

# STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

## PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

STATE PROJECT NO.: C1064-1-32  
CSJ = 1064-01-032

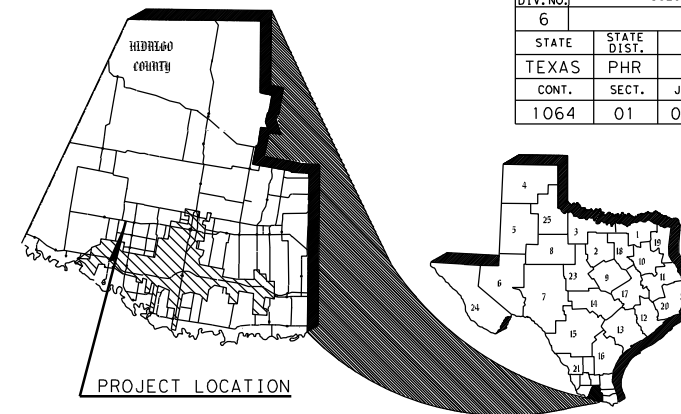
**HIDALGO COUNTY  
FM 676**

LIMITS: FROM SH 364 (LA HOMA RD) TO SH 107

ROADWAY LENGTH = 13,545.90 FT  
NET LENGTH OF PROJECT = 13,545.90 FT = 2.566 mi

RECONSTRUCTION OF WIDENING TO A 4 LANE WITH A TWO-WAY-LEFT-TURN-LANE FACILITY  
CONSISTING OF GRADING, STORM SEWER AND DRAINAGE STRUCTURES, CONCRETE CURB & GUTTER,  
LIME TREATED SUBGRADE, FLEX BASE, ASPHALTIC CONCRETE PAVEMENT, WHEELCHAIR  
RAMPS, SIDEWALKS, PAVEMENT MARKINGS, SIGNING, AND TRAFFIC SIGNALS

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			1
STATE	STATE DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



SEE INDEX OF SHEETS ON SHEETS 2 & 3

REGISTERED ACCESSIBILITY SPECIALIST (RAS)  
INSPECTION REQUIRED TDLR No. EABPRJ \_\_\_\_\_

**FM 676 (CSJ 1064-01-032)**

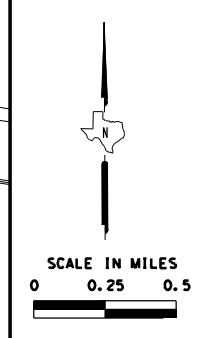
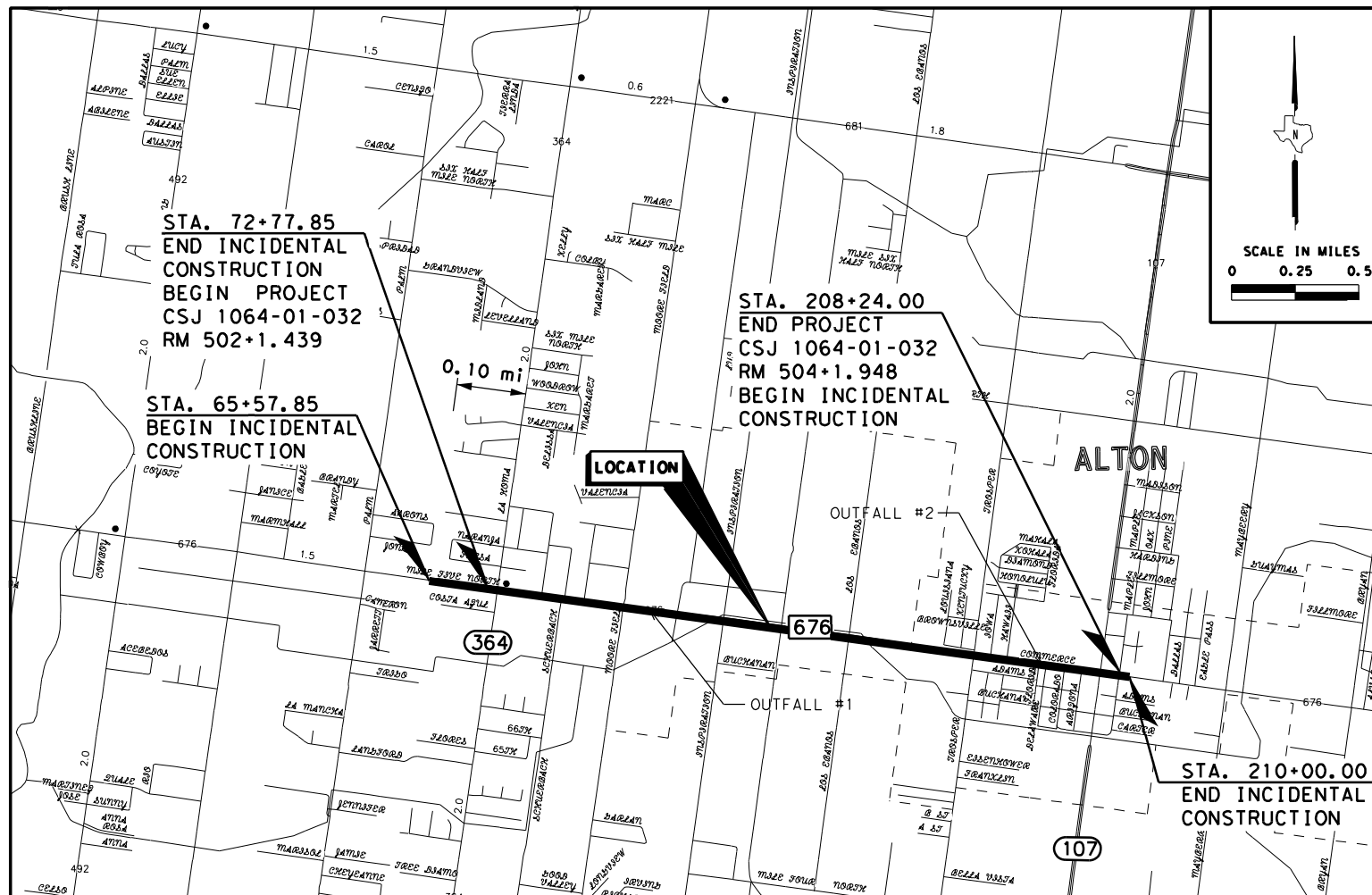
**FINAL PLAN DATA :**

FINAL CONTRACT PRICE: \_\_\_\_\_  
CONTRACTORS NAME: \_\_\_\_\_  
CONTRACTORS ADDRESS: \_\_\_\_\_  
LETTING DATE: \_\_\_\_\_  
DATE WORK BEGAN: \_\_\_\_\_  
DATE WORK COMPLETED: \_\_\_\_\_  
DATE OF ACCEPTANCE: \_\_\_\_\_

**CHANGE ORDERS & SUPP. AGREEMENTS :**

ALL CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND CONTRACT. ALL PROPOSED CONSTRUCTION WAS COMPLETED UNLESS OTHERWISE NOTED.

RENE GARZA, P.E. DATE \_\_\_\_\_  
PHARR AREA ENGINEER



LOCAL ENTITIES	
CITY OF ALTON CONCURRENCE :	DATE : _____
NAME	TITLE
HIDALGO COUNTY CONCURRENCE :	DATE : _____
NAME	TITLE
HIDALGO CO. DRAINAGE DIST. No. 1 CONCURRENCE :	DATE : _____
NAME	TITLE
UNITED IRRIGATION DISTRICT CONCURRENCE :	DATE : _____
NAME	TITLE
HIDALGO COUNTY IRRIGATION DISTRICT No. 6 CONCURRENCE :	DATE : _____
NAME	TITLE

**ATKINS** TBPE REG. #F-474  
11801 Domain Boulevard,  
SUITE 500  
Austin, Texas 78758  
(512) 327-6840

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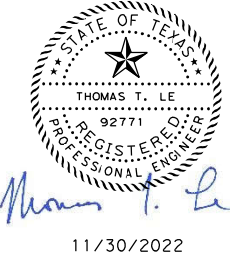
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT. REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, JULY 2022 ) .

PROJECT DATA	
<b>DESIGN SPEED:</b> 45 mph FM 676 30 mph CROSS STREETS	<b>TRAFFIC DATA</b> FROM: SH 364 TO SH 107 TRAFFIC VOLUMES: 2020 ADT 12,700 2040 ADT 18,600 PERCENT TRUCKS: 3.8% ADT
<b>RAILROAD CROSSING:</b> NONE	<b>FUNCTIONAL CLASSIFICATION:</b> PRINCIPAL ARTERIAL
<b>EXCEPTION:</b> NONE	
<b>EQUATION:</b> NONE	

Texas Department of Transportation  
ALL RIGHTS RESERVED

RECOMMENDED FOR LETTING: 11/30/2022  
DocuSigned by: Pedro R. Alvarez  
DISTRICT ENGINEER  
EABA335C2DA48C

SUBMITTED FOR LETTING: 11/30/2022  
DocuSigned by: Romualdo Mena Jr  
DISTRICT CENTRAL DESIGN SUPERVISOR  
8D995A956F70440...



11/30/2022

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COUNTY: HIDALGO PROJ. NO. \_\_\_\_\_  
HWY. NO. FM 676 LETTING DATE \_\_\_\_\_  
DATE ACCEPTED \_\_\_\_\_

**SHEET NO.**      **DESCRIPTION**

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8 - 15	TYPICAL SECTIONS
16	SEAL COAT MATERIAL SELECTION TABLE
17,17A-17J	GENERAL NOTES
18,18A-18E	ESTIMATE AND QUANTITY SHEETS
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**SHEET NO.**      **DESCRIPTION**

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THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH \* HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

1/4/2023  
DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH AN \*\* HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

1/4/2023  
DATE



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**ATKINS**

TBPE REG. #F-474

**FM 676  
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FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			2
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

D - DISTRICT STANDARD  
S - STATE STANDARD

SHEET NO.      DESCRIPTION

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THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH \* HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

1/4/2023  
DATE



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DATE



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D - DISTRICT STANDARD  
 S - STATE STANDARD



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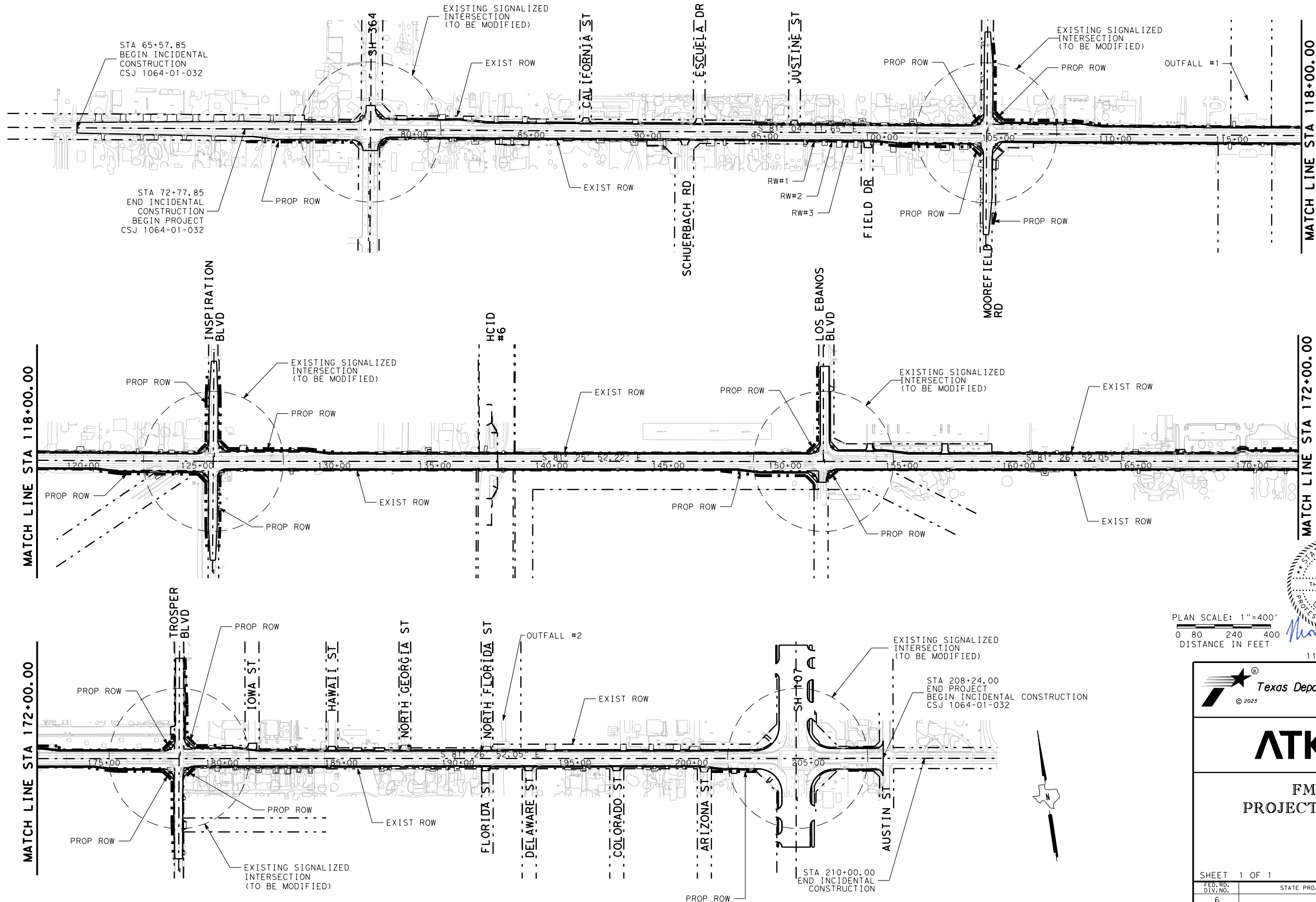
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**FM 676**  
**INDEX OF SHEETS**

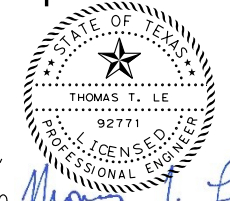
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			3
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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PLAN SCALE: 1"=400'  
 0 80 240 400  
 DISTANCE IN FEET



11/17/2022

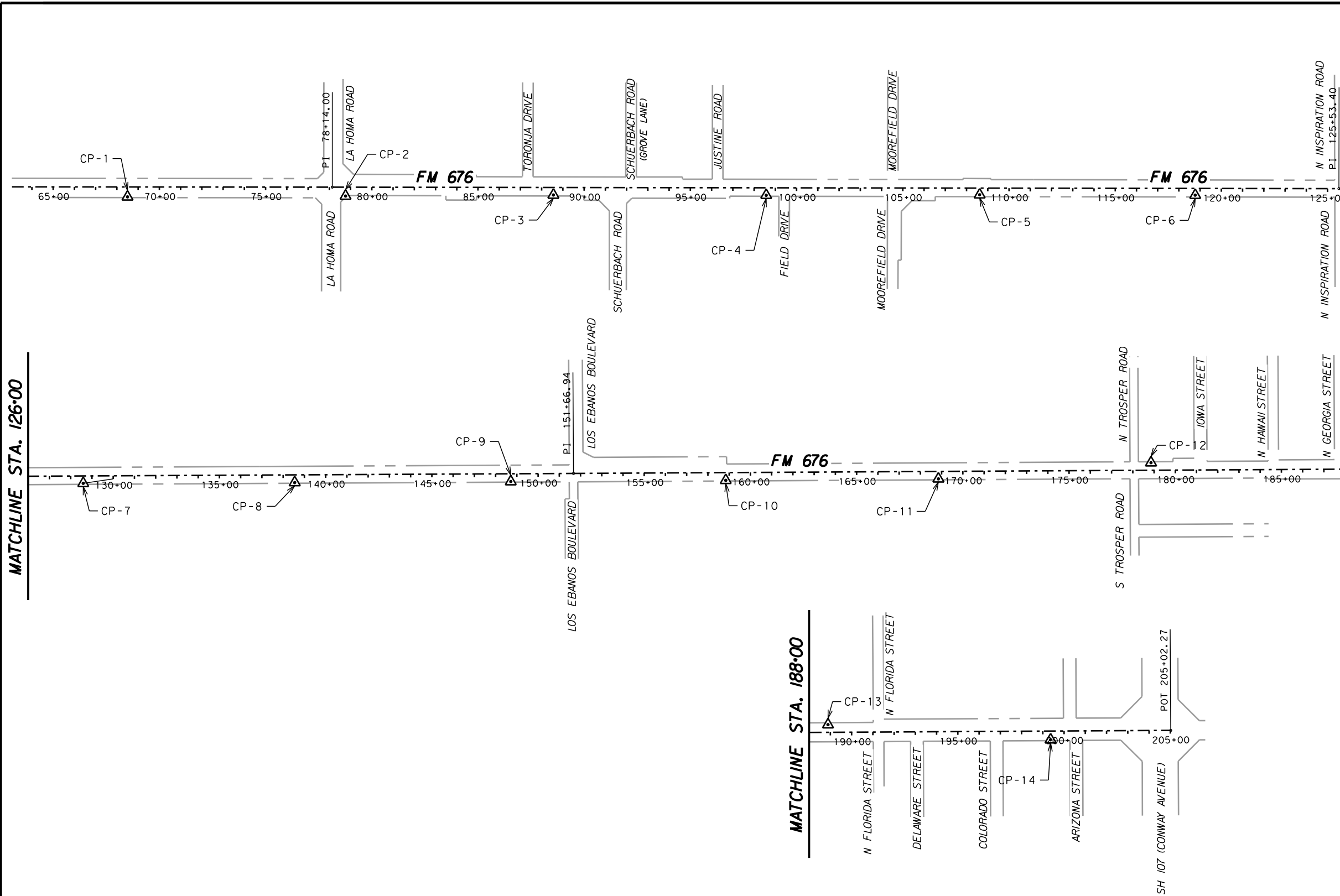


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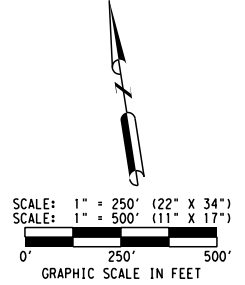
FM 676  
 PROJECT LAYOUT

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			4
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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- NOTES:
1. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE (4205), NAD83, (2011 ADJ.); EPOCH 2010.00 NAVD 88 USING GEOID 12A. ALL COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00004 (HIDALGO COUNTY).
  2. ALL PROJECT ELEVATIONS ARE BASED ON NAVD88 (GEOID03) HOLDING AN ELEVATION OF 178.68 ON CONTROL POINT BM-1, ELEVATIONS OF ALL OTHER CONTROL POINTS WERE DETERMINED BY DIGITAL LEVEL LOOPS PERFORMED IN JUNE 2017.
  3. ABSTRACTING PERFORMED MARCH 2017.
  4. FIELD SURVEYS PERFORMED DECEMBER 2017.
  5. UNITS OF MEASURE (US SURVEY FEET)
  6. THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E.



*James A. Woods, RPLS*  
 JAMES A. WOODS RPLS#5333



FM 676

**SURVEY CONTROL INDEX SHEET**

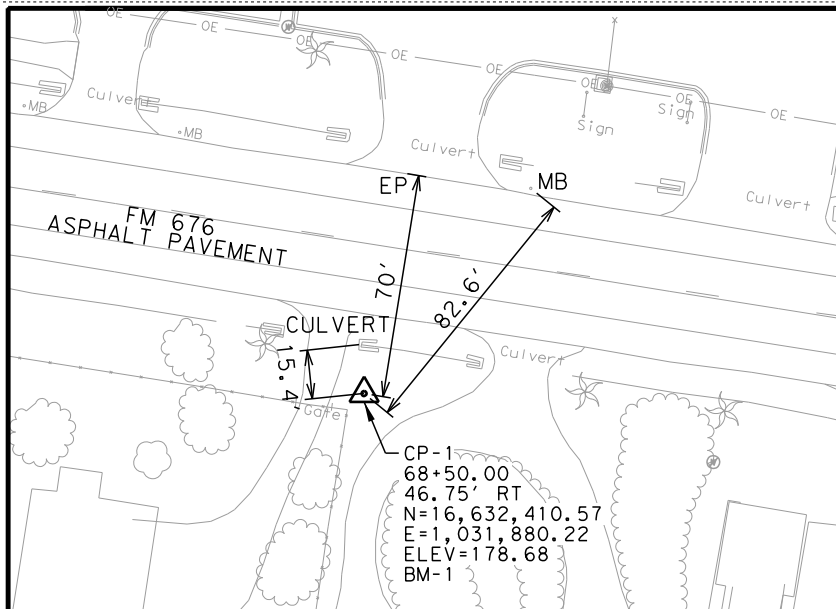
- LEGEND**
- △ CONTROL POINT
  - EXISTING R.O.W.

POINT	NORTH	EAST	ELEVATION	STATION	OFFSET	DESCRIPTION
CP-1	16,632,410.57	1,031,880.22	178.68	68+50.00	46.75'	BM-1
CP-2	16,632,256.33	1,032,895.30	174.50	78+76.75	42.07'	BM-2
CP-3	16,632,110.71	1,033,862.64	174.40	88+54.98	35.53'	BM-3
CP-4	16,631,955.13	1,034,852.60	172.94	98+57.08	35.32'	BM-4
CP-5	16,631,802.87	1,035,845.67	169.82	108+61.75	31.34'	BM-5
CP-6	16,631,644.62	1,036,848.11	174.31	118+76.60	31.82'	BM-6
CP-7	16,631,490.90	1,037,818.31	172.94	128+58.68	34.90'	BM-7
CP-8	16,631,341.19	1,038,802.69	172.40	138+54.37	36.44'	BM-8
CP-9	16,631,189.21	1,039,808.73	170.54	148+71.83	37.00'	BM-9
CP-10	16,631,039.03	1,040,809.47	166.52	158+83.76	36.82'	BM-10
CP-11	16,630,891.96	1,041,799.73	169.27	168+84.89	35.23'	BM-11
CP-12	16,630,813.01	1,042,800.45	166.13	178+86.24	-35.29'	BM-12
CP-13	16,630,664.77	1,043,792.12	160.85	188+88.93	-35.94'	BM-13
CP-14	16,630,433.17	1,044,816.59	163.20	199+36.43	40.98'	BM-14

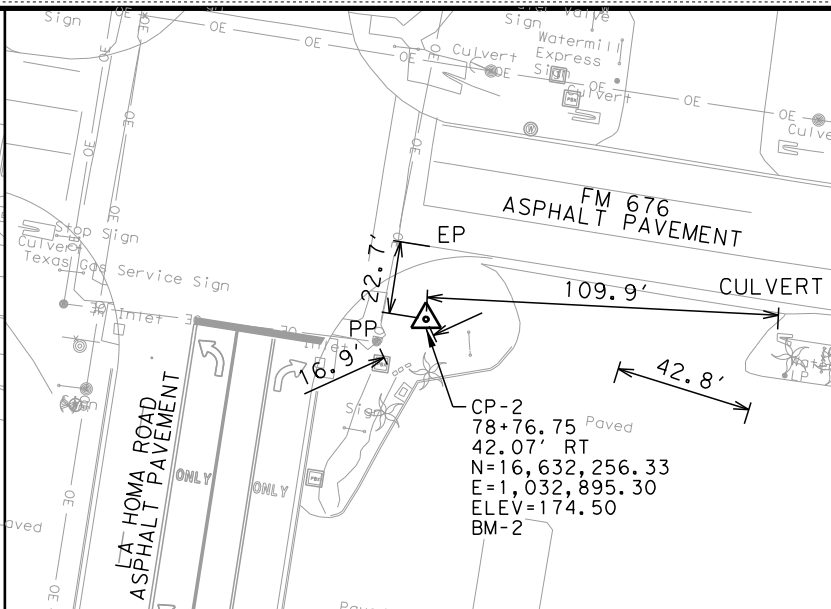
FROM	TO	DIRECTION	DISTANCE
CP-1	CP-2	S 81° 21' 34.91" E	1,026.69'
CP-2	CP-3	S 81° 26' 22.01" E	978.20'
CP-3	CP-4	S 81° 04' 07.42" E	1,002.06'
CP-4	CP-5	S 81° 16' 58.21" E	1,004.64'
CP-5	CP-6	S 81° 01' 45.34" E	1,014.81'
CP-6	CP-7	S 80° 59' 49.37" E	982.26'
CP-7	CP-8	S 81° 21' 09.27" E	995.65'
CP-8	CP-9	S 81° 24' 32.71" E	1,017.42'
CP-9	CP-10	S 81° 27' 56.26" E	1,011.91'
CP-10	CP-11	S 81° 33' 07.38" E	1,001.08'
CP-11	CP-12	S 85° 29' 22.18" E	1,003.79'
CP-12	CP-13	S 81° 29' 51.91" E	1,002.65'
CP-13	CP-14	S 77° 15' 41.15" E	1,050.28'

SHEET 1 OF 1

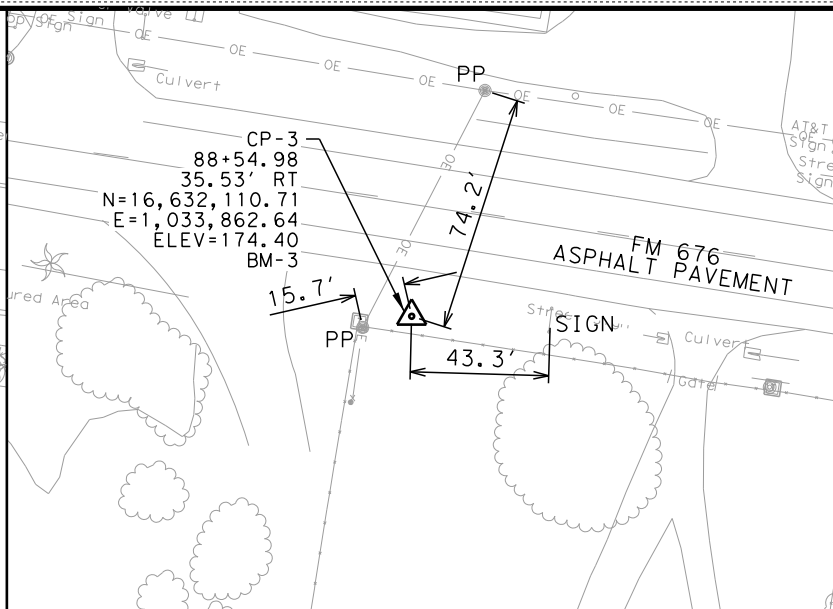
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6			
STATE	DIST.	COUNTY	
TEXAS	21	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
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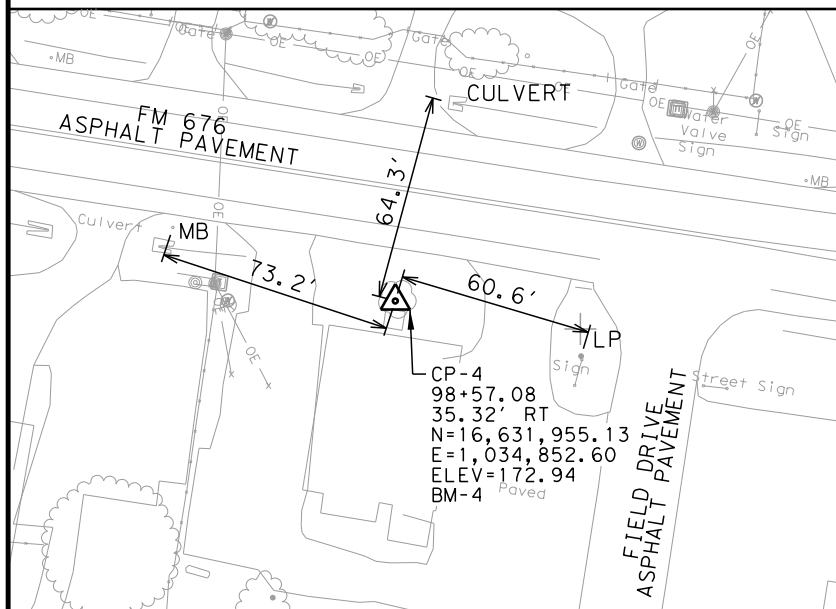
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APPROXIMATELY 960 FEET WEST OF LA HOMA ROAD



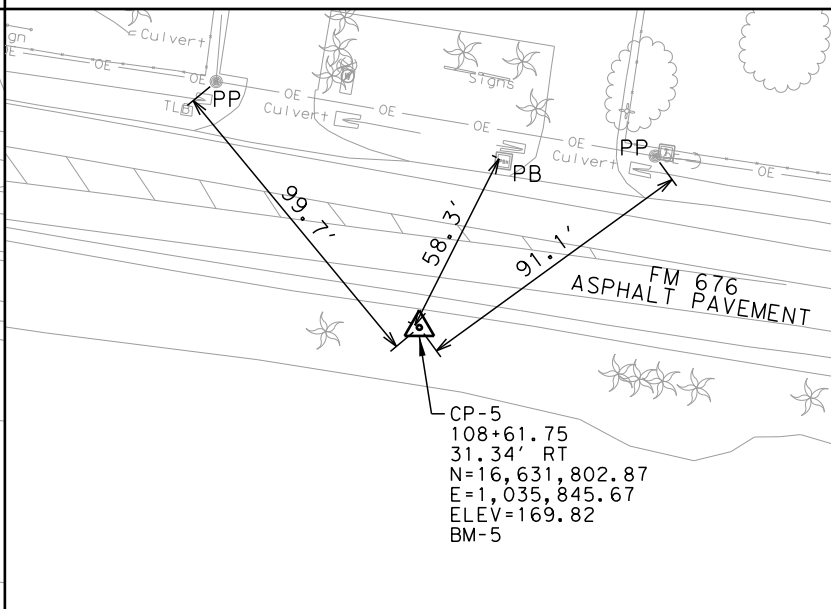
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APPROXIMATELY 60 FEET EAST OF LA HOMA ROAD



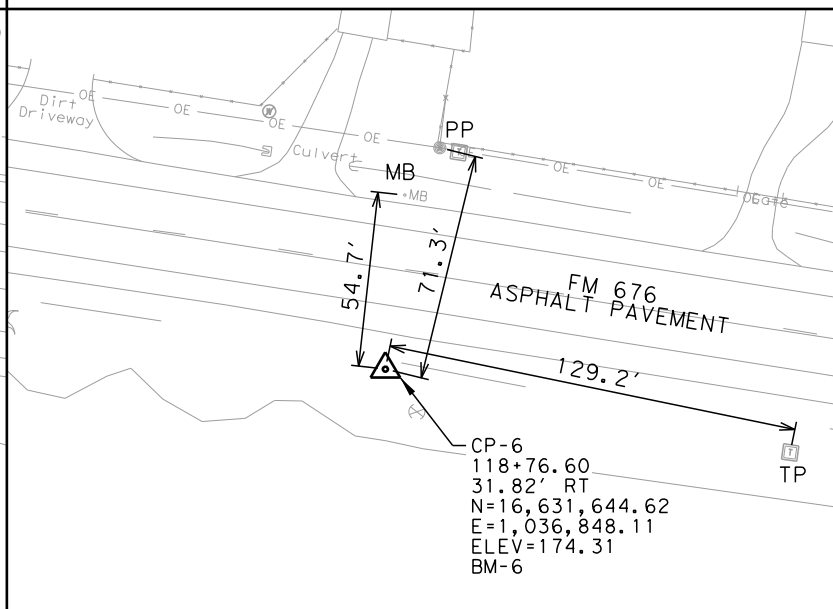
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APPROXIMATELY 130 FEET EAST OF TORONJA DRIVE



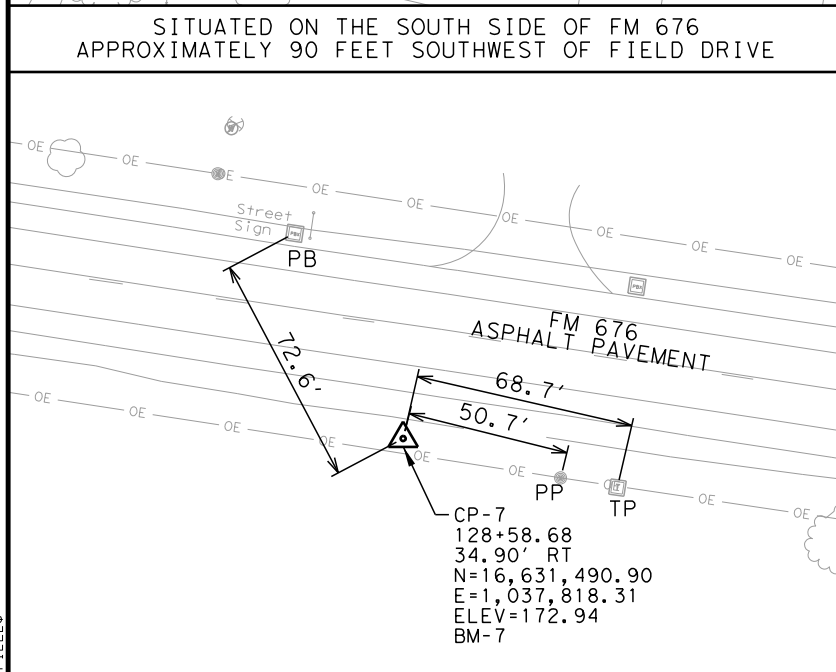
SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 90 FEET SOUTHWEST OF FIELD DRIVE



SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 410 FEET EAST OF MOOREFIELD DRIVE

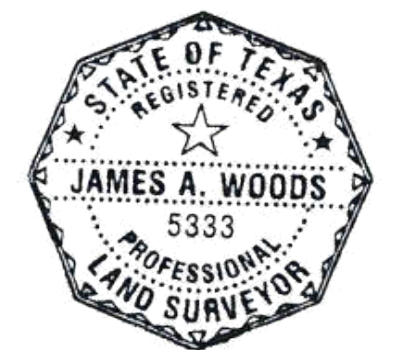
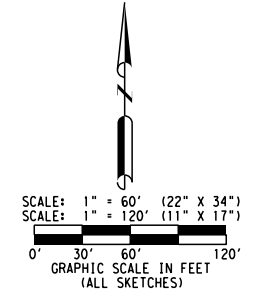


SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 680 FEET WEST OF N INSPIRATION ROAD



SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 300 FEET EAST OF N INSPIRATION ROAD

- NOTES:
- ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE (4205), NAD83. (2011 ADJ.; EPOCH 2010.00) NAVD 88 USING GEOID 12A. ALL COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00004 (HIDALGO COUNTY).
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  - FIELD SURVEYS PERFORMED DECEMBER 2017.
  - UNITS OF MEASURE (US SURVEY FEET)
  - THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E.



*James A. Woods, RPLS*  
JAMES A. WOODS RPLS#5333



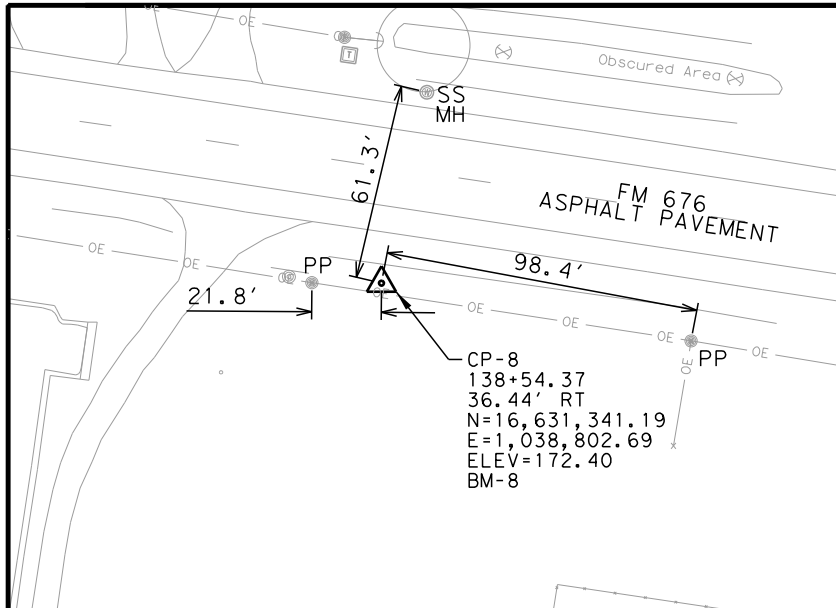
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TBPE REG. #F-474

**FM 676**  
**HORIZONTAL AND VERTICAL CONTROL**

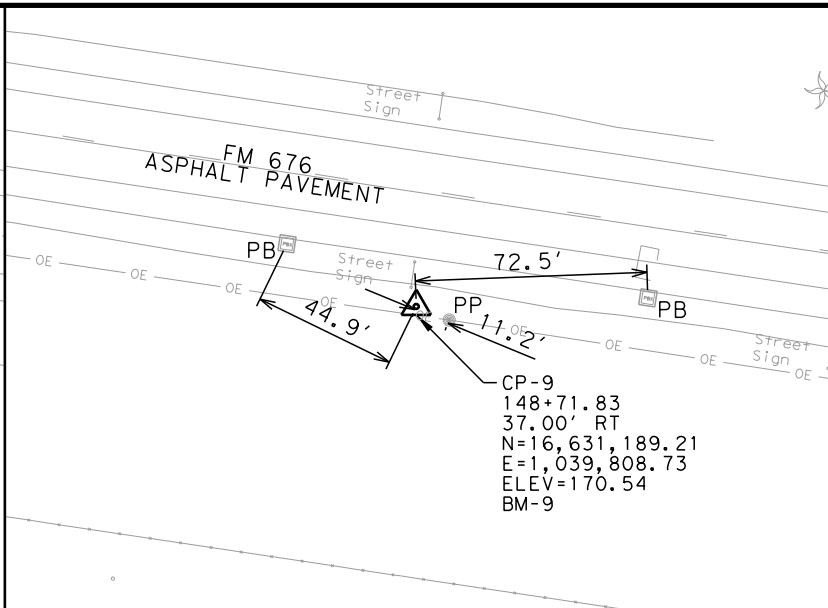
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			
STATE	DIST.	COUNTY	
TEXAS	21	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

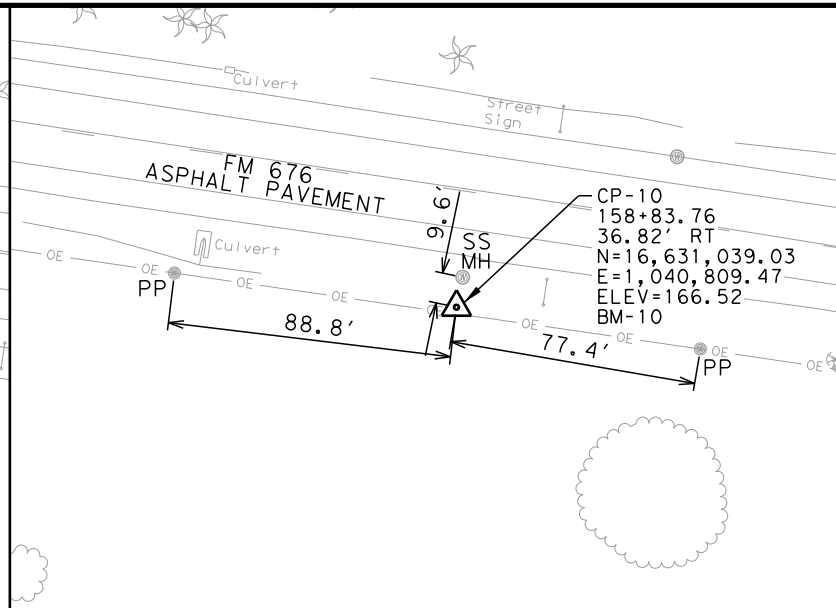
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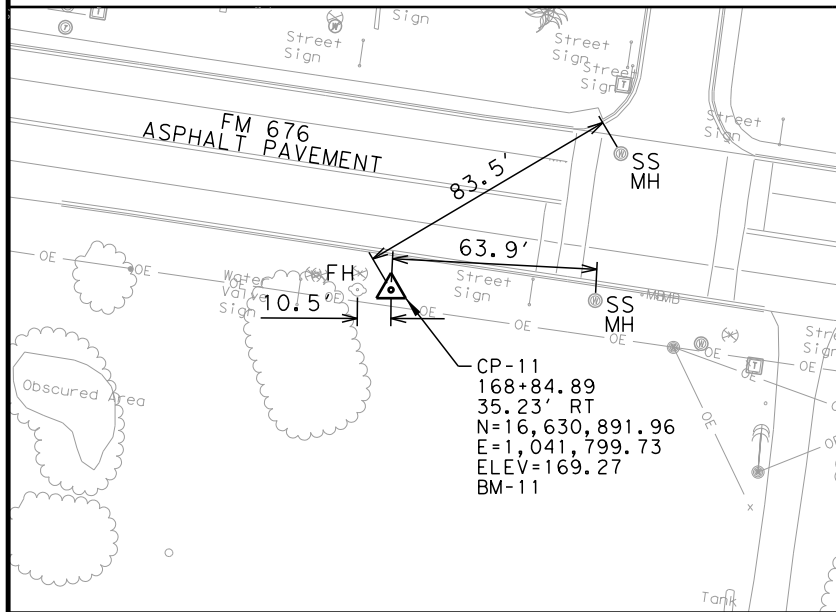
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APPROXIMATELY 1,310 FEET WEST OF LOS EBANOS BOULEVARD



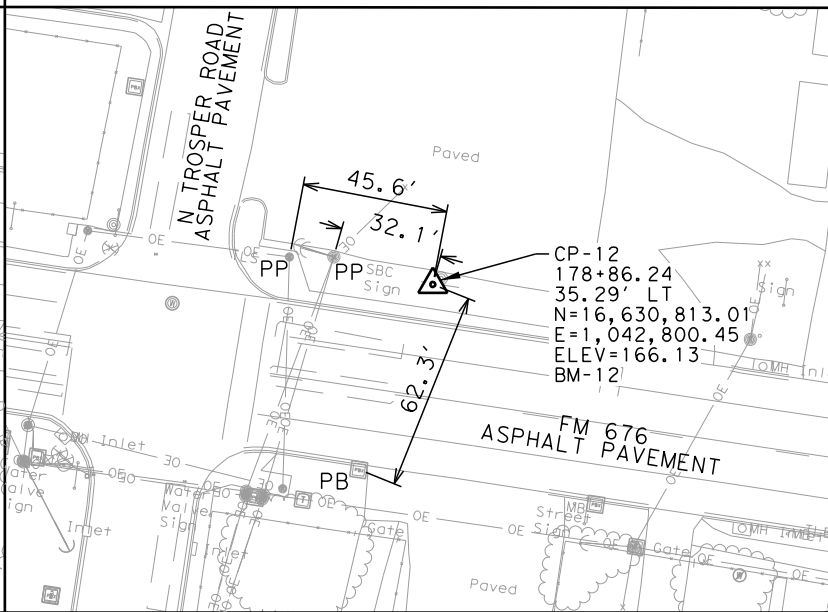
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APPROXIMATELY 290 FEET WEST OF LOS EBANOS BOULEVARD



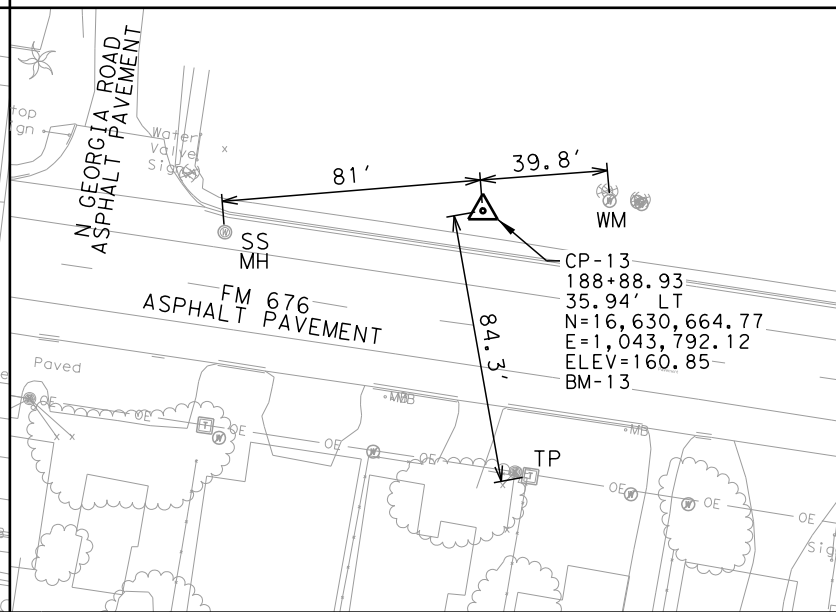
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APPROXIMATELY 720 FEET EAST OF LOS EBANOS BOULEVARD



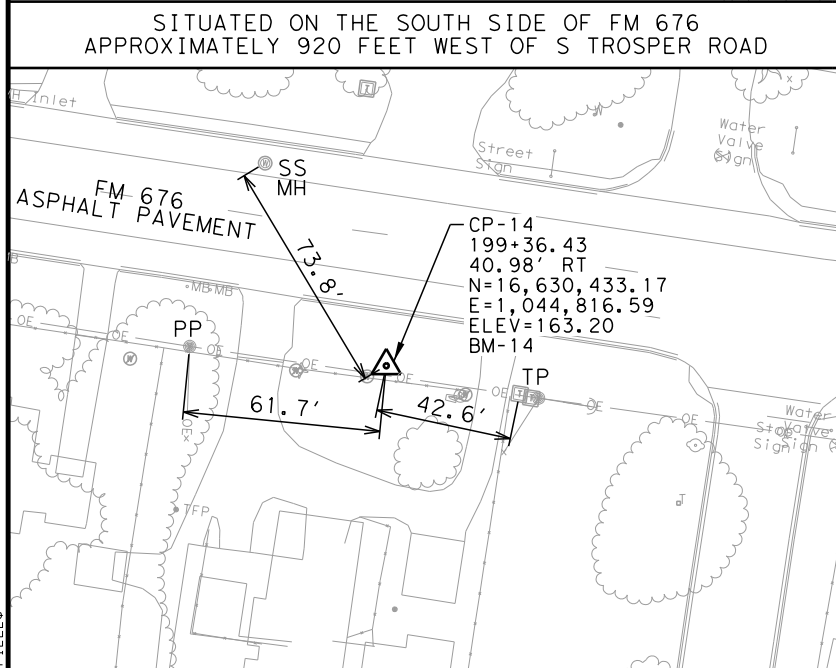
SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 920 FEET WEST OF S TROSPER ROAD



SITUATED ON THE NORTH SIDE OF FM 676  
APPROXIMATELY 80 FEET EAST OF N TROSPER ROAD

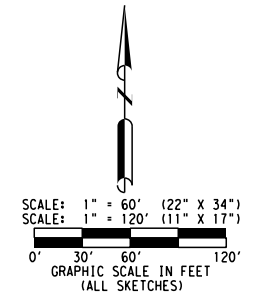


SITUATED ON THE NORTH SIDE OF FM 676  
APPROXIMATELY 120 FEET EAST OF N GEORGIA STREET



SITUATED ON THE SOUTH SIDE OF FM 676  
APPROXIMATELY 120 FEET WEST OF ARIZONA STREET

- NOTES:
1. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE (4205), NAD83. (2011 ADJ.; EPOCH 2010.00) NAVD 88 USING GEOID 12A. ALL COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00004 (HIDALGO COUNTY).
  2. ALL PROJECT ELEVATIONS ARE BASED ON NAVD88 (GEOID03) HOLDING AN ELEVATION OF 178.68 ON CONTROL POINT BM-1. ELEVATIONS OF ALL OTHER CONTROL POINTS WERE DETERMINED BY DIGITAL LEVEL LOOPS PERFORMED IN JUNE 2017.
  3. ABSTRACTING PERFORMED MARCH 2017.
  4. FIELD SURVEYS PERFORMED DECEMBER 2017.
  5. UNITS OF MEASURE (US SURVEY FEET)
  6. THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E.



*James A. Woods, RPLS*  
JAMES A. WOODS RPLS#5333

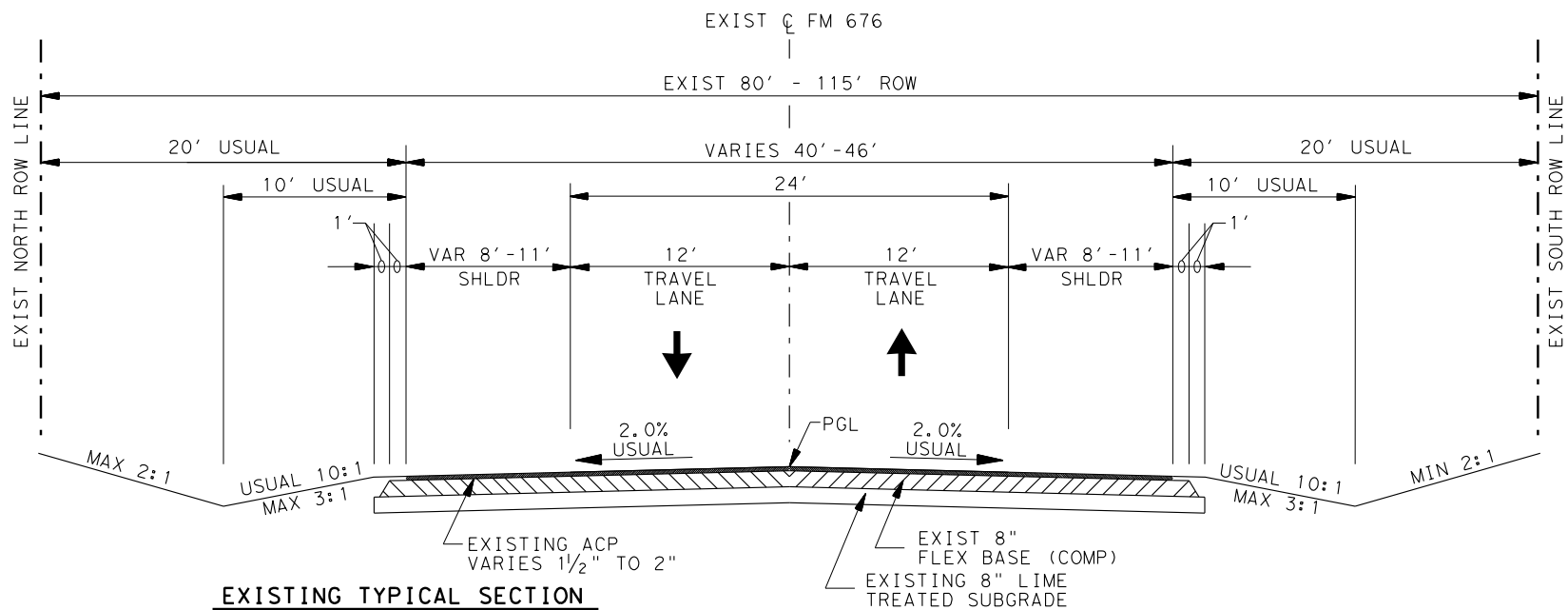


FM 676  
HORIZONTAL AND  
VERTICAL CONTROL

SHEET 2 OF 2

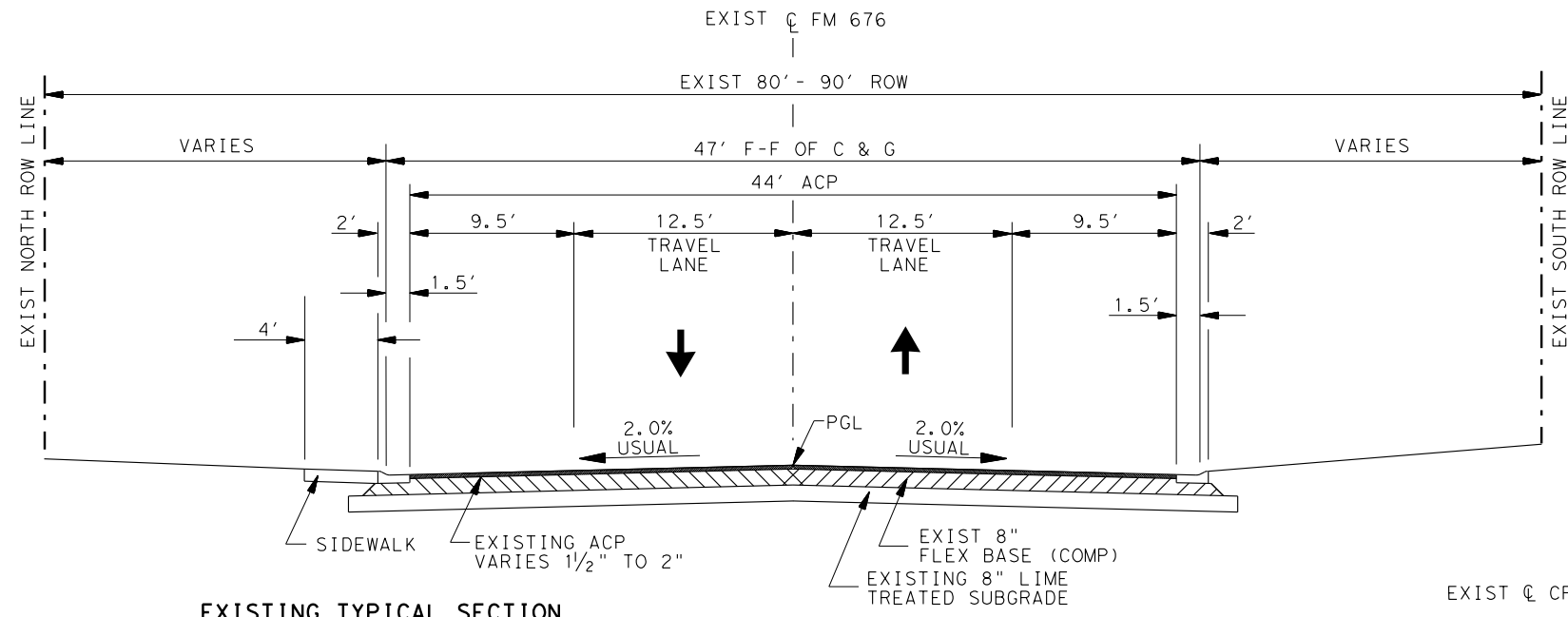
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6			
STATE	DIST.	COUNTY	
TEXAS	21	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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FILE: \$FILEL\$



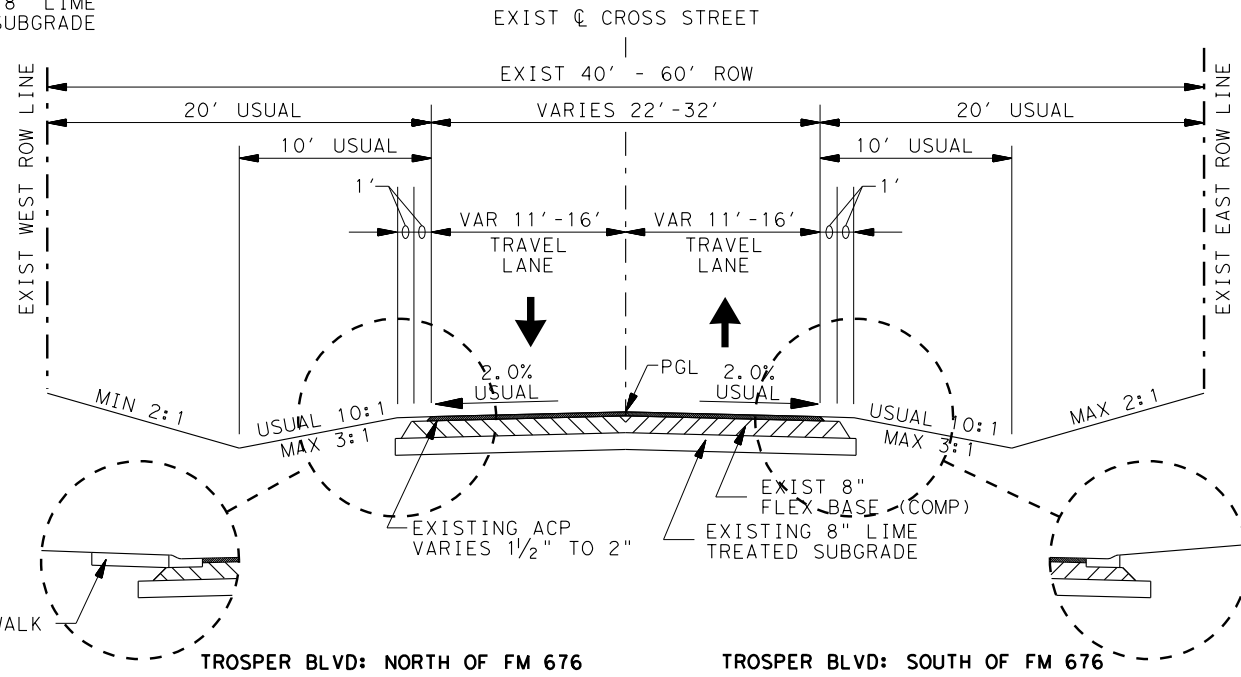
**EXISTING TYPICAL SECTION**

**FM 676**  
**STA 65+57.85 TO STA 165+00**



**EXISTING TYPICAL SECTION**

**FM 676**  
**STA 165+00 TO STA 210+00.00**



**EXISTING CROSS STREET TYPICAL SECTION**

**MOOREFIELD DR: NORTH & SOUTH OF FM 676**  
**INSPIRATION BLVD: NORTH & SOUTH OF FM 676**  
**LOS EBANOS BLVD: NORTH OF FM 676**  
**TROSPER BLVD: NORTH & SOUTH OF FM 676**

**TROSPER BLVD: NORTH OF FM 676**

**TROSPER BLVD: SOUTH OF FM 676**

**NOTE:**

THE EXISTING ACP IS TO BE SALVAGED IN ACCORDANCE WITH ITEM 305. THIS MATERIAL MAY BE REUSED IN THE NEW PAVEMENT STRUCTURE. ANY EXCESS ACP MATERIAL SHALL BECOME THE PROPERTY OF THE TXDOT MISSION MAINTENANCE OFFICE. THE EXISTING BASE MATERIAL TO BE SALVAGED IN ACCORDANCE WITH ITEM 251, ANY EXCESS BASE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR. QUANTITY ESTIMATED IS FOR EXISTING ROADWAY AND SIDESTREETS.



11/17/2022



**ATKINS**  
 TBPE REG. #F-474

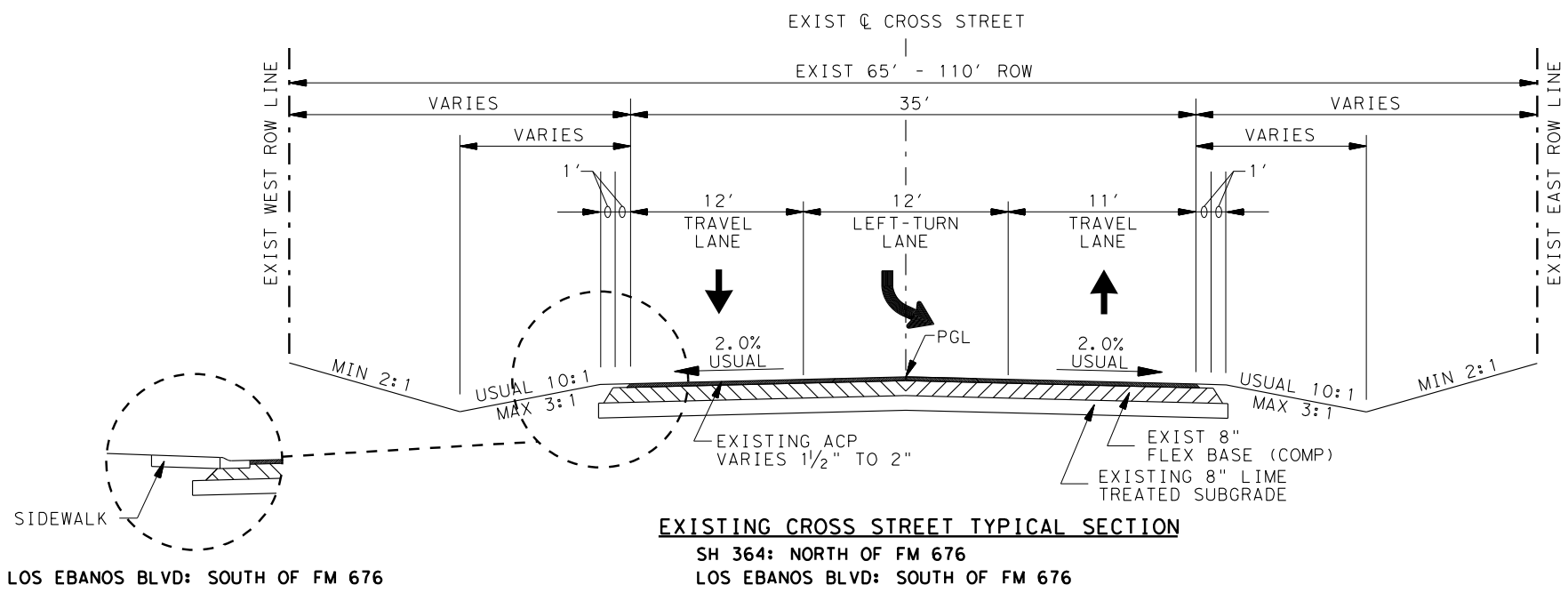
**FM 676**  
**EXISTING**  
**TYPICAL SECTIONS**

SHEET 1 OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		8	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

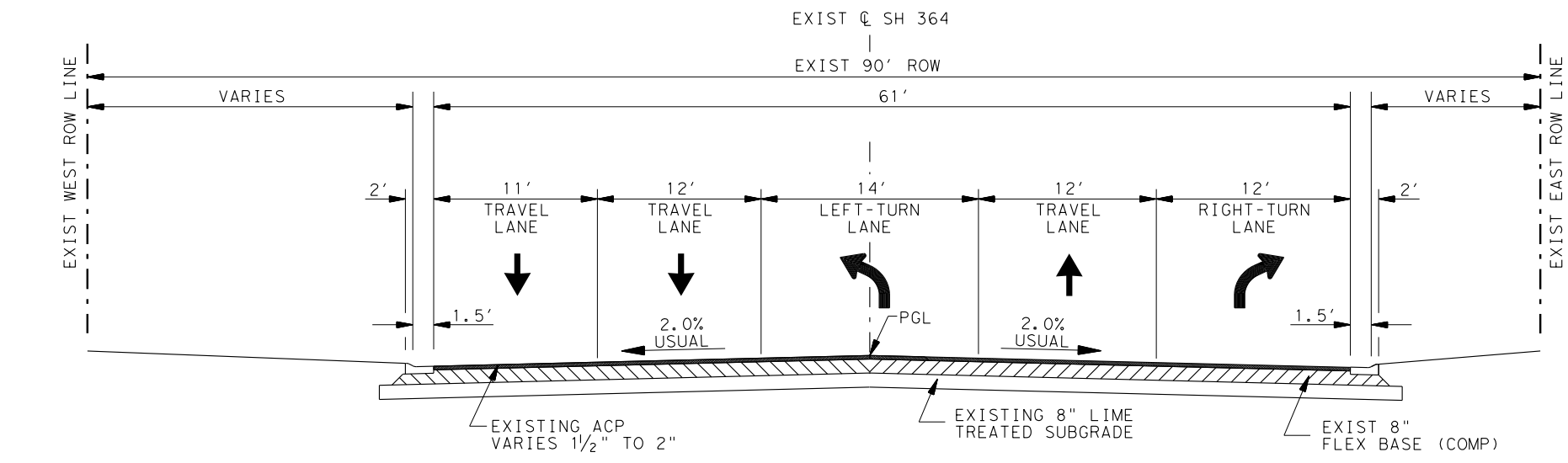
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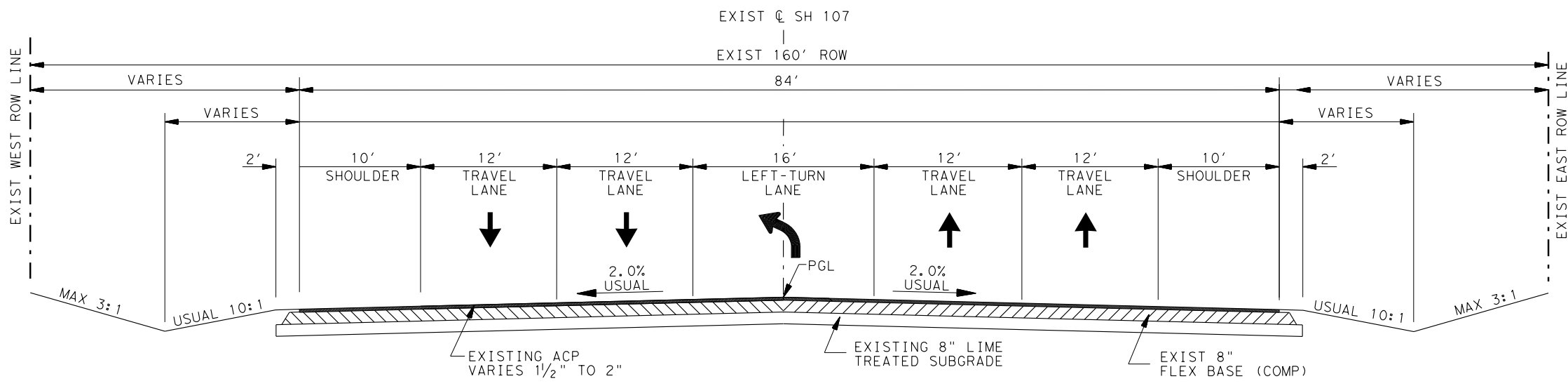
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**EXISTING CROSS STREET TYPICAL SECTION**  
 SH 364: NORTH OF FM 676  
 LOS EBANOS BLVD: SOUTH OF FM 676



**EXISTING CROSS STREET TYPICAL SECTION**  
 SH 364: SOUTH OF FM 676



**EXISTING CROSS STREET TYPICAL SECTION**  
 SH 107

**NOTE:**  
 THE EXISTING ACP IS TO BE SALVAGED IN ACCORDANCE WITH ITEM 305. THIS MATERIAL MAY BE REUSED IN THE NEW PAVEMENT STRUCTURE. ANY EXCESS ACP MATERIAL SHALL BECOME THE PROPERTY OF THE TXDOT MISSION MAINTENANCE OFFICE. THE EXISTING BASE MATERIAL TO BE SALVAGED IN ACCORDANCE WITH ITEM 251, ANY EXCESS BASE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR. QUANTITY ESTIMATED IS FOR EXISTING ROADWAY AND SIDESTREETS.



11/17/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**EXISTING**  
**TYPICAL SECTIONS**

SHEET 2 OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		9	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

GENERAL NOTES:

WHERE REQUIRED BY FIXTURES OR UNUSUAL CONDITIONS, THE GOVERNING SLOPES MAY BE VARIED WHEN SPECIFICALLY DIRECTED BY THE ENGINEER.

PGL - DENOTES PROFILE GRADE LINE.

WHERE POSSIBLE AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER, PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON STRIPING LANES AS SHOWN ON STRIPING DETAILS

THE SUBGRADE SHALL BE SHAPED AS PER DETAIL 'C' OR 'A1'. THE COMPLETE BASE SHALL BE ROLLED BEFORE THE EARTH SHOULDER IS SHAPED AND FINAL COMPACTION SHALL BE DONE OVER BASE AND EDGE OF SHOULDER. ALL GRADING SHALL BE WITHIN THE ROW LIMITS.

SALVAGED FLEX BASE WITHIN THIS PROJECT MAY BE USED AS PART OF FLEX BASE, ITEM 251. BASE WILL BE REQUIRED WHERE SALVAGE IS PART OF FLEX BASE. 114 lb/sy ACP EQUIVALENT TO 1" IN DEPTH. ONE STATION IS EQUIVALENT TO 100 FT.

CELL FIBER SEEDING SHALL BE PLACED BETWEEN THE EDGE OF PAVEMENT AND ROW LINE.

MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER



11/17/2022

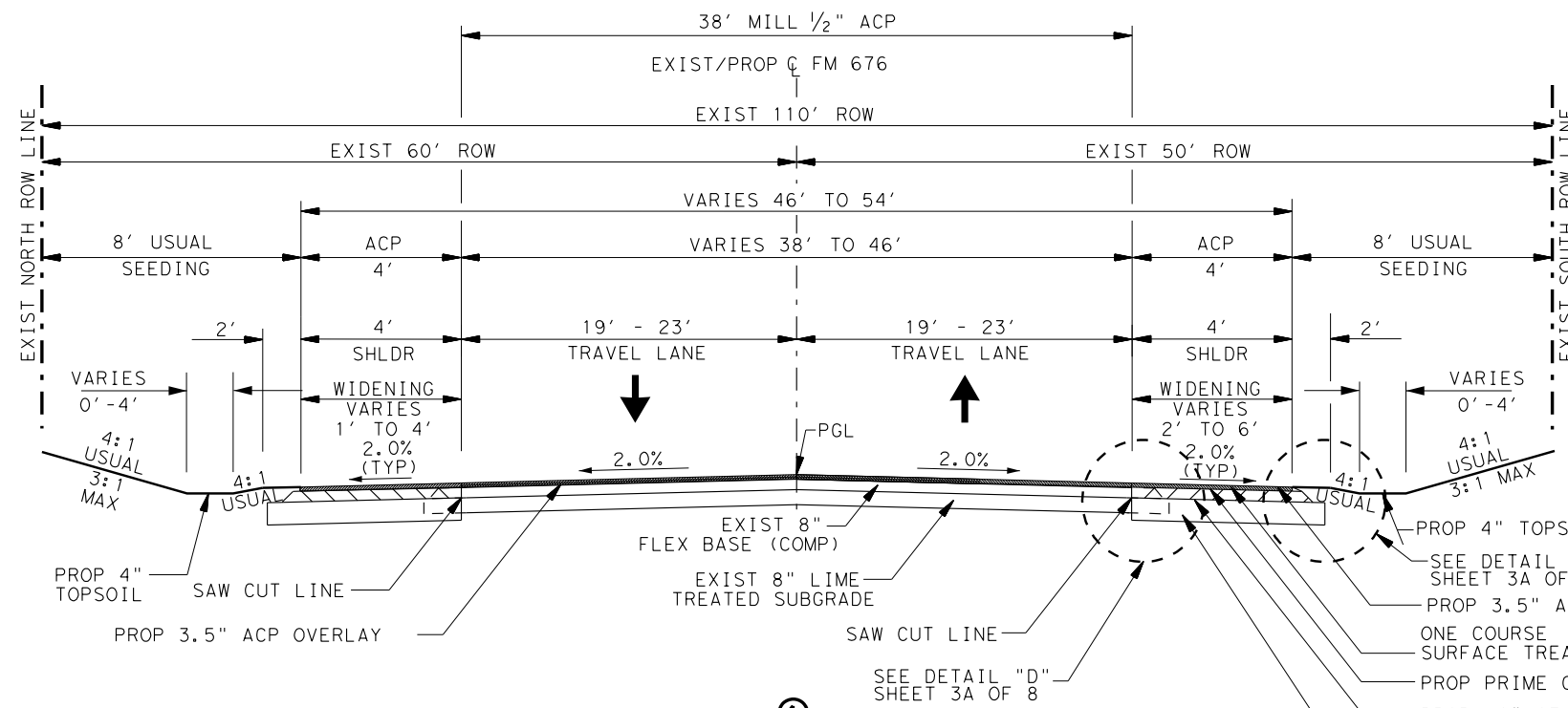


**ATKINS**  
TBPE REG. #F-474

**FM 676  
PROPOSED  
TYPICAL SECTION**

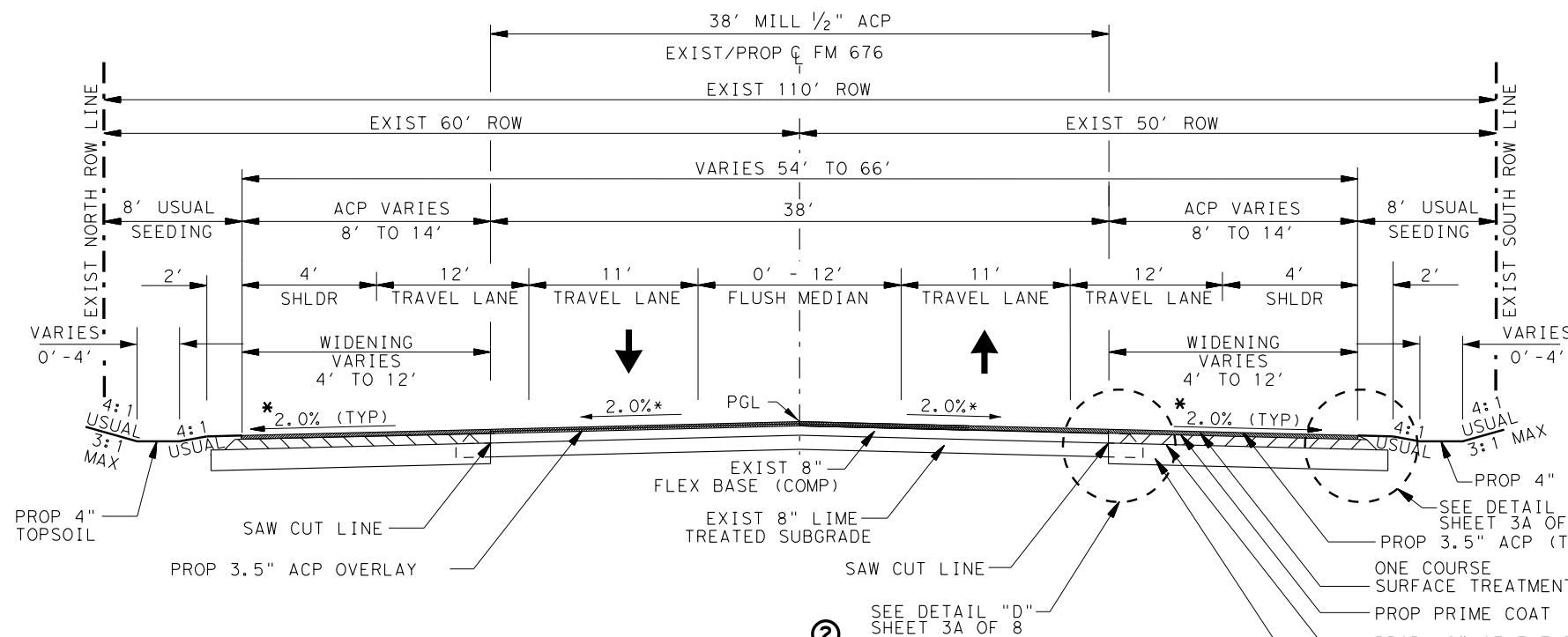
SHEET 3 OF 8 SCALE: NTS

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			10
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**①  
PROPOSED TYPICAL SECTION**  
FM 676 - WIDENING AND MILL & OVERLAY  
STA 65+57.85 TO STA 68+45.89

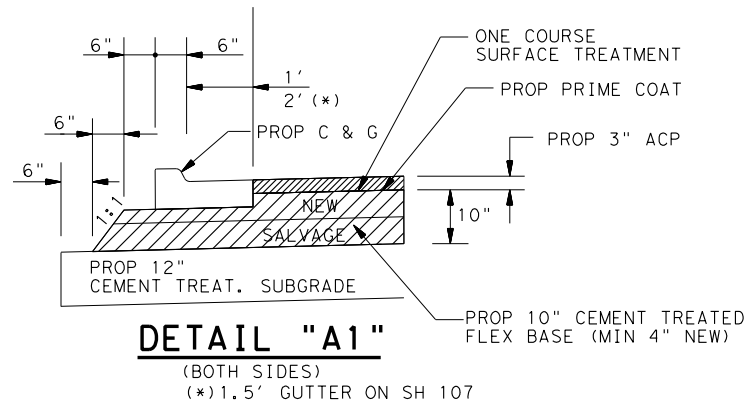
- PROP 4" TOPSOIL
- SEE DETAIL "C" SHEET 3A OF 8
- PROP 3.5" ACP (TYPE "SP-D")
- ONE COURSE SURFACE TREATMENT
- PROP PRIME COAT
- PROP 10" CEMENT TREATED FLEX BASE (COMP THICK) W/ 2% CEMENT ADMIX BY WT ON NEW & SALV (MIN 4" NEW)
- PROP 12" CEMENT TREATED SUBGRADE W/ 2% CEMENT BY WT



**②  
PROPOSED TYPICAL SECTION**  
FM 676 - WIDENING AND MILL & OVERLAY  
STA 68+45.89 TO STA 72+77.85  
\* STA 72+37.85 TO STA 72+77.85 (X-SLOPE TRANSITION 2.0% - 2.5%)

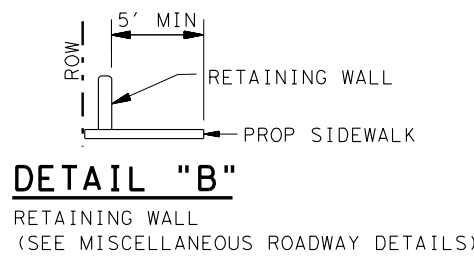
- PROP 4" TOPSOIL
- SEE DETAIL "C" SHEET 3A OF 8
- PROP 3.5" ACP (TYPE "SP-D")
- ONE COURSE SURFACE TREATMENT
- PROP PRIME COAT
- PROP 10" CEMENT TREATED FLEX BASE (COMP THICK) W/ 2% CEMENT ADMIX BY WT ON NEW & SALV (MIN 4" NEW)
- PROP 12" CEMENT TREATED SUBGRADE W/ 2% CEMENT BY WT

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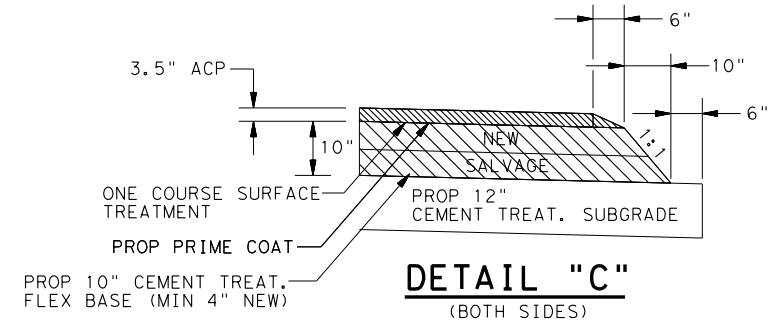
**DETAIL "A1"**

(BOTH SIDES)  
(\*) 1.5' GUTTER ON SH 107



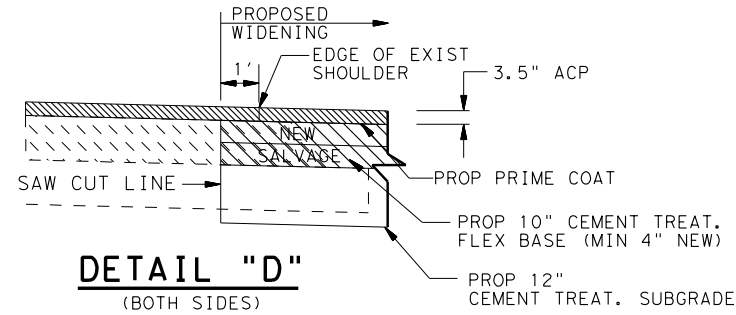
**DETAIL "B"**

RETAINING WALL  
(SEE MISCELLANEOUS ROADWAY DETAILS)



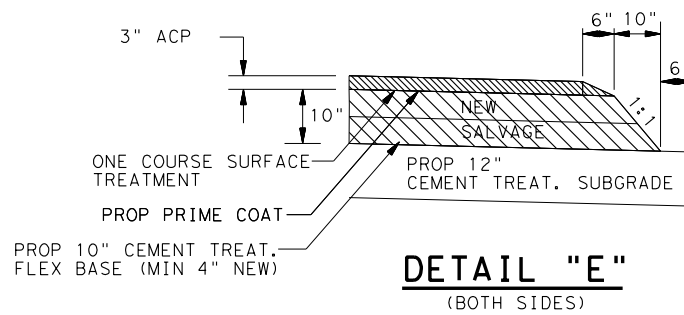
**DETAIL "C"**

(BOTH SIDES)



**DETAIL "D"**

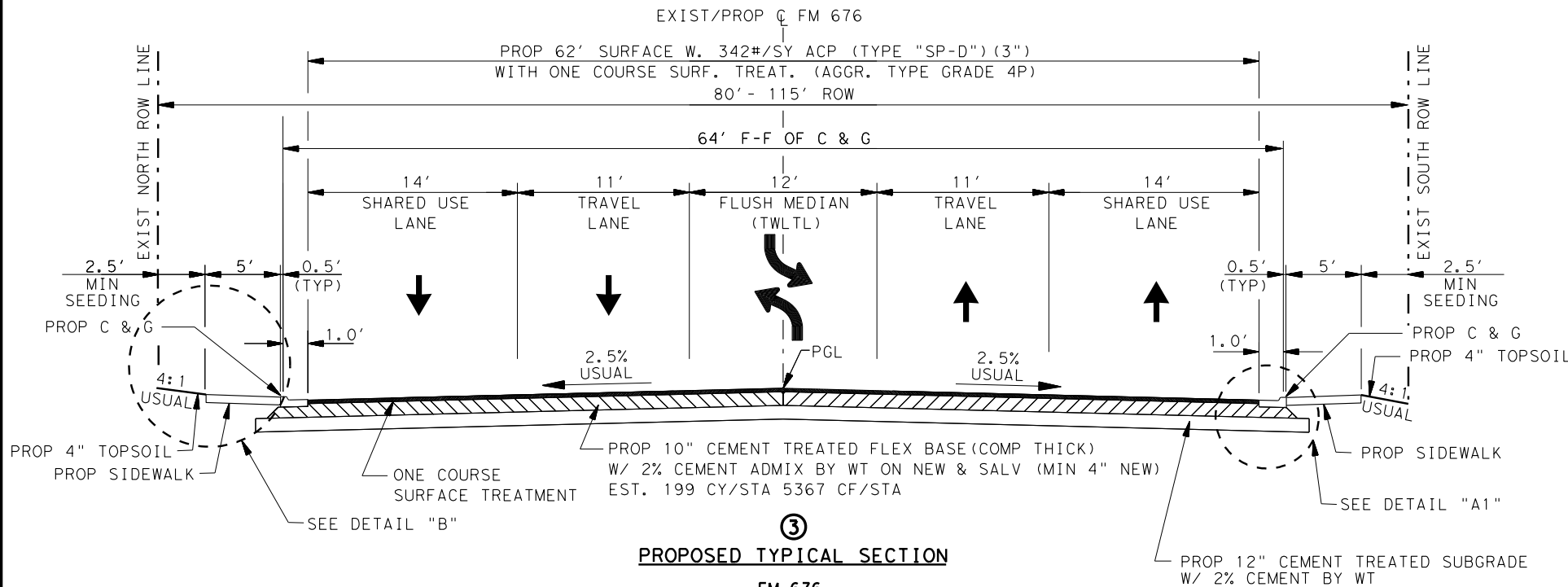
(BOTH SIDES)



**DETAIL "E"**

(BOTH SIDES)

**PROPOSED PAVEMENT DETAILS**



**PROPOSED TYPICAL SECTION**

- FM 676**
- STA 72+77.85 TO STA 73+10.06
  - STA 73+10.06 TO STA 74+10.06 - TRANSITION ③ TO ④
  - STA 83+09.94 TO STA 99+80.06
  - STA 99+80.06 TO STA 100+80.06 - TRANSITION ③ TO ④
  - STA 109+49.94 TO STA 120+55.06
  - STA 120+55.06 TO STA 121+55.06 - TRANSITION ③ TO ④
  - STA 130+49.94 TO STA 147+95.06
  - STA 147+95.06 TO STA 148+95.06 - TRANSITION ③ TO ④
  - STA 155+31.94 TO STA 169+31.12
  - STA 169+31.12 TO STA 169+94.47 - TRANSITION ③ TO ⑤
  - STA 172+94.94 TO STA 174+41.06
  - STA 174+41.06 TO STA 175+41.06 - TRANSITION ③ TO ④
  - STA 181+54.52 TO STA 200+20.56
  - STA 200+20.56 TO STA 201+40.06 - TRANSITION ③ TO ④



12/1/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
PROPOSED  
TYPICAL SECTION**

SHEET 3A OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		10A	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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GENERAL NOTES:

WHERE REQUIRED BY FIXTURES OR UNUSUAL CONDITIONS, THE GOVERNING SLOPES MAY BE VARIED WHEN SPECIFICALLY DIRECTED BY THE ENGINEER.

PGL - DENOTES PROFILE GRADE LINE.

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SALVAGED FLEX BASE WITHIN THIS PROJECT MAY BE USED AS PART OF FLEX BASE, ITEM 251. BASE WILL BE REQUIRED WHERE SALVAGE IS PART OF FLEX BASE. 114 lb/sy ACP EQUIVALENT TO 1" IN DEPTH. ONE STATION IS EQUIVALENT TO 100 FT.

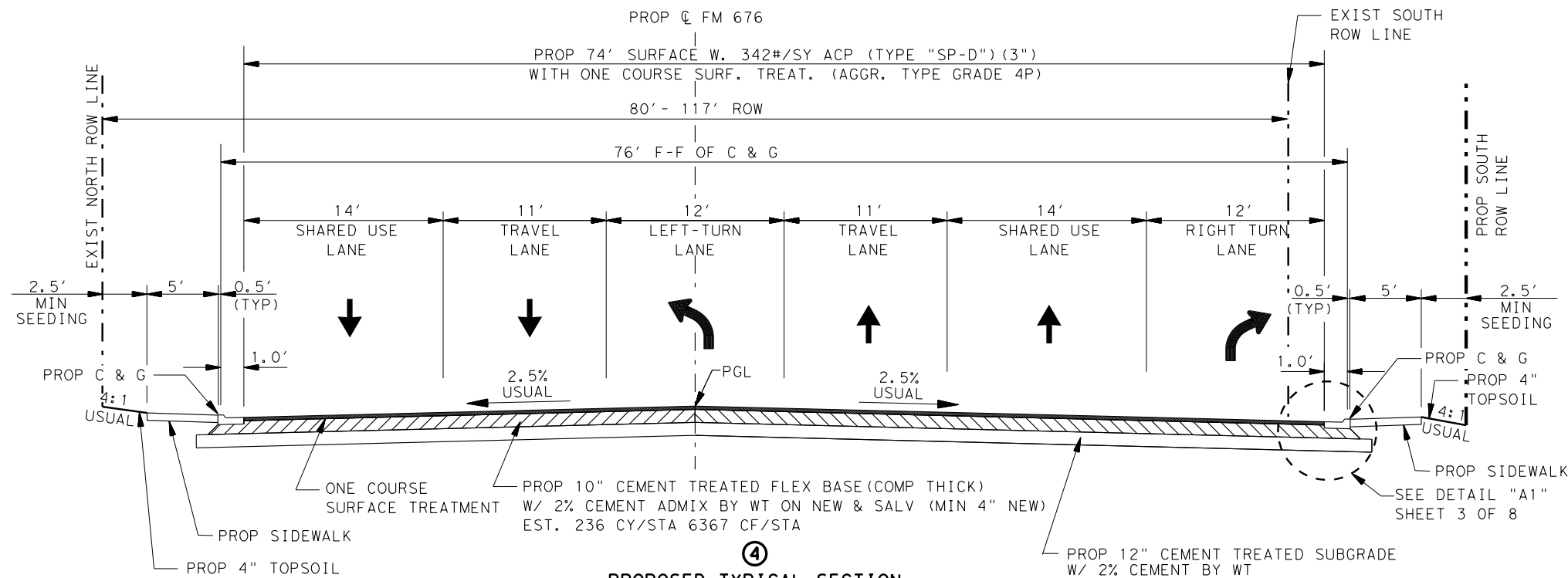
CELL FIBER SEEDING SHALL BE PLACED BETWEEN THE EDGE OF PAVEMENT AND ROW LINE.

MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

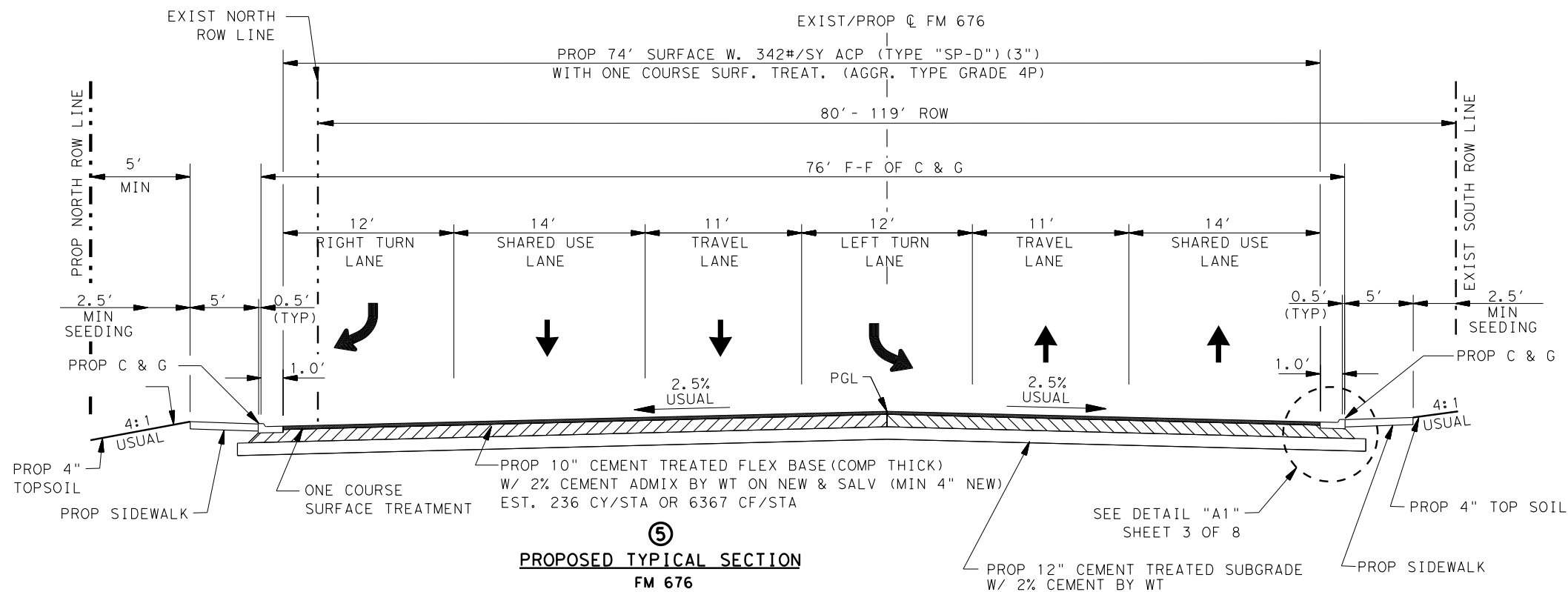
ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER



**PROPOSED TYPICAL SECTION**

**FM 676**  
 STA 74+10.06 TO STA 78+14.86  
 STA 100+80.06 TO STA 104+52.91  
 STA 121+55.06 TO STA 125+54.46  
 STA 148+95.06 TO STA 151+66.81  
 STA 175+41.06 TO STA 178+08.21  
 STA 201+40.06 TO STA 204+96.87



**PROPOSED TYPICAL SECTION**

**FM 676**  
 STA 78+14.86 TO STA 82+01.00  
 STA 82+01.00 TO STA 83+09.94 - TRANSITION ⑤ TO ③  
 STA 104+52.91 TO STA 108+49.94  
 STA 108+49.94 TO STA 109+49.94 - TRANSITION ⑤ TO ③  
 STA 125+54.46 TO STA 129+49.94  
 STA 129+49.94 TO STA 130+49.94 - TRANSITION ⑤ TO ③  
 STA 151+66.81 TO STA 154+31.94  
 STA 154+31.94 TO STA 155+31.94 - TRANSITION ⑤ TO ③  
 STA 169+94.47 TO STA 171+94.87  
 STA 171+94.87 TO STA 172+94.94 - TRANSITION ⑤ TO ③  
 STA 178+08.21 TO STA 180+49.94  
 STA 180+49.94 TO STA 181+54.52 - TRANSITION ⑤ TO ③



11/17/2022



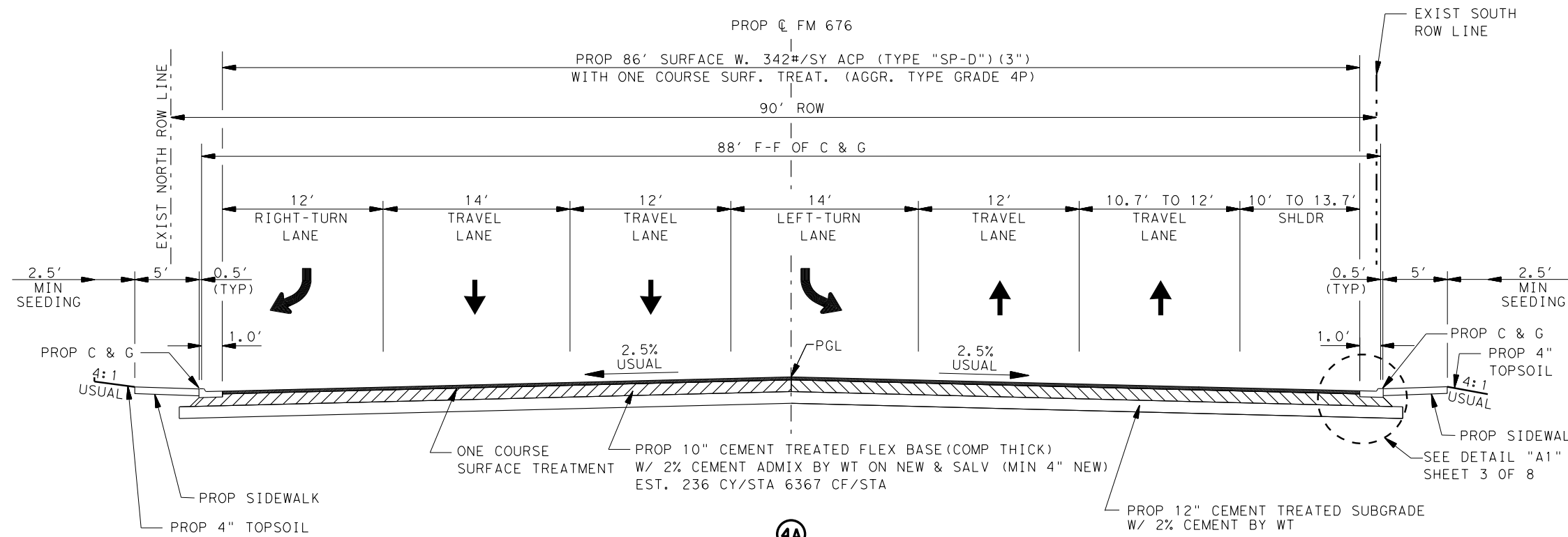
**ATKINS**

TBPE REG. #F-474

**FM 676**  
**PROPOSED**  
**TYPICAL SECTIONS**

SHEET 4 OF 8		SCALE: NTS	
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6			11
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**4A**  
**PROPOSED TYPICAL SECTION**  
 FM 676  
 STA 204+96.87 TO STA 208+24.00

**GENERAL NOTES:**

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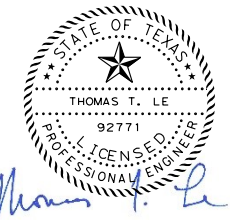
CELL FIBER SEEDING SHALL BE PLACED BETWEEN THE EDGE OF PAVEMENT AND ROW LINE.

MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER



11/17/2022



**ATKINS**

TBPE REG. #F-474

**FM 676**  
**PROPOSED**  
**TYPICAL SECTIONS**

SHEET 4A OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			11A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

GENERAL NOTES:  
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MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER.



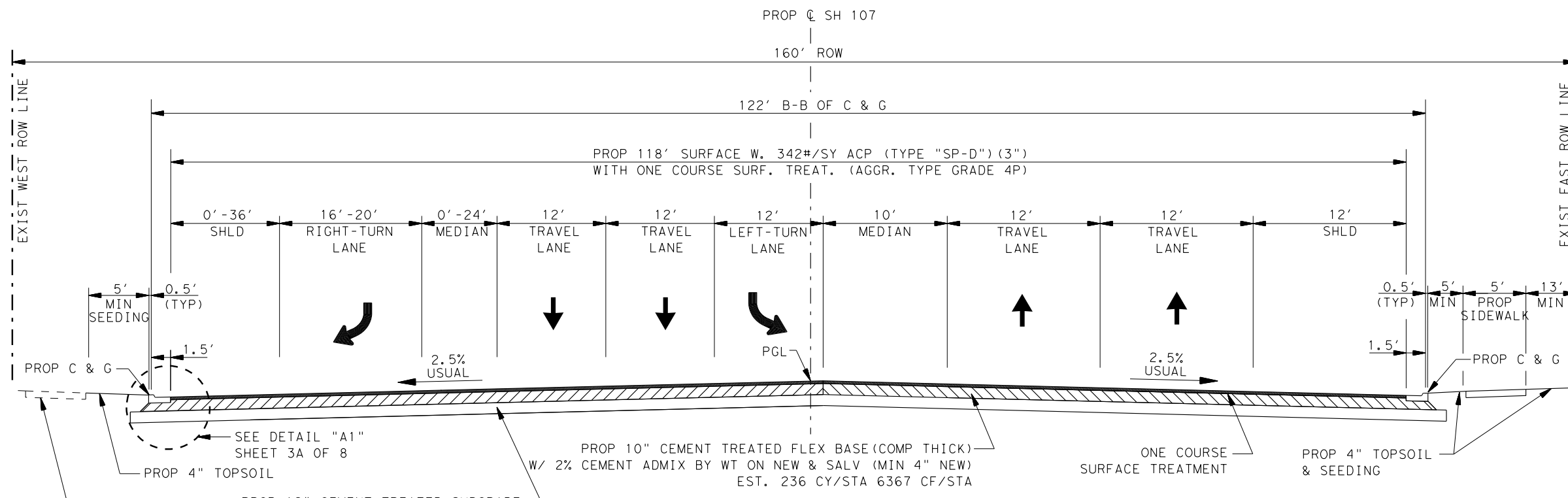
12/1/2022



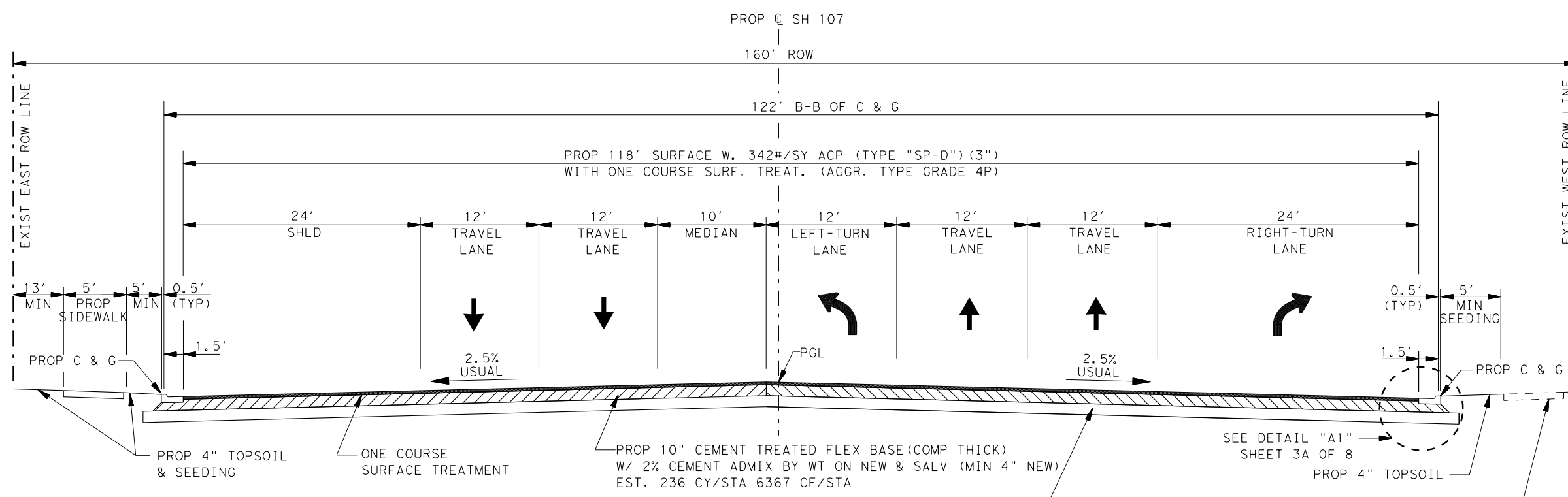
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PROPOSED  
TYPICAL SECTION**

SHEET 5 OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		12	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



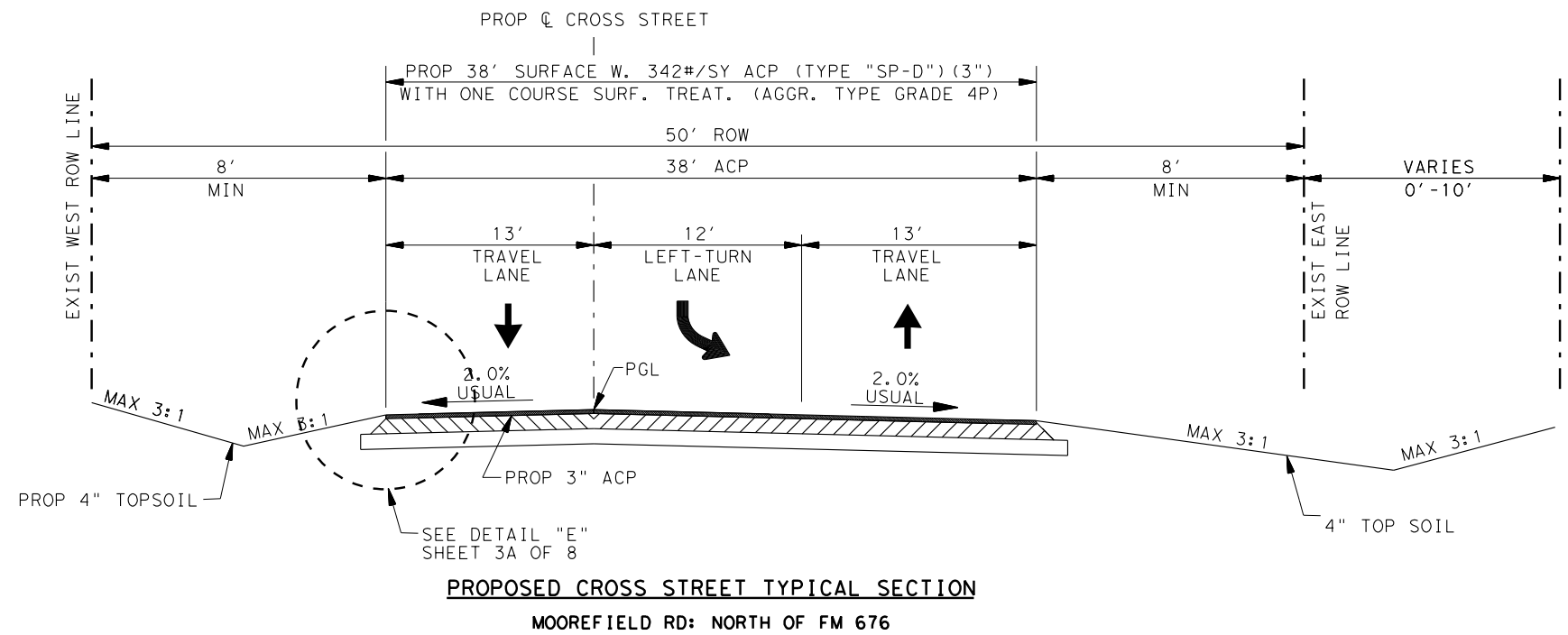
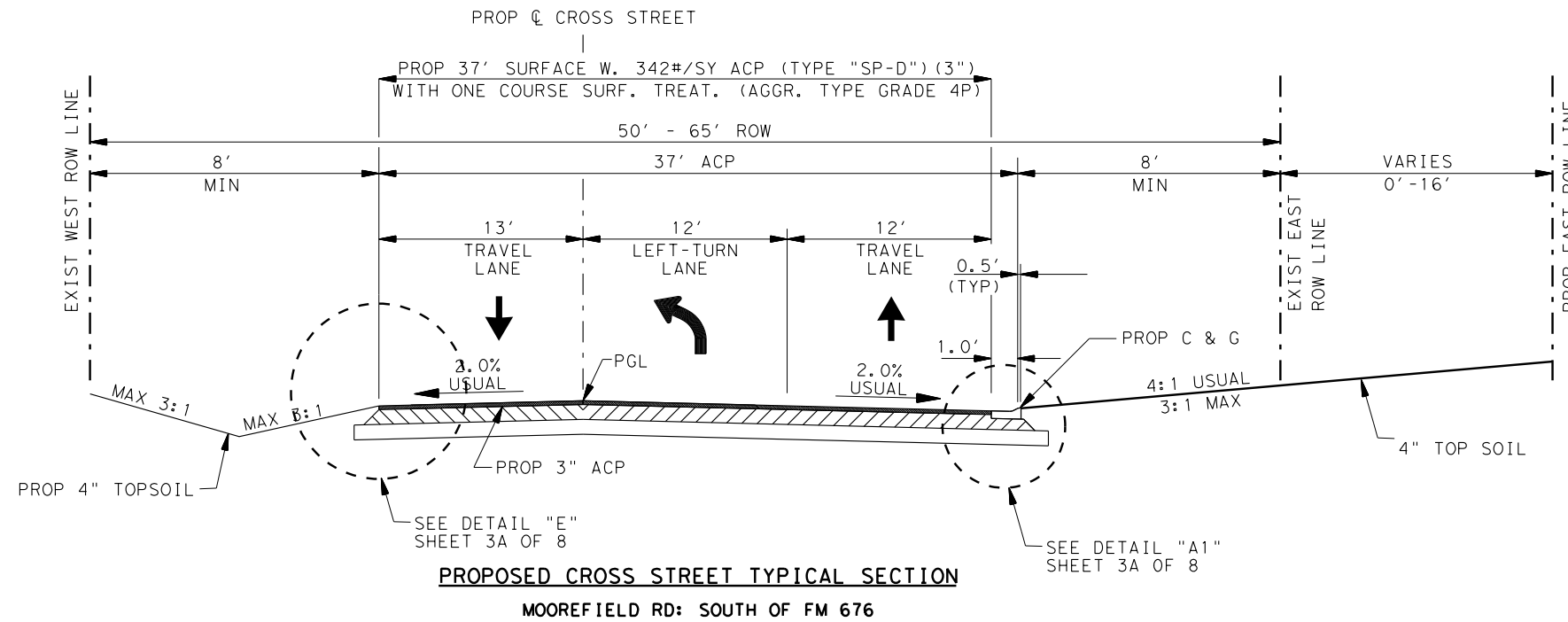
**6**  
**PROPOSED TYPICAL SECTION**  
SH 107  
STA 261+73.72 TO STA 266+58.42



**7**  
**PROPOSED TYPICAL SECTION**  
SH 107  
STA 257+93.88 TO STA 261+73.72

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**GENERAL NOTES:**

WHERE REQUIRED BY FIXTURES OR UNUSUAL CONDITIONS, THE GOVERNING SLOPES MAY BE VARIED WHEN SPECIFICALLY DIRECTED BY THE ENGINEER.

PGL - DENOTES PROFILE GRADE LINE.

WHERE POSSIBLE AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER, PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON STRIPING LANES AS SHOWN ON STRIPING DETAILS

THE SUBGRADE SHALL BE SHAPED AS PER DETAIL 'C' OR 'A1'. THE COMPLETE BASE SHALL BE ROLLED BEFORE THE EARTH SHOULDER IS SHAPED AND FINAL COMPACTION SHALL BE DONE OVER BASE AND EDGE OF SHOULDER. ALL GRADING SHALL BE WITHIN THE ROW LIMITS.

SALVAGED FLEX BASE WITHIN THIS PROJECT MAY BE USED AS PART OF FLEX BASE, ITEM 251. BASE WILL BE REQUIRED WHERE SALVAGE IS PART OF FLEX BASE. 114 lb/sy ACP EQUIVALENT TO 1" IN DEPTH. ONE STATION IS EQUIVALENT TO 100 FT.

CELL FIBER SEEDING SHALL BE PLACED BETWEEN THE EDGE OF PAVEMENT AND ROW LINE.

MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER



11/17/2022



**ATKINS**

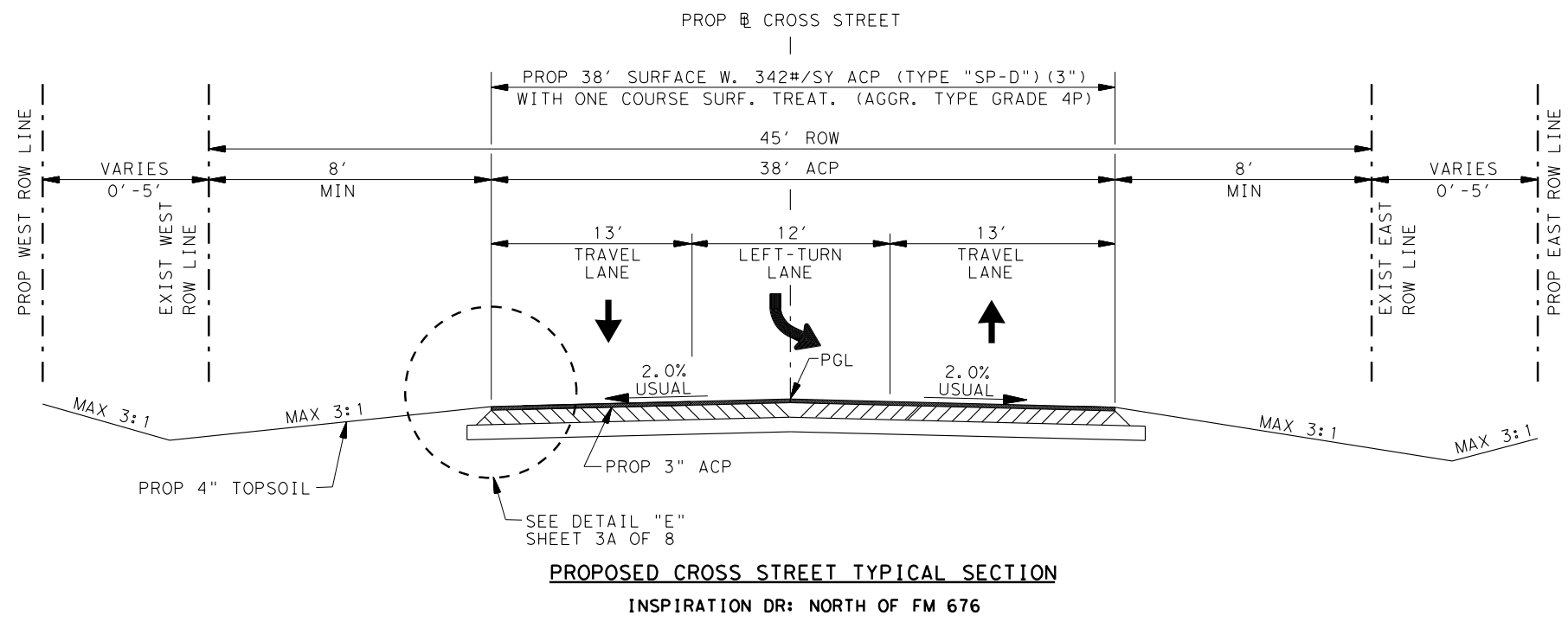
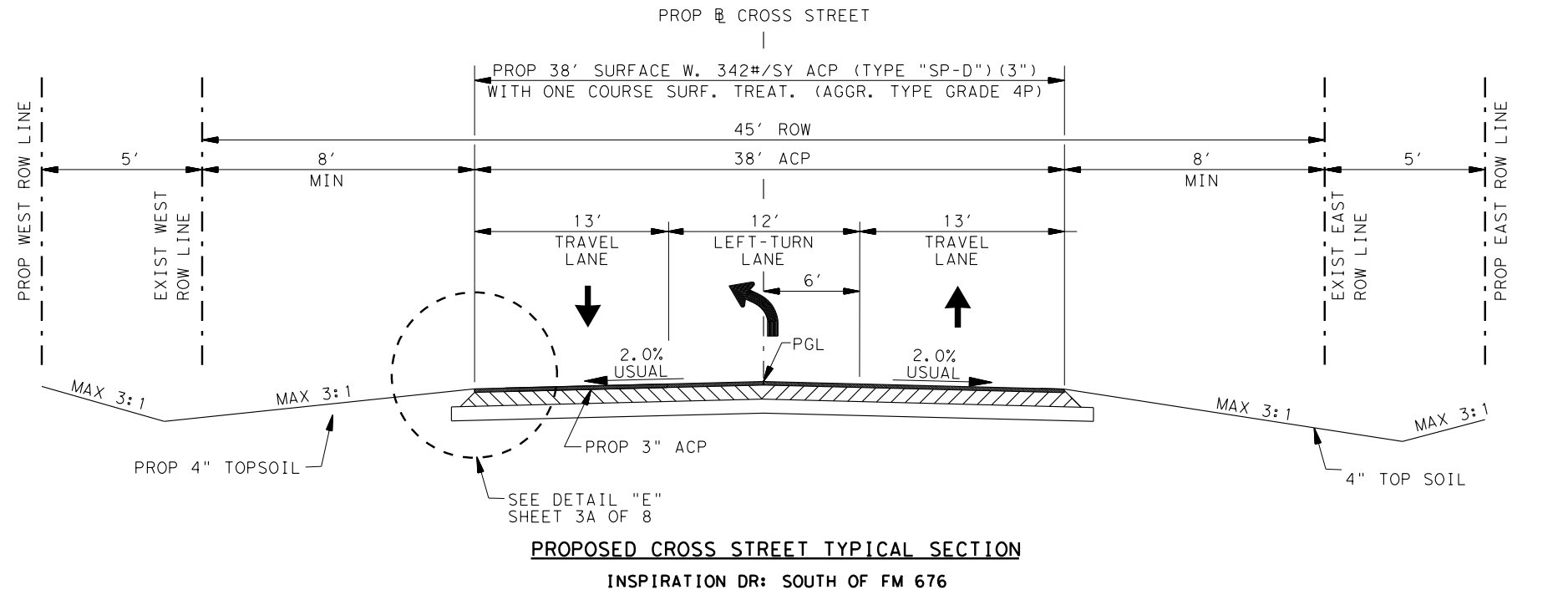
TBPE REG. #F-474

**FM 676  
 PROPOSED  
 TYPICAL SECTION**

SHEET 6 OF 8 SCALE: NTS

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			13
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**GENERAL NOTES:**

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ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER



11/17/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
 PROPOSED  
 TYPICAL SECTION**

SHEET 7 OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			14
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



GENERAL NOTES:

WHERE REQUIRED BY FIXTURES OR UNUSUAL CONDITIONS, THE GOVERNING SLOPES MAY BE VARIED WHEN SPECIFICALLY DIRECTED BY THE ENGINEER.

PGL - DENOTES PROFILE GRADE LINE.

WHERE POSSIBLE AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER, PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON STRIPING LANES AS SHOWN ON STRIPING DETAILS

THE SUBGRADE SHALL BE SHAPED AS PER DETAIL 'C' OR 'A1'. THE COMPLETE BASE SHALL BE ROLLED BEFORE THE EARTH SHOULDER IS SHAPED AND FINAL COMPACTION SHALL BE DONE OVER BASE AND EDGE OF SHOULDER. ALL GRADING SHALL BE WITHIN THE ROW LIMITS.

SALVAGED FLEX BASE WITHIN THIS PROJECT MAY BE USED AS PART OF FLEX BASE, ITEM 251. BASE WILL BE REQUIRED WHERE SALVAGE IS PART OF FLEX BASE.

114 lb/sy ACP EQUIVALENT TO 1" IN DEPTH. ONE STATION IS EQUIVALENT TO 100 FT.

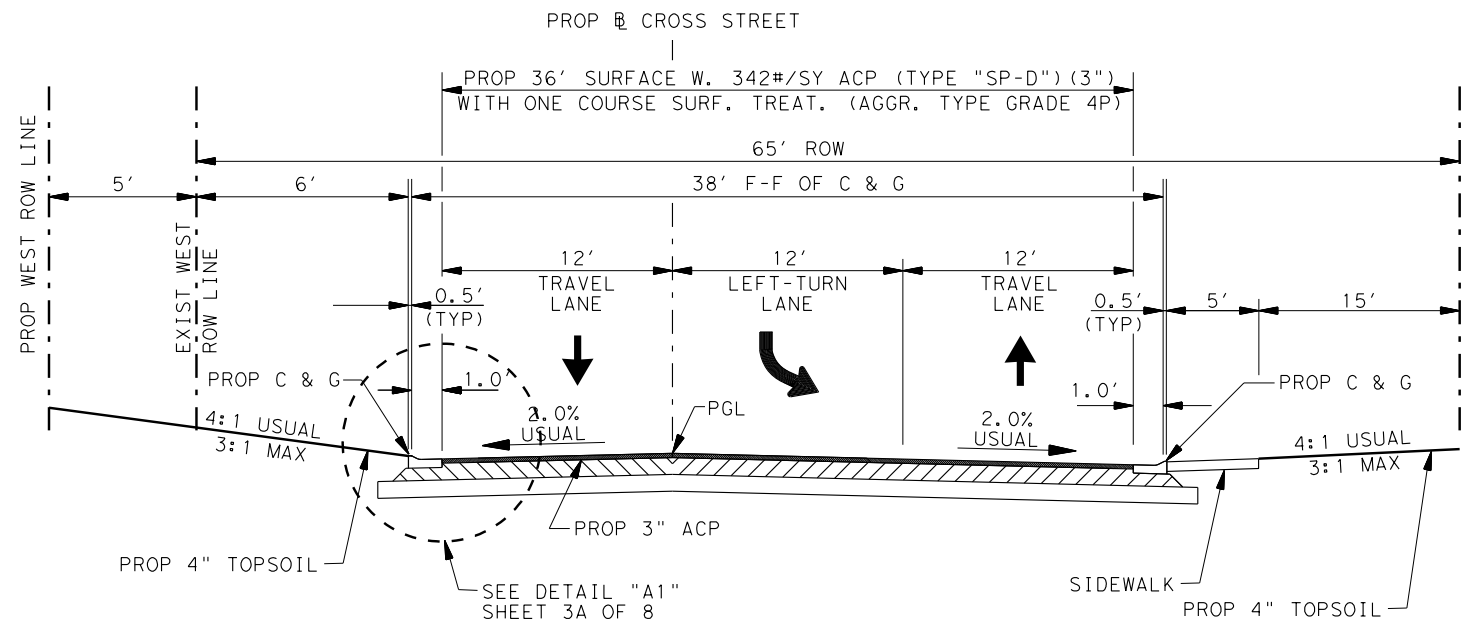
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MILLING EXISTING 1/2" ACP FROM STA 65+57.85 TO STA 72+77.85 SHALL BE PAID FOR UNDER ITEM 354.

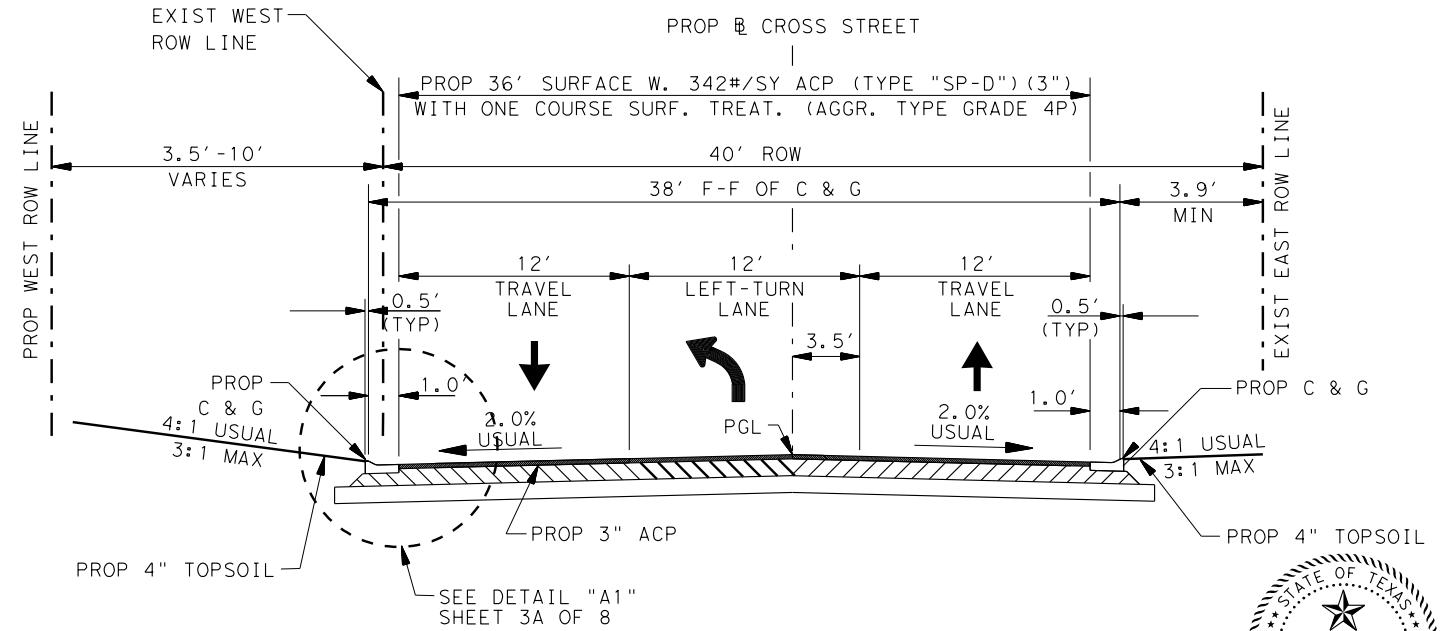
EXISTING TOPSOIL TO BE SCARIFIED, SALVAGED AND STOCKPILED IN THE ROW.

ROW AND BASELINE/CENTERLINE DIMENSIONS MAY VARY SLIGHTLY THROUGHOUT THE PROJECT.

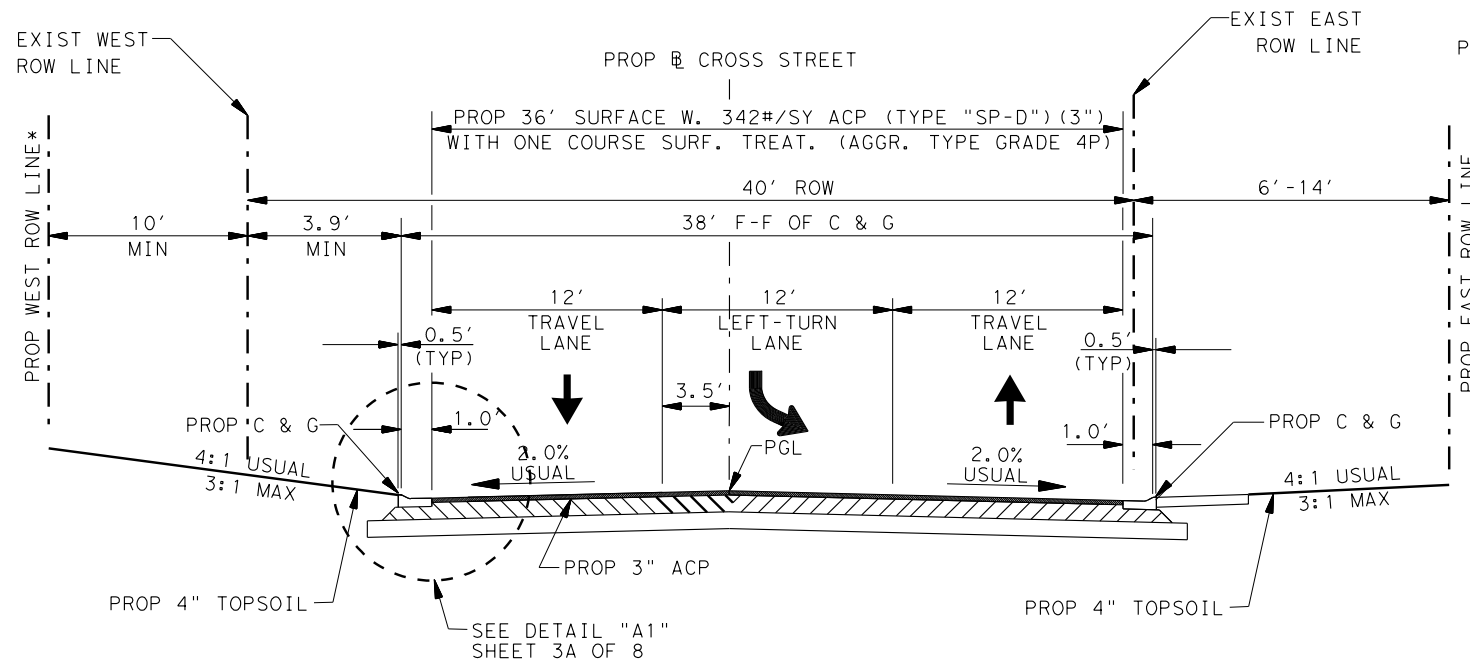
CURB AND GUTTER TO BE POURED AFTER THE FLEX BASE PASSES DENSITY OR APPROVED BY THE ENGINEER.



**PROPOSED CROSS STREET TYPICAL SECTION**  
LOS EBANOS BLVD: NORTH OF FM 676



**PROPOSED CROSS STREET TYPICAL SECTION**  
TROSPER BLVD: SOUTH OF FM 676



**PROPOSED CROSS STREET TYPICAL SECTION**  
TROSPER BLVD: NORTH OF FM 676

\* PROPOSED WEST ROW LINE OCCURS BETWEEN FM 676 AND MONROE AVE. IN ADDITION, SIDEWALKS WILL BE CONSTRUCTED TO CONNECT FM 676 AND MONROE AVE PEDESTRIAN FACILITIES



11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PROPOSED  
TYPICAL SECTION**

SHEET 8 OF 8		SCALE: NTS	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		15	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**SEAL COAT MATERIAL SELECTION TABLE**

**Contractor:**

- 1) Provide materials according to the alternates selected for the roadway tier designations specified at various roadway locations shown on the plans;
- 2) Alternately supply selected binders from a higher tier, but only if the type of material is allowed for the designated tier; payment will only be made for the tier designated for the pavement;
- 3) Supply the aggregate type, grade and surface aggregate class that is shown to be allowed with the binder used; and
- 4) Adhere to the application season selected.

**Tier 1: Heavy Use (>5,000 ADT) Use only the selected materials.**

Type	Asphalt Rubber (A-R) <input type="checkbox"/> A-R Only	Asphalt Cement (A-C) <input type="checkbox"/> A-C Only
Asphalt	<input type="checkbox"/> A-R Ty II <input type="checkbox"/> SP 300-016&039 <input type="checkbox"/> A-R Ty III	<input type="checkbox"/> AC-20-5TR <input type="checkbox"/> AC-20XP <input type="checkbox"/> AC-15P
Aggregate Type	<input type="checkbox"/> Ty PA <input type="checkbox"/> Ty PB <input type="checkbox"/> Ty PC <input type="checkbox"/> Ty PD <input type="checkbox"/> Ty PE <input type="checkbox"/> Ty PL	<input type="checkbox"/> Ty PA <input type="checkbox"/> Ty PB <input type="checkbox"/> Ty PC <input type="checkbox"/> Ty PD <input type="checkbox"/> Ty PE <input type="checkbox"/> Ty PL
Aggregate Grade	<input type="checkbox"/> 3S <input type="checkbox"/> 3non-1w <input type="checkbox"/> 3 1w <input type="checkbox"/> 4S <input type="checkbox"/> 4P <input type="checkbox"/> SP 302-013	<input type="checkbox"/> 3S <input type="checkbox"/> 4S <input type="checkbox"/> 5 <input type="checkbox"/> 3non-1w <input type="checkbox"/> 4P <input type="checkbox"/> 5S <input type="checkbox"/> 3 1w <input type="checkbox"/> SP 302-1
Aggregate SAC	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> A <input type="checkbox"/> B

**Tier 2: Moderate Use (500-5,000 ADT)**

Use this materials or any selected Tier 1 materials combinations of the allowed types

Type	Asphalt Cement (A-C) <input checked="" type="checkbox"/> A-C Only	Asphalt Emulsion <input type="checkbox"/> Emulsion Only
Asphalt	<input checked="" type="checkbox"/> AC-10-2TR <input checked="" type="checkbox"/> AC-5 W/2% SBR <input checked="" type="checkbox"/> AC-10 <input checked="" type="checkbox"/> AC-10 W/2% SBR <input type="checkbox"/> AC-15P	<input type="checkbox"/> CHFRS-2P <input type="checkbox"/> CRS-2P <input type="checkbox"/> HFRS-2P <input type="checkbox"/> SP 300-016&039
Aggregate Type	<input type="checkbox"/> Ty PA <input type="checkbox"/> Ty PB <input type="checkbox"/> Ty PC <input type="checkbox"/> Ty PD <input type="checkbox"/> Ty PE <input type="checkbox"/> Ty PL <input checked="" type="checkbox"/> Allow uncoated aggregate	<input type="checkbox"/> Ty A <input type="checkbox"/> Ty B <input type="checkbox"/> Ty C <input type="checkbox"/> Ty D <input type="checkbox"/> Ty E <input type="checkbox"/> Ty L
Aggregate Grade	<input type="checkbox"/> 3S <input type="checkbox"/> 4S <input type="checkbox"/> 5 <input type="checkbox"/> 3non-1w <input checked="" type="checkbox"/> 4P <input type="checkbox"/> 5S <input type="checkbox"/> 3 1w <input checked="" type="checkbox"/> SP 302-008	<input type="checkbox"/> 3S <input type="checkbox"/> 4S <input type="checkbox"/> 5S <input type="checkbox"/> 3non-1w <input type="checkbox"/> 4P <input type="checkbox"/> 5 <input type="checkbox"/> 3 1w <input type="checkbox"/> SP 302-013
Aggregate SAC	<input type="checkbox"/> A <input checked="" type="checkbox"/> B	<input type="checkbox"/> A <input type="checkbox"/> B

**Tier 3: Moderate Use (<500 ADT) Use this materials or any selected Tier 1 or Tier 2 materials combinations of the allowed types**

Type	Asphalt Cement (A-C) <input type="checkbox"/> A-C Only	Asphalt Emulsion <input type="checkbox"/> Emulsion Only
Asphalt	<input type="checkbox"/> AC-10-2TR <input type="checkbox"/> AC-5 W/2% SBR <input type="checkbox"/> AC-20XP <input type="checkbox"/> SP 300-016&039 <input type="checkbox"/> AC-10 W/2% SBR <input type="checkbox"/> AC-15P	<input type="checkbox"/> CRS-2 <input type="checkbox"/> CRS-2H <input type="checkbox"/> HFRS-2 <input type="checkbox"/> SP 300-016&039
Aggregate Type	<input type="checkbox"/> Ty PA <input type="checkbox"/> Ty PB <input type="checkbox"/> Ty PC <input type="checkbox"/> Ty PD <input type="checkbox"/> Ty PE <input type="checkbox"/> Ty PL	<input type="checkbox"/> Ty A <input type="checkbox"/> Ty B <input type="checkbox"/> Ty C <input type="checkbox"/> Ty D <input type="checkbox"/> Ty E <input type="checkbox"/> Ty L
Aggregate Grade	<input type="checkbox"/> 3S <input type="checkbox"/> 4S <input type="checkbox"/> 5 <input type="checkbox"/> 3non-1w <input type="checkbox"/> 4P <input type="checkbox"/> 5S <input type="checkbox"/> 3 1w <input type="checkbox"/> SP 302-013	<input type="checkbox"/> 3S <input type="checkbox"/> 4S <input type="checkbox"/> 5 <input type="checkbox"/> 3non-1w <input type="checkbox"/> 4P <input type="checkbox"/> 5 <input type="checkbox"/> 3 1w <input type="checkbox"/> SP 302-013
Aggregate SAC	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> A <input type="checkbox"/> B

**Seasonal Alternates: Use these materials for work in cooler conditions as directed.**

CRS-2     HFRS-2     CRS-1P     RS-1P     RC-250     MC-800     AC-12-5-TR     SP 300-016&032

**Seal Coat Seasons: Refer to Item 316 for temperature and weather restrictions.**

**Season 4: CRP, LRD, PHR**

**Apr 1 to Sept 30**



11/17/2022



**SEAL COAT MATERIAL SELECTION TABLE "UNDERSEAL"**

FILE: sctable.dgn	DN: TxDOT	CK: AM	DW: BGD	CK:
© TxDOT June 2011	DIST	FEDERAL AID PROJECT		SHEET
REVISIONS	PHR	STP	( ) MM	16
September 2020	COUNTY	CONTROL	SECT	JOB HIGHWAY
	HIDALGO	1064	01	032 FM 676

**Project Number:**

**County:** Hidalgo

**Highway:** FM 676

**Control:** 1064-01-032

**2014 SPECS GENERAL NOTES:**

\*\*\*\*\*

**General Requirements and Covenants to ITEMS 1 thru 9:**

For all pits or quarries, comply with the “Texas Aggregate Quarry and Pit Safety Act.”

Provide on a weekly basis a list of equipment, including idle equipment, utilized on the project that week.

The 1-800 call services for utility locations do not include TxDOT facilities. Contact the Pharr District Signal Section (956-702-6225) for coordination regarding TxDOT underground lines.

**ITEM 2: Instructions to Bidders**

Contractor questions on this project are to be addressed to the following individual(s):

Rene Garza, P.E., Pharr Area Engineer; [Rene.Garza@txdot.gov](mailto:Rene.Garza@txdot.gov)  
Jesus Noriega, P.E., Assist. Area Engineer; [Jesus.Noriega@txdot.gov](mailto:Jesus.Noriega@txdot.gov)

Contractor questions will be accepted through email, phone, and in person by the above individuals.

All Contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT’s Public FTP at the following Address:

<https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/>

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, and CCSJ/Project Name.

**ITEM 5: Control of the Work**

The responsibility for the construction surveying on this contract will be in accordance with Article 5.9.1., “Method A.”

Prior to contract letting, bidders may obtain a free computerized transfer of files (from the Engineer’s office) that contains the earthwork information. If copies of the actual cross-sections in addition to, or instead of the electronic files are requested, they will be available at the Engineer’s office for borrowing by copying companies for the purpose of making copies for the bidder at the bidder’s expense.

**Project Number:**

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**Sheet 17**

**Control:** 1064-01-032

**ITEM 7: Legal Relations and Responsibilities**

No significant traffic generator events identified.

**ITEM 8: Prosecution and Progress**

Where road closures or detours around structures are necessary to accomplish proposed work, the removal of existing structures and/or cutting of existing pavement will not be permitted until all precast members for the proposed structure have been cast, tested, and approved for use.

Prepare progress schedules using the Critical Path Method (CPM).

Working days will be computed and charged in accordance with Article 8.3.1.4. Standard Workweek.

**ITEM 100: Preparing Right of Way**

Preparation of right of way will be done in accordance with the construction phasing shown on the Traffic Control Plans. Performance of this item will not be allowed outside of the project’s current construction phase without prior approval by the Engineer.

Removal of all existing vegetation and trees within the ROW will be subsidiary to prep ROW.

**ITEM 132: Embankment**

Embankment (DENS CONT) shall be Type C with a max. PI of 40. Material used as embankment material in the top two feet below the bottom of Flexible Base shall meet the following requirements based on preliminary tests and such other tests found necessary by the Engineer.

1. The material shall be such as to produce a well-bonded embankment and shall have a minimum PI of 8 and a maximum PI of 30.

It is the Contractor's responsibility to advise the Engineer of the location of the source sufficiently in advance to avoid delay.

**ITEM 134: Backfilling Pavement Edges**

Areas to be backfilled shall extend approximately 3-ft out from the edges of the proposed overlay. Final slopes shall be uniform and smooth. The 100-foot station payment includes backfilling of both sides.

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**Highway:** FM 676

**Control:** 1064-01-032

Backfill Ty A shall not contain particles more than two inches in size and shall have a minimum PI of 10 and a maximum PI of 20.

Any additional backfill material necessary due to pre-existing edge conditions or to replace existing fill removed during blading operations will not be paid for directly. It will be considered subsidiary to this bid item.

ITEM 160: Topsoil

Use topsoil as needed and directed by the Project Engineer for select problem areas. Unless otherwise approved by the Project Engineer, use topsoil from approved sources outside the right of way as per standard specifications. Existing topsoil is to be salvaged and retained for re-use on the project as topsoil.

ITEM 164: Seeding for Erosion Control

During drill seeding operations, application methods shall be in accordance with the method shown in the Standard Specification Book.

SS-1 Tacking Agent shall be a ratio of 2:1, two (Emulsion) to one (water) and applied at a rate of 0.05 gallons per square yard. The SS-1 Tacking Agent required for Drill Seed operations, will not be paid for directly, but will be subsidiary to Item 164 "Drill Seeding." Watering shall not be used with the Drill Seed Method. A biodegradable tacking agent may be used in lieu of the SS-1 tacking agent in accordance with the manufacturer's recommendations when approved by the Engineer.

Cool Season or Warm Season Grasses shall be included as part of Item 164 (See Table 3 and/or Table 4 in the Standard Specification Book or dates and seed type).

Seed mixture shall be as specified under Item 164.

ITEM 166: Fertilizer

Fertilizer rate is based on a rate of 100 Lbs. of Nitrogen per acre. The Nitrogen-Phosphorous Potassium (NPK) ratio shall include a minimum of 5% Phosphorous and 5% Potassium.

Fertilizer shall be homogenized.

ITEM 169: Soil Retention Blankets

In areas designated for soil retention blankets (SRB) in the plans, furnish only spray-on products listed on the Approved Product List for Erosion Control Products based upon the Class and Type specified in the plans or from the following list: AEC Premier Straw Double Net Fibrenet,

**Project Number:**

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**Highway:** FM 676

**Sheet 17A**

**Control:** 1064-01-032

American Excelsior Curlex I Fibrenet, Erosion Control Blanket S31BD, Curlex II Fibrenet, Koirmat 700, AEC Premier Coconut Fibrenet, and AEC Premier Straw-Coconut Fibrenet.

ITEM 247: Flexible Base

Flexible Base Type E will be composed of caliche (argillaceous Limestone, calcareous or calcareous clay particles) and may contain stone, conglomerate, gravel, sand, or granular materials when these materials are in situ with the caliche.

Flexible Base (TY E GR 4) caliche shall conform to the following requirements:

Retained on Sq. Sieve:	Percent Retained
2"	0
1/2"	20-60
No. 4	40-75
No. 40	70-90
Max. PI	15
Max. Wet Ball PI	15
Wet Ball Mill Max. Amount	50
Min. Comp. Strength PSI	150 at 15 PSI lateral pressure
Triaxial Test	Tex-117-E

The Wet Ball Test (Tex-116-E) shall be run and the Plasticity Index of the material passing the No.40 sieve shall be determined (Wet Ball PI).

The percent of density as determined by Compaction Ratio (Tex-113-E) for the new Flexible Base shall be a minimum of 98%.

The Contractor's attention is called to the fact that certain existing and/or proposed structures may be within the limits of the Flexible Base. It shall be the Contractor's responsibility to perform construction operations without damage to these structures.

Proof roll constructed flexible base in accordance with Item 216, "Proof Rolling." Correct soft spots as directed.

ITEM 251: Reworking Base Courses

Quantities of Flexible Base to be salvaged, shown on the typical sections, are for estimating purposes only. All acceptable base material encountered in existing base is to be salvaged as directed by the Engineer regardless of the quantities involved.

**Project Number:**

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**Highway:** FM 676

**Control:** 1064-01-032

Salvaged base shall be used in the bottom course on any of the proposed roadway and/or turnout sections.

Salvaged base may be used on any of the proposed driveway sections.

All surplus salvage base not used on the project will remain the property of the Contractor, unless otherwise directed by Engineer.

All surplus millings not used on the project will remain the property of TxDOT and will be delivered to the TxDOT Mission maintenance yard in Mission, Texas.

ITEM 275: Cement Treatment (Road-Mixed)

The Contractor's attention is called to the fact that certain existing and/or proposed structures are within the limits of the cement-treated Subgrade. Unless otherwise directed by the Engineer, these structures shall be installed before the final rolling of this Subgrade. It shall be the Contractor's responsibility to perform the proper cement treating operation without damage to these structures.

The percent of density as determined by Tex-120-E for the new and salvage Flexible Base shall be a minimum of 98% for all courses.

Proof roll all constructed cement treated subgrade and bases courses in accordance with Item 216, "Proof Rolling." Correct soft spots as directed. Correction of soft spots in the subgrade or base courses will be at the Contractor's expense.

Contractor is to place an underseal and/or pavement course as indicated on plans within 14 calendar days of initial prime coat application. Otherwise, reapply prime coat as directed by the Engineer. Reapplication of the prime coat will be at the Contractor's expense.

ITEM 305: Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement

Stockpile 79,167 SY (@1 ½") of material generated from the project at designated site located at 1201 W. Expressway 83, Mission, TX 78572. Ensure this material meets the requirements of Item 305 when stockpiled at above specified location.

ITEM 310: Prime Coat

The Contractor shall exercise diligence in the application of asphalt by the use of flagging and rolling procedures to keep from spraying or splattering the traveling public with asphaltic material.

**Project Number:**

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**Highway:** FM 676

**Sheet 17B**

**Control:** 1064-01-032

All existing Flexible Base, which may become exposed by the milling operation, shall be primed at the rate of 0.2 Gal/SY.

Do not apply subsequent courses over the initial prime coat no earlier than 12 hours after the prime coat was applied, unless otherwise authorized or directed by the Engineer.

ITEM 316: Seal Coat

In addition to cleaning by brooming of paved surfaces to be sealed as required by this Item, blading may also be necessary to clean dirt and grass from edges of the pavement and/or turnout areas. The cost of this blading will not be paid for directly but will be considered subsidiary to the various bid Items of the project.

When applying surface treatment at railroad crossings, a strip of paper shall be placed over the rail and flange areas across the pavement.

The type and grade of asphalt as shown on the plans and/or as directed by the Engineer, shall be used on these projects. Asphalt cement will be used during the warm season. An emulsified asphalt will be used during the cooler season if permitted in writing by the Engineer. The emulsified asphalt, if used, shall be HFRS 2P. Estimated quantities shown for the bid Item is based on an average of the estimated rates of application for asphaltic cement and emulsified asphalt. These rates should be used for estimating and comparison purposes only.

The one or two-course surface treatment shall be in place for a sufficient period of time in the opinion of the Engineer, for the surface treatment to properly dry and cure before placing the Asphaltic Concrete Pavement.

Traffic will not be permitted on the surface treatment unless authorized by the Engineer.

When emulsified asphalt is used, do not apply subsequent courses over the surface treatment any earlier than the day after the surface treatment was applied, unless otherwise authorized or directed by the Engineer.

ITEM 3077: Superpave Mixtures

The Contractor shall exercise diligence in the application of "Bonding Course" by the use of flagging and rolling procedures to keep from spraying or splattering the traveling public with asphaltic material.

Project Number:

County: Hidalgo

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Control: 1064-01-032

Blading (not to exceed more than 3-ft from the pavement edge) may also be necessary to clean dirt and grass from pavement edges and turnout areas as work under this bid Item. The cost of this blading will not be paid for directly but shall be considered subsidiary to this bid Item.

RAP (recycled asphalt pavement) to be recycled will be stockpiled separately from other project sources and Contractor owned RAP. Each stockpile will be clearly marked by the Contractor indicating project source.

The Contractor shall exercise diligence during milling operations in order to avoid contamination.

The RAP stockpiles are subjected to PI and decantation requirements as specified under this Item.

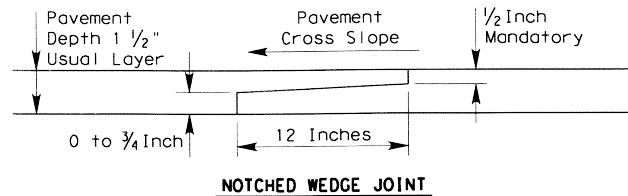
Recycled asphaltic pavement to be salvaged as shown in plans will be available for use as RAP in the hot mix for this project.

All surplus RAP from this project will remain the property of the Contractor.

Level-up will be placed before the surface course. An asphaltic concrete spreading and finishing machine and/or motor graders; when approved by the Engineer may be used to place the ACP level-up.

Aggregates used on shoulders and ramps are required to meet SAC requirements.

All unconfined longitudinal joints shall be constructed with a joint maker providing a maximum 1/2-inch vertical edge and a minimum 6:1 edge taper or as approved by the Engineer. The Engineer may waive this requirement when no impacts to the traveling public are foreseen.



The engineer may allow for variances to the dimensions shown.

Public and private driveways need to have a smooth vertical transition between the edge of pavement and the existing driveways. The Contractor is to add a vertical taper if needed which will be subsidiary to Item 3077.

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Use a release agent from the Department's MPL to clean and to coat the inside of truck beds for hauling equipment. Hauling equipment shall be cleaned prior to hauling material to job site. Submit a copy of the bill of lading to the Engineer as part of the QCP. Ensure the pavement is free from any spillage of hydraulic oil or diesel from construction equipment. The Department may reject trucks that contain any foreign material and suspend production if the pavement is contaminated by any pollutants mentioned above.

ITEM 3084 – Bonding Course

The minimum application rates are listed in Table BC.

The target shear bond strengths are listed in Table BCS. The informational test cores shall be taken once a shift for first 5 lots of placement or a change to placement method of bonding course, bonding material, or hot mix material. The remaining informational test cores shall be taken once every 3 lots for surface mix. Informational tests are not required for non-surface mix beyond the first 5 lots unless there is a change to placement method of bonding course, bonding material, or hot mix material. Results from these informational tests will not be used for specification compliance.

Table BC

Material	Minimum Application Rate (gal. per square yard)
TRAIL – Emulsified Asphalt	0.06
TRAIL – Hot Asphalt	0.12
Spray Applied Underseal Membrane	0.10

Table BCS (For Informational Tests)

Material	Target Shear Bond Strength (Tex-249-F psi)
SMA – Stone-Matrix Asphalt	60.0
All Other Materials	40.0

ITEM 354: Planing and Texturing Pavement

Contractor is to place seal coat or ACP layer(s) as indicated on plans within 14-calendar days of planing/milling operation unless otherwise directed by the Engineer.

All planing/milling operation drop offs greater than 1-inch need to have a 3:1 slope taper unless otherwise directed by the Engineer. The cost of the 3:1 slope taper is subsidiary to Item 354.

For full width planing/milling locations, Contractor is to place seal coat or ACP layer(s) as indicated on the plans within 2-calendar days of the planing/milling operation unless otherwise

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directed by the Engineer. Contractor will not be allowed to move onto the next planing/milling location or seal coat/ACP overlay location until the exposed area is covered as per above. Contractor cannot get paid for the planing/milling operation until exposed area is covered as per above.

**ITEM 400: Excavation and Backfill for Structures**

If the Contractor elects to cut pavement (existing/detour) for structural work beyond that required by the construction phasing shown in the plans and approved by the Engineer, it shall be restored at his expense and backfilled to its original condition or better in accordance with Item 400.

Unless shown otherwise in the plans, use a 1-ft depth for Item 400 Structural Excavation (Special) for gravel bedding needed below drainage structures with unstable material.

Structural Excavation Special (Gravel):

Use durable natural stone when tested in accordance with Tex-411-A, has weight loss of no more than 18% after 5 cycles of magnesium sulfate solution. Provide gravel conforming to an aggregate Grade No. 1 as shown on Table 4 of Article 421.2.

**ITEM 416: Drilled Shaft Foundations**

Payment for furnishing and installing anchor bolts mounted in drill shafts will be included in the unit price bid for the various diameter drill shafts.

The Contractor shall coordinate with the utility companies to verify utility locations before drilling foundations.

The Contractor shall form, or provide a smooth finish, the portions of drilled shaft that project above the ground line. Place a 3/4 inch chamfer on the top edge of each pole foundation. This work will not be paid for directly but will be considered subsidiary to this bid item.

All drilled shaft foundations will be based on the lengths shown on the plans or those established in writing. Adequate calculations for measurements of foundations have been made in accordance with Article 9.1. of the Standard Specifications. Increases or decreases in the quantities required by change in design will be measured as specified and the revised quantities will be the basis for payment.

In the presence of excess ground water and/or unstable conditions in sub-grade soils prevents excavation to the line and depths indicated on the plans for "Drilled Shaft Foundation", other proposed methods of foundation installation such as casing, etc. shall be submitted for review and approved by the Engineer.

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**ITEM 432: Riprap**

Provide Class "A" concrete minimum for riprap aprons placed around all box culvert and pipe safety end treatments. Provide 1/4-inch thick dummy joints at least every 15-ft for riprap aprons placed around box and pipe culverts.

Do not use fiber reinforced concrete RIPRAP on side slopes equal to or steeper than 6:1 unless approved by the Engineer.

**ITEM 462: Concrete Box Culverts and Drains**

Provide joints in pre-cast concrete box culverts using any of the methods specified in Item 464, except mortar joints.

Provide pre-cast concrete boxes to expedite traffic handling unless otherwise shown on the plans.

Provide the Area Engineer with the casting schedule of all pre-cast concrete boxes prior to beginning any fabrication.

**ITEM 464: Reinforced Concrete Pipe**

Use tongue and groove pipe where the RCP extends into the lime treated subgrade. The 4-foot depth restriction for heavy equipment passage over pipe structures is voided. The Contractor will be responsible for any construction damage to these facilities.

Do not use mortar joints.

All reinforced concrete pipe shall include rubber gaskets unless shown otherwise on the plans or directed by the Engineer.

**ITEM 465: Junction Boxes, Manholes, and Inlets**

For TY PSL with RG, FG, or SFG lid inlets, provide Class B concrete riprap with (6"x6" W3xW3

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(No. 6 gauge) welded wire fabric) for any side that is touching the natural ground. The riprap will be 4-in thick and 3-ft wide with an 8-in deep by 6-in wide toe unless otherwise shown in the plans. The cost will be subsidiary to Item 465, unless otherwise shown in the plans.

For all inlet extensions, provide a temporary circular curb/inlet extension opening for drainage during construction. The circular opening will be a 4-in Diameter by 2-in deep slot that matches the statewide PCO standard. Fill curb circular curb/inlet extension opening with epoxy and mortar as per Item 429 Concrete Structure Repair specifications. Epoxy and mortar are subsidiary to Item 465.

ITEM 466: Headwalls and Wingwalls

Do not use pre-cast headwalls/wingwalls.

ITEM 467: Safety End Treatment

All Type II SET's shall have riprap, Class "A" minimum, aprons as shown on the plans. The Contractor may submit an alternate precast SET design for approval by the Engineer.

ITEM 471: Frames, Grates, Rings, and Covers

All grates will be tack welded to the frames in a manner satisfactory to the Engineer.

ITEM 496: Removing Structures

Store the following items to be salvaged at a location designated by the Engineer.

ITEM 502: Barricades, Signs, and Traffic Handling

Shadow vehicles equipped with Truck-Mounted Attenuators are required for traffic handling. See notes for Item 6185: Truck Mounted Attenuator/Trailer Attenuator, for additional references pertaining to the TMAs.

A pilot car and radio equipped flaggers shall be required for all undivided roadway locations as directed by the Engineer. The pilot car with necessary flaggers and/or radio equipped flaggers and all signs, equipment, labor, and incidentals required for this method of traffic control will not be paid for directly but shall be considered subsidiary to Item 502.

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Replace/relocate all regulatory signs removed due to construction operations with the same sign on fixed support(s) immediately upon its removal. First obtain Project Engineer approval before removing any regulatory roadway sign. Required flaggers are to be available to direct traffic during sign intermediate down time.

Relocate any Directional Sign Assemblies removed during construction operations immediately upon their removal.

These signs shall be relocated to a location in accordance with the Latest Version of the "Texas Manual on Uniform Traffic Control Devices". In no case will a sign be removed without a replacement sign and support(s) being readily available and a location established. Removal and relocation of these signs required for traffic control will not be paid for directly but shall be considered subsidiary to Item 502.

From the beginning to the end of the project, all traffic control devices need to be in acceptable condition as per the Texas Quality Guidelines for Work Zone Traffic Control Devices.

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The "Safety Contingency" is not intended to be used in lieu of bid Items established by the contract.

Remove and dispose of all litter, debris, objectionable material, excess materials that accumulate at the base of all traffic control devices as directed by the Engineer.

ITEM 504: Field Office and Laboratory

Furnish (1) Field Office (Type C).

The Contractor will furnish a Type D Structure (Asphalt Mix Laboratory) modified by the following.

Laboratory room:

The other room of this building will be used as a laboratory and will include access to a bathroom facility from the interior. The laboratory and bathroom facility will have the walls, ceiling and floor insulated such that the air temperature can always be maintained at 76 degrees Fahrenheit.

Furnish for the Department's use in the asphalt laboratory one (1) desktop computer.



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ITEM 506: Temporary Erosion, Sedimentation, and Environmental Controls

Before starting each phase of construction, review with the Engineer the SW3P used for temporary erosion control as outlined on the plans. Before construction, place the temporary erosion and sedimentation control features as shown on the SW3P. Location of Construction Exits are to be approved by the Engineer. After completing earthwork operations, restore and reseed the disturbed areas in accordance with the Department's specifications for permanent or temporary erosion control. Before starting grading operations and during the project duration, place the temporary or permanent erosion control measures to prevent sediment from leaving the right of way.

The Contractor Force Account "Erosion Control Maintenance" that has been established for this project is intended to be utilized for work zone Best Management Practice (BMP) maintenance, to improve the effectiveness of the Environmental Controls that may need maintenance attention and/or require replacement while the project is still under the construction stage. These procedures will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent BMP management reviews on the project. The "Erosion Control Maintenance" is not intended to be used in lieu of bid Items established by the contract.

ITEM 508: Constructing Detours

Flexible Base, prime coat, and Asphaltic Concrete Pavement used for detours shall meet the requirements of Items 247, 310 and 3076 respectively, except for measurement and payment.

ITEM 512: Portable Traffic Barrier

During the various construction phases, provide drainage slots in every temporary concrete traffic barrier used for traffic control in order to handle temporary drainage. Provide any additional drainage measures needed as directed by the Engineer.

ITEM 529: Concrete Curb, Gutter, and Combined Curb and Gutter

Before final acceptance of the project, remove discoloration caused by tire marks, mud, asphalt, paint, or other similar material by any method satisfactory to the Engineer to achieve a uniform color and texture of the finished surface exposed to view.

Curb attached to the MBGF thrie-beam transition section will be subsidiary to the MBGF transition.

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ITEM 530: Intersections, Driveways, and Turnouts

Prime coat shall meet the requirements of Item 310.

Public and private driveways need to have a smooth vertical transition tie-in between the proposed driveway and the existing driveway. The Contractor is to add a vertical taper if needed which will be subsidiary to Item 530.

ITEM 531: Sidewalks

Construct ¼-inch thick score joints at a maximum 6-foot spacing and expansion joints at a maximum 18 foot spacing. Construct a joint in the center of the sidewalk if it is over 15-feet wide. For steel reinforcement, use 6x6-inch spacing with #3 bars or 6x6 – D6 welded wire fabric.

ITEM 560: Mailbox Assemblies

Coordinate and verify final mailbox locations with TxDOT and the US Postmaster.

ITEM 585: Ride Quality for Pavement Surfaces

Diamond grinding shall be used to remove localized roughness.

Use Surface Test Type B pay adjustment schedule 1 to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces." This includes ramps and service road travel lanes.

ITEM 610: Roadway Illumination Assemblies

Luminaires shown on the proposed Traffic Signal installation layout sheets may be shown at an angle for clarity. All luminaires shown shall be installed perpendicular to the main roadway under construction.

In addition to ED (3)-14, each cable for luminaires shall be identified in each ground box, pole base, or other accessible location with yellow electrical tape wrapped around the cable. The tape marking shall be at least 2 inches.

All luminaires on traffic signal poles shall be rated for 240 vac. All safety lighting poles shall be serviced for 480 vac.

Luminaires installed on traffic signal poles will not be paid for directly but shall be considered subsidiary to the various bid Items of the project.

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ITEM 618: Conduit

All conduit ends in pole bases, controllers and ground boxes shall be plugged with 4 to 6 inches of polyurethane sealant or its equivalent after cables are in place.

Conduit shall be placed in a straight line not to exceed 2.0 feet in any direction. The depth of the conduit shall be 2.0 feet except when crossing a roadway where the depth shall not be more than 3.0 feet nor less than 1.0 foot below the bottom of the base material in the roadway when placed by the jacking or boring method. Any evidence of damage to the roadway during the jacking or boring operation shall be sufficient grounds to stop the method being used.

Conduit runs under paved roadways or driveways shall be jacked or bored and then pushed across. At these locations, galvanized rigid metal may be used. All other runs shall be made by trenching. Existing pavement which will be removed, reconstructed, or overlaid with new pavement may be trenched across. Trenches for conduit runs shall be a minimum 2 feet deep and 4 inches wide. The conduit shall be placed on a 2-inch sand cushion and then backfilled with a minimum of 6 inches sand fill. The remainder of the trench shall be backfilled with flexible base, soil or two-sack concrete as required by location of conduit on the project or as directed. The top 3 inches shall match the existing surface material.

All conduit elbows and rigid extensions required to be installed on PVC conduit systems will not be paid for separately but will be considered subsidiary to the various bid Items.

Use materials from prequalified Material Producer List as shown on the Texas Department of Transportation (TxDOT) - Construction Division's (CST) Material Producer List. Category is "Roadway Illumination and Electrical Supplies."

ITEM 628: Electrical Services

Arrange for and cooperate with the utility company to provide electrical power for the service(s) shown and as required by the plans. A meter will be required on all electrical services.

ITEMS 636: Signs

Complete sign blanks and panels shall be handled and stored at the job site in such a manner that corners, edges and faces are not damaged. Finished sign blanks shall be stored in either a weatherproof warehouse or outside and off the ground in a vertical position. All paper, cardboard and chemically treated separators and packaging shall be removed prior to outside storage.

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ITEM 644: Small Roadside Sign Assemblies

All signs shall be installed as shown in the plans and in accordance with the current edition of the "Texas Manual on Uniform Traffic Control Devices" and the "Sign Crew Field Book" (SCFB).

All signs shall be erected according to the locations shown on the signing layout sheets except that a sign may be shifted in order to secure a more desirable location. All sign locations will be staked as shown in the plans and as approved. It is the intent of the plans to erect all roadside traffic signs with the sign edge a minimum of 6 feet from the edge of the shoulder, or if none, 12 feet from the edge of the travel lane. In curb and gutter sections, the sign edge shall be a minimum of 2 feet from the face of the curb.

For this project, aluminum type sign blanks as provided for under Item 636 will be required for all proposed signing installed under Item 644. Aluminum sign blanks less than 7.5 square feet shall be 0.08-inch-thick, sign blanks 7.5 to 15 square feet shall be 0.100-inch-thick and sign blanks greater than 15 square feet shall be 0.125 inch thick.

All excess excavation shall be spread uniformly inside the right of way as directed and shall be included in the price of these Items.

Sign types which design details are not shown on the plans shall conform with the latest edition of the Department's "Standard Highway Sign Design for Texas" Manual.

Signs shown to be removed shall include the complete sign installation and separate the sign post at the concrete foundation. The concrete foundation shall be disposed in accordance with this bid Item. Except for concrete foundations, all removed sign panels, sign posts, and hardware shall remain then property of the Department. All removed sign installations shall be completely disassembled. All salvageable sections of sign panels shall be recycled by TxDOT. The removed sign material will be required to be hauled to the maintenance yard closest to the project. No signs shall be removed without prior approval.

ITEM 656: Foundations for Traffic Control Devices

The dimensions shown on the plans for location of signal pole foundations, conduit and other items may be varied to meet existing conditions as approved.

The work area shall be cleaned up and all loose material resulting from the contract operations shall be removed from the work area each day before work is suspended.

No traffic signal pole shall be placed on the foundations prior to seven (7) days following placement of concrete.

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ITEMS 662 and 666: Work Zone Pavement Markings and Retroreflectorized Pavement Markings

All permanent pavement markings and work zone pavement markings for this project under these Items shall be 0.100 inches (100 mil) thick thermoplastic.

Any permanent pavement markings or non-removal work zone pavement markings lacking reflectivity in accordance with the requirements of Tex 828-B, or that fail to meet minimum retro reflectivity requirements for longitudinal pavement markings when required, will be addressed per the requirements of the specification. The roadway will be re-striped at no additional compensation.

Pavement surface preparation for markings and markers will not be paid for directly but shall be considered subsidiary to Item 666.

Prior to any striping operations, an on-site coordination meeting between all the parties involved will be required to review striping details and requirements to ensure quality work.

The beads used on this project shall meet the requirements of Departmental Materials Specification DMS-8290, Glass Traffic Beads Texas Type II & III. Use a 50% Type II/ 50% Type III mix utilizing a double drop system with Type III beads dropped first.

ITEM 677: Eliminating Existing Pavement Markings and Markers

Asphalt and aggregate types and grades shall be as approved in writing when a surface treatment is used to eliminate existing pavement markings.

ITEM 680: Highway Traffic Signals

The installation of highway traffic signals shall consist of the following principal Items:

1. Furnishing and installing 16-phase full traffic actuated controllers, base mounted cabinets, conflict monitors, load switches and loop amplifiers.
2. Furnishing and installing either steel mast arm poles, or steel strain poles and span wire and pedestal poles (as shown on plans), electrical service, luminaires, signal heads, signal cables, pedestrian heads and pedestrian push buttons with signs that meet the "Americans with Disabilities Act" Standards, loop detectors, ground boxes, conduit runs and controller concrete foundations.
3. Removal and disposal of existing signal material specified in the plans.
4. All other Items not listed above which are needed to provide for complete traffic signal installations and for proper signal operation as called for in the plans and specifications shall be furnished and installed.

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Any deviation of location for proposed signal work shall be as approved.

Signal controller

The signal installations shall be wired in accordance with the phase diagrams in the plans. The proposed base mounted cabinet shall contain 16-phase conflict monitor which display the "R-Y-G" and "Walk" phases. In addition to detecting phasing conflicts, the conflict monitor shall also be able to detect multiple signal head indications within every phase. The conflict monitor shall continue to operate in the event of a power supply failure in the timer and shall be able to retain in memory the time and date of the failure detection. Time changes shall be programmable in the field without replacing components or use of external devices. The full-actuated controller shall meet N.E.M.A. Specifications.

A controller manufacturer's technician shall be required to load initial timing programs into the controllers as called for in the plans. Once the traffic signals are turned on, the same technician shall monitor the signal operation and traffic movement and shall adjust settings for best signal operation. The technician shall provide the State with a certification that the timing plan and coordination has been established according to the plans. This certification shall include a record showing all settings and functions programmed into the timer and any related units.

The controller must be delivered with two sets of wiring diagrams and operating manuals enclosed in a weatherproof bag.

All wiring not covered by the plans and specifications shall be in accordance with the latest edition of the National Electrical Code.

Existing utilities

The exact location of existing underground utilities shall be verified with the utility companies prior to construction to avoid conflict with or damage to these utilities.

Coordination with the utility companies will be required to make any adjustments, due to utility conflicts, as defined in the specifications or deemed necessary.

Uniformity in Equipment

1. All traffic signal heads furnished shall be by the same manufacturer.
2. All signal fittings and pipe brackets shall be of an approved metallic material and of the same design and manufacturer.
3. All traffic signal poles furnished shall be by the same manufacturer.
4. All loop detector amplifiers furnished shall be by the same manufacturer.

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Handling of Traffic

Roads and streets shall always be kept open to traffic. The setting of loop detectors shall be arranged so as to close only one lane of a roadway at a time. The installation of signal heads, poles and conduit shall also be arranged so as to permit the continuous movement of traffic in both directions at all times.

All construction operations shall be conducted to provide the least possible interference to traffic as shown on the plans, as provided for in the specifications and/or as directed. All signing, barricading, and handling of traffic shall conform to the current edition of the "Texas Manual on Uniform Traffic Control Devices".

Sequence of work

1. The existing traffic signal installations shall always remain in operation during construction of the proposed traffic signal installations or modifications.
2. The complete removal of the specified existing traffic signals or specified Items will be required when the proposed traffic signal installations are in place and operational.
3. All labor, tools, and materials used to remove the specified existing traffic signal material shall not be paid for directly but be considered subsidiary to the various items of work.
4. Final inspection shall be conducted in conjunction with the district signal shop.

ITEM 682: Vehicle and Pedestrian Signal Heads

All signal heads shall be covered with burlap from the time of installation until the signal is placed in operation. All signal heads shall be of polycarbonate material and yellow in color. Signal heads shall have standard detachable visors. LEDs shall be furnished for all traffic signal heads.

Signal heads shall be positioned carefully to provide the best view of signal indications to motorists. All signal heads shall be installed to a neat overall appearance. Nominal height for signal heads above pavement surface shall be 18 feet 6 inches, plus/minus 3 inches.

Pedestrian signal heads shall be positioned carefully to provide the best view to pedestrians.

ITEM 684: Traffic Signal Cables

All signal cable shall be #12 AWG; 2/c loop. Lead-In shall be #14 AWG shielded and loop wires in pavement.

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ITEM 685: Roadside Flashing Beacon Assemblies

The roadside flashing beacons shall be installed at locations shown on the signing detail sheets and as shown on Standard Sheet RFBA-13.

All wiring not covered by the plans and specifications shall be in accordance with the latest edition of the National Electrical Code.

Grounding and bonding

A continuous bare or green insulated copper wire no. 8 or larger shall be installed in every conduit throughout the electrical and traffic signal system in accordance with Item 680, the Electrical Detail Sheets, and the latest edition of the National Electrical Code.

Existing utilities

The exact location of existing underground utilities shall be verified with the utility company prior to construction to avoid conflict with or damage to these utilities.

Coordination with the utility companies will be required to make any adjustments, due to utility conflicts, as defined in the specifications or deemed necessary.

Handling of traffic

All construction operations shall be conducted to provide the least possible interference to traffic as shown on the plans, as provided for in the specifications and/or as directed. All signing, barricading, and handling of traffic shall conform to the current edition of the "Texas Manual on Uniform Traffic Control Devices".

ITEM 686: Traffic Signal Pole Assemblies (Steel)

The locations for the proposed traffic signal poles are approximate. The exact locations will be determined in the field in coordination with the District Signal Shop.

Erection and/or removal of poles and luminaries located near any overhead electrical power lines shall be accomplished using established industry and utility safety practices. The appropriate utility company shall be consulted with prior to beginning such work.

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ITEM 688: Pedestrian Detectors and Vehicle Loop Detectors

Loop detectors shall be installed to replace those damaged or destroyed due to construction operations.

Before milling operations begin, all existing loop detector locations shall be marked, and their configuration and orientation obtained for replacement with same size loop detectors.

Any deviation of location for proposed loop detector work shall be as approved.

Install loop vehicle detectors in accordance with plan Standard Sheet LD1-03 (Loop Detector Installation Details). All loop detectors shall be rectangular.

Use 2/c #14 AWG shielded for loop lead-ins and #14 AWG for loop wire in pavement.

Splices for loop wire will be permitted only at ground boxes or pole base with approved weatherproof splice kits.

A minimum length of 2 feet for each cable shall be left in each ground box.

All wiring not covered by the plans and specifications shall be in accordance with the latest edition of the National Electrical Code.

Handling of traffic

Roads and streets shall always be kept open to traffic. The setting of loop detectors shall be arranged so as to close only one lane of a roadway at a time and to permit the continuous movement of traffic in both directions at all times.

All construction operations shall be conducted to provide the least possible interference to traffic as shown on the plans, as provided for in the specifications and/or as directed. All signing, barricading, and handling of traffic lane closures shall conform to the current edition of the "Texas Manual on Uniform Traffic Control Devices".

Sequence of work

1. The existing traffic signal installation shall always remain in operation during construction of the proposed loop detector work.
2. Final inspection shall be performed in conjunction with the District Signal Shop.

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**Sheet 17J**

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ITEM 688: Pedestrian Detectors and Vehicle Loop Detectors

The Contractor shall install loop vehicle detectors in accordance with the Intersection layouts in the plans or as directed. Each loop detector Lead-In cable shall be tagged inside the controller cabinet with its loop number. The loop amplifiers shall indicate the loop and phase of control or direction of control. Loop wires in street shall be #14 AWG. Pedestrian detectors shall meet the minimum requirements called for by the "Americans with Disabilities Act".

Loop detector lead-in cable shall be continuous from ground box to the controller.

Splices for loop wire will be permitted only at ground boxes or pole base with approved weatherproof splice kits.

A minimum length of 2.0 feet for each cable shall be left in each ground box.

ITEM 1007: Irrigation Wells, Gates, and Valves

If the Contractor elects, a larger size item may be furnished and installed at no extra cost to the State.

ITEM 6185: Truck Mounted Attenuator/Trailer Attenuator

In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for the project, provide 2 additional shadow vehicle(s) with TMA as per TCP (1-1) -18 as detailed on General Note 5 of this standard sheet; or as per TCP (1-2) -18 as detailed on General Note 6 of this standard sheet; or as per TCP (1-3) -18 as detailed on General Note 7 of this standard sheet; or as per TCP (1-4) -18 as detailed on General Note 5 of this standard sheet; or as per TCP (2-1) -18 as detailed on General Note 5 of this standard sheet; or as per TCP (2-2) -18 as detailed on General Note 7 of this standard sheet; or as per TCP (2-3) -18 as detailed on General Note 8 of this standard sheet; or as per TCP (2-4) -18 as detailed on General Note 6 of this standard sheet; or as per TCP (2-5) -18 as detailed on General Note 4 of this standard sheet.

Therefore, 3 total shadow vehicles with TMA will be required on this project for the type of work as shown on the plans. The Contractor will be responsible for determining if one or more of his construction operations will be ongoing at the same time and thus determine the total number of TMAs needed for the project.



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	100-6002	PREPARING ROW	STA	195.000		195.000	
	104-6009	REMOVING CONC (RIPRAP)	SY	727.000		727.000	
	104-6015	REMOVING CONC (SIDEWALKS)	SY	1,566.000		1,566.000	
	104-6031	REMOVING CONC (HEADWALL)	CY	41.000		41.000	
	110-6001	EXCAVATION (ROADWAY)	CY	35,883.000		35,883.000	
	110-6002	EXCAVATION (CHANNEL)	CY	88.000		88.000	
	132-6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	889.000		889.000	
	134-6001	BACKFILL (TY A)	STA	7.200		7.200	
	158-6005	SPEC EXCAV WORK (ORIGINAL)	CY	1,255.000		1,255.000	
	160-6005	FURNISHING AND PLACING TOPSOIL	CY	2,973.000		2,973.000	
	164-6005	BROADCAST SEED (PERM) (URBAN) (SANDY)	SY	4,044.000		4,044.000	
	164-6025	CELL FBR MLCH SEED(PERM)(URBAN)(SANDY)	SY	26,774.000		26,774.000	
	164-6029	CELL FBR MLCH SEED(TEMP)(WARM)	SY	37,681.000		37,681.000	
	168-6001	VEGETATIVE WATERING	MG	1,294.000		1,294.000	
	169-6003	SOIL RETENTION BLANKETS (CL 1) (TY C)	SY	1,229.000		1,229.000	
	204-6003	SPRINKLING (DUST CONTROL)	MG	727.000		727.000	
	216-6001	PROOF ROLLING	HR	10.000		10.000	
	247-6225	FL BS (RDWY DEL)(TY E GR 4)(FNAL POS)	CY	14,994.000		14,994.000	
	251-6159	REWORK BS MATL (TY B)(10")(DC)(ORG POS)	CY	27,005.000		27,005.000	
	275-6001	CEMENT	TON	2,666.000		2,666.000	
	275-6005	CEMENT TREAT (EXIST MATL)(12")	SY	138,130.000		138,130.000	
	275-6012	CEMENT TRT (MX EXST MTL & NW BS)(10")	SY	134,990.000		134,990.000	
	305-6015	SALV, HAUL & STKPL RCL APH PV (1 1/2")	SY	89,233.000		89,233.000	
	310-6009	PRIME COAT (MC-30)	GAL	25,562.000		25,562.000	
	316-6242	AGGR(TY-PD GR-5 SAC-B)	CY	1,063.000		1,063.000	
	316-6277	ASPH (SPG 73-19)	GAL	40,894.000		40,894.000	
	354-6013	PLAN & TEXT CONC PAV(0" TO 1/2")	SY	3,041.000		3,041.000	
	400-6003	STRUCT EXCAV (PIPE)	CY	1,087.000		1,087.000	
	400-6005	CEM STABIL BKFL	CY	92.000		92.000	
	400-6006	CUT & RESTORING PAV	SY	390.000		390.000	
	401-6001	FLOWABLE BACKFILL	CY	189.000		189.000	
	402-6001	TRENCH EXCAVATION PROTECTION	LF	9,606.000		9,606.000	
	403-6001	TEMPORARY SPL SHORING	SF	765.000		765.000	
	416-6030	DRILL SHAFT (TRF SIG POLE) (24 IN)	LF	136.800		136.800	
	416-6032	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	294.400		294.400	
	423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	1,824.000		1,824.000	
	432-6001	RIPRAP (CONC)(4 IN)	CY	103.000		103.000	



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	432-6002	RIPRAP (CONC)(5 IN)	CY	29.000		29.000	
	462-6002	CONC BOX CULV (3 FT X 3 FT)	LF	1,758.000		1,758.000	
	462-6005	CONC BOX CULV (4 FT X 4 FT)	LF	1,474.000		1,474.000	
	462-6007	CONC BOX CULV (5 FT X 3 FT)	LF	836.000		836.000	
	462-6008	CONC BOX CULV (5 FT X 4 FT)	LF	1,009.000		1,009.000	
	462-6009	CONC BOX CULV (5 FT X 5 FT)	LF	867.000		867.000	
	462-6015	CONC BOX CULV (7 FT X 4 FT)	LF	92.000		92.000	
	462-6020	CONC BOX CULV (8 FT X 5 FT)	LF	196.000		196.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	4,920.000		4,920.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	2,988.000		2,988.000	
	464-6007	RC PIPE (CL III)(30 IN)	LF	1,442.000		1,442.000	
	464-6008	RC PIPE (CL III)(36 IN)	LF	2,336.000		2,336.000	
	464-6009	RC PIPE (CL III)(42 IN)	LF	96.000		96.000	
	464-6010	RC PIPE (CL III)(48 IN)	LF	756.000		756.000	
	464-6021	RC PIPE (CL IV)(42 IN)	LF	75.000		75.000	
	464-6022	RC PIPE (CL IV)(48 IN)	LF	450.000		450.000	
	465-6002	MANH (COMPL)(PRM)(48IN)	EA	5.000		5.000	
	465-6003	MANH (COMPL)(PRM)(60IN)	EA	4.000		4.000	
	465-6004	MANH (COMPL)(PRM)(72IN)	EA	14.000		14.000	
	465-6013	INLET (COMPL)(PCO)(3FT)(NONE)	EA	2.000		2.000	
	465-6014	INLET (COMPL)(PCO)(3FT)(LEFT)	EA	4.000		4.000	
	465-6021	INLET (COMPL)(PCO)(5FT)(NONE)	EA	1.000		1.000	
	465-6025	INLET (COMPL)(PCO)(6FT)(NONE)	EA	5.000		5.000	
	465-6027	INLET (COMPL)(PCO)(6FT)(RIGHT)	EA	4.000		4.000	
	465-6029	INLET (COMPL)(PCU)(3FT)(NONE)	EA	18.000		18.000	
	465-6030	INLET (COMPL)(PCU)(3FT)(LEFT)	EA	9.000		9.000	
	465-6031	INLET (COMPL)(PCU)(3FT)(RIGHT)	EA	11.000		11.000	
	465-6033	INLET (COMPL)(PCU)(4FT)(NONE)	EA	7.000		7.000	
	465-6034	INLET (COMPL)(PCU)(4FT)(LEFT)	EA	5.000		5.000	
	465-6035	INLET (COMPL)(PCU)(4FT)(RIGHT)	EA	9.000		9.000	
	465-6041	INLET (COMPL)(PCU)(6FT)(NONE)	EA	2.000		2.000	
	465-6042	INLET (COMPL)(PCU)(6FT)(LEFT)	EA	8.000		8.000	
	465-6043	INLET (COMPL)(PCU)(6FT)(RIGHT)	EA	11.000		11.000	
	465-6076	INLET (COMPL)(PSL)(RC)(6FTX6FT)	EA	10.000		10.000	
	465-6158	INLET(COMPL)(PAZD)(FG)(3FTX3FT-3FTX3FT)	EA	17.000		17.000	
	466-6003	HEADWALL (CH - FW - 0) (DIA= 18 IN)	EA	1.000		1.000	
	466-6007	HEADWALL (CH - FW - 0) (DIA= 30 IN)	EA	1.000		1.000	



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	466-6152	WINGWALL (FW - 0) (HW=5 FT)	EA	2.000		2.000	
	466-6182	WINGWALL (PW - 1) (HW=7 FT)	EA	2.000		2.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	22.000		22.000	
	496-6002	REMOV STR (INLET)	EA	9.000		9.000	
	496-6004	REMOV STR (SET)	EA	124.000		124.000	
	496-6007	REMOV STR (PIPE)	LF	6,844.000		6,844.000	
	496-6008	REMOV STR (BOX CULVERT)	LF	90.000		90.000	
	496-6042	REMOV STR (SMALL)	EA	8.000		8.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	29.000		29.000	
	506-6003	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	243.000		243.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	243.000		243.000	
	506-6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	312.000		312.000	
	506-6024	CONSTRUCTION EXITS (REMOVE)	SY	312.000		312.000	
	506-6025	EXCAV (EROSN & SEDMT CONT, IN PLACE)	CY	637.000		637.000	
	506-6026	EMBANK (EROSN & SEDMT CONT, IN PLACE)	CY	637.000		637.000	
	506-6031	FRNT END LOADER WORK (ERSN & SEDM CONT)	HR	96.000		96.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	50.000		50.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	50.000		50.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	7,888.000		7,888.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	7,888.000		7,888.000	
	508-6001	CONSTRUCTING DETOURS	SY	11,339.000		11,339.000	
	512-6008	PORT CTB (FUR & INST)(F-SHAPE)(TY 4)	LF	250.000		250.000	
	512-6032	PORT CTB (MOVE)(F-SHAPE)(TY 4)	LF	500.000		500.000	
	512-6056	PORT CTB (REMOVE)(F-SHAPE)(TY 4)	LF	250.000		250.000	
	528-6004	LANDSCAPE PAVERS	SY	80.000		80.000	
	529-6029	CONC CURB & GUTTER (TY A)	LF	24,968.000		24,968.000	
	529-6030	CONC CURB & GUTTER (VALLEY GUTTER)	LF	3,676.000		3,676.000	
	529-6031	CONC CURB & GUTTER (VALLEY GUTTER)(48")	LF	787.000		787.000	
	530-6004	DRIVEWAYS (CONC)	SY	935.000		935.000	
	530-6005	DRIVEWAYS (ACP)	SY	6,092.000		6,092.000	
	530-6010	INTRSCT, DRVWAYS, & TURNOUT (CONC)	SY	240.000		240.000	
	530-6011	INTRSCT, DRVWAYS, & TURNOUT (ACP)	SY	668.000		668.000	
	531-6001	CONC SIDEWALKS (4")	SY	12,882.000		12,882.000	
	531-6004	CURB RAMPS (TY 1)	EA	42.000		42.000	
	531-6005	CURB RAMPS (TY 2)	EA	4.000		4.000	
	531-6008	CURB RAMPS (TY 5)	EA	9.000		9.000	



DISTRICT	COUNTY	CCSJ	SHEET
Pharr	Hidalgo	1064-01-032	18B





# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	531-6013	CURB RAMPS (TY 10)	EA	22.000		22.000	
	531-6016	CURB RAMPS (TY 21)	EA	1.000		1.000	
	531-6017	CURB RAMPS (TY 22)	EA	4.000		4.000	
	545-6003	CRASH CUSH ATTEN (MOVE & RESET)	EA	6.000		6.000	
	545-6005	CRASH CUSH ATTEN (REMOVE)	EA	2.000		2.000	
	545-6018	CRASH CUSH ATTEN (INSTL)(S)(N)(TL2)	EA	2.000		2.000	
	550-6001	CHAIN LINK FENCE (INSTALL) (6')	LF	290.000		290.000	
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA	55.000		55.000	
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA	11.000		11.000	
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA	6.000		6.000	
	560-6015	MAILBOX INSTALL-S (TIM-POST) TY 5	EA	6.000		6.000	
	618-6016	CONDT (PVC) (SCH 40) (1")	LF	553.000		553.000	
	618-6023	CONDT (PVC) (SCH 40) (2")	LF	4,865.000		4,865.000	
	618-6033	CONDT (PVC) (SCH 40) (4")	LF	865.000		865.000	
	618-6058	CONDT (PVC) (SCH 80) (4")	LF	1,950.000		1,950.000	
	618-6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF	440.000		440.000	
	620-6007	ELEC CONDR (NO.8) BARE	LF	1,410.000		1,410.000	
	620-6009	ELEC CONDR (NO.6) BARE	LF	145.000		145.000	
	620-6010	ELEC CONDR (NO.6) INSULATED	LF	290.000		290.000	
	621-6005	TRAY CABLE (4 CONDR) (12 AWG)	LF	1,695.000		1,695.000	
	624-6002	GROUND BOX TY A (122311)W/APRON	EA	80.000		80.000	
	624-6010	GROUND BOX TY D (162922)W/APRON	EA	6.000		6.000	
	625-6002	ZINC-COAT STL WIRE STRAND (3/16")	LF	545.000		545.000	
	625-6003	ZINC-COAT STL WIRE STRAND (3/8")	LF	4,470.000		4,470.000	
	625-6004	ZINC-COAT STL WIRE STRAND (5/16")	LF	1,090.000		1,090.000	
	628-6301	ELC SRV TY T 120/240 000(NS)GS(L)TS(O)	EA	4.000		4.000	
	644-6027	IN SM RD SN SUP&AM TYS80(1)SA(P)	EA	69.000		69.000	
	644-6028	IN SM RD SN SUP&AM TYS80(1)SA(P-BM)	EA	16.000		16.000	
	644-6030	IN SM RD SN SUP&AM TYS80(1)SA(T)	EA	11.000		11.000	
	644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	4.000		4.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	72.000		72.000	
	662-6004	WK ZN PAV MRK NON-REMOV (W)4"(SLD)	LF	35,351.000		35,351.000	
	662-6012	WK ZN PAV MRK NON-REMOV (W)8"(SLD)	LF	424.000		424.000	
	662-6014	WK ZN PAV MRK NON-REMOV (W)12"(SLD)	LF	517.000		517.000	
	662-6016	WK ZN PAV MRK NON-REMOV (W)24"(SLD)	LF	502.000		502.000	
	662-6034	WK ZN PAV MRK NON-REMOV (Y)4"(SLD)	LF	50,498.000		50,498.000	
	662-6050	WK ZN PAV MRK REMOV (REFL) TY II-A-A	EA	895.000		895.000	



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	662-6061	WK ZN PAV MRK REMOV (W)4"(DOT)	LF	110.000		110.000	
	662-6063	WK ZN PAV MRK REMOV (W)4"(SLD)	LF	14,188.000		14,188.000	
	662-6071	WK ZN PAV MRK REMOV (W)8"(SLD)	LF	181.000		181.000	
	662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	125.000		125.000	
	662-6080	WK ZN PAV MRK REMOV (W)(ARROW)	EA	2.000		2.000	
	662-6094	WK ZN PAV MRK REMOV (Y)4"(DOT)	LF	955.000		955.000	
	662-6095	WK ZN PAV MRK REMOV (Y)4"(SLD)	LF	18,083.000		18,083.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	734.000		734.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,415.000		1,415.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	7,080.000		7,080.000	
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	5,410.000		5,410.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	1,140.000		1,140.000	
	666-6054	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	57.000		57.000	
	666-6078	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	55.000		55.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF	6,330.000		6,330.000	
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	4,170.000		4,170.000	
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	4,570.000		4,570.000	
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	38,970.000		38,970.000	
	672-6007	REFL PAV MRKR TY I-C	EA	988.000		988.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,427.000		1,427.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	24,618.000		24,618.000	
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	505.000		505.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	25.000		25.000	
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA	15.000		15.000	
	680-6002	INSTALL HWY TRF SIG (ISOLATED)	EA	6.000		6.000	
	680-6004	REMOVING TRAFFIC SIGNALS	EA	6.000		6.000	
	681-6001	TEMP TRAF SIGNALS	EA	5.000		5.000	
	682-6001	VEH SIG SEC (12")LED(GRN)	EA	65.000		65.000	
	682-6002	VEH SIG SEC (12")LED(GRN ARW)	EA	17.000		17.000	
	682-6003	VEH SIG SEC (12")LED(YEL)	EA	65.000		65.000	
	682-6004	VEH SIG SEC (12")LED(YEL ARW)	EA	17.000		17.000	
	682-6005	VEH SIG SEC (12")LED(RED)	EA	65.000		65.000	
	682-6018	PED SIG SEC (LED)(COUNTDOWN)	EA	48.000		48.000	
	682-6051	BACKPLATE W/REFL BRDR(3 SEC)ALUM	EA	48.000		48.000	
	682-6052	BACKPLATE W/REFL BRDR(4 SEC)ALUM	EA	17.000		17.000	
	684-6010	TRF SIG CBL (TY A)(12 AWG)(5 CONDR)	LF	11,050.000		11,050.000	
	684-6012	TRF SIG CBL (TY A)(12 AWG)(7 CONDR)	LF	2,505.000		2,505.000	



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1064-01-032

DISTRICT Pharr  
HIGHWAY FM 676

COUNTY Hidalgo

CONTROL SECTION JOB				1064-01-032		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00109273			
COUNTY				Hidalgo			
HIGHWAY				FM 676			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	684-6080	TRF SIG CBL (TY C)(14 AWG)(2 CONDR)	LF	14,940.000		14,940.000	
	685-6002	RELOCATE RDSB FLASH BEACON ASSEMBLY	EA	5.000		5.000	
	685-6004	INSTL RDSB FLSH BCN ASSM (SOLAR PWRD)	EA	4.000		4.000	
	685-6006	REMOV RDSB FLSH BCN AM (SOLAR PWRD)	EA	4.000		4.000	
	686-6007	INS TRF SIG PL AM (S)STR(TY B)	EA	9.000		9.000	
	686-6008	INS TRF SIG PL AM (S)STR(TY B)LUM	EA	9.000		9.000	
	686-6020	INS TRF SIG PL AM (S)STR(TY D)LUM	EA	2.000		2.000	
	687-6001	PED POLE ASSEMBLY	EA	24.000		24.000	
	688-6001	PED DETECT PUSH BUTTON (APS)	EA	4.000		4.000	
	688-6004	VEH LP DETECT (SAWCUT)	LF	8,812.000		8,812.000	
	1007-6001	IRRIGATION GATE (18")	EA	1.000		1.000	
	1007-6002	IRRIGATION GATE (30")	EA	1.000		1.000	
	1007-6003	IRRIGATION WELL (18")	EA	3.000		3.000	
	1007-6004	IRRIGATION WELL (24")	EA	2.000		2.000	
	1007-6005	IRRIGATION WELL (30")	EA	3.000		3.000	
	1008-6001	PRSSR IRRIG PVC PIPE (18")	LF	541.000		541.000	
	1008-6002	PRSSR IRRIG PVC PIPE (24")	LF	340.000		340.000	
	3077-6065	SP MIXESSP-DSAC-A PG76-22	TON	21,853.000		21,853.000	
	4024-6001	RC LOW HEAD PRSSR PIPE (CL III)(30")	LF	254.000		254.000	
	5145-6001	GATE (INSTALL)(TYPE 1)(OTU)	EA	1.000		1.000	
	5145-6002	GATE (INSTALL)(TYPE 2)(OTU)	EA	3.000		3.000	
	5145-6003	GATE (INSTALL)(TYPE 3)(OTU)	EA	10.000		10.000	
	5145-6004	GATE (INSTALL)(TYPE 4)(OTU)	EA	2.000		2.000	
	5145-6005	GATE (INSTALL)(TYPE 5)(OTU)	EA	2.000		2.000	
	5148-6001	RIPRAP CANAL LINER	SF	8,331.000		8,331.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	4.000		4.000	
	6027-6003	CONDUIT (PREPARE)	LF	755.000		755.000	
	6027-6008	GROUND BOX (PREPARE)	EA	14.000		14.000	
	6054-6001	SPREAD SPECTRUM RADIO	EA	6.000		6.000	
	6054-6002	COAXIAL CABLE	LF	319.000		319.000	
	6061-6001	GPS COMMUNICATIONS UNIT	EA	6.000		6.000	
	18	ENVIRONMENTAL: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	

**SUMMARY OF ROADWAY QUANTITIES**

ITEM	100-6002	134-6001	204-6003	247-6225	251-6159	275-6001	275-6001	275-6005	275-6012	305-6015	310-6009		316-6005		316-6531		354-6079	3077-6065	3084-6001
	PREPARING ROW	BACKFILL (TY A)	SPRINKLING (DUST CONTROL)	FL BS (RDWY DEL) (TY E GR 4) (FNAL POS)	REWORK BS MTL (TY B) (10") (DC) (ORG POS)	FLEX BASE CEMENT	SUBGRADE CEMENT	CEMENT TREAT (EXIST MATL) (12")	CEMENT TRT (MX EXST MATL & NEW BASE) (10")	SALV. HAUL & STKPL RCL APH PV (1 1/2")	PRIME COAT (MC-30) (0.2 GAL/SY)		SEAL COAT ASPH (TIER II) (0.30 GAL/SY)		AGGR (TY-B GR-4P) (SAC-B) (1 CY/120 SY)		PLAN & TEXT ASPH CONC PAV (0" TO 1/2")	SP MIXES SP-D SAC-A PG76-22	BONDING COURSE
RATE			4 MG/STA		**	*** 2% BY WT	*** 2% BY WT				*SURFACE AREA SY	0.2 GAL/SY GAL	*SURFACE AREA SY	0.30 GAL/SY GAL	*SURFACE AREA SY	1CY/120 SY CY		(342 LB/SY) SY	(0.07 GAL/SY) GAL
SHEET	STA	STA	MG	CY	CY	TON	TON	SY	SY	SY	SY	GAL	SY	GAL	SY	CY	SY	TON	GAL
1 OF 33	3.4	3.4	14	220	511	19	20	2031	1980	1686	1929	386	1929	579	1929	16	1445	330	135
2 OF 33	6.0	3.8	24	492	890	42	45	4520	4431	2938	4268	854	4268	1280	4268	36	1596	730	299
3 OF 33	6.0	-	24	559	853	47	49	4900	5033	2803	4758	952	4758	1427	4758	40		814	333
4 OF 33	6.0	-	24	515	825	43	47	4725	4636	2703	4390	878	4390	1317	4390	37		751	307
5 OF 33	6.0	-	24	491	827	41	45	4511	4422	2712	4133	827	4133	1240	4133	34		707	289
6 OF 33	6.0	-	24	491	811	41	45	4511	4422	2654	4133	827	4133	1240	4133	34		707	289
7 OF 33	6.0	-	24	557	818	47	50	5100	5009	2679	4715	943	4715	1415	4715	39		806	330
8 OF 33	6.0	-	24	551	819	47	50	5059	4962	2682	4680	936	4680	1404	4680	39		800	328
9 OF 33	6.0	-	24	491	827	41	45	4511	4422	2709	4133	827	4133	1240	4133	34		707	289
10 OF 33	6.0	-	24	520	830	44	47	4771	4682	2720	4393	879	4393	1318	4393	37		751	308
11 OF 33	6.0	-	24	561	817	66	51	5134	5045	2673	4756	951	4756	1427	4756	40		813	333
12 OF 33	6.0	-	24	506	828	43	46	4645	4556	2713	4267	853	4267	1280	4267	36		730	299
13 OF 33	6.0	-	24	491	818	41	45	4511	4422	2679	4133	827	4133	1240	4133	34		707	289
14 OF 33	6.0	-	24	491	826	41	45	4511	4422	2706	4133	827	4133	1240	4133	34		707	289
15 OF 33	6.0	-	24	537	832	58	49	4918	4830	2727	4541	908	4541	1362	4541	38		776	318
16 OF 33	6.0	-	24	518	822	44	47	4754	4665	2692	4376	875	4376	1313	4376	36		748	306
17 OF 33	6.0	-	24	491	830	41	45	4511	4423	2722	4134	827	4134	1240	4134	34		707	289
18 OF 33	6.0	-	24	515	907	43	47	4720	4631	2999	4341	868	4341	1302	4341	36		742	304
19 OF 33	6.0	-	24	544	899	46	49	4983	4894	2969	4605	921	4605	1382	4605	38		787	322
20 OF 33	6.0	-	24	530	909	45	48	4853	4772	3004	4482	896	4482	1345	4482	37		766	314
21 OF 33	6.0	-	24	491	906	41	45	4511	4422	2995	4133	827	4133	1240	4133	34		707	289
22 OF 33	6.0	-	24	491	905	41	45	4511	4422	2991	4133	827	4133	1240	4133	34		707	289
23 OF 33	6.0	-	24	494	905	42	45	4535	4446	2992	4164	833	4164	1249	4164	35		712	291
24 OF 33	6.0	-	24	652	1343	55	60	6079	5872	4732	5637	1127	5637	1691	5637	47		964	395
24A OF 33	1.2	-	5	136	369	11	13	1319	1223	1223	1223	245	1223	367	1223	10		209	86
25 OF 33	1.5	-	6	118	310	10	11	1072	1061	1050	1057	211	1057	317	1057	9		181	74
26 OF 33	5.1	-	20	240	454	20	22	2217	2161	1407	2078	416	2078	623	2078	17		355	145
27 OF 33	3.2	-	13	138	277	12	13	1289	1242	856	1195	239	1195	359	1195	10		204	84
28 OF 33	5.1	-	20	250	486	21	23	2310	2252	1524	2189	438	2189	657	2189	18		374	153
29 OF 33	3.0	-	12	127	271	11	12	1185	1140	842	1095	219	1095	329	1095	9		187	77
30 OF 33	3.7	-	15	197	355	17	18	1811	1777	1112	1664	333	1664	499	1664	14		285	116
31 OF 33	1.1	-	4	53	130	4	5	497	481	422	429	86	429	129	429	4		73	30
32 OF 33	5.1	-	20	271	559	23	25	2504	2439	1788	2251	450	2251	675	2251	19		385	158
33 OF 33	3.1	-	12	147	333	12	14	1373	1327	1063	1178	236	1178	353	1178	10		202	82
33A OF 33	5.1	-	20	596	1553	50	57	5760	5366	5366	5366	1073	5366	1610	5366	45		918	376
33B OF 33	3.6	-	14	522	1350	44	49	4978	4700	4700	4700	940	4700	1410	4700	39		804	329
<b>TOTAL</b>	<b>182.2</b>	<b>7.2</b>	<b>727.0</b>	<b>14994.0</b>	<b>24102.0</b>	<b>1200.0</b>	<b>1266.0</b>	<b>127392.0</b>	<b>124924.0</b>	<b>79167.0</b>	<b>117726.0</b>	<b>23549.0</b>	<b>117726.0</b>	<b>35319.0</b>	<b>117726.0</b>	<b>979.0</b>	<b>3041.0</b>	<b>20131.0</b>	<b>8239.0</b>

342 LBS/SY DOES NOT APPLY FROM STA 65+57.85 TO STA 72+77.85

PLOT DRIVER: RD\*11x17\*PDF.d1+  
PENTTABLE: PenTable.tbl  
DATE: 12/1/2022  
FILE: pm1\SUS036343.wsatkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W\E8001.dgn



# ATKINS

TBPE REG. #F-474

**FM 676  
SUMMARY OF  
ESTIMATED QUANTITIES  
(ROADWAY)**

SHEET 1 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			19
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

\* FOR CONTRACTOR INFORMATION ONLY  
\*\* ONLY THE BOTTOM 4" OF THE PROPOSED FLEX BASE WILL USE SALVAGE MATERIAL  
\*\*\* PERCENT OF LIME AND CEMENT MAY BE VARIED WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER  
- EST. WT. OF SUBGRADE = 2970 LB/CY (COMPACTED)  
- EST. WT. OF FLEXIBLE BASE (NEW & SALVAGED) = 3375 LB/CY COMPACTED DRY WEIGHT

**SUMMARY OF DRIVEWAYS**

ITEM 530								
DESCRIPTION	DRIVEWAYS				INTRSCT, DRVWAYS, & TURNOUT (CONC) SY	INTRSCT, DRVWAYS, & TURNOUT (ACP) SY		
	SY		CONC					
STATION LIMITS	530-6005		530-6004		530-6010		530-6011	
	ACP		CONC		CONC		TY PBS-2	
	EST.	FIN.	EST.	FIN.	EST.	FIN.	EST.	FIN.
65+57.85 TO 204+11.14	5538		850		240		668	
<b>TOTAL</b>	<b>5538</b>		<b>850</b>		<b>240</b>		<b>668</b>	

**SUMMARY OF REWORKING BASE MATERIAL (ITEM 251)(TYPE B)**

STATION LIMITS	BEG STA	END STA	AREA * (ACP)		AREA * (BASE)	DEPTH	FACTOR	VOLUME	Factor	Rework Base MTL
			SF	SY	SF					
PHASE II (WBML)	72+77.85	204+11.14	293296	32588	345829	8/12	1/27	8539.00	100%	8,539.00
PHASE III (EBML)	72+77.85	165+00.00	419207	46579	435044	8/12	1/27	10742.00	100%	10,742.00
<b>TOTAL</b>			<b>712503</b>	<b>79167</b>	<b>780873</b>			<b>19281</b>		<b>19281</b>

\*NOTE: FOR CONTRACTOR'S INFORMATION ONLY.

**SUMMARY OF SIDEWALKS AND CURB RAMPS**

ITEM	104-6015	528-6004	531-6001	531-6004	531-6005	531-6008	531-6013	531-2016	531-6017
	REMOVING CONC (SIDEWALKS)	LANDSCAPE PAVERS	CONC SIDEWALK (4")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 5)	CURB RAMPS (TY 10)	CURB RAMPS (TY 21)	CURB RAMPS (TY 22)
SHEET	SY	SY	SY	EA	EA	EA	EA	EA	EA
1 OF 33									
2 OF 33									
3 OF 33			247	8					
4 OF 33			495						
5 OF 33			450				6		
6 OF 33			488				2		
7 OF 33			541	8			1	1	
8 OF 33			656						
9 OF 33			595						
10 OF 33			628						
11 OF 33			555	6		1			
12 OF 33			619						
13 OF 33			592						
14 OF 33			667						
15 OF 33			739	8					
16 OF 33			617						
17 OF 33			630						
18 OF 33	279		529		4	2	1		
19 OF 33	279		644						
20 OF 33	272		576	8			2		
21 OF 33	214		421			2	2		
22 OF 33	249		483			3	3		
23 OF 33	168		433			1	3		
24 OF 33	105	203	563	4	2		2		12
24A OF 33			94				2		
25 OF 33									
26 OF 33									
27 OF 33									
28 OF 33									
29 OF 33									
30 OF 33			115						
31 OF 33									
32 OF 33			40						
33 OF 33	15		83						
33A OF 33			380						
33B OF 33			254						
<b>TOTAL</b>	<b>1581</b>	<b>203</b>	<b>13134</b>	<b>42</b>	<b>6</b>	<b>9</b>	<b>24</b>	<b>1</b>	<b>12</b>

**SUMMARY OF CONCRETE CURB & GUTTER**

ITEM	529-6029	529-6030	529-6031
	CONC CURB & GUTTER (TY A)	CONC CURB & GUTTER (VALLEY GUTTER)	CONC CURB & GUTTER (VALLEY GUTTER)(48")
SHEET	(LF)	(LF)	(LF)
1 OF 33			
2 OF 33	349	60	
3 OF 33	828	293	
4 OF 33	753	329	
5 OF 33	998	159	186
6 OF 33	801	262	62
7 OF 33	869	257	50
8 OF 33	1063	104	
9 OF 33	986	130	
10 OF 33	1080	73	
11 OF 33	840	287	
12 OF 33	1060	127	
13 OF 33	986	103	50
14 OF 33	1200		
15 OF 33	1241		
16 OF 33	1224	128	
17 OF 33	1086	60	
18 OF 33	1074	102	
19 OF 33	1131	46	
20 OF 33	924	225	66
21 OF 33	885	292	122
22 OF 33	1014	118	166
23 OF 33	866	281	108
24 OF 33	1150	32	
24A OF 33	277		
25 OF 33			
26 OF 33		54	
27 OF 33			
28 OF 33			
29 OF 33			
30 OF 33	412		
31 OF 33	177	17	
32 OF 33	686	89	
33 OF 33	335		
33A OF 33	470		
33B OF 33	538		
<b>TOTAL</b>	<b>25303</b>	<b>3628</b>	<b>810</b>

**SUMMARY OF RETAINING WALL**

ITEM	423-6008
	RETAINING WALL (CAST - IN - PLACE WALL)
SHEET	(SF)
RET WALL #1	49
RET WALL #2	39
RET WALL #3	59
RET WALL #4	1556
RET WALL #5	121
<b>TOTAL</b>	<b>1824</b>

**SUMMARY OF GATES AND FENCES**

ITEM	5145-6001	5145-6002	5145-6003	5145-6004	5145-6005	550-6001	
DESCRIPTION	GATES					CHAIN LINK FENCE (INSTALL) (6')	
						LF	
STATION LIMITS	DET #1	DET #2	DET #3	DET #4	DET #5	550-6001	
	EA	EA	EA	EA	EA	EST.	FIN.
65+57.85 TO 204+11.14	1	3	11	2	2	290	
<b>TOTAL</b>	<b>1</b>	<b>3</b>	<b>11</b>	<b>2</b>	<b>2</b>	<b>290</b>	



**ATKINS**

TBPE REG. #F-474

FM 676  
SUMMARY OF  
ESTIMATED QUANTITIES  
(ROADWAY)

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			20
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm1\SUS03036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676W&E003.dgn

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: pm1\US036343.wso\atkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W+E\003A.dgn

**SUMMARY OF MAILBOXES**

SHEET	STATION	LT/RT	560-6011	560-6012	560-6013	560-6015
			MAILBOX INSTALL - S (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - D (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - M (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - S P(TIM-POST) TY 5 (EA)
SHT 1 OF 33	65+70.00	LT			1	
SHT 1 OF 33	65+75.00	LT		1		
SHT 1 OF 33	66+35.00	LT	1			
SHT 1 OF 33	66+90.00	RT	1			
SHT 1 OF 33	67+40.00	LT				1
SHT 1 OF 33	67+45.00	LT		1		
SHT 1 OF 33	67+60.00	LT	1			
SHT 1 OF 33	68+75.00	LT		1		
SHT 2 OF 33	69+90.00	RT	1			
SHT 2 OF 33	71+25.00	RT	1			
SHT 2 OF 33	72+50.00	LT		1		
SHT 2 OF 33	72+55.00	RT	1			
SHT 2 OF 33	73+35.00	RT	1			
SHT 2 OF 33	74+55.00	LT	1			
SHT 3 OF 33	76+85.00	RT	1			
SHT 4 OF 33	81+45.00	RT	1			
SHT 4 OF 33	82+85.00	LT		1		
SHT 4 OF 33	85+90.00	RT	1			
SHT 4 OF 33	84+40.00	LT	1			
SHT 4 OF 33	84+45.00	RT	1			
SHT 5 OF 33	89+10.00	RT		1		
SHT 6 OF 33	93+45.00	RT	1			
SHT 6 OF 33	94+20.00	RT	1			
SHT 6 OF 33	95+05.00	LT	1			
SHT 6 OF 33	95+30.00	RT	1			
SHT 6 OF 33	96+55.00	RT	1			
SHT 6 OF 33	97+45.00	LT	1			
SHT 6 OF 33	97+85.00	RT	1			
SHT 7 OF 33	100+40.00	RT	1			
SHT 7 OF 33	100+50.00	LT	1			
SHT 7 OF 33	101+55.00	LT	1			
SHT 7 OF 33	101+60.00	RT	1			
SHT 8 OF 33	106+55.00	LT	1			
SHT 8 OF 33	110+70.00	LT	1			
SHT 9 OF 33	112+70.00	LT	1			
SHT 9 OF 33	113+80.00	LT	1			
SHT 10 OF 33	118+70.00	LT	1			
SHT 10 OF 33	120+05.00	LT	1			
SHT 10 OF 33	120+95.00	LT	1			
SHT 11 OF 33	123+15.00	LT	1			

**SUMMARY OF MAILBOXES**

SHEET	STATION	LT/RT	560-6011	560-6012	560-6013	560-6015
			MAILBOX INSTALL - S (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - D (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - M (TWW-POST) TY 4 (EA)	MAILBOX INSTALL - S P(TIM-POST) TY 5 (EA)
SHT 11 OF 33	123+95.00	LT	1			
SHT 12 OF 33	134+55.00	LT	1			
SHT 13 OF 33	135+85.00	LT		1		
SHT 16 OF 33	157+20.00	RT	1			
SHT 17 OF 33	164+75.00	LT		1		
SHT 18 OF 33	165+85.00	RT	1			
SHT 18 OF 33	170+85.00	RT			1	
SHT 20 OF 33	179+45.00	RT	1			
SHT 20 OF 33	180+10.00	RT	1			
SHT 20 OF 33	180+30.00	RT			1	
SHT 20 OF 33	181+25.00	RT	1			
SHT 20 OF 33	181+75.00	RT	1			
SHT 20 OF 33	182+55.00	RT	1			
SHT 21 OF 33	183+45.00	RT	1			
SHT 21 OF 33	183+50.00	RT	1			
SHT 21 OF 33	184+45.00	RT			1	
SHT 21 OF 33	185+20.00	RT	1			
SHT 21 OF 33	186+55.00	RT		1		
SHT 21 OF 33	187+15.00	RT	1			
SHT 21 OF 33	188+55.00	RT		1		
SHT 22 OF 33	189+40.00	RT	1			
SHT 22 OF 33	190+40.00	RT	1			
SHT 22 OF 33	191+70.00	RT			1	
SHT 22 OF 33	191+75.00	RT		1		
SHT 23 OF 33	195+25.00	RT	1			
SHT 23 OF 33	198+10.00	LT	1			
SHT 23 OF 33	198+15.00	RT	1			
SHT 23 OF 33	198+75.00	RT			1	
SHT 23 OF 33	198+80.00	RT	1			
SHT 24 OF 33	201+20.00	RT	1			
SHT 26 OF 33	100+65.00	LT	1			
SHT 26 OF 33	102+60.00	LT				1
SHT 32 OF 33	101+00.00	RT				1
SHT 32 OF 33	102+60.00	RT				1
SHT 33 OF 33	106+40.00	LT	1			
SHT 33 OF 33	106+70.00	LT				1
SHT 33 OF 33	107+40.00	LT				1
SHT 33 OF 33	107+75.00	LT	1			
<b>TOTAL</b>			55	11	6	6



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (ROADWAY)**

SHEET 3 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			21
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**SUMMARY OF TRAFFIC CONTROL PHASING**

ITEM NUMBER	400-6006	403-6001	508-6001	512-6008	512-6032	512-6056	545-6003	545-6005	545-6018	681-6001	685-6002	6185-6005
DESCRIPTION	CUT & RESTORING PAV	TEMPORARY SPL SHORING	CONSTRUCTIN DETOURS	PORT CTB (FUR & INST) (F-SHAPE) (TY 4)	PORT CTB (MOVE) (F-SHAPE) (TY 4)	PORT CTB (REMOV) (F-SHAPE) (TY 4)	CRASH CUSH ATTEN (MOVE & RESET)	CRASH CUSH ATTEN (REMOVE)	CRASH CUSH ATTEN (INSTL) (S)(N)(TL2)	TEMP TRAF SIGNALS	RELOCATE RDSD FLASH BEACON ASSEMBLY	TMA (MOBILE OPERATION)
SHEET	SY	SF	SY	LF	LF	LF	EA	EA	EA	EA	EA	DAY
<b>PHASE IA</b>												
STEP 1			502.91				2		2			
STEP 2	71	247.65	608.98	250			2					
STEP 3	121	382.5			250		2					
STEP 4	56	134.85			250	250		2				
<b>PHASE I STEP 1</b>												
1 OF 15												
2 OF 15			201.93									
3 OF 15			1104.15									
4 OF 15			376.62									
5 OF 15			1257.27									
6 OF 15			1184.98							1		
7 OF 15			1242.83									
8 OF 15			1146.59							1		
9 OF 15			603.88									
10 OF 15			1138.22							1		
11 OF 15			684.34									
12 OF 15												
13 OF 15												
14 OF 15			1286.68									
15 OF 15												
15A OF 15												
15B OF 15												
<b>PHASE II</b>												
1 OF 17												
2 OF 17												
3 OF 17												
4 OF 17												
5 OF 17												
6 OF 17												
7 OF 17												
8 OF 17												
9 OF 17												
10 OF 17										1		
11 OF 17												
12 OF 17										1		
13 OF 17											1	
14 OF 17											1	
15 OF 17												
16 OF 17												
17 OF 17												
17A OF 17												
17B OF 17												
17C OF 17												
17D OF 17												
17E OF 17												
<b>SHEET TOTAL</b>	<b>248</b>	<b>765</b>	<b>11339</b>	<b>250</b>	<b>500</b>	<b>250</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>0</b>

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm1\SUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W&E008.dgn

\*\* PORTABLE CHANGEABLE MESSAGE SIGN (FROM THE PREVIOUS PHASE) WILL BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS. PAYMENT FOR MOVING THE PORTABLE CHANGEABLE MESSAGE SIGN FROM THE PREVIOUS PHASE WILL BE SUBSIDIARY TO OTHER PERTINENT ITEMS.



**ATKINS**

TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (TRAFFIC CONTROL  
 PHASING)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			22
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.plt  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm\USUS036343.wso\atkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676W\*E008A1.dgn

PHASE III												
1 OF 18												
2 OF 18												
3 OF 18												
4 OF 18												
5 OF 18												
6 OF 18												
7 OF 18												
8 OF 18												
9 OF 18												
10 OF 18												
11 OF 18												
12 OF 18												
13 OF 18												
14 OF 18											1	
15 OF 18											2	
16 OF 18												
17 OF 18												
18 OF 18												
18A OF 18												
18B OF 18												
18C OF 18												
18D OF 18												
18E OF 18												
18F OF 18												
<b>SHEET TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>
<b>PROJECT TOTAL</b>	<b>248</b>	<b>765</b>	<b>11339</b>	<b>250</b>	<b>500</b>	<b>250</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>0</b>

\*\* PORTABLE CHANGEABLE MESSAGE SIGN (FROM THE PREVIOUS PHASE) WILL BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS. PAYMENT FOR MOVING THE PORTABLE CHANGEABLE MESSAGE SIGN FROM THE PREVIOUS PHASE WILL BE SUBSIDIARY TO OTHER PERTINENT ITEMS.



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (TRAFFIC CONTROL  
 PHASING)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			22A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



SUMMARY OF WORKZONE PAVEMENT MARKINGS

Table with columns: DESCRIPTION ITEM, ITEM 216 (6001, 6004, 6012, 6014, 6016, 6034, 6050), ITEM 662 (6061, 6063, 6071, 6075, 6080, 6094, 6095), ITEM 677 (6001, 6007, 6008, 6012). Rows include PHASE IA (STEP 1-4), PHASE I STEP 1 & 2 (SHEETS 1 THRU 15/4), PHASE II (10 sheets), and PHASE III (18 sheets).

PLOT DRIVER: RD\*11x17\*PDF.d1+
PENTTABLE: PentTable.tbl
DATE: 12/1/2022
FILE: pml\SUS0036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W&E\008A.dgn



ATKINS
TBPE REG. #F-474

FM 676
SUMMARY OF ESTIMATED QUANTITIES (WORKZONE PAVEMENT MARKINGS)

SHEET 1 OF 2

Table with columns: FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, CONT., SECT., JOB, HIGHWAY NO. Values: 6, 1064 01 032, 23, TEXAS, PHR, HIDALGO, FM 676

PLOT DRIVER: RD\*11x17\*PDF.plt  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm\...SUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W&E008A2.dgn

SUMMARY OF WORKZONE PAVEMENT MARKINGS		
DESCRIPTION ITEM	662	
LOCATION/ PHASE	6109	6111
	WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2
RATE	EA	EA
PHASE IV	734	1415
TOTAL	734	1415



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (WORKZONE PAVEMENT  
 MARKINGS)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			23A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**SUMMARY OF IRRIGATION QUANTITIES**

ITEM	104-6009	158-6005	164-6005	400-6001	400-6005	400-6006	400-6010	401-6001	402-6001	432-6001	462-6020	464-6005	464-6007	466-6152	471-6003	496-6007	496-6042	1008 6001	1008 6002	4024 6001
	REMOVING CONC (RIPRAP)	SPEC EXCAV WORK (ORIGINAL)	BROADCAST SEED (PERM) (URBAN) (SANDY)	* STRUCT EXCAV	CEM STABIL BKFL	CUT & RESTORING PAV	* STRUCT EXCAV (SPECIAL)	FLOWABLE BACKFILL	TRENCH EXCAVATION PROTECTION	RIPRAP (CONC) (4 IN)	CONC BOX CULV (8FT X 5FT)	RC PIPE (CL III) (24 IN)	RC PIPE (CL III) (30 IN)	WINGWALL (FW-0) (HW=5FT)	GRATE & FRAME	REMOVE STR (PIPE)	REMOVE STR (SMALL)	PRESS IRRIG PVC PIPE (18 IN)	PRESS IRRIG PVC PIPE (24 IN)	RC LOW HEAD PRSSR PIPE (CL III) (30")
SHEET	SY	CY	SY	CY	CY	SY	CY	CY	LF	CY	LF	LF	LF	EA	EA	LF	EA	LF	LF	LF
1		49			2	53	244		275			265				234	3	265		
2		38			52	58	213		245			113	129			211	2	113	129	
3	556	41	4,044	2,698	126		1,430	189	210	103	196	96		2	1	347	3	96		42
1DETAILS																370				
<b>TOTAL</b>	<b>556</b>	<b>128</b>	<b>4044</b>	<b>2698</b>	<b>180</b>	<b>111</b>	<b>1,887</b>	<b>189</b>	<b>730</b>	<b>103</b>	<b>196</b>	<b>474</b>	<b>129</b>	<b>2</b>	<b>1 **</b>	<b>1162</b>	<b>8</b>	<b>474</b>	<b>129</b>	<b>42</b>

\* FOR CONTRACTORS INFORMATION ONLY. (NON-PAY)  
 \*\* REFER TO MISCELLANEOUS IRRIGATION DETAILS SHEET

**SUMMARY OF IRRIGATION QUANTITIES**

ITEM	1007 6001	1007 6002	1007 6003	1007 6004	1007 6005	5148-6001
	IRRIGATION GATE (18")	IRRIGATION GATE (30")	IRRIGATION WELL (18")	IRRIGATION WELL (24")	IRRIGATION WELL (30")	RIPRAP CANAL LINER
SHEET	EA	EA	EA	EA	EA	SF
1			3			
2				2		
3	1	1			3	8331
1DETAILS						
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>8331</b>

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm\SSUS036343.wsoftkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W\*E009A.dgn



**ATKINS**

TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (IRRIGATION)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			24
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**SUMMARY OF DRAINAGE QUANTITIES**

ITEM	158-6005	400-6002	400-6003	400-6010	402-6001	462-6002	462-6005	462-6007	462-6008	462-6009	464-6003	464-6005	464-6007	464-6008	464-6010	464-6021	464-6022
	SPEC EXCAV WORK (ORIGINAL)	*STRUCT EXCAV (BOX)	*STRUCT EXCAV	*STRUC EXCAV (SPECIAL)	TRENCH EXCAV PROTECTION	CONC BOX CULV (3 FT x 3 FT)	CONC BOX CULV (4 FT x 4 FT)	CONC BOX CULV (5 FT x 3 FT)	CONC BOX CULV (5 FT x 4 FT)	CONC BOX CULV (5 FT x 5 FT)	RC PIPE (CLASS III) (18 IN)	RC PIPE (CLASS III) (24 IN)	RC PIPE (CLASS III) (30 IN)	RC PIPE (CLASS III) (36 IN)	RC PIPE (CLASS III) (48 IN)	RC PIPE (CLASS IV) (42 IN)	RC PIPE (CLASS IV) (48 IN)
SHEET	CY	CY	CY	CY	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
1 OF 24			52.0	52							194						
2 OF 24			273	273							228	355					
3 OF 24			793	793							365	122	253	205			
4 OF 24			904	904							65				598		
5 OF 24	57	965	709	1674	739		466				247				158		
6 OF 24	204	1044	415	1459	600		569				183						
7 OF 24		1209	241	1450	539		439		212		244						
8 OF 24	7	379	284	663	600				197	358	223						
9 OF 24	414		364	432	427					509	65			175			
10 OF 24	251		1157	1408	600						142			627			
11 OF 24	143		1106	1249	675						370			499			
12 OF 24			609	609	335						130		602				
13 OF 24			33	18							65						
14 OF 24			522	522	100						719						
15 OF 24			453	453	180						118	539					
16 OF 24			514	514	60						137	243	379				
17 OF 24			695	695	580						130			630			
18 OF 24	33	815	208	1023	600	610								120			
19 OF 24	18	838	205	1043	600	531					144						
20 OF 24		688	364	1052	838	530					339						
21 OF 24		884	149	1033	187	87		513			195						
22 OF 24		1032	158	1190	814			323	375		206						
23 OF 24		246	537	783					225		334						275
24 OF 24			288	288	120						77					75	175
<b>TOTAL</b>	<b>1127</b>	<b>8100</b>	<b>11033</b>	<b>19580</b>	<b>8594</b>	<b>1758</b>	<b>1474</b>	<b>836</b>	<b>1009</b>	<b>867</b>	<b>4920</b>	<b>1259</b>	<b>1234</b>	<b>2256</b>	<b>756</b>	<b>75</b>	<b>450</b>

\* FOR CONTRACTORS INFORMATION ONLY. (NON-PAY)

**SUMMARY OF CULVERT QUANTITIES**

ITEM	104-6009	104-6031	400-6002	400-6005	400-6006	402-6001	432-6002	462-6015	466-6182
CULVERT NO	REMOVING CONC (RIPRAP)	REMOVING CONC (HEADWALL)	*STRUCT EXCAV (BOX)	CEM STABIL BKFL	CUT & RESTORING PAV	TRENCH EXCAV PROTECTION	RIPRAP (CONC) (5 IN)	CONC BOX CULV (7 FT x 4 FT)	WINGWALL (PW-1) (HW=7 FT)
NO	SY	CY	CY	CY	SY	LF	CY	LF	EA
1	50						6		
2	134	41	215	14	31	92	23	92	2
<b>TOTAL</b>	<b>171</b>	<b>41</b>	<b>215</b>	<b>14</b>	<b>31</b>	<b>92</b>	<b>29</b>	<b>92</b>	<b>2</b>

\* FOR CONTRACTORS INFORMATION ONLY. (NON-PAY)

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PentTable.tbl  
 DATE: 12/1/2022  
 FILE: pm1\SUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676M\*E009.dgn



**ATKINS**

TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (DRAINAGE)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			25
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**SUMMARY OF DRAINAGE QUANTITIES**

ITEM	465-6002	465-6003	465-6004	465-6013	465-6014	465-6021	465-6025	465-6027	465-6029	465-6030	465-6031	465-6033	465-6034	465-6035	465-6042	465-6043	465-6076	465-6158	465-XXX1	465-XXX2	465-XXX3
	MANH (COMPL) (PRM) (48IN)	MANH (COMPL) (PRM) (60IN)	MANH (COMPL) (PRM) (72IN)	INLET (COMPL) (PCO) (3FT) (NONE)	INLET (COMPL) (PCO) (3FT) (LEFT)	INLET (COMPL) (PCO) (5FT) (NONE)	INLET (COMPL) (PCO) (6FT) (NONE)	INLET (COMPL) (PCO) (6FT) (RIGHT)	INLET (COMPL) (PCU) (3FT) (NONE)	INLET (COMPL) (PCU) (3FT) (LEFT)	INLET (COMPL) (PCU) (3FT) (RIGHT)	INLET (COMPL) (PCU) (4FT) (NONE)	INLET (COMPL) (PCU) (4FT) (LEFT)	INLET (COMPL) (PCU) (4FT) (RIGHT)	INLET (COMPL) (PCU) (6FT) (LEFT)	INLET (COMPL) (PCU) (6FT) (RIGHT)	INLET (COMPL) (PSL)(RC) (6FTX6FT)	INLET (COMPL) (PAZD) (FG) (3FTX3FT- 3FTX3FT)	INLET (COMPL) (PCO) (7FT) (NONE)	INLET (COMPL) (PCU) (7FT) (NONE)	INLET (COMPL) (PCU) (7FT) (LEFT)
SHEET	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
1 OF 24																					
2 OF 24		1																2			
3 OF 24		1	1								2							2			
4 OF 24									1							2	1				
5 OF 24										1						1	3	4			
6 OF 24											2				2		2	2			
7 OF 24											1						1	4			
8 OF 24	1									2											1
9 OF 24			1							1											
10 OF 24			1						2			1		1							
11 OF 24	1		3						1		1		1					3			
12 OF 24			1						1	1				2							
13 OF 24									2												
14 OF 24	1	1							2												
15 OF 24		1							2												
16 OF 24			1						2			2									
17 OF 24			1						1		1	2									
18 OF 24			2											1							
19 OF 24			2							2				2							
20 OF 24	2		1						1	2	1	2									
21 OF 24									1		2										3
22 OF 24				1					1		1								1	2	
23 OF 24					3		1	2											2		
24 OF 24				1	1	1		2													
<b>TOTAL</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>18</b>	<b>9</b>	<b>11</b>	<b>7</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>17</b>	<b>3</b>	<b>2</b>	<b>4</b>

ITEM	465-XXX4	465-XXX5	467-6363	496-6002	496-6004	496-6007	496-6008
	INLET (COMPL) (PCU) (7FT) (RIGHT)	INLET (COMPL) (PSL)(RC) (7FTX7FT)	SET (TY II) (18 IN) (RCP) (6:1) (P)	REMOVE STR (INLET)	REMOVE STR (SET)	REMOVE STR (PIPE)	REMOVE STR (BOX CULVERT)
SHEET	EA	EA	EA	EA	EA	LF	LF
1 OF 24			12			188	
2 OF 24			10			504	
3 OF 24				2		998	
4 OF 24						334	
5 OF 24						246	
6 OF 24						176	
7 OF 24						290	
8 OF 24	2	2			6	107	
9 OF 24	1	1			4	63	
10 OF 24					2	26	
11 OF 24					2	180	
12 OF 24						91	
13 OF 24					4	175	
14 OF 24							
15 OF 24					2	96	
16 OF 24				1	1	156	
17 OF 24					4	84	
18 OF 24							
19 OF 24						246	
20 OF 24				2		650	
21 OF 24				2		648	
22 OF 24						276	90
23 OF 24				2		48	
24 OF 24							
<b>TOTAL</b>	<b>3</b>	<b>3</b>	<b>22</b>	<b>9</b>	<b>124</b>	<b>5582</b>	<b>90</b>



**ATKINS**  
TBPE REG. #F-474

**FM 676  
SUMMARY OF  
ESTIMATED QUANTITIES  
(DRAINAGE)**

SHEET 2 OF 2			
FED. RD. DIV. NO. 6	STATE PROJECT NO.		SHEET NO. 26
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: pm\US03036343.wsoftkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676M\*E009B.dgn

**SUMMARY OF TEMPORARY EROSION SEDIMENTATION AND WATER POLLUTION PREVENTION & CONTROL**

ITEM	160-6005	164-6025	164-6029	166-6002	168-6001	169-6003	506-6003	506-6011	506-6020	506-6024	506-6025	506-6026	506-6031	506-6041	506-6043	506-6045
	FURNISHING AND PLACING TOPSOIL	CELL FBR MLCH SEED(PERM)(URBAN)(SANDY)	CELL FBR MLCH SEED(TEMP)(WARM)	FERTILIZER *	VEGETATIVE WATERING**	SOIL RETENTION BLANKETS (CL 1) (TY C)	ROCK FILTER DAMS (INSTALL) (TY 3)	ROCK FILTER DAMS (REMOVE)	CONSTRUCTION EXITS (INSTALL) (TY 1)	CONSTRUCTION EXITS (REMOVE)	EXCAV (EROS & SEDM CONT, IN PLACE)	EMBANK (EROS & SEDM CONT, IN PLACE)	FRNT END LOADER (EROSION & SEDM CONT)	BIODEG EROSN CONT LOGS (INSTL)(12")	BIODEG EROSN CONT LOGS (REMOVE)	BIODEG EROSN CONT LOGS (INSTL)(6")
SHEET	CY	(SY)	(SY)	(TON)	(MG)	(SY)	(LF)	(LF)	(SY)	(SY)	(CY)	(CY)	(HR)	(LF)	(LF)	(LF)
<b>PHASE IA STEPS 1 - 4</b>																
1 OF 4	-	-	1235	0.06	39	-	-	-	-	-	-	-	-	600	600	-
2 OF 4	-	-	1328	0.07	42	-	34	34	-	-	315	315	48	444	444	-
3 OF 4	-	-	-	-	-	-	34	34	-	-	322	322	48	-	-	-
4 OF 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PHASE 1 STEP 1</b>																
1 OF 11	170	1533	470	0.10	63	-	-	-	-	-	-	-	-	149	149	-
2 OF 11	-	-	1163	0.06	37	-	-	-	-	-	-	-	-	132	132	-
3 OF 11	-	-	583	0.03	18	-	-	-	-	-	-	-	-	125	125	-
4 OF 11	-	-	1507	0.08	48	-	-	-	-	-	-	-	-	99	99	-
5 OF 11	-	-	1152	0.06	36	-	-	-	-	-	-	-	-	98	98	-
6 OF 11	-	-	1321	0.07	42	-	-	-	-	-	-	-	-	18	18	-
7 OF 11	-	-	1328	0.07	42	-	-	-	-	-	-	-	-	18	18	-
8 OF 11	-	-	923	0.05	29	-	-	-	-	-	-	-	-	9	9	-
9 OF 11	-	-	1287	0.07	41	-	-	-	-	-	-	-	-	36	36	-
10 OF 11	-	-	793	0.04	25	-	-	-	-	-	-	-	-	9	9	-
11 OF 11	-	-	1134	0.06	36	-	-	-	-	-	-	-	-	173	173	-
<b>PHASE 1 STEP 2</b>																
1 OF 1	198	1784	-	0.09	56	-	-	-	78	-	-	-	-	169	169	-
<b>SHEET TOTAL</b>	<b>368</b>	<b>3317</b>	<b>14224</b>	<b>0.91</b>	<b>554</b>	<b>0</b>	<b>68</b>	<b>68</b>	<b>78</b>	<b>0</b>	<b>637</b>	<b>637</b>	<b>96</b>	<b>2079</b>	<b>2079</b>	<b>0</b>

\* FOR CONTRACTORS INFORMATION ONLY. NO DIRECT PAYMENT. FERTILIZER QUANTITY IS BASED ON A RATE OF 500 LB/ACRE. SUBSIDIARY TO ITEM 164.

\*\* VEGETATIVE WATERING QUANTITY IS BASED ON A RATE OF 3400GAL/ACRE/CYCLE FOR 45 CYCLES.

\*\*\* RIGHT OF WAY SEDIMENT TRAP IS PAID FOR AS ITEM #506 6041

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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 FILE: pm1\SUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\GEN\676W\*E007.dgn



**ATKINS**

TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (EROSION CONTROL)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.			SHEET NO.
6				27
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

**SUMMARY OF TEMPORARY EROSION SEDIMENTATION AND WATER POLLUTION PREVENTION & CONTROL**

ITEM	160-6005	164-6025	164-6029	166-6002	168-6001	169-6003	506-6003	506-6011	506-6020	506-6024	506-6025	506-6026	506-6031	506-6041	506-6043	506-6045
	FURNISHING AND PLACING TOPSOIL	CELL FBR MLCH SEED(PERM)(URBAN)(SANDY)	CELL FBR MLCH SEED(TEMP)(WARM)	FERTILIZER *	VEGETATIVE WATERING**	SOIL RETENTION BLANKETS (CL 1)(TY C)	ROCK FILTER DAMS (INSTALL)(TY 3)	ROCK FILTER DAMS (REMOVE)	CONSTRUCTIO N EXITS (INSTALL)(TY 1)	CONSTRUCTION EXITS (REMOVE)	EXCAV (EROS & SEDM CONT, IN PLACE)	EMBANK (EROS & SEDM CONT, IN PLACE)	FRNT END LOADER (EROSION & SEDM CONT)	BIODEG EROSN CONT LOGS (INSTL)(12")	BIODEG EROSN CONT LOGS (REMOVE)	BIODEG EROSN CONT LOGS (INSTL)(6")
SHEET	CY	(SY)	(SY)	(TON)	(MG)	(SY)	(LF)	(LF)	(SY)	(SY)	(CY)	(CY)	(HR)	(LF)	(LF)	(LF)
<b>PHASE 2</b>																
1 OF 15	66	598	598	0.03	19	-	-	-	-	78	-	-	-	-	-	-
2 OF 15	163	1465	1465	0.08	46	-	-	-	-	-	-	-	-	61	74	13
3 OF 15	ALL QUANTITIES ARE ACCOUNTED FOR IN SHEET #2															
4 OF 15	48	436	436	0.02	14	-	-	-	-	-	-	-	-	139	178	39
5 OF 15	ALL QUANTITIES ARE ACCOUNTED FOR IN SHEET #4															
6 OF 15	112	1010	1010	0.05	32	-	-	-	-	-	-	-	-	253	292	39
7 OF 15	154	1388	1388	0.07	44	-	-	-	-	-	-	-	-	703	742	39
8 OF 15	39	353	353	0.02	11	927	100	100	-	-	-	-	-	654	680	26
9 OF 15	135	1212	1212	0.06	38	-	-	-	-	-	-	-	-	432	483	51
10 OF 15	30	266	266	0.01	8	-	-	-	-	-	-	-	-	64	76	12
11 OF 15	382	3439	3439	0.18	109	-	-	-	-	-	-	-	-	92	110	18
12 OF 15	53	481	481	0.02	15	-	-	-	-	-	-	-	-	210	242	32
13 OF 15	86	771	771	0.04	24	-	-	-	-	-	-	-	-	601	653	52
14 OF 15	100	897	897	0.05	28	302	75	75	-	-	-	-	-	464	521	57
15 OF 15	128	1152	1152	0.06	36	-	-	-	78	78	-	-	-	104	208	104
<b>PHASE 3</b>																
1 OF 15	36	324	324	0.02	10	-	-	-	78	78	-	-	-	-	-	-
2 OF 15	66	592	592	0.03	19	-	-	-	-	-	-	-	-	35	48	13
3 OF 15	ALL QUANTITIES ARE ACCOUNTED FOR IN SHEET #2															
4 OF 15	-	-	-	-	-	-	-	-	-	-	-	-	-	73	98	25
5 OF 15	ALL QUANTITIES ARE ACCOUNTED FOR IN SHEET #4															
6 OF 15	102	916	916	0.05	29	-	-	-	-	-	-	-	-	207	246	39
7 OF 15	223	2009	2009	0.10	64	-	-	-	-	-	-	-	-	391	430	39
8 OF 15	44	397	397	0.02	13	-	-	-	-	-	-	-	-	25	50	25
9 OF 15	136	1224	1224	0.06	39	-	-	-	-	-	-	-	-	106	138	32
10 OF 15	42	377	377	0.02	12	-	-	-	-	-	-	-	-	12	24	12
11 OF 15	82	743	743	0.04	23	-	-	-	-	-	-	-	-	18	36	18
12 OF 15	44	395	395	0.02	12	-	-	-	-	-	-	-	-	12	24	12
13 OF 15	113	1022	1022	0.05	32	-	-	-	-	-	-	-	-	173	230	57
14 OF 15	74	670	670	0.03	21	-	-	-	-	-	-	-	-	64	128	64
15 OF 15	147	1320	1320	0.07	42	-	-	-	78	78	-	-	-	58	116	58
<b>TOTAL</b>	<b>2973</b>	<b>26774</b>	<b>37681</b>	<b>2.11</b>	<b>1294</b>	<b>1229</b>	<b>243</b>	<b>243</b>	<b>312</b>	<b>312</b>	<b>637</b>	<b>637</b>	<b>96</b>	<b>7030</b>	<b>7906</b>	<b>876</b>

\* FOR CONTRACTORS INFORMATION ONLY. NO DIRECT PAYMENT. FERTILIZER QUANTITY IS BASED ON A RATE OF 100 LBS OF NITROGEN PER ACRE NPK 10-5-5. SUBSIDIARY TO ITEM 164.

\*\* VEGETATIVE WATERING QUANTITY IS BASED ON A RATE OF 3400GAL/ACRE/CYCLE FOR 45 CYCLES.

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: pm1\SUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676W\*E8007a.dgn



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (EROSION CONTROL)**

SHEET 2 OF 2			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			28
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/18/2022  
 FILE: pm1\ASUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\SIG\676w\*pm1.o\*08.dgn

SUMMARY OF PAVEMENT MARKINGS												
ITEM	M	N	D	P	B	A	F	G	E	J	K	L
	666-6036	666-6042	666-6048	666-6141	666-6300	666-6303	666-6312	666-6315	668-6077	668-6077	672-6007	672-6009
	REFL PAV MRK TY I (W) (8") (SLD) (100 MIL)	REFL PAV MRK TY I (W) (12") (SLD) (100 MIL)	REFL PAV MRK TY I (W) (24") (SLD) (100 MIL)	REFL PAV MRK TY I (Y) (12") (SLD) (100 MIL)	RE PM W/RET REQ TY I (W) (4") (BRK) (100 MIL)	RE PM W/RET REQ TY I (W) (4") (SLD) (100 MIL)	RE PM W/RET REQ TY I (Y) (4") (BRK) (100 MIL)	RE PM W/RET REQ TY I (Y) (4") (SLD) (100 MIL)	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (WORD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
SHEET	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(EA)	(EA)	(EA)	(EA)
1	1220	940	215	130	1050	2450	800	7420	9	7	133	253
2	1455	760	190		800	0	660	5880	10	10	121	229
3	1465	570	160		960	0	720	6040	10	10	121	232
4	960	590	170		960	0	710	5280	8	8	97	172
5	200	350	0		950	0	940	3700	2	2	92	93
6	1890	1200	260		850	0	540	4630	10	10	108	217
7	900	2175	214		832	3512	250	3904	18	10	90	96
<b>TOTAL</b>	<b>8090</b>	<b>6585</b>	<b>1209</b>	<b>130</b>	<b>6402</b>	<b>5962</b>	<b>4620</b>	<b>36854</b>	<b>67</b>	<b>57</b>	<b>762</b>	<b>1292</b>

SUMMARY OF SIGNING								
ITEM	636-6001	644-6027	644-6028	644-6030	644-6070	644-6076	685-6004	685-6006
	ALUMINUM SIGNS (TY A)	IN SM RD SN SUP&AM TYS80(1) SA(P)	IN SM RD SN SUP&AM TYS80(1) SA(P-BM)	IN SM RD SN SUP&AM TY S80(1) SA(T)	RELOCATE SM RD SN SUP & AM TY S80	REMOVE SM RD SN SUP & AM	INSTL RDS FLSH BCN ASSM (SOLAR PWRD)	REMOV RDS FLSH BCN AM (SOLAR PWRD)
SHEET	SF	EA	EA	EA	EA	EA	EA	EA
1	209	15	-	2	4	14	-	-
2	149	8	-	2	-	9	-	-
3	65	4	-	-	-	4	-	-
4	75	7	-	-	-	6	-	-
5	192	14	-	-	-	10	3	3
6	274	18	-	5	-	21	1	1
7	184	11	2	2	-	10	-	-
<b>TOTAL</b>	<b>1147</b>	<b>77</b>	<b>2</b>	<b>11</b>	<b>4</b>	<b>74</b>	<b>4</b>	<b>4</b>



**ATKINS**

TBPE REG. #F-474

FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (SIGN & PAVEMENT  
 MARKINGS)

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			29
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**SUMMARY OF TRAFFIC SIGNALS**

ITEM	CODE	DESCRIPTION	UNIT	FM 676 AT SH 364 [1]		FM 676 AT MOOREFIELD [2]		FM 676 AT INSPIRATION [3]		FM 676 AT LOS EBANOS [4]		FM 676 AT TROSPER [5]		FM 676 AT SH 107 [6]		TOTAL QUANTITY
				ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	
416	6030	DRILL SHAFT (TRF SIG POLE) (24 IN)	LF	22.8		22.8		22.8		22.8		22.8		22.8		136.8
416	6032	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	52.8		52.8		52.8		52.8		52.8		30.4		294.4
618	6016	CONDT (PVC) (SCH 40) (1")	LF	158		120		114		79		106		64		641
618	6023	CONDT (PVC) (SCH 40) (2")	LF	1498		980		1514		1095		893		1183		7163
618	6033	CONDT (PVC) (SCH 40) (4")	LF	145		170		150		95		100		423		1083
618	6058	CONDT (PVC) (SCH 80) (4")	LF	95		235		415		340		345		1042		2472
618	6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF	145		0		0		0		0		1335		1480
620	6007	ELEC CONDR (NO. 8) BARE	LF	105		170		210		95		100		423		1103
620	6009	ELEC CONDR (NO. 6) BARE	LF	20		35		20		20		20		10		125
620	6010	ELEC CONDR (NO. 6) INSULATED	LF	40		70		40		40		40		20		250
621	6005	TRAY CABLE (4 CONDR) (12 AWG)	LF	220		225		225		230		225		801		1926
624	6002	GROUND BOX TY A (122311) W/APRON	EA	17		19		18		15		16		13		98
624	6010	GROUND BOX TY D (162922) W/APRON	EA	1		1		1		1		1		1		6
625	6002	ZINC-COAT STL WIRE STAND (3/16")	LF											545		545
625	6003	ZINC-COAT STL WIRE STAND (3/8")	LF	930		880		870		900		890				4470
625	6004	ZINC-COAT STL WIRE STAND (5/16")	LF											1090		1090
628	6301	ELC SRV TY T 120/240 000 (NS)GS (L) TS (O	EA			1		1		1		1				4
680	6002	INSTALL HWY TRF SIG (ISOLATED)	EA	1		1		1		1		1		1		6
*		CONTROLLER W/CABINET (SIGNAL) & FOUNDATIO	EA			1		1		1		1				4
*		SIGN, "PEDESTRAIN", R10-3e, 9"X15"	EA	8		8		8		8		8		4		44
*		SIGN, "LEFT TURN YEILD", R10-12, 30"X36"	EA	4		2		2		3		2		4		17
*		STREET NAME SIGNS (VAR X 18")	EA	4		4		4		4		4		4		24
*		ROADWAY LIGHT ON TRAF SIG POLE (250 WATT	EA	2		2		2		2		2		4		14
*		ROD GROUND 5/8" X 8'	EA			1		1		1		1				4
*		PHOTOELECTRIC CELL	EA	1		2		2		2		2		2		11
680	6004	REMOVING TRAFFIC SIGNALS	EA	1		1		1		1		1		1		6
682	6001	VEH SIG SEC (12") LED (GRN)	EA	12		10		10		11		10		12		65
682	6002	VEH SIG SEC (12") LED (GRN ARW)	EA	4		2		2		3		2		4		17
682	6003	VEH SIG SEC (12") LED (YEL)	EA	12		10		10		11		10		12		65
682	6004	VEH SIG SEC (12") LED (YEL ARW)	EA	4		2		2		3		2		4		17
682	6005	VEH SIG SEC (12") LED (RED)	EA	12		10		10		11		10		12		65
682	6018	PED SIG SEC LED (COUNTDOWN)	EA	8		8		8		8		8		8		48
682	6051	BACKPLATE W/REFL BRDR(3 SEC)ALUM	EA	8		8		8		8		8		8		48
682	6052	BACKPLATE W/REFL BRDR(4 SEC)ALUM	EA	4		2		2		3		2		4		17
684	6010	TRF SIG CBL (TY A) (12 AWG) (5 CONDR)	LF	1765		1885		1660		1690		1660		3065		11725
684	6012	TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	555		600		475		510		495		1635		4270
684	6080	TRF SIG CBL (TY C) (14 AWG) (2 CONDR)	LF	3198		2575		3439		3060		2813		3138		18223
684	6007	TRF SIG CBL (TY A) (12 AWG) ( 2 CONDR)	EA	1185		1270		1120		1065		1110		2181		7931
686	6007	INS TRF SIG PL AM(S) STR (TY B)	EA	1		2		2		2		2				9
686	6008	INS TRF SIG PL AM(S) STR (TY B) LUM	EA	1		2		2		2		2		4		13
686	6020	INS TRF SIG PL AM(S) STR (TY D) LUM	EA											2		2
687	6001	PED POLE ASSEMBLY	EA	4		4		4		4		4		8		28
688	6001	PED DETECT PUSH BUTTON (APS)	EA											8		8
688	6004	VEH LP DETECT (SAWCUT)	LF	1653		1859		1832		1588		1722		1144		9798
6027	6003	CONDUIT (PREPARE)	LF	755										0		755
6027	6008	GROUND BOX (PREPARE)	EA	7										7		14
6054	6001	SPREAD SPECTRUM RADIO	EA	1		1		1		1		1		1		6
6054	6002	COAXIAL CABLE	LF	10		35		50		50		50		10		205
6061	6001	GPS COMMUNICATIONS UNIT	EA	1		1		1		1		1		1		6

\*FOR CONTRACTOR INFORMATION ONLY. ITEMS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 680



**ATKINS**  
TBPE REG. #F-474

**SUMMARY OF ESTIMATED QUANTITIES (SIGNALIZATION)**

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			30
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

\*FOR CONTRACTOR INFORMATION ONLY. ITEMS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 680

PLOT DRIVER: RD\*11x17\*PDF.d1t  
PENTTABLE: PenTable.tbl  
DATE: 11/17/2022  
FILE: pm\...SUS036343.wsoftk.ins.com:ATKNTX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\FM676\SIG\*QTY\*DAL.dgn

PLOT DRIVER: RD\*11x17\*PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm1\\SUS03036343.wsoftkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676M+E&002a.dgn

BASELINE STATION	STATION CUT (CY)	STATION FILL (CY)	ACCUM CUT (CY)	ACCUM FILL (CY)	MASS ORDINATE (CY)
65+57.85	0	0	0	0	0
66+00.00	28	0	28	0	28
66+49.81	48	0	76	0	76
66+68.89	17	0	93	0	93
67+00.00	38	1	131	1	130
67+54.93	68	2	199	3	196
68+00.00	66	3	265	6	259
68+35.40	63	4	328	10	318
68+57.14	30	2	358	12	346
69+00.00	55	4	413	16	397
69+63.77	103	4	516	19	497
70+00.00	86	3	602	23	579
70+18.24	56	2	658	25	633
70+63.62	113	5	771	30	741
71+00.00	89	4	860	34	826
71+40.98	113	2	973	36	937
71+65.52	49	0	1022	36	986
72+00.00	70	1	1092	37	1055
72+28.30	70	0	1162	37	1125
72+80.00	0	0	1162	37	1125
73+00.00	45	7	1207	44	1163
74+00.00	333	16	1540	60	1480
75+00.00	416	1	1956	61	1895
76+00.00	463	1	2419	62	2357
77+00.00	445	0	2864	62	2802
77+60.00	260	0	3124	62	3062
78+60.00	452	0	3576	62	3514
79+00.00	191	0	3767	62	3705
80+00.00	355	1	4122	63	4059
81+00.00	419	1	4541	64	4477
82+00.00	434	0	4975	64	4911
83+00.00	356	3	5331	67	5264
84+00.00	323	3	5654	70	5584
85+00.00	351	0	6005	70	5935
86+00.00	336	1	6341	71	6270
87+00.00	277	1	6618	72	6546
88+00.00	337	0	6955	72	6883
89+00.00	417	0	7372	72	7300
90+00.00	360	0	7732	72	7660
91+00.00	317	1	8049	73	7976
92+00.00	400	2	8449	75	8374
93+00.00	497	0	8946	75	8871
94+00.00	472	0	9418	75	9343
95+00.00	347	0	9765	75	9690
96+00.00	222	0	9987	75	9912
97+00.00	183	1	10170	76	10094
98+00.00	236	1	10406	77	10329
99+00.00	378	0	10784	77	10707
100+00.00	436	0	11220	77	11143
101+00.00	496	6	11716	83	11633
102+00.00	591	10	12307	93	12214
103+00.00	560	7	12867	100	12767
104+00.00	403	30	13270	130	13140
105+00.00	326	53	13596	183	13413
106+00.00	269	87	13865	270	13595
107+00.00	220	92	14085	362	13723
108+00.00	373	32	14458	394	14064
109+00.00	437	0	14895	394	14501
110+00.00	346	0	15241	394	14847
111+00.00	313	0	15554	394	15160
112+00.00	349	0	15903	394	15509
113+00.00	379	0	16282	394	15888

BASELINE STATION	STATION CUT (CY)	STATION FILL (CY)	ACCUM CUT (CY)	ACCUM FILL (CY)	MASS ORDINATE (CY)
114+00.00	387	0	16669	394	16275
115+00.00	334	2	17003	396	16607
116+00.00	242	5	17245	401	16844
117+00.00	239	7	17484	408	17076
118+00.00	302	4	17786	412	17374
119+00.00	294	0	18080	412	17668
120+00.00	252	2	18332	414	17918
121+00.00	278	3	18610	417	18193
122+00.00	404	1	19014	418	18596
123+00.00	506	0	19520	418	19102
124+00.00	495	0	20015	418	19597
125+00.00	406	1	20421	419	20002
126+00.00	322	2	20743	421	20322
127+00.00	291	3	21034	424	20610
128+00.00	364	4	21407	428	20979
129+00.00	415	2	21822	430	21392
130+00.00	345	2	22167	432	21735
131+00.00	311	3	22478	435	22043
132+00.00	363	2	22841	437	22404
133+00.00	427	3	23268	440	22828
134+00.00	498	1	23766	441	23325
135+00.00	538	0	24304	441	23863
136+00.00	464	2	24768	443	24325
137+00.00	332	3	25100	446	24654
138+00.00	248	1	25348	447	24901
139+00.00	217	27	25565	474	25091
140+00.00	276	27	25841	501	25340
141+00.00	379	0	26220	501	25719
142+00.00	371	1	26591	502	26089
143+00.00	334	2	26925	504	26421
144+00.00	332	1	27257	505	26752
145+00.00	267	1	27524	506	27018
146+00.00	152	10	27676	516	27160
147+00.00	121	11	27797	527	27270
148+00.00	186	5	27983	532	27451
149+00.00	398	5	28381	537	27844
150+00.00	582	1	28963	538	28425
151+00.00	566	1	29529	539	29470
152+00.00	503	3	30032	542	29490
153+00.00	420	20	30452	562	29890
154+00.00	454	18	30906	580	30326
155+00.00	508	1	31414	581	30833
156+00.00	424	3	31838	584	31254
157+00.00	424	2	32262	586	31676
158+00.00	497	0	32759	586	32173
159+00.00	468	1	33227	587	32640
160+00.00	431	1	33658	588	33070
161+00.00	496	0	34154	588	33566
162+00.00	518	0	34672	588	34084
163+00.00	450	0	35122	588	34534
164+00.00	417	0	35539	588	34951
165+00.00	506	0	36045	588	35457
166+00.00	563	0	36608	588	36020
167+00.00	455	0	37063	588	36475
168+00.00	352	0	37415	588	36827
169+00.00	322	0	37737	588	37149
170+00.00	382	3	38119	591	37528
171+00.00	455	2	38574	593	37981
172+00.00	443	0	39017	593	38424
173+00.00	378	1	39395	594	38801
174+00.00	373	0	39768	594	39174
175+00.00	461	0	40229	594	39635

BASELINE STATION	STATION CUT (CY)	STATION FILL (CY)	ACCUM CUT (CY)	ACCUM FILL (CY)	MASS ORDINATE (CY)
176+00.00	531	0	40760	594	40166
177+00.00	535	0	41295	594	40701
177+50.00	283	0	41578	594	40984
178+50.00	443	0	42021	594	41427
179+00.00	184	0	42205	594	41611
180+00.00	305	0	42510	594	41916
181+00.00	351	3	42861	597	42264
182+00.00	422	2	43283	599	42684
183+00.00	481	0	43764	599	43165
184+00.00	413	0	44177	599	43578
185+00.00	231	14	44408	613	43795
186+00.00	143	16	44551	629	43922
187+00.00	175	3	44726	632	44094
188+00.00	243	2	44969	634	44335
189+00.00	357	1	45326	635	44691
190+00.00	432	0	45758	635	45123
191+00.00	348	2	46106	637	45469
192+00.00	246	5	46532	642	45710
193+00.00	253	4	46785	646	46139
194+00.00	347	0	47132	646	46486
195+00.00	387	0	47519	646	46873
196+00.00	331	0	47850	646	47204
197+00.00	281	0	48131	646	47485
198+00.00	233	0	48364	646	47718
199+00.00	223	0	48587	646	47941
200+00.00	231	0	48818	646	48172
201+00.00	270	1	49088	647	48441
202+00.00	318	3	49406	650	48756
203+00.00	342	14	49748	664	49084
204+00.00	731	11	50479	675	49804
205+00.00	1034	0	51513	675	50388
206+00.00	762	0	52275	675	51600
207+00.00	489	6	52764	681	52083
208+00.00	487	10	53251	691	52560
208+24.00	146	1	53397	692	52705

NOTE:  
 SHRINKAGE OR SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING EXCAVATION SUBTOTAL QUANTITY. EXCAVATION (ROADWAY) SUBTOTAL VOLUME WAS MEASURED FROM ORIGINAL AND FINAL POSITIONS. EXCAVATION GRAND TOTAL IS THE TOTAL EXCAVATION WHEN SUBTRACTING REWORK OF BASE MATERIAL AND SALV, HAUL, & STOCKPILE OF ASPHALT.

\* PAY ITEM 305-6015 IS BASED ON SQUARE YARDS (SY) AND WAS CONVERTED TO CUBIC YARDS (CY) BY ACCOUNTING FOR THE 1.5" THICKNESS.



**ATKINS**

TBPE REG. #F-474

**FM 676  
 SUMMARY OF  
 ESTIMATED QUANTITIES  
 (EARTHWORK TABULATION)**

SHEET 1 OF 2

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				31	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		



**GENERAL NOTES AND SPECIFICATIONS DATA:**

USE A POWER-BROOM WHEN CLEANING THE ROADWAY AS NEEDED.

REMOVE & DISPOSE ALL MATERIAL NOT DEEMED SALVAGEABLE BY THE ENGINEER, UNLESS OTHERWISE SHOWN ON THE PLANS.

ON EXISTING PAVEMENT THAT WILL REMAIN IN PLACE, SAND BLAST OR SURFACE TREAT IN ORDER TO REMOVE EXISTING STRIPING.

DO NOT BLOCK DRAINAGE WHEN HANDLING & STOCKPILING EXCAVATED MATERIAL.

MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTIONS THROUGH ALL PHASES OF CONSTRUCTION.

MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF CONSTRUCTION.

ALWAYS COMPLETE THE PROPOSED DRIVEWAYS DURING THEIR TCP PHASE BEFORE SWITCHING TRAFFIC TO A NEW PHASE UNLESS DIRECTED BY THE ENGINEER.

**TRAFFIC CONTROL DEVICES:**

AT THE COMMENCEMENT OF THE PROJECT, ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCEPTABLE CONDITION, AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AS PER GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES AND FEATURES.

NOTIFY THE AREA ENGINEER(AE) IN WRITING(E-MAIL IS ACCEPTABLE) ONCE THE TRAFFIC CONTROL PLAN(TCP) AND ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED AS PER PLANS ON THE PROJECT SO THAT THE DEPARTMENT'S RESPONSIBLE PERSON ACCOMPANIED BY THE CONTRACTOR'S RESPONSIBLE PERSON CAN CONDUCT A NIGHT INSPECTION ON THE SAID TCP AND TRAFFIC CONTROL DEVICES. COMMENCEMENT OF WORK WILL NOT BE AUTHORIZED NOR ALLOWED UNTIL THE AE NOTIFIES THE CONTRACTOR IN WRITING(E-MAIL IS ACCEPTABLE) TO PROCEED WITH THE WORK.

CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF TRAFFIC CONTROL DEVICES IN ACCEPTABLE CONDITION TO REPLACE ANY DAMAGED TRAFFIC CONTROL DEVICE WITHIN 24 HOURS OF NOTIFICATION.

PROVIDE ADDITIONAL SIGNS AND BARRICADES AS NECESSARY TO ADDRESS FIELD CONSTRUCTIBILITY & VISIBILITY. THESE ADDITIONAL SIGNS WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

REMOVE OR COMPLETELY COVER ALL EXISTING SIGNS WHICH ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN.

ADJUST STOP SIGNS AS NEEDED ON INTERSECTING STREETS DURING THE VARIOUS CONSTRUCTION PHASES. DO NOT REMOVE ANY EXISTING STOP SIGNS UNTIL TEMPORARY SIGNS ARE IN PLACE.

COORDINATE THE TRAFFIC CONTROL PLAN AND THE VARIOUS SEQUENCES OF CONSTRUCTION WITH ADJACENT CONSTRUCTION PROJECTS IF APPLICABLE, TO ENSURE THE UNINTERRUPTED AND SAFE FLOW OF TRAFFIC.

NOTIFY THE ENGINEER IN WRITING WHEN MAJOR TRAFFIC CHANGES ARE TO BE MADE. NOTIFICATIONS MUST BE GIVEN A MINIMUM OF THREE WORKING DAYS PRIOR TO THE CHANGE.

ALL WORK ZONE PAVEMENT MARKINGS FOR THIS PROJECT SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC.

**SAFETY:**

PROTECT EXPOSED PITS THAT MUST REMAIN OPEN DURING NON-WORKING HOURS AS PER OSHA REQUIREMENTS.

**PROJECT SPECIFIC NOTES:**

FOR PEDESTRIAN SAFETY, PLASTIC CONSTRUCTION FENCING (MINIMUM OF 4 FEET HIGH) SHALL BE USED AROUND ALL OPEN EXCAVATIONS, AS REQUIRED OR DIRECTED BY THE ENGINEER. ITEM SHALL NOT BE PAID FOR DIRECTLY BUT WILL BE PART OF ITEM 502, "BARRICADES, SIGNS AND TRAFFIC HANDLING".

THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION.

IRRIGATION CROSSINGS SHALL BE COORDINATED AND COMPLETED BEFORE ANY ROADWAY CONSTRUCTION.

ALL THE WORK ZONE PAVEMENT MARKINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE IN ACCORDANCE WITH THE STANDARD SHEETS, "BC (11)-14, BC (12)-14, WZ(STPM)-13" AND THE T.M.U.T.C.D.

ALL WORK ZONE GUIDEMARKS, SHORT TERM MARKINGS AND STANDARD MARKINGS USED ON THIS PROJECT, WILL BE PAID FOR UNDER ITEM 662, "WORK ZONE PAVEMENT MARKINGS," AS REQUIRED BY THE T.M.U.T.C.D.

RAISED PAVEMENT MARKINGS SHALL BE USED WITH WORK ZONE PAVEMENT MARKER LANE DELINEATION AS PER TCP LAYOUTS AND BARRICADE AND CONSTRUCTION STANDARD SHEETS, BC(11)-14, BC (12)-14, WZ(STPM)-13 AND/OR AS DIRECTED BY THE ENGINEER.

ALL DRUMS USED ON THIS PROJECT FOR TRAFFIC CONTROL SHALL BE PLASTIC. PLASTIC DRUMS SHALL BE USED IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S RECOMMENDATION, OR AS DIRECTED BY THE ENGINEER. REFLECTORS AND CHEVRONS SHALL BE INSTALLED ON DRUMS ON TANGENTS AND TAPERS, RESPECTIVELY. REFER TO THE PLANS AND BC STANDARD SHEETS FOR MORE INFORMATION.

THE PORTION OF THIS PROJECT WHICH COINCIDES WITH EXISTING ROADS AND/OR PRIVATE DRIVES SHALL BE KEPT OPEN TO TRAFFIC AT ALL TIMES, UNLESS OTHERWISE PROVIDED FOR OR AS APPROVED BY THE ENGINEER.

WHEN CONNECTING PROPOSED ROADWAY TO SECTIONS OF EXISTING PAVEMENT BEING USED BY TRAFFIC AND SUCH OPERATIONS RESULT IN A DROP-OFF OF MORE THAN ONE (1) INCH, A 3:1 SLOPE WILL BE REQUIRED. THE SLOPE MUST BE CONSTRUCTED OF A COMPACTED MATERIAL CAPABLE OF SUPPORTING VEHICLES. FLAGGERS AND APPROPRIATE SIGNING TO SAFELY GUIDE TRAFFIC THROUGH THE WORK AREA WILL BE REQUIRED, AND/OR AS DIRECTED BY THE ENGINEER.

ALL WORK AND MATERIALS REQUIRED FOR TRAFFIC HANDLING AND REMOVAL OF EXIST RAISED PAVEMENT MARKERS, ETC. WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PART OF ITEM 502. REMOVAL OF EXISTING PAVEMENT MARKINGS WILL BE ACCOMPLISHED BY ONE COURSE SURFACE TREATMENT OR ANOTHER EFFECTIVE METHOD ACCEPTABLE TO THE ENGINEER AND WILL BE PAID FOR UNDER ITEM 677.

TOPSOIL TO BE SCARIFIED, SALVAGED, AND STOCKPILED OUTSIDE THE CLEARZONE.

EXISTING SIGNS, INCLUDING STOP SIGNS, TO RELOCATED AS NEEDED. PAYMENT IS TO BE CONSIDERED SUBSIDIARY TO ITEM 502, BARRICADES, SIGNS, AND TRAFFIC HANDLING.

4,865 SY OF MILLING & RESURFACING TO BE PERFORMED ON SH 364 IN ORDER TO RESTORE EXISTING PAVEMENT MARKINGS OBLITERATED BY THE TCP.


FOR THE PURPOSES OF THIS TRAFFIC CONTROL PLAN, THE FOLLOWING DEFINITIONS SHALL APPLY:

- PEAK HOURS
  - MON.-FRI. 6:00 A.M. TO 8:30 A.M.
  - MON.-FRI. 4:00 P.M. TO 7:00 P.M.
- OFF-PEAK HOURS
  - MON.-FRI. 9:00 A.M. TO 4:00 P.M.
- NIGHTTIME HOURS
  - MON.-FRI. 8:00 P.M. TO 6:00 A.M.
- WEEKEND HOURS
  - FRI. 8:00 P.M. TO MON. 6:00 A.M.

**TRAFFIC CONTROL PLAN NOTES**

SHEET 1 OF 1 SHEETS

PHARR DISTRICT STANDARD

 Texas Department of Transportation ©TxDOT 2017		FEDERAL AID PROJECT NO.			SHEET NO.	
TEXAS		6			33	
DIST.		COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
PHR		HIDALGO	1064	01	032	FM 676

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# SEQUENCE OF CONSTRUCTION

NO PHASE OF CONSTRUCTION SHALL START UNTIL COMPLETION OF PREVIOUS PHASE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

INSTALL PROJECT LIMIT AND ADVANCE WARNING SIGNS, CROSSROADS BARRICADES/SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP), IN ACCORDANCE WITH THE TMUTCD AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY PROPOSED ROADWAY CONSTRUCTION, AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT, UNTIL COMPLETION AND ACCEPTANCE OF THE PROJECT BY TxDOT.

RELOCATION AND ADJUSTMENT OF EXISTING UTILITIES CONFLICTING W/PROPOSED ROADWAY & DRAINAGE IMPROVEMENTS SHALL BE ADJUSTED PRIOR TO COMMENCING ANY PROPOSED IMPROVEMENTS.

THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE IRRIGATION DISTRICT AT A MINIMUM TWO WEEKS PRIOR TO SCHEDULING IRRIGATION CROSSING INSTALLATIONS. CONSTRUCT THE PROPOSED 18 IN & 24 IN IRRIGATION CULVERT CROSSINGS AT THE FOLLOWING STATIONS: STA 98+86, STA 118+88, STA 125+90 AND STA 170+20 PRIOR TO COMMENCING PHASE IA CONSTRUCTION, AND AFTER SIGNS HAVE BEEN RELOCATED. THE CONTRACTOR WILL CONSTRUCT IRRIGATION CROSSINGS (CUT & RESTORE) SUCH THAT CONSTRUCTION ON THAT PORTION OF THE ROADWAY WILL BE COMPLETE & BACK IN SERVICE AT THE END OF EACH WORK DAY. STEEL PLATING CAN BE USED WITH THE APPROVAL FROM ENGINEER. TCP FOR LATERAL, CULVERT & TRUNKLINE INSTALLATION WILL BE HANDLED BY STANDARD SHEETS TCP (2-1)-12, TCP (2-2)-12, TCP (2-3)-12. PROVIDE APPROPRIATE TRAFFIC CONTROL DEVICES, INCLUDING SIGNING, AS REQUIRED. THE RESTORATION OF ALL-WEATHER SURFACE ROADWAY CROSSINGS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR WILL BE GIVEN THREE (3) CALENDAR DAYS TO COMPLETE EACH PROPOSED IRRIGATION CULVERT CROSSING AT STA 98+86, STA 118+88, STA 125+90 AND STA 170+20. THIS WORK WILL BE DONE PRIOR TO PHASE I. CULVERT CROSSING 137+71.45 WILL BE CONSTRUCTED IN PHASE IA

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE AT ALL TIMES, FOR THE DURATION OF THE JOB. INSTALL APPROPRIATE SEDIMENT AND STORM WATER POLLUTION CONTROL MEASURES AS SHOWN ON THE SW3P LAYOUTS AND STANDARDS, OR AS DIRECTED BY ENGINEER.

TO ACCOMMODATE THE VARIOUS PHASES OF CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE TEMPORARY ADJUSTMENTS AND RELOCATION OF EXISTING SIGNAL HEADS, POLES AND ANY OTHER INCIDENTAL WORK NECESSARY TO PROVIDE FOR PROPER TRAFFIC SIGNAL OPERATION.

ALL DRIVEWAY AND CROSS STREET CULVERTS THAT ARE IN CONFLICT WITH THE DETOUR PAVEMENT WILL BE REMOVED. ANY CULVERT THAT IS TO REMAIN WILL BE CALLED OUT IN THE PLANS.

THE EXISTING TRAFFIC SIGNAL SYSTEMS AT ALL SIGNALIZED INTERSECTIONS SHALL REMAIN IN SERVICE UNTIL THE PROPOSED SIGNALS AT THESE INTERSECTIONS ARE CONSTRUCTED AND PLACED INTO SERVICE.

CONSTRUCT THE PROPOSED TRAFFIC SIGNALS AS MAY BE PERMISSIBLE DURING THE VARIOUS AND APPROPRIATE PHASES OF CONSTRUCTION, PER THE TRAFFIC SIGNAL PLANS.

## PHASE IA

SEQUENCE OF CONSTRUCTION FOR ALL STEPS IN PHASE IA ARE LOCATED IN TRAFFIC CONTROL PLAN PHASE IA SHEETS 1-4. CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE IRRIGATION DISTRICT AT A MINIMUM TWO WEEKS PRIOR TO SCHEDULING IRRIGATION CROSSING INSTALLATIONS.

CONSTRUCTION AND TCP FOR THE IRRIGATION CROSSING SHALL OCCUR DURING OFF PEAK HOURS BETWEEN THE HOURS OF 8:30 AM AND 3:30 PM, OR AT THE DISCRETION OF THE ENGINEER. THE ROADWAY WILL BE BACK IN SERVICE AT THE END OF EACH WORK DAY.

THE CONTRACTOR IS TO CALL THE IRRIGATION DISTRICT A MINIMUM OF ONE WEEK PRIOR TO CONSTRUCTION ON THE CROSSING.

THE CONTRACTOR WILL BE GIVEN A TOTAL OF FOUR CALENDAR DAYS AFTER THEIR START TIME TO COMPLETE THEIR PORTION OF THE WORK AS DETAILED ON THE IRRIGATION CROSSING SHEETS.

## PHASE I (STEP 1)

CONSTRUCT DETOUR ON SOUTH SIDE OF EXISTING ROADWAY FROM STA 72+77.85 TO STA 206+40.71 AS SHOWN ON THE TCP PLANS. ALL TEMPORARY PAVEMENT WILL CONSIST OF 1/2 INCH ACP, TYPE D OVER 12 INCH FLEX BASE.

MAINTAIN EXISTING ROADWAY STRIPING. INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES AND SIGNING AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS.

ACCESS TO ALL DRIVEWAYS NORTH AND SOUTH OF THE PROPOSED ROADWAY SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

CONTRACTOR SHALL REMOVE ONLY ENOUGH MATERIAL TO CONSTRUCT DETOURS, WHICH CAN BE DONE THE SAME DAY.

## PROPOSED TRAFFIC SIGNALS

THE PROPOSED TRAFFIC SIGNAL SYSTEM AT SH 107 IS TO BE INSTALLED DURING PHASE I FOR TEMPORARY SIGNAL USE DURING THE REMAINING PHASES.

## PHASE I (STEP 2)

INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES AND SIGNING AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS.

BUILD NORTH HALF OF PROPOSED WIDENING AS SHOWN IN THE PLANS. OVERLAY TO BE PERFORMED USING TCP (2-2)-12.

ACCESS TO ALL DRIVEWAYS NORTH AND SOUTH OF THE PROPOSED ROADWAY SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.

## PHASE I (STEP 3)

APPLY 3.5" ACP OVERLAY TO THE ENTIRE ROADWAY SECTION FROM STA 65+57.85 TO STA 72+77.85. IT SHALL BE PERFORMED USING TCP (2-2)-12.

## PHASE II

INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES AND SIGNING AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS.

ELIMINATE EXISTING STRIPING ON EASTBOUND TRAVEL LANE FROM STA 78+67.00 TO STA 213+50.00. PLACE WORK ZONE PAVEMENT MARKINGS ON NEW SECTION OF ROADWAY, DETOUR AND TRANSITION SECTIONS AS SHOWN IN THE TCP PLANS.

SHIFT EAST AND WESTBOUND TRAFFIC ONTO THE SOUTHERN HALF OF THE ROADWAY, AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS.

CONSTRUCT THE NORTHERN HALF OF THE PROPOSED ROADWAY AND DRAINAGE, FROM STA 72+77.85 TO STA 204+52.53 (SH 107) AS SHOWN ON THE TCP LAYOUTS, TYPICAL SECTIONS, ROADWAY P&P SHEETS, AND U&D SHEETS.

ACCESS TO THE EXISTING ROADWAY, FROM ALL DRIVEWAYS AND INTERSECTING STREETS, NORTH AND SOUTH OF THE ROADWAY, SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.

PHASE AND CONSTRUCT THE ROADWAY WIDENING AND OVERLAYS FOR ALL INTERSECTING STREETS AND DRIVEWAYS, AS REQUIRED AND/OR AS SHOWN ON THE TCP LAYOUTS AND ROADWAY P&P SHEETS.

## PHASE III

INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES AND SIGNING AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS.

STRIPING THE NEWLY CONSTRUCTED NORTHERN HALF OF THE ROADWAY FOR TWO LANES OF EAST AND WESTBOUND TRAFFIC, AS SHOWN ON THE TCP LAYOUTS AND TYPICAL SECTIONS. PLACE REMOVAL WORK ZONE PAVEMENT MARKINGS ON INTERSECTING STREETS (SIGNALIZED INTERSECTIONS ONLY).

SHIFT EXISTING EAST AND WESTBOUND TRAFFIC ONTO THE NEWLY CONSTRUCTED, NORTHERN HALF OF THE ROADWAY.

CONSTRUCT THE SOUTHERN HALF OF THE PROPOSED ROADWAY AND DRAINAGE, AS SHOWN ON THE TCP LAYOUTS, TYPICAL SECTIONS, ROADWAY P&P SHEETS, AND U&D SHEETS.

ACCESS TO THE NEWLY CONSTRUCTED NORTHERN HALF OF THE ROADWAY FROM ALL DRIVEWAYS AND INTERSECTING STREETS, TO THE NORTH AND SOUTH OF THE ROADWAY, SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.

PHASE AND CONSTRUCT THE ROADWAY WIDENING AND OVERLAYS FOR ALL INTERSECTING STREETS AND DRIVEWAYS AS REQUIRED, AND/OR AS SHOWN ON THE TCP LAYOUTS AND ROADWAY P&P SHEETS.

## PHASE IV

COMPLETE CONSTRUCTION TIE-IN AND DRIVEWAY TRANSITIONS TO THE NEWLY CONSTRUCTED ROADWAY. COMPLETE THE FINAL COURSE OF ACP. PLACE SHORT-TERM GUIDE MARK TABS UNTIL PERMANENT PAVEMENT MARKINGS HAVE BEEN INSTALLED. COMPLETE PERMANENT PAVEMENT MARKINGS, SIGNING & STRIPING. UTILIZE TxDOT STANDARDS, TCP MOBILE OPERATIONS DURING THIS WORK.

CONSTRUCTION SHALL NOT BE CONSTRUED AS FINAL UNTIL WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER.



*Thomas T. Le*

12/1/2022



# ATKINS

TBPE REG. #F-474

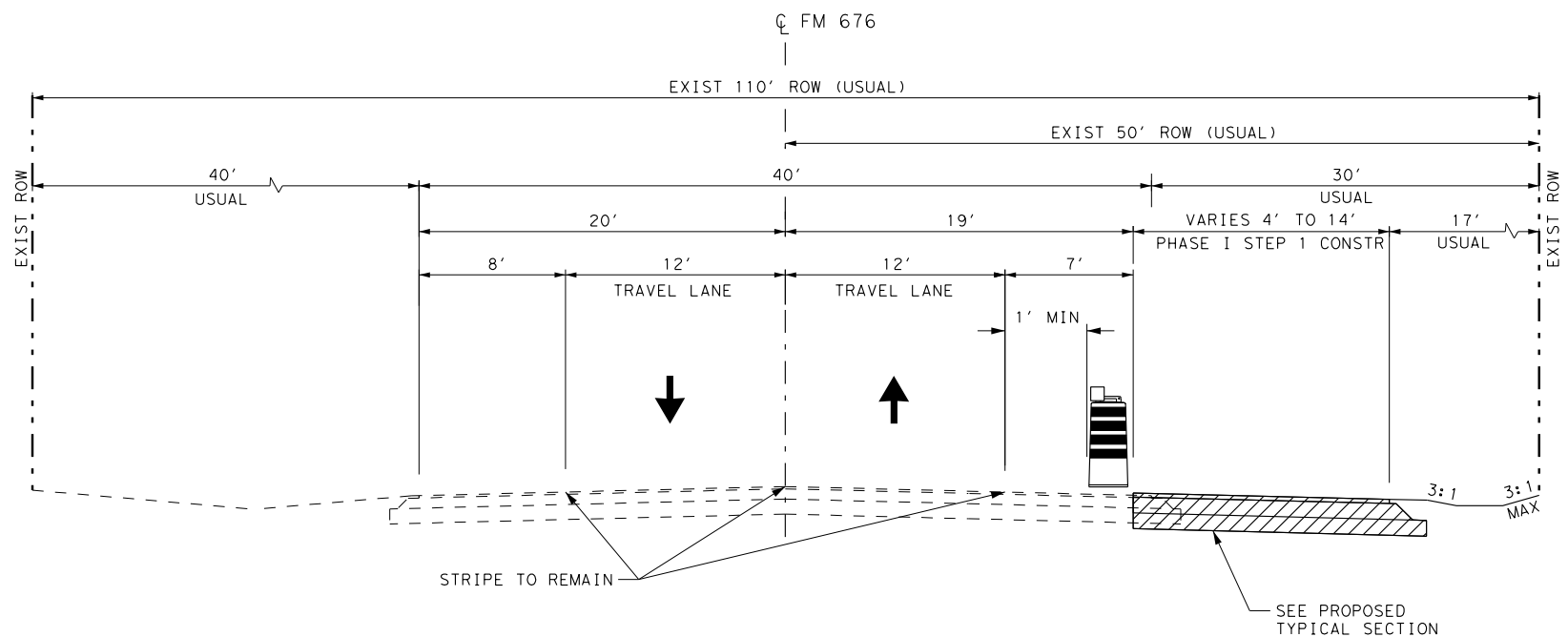
## FM 676 TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION

SHEET 1 OF 1

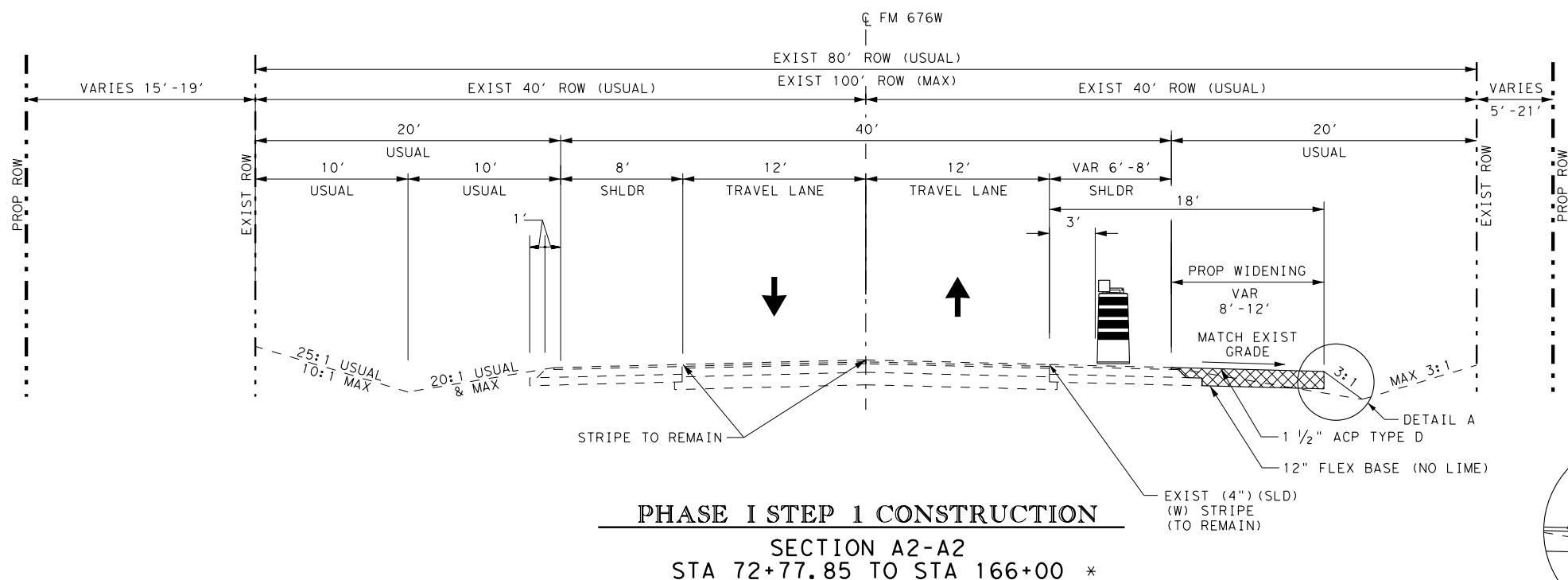
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6			34
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
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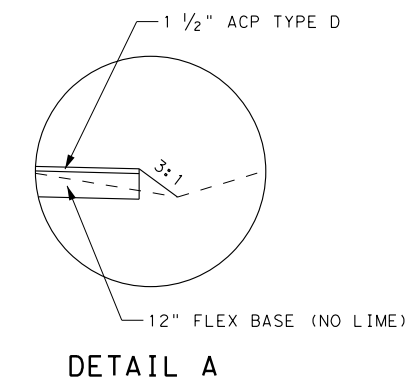


**PHASE I STEP 1 CONSTRUCTION**  
**SECTION A1-A1**  
**STA 65+57.85 TO STA 72+77.85**



**PHASE I STEP 1 CONSTRUCTION**  
**SECTION A2-A2**  
**STA 72+77.85 TO STA 166+00 \***

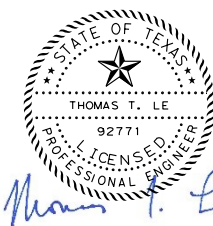
\* TEMPORARY PAVEMENT FROM TCP PHASE IA STEP 1  
 TO REMAIN IN PLACE FOR PHASE 1 STEP 1  
 CONSTRUCTION FOR STA 136+35.71 TO STA 140+36.15



**LEGEND**

	CONSTRUCTION AREA
	TEMPORARY ROADWAY CONSTRUCTION
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
	WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
	TY II-A-A
	WARNING REFLECTOR (YELLOW)
	PLASTIC DRUM

- NOTES:**
- SEE ROADWAY TYPICAL SECTIONS FOR PROPOSED ACP TO PLACE DURING CONSTRUCTION AND THE FINAL PHASES, PRIOR TO PLACING PERMANENT MARKING AND STRIPING.
  - CONTRACTOR MUST LOCATE AND CONFIRM DEPTHS OF UTILITIES BEFORE DIGGING.
  - REFER TO BC STANDARDS FOR PLASTIC DRUM DIMENSIONS.
  - TEMPORARY WIDENING SUBGRADE TO BE PROOF ROLLED.
  - MAINTAIN 3:1 SLOPE OUTSIDE OF THE IMMEDIATE WORK AREA.
  - REFER TO TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION FOR ADDITIONAL PHASES NOT SHOWN HERE.
  - SECTIONS FOR PHASE IA STEPS 1 THROUGH 4 ARE LOCATED IN THEIR RESPECTIVE TCP PLANS.



11/18/2022



**ATKINS**

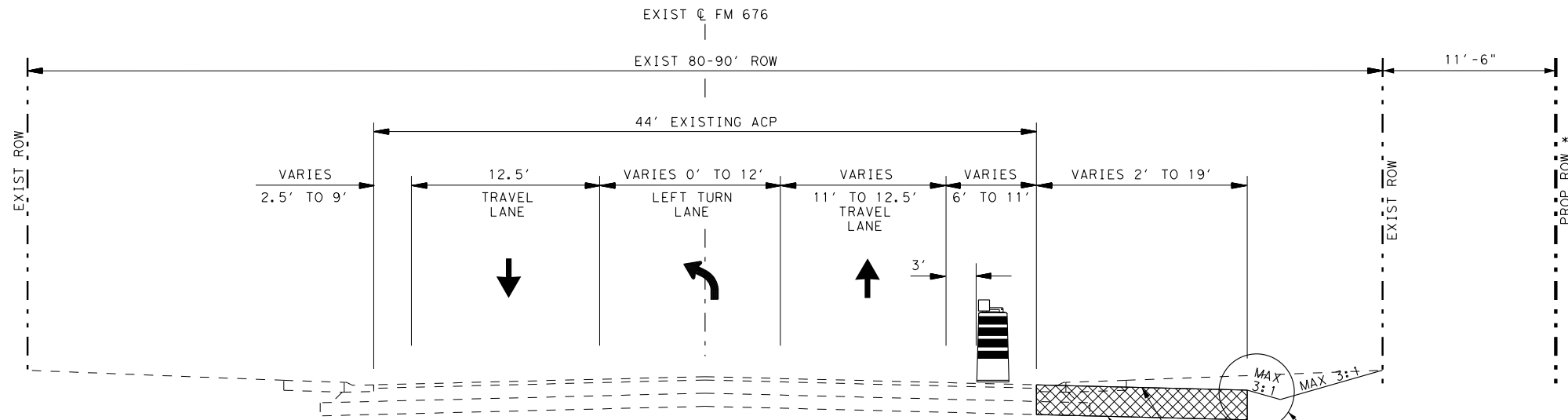
TBPE REG. #F-474

**FM 676**  
**STA 65+57.85 TO STA 72+77.85**  
**TRAFFIC CONTROL PLAN**  
**TYPICAL SECTIONS**

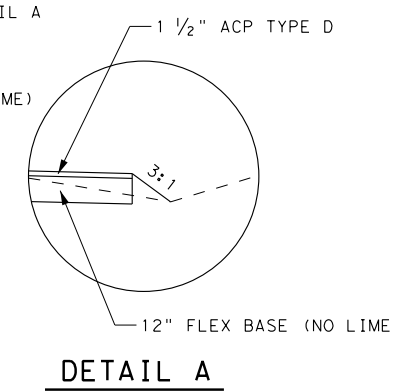
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TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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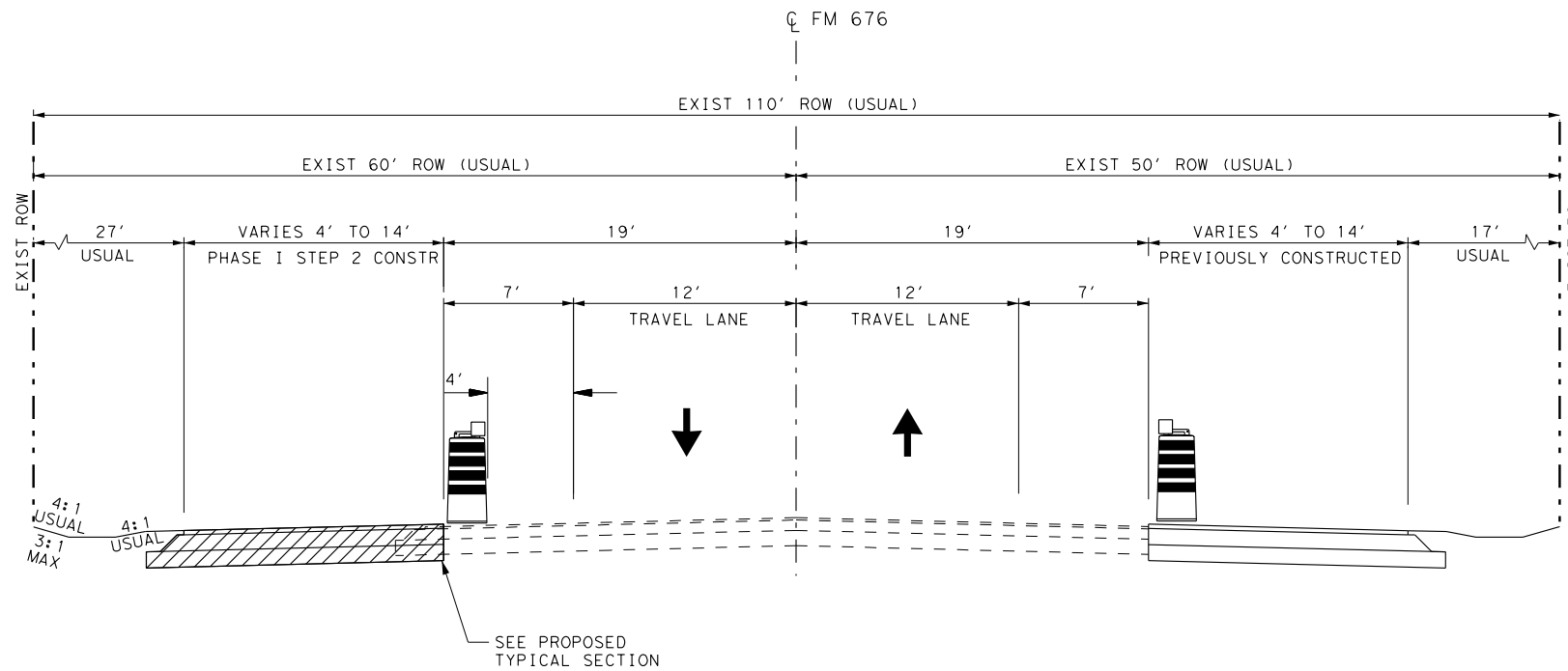
**PHASE I STEP 1 CONSTRUCTION**  
**SECTION A3-A3**  
**STA 197+40.00 TO STA 206+40.71**  
 \* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS  
 AT MASTER INTERSECTIONS



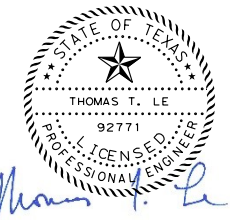
**LEGEND**

	CONSTRUCTION AREA
	TEMPORARY ROADWAY CONSTRUCTION
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
	WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
	TY II-A-A
	WARNING REFLECTOR (YELLOW)
	PLASTIC DRUM

- NOTES:**
- SEE ROADWAY TYPICAL SECTIONS FOR PROPOSED ACP TO PLACE DURING CONSTRUCTION AND THE FINAL PHASES, PRIOR TO PLACING PERMANENT MARKING AND STRIPING.
  - CONTRACTOR MUST LOCATE AND CONFIRM DEPTHS OF UTILITIES BEFORE DIGGING.
  - REFER TO BC STANDARDS FOR PLASTIC DRUM DIMENSIONS.
  - TEMPORARY WIDENING SUBGRADE TO BE PROOF ROLLED.
  - MAINTAIN 3:1 SLOPE OUTSIDE OF THE IMMEDIATE WORK AREA.
  - REFER TO TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION FOR ADDITIONAL PHASES NOT SHOWN HERE.
  - SECTIONS FOR PHASE IA STEPS 1 THROUGH 4 ARE LOCATED IN THEIR RESPECTIVE TCP PLANS.



**PHASE I STEP 2 CONSTRUCTION**  
**SECTION B1-B1**  
**STA 65+57.85 TO STA 72+77.85**



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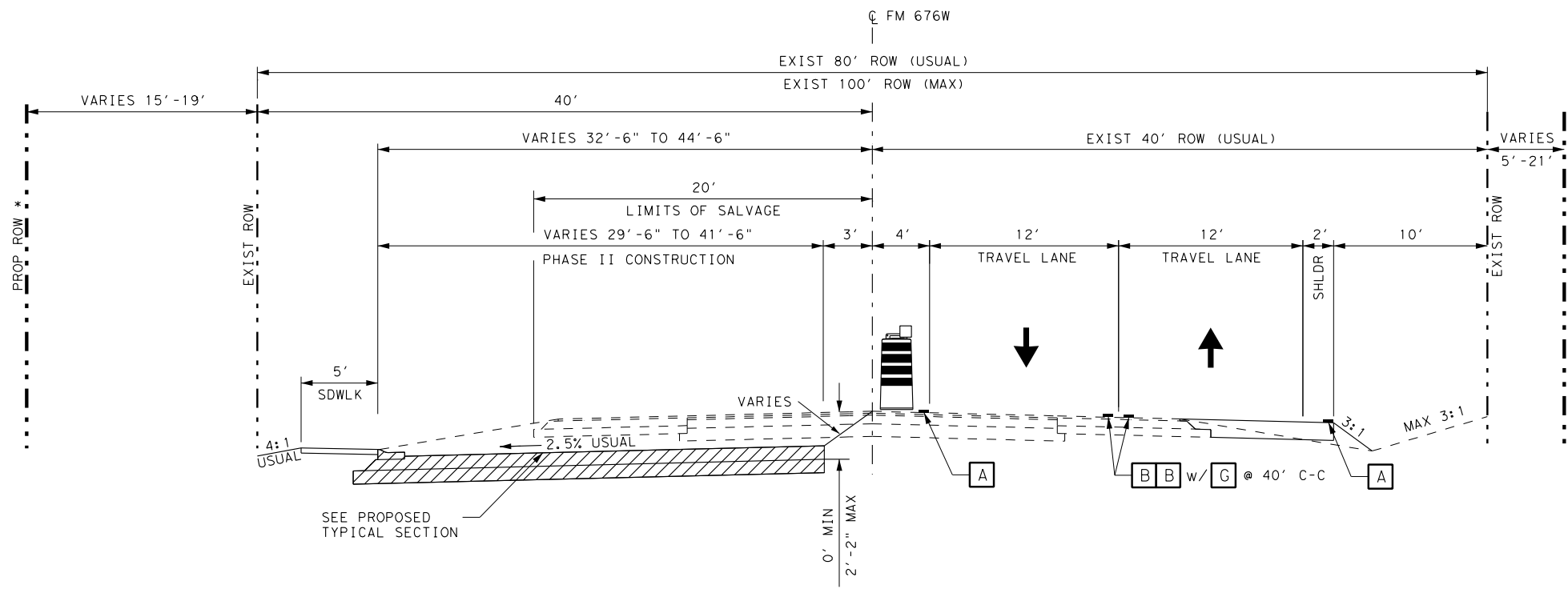
**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**STA 72+77.85 TO STA 165+00**  
**TRAFFIC CONTROL PLANS**  
**TYPICAL SECTIONS**

SHEET 2 OF 5 NOT TO SCALE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			36
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**PHASE II STEP 1 CONSTRUCTION**

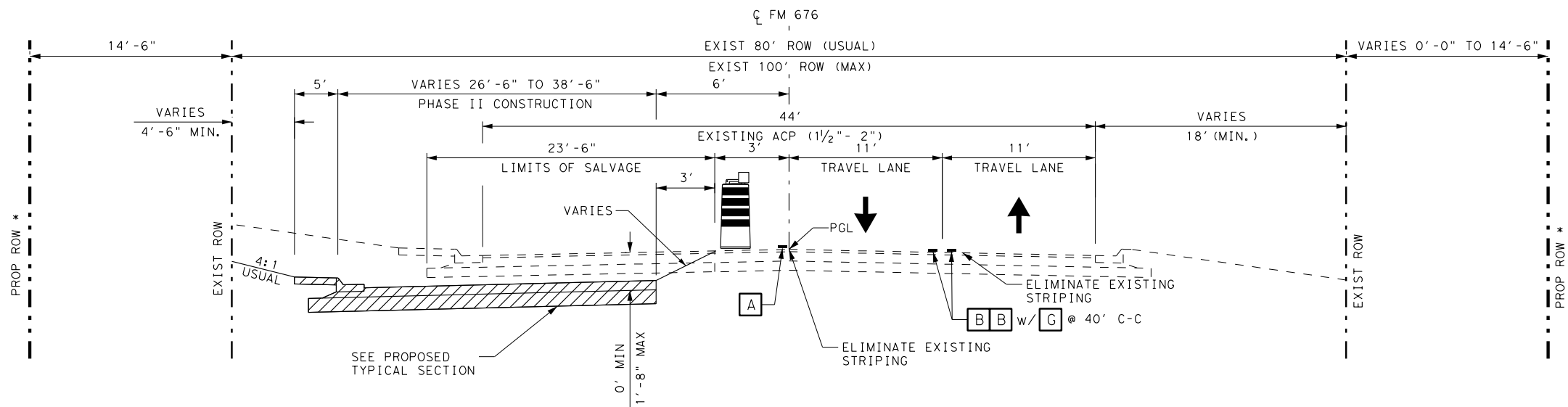
SECTION B2-B2  
 STA 72+77.85 TO STA 165+00  
 (STA 165+00 TO STA 166+00 TRANSITION TO SECTION D1-D1)

\* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS AT MASTER INTERSECTIONS

**LEGEND**

	CONSTRUCTION AREA
	TEMPORARY ROADWAY CONSTRUCTION
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
	WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
	TY II-A-A
	WARNING REFLECTOR (YELLOW)
	PLASTIC DRUM

- NOTES:
- SEE ROADWAY TYPICAL SECTIONS FOR PROPOSED ACP TO PLACE DURING CONSTRUCTION AND THE FINAL PHASES, PRIOR TO PLACING PERMANENT MARKING AND STRIPING.
  - CONTRACTOR MUST LOCATE AND CONFIRM DEPTHS OF UTILITIES BEFORE DIGGING.
  - REFER TO BC STANDARDS FOR PLASTIC DRUM DIMENSIONS.
  - TEMPORARY WIDENING SUBGRADE TO BE PROOF ROLLED.
  - MAINTAIN 3:1 SLOPE OUTSIDE OF THE IMMEDIATE WORK AREA.
  - REFER TO TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION FOR ADDITIONAL PHASES NOT SHOWN HERE.
  - SECTIONS FOR PHASE IA STEPS 1 THROUGH 4 ARE LOCATED IN THEIR RESPECTIVE TCP PLANS.



**PHASE II STEP 1**

SECTION D1-D1  
 STA 166+00 TO STA 196+30.00

\* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS AT MASTER INTERSECTIONS



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

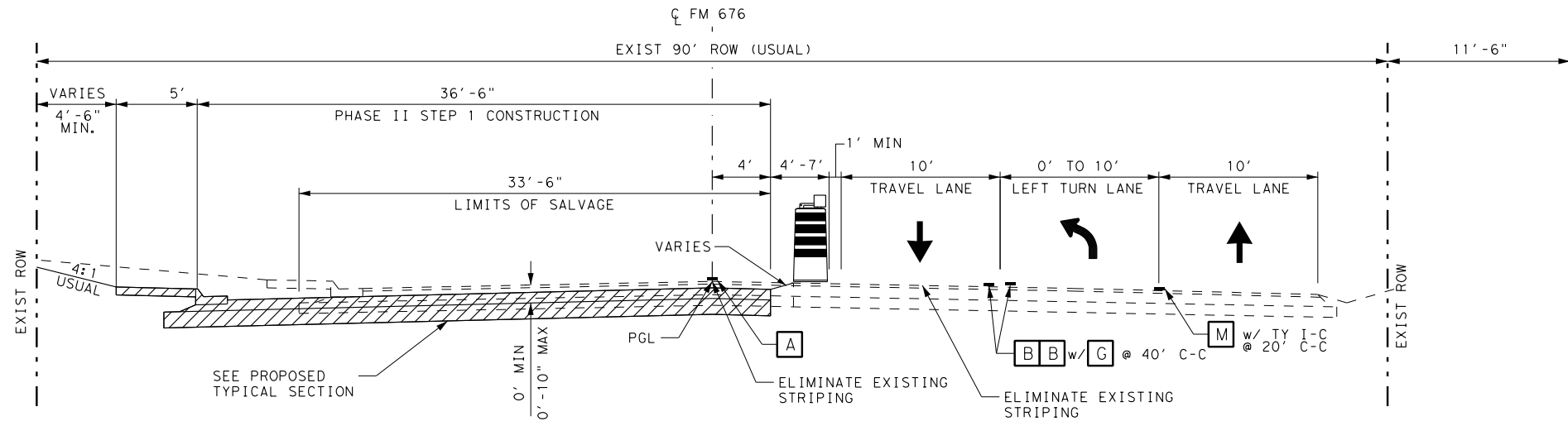
FM 676  
 STA 72+77.85 TO STA 165+00  
 TRAFFIC CONTROL PLANS  
 TYPICAL SECTIONS

SHEET 3 OF 5 NOT TO SCALE

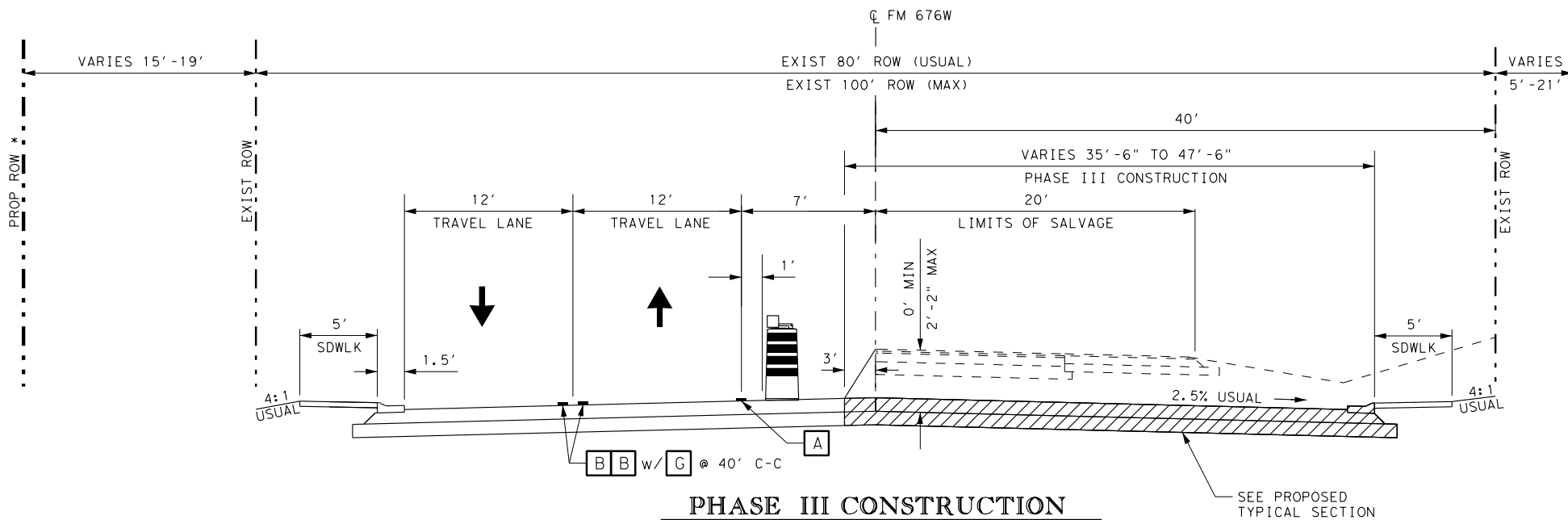
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			37
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



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**PHASE II STEP 1**  
 SECTION D2-D2  
 STA 200+75.64 TO STA 204+52.53  
 (TRANSITION TO SECTION D2-D2 FROM STA 196+30.00 TO STA 200+75.64)  
 \* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS  
 AT MASTER INTERSECTIONS

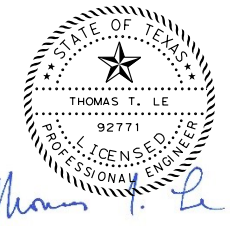


**PHASE III CONSTRUCTION**  
 SECTION C-C  
 STA 72+77.85 TO STA 164+00  
 (STA 164+00 TO STA 165+00 TRANSITION TO SECTION E-E)  
 \* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS  
 AT MASTER INTERSECTIONS

**LEGEND**

	CONSTRUCTION AREA
	TEMPORARY ROADWAY CONSTRUCTION
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
	WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
	WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
	WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
	TY II-A-A
	WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
	WARNING REFLECTOR (YELLOW)
	PLASTIC DRUM

- NOTES:**
- SEE ROADWAY TYPICAL SECTIONS FOR PROPOSED ACP TO PLACE DURING CONSTRUCTION AND THE FINAL PHASES, PRIOR TO PLACING PERMANENT MARKING AND STRIPING.
  - CONTRACTOR MUST LOCATE AND CONFIRM DEPTHS OF UTILITIES BEFORE DIGGING.
  - REFER TO BC STANDARDS FOR PLASTIC DRUM DIMENSIONS.
  - TEMPORARY WIDENING SUBGRADE TO BE PROOF ROLLED.
  - MAINTAIN 3:1 SLOPE OUTSIDE OF THE IMMEDIATE WORK AREA.
  - REFER TO TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION FOR ADDITIONAL PHASES NOT SHOWN HERE.
  - SECTIONS FOR PHASE IA STEPS 1 THROUGH 4 ARE LOCATED IN THEIR RESPECTIVE TCP PLANS.



11/18/2022



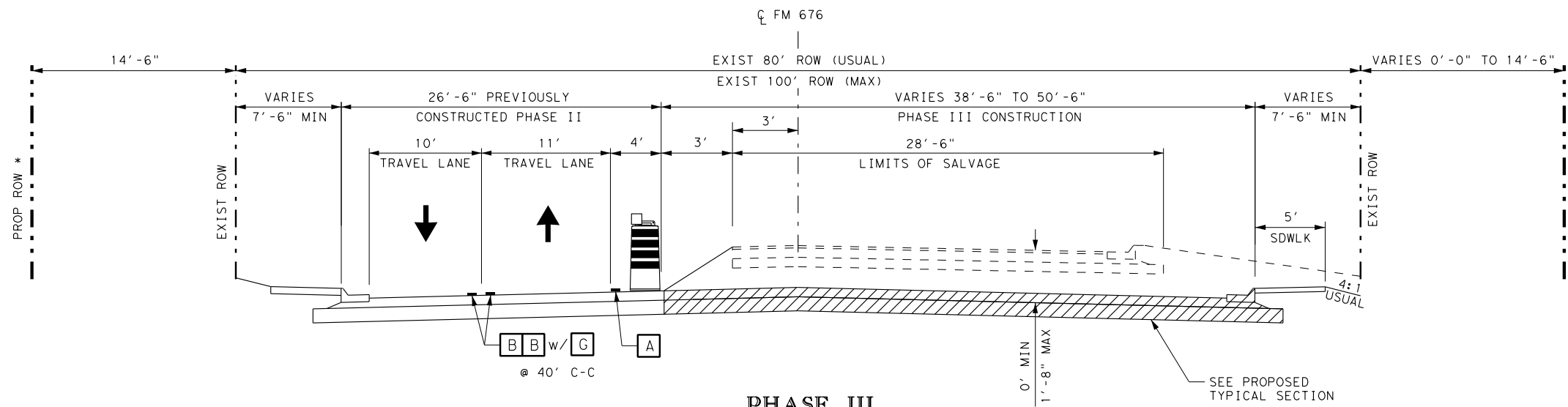
**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**STA 165+00 TO STA 204+52.53**  
**TRAFFIC CONTROL PLANS**  
**TYPICAL SECTIONS**

SHEET 4 OF 5 NOT TO SCALE

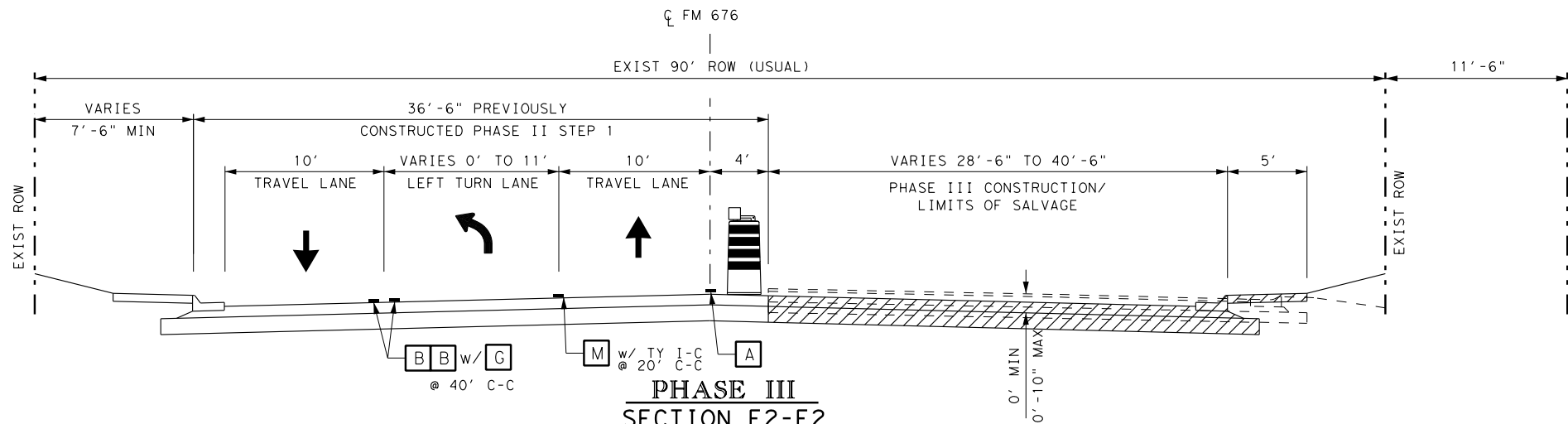
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6			38
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**PHASE III**  
**SECTION E-E**  
**STA 165+00 TO STA 199+18.23**

\* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS  
 AT MASTER INTERSECTIONS



**PHASE III**  
**SECTION E2-E2**  
**STA 199+18.23 TO STA 204+52.53**  
**(TRANSITION TO SECTION E1-E1 FROM STA 199+15.63 TO STA 202+09.86)**

\* PROPOSED ROW NEEDED FOR RIGHT TURN BAYS  
 AT MASTER INTERSECTIONS

**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- TY II-A-A
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- WARNING REFLECTOR (YELLOW)
- PLASTIC DRUM

- NOTES:
- SEE ROADWAY TYPICAL SECTIONS FOR PROPOSED ACP TO PLACE DURING CONSTRUCTION AND THE FINAL PHASES, PRIOR TO PLACING PERMANENT MARKING AND STRIPING.
  - CONTRACTOR MUST LOCATE AND CONFIRM DEPTHS OF UTILITIES BEFORE DIGGING.
  - REFER TO BC STANDARDS FOR PLASTIC DRUM DIMENSIONS.
  - TEMPORARY WIDENING SUBGRADE TO BE PROOF ROLLED.
  - MAINTAIN 3:1 SLOPE OUTSIDE OF THE IMMEDIATE WORK AREA.
  - REFER TO TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION FOR ADDITIONAL PHASES NOT SHOWN HERE.
  - SECTIONS FOR PHASE IA STEPS 1 THROUGH 4 ARE LOCATED IN THEIR RESPECTIVE TCP PLANS.



11/18/2022



**ATKINS**

TBPE REG. #F-474

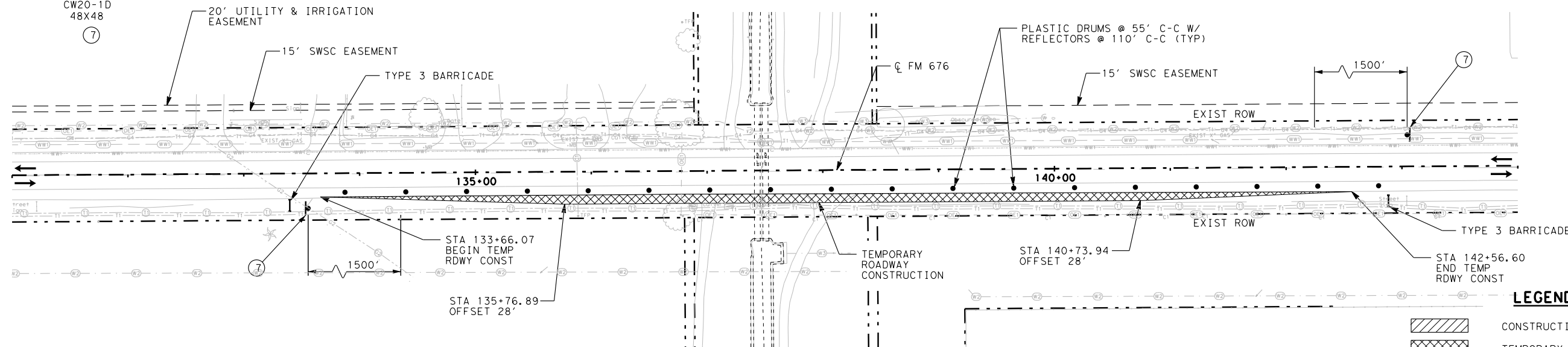
**FM 676**  
**STA 189+77.27 TO**  
**STA +204 52.53**  
**TRAFFIC CONTROL PLANS**  
**TYPICAL SECTIONS**

SHEET 5 OF 5 NOT TO SCALE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			39
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



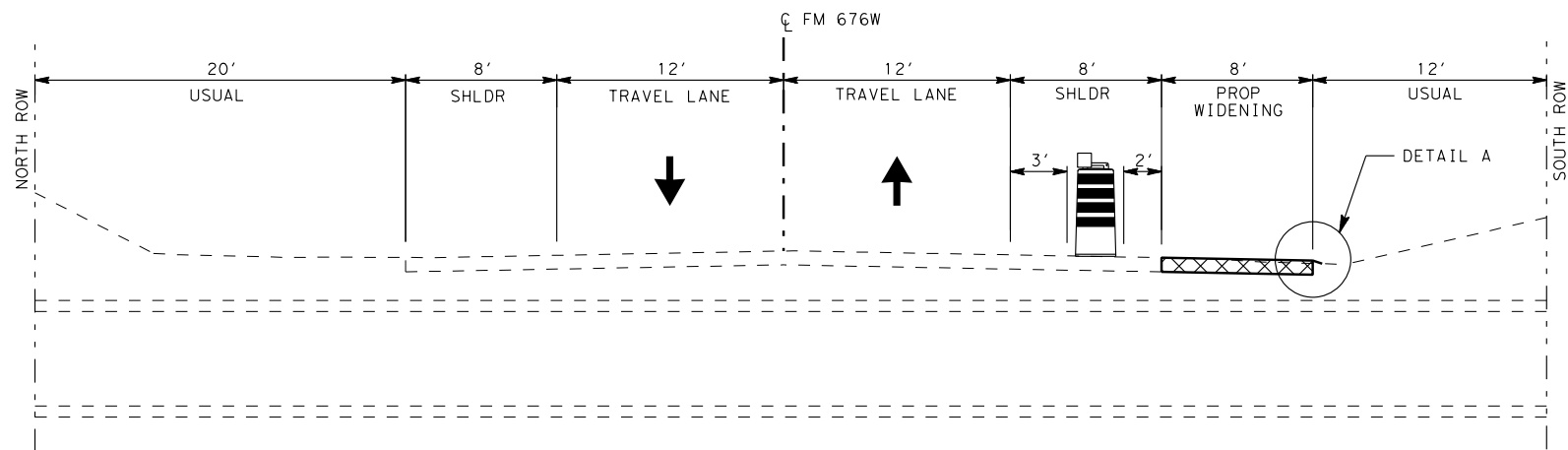
CW20-1D  
48X48  
7



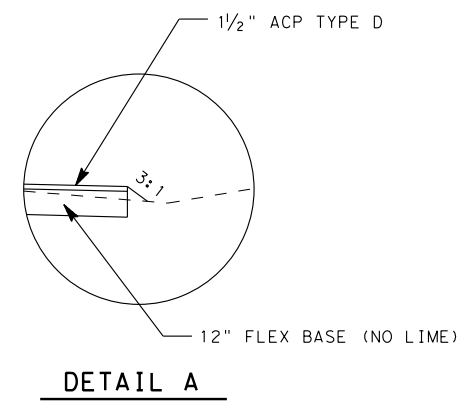
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0 20 40 60 80 100  
DISTANCE IN FEET

**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONCRETE SAFETY BARRIER (TYPE 4) (F-SHAPE)
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- WARNING REFLECTOR (YELLOW)
- PLASTIC DRUM



**SECTION AT CULVERT - PHASE IA STEP 1**  
NOT TO SCALE



NOTE: REFER TO "IRRIGATION CROSSINGS" AND "MISCELLANEOUS IRRIGATION DETAILS" SHEETS FOR ADDITIONAL INFORMATION. REFER TO SCC-8 (MOD) FOR WATERSTOP DETAILS.

SEE DRAINAGE SHEETS AND NOTES FOR IRRIGATION CONNECTION AND TIMING.

SEE TRAFFIC CONTROL PLAN PHASE I STEP 1 AND BC(2)-21 FOR PLACEMENT OF ADVANCED WARNING SIGNS. THE TCP ADVANCED WARNING SIGNS SHALL BE INSTALLED PRIOR TO PHASE IA CONSTRUCTION.



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE IA STEP 1**

SHEET 1 OF 4			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			40
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**DO NOT PASS**

R4-1  
24X30

(2)

**ROAD WORK AHEAD**

CW20-1D  
48X48

(7)

**RIGHT TURN**

CW1-4L  
36X36

(17)

**RIGHT TURN**

CW1-4R  
36X36

(18)

**RIGHT TURN**

CW1-6aT  
36X36

(21)

**RIGHT TURN**

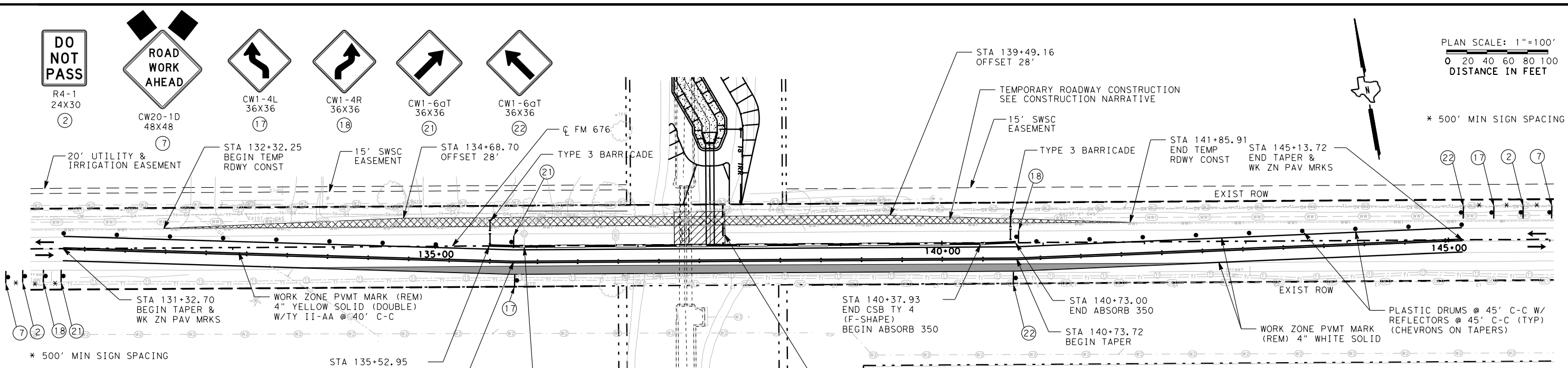
CW1-6aT  
36X36

(22)

PLAN SCALE: 1"=100'

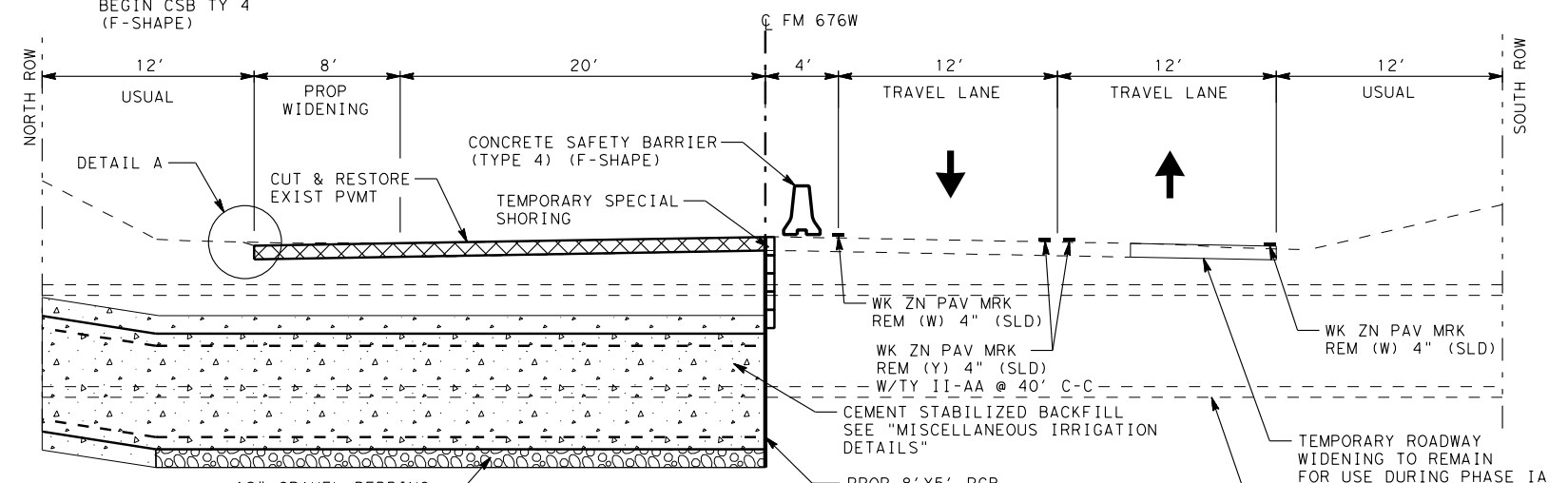
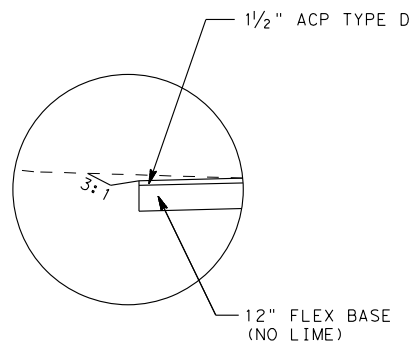
0 20 40 60 80 100  
DISTANCE IN FEET

\* 500' MIN SIGN SPACING



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- COMPLETED IN PREVIOUS PHASE
- CONCRETE SAFETY BARRIER (TYPE 4) (F-SHAPE)
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- WARNING REFLECTOR (YELLOW)



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE IA STEP 2**

SHEET 2 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			41
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

NOTE: REFER TO "IRRIGATION CROSSINGS" AND "MISCELLANEOUS IRRIGATION DETAILS" SHEETS FOR ADDITIONAL INFORMATION. REFER TO SCC-8 (MOD) FOR WATERSTOP DETAILS.

THE TCP ADVANCED WARNING SIGNS SHALL BE INSTALLED PRIOR TO PHASE 1A CONSTRUCTION AS PER BC(2)-21.

SEE DRAINAGE SHEETS AND NOTES FOR IRRIGATION CONNECTION AND TIMING.

THE EXISTING 2-60" RCP ARE TO REMAIN IN OPERATION DURING PHASE 1A STEP 2.

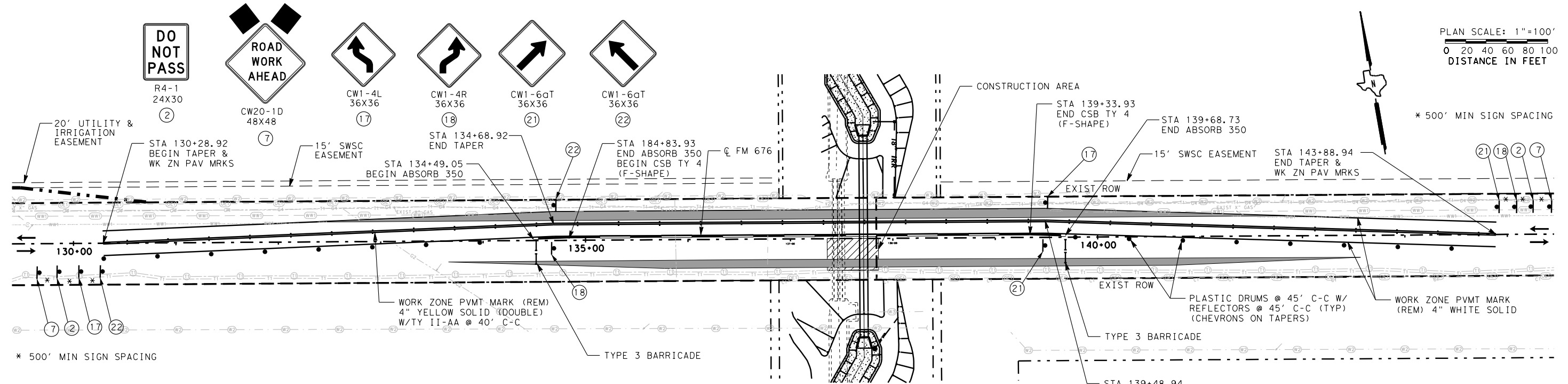
USING TRAFFIC CONTROL PLAN DETAILED ABOVE, PERFORM THE FOLLOWING:

- REMOVE EXISTING STRIPING FROM STA 131+95.93 TO STA 144+75.93
- PERFORM STRUCTURAL EXCAVATION FOR PROPOSED 8'X5' RCB AS DETAILED.
- CONSTRUCT TEMPORARY SPECIAL SHORING FOR PROPOSED 8'X5' RCB AS DETAILED.
- PLACE PROPOSED 8'X5' RCB AND BACKFILL AS DETAILED.
- CONSTRUCT TEMPORARY ROADWAY WIDENING ON NORTH SIDE USING TCP (2-3)-12.

TEMPORARY ROADWAY WIDENING AND DITCH ON SOUTH SIDE TO REMAIN FOR USE DURING PHASE IA STEP 4 AND PHASE I STEP 1.

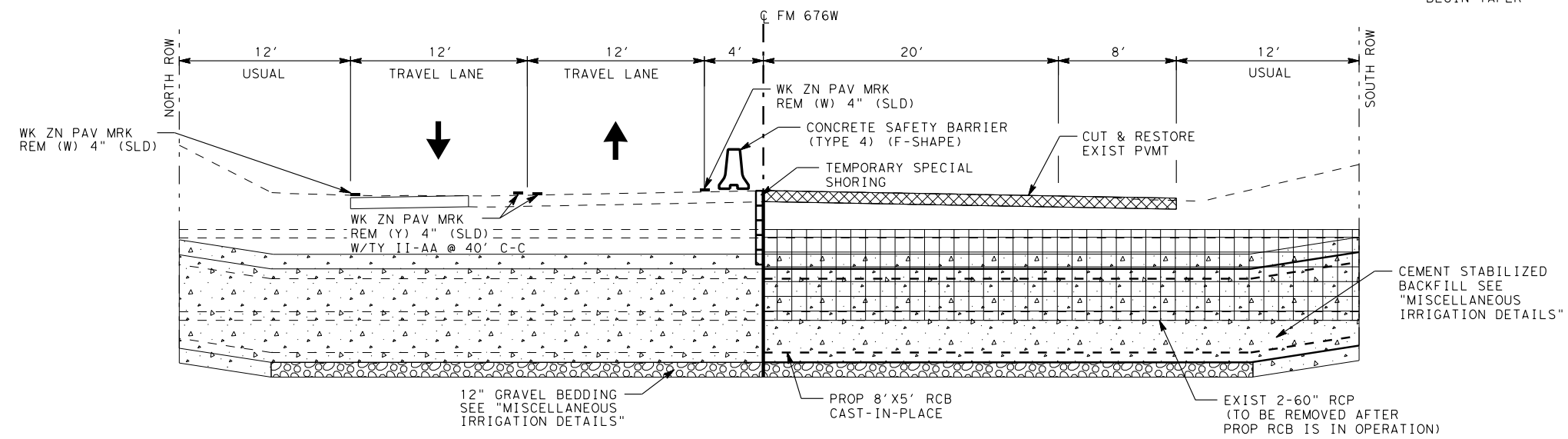
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PLAN SCALE: 1"=100'  
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 DISTANCE IN FEET

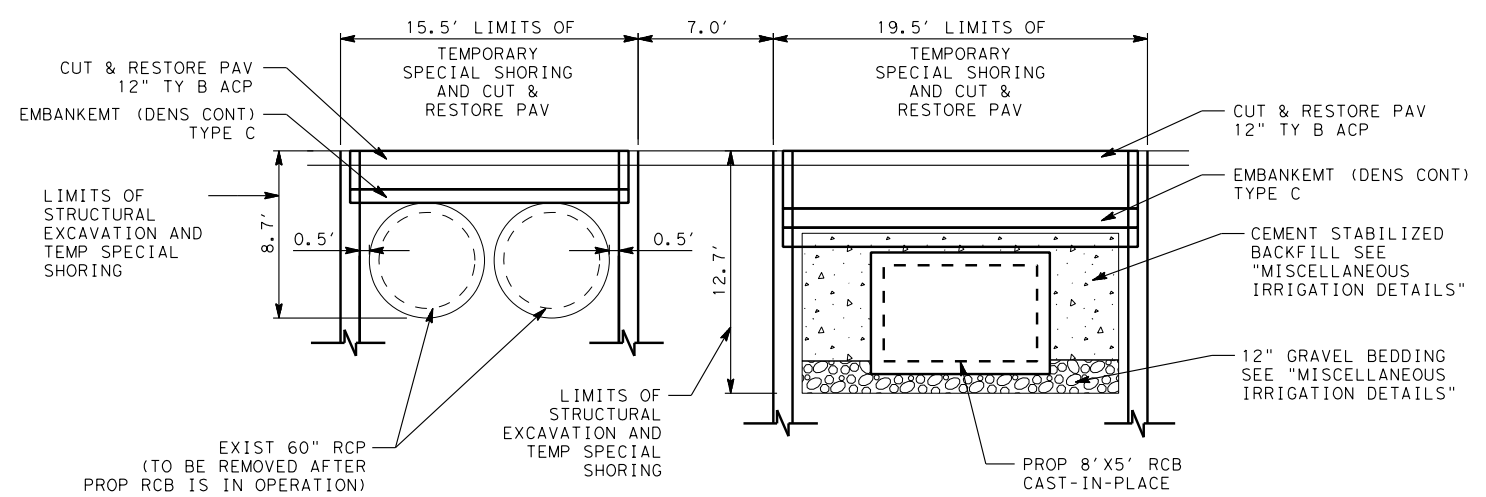


**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- COMPLETED IN PREVIOUS PHASE
- CONCRETE SAFETY BARRIER (TYPE 4) (F-SHAPE)
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- WARNING REFLECTOR (YELLOW)



**SECTION AT CULVERT - PHASE IA STEP 3**  
 NOT TO SCALE



**DETAIL OF TEMPORARY SPECIAL SHORING**  
 NOT TO SCALE

NOTE: REFER TO "IRRIGATION CROSSINGS" AND "MISCELLANEOUS IRRIGATION DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

SEE DRAINAGE SHEETS AND NOTES FOR IRRIGATION CONNECTION AND TIMING.

THE TCP ADVANCED WARNING SIGNS SHALL BE INSTALLED PRIOR TO PHASE 1A CONSTRUCTION AS PER BC (2)-21

USING TRAFFIC CONTROL PLAN DETAILED ABOVE, PERFORM THE FOLLOWING:

- A. REMOVE EXISTING STRIPING FROM STA 130+45.93 TO STA 143+25.93.
- A. PERFORM STRUCTURAL EXCAVATION FOR PROPOSED 8' X5' RCB AS DETAILED.
- B. CONSTRUCT TEMPORARY SPECIAL SHORING FOR PROPOSED 8' X5' AS DETAILED.
- C. PLACE PROPOSED 8' X5' RCB AND BACKFILL AS DETAILED.
- D. REMOVE TEMPORARY SPECIAL SHORING OVER PROPOSED RCB.

PROPOSED 8' X5' RCB TO BE IN OPERATION BEFORE REMOVING EXISTING 2-60" RCP.

- E. CONSTRUCT TEMPORARY ROADWAY WIDENING ON NORTH SIDE USING TCP (2-3)-12.
- F. PERFORM STRUCTURAL EXCAVATION FOR EXISTING 2-60" RCP AS DETAILED.
- G. CONSTRUCT TEMPORARY SPECIAL SHORING FOR EXISTING 2-60" AS DETAILED.
- H. REMOVE PORTION OF EXISTING 2-60" AS DETAILED.
- I. REPLACE PORTIONS OF TEMPORARY ROADWAY WIDENING REMOVED DURING EXCAVATION. TEMPORARY ROADWAY WIDENING TO REMAIN FOR USE DURING PHASE IA STEP 4 AND PHASE I STEP 1.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE IA STEP 3**

SHEET 3 OF 4		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		42
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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DO NOT PASS  
R4-1  
24X30  
②

ROAD WORK AHEAD  
CW20-1D  
48X48  
⑦

CW1-4L  
36X36  
⑩

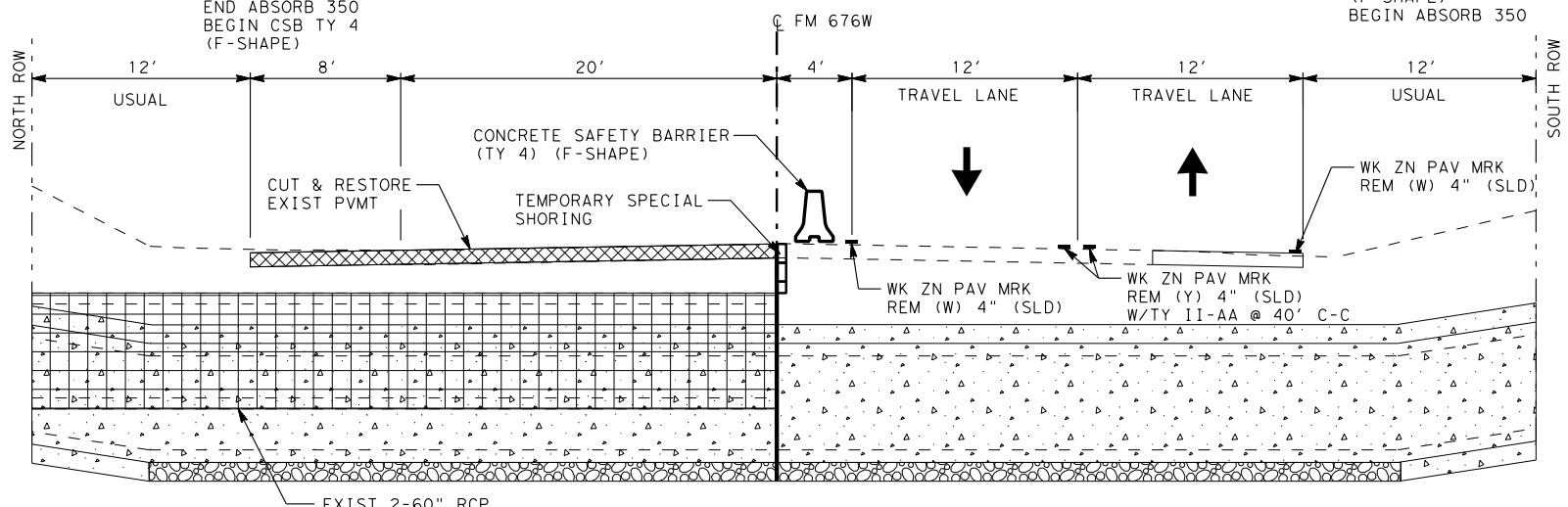
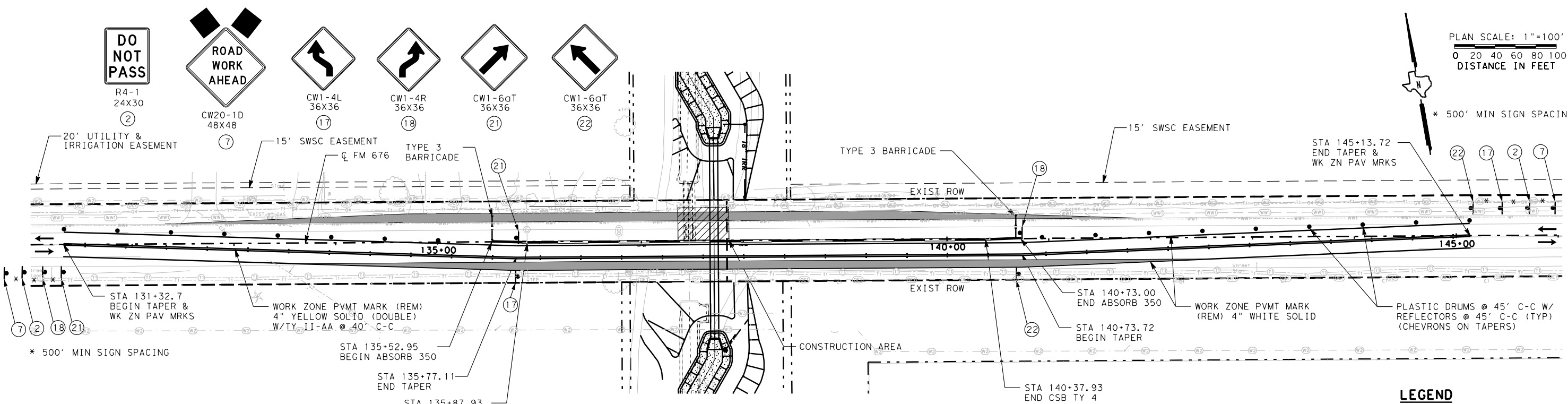
CW1-4R  
36X36  
⑪

CW1-6aT  
36X36  
⑫

CW1-6aT  
36X36  
⑬

PLAN SCALE: 1"=100'  
0 20 40 60 80 100  
DISTANCE IN FEET

\* 500' MIN SIGN SPACING



SECTION AT CULVERT - PHASE IA STEP 4  
NOT TO SCALE

LEGEND

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- COMPLETED IN PREVIOUS PHASE
- CONCRETE SAFETY BARRIER (TYPE 4) (F-SHAPE)
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- WARNING REFLECTOR (YELLOW)



11/18/2022



**ATKINS**  
TBPE REG. #F-474

FM 676  
TRAFFIC CONTROL PLAN  
PHASE IA STEP 4

SHEET 4 OF 4

FED. RD. DIV. NO. 6	STATE PROJECT NO. PHR 032	SHEET NO. 43
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CONT. 1064	SECT. 01	JOB 032
		HIGHWAY NO. FM 676

NOTE: REFER TO "IRRIGATION CROSSINGS" AND "MISCELLANEOUS IRRIGATION DETAILS" SHEETS FOR ADDITIONAL INFORMATION.

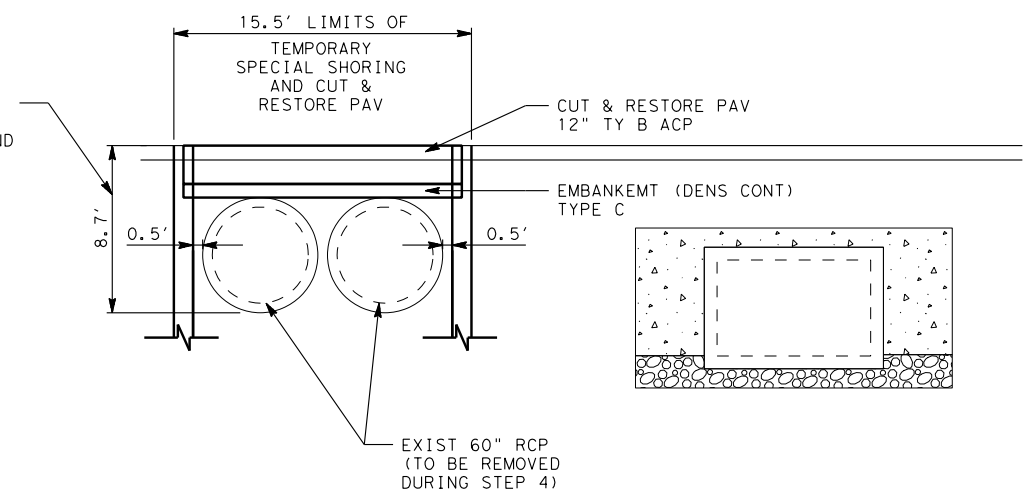
SEE DRAINAGE SHEETS AND NOTES FOR IRRIGATION CONNECTION AND TIMING.

THE TCP ADVANCED WARNING SIGNS SHALL BE INSTALLED PRIOR TO PHASE 1A CONSTRUCTION.

USING TRAFFIC CONTROL PLAN DETAILED ABOVE, PERFORM THE FOLLOWING:

- REMOVE TEMPORARY PAVEMENT MARKINGS FROM PHASE 1A STEP 3.
- PERFORM STRUCTURAL EXCAVATION FOR EXISTING 2-60" RCP AS DETAILED.
- CONSTRUCT TEMPORARY SPECIAL SHORING FOR EXISTING 2-60" RCP AS DETAILED.
- REMOVE PORTION OF EXISTING 2-60" RCP AS DETAILED.
- REMOVE TEMPORARY SPECIAL SHORING OVER EXISTING RCP.
- REMOVE TEMPORARY ROADWAY WIDENING ON NORTH SIDE.
- CONSTRUCT TEMPORARY ROADWAY WIDENING ON NORTH SIDE USING TCP (2-3)-12.

TEMPORARY ROADWAY WIDENING AND DITCH ON SOUTH SIDE TO REMAIN FOR USE DURING PHASE I STEP 1.



DETAIL OF TEMPORARY SPECIAL SHORING  
NOT TO SCALE

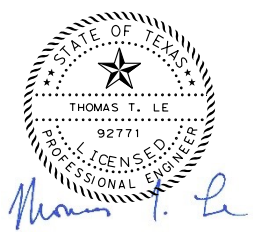
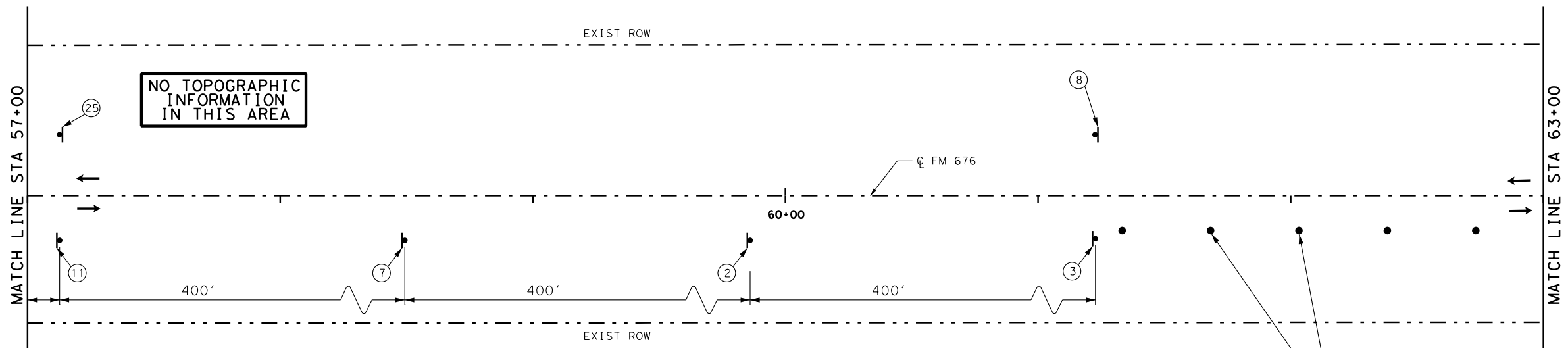
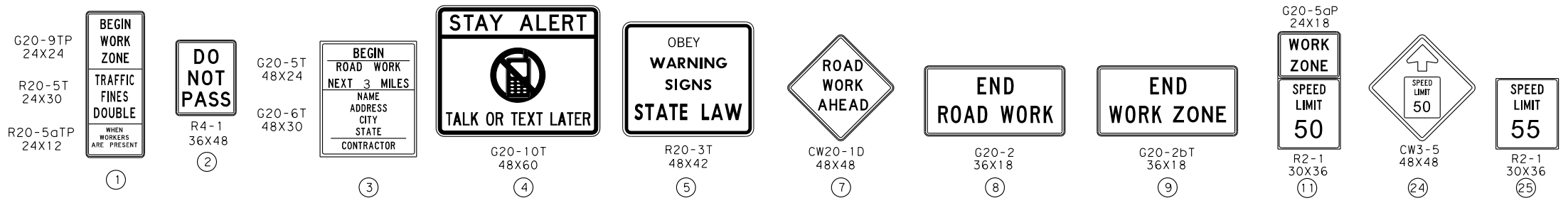
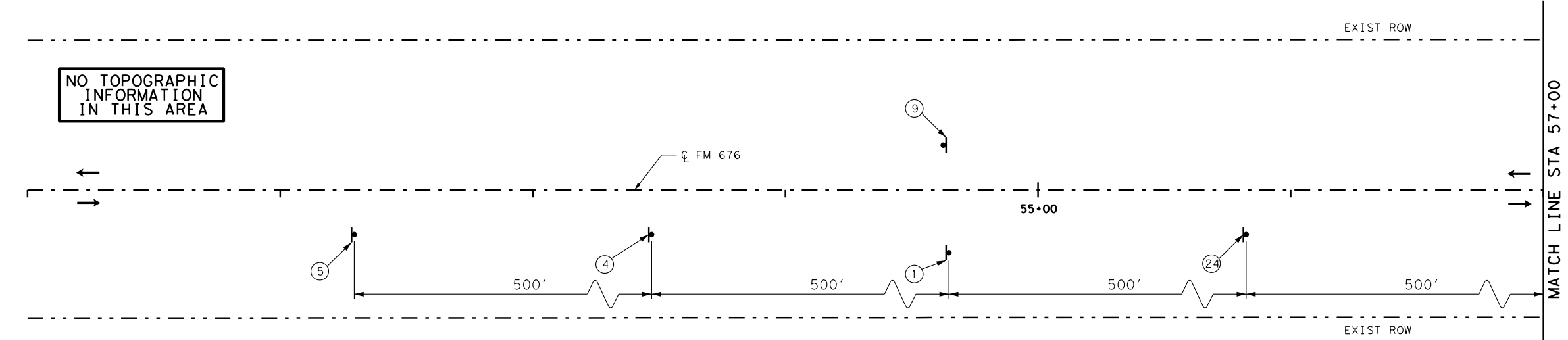
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DATE: 11/18/2022  
FILE: pm\11x17\11x17\Documents\Projects\100053456 FM 676 PS&E Update\CADD\TCP\031PIA04.dgn

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 1 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			44
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

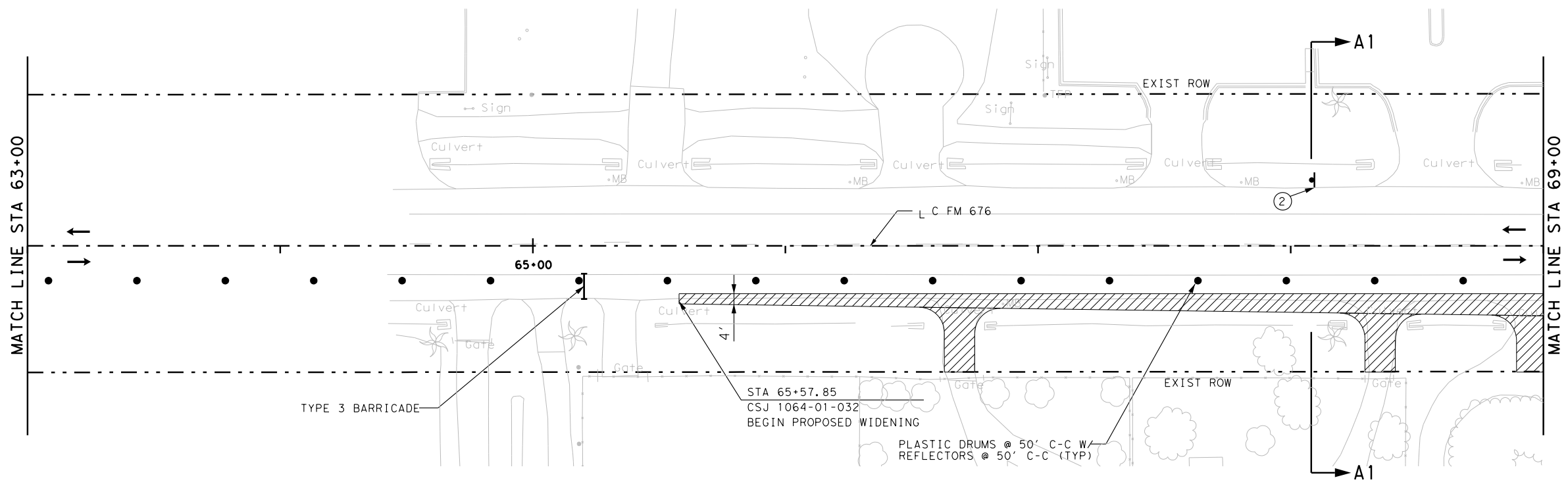
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PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

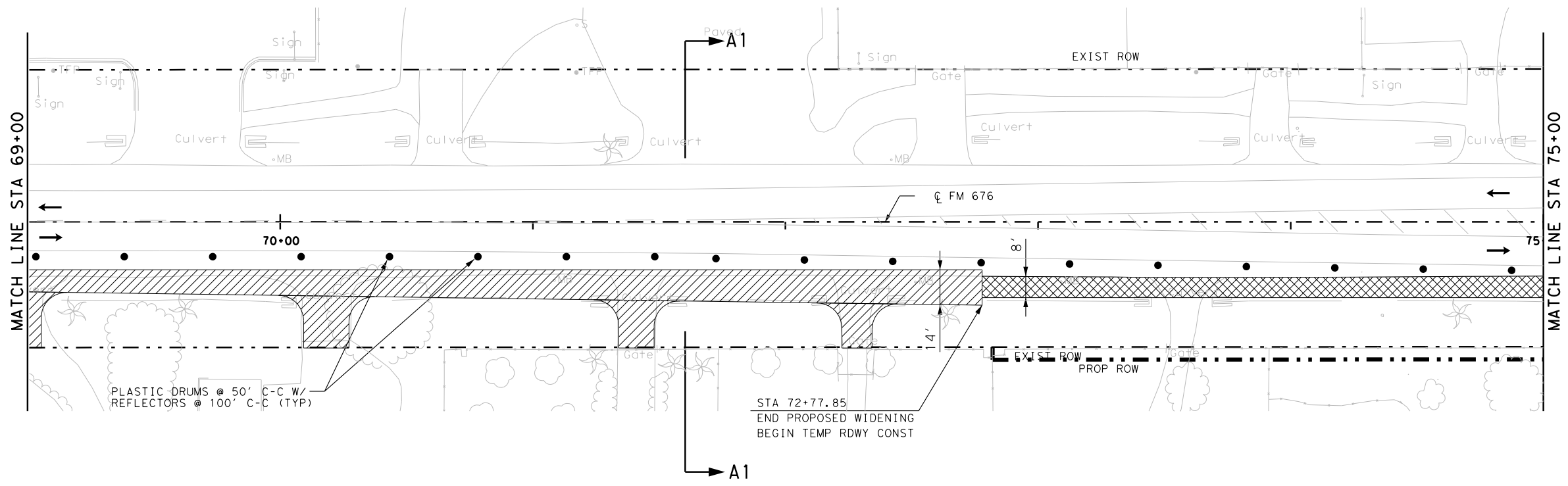


**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



**DO NOT PASS**  
R4-1  
36X48  
②



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 2 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			45
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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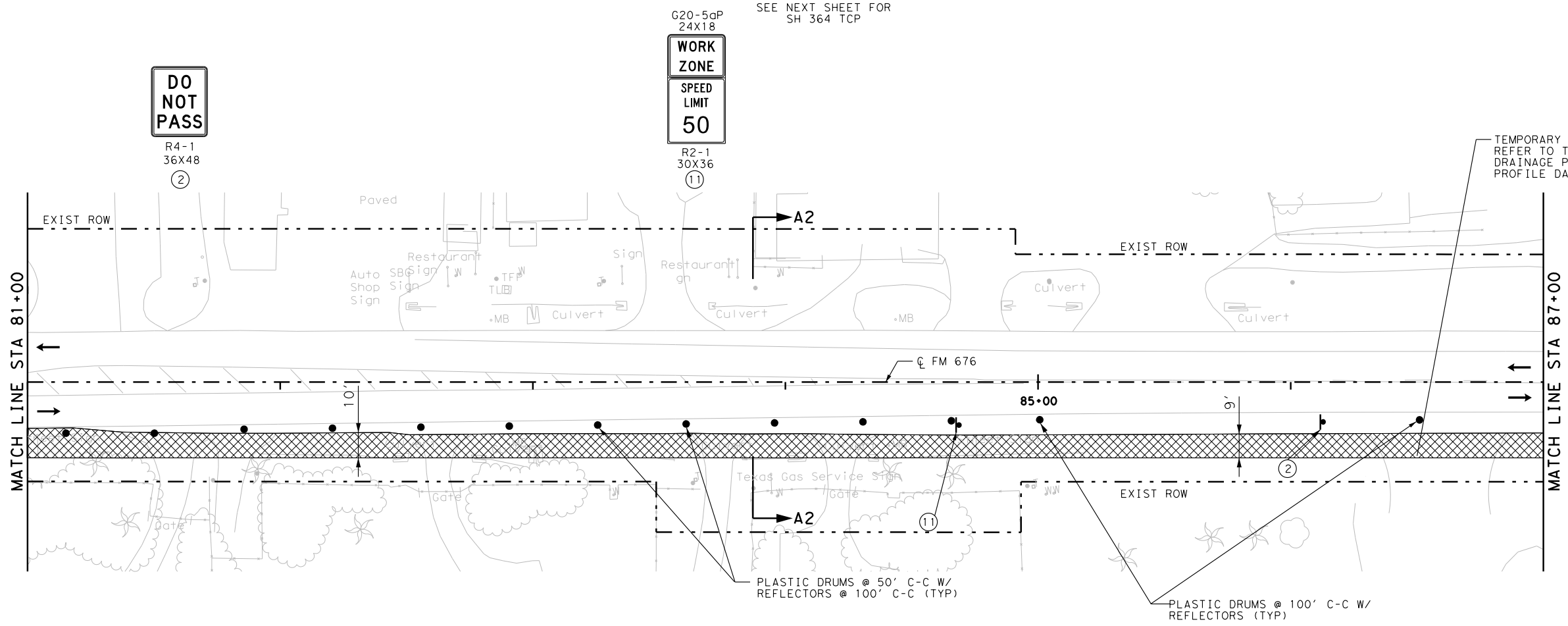
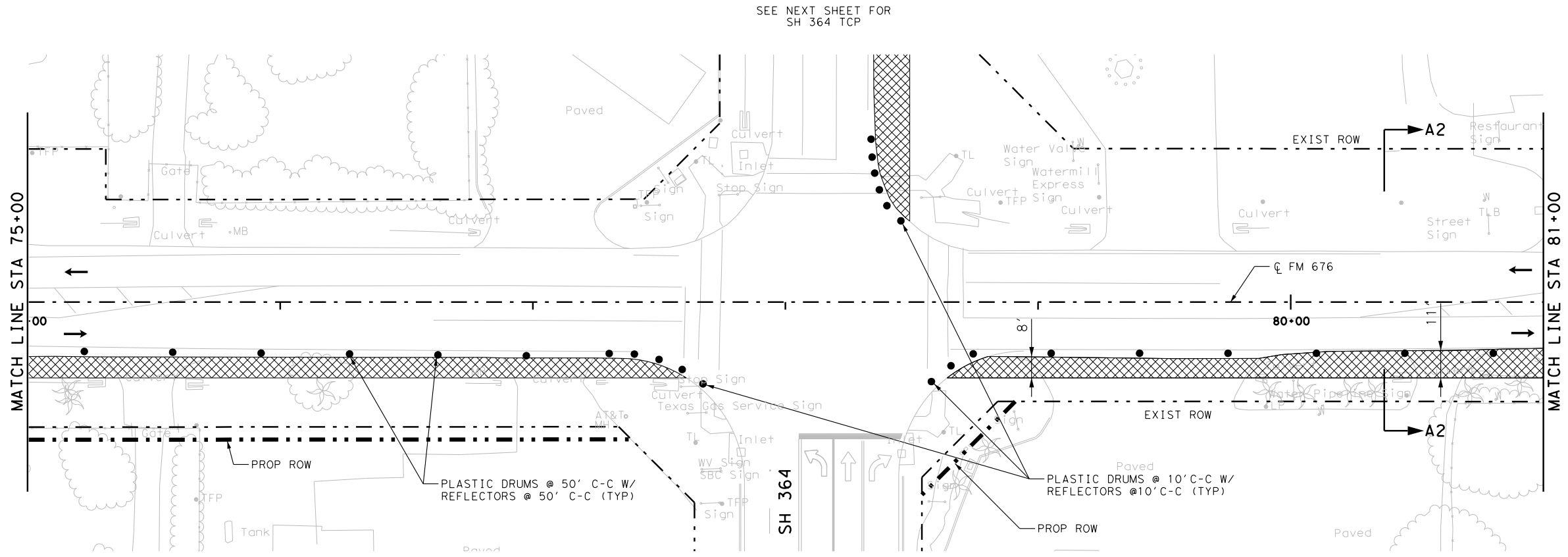
SEE NEXT SHEET FOR SH 364 TCP

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



SEE NEXT SHEET FOR SH 364 TCP

**WORK ZONE**  
**SPEED LIMIT**  
**50**

**DO NOT PASS**

R4-1  
36X48  
②

R2-1  
30X36  
①①



11/18/2022



**ATKINS**

TBPE REG. #F-474

FM 676

**TRAFFIC CONTROL PLAN  
PHASE I STEP 1**

SHEET 3 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			46
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**







1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
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 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE



11/18/2022



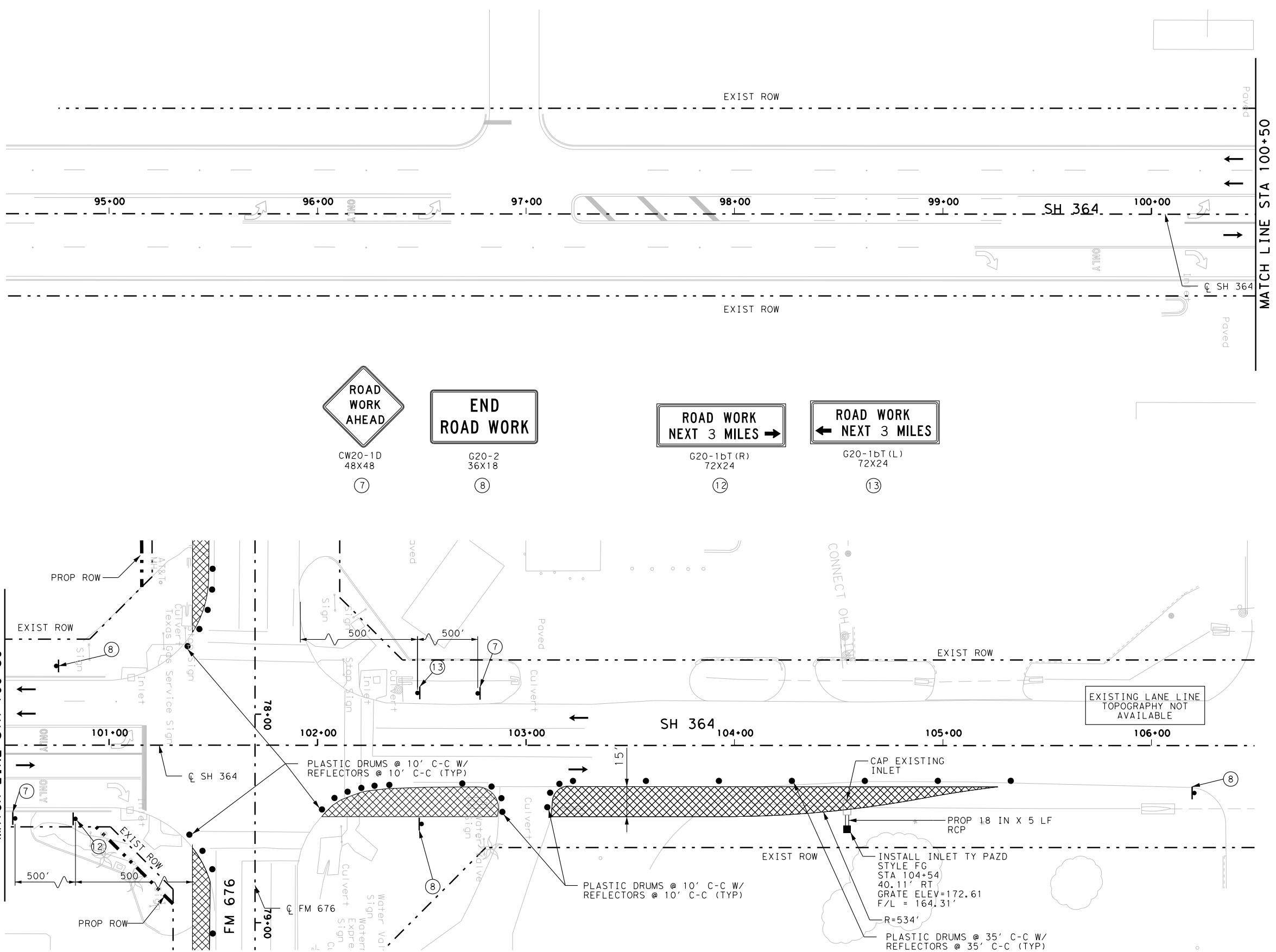
**ATKINS**  
 TBPE REG. #F-474

FM 676

**TRAFFIC CONTROL PLAN  
 PHASE I STEP 1**

SHEET 4 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			47
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

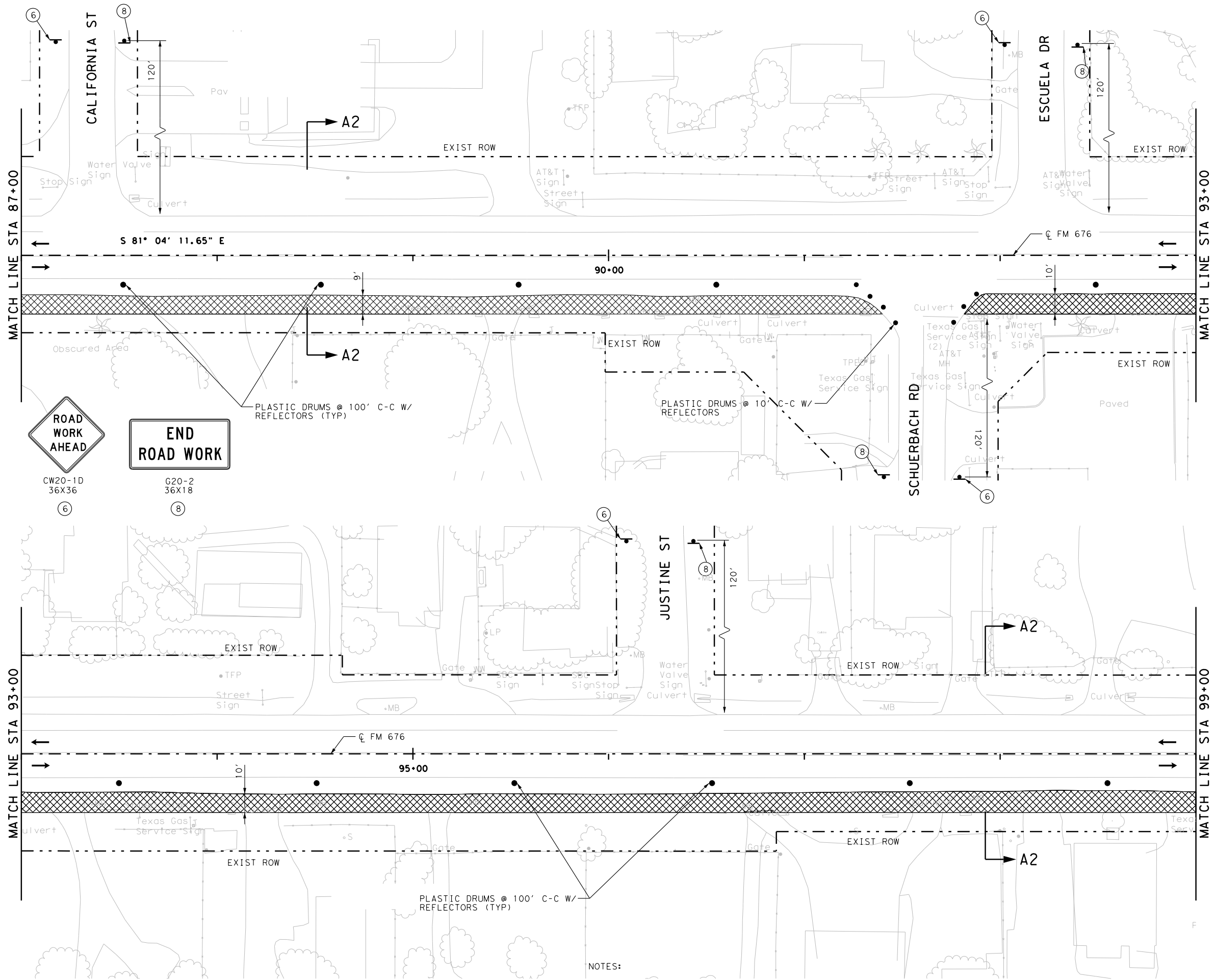


**NOTES:**

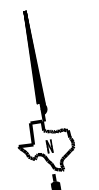
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

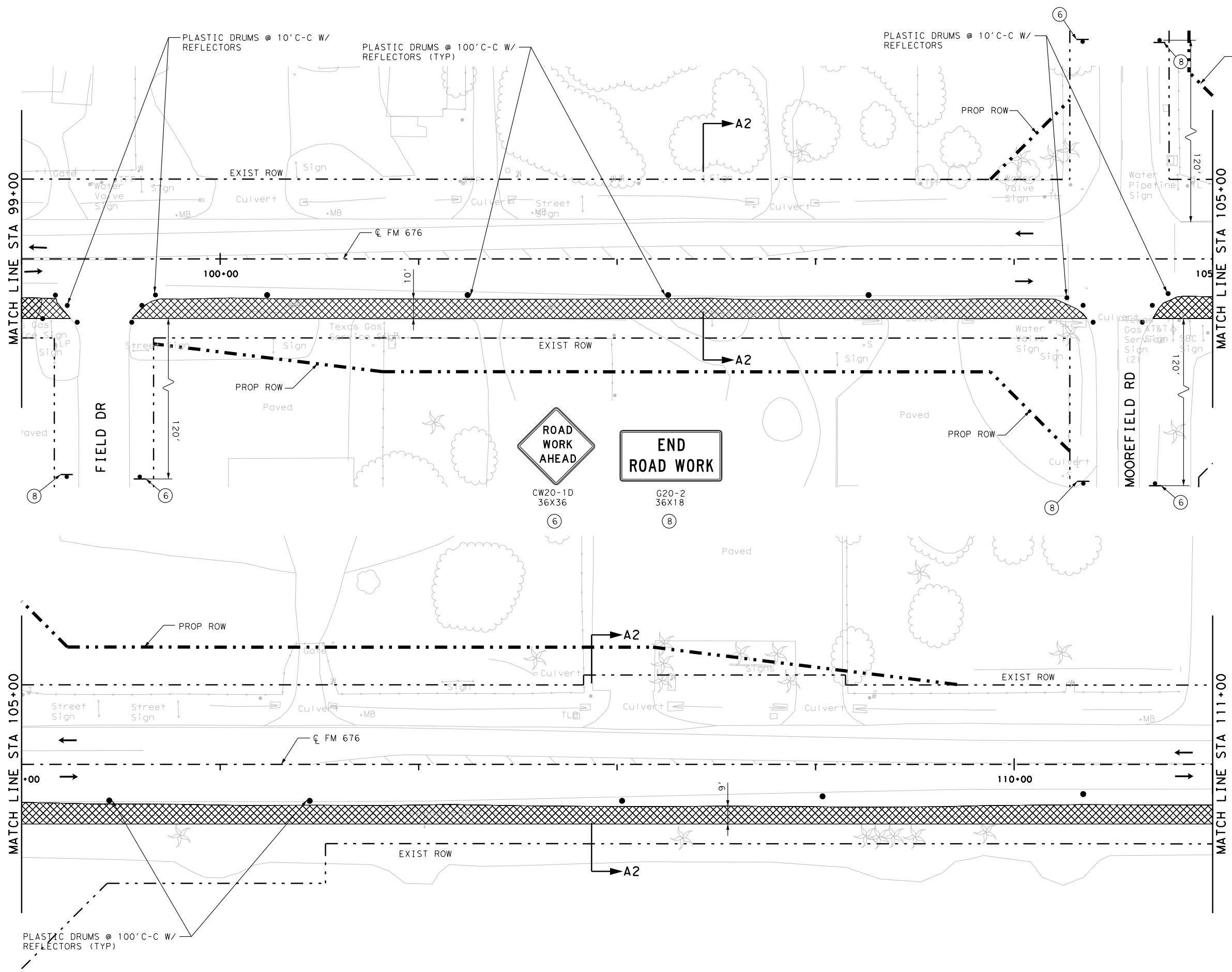
SHEET 5 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			48
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 6 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			49
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022

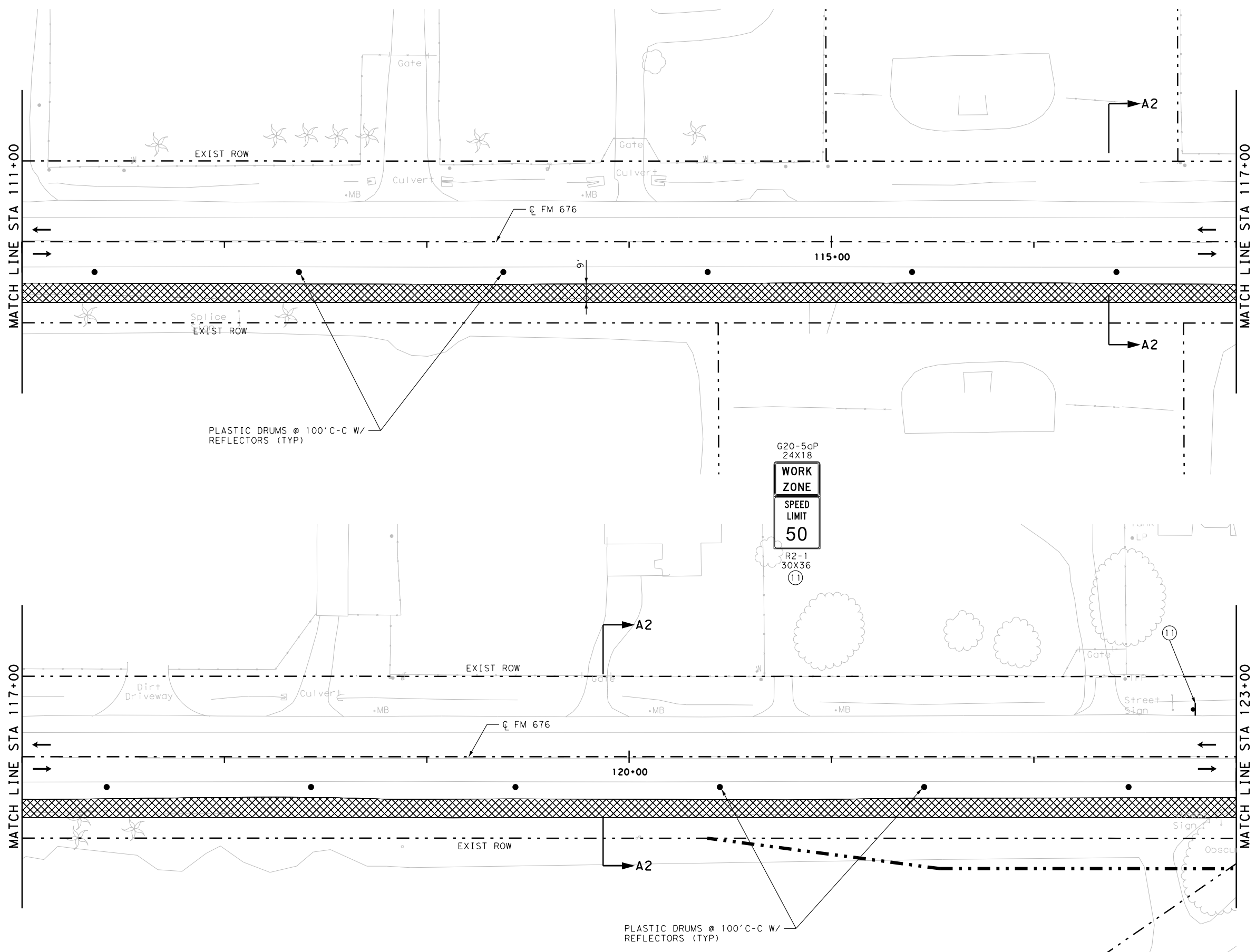


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 7 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			50
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022

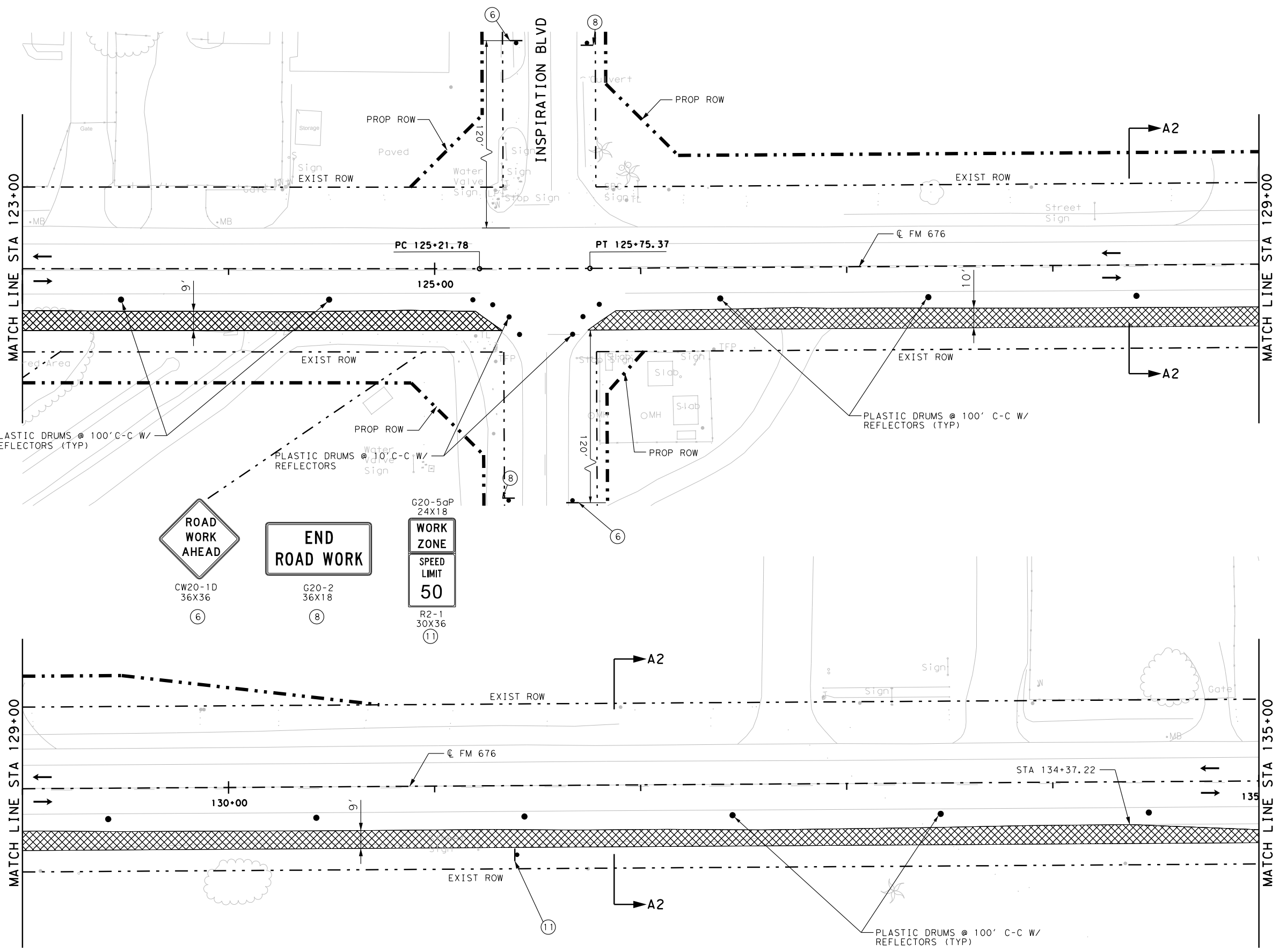


**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 8 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			51
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

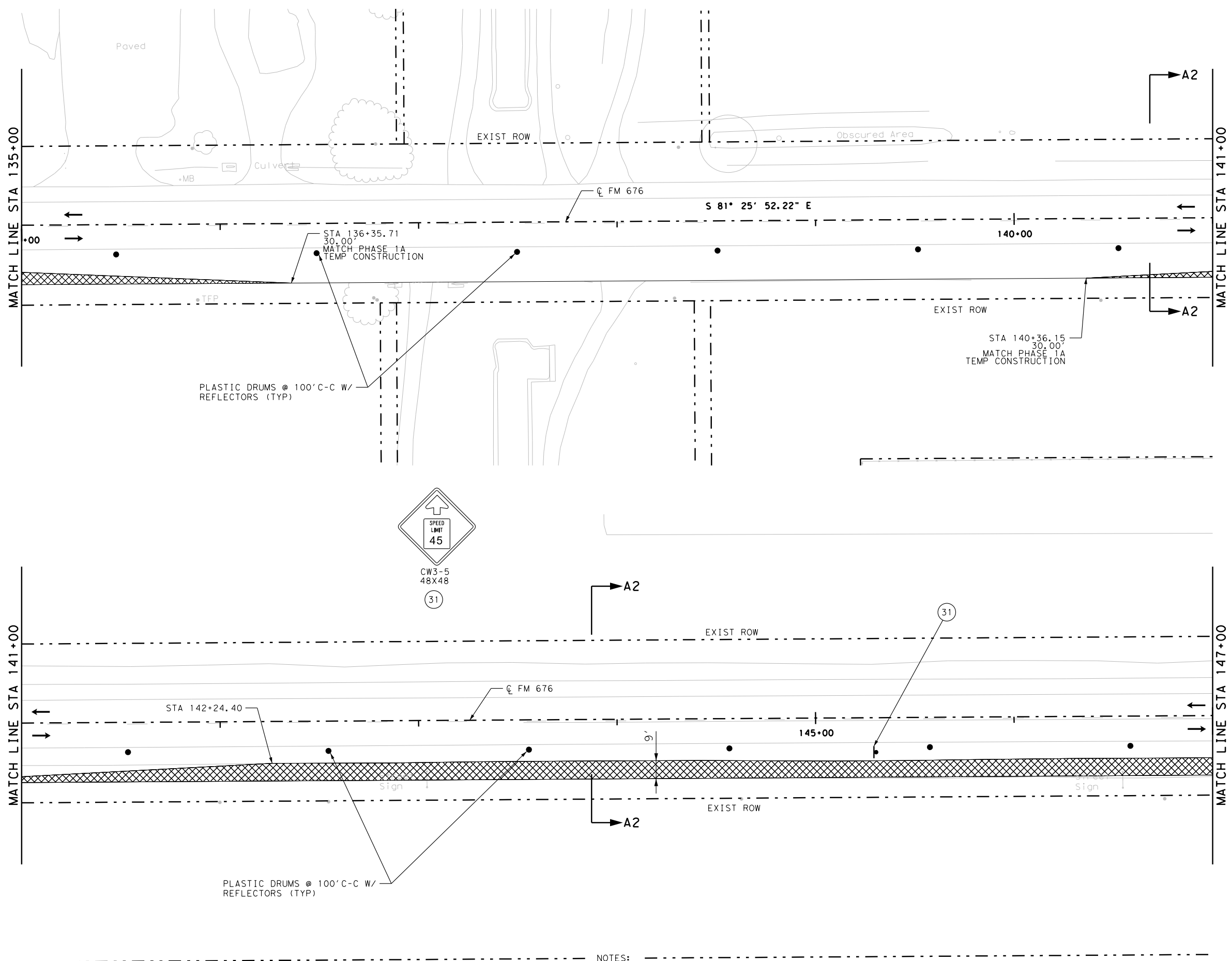
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



NOTES:

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 9 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		52
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022

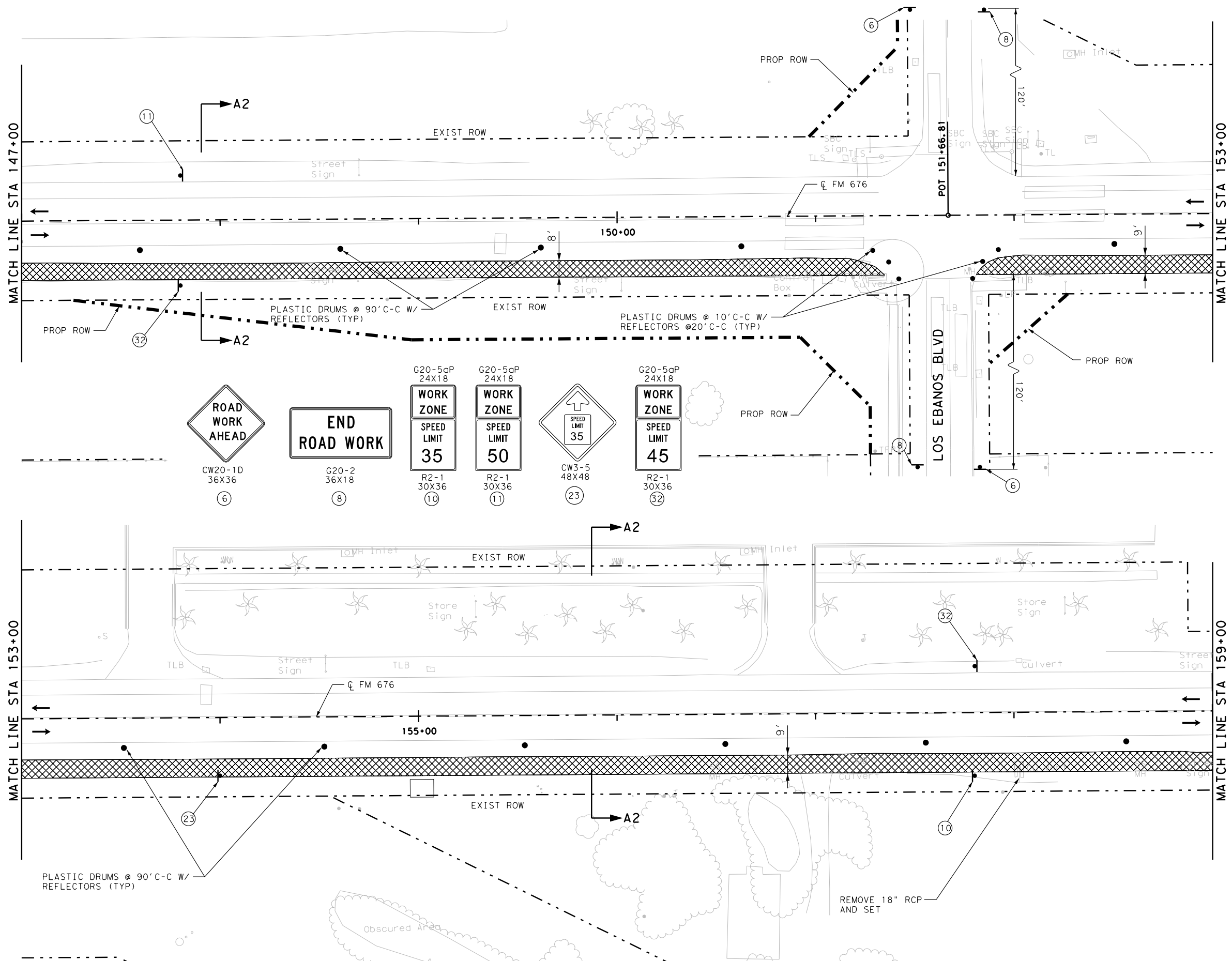


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 10 OF 15

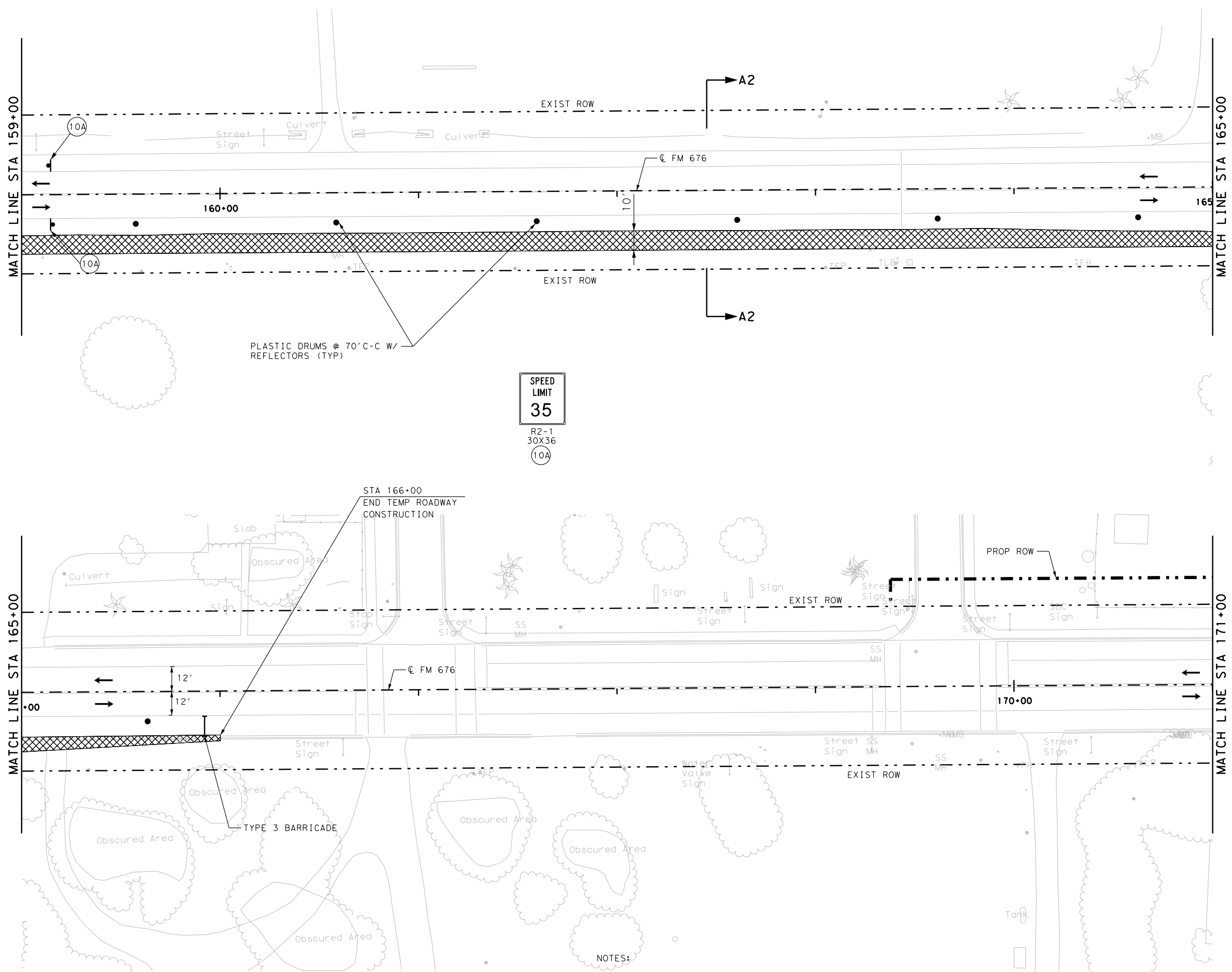
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STATE TEXAS	DIST. PHR	COUNTY HIDALGO			
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676		



- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



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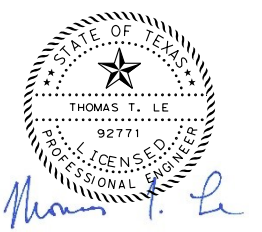


PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRIADA
- CHANNELIZING DEVICE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 11 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		54
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022

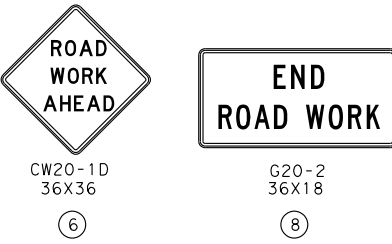
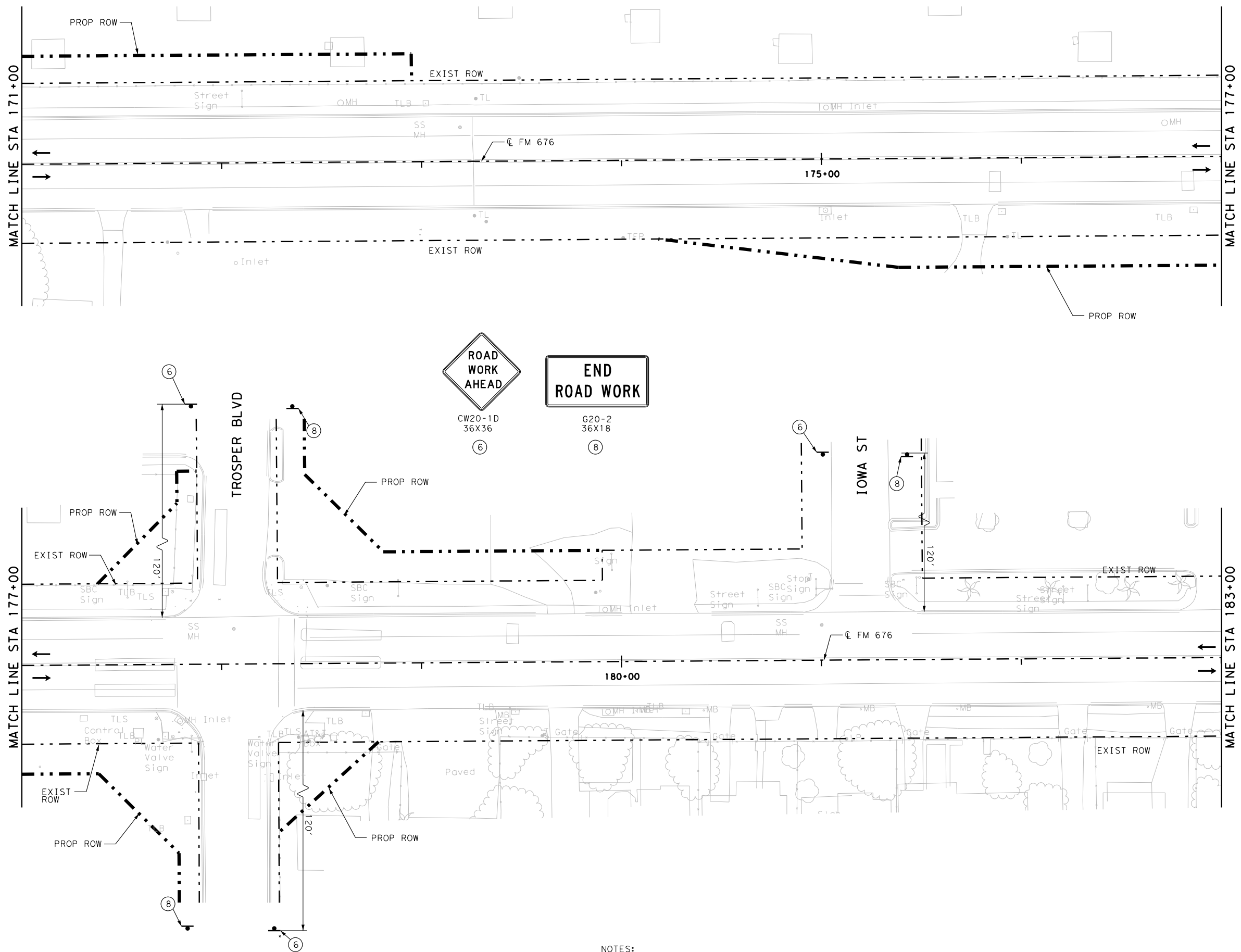


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 12 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			55
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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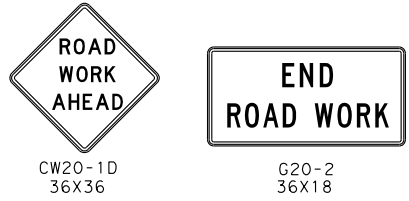
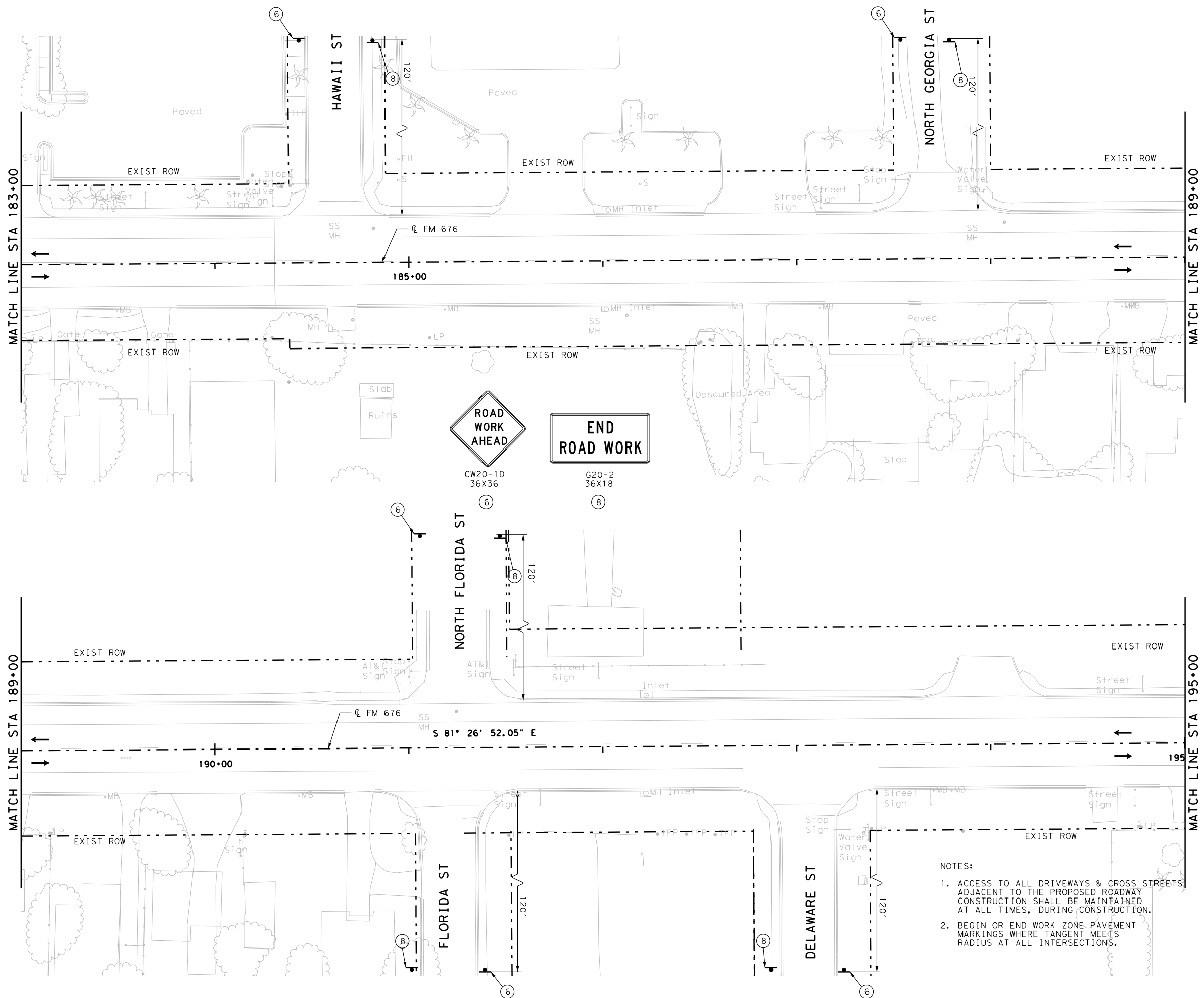
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 13 OF 15

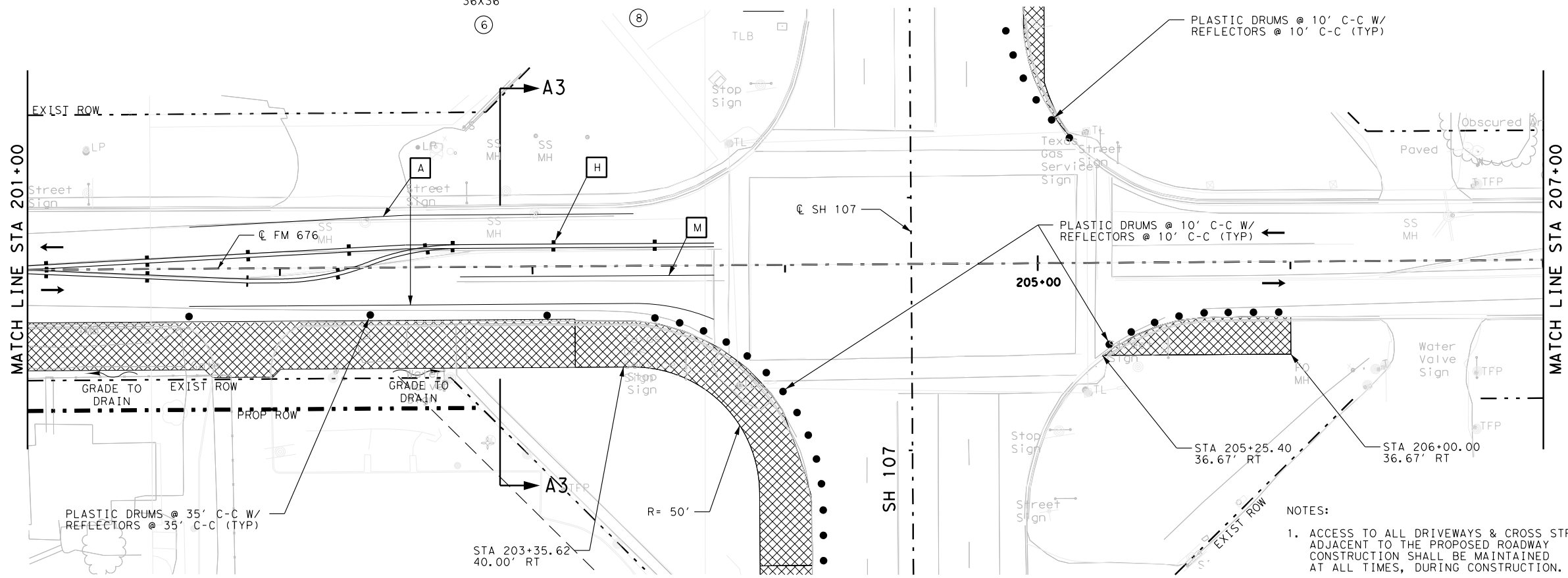
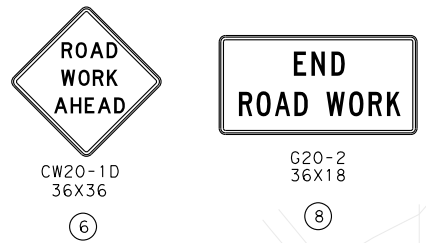
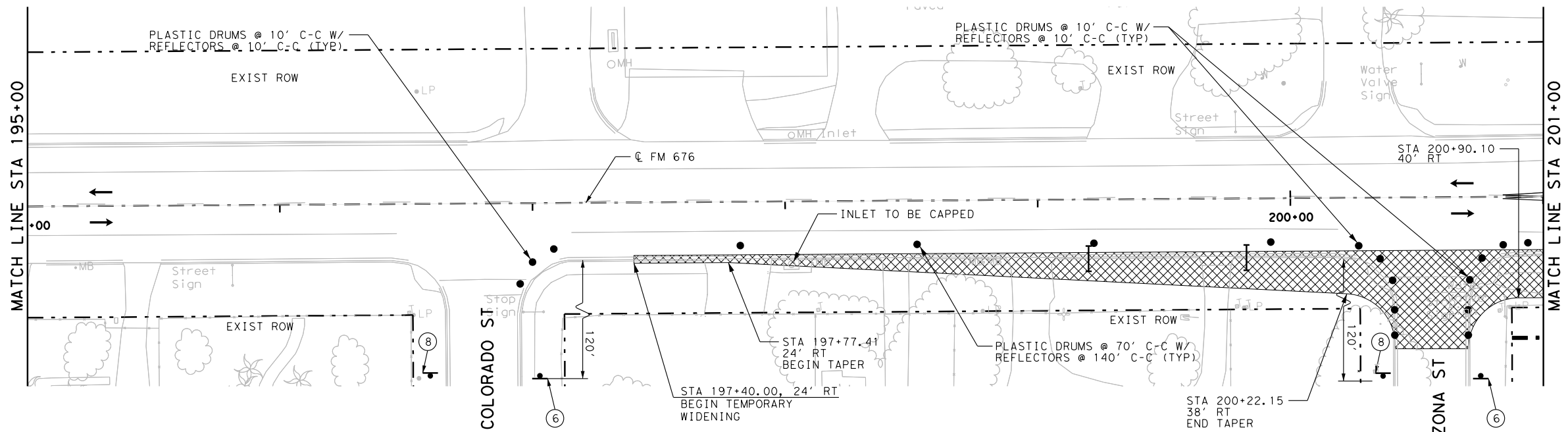
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		56
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



SEE SHEET NO. 58 FOR SH 107 TCP

- NOTES:**
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 14 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		57	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

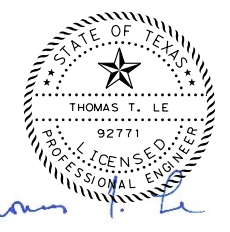
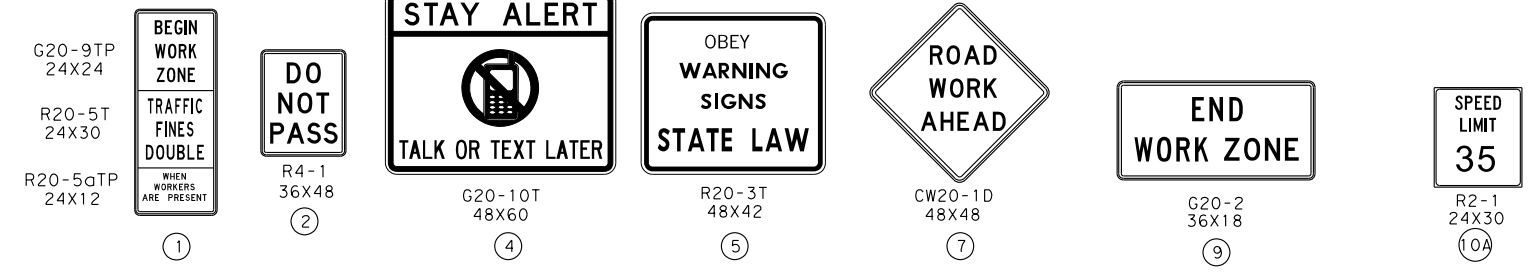
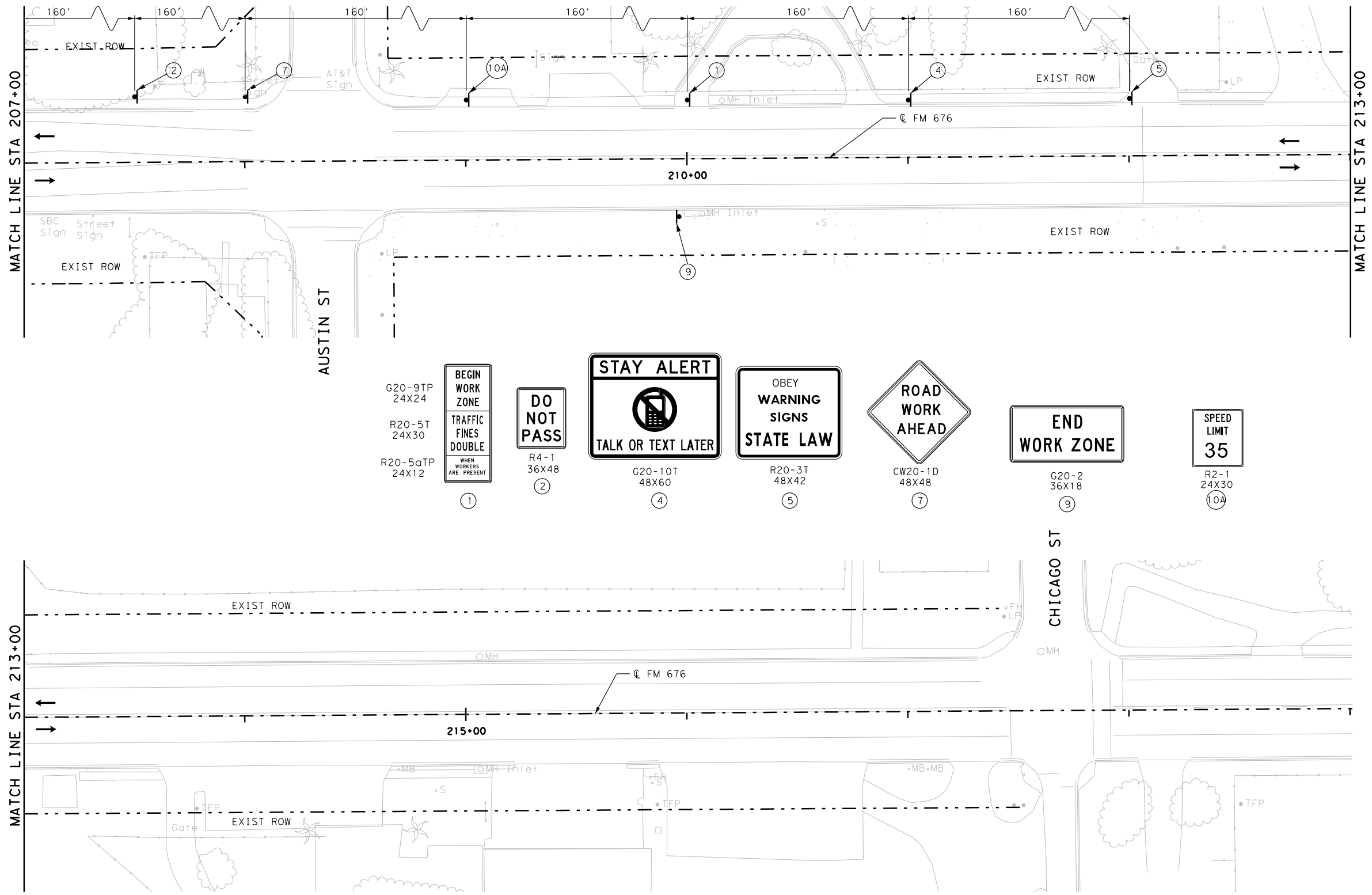
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 15 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			58
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676




















NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022

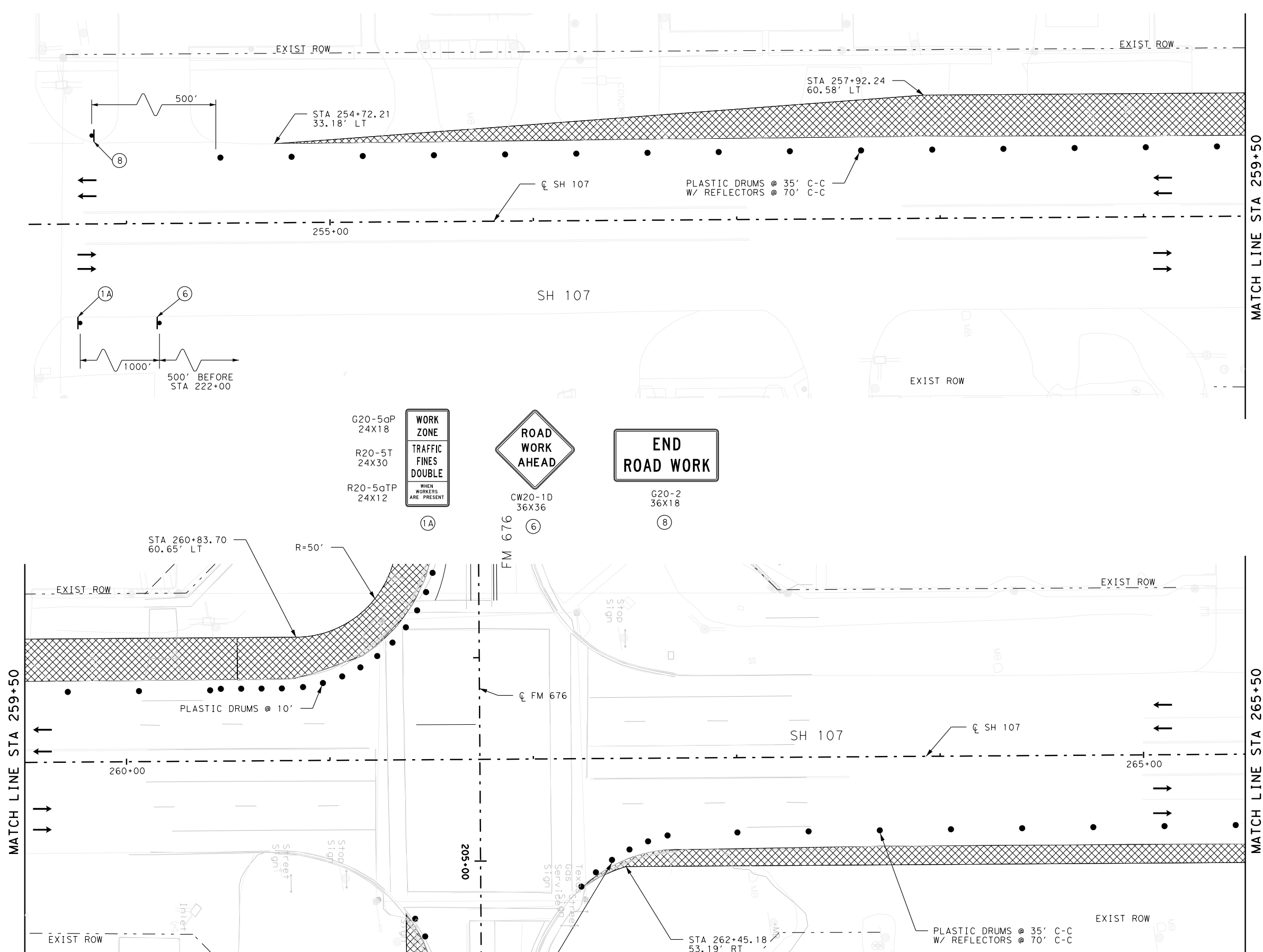


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 1**

SHEET 15a OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			58A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

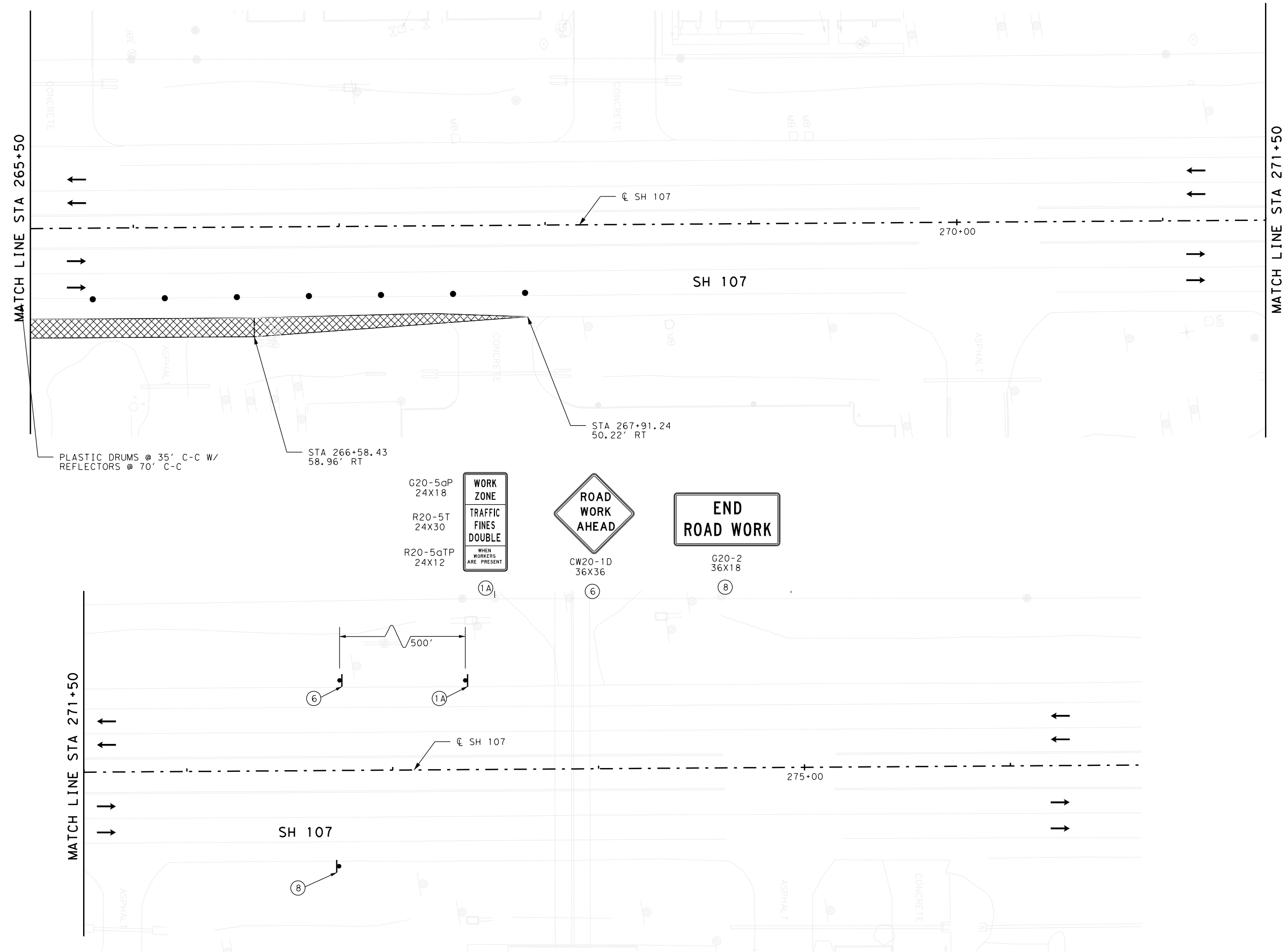


- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
**TRAFFIC CONTROL PLAN  
 PHASE I STEP 1**

SHEET 15b OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			58B
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- \*** ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

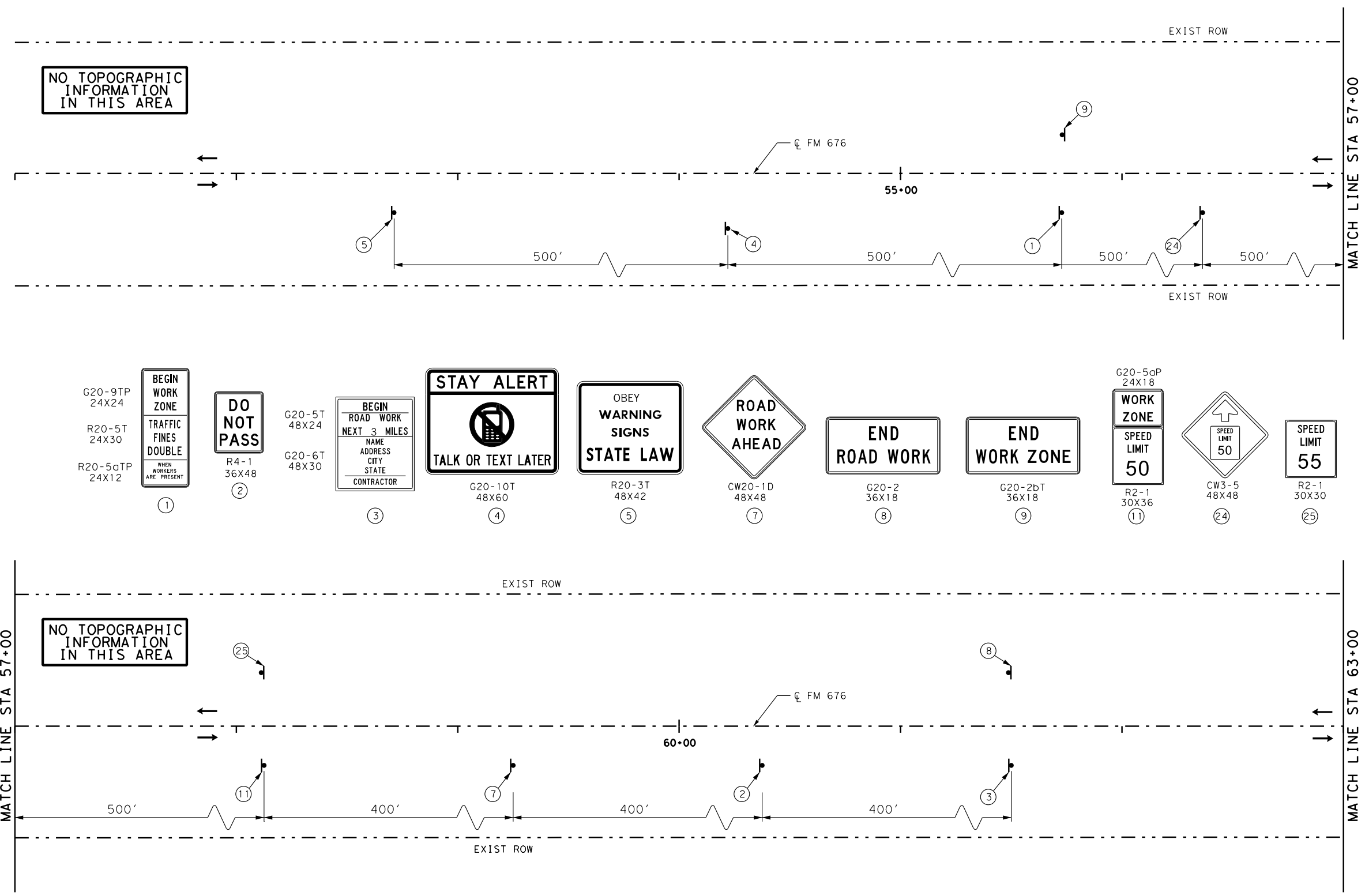
**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 2**

SHEET 1 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			59
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

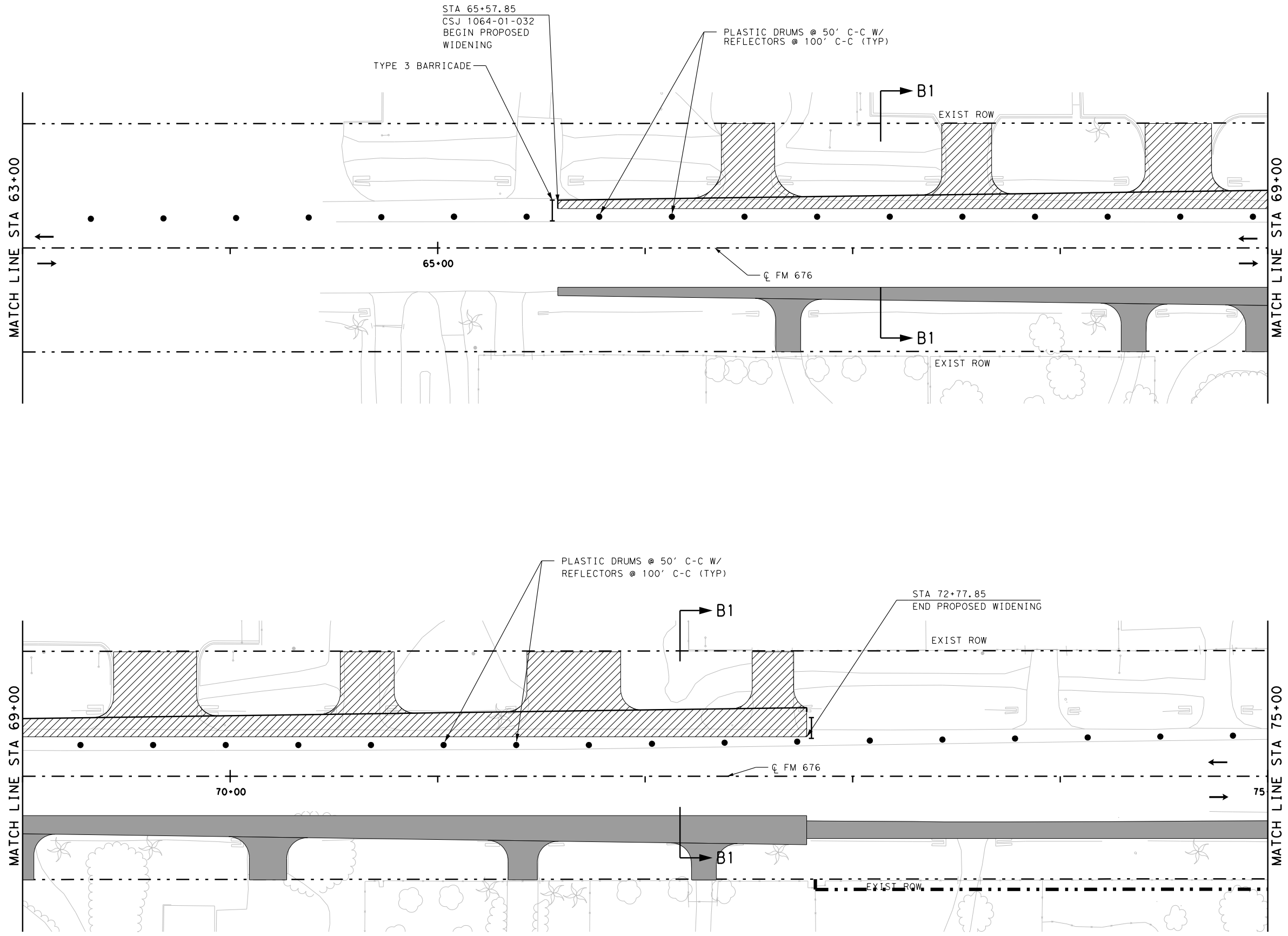


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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- \* ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 2**

SHEET 2 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			60
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

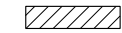


















- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

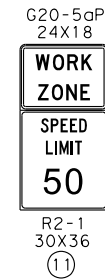
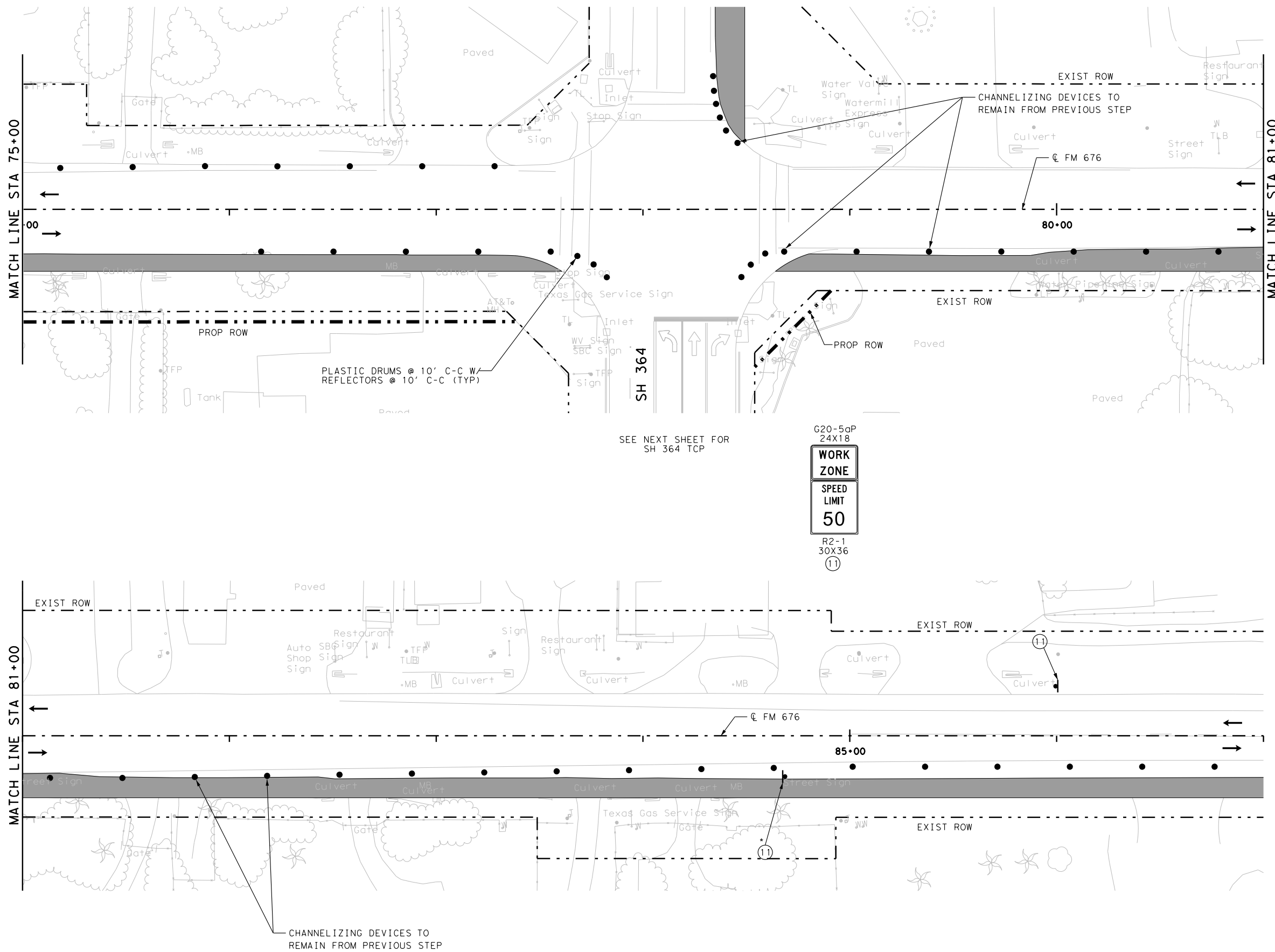
SEE NEXT SHEET FOR  
SH 364 TCP

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 2**

SHEET 3 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6	6		61
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676




















**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

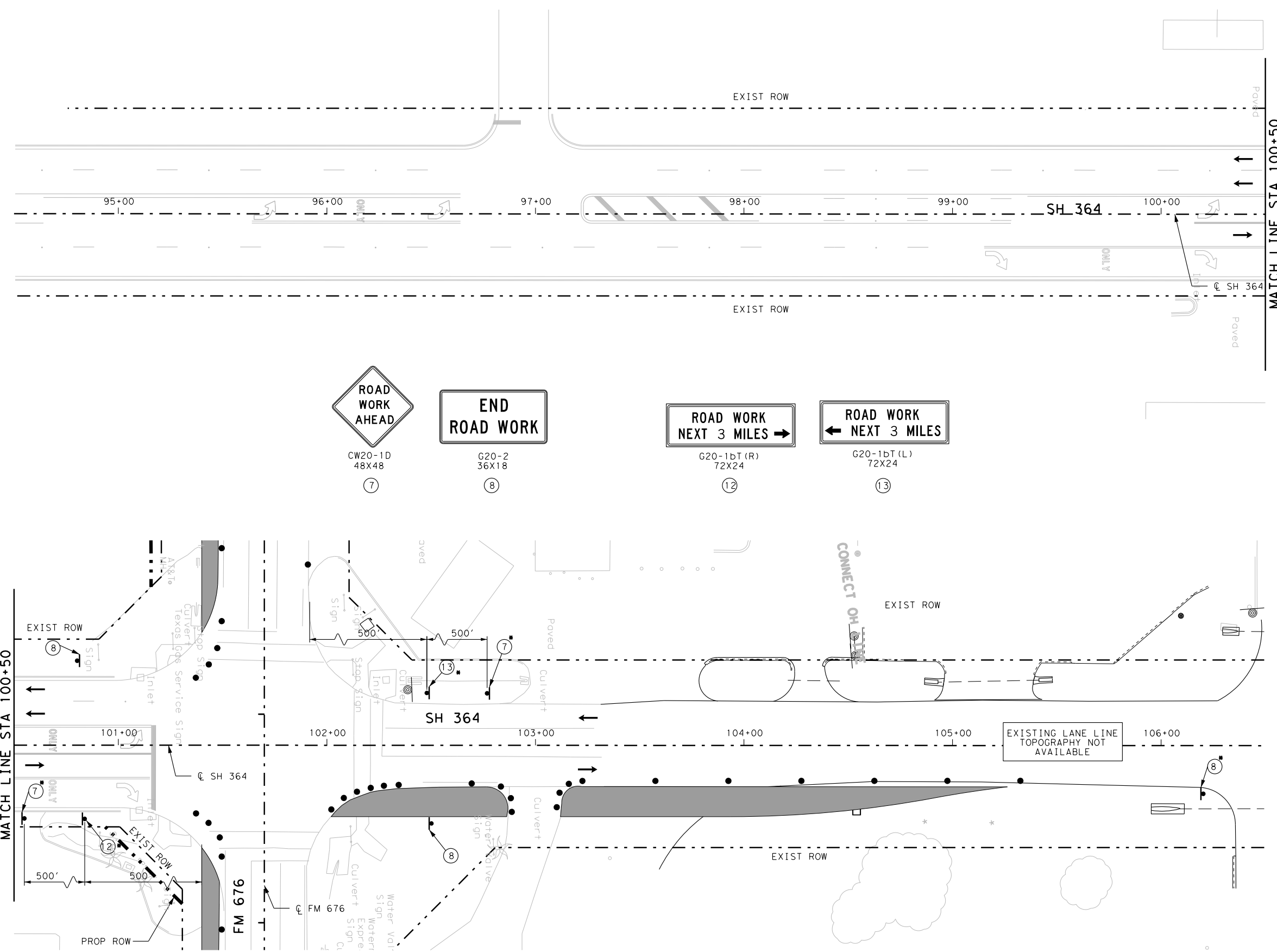


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE I STEP 2**

SHEET 4 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			62
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

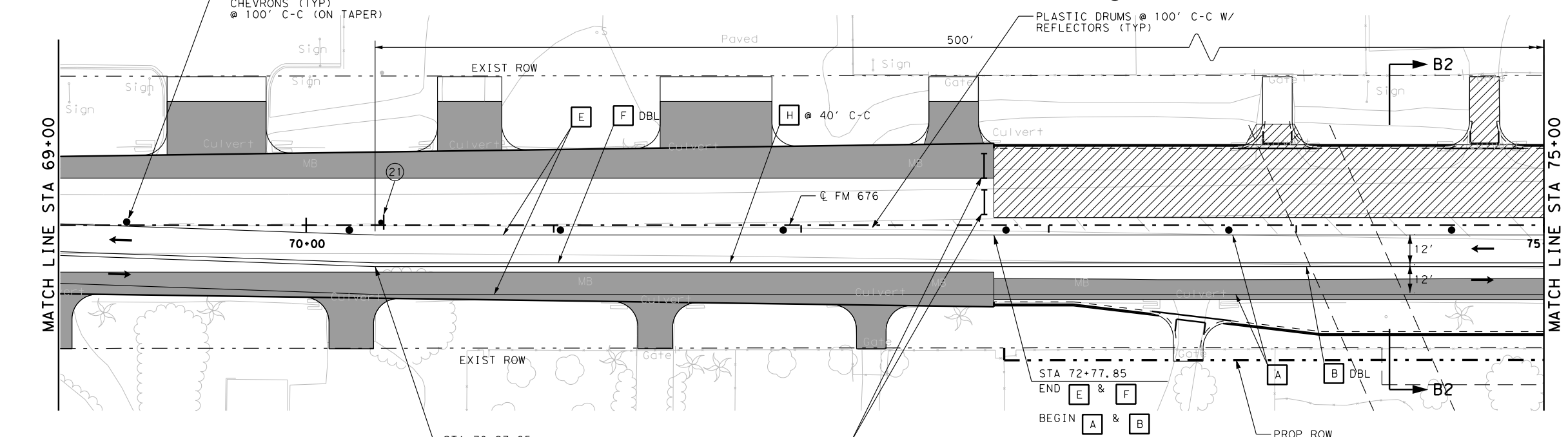
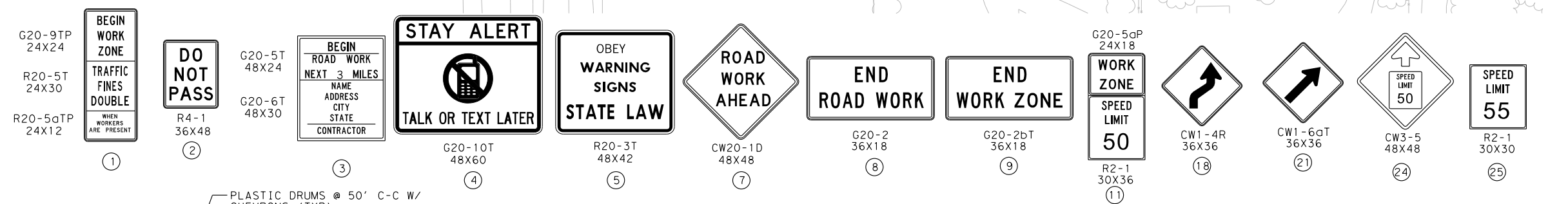
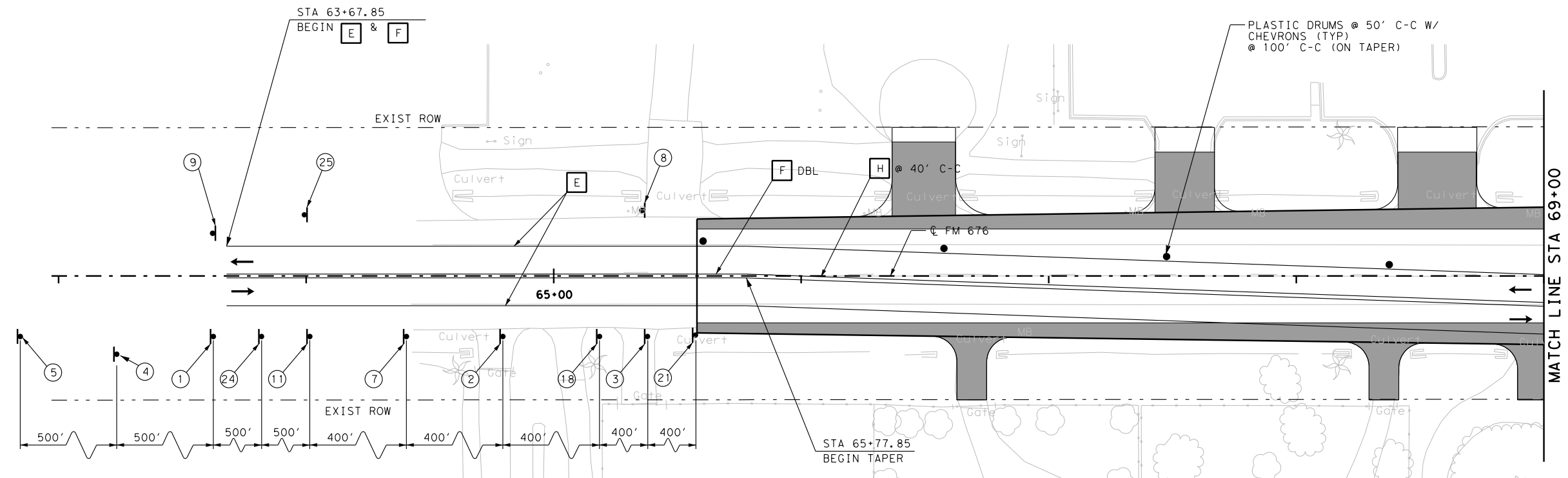
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



\*\* PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS.

- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

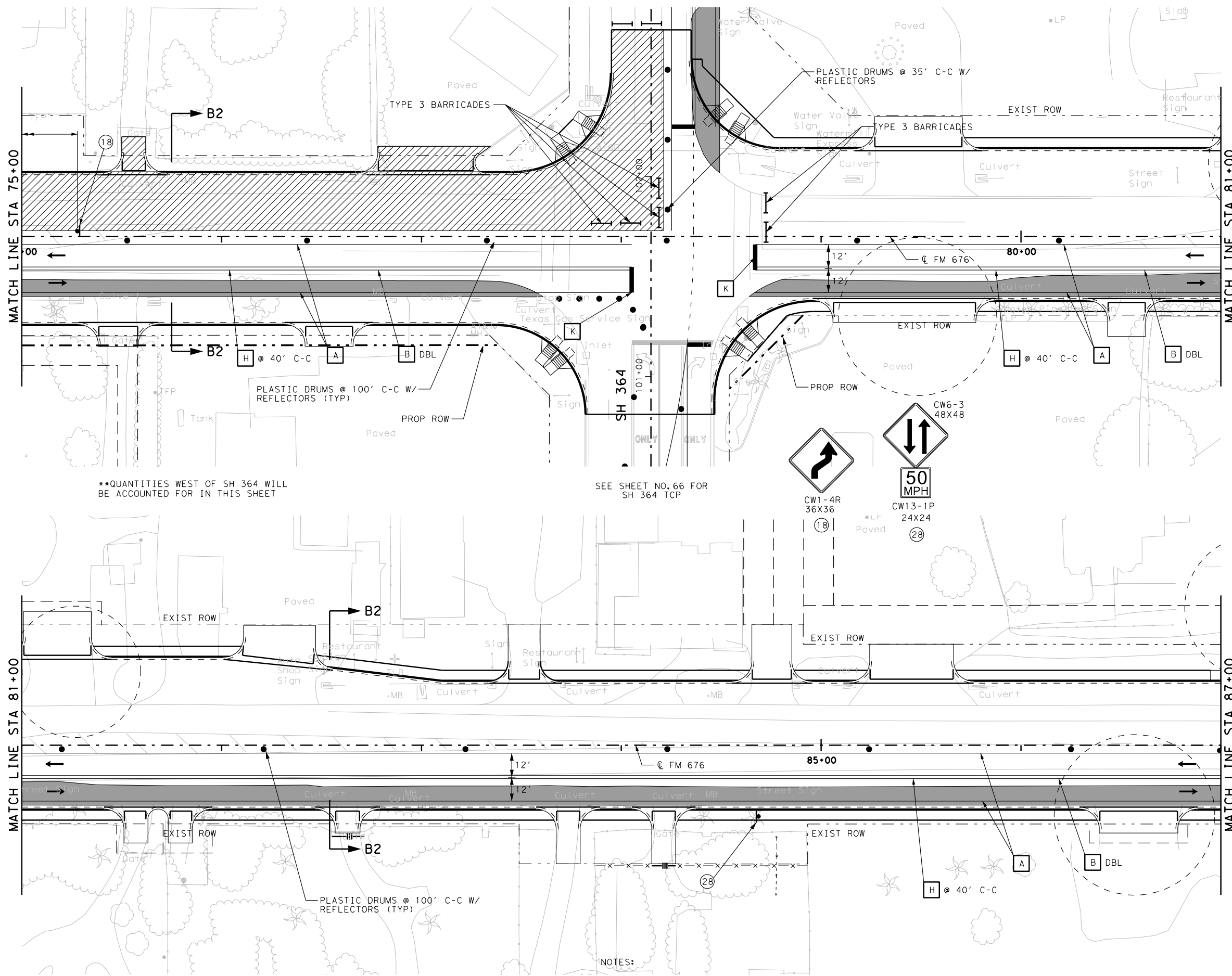
SHEET 1 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		63
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676




















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SEE SHEET NO. 66 FOR SH 364 TCP

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE

\*\*QUANTITIES WEST OF SH 364 WILL BE ACCOUNTED FOR IN THIS SHEET

SEE SHEET NO. 66 FOR SH 364 TCP



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
TRAFFIC CONTROL PLAN  
PHASE II**

SHEET 2 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			64
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**





















1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

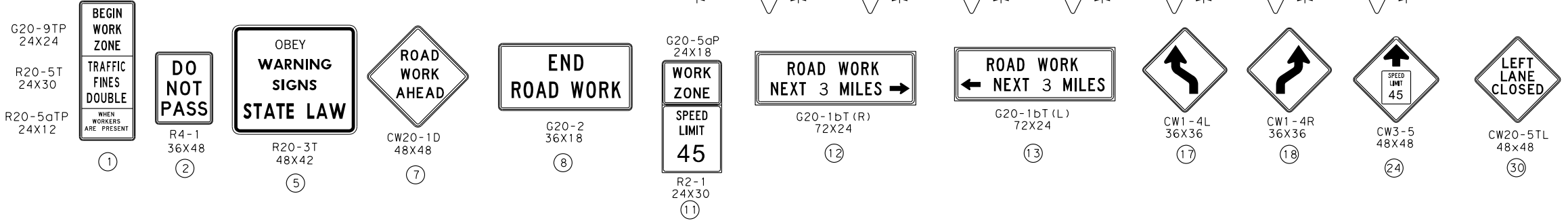
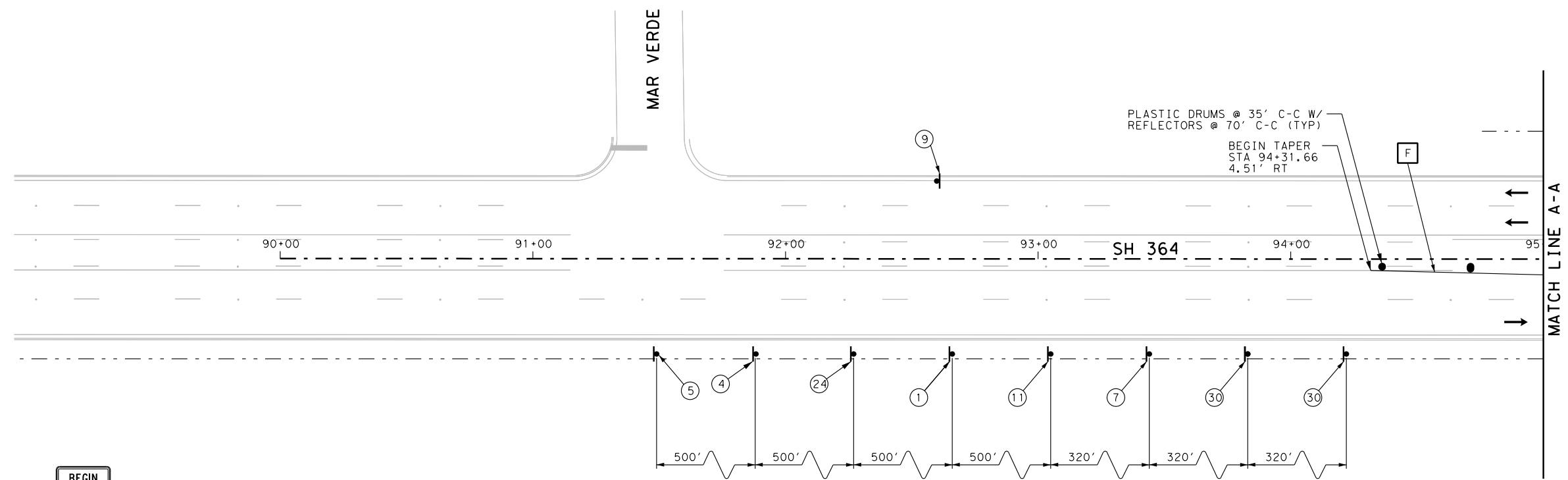
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE
-  TRAILER MOUNTED FLASHING ARROW BOARD



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 3 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			65
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

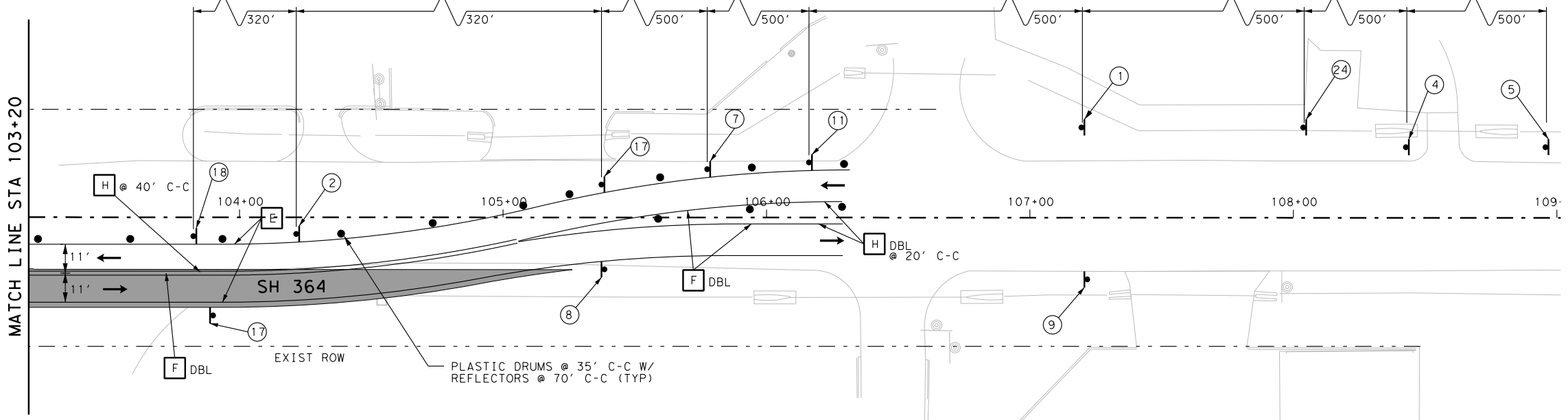
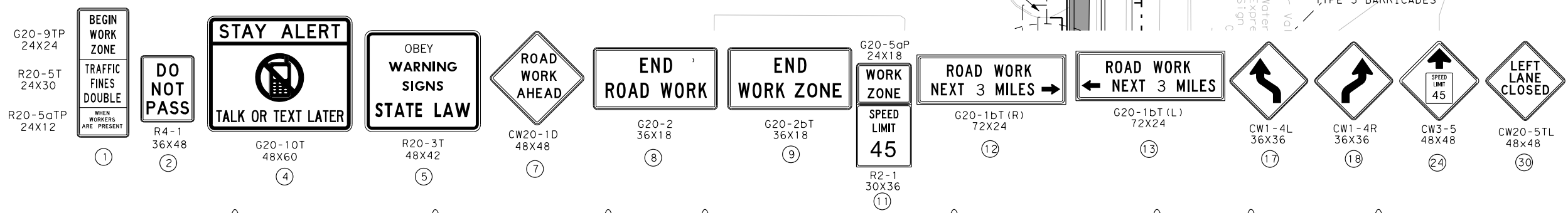
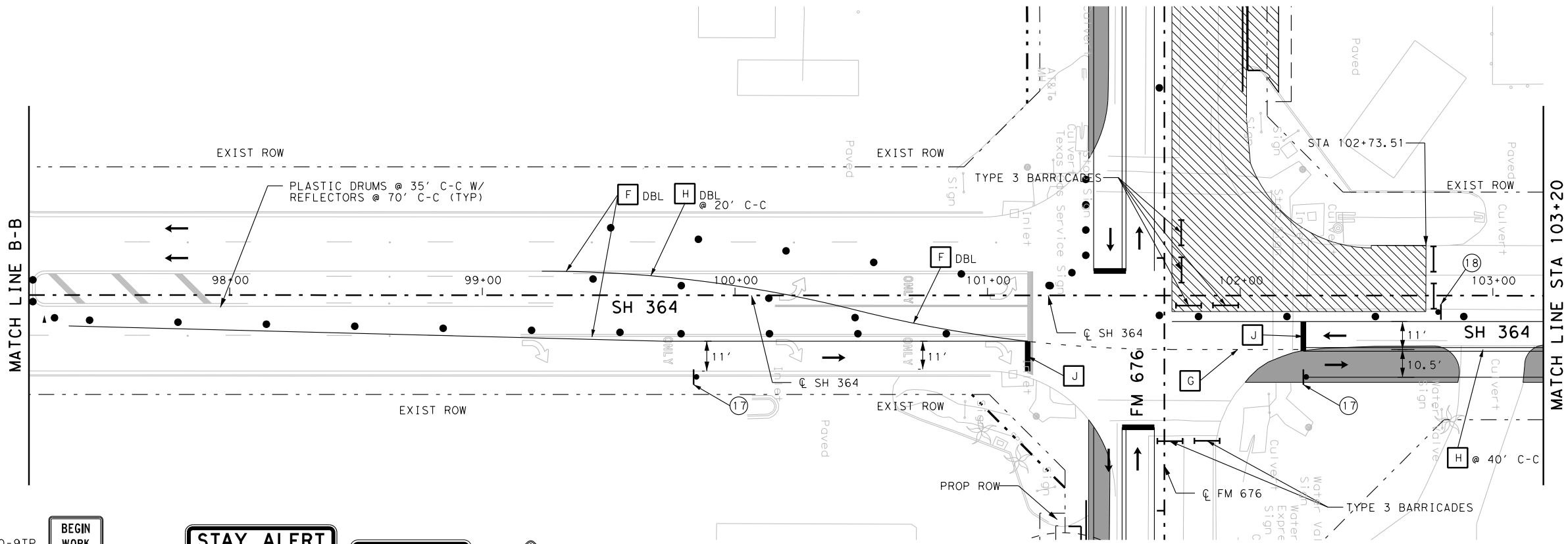
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 4 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			66
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

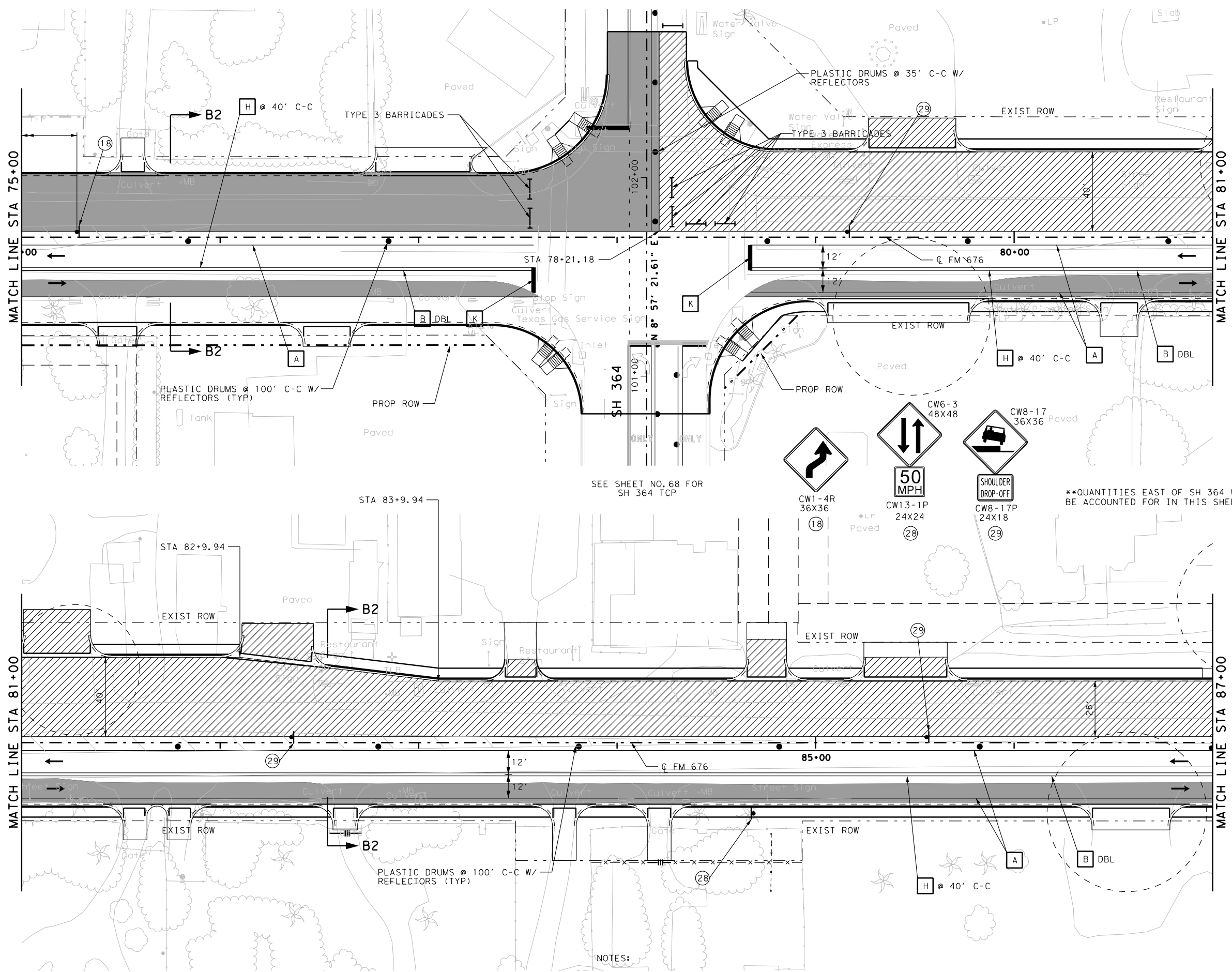
- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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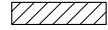


















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SEE SHEET NO. 68 FOR  
 SH 364 TCP

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE II**

SHEET 5 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			67
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.




















\*\*QUANTITIES EAST OF SH 364 WILL BE ACCOUNTED FOR IN THIS SHEET



PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

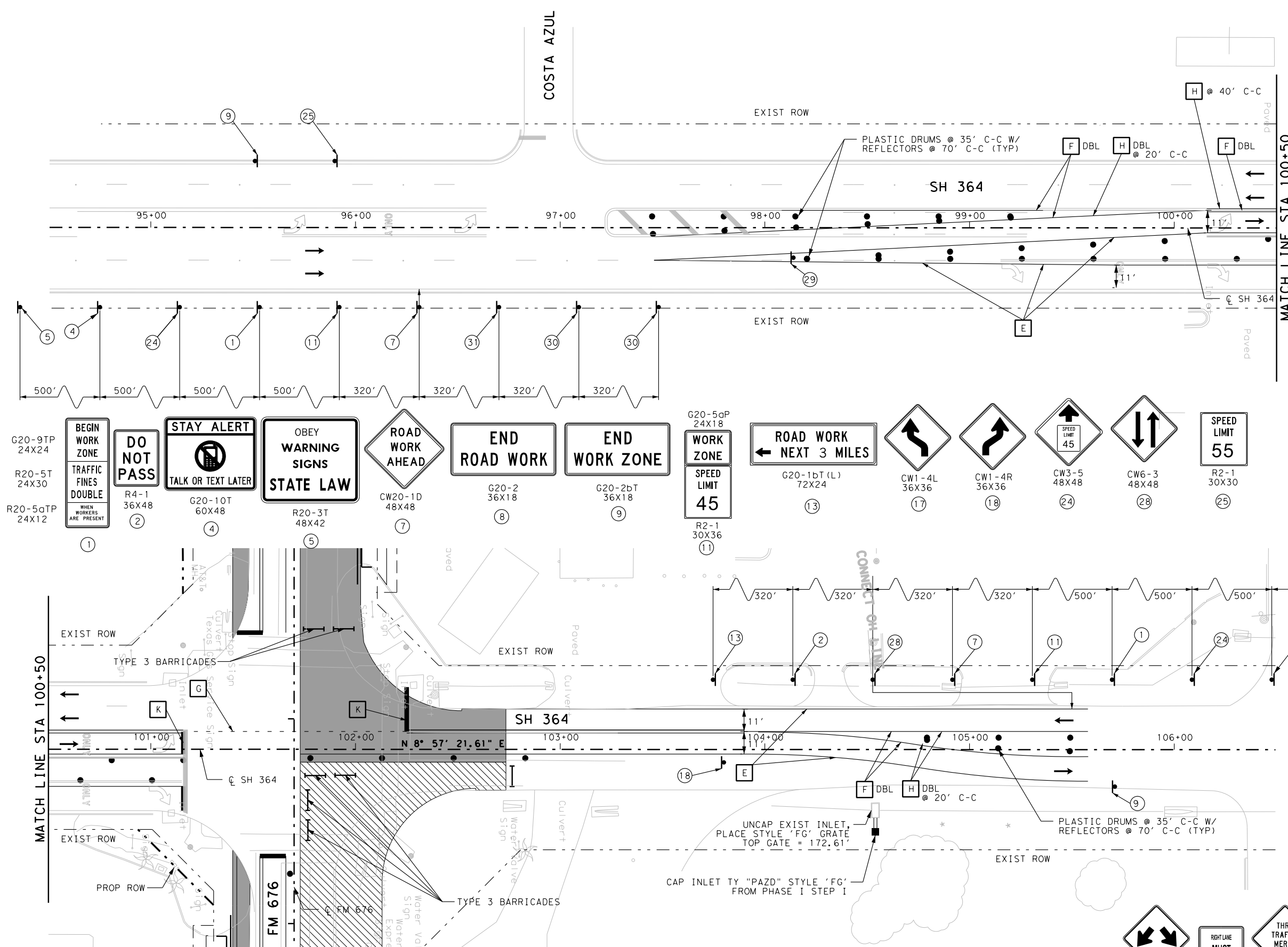


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 6 OF 17

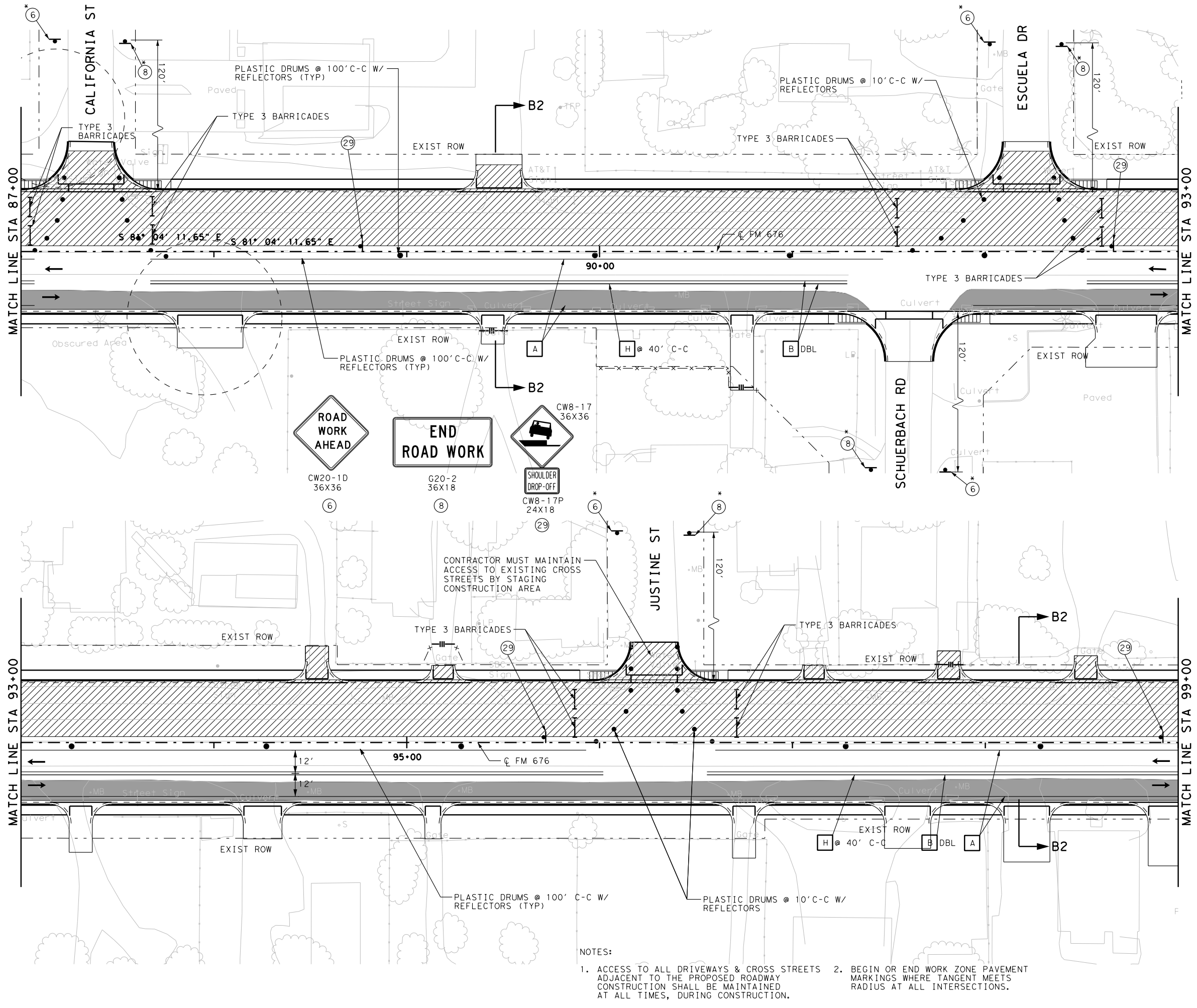
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			68
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLOT DRIVER: RD\*11x17\*PDF.d1+  
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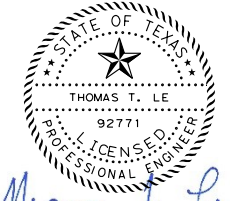


PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 7 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			69
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

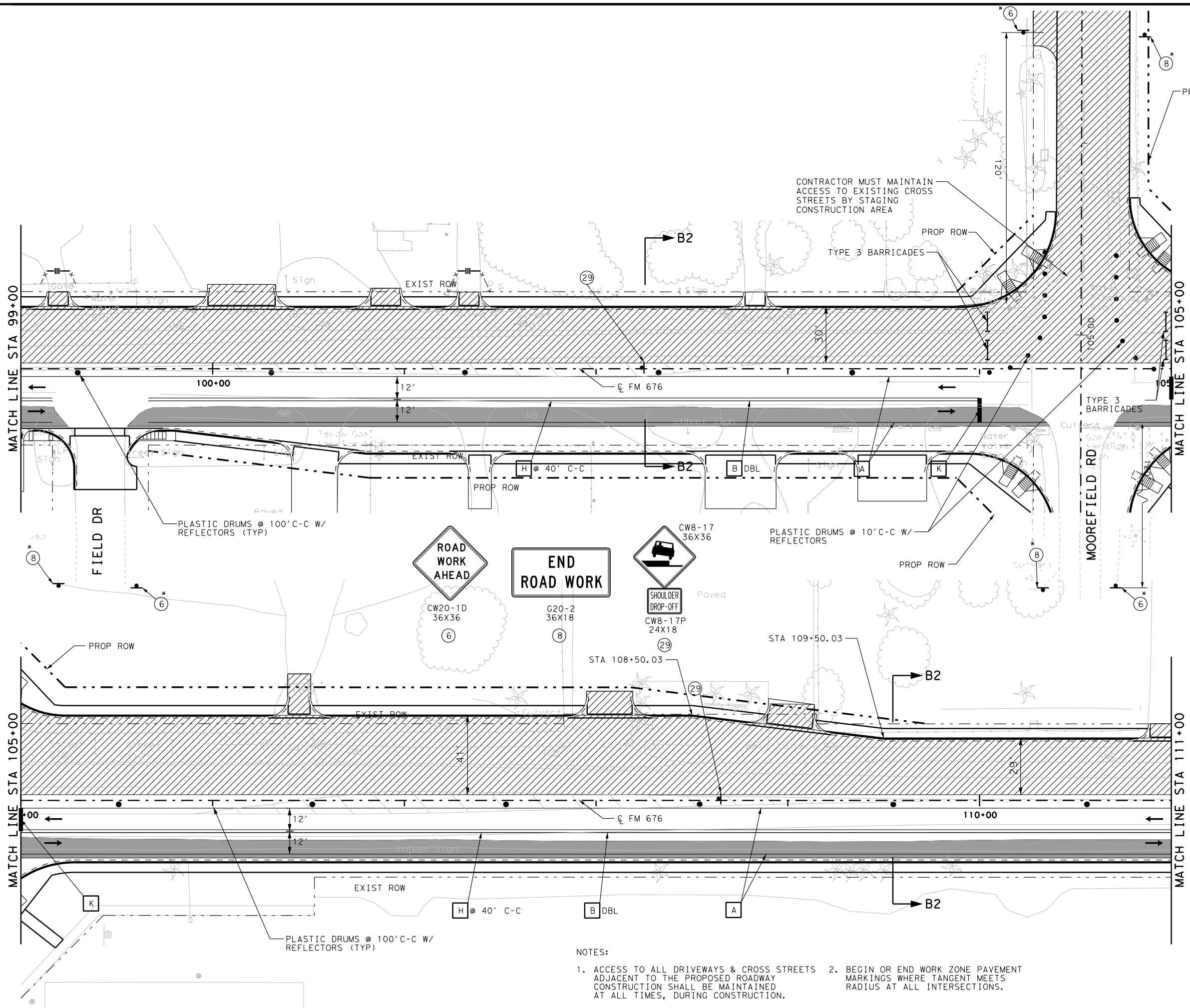


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 8 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		70
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

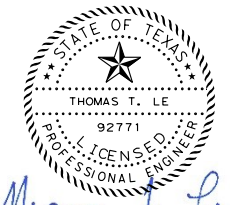
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PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

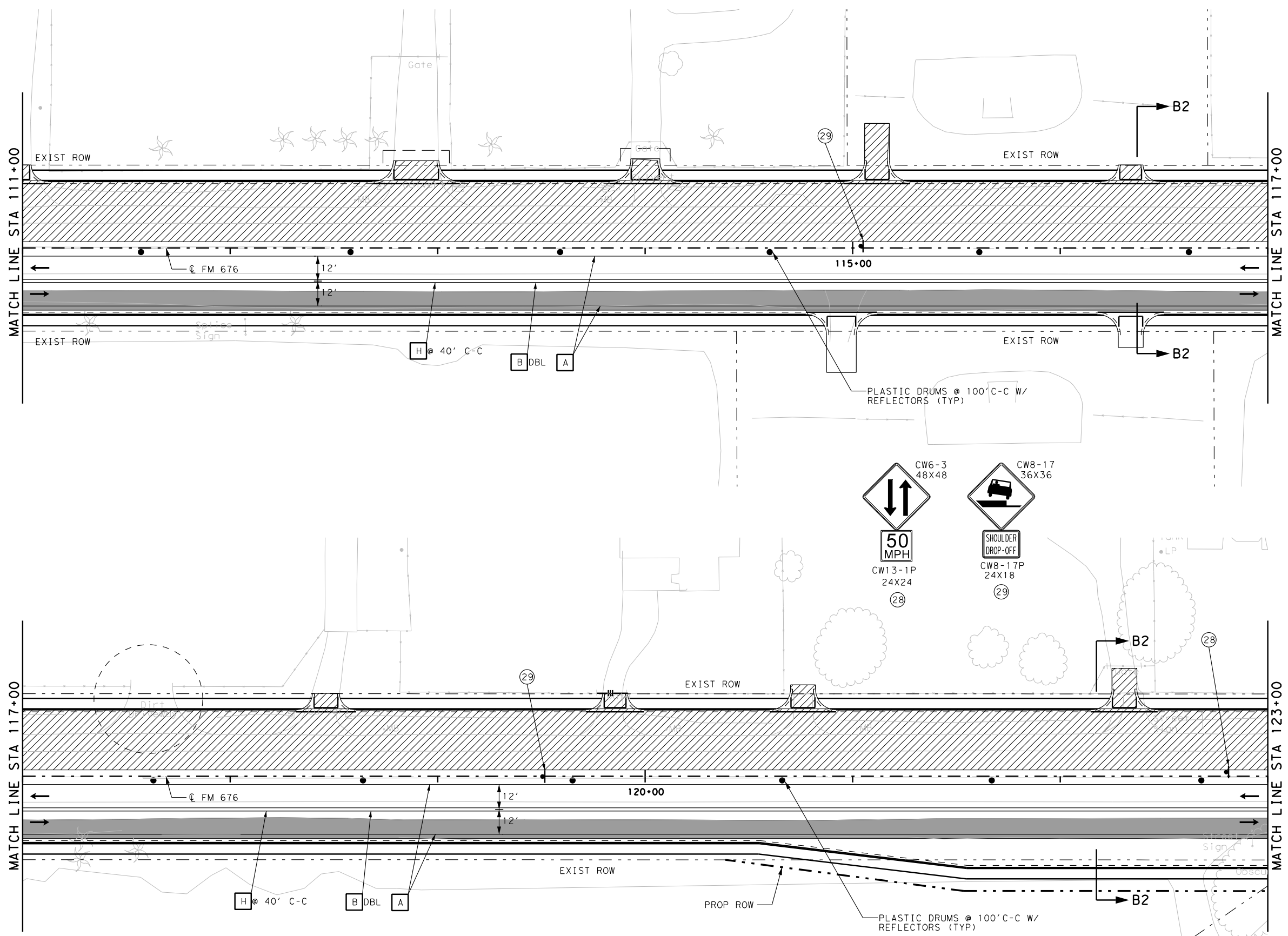


**ATKINS**  
TBPE REG. #F-474

**FM 676  
TRAFFIC CONTROL PLAN  
PHASE II**

SHEET 9 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		71
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



**NOTES:**

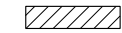


















1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

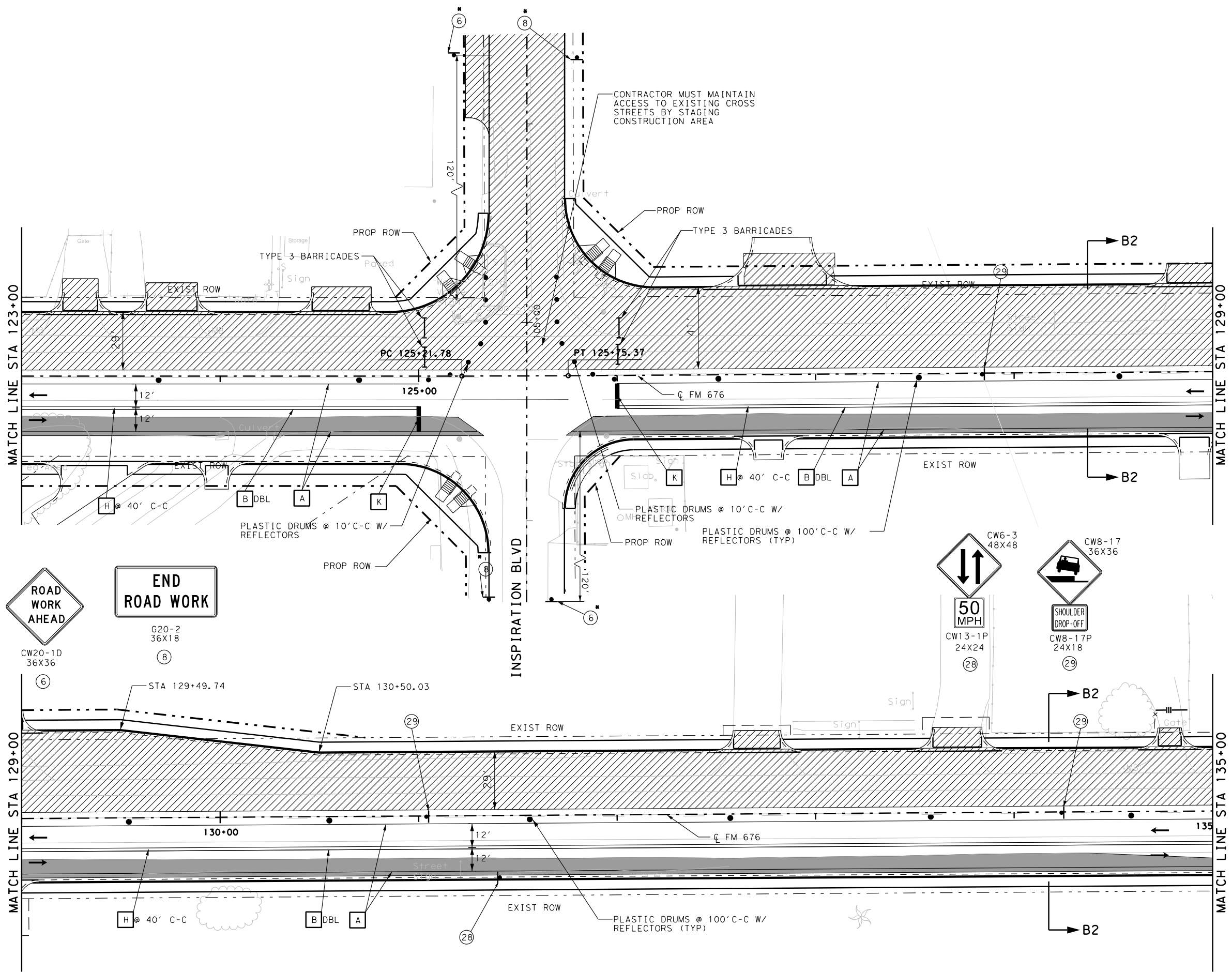


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 10 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			72
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

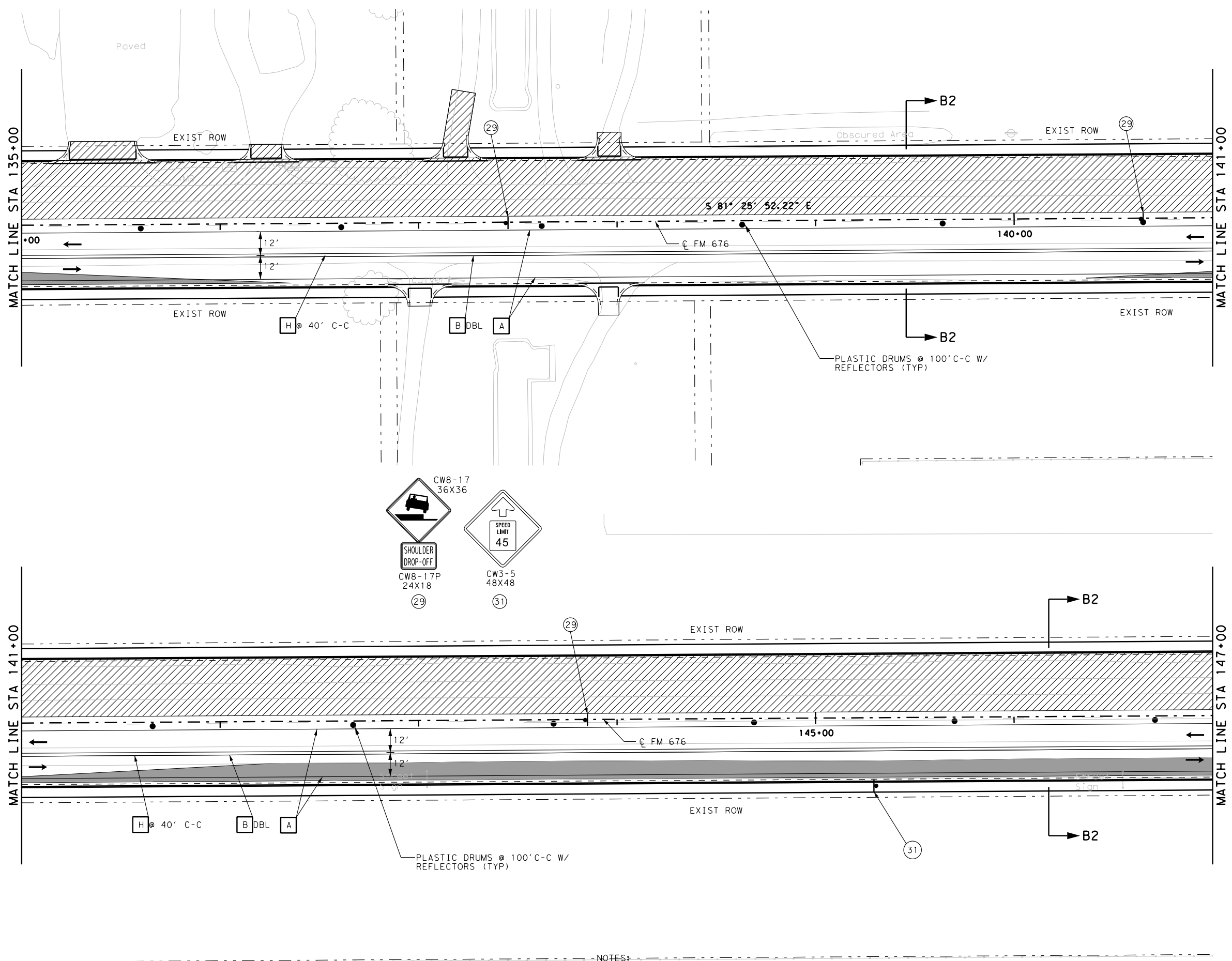


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 11 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			73
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

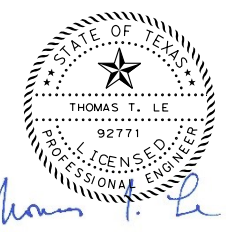
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



*Thomas T. Le*  
 11/18/2022

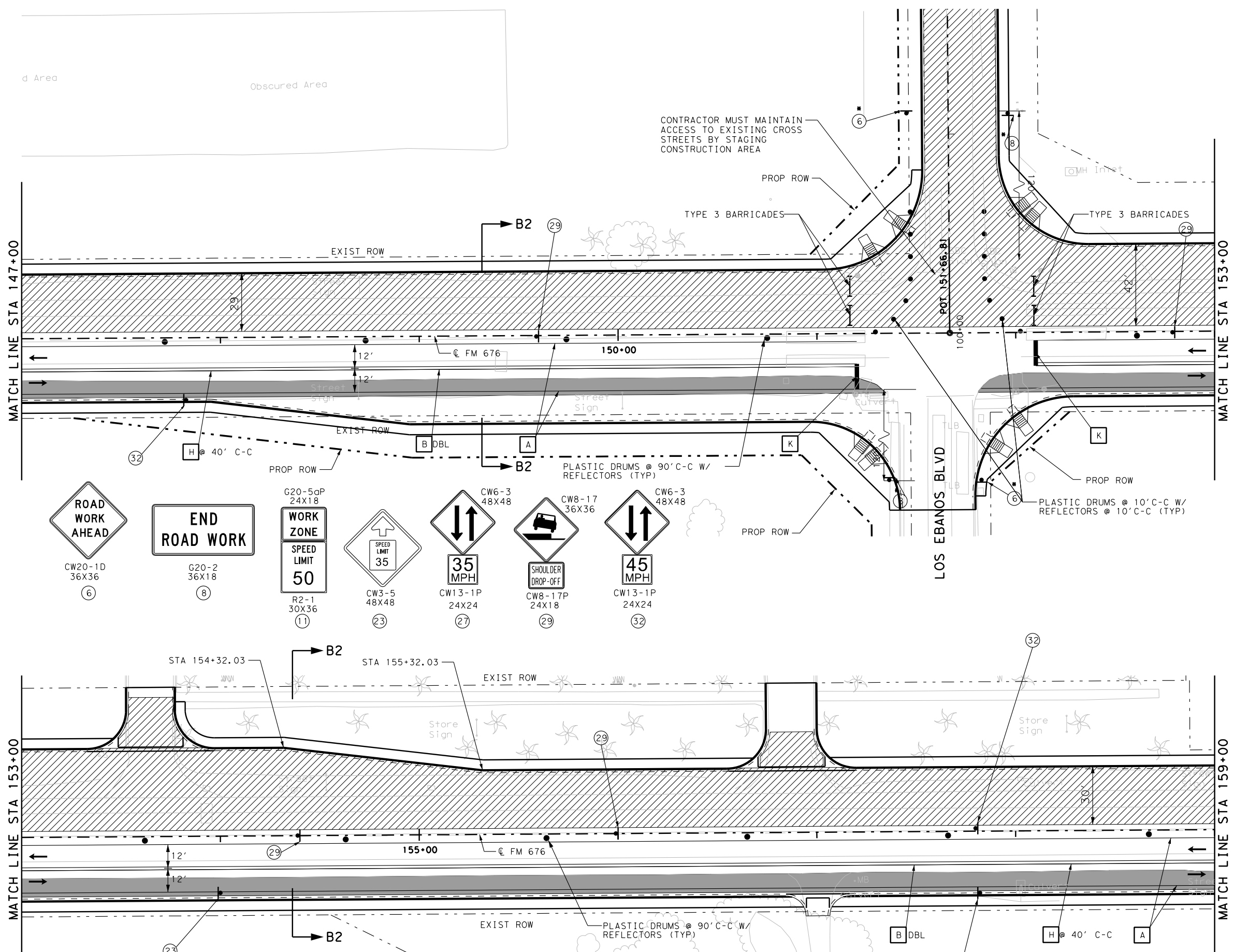


**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE II**

SHEET 12 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		74
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



- ROAD WORK AHEAD  
CW20-1D 36X36 (6)
- END ROAD WORK  
G20-2 36X18 (8)
- WORK ZONE SPEED LIMIT 50  
R2-1 30X36 (11)
- SPEED LIMIT 35  
CW3-5 48X48 (23)
- 35 MPH  
CW13-1P 24X24 (27)
- SHOULDER DROP-OFF  
CW8-17P 24X18 (29)
- 45 MPH  
CW13-1P 24X24 (32)

NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

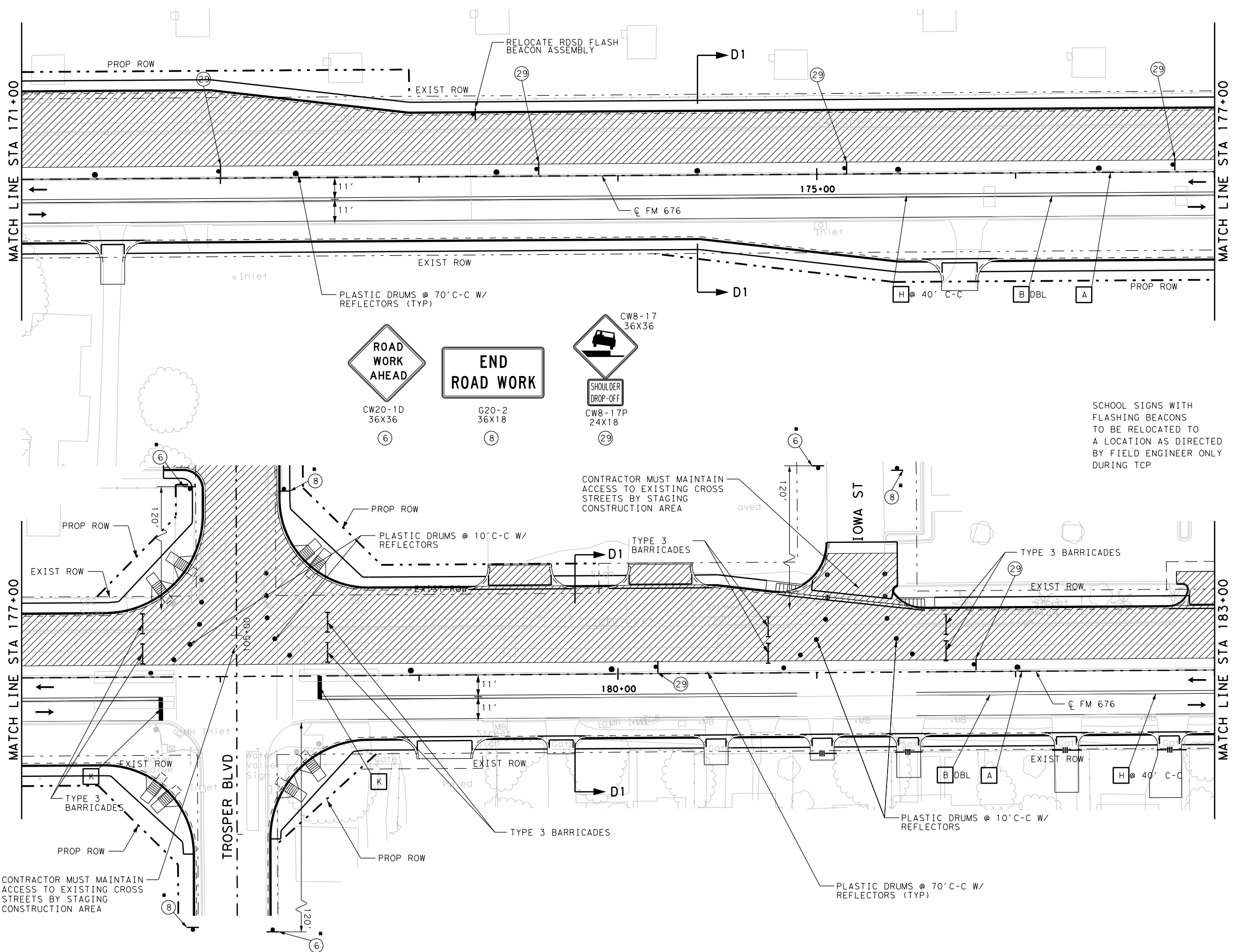


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 14 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		76
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



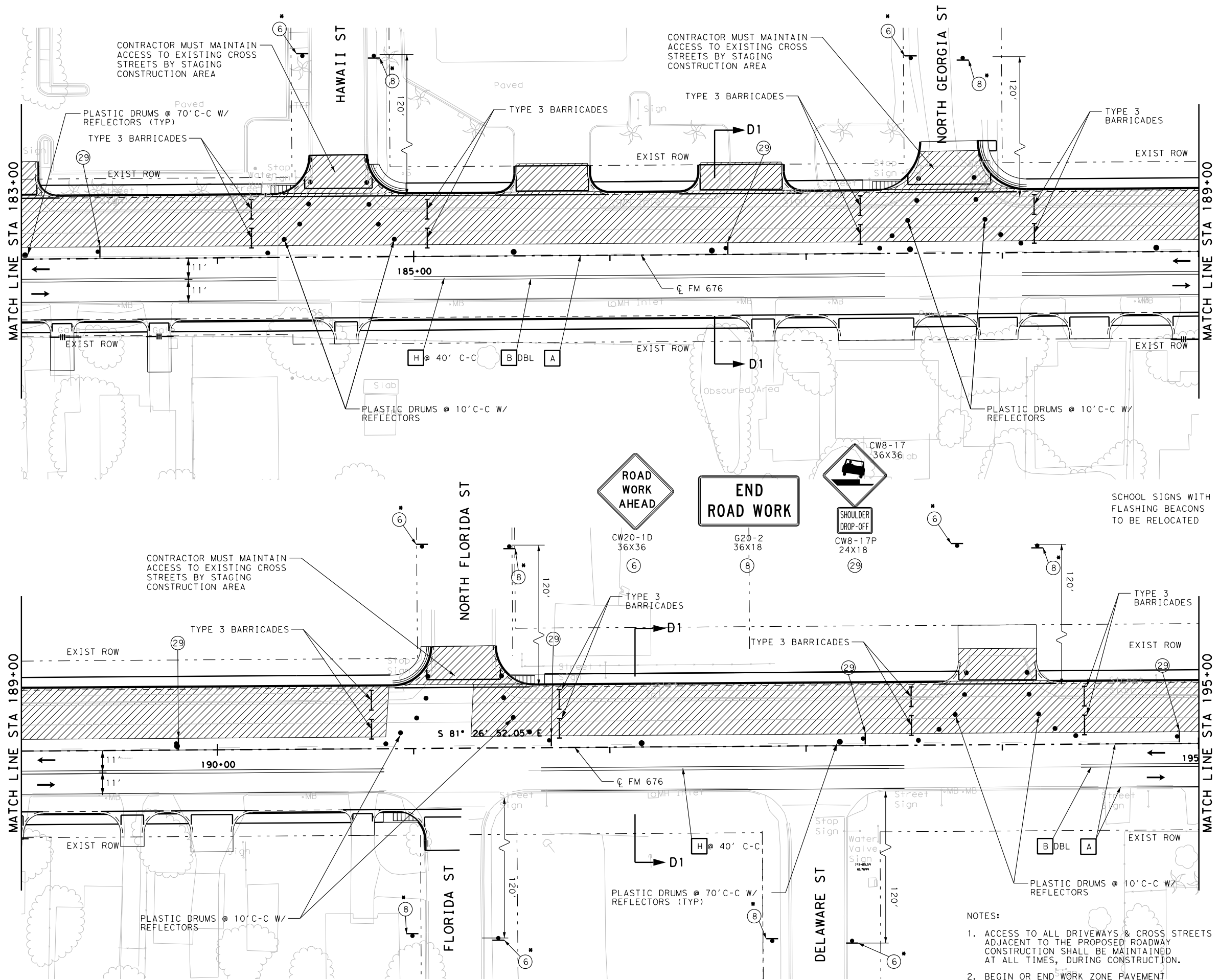
**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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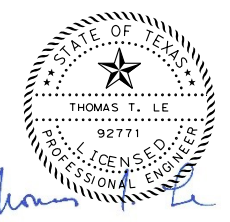
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 15 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			77
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

**LEGEND**

TRAILER MOUNTED FLASHING  
ARROW BOARD

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MK (NON-REM) 8" WHITE SOLID
- WORK ZONE PVMT MK (REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022

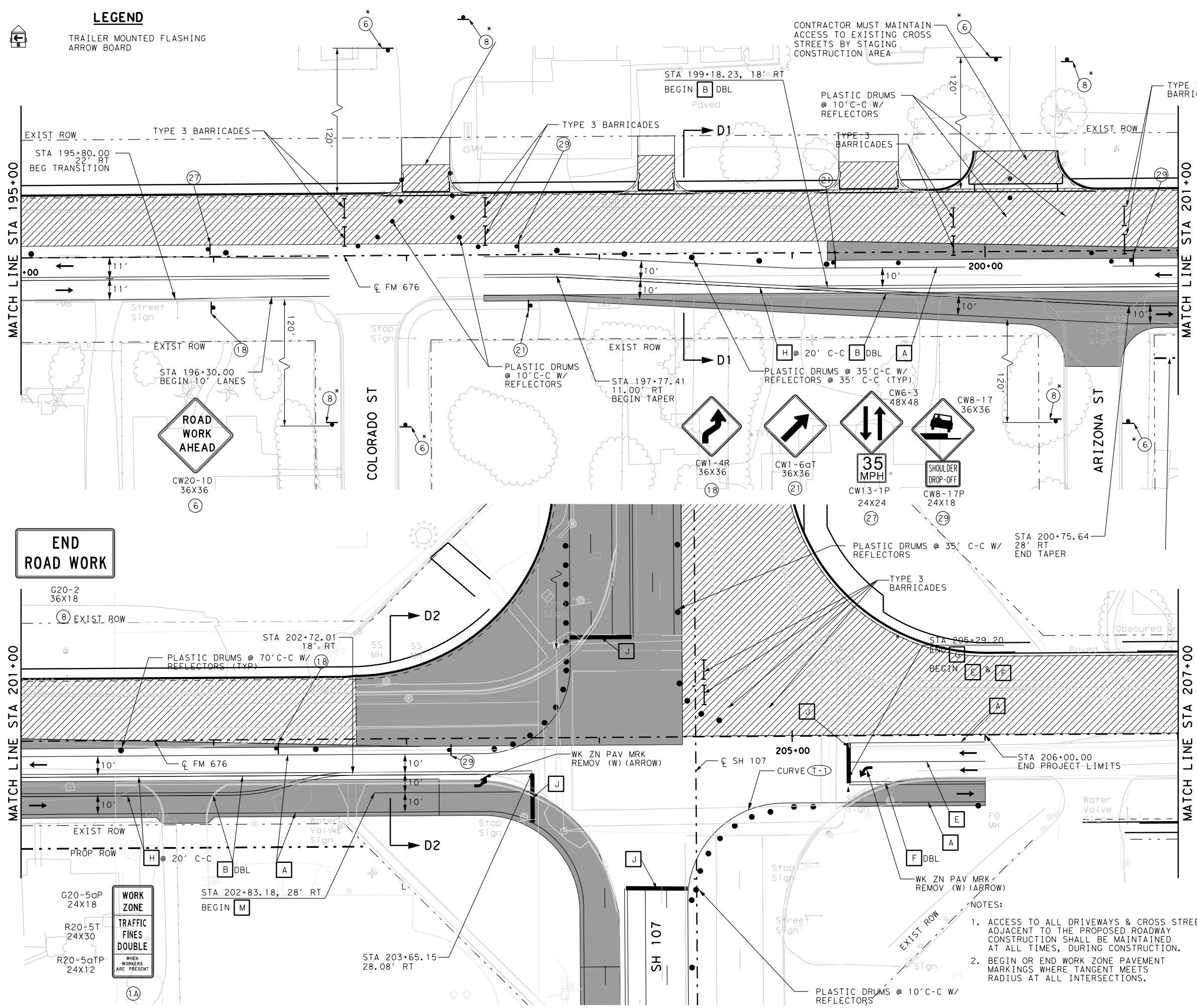


**ATKINS**  
TBPE REG. #F-474

**FM 676  
TRAFFIC CONTROL PLAN  
PHASE II**

SHEET 16 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			78
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

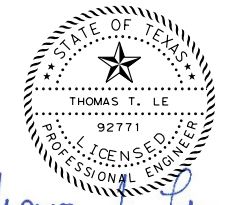
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- \*** ITEMS TO REMAIN FROM PREVIOUS PHASE



*Thomas T. Le*  
 12/1/2022

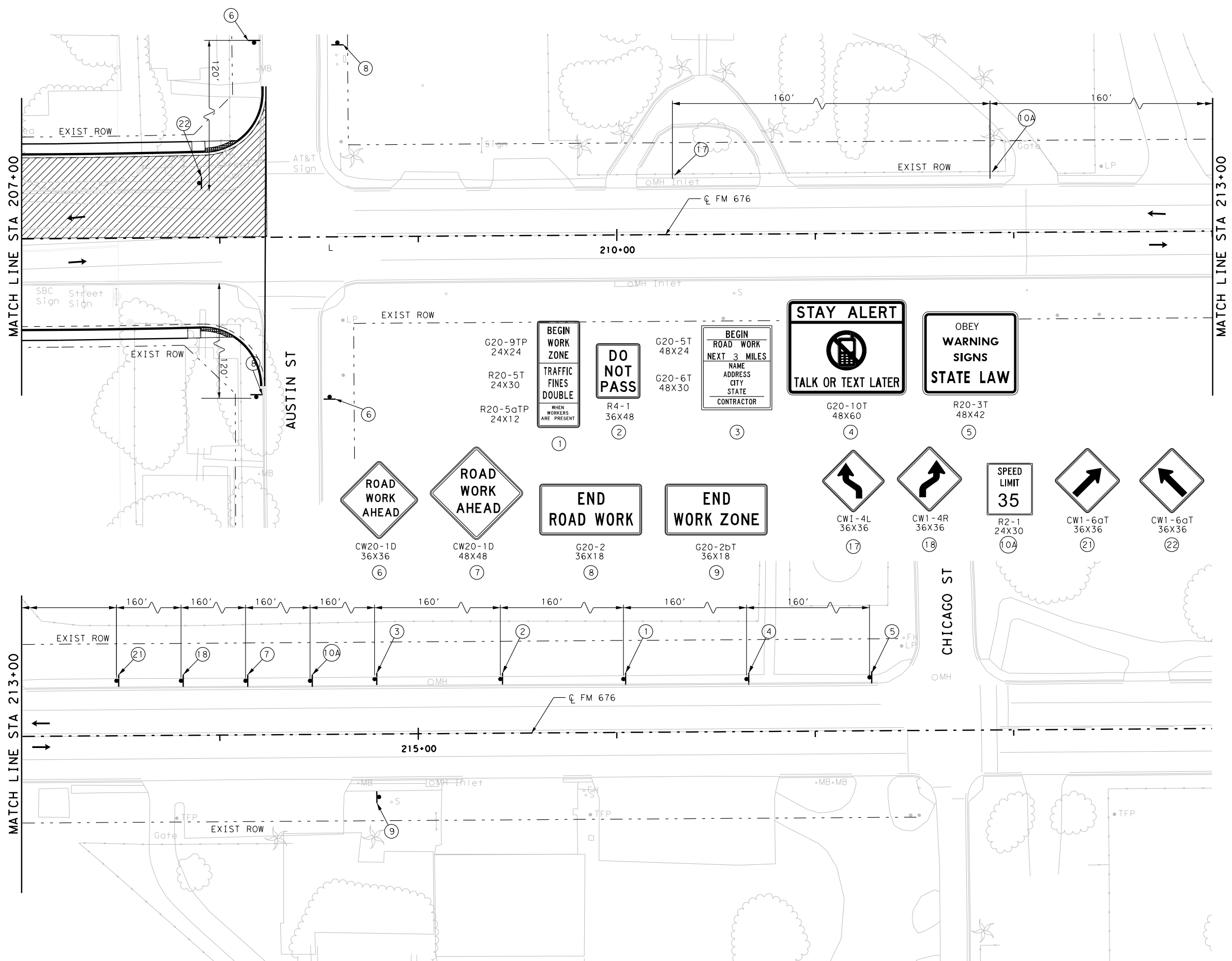


**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE II**

SHEET 17 OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			79
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.




















\*\* PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS.

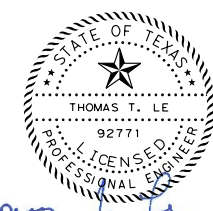
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



*Thomas T. Le*  
 12/1/2022

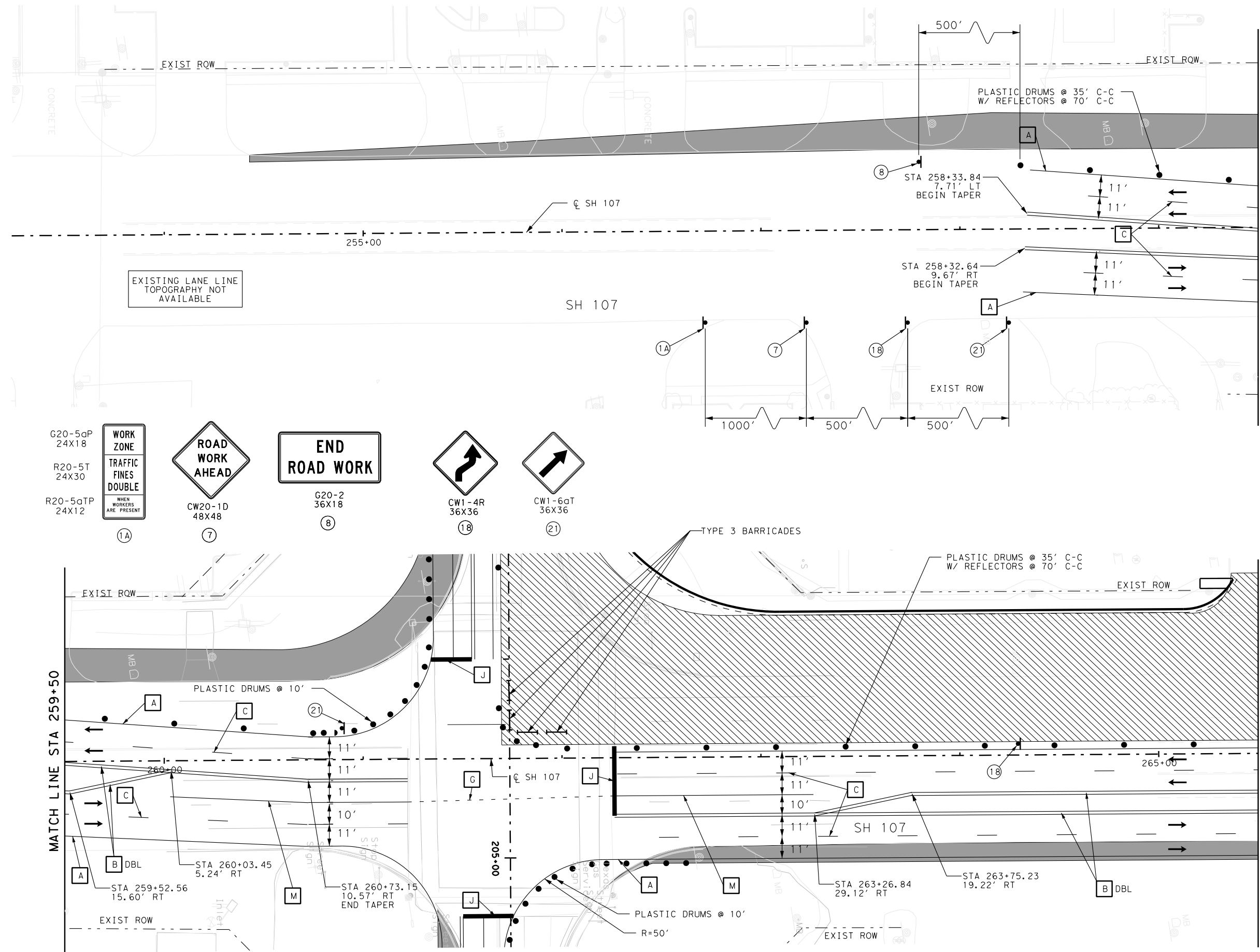







**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 17a OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			79A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

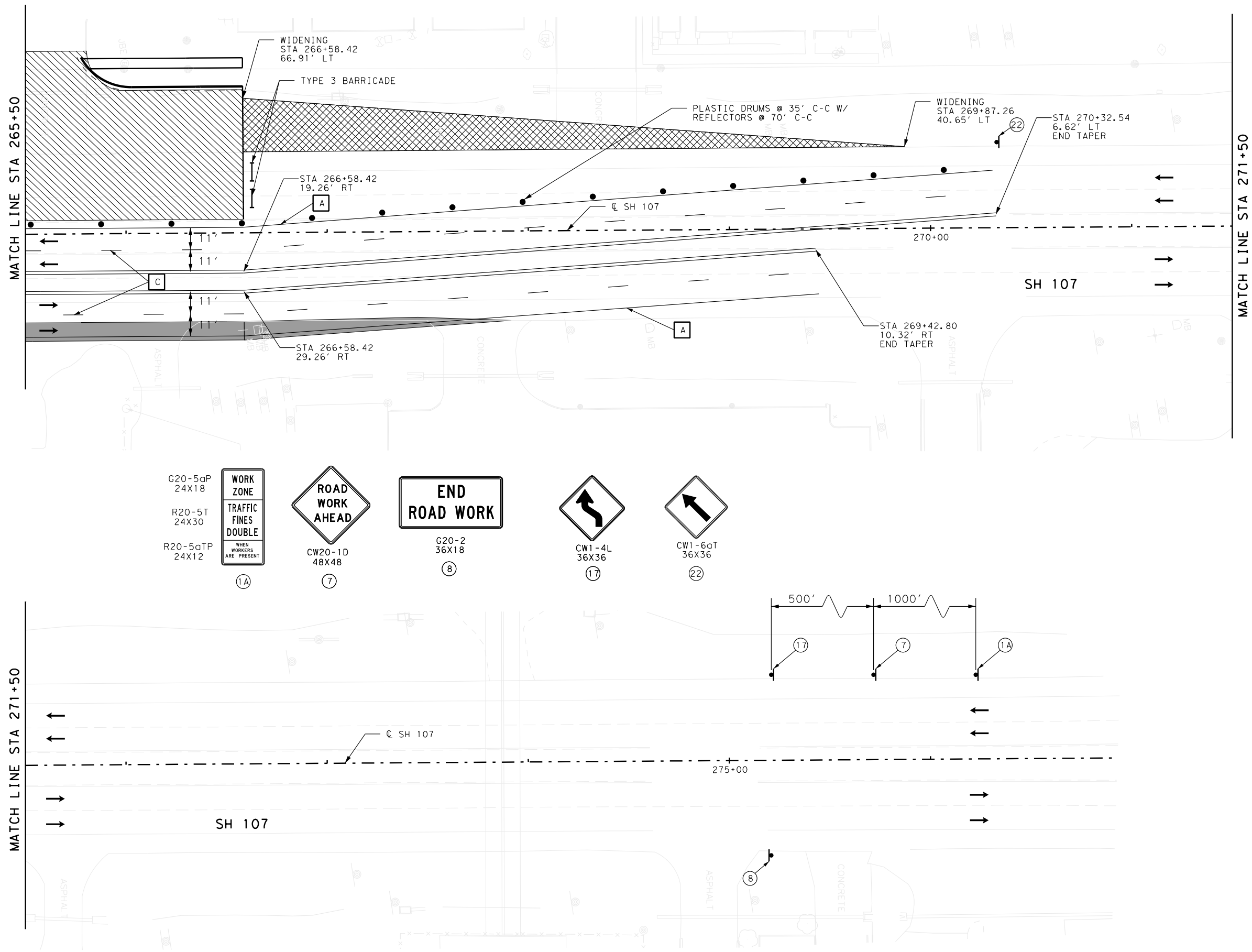


- G20-5aP 24X18
- R20-5T 24X30
- R20-5aTP 24X12
-  WHEN WORKERS ARE PRESENT
-  CW20-1D 48X48
-  G20-2 36X18
-  CW1-4R 36X36
-  CW1-6aT 36X36

NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE

G20-5aP 24X18  
 R20-5T 24X30  
 R20-5aTP 24X12  
**WORK ZONE TRAFFIC FINES DOUBLE WHEN WORKERS ARE PRESENT**  
 (1A)

CW20-1D 48X48  
**ROAD WORK AHEAD**  
 (7)

G20-2 36X18  
**END ROAD WORK**  
 (8)

CW1-4L 36X36  
 (17)

CW1-6aT 36X36  
 (22)



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
**TRAFFIC CONTROL PLAN  
 PHASE II**

SHEET 17b OF 17

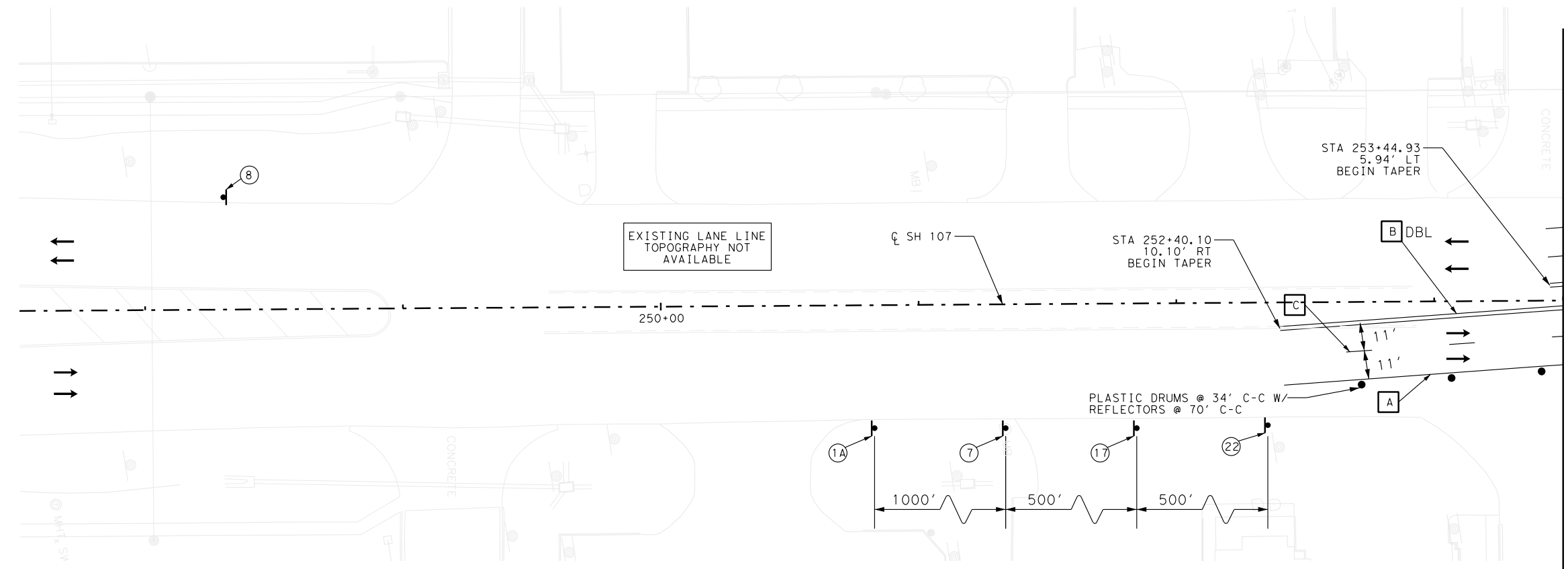
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6			79B
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE

G20-5aP 24X18					
R20-5T 24X30					
R20-5aTP 24X12					
	CW20-1D 48X48		G20-2 36X18	CW1-4L 36X36	CW1-6aT 36X36



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 17c OF 17




















FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			79C
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022

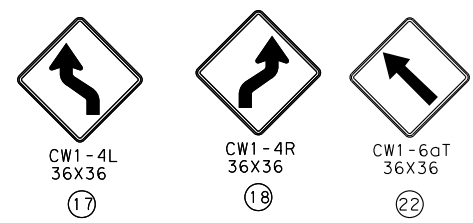
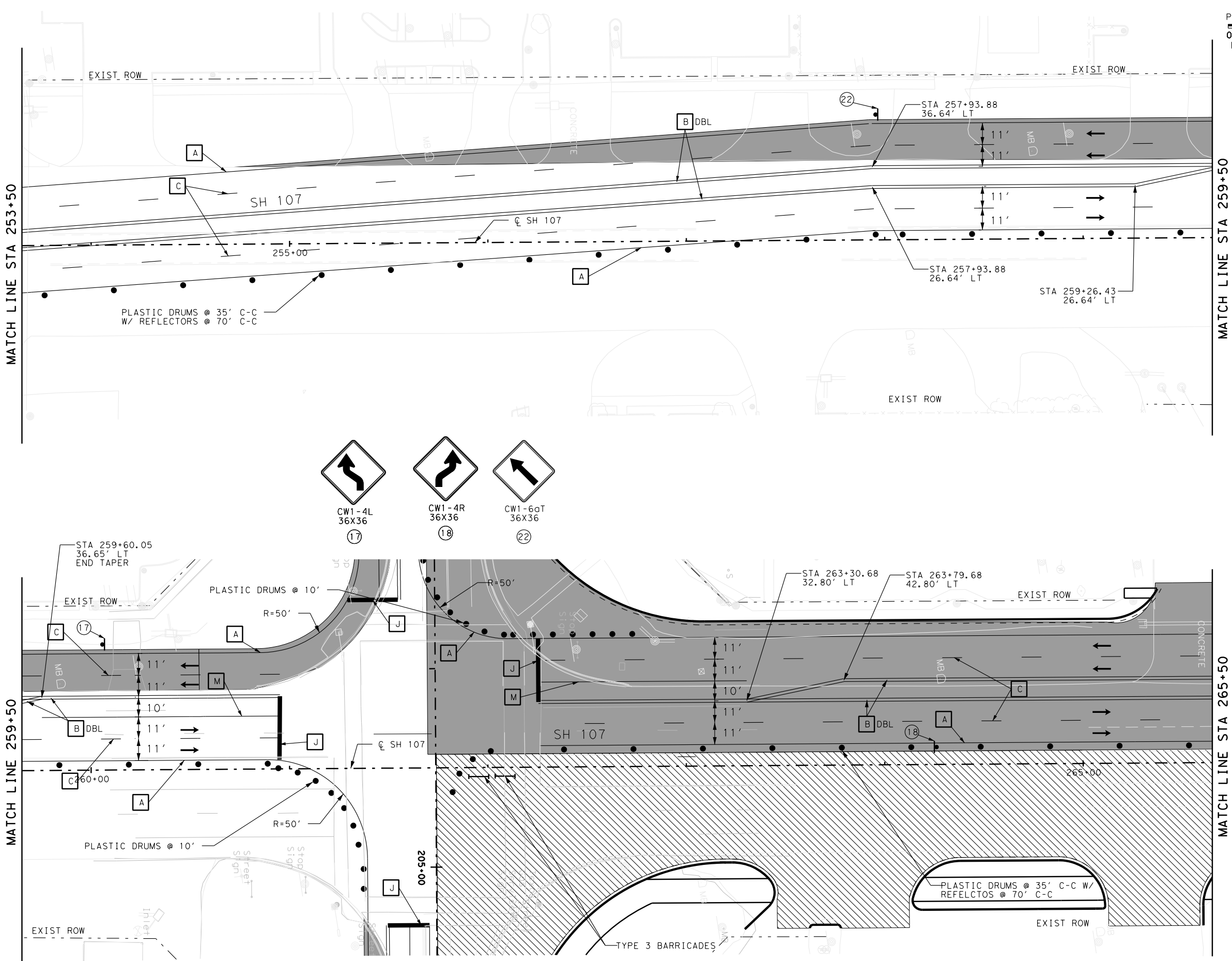


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 17d OF 17

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			79D
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



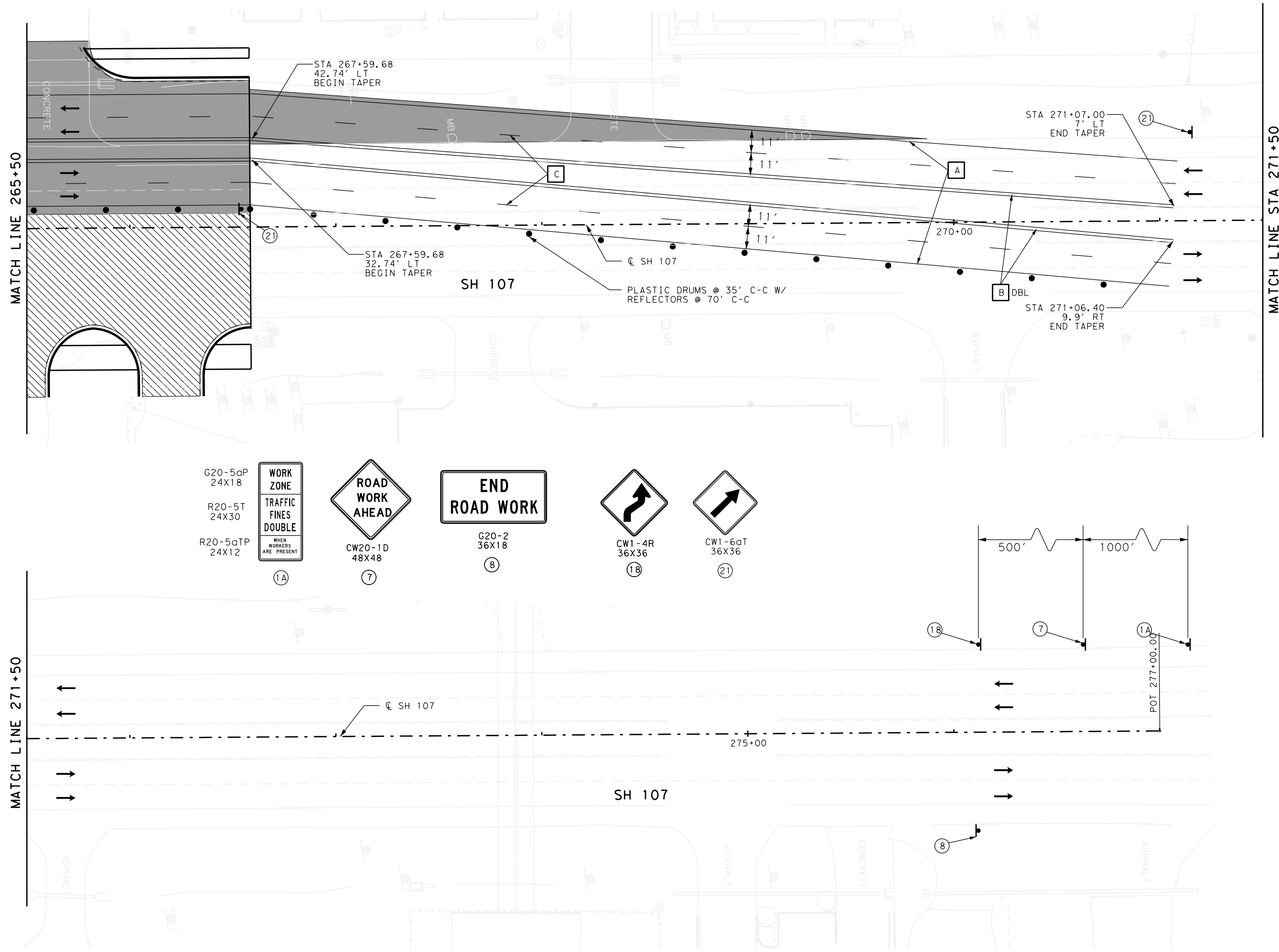
NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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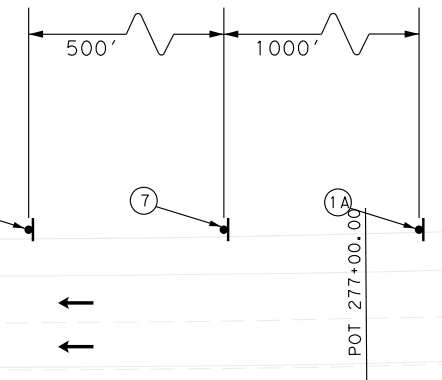
PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE

G20-5aP 24X18  
 R20-5T 24X30  
 R20-5aTP 24X12  
**WORK ZONE TRAFFIC FINES DOUBLE WHEN WORKERS ARE PRESENT** (1A)  
**ROAD WORK AHEAD** (7)  
**END ROAD WORK** (8)  
 CW20-1D 48X48  
 G20-2 36X18  
 CW1-4R 36X36  
 CW1-6aT 36X36 (21)



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE II**

SHEET 17e OF 17

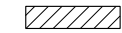



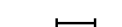


FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			79E
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

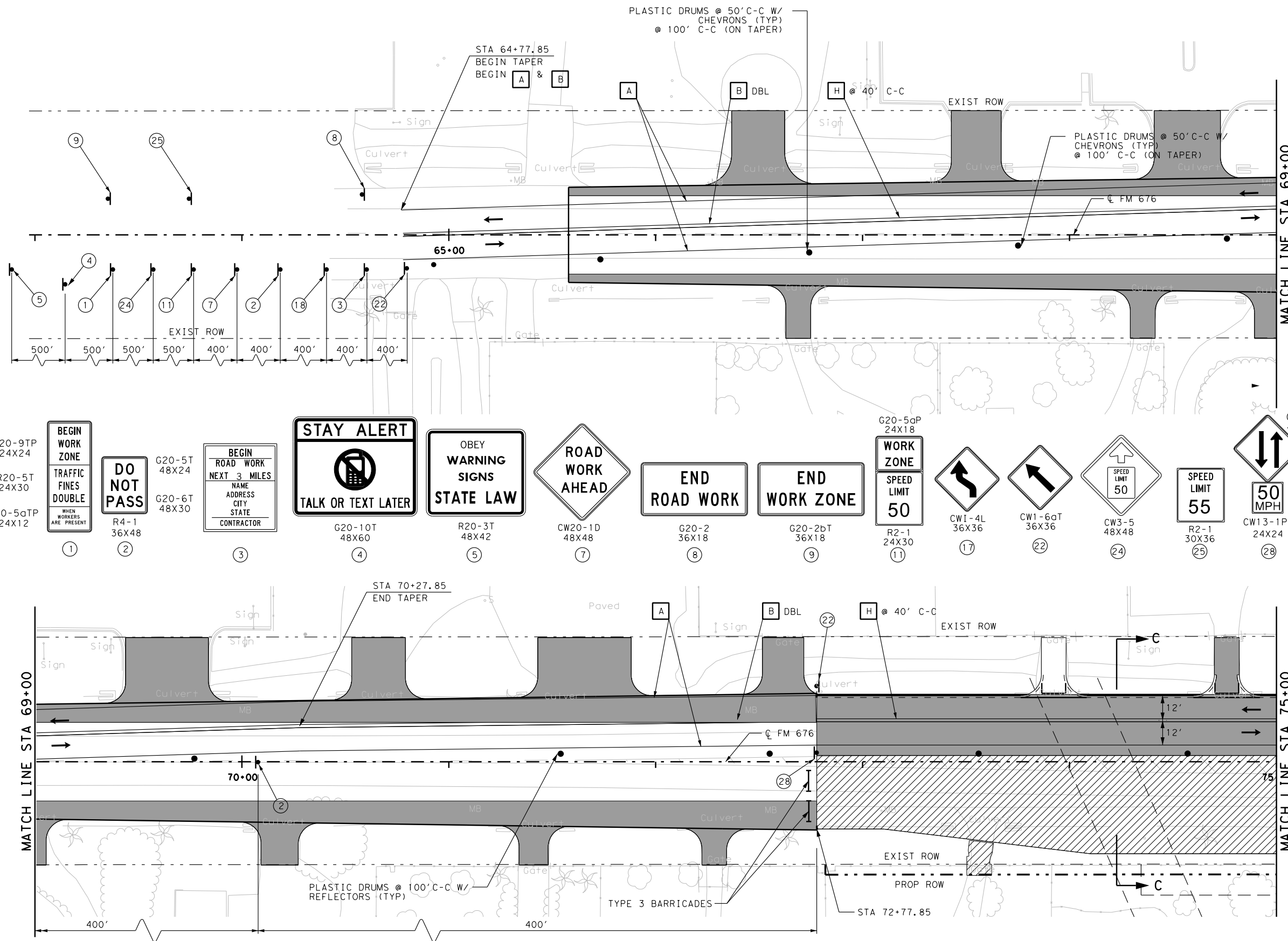
- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 1 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			80
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

\*\* PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS.

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

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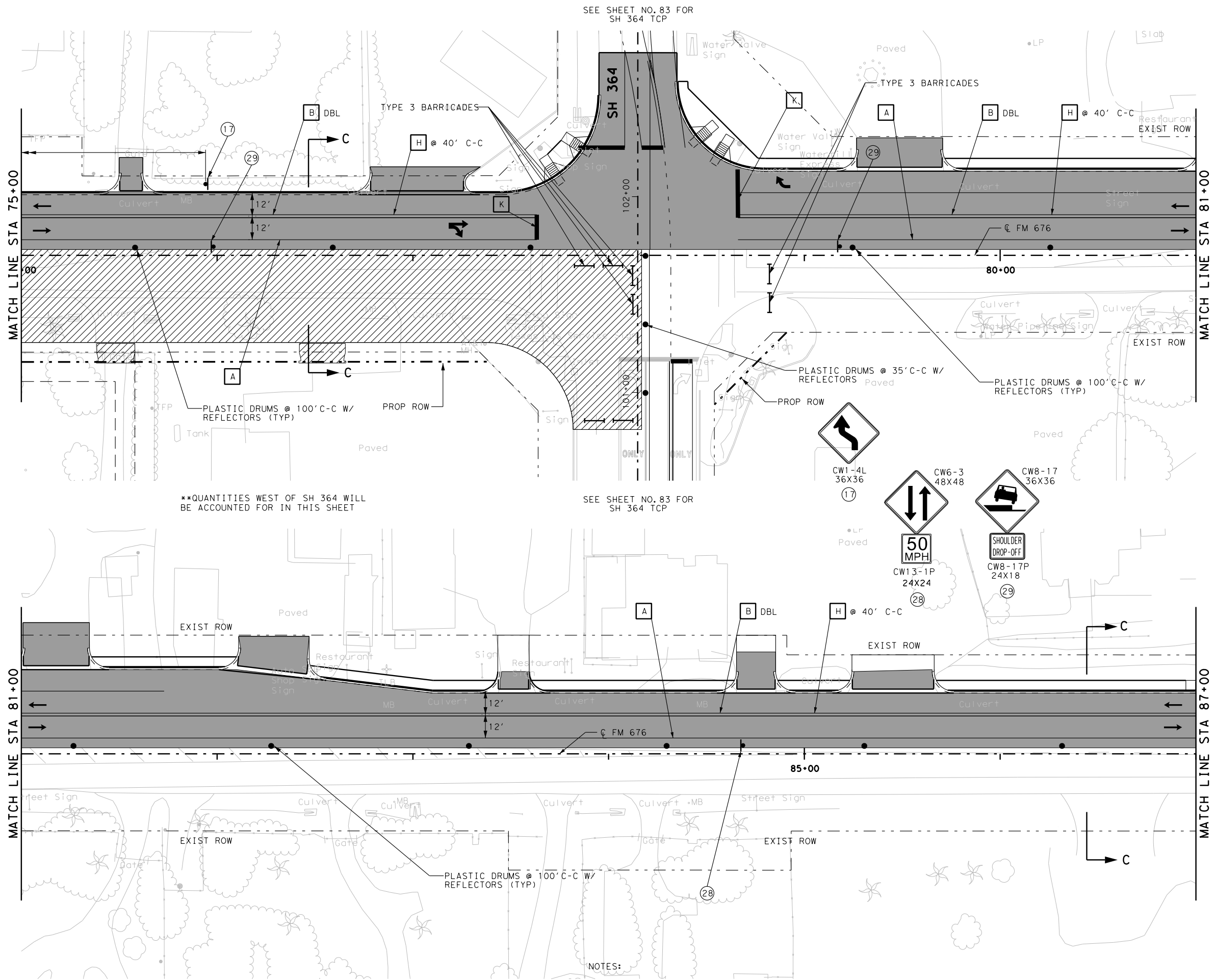
SEE SHEET NO. 83 FOR  
SH 364 TCP

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



\*\*QUANTITIES WEST OF SH 364 WILL  
BE ACCOUNTED FOR IN THIS SHEET

SEE SHEET NO. 83 FOR  
SH 364 TCP

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEN MARKINGS WHERE TANGENT MEET: RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
TRAFFIC CONTROL PLAN  
PHASE III**

SHEET 2 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		81	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676




















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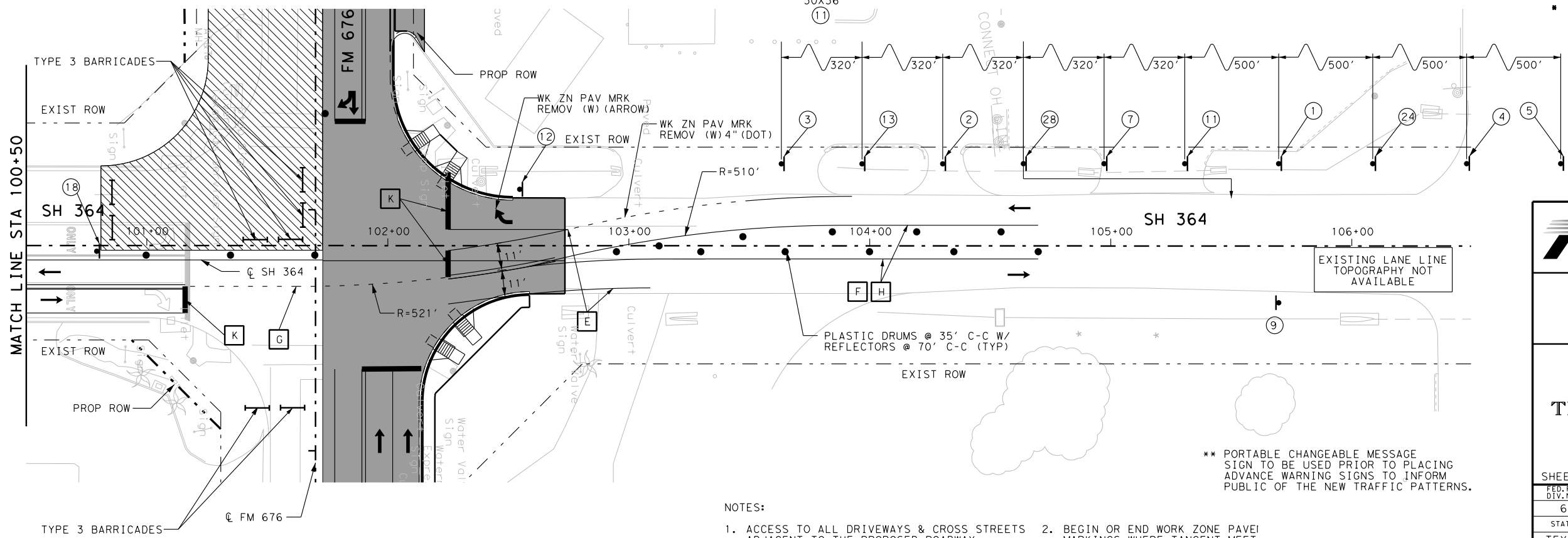
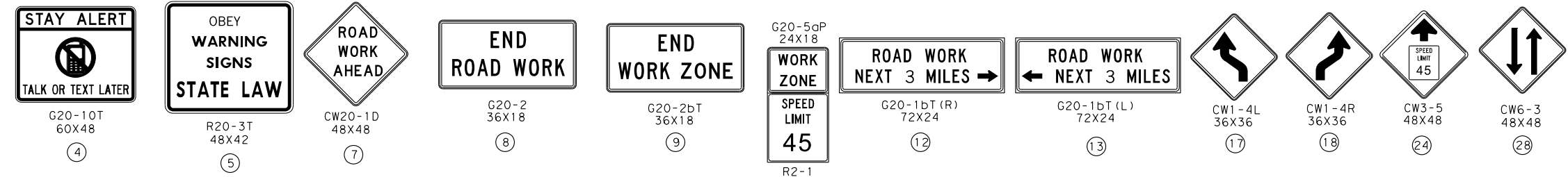
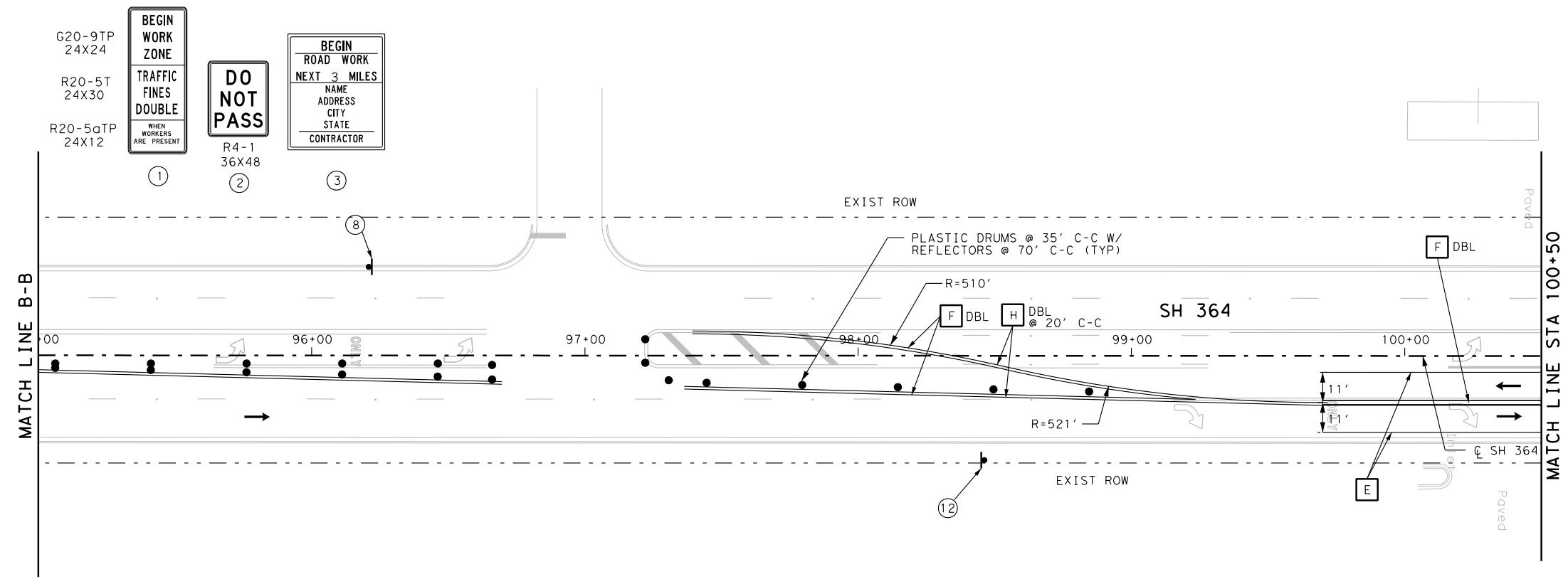


PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 4 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			83
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

\*\* PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS.

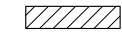


















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SEE SHEET NO. 86 FOR  
SH 364 TCP

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

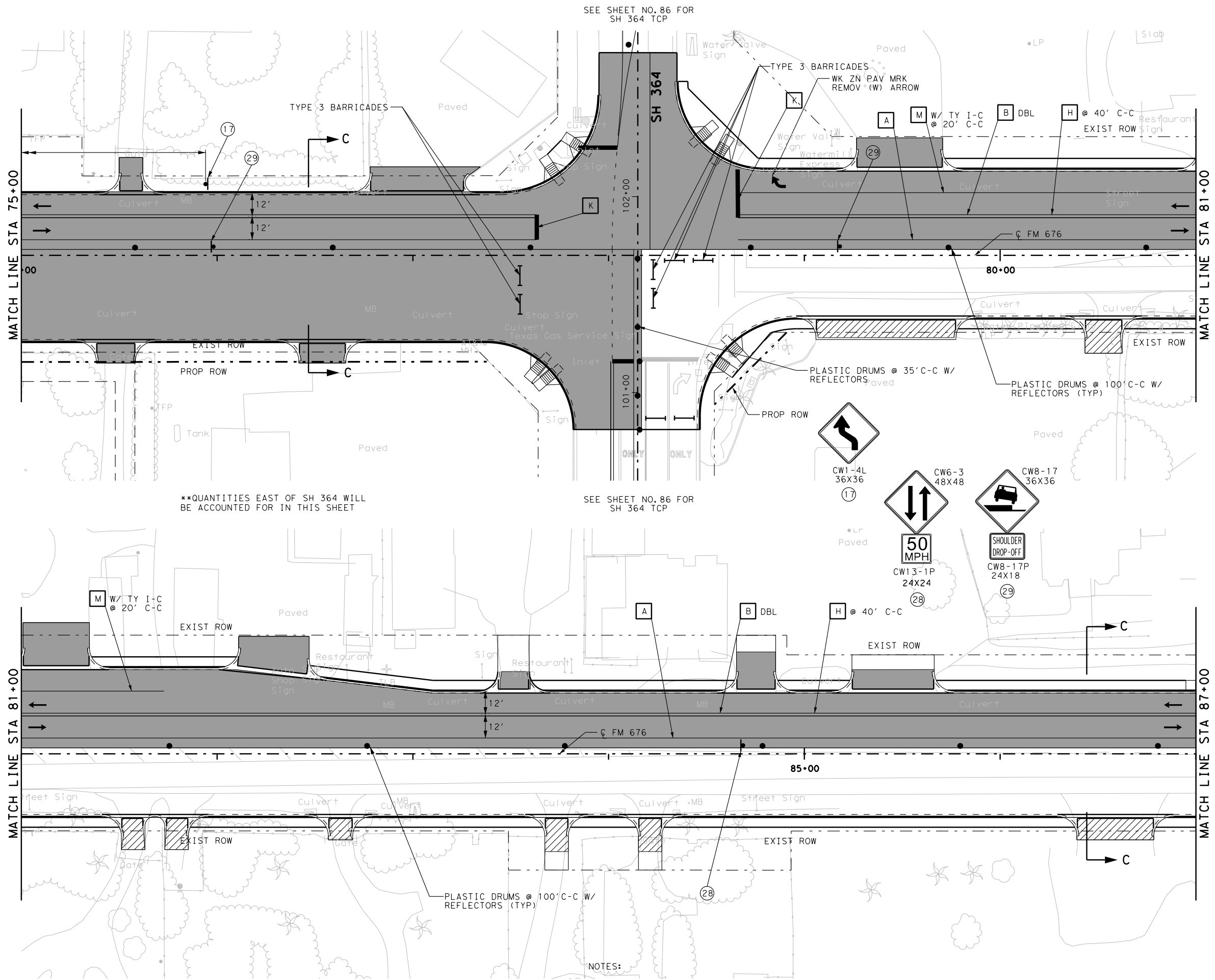


**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 5 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			84
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



\*\*QUANTITIES EAST OF SH 364 WILL BE ACCOUNTED FOR IN THIS SHEET

SEE SHEET NO. 86 FOR  
SH 364 TCP

**NOTES:**





















1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

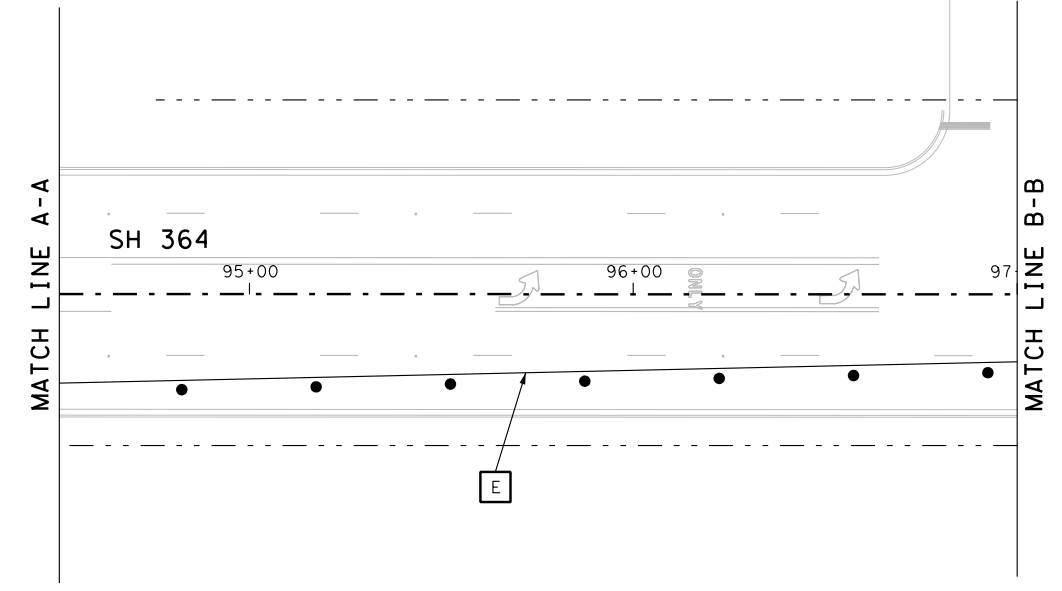
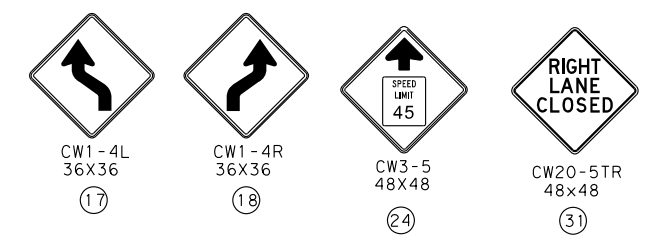
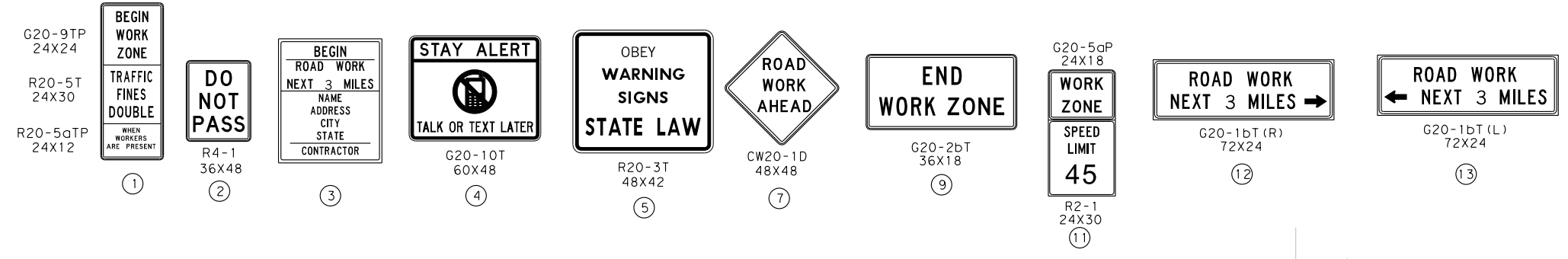
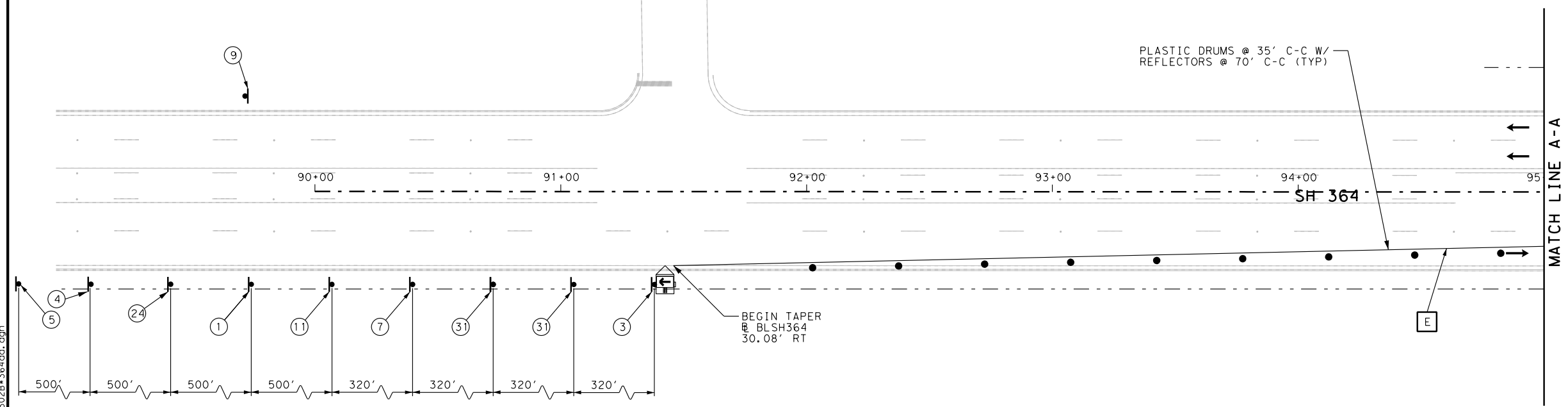
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY 11-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE
-  TRAILER MOUNTED FLASHING ARROW BOARD



NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
**TRAFFIC CONTROL PLAN**  
 PHASE III

SHEET 6 OF 18




















FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			85
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

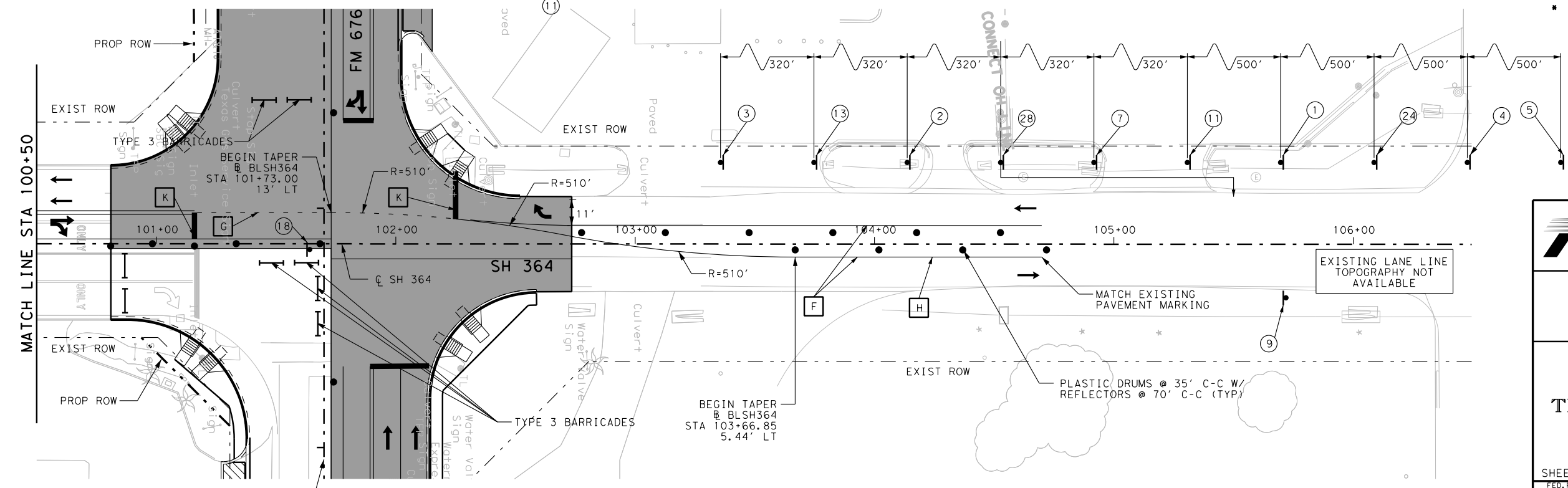
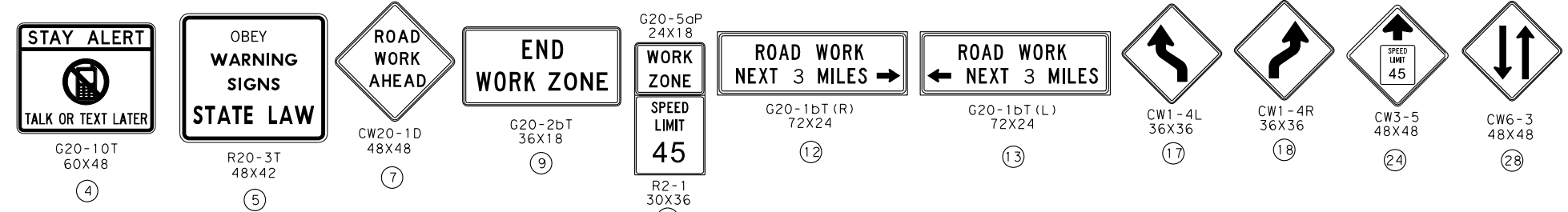
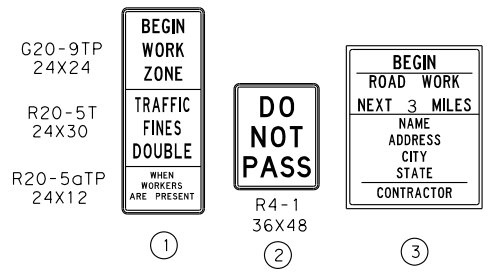
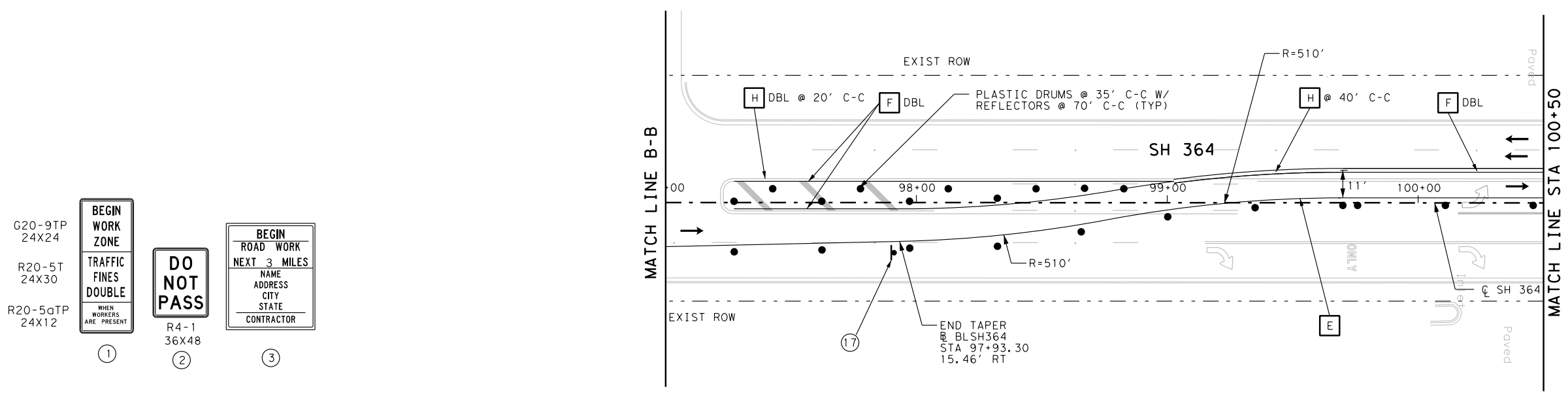
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 7 OF 18

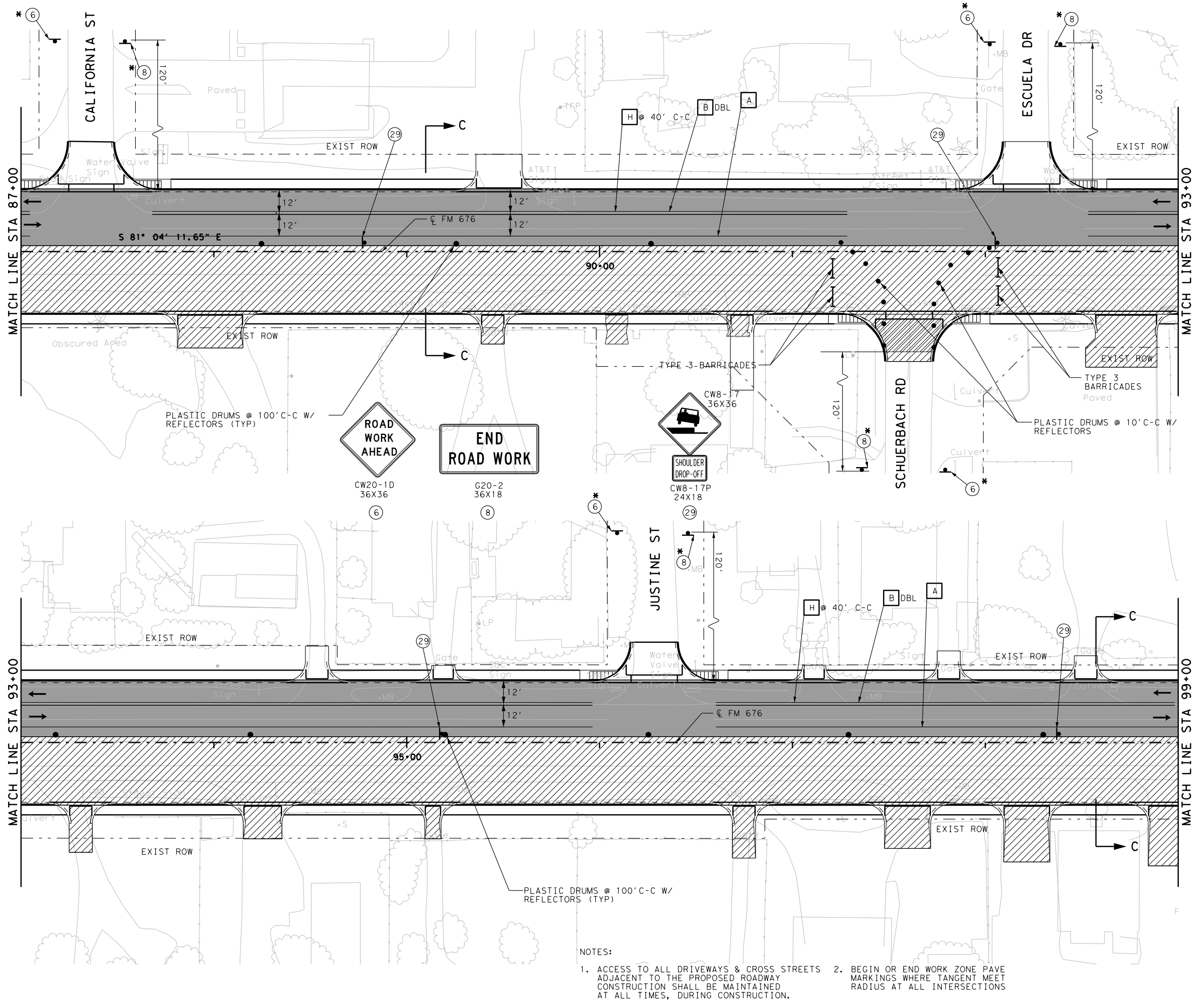
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			86
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

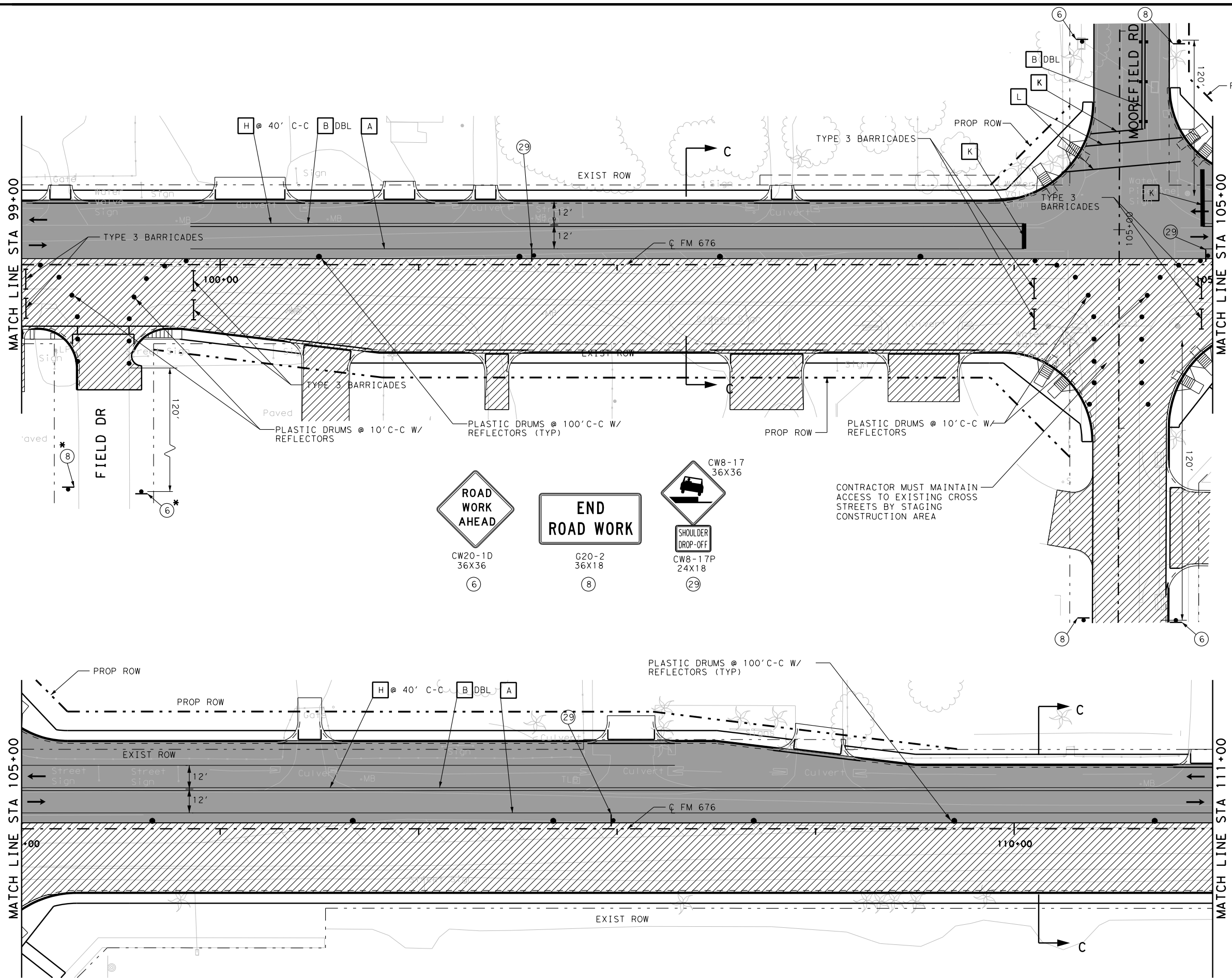
SHEET 8 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			87
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



- LEGEND**
- CONSTRUCTION AREA
  - TEMPORARY ROADWAY CONSTRUCTION
  - CONSTRUCTION AREA PREVIOUS PHASES
  - A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
  - B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
  - C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
  - D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
  - E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
  - F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
  - G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
  - H** WORK ZONE PVMT MARK (REFL) TY II-A-A
  - J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
  - K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
  - L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
  - M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
  - DIRECTION OF TRAFFIC FLOW
  - TYPE 3 BARRICADE
  - CHANNELIZING DEVICE
  - ITEMS TO REMAIN FROM PREVIOUS PHASE



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**ATKINS**  
 TBPE REG. #F-474

FM 676  
**TRAFFIC CONTROL PLAN  
 PHASE III**

SHEET 9 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			88
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:**
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEI MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

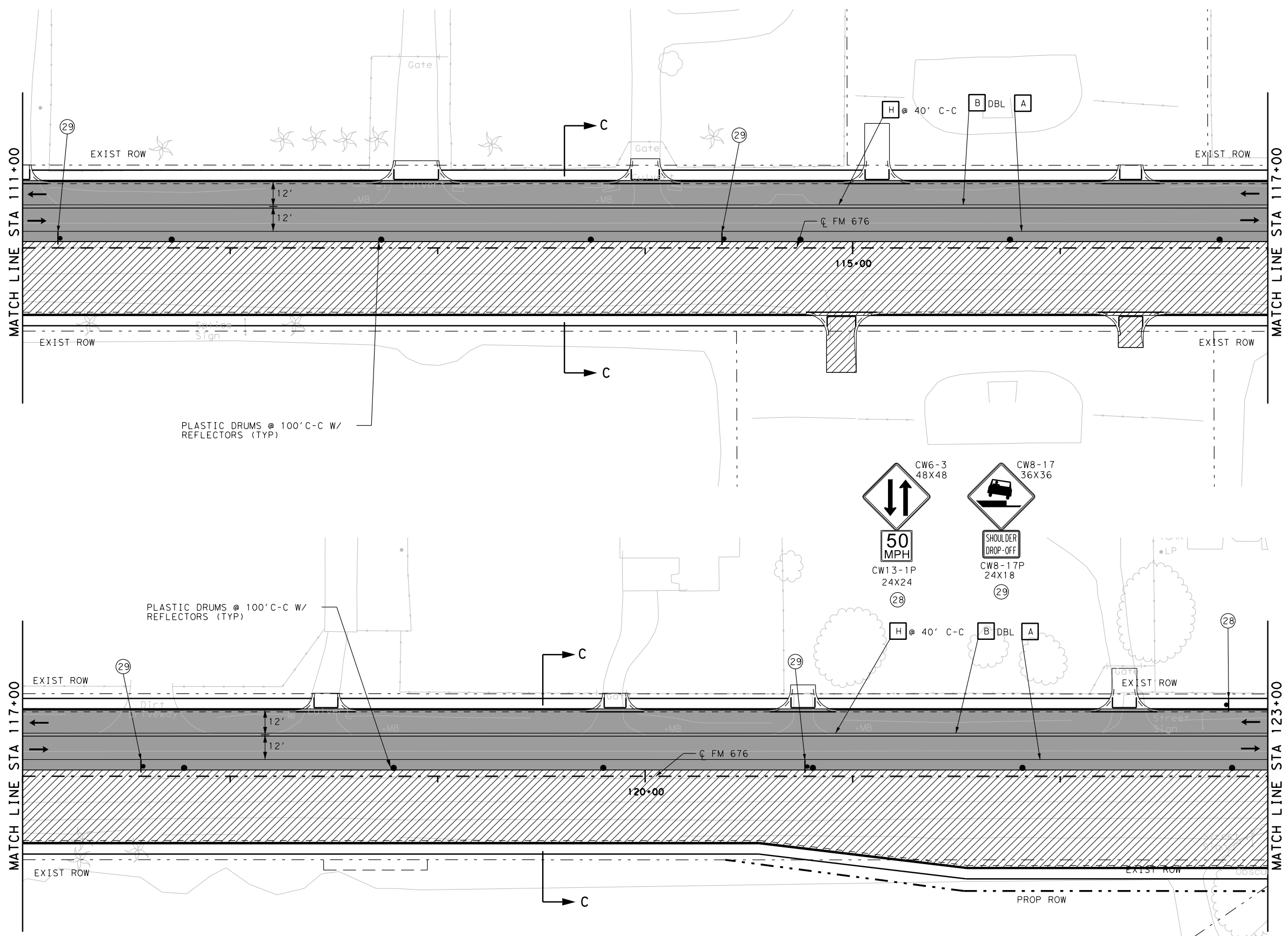


**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 10 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			89
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



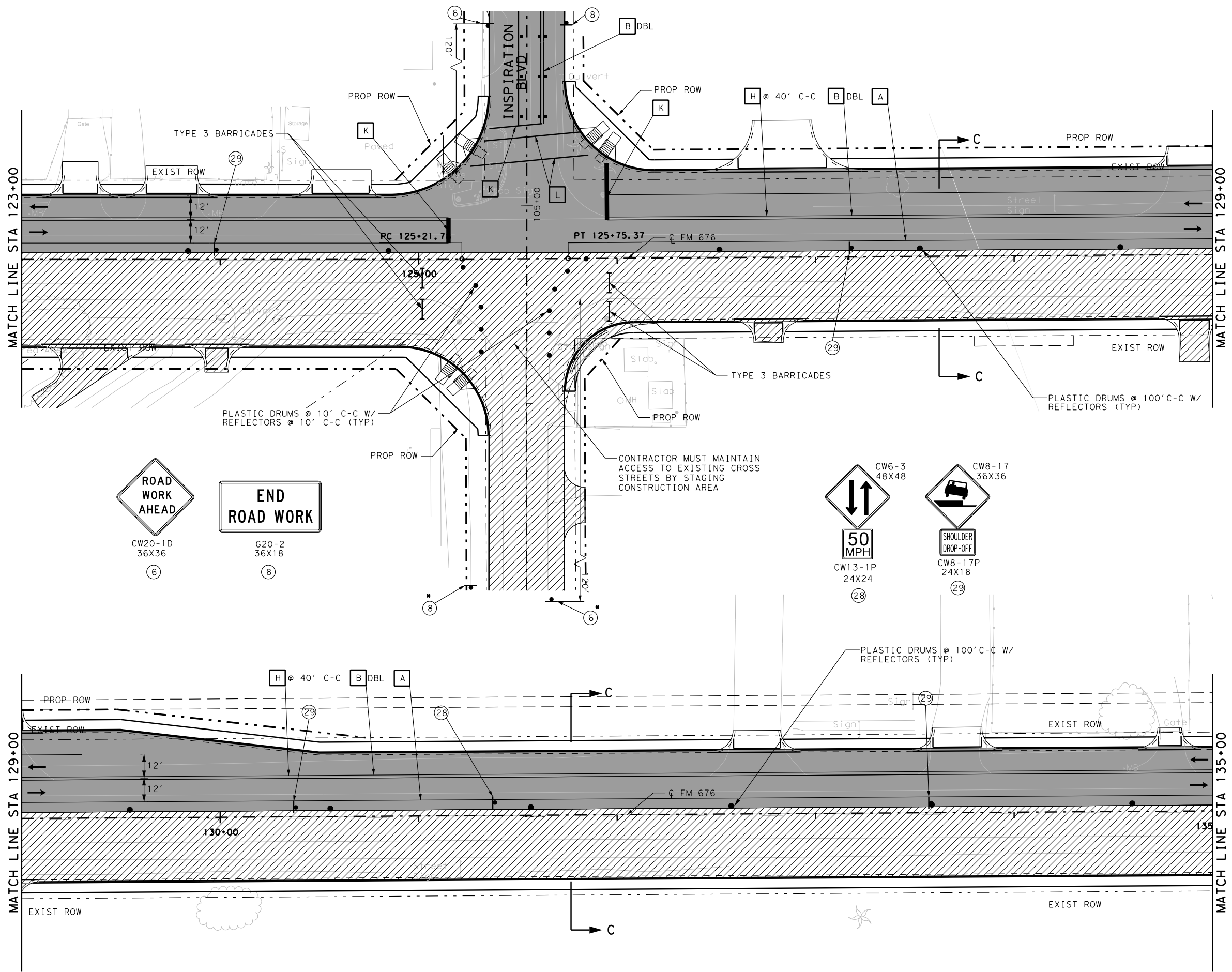
**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



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**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 11 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			90
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



11/18/2022

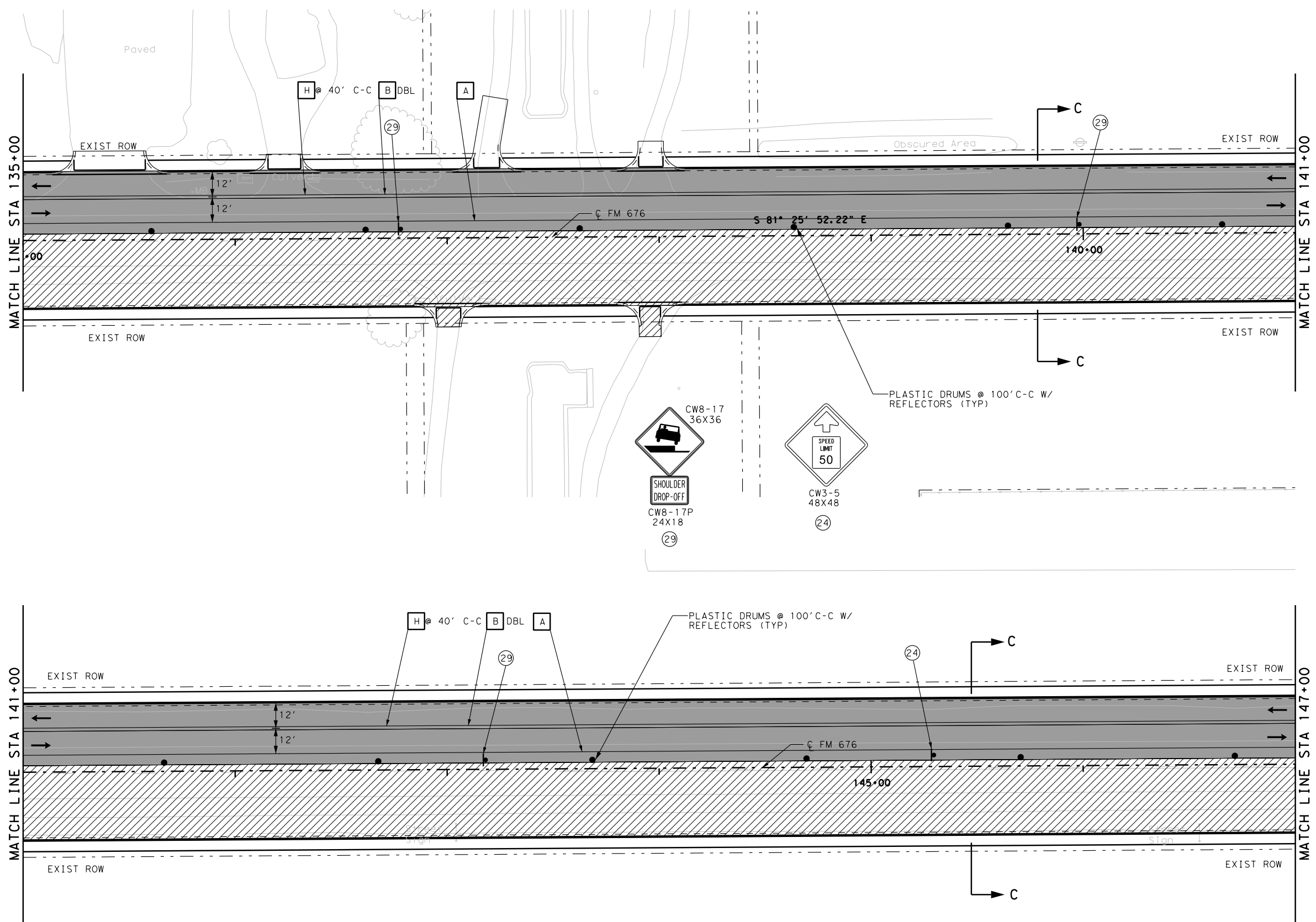


**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE III**

SHEET 12 OF 18

FED. RD. DIV. NO. 6		STATE PROJECT NO.		SHEET NO. 91	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO		HIGHWAY NO. FM 676	
CONT. 1064	SECT. 01	JOB 032			

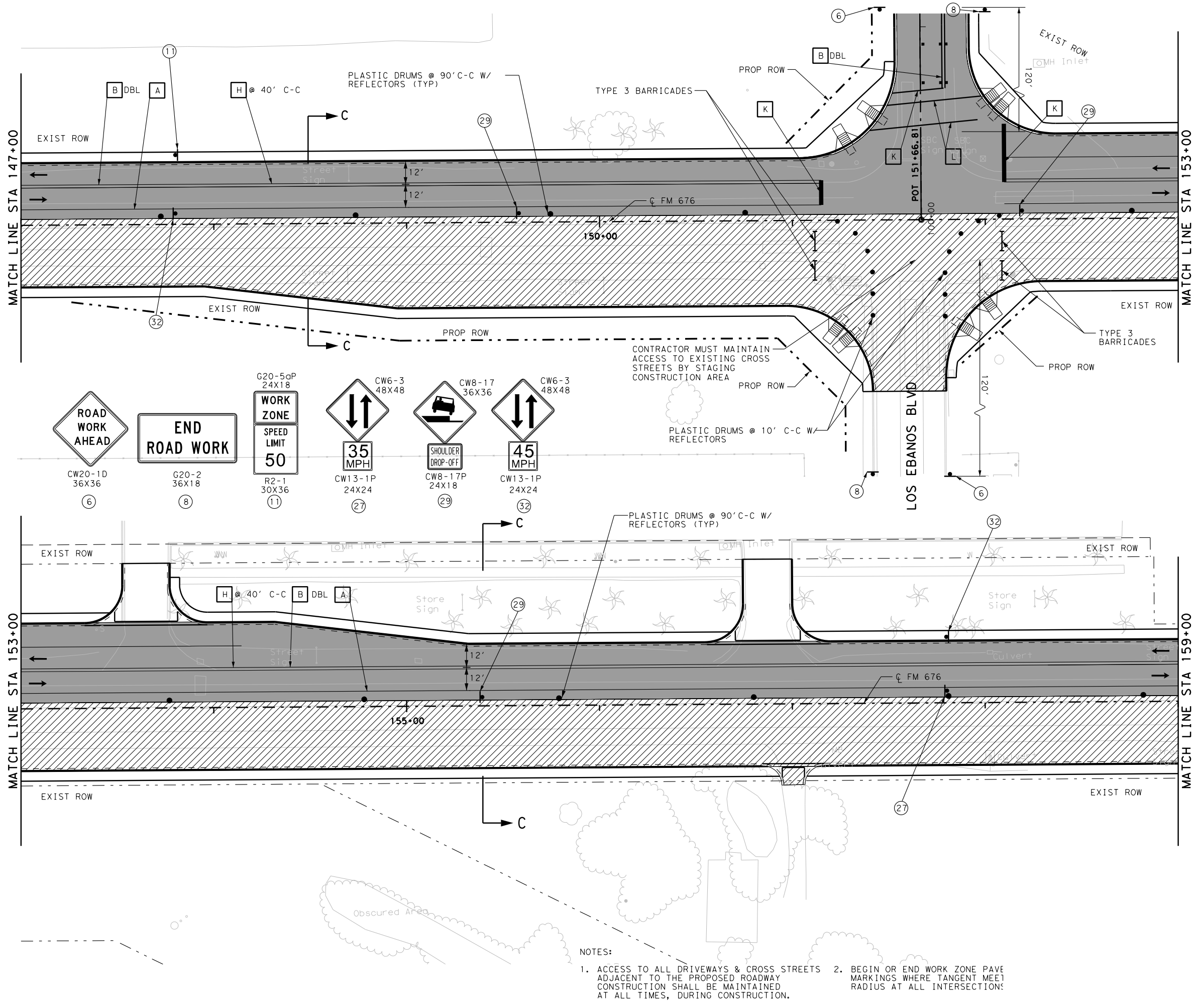


**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE! MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 13 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			92
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET RADIUS AT ALL INTERSECTIONS!

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022

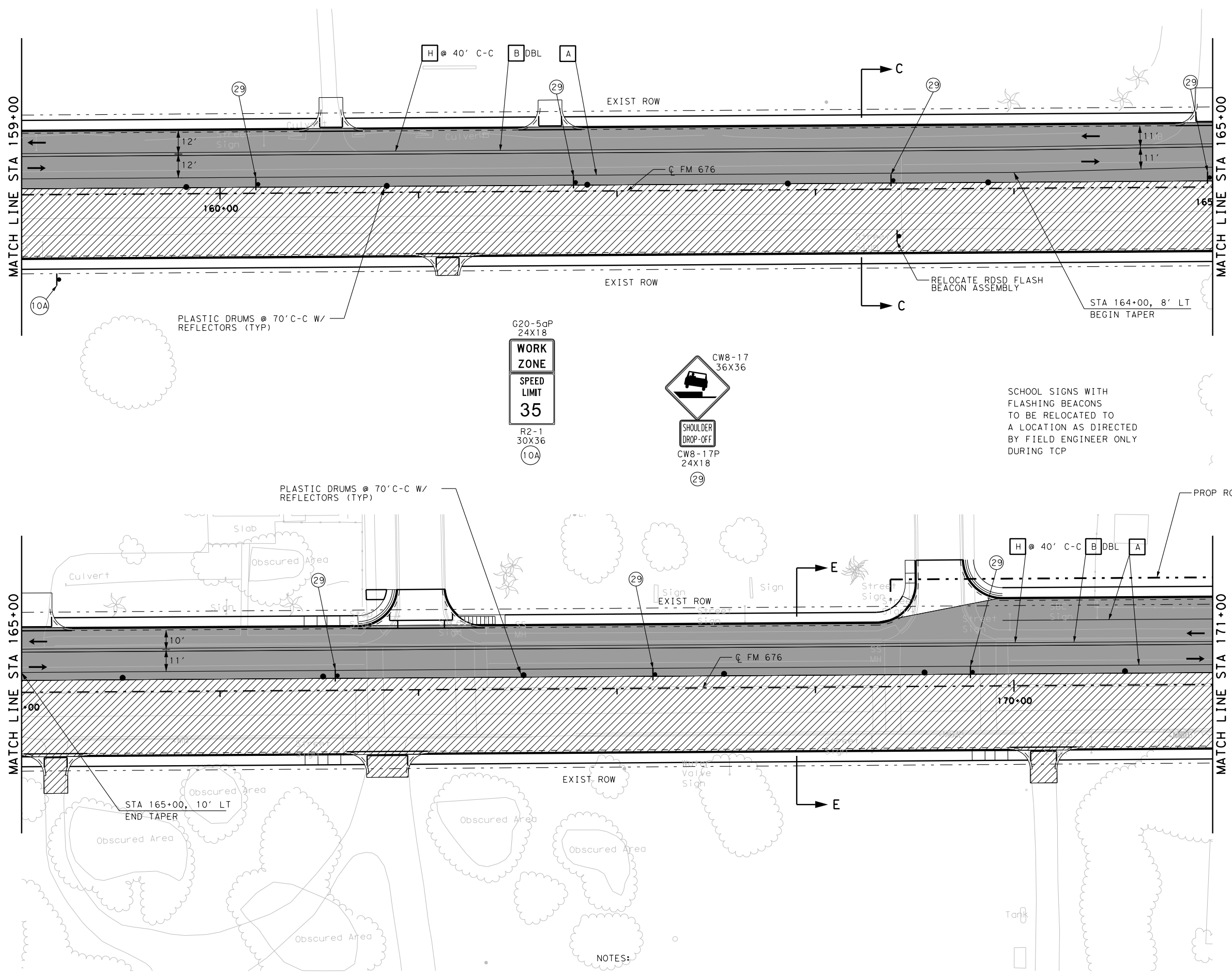


**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 14 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			93
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**NOTES:**

- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
- BEGIN OR END WORK ZONE PAVE MARKINGS WHERE TANGENT MEET AT ALL INTERSECTIONS.

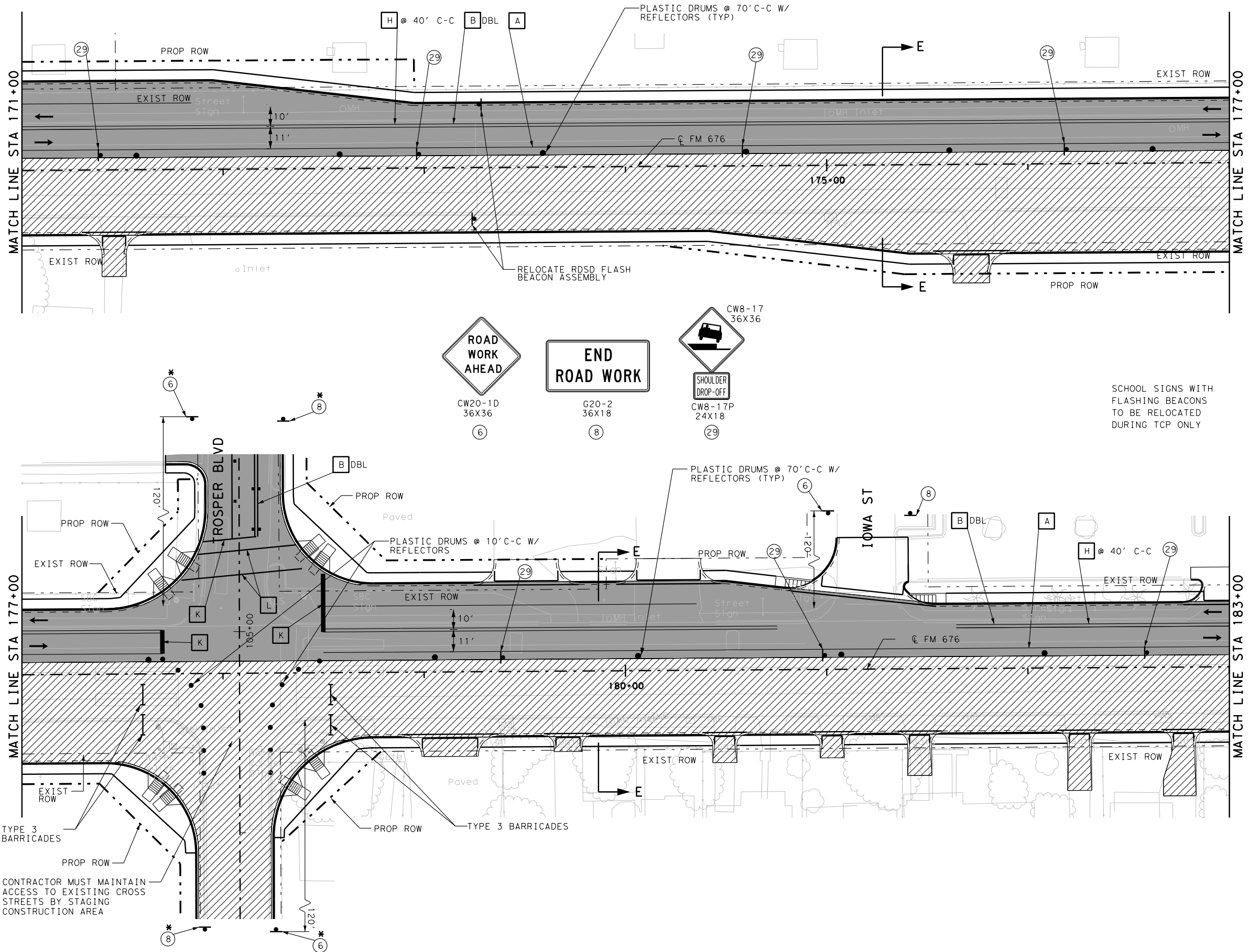
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PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

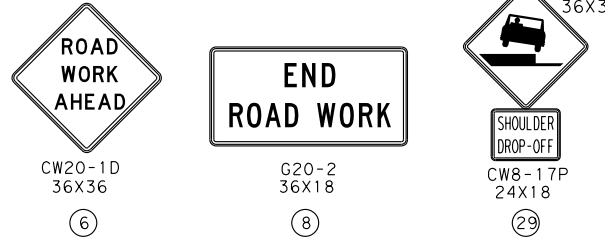


**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



SCHOOL SIGNS WITH FLASHING BEACONS TO BE RELOCATED DURING TCP ONLY



CONTRACTOR MUST MAINTAIN ACCESS TO EXISTING CROSS STREETS BY STAGING CONSTRUCTION AREA

NOTES:

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
TRAFFIC CONTROL PLAN  
PHASE III**

SHEET 15 OF 18

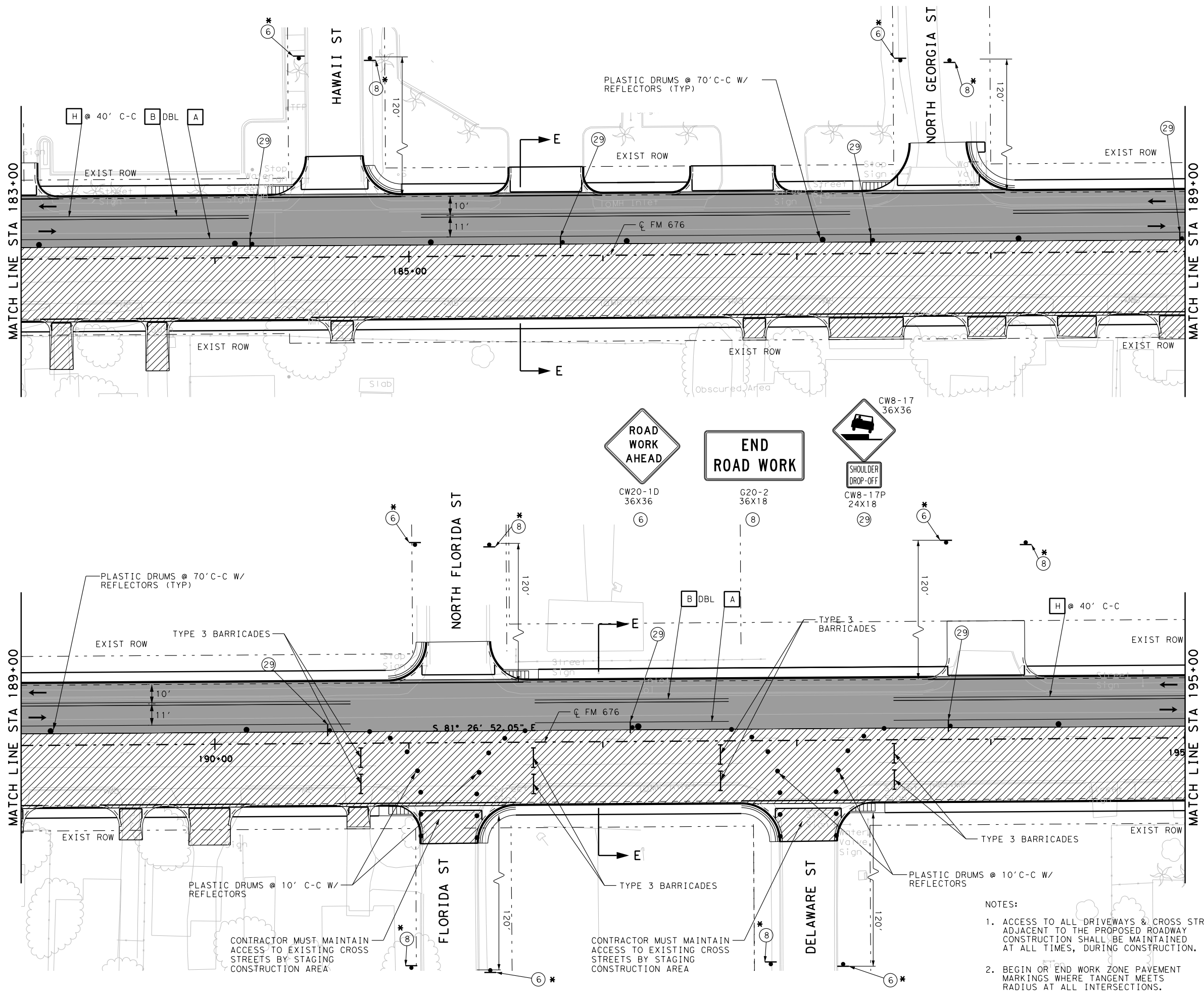
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STATE TEXAS	DIST. PHR	COUNTY HIDALGO			
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676		

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 16 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			95
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

CONTRACTOR MUST MAINTAIN ACCESS TO EXISTING CROSS STREETS BY STAGING CONSTRUCTION AREA

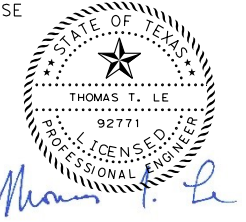
CONTRACTOR MUST MAINTAIN ACCESS TO EXISTING CROSS STREETS BY STAGING CONSTRUCTION AREA

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



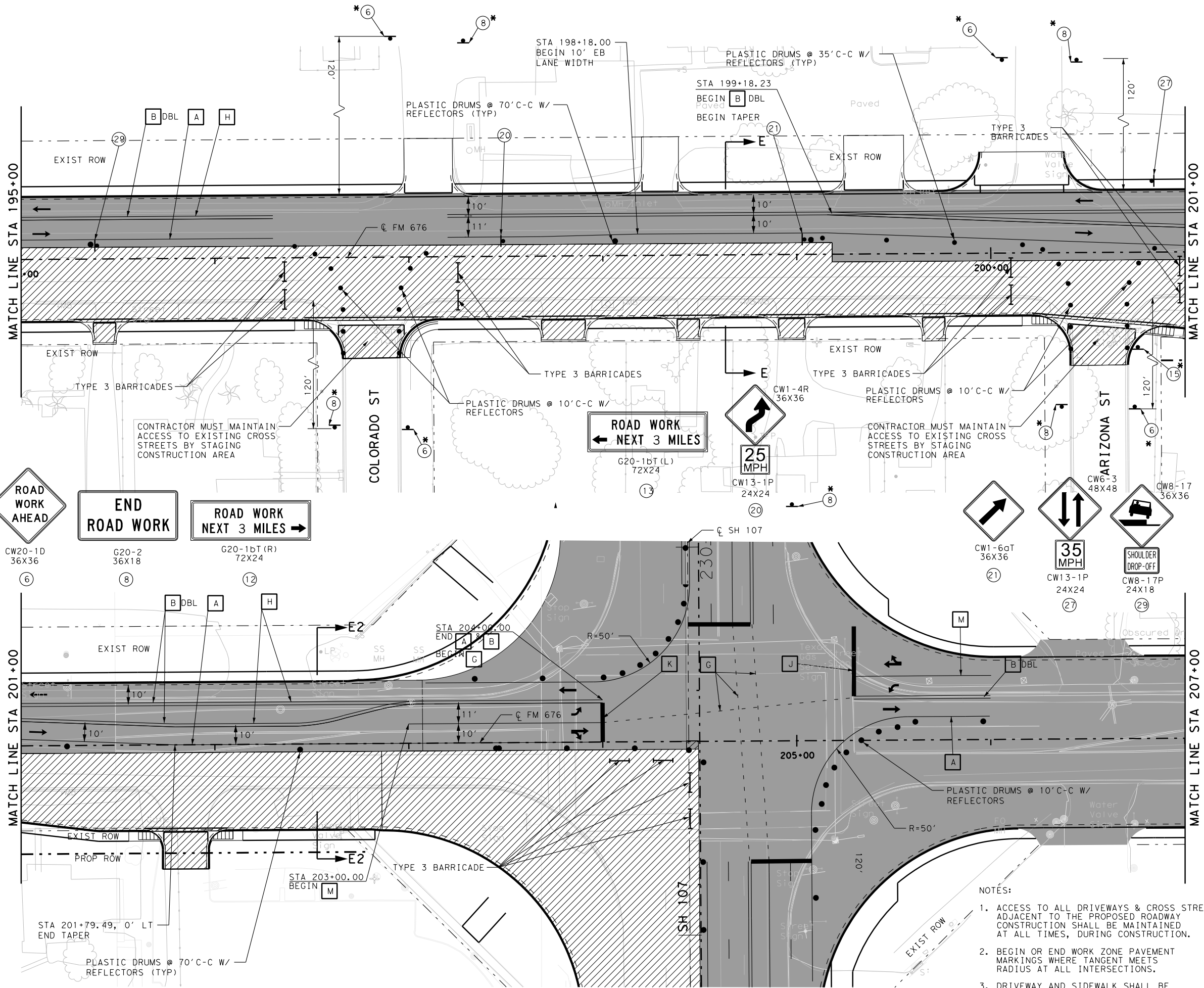
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE III**

SHEET 17 OF 18

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				96	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

- NOTES:
1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.
  3. DRIVEWAY AND SIDEWALK SHALL BE CONSTRUCTED AT THE SAME TIME.



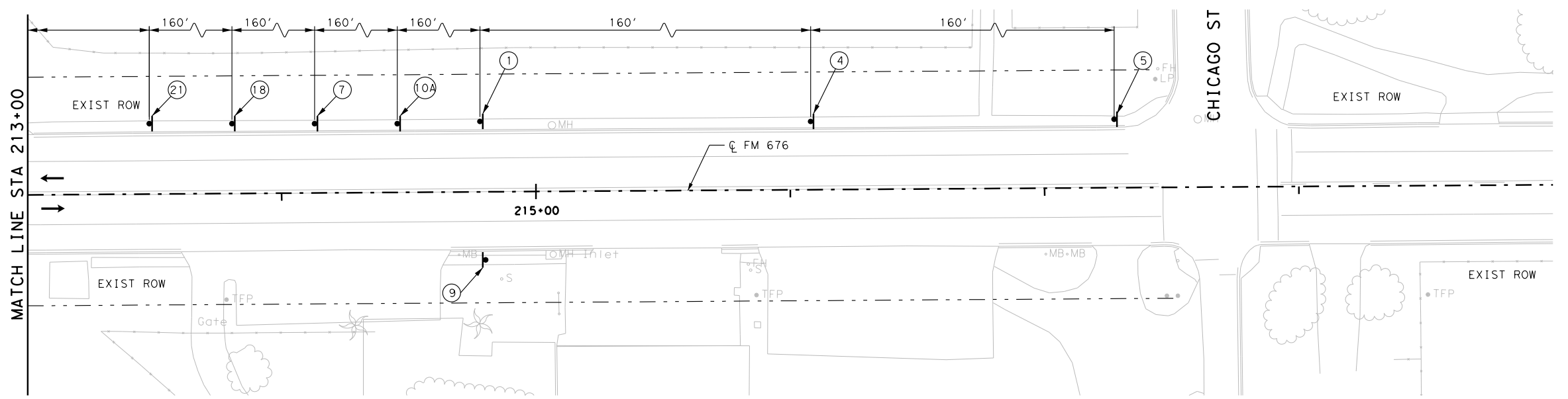
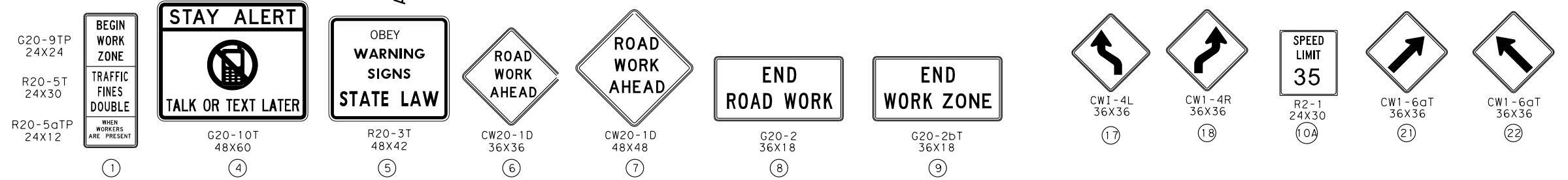
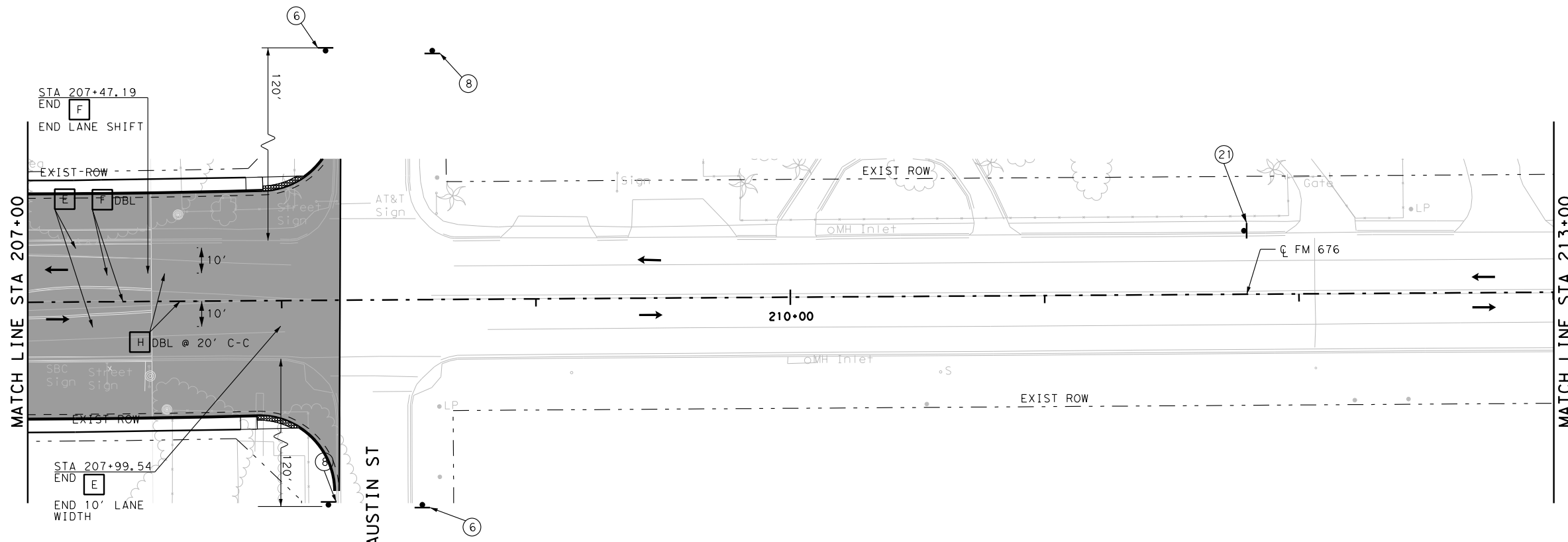
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- \*** ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 18 OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			97
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

\*\* PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED PRIOR TO PLACING ADVANCE WARNING SIGNS TO INFORM PUBLIC OF THE NEW TRAFFIC PATTERNS.

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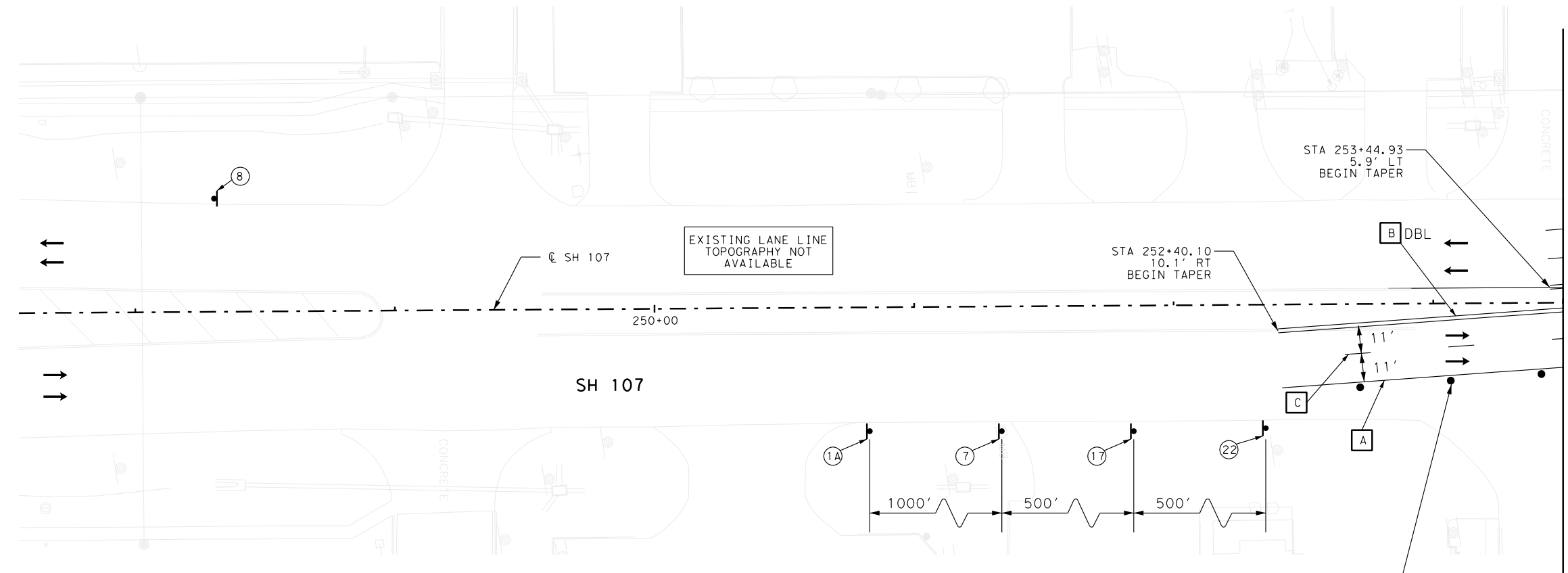
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 DISTANCE IN FEET



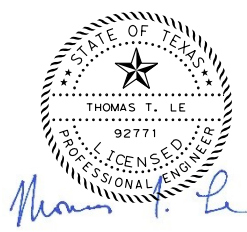
**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



G20-5aP 24X18					
R20-5T 24X30					
R20-5aTP 24X12					
	(1A)	(7)	(8)	(17)	(22)

NOTES:  
 1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.  
 2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 TRAFFIC CONTROL PLAN  
 PHASE III




















SHEET 18a OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			97A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
-  WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 18b OF 18

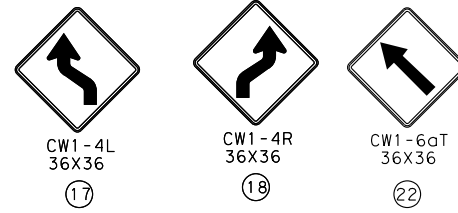
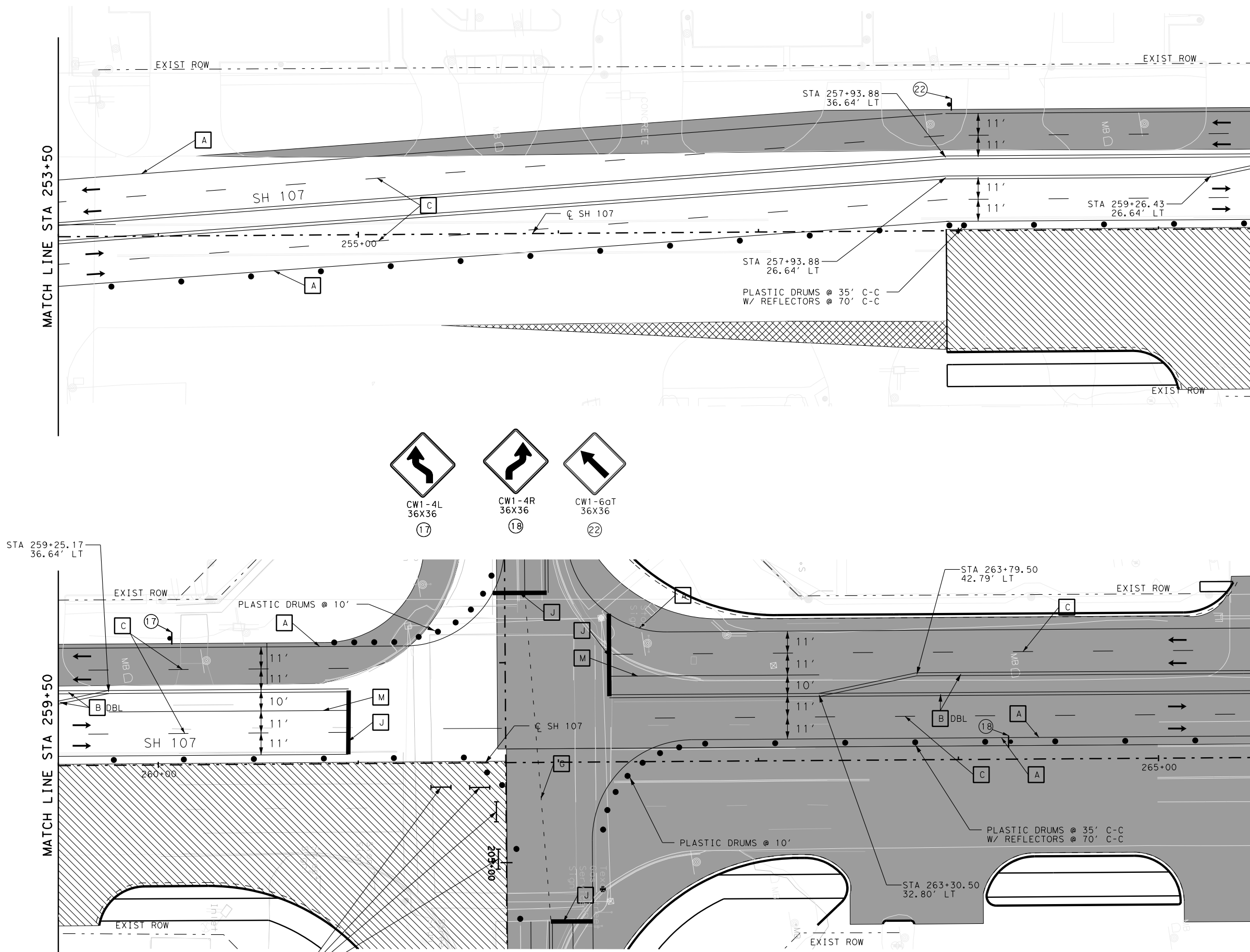
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6			97B
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

MATCH LINE STA 253+50

MATCH LINE STA 259+50

MATCH LINE STA 259+50

MATCH LINE STA 265+50



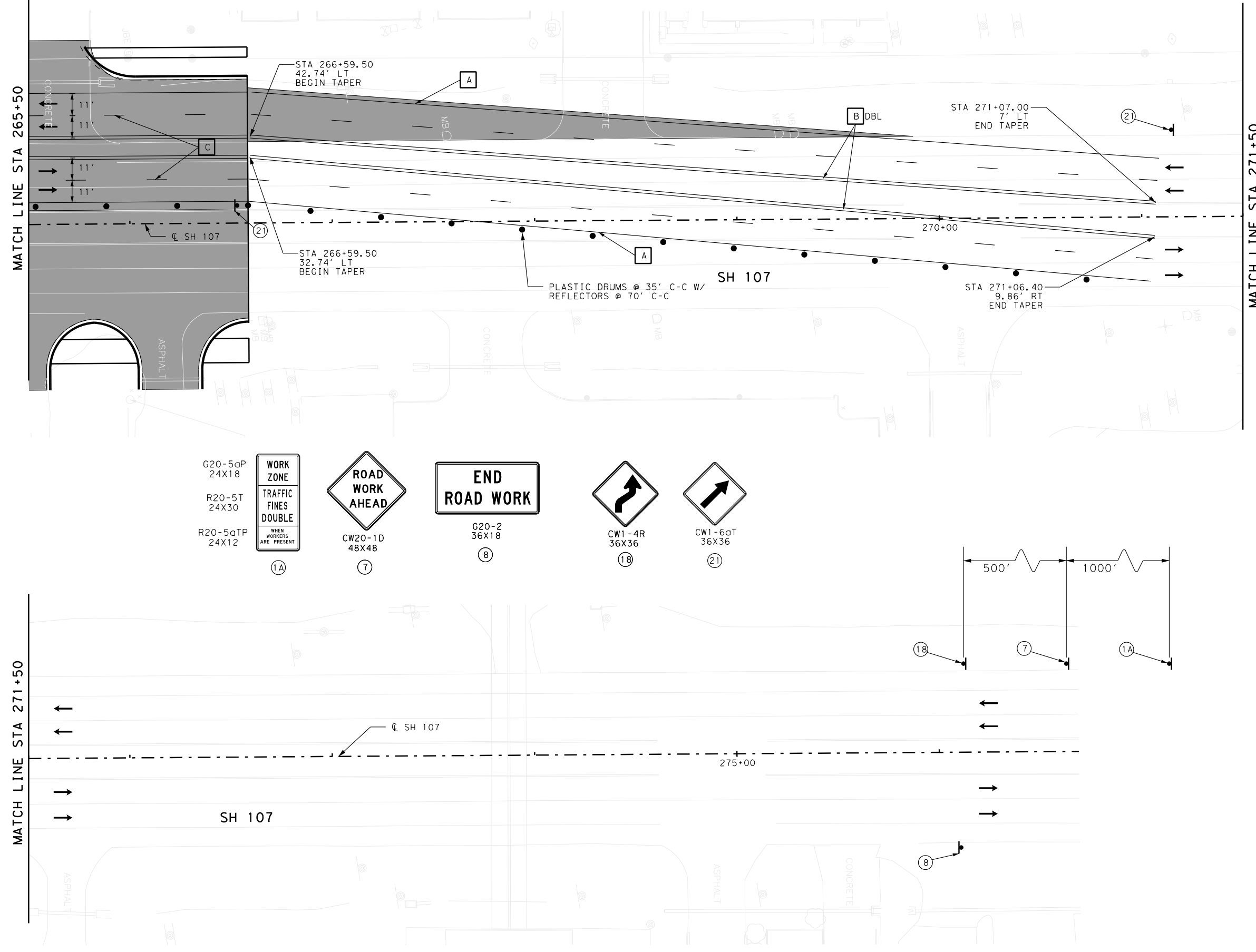
- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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TYPE 3 BARRICADES

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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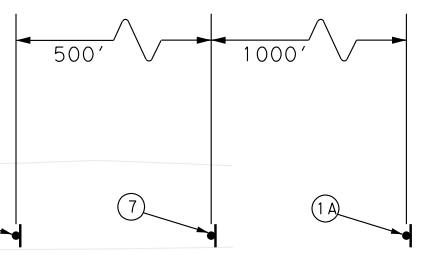
PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- A** WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- B** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- C** WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- D** WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- E** WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- F** WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- G** WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- H** WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- J** WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- K** WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- L** WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- M** WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE

- G20-5aP 24X18  
R20-5T 24X30  
R20-5aTP 24X12
- WORK ZONE TRAFFIC FINES DOUBLE WHEN WORKERS ARE PRESENT (1A)
- ROAD WORK AHEAD CW20-1D 48X48 (7)
- END ROAD WORK G20-2 36X18 (8)
- CW1-4R 36X36 (18)
- CW1-6aT 36X36 (21)



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
**TRAFFIC CONTROL PLAN**  
 PHASE III

SHEET 18c OF 18

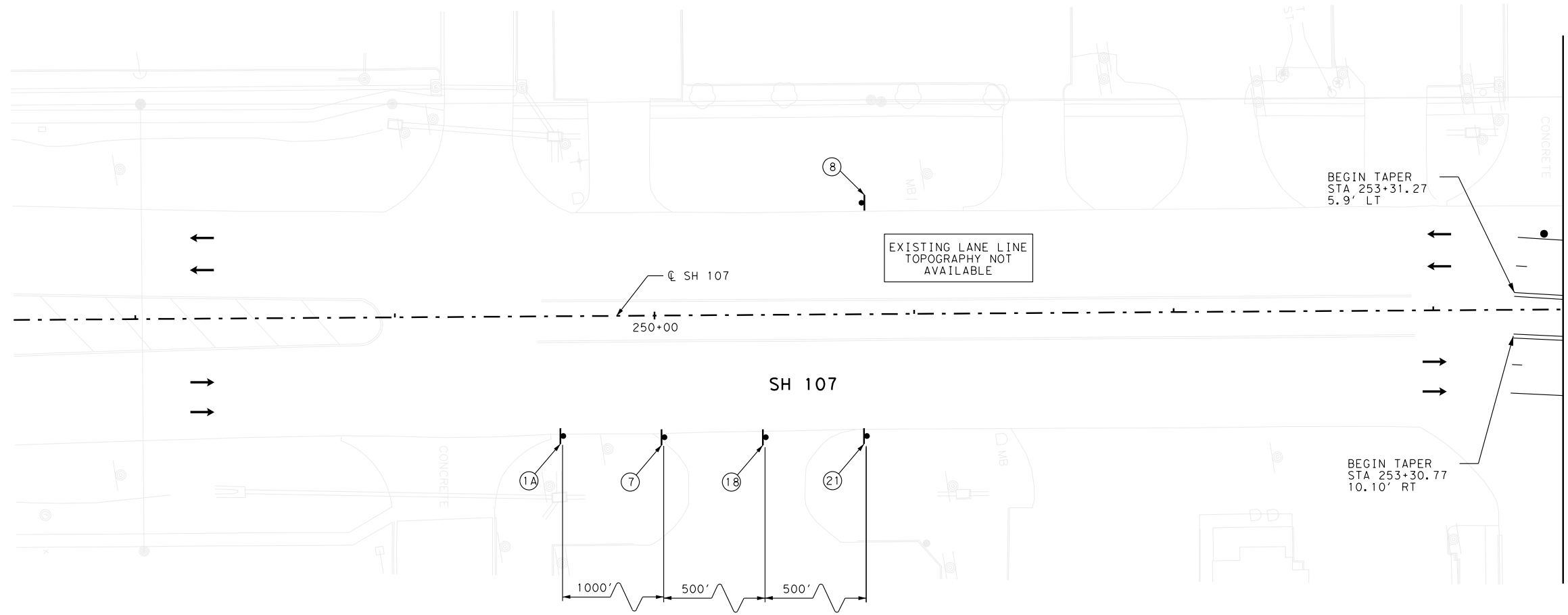
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6			97C
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE

G20-5aP 24X18  
 R20-5T 24X30  
 R20-5aTP 24X12

**WORK ZONE TRAFFIC FINES DOUBLE WHEN WORKERS ARE PRESENT**

**ROAD WORK AHEAD**  
 CW20-1D 48X48

**END ROAD WORK**  
 G20-2 36X18

CW1-4R 36X36

CW1-6aT 36X36

1A, 7, 8, 21



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**PHASE III**

SHEET 18d OF 18




















FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			97D
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

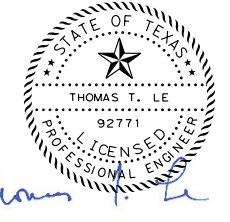
- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY ROADWAY CONSTRUCTION
-  CONSTRUCTION AREA PREVIOUS PHASES
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN
-  WORK ZONE PVMT MARK (NON-REM) 4" YELLOW BROKEN
-  WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID
-  WORK ZONE PVMT MARK (REM) 4" YELLOW DOT
-  WORK ZONE PVMT MARK (REFL) TY II-A-A
-  WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 12" WHITE SOLID
-  WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



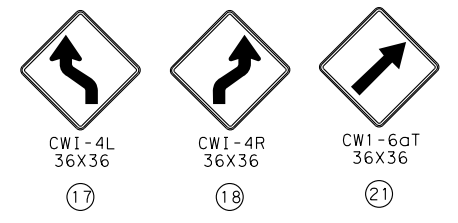
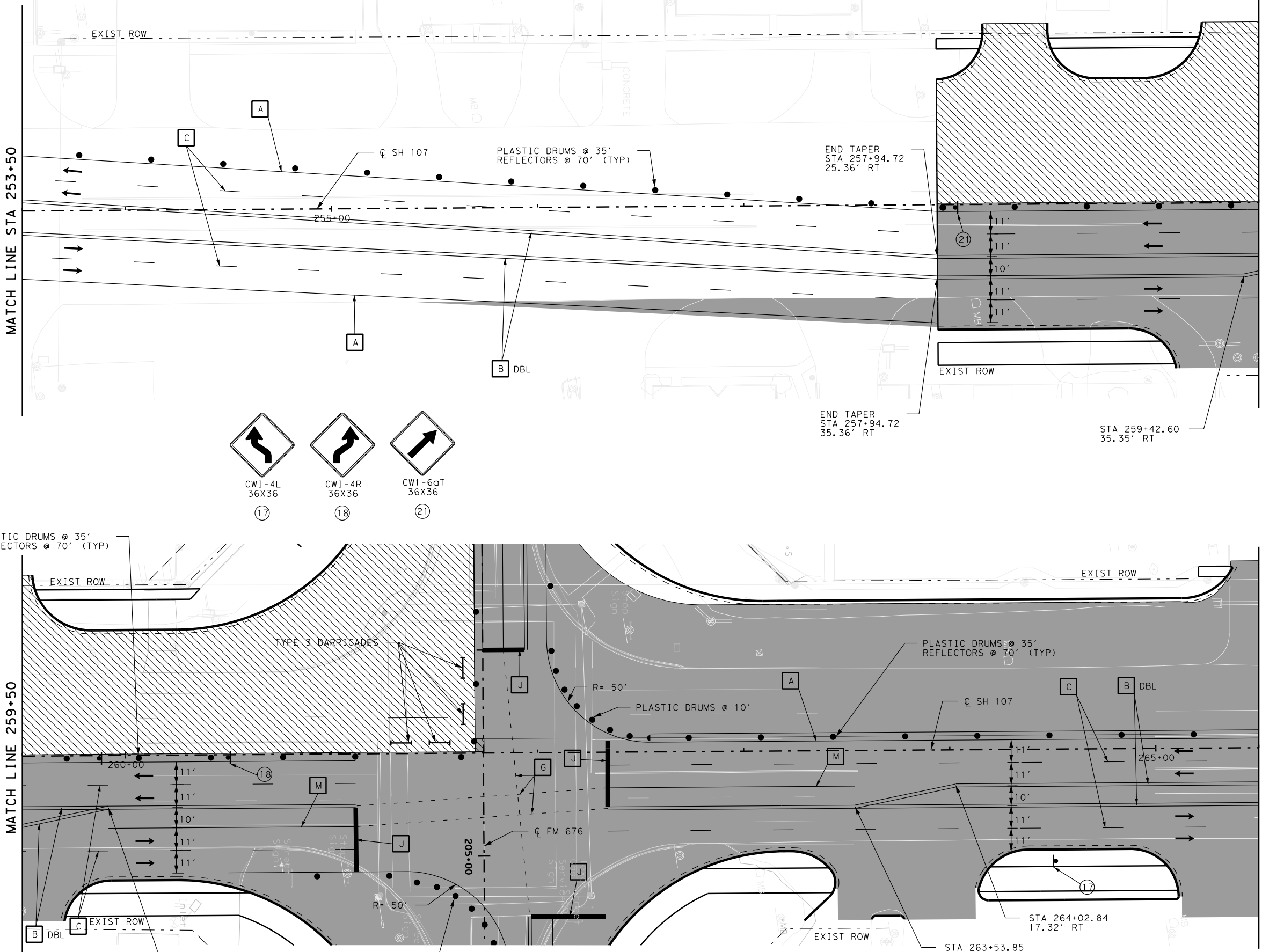
**ATKINS**  
 TBPE REG. #F-474

FM 676

**TRAFFIC CONTROL PLAN  
 PHASE III**

SHEET 18e OF 18

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			97E
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

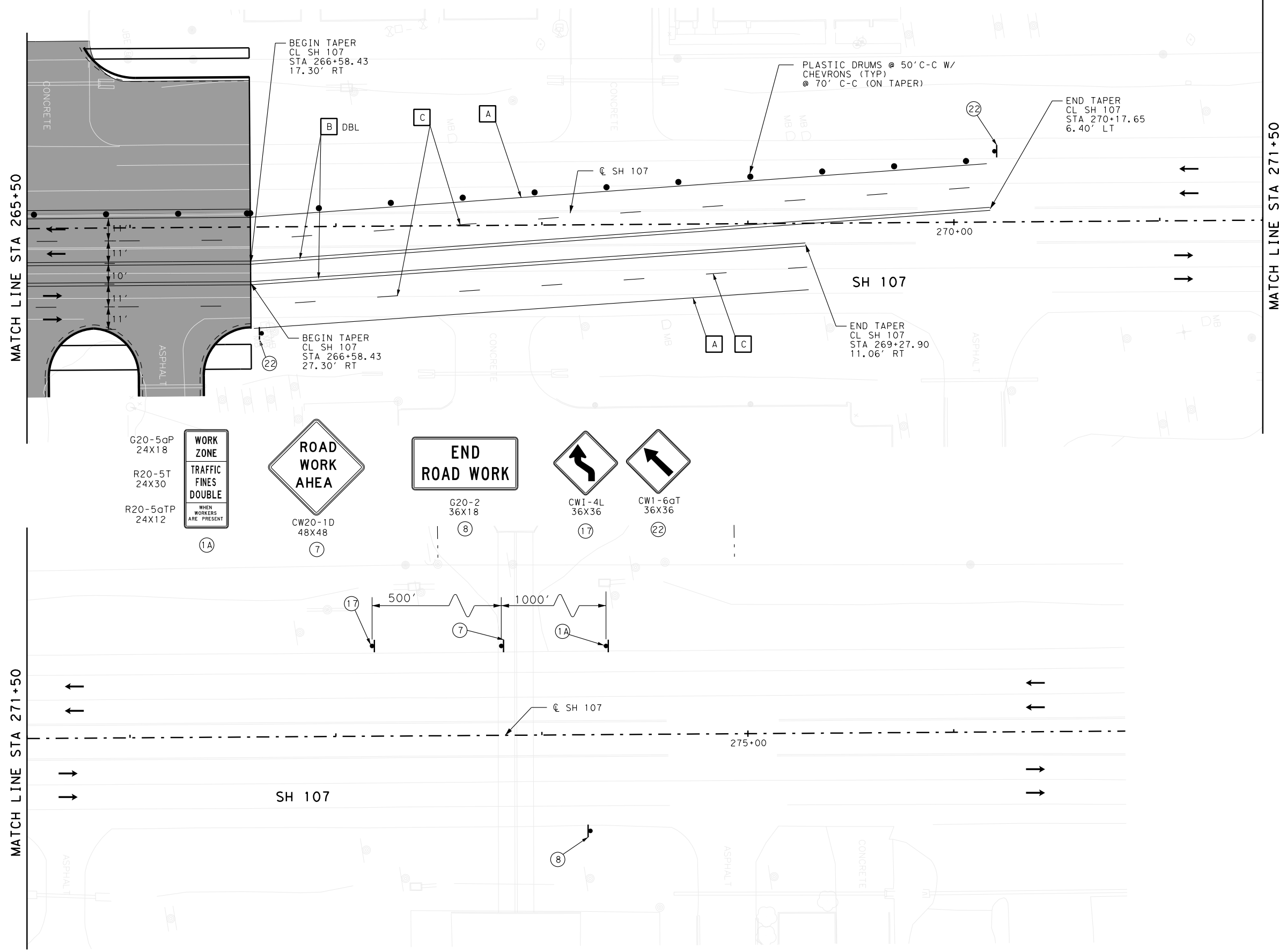


- NOTES:
- ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
  - BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- CONSTRUCTION AREA
- TEMPORARY ROADWAY CONSTRUCTION
- CONSTRUCTION AREA PREVIOUS PHASES
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (NON-REM)  
4" WHITE BROKEN
- WORK ZONE PVMT MARK (NON-REM)  
4" YELLOW BROKEN
- WORK ZONE PVMT MARK (REM)  
4" WHITE SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW SOLID
- WORK ZONE PVMT MARK (REM)  
4" YELLOW DOT
- WORK ZONE PVMT MARK (REM)  
(REFL) TY II-A-A
- WORK ZONE PVMT MARK (REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
12" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)  
8" WHITE SOLID
- DIRECTION OF TRAFFIC FLOW
- TYPE 3 BARRICADE
- CHANNELIZING DEVICE
- ITEMS TO REMAIN FROM PREVIOUS PHASE



12/1/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676

**TRAFFIC CONTROL PLAN  
 PHASE III**

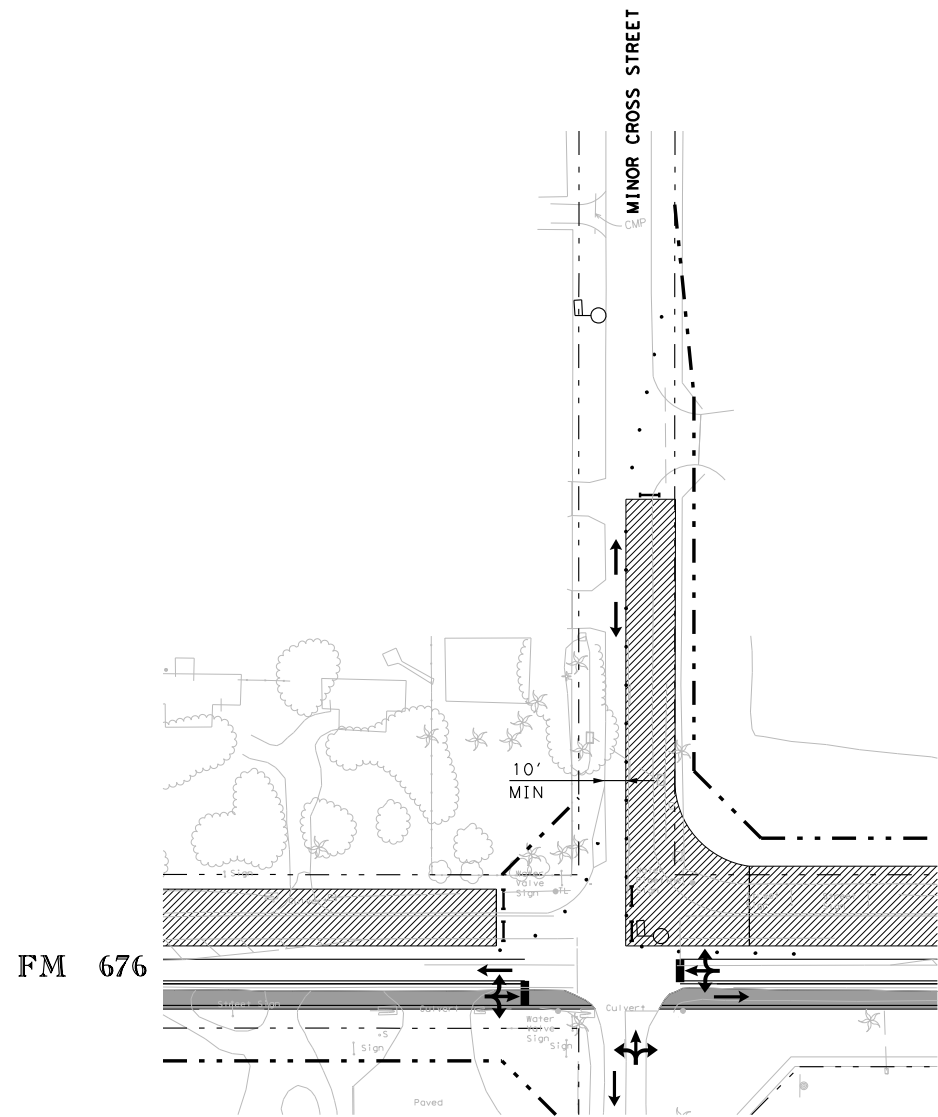
SHEET 18f OF 18

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				97F	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

**NOTES:**

1. ACCESS TO ALL DRIVEWAYS & CROSS STREETS ADJACENT TO THE PROPOSED ROADWAY CONSTRUCTION SHALL BE MAINTAINED AT ALL TIMES, DURING CONSTRUCTION.
2. BEGIN OR END WORK ZONE PAVEMENT MARKINGS WHERE TANGENT MEETS RADIUS AT ALL INTERSECTIONS.

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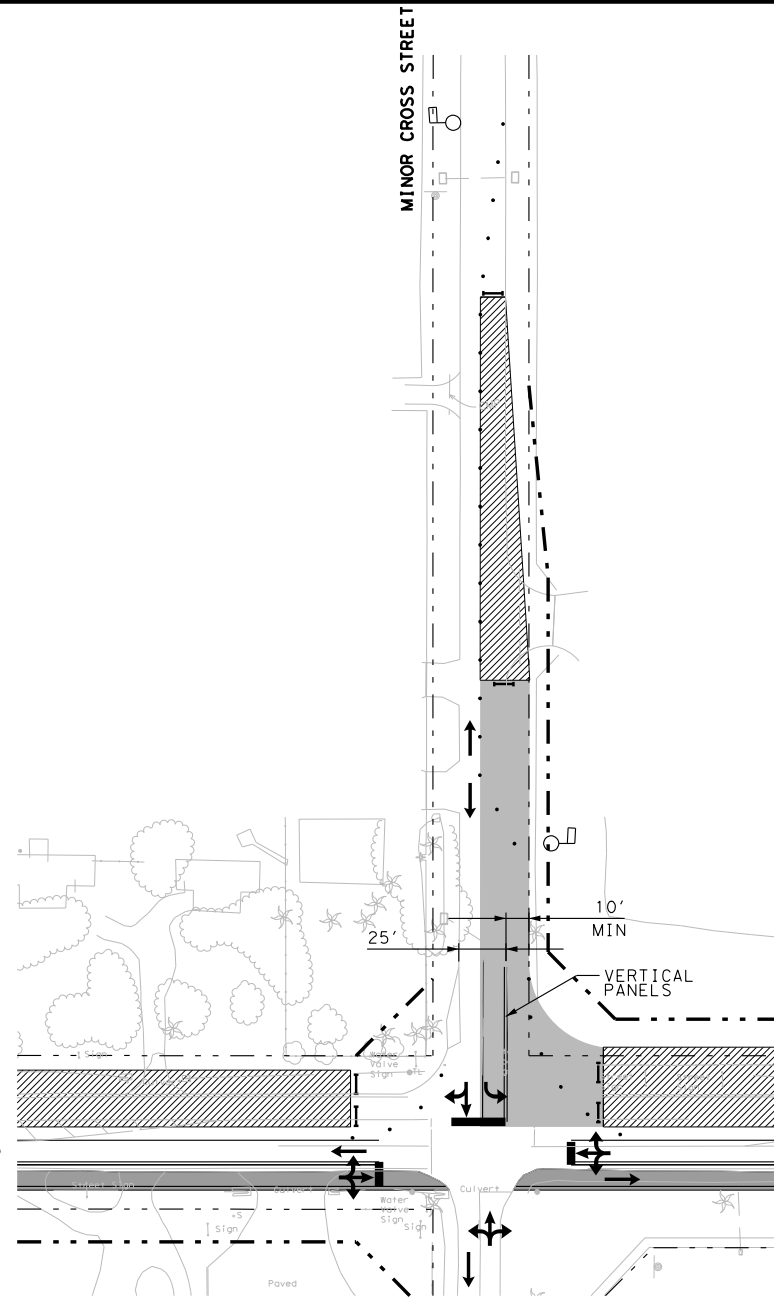
**STEP 1**

FOR THE FOLLOWING INTERSECTIONS:  
 MOOREFIELD RD, LOS EBANOS BLVD,  
 AND TROSPER RD

**NOTES:**

1. CONTRACTOR WILL HAVE FLAGGER PRESENT AT ALL TIMES DURING INTERSECTION CONSTRUCTION.
2. INTERSECTION MUST BE REOPENED AT THE END OF EACH WORKING DAY TO NORMAL TWO WAY TRAFFIC OPERATIONS.
3. ADDITIONAL SIGNING, BARRICADES AND BARRELS MAY BE REQUIRED AS DIRECTED. REFER TO STANDARD TCP (2-2)-18
4. CONTRACTOR WILL STAGE CONSTRUCTION IN SUCH A MANNER THAT THE INTERSECTION IS REOPENED TO TWO-WAY TRAFFIC BY THE END OF EACH WORK DAY.
5. WITH THE APPROVAL OF THE FIELD ENGINEER, CONTRACTOR CAN USE DETOUR ROUTE FOR FULL CLOSURE FOR THE FOLLOWING CONSTRUCTION: MOORFIELD RD NORTH OF FM 676 AND TROSPER RD, OTHERWISE USE INTERSECTION CONSTRUCTION PHASING. DETOUR LAYOUT WILL NEED TO BE PROVIDED TO THE ENGINEER PRIOR TO ENACTING THE DETOUR
6. FOR SIGNING FOR UNEVEN LANES, REFER TO STANDARD WZ(UL)-13
7. VERTICAL PANELS WILL BE USED FOR TEMPORARY LANE SEPARATORS OR AS DIRECTED.







FM 676

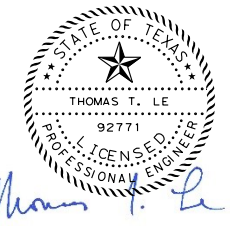


**STEP 2**

FOR THE FOLLOWING INTERSECTIONS:  
 MOOREFIELD RD, LOS EBANOS BLVD,  
 AND TROSPER RD

**LEGEND**

	CONSTRUCTION AREA
	CONSTRUCTION AREA PREVIOUS PHASES
	DIRECTION OF TRAFFIC FLOW
	TYPE 3 BARRICADE
	CHANNELIZING DEVICE
	FLAGGER



*Thomas T. Le*  
 11/18/2022



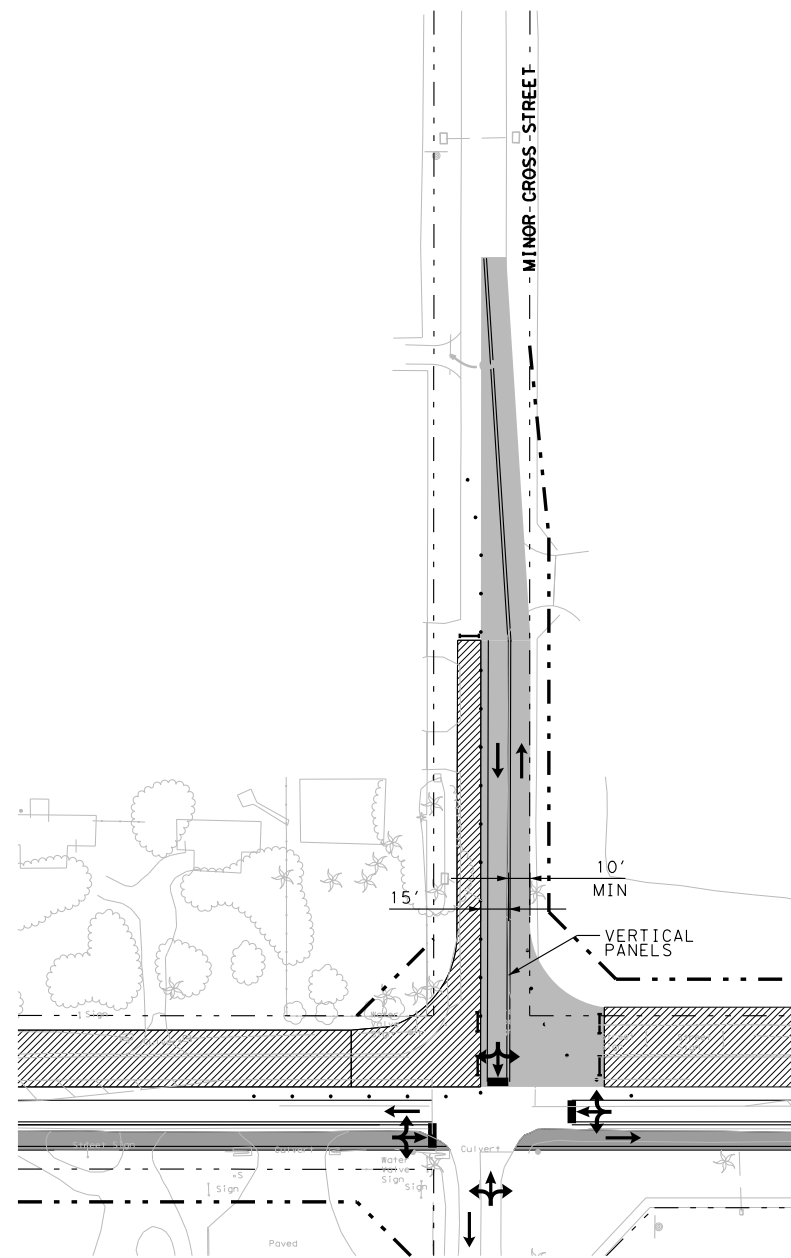
**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**TRAFFIC CONTROL PLAN**  
**MINOR INTERSECTION**  
**CONSTRUCTION PHASING**

SHEET 1 OF 4

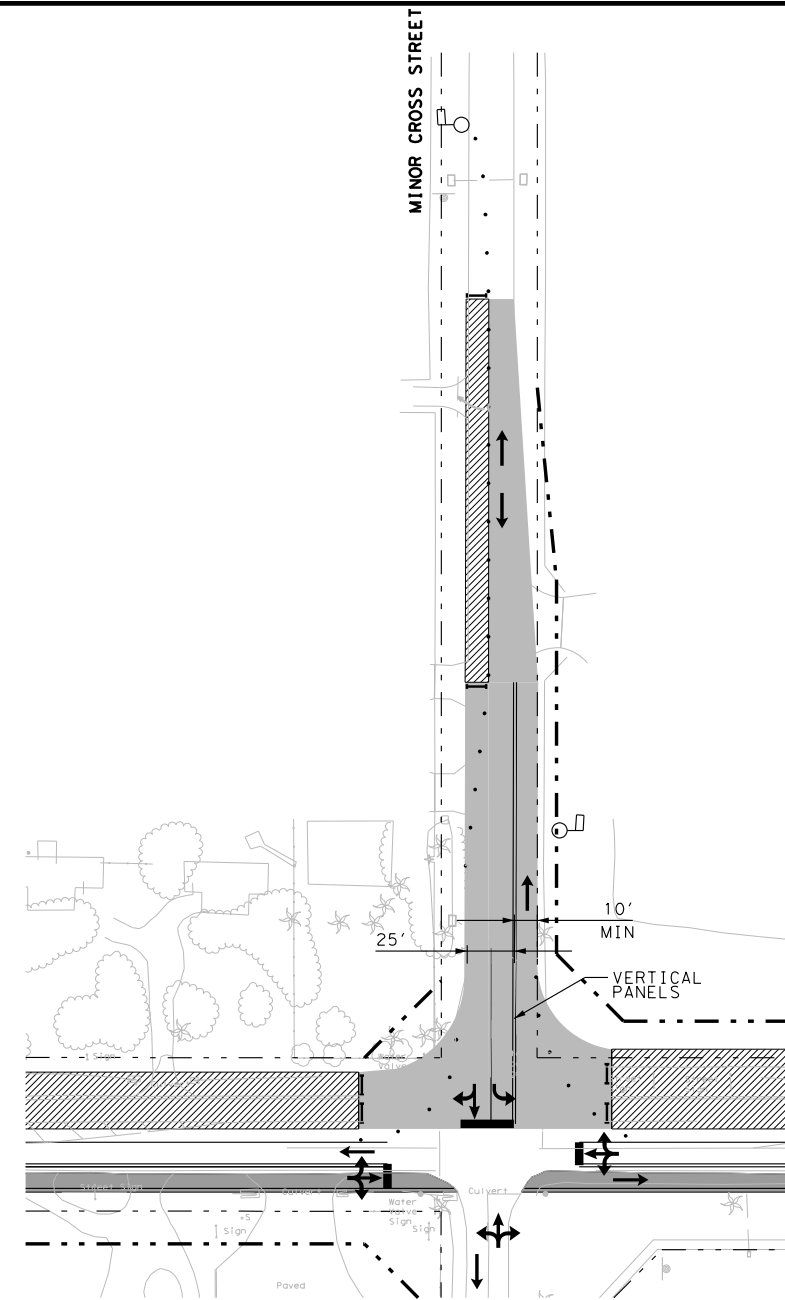
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6			98
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**STEP 3**

FOR THE FOLLOWING INTERSECTIONS:  
 MOOREFIELD RD, LOS EBANOS BLVD,  
 AND TROSPER RD









**STEP 4**

FOR THE FOLLOWING INTERSECTIONS:  
 MOOREFIELD RD, LOS EBANOS BLVD,  
 AND TROSPER RD

NOTES:

1. CONTRACTOR WILL HAVE FLAGGER PRESENT AT ALL TIMES DURING INTERSECTION CONSTRUCTION.
2. INTERSECTION MUST BE REOPENED AT THE END OF EACH WORKING DAY TO NORMAL TWO WAY TRAFFIC OPERATIONS.
3. ADDITIONAL SIGNING, BARRICADES AND BARRELS MAY BE REQUIRED AS DIRECTED. REFER TO STANDARD TCP (2-2)-18
4. CONTRACTOR WILL STAGE CONSTRUCTION IN SUCH A MANNER THAT THE INTERSECTION IS REOPENED TO TWO-WAY TRAFFIC BY THE END OF EACH WORK DAY.
5. WITH THE APPROVAL OF THE FIELD ENGINEER, CONTRACTOR CAN USE DETOUR ROUTE FOR FULL CLOSURE FOR THE FOLLOWING CONSTRUCTION: MOORFIELD RD NORTH OF FM 676 AND TROSPER RD, OTHERWISE USE INTERSECTION CONSTRUCTION PHASING. DETOUR LAYOUT WILL NEED TO BE PROVIDED TO THE ENGINEER PRIOR TO ENACTING THE DETOUR
6. FOR SIGNING FOR UNEVEN LANES, REFER TO STANDARD WZ(UL)-13
7. VERTICAL PANELS WILL BE USED FOR TEMPORARY LANE SEPARATORS OR AS DIRECTED.

**LEGEND**

	CONSTRUCTION AREA
	CONSTRUCTION AREA PREVIOUS PHASES
	DIRECTION OF TRAFFIC FLOW
	TYPE 3 BARRICADE
	CHANNELIZING DEVICE
	FLAGGER



11/18/2022



**ATKINS**

TBPE REG. #F-474

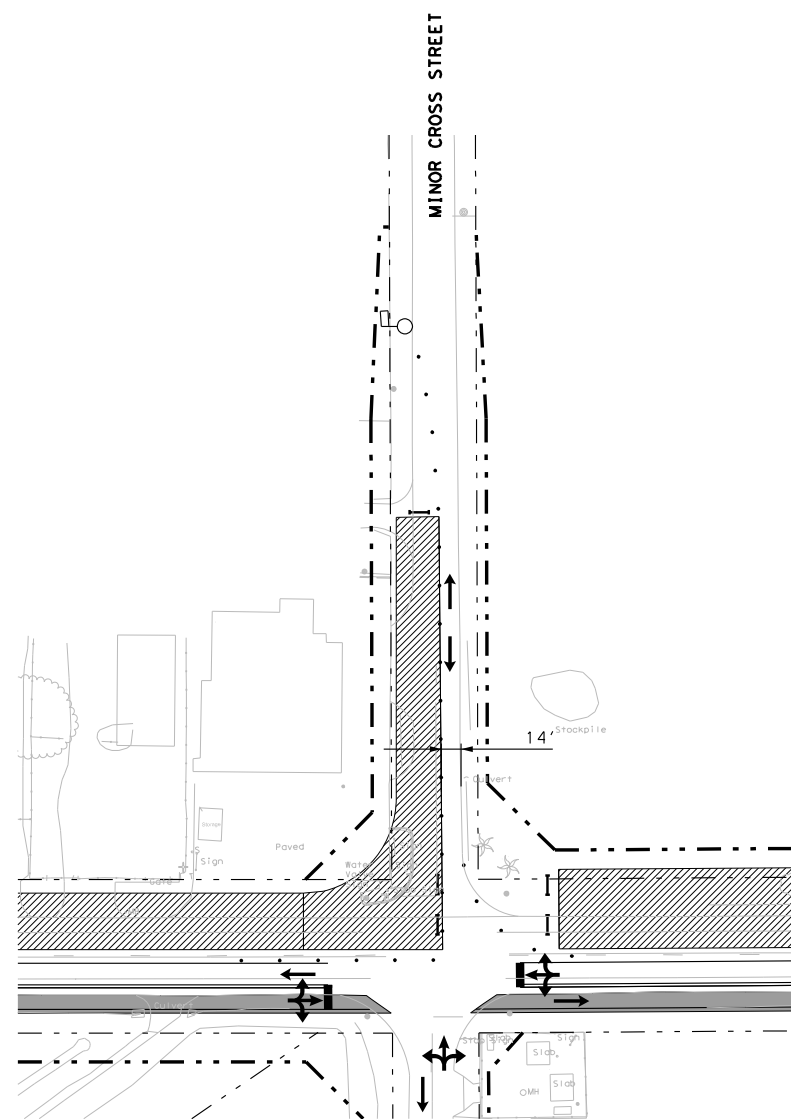
FM 676

**TRAFFIC CONTROL PLAN  
 MINOR INTERSECTION  
 CONSTRUCTION PHASING**

SHEET 2 OF 4

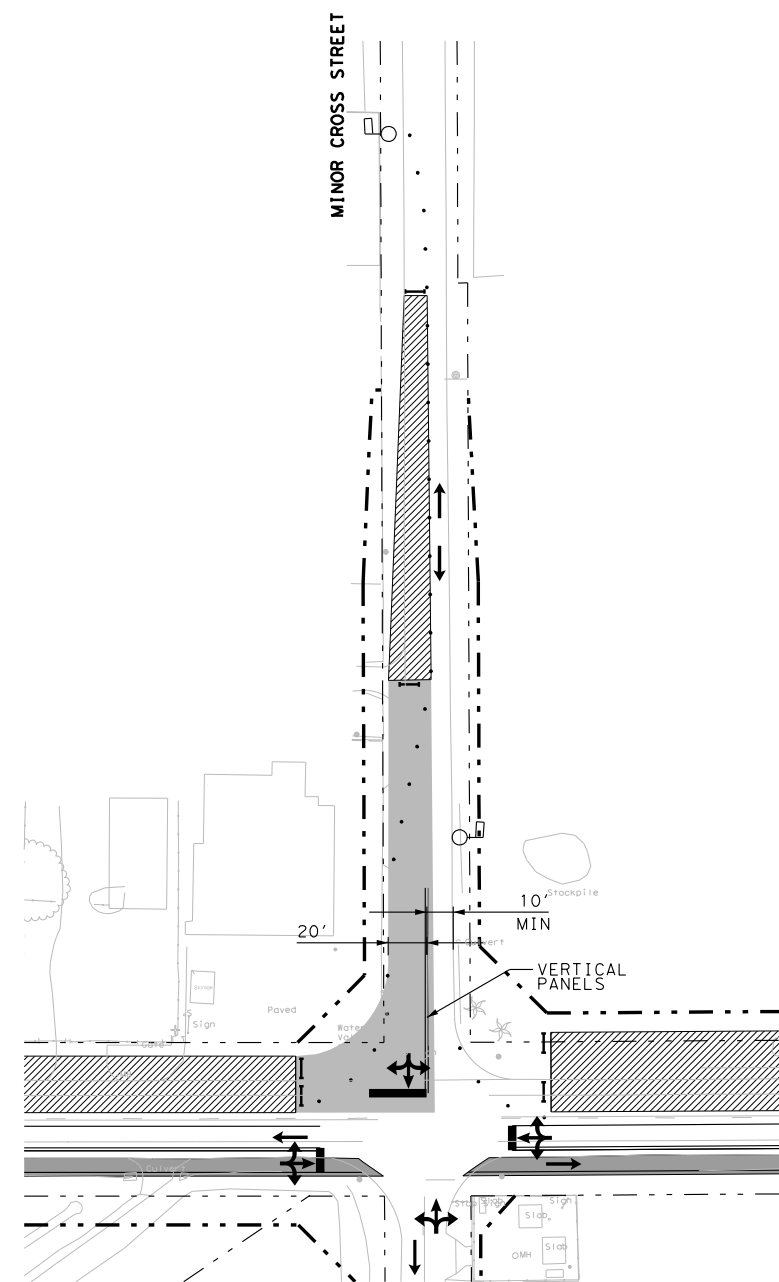
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6			99
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**STEP 1**

FOR THE FOLLOWING INTERSECTION:  
 INSPIRATION BLVD



**STEP 2**

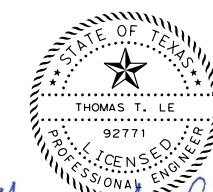
FOR THE FOLLOWING INTERSECTIONS:  
 INSPIRATION BLVD

NOTES:

1. CONTRACTOR WILL HAVE FLAGGER PRESENT AT ALL TIMES DURING INTERSECTION CONSTRUCTION.
2. INTERSECTION MUST BE REOPENED AT THE END OF EACH WORKING DAY TO NORMAL TWO WAY TRAFFIC OPERATIONS.
3. ADDITIONAL SIGNING, BARRICADES AND BARRELS MAY BE REQUIRED AS DIRECTED. REFER TO STANDARD TCP (2-2)-18
4. CONTRACTOR WILL STAGE CONSTRUCTION IN SUCH A MANNER THAT THE INTERSECTION IS REOPENED TO TWO-WAY TRAFFIC BY THE END OF EACH WORK DAY.
5. FOR SIGNING FOR UNEVEN LANES, REFER TO STANDARD WZ(UL)-13
6. VERTICAL PANELS WILL BE USED FOR TEMPORARY LANE SEPARATORS OR AS DIRECTED.

**LEGEND**

	CONSTRUCTION AREA
	CONSTRUCTION AREA PREVIOUS PHASES
	DIRECTION OF TRAFFIC FLOW
	TYPE 3 BARRICADE
	CHANNELIZING DEVICE
	FLAGGER



*Thomas T. Le*  
 11/18/2022



**ATKINS**

TBPE REG. #F-474

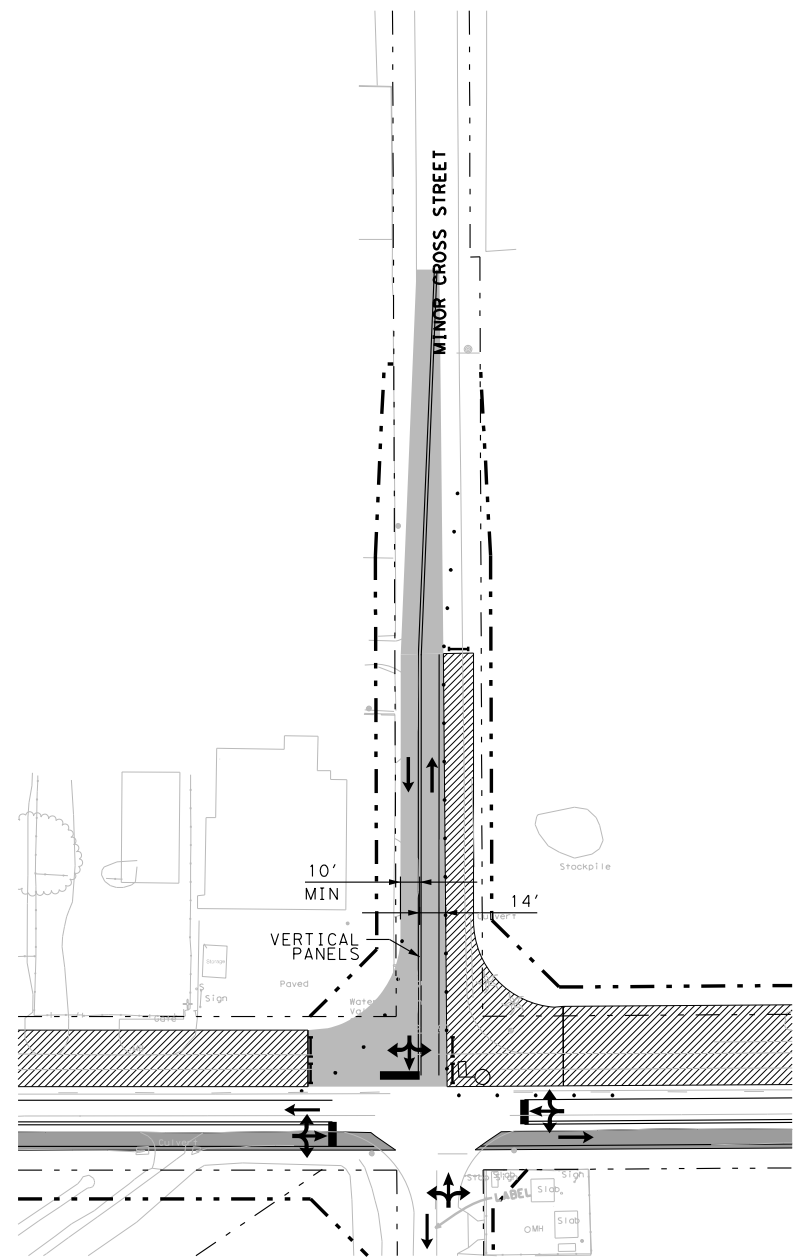
FM 676

**TRAFFIC CONTROL PLAN  
 MINOR INTERSECTION  
 CONSTRUCTION PHASING**

SHEET 3 OF 4

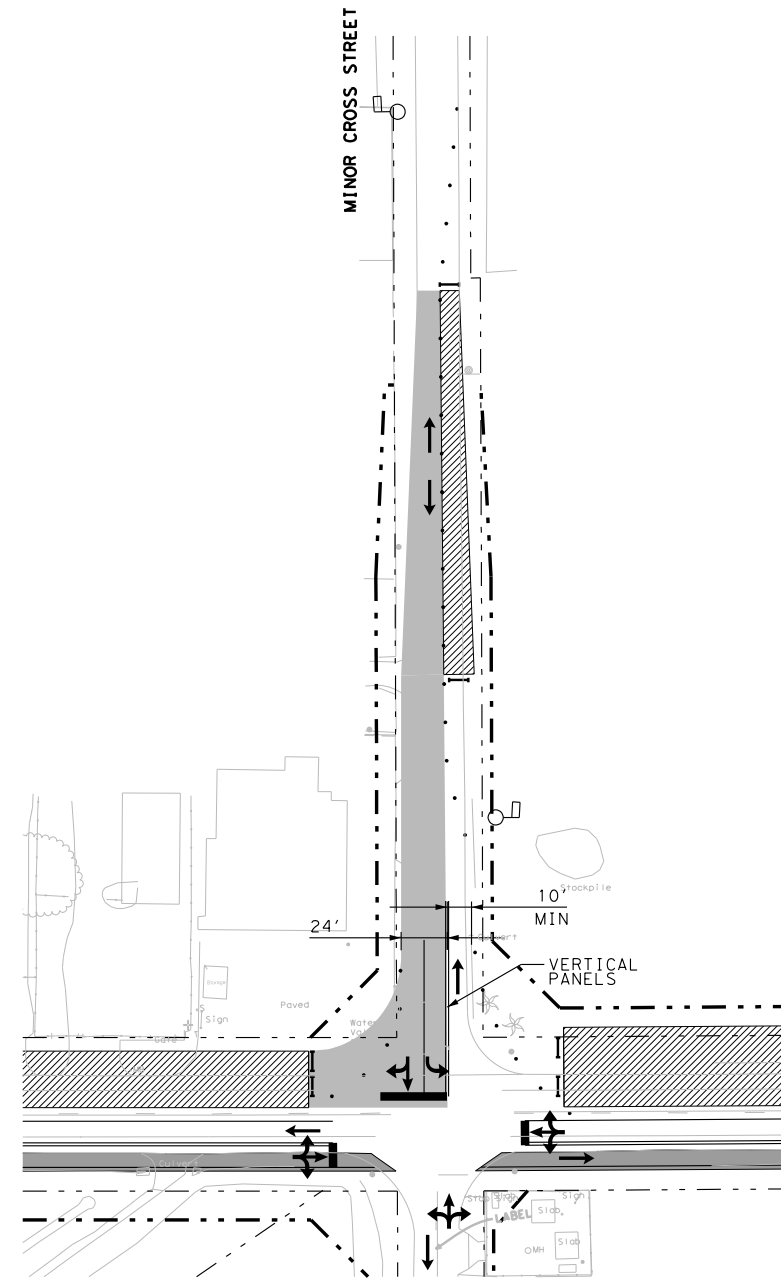
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6			100
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**STEP 3**

FOR THE FOLLOWING INTERSECTION:  
 INSPIRATION BLVD









**STEP 4**

FOR THE FOLLOWING INTERSECTIONS:  
 INSPIRATION BLVD

NOTES:

1. CONTRACTOR WILL HAVE FLAGGER PRESENT AT ALL TIMES DURING INTERSECTION CONSTRUCTION.
2. INTERSECTION MUST BE REOPENED AT THE END OF EACH WORKING DAY TO NORMAL TWO WAY TRAFFIC OPERATIONS.
3. ADDITIONAL SIGNING, BARRICADES AND BARRELS MAY BE REQUIRED AS DIRECTED. REFER TO STANDARD TCP (2-2)-18
4. CONTRACTOR WILL STAGE CONSTRUCTION IN SUCH A MANNER THAT THE INTERSECTION IS REOPENED TO TWO-WAY TRAFFIC BY THE END OF EACH WORK DAY.
5. FOR SIGNING FOR UNEVEN LANES, REFER TO STANDARD WZ(UL)-13
6. VERTICAL PANELS WILL BE USED FOR TEMPORARY LANE SEPARATORS OR AS DIRECTED.

**LEGEND**

-  CONSTRUCTION AREA
-  CONSTRUCTION AREA PREVIOUS PHASES
-  DIRECTION OF TRAFFIC FLOW
-  TYPE 3 BARRICADE
-  CHANNELIZING DEVICE
-  FLAGGER



11/18/2022



**ATKINS**

TBPE REG. #F-474

FM 676

**TRAFFIC CONTROL PLAN  
 MINOR INTERSECTION  
 CONSTRUCTION PHASING**

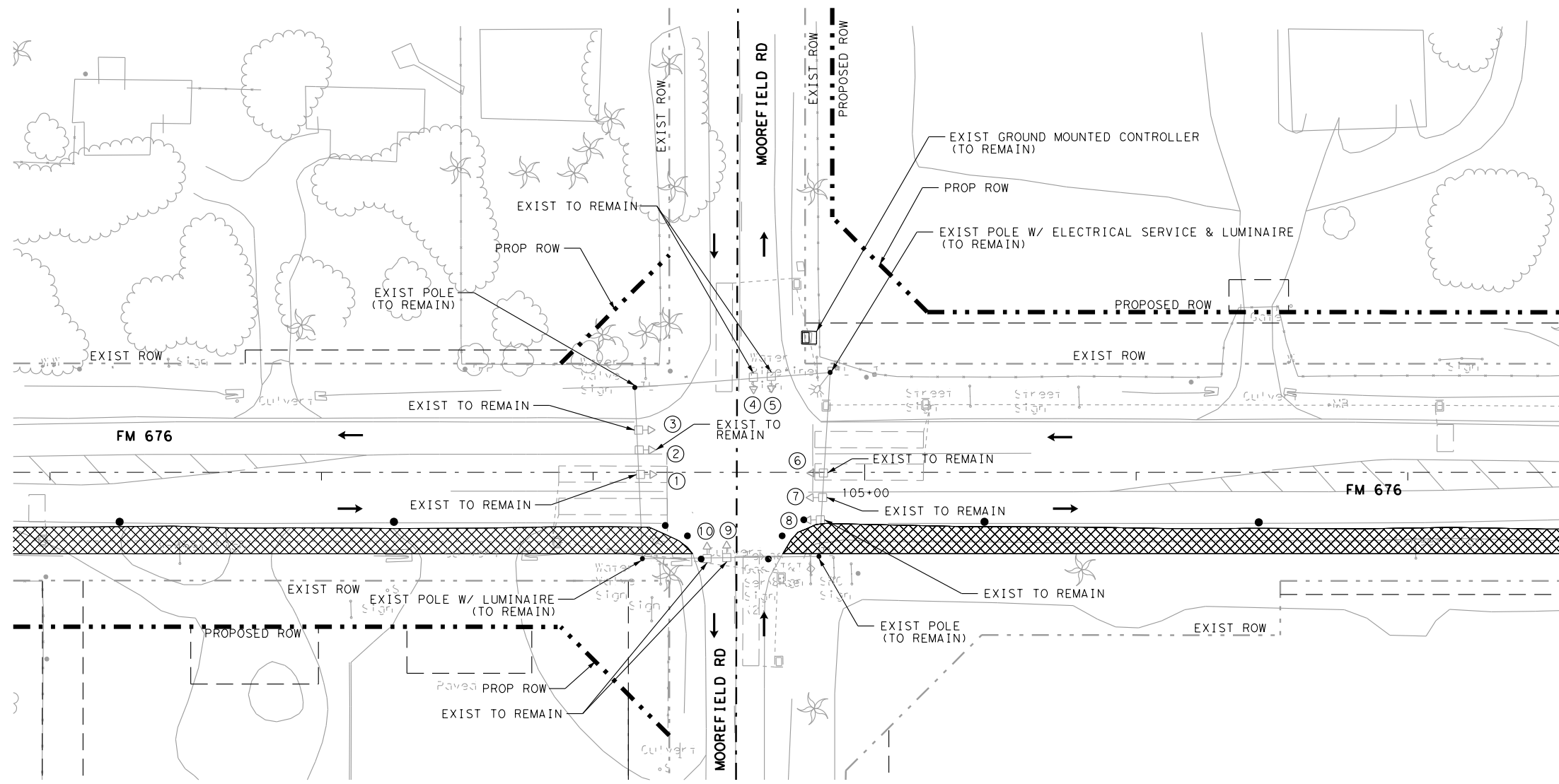
SHEET 4 OF 4

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STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
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1064	01	032	FM 676

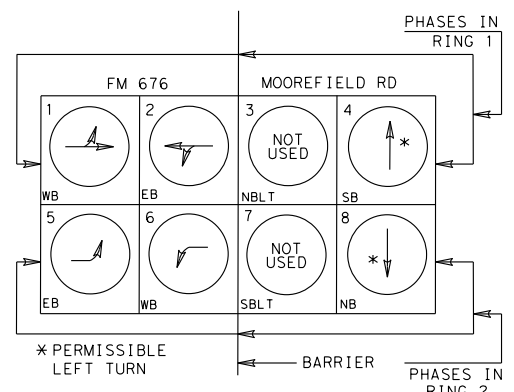


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ LP EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**

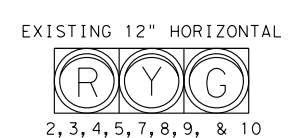
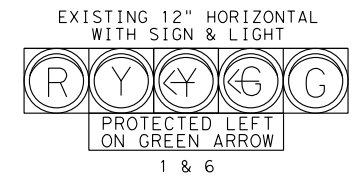


**TEMPORARY CONDITION PHASE I STEP 1**

INTERSECTION OF  
FM 676 AND MOOREFIELD  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND IF DAMAGED, SHALL REPAIR AT CONTRACTOR'S EXPENSE.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

2 FM 676  
**TRAFFIC SIGNAL LAYOUT**  
**TEMPORARY CONDITION**  
**PH I S1 - MOOREFIELD RD**  
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

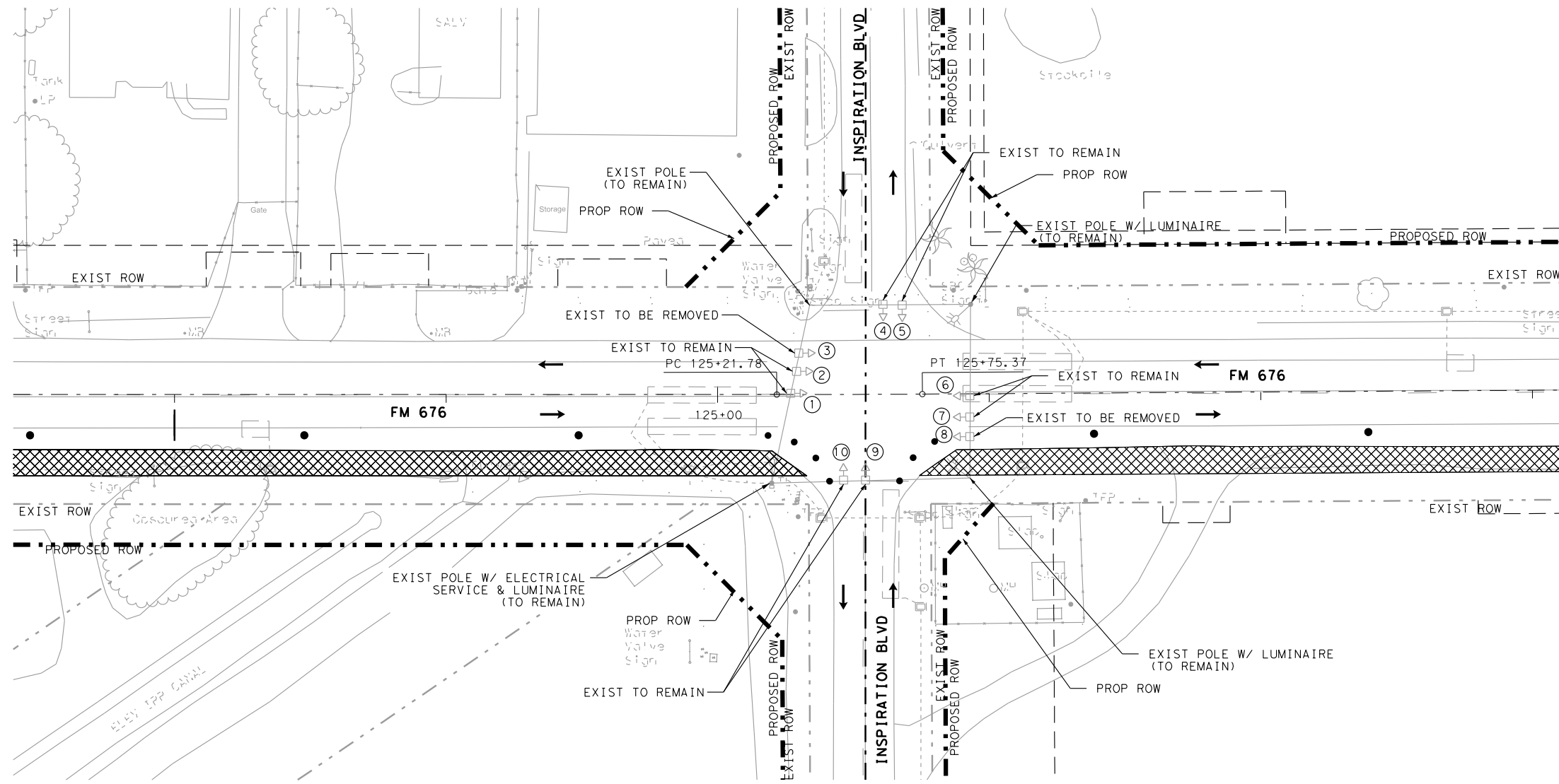
SHEET 1 OF 3		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		102
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022

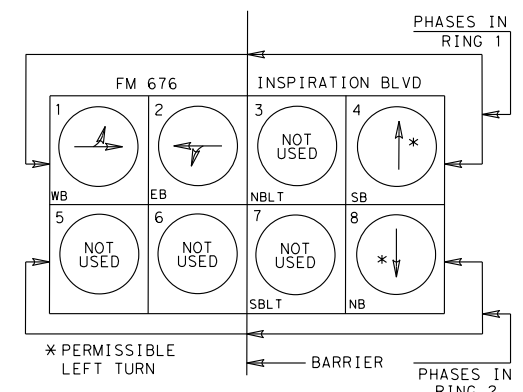


**ATKINS**  
TBPE REG. #F-474

3 FM 676  
**TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH I S1 - INSPIRATION BLVD**  
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 2 OF 3		FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 103
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	

**TEMPORARY PHASING DIAGRAM**



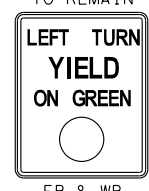
**TEMPORARY CONDITION PHASE I STEP 1**

INTERSECTION OF  
FM 676 AND INSPIRATION  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND IF DAMAGED, SHALL REPAIR AT CONTRACTOR'S EXPENSE.

EXISTING SIGN TO REMAIN



EB & WB

EXISTING 12" HORIZONTAL WITH BACKPLATES



1, & 6

EXISTING 12" HORIZONTAL WITH BACKPLATES



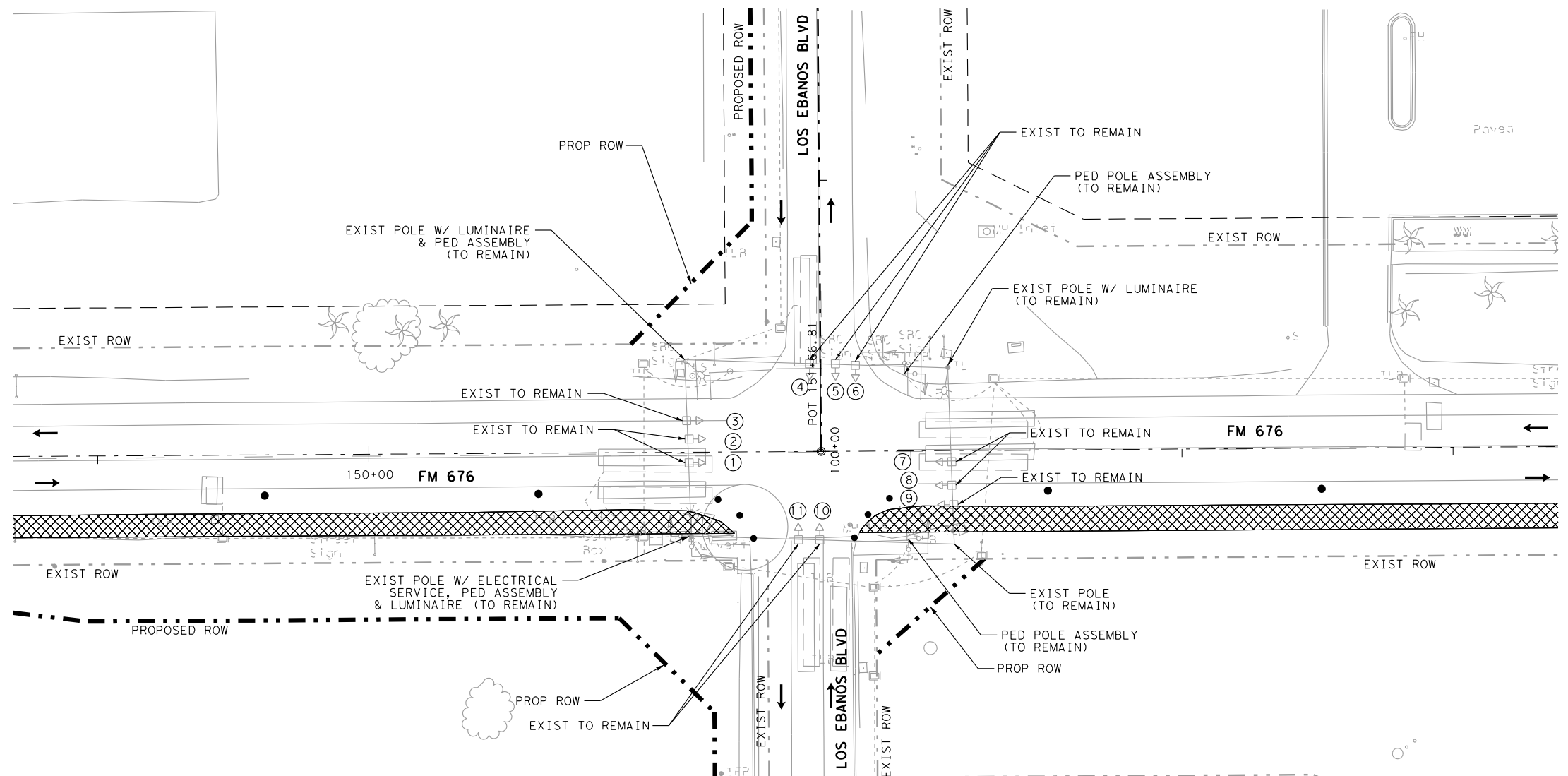
2, 3, 4, 5, 7, 8, 9, & 10

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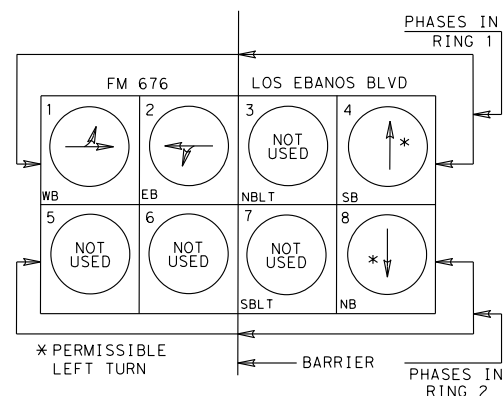


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⊢ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**



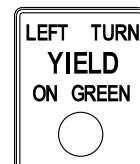
**TEMPORARY CONDITION PHASE I STEP 1**

INTERSECTION OF  
FM 676 AND LOS EBANOS  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND IF DAMAGED, SHALL REPAIR AT CONTRACTOR'S EXPENSE.

EXISTING SIGN TO REMAIN



NB, EB & WB

EXISTING 12" HORIZONTAL WITH BACKPLATES



1, 4, & 7

EXISTING 12" HORIZONTAL WITH BACKPLATES



2, 3, 5, 6, 8, 9, 10, & 11



11/18/2022



**ATKINS**

TBPE REG. #F-474

4 FM 676  
TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH I S1 - LOS EBANOS BLVD  
PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 3 OF 3

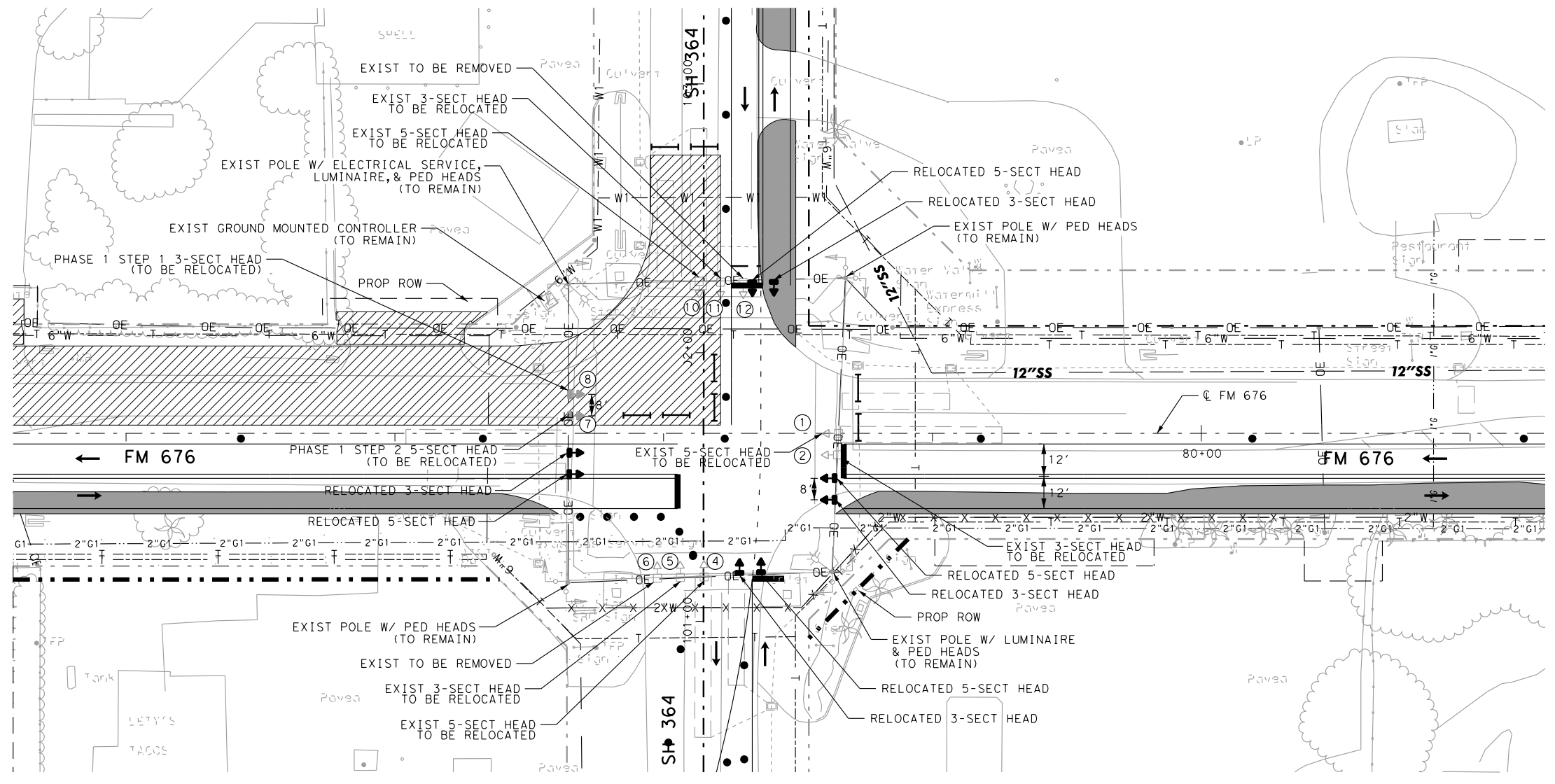
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			104
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676





**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⚡ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA

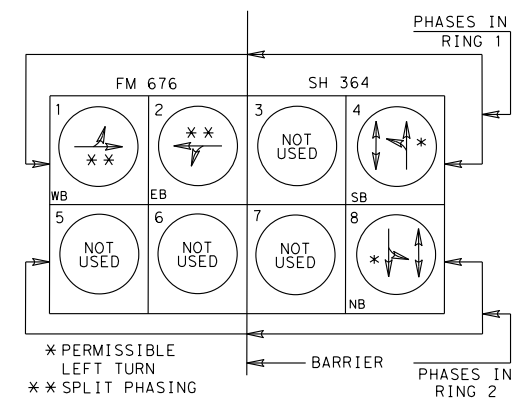


11/18/2022



- NOTES:**
1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
  2. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND IF DAMAGED, SHALL REPAIR AT CONTRACTOR'S EXPENSE.

**TEMPORARY PHASING DIAGRAM**



**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF FM 676 AND SH364 IN HIDALGO COUNTY CONTROL 1064-01



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# ATKINS

TBPE REG. #F-474

1 FM 676

## TRAFFIC SIGNAL LAYOUT

### TEMPORARY CONDITION

PH II S1 - SH 364

PLAN SCALE: 1"=50'

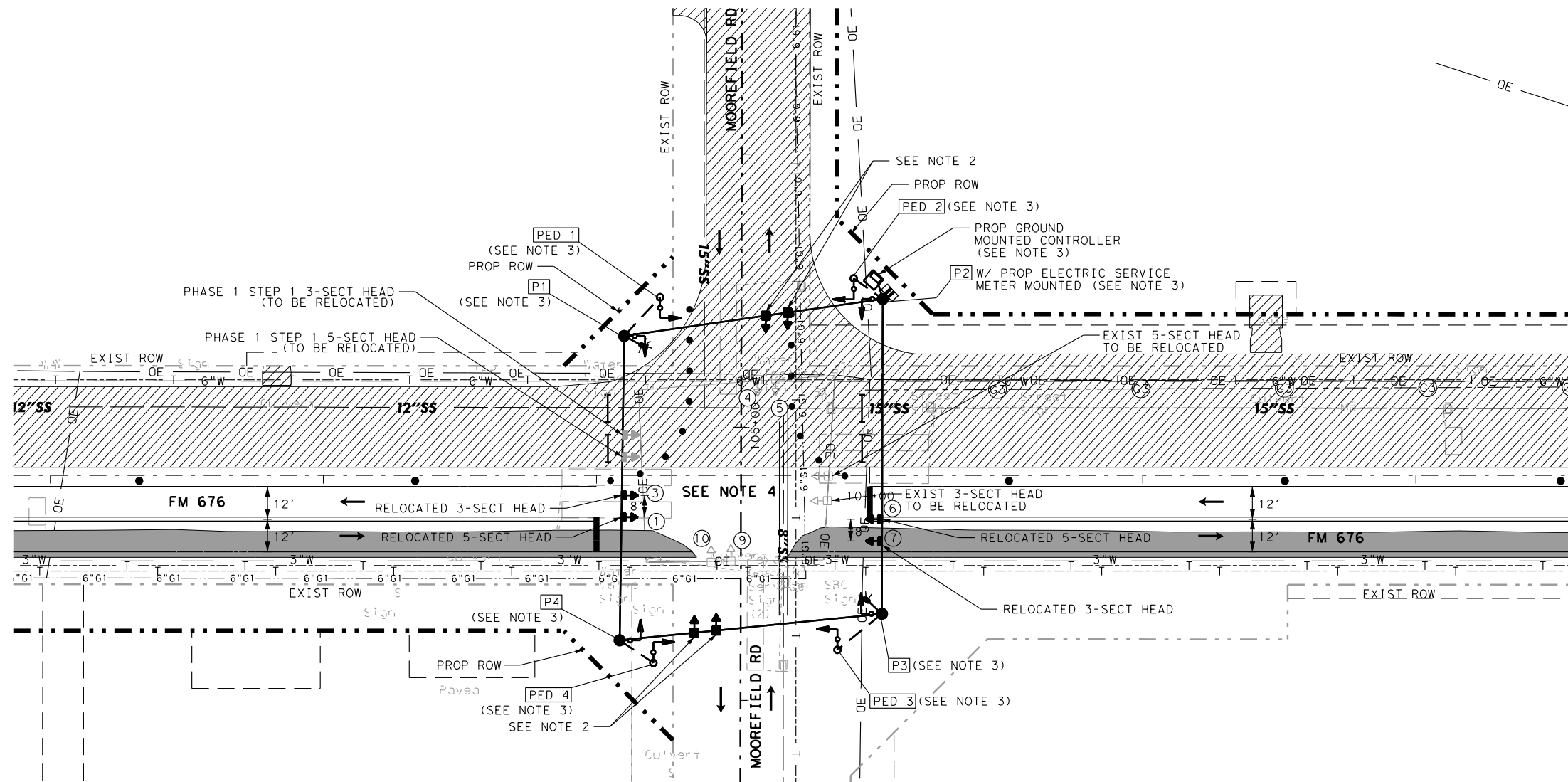
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 1 OF 6		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		105
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

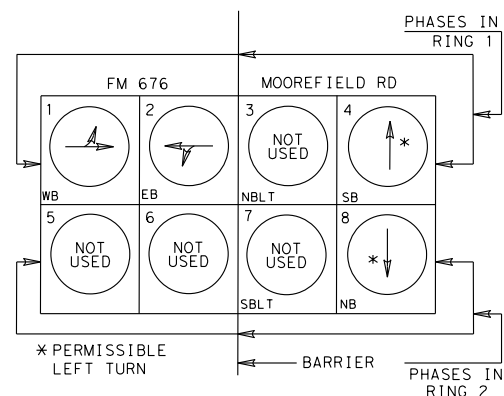


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⊢ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**

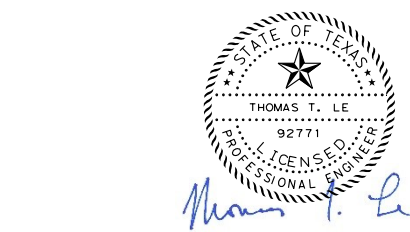
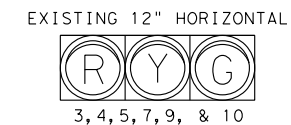


**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF  
FM 676 AND MOOREFIELD  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
3. PROPOSED GROUND MOUNTED CONTROLLER, PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1, P2, P3, AND P4), AND PEDESTRIAN POLE ASSEMBLIES (PED 1, PED 2, PED 3, AND PED 4) SHALL BE ERECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
4. ALL EXISTING SIGNAL POLES, LUMINAIRES, ELECTRICAL SERVICE, SPAN WIRE, SIGNAL HEADS, AND PEDESTRIAN ASSEMBLY TO BE REMOVED UNLESS OTHERWISE INDICATED.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH II S1 - MOOREFIELD RD**

PLAN SCALE: 1"=50'

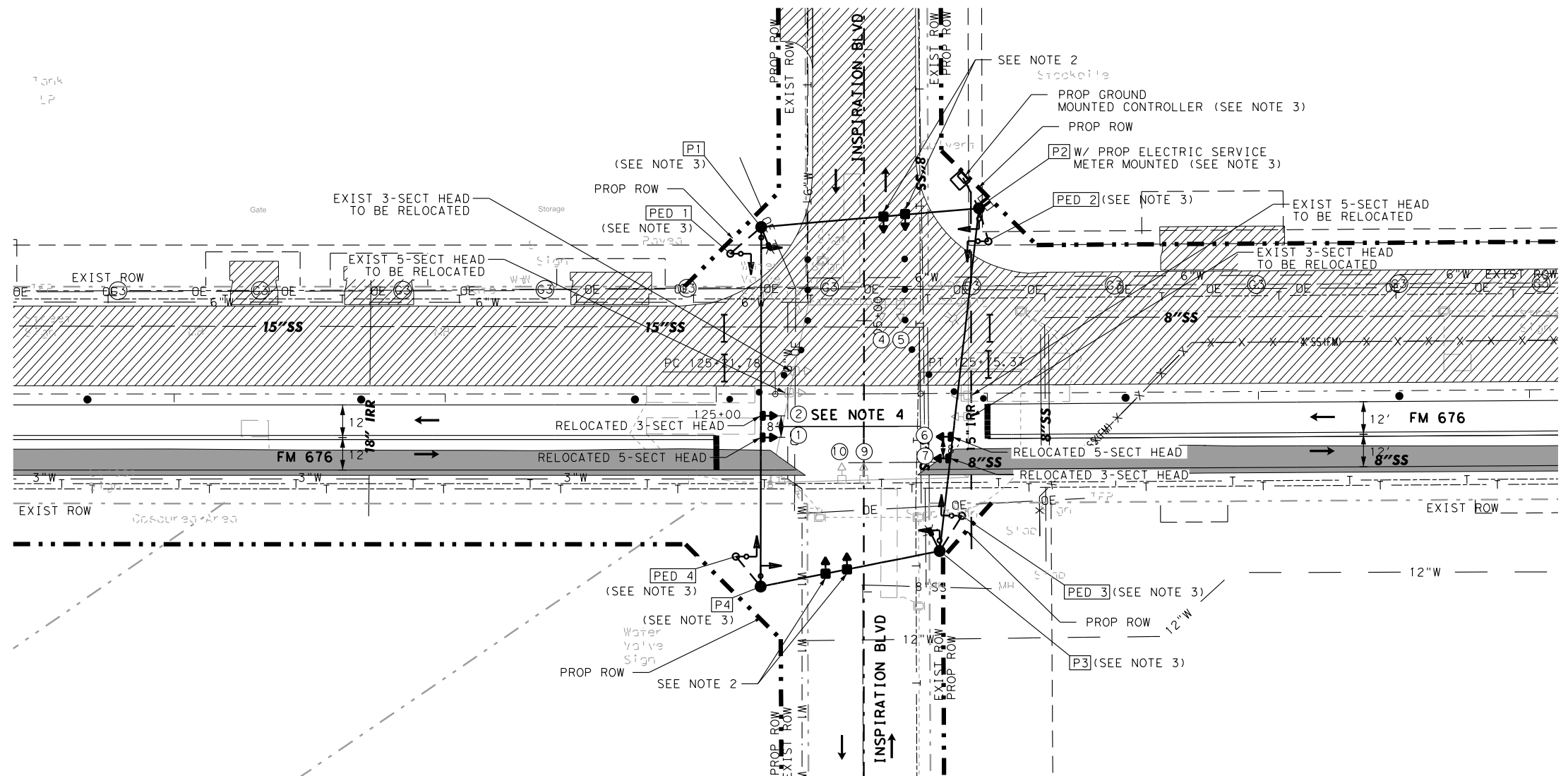
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 2 OF 6		STATE PROJECT NO. 6		SHEET NO. 106	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⬆️ PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**TRAFFIC SIGNAL LAYOUT**  
**TEMPORARY CONDITION**  
**PHII S1 - INSPIRATION BLVD**  
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 3 OF 6		FED. RD. DIV. NO. 6	STATE PROJECT NO. 107
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO	
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676

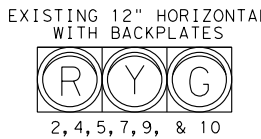
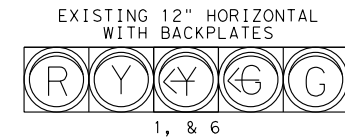
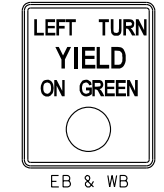
**NOTES:**

- SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
- REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
- PROPOSED GROUND MOUNTED CONTROLLER, PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1, P2, P3, AND P4), AND PEDESTRIAN POLE ASSEMBLIES (PED 1, PED 2, PED 3, AND PED 4) SHALL BE ERECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
- ALL EXISTING SIGNAL POLES, LUMINAIRES, ELECTRICAL SERVICE, SPAN WIRE, SIGNAL HEADS, AND PEDESTRIAN ASSEMBLY TO BE REMOVED UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

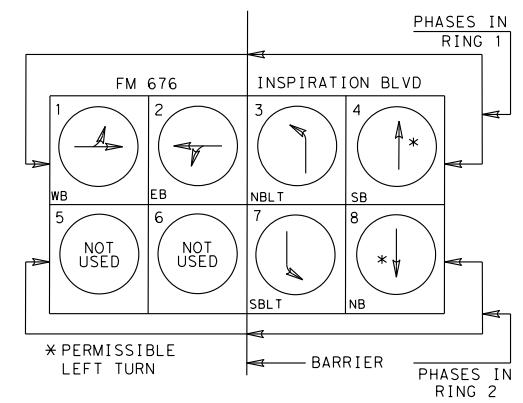
**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF  
FM 676 AND INSPIRATION  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE



**TEMPORARY PHASING DIAGRAM**

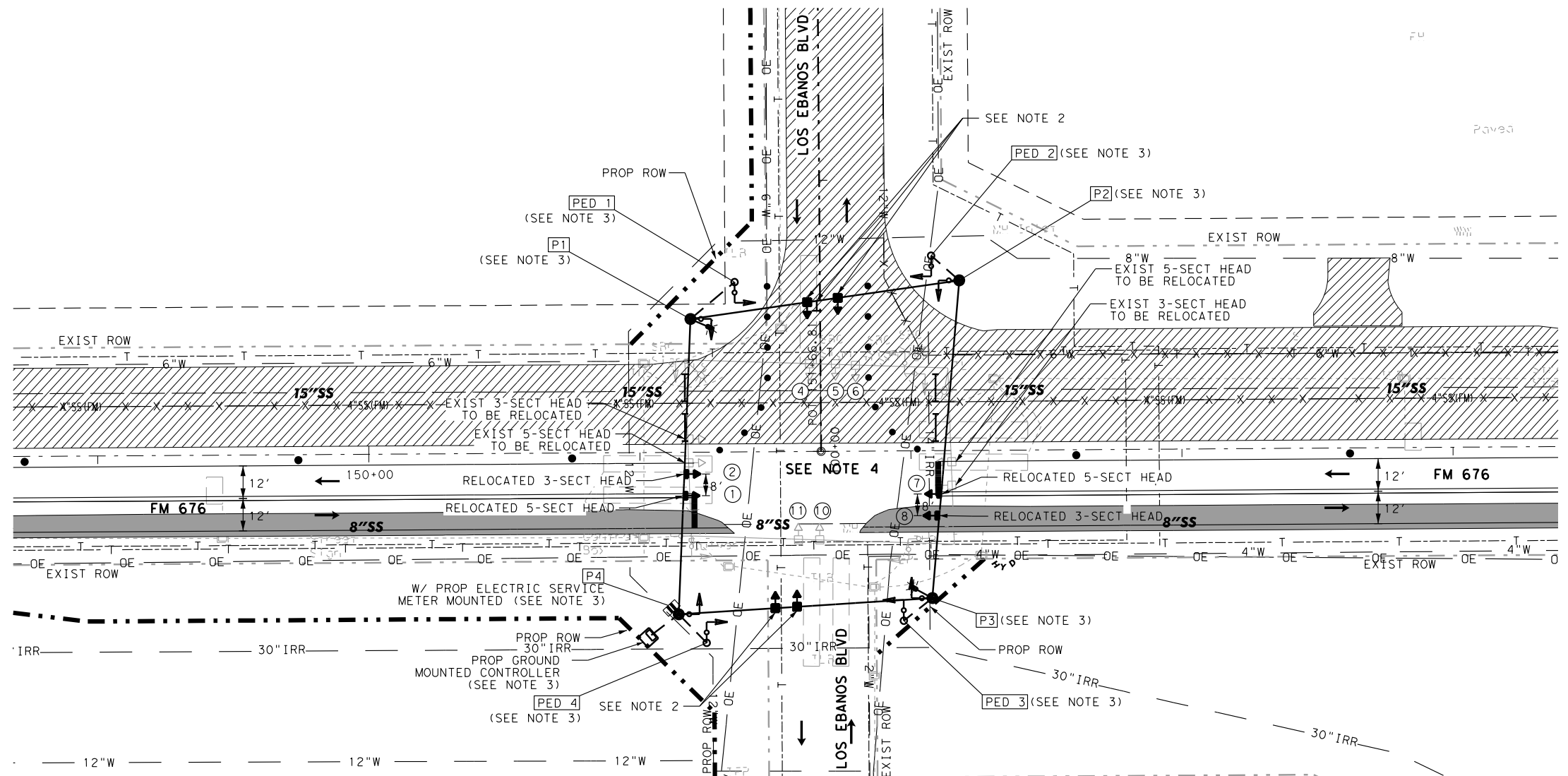


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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⚡ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022



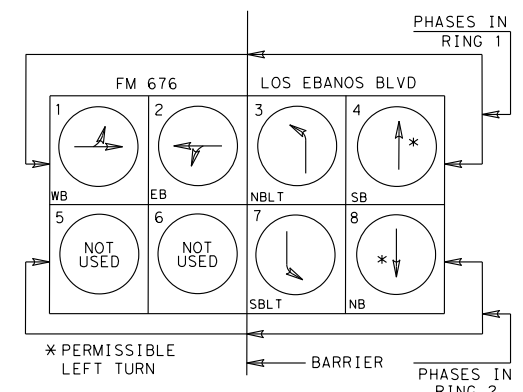
**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF  
FM 676 AND LOS EBANOS  
IN HIDALGO COUNTY  
CONTROL 1064-01

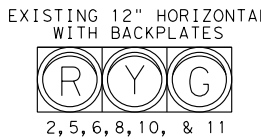
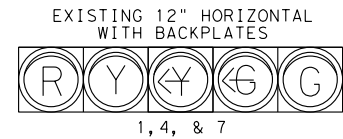
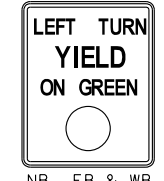
**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
3. PROPOSED GROUND MOUNTED CONTROLLER, PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1, P2, P3, AND P4), AND PEDESTRIAN ASSEMBLIES (PED 1, PED 2, PED 3, AND PED 4) SHALL BE ERRECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
4. ALL EXISTING SIGNAL POLES, LUMINAIRES, ELECTRICAL SERVICE, SPAN WIRE, SIGNAL HEADS, AND PEDESTRIAN ASSEMBLY TO BE REMOVED UNLESS OTHERWISE INDICATED.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

**TEMPORARY PHASING DIAGRAM**



EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE



# ATKINS

TBPE REG. #F-474

4 FM 676

**TRAFFIC SIGNAL LAYOUT**

**TEMPORARY CONDITION**

**PH II S1 - LOS EBANOS BLVD**

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

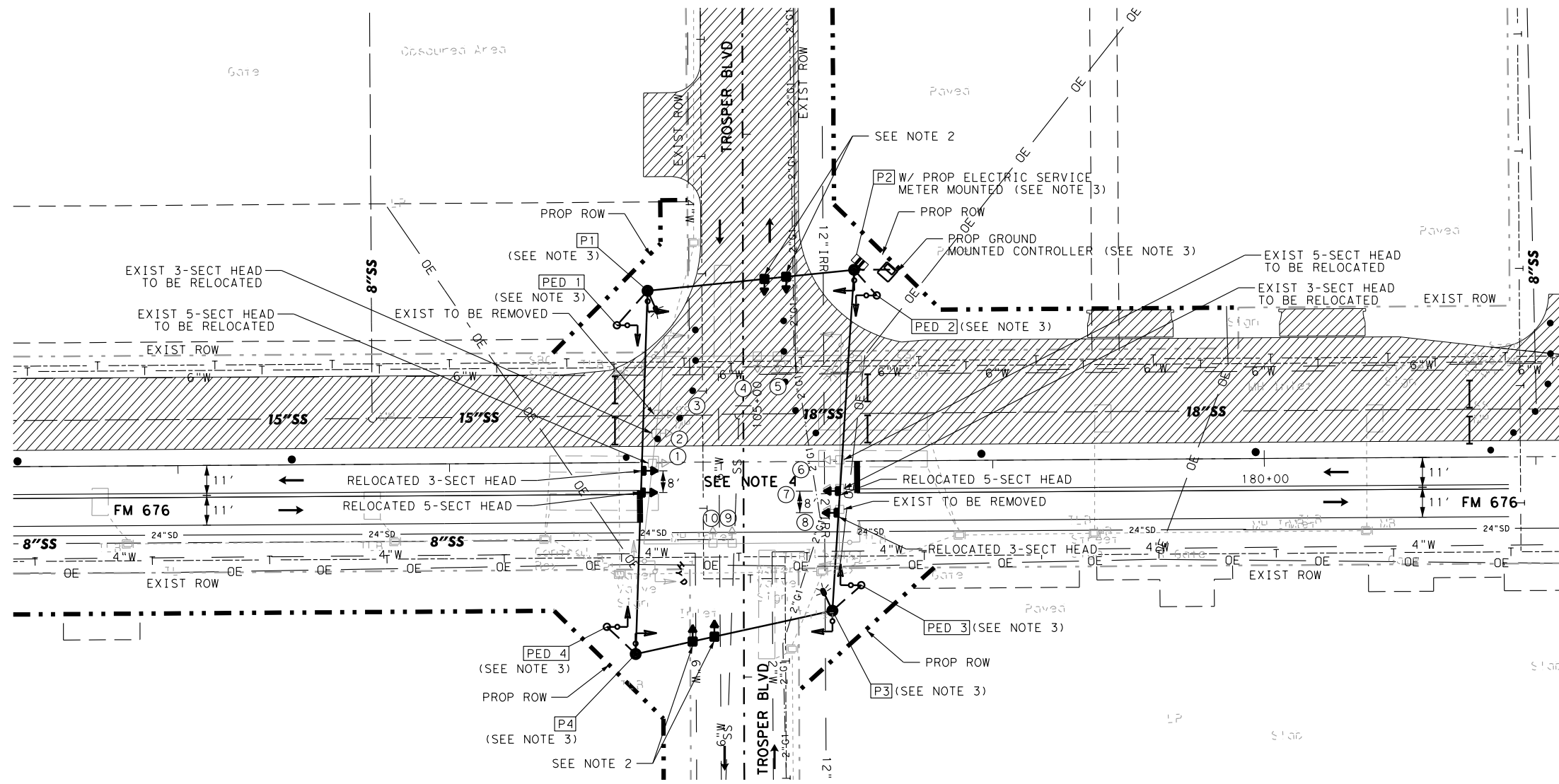
SHEET 4 OF 6		FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 108
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	

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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ◻️ EXIST SIGNAL HEAD
- ◻️ EXIST GROUND BOX
- ◻️ EXIST LOOP DETECTOR
- ◻️ EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ LP EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ◻️ PROP ELECTRIC SERVICE
- ◻️ PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022



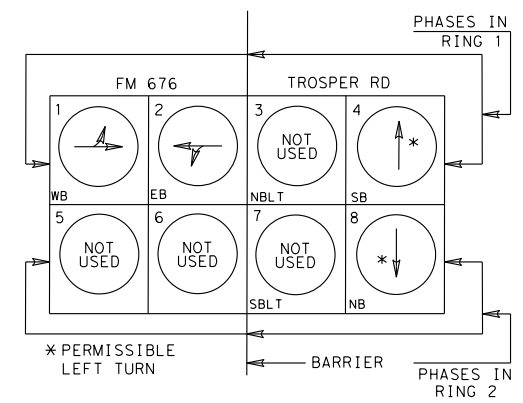
**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF  
FM 676 AND TROSPER  
IN HIDALGO COUNTY  
CONTROL 1064-01

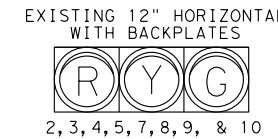
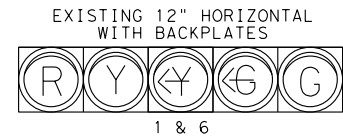
**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
3. PROPOSED GROUND MOUNTED CONTROLLER, PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1,P2,P3, AND P4), AND PEDESTRIAN POLE ASSEMBLIES (PED 1, PED 2, PED 3, AND PED 4) SHALL BE ERRECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
4. ALL EXISTING SIGNAL POLES, LUMINAIRES, ELECTRICAL SERVICE, SPAN WIRE, SIGNAL HEADS, AND PEDESTRIAN ASSEMBLY TO BE REMOVED UNLESS OTHERWISE INDICATED.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

**TEMPORARY PHASING DIAGRAM**



EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE



ATKINS  
TBPE REG. #F-474

5 FM 676  
**TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH II S1- TROSPER BLVD**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 5 OF 6

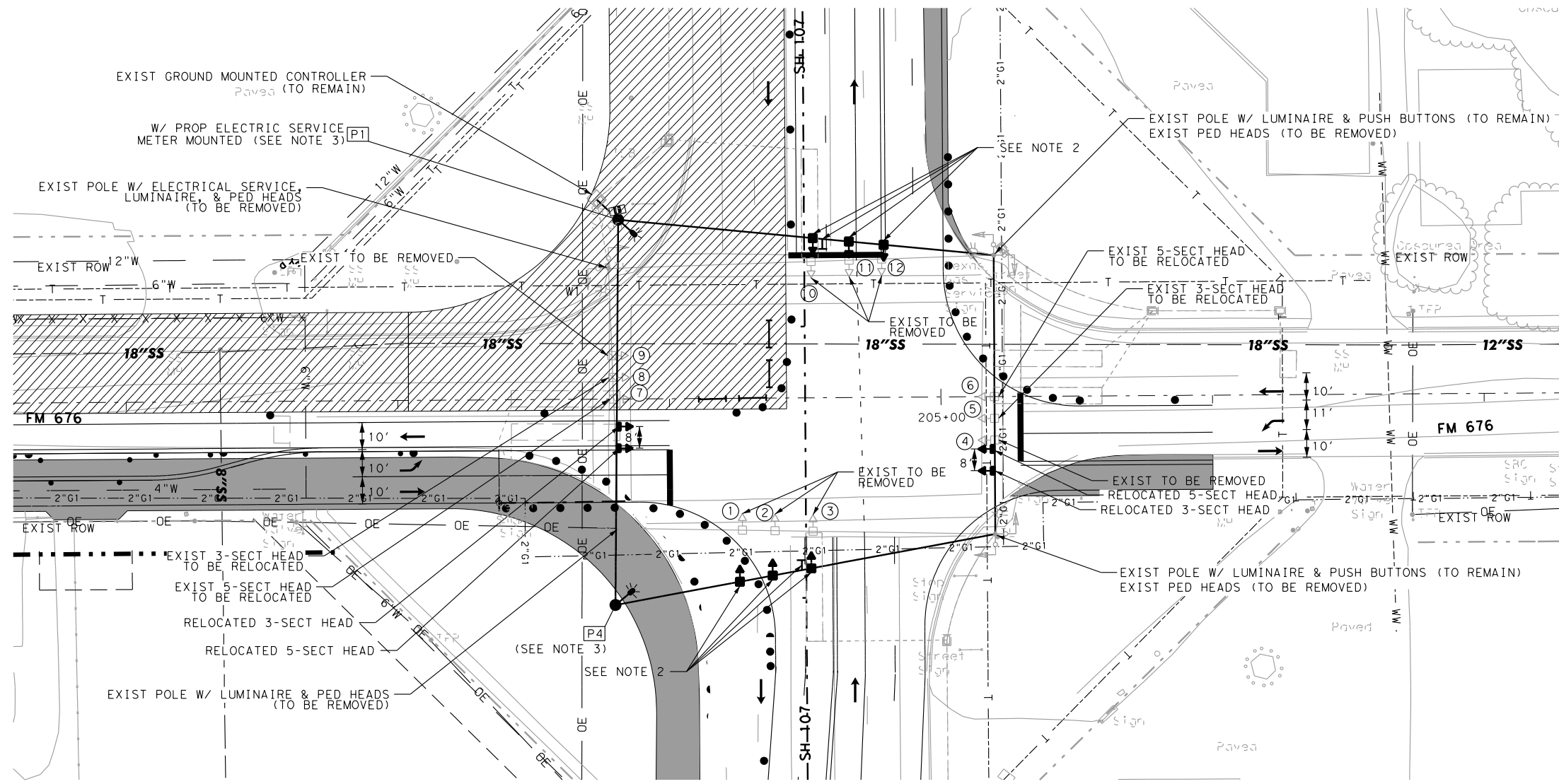
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STATE TEXAS	DIST. PHARR	COUNTY HIDALGO	
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676

PLOT DRIVER: RD:11x17.dwg, P1+ PENTTABLE: PenTable.tbl DATE: 11/18/2022 FILE: dwg:\SUS036343.wsatkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\SIG\FM676W\*TEMP\*P2S1\*SIG05.dwg



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⊠ EXIST SIGNAL HEAD
- ⊠ EXIST GROUND BOX
- ⊠ EXIST LOOP DETECTOR
- ⊠ EXIST ELECTRICAL CONTROLLER
- ⊠ EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⊠ LP EXIST LIGHT POLE
- ⊠ EXIST POWER POLE
- ⊠ TFP EXIST TELEPHONE POLE
- ⊠ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⊠ PROP ELECTRIC SERVICE
- ⊠ PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022



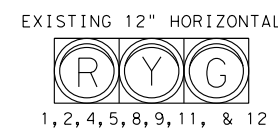
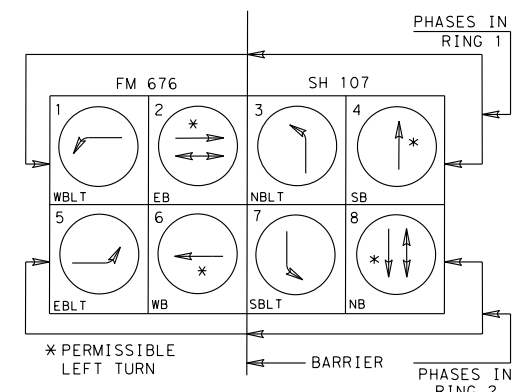
**TEMPORARY CONDITION PHASE II STEP 1**

INTERSECTION OF  
FM 676 AND SH364  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
3. PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1, P2, P3 AND P4) SHALL BE ERECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

**TEMPORARY PHASING DIAGRAM**



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ATKINS

TBPE REG. #F-474

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6 FM 676

TRAFFIC SIGNAL LAYOUT

TEMPORARY CONDITION

PH II S1 - SH 107

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

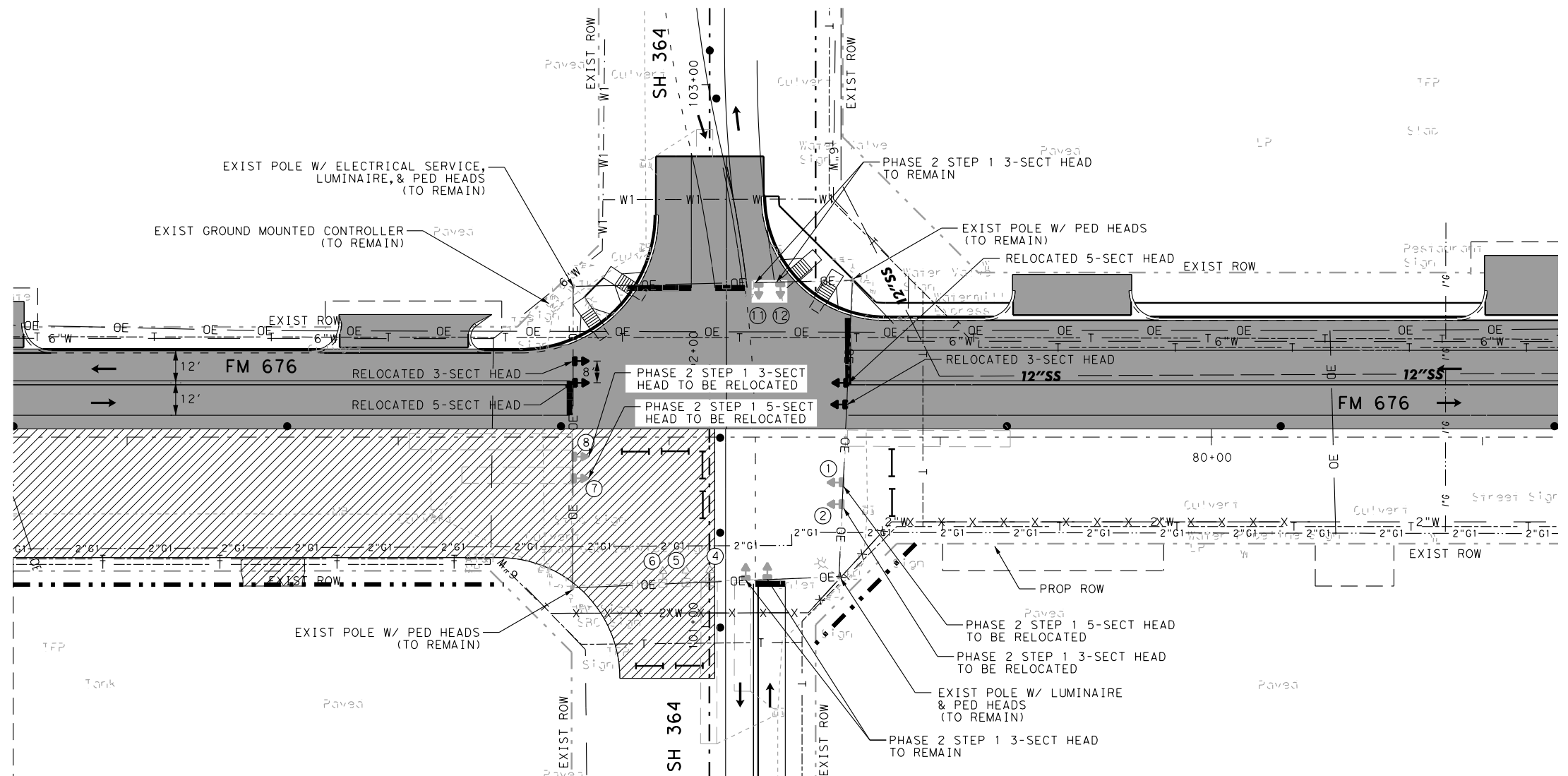
SHEET 6 OF 6

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		110	
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

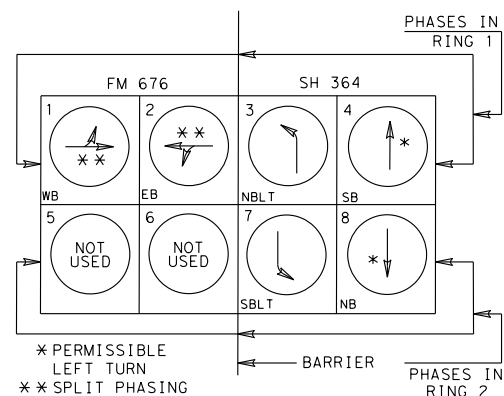


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⬆️ PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**

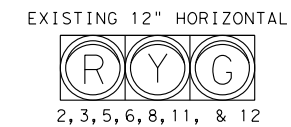
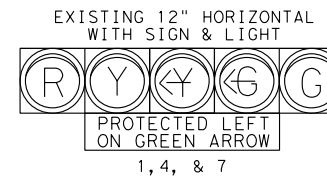


**TEMPORARY CONDITION PHASE III**

INTERSECTION OF  
FM 676 AND SH364  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND IF DAMAGED, SHALL REPAIR AT CONTRACTOR'S EXPENSE.



11/18/2022



**ATKINS**

TBPE REG. #F-474

1 FM 676  
**TRAFFIC SIGNAL LAYOUT**  
**TEMPORARY CONDITION**  
**PH III - SH 364**  
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

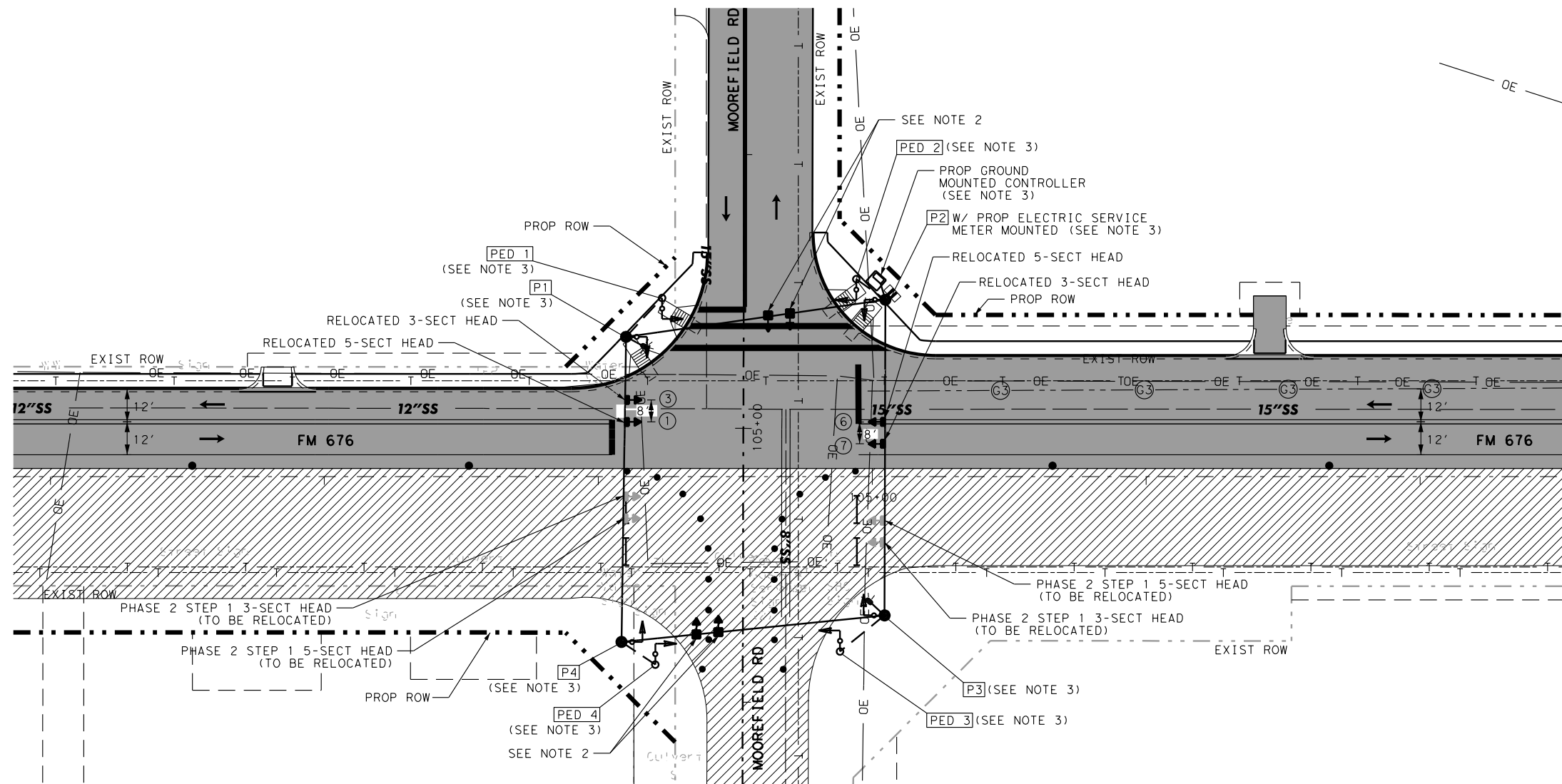
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STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	

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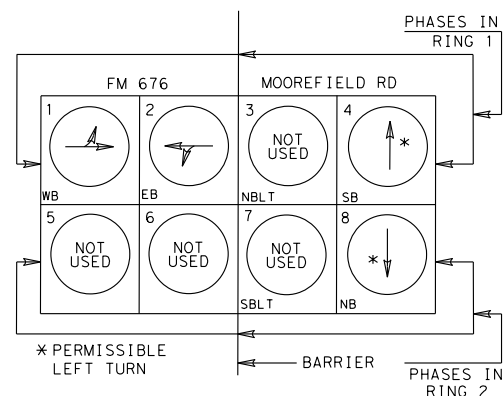


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⬆️ PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**

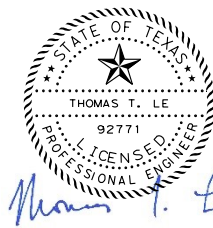
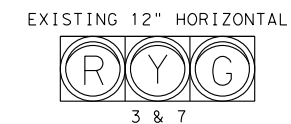


**TEMPORARY CONDITION PHASE III**

INTERSECTION OF  
FM 676 AND MOOREFIELD  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
2. REFER TO "FM 676W TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION" SHEETS FOR MORE INFORMATION.
3. PROPOSED ELECTRIC SERVICE, PERMANENT TRAFFIC SIGNALS (P1, P2, P3 AND P4) SHALL BE ERECTED AND OPERATIONAL PRIOR TO PHASE II STEP 1.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY TRAFFIC SIGNAL COMPONENTS AND NEW INSTALLATIONS DURING CONSTRUCTION. IF DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676**  
**TRAFFIC SIGNAL LAYOUT**  
**TEMPORARY CONDITION**  
**PH III - MOOREFIELD RD**

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

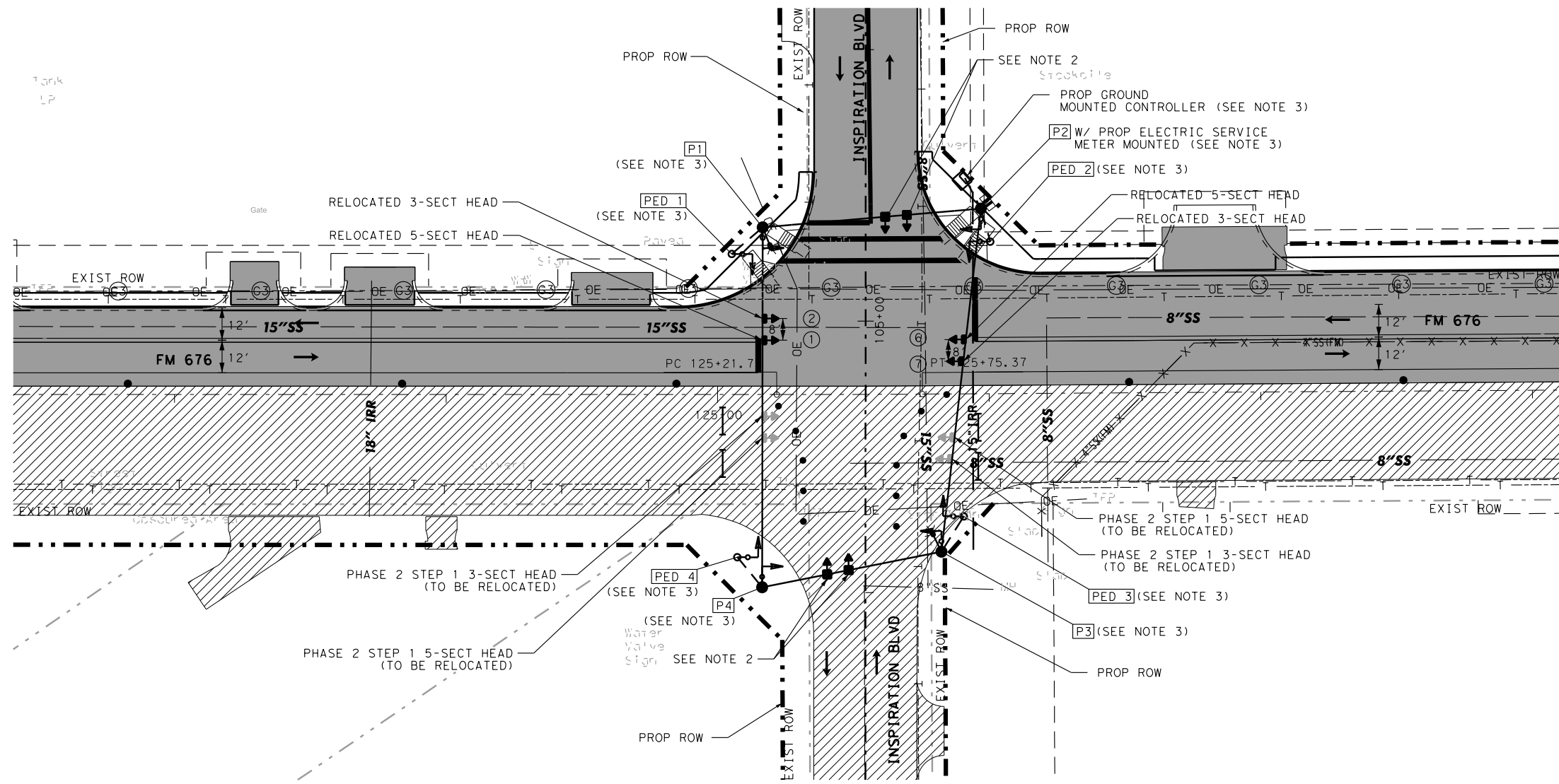
SHEET 2 OF 6		STATE PROJECT NO.		SHEET NO.	
6				112	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		



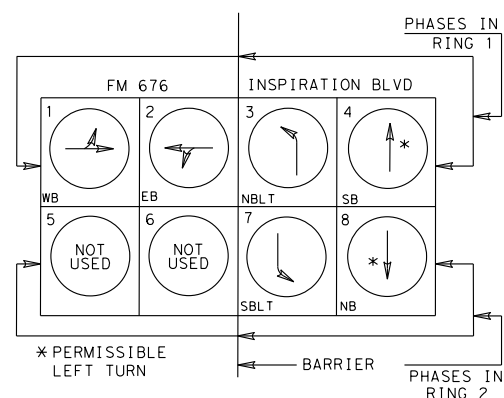


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



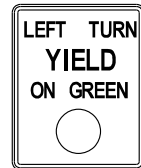
**TEMPORARY PHASING DIAGRAM**



**TEMPORARY CONDITION PHASE III**

INTERSECTION OF  
FM 676 AND INSPIRATION  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE

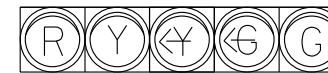


EB & WB

**NOTES:**

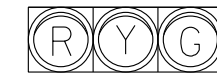
1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
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EXISTING 12" HORIZONTAL WITH BACKPLATES

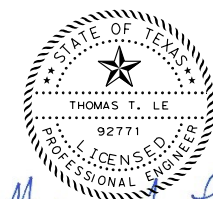


1 & 6

EXISTING 12" HORIZONTAL WITH BACKPLATES



2 & 7



*Thomas T. Le*

11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH III - INSPIRATION BLVD**

PLAN SCALE: 1"=50'

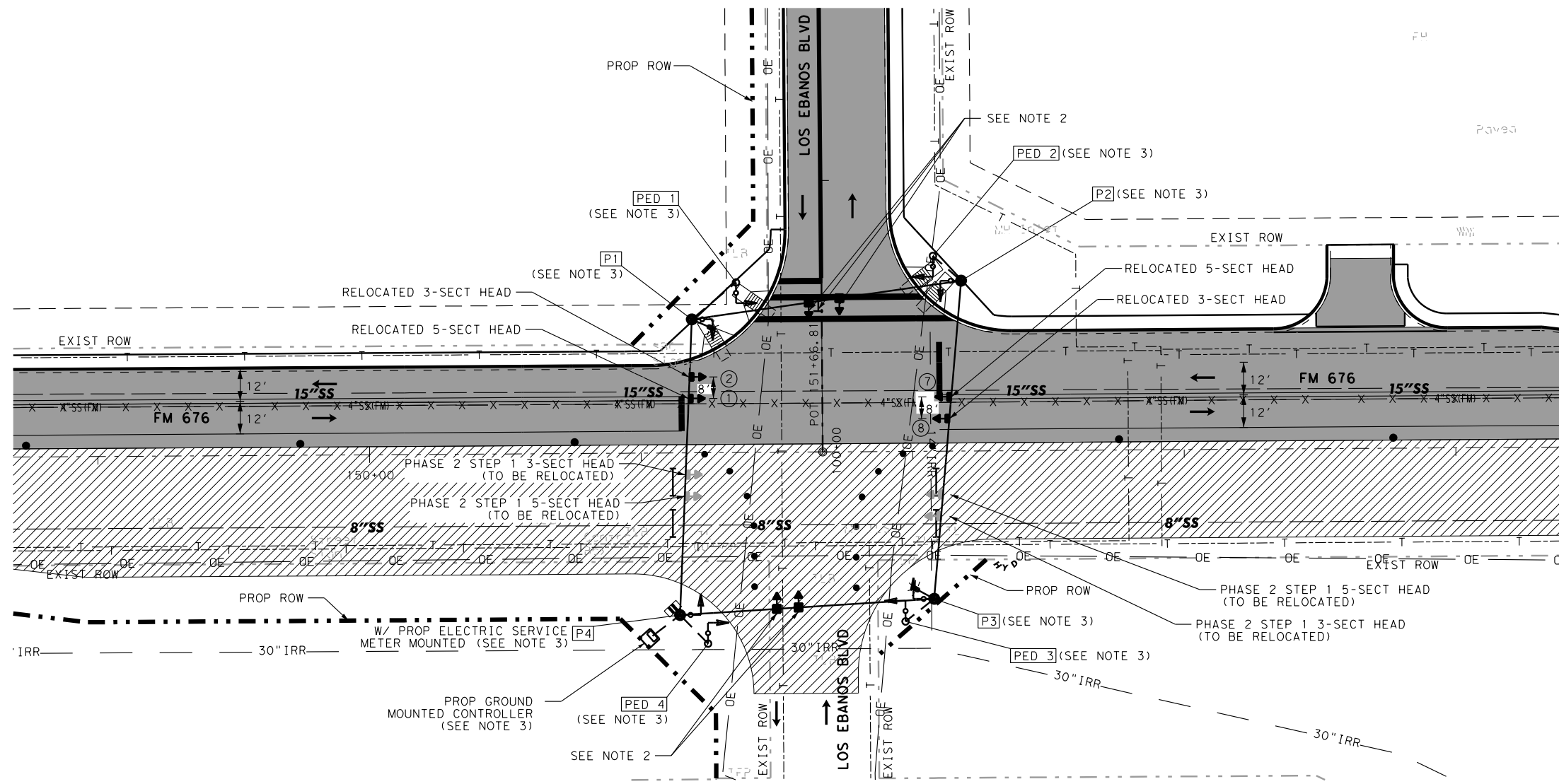
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 3 OF 6		FED. RD. DIV. NO. 6	STATE PROJECT NO. 113	SHEET NO. 113
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⦿ EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



11/18/2022



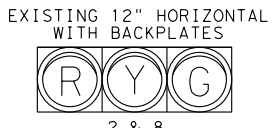
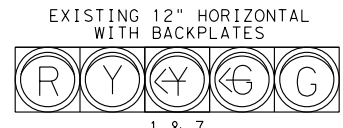
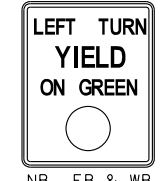
**TEMPORARY CONDITION PHASE III**

INTERSECTION OF  
FM 676 AND LOS EBANOS  
IN HIDALGO COUNTY  
CONTROL 1064-01

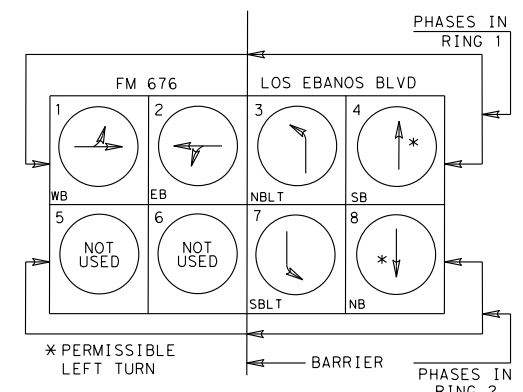
**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
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EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE



**TEMPORARY PHASING DIAGRAM**



# ATKINS

TBPE REG. #F-474

**4** FM 676

**TRAFFIC SIGNAL LAYOUT**

**TEMPORARY CONDITION**

**PH III - LOS EBANOS BLVD**

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

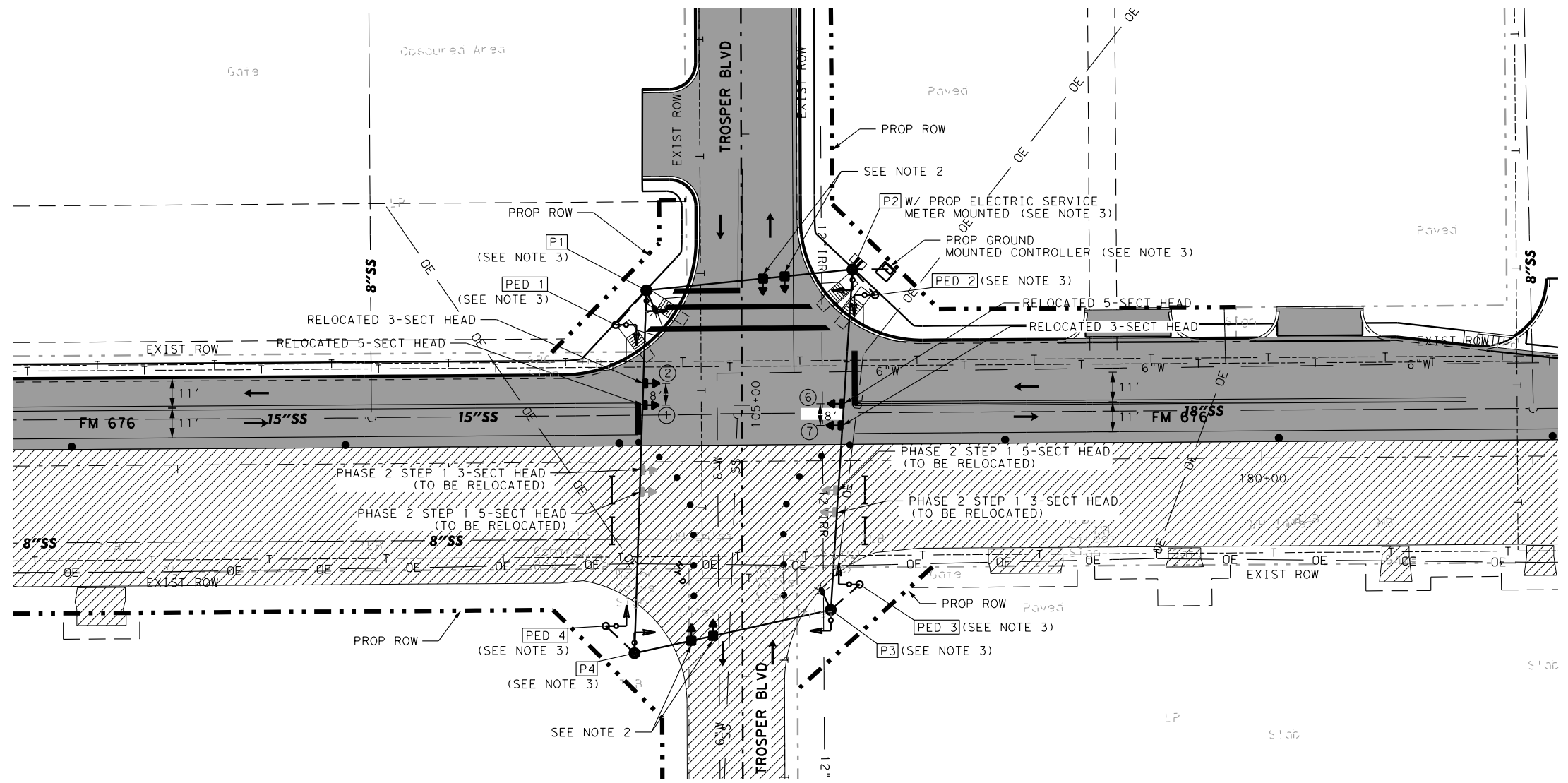
FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				114	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

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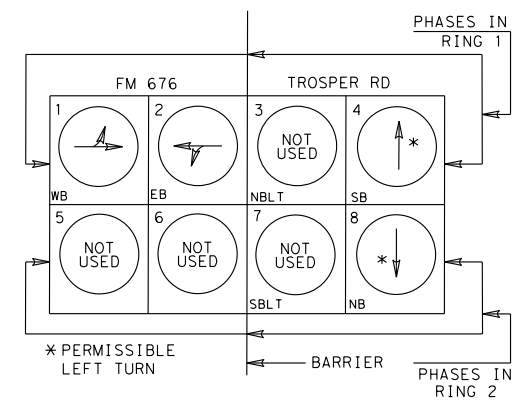


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- ⦿ EXIST FIRE HYDRANT
- ⬆️ EXIST TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⬆️ PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



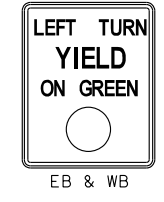
**TEMPORARY PHASING DIAGRAM**



**TEMPORARY CONDITION PHASE III**

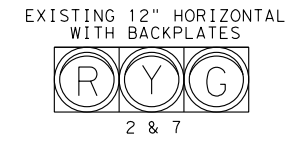
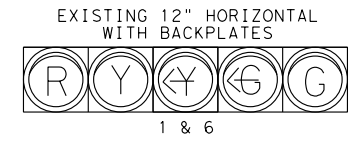
INTERSECTION OF  
FM 676 AND TROSPER  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING SIGNS  
TO BE RELOCATED  
ALONG SPAN WIRE



**NOTES:**

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11/18/2022

Texas Department of Transportation  
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**ATKINS**  
TBPE REG. #F-474

5 FM 676  
**TRAFFIC SIGNAL LAYOUT  
TEMPORARY CONDITION  
PH III - TROSPER BLVD**  
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

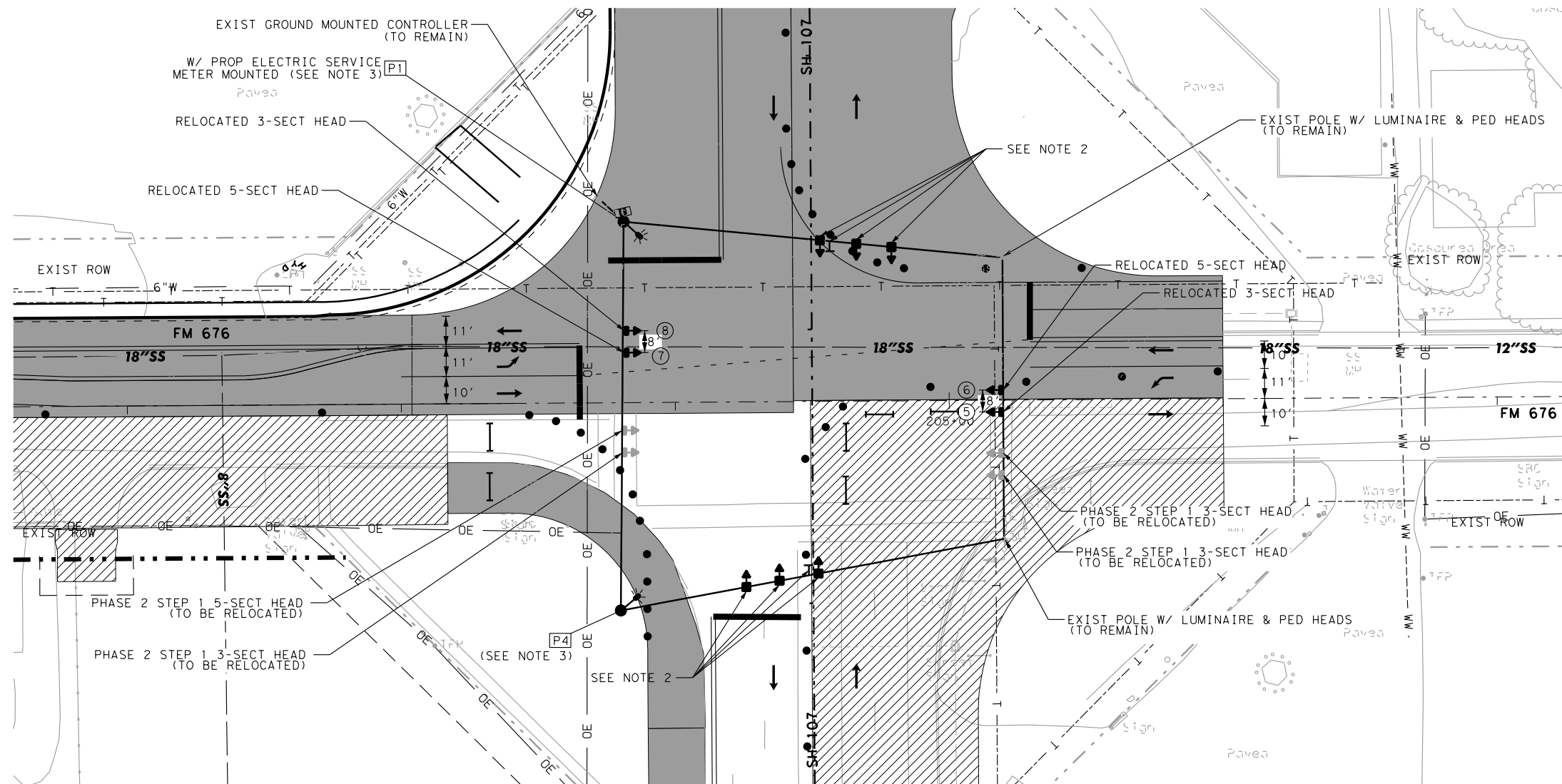
SHEET 5 OF 6		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		115
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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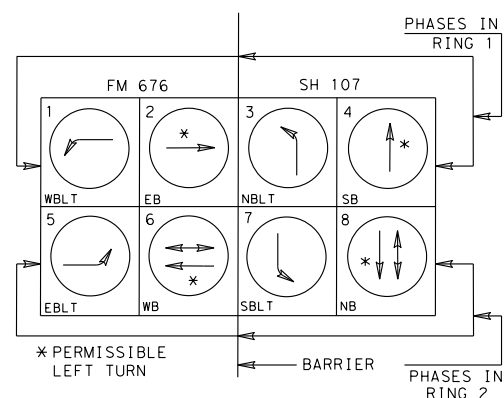


**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- ⦿ LP EXIST LIGHT POLE
- ⦿ EXIST POWER POLE
- ⦿ TFP EXIST TELEPHONE POLE
- ⦿ FH EXIST FIRE HYDRANT
- ⬆️ TEMPORARY SIGNAL HEAD
- PROP SPAN WIRE
- PROP CONDUIT
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- ⬆️ PROP ELECTRIC SERVICE
- PROP FULL TRAFFIC ACTUATED GROUND MOUNTED CONTROLLER
- PROP SIGNAL POLE
- ⚡ PROP LUMINAIRE
- ▨ CONSTRUCTION AREA
- ▨ CONSTRUCTION AREA



**TEMPORARY PHASING DIAGRAM**

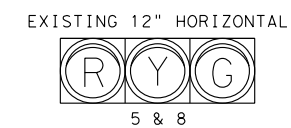
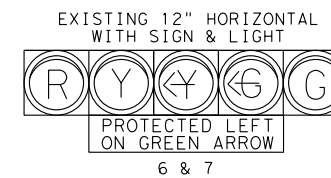


**TEMPORARY CONDITION PHASE III**

INTERSECTION OF  
FM 676 AND SH364  
IN HIDALGO COUNTY  
CONTROL 1064-01

**NOTES:**

1. SIGNAL PHASING & TIMING SHALL BE SET TO FIXED OPERATIONS OR AS DETERMINED BY THE ENGINEER IN THE FIELD. SPLIT PHASING MAY BE USED IF HEAVY LEFT TURN MOVEMENTS ARE PREVALENT IN ONE OR MORE APPROACHES.
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11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676**  
**TRAFFIC SIGNAL LAYOUT**  
**TEMPORARY CONDITION**  
**PH III - SH 107**

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 6 OF 6		STATE PROJECT NO.		SHEET NO.	
6		116		116	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

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DATE:  
 FILE:

**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

**WORKER SAFETY NOTES:**



1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

**COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES**

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

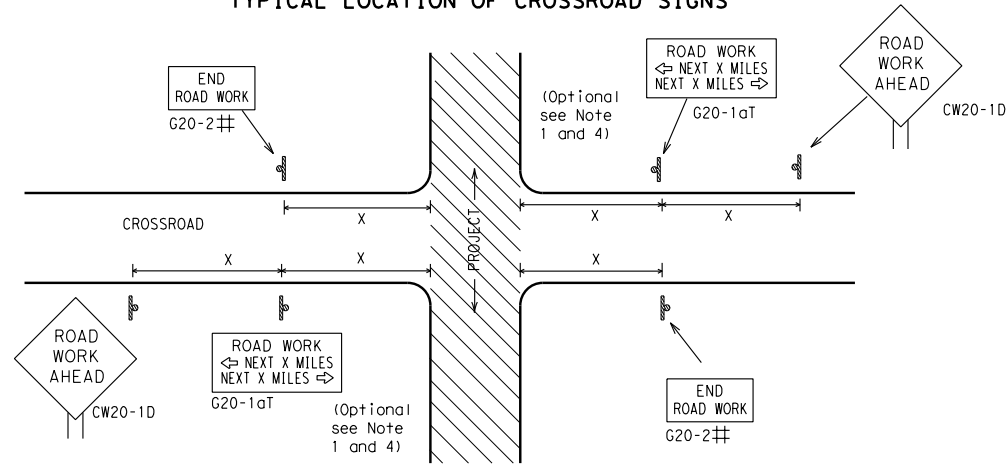
<p><b>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT</b>  <a href="http://www.txdot.gov">http://www.txdot.gov</a></p>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

			
<p><b>BARRICADE AND CONSTRUCTION          GENERAL NOTES          AND REQUIREMENTS</b></p> <p><b>BC (1) - 21</b></p>			
FILE:	bc-21.dgn	DN:	TxDOT
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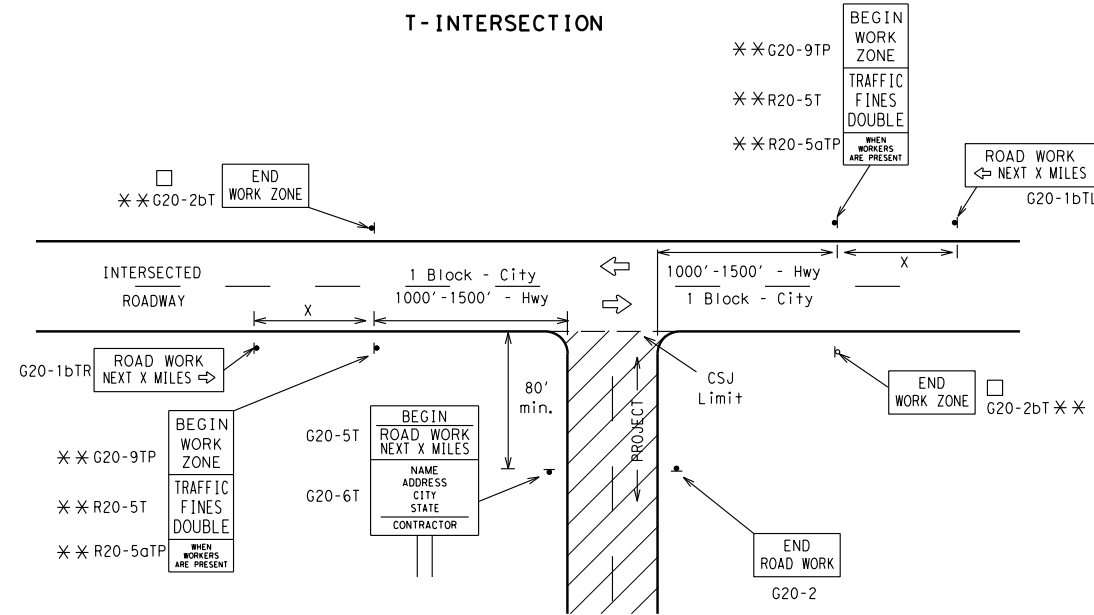
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**TYPICAL LOCATION OF CROSSROAD SIGNS**



- ## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
  - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
  - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
  - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
  - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
  - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

**T-INTERSECTION**



**CSJ LIMITS AT T-INTERSECTION**

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

**TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING 1.5.6**

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Δ Spacing "X" Feet (Apprx.)
CW20 <sup>4</sup>	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 <sup>2</sup>
			65	700 <sup>2</sup>
			70	800 <sup>2</sup>
			80	1000 <sup>2</sup>
	*	*	*	*

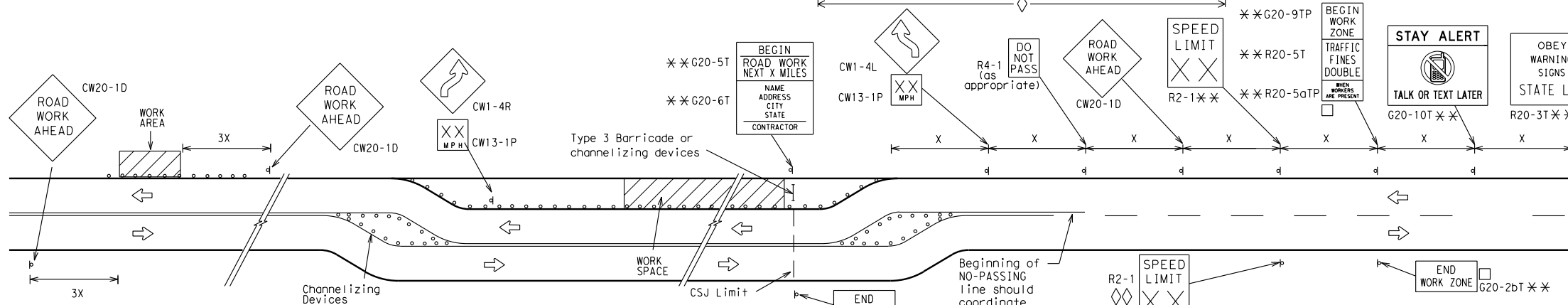
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

**GENERAL NOTES**

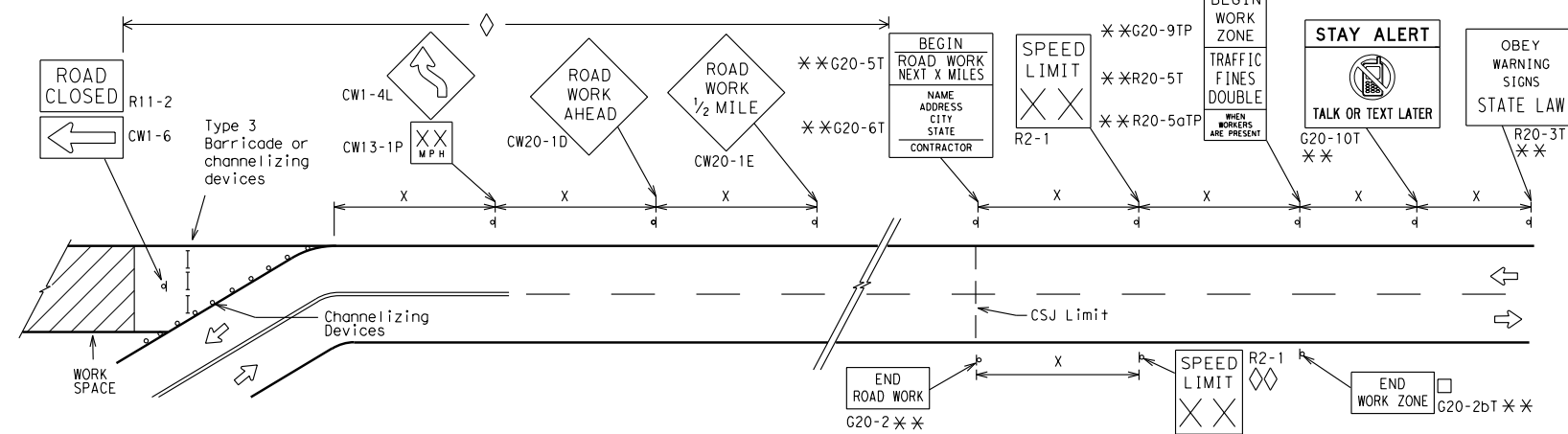
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

**WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS**



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

**SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS**



**NOTES**

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
  - \*\* CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
  - ◇ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
  - ◇◇ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
—	Type 3 Barricade
○ ○ ○	Channelizing Devices
■	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

**BC (2) - 21**

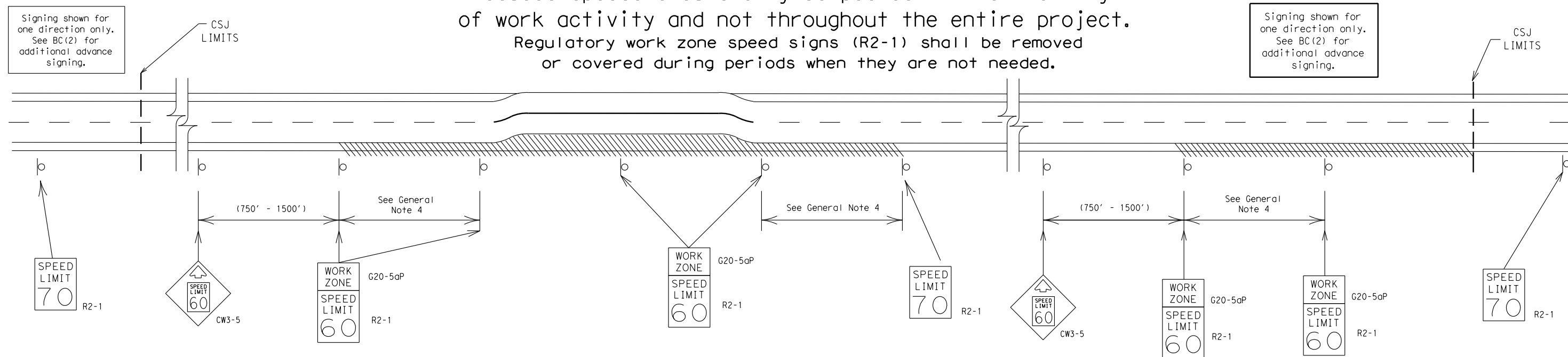
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# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

## GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 

40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

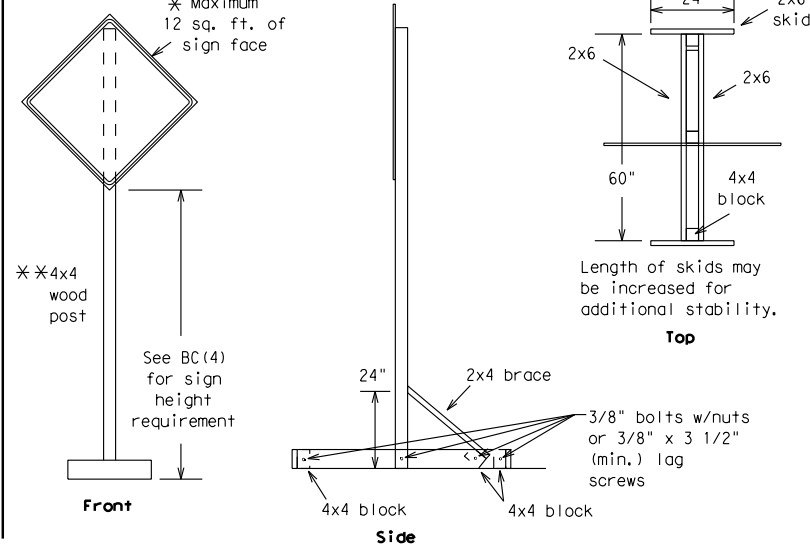
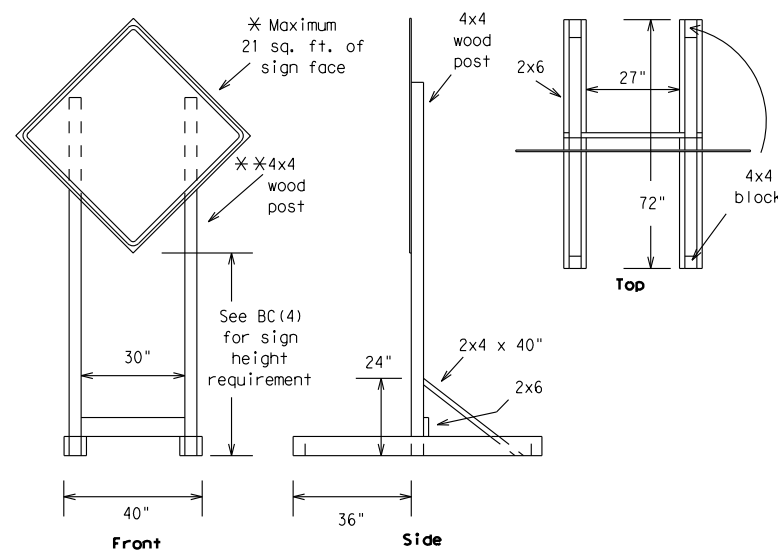
BC (3) - 21

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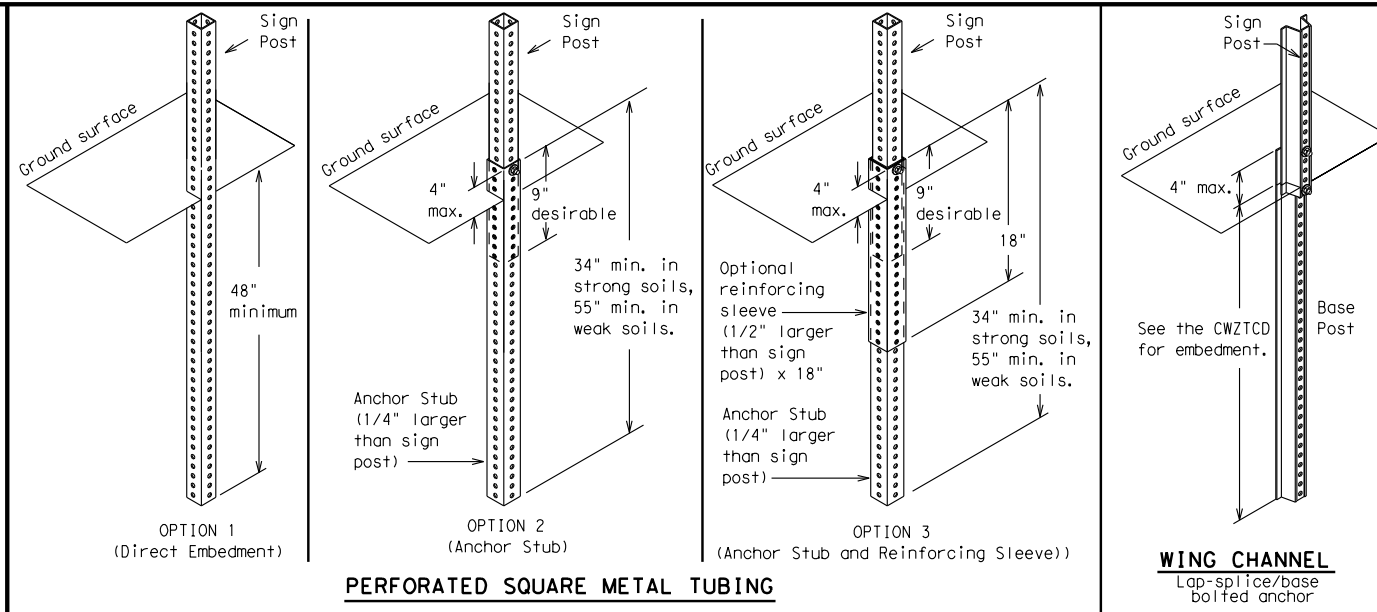


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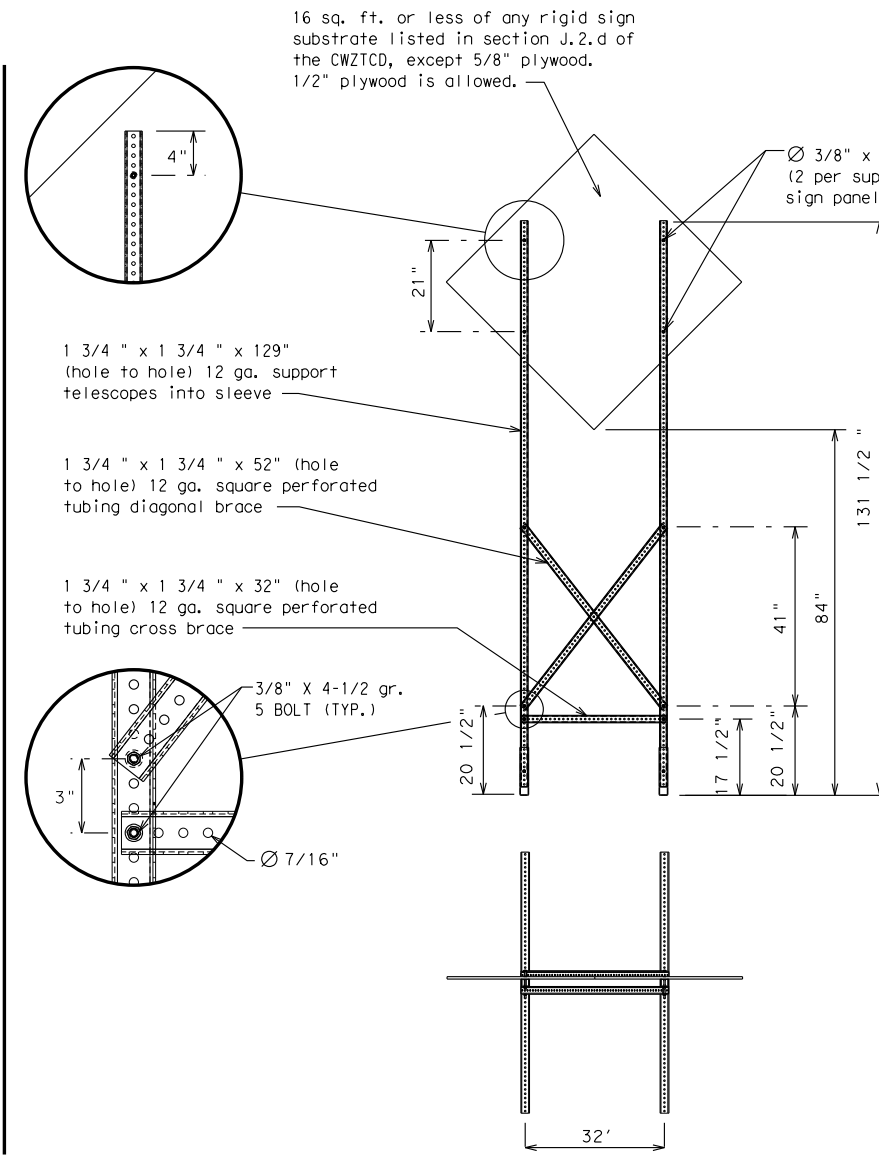
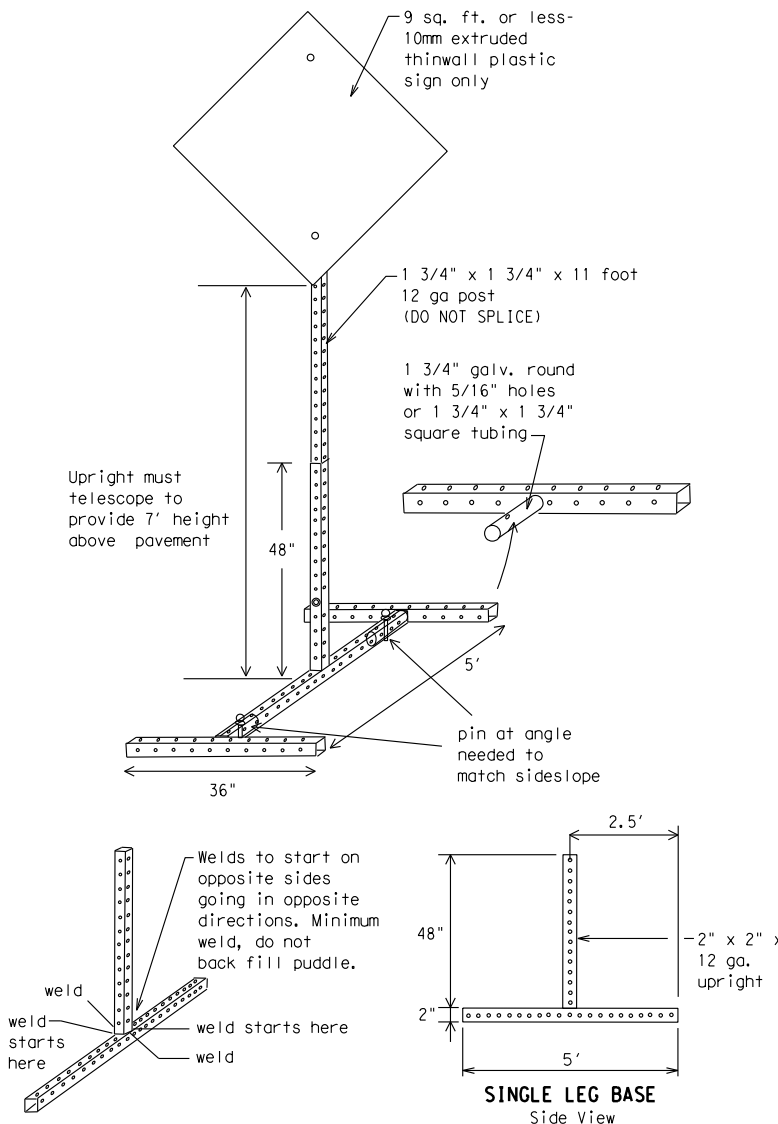
### SKID MOUNTED WOOD SIGN SUPPORTS

\* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



### GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



### SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

\* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

### WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

### OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

### GENERAL NOTES

- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
- No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
- When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

- \* See BC(4) for definition of "Work Duration."
- \*\* Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

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## BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 21

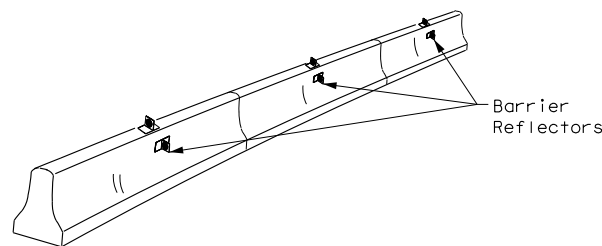
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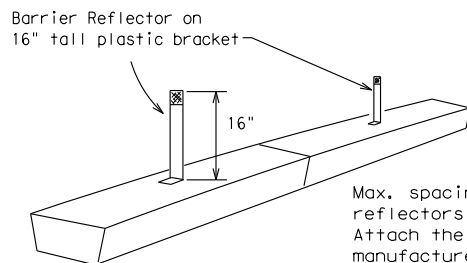
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



**CONCRETE TRAFFIC BARRIER (CTB)**

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.

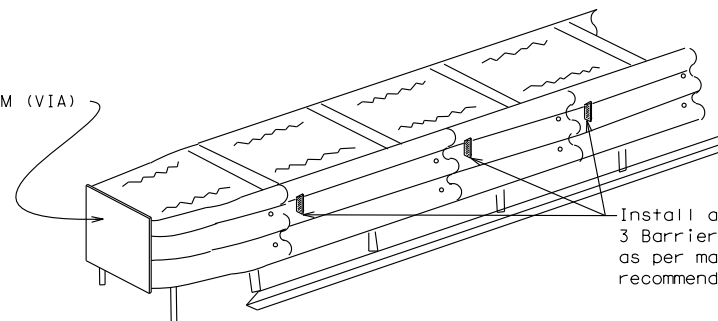


**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

**LOW PROFILE CONCRETE BARRIER (LPCB)**



**DELINEATION OF END TREATMENTS**

**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

**BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS**

**WARNING LIGHTS**

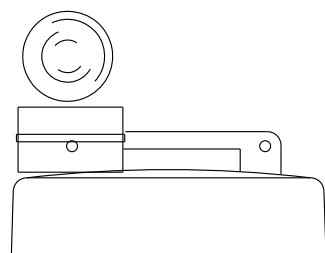
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B<sub>FL</sub> or C<sub>FL</sub> Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

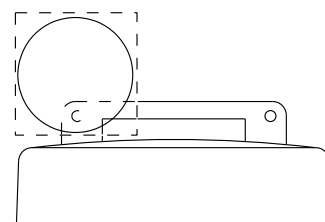
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

**WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS**

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.

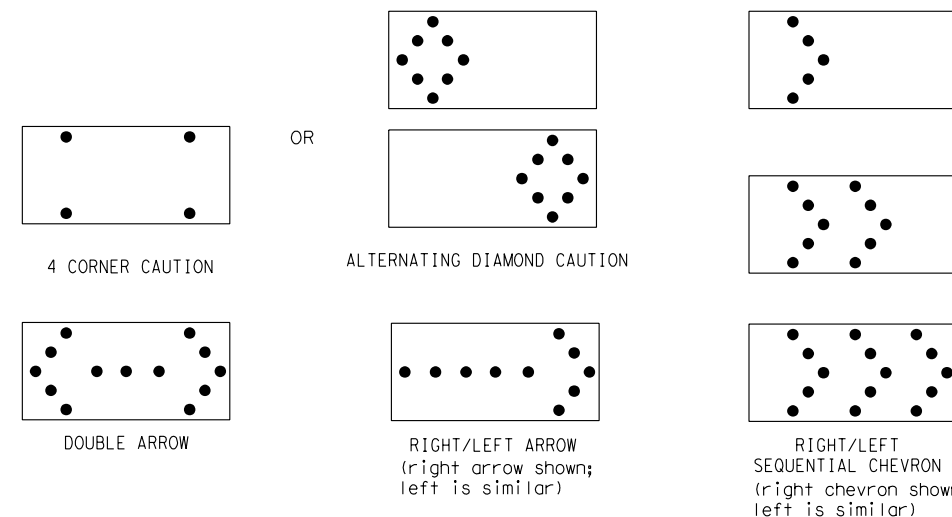


Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

**ATTENTION**  
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

**FLASHING ARROW BOARDS**

SHEET 7 OF 12

**TRUCK-MOUNTED ATTENUATORS**

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



**BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR**

**BC (7) - 21**

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**GENERAL NOTES**

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

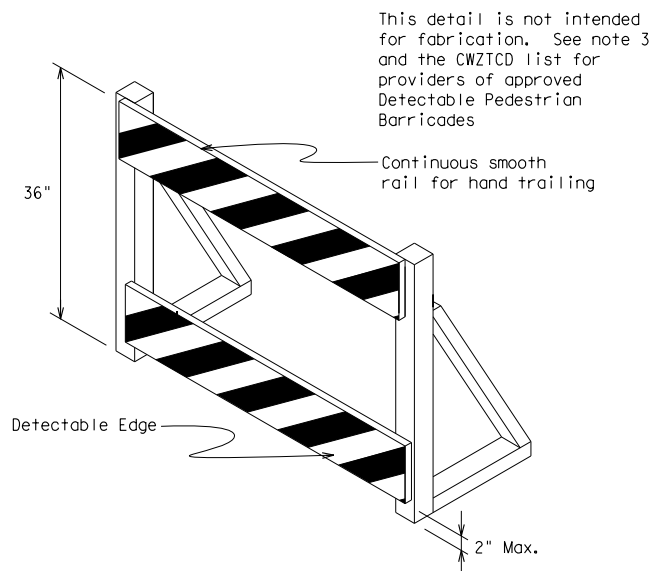
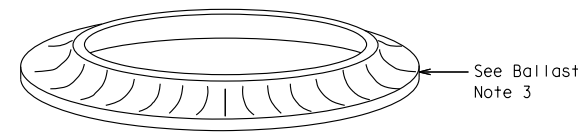
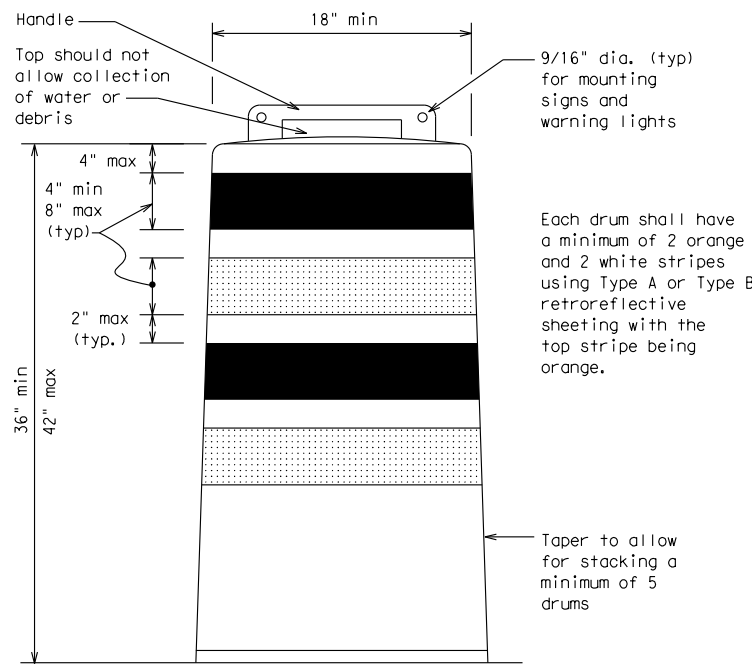
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

**RETROREFLECTIVE SHEETING**

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

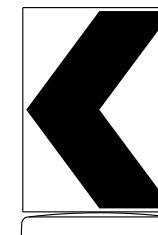
**BALLAST**

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.

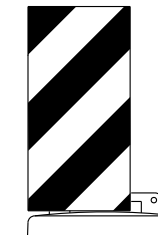


**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign  
(Maximum Sign Dimension)  
Chevron CW1-8, Opposing Traffic Lane  
Divider, Driveway sign D70a, Keep Right  
R4 series or other signs as approved  
by Engineer



12" x 24"  
Vertical Panel  
mount with diagonals  
sloping down towards  
travel way

Plywood, Aluminum or Metal sign  
substrates shall NOT be used on  
plastic drums

**SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS**

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B<sub>FL</sub> or Type C<sub>FL</sub> Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

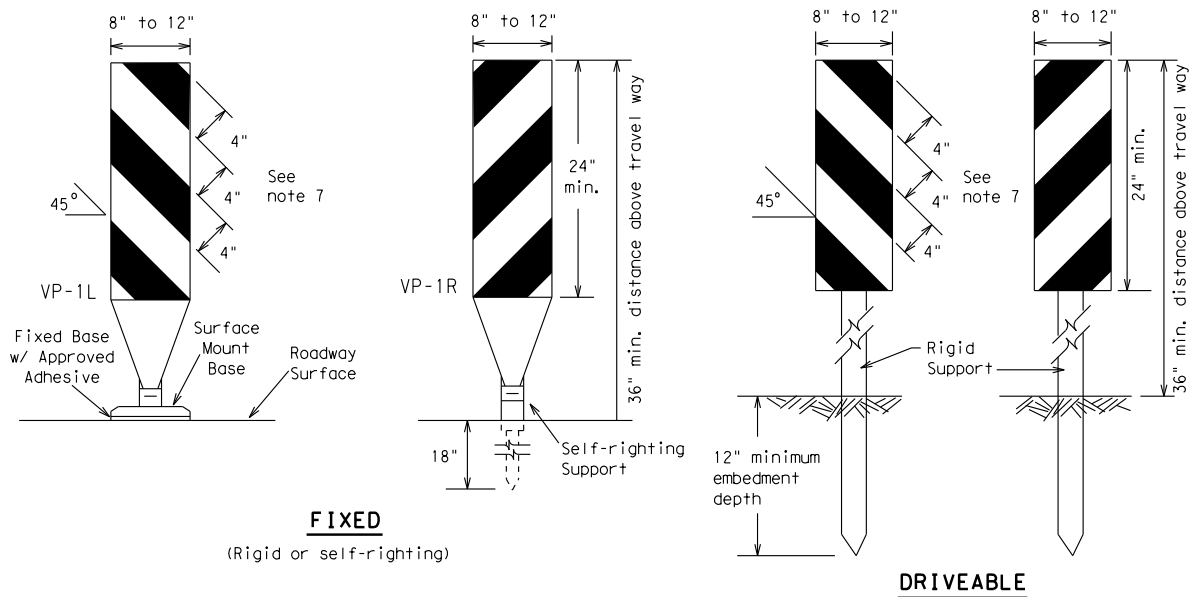
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9-07	5-21	PHR	HIDALGO		124				
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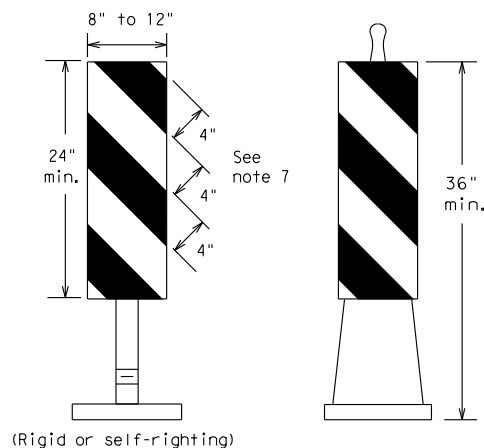
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**FIXED**  
(Rigid or self-righting)

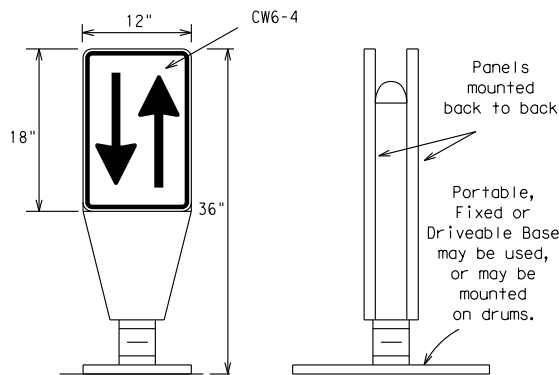
**DRIVEABLE**



**PORTABLE**

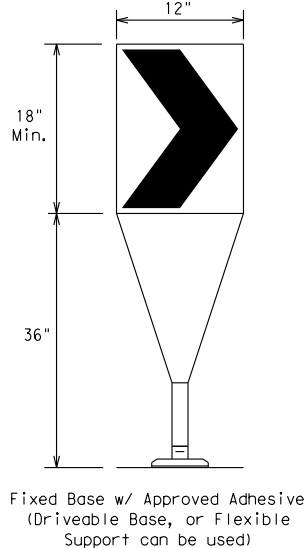
**VERTICAL PANELS (VPs)**

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



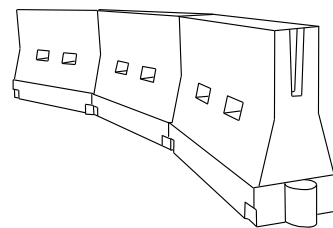
**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

**HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS**

**GENERAL NOTES**

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths * X			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

\*X Taper lengths have been rounded off.  
L=Length of Taper (FT.) W=Width of Offset (FT.)  
S=Posted Speed (MPH)

**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

SHEET 9 OF 12



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

BC (9) - 21

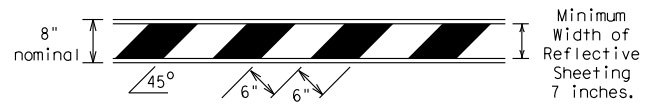
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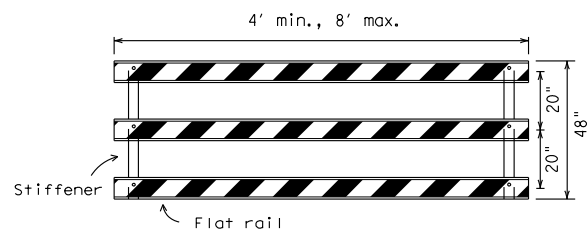
**TYPE 3 BARRICADES**

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



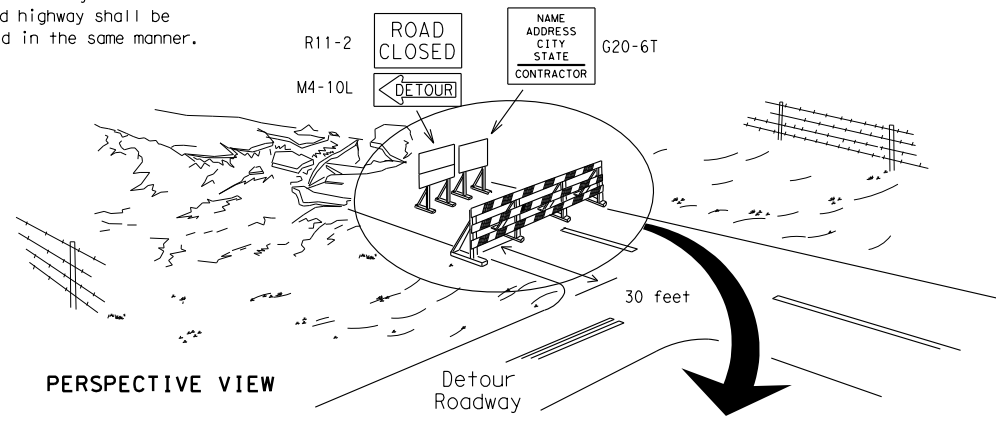
**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

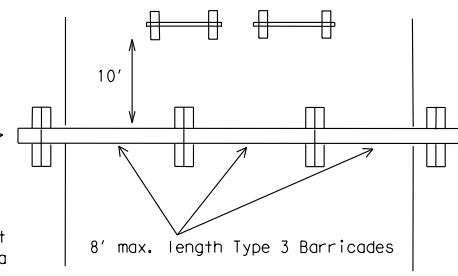
**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

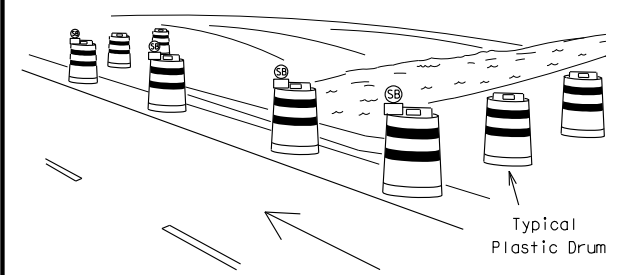
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



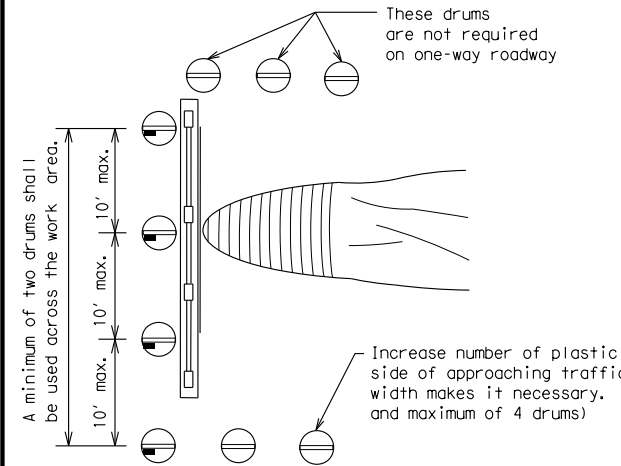
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

**TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION**



PERSPECTIVE VIEW

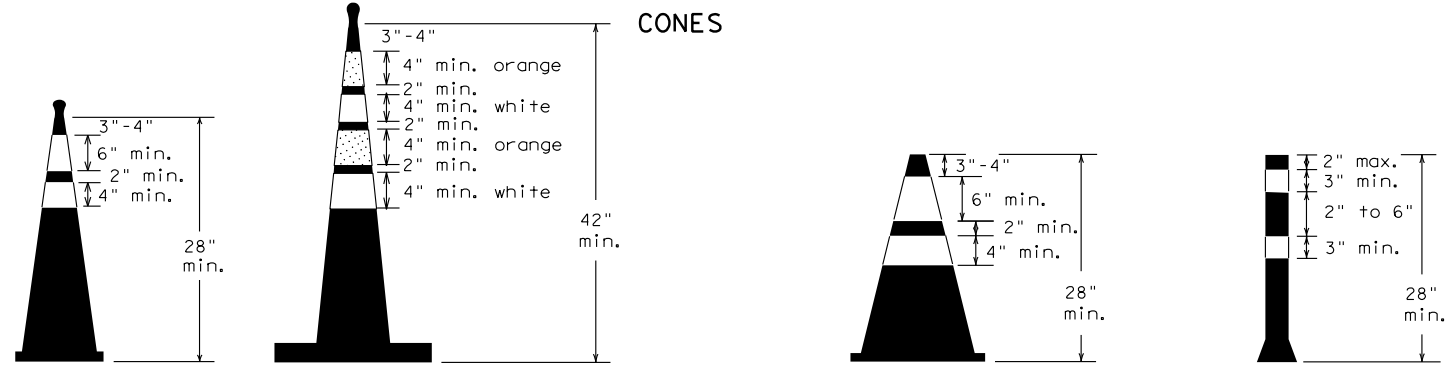


PLAN VIEW

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

**CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS**



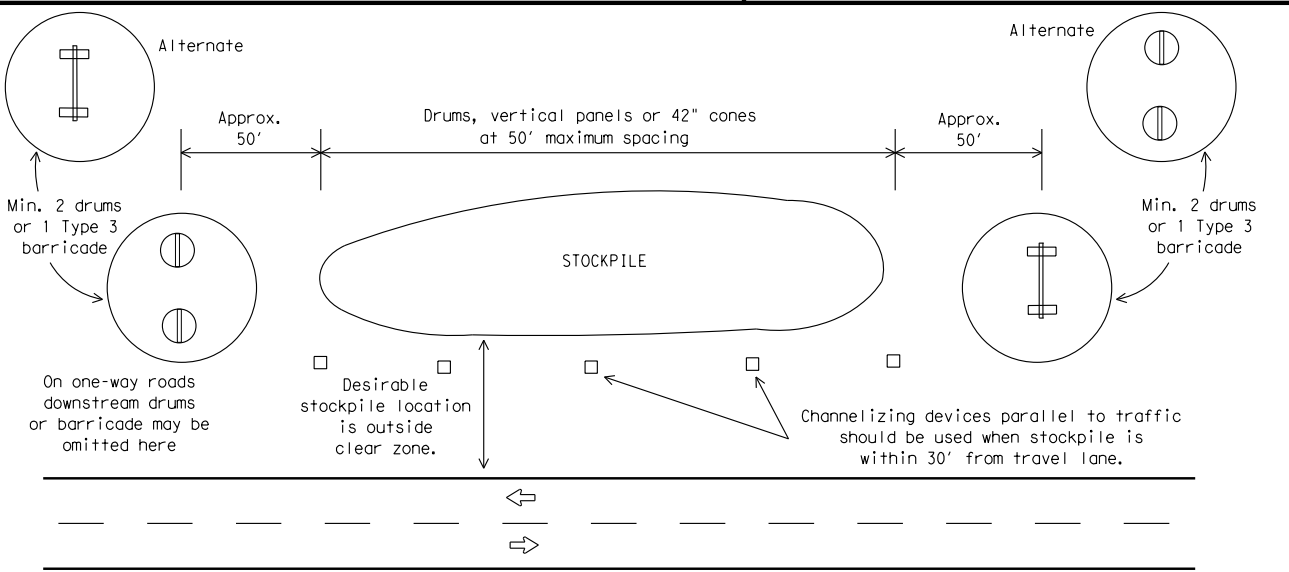
Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.  
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) - 21**

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## WORK ZONE PAVEMENT MARKINGS

### GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

### RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

### PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

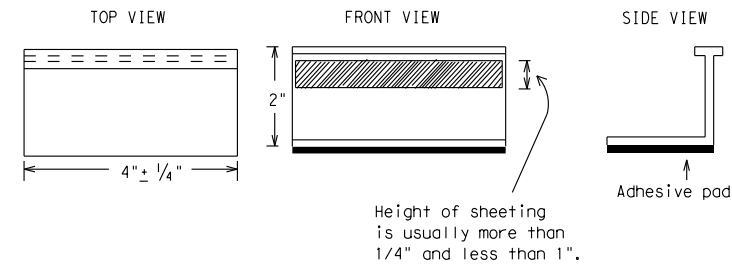
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

### REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

## Temporary Flexible-Reflective Roadway Marker Tabs



**STAPLES OR NAILS SHALL NOT BE USED TO SECURE  
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER  
TABS TO THE PAVEMENT SURFACE**

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
  - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
  - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:  
 YELLOW - (two amber reflective surfaces with yellow body).  
 WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

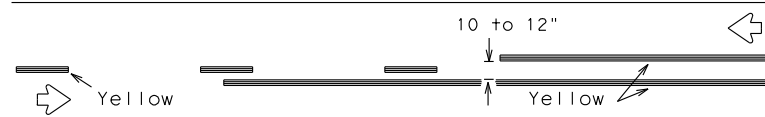
**BC(11) - 21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
	1064	01	032	FM 676
REVISIONS	DIST	COUNTY	SHEET NO.	
2-98 9-07 5-21	PHR	HIDALGO	127	
1-02 7-13				
11-02 8-14				

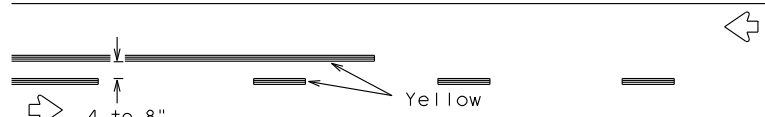
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:  
FILE:

## PAVEMENT MARKING PATTERNS

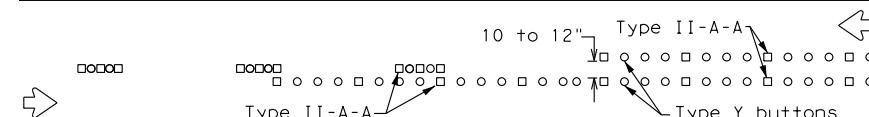


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

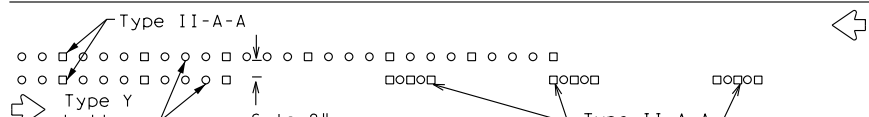


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

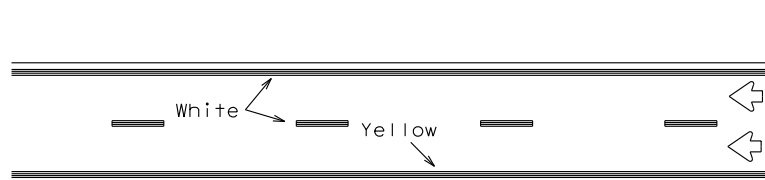


RAISED PAVEMENT MARKERS - PATTERN A



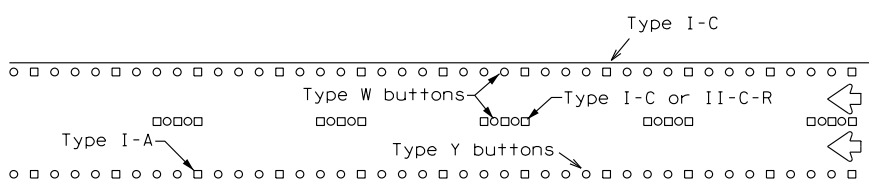
RAISED PAVEMENT MARKERS - PATTERN B

## CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



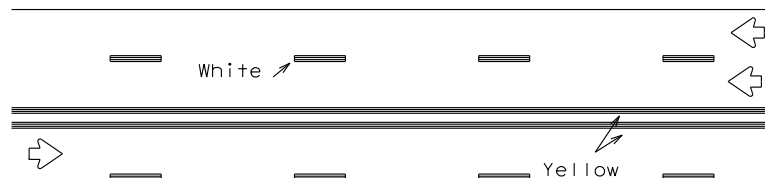
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



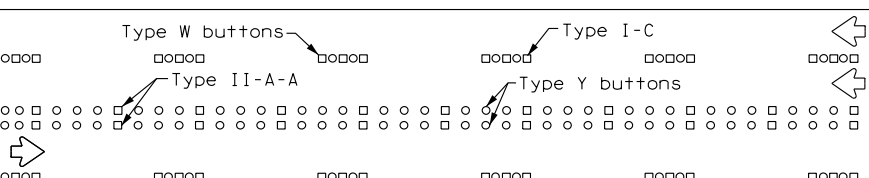
RAISED PAVEMENT MARKERS

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



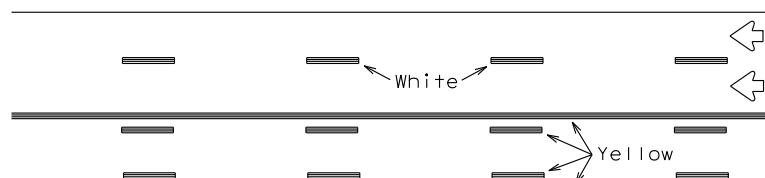
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



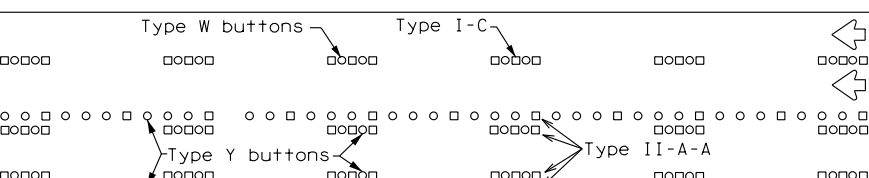
RAISED PAVEMENT MARKERS

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

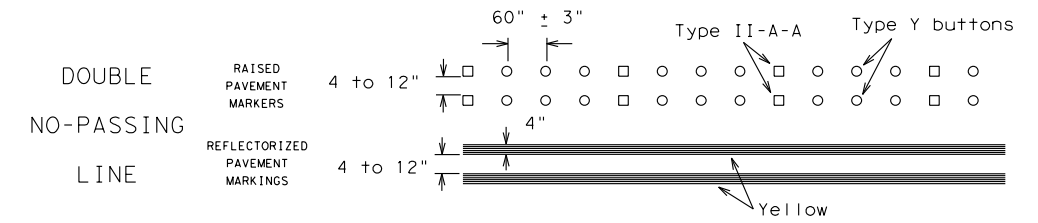
Prefabricated markings may be substituted for reflectORIZED pavement markings.



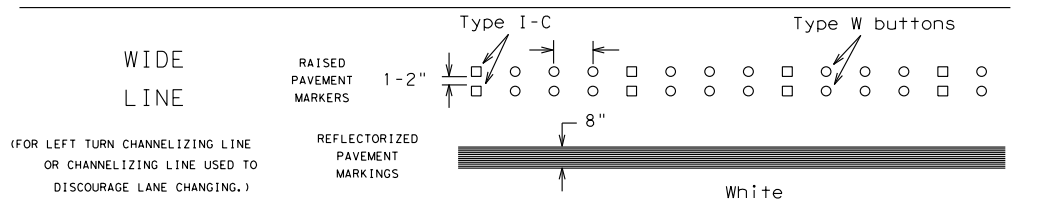
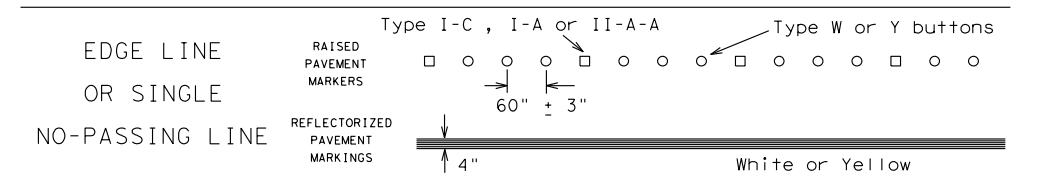
RAISED PAVEMENT MARKERS

## TWO-WAY LEFT TURN LANE

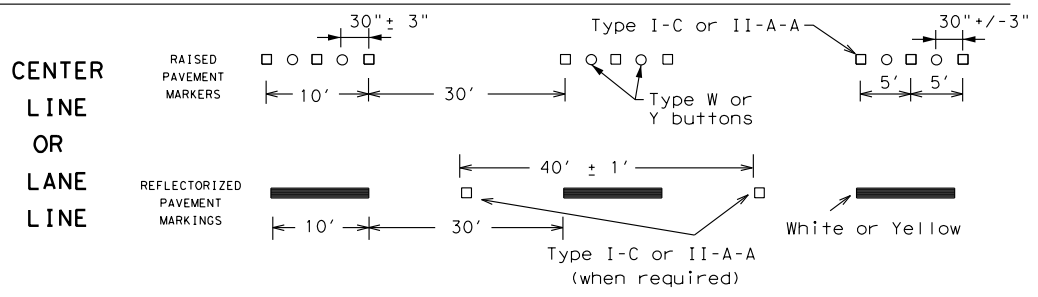
## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



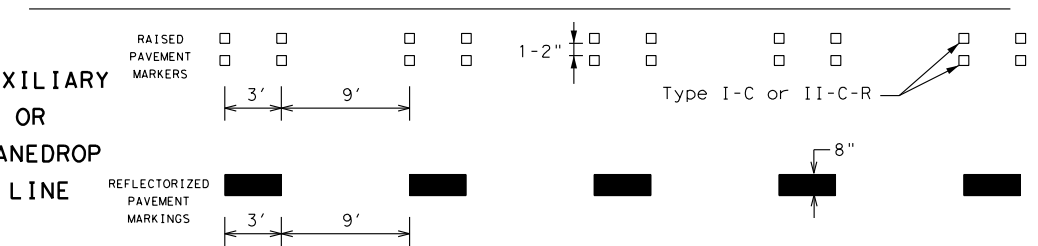
### SOLID LINES



### BROKEN LINES

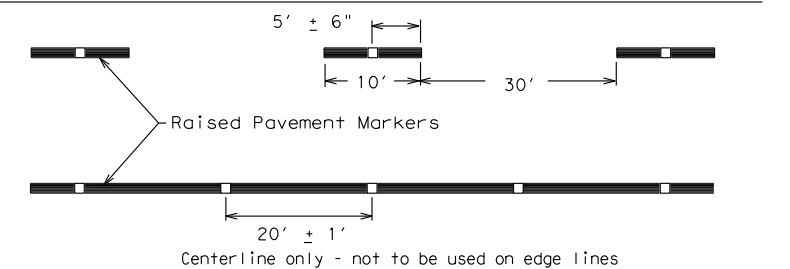


### AUXILIARY OR LANEDROP LINE



### REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	PHR	HIDALGO	128	
11-02 8-14				

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

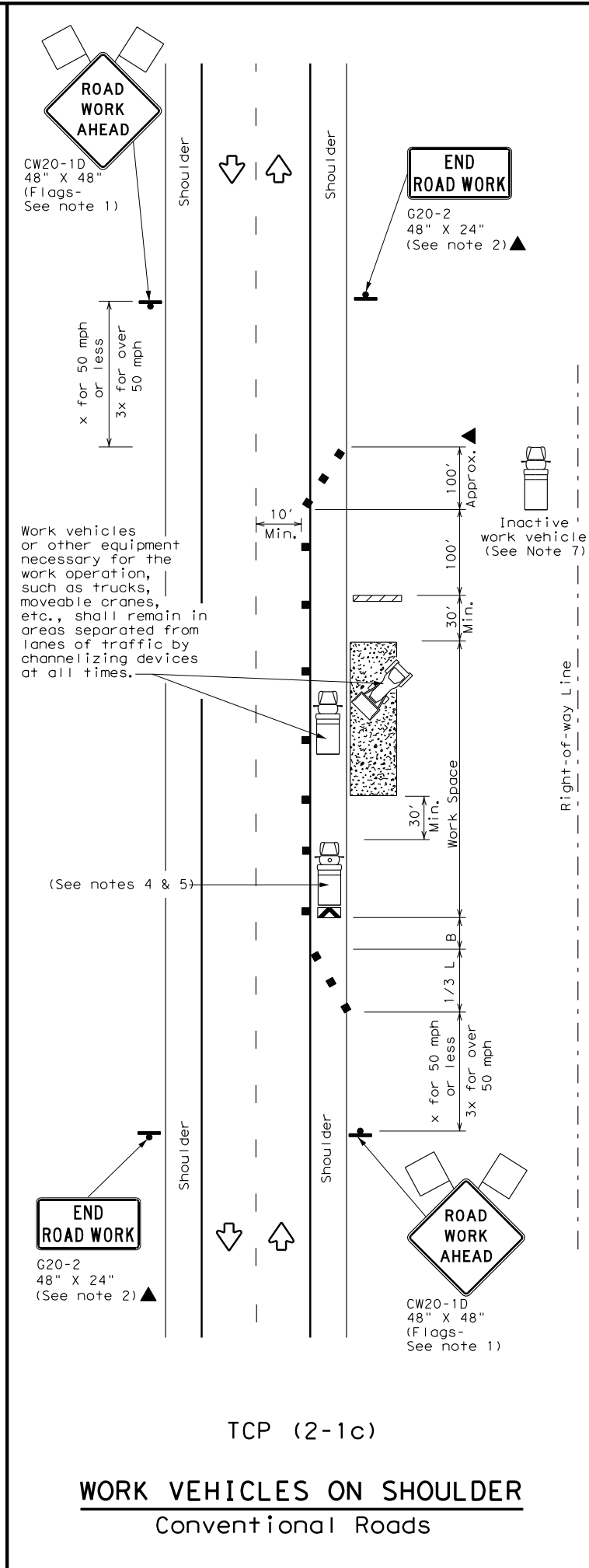
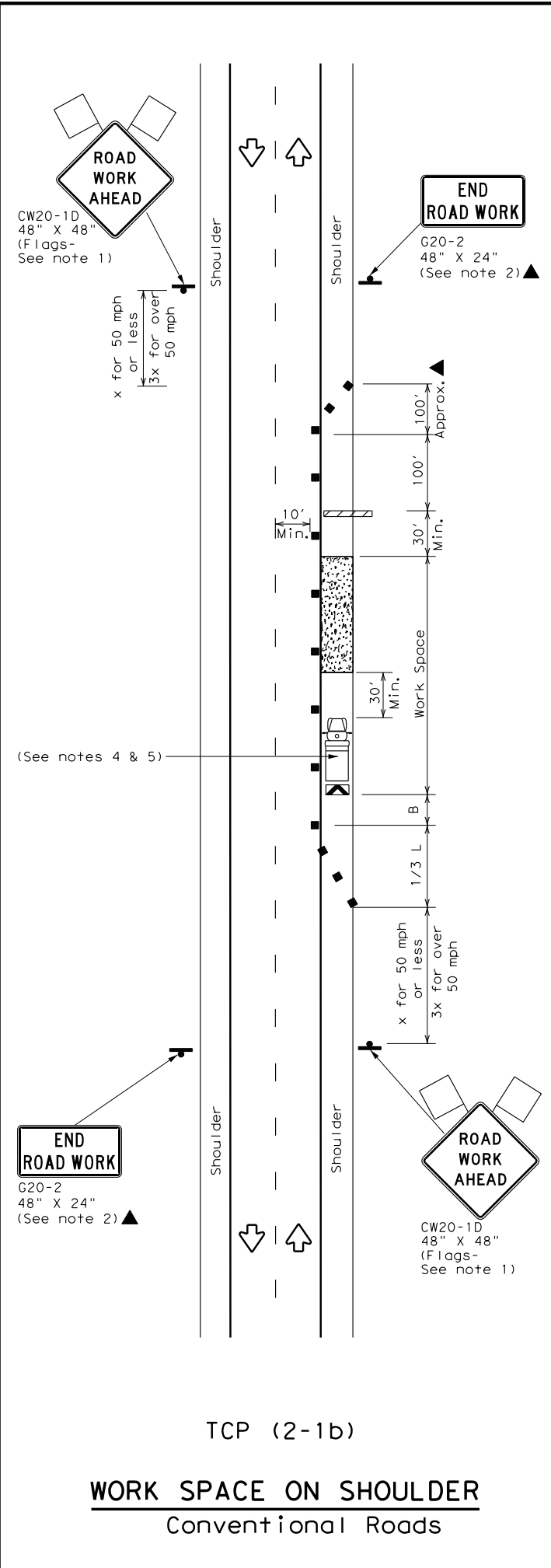
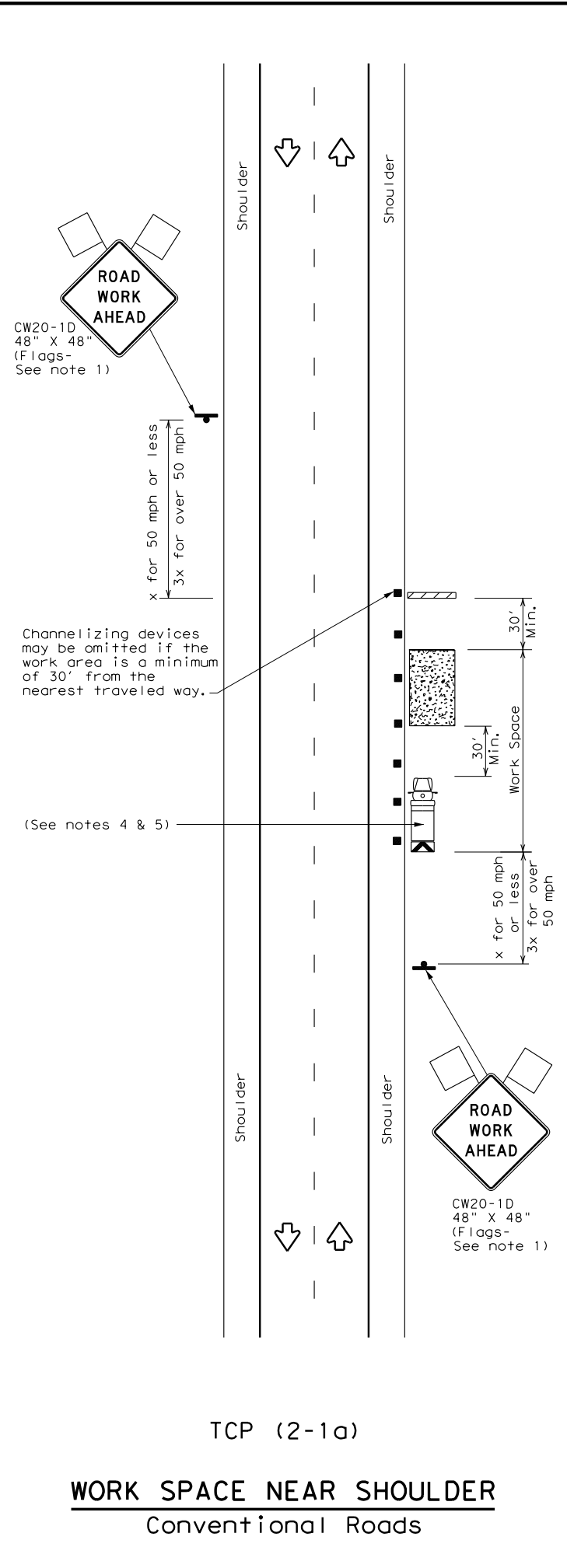
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DATE:  
FILE:



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DATE: 11/17/2022 7:44:39 PM  
 FILE: ...CADD\STD\TCP\top2-1-18.dgn



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
  - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
  - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
  - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
  - CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

**Texas Department of Transportation**  
 Traffic Operations Division Standard

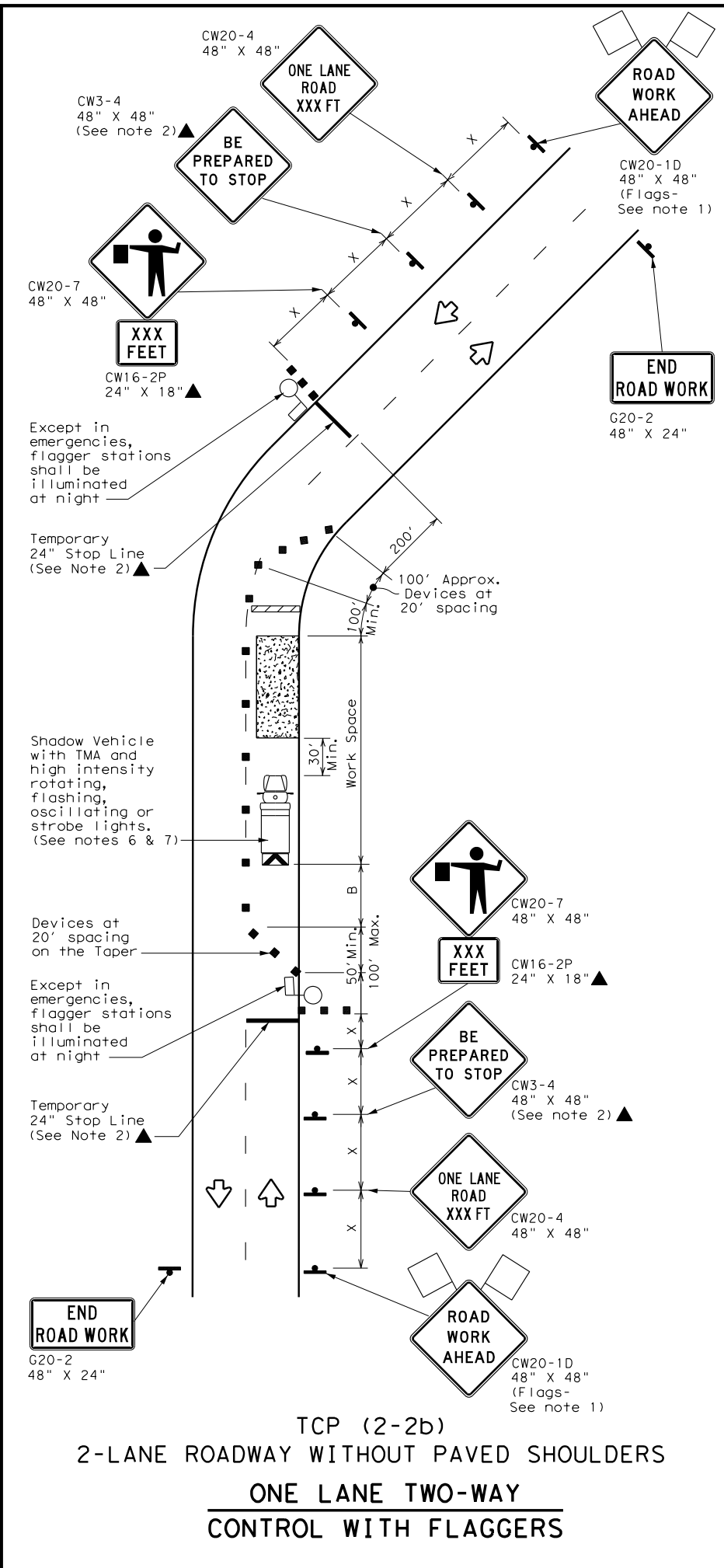
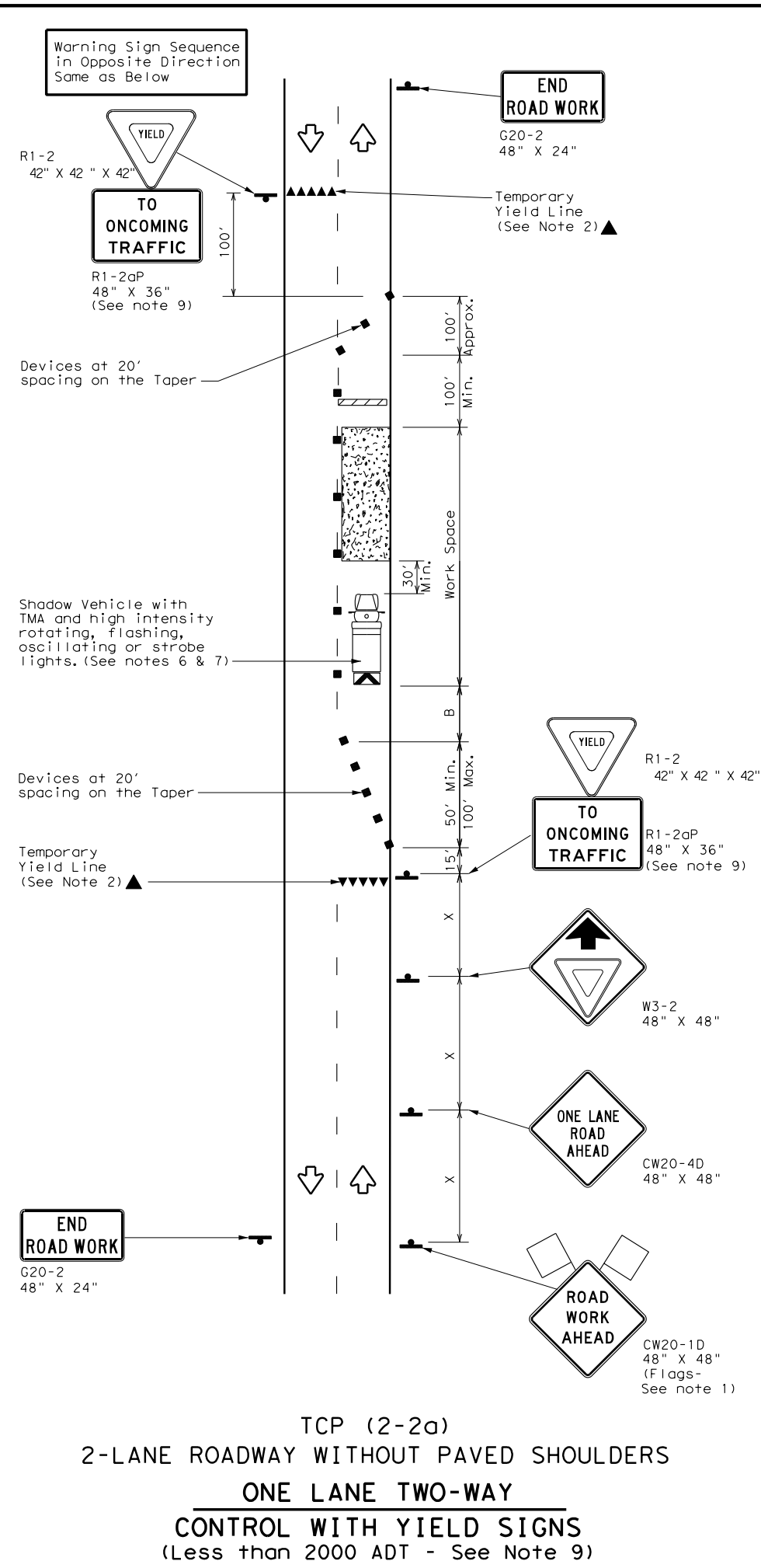
**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**

**TCP (2-1) - 18**

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	1064	01	032	FM 676
2-94 4-98	DIST:	COUNTY:	SHEET NO.:	
8-95 2-12	PHR	HIDALGO	129	
1-97 2-18				

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DATE: 11/17/2022 7:44:44 PM  
 FILE: ...\\CADD\STD\TCP\tcp2-2-18.dgn



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

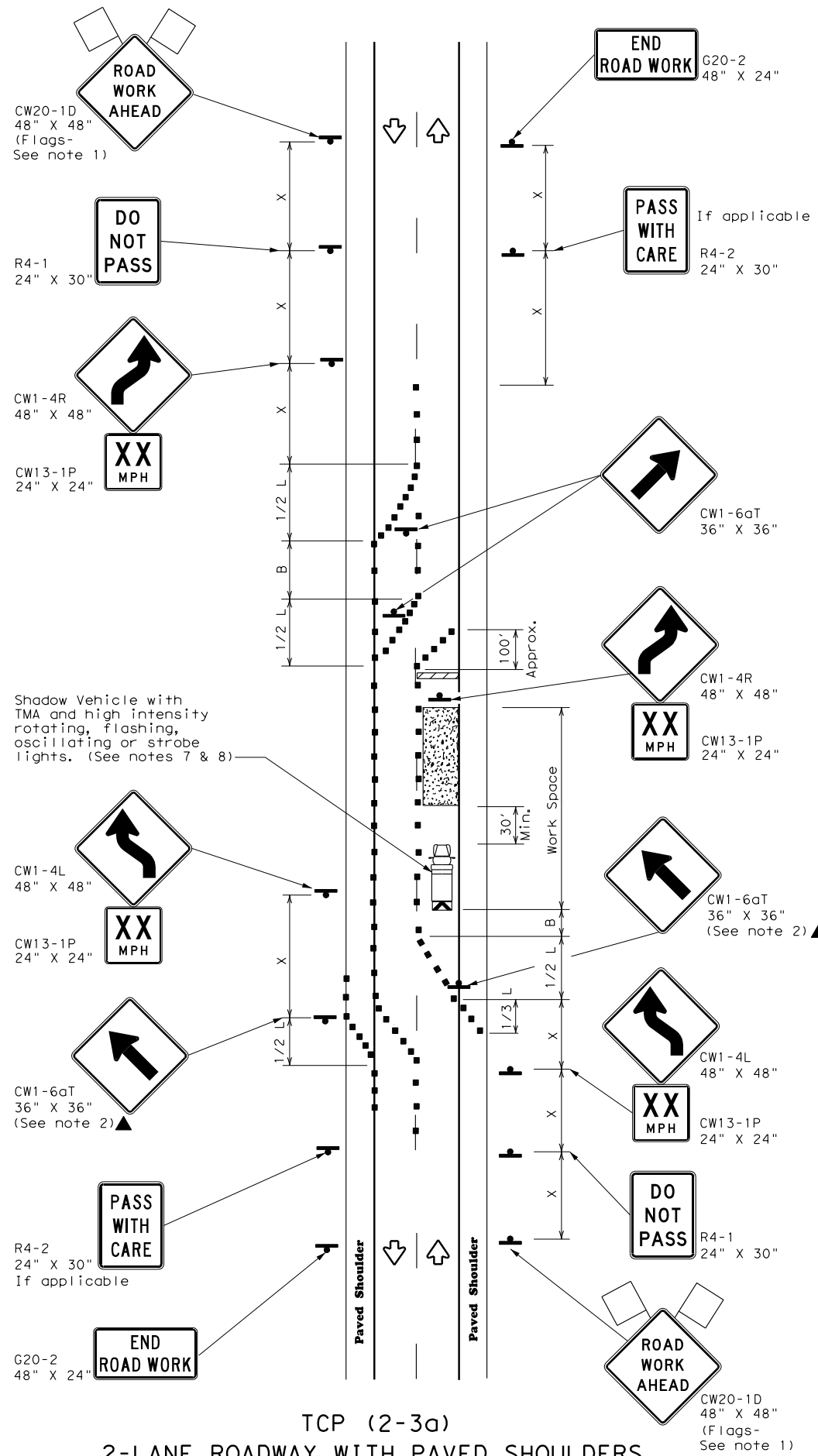
**GENERAL NOTES**

- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
  - Flaggers should use two-way radios or other methods of communication to control traffic.
  - Length of work space should be based on the ability of flaggers to communicate.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
  - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
  - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

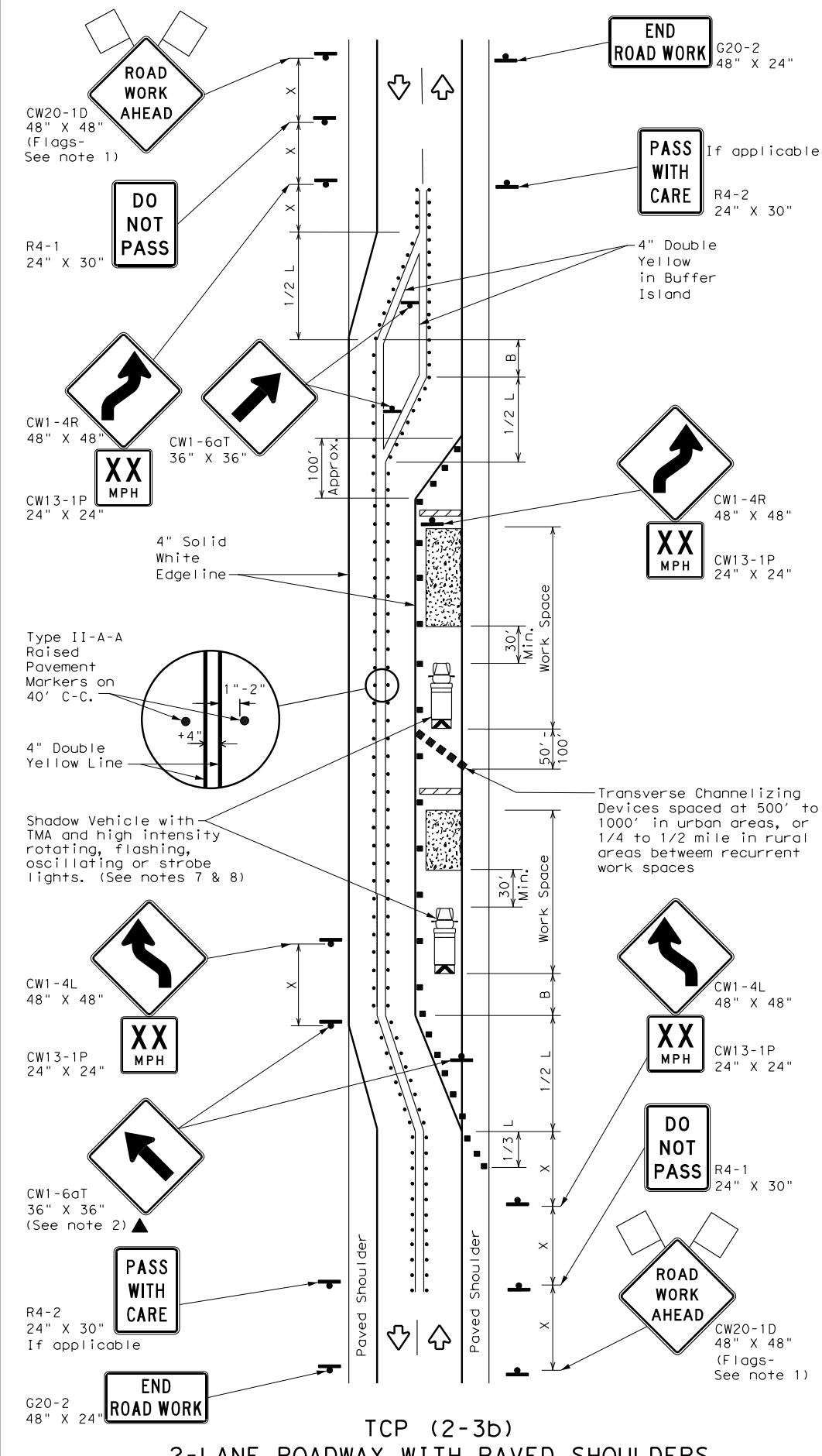
		<b>Traffic Operations Division Standard</b>	
<b>TRAFFIC CONTROL PLAN</b> <b>ONE-LANE TWO-WAY</b> <b>TRAFFIC CONTROL</b> <b>TCP (2-2) - 18</b>			
FILE:	tcp2-2-18.dgn	DN:	CK:
© TxDOT	December 1985	CON:	SECT:
REVISIONS 8-95 3-03 1-97 2-12 4-98 2-18		JOB 1064 01 COUNTY HIDALGO	HIGHWAY FM 676 SHEET NO. <b>130</b>

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DATE: 11/17/2022 7:44:50 PM  
 FILE: ...CADD\STD\TCP\top2-3-18.dgn



TCP (2-3a)  
 2-LANE ROADWAY WITH PAVED SHOULDERS  
 ONE LANE CLOSED  
 ADEQUATE FIELD OF VIEW



TCP (2-3b)  
 2-LANE ROADWAY WITH PAVED SHOULDERS  
 ONE LANE CLOSED  
 INADEQUATE FIELD OF VIEW

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Raised Pavement Markers Ty II-AA
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed X	Formula	Minimum Desirable Taper Lengths X X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

X Conventional Roads Only  
 XX Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓
				TCP (2-3b) ONLY

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - When work space will be in place less than three days existing pavement markings may remain in place. Channelizing devices shall be used to separate traffic.
  - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue.
  - The R4-1 "DO NOT PASS," R4-2 "PASS WITH CARE" and construction regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
  - Conflicting pavement marking shall be removed for long term projects.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-3a)**
- Conflicting pavement markings shall be removed for long-term projects. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter device spacing is intended for the area of the conflicting markings, not the entire work zone.

**Texas Department of Transportation**  
 Traffic Operations Division Standard

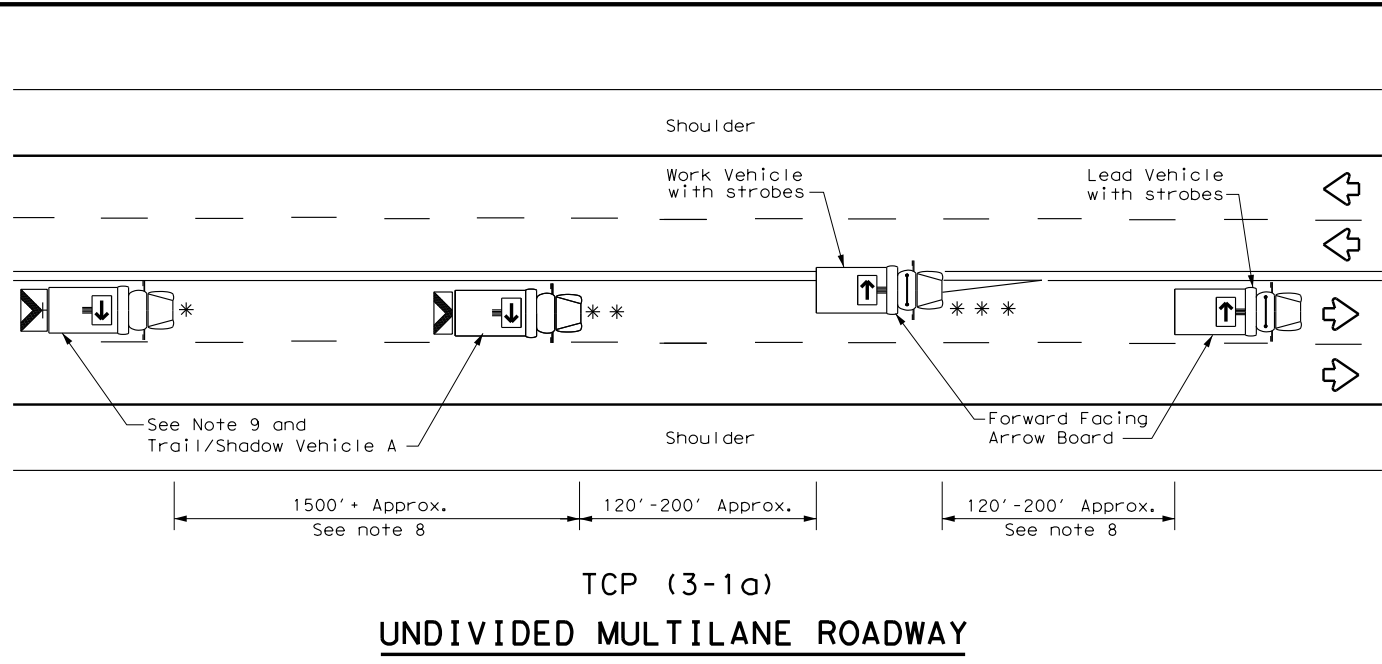
## TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO-LANE ROADS

### TCP (2-3) - 18

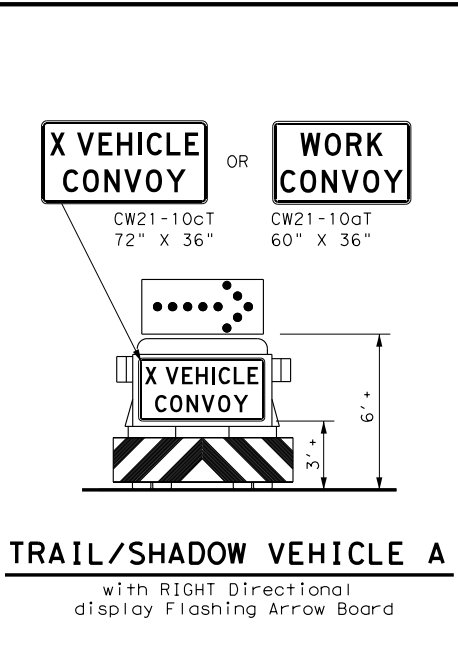
FILE: tcp(2-3)-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	1064	01	032	FM 676
8-95 3-03	DIST:	COUNTY:	SHEET NO.:	
1-97 2-12	PHR	HIDALGO	131	
4-98 2-18				

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DATE: 11/17/2022  
 FILE: p:\w\1172022\1172022.dwg



TCP (3-1a)  
**UNDIVIDED MULTILANE ROADWAY**



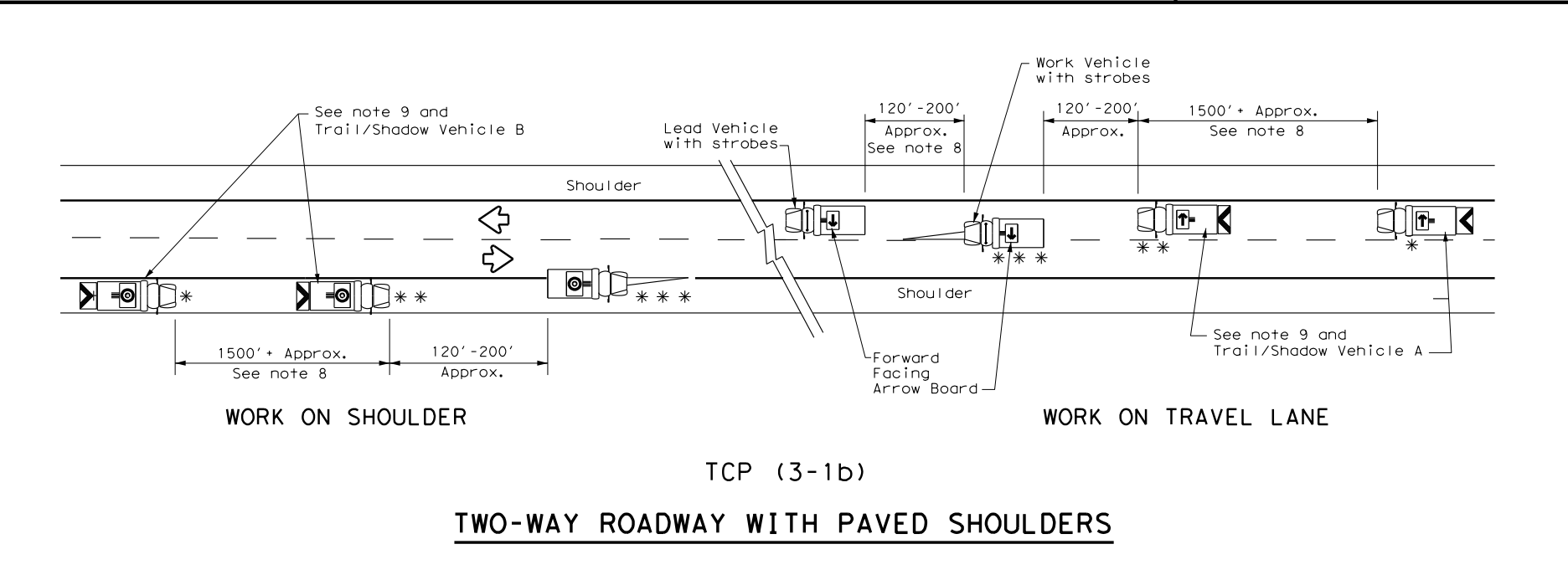
**TRAIL/SHADOW VEHICLE A**  
 with RIGHT Directional display Flashing Arrow Board

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

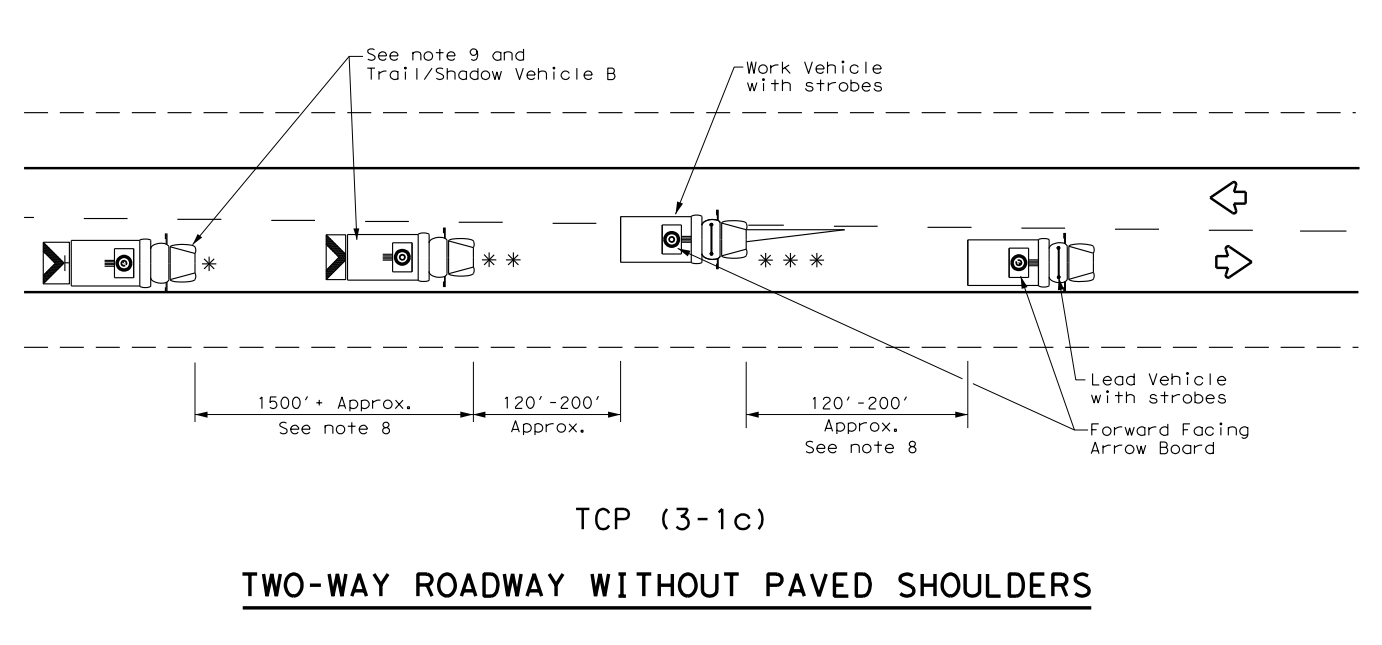
TYPICAL USAGE				
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**GENERAL NOTES**

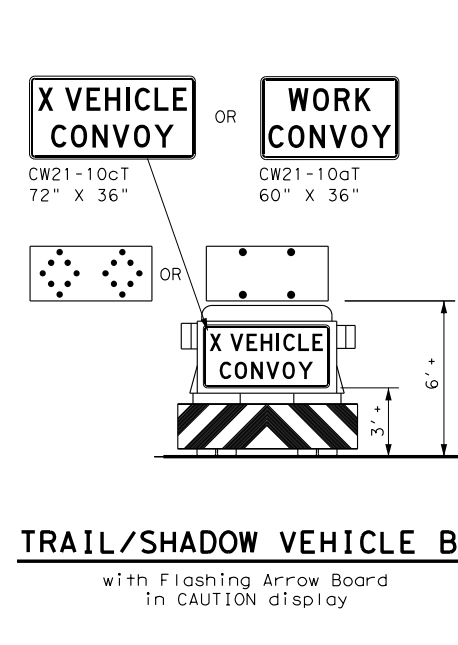
1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY" (CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



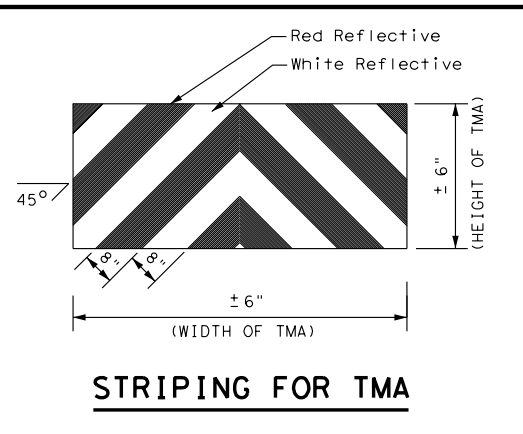
TCP (3-1b)  
**TWO-WAY ROADWAY WITH PAVED SHOULDERS**



TCP (3-1c)  
**TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS**



**TRAIL/SHADOW VEHICLE B**  
 with Flashing Arrow Board in CAUTION display



**STRIPING FOR TMA**

Texas Department of Transportation  
 Traffic Operations Division Standard

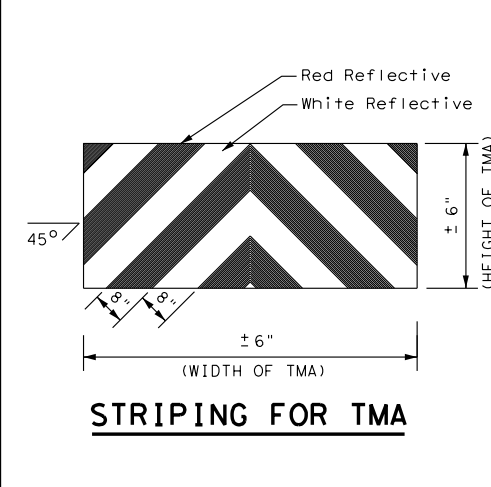
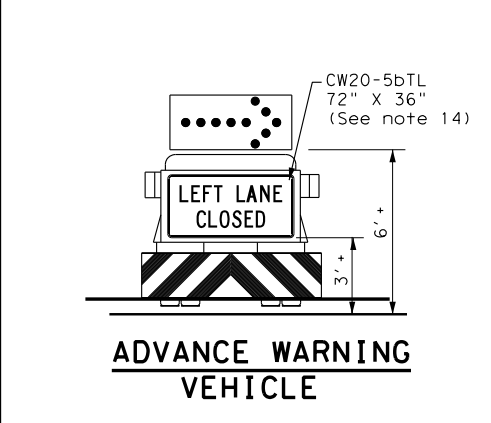
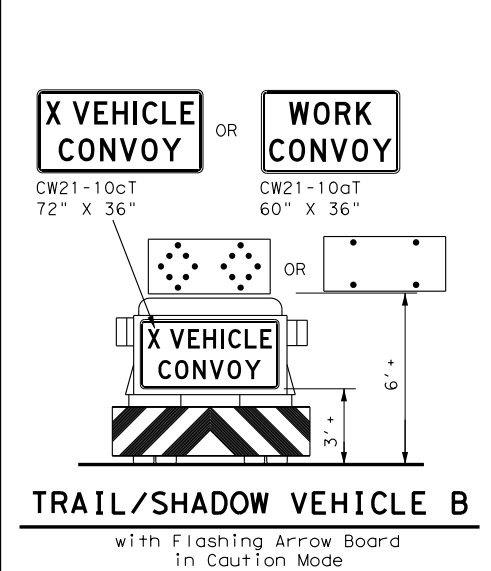
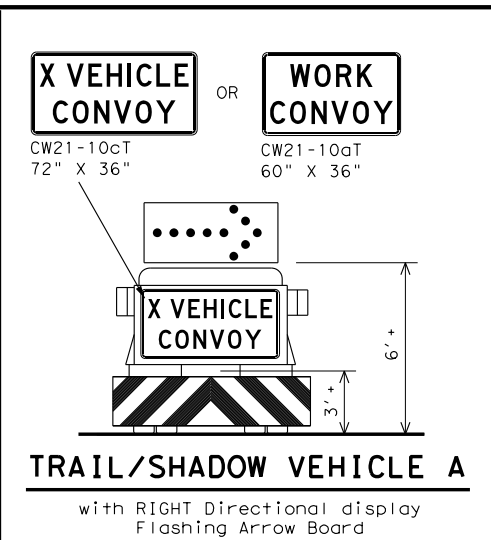
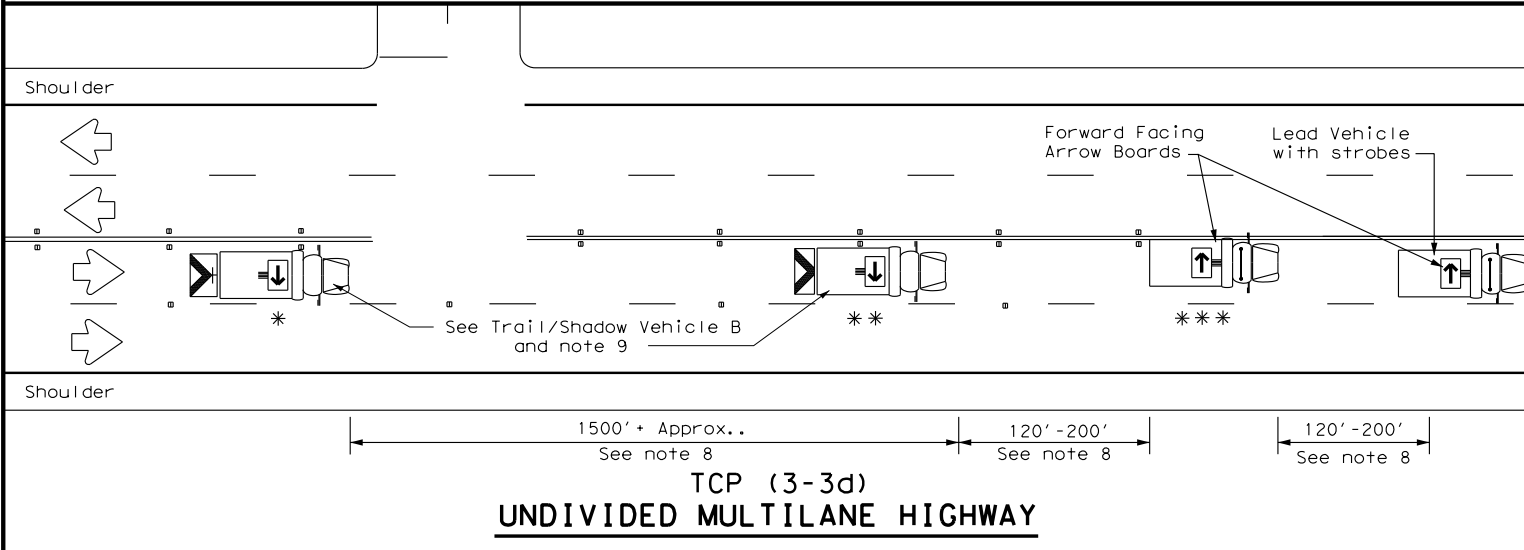
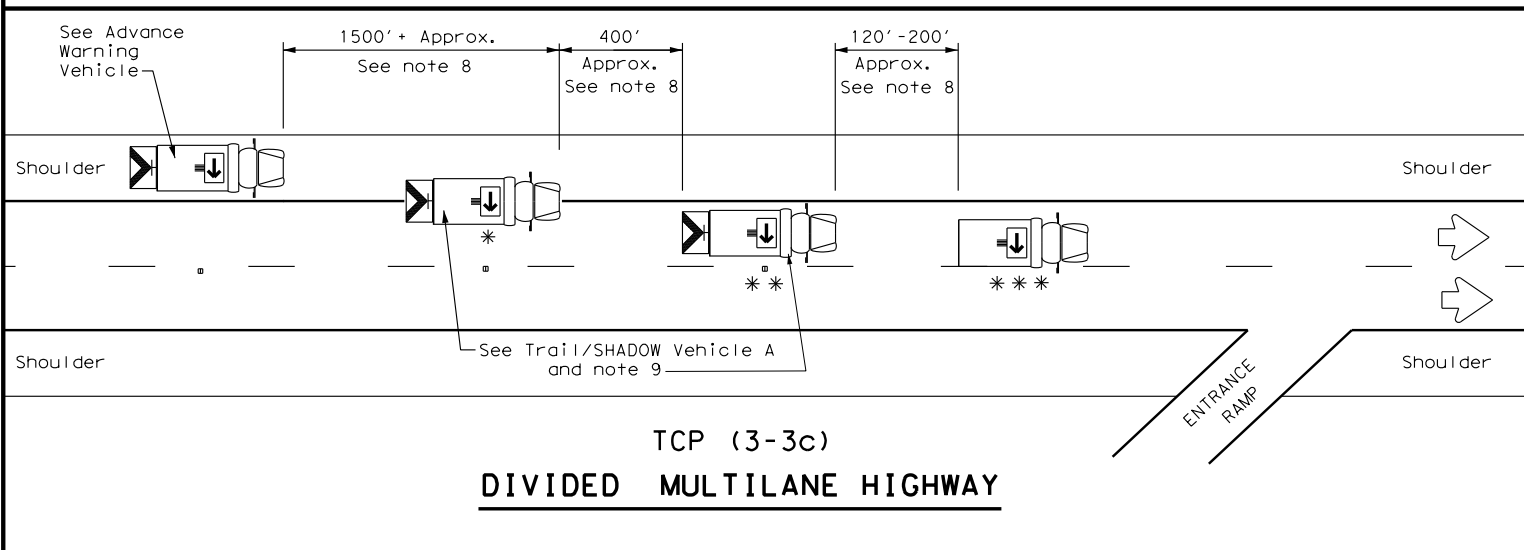
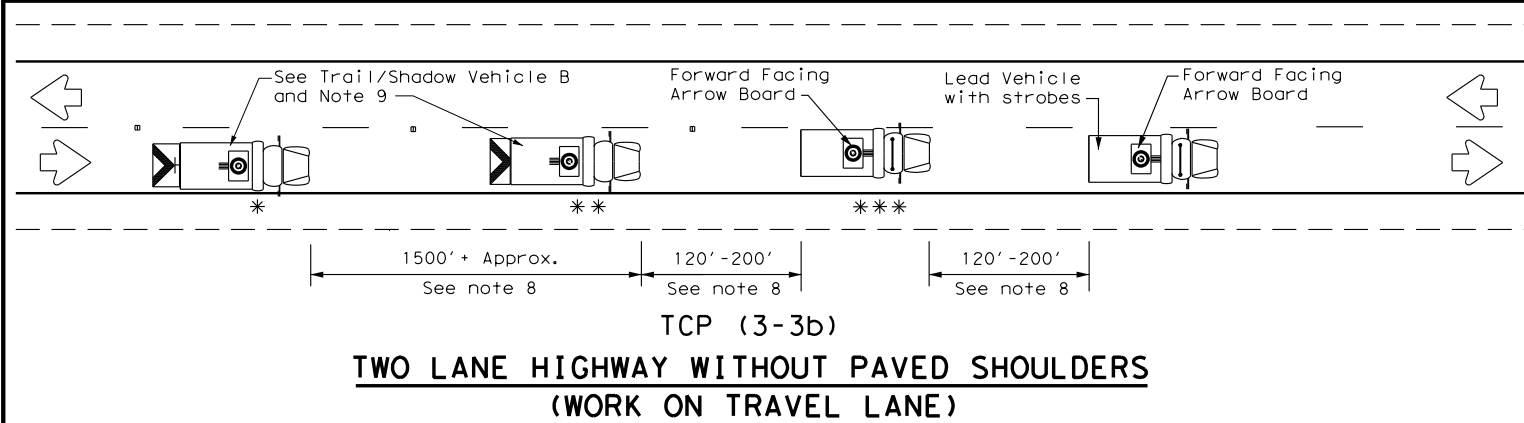
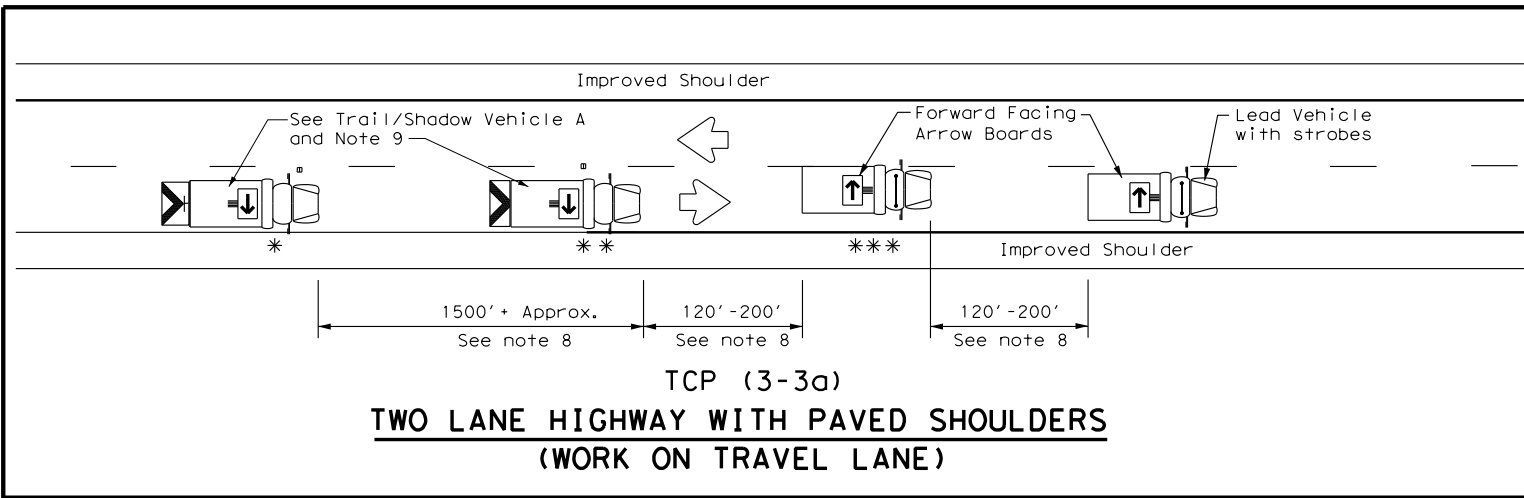
**TRAFFIC CONTROL PLAN  
 MOBILE OPERATIONS  
 UNDIVIDED HIGHWAYS**

**TCP (3-1) - 13**

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	PHR	HIDALGO	132	
1-97				

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DATE: FILE:



LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

**GENERAL NOTES**

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

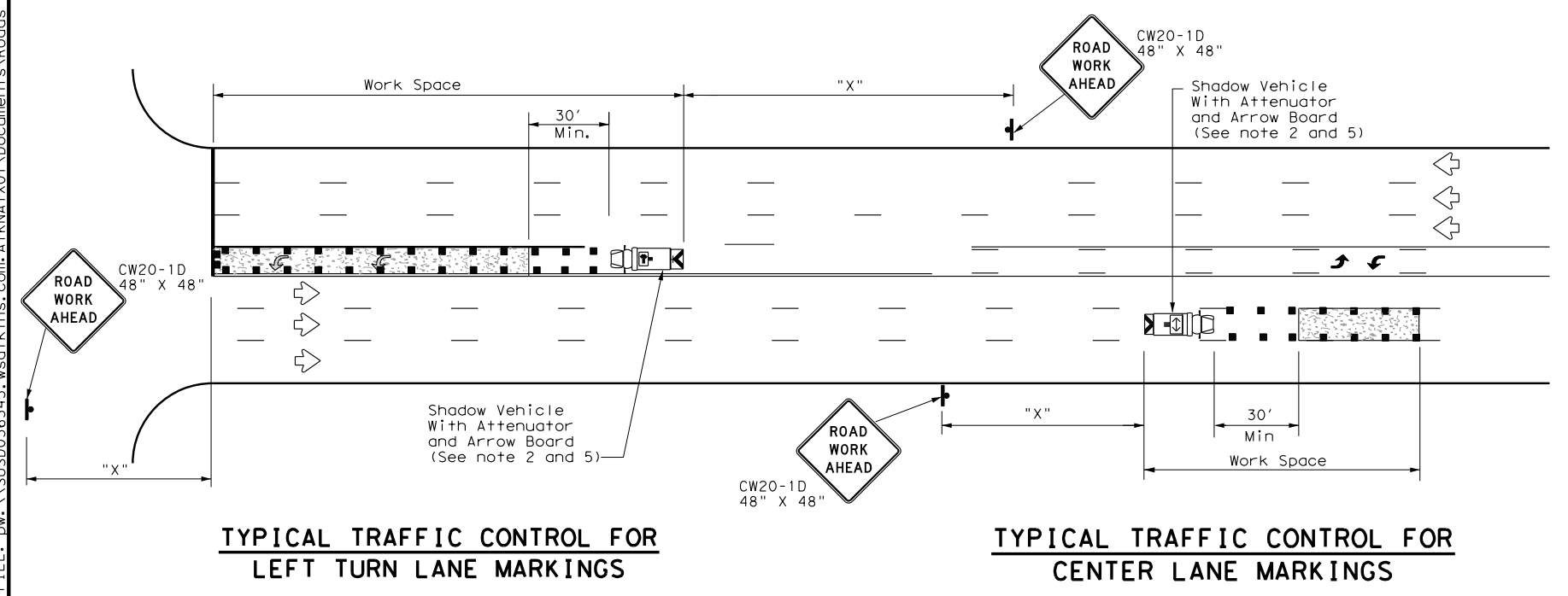
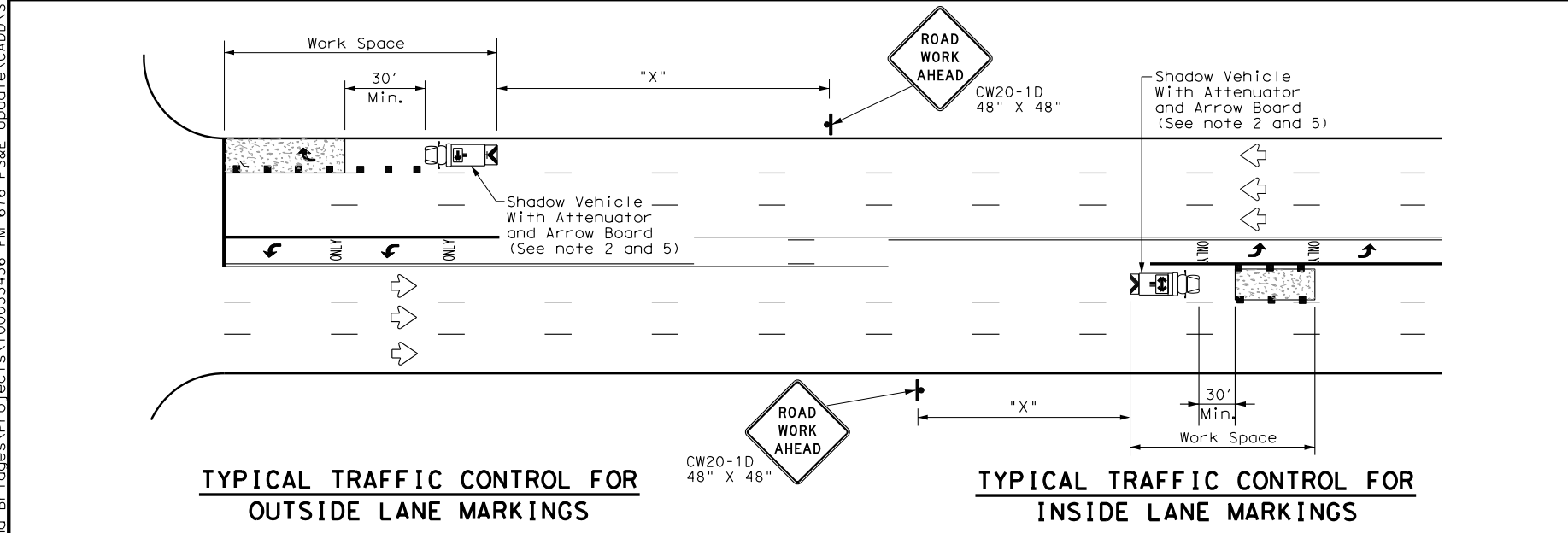
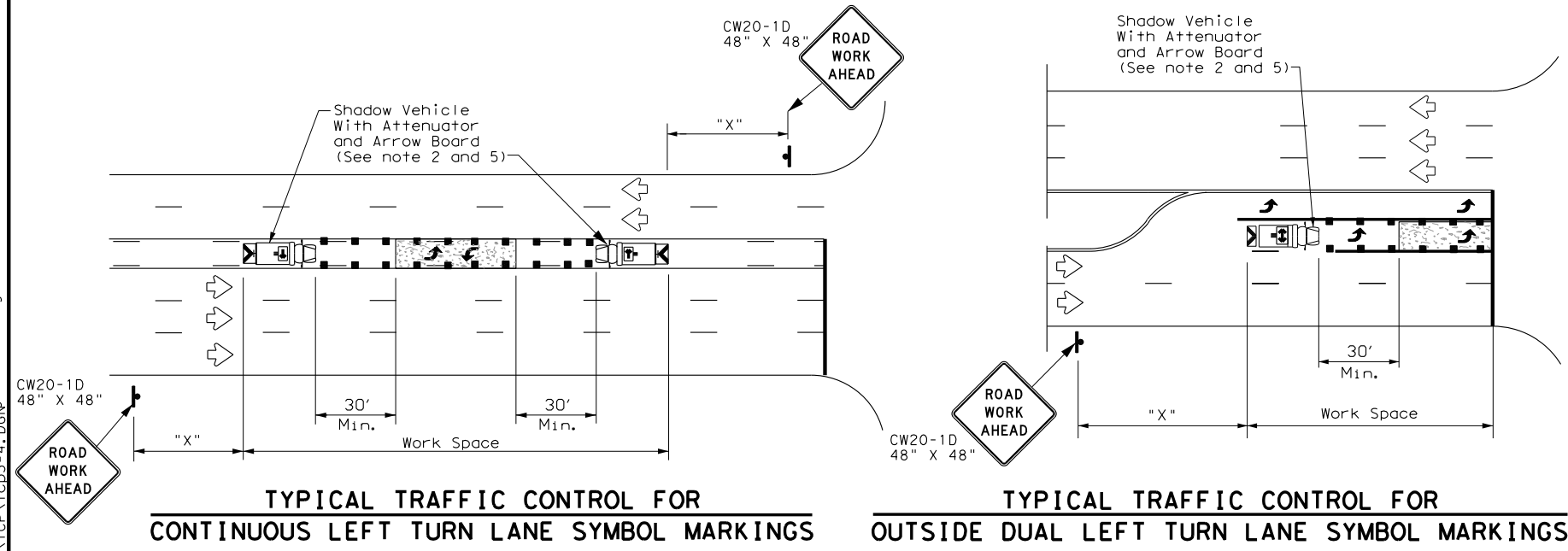
**Texas Department of Transportation**  
Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN  
MOBILE OPERATIONS  
RAISED PAVEMENT  
MARKER INSTALLATION/  
REMOVAL  
TCP (3-3) - 14**

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	PHR	HIDALGO	133	
1-97 7-14				

DATE: 11/17/2022  
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LEGEND		
*	Trail Vehicle	ARROW BOARD DISPLAY
**	Shadow Vehicle	
***	Work Vehicle	RIGHT Directional
	Heavy Work Vehicle	LEFT Directional
	Truck Mounted Attenuator (TMA)	Double Arrow
	Traffic Flow	Channelizing Devices

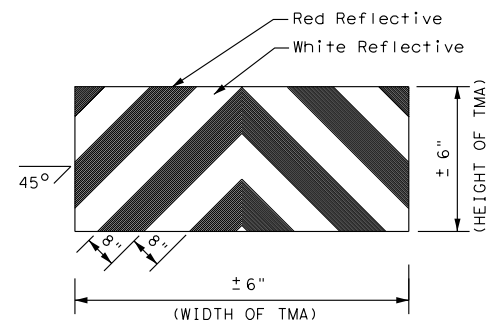
Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = $\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

**GENERAL NOTES**

1. This traffic control plan is for use on conventional roads posted at 45 mph or less and is intended for mobile operations that move continuously or intermittently (stopping up to approximately 15 minutes) such as short-line striping and in-lane rumble strips. When activities are anticipated to take longer amounts of time or traffic conditions warrant, a short duration or short-term stationary traffic control plan should be used.
2. A Truck Mounted Attenuator shall be used on Shadow Vehicle. Striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of departmental material specification DMS-8300, Type A.
3. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
4. The use of yellow rotating beacons or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the drivers side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
5. Flashing arrow board shall be used on Shadow Vehicle. Flashing arrow board shall be Type B or Type C as per BC Standards. The arrow board operation shall be controlled from inside the truck.



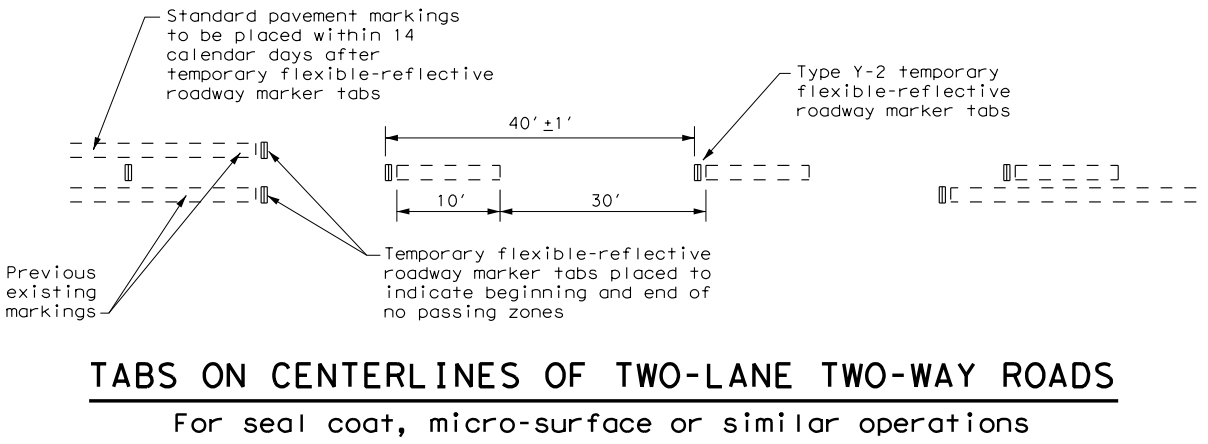
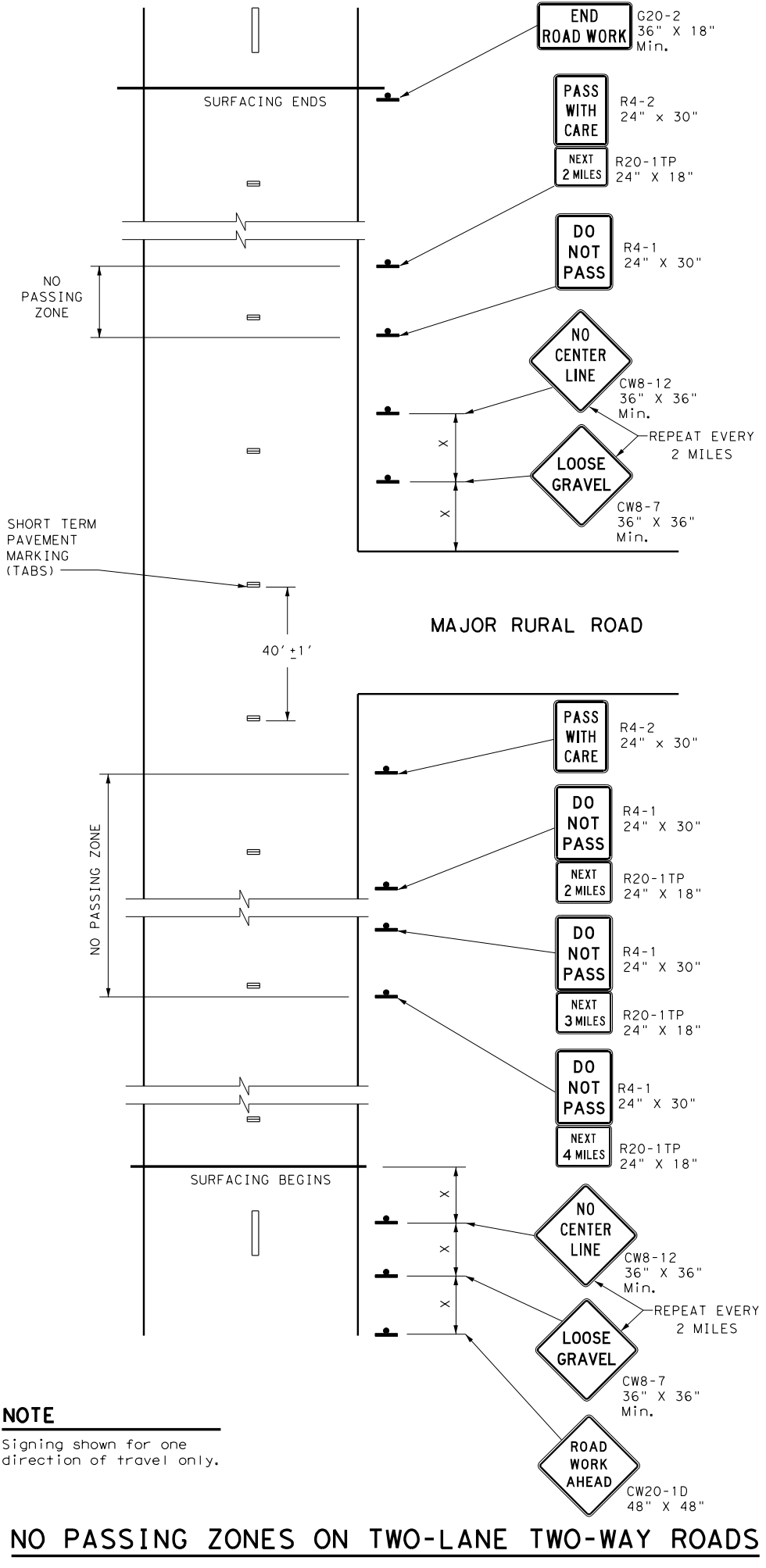
**Texas Department of Transportation** Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN  
 MOBILE OPERATIONS FOR  
 ISOLATED WORK AREAS  
 UNDIVIDED HIGHWAYS  
 TCP(3-4)-13**

FILE: tcp3-4.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT July, 2013	CONT 1064	SECT 01	JOB 032	HIGHWAY FM 676
REVISIONS		DIST	COUNTY	SHEET NO.
		PHR	HIDALGO	134

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DATE: 11/17/2022  
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**"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES**

- Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.
- At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.
- Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one day's operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.
- R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

**"NO CENTER LINE" SIGN (CW8-12)**

- Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.
- At the time construction activity obliterates the existing center line markings (low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.
- The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

**"LOOSE GRAVEL" SIGN (CW8-7)**

- When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.
- The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

**PAVEMENT MARKINGS**

- Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.
- Tabs shall not be used to simulate edge lines.
- Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

**COORDINATION OF SIGN LOCATIONS**

- The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.
- Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T) sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

\* Conventional Roads Only

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓

**GENERAL NOTES**

- The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
- The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
- Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
- When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
- Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.



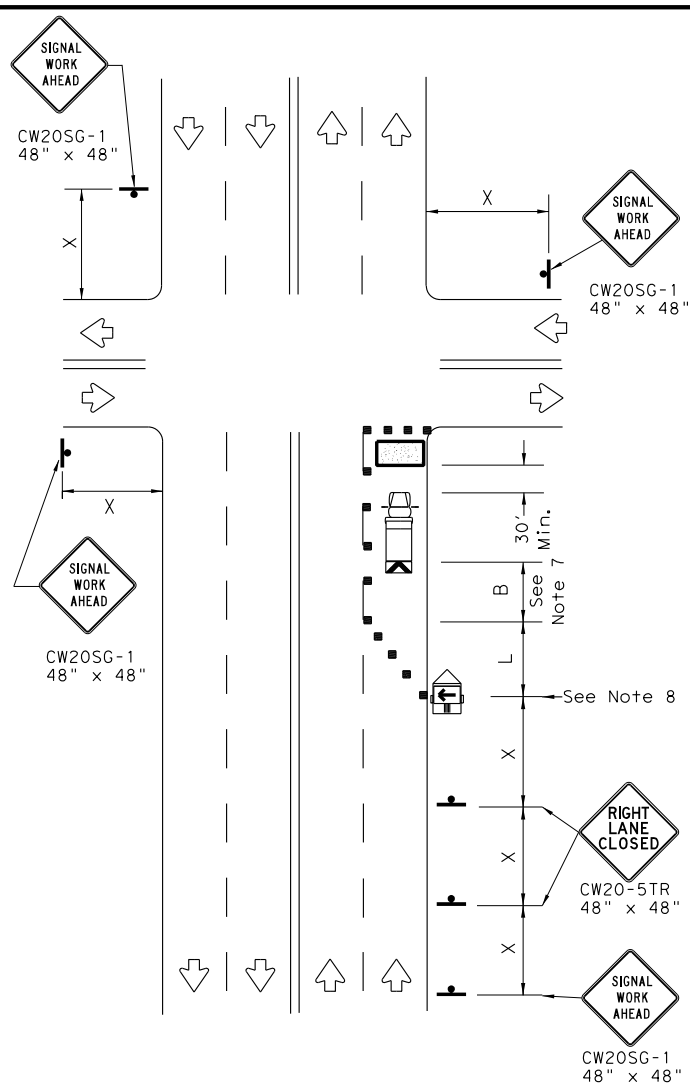
**TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS**  
**TCP (7-1) - 13**

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© TxDOT March 1991	CONT	SECT	JOB	HIGHWAY
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4-92 4-98	DIST	COUNTY	SHEET NO.	
1-97 7-13	PHR	HIDALGO	135	

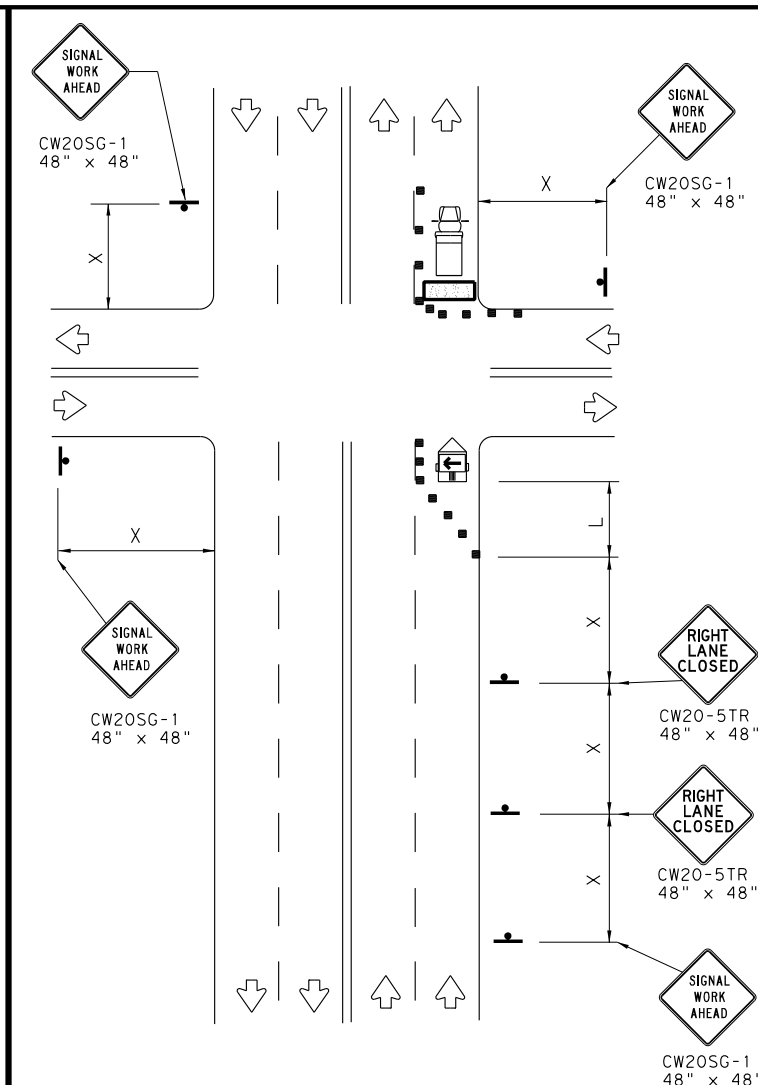
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DATE: 11/17/2022

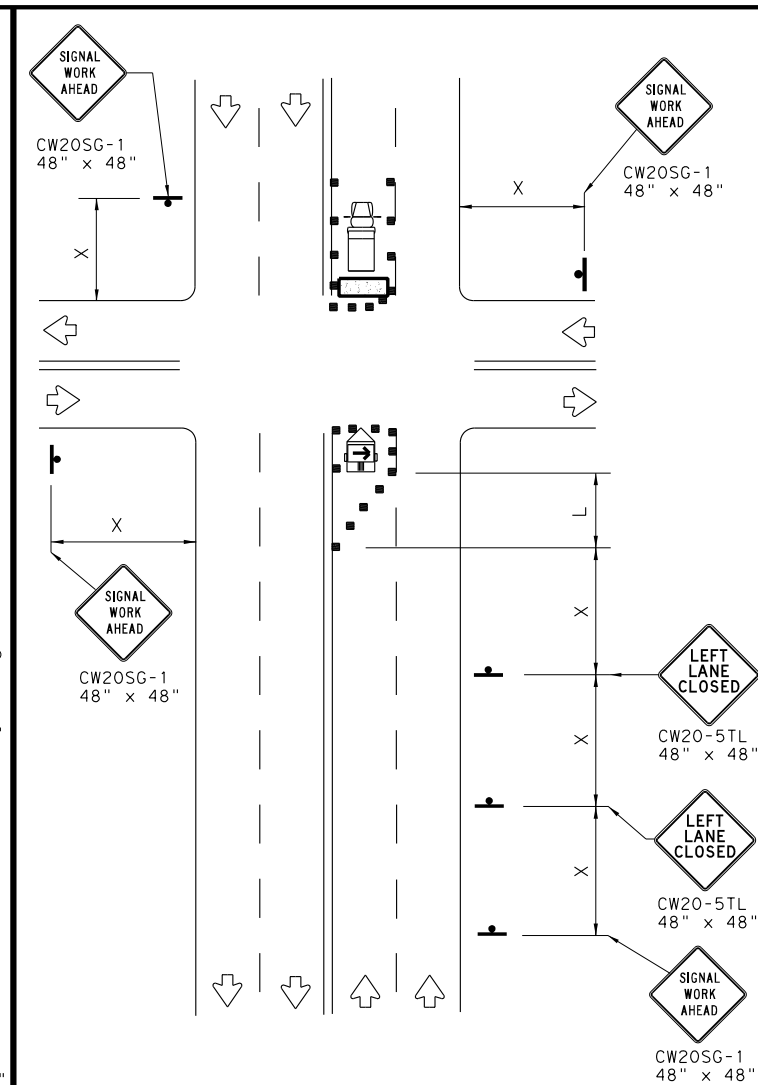
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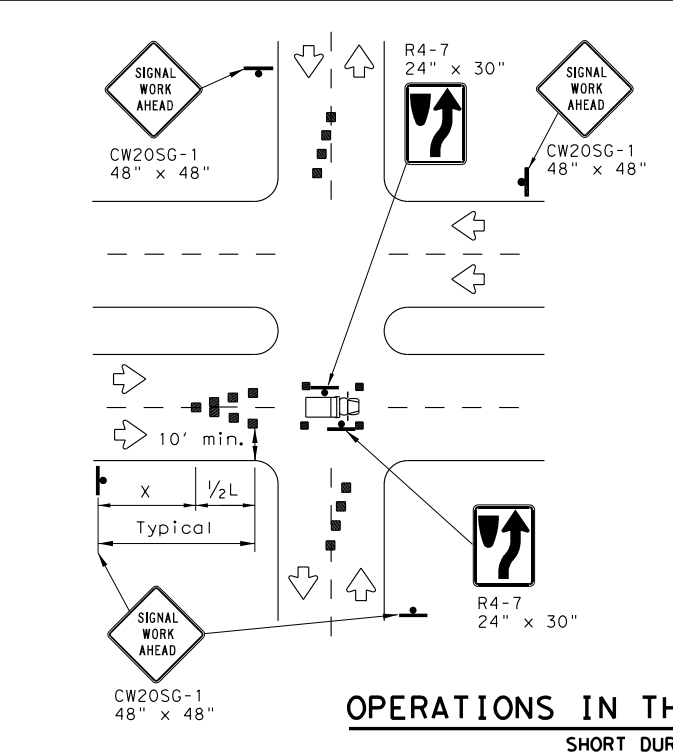
**NEAR SIDE LANE CLOSURE**  
SHORT DURATION OR SHORT TERM STATIONARY



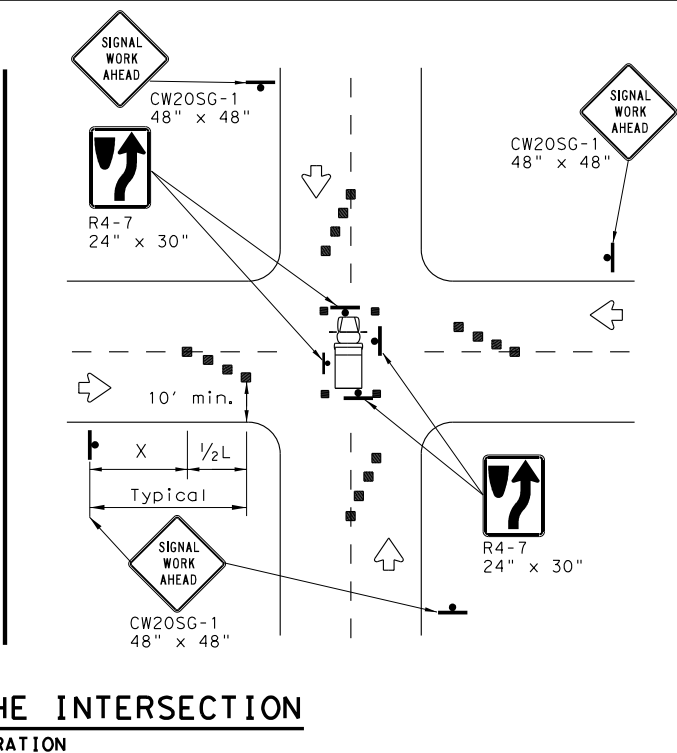
**FAR SIDE RIGHT LANE CLOSURE**  
SHORT DURATION OR SHORT TERM STATIONARY



**FAR SIDE LEFT LANE CLOSURE**  
SHORT DURATION OR SHORT TERM STATIONARY



**OPERATIONS IN THE INTERSECTION**  
SHORT DURATION



**GENERAL NOTES**

- 1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- 2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- 3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- 4. Vehicles parked on roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- 5. High level warning devices (flag trees) may be used at corners of the vehicle.
- 6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- 7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- 8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- 9. Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed * S	Formula L = WS <sup>2</sup> / 60	Minimum Desirable Taper Lengths * X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
		30	150'	165'	180'	30'	60'	120'
35	205'	225'	245'	35'	70'	160'	120'	
40	265'	295'	320'	40'	80'	240'	155'	
45	450'	495'	540'	45'	90'	320'	195'	
50	500'	550'	600'	50'	100'	400'	240'	
55	600'	605'	660'	55'	110'	500'	295'	
60	600'	660'	720'	60'	120'	600'	350'	
65	650'	715'	780'	65'	130'	700'	410'	
70	700'	770'	840'	70'	140'	800'	475'	
75	750'	825'	900'	75'	150'	900'	540'	

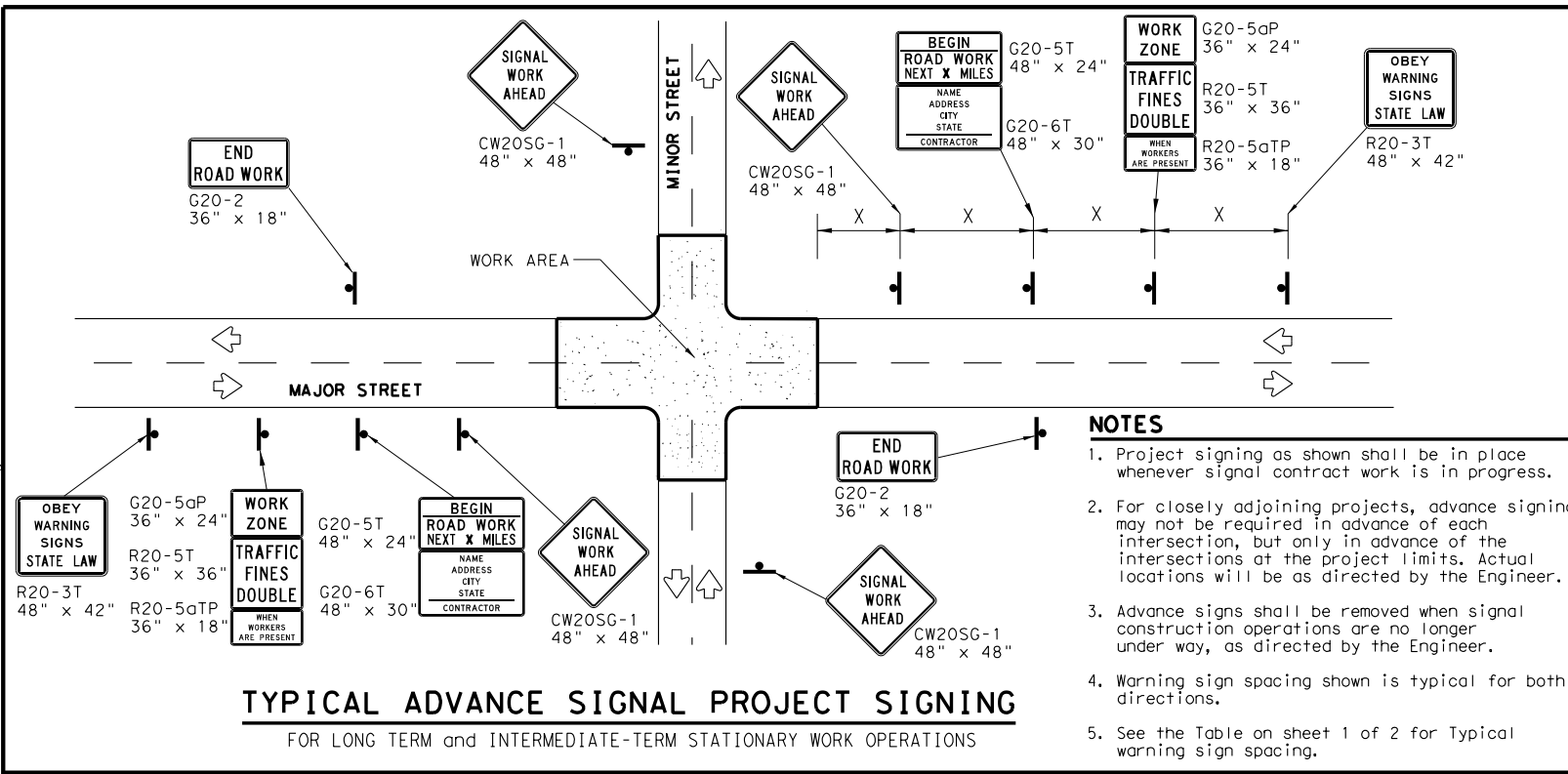
\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.**

 Texas Department of Transportation				<i>Traffic Operations Division Standard</i>	
<b>TRAFFIC SIGNAL WORK TYPICAL DETAILS</b>					
<b>WZ(BTS-1)-13</b>					
FILE:	wzbtts-13.dgn	DN:	TxDOT	CK:	TxDOT
REVISIONS:	1064	01	032	HIGHWAY	
2-98	10-99	7-13	COUNTY		SHEET NO.
4-98	3-03	HIDALGO		136	



DATE: 11/17/2022  
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- NOTES**
1. Project signing as shown shall be in place whenever signal contract work is in progress.
  2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
  3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
  4. Warning sign spacing shown is typical for both directions.
  5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

**GENERAL NOTES FOR WORK ZONE SIGNS**

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

**DURATION OF WORK**

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

**SIGN MOUNTING HEIGHT**

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

**REMOVING OR COVERING**

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

**REFLECTIVE SHEETING**

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

**SIGN SUPPORT WEIGHTS**

1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

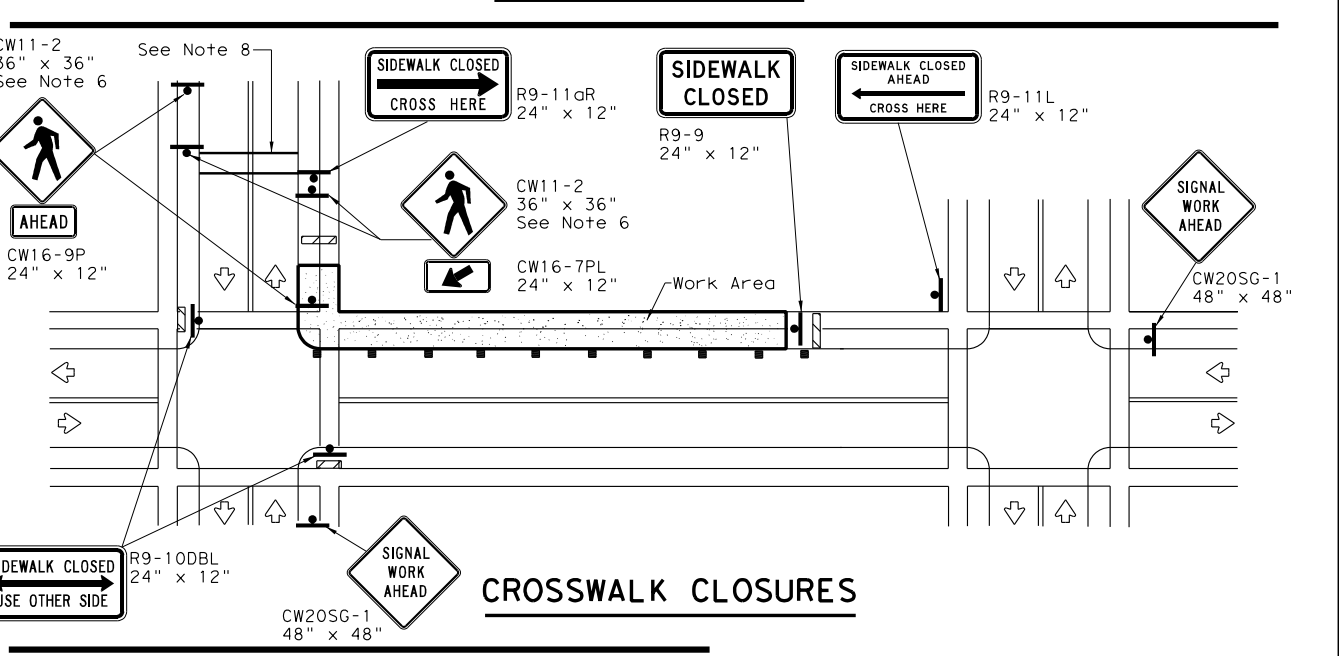
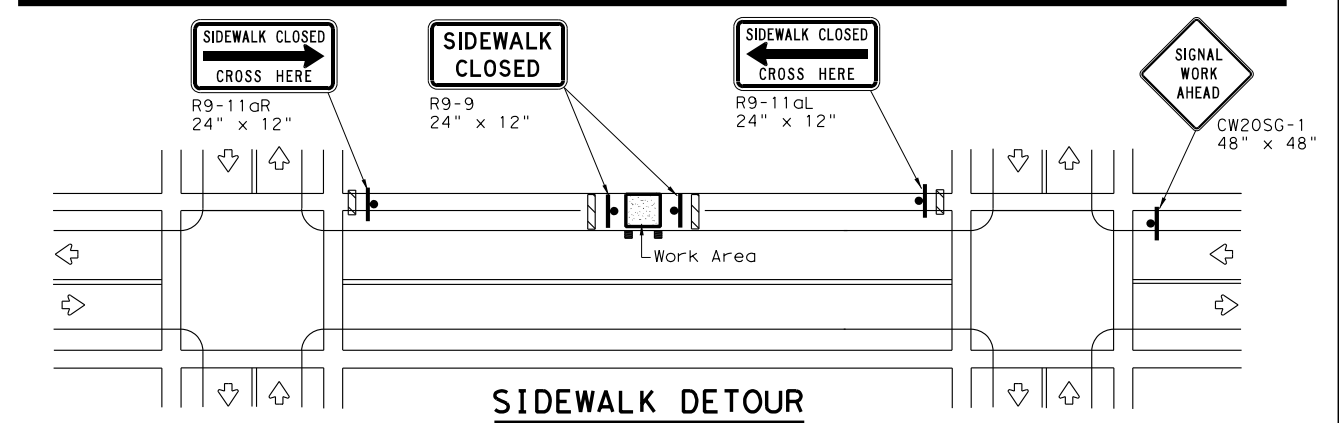
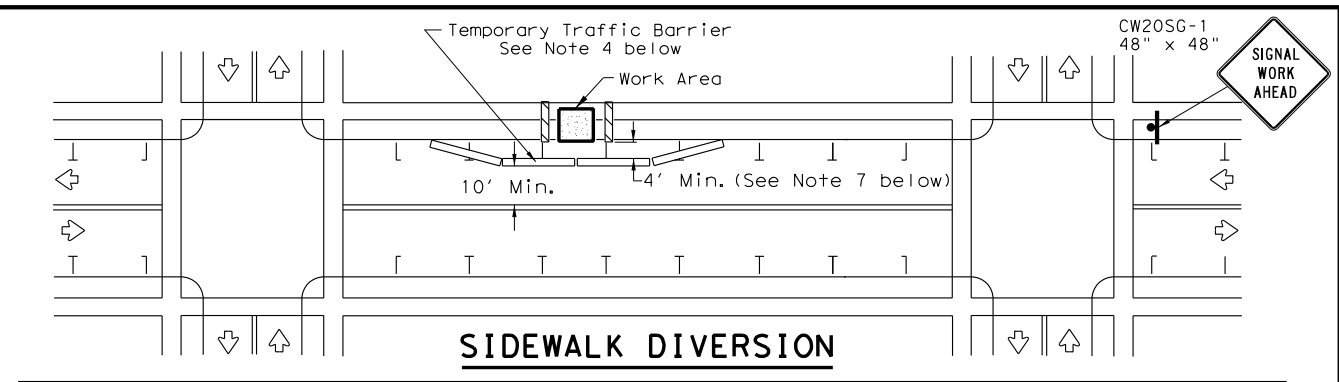
LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B <sub>FL</sub> OR TYPE C <sub>FL</sub> SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:  
[http://www.txdot.gov/txdot\\_library/publications/construction.htm](http://www.txdot.gov/txdot_library/publications/construction.htm)



**PEDESTRIAN CONTROL**

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

SHEET 2 OF 2

Traffic Operations Division Standard

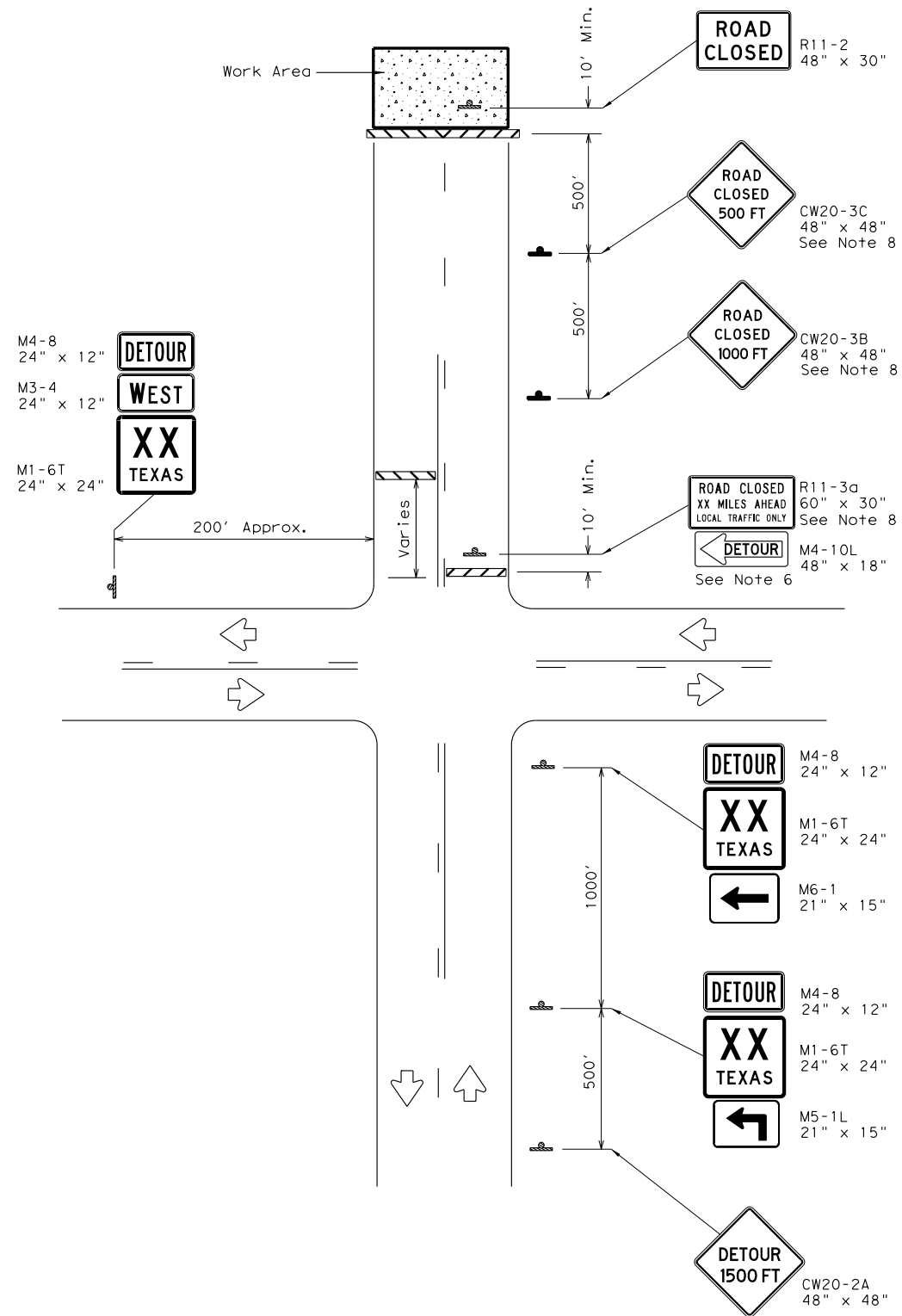
**TRAFFIC SIGNAL WORK BARRICADES AND SIGNS**

**WZ (BTS-2) - 13**

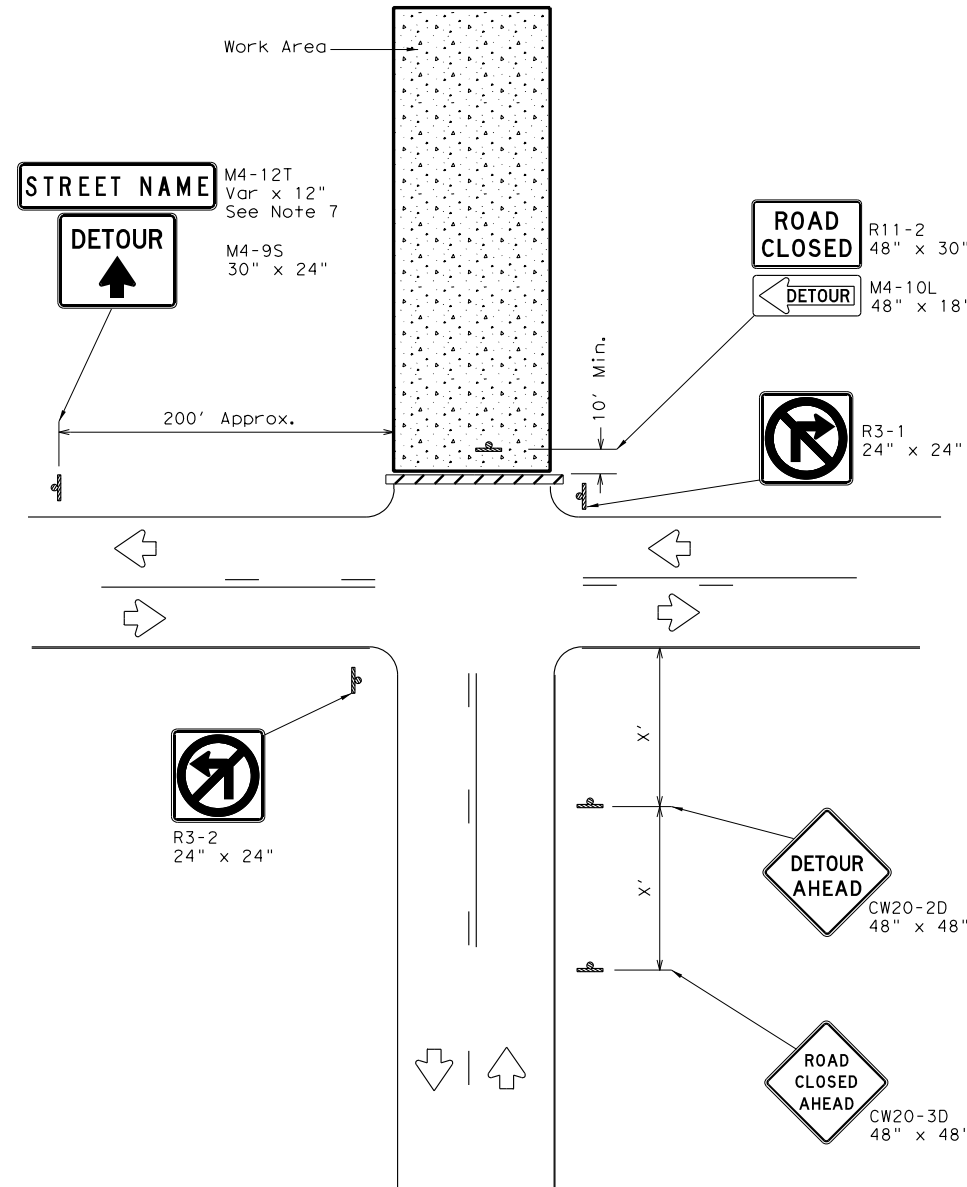
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© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
2-98 10-99 7-13	DIST	COUNTY	SHEET NO.	
4-98 3-03	PHR	HIDALGO	137	

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**ROAD CLOSURE BEYOND THE INTERSECTION**  
 Signing for a Numbered Route with an Off-Site Detour



**ROAD CLOSURE AT THE INTERSECTION**  
 Signing for an Un-numbered Route with an Off-Site Detour

LEGEND	
	Type 3 Barricade
	Sign

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

\* Conventional Roads Only

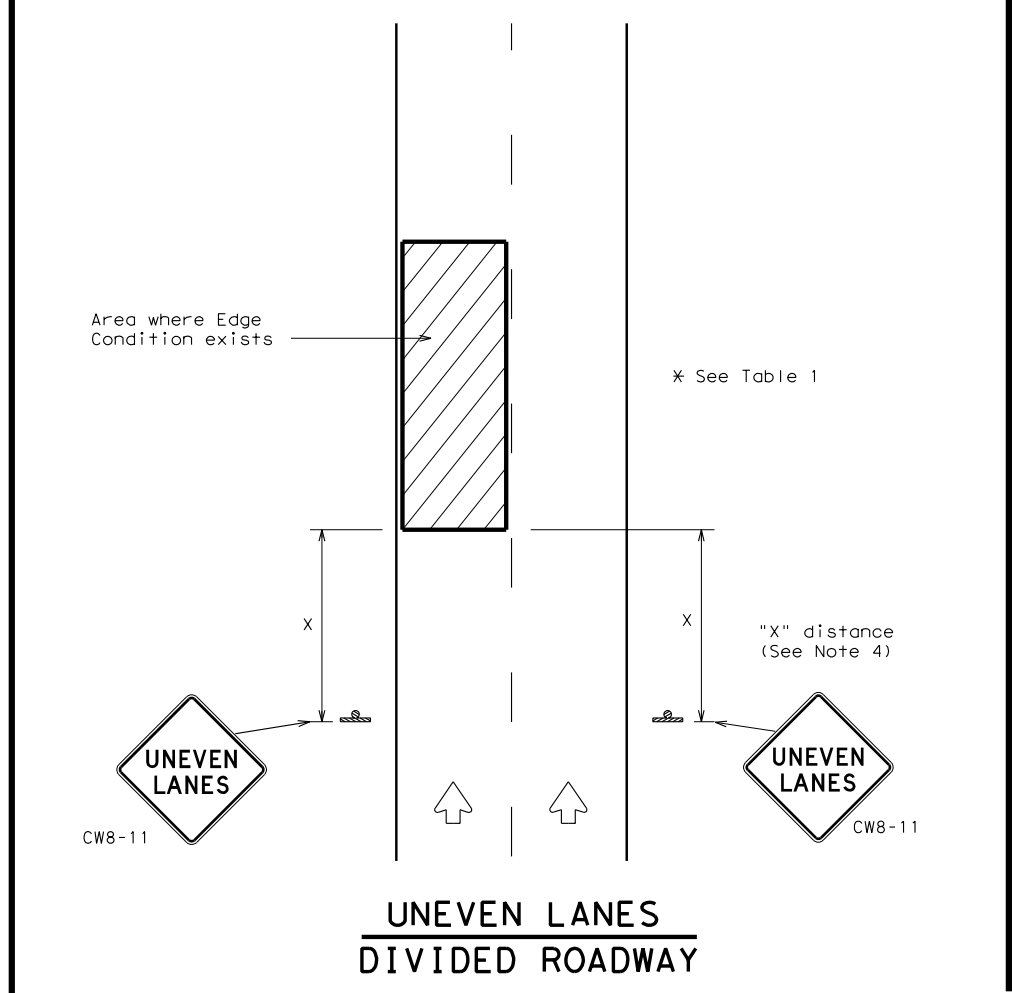
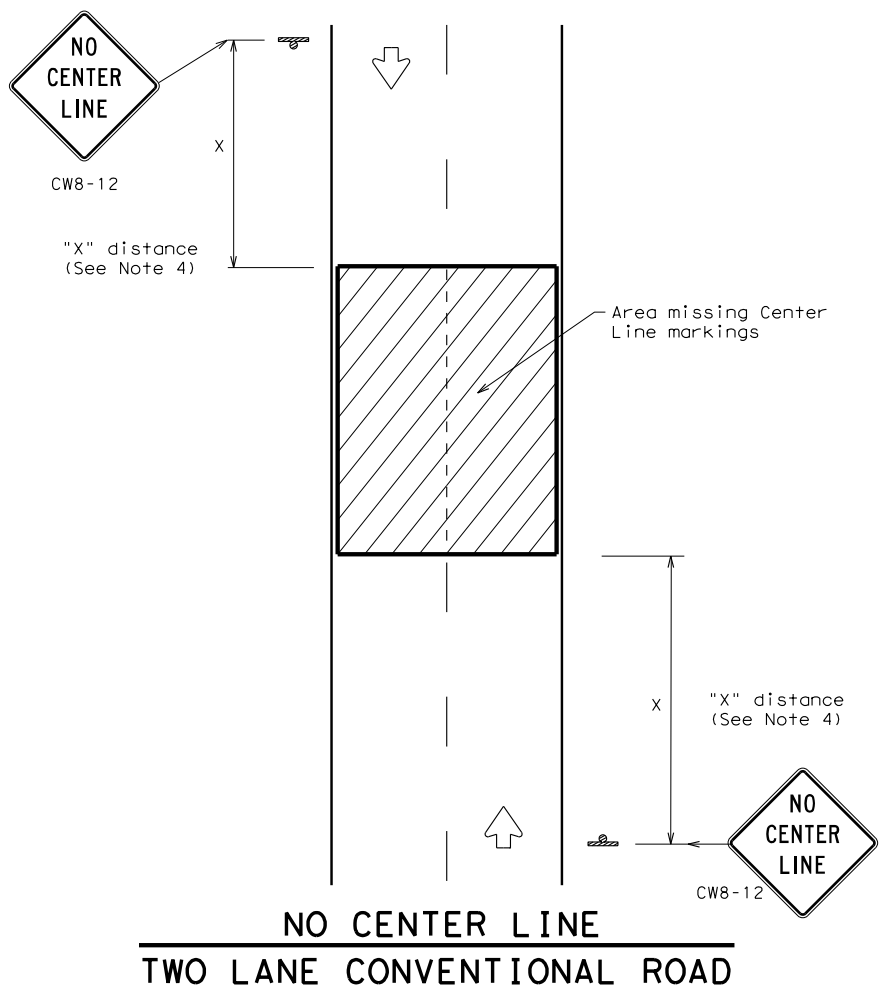
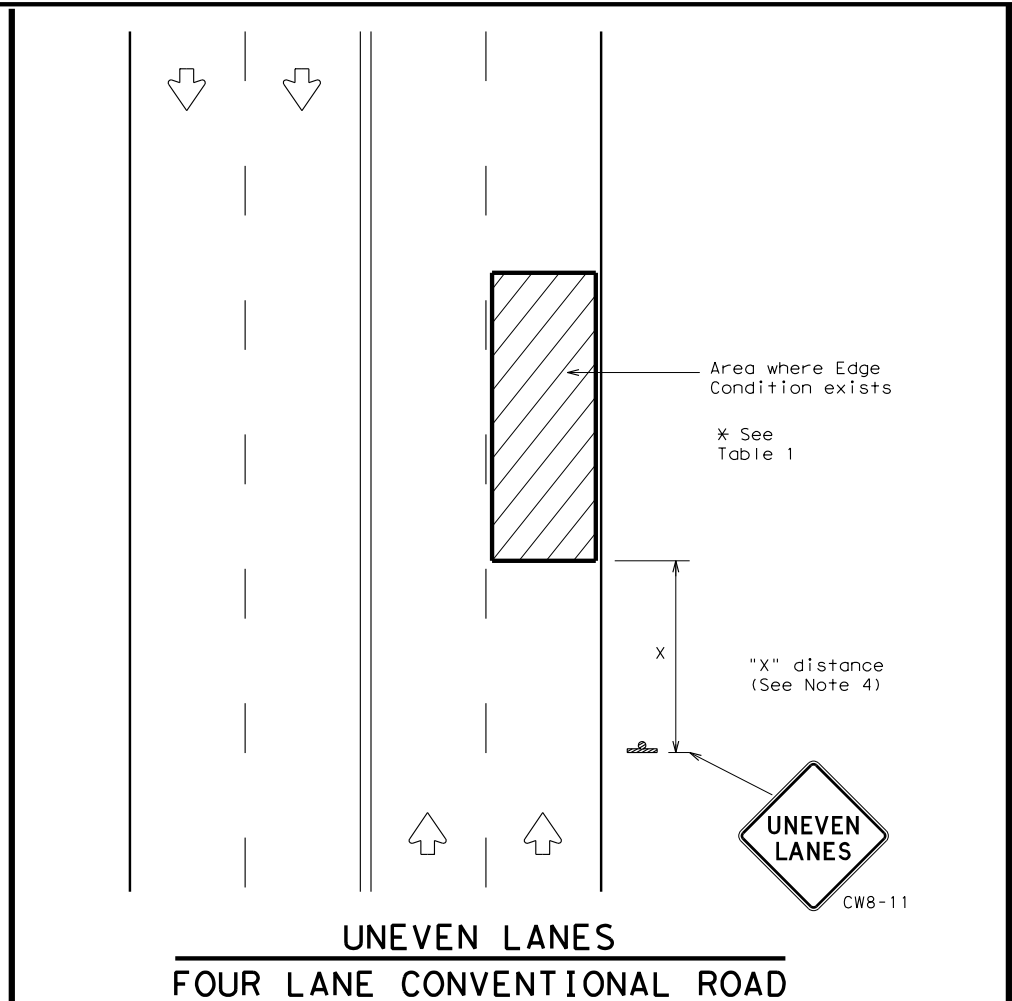
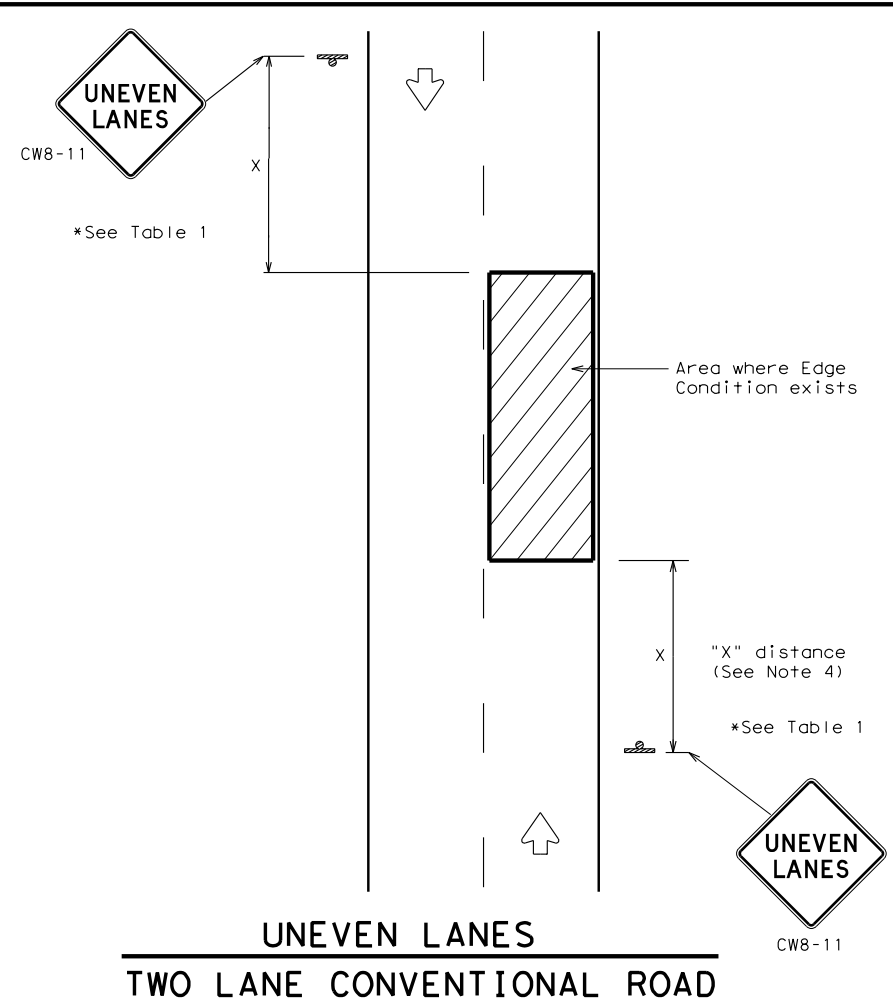
**GENERAL NOTES**

1. This sheet is intended to provide details for temporary work zone road closures. For permanent road closure details see the D&OM standards.
2. Barricades used shall meet the requirements shown on Barricade and Construction Standard BC(10) and listed on the Compliant Work Zone Traffic Control Devices List (CWZTCD).
3. Stockpiled materials shall not be placed on the traffic side of barricades.
4. Barricades at the road closure should extend from pavement edge to pavement edge.
5. Detour signing shown is intended to illustrate the type of signing that is appropriate for numbered routes or un-numbered routes as labeled. It does not indicate the full extent of detour signing required. Detour routes should be signed as shown elsewhere in the plans.
6. If the road is open for a significant distance beyond the intersection or there are significant origin/destination points beyond the intersection, the signs and barricades at this location should be located at the edge of the traveled way.
7. The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
8. For urban areas where there is a shorter distance between the intersection and the actual closure location, the ROAD CLOSED XX MILES AHEAD (R11-3a) sign may be replaced with a ROAD CLOSED TO THRU TRAFFIC (R11-4) sign. If adequate space does not exist between the intersection and the closure a single ROAD CLOSED AHEAD (CW20-3D) sign spaced as per the table above may replace the ROAD CLOSED 1000 FT (CW20-3B) and ROAD CLOSED 500 FT (CW20-3C) signs.
9. Signs and barricades shown shall be subsidiary to Item 502. Locations where these details will be required shall be as shown elsewhere in the plans.

		Traffic Operations Division Standard	
<b>WORK ZONE ROAD CLOSURE DETAILS</b>			
<b>WZ (RCD) - 13</b>			
FILE: wzrcd-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT August 1995	CONT	SECT	JOB
REVISIONS	1064	01	032
1-97 4-98 7-13	DIST	COUNTY	SHEET NO.
2-98 3-03	PHR	HIDALGO	138

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DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B <sub>FL</sub> OR TYPE C <sub>FL</sub> SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

**GENERAL NOTES**

1. If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
2. UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
3. NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
7. Short term markings shall not be used to simulate edge lines.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

Edge Condition	Edge Height (D)	* Warning Devices
①	Less than or equal to: 1/4" (maximum-planing) 1/2" (typical-overlay)	Sign: CW8-11
②	Less than or equal to 3"	Sign: CW8-11
③	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

**TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.**

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"

**Texas Department of Transportation** *Traffic Operations Division Standard*

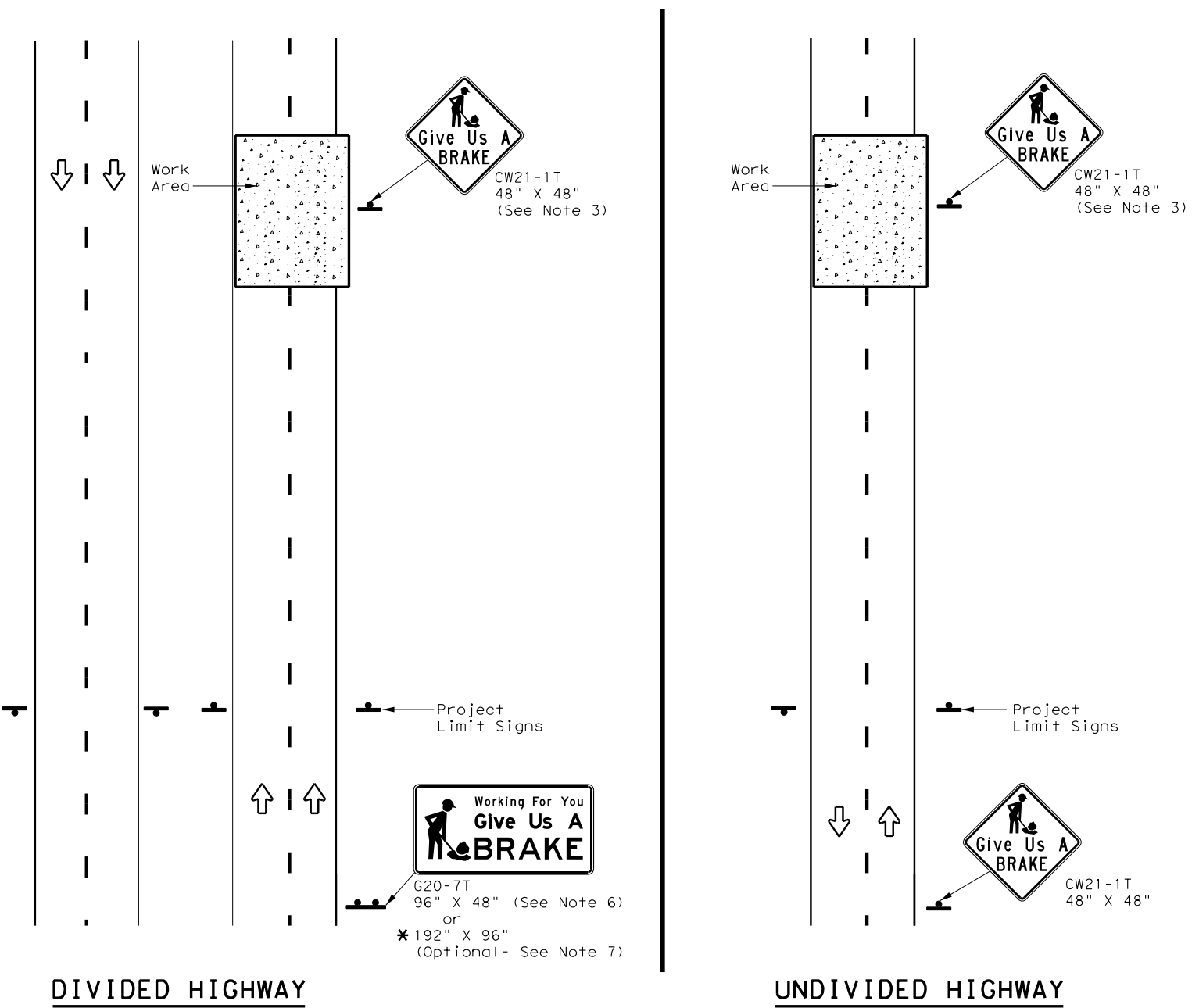
## SIGNING FOR UNEVEN LANES

### WZ (UL) - 13

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© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
8-95 2-98 7-13	DIST	COUNTY	SHEET NO.	
1-97 3-03	PHR	HIDALGO	139	

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SIGNS ARE SHOWN FOR ONE DIRECTION OF TRAVEL

\* When the optional larger WORKING FOR YOU GIVE US A BRAKE (G20-7T) 192" x 96" sign is required, the locations shall be noted elsewhere in the plans.

SUMMARY OF LARGE SIGNS

BACKGROUND COLOR	SIGN DESIGNATION	SIGN	SIGN DIMENSIONS	REFLECTIVE SHEETING	SQ FT	GALVANIZED STRUCTURAL STEEL		DRILLED SHAFT
						Size	(LF)	
							① ②	24" DIA. (LF)
Orange	G20-7T		96" X 48"	Type B <sub>FL</sub> or C <sub>FL</sub>	32	▲	▲ ▲	▲
Orange	G20-7T		192" X 96"	Type B <sub>FL</sub> or C <sub>FL</sub>	128	W8x18	16 17	12

▲ See Note 6 Below

**LEGEND**

	Sign
	Large Sign
	Traffic Flow

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B <sub>FL</sub> OR TYPE C <sub>FL</sub>
BLACK	LEGEND & BORDERS	NON-REFLECTIVE ACRYLIC FILM

GENERAL NOTES

- See BC and SMD sheets for additional sign support details.
- Sign locations shall be approved by the Engineer.
- For projects more than two miles in length, Give Us a BRAKE signs should be repeated halfway through the project. The Give Us a Brake (CW21-1T) may be used for this purpose.
- Work zone speed limits are sometimes used in conjunction with GIVE US A BRAKE signing. See BC(3) for location and spacing of construction speed zone signing when required.
- Give Us a Brake (CW21-1T) signs and supports shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling."
- The 96" X 48" Working For You Give Us A BRAKE (G20-7T) may use a 1/2" or 5/8" plywood substrate or 0.125" aluminum sheeting substrate and may be supported by two 4" x 6" wood posts with drilled holes for breakaway as per BC(5) and will be subsidiary to Item 502.
- The Working For You Give Us A BRAKE (G20-7T) 192" X 96" sign shall be paid for under the following specification items:  
 Item 636 - Aluminum Signs  
 Item 647 - Large Roadside Sign Supports and Assemblies.  
 Item 416 - Drilled Shaft Foundations
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.



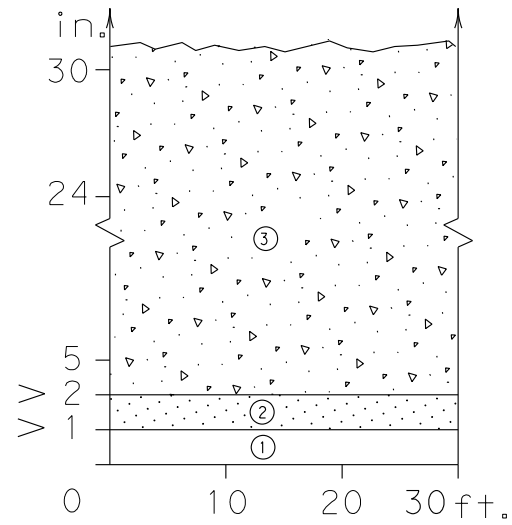
**WORK ZONE  
 "GIVE US A BRAKE"  
 SIGNS**

**WZ (BRK) - 13**

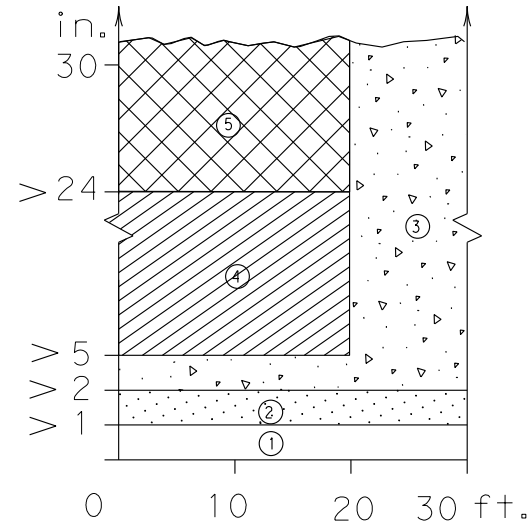
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REVISIONS	1064	01	032	FM 676
6-96 5-98 7-13	DIST	COUNTY		SHEET NO.
8-96 3-03	PHR	HIDALGO		140

# DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

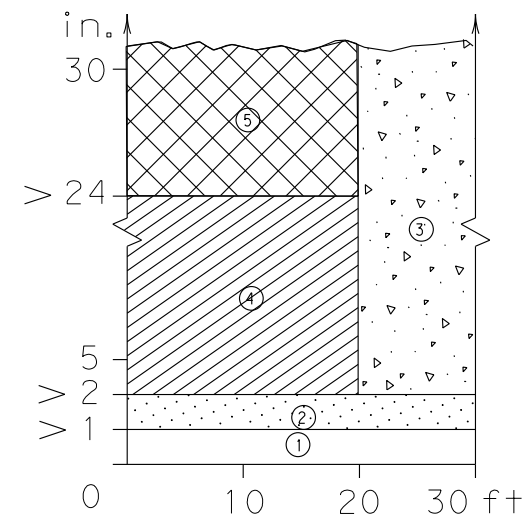
Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet



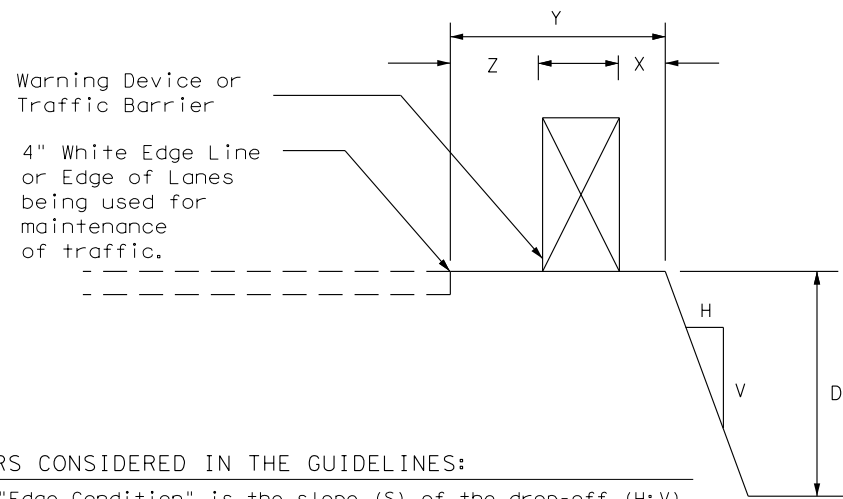
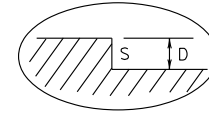
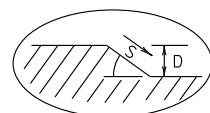
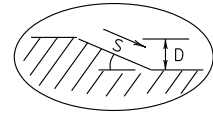
Edge Condition I  
S = (3:1) (or flatter)



Edge Condition II  
S = ((2.99):1) to (1:1)



Edge Condition III  
S is steeper than (1:1)



Zone	Treatment Types Guidelines:
①	No treatment
②	CW 8-11 "Uneven Lanes" signs.
③	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
④	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the profered Edge Condition I.
⑤	Check indications (Figure-1) for possitive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

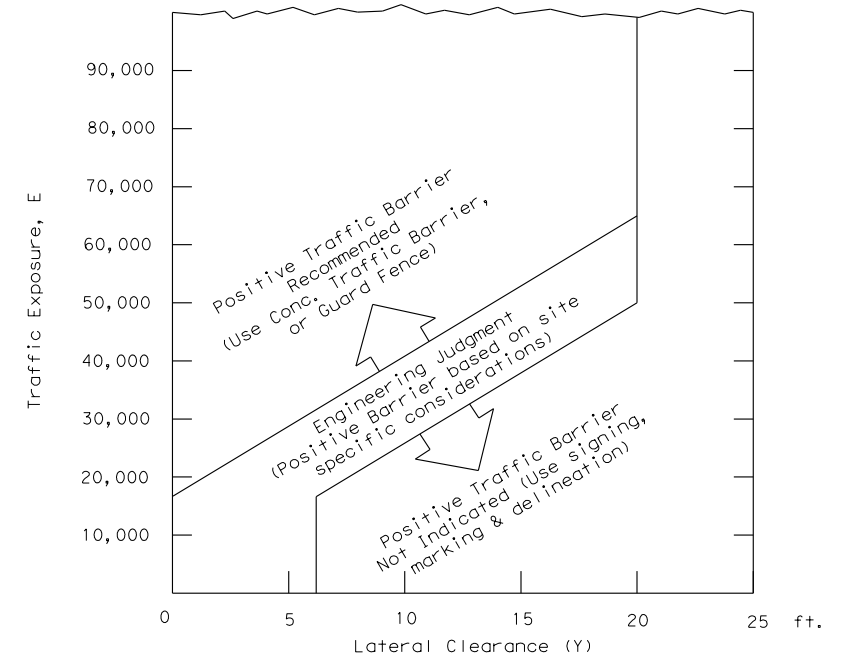
### FACTORS CONSIDERED IN THE GUIDELINES:

- The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height" is the depth of the drop-off "D".
- Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.
- In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.
- The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.
- If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

### Edge Condition Notes:

- Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.
- Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exceeds 24 inches, the possibility for rollover is greater in most vehicles.
- Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.
- Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

## FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 ( [Cross-hatch] )



- $E = ADT \times T$   
Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.
- Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.
- An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.

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Engineer's Seal

Thomas T. Le

Date 11/17/2022

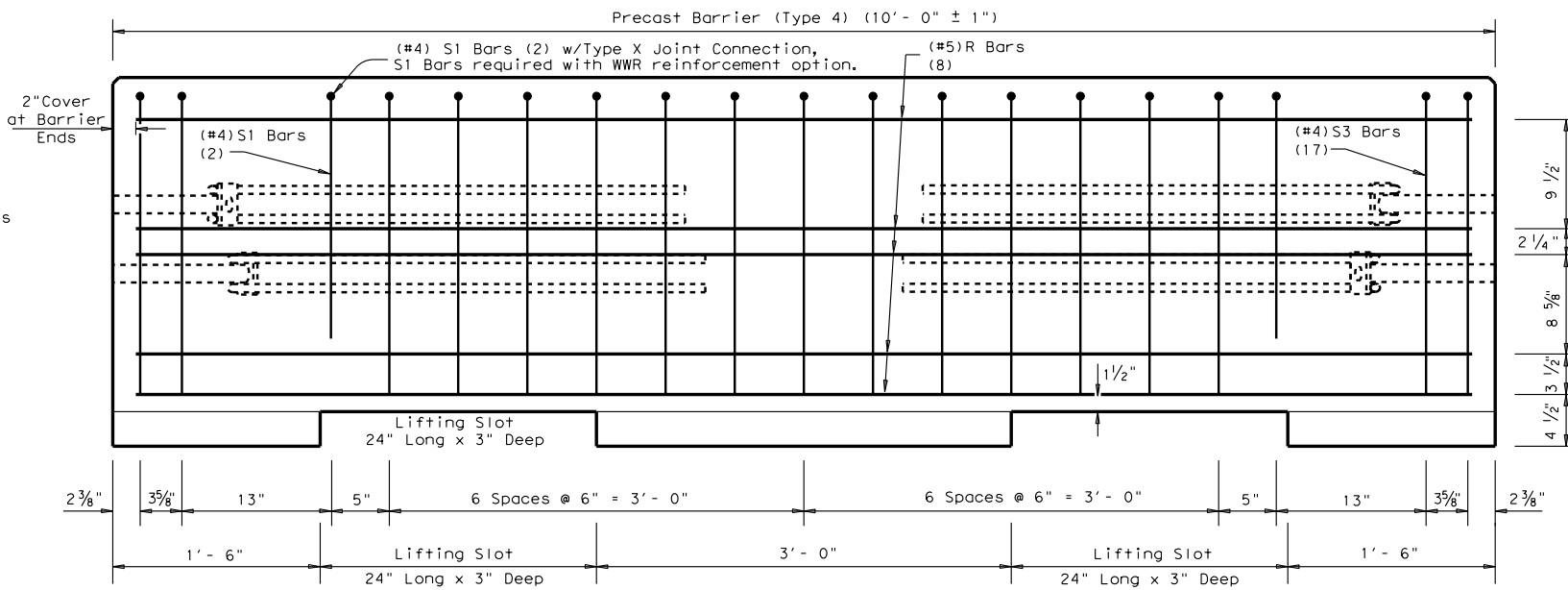
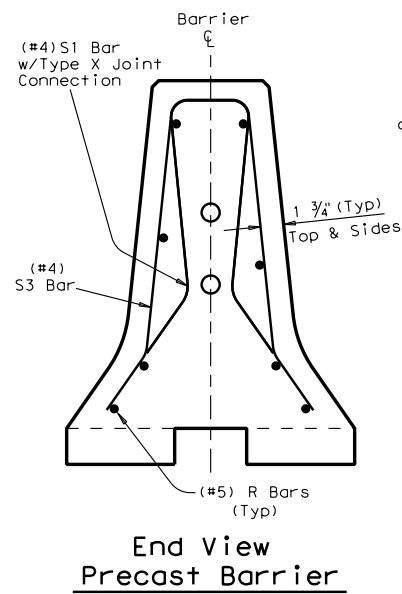
**Texas Department of Transportation**

Traffic Safety Division Standard

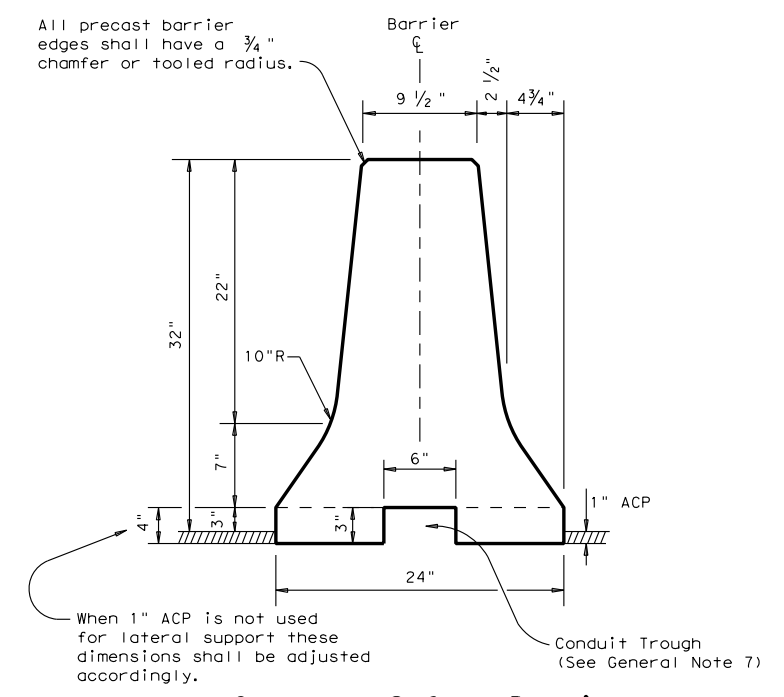
## TREATMENT FOR VARIOUS EDGE CONDITIONS

FILE: edgecon.dgn	DN:	CK:	DW:	CK:
© TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
	1064	01	032	FM 676
03-01 08-01 9-21	REVISIONS		DIST	COUNTY
	PHR		Hidalgo	SHEET NO. 141

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Reinforcement for (10 ft) Precast Concrete Safety Barrier (Type 4)

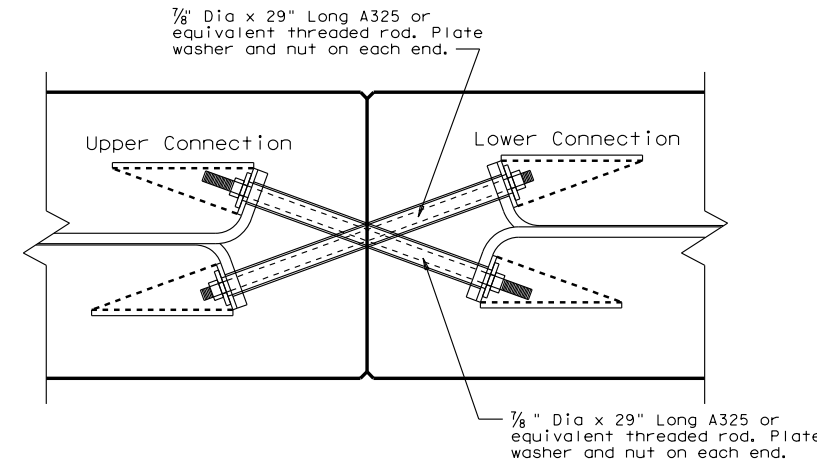
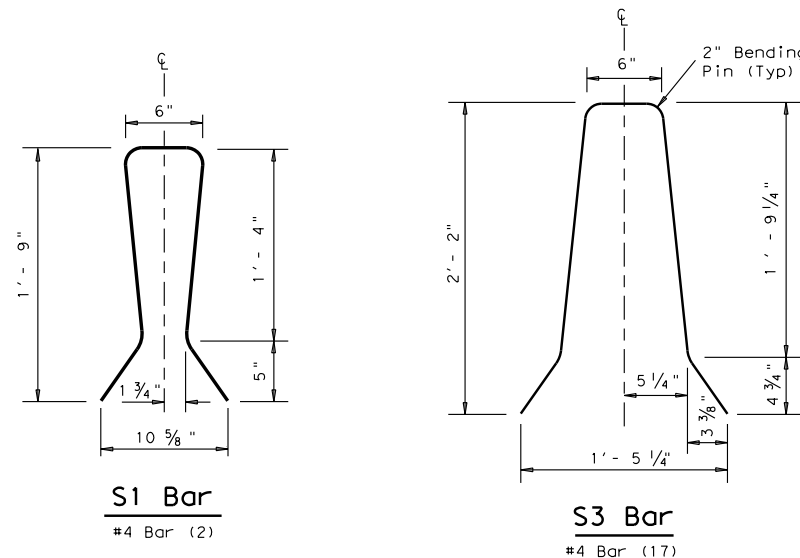


Concrete Safety Barrier

Schedule of reinforcement for each 10 foot precast section.

BAR	SIZE	QUANTITY
S1	#4	2
R3	#4	17
R	#5	8

Note:  
Two S1 Bars are required with the use of WWR reinforcement option. The S1 Bars may need a slight modification to fit within the WWR cage, as directed by the Engineer.



Top view showing Joint Connection Type X

Joint Type X Connection Required with (10 foot) barrier length, See CSB(1), sheet 1 of 2 for Joint Type X details.

Approximate Per L.F. Quantities

	Precast
Concrete	CY. 0.108
Rebar	LB. 14.8

For Contractor's information only  
Weight of one Precast 10 ft. unit = Approx. 2 Tons

General Notes

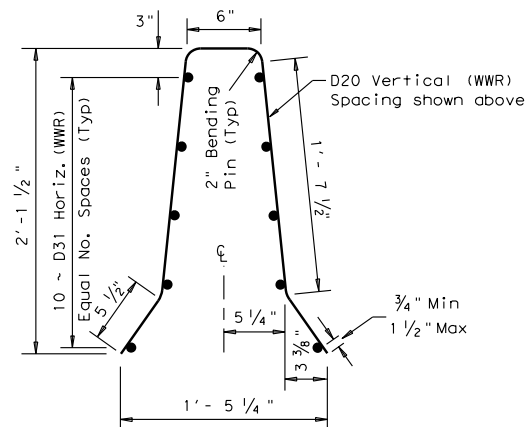
- The 10 foot barrier is intended for maintenance applications of short duration periods. The 10 foot barrier is limited to use in temporary work zone conditions not to exceed 2 calendar months, unless approved in writing by the TxDOT engineer, noting the duration and location of the barrier placement in the written approval.
- 30 ft. (Type 1) barrier and 10 ft. (Type 4) barrier sections shall not be mixed in a single run of barrier.
- Barrier lengths other than 10 ft. for (Type 4) barrier are not allowed.
- Concrete shall be Class H, with a minimum compressive strength of 3,600 psi.
- Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
- Only the Type X joint connection system is to be used with Type 4 barrier and is considered subsidiary. See CSB(1), Sheet 1 of 2, for (Type X) connection details.
- Conduit trough may be omitted, as shown elsewhere or as directed by the Engineer.

**NOTE:**  
USAGE OF THE 10 FT (TYPE 4) CSB BARRIER REQUIRES A MINIMUM OF 100 LINEAR FEET.  
  
SHORTER LENGTHS THAN THESE SHOULD BE DISCUSSED WITH THE DESIGN DIVISION.

Welded Wire Reinforcement (WWR) Option for Bars R and S3

(WWR) General Notes

- Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
- Welded wire cage may be cut or bent to accommodate the Type X joint connection and drainage slots, as directed by the Engineer.
- All reinforcement shall comply with Item 440, "Reinforcing Steel."
- Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".



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Texas Department of Transportation  
Design Division Standard

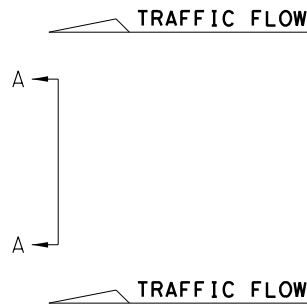
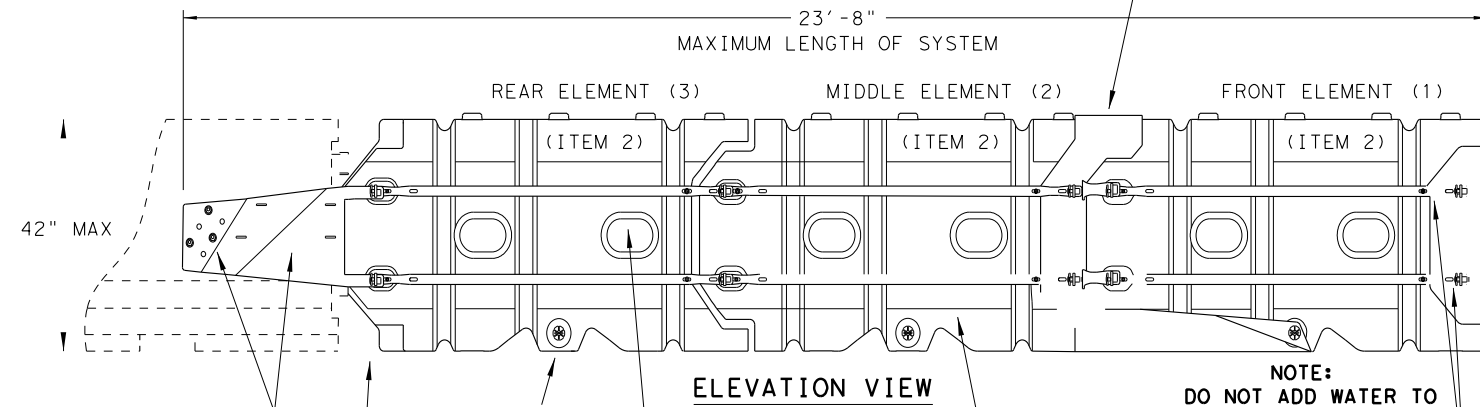
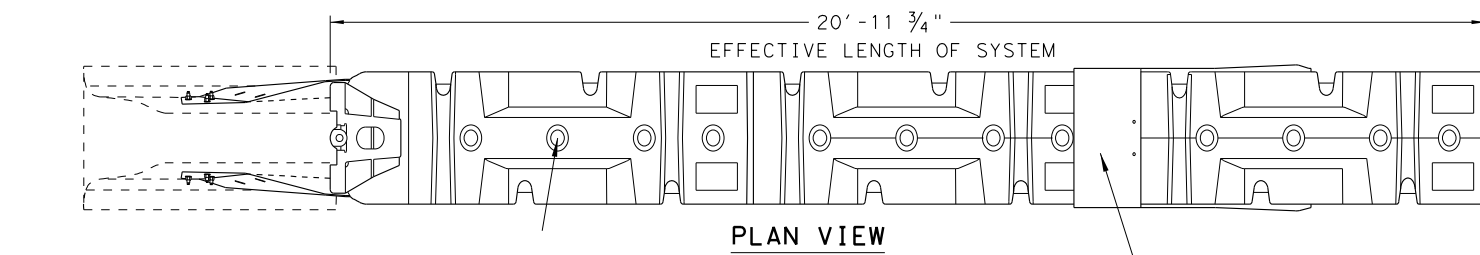
**CONCRETE SAFETY BARRIER (F-SHAPE) PRECAST BARRIER (TYPE 4) (10 FOOT, BARRIER SEGMENT) CSB(8) - 10**

FILE: csb810.dgn	DN: TxDOT	CK: AM	DW: BD	CK:
© TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	142	

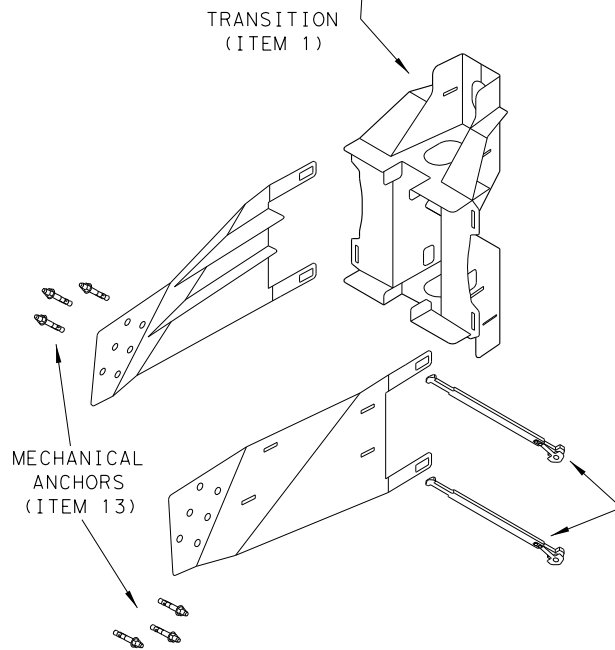
DISCLAIMER: THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

DATE:  
FILE:

SYSTEM SHOWN - ABSORB-M TL-3



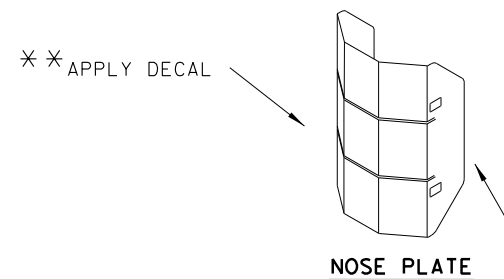
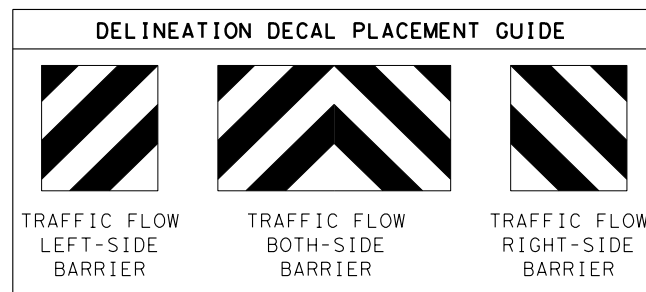
NOTE:  
DO NOT ADD WATER TO  
FRONT ELEMENT  
TL-2 OR TL-3 UNITS



TEST LEVEL	NUMBER OF ELEMENTS	EFFECTIVE LENGTH	MAXIMUM LENGTH
TL-2	2	14' - 7 3/4"	17' - 4"
TL-3	3	20' - 11 3/4"	23' - 8"

BILL OF MATERIALS (BOM) ABSORB-M TL-3 & TL-2 SYSTEMS			QTY	QTY
ITEM #	PART NUMBER	PART DESCRIPTION	TL-2 SYSTEM	TL-3 SYSTEM
1	BSI-1809036-00	TRANSITION-(GALV)	1	1
2	BSI-1808002-00	PRE-ASSEMBLED ABSORBING (ELEMENTS)	2	3
3	BSI-4004598	FILL CAPS	8	12
4	BSI-4004599	DRAIN PLUGS	2	3
5	BSI-1809053-00	TENSION STRAP-(GALV)	8	12
6	BSI-2001998	C-SCR FH 3/8-16 X 1 1/2 GR5 PLT	8	12
7	BSI-2001999	C-SCR FH 3/8-16 X 1 GR5 PLT	8	12
8	BSI-1809035-00	MIDNOSE-(GALV)	1	1
9	BSI-1808014-00	NOSE PLATE	1	1
10	BSI-1809037-00	TRANSITION STRAP (LEFT-HAND)-(GALV)	1	1
11	BSI-1809038-00	TRANSITION STRAP (RIGHT-HAND)-(GALV)	1	1
12	BSI-1808005-00	PIN ASSEMBLY	8	10
13	BSI-2002001	ANC MECH 5/8-11X5 (GALV)	6	6
14	ABSORB-M	INSTALLATION AND INSTRUCTIONS MANUAL	1	1

\* COMPONENTS PRE-ASSEMBLED WITH ELEMENT ASSEMBLY



\*\* NOTE: (PROVIDED BY OTHERS)  
ENGINEER OR CONTRACTOR SHALL COORDINATE WITH  
THE MANUFACTURER FOR THE CORRECT DECAL PER  
TRAFFIC FLOW, LEFT, RIGHT OR BOTH-SIDES.

NOTE:  
APPLY A HIGH REFLECTIVE DECAL TO THE NOSE PLATE.  
DELINEATION DECAL ORIENTATION IS SHOWN ON THE CONSTRUCTION  
PLAN SET AND SHALL BE IN ACCORDANCE WITH THE TEXAS MUTCD  
FOR (TRAFFIC CONTROL DEVICES). DECALS ARE AVAILABLE FOR  
TRAFFIC FLOW ON THE LEFT-SIDE, BOTH -SIDES AND RIGHT-SIDE.

NOTE:  
THIS STANDARD IS A BASIC REPRESENTATION OF  
THE ABSORB-M, IT IS NOT INTENDED TO REPLACE  
THE INSTALLATION INSTRUCTIONS MANUAL.

**GENERAL NOTES**

- FOR SPECIFIC INFORMATION REGARDING THE INSTALLATION AND TECHNICAL GUIDANCE, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800. 180 RIVER ROAD, RIO VISTA, CA 94571
- THE ABSORB-M SYSTEM IS ONLY APPROVED FOR USE IN (TEMPORARY WORK ZONE) LOCATIONS.
- THE ABSORB-M IS A WATER FILLED NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO A FOUNDATION AND CAN BE INSTALLED ON TOP OF CONCRETE, ASPHALT, OR ANY SURFACE CAPABLE OF BEARING THE WEIGHT OF THE SYSTEM.
- MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
- THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- THE ABSORB-M SHOULD BE LOCATED APPROXIMATELY PARALLEL WITH THE BARRIER.
- THE USE OF THE ABSORB-M IS RESTRICTED TO A BARRIER HEIGHT OF UP TO 42 INCHES.
- DO NOT ADD WATER TO FRONT ELEMENT (TL-2 OR TL-3 UNIT).

**SACRIFICIAL**

		<b>Design Division Standard</b>	
<b>LINDSAY TRANSPORTATION SOLUTIONS CRASH CUSHION (MASH TL-3 &amp; TL-2) TEMPORARY - WORK ZONE ABSORB (M) - 19</b>			
FILE: absorbmi19	DN: TxDOT	CK: KM	DW: VP
© TXDOT: JULY 2019	CONT SECT	JOB	HIGHWAY
REVISIONS	1064 01	032	FM 676
DIST	COUNTY	SHEET NO.	
PHR	HIDALGO	143	





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HORIZONTAL ALIGNMENT  
FOR INSPIRATION BLVD

Beginning chain BLINSP description

Point BLINSP01 N 16,631,103.8979 E 1,037,449.1319 Sta 100+00.00  
Course from BLINSP01 to BLINSP02 N 8° 57' 21.61" E Dist 951.6443  
Point BLINSP02 N 16,632,043.9399 E 1,037,597.2801 Sta 109+51.64  
Ending chain BLINSP description

HORIZONTAL ALIGNMENT  
FOR MOOREFIELD RD

Beginning chain BLMOORE description

Point BLMOORE01 N 16,631,420.9807 E 1,035,370.5753 Sta 100+00.00  
Course from BLMOORE01 to BLMOORE02 N 9° 04' 42.85" E Dist 967.6683  
Point BLMOORE02 N 16,632,376.5269 E 1,035,523.2624 Sta 109+67.67  
Ending chain BLMOORE description

HORIZONTAL ALIGNMENT  
FOR LOS EBANOS BLVD

Beginning chain BLLOSEBOS description

Point BLLOSEBOS01 N 16,631,181.8807 E 1,040,106.0310 Sta 100+00.00  
Course from BLLOSEBOS01 to BLLOSEBOS02 N 8° 29' 25.18" E Dist 540.7087  
Point BLLOSEBOS02 N 16,631,716.6637 E 1,040,185.8625 Sta 105+40.71  
Ending chain BLLOSEBOS description

HORIZONTAL ALIGNMENT  
FOR SH 107

Beginning chain BLSH107 description

Point 6 N 16,630,227.7108 E 1,045,307.8162 Sta 100+00.00  
Course from 6 to 7 N 8° 29' 06.97" E Dist 340.0002  
Point 7 N 16,630,563.9893 E 1,045,357.9850 Sta 103+40.00  
Ending chain BLSH107 description

HORIZONTAL ALIGNMENT  
FOR SH364

Beginning chain BLSH364 description

Point 4 N 16,632,138.8855 E 1,032,814.1513 Sta 100+00.00  
Course from 4 to 5 N 8° 57' 21.61" E Dist 340.0000  
Point 5 N 16,632,474.7404 E 1,032,867.0811 Sta 103+40.00  
Ending chain BLSH364 description

HORIZONTAL ALIGNMENT  
FOR TROSPER BLVD

Beginning chain BLTROSPER description

Point BLTROSPER01 N 16,630,315.4008 E 1,042,644.8237 Sta 100+00.00  
Course from BLTROSPER01 to BLTROSPER02 N 8° 46' 49.98" E Dist 958.6070  
Point BLTROSPER02 N 16,631,262.7732 E 1,042,791.1554 Sta 109+58.61  
Ending chain BLTROSPER description

VERTICAL ALIGNMENT  
FOR INSPIRATION BLVD

Beginning profile PBLINSP description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	100+50.00	174.7509			
VPI	2	102+50.00	175.1509	0.2000		
VPC		103+85.00	174.4084	-0.5500	K = 41.6	
Low Point		104+07.89	174.3454			
VPI	3	104+10.00	174.2709	50.0000	25.0000	25.0000
VPT		104+35.00	174.4337	0.6512		
VPI	4	104+35.97	174.4400	0.6512		
VPI	5	104+73.02	175.3700	2.5101		
VPI	6	105+10.40	174.4400	-2.4880		
VPI	7	105+50.00	173.6876	-1.9000		
VPI	8	109+01.64	171.5955	-0.5950		

Ending profile PBLINSP description

VERTICAL ALIGNMENT  
FOR MOOREFIELD RD

Beginning profile PBLMOORE description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	100+50.00	171.9922			
VPC		102+90.00	170.8922	-0.4583	K = 44.7	SSD = 834.2
VPI	2	103+20.00	170.7548	60.0000	30.0000	30.0000
VPT		103+50.00	170.2148	-1.8000		
VPC		103+94.00	169.4228	-1.8000	K = 39.0	
VPI	3	104+19.00	168.9728	50.0000	25.0000	25.0000
VPT		104+44.00	168.8432	-0.5182		
VPI	4	104+44.62	168.8400	-0.5182		
VPI	5	104+82.37	169.7800	2.4901		
VPI	6	105+35.38	168.4505	-2.5082		
VPI	7	106+93.00	167.5679	-0.5600		
VPI	8	109+17.67	166.8000	-0.3418		

Ending profile PBLMOORE description

VERTICAL ALIGNMENT  
FOR LOS EBANOS BLVD

Beginning profile PBLLOSEBOS description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	100+00.00	169.7800			
VPI	2	100+36.70	168.8600	-2.5068		
VPI	3	101+00.00	168.9866	0.2000		
VPI	4	102+75.00	168.6366	-0.2000		
VPI	5	103+40.00	168.8404	0.3135		
VPI	6	104+07.27	168.7058	-0.2000		

Ending profile PBLLOSEBOS description

VERTICAL ALIGNMENT  
FOR TROSPER BLVD

Beginning profile PBLTROSPER description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	100+50.00	167.1422			
VPC		103+90.00	166.0542	-0.3200	K = 53.9	
Low Point		104+07.26	166.0266			
VPI	2	104+15.00	165.9742	50.0000	25.0000	25.0000
VPT		104+40.00	166.1259	0.6069		
VPI	3	104+42.32	166.1400	0.6069		
VPI	4	104+79.30	167.0600	2.4878		
VPI	5	105+16.29	166.1400	-2.4872		
VPI	6	106+80.15	164.4195	-1.0500		
VPI	7	109+08.61	163.4975	-0.4036		

Ending profile PBLTROSPER description



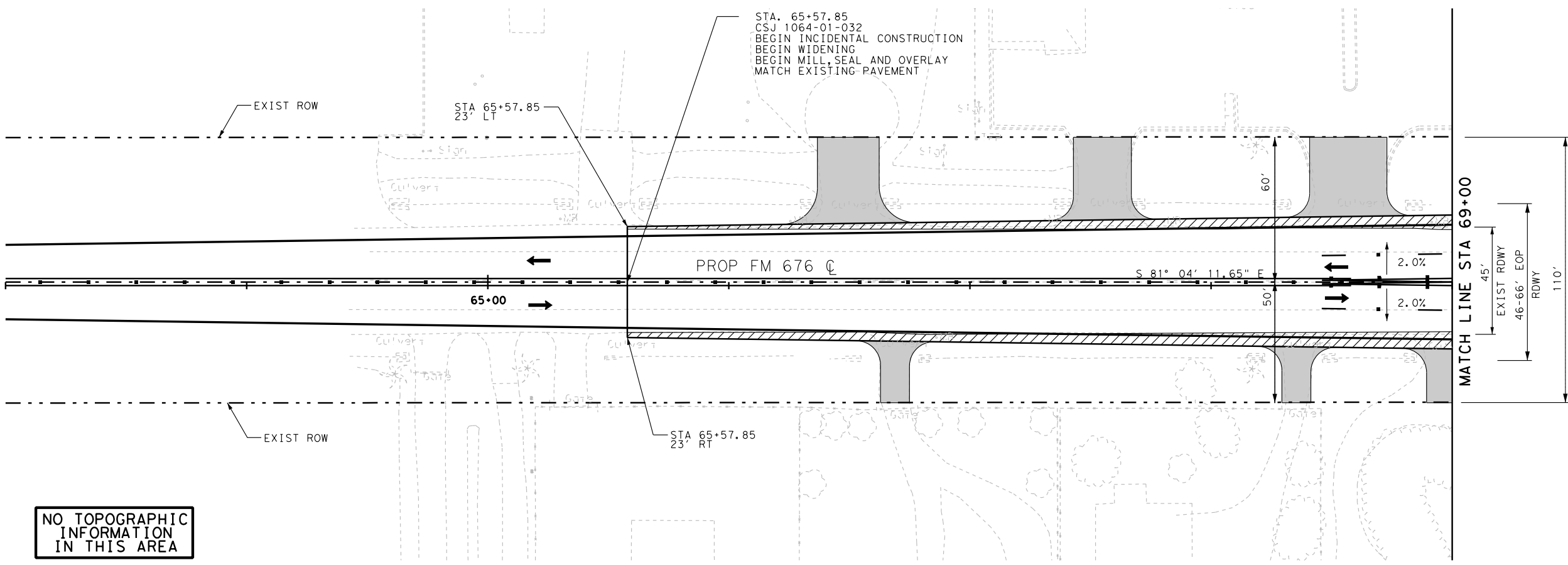
11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**GEOMETRIC DATA**

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STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



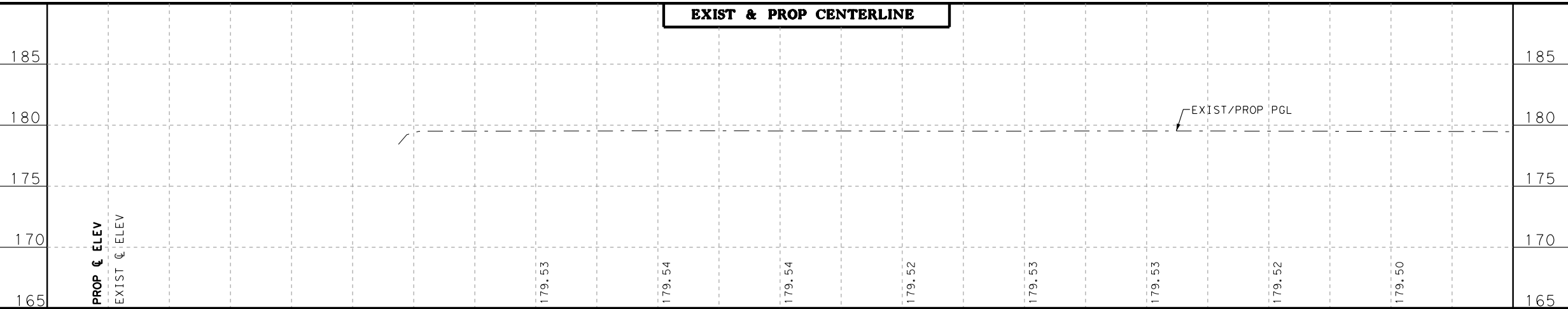
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- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

**LEGEND**

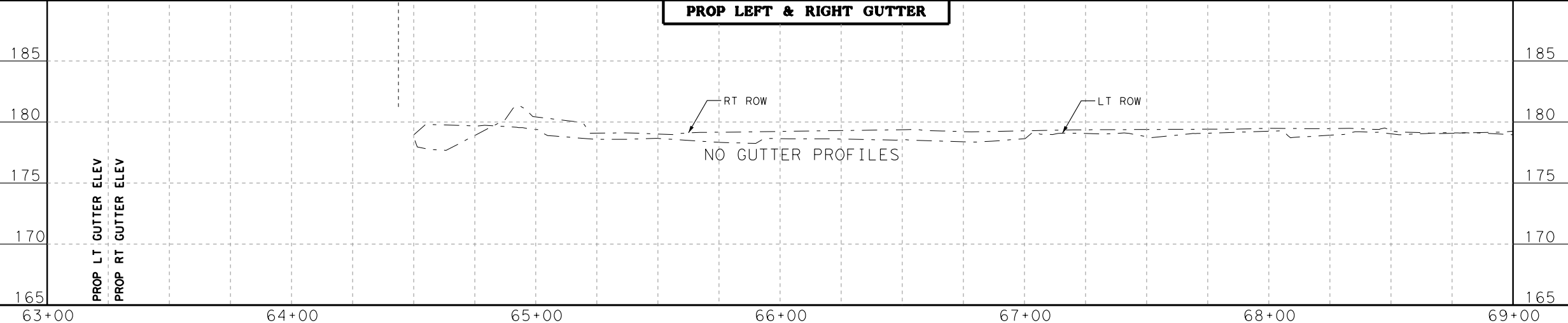
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- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS
- PROP WIDENING

NO TOPOGRAPHIC INFORMATION IN THIS AREA

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



Thomas T. Le

11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 65+57.85 TO STA 69+00.00**

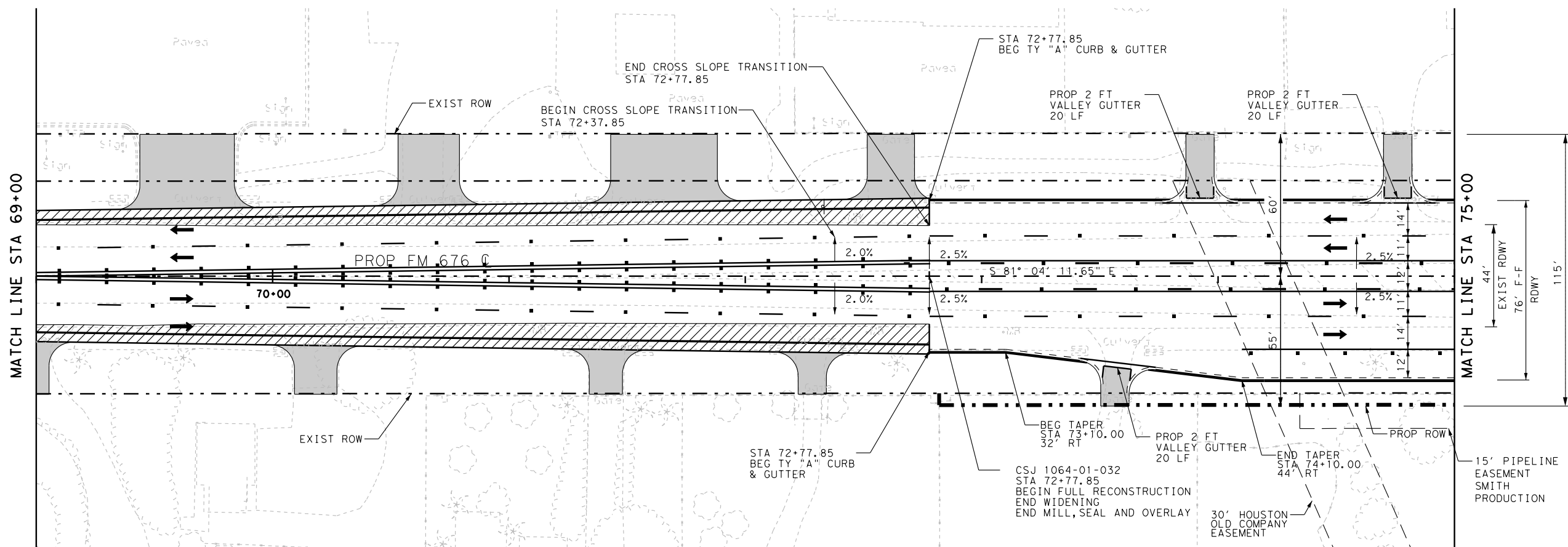
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SHEET 1 OF 33

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STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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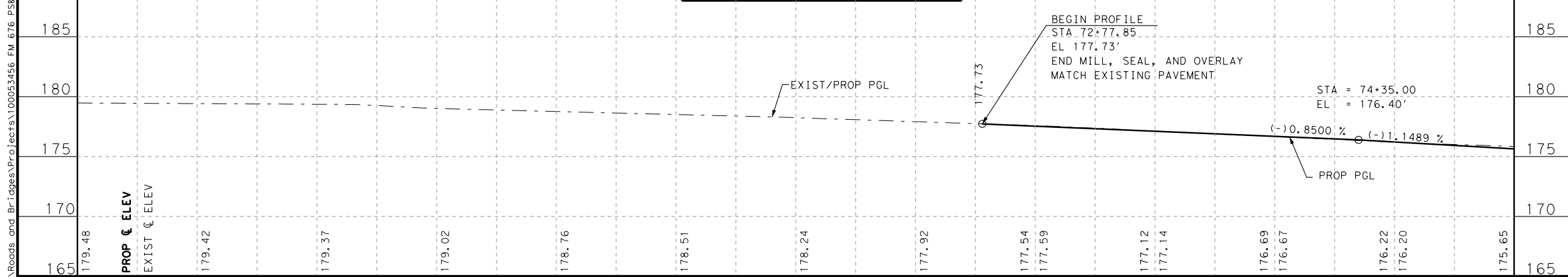


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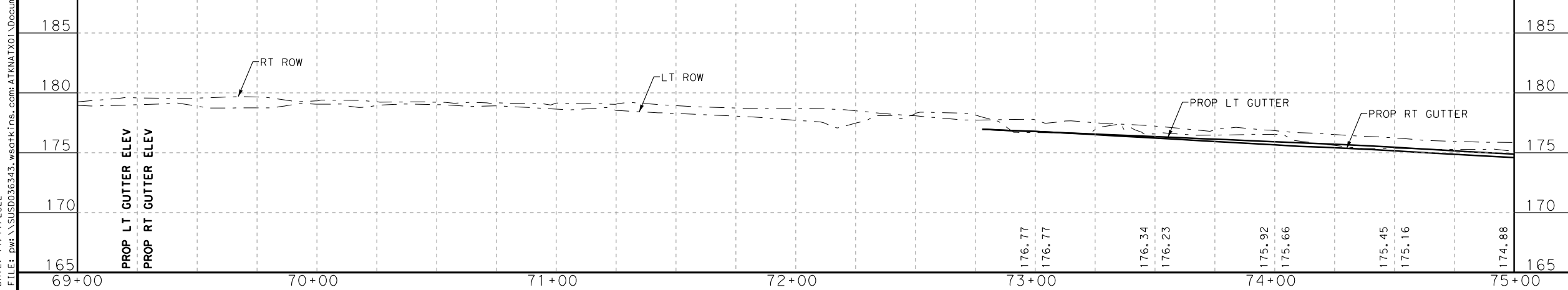
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- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS
- PROP WIDENING

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



11/17/2022

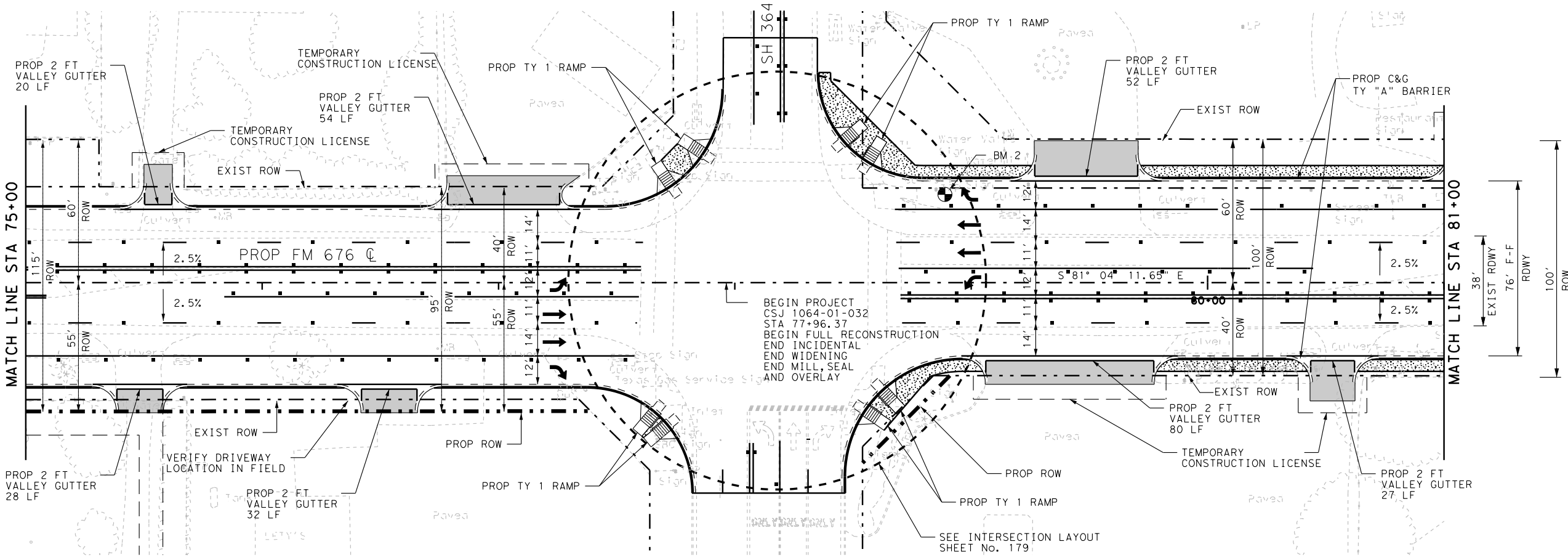


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TBPE REG. #F-474

**FM 676  
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SHEET 2 OF 33

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STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
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1064	01	032	FM 676	

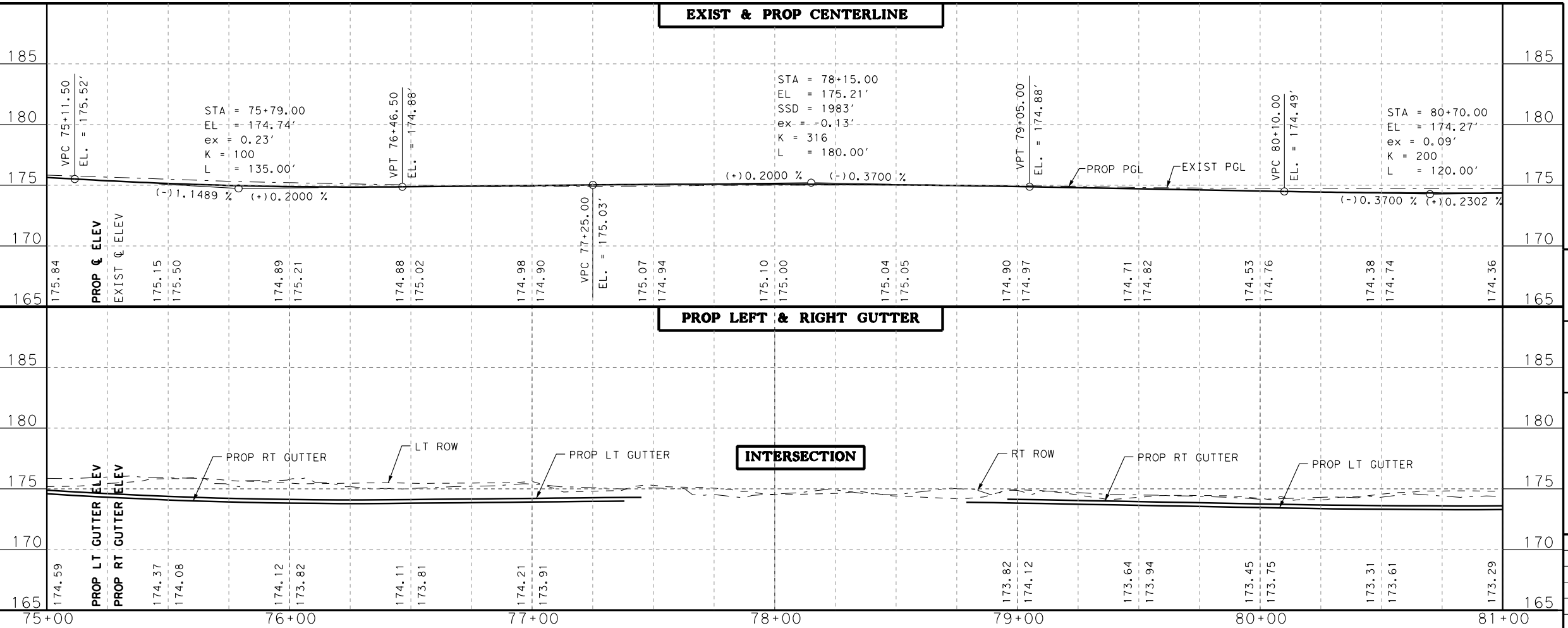
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- NOTES:**
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- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
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  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

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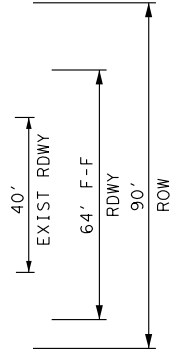
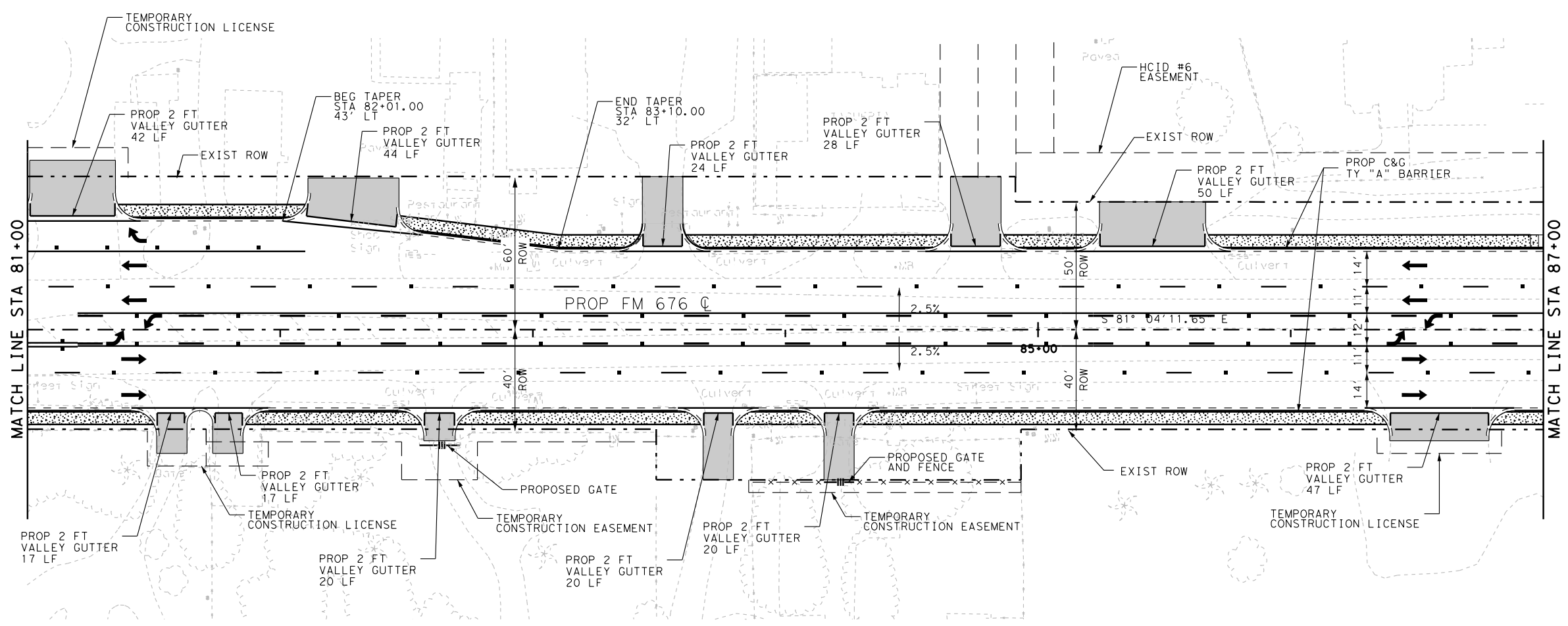
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**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
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 SHEET 3 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6		1064 01 032		148
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1064	01	032	FM 676	

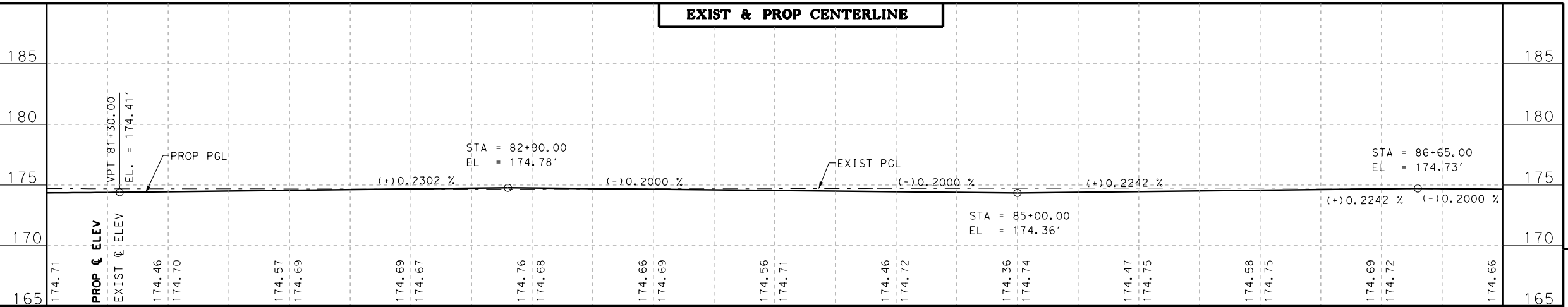


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  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

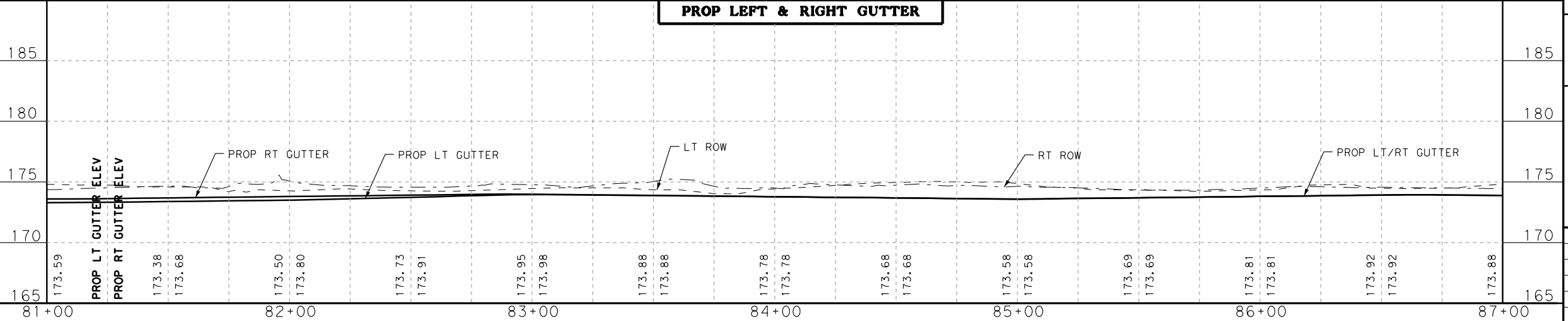
**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



11/17/2022

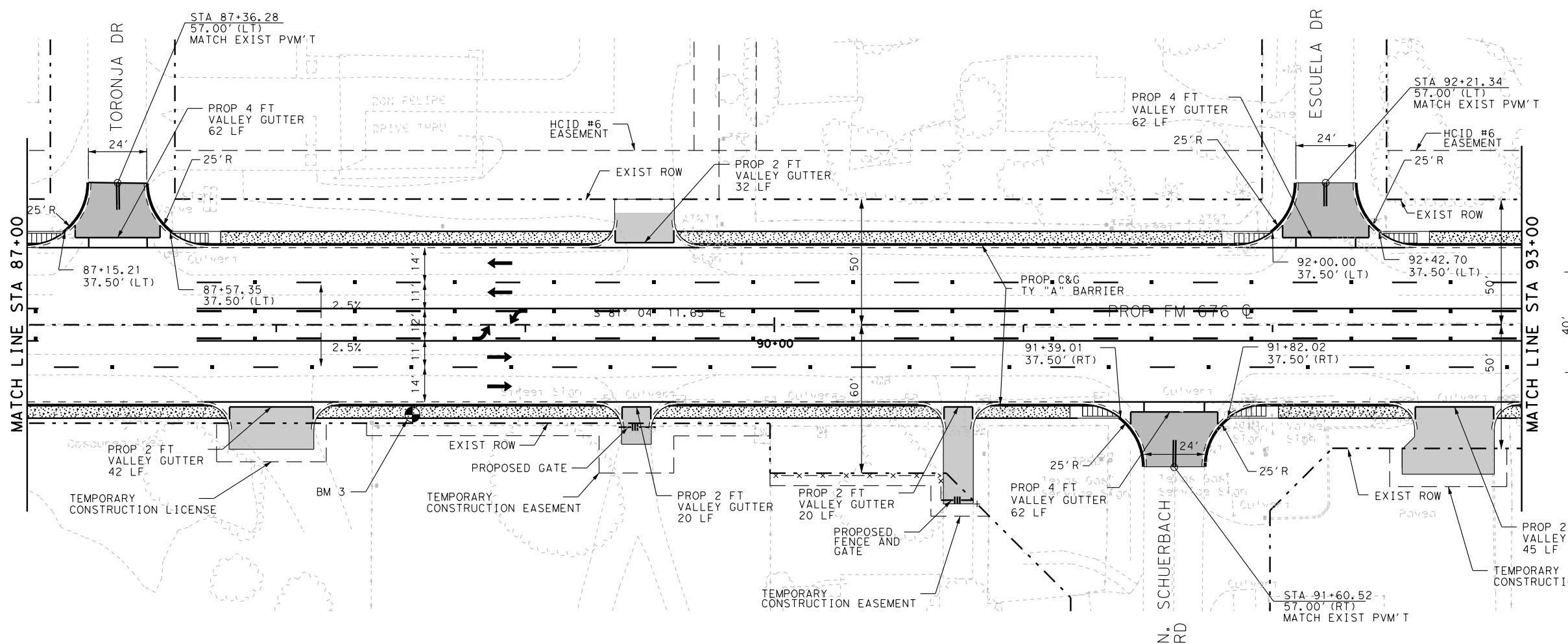


**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 81+00.00 TO STA 87+00.00**  
PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
0 10 20 30 40 50    0 2 4 6 8 10  
DISTANCE IN FEET    DISTANCE IN FEET  
SHEET 4 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			149
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

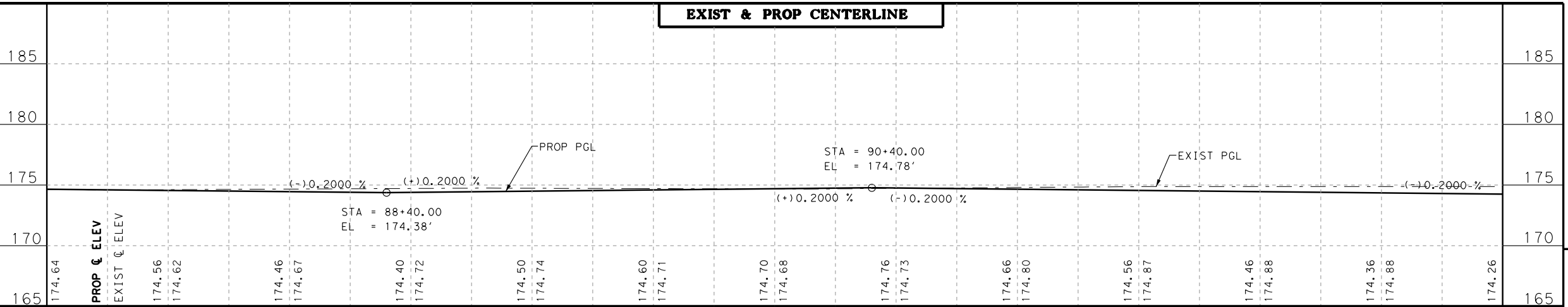
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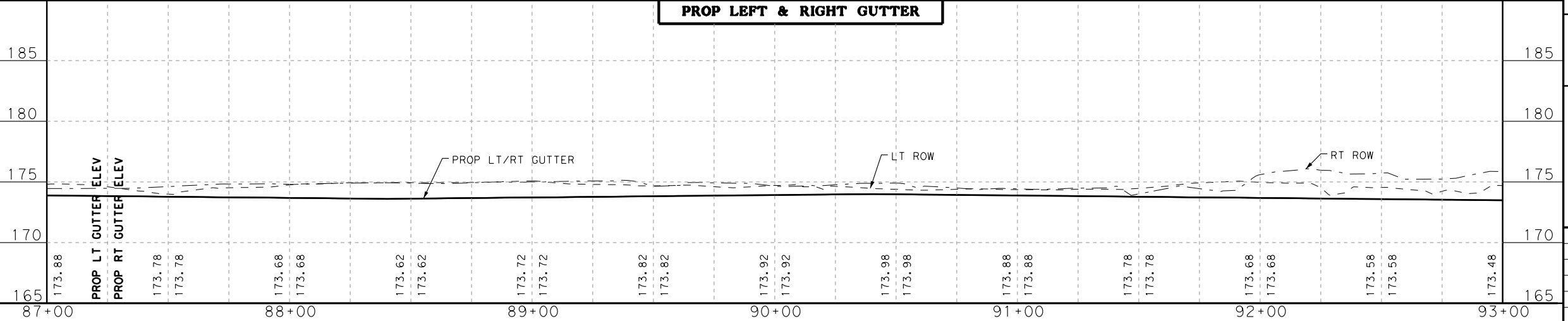
- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



11/17/2022



**ATKINS**  
TBPE REG. #F-474

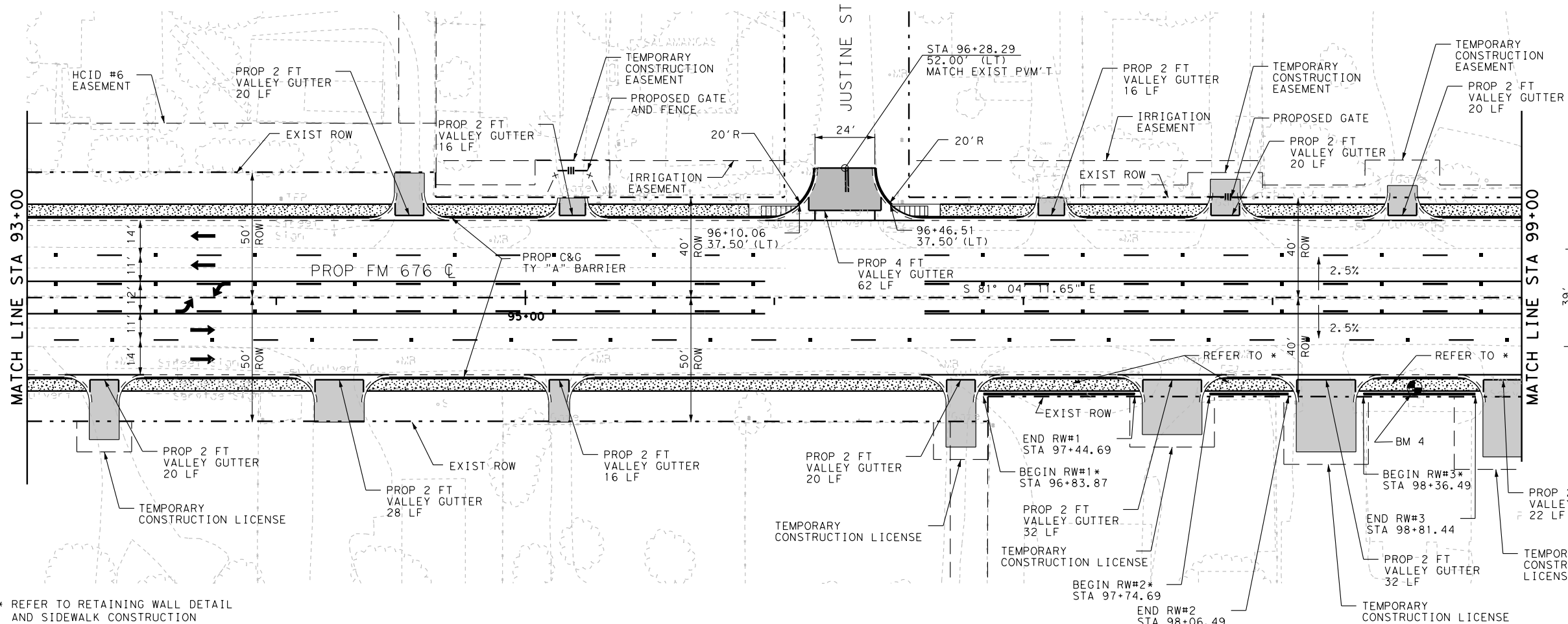
**FM 676**  
**PLAN & PROFILE**  
**STA 87+00.00 TO STA 93+00.00**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
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DISTANCE IN FEET      DISTANCE IN FEET

SHEET 5 OF 33

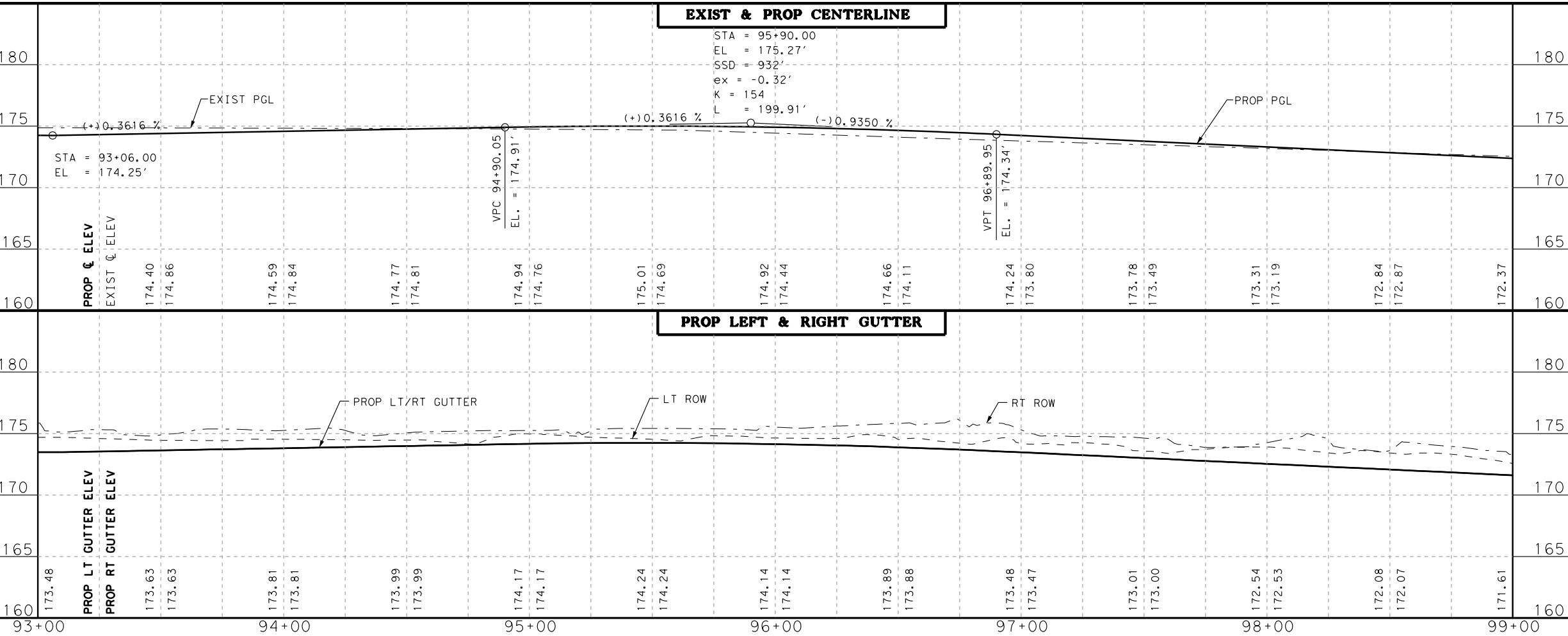
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			150
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: p:\SUS036343.sofatkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676W\PP05.dgn



- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



Thomas T. Le  
 11/17/2022

Texas Department of Transportation  
 ALL RIGHTS RESERVED

**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**PLAN & PROFILE**  
**STA 93+00.00 TO STA 99+00.00**

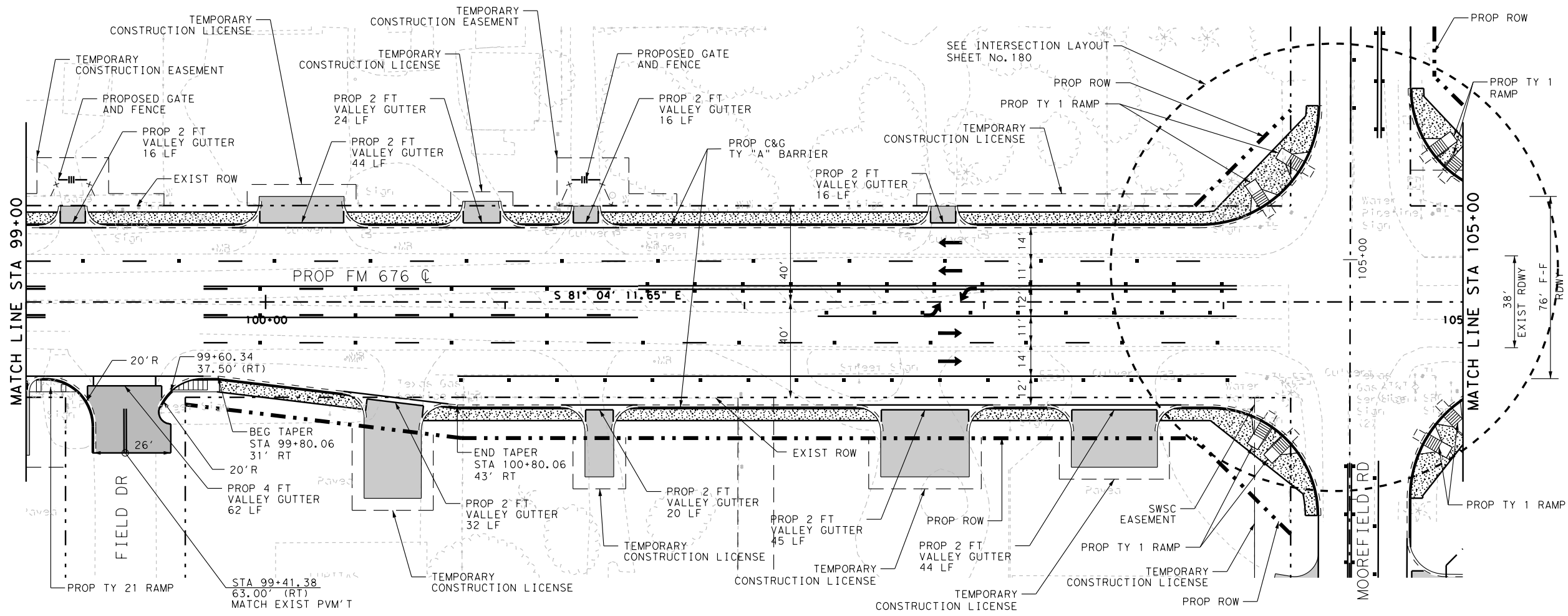
PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 6 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				151
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
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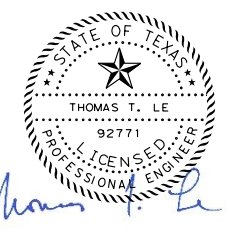
PLOT DRIVER: RD+11x17+PDF.d1t  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\odot$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



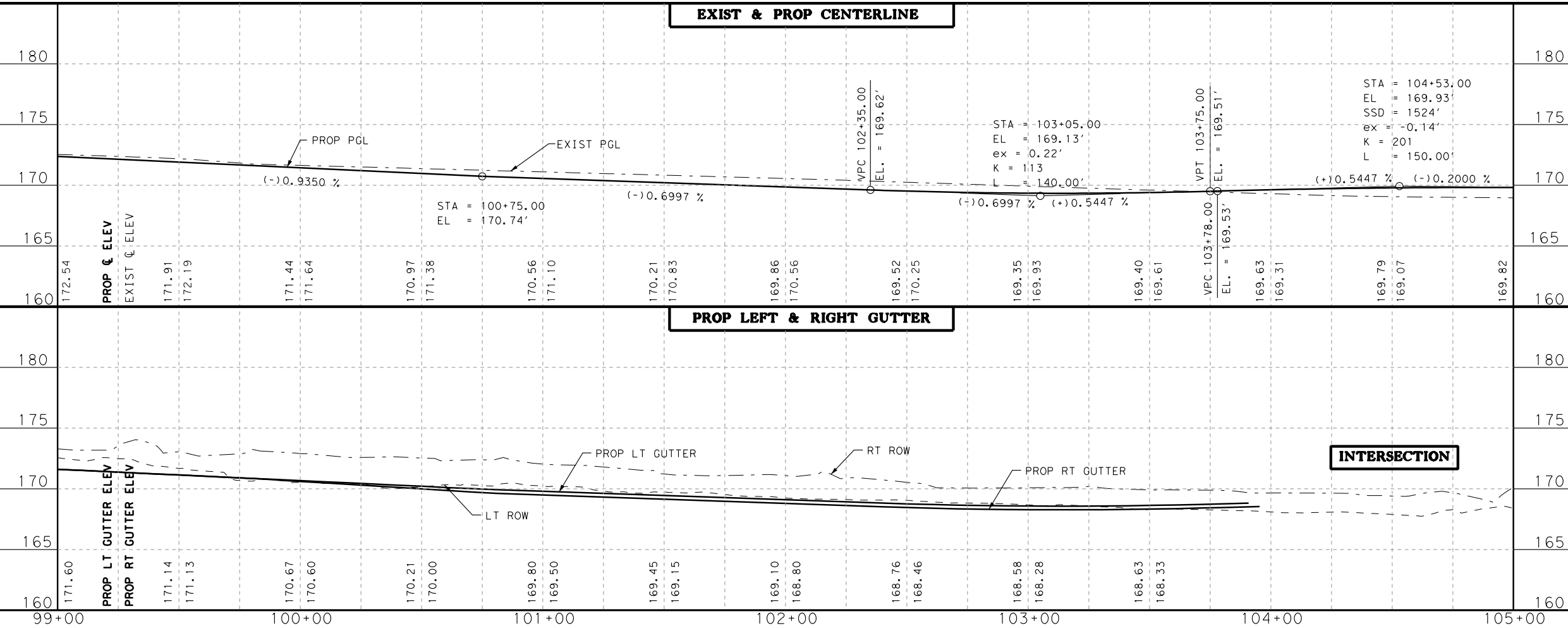
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 99+00.00 TO STA 105+00.00**

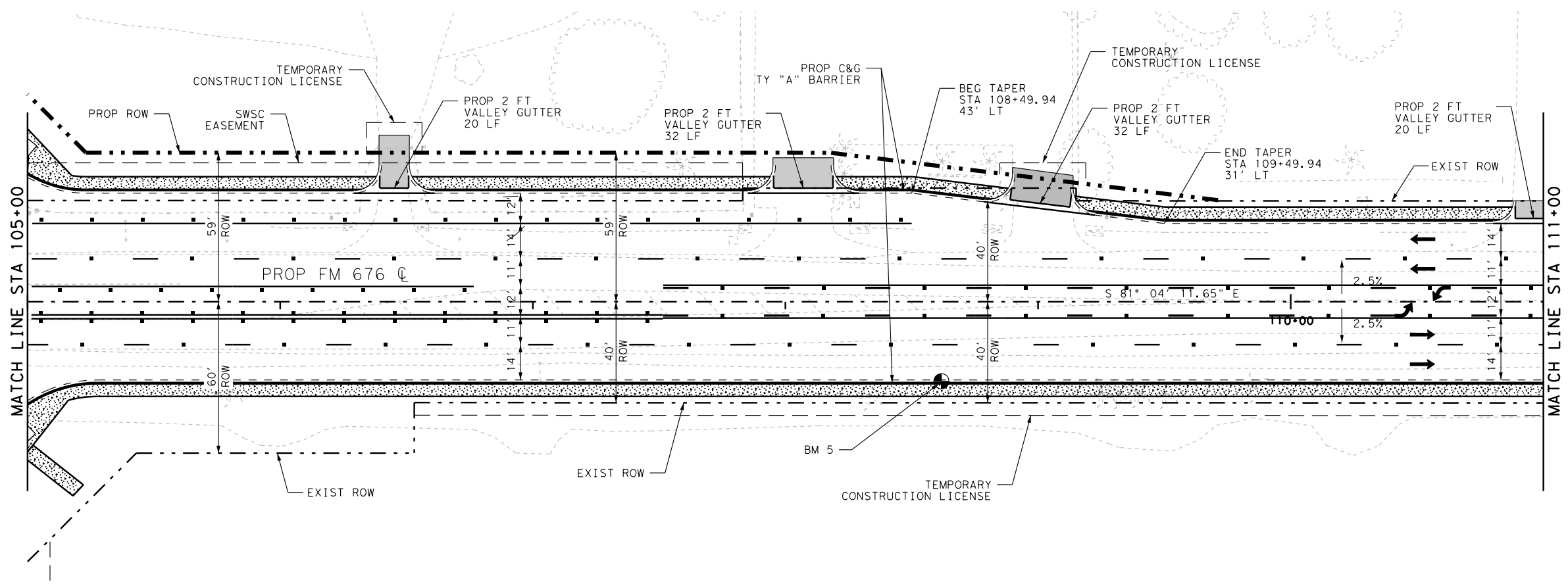
PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 7 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			152
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676







- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\text{\textcircled{C}}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



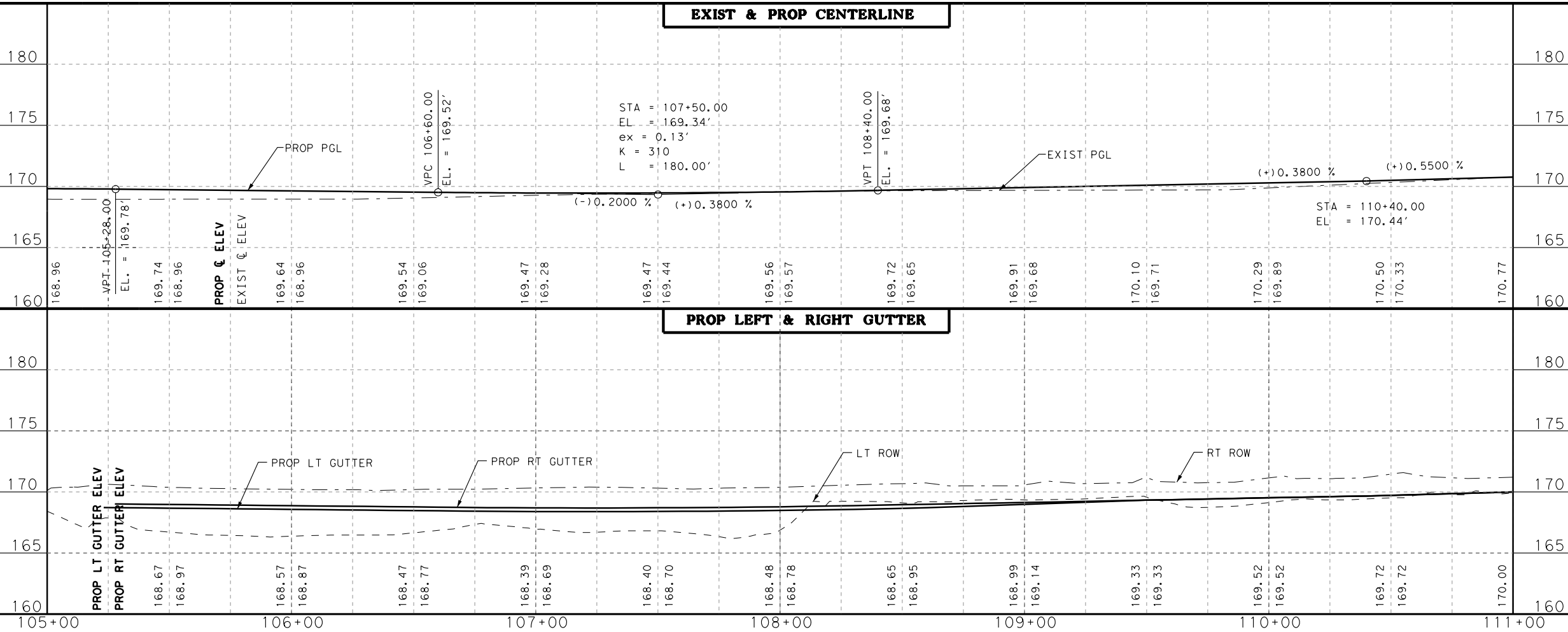
**ATKINS**  
TBPE REG. #F-474

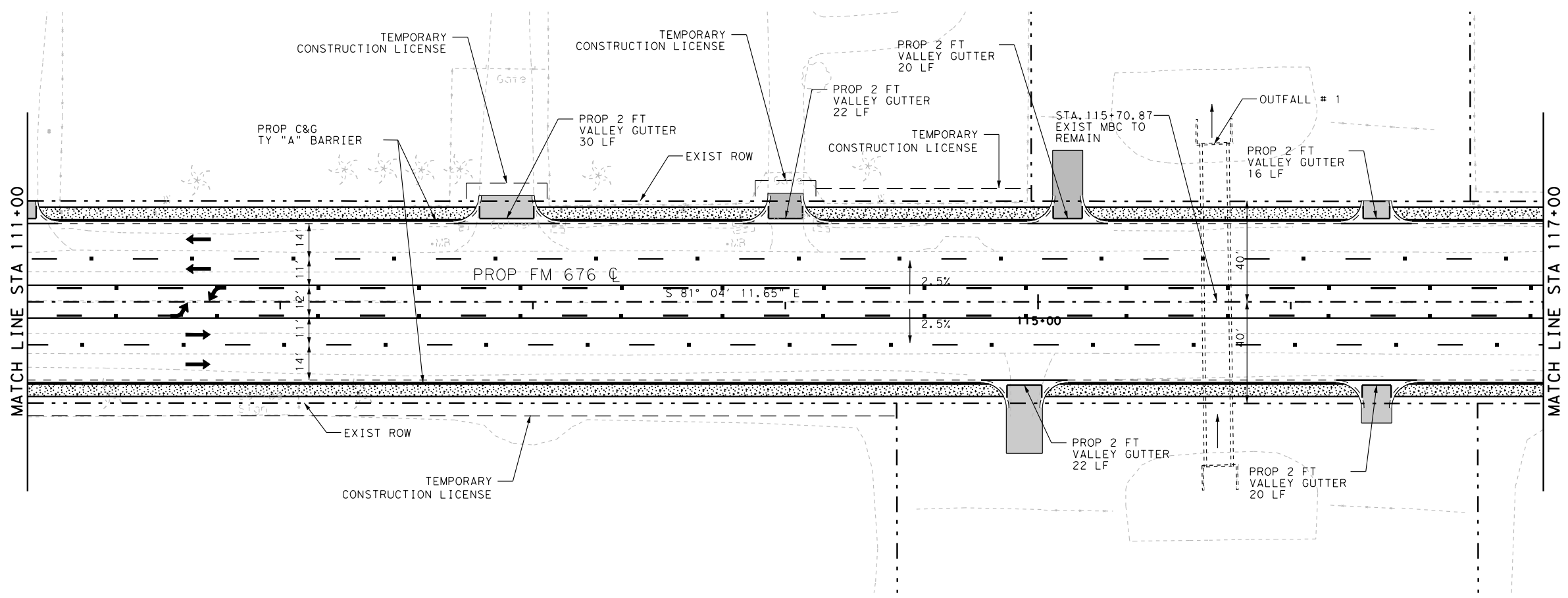
**FM 676  
PLAN & PROFILE  
STA 105+00.00 TO STA 111+00.00**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 8 OF 33

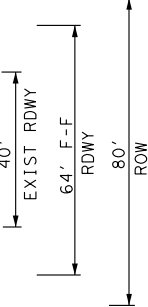
FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				153
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
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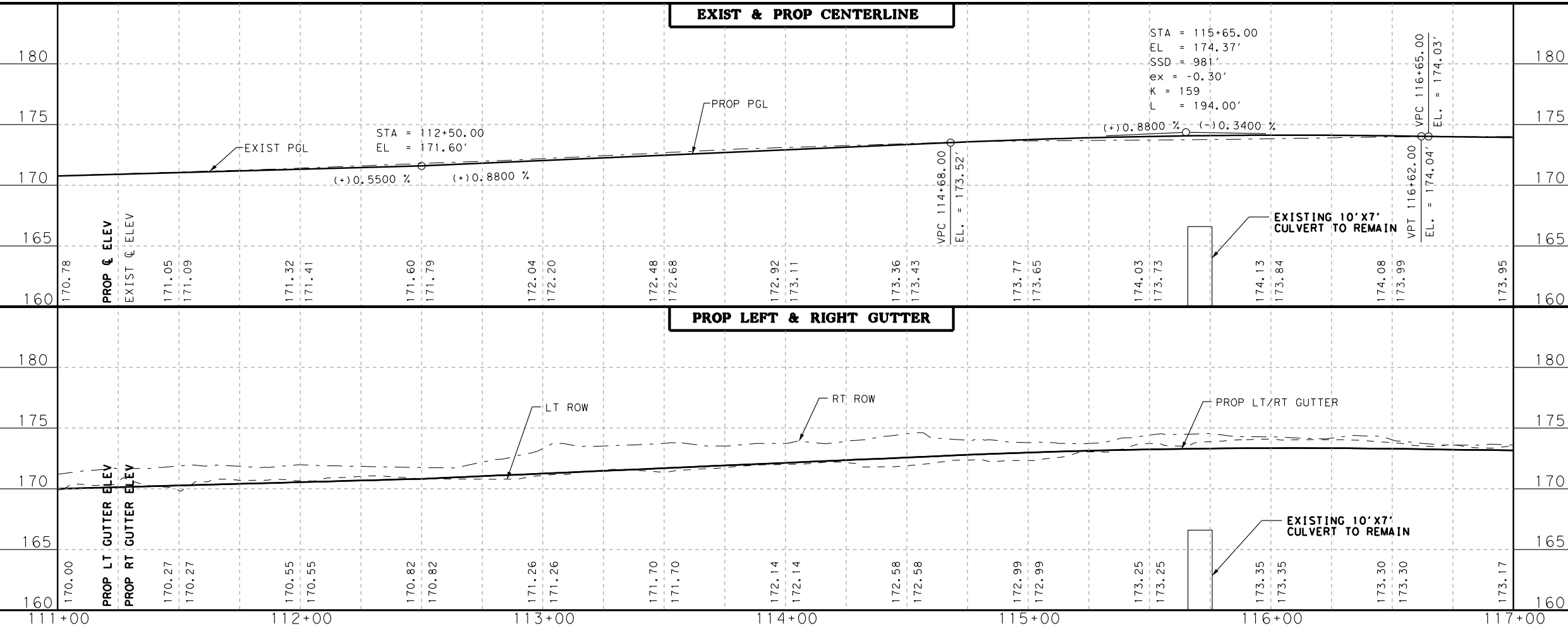


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.



- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

PLOT DRIVER: RD\111x17\PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
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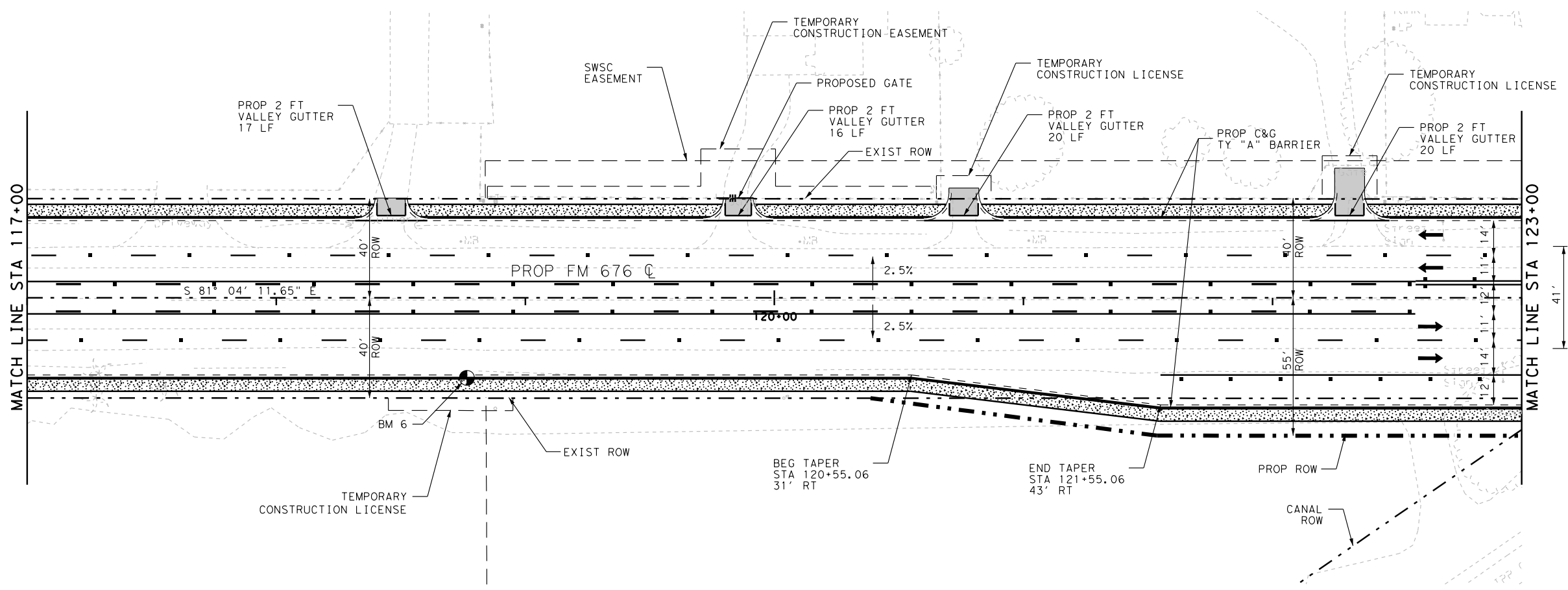
11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 111+00.00 TO STA 117+00.00**  
 PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50    0 2 4 6 8 10  
 DISTANCE IN FEET    DISTANCE IN FEET  
 SHEET 9 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				154
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



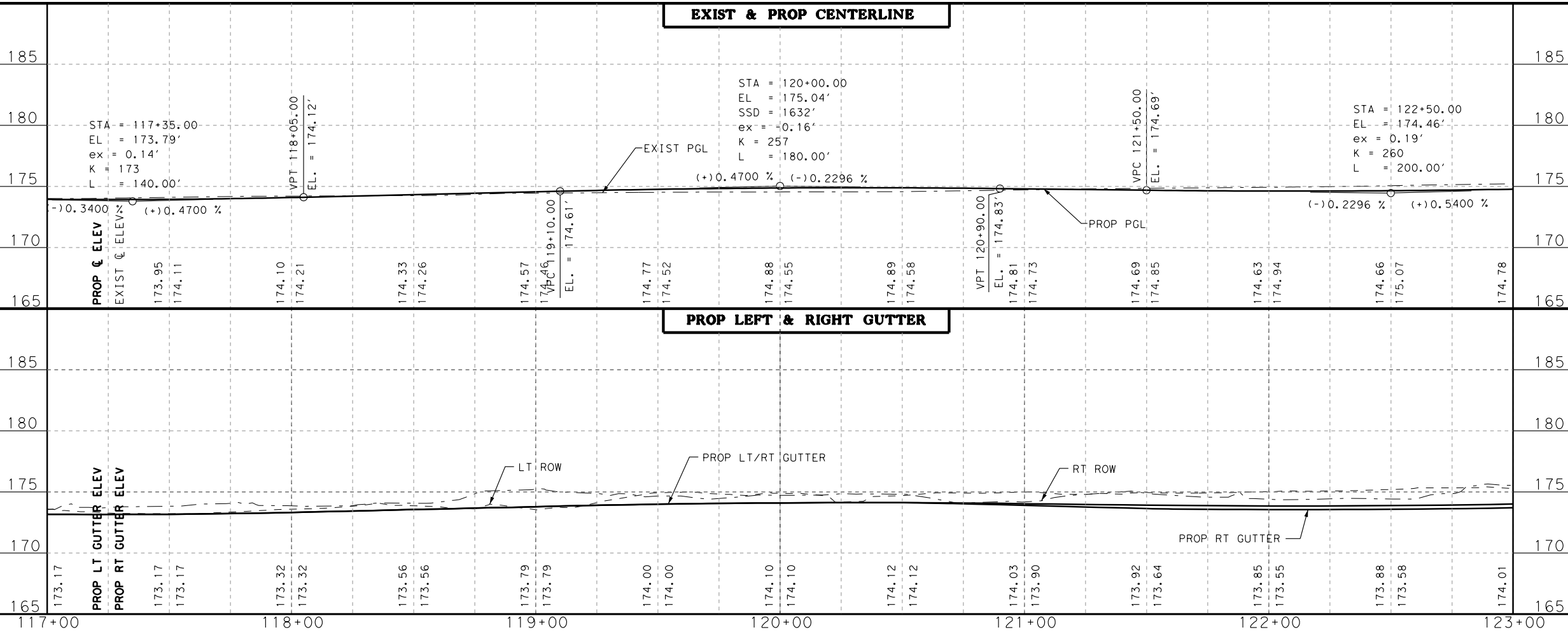
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 117+00.00 TO STA 123+00.00**

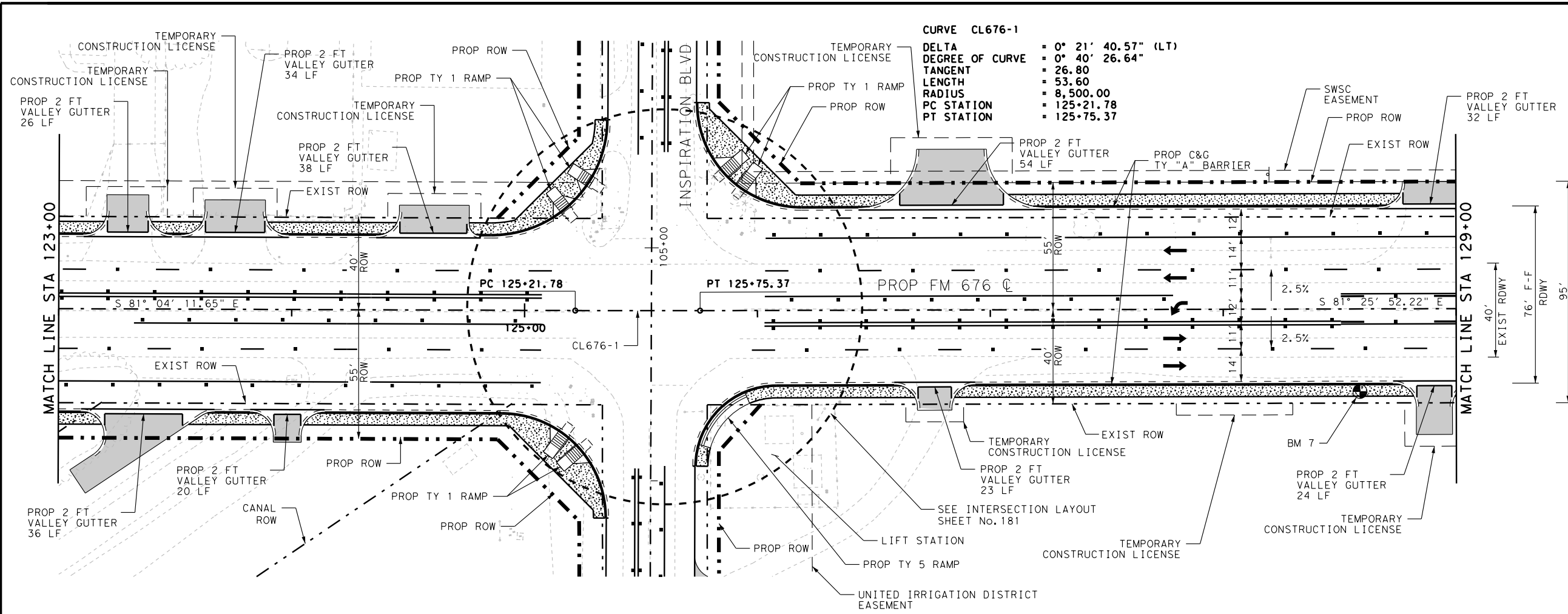
PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 10 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			155
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1+  
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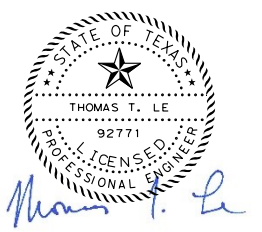


PLOT DRIVER: RD+11x17+PDF.d1t  
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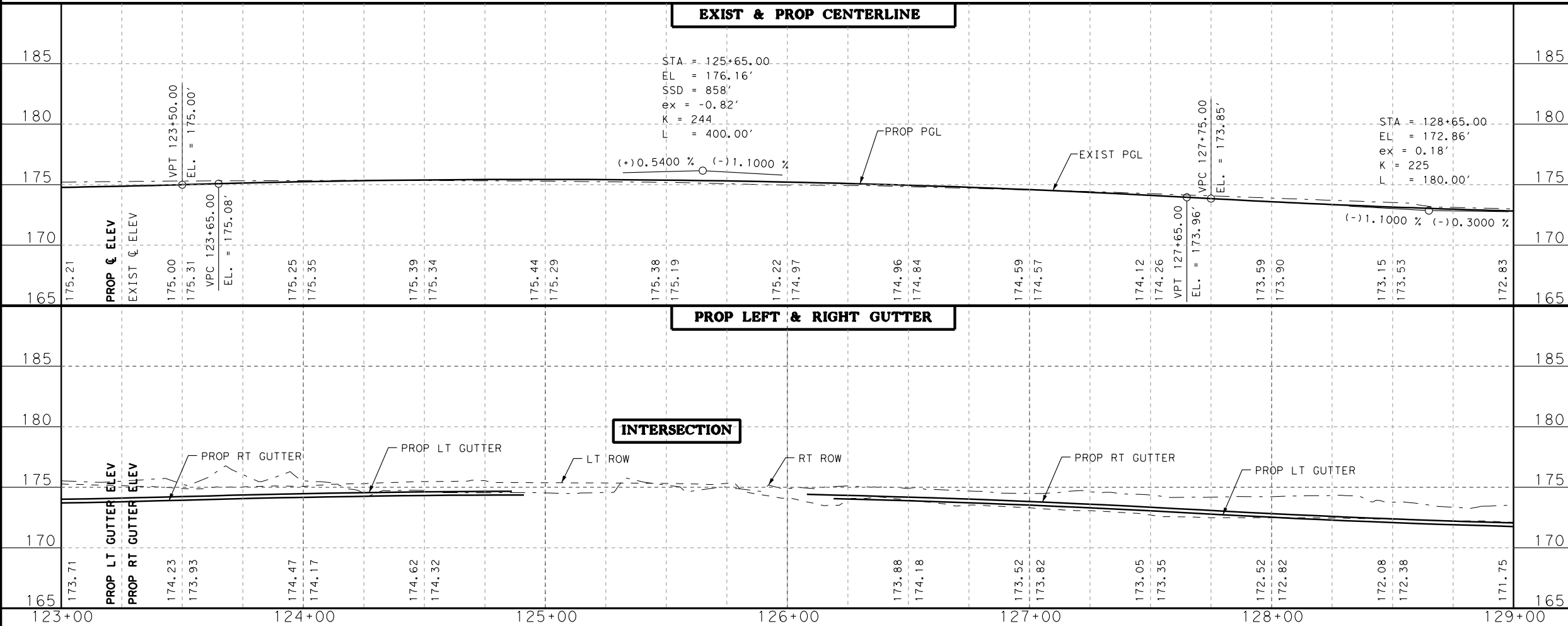


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



**ATKINS**  
 TBPE REG. #F-474

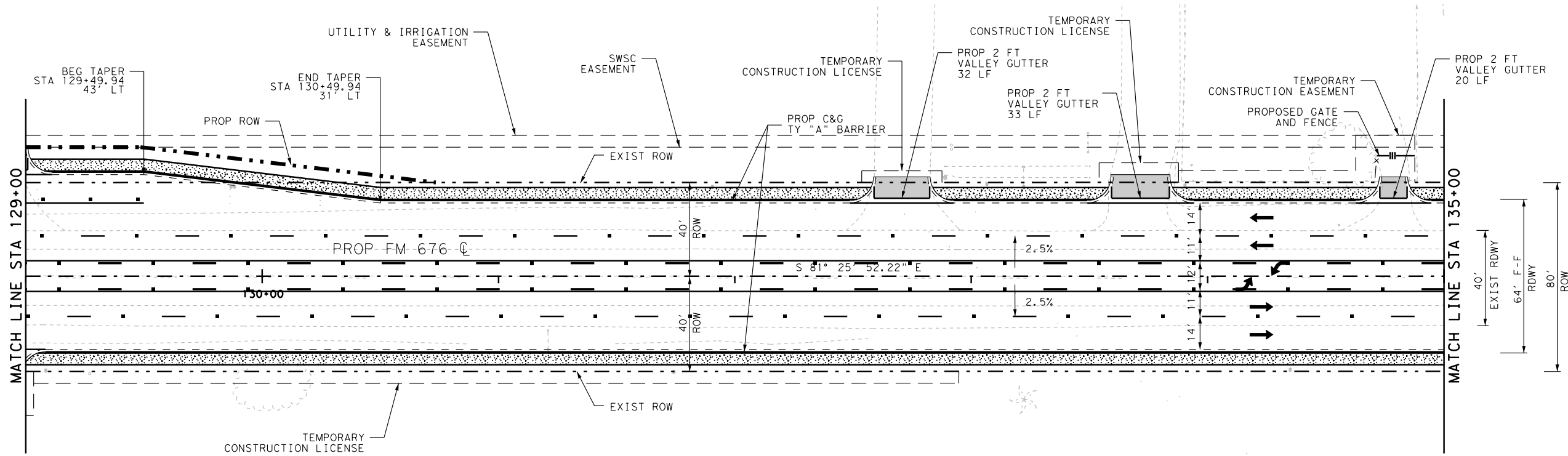
**FM 676  
 PLAN & PROFILE  
 STA 123+00.00 TO STA 129+00.00**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

SHEET 11 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		156	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\text{\textcircled{C}}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



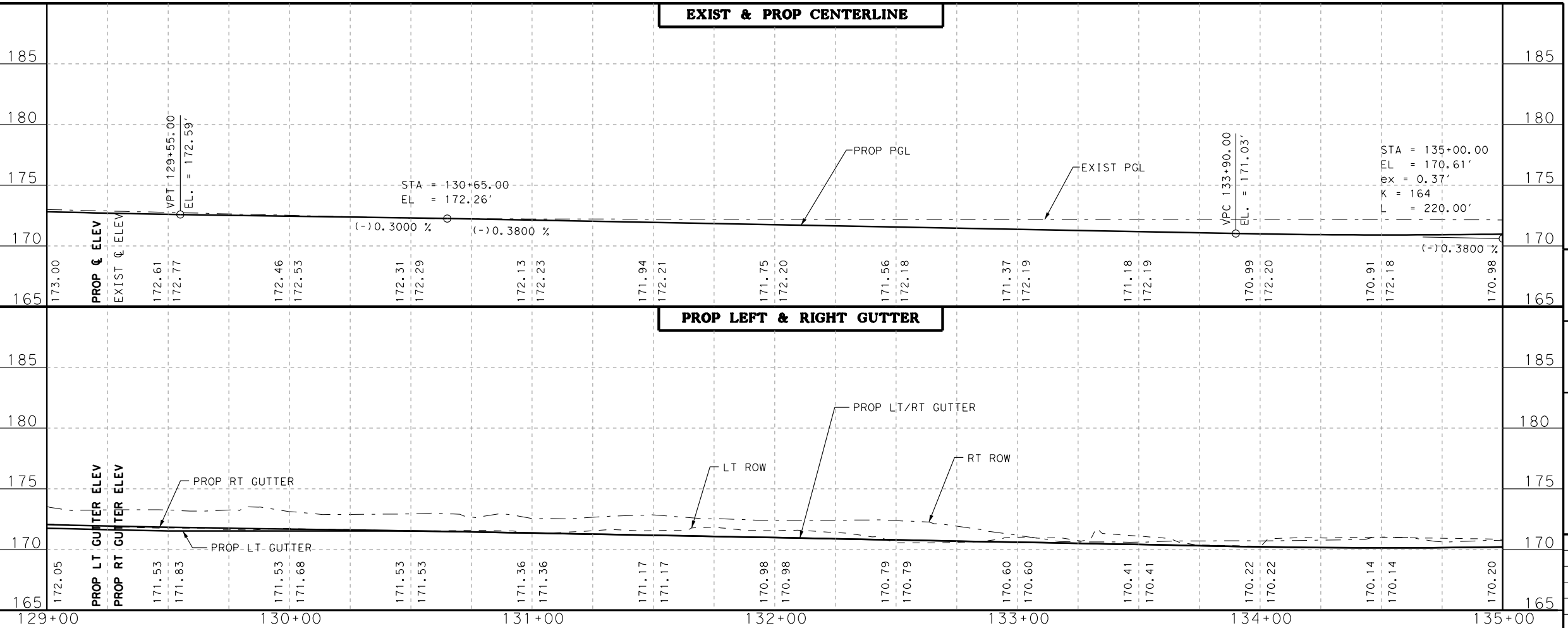
**ATKINS**  
TBPE REG. #F-474

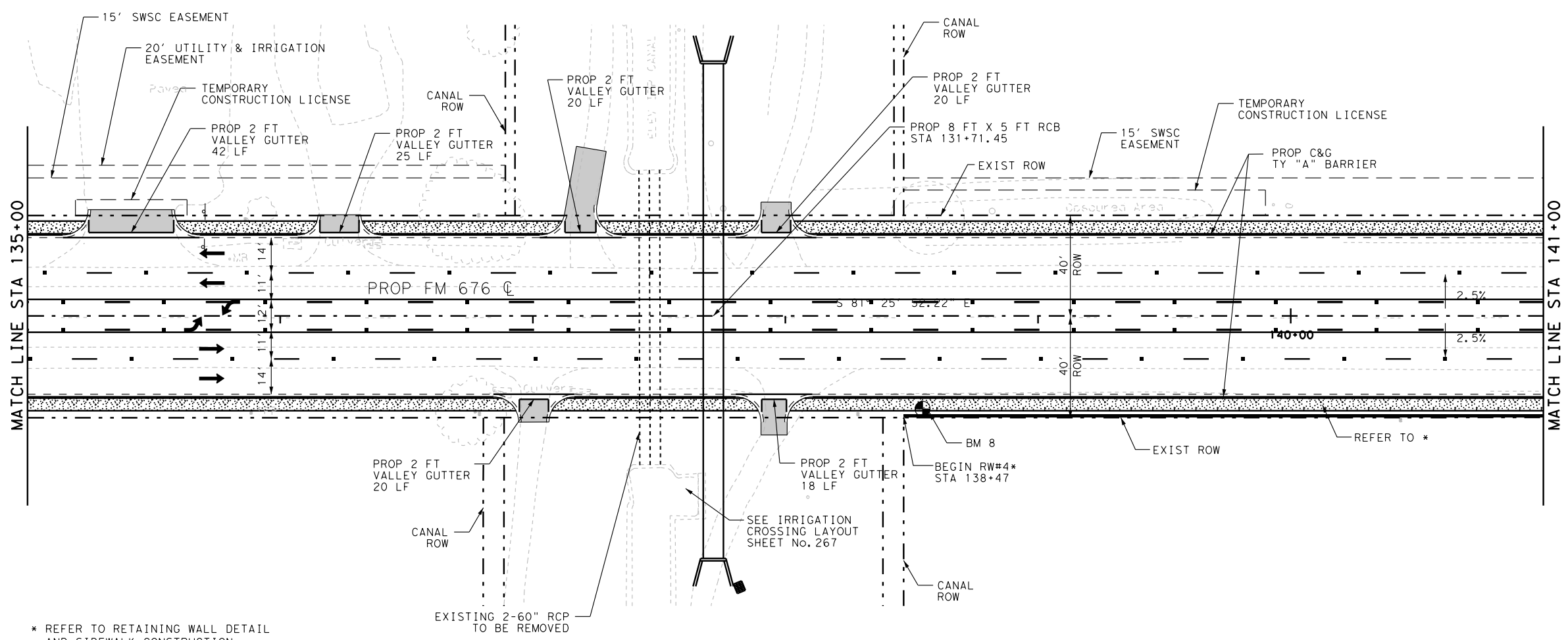
**FM 676  
PLAN & PROFILE  
STA 129+00.00 TO STA 135+00.00**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 12 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				157
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
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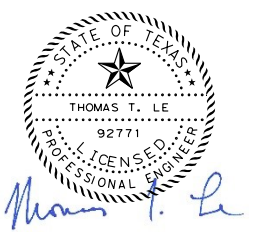
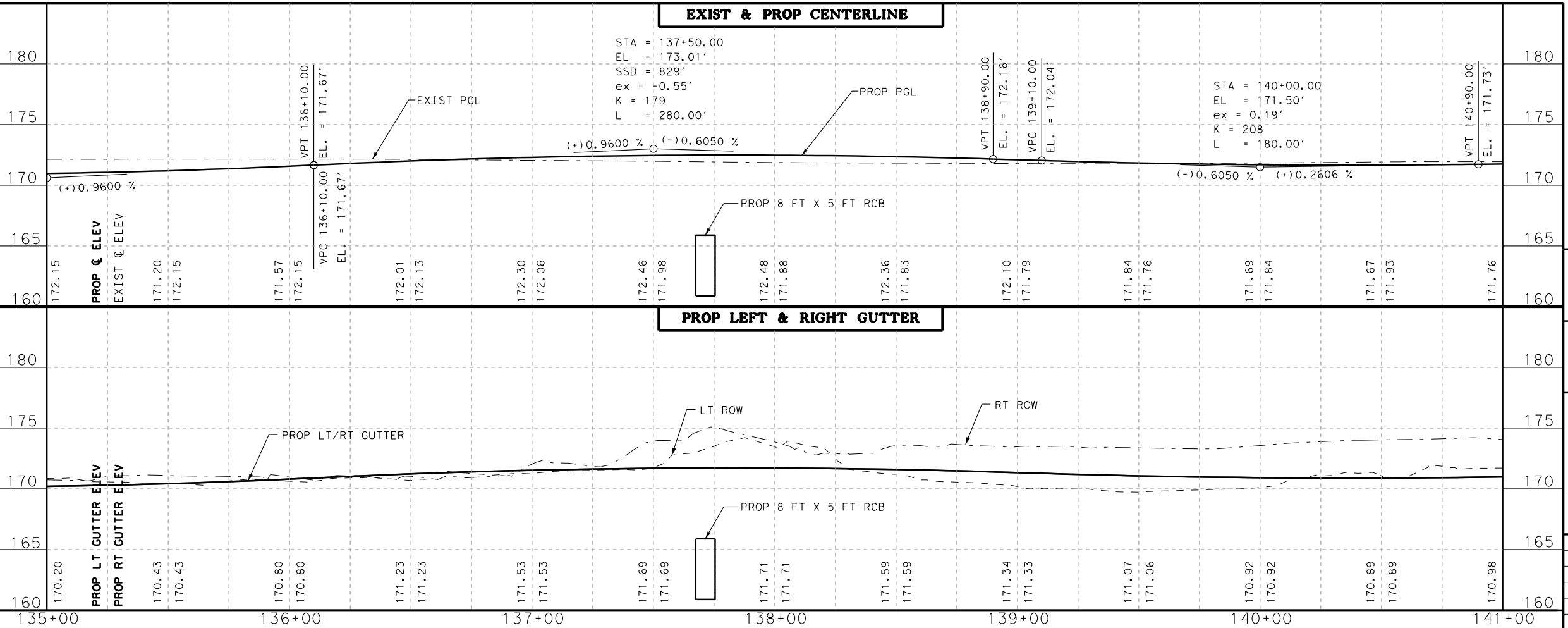


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\text{\textcircled{C}}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

\* REFER TO RETAINING WALL DETAIL AND SIDEWALK CONSTRUCTION

PLOT DRIVER: RD+11x17+PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: p:\SUS036343.sof\k.ins.com:ATKNTX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676W\PP13.dgn



11/17/2022



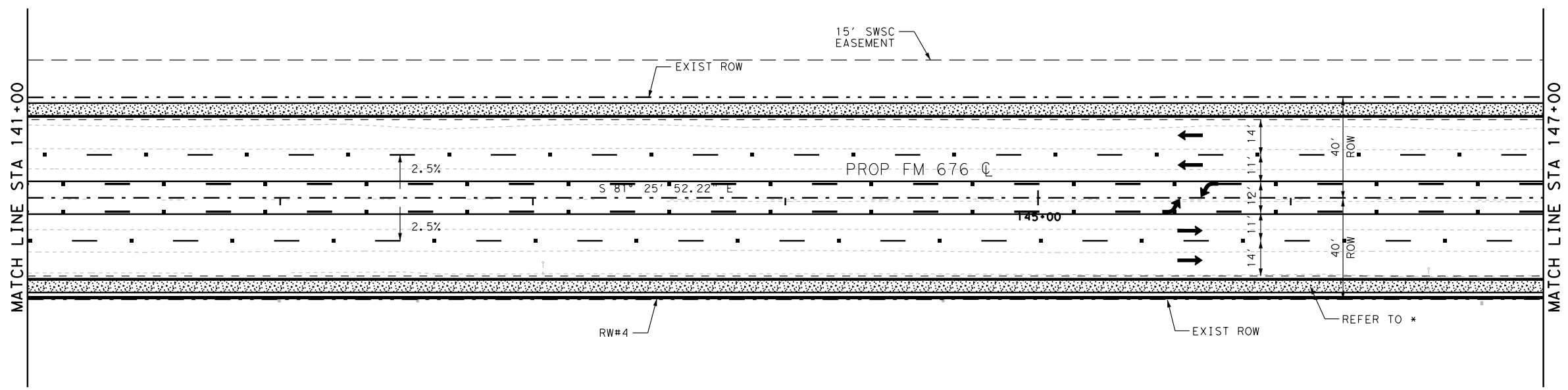
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 135+00.00 TO STA 141+00.00**

PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50    0 2 4 6 8 10  
 DISTANCE IN FEET    DISTANCE IN FEET

SHEET 13 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			158
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

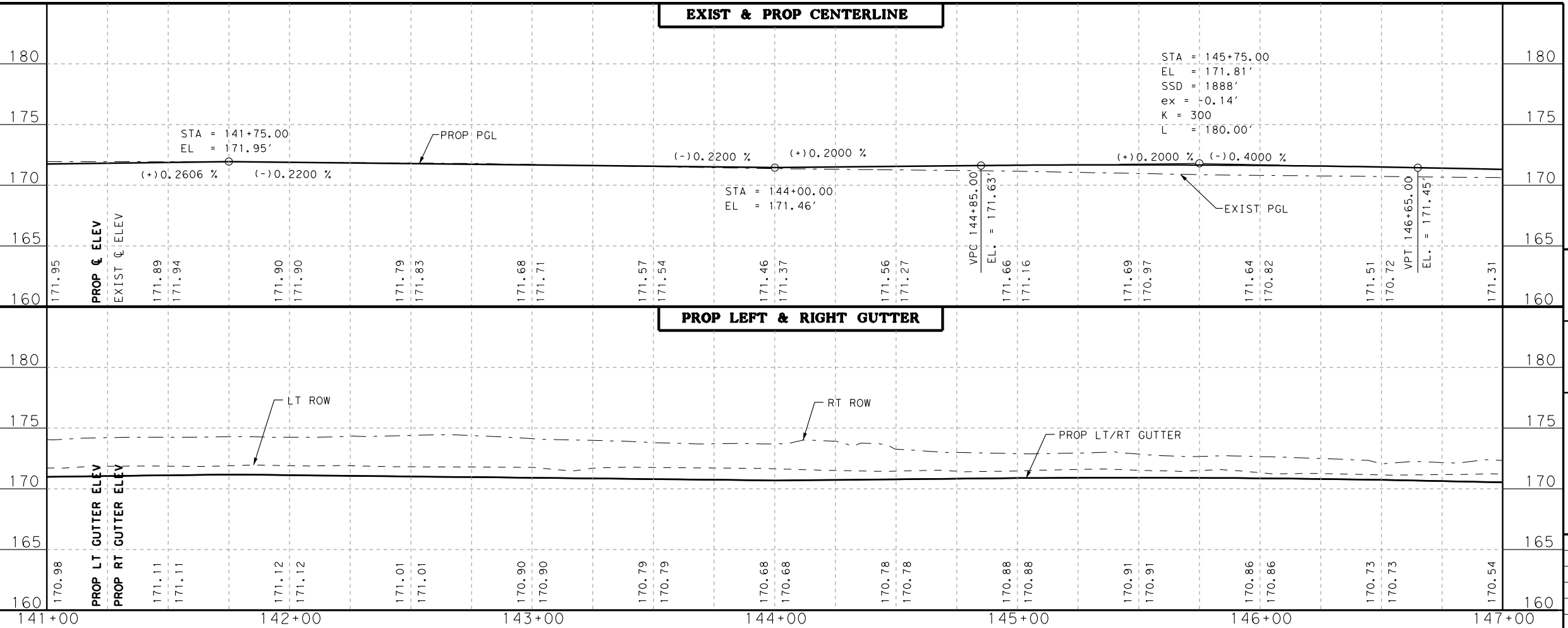


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\phi$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

\* REFER TO RETAINING WALL DETAIL AND SIDEWALK CONSTRUCTION

PLOT DRIVER: RD+11x17+PDF.d1+  
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Thomas T. Le  
 11/17/2022

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ATKINS

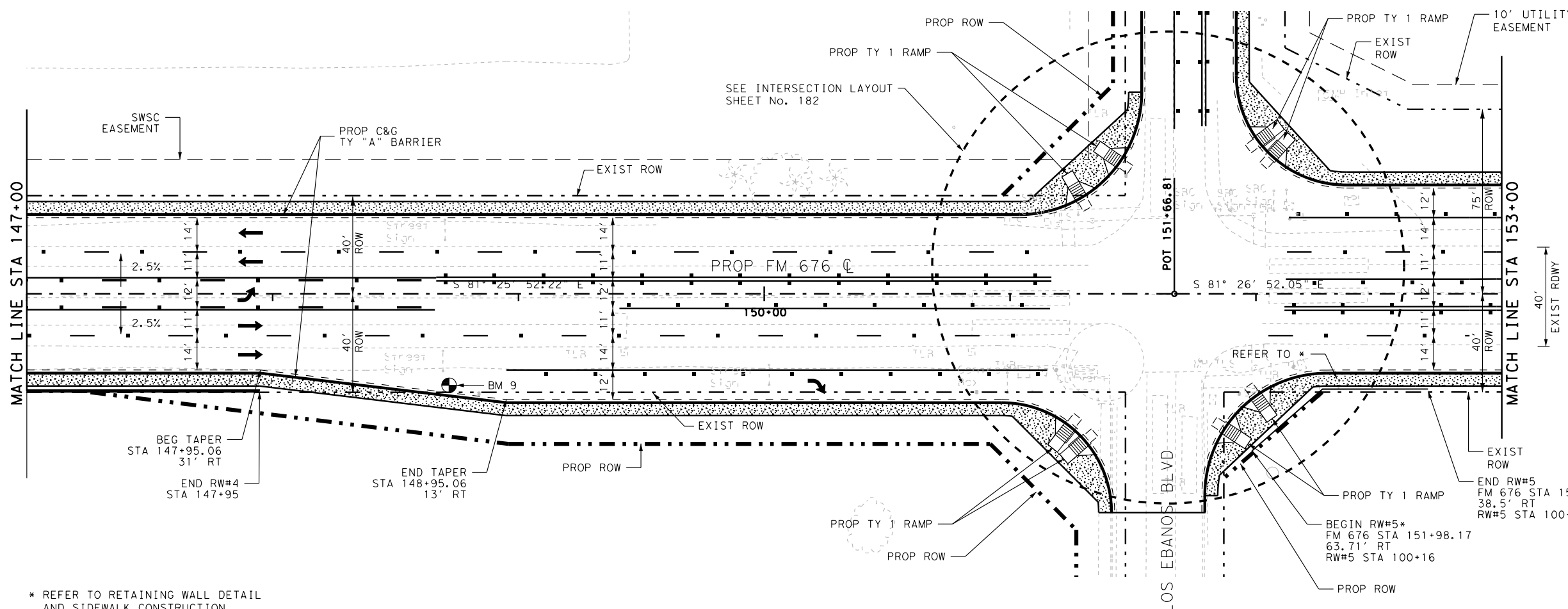
TBPE REG. #F-474

FM 676  
PLAN & PROFILE  
STA 141+00.00 TO STA 147+00.00

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 14 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				159
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

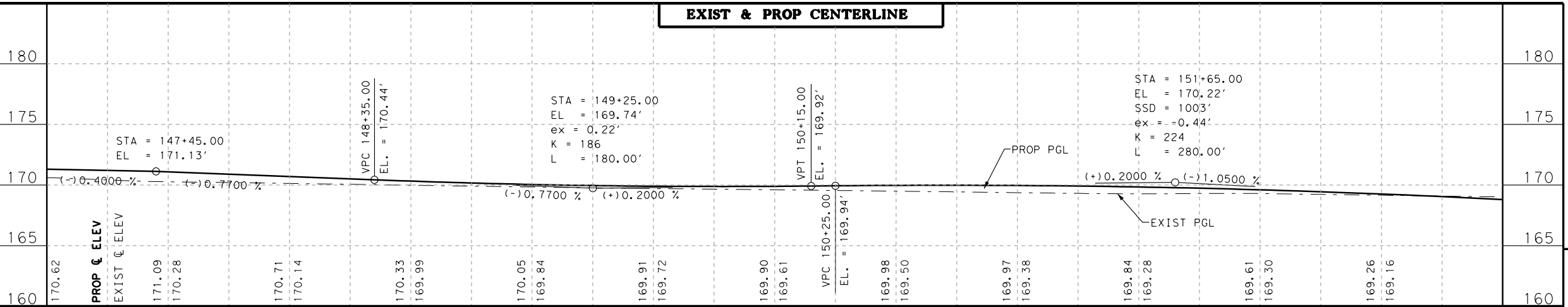


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\mathcal{C}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

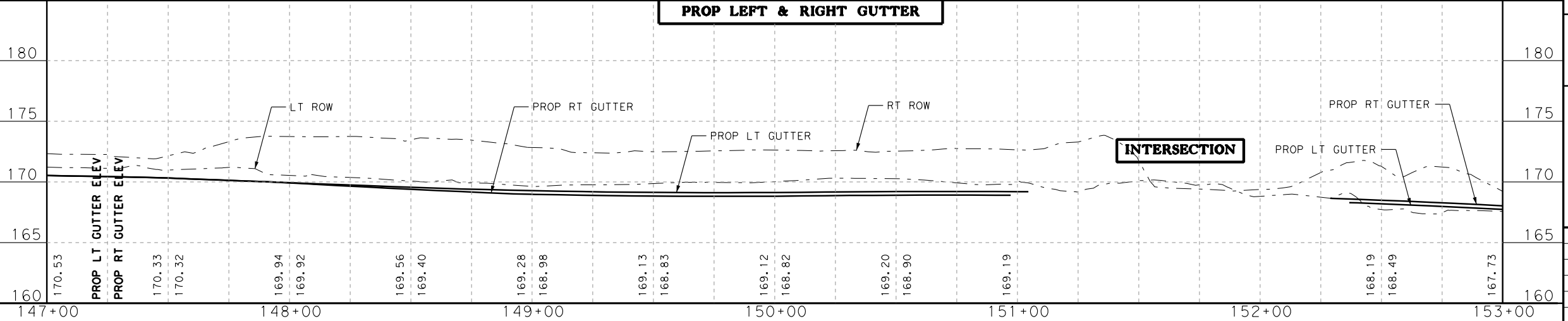
- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

\* REFER TO RETAINING WALL DETAIL AND SIDEWALK CONSTRUCTION

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



11/17/2022



**ATKINS**  
TBPE REG. #F-474

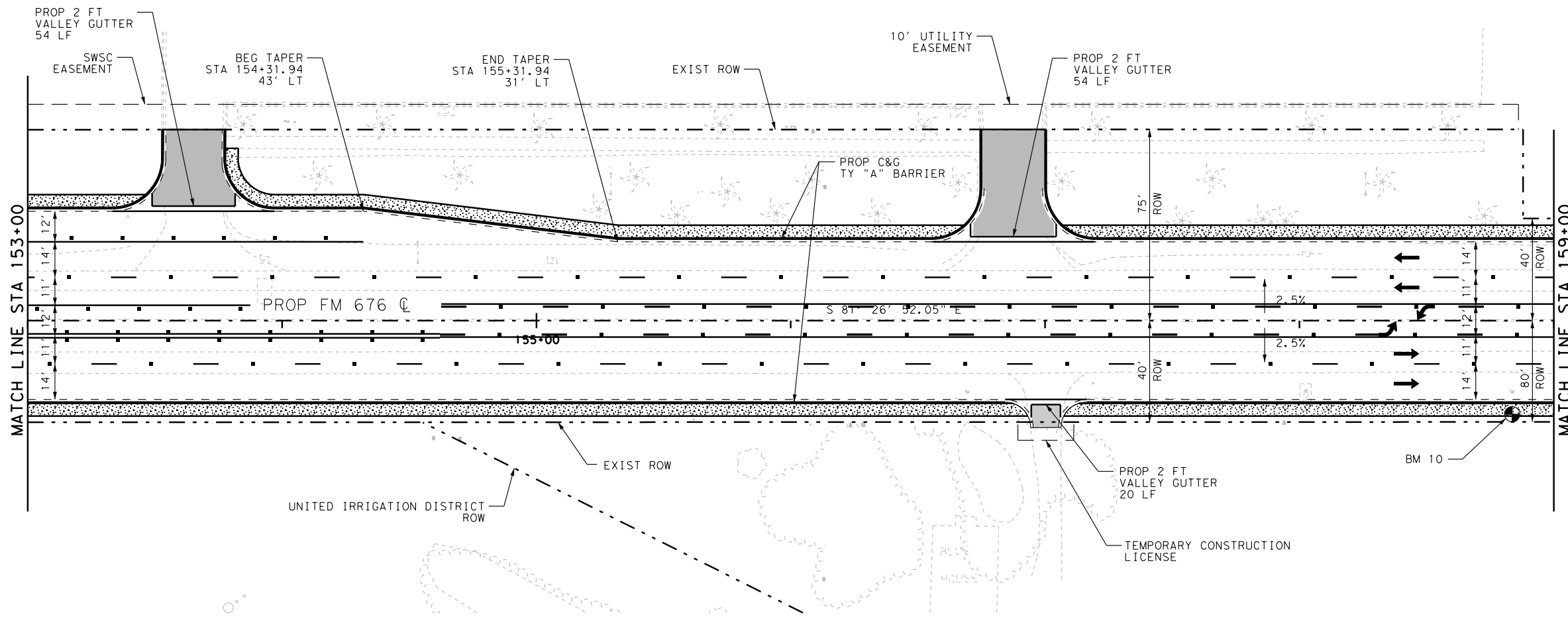
**FM 676  
PLAN & PROFILE  
STA 147+00.00 TO STA 153+00.00**  
PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
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DISTANCE IN FEET    DISTANCE IN FEET  
SHEET 15 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			160
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1t  
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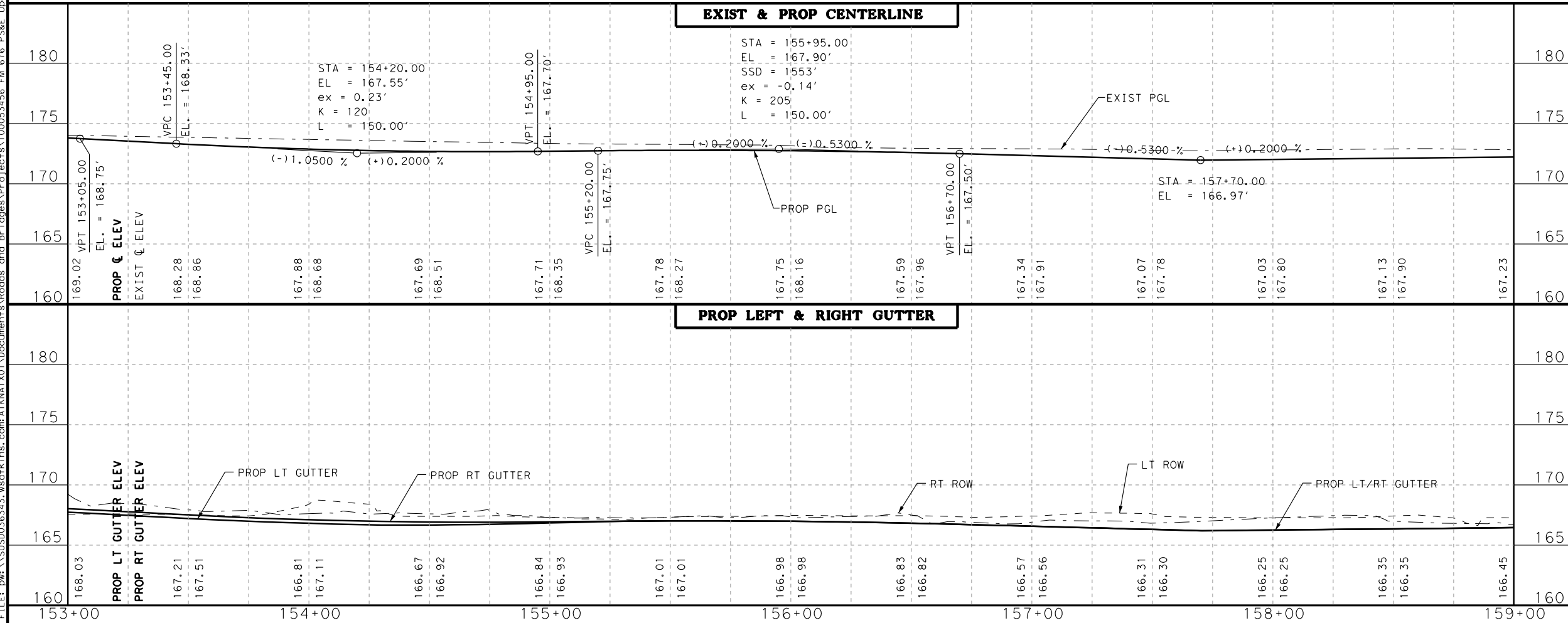


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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\text{C}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022

Thomas T. Le

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 TBPE REG. #F-474

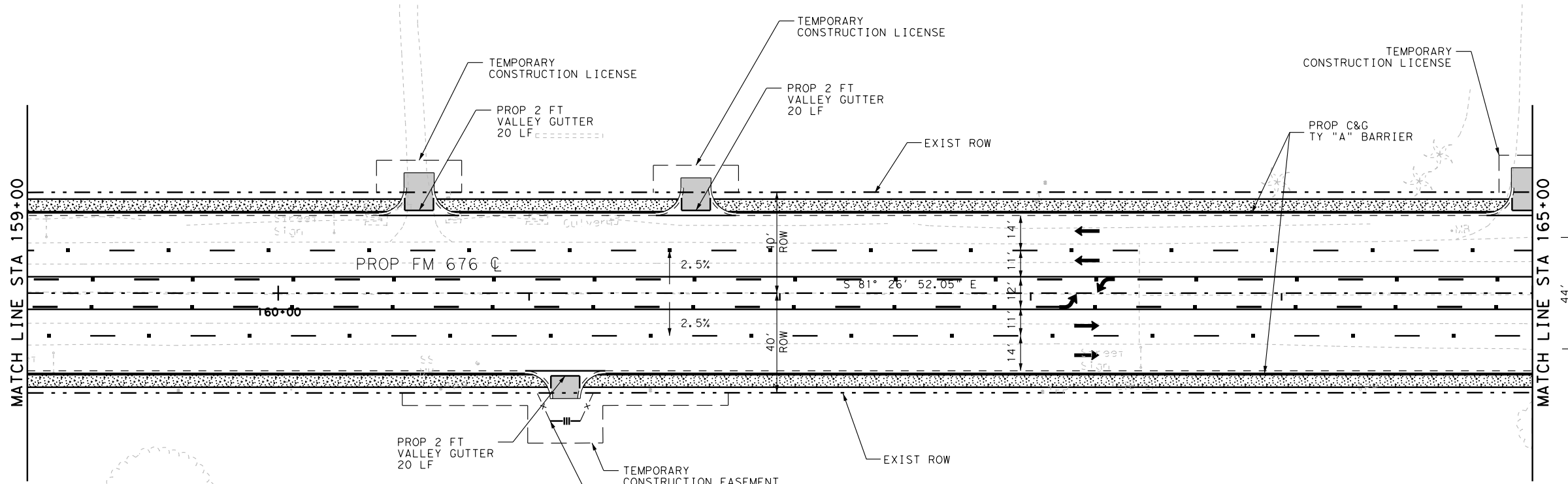
**FM 676  
 PLAN & PROFILE  
 STA 153+00.00 TO STA 159+00.00**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

SHEET 16 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			161
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

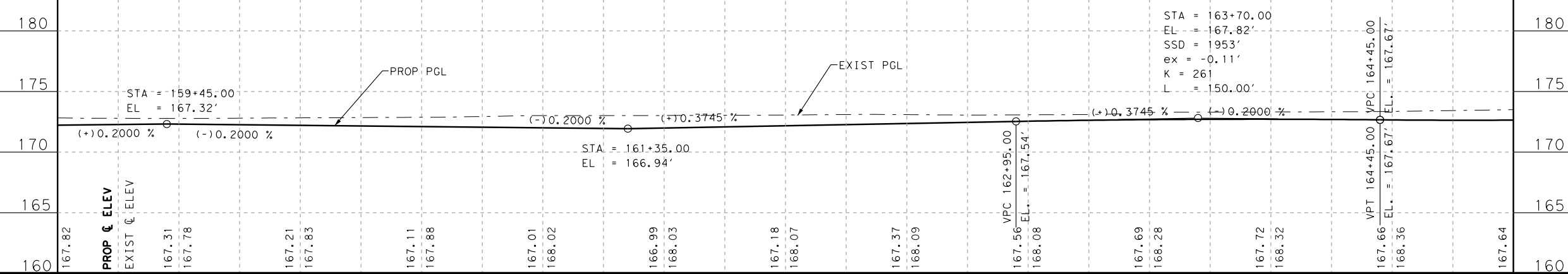


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\text{CL}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

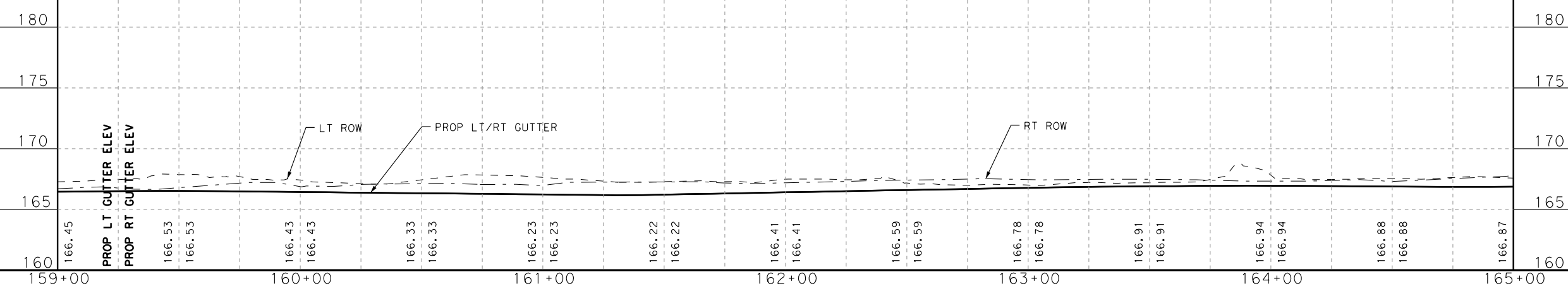
**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



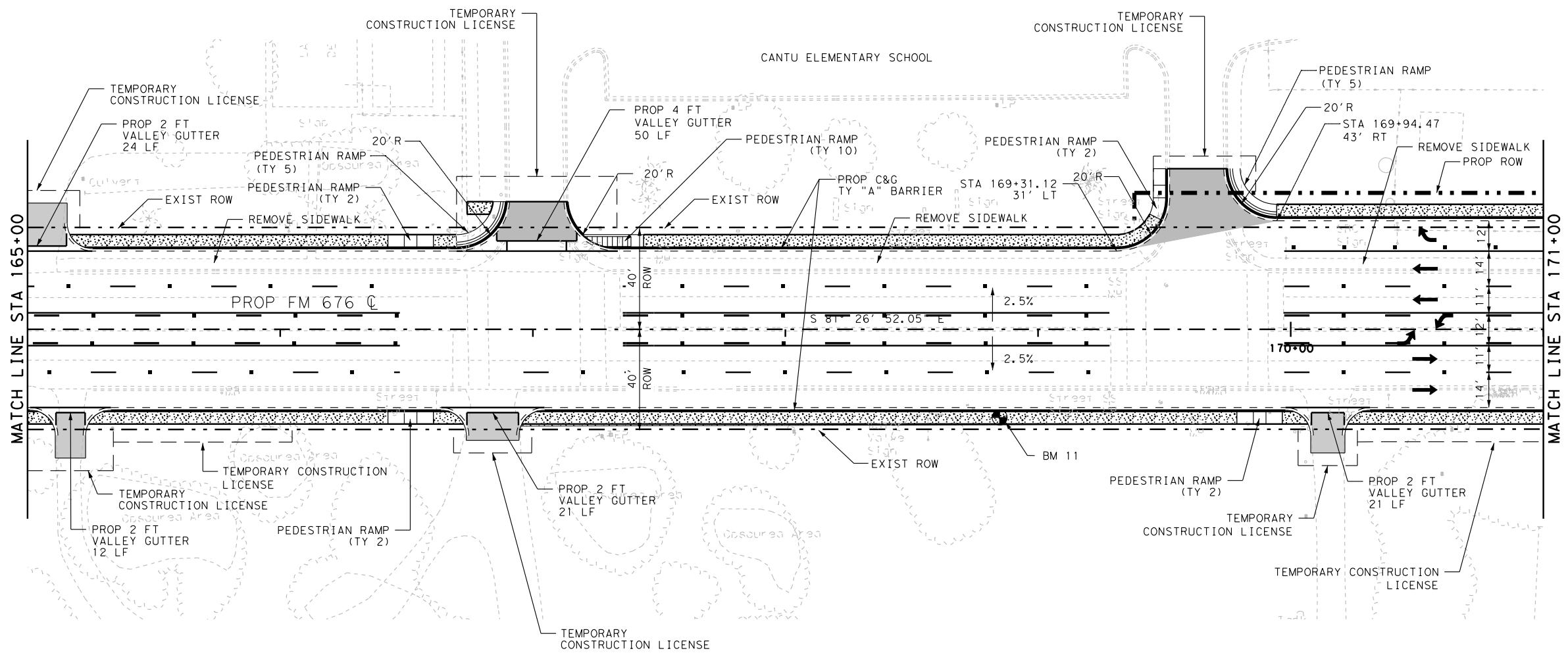
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 159+00.00 TO STA 165+00.00**  
PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
0 10 20 30 40 50    0 2 4 6 8 10  
DISTANCE IN FEET    DISTANCE IN FEET  
SHEET 17 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				162
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
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PLOT DRIVER: RD+11x17+PDF.d1t  
 PENTTABLE: PenTable.tbl  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\bar{C}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022

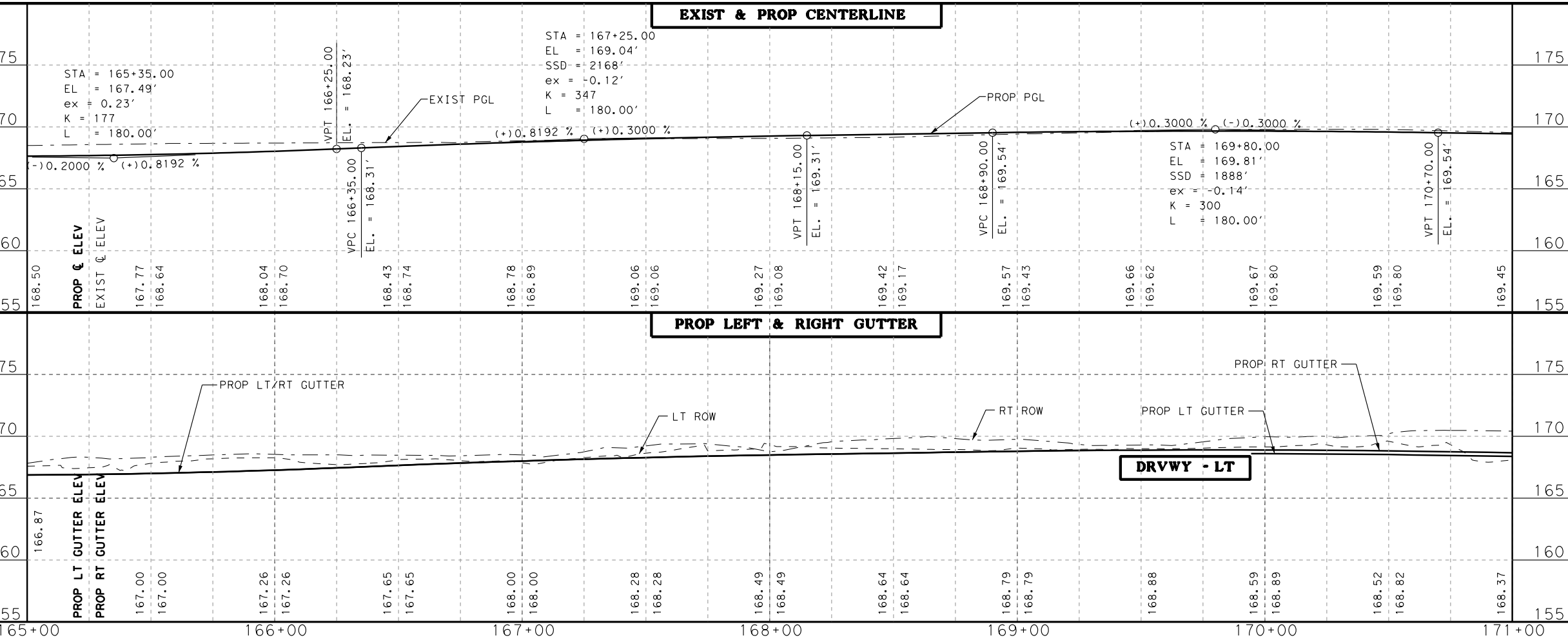


**ATKINS**  
 TBPE REG. #F-474

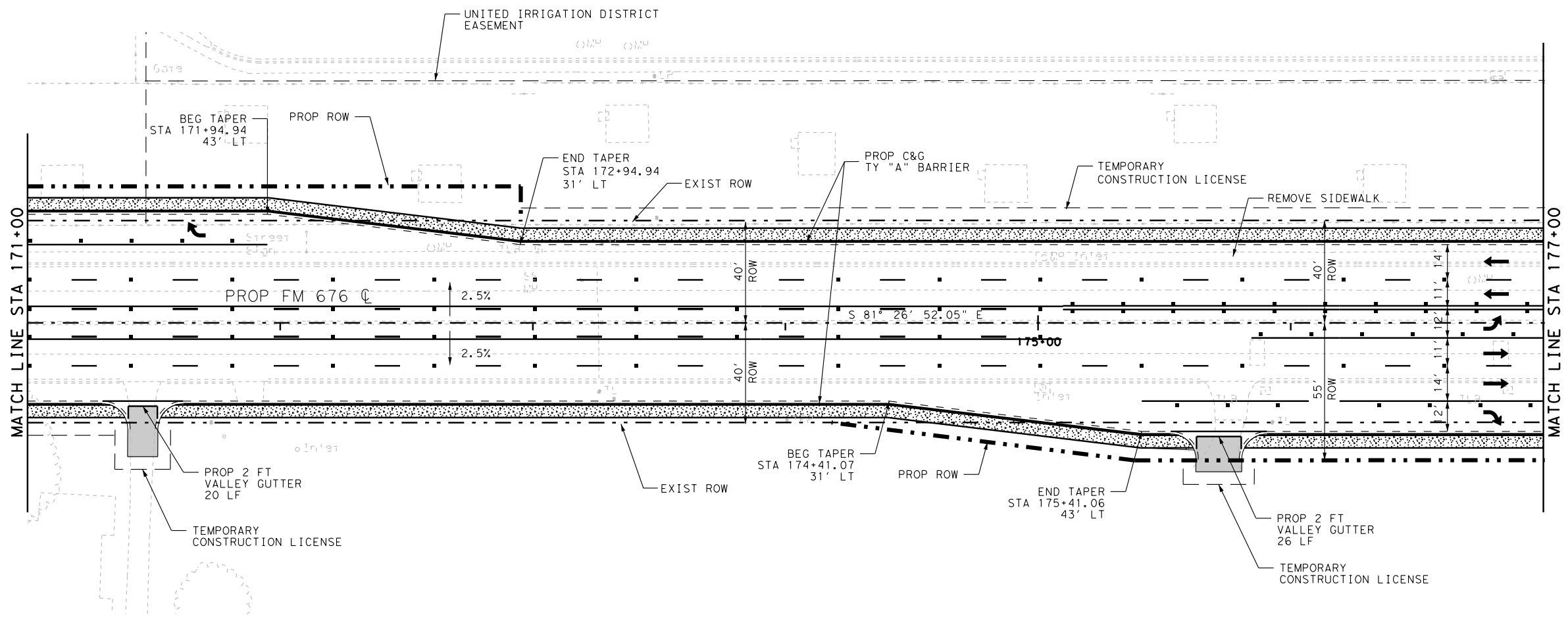
**FM 676  
 PLAN & PROFILE  
 STA 165+00.00 TO STA 171+00.00**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
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 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 18 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				163
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



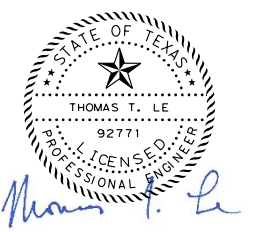
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022

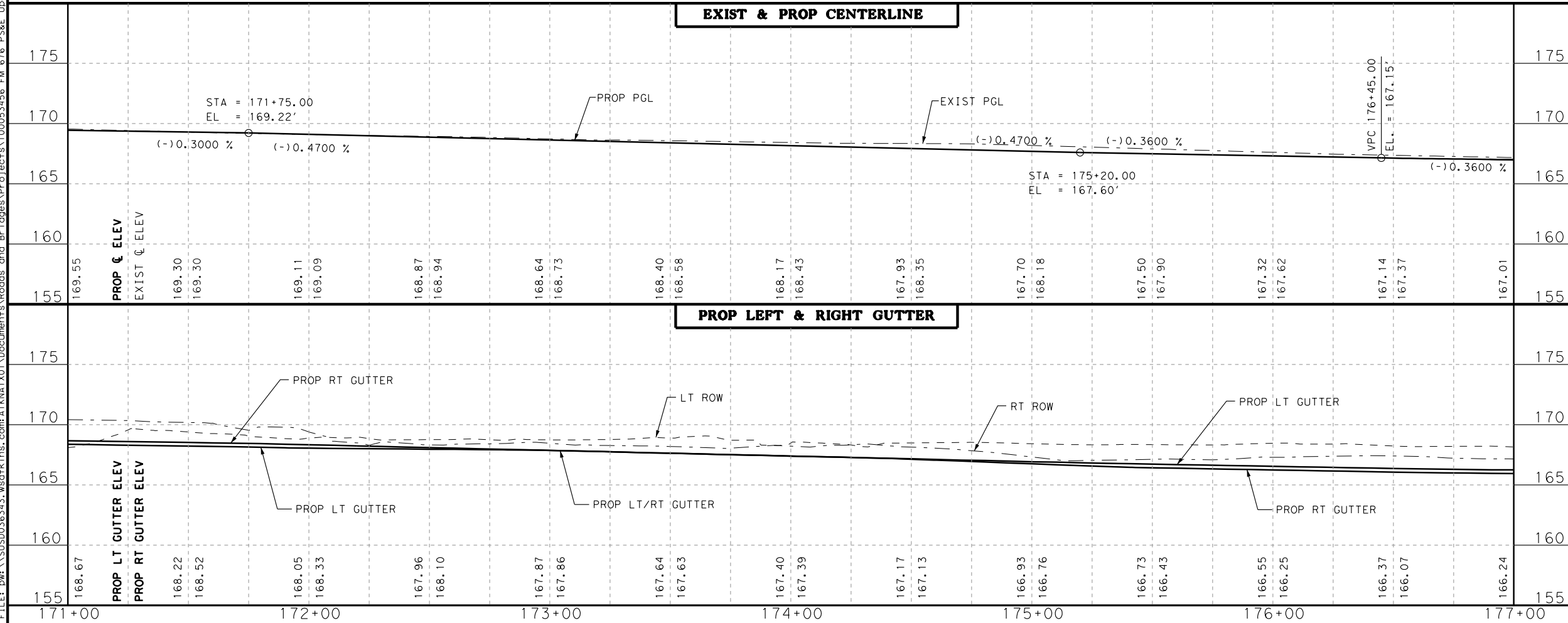


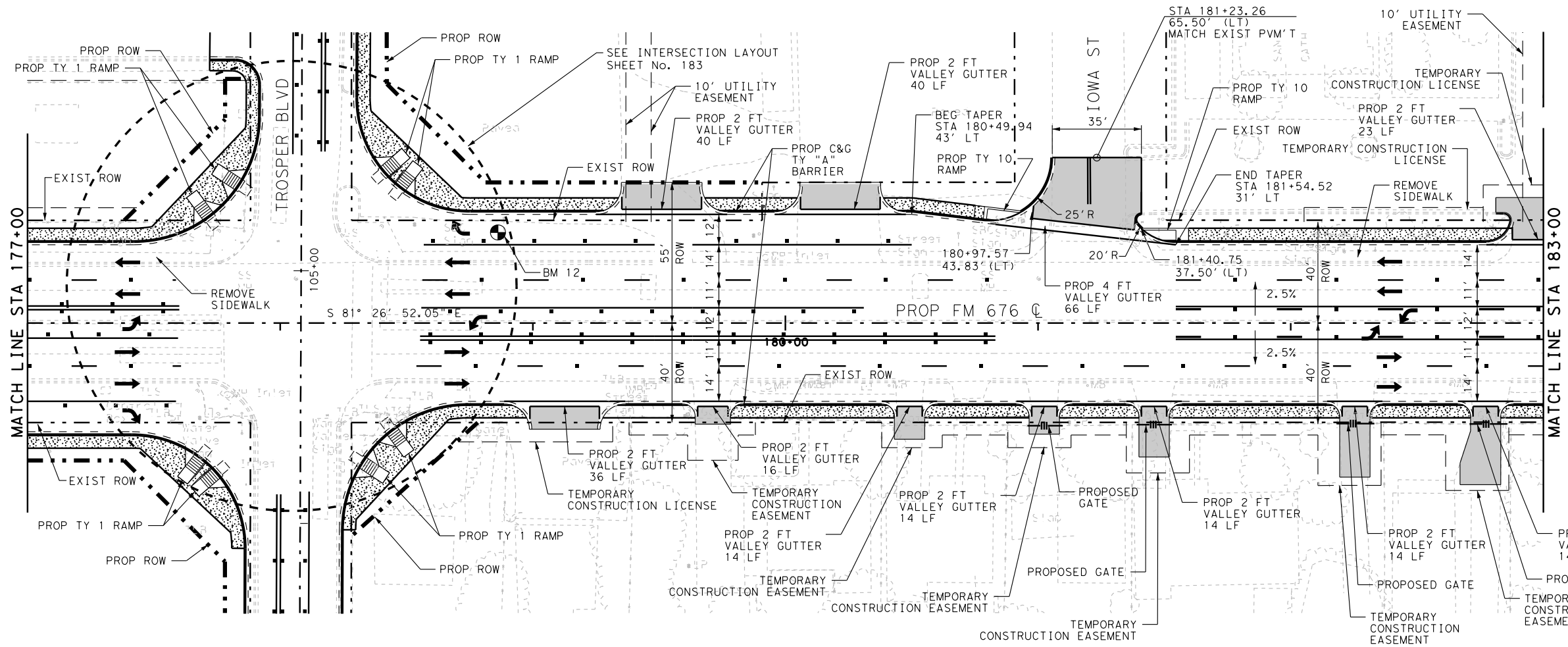
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 PLAN & PROFILE  
 STA 171+00.00 TO STA 177+00.00**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'  
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 0 2 4 6 8 10 DISTANCE IN FEET  
 SHEET 19 OF 33

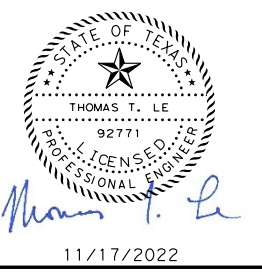
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			164
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676





- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 177+00.00 TO STA 183+00.00**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

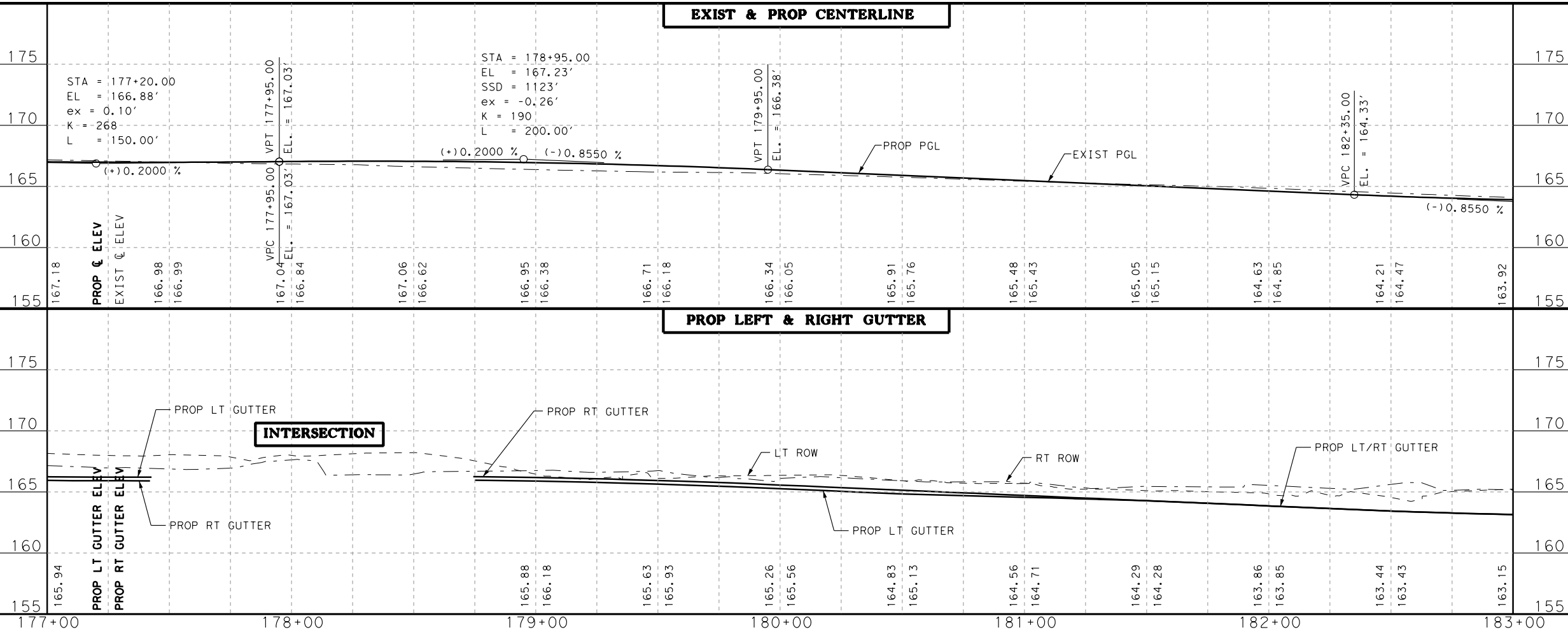
0 10 20 30 40 50  
DISTANCE IN FEET

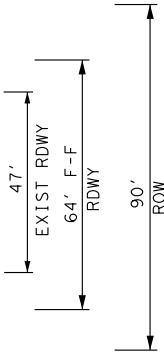
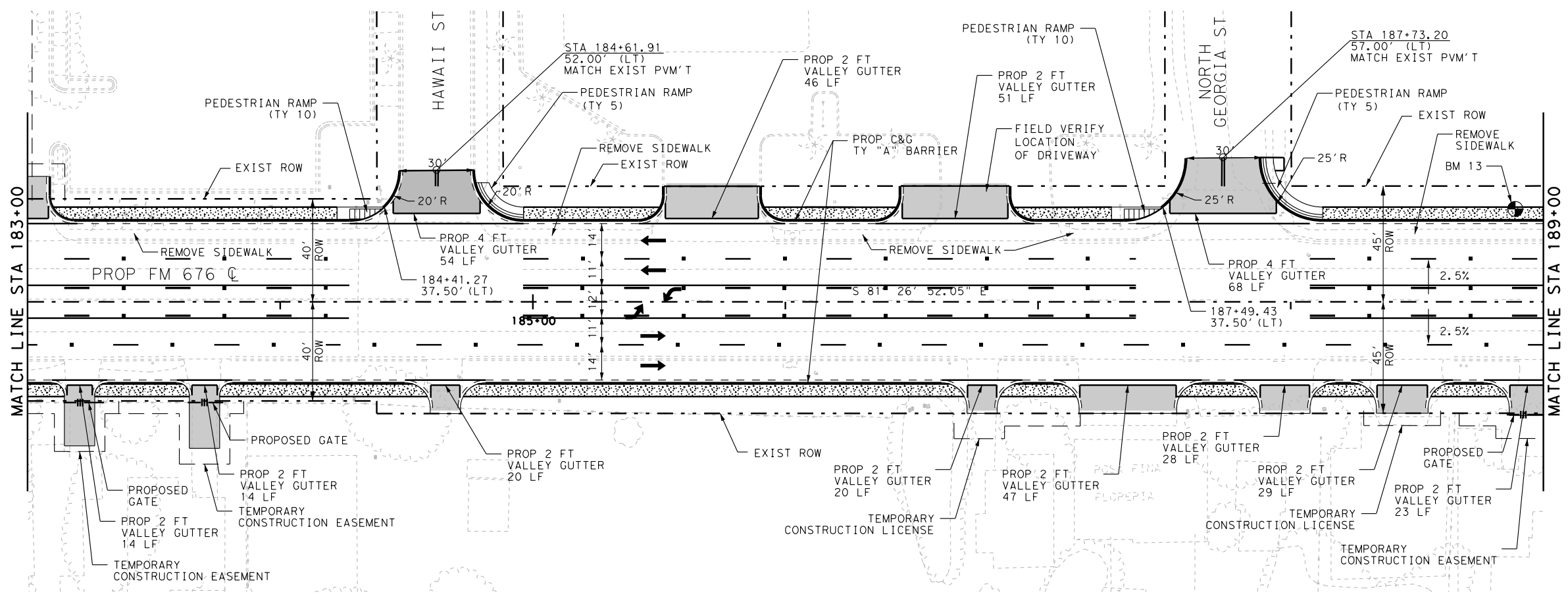
0 2 4 6 8 10  
DISTANCE IN FEET

SHEET 20 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			165
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1+  
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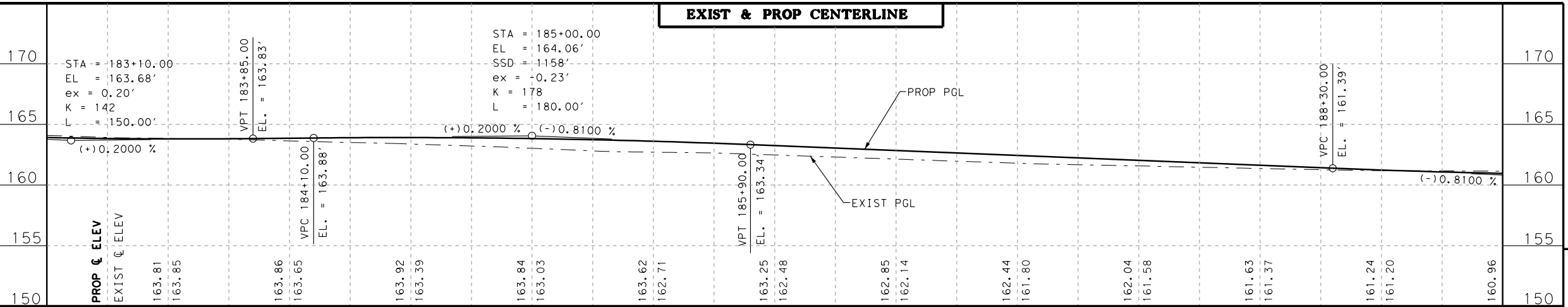




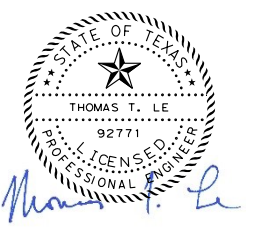
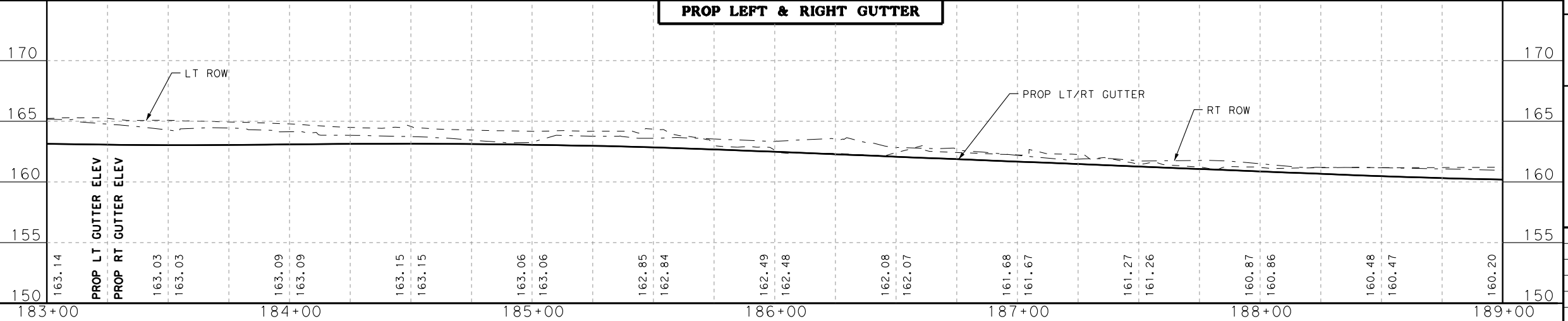
**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

**EXIST & PROP CENTERLINE**



**PROP LEFT & RIGHT GUTTER**



11/17/2022



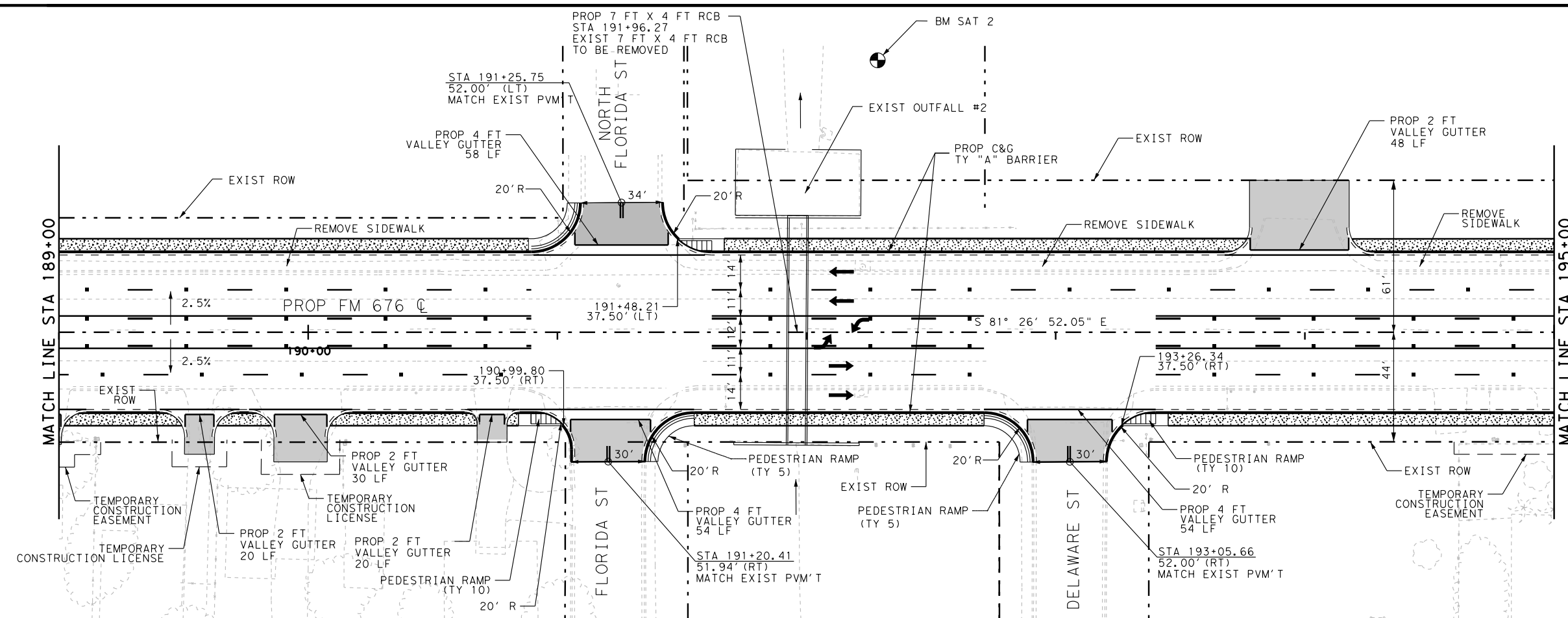
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 183+00.00 TO STA 189+00.00**

PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
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DISTANCE IN FEET    DISTANCE IN FEET  
SHEET 21 OF 33

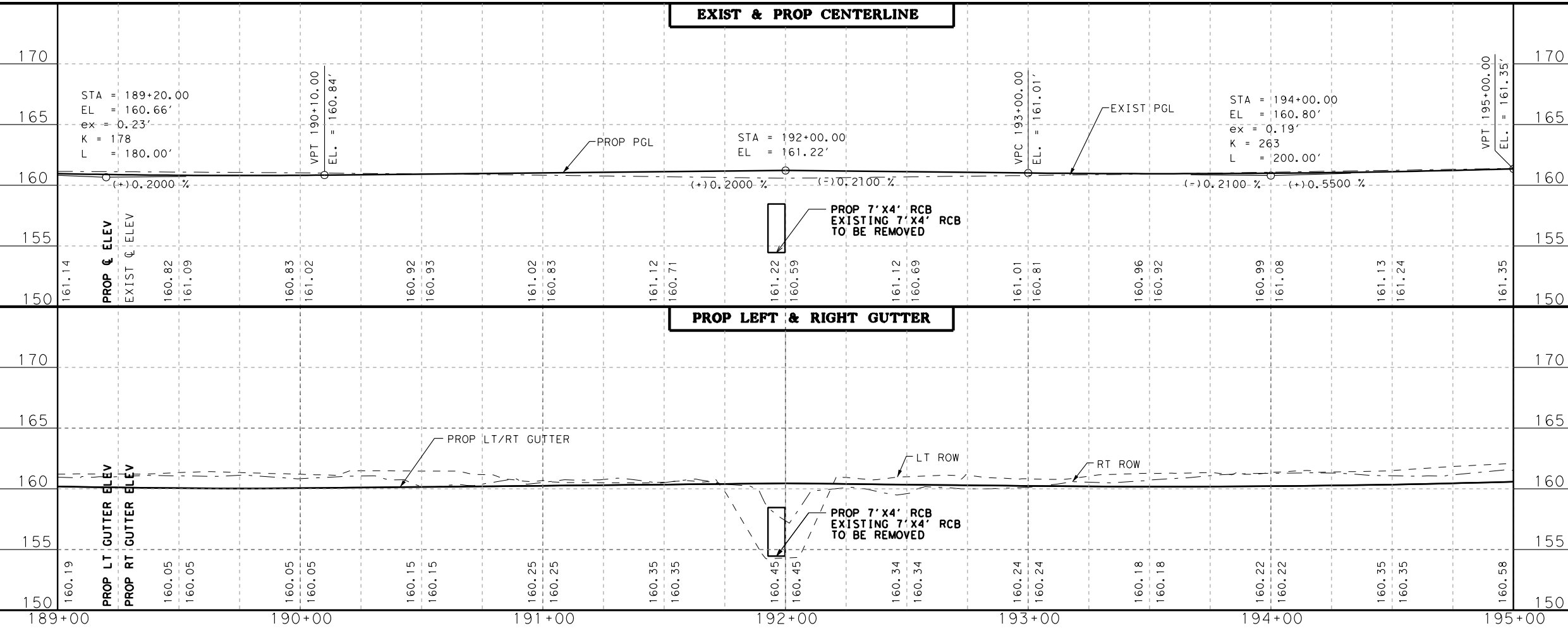
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			166
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1+  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022

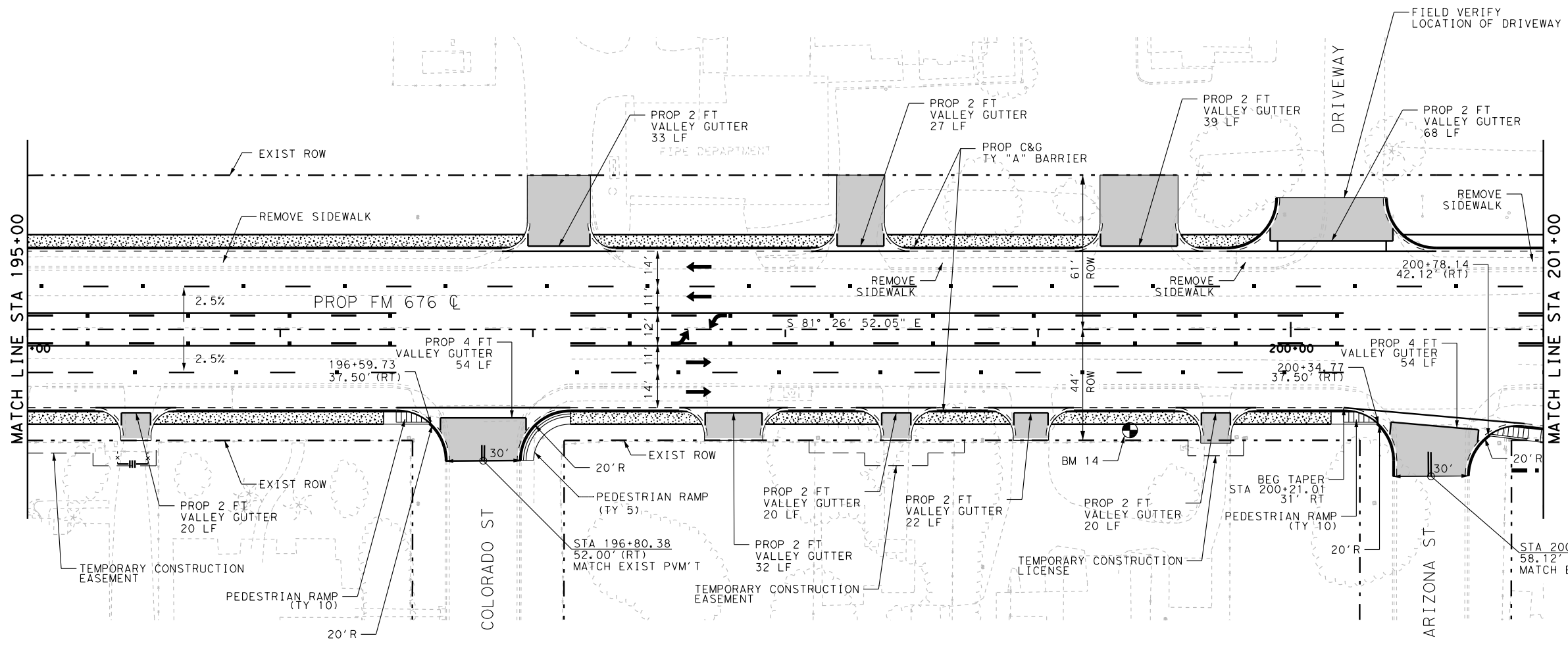


**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**PLAN & PROFILE**  
**STA 189+00.00 TO STA 195+00.00**  
 PLAN SCALE: 1"=50' PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50 0 2 4 6 8 10  
 DISTANCE IN FEET DISTANCE IN FEET  
 SHEET 22 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			167
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD+11x17+PDF.d1+  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\bar{C}$  OF FM 676 AND ALL OFFSETS ARE TO THE CURB AND GUTTER.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



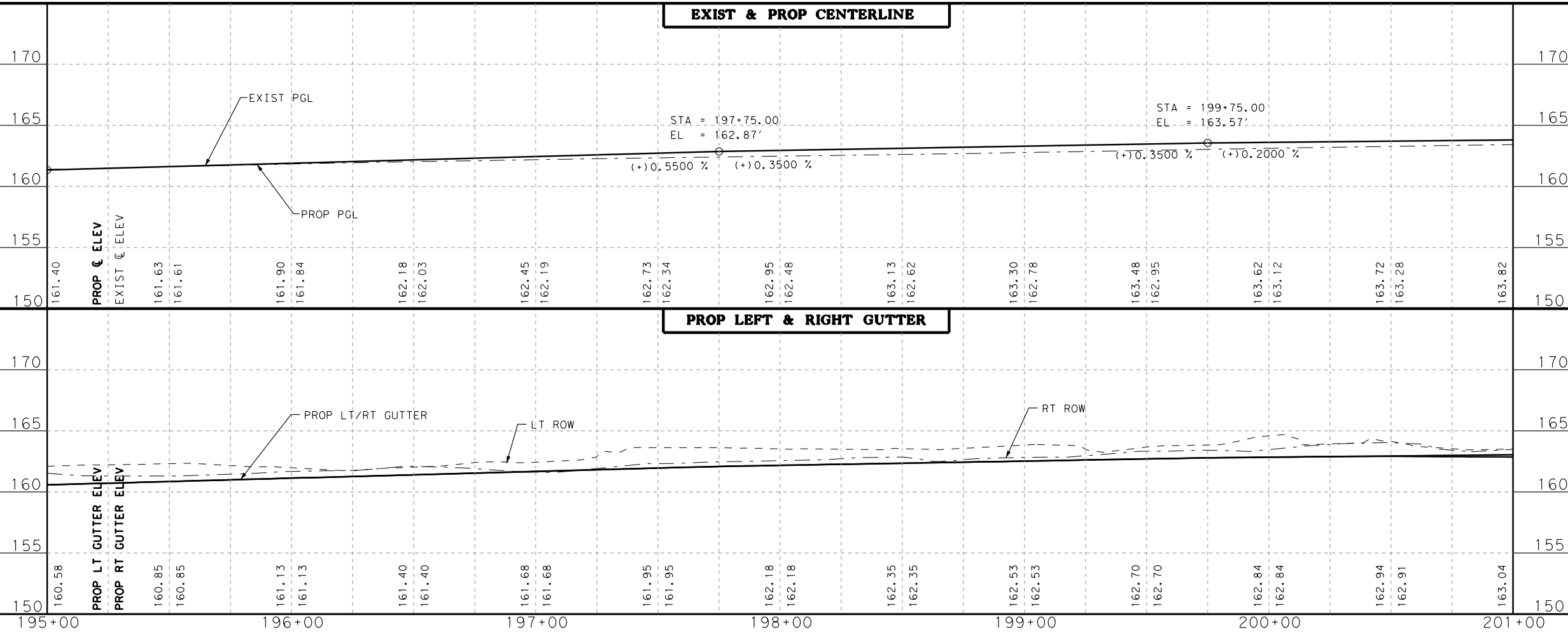
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
STA 195+00.00 TO STA 201+00.00**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
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DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 23 OF 33

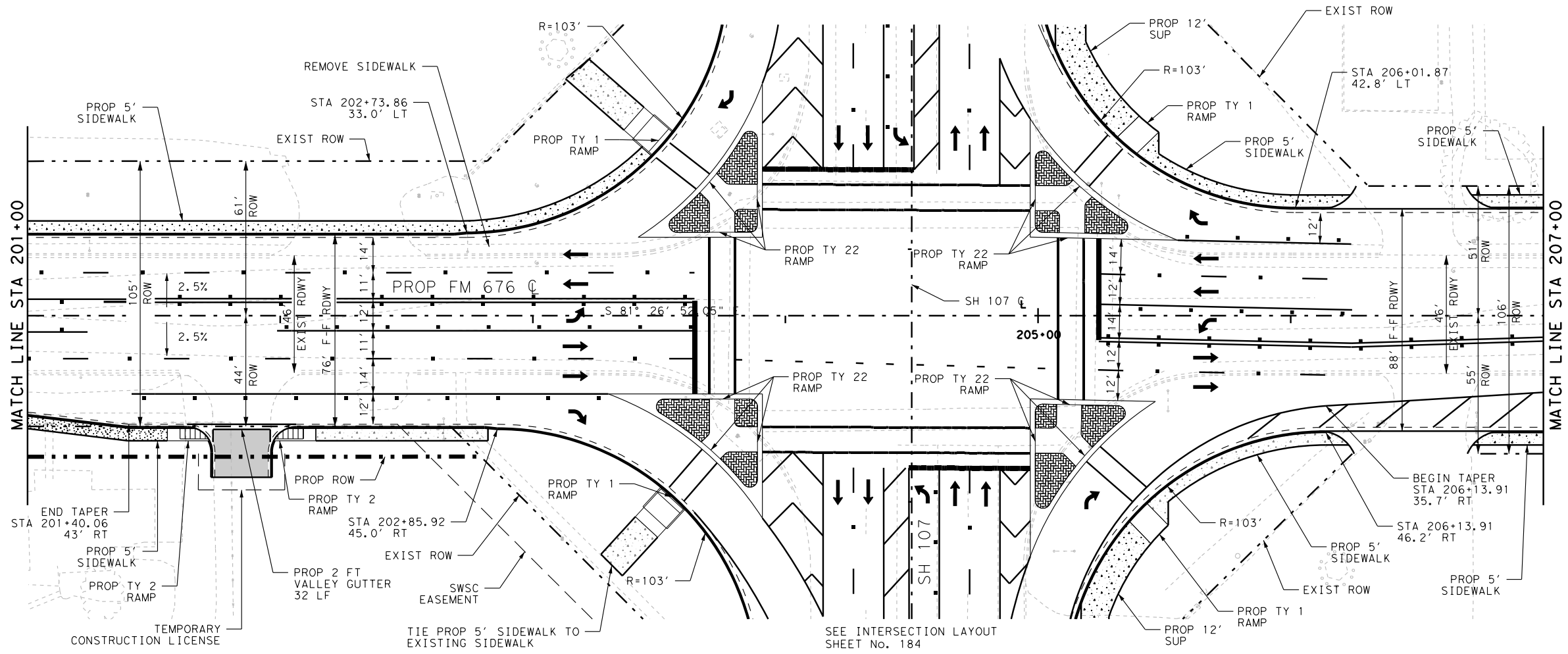
FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				168
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: pm1\SUS0036343.wsorkins.com:ATKNTX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676MPP23.dgn





PLOT DRIVER: RD\*11x17\*PDF\*.p1+  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK
- LANDSCAPE PAVERS
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



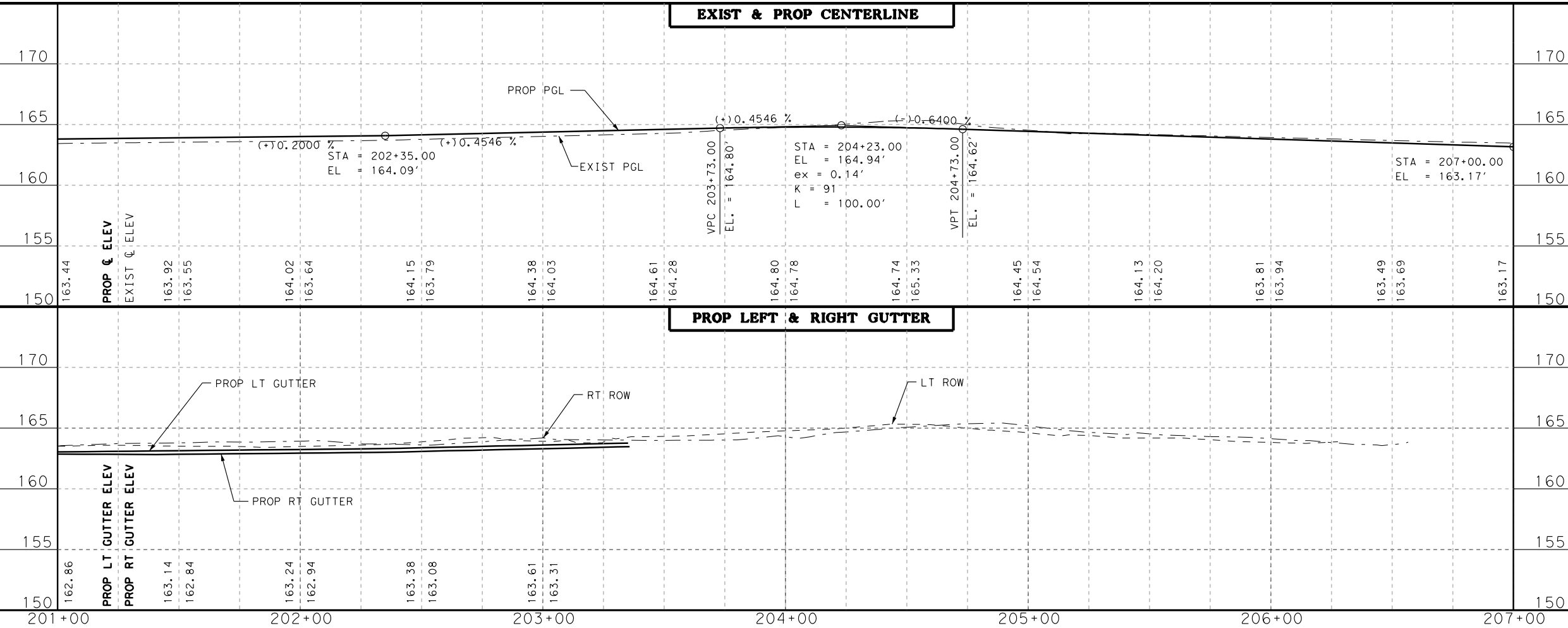
11/17/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**PLAN & PROFILE**  
**STA 201+00.00 TO STA 207+00.00**  
 PLAN SCALE: 1"=50'    PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50    0 2 4 6 8 10  
 DISTANCE IN FEET    DISTANCE IN FEET  
 SHEET 24 OF 33

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			169
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676





- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK
- LANDSCAPE PAVERS
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



*Thomas T. Le*

12/1/2022



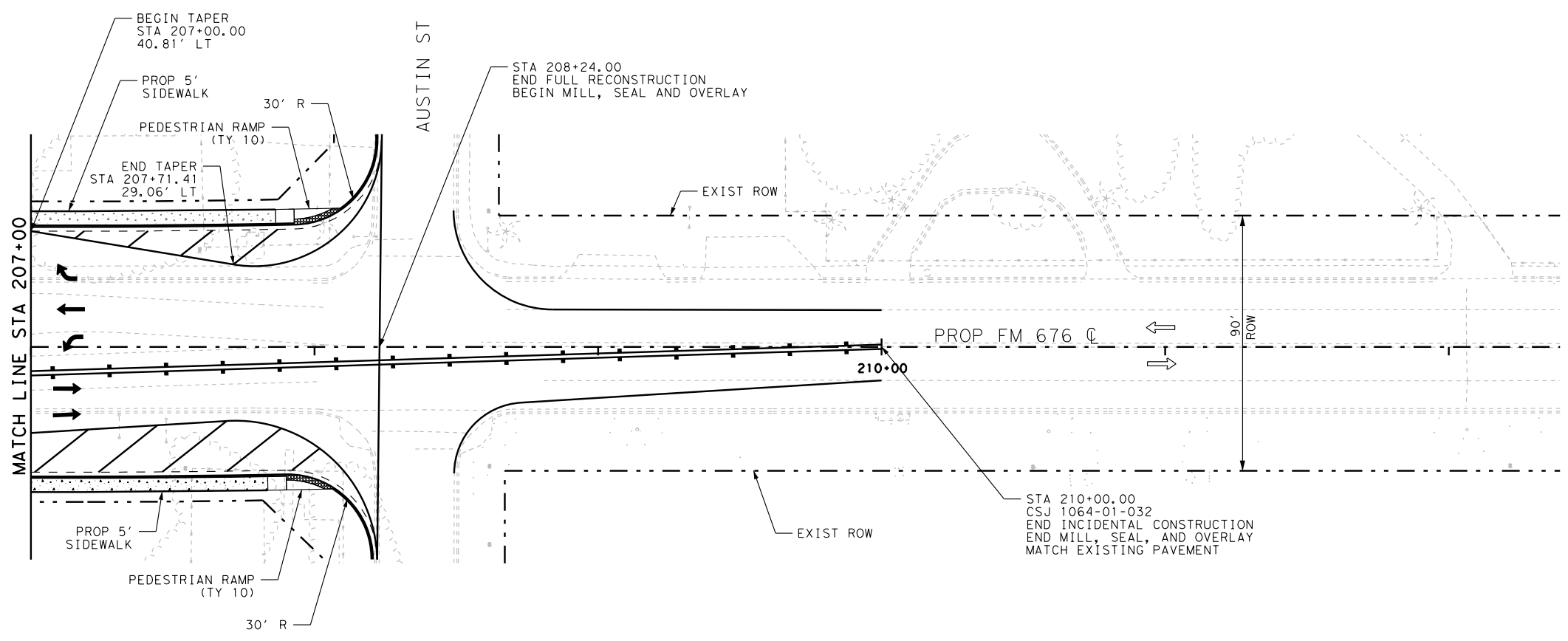
**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**PLAN & PROFILE**  
**STA 207+00.00 TO STA 210+00.00**

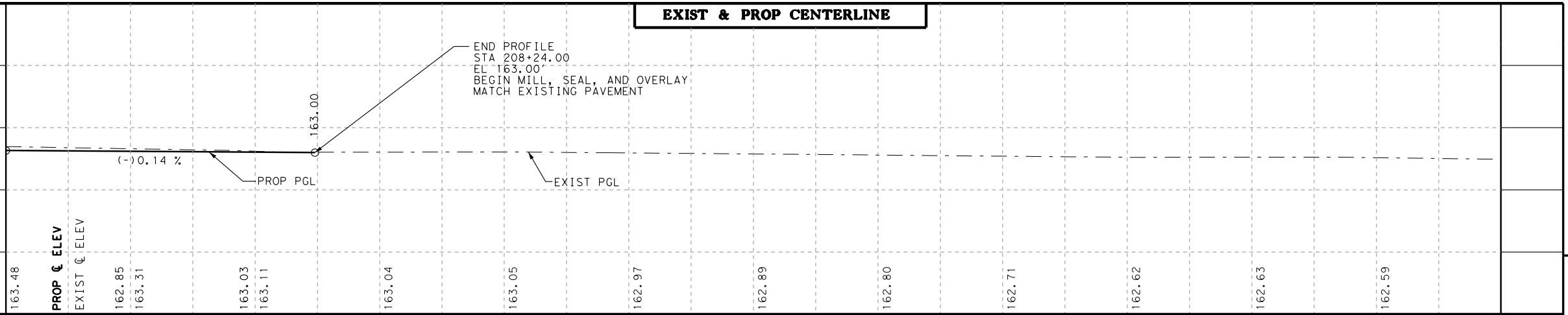
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DISTANCE IN FEET      DISTANCE IN FEET

SHEET 24A OF 33

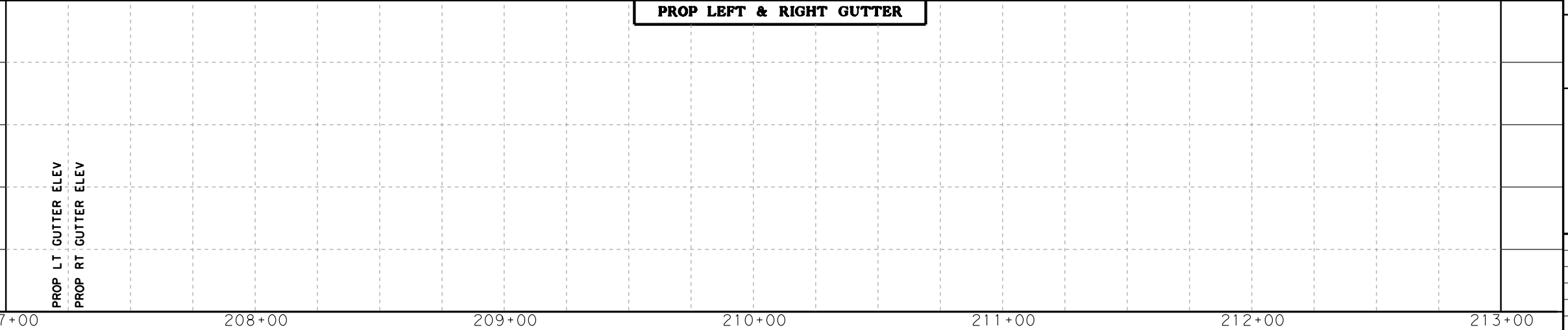
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			169A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**EXIST & PROP CENTERLINE**



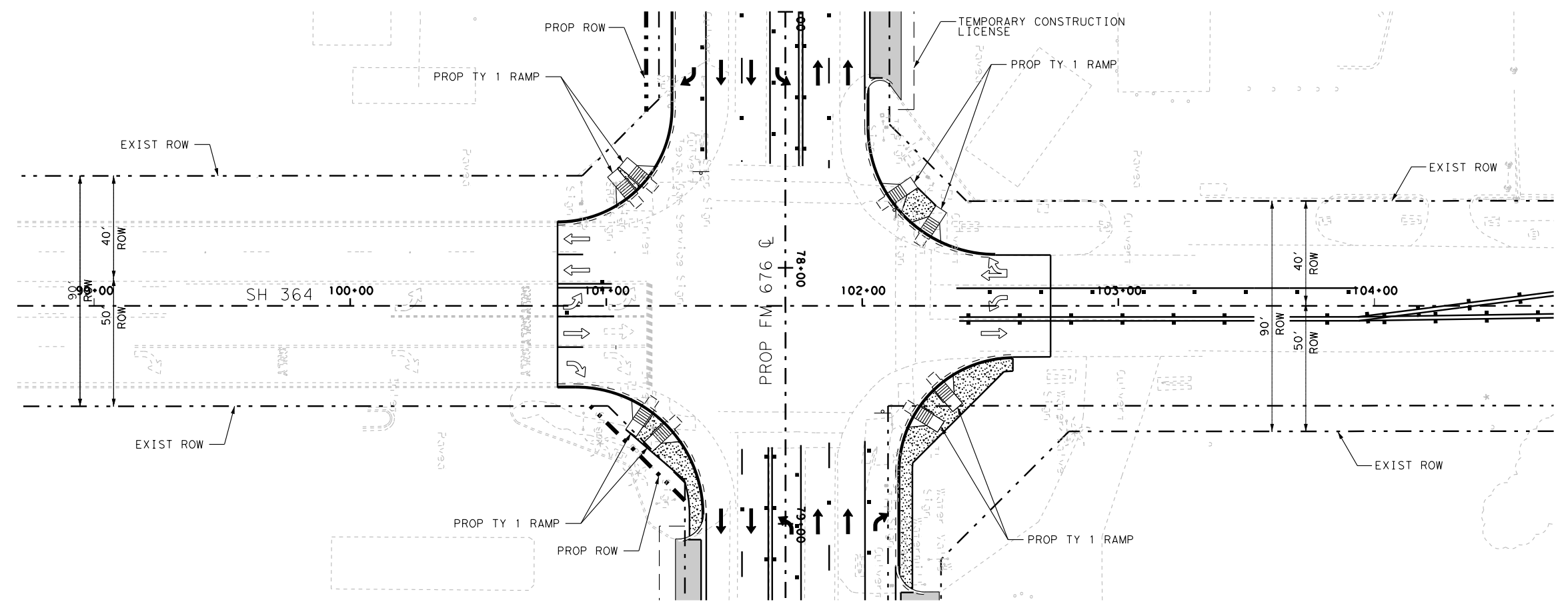
**PROP LEFT & RIGHT GUTTER**



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DATE: 12/1/2022  
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RT GUTTER &  
 LT GUTTER ELEV

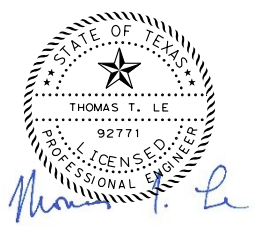


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\phi$  OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS

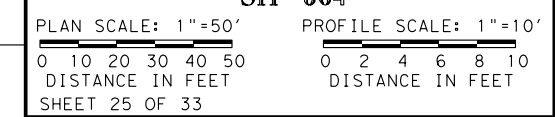


11/17/2022



**ATKINS**  
 TBPE REG. #F-474

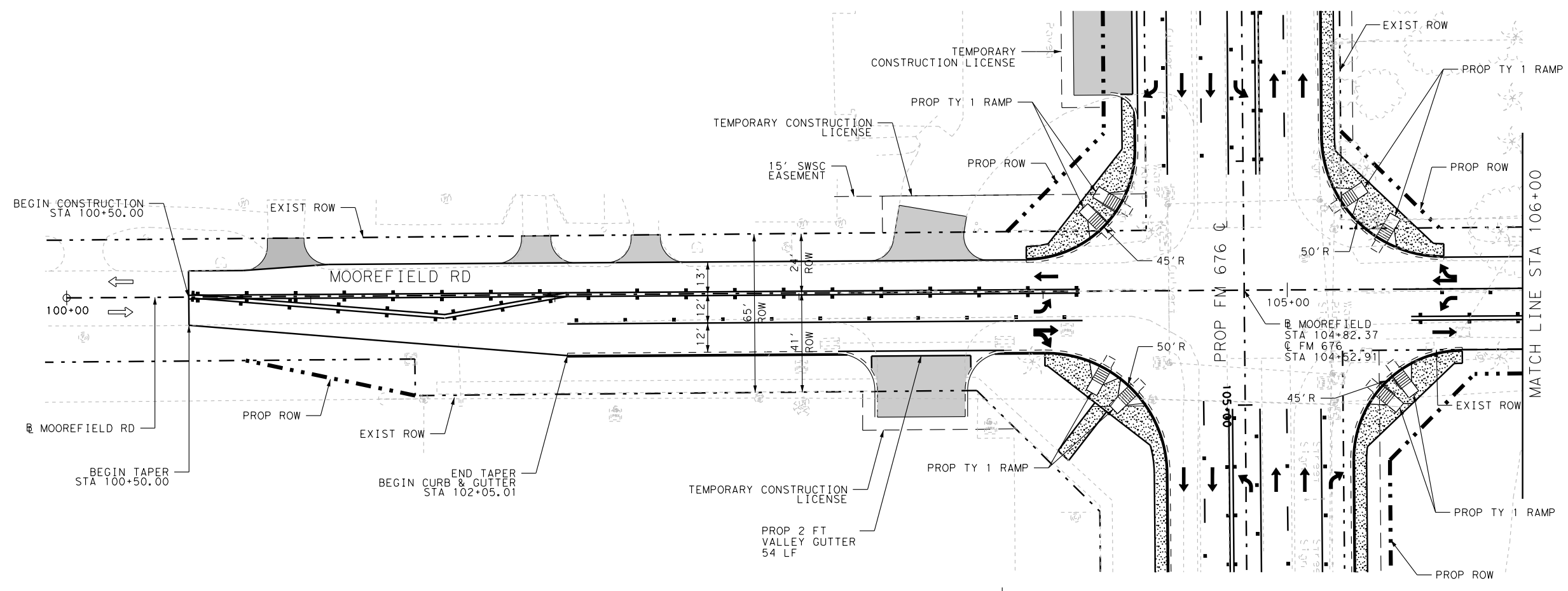
**FM 676  
 PLAN & PROFILE  
 SH 364**



FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				170
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

EXIST & PROP CENTERLINE

REFER TO FM 676 ELEVATIONS



- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\odot$  OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



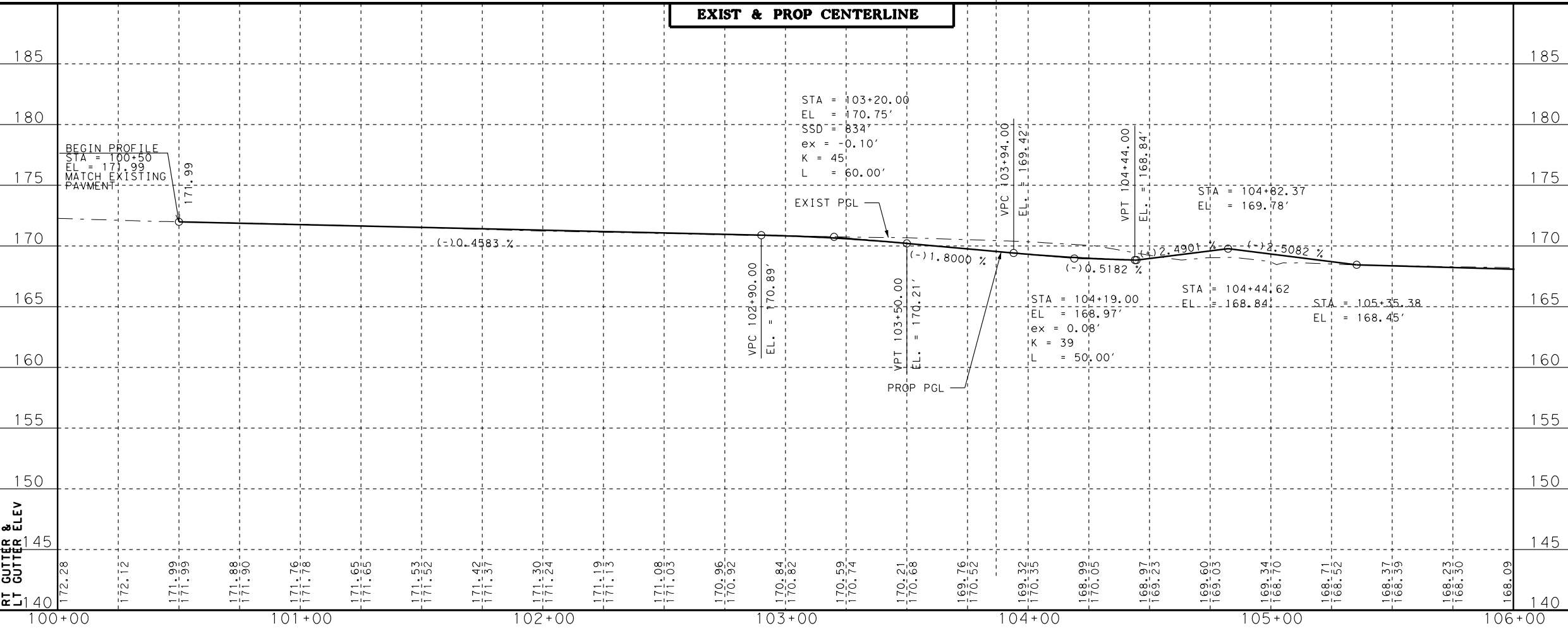
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
MOOREFIELD RD**

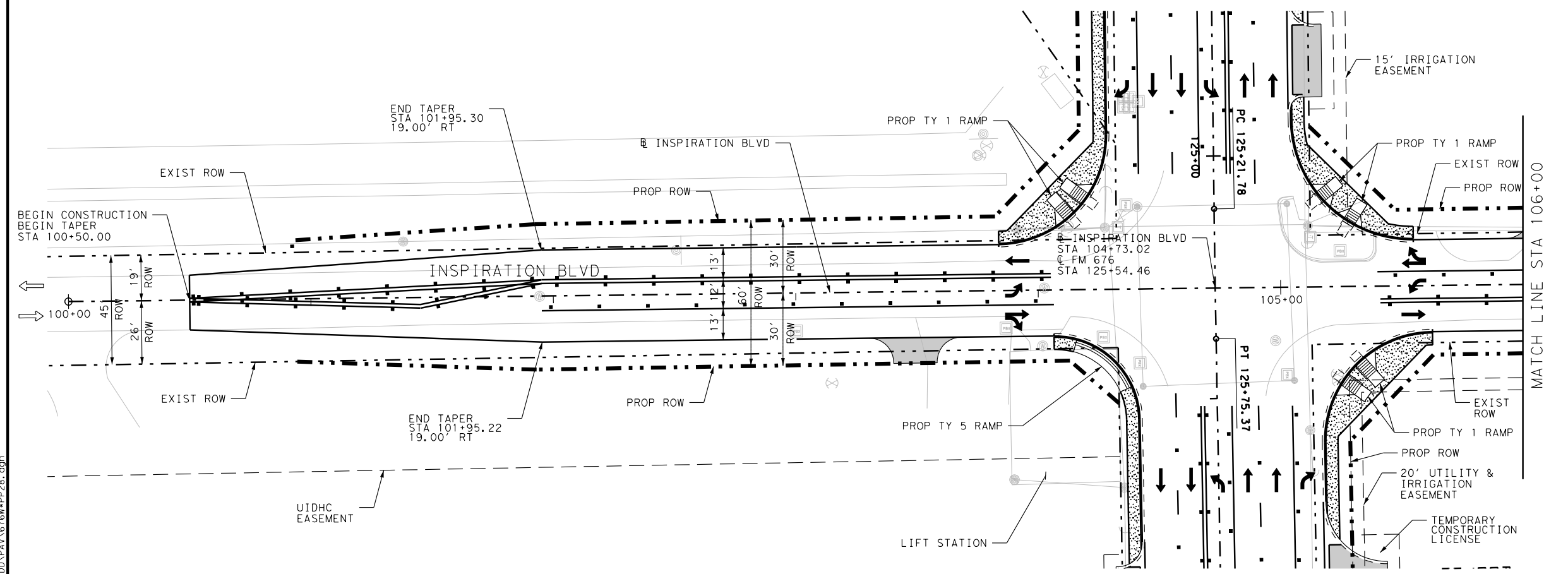
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DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 26 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				171
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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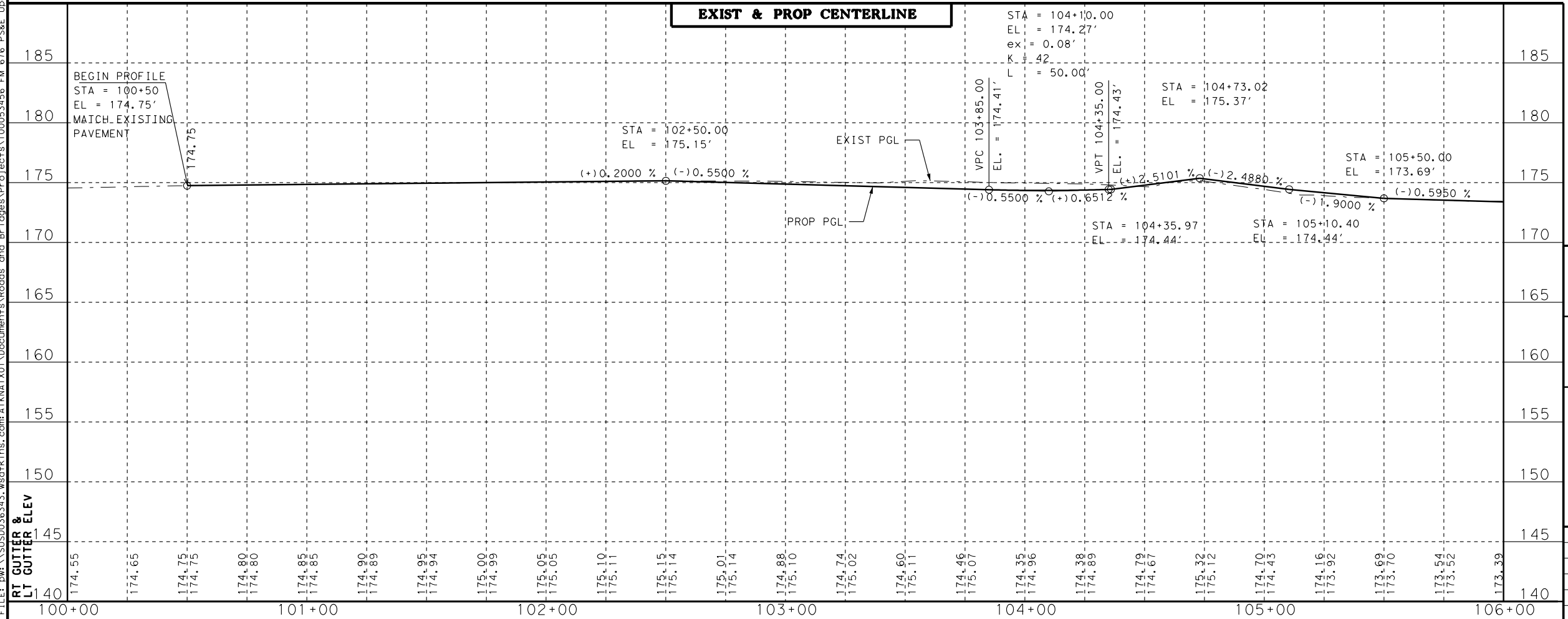




- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW



11/17/2022



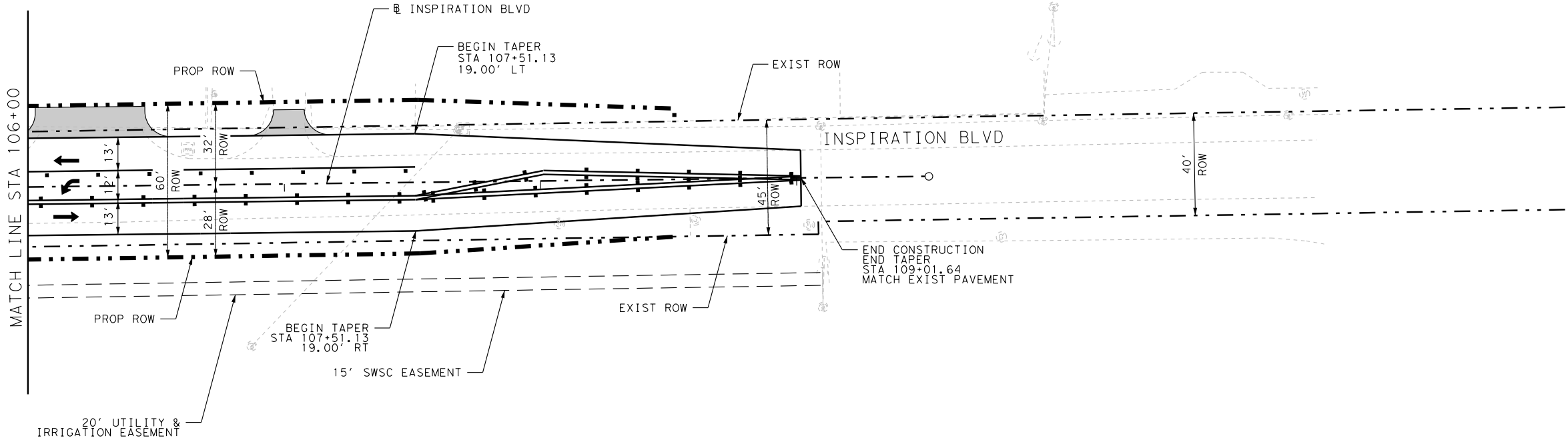
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
INSPIRATION BLVD**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 28 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				173	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

PLOT DRIVER: RD+11x17+PDF.d1+  
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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022



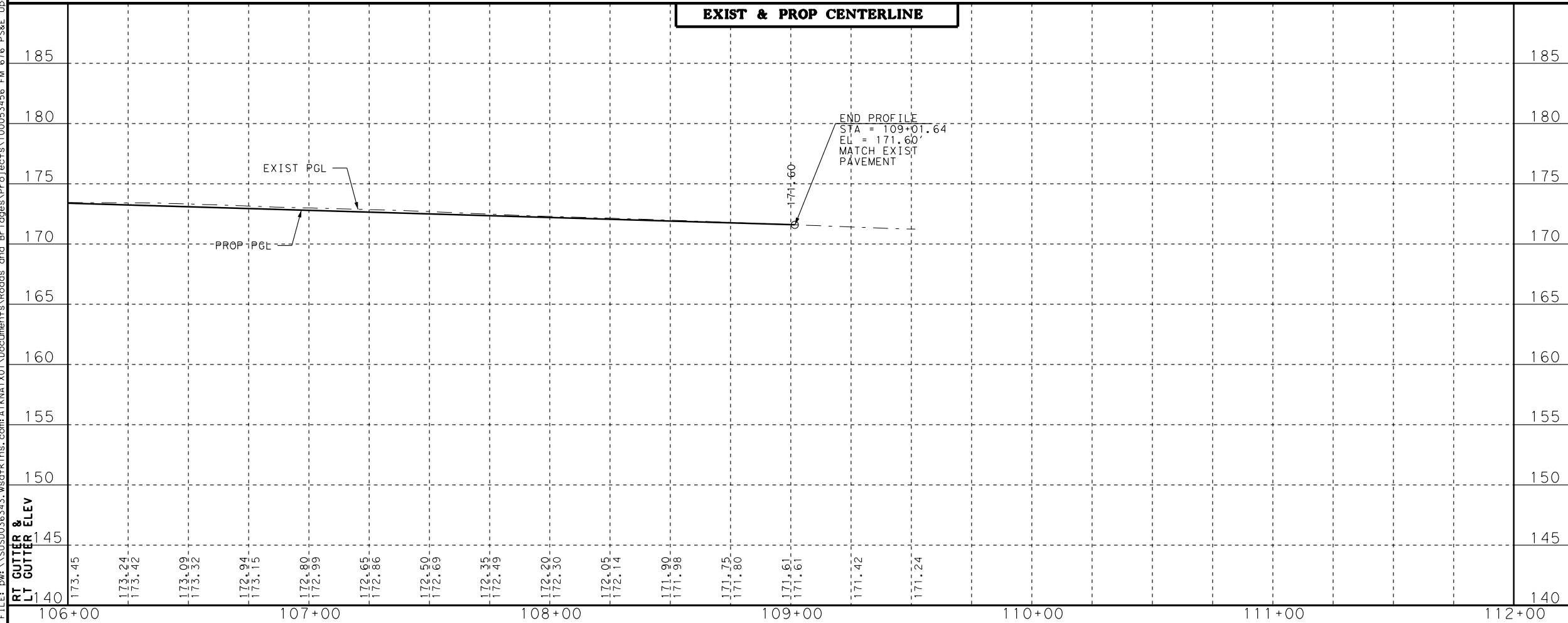
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
INSPIRATION BLVD**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 29 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				174
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - SIDEWALK (5' TYP)
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW

REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS



11/17/2022

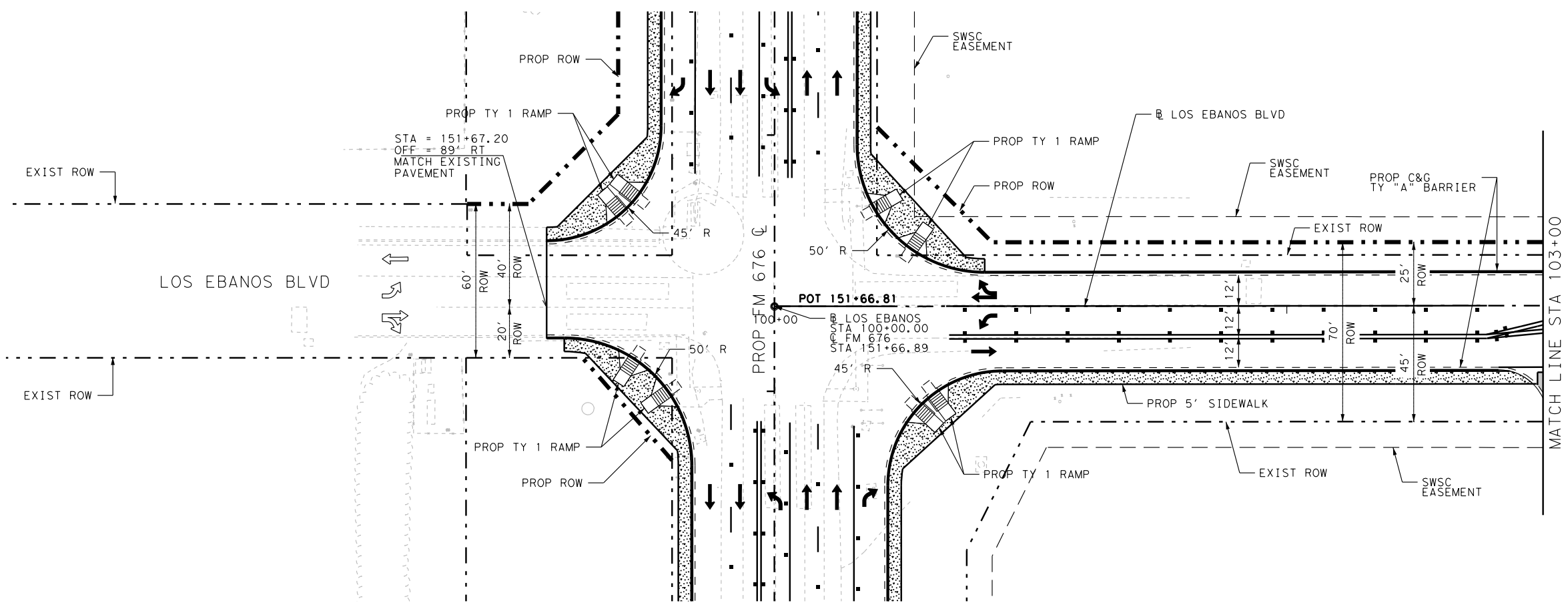


**ATKINS**  
TBPE REG. #F-474

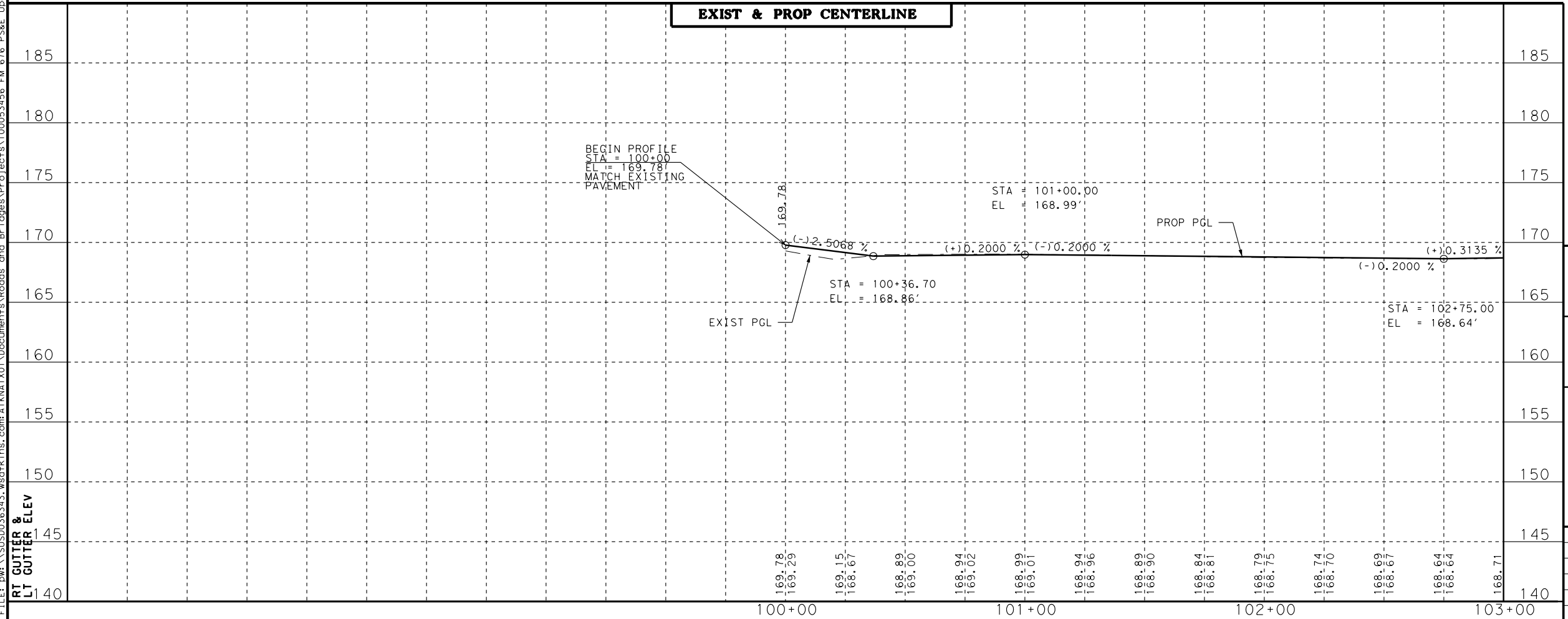
**FM 676  
PLAN & PROFILE  
LOS EBANOS BLVD**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 30 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				175
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



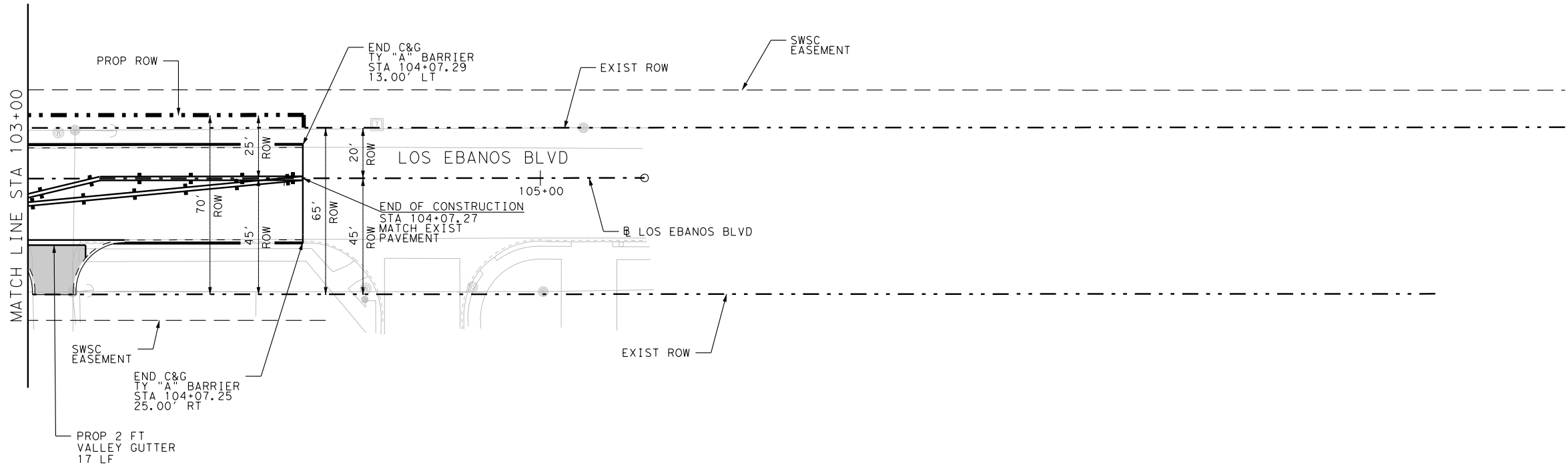
**EXIST & PROP CENTERLINE**



PLOT DRIVER: RD\*11x17\*PDF.d1+  
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RT GUTTER &  
 LT GUTTER ELEV



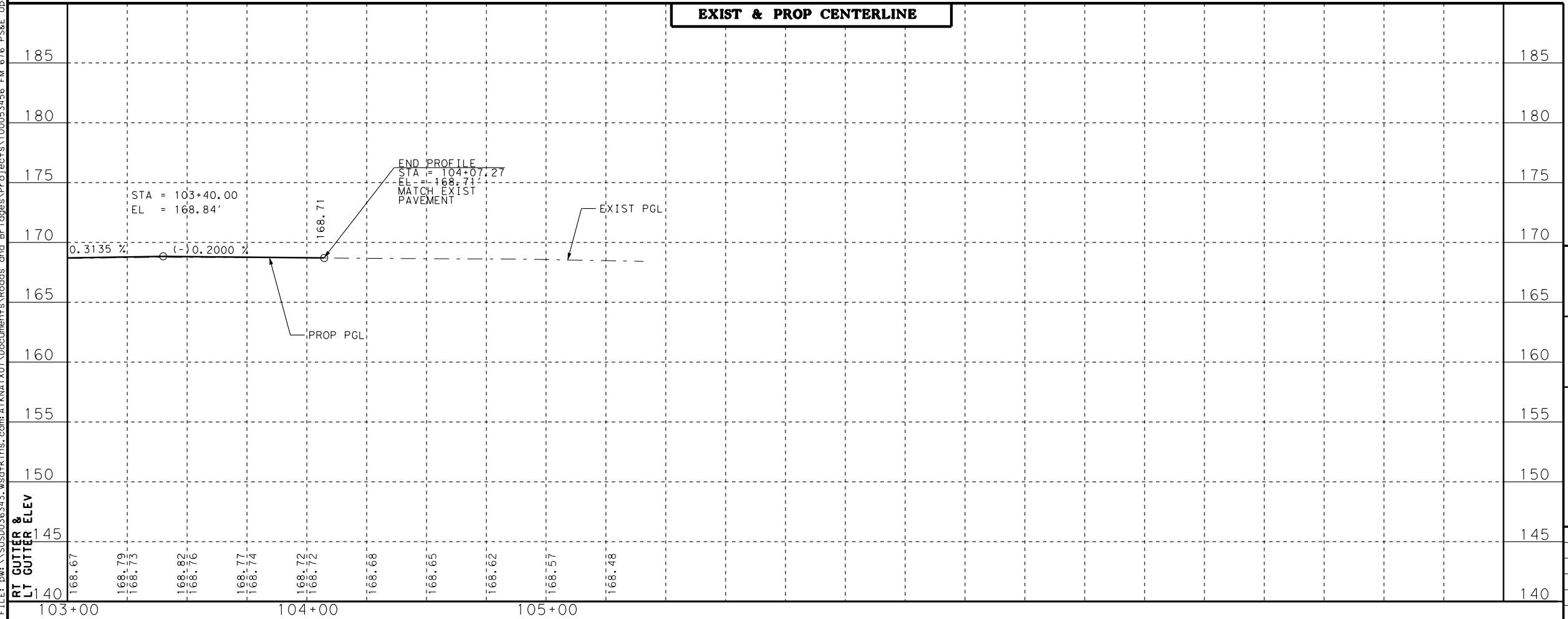


- NOTES:**
1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  2. GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  3. ALL OFFSETS ARE BASED ON  $\phi$  OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

PLOT DRIVER: RD+11x17+PDF.plt  
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11/17/2022

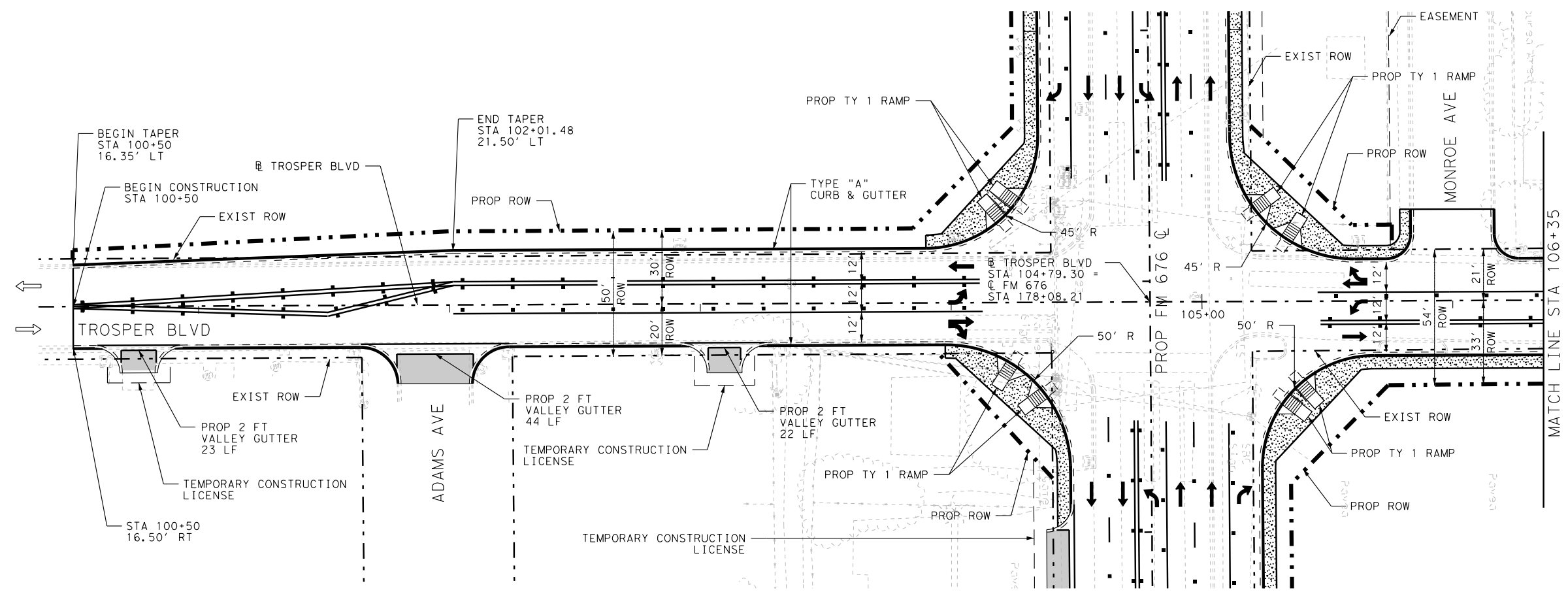


**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
LOS EBANOS BLVD**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 31 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				176
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



- NOTES:**
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- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW



11/17/2022



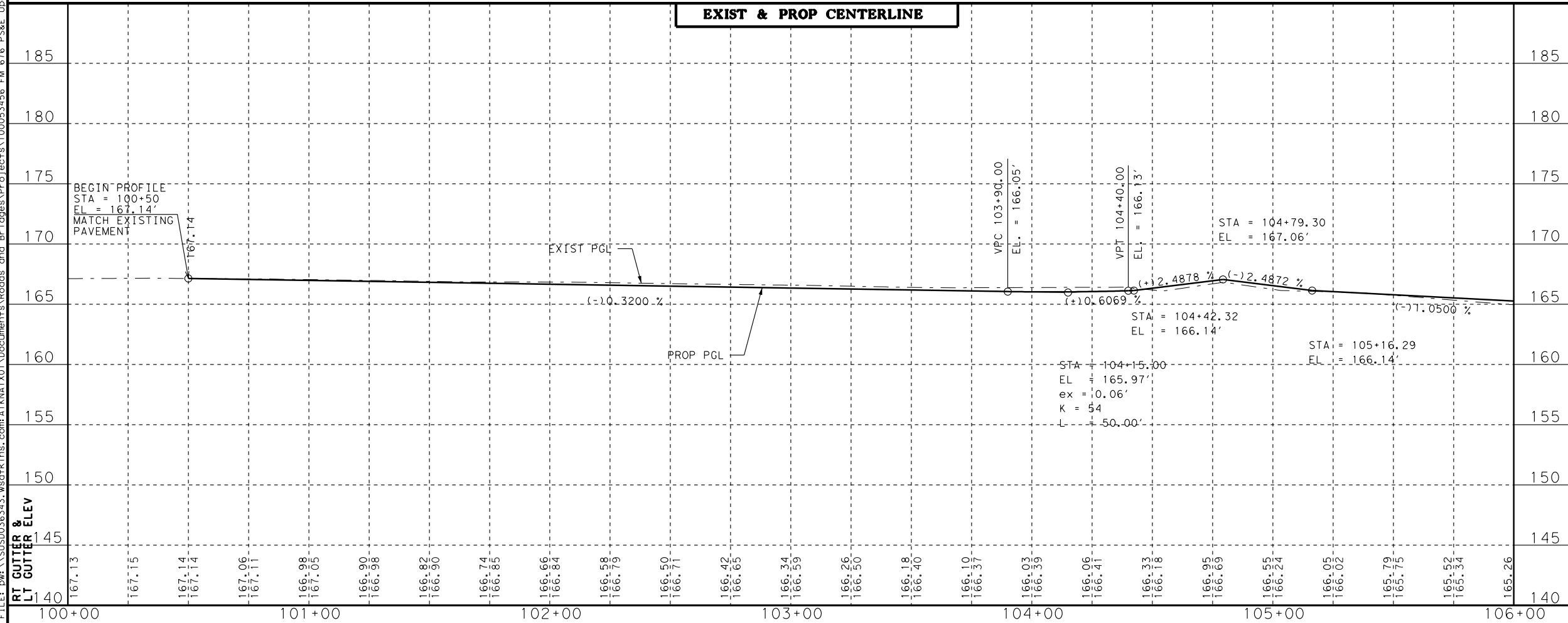
**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
TROSPER BLVD**

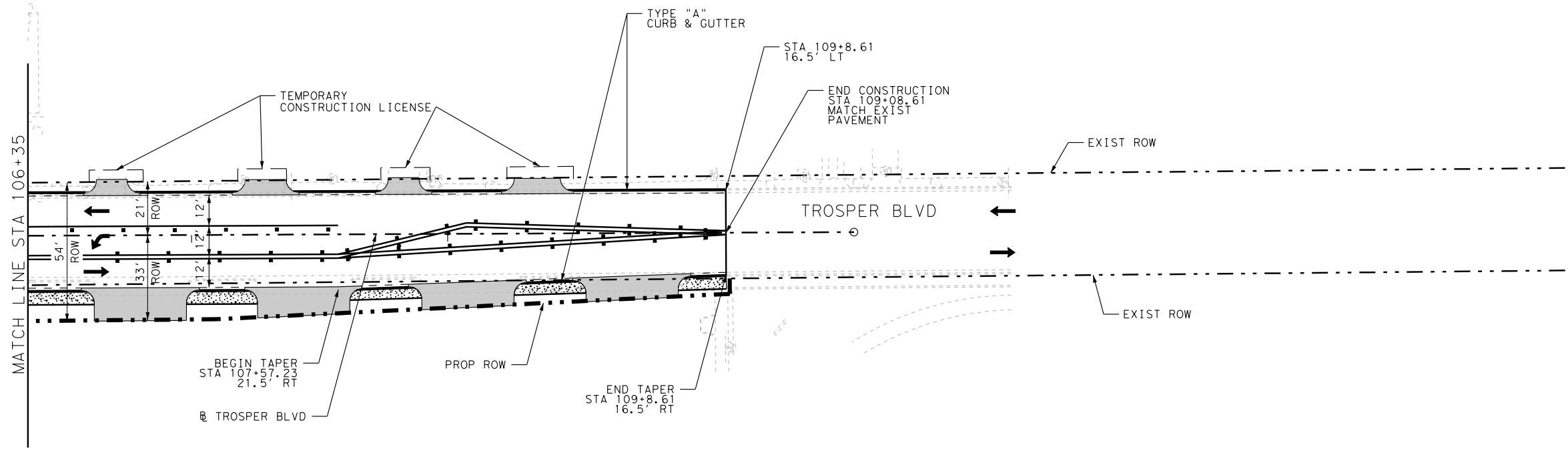
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DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 32 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				177
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD+11x17+PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/17/2022  
 FILE: DWG:\SUS036343.wsoftkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676WPP32.dgn



**RT GUTTER & LT GUTTER ELEV**  
 167.13, 167.15, 167.14, 167.14, 167.06, 167.11, 166.98, 167.05, 166.90, 166.98, 166.82, 166.90, 166.74, 166.85, 166.66, 166.84, 166.58, 166.79, 166.50, 166.71, 166.42, 166.65, 166.34, 166.59, 166.26, 166.50, 166.18, 166.40, 166.10, 166.37, 166.03, 166.39, 166.06, 166.41, 166.33, 166.18, 166.95, 166.69, 166.55, 166.24, 166.05, 166.02, 165.79, 165.75, 165.52, 165.34, 165.26

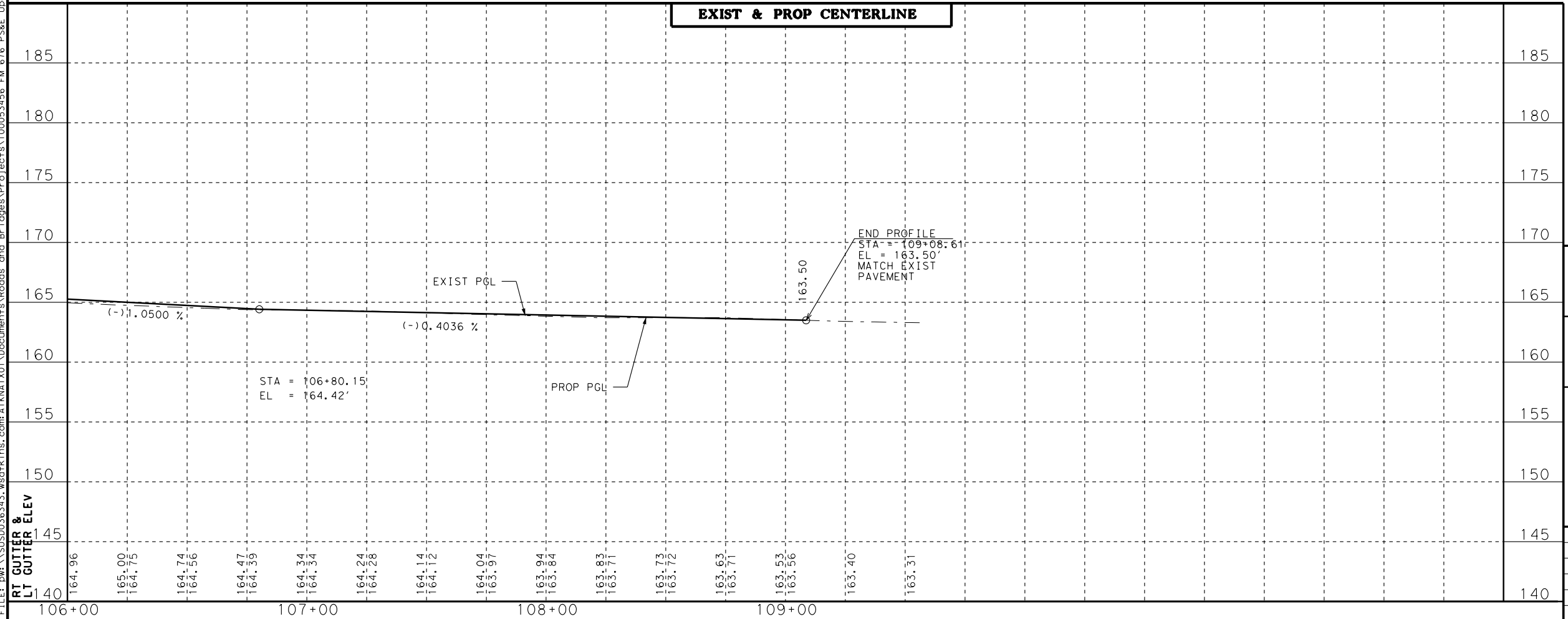


- NOTES:**
1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:  
- UTILITY AND DRAINAGE PLAN AND PROFILES  
- INTERSECTION LAYOUTS
  2. GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  3. ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

PLOT DRIVER: RD\11x17\PDF.d1+  
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 DATE: 11/17/2022  
 FILE: DWG\ASUS036343.wsofkins.com:ATKNTX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676W\PP33.dgn



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PLAN & PROFILE  
TROSPER BLVD**

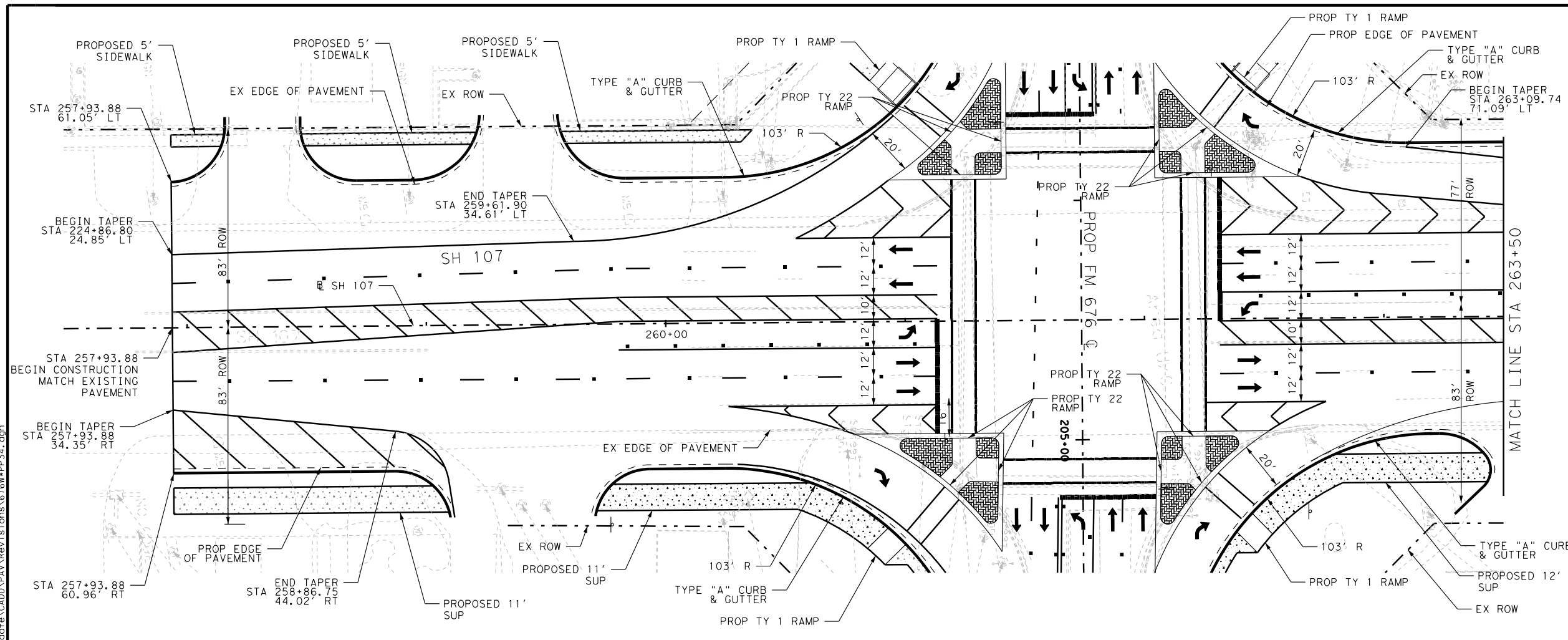
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0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET

SHEET 33 OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				178
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

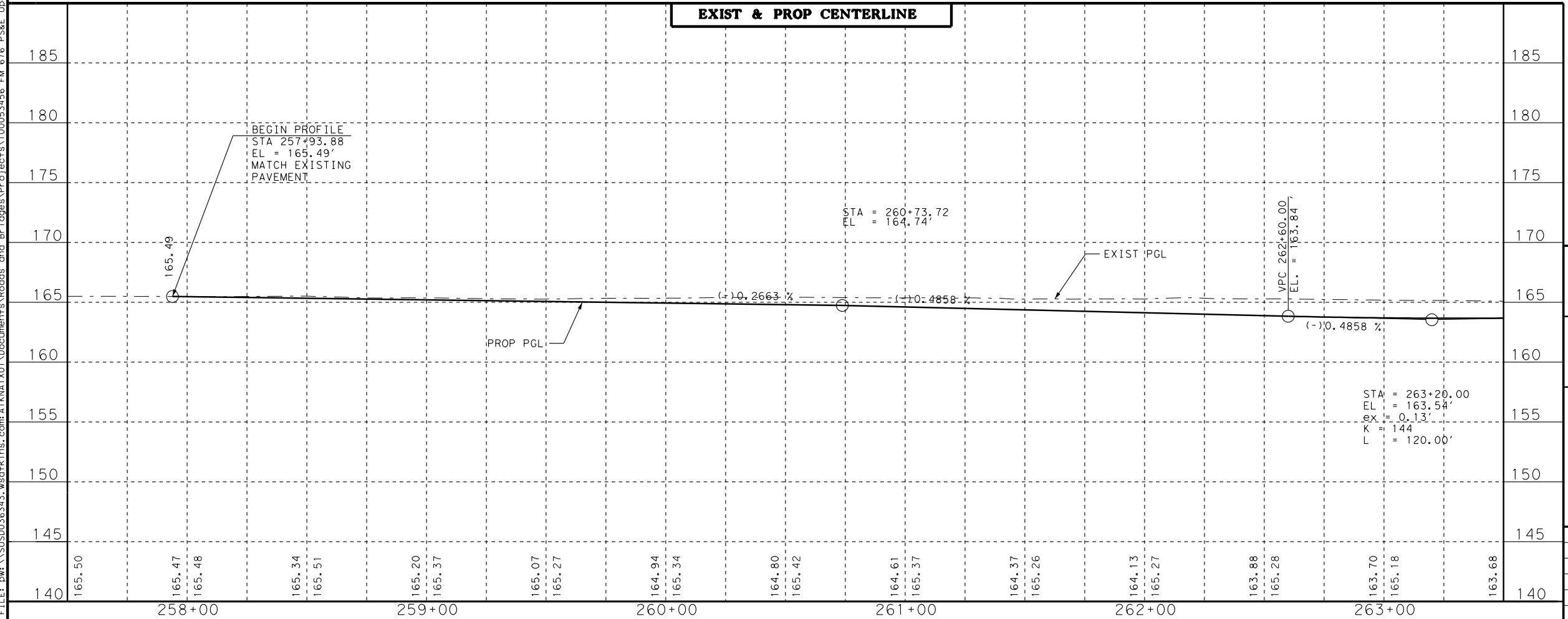
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 DATE: 11/17/2022  
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- NOTES:**
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 - UTILITY AND DRAINAGE PLAN AND PROFILES  
 - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON C OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW



11/17/2022

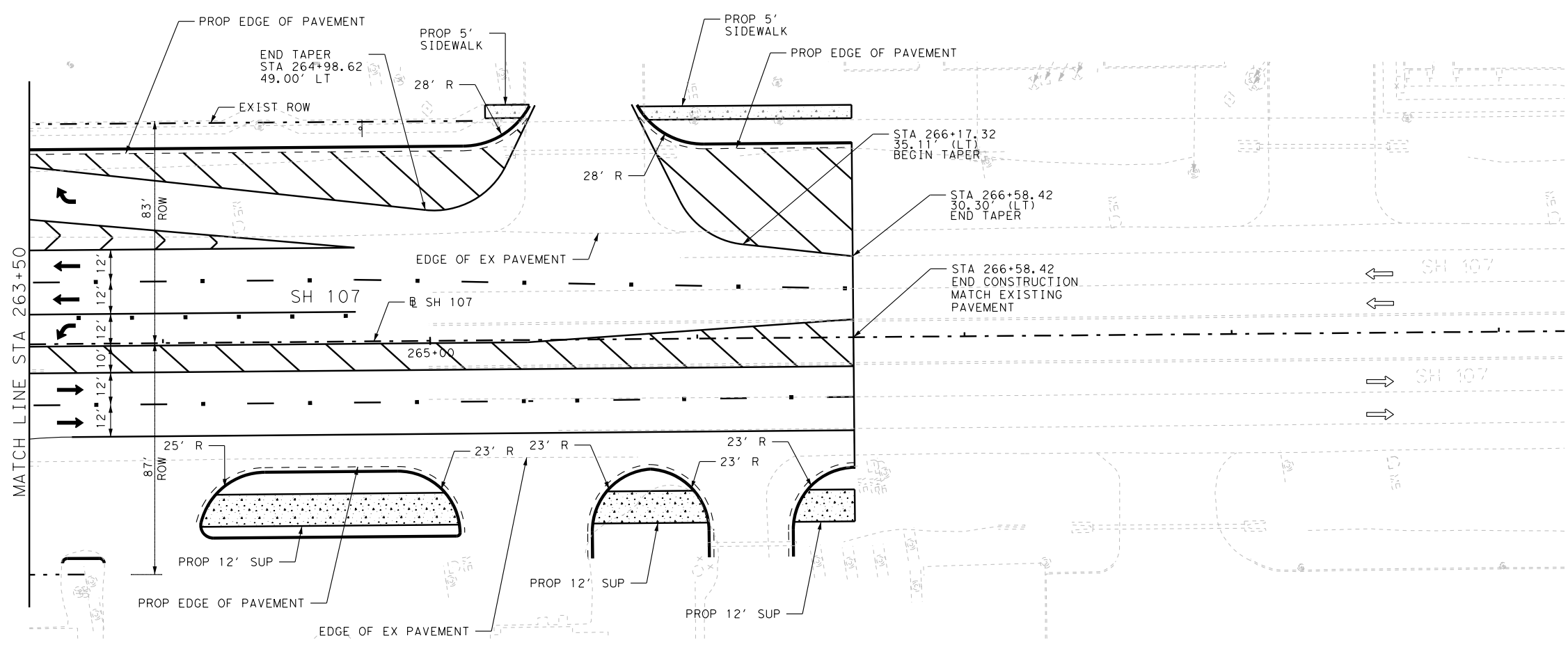


**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 PLAN & PROFILE  
 SH 107**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET  
 SHEET 33A OF 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				178A	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

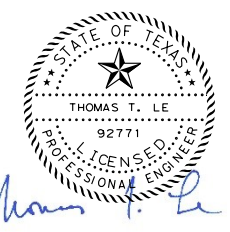
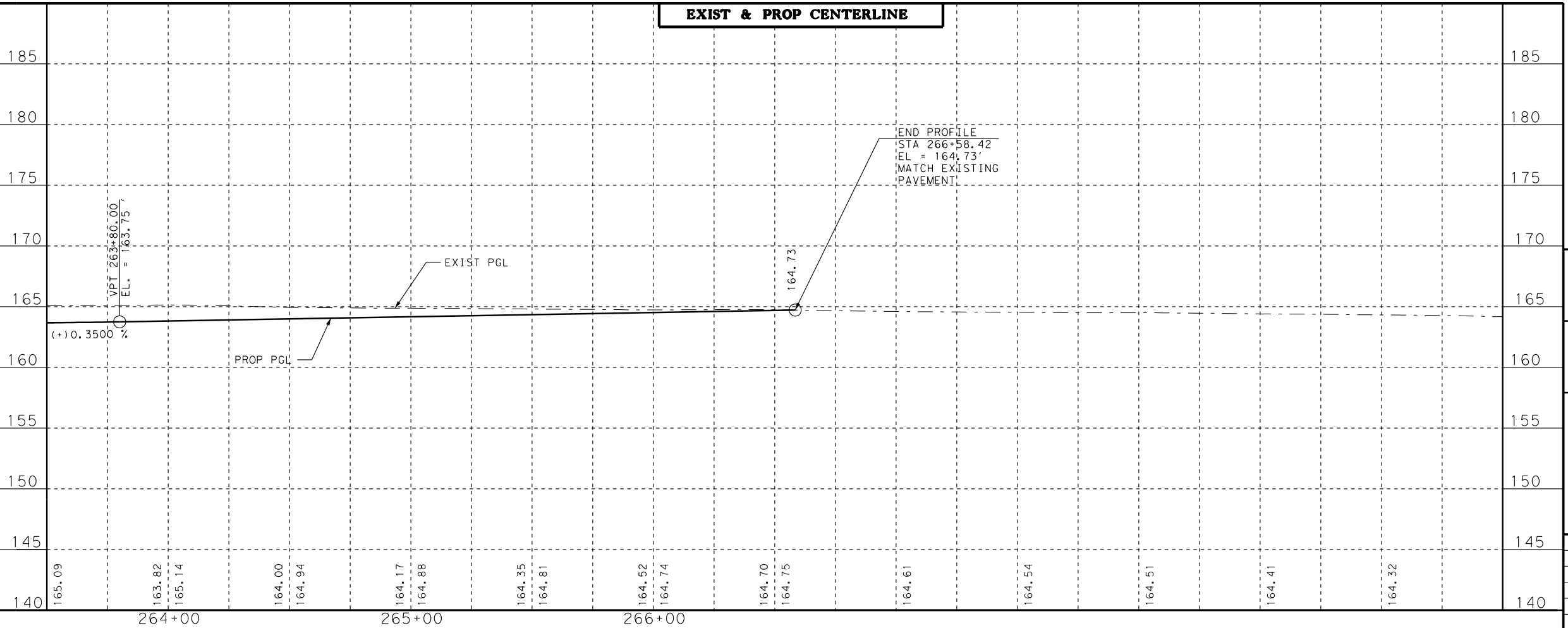


- NOTES:**
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING SHEETS:
    - UTILITY AND DRAINAGE PLAN AND PROFILES
    - INTERSECTION LAYOUTS
  - GRADING OF THE DRIVEWAYS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
  - ALL OFFSETS ARE BASED ON  $\odot$  OF FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB.

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK (5' TYP)
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW

**EXIST & PROP CENTERLINE**



*Thomas T. Le*

11/17/2022



**ATKINS**  
TBPE REG. #F-474

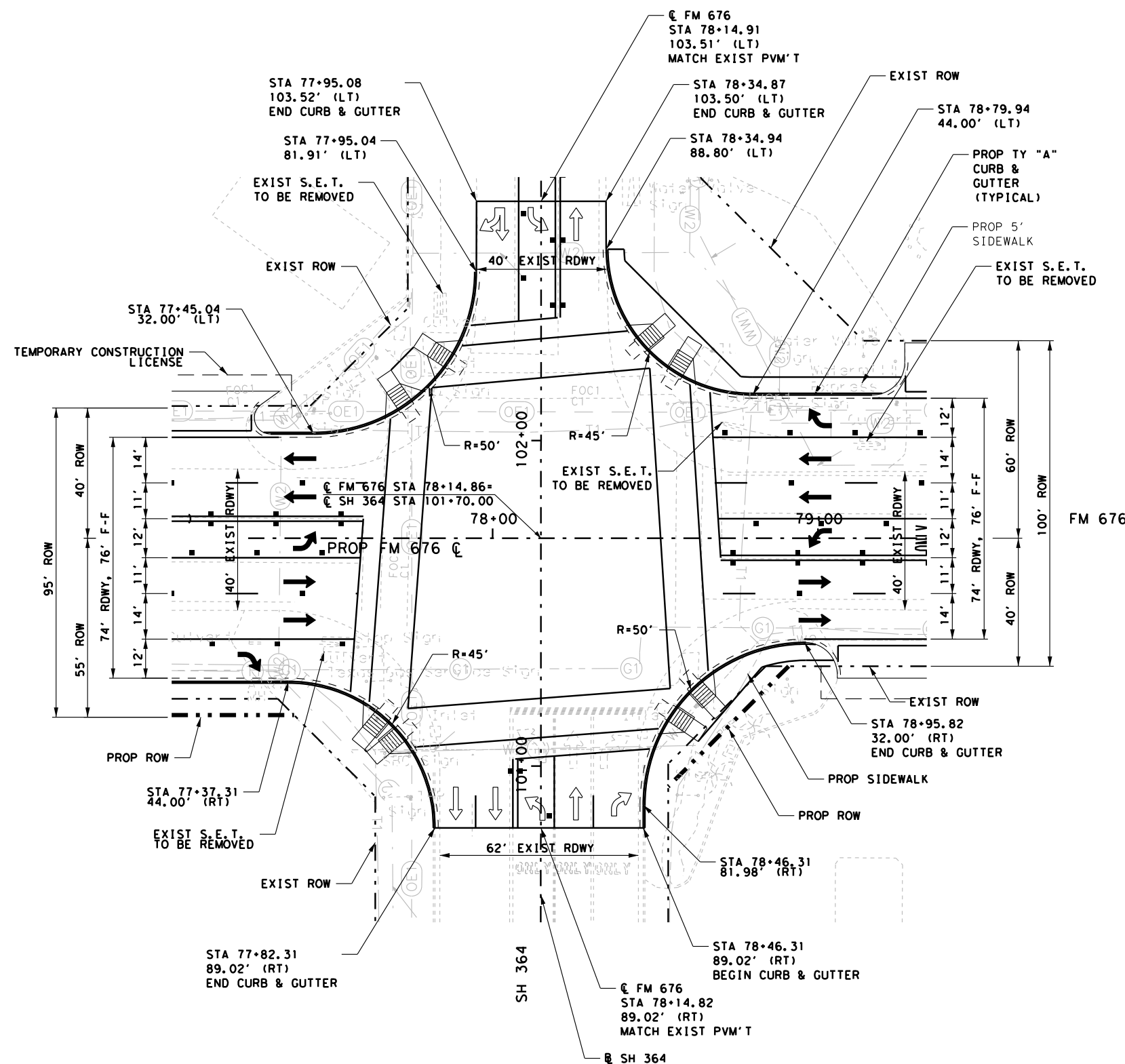
**FM 676  
PLAN & PROFILE  
SH 107**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET  
SHEET 33B of 33

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				178B	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

258+  
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- NOTES:**
1. ALL STATIONS ARE BASED ON  $\text{C FM 676}$  AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  2. ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  3. ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  4. SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  5. ALL RADII CALLOUTS ARE TO THE FACE OF CURB

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET SIDEWALK
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - EXIST ROW
  - PROP ROW



*Thomas T. Le*

11/17/2022



**ATKINS**  
 TBPE REG. #F-474

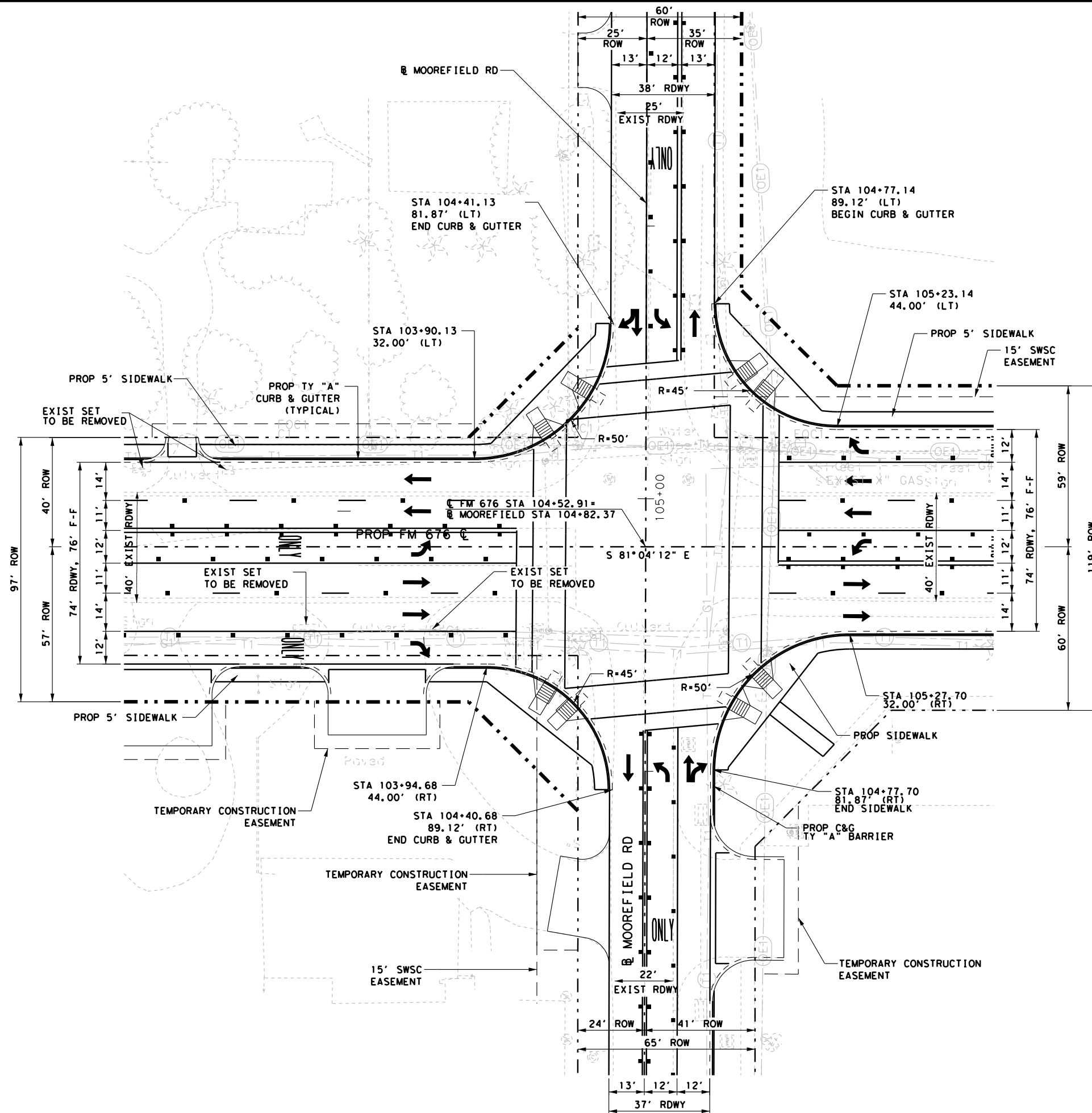
**FM 676  
 INTERSECTION LAYOUT  
 SH 364**

PLAN SCALE: 1"=40'  
 0 8 16 24 32 40  
 DISTANCE IN FEET

SHEET 1 OF 6

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			179
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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- NOTES:**
1. ALL STATIONS ARE BASED ON C FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  2. ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  3. ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  4. SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  5. ALL RADII CALLOUTS ARE TO THE FACE OF CURB

- LEGEND**
- PROP DRIVEWAY/ CROSS STREET
  - PROP SIDEWALK
  - PEDESTRIAN RAMP (TY 1)
  - PEDESTRIAN RAMP (TY 2)
  - PEDESTRIAN RAMP (TY 5)
  - PEDESTRIAN RAMP (TY 10)
  - TRAFFIC FLOW
  - EXIST TRAFFIC FLOW
  - EXIST ROW
  - PROP ROW



11/17/2022



**ATKINS**  
 TBPE REG. #F-474

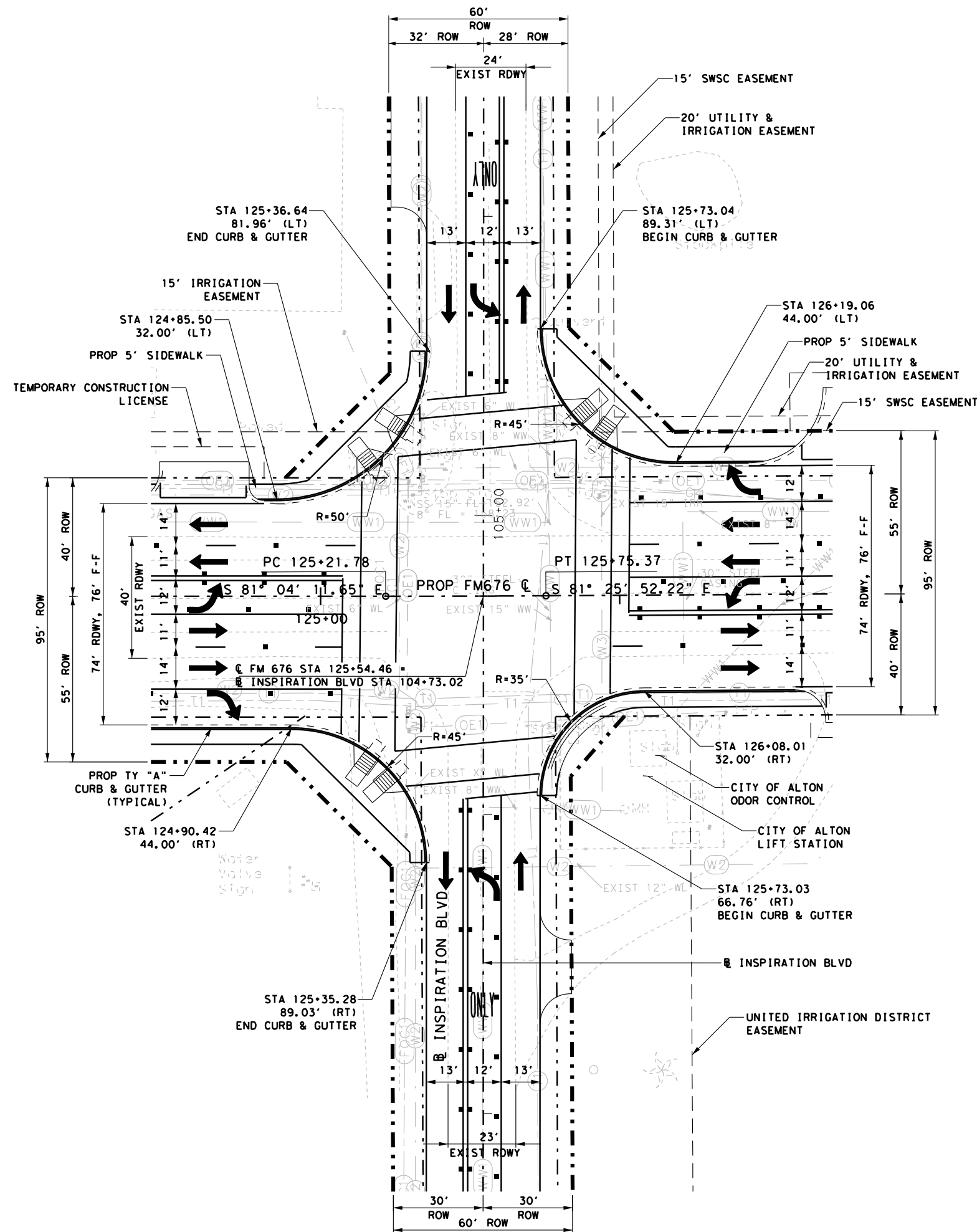
**FM 676  
 INTERSECTION LAYOUT  
 MOOREFIELD RD**

PLAN SCALE: 1"=40'  
 0 8 16 24 32 40  
 DISTANCE IN FEET

SHEET 2 OF 6

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			180
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

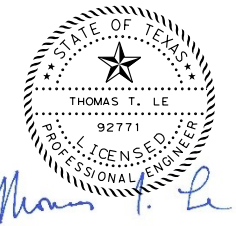
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- NOTES:**
1. ALL STATIONS ARE BASED ON C FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  2. ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  3. ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  4. SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  5. ALL RADII CALLOUTS ARE TO THE FACE OF CURB

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- PROP SIDEWALK
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- EXIST ROW
- PROP ROW



*Thomas T. Le*

11/17/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
 INTERSECTION LAYOUT  
 INSPIRATION BLVD**

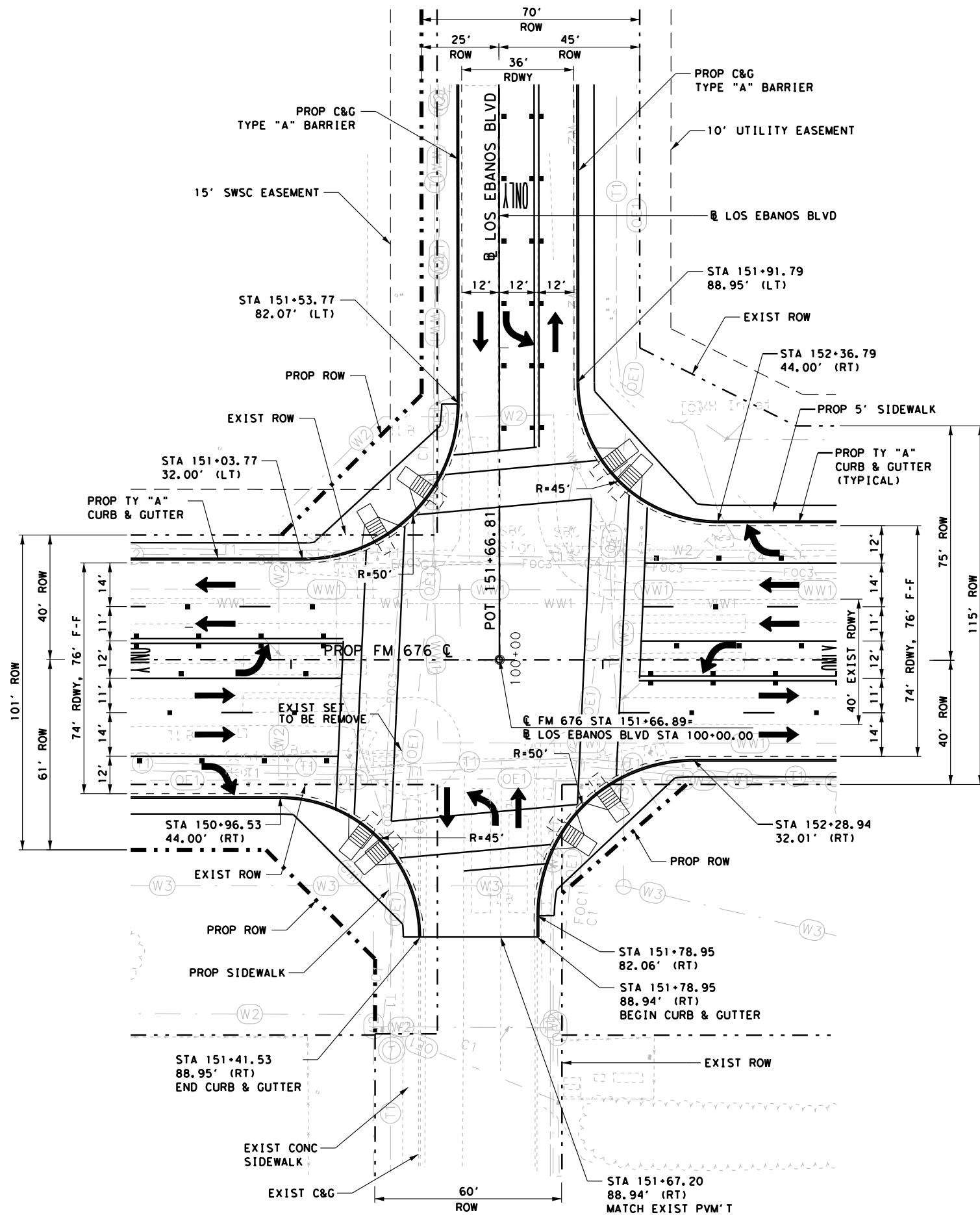
PLAN SCALE: 1"=40'  
 0 8 16 24 32 40  
 DISTANCE IN FEET

SHEET 3 OF 6	
FED. RD. DIV. NO. 6	STATE PROJECT NO. 181
STATE TEXAS	DIST. PHR
COUNTY HIDALGO	
CONT. 1064	SECT. 01
JOB 032	HIGHWAY NO. FM 676



PLOT DRIVER: RD\*11x17\*PDF\*.p1+  
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ATKINS\Projects\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\676W\*1L04.dgn



- NOTES:**
1. ALL STATIONS ARE BASED ON C FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  2. ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  3. ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  4. SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  5. ALL RADII CALLOUTS ARE TO THE FACE OF CURB

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- EXIST ROW
- PROP ROW



11/17/2022



**ATKINS**  
 TBPE REG. #F-474

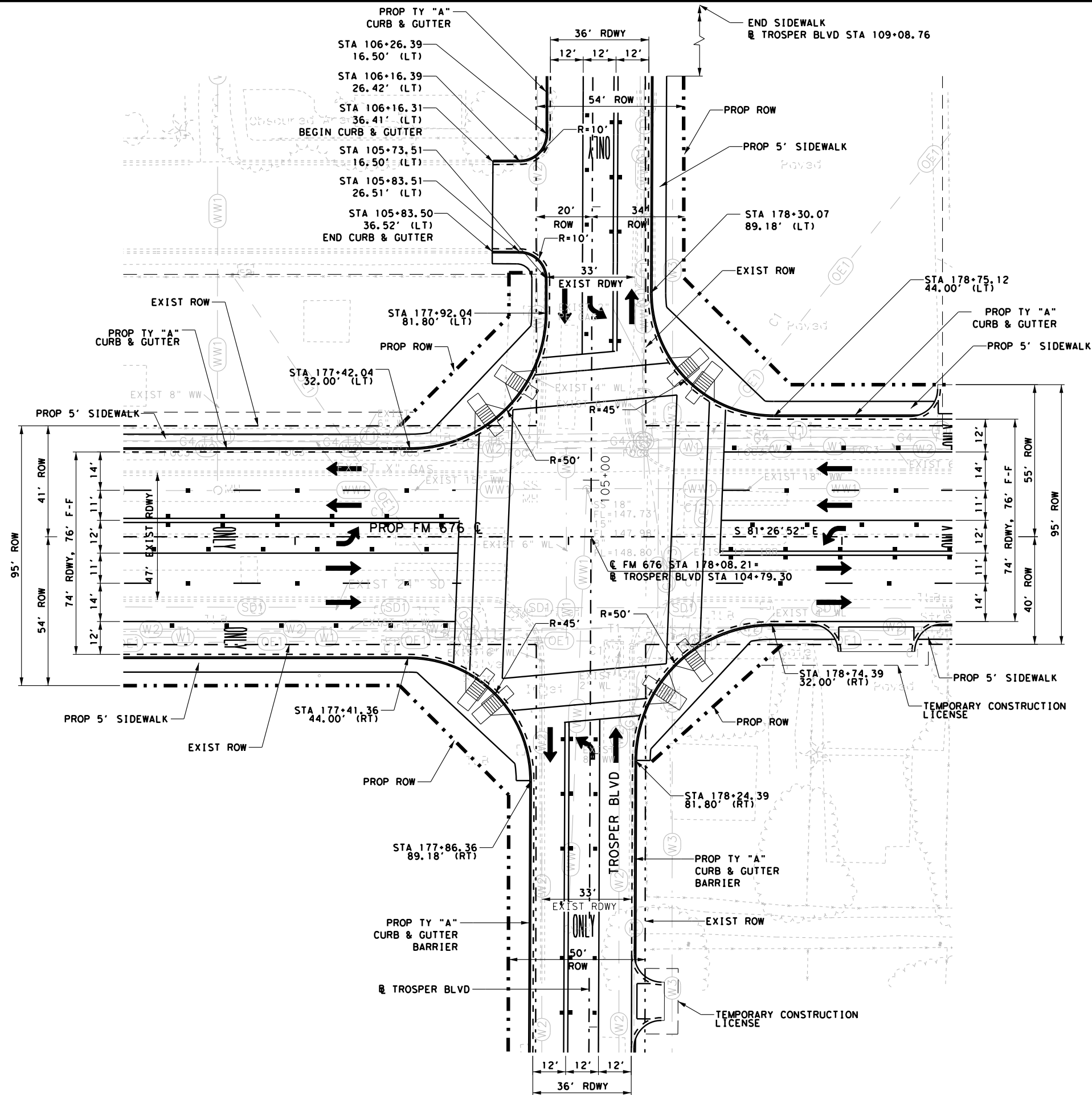
**FM 676  
 INTERSECTION LAYOUT  
 LOS EBANOS BLVD**

PLAN SCALE: 1"=40'  
 0 8 16 24 32 40  
 DISTANCE IN FEET

SHEET 4 OF 6

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			182
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

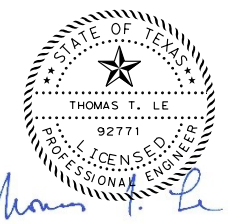
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- NOTES:**
1. ALL STATIONS ARE BASED ON C FM 676 AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  2. ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  3. ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  4. SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  5. ALL RADII CALLOUTS ARE TO THE FACE OF CURB

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET SIDEWALK
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- EXIST ROW
- PROP ROW



12/1/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
 INTERSECTION LAYOUT  
 TROSPER BLVD**

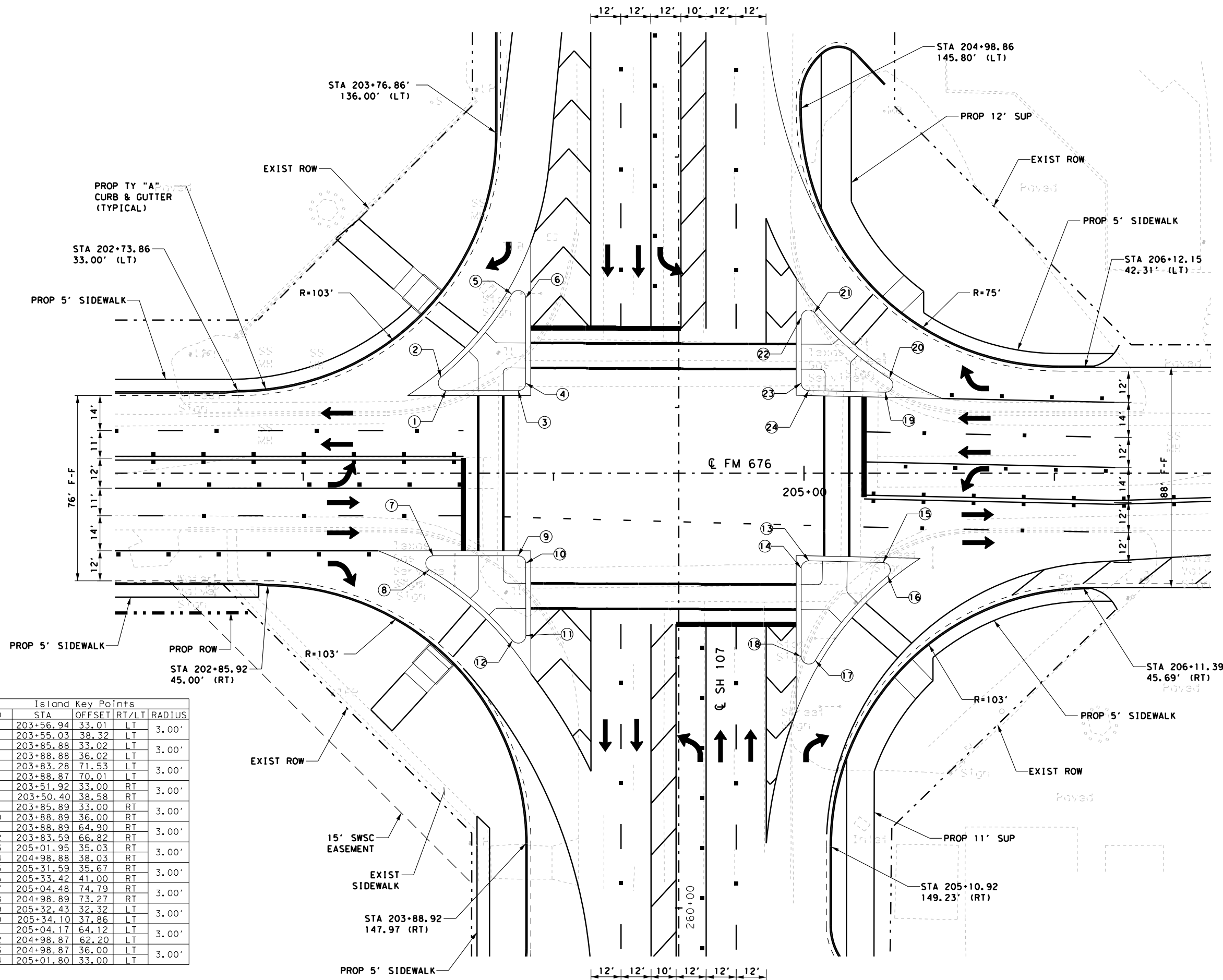
PLAN SCALE: 1"=40'

0 8 16 24 32 40  
 DISTANCE IN FEET

SHEET 5 OF 6		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		183
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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 FILE: pm\US03036343.wso\atkins.com\ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\Revisions\676W\*1106.dgn

ID	STA	OFFSET	RT/LT	RADIUS
1	203+56.94	33.01	LT	3.00'
2	203+55.03	38.32	LT	3.00'
3	203+85.88	33.02	LT	3.00'
4	203+88.88	36.02	LT	3.00'
5	203+83.28	71.53	LT	3.00'
6	203+88.87	70.01	LT	3.00'
7	203+51.92	33.00	RT	3.00'
8	203+50.40	38.58	RT	3.00'
9	203+85.89	33.00	RT	3.00'
10	203+88.89	36.00	RT	3.00'
11	203+88.89	64.90	RT	3.00'
12	203+83.59	66.82	RT	3.00'
13	205+01.95	35.03	RT	3.00'
14	204+98.88	38.03	RT	3.00'
15	205+31.59	35.67	RT	3.00'
16	205+33.42	41.00	RT	3.00'
17	205+04.48	74.79	RT	3.00'
18	204+98.89	73.27	RT	3.00'
19	205+32.43	32.32	LT	3.00'
20	205+34.10	37.86	LT	3.00'
21	205+04.17	64.12	LT	3.00'
22	204+98.87	62.20	LT	3.00'
23	204+98.87	36.00	LT	3.00'
24	205+01.80	33.00	LT	3.00'



- NOTES:**
- ALL STATIONS ARE BASED ON  $\text{C FM 676}$  AND ALL OFFSETS ARE TO NOMINAL FACE OF CURB UNLESS OTHERWISE NOTED
  - ALL ITEMS SHOWN IN THIS INTERSECTION TO BE PAID UNDER ROADWAY AND DRAINAGE QUANTITIES
  - ITEMS TO BE REMOVED AS INDICATED PAID FOR UNDER ITEM 100 "PREP ROW"
  - SEE UTILITY & DRAINAGE PLAN & PROFILE SHEETS FOR DETAILS OF UTILITIES TO BE RELOCATED
  - ALL RADIUS CALLOUTS ARE TO THE FACE OF CURB

**LEGEND**

- PROP DRIVEWAY/ CROSS STREET
- SIDEWALK
- PEDESTRIAN RAMP (TY 1)
- PEDESTRIAN RAMP (TY 2)
- PEDESTRIAN RAMP (TY 5)
- PEDESTRIAN RAMP (TY 10)
- TRAFFIC FLOW
- EXIST TRAFFIC FLOW
- EXIST ROW
- PROP ROW
- PROP SIDE WALK
- LANDSCAPE PAVERS



**ATKINS**

TBPE REG. #F-474

**FM 676W  
INTERSECTION LAYOUT  
SH 107**

PLAN SCALE: 1" = 40'

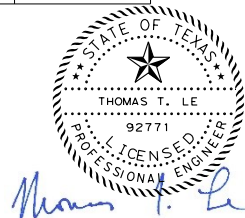
0 8 16 24 32 40  
DISTANCE IN FEET

SHEET 6 OF 6		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		184
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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SUMMARY OF DRIVEWAYS (PRIVATE)										
APPROX STATION	Offset	Radius 1	Radius 2	PROP WIDTH @ ROW LINE	ACP DRWY AREA (PRB-1)	6" CONC. DRWYS	RELOCATE GATE	TEMPORARY CONSTRUCTION LICENSES		TEMPORARY CONSTRUCTION EASEMENT
								L	W	Y/N
	L or R	(FT)	(FT)	(FT)	(SY)	(SY)	Y/N	L	W	Y/N
66+50	LT	15	15	26	113		N			
66+69	RT	10	10	12	39		N			
67+55	LT	10	10	24	96		N			
68+35	RT	10	10	12	36		N			
68+57	LT	10	10	32	122		N			
68+97	RT	10	10	16	44		N			
69+64	LT	10	10	40	144		N			
70+18	RT	10	10	18	46		N			
70+66	LT	10	10	26	91		N			
71+41	RT	10	10	14	34		N			
71+66	LT	10	10	45	148		N			
72+28	RT	10	10	12	28		N			
72+62	LT	10	10	20	64		N			
73+56	RT	10	10	12	21		N			
73+92	LT	10	10	12	35		N			
74+76	LT	10	10	12	35		N			
75+48	RT	10	10	20	21		N			
75+56	LT	10	10	12	22		N	15	22	
76+54	RT	10	10	24	26		N			
77+04	LT	10	5	49	67		N	10	65	
79+49	LT	10	10	44	72		N			
79+42	RT	10	10	72	79		N	8	82	
80+53	RT	10	10	19	35		N	15	29	
81+18	LT	10	10	34	82		N	12	44	
81+57	RT	10	5	12	20		N	14	22	
81+80	RT	5	10	12	20		N	14	22	
82+29	LT	10	10	36	68		N			
82+63	RT	10	10	12	14		Y	9	23	
83+52	LT	10	10	16	48		N			
83+73	RT	10	10	12	22		N	15	22	
84+21	RT	10	10	12	22		Y	15	22	
84+76	LT	10	10	20	60		N			
85+45	LT	10	10	42	81		N			
86+59	RT	10	10	39	47		N	9	49	
87+98	RT	10	10	34	63		N	15	44	
89+45	RT	10	10	12	19		Y	13	22	
89+48	LT	10	10	24	46		N			
90+72	RT	10	10	12	51		Y	9	22	
92+71	RT	10	10	37	102		N	15	47	
93+31	RT	10	10	12	31		N	12	22	
94+25	RT	10	10	20	37		N			
94+53	LT	10	10	12	22		N			
95+14	RT	10	10	8	15		Y			
95+19	LT	8	8	12	8		Y			
96+75	RT	10	10	12	35		N	15	22	

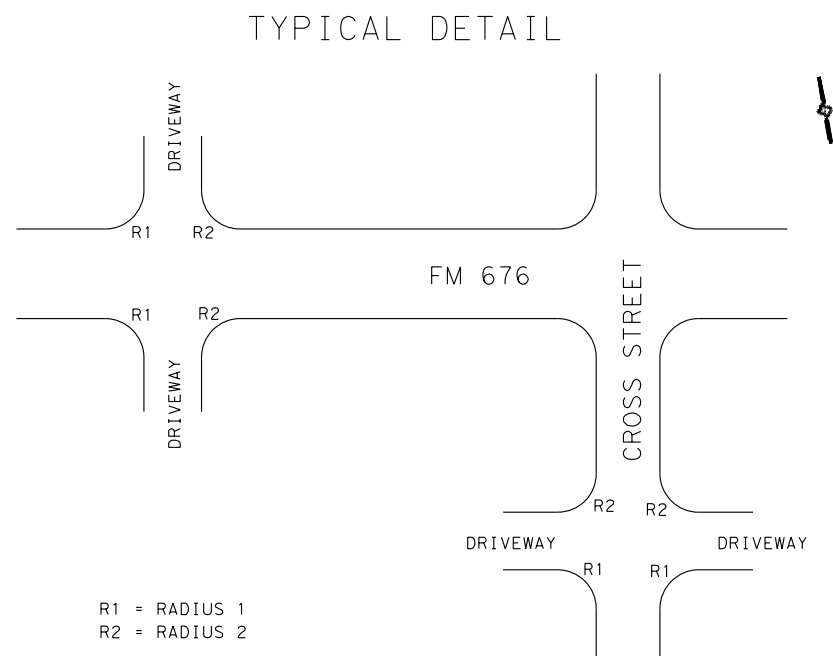
SUMMARY OF DRIVEWAYS (PRIVATE)										
APPROX STATION	Offset	Radius 1	Radius 2	PROP WIDTH @ ROW LINE	ACP DRWY AREA (PRB-1)	6" CONC. DRWYS	RELOCATE GATE	TEMPORARY CONSTRUCTION LICENSES		TEMPORARY CONSTRUCTION EASEMENT
								L	W	Y/N
	L or R	(FT)	(FT)	(FT)	(SY)	(SY)	Y/N	L	W	Y/N
97+11	LT	8	8	12	8		N			
97+60	RT	10	10	24	58		N	20	34	
97+81	LT	10	10	12	18		N	13	22	
98+21	RT	10	10	24	76		N	27	34	
98+52	LT	10	10	12	15		N	10	22	
98+93	RT	10	5	17	58		N	29	43	
99+19	LT	8	8	12	8		N			
100+15	LT	10	10	36	42		N	9	46	
100+53	RT	10	10	24	106		N	36	34	
100+91	LT	10	10	16	15		N	6	26	
101+34	LT	8	8	12	8		Y			
101+39	RT	10	10	12	36		N	22	22	
102+75	RT	10	10	37	114		N	22	47	
102+83	LT	8	8	12	8		N			
103+54	RT	10	10	36		95	N	18	46	
MOORE 100+90	LT	10	10	15	23		N			
MOORE 101+92	LT	10	10	12	21		N			
MOORE 102+37	LT	10	10	12	20		N			
MOORE 103+50	RT	15	15	36		104	N			
MOORE 103+54	LT	10	10	28	69		N			
MOORE 106+61	LT	10	10	20	32		N			
MOORE 107+23	LT	10	10	17	28		N			
MOORE 107+55	RT	10	10	26	39		N	10	36	
MOORE 108+67	LT	10	10	12	22		N			
106+45	LT	10	10	12	27		N	12	22	
108+07	LT	10	10	24	31		N			
109+02	LT	10	10	24		33	N	9	34	
110+96	LT	8	8	16	11		N			
112+90	LT	10	10	22	21		N	7	32	
114+00	LT	10	10	14	15		N	8	24	
114+95	RT	10	10	14	42		N			
115+12	LT	10	10	12	35		N			
116+34	LT	8	8	12	8		N			
116+34	RT	10	10	12	19		N			
118+48	LT	8	8	13	9		N			
119+85	LT	8	8	12	8		Y			
120+76	LT	10	10	12	14		N	9	22	
<b>SHEET 1 SUBTOTALS</b>					<b>3395</b>	<b>232</b>	<b>8</b>			



11/18/2022

NOTE:

- STATIONING LISTED ON THE TABLE ARE APPROXIMATE LOCATIONS, DIMENSIONS AND TYPE WILL BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER AS REQUIRED.
- CONTRACTOR TO COORDINATE WITH PROPERTY OWNER WHEN CONSTRUCTING DRIVEWAY.
- ALL PRIVATE COMMERCIAL & RESIDENTIAL DRIVEWAYS ARE TO BE CONSTRUCTED WITH ADA REQUIRED SLOPE FOR SIDEWALKS.



Texas Department of Transportation  
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# ATKINS

TBPE REG. #F-474

## FM 676 PRIVATE DRIVEWAY TABLE

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		185	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1t  
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FILE: pm1\SUS036343.wsoftkins.com:ATKNA1X01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\GEN\676W\*E006.dgn

### SUMMARY OF DRIVEWAYS (PRIVATE)

APPROX STATION	Offset	Radius 1	Radius 2	PROP WIDTH @ ROW LINE	ACP DRWY AREA (PRB-1)	6" CONC. DRWYS	RELOCATE GATE	TEMPORARY CONSTRUCTION LICENSES		TEMPORARY CONSTRUCTION EASEMENT
								L	W	
	L or R	(FT)	(FT)	(FT)	(SY)	(SY)	Y/N			Y/N
122+31	LT	10	10	12	24		N	17	22	
123+30	LT	10	10	18	31		N	13	35	
123+34	RT	10	10	28	82		N			
123+76	LT	10	10	26	40		N	12	36	
123+98	RT	10	10	12	15		N			
124+61	LT	10	10	30	39		N	20	40	
126+76	RT	10	10	15	16		N	8	25	
126+87	LT	10	10	46	81		N	11	51	
INSP 103+49	RT	10	10	18	26		N			
INSP 106+25	LT	10	10	43	62		N			
INSP 107+02	LT	10	10	12	18		N			
128+89	LT	10	10	24	25		N			
128+91	RT	10	10	16	35		N	19	26	
132+71	LT	10	10	24	23		N	5	34	
133+72	LT	10	10	25		27	N	8	35	
134+79	LT	10	10	12	11		Y	6	22	
135+41	LT	10	10	34	33		N	8	44	
136+23	LT	10	10	17	12		N			
137+00	RT	10	10	12	11		N			
137+24	LT	10	10	12	44		N			
137+96	LT	10	10	12	15		N			
137+96	RT	10	10	10	15		N			
LOS EBANOS 103+10	RT	19	19	17	42		N			
153+65	LT	20	20	24	85		N			
156+88	LT	20	20	24	124		N			
157+00	RT	10	10	12	11		N	7	22	
160+56	LT	10	10	12	19		N	13	34	
161+15	RT	10	10	12	11		Y	7	22	
161+67	LT	10	10	12	16		N	11	34	
165+04	LT	10	10	24	44		N	15	34	
165+17	RT	10	10	12	23		N	16	34	
166+84	RT	10	10	21	25		N	9	31	
167+02	LT	20	20	24	46		N	21	63	
169+63	LT									
170+15	RT	10	10	13	23		N	14	23	
171+46	RT	10	10	12	26		N	18	22	
175+71	RT	10	10	18	28		N	10	28	
TROSPER 100+76	RT	10	10	15	14		N	9	25	
TROSPER 101+94	RT	15	15	30	38		N			
TROSPER 103+10	RT	10	10	14	14		N	12	24	
TROSPER 106+69	LT	5	5	12		11	N	5	21	
TROSPER 106+79	RT	5	5	36		54	N			
TROSPER 107+29	LT	5	5	16		13	N	5	19	
TROSPER 107+44	RT	5	5	36		47	N			
TROSPER 107+83	LT	5	5	12		11	N	5	19	
TROSPER 108+09	RT	5	5	36		42	N			
TROSPER 108+35	LT	5	5	18		14	N	5	26	
TROSPER 108+72	RT	5	5	36		39	N			
179+13	RT	10	10	28	27		N	7	62	
179+51	LT	10	10	32	37		N			

### SUMMARY OF DRIVEWAYS (PRIVATE)

APPROX STATION	Offset	Radius 1	Radius 2	PROP WIDTH @ ROW LINE	ACP DRWY AREA (PRB-1)	6" CONC. DRWYS	RELOCATE GATE	TEMPORARY CONSTRUCTION LICENSES		TEMPORARY CONSTRUCTION EASEMENT
								L	W	
	L or R	(FT)	(FT)	(FT)	(SY)	(SY)	Y/N			Y/N
179+71	RT	5	5	14	10		Y			
180+22	LT	10	10	32	37		N			
180+49	RT	5	5	12	16		Y	11	24	
181+02	RT	5	5	12	14		Y	9	26	
181+46	RT	5	5	12	26		Y	18	22	
182+25	RT	5	5	12	36		Y	26	22	
182+75	RT	5	5	12	47		Y	29	26	
182+95	LT	5	5	21	42		N	15	38	
183+21	RT	5	5	12	31		Y	22	22	
183+70	RT	5	5	12	32		Y	23	22	
184+65	RT	10	10	12	14		N			
185+71	LT	10	10	38		52	N			
186+78	RT	10	10	12	14		Y			
186+67	LT	10	10	43		59	N			
187+36	RT	10	10	39	47		N			
187+98	RT	10	10	20	24		N			
188+44	RT	10	10	21	24		N	6	22	
188+94	RT	10	10	15	18		Y	6	25	
189+56	RT	10	10	12	20		N	11	22	
189+97	RT	10	10	22	44		N	13	32	
190+74	RT	10	10	12		14	N			
193+98	LT	10	10	40	123		N			
195+43	RT	10	10	12	14		Y			
197+10	LT	10	10	25		77	N			
197+79	RT	10	10	24		27	N			
198+30	LT	10	10	19	58		N	9	29	
198+44	RT	10	10	12	14		Y			
198+97	RT	10	10	14	16		N			
199+40	LT	10	10	31	96		N			
199+70	RT	10	10	12	15		N	7	22	
200+16	LT	20	20	44		85	N			
201+85	RT	10	10	24		46	N	14	34	
<b>SHEET 2 SUBTOTALS</b>					<b>2143</b>	<b>618</b>	<b>14</b>			
<b>GRAND TOTALS</b>					<b>5538</b>	<b>850</b>	<b>22</b>			

NOTE:

1. STATIONING LISTED ON THE TABLE ARE APPROXIMATE LOCATIONS, DIMENSIONS AND TYPE WILL BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER AS REQUIRED.
2. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER WHEN CONSTRUCTING DRIVEWAY.
3. ALL PRIVATE COMMERCIAL & RESIDENTIAL DRIVEWAYS ARE TO BE CONSTRUCTED WITH ADA REQUIRED SLOPE FOR SIDEWALKS



11/18/2022



# ATKINS

TBPE REG. #F-474

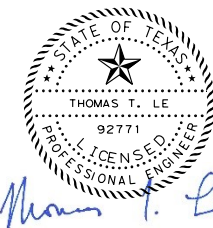
## FM 676 PRIVATE DRIVEWAY TABLE

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			186
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

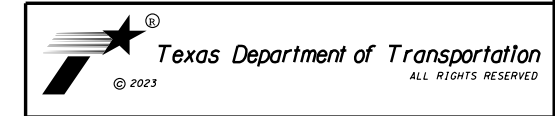
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TURNOUTS									
STATION	DESCRIPTION	EXIST WIDTH	PROP WIDTH	Valley Gutter Width	R1	R2	VALLEY GUTTER	TURNOUT AREAS (PBS-2)	TURNOUT AREAS (CONC)
		(FT)	(FT)	(FT)	(FT)	(FT)	(LF)	(SY)	(SY)
87+36.31LT	TORONJA DR	24.0	24.0	4.0	25	25	62.0	67	
91+60.52 RT	SCHUERBACH RD	24.0	24.0	4.0	25	25	62.0	69	
92+21.34 LT	ESCUELA DR	24.0	24.0	4.0	25	25	62.0	68	
96+28.29 LT	JUSTINE DR	24.0	24.0	4.0	25	25	62.0	49	
99+41.11RT	FIELD DR	25.9	26.0	4.0	20	20	50.0	94	
181+20.04 LT	IOWA ST	28.3	35.0	4.0	25	20	66.0	112	
184+61.91LT	HAWAII ST	28.8	30.0	4.0	20	20	54.0	58	
187+73.81LT	GEORGIA ST	27.6	30.0	4.0	25	25	68.0	86	
191+20.41RT	FLORIDA ST	32.5	30.0	4.0	15	20	54.0		56
191+25.75 LT	FLORIDA ST	28.9	34.0	4.0	20	20	58.0	65	
193+05.66 RT	DELAWARE ST	28.9	30.0	4.0	20	20	54.0		58
196+80.38 RT	COLORADO ST	28.8	30.0	4.0	20	20	54.0		58
200+55.56 RT	ARIZONA ST	29.1	30.0	4.0	20	20	54.0		68
<b>TOTAL</b>							<b>760</b>	<b>668</b>	<b>240</b>



*Thomas T. Le*

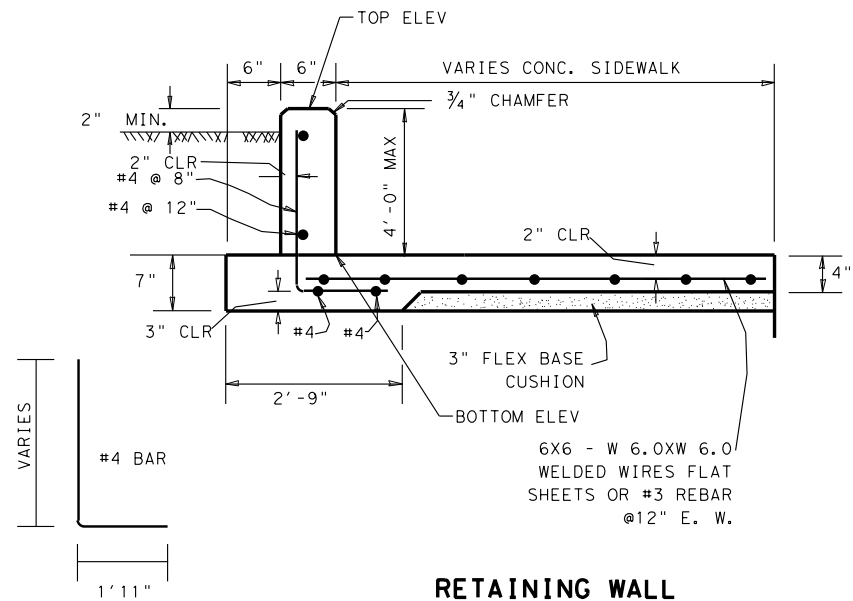
11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**PUBLIC DRIVEWAY TABLE**

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			187
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**RETAINING WALL**

**RETAINING WALL DETAILS**

CLASS C CONCRETE SHALL BE USED TO CONSTRUCT THE RETAINING WALL.

ALL OTHER MATERIALS AND INCIDENTALS REQUIRED TO CONSTRUCT THE RETAINING WALL ARE SUBSIDIARY.

CONCRETE SIDEWALKS OR RIPRAP ADJACENT TO THE RETAINING WALL SHALL BE PAID FOR SEPARATELY.

\* OFFSET LOCATION IS TO THE FACE OF WALL

**RETAINING WALL #5 HORIZONTAL DATA**

Beginning chain RW5 description			
Point RW51	X	1,040,114.0141	Y 16,631,105.5979 Sta 100+00.00
Course from RW51 to RW52 N 57° 22' 24.56" E Dist 53.5340			
Point RW52	X	1,040,159.1006	Y 16,631,134.4613 Sta 100+53.53
Course from RW52 to RW53 S 81° 26' 52.05" E Dist 43.5828			
Point RW53	X	1,040,202.1989	Y 16,631,127.9801 Sta 100+97.12
Ending chain RW5 description			

**RETAINING WALL #1**

FM 676 Stations 38.5' RT *	Ret Wall #1 Stations	Bottom Elev	Top Elev	Wall Height
96+83.87	100+00	174.20	175.18	0.98
96+93.87	100+10	174.11	174.73	0.62
97+03.87	100+20	174.01	174.71	0.70
97+13.87	100+30	173.92	174.74	0.82
97+23.87	100+40	173.83	174.60	0.77
97+33.87	100+50	173.73	174.60	0.87
97+43.87	100+60	173.64	174.59	0.95
97+44.69	100+61	173.63	174.48	0.85

**TOTAL FRONT SURFACE  
FACE= 49 SF**

**RETAINING WALL #2**

FM 676 Stations 38.5' RT *	Ret Wall #2 Stations	Bottom Elev	Top Elev	Wall Height
97+74.69	100+00	173.35	173.8947	0.54
97+84.69	100+10	173.26	174.2806	1.02
97+94.69	100+20	173.16	174.6378	1.48
98+04.69	100+30	173.07	174.7163	1.65
98+06.49	100+32	173.05	174.57	1.52

**TOTAL FRONT SURFACE  
FACE= 39 SF**

**RETAINING WALL #3**

FM 676 Stations 38.5' RT *	Ret Wall #3 Stations	Bottom Elev	Top Elev	Wall Height
98+36.49	100+00	172.77	173.93	1.16
98+46.49	100+10	172.68	174.17	1.49
98+56.49	100+20	172.59	173.97	1.38
98+66.49	100+30	172.49	173.76	1.27
98+76.49	100+40	172.4	173.56	1.16
98+81.44	100+45	172.35	173.38	1.03

**TOTAL FRONT SURFACE  
FACE= 59 SF**

**RETAINING WALL #5**

Ret Wall #5 Stations	Bottom Elev	Top Elev	Wall Height
100+16	169.59	169.60	0.01
100+20	169.57	169.99	0.42
100+30	169.51	171.07	1.56
100+40	169.40	171.88	2.49
100+50	169.29	171.85	2.56
100+60	169.20	170.11	0.91
100+70	169.12	170.58	1.46
100+80	169.05	170.83	1.78
100+90	168.96	170.04	1.07
100+97	168.90	169.24	0.34

**TOTAL FRONT SURFACE  
FACE= 121 SF**

RETAINING WALL #5 NOTE:

- RETAINING WALL IS LOCATED AT THE SE QUADRANT OF FM 676/LOS EBANOS BLVD
- CONTROL POINT IS LOCATED AT THE FACE OF THE RETAINING WALL
- REFER TO HORIZONTAL DATA

**RETAINING WALL #4**

FM 676 Stations 39' RT *	Ret Wall #4 Stations	Bottom Elev	Top Elev	Wall Height
138+47	100+00	172.18	173.22	1.04
138+67	100+20	172.10	173.17	1.07
138+87	100+40	171.99	173.17	1.18
139+07	100+60	171.87	173.06	1.18
139+27	100+80	171.76	173.12	1.36
139+47	101+00	171.66	173.05	1.39
139+67	101+20	171.59	173.07	1.48
139+87	101+40	171.53	173.38	1.85
140+07	101+60	171.49	173.61	2.12
140+27	101+80	171.47	173.74	2.27
140+47	102+00	171.48	173.79	2.31
140+67	102+20	171.50	173.92	2.42
140+87	102+40	171.53	173.83	2.29
141+07	102+60	171.59	173.96	2.38
141+27	102+80	171.64	173.96	2.32
141+47	103+00	171.69	174.00	2.31
141+67	103+20	171.74	174.04	2.30
141+87	103+40	171.74	174.18	2.44
142+07	103+60	171.69	174.15	2.46
142+27	103+80	171.65	174.11	2.46
142+47	104+00	171.61	174.15	2.55
142+67	104+20	171.56	174.05	2.49
142+87	104+40	171.52	173.89	2.37
143+07	104+60	171.47	173.80	2.32
143+27	104+80	171.43	173.69	2.26
143+47	105+00	171.39	173.55	2.16
143+67	105+20	171.34	173.48	2.14
143+87	105+40	171.30	173.50	2.20
144+07	105+60	171.28	173.50	2.22
144+27	105+80	171.32	173.28	1.96
144+47	106+00	171.36	172.82	1.46
144+67	106+20	171.40	172.70	1.30
144+87	106+40	171.44	172.63	1.19
145+07	106+60	171.48	172.81	1.34
145+27	106+80	171.49	172.75	1.26
145+47	107+00	171.50	172.56	1.06
145+67	107+20	171.49	172.55	1.06
145+87	107+40	171.47	172.36	0.89
146+07	107+60	171.44	172.11	0.68
146+27	107+80	171.39	171.96	0.57
146+47	108+00	171.33	171.90	0.57
146+67	108+20	171.25	171.96	0.71
146+87	108+40	171.17	172.15	0.98
147+07	108+60	171.09	171.93	0.84
147+27	108+80	171.01	171.59	0.57
147+47	109+00	170.93	171.60	0.68
147+67	109+20	170.77	171.72	0.95
147+87	109+40	170.62	171.60	0.98
147+95	109+48	170.56	171.59	1.03

**TOTAL FRONT SURFACE  
FACE= 1556 SF**



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
MISCELLANEOUS  
ROADWAY DETAILS  
RETAINING WALLS**

SHEET 1 OF 7 SCALE: NONE

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		188	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

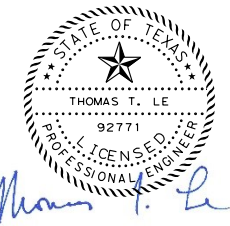
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County Property ID (Appraisal)	Owner Name	Proposed Gate Type	Gate Detail #	Height	Width	Approx Station	North or South side of FM 676
209754	DUQUE JOSE	SLIDING	4	6	16	82+63	SOUTH
843452	CANTU ALFREDO & JOSE A	SLIDING	3	6	12	84+21	SOUTH
209757	BARRIENTOS JOEL	SLIDING	3	6	15	89+45	SOUTH
159314	COLUNGA MARIA D	SLIDING	5	6	12	95+19	NORTH
159274	CANTU EUTIMIO & OLGA L	SLIDING	4	6	15	97+81	NORTH
209622	TORRES LEYLA I & ELSA M	RECESSED	2	4'-4"	12	99+19	NORTH
209620	AREM LLC (EMMA GONZALEZ)	RECESSED	2	4'-4"	12	101+34	NORTH
193234	CUELLAR JOSEFA	SLIDING	3	6	15	119+85	NORTH
197604	MARRON MARIO & CONCEPCION	RECESSED	5	6	16	134+79	NORTH
318190	COOGAN MARTHA	RECESSED	2	4'-4"	12	161+15	SOUTH
175231	RAMOS MARIBEL	SLIDING	3	6	14	181+00	SOUTH
175232	SMITH GRACIELA G & SILVERIO	SLIDING	3	6	14	181+45	SOUTH
175232	SMITH GRACIELA G & SILVERIO	SLIDING	3	6	15	182+25	SOUTH
175234	GARCIA YOLANDA	SLIDING	3	6	15	182+80	SOUTH
175235	AMAYA TERESITA DE JESUS	SLIDING	3	6	16	183+25	SOUTH
175236	PALOMO EVA GARCIA	SLIDING	3	6	14	183+70	SOUTH
280050	BECERRA RAFAEL	SLIDING	3	6	18	188+90	SOUTH
117756	GARCIA JAVIER	RECESSED	1	4	12	195+40	SOUTH

**NOTES:**

- \* CONTRACTOR SHALL VERIFY ALL HEIGHTS AND WIDTHS OF GATES PRIOR TO INSTALLATION
- \* CONTRACTOR SHALL VERIFY THAT TEMPORARY CONSTRUCTION EASEMENTS WERE OBTAINED AND NOT EXPIRED PRIOR TO DOING ANY WORK OUTSIDE ROW
- \* THE TYPE OF PAYMENT FOR THE GATE INSTALLATION IS RELATED TO THE GATE DETAIL #



12/1/2022



**ATKINS**

TBPE REG. #F-474

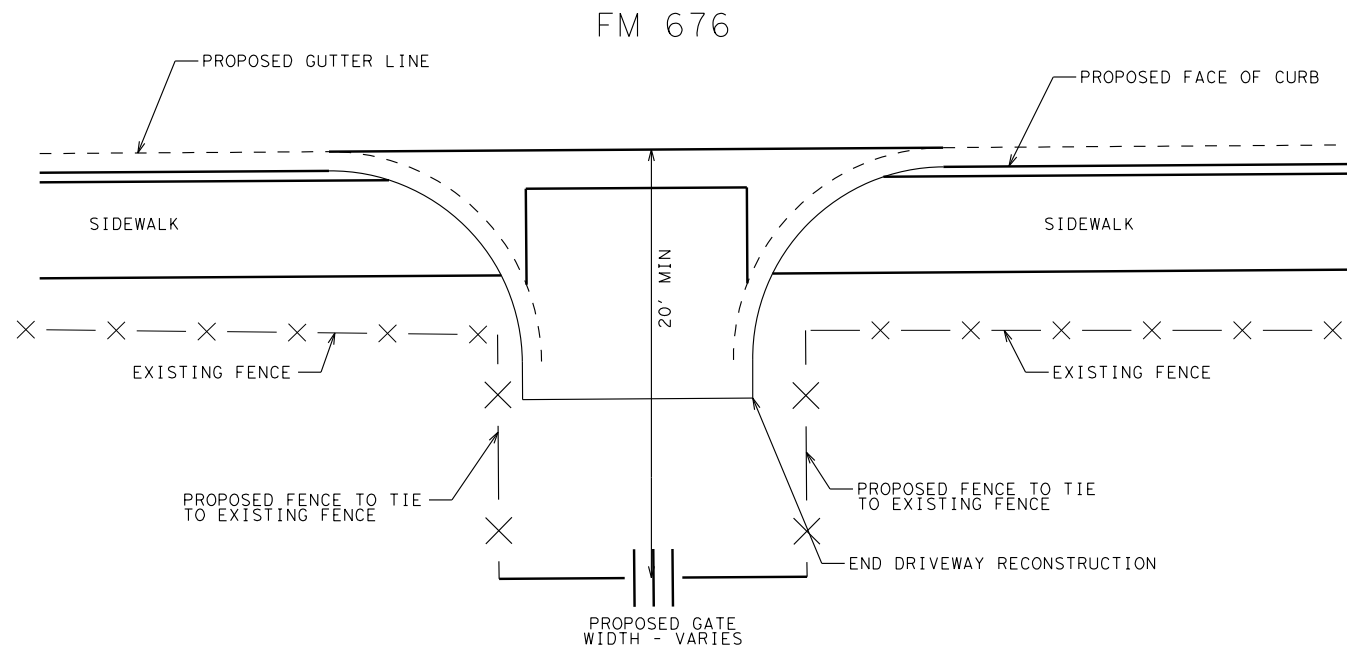
**FM 676**  
**MISCELLANEOUS**  
**ROADWAY DETAILS**  
**GATE PROPERTY OWNERS**

SHEET 2 OF 7 SCALE: NONE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			189
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

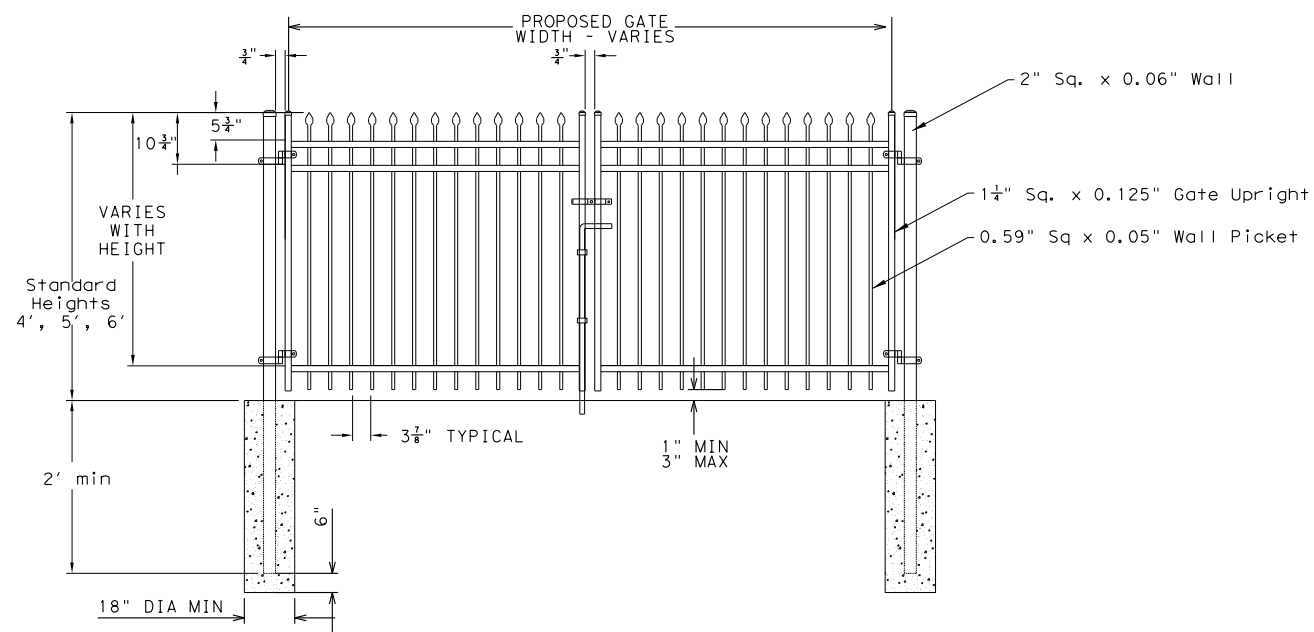


TYPICAL PLAN VIEW



NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER FOR EACH SPECIFIC DRIVEWAY GATE.
2. MATERIALS:
  - A. ALUMINUM MATERIAL (I.E., TUBULAR PICKETS, RAILS AND POSTS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM B221.
  - B. PICKETS SHALL BE .590" SQUARE x .050" THICK. HORIZONTAL RAILS SHALL BE 1.125" x 1" CHANNEL WITH .055" THICK TOP & INTERNAL WEB WALL, AND .072" THICK SIDE WALLS AND SHALL BE PUNCHED TO ALLOW PICKET TO PASS THROUGH THE TOP OF THE RAIL. FENCE POSTS AND GATE POSTS SHALL MEET THE MINIMUM SIZE REQUIREMENTS OF TABLE 1.
  - C. ACCESSORIES: ALUMINUM CASTINGS SHALL BE USED FOR ALL POST CAPS, SCROLLS, FINIALS AND OTHER MISCELLANEOUS HARDWARE. HINGES AND LATCHES SHALL BE FABRICATED FROM ALUMINUM, STAINLESS STEEL OR COMPOSITE MATERIALS.
3. INSTALLATION: GATE POSTS SHALL BE SPACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION. GATE HARDWARE SHALL BE PROVIDED BY THE MANUFACTURE OF THE GATE AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
4. THE PROPOSED PAINT SHALL MATCH THE EXISTING COLOR AS MUCH AS POSSIBLE WITH THE APPROVAL OF THE ENGINEER.



PROPOSED SWING GATE



Thomas T. Le

11/18/2022



**ATKINS**

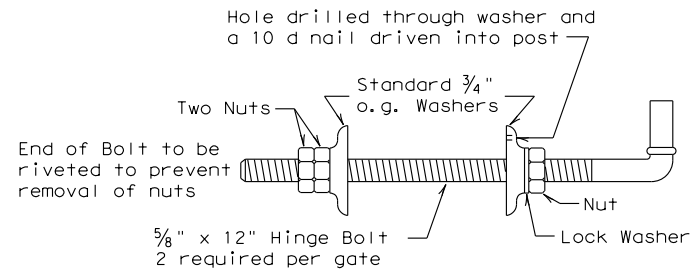
TBPE REG. #F-474

FM 676  
MISCELLANEOUS  
ROADWAY DETAILS  
GATE DETAIL 1

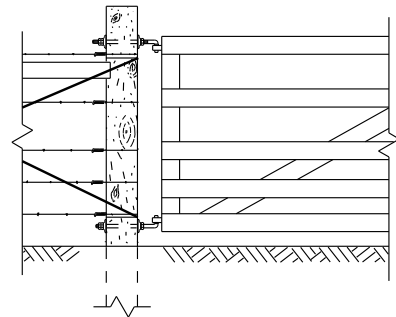
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FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		190	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

TYPICAL PLAN VIEW

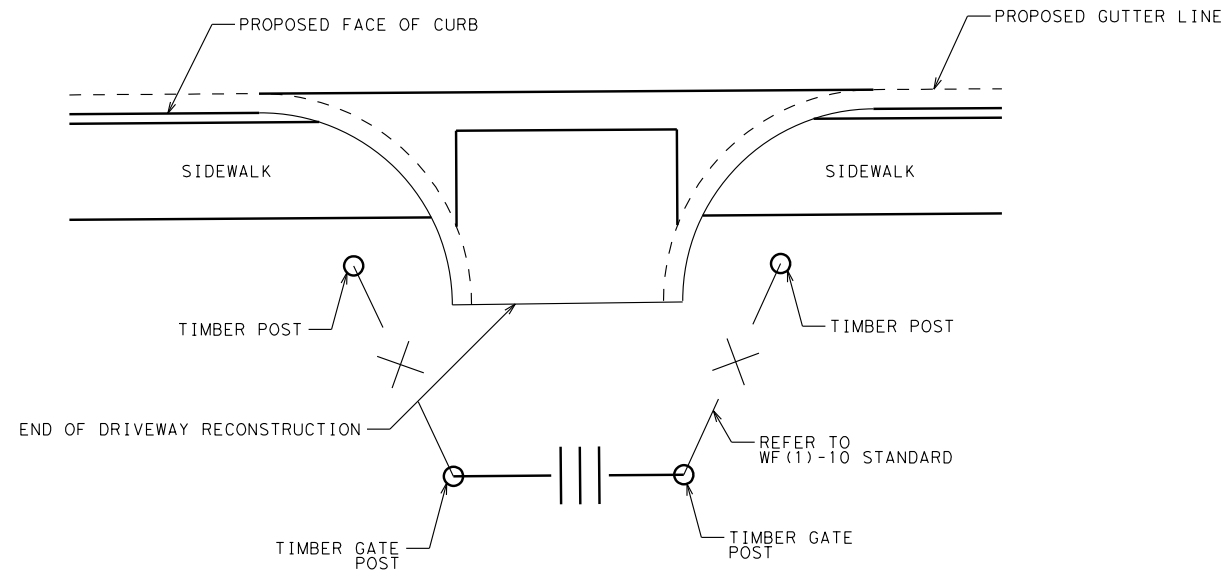
FM 676



DETAIL OF GATE HINGE BOLT ASSEMBLY

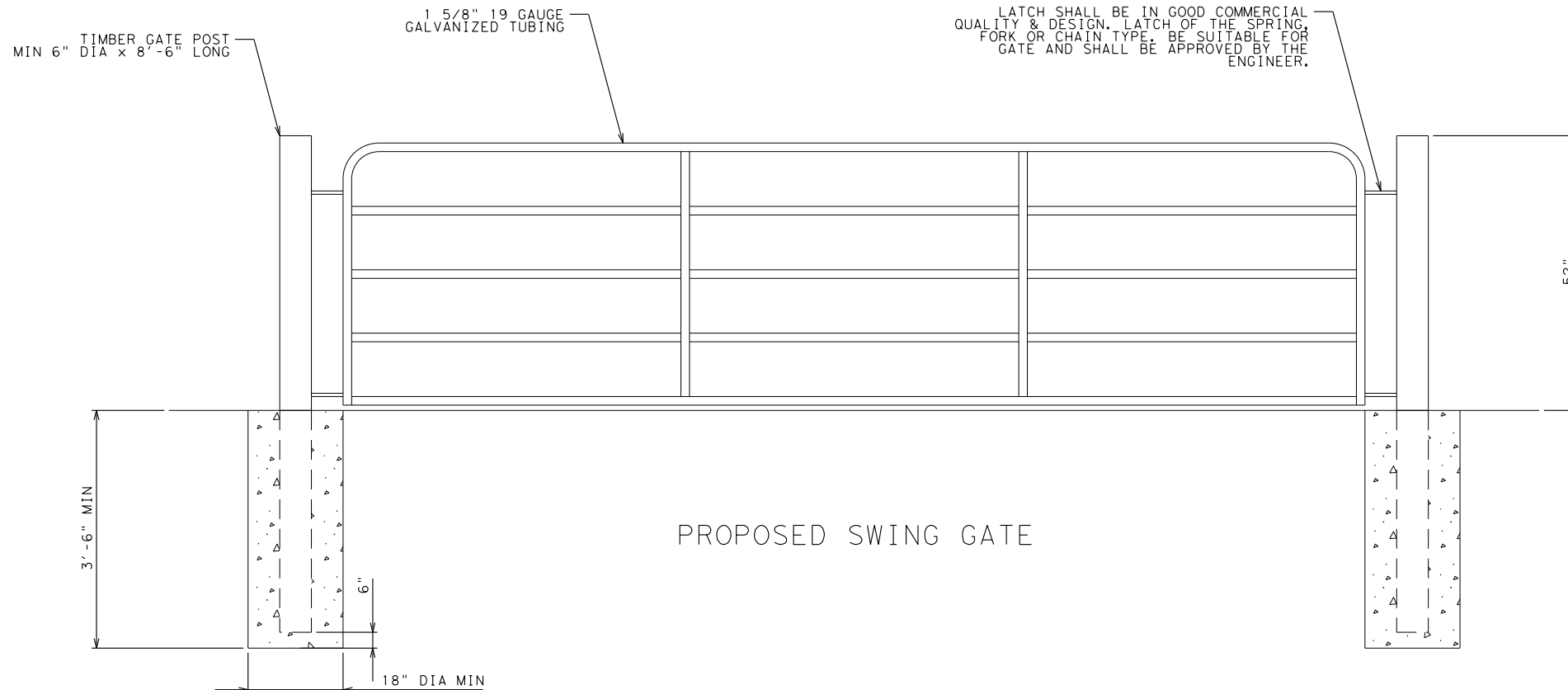


DETAIL SHOWING INSTALLATION OF HINGES OF TYPE 1 & 2 GATE

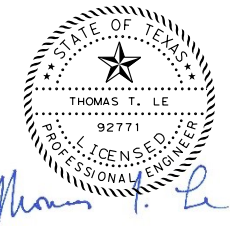


NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER FOR EACH SPECIFIC DRIVEWAY GATE.
2. METAL GATE SHALL CONSIST OF 6 PANELS NOT LESS THAN 4'-4" AND SHALL BE ALUMINUM OR GALVANIZED METAL AND OF GOOD QUALITY. GATE AND HARDWARE SHALL MEET THE APPROVAL OF THE ENGINEER.
3. THE PROPOSED PAINT SHALL MATCH THE EXISTING COLOR AS MUCH AS POSSIBLE WITH THE APPROVAL OF THE ENGINEER.
4. IF ROCK IS ENCOUNTERED AT A DEPTH LESS THAN THE EMBEDDED DEPTH REQUIRED, A 15" OR LARGER DIAMETER HOLE SHALL BE DRILLED FOR THE POST AND THE POST SHALL BE SET IN CONCRETE. IF ROCK IS ENCOUNTERED AT A DEPTH OF 1'-6" OR MORE BELOW THE GROUND SURFACE, THE HOLE SHALL BE DRILLED TO THE REQUIRED DEPTH. IF ROCK IS ENCOUNTERED AT A DEPTH LESS THAN 1'-6" BELOW THE GROUND SURFACE, THE HOLES SHALL BE DRILLED A MINIMUM OF 2'-0" INTO THE ROCK OR TO THE DEPTH WHICHEVER IS THE LESSER DEPTH.



PROPOSED SWING GATE



11/18/2022



**ATKINS**

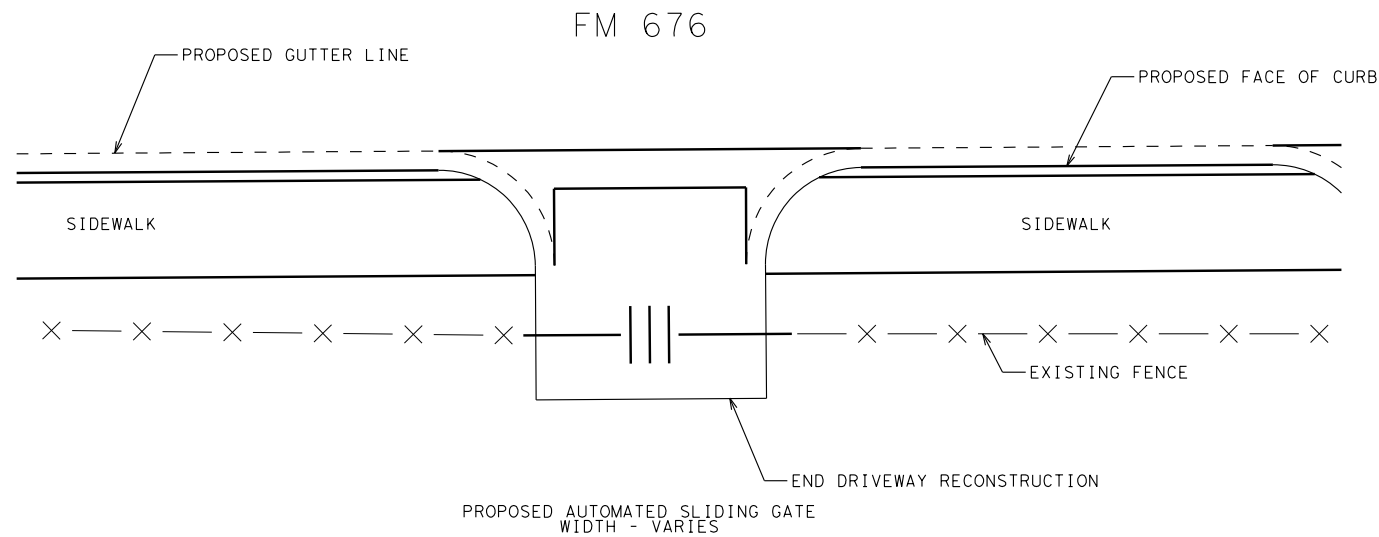
TBPE REG. #F-474

FM 676  
MISCELLANEOUS  
ROADWAY DETAILS  
GATE DETAIL 2

SHEET 4 OF 7		SCALE: NONE	
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		191	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

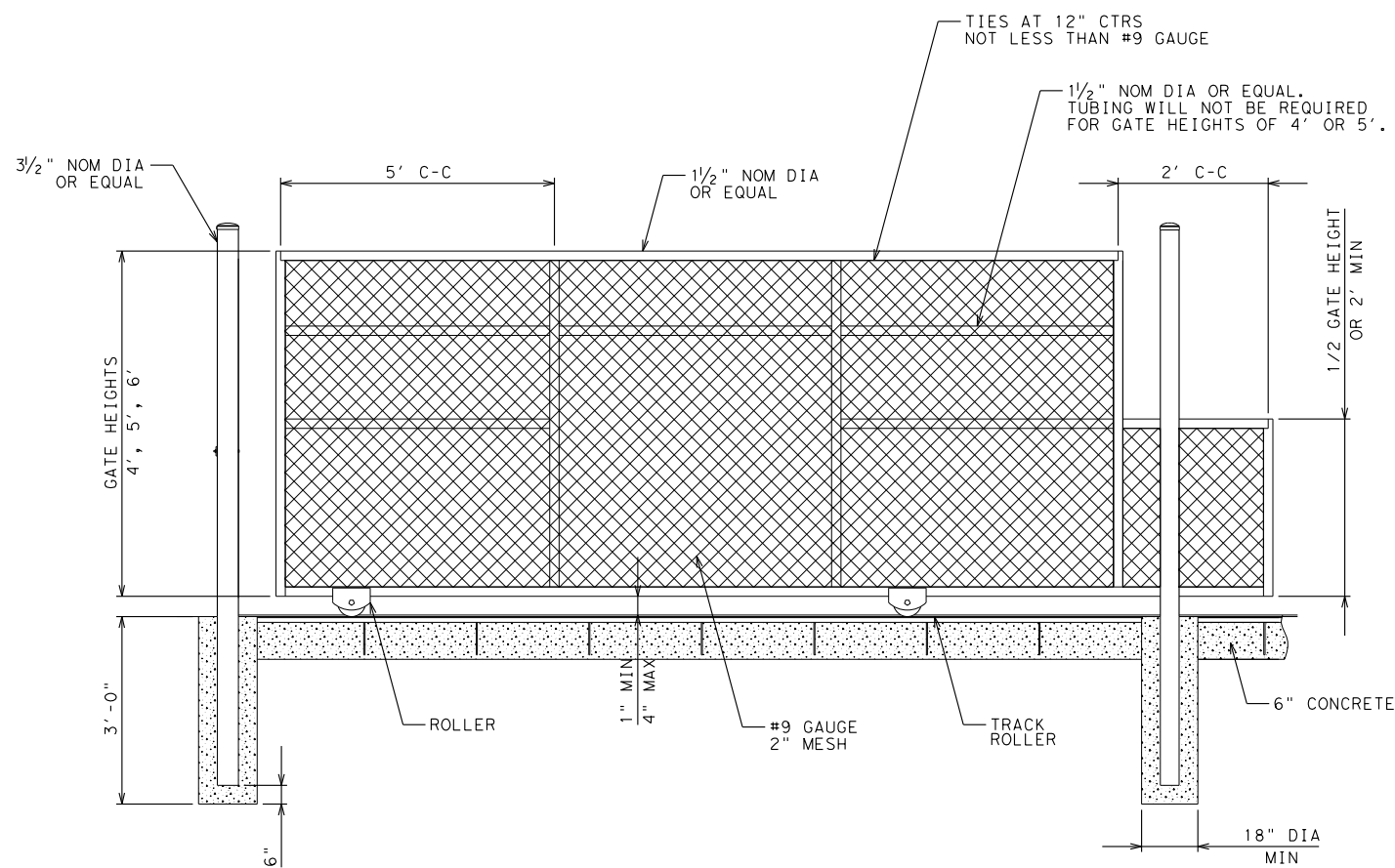
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TYPICAL PLAN VIEW

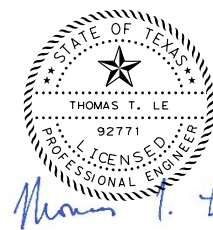


NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER FOR EACH SPECIFIC DRIVEWAY GATE.
2. THE PROPOSED PAINT SHALL MATCH THE EXISTING COLOR AS MUCH AS POSSIBLE WITH THE APPROVAL OF THE ENGINEER.
3. TYPICAL INSTALLATION PLAN MAY VARY AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATION OF GATES SHOWN ELSEWHERE ON PLANS.
4. GATE-FRAME MEMBERS SHALL BE BOLTED, AT FRAME CORNERS, TO JOINT FITTINGS WITH FOUR 1/2" BOLTS PER JOINT.
5. CONCRETE SHALL BE OF THE CONSISTENCY APPROVED BY THE ENGINEER AND SHALL CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER CUBIC YARD.
6. CONCRETE FOOTINGS ARE TO BE CROWNED AT THE TOP TO SHED WATER.
7. THE GATE SHALL HAVE A HEAVY-DUTY WHEEL WITH RUBBER SURFACE AFFIXED TO THE LEADING EDGE WHICH ROLLS ON A 6" DEEP REINFORCED CONCRETE GRADE BEAM ALIGNED WITH THE WHEEL TO PROVIDE A UNIFORM BEARING SURFACE TO SUPPORT THE WEIGHT OF THE GATE.
8. ALL MOVING PARTS MUST OPERATE FREELY WITHOUT BINDING OR JAMMING.
9. GATE MUST BE LEVEL & POSTS SHALL BE PLUMB.



PROPOSED SLIDING GATE



11/18/2022



**ATKINS**

TBPE REG. #F-474

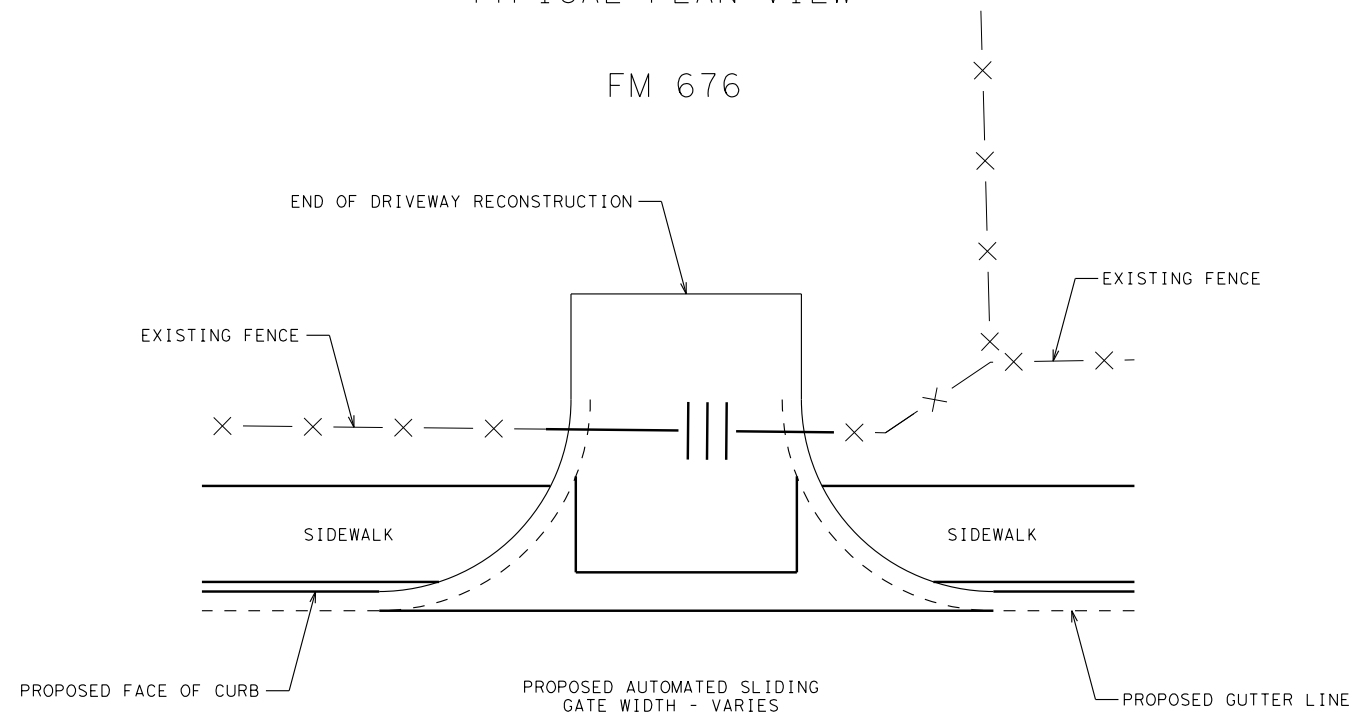
**FM 676**  
**MISCELLANEOUS**  
**ROADWAY DETAILS**  
**GATE DETAIL 3**

SHEET 5 OF 7 SCALE: NONE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			192
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

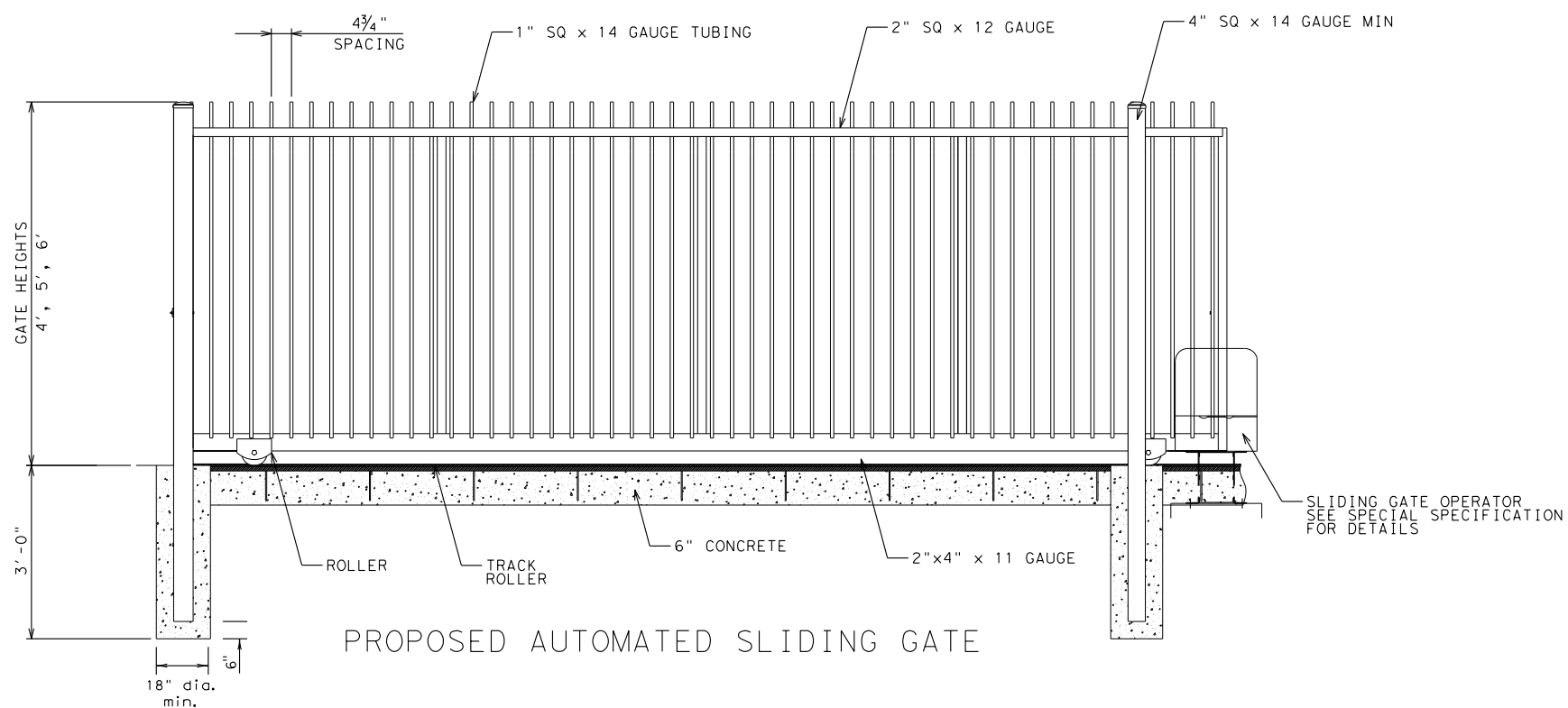
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TYPICAL PLAN VIEW



NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER FOR EACH SPECIFIC DRIVEWAY GATE.
2. THE PROPOSED PAINT SHALL MATCH THE EXISTING COLOR AS MUCH AS POSSIBLE WITH THE APPROVAL OF THE ENGINEER.
3. TYPICAL INSTALLATION PLAN MAY VARY AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATION OF GATES SHOWN ELSEWHERE ON PLANS.
4. GATE-FRAME MEMBERS SHALL BE BOLTED, AT FRAME CORNERS, TO JOINT FITTINGS WITH FOUR 1/2" BOLTS PER JOINT.
5. CONCRETE SHALL BE OF THE CONSISTENCY APPROVED BY THE ENGINEER AND SHALL CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER CUBIC YARD.
6. CONCRETE FOOTINGS ARE TO BE CROWNED AT THE TOP TO SHED WATER.
7. THE GATE SHALL HAVE A HEAVY-DUTY WHEEL WITH RUBBER SURFACE AFFIXED TO THE LEADING EDGE WHICH ROLLS ON A 6" DEEP REINFORCED CONCRETE GRADE BEAM ALIGNED WITH THE WHEEL TO PROVIDE A UNIFORM BEARING SURFACE TO SUPPORT THE WEIGHT OF THE GATE.
8. ALL MOVING PARTS MUST OPERATE FREELY WITHOUT BINDING OR JAMMING.
9. GATE MUST BE LEVEL & POSTS SHALL BE PLUMB.



11/18/2022



**ATKINS**

TBPE REG. #F-474

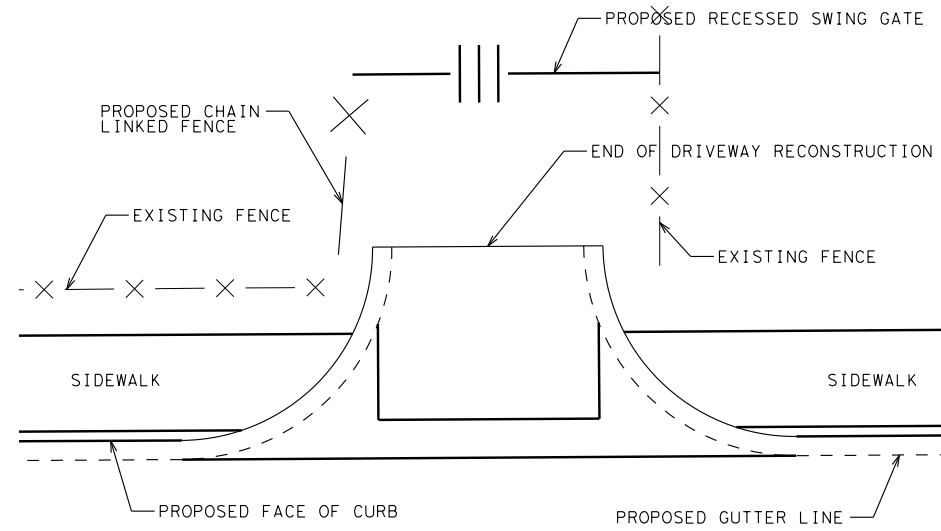
FM 676  
MISCELLANEOUS  
ROADWAY DETAILS  
GATE DETAIL 4

SHEET 6 OF 7 SCALE: NONE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			193
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

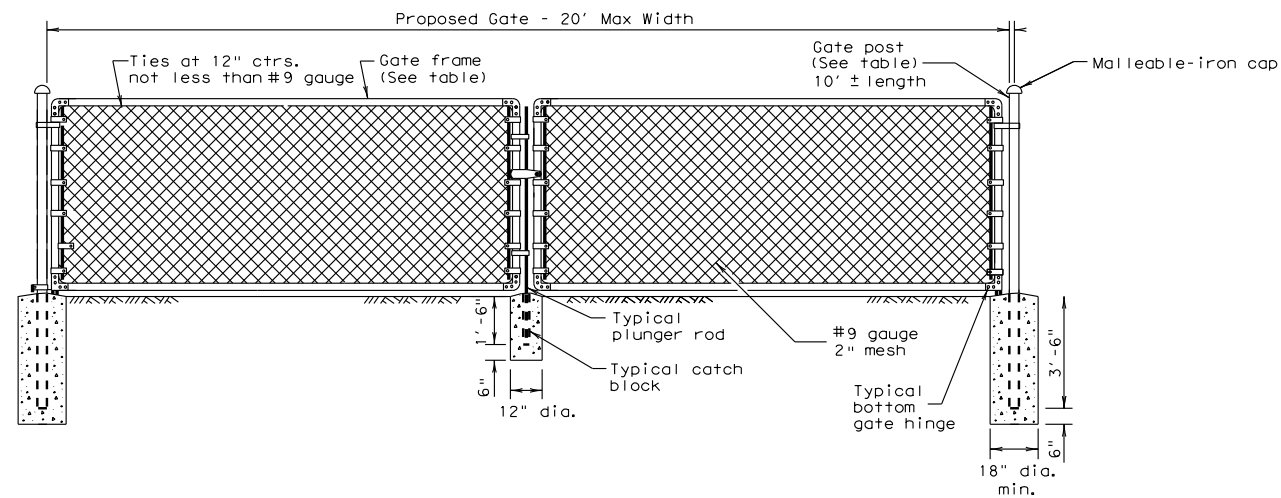
TYPICAL PLAN VIEW

FM 676



NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY ENGINEER FOR EACH SPECIFIC DRIVEWAY GATE.
2. ALL CONCRETE FOOTINGS SHALL BE CROWNED A MINIMUM 1" ABOVE THE EXISTING GROUND.
3. GATE FRAME MEMBERS SHALL BE BOLTED AT FRAME CORNERS, TO JOINT FITTINGS WITH FOUR 1/2" BOLTS PER JOINT.
4. TYPICAL INSTALLATION PLAN MAY VARY AS DIRECTED BY THE ENGINEER.



GATE FRAME (WEIGHT)		GATE POST (WEIGHT)	
SIZE	WT./LIN. FT.	SIZE	WT./LIN. FT.
1 1/2" nom dia.	2.72 Lbs. or equal	3 1/2" nom dia.	9.11 Lbs. or equal



11/18/2022



**ATKINS**

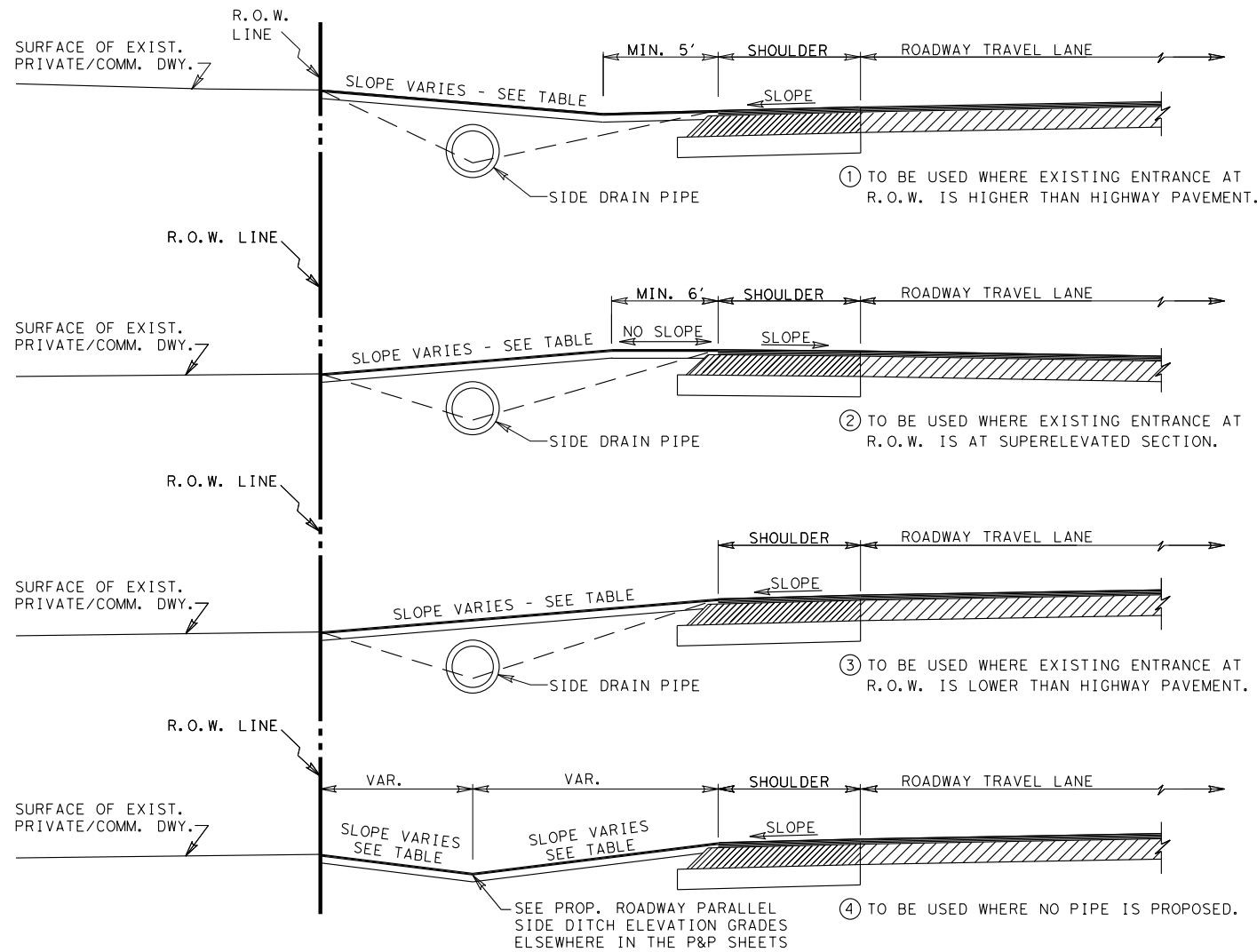
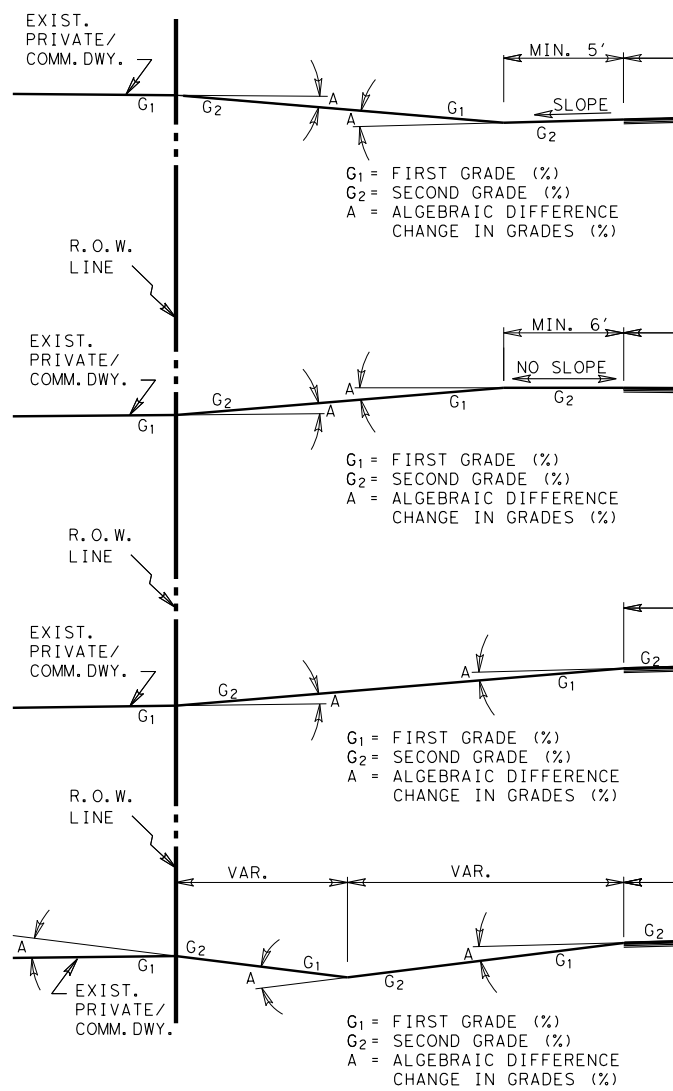
TBPE REG. #F-474

**FM 676**  
**MISCELLANEOUS**  
**ROADWAY DETAILS**  
**GATE DETAIL 5**

SHEET 7 OF 7		SCALE: NONE	
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			194
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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### TYPICAL ENTRANCE PROFILE FOR DRIVEWAYS W/OUT C&G

PROPOSED DRIVEWAY SLOPE TABLE
COMMERCIAL DRIVEWAYS @ 12:1 MAX. RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PROP. DWY ALGEBRAIC DIFFERENCE TABLE
COMMERCIAL DRIVEWAYS @ A = 6% DESIRABLE RESIDENTIAL DRIVEWAYS @ A = 8% DESIRABLE FORMULA, A=G <sub>2</sub> -G <sub>1</sub>

#### NOTES:

ALL ENTRANCES CONSTRUCTED ON THIS PROJECT ARE SUBJECT TO CONCURRENCE WITH EXISTING GOVERNING REGULATIONS AS SET OUT BY THE STATE - TEXAS TRANSPORTATION COMMISSION.

ENTRANCE'S BASE AND SURFACING MAY BE EXTENDED BEYOND R.O.W. LINE AS REQUIRED TO MEET EXISTING DRIVEWAY GRADE IN A SATISFACTORY MANNER OF WHICH NO STEEPER THAN 12:1 FOR COMMERCIAL DRIVEWAY AND 8:1 FOR RESIDENTIAL DRIVEWAY SLOPE WILL BE CONSTRUCTED.

ALL FLEXIBLE BASE USED FOR PRIVATE DRIVES & COMMERCIAL DRIVES WILL NOT REQUIRE LIME TREATMENT.

EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER.

PROP. WIDTH OF DRIVEWAYS TO MATCH EXISTING WIDTH AT R.O.W. LINE.

114 #/SY ACP (COMPACTED) IS EQUAL TO 1 IN. DEPTH,  
171 #/SY ACP (COMPACTED) IS EQUAL TO 1 1/2 IN. DEPTH.

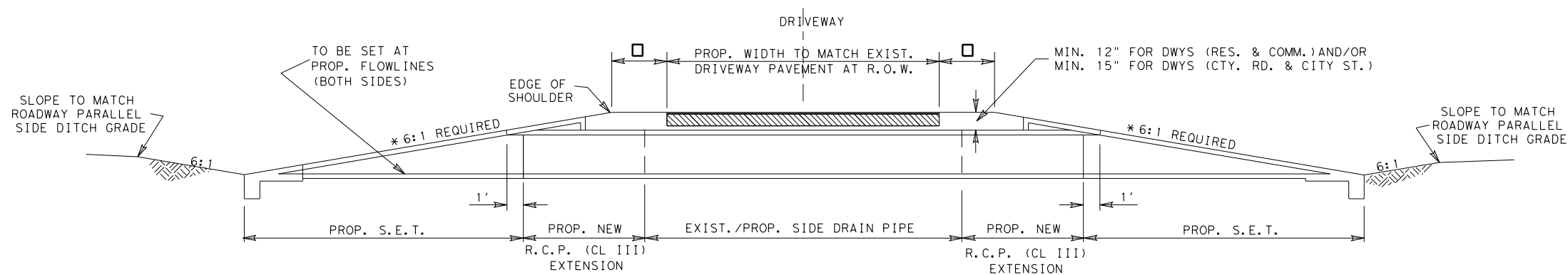
SIDE DRAIN PIPES TO BE INSTALLED WHERE ROADWAY DITCH DRAINAGE IS NECESSARY, AS INDICATED ON PLANS AND/OR AS DIRECTED BY THE ENGINEER.

SIDE DRAIN PIPES TO BE INSTALLED WITH A MINIMUM OF 12" COVER WITH PROPOSED RESIDENTIAL & COMMERCIAL DRIVEWAY MATERIAL OR 15" COVER WITH PROPOSED COUNTY ROAD & CITY STREET ROADWAY MATERIAL.

AVERAGE DRIVEWAY DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS (ELSEWHERE IN PLANS) ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL DRIVEWAY DIMENSIONS MAY BE CHANGED BY THE ENGINEER BASED ON EXISTING FIELD CONDITIONS.

THE RATE OF PRIME COAT SHALL BE 0.10 GAL/SY FOR PRIVATE AND/OR COMMERCIAL DRIVEWAYS AND 0.20 GAL/SY FOR PUBLIC DRIVEWAYS (COUNTY ROADS AND/OR CITY STREETS).

TYPICALLY A CHANGE IN GRADE OF THREE PERCENT (3%) OR LESS AND A DISTANCE BETWEEN CHANGES IN GRADE OF AT LEAST ELEVEN FEET (11') ACCOMMODATES MOST VEHICLES. HOWEVER, LITERATURE SUGGESTS THAT A SIX PERCENT (6%) TO EIGHT PERCENT (8%) CHANGE IN GRADE MAY OPERATE EFFECTIVELY. INDIVIDUAL SITE CONDITIONS SHOULD BE EVALUATED TO ACCOMMODATE THE VEHICLE FLEET USING THE DRIVEWAY.



- - 1' MIN. ON DRIVEWAYS (RES. & COMM.)  
2' MIN. ON DRIVEWAYS (COUNTY RD. & CITY ST.)
- \* - 6:1 SLOPE REQUIRED

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TEXAS DEPARTMENT OF TRANSPORTATION

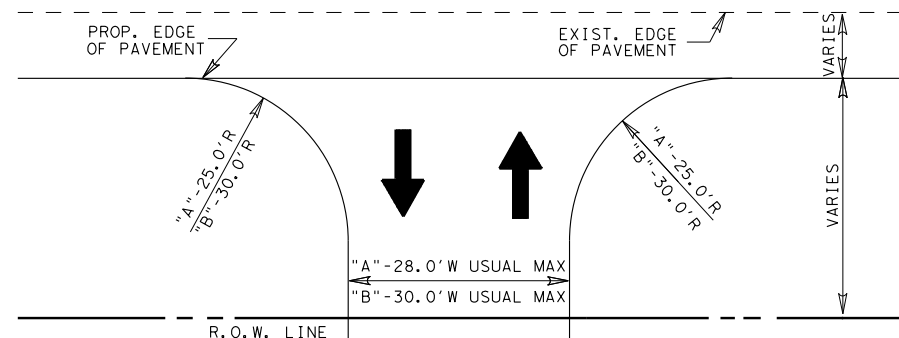
## DRIVEWAY PROFILE DETAILS

REV. 3/2020

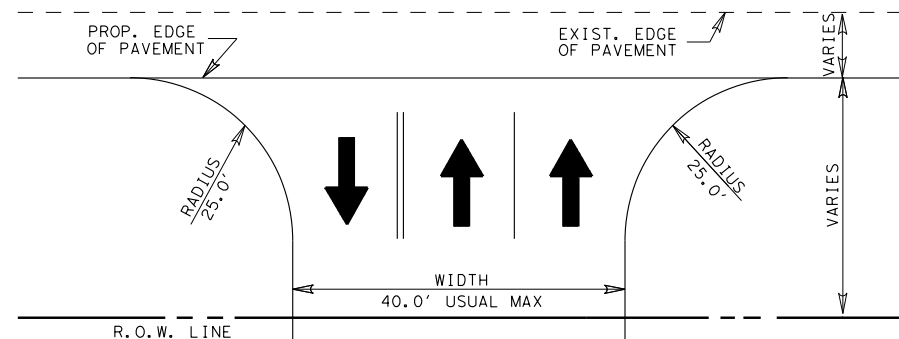
DRIVEWAY1.DGN

STATE AID PROJECT NO.	FILE NO.	SHEET NO.				
6		195				
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	21	HIDALGO	1064	01	032	FM 676

**DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS**

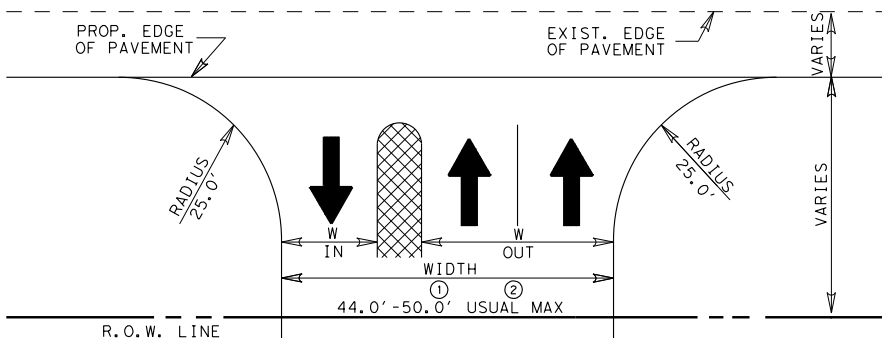


"A"- ONE ENTRY LANE AND ONE EXIT LANE, FEWER THAN 4 LARGE VEHICLES PER HOUR  
 "B"- ONE ENTRY LANE AND ONE EXIT LANE, 4 OR MORE SINGLE UNIT VEHICLES<sup>①</sup> PER HOUR  
 ① - DRIVEWAY DESIGNS FOR LARGER VEHICLES WILL BE CONSIDERED ON A CASE BY CASE BASIS

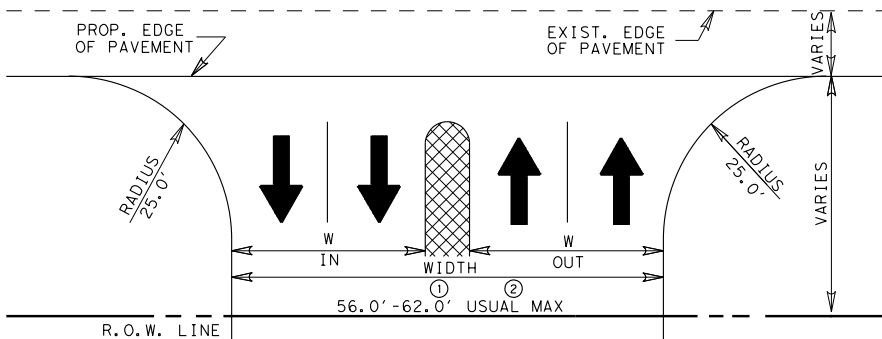


ONE ENTRY LANE AND TWO EXIT LANES (WITHOUT DIVIDERS)

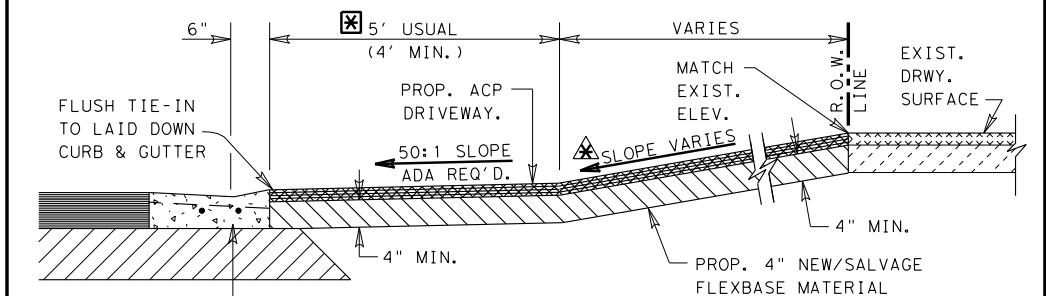
**DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS**



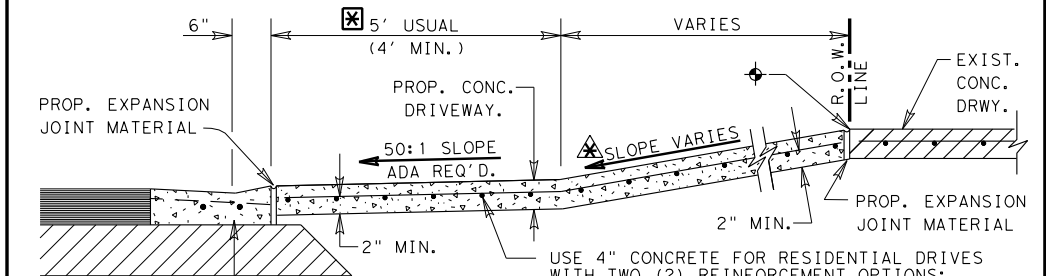
① - 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS  
 ② - 10.0' WIDE DIVIDER, FACE-TO-FACE CURBS  
 ONE ENTRY LANE AND TWO EXIT LANES (WITH A DIVIDER)



① - 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS  
 ② - 10.0' WIDE DIVIDER, FACE-TO-FACE CURBS  
 TWO ENTRY LANES AND TWO EXIT LANES (WITH A DIVIDER)



**TYPICAL ASPH. CONC. PVM'T. DRIVEWAY SECTION**  
 N. T. S.



**TYPICAL CONCRETE DRIVEWAY SECTION**  
 N. T. S.

CONCRETE SHALL BE SAW CUT TO THE LIMITS OF REMOVAL WHERE APPLICABLE.  
 PROP./FUTURE SIDEWALK CROSSING LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. SEE P&P SHEETS FOR PROP. SIDEWALK LOCATION IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.  
 ENTRANCE'S BASE AND SURFACING MAY BE EXTENDED BEYOND R.O.W. LINE AS REQUIRED TO MEET EXISTING GRADE IN A SATISFACTORY MANNER OF WHICH NO STEEPER THAN 12:1 FOR COMMERCIAL DRIVEWAY AND 8:1 FOR RESIDENTIAL DRIVEWAY SLOPE WILL BE CONSTRUCTED.

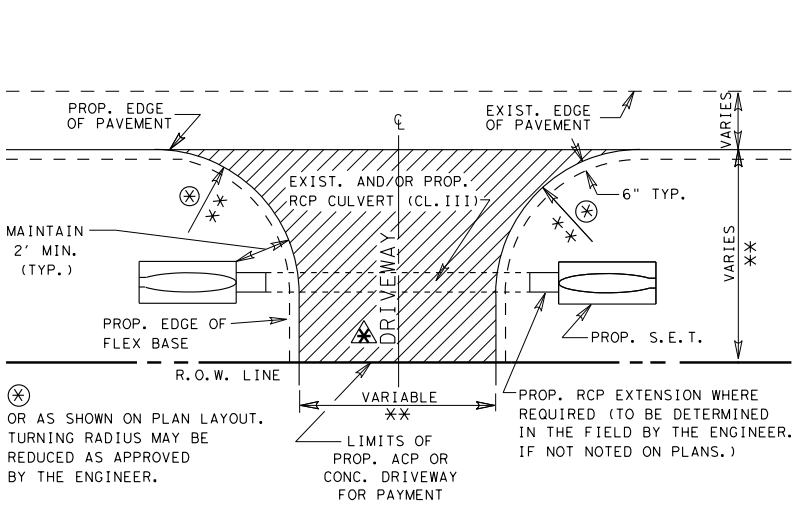
PROP. DWY ALGEBRAIC DIFFERENCE TABLE

COMMERCIAL DRIVEWAYS @ A = 6% MAX.
RESIDENTIAL DRIVEWAYS @ A = 8% MAX.

PROPOSED DRIVEWAY SLOPE TABLE

COMMERCIAL DRIVEWAYS @ 12:1 MAX.
RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

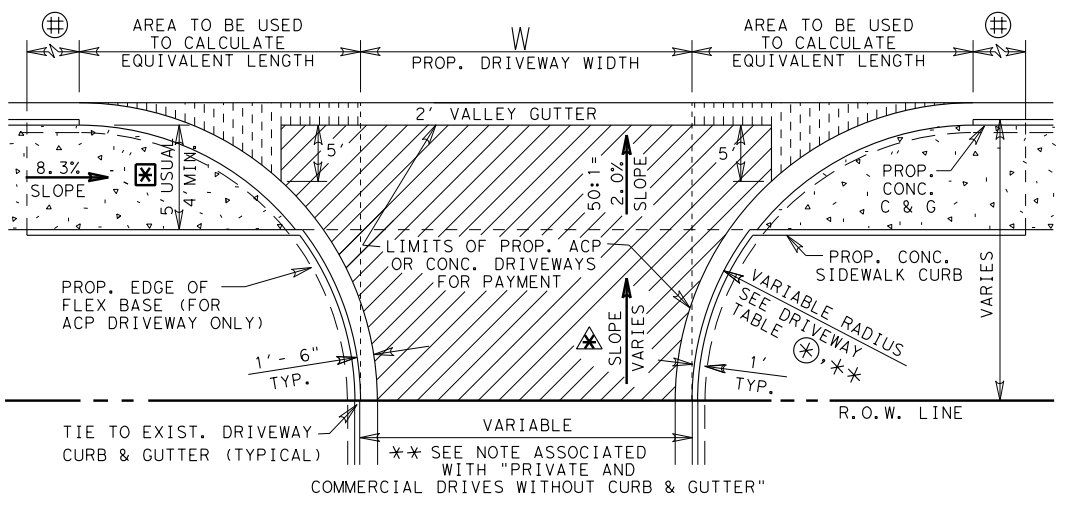
**PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER**



**PLAN OF PRIVATE AND COMMERCIAL DRIVES**

\*\* FOR PRIVATE RESIDENTIAL DRIVES, TRY TO MATCH EXISTING WITH A MINIMUM WIDTH OF 12 FT. AND A MAXIMUM WIDTH OF 24 FT. WITH 15 FT. USUAL RADIUS. FOR COMMERCIAL DRIVES, USE ABOVE COMMERCIAL DRIVEWAY DETAILS.  
 SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

**PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER**



**PLAN OF PRIVATE AND COMMERCIAL DRIVES**

SEE P&P SHEETS FOR LOCATIONS OF DRIVES N. T. S.  
 PROP./FUTURE CONC. SIDEWALK LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.  
 LIMITS OF SLOPE FOR PROP. CONC. CURB BASED ON 8.3% SLOPE FOR SIDEWALK.  
 SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

**LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER**

LF OF VALLEY GUTTER = W + X1 + X2  
 WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS

Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 2') Equivalent LF Length
5'	1
8'	2
10'	4
12'	6
15'	9
18'	12
20'	15
22'	18
25'	24
28'	30
30'	34

SEE DRIVEWAY TABLE FOR LIMITS OF LAID DOWN CURB TO BE PAID FOR AS CURB AND GUTTER

**DRIVEWAY TYPES**

TY PB-1  
 EXIST. PRIVATE OR COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE FLEX. BASE, PRIMED AND SURFACED WITH 171#/SY ACP. (HMA-D PG 64-22 SAC B MEETING ITEM 340)  
 CONCRETE (RESIDENTIAL)  
 EXIST. PRIVATE DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" CONCRETE. TO BE PAID FOR BY THE SQ. YD.  
 CONCRETE (COMMERCIAL)  
 EXIST. BUSINESS DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 6" CONCRETE. TO BE PAID FOR BY THE SQ. YD.

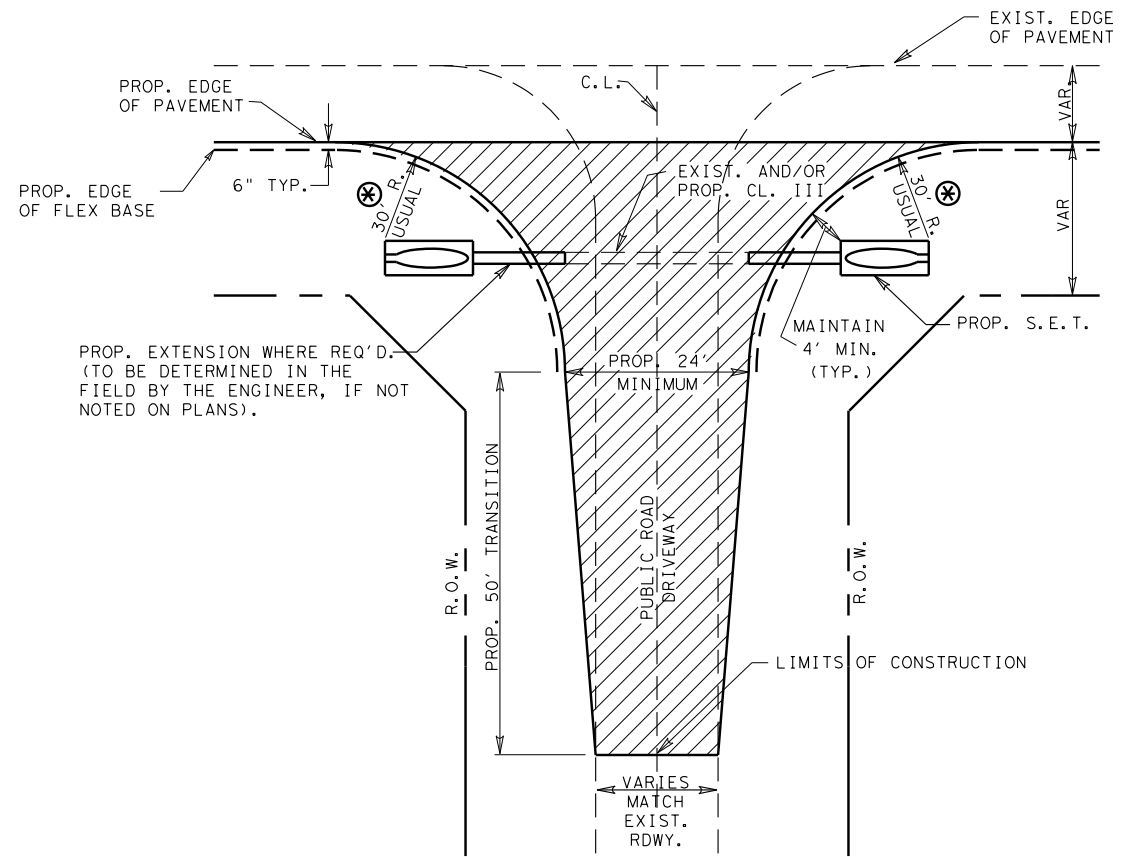
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**TEXAS DEPARTMENT OF TRANSPORTATION**  
**DRIVEWAY DETAILS**  
**PRIVATE**  
**(RESIDENTIAL-COMMERCIAL)**

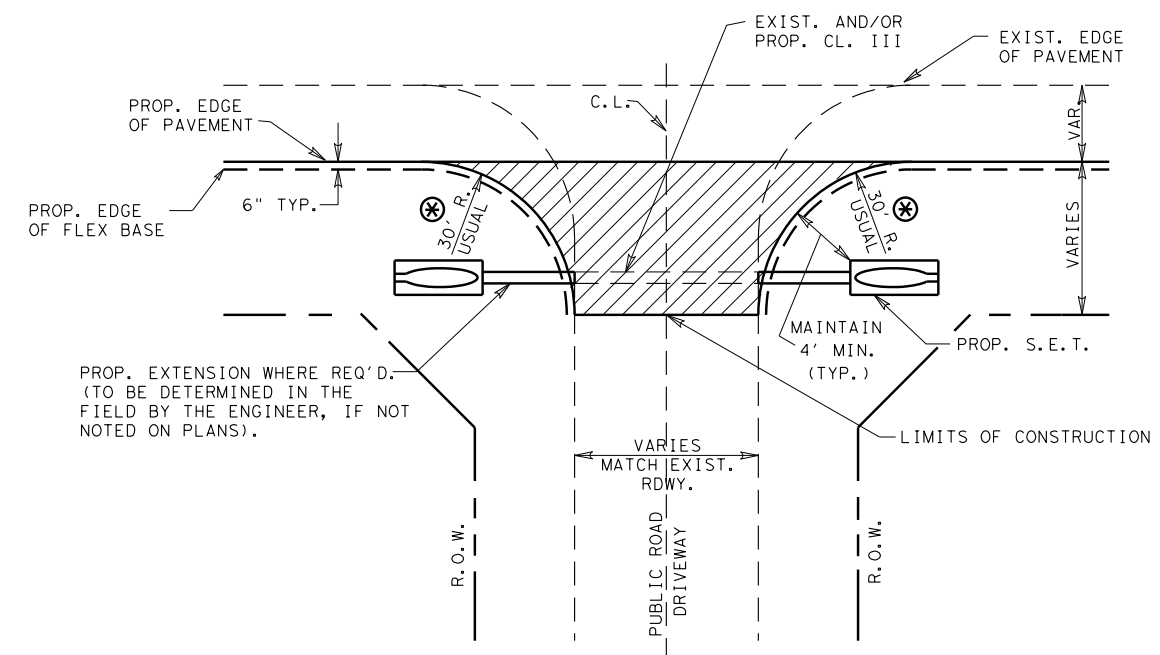
REV. 08/22 DRIVEWAY2.DGN

FED. RD. DIV. NO.	PROJECT NO.	FILE NO.	SHEET NO.
6			196
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	21	HIDALGO	1064 01 032 FM 676

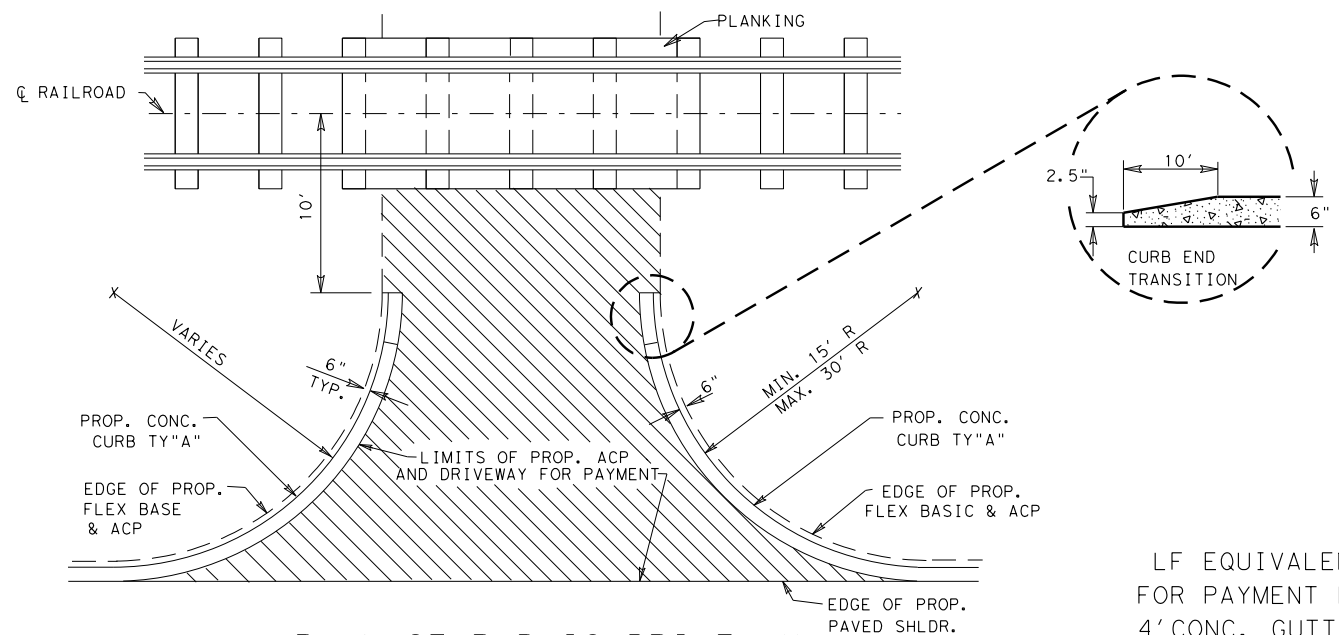
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**TYPICAL DETAIL**  
 (WHEN EXIST. ROADWAY WIDTH LESS THAN 24'.)

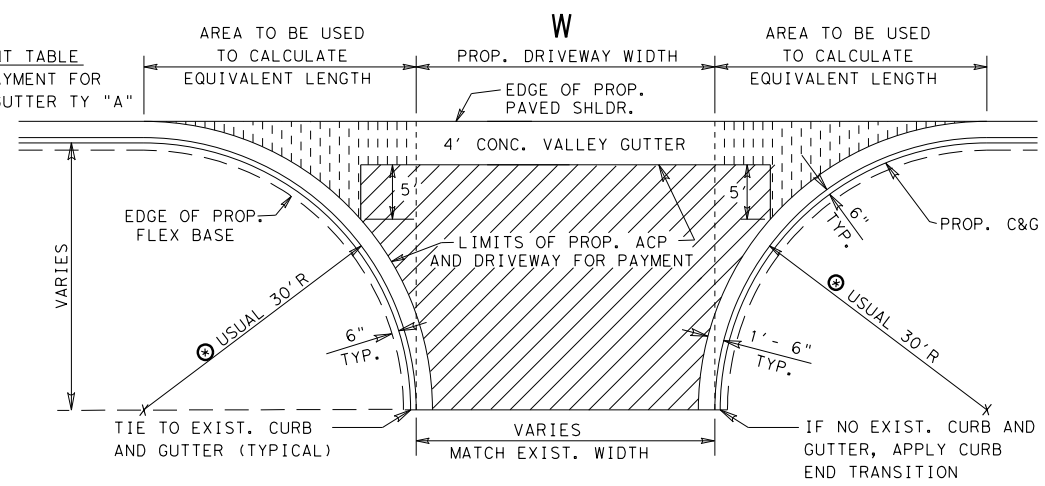


**TYPICAL DETAIL**  
 (WHEN EXIST. ROADWAY WIDTH EQUAL TO OR GREATER THAN 24'.)



**PLAN OF PUBLIC DRIVEWAY ADJACENT TO R.R. CROSSING**

SEE LF EQUIVALENT TABLE FOR LIMITS OF PAYMENT FOR PROP. 4' CONC. GUTTER TY "A" WHERE REQUIRED



**PLAN OF PUBLIC DRIVEWAY**

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 4' CONC. GUTTER TY. "A"

LF OF VALLEY GUTTER= W + X1 + X2	
WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS	
Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 4')
10	3
15	7
20	12
25	19
30	27
35	37
40	48
45	61
50	75
55	91
60	109
65	127
70	148
75	170

GENERAL NOTES:

- AVERAGE DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS ARE FOR ESTIMATING PURPOSES ONLY.
- LOCATIONS LISTED ON THE TABLE ARE APPROXIMATE, EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER AS REQUIRED.
- ⊗ SEE DRIVEWAY TABLE, TURNING RADIUS MAY BE REDUCED AS APPROVED BY THE ENGINEER.
- SEE TABLE OF DRIVEWAYS FOR TOTAL LENGTH OF PROP. 4' CONC. VALLEY GUTTER FOR EACH LOCATION.

**TY PBS1**

EXIST. UNPAVED PUBLIC DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 12" LIME TREAT. SUBGRADE, 8" FLEX. BASE 1% LIME, THEN PRIMED AND SURFACED WITH 171#/SY ACP. (HMA-D PG 64-22 SAC B MEETING ITEM 340)

**TY PBS2**

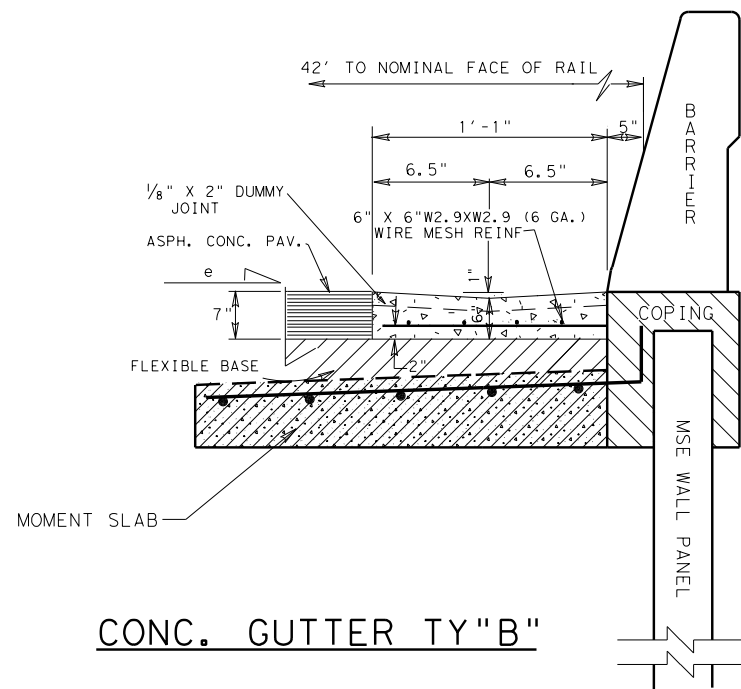
EXIST. DRIVEWAY TO BE CONSTRUCTED SAME AS PROPOSED ROADWAY.

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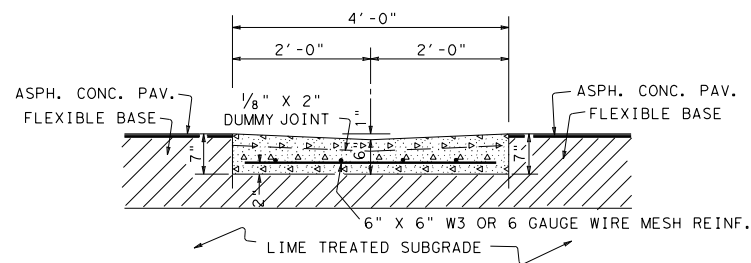
**TEXAS DEPARTMENT OF TRANSPORTATION**  
**DRIVEWAY DETAILS**  
**PUBLIC**  
**(COUNTY ROAD-CITY STREET)**

REV. 8/22		DRIVEWAY3.DGN			
STATE AID PROJECT NO.	FILE NO.	SHEET NO.		197	
6					
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB
TEXAS	21		1064	01	032
			HIGHWAY NO.	FM 676	



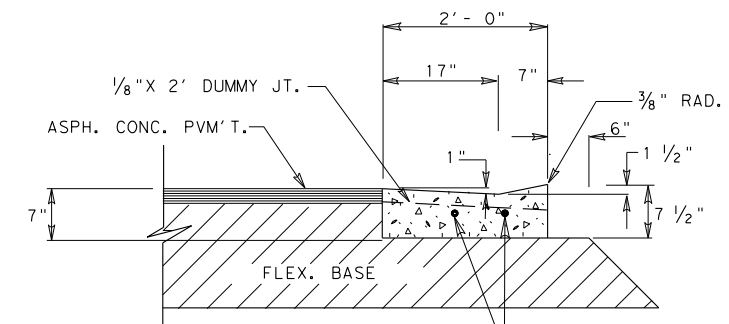


**CONC. GUTTER TY "B"**



**4' CONC. VALLEY GUTTER (TY "A")**

TO BE USED WHERE REQUIRED TO CARRY DRAINAGE WATER ACROSS SIDE STREETS



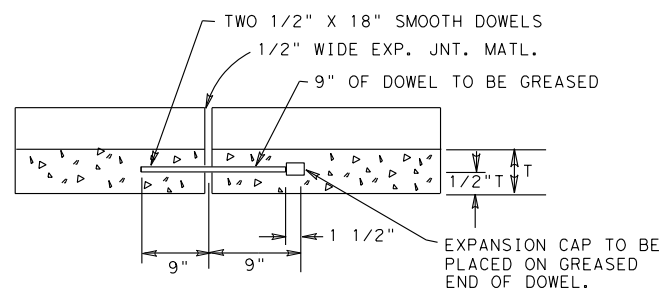
(TO BE USED ONLY ON COMMERCIAL ENTRANCES) 2-NO. 5 LONGITUDINAL REINF. BAR REINF. STEEL TO BE MADE PART OF ITEM "CONC. CURB & GUTTER." THE LENGTH OF REINFORCING STEEL WILL BE THE WIDTH OF THE PROP. COMMERCIAL ENTRANCE PLUS FOUR FEET.

**CONC. GUTTER**

**NOTE:**

CONCRETE GUTTER TO BE USED ONLY WHERE PERMITTED BY TEXAS DEPARTMENT OF TRANSPORTATION REGULATIONS FOR ACCESS DRIVEWAYS.

2' VALLEY GUTTER SHALL BE PAID FOR AS CONC. CURB AND GUTTER. CONCRETE CURB & GUTTER & CONCRETE CURB SHALL BE MEASURED FOR PAYMENT ALONG FACE OF CURB AT FLOW LINE.

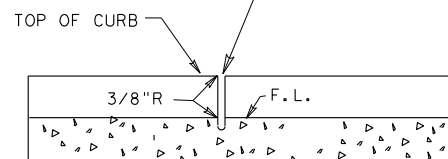


**DETAIL EXPANSION JOINT**

LONGITUDINAL SECTION THRU CURB AND/OR C&G. REINFORCING STEEL (WHEN USED) SHALL NOT CROSS EXPANSION JOINTS. STEEL SHALL BE TERMINATED 3" ± 1" FROM FACE OF THE JOINT.

1/2" PREMOLDED EXPANSION JOINT MATERIAL SHALL BE INSTALLED WHERE CONC. CURB & GUTTER ABUTS CONC. CURB, OR WHERE CONC. CURB & GUTTER OR CONC. CURB ABUT INLETS, BRIDGE WINGWALLS, BRIDGE ABUTMENTS AND/OR ANY OTHER LOCATIONS SPECIFIED BY THE ENGINEER. MAX. SPACING = 105'

JOINTS MAY BE FORMED WITH 1/8" METAL PLATES NO FILLER REQUIRED. USUAL SPACING 10' O.C., MAX. SPACING 15' O.C.

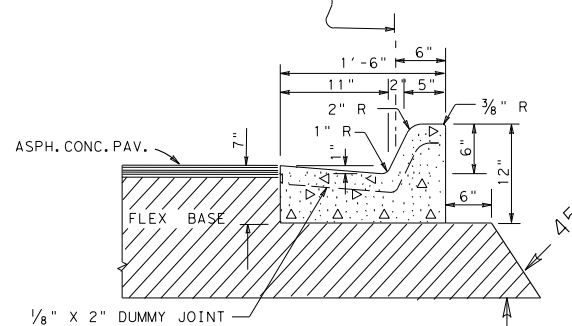


**DETAIL DUMMY JOINT**

**NOTE:**

DUMMY JOINTS TO BE USED ON CURB & CUTTER, CONC. MEDIAN AND ALL TYPE OF VALLEY GUTTERS JOINTS TO BE LOCATED BY THE ENGINEER.

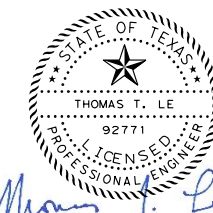
ALL HORIZONTAL DIMENSIONS AND RADII SHOWN ON PLANS, RELATING TO CURB & GUTTER, ARE TO A POINT 6" IN FROM BACK OF CURB.



**CONC. CURB & GUTTER TY "A" (BARRIER) (MOD)**

**NOTE:**  
EXPANSION JOINTS

1/2" PREMOLDED EXPANSION JOINT MATERIAL SHALL BE INSTALLED WHERE CONC. CURB & GUTTER ABUTS CONC. CURB, OR WHERE CONC. CURB & GUTTER OR CONC. CURB ABUT INLETS, BRIDGE WINGWALLS, BRIDGE ABUTMENTS AND/OR ANY OTHER LOCATIONS SPECIFIED BY THE ENGINEER. MAX. SPACING = 105'



*Thomas T. Le*

11/18/2022



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PHARR DISTRICT STANDARD



**CURB & GUTTER DETAILS (MOD)**

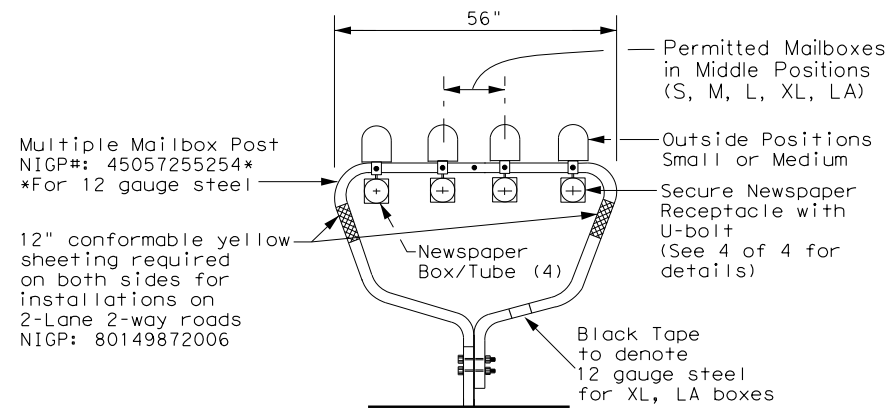
REV. 4/02		C&G. DGN	
FED. RD. DIST. NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			198
STATE	STATE DIST.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	PHR	HIDALGO	1064 01 032 FM 676

PLOT DRIVER: RD+11x17+PDF.p14  
 PENTABLE: Pentable.tbl  
 DATE: 11/18/2022  
 FILE: pwr\ASUSD036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676\_P&E\_Update\CADD\STD\RDW\C&G.dgn

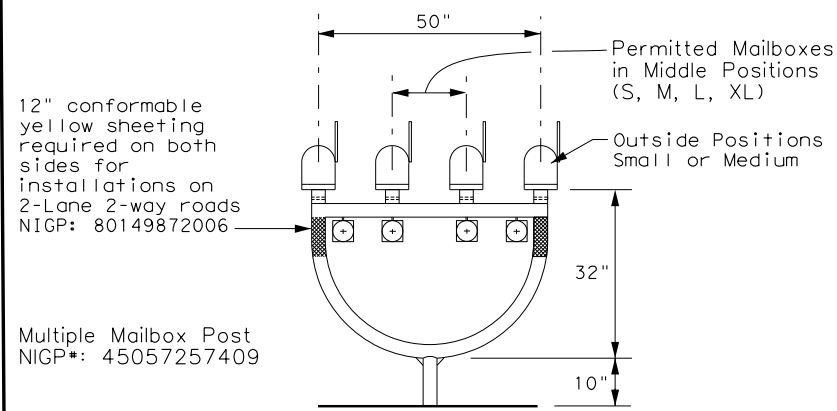
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DATE: FILE:

### TYPE 1 - MULTIPLE



### TYPE 4 - MULTIPLE



### MAILBOX SIZES

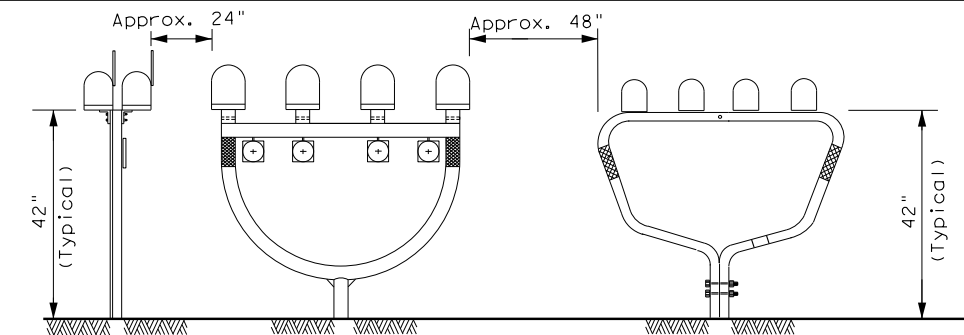
MAILBOX SIZE	TYPICAL DIMENSIONS			MAX **
	LENGTH	WIDTH	HEIGHT	WEIGHT
SMALL	19 1/2"	6"	7"	6 LBS
MEDIUM	22 1/2" *	8" *	11 1/2" *	8 LBS
LARGE	23 1/2"	11 1/2"	13 1/2"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 1/2"	15"	23 LBS

### GENERAL NOTES:

- Dimensions shown (length, width, and height) are typical, not maximums. However, anytime a medium size mailbox is mounted on a single/double mount or on the outside position on a multi mount, the dimensions shown are maximums.
- Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.

\* See Note 1.  
 \*\* Excluding Molded Plastic on 4 X 4 Post

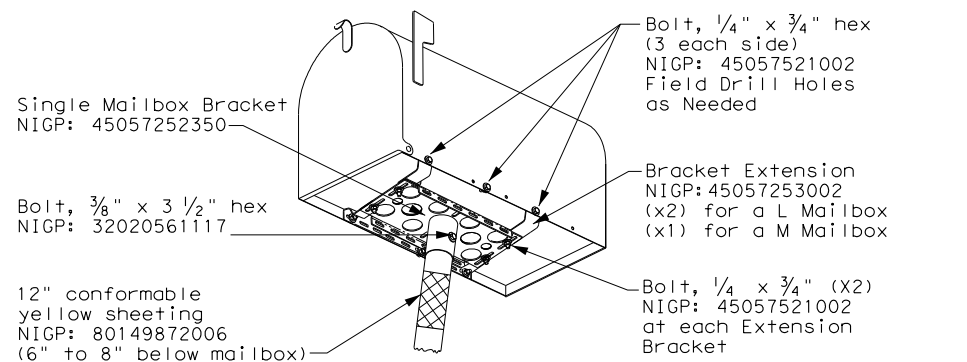
### TYPICAL INSTALLATION MEASUREMENTS



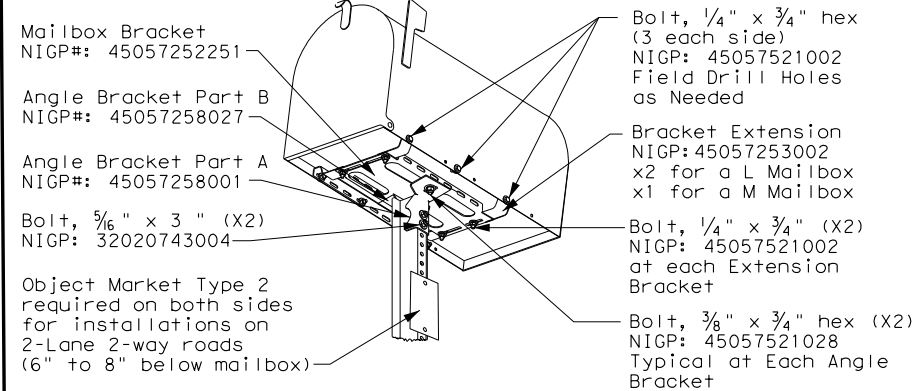
### NOTE:

Mailbox installations in sidewalk areas shall be in accordance with the latest TxDOT Design Standard sheets PED-Pedestrian Facilities Curb Ramps.

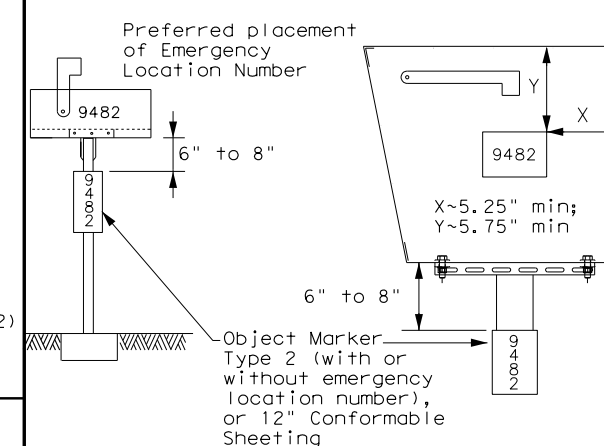
### TYPE 2 and 4 - SINGLE/DOUBLE



### TYPE 3 - SINGLE/DOUBLE



### PLACEMENT OF EMERGENCY LOCATION NUMBER

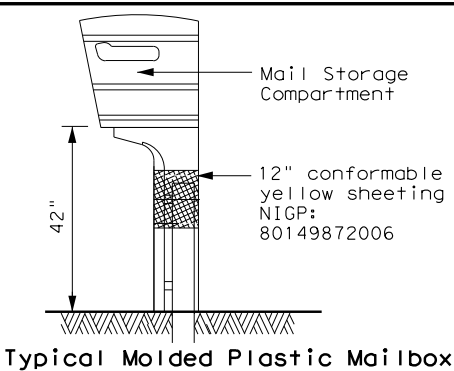


### NOTES:

- Location numbers are provided by homeowner. Minimum size 1" height.
- Location number is typically placed on the mailbox in a contrasting color.
- Black numbers may be placed on the Type 2 object marker if the numbers cannot be placed on the mailbox.
- Alternatively, a green or blue plate with white numbers attached may be mounted below the object marker. Other contrasting color configuration, as approved, may be used.
- See 3 of 4 for Foundation details.
- See 4 of 4 for Hardware details.

SHEET 1 OF 4

### TYPE 5



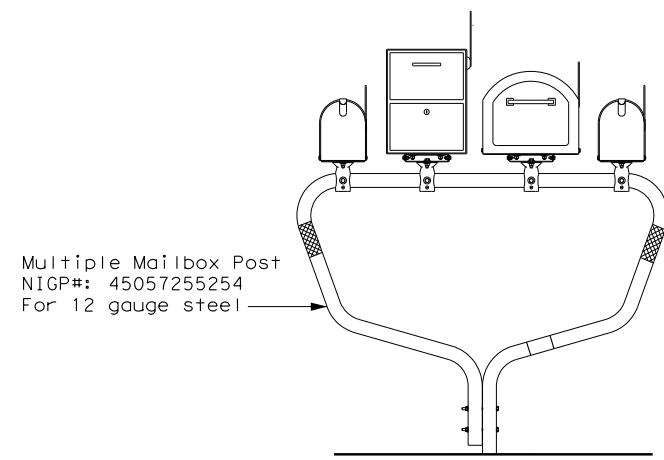
## MAILBOX MOUNTING AND ASSEMBLY

### MB(1)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
2/2005	11/2009	4/2015		
6/2005	1/2011			
11/2006	7/2014			
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		199

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**TYPE 1 - MULTI LOCKABLE AND XL MAILBOX**



Multiple Mailbox Post  
NIGP#: 45057255254  
For 12 gauge steel

**TYPE 2/4 - SINGLE LOCKABLE MAILBOX**

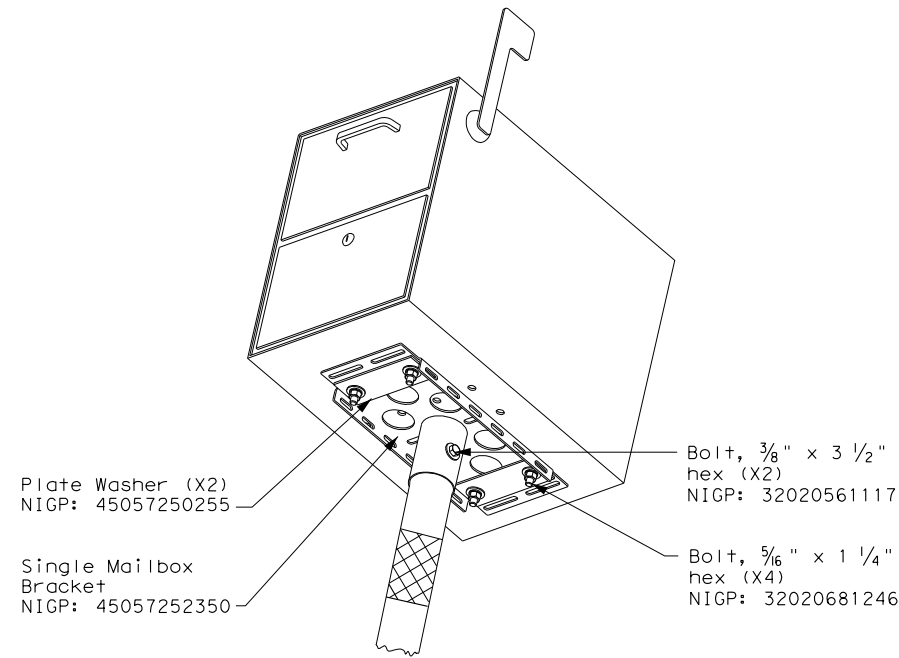


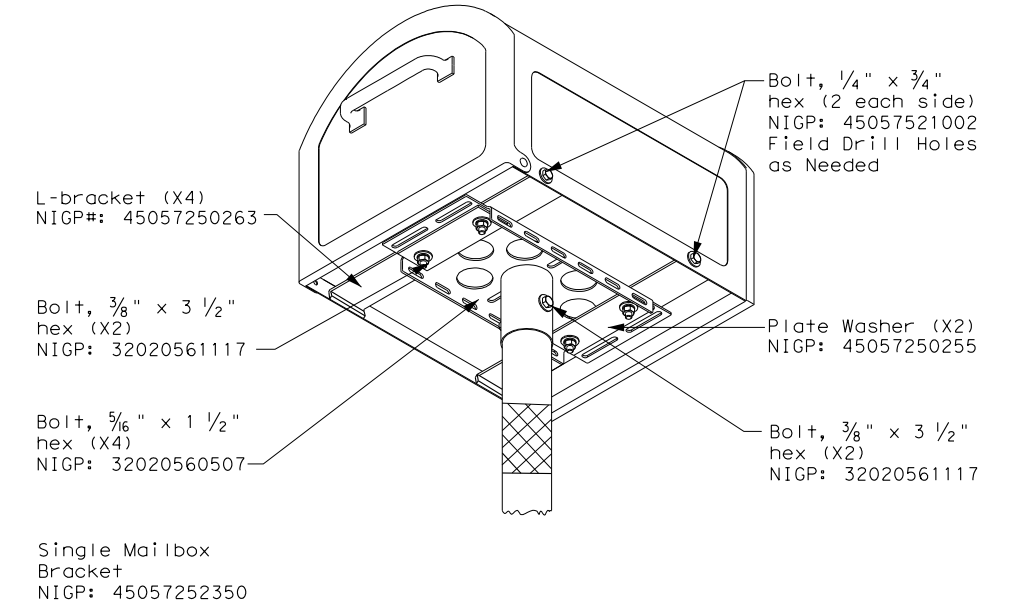
Plate Washer (X2)  
NIGP: 45057250255

Single Mailbox Bracket  
NIGP: 45057252350

Bolt, 3/8" x 3 1/2" hex (X2)  
NIGP: 32020561117

Bolt, 5/16" x 1 1/4" hex (X4)  
NIGP: 32020681246

**TYPE 2/4 - SINGLE XL MAILBOX**



L-bracket (X4)  
NIGP#: 45057250263

Bolt, 3/8" x 3 1/2" hex (X2)  
NIGP: 32020561117

Bolt, 5/16" x 1 1/2" hex (X4)  
NIGP: 32020560507

Single Mailbox Bracket  
NIGP: 45057252350

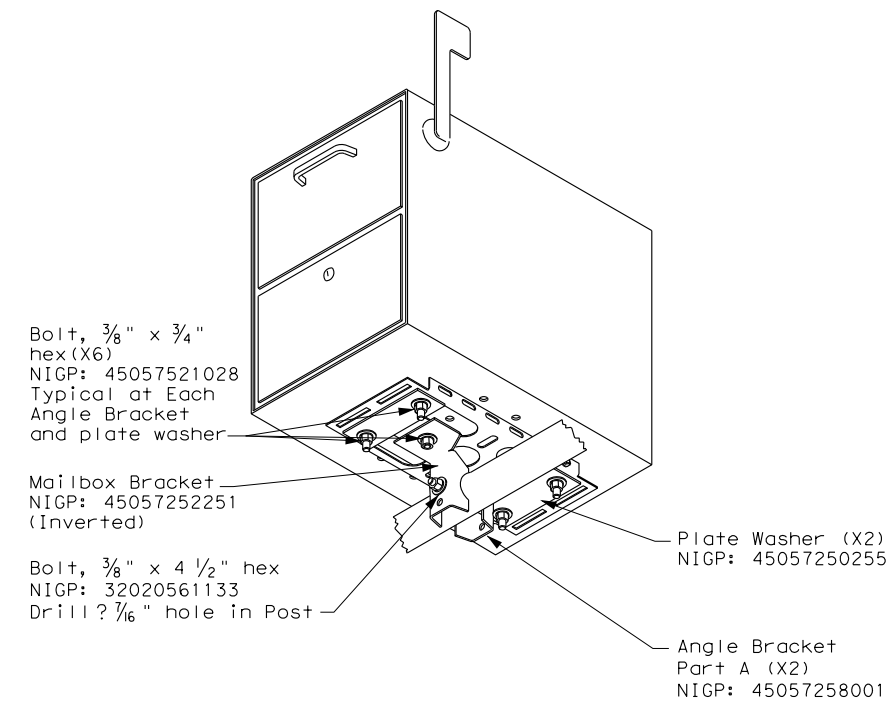
Bolt, 1/4" x 3/4" hex (2 each side)  
NIGP: 45057521002  
Field Drill Holes as Needed

Plate Washer (X2)  
NIGP: 45057250255

Bolt, 3/8" x 3 1/2" hex (X2)  
NIGP: 32020561117

**NOTE:**  
Follow same configuration when mounting an XL mailbox on a Type 4 multi post.

**TYPE 1 MULTI - LOCKABLE ARCHITECTURAL (LA)**



Bolt, 3/8" x 3/4" hex (X6)  
NIGP: 45057521028  
Typical at Each Angle Bracket and plate washer

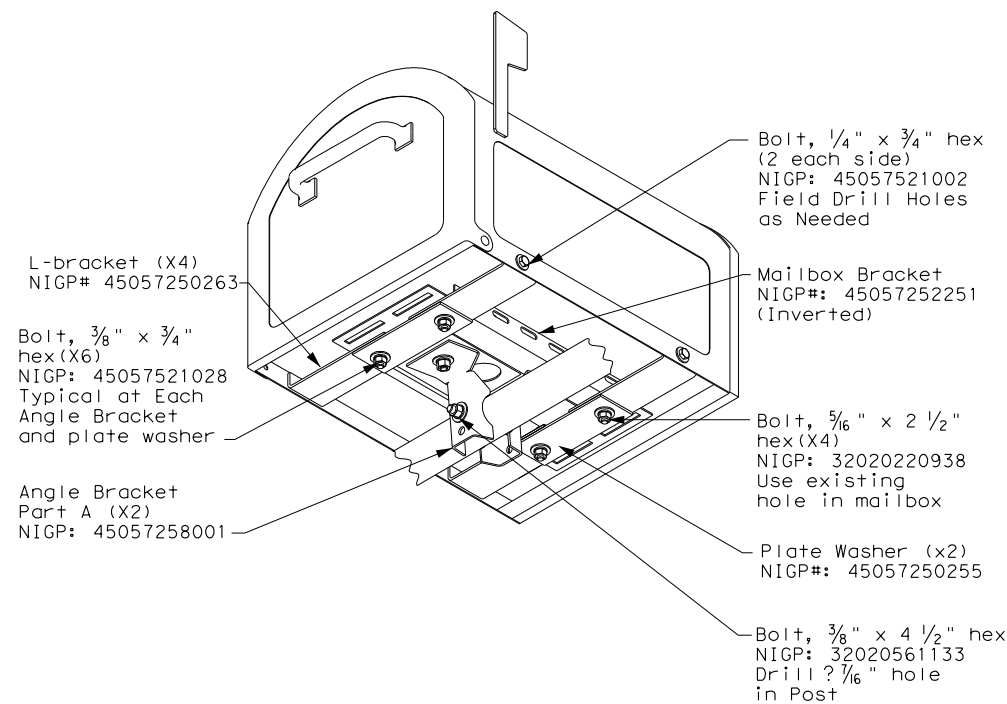
Mailbox Bracket  
NIGP: 45057252251 (Inverted)

Bolt, 3/8" x 4 1/2" hex  
NIGP: 32020561133  
Drill 7/16" hole in Post

Plate Washer (X2)  
NIGP: 45057250255

Angle Bracket Part A (X2)  
NIGP: 45057258001

**TYPE 1 MULTI - XL MAILBOX**



L-bracket (X4)  
NIGP#: 45057250263

Bolt, 3/8" x 3/4" hex (X6)  
NIGP: 45057521028  
Typical at Each Angle Bracket and plate washer

Angle Bracket Part A (X2)  
NIGP: 45057258001

Bolt, 1/4" x 3/4" hex (2 each side)  
NIGP: 45057521002  
Field Drill Holes as Needed

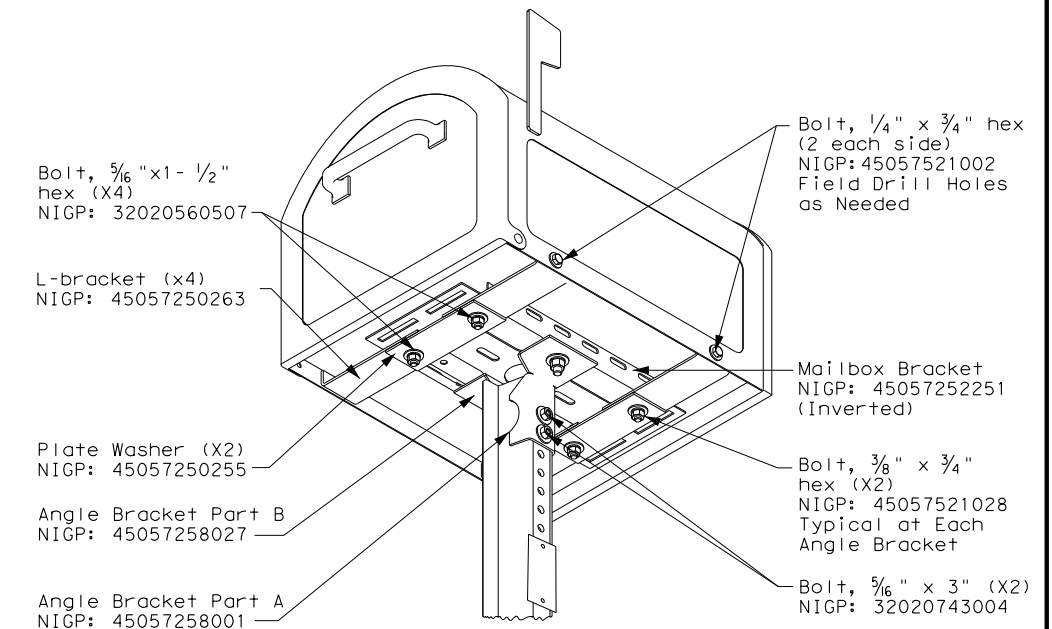
Mailbox Bracket  
NIGP#: 45057252251 (Inverted)

Bolt, 5/16" x 2 1/2" hex (X4)  
NIGP: 32020220938  
Use existing hole in mailbox

Plate Washer (X2)  
NIGP#: 45057250255

Bolt, 3/8" x 4 1/2" hex  
NIGP: 32020561133  
Drill 7/16" hole in Post

**TYPE 3 - XL MAILBOX MOUNTING**



Bolt, 5/16" x 1 1/2" hex (X4)  
NIGP: 32020560507

L-bracket (X4)  
NIGP: 45057250263

Plate Washer (X2)  
NIGP: 45057250255

Angle Bracket Part B  
NIGP: 45057258027

Angle Bracket Part A  
NIGP: 45057258001

Bolt, 1/4" x 3/4" hex (2 each side)  
NIGP: 45057521002  
Field Drill Holes as Needed

Mailbox Bracket  
NIGP: 45057252251 (Inverted)

Bolt, 3/8" x 3/4" hex (X2)  
NIGP: 45057521028  
Typical at Each Angle Bracket

Bolt, 5/16" x 3" (X2)  
NIGP: 32020743004

SHEET 2 OF 4

		<b>Maintenance Division Standard</b>	
<p><b>XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY</b></p> <p><b>MB (2) - 21</b></p>			
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT March 2004	CON: 1064	SECT: 01	JOB: 032
2/2005	11/2009	4/2015	FM 676
6/2005	1/2011		
11/2006	7/2014		
	DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 200

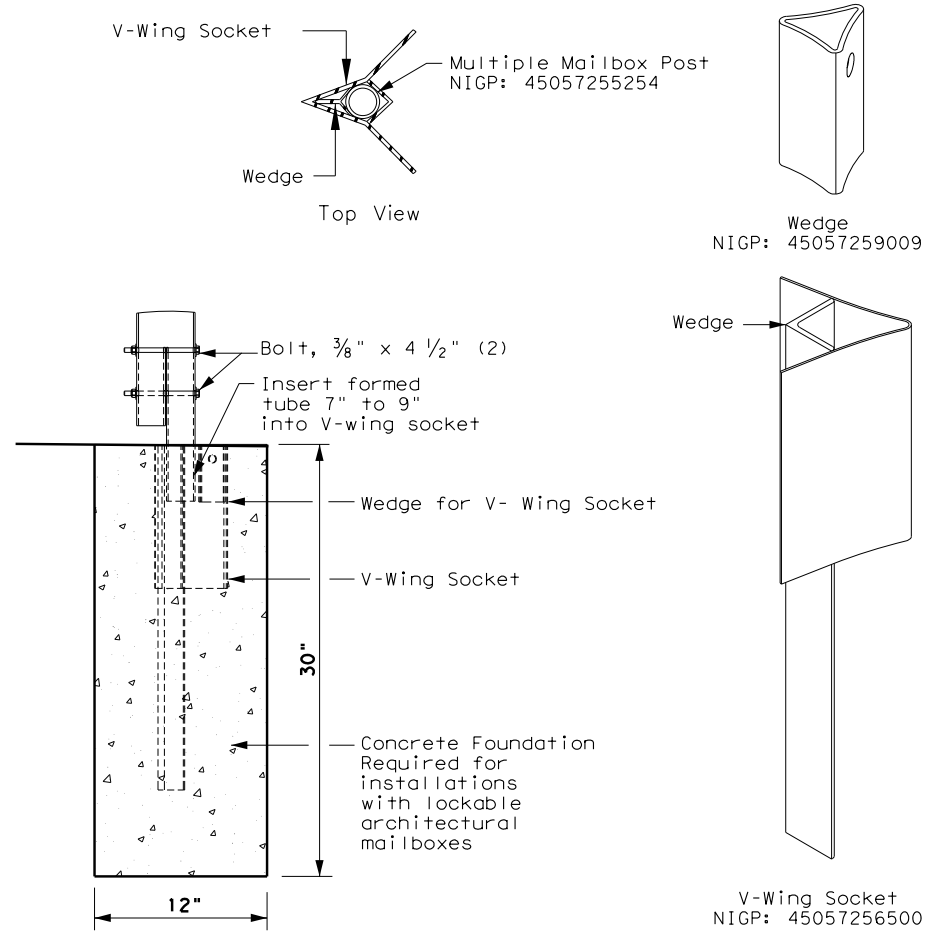
DATE:  
FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

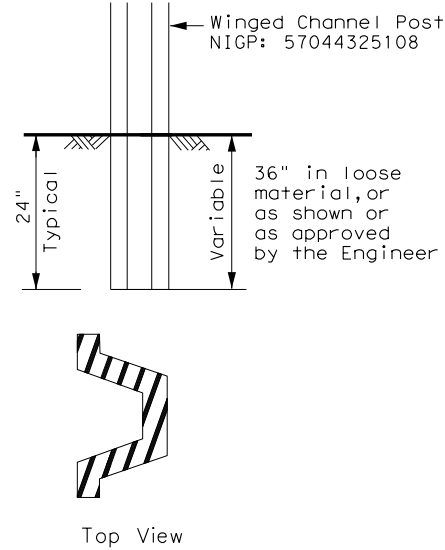
DATE: 11/16/08/02/02/2 10:2 3:32:34MM  
 FILE: \\C:\AD\AS\J\PR\DWY\mb(3)-21.dgn

**TYPE 1 - SUPPORT/FOUNDATION**

Thin Wall Tube w/ V-LOC Anchorage



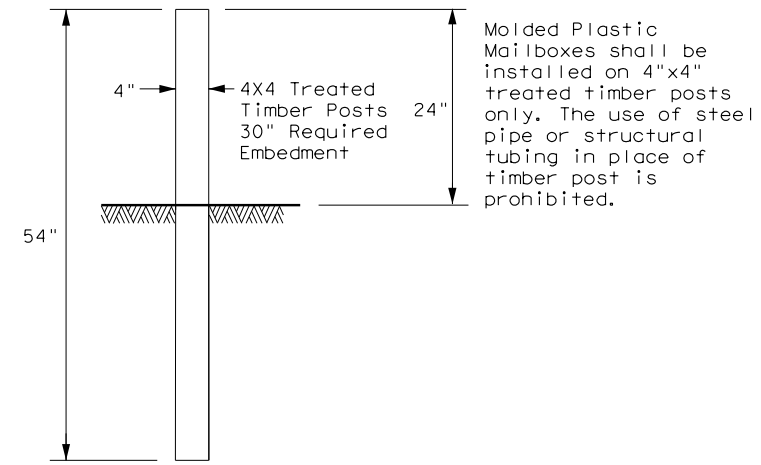
**TYPE 3 - SUPPORT/FOUNDATION**



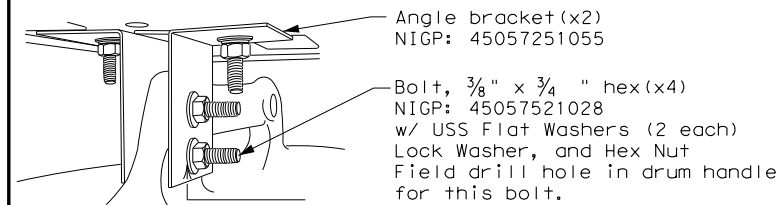
**NOTES:**

1. Attach Object Marker (OM) facing direction of traffic.
2. OM will also be required on opposite side if installed on a 2-Lane, 2-Way roadway.

**TYPE 5 - SUPPORT/FOUNDATION**



**TYPE 6 - TEMPORARY MAILBOX SUPPORT**



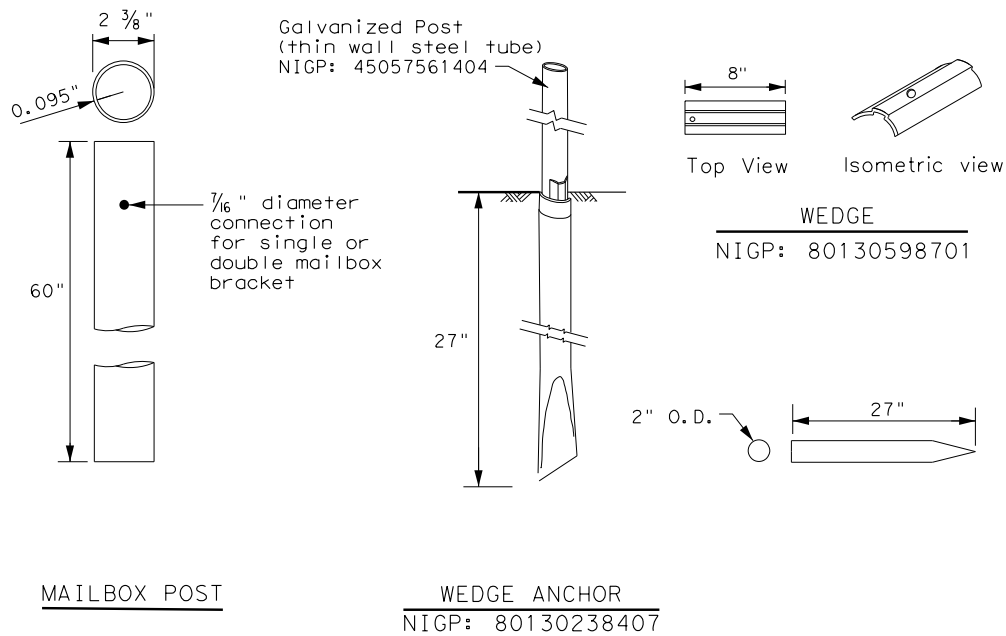
Plastic Drum NIGP: 55093383655  
 Rubber Collar NIGP: 55093387102

**NOTES:**

1. Place on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD).
2. Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

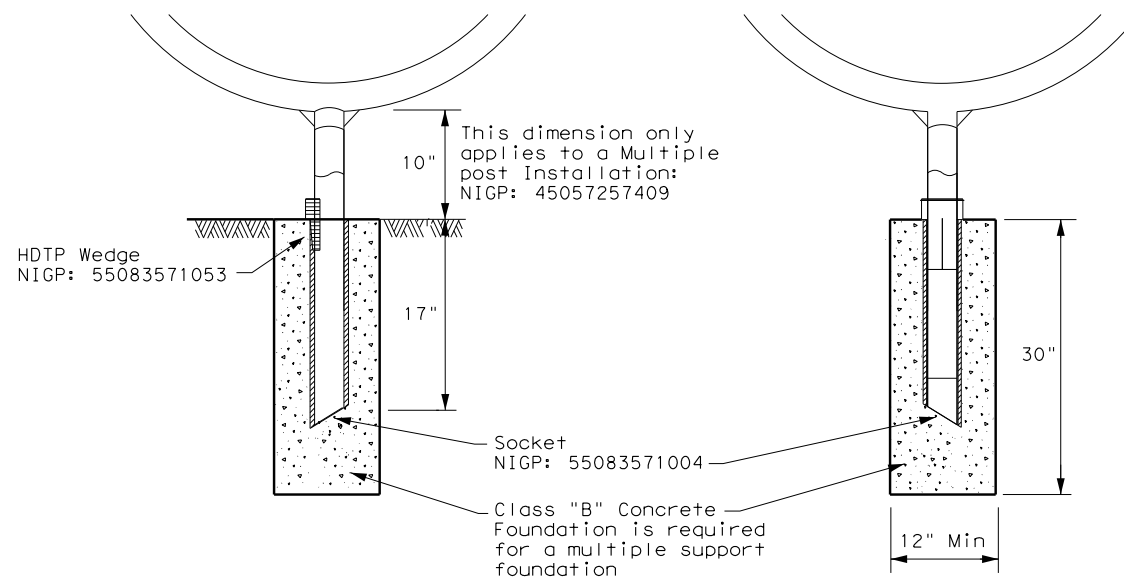
**TYPE 2 - SUPPORT/FOUNDATION**

Thin Wall Steel Tube w/Wedge Anchor System



**TYPE 4 - SUPPORT/FOUNDATION**

Whitecoated steel post NIGP: 45057561107  
 Multiple post NIGP: 45057257409  
 Recycled Rubber post (RR) NIGP: 45057561057



**GENERAL NOTES:**

1. Erect post plumb or vertical.
2. When galvanized part is required galvanize in accordance with Item 445.
3. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition, only on Type 1, Type 2, and Type 4

SHEET 3 OF 4



**MAILBOX SUPPORT AND FOUNDATION**

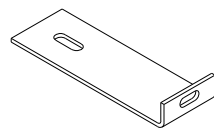
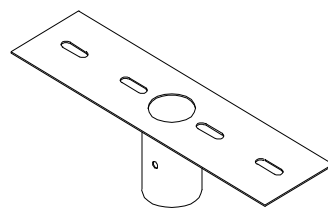
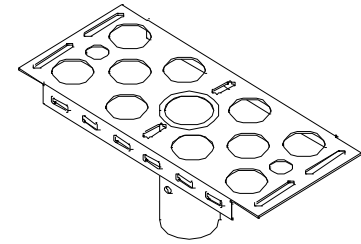
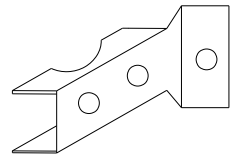
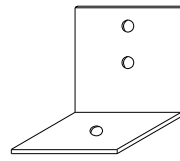
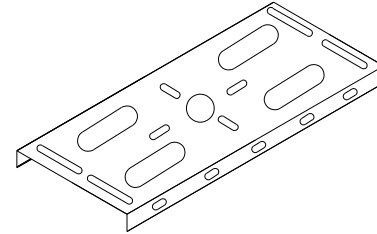
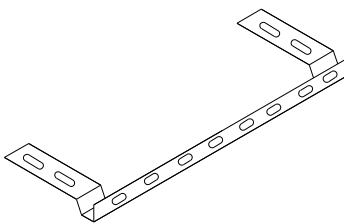
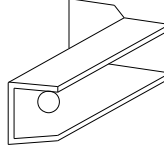
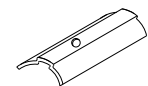


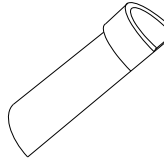
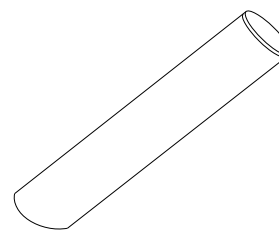

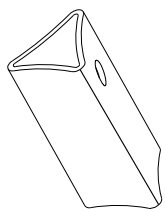
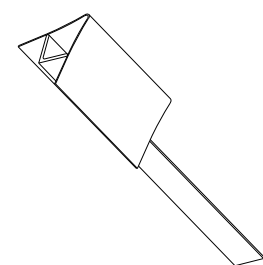
**MB (3) - 21**

FILE: MB-21.dgn	DN:	CK:	DW:	CK:
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
2/2005 11/2009 4/2015	1064	01	032	FM 676
6/2005 1/2011	DIST	COUNTY		SHEET NO.
11/2006 7/2014	PHR	HIDALGO		201

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DATE: 11/18/2022 10:23:24 AM  
 FILE: ... \CADD\STD\ROWY\Mb-21(1).dgn

TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
Configuration	Multiple	Single or Double	Single or Double	Single	Double	Multiple
Mailbox Size NIGP #	Outside Position: S or M Inside Position: S, M, L, XL, or LA	Single: S, M, L, XL, or LA Double: SS, SM, MM	Single: S, M, L, or XL Double: SS, SM, MM	S, M, L, XL, or LA	SS, SM, or MM	Outside Position: S or M Inside Position: S, M, L, or XL
Mailbox Post NIGP #	45057255254 (Galvanized Multiple)	45057561404 (Thin Walled Galvanize)	57044325108 (Wing Channel Post)	45057561107 (Thin walled white powder coated) 45057561057 (Recycled Rubber Post: S or M only)	45057561107 (Thin Walled White Powder Coated)	45057257409 (White Powder Coated Multiple)
Post and Mailbox Hardware NIGP #	45057259009 (Wedge) 45057256500 (V-Wing Socket) 45057253002 (Bracket Extension) 45057252251 (Mailbox Bracket) 45057258001 (Part A Angle Bracket x2) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	80130598701 (Wedge) 80130238407 (Wedge Anchor) 45057253002 (Bracket Extension) 45057252343 (Double MB Bracket) 45057252350 (S. Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	45057541653 (Type 3 Double Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057253002 (Bracket Extension) 45057258001 (Part A Angle Bracket) 45057258027 (Part B Angle Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057252350 (Single Mailbox Bracket) 45057253002 (Bracket Extension) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252343 (Double Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057252251 (Mailbox Bracket x2)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252350 (Single Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)
Foundation Used	Class B Concrete (Required for LA Mailboxes)	Class B Concrete (Required for LA Mailboxes)	None	Class B Concrete (not used with recycled rubber post, required for LA Mailboxes)	Class B Concrete (not required)	Class B Concrete

 NIGP: 45057250263 L-Bracket x4 for XL sized mailboxes	 NIGP: 45057252343 Double Mailbox Bracket For Type 2 and Type 4 double mount	 NIGP: 45057252350 Single Mailbox Bracket For Type 2 single and for Type 4 single and multi mount	 NIGP: 45057258001 Part "A" Angle Bracket For Type 1 multi (2 per mailbox) and Type 3 single and double
 NIGP: 45057251055 Type 6 Angle Bracket (2 per mailbox)	 NIGP: 45057252251 Mailbox Bracket For Type 1 multi and any double mount (use 2)	 NIGP: 45057253002 Bracket Extension Use 1 for a medium Mailbox Use 2 for a Large Mailbox	 NIGP: 45057258027 Part "B" Angle Bracket For Type 3 single and double
 NIGP: 80130598701 Wedge for Type 2	 NIGP: 45057250255 Plate Washer for Architecural and XL Mailboxes	 NIGP: 45057541653 Type 3 double mailbox bracket	 NIGP: 55083571053 Type 4 Mailbox Wedge
 NIGP: 55083571004 Type 4 Mailbox Socket	 NIGP: 80130238407 Type 2 Wedge Anchor	 NIGP: 45057259009 Wedge for Type 1 V-wing Socket	 NIGP: 45057256500 V-wing Socket for Type 1 Foundation

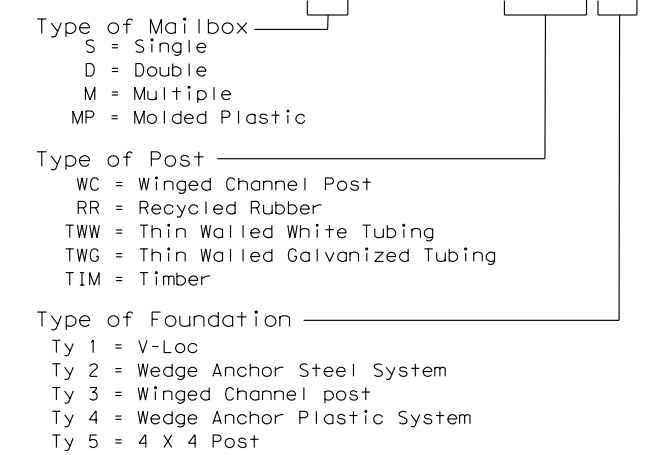
NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

**NOTES:**


- Type 2 object marker in accordance with Traffic Engineering Standard Delineators & Object Markers.
- A light weight receptacle for newspaper delivery can be attached to mailbox posts if the receptacle does not touch the mailbox, present a hazard to traffic or delivery of the mail, extend beyond the front of the mailbox, or display advertising, except the publication title.

BID CODES FOR CONTRACTS

MB-(X) ASSM TY (XXX) (X)

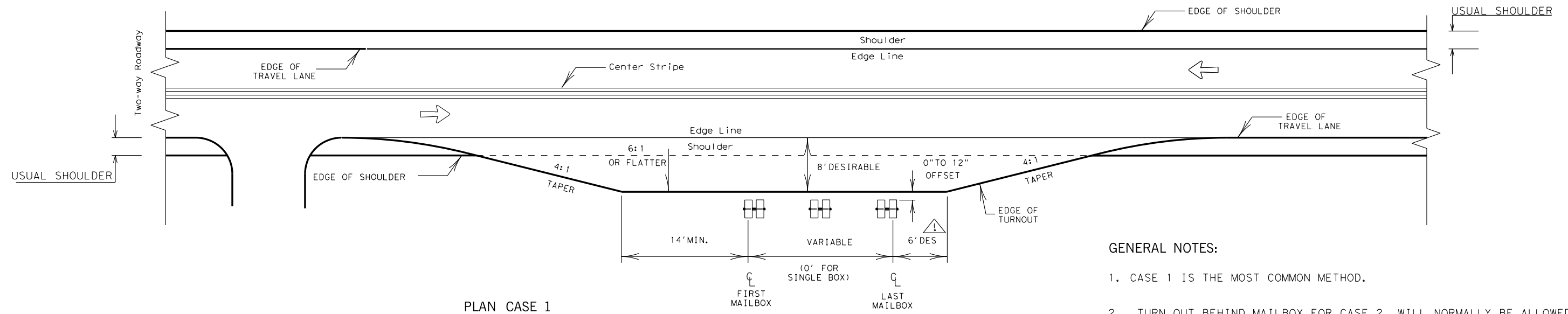
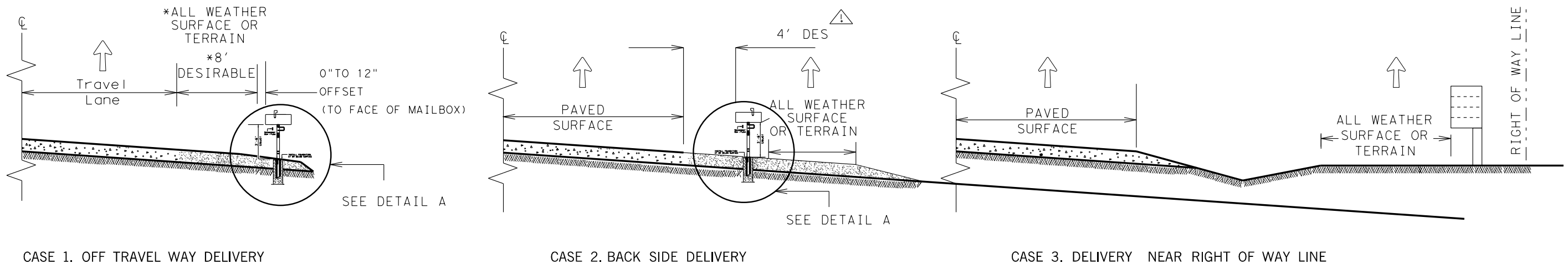


SHEET 4 OF 4

		<b>Maintenance Division Standard</b>	
<h2>NIGP PARTS LIST AND COMPATIBILITY</h2> <h3>MB(4)-21</h3>			
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT March 2004	CONT	SECT	JOB
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6/2005	1/2011		DIST COUNTY SHEET NO.
11/2006	7/2014	PHR	HIDALGO 202

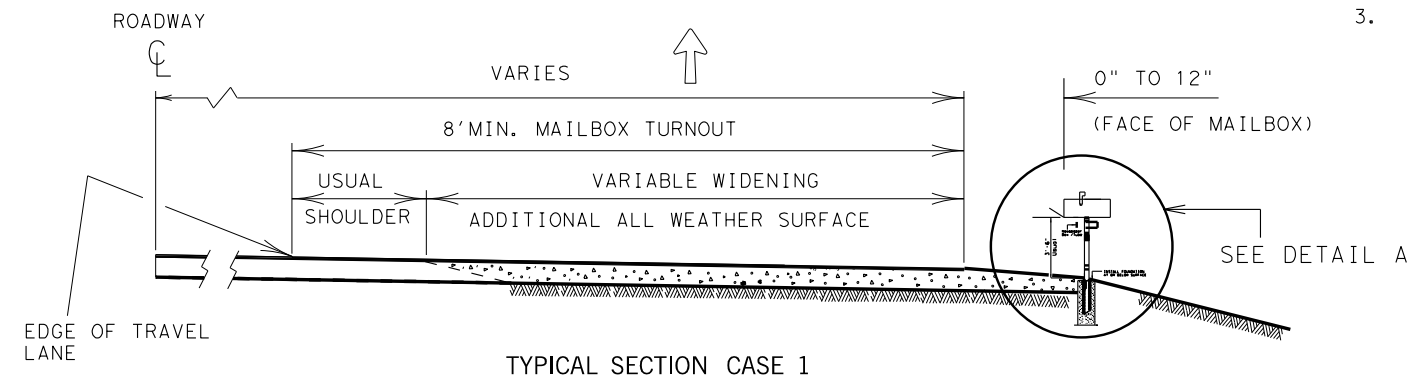
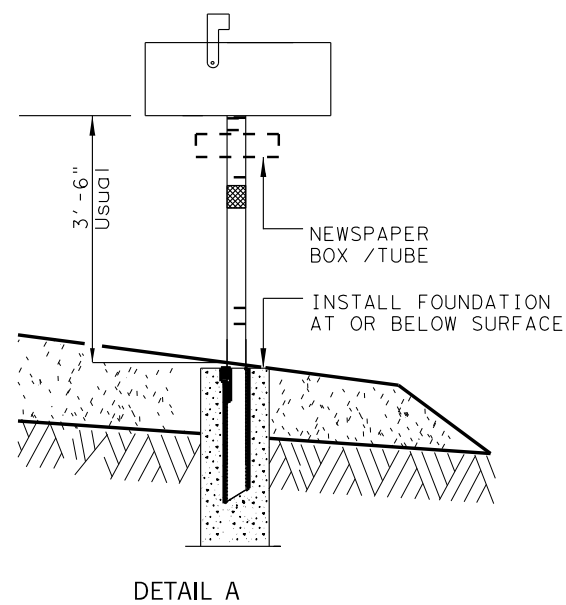
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DATE:  
FILE:



**GENERAL NOTES:**

1. CASE 1 IS THE MOST COMMON METHOD.
2. TURN OUT BEHIND MAILBOX FOR CASE 2 WILL NORMALLY BE ALLOWED FOR NATURAL TERRAIN THAT WILL SERVE AS AN ALL WEATHER SURFACE.
3. ALL WEATHER DRIVEWAYS FOR CASE 3 MAILBOXES LOCATED AT THE RIGHT OF WAY LINE SHOULD NORMALLY BE PLACED IN CONJUNCTION WITH COUNTY ROADS OR OTHER CONNECTING COMMUNITY ROADS OR STREETS. IF THE NUMBER OF MAILBOXES EXCEEDS FOUR, A COMMUNITY MAIL BOX SHOULD BE ENCOURAGED AT THESE LOCATIONS.



↑ MAIL DELIVERY VEHICLE TRAVEL DIRECTION

SHEET 1 OF 3

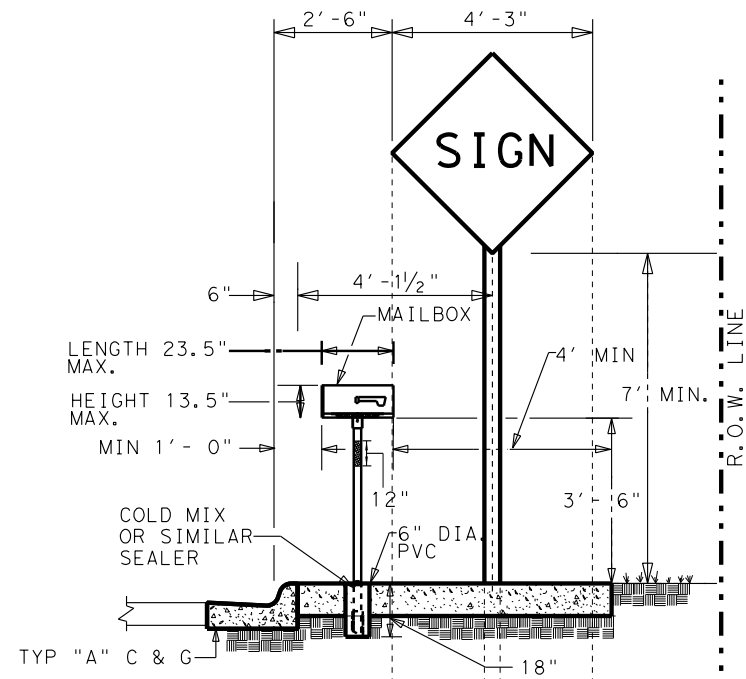


*Guideline*  
**MAILBOX SIDE ROAD PLACEMENT AND TURNOUTS**  
**MB-14(2)**

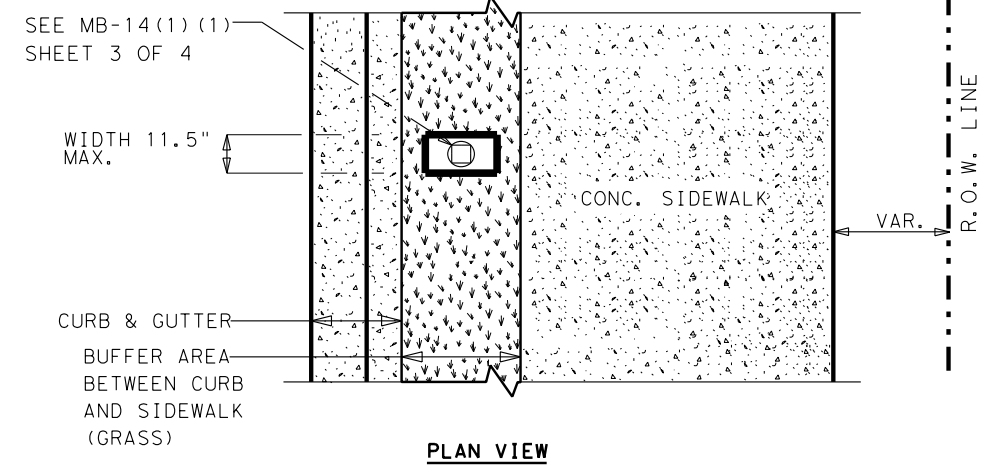
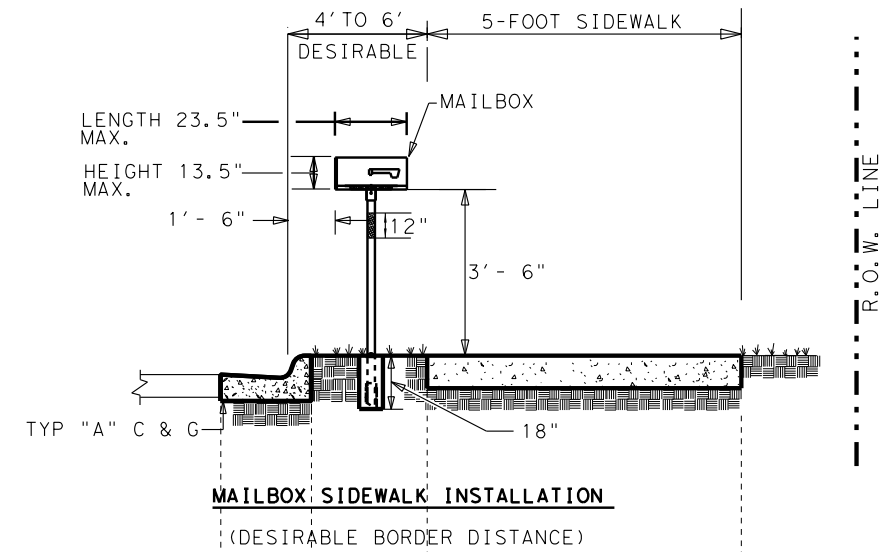
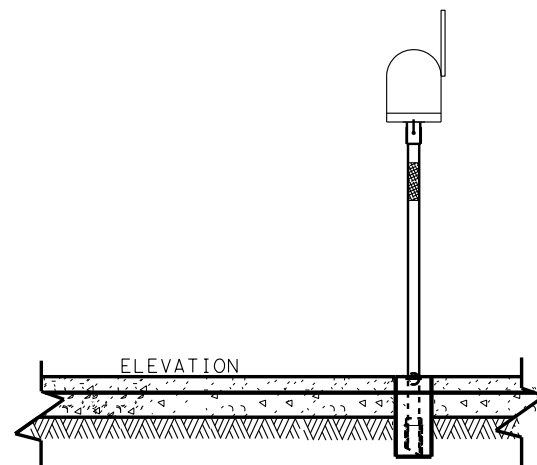
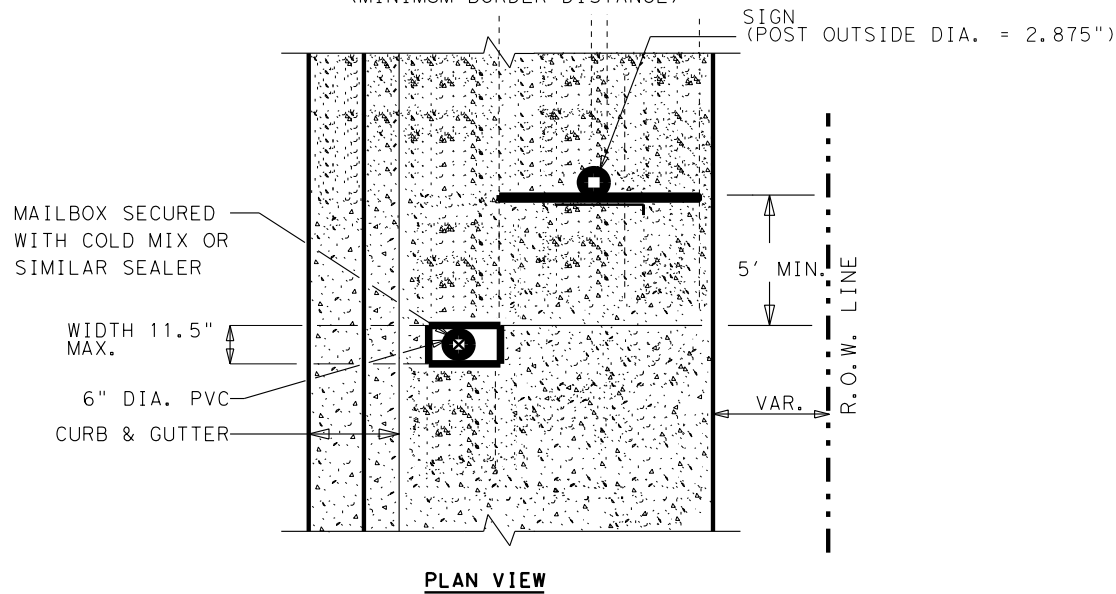
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© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
DECEMBER 2012-NEW TxDOT TITLE BLOCK	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	203	

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DATE:  
FILE:



MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN (MINIMUM BORDER DISTANCE)



SHEET 2 OF 3



Maintenance Division Standard

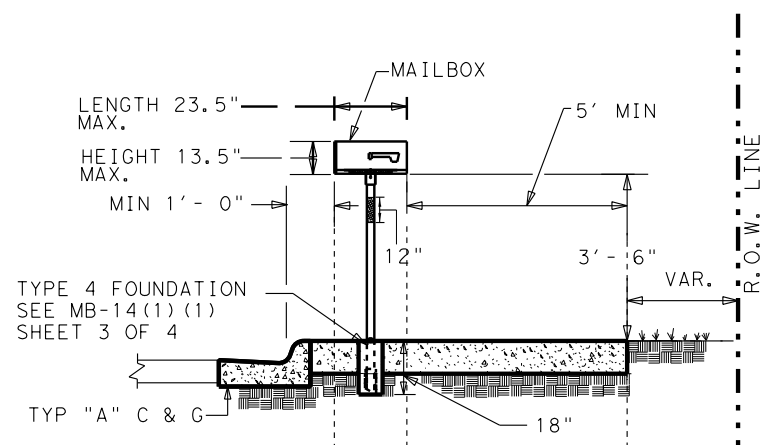
SINGLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

MB-14(2A)

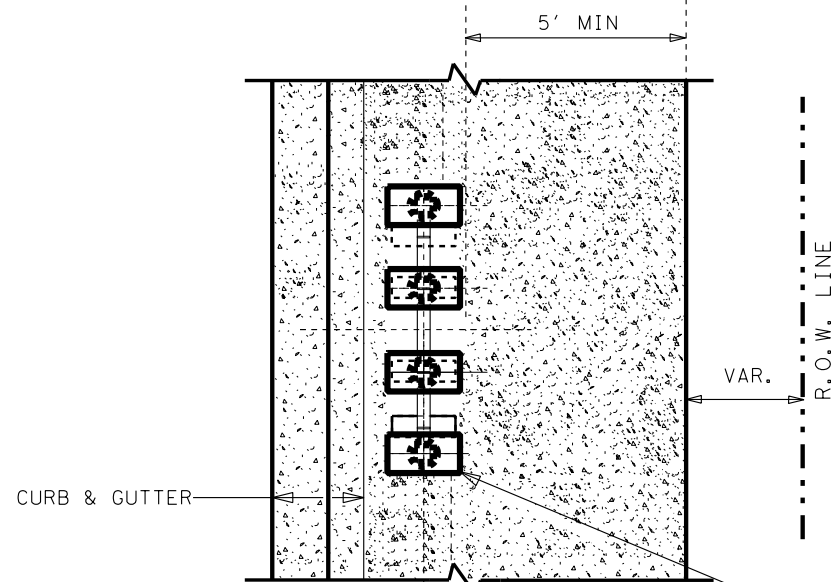
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© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		204

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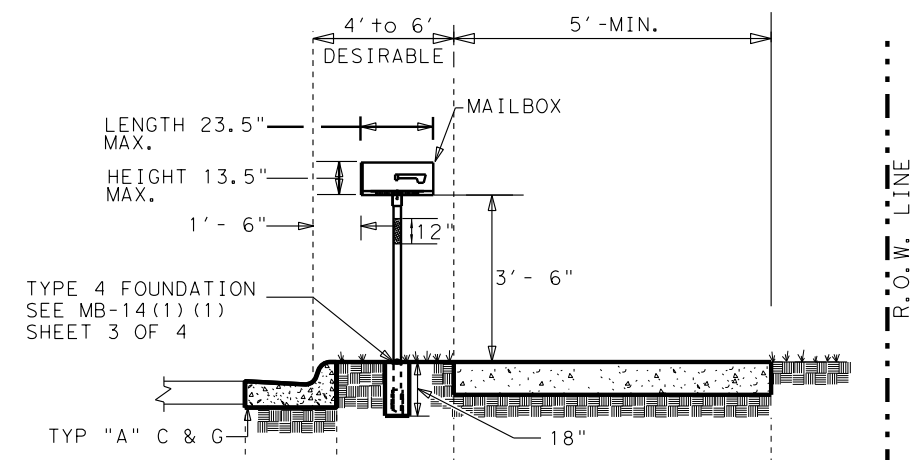
DATE:  
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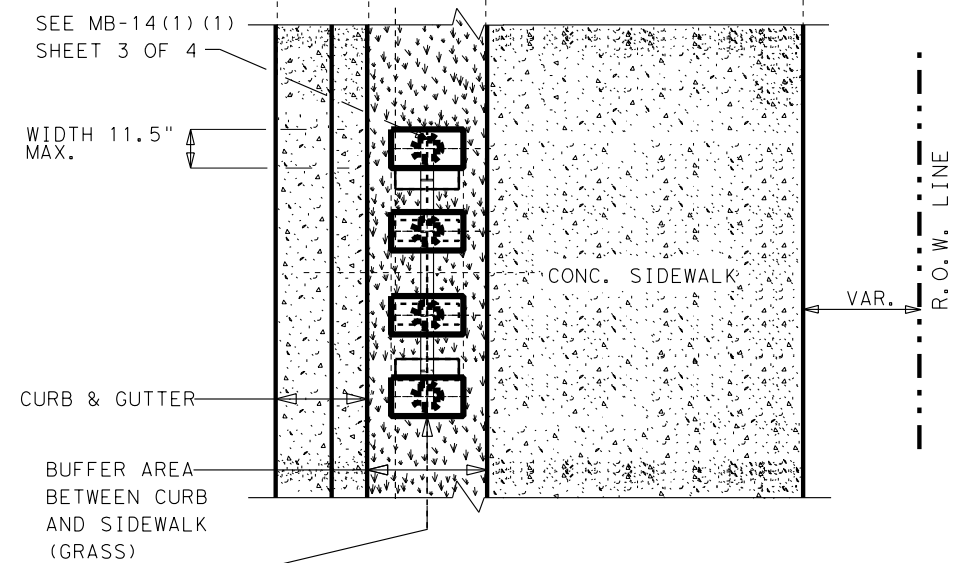
MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN (MINIMUM BORDER DISTANCE)



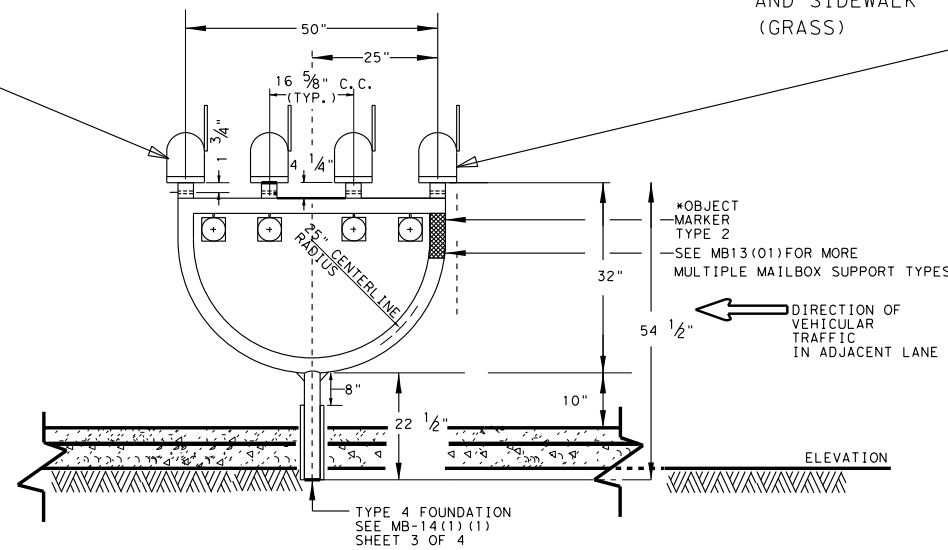
PLAN VIEW



MAILBOX SIDEWALK INSTALLATION (DESIRABLE BORDER DISTANCE)



PLAN VIEW



\*OBJECT MARKER TYPE 2  
SEE MB13(01) FOR MORE MULTIPLE MAILBOX SUPPORT TYPES  
DIRECTION OF VEHICULAR TRAFFIC IN ADJACENT LANE

TYPE 4 FOUNDATION SEE MB-14(1)(1) SHEET 3 OF 4

SHEET 3 OF 3



MULTIPLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

MB-14(2B)

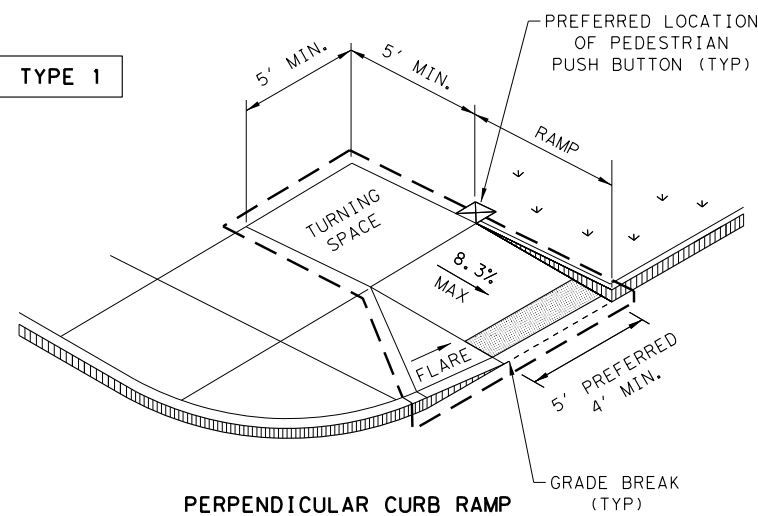
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© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	205	



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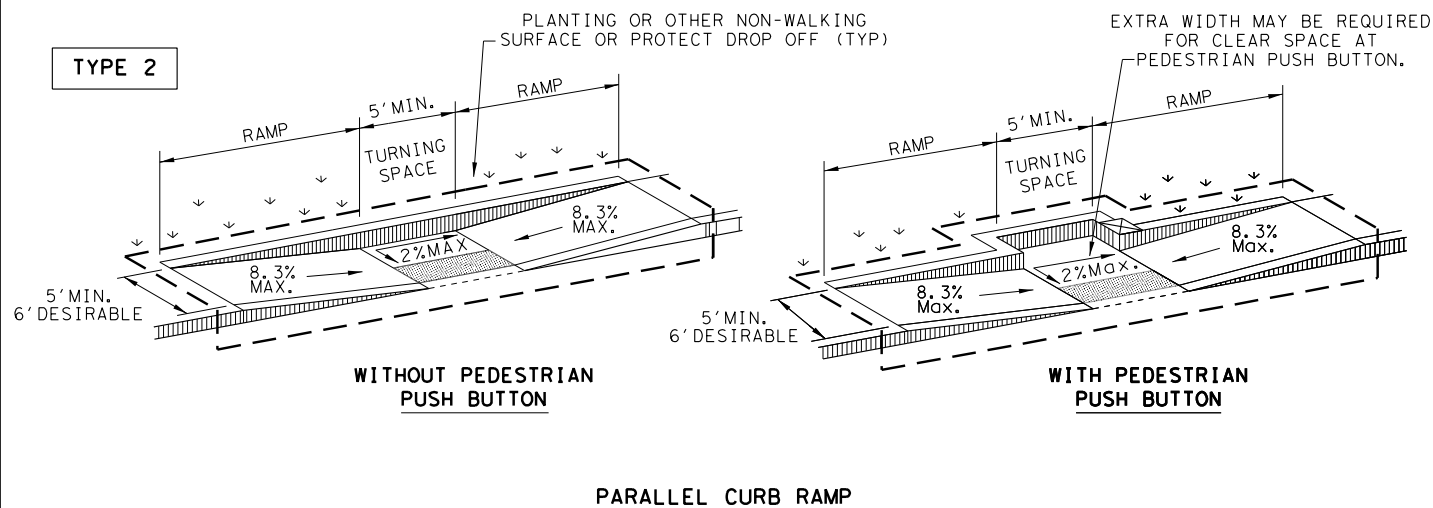
DATE:  
FILE:

**TYPE 1**



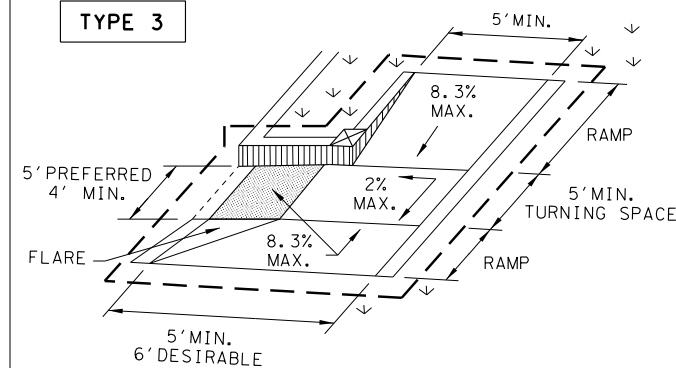
**PERPENDICULAR CURB RAMP**

**TYPE 2**



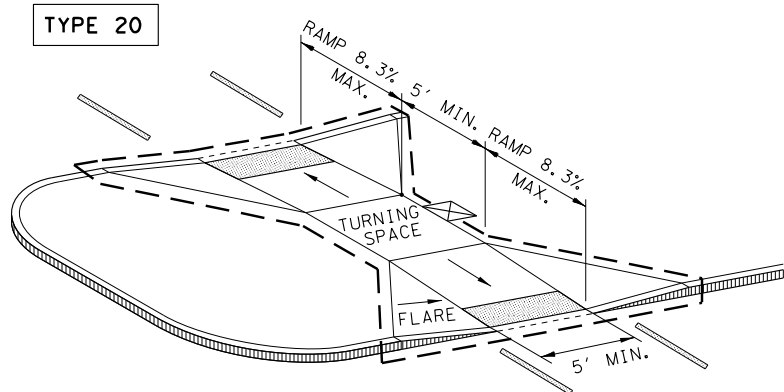
**PARALLEL CURB RAMP**

**TYPE 3**



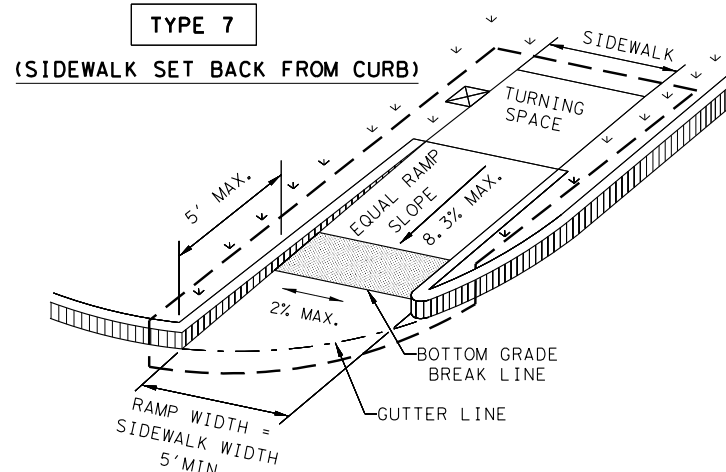
**COMBINATION CURB RAMPS**

**TYPE 20**

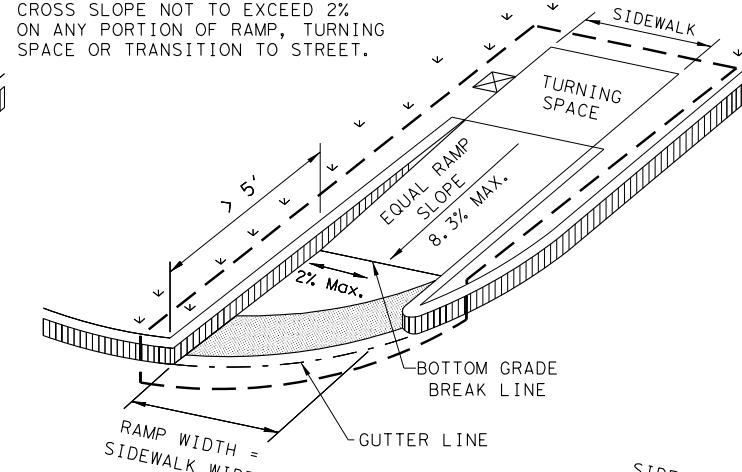


**CURB RAMPS AT MEDIAN ISLANDS**

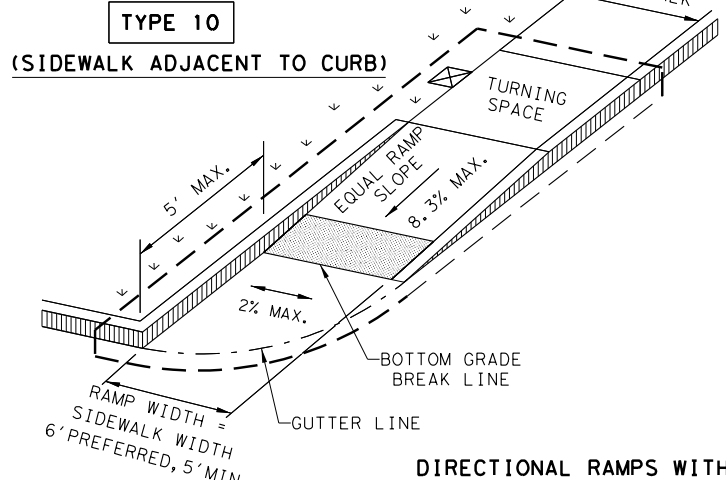
**TYPE 7**



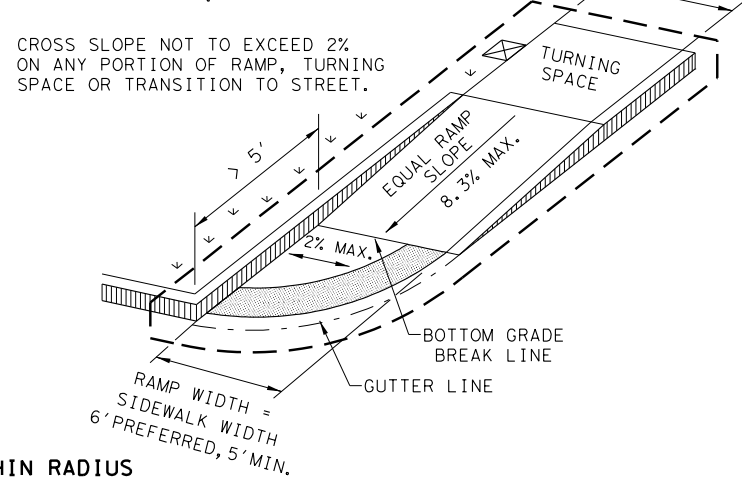
**(SIDEWALK SET BACK FROM CURB)**



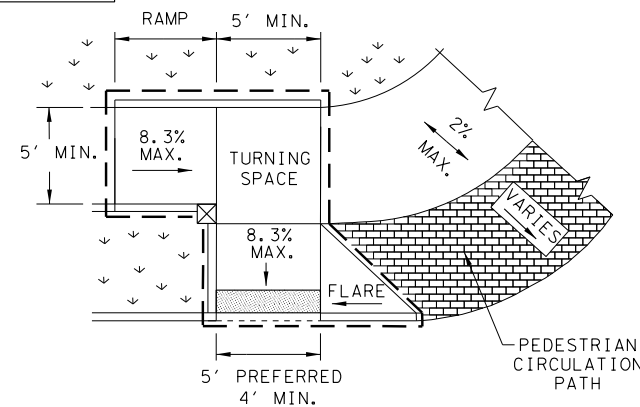
**TYPE 10**



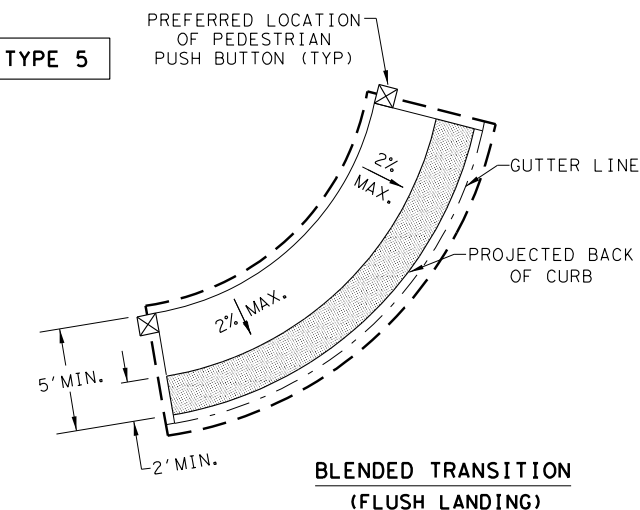
**DIRECTIONAL RAMPS WITHIN RADIUS**



**TYPE 6**



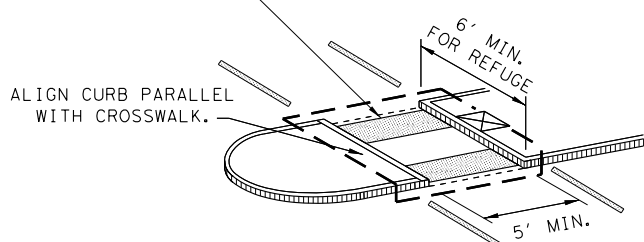
**TYPE 5**



**BLENDED TRANSITION (FLUSH LANDING)**

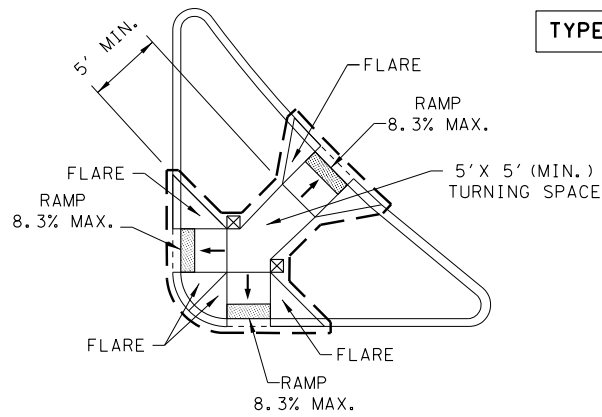
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

**TYPE 21**



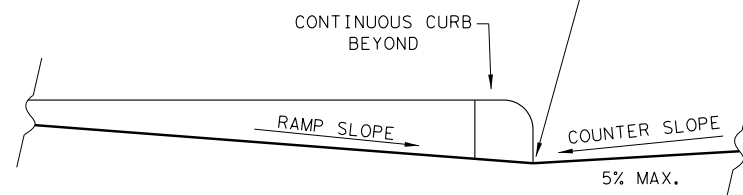
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

**TYPE 22**



**COMBINATION ISLAND RAMPS**

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



**TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY**

**NOTES / LEGEND:**

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.



GUTTER LINE



DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.



GRADE BREAK



RAMP LIMITS OF PAYMENT



**PEDESTRIAN FACILITIES CURB RAMPS PED-18**

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
REVISED 08, 2005	DIST	COUNTY		SHEET NO.
REVISED 06, 2012	PHR	HIDALGO		206
REVISED 01, 2018				

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**GENERAL NOTES**

**CURB RAMP**

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

**DETECTABLE WARNING MATERIAL**

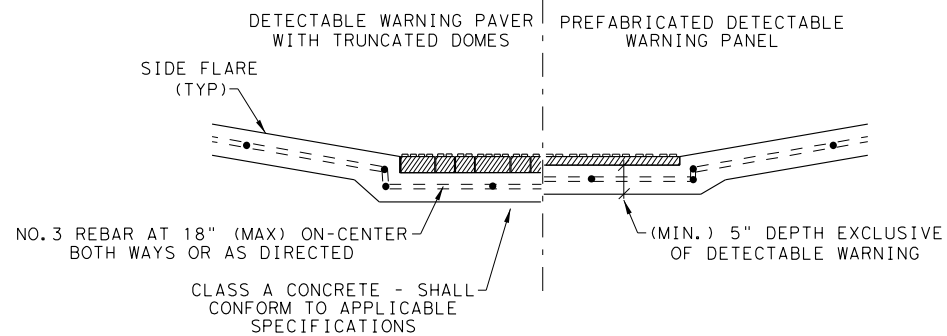
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

**DETECTABLE WARNING PAVERS (IF USED)**

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

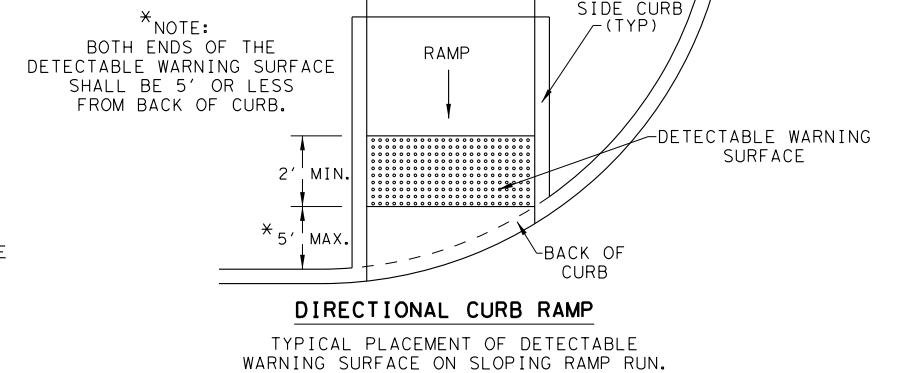
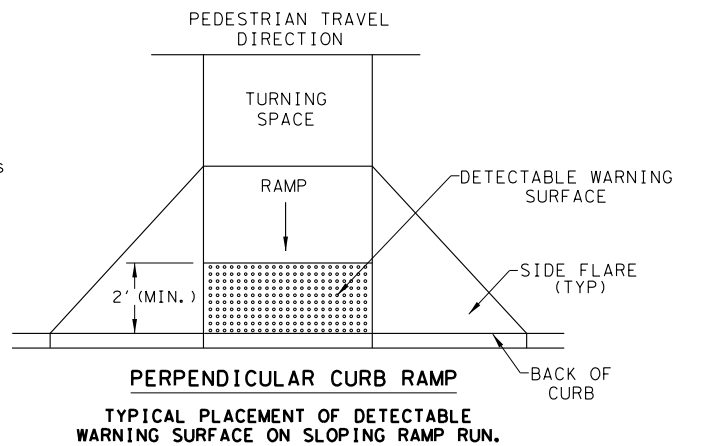
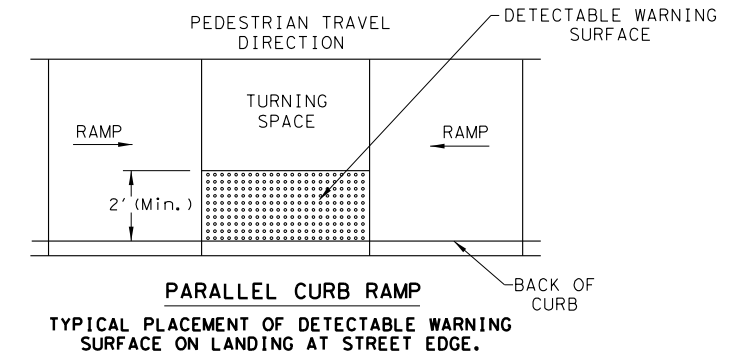
**SIDEWALKS**

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.



**SECTION VIEW DETAIL  
CURB RAMP AT DETECTIBLE WARNINGS**

**DETECTABLE WARNING SURFACE DETAILS**



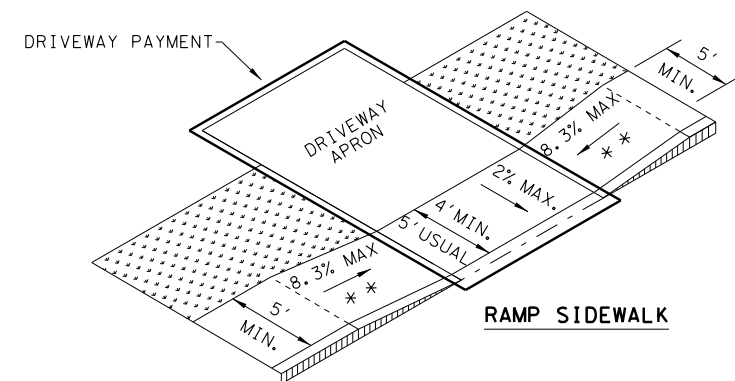
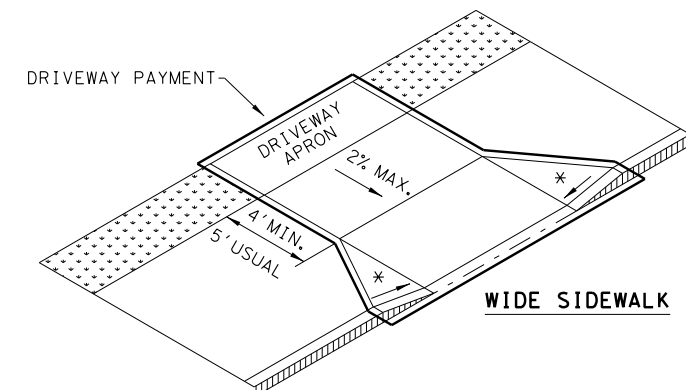
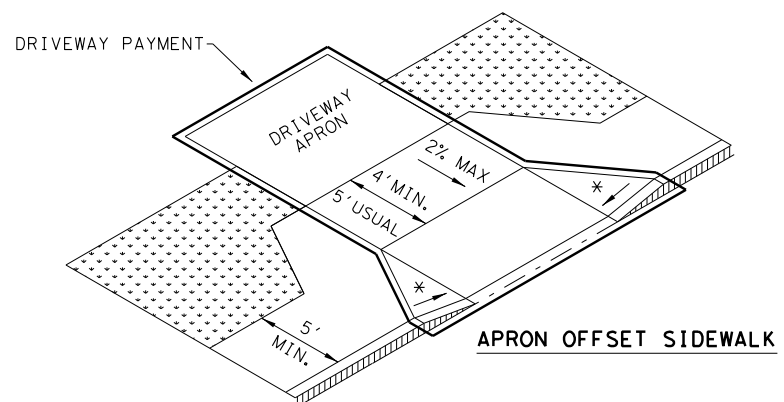
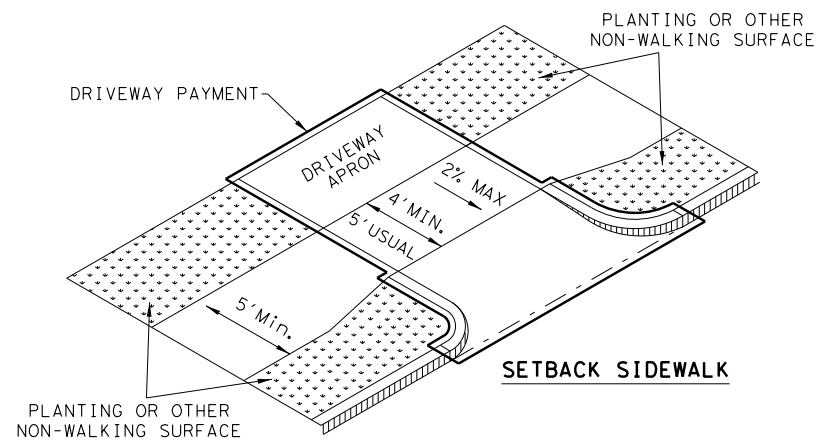
SHEET 2 OF 4

		<b>Design Division Standard</b>	
<h1>PEDESTRIAN FACILITIES</h1> <h2>CURB RAMPS</h2> <h3>PED-18</h3>			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	1064	01	032
REVISED 08, 2005	DIST	COUNTY	SHEET NO.
REVISED 06, 2012	PHR	HIDALGO	207
REVISED 01, 2018			

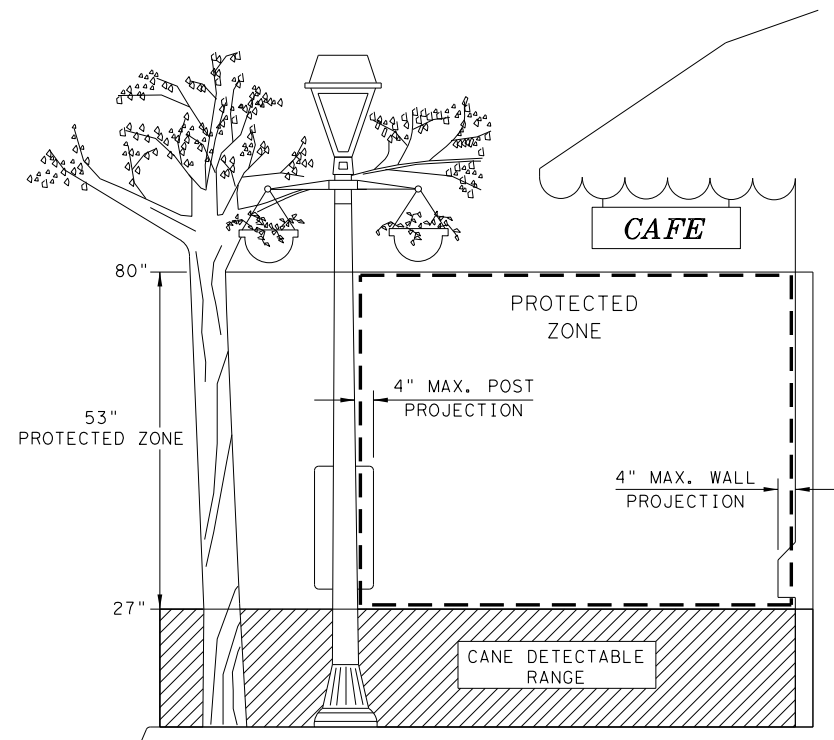
DATE:  
FILE:

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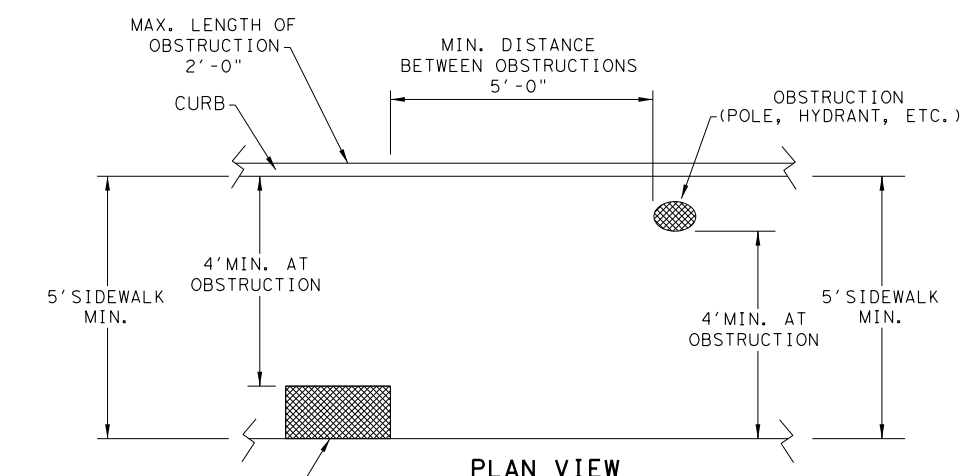
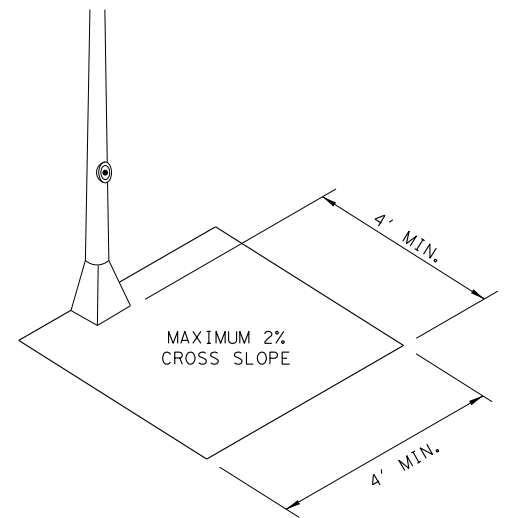
**SIDEWALK TREATMENT AT DRIVEWAYS**



NOTES:  
 \* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.  
 \* \* IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

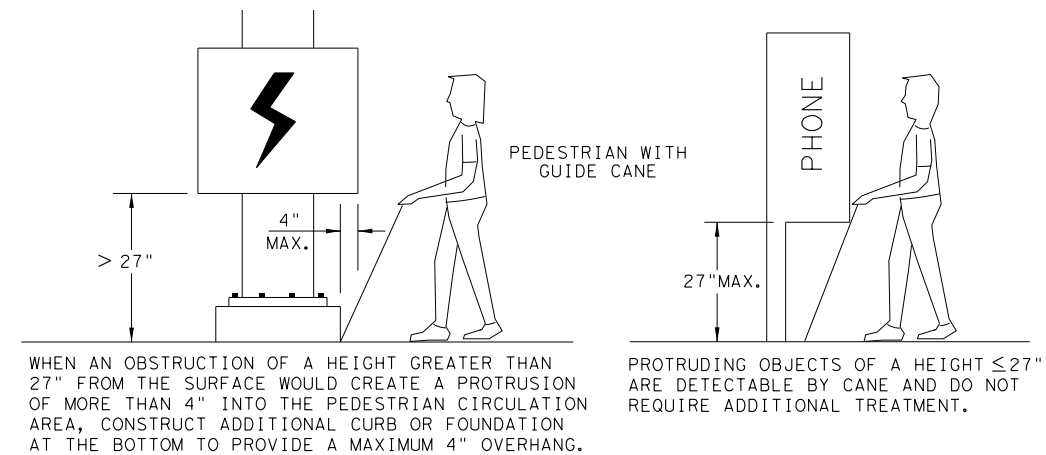


NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



**PLACEMENT OF STREET FIXTURES**

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

SHEET 3 OF 4



**PEDESTRIAN FACILITIES CURB RAMPS**

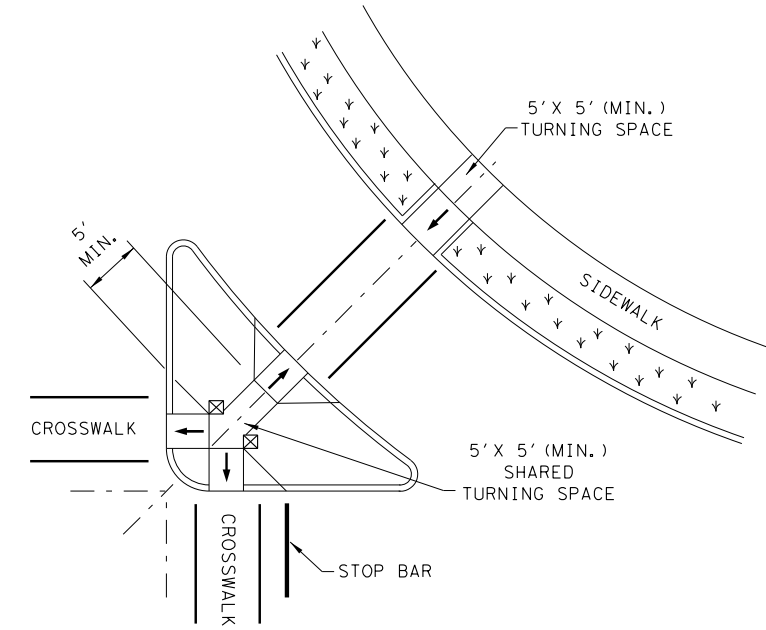
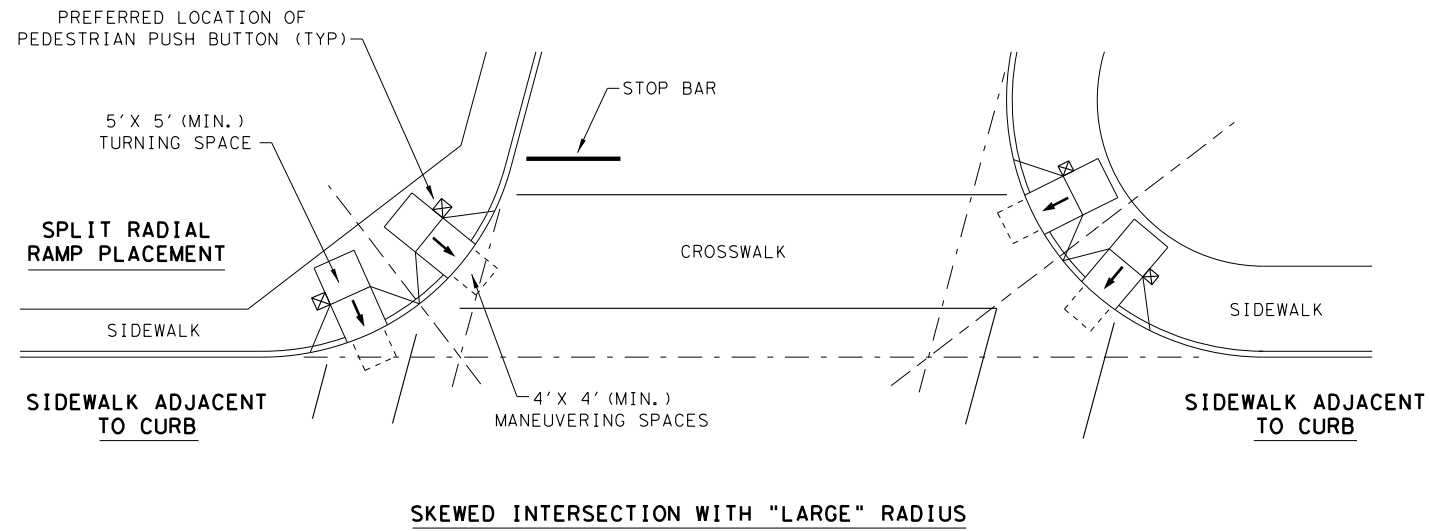
**PED-18**

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
REVISED 08, 2005	DIST	COUNTY	SHEET NO.	
REVISED 06, 2012	PHR	HIDALGO	208	
REVISED 01, 2018				

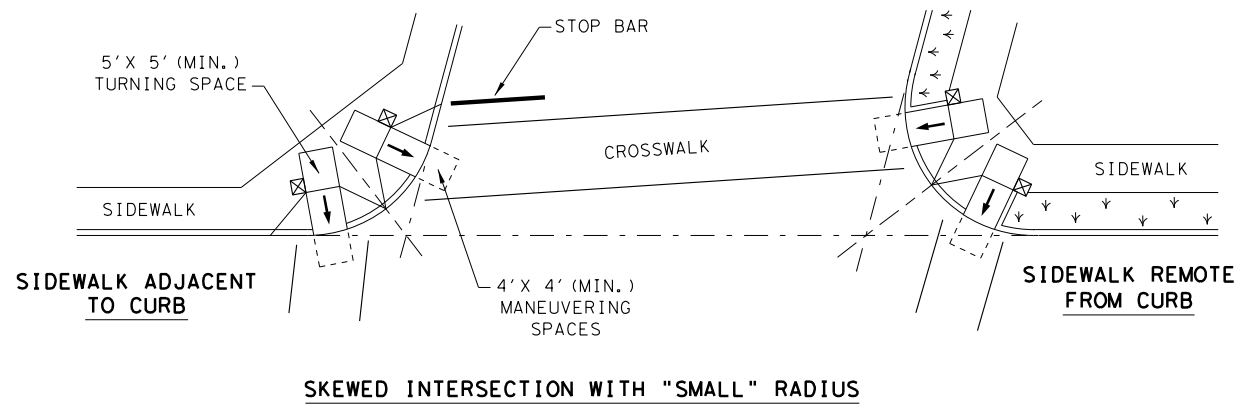
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FILE:

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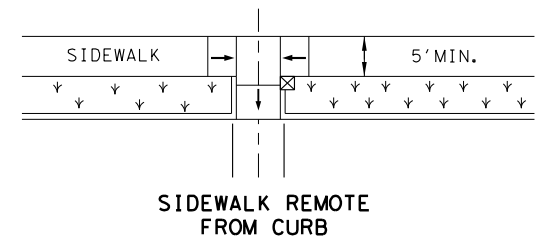
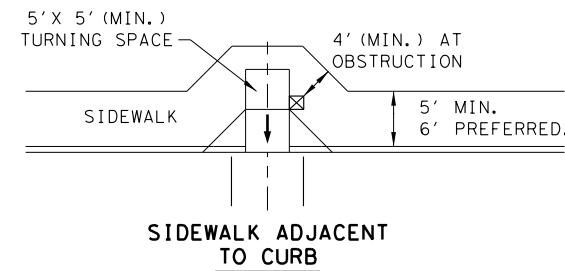
TYPICAL CROSSING LAYOUTS  
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



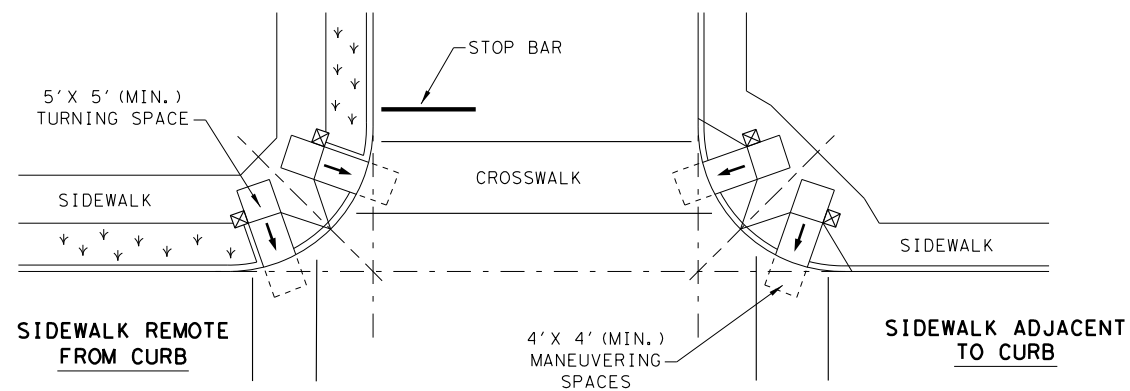
AT INTERSECTION  
W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT  
PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH. ↙ ↘ ↙ ↘ ↙ ↘

SHEET 4 OF 4



Design  
Division  
Standard

PEDESTRIAN FACILITIES  
CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
REVISED 08, 2005	DIST	COUNTY	SHEET NO.	
REVISED 06, 2012	PHR	HIDALGO	209	
REVISED 01, 2018				

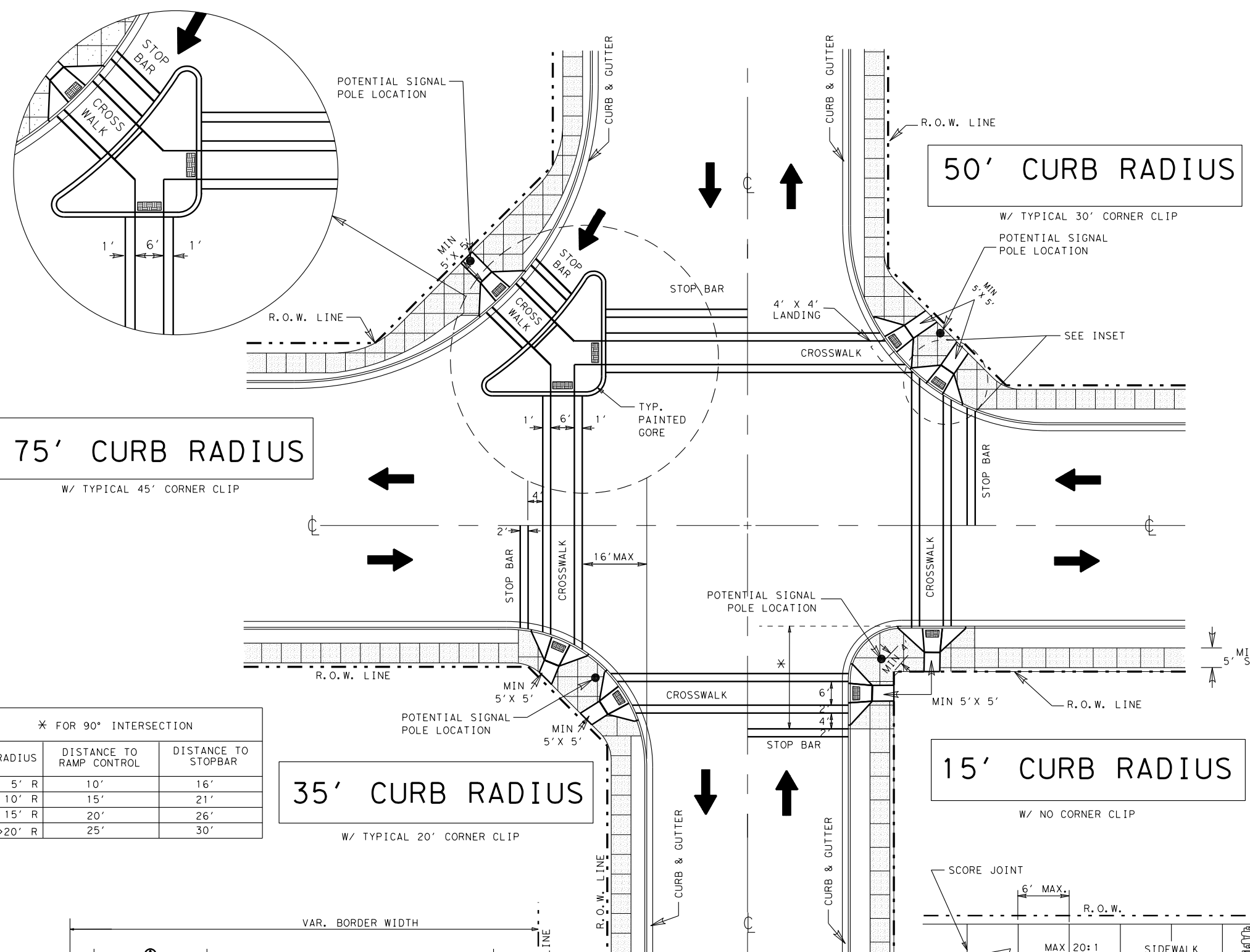
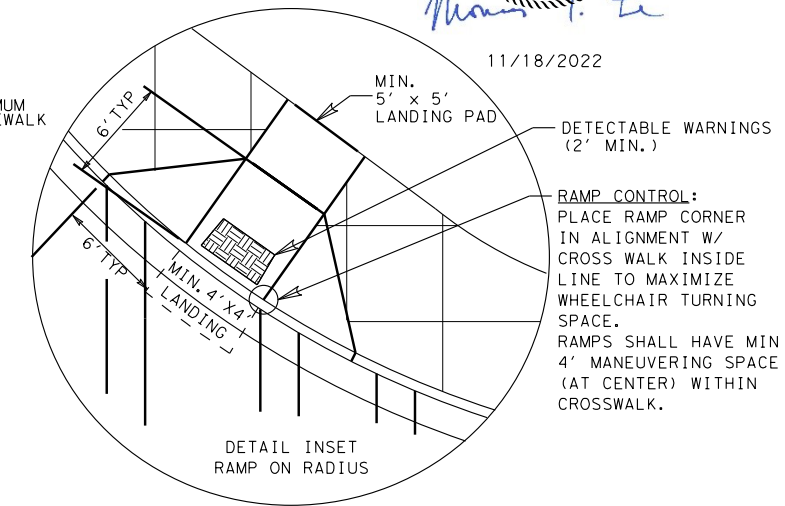
DATE:  
FILE:

GENERAL NOTES

- ALL RAMP SHALL HAVE A 5' x 5' LANDING PAD.
  - RAMP CENTER TO BE PERPENDICULAR TO FACE OF CURB. A PERPENDICULAR RAMP MAY BE LOCATED WITHIN THE RADIUS OF A CURBLINE.
  - SIDEWALK GRADE TO BE PARALLEL TO TOP OF CURB AND GUTTER UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY THE ENGINEER.
  - SIDEWALK WIDTH AS SHOWN ELSEWHERE IN PLANS. MIN WIDTH 5'. PROVIDE DROPPED CURBS AT INTERSECTIONS. ALL CONCRETE SHALL BE CLASS "A" PROPOSED SIDEWALKS TO MATCH EXIST. SIDEWALK.
  - NO VERTICAL CHANGES SHALL EXCEED 1/4" IN ELEVATION AT ADJOINING SURFACES.
  - TO PROVIDE ACCESS TO PEDESTRIAN BUTTON, SIDEWALK / LANDING PAD SHALL EXTEND AND/ OR ABUT TO SIGNAL POLE CONC. FOUNDATION.
  - COLOR TEXTURIZED CONCRETE SHALL BE USED TO COLOR AREAS AT RAMP. COLOR SHALL BE " BRICK RED " AS PER L.M. SCOFIELD COMPANY STANDARDS COLOR A-26 OR EQUAL. COLOR TEXTURIZED CONCRETE SHALL BE SUBSIDIARY TO CURB RAMP ITEM
  - IF THE DETAIL IS TO BE USED IN A PLAN SET, IT MUST BE SIGNED AND SEALED.
- Ⓐ DESIRABLE 3' OR GREATER FOR HIGH SPEED TRAFFIC. FOR BORDER WIDTHS OF 8' OR LESS, PLACE SIDEWALK ADJACENT TO CURB.

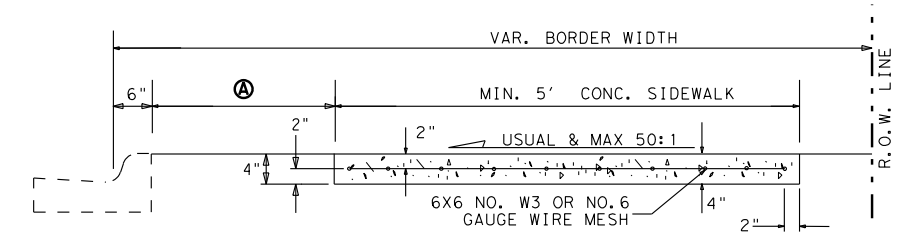


Thomas T. Le  
11/18/2022

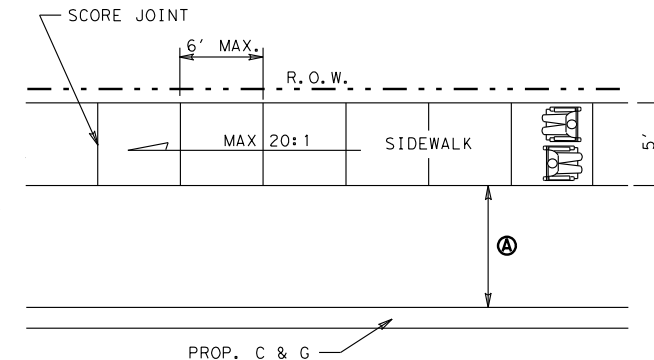


\* FOR 90° INTERSECTION

RADIUS	DISTANCE TO RAMP CONTROL	DISTANCE TO STOPBAR
5' R	10'	16'
10' R	15'	21'
15' R	20'	26'
>20' R	25'	30'



TYPICAL WHEEL CHAIR RAMP LOCATION



SCORE JOINTS 1/4" THICKNESS EXPANSION JOINT EVERY 30' JOINT IN CENTER OF SIDEWALK IF OVER 15' WIDE.

PLAN VIEW



SIDEWALK & WHEELCHAIR RAMP DESIGN GUIDE

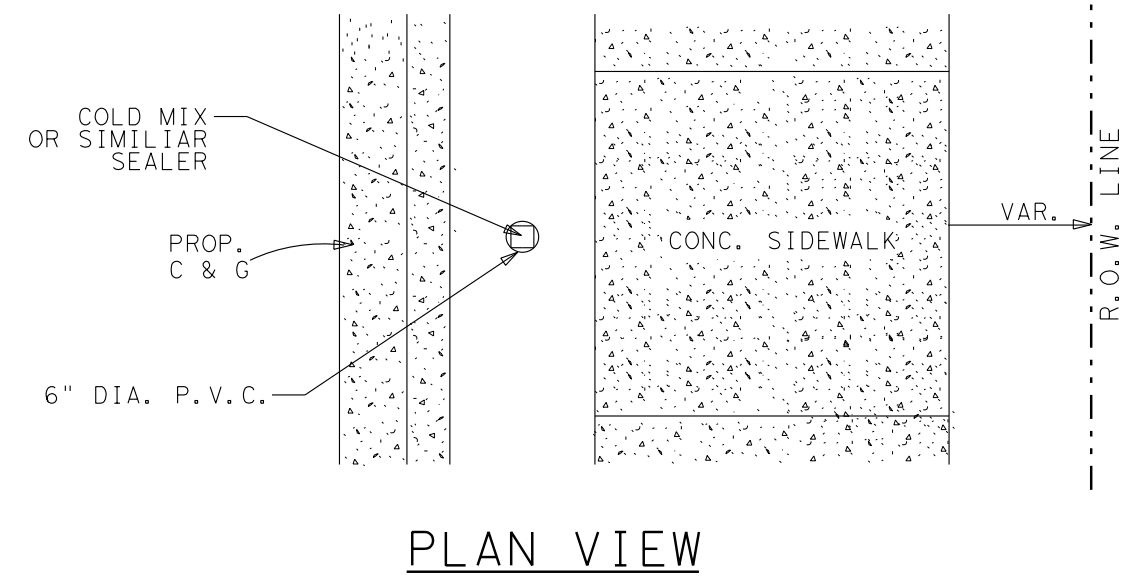
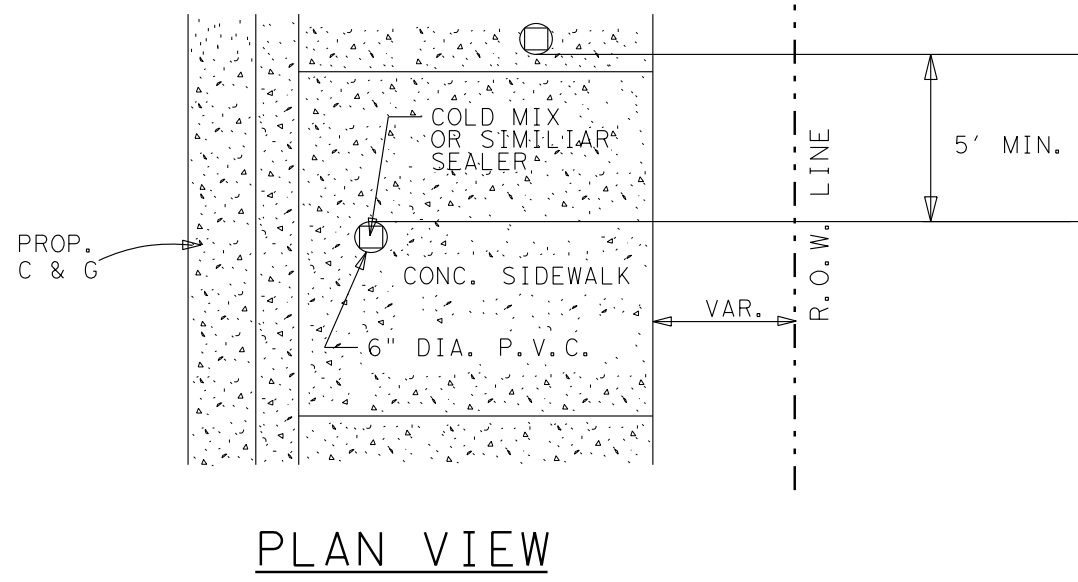
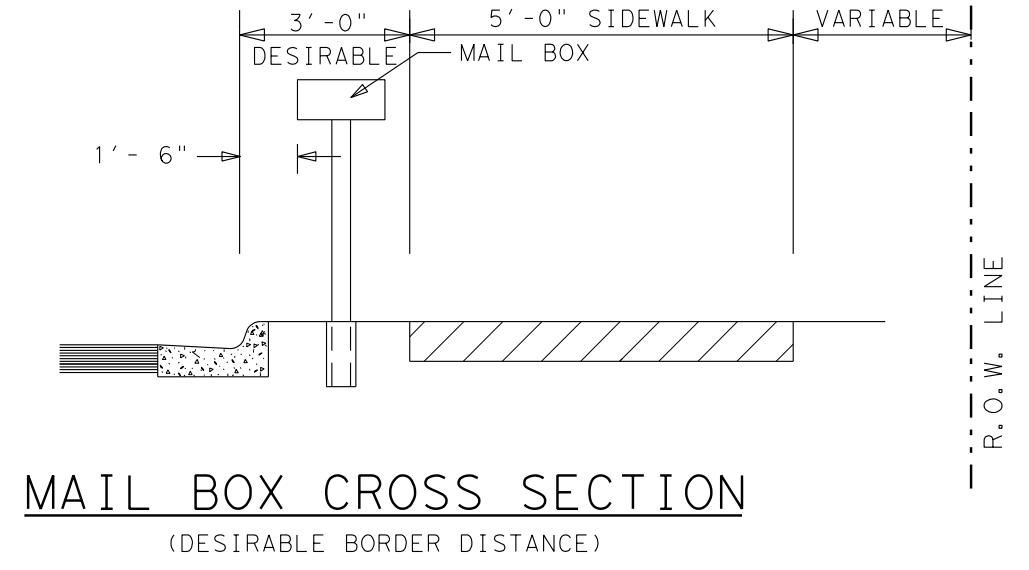
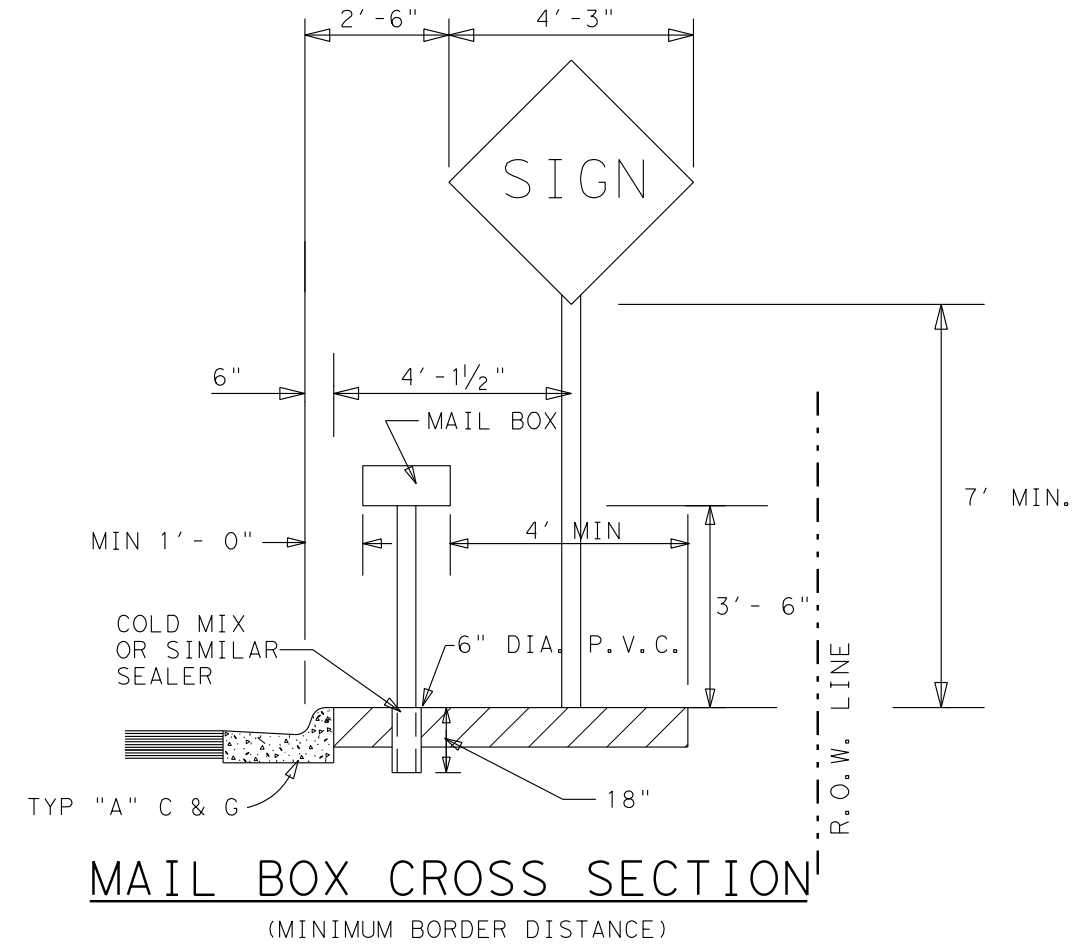
REV. 5/18

SIDEWALK.DGN

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	FILE NO.	SHEET NO.
6			210
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	PHR	HIDALGO	1064 01 032 FM 676

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 DATE: 11/18/2022  
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DATE: 11/18/2022  
 FILE: p:\SUS0036343.wso\kings.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\STD\RDWY\MAIL BOX.DGN



© TxDOT 2003 PHARR DISTRICT STANDARDS

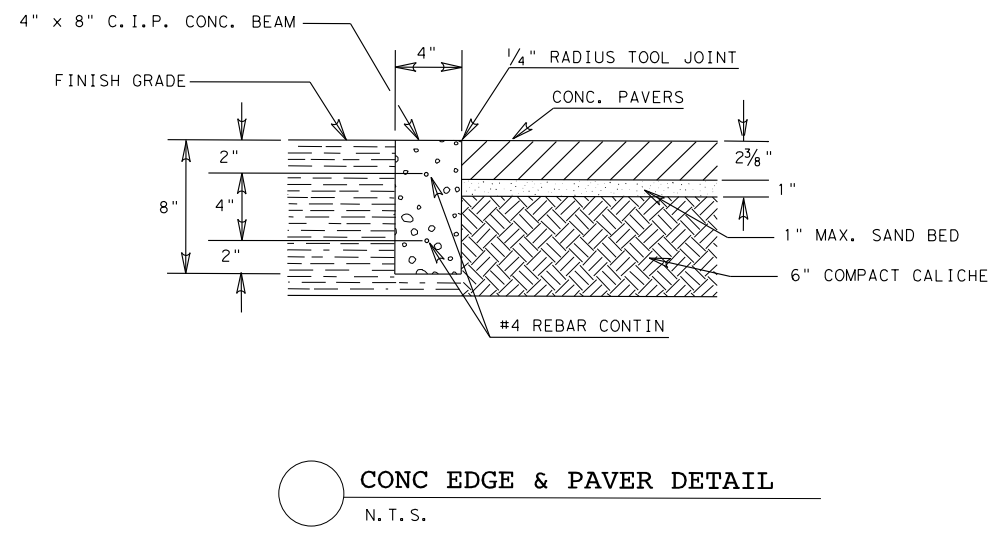
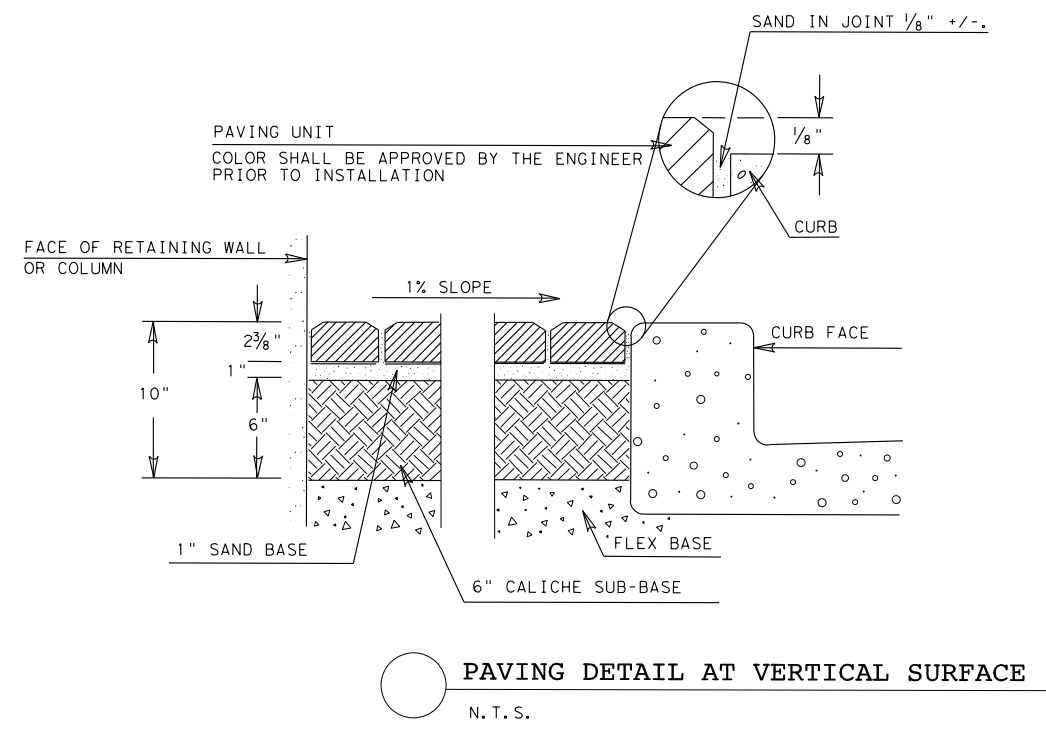
**TEXAS DEPARTMENT OF TRANSPORTATION**

**MAILBOX DETAIL**

REV. 5/03 MAILBOX.DGN

STATE AID PROJECT NO.		FILE NO.		SHEET NO.	
6				211	
STATE	STATE DIST.	COUNTY	CONT.	SECT.	JOB
TEXAS	PHR	HIDALGO	1064	01	032
HIGHWAY NO.			FM 676		

PLOT DRIVER: RD\*11x17\*.pdf .pif  
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## LANDSCAPE PAVERS DETAILS

- NOTES:
- EDGE TREATMENT SHOULD BE AS STRAIGHT AS POSSIBLE TO COMPLIMENT THE ALIGNMENT OF PAVING STONES.
  - ALL EDGE TREATMENT MUST BE VERTICAL TO ALLOW CLOSE FIT OF PAVERS.
  - RELIEF TOOL FOR PAVER SIDE SHALL BE AS SMALL AS POSSIBLE (1/8").
- CALICHE SHALL MEET REQUIREMENTS AS SPECIFIED IN ITEMS 247 AND / OR 251.  
 ALL MATERAILS AND LABOR SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM "LANDSCAPE PAVERS".

Texas Department of Transportation

**DISTRICT STANDARD  
 FOR  
 LANDSCAPE PAVERS**

FED. RD. DIV. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	SHEET NO.		
6			212		
STATE	STATE DIST.	COUNTY	CONT. SECT.	JOB	HWY NO.
TEXAS	PHR	HIDALGO	1064-01	032	FM 676

PROJECT NAME : 676 WEST
JOB NUMBER : 100033557
PROJECT DESCRIPTION : 676 WEST SYSTEM A
ANALYSYS FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSYS FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

Table with columns: ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Rows include A-16, A-17, A-18, A-19, A-20, A-21, A-22, A-23, A-24, A-25, A-26, A-27, A-28, A-29, A-30, A-1B, A-1E, A-2C, A-1F, A-2E, A-3, A-4, A-5, A-11.

Table with columns: ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Rows include A-12, A-13, A-14, A-15, A-31, A-32, A-1A, A-2A, A-2B, A-6, A-7, A-8, A-9, A-10, A-2D, A-4A.

On Grade Inlet Configuration Data

Table with columns: Inlet ID, Inlet Type, Inlet Length (ft), Slopes Long Trans (%), Slopes n Trans (%), Gutter Depr. (ft), Grate Width (ft), Grate Type, Pond Width Allowed (ft), Pond Width Critic Elev. (ft). Rows include A-32, A-6, A-29, A-30, A-15, A-16, A-1E, A-31.

On Grade Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Total Q (cfs), Intercept Capacity (cfs), Q Bypass Allow (cfs), Q Bypass Actual (cfs), To Inlet ID, Inlet Required Length (ft), Actual Length (ft), Pondered Width (ft). Rows include A-32, A-6, A-29, A-30, A-15, A-16, A-1E, A-31.

NOTES:

- 1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TXDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TXDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING RATIONAL METHOD TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.

PLOT DRIVER: RD:11x17\*PDF\*.p1+
PENTTABLE: PentTable.tbl
DATE: 11/18/2022
FILES: PW:\SUS036343.wsf\atkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\DRN\676W\*H001.dgn



11/18/2022



ATKINS
TBPE REG. #F-474

FM 676
HYDRAULIC DATA SHEET
TRUNKLINE "A"
5 YEAR ANALYSIS

Table with columns: SHEET OF, FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, CONT., SECT., JOB, HIGHWAY NO. Values include SHEET 1 OF 7, STATE TEXAS, DIST. PHR, COUNTY HIDALGO, JOB 032, HIGHWAY NO. FM 676.



Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Inlet Length/Perim. (ft)	Grate Area (sf)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n	Depth Allowed (ft)	Critic Elev. (ft)
A-2A	Grate	12.00	9.00	0.50	2.00	0.14	n/a	174.31
A-2B	Combi	10.00		0.88	2.50	0.14		174.54
A-1B	Combi	10.00		0.88	2.50	0.14		174.24
A-1F	Combi	5.00		0.30	2.50	0.14		174.04
A-2E	Combi	10.00		0.30	2.50	0.14		173.74
A-3	Combi	5.00		0.20	2.50	0.14		174.04
A-4	Combi	10.00		0.20	2.50	0.14		174.04
A-5	Combi	10.00		0.20	2.50	0.14		174.06
A-8	Combi	10.00		0.20	2.50	0.14		174.06
A-9	Combi	10.00		0.20	2.50	0.35		173.93
A-10	Combi	10.00		0.20	2.50	0.14		173.93
A-23	Grate	11.92	8.80	0.34	2.50	0.35	n/a	168.29
A-24	Grate	11.92	8.80	0.20	2.50	0.35	n/a	168.14
A-25	Grate	11.92	8.80	0.25	2.50	0.35	n/a	168.22
A-26	Grate	11.92	8.80	0.25	2.50	0.35	n/a	167.97
A-27	Combi	10.00		0.25	2.50	0.14		169.15
A-28	Combi	10.00		0.25	2.50	0.14		168.85
A-11	Grate	11.92	8.80	0.20	2.50	0.35	n/a	173.82
A-12	Grate	11.92	8.80	0.20	2.50	0.35	n/a	173.81
A-13	Grate	11.92	8.80	0.20	2.50	0.35	n/a	173.74
A-14	Grate	11.92	8.80	0.20	2.50	0.35	n/a	173.92
A-17	Grate	11.92	8.80	0.43	2.50	0.35	n/a	174.20
A-18	Grate	11.92	8.80	0.67	2.50	0.35	n/a	174.00
A-19	Combi	10.00		0.92	2.50	0.14		168.73
A-20	Combi	10.00		0.92	2.50	0.14		169.03
A-2C	Grate	11.92	8.80	0.50	2.00	0.35	n/a	173.22
A-2D	Grate	11.92	8.80	0.50	2.00	0.35	n/a	173.17

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Inlet Length (ft)	Grate Perim Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-2A	Grate	n/a	12.00	9.00	7.209	72.395	0.336	12.65
A-2B	Combi	10.00	3.35	2.69	7.579	10.327	0.407	9.30
A-1B	Combi	10.00	3.35	2.69	10.026	12.095	0.409	13.20
A-1F	Combi	5.00	3.35	2.69	2.525	6.261	0.273	7.50
A-2E	Combi	10.00	3.35	2.69	5.409	10.327	0.325	11.40
A-3	Combi	5.00	3.35	2.69	5.334	6.047	0.435	11.40
A-4	Combi	10.00	3.35	2.69	4.140	10.327	0.272	10.50
A-5	Combi	10.00	3.35	2.69	7.168	10.327	0.392	11.70
A-8	Combi	10.00	3.35	2.69	5.124	10.327	0.313	8.70
A-9	Combi	10.00	3.35	2.69	6.203	10.327	0.356	11.10
A-10	Combi	10.00	3.35	2.69	6.339	10.327	0.361	11.40
A-23	Grate	n/a	11.92	8.80	1.302	6.503	0.108	4.80
A-24	Grate	n/a	11.92	8.80	0.536	6.503	0.060	8.64
A-25	Grate	n/a	11.92	8.80	0.897	6.503	0.084	4.44
A-26	Grate	n/a	11.92	8.80	0.566	6.503	0.062	8.48
A-27	Combi	10.00	3.35	2.69	5.183	10.327	0.316	10.20
A-28	Combi	10.00	3.35	2.69	6.651	10.327	0.373	11.10
A-11	Grate	n/a	11.92	8.80	1.015	6.503	0.091	4.84
A-12	Grate	n/a	11.92	8.80	0.387	6.503	0.048	7.68
A-13	Grate	n/a	11.92	8.80	0.481	6.503	0.056	3.64
A-14	Grate	n/a	11.92	8.80	0.380	6.503	0.047	7.60
A-17	Grate	n/a	11.92	8.80	0.382	6.503	0.048	6.60
A-18	Grate	n/a	11.92	8.80	0.366	6.503	0.046	5.96
A-19	Combi	10.00	3.35	2.69	7.197	10.327	0.393	11.40
A-20	Combi	10.00	3.35	2.69	6.326	10.327	0.361	11.10
A-2C	Grate	n/a	11.92	8.80	0.954	6.503	0.088	8.35
A-2D	Grate	n/a	11.92	8.80	0.481	6.503	0.056	6.45

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-32	Combi	0.531	40.64	27.81	4.53	0.000	13.05	110.936
A-6	Combi	0.575	14.54	21.09	5.31	0.000	13.05	57.488
MH-2	CircMh	0.567	22.57	22.69	5.10	0.000	13.05	78.284
MH-3	CircMh	0.563	25.26	24.15	4.92	0.000	13.05	83.005
MH-4	CircMh	0.563	30.67	25.70	4.75	0.000	13.05	94.979
A-1A	CircMh	0.478	2.89	16.88	5.99	0.000	0.00	8.266
A-2A	Grate	0.548	4.60	17.42	5.89	0.000	0.00	14.837
A-2B	Combi	0.563	8.57	18.42	5.72	0.000	0.00	27.593
A-1B	Combi	0.568	2.31	10.00	7.64	0.000	0.00	10.026
A-1F	Combi	0.764	1.05	18.38	5.73	0.000	0.00	4.592
A-2E	Combi	0.569	11.93	19.38	5.57	0.000	13.05	50.810
A-3	Combi	0.568	1.23	10.00	7.64	0.000	0.00	5.334
A-4	Combi	0.579	14.06	20.60	5.38	0.000	13.05	56.889
A-5	Combi	0.574	1.64	10.00	7.64	0.000	0.00	7.168
A-7	CircMh	0.571	14.94	21.29	5.29	0.000	13.05	58.132
A-8	Combi	0.574	17.65	21.48	5.26	0.000	13.05	66.367
A-9	Combi	0.566	1.95	19.04	5.62	0.000	0.00	6.203
A-10	Combi	0.567	22.36	22.69	5.10	0.000	13.05	77.665
A-23	Grate	0.588	0.36	15.97	6.16	0.000	0.00	1.302
A-24	Grate	0.580	0.15	15.97	6.16	0.000	0.00	0.536
A-25	Grate	0.558	0.59	16.29	6.10	0.000	0.00	2.006
A-26	Grate	0.617	0.29	16.21	6.11	0.000	0.00	1.094
A-27	Combi	0.351	1.94	10.06	7.62	0.000	0.00	5.183
A-28	Combi	0.552	34.63	26.26	4.69	0.000	13.05	102.741
A-29	Combi	0.330	1.40	10.35	7.53	0.000	0.00	3.478
A-30	Combi	0.537	37.42	26.88	4.62	0.000	13.05	105.901
A-11	Grate	0.579	0.35	11.19	7.28	0.000	0.00	1.474
A-12	Grate	0.442	0.11	10.00	7.64	0.000	0.00	0.387
A-13	Grate	0.525	0.12	10.00	7.64	0.000	0.00	0.481
A-14	Grate	0.437	0.23	10.00	7.64	0.000	0.00	0.767
A-15	Combi	0.529	1.47	10.00	7.64	0.000	0.00	5.933
A-16	Combi	0.563	25.26	24.15	4.92	0.000	13.05	83.005
A-17	Grate	0.572	0.11	15.97	6.16	0.000	0.00	0.382
A-18	Grate	0.560	0.22	16.29	6.10	0.000	0.00	0.740
A-19	Combi	0.625	2.16	20.97	5.33	0.000	0.00	7.197
A-20	Combi	0.562	29.79	25.11	4.81	0.000	13.05	93.650
A-1E	Combi	0.820	0.44	10.52	7.48	0.000	0.00	2.699
A-31	Combi	0.572	1.61	10.00	7.64	0.000	0.00	7.029
A-2C	Grate	0.768	0.17	11.09	7.31	0.000	6.82	7.774
A-2D	Grate	0.744	0.26	11.24	7.27	0.000	13.05	14.456
MH-24	CircMh	0.569	11.93	19.38	5.57	0.000	13.05	50.810
MH-25	CircMh	0.574	18.00	22.22	5.16	0.000	13.05	66.412
MH-26	CircMh	0.573	18.23	22.50	5.13	0.000	13.05	66.561
MH-5	JnctBx	0.531	40.64	27.81	4.53	0.000	13.05	110.936
MH-21	CircMh	0.478	2.89	16.88	5.99	0.000	0.00	8.266
MH-23	JnctBx	0.568	8.83	19.01	5.62	0.000	13.05	41.272
MH-27	CircMh	0.548	4.60	17.42	5.89	0.000	0.00	14.837
MH-28	CircMh	0.567	22.36	22.69	5.10	0.000	13.05	77.665
MH-29	CircMh	0.558	0.59	16.29	6.10	0.000	0.00	2.006
MH-30	CircMh	0.537	37.42	26.88	4.62	0.000	13.05	105.901
OUT	Outlet	0.531	40.64	27.81	4.53	0.000	13.05	110.936

NOTE:

1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TXDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TXDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.



*Thomas T. Le*

11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
HYDRAULIC DATA SHEET  
TRUNKLINE "A"  
5 YEAR ANALYSIS**

SHEET 2 OF 7

FED. RD. DIV. NO.	STATE PROJECT NO.			SHEET NO.
6				214
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

Conveyance Configuration Data

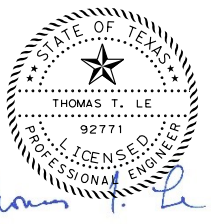
Run#	Node	I.D.	Flowline	Elev.	Shape	#	Span	Rise	Length	Slope	n	value
	US	DS	US	DS			(ft)	(ft)	(ft)	(%)		
41	A-30	MH-30	159.99	159.80	Box	1	5.00	5.00	125.65	0.15	0.012	
42	MH-21	A-2A	171.18	171.08	Circ	1	0.00	2.00	85.02	0.12	0.012	
43	A-2C	A-2D	170.38	169.77	Circ	1	0.00	1.50	61.42	0.99	0.012	
44	MH-23	A-2E	167.63	166.19	Circ	1	0.00	3.00	204.87	0.70	0.012	
45	A-2D	MH-23	169.77	168.52	Circ	1	0.00	1.50	65.52	1.91	0.012	
49	A-1E	A-1F	169.45	168.96	Circ	1	0.00	1.50	84.00	0.58	0.012	
50	A-6	A-7	165.10	164.90	Circ	1	0.00	4.00	78.74	0.25	0.012	
51	A-14	MH-26	168.80	168.50	Circ	1	0.00	1.50	14.04	2.14	0.012	
52	A-12	A-14	169.00	168.80	Circ	1	0.00	1.50	40.00	0.50	0.012	
53	MH-5	OUT	159.31	159.23	Box	1	5.00	5.00	57.21	0.14	0.012	
54	MH-24	A-4	165.77	165.48	Circ	1	0.00	4.00	175.00	0.17	0.012	
55	MH-27	A-2B	169.61	168.85	Circ	1	0.00	2.00	122.48	0.62	0.012	
56	MH-28	MH-2	163.19	162.85	Box	1	4.00	4.00	158.00	0.22	0.012	
20	A-25	MH-29	164.32	163.59	Circ	1	0.00	1.50	66.33	1.10	0.012	
1	A-1F	A-2E	168.96	168.66	Circ	1	0.00	1.50	77.00	0.39	0.012	
2	A-2E	MH-24	166.19	165.77	Circ	1	0.00	4.00	241.03	0.17	0.012	
3	A-3	A-4	169.10	168.80	Circ	1	0.00	1.50	65.00	0.46	0.012	
4	A-4	A-6	165.48	165.10	Circ	1	0.00	4.00	181.87	0.21	0.012	
7	A-7	A-8	164.90	164.71	Circ	1	0.00	4.00	79.49	0.24	0.012	
8	A-5	A-8	169.10	168.80	Circ	1	0.00	1.50	65.00	0.46	0.012	
9	A-8	MH-25	164.71	163.90	Box	1	4.00	4.00	302.00	0.27	0.012	
10	A-13	A-11	169.00	168.80	Circ	1	0.00	1.50	43.00	0.47	0.012	
11	A-11	MH-25	168.80	168.50	Circ	1	0.00	1.50	85.00	0.35	0.012	
12	MH-25	MH-26	163.90	163.70	Box	1	4.00	4.00	99.00	0.20	0.012	
13	MH-26	A-10	163.70	163.60	Box	1	4.00	4.00	65.00	0.15	0.012	
14	A-9	A-10	168.98	168.68	Circ	1	0.00	1.50	65.00	0.46	0.012	
15	A-10	MH-28	163.60	163.19	Box	1	4.00	4.00	184.00	0.22	0.012	
16	A-17	A-18	169.50	169.38	Circ	1	0.00	1.50	38.00	0.32	0.012	
17	A-18	MH-2	169.38	169.35	Circ	1	0.00	1.50	15.00	0.20	0.012	
18	MH-2	A-16	162.85	162.36	Box	1	4.00	4.00	227.00	0.22	0.012	
19	A-15	A-16	167.37	167.07	Circ	1	0.00	1.50	65.11	0.46	0.012	
21	A-16	MH-3	162.36	161.89	Box	1	4.00	4.00	200.00	0.24	0.012	
23	MH-3	A-20	161.89	160.96	Box	1	4.00	4.00	238.72	0.39	0.012	
24	A-19	A-20	163.97	163.66	Circ	1	0.00	1.50	77.00	0.40	0.012	
25	A-20	MH-4	160.96	160.63	Box	1	5.00	4.00	211.80	0.16	0.012	
26	A-24	A-26	162.36	161.94	Circ	1	0.00	1.50	45.94	0.91	0.012	
27	A-26	MH-4	161.94	161.62	Circ	1	0.00	1.50	64.45	0.50	0.012	
28	A-23	A-25	164.52	164.32	Circ	1	0.00	1.50	56.41	0.35	0.012	
29	MH-29	MH-4	163.59	163.30	Circ	1	0.00	1.50	80.83	0.36	0.012	
30	MH-4	A-28	160.63	160.37	Box	1	5.00	4.00	196.55	0.13	0.012	
31	A-27	A-28	163.73	163.43	Circ	1	0.00	1.50	77.00	0.39	0.012	
32	A-28	A-30	160.37	159.99	Box	1	5.00	5.00	232.28	0.16	0.012	
33	A-29	A-30	164.41	164.11	Circ	1	0.00	1.50	65.00	0.46	0.012	
34	MH-30	A-32	159.80	159.60	Box	1	5.00	5.00	185.00	0.11	0.012	
35	A-31	A-32	166.05	165.75	Circ	1	0.00	1.50	65.00	0.46	0.012	
36	A-32	MH-5	159.60	159.31	Box	1	5.00	5.00	267.32	0.11	0.012	
37	A-2B	MH-23	168.85	167.63	Circ	1	0.00	2.50	252.62	0.48	0.012	
38	A-1B	A-2B	169.75	169.15	Circ	1	0.00	1.50	77.00	0.78	0.012	
39	A-2A	MH-27	171.08	169.61	Circ	1	0.00	2.00	270.03	0.54	0.012	
40	A-1A	MH-21	171.33	171.18	Circ	1	0.00	1.50	24.96	0.60	0.012	

Conveyance Hydraulic Computations, Tailwater = 164.230 (ft)


Run#	Hydraulic Gradeline			Depth		Velocity		Q	Cap	Junc Loss
	US Elev (ft)	DS Elev (ft)	Fr.Slope (%)	Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
41	164.61	164.54	0.087	3.44	4.74	6.16	4.47	105.90	139.69	0.000
42	172.81	172.46	0.114	1.63	1.63	3.02	3.02	8.27	8.41	0.000
43*	171.30	170.90	0.467	0.91	1.13	6.89	5.44	7.77	11.34	0.000
44*	169.46	168.90	0.326	1.82	2.71	9.22	6.15	41.27	60.59	0.000
45*	170.90	169.65	1.613	1.13	1.13	10.11	10.11	14.46	15.72	0.000
49*	170.02	169.84	0.056	0.57	0.88	4.34	2.51	2.70	8.69	0.000
50	167.69	167.53	0.136	2.56	2.63	6.76	6.58	57.49	78.44	0.000
51*	169.02	168.72	0.005	0.22	0.22	4.80	4.80	0.77	16.64	0.000
52	169.22	169.02	0.001	0.22	0.22	2.34	2.34	0.39	8.05	0.000
53	164.26	164.23	0.095	3.75	5.00	5.92	4.44	110.94	134.34	0.000
54	168.52	168.23	0.107	2.75	2.75	5.52	5.52	50.81	63.36	0.000
55*	170.93	170.69	0.366	1.31	1.84	6.79	4.91	14.84	19.31	0.000
56	166.38	166.13	0.154	3.00	3.28	6.47	5.93	77.66	91.91	0.000
20*	165.04	165.02	0.031	0.42	1.42	5.02	1.16	2.01	11.94	0.000
1	169.84	169.48	0.163	0.88	0.88	4.27	4.27	4.59	7.10	0.000
2	168.90	168.52	0.107	2.63	2.75	5.81	5.52	50.81	64.97	0.000
3	170.01	169.69	0.220	0.91	0.91	4.73	4.73	5.33	7.73	0.000
4	168.23	167.69	0.134	2.75	2.75	6.18	6.18	56.89	71.14	0.000
7	167.53	167.33	0.140	2.63	2.63	6.65	6.65	58.13	76.09	0.000
8	170.25	169.84	0.397	1.15	1.15	4.94	4.94	7.17	7.73	0.000
9	167.33	166.91	0.112	2.44	3.01	6.81	5.51	66.37	102.61	0.000
10	169.28	169.27	0.002	0.25	0.47	2.46	1.00	0.48	7.76	0.000
11	169.27	168.95	0.017	0.47	0.47	3.07	3.07	1.47	6.76	0.000
12	166.91	166.78	0.112	2.75	3.08	6.04	5.38	66.41	89.05	0.000
13	166.78	166.69	0.113	3.00	3.09	5.55	5.38	66.56	77.71	0.000
14	170.00	169.64	0.297	1.02	1.02	4.85	4.85	6.20	7.73	0.000
15	166.69	166.38	0.154	3.00	3.18	6.47	6.10	77.66	93.53	0.000
16	169.78	169.77	0.001	0.25	0.39	1.98	1.06	0.38	6.40	0.000
17	169.77	169.67	0.004	0.39	0.39	2.05	2.05	0.74	5.09	0.000
18	166.13	165.81	0.156	3.00	3.45	6.52	5.68	78.28	92.05	0.000
19	168.35	168.01	0.272	0.98	0.98	4.83	4.83	5.93	7.73	0.000
21	165.81	165.55	0.176	3.00	3.66	6.92	5.67	83.01	96.05	0.000
23	165.55	165.26	0.176	2.50	4.00	8.30	5.19	83.01	123.67	0.000
24	165.56	165.26	0.400	1.22	1.50	4.68	4.07	7.20	7.22	0.000
25	165.26	164.99	0.124	3.13	4.00	5.99	4.68	93.65	104.87	0.000
26*	165.00	165.00	0.002	0.23	1.50	3.20	0.30	0.54	10.88	0.000
27*	165.00	164.99	0.009	0.38	1.50	3.17	0.62	1.09	8.02	0.000
28	165.05	165.04	0.013	0.45	0.72	2.96	1.57	1.30	6.78	0.000
29	165.02	164.99	0.031	0.56	1.50	3.36	1.13	2.01	6.82	0.000
30	164.99	164.74	0.128	3.25	4.00	5.84	4.75	94.98	96.63	0.000
31	164.85	164.74	0.207	0.95	1.31	4.40	3.16	5.18	7.10	0.000
32	164.74	164.61	0.082	3.28	4.62	6.26	4.45	102.74	145.30	0.000
33*	165.11	164.81	0.093	0.70	0.70	4.28	4.28	3.48	7.73	0.000
34	164.54	164.43	0.087	4.06	4.83	5.21	4.39	105.90	118.12	0.000
35	167.18	166.78	0.381	1.13	1.13	4.94	4.94	7.03	7.73	0.000
36	164.43	164.26	0.095	4.06	4.95	5.46	4.48	110.94	118.32	0.000
37	170.69	169.46	0.386	1.84	1.84	7.14	7.14	27.59	30.88	0.000
38	171.28	170.69	0.776	1.22	1.50	6.52	5.67	10.03	10.05	0.000
39*	172.46	170.99	0.366	1.38	1.38	6.44	6.44	14.84	18.08	0.000
40	172.94	172.81	0.528	1.15	1.50	5.69	4.68	8.27	8.82	0.000

\* Super critical flow.  
 NORMAL TERMINATION OF WINSTORM.

- NOTE:**
1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
  2. CALCULATIONS MADE BY TxDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
  3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TxDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.



11/18/2022


  
**ATKINS**
  
 TBPE REG. #F-474

**FM 676**  
**HYDRAULIC DATA SHEET**  
**TRUNKLINE "A"**  
**5 YEAR ANALYSIS**

SHEET 3 OF 7  
 STATE PROJECT NO. 6  
 COUNTY HIDALGO  
 JOB 032  
 HIGHWAY NO. FM 676

PLOT DRIVER: RD\*11x17\*PDF.p1t  
 PENTTABLE: PentTable.tbl  
 DATE: 11/18/2022  
 FILE: pm1\SUS0036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100

PROJECT NAME : FM676 WEST
JOB NUMBER : 100033557
PROJECT DESCRIPTION : FM676 WEST SYSTEM B
ANALYSIS FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSIS FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

Table with columns: ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Rows include various inlet types like B-11, B-12, B-13, B-14, B-1, B-2, B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10.

On Grade Inlet Configuration Data

Table with columns: Inlet ID, Inlet Type, Inlet Length (ft), Slopes Long Trans (%), Gutter n, Gutter Depr. (ft), Grate Width (ft), Pond Width Allowed (ft), Critic Elev. (ft).

On Grade Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Total Q (cfs), Intercept Capacity (cfs), Q Bypass Allow (cfs), Q Actual (cfs), To Inlet ID, Required Length (ft), Actual Length (ft), Ponded Width (ft).

Sag Inlets Configuration Data.

Table with columns: Inlet ID, Inlet Type, Inlet Length/Perim (ft), Grate Area (sf), Left-Slope Long Trans (%), Right-Slope Long Trans (%), Gutter n, Gutter DeprW (ft), Depth Allowed (ft), Critic Elev. (ft).

Sag Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Inlet Length (ft), Grate Perim Area (sf), Total Q (cfs), Inlet Capacity (cfs), Total Head (ft), Ponded Width Left (ft), Ponded Width Right (ft).

Cumulative Junction Discharge Computations

Table with columns: Node I.D., Node Type, Weighted C-Value, Cumulat. Dr. Area (acres), Cumulat. Tc (min), Intens. (in/hr), User Supply Q (cfs), Additional Q in Node (cfs), Total Disch. (cfs).

Conveyance Configuration Data

Table with columns: Run#, Node I.D., Flowline Elev. US (ft), Flowline Elev. DS (ft), Shape #, Span (ft), Rise (ft), Length (ft), Slope (%), n\*value.

Conveyance Hydraulic Computations. Tailwater = 163.950 (ft)

Table with columns: Run#, Hydraulic US Elev (ft), Hydraulic DS Elev (ft), Fr. Slope (%), Depth Unif. (ft), Depth Actual (ft), Velocity Unif. (f/s), Velocity Actual (f/s), Q (cfs), Cap (cfs), Junc Loss (ft).

\* Super critical flow.

NORMAL TERMINATION OF WINSTORM.

NOTE:

- 1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TXDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TXDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD
4. TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.



11/18/2022



ATKINS

TBPE REG. #F-474

FM 676 HYDRAULIC DATA SHEET TRUNKLINE "B" 5 YEAR ANALYSIS

SHEET 4 OF 7

Table with columns: FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, CONT., SECT., JOB, HIGHWAY NO.

PROJECT NAME : 676 WEST  
JOB NUMBER : 100033557  
PROJECT DESCRIPTION : 676 WEST SYSTEM C  
ANALYSIS FREQUENCY : 5 Years  
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSIS FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

Table with columns: ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Contains runoff data for various inlets from C-30 to C-17.

Table with columns: Inlet ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Contains runoff data for various inlets from C-18 to C-29.

On Grade Inlet Configuration Data

Table with columns: Inlet ID, Inlet Type, Inlet Length (ft), Slopes Long Trans (%), Slopes Trans (%), Gutter n, Gutter Depr. (ft), Grate Width (ft), Grate Type, Pond Width Allowed (ft), Critic Elev. (ft). Contains configuration data for inlets C-18A through C-38.

On Grade Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Total Q (cfs), Intercept Capacity (cfs), Q Allow (cfs), Q Bypass Actual (cfs), To Inlet ID, Required Length (ft), Actual Length (ft), Pondered Width (ft). Contains computation data for inlets C-18A through C-38.

Sag Inlets Configuration Data.

Table with columns: Inlet ID, Inlet Type, Inlet Length/Perim (ft), Grate Area (sf), Left-Slope Long Trans (%), Right-Slope Long Trans (%), Gutter n, Gutter DeprW (ft), Depth Allowed (ft), Critic Elev. (ft). Contains configuration data for inlets C-1 through C-36.

NOTE:

- 1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TxDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TxDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.



11/18/2022



ATKINS

TBPE REG. #F-474

FM 676  
HYDRAULIC DATA SHEET  
TRUNKLINE "C"  
5 YEAR ANALYSIS

SHEET 5 OF 7

Table with columns: FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, CONT., SECT., JOB, HIGHWAY NO. Values include: 6, STATE PROJECT NO., 217, TEXAS, PHR, HIDALGO, 1064, 01, 032, FM 676.

Sag Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Length (ft), Gate Perim Area (sf), Total Q (cfs), Inlet Capacity (cfs), Total Head (ft), Pondered Left Width (ft), Pondered Right Width (ft).

Conveyance Configuration Data

Table with columns: Run#, Node US, Node DS, I.D., Flowline Elev. US (ft), Flowline Elev. DS (ft), Shape #, Span (ft), Rise (ft), Length (ft), Slope (%), n-value.

Cumulative Junction Discharge Computations

Table with columns: Node I.D., Node Type, Weighted C-Value, Cumulat. Dr. Area (acres), Cumulat. Tc (min), Intens. (in/hr), User Supply Q (cfs), Additional Q in Node (cfs), Total Disch. (cfs).

Conveyance Hydraulic Computations. Tailwater = 157.480 (ft)

Table with columns: Run#, Hydraulic GradeLine US Elev (ft), Hydraulic GradeLine DS Elev (ft), Fr. Slope (%), Depth Unif. (ft), Depth Actual (ft), Velocity Unif. (f/s), Velocity Actual (f/s), Q (cfs), Cap (cfs), Junc Loss (ft).

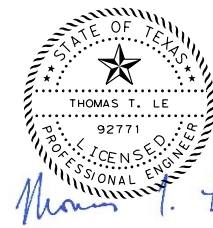
Table with columns: Run#, Node US, Node DS, I.D., Flowline Elev. US (ft), Flowline Elev. DS (ft), Shape #, Span (ft), Rise (ft), Length (ft), Slope (%), n-value.

\* Super critical flow.

NORMAL TERMINATION OF WINSTORM.

NOTE:

- 1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TXDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY.
4. RUNOFFS IN TXDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD.
5. TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.



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ATKINS

TBPE REG. #F-474

FM 676 HYDRAULIC DATA SHEET TRUNKLINE "C" 5 YEAR ANALYSIS

SHEET 6 OF 7

Table with columns: FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, CONT., SECT., JOB, HIGHWAY NO.

PROJECT NAME : 676 WEST
JOB NUMBER : 100033557
PROJECT DESCRIPTION : 676 WEST SYSTEM D
ANALYSIS FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSIS FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

Table with columns: ID, C Value, Area (acre), Tc (min), Tc Used (min), Intensity (in/hr), Supply Q (cfs), Total Q (cfs). Lists runoff data for inlets D-1 through D-15.

On Grade Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Total Q (cfs), Intercept Capacity (cfs), Q Allow (cfs), Q Bypass Actual (cfs), To Inlet ID, Required Length (ft), Actual Length (ft), Pondered Width (ft). Lists inlet computation data for D-3 through D-15.

Sag Inlets Configuration Data.

Table with columns: Inlet ID, Inlet Type, Length/Perim (ft), Grate Area (sf), Left-Slope Long Trans (%), Right-Slope Long Trans (%), Gutter n, Depth Allowed (ft), Critic Elev. (ft). Lists sag inlet configuration for D-1 and D-2.

Sag Inlets Computation Data.

Table with columns: Inlet ID, Inlet Type, Length (ft), Grate Perim Area (sf), Total Q (cfs), Inlet Capacity (cfs), Total Head (ft), Pondered Left Width (ft), Right Width (ft). Lists sag inlet computation for D-1 and D-2.

Cumulative Junction Discharge Computations

Table with columns: Node I.D., Node Type, Weighted C-Value, Cumulat. Dr. Area (acres), Cumulat. Tc (min), Intens. (in/hr), User Supply Q (cfs), Additional Q in Node (cfs), Total Disch. (cfs). Lists cumulative junction discharge for nodes D-1 through D-15 and OUT.

Conveyance Configuration Data

Table with columns: Run#, Node I.D., Flowline Elev. US (ft), Flowline Elev. DS (ft), Shape #, Span (ft), Rise (ft), Length (ft), Slope (%), n\*value. Lists conveyance configuration for runs 1 through 15.

On Grade Inlet Configuration Data

Table with columns: Inlet ID, Inlet Type, Inlet Length (ft), Slopes Long Trans (%), Slopes Trans (%), Gutter n, Gutter Depr. (ft), Grate Width (ft), Pond Type, Pond Width Allowed (ft), Critic Elev. (ft). Lists on-grade inlet configuration for D-3 through D-15.

Conveyance Hydraulic Computations. Tailwater = 157.360 (ft)

Table with columns: Run#, Hydraulic US Elev (ft), Hydraulic DS Elev (ft), Fr. Slope (%), Depth Unif. (ft), Depth Actual (ft), Velocity Unif. (f/s), Velocity Actual (f/s), Q (cfs), Cap (cfs), Junc Loss (ft). Lists conveyance hydraulic computations for runs 1 through 15.

\* Super critical flow.

NORMAL TERMINATION OF WINSTORM.

NOTE:

- 1. STORM SEWER CALCULATIONS BASED ON MANNING'S FORMULA.
2. CALCULATIONS MADE BY TXDOT "WINSTORM" HYDRAULIC COMPUTER PROGRAM.
3. STORM SEWER SYSTEM DESIGNED FOR 5 YEAR MAXIMUM PRESSURE FLOW NOT PIPE CAPACITY RUNOFFS IN TXDOT "WINSTORM" PROGRAM WERE COMPUTED UTILIZING: RATIONAL METHOD TAILWATER ELEVATION USED IN "WINSTORM" IS BASED ON THE TOP OF SOFFIT ELEVATION OF THE OUTFALL PIPE.
4. AN ADDITIONAL FLOW OF 100.8 CFS HAS BEEN INCLUDED WITH THIS ANALYSIS TO ACCOMMODATE FOR THE DRAINAGE EAST OF SH 107.



11/18/2022



ATKINS

TBPE REG. #F-474

FM 676
HYDRAULIC DATA SHEET
TRUNKLINE "D"
5 YEAR ANALYSIS

SHEET 7 OF 7

Table with columns: FED. RD. DIV. NO., STATE PROJECT NO., SHEET NO., STATE, DIST., COUNTY, HIGHWAY NO. Values: 6, 1064, 01, 032, TEXAS, PHR, HIDALGO, FM 676.

CULVERT ANALYSIS SUMMARY TABLE

Outlet	Existing Culvert	Approx. Channel Overflow Ele.* (ft)	Sag Elevation** (ft)	25-Year Overflow Elevation*** (ft)	FL In (ft)	FL Out (ft)	5-YR WSE****		10-YR WSE		25-YR WSE		100-YR WSE		5-YR Flow			10-YR Flow			25-YR Flow			100-YR Flow		
							US (ft)	DS (ft)	US (ft)	DS (ft)	US (ft)	DS (ft)	US (ft)	DS (ft)	Flow over (cfs)	Culvert Flow (cfs)	Vel. Culvert (ft/sec)	Flow over (cfs)	Culvert Flow (cfs)	Vel. Culvert (ft/sec)	Flow over (cfs)	Culvert Flow (cfs)	Vel. Culvert (ft/sec)	Flow over (cfs)	Culvert Flow (cfs)	Vel. Culvert (ft/sec)
							1	1-10X7	175.0	169.0	169.4	160.00	159.20	171.03	169.71	173.45	171.16	175.48	172.21	176.23	172.56	0	582	8.29	0	764
2	1-7X4	160.0	160.4	N/A	154.65	154.27	159.93	158.23	160.13	158.30	160.21	158.32	160.36	158.36	0	269	9.65	92	278	9.88	203	281	9.97	457	286	10.1

\* The overflow elevation tabulated here describes the approximate elevation at which water flows laterally out of the drainage channel, not the top of road elevation.

\*\* These culverts are not located directly under a road sag. Therefore as water overtops the channel, water has to flow to the sag where it will overtop the road.

\*\*\* Maximum elevation of water flowing over the road sag for the 25-year flow.

\*\*\*\* Elevations reported here are at the culvert and do not represent the elevation of water flowing over the road at the road sag

Note 1 The hydraulic analysis for culvert 1 and 2 were performed using XP-SWMM in order to account for the dynamic storage routing characteristics of water flowing through the existing culverts. When water flows out of the channel it would exhibit uncertain two dimensional shallow flooding. Culverts 1 and 2 meet the 10-year design.

Note 2 Culvert #1 is a Hidalgo County Drainage District (HCDD) culvert. In a meeting between HCDD, ATKINS and TxDOT HCDD requested that HCDD culverts not be upsized, as this may adversely affect the flood control storage/routing nature of the drainage system. It was decided that the existing conditions culverts should be left in place as per HCDD request. Culvert 1 and 2 meet the 10-year design criteria. Given the two dimensional shallow flooding characteristics, the road overtopping can not be accurately predicted. However, conservative engineering estimates predict no more than 0.4 ft of overtopping for the 25-year flow (but only in sags away from the culvert.)

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11/18/2022



**ATKINS**

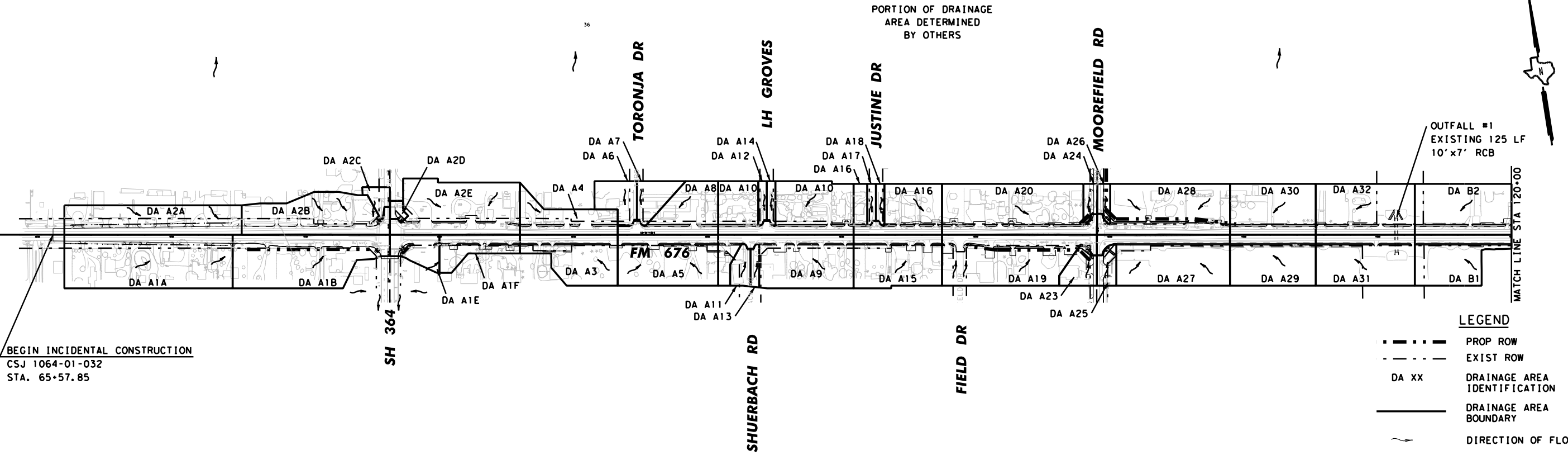
TBPE REG. #F-474

FM 676  
 HYDRAULIC DATA SHEET  
 CULVERT #1 & #2

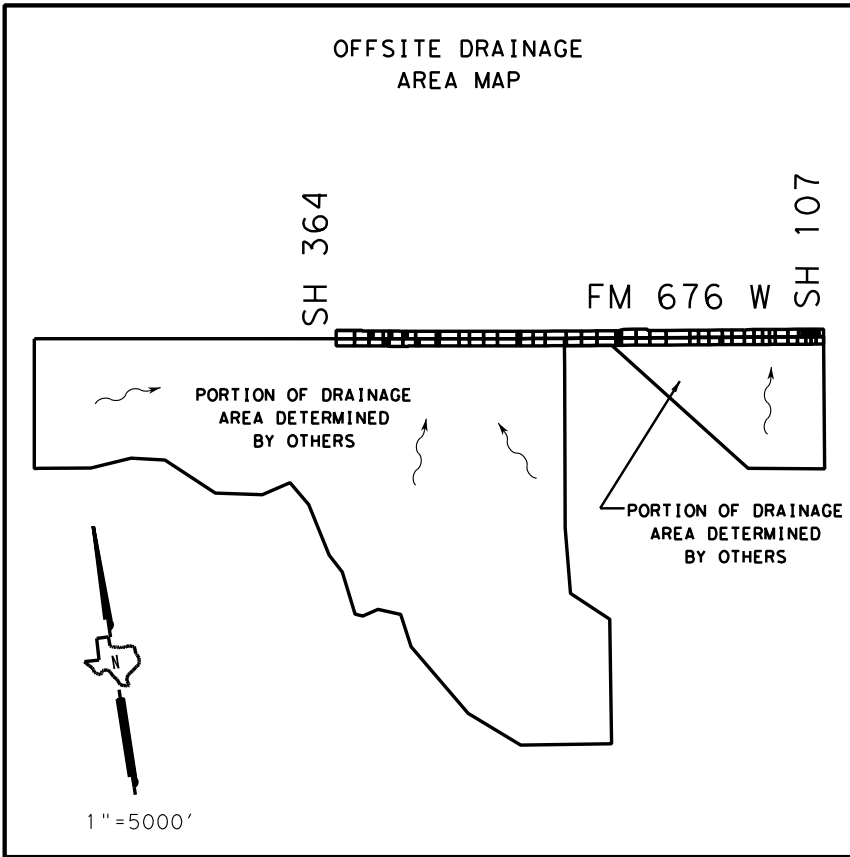
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			220
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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BEGIN INCIDENTAL CONSTRUCTION  
 CSJ 1064-01-032  
 STA. 65+57.85



PORTION OF DRAINAGE  
 AREA DETERMINED  
 BY OTHERS

STATE OF TEXAS  
 THOMAS T. LE  
 92771  
 LICENSED PROFESSIONAL ENGINEER

11/18/2022

Texas Department of Transportation  
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**ATKINS**  
 TBPE REG. #F-474

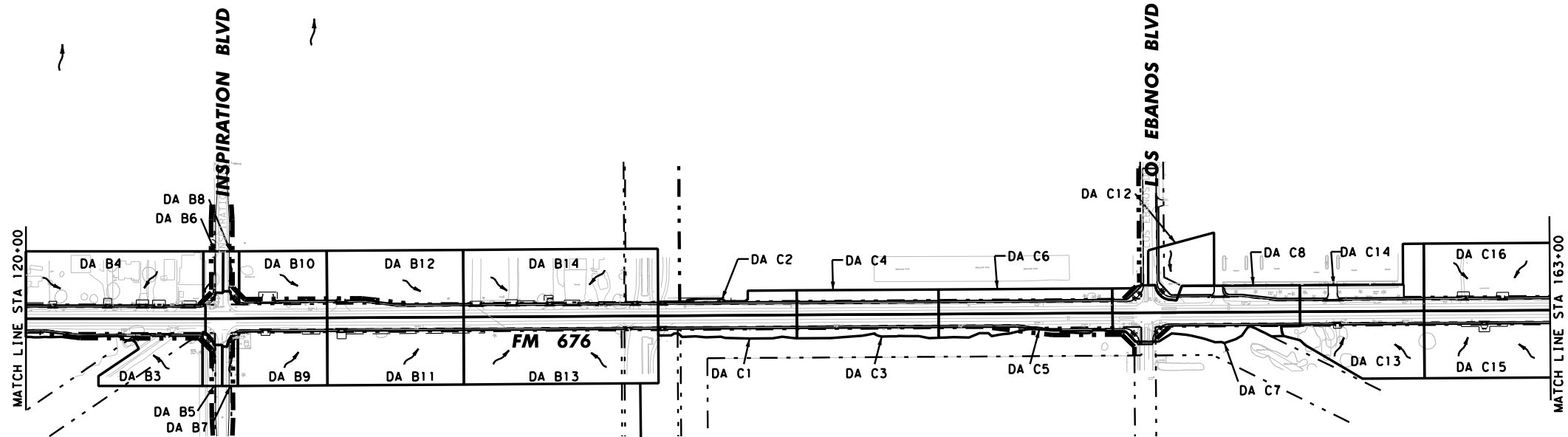
**FM 676  
 PERIMETER DRAINAGE  
 AREA MAP**

PLAN SCALE: 1"=400'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 1 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			221
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676





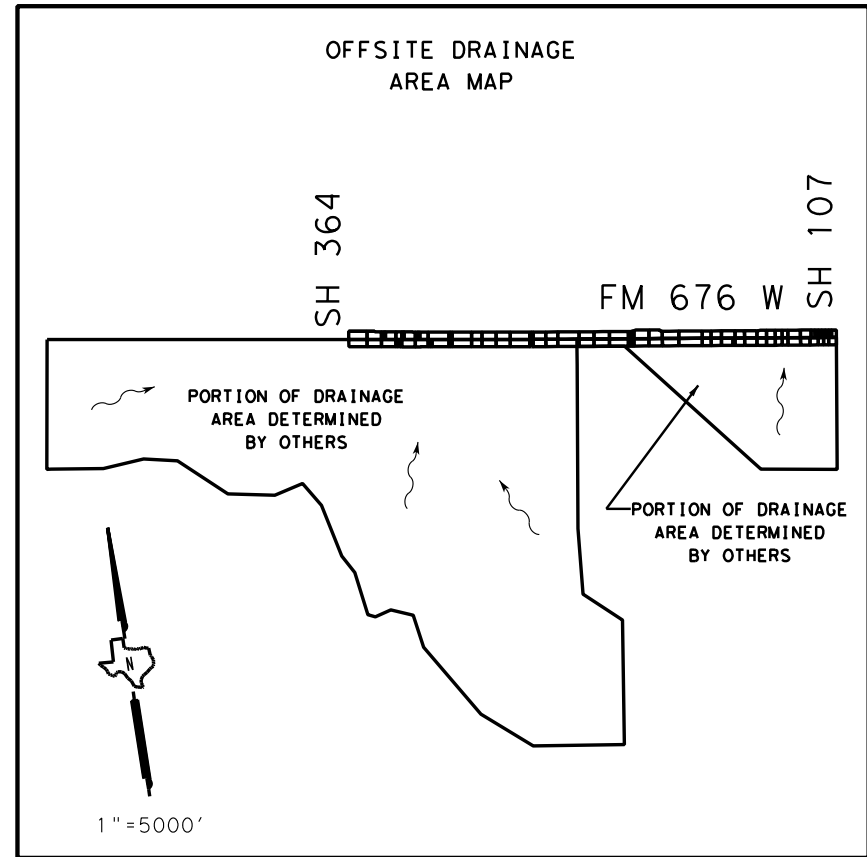
- LEGEND**
- PROP ROW
  - - - EXIST ROW
  - DA XX DRAINAGE AREA IDENTIFICATION
  - DRAINAGE AREA BOUNDARY
  - ~ DIRECTION OF FLOW

PORTION OF DRAINAGE AREA DETERMINED BY OTHERS

PORTION OF DRAINAGE AREA DETERMINED BY OTHERS

PORTION OF DRAINAGE AREA DETERMINED BY OTHERS

OFFSITE DRAINAGE AREA MAP BOUNDARY



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
PERIMETER DRAINAGE  
AREA MAP**

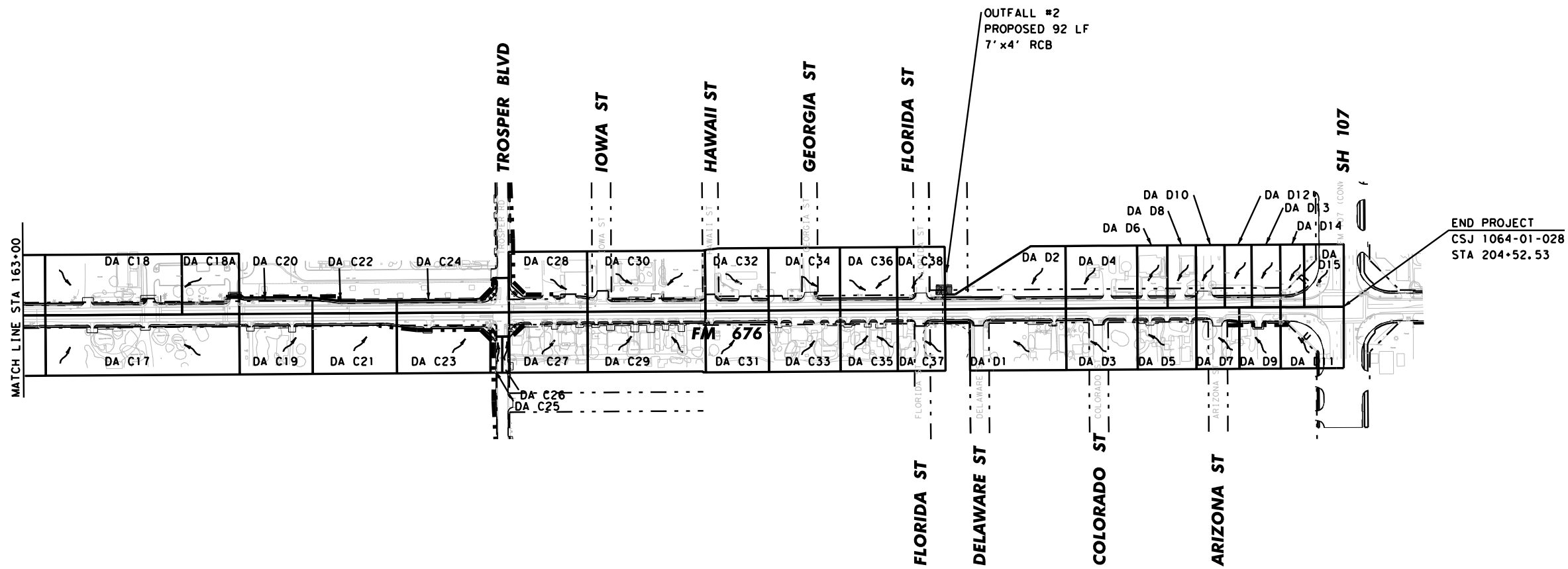
PLAN SCALE: 1"=400'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			222
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

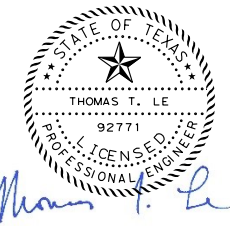
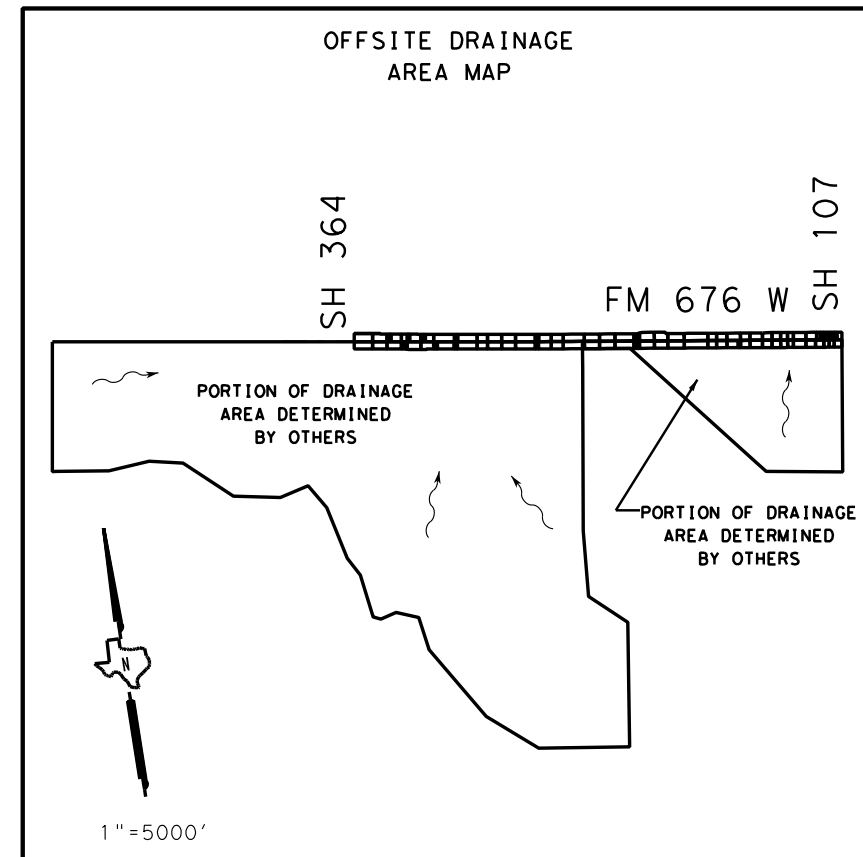
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- LEGEND**
- PROP ROW
  - - - EXIST ROW
  - DA XX DRAINAGE AREA IDENTIFICATION
  - DRAINAGE AREA BOUNDARY
  - ~ DIRECTION OF FLOW

PORTION OF DRAINAGE AREA DETERMINED BY OTHERS



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676 PERIMETER DRAINAGE AREA MAP**

PLAN SCALE: 1"=400'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 3 OF 3		
FED. RD. DIV. NO.	STATE PROJECT NO.	
6	223	
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DA XX DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**  
 1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



*Thomas T. Le*

11/18/2022

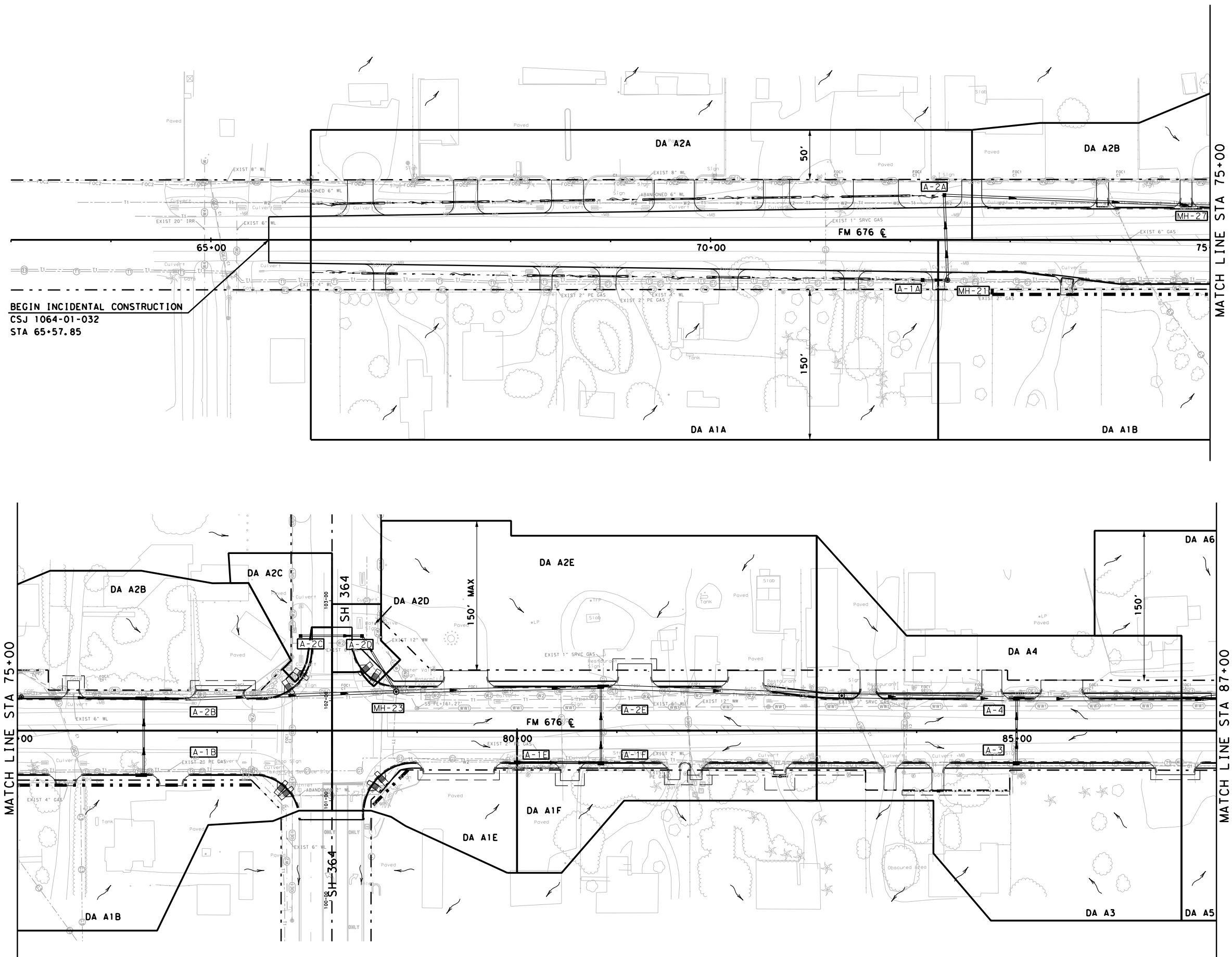


**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 1 OF 6		
FED. RD. DIV. NO. 6	STATE PROJECT NO. PHR 032	SHEET NO. 224
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CONT. 1064	SECT. 01	JOB 032
		HIGHWAY NO. FM 676



BEGIN INCIDENTAL CONSTRUCTION  
 CSJ 1064-01-032  
 STA 65+57.85

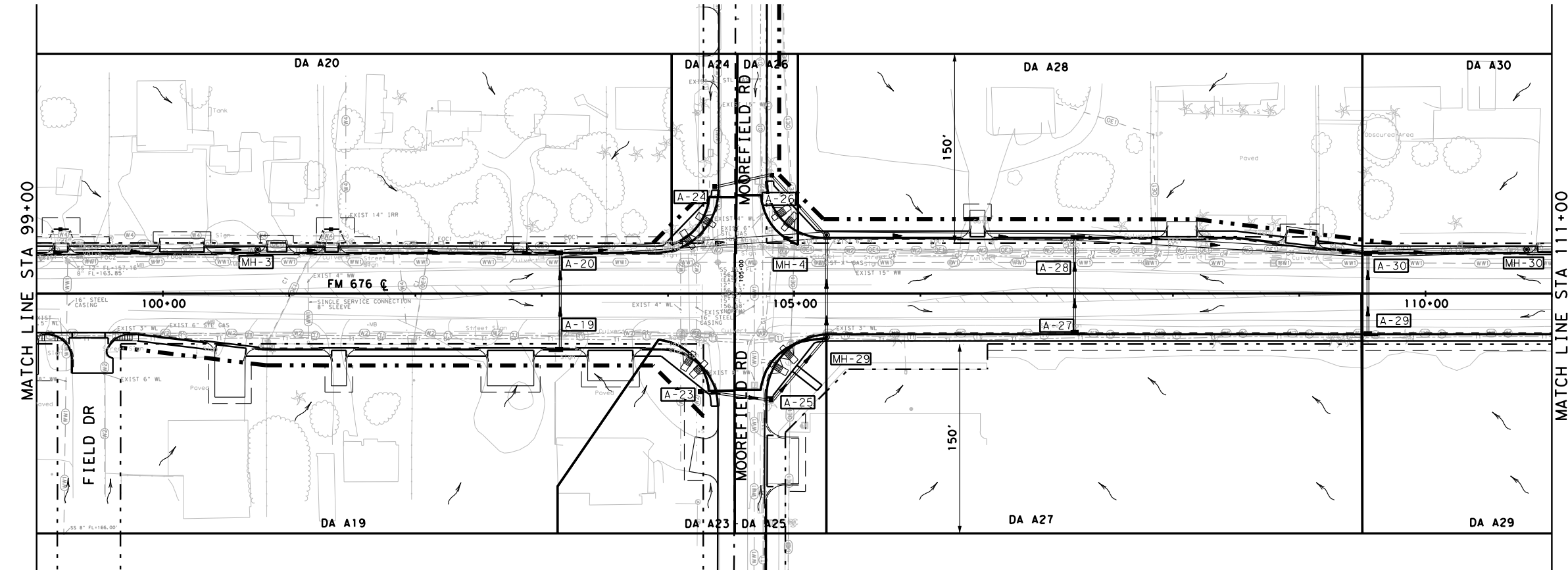
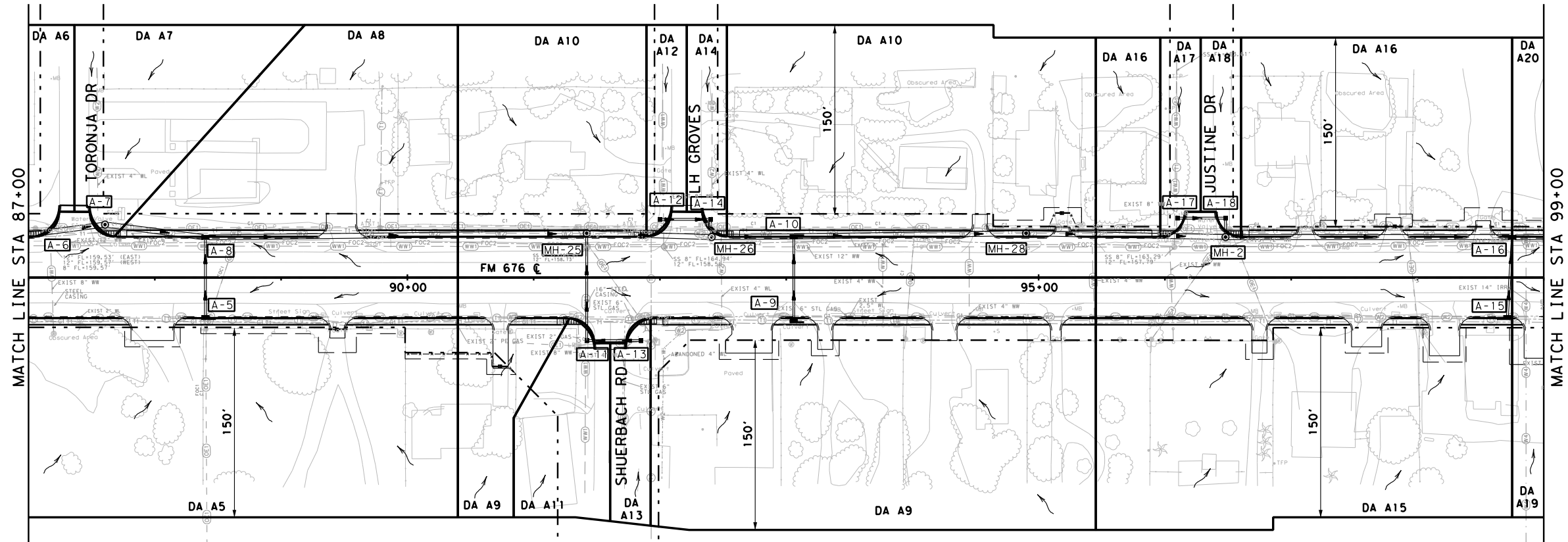
MATCH LINE STA 75+00

MATCH LINE STA 75+00

MATCH LINE STA 87+00

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**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**

1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



11/18/2022



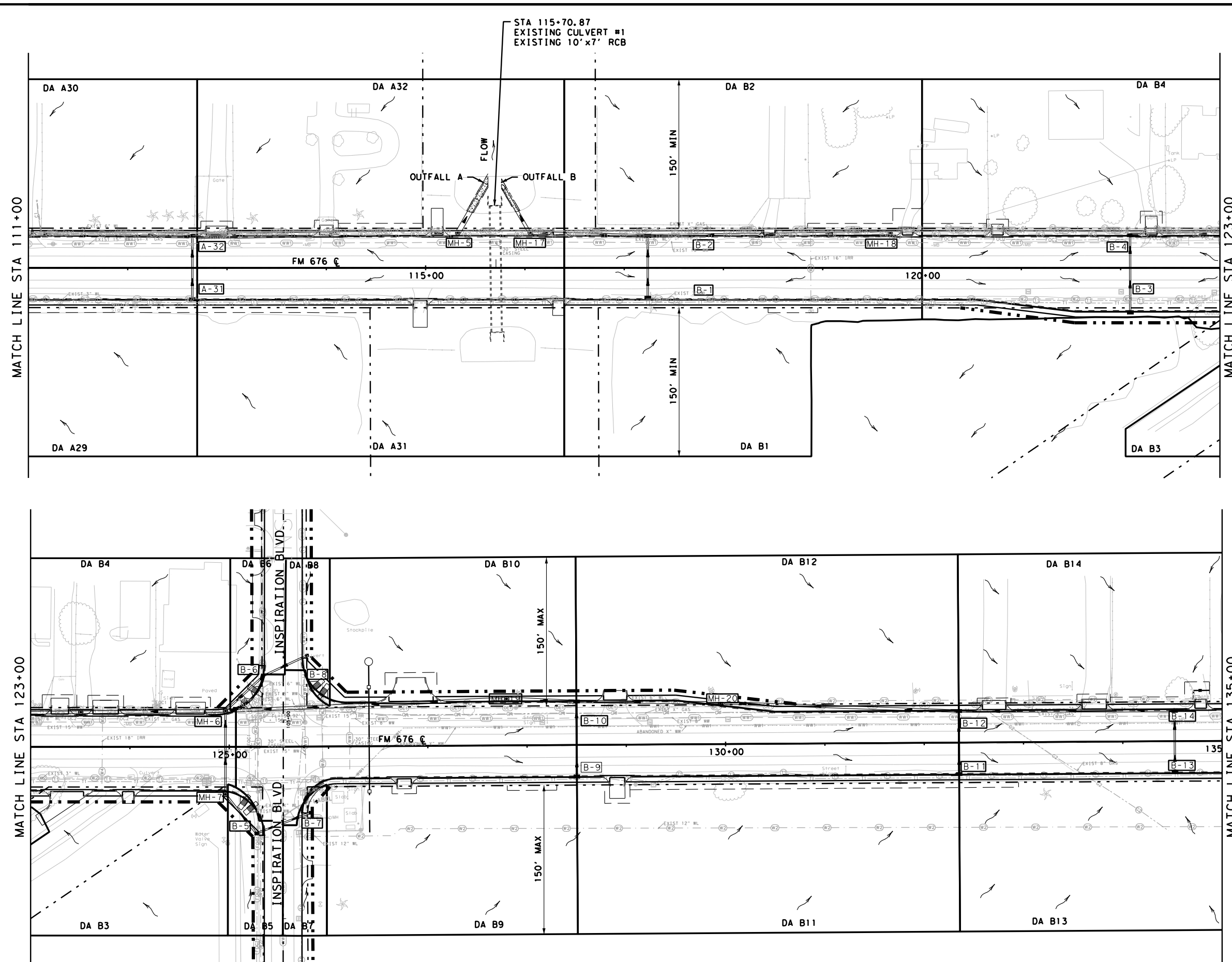
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 2 OF 6		STATE PROJECT NO.		SHEET NO.
6		225		225
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DA XX DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**

1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



11/18/2022



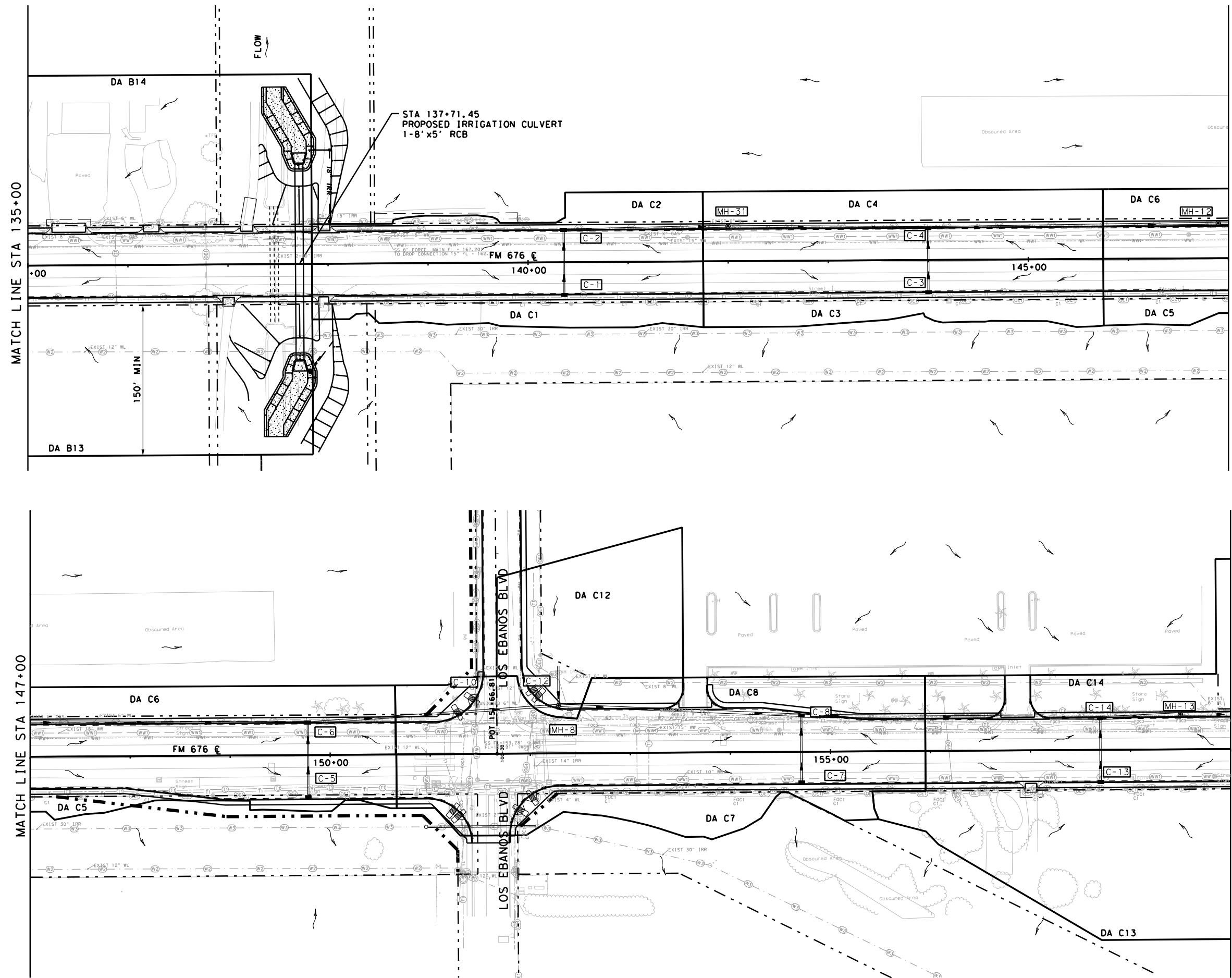
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 3 OF 6			
FED. RD. DIV. NO. 6	STATE PROJECT NO. 226	SHEET NO. 226	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676

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**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DA XX DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**

1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



11/18/2022



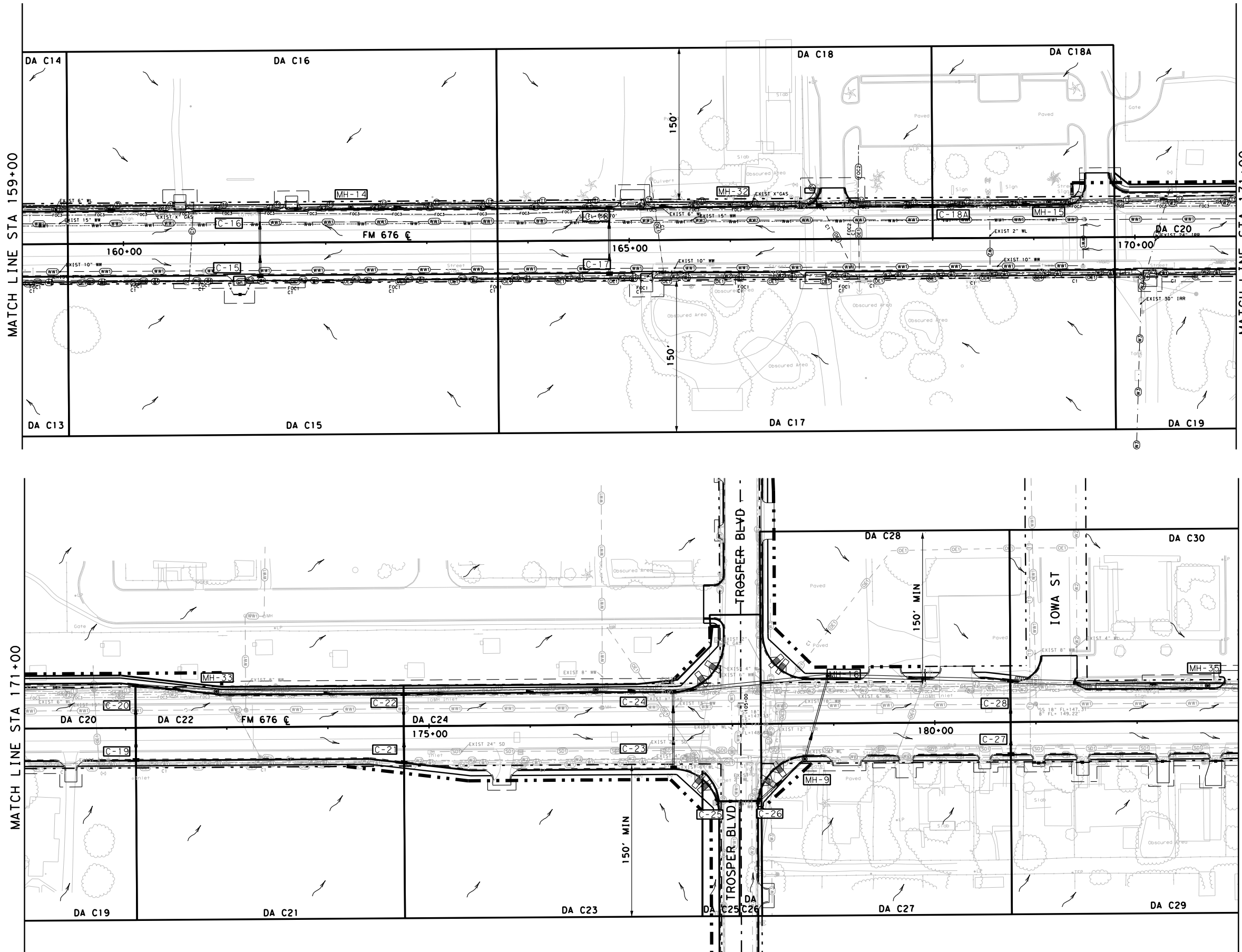
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 4 OF 6		STATE PROJECT NO.		SHEET NO.
6				227
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**

1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

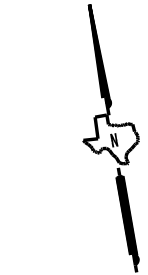
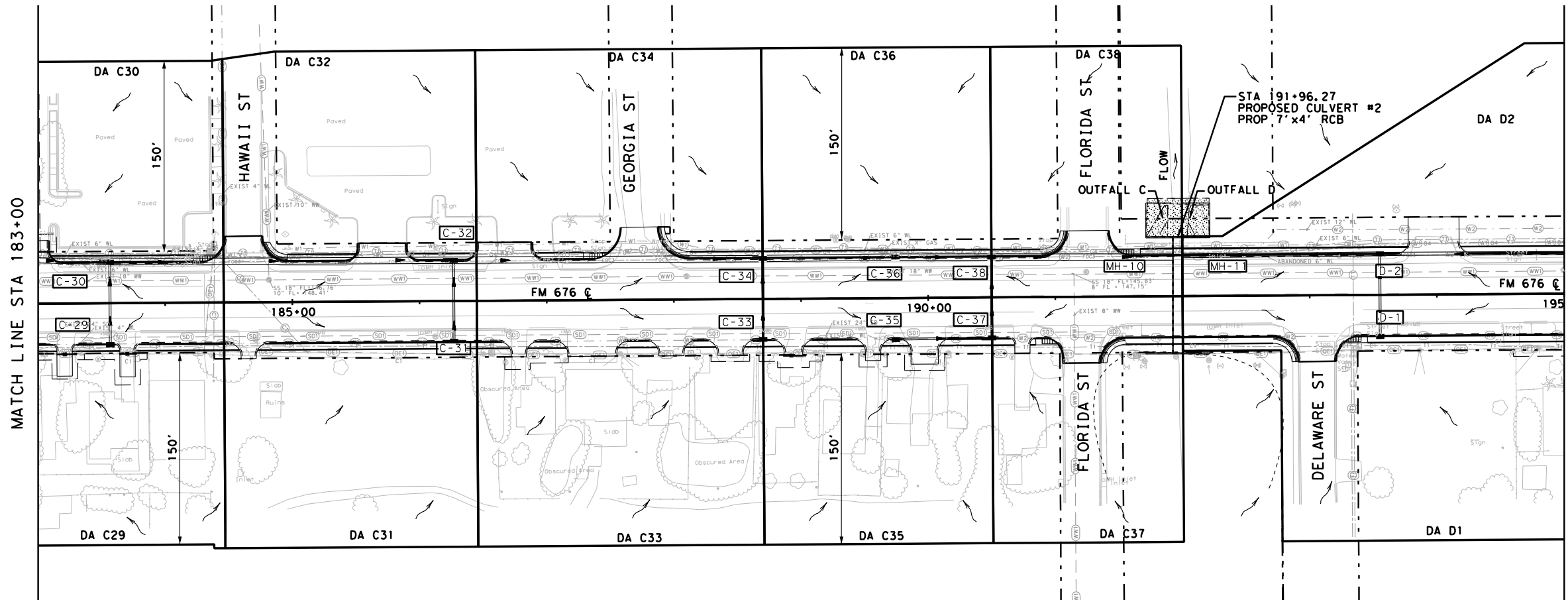
**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 5 OF 6

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			228
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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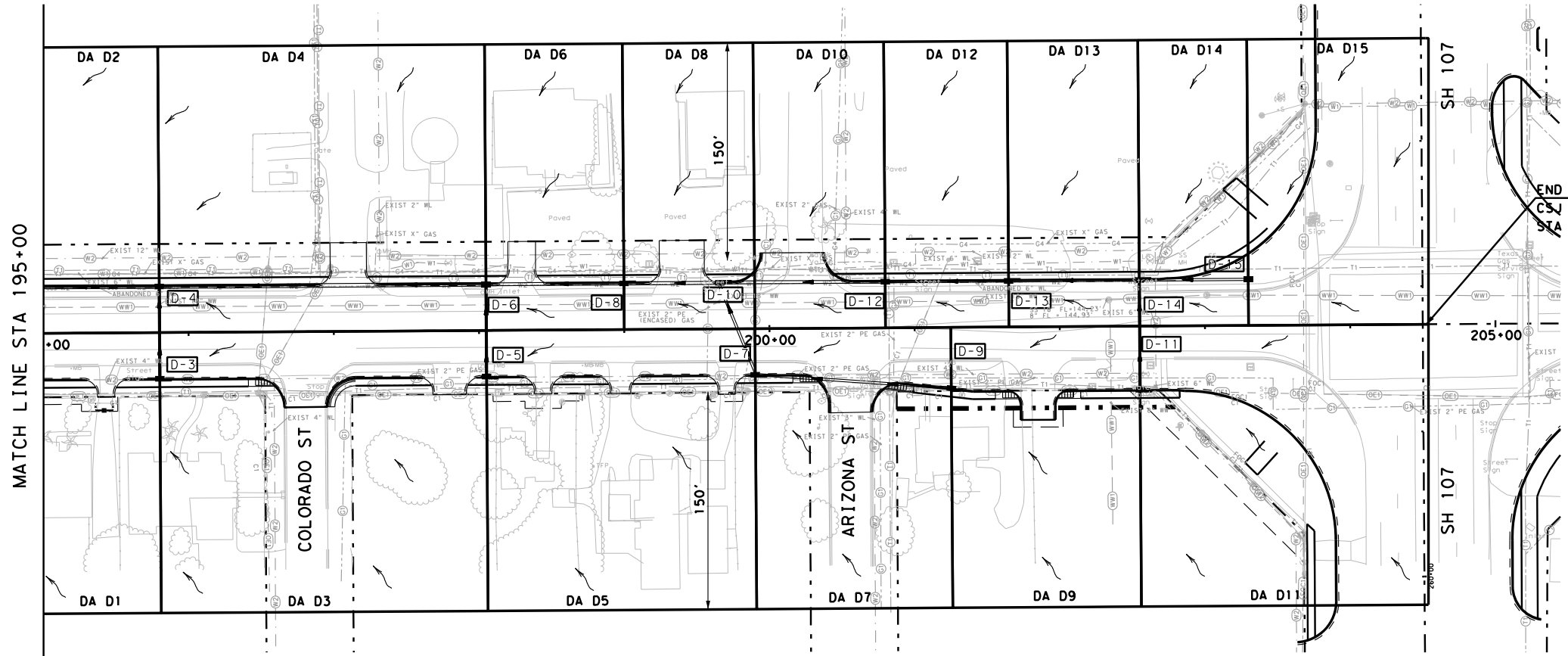


**LEGEND**

- PROP DRIVEWAY LIMITS
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- PROP INLET
- PROP MANHOLE
- PROP ROW
- EXIST ROW
- DRAINAGE AREA IDENTIFICATION
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE STRUCTURE ID

**NOTES:**

1. REFERENCE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA RUNOFF COMPUTATIONS.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 DRAINAGE AREA MAP**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 6 OF 6		
FED. RD. DIV. NO. 6	STATE PROJECT NO. 1064-01-032	SHEET NO. 229
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CONT. 1064	SECT. 01	JOB 032
		HIGHWAY NO. FM 676

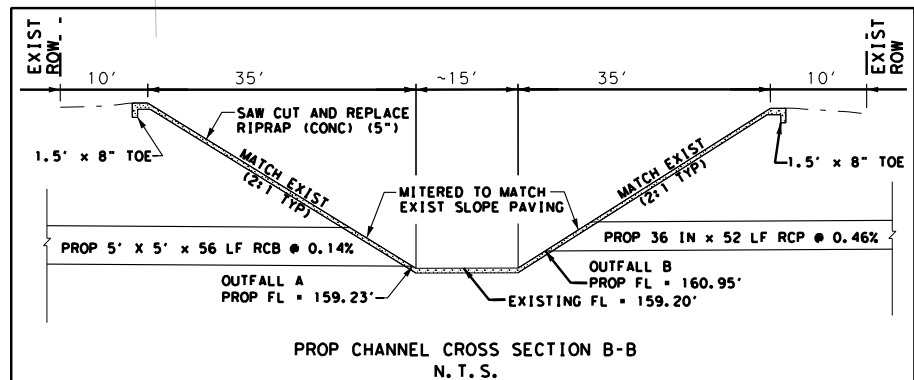
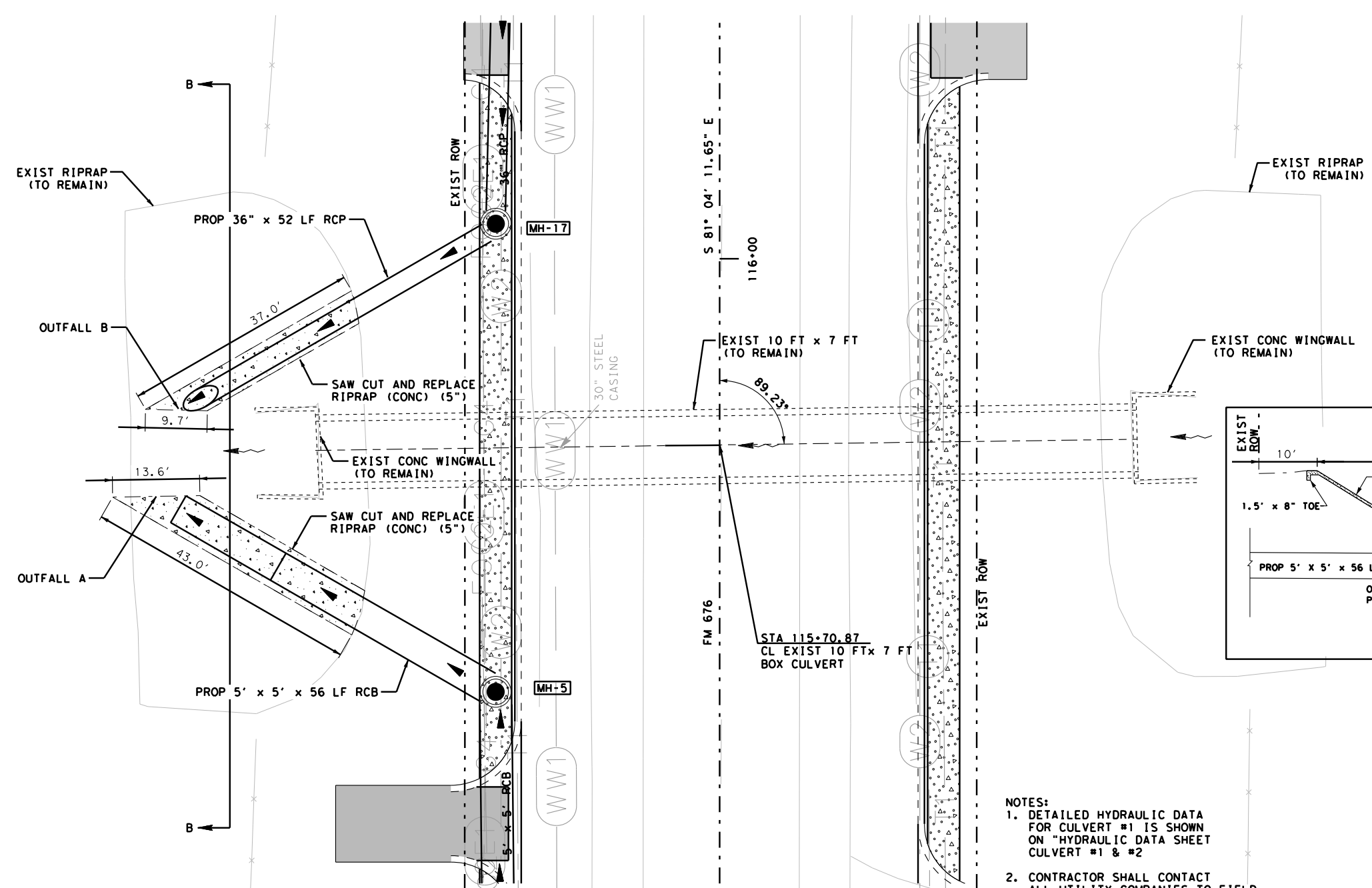


EST	UNIT	DESCRIPTION
50	SY	REMOVING CONC (RIPRAP)
6	CY	RIPRAP (CONC) (5")



**LEGEND**

- DIRECTION OF FLOW RUNOFF
- PROP STORM DRAIN LATERAL OR TRUNKLINE



- NOTES:**
- DETAILED HYDRAULIC DATA FOR CULVERT #1 IS SHOWN ON "HYDRAULIC DATA SHEET CULVERT #1 & #2"
  - CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION



12/1/2022



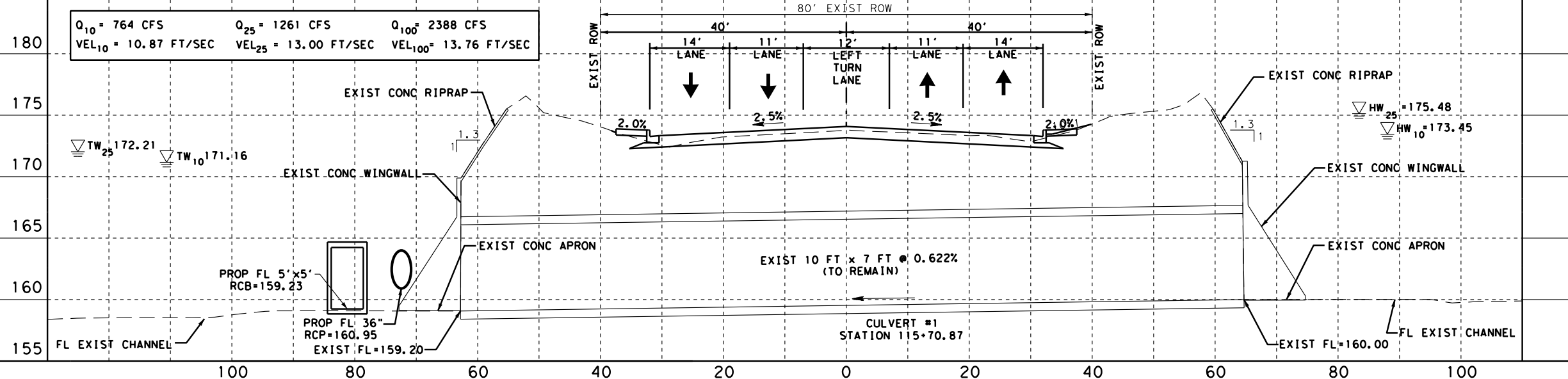
**ATKINS**  
TBPE REG. #F-474

**FM 676  
CULVERT #1 LAYOUT**

PLAN SCALE: 1"=20'  
PROFILE SCALE: 1"=10'  
0 4 8 12 16 20 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			230
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

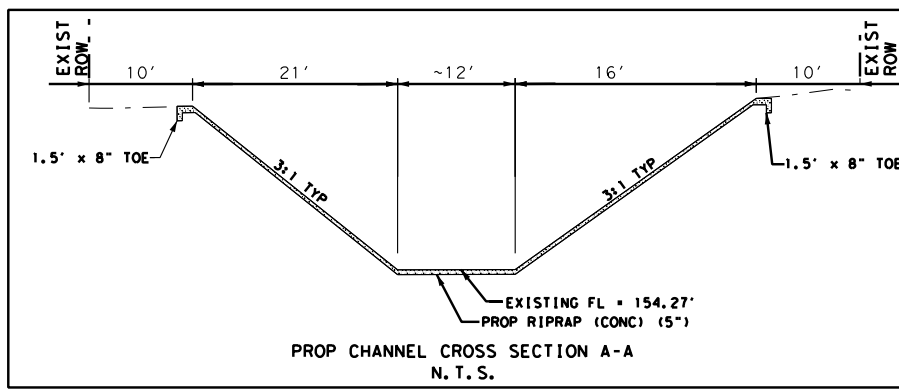
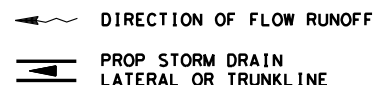


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EST	UNIT	DESCRIPTION
134	SY	REMOVING CONC (RIPRAP)
41	CY	REMOVING CONC (HEADWALL)
215	CY	STRUCTURAL EXCAV (BOX)
13.6	CY	CEM STABIL BKFL
30.8	SY	CUT & RESTORING PAV (CONC)
92	LF	TRENCH EXCAVATION PROTECTION
23	CY	RIPRAP (CONC) (5")
92	LF	CONC BOX CULV (7 FT X 4 FT)
2	EA	WINGWALL (PW) (HW=7 FT)



**LEGEND**



- NOTES:**
1. DETAILED HYDRAULIC DATA FOR CULVERT #2 IS SHOWN ON "HYDRAULIC DATA SHEET CULVERT #1 & #2"
  2. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION



11/18/2022

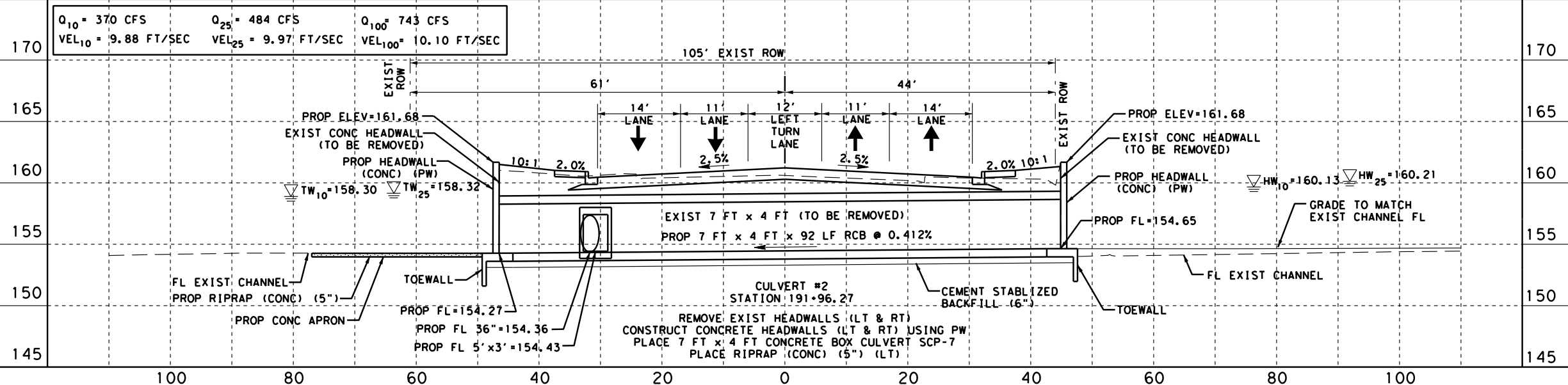
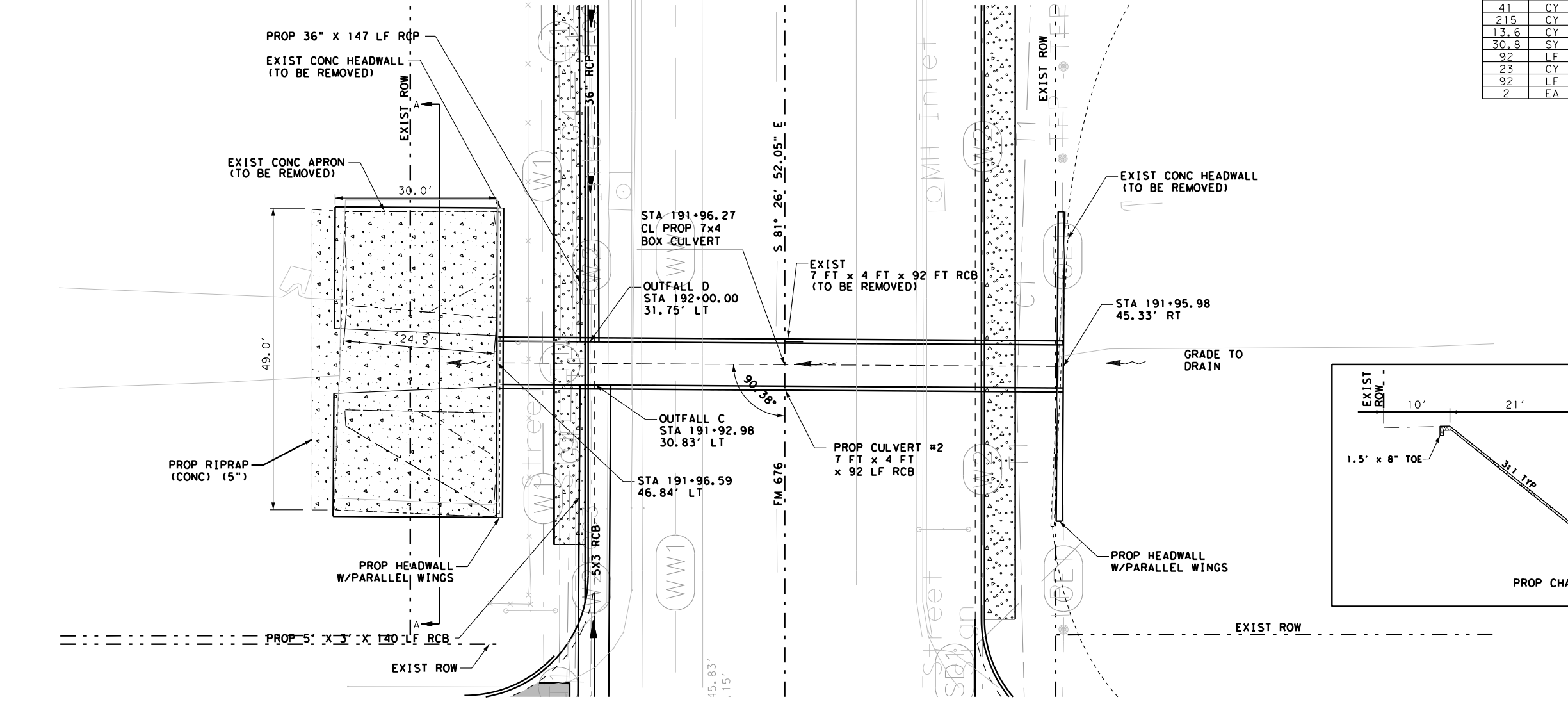


**ATKINS**

**FM 676**  
**CULVERT #2 LAYOUT**

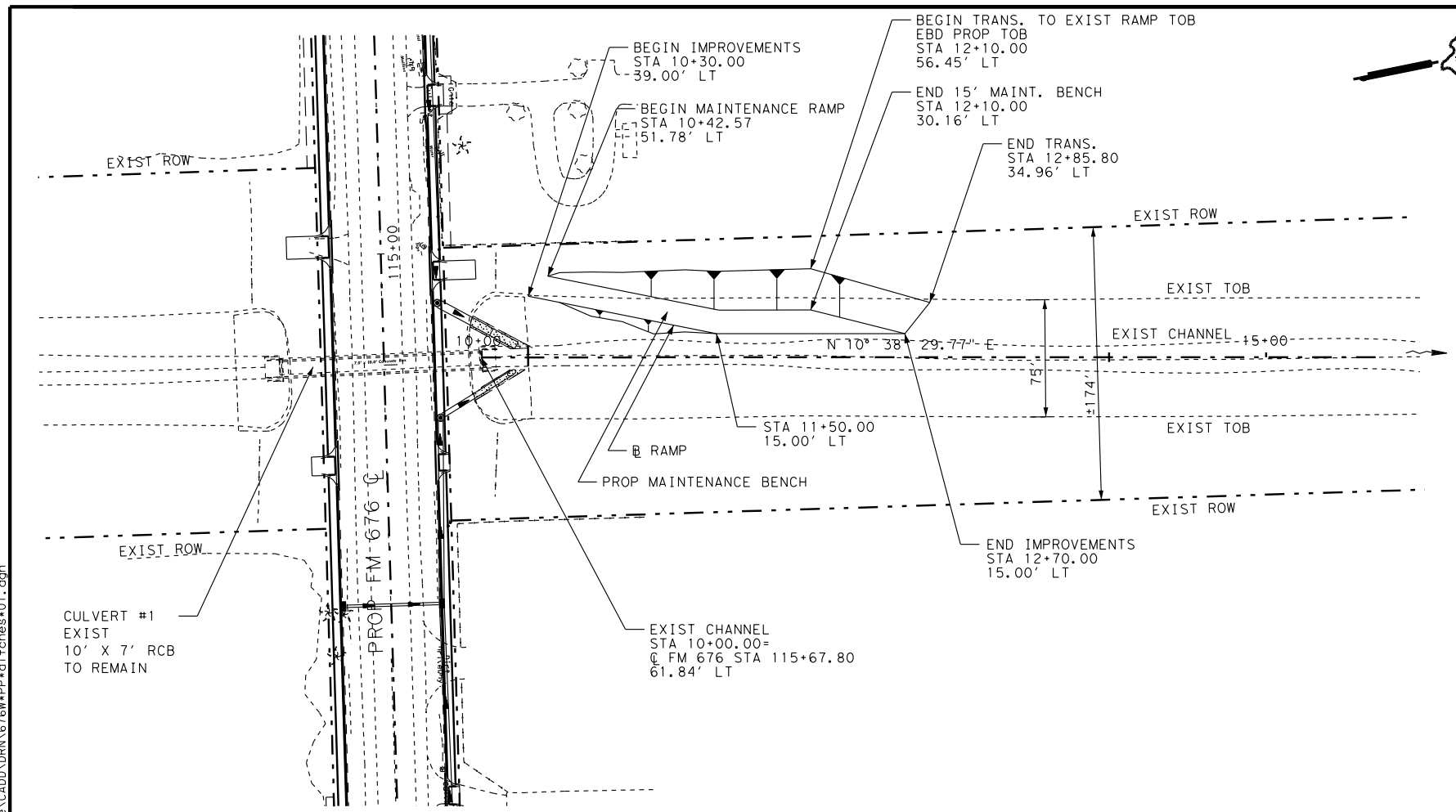
PLAN SCALE: 1"=20'  
PROFILE SCALE: 1"=10'

SHEET 2 OF 2		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		231
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

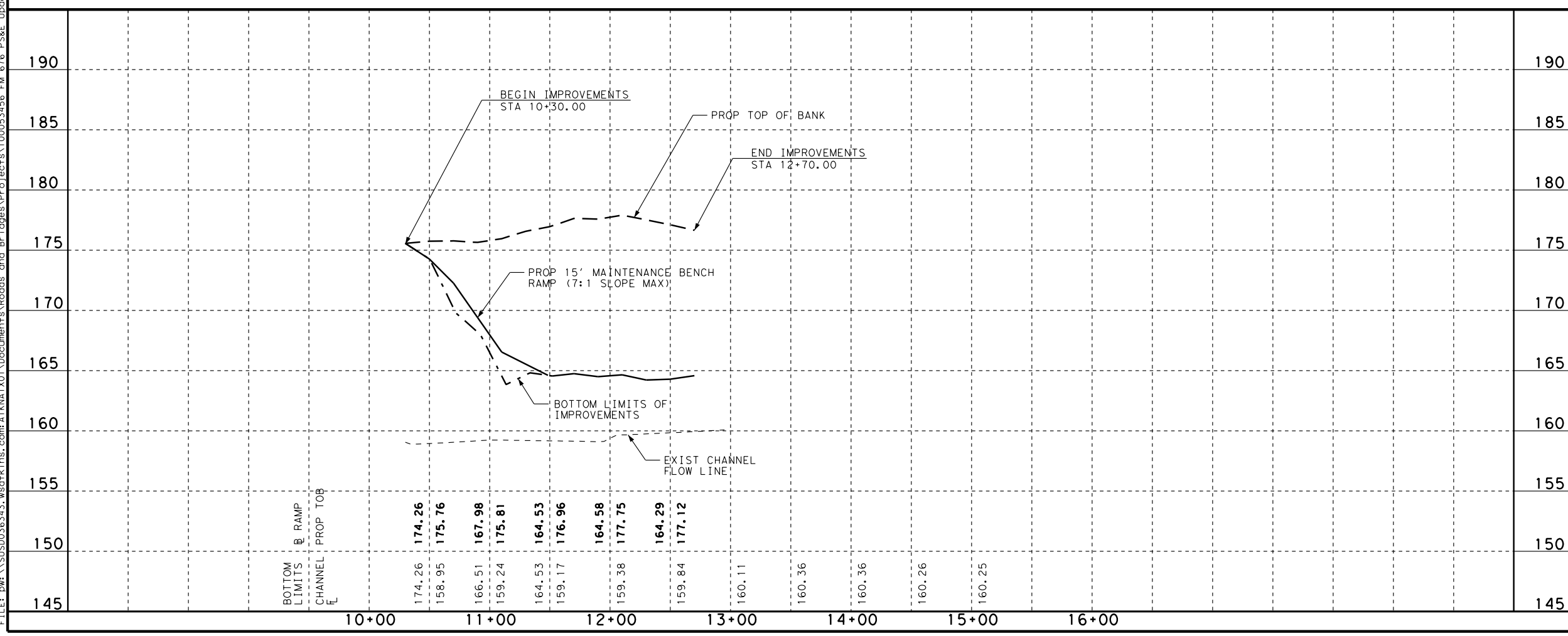


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NOTE: FOR CROSS SECTIONS SEE  
OUTFALL CHANNEL 1 CROSS-SECTIONS



11/18/2022

Thomas T. Le

Texas Department of Transportation  
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**ATKINS**  
TBPE REG. #F-474

**FM 676  
OUTFALL CHANNEL 1**

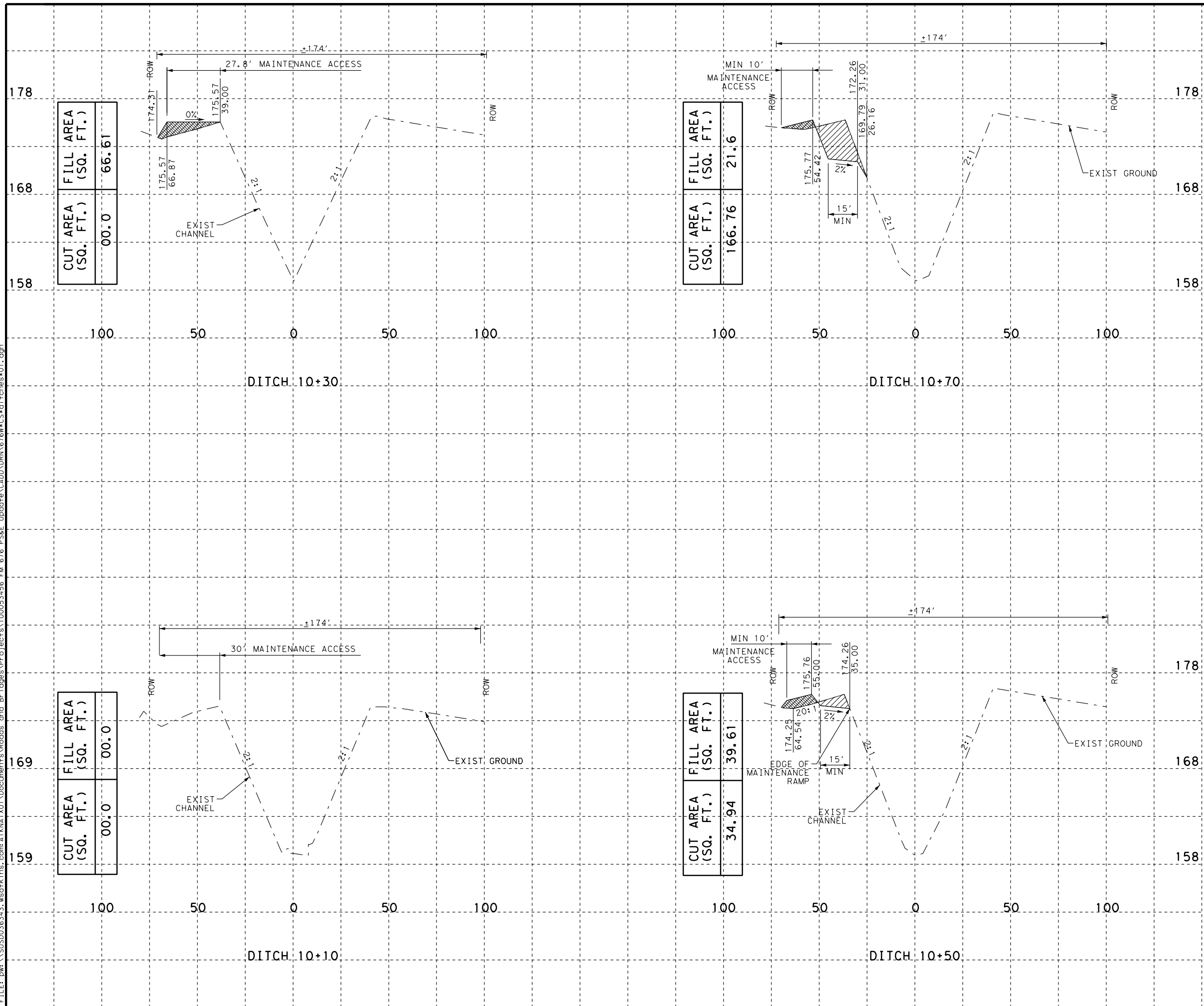
PLAN SCALE: 1"=100'      PROFILE SCALE: 1"=10'  
 0 20 40 60 80 100      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			233
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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 PENTTABLE: PenTable.tbl  
 DATE: 11/18/2022  
 FILE: pm\11x17\11x17.dwg



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 OUTFALL CHANNEL 1  
 CROSS SECTIONS**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 1 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			234
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 OUTFALL CHANNEL 1  
 CROSS SECTIONS**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

SHEET 2 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			235
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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 DATE: 11/18/2022  
 FILE: pm\ASUS036343.wso\atkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\DRN\676WCS\*di+ches\*03.dgn



11/18/2022



**ATKINS**

TBPE REG. #F-474

**FM 676  
 OUTFALL CHANNEL 1  
 CROSS SECTIONS**

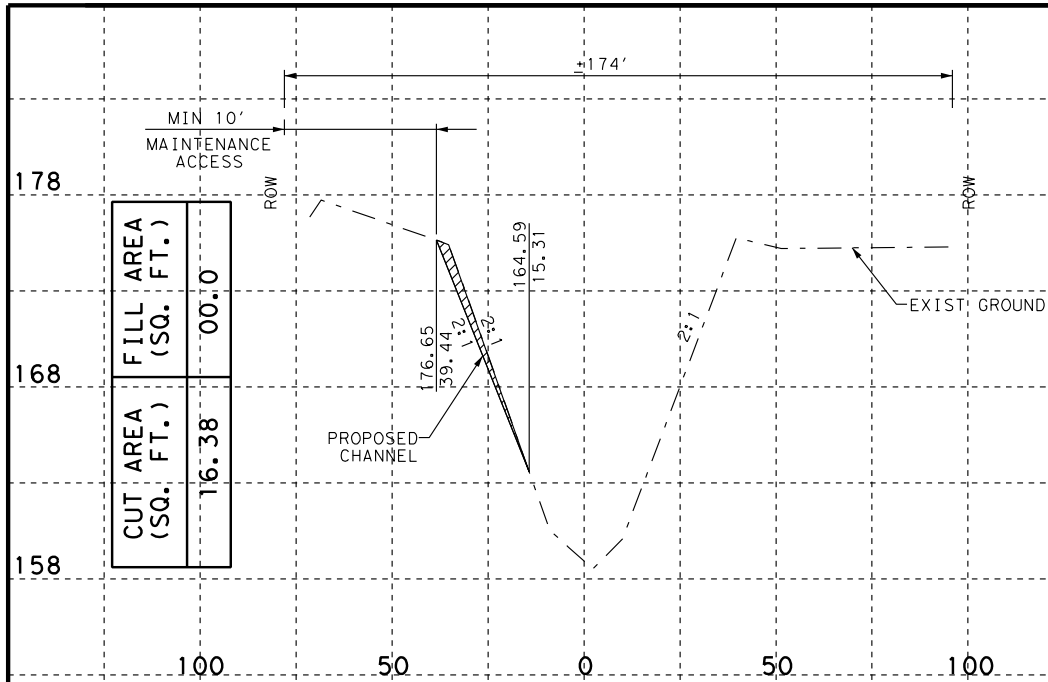
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 0 10 20 30 40 50  
 DISTANCE IN FEET

PROFILE SCALE: 1"=10'  
 0 2 4 6 8 10  
 DISTANCE IN FEET

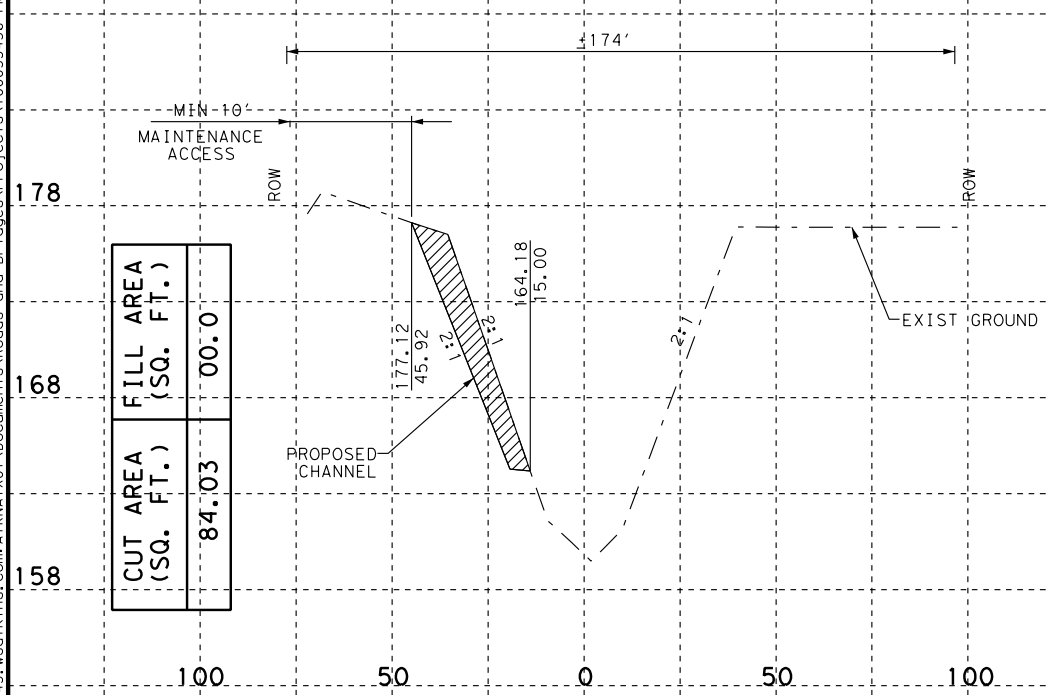
SHEET 3 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			236
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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DITCH 12+70



DITCH 12+50



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

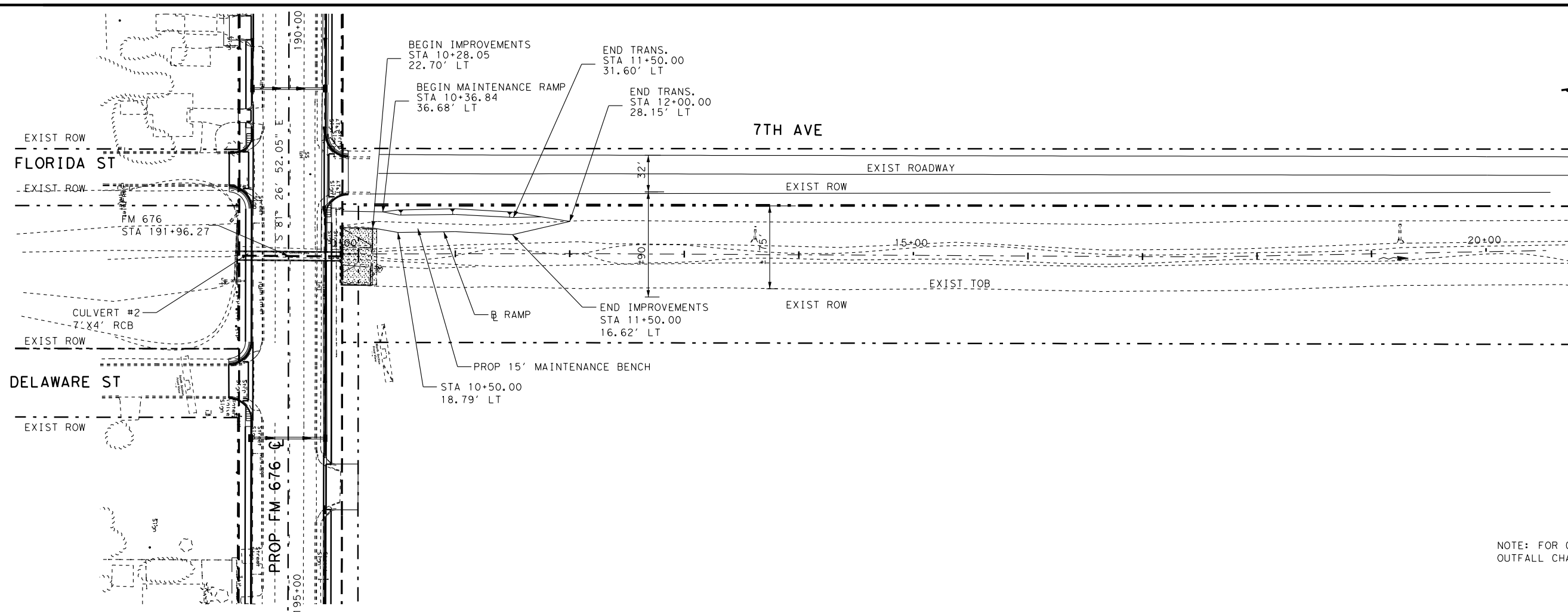
**FM 676  
 OUTFALL CHANNEL 1  
 CROSS SECTIONS**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
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 DISTANCE IN FEET      DISTANCE IN FEET

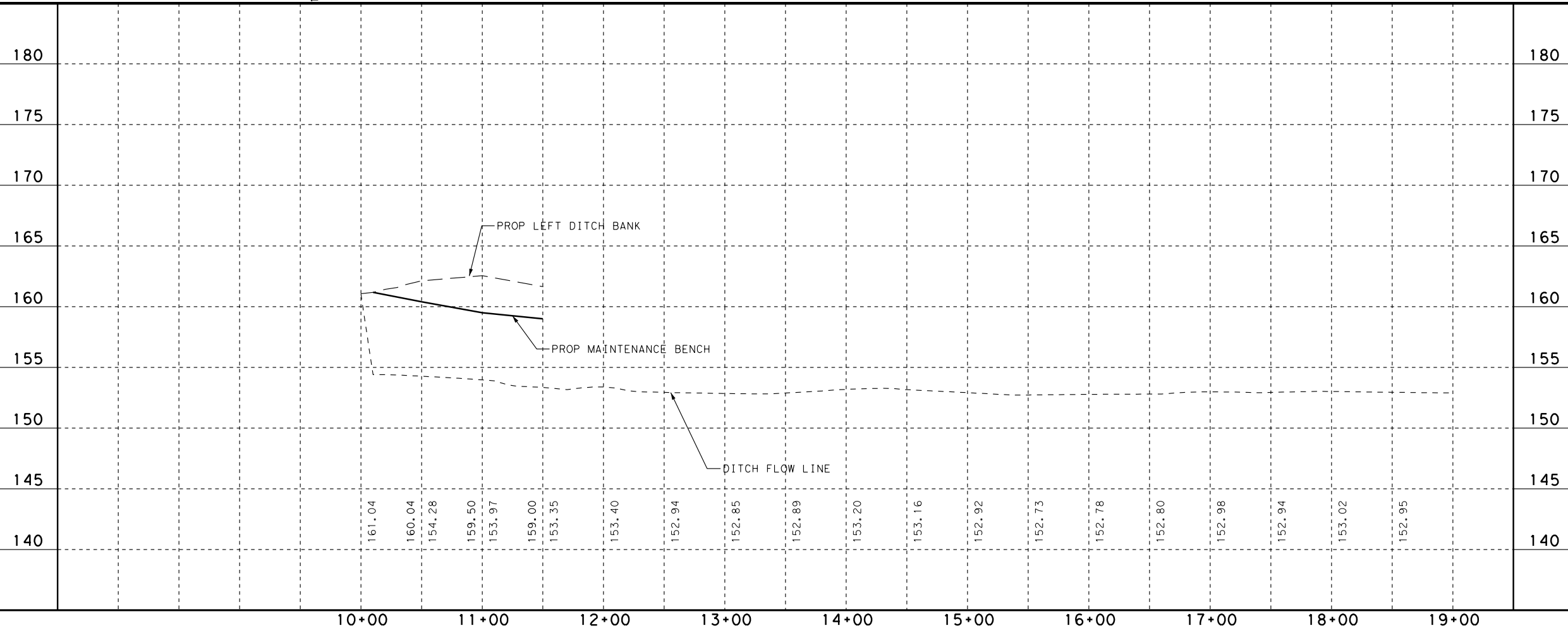
SHEET 4 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			237
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676





NOTE: FOR CROSS SECTIONS SEE  
OUTFALL CHANNEL 2 CROSS-SECTIONS



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
OUTFALL CHANNEL 2**

PLAN SCALE: 1"=100'  
DISTANCE IN FEET

PROFILE SCALE: 1"=10'  
DISTANCE IN FEET

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			238
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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PLOT DRIVER: RD\*11x17\*PDF.p1t  
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 FILE: pm\ASUS036343.wso\atkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\DRN\676W\*CS\*di+ches\*05.dgn



CUT AREA (SQ. FT.)	54.09
FILL AREA (SQ. FT.)	00.0

CUT AREA (SQ. FT.)	43.90
FILL AREA (SQ. FT.)	0.0

CUT AREA (SQ. FT.)	44.54
FILL AREA (SQ. FT.)	0.0



11/18/2022



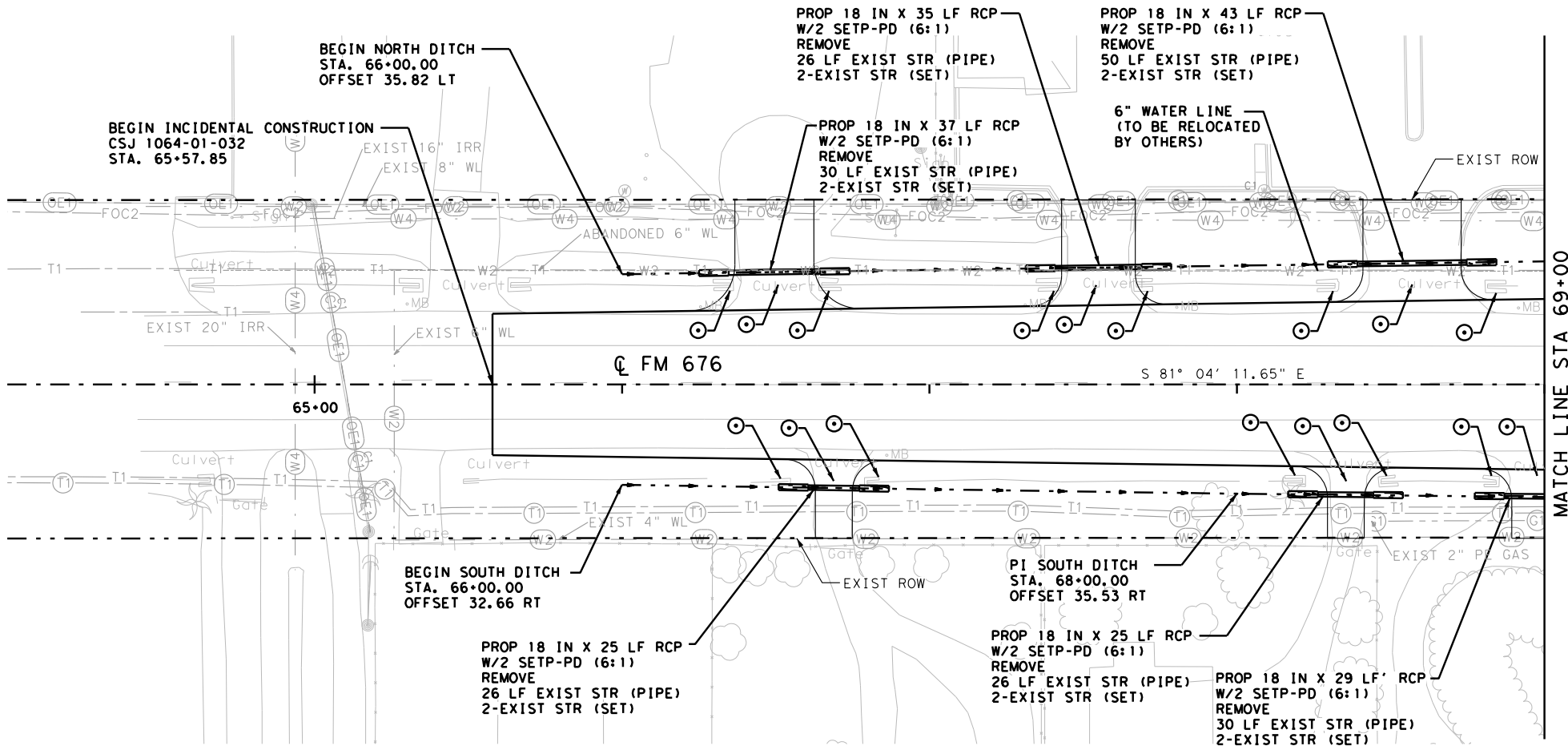
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 OUTFALL CHANNEL 2  
 CROSS SECTIONS**

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50      0 2 4 6 8 10  
 DISTANCE IN FEET      DISTANCE IN FEET

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			239
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1t  
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 FILE: pm1\USJ036343.wsoftk\ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\DRN\676W\*SS01.dgn



MATCH LINE STA 69+00

SHEET TOTALS						
ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	52	52			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	0	0			CY	STRUCT EXCAV (SPECIAL)
402	0	0			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	194	194			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
467	12	12			EA	SET (TY II) (18 IN) (RCP) (6:1) (P)
496	188	188			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	12	12			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

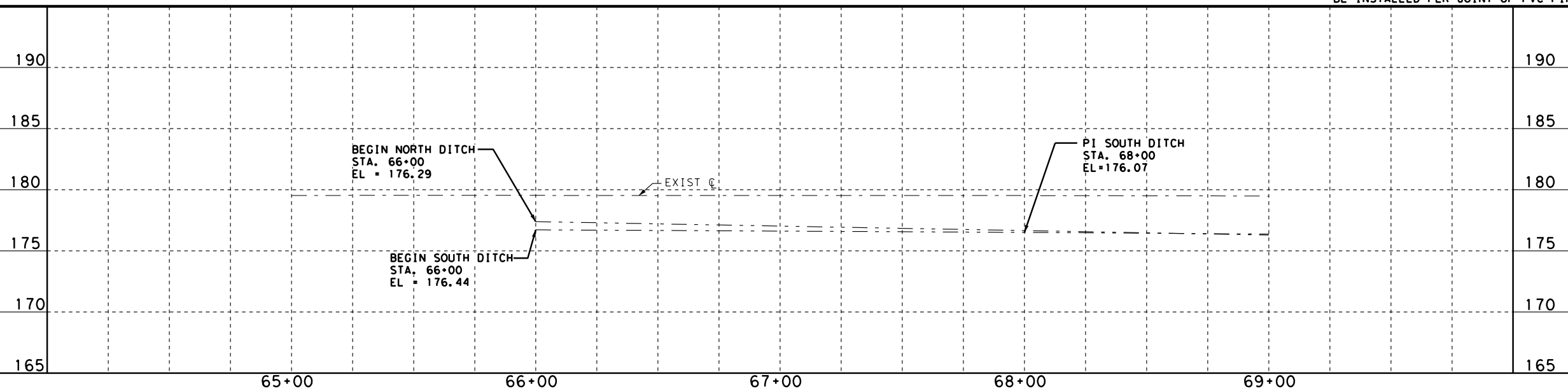
**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- (SD) — EX. STORM DRAIN
- (WW) — EX. SANITARY SEWER
- (OE) — EX. OVER HEAD ELECTRIC
- (T) — EX. UNDER-GROUND TELEPHONE
- (FOC1) — (FOC2) — (FOC3) — EX. FIBER OPTIC
- (W1) — (W2) — EX. WATER LINE
- (I3) — (I4) — (I5) — EX. IRRIGATION
- (G1) — (G2) — (G3) — (G4) — EX. GAS LINE

- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



12/1/2022



Texas Department of Transportation  
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**ATKINS**

TBPE REG. #F-474

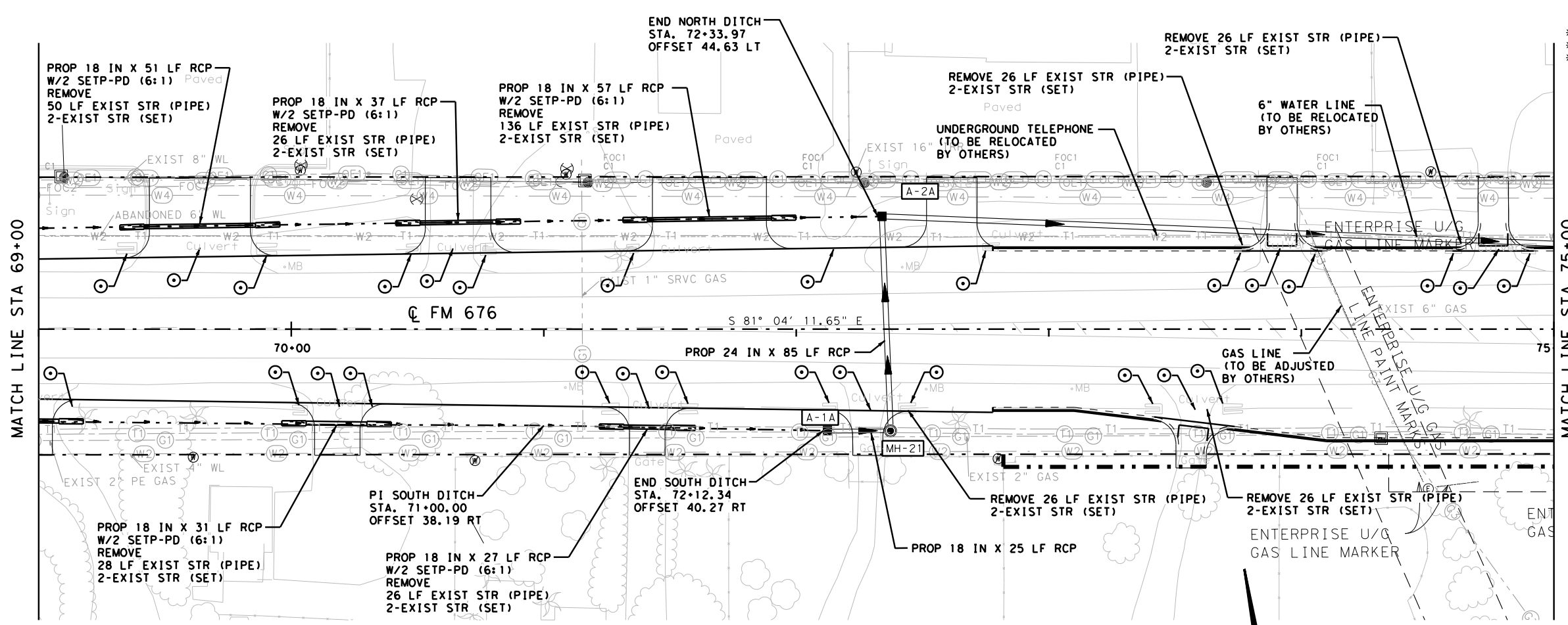
**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50 DISTANCE IN FEET      0 2 4 6 8 10 DISTANCE IN FEET

SHEET 1 OF 24

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.
6				240
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD\*11x17\*PDF\*.d11  
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 FILE: pm\SSUS0363433.wsof\ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\DRN\676W\*SS02.dgn



SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN/UNIT	
* 400	273	273	CY	STRUCT EXCAV
* 400	0	0	CY	STRUCT EXCAV (BOX)
* 400	170.0	170	CY	STRUC EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	0	0	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	228	228	LF	RCP PIPE (CL III) (18 IN)
464	355	352	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	2	2	EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT)**
465	1	1	EA	MANHOLE (COMPL) (PRM) (60 IN)
467	10	10	EA	SET (TY II) (18 IN) (RCP) (6:1) (P)
496	504	504	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	18	18	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\*INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

LEGEND	
⊙	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
⊙	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE
(BM) ■	
▨	PROPOSED DRIVEWAY
⊙	EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
⊙	EX. FIRE HYDRANT
⊙	EX. MAIL BOX
—(SD)—	EX. STORM DRAIN
—(WW)—	EX. SANITARY SEWER
—(OE)—	EX. OVER HEAD ELECTRIC
—(T)—	EX. UNDERGROUND TELEPHONE
—(FOC1)—(FOC2)—(FOC3)—	EX. FIBER OPTIC
—(W1)—(W2)—	EX. WATER LINE
—(I3)—(I4)—(I5)—	EX. IRRIGATION
—(G1)—(G2)—(G3)—(G4)—	EX. GAS LINE

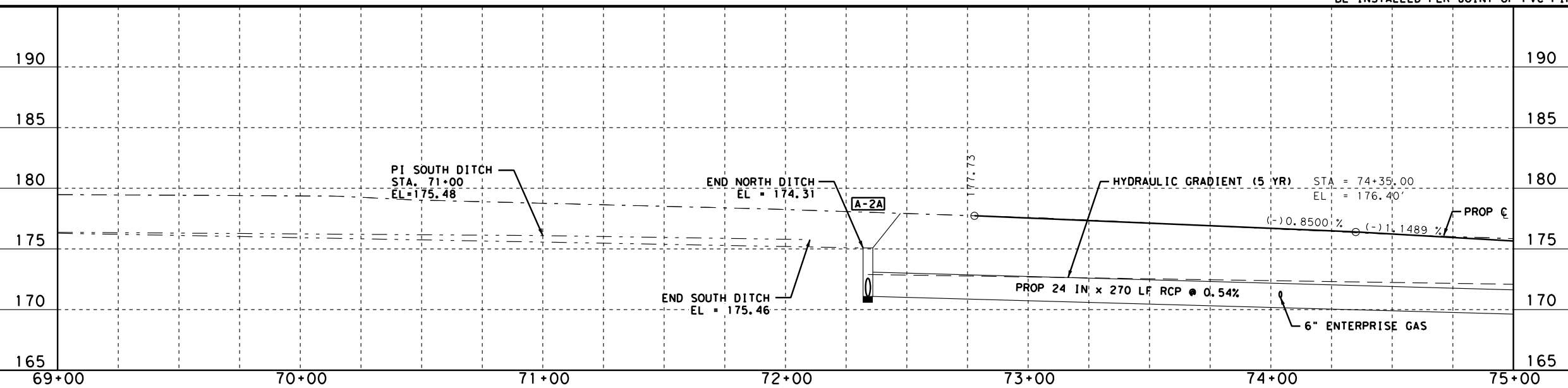
- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



12/1/2022

SYSTEM A									
STORM DRAIN TABLE									
STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-1A	3' X 3'	INLET TY "PAZD" STYLE 'FG'	72+12.34 / 40.27 RT	175.46	171.33			171.33	
A-2A	3' X 3'	INLET TY "PAZD" STYLE 'FG'	72+33.97 / 44.63 LT	174.31	171.08		171.08		
MH-21	60"	MANHOLE TY "PRM"	72+37.30 / 40.32 RT	175.38	171.18	171.18			171.18

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



**ATKINS**  
TBPE REG. #F-474

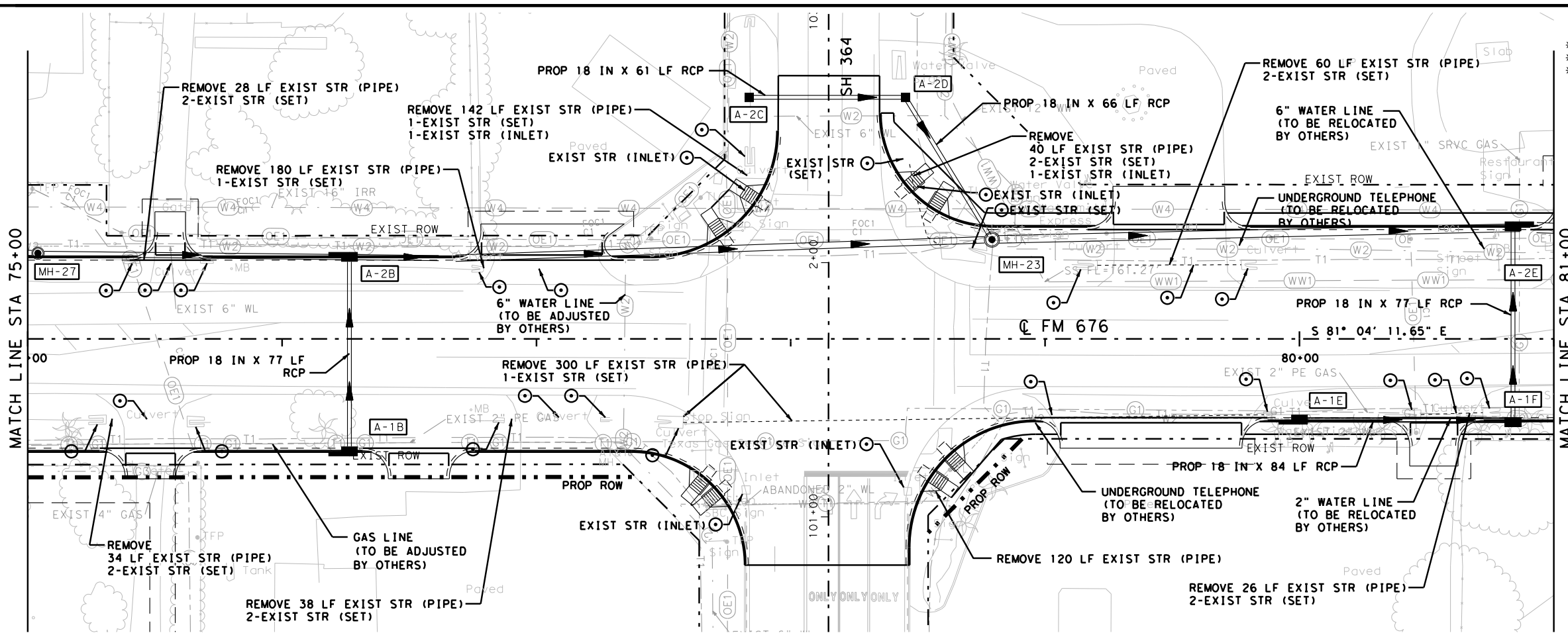
**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 2 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		241
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676



SHEET TOTALS				DESCRIPTION
400	793	793	CY	STRUCT EXCAV
400	0	0	CY	STRUCT EXCAV (BOX)
400	793.0	793	CY	STRUC EXCAV (SPECIAL)
402	0	0	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	365	365	LF	RCP PIPE (CL III) (18 IN)
464	122	118	LF	RCP PIPE (CL III) (24 IN)
464	253	249	LF	RCP PIPE (CL III) (30 IN)
464	205	201	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
465	1	1	EA	INLET (PCU) (3FT)
465	1	1	EA	INLET (PCU) (4FT) (LEFT)
465	2	2	EA	INLET (PCU) (3FT) (RIGHT)
465	1	1	EA	INLET (PCU) (6FT) (RIGHT)
465	2	2	EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT)
465	1	1	EA	MANHOLE (COMPL) (PRM) (60 IN)
465	1	1	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	998	998	LF	REMOVE STR (PIPE)
496	2	2	EA	REMOVE STR (INLET)
496	15	15	EA	REMOVE STR (SET)

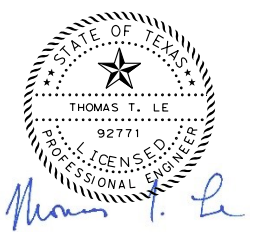
\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\* INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

LEGEND	
○	EX. STRUCTURE TO BE REMOVED
■	PROP TO BE INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE
(BM) ■	EX. BENCHMARK
▨	PROPOSED DRIVEWAY
○	EX. TRAFFIC LIGHT POLE
●	EX. TELEPHONE POLE
○	EX. FIRE HYDRANT
○	EX. MAIL BOX
—	EX. STORM DRAIN
—	EX. SANITARY SEWER
—	EX. OVER HEAD ELECTRIC
—	EX. UNDERGROUND TELEPHONE
—	EX. FIBER OPTIC
—	EX. WATER LINE
—	EX. IRRIGATION
—	EX. GAS LINE

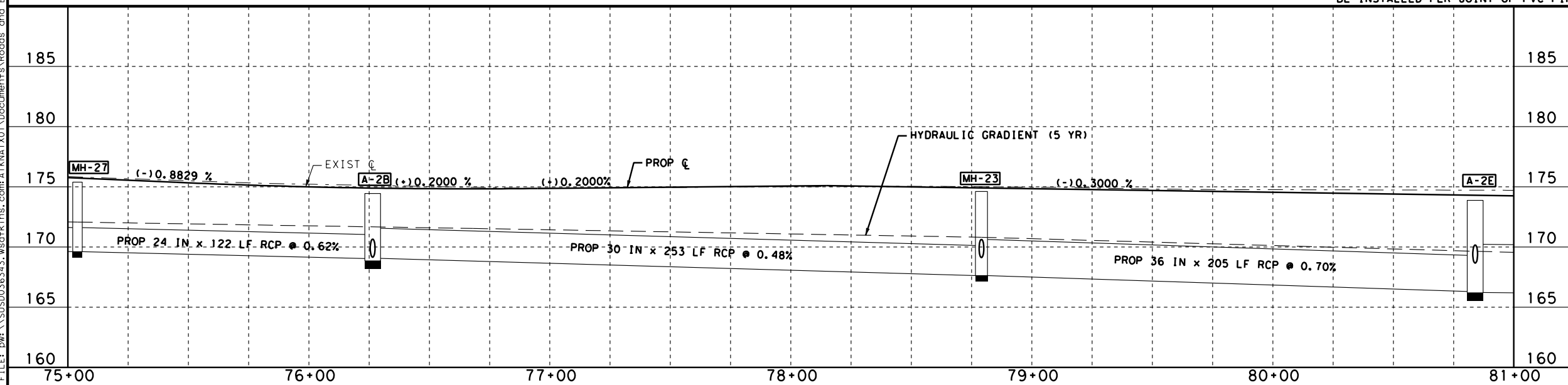
SYSTEM A									
STORM DRAIN TABLE									
STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-1B	3'X5'	INLET TY "PCU" w/ EXT	76+26.48 / 44.5 RT	174.20	169.75	169.75			
A-2B	4'X5'	INLET TY "PCU" w/ EXT	76+26.48 / 32.5 LT	174.50	168.85		169.15	168.85	168.85
A-2C	3'X3'	INLET TY "PAZD" STYLE 'FG'	77+83.57 / 95 LT	173.50	170.38			170.38	
MH-23	72"	MANHOLE TY "PRM"	78+79.10 / 39.05 LT	173.99	167.63	168.52		167.63	167.63
MH-27	60"	MANHOLE TY "PRM"	75+04.00 / 33.67 LT	175.50	169.61			169.61	169.61
A-2D	3'X3'	INLET TY "PAZD" STYLE 'FG'	78+45.00 / 95 LT	172.50	169.77		169.77	169.61	169.77
A-1E	3'X5'	INLET TY "PCU" w/ EXT	80+00.00 / 32.5 RT	174.17	169.45			169.45	
A-1F	3'X5'	INLET TY "PCU"	80+83.97 / 32.5 RT	174.00	168.96	168.96			168.96
A-2E	6'X5'	INLET TY "PCU" w/ EXT	80+83.97 / 44.5 LT	173.70	166.19		168.66	166.19	166.19

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

- NOTES:
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  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



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# ATKINS

TBPE REG. #F-474

## FM 676 UTILITY & DRAINAGE PLAN & PROFILE

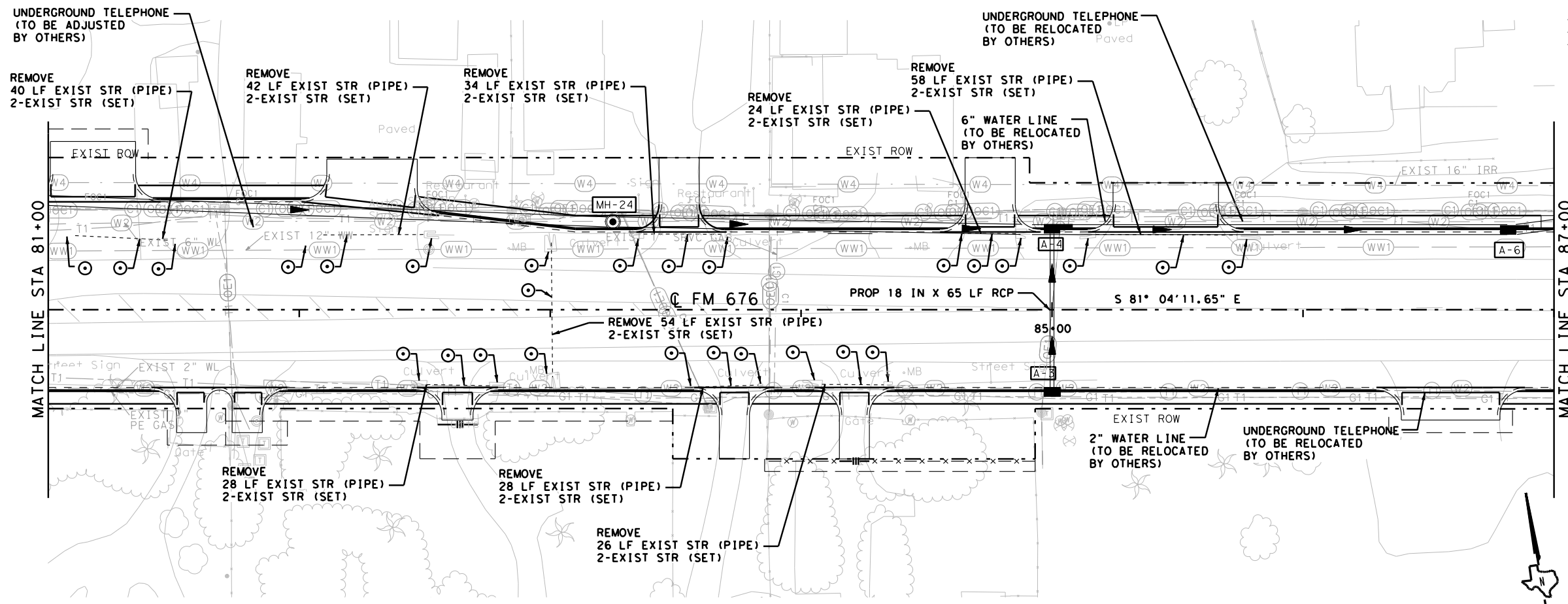
PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

SHEET 3 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		242	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 11/18/2022  
 FILE: pm\USUS036343.wsotkins.com:ATKINATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\DRN\676W\*SS03.dgn



SHEET TOTALS

ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	904	904			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	904.0	904			CY	STRUC EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	0	0			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	65	65			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	598	583			LF	RCP PIPE (CL III) (48 IN)
465	1	1			EA	INLET (PCU) (3FT)
465	2	2			EA	INLET (PCU) (6FT) (RIGHT)
465	1	1			EA	INLET (PSL) (RC) (6FTX6FT)
467	0	0			EA	SET (TY II) (18 IN) (RCP) (6:1) (P)
496	334	334			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	18	18			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

LEGEND

○ EX. STRUCTURE TO BE REMOVED	● TL EX. TRAFFIC LIGHT POLE
■ PROP INLET	● TFP EX. TELEPHONE POLE
● PROP MANHOLE	○ FH EX. FIRE HYDRANT
■ PROP GRATE INLET	○ MB EX. MAIL BOX
XXX DRAINAGE STRUCTURE ID	○ SD EX. STORM DRAIN
▶ PROP STORM DRAIN LATERAL OR TRUNKLINE	— WW EX. SANITARY SEWER
● EX. POWER POLE	— OE EX. OVER HEAD ELECTRIC
● LP EX. LIGHT POLE (BM) ■	— T EX. UNDERGROUND TELEPHONE
▨ PROPOSED DRIVEWAY	— FOC1-FOC2-FOC3 EX. FIBER OPTIC
	— W1-W2 EX. WATER LINE
	— M3-M4-M5 EX. IRRIGATION
	— G1-G2-G3-G4 EX. GAS LINE

- NOTES:
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  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

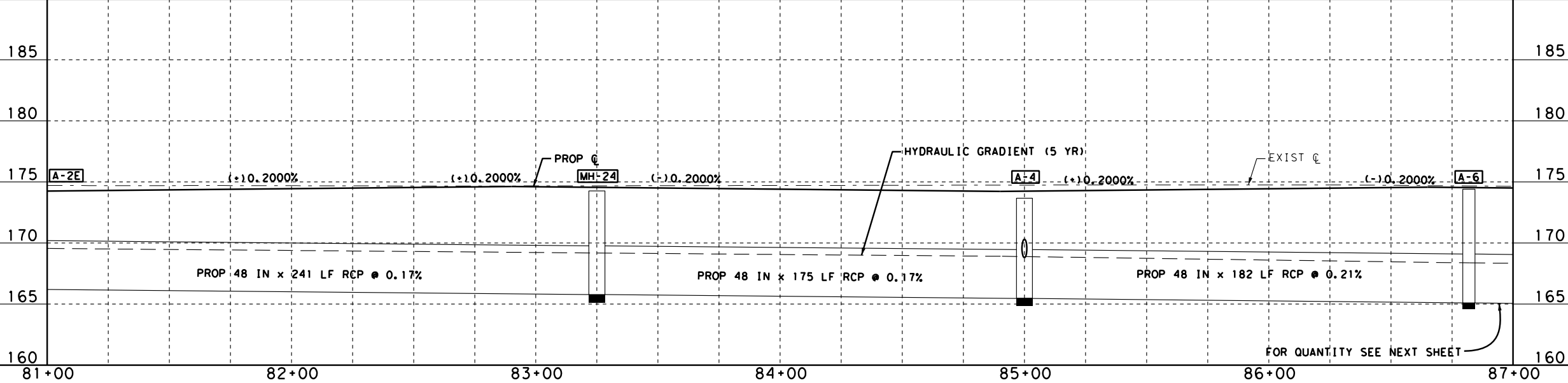


11/18/2022

SYSTEM A  
STORM DRAIN TABLE

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-3	3' X 5'	INLET TY "PCU"	85+00.00 / 32.5 RT	174.00	169.10	169.10			
MH-24	6' X 6'	INLET TY "PSL" STYLE 'RC'	83+25.00 / 35 LT	174.47	165.77			165.77	165.77
A-4	6' X 5'	INLET TY "PCU" w/ EXT	85+00.00 / 32.5 LT	174.00	165.48		168.80	165.48	165.48
A-6	6' X 5'	INLET TY "PCU" w/ EXT	86+81.77 / 32.5 LT	174.34	165.10			165.10	165.10

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



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**ATKINS**  
TBPE REG. #F-474

FM 676  
**UTILITY & DRAINAGE  
PLAN & PROFILE**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

PROFILE SCALE: 1"=10'  
0 2 4 6 8 10  
DISTANCE IN FEET

SHEET 4 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		243	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

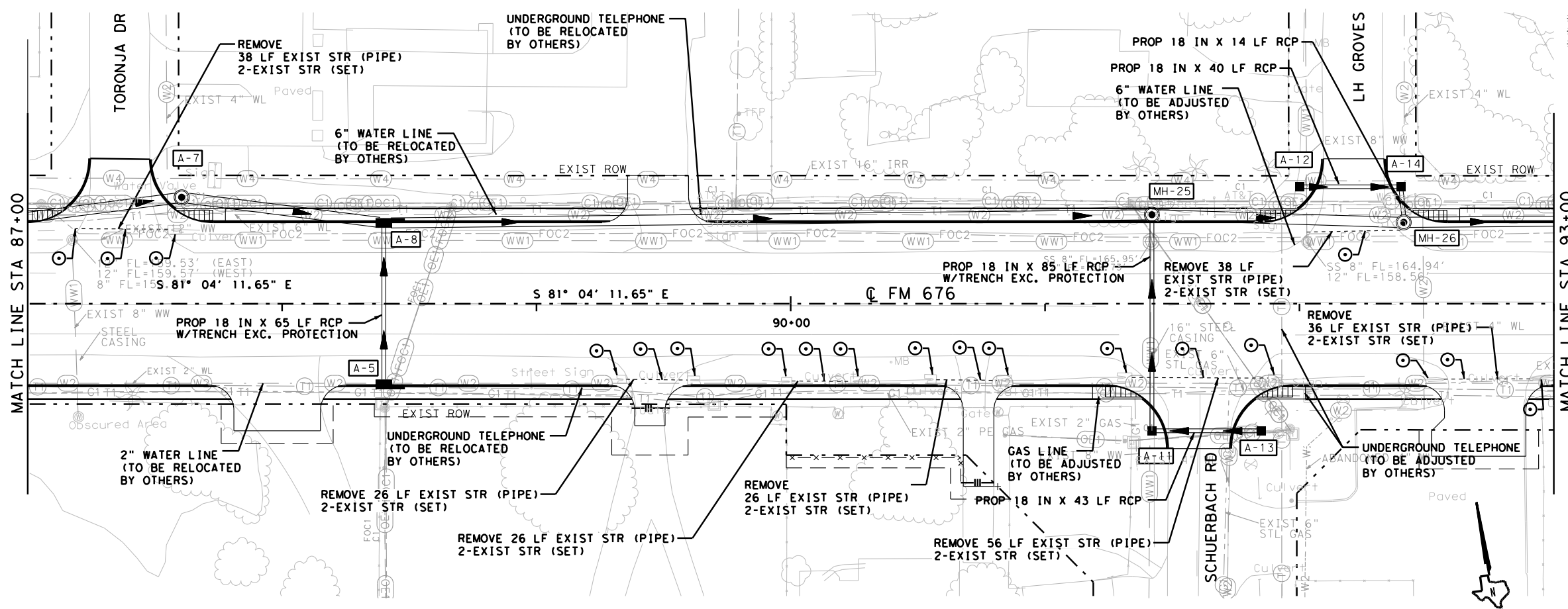
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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN/UNIT	
158	57	57	CY	STRUCT EXCAV WORK (ORIGINAL)
400	709	709	CY	STRUCT EXCAV
400	965	965	CY	STRUCT EXCAV (BOX)
400	1674	1674	CY	STRUCT EXCAV (SPECIAL)
402	739	739	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	466	451	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	247	247	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	158	149	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (3FT) (LEFT)
465	1	1	EA	INLET (PCU) (6FT) (RIGHT)
465	4	4	EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT) **
465	3	3	EA	INLET (PSL) (RC) (6FTX6FT)
496	246	246	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	14	14	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\*INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

**LEGEND**

- ⊙ EX. STRUCTURE TO BE REMOVED
- ⊙ EX. TRAFFIC LIGHT POLE
- PROP TO BE INLET
- ⊙ TFP EX. TELEPHONE POLE
- ⊙ PROP MANHOLE
- ⊙ PROP GRATE INLET
- ⊙ FH EX. FIRE HYDRANT
- ⊙ MB EX. MAIL BOX
- XXX DRAINAGE STRUCTURE ID
- ⊙ EX. STORM DRAIN LATERAL OR TRUNKLINE
- ⊙ EX. SANITARY SEWER
- ⊙ EX. POWER POLE
- ⊙ EX. OVER HEAD ELECTRIC
- ⊙ LP EX. LIGHT POLE
- ⊙ (BM) EX. UNDERGROUND TELEPHONE
- ⊙ EX. GAS LINE
- ⊙ EX. FIBER OPTIC
- ⊙ EX. WATER LINE
- ⊙ EX. IRRIGATION



**SYSTEM A**

**STORM DRAIN TABLE**

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-5	3' X 5'	INLET TY "PCU" w/ EXT	88+40.00 / 32.5 RT	174.02	169.10	169.10		
A-7	6' X 6'	INLET TY "PSL" STYLE 'RC'	87+60.51 / 41.84 LT	173.99	164.90		164.90	164.90
A-8	6' X 5'	INLET TY "PCU" w/ EXT	88+40.00 / 32.5 LT	174.02	164.71		164.71	164.71
A-11	3' X 3'	INLET TY "PAZD" STYLE 'FG'	91+42.00 / 50 RT	173.75	168.80	168.80	168.80	168.80
A-12	3' X 3'	INLET TY "PAZD" STYLE 'FG'	92+00.00 / 46 LT	173.75	169.00		169.00	
A-13	3' X 3'	INLET TY "PAZD" STYLE 'FG'	91+85.00 / 50 RT	173.75	169.00		169.00	169.00
A-14	3' X 3'	INLET TY "PAZD" STYLE 'FG'	92+40.00 / 46 LT	173.75	168.80	168.80	168.80	168.80
MH-25	6' X 6'	INLET TY "PSL" STYLE 'RC'	91+42.00 / 35 LT	174.33	163.90	168.50	163.90	163.90
MH-26	6' X 6'	INLET TY "PSL" STYLE 'RC'	92+41.00 / 32 LT	173.58	163.70	163.70	163.70	163.70

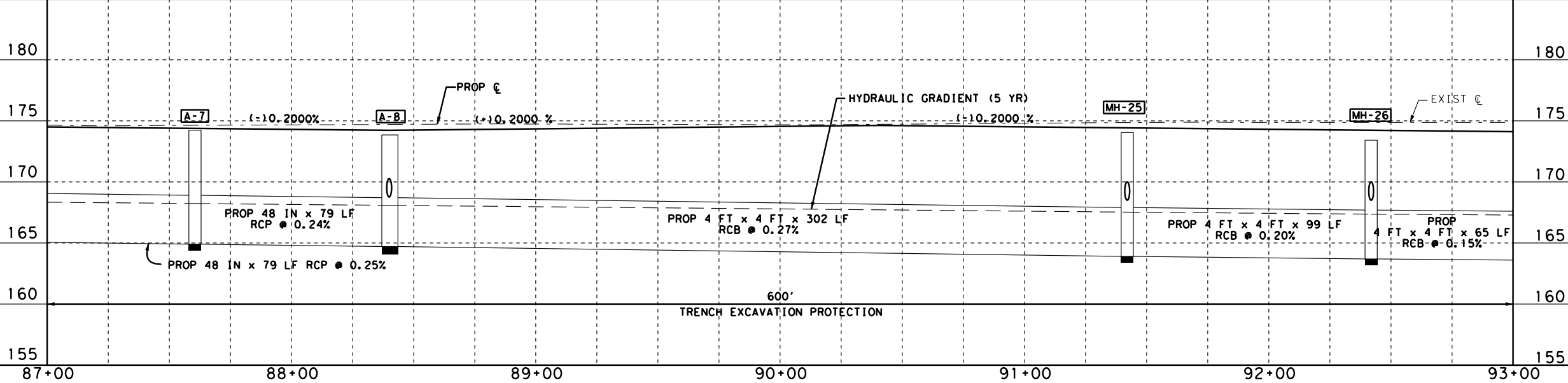
\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

**NOTES:**

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- THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
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- PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
- FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



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**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

SHEET 5 OF 24

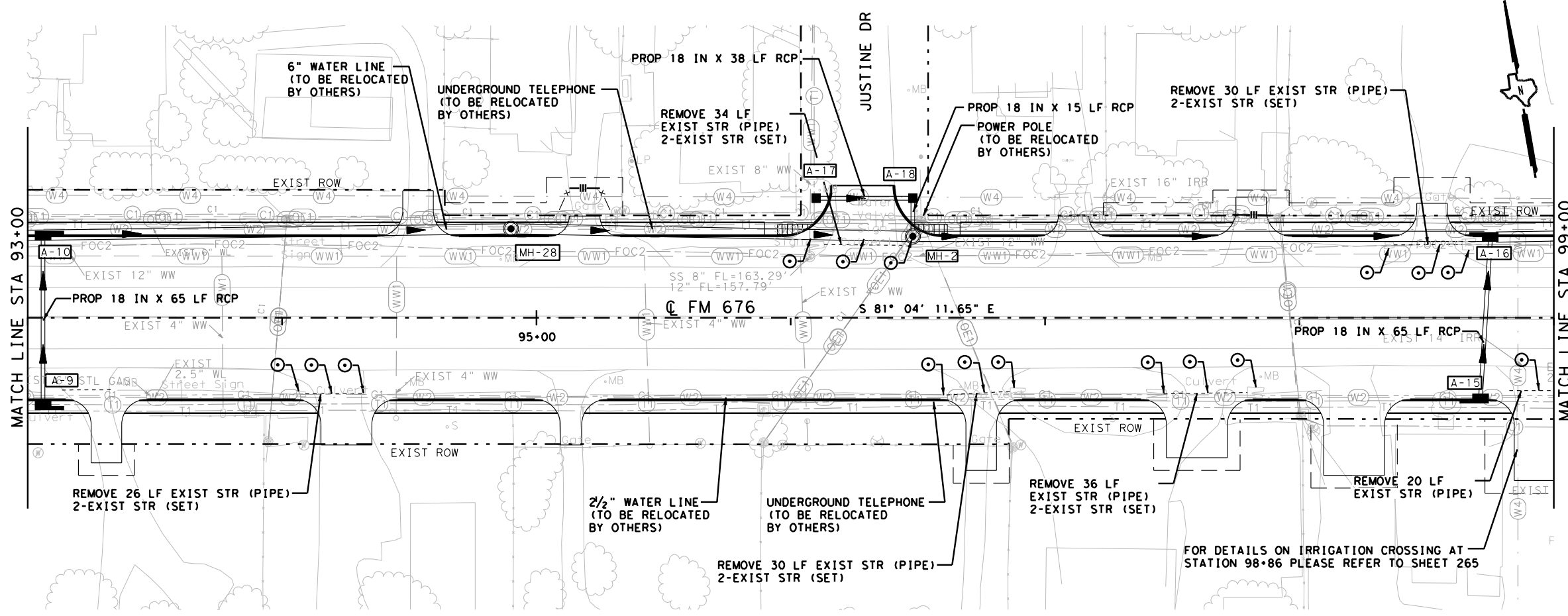
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		244
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
158	204	204	CY	STRUCT EXCAV WORK (ORIGINAL)
400	415	415	CY	STRUCT EXCAV
400	1044	1044	CY	STRUCT EXCAV (BOX)
400	1459	1459	CY	STRUCT EXCAV (SPECIAL)
402	600	600	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	569	554	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	183	183	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	2	2	EA	INLET (PCU) (3FT) (RIGHT)
465	2	2	EA	INLET (PCU) (6FT) (LEFT)
465	2	2	EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT) **
465	2	2	EA	INLET (PSL) (RC) (6FTX6FT)
496	176	176	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	10	10	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\*INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

LEGEND	
⊙	EX. STRUCTURE TO BE REMOVED
■	PROP TO BE INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE (BM) ■
▨	PROPOSED DRIVEWAY
●	TL EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
●	EX. FIRE HYDRANT
○	EX. MAIL BOX
—	EX. STORM DRAIN
—	EX. SANITARY SEWER
—	EX. OVER HEAD ELECTRIC
—	EX. UNDERGROUND TELEPHONE
—	EX. FIBER OPTIC
—	EX. WATER LINE
—	EX. IRRIGATION
—	EX. GAS LINE



SYSTEM A  
STORM DRAIN TABLE

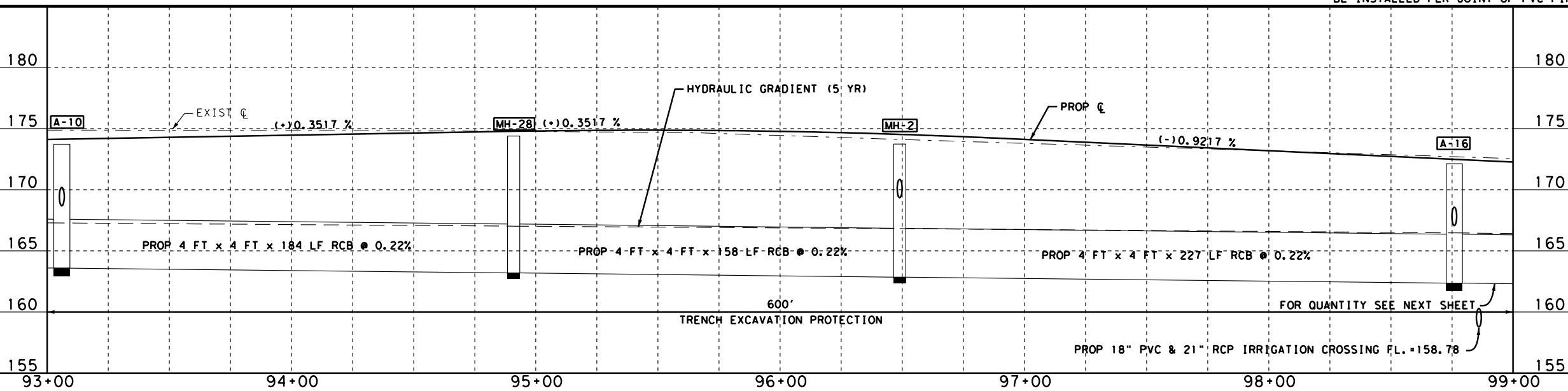
STRUCTURE E. I. D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-9	3' X 5'	INLET TY "PCU" w/ EXT	93+06.00 / 32.5 RT	173.89	168.98	168.98			
A-10	6' X 5'	INLET TY "PCU" w/ EXT	93+06.00 / 32.5 LT	173.89	163.60		168.68	163.60	163.60
A-15	3' X 5'	INLET TY "PCU" w/ EXT	98+71.17 / 32.5 RT	172.29	167.37	167.37			
A-16	6' X 5'	INLET TY "PCU" w/ EXT	98+75.00 / 32.5 LT	172.25	162.36		167.07	162.36	162.36
A-17	3' X 3'	INLET TY "PAZD" STYLE	96+10.00 / 47 LT	174.00	169.50		169.38	169.50	
A-18	3' X 3'	INLET TY "PAZD" STYLE	96+48.00 / 47 LT	174.00	169.38		169.38	169.38	169.38
MH-2	6' X 6'	INLET TY "PSL" STYLE 'RC'	96+48.00 / 32 LT	173.87	162.85	169.35		162.85	162.85
MH-28	6' X 6'	INLET TY "PSL" STYLE 'RC'	94+90.00 / 35 LT	174.67	163.19		163.19	163.19	163.19

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
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11/18/2022



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TBPE REG. #F-474

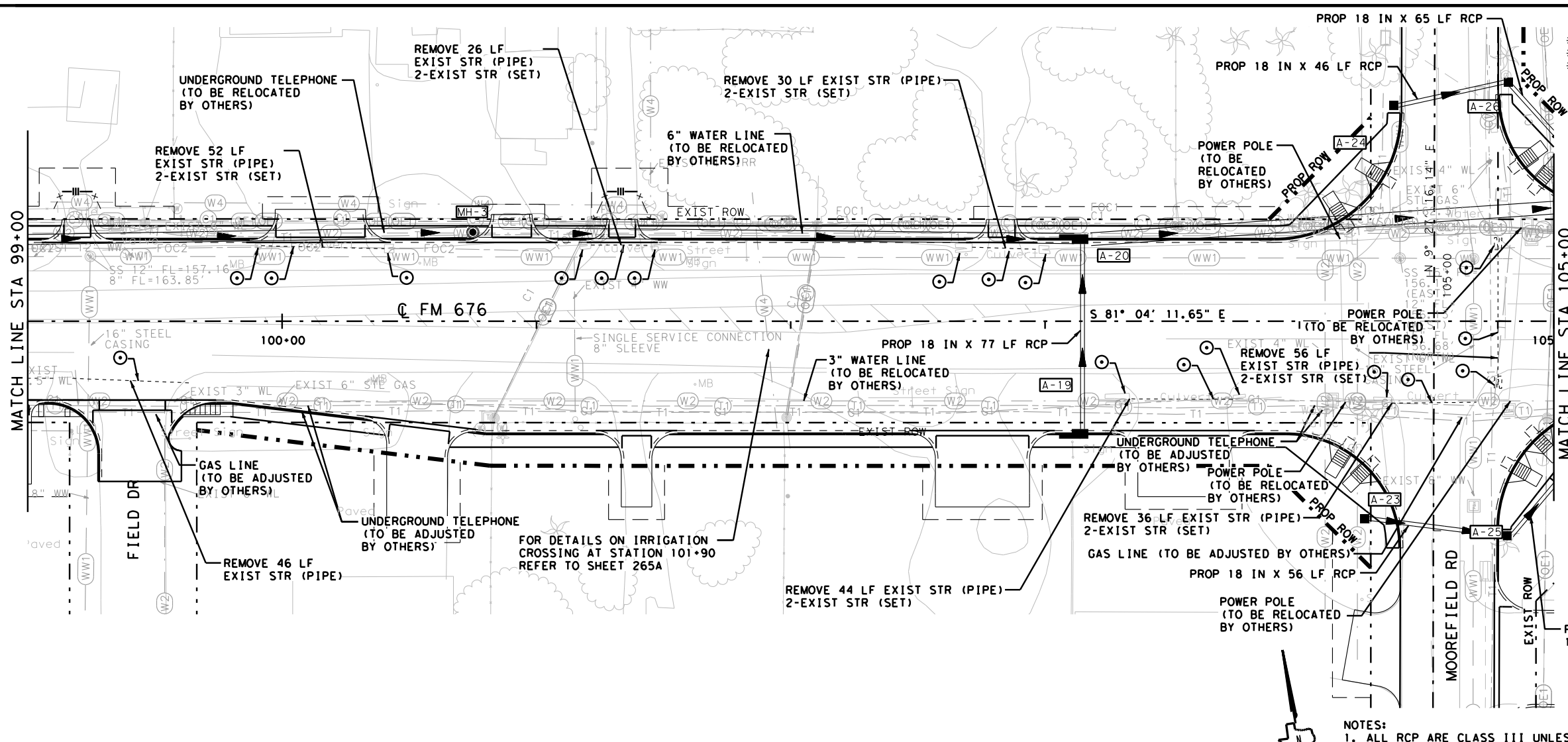
FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 6 OF 24		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		245
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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**SHEET TOTALS**

ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	241	241			CY	STRUCT EXCAV
* 400	1209	1209			CY	STRUCT EXCAV (BOX)
* 400	1450	1450			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	539	539			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	439	429			LF	CONC BOX CULV (4 FT X 4 FT)
462	212	207			LF	CONC BOX CULV (5 FT X 4 FT)
464	244	244			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	1	1			EA	INLET (PCU) (3FT) (RIGHT)
465	1	1			EA	INLET (PCU) (7FT) (LEFT)
465	4	4			EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT)**
465	1	1			EA	INLET (PSL) (RC) (6FTX6FT)
496	290	290			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	12	12			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\*INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

**LEGEND**

○ EX. STRUCTURE TO BE REMOVED	● TL EX. TRAFFIC LIGHT POLE
■ PROP INLET	● TFP EX. TELEPHONE POLE
● PROP MANHOLE	○ FH EX. FIRE HYDRANT
■ PROP GRATE INLET	○ MB EX. MAIL BOX
XXX DRAINAGE STRUCTURE ID	○ SD EX. STORM DRAIN
▶ PROP STORM DRAIN LATERAL OR TRUNKLINE	— WW EX. SANITARY SEWER
● EX. POWER POLE	— OE EX. OVER HEAD ELECTRIC
● LP EX. LIGHT POLE	— TI EX. UNDERGROUND TELEPHONE
(BM) ■	— FOC1-FOC2-FOC3 EX. FIBER OPTIC
▨ PROPOSED DRIVEWAY	— W1-W2 EX. WATER LINE
	— M3-M4-M5 EX. IRRIGATION
	— G1-G2-G3-G4 EX. GAS LINE

- NOTES:**
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  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

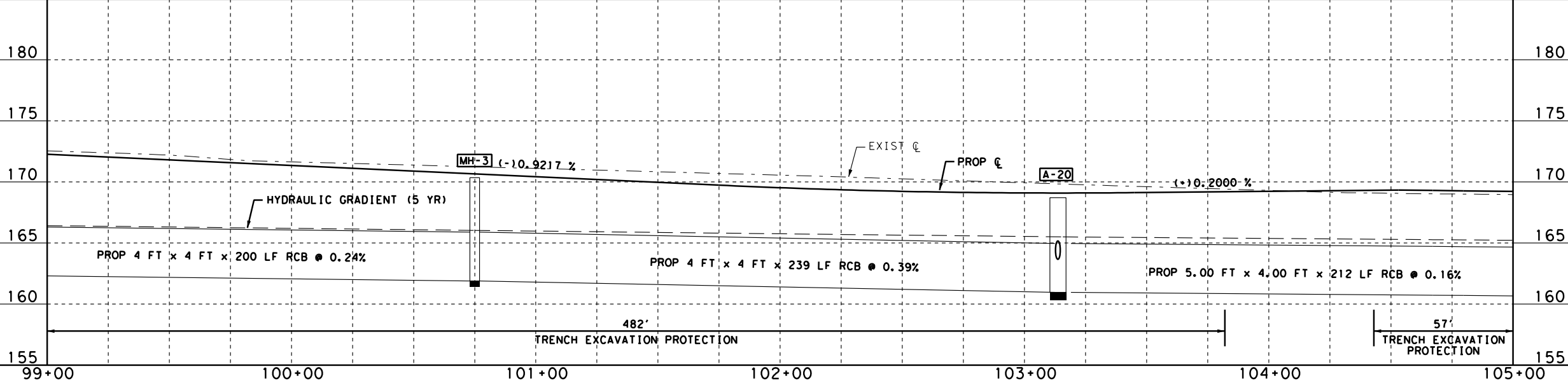


**SYSTEM A**

**STORM DRAIN TABLE**

STRUCTURE E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-19	3'X5'	INLET TY "PCU" w/ EXT	103+13.72 / 44.5 RT	168.68	163.97	163.97			
A-20	7'X5'	INLET TY "PCU" w/ EXT	103+13.72 / 32.5 LT	169.98	160.96		163.66	160.96	160.96
A-23	3'X3'	INLET TY "PAZD" STYLE	104+25.72 / 77.58 RT	168.29	164.52			164.52	
A-24	3'X3'	INLET TY "PAZD" STYLE	104+37.07 / 84.87 LT	168.14	162.36			162.36	
A-25	3'X3'	INLET TY "PAZD" STYLE	104+81.74 / 84.24 RT	168.22	164.32	164.32			164.32
A-26	3'X3'	INLET TY "PAZD" STYLE	104+82.09 / 94.03 LT	167.97	161.94		161.94		161.94
MH-3	6'X6'	INLET TY "PSL" STYLE 'RC'	100+75.00 / 35 LT	170.50	161.89			161.89	161.89

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



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**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
 0 2 4 6 8 10 DISTANCE IN FEET

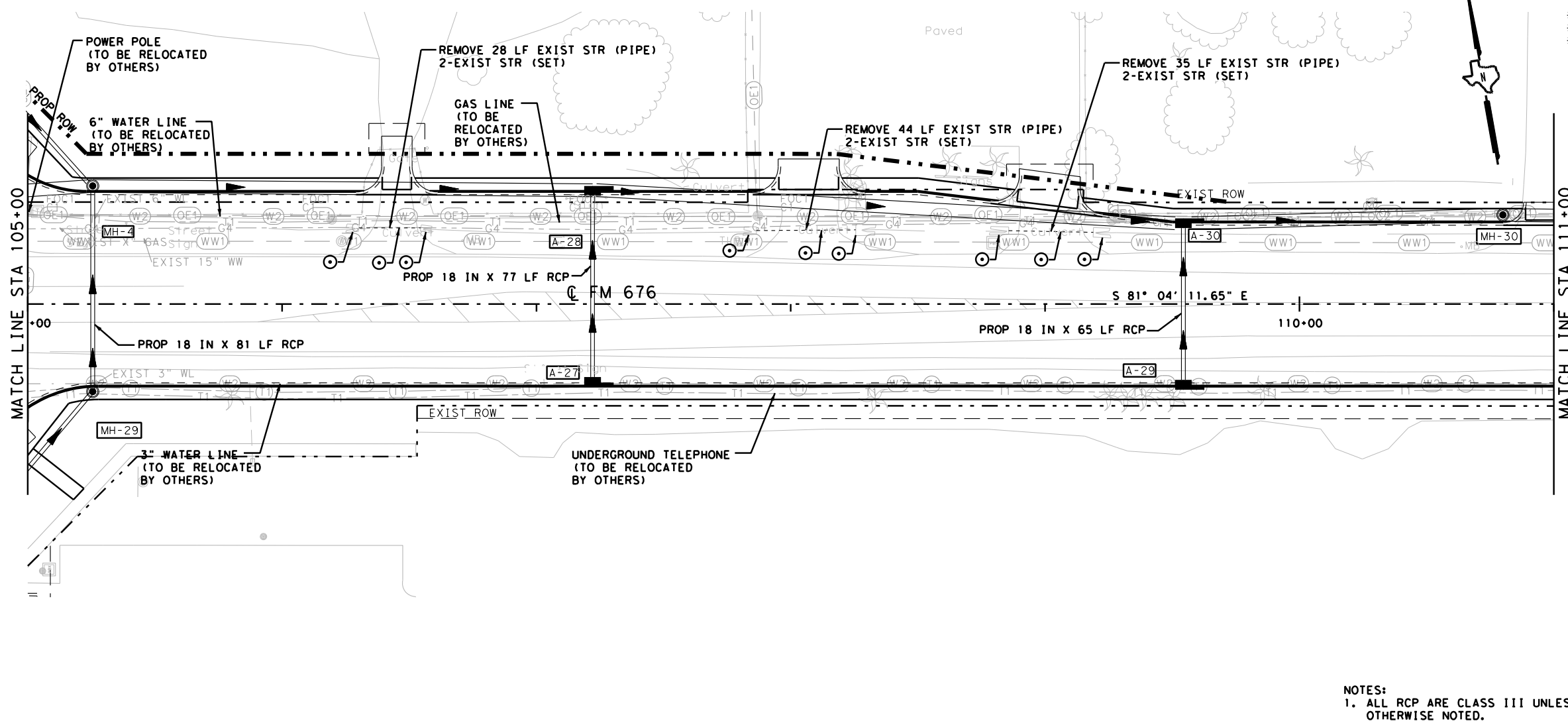
SHEET 7 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		246	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS				
ITEM	EST	PAY	EST/FIN UNIT	DESCRIPTION
158	7	7	CY	STRUCT EXCAV WORK (ORIGINAL)
400	284	284	CY	STRUCT EXCAV
400	379	379	CY	STRUCT EXCAV (BOX)
400	663.0	663	CY	STRUCT EXCAV (SPECIAL)
402	600	600	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	197	192	LF	CONC BOX CULV (5 FT X 4 FT)
462	358	348	LF	CONC BOX CULV (5 FT X 5 FT)
464	223	223	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	2	2	EA	INLET (PCU) (3FT) (LEFT)
465	2	2	EA	INLET (PCU) (7FT) (RIGHT)
465	2	2	EA	INLET (PSL) (RC) (7FTX7FT)
465	1	1	EA	MANHOLE (COMPL) (PRM) (48 IN)
496	107	107	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	6	6	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



**LEGEND**

- ⊙ EX. STRUCTURE TO BE REMOVED
- ▬ PROP INLET
- ⊙ PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▬ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- ▬ SD EX. STORM DRAIN
- ▬ WW EX. SANITARY SEWER
- OE EX. OVER HEAD ELECTRIC
- ▬ TI EX. UNDERGROUND TELEPHONE
- FOC1 FOC2 FOC3 EX. FIBER OPTIC
- W1 W2 EX. WATER LINE
- M3 M4 M5 EX. IRRIGATION
- G1 G2 G3 G4 EX. GAS LINE

**NOTES:**

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- FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
- THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
- MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
- PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
- FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

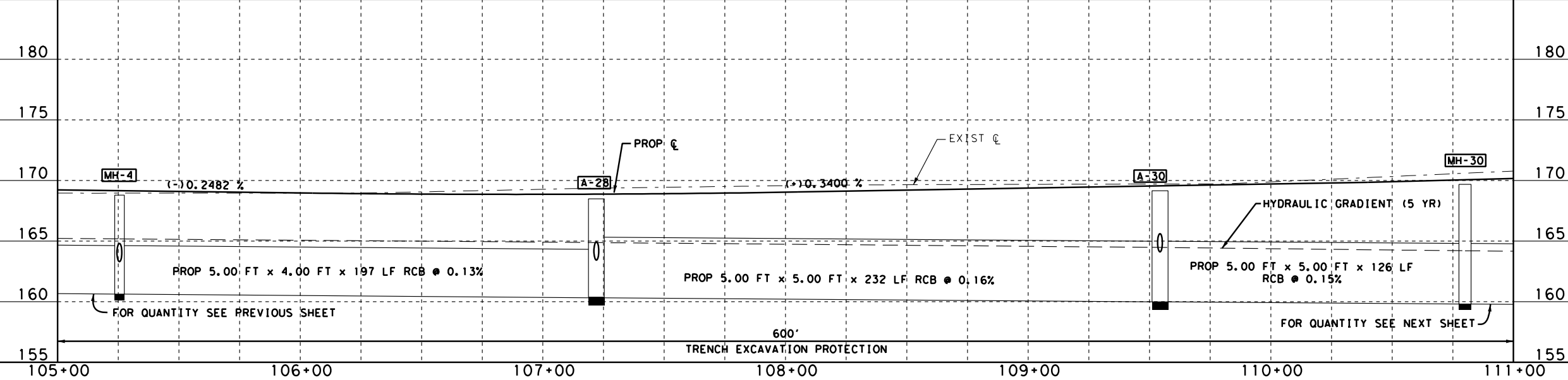


11/18/2022

**SYSTEM A**

STORM DRAIN TABLE									
STRUCTURE E. I. D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-27	3' X 5'	INLET TY "PCU" w/ EXT	107+22.07 / 32.5 RT	169.10	163.73	163.73			
A-28	7' X 5'	INLET TY "PCU" w/ EXT	107+22.07 / 44.5 LT	168.80	160.37		163.43	160.37	160.37
A-29	3' X 5'	INLET TY "PCU" w/ EXT	109+54.35 / 32.5 RT	169.76	164.41		164.41		
A-30	7' X 5'	INLET TY "PCU" w/ EXT	109+54.35 / 32.5 LT	169.76	159.99		164.11	159.99	159.99
MH-4	7' X 7'	INLET TY "PSL" STYLE 'RC'	105+25.52 / 46.42 LT	169.24	160.63		161.62	160.63	160.63
MH-29	48"	MANHOLE TY "PRM"	105+25.52 / 34.42 RT	169.54	163.59		163.59	163.59	
MH-30	7' X 7'	INLET TY "PSL" STYLE 'RC'	110+80.00 / 35.02 LT	170.42	159.80			159.80	159.80

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



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**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

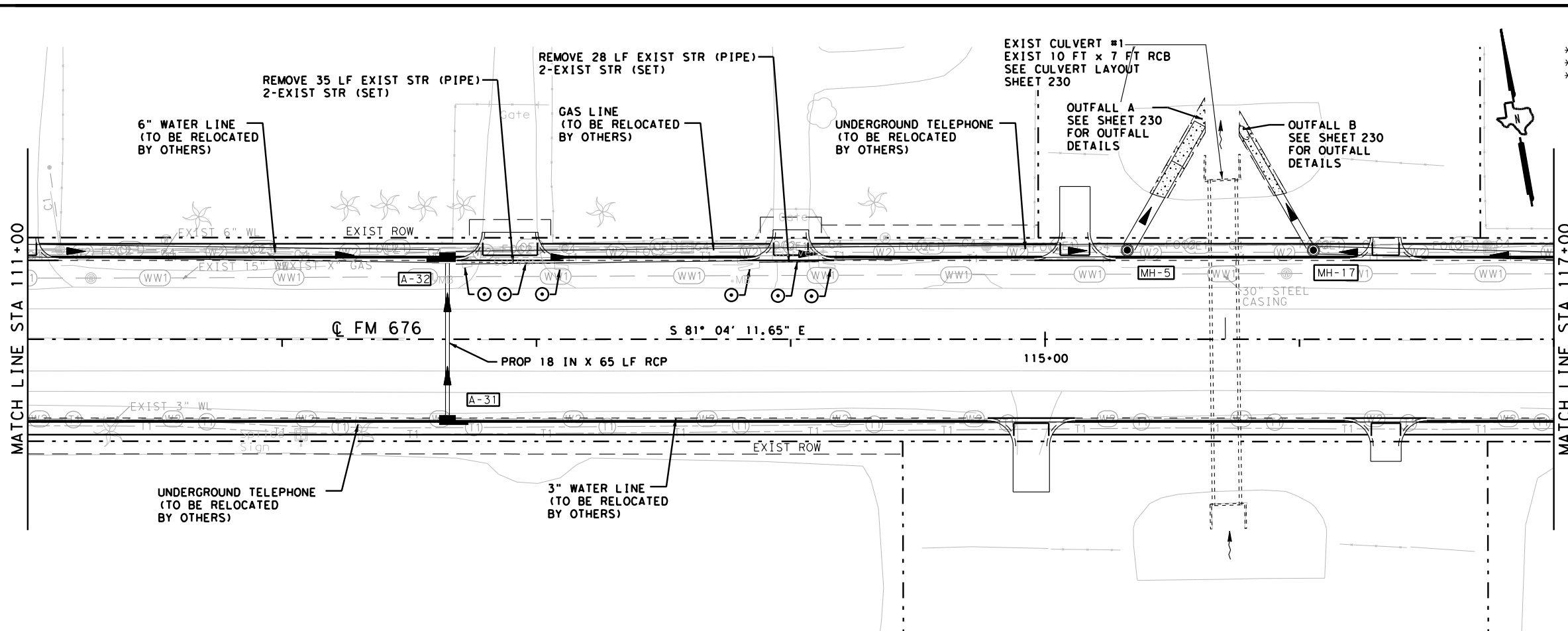
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 8 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		247	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\111x17\PDF.d11  
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SHEET TOTALS				
ITEM	EST	PAY	EST FIN UNIT	DESCRIPTION
158	414	414	CY	STRUCT EXCAV WORK (ORIGINAL)
400	364	364	CY	STRUCT EXCAV
* 400	432.0	432	CY	STRUC EXCAV (SPECIAL)
* 400	0	0	SY	CUT & RESTORING PAV
402	427	427	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
462	509	497	LF	CONC BOX CULV (5 FT X 5 FT)
464	65	65	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	175	171	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (3FT) (LEFT)
465	1	1	EA	INLET (PCU) (3FT) (RIGHT)
465	1	1	EA	INLET (PSL) (RC) (7FTX7FT)
465	1	1	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	63	63	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	4	4	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▶ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE
- (BM) ■ EX. BENCHMARK
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- (SD)— EX. STORM DRAIN
- (WW)— EX. SANITARY SEWER
- (OE)— EX. OVER HEAD ELECTRIC
- (T)— EX. UNDERGROUND TELEPHONE
- (FOC1)—(FOC2)—(FOC3)— EX. FIBER OPTIC
- (W1)—(W2)— EX. WATER LINE
- (M3)—(M4)—(M5)— EX. IRRIGATION
- (G1)—(G2)—(G3)—(G4)— EX. GAS LINE

SYSTEM A									
STORM DRAIN TABLE									
STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-31	3'X5'	INLET TY "PCU" w/ EXT	112+65.00 / 32.5 RT	171.37	166.05	166.05			
A-32	7'X5'	INLET TY "PCU" w/ EXT	112+65.00 / 32.5 LT	171.37	159.60		165.75	159.60	159.60
MH-5	7'X7'	INLET TY "PSL" STYLE "RC"	115+32.32 / 35 LT	173.21	159.31	159.31		159.31	159.31
OUTFALL		OUTFALL	115+60.87 / 84.6 LT		159.23		159.23		

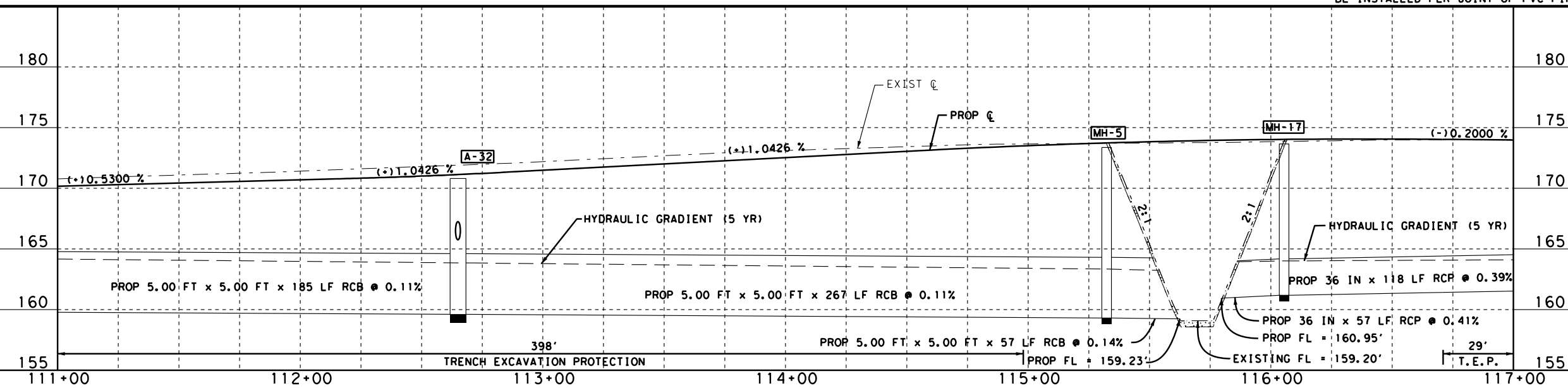
SYSTEM B									
STORM DRAIN TABLE									
STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
MH-17	72"	MANHOLE TY "PRM"	116+05.48 / 34.99 LT	173.89	161.18	161.18		161.18	
OUTFALL		OUTFALL	115+76.73 / 83.72 LT		160.95		160.95		

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

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  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



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**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 9 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		248	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

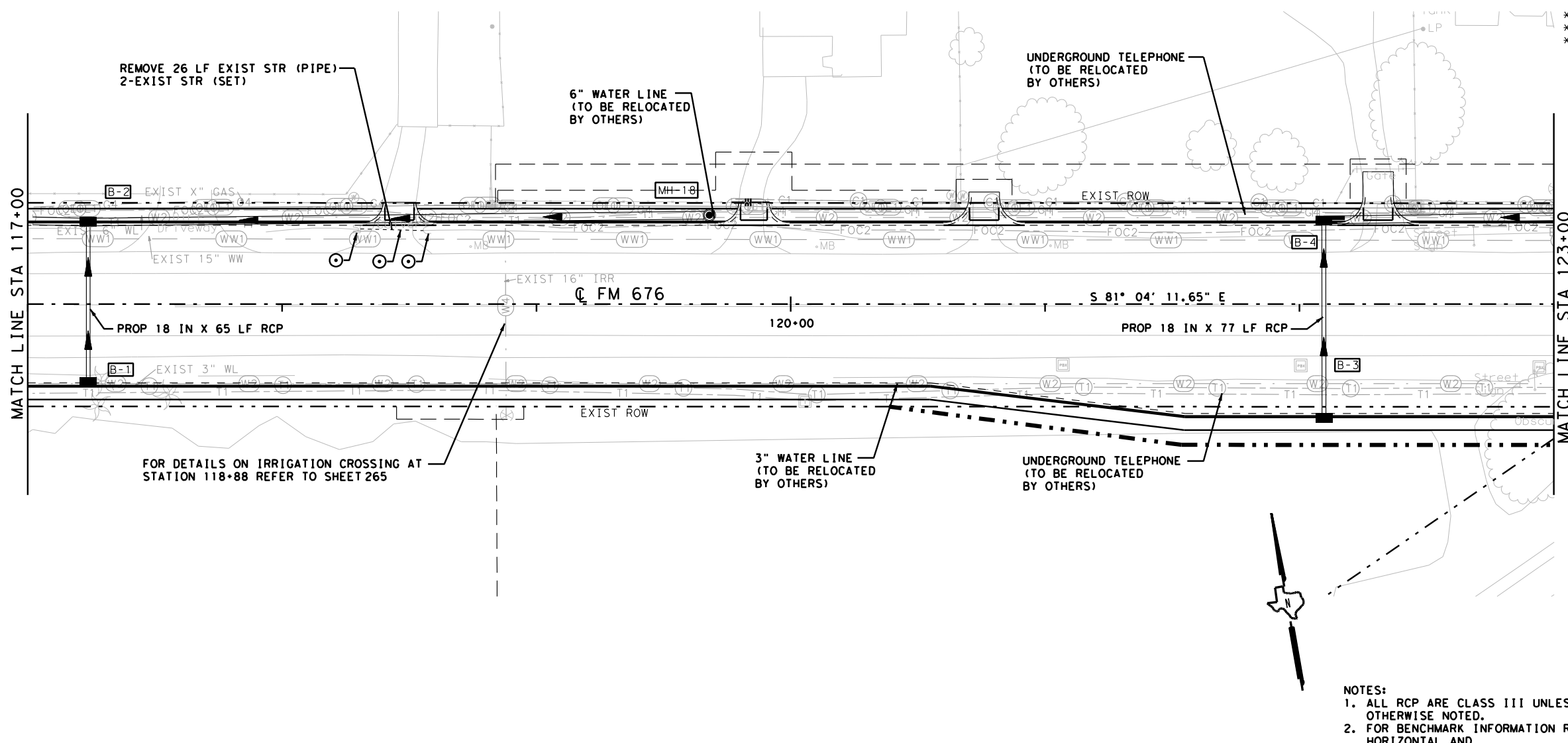
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SHEET TOTALS				DESCRIPTION	
ITEM	EST	PAY	EST/FIN	UNIT	
158	251	251		CY	STRUCT EXCAV WORK (ORIGINAL)
400	1157	1157		CY	STRUCT EXCAV
400	1408	1408		CY	STRUCT EXCAV (SPECIAL)
400	0	0		SY	CUT & RESTORING PAV
402	600	600		LF	TRENCH EXCAV PROTECT
462	0	0		LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0		LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0		LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0		LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0		LF	CONC BOX CULV (5 FT X 4 FT)
464	142	142		LF	RCP PIPE (CL III) (18 IN)
464	0	0		LF	RCP PIPE (CL III) (24 IN)
464	0	0		LF	RCP PIPE (CL III) (30 IN)
464	627	614		LF	RCP PIPE (CL III) (36 IN)
464	0	0		LF	RCP PIPE (CL III) (42 IN)
464	0	0		LF	RCP PIPE (CL III) (48 IN)
465	2	2		EA	INLET (PCU) (3FT)
465	1	1		EA	INLET (PCU) (4FT)
465	1	1		EA	INLET (PCU) (4FT) (RIGHT)
465	1	1		EA	MANHOLE (COMPL) (PRM) (72 IN)
496	26	26		LF	REMOVE STR (PIPE)
496	0	0		EA	REMOVE STR (INLET)
496	2	2		EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▬ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE
- (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- ▬ SD EX. STORM DRAIN
- ▬ WW EX. SANITARY SEWER
- ▬ OE EX. OVER HEAD ELECTRIC
- ▬ T EX. UNDERGROUND TELEPHONE
- FOC1-FOC2-FOC3 EX. FIBER OPTIC
- W1-W2 EX. WATER LINE
- M3-M4-M5 EX. IRRIGATION
- G1-G2-G3-G4 EX. GAS LINE



**SYSTEM B**

**STORM DRAIN TABLE**

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
B-1	3' X 5'	INLET TY "PCU"	117+23.77 / 32.5 RT	173.57	165.15	165.15			
B-2	4' X 5'	INLET TY "PCU"	117+23.77 / 32.5 LT	173.57	161.64		164.91	161.64	161.64
B-3	3' X 5'	INLET TY "PCU"	122+09.67 / 44.5 RT	173.97	166.03	166.03			
B-4	4' X 5'	INLET TY "PCU" w/ EXT	122+09.57 / 32.5 LT	175.27	162.83		165.79	162.83	162.83
MH-18	72"	MANHOLE TY "PRM"	119+68.00 / 34.92 LT	174.58	162.21			162.21	162.21

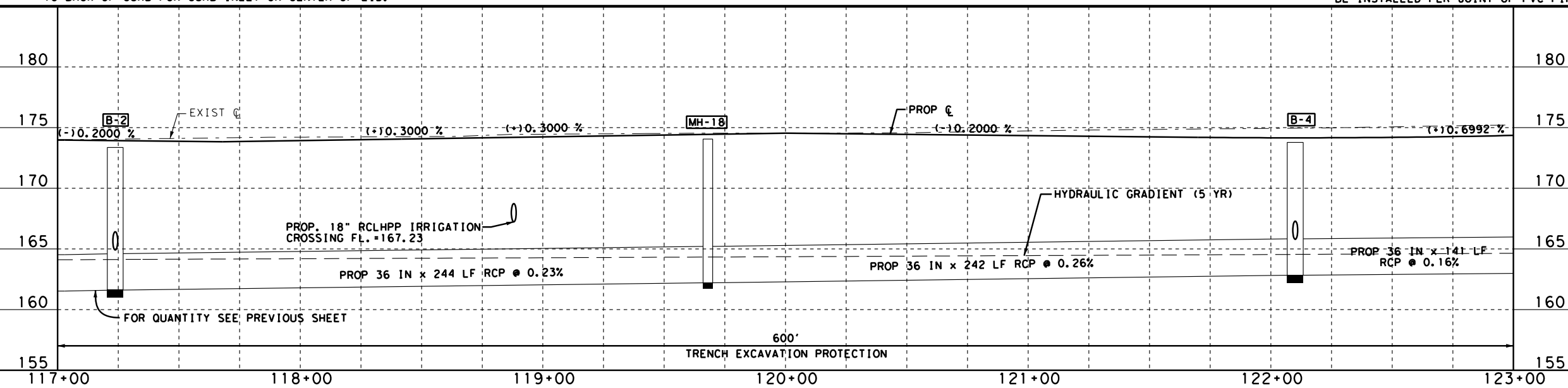
\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

**NOTES:**

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- PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
- FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



**ATKINS**

FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

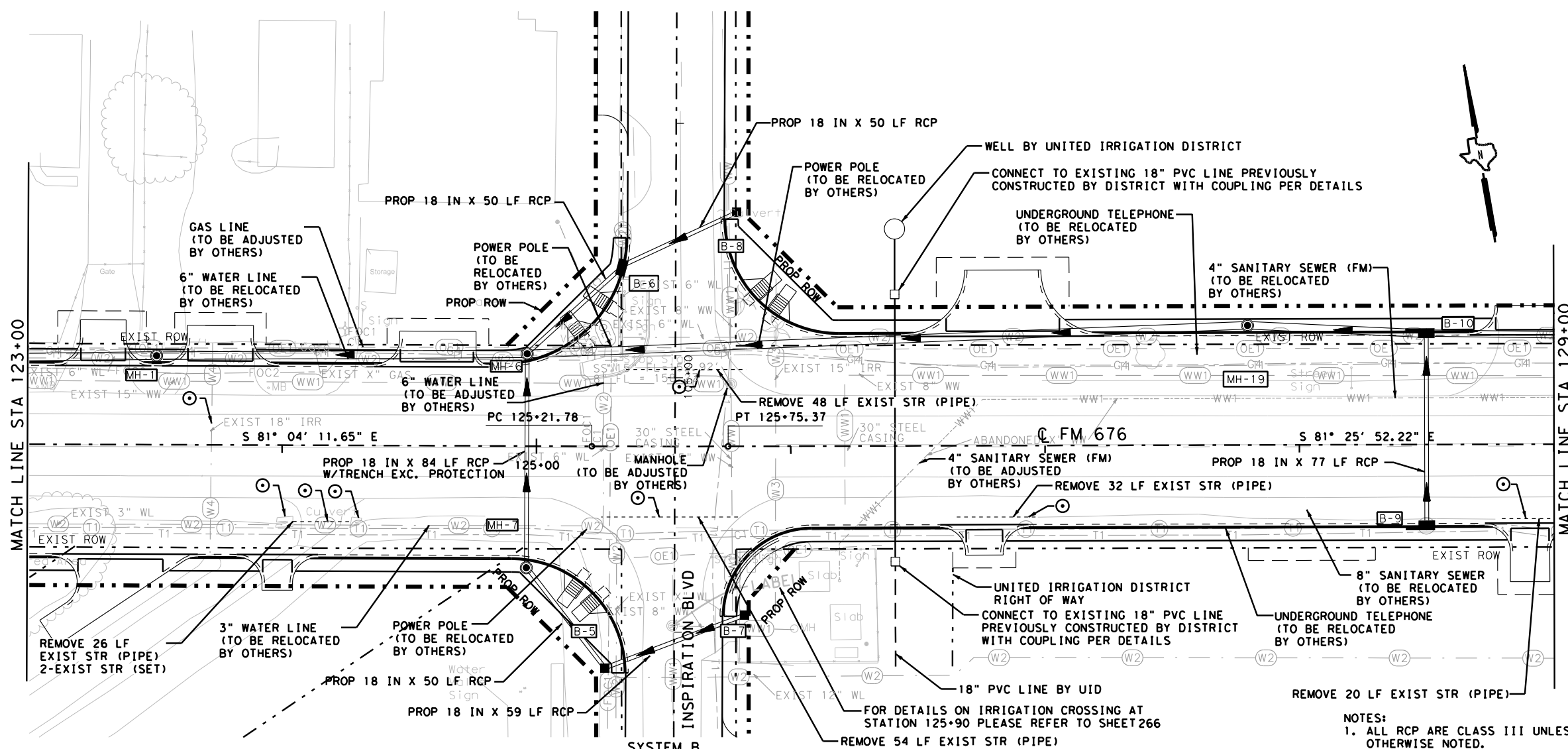
PROFILE SCALE: 1"=10'  
0 2 4 6 8 10  
DISTANCE IN FEET

SHEET 10 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		249	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
158	143	143	CY	STRUCT EXCAV WORK (ORIGINAL)
400	1106	1106	CY	STRUCT EXCAV
400	1249	1249	CY	STRUC EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	675	675	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	370	370	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	499	487	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	1	1	EA	INLET (PCU) (3FT)
465	1	1	EA	INLET (PCU) (4FT) (LEFT)
465	1	1	EA	INLET (PCU) (5FT) (RIGHT)
465	3	3	EA	INLET (TY PAZD STYLE 'FG') (3FTX3FT) **
465	1	1	EA	MANHOLE (COMPL) (PRM) (48 IN)
465	3	3	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	180	180	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	2	2	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.  
 \*\*INLET (TY PAZD STYLE 'FG') WILL INCLUDE A 1'-6" CONCRETE APRON

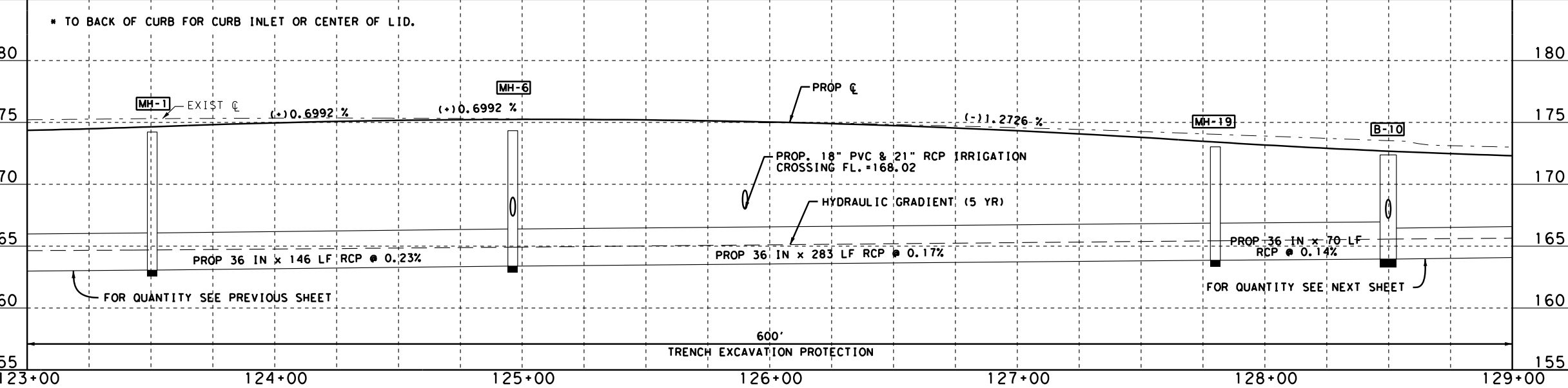
LEGEND	
⊙	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
⊙	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE
⊙	(BM) ■
▨	PROPOSED DRIVEWAY
⊙	TL EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
⊙	FH EX. FIRE HYDRANT
⊙	MB EX. MAIL BOX
—	EX. STORM DRAIN
—	EX. SANITARY SEWER
—	EX. OVER HEAD ELECTRIC
—	EX. UNDERGROUND TELEPHONE
—	EX. FIBER OPTIC
—	EX. WATER LINE
—	EX. IRRIGATION
—	EX. GAS LINE

SYSTEM B STORM DRAIN TABLE									
STRUCTURE E.I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
B-5	3' X 3'	INLET TY "PAZD" STYLE 'FG'	125+27.15 / 87.06 RT	173.74	168.14	168.14		168.14	
B-6	3' X 5'	INLET TY "PCU"	125+33.65 / 70.92 LT	173.76	166.53		166.53	166.53	
B-7	3' X 3'	INLET TY "PAZD" STYLE 'FG'	125+81.72 / 66.31 RT	173.00	169.40			169.40	
B-8	3' X 3'	INLET TY "PAZD" STYLE 'FG'	125+79.05 / 91.95 LT	172.25	168.26			168.26	
B-9	3' X 5'	INLET TY "PCU" w/ EXT	128+50.00 / 32.5 RT	172.80	167.63	167.63			
B-10	4' X 5'	INLET TY "PCU" w/ EXT	128+50.00 / 44.5 LT	172.50	163.96		167.26	163.96	163.96
MH-1	72"	MANHOLE TY "PRM"	123+50.53 / 34.99 LT	174.77	163.05			163.05	163.05
MH-6	72"	MANHOLE TY "PRM"	124+96.25 / 36.26 LT	175.17	163.39	165.79		163.39	163.39
MH-7	48"	MANHOLE TY "PRM"	124+96.19 / 47.81 RT	174.90	167.87	167.87		167.87	
MH-19	72"	MANHOLE TY "PRM"	127+79.72 / 46.98 LT	173.24	163.86			163.86	163.86

- NOTES:
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  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



# ATKINS

TBPE REG. #F-474

## FM 676 UTILITY & DRAINAGE PLAN & PROFILE

PLAN SCALE: 1"=50'      PROFILE SCALE: 1"=10'

0 10 20 30 40 50      0 2 4 6 8 10  
DISTANCE IN FEET      DISTANCE IN FEET

SHEET 11 OF 24

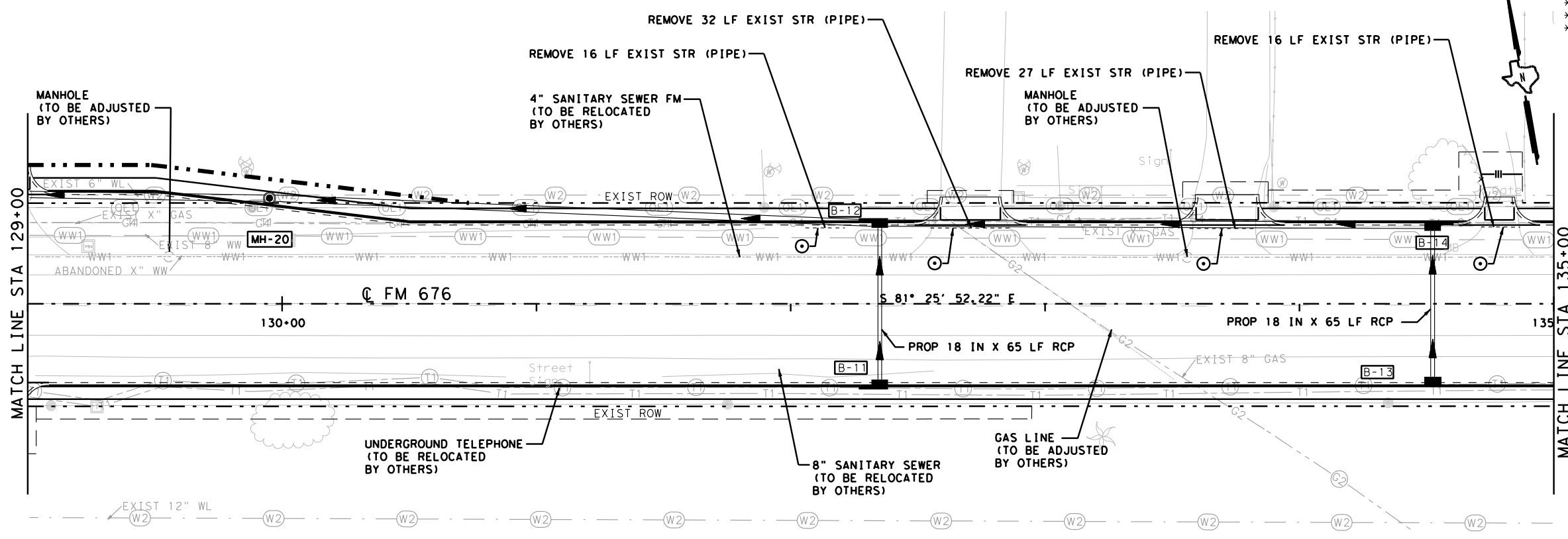
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		250
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST FIN UNIT	
* 400	609	609	CY	STRUCT EXCAV
* 400	0	0	CY	STRUCT EXCAV (BOX)
* 400	609.0	609	CY	STRUCT EXCAV (SPECIAL)
400	0	0	CY	CUT & RESTORING PAV
402	335	335	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	130	130	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	602	591	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (3FT)
465	1	1	EA	INLET (PCU) (3FT) (LEFT)
465	2	2	EA	INLET (PCU) (4FT) (RIGHT)
465	1	1	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	91	91	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▬ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- ▬ SD EX. STORM DRAIN
- ▬ WW EX. SANITARY SEWER
- OE EX. OVER HEAD ELECTRIC
- ▬ TI EX. UNDERGROUND TELEPHONE
- FOC1 FOC2 FOC3 EX. FIBER OPTIC
- W1 W2 EX. WATER LINE
- W3 W4 W5 EX. IRRIGATION
- G1 G2 G3 G4 EX. GAS LINE



**SYSTEM B**

STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	STORM DRAIN TABLE					
				TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
B-11	3' X 5'	INLET TY "PCU" w/ EXT	132+35.00 / 32.5 RT	171.26	165.98	165.98			
B-12	4' X 5'	INLET TY "PCU" w/ EXT	132+35.00 / 32.5 LT	171.26	164.83		165.68	164.83	164.83
B-13	3' X 5'	INLET TY "PCU"	134+52.39 / 32.5 RT	170.55	165.31	165.31			
B-14	4' X 5'	INLET TY "PCU" w/ EXT	134+52.39 / 32.5 LT	170.55	165.14		165.14	165.14	165.14
MH-20	72"	MANHOLE TY "PRM"	129+95.00 / 41.54 LT	172.07	164.31				164.31

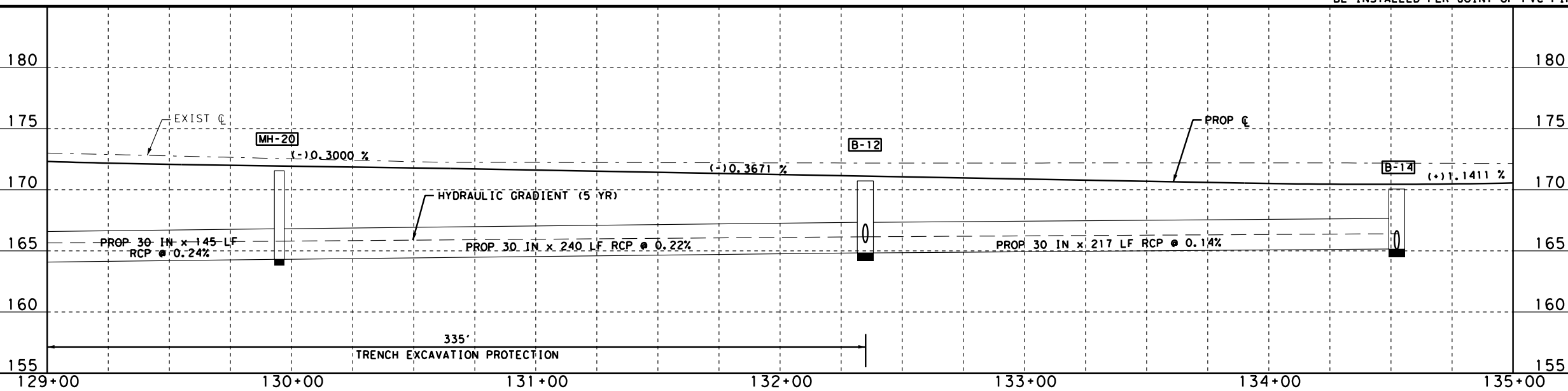
\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

**NOTES:**

- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
- FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
- THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
- MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
- PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
- FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



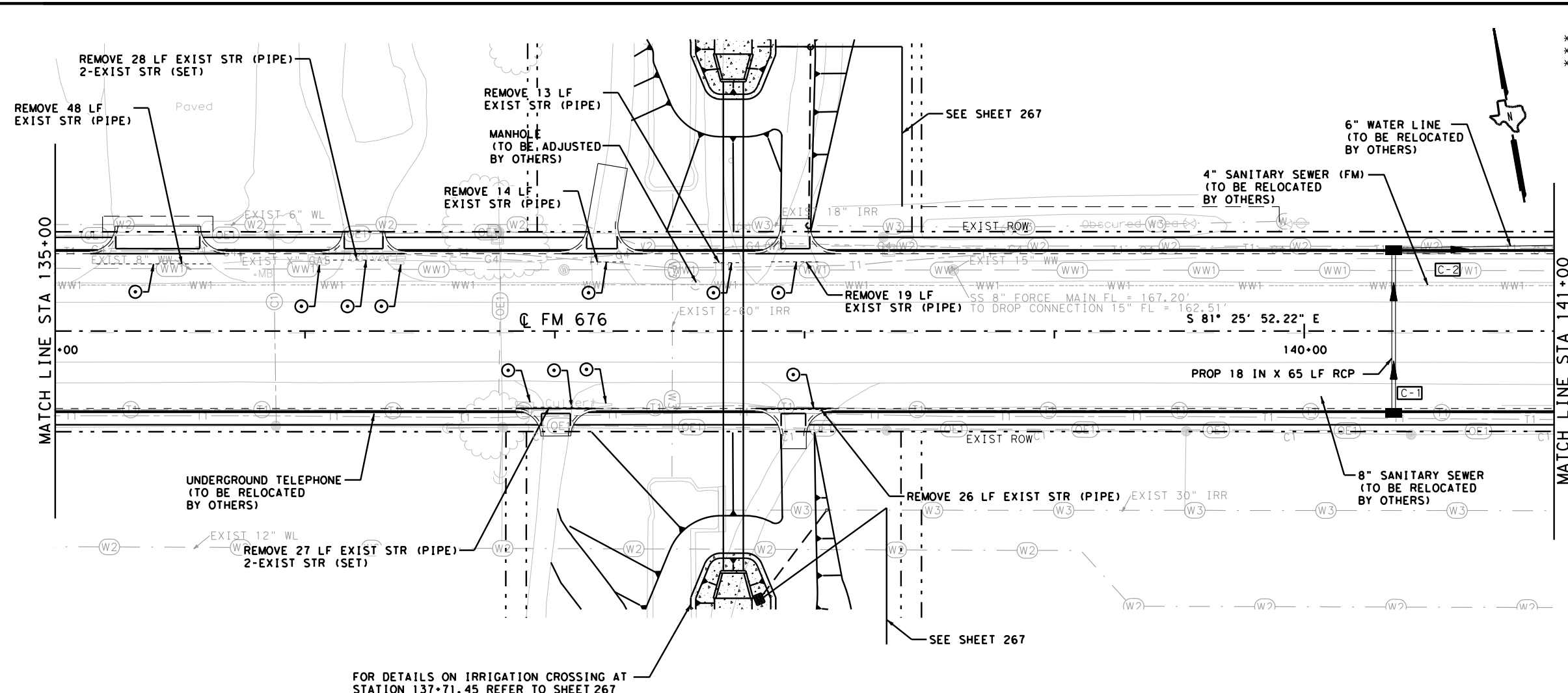
**ATKINS**  
TBPE REG. #F-474

**FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE**  
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
DISTANCE IN FEET

SHEET 12 OF 24		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		251
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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**SHEET TOTALS**

ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	33	33			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	18.0	18			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	0	0			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	65	65			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	2	2			EA	INLET (PCU) (3FT)
496	175	175			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	4	4			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

○ EX. STRUCTURE TO BE REMOVED	● TL EX. TRAFFIC LIGHT POLE
■ PROP INLET	● TFP EX. TELEPHONE POLE
● PROP MANHOLE	○ FH EX. FIRE HYDRANT
■ PROP GRATE INLET	○ MB EX. MAIL BOX
XXX DRAINAGE STRUCTURE ID	○ SD EX. STORM DRAIN
PROP STORM DRAIN LATERAL OR TRUNKLINE	--- WW EX. SANITARY SEWER
● EX. POWER POLE	--- OE EX. OVER HEAD ELECTRIC
● LP EX. LIGHT POLE	--- TI EX. UNDERGROUND TELEPHONE
(BM) ■	--- FOC EX. FIBER OPTIC
PROPOSED DRIVEWAY	--- W1 EX. WATER LINE
	--- W2 EX. IRRIGATION
	--- G1 EX. GAS LINE

FOR DETAILS ON IRRIGATION CROSSING AT STATION 137+71.45 REFER TO SHEET 267

- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

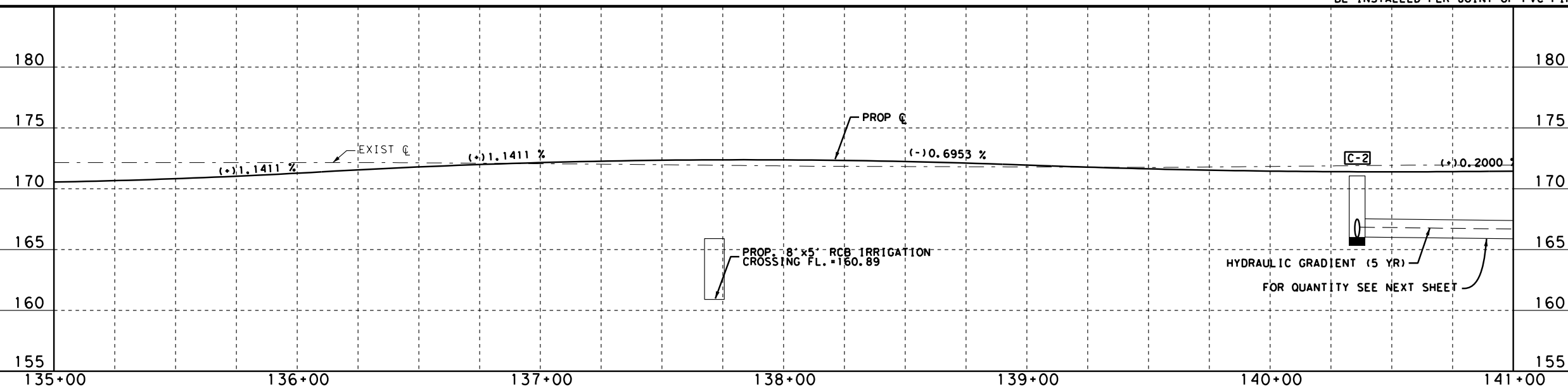


11/18/2022

**SYSTEM C**  
STORM DRAIN TABLE

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-1	3' X 5'	INLET TY "PCU"	140+35.81 / 32.5 RT	171.30	166.30	166.30			
C-2	3' X 5'	INLET TY "PCU"	140+35.81 / 32.5 LT	171.30	166.00		166.00	166.00	

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

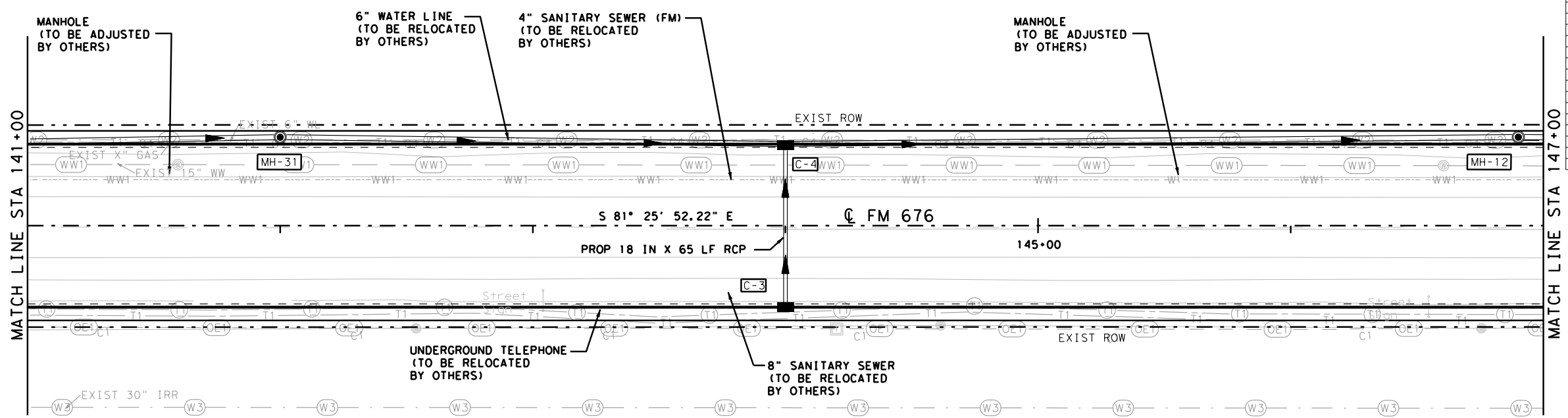
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 13 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		252	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS					DESCRIPTION	
ITEM	EST	PAY	EST	FIN	UNIT	
* 400	522	522			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	522.0	522			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	100	100			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	719	707			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	2	2			EA	INLET (PCU) (3FT)
465	1	1			EA	MANHOLE (COMPL) (PRM) (48 IN)
467	1	1			EA	MANHOLE (COMPL) (PRM) (60 IN)
496	0	0			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	0	0			EA	REMOVE STR (SET)

\*FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- PROF STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE
- (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- SD EX. STORM DRAIN
- WW EX. SANITARY SEWER
- OE EX. OVER HEAD ELECTRIC
- T EX. UNDERGROUND TELEPHONE
- FOC1-FOC2-FOC3 EX. FIBER OPTIC
- W1-W2 EX. WATER LINE
- M3-M4-M5 EX. IRRIGATION
- G1-G2-G3-G4 EX. GAS LINE

- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

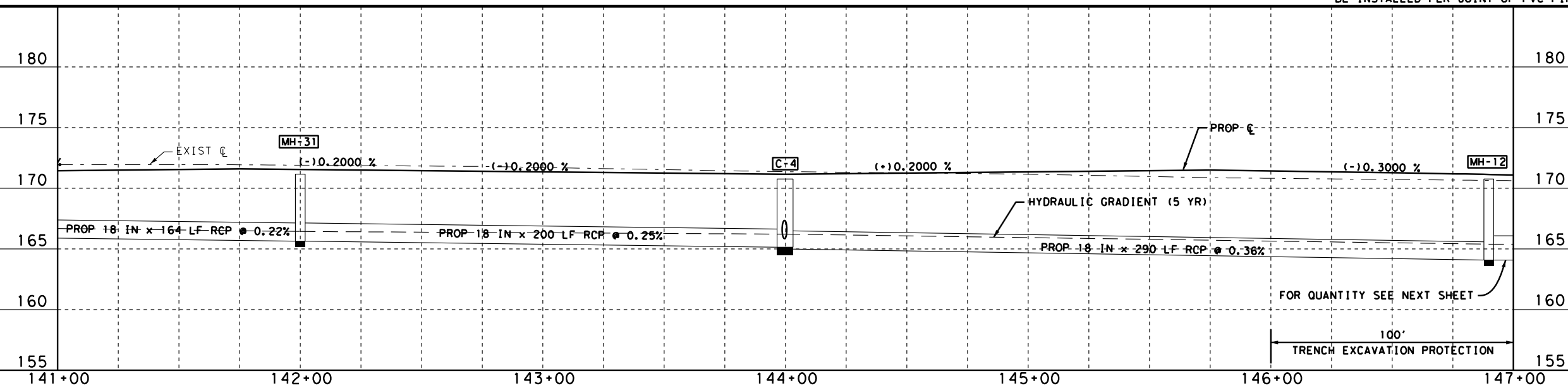


11/18/2022

**SYSTEM C**  
STORM DRAIN TABLE

STRUCTURE I. D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-3	3' X 5'	INLET TY "PCU"	144+00.00 / 32.5 RT	171.10	166.02	166.02			
C-4	3' X 5'	INLET TY "PCU"	144+00.00 / 32.5 LT	171.10	165.14		165.85	165.14	165.14
MH-12	60"	MANHOLE TY "PRM"	146+90.10 / 35.03 LT	171.11	164.09			164.09	164.09
MH-31	48"	MANHOLE TY "PRM"	142+00.00 / 34.98 LT	171.66	165.64			165.64	165.64

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

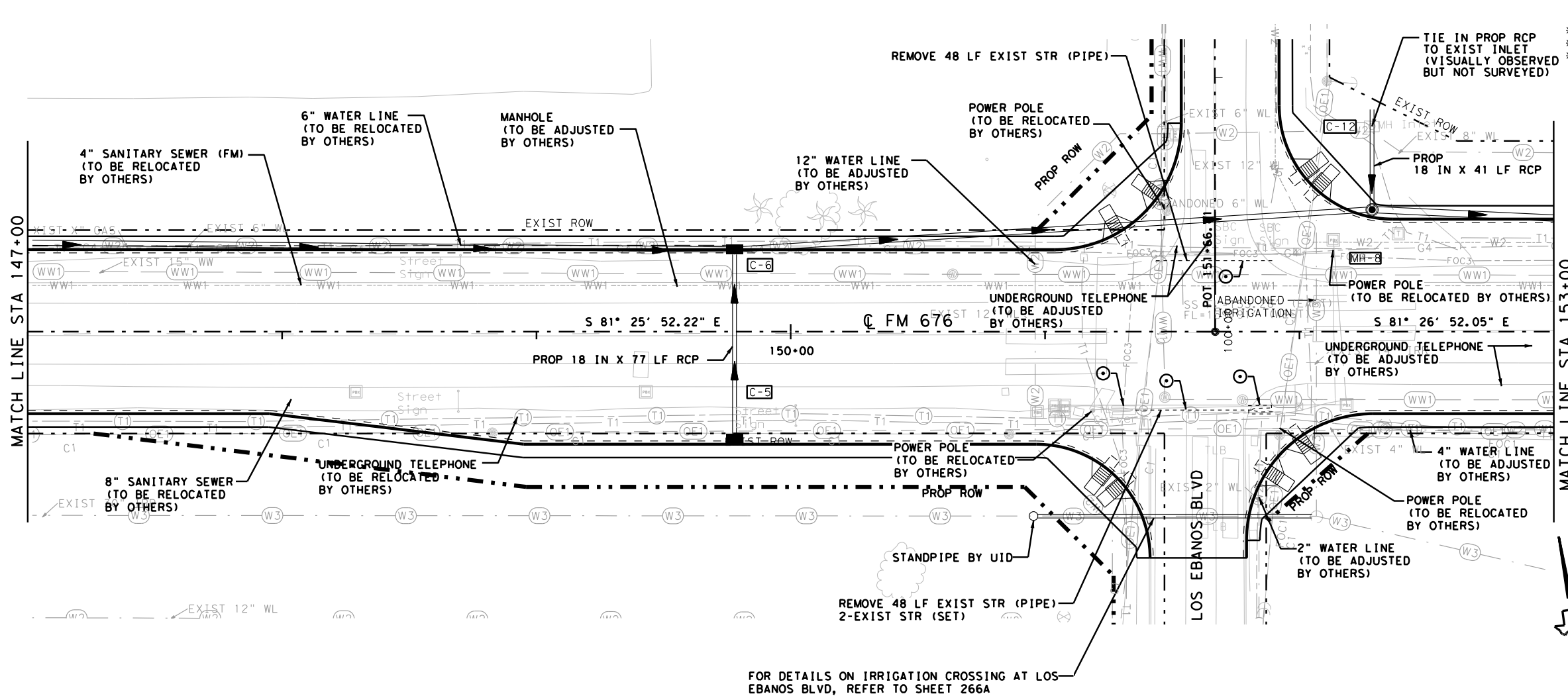
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
DISTANCE IN FEET

SHEET 14 OF 24		FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 253
STATE TEXAS	DIST. PHR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	



SHEET TOTALS						
ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	453	453			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	453.0	453			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	180	180			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	118	118			LF	RCP PIPE (CL III) (18 IN)
464	539	531			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	2	2			EA	INLET (PCU) (3FT)
465	1	1			EA	MANHOLE (COMPL) (PRM) (60 IN)
496	96	96			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	2	2			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP TO BE INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- SD EX. STORM DRAIN
- WW EX. SANITARY SEWER
- OE EX. OVER HEAD ELECTRIC
- TI EX. UNDERGROUND TELEPHONE
- FOC EX. FIBER OPTIC
- W1 EX. WATER LINE
- W2 EX. IRRIGATION
- G1 EX. GAS LINE

FOR DETAILS ON IRRIGATION CROSSING AT LOS EBANOS BLVD, REFER TO SHEET 266A

**SYSTEM C  
STORM DRAIN TABLE**

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-5	3'X5'	INLET TY "PCU"	149+77.89 / 44.5 RT	169.23	164.56	164.56			
C-6	3'X5'	INLET TY "PCU"	149+77.89 / 32.5 LT	169.53	163.72		164.39	163.72	163.72
C-12		EXIST INLET **	152+28.59 / 88.02 LT	167.48	163.50		163.50		
MH-8	60"	MANHOLE TY "PRM"	152+28.57 / 47.95 LT	168.87	163.15		163.30	163.15	163.15

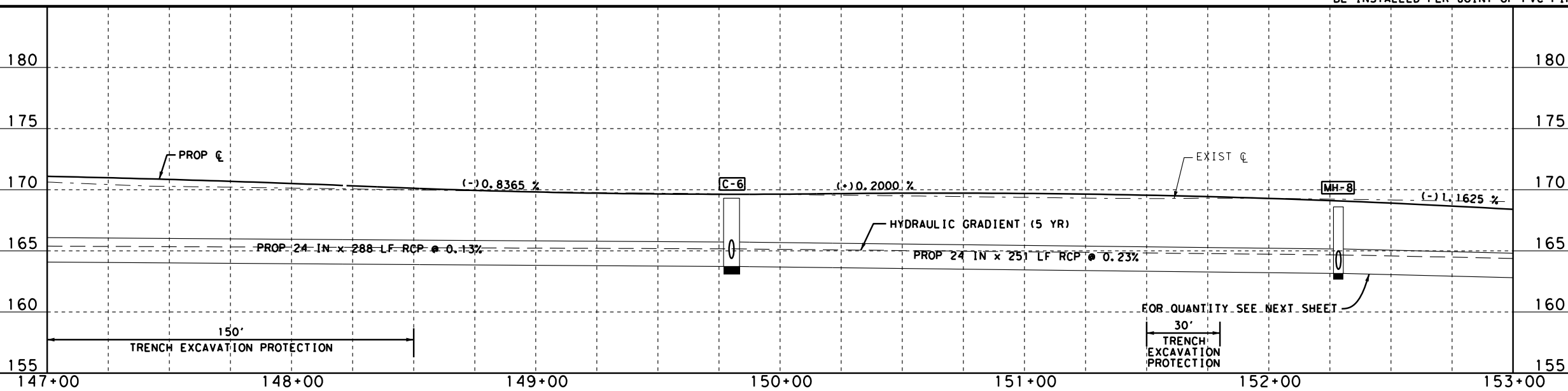
\* TO BACK OF CURB FOR CURB INLET OR CENTER OF L.I.D.  
\*\* E ELEVATIONS FOR EXISTING INLET ARE ESTIMATED.

**NOTES:**

- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
- FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
- THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
- MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
- PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
- FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE**

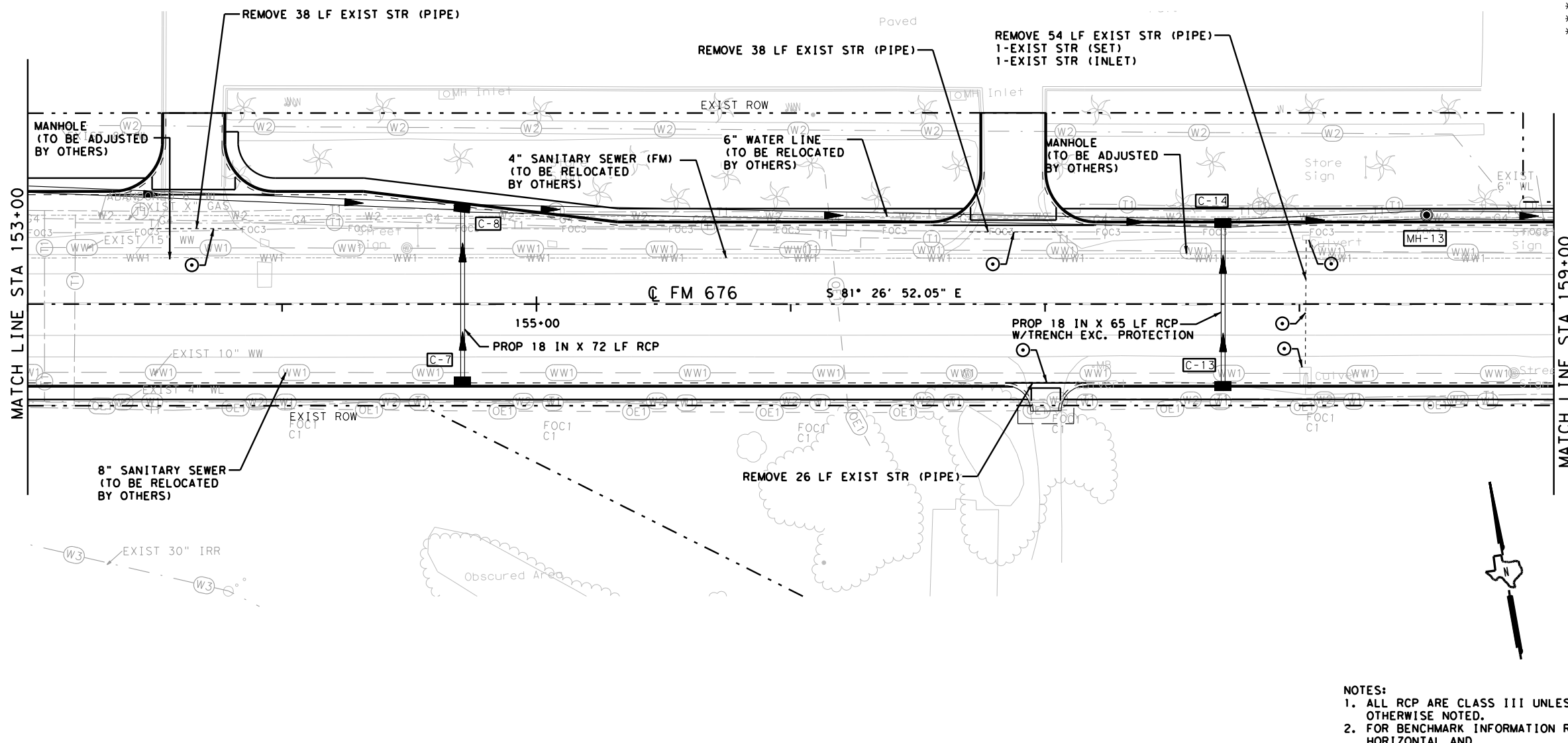
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
DISTANCE IN FEET

SHEET 15 OF 24	
FED. RD. DIV. NO. 6	STATE PROJECT NO. 1064-01-032
STATE TEXAS	COUNTY HIDALGO
CONT. 1064	HIGHWAY NO. FM 676

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SHEET TOTALS					DESCRIPTION	
ITEM	EST	PAY	EST	FIN	UNIT	
* 400	514	514			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	514.0	514			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	60	60			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	137	137			LF	RCP PIPE (CL III) (18 IN)
464	243	239			LF	RCP PIPE (CL III) (24 IN)
464	379	370			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	2	2			EA	INLET (PCU) (3FT)
465	2	2			EA	INLET (PCU) (4FT)
465	1	1			EA	MANHOLE (COMPL) (PRM) (72 IN)
496	156	156			LF	REMOVE STR (PIPE)
496	1	1			EA	REMOVE STR (INLET)
496	1	1			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



LEGEND	
○	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE
(BM)	EX. BENCHMARK
▨	PROPOSED DRIVEWAY
●	TL EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
○	FH EX. FIRE HYDRANT
○	MB EX. MAIL BOX
—	EX. STORM DRAIN
—	EX. SANITARY SEWER
—	EX. OVER HEAD ELECTRIC
—	EX. UNDER-GROUND TELEPHONE
—	EX. FIBER OPTIC
—	EX. WATER LINE
—	EX. IRRIGATION
—	EX. GAS LINE

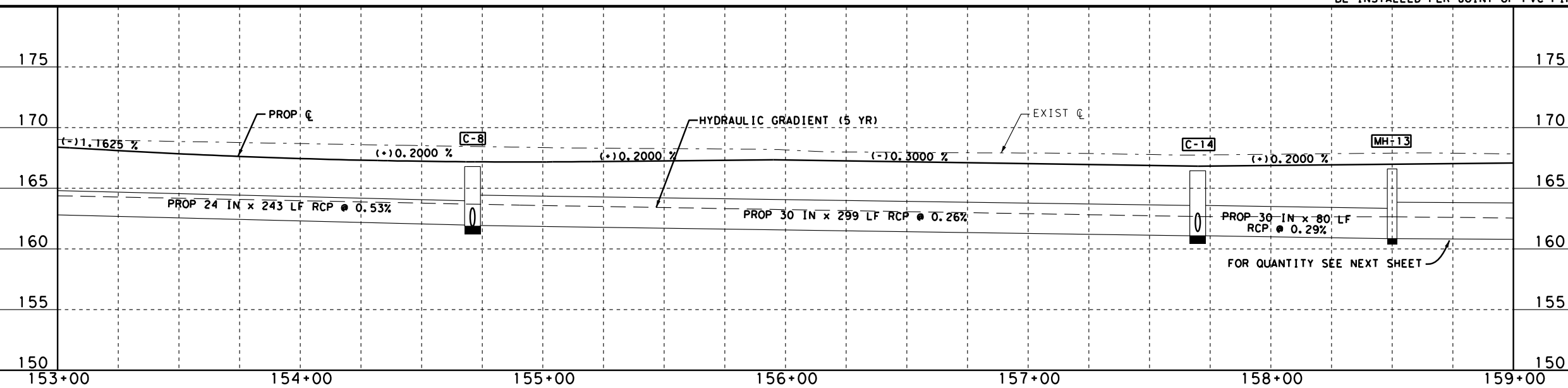
- NOTES:
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



12/1/2022

SYSTEM C STORM DRAIN TABLE									
STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-7	3' X 5'	INLET TY "PCU"	154+71.00 / 32.5 RT	167.31	162.04				
C-8	4' X 5'	INLET TY "PCU"	154+71.00 / 39.80 LT	167.13	161.87		161.87	161.87	161.87
C-13	3' X 5'	INLET TY "PCU"	157+70.00 / 32.5 RT	166.61	161.70		161.70		
C-14	4' X 5'	INLET TY "PCU"	157+70.00 / 32.5 LT	166.61	161.08		161.45	161.08	161.08
MH-13	72"	MANHOLE TY "PRM"	158+50.00 / 35 LT	166.89	160.85			160.85	160.85

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



**Texas Department of Transportation**  
ALL RIGHTS RESERVED

**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

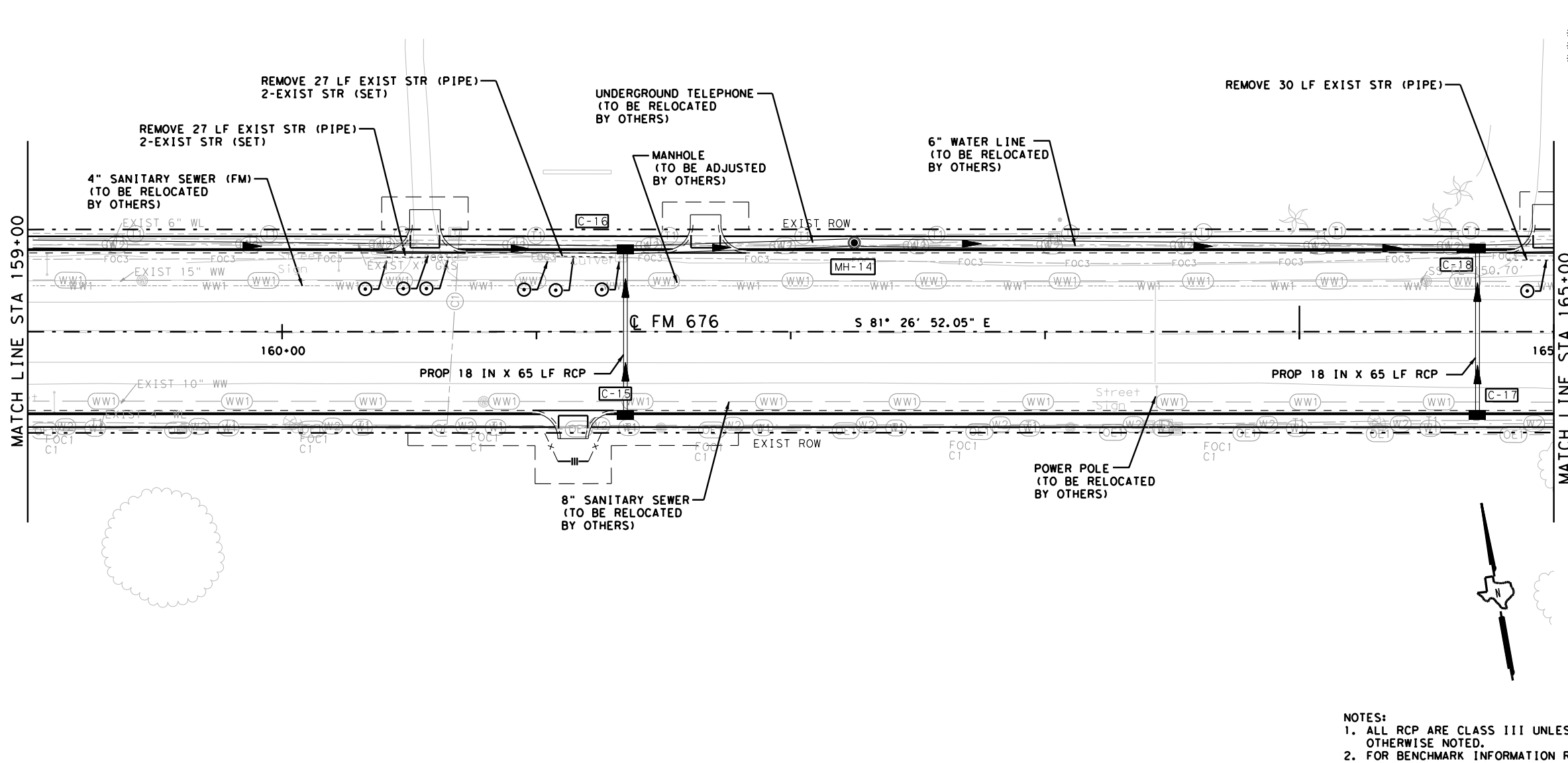
SHEET 16 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		255	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS						
ITEM	EST	PAY	EST	FIN	UNITS	DESCRIPTION
* 400	695	695			CY	STRUCT EXCAV
* 400	0	0			CY	STRUCT EXCAV (BOX)
* 400	695.0	695			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	580	580			LF	TRENCH EXCAV PROTECT
462	0	0			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	130	130			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	630	617			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	1	1			EA	INLET (PCU) (3FT)
465	2	2			EA	INLET (PCU) (4FT)
465	1	1			EA	INLET (PCU) (3FT) (RIGHT)
465	1	1			EA	MANHOLE (COMPL) (PRM) (72 IN)
496	84	84			LF	REMOVE STR (PIPE)
496	0	0			EA	REMOVE STR (INLET)
496	4	4			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



LEGEND	
○	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
● LP	EX. LIGHT POLE
(BM) ■	EX. BENCHMARK
▨	PROPOSED DRIVEWAY
○ TL	EX. TRAFFIC LIGHT POLE
● TFP	EX. TELEPHONE POLE
○ FH	EX. FIRE HYDRANT
○ MB	EX. MAIL BOX
— (SD)	EX. STORM DRAIN
— (WW)	EX. SANITARY SEWER
— (OE)	EX. OVER HEAD ELECTRIC
— (T)	EX. UNDER-GROUND TELEPHONE
— (FOC1) (FOC2) (FOC3)	EX. FIBER OPTIC
— (W1) — (W2)	EX. WATER LINE
— (I1) — (I2) — (I3) — (I4)	EX. IRRIGATION
— (G1) — (G2) — (G3) — (G4)	EX. GAS LINE

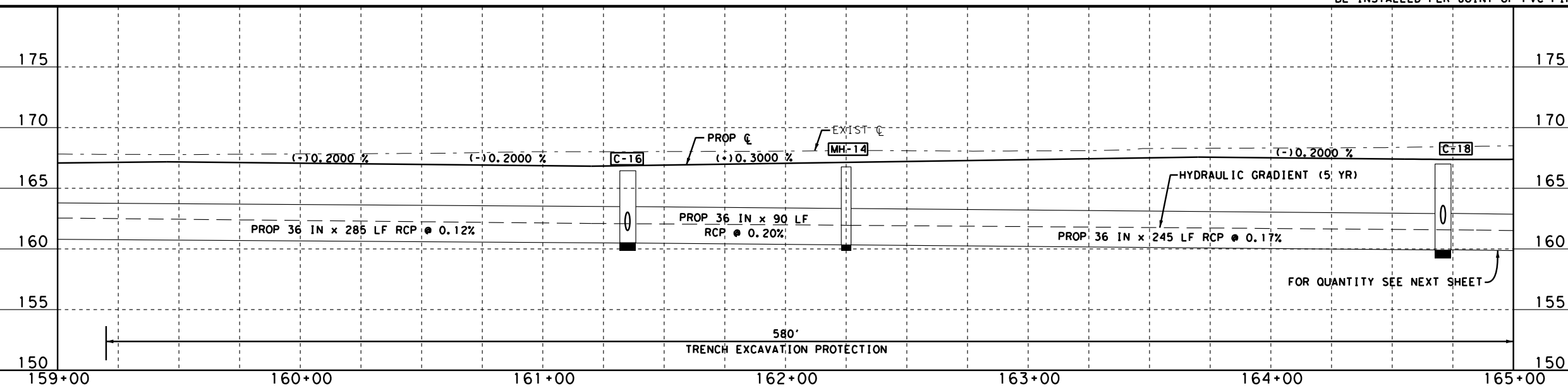
- NOTES:
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



12/1/2022

SYSTEM C STORM DRAIN TABLE									
STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-15	3' X 5'	INLET TY "PCU"	161+35.00 / 32.5 RT	166.58	161.70	161.70			
C-16	4' X 5'	INLET TY "PCU"	161+35.00 / 32.5 LT	166.58	160.51		161.53	160.51	160.51
C-17	3' X 5'	INLET TY "PCU"	164+70.00 / 32.5 RT	167.27	162.25	162.25			
C-18	4' X 5'	INLET TY "PCU" w/ EXT	164+70.00 / 32.5 LT	167.27	159.90		162.08	159.90	159.90
MH-14	72"	MANHOLE TY "PRM"	162+24.98 / 34.97 LT	167.03	160.33		160.33	160.33	160.33

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



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**ATKINS**  
TBPE REG. #F-474

**FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE**

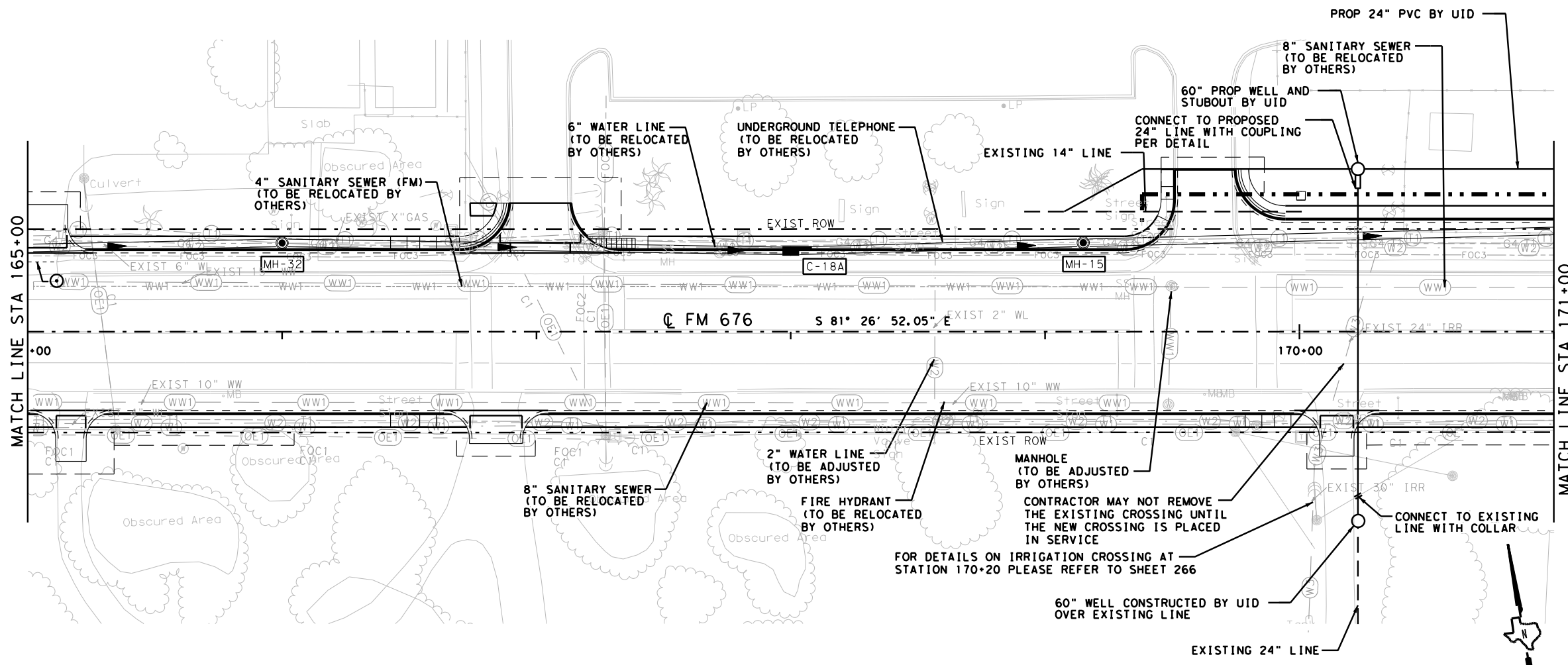
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 17 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		256	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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SHEET TOTALS				
ITEM	EST	PAY	EST FIN UNIT	DESCRIPTION
158	33	33	CY	STRUCT EXCAV WORK (ORIGINAL)
400	208	208	CY	STRUCT EXCAV
400	815	815	CY	STRUCT EXCAV (BOX)
400	1023	1023	CY	STRUCT EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	600	600	LF	TRENCH EXCAV PROTECT
462	610	597	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	0	0	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	120	116	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (4FT) (RIGHT)
465	2	2	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	0	0	EA	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

⊙	EX. STRUCTURE TO BE REMOVED	● TL	EX. TRAFFIC LIGHT POLE
■	PROP INLET	● TFP	EX. TELEPHONE POLE
⊙	PROP MANHOLE	○ FH	EX. FIRE HYDRANT
■	PROP GRATE INLET	○ MB	EX. MAIL BOX
XXX	DRAINAGE STRUCTURE ID	— (SD)	EX. STORM DRAIN
▶	PROP STORM DRAIN LATERAL OR TRUNKLINE	— (WW)	EX. SANITARY SEWER
●	EX. POWER POLE	— (OE)	EX. OVER HEAD ELECTRIC
● LP	EX. LIGHT POLE	— (T)	EX. UNDERGROUND TELEPHONE
(BM) ■		— (FOC1) (FOC2) (FOC3)	EX. FIBER OPTIC
▨	PROPOSED DRIVEWAY	— (W1) — (W2)	EX. WATER LINE
		— (M3) — (M4) — (M5)	EX. IRRIGATION
		— (G1) — (G2) — (G3) — (G4)	EX. GAS LINE

**SYSTEM C**  
STORM DRAIN TABLE

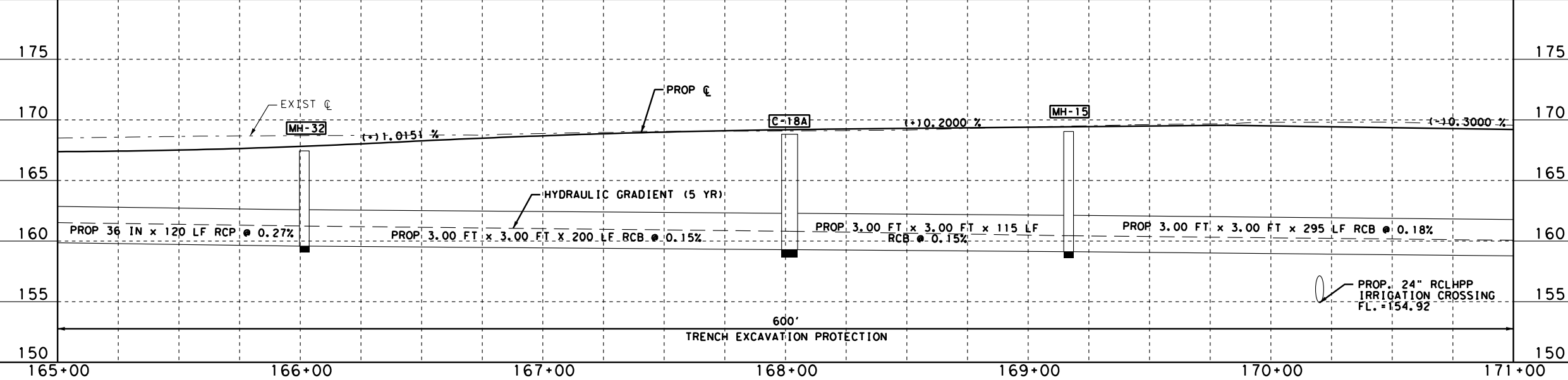
STRUCTUR E I. D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-18A	4' X 5'	INLET TY "PCU" w/ EXT	168+00.00 / 32.50 LT	168.91	159.29			159.29	159.29
MH-15	72"	MANHOLE TY "PRM"	169+15.00 / 34.96 LT	169.36	159.12			159.12	159.12
MH-32	72"	MANHOLE TY "PRM"	166+00.00 / 34.87 LT	167.80	159.58			159.58	159.58

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



**ATKINS**
  
 TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
 PROFILE SCALE: 1"=10'  
 0 10 20 30 40 50 DISTANCE IN FEET      0 2 4 6 8 10 DISTANCE IN FEET

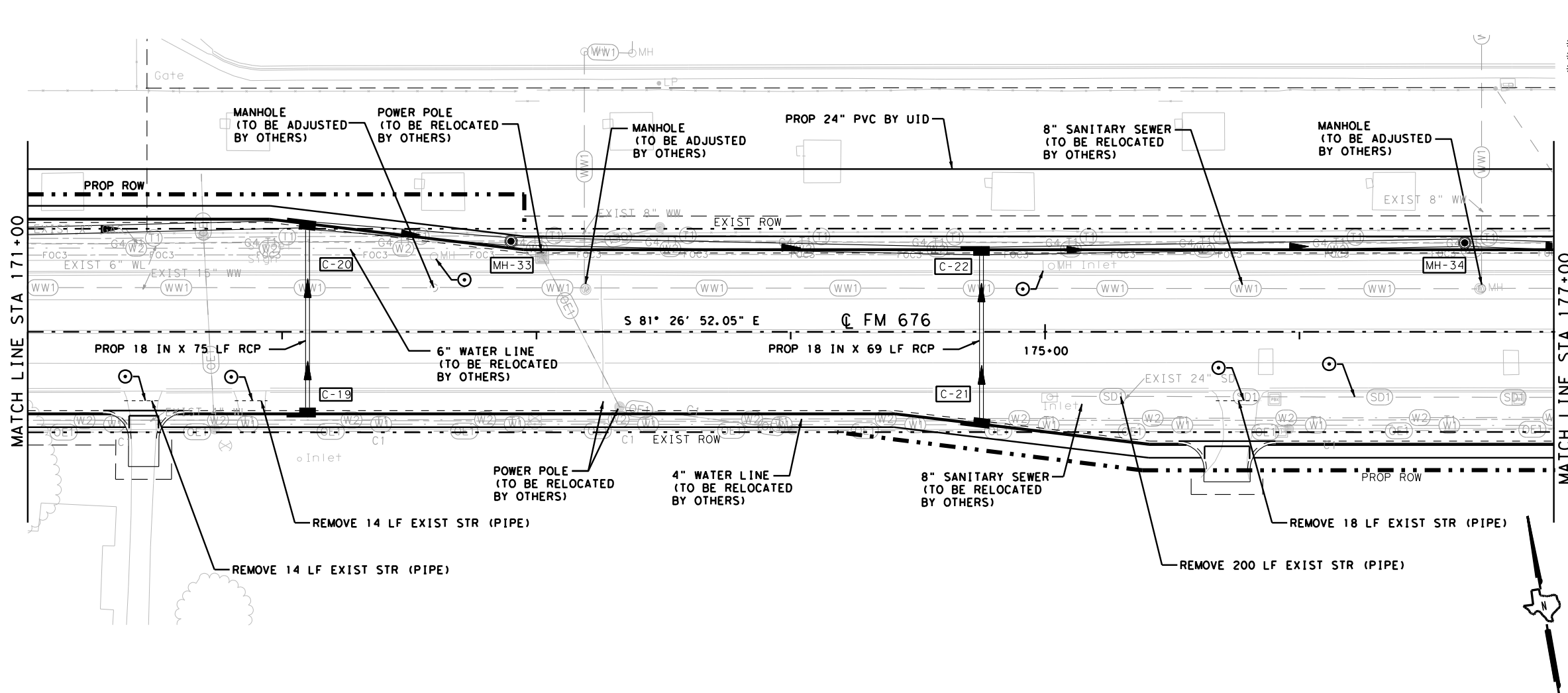
SHEET 18 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		257	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1t  
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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
158	18	18	CY	STRUCT EXCAV WORK (ORIGINAL)
400	205	205	CY	STRUCT EXCAV
400	838	838	CY	STRUCT EXCAV (BOX)
400	1043	1043	CY	STRUCT EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	600	600	LF	TRENCH EXCAV PROTECT
462	531	516	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	144	144	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	2	2	EA	INLET (PCU) (3FT) (LEFT)
465	2	2	EA	INLET (PCU) (4FT) (RIGHT)
465	2	2	EA	MANHOLE (COMPL) (PRM) (72 IN)
496	246	246	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



LEGEND	
○	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE (BM) ■
▨	PROPOSED DRIVEWAY
○	EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
○	EX. FIRE HYDRANT
○	EX. MAIL BOX
—	EX. STORM DRAIN
—	EX. SANITARY SEWER
—	EX. OVER HEAD ELECTRIC
—	EX. UNDER-GROUND TELEPHONE
—	EX. FIBER OPTIC
—	EX. WATER LINE
—	EX. IRRIGATION
—	EX. GAS LINE

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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.

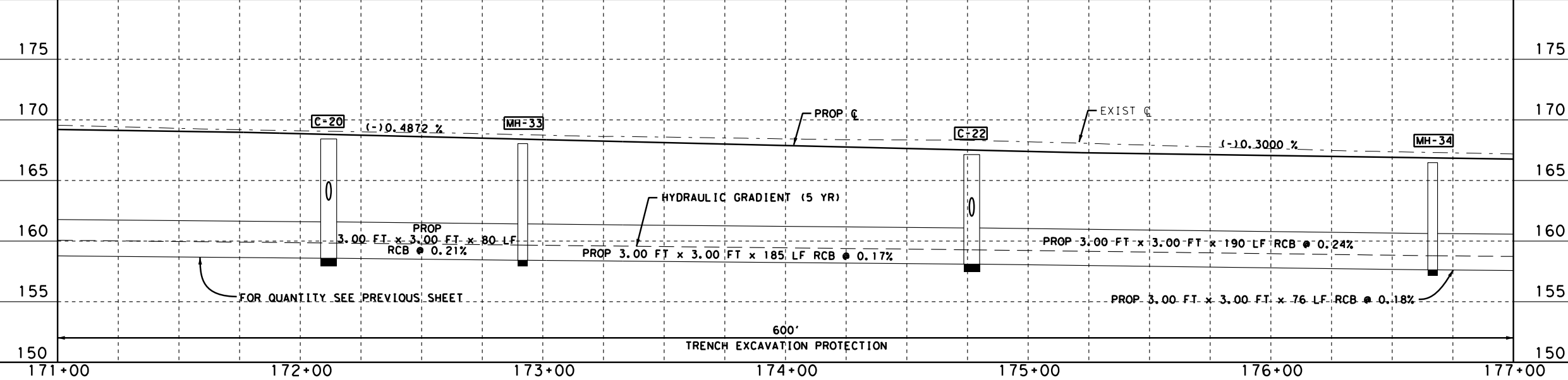


11/18/2022

SYSTEM C  
STORM DRAIN TABLE

STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-19	3' X 5'	INLET TY "PCU" w/ EXT	172+10.00 / 32.5 RT	168.70	163.68	163.68			
C-20	4' X 5'	INLET TY "PCU" w/ EXT	172+10.00 / 42.7 LT	168.45	158.58				
C-21	3' X 5'	INLET TY "PCU" w/ EXT	174+75.00 / 36.6 RT	167.35	162.42	162.42			
C-22	4' X 5'	INLET TY "PCU" w/ EXT	174+75.00 / 32.5 LT	167.46	158.09		162.07	158.09	158.09
MH-33	72"	MANHOLE TY "PRM"	172+90.00 / 35.58 LT	168.43	158.41	158.41			158.41
MH-34	72"	MANHOLE TY "PRM"	176+65.00 / 34.97 LT	166.85	157.63	157.63			157.63

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



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**ATKINS**  
TBPE REG. #F-474

FM 676  
**UTILITY & DRAINAGE  
PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

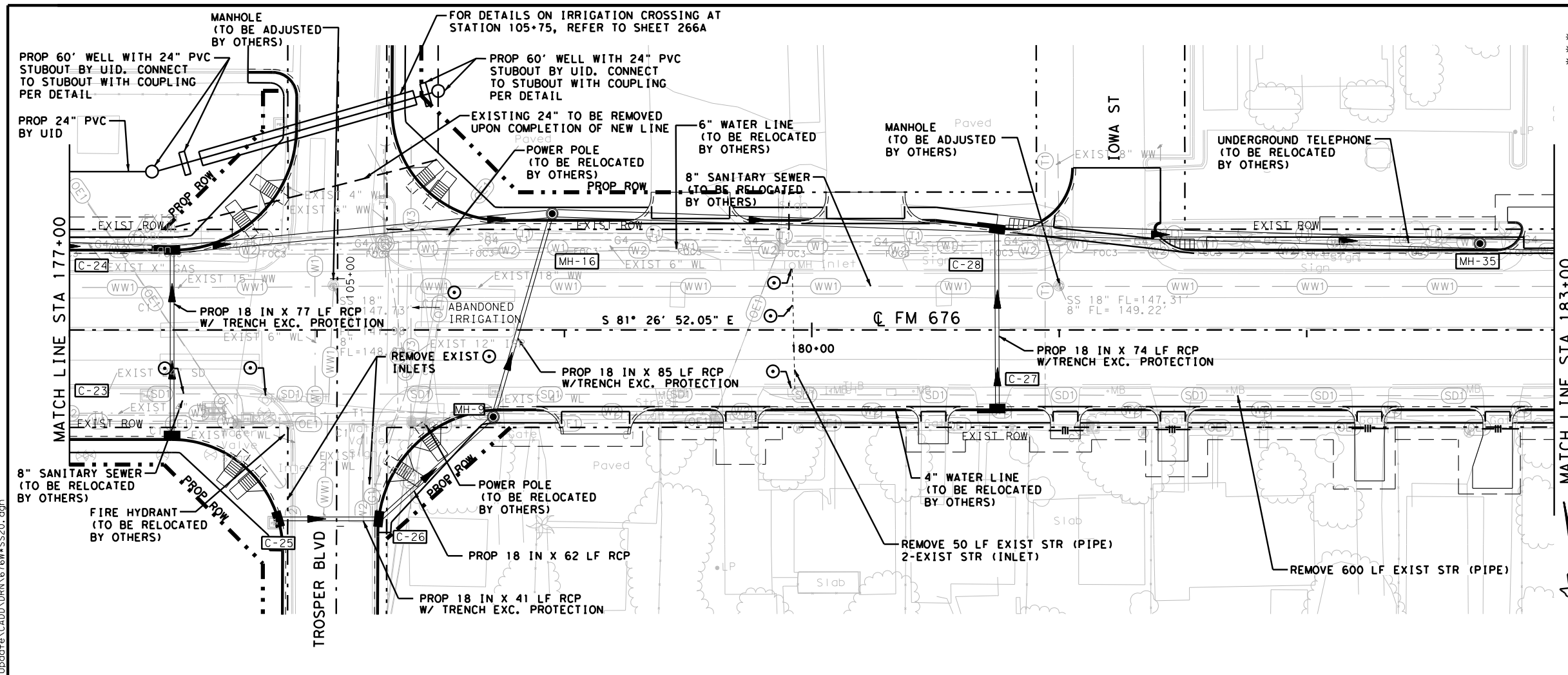
0 10 20 30 40 50  
DISTANCE IN FEET

0 2 4 6 8 10  
DISTANCE IN FEET

SHEET 19 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		258	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\11x17\PDF.d1+  
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SHEET TOTALS

ITEM	EST	PAY	EST	FIN	UNIT	DESCRIPTION
* 400	364	364			CY	STRUCT EXCAV
* 400	688	688			CY	STRUCT EXCAV (BOX)
* 400	1052	1052			CY	STRUCT EXCAV (SPECIAL)
400	0	0			SY	CUT & RESTORING PAV
402	838	838			LF	TRENCH EXCAV PROTECT
462	530	517			LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0			LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0			LF	CONC BOX CULV (5 FT X 4 FT)
464	339	339			LF	RCP PIPE (CL III) (18 IN)
464	0	0			LF	RCP PIPE (CL III) (24 IN)
464	0	0			LF	RCP PIPE (CL III) (30 IN)
464	0	0			LF	RCP PIPE (CL III) (36 IN)
464	0	0			LF	RCP PIPE (CL III) (42 IN)
464	0	0			LF	RCP PIPE (CL III) (48 IN)
465	1	1			EA	INLET (PCU) (3FT)
465	2	2			EA	INLET (PCU) (4FT)
465	2	2			EA	INLET (PCU) (3FT) (LEFT)
465	1	1			EA	INLET (PCU) (3FT) (RIGHT)
465	2	2			EA	MANHOLE (COMPL) (PRM) (48 IN)
465	1	1			EA	MANHOLE (COMPL) (PRM) (72 IN)
496	650	650			LF	REMOVE STR (PIPE)
496	2	2			EA	REMOVE STR (INLET)
496	0	0			EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

LEGEND

⊙	EX. STRUCTURE TO BE REMOVED	● TL	EX. TRAFFIC LIGHT POLE
■	PROP INLET	● TFP	EX. TELEPHONE POLE
⊙	PROP MANHOLE	⊙ FH	EX. FIRE HYDRANT
■	PROP GRATE INLET	⊙ MB	EX. MAIL BOX
XXX	DRAINAGE STRUCTURE ID	---	EX. STORM DRAIN
▶	PROP STORM DRAIN LATERAL OR TRUNKLINE	---	EX. SANITARY SEWER
●	EX. POWER POLE	---	EX. OVER HEAD ELECTRIC
● LP	EX. LIGHT POLE	---	EX. UNDERGROUND TELEPHONE
⊙ (BM)	PROP DRIVEWAY	---	EX. FIBER OPTIC
⊙		---	EX. WATER LINE
⊙		---	EX. IRRIGATION
⊙		---	EX. GAS LINE

SYSTEM C  
STORM DRAIN TABLE

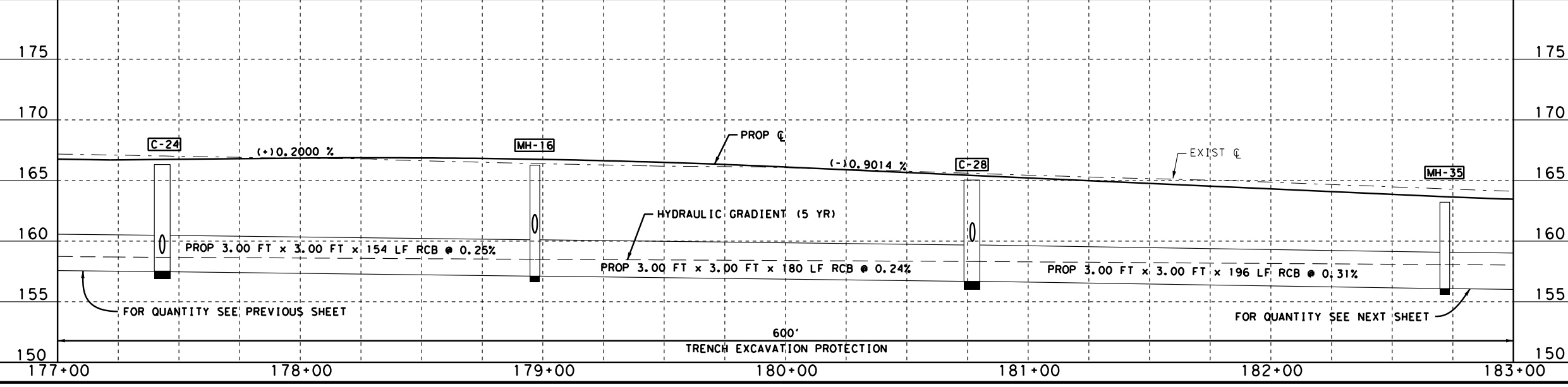
STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-23	3' X 5'	INLET TY "PCU"	177+41.43 / 44.5 RT	166.32	159.18	159.18			
C-24	4' X 5'	INLET TY "PCU" w/ EXT	177+41.43 / 32.50 LT	166.62	157.49		159.00	157.49	157.49
C-25	3' X 5'	INLET TY "PCU"	177+84.00 / 76.35 RT	165.52	161.84			161.84	
C-26	3' X 5'	INLET TY "PCU"	178+25.21 / 76.35 RT	165.58	160.34	160.34			160.34
C-27	3' X 5'	INLET TY "PCU" w/ EXT	180+75.00 / 32.5 RT	165.34	160.18	160.18			
C-28	4' X 5'	INLET TY "PCU" w/ EXT	180+74.94 / 41.53 LT	165.11	156.68		160.00	156.68	156.68
MH-9	72"	MANHOLE TY "PRM"	178+71.24 / 35.1 RT	166.79	159.81	159.81			
MH-16	48"	MANHOLE TY "PRM"	178+95.06 / 46.97 LT	166.43	157.11		159.06	157.11	157.11
MH-35	48"	MANHOLE TY "PRM"	182+70.00 / 34.88 LT	163.83	156.08			156.08	156.08

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



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**ATKINS**  
TBPE REG. #F-474

FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

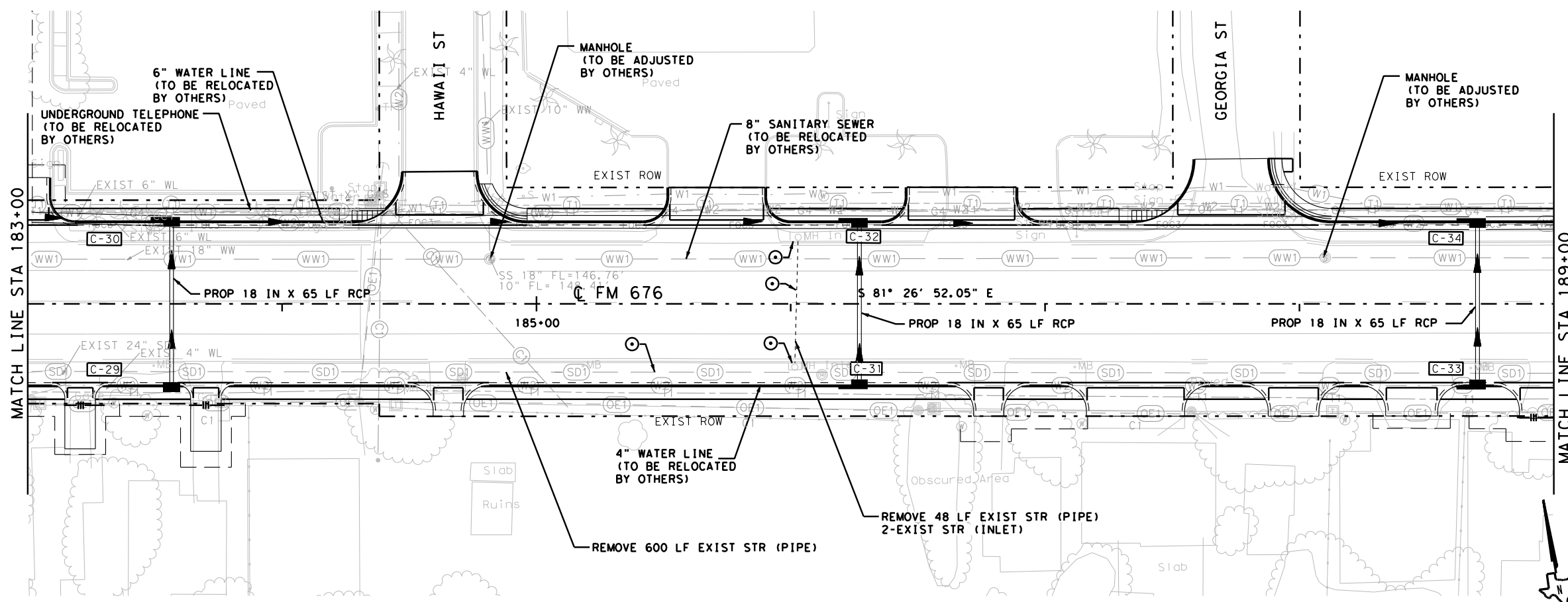
SHEET 20 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		259	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1t  
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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
* 400	149	149	CY	STRUCT EXCAV
* 400	884	884	CY	STRUCT EXCAV (BOX)
* 400	1033	1033	CY	STRUCT EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	187	183	LF	TRENCH EXCAV PROTECT
462	87	87	LF	CONC BOX CULV (3 FT X 3 FT)
462	513	503	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	195	195	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (3FT)
465	3	3	EA	INLET (PCU) (7FT) (LEFT)
465	2	2	EA	INLET (PCU) (3FT) (RIGHT)
496	648	648	LF	REMOVE STR (PIPE)
496	2	2	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.



LEGEND	
○	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
●	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
●	EX. LIGHT POLE
(BM) ■	EX. BENCHMARK
▨	PROPOSED DRIVEWAY
○	TL EX. TRAFFIC LIGHT POLE
●	TFP EX. TELEPHONE POLE
○	FH EX. FIRE HYDRANT
○	MB EX. MAIL BOX
— (SD)	EX. STORM DRAIN
— (WW)	EX. SANITARY SEWER
— (OE)	EX. OVER HEAD ELECTRIC
— (T)	EX. UNDERGROUND TELEPHONE
— (FOC1) (FOC2) (FOC3)	EX. FIBER OPTIC
— (W1) (W2)	EX. WATER LINE
— (I1) (I2) (I3) (I4) (I5)	EX. IRRIGATION
— (G1) (G2) (G3) (G4)	EX. GAS LINE

SYSTEM C  
STORM DRAIN TABLE

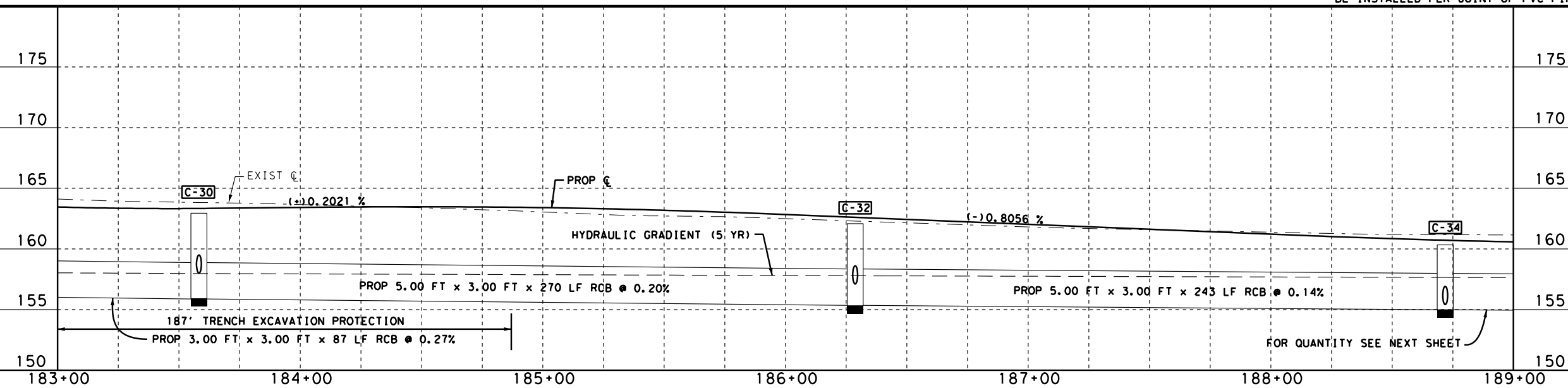
STRUCTURE I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-29	3' X 5'	INLET TY "PCU"	183+56.56 / 32.5 RT	163.45	158.18	158.18			
C-30	7' X 5'	INLET TY "PCU" w/ EXT	183+56.56 / 32.5 LT	163.45	155.85		158.00	155.85	155.85
C-31	3' X 5'	INLET TY "PCU" w/ EXT	186+27.00 / 32.5 RT	162.68	157.18	157.18			
C-32	7' X 5'	INLET TY "PCU" w/ EXT	186+27.00 / 32.5 LT	162.68	155.32		157.00	155.32	155.32
C-33	3' X 5'	INLET TY "PCU" w/ EXT	188+70.00 / 32.5 RT	160.75	155.59	155.59			
C-34	7' X 5'	INLET TY "PCU" w/ EXT	188+70.00 / 32.5 LT	160.75	154.98		155.42	154.98	154.98

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

- NOTES:
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
  - MANHOLE OFFSETS ARE MEASURED TO CENTER OF STRUCTURE AND INLET OFFSETS ARE MEASURED TO FACE OF CURB.
  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022



**Texas Department of Transportation**  
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**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'

0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 21 OF 24

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.	
6		260	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS				
ITEM	EST	PAY	EST FIN UNIT	DESCRIPTION
* 400	158	158	CY	STRUCT EXCAV
* 400	1032	1032	CY	STRUCT EXCAV (BOX)
* 400	1190	1190	CY	STRUCT EXCAV (SPECIAL)
402	814	814	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	323	311	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	375	368	LF	CONC BOX CULV (5 FT X 4 FT)
464	206	206	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	0	0	LF	RCP PIPE (CL III) (48 IN)
465	1	1	EA	INLET (PCU) (3FT)
465	2	2	EA	INLET (PCU) (7FT)
465	1	1	EA	INLET (PCU) (3FT) (RIGHT)
465	1	1	EA	INLET (PCO) (3FT)
465	1	1	EA	INLET (PCO) (7FT)
496	276	276	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)
496	90	90	LF	REMOVE STR (BOX CULVERT)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- ⊙ EX. STRUCTURE TO BE REMOVED
- ▣ PROP INLET
- ⊙ PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▬ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE
- (BM) EX. BENCHMARK
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- X"SD EX. STORM DRAIN
- X"SS EX. SANITARY SEWER
- X"SS(FM) EX. SANITARY SEWER FORCED MAIN
- OHE EX. OVERHEAD ELECTRIC
- UT EX. UNDERGROUND TELEPHONE
- X"IRR EX. IRRIGATION
- X"W EX. WATER LINE
- G EX. GAS LINE

- NOTES:**
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  - FOR BENCHMARK INFORMATION REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS 3-6.
  - THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY PRIOR TO CONSTRUCTION.
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  - PIPE LENGTHS ARE MEASURED FROM CENTER TO CENTER OF STRUCTURE.
  - FOR UID LINES, NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT SHALL BE INSTALLED PER JOINT OF PVC PIPE.



11/18/2022

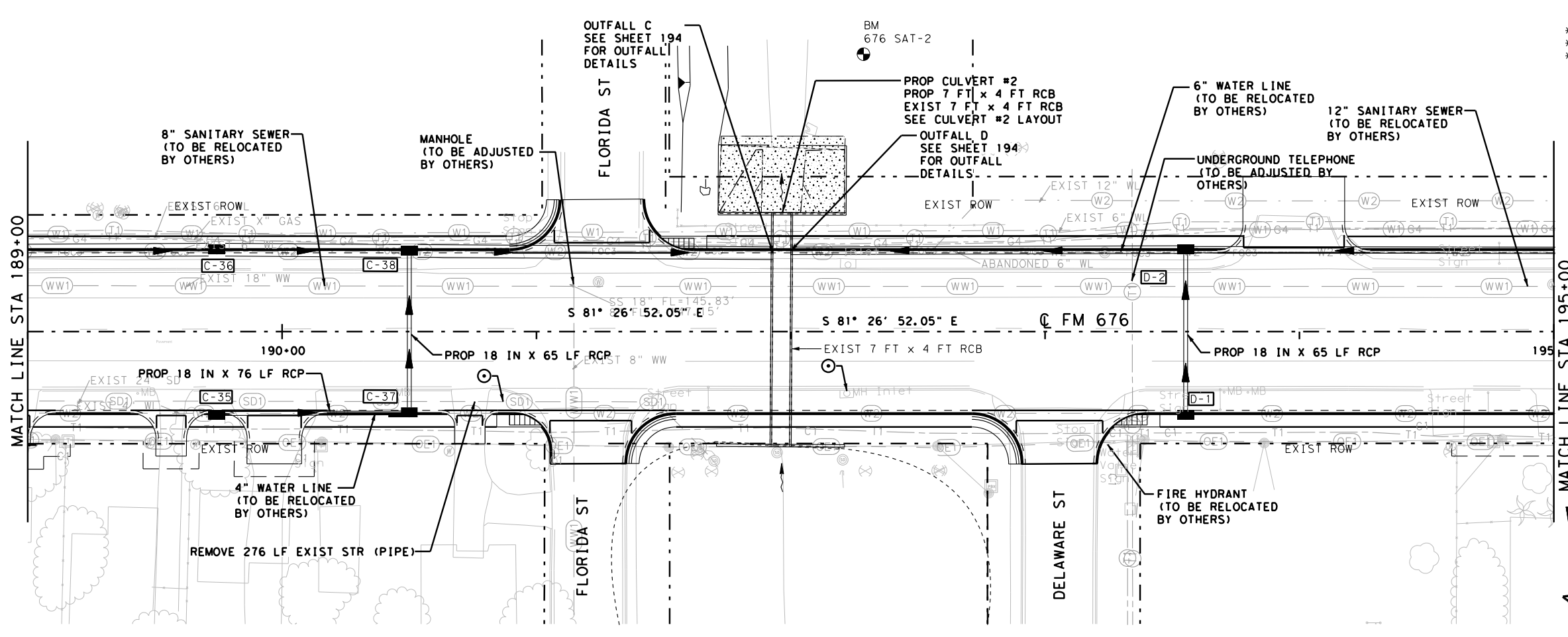


**ATKINS**  
TBPE REG. #F-474

**FM 676  
UTILITY & DRAINAGE  
PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

SHEET 22 OF 24	
FED. RD. DIV. NO. 6	STATE PROJECT NO. 1064 01 032
SHEET NO. 261	COUNTY HIDALGO
STATE TEXAS	DIST. PHR
CONT. 1064	SECT. 01
JOB 032	HIGHWAY NO. FM 676



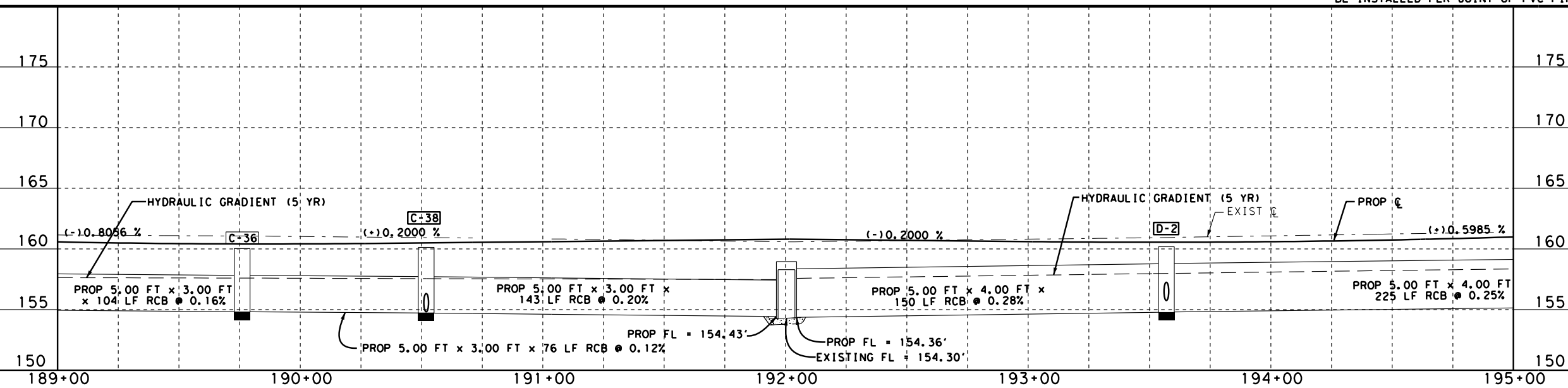
**SYSTEM C**

STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
C-35	3' X 5'	INLET TY "PCU"	189+74.36 / 32.5 RT	160.45	155.30			155.30	
C-36	7' X 5'	INLET TY "PCU"	189+74.36 / 32.5 LT	160.45	154.81			154.81	154.81
C-37	3' X 5'	INLET TY "PCU" w/ EXT	190+50.00 / 32.5 RT	160.56	154.99	154.99			154.99
C-38	7' X 5'	INLET TY "PCU"	190+50.00 / 32.5 LT	160.56	154.72		154.82	154.72	154.72
OUTFALL		OUTFALL	191+92.98 / 30.83 LT		154.43		154.43		

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

**SYSTEM D**

STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
D-1	3' X 5'	INLET TY "PCO"	193+55.26 / 32.5 RT	160.60	155.96			155.96	
D-2	7' X 5'	INLET TY "PCO"	193+55.26 / 32.5 LT	160.60	154.78	155.96		155.75	154.78
OUTFALL		OUTFALL	191+99.99 / 31.75 LT		154.36		154.36		



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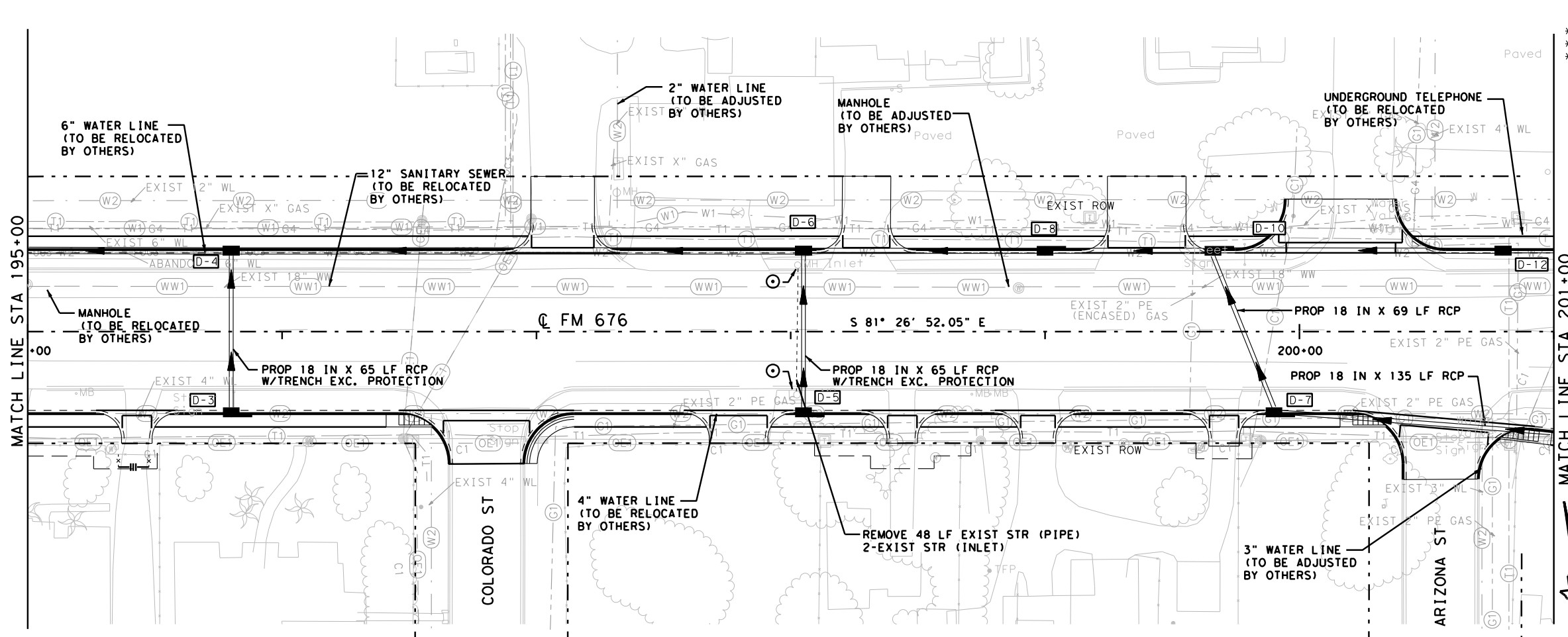


SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
* 400	537	537	CY	STRUCT EXCAV
* 400	246	246	CY	STRUCT EXCAV (BOX)
* 400	783.0	783	CY	STRUC EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	0	0	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	225	220	LF	CONC BOX CULV (5 FT X 4 FT)
464	334	334	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	0	0	LF	RCP PIPE (CL III) (42 IN)
464	275	260	LF	RC PIPE (CL IV) (48 IN)
465	1	1	EA	INLET (PCO) (6FT)
465	2	2	EA	INLET (PCO) (6FT) (RIGHT)
465	3	3	EA	INLET (PCO) (3FT) (LEFT)
465	2	2	EA	INLET (PCO) (6FT) (RIGHT)
496	48	48	LF	REMOVE STR (PIPE)
496	2	2	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

\* FOR CONTRACTOR'S INFORMATION ONLY.

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- PROP INLET
- PROP MANHOLE
- PROP GRATE INLET
- XXX DRAINAGE STRUCTURE ID
- ▬ PROP STORM DRAIN LATERAL OR TRUNKLINE
- EX. POWER POLE
- LP EX. LIGHT POLE (BM) ■
- ▨ PROPOSED DRIVEWAY
- TL EX. TRAFFIC LIGHT POLE
- TFP EX. TELEPHONE POLE
- FH EX. FIRE HYDRANT
- MB EX. MAIL BOX
- ▬ SD EX. STORM DRAIN
- ▬ WW EX. SANITARY SEWER
- ▬ OE EX. OVER HEAD ELECTRIC
- ▬ T EX. UNDERGROUND TELEPHONE
- FOC1-FOC2-FOC3 EX. FIBER OPTIC
- W1-W2 EX. WATER LINE
- M3-M4-M5 EX. IRRIGATION
- G1-G2-G3-G4 EX. GAS LINE



**SYSTEM D**

**STORM DRAIN TABLE**

STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
D-3	3' X 5'	INLET TY "PCO" w/ EXT	195+80.00 / 32.5 RT	161.43	156.85	156.85			
D-4	7' X 5'	INLET TY "PCO"	195+80.00 / 32.5 LT	161.43	155.35		156.55	155.35	155.35
D-5	3' X 5'	INLET TY "PCO" w/ EXT	198+05.00 / 32.5 RT	162.61	158.00	158.00			
D-6	7' X 5'	INLET TY "PCO"	198+05.00 / 32.5 LT	162.61	155.90		157.70	155.90	155.90
D-7	3' X 5'	INLET TY "PCO" w/ EXT	199+90.00 / 32.5 RT	163.24	158.75	158.75			
D-8	6' X 5'	INLET TY "PCO" w/ EXT	199+00.00 / 32.5 LT	162.94	156.58		158.60	156.58	156.58
D-10	6' X 5'	INLET TY "PCO" w/ EXT	199+66.00 / 32.5 LT	163.18	157.00		157.00	157.00	157.00
D-12	6' X 5'	INLET TY "PCO"	200+80.00 / 32.5 LT	163.42	157.70			157.70	157.70

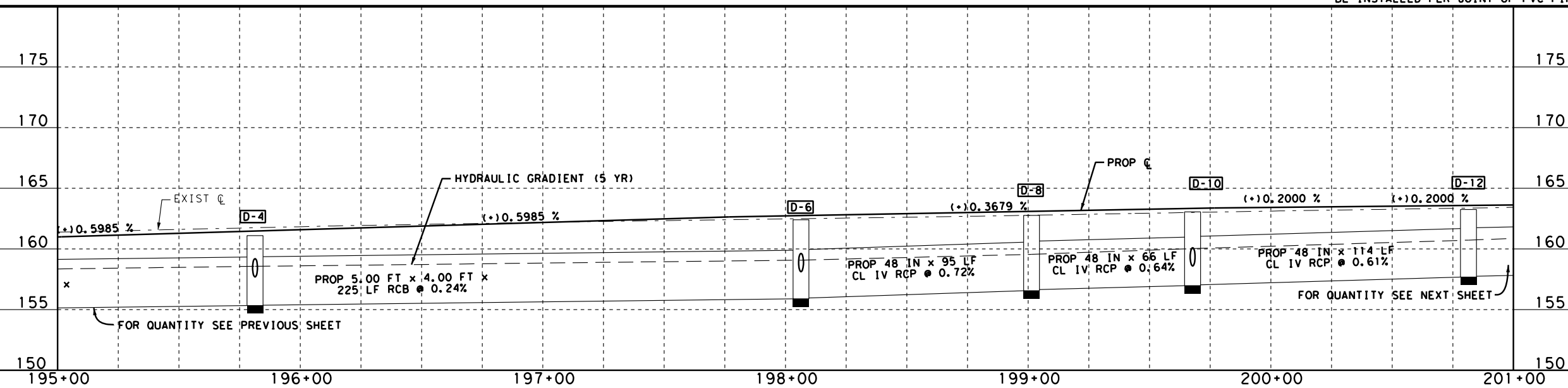
\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.

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11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**UTILITY & DRAINAGE**  
**PLAN & PROFILE**

PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
DISTANCE IN FEET

SHEET 23 OF 24		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		262
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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SHEET TOTALS				DESCRIPTION
ITEM	EST	PAY	EST/FIN UNIT	
* 400	288	288	CY	STRUCT EXCAV
* 400	0	0	CY	STRUCT EXCAV (BOX)
* 400	288.0	288	CY	STRUCT EXCAV (SPECIAL)
400	0	0	SY	CUT & RESTORING PAV
402	120	120	LF	TRENCH EXCAV PROTECT
462	0	0	LF	CONC BOX CULV (3 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (6 FT X 3 FT)
462	0	0	LF	CONC BOX CULV (4 FT X 4 FT)
462	0	0	LF	CONC BOX CULV (5 FT X 4 FT)
464	77	77	LF	RCP PIPE (CL III) (18 IN)
464	0	0	LF	RCP PIPE (CL III) (24 IN)
464	0	0	LF	RCP PIPE (CL III) (30 IN)
464	0	0	LF	RCP PIPE (CL III) (36 IN)
464	75	70	LF	RC PIPE (CL IV) (42 IN)
464	175	165	LF	RC PIPE (CL IV) (48 IN)
465	1	1	EA	INLET (PCO) (3FT)
465	1	1	EA	INLET (PCO) (5FT)
465	1	1	EA	INLET (PCO) (3FT) (LEFT)
465	2	2	EA	INLET (PCO) (6FT) (RIGHT)
496	0	0	LF	REMOVE STR (PIPE)
496	0	0	EA	REMOVE STR (INLET)
496	0	0	EA	REMOVE STR (SET)

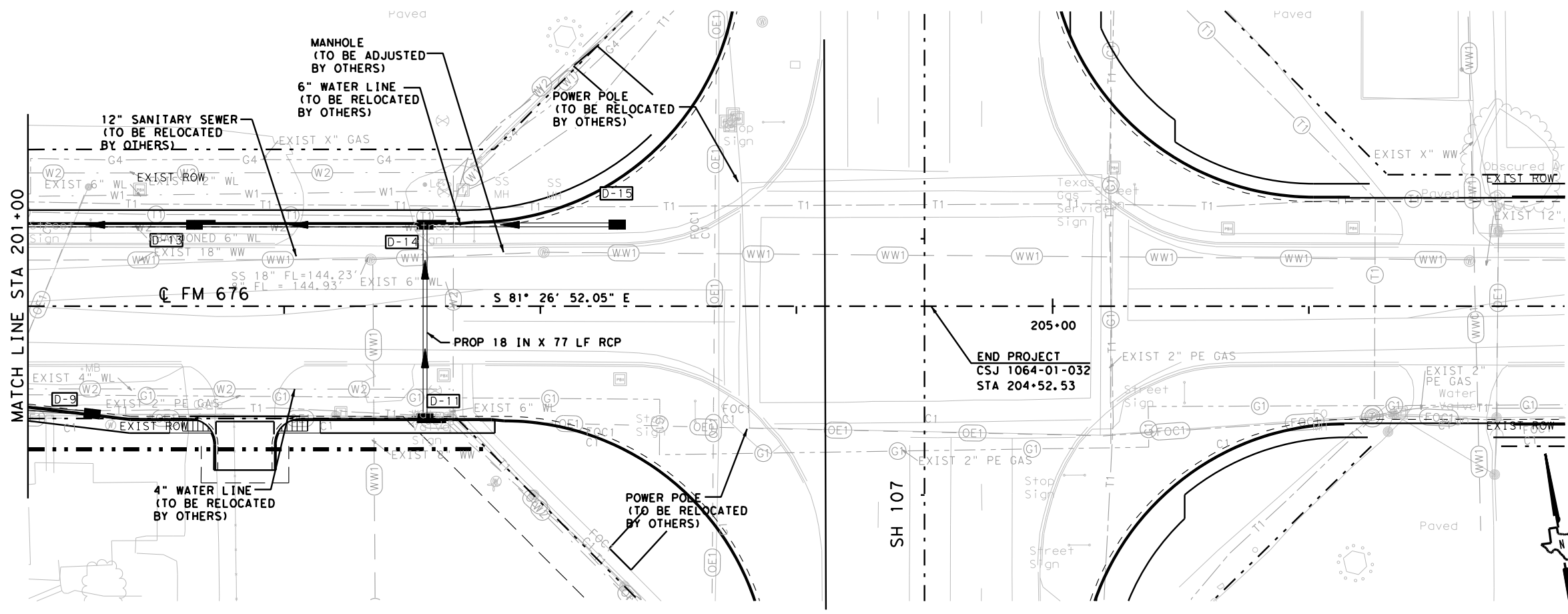
\* FOR CONTRACTOR'S INFORMATION ONLY.

LEGEND	
⊙	EX. STRUCTURE TO BE REMOVED
■	PROP INLET
⊙	PROP MANHOLE
■	PROP GRATE INLET
XXX	DRAINAGE STRUCTURE ID
—▲—	PROP STORM DRAIN LATERAL OR TRUNKLINE
●	EX. POWER POLE
● LP	EX. LIGHT POLE
(BM) ■	EX. BENCHMARK
▨	PROPOSED DRIVEWAY
⊙ TL	EX. TRAFFIC LIGHT POLE
● TFP	EX. TELEPHONE POLE
○ FH	EX. FIRE HYDRANT
○ MB	EX. MAIL BOX
—SD—	EX. STORM DRAIN
—WW—	EX. SANITARY SEWER
—OE—	EX. OVERHEAD ELECTRIC
—T—	EX. UNDERGROUND TELEPHONE
—FOC1—FOC2—FOC3—	EX. FIBER OPTIC
—W1—W2—	EX. WATER LINE
—M3—M4—M5—	EX. IRRIGATION
—G1—G2—G3—G4—	EX. GAS LINE

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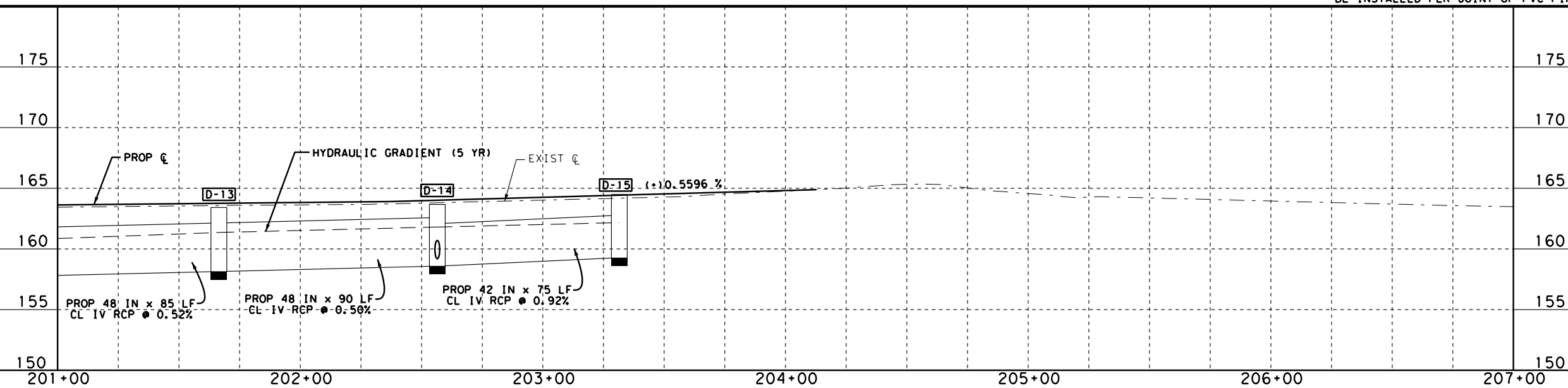
11/18/2022



SYSTEM D  
STORM DRAIN TABLE

STRUCTUR E I.D.	X&Y OR DIA.	DESCRIPTION	STATION / OFFSET *	TOP OF STR/ GRATE ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
D-9	3'X5'	INLET TY "PCO"	201+25.00 / 42.71 RT	163.25	159.00				159.00
D-11	3'X5'	INLET TY "PCO" w/ EXT	202+55.00 / 44.5 RT	163.52	159.42	159.42			
D-13	6'X5'	INLET TY "PCO" w/ EXT	201+65.00 / 32.5 LT	163.59	158.20		158.20	158.20	158.20
D-14	6'X5'	INLET TY "PCO" w/ EXT	202+55.00 / 32.5 LT	163.82	158.70	158.94	158.70	158.70	158.70
D-15	5'X5'	INLET TY "PCO"	203+30.00 / 32.5 LT	164.16	159.08				159.08

\* TO BACK OF CURB FOR CURB INLET OR CENTER OF LID.



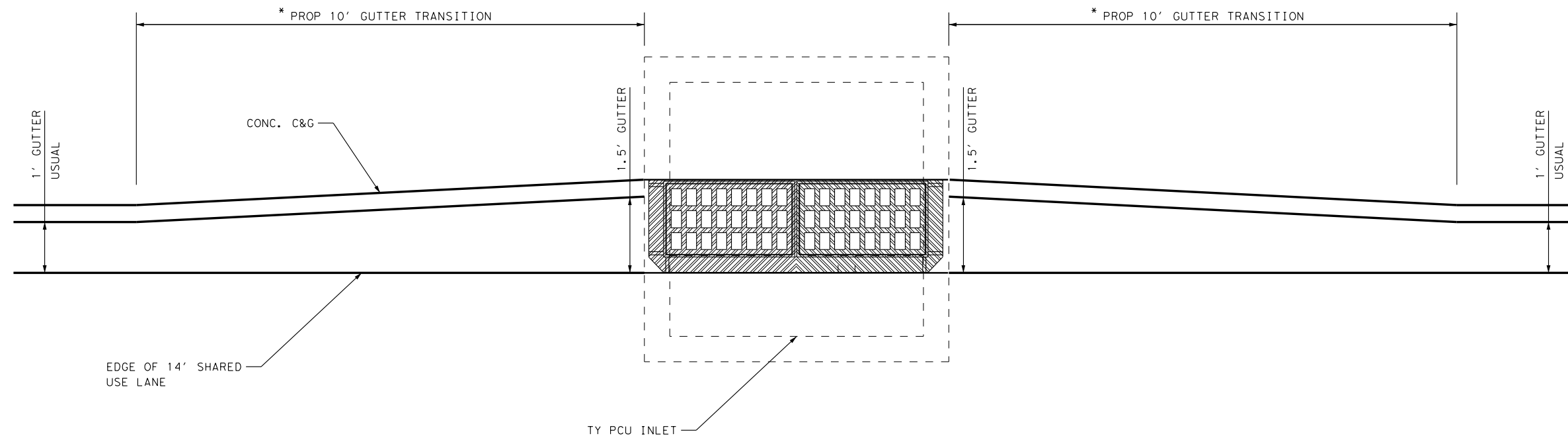
**ATKINS**  
TBPE REG. #F-474

FM 676  
**UTILITY & DRAINAGE  
PLAN & PROFILE**  
PLAN SCALE: 1"=50'  
PROFILE SCALE: 1"=10'  
0 10 20 30 40 50 DISTANCE IN FEET  
0 2 4 6 8 10 DISTANCE IN FEET

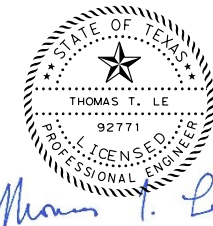
SHEET 24 OF 24		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		263
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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NOTE:  
 \* GUTTER TRANSITION TO BE USED AT ALL CURB INLETS



11/18/2022



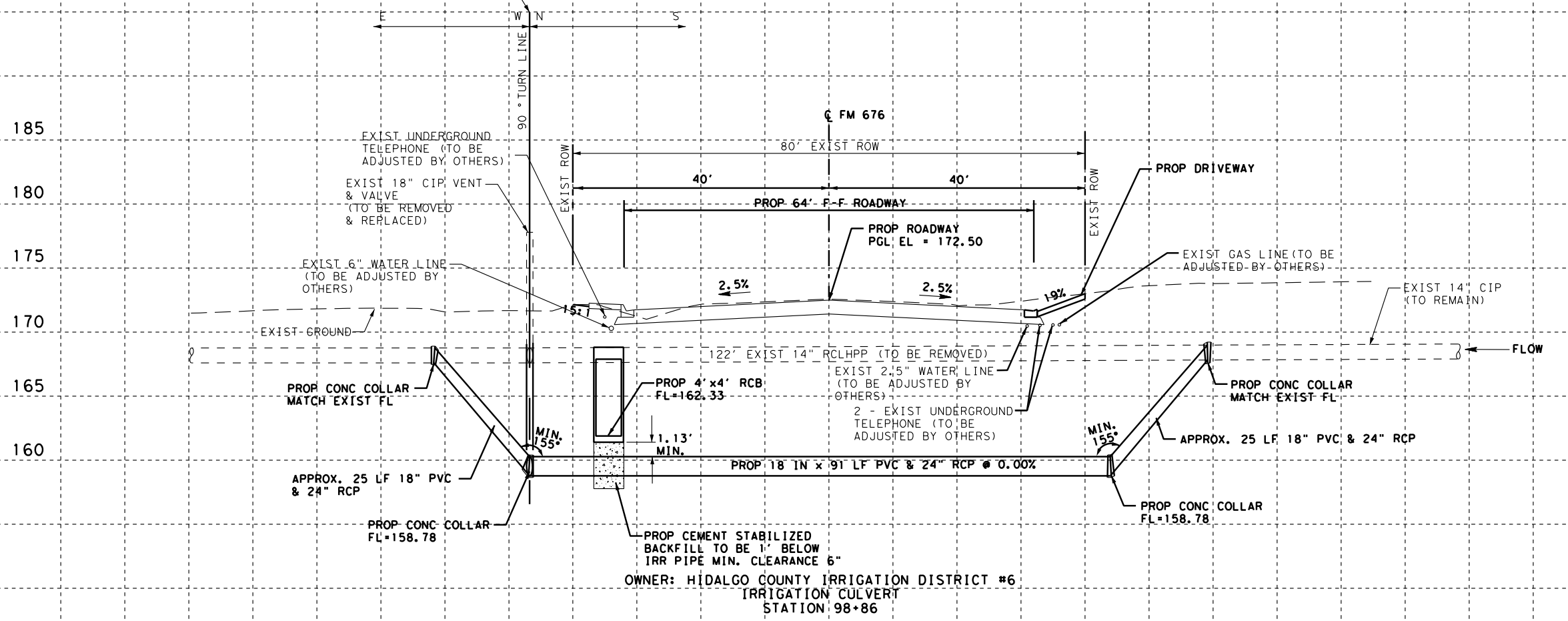
**ATKINS**  
 TBPE REG. #F-474

FM 676

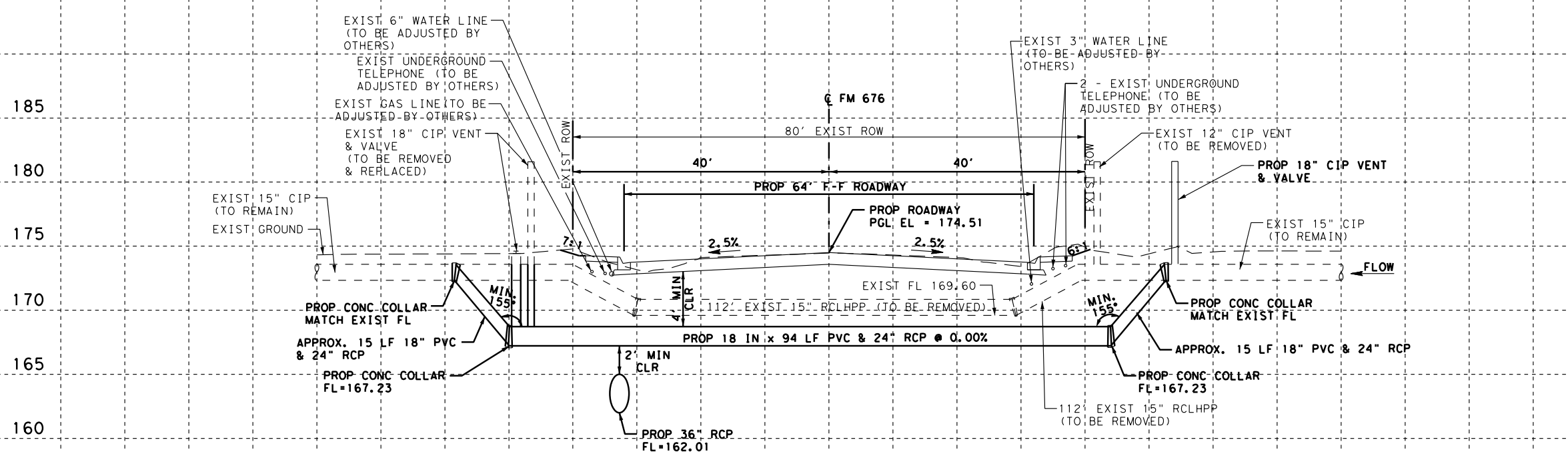
MISCELLANEOUS  
 DRAINAGE DETAILS

SHEET 1 OF 1		SCALE: NONE	
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6			264
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PIPE TURNS 90° AT IRRIGATION WELL  
PROPOSED PIPE RISES EASTWARD FROM  
PROPOSED SIPHON TO EXISTING LINE



OWNER: HIDALGO COUNTY IRRIGATION DISTRICT #6  
IRRIGATION CULVERT  
STATION 98+86



OWNER: HIDALGO COUNTY IRRIGATION DISTRICT #6  
IRRIGATION CULVERT  
STATION 118+88

SHEET TOTALS				
ITEM	EST.	FIN.	UNIT	DESCRIPTION
400*	244		CY	STRUCTURAL EXCAVATION (PIPE)
400	2		CY	CEMENT STABIL BKFL
400	53		SY	CUT & RESTORING PAV
400	49		CY	STRUCT. EXC. (SPL)
402	275		LF	TRENCH EXC. PROTECTION
464	265		LF	RC PIPE (CL III) (24 IN)
496	234		LF	REMOVE STRUCTURE (PIPE)
496	3		EA	REMOVE STRUCTURE (SMALL)
4061	3		EA	IRRIGATION WELL (18")
4269	265		LF	PRESS IRRIG PVC PIPE (18 IN)

\*FOR CONTRACTORS INFORMATION ONLY

NOTES:

- SEE DETAIL AND STANDARDS SHEETS FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE IRRIGATION DISTRICT AT A MINIMUM TWO WEEKS PRIOR TO SCHEDULING IRRIGATION CROSSING INSTALLATIONS.



11/18/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676  
IRRIGATION  
CROSSINGS**

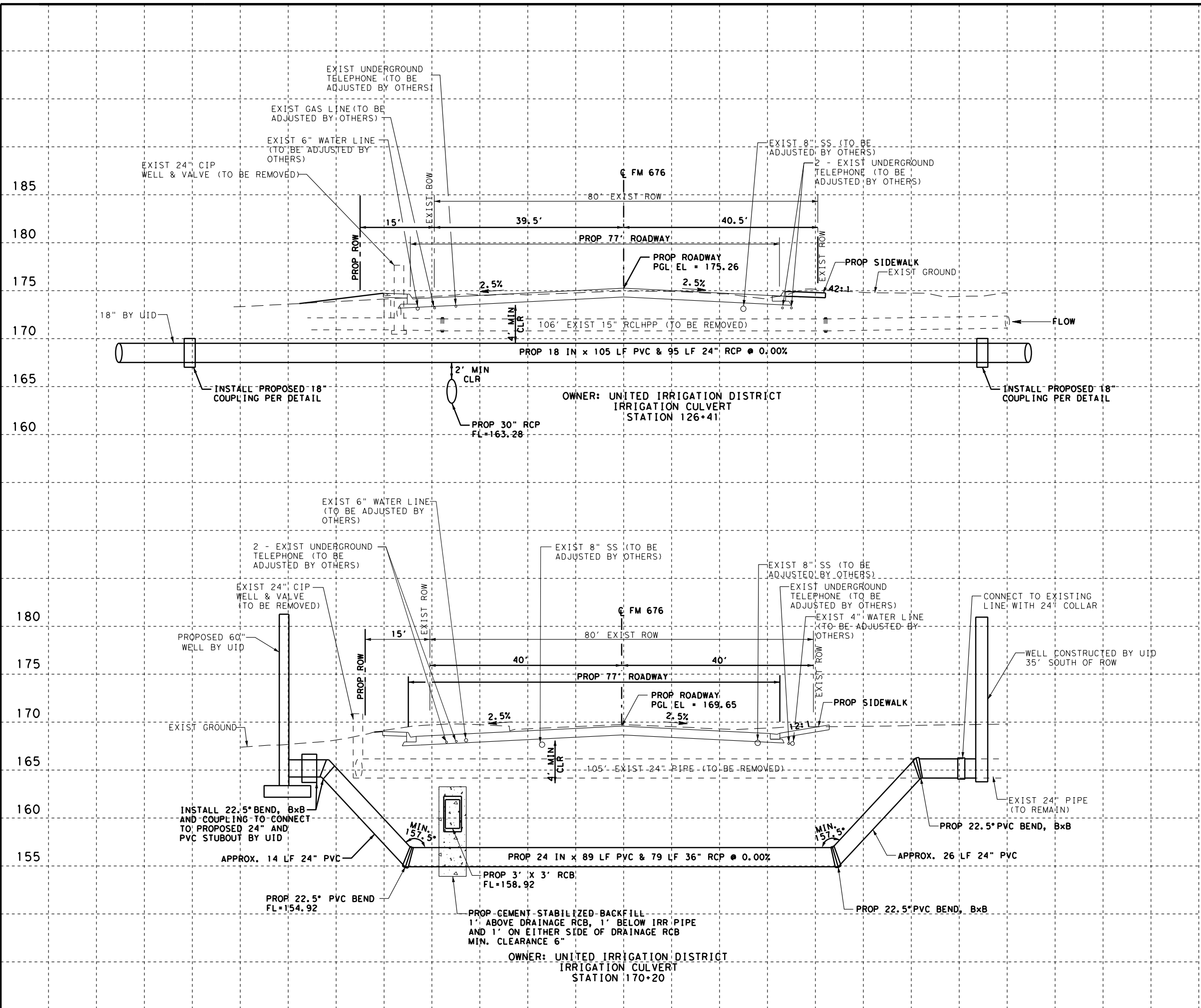
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DISTANCE IN FEET

VERT SCALE: 1"=10'  
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DISTANCE IN FEET

SHEET 1 OF 4			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			265
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS				
ITEM	EST.	FIN.	UNIT	DESCRIPTION
400*	213		CY	STRUCTURAL EXCAVATION (PIPE)
400	52		CY	CEMENT STABIL BKFL
400	58		SY	CUT & RESTORING PAV
400	38		CY	STRUCT. EXC. (SPL)
402	245		LF	TRENCH EXC. PROTECTION
464	113		LF	RC PIPE (CL III) (24 IN)
464	129		LF	RC PIPE (CL III) (30 IN)
496	211		LF	REMOVE STRUCTURE (PIPE)
496	2		EA	REMOVE STRUCTURE (SMALL)
4061	2		EA	IRRIGATION WELL (24")
4269	113		LF	PRESS IRRIG PVC PIPE (18 IN)
4035	129		LF	PRESS IRRIG PVC PIPE (24 IN)

\*FOR CONTRACTORS INFORMATION ONLY

- NOTES:
- SEE DETAIL AND STANDARDS SHEETS FOR ADDITIONAL INFORMATION.
  - NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT, SHALL BE INSTALLED PER JOINT OF PVC PIPE.



**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 IRRIGATION  
 CROSSINGS**

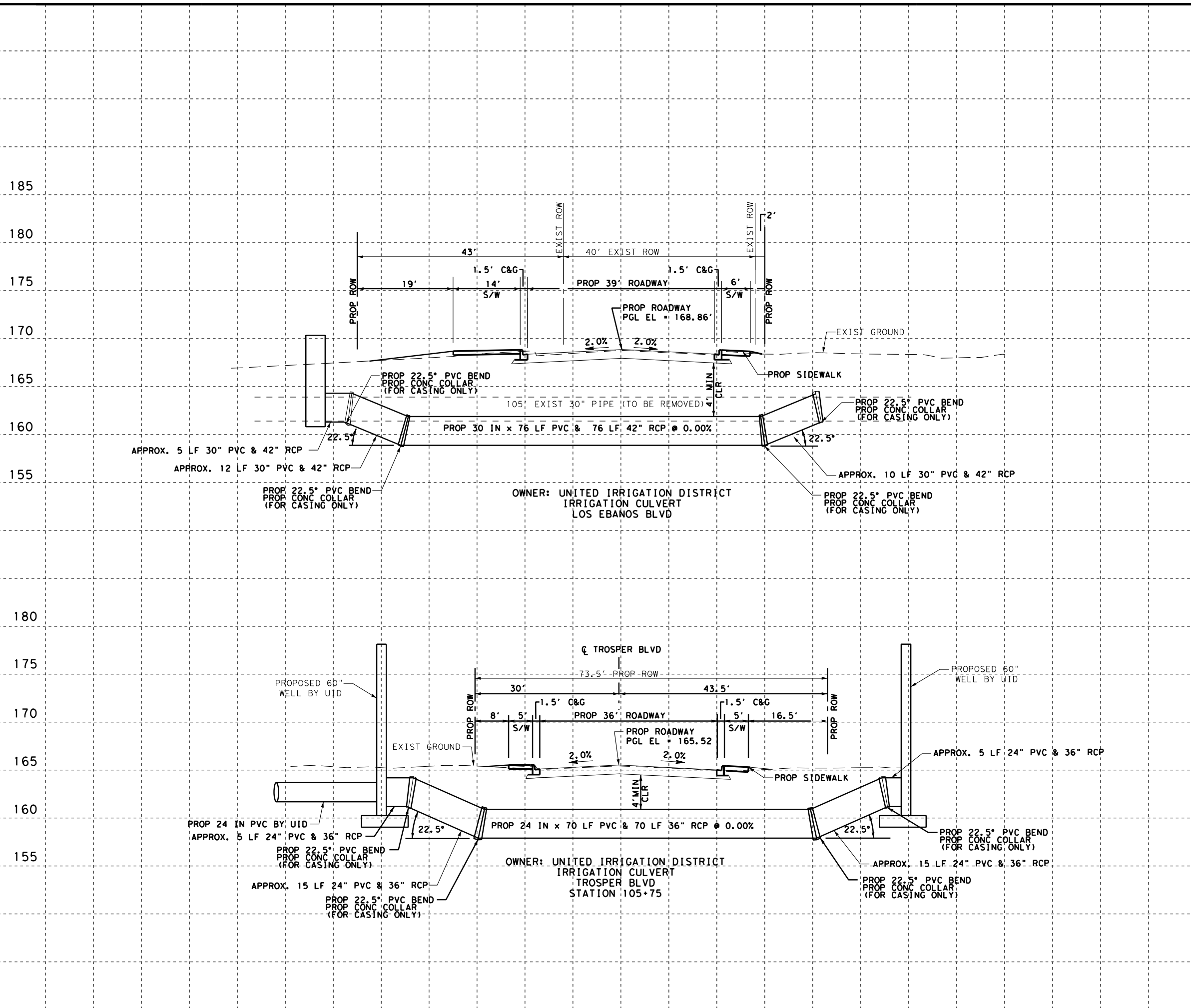
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 DISTANCE IN FEET

VERT SCALE: 1"=10'  
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 DISTANCE IN FEET

SHEET 2 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			266
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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SHEET TOTALS				
ITEM	EST.	FIN.	UNIT	DESCRIPTION
400*	265		CY	STRUCTURAL EXCAVATION (PIPE)
400	52		CY	CEMENT STABIL BKFL
400	250		SY	CUT & RESTORING PAV
402	176		LF	TRENCH EXC. PROTECTION
464	110		LF	RC PIPE (CL III) (36 IN)
464	103		LF	RC PIPE (CL III) (42 IN)
496	211		LF	REMOVE STRUCTURE (PIPE)
4035	110		LF	PRESS IRRIG PVC PIPE (24 IN)
4036	103		LF	PRESS IRRIG PVC PIPE (30 IN)

\*FOR CONTRACTORS INFORMATION ONLY

- NOTES:
- SEE DETAIL AND STANDARDS SHEETS FOR ADDITIONAL INFORMATION.
  - NOT LESS THAN 5 SETS OF RANGER CASING SPACERS OR APPROVED EQUIVALENT, SHALL BE INSTALLED PER JOINT OF PVC PIPE.



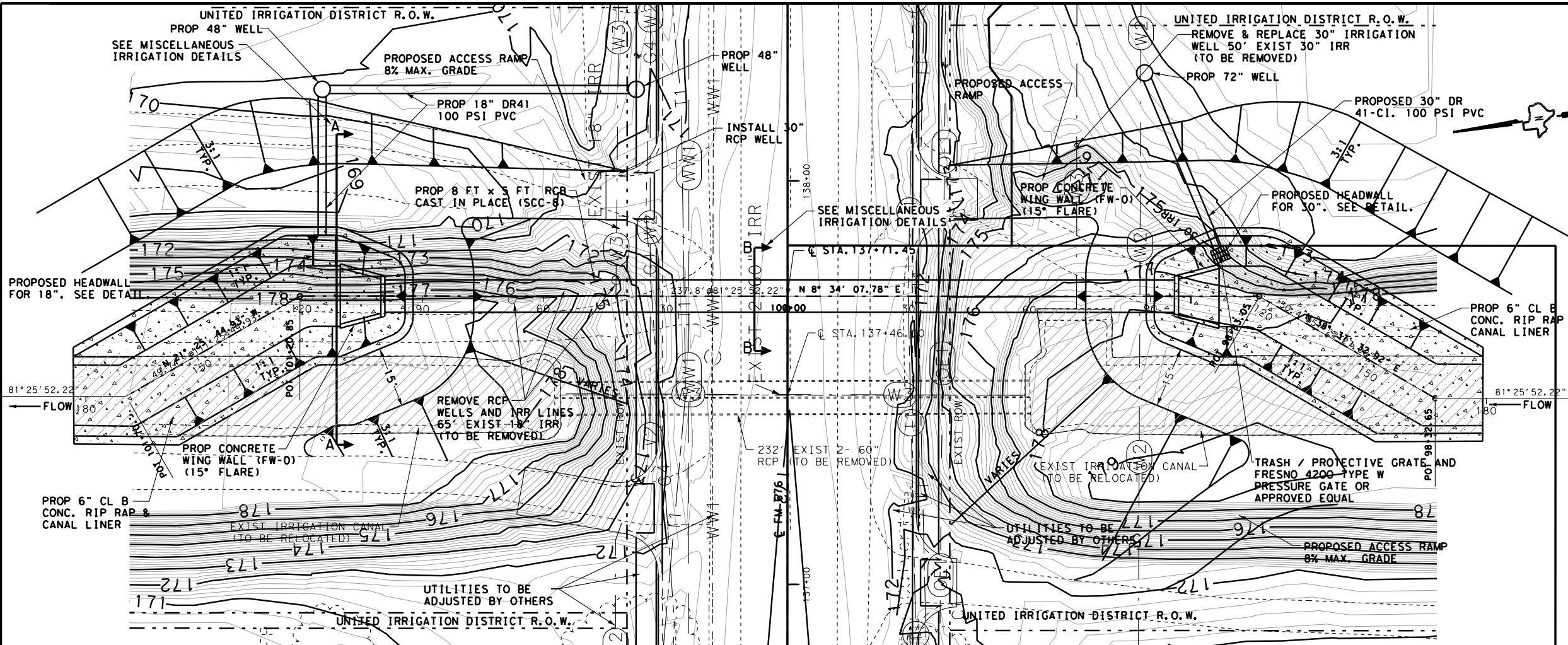
**ATKINS**  
 TBPE REG. #F-474

**FM 676  
 IRRIGATION  
 CROSSINGS**

HORIZ SCALE: 1"=20'  
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 DISTANCE IN FEET

VERT SCALE: 1"=10'  
 0 2 4 6 8 10  
 DISTANCE IN FEET

SHEET 3 OF 4			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			266A
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



- LEGEND:**
- R.O.W.
  - [Diagonal Hatching] CONCRETE REMOVAL
  - [Dotted Pattern] PROPOSED CONCRETE
  - 6" W — 6" WATER LINE
  - 4" SS (FM) — 4" SANITARY SEWER
  - 8" SS — 8" SANITARY SEWER
  - UT — UNDERGROUND TELEPHONE
  - OHE — OVERHEAD ELECTRIC
  - IRR — IRRIGATION LINE

- NOTES:**
- SEE DETAIL AND STANDARDS SHEETS FOR ADDITIONAL INFORMATION.
  - CONTRACTOR MUST KEEP IRRIGATION SYSTEM OPERATIONAL AT ALL TIMES.
  - SEE SCC-8 (MOD) FOR ADDITIONAL INFORMATION.

SHEET TOTALS			
ITEM	EST.	FIN. UNIT	DESCRIPTION
104	556	SY	REMOVE CONC (RIPRAP)
164	4,044	SY	BROADCAST SEED (PERM) (URBAN) (SANDY)
400	2,698	CY	STRUCTURAL EXCAVATION
400*	1,430	CY	STRUCTURAL EXCAVATION (BOX)
400	126	CY	CEMENT STABIL BKFL
400	41	CY	STRUCT. EXC. (SPL)
401	189	CY	FLOWABLE BACKFILL
402	210	LF	TRENCH EXC. PROTECTION
432	154	CY	RIPRAP (CONC) (6 IN)
462	196	LF	CONCRETE BOX CULVERT (8FT X 5FT)
464	96	LF	RC PIPE (CL III) (24 IN)
466	2	EA	WINGWALL (SW-0) (HW=5 FT)
496	347	LF	REMOVE STRUCTURE (PIPE)
496	3	EA	REMOVE STRUCTURE (SMALL)
4269	204	LF	PRESS IRRIG PVC PIPE (18 IN)
4035	87	LF	RCHPP (CL III) (30 IN)
4061	1	EA	IRRIGATION GATE (18")
4061	1	EA	IRRIGATION GATE (30")
4061	3	EA	IRRIGATION WELL (30")
4153	8331	SF	RIPRAP CANAL LINER

\*FOR CONTRACTORS INFORMATION ONLY



11/18/2022



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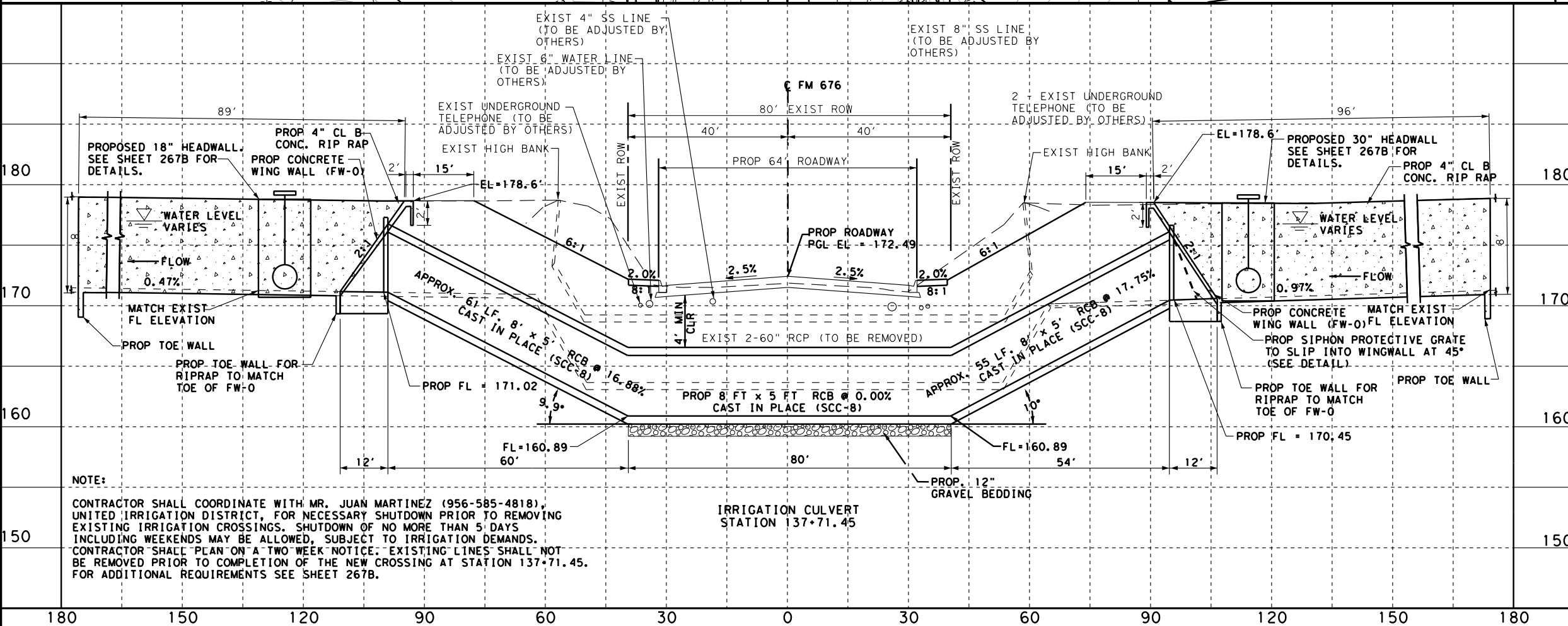
TBPE REG. #F-474

## FM 676 IRRIGATION CROSSINGS

SCALE: 1"=30' H  
1"=10' V

SHEET 4 OF 4

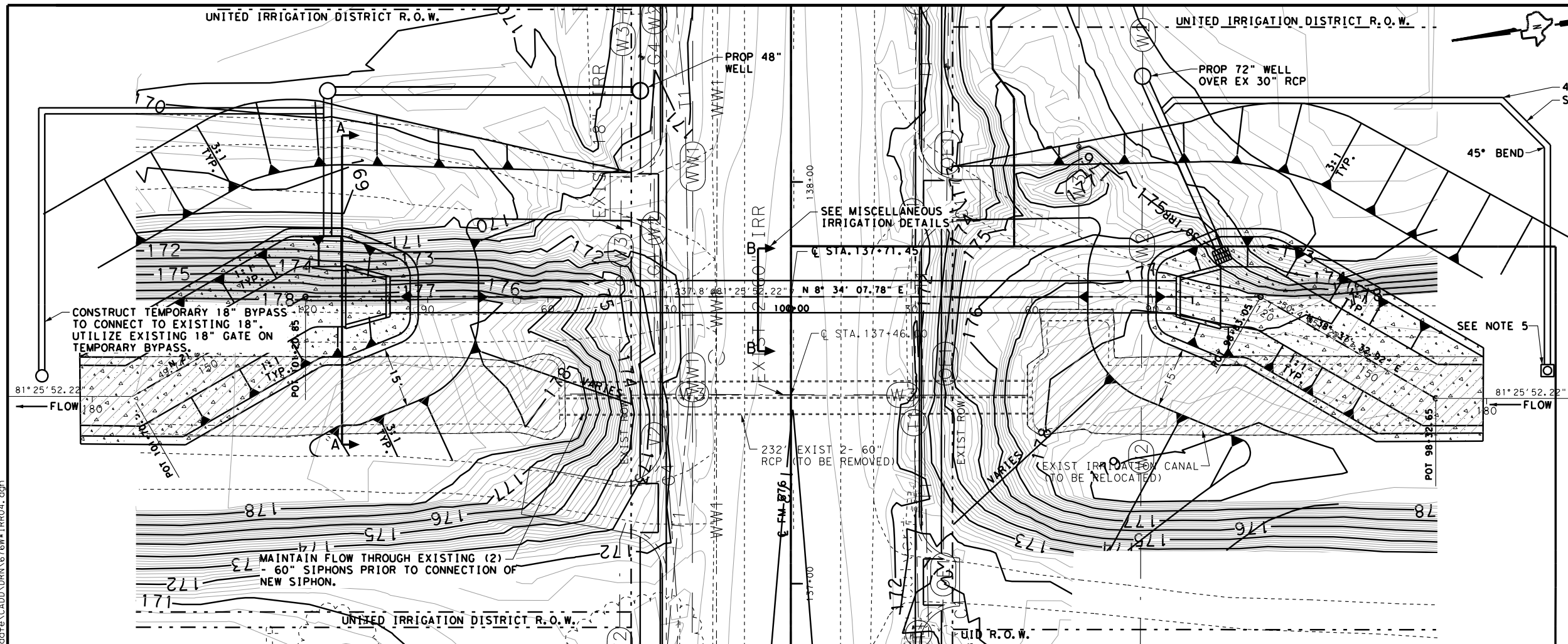
FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 267
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CONT. 1064	SECT. 01	JOB 032
		HIGHWAY NO. FM 676



**NOTE:**  
CONTRACTOR SHALL COORDINATE WITH MR. JUAN MARTINEZ (956-585-4818), UNITED IRRIGATION DISTRICT, FOR NECESSARY SHUTDOWN PRIOR TO REMOVING EXISTING IRRIGATION CROSSINGS. SHUTDOWN OF NO MORE THAN 5 DAYS INCLUDING WEEKENDS MAY BE ALLOWED, SUBJECT TO IRRIGATION DEMANDS. CONTRACTOR SHALL PLAN A TWO WEEK NOTICE. EXISTING LINES SHALL NOT BE REMOVED PRIOR TO COMPLETION OF THE NEW CROSSING AT STATION 137+71.45. FOR ADDITIONAL REQUIREMENTS SEE SHEET 267B.

IRRIGATION CULVERT  
STATION 137+71.45

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DATE: 11/18/2022  
FILES: pml\USDD036343.wsoftk\ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\DRN\676W\IRR03.dgn

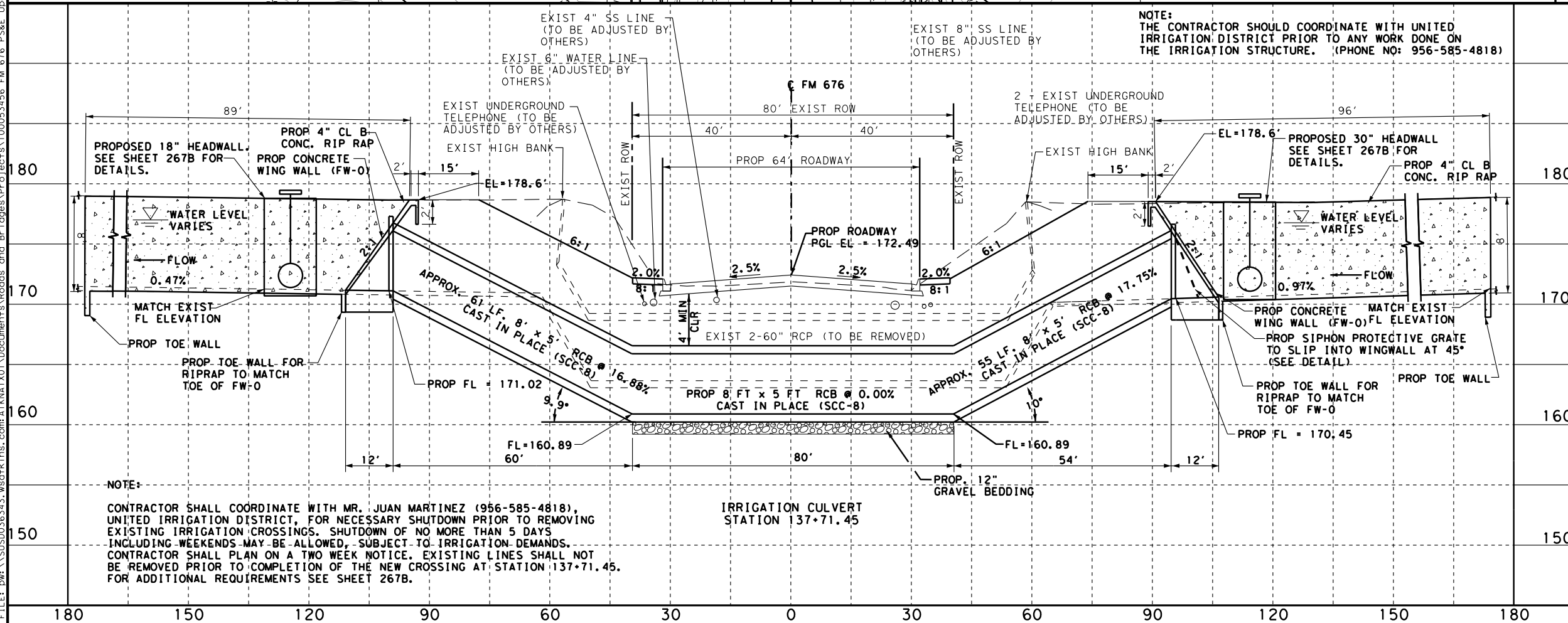


- LEGEND:**
- R.O.W.
  - [Hatched Box] CONCRETE REMOVAL
  - [Dotted Box] PROPOSED CONCRETE
  - 6"W — 6" WATER LINE
  - 4"SS (FM) — 4" SANITARY SEWER
  - 8"SS — 8" SANITARY SEWER
  - UT — UNDERGROUND TELEPHONE
  - OHE — OVERHEAD ELECTRIC
  - IRR — IRRIGATION LINE

- NOTES:**
1. SEE DETAIL AND STANDARDS SHEETS FOR ADDITIONAL INFORMATION.
  2. CONTRACTOR MUST KEEP IRRIGATION SYSTEM OPERATIONAL AT ALL TIMES.
  3. SEE SCC-8 (MOD) FOR ADDITIONAL INFORMATION.
  4. CONSTRUCT TEMPORARY 30" DR 41 100 PSI PVC BYPASS, RELOCATE EXISTING GATE AND GRATE. 30" LINE SHUT DOWN SHALL BE COORDINATED WITH UID.
  5. RELOCATE EXISTING GATE AND GRATE.
  6. PROVIDE A BYPASS ARRANGEMENT FOR THE (2) - 60" SIPHONS TO REMAIN IN SERVICE DURING CONSTRUCTION OF NEW 5X8 BOX. THE BYPASS ARRANGEMENT SHALL BE APPROVED BY UID.

SHEET TOTALS			
ITEM	EST.	FIN. UNIT	DESCRIPTION
400	217	CY	STRUCTURAL EXCAVATION
1008	135	LF	PRSSR IRRIG PVC PIPE (18")
XXXX	157	LF	PRSSR IRRIG PVC PIPE (30")

\*FOR CONTRACTORS INFORMATION ONLY



**NOTE:**  
THE CONTRACTOR SHOULD COORDINATE WITH UNITED IRRIGATION DISTRICT PRIOR TO ANY WORK DONE ON THE IRRIGATION STRUCTURE. (PHONE NO: 956-585-4818)

11/18/2022

Texas Department of Transportation  
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# ATKINS

TBPE REG. #F-474

## FM 676 IRRIGATION CROSSINGS

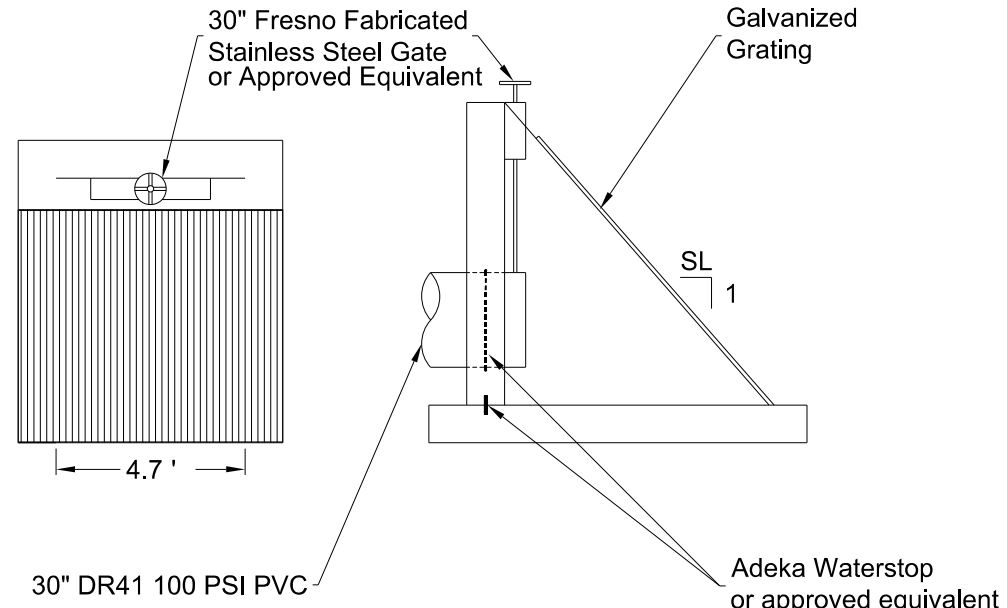
BYPASS PLAN

SHEET 1 OF 1		SCALE: 1"=30' H 1"=10' V
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		267A
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

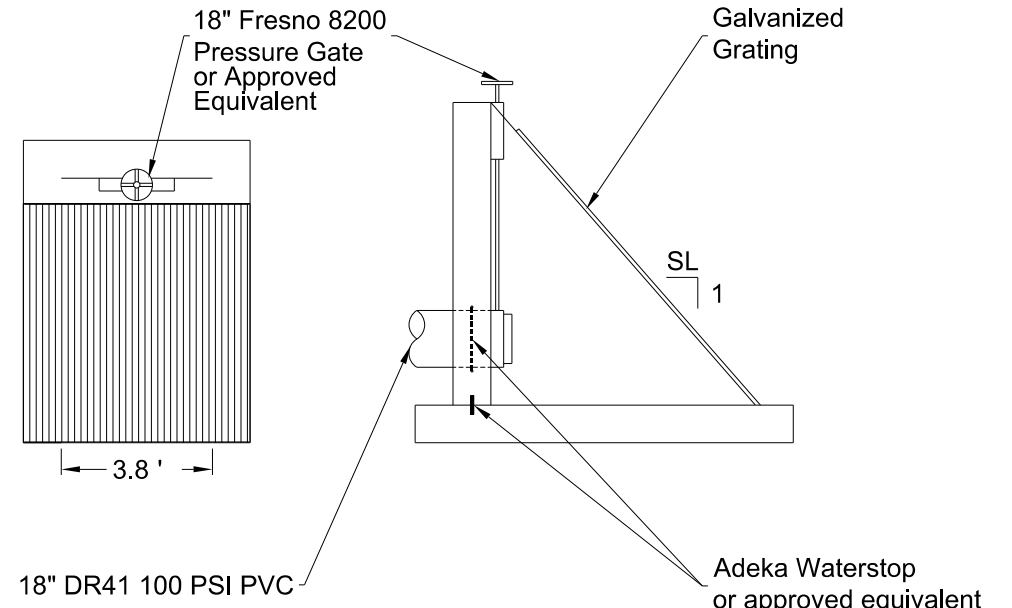
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**NOTE:**  
CONTRACTOR SHALL COORDINATE WITH MR. JUAN MARTINEZ (956-585-4818), UNITED IRRIGATION DISTRICT, FOR NECESSARY SHUTDOWN PRIOR TO REMOVING EXISTING IRRIGATION CROSSINGS. SHUTDOWN OF NO MORE THAN 5 DAYS INCLUDING WEEKENDS MAY BE ALLOWED, SUBJECT TO IRRIGATION DEMANDS. CONTRACTOR SHALL PLAN ON A TWO WEEK NOTICE. EXISTING LINES SHALL NOT BE REMOVED PRIOR TO COMPLETION OF THE NEW CROSSING AT STATION 137+71.45. FOR ADDITIONAL REQUIREMENTS SEE SHEET 267B.

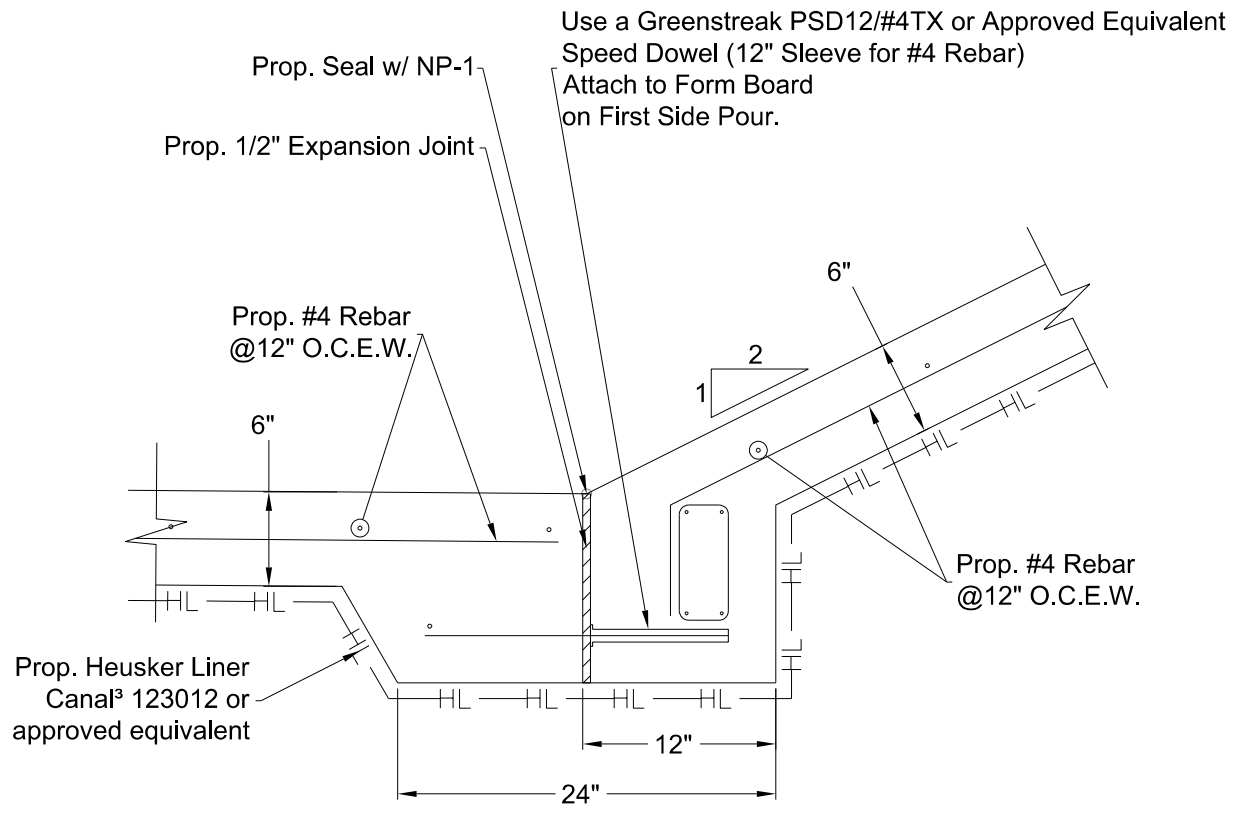




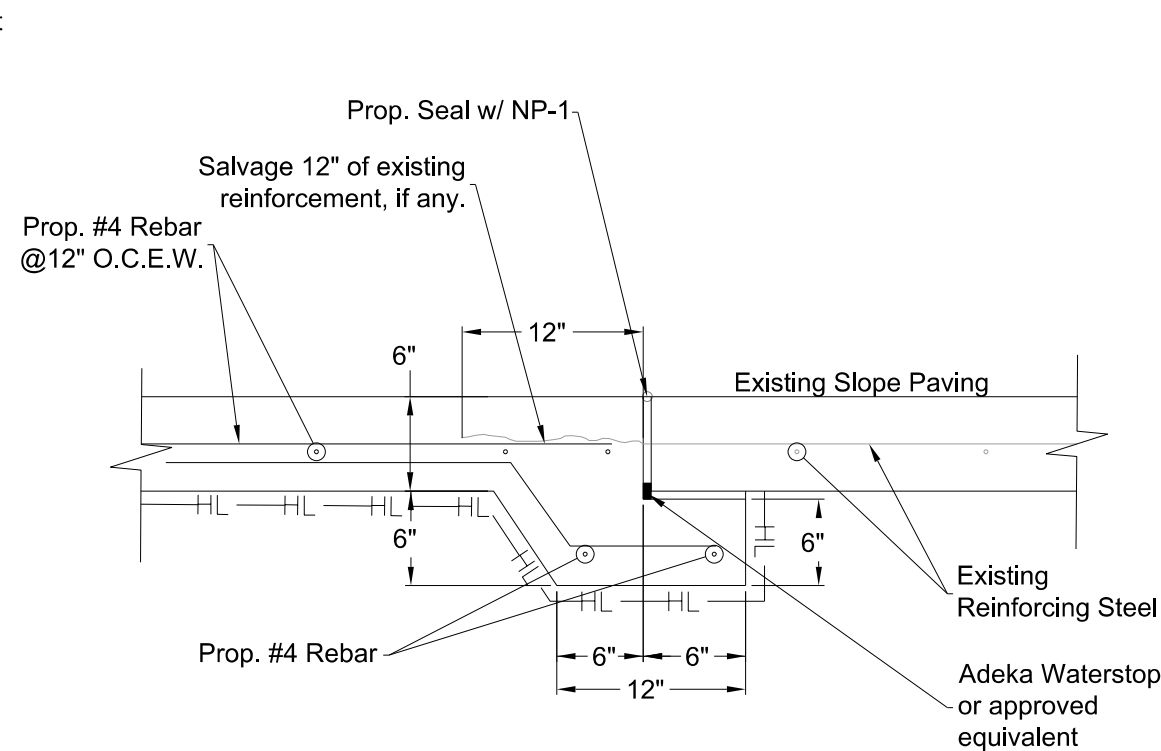
**30" Headwall & Grating Detail**  
Scale: N.T.S.



**18" Headwall & Grating Detail**  
Scale: N.T.S.



**Slope Paving to Floor Detail**  
Scale: N.T.S.



**Connection for Existing Concrete Slope Paving Detail**  
Scale: N.T.S.



11/18/2022



**ATKINS**

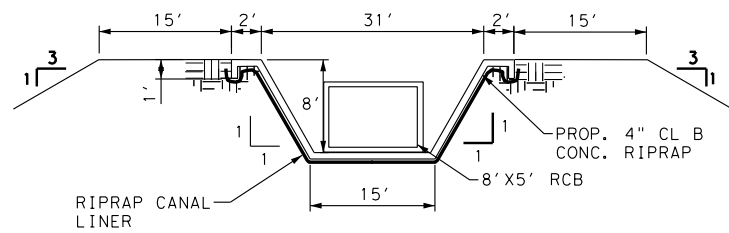
TBPE REG. #F-474

**FM 676  
HEADWALL & SLOPE  
PAVING DETAILS**

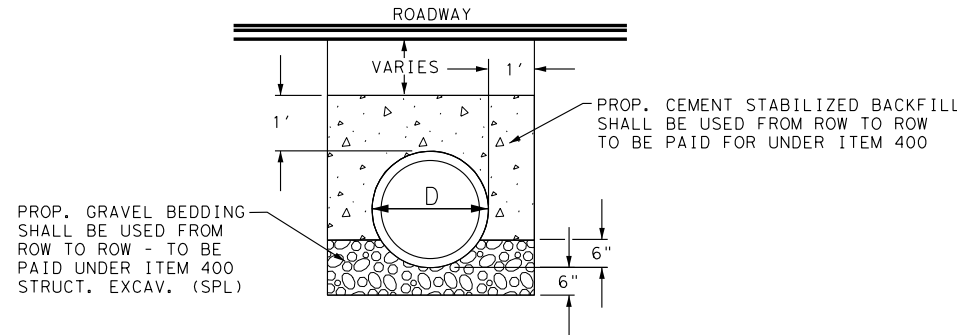
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SHEET 1 OF 1			
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6			267B
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

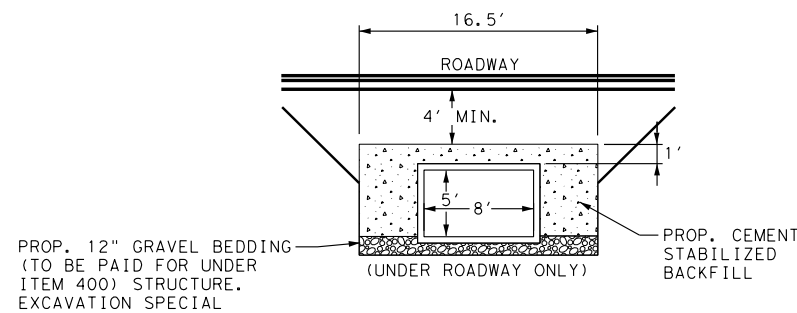
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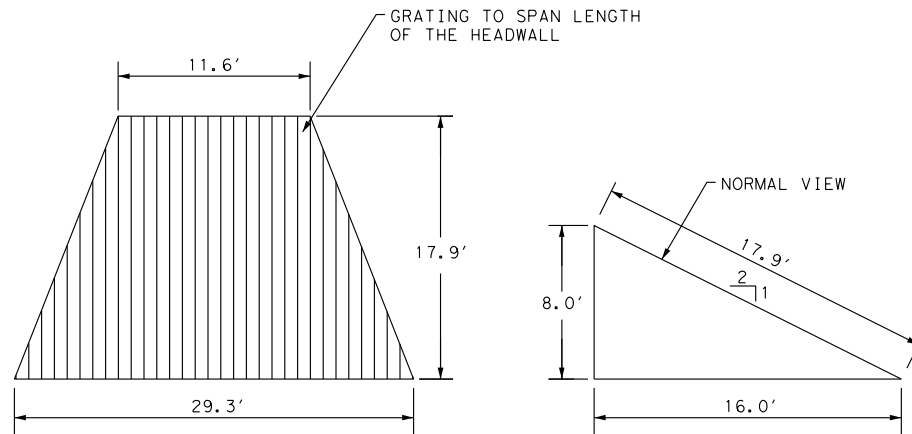
**TYPICAL SECTION A-A**  
N. T. S.



**TYPICAL IRRIGATION CROSSING DETAIL**  
N. T. S.



**TYPICAL SECTION B-B**  
N. T. S.



**GRATING NORMAL VIEW**  
N. T. S.

**HEADWALL PROFILE VIEW**  
N. T. S.

**TRASH/PROTECTIVE GRATE DETAIL**

N. T. S.  
NOTE: GRATING SHALL BE DESIGNED TO SPAN 17.9' WITH 150 PSF LOADING WITH SUPPORTS AS REQUIRED AND HOT DIPPED GALVANIZING AFTER FABRICATION

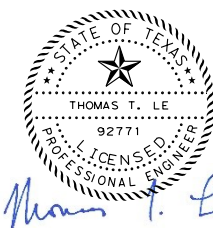
PAID FOR UNDER 471 6003 GRATE & FRAME LOCATED AT THE UPSTREAM SIDE OF IRRIGATION CULVERT STATION 137+71.45

Irrigation Crossing Summary Table					
Station	Existing Size	Owner	Proposed Action	Proposed Size	REMOVE STRUCTURE (PIPE) (LF)
96+36	24"	HCID # 6	REMOVE	N/A	90
98+86	14"	HCID # 6	NEW SIPHON	18"	122
118+88	15"	HCID # 6	NEW SIPHON	18"	112
123+73	18"	HCID # 6	REMOVE	N/A	80
125+90	15"	UID	NEW SIPHON	18"	106
137+46	2 x 60"	UID	NEW SIPHON	8' x 5' RCB	232
152+06	14"	UID	REMOVE	N/A	120
170+20	24"	UID	NEW SIPHON	24"	105
178+38	12"	UID	REMOVE	N/A	80
200+24	15"	UID	REMOVE	N/A	90

SEE IRRIGATION CROSSINGS SHEETS FOR PROPOSED PIPE LENGTHS.

**GENERAL IRRIGATION LINE NOTES**

1. THE CONTRACTOR WILL COORDINATE WITH HIDALGO COUNTY IRRIGATION DISTRICT # 6 (HCID # 6) AT LEAST 48 HOURS PRIOR TO ANY WORK DONE ON THE IRRIGATION STRUCTURES.
2. WHEN WORKING OUTSIDE THE ROW, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL CONFIRM THAT ALL CONFLICTS WITH EXISTING UTILITIES HAVE BEEN RESOLVED IN ADVANCE OF CONSTRUCTION.
4. ALL UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION. IN PARTICULAR, THE VERTICAL INFORMATION OF UTILITIES SHOWN ARE ROUGH ESTIMATES. PIPE LENGTHS SHOWN FOR ANGLED SIPHON SEGMENTS WILL VARY DEPENDING ON ACTUAL ELEVATION OF EXISTING UTILITY. CONTRACTOR TO DETERMINE PRECISE LENGTH AND SLOPE.
5. CONCRETE COLLARS TO BE SUBSIDIARY TO PIPE
6. FOR THE PROPOSED SIPHON AT STATION 137+71.45 TO REPLACE THE EXISTING SIPHON AT STATION 137+46, THE FOLLOWING ITEMS APPLY.
  - a. THE EXISTING SIPHON AT STATION 137+46 IS TO REMAIN IN PLACE AND IN SERVICE DURING THE CONSTRUCTION OF THE PROPOSED SIPHON.
  - b. PROPOSED SIPHON WILL BE AN 8'X5' CAST IN PLACE REINFORCED CONCRETE BOX CULVERT FOR DESIGN FILL HEIGHT OF 20 FEET AS PER STANDARD SCC-8(MOD).
  - c. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
  - d. PROPOSED SIPHON SHALL MEET "WATERTIGHTNESS" REQUIREMENTS IN ACCORDANCE WITH ACI 350-01, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES".
  - e. RIPRAP CANAL LINER TO BE PLACED UNDER NEW RIPRAP (PAY TO BE SUBSIDIARY TO PERTINENT BID ITEM).
  - f. SLOPED CULVERT ENDS SHALL BE SUPPORTED ON A CEMENT-STABILIZED SAND BEDDING.
  - g. THE TXDOT CONTRACTOR SHALL SUBMIT A BYPASS PLAN TO UNITED IRRIGATION DISTRICT, SUBSTANTIALLY CONFORMING TO SHEET 267A. THE BYPASS AND NEW SIPHON CONSTRUCTION SHALL MEET THE SHUTDOWN REQUIREMENTS IN PROFILE NOTE 6.



11/18/2022



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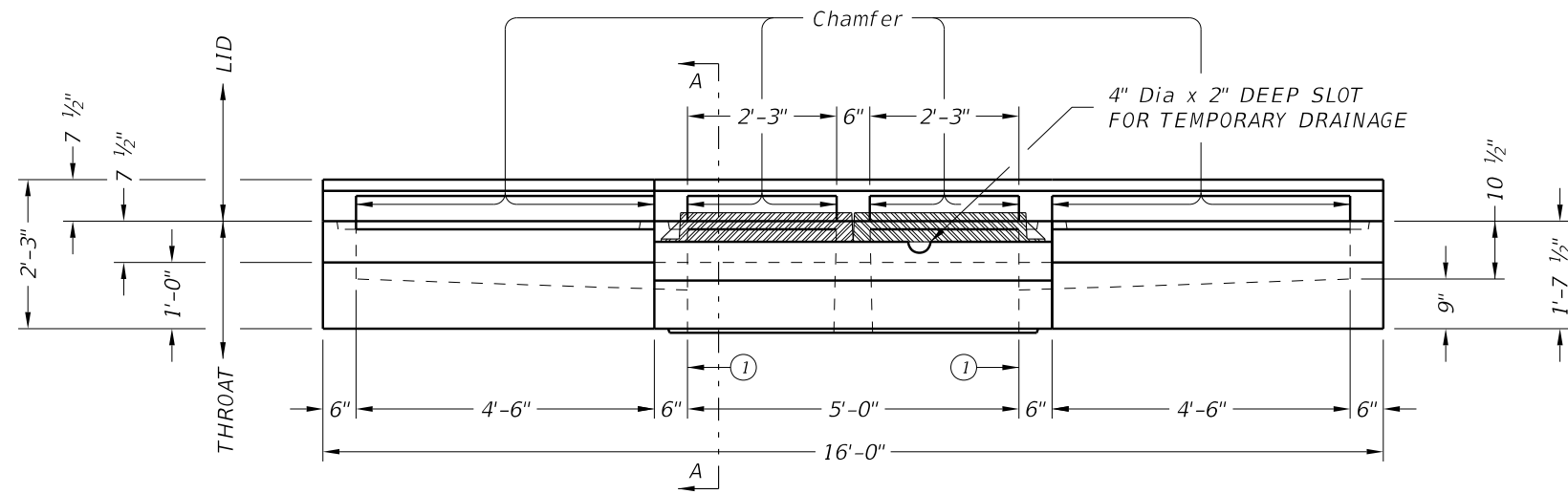
**FM 676**  
**MISCELLANEOUS IRRIGATION**  
**DETAILS**

SHEET 1 OF 1

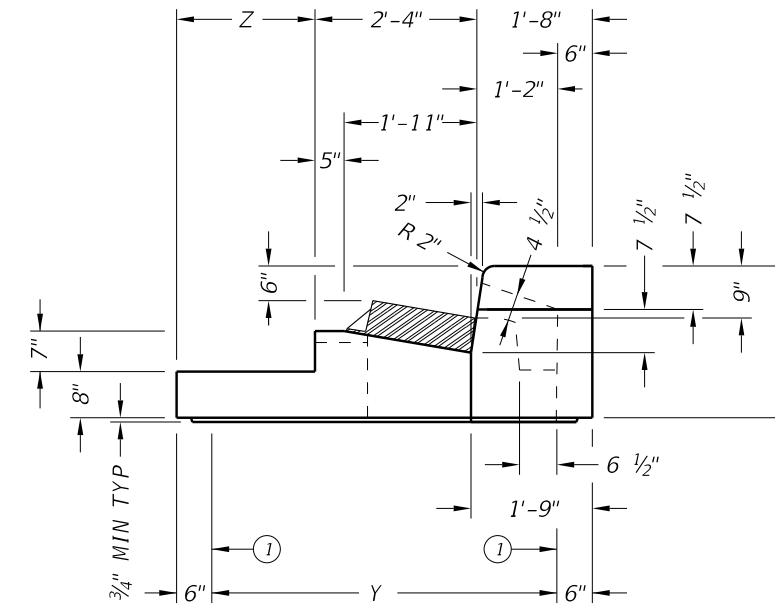
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6			268
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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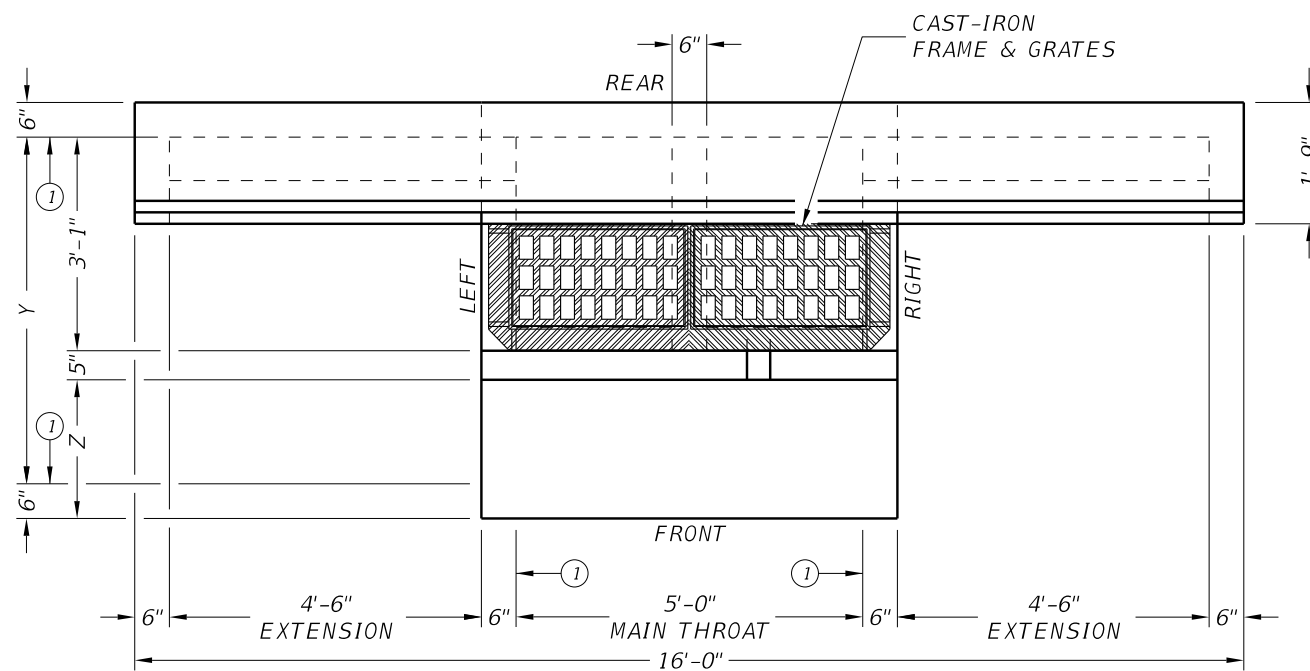
DATE:  
FILE:



**FRONT VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



① Matches inside face of wall of precast base or riser below inlet.



**PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)

HS20 LOADING SHEET 1 OF 2

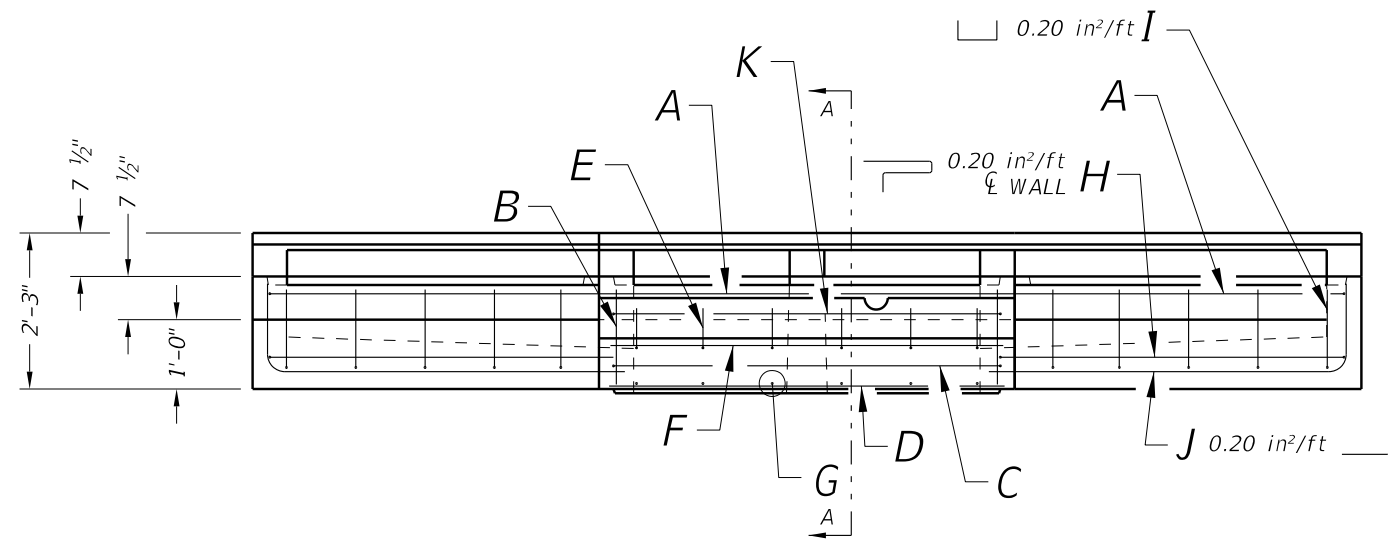


**PRECAST CURB INLET  
UNDER ROADWAY**

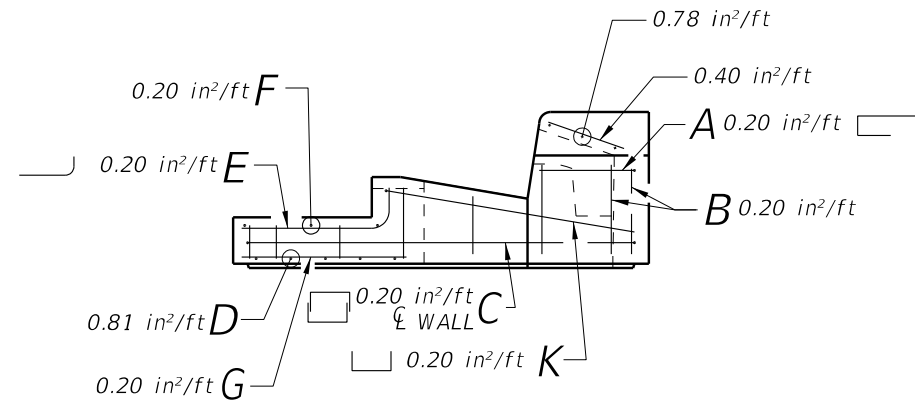
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	269	

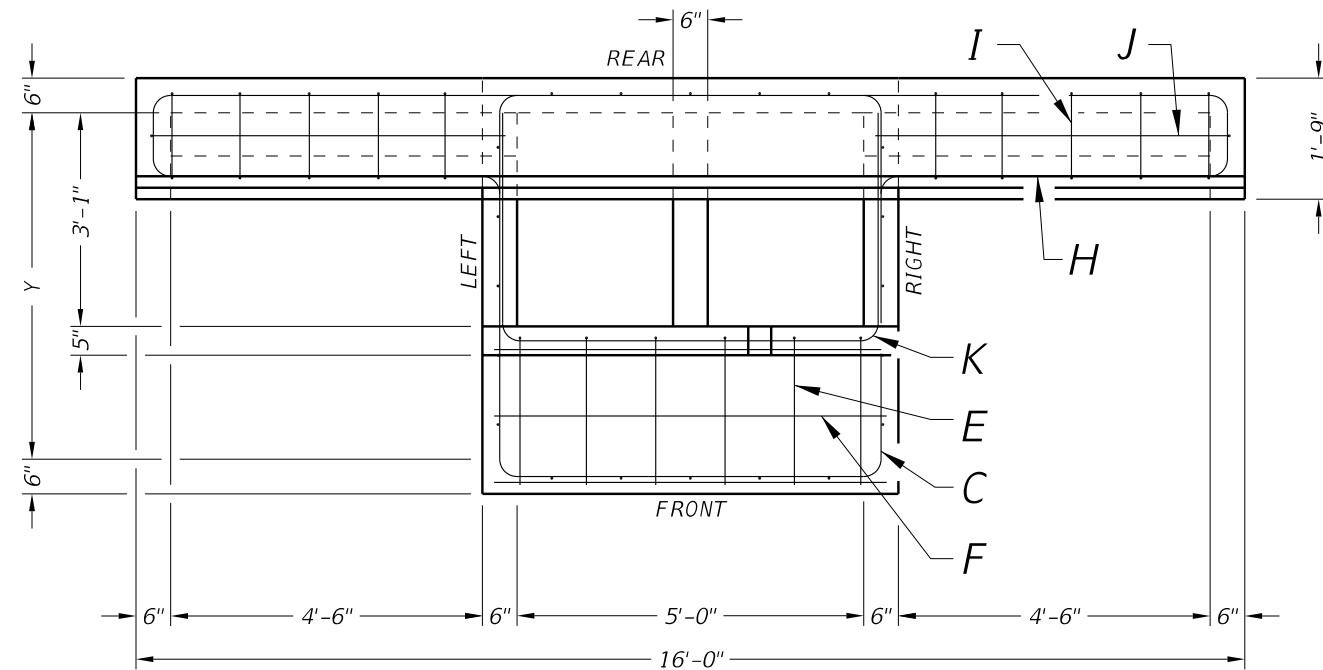
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**FRONT VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**SECTION A-A**



**PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)

**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel from surface of concrete or lower outside shoulder.
4. Extensions may be right, left, both or none. Provide extensions as specified elsewhere in plans.
5. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4". Top slab may employ a butt joint with dowels at the Contractor's option.
6. Provide lifting devices in conformance with Manufacturer's recommendations.
7. Chamfer vertical edges on inlet lid 3/4" as shown in Front View, sheet 1.

**INSTALLATION NOTES:**

1. Inlet throat is placed under roadway and intended for direct traffic. Inlet lid is not for direct traffic. Do not place Inlet lid in roadway.
2. Seal tongue and groove joints and butt joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.

**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Open area of main throat = 324 sq in. Open area of one extension throat = 324 sq in.
3. Payment for inlet is per Item 465, "Junction Boxes, Manholes and Inlets" by type, size and extension placement. Extensions are subsidiary to inlet.

SIZE (Y)	Z
3'	0'
4'	1'
5'	2'
6'	3'



**PRECAST CURB INLET  
UNDER ROADWAY**

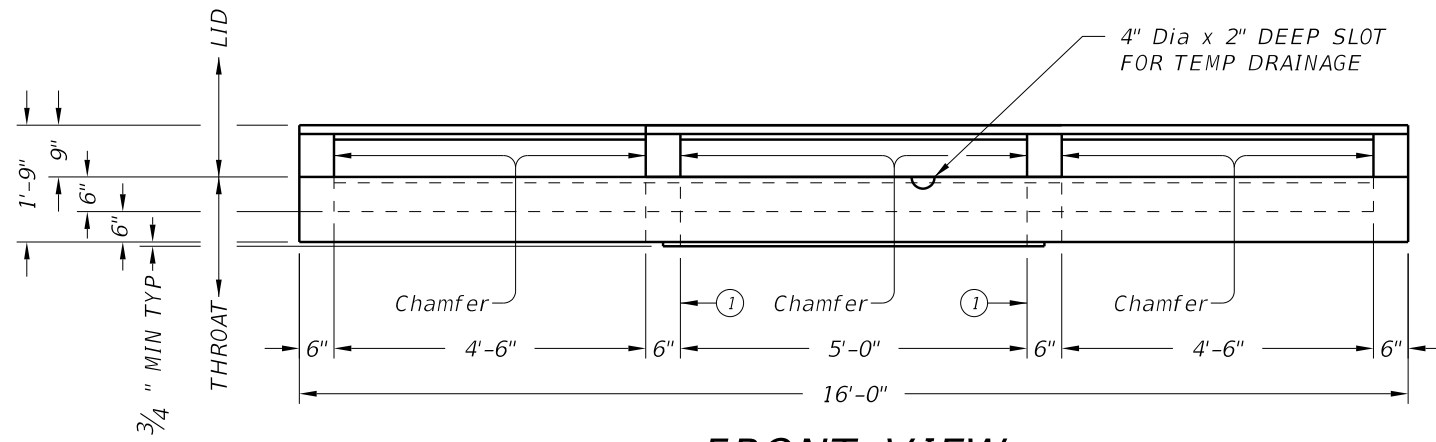
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FILE: prest04-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
DIST	COUNTY		SHEET NO.	
PHR	HIDALGO		270	

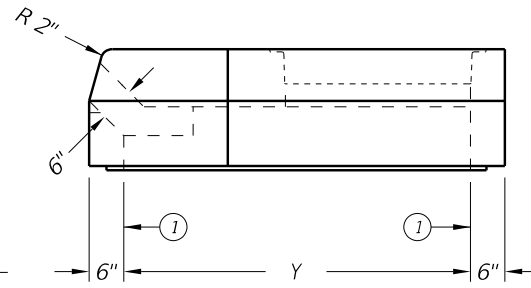
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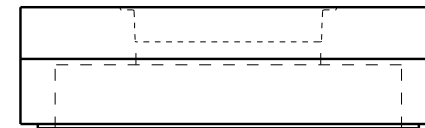
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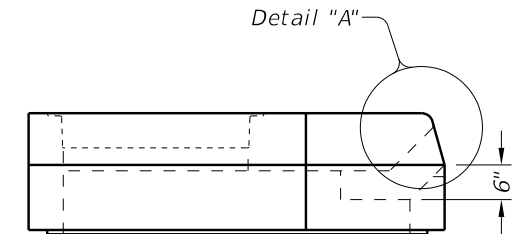
**FRONT VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**RIGHT VIEW**

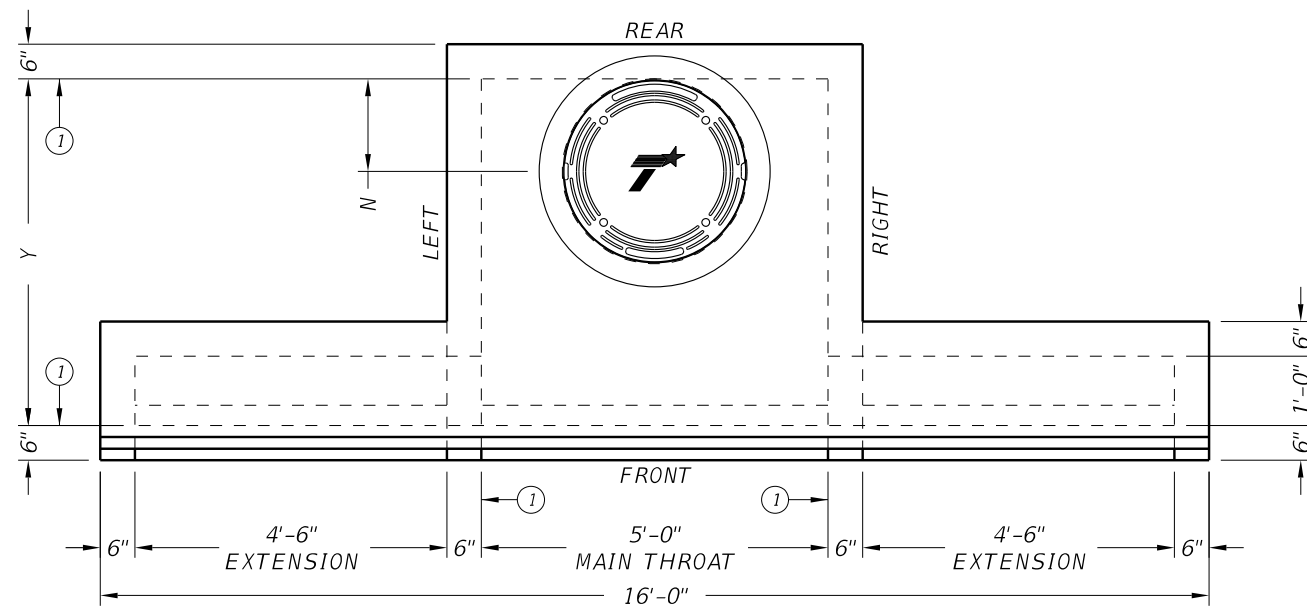


**REAR VIEW**  
(EXTENSIONS NOT SHOWN)

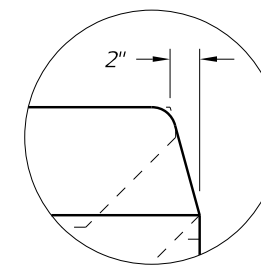


**LEFT VIEW**

① Matches inside face of wall of precast base or riser below inlet.



**PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**DETAIL "A"**

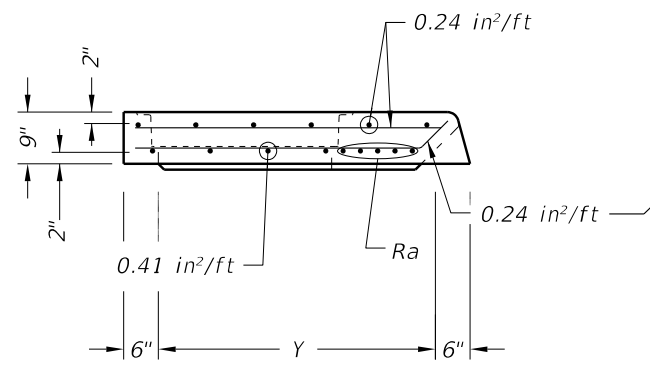


**PRECAST CURB INLET  
OUTSIDE ROADWAY**

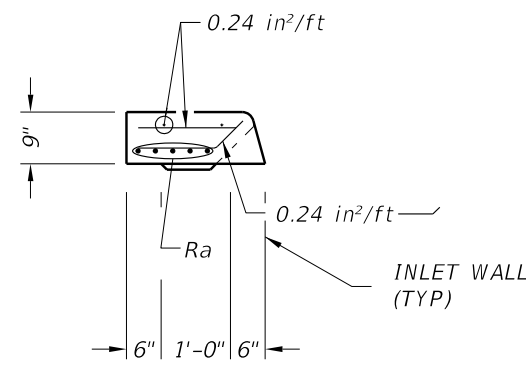
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FILE: prest03-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		271

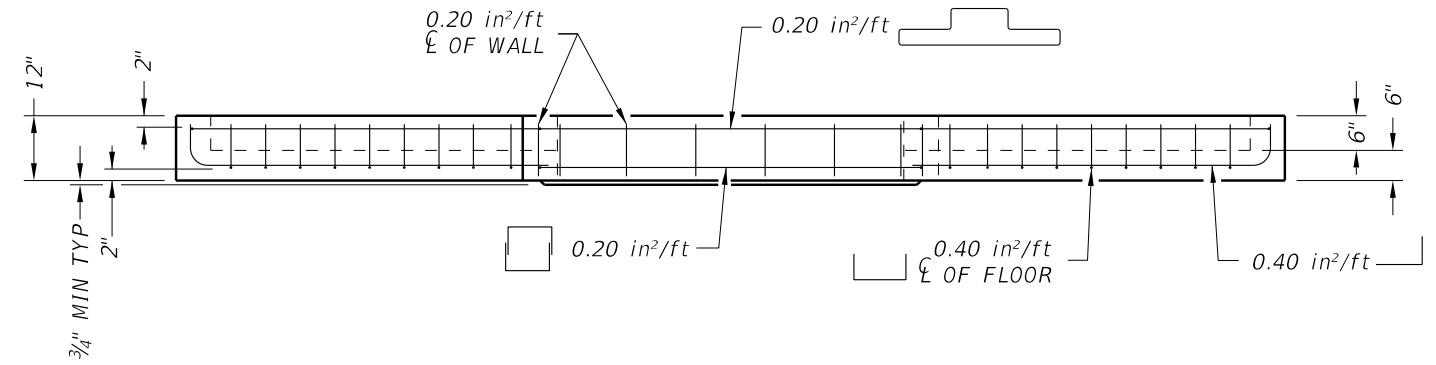
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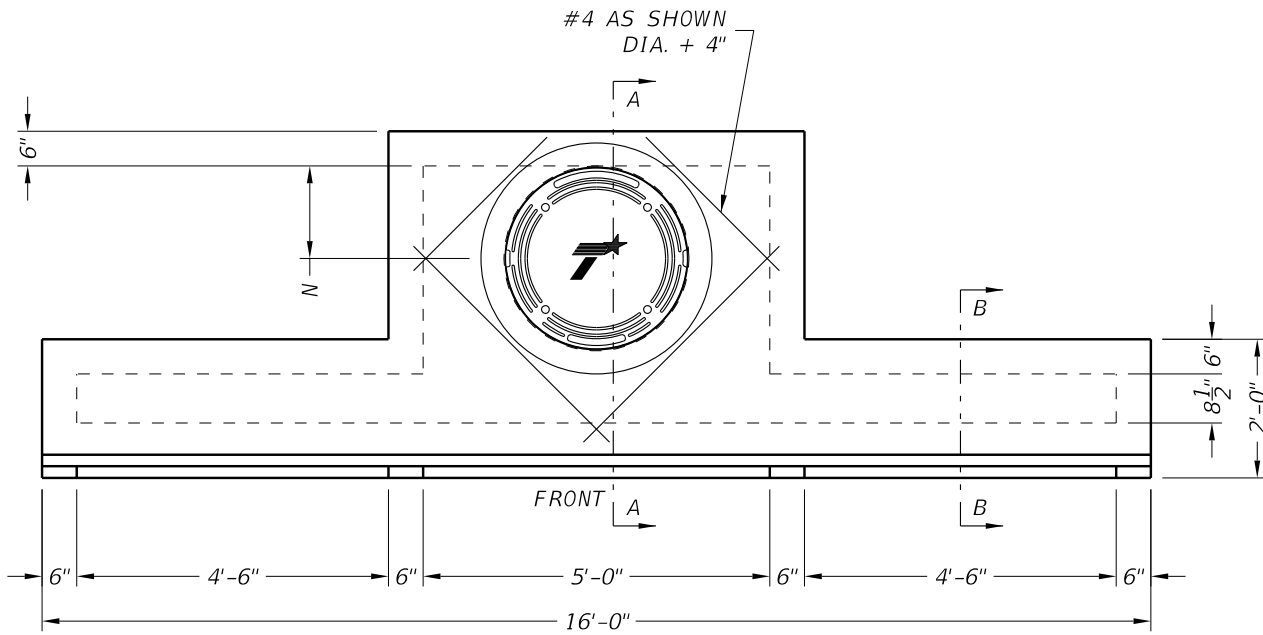
**LID SECTION A-A**



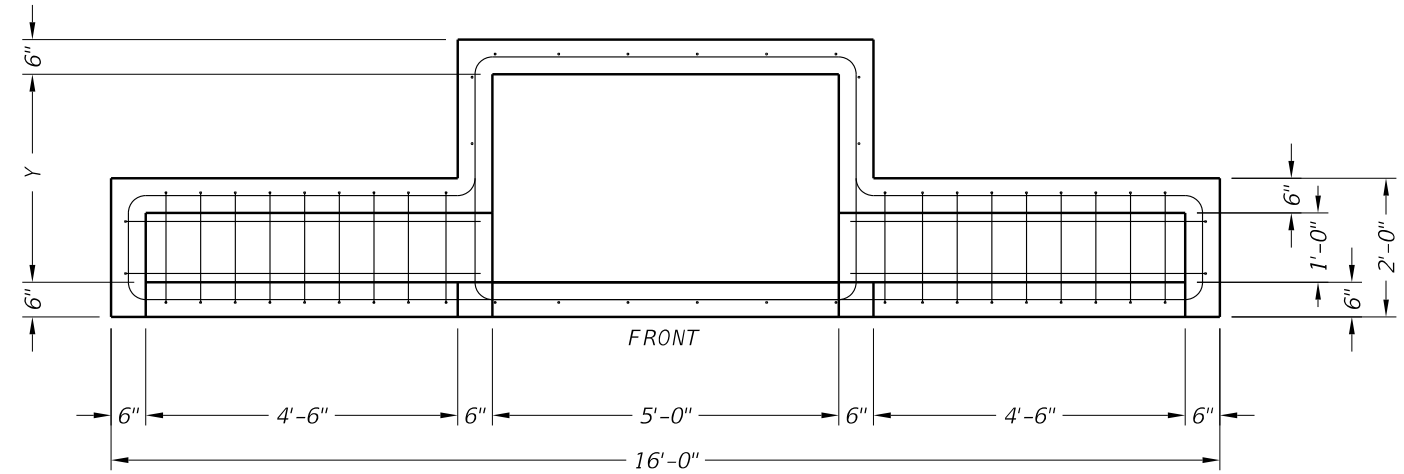
**LID SECTION B-B**



**THROAT ELEVATION VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**LID PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**THROAT PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)

**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Extensions may be right, left, both or none. Provide extensions as specified elsewhere in the plans.
4. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4". Lid may employ a butt joint with dowels at the Contractor's option.
5. Provide lifting devices in conformance with Manufacturer's recommendations.
6. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.
7. Chamfer vertical edges of inlet lid 3/4" as shown in Front View, sheet 1.

**INSTALLATION NOTES:**

1. Inlet throat and lid are not intended for direct traffic. Do not place in roadway.
2. Seal tongue and groove joints and butt joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.

**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Open area of main throat = 360 sq in. Open area of one extension throat = 324 sq in.
3. Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, size, and extension placement. Extensions are subsidiary to inlet.

Cover dimensions are clear dimensions, unless noted otherwise.

SIZE (Y)	N	MH DIA*	Ra
3'	9"	18"	(4) #5 Additional
4'	16"	32"	(4) #5 Additional
5'	16"	32"	(4) #5 Additional
6'	16"	32"	(4) #5 Additional

\*Nominal ring and cover size.

HS20 LOADING SHEET 2 OF 2



**PRECAST CURB INLET  
OUTSIDE ROADWAY**

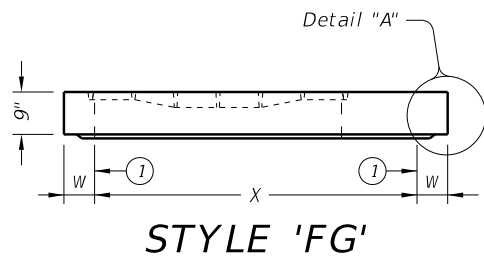
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REVISIONS	1064	01	032	FM 676
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	PHR	HIDALGO	272	

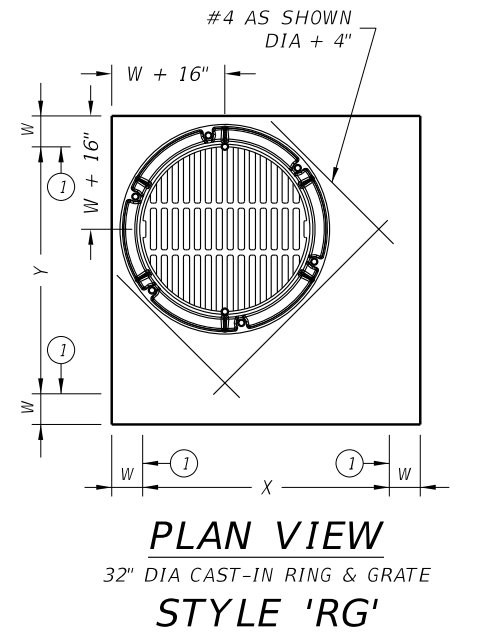
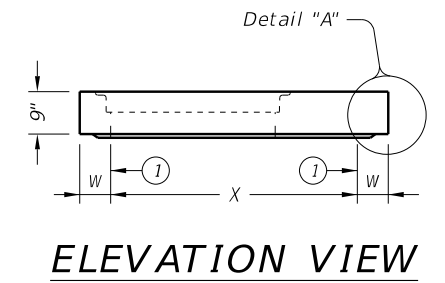
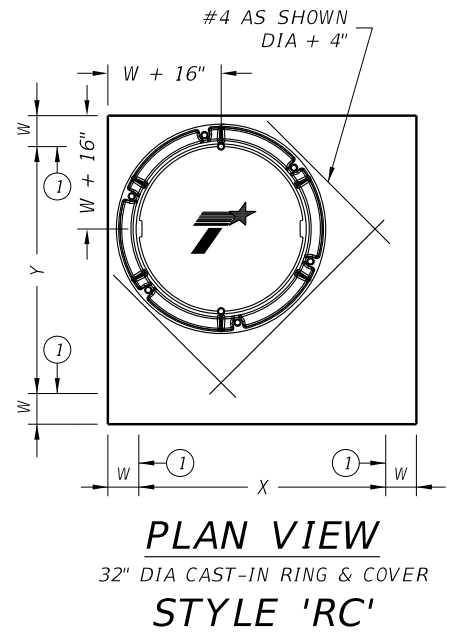
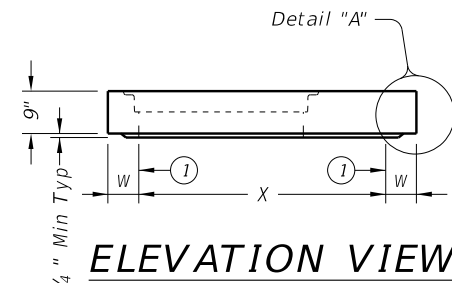
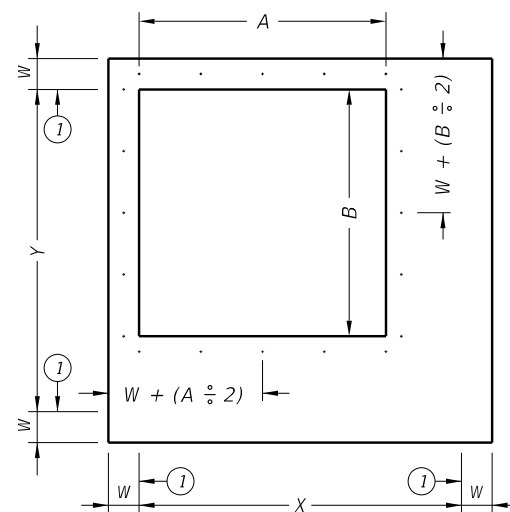
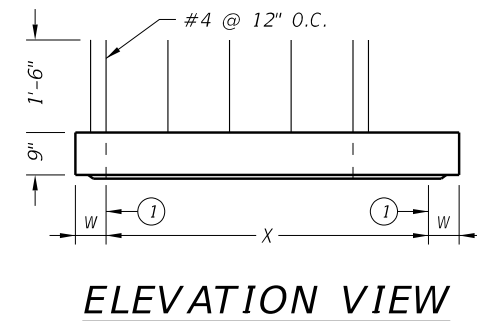
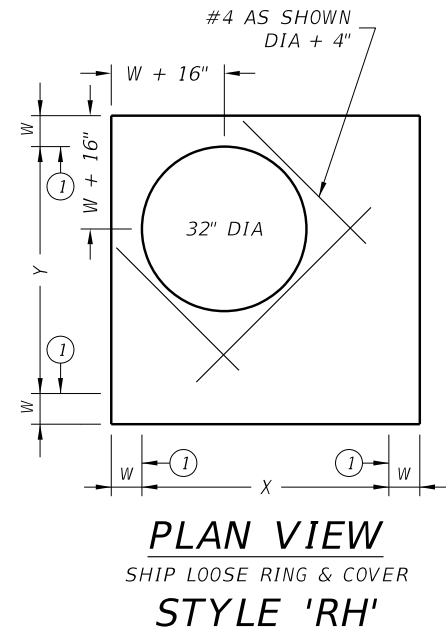
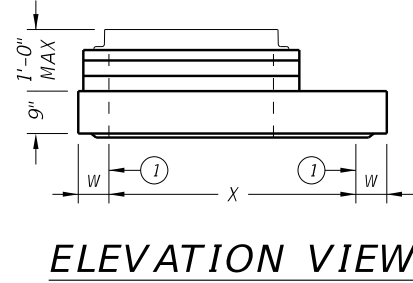
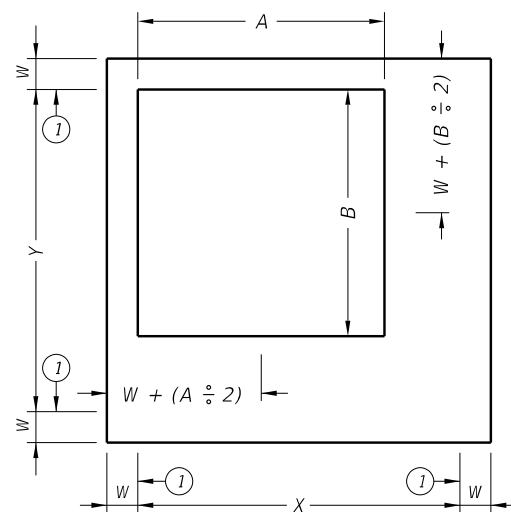
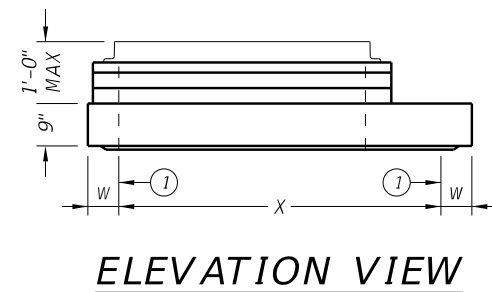
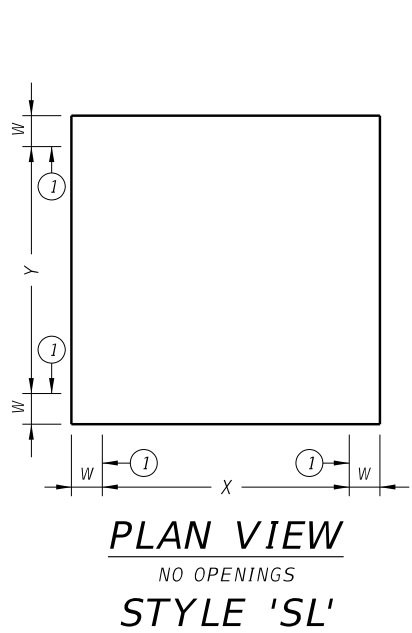
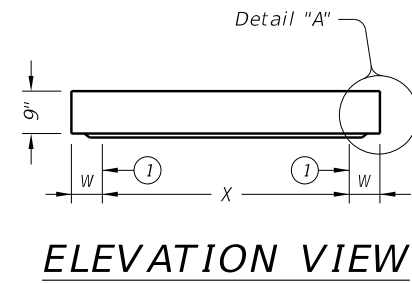
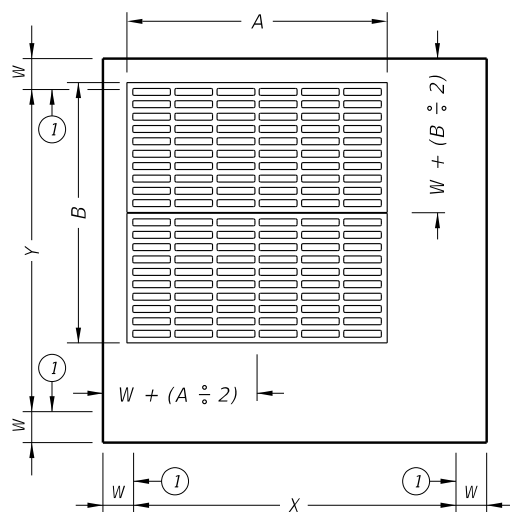
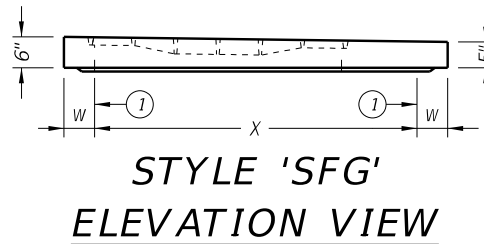
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ORIENT TAPER TO CORRESPOND WITH ROADWAY CROSS-SLOPE.



① Matches inside face of wall of precast base or riser below inlet.

PRECAST SLAB LID

PSL

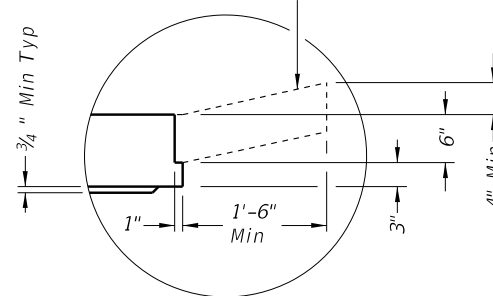
FILE: prest05-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
DIST	COUNTY		SHEET NO.	
PHR	HIDALGO		273	

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Style	Size (X x Y)	W <sup>②</sup>	A x B (nominal)	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	6"	n/a	0.37 in <sup>2</sup> /ft	0.37 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	3'x3'	6"	3'x3' or 32" Dia	0.37 in <sup>2</sup> /ft	0.37 in <sup>2</sup> /ft
SFG	3'x3'	6"	3'x3'	0.32 in <sup>2</sup> /ft	0.32 in <sup>2</sup> /ft
SL	4'x4'	6"	n/a	0.34 in <sup>2</sup> /ft	0.34 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	4'x4'	6"	3'x3' or 32" Dia	0.41 in <sup>2</sup> /ft	0.41 in <sup>2</sup> /ft
SH,S1,FG	4'x4'	6"	4'x4'	0.41 in <sup>2</sup> /ft	0.41 in <sup>2</sup> /ft
SFG	4'x4'	6"	4'x4'	0.32 in <sup>2</sup> /ft	0.32 in <sup>2</sup> /ft
SL	3'x5'	6"	n/a	0.39 in <sup>2</sup> /ft	0.39 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	3'x5'	6"	3'x3' or 32" Dia	0.48 in <sup>2</sup> /ft	0.48 in <sup>2</sup> /ft
SH,S1,FG	3'x5'	6"	3'x5'	0.48 in <sup>2</sup> /ft	0.48 in <sup>2</sup> /ft
SFG	3'x5'	6"	3'x5'	0.32 in <sup>2</sup> /ft	0.32 in <sup>2</sup> /ft
SL	4'x5'	6"	n/a	0.42 in <sup>2</sup> /ft	0.42 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	4'x5'	6"	3'x3' or 32" Dia	0.42 in <sup>2</sup> /ft	0.42 in <sup>2</sup> /ft
SH,S1,FG	4'x5'	6"	4'x4'	0.63 in <sup>2</sup> /ft	0.63 in <sup>2</sup> /ft
SH,S1,FG	4'x5'	6"	3'x5'	0.66 in <sup>2</sup> /ft	0.66 in <sup>2</sup> /ft
SL	5'x5'	6"	n/a	0.36 in <sup>2</sup> /ft	0.36 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.43 in <sup>2</sup> /ft	0.43 in <sup>2</sup> /ft
SH,S1,FG	5'x5'	6"	4'x4'	0.63 in <sup>2</sup> /ft	0.63 in <sup>2</sup> /ft
SH,S1,FG	5'x5'	6"	3'x5'	0.63 in <sup>2</sup> /ft	0.63 in <sup>2</sup> /ft
SL	5'x6'	6"/8"	n/a	0.48 in <sup>2</sup> /ft	0.48 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	5'x6'	6"/8"	3'x3' or 32" Dia	0.48 in <sup>2</sup> /ft	0.48 in <sup>2</sup> /ft
SH,S1,FG	5'x6'	6"/8"	4'x4'	0.60 in <sup>2</sup> /ft	0.60 in <sup>2</sup> /ft
SH,S1,FG	5'x6'	6"/8"	3'x5'	0.60 in <sup>2</sup> /ft	0.60 in <sup>2</sup> /ft
SL	6'x6'	6"/8"	n/a	0.43 in <sup>2</sup> /ft	0.43 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	6'x6'	6"/8"	3'x3' or 32" Dia	0.56 in <sup>2</sup> /ft	0.56 in <sup>2</sup> /ft
SH,S1,FG	6'x6'	6"/8"	4'x4'	0.56 in <sup>2</sup> /ft	0.56 in <sup>2</sup> /ft
SH,S1,FG	6'x6'	6"/8"	3'x5'	0.59 in <sup>2</sup> /ft	0.59 in <sup>2</sup> /ft
SL	8'x8'	8"/10"	n/a	0.45 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft
RH,RC,RG,SH,S1,FG	8'x8'	8"/10"	3'x3' or 32" Dia	0.45 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft
SH,S1,FG	8'x8'	8"/10"	4'x4'	0.45 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft
SH,S1,FG	8'x8'	8"/10"	3'x5'	0.45 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft

② See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.



**DETAIL "A"**

(Reinforcing not shown for clarity)  
When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

**FABRICATION NOTES:**

1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of 3/4" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

**INSTALLATION NOTES:**

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans.

**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

SHEET 2 OF 2



Bridge Division Standard

**PRECAST SLAB LID**

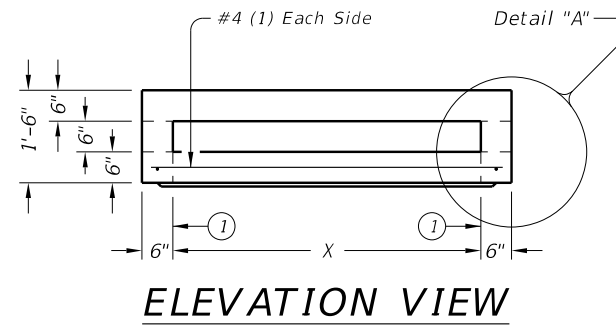
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REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	274	

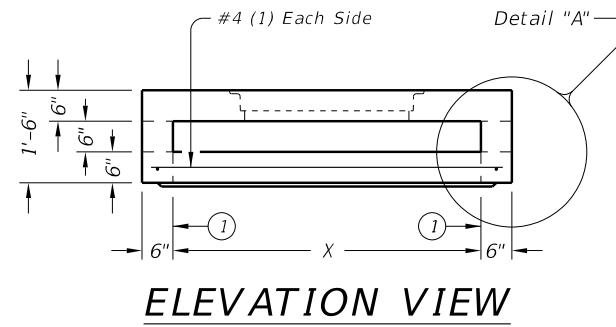
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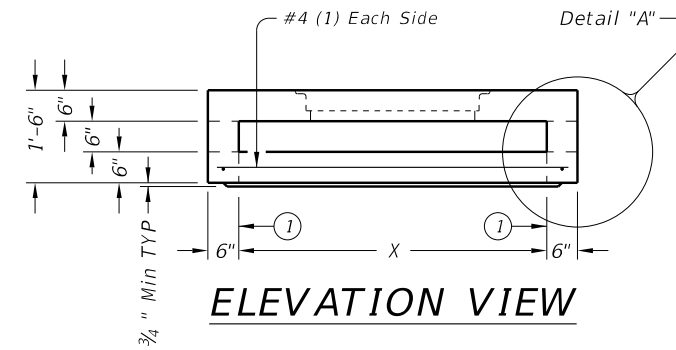
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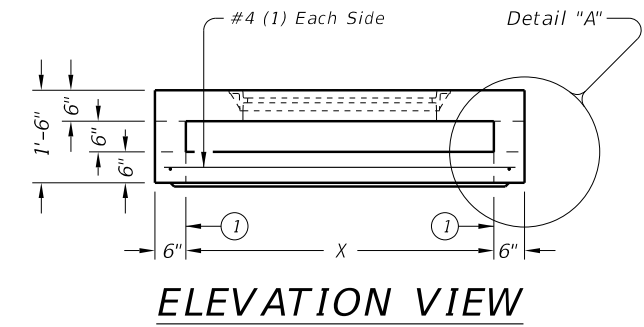
**ELEVATION VIEW**



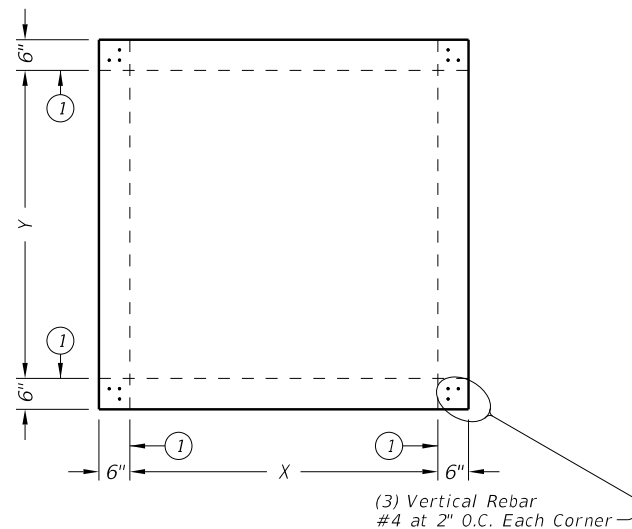
**ELEVATION VIEW**



**ELEVATION VIEW**

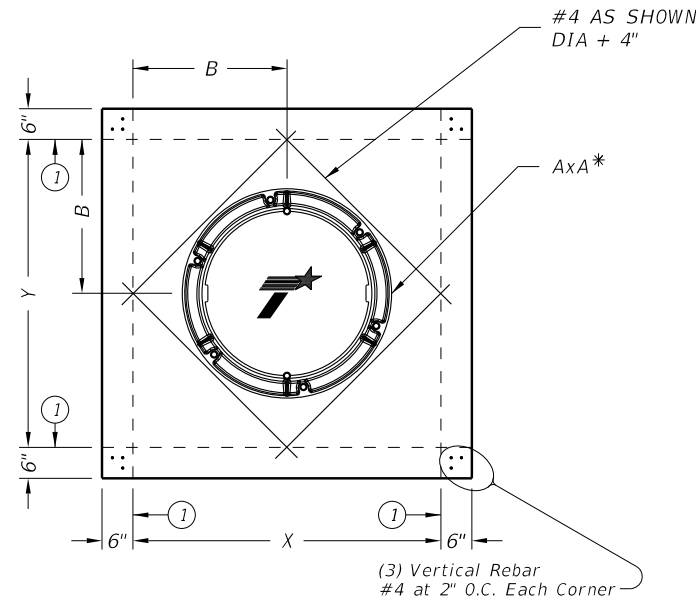


**ELEVATION VIEW**



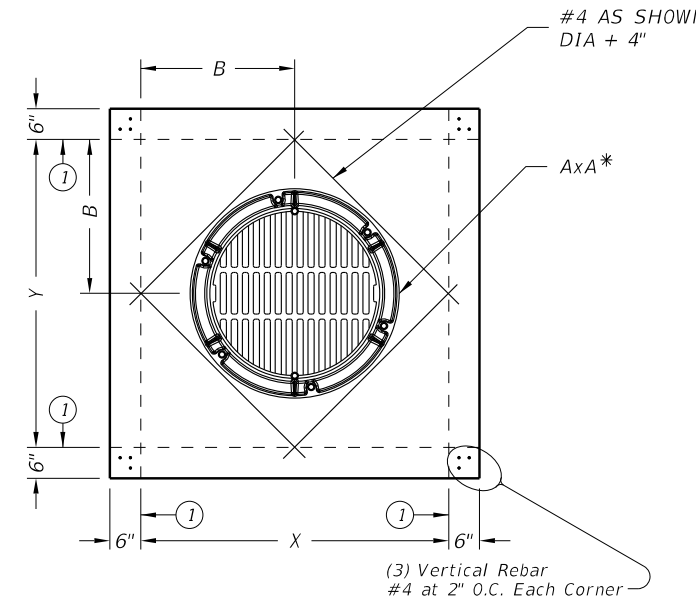
**PLAN VIEW**  
NO OPENINGS

**STYLE 'SL'**



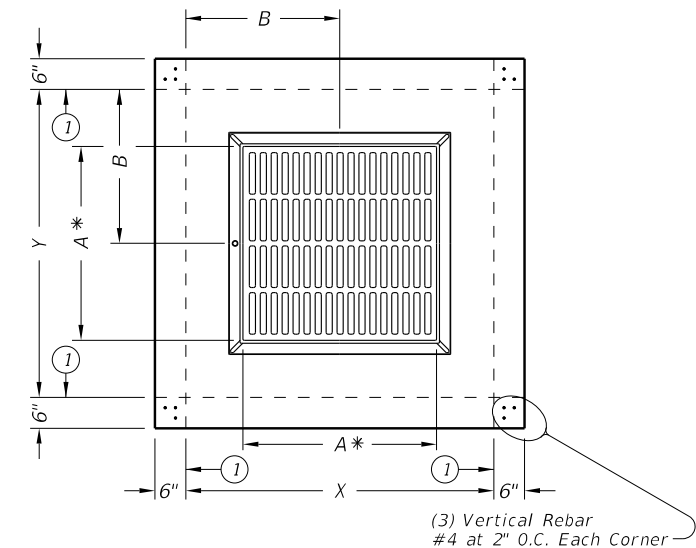
**PLAN VIEW**  
32" DIA CAST-IN RING & COVER

**STYLE 'RC'**



**PLAN VIEW**  
32" DIA CAST-IN RING & GRATE

**STYLE 'RG'**



**PLAN VIEW**  
CAST-IN FRAME & GRATE

**STYLE 'FG'**

① Matches inside face of wall of precast base or riser below inlet.

**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide clear cover of 3/4" to reinforcing from bottom of slab for structural reinforcement. Place short span reinforcing closest to surface.
4. No substitution is allowed for diagonal #4 bars around openings.
5. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
6. Provide lifting devices in conformance with Manufacturer's recommendations.

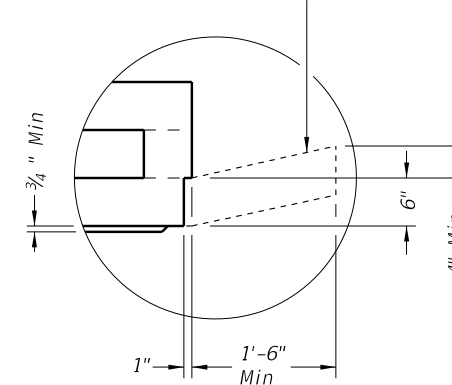
**INSTALLATION NOTES:**

1. PAZD is for use in ditches and medians outside of the horizontal clearance (clear zone). Precast Area Zone Drain is not intended for direct traffic and may not be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.

**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Construct cast-in-place reinforced concrete apron when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PAZD. Apron is 1'-6" Min width around precast zone drain.



**DETAIL "A"**

(Reinforcing not shown for clarity)  
When an apron is to be cast around PAZD, use detail above to create an apron ledge on all 4 sides.

Style	Size (X x Y)	A x A *	B x B	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	n/a	n/a	0.37 in <sup>2</sup> /ft	0.37 in <sup>2</sup> /ft
RC, RG	3'x3'	32" Dia	1.5'x1.5'	0.37 in <sup>2</sup> /ft	0.37 in <sup>2</sup> /ft
FG	3'x3'	3'x3'	1.5'x1.5'	0.37 in <sup>2</sup> /ft	0.37 in <sup>2</sup> /ft
SL	4'x4'	n/a	n/a	0.34 in <sup>2</sup> /ft	0.34 in <sup>2</sup> /ft
RC, RG	4'x4'	32" Dia	2'x2'	0.34 in <sup>2</sup> /ft	0.34 in <sup>2</sup> /ft
FG	4'x4'	3'x3'	2'x2'	0.34 in <sup>2</sup> /ft	0.34 in <sup>2</sup> /ft
FG	4'x4'	4'x4'	2'x2'	0.34 in <sup>2</sup> /ft	0.34 in <sup>2</sup> /ft
SL	5'x5'	n/a	n/a	0.43 in <sup>2</sup> /ft	0.43 in <sup>2</sup> /ft
RC, RG	5'x5'	32" Dia	2.5'x2.5'	0.68 in <sup>2</sup> /ft	0.68 in <sup>2</sup> /ft
FG	5'x5'	3'x3'	2.5'x2.5'	0.43 in <sup>2</sup> /ft	0.43 in <sup>2</sup> /ft
FG	5'x5'	4'x4'	2.5'x2.5'	0.43 in <sup>2</sup> /ft	0.43 in <sup>2</sup> /ft

\* Nominal frame/grate or ring/cover size.

**Texas Department of Transportation**  
**Bridge Division Standard**

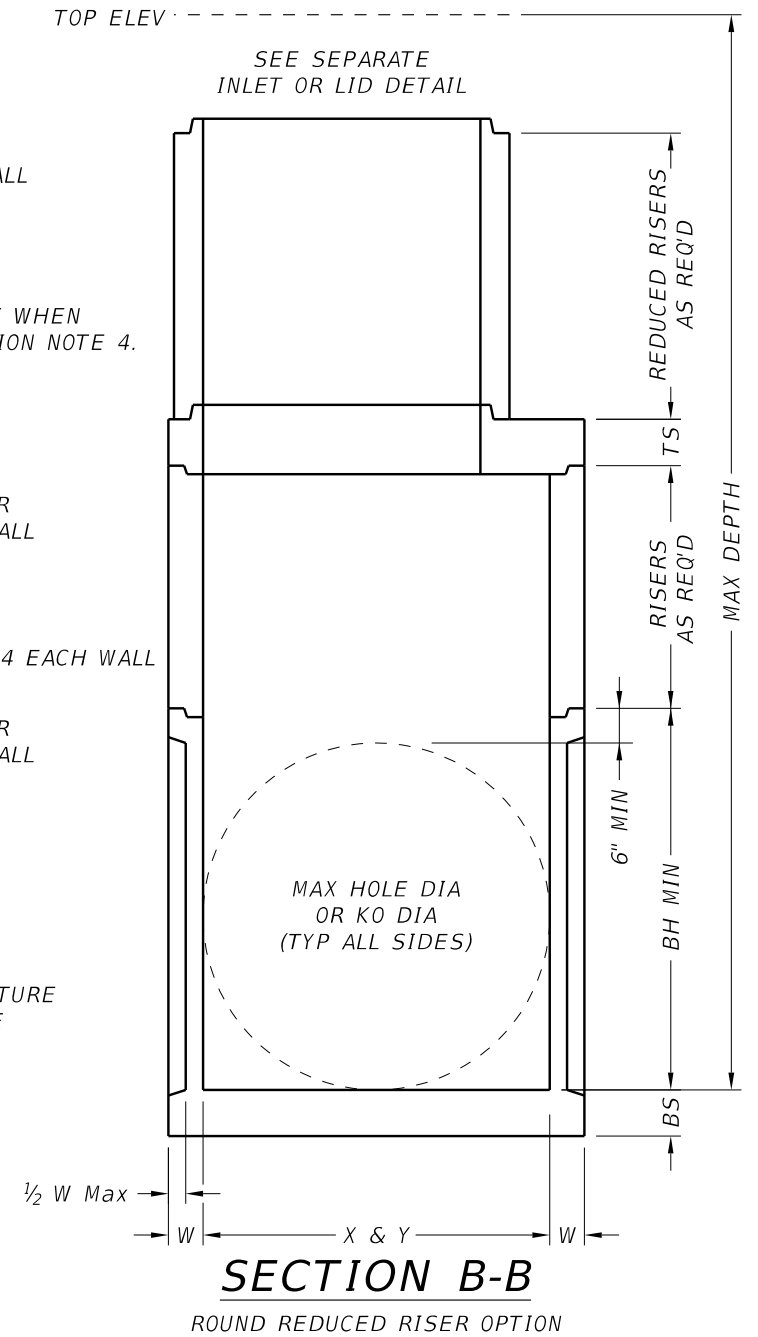
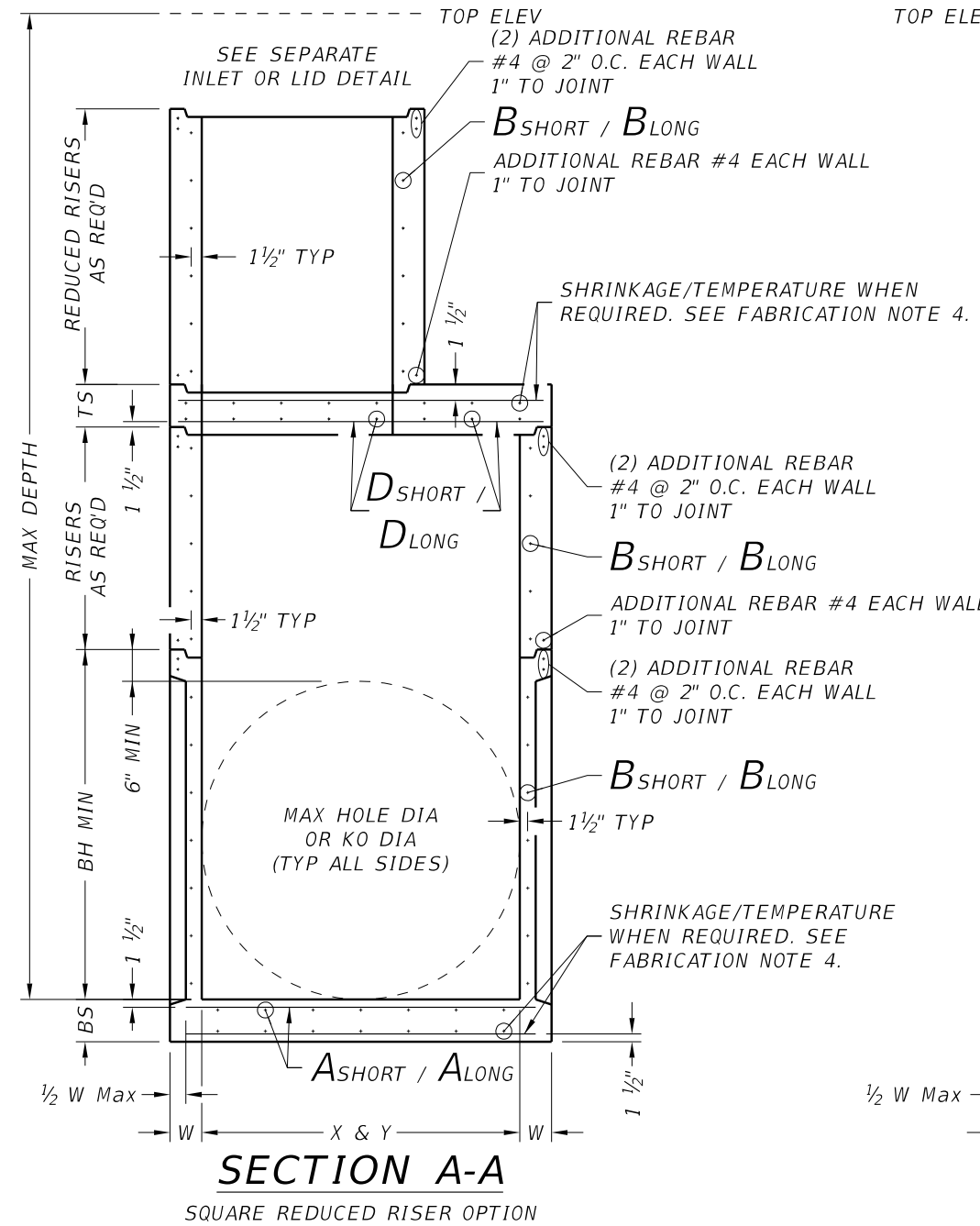
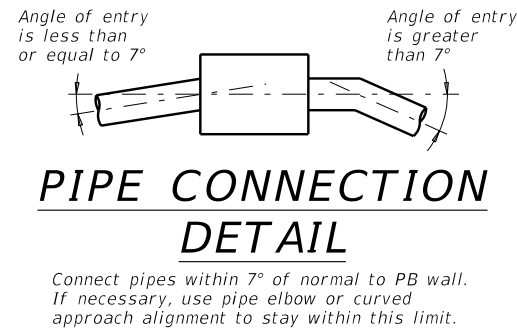
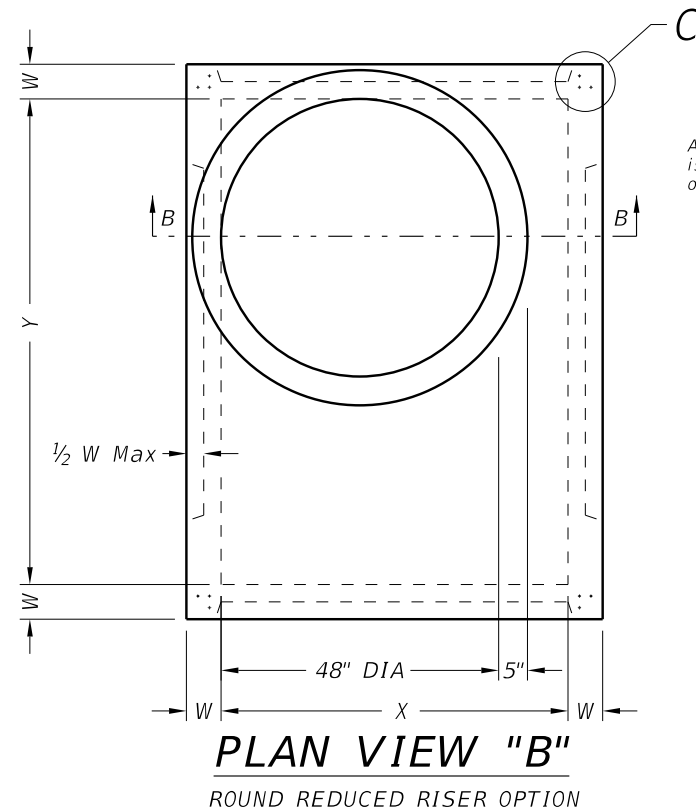
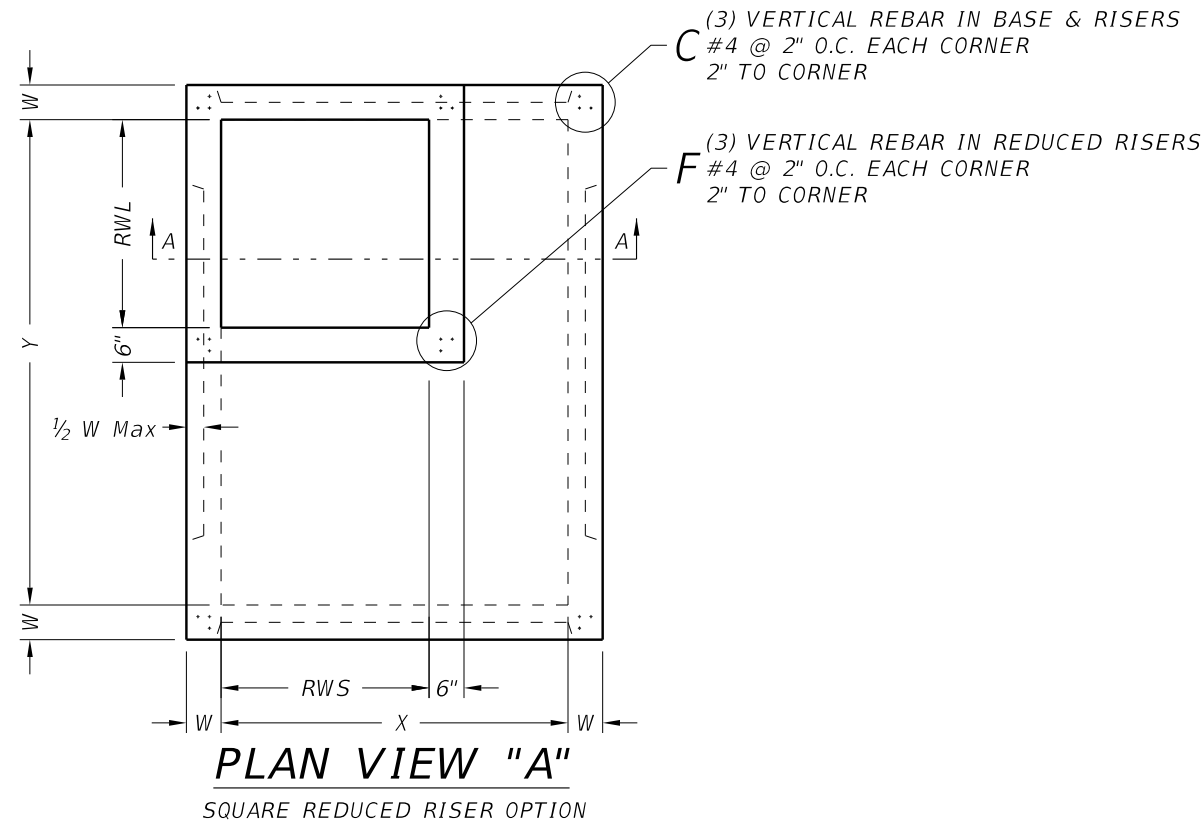
**PRECAST AREA ZONE DRAIN**

**PAZD**

FILE: prest08-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	275	

DATE:  
FILE:

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**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

**INSTALLATION NOTES:**

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

**GENERAL NOTES:**

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING



**PRECAST BASE**

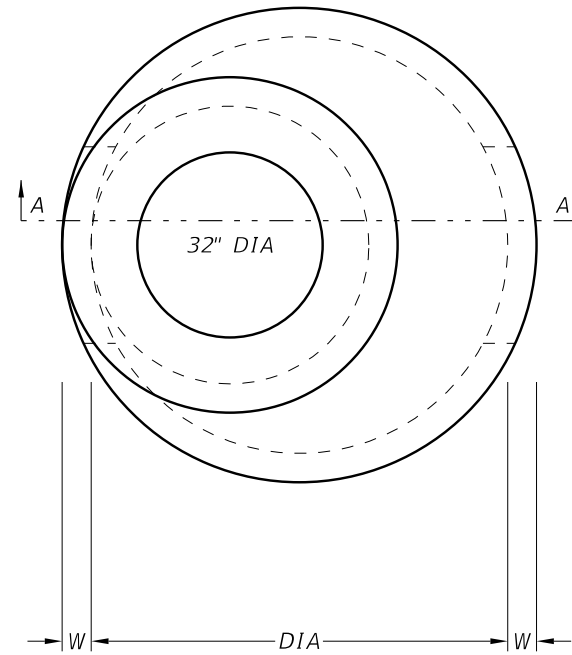
PB

FILE: prest01-20.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	276	

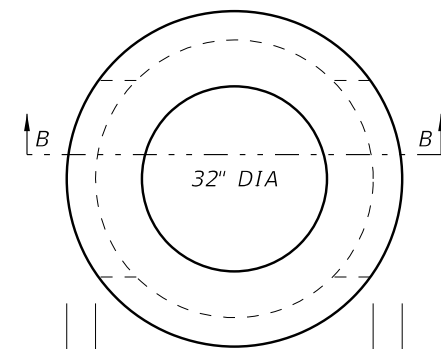
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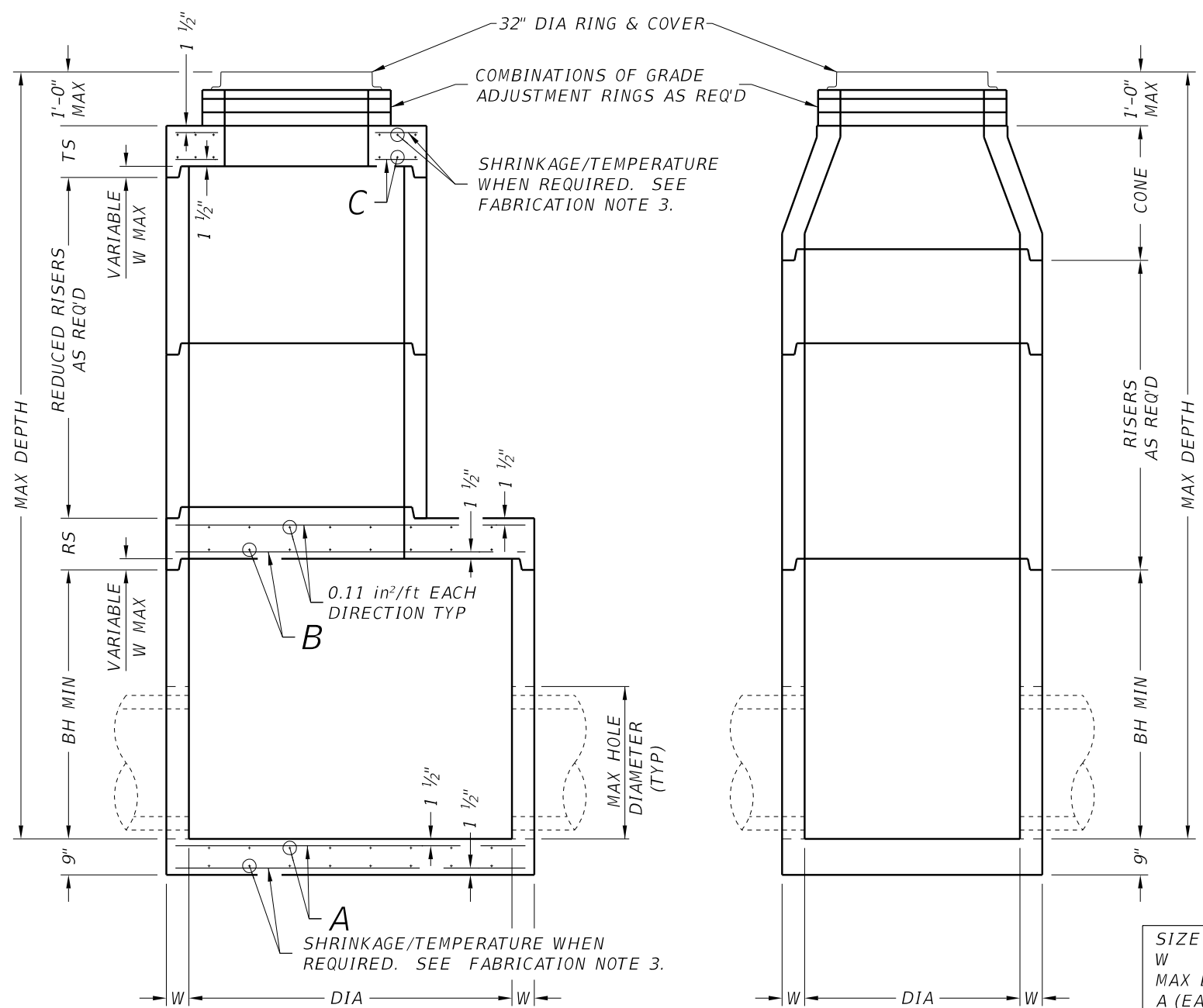
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PLAN VIEW "A"



PLAN VIEW "B"



SECTION A-A

ROUND REDUCED RISER OPTION  
SHOWING FLAT SLAB TOP

SECTION B-B

ROUND RISER OPTION  
SHOWING CONE

**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR. Provide circumferential reinforcing steel in vertical walls of base, riser and cone in accordance with ASTM C478.
3. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
4. Manufacture base and risers to nearest 3" increment.
5. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
6. Provide lifting devices in conformance with Manufacturer's recommendations.
7. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.

**INSTALLATION NOTES:**

1. Cones may be concentric or eccentric. Reduction cones are acceptable. See Manufacturer for cone dimensions.
2. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to this item.
3. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
4. Do not grout rubber gasket joints without Manufacturer's recommendation.
5. Initial installation of grade adjustment rings is limited to 1'-0" Max as shown.
6. Grade adjustment rings may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments may be made up to the Max depth shown. Structure must be evaluated if Max depth will be exceeded.

**GENERAL NOTES:**

1. Designed according to ASTM C478.
2. Payment for manhole is per Item 465, "Junction Boxes, Manholes, and Inlets" by type and size.
3. Pipe OD + placement tolerance must be equal or less than Max hole diameter. For rigid pipe, placement tolerance is 4" Max, 2" Min. For flexible pipe, consult boot/seal manufacturer's specification for placement tolerance.

Cover dimensions are clear dimensions, unless noted otherwise.

SIZE (DIA)	48 in	60 in	72 in
W	5 in	6 in	7 in
MAX DEPTH	25 ft	25 ft	25 ft
A (EACH WAY)	0.22 in <sup>2</sup> /ft	0.30 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft
B (EACH WAY)	N/A	0.37 in <sup>2</sup> /ft	0.62 in <sup>2</sup> /ft
C (EACH WAY)	0.24 in <sup>2</sup> /ft	0.46 in <sup>2</sup> /ft	0.46 in <sup>2</sup> /ft
BH MIN	12 in	36 in	36 in
TS	9 in	9 in	9 in
RS	N/A	9 in	12 in
REDUCED RISER DIA	N/A	48 in	48/60 in
MAX HOLE DIA	32 in	40 in	54 in

HL93 LOADING



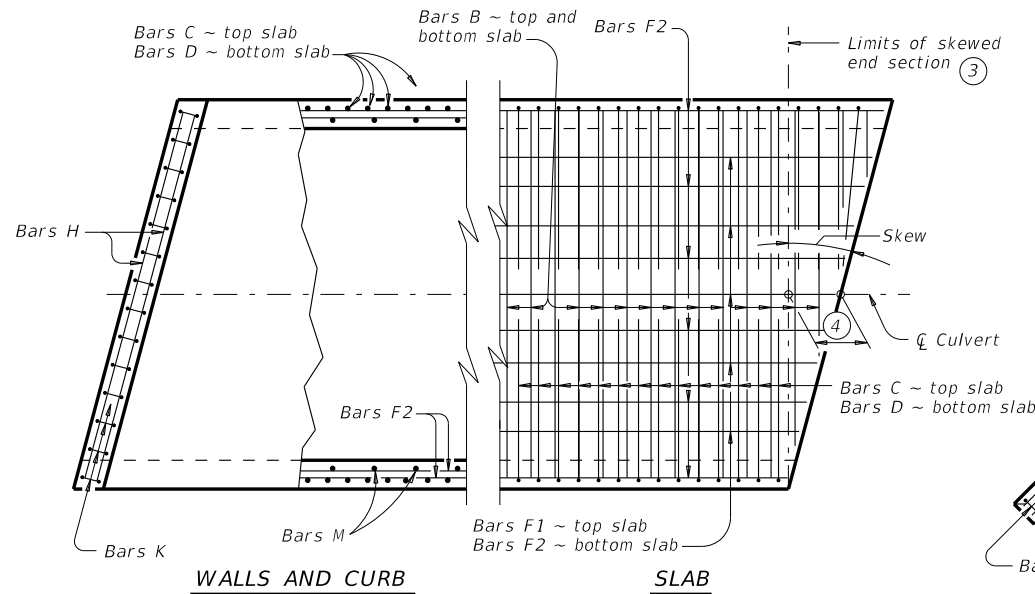
PRECAST ROUND MANHOLE

PRM

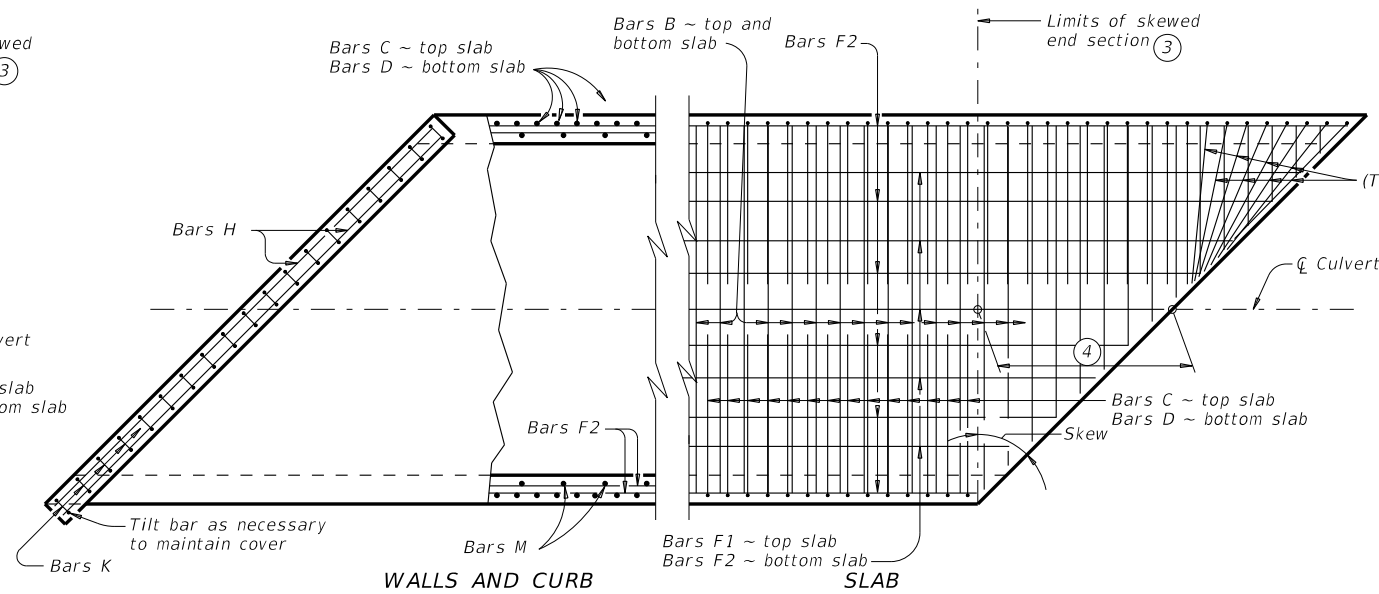
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	277	

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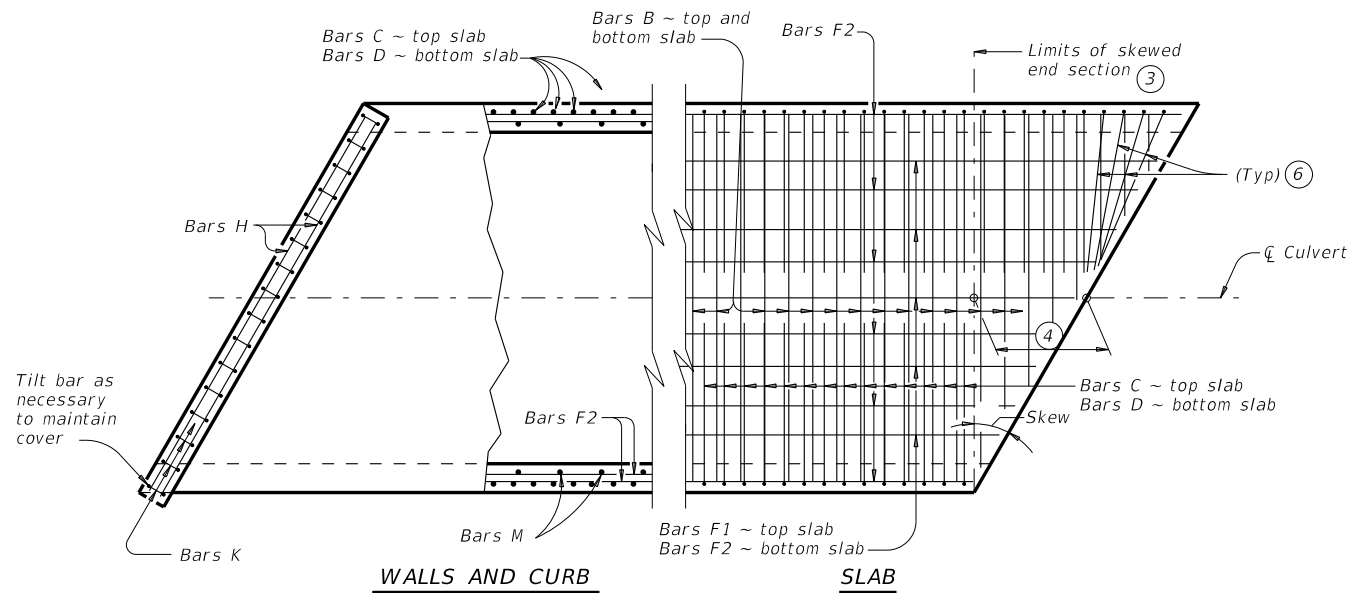
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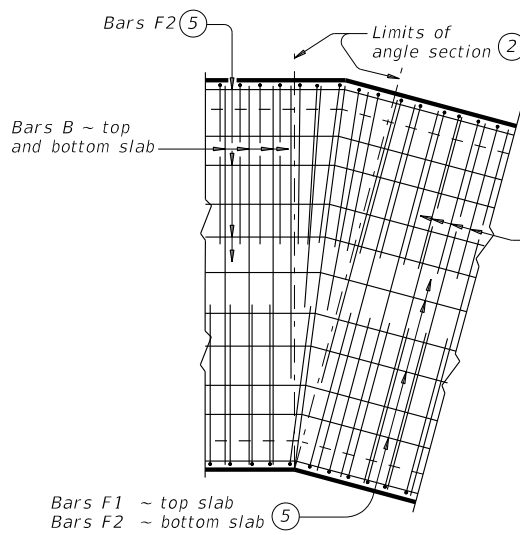
PLAN OF SKEWED ENDS ~ FROM 0° TO 15°



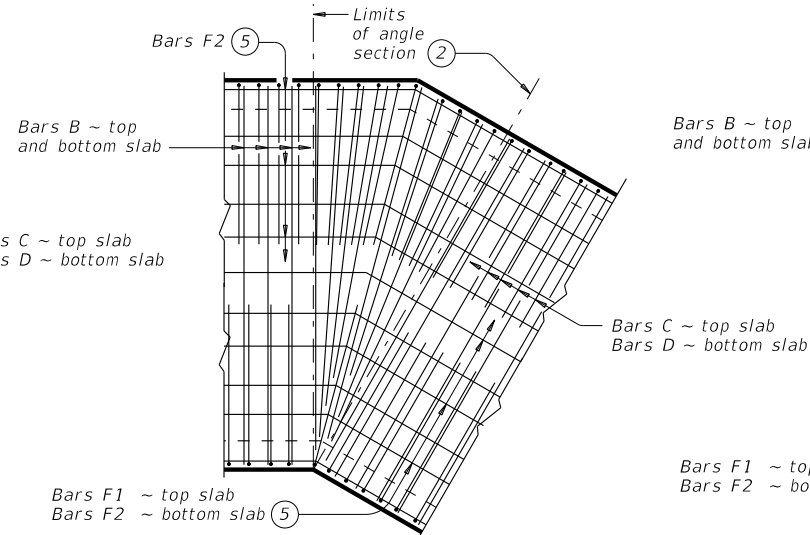
PLAN OF SKEWED ENDS ~ OVER 30° TO 45°



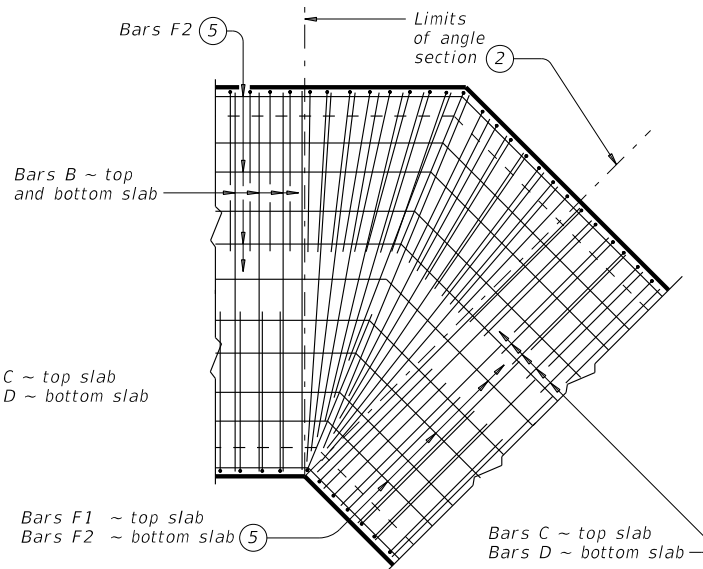
PLAN OF SKEWED ENDS ~ OVER 15° TO 30°



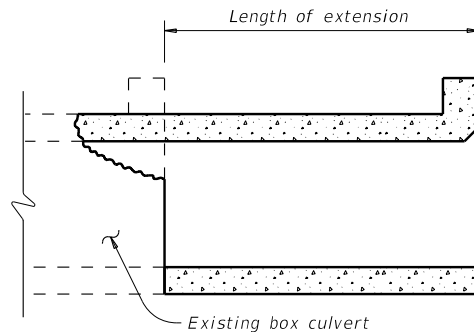
PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°



LENGTHENING DETAIL

1 For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.  
 For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, C, D, E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.  
 Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.

- 2 When the spacing between Bars B becomes less than half of the normal spacing, cut bars to avoid conflict.
- 3 The length of Bars B vary in the skewed end sections.
- 4  $[One\ half\ of\ overall\ width] \times [tangent\ of\ the\ skew\ angle]$
- 5 Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
- 6 When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
- 7 At the Contractor's option, for skews of 15° or less, place Bars B, C, and D parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B shown on the Single Box Culverts Cast-In-Place (SCC) standards sheets to accommodate the skew.

**CONSTRUCTION NOTES:**  
 Do not use permanent forms.  
 When required, lap Bars H 1'-8" for uncoated or galvanized bars.  
 Provide a minimum of 1 1/2" clear cover.

**MATERIAL NOTES:**  
 Provide Grade 60 reinforcing steel.  
 Provide galvanized reinforcing steel, if required elsewhere in the plans.  
 Provide Class C concrete ( $f'c = 3,600$  psi) with these exceptions:  
 provide Class S concrete ( $f'c = 4,000$  psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

**GENERAL NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 Refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for details of straight sections of culvert.  
 For skewed sections and angle sections, refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.  
 For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the culvert Single Box Culverts Cast-In-Place (SCC) standard sheets by the cosine of the skew angle.

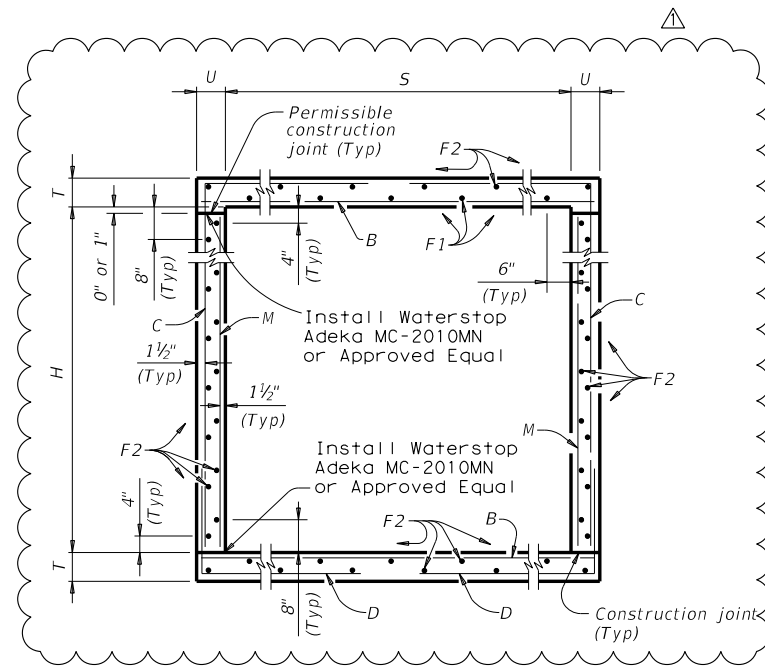
Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

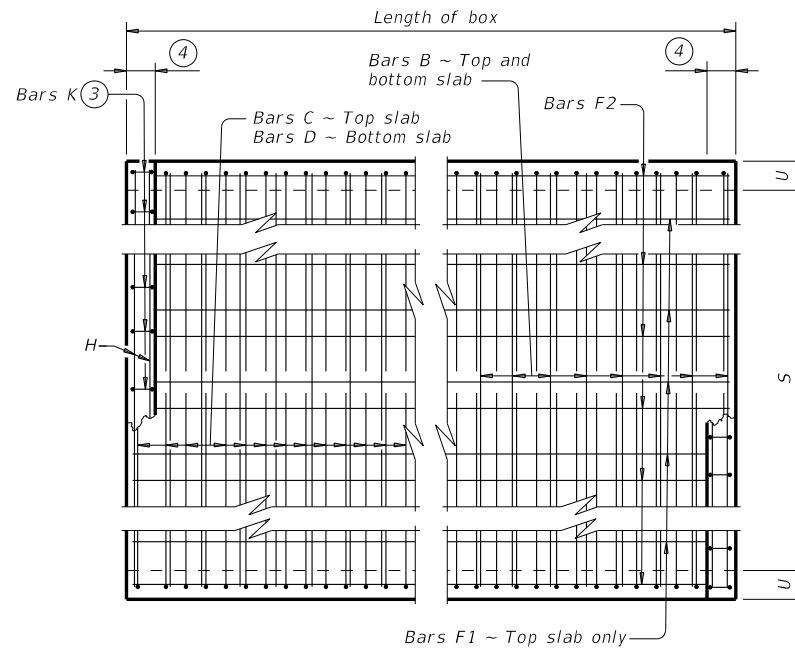
		<b>Bridge Division Standard</b>	
<b>SINGLE BOX CULVERTS          CAST-IN-PLACE          MISCELLANEOUS DETAILS</b>			
<b>SCC-MD</b>			
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©TxDOT February 2020	CONT: 1064	SECT: 01	JOB: 032
REVISIONS	1064	01	032
DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 278	

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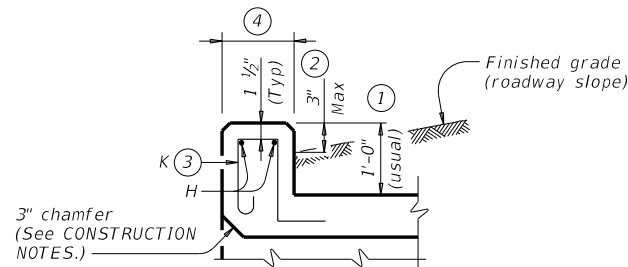
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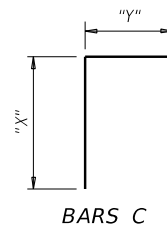
**TYPICAL SECTION**



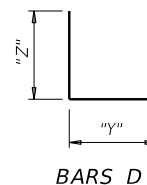
**PLAN OF REINF STEEL**



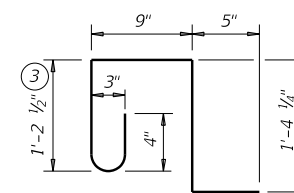
**SECTION THRU CURB**



BARS C



BARS D



BARS K (#4)  
(Spa = 1'-0" Max)  
(Length = 4'-2")

- ① 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- ② For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, construct curbs no more than 3" above finished grade.
  - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- ④ 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.
- ⑥ Install waterstop Adeka MC-2010MN or Approved Equal at all construction joints per manufacturer recommendation.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR.  
 Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.  
 If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

**CONSTRUCTION NOTES:**

Do not use permanent forms.  
 Chamfer the bottom edge of the top slab 3" at the entrance.  
 Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed. Allow a minimum of 48 hours between casting of adjoining units.  
 Reinforcing bars shall be adjusted to provide a minimum of 2" clear cover.

**MATERIAL NOTES:**

- Provide Grade 60 reinforcing steel.
- Provide galvanized reinforcing steel if required elsewhere in the plans.
- Provide Class S concrete (f'c = 4,000 psi).
- Provide bar laps, where required, as follows:
  - Uncoated or galvanized ~ #4 = 1'-8" Min
  - Uncoated or galvanized ~ #5 = 2'-1" Min
  - Uncoated or galvanized ~ #6 = 2'-6" Min

**GENERAL NOTES:**

Designed according to AASHTO LRFD Bridge Design Specifications and with ACI 350-6 for the range of fill heights shown.  
 See the Single Box Culverts Cast-In-Place Miscellaneous Detail (SCC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

Cover dimensions are clear dimensions, unless noted otherwise.  
 Reinforcing bar dimensions shown are out-to-out of bar.



11/18/2022



**SINGLE BOX CULVERTS  
CAST-IN-PLACE  
0' TO 30' FILL**

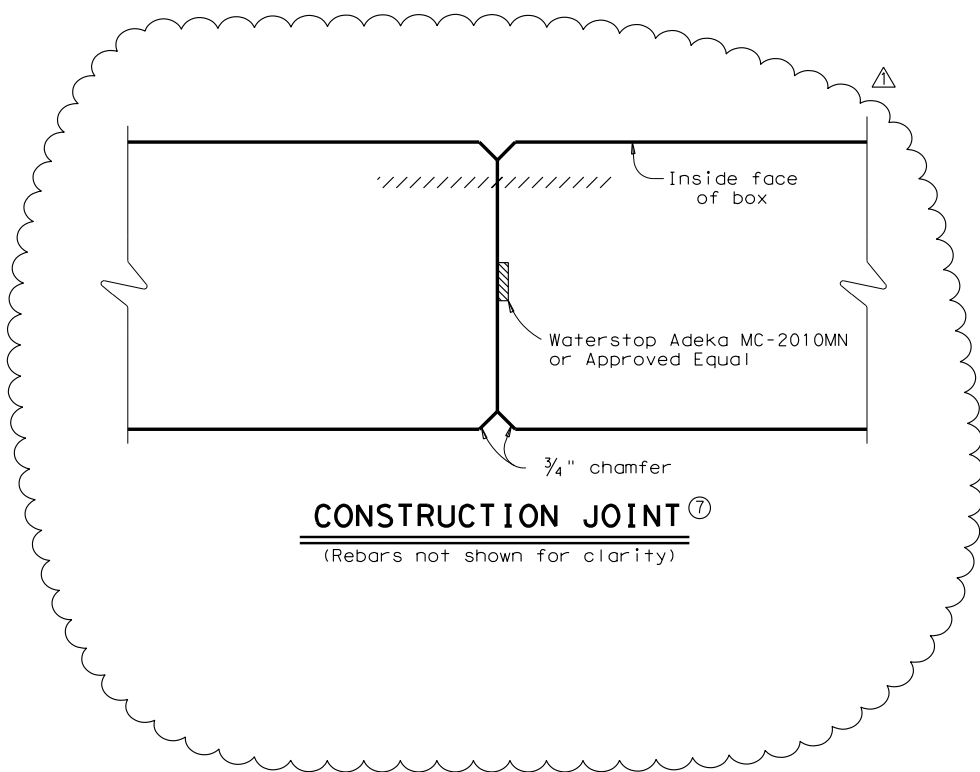
**SCC-8 (MOD)**

FILE: scc08ste-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
04/2021 Updated X values.	DIST	COUNTY	SHEET NO.	
Modified for a siphon.	PHARR	HIDALGO	279	

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DATE: FILE:

SECTION DIMENSIONS				FILL HEIGHT ⑤	BILLS OF REINFORCING STEEL (For Box Length = 40 feet) ⑦ ⑧																								QUANTITIES														
					Bars B				Bars C				Bars D				Bars E ~ #5 at 12" Max			Bars F1 ~ #4			Bars F2 ~ #4 at 12" Spa			Bars H 4 ~ #4		Bars K		Per Foot of Barrel		Curb		Total									
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	" X "	" Y "	No.	Size	Spa	Length	Weight	" Y "	" Z "	No.	Length	Weight	No.	Spa	Length	Wt	No.	Length	Weight	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
8'-0"	5'-0"	9.5"	9.5"	6"	162	#6	6"	8'-11"	2,170	194	#6	5"	10'-0"	2,914	5'-8"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	82	5'-0"	428	13	7"	39'-9"	345	56	39'-9"	1,487	8'-11"	24	20	57	0.885	221.9	0.7	81	34.2	887.5



- ⑤ For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.
- ⑦ Provide construction joints every 40 ft. Install waterstop Adeka MC-2010MN per manufacturer recommendation or approved equal as shown.
- ⑧ Bars F1 & F2 shall be continuous across the construction joints.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.  
If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.  
Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).



11/18/2022

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation  
Texas Department of Transportation  
Bridge Division Standard

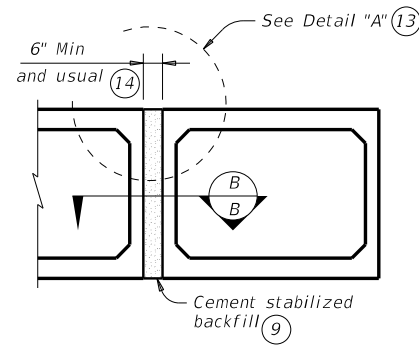
**SINGLE BOX CULVERTS  
CAST-IN-PLACE  
0' TO 30' FILL**

**SCC-8 (MOD)**

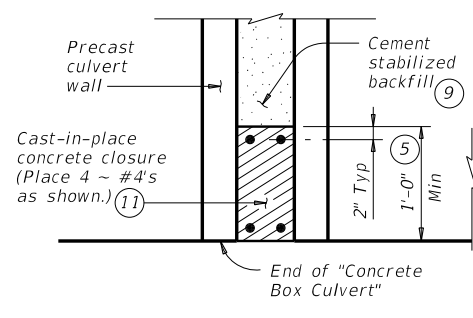
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04/2021 Updated X values.	1064	01	032	FM 676
Modified for a siphon.	DIST	COUNTY	SHEET NO.	
	PHARR	HIDALGO	280	

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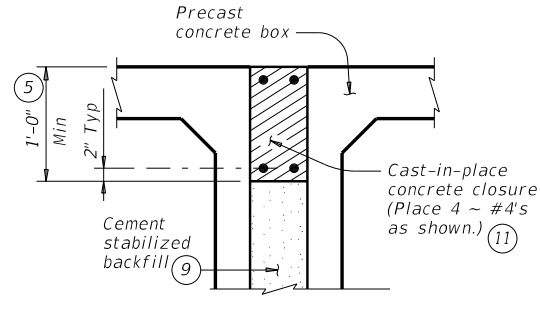
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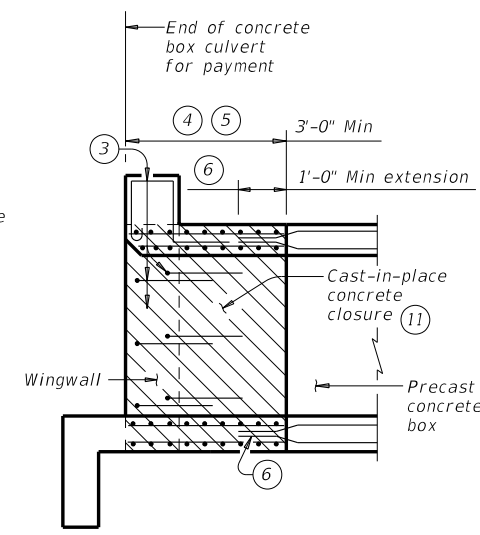
**MULTIPLE UNIT PLACEMENT**



**SECTION B-B**

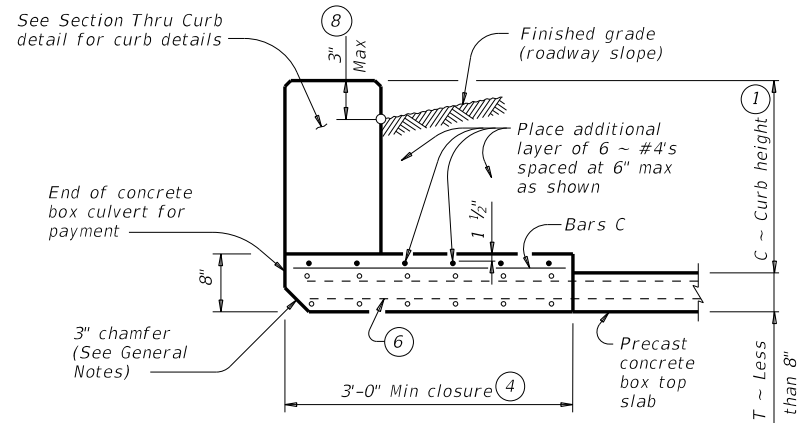


**DETAIL "A" (13)**

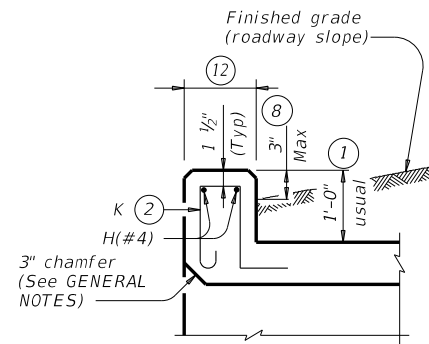


**WINGWALL CONNECTION**

(Also applies to safety end treatment.)

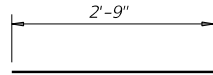


**SECTION THRU TOP SLABS LESS THAN 8"**

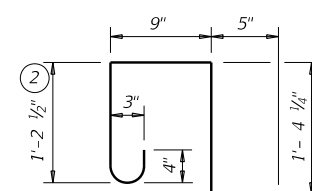


**SECTION THRU CURB**

QUANTITIES PER FOOT OF CURB (10)	
Reinforcing Steel	4.12 Lb
Concrete	0.037 CY



**BARS C (#4)**  
(Spa = 1'-0" Max)



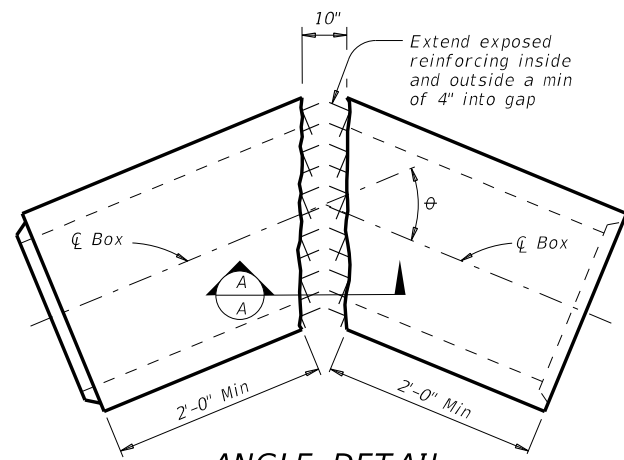
**BARS K (#4)**  
(Spa = 1'-0" Max)  
(Length = 4'-2")

- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail, or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- Extend curb, wingwall, or safety end treatment reinforcing into concrete closure. Bend or trim, as necessary, any reinforcing that does not fit into closure area.
- Provide a 3'-0" Min cast-in-place concrete closure. Break back boxes in the field or cast boxes short. Provide bands of reinforcing in the closure that are the same size and spacing as in the precast box section. Provide #4 longitudinal reinforcement spaced at 12 inches Max within the closure. Except where shown otherwise, construct the cast-in-place closure flush with the inside and outside faces of the precast box section.
- For multiple unit placements, adjust the length of the closure for the interior walls as necessary. Provide a 3'-0" Min cast-in-place closure in the top slab, bottom slab, and exterior wall. See Section B-B detail when interior walls are cast full length.
- Extend precast box reinforcing a minimum of 1'-0" into concrete closure (Typ).
- Place bands of reinforcing matching the inside and outside face reinforcing in the gaps of the top and bottom slabs. Place a band matching the outside face reinforcing of the wall in the gaps of the walls (placed in the outside face only). Tack weld the bands to the exposed reinforcing at each point of contact.
- For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, construct curbs no more than 3" above finished grade.
  - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Cement stabilized backfill between boxes is considered part of the box culvert for payment.
- All curb concrete and reinforcing is considered part of the box culvert for payment.
- Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.
- 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
- For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in Detail "A".
- This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.

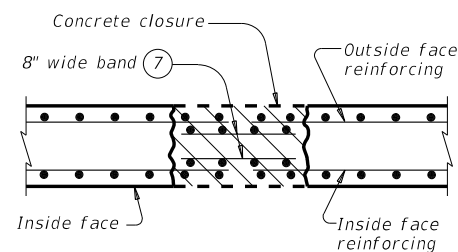
**MATERIAL NOTES:**  
Provide Grade 60 reinforcing steel.  
Provide ASTM A1064 welded wire reinforcement.  
Provide Class C concrete (f'c = 3,600 psi) for the closures.  
Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures."  
Any additional concrete required for the closures will be considered subsidiary to the box culvert.

**GENERAL NOTES:**  
Designed according to AASHTO LRFD Bridge Design Specifications.  
Refer to the Single Box Culverts Precast (SCP) standard sheets for details and notes not shown.  
Chamfer the bottom edge of the top slab closure 3 inches at culvert closure ends.

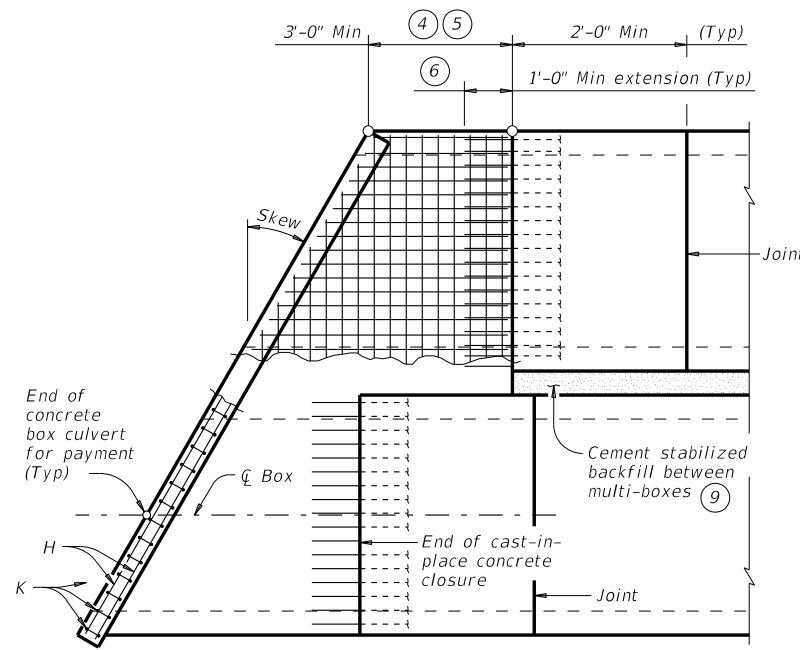
Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bars dimensions are out-to-out of bars.



**ANGLE DETAIL**



**SECTION A-A**



**PLAN OF SKEWED ENDS**

(Showing multi-box placement.)

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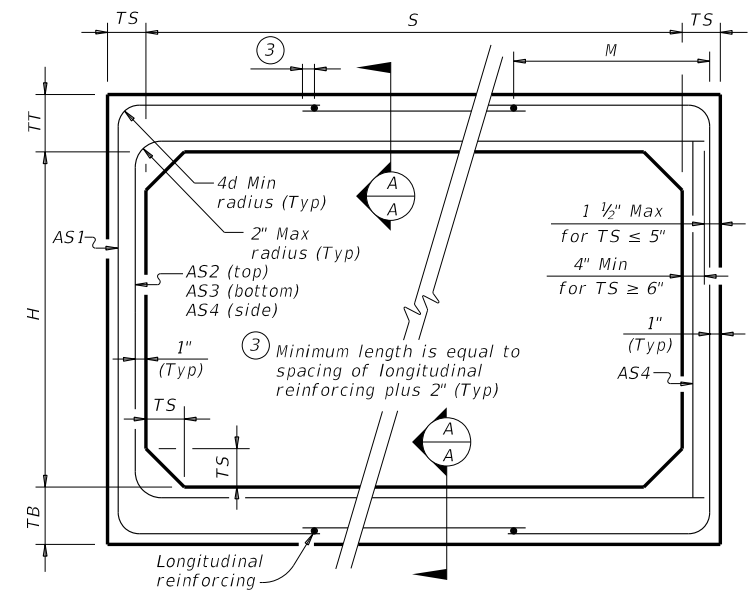
		<b>Bridge Division Standard</b>	
<b>BOX CULVERTS PRECAST MISCELLANEOUS DETAILS</b>			
<b>SCP-MD</b>			
FILE: scpmdsts-20.dgn	DN: GAF	ck: LMW	DW: BWH/TxDOT ck: GAF
©TxDOT February 2020	CONT	SECT	JOB HIGHWAY
REVISIONS	1064	01	032 FM 676
	DIST	COUNTY	SHEET NO.
	PHR	HTDALGO	281

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DATE: FILE:

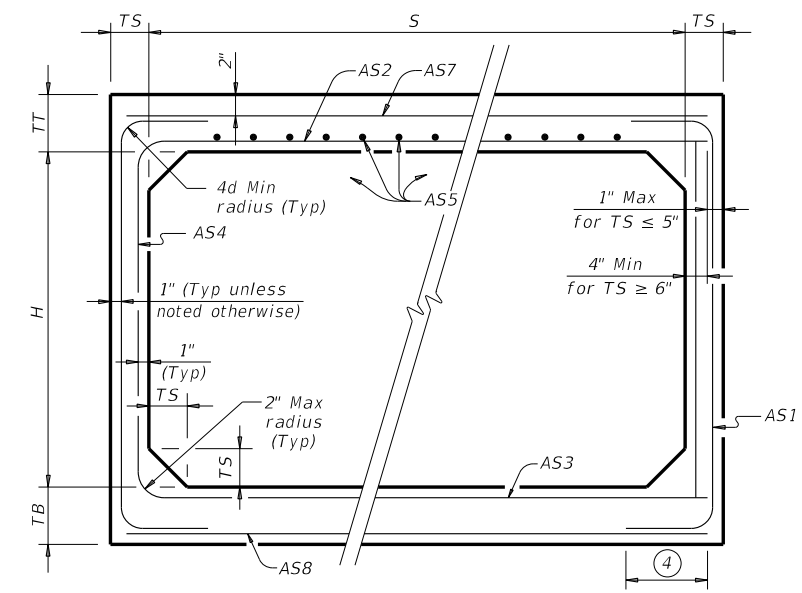
**BOX DATA**

SECTION DIMENSIONS					Fill Height (ft.)	M (Min) (in.)	REINFORCING (sq. in. / ft.) <sup>②</sup>								① Lift Weight (tons)
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)			AS1	AS2	AS3	AS4	AS5	AS7	AS8		
3	2	7	6	4	< 2	-	0.17	0.25	0.16	0.10	0.17	0.17	0.14	3.3	
3	2	4	4	4	2 < 3	31	0.13	0.19	0.18	0.10	-	-	-	2.4	
3	2	4	4	4	3 - 5	31	0.10	0.11	0.12	0.10	-	-	-	2.4	
3	2	4	4	4	10	31	0.10	0.10	0.10	0.10	-	-	-	2.4	
3	2	4	4	4	15	31	0.10	0.13	0.13	0.10	-	-	-	2.4	
3	2	4	4	4	20	31	0.11	0.17	0.17	0.10	-	-	-	2.4	
3	2	4	4	4	25	31	0.14	0.21	0.21	0.10	-	-	-	2.4	
3	2	4	4	4	30	31	0.17	0.25	0.25	0.10	-	-	-	2.4	
3	2	4	4	4	35	31	0.20	0.29	0.30	0.10	-	-	-	2.4	
3	3	7	6	4	< 2	-	0.17	0.27	0.17	0.10	0.17	0.17	0.14	3.7	
3	3	4	4	4	2 < 3	31	0.10	0.22	0.21	0.10	-	-	-	2.8	
3	3	4	4	4	3 - 5	31	0.10	0.14	0.14	0.10	-	-	-	2.8	
3	3	4	4	4	10	31	0.10	0.11	0.11	0.10	-	-	-	2.8	
3	3	4	4	4	15	31	0.10	0.14	0.15	0.10	-	-	-	2.8	
3	3	4	4	4	20	31	0.10	0.18	0.19	0.10	-	-	-	2.8	
3	3	4	4	4	25	31	0.10	0.23	0.23	0.10	-	-	-	2.8	
3	3	4	4	4	30	31	0.12	0.27	0.28	0.10	-	-	-	2.8	
3	3	4	4	4	35	31	0.14	0.32	0.32	0.10	-	-	-	2.8	



**CORNER OPTION "A"      CORNER OPTION "B"**

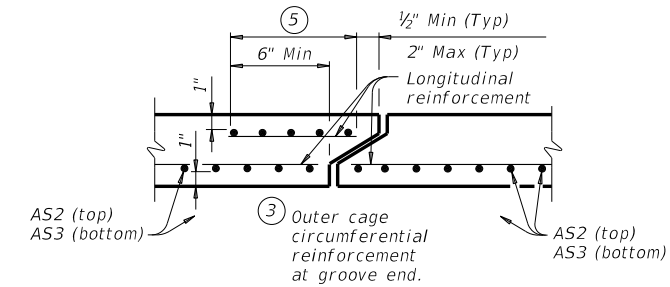
**FILL HEIGHT 2 FT AND GREATER**



**CORNER OPTION "A"      CORNER OPTION "B"**

**FILL HEIGHT LESS THAN 2 FT**

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



**SECTION A-A**  
(Showing top and bottom slab joint reinforcement.)

**MATERIAL NOTES:**  
 Provide 0.03 sq. in./ft. minimum longitudinal reinforcing at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcing is used.  
 Provide Class H concrete ( $f'c = 5,000$  psi).

**GENERAL NOTES:**  
 Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.  
 See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.  
 In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

① For box length = 8'-0"  
 ② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcing per linear foot of box length. AS5 is minimum required area of reinforcing per linear foot of box width.

HL93 LOADING

Texas Department of Transportation  
 Bridge Division Standard

**SINGLE BOX CULVERTS  
 PRECAST  
 3'-0" SPAN**

**SCP-3**

FILE: scp03sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		282



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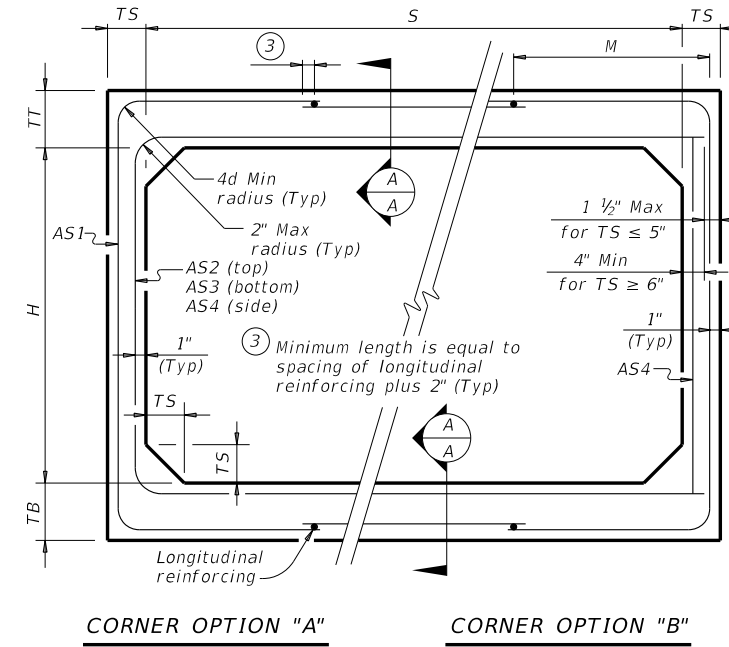
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### BOX DATA

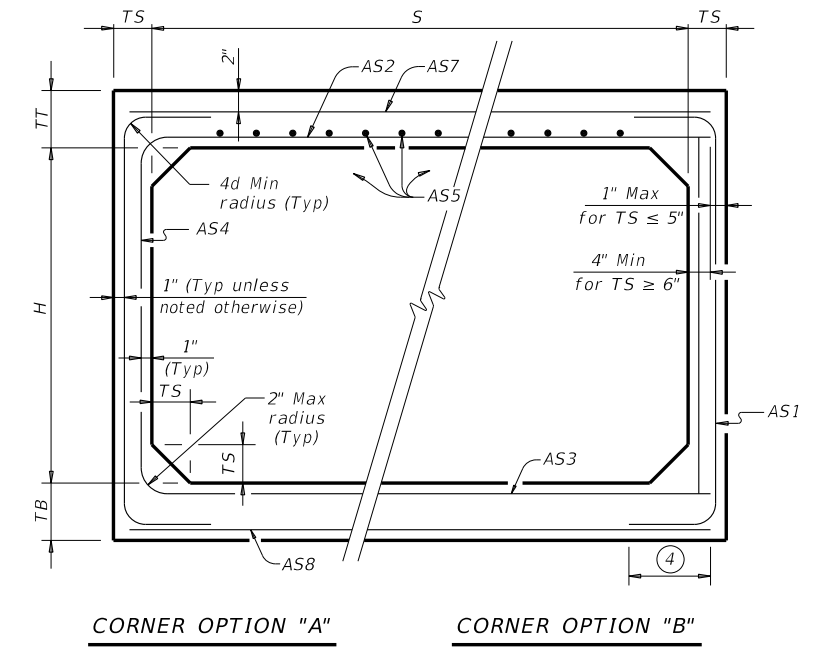
SECTION DIMENSIONS					Fill Height (ft.)	M (Min) (in.)	REINFORCING (sq. in. / ft.) <sup>②</sup>						① Lift Weight (tons)	
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)			AS1	AS2	AS3	AS4	AS5	AS7		AS8
4	2	7.5	6	5	< 2	-	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	-	-	-	3.6
4	2	5	5	5	3 - 5	38	0.13	0.13	0.13	0.12	-	-	-	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	-	-	-	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	-	-	-	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	-	-	-	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	-	-	-	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	-	-	-	3.6
4	3	7.5	6	5	< 2	-	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	-	-	-	4.1
4	3	5	5	5	3 - 5	38	0.12	0.16	0.16	0.12	-	-	-	4.1
4	3	5	5	5	10	38	0.12	0.14	0.14	0.12	-	-	-	4.1
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	-	-	-	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	-	-	-	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	-	-	-	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	-	-	-	4.1
4	4	7.5	6	5	< 2	-	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	-	-	-	4.6
4	4	5	5	5	3 - 5	38	0.12	0.18	0.18	0.12	-	-	-	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	-	-	-	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	-	-	-	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	-	-	-	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	-	-	-	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	-	-	-	4.6

① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

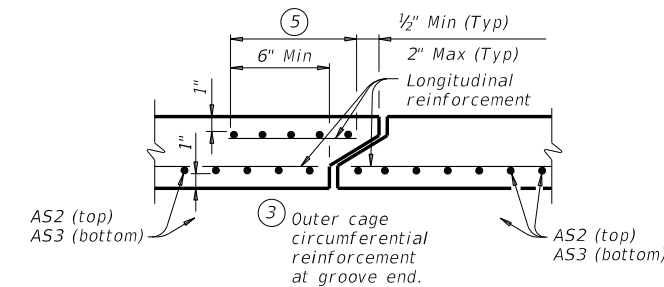


**FILL HEIGHT 2 FT AND GREATER**



**FILL HEIGHT LESS THAN 2 FT**

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



**SECTION A-A**  
(Showing top and bottom slab joint reinforcement.)

**MATERIAL NOTES:**

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.  
Provide Class H concrete (f'c = 5,000 psi).

**GENERAL NOTES:**

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.  
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.  
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

		<b>Bridge Division Standard</b>	
<h2>SINGLE BOX CULVERTS PRECAST 4'-0" SPAN</h2>			
<h3>SCP-4</h3>			
FILE: scp04sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	1064	01	032
	DIST	COUNTY	SHEET NO.
	PHR	HIDALGO	283

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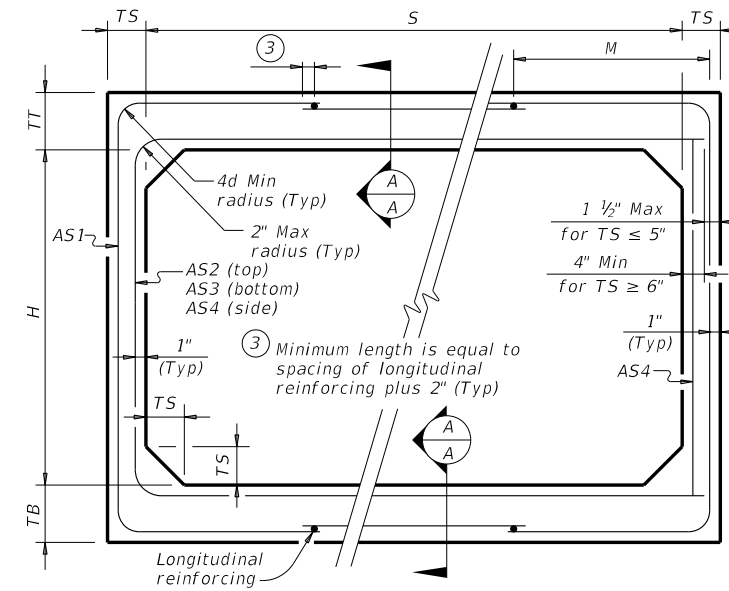
DATE:  
FILE:

**BOX DATA**

SECTION DIMENSIONS					Fill Height (ft.)	M (Min) (in.)	REINFORCING (sq. in. / ft.) <sup>(2)</sup>							<sup>(1)</sup> Lift Weight (tons)
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)			AS1	AS2	AS3	AS4	AS5	AS7	AS8	
5	2	8	7	6	< 2	-	0.19	0.27	0.18	0.14	0.19	0.19	0.17	6.0
5	2	6	6	6	2 < 3	44	0.22	0.20	0.16	0.14	-	-	-	5.1
5	2	6	6	6	3 - 5	44	0.16	0.14	0.14	0.14	-	-	-	5.1
5	2	6	6	6	10	36	0.15	0.14	0.14	0.14	-	-	-	5.1
5	2	6	6	6	15	36	0.20	0.18	0.18	0.14	-	-	-	5.1
5	2	6	6	6	20	36	0.26	0.23	0.24	0.14	-	-	-	5.1
5	2	6	6	6	25	36	0.33	0.29	0.29	0.14	-	-	-	5.1
5	2	6	6	6	30	36	0.39	0.34	0.35	0.14	-	-	-	5.1
5	3	8	7	6	< 2	-	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6
5	3	6	6	6	2 < 3	45	0.18	0.24	0.19	0.14	-	-	-	5.7
5	3	6	6	6	3 - 5	36	0.14	0.17	0.16	0.14	-	-	-	5.7
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	-	-	-	5.7
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	-	-	-	5.7
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	-	-	-	5.7
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	-	-	-	5.7
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	-	-	-	5.7
5	4	8	7	6	< 2	-	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2
5	4	6	6	6	2 < 3	45	0.16	0.27	0.22	0.14	-	-	-	6.3
5	4	6	6	6	3 - 5	45	0.14	0.19	0.18	0.14	-	-	-	6.3
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	-	-	-	6.3
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	-	-	-	6.3
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	-	-	-	6.3
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	-	-	-	6.3
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	-	-	-	6.3
5	5	8	7	6	< 2	-	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8
5	5	6	6	6	2 < 3	45	0.14	0.29	0.24	0.14	-	-	-	6.9
5	5	6	6	6	3 - 5	45	0.14	0.21	0.20	0.14	-	-	-	6.9
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	-	-	-	6.9
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	-	-	-	6.9
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	-	-	-	6.9
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	-	-	-	6.9
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	-	-	-	6.9

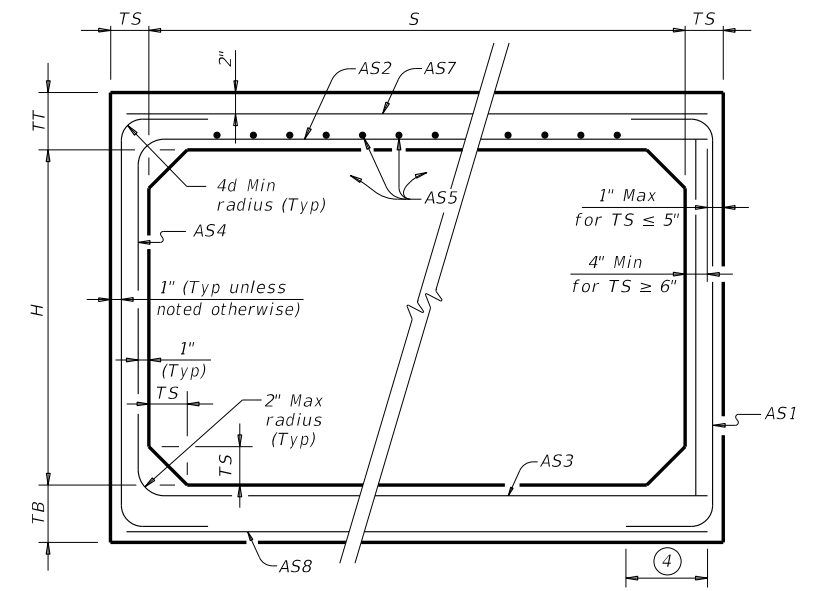
<sup>(1)</sup> For box length = 8'-0"

<sup>(2)</sup> AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



**CORNER OPTION "A"**      **CORNER OPTION "B"**

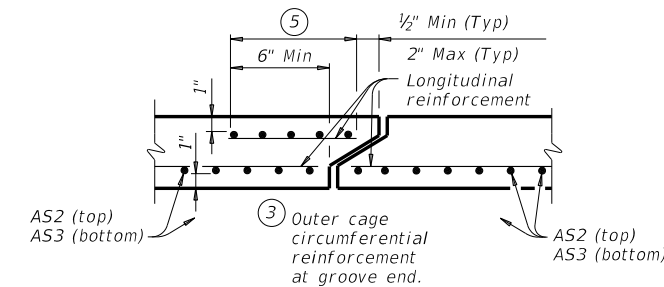
**FILL HEIGHT 2 FT AND GREATER**



**CORNER OPTION "A"**      **CORNER OPTION "B"**

**FILL HEIGHT LESS THAN 2 FT**

<sup>(4)</sup> Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



**SECTION A-A**

(Showing top and bottom slab joint reinforcement.)

**MATERIAL NOTES:**

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.  
Provide Class H concrete ( $f'c = 5,000$  psi).

**GENERAL NOTES:**

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.  
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.  
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

**HL93 LOADING**

		<b>Bridge Division Standard</b>	
<b>SINGLE BOX CULVERTS PRECAST 5'-0" SPAN</b>			
<b>SCP-5</b>			
FILE: scp05sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	1064	01	032
	DIST	COUNTY	SHEET NO.
	PHR	HIDALGO	284

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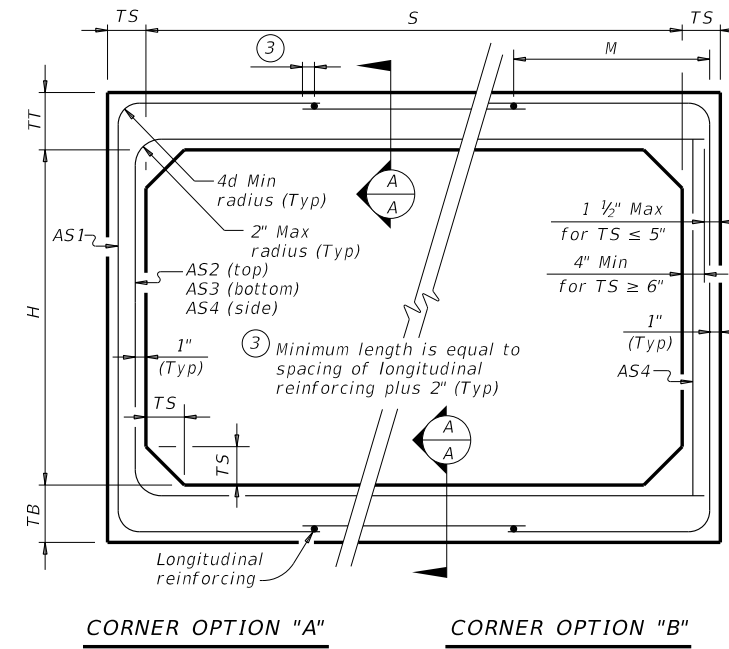
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**BOX DATA**

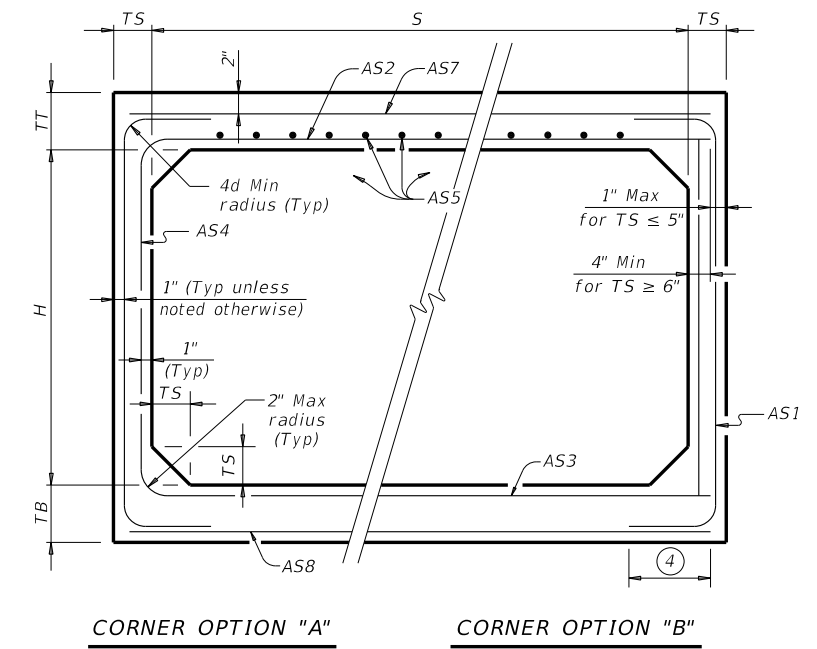
SECTION DIMENSIONS					Fill Height (ft.)	M (Min) (in.)	REINFORCING (sq. in. / ft.) <sup>②</sup>							① Lift Weight (tons)
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)			AS1	AS2	AS3	AS4	AS5	AS7	AS8	
7	3	8	8	8	< 2	-	0.23	0.31	0.22	0.19	0.19	0.19	0.19	9.6
7	3	8	8	8	2 < 3	47	0.27	0.25	0.24	0.19	-	-	-	9.6
7	3	8	8	8	3 - 5	43	0.19	0.19	0.19	0.19	-	-	-	9.6
7	3	8	8	8	10	43	0.21	0.20	0.21	0.19	-	-	-	9.6
7	3	8	8	8	15	43	0.28	0.26	0.27	0.19	-	-	-	9.6
7	3	8	8	8	20	43	0.36	0.34	0.35	0.19	-	-	-	9.6
7	3	8	8	8	25	43	0.45	0.42	0.43	0.19	-	-	-	9.6
7	3	8	8	8	30	43	0.54	0.50	0.51	0.19	-	-	-	9.6
7	4	8	8	8	< 2	-	0.21	0.34	0.25	0.19	0.19	0.19	0.19	10.4
7	4	8	8	8	2 < 3	43	0.23	0.28	0.28	0.19	-	-	-	10.4
7	4	8	8	8	3 - 5	43	0.19	0.22	0.19	0.19	-	-	-	10.4
7	4	8	8	8	10	43	0.19	0.23	0.23	0.19	-	-	-	10.4
7	4	8	8	8	15	41	0.24	0.30	0.30	0.19	-	-	-	10.4
7	4	8	8	8	20	41	0.31	0.38	0.39	0.19	-	-	-	10.4
7	4	8	8	8	25	41	0.38	0.47	0.48	0.19	-	-	-	10.4
7	4	8	8	8	30	41	0.46	0.57	0.57	0.19	-	-	-	10.4
7	5	8	8	8	< 2	-	0.19	0.36	0.27	0.19	0.19	0.19	0.19	11.2
7	5	8	8	8	2 < 3	47	0.21	0.31	0.31	0.19	-	-	-	11.2
7	5	8	8	8	3 - 5	43	0.19	0.24	0.21	0.19	-	-	-	11.2
7	5	8	8	8	10	43	0.19	0.25	0.26	0.19	-	-	-	11.2
7	5	8	8	8	15	41	0.21	0.32	0.33	0.19	-	-	-	11.2
7	5	8	8	8	20	41	0.27	0.41	0.42	0.19	-	-	-	11.2
7	5	8	8	8	25	41	0.33	0.51	0.52	0.19	-	-	-	11.2
7	5	8	8	8	30	41	0.40	0.61	0.62	0.19	-	-	-	11.2
7	6	8	8	8	< 2	-	0.19	0.38	0.30	0.19	0.19	0.19	0.19	12.0
7	6	8	8	8	2 < 3	59	0.19	0.33	0.34	0.19	-	-	-	12.0
7	6	8	8	8	3 - 5	47	0.19	0.25	0.23	0.19	-	-	-	12.0
7	6	8	8	8	10	43	0.19	0.26	0.27	0.19	-	-	-	12.0
7	6	8	8	8	15	41	0.19	0.34	0.35	0.19	-	-	-	12.0
7	6	8	8	8	20	41	0.24	0.43	0.45	0.19	-	-	-	12.0
7	6	8	8	8	25	41	0.29	0.53	0.55	0.19	-	-	-	12.0
7	6	8	8	8	30	41	0.35	0.64	0.65	0.19	-	-	-	12.0
7	7	8	8	8	< 2	-	0.19	0.40	0.33	0.19	0.19	0.19	0.19	12.8
7	7	8	8	8	2 < 3	59	0.19	0.36	0.37	0.19	-	-	-	12.8
7	7	8	8	8	3 - 5	59	0.19	0.27	0.25	0.19	-	-	-	12.8
7	7	8	8	8	10	47	0.19	0.27	0.29	0.19	-	-	-	12.8
7	7	8	8	8	15	43	0.19	0.35	0.37	0.19	-	-	-	12.8
7	7	8	8	8	20	43	0.22	0.44	0.46	0.19	-	-	-	12.8
7	7	8	8	8	25	43	0.27	0.54	0.57	0.19	-	-	-	12.8
7	7	8	8	8	30	41	0.32	0.65	0.67	0.19	-	-	-	12.8

① For box length = 8'-0"

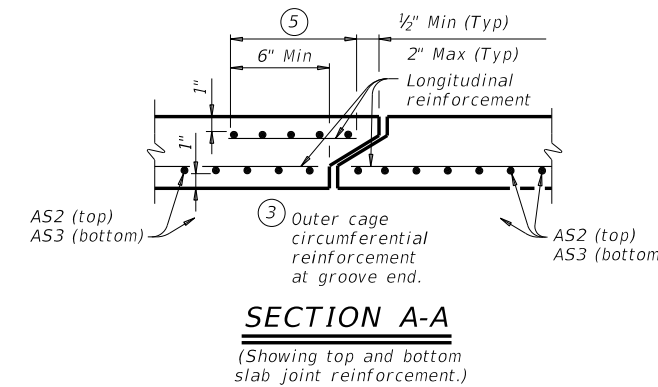
② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



**FILL HEIGHT 2 FT AND GREATER**



**FILL HEIGHT LESS THAN 2 FT**



**SECTION A-A**

(Showing top and bottom slab joint reinforcement.)

**MATERIAL NOTES:**

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.  
 Provide Class H concrete ( $f'c = 5000$  psi).

**GENERAL NOTES:**

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.  
 See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.  
 In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

**HL93 LOADING**

				<b>Bridge Division Standard</b>	
<b>SINGLE BOX CULVERTS PRECAST 7'-0" SPAN</b>					
<b>SCP-7</b>					
FILE:	scp07sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		1064	01	032	FM 676
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		285

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DATE: FILE:

**TABLE OF DIMENSIONS AND REINFORCING STEEL**  
(Wings for one structure end)

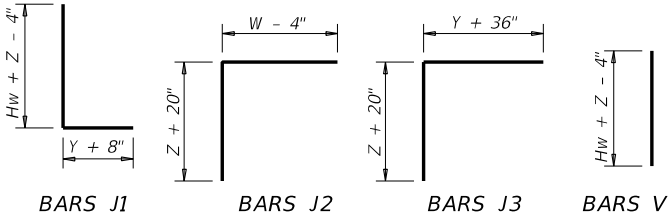
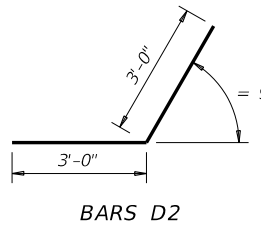
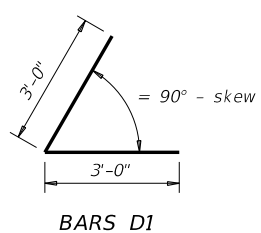
Maximum Wingwall Height Hw	Dimensions				Variable Reinforcing				Estimated Quantities per ft of wing (2-wings)		Estimated Quantities per ft of Toewall (1-toewall)	
	W	X	Y	Z	Bars J1		Bars J2		Reinf (Lb/Ft)	Conc (CY/Ft)	Reinf (Lb/Ft)	Conc (CY/Ft)
					Size	Spa	Size	Spa				
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

**TABLE OF WINGWALL REINFORCING**  
(2-wings)

Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

**TABLE OF TOEWALL REINFORCING**

Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



**WING DIMENSION FORMULAS:**  
(All values are in feet.)

$Hw = H + T + C$   
 $Lw = (Hw) (SL) \div \cosine(\theta)$  for Type PW-1  
 $= (Hw - 1') (SL) \div \cosine(\theta)$  for Type PW-2 and  $Hw \geq 4'$   
 $= (Hw - 0.5') (SL) \div \cosine(\theta)$  for Type PW-2 and  $Hw < 4'$

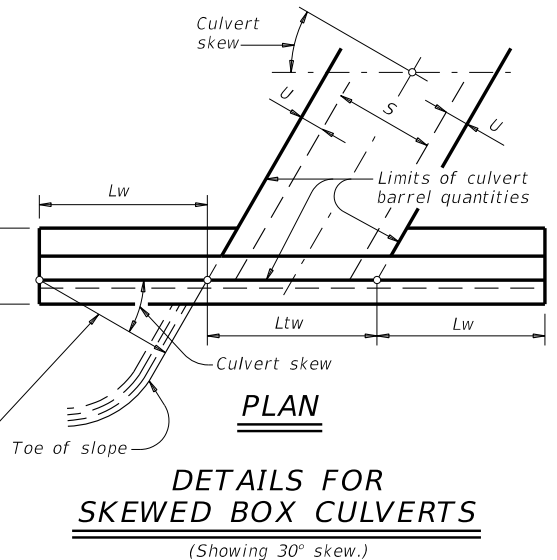
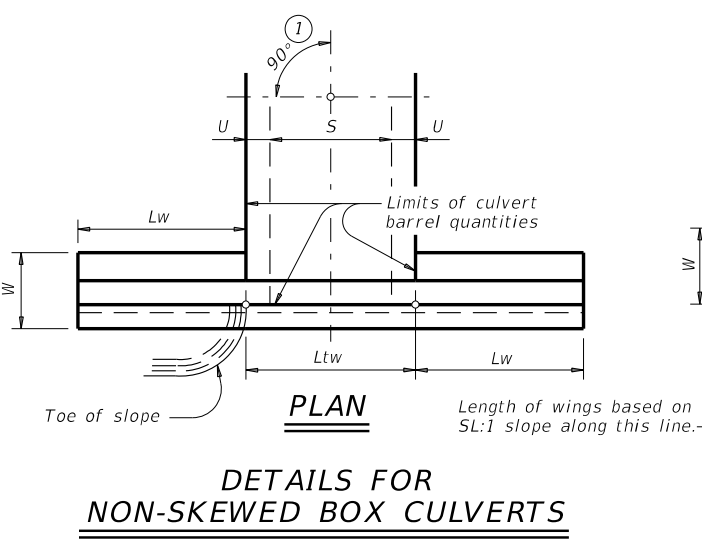
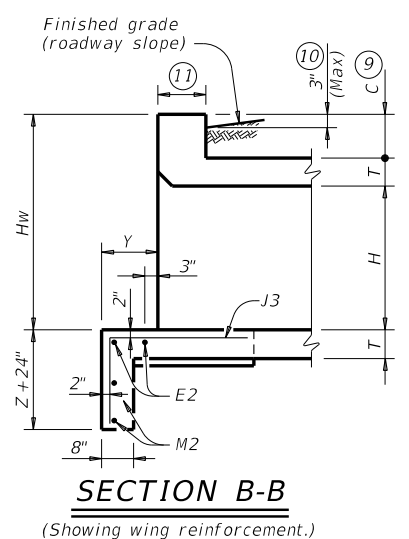
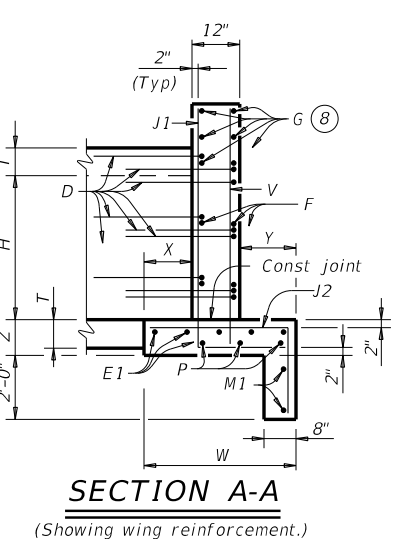
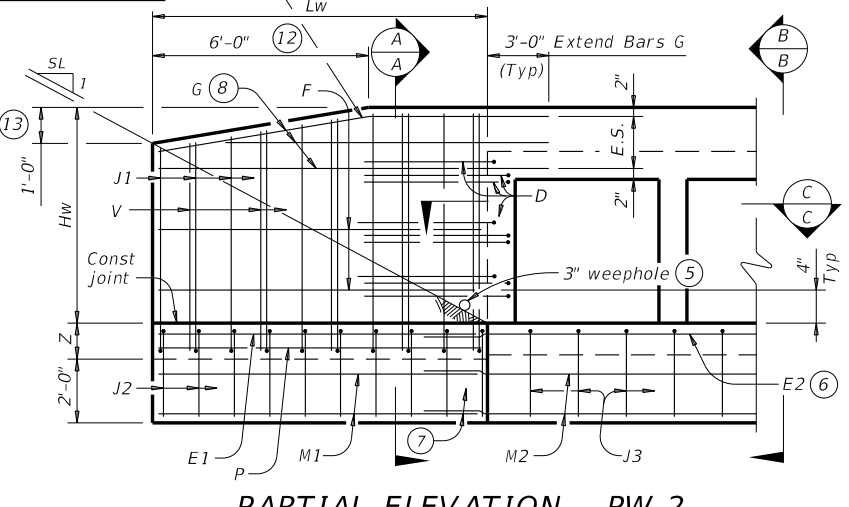
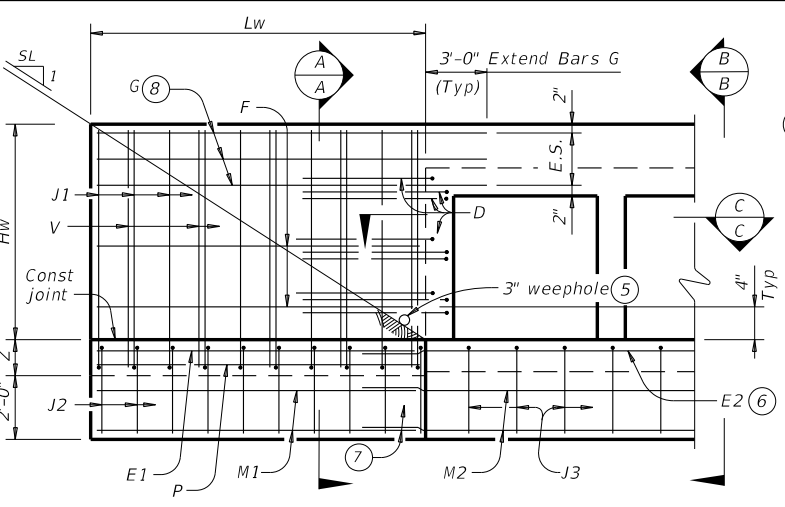
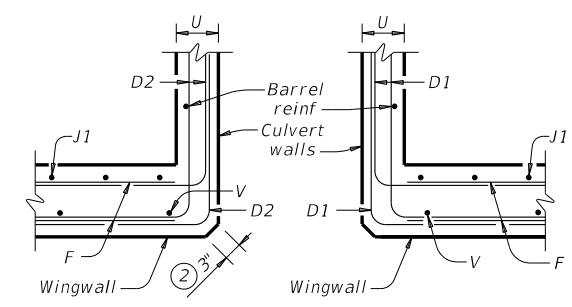
For cast-in-place culverts:  
 $Ltw = [(N)(S) + (N + 1)(U)] \div \cosine(\theta)$

For precast culverts:  
 $Ltw = [(N)(2U + S) + (N - 1)(0.5')] \div \cosine(\theta)$   
 Total Wingwall Area (two wings ~ SF)  
 $= (2)(Hw)(Lw)$  for Type PW-1  
 $= (2)(Hw)(Lw) - 6 SF$  for Type PW-2 and  $Hw \geq 4'$   
 $= (2)(Hw)(Lw) - 1.5 SF$  for Type PW-2 and  $Hw < 4'$

$Hw$  = Height of wingwall  
 $Lw$  = Length of wingwall  
 $Ltw$  = Culvert toewall length  
 $N$  = Number of culvert spans  
 $SL:1$  = Channel slope ratio, (horizontal: 1 vertical, usual value is 2:1)  
 $\theta$  = Culvert skew

See applicable box culvert standard sheet for S, H, T, and U values.

- Skew = 0°
- At discharge end, chamfer may be 3/4" minimum.
- For 15° skew ~ 1"  
For 30° skew ~ 2"  
For 45° skew ~ 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
- Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars M1 1'-6" minimum with Bars M2.
- Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, construct curbs no more than 3" above finished grade.
  - For structures with bridge rail, construct curbs flush with finished grade.
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
- 3'-0" for Hw < 4'.
- 6" for Hw < 4'.



**DESIGNER NOTES:**  
 Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.  
 Type PW-2 can only be used for applications without a railing mounted to the wingwall.

**MATERIAL NOTES:**  
 Provide Class C concrete (f'c=3,600 psi).  
 Provide Grade 60 reinforcing steel.  
 Provide galvanized reinforcing steel if required elsewhere in the plans.

**GENERAL NOTES:**  
 Designed in accordance with AASHTO LRFD Bridge Design Specifications.  
 Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.  
 See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.  
 Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

**Bridge Division Standard**

**CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2**

**PW**

FILE: pwstde01-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		286

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DATE: FILE:

**TABLE OF DIMENSIONS AND REINFORCING STEEL**  
(Wings for one structure end)

Maximum Wingwall Height Hw	Dimensions				Variable Reinforcing				Estimated Quantities per ft of wing length (2-wings)	
	W	X	Y	Z	Bars J1		Bars J2		Reinf (Lb/Ft)	Conc (CY/Ft)
					Size	Spa	Size	Spa		
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

**TABLE OF WINGWALL REINFORCING**  
(2-wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

**TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES**

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

**WING DIMENSION FORMULAS:**

(All values are in feet.)

$Hw = H + T + C - 0.250'$   
 $A = (Hw - 0.333') (SL)$   
 $B = (A) \text{ tangent } (30^\circ)$   
 $Lw = (A) \div \text{cosine } (30^\circ)$

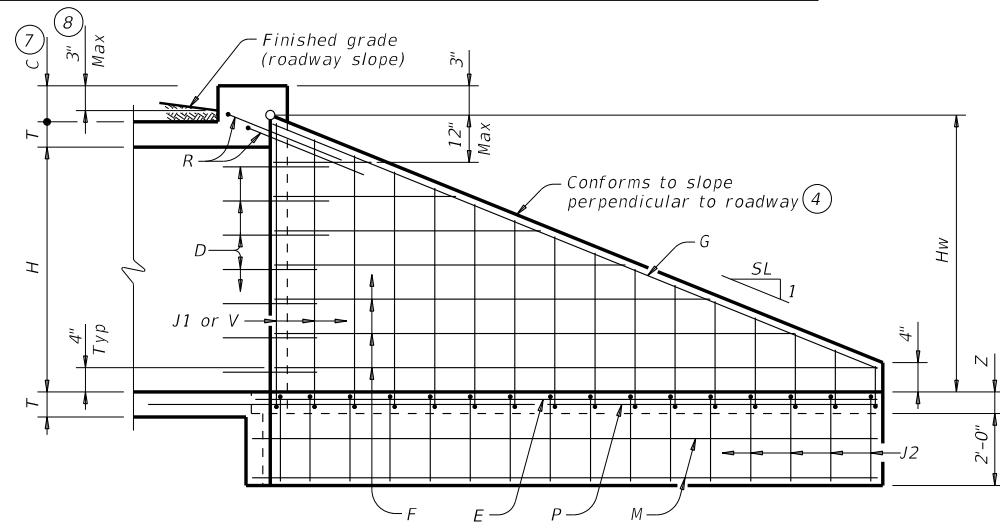
For cast-in-place culverts:  
 $Ltw = (N) (S) + (N + 1) (U)$

For precast culverts:  
 $Ltw = (N) (2U + S) + (N - 1) (0.5')$

Total wingwall area (two wings ~ SF) =  $(Hw + 0.333') (Lw)$

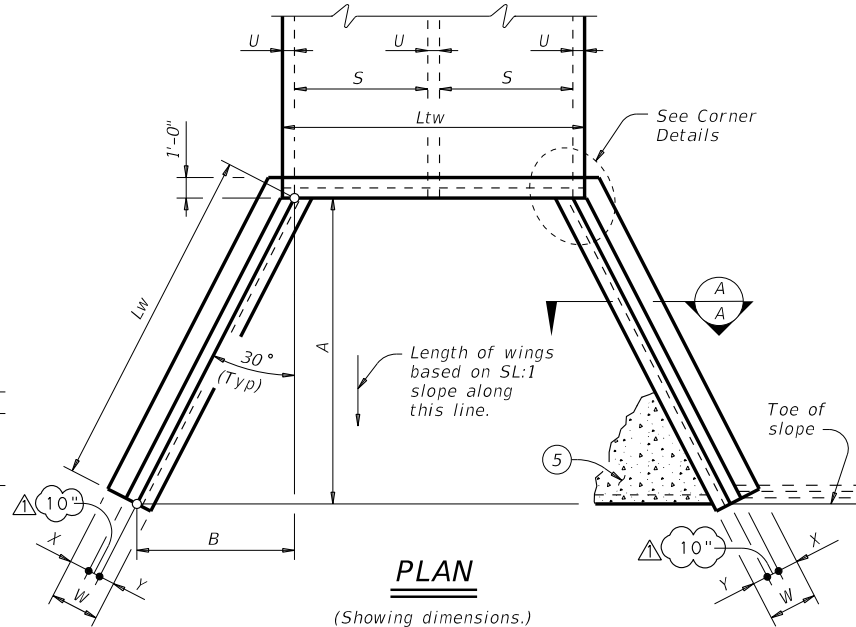
Hw = Height of wingwall  
 SL:1 = Side slope ratio (horizontal:1 vertical)  
 Lw = Length of wingwall  
 Ltw = Culvert toewall length  
 N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.



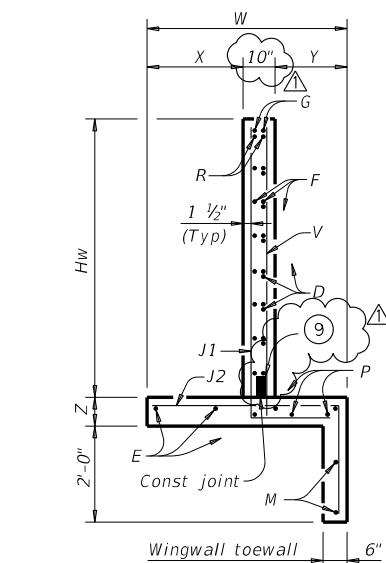
**INSIDE ELEVATION**

(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

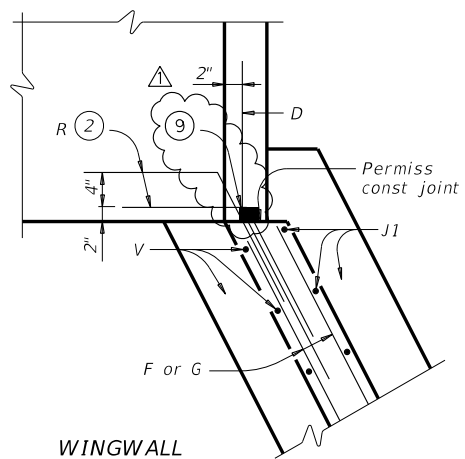


**PLAN**

(Showing dimensions.)



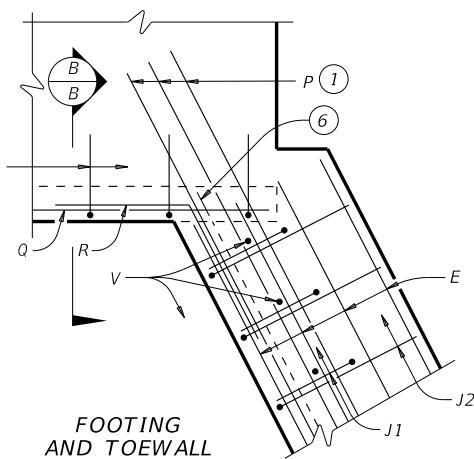
**SECTION A-A**



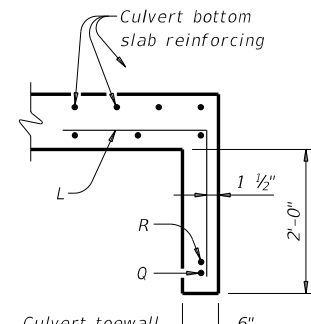
**WINGWALL**

**CORNER DETAILS**

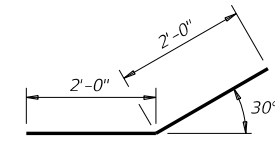
(Culvert and culvert toewall reinforcing not shown for clarity.)



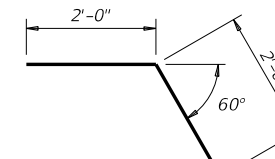
**FOOTING AND TOEWALL**



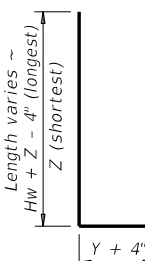
**SECTION B-B**



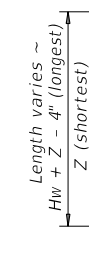
**BARS D**



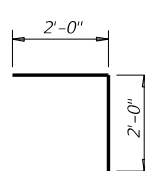
**BARS R**



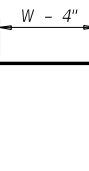
**BARS J1**



**BARS V**



**BARS L**



**BARS J2**

- Extend Bars P 3'-0" minimum into bottom slab of box culvert.
- Adjust as necessary to maintain 1 1/2" clear cover and 4" minimum between bars.
- Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.
- Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
- When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
- At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, construct curbs no more than 3" above finished grade.
  - For structures with bridge rail, construct curbs flush with finished grade.
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

**MATERIAL NOTES:**

Provide Class C concrete (f'c=3,600 psi).  
 Provide Grade 60 reinforcing steel.  
 Provide galvanized reinforcing steel if required elsewhere in the plans.  
 In riprap concrete synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

**GENERAL NOTES:**

Designed according to AASHTO LRFD Bridge Design Specifications.  
 When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.  
 See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.  
 All reinforcing bars shall be adjusted to provide a minimum of 2" clear cover.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.



**CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS**

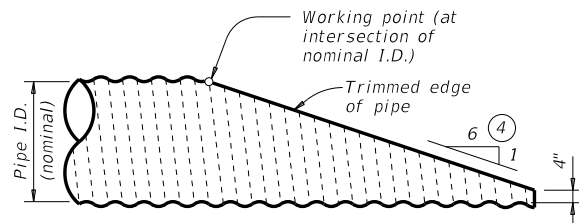
**FW-0 (MOD)**

FILE: fw-0std-20.dgn	DN: GAF	CK: CAT	OW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	287	



11/18/2022

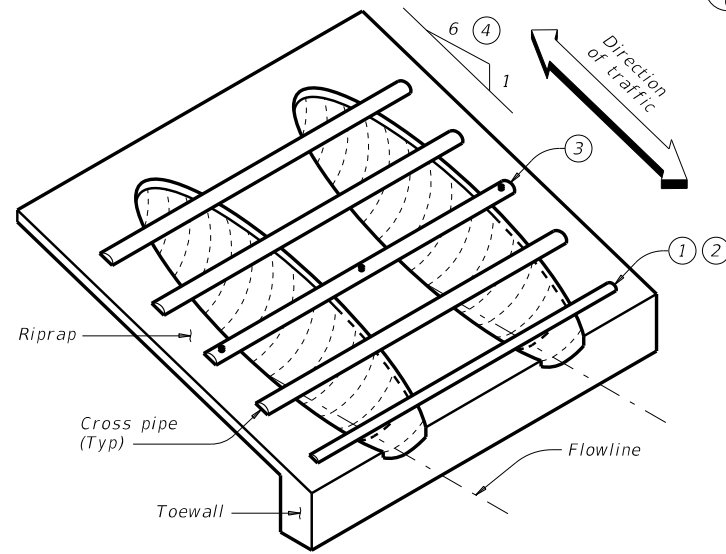
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



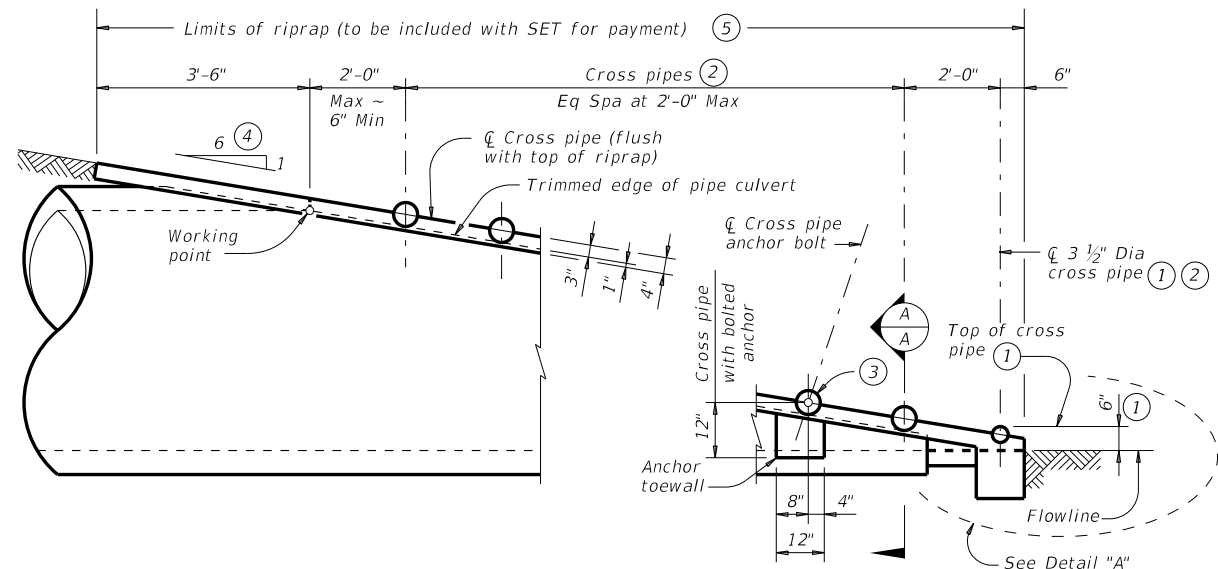
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

**SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER**

(Showing corrugated metal pipe (CMP) culvert. Details at reinforced concrete pipe (RCP) culvert are similar.)

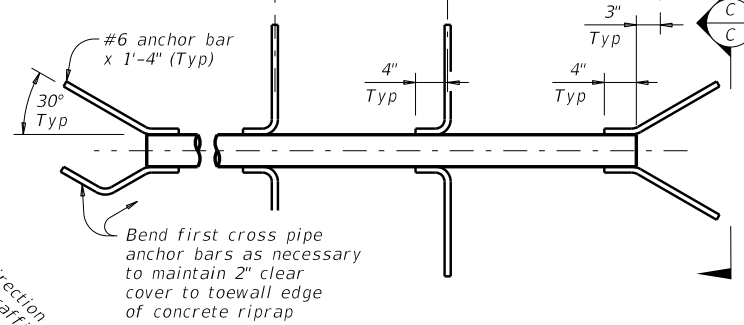
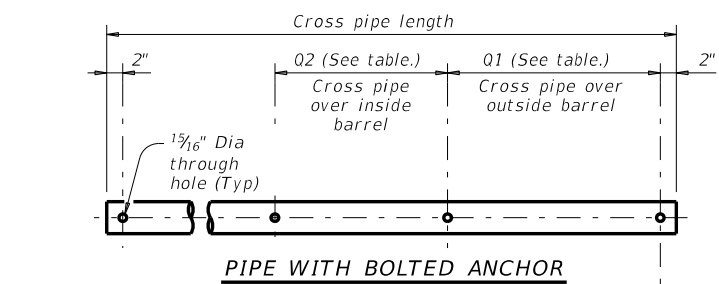


**ISOMETRIC VIEW OF TYPICAL INSTALLATION**

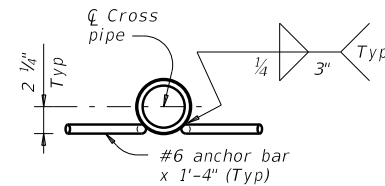


**SIDE ELEVATION OF CAST-IN-PLACE CONCRETE**

(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)

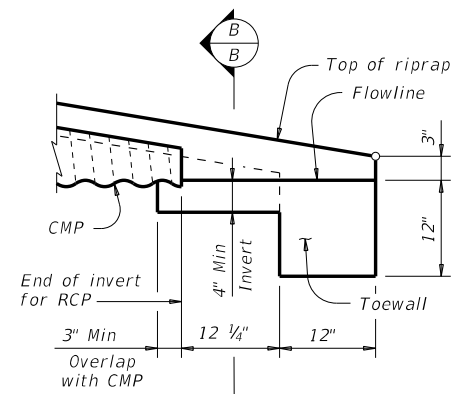


**PIPE WITH ANCHOR BARS**



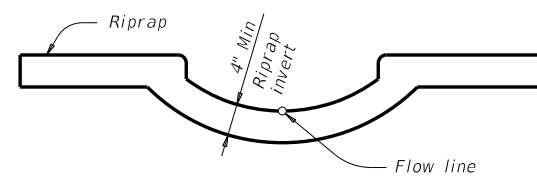
**SECTION C-C**

**CROSS PIPE DETAILS**



**DETAIL "A"**

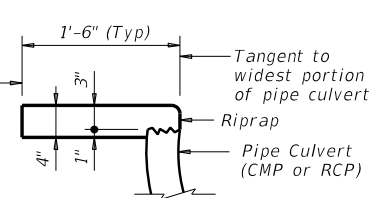
(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



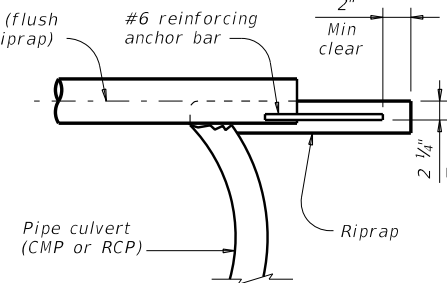
**SECTION B-B**

(Cross pipes not shown for clarity.)

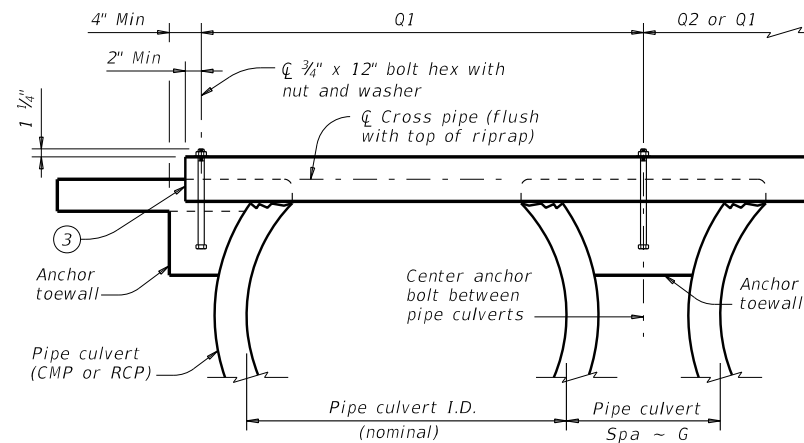
Limits of riprap (to be included with SET for payment) ⑤



**SHOWING TYPICAL PIPE CULVERT AND RIPRAP**



**SHOWING CROSS PIPE WITH ANCHOR BAR**



**SHOWING CROSS PIPE WITH BOLTED ANCHOR**

**SECTION A-A**

**CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES**

Nominal Culvert I.D.	Conc Riprap (CY) ⑥	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"		
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"	3 or more pipe culverts	3 1/2" Std (4.000" O.D.)
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"	2 or more pipe culverts	
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	All pipe culverts	4" Std (4.500" O.D.)
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	5" Std (5.563" O.D.)
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"		
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"		
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"	All pipe culverts	5" Std (5.563" O.D.)
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

- The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.
- Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1/2" standard pipe (4" O.D.) for the first bottom pipe.
- Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
- Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
- Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

**MATERIAL NOTES:**

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52. Provide ASTM A307 bolts and nuts. Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

**GENERAL NOTES:**

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981. Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes. Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap". Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

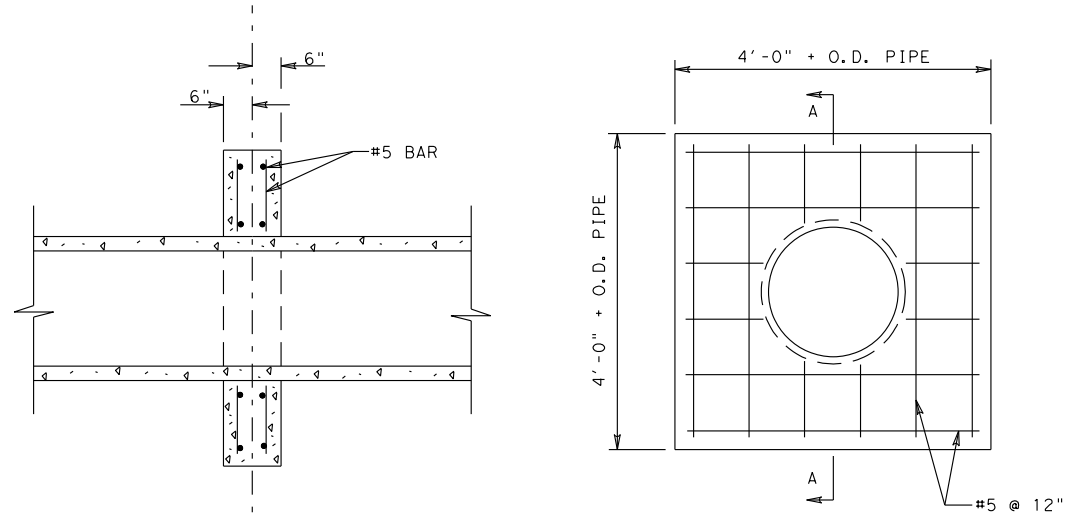
**Texas Department of Transportation** Bridge Division Standard

**SAFETY END TREATMENT FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE**

**SETP-PD**

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REVISIONS	CONT	SECT	JOB	HIGHWAY
1064	01	032	FM 676	
DIST	COUNTY		SHEET NO.	
PHR	HIDALGO		288	

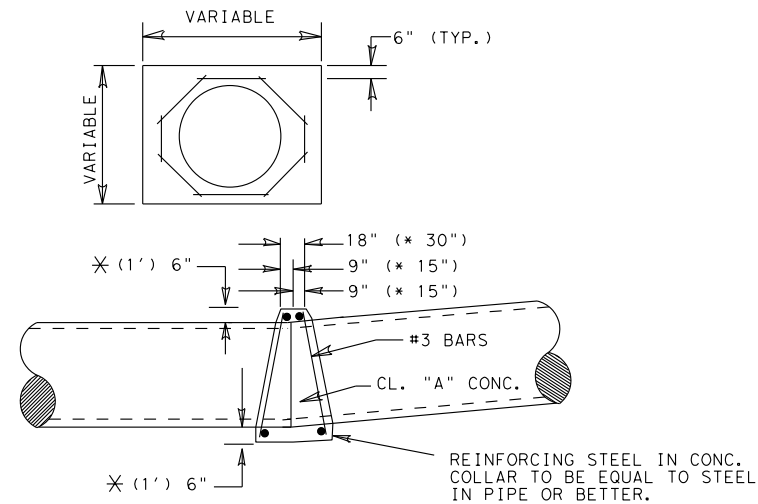
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SECTION A-A

FRONT ELEVATION

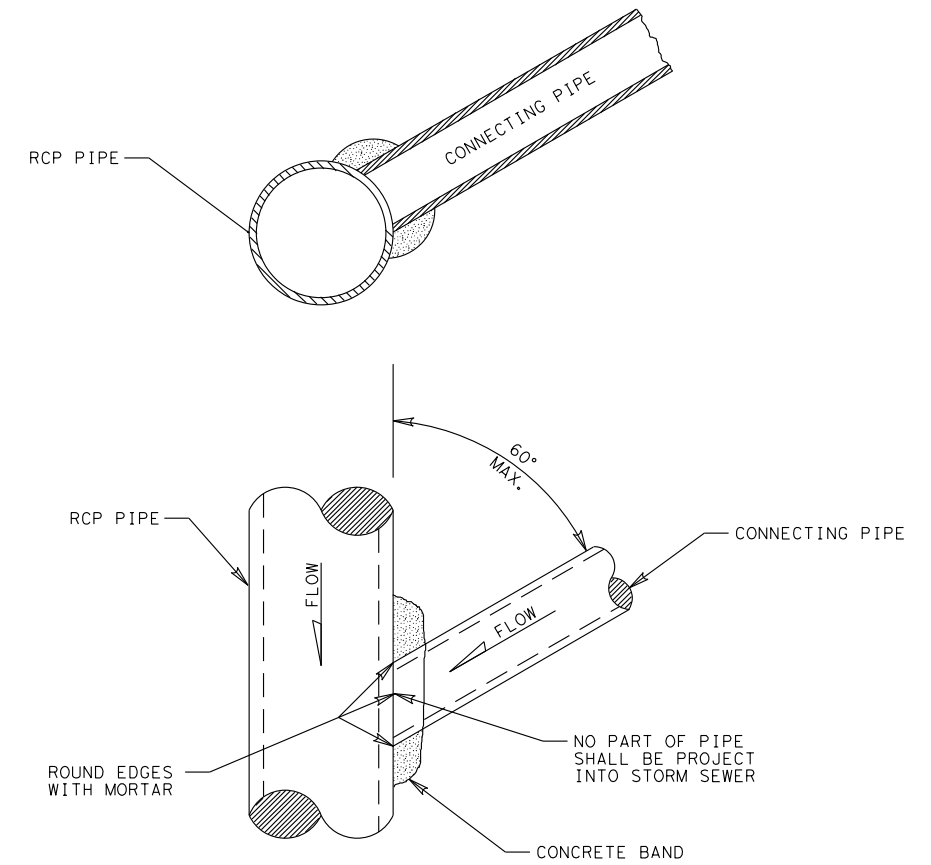
CONCRETE PIPE COLLAR



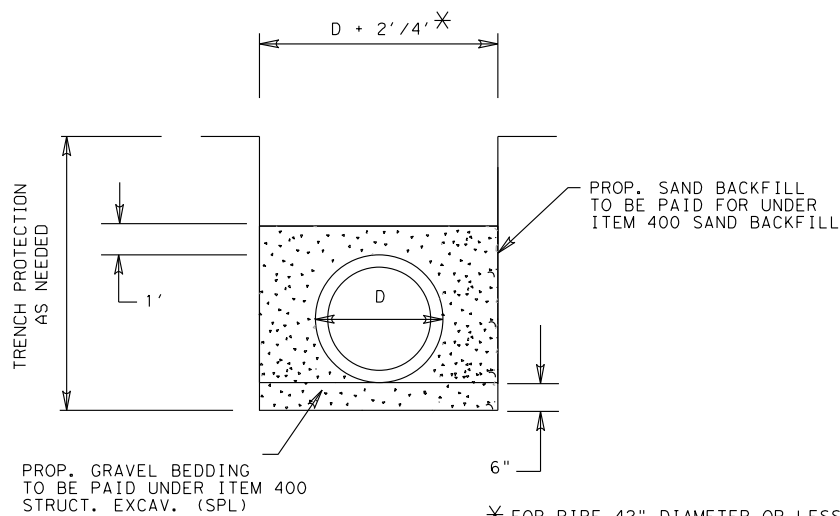
DETAIL FOR CONC. COLLARS  
DRAINAGE STRUCTURES AND PIPE  
SIPHONS (HORIZ. & VERT. BENDS)

NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.

\* FOR 42" DIAMETER AND LARGER PIPE



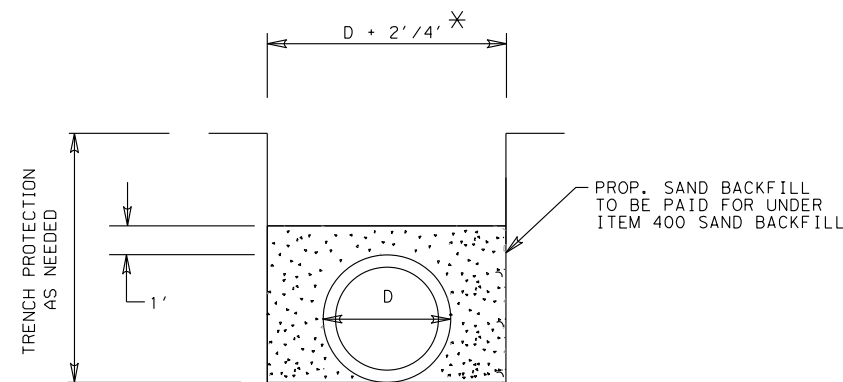
TYPICAL REINFORCED CONC. PIPE  
CONNECTION WITHOUT MANHOLE



SPIRAL RIB CMP

TYPICAL BACKFILL DETAIL  
GRAVEL & SAND

\* FOR PIPE 42" DIAMETER OR LESS PLACE 1' OF FILL ON EACH SIDE OF THE PIPE.  
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.



REINFORCED CONCRETE PIPE

TYPICAL BACKFILL DETAIL-SAND

\* FOR PIPE 42" DIAMETER OR LESS PLACE 1' OF FILL ON EACH SIDE OF THE PIPE.  
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.

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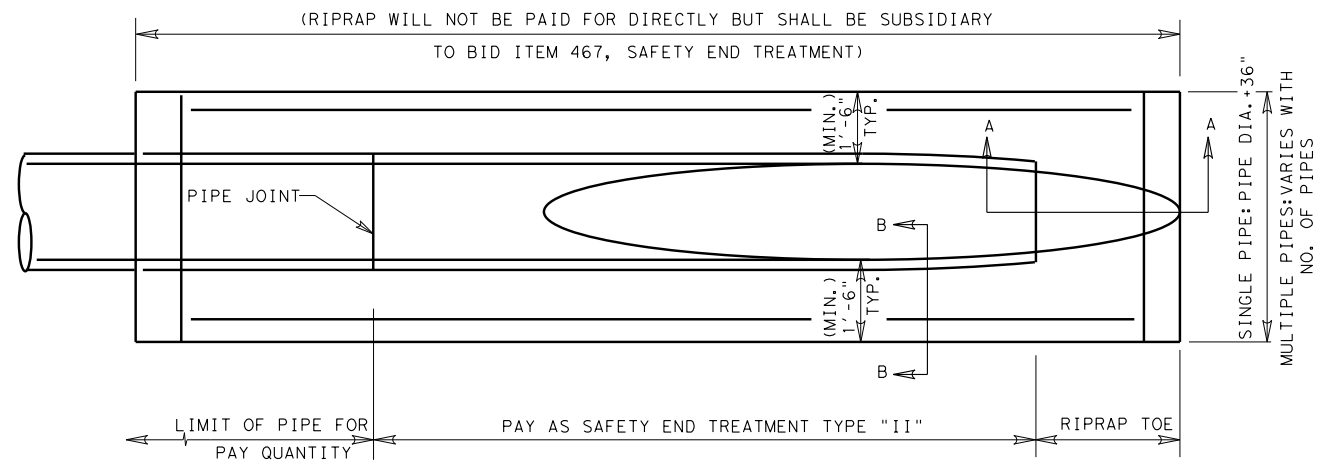
© TxDOT 2014 PHARR DISTRICT STANDARD

**TEXAS DEPARTMENT OF TRANSPORTATION**

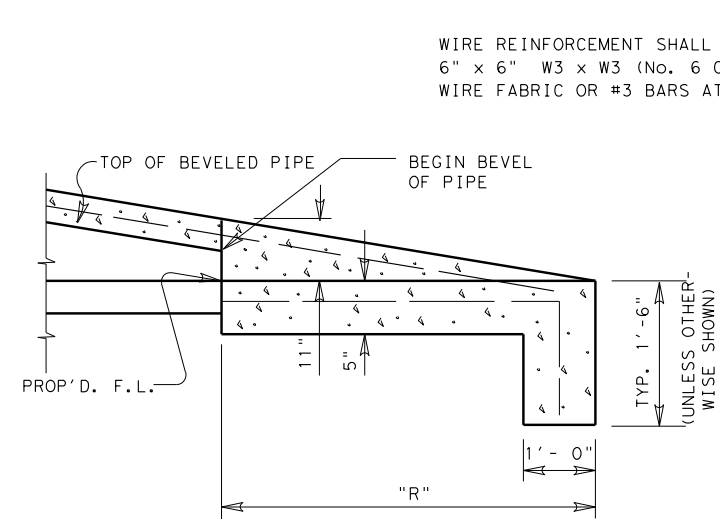
MISCELLANEOUS  
PIPE DETAILS

REV. 8/14 COLLAR.DGN

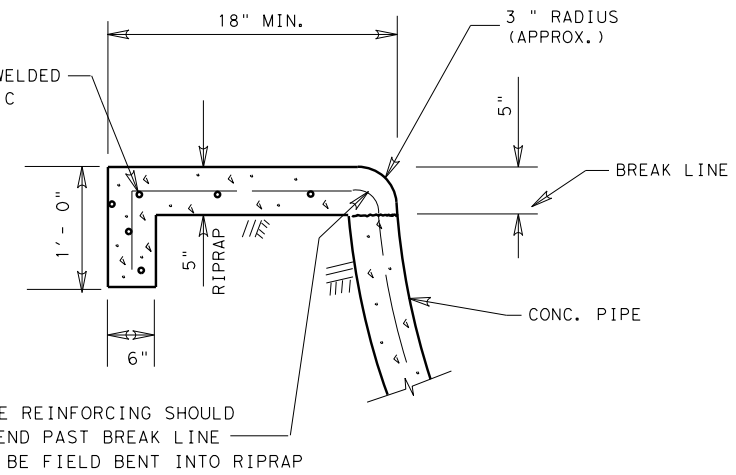
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TEXAS	21	HIDALGO	1064	01	032	FM 676	



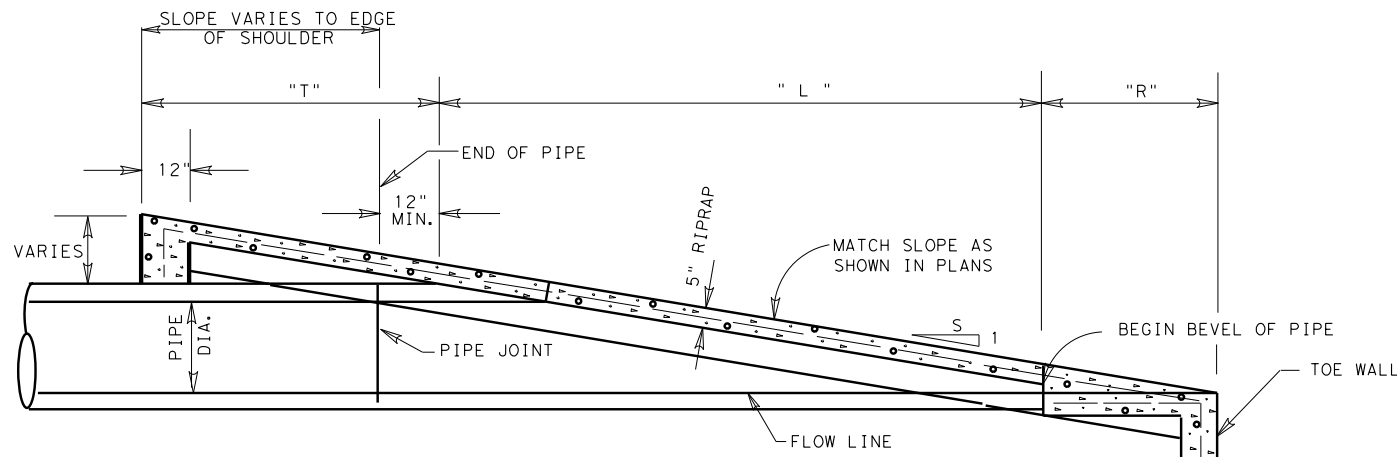
**PLAN VIEW**



**SEC. A-A**



**SEC. B-B**



**ELEVATION SAFETY END TREATMENT**

**SAFETY END TREATMENT PIPE LENGTHS**

PIPE DIA. (IN.)	"L"			
	3:1	4:1	5:1	6:1
12	2'-0"	2'-8"	3'-4"	4'-0"
15	2'-9"	3'-8"	4'-7"	5'-6"
18	3'-6"	4'-8"	5'-10"	7'-0"
24	5'-1 1/2"	6'-10"	8'-6 1/2"	10'-3"
30	6'-9"	9'-0"	11'-3"	13'-6"
36	8'-6"	11'-4"	14'-2"	17'-0"
42	10'-1 1/2"	13'-6"	16'-10 1/2"	20'-3"
48	11'-9"	15'-8"	19'-7"	23'-6"

⊗ DRIVEWAYS & TURNOUTS ARE 6:1 ONLY

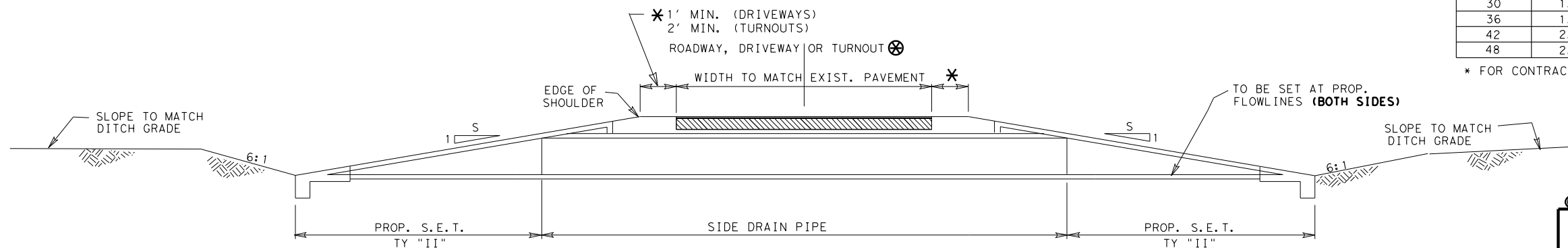
**RIPRAP TOE LENGTHS**

SLOPE	"R"		"T"	
	"R"	"T"	"R"	"T"
3:1	2'-9"	1'-9"		
4:1	3'-8"	2'-4"		
5:1	4'-7"	2'-11"		
6:1	5'-6"	3'-6"		

**ESTIMATED RIPRAP VOLUME (CY)**

PIPE DIA. (IN.)	ESTIMATED RIPRAP VOLUME (CY)			
	3:1	4:1	5:1	6:1
12	.9	1.1	1.3	1.6
15	1.0	1.2	1.5	1.8
18	1.1	1.4	1.6	1.9
24	1.3	1.6	2.0	2.3
30	1.5	1.9	2.3	2.7
36	1.7	2.2	2.7	3.2
42	2.0	2.5	3.1	3.6
48	2.2	2.8	3.4	4.1

\* FOR CONTRACTORS INFORMATION ONLY (SINGLE PIPE)



**TYPICAL SIDEDRAIN SECTION**

**NOTE:**

ALL EXCAVATION AND BACKFILL REQUIRED AT ALL PIPE SIDE DRAIN CONNECTIONS, ADJUSTMENTS AND/OR EXTENSIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE BID ITEMS INVOLVED AND IN ACCORDANCE WITH ITEM 400 "STRUCTURAL EXCAVATION".

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**TEXAS DEPARTMENT OF TRANSPORTATION**

**SAFETY END TREATMENT DETAILS**

REV. 9/16 SET.DGN

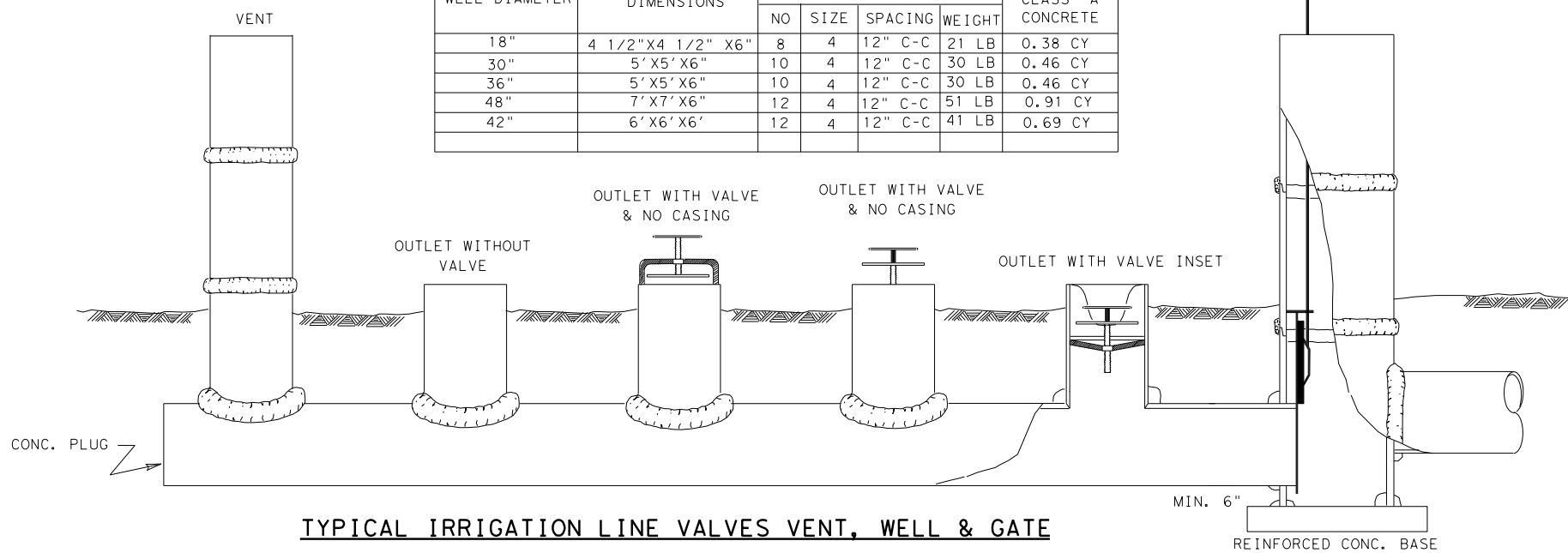
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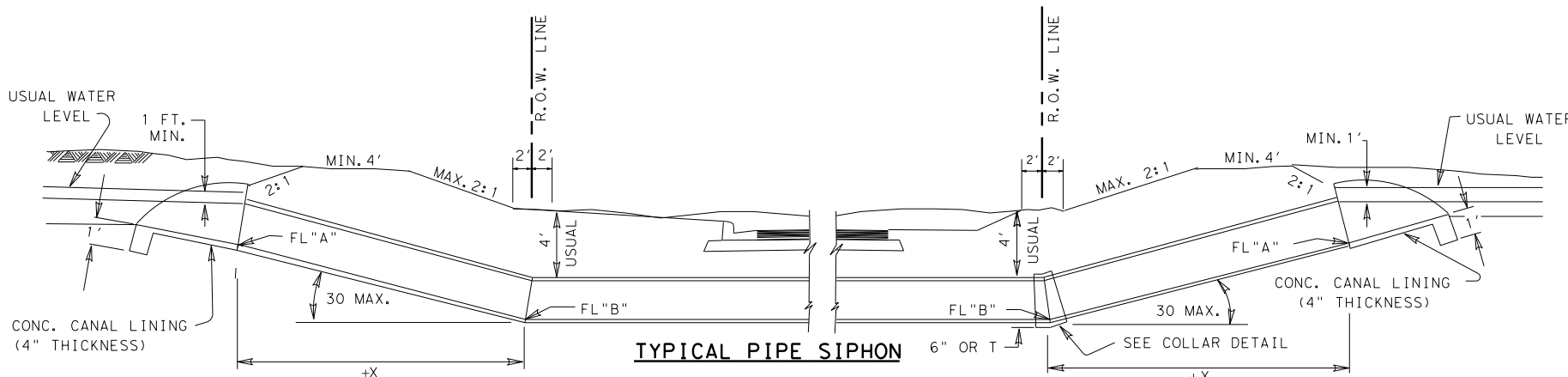


ESTIMATED QUANTITIES FOR  
TYPICAL WELL BASE

WELL DIAMETER	BASE DIMENSIONS	REINFORCING STEEL				CLASS "A" CONCRETE
		NO	SIZE	SPACING	WEIGHT	
18"	4 1/2" X 4 1/2" X 6"	8	4	12" C-C	21 LB	0.38 CY
30"	5' X 5' X 6"	10	4	12" C-C	30 LB	0.46 CY
36"	5' X 5' X 6"	10	4	12" C-C	30 LB	0.46 CY
48"	7' X 7' X 6"	12	4	12" C-C	51 LB	0.91 CY
42"	6' X 6' X 6'	12	4	12" C-C	41 LB	0.69 CY

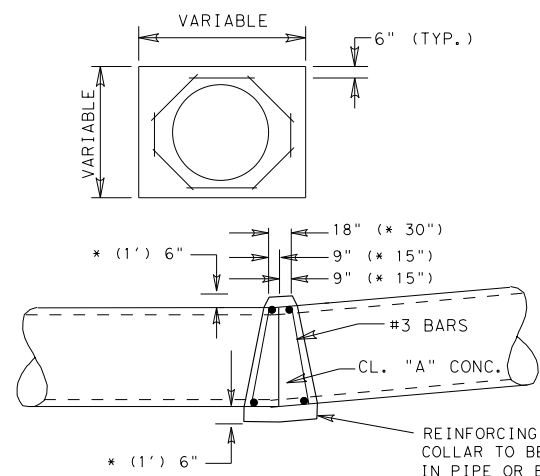


TYPICAL IRRIGATION LINE VALVES VENT, WELL & GATE



TYPICAL PIPE SIPHON

BENDS IN SIPHON TO BE CONSTRUCTED AS PROVIDED IN SPECIFICATIONS.  
+X AND FL "A" AS SHOWN ON PLANS ARE NOMINAL DESIGN DIMENSIONS AND MAY BE VARIED IN FIELD TO FIT EXISTING CONDITIONS.



DETAIL FOR CONC. COLLARS  
DRAINAGE STRUCTURES AND PIPE  
SIPHONS (HORIZ. & VERT. BENDS)

NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.

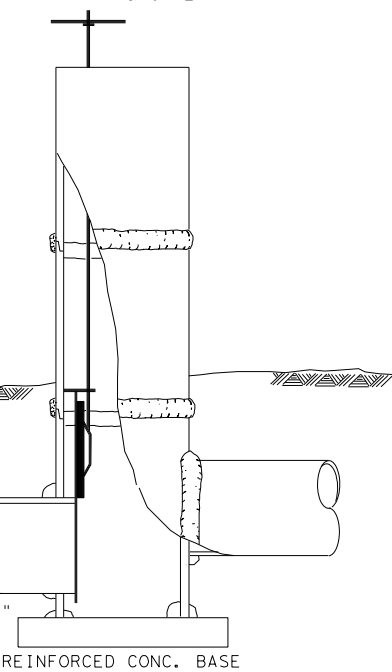
\* FOR 42" AND LARGER PIPE

LADDER TO BE CONSTRUCTED OF 3/4" DIA. REINF. STEEL. THE PARALLEL SIDEPieces SPACED 12" APART TO BE HOOKED OVER TOP OF WELL AND STAND-OFFS WELDED AT TOP RUNG, AT THEIR MID-POINT AND BOTTOM. RUNGS TO BE WELDED TO SIDEPieces AT 12" INTERVALS THE FIRST RUNG TO BE 2' FROM NATURAL GROUND.

STEEL LADDER TO BE PAID FOR AS SUBSIDIARY TO PRICE OF WELL.

NOTE: COMMERCIAL FABRICATED OR CAST METAL STEPS MAY BE USED IF APPROVED BY THE ENGINEER AND/OR THE WATER DISTRICT INVOLVED.

REINF. CONCRETE PIPE WELL & GATE

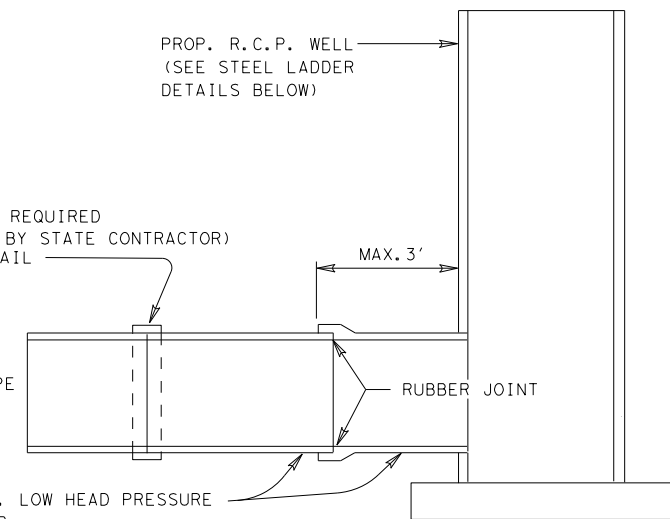


PROP. R.C.P. WELL (SEE STEEL LADDER DETAILS BELOW)

CONC COLLAR IF REQUIRED (TO BE CONSTR. BY STATE CONTRACTOR) SEE COLLAR DETAIL

SIZE AND LENGTH OF PIPE AS INDICATED ON PLANS

CUT ONE JOINT OF CONC. LOW HEAD PRESSURE PIPE APPROX. IN CENTER

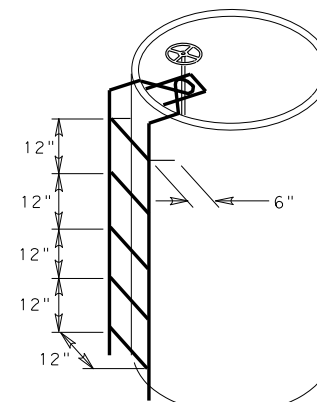


GENERAL NOTES

HEIGHT OF RELOCATED WELLS AND VENTS TO BE EQUIVALENT TO THAT OF EXISTING STRUCTURES OR AS REQUIRED FOR PROPER OPERATION.

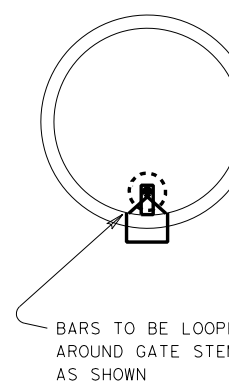
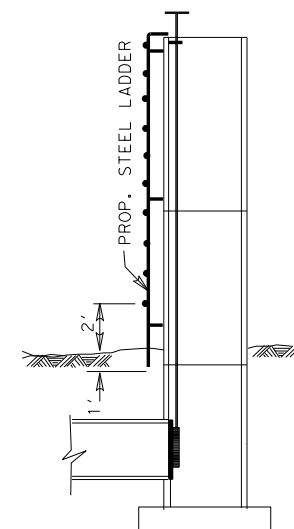
CONCRETE REQUIRED FOR BASE, PLUGS, OR CAPS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED AS SUBSIDIARY TO THE VARIOUS BID ITEMS OF THIS CONTRACT.

IN GENERAL THE PARTICULAR TYPE OR DESIGN OF THE EXISTING FACILITY TO BE EXTENDED OR RELOCATED SHALL BE DUPLICATED.



STEEL LADDER DETAILS

TO BE USED ON ALL WELLS WITH GATES WHEN THE DISTANCE FROM NATURAL GROUND TO TOP OF WELL IS 6 FT. OR MORE.



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PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

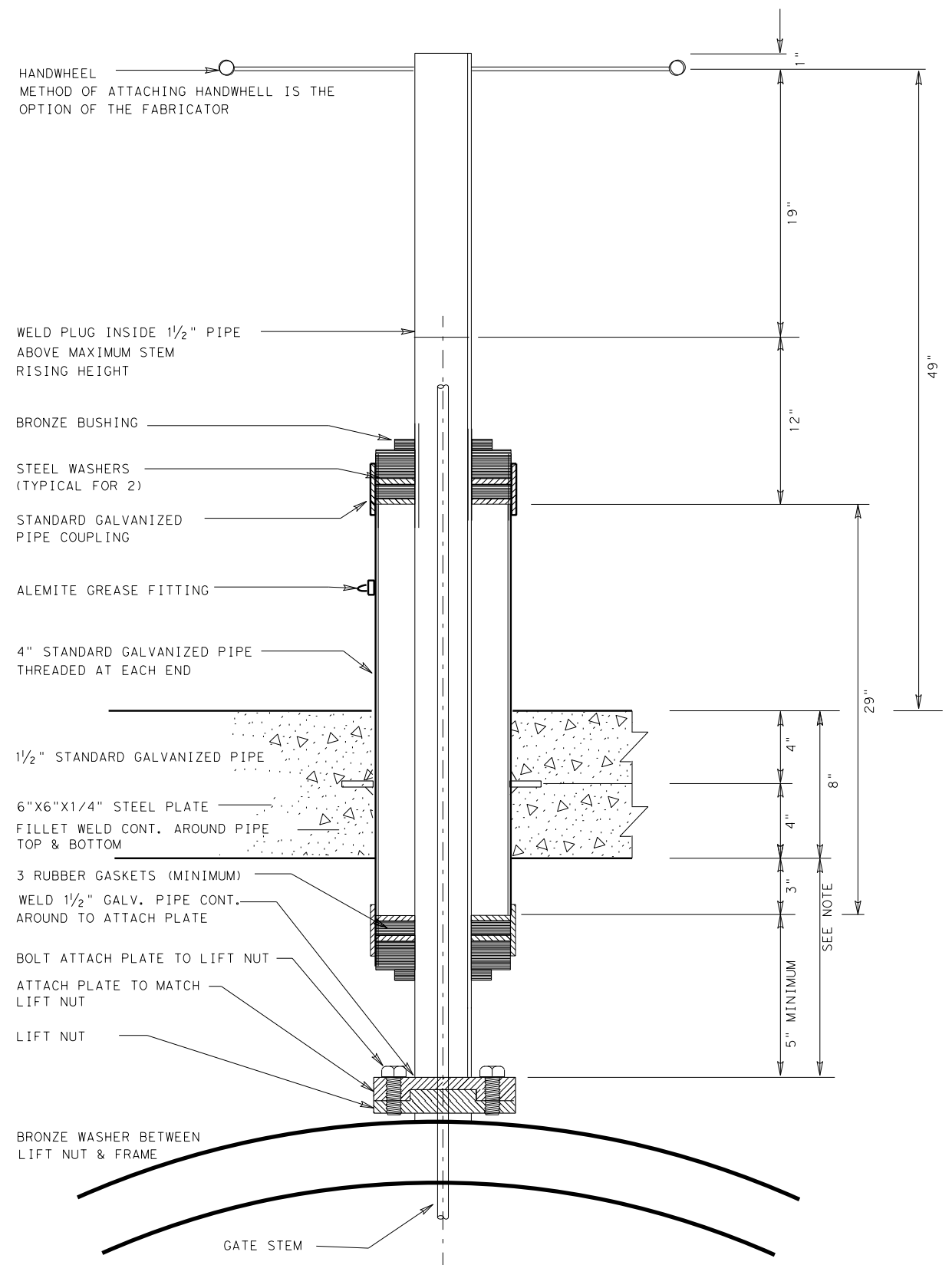
IRRIGATION CROSSING  
DETAIL

REV. 4/15 IRRIG1.DGN

FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	FILE NO.	SHEET NO.
6			292
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	21	HIDALGO	1064 01 032 FM 676

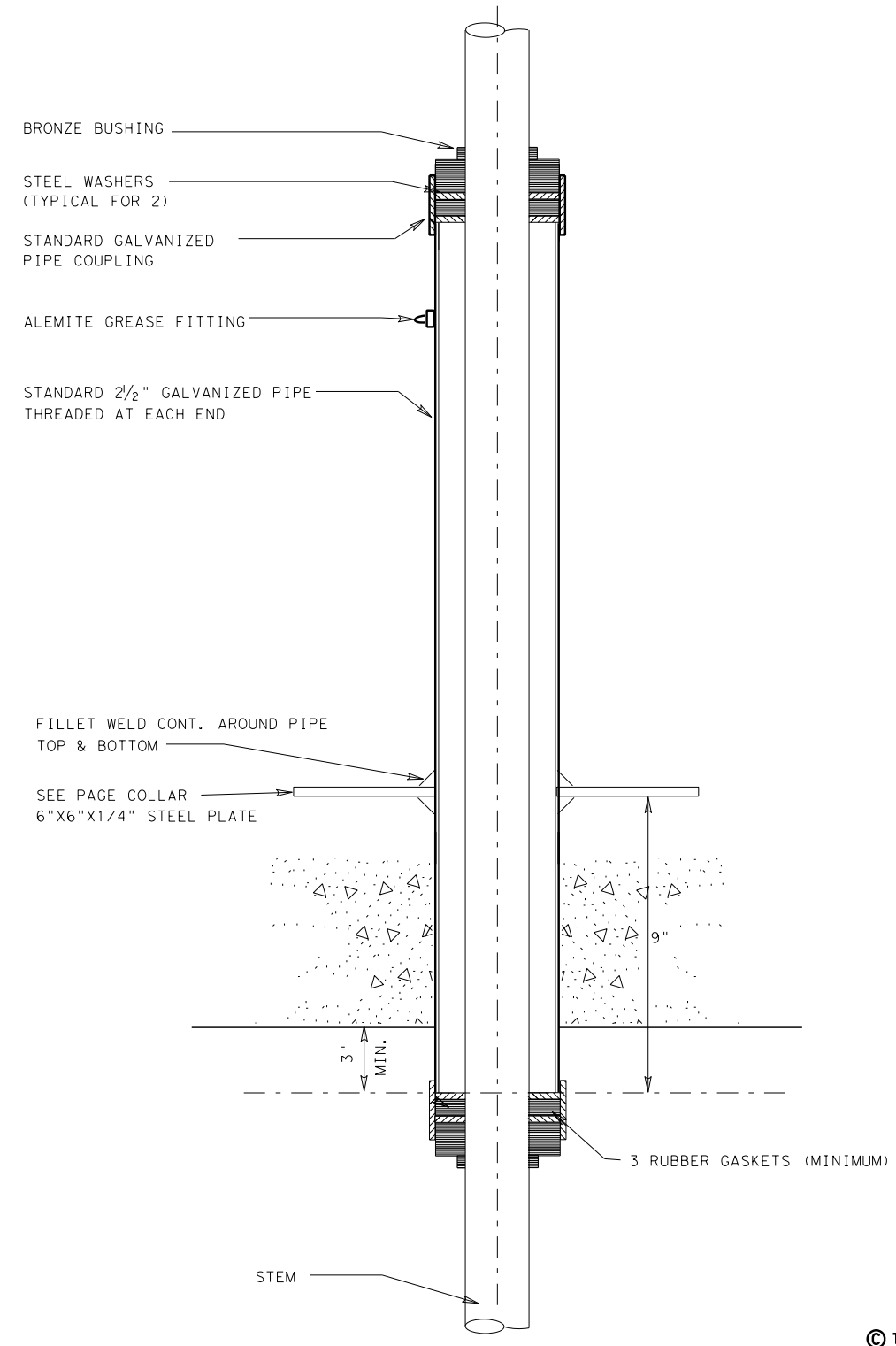
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 FILE: p:\SUSD036343\_wsotkins.com\ATKNATX01\Documents\Roads and Bridges\Projects\100053456\_FM\_676\_PS&E\_Update\CADD\STD\DRN\IRRIG2.dgn



NOTE:  
 CONSTRUCTION SUPERINTENDENT TO DETERMINE EXACT  
 LENGTH OF 1/2" STANDARD GALVANIZED PIPE

**PACKING GLAND  
 FOR 36" RISING STEM GATE**



**PACKING GLAND  
 FOR 16" - 24" NON-RISING STEM GATES**

THESE DETAILS DO NOT APPLY  
 TO UNITED IRRIGATION DISTRICT

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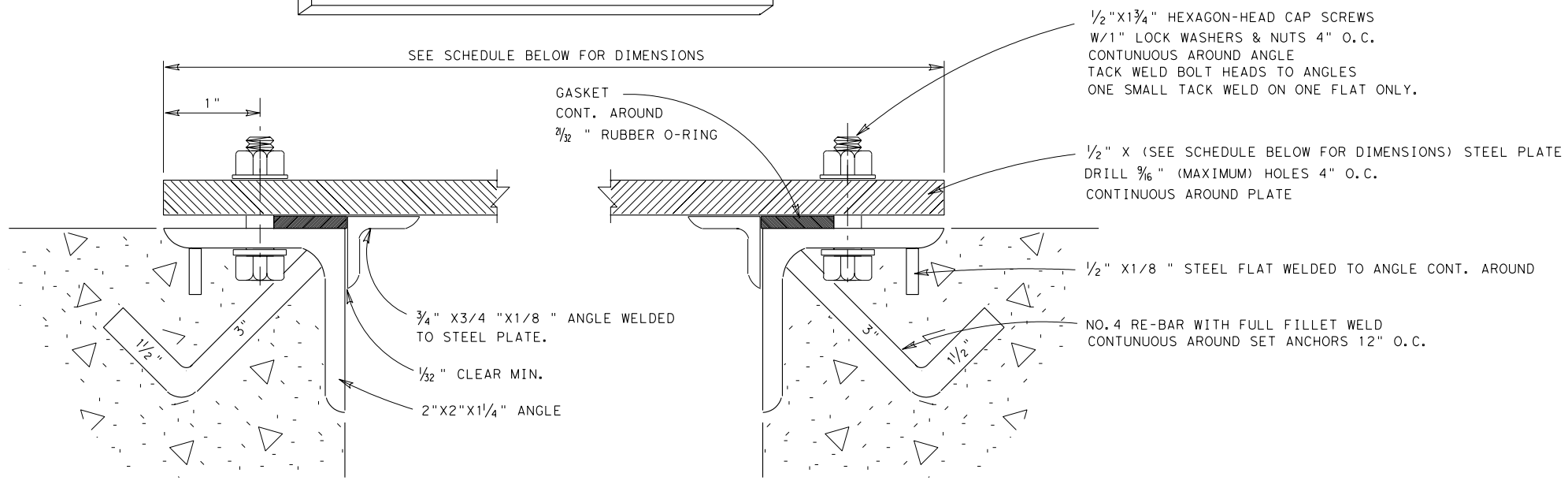
**IRRIGATION  
 STEM GATE DETAILS**

REV. 6/99 IRRIG2.DGN

FED. RD. DIST. NO.		FEDERAL AID PROJECT NO.		FILE NO.		SHEET NO.	
6						293	
STATE	STATE DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.	
TEXAS	PHR	HIDALGO	1064	01	032	FM 676	

NOTE:  
 1/2" STEEL PLATE & 2"x2"x1/4" ANGLE TO BE DRILLED  
 AND MARKED SIMULTANEOUSLY TO ENSURE PROPER  
 CONNECTION

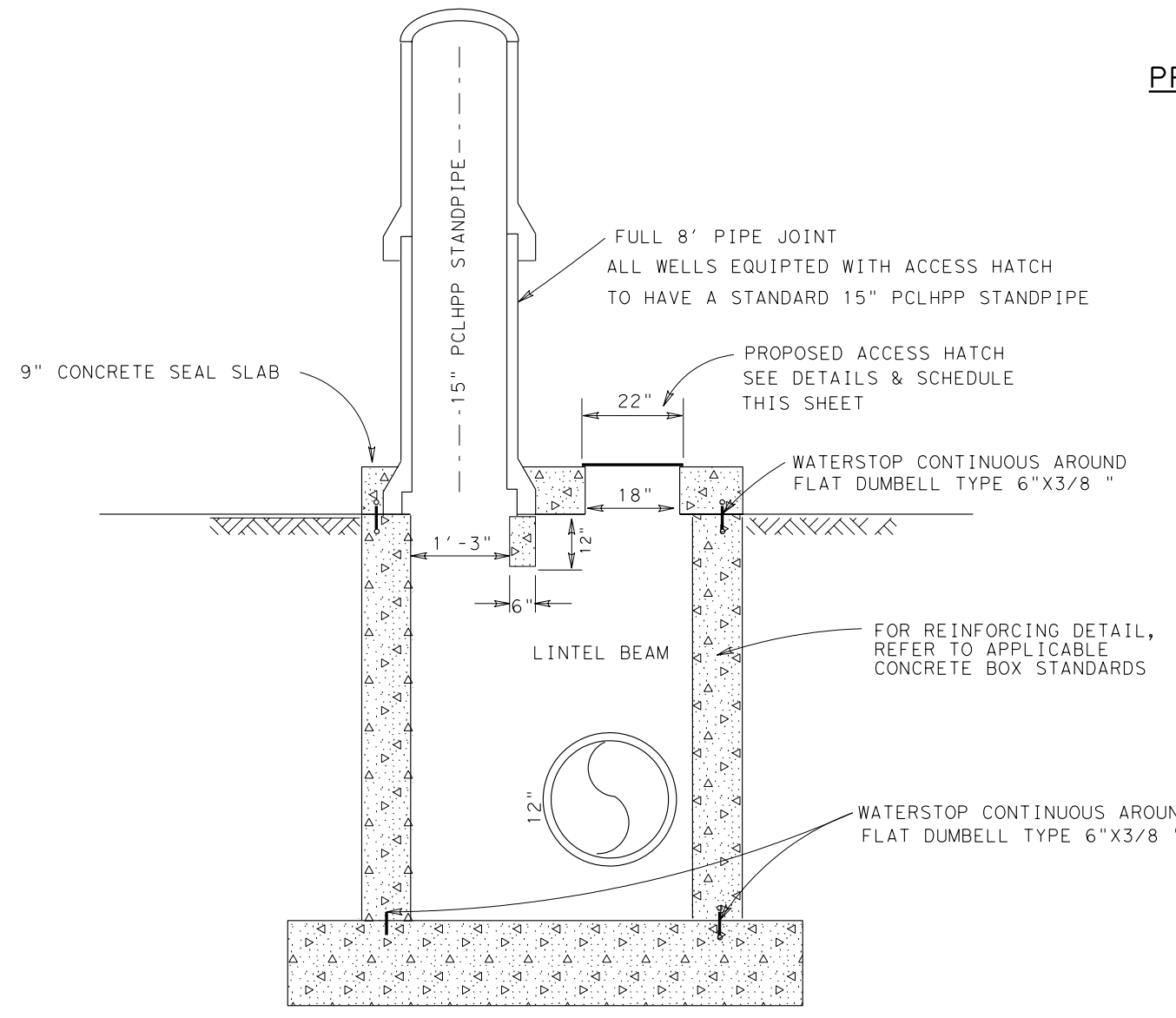
3/32" O-RING TO BE COMPACTED TO 1/4" (+ OR -)



SECTION A-A  
**PROPOSED ACCESS HATCH**

**ACCESS HATCH SCHEDULE**

GATE SIZE	GATE FRAME SIZE	OPENING SIZE	STEEL PLATE DIM.	NO. OF BOLTS REQD.	STEEL PLAT-SQ. FT.	ANGLE-LIN. FT.
16	21"	36"X18"	30"X22"	24	4.58325	8'-0"
18	24"	30"X18"	34"X22"	26	5.1942889	8'-8"
21	27"	34"X18"	38"X22"	28	5.8055111	9'-4"
24	30"	34"X18"	38"X22"	28	5.8055111	9'-4"
30	37"	42"X18"	46"X22"	32	7.0275889	10'-8"
36	43"	50"X18"	54"X22"	36	8.42985	12'-0"
42	50"	54"X18"	58"X22"	38	8.8608889	12'-8"
48	54"	60"X18"	64"X22"	42	9.7775389	16'-4"
54	61"	66"X18"	70"X22"	44	10.694189	17'-4"
60						



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**TEXAS DEPARTMENT OF TRANSPORTATION**  
**IRRIGATION ACCESS HATCH DETAILS**

REV. 6/99 IRR163.DGN

ED. REV. NO.	FEDERAL AID PROJECT NO.	FILE NO.	SHEET NO.
6			294
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	21		



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE



*Cesar R. Nevarez*  
November 17, 2022

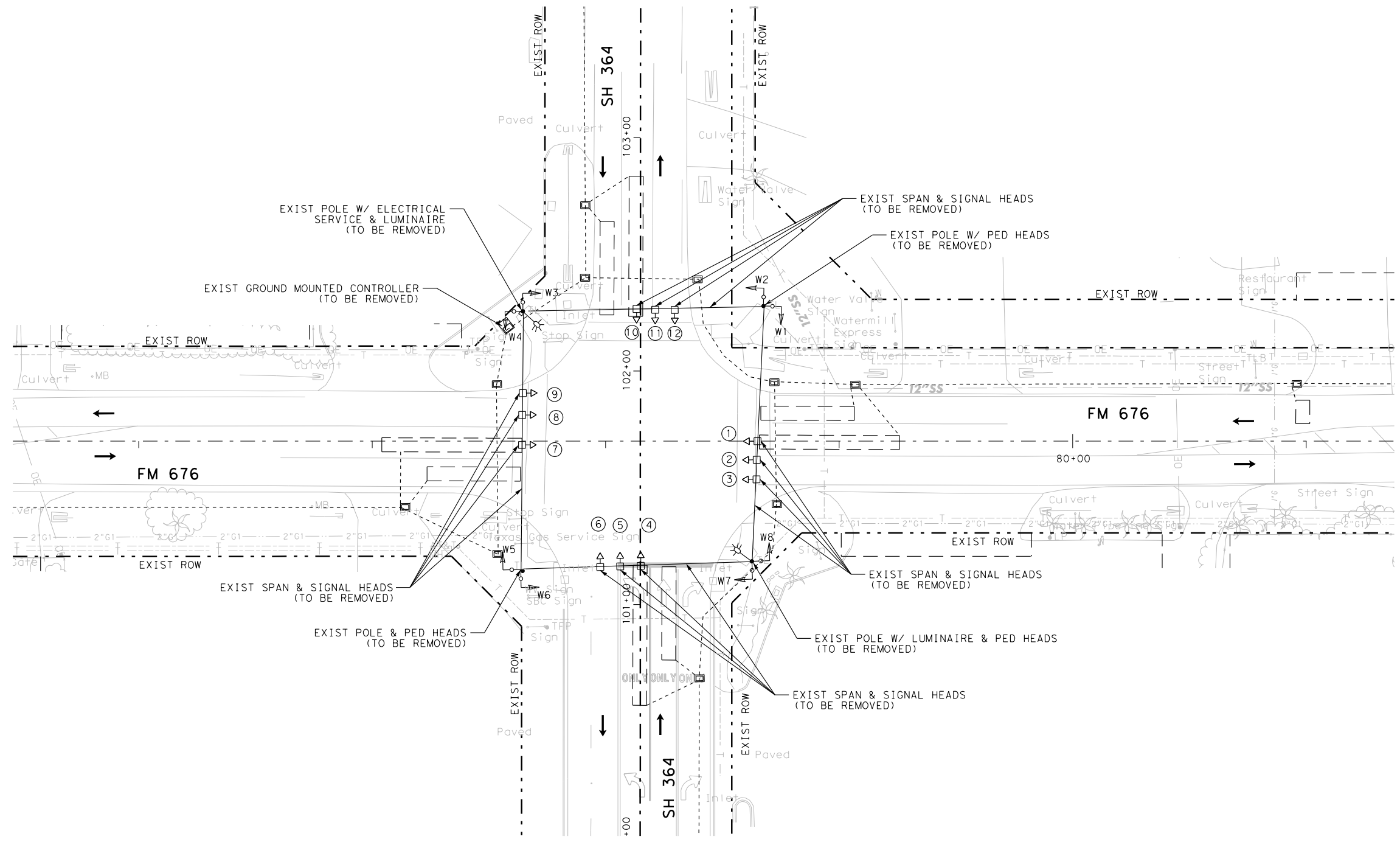


**ATKINS**  
TBPE REG. #F-474

**1** FM 676  
**TRAFFIC SIGNAL LAYOUT**  
**EXISTING CONDITION**  
SH 364

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 1 OF 3		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		295
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



**EXISTING CONDITION**

INTERSECTION OF  
FM 676 AND SH 364  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING  
PEDESTRIAN SIGNALS  
18" X 16"



W1 THRU W8

EXISTING  
R10-4b SIGN  
9" X 12"  
WITH PEDESTRIAN  
PUSH BUTTON



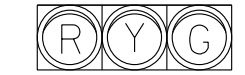
W1 THRU W8

EXISTING 12" HORIZONTAL  
WITH SIGN & LIGHT



PROTECTED LEFT  
ON GREEN ARROW  
1, 4, 7, & 10

EXISTING 12" HORIZONTAL



2, 3, 5, 6, 8, 9, 11, & 12

PLOT DRIVER: RD\*11x17\*PDF.d1t  
PENTTABLE: PenTable.tbl  
DATE: 11/17/2022  
FILE: DWG\SSUS036343.wsoatkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\SIG\FM676W\SIG01.dgn



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⊞ EXIST LOOP DETECTOR
- ⊞ EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆️ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⊞ PROP LOOP DETECTOR
- ⊞ PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⚡ PROP LUMINAIRE
- T PROP SIGN
- ⊞ PROP ELECTRIC SERVICE
- PROP SPAN WIRE



*Cesar R. Nevarez*  
November 17, 2022



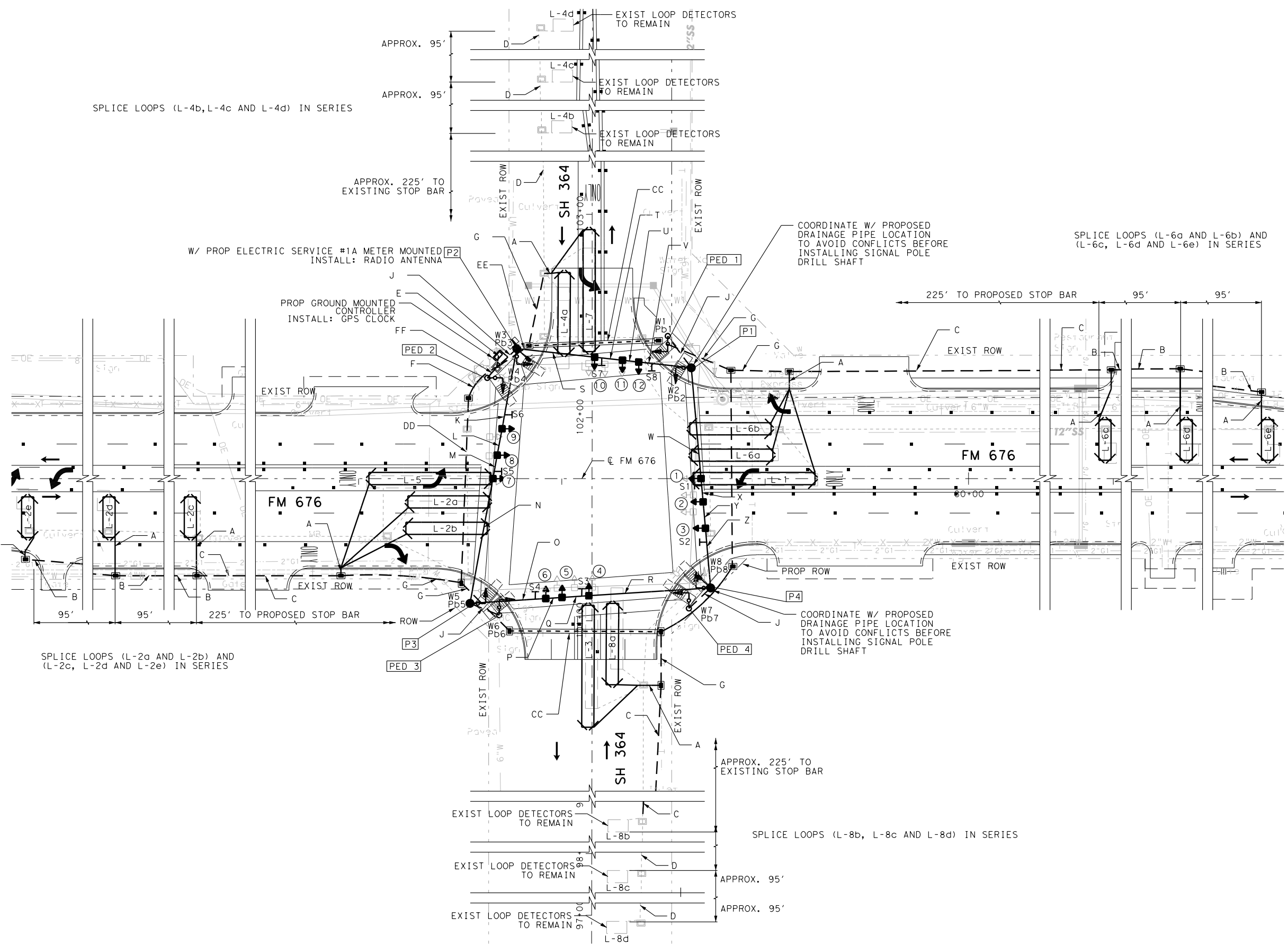
**ATKINS**  
TBPE REG. #F-474

1 FM 676  
**TRAFFIC SIGNAL LAYOUT  
PROPOSED INSTALLATION  
SH 364**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			296
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



**PROPOSED INSTALLATION**

INTERSECTION OF  
FM 676 AND SH 364  
IN HIDALGO COUNTY  
CONTROL A64-01

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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## EXISTING & PROPOSED ELECTRICAL CHART

ITEM	#TOTAL QTY (FT)	RUN NUMBER	A	B	C	D	E	F	G	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	CC	DD	EE	FF
		RUN LENGTH (FT)	158	658	530	EXIST	10	25	245	65	45	15	15	65	40	10	15	65	40	15	10	30	60	15	15	35	145	95	20	10
POWER	40	#6 XHHW INSUL					2																							2
GROUND	20	#6 BARE					1																							1
	105	#8 BARE					2			1																				2
SIGNAL WIRE SIZE TYPE	220	4 / C #12 TRAY																		1	1	1	1	1	1					
	1765	5 / C #12					12			1	5	5	4	4	2	2	1	1	5	5	5	4	2	2	1				12	
	555	7 / C #12					4			2	2	2	1	1	1	1	1	1	2	1	1	1	1	1					4	
LOOP LEAD	316	#14 LOOP WIRE	2																											
	3198	2 / C L.L. SHIELDED		1	1	1		6	3																					
ANTENNA	10	COAXIAL CABLE					1																							
	158	1" PVC	1																											
CONDUIT	1498	2" PVC		1	1			1	1	1																			1	1
	105	4" PVC (TRENCH) (SCH 40)						2			1																			2
	95	4" PVC (TRENCH) (SCH 80)																												
	145	4" PVC (BORE) (SCH 80)																												
*GPS CLOCK	40	GPS CABLE						1																						
PED. PUSH BUTTONS	1185	2 / C #12						8		1	3	3	3	3	3	1	1	1	1	3	3	3	3	1	1	1	1			8

\* QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061

### NOTES:

- THE CONTRACTOR SHALL FURNISH AND INSTALL SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE STRAIN POLES, LOOP DETECTORS, AND CONDUIT RUNS IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRIAN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

LOOP DETECTOR						
LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION
L-1	6' X 60'	345	164	1	PRESENCE	CALL & EXTEND PH 1
L-2a	6' X 40'	275	134	2	PRESENCE	CALL & EXTEND PH 2
L-2b	6' X 40'	270	131	2	PRESENCE	CALL & EXTEND PH 2
L-2c	6' X 20'	124	55	9	PRESENCE	CALL & EXTEND PH 2
L-2d	6' X 20'	118	52	9	PRESENCE	CALL & EXTEND PH 2
L-2e	6' X 20'	124	58	9	PRESENCE	CALL & EXTEND PH 2
L-3	6' X 60'	330	153	3	PRESENCE	CALL & EXTEND PH 3
L-4a	6' X 40'	224	108	4	PRESENCE	CALL & EXTEND PH 4
L-4b	#			10	PRESENCE	CALL & EXTEND PH 4
L-4c	#			10	PRESENCE	CALL & EXTEND PH 4
L-4d	#			10	PRESENCE	CALL & EXTEND PH 4
L-5	6' X 60'	342	167	5	PRESENCE	CALL & EXTEND PH 5
L-6a	6' X 40'	245	114	6	PRESENCE	CALL & EXTEND PH 6
L-6b	6' X 40'	225	104	6	PRESENCE	CALL & EXTEND PH 6
L-6c	6' X 20'	130	55	11	PRESENCE	CALL & EXTEND PH 6
L-6d	6' X 20'	132	55	11	PRESENCE	CALL & EXTEND PH 6
L-6e	6' X 20'	131	55	11	PRESENCE	CALL & EXTEND PH 6
L-7	6' X 60'	306	149	7	PRESENCE	CALL & EXTEND PH 7
L-8a	6' X 40'	222	99	8	PRESENCE	CALL & EXTEND PH 8
L-8b	#			12	PRESENCE	CALL & EXTEND PH 8
L-8c	#			12	PRESENCE	CALL & EXTEND PH 8
L-8d	#			12	PRESENCE	CALL & EXTEND PH 8
<b>TOTAL:</b>		3543	1653			

# LOOP DETECTORS TO REMAIN IN-PLACE AND BE CONNECTED TO CONTROLLER

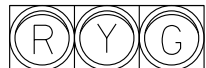
### SIGNAL HEAD & SIGN DETAILS

INSTALL 4-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



1, 4, 7, 10

INSTALL 3-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE

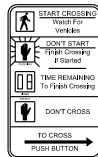


2, 3, 5, 6, 8, 9, 11, 12



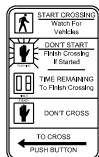
S1, S3, S5, S7

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 2, 3, 5, 7

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 1, 4, 6, 8

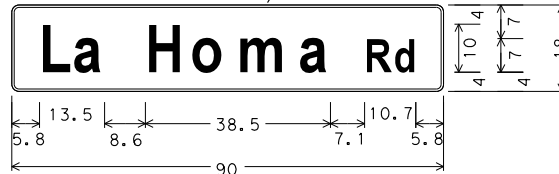


W1, W2, W3, W4, W5, W6, W7, W8

TRAFFIC SIGNAL POLES				
POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 78+63.7 54.5' LEFT	SP-30B 100	36-A	13.2'
P2	STA 77+77.8 63.9' LEFT	SPL-30B 100	36-A	13.2'
P3	STA 77+54.8 61.4' RIGHT	SP-30B 100	36-A	13.2'
P4	STA 78+73.2 53.8' RIGHT	SPL-30B 100	36-A	13.2'
PED 1	STA 78+52.1 70.1' LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 77+63.3 49.5' LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 77+69.2 67.2' RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 78+62.5 63.9' RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*@ FM 676 ALIGNMENT

INSTALL (S2, S6)



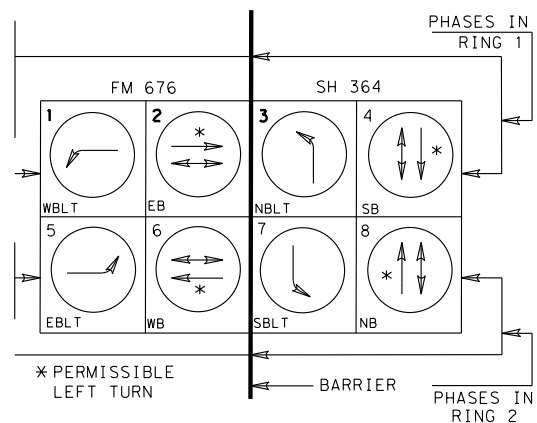
D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[La Homa] ClearviewHwy-3-W;  
[Rd] ClearviewHwy-3-W;

INSTALL (S4, S8)



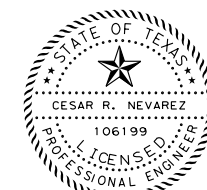
D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[Main] ClearviewHwy-3-W;  
[Ave] ClearviewHwy-3-W;

### PHASING DIAGRAM



### SERVICE POLE SUMMARY

Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect		Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
						Switch Amp/Fuse	Ckt. Bkr. Pole / Amp						
1A		TY T (120/240) 000 (NS) GS (L) TS (O)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	5.5



*Cesar R. Nevarez*  
November 17, 2022



# ATKINS

TBPE REG. #F-474

**FM 676  
TRAFFIC SIGNAL LAYOUT  
PROPOSED INSTALLATION  
SH 364**

PLAN SCALE: 1"=50'

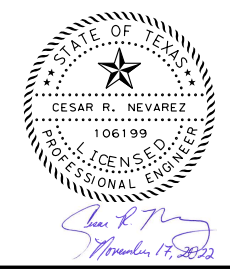
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DISTANCE IN FEET

SHEET 3 OF 3		FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 297
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE



**ATKINS**  
TBPE REG. #F-474

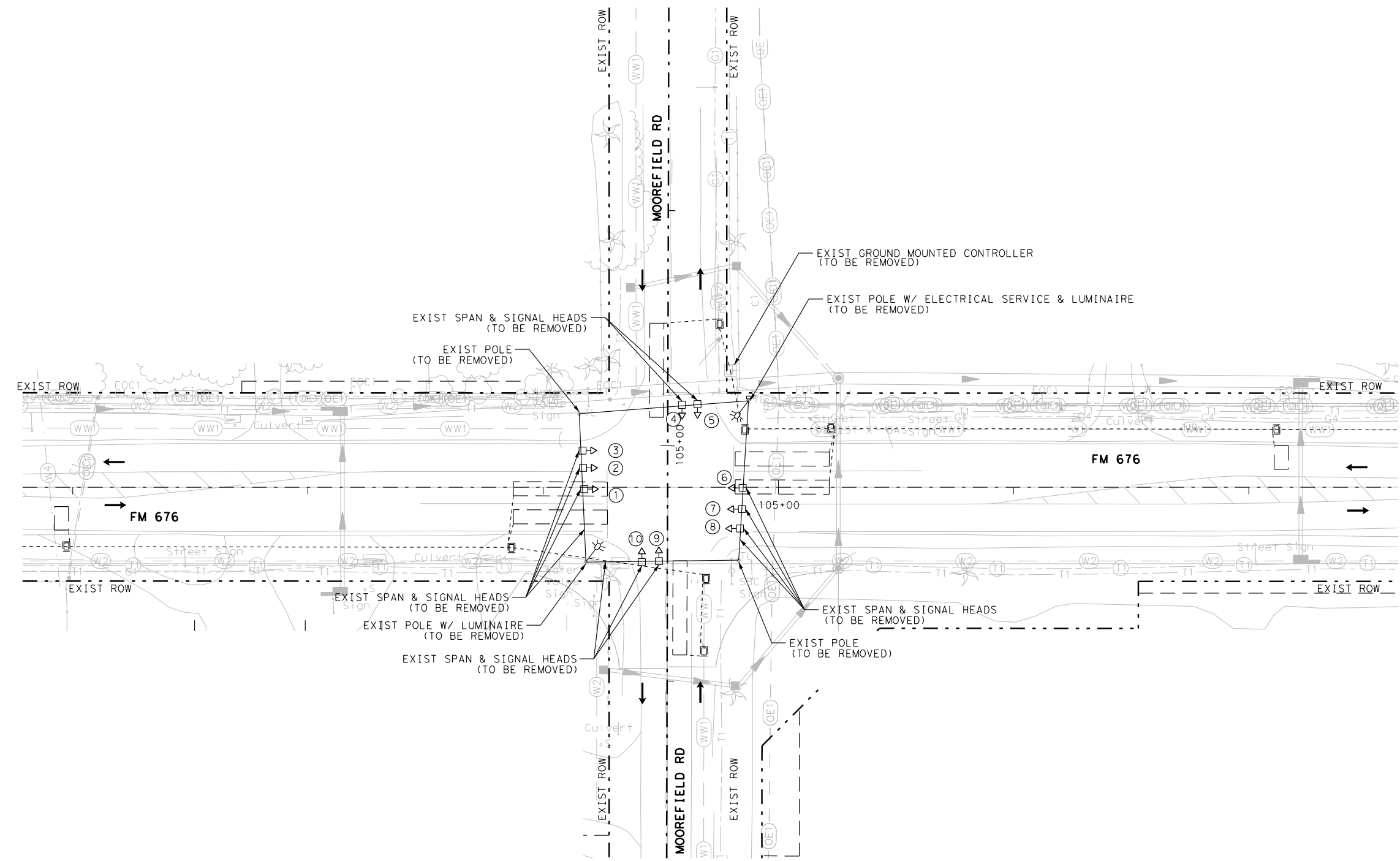
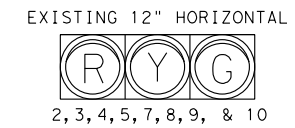
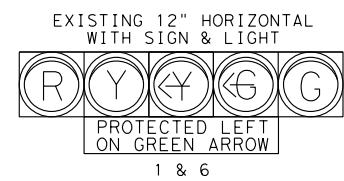
2 FM 676  
**TRAFFIC SIGNAL LAYOUT  
EXISTING CONDITION  
MOOREFIELD**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 1 OF 3		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		298
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

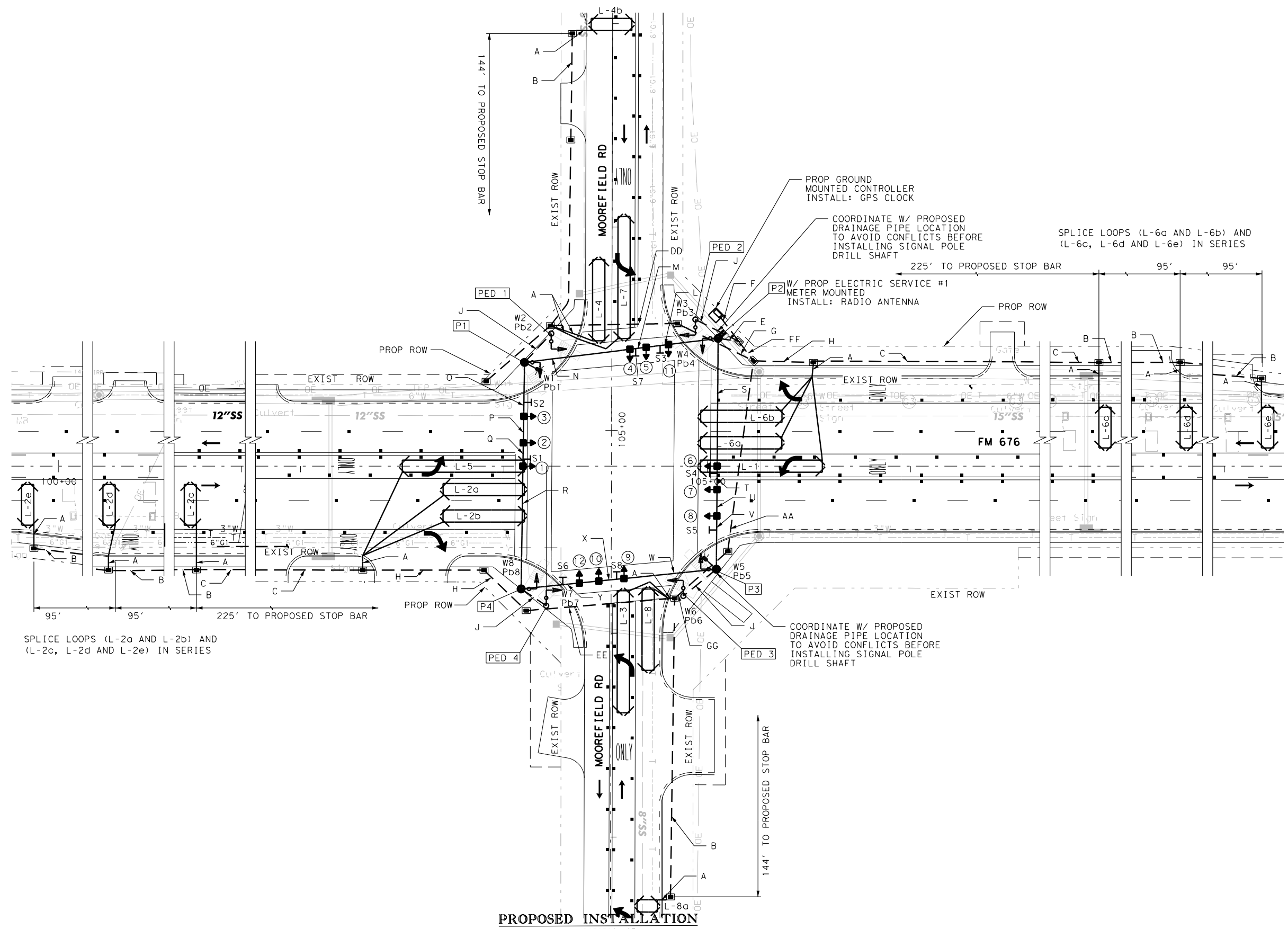
**EXISTING CONDITION**

INTERSECTION OF  
FM 676 AND MOOREFIELD  
IN HIDALGO COUNTY  
CONTROL 1064-01



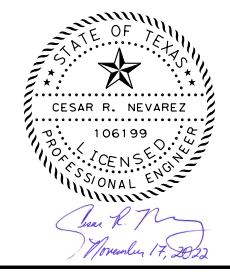
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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⬭ EXIST LOOP DETECTOR
- ⊞ EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⬭ PROP LOOP DETECTOR
- ⊞ PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⚡ PROP LUMINAIRE
- T PROP SIGN
- ⊞ PROP ELECTRIC SERVICE
- PROP SPAN WIRE



**ATKINS**  
 TBPE REG. #F-474

2 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 MOOREFIELD**

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			299
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676



PROPOSED ELECTRICAL CHART

ITEM	*TOTAL QTY (FT)	RUN NUMBER	RUN LENGTH (FT)																											
			A	B	C	E	F	G	H	J	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	AA	DD	EE	FF	GG	
POWER	70	#6 XHHW INSUL	120	395	320	15	20	45	130	100	35	10	55	30	15	15	65	65	15	15	30	50	15	40	95	65	75	15	40	
GROUND	35	#6 BARE				2	2																							
	170	#8 BARE				1	1																							
SIGNAL WIRE SIZE TYPE	225	4 / C #12 TRAY																												
	1885	5 / C #12				11	12				1	5	5	4	2	2	1	1	5	5	5	4	2	2	1					
	600	7 / C #12				4	4				2	2	1	1	1	1	1	2	1	1	1	1	1	1						
LOOP LEAD	240	#14 LOOP WIRE	2																											
	2575	2 / C L.L. SHIELDED		1	1			10	2	3																				
ANTENNA	35	COAXIAL CABLE				1	1																			5	2	3	10	5
	120	1" PVC	1																											
CONDUIT	980	2" PVC		1	1	1	1	1	1																					
	170	4" PVC (TRENCH) (SCH 40)				2	2			1																				
	235	4" PVC (TRENCH) (SCH 80)																							1	1	1			
*GPS CLOCK	65	GPS CABLE				1	1																							
PED. PUSH BUTTONS	1270	2 / C #12				7	8			1	3	3	3	1	1	1	1	3	3	3	3	1	1	1						

\* QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061

NOTES:

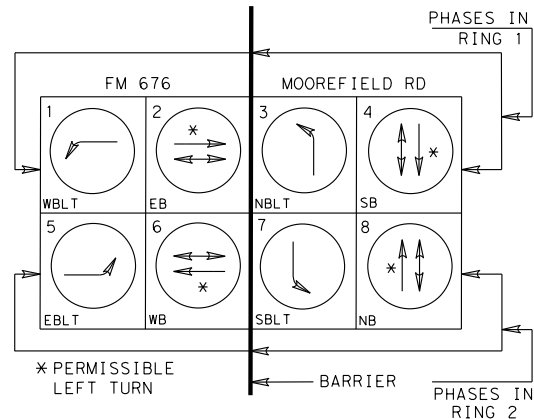
- THE CONTRACTOR SHALL FURNISH AND INSTALL A FULL TRAFFIC ACTUATED CONTROLLER, SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, CONTROLLER FOUNDATION, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE TRAFFIC CONTROLLER, STRAIN POLES, LOOP DETECTORS, CONDUIT RUNS AND CONTROLLER FOUNDATION IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRAIN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION	DELAY TIMING
L-1	6' X 60'	362	174	1	PRESENCE	CALL & EXTEND PH 1	
L-2a	6' X 40'	298	142	2	PRESENCE	CALL & EXTEND PH 2	
L-2b	6' X 40'	284	135	2	PRESENCE	CALL & EXTEND PH 2	
L-2c	6' X 20'	148	67	9	PRESENCE	CALL & EXTEND PH 2	
L-2d	6' X 20'	150	68	9	PRESENCE	CALL & EXTEND PH 2	
L-2e	6' X 20'	126	56	9	PRESENCE	CALL & EXTEND PH 2	
L-7	6' X 60'	340	155	7	PRESENCE	CALL & EXTEND PH 7	
L-4	6' X 40'	228	99	4	PRESENCE	CALL & EXTEND PH 4	
L-5	6' X 60'	369	178	5	PRESENCE	CALL & EXTEND PH 5	
L-6a	6' X 40'	264	125	6	PRESENCE	CALL & EXTEND PH 6	
L-6b	6' X 40'	244	115	6	PRESENCE	CALL & EXTEND PH 6	
L-6c	6' X 20'	147	67	11	PRESENCE	CALL & EXTEND PH 6	
L-6d	6' X 20'	147.032	67	11	PRESENCE	CALL & EXTEND PH 6	
L-6e	6' X 20'	131.032	59	11	PRESENCE	CALL & EXTEND PH 6	
L-8	6' X 40'	208	100	8	PRESENCE	CALL & EXTEND PH 8	
L-3	6' X 60'	318	155	3	PRESENCE	CALL & EXTEND PH 3	
L-4b	6' X 20'	130	60		PRESENCE	CALL & EXTEND PH 4	
L-8a	6' X 10'	82	37		PRESENCE	CALL & EXTEND PH 8	
<b>TOTAL:</b>		3976	1859				

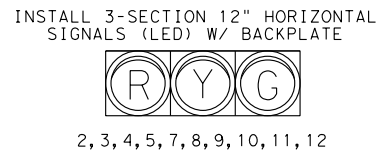
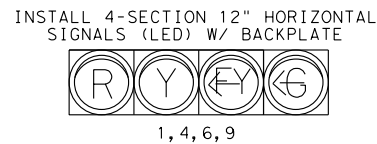
POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 104+10.1 LEFT	SPL-30B 100	36-A	13.2'
P2	STA 105+05.4 LEFT	SP-30B 100	36-A	13.2'
P3	STA 105+04.5 RIGHT	SPL-30B 100	36-A	13.2'
P4	STA 104+08.5 RIGHT	SP-30B 100	36-A	13.2'
PED 1	STA 104+23.3 LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 104+94.1 LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 104+88.2 RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 104+20.1 RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*Q FM 676 ALIGNMENT

PHASING DIAGRAM



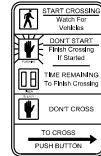
SIGNAL HEAD & SIGN DETAILS



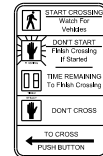
INSTALL R10-17T 30" X 30"



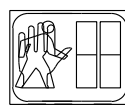
INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



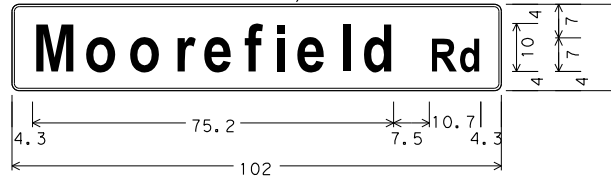
INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



INSTALL PEDESTRIAN SIGNALS 12" (LED)



INSTALL (S2, S5)



D-3\_VARx8; 1.5" Radius, 0.5" Border, White on Green; [Moorefield] ClearviewHwy-3-W; [Rd] ClearviewHwy-3-W;

INSTALL (S3, S6)



D-3\_VARx8; 1.5" Radius, 0.5" Border, White on Green; [Main] ClearviewHwy-3-W; [Ave] ClearviewHwy-3-W;



**ATKINS**  
 TBPE REG. #F-474

FM 676 TRAFFIC SIGNAL LAYOUT PROPOSED INSTALLATION MOOREFIELD

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 3 OF 3

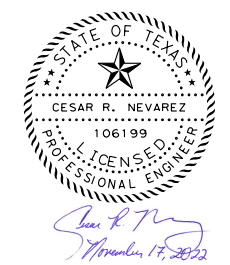
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		300
STATE	DIST.	COUNTY
TEXAS	PHARR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

SERVICE POLE SUMMARY														
Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect		Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Brk. Pole / Amps	Branch Circuit Amps	KVA Load	
						Switch Amp/Fuse	Ckt. Brk. Pole / Amp							
1		TY T (120/240) 000 (NS) GS (L) TS (0)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	5.5	
										ILL	2P/20	3.0		



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE

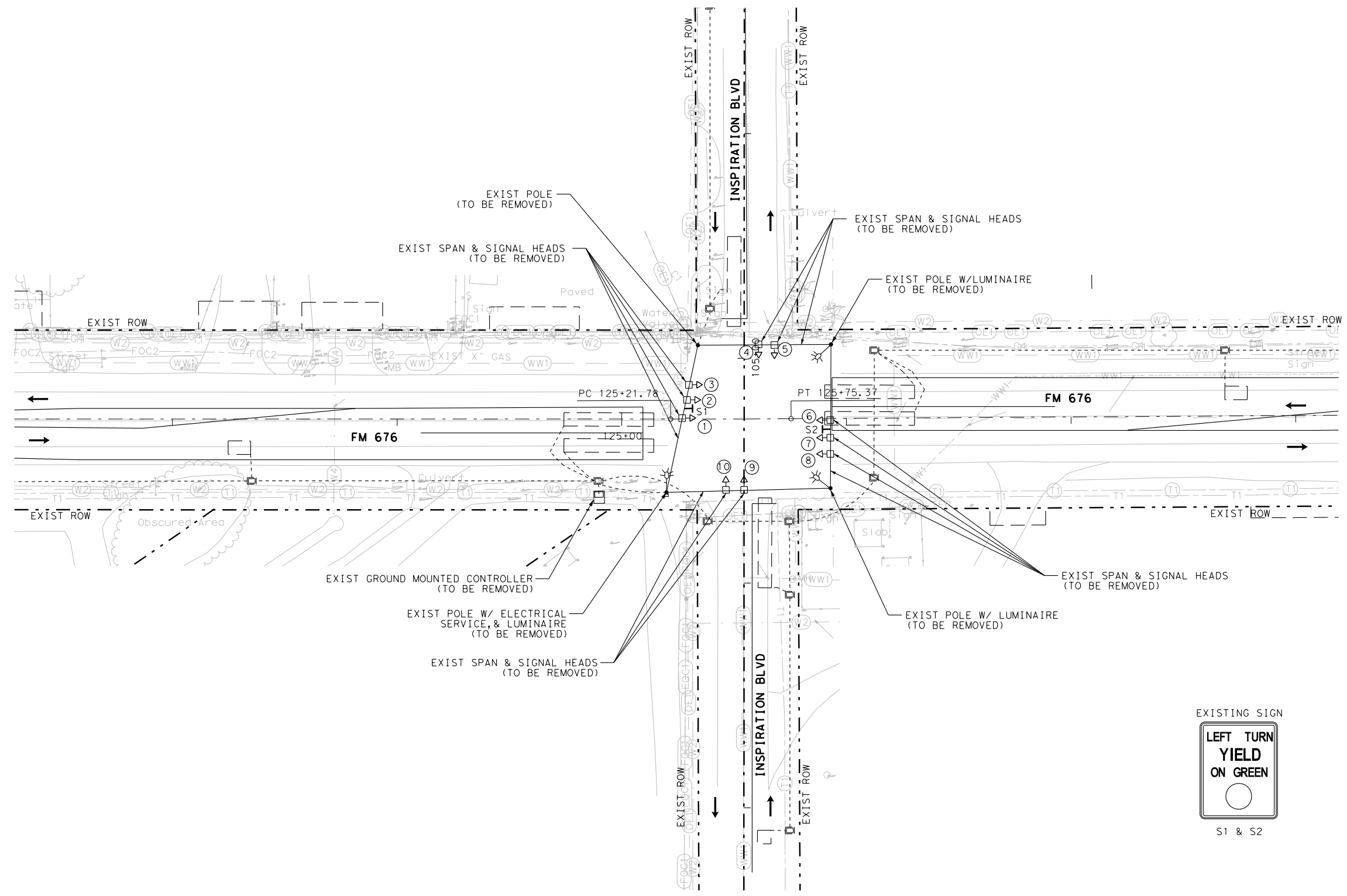


**ATKINS**  
TBPE REG. #F-474

**3** FM 676  
**TRAFFIC SIGNAL LAYOUT  
EXISTING CONDITION  
INSPIRATION**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 1 OF 3		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		301
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



EXISTING SIGN

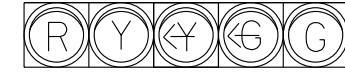


S1 & S2

**EXISTING CONDITION**

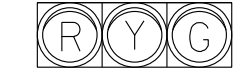
INTERSECTION OF  
FM 676 AND INSPIRATION  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING 12" HORIZONTAL WITH BACKPLATES



1, & 6

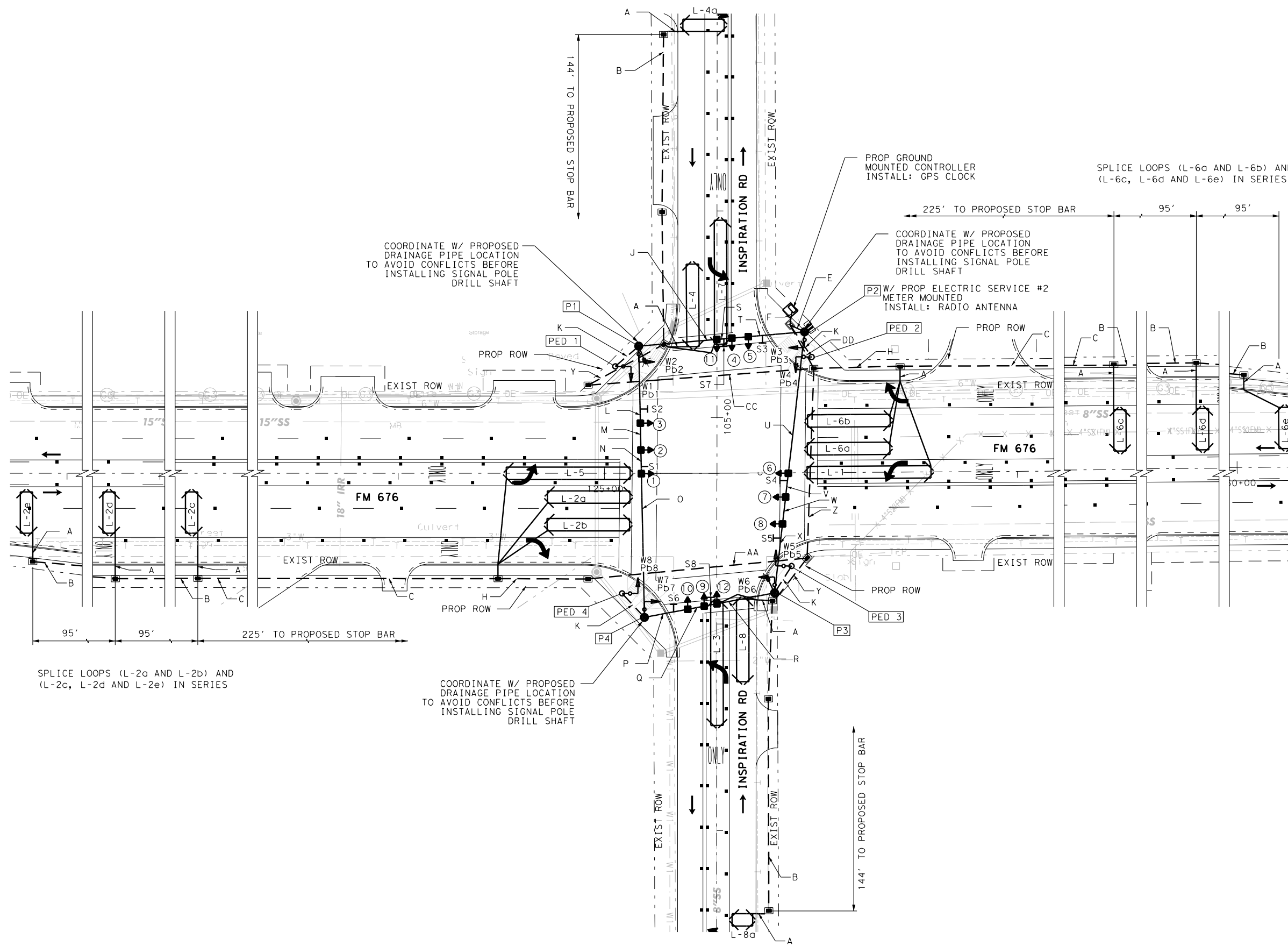
EXISTING 12" HORIZONTAL WITH BACKPLATES



2, 3, 4, 5, 7, 8, 9, & 10

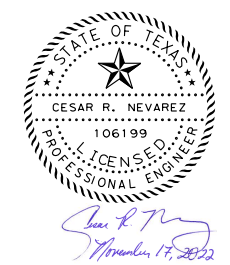
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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⬆ EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⬆ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⬆ PROP LOOP DETECTOR
- PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⬆ PROP LUMINAIRE
- T PROP SIGN
- PROP ELECTRIC SERVICE
- PROP SPAN WIRE



**ATKINS**  
 TBPE REG. #F-474

3 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 INSPIRATION**

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			302
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**PROPOSED INSTALLATION**

INTERSECTION OF  
 FM 676 AND INSPIRATION  
 IN HIDALGO COUNTY  
 CONTROL 1064-01

### PROPOSED ELECTRICAL CHART

ITEM	*TOTAL QTY (FT)	RUN NUMBER	RUN LENGTH (FT)																											
			A	B	C	E	F	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	CC	DD		
POWER	40	#6 XHHW INSUL				2	2																							
GROUND	20	#6 BARE				1	1																							
	210	#8 BARE				2	2					1																		
SIGNAL WIRE SIZE TYPE	225	4 / C #12 TRAY								1								1	1	1	1	1	1							
	1660	5 / C #12				11	12		4	1	2	2	1	1	1	2	2	4	5	5	5	5	4							
	475	7 / C #12				2	2			1		1	1	1	1	1	1	1	1	2	1	1	1							
LOOP LEAD	228	#14 LOOP WIRE	2																											
ANTENNA	3439	2 / C L.L. SHIELDED		1	1			12	3																3	6	3	3	9	
	50	COAXIAL CABLE				1	1																							
CONDUIT	114	1" PVC	1																											
	1514	2" PVC		1	1	1	1	1	1																					
	150	4" PVC (TRENCH) (SCH 40)				2	2					1												1	1	1	1	1		
	415	4" PVC (TRENCH) (SCH 80)																												
*GPS CLOCK	50	GPS CABLE				1	1																							
PED. PUSH BUTTONS	1120	2 / C #12				7	8		3	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3						

#### NOTES:

\* QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061

- THE CONTRACTOR SHALL FURNISH AND INSTALL A FULL TRAFFIC ACTUATED CONTROLLER, SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, CONTROLLER FOUNDATION, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE TRAFFIC CONTROLLER, STRAIN POLES, LOOP DETECTORS, CONDUIT RUNS AND CONTROLLER FOUNDATION IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRIAN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 125+16.6 61.6' LEFT	SPL-30B 100	36-A	13.2'
P2	STA 125+97.3 68.2' LEFT	SP-30B 100	36-A	13.2'
P3	STA 125+82.0 58.1' RIGHT	SPL-30B 100	36-A	13.2'
P4	STA 125+19.3 69.8' RIGHT	SP-30B 100	36-A	13.2'
PED 1	STA 125+05.2 51.8' LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 126+00.7 56.1' LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 125+90.3 45.2' RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 125+08.5 58.2' RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*CL FM 676 ALIGNMENT

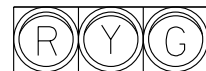
#### SIGNAL HEAD & SIGN DETAILS

INSTALL 4-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



1, 6, 11, 12

INSTALL 3-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



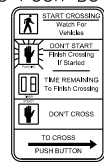
2, 3, 4, 5, 7, 8, 9, 10

INSTALL R10-17T 30" X 30"



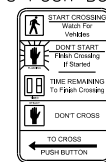
S1, S4, S7, S8

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



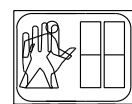
Pb 2, 4, 6, 8

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 1, 3, 5, 7

INSTALL PEDESTRIAN SIGNALS 12" (LED)

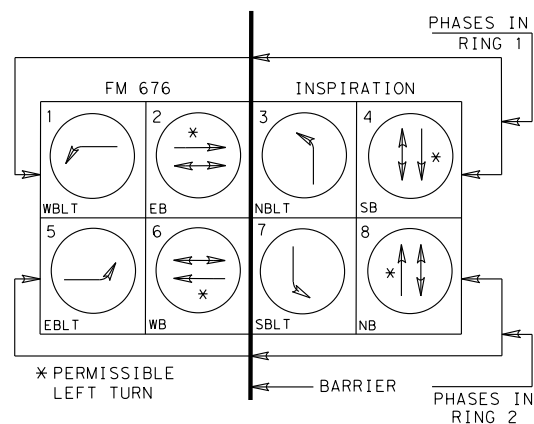


W1, W2, W3, W4, W5, W6, W7, W8

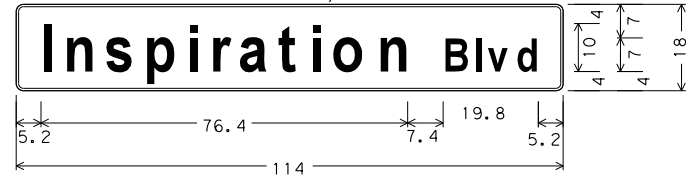
#### LOOP DETECTOR

LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION	DELAY TIMING
L-1	6' X 60'	366	176	1	PRESENCE	CALL & EXTEND PH 1	
L-2a	6' X 40'	274	130	2	PRESENCE	CALL & EXTEND PH 2	
L-2b	6' X 40'	256	121	2	PRESENCE	CALL & EXTEND PH 2	
L-2c	6' X 20'	148	67	9	PRESENCE	CALL & EXTEND PH 2	
L-2d	6' X 20'	148	67	9	PRESENCE	CALL & EXTEND PH 2	
L-2e	6' X 20'	132	59	9	PRESENCE	CALL & EXTEND PH 2	
L-7	6' X 60'	320	157	7	PRESENCE	CALL & EXTEND PH 7	
L-4	6' X 40'	208	101	4	PRESENCE	CALL & EXTEND PH 4	
L-4a	6' X 20'	130	60	10	PRESENCE	CALL & EXTEND PH 4	
L-5	6' X 60'	362	174	5	PRESENCE	CALL & EXTEND PH 5	
L-6a	6' X 40'	258	122	6	PRESENCE	CALL & EXTEND PH 6	
L-6b	6' X 40'	232	109	6	PRESENCE	CALL & EXTEND PH 6	
L-6c	6' X 20'	148	67	11	PRESENCE	CALL & EXTEND PH 6	
L-6d	6' X 20'	148	67	11	PRESENCE	CALL & EXTEND PH 6	
L-6e	6' X 20'	156	71	11	PRESENCE	CALL & EXTEND PH 6	
L-8	6' X 40'	208	96	8	PRESENCE	CALL & EXTEND PH 8	
L-3	6' X 60'	316	150	3	PRESENCE	CALL & EXTEND PH 3	
L-8a	6' X 10'	86	38	12	PRESENCE	CALL & EXTEND PH 8	
<b>TOTAL:</b>		3896	1832				

#### PHASING DIAGRAM



INSTALL (S2, S5)

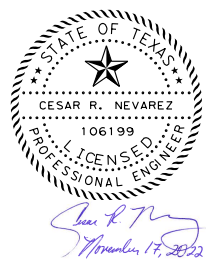


D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[Inspiration] ClearviewHwy-3-W;  
[Blvd] ClearviewHwy-3-W;

INSTALL (S3, S6)



D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[Main] ClearviewHwy-3-W;  
[Ave] ClearviewHwy-3-W;



# ATKINS

TBPE REG. #F-474

3 FM 676  
TRAFFIC SIGNAL LAYOUT  
PROPOSED INSTALLATION  
INSPIRATION

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 3 OF 3		
FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 303
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO
CONT. 1064	SECT. 01	JOB 032
HIGHWAY NO. FM 676		

SERVICE POLE SUMMARY													
Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect Switch Amp/Fuse	Ckt. Bkr. Pole / Amp	Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
2		TY T(120/240)000(NS)GS(L)TS(O)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	5.5
										ILL	2P/20	3.0	



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE



*Cesar R. Nevarez*  
November 17, 2022

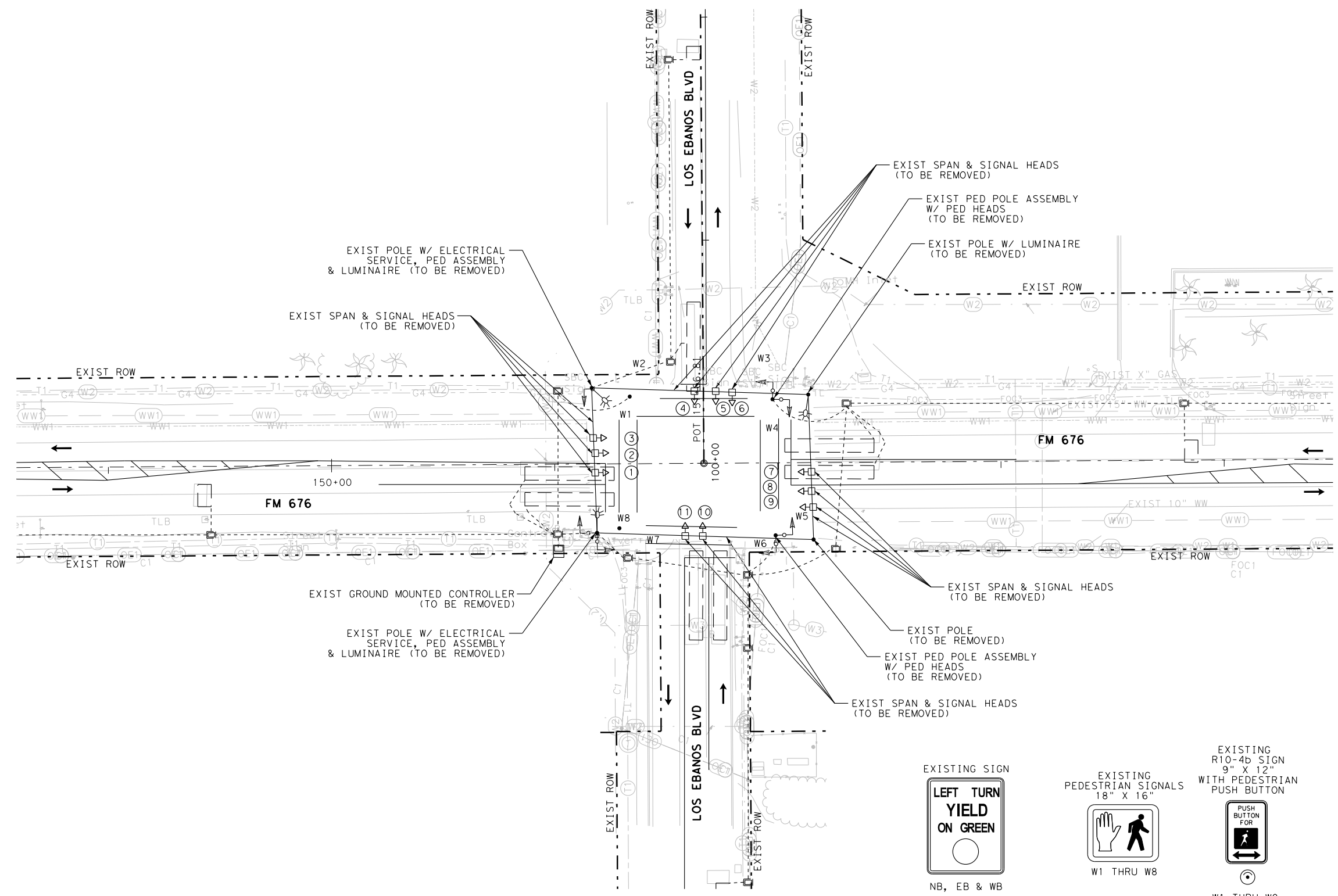


**ATKINS**  
TBPE REG. #F-474

**4** FM 676  
**TRAFFIC SIGNAL LAYOUT**  
**EXISTING CONDITION**  
**LOS EBANOS**

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 1 OF 3		FED. RD. DIV. NO. 6	STATE PROJECT NO. 032	SHEET NO. 304
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	



EXIST POLE W/ ELECTRICAL SERVICE, PED ASSEMBLY & LUMINAIRE (TO BE REMOVED)

EXIST SPAN & SIGNAL HEADS (TO BE REMOVED)

EXIST SPAN & SIGNAL HEADS (TO BE REMOVED)

EXIST PED POLE ASSEMBLY W/ PED HEADS (TO BE REMOVED)

EXIST POLE W/ LUMINAIRE (TO BE REMOVED)

EXIST GROUND MOUNTED CONTROLLER (TO BE REMOVED)

EXIST POLE W/ ELECTRICAL SERVICE, PED ASSEMBLY & LUMINAIRE (TO BE REMOVED)

EXIST SPAN & SIGNAL HEADS (TO BE REMOVED)

EXIST POLE (TO BE REMOVED)

EXIST PED POLE ASSEMBLY W/ PED HEADS (TO BE REMOVED)

EXIST SPAN & SIGNAL HEADS (TO BE REMOVED)

**EXISTING CONDITION**

INTERSECTION OF FM 676 AND LOS EBANOS IN HIDALGO COUNTY CONTROL 1064-01

EXISTING SIGN



NB, EB & WB

EXISTING PEDESTRIAN SIGNALS 18" X 16"



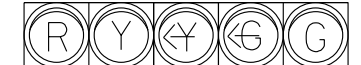
W1 THRU W8

EXISTING R10-4b SIGN 9" X 12" WITH PEDESTRIAN PUSH BUTTON



W1 THRU W8

EXISTING 12" HORIZONTAL WITH BACKPLATES



1, 4, & 7

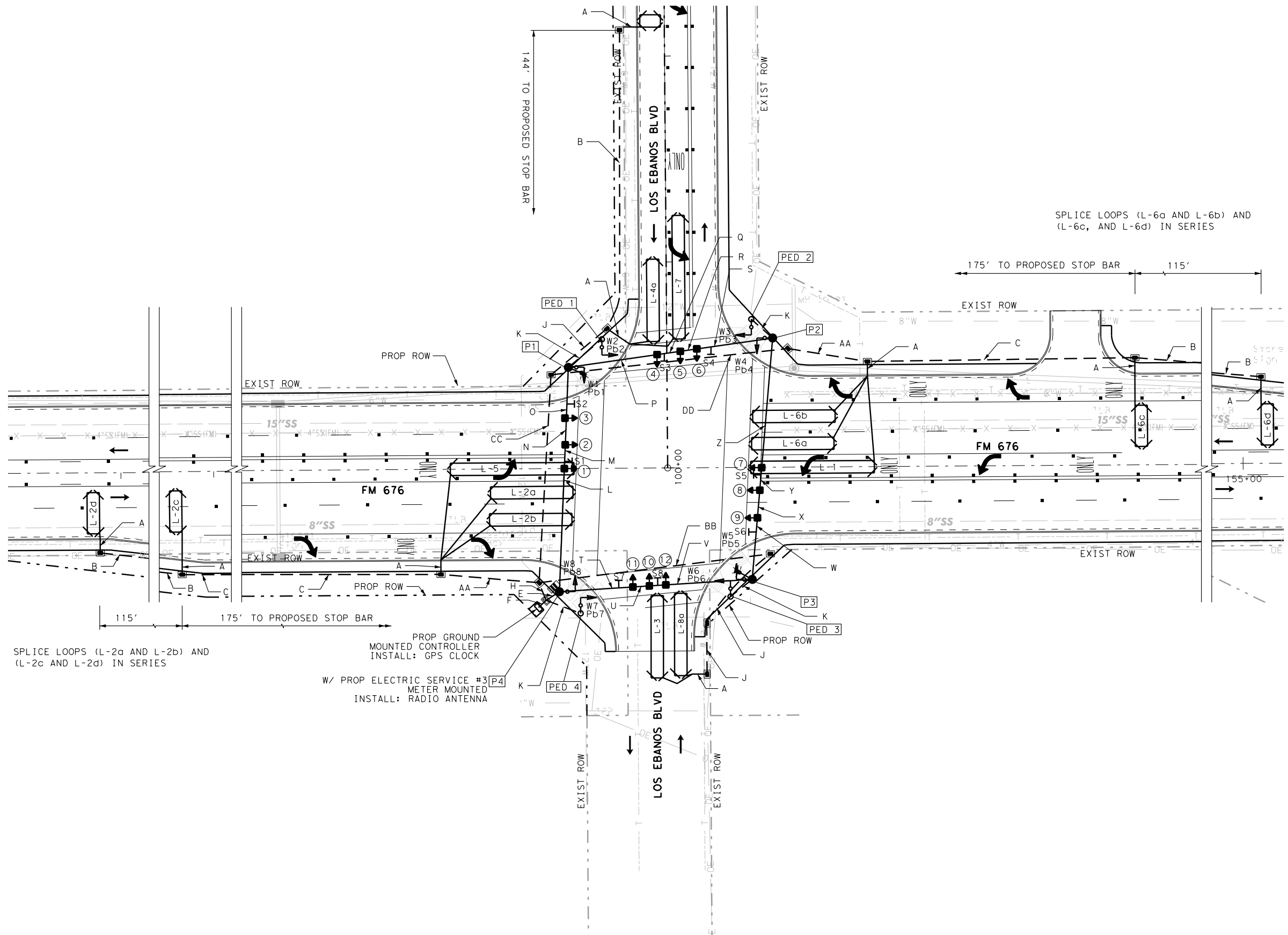
EXISTING 12" HORIZONTAL WITH BACKPLATES



2, 3, 5, 6, 8, 9, 10, & 11

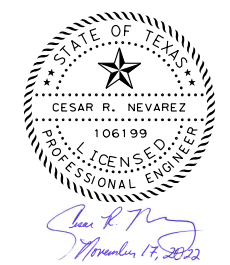
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**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⊞ EXIST LOOP DETECTOR
- ⊞ EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⊞ PROP LOOP DETECTOR
- ⊞ PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⚡ PROP LUMINAIRE
- T PROP SIGN
- ⊞ PROP ELECTRIC SERVICE
- PROP SPAN WIRE



**ATKINS**  
 TBPE REG. #F-474

4 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 LOS EBANOS**  
 PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			305
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**PROPOSED INSTALLATION**  
 INTERSECTION OF  
 FM 676 AND LOS EBANOS  
 IN HIDALGO COUNTY  
 CONTROL 1064-01

PROPOSED ELECTRICAL CHART

ITEM	*TOTAL QTY (FT)	RUN NUMBER	RUN LENGTH (FT)																										
			A	B	C	E	F	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD
POWER	40	#6 XHHW INSUL	79	500	355	10	10	10	120	55	65	15	15	30	45	15	10	40	40	10	55	30	15	15	65	90	115	105	120
GROUND	20	#6 BARE				2	2																						
	95	#8 BARE				1	1																						
	230	4 / C #12 TRAY				2	2																						
SIGNAL WIRE SIZE TYPE	1690	5 / C #12				11	12				1	5	5	5	4	2	2	2	1	5	4	4	2	2	1	1			
	510	7 / C #12				3	3				2	1	1	1	1	1				2	2	1	1	1	1				
	158	#14 LOOP WIRE	2																										
LOOP LEAD	3060	2 / C L.L. SHIELDED		1	1		12	12	3																	3	3	6	3
ANTENNA	50	COAXIAL CABLE				1	1																						
	79	1" PVC	1																										
	1095	2" PVC		1	1	1	1	1	1																				
CONDUIT	95	4" PVC (TRENCH) (SCH 40)				2	2							1															
	340	4" PVC (TRENCH) (SCH 80)																											
	50	GPS CABLE				1	1																						
*GPS CLOCK	50	GPS CABLE				1	1																						
PED. PUSH BUTTONS	1065	2 / C #12				7	8				1	3	3	3	3	1	1	1	1	3	3	3	1	1	1				

NOTES:

\* QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061

- THE CONTRACTOR SHALL FURNISH AND INSTALL A FULL TRAFFIC ACTUATED CONTROLLER, SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, CONTROLLER FOUNDATION, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE TRAFFIC CONTROLLER, STRAIN POLES, LOOP DETECTORS, CONDUIT RUNS AND CONTROLLER FOUNDATION IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRIAN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

TRAFFIC SIGNAL POLES				
POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 151+19.0 49.2' LEFT	SPL-30B 100	36-A	13.2'
P2	STA 152+18.2 62.8' LEFT	SP-30B 100	36-A	13.2'
P3	STA 152+07.6 54.4' RIGHT	SPL-30B 100	36-A	13.2'
P4	STA 151+14.0 59.8' RIGHT	SP-30B 100	36-A	13.2'
PED 1	STA 151+35.3 62.7' LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 152+07.9 71.9' LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 151+97.0 62.6' RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 151+24.2 70.3' RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*Q FM 676 ALIGNMENT

LOOP DETECTOR								
LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION	DELAY TIMING	
L-1	6' X 60'	362	174	1	PRESENCE	CALL & EXTEND PH 1		
L-2a	6' X 40'	274	130	2	PRESENCE	CALL & EXTEND PH 2		
L-2b	6' X 40'	256	121	2	PRESENCE	CALL & EXTEND PH 2		
L-2c	6' X 20'	146	66	9	PRESENCE	CALL & EXTEND PH 2		
L-2d	6' X 20'	124	59	9	PRESENCE	CALL & EXTEND PH 2		
L-3	6' X 40'	228	107	3	PRESENCE	CALL & EXTEND PH 3		
L-4a	6' X 40'	230	101	4	PRESENCE	CALL & EXTEND PH 4		
L-8b	6' X 10'				* EXISTING LOOP DETECTOR TO REMAIN IN PLACE			
L-5	6' X 60'	362	174	5	PRESENCE	CALL & EXTEND PH 5		
L-6a	6' X 40'	266	126	6	PRESENCE	CALL & EXTEND PH 6		
L-6b	6' X 40'	244	115	6	PRESENCE	CALL & EXTEND PH 6		
L-6c	6' X 20'	150	67	11	PRESENCE	CALL & EXTEND PH 6		
L-6d	6' X 20'	130	58	11	PRESENCE	CALL & EXTEND PH 6		
L-7	6' X 60'	338	155	7	PRESENCE	CALL & EXTEND PH 7		
L-8a	6' X 40'	204	95	8	PRESENCE	CALL & EXTEND PH 8		
L-4b	6' X 10'	88	40	12	PRESENCE	CALL & EXTEND PH 8		
<b>TOTAL:</b>		3402	1588					

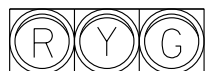
SIGNAL HEAD & SIGN DETAILS

INSTALL 4-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



1, 4, 7, 12

INSTALL 3-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



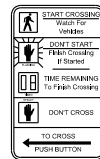
2, 3, 5, 6, 8, 9, 10, 11

INSTALL R10-3e (9"x15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 2, 4, 6, 8

INSTALL R10-3e (9"x15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 1, 3, 5, 7

INSTALL PEDESTRIAN SIGNALS 12" (LED)

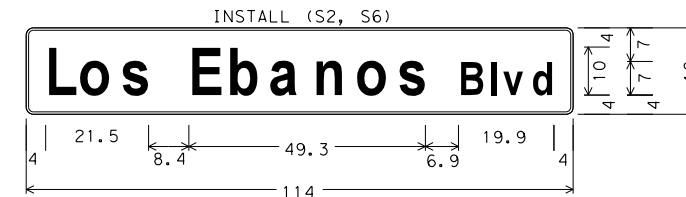
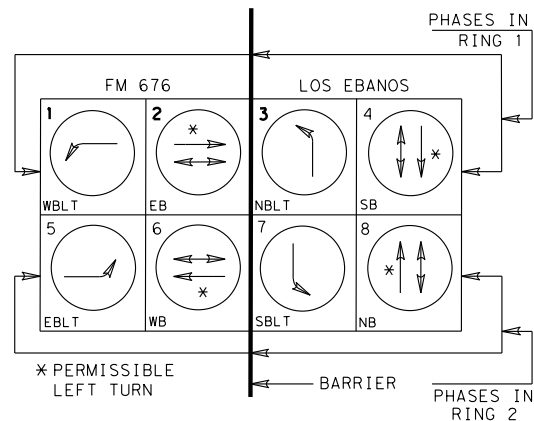


W1, W2, W3, W4, W5, W6, W7, W8



S1, S3, S5, S8

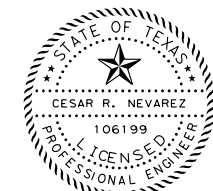
PHASING DIAGRAM



D-3\_VARx8; 1.5" Radius, 0.5" Border, White on Green; [Los Ebanos] ClearviewHwy-3-W; [Blvd] ClearviewHwy-3-W;



D-3\_VARx8; 1.5" Radius, 0.5" Border, White on Green; [Main] ClearviewHwy-3-W; [Ave] ClearviewHwy-3-W;



*Cesar R. Nevarez*  
 November 17, 2022



ATKINS

TBPE REG. #F-474

FM 676  
 TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 LOS EBANOS

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 3 OF 3		
FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		306
STATE	DIST.	COUNTY
TEXAS	PHARR	HIDALGO
CONT.	SECT.	JOB
1064	01	032
		HIGHWAY NO.
		FM 676

SERVICE POLE SUMMARY													
Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect Switch Amp/Fuse	Disconn. Pole / Amp	Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
3		TY T (120/240) 000 (NS) GS (L) TS (O)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	5.5
										ILL	2P/20	3.0	



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE



*Cesar R. Nevarez*  
November 17, 2022

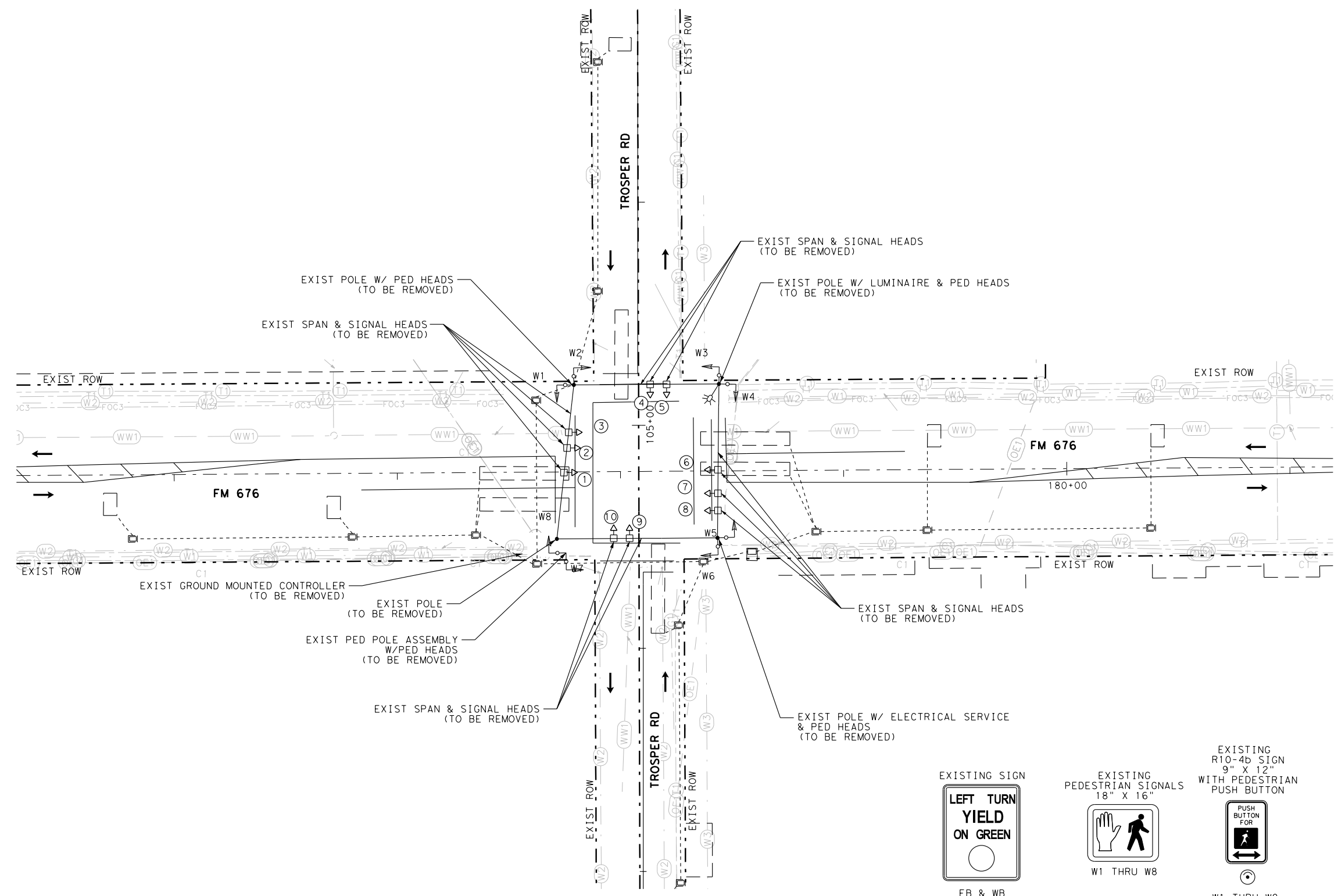


**ATKINS**  
TBPE REG. #F-474

5 FM 676  
**TRAFFIC SIGNAL LAYOUT  
EXISTING CONDITION  
TROSER**

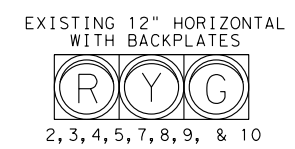
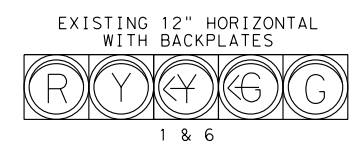
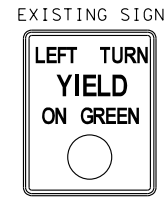
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DISTANCE IN FEET

SHEET 1 OF 3		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		307
STATE	DIST.	COUNTY		
TEXAS	PHARR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



**EXISTING CONDITION**

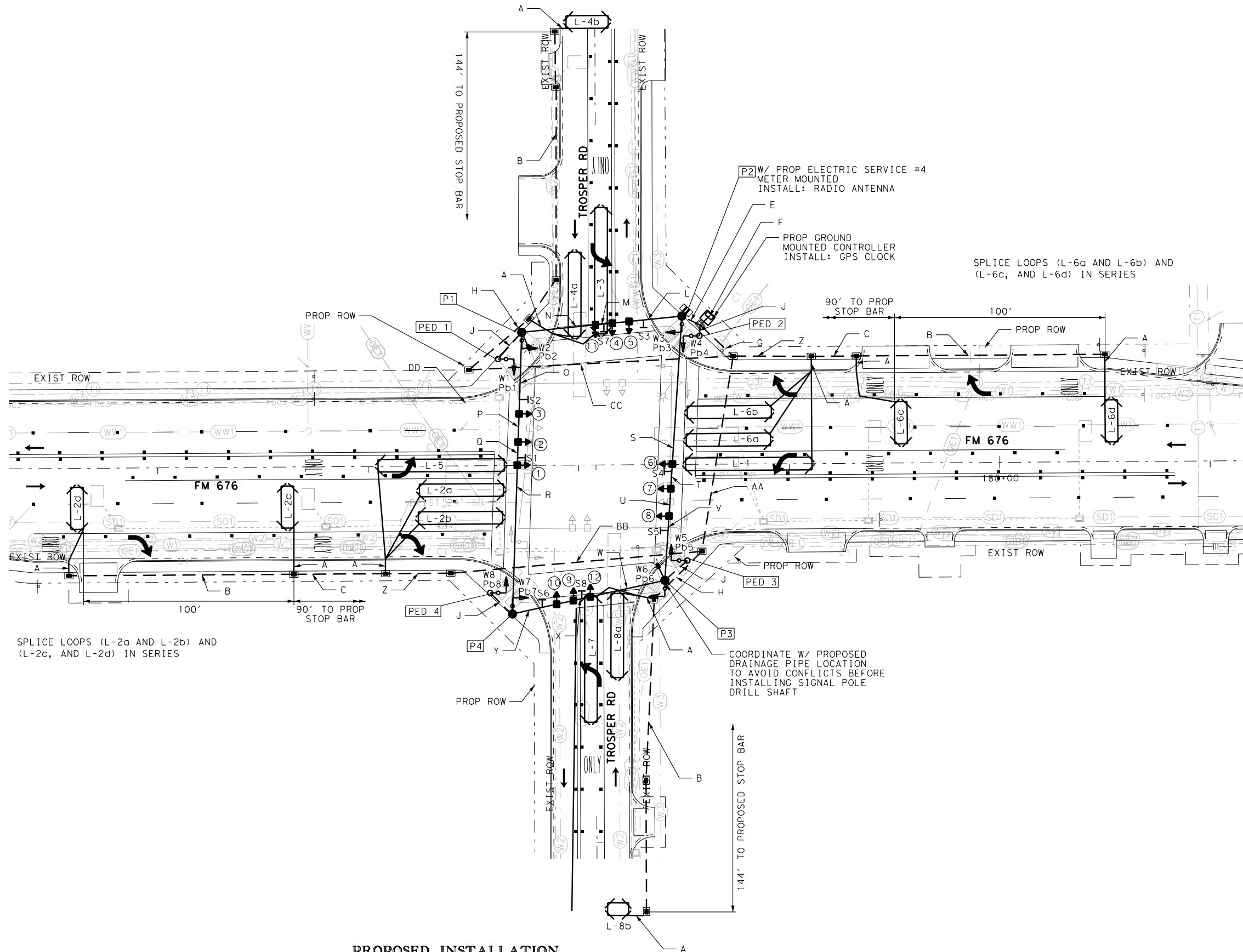
INTERSECTION OF  
FM 676 AND TROSER  
IN HIDALGO COUNTY  
CONTROL 1064-01



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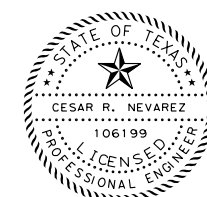


**PROPOSED INSTALLATION**

INTERSECTION OF  
 FM 676 AND TROSPER  
 IN HIDALGO COUNTY  
 CONTROL 1064-01

**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⬆ EXIST LOOP DETECTOR
- EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⬆ PROP LOOP DETECTOR
- PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⚡ PROP LUMINAIRE
- T PROP SIGN
- ⬆ PROP ELECTRIC SERVICE
- ⬆ PROP SPAN WIRE



*Cesar R. Nevarez*  
 November 17, 2022



**ATKINS**  
 TBPE REG. #F-474

5 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 TROSPER**

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 2 OF 3

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			308
STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PROPOSED ELECTRICAL CHART

ITEM	*TOTAL QTY (FT)	RUN NUMBER	A-Z-AA-CC																									
			RUN LENGTH (FT)																									
POWER	40	#6 XHHW INSUL	106	628	70	10	10	25	75	60	30	10	45	40	15	15	75	75	15	15	35	45	10	25	75	95	120	130
GROUND	20	#6 BARE					2	2																				
	100	#8 BARE					1	1																				
SIGNAL WIRE SIZE TYPE	225	4 / C #12 TRAY																										
	1660	5 / C #12					11	12			1	5	4	4	2	2	1	1	1	1	1	1	1	2	2	1		
	495	7 / C #12					2	2				2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOOP LEAD	212	#14 LOOP WIRE	2																									
	2813	2 / C L.L. SHIELDED		1	1			12	9	3																3	6	3
ANTENNA	50	COAXIAL CABLE					1	1																				
	106	1" PVC	1																									
CONDUIT	893	2" PVC			1	1	1	1	1	1																		
	100	4" PVC (TRENCH) (SCH 40)					2	2																		1		
	345	4" PVC (TRENCH) (SCH 80)																										
	0	4" PVC (BORE) (SCH 80)																										
*GPS CLOCK	50	GPS CABLE					1	1																				
PED. PUSH BUTTONS	1110	2 / C #12					7	8				1	3	3	3	1	1	1	1	1	3	3	3	3	1	1	1	

\* QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061

NOTES:

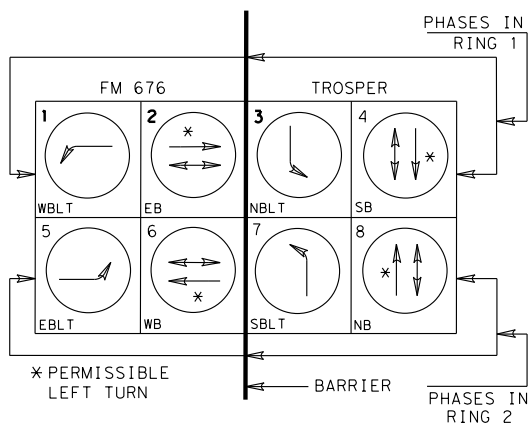
- THE CONTRACTOR SHALL FURNISH AND INSTALL A FULL TRAFFIC ACTUATED CONTROLLER, SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, CONTROLLER FOUNDATION, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE TRAFFIC CONTROLLER, STRAIN POLES, LOOP DETECTORS, CONDUIT RUNS AND CONTROLLER FOUNDATION IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRIAN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

TRAFFIC SIGNAL POLES				
POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 177+73.3 63.3' LEFT	SPL-30B 100	36-A	13.2'
P2	STA 178+49.4 70.5' LEFT	SP-30B 100	36-A	13.2'
P3	STA 178+40.6 55.0' RIGHT	SPL-30B 100	36-A	13.2'
P4	STA 177+68.1 70.5' RIGHT	SP-30B 100	36-A	13.2'
PED 1	STA 177+61.9 50.6' LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 178+57.7 61.0' LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 178+51.3 45.7' RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 177+57.5 60.4' RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*Q FM 676 ALIGNMENT

LOOP DETECTOR							
LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION	DELAY TIMING
L-1	6' X 60'	360	173	1	PRESENCE	CALL & EXTEND PH 1	
L-2a	6' X 40'	266	126	2	PRESENCE	CALL & EXTEND PH 2	
L-2b	6' X 40'	244	115	2	PRESENCE	CALL & EXTEND PH 2	
L-2c	6' X 20'	148	67	9	PRESENCE	CALL & EXTEND PH 2	
L-2d	6' X 20'	152	69	9	PRESENCE	CALL & EXTEND PH 2	
L-3	6' X 60'	338	155	3	PRESENCE	CALL & EXTEND PH 3	
L-4a	6' X 40'	228	100	4	PRESENCE	CALL & EXTEND PH 4	
L-4b	6' X 20'	124	56	10	PRESENCE	CALL & EXTEND PH 4	
L-5	6' X 60'	362	174	5	PRESENCE	CALL & EXTEND PH 5	
L-6a	6' X 40'	270	128	6	PRESENCE	CALL & EXTEND PH 6	
L-6b	6' X 40'	250	118	6	PRESENCE	CALL & EXTEND PH 6	
L-6c	6' X 20'	176	81	11	PRESENCE	CALL & EXTEND PH 6	
L-6d	6' X 20'	148	67	11	PRESENCE	CALL & EXTEND PH 6	
L-7	6' X 60'	322	154	7	PRESENCE	CALL & EXTEND PH 7	
L-8a	6' X 40'	214	100	8	PRESENCE	CALL & EXTEND PH 8	
L-8b	6' X 10'	88	39	12	PRESENCE	CALL & EXTEND PH 8	
<b>TOTAL:</b>		3690	1722				

PHASING DIAGRAM



INSTALL 4-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



1, 6, 11, 12

INSTALL 3-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



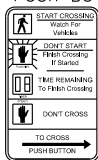
2, 3, 4, 5, 7, 8, 9, 10

INSTALL R10-17T 30" X 30"



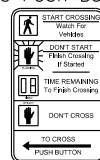
S1, S4, S7, S8

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



Pb 2, 4, 6, 8

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



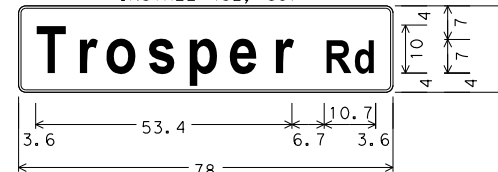
Pb 1, 3, 5, 7

INSTALL PEDESTRIAN SIGNALS 12" (LED)



W1, W2, W3, W4, W5, W6, W7, W8

INSTALL (S2, S5)



D-3\_VARx8;  
 1.5" Radius, 0.5" Border, White on Green;  
 [Trosper] ClearviewHwy-3-W;  
 [Rd] ClearviewHwy-3-W;

INSTALL (S3, S6)



D-3\_VARx8;  
 1.5" Radius, 0.5" Border, White on Green;  
 [Main] ClearviewHwy-3-W;  
 [Ave] ClearviewHwy-3-W;



**ATKINS**

TBPE REG. #F-474

5 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION  
 TROSPER**

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
 DISTANCE IN FEET

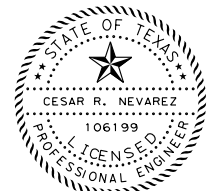
SHEET 3 OF 3		FED. RD. DIV. NO. 6	STATE PROJECT NO.	SHEET NO. 309
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676	

SERVICE POLE SUMMARY														
Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect		Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load	
						Switch Amp/Fuse	Ckt. Bkr. Pole / Amp							
4		TY T (120/240) 000 (NS) GS (L) TS (O)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	5.5	



**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- ⬆ EXIST SIGNAL HEAD
- EXIST GROUND BOX
- EXIST LOOP DETECTOR
- EXIST ELECTRIC MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- LP EXIST LIGHT POLE
- EXIST POWER POLE
- TFP EXIST TELEPHONE POLE
- FH EXIST FIRE HYDRANT
- MB EXIST MAIL BOX
- X"SD- EXIST STORM DRAIN
- X"SS- EXIST SANITARY SEWER
- X"SS(FM)- EXIST SANITARY SEWER FORCED MAIN
- OHE - EXIST OVERHEAD ELECTRIC
- UT - EXIST UNDER-GROUND TELEPHONE
- X"IRR- EXIST IRRIGATION
- X"W - EXIST WATER LINE
- G - EXIST GAS LINE



*Cesar R. Nevarez*  
November 17, 2022



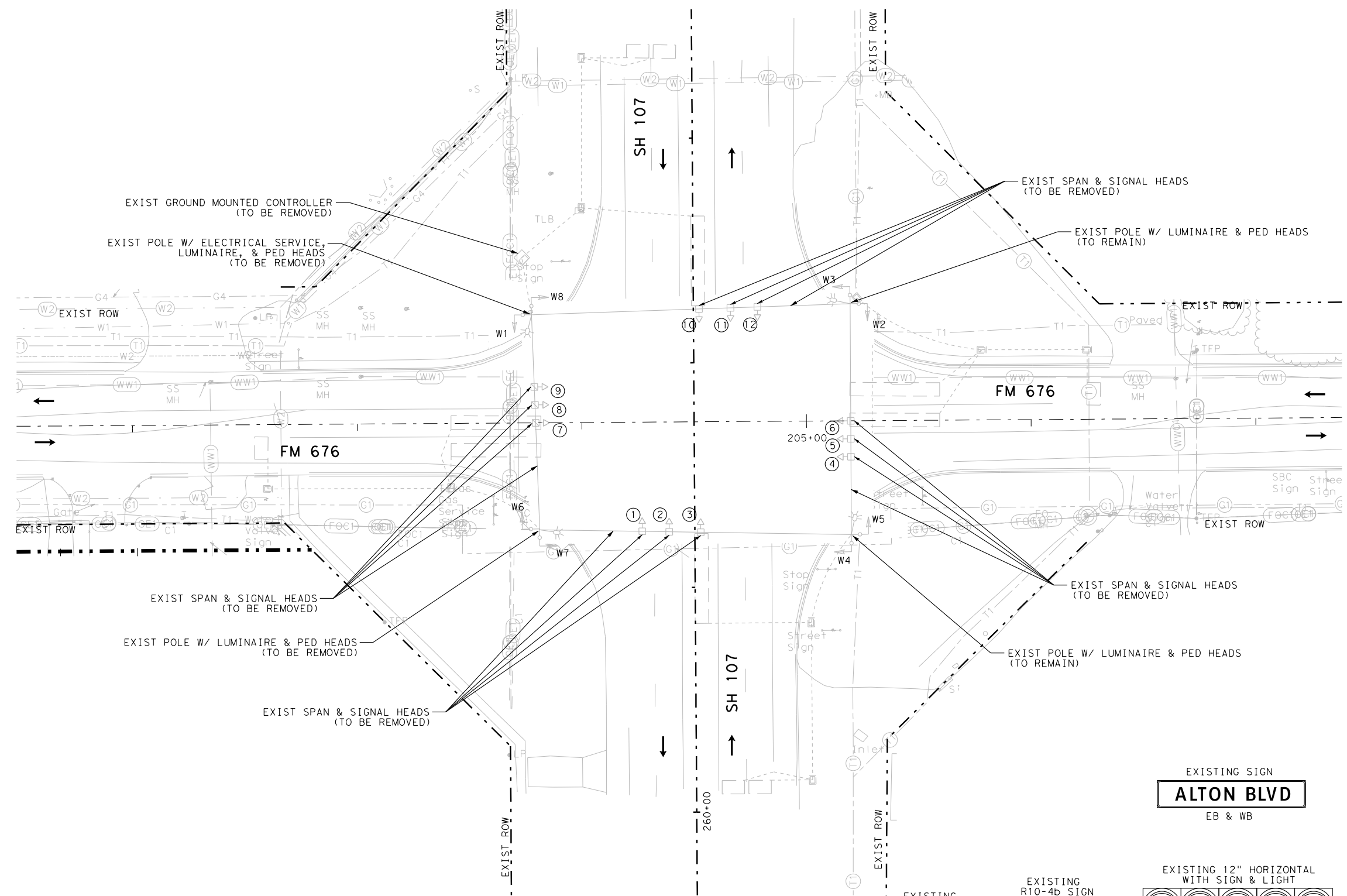
**ATKINS**  
TBPE REG. #F-474

6 FM 676  
**TRAFFIC SIGNAL LAYOUT**  
**EXISTING CONDITION**  
SH 107

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

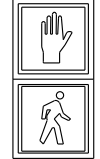
SHEET 1 OF 3		FED. RD. DIV. NO. 6	STATE PROJECT NO. 032	SHEET NO. 310
STATE TEXAS	DIST. PHARR	COUNTY HIDALGO		HIGHWAY NO. FM 676
CONT. 1064	SECT. 01	JOB 032		

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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**EXISTING CONDITION**  
INTERSECTION OF  
FM 676 AND SH 107  
IN HIDALGO COUNTY  
CONTROL 1064-01

EXISTING PEDESTRIAN SIGNALS  
18" X 16"



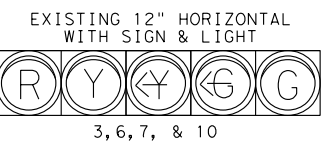
W1 THRU W8

EXISTING R10-4b SIGN  
9" X 12"  
WITH PEDESTRIAN  
PUSH BUTTON



W1 THRU W8

EXISTING SIGN  
**ALTON BLVD**  
EB & WB



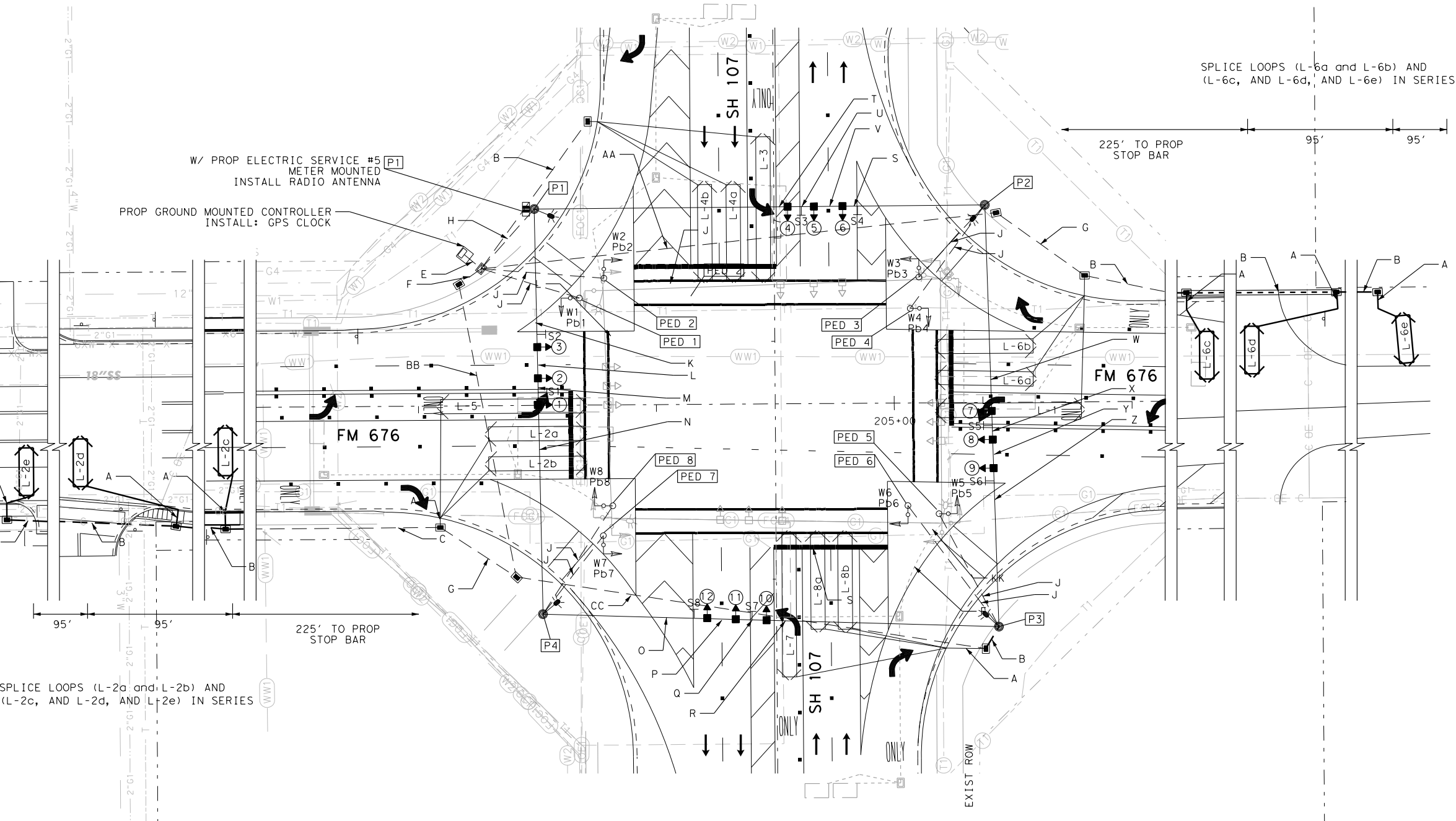
EXISTING 12" HORIZONTAL  
1, 2, 4, 5, 8, 9, 11, & 12





**LEGEND**

- TL EXIST SIGNAL POLE
- ⬆️ EXIST PED HEAD W/ PUSH BUTTON & SIGN
- EXIST GROUND BOX
- ⊞ EXIST LOOP DETECTOR
- ⊞ EXIST GROUND MOUNTED CONTROLLER
- EXIST ELECTRICAL SERVICE
- EXIST CONDUIT
- ⚡ EXIST LUMINAIRE
- PROP SIGNAL POLE
- PROP PED POLE
- ⬆️ PROP PED HEAD W/ PUSH BUTTON & SIGN
- ⬆️ PROP 12" SPAN WIRE MOUNTED SIGNAL HEAD
- PROP GROUND BOX (TY A)
- PROP GROUND BOX (TY D)
- ⊞ PROP LOOP DETECTOR
- ⊞ PROP FULL ACTUATED GROUND MOUNTED CONTROLLER
- PROP CONDUIT (TRENCH)
- PROP CONDUIT (BORE)
- ⚡ PROP LUMINAIRE
- T PROP SIGN
- ⊞ PROP ELECTRIC SERVICE
- PROP SPAN WIRE



SPLICE LOOPS (L-2a and L-2b) AND (L-2c, AND L-2d, AND L-2e) IN SERIES

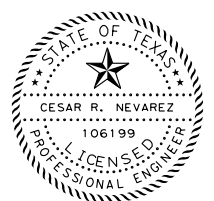
SPLICE LOOPS (L-6a and L-6b) AND (L-6c, AND L-6d, AND L-6e) IN SERIES

W/ PROP ELECTRIC SERVICE #5  
METER MOUNTED  
INSTALL: RADIO ANTENNA

PROP GROUND MOUNTED CONTROLLER  
INSTALL: GPS CLOCK

**PROPOSED INSTALLATION**

INTERSECTION OF  
FM 676 AND SH 107  
IN HIDALGO COUNTY  
CONTROL 1064-01



**ATKINS**  
TBPE REG. #F-474

6 FM 676  
TRAFFIC SIGNAL LAYOUT  
PROPOSED INSTALLATION  
SH 107

PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET

SHEET 2 OF 230F 3		STATE PROJECT NO.		SHEET NO.	
6				311	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

PLOT DRIVER: R0\*11x17\*PDF.p1t  
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PROPOSED ELECTRICAL CHART

ITEM	*TOTAL QTY (FT)	RUN NUMBER	RUN LENGTH (FT)																										
			A	B	C	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
POWER	20	#6 XHHW INSUL	64	917	160	10	12	84	34	403	59	13	12	88	70	12	13	98	105	107	11	12	87	12	12	67	218	125	200
GROUND	10	#6 BARE																											
	423	#8 BARE																											
	801	4 / C #12 TRAY																											
SIGNAL WIRE SIZE TYPE	3065	5 / C #12																											
	1635	7 / C #12																											
	128	#14 LOOP WIRE	2																										
LOOP LEAD	3138	2 / C L.L. SHIELDED		1	1	7	5	3																					
ANTENNA	10	COAXIAL CABLE																											
CONDUIT	64	1" PVC	1																										
	1183	2" PVC		1	1	1	1	1																					
	423	4" PVC				2						1																	
	1042	4" PVC (TRENCH) (SCH 80)		1																									
	1335	4" PVC (BORE) (SCH 80)		1																									
*GPS ANTENNA	10	GPS CABLE				1																					1	1	
PED. PUSH BUTTONS	2181	2 / C #12				8						1		3	3	3	1	1	1	1	3	3	3	3	1	1	1		

\*QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES.  
 ° FOR CONTRACTOR'S INFORMATION ONLY, SUBSIDIARY TO ITEM 6061  
 ° DISCONNECT EXISTING LOOP WIRES & PLACE IN NEW CONDUIT BEFORE CONNECTING TO PROP. GROUND MOUNTED CONTROLLER (NO SPLICING)

NOTES:

- THE CONTRACTOR SHALL FURNISH AND INSTALL SIGNAL HEADS, CABLES CONDUITS, LOOP DETECTORS, PEDESTRIAN HEADS, PUSH BUTTONS AND SIGNAL POLES.
- THE LOCATION SHOWN FOR THE STRAIN POLES, LOOP DETECTORS, AND CONDUIT RUNS IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT TRAFFIC SECTION.
- ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG, 2/C LOOP LEAD-IN CABLE SHALL BE #14 AWG SHIELDED AND LOOP WIRES IN STREET SHALL BE #14 AWG.
- THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL AND PEDESTRIAN HEADS.
- ALL SIGNAL HEADS SHALL HAVE BLACKPLATES.
- THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTRIC CONTROL.
- PEDESTRIAN SIGNAL HEADS SHALL BE IN LINE WITH PROPOSED CROSS WALKS.
- EXISTING UTILITIES ARE SHOWN AS PER RECORD DRAWINGS AVAILABLE. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

TRAFFIC SIGNAL POLES				
POLE NUMBER	**LOCATION	SIGNAL POLE DESIGNATION	FOUNDATION TYPE	FOUNDATION DEPTH
P1	STA 203+81.6 66.1' LEFT	SPL-34D 100	36-B	15.2'
P2	EXISTING TO REMAIN W/ LUMINAIRE			
P3	EXISTING TO REMAIN W/ LUMINAIRE			
P4	STA 203+79.6 75.9' RIGHT	SPL-34D 100	36-B	15.2'
PED 1	STA 204+06.0 36.7' LEFT	PEDESTAL POLE	24-A	5.7'
PED 2	STA 204+14.8 45.5' LEFT	PEDESTAL POLE	24-A	5.7'
PED 3	STA 204+14.6 44.8' RIGHT	PEDESTAL POLE	24-A	5.7'
PED 4	STA 204+05.5 36.0' RIGHT	PEDESTAL POLE	24-A	5.7'

\*\*@ FM 676 ALIGNMENT

LOOP DETECTOR								
LOOP	SIZE	WIRE LENGTH	SAW CUT	AMPLIFIER NO.	SETTING	FUNCTION	DELAY TIMING	
L-1	6' X 60'	358	176	1	PRESENCE	CALL & EXTEND PH 1		
L-2a	6' X 40'	270	131	2	PRESENCE	CALL & EXTEND PH 2		
L-2b	6' X 40'	375	121	2	PRESENCE	CALL & EXTEND PH 2		
L-2c	6' X 20'	219	68	9	PRESENCE	CALL & EXTEND PH 2		
L-2d	6' X 20'	194	91	9	PRESENCE	CALL & EXTEND PH 2		
L-2e	6' X 20'	213	64	9	PRESENCE	CALL & EXTEND PH 2		
L-3	6' X 60'	603	199	3	PRESENCE	CALL & EXTEND PH 3		
L-4a	6' X 40'	308	152	4	PRESENCE	CALL & EXTEND PH 4		
L-4b	6' X 40'	432	142	4	PRESENCE	CALL & EXTEND PH 4		
L-5	6' X 60'	540	176	5	PRESENCE	CALL & EXTEND PH 5		
L-6a	6' X 40'	268	131	6	PRESENCE	CALL & EXTEND PH 6		
L-6b	6' X 40'	372	121	6	PRESENCE	CALL & EXTEND PH 6		
L-6c	6' X 20'	201	63	11	PRESENCE	CALL & EXTEND PH 7		
L-6d	6' X 20'	182	86	11	PRESENCE	CALL & EXTEND PH 8		
L-6e	6' X 20'	198	60	11	PRESENCE	CALL & EXTEND PH 9		
L-7	6' X 60'	600	196	7	PRESENCE	CALL & EXTEND PH 7		
L-8a	6' X 40'	296	144	8	PRESENCE	CALL & EXTEND PH 8		
L-8b	6' X 40'	408	132	8	PRESENCE	CALL & EXTEND PH 8		
<b>TOTAL:</b>		3154	1144					

# LOOP DETECTORS TO REMAIN IN-PLACE AND BE CONNECTED TO CONTROLLER

SIGNAL HEAD & SIGN DETAILS

INSTALL 4-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



1, 4, 7, 10

INSTALL 3-SECTION 12" HORIZONTAL SIGNALS (LED) W/ BACKPLATE



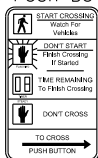
2, 3, 5, 6, 8, 9, 11, 12

INSTALL R10-17T 30" X 30"



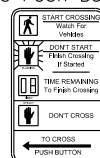
S1, S3, S5, S7

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



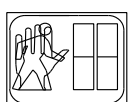
Pb 2, 4, 6, 8

INSTALL R10-3e (9"X15") W/ PEDESTRIAN APS PUSH BUTTON



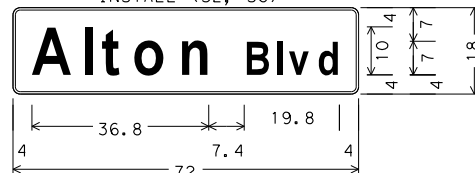
Pb 1, 3, 5, 7

INSTALL PEDESTRIAN SIGNALS 12" (LED)



W1, W2, W3, W4, W5, W6, W7, W8

INSTALL (S2, S6)



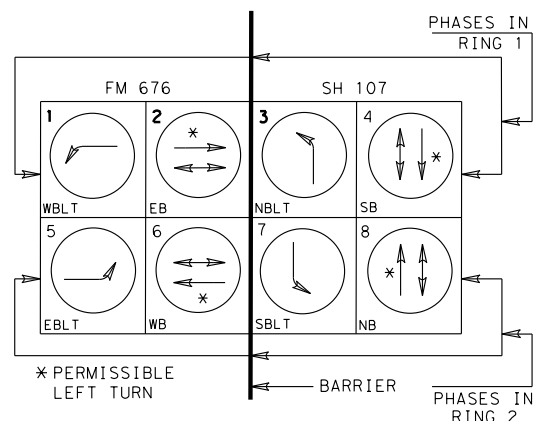
D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[Alton] ClearviewHwy-3-W;  
[Blvd] ClearviewHwy-3-W;

INSTALL (S4, S8)



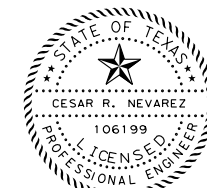
D-3\_VARx8;  
1.5" Radius, 0.5" Border, White on Green;  
[Main] ClearviewHwy-3-W;  
[Ave] ClearviewHwy-3-W;

PHASING DIAGRAM



SERVICE POLE SUMMARY

Service Pole No.	Sheet No.	Electrical Service Description, See ED (4)-03 (Typ.)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect Switch Amp/Fuse	Ckt. Bkr. Pole / Amp	Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
5		TY T (120/240) 000 (NS) GS (L) TS (O)	1 1/4"	3/#6	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	6.2
										ILL	2P/20	6.0	



Amended 1/7/2022



**ATKINS**

TBPE REG. #F-474

6 FM 676  
**TRAFFIC SIGNAL LAYOUT  
 PROPOSED INSTALLATION**  
 SH 107

PLAN SCALE: 1"=50'

0 10 20 30 40 50  
 DISTANCE IN FEET

SHEET 3 OF 3		STATE PROJECT NO.		SHEET NO.	
6				312	
STATE	DIST.	COUNTY			
TEXAS	PHARR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

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DATE: FILE:

## GENERAL NOTES FOR ALL ELECTRICAL WORK

- The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.
- Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.
- Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.
- Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.
- Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.
- When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

## CONDUIT

### A. MATERIALS

- Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.
- Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.
- Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.


AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

- Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.
- Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.
- Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.
- Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

- Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.
- When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.
- Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

### B. CONSTRUCTION METHODS

- Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.
- Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.
- Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.
- Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.
- When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."
- Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.
- During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.
- Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.
- Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.
- Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.
- At all electrical services, install a 6 AWG solid copper grounding electrode conductor.
- Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).
- Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.
- File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

				<b>Traffic Operations Division Standard</b>	
<h1>ELECTRICAL DETAILS CONDUITS &amp; NOTES</h1>					
<h2>ED(1) - 14</h2>					
FILE:	ed1-14.dgn	DN:	CK:	DW:	CK:
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS		1064	01	032	FM 676
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		313

# ELECTRICAL CONDUCTORS

## A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS) 11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

## B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
6. Support conductors in illumination poles with a J-hook at the top of the pole.
7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

## C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.
4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

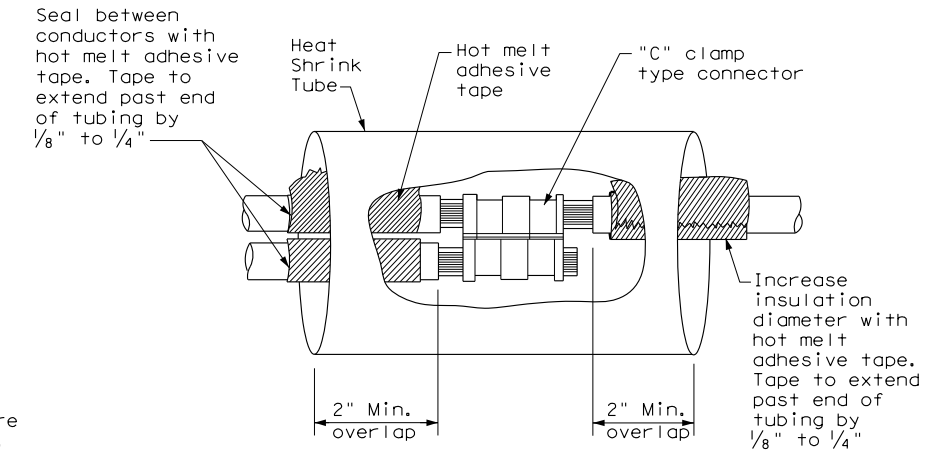
## GROUND RODS & GROUNDING ELECTRODES

### A. MATERIAL INFORMATION

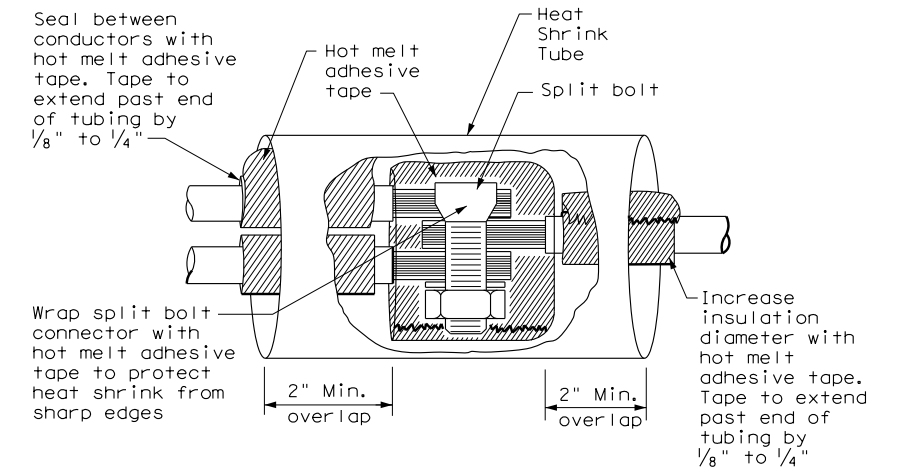
1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical services, see individual plan sheets.

### B. CONSTRUCTION METHODS

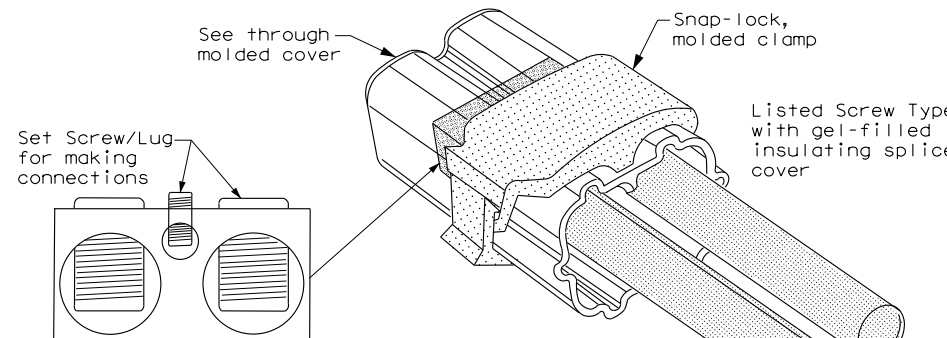
1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
2. Do not place ground rods in the same drilled hole as a timber pole.
3. Install ground rods so the imprinted part number is at the upper end of the rod.
4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



**SPLICE OPTION 1  
Compression Type**



**SPLICE OPTION 2  
Split Bolt Type**



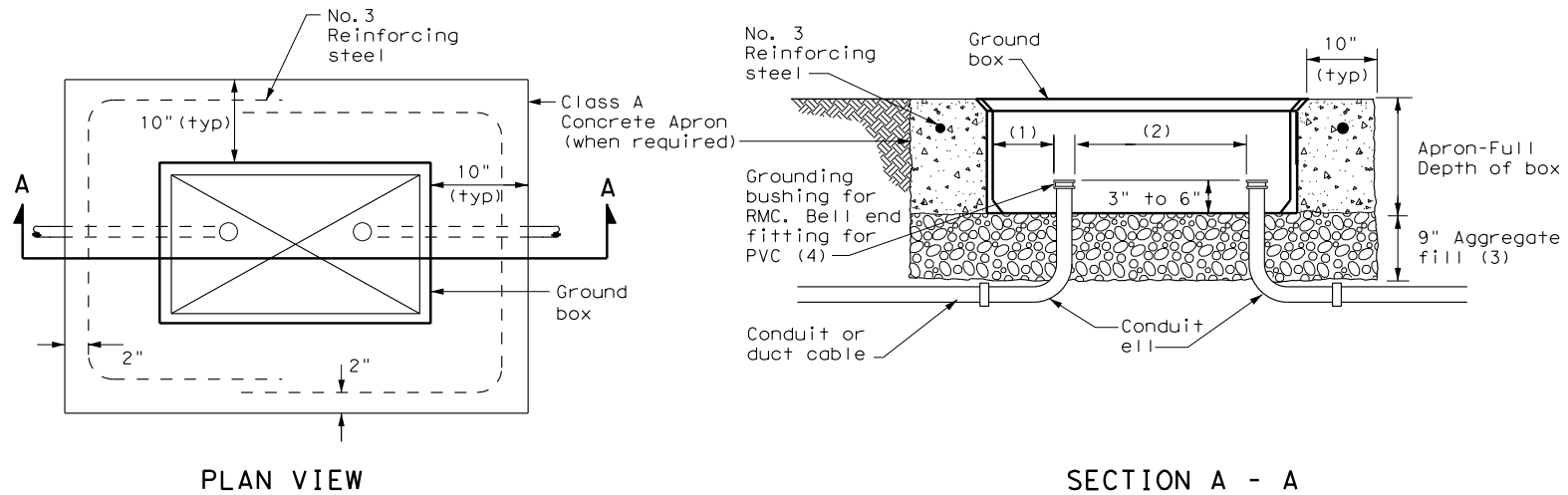
**SPLICE OPTION 3  
Listed Screw Type**

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DATE:  
FILE:

		<b>Texas Department of Transportation</b>		<b>Traffic Operations Division Standard</b>	
<h2>ELECTRICAL DETAILS CONDUCTORS</h2>					
<h3>ED(3) - 14</h3>					
FILE:	ed3-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CON:	1064	SECT:	01
REVISIONS		JOB:	032	HIGHWAY:	FM 676
		DIST:	COUNTY	SHEET NO.	
		PHR:	HIDALGO		315

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**APRON FOR GROUND BOX**

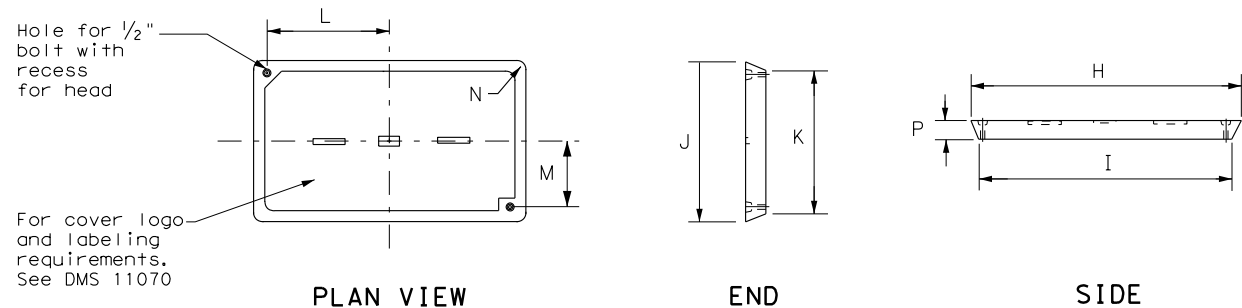
- (1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.
- (2) Maintain sufficient space between conduits to allow for proper installation of bushing.
- (3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.
- (4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

**GROUND BOX DIMENSIONS**

TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

**GROUND BOX COVER DIMENSIONS**

TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



**GROUND BOX COVER**

**GROUND BOXES**

**A. MATERIALS**

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.

3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.

4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

**B. CONSTRUCTION METHODS**

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

**Texas Department of Transportation**  
*Traffic Operations Division Standard*

ELECTRICAL DETAILS  
 GROUND BOXES

ED(4) - 14

FILE: ed4-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		316



**ELECTRICAL SERVICES NOTES**

- Provide new materials. Ensure installation and materials comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Ensure material is Underwriters Laboratories (UL) listed. Provide and install electrical service conduits, conductors, disconnects, contactors, circuit breaker panels, and branch circuit breakers as shown on the Electrical Service Data chart in the plans. Faulty fabrication or poor workmanship in material, equipment, or installation is justification for rejection. Where manufacturers provide warranties and guarantees as a customary trade practice, furnish these to the State.
- Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS) 11080 "Electrical Services," DMS 11081 "Electrical Services-Type A," DMS 11082 "Electrical Services-Type C," DMS 11083 "Electrical Services-Type D," DMS 11084 "Electrical Services-Type T," DMS 11085 "Electrical Services-Pedestal (PS)", and Item 628 "Electrical Services" of the Standard Specifications. Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.
- Provide all work, materials, services, and any incidentals needed to install a complete electrical service as specified in the plans.
- Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.
- The enclosure manufacturer will provide Master Lock Type 2 with brass tumblers keyed #2195 for all custom electrical enclosures. Installing Contractor is to provide Master Lock #2195 Type 2 with brass tumblers for "off the shelf" enclosures. Master Lock #2195 keys and locks become property of the State. Unless otherwise approved, do not energize electrical service equipment until locks are installed.
- Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.
- When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.
- Provide wiring and electrical components rated for 75°C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify size 6 AWG conductors by continuous color jacket. Identify electrical conductors sized 4 AWG and larger by continuous color jacket or by colored tape. Mark at least 6 inches of the conductor's insulation with half laps of colored tape, when identifying conductors. Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 12 inches minimum, 18 inches maximum, or as required by utility.
- All electrical service conduit and conductors attached to the electrical service including the riser or the elbow below ground are subsidiary to the electrical service. For an underground utility feed, all service conduit and conductors after the elbow, including service conduit and conductors for the utility pole riser when furnished by the Contractor, will be paid for separately.
- Provide rigid metal conduit (RMC) for all conduits on service, except for the 1/2 in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as that shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 inches underground and then couple to the type and schedule of the conduit shown on the layout for that particular branch circuit. Install a grounding bushing on the RMC where it terminates in the service enclosure.
- Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees to each other. Size the LFMC the same size as service entrance conduit. LFMC must not exceed 3 feet in length. Strap LFMC within 1 foot of each end. LFMC less than 12 inches in length need not be strapped. Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. The LFMC must contain a grounded (neutral) conductor. Ensure any bend in LFMC never exceeds 180 degrees. A pull test is required on all installed conductors, with at least six inches of free conductor movement demonstrated to the satisfaction of the Engineer.
- Ensure all mounting hardware and installation details of services conform to utility company specifications.
- For all electrical service enclosures listed under Item 628 on the MPL, the UL 508 enclosure manufacturers will prepare and submit a schematic drawing unique to each service. Before shipment to the job site, place the applicable laminated schematic drawings and the laminated plan sheet showing the electrical service data chart used to build the enclosure in the enclosure's data pocket. The installing contractor will copy and laminate the actual project plan sheets detailing all equipment and branch circuits supplied by that service. The laminated plan sheets are to be placed in the service enclosure's document pocket. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. If the installation differs from the plan sheets, the installing contractor is to redline plan sheets before laminating.
- When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in before laminating. Deliver these drawings before completion of the work to the Engineer, instead of placing in enclosure that has no door pocket.
- Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss, such as a meter base hub.

**SERVICE ASSEMBLY ENCLOSURE**

- Provide threaded hub for all conduit entries into the top of enclosure.
- Type galvanized steel (GS) enclosures may be used for Type C panelboards and for Type D and T services that do not use an enclosure mounted photocell or lighting contactor. Provide GS enclosures in accordance with DMS 11080, 11082, 11083, and 11084.
- Provide aluminum (AL) and stainless steel (SS) enclosures for Types A, C, and D in accordance with DMS 11080, 11081, 11082, 11083, and 11084. Do not paint stainless steel.
- Provide pedestal service (PS) enclosures in accordance with ED(9) and DMS 11080 and 11085. Do not provide GS pedestal services. If GS is shown in the PS descriptive code, provide an AL enclosure.

**MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS**

- Field drill flange-mounted remote operator handle if needed, to ensure handle is lockable in both the "On" and "Off" positions.
- When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

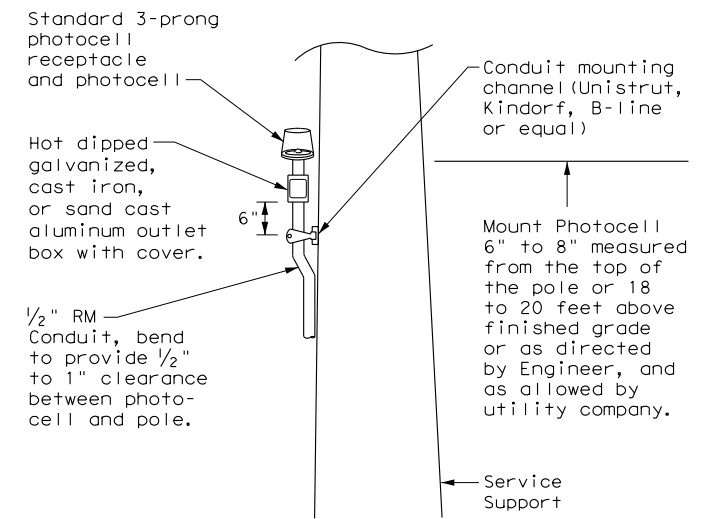
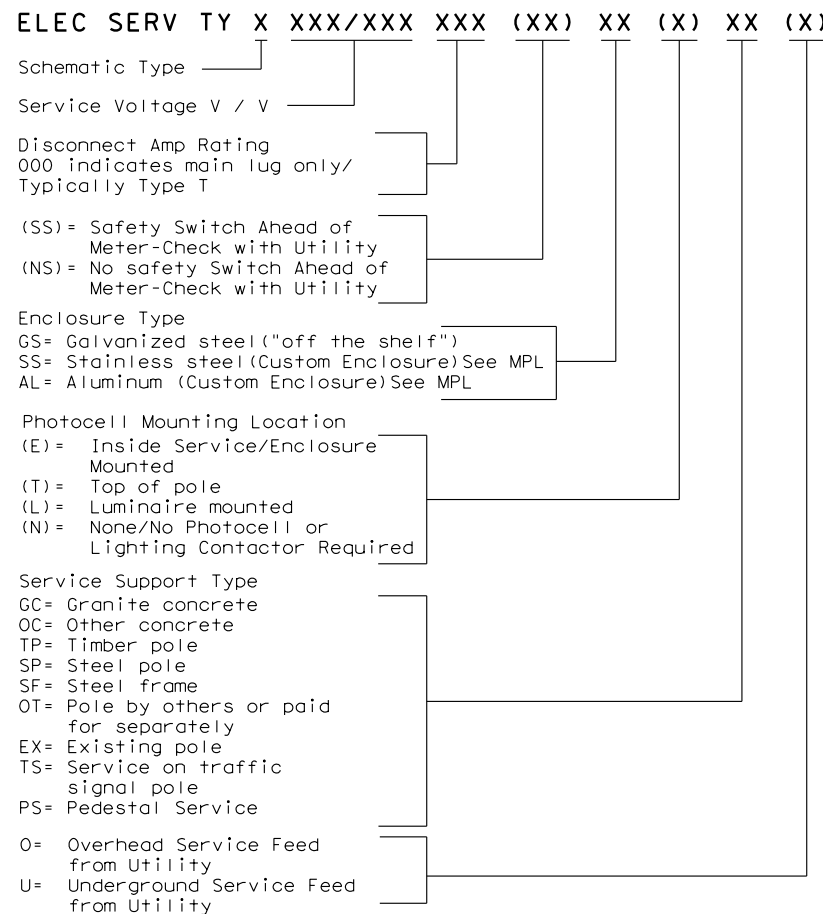
**PHOTOELECTRIC CONTROL**

- Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

* ELECTRICAL SERVICE DATA												
Elec. Service ID	Plan Sheet Number	Electrical Service Description	Service Conduit *xSize	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amps	Two-Pole Contractor Amps	Panelbd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/#2	100	2P/100	100	N/A	Lighting NB	2P/40	26	28.1
									Lighting SB	2P/40	25	
									Underpass	1P/20	15	
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 1/4"	3/#6	N/A	2P/60		100	Sig. Controller	1P/30	23	5.3
							30		Luminaires	2P/20	9	
									CCTV	1P/20	3	
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 1/4"	3/#6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0
									Flashing Beacon 2	1P/20	4	

\* Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.  
 \*\* Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

**EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE**



**TOP MOUNTED PHOTOCELL**

Install conduit strap maximum 3 feet from box. 5 foot maximum spacing between straps supporting conduit.

Texas Department of Transportation Traffic Operations Division Standard

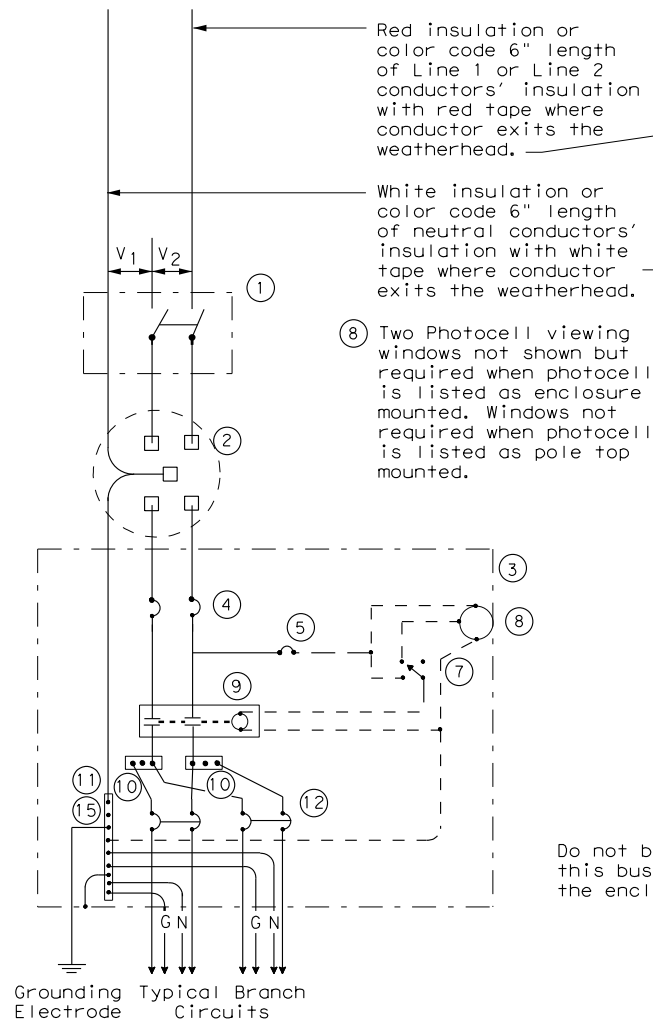
**ELECTRICAL DETAILS SERVICE NOTES & DATA**

**ED(5) - 14**

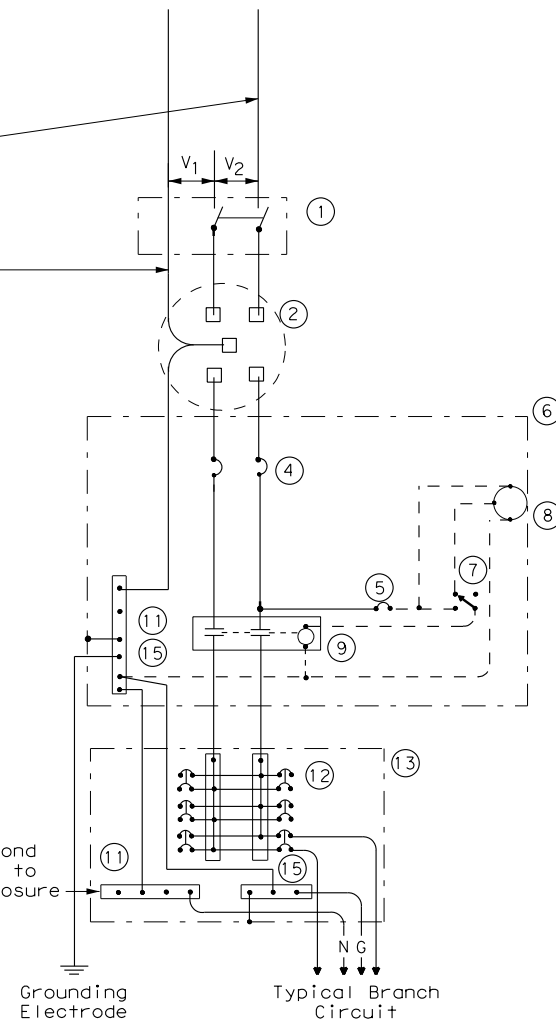
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© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		317

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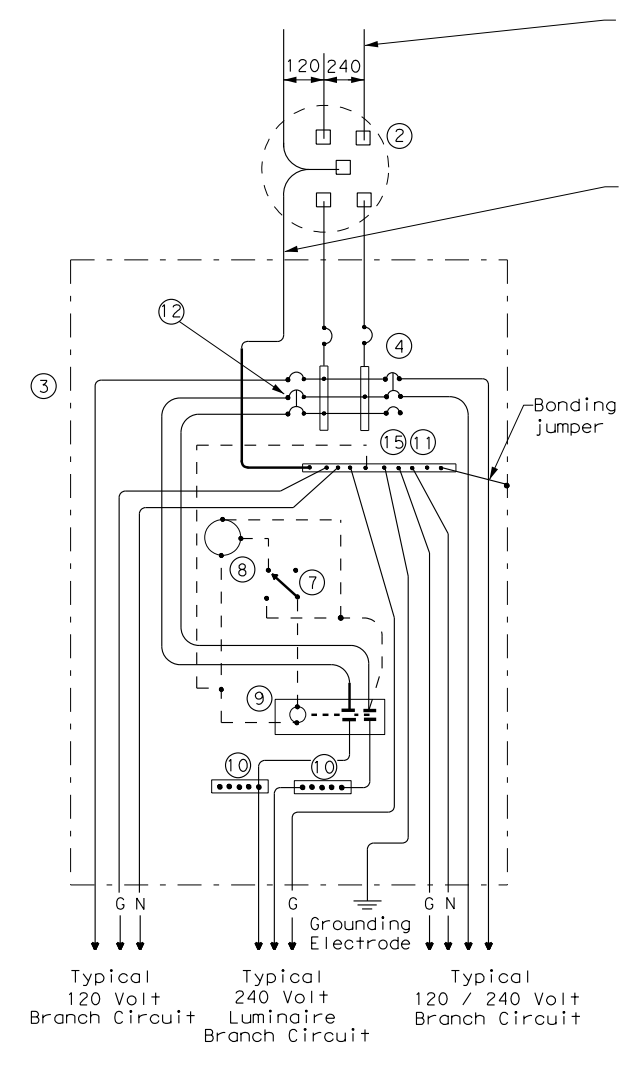
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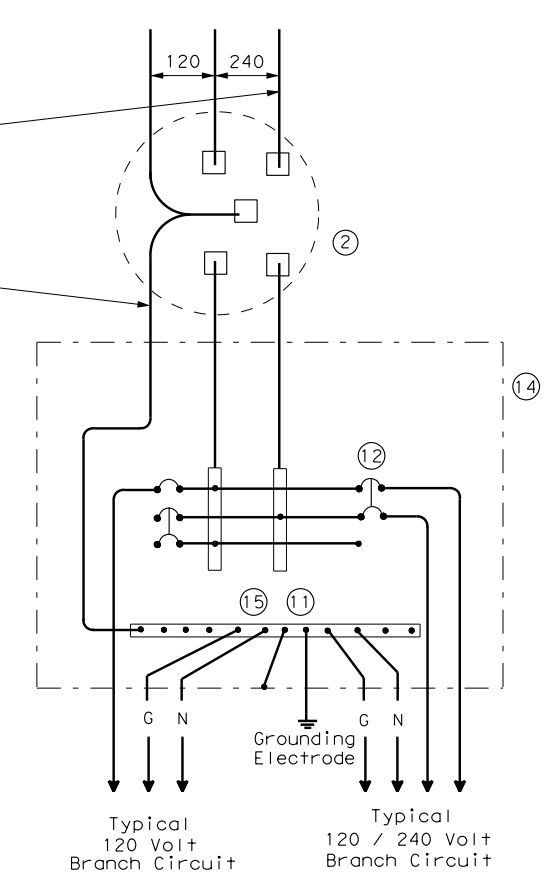
**SCHEMATIC TYPE A  
THREE WIRE**



**SCHEMATIC TYPE C  
THREE WIRE**



**SCHEMATIC TYPE D - CUSTOM  
120/240 VOLTS - THREE WIRE**



**SCHEMATIC TYPE T  
120/240 VOLTS - THREE WIRE**  
Galvanized steel - "Buy Off The Shelf" only. When required install photocell top of the pole or on luminaire only, no lighting contractor will be installed.

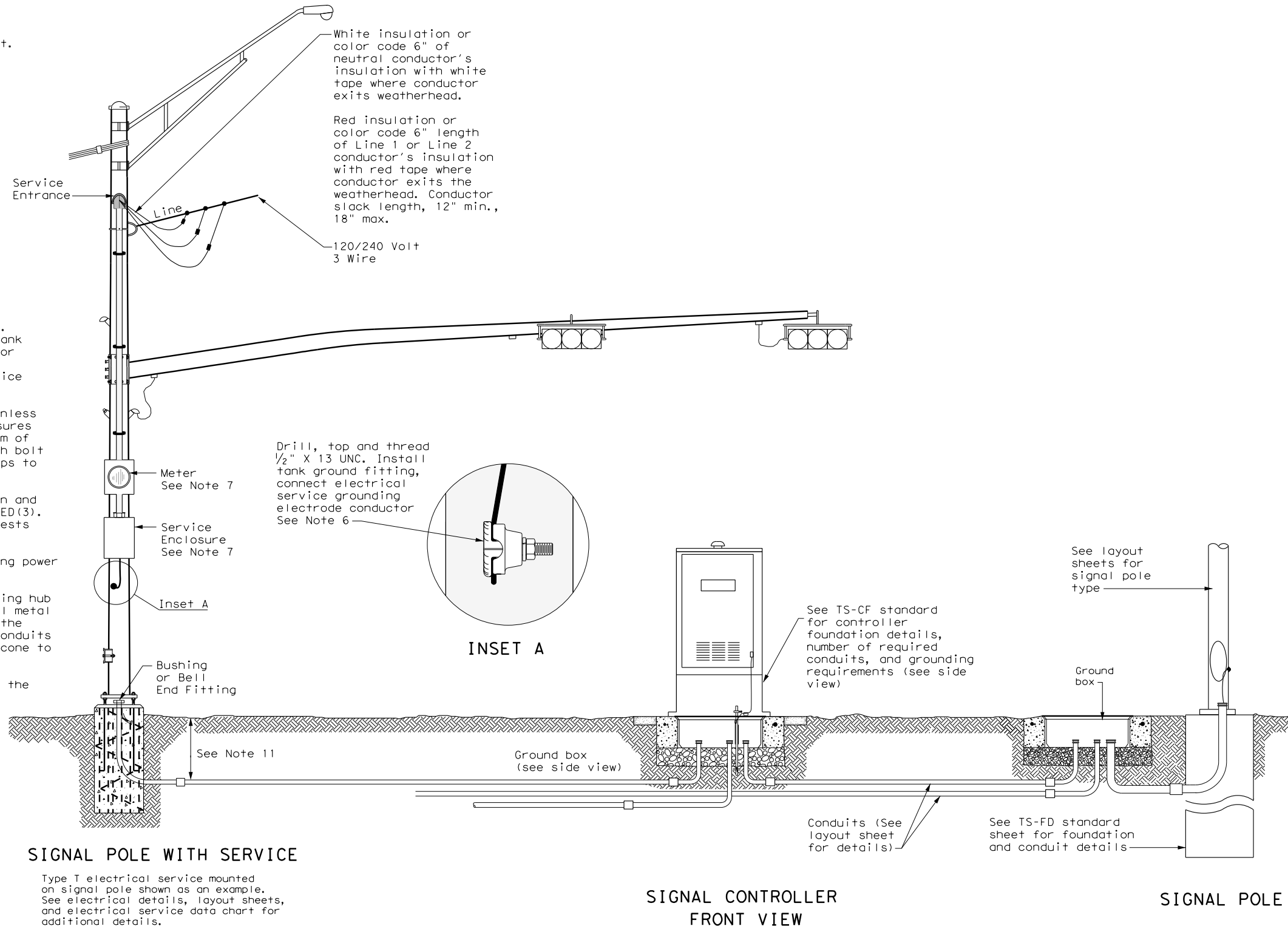
WIRING LEGEND	
—	Power Wiring
- - - -	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor-always required

SCHEMATIC LEGEND	
1	Safety Switch (when required)
2	Meter (when required-verify with electric utility provider)
3	Service Assembly Enclosure
4	Main Disconnect Breaker (See Electrical Service Data)
5	Circuit Breaker, 15 Amp (Control Circuit)
6	Auxiliary Enclosure
7	Control Station ("H-O-A" Switch)
8	Photo Electric Control (enclosure-mounted shown)
9	Lighting Contactor
10	Power Distribution Terminal Blocks
11	Neutral Bus
12	Branch Circuit Breaker (See Electrical Service Data)
13	Separate Circuit Breaker Panelboard
14	Load Center
15	Ground Bus

				<b>Traffic Operations Division Standard</b>	
<b>ELECTRICAL DETAILS SERVICE ENCLOSURE AND NOTES</b>					
<b>ED(6) - 14</b>					
FILE:	ed6-14.dgn	DN:	TxDOT	CK:	TxDOT
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REVISIONS		JOB:	032	HIGHWAY:	FM 676
		DIST:	COUNTY	SHEET NO.	
		PHR:	HIDALGO		318

**TRAFFIC SIGNAL NOTES**

1. Do not pass luminaire conductors through the signal controller cabinet.
2. Include an equipment grounding conductor in all conduits throughout the electrical system. Bond all exposed metal parts to the grounding conductor.
3. Provide roadway luminaires, when required, in accordance with the material and construction sections of Item 610, "Roadway Illumination Assemblies," except for performance testing of luminaires. Test installed roadway luminaires for proper operation as a part of the associated traffic signal system test.
4. If internally illuminated street name signs are approved for use, ground the fixture to the pole with a 12 AWG green XHHW conductor.
5. Bond anchor bolts to rebar cage in two locations using #3 bars or 6 AWG stranded copper conductors. Use listed mechanical connectors rated for embedment in concrete. See TXDOT standard TS-FD for further details.
6. Drill and tap signal poles for 1/2 in. X 13 UNC tank ground fitting. Provide and install tank ground fitting 4 in. to 6 in. directly below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Connect the electrical service grounding electrode conductor to the tank ground fitting. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. See Inset A detail for further information. Size service entrance conduit and branch circuit conduit as shown in the plans.
7. Mount electrical service enclosure and meter to signal pole with stainless steel bands. Ensure bands are a minimum width of 3/4 in. Secure enclosures to bands using two-bolt brackets. Install brackets near top and bottom of each enclosure. Install properly sized stainless steel washers on each bolt in the enclosure. Band or drill and tap properly sized stand-off straps to signal pole for attaching conduit.
8. Conduct pull tests and insulation resistance tests on all illumination and power conductors as required in Item 620 "Electrical Conductors" and ED(3). To prevent electronics damage, do not conduct insulation resistance tests on traffic signal cables after termination.
9. Lock all enclosures and bolt down all ground box covers before applying power to the signal installation.
10. Terminate conduits entering the top of enclosures with a conduit-sealing hub or threaded boss such as meter hub. Install a grounding bushing on all metal conduits not connected to conduit-sealing hub or threaded boss. Bond the grounding bushing to the ground bus with a bonding jumper. Seal all conduits entering enclosures with duct seal or expanding foam. Do not use silicone to seal conduit ends.
11. For all conduits, ensure the burial depth is a minimum of 18". Ensure the minimum burial depth for conduit placed under a roadway is 24".

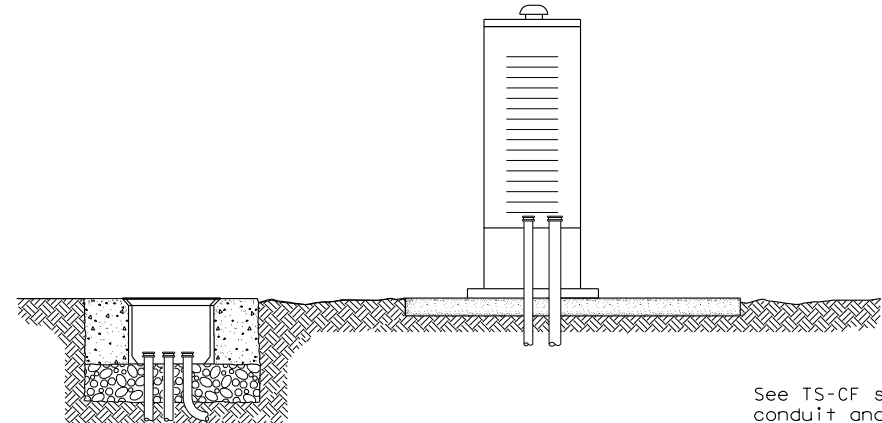


**SIGNAL POLE WITH SERVICE**

Type T electrical service mounted on signal pole shown as an example. See electrical details, layout sheets, and electrical service data chart for additional details.

**SIGNAL CONTROLLER FRONT VIEW**

**SIGNAL POLE**



**SIGNAL CONTROLLER SIDE VIEW**

See TS-CF standard for conduit and grounding requirements. See layout sheets for ground box locations and any additional conduits that are required.

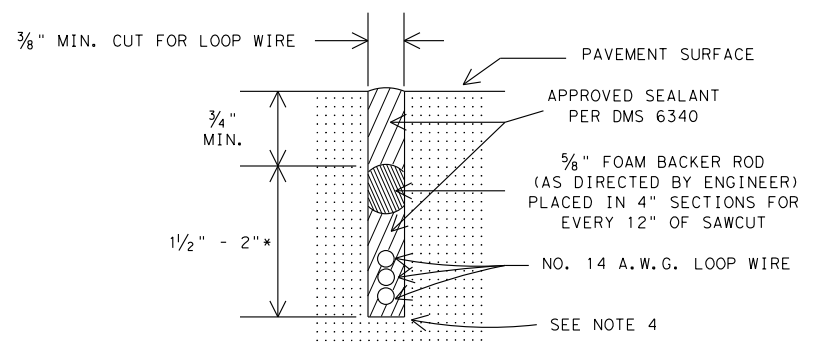
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DATE:  
FILE:

		<b>Traffic Operations Division Standard</b>	
<h2>ELECTRICAL DETAILS</h2> <h2>TYPICAL TRAFFIC SIGNAL</h2> <h2>SYSTEM DETAILS</h2> <h3>ED(8) - 14</h3>			
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© TxDOT October 2014	CONT: 1064	SECT: 01	JOB: 032
REVISIONS		HIGHWAY: FM 676	
DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 320	

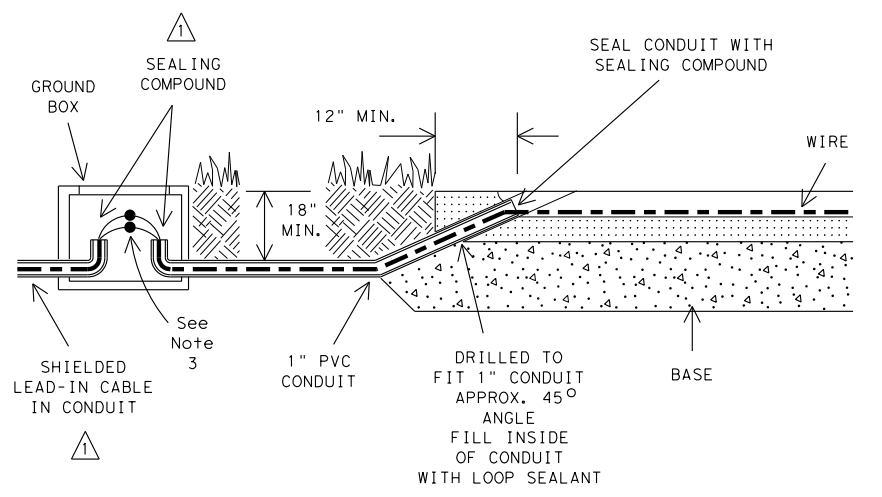
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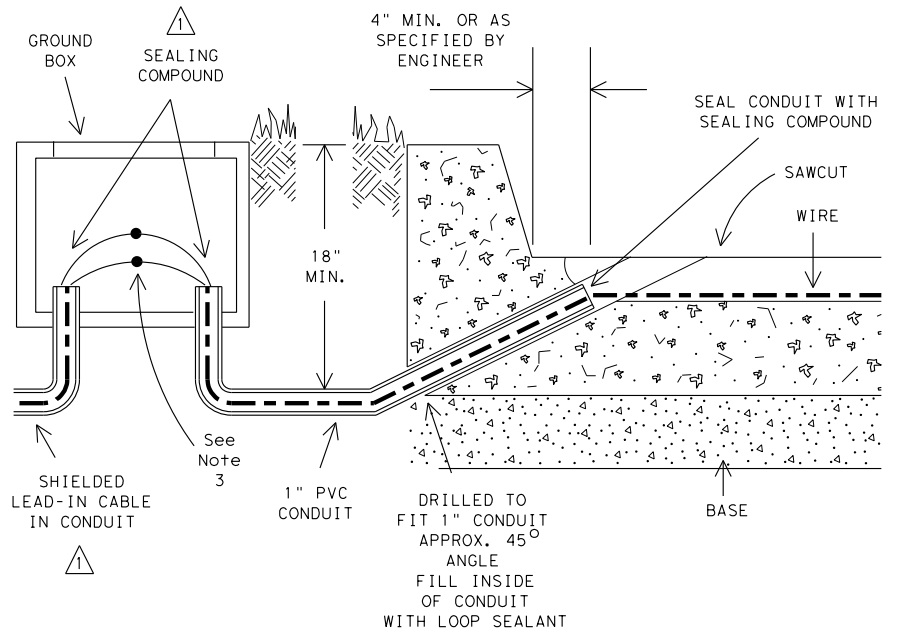


**LOOP SAW CUT CROSS-SECTION**

\* SAWCUTS IN BRIDGE DECKS ARE TYPICALLY 1" DEPTH MAXIMUM  
 SAWCUTS IN BRIDGE DECKS AND ACROSS EXPANSION JOINTS SHALL BE AS APPROVED BY ENGINEER



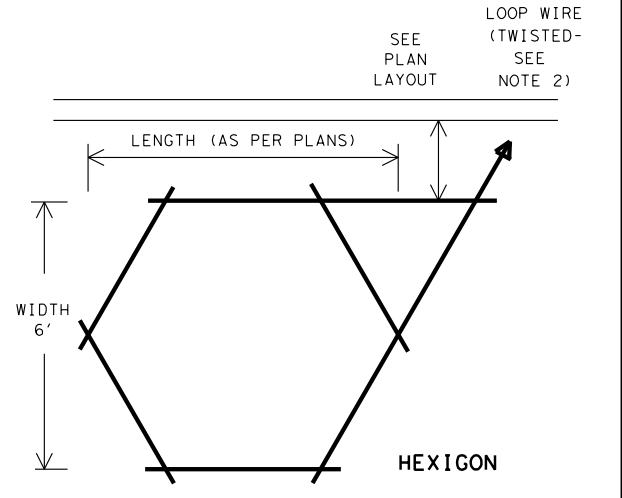
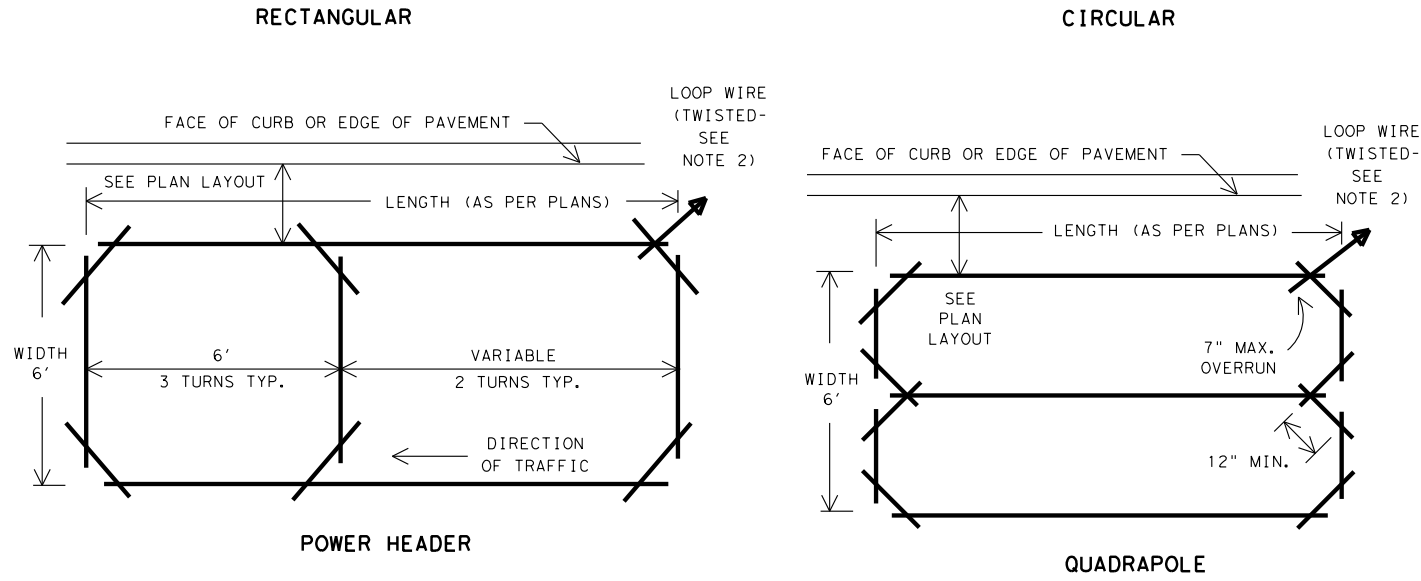
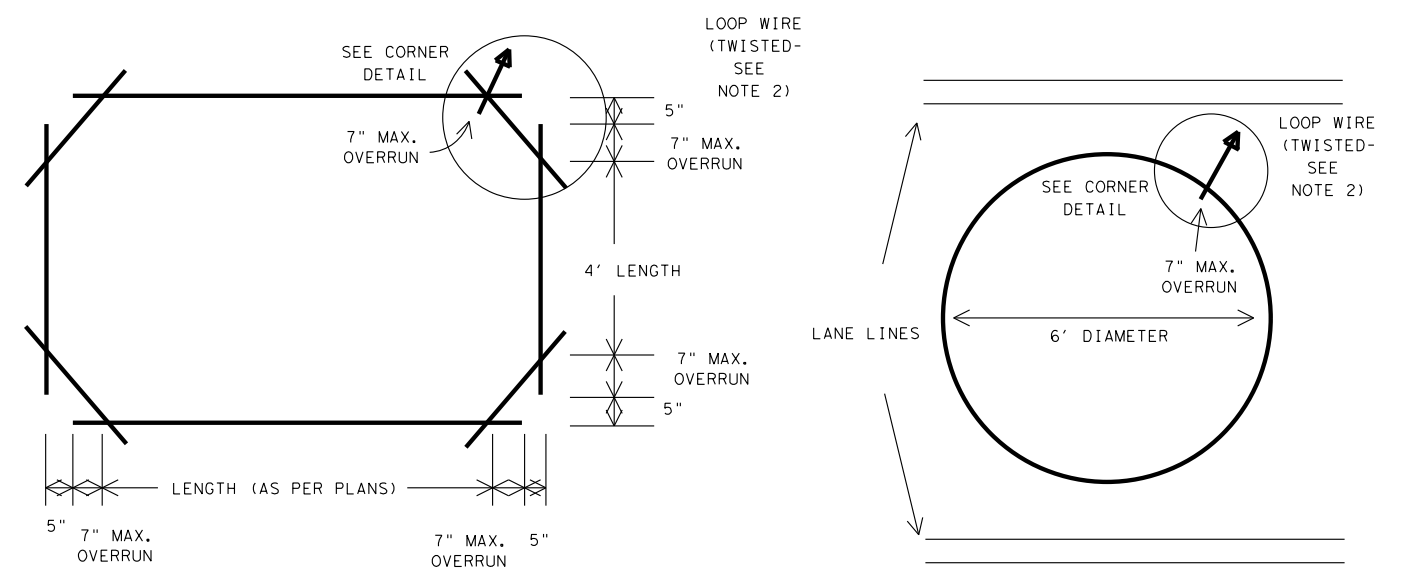
**TYPICAL LEAD IN CONFIGURATION (WITHOUT CURBING)**



**TYPICAL LEAD IN CONFIGURATION (WITH CURBING)**

**TYPICAL LOOP DETECTOR LAYOUTS**

(AS SPECIFIED IN PLANS)



**GENERAL NOTES:**

- The pavement cut is to be made with a concrete saw to neat lines and loose material removed. The cut shall be clean and dry when the wire and sealing compound is placed.
- Loop wire shall be 14 AWG Stranded Type XHHW. Wire from the loop to the ground box shall be twisted a minimum of 5 turns per foot. No splices shall be permitted in the loop or in the run to the ground box.
- The home run cable from the pull box to the controller shall be IMSA 50-2 shielded cable and shall be soldered to the loop wire. The solder joints shall be sealed with Scotchcast or other method acceptable to the Engineer. The shield shall be grounded only at the controller end. Loop home run cable shall be two conductor 14 AWG shielded, Type XHHW.
- All wire placed in the saw cut shall be sealed by fully encapsulating it in a sealant acceptable to the Engineer. Sealing compound shall be in accordance with DMS 6340.
- The loop location, configuration and number of turns shall be as indicated on the plans or as directed by the Engineer.

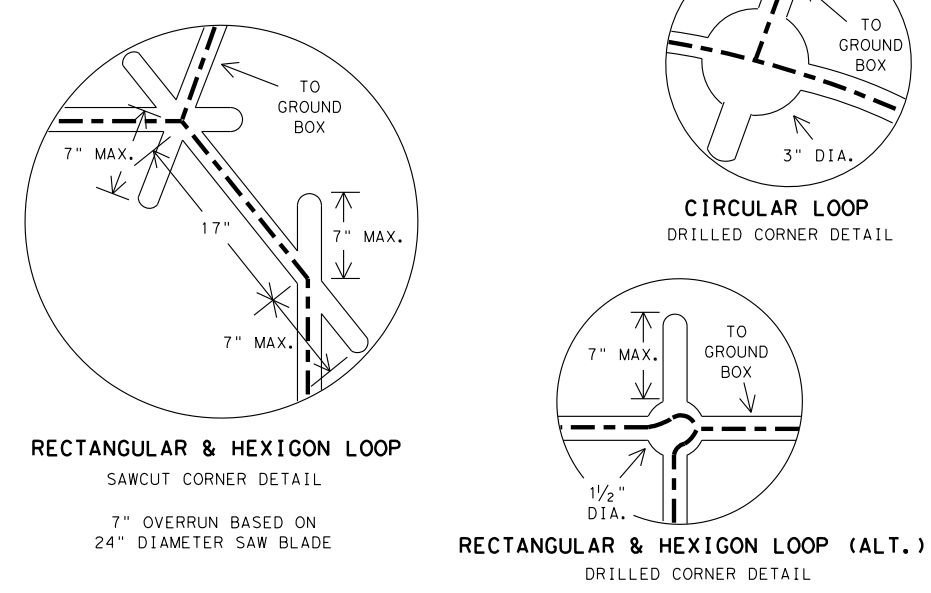
**Recommended Number of Turns for Loop Detectors**

LOOP PERIMETER SIZE (FT.)	NUMBER OF TURNS	APPROXIMATE LOOP SIZES INCLUDED
24' or Less	3 or 4	5' x 5', 6' x 6'
25' - 110'	2 or 3	6' x 10', 6' x 45'
110' or More	1 or 2	6' x 50' or Longer

- A separate saw cut shall be made from each loop to the edge of pavement or as specified by the Engineer.
- Splices between the loop lead-in cable and loop detector shall be made only in the ground box near the loop it is serving.
- Circular loops may use prewound loops encased in continuous pvc tubing. Sawcut width may be adjusted to accommodate tubing.
- The lead-in wire in the circular loop shall be coiled at the 3 inch drilled corner to reduce bending stress.
- Loop duct may be used as specified by Engineer.

For additional information refer to "Texas Traffic Signal Detector" manual, TTI Report 1163-1.

**TYPICAL CORNER DETAILS**



**STANDARD PLANS**  
 Texas Department of Transportation  
 Traffic Operations Division

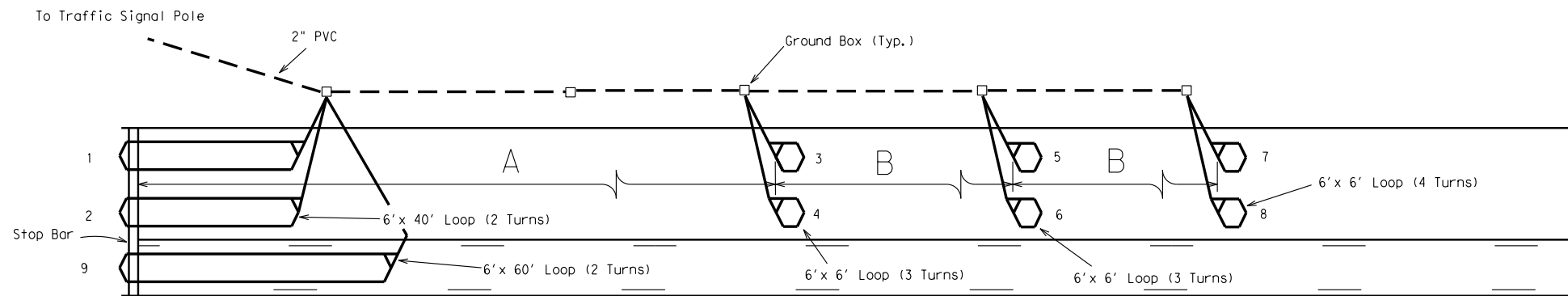
**LOOP DETECTOR INSTALLATION DETAILS**

**LD(1)-03**

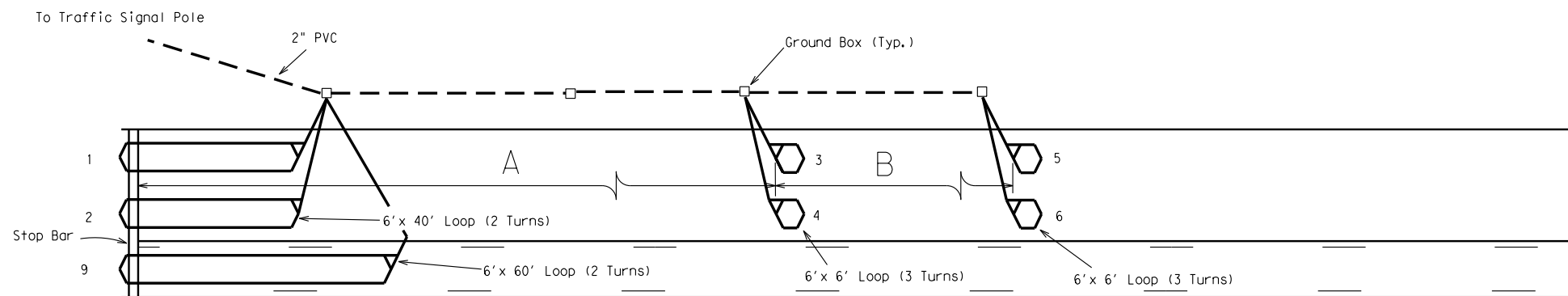
© TxDOT December 1998		DNV - CR	CKI - GRB	DNV - FDN	CKI - CAL
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2-99	PHR	6			321
1-03			COUNTY	CONTROL	SECTION
			HIDALGO	1064	01
			JOB	032	FM 676

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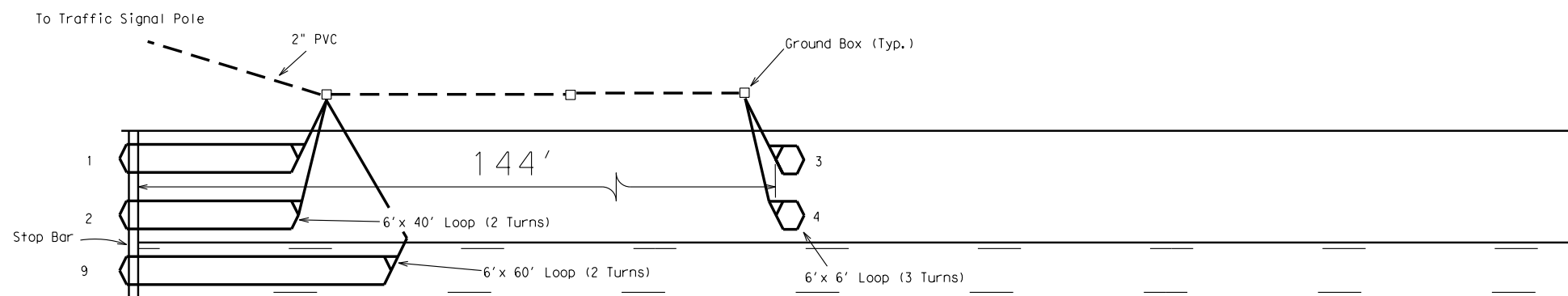
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 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48  
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63



55 MPH ( A=225', B=95' ) 60 MPH ( A=275', B=100' )  
 65 MPH ( A=320', B=110' ) 70 MPH ( A=350', B=125' )



35 MPH ( A=90', B=100' ) 40 MPH ( A=110', B=130' )  
 45 MPH ( A=175', B=115' ) 50 MPH ( A=220', B=130' )



30 MPH

GENERAL NOTES:

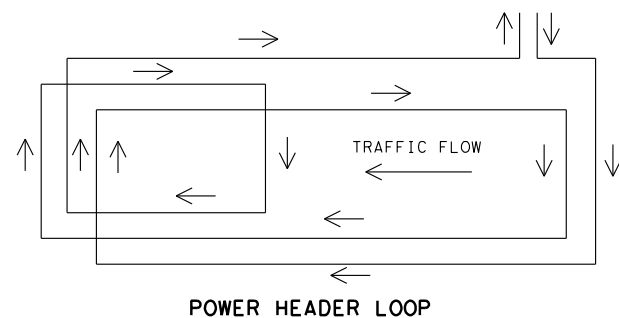
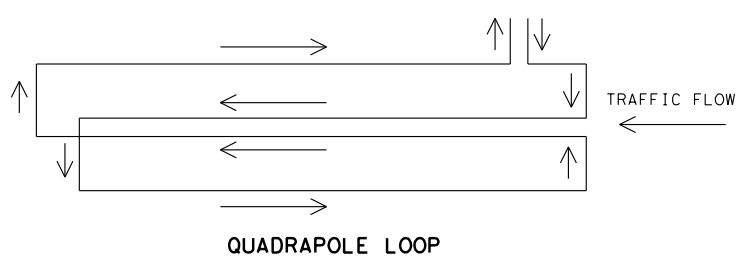
Loops 1 and 2 shall be connected to the controller cabinet by means of the same loop lead-in (2/C #14 AWG).

Loops 3 thru 6 shall be connected to the controller cabinet by means of the same loop lead-in (2/C #14 AWG).

Loops 7 and 8 shall be connected to the controller cabinet by means of the same loop lead-in (2/C #14 AWG).

Loop 9 shall be connected to the controller cabinet by means of a loop lead-in (2/C #14 AWG). Loop 9 shall be placed only when a left turn lane exists.

LOOP WINDING DETAILS



LOOP DETECTOR  
 PLACEMENT DETAILS

LD(2)-03

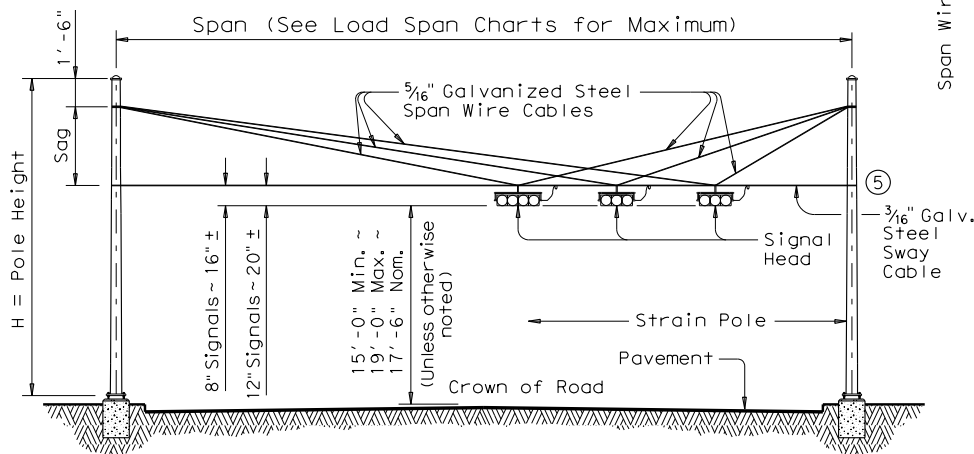
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	HIDALGO	1064	01	032	FM 676

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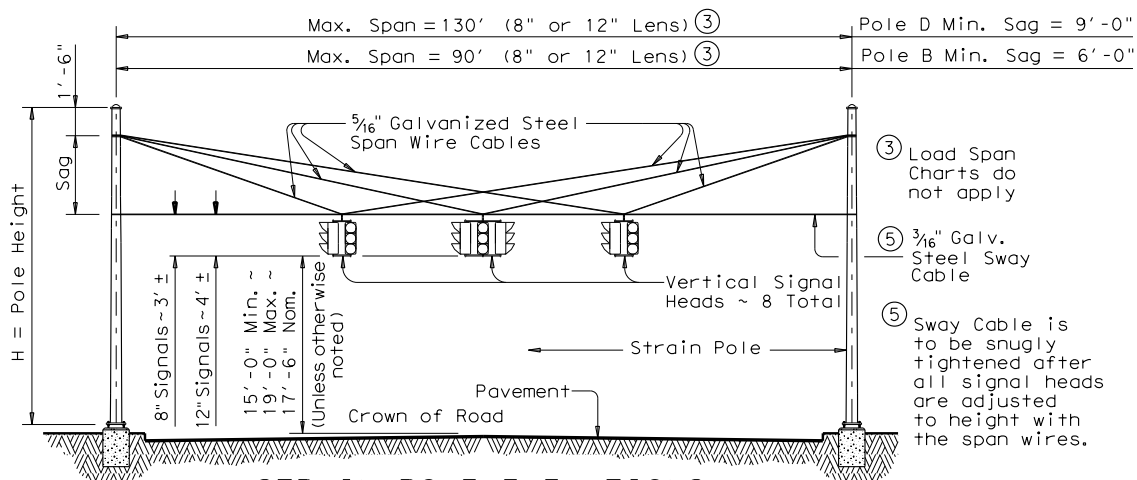
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STRAIN POLE DESCRIPTION	Pole Type	Foundation Type	Maximum Permissible Span Wire Load (lbs.)
26' Pole	A	36-A	4900
30' Pole	B	36-A	4300
30' Pole with Lum.	B	36-A	4000
30' Pole with 20' Mast Arm	C	36-B	4400
30' Pole with 24' Mast Arm	C	36-B	4000
30' Pole with 28' Mast Arm	C	36-B	3600
30' Pole with 32' Mast Arm	C	36-B	3300
30' Pole with 36' Mast Arm	C	36-B	2900
30' Pole with 20' Mast Arm & Lum.	C	36-B	4100
30' Pole with 24' Mast Arm & Lum.	C	36-B	3800
30' Pole with 28' Mast Arm & Lum.	C	36-B	3400
30' Pole with 32' Mast Arm & Lum.	C	36-B	3000
30' Pole with 36' Mast Arm & Lum.	C	36-B	2500
34' Pole	D	36-B	5200
34' Pole with Lum.	D	36-B	4900

② Numbers on Load Span Charts indicate the number of signal heads on the span. The total span wire design load is based on one 5-section head and one or more additional 3-section head(s). Design wind pressures on cables are assumed as 1.6 lb/ft. Weight of span wire cables (one per signal head) is assumed as 0.65 lb/ft which includes an allowance for conductor cables and miscellaneous hardware. The effect of the sway cable on load distribution is ignored as it is assumed to break at design wind conditions. When a pole supports 2 spans, the span wire design loads for both spans should be added vectorially to determine the design load for that pole.

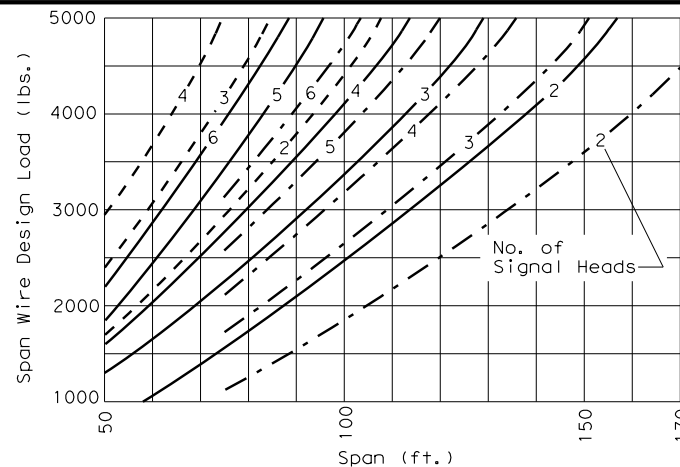


**STRAIN POLE ELEVATIONS  
 HORIZONTAL SIGNALS**

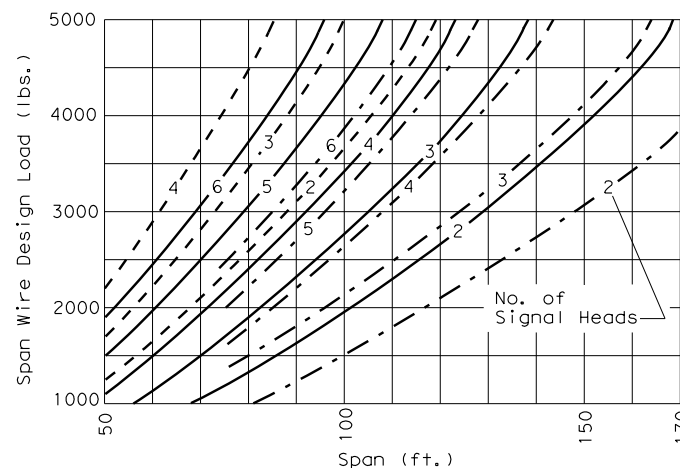


**STRAIN POLE ELEVATIONS  
 VERTICAL SIGNALS**

(Mast arms are not used with vertical signals)



**② SIGNALS WITH 12-INCH LENS**



**② SIGNALS WITH 8-INCH LENS**

Signal Head Type	Wt. Per Head	Wind Area
5-Section, 12" Lens	125 lbs	9.6 sq. ft.
5-Section, 8" Lens	70 lbs	4.8 sq. ft.
3-Section, 12" Lens	75 lbs	5.64 sq. ft.
3-Section, 8" Lens	45 lbs	3.0 sq. ft.

◆ Effective projected design wind area (actual area times drag coefficient)

- Sag = 4'-6" (26' or 30' Pole)
- Sag = 8'-0" (30' or 34' Pole)
- - - Sag = 11'-6" (34' Pole)

Pole Type	ROUND POLES				POLYGONAL POLES			
	D <sub>B</sub> in.	D <sub>T</sub> in.	(4)thk in.	H ft.	D <sub>B</sub> in.	D <sub>T</sub> in.	(4)thk in.	H ft.
A	12.5	8.9	.239	26	13.0	9.0	.239	26
B	13.5	9.3	.239	30	14.0	9.0	.239	30
C	15.5	11.3	.239	30	16.0	11.0	.239	30
D	15.5	10.7	.239	34	16.0	11.0	.239	34

D<sub>B</sub> = Pole Base O.D. D<sub>T</sub> = Pole Top O.D. H = Pole Height

④ Thickness shown are minimum, thicker materials may be used.

**SHIPPING PARTS LIST**

Poles (Without Traffic Signal Arm)						
Pole Type	Strain poles with Luminaire			Strain poles without Luminaire		
	Description	Designation	Quantity	Description	Designation	Quantity
A				26' Strain Pole	SP 26 A-100	
B	30' Strain Pole	SPL 30 B-100	10	30' Strain Pole	SP 30 B-100	10
D	34' Strain Pole	SPL 34 D-100	4	34' Strain Pole	SP 34 D-100	

Poles (With Traffic Signal Arm)						
Pole Type	Strain poles with Luminaire			Strain poles without Luminaire		
	Description	Designation	Quantity	Description	Designation	Quantity
C	30' SPw/TS Arm	SPL 30 C-100		30' SPw/TS Arm	SP 30 C-100	

Traffic Signal Arms (For Type C poles)						
Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-100					
24	24I-100		24 II-100			
28	28I-100		28 II-100			
32			32 II-100		32 III-100	
36			36 II-100		36 III-100	

**Anchor Bolt Assemblies (1 per pole)**

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 3/4"	3'-10"	20
2"	4'-3"	4

**Luminaire Arms**

Nominal Arm Length	Quantity
8' Arm	14

Each Anchor Bolt Assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

① See Sheet "DMA-100"

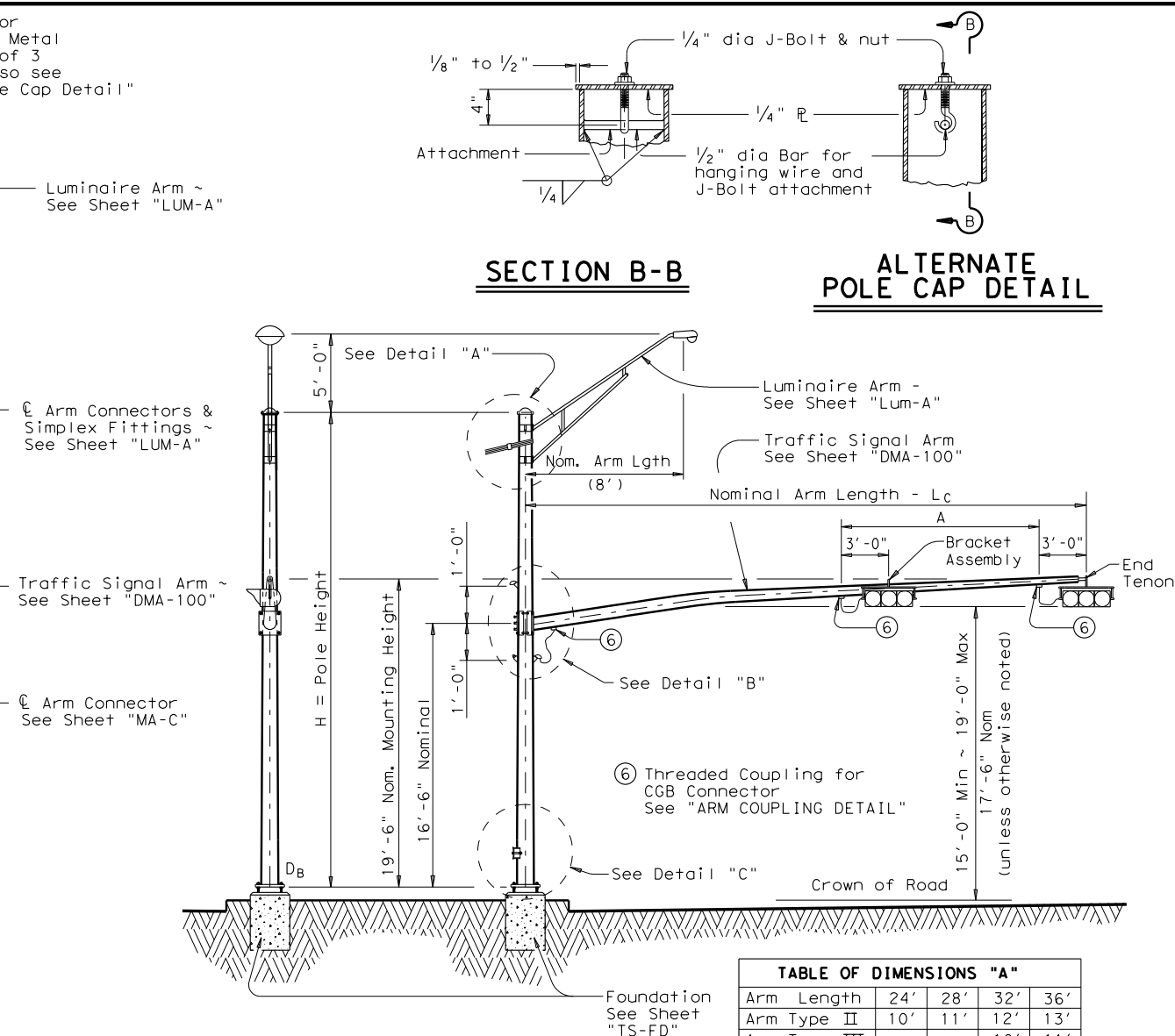
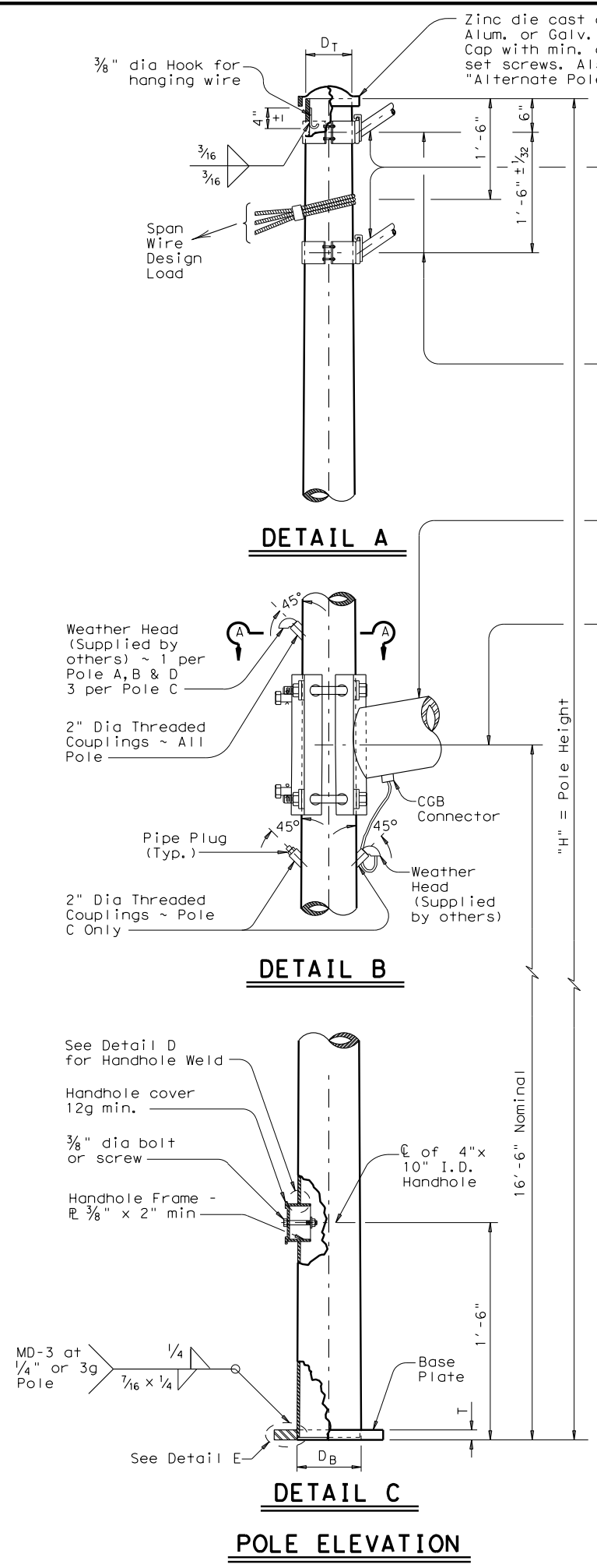
**Texas Department of Transportation**  
 Traffic Operations Division

**TRAFFIC SIGNAL  
 SUPPORT STRUCTURES  
 STRAIN POLE ASSEMBLIES**  
 (100 MPH WIND ZONE)  
**SP-100(1)-12**

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REVISIONS					
NO.	DATE	BY	REASON	APP.	DATE
6-96	1-12				
1604	01		032		FM 676
DIST		COUNTY			SHEET NO.
PHR					323

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**TABLE OF DIMENSIONS "A"**

Arm Length	24'	28'	32'	36'
Arm Type II	10'	11'	12'	13'
Arm Type III			10'	11'

**MATERIALS**

Round Shafts or Polygonal Shafts <sup>9</sup>	ASTM A595 Gr.A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 <sup>10</sup>
Plates <sup>9</sup>	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325 except where noted
Pin Bolts	ASTM A325
Pipe <sup>9</sup>	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Steel Cable	ASTM A475, 7 Wire Utilities Grade
Misc. Hardware	Galvanized steel or stainless steel or as noted

<sup>9</sup> ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.

<sup>10</sup> ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

**GENERAL NOTES**

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 100 mph plus a 1.3 gust factor. The maximum permissible span wire design loads tabulated are calculated at a stress load of 1.4 times the basic allowable stress. A simultaneous wind on the pole, mast arm, and luminaire is also included.

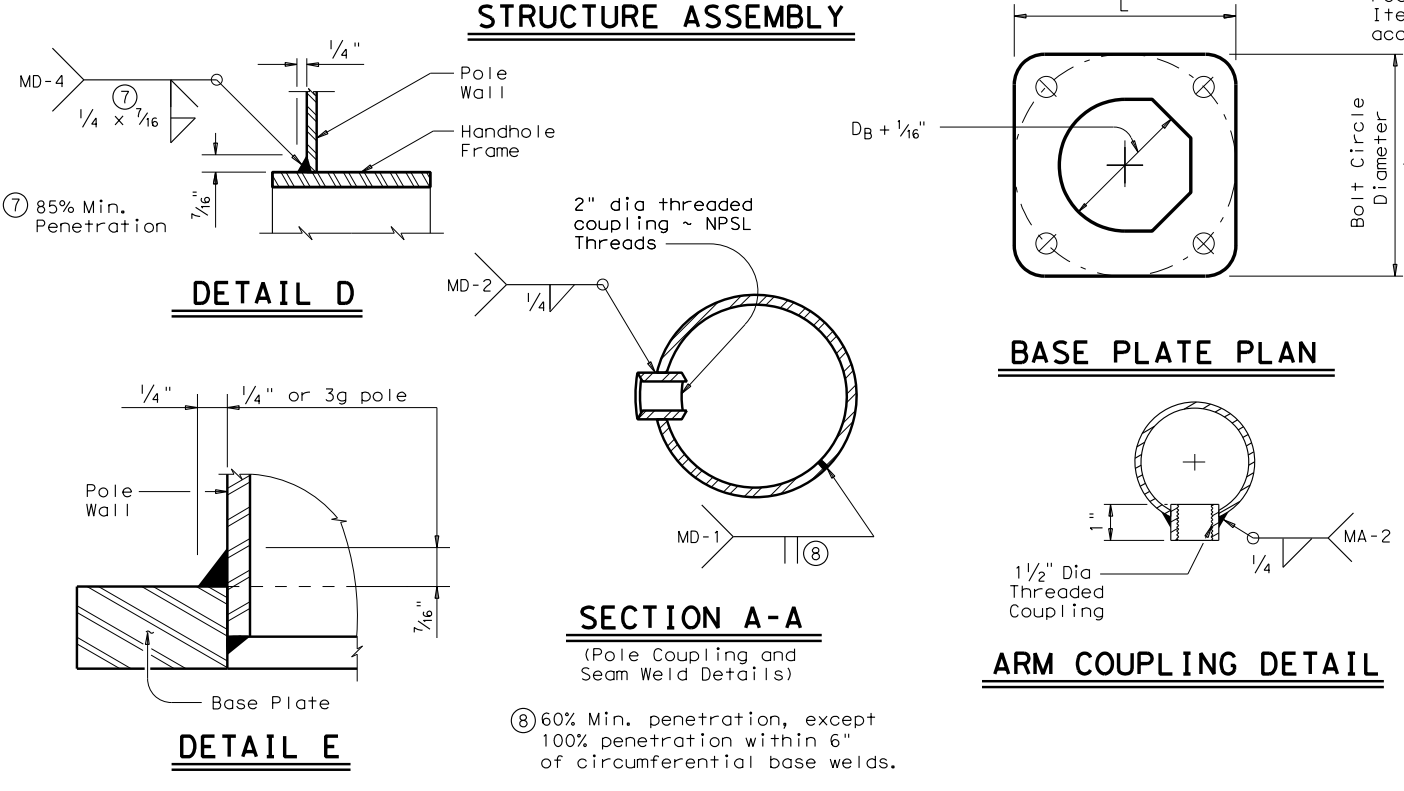
See standard sheet "DMA-100" for details of clamp-on traffic signal arms, sheet "MA-C" for traffic signal arm connection details, sheet "LUM-A" for luminaire arm and connection details, and sheet "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing", after fabrication.

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

Foundation Type	Anchor Bolt Diameter	Bolt Hole Diameter	Bolt Circle Diameter	Base R Dim. L x T
36-A	1 3/4"	2"	19"	19" x 1 3/4"
36-B	2"	2 1/4"	21"	21" x 2"



<sup>8</sup> 60% Min. penetration, except 100% penetration within 6" of circumferential base welds.

**Texas Department of Transportation**  
 Traffic Operations Division

**TRAFFIC SIGNAL SUPPORT STRUCTURES STRAIN POLE ASSEMBLIES**  
 (100 MPH WIND ZONE)

**SP-100(2)-12**

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 REVISIONS

DN: MS	CK: JSY	DW: BR	CK: JSY
CON: 1604	SECT: 01	JOB: 032	HIGHWAY: FM 676
DIST: PHR	COUNTY:	SHEET NO.:	324

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**FOUNDATION DESIGN TABLE**

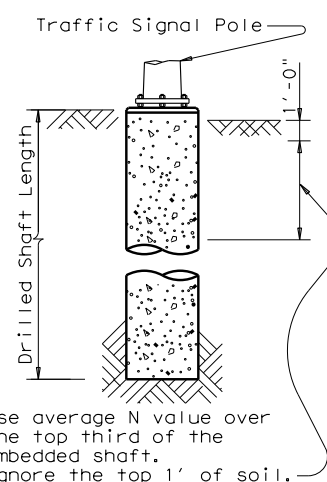
FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft (4), (5), (6)			ANCHOR BOLT DESIGN (1)			FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION	
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft		SHEAR Kips
				10	15	40							
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

**NOTES:**

- Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- Foundation Design Loads are the allowable moments and shears at the base of the structure.
- Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

**FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)**

80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		24' X 24'			
MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	28' X 28'				
	32' X 28'				
	36' X 36'				
	40' X 36'				
		44' X 28'	44' X 36'		
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		24' X 24'			
MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	28' X 28'				
	32' X 24'				
	36' X 36'				
	40' X 24'				
		40' X 24'	40' X 36'		
		44' X 36'			

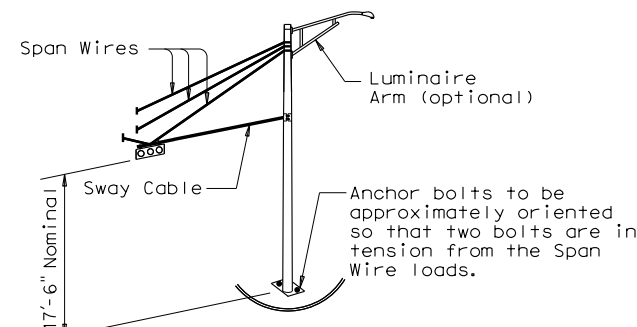


**ANCHOR BOLT & TEMPLATE SIZES**

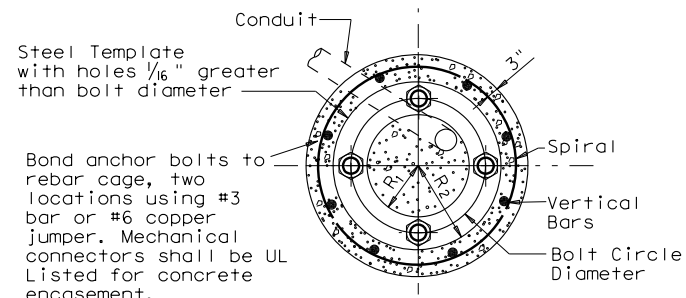
BOLT DIA IN.	BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	4"	17"	10"	7"
1 3/4"	3'-10"	7"	4 1/2"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	5"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	5 1/2"	23"	13 3/4"	9 1/4"

⑦ Min dimensions given, longer bolts are acceptable.

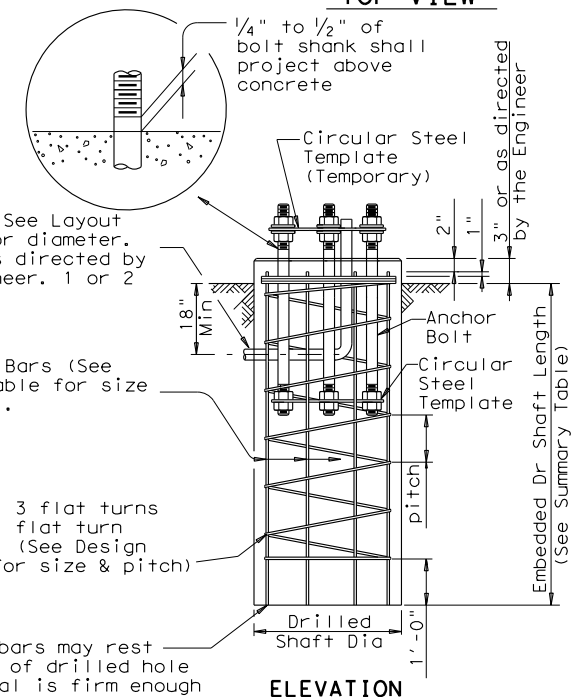
**EXAMPLE:**  
 1. For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'  
 2. For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



**TYPICAL STRAIN POLE ASSEMBLY**



**TOP VIEW**



**ELEVATION**

**FOUNDATION DETAILS**

**FOUNDATION SUMMARY TABLE (3)**

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (6) (FEET)				
				24-A	30-A	36-A	36-B	42-A
<b>LA HOMA</b>								
P1	10	36-A	1			13.2'		
P2	10	36-A	1			13.2'		
P3	10	36-A	1			13.2'		
P4	10	36-A	1			13.2'		
PED 1	10	24-A	1	5.7'				
PED 2	10	24-A	1	5.7'				
PED 3	10	24-A	1	5.7'				
PED 4	10	24-A	1	5.7'				
<b>MOOREFIELD</b>								
P1	10	36-A	1			13.2'		
P2	10	36-A	1			13.2'		
P3	10	36-A	1			13.2'		
P4	10	36-A	1			13.2'		
PED 1	10	24-A	1	5.7'				
PED 2	10	24-A	1	5.7'				
PED 3	10	24-A	1	5.7'				
PED 4	10	24-A	1	5.7'				
<b>INSPIRATION</b>								
P1	10	36-A	1			13.2'		
P2	10	36-A	1			13.2'		
P3	10	36-A	1			13.2'		
P4	10	36-A	1			13.2'		
PED 1	10	24-A	1	5.7'				
PED 2	10	24-A	1	5.7'				
PED 3	10	24-A	1	5.7'				
PED 4	10	24-A	1	5.7'				
<b>TOTAL DRILLED SHAFT LENGTHS</b>				68.4'		158.6'		

**GENERAL NOTES:**

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

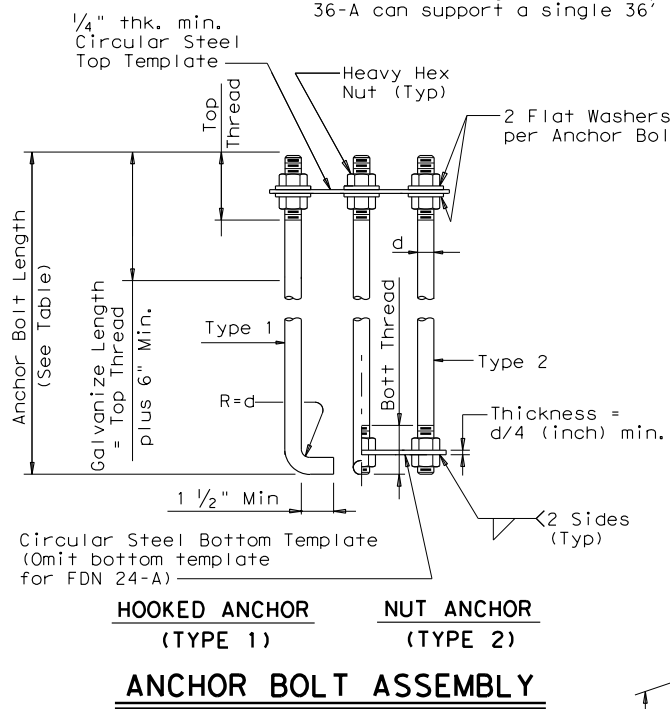
Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

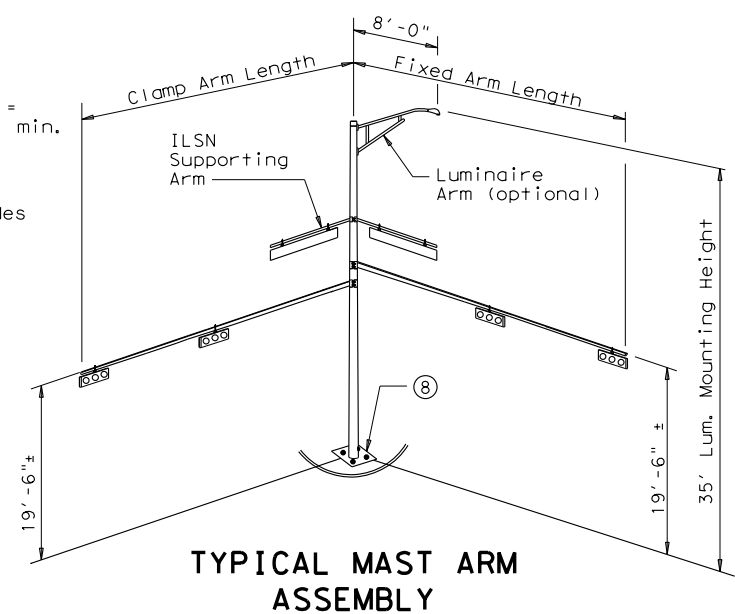
Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".



**HOOKED ANCHOR (TYPE 1) NUT ANCHOR (TYPE 2) ANCHOR BOLT ASSEMBLY**



**TYPICAL MAST ARM ASSEMBLY**

⑧ Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.

**Texas Department of Transportation**  
 Traffic Operations Division

**TRAFFIC SIGNAL POLE FOUNDATION**

**TS-FD-12**

SHEET 1 OF 2

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DN: MS	CK: JSY	DW: MAO/MMF	CK: JSY/TEB
CON: 1064	SECT: 01	JOB: 032	HIGHWAY: FM 676
DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 325	

5-96 11-99 1-12



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### FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft (4), (5), (6)			ANCHOR BOLT DESIGN (1)			FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION	
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft		SHEAR Kips
				10	15	40							
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

### NOTES:

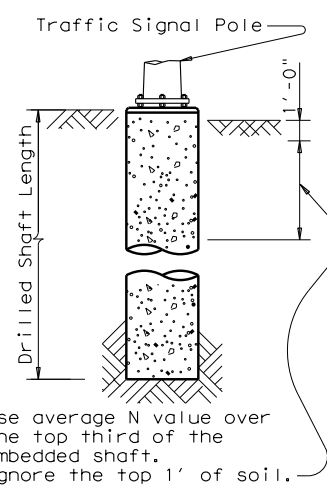
- Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- Foundation Design Loads are the allowable moments and shears at the base of the structure.
- Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

### FOUNDATION SUMMARY TABLE (3)

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (6) (FEET)							
				24-A	30-A	36-A	36-B	42-A			
LOS EBANOS											
P1	10	36-A	1			13.2'					
P2	10	36-A	1			13.2'					
P3	10	36-A	1			13.2'					
P4	10	36-A	1			13.2'					
PED 1	10	24-A	1	5.7'							
PED 2	10	24-A	1	5.7'							
PED 3	10	24-A	1	5.7'							
PED 4	10	24-A	1	5.7'							
TROSPER											
P1	10	36-A	1			13.2'					
P2	10	36-A	1			13.2'					
P3	10	36-A	1			13.2'					
P4	10	36-A	1			13.2'					
PED 1	10	24-A	1	5.7'							
PED 2	10	24-A	1	5.7'							
PED 3	10	24-A	1	5.7'							
PED 4	10	24-A	1	5.7'							
ALTON											
P1	10	36-B	1				15.2'				
P2	10	36-B	1				15.2'				
P3	10	36-B	1				15.2'				
P4	10	36-B	1				15.2'				
PED 1	10	24-A	1	5.7'							
PED 2	10	24-A	1	5.7'							
PED 3	10	24-A	1	5.7'							
PED 4	10	24-A	1	5.7'							
TOTAL DRILLED SHAFT LENGTHS				68.4'		105.6'	30.4'				

### FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		24' X 24'			
MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	28' X 28'				
	32' X 28'				
		32' X 32'			
		36' X 36'			
		40' X 36'			
		44' X 28'	44' X 36'		
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
		28' X 28'			
		32' X 24'	32' X 32'		
			36' X 36'		
			40' X 24'	40' X 36'	
				44' X 36'	

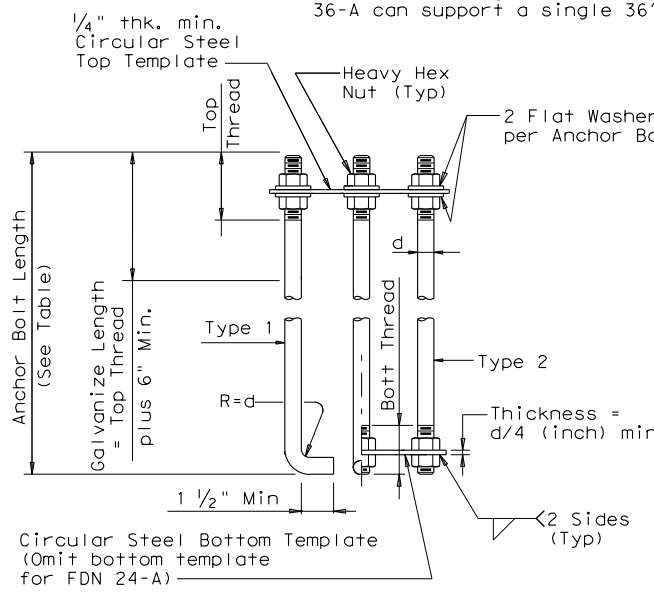


### ANCHOR BOLT & TEMPLATE SIZES

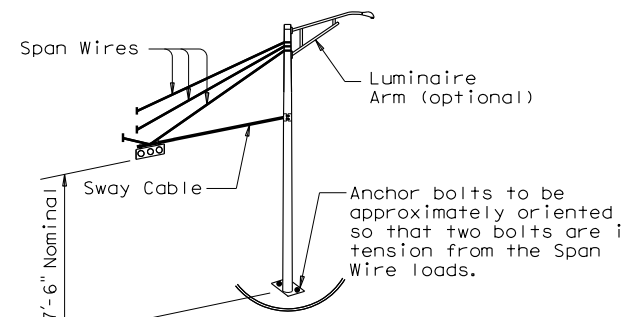
BOLT DIA IN.	(7) BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	4"	17"	10"	7"
1 3/4"	3'-10"	7"	4 1/2"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	5"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	5 1/2"	23"	13 3/4"	9 1/4"

(7) Min dimensions given, longer bolts are acceptable.

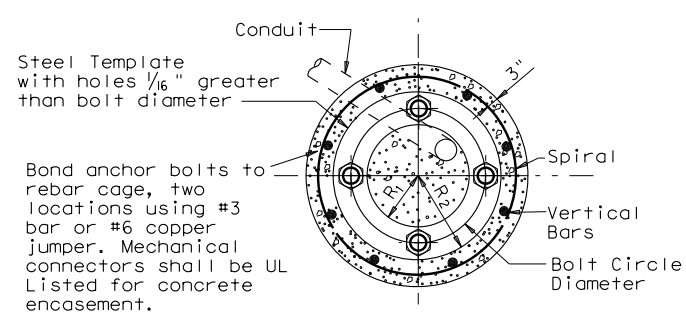
- EXAMPLE:
- For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
  - For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



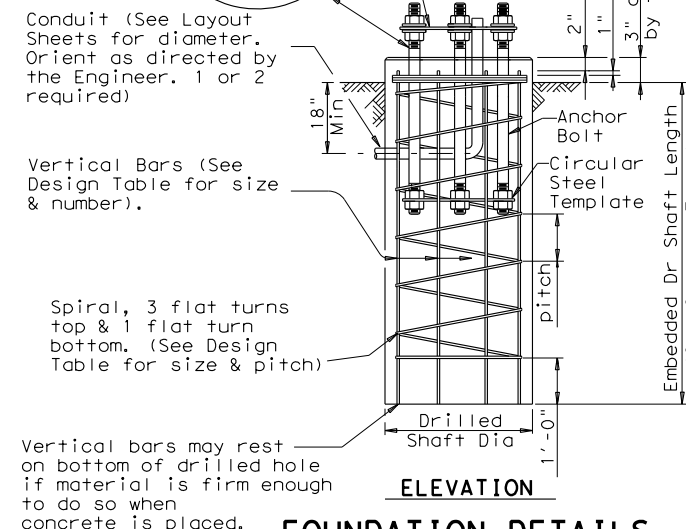
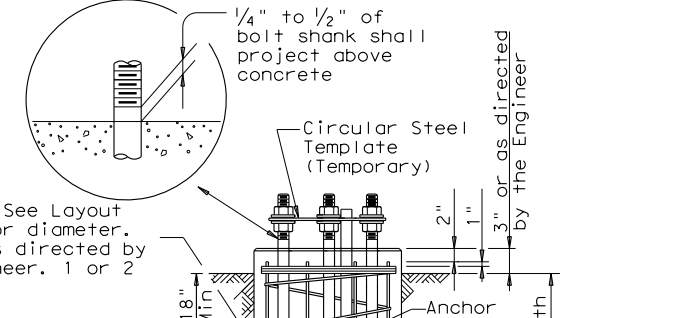
**HOOKED ANCHOR (TYPE 1) NUT ANCHOR (TYPE 2)**  
**ANCHOR BOLT ASSEMBLY**



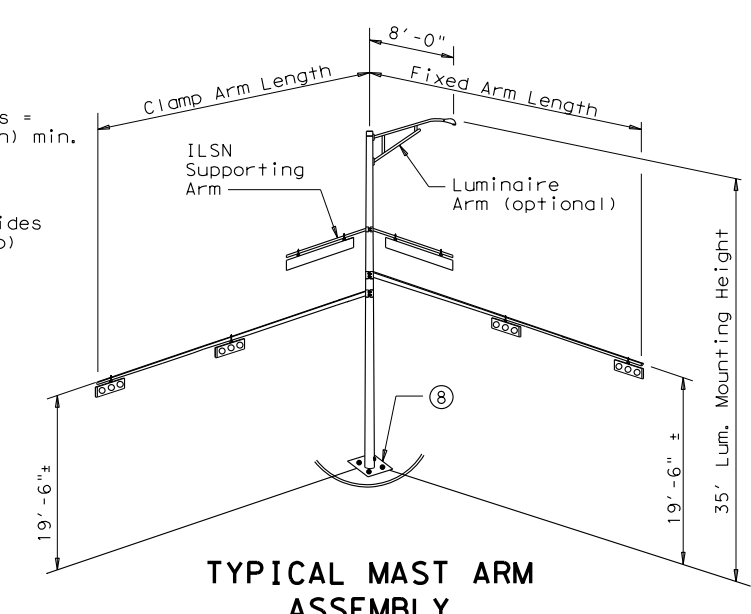
**TYPICAL STRAIN POLE ASSEMBLY**



### TOP VIEW



### FOUNDATION DETAILS



**TYPICAL MAST ARM ASSEMBLY**

(8) Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.

### GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".



## TRAFFIC SIGNAL POLE FOUNDATION

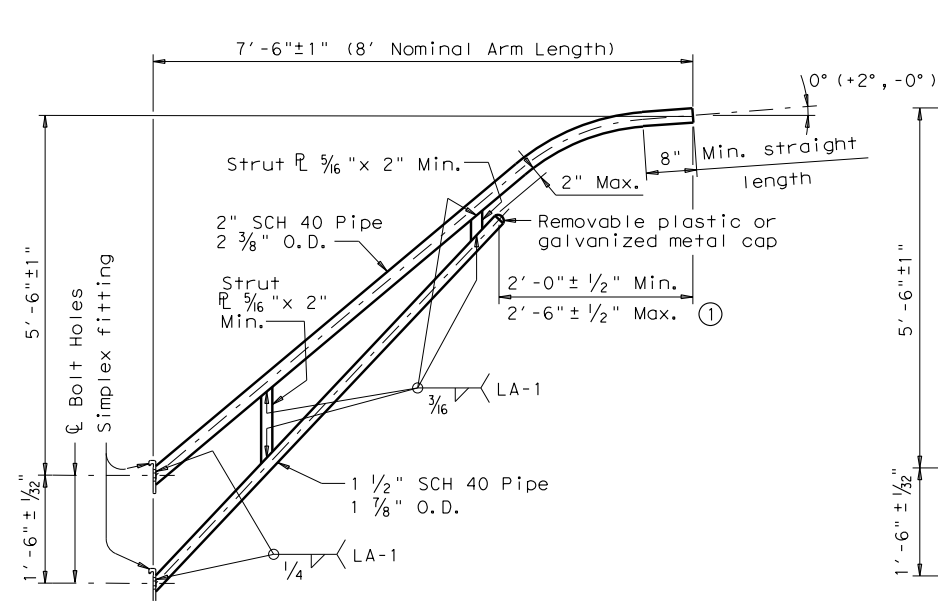
TS-FD-12

SHEET 2 OF 2

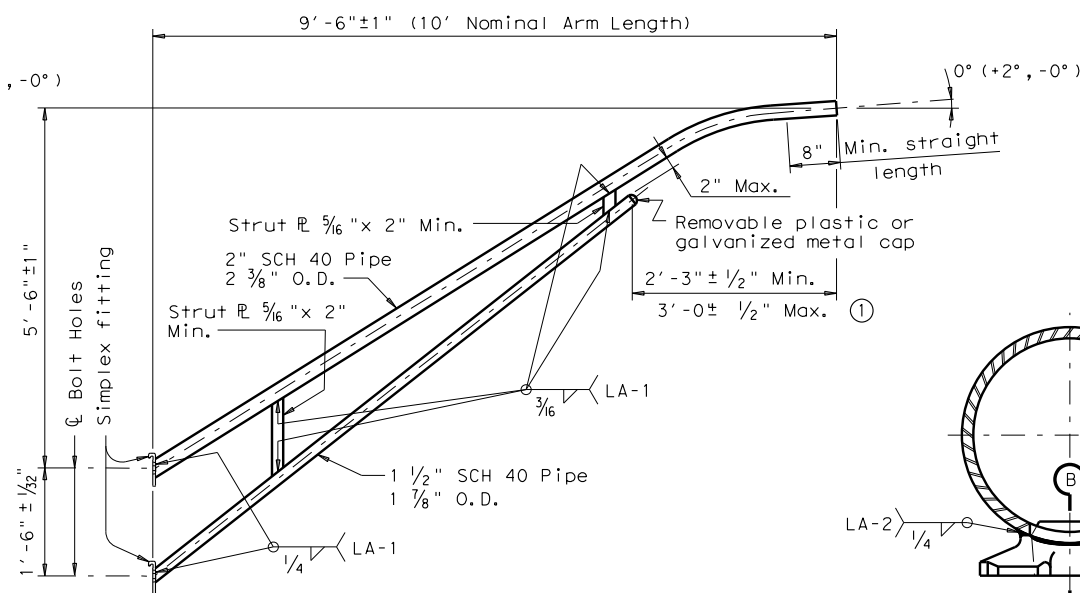
© TxDOT August 1995		DN: MS	CK: JSY	DW: MAO/MMF	CK: JSY/TEB
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-96		1064	01	032	FM 676
11-99		DIST	COUNTY		SHEET NO.
1-12		PHR	HIDALGO		326

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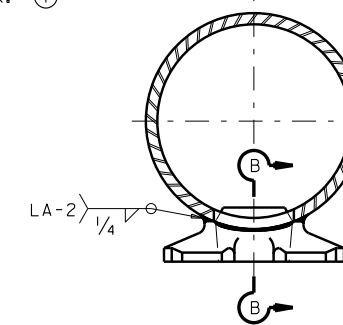
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8-FOOT LUMINAIRE ARM



10-FOOT LUMINAIRE ARM



DIRECT ATTACHMENT DETAIL

MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr. 65-35 or A148 Gr. 80-50, A576 Gr. 1021 (3), or A36 (Arm only)
Arm Pipes	ASTM A53 Gr. B, A501, A1008 HSLAS-F Gr. 50 (4), or A1011 HSLAS-F Gr. 50 (4)
Arm Strut Plates (2)	ASTM A36, A572 Gr. 50 (4), or A588
Misc.	ASTM designations as noted

- Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
- Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
- A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
- ASTM A572, A1008 HSLAS-F, and A1011 HSLAS-F may have higher yield strengths but shall not have less elongation than the grade indicated.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Revisions thereto. Design Wind Speed equals 90 mph plus a 1.3 gust factor. Arms are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq. ft.

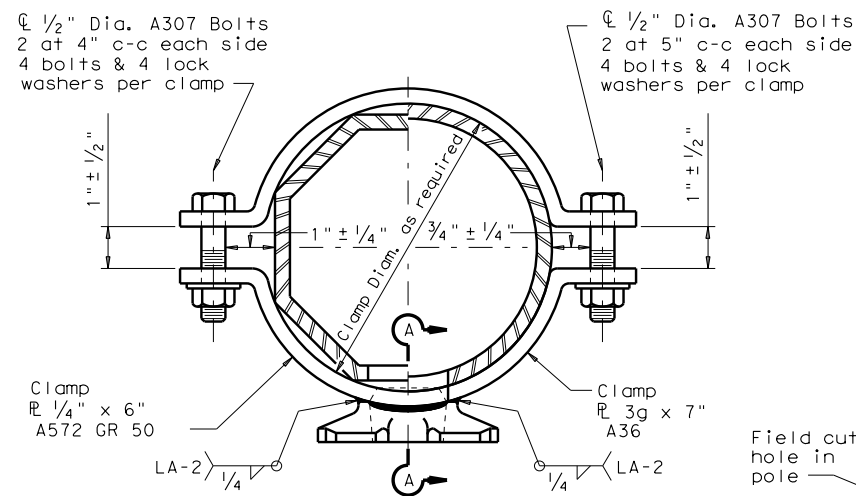
Materials and fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absence of specified Fabricator tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.

Unless otherwise noted, all parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing".

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

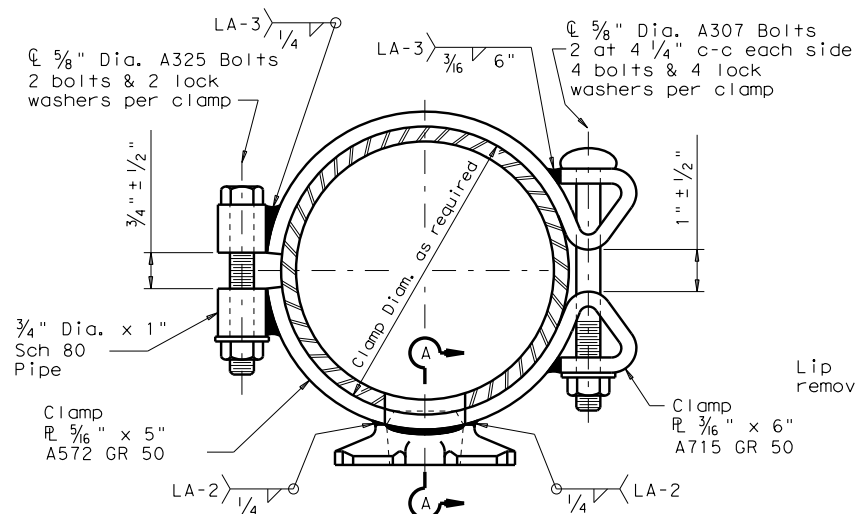
Each pole simplex fitting shall be supplied with 2 ASTM A325 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans. When clamp attachment is specified, the Fabricator shall ship the clamp assembly securely attached to the pole at the location shown on the plans.

If clamp assemblies are ordered without poles, the Fabricator shall ship one upper and one lower clamp assembly together in a single package, including all nuts and washers required for the clamps and simplex fittings.



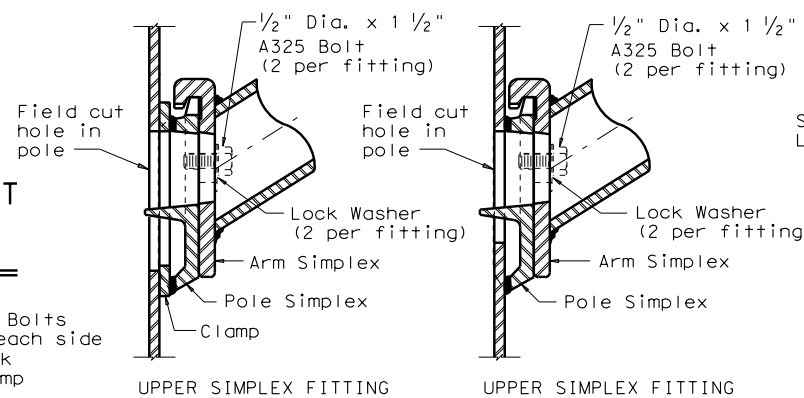
CLAMP ATTACHMENT DETAIL NO. 1 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 2 (HALF SECTION)



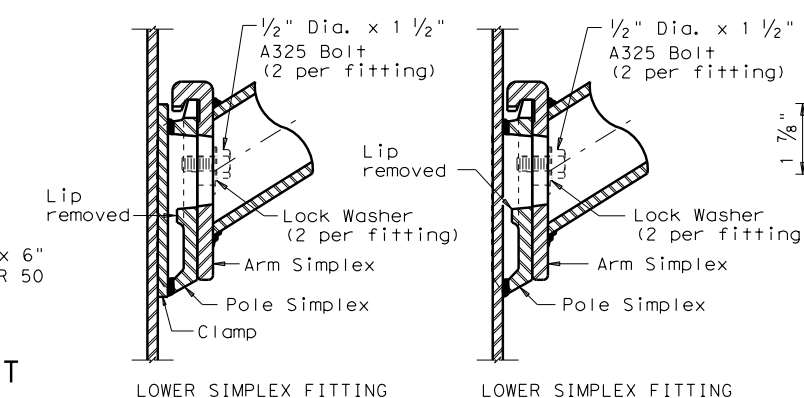
CLAMP ATTACHMENT DETAIL NO. 3 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 4 (HALF SECTION)



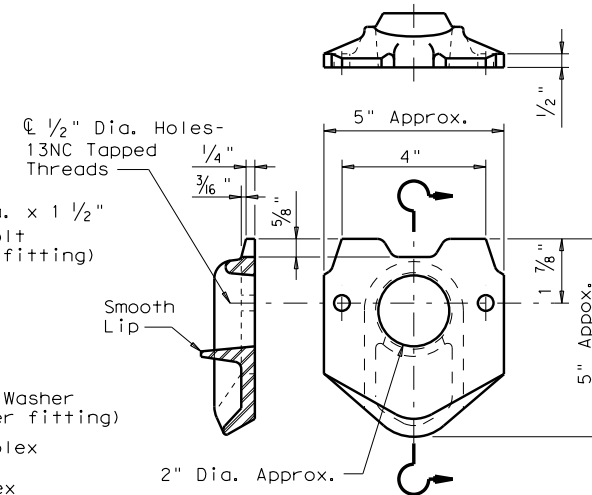
UPPER SIMPLEX FITTING

UPPER SIMPLEX FITTING

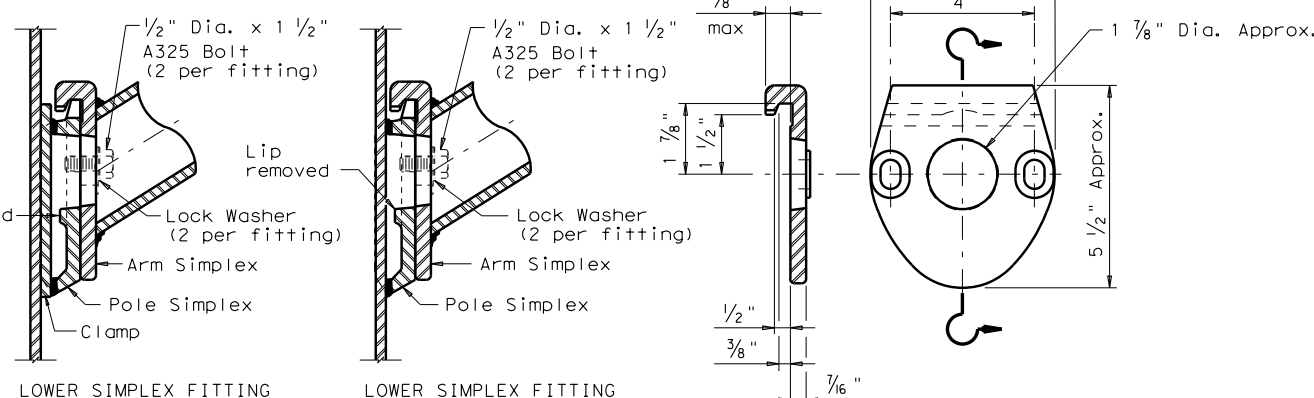


LOWER SIMPLEX FITTING

LOWER SIMPLEX FITTING



POLE SIMPLEX DETAIL



SECTION A-A

SECTION B-B

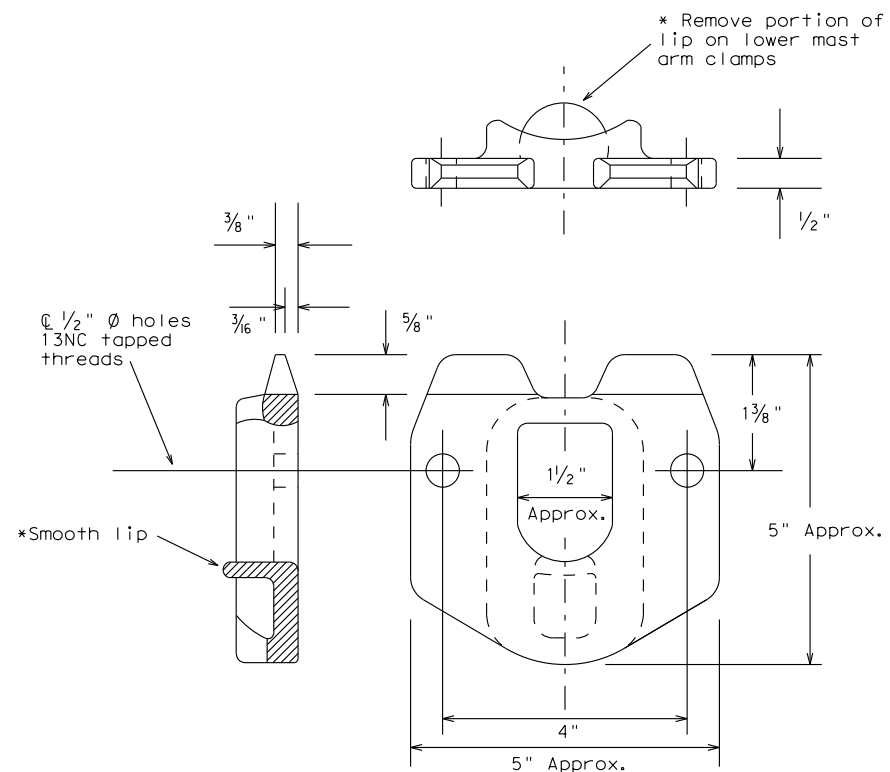
ARM SIMPLEX DETAIL

Texas Department of Transportation  
Traffic Operations Division  
**STANDARD ASSEMBLY DRAWINGS FOR LUMINAIRE SUPPORT STRUCTURES**  
ARM DETAILS  
**LUM-A-12**

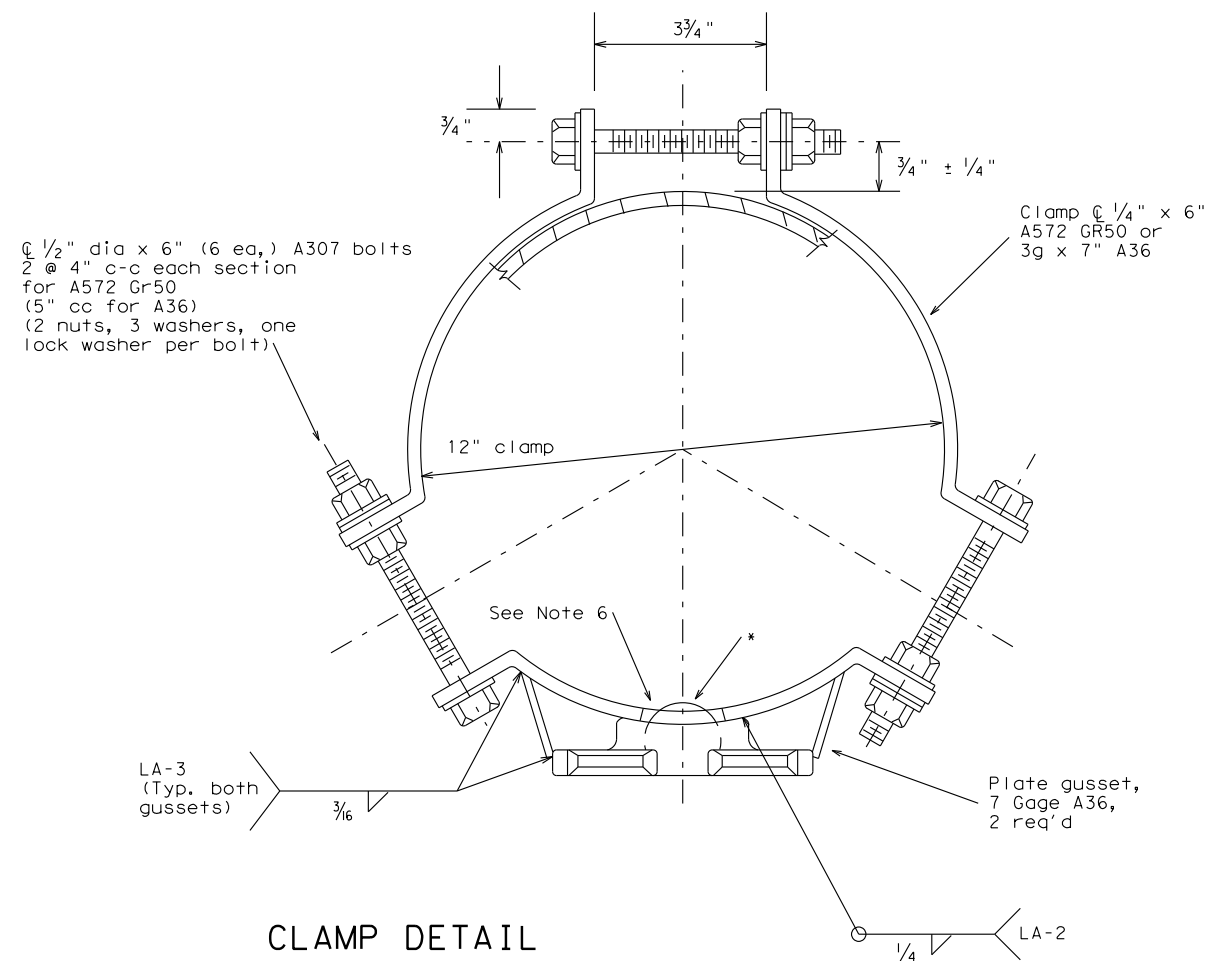
© TxDOT August 1995		DN: LEH	CK: JSY	DW: LTT	CK: TEB
5-96	REVISIONS	CONT	SECT	JOB	HIGHWAY
1-99		1064	01	032	FM 676
1-12		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		327

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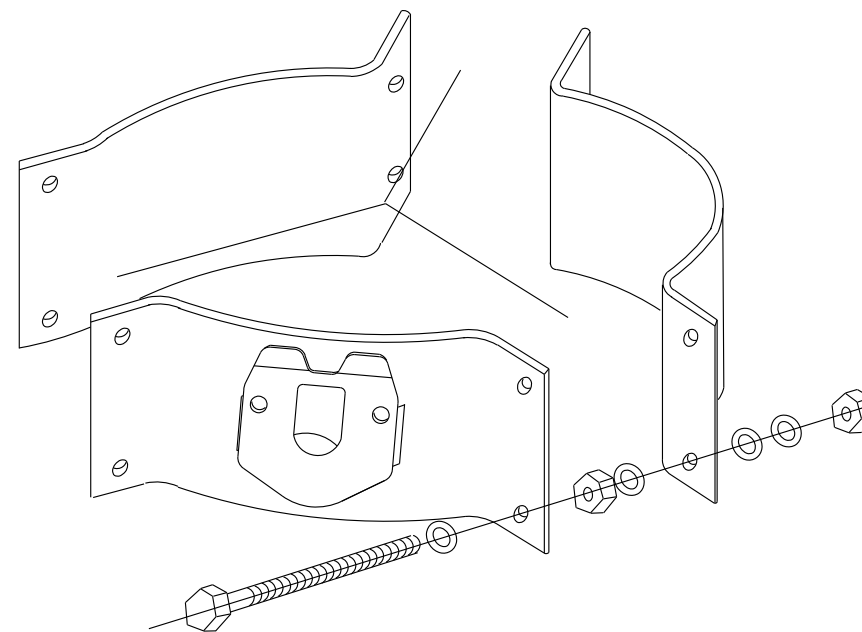
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POLE SIMPLEX DETAILS



CLAMP DETAIL



PROJECTION

For 8.9 - 12 inch diameter Signal Poles  
(Two req'd for each mast arm)

OTHER MATERIALS:

1. Pole simplex shall be ASTM A27 GR65-35 or A148 GR80-50 or A576 GR1021. ASTM A576 must be suitable for forging and also meet minimum tensile of 65ksi, minimum yield of 35ksi, and a minimum elongation of 22 percent in 2 inches.
2. Welded tabs and backplates shall be ASTM A-36 steel or better.
3. Nylon insert locknuts shall conform to ASTM A563.

GENERAL NOTES:

1. Materials and fabrication shall be in accordance with Standard Sheet "MA-C" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
2. All parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing". The throat of the Simplex shall be made free of all rough or sharp edges resulting from the galvanizing process.
3. Each simplex fitting shall be supplied with 2 ASTM A325 bolts, 1/2 in. X 1 1/2 in. and 2 lock washers. The bolts and lock washers shall be secured to the clamp with the other hardware items. The Fabricator shall ship clamp assembly together in a single package, including all bolts, nuts, and washers required for the clamp and simplex fitting.
4. Design conforms to 1994 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" and interim revisions thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor. Clamps are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq.ft., 12 ft. maximum arm length.
5. Each assembly shall consist of one upper piece simplex fitting having a smooth lip and one lower piece simplex fitting with the lip removed.
6. Approximately 2 in. diameter hole in upper mast arm clamp.

Texas Department of Transportation  
Traffic Operations Division

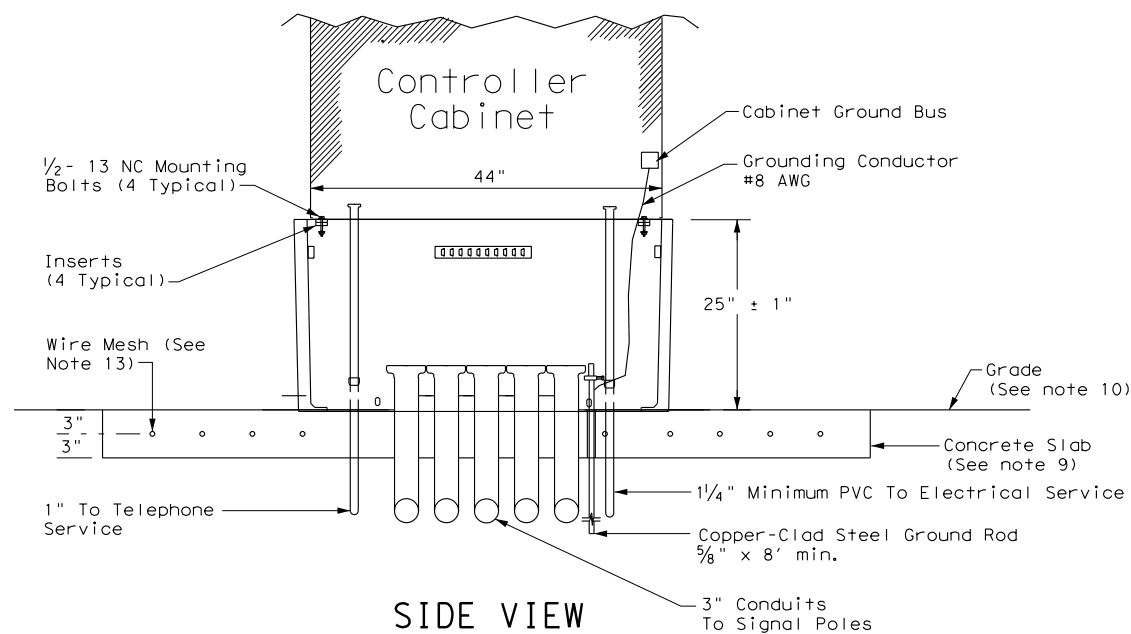
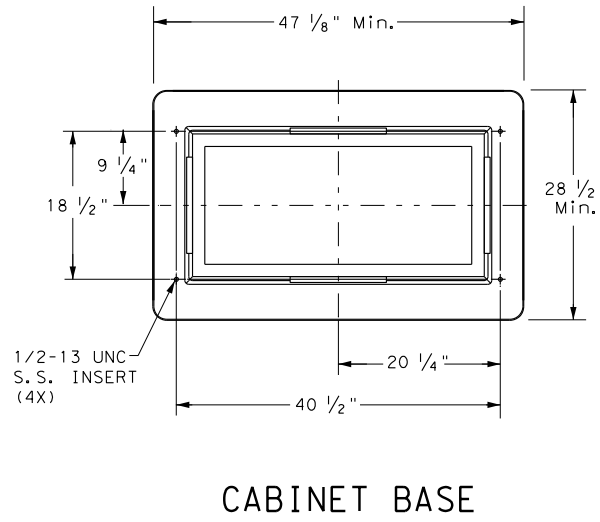
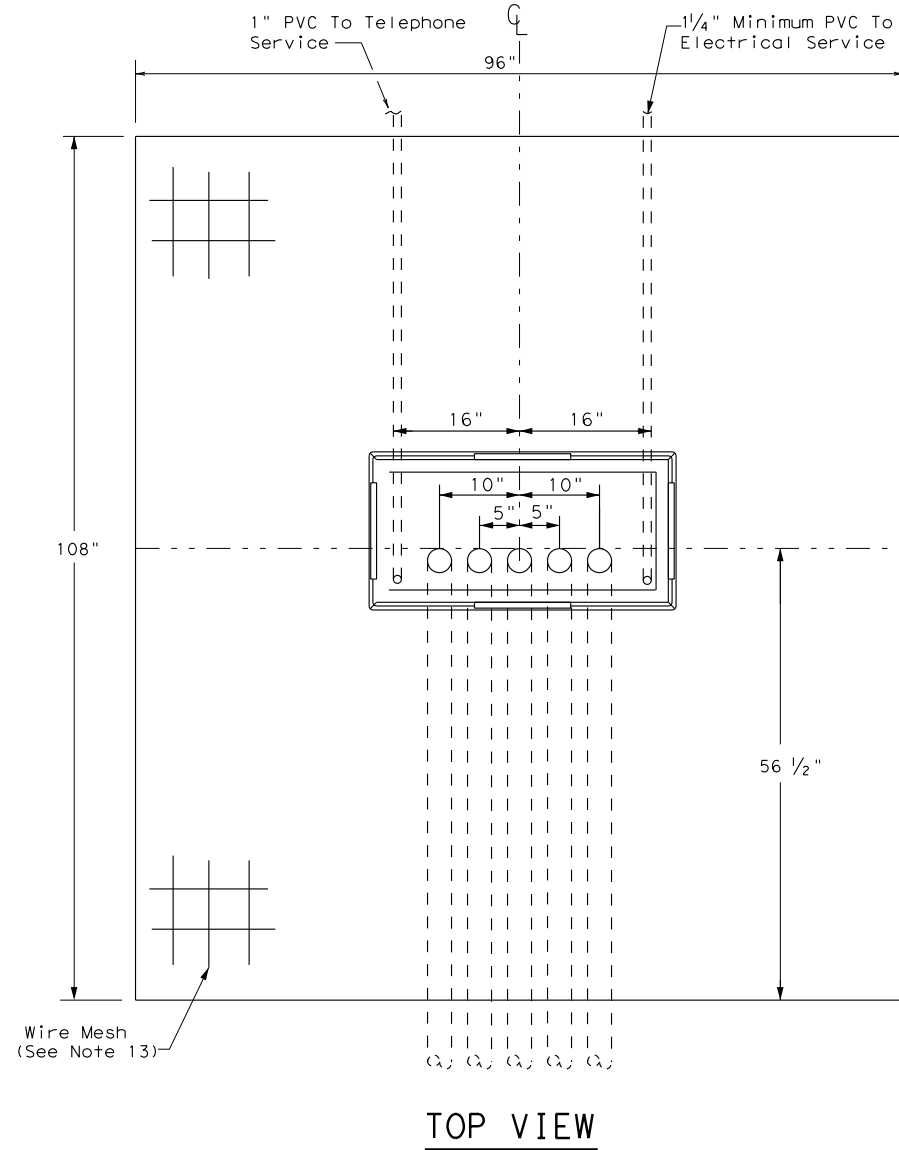
CLAMP ON  
FITTING ASSEMBLY FOR  
LUMINAIRE MAST ARM

CFA-12

© TxDOT		DN: KAB	CK: RES	DW: FDN	CK: CAL
11-99	REVISIONS	CONT	SECT	JOB	HIGHWAY
1-12		1064	01	032	FM 676
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		328

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### TRAFFIC SIGNAL CONTROLLER BASE:

1. Provide a traffic signal controller base (cabinet base) manufactured of polymer concrete material consisting of calcareous and siliceous stone; glass fibers and thermoset polyester resin. The polymer concrete cabinet base must be reinforced on the inside of the cabinet base with fiberglass matting. Provide one of the following bases: Armorcast Part # A6001848X24, Quazite Model # PG3048Z709, or other as approved by TxDOT Traffic Safety Division.
2. The polymer concrete material must have a minimum compressive strength of 10,300 pounds per square inch (psi), minimum flexural strength of 3600 psi, and minimum shear strength of 3600 psi.
3. The polymer concrete cabinet base must conform to the dimensions shown and must accommodate a standard TxDOT basemount cabinet.
4. Supply the cabinet base with four 1#2"-13 UNC stainless steel inserts for attachment of the cabinet to the base. Inserts must withstand a minimum torque of 50 ft-lb and a minimum straight pull out strength of 750 lbs.
5. Provide the cabinet base with 4 cable racks mounted one on each side of the base 2" to 7" from the top edge of the base. Unless approved otherwise, cable racks must be 1-1/2 x 9#16x 3#16inch steel channel with eight T-slots spaced at 1-1/2 inches. The cable racks must easily accommodate the insertion of tie wraps to attach field wiring to the racks to serve as strain relief. Secure cable racks to the base using 1#2"-13 UNC stainless steel screws and inserts.
6. The cabinet base, when secured to the concrete slab with controller cabinet attached, must withstand a minimum wind load of 125 mph or a 850 lb force applied at 49" above the bottom of the base without causing the base or cabinet to come out of their anchored position or cause any permanent deformation. The manufacturer must supply certification by an independent testing laboratory or sealed by a Texas Licensed Professional Engineer. Provide the cabinet base with hardware for attachment to a concrete slab.
7. The traffic signal base must be permanently marked either by impress or by permanent ink with the manufacturer's model number and name or logo.
8. Seal the base to the concrete with a silicone caulk bead and fastened to the slab per manufacturer's instructions.

### CONCRETE SLAB:

9. Traffic signal controller pad must be a portland cement concrete slab poured in place, must conform to the dimensions shown, and must be level.
  10. Grade earthwork such that it is flush with the concrete pad on all four sides, unless otherwise shown on the plans. Subsidiary to ITEM 680, four inch rip rap may be used in lieu of earthwork. Slopes shall gradually contour to match plans.
  11. Bond a #8 AWG copper ground wire and an 8 ft ground rod bonded to the reinforcing mesh by a suitable UL Listed clamp and terminated to the cabinet grounding bus for the purpose of providing a local ground for the electrical grounding conductor. The electrical grounding conductor specified in Item 680-3.A.4 is required and must be terminated to the cabinet ground bus.
  12. Install a PVC sleeve to prevent the ground rod from direct embedment in the slab.
  13. Provide welded wire mesh 6X6-W2.9 X W2.9 for reinforcement. Provide joints and splices in the mesh with a minimum 6-inch overlap. Center the mesh between top and bottom and provide a minimum 3 inch cover on the edges.
  14. Provide Class B concrete minimum for the slab in accordance with Item 421. Construct the slab in accordance with Item 531.
- ### CONDUITS:
15. Stub up and run 3-inch conduits through the slab to the various traffic signal poles and ground boxes as shown on the layouts. Install the number of conduits as shown on layouts plus two additional 3 inch conduits for future use. Terminate the conduits with a bushing between 2 and 4-inches above the slab.
  16. Extend conduits for future use at least 18-inches from the edge of the slab, terminate underground with a coupling, and cap and seal so that the seal can be removed without damaging the coupling. This must also apply to unused telephone conduit.
  17. Stub up two separate conduits through the slab from the electrical and telephone services. Run the conduit for the electrical feed directly to the electrical service enclosure. Run the conduit for the telephone line directly to the telephone service, usually located on the same pole as the electrical service. Telephone must not under any circumstance share a conduit with any other function.
  18. Terminate electric and telephone conduits above the slab with a coupling. After the base is installed, extend the conduits above the top of the base and secure to the base using a steel one-hole strap or similar suitable substitute.

### CONTROLLER CABINET:

19. Anchor the controller cabinet to the base using four stainless steel 1/2-13 NC bolts.
20. The silicone caulk bead specified in Item 680.3.B must be RTV 133.

### PAYMENT:

21. Bid TS-CF as subsidiary to Item 680.



## TRAFFIC SIGNAL CONTROLLER CABINET BASE AND PAD TS-CF-21

FILE: ts-cf-21.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2000	CONT	SECT	JOB	HIGHWAY
12-04	1064	01	032	FM 676
2-21	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		329

# ROADWAY ILLUMINATION ASSEMBLY NOTES

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1. Details apply to roadway lighting installations bid or referenced under Item 610, "Roadway Illumination Assemblies." Provide, furnish, and install all other materials not shown on the plans which may be necessary for complete and proper construction. Where manufacturers provide warranties or guarantees as a customary trade practice, furnish to the State such warranties or guarantees.
2. The locations of poles and fixtures may be shifted by the Engineer to accommodate local conditions. Install or remove poles and luminaires located near overhead electrical lines using established industry and utility safety practices and in accordance with laws governing such work. Consult with the appropriate utility company prior to beginning such work.
3. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association, Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection.
4. Provide Roadway Illumination Light Fixtures as per TxDOT Departmental Material Specification (DMS) 11010, Item 610, and as shown on the Material Producers List (MPL) for Roadway Illumination and Electrical Supplies.
5. Fabricate steel roadway illumination poles in accordance with Roadway Illumination Poles (RIP) standards and Item 610. Poles fabricated according to RIP standards do not require shop drawing submittals.
  - a. Alternate designs to RIP standards or the use of aluminum to fabricate poles will require the submission of shop drawings electronically. For instructions on submitting shop drawings electronically see "Guide to Electronic Shop Drawing Submittal" on the TxDOT web site.
  - b. Limitations on use of the RIP standard: The RIP standard details were developed for installations in locations where the 3-second gust basic maximum wind speed is 110 mph, and where the elevation of the base of the pole is less than (i.e. not more than) 25' above the elevation of the surrounding terrain, in accordance with the "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," 6th Edition (2013) of the AASHTO Design Specifications. For poles to be installed in regions where the maximum basic wind speed exceeds 110 mph or to be mounted more than 25' above the surrounding terrain, provide poles meeting the following requirements:
    - i. Submittals. Following the electronic shop drawing submittal process (see Guide to Electronic Shop Drawing Submittal on the TxDOT web site), submit to the Engineer for approval fabrication drawings and calculations for the poles, sealed by a Texas licensed professional engineer (P.E.).
    - ii. Luminaire Structural Support Requirements. Provide light poles, arms, and anchor bolt assemblies with a 25 year design life to safely resist dead loads, ice loads and the required basic wind speeds at the location of installation in accordance with the 6th edition (2013) of the AASHTO Design Specifications. For transformer base poles, include transformer base and connecting hardware in calculations and shop drawing submittals. Structurally test all transformer bases to resist the theoretical plastic moment capacity of the pole. Submit certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished with the shop drawings. Show breakaway base model number, manufacturer's name, and logo on shop drawings. Include on manufacturer's shop drawings the ASTM designations for all materials to be used.
6. For both transformer and shoe-base type illumination poles, provide and install double-pole breakaway fuse holders as specified by DMS-11040. Breakaway fuse holders are listed on the MPL for Roadway Illumination and Electrical Supplies under Items 610 & 620. Provide 10 amp time delay fuses for breakaway connectors in light poles, or inside the light fixture for underpass luminaires. In each pole, connect luminaires to the breakaway connector with continuous stranded 12 AWG copper conductors as listed on the MPL. Bond all equipment grounding conductors together and to the ground lug in the transformer base or hand hole.
7. Tighten anchor bolts for shoe base, concrete traffic barrier base, and bridge mount roadway illumination poles, in accordance with Item 449.
8. Install T-Base with following procedure:
  - a. Anchor Bolt Tightening.
    - i. Coat the threads of the anchor bolts with electrically conductive lubricant.
    - ii. Place the T-base over the anchor bolts. Foundation must be level and flat. The maximum permissible gap under any one corner of the T-base is 1/8" before nuts are tightened.
    - iii. Coat the bearing surfaces of the nuts and washers with electrically conductive lubricant. Install (1) 1/2" hold down washer, (1) lock washer, and (1) nut on each anchor bolt. Turn the nuts onto the bolts so that each is hand-tight against the washer.
    - iv. Using a torque wrench, tighten each nut to 150 ft-lb. Uniform contact is required between the foundation and the T-base in the corner regions of the T-base, and all corner gaps must be closed after applying torque. If a gap still exists after torquing to 150 ft-lbs, continue torquing each bolt incrementally until gap is closed or maximum allowable torque of 250 ft. pound is reached, whichever comes first. If 250 ft-lbs is not enough to close the gap the foundation must be leveled. Gaps along the straight sides of the T-bases and the foundation are permissible. Ensure that no high point of contact occurs between the straight sides of the T-base and the foundation.
    - v. Check top of T-base for level. If not level then foundation must be leveled.
  - b. Top Bolt Procedure
    - i. Erect pole over T-base with crane. Coat bolts, nuts, washers, and lock washers with electrically conductive lubricant.

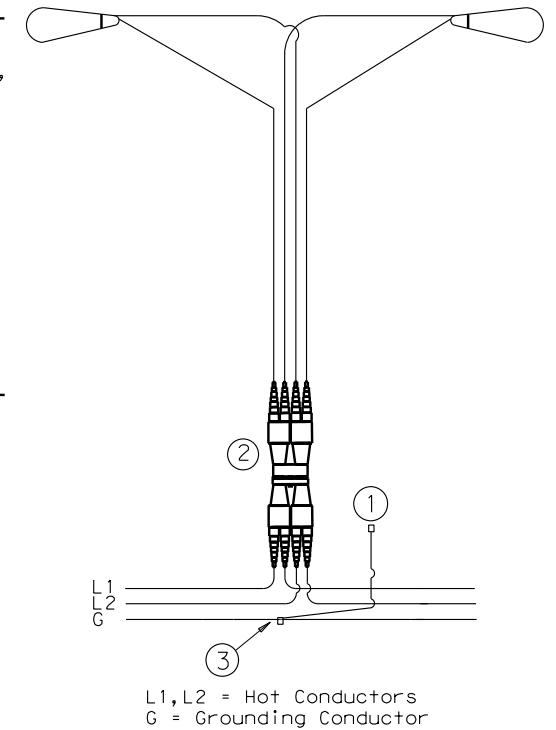
- ii. Install bolts and 1/2" connecting washers from the inside of the T-base, thread up through the pole base. Install flat washers, lock washers and nuts snug tight according to Item 447, "Structural Bolting."
- iii. Tighten each nut to 150 ft-lb. using a torque wrench.
- c. Level and Plumb
  - i. Ensure pole is plumb and mast arm is perpendicular to the roadway according to plans to within 5 degrees.
9. Construct luminaire pole foundations in accordance with Item 416, "Drilled Shaft Foundations," and TxDOT standard sheet RID(2).
10. Provide and install underpass luminaires in accordance with Item 610, DMS-11010, and TxDOT standard sheet RID(3). Typical luminaire size for underpass luminaires is 150W HPS or 150W EQ LED.
11. Mount luminaires on arms level as shown by the luminaire level indicator.
12. Orient luminaires perpendicular to the roadway intended to be lit unless otherwise shown on the plans.

## Wiring Diagram Notes:

- ① Use 1/2 in. -13 UNC threaded, copper or tin-plated copper, pole bonding connector, sized appropriately for conductors, bonded to T-base, or use ground lug in handhole as available.
- ② Use pre-qualified two-pole breakaway connectors for all luminaire pole installations. For luminaires fed by a circuit with a neutral conductor, use double pole breakaway connectors with the neutral side unfused and marked white.
- ③ Split Bolt or other connector.

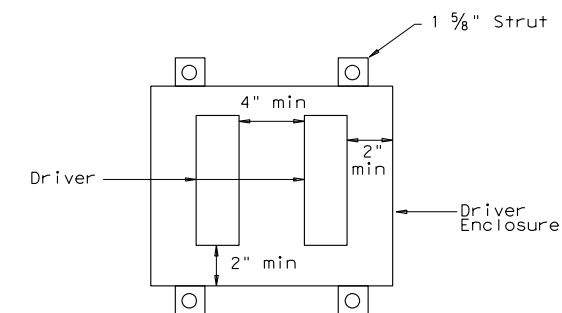
## Decorative LED Lighting Notes:

1. LED Drivers in Remote Outdoor enclosures (for drivers that do not include an enclosure as part of a factory assembly):
  - a. Provide NEMA 3R outdoor enclosure or as approved.
  - b. Install enclosure at least 12" above ground or other horizontal surface. Mount vertically or on ceiling, and avoid direct sun where possible.
  - c. Install drivers with at least 2 inches of space from enclosure walls.
  - d. For multiple drivers in an enclosure, provide at least 4 inches side to side and 1 inch end to end from other drivers or electronic equipment
  - e. For drivers mounted on back wall of enclosure, mount enclosure on 1 5/8" strut or other standoff to dissipate heat, or mount driver to side of the enclosure or to the metal cover.
  - f. Provide remote drivers with a maximum of 100 watts
  - g. Provide drivers with documentation of 100,000 hr lifetime at Tcase of 65C or higher.



## TYPICAL WIRING DIAGRAM

LUMINAIRES SERVED AT 480V ON 240/480 VOLT SERVICE OR LUMINAIRES SERVED AT 240V FOR 120/240 VOLT SERVICE.



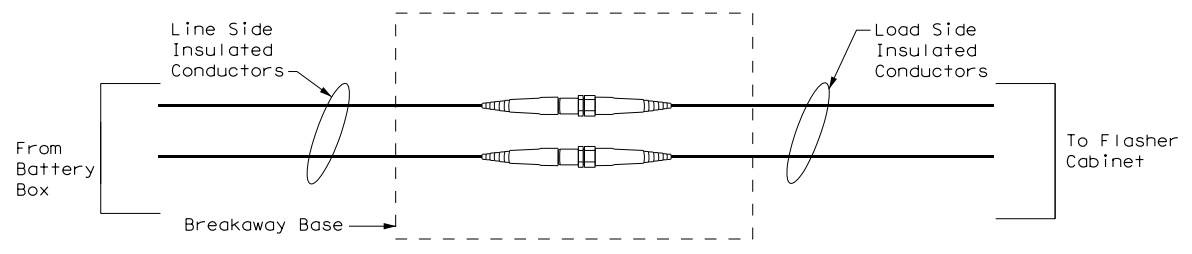
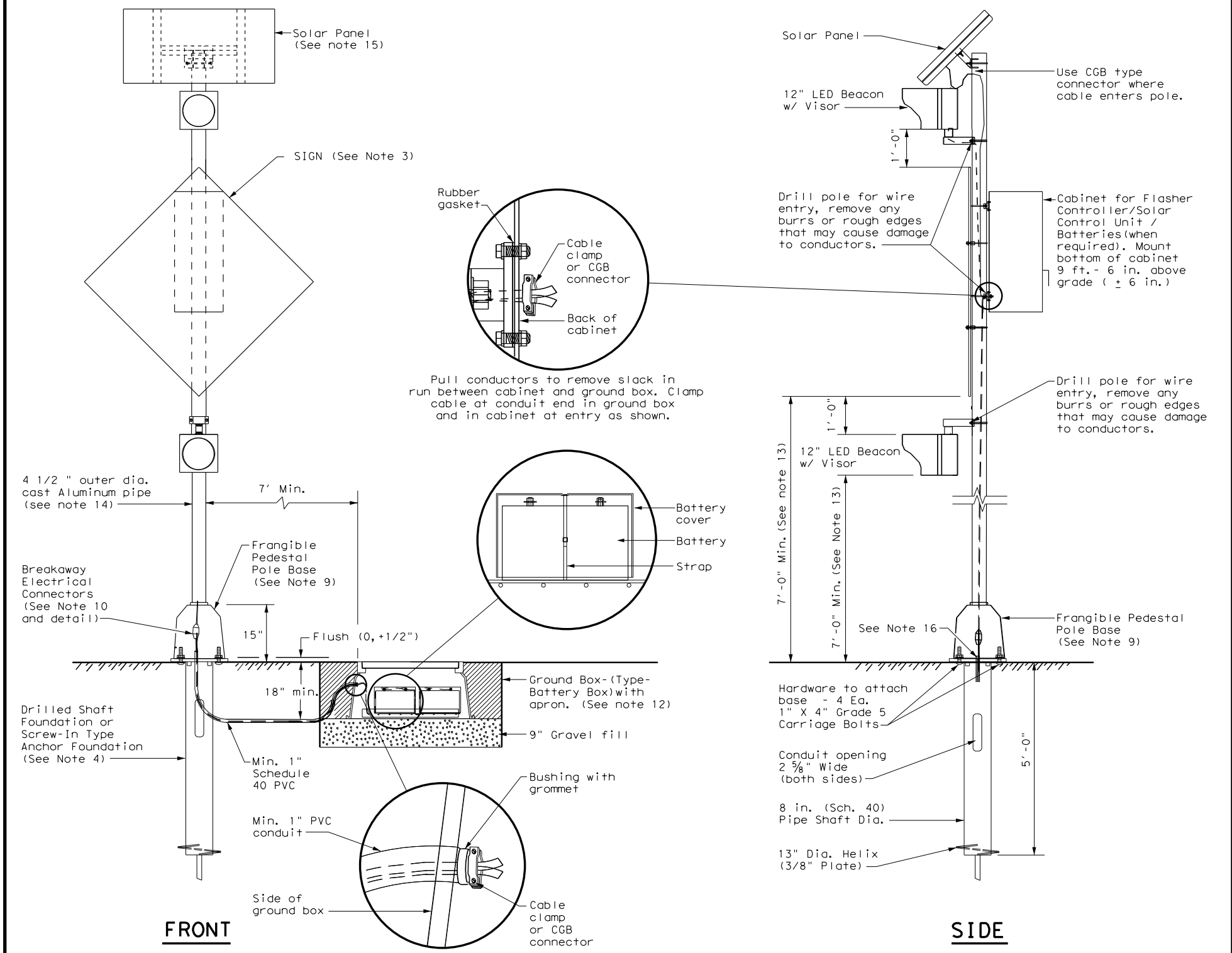
Driver Spacing In Remote Enclosure

				<b>Traffic Safety Division Standard</b>	
<h1>ROADWAY ILLUMINATION DETAILS</h1> <h2>RID(1)-20</h2>					
FILE:	rid1-20.dgn	DN:	CK:	DW:	CK:
© TxDOT	January 2007	CONT	SECT	JOB	HIGHWAY
REVISIONS		1064	01	032	FM 676
7-17		DIST	COUNTY		SHEET NO.
12-20		PHR	HIDALGO		330
72A					

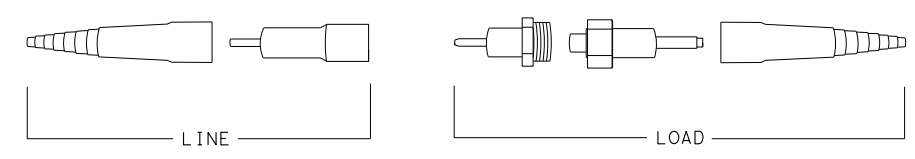
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**GENERAL NOTES:**

1. Details show a typical warning sign with two flashing beacon heads, other arrangements are possible. When only one beacon is required, install the upper beacon.
2. See Item 685, "Roadside Flashing Beacon Assemblies" for further requirements.
3. See SMD standard sheets for lateral and vertical clearances and sign mounting details. Install signs as shown on the sign layout sheets.
4. Use either a Screw-In Type Anchor Foundation or a Drilled Shaft Foundation as shown elsewhere in the plans. When plans require a Drilled Shaft Foundation, see standard sheet TS-FD. Install the Screw-In Type Anchor Foundation as per manufacturer's recommendations. On a slope, install one edge at ground level. Screw-In/Drilled Shaft Foundation is subsidiary to Item 685. Installation of a ground rod is not required for solar powered flashing beacon assemblies.
5. When used, provide Screw-In Type Anchor Foundations as shown on TxDOT's Material Producer List (MPL) in the file "Highway Traffic Signals".
6. Use materials specifically designed for attaching cabinets, beacon heads, solar panels, etc., to poles.
7. Install beacon heads as shown here, as shown elsewhere on the plans, or as directed. Use hardware specifically designed for mounting beacon heads on poles.
8. Conduit in foundation and within 6 in. of foundation is subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies."
9. Per manufacturer's recommendations, engage all threads on the pedestal pole base and pipe unless the pipe is fully seated into base. In high winds, use a pole and base collar assembly to add strength and prevent loosening on connection.
10. Provide single pole non-fused watertight breakaway electrical connectors for frangible pedestal pole bases, as shown on TxDOT's MPL in the file "Roadway Illumination and Electrical Supplies." Approved models are listed under Item 685. For ungrounded (hot) conductors, install a breakaway connector with a dummy fuse slug. For grounded (neutral) conductors, install a breakaway connector with a white colored marking and a permanently installed dummy fuse (slug).
11. Install the batteries in a battery box. Place the batteries on a 3/16" thick plastic sheet and connect together. Place a plastic cover (battery bell jar) over the top of each battery and secure the battery bell jar to the battery with a strap. The batteries, bell jars, straps and 3/16" plastic sheet are subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies." When required, install batteries in the flasher cabinet. Wire batteries according to manufacturer's recommendations. Provide the number of batteries as required by the manufacturer.
12. See standard sheet Electrical Details (ED) for additional requirements regarding the installation of ground boxes/battery boxes, conduit, and cabinets.
13. Provide clearance as shown above the sidewalk or pavement grade at the edge of the road. When a bottom beacon is not used, mount the bottom of the sign at least 7 ft. above the sidewalk or pavement grade at the edge of the road.
14. Unless otherwise shown on the plans, pole shaft shall be one piece, Schedule 40 Aluminum pipe, ASTM B429 or B221 (Alloy 6061-T6 only). Aluminum conduit will not develop the necessary strength and will not be allowed.
15. Orient solar panel for optimum exposure to sunlight (face to the south). Prior to installation, check the location to ensure there is no overhead obstruction that would block the solar panel from receiving full sunlight. Unless specified elsewhere, mount a minimum of 14' above grade.
16. Ensure height of conduit is below top of anchor bolts.



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS**



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS  
EXPLODED VIEW**

**SOLAR POWERED ROADSIDE FLASHING BEACON ASSEMBLY DETAILS**  
**SPRFBA (1) - 13**

FILE: spb1-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 2003	CONT: 1604	SECT: 01	JOB: 032	HIGHWAY: FM 676
12-04	DIST: PHR	COUNTY: HIDALGO	SHEET NO. 332	

DATE:  
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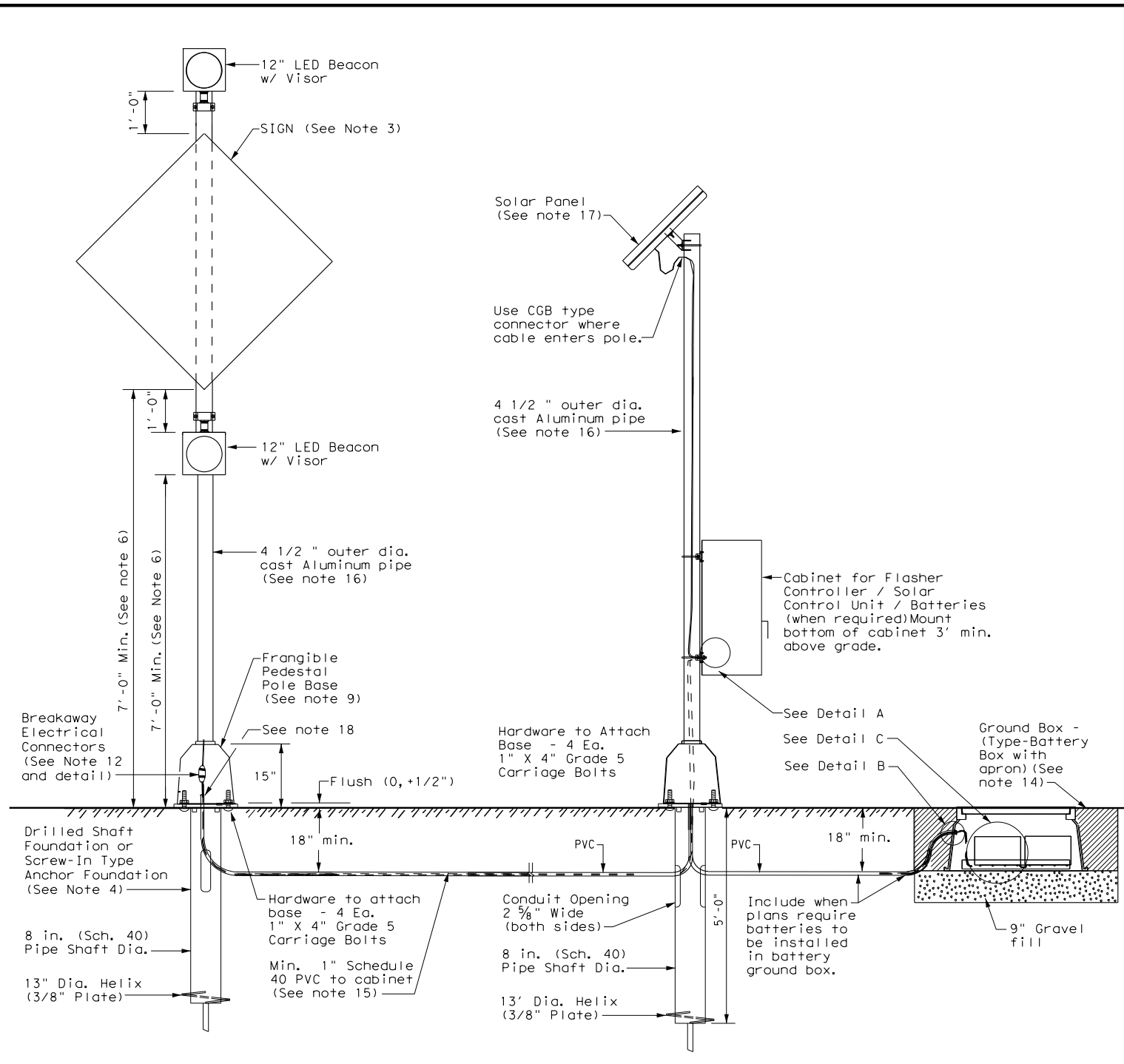
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**GENERAL NOTES:**

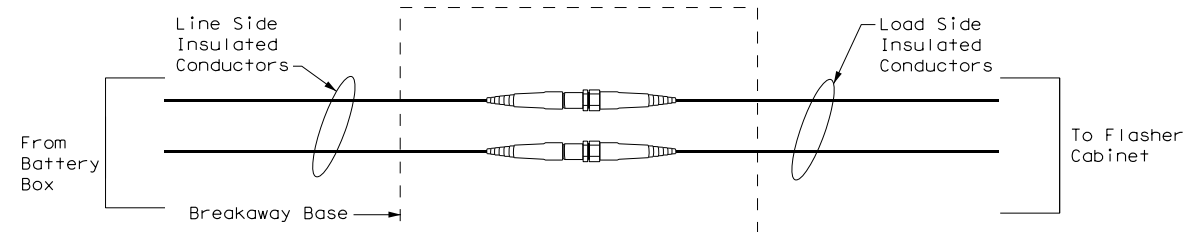
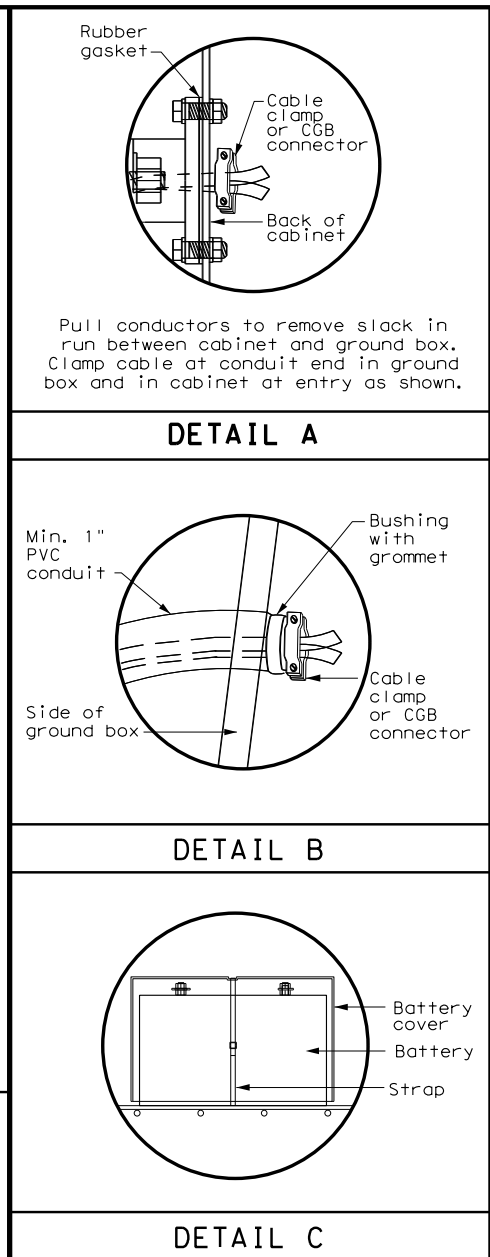
- Details show a typical warning sign with two flashing beacon heads, other arrangements are possible. When only one beacon is required, install the upper beacon.
- See Item 685, "Roadside Flashing Beacon Assemblies" for further requirements.
- See SMD standard sheets for lateral and vertical clearances and sign mounting details. Install signs as shown on the sign layout sheets.
- Use either a Screw-In Type Anchor Foundation or a Drilled Shaft Foundation as shown elsewhere in the plans. When plans require a Drilled Shaft Foundation, see standard sheet T5-FD. Install the Screw-In Type Anchor Foundation as per manufacturer's recommendations. On a slope, install one edge at ground level. Screw-In/Drilled Shaft Foundation is subsidiary to Item 685. Installation of a ground rod is not required for solar powered flashing beacon assemblies.
- When used, provide Screw-In Type Anchor Foundations as shown on TxDOT's Material Producer List (MPL) in the file "Highway Traffic Signals".
- Provide clearance as shown above the sidewalk or pavement grade at the edge of the road. When a bottom beacon is not used, mount the bottom of the sign at least 7 ft. above the sidewalk or pavement grade at the edge of the road.
- Use materials specifically designed for attaching cabinets, beacon heads, solar panels, etc., to poles.
- Conduit in foundation and within 6 in. of foundation is subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies."
- Per manufacturer's recommendations, engage all threads on the pedestal pole base and pipe unless the pipe is fully seated into base. In high winds, use a pole and base collar assembly to add strength and prevent loosening on connection.
- Install beacon heads as shown here, as shown elsewhere on the plans, or as directed. Use hardware specifically designed for mounting beacon heads on poles.
- Install the cable clamp in the bottom third of the back of the cabinet. See Detail A.
- Provide single pole non-fused watertight breakaway electrical connectors for frangible pedestal pole bases, as shown on TxDOT's MPL in the file "Roadway Illumination and Electrical Supplies". Approved models are listed under Item 685. For ungrounded (hot) conductors, install a breakaway connector with a dummy fuse (slug). For grounded (neutral) conductors, install a breakaway connector with a white colored marking and a permanently installed dummy fuse (slug).
- Install the batteries in a battery box. Place the batteries on a 3/16" thick plastic sheet and connect together. Place a plastic cover (battery bell jar) over the top of each battery and secure the battery bell jar to the battery with a strap. The batteries, bell jars, straps and 3/16" plastic sheet are subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies." When required, install batteries in the flasher cabinet. Wire batteries according to manufacturer's recommendations. Provide the number of batteries as required by the manufacturer.
- See standard sheet Electrical Details (ED) for additional requirements regarding the installation of ground boxes/battery boxes, conduit, and cabinets.
- Unless otherwise shown on the plans or recommended by the manufacturer, use the following table to determine the wire size from cabinet to beacons.

Distance from Cabinet to Beacons (ft.)	Minimum Required Wire Size (AWG)
0 - 35	#14
35 - 60	#12
60 - 100	#10
> 100	#8

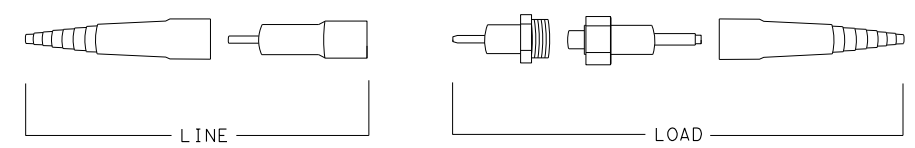
- Unless otherwise shown on the plans, pole shaft shall be one piece, Schedule 40 Aluminum pipe, ASTM B429 or B221 (Alloy 6061-T6 only). Aluminum conduit will not develop the necessary strength and will not be allowed.
- Orient solar panel for optimum exposure to sunlight (face to the south). Prior to installation, check the location to ensure there is no overhead obstruction that would block the solar panel from receiving full sunlight. Unless specified elsewhere, mount a minimum of 14' above grade.
- Ensure height of conduit is below top of anchor bolts.



**DETAIL FOR SOLAR PANEL, CABINET, AND BATTERIES LOCATED OUT OF CLEAR ZONE ON SEPARATE ALUMINUM POLE ASSEMBLY**



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS**



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS EXPLODED VIEW**

**SOLAR POWERED ROADSIDE FLASHING BEACON ASSEMBLY DETAILS (ALUMINUM)**  
**SPRFBA (3) - 13**

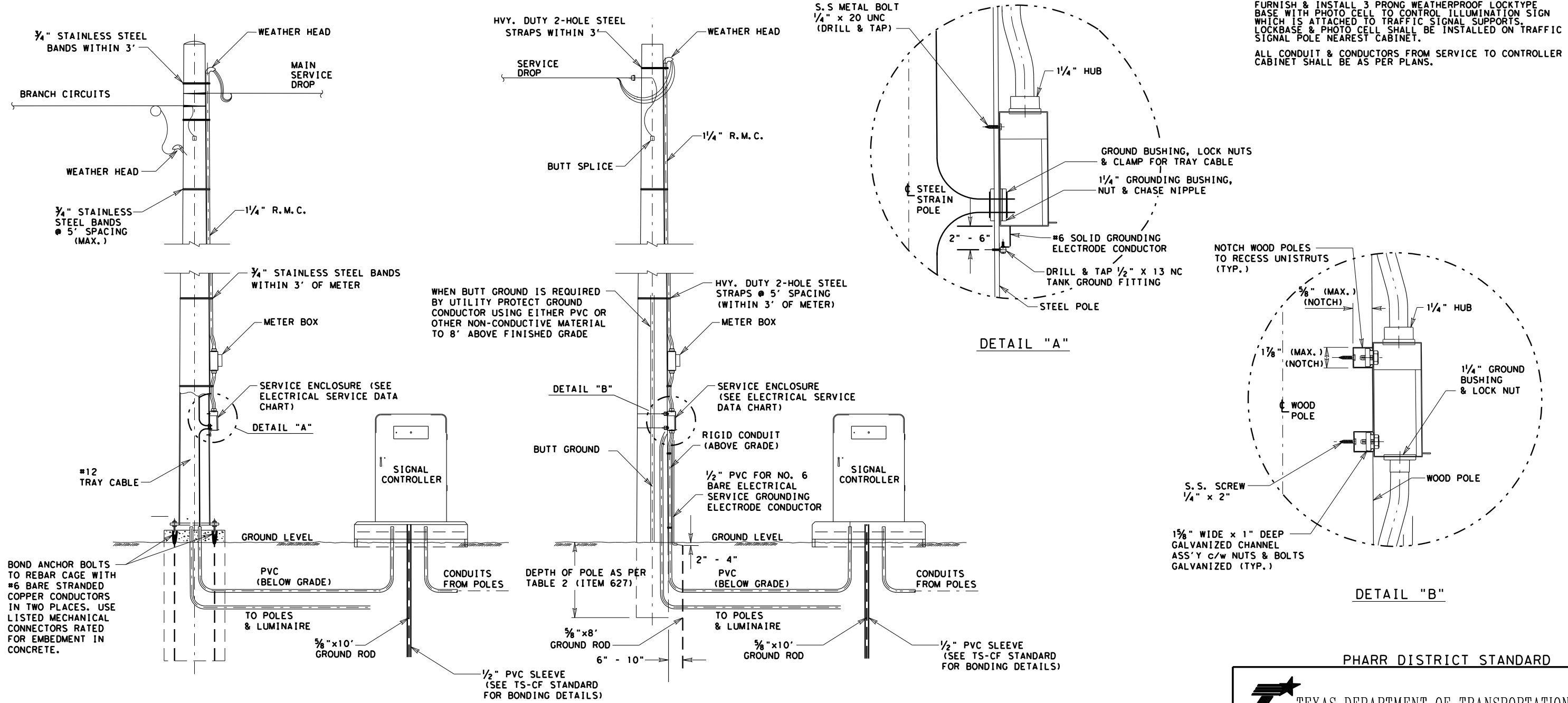
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12-04	DIST		COUNTY	SHEET NO.
3-13	PHR		HIDALGO	333

DATE: FILE:

ELECTRICAL SERVICE DATA

Service Pole No.	Sheet No.	Electrical Service Description (see ED (4)-03)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect		Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
						Switch Amp/Fuse	Ckt. Bkr. Pole / Amp						
1 thru 5		TY T 120/240 000(NS)GS(L)TS(O)	1 1/4"	3/#4	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	<5.5
										ILL	1P/20	6.0	
19 thru 21		TY T 120/240 000(NS)GS(L)TS(O)	1 1/4"	3/#4	N/A	N/A	N/A	N/A	100	FB	1P/20	12.0	<2.2
										ILL	1P/20	6.0	

NOTES:  
 ENSURE MAIN SERVICE DROP IS BELOW WEATHERHEAD.  
 BREAKER BOX & METER BOX SHALL BE ATTACHED TO WOOD POLE BY GALVANIZED CHANNEL (SEE DETAIL "B").  
 BOLT BOX TO GALVANIZED CHANNEL MOUNTED FLUSH WITH POLE.  
 CONDUIT SHALL BE ATTACHED TO POLE WITH H.D. 2-HOLE STRAPS AND 1/2"x1/4" #8 S.S. SCREW OR LAG BOLT.  
 ALL EXPOSED CONDUIT SHALL BE RIGID METAL CONDUIT EXCEPT CONDUIT USED ON ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR.  
 WHEN SERVICE IS CONNECTED WITHIN 100' OF THE CONTROLLER, NO PULL BOX SHALL BE USED.  
 DISTRIBUTION TO LUMINAIRE SHALL BE OUT OF THE SERVICE BREAKER BOX. EACH LUMINAIRE SHALL HAVE A SEPARATE PHOTO CONTROL.  
 FURNISH & INSTALL 3 PRONG WEATHERPROOF LOCKTYPE BASE WITH PHOTO CELL TO CONTROL ILLUMINATION SIGN WHICH IS ATTACHED TO TRAFFIC SIGNAL SUPPORTS. LOCKBASE & PHOTO CELL SHALL BE INSTALLED ON TRAFFIC SIGNAL POLE NEAREST CABINET.  
 ALL CONDUIT & CONDUCTORS FROM SERVICE TO CONTROLLER CABINET SHALL BE AS PER PLANS.



STEEL STRAIN POLE

WOOD POLE

ELECTRICAL SERVICE

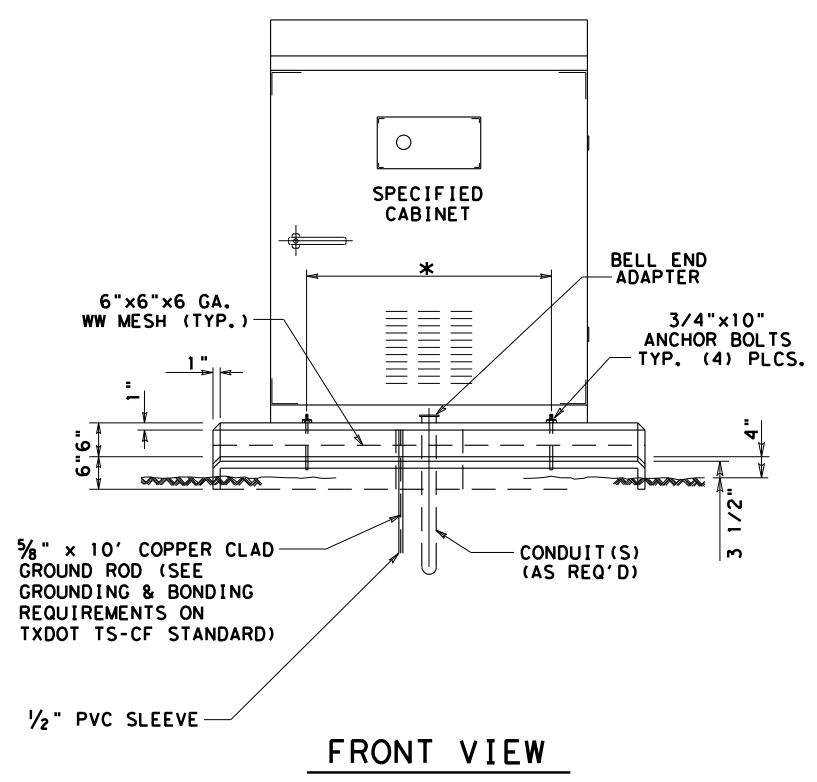
PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL SERVICE DESIGN  
 WITH SIGNAL CONTROLLER

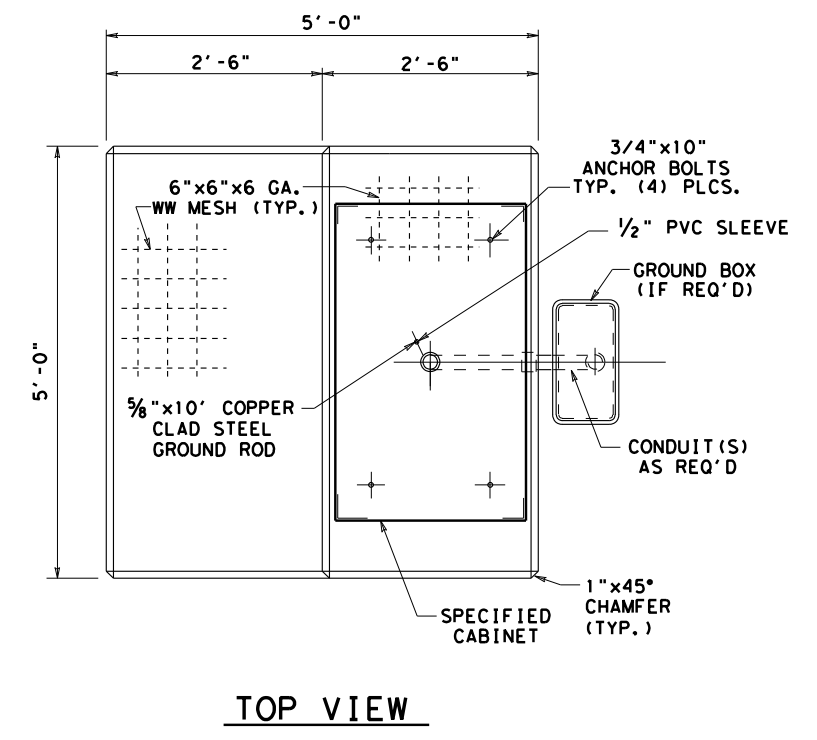
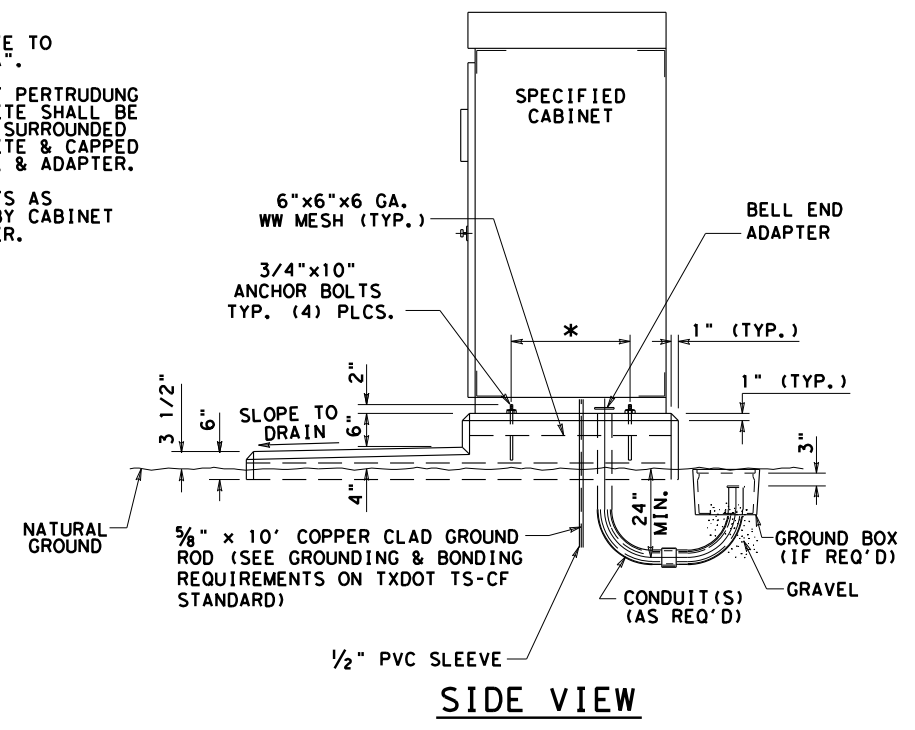
© 2010 TxDOT				SHEET 1 OF 1			
DN:	OG	DRAWING	DATE	REV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
CK DN:	JSL	ORIGINAL	APR. 2010	6	TEXAS		334
DW:	OG		MAY 2017				
CK DW:	JSL				STATE DIST. NO.	COUNTY	CONTROL NO. SECTION NO. JOB NO. HIGHWAY NO.
					21	HIDALGO	1064 01 032 FM 676



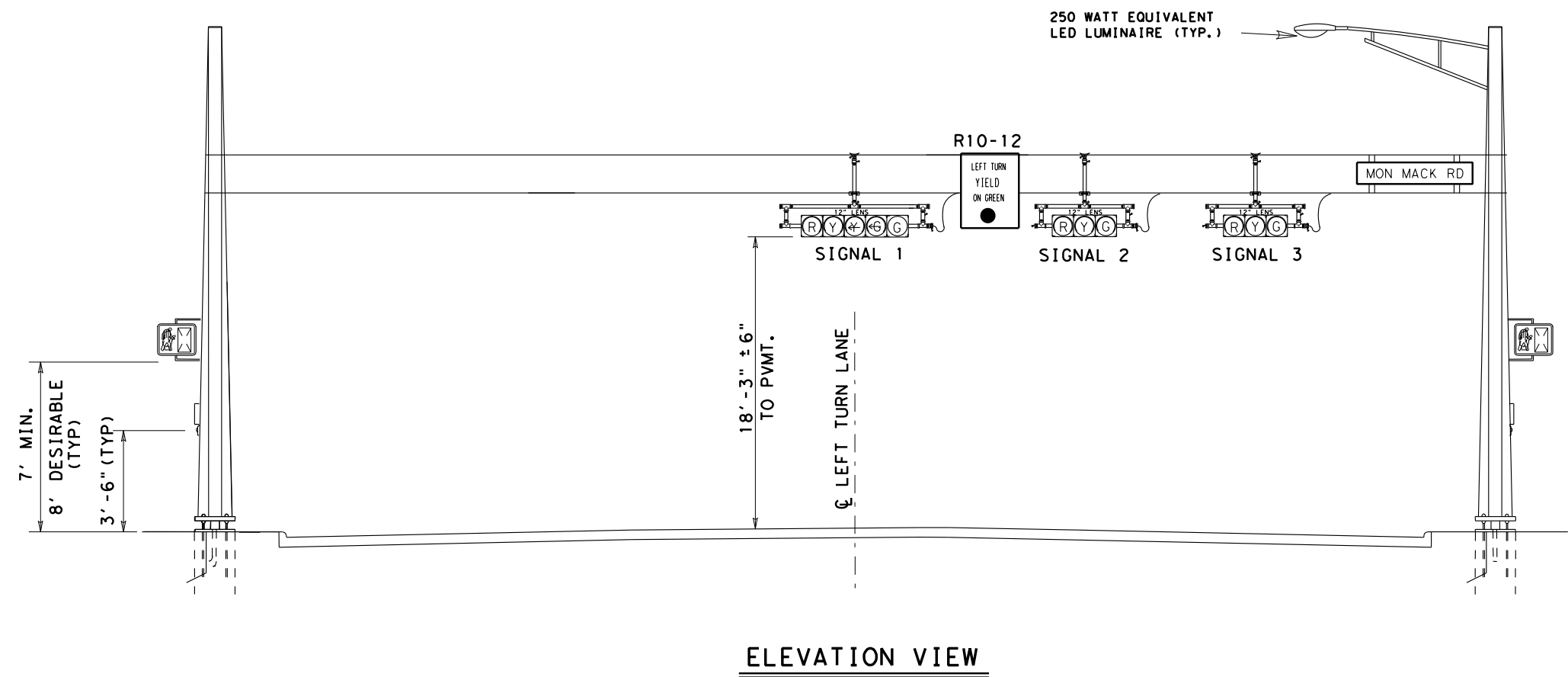
FILE: pwr \SUS036343.wsk\ins.com\ATKNAI\01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\STD\TRAFFIC\SIGNAL Construction Details (Feb 2020). rtd.dgn  
 4-96 PHARR DISTRICT



- NOTES:**
1. ALL CONCRETE TO BE CLASS "A".
  2. ALL CONDUIT PERTRUDING THRU CONCRETE SHALL BE COMPLETELY SURROUNDED WITH CONCRETE & CAPPED WITH A BELL & ADAPTER.
  - \* 3. ANCHOR BOLTS AS SPECIFIED BY CABINET MANUFACTURER.

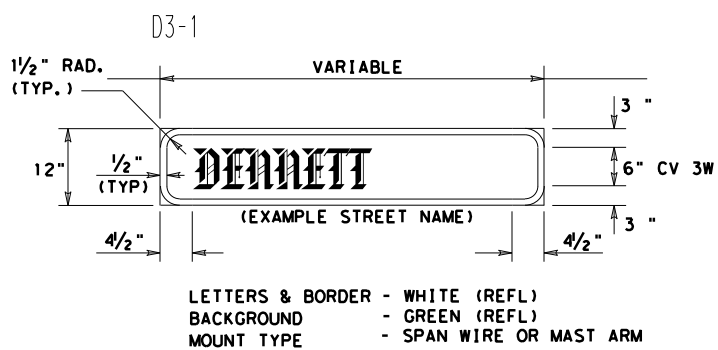


**DETAIL OF BASE MOUNT CABINET FOUNDATION**

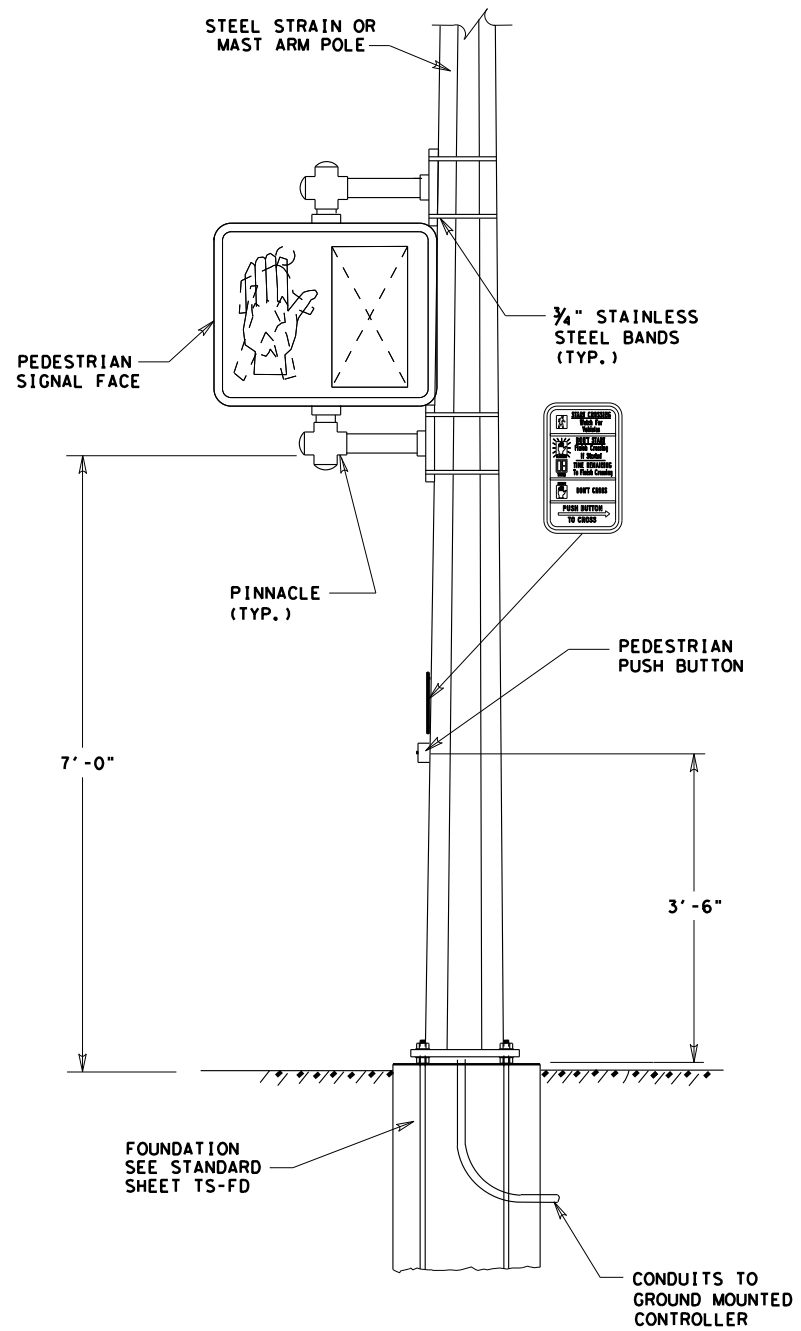


DISTRICT STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 PHARR DISTRICT STANDARD  
**TRAFFIC SIGNAL CONSTRUCTION DETAILS**  
 CONTROLLER FOUNDATION & LOOP DETECTOR INSTALLATION

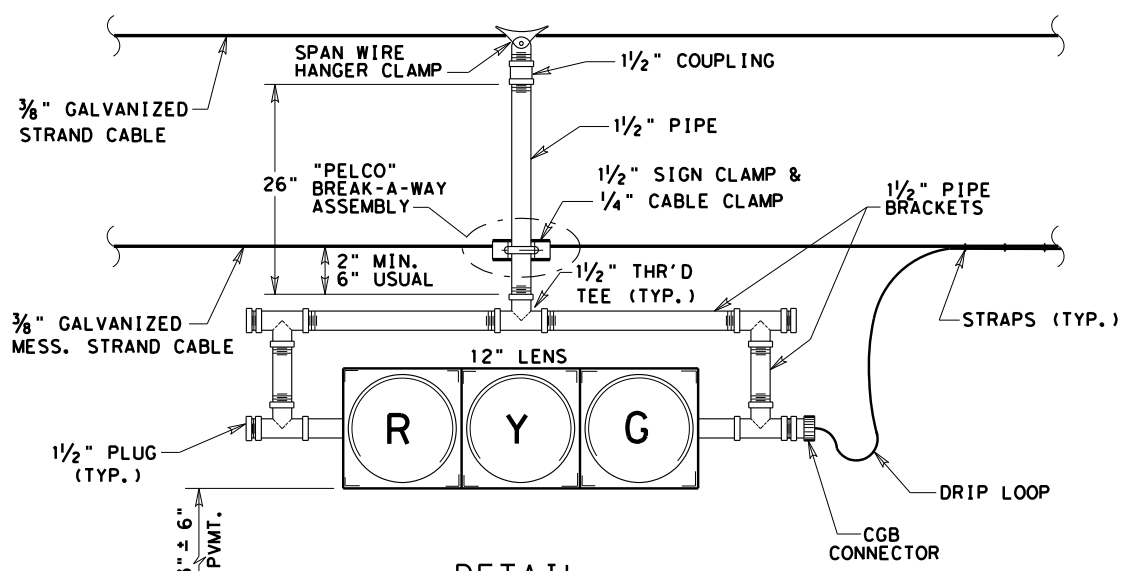
© 2020 TxDOT		SHEET 1 OF 3	
DN: GV	DRAWING ORIGINAL	DATE APR. 2010	SHEET NO. 335
CK DN: JSL	REV. JUL 2015	STATE 6 TEXAS	
DW: GV	AUG 2016	STATE DIST. NO. PHARR HIDALGO	CONTROL NO. 1064
CK DW: JSL	FEB 2020	COUNTY	SECTION NO. 01
			JOB NO. 032
			HIGHWAY NO. FM 676



**STREET NAME SIGN**

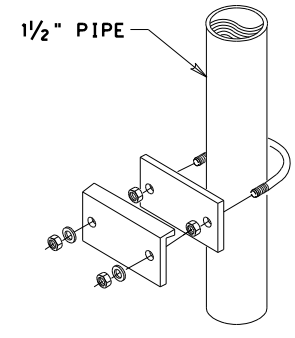


**DETAIL-PEDESTRIAN SIGNALS**

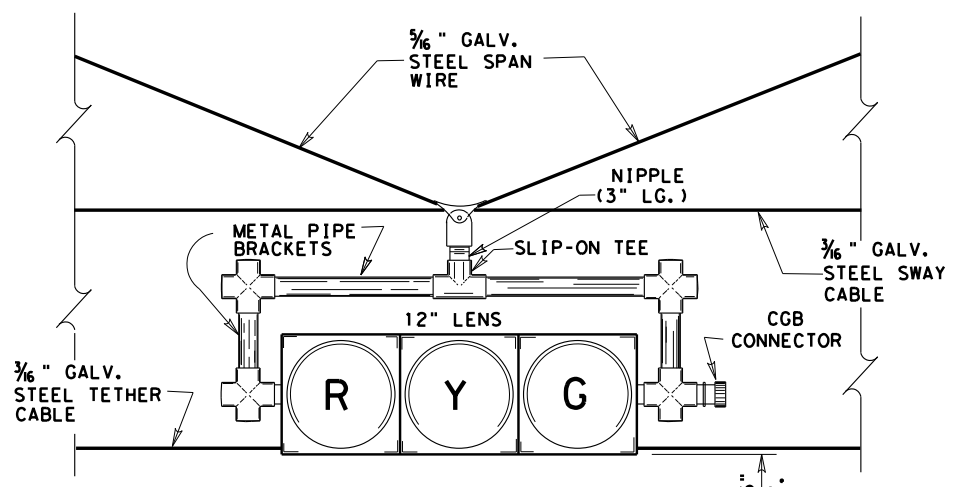


**DETAIL**

1 WAY-3 SEC. HORIZONTAL SIGNAL HEAD  
ALL SIGNALS TO BE POLYCARBONATE  
(TO BE USED ON SKEWED INTERSECTIONS OR WHEN SIGNAL POLES ARE NOT SQUARED TO EACH OTHER)

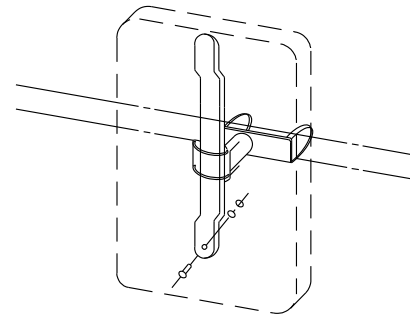


**DETAIL - "PELCO" BREAK-A-WAY ASSEMBLY**



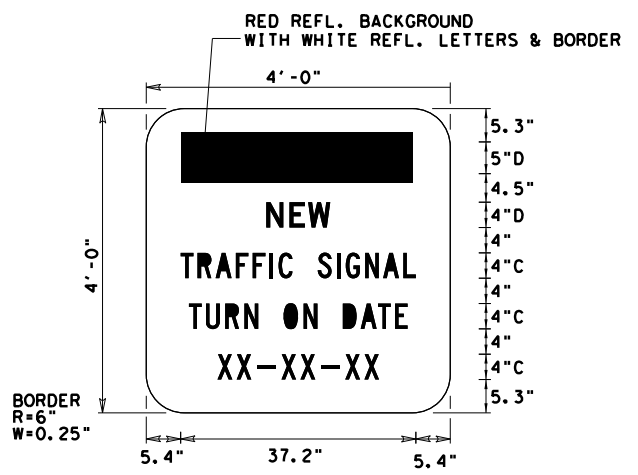
**DETAIL**

1 WAY-3 SEC. HORIZONTAL SIGNAL HEAD  
ALL SIGNALS TO BE POLYCARBONATE

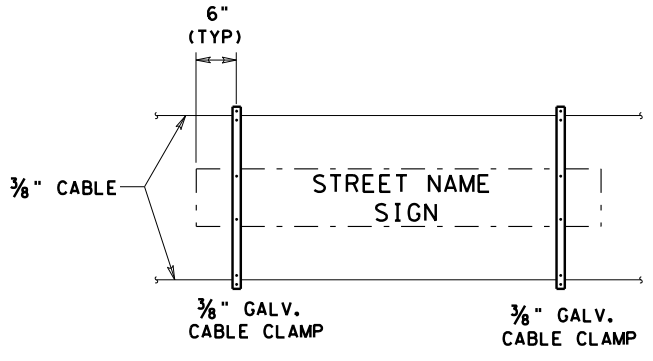


**SIGN BRACKET**

NOTE: THESE BRACKETS, USED IN PAIRS FOR LONGER SIGN, OR IN SINGLE UNITS FOR SMALLER SIGNS.



**SPECIAL SIGN DETAIL**



**STREET NAME SIGN MOUNTING DETAIL**

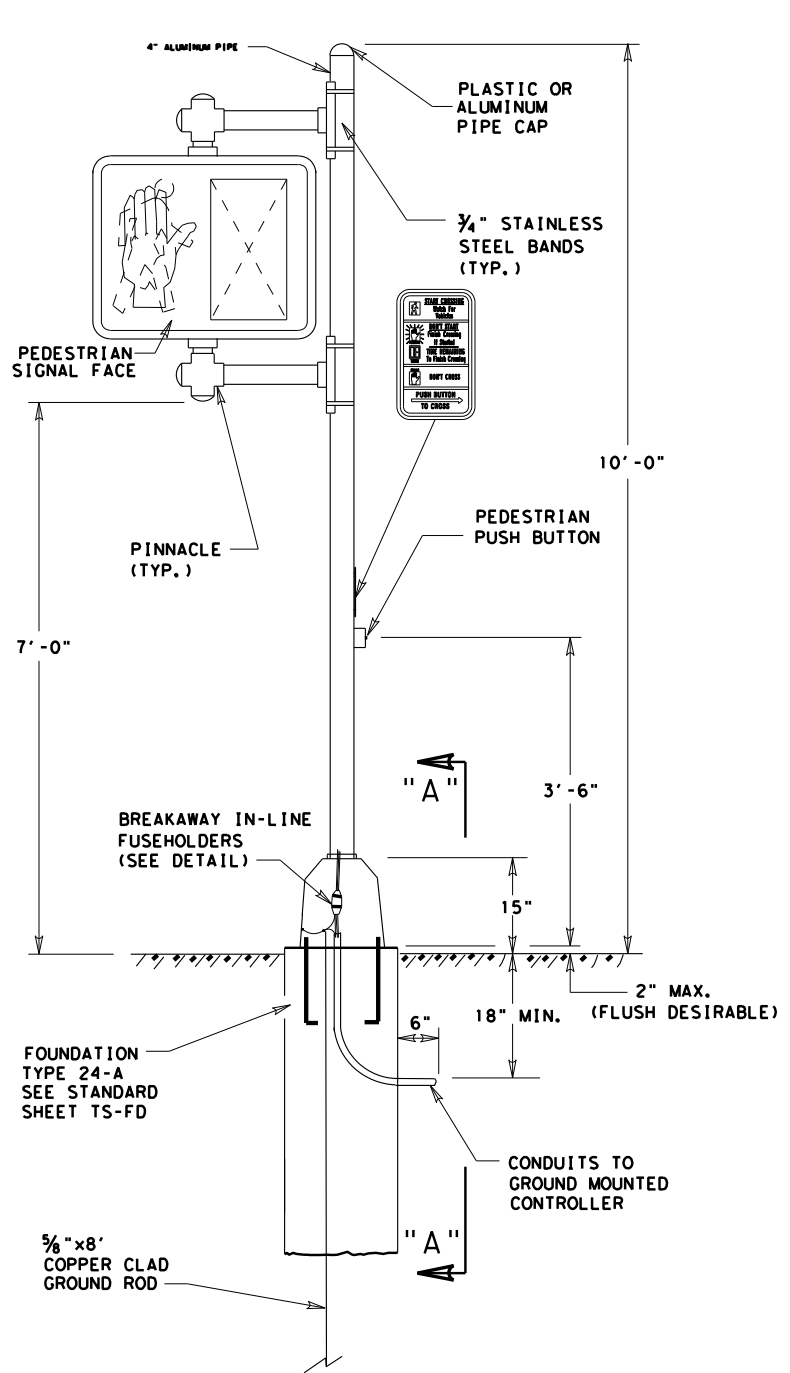
DISTRICT STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
PHARR DISTRICT STANDARD

**TRAFFIC SIGNAL CONSTRUCTION DETAILS**  
MISCELLANEOUS DETAILS

© 2020 TxDOT		SHEET 2 OF 3	
DN: OG	DRAWING ORIGINAL	DATE APR. 2010	SHEET NO. 336
CK DN: JSL	REV. MAY 2016	STATE 6 TEXAS	PROJECT NO.
DW: OG	REV. AUG 2016	STATE DIST. NO. PHARR	COUNTY HIDALGO
CK DW: JSL		CONTROL NO. 1064	SECTION NO. 01
		JOB NO. 032	HIGHWAY NO. FM 676

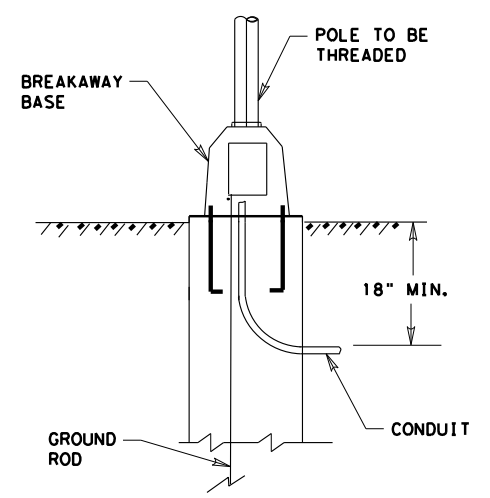
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 4-96 PHARR DISTRICT

FILES: pwr \SUS036343.wsotk.ins.com:ATKNA1X01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\STD\TRAFFIC\Traffic Signal Construction Details (Feb 2020).1s.dgn

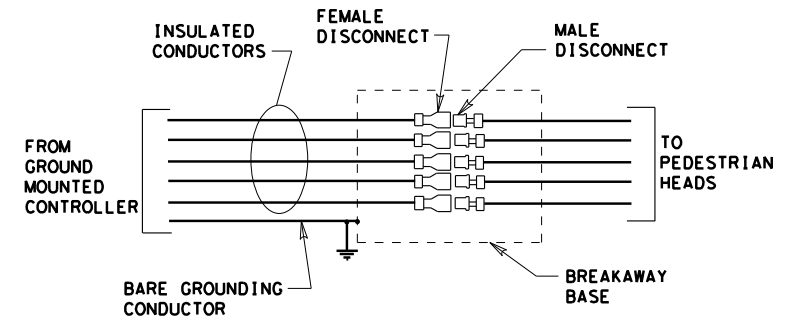


**PEDESTAL POLE DETAIL**

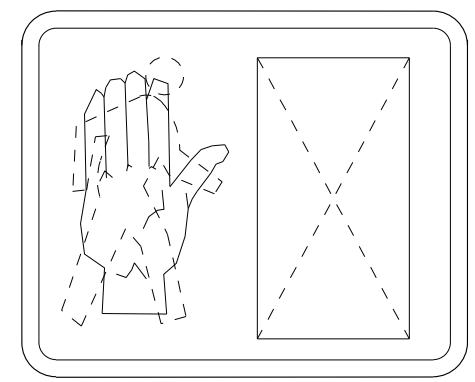
- NOTES:**
1. BREAKAWAY ELECTRICAL QUICK-DISCONNECTS SHALL BE WATERTIGHT BUSSMANN HEB SERIES OR EQUAL.
  2. DRILL POLE FOR WIRE ENTRY. USE BUSHING OR RUBBER GROMMET TO PROTECT CONDUCTORS.
  3. POLE SHAFT SHALL BE ONE PIECE SCHEDULE 40 ALUMINUM PIPE, ASTM B429 OR B221 (ALLOY 6601-T6), DO NOT USE ALUMINUM CONDUIT.



**SECTION "A A"**



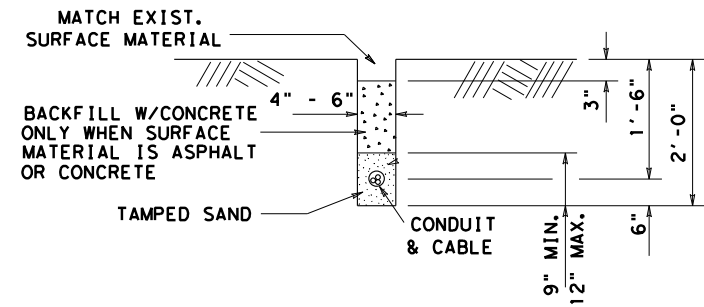
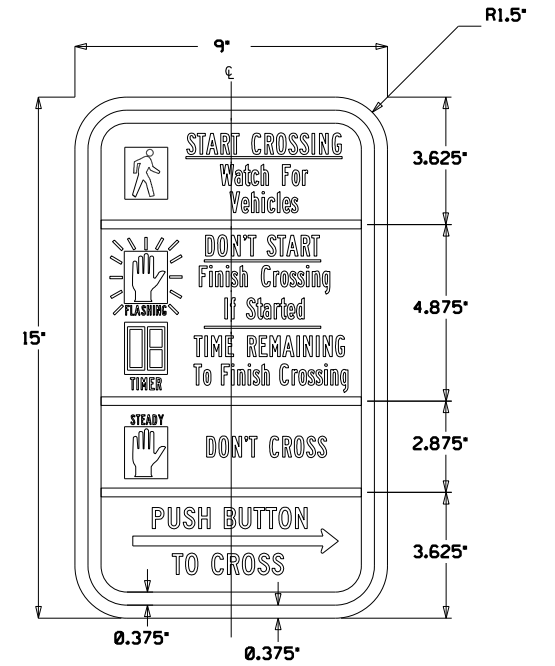
**BREAKAWAY IN-LINE FUSEHOLDERS**



**18"x16" LED PEDESTRIAN SIGNAL HEAD w/COUNTDOWN**

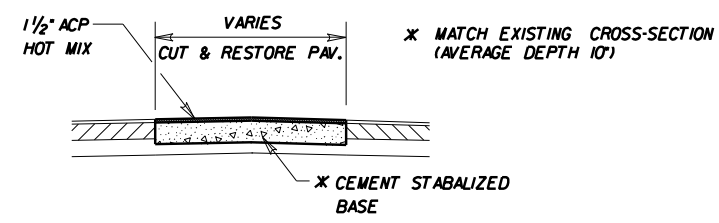
- LEGEND:**  
**BLACK**  
**- BACKGROUND:**  
 WHITE (RETROREFLECTIVE)  
**- OB. HAND SYMBOL:**  
 ORANGE (RETROREFLECTIVE) ON BLACK  
**- PEDESTRIAN SYMBOL:**  
 WHITE (RETROREFLECTIVE) ON BLACK

**NOTE:**  
 REFER TO THE STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD) FOR MORE DETAILS AND DIMENSIONS REGARDING SIGN R10-3e

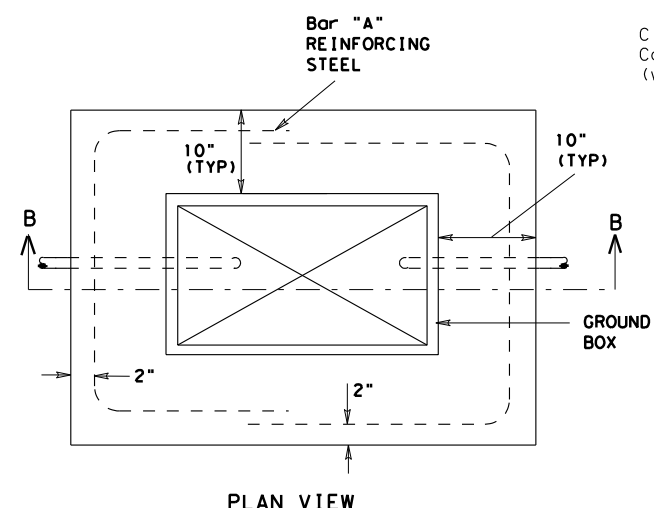


**DETAIL - TRENCH LAY CONDUIT**

**NOTE:**  
 ALL TRENCHES ARE TO BE MADE ONLY PARALLEL TO THE STREET. ALL CONDUIT RUNS CROSSING THE STREET SHALL BE PUSHED AND NO CUTS MADE IN THE SURFACE.



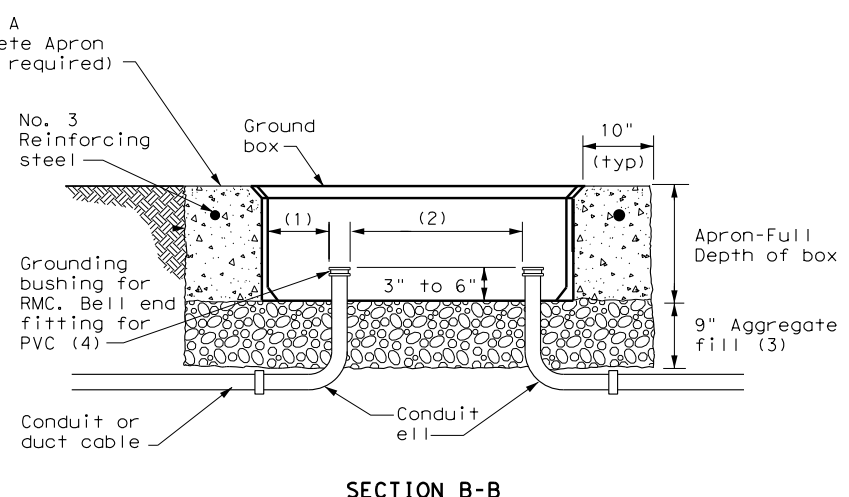
**DETAIL - CUT AND RESTORE PAVEMENT**



**PLAN VIEW**

**APRON FOR GROUND BOXES**

(Where required)



**SECTION B-B**

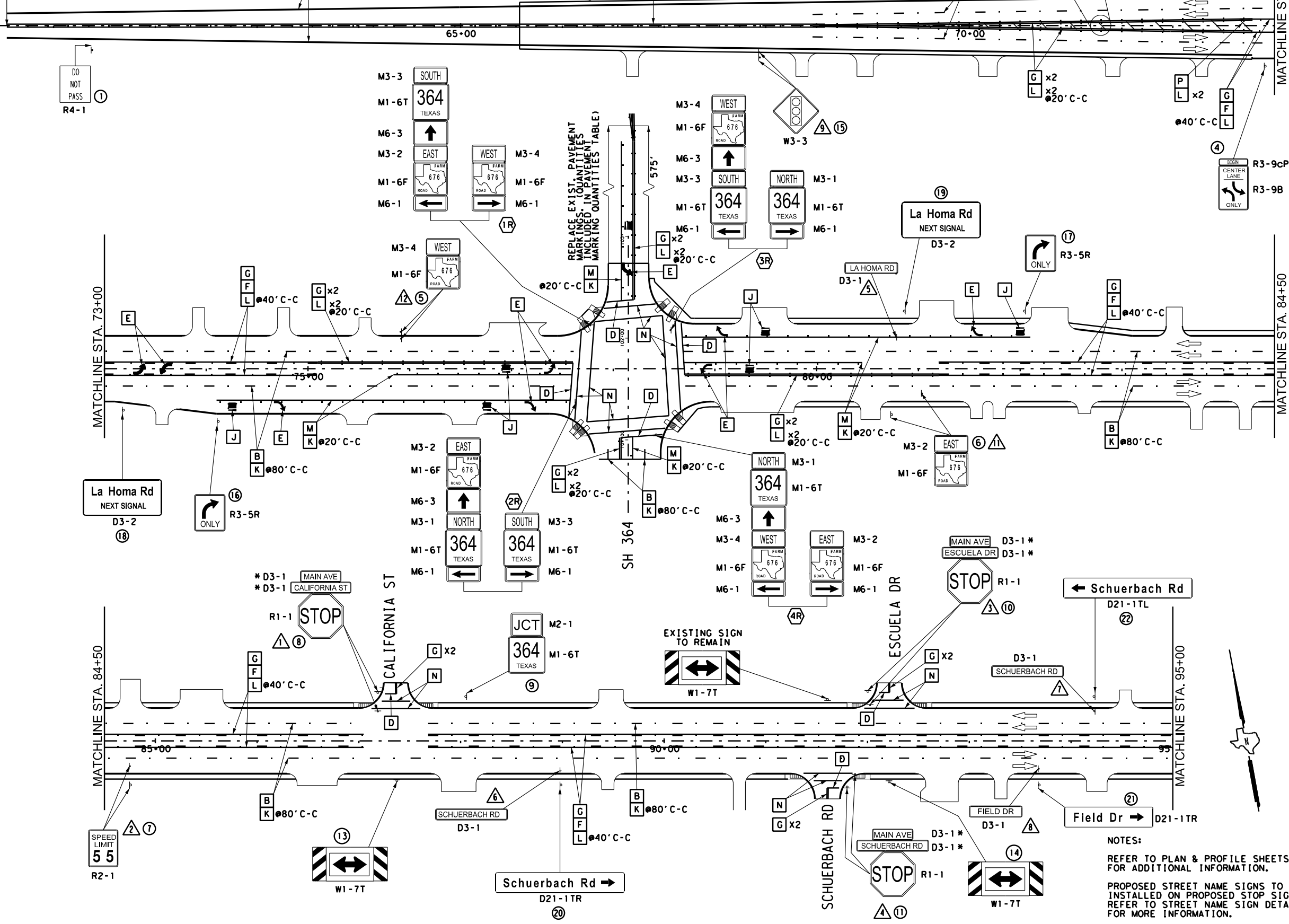
DISTRICT STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 PHARR DISTRICT STANDARD

**TRAFFIC SIGNAL CONSTRUCTION DETAILS**  
 MISCELLANEOUS DETAILS

© 2020 TxDOT		SHEET 3 OF 3	
DN: OG	DRAWING ORIGINAL	DATE APR. 2010	STATE TEXAS
CK DN: JSL	REV. JUL. 2015	MAY 2016	CONTROL NO. 1064
DW: OG	REV. AUG 2016	AUG 2016	SECTION NO. 01
CK DW: JSL	REV. APR 2017	APR 2017	JOB NO. 032
		COUNTY HIDALGO	HIGHWAY NO. FM 676

PAVEMENT MARKING QUANTITIES CSJ 1064-01-032											
A	B	D	E	F	G	J	K	L	M	N	P
2450'	1050'	215'	9	800'	7420'	7	133	253	1220'	940'	130'

BEGIN STRIPING  
STA. 60+53.88  
MATCH EXISTING STRIPING



**PAVEMENT MARKINGS LEGEND**  
(TYPE 1 - THERMOPLASTIC)

- [A] 4" WHITE SOLID
- [B] 4" WHITE BROKEN
- [D] 24" WHITE SOLID
- [E] SINGLE ARROW - WHITE
- [F] 4" BROKEN YELLOW
- [G] 4" SOLID YELLOW
- [H] 24" SOLID YELLOW
- [J] WORD - WHITE
- [M] 8" WHITE SOLID
- [N] 12" WHITE SOLID
- [P] 12" YELLOW SOLID
- [Q] 4" WHITE DOT
- DIRECTIONAL ARROW

**RAISED PAVEMENT MARKERS**

- [K] TYPE I-C REFLECTIVE
  - [L] TYPE II-A-A REFLECTIVE
- SIGNING LEGEND**
- (X) PROPOSED SMALL SIGN
  - (X) EXISTING SMALL SIGN TO BE REMOVED
  - (R) EXISTING SMALL SIGN TO BE RELOCATED
  - \* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



11/18/2022



**ATKINS**  
TBPE REG. #F-474

FM 676  
SIGNING AND STRIPING  
BEGIN TO STA 95+00

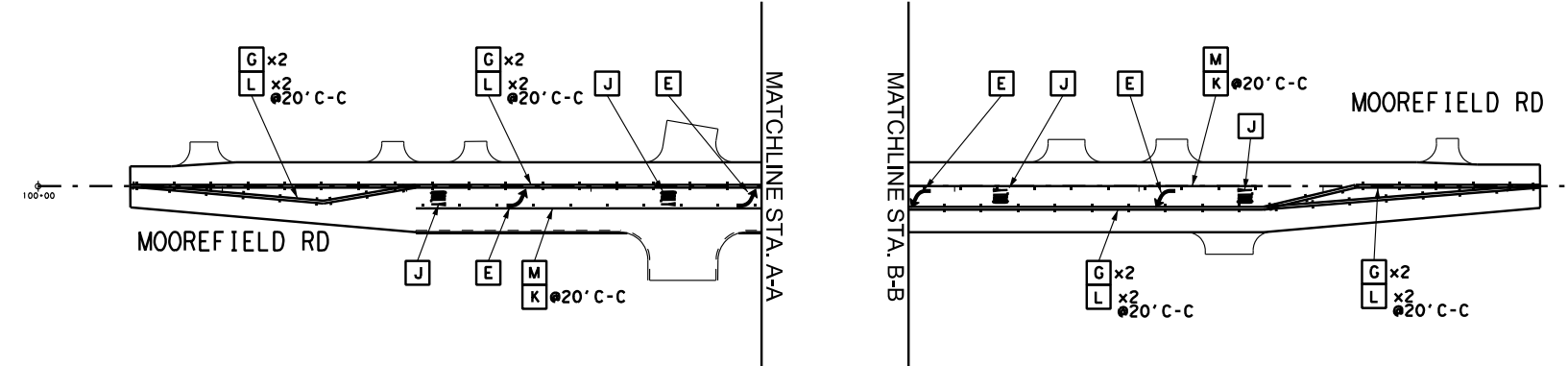
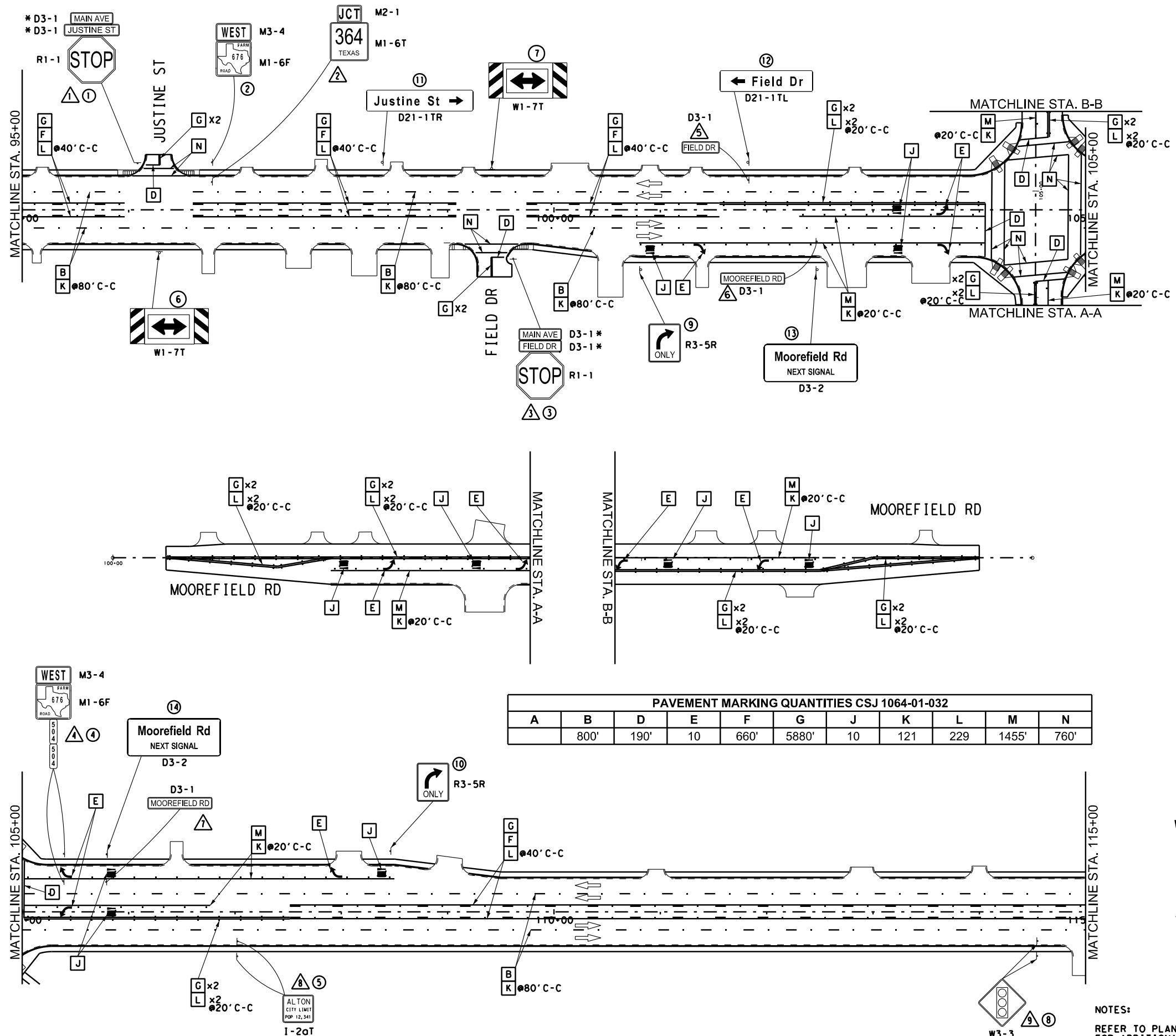
PLAN SCALE: 1"=100'  
0 20 40 60 80 100  
DISTANCE IN FEET

SHEET 1 OF 7		STATE PROJECT NO.		SHEET NO.	
6		338		338	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

**NOTES:**  
REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.

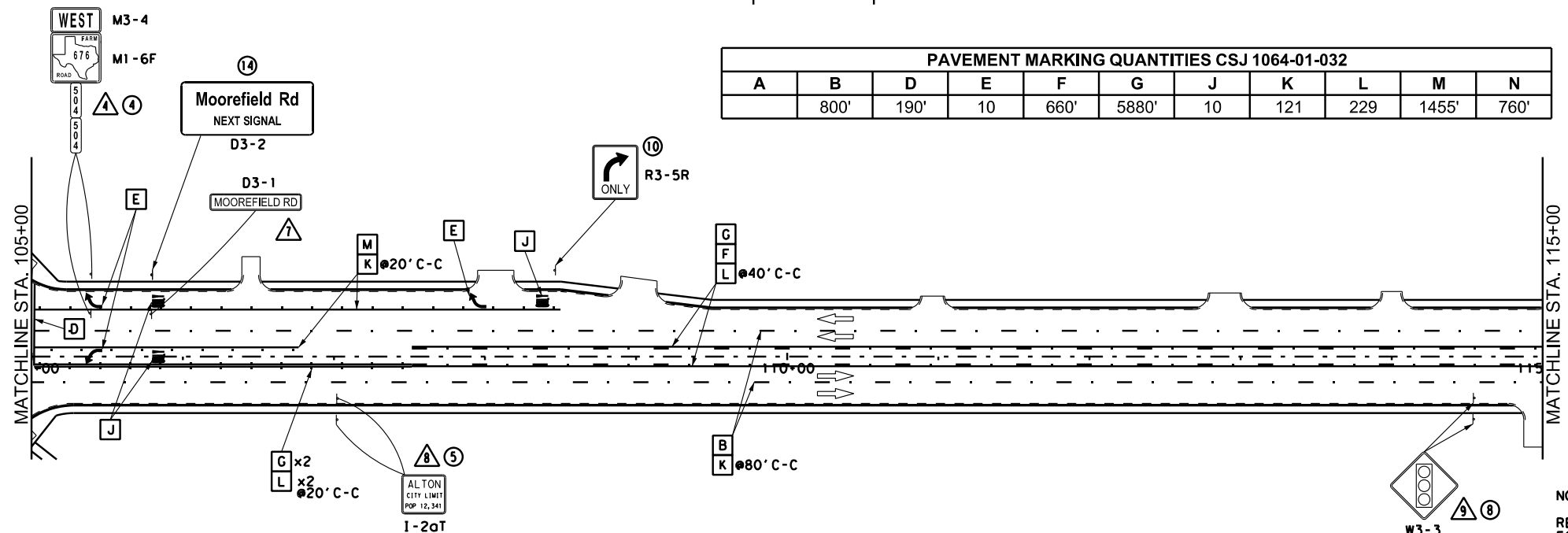
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 FILE: pm1\SUS036343.wsoftk.ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\SIG\676w\*pm1.o\*02.dgn



**PAVEMENT MARKING QUANTITIES CSJ 1064-01-032**

A	B	D	E	F	G	J	K	L	M	N
	800'	190'	10	660'	5880'	10	121	229	1455'	760'



**NOTES:**  
 REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
 PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.

**PAVEMENT MARKINGS LEGEND**  
 (TYPE 1 - THERMOPLASTIC)

- A** 4" WHITE SOLID
- B** 4" WHITE BROKEN
- D** 24" WHITE SOLID
- E** SINGLE ARROW - WHITE
- F** 4" BROKEN YELLOW
- G** 4" SOLID YELLOW
- H** 24" SOLID YELLOW
- J** WORD - WHITE
- M** 8" WHITE SOLID
- N** 12" WHITE SOLID
- P** 12" YELLOW SOLID
- Q** 4" WHITE DOT
- DIRECTIONAL ARROW

**RAISED PAVEMENT MARKERS**

- K** TYPE I-C REFLECTIVE
- L** TYPE II-A-A REFLECTIVE

**SIGNING LEGEND**

- (X)** PROPOSED SMALL SIGN
- (X)** EXISTING SMALL SIGN TO BE REMOVED
- (R)** EXISTING SMALL SIGN TO BE RELOCATED

\* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

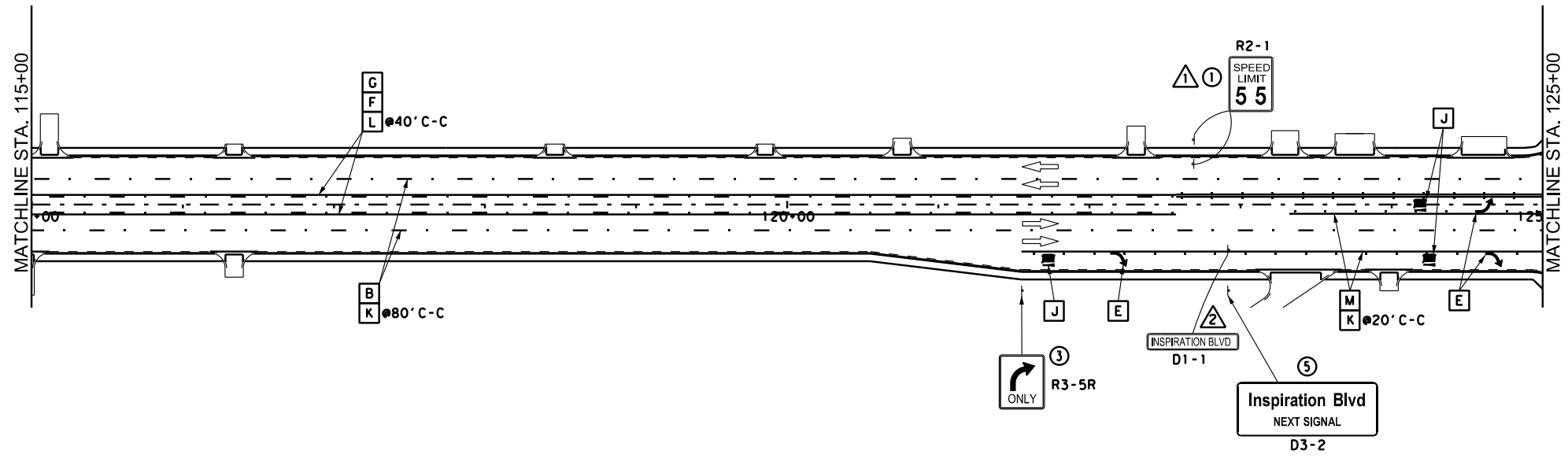
**FM 676**  
**SIGNING AND STRIPING**  
**STA. 95+00 TO 115+00**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 2 OF 7

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6	1064 01 032		339
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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**PAVEMENT MARKINGS LEGEND**

- (TYPE 1 - THERMOPLASTIC)
- A 4" WHITE SOLID
  - B 4" WHITE BROKEN
  - D 24" WHITE SOLID
  - E SINGLE ARROW - WHITE
  - F 4" BROKEN YELLOW
  - G 4" SOLID YELLOW
  - H 24" SOLID YELLOW
  - J WORD - WHITE
  - M 8" WHITE SOLID
  - N 12" WHITE SOLID
  - P 12" YELLOW SOLID
  - Q 4" WHITE DOT
- DIRECTIONAL ARROW

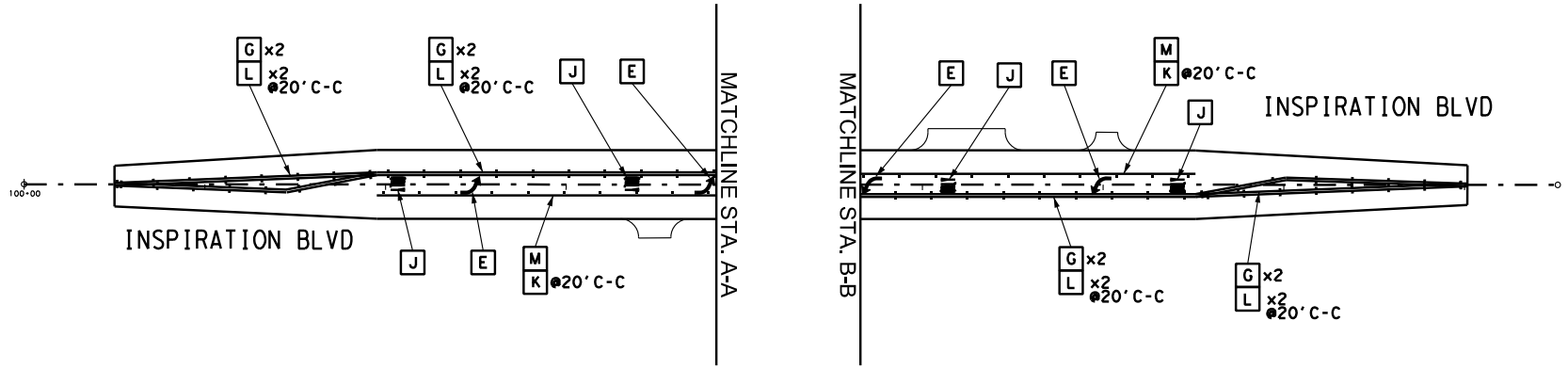
**RAISED PAVEMENT MARKERS**

- K TYPE I-C REFLECTIVE
- L TYPE II-A-A REFLECTIVE

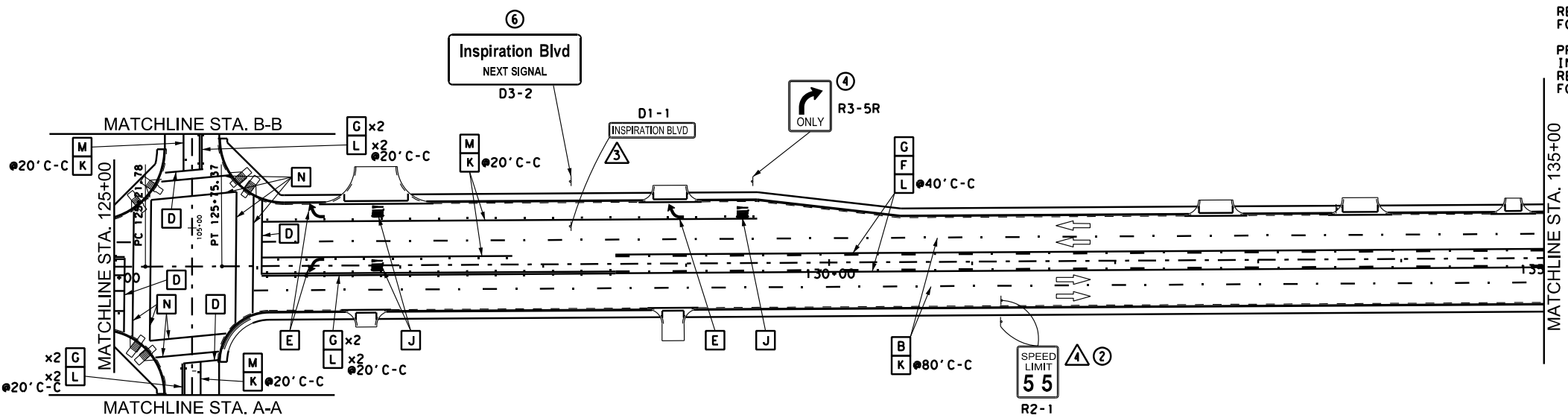
**SIGNING LEGEND**

- X PROPOSED SMALL SIGN
- △ EXISTING SMALL SIGN TO BE REMOVED
- ⬡ EXISTING SMALL SIGN TO BE RELOCATED

\* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



PAVEMENT MARKING QUANTITIES CSJ 1064-01-032										
A	B	D	E	F	G	J	K	L	M	N
960'	160'	10	720'	6040'	10	121	232	1465'	570'	



**NOTES:**  
 REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
 PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.



11/18/2022



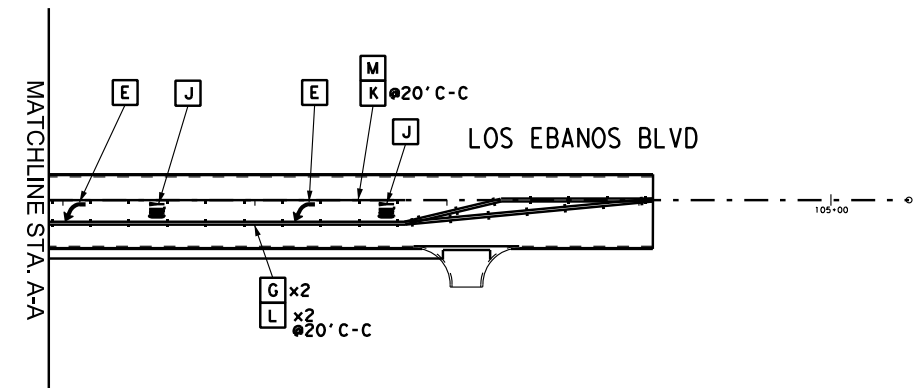
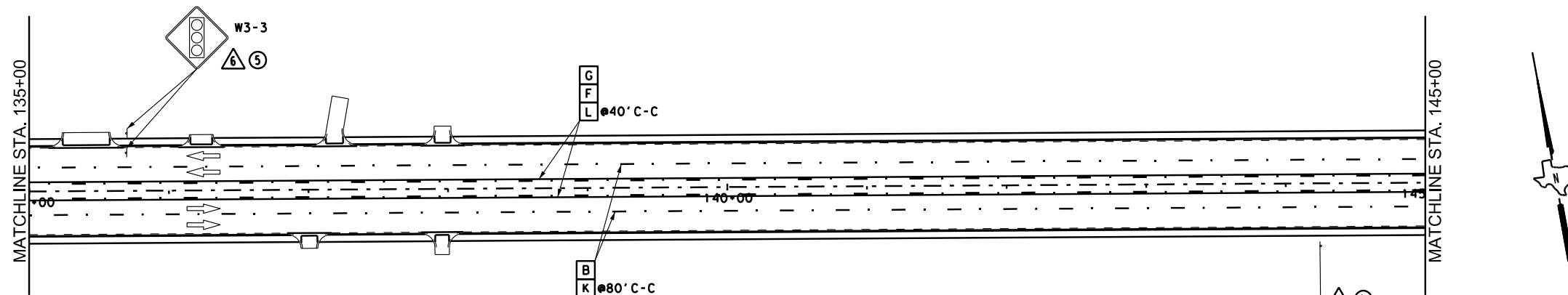
**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SIGNING AND STRIPING**  
**STA. 115+00 TO 135+00**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

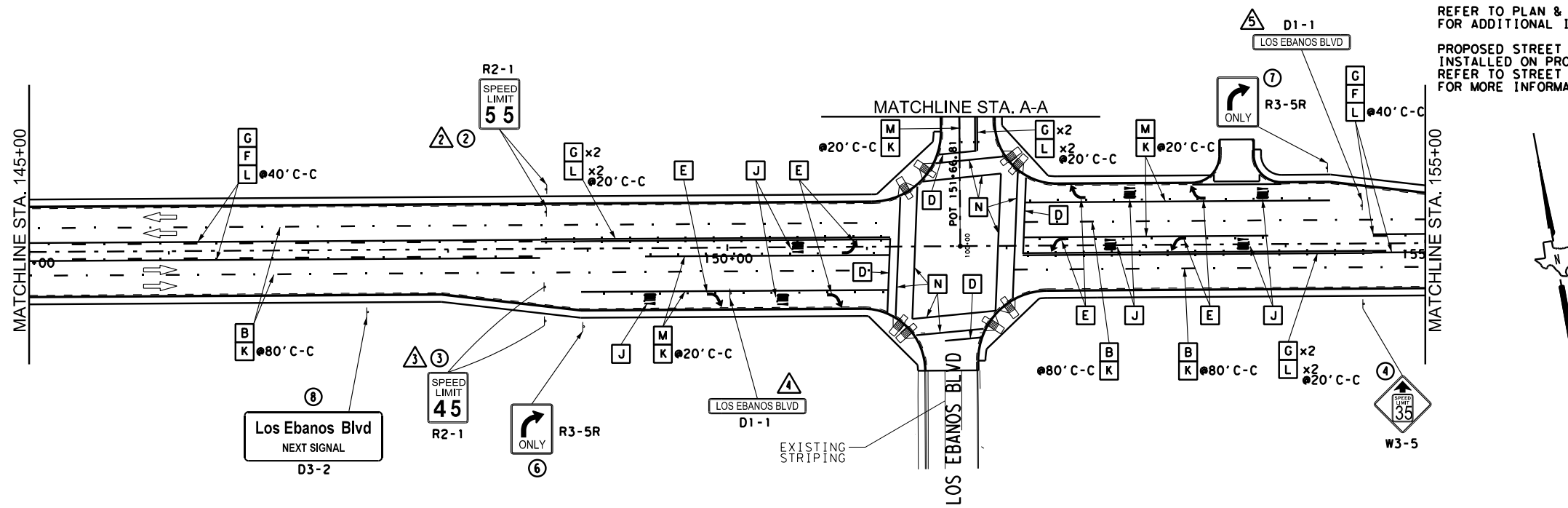
SHEET 3 OF 7		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		340
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

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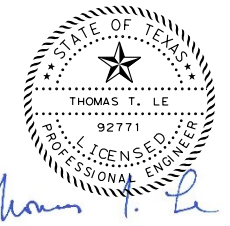


PAVEMENT MARKING QUANTITIES CSJ 1064-01-032										
A	B	D	E	F	G	J	K	L	M	N
	960'	170'	8	710'	5280'	8	97	172	960'	590'

- PAVEMENT MARKINGS LEGEND**  
 (TYPE 1 - THERMOPLASTIC)
- A 4" WHITE SOLID
  - B 4" WHITE BROKEN
  - D 24" WHITE SOLID
  - E SINGLE ARROW - WHITE
  - F 4" BROKEN YELLOW
  - G 4" SOLID YELLOW
  - H 24" SOLID YELLOW
  - J WORD - WHITE
  - M 8" WHITE SOLID
  - N 12" WHITE SOLID
  - P 12" YELLOW SOLID
  - Q 4" WHITE DOT
- DIRECTIONAL ARROW
- RAISED PAVEMENT MARKERS**
- K TYPE I-C REFLECTIVE
  - L TYPE II-A-A REFLECTIVE
- SIGNING LEGEND**
- X PROPOSED SMALL SIGN
  - △ EXISTING SMALL SIGN TO BE REMOVED
  - ⊞ EXISTING SMALL SIGN TO BE RELOCATED
- \* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



**NOTES:**  
 REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
 PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SIGNING AND STRIPING**  
**STA. 135 +00 TO 155 +00**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 4 OF 7		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		341
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PAVEMENT MARKING QUANTITIES CSJ 1064-01-032										
A	B	D	E	F	G	J	K	L	M	N
	950'		2	940'	3700'	2	92	93	200'	350'

**PAVEMENT MARKINGS LEGEND**

(TYPE 1 - THERMOPLASTIC)

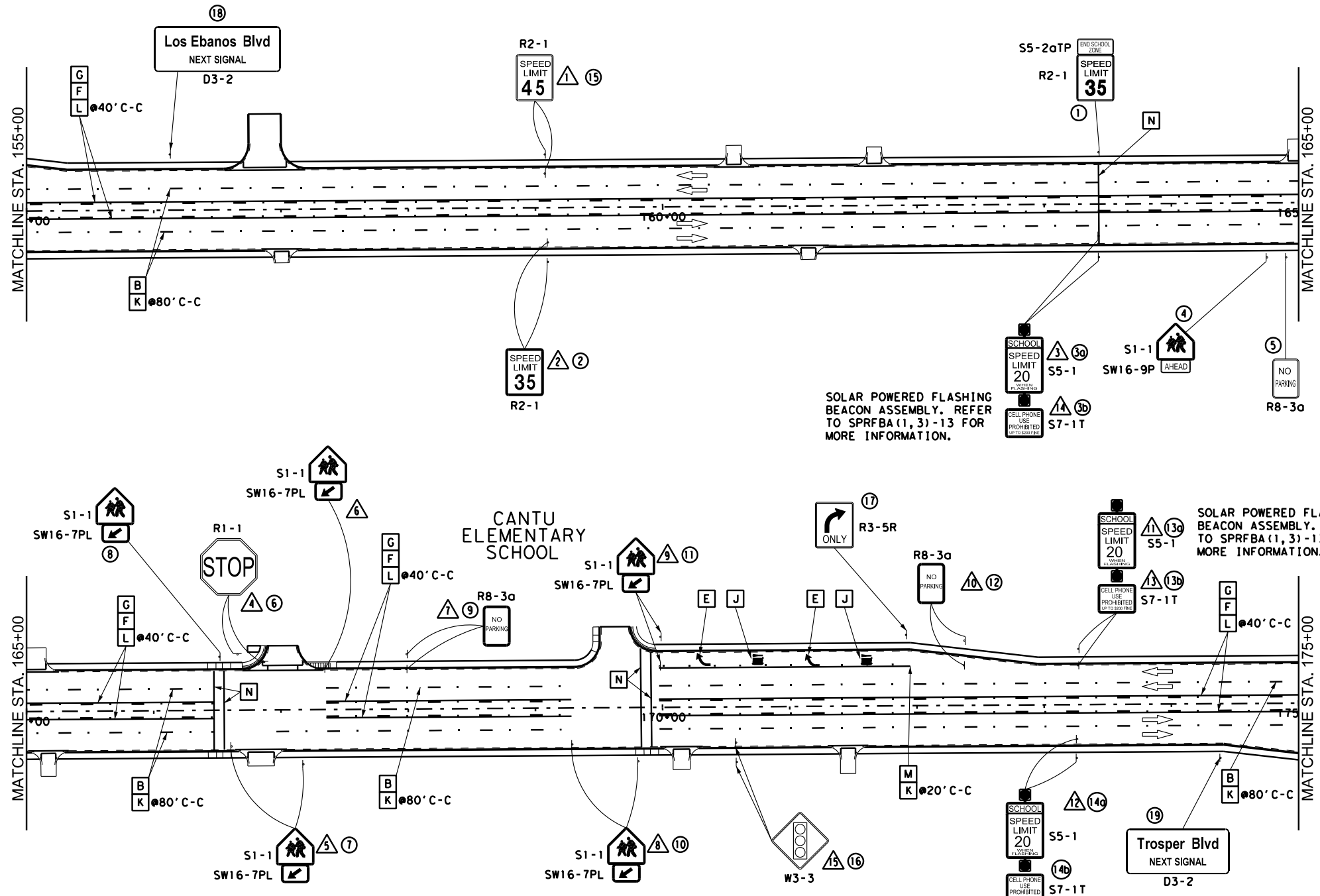
- A** 4" WHITE SOLID
- B** 4" WHITE BROKEN
- D** 24" WHITE SOLID
- E** SINGLE ARROW - WHITE
- F** 4" BROKEN YELLOW
- G** 4" SOLID YELLOW
- H** 24" SOLID YELLOW
- J** WORD - WHITE
- M** 8" WHITE SOLID
- N** 12" WHITE SOLID
- P** 12" YELLOW SOLID
- Q** 4" WHITE DOT
- DIRECTIONAL ARROW

**RAISED PAVEMENT MARKERS**

- K** TYPE I-C REFLECTIVE
- L** TYPE II-A-A REFLECTIVE

**SIGNING LEGEND**

- PROPOSED SMALL SIGN
- EXISTING SMALL SIGN TO BE REMOVED
- EXISTING SMALL SIGN TO BE RELOCATED
- \* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



SOLAR POWERED FLASHING BEACON ASSEMBLY. REFER TO SPRFBA (1, 3) -13 FOR MORE INFORMATION.

SOLAR POWERED FLASHING BEACON ASSEMBLY. REFER TO SPRFBA (1, 3) -13 FOR MORE INFORMATION.

SOLAR POWERED FLASHING BEACON ASSEMBLY. REFER TO SPRFBA (1, 3) -13 FOR MORE INFORMATION.

**NOTES:**  
 REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
 PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SIGNING AND STRIPING**  
**STA. 155 + 00 TO 175 + 00**

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

SHEET 5 OF 7		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		342
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

PLOT DRIVER: RD\*11x17\*PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 11/18/2022  
 FILE: pm1\SSUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\SIG\676w\*pm1.o\*05.dgn



**PAVEMENT MARKINGS LEGEND**

- (TYPE 1 - THERMOPLASTIC)
- [A] 4" WHITE SOLID
  - [B] 4" WHITE BROKEN
  - [D] 24" WHITE SOLID
  - [E] SINGLE ARROW - WHITE
  - [F] 4" BROKEN YELLOW
  - [G] 4" SOLID YELLOW
  - [H] 24" SOLID YELLOW
  - [J] WORD - WHITE
  - [M] 8" WHITE SOLID
  - [N] 12" WHITE SOLID
  - [P] 12" YELLOW SOLID
  - [Q] 4" WHITE DOT
- DIRECTIONAL ARROW

**RAISED PAVEMENT MARKERS**

- [K] TYPE I-C REFLECTIVE
- [L] TYPE II-A-A REFLECTIVE

**SIGNING LEGEND**

- (X) PROPOSED SMALL SIGN
  - (A) EXISTING SMALL SIGN TO BE REMOVED
  - (R) EXISTING SMALL SIGN TO BE RELOCATED
- \* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



*Thomas T. Le*

11/18/2022

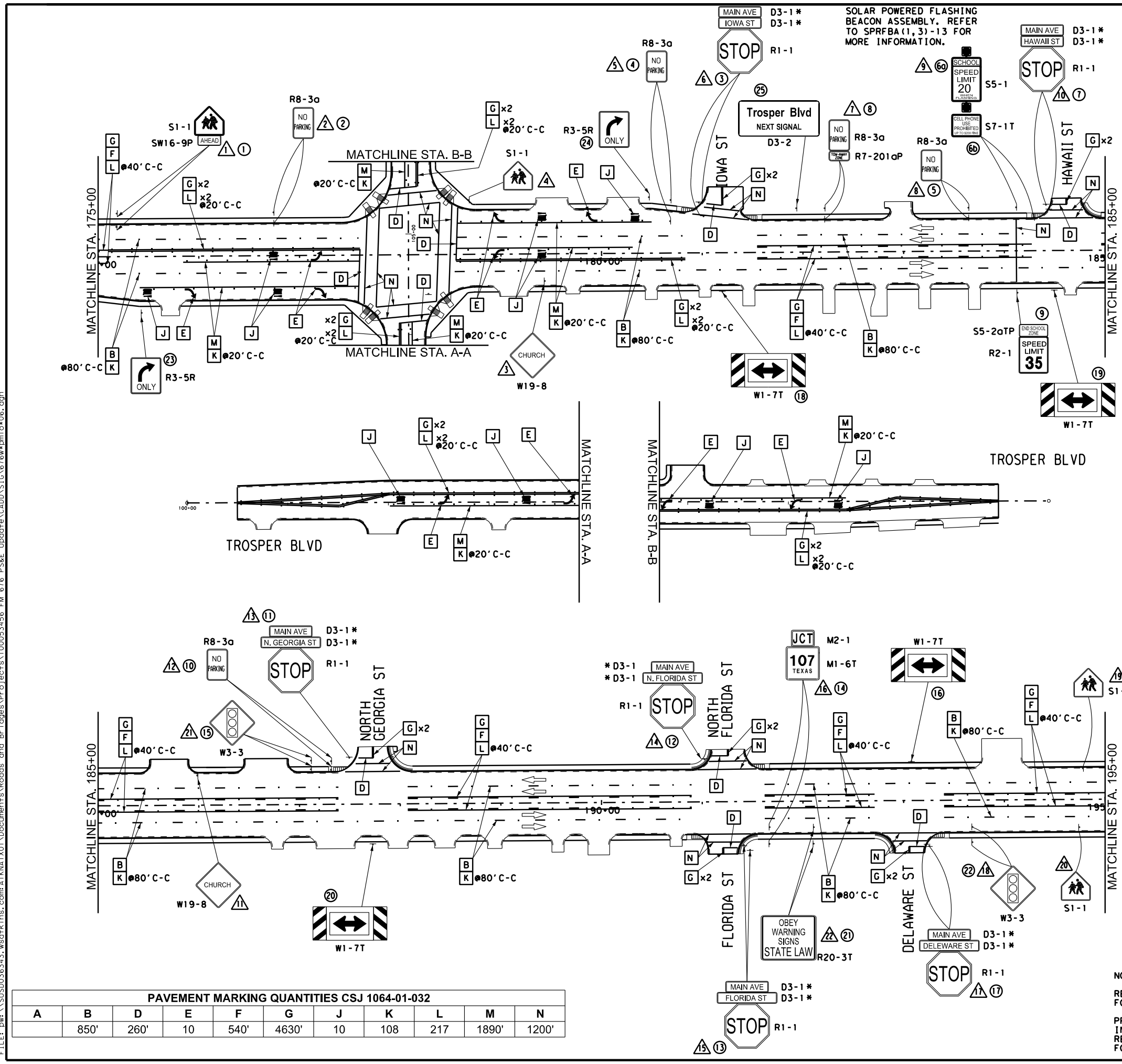


**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**SIGNING AND STRIPING**  
**STA. 175+00 TO 195+00**

PLAN SCALE: 1"=100'  
0 20 40 60 80 100  
DISTANCE IN FEET

SHEET 6 OF 7		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		343
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	



**PAVEMENT MARKING QUANTITIES CSJ 1064-01-032**

A	B	D	E	F	G	J	K	L	M	N
	850'	260'	10	540'	4630'	10	108	217	1890'	1200'

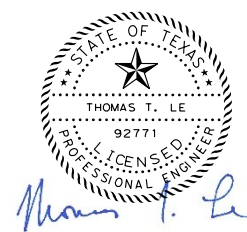
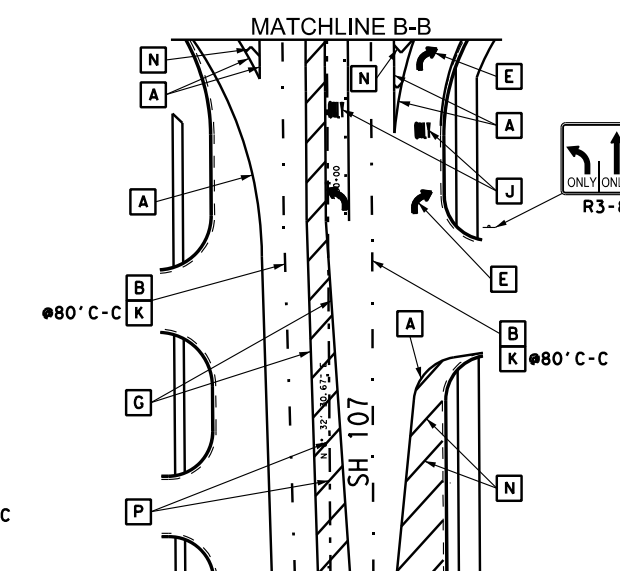
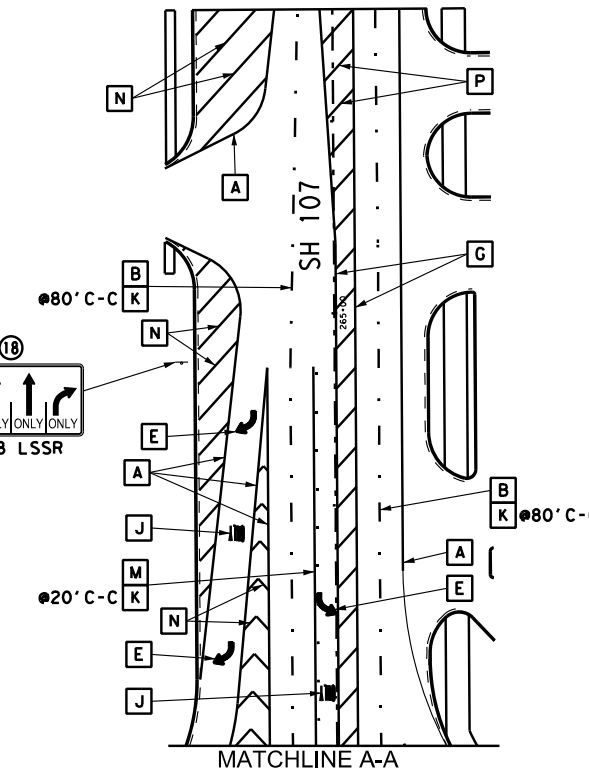
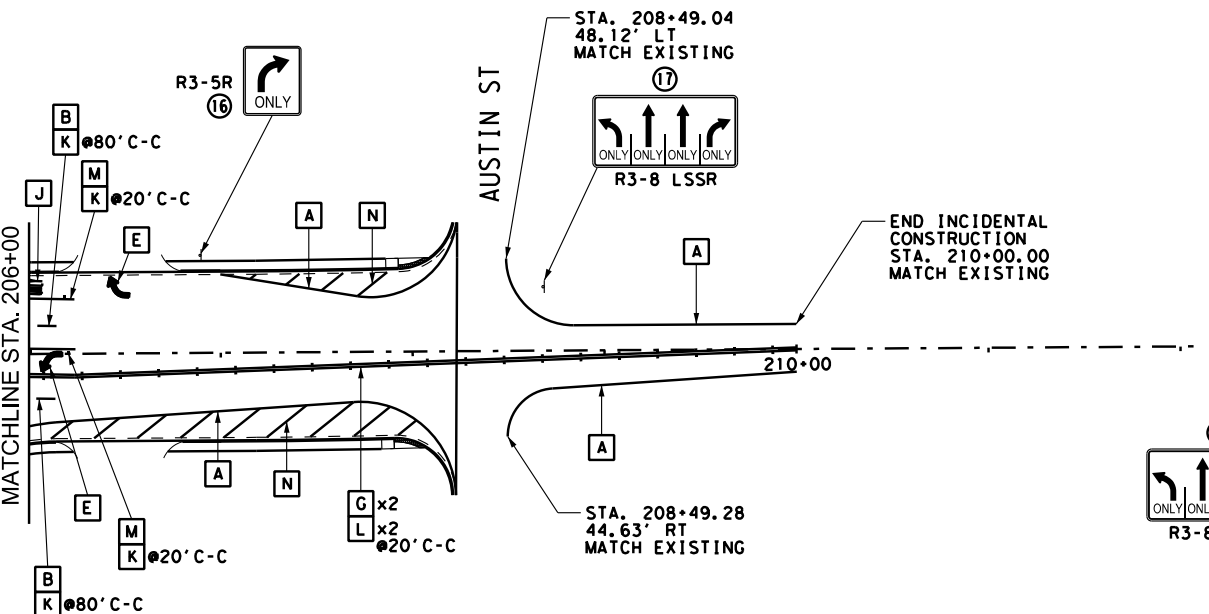
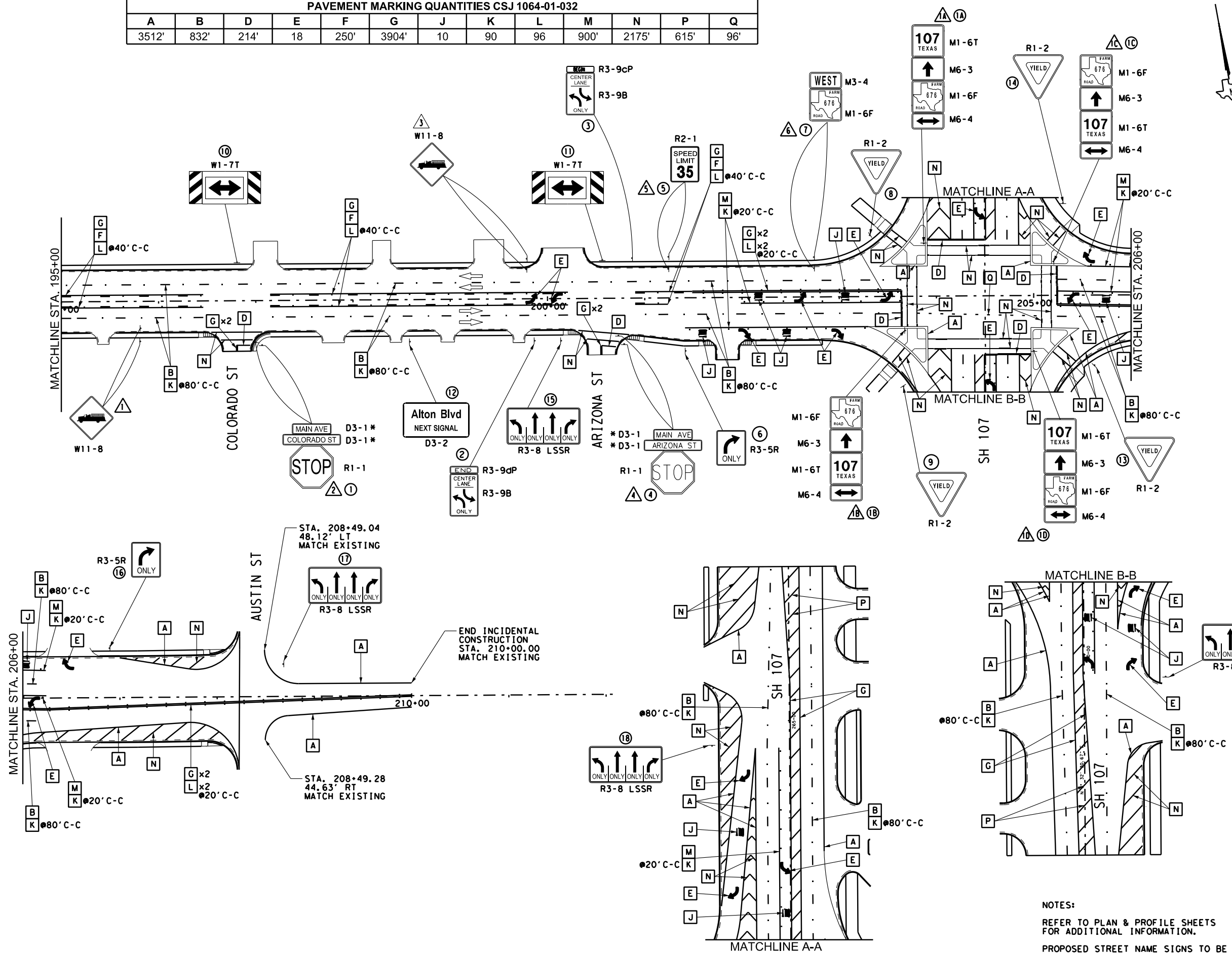
**NOTES:**  
REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.

PLOT DRIVER: RD\*11x17\*PDF.d1+  
 PENTTABLE: PenTable.tbl  
 DATE: 11/18/2022  
 FILE: pm\US03036343.wsatkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\SIG\676wpm1.o\*06.dgn

PAVEMENT MARKING QUANTITIES CSJ 1064-01-032												
A	B	D	E	F	G	J	K	L	M	N	P	Q
3512'	832'	214'	18	250'	3904'	10	90	96	900'	2175'	615'	96'

**PAVEMENT MARKINGS LEGEND**  
(TYPE 1 - THERMOPLASTIC)

- [A] 4" WHITE SOLID
  - [B] 4" WHITE BROKEN
  - [D] 24" WHITE SOLID
  - [E] SINGLE ARROW - WHITE
  - [F] 4" BROKEN YELLOW
  - [G] 4" SOLID YELLOW
  - [H] 24" SOLID YELLOW
  - [J] WORD - WHITE
  - [M] 8" WHITE SOLID
  - [N] 12" WHITE SOLID
  - [P] 12" YELLOW SOLID
  - [Q] 4" WHITE DOT
  - DIRECTIONAL ARROW
- RAISED PAVEMENT MARKERS**
- [K] TYPE I-C REFLECTIVE
  - [L] TYPE II-A-A REFLECTIVE
- SIGNING LEGEND**
- (X) PROPOSED SMALL SIGN
  - (△) EXISTING SMALL SIGN TO BE REMOVED
  - (⊖) EXISTING SMALL SIGN TO BE RELOCATED
- \* SMALL SIGN TO BE REMOVED & INSTALLED BY OTHERS



12/1/2022



**ATKINS**  
TBPE REG. #F-474

**FM 676**  
**SIGNING AND STRIPING**  
**STA. 195+00 TO END**

PLAN SCALE: 1"=100'  
0 20 40 60 80 100  
DISTANCE IN FEET











SHEET 7 OF 7		FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
		6		344
STATE	DIST.	COUNTY		
TEXAS	PHR	HIDALGO		
CONT.	SECT.	JOB	HIGHWAY NO.	
1064	01	032	FM 676	

**NOTES:**  
REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.  
PROPOSED STREET NAME SIGNS TO BE INSTALLED ON PROPOSED STOP SIGNS. REFER TO STREET NAME SIGN DETAILS FOR MORE INFORMATION.

PLOT DRIVER: RD\*11x17\*PDF.d1t  
 PENTTABLE: PenTable.tbl  
 DATE: 12/1/2022  
 FILE: pm1\SUS03036343.wsoftk.ins.com:ATKATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\PAV\Revisions\676w\*pm1.o\*07.dgn

# SUMMARY OF SMALL SIGNS

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of any information from one format to another, or for incorrect results or damages resulting from its use.

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
1 of 7											
	1	R4-1		24 X 30	X		S80	1	SA	P	
	2	W4-2R		36 X 36	X		S80	1	SA	P	
	3	R3-9dP		24 X 8	X		S80	1	SA	P	
		R3-9B		24 X 36							
	4	R3-9cP		24 X 8	X		S80	1	SA	P	
		R3-9B		24 X 36							
	5	M3-4		24 X 12	X		S80	1	SA	P	
		M1-6F		24 X 24							
	6	M3-2		24 X 12	X		S80	1	SA	P	
		M1-6F		24 X 24							
	7	R2-1		30 X 36	X		S80	1	SA	P	
	8	R1-1		36 X 36	X		S80	1	SA	P	
			BY OTHERS								
	9	M2-1		21 X 15	X		S80	1	SA	P	
		M1-6T		24 X 24							
	10	R1-1		36 X 36	X		S80	1	SA	P	
			BY OTHERS								

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.  
<http://www.txdot.gov/>

- NOTE:**
- Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
  - For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
  - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 1 OF 11				
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
4-16	DIST	COUNTY	SHEET NO.	
8-16	PHR	HIDALGO	345	

# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels
1 of 7 (Cont.)												
	11	R1-1		36 X 36	X		S80	1	SA	P		
	12	R2-1		30 X 36	X		S80	1	SA	P		
	13	W1-7T		96 X 36	X		S80	1	SA	T		
	14	W1-7T		96 X 36	X		S80	1	SA	T		
	15	W3-3		36 X 36	X		S80	1	SA	P		
	16	R3-5R		30 X 36	X		S80	1	SA	P		
	17	R3-5R		30 X 36	X		S80	1	SA	P		
	18	D3-2		66 X 30	X		S80	1	SA	T		
	19	D3-2		66 X 30	X		S80	1	SA	T		
	20	D21-1TR		90 X 12	X		S80	1	SA	T		
	21	D21-1TR		60 X 12	X		S80	1	SA	T		
	22	D21-1TR		90 X 12	X		S80	1	SA	T		
2 of 7												
	1	R1-1		36 X 36	X		S80	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:  
<http://www.txdot.gov/>

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- Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
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  - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 2 OF 11					
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY	
REVISIONS	1064	01	032	FM 676	
4-16	DIST	COUNTY		SHEET NO.	
8-16	PHR	HIDALGO		346	





# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
5 of 7											
1	S5-2ATP R2-1		30 X 15	X	S80	1	SA	P			
			30 X 36								
2	R2-1		30 X 36	X	S80	1	SA	P			
3a	S5-1		24 X 48	X	LISTED FOR INFORMATION PURPOSES AND ARE INCLUDED IN ITEM 685						
			24 X 18								
3b	S7-1T		24 X 18								
4	S1-1 SW16-9P		36 X 36	X	S80	1	SA	P			
			24 X 12								
5	R8-3a		24 X 30	X	S80	1	SA	P			
6	R1-1		36 X 36	X	S80	1	SA	P			
7	S1-1 SW16-7PL		36 X 36	X	S80	1	SA	P			
			30 X 18								
8	S1-1 SW16-7PL		36 X 36	X	S80	1	SA	P			
			30 X 18								
9	R8-3a		24 X 30	X	S80	1	SA	P			
10	S1-1 SW16-7PL		36 X 36	X	S80	1	SA	P			
			30 X 18								
11	S1-1 SW16-7PL		36 X 36	X	S80	1	SA	P			
			30 X 18								
12	R8-3a		24 X 30	X	S80	1	SA	P			

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:  
<http://www.txdot.gov/>

- NOTE:**
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  - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).








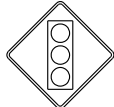







## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 5 OF 11				
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
4-16	DIST	COUNTY		SHEET NO.
8-16	PHR	HIDALGO		349

# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels
5 of 7 (Cont.)												
	13a	S5-1		24 X 48								
	13b	S7-1T		24 X 18								
							LISTED FOR INFORMATION PURPOSES AND ARE INCLUDED IN ITEM 685					
	14a	S5-1		24 X 48								
	14b	S7-1T		24 X 18								
							LISTED FOR INFORMATION PURPOSES AND ARE INCLUDED IN ITEM 685					
	15	R2-1		30 X 36	X		S80	1	SA	P		
	16	W3-3		36 X 36	X		S80	1	SA	P		
	17	R3-5R		30 X 36	X		S80	1	SA	P		
	18	D3-2		84 X 30	X		S80	1	SA	T		
	19	D3-2		66 X 30	X		S80	1	SA	T		
6 of 7												
	1	S1-1 SW16-9P		36 X 36 24 X 12		X	S80	1	SA	P		
	2	R8-3a		24 X 30	X		S80	1	SA	P		
	3	R1-1	 BY OTHERS	36 X 36	X		S80	1	SA	P		
	4	R8-3a		24 X 30	X		S80	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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  - For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
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## SUMMARY OF SMALL SIGNS











### SOSS

SHEET 6 OF 11					
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY	
REVISIONS	1064	01	032	FM 676	
4-16	DIST	COUNTY	SHEET NO.		
8-16	PHR	HIDALGO	350		



# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels
6 of 7 (Cont.)												
	5	R8-3a		24 X 30	X		S80	1	SA	P		
	6a	S5-1		24 X 48								
	6b	S7-1T		24 X 18								
	7	R1-1	 <span style="font-size: small;">BY OTHERS</span>	36 X 36	X		S80	1	SA	P		
	8	R8-3a R7-201aP		24 X 30 12 X 6			S80	1	SA	P		
	9	S5-2aTP R2-1		24 X 10 30 X 36			S80	1	SA	P		
	10	R8-3a		24 X 30	X		S80	1	SA	P		
	11	R1-1	 <span style="font-size: small;">BY OTHERS</span>	36 X 36	X		S80	1	SA	P		
	12	R1-1	 <span style="font-size: small;">BY OTHERS</span>	36 X 36	X		S80	1	SA	P		
	13	R1-1	 <span style="font-size: small;">BY OTHERS</span>	36 X 36	X		S80	1	SA	P		

LISTED FOR INFORMATION PURPOSES AND ARE INCLUDED IN ITEM 685

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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  - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD (GEN).



## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 7 OF 11				
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
4-16	DIST	COUNTY	SHEET NO.	
8-16	PHR	HIDALGO	351	

# SUMMARY OF SMALL SIGNS

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of any units from SI to US Customary Units or for any errors or omissions in this standard.   
 DATE: 11/18/2022  
 FILE: \\s03036343.worhkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456\100053456.dwg

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
6 of 7 (Cont.)											
	14	M2-1 M1-6T		21 X 15 24 X 24	X		S80	1	SA	P	
	15	W3-3		36 X 36	X		S80	1	SA	P	
	16	W1-7T		96 X 36	X		S80	1	SA	T	
	17	R1-1		36 X 36	X		S80	1	SA	P	
	18	W1-7T		96 X 36	X		S80	1	SA	T	
	19	W1-7T		96 X 36	X		S80	1	SA	T	
	20	W1-7T		96 X 36	X		S80	1	SA	T	
	21	R20-3T		48 X 42	X		S80	1	SA	T	
	22	W3-3		36 X 36	X		S80	1	SA	P	
	23	R3-5R		30 X 36	X		S80	1	SA	P	
	24	R3-5R		30 X 36	X		S80	1	SA	P	
	25	D3-2		66 X 30	X		S80	1	SA	T	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.  
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  - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



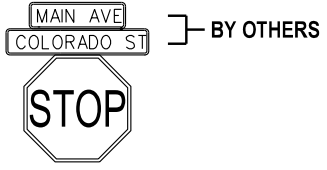


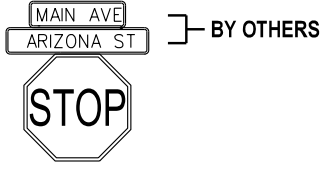



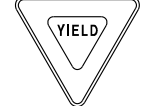
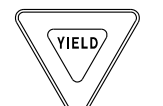
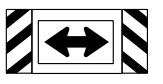
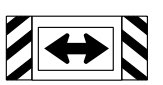

## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 8 OF 11										
FILE:	slums16.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT	
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY					
REVISIONS		1064	01	032	FM 676					
4-16		DIST	COUNTY		SHEET NO.					
8-16		PHR	HIDALGO		352					

# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
7 of 7											
	1	R1-1		36 X 36	X		S80	1	SA	P	
	2	R3-9dP R3-9B		30 X 12 24 X 36		X	S80	1	SA	P	
	3	R3-9cP R3-9B		30 X 12 24 X 36		X	S80	1	SA	P	
	4	R1-1		36 X 36	X		S80	1	SA	P	
	5	R2-1		30 X 36	X		S80	1	SA	P	
	6	R3-5R		30 X 36	X		S80	1	SA	P	
	7	M3-4 M1-6F		24 X 12 24 X 24		X	S80	1	SA	P	
	8	R1-2		36 X 36	X		S80	1	SA	P	BM
	9	R1-2		36 X 36	X		S80	1	SA	P	BM
	10	W1-7T		96 X 36	X		S80	1	SA	T	
	11	W1-7T		96 X 36	X		S80	1	SA	T	
	12	D3-2		60 X 30	X		S80	1	SA	T	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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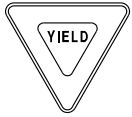
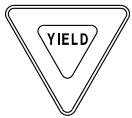
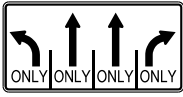

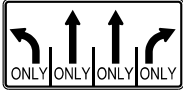
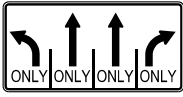
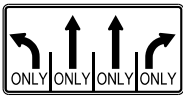


## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 9 OF 11			
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT May 1987	CON: 1064	SECT: 01	JOB: 032
REVISIONS	DIST: COUNTY		SHEET NO.
4-16	PHR		HIDALGO
8-16			353

# SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels
7 of 7 (Cont.)												
	13	R1-2		36 X 36	X		S80	1	SA	P	BM	
	14	R1-2		36 X 36	X		S80	1	SA	P	BM	
	15	R3-8 LSSR		30 X 66	X		S80	1	SA	T		
	16	R3-5R		30 X 36	X		S80	1	SA	P		
	17	R3-8 LSSR		30 X 66	X		S80	1	SA	T		
	18	R3-8 LSSR		30 X 66	X		S80	1	SA	T		
	19	R3-8 LSSR		30 X 66	X		S80	1	SA	T		
	1A	M1-6T		24 X 24	X		S80	1	SA	P		
		M6-3		21 X 15								
		M1-6F		24 X 24								
		M6-4		21 X 15								
	1B	M1-6F		24 X 24	X		S80	1	SA	P		
		M6-3		21 X 15								
		M1-6T		24 X 24								
		M6-4		21 X 15								

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
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7.5 to 15	0.100"
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## SUMMARY OF SMALL SIGNS









### SOSS

SHEET 10 OF 11					
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY	
REVISIONS	1064	01	032	FM 676	
4-16	DIST	COUNTY		SHEET NO.	
8-16	PHR	HIDALGO		353A	

# SUMMARY OF SMALL SIGNS

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DATE: 11/18/2022  
 FILE: pww\USJSD036343\_wsork\ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456\FM 676\Signs\Summary of Small Signs.dgn

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"		1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels
7 of 7 (Cont.)												
	1C	M1-6F	   	24 X 24								
		M6-3		21 X 15	X	S80	1	SA	P			
		M1-6T		24 X 24								
		M6-4		21 X 15								
	1D	M1-6T	   	24 X 24								
		M6-3		21 X 15	X	S80	1	SA	P			
		M1-6F		24 X 24								
		M6-4		21 X 15								

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Square Feet	Minimum Thickness
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## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 11 OF 11				
FILE: slums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
4-16	DIST	COUNTY	SHEET NO.	
8-16	PHR	HIDALGO	353B	

## SUMMARY OF SIGN REMOVAL & RELOCATION

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	REMOVE SN SUP & AM (EA)	SM RD	RELOCATE SN SUB & AM TY S80 (EA)
<b>1 of 7</b>						
	1R	M3-3	SOUTH			1
		M1-6T	364 TEXAS			
		M6-3	VERTICAL ARROW			
		M3-2	EAST			
		M1-6F	FARM ROAD 676			
		M6-1	DIRECTIONAL ARROW			
		M3-4	WEST			
		M1-6F	FARM ROAD 676			
		M6-1	DIRECTIONAL ARROW			
	2R	M3-2	EAST			1
		M1-6F	FARM ROAD 676			
		M6-3	VERTICAL ARROW			
		M3-1	NORTH			
		M1-6T	364 TEXAS			
		M6-1	DIRECTIONAL ARROW			
		M3-3	SOUTH			
		M1-6T	364 TEXAS			
		M6-1	DIRECTIONAL ARROW			
	3R	M3-4	WEST			1
		M1-6F	FARM ROAD 676			
		M6-3	VERTICAL ARROW			
		M3-3	SOUTH			
		M1-6T	364 TEXAS			
		M6-1	DIRECTIONAL ARROW			
	4R	M3-1	NORTH			1
		M1-6T	364 TEXAS			
		M6-3	VERTICAL ARROW			
		M3-4	WEST			
		M1-6F	FARM ROAD 676			
		M6-1	DIRECTIONAL ARROW			
		M3-2	EAST			
		M1-6F	FARM ROAD 676			
		M6-1	DIRECTIONAL ARROW			
	1	R1-1	STOP	1		
	2	R2-1	SPEED LIMIT 55	1		
	3	R1-1	STOP	1		
	4	R1-1	STOP	1		
	5	D3-1	LA HOMA RD	1		
	6	D3-1	SCHUERBACH RD	1		
	7	D3-1	SCHUERBACH RD	1		
	8	D3-1	FIELD DR	1		
	9	W3-3	(SYM) SIGNAL AHEAD	1		
	10	R2-1	SPEED LIMIT 55	1		
	11	M3-2	EAST	1		
		M1-6F	FARM ROAD 676	1		
	12	M3-4	WEST	1		
		M1-6F	FARM ROAD 676	1		
<b>SHEET TOTAL</b>				<b>14</b>		<b>4</b>
<b>SUBTOTAL</b>				<b>14</b>		<b>4</b>

## SUMMARY OF SIGN REMOVAL & RELOCATION

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	REMOVE SN SUP & AM (EA)	SM RD	RELOCATE SN SUB & AM TY S80 (EA)
<b>2 of 7</b>						
	1	R1-1	STOP	1		
	2	M2-1	JCT	1		
		M1-6T	364 TEXAS			
	3	R1-1	STOP	1		
	4	M3-4	WEST	1		
		M1-6F	FARM ROAD 676			
	5	D3-1	FIELD DR	1		
	6	D3-1	MOOREFIELD RD	1		
	7	D3-1	MOOREFIELD RD	1		
	8	I-2AT	ALTON CITY LIMITS	1		
	9	W3-3	(SYM) SIGNAL AHEAD	1		
<b>SHEET TOTAL</b>				<b>9</b>		<b>0</b>
<b>3 of 7</b>						
	1	R2-1	SPEED LIMIT 55	1		
	2	D1-1	INSPIRATION BLVD	1		
	3	D1-1	INSPIRATION BLVD	1		
	4	R2-1	SPEED LIMIT 55	1		
<b>SHEET TOTAL</b>				<b>4</b>		<b>0</b>
<b>4 of 7</b>						
	1	W3-5	SPEED LIMIT 45 AHEAD	1		
	2	R2-1	SPEED LIMIT 55	1		
	3	R2-1	SPEED LIMIT 45	1		
	4	D1-1	LOS EBANOS BLVD	1		
	5	D1-1	LOS EBANOS BLVD	1		
	6	W3-3	(SYM) SIGNAL AHEAD	1		
<b>SHEET TOTAL</b>				<b>6</b>		<b>0</b>
<b>5 of 7</b>						
	1	R2-1	SPEED LIMIT 45	1		
	2	R2-1	SPEED LIMIT 35	1		
	3	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	*		
	4	R1-1	STOP	1		
	5	S1-1	(SYM) SCHOOL CROSSING	1		
	6	S1-1	(SYM) SCHOOL CROSSING	1		
	7	R8-3a	NO PARKING	1		
	8	S1-1	(SYM) SCHOOL CROSSING	1		
	9	S1-1	(SYM) SCHOOL CROSSING	1		
	10	R8-3a	NO PARKING	1		
	11	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	*		
	12	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	*		
	13	S7-1T	CELL PHONE USE PROHIBITED UP TO \$20 FINE	*		
	14	S7-1T	CELL PHONE USE PROHIBITED UP TO \$20 FINE	*		
	15	W3-3	(SYM) SIGNAL AHEAD	1		
<b>SHEET TOTAL</b>				<b>10</b>		<b>0</b>
<b>SUBTOTAL</b>				<b>43</b>		<b>4</b>

\* INCLUDED UNDER ITEM 685



# ATKINS

TBPE REG. #F-474

**FM 676W**  
**SUMMARY OF SMALL SIGNS**  
**TO BE REMOVED**  
**OR RELOCATED**

SHEET 1 OF 2

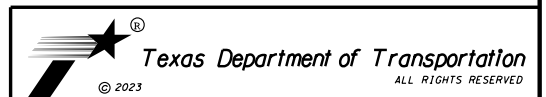
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6			354
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

# SUMMARY OF SIGN REMOVAL & RELOCATION

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	REMOVE SN SUP & AM (EA)	RELOCATE SM RD SN SUB & AM TY S80 (EA)
6 of 7					
	1	S1-1	(SYM) SCHOOL CROSSING	1	
	2	R8-3a	NO PARKING	1	
	3	W19-8	CHURCH	1	
	4	S1-1	(SYM) SCHOOL CROSSING	1	
	5	R8-3a	NO PARKING	1	
	6	R1-1	STOP	1	
	7	R8-3a	NO PARKING	1	
		R7-201aP	TOW AWAY ZONE		
	8	R8-3a	NO PARKING	1	
	9	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	*	
	10	R1-1	STOP	1	
	11	W19-8	CHURCH	1	
	12	R8-3a	NO PARKING	1	
	13	R1-1	STOP	1	
	14	R1-1	STOP	1	
	15	R1-1	STOP	1	
	16	M2-1	JCT	1	
		M1-6T	TEXAS 107		
	17	R1-1	STOP	1	
	18	W3-3	(SYM) SIGNAL AHEAD	1	
	19	S1-1	(SYM) SCHOOL CROSSING	1	
	20	S1-1	(SYM) SCHOOL CROSSING	1	
	21	W3-3	(SYM) SIGNAL AHEAD	1	
	22	R20-3T	OBEY WARNING SIGNS STATE LAW	1	
<b>SHEET TOTAL</b>				<b>21</b>	<b>0</b>

7 of 7					
	1A	M1-6F	FARM ROAD 676	1	
		M6-4	BIDIRECTIONAL ARROW		
	1B	M1-6T	107 TEXAS	1	
		M6-4	BIDIRECTIONAL ARROW		
	1C	M1-6T	107 TEXAS	1	
		M6-4	BIDIRECTIONAL ARROW		
	1D	M1-6F	FARM ROAD 676	1	
		M6-4	BIDIRECTIONAL ARROW		
	1	W11-8	(SYM) FIRE STATION	1	
	2	R1-1	STOP	1	
	3	W11-8	(SYM) FIRE STATION	1	
	4	R1-1	STOP	1	
	5	R2-1	SPEED LIMIT 35	1	
	6	M3-4	WEST	1	
		M1-6F	FARM ROAD 676		
<b>SHEET TOTAL</b>				<b>10</b>	<b>0</b>
<b>SUBTOTAL</b>				<b>31</b>	<b>0</b>
<b>TOTAL</b>				<b>74</b>	<b>4</b>

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 DATE: 11/18/2022  
 FILE: pm1\USUS036343.wsofkins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 P&E Update\CADD\SIG\sums08.dgn



## ATKINS

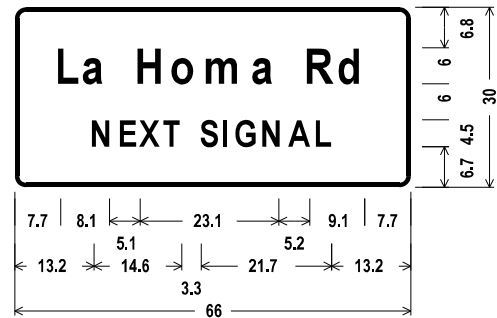
TBPE REG. #F-474

### FM 676W SUMMARY OF SMALL SIGNS TO BE REMOVED OR RELOCATED

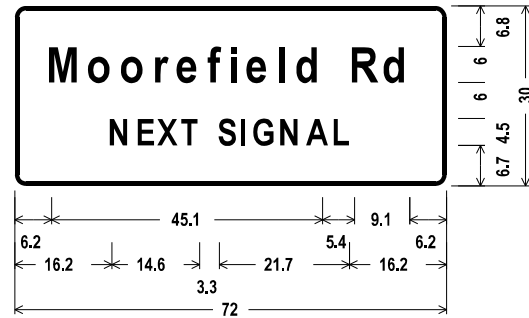
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			355
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

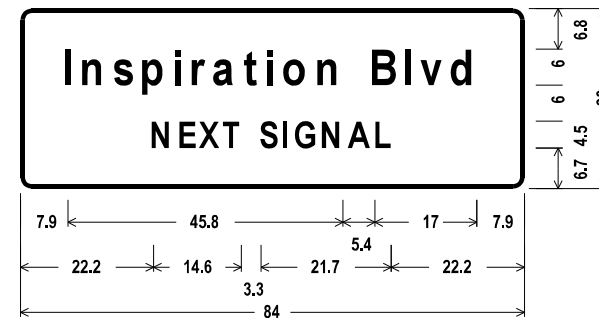
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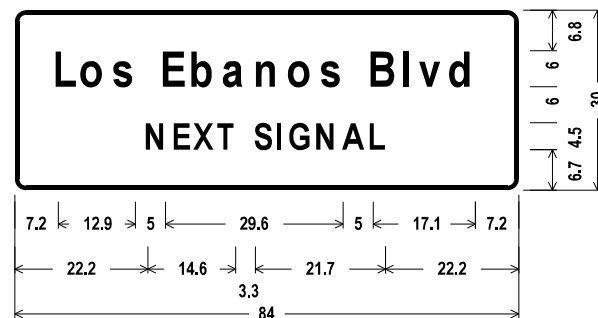
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 "La Homa Rd", ClearviewHwy-3-W;  
 "NEXT SIGNAL", ClearviewHwy-3-W;



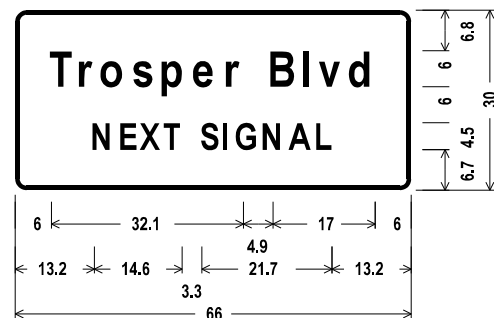
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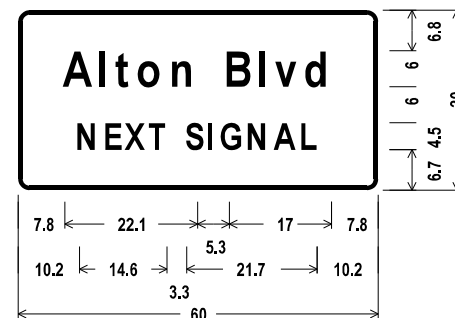
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D3-2(1)\_VARx30;  
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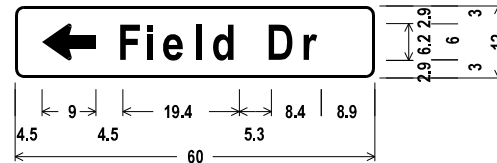
D3-2(1)\_VARx30;  
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 "NEXT SIGNAL", ClearviewHwy-3-W;



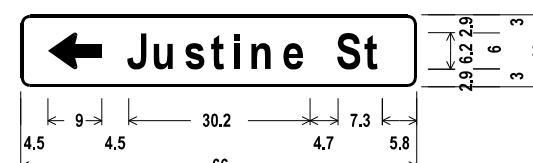
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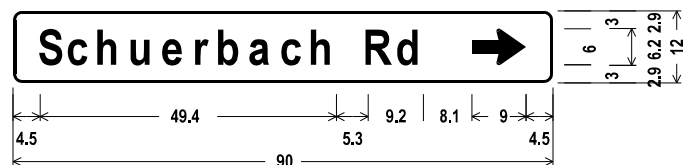
D21-1TL\_VARx12;  
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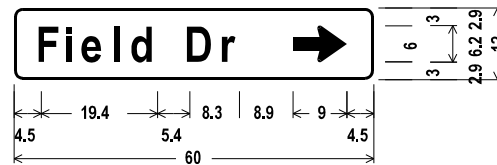
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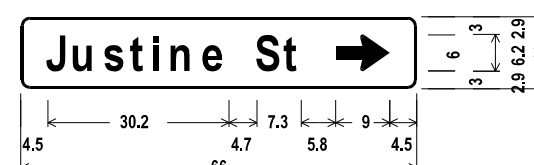
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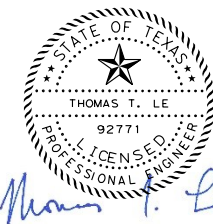
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 Standard Arrow Custom 9.0" X 6.1" 0°;



D21-1TR\_VARx12;  
 1.5" Radius, 0.5" Border, White on Green;  
 "Field Dr", ClearviewHwy-3-W;  
 Standard Arrow Custom 9.0" X 6.1" 0°;



D21-1TR\_VARx12;  
 1.5" Radius, 0.5" Border, White on Green;  
 "Justine St", ClearviewHwy-3-W;  
 Standard Arrow Custom 9.0" X 6.1" 0°;



11/18/2022



**ATKINS**

TBPE REG. #F-474

FM 676  
SIGN DETAILS

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			356
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

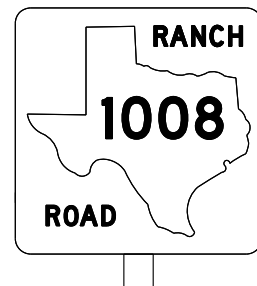
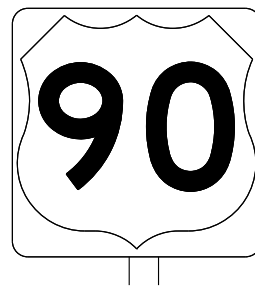


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DATE: 11/18/2022  
 FILE: p:\SUS0036343\_wsatk\ins.com:ATKNATX01\Documents\Roads and Bridges\PS:12-03-07-13-08\12-03-07-13-08.dwg

## REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

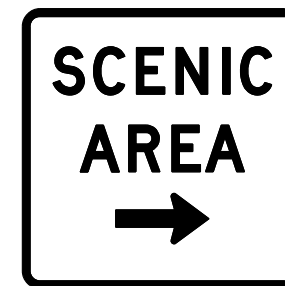
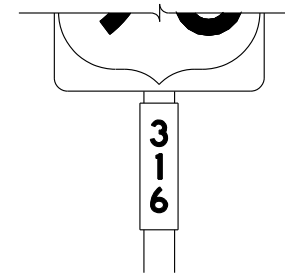
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



TYPICAL EXAMPLES

## REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING



TYPICAL EXAMPLES

## GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

- Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.
- Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

<http://www.txdot.gov/>



## TYPICAL SIGN REQUIREMENTS

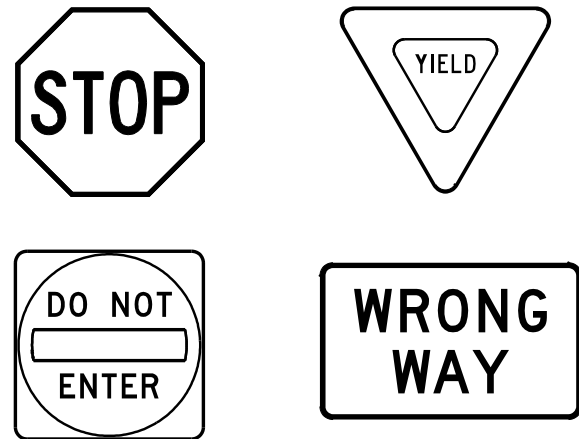
### TSR(3) - 13

FILE:	tsr3-13.dgn	DN:	TxDOT	CK:	TxDOT	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY				
REVISIONS		1064	01	032	FM 676				
12-03	7-13	DIST	COUNTY		SHEET NO.				
9-08		PHR	HIDALGO		357				

DATE: 11/18/2022  
 FILE: pwr\USUD036343\_wsatk\ins.com:ATKNATX01\Documents\Roads and Bridges\PS1\Signs\Signs\Requirements\Requirements.dgn  
 DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or the accuracy of the information contained herein.

### REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



#### REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

### REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

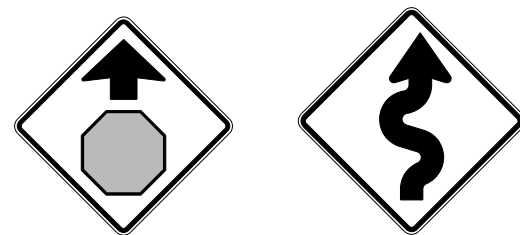
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



#### TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

### REQUIREMENTS FOR WARNING SIGNS



#### TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B <sub>FL</sub> OR C <sub>FL</sub> SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

### REQUIREMENTS FOR SCHOOL SIGNS



#### TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B <sub>FL</sub> OR C <sub>FL</sub> SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

### GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
- White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
- Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

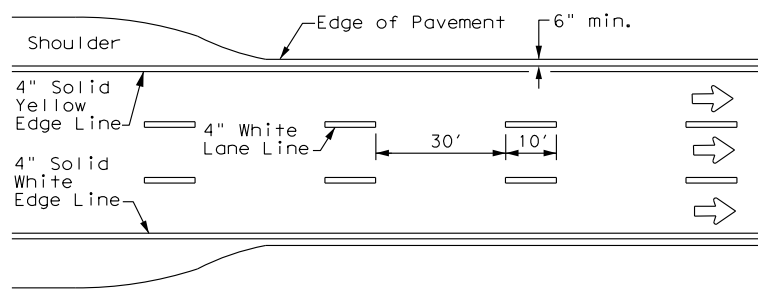
DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:  
<http://www.txdot.gov/>

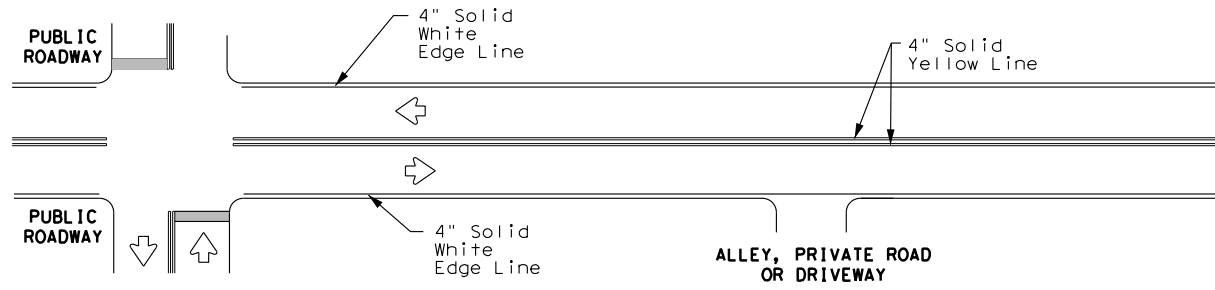
				<b>Traffic Operations Division Standard</b>	
<h2>TYPICAL SIGN REQUIREMENTS</h2>					
<h3>TSR(4) - 13</h3>					
FILE:	tsr4-13.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2003	CONT:	1064	SECT:	01
REVISIONS		JOB:	032	HIGHWAY:	FM 676
12-03	7-13	DIST:	COUNTY	SHEET NO.:	
9-08		PHR:	HIDALGO	358	



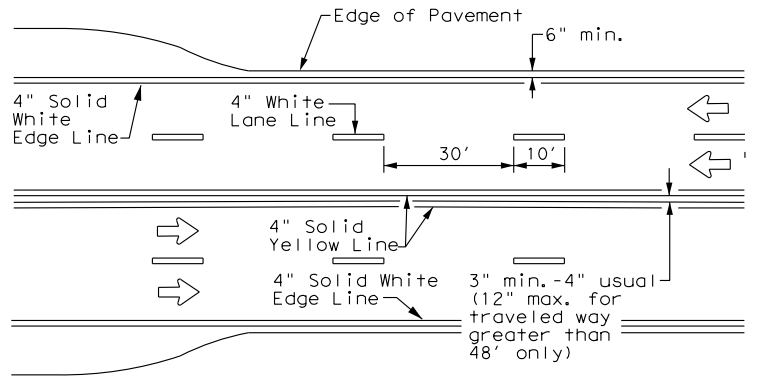
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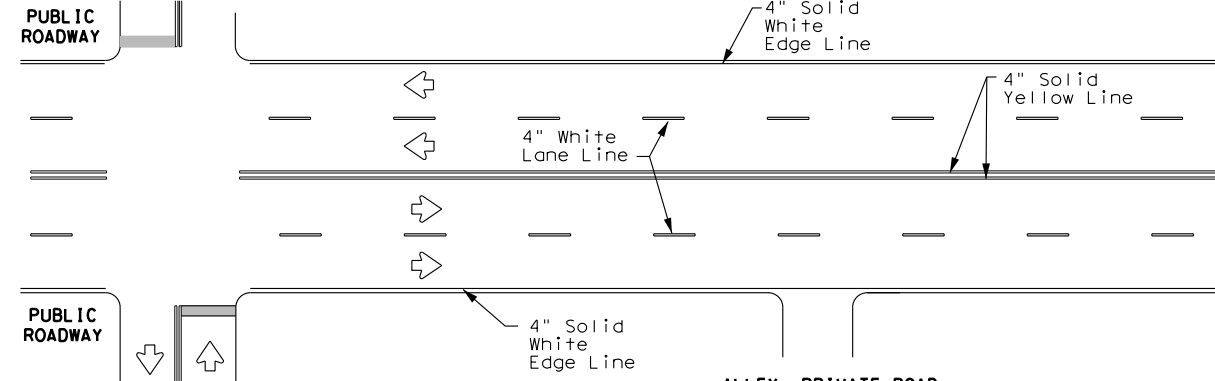
**EDGE LINE AND LANE LINES  
ONE-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



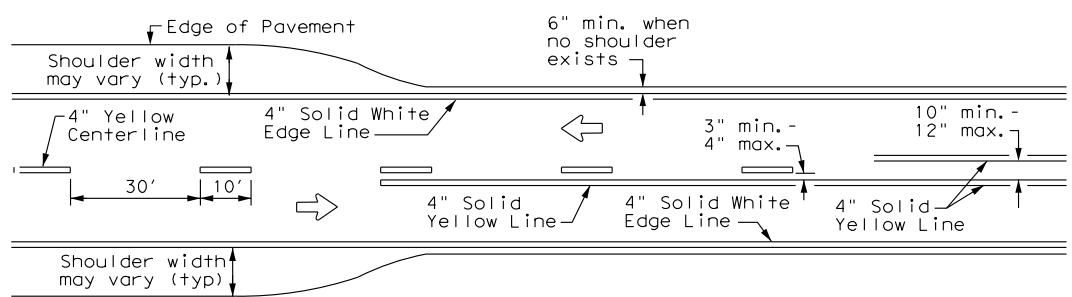
**TYPICAL TWO-LANE, TWO-WAY PAVEMENT  
MARKINGS THROUGH INTERSECTIONS**



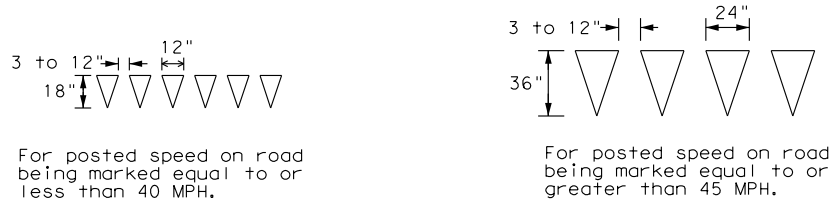
**CENTERLINE AND LANE LINES  
FOUR LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



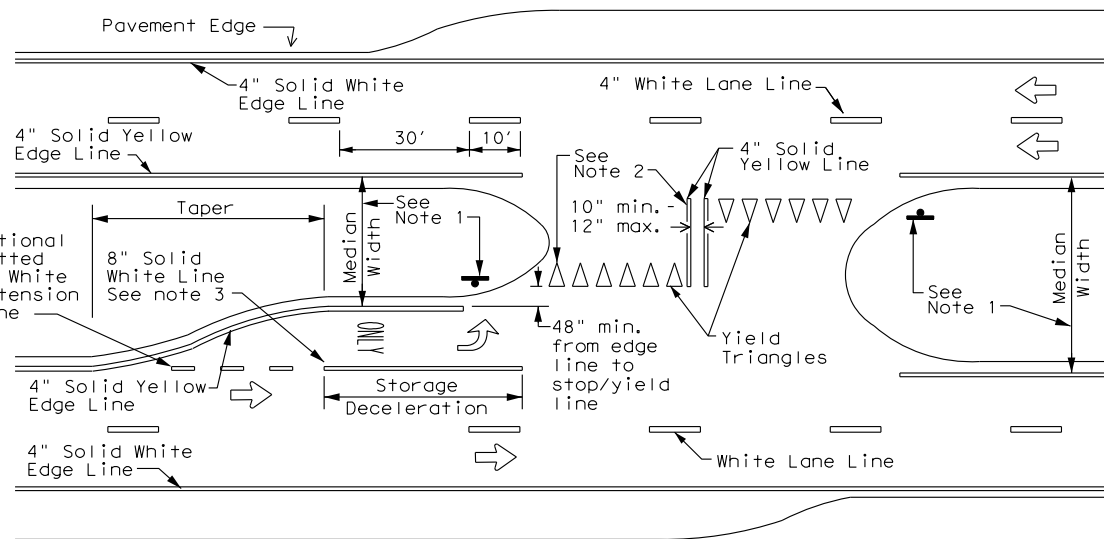
**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT  
MARKINGS THROUGH INTERSECTIONS**



**TWO LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



**YIELD LINES**



**FOUR LANE DIVIDED ROADWAY CROSSOVERS**

**NOTES**

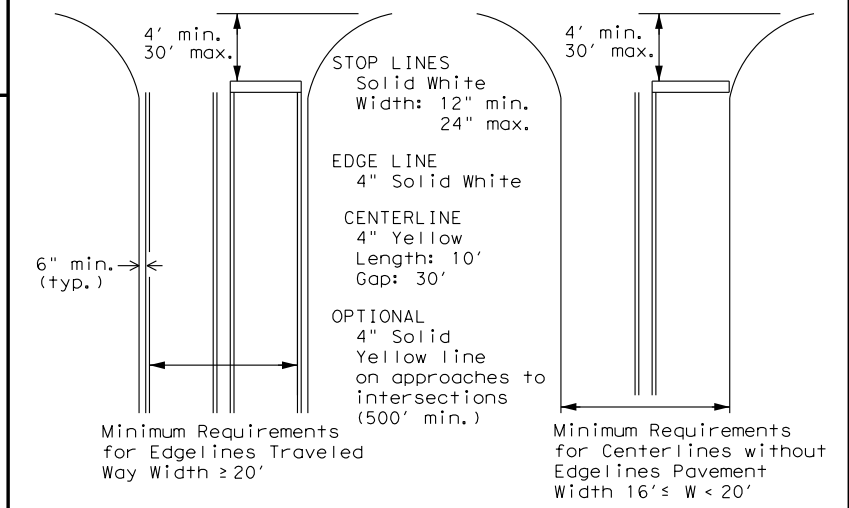
- Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.
- Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield triangles shall only be used with yield signs.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

**GENERAL NOTES**

- Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
- The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



**GUIDE FOR PLACEMENT OF STOP LINES,  
EDGE LINE & CENTERLINE**

Based on Traveled Way and Pavement Widths for Undivided Highways



**TYPICAL STANDARD  
PAVEMENT MARKINGS**

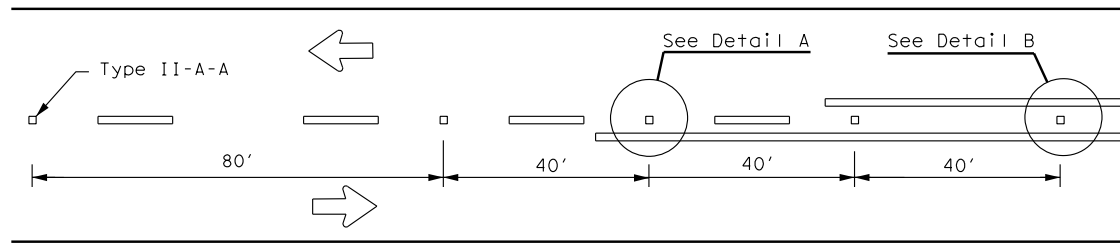
**PM(1) - 20**

FILE: pml-20.dgn	DN:	CK:	DW:	CK:
© TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
8-95 3-03 REVISIONS	1064	01	032	FM 676
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	PHR	HIDALGO		360

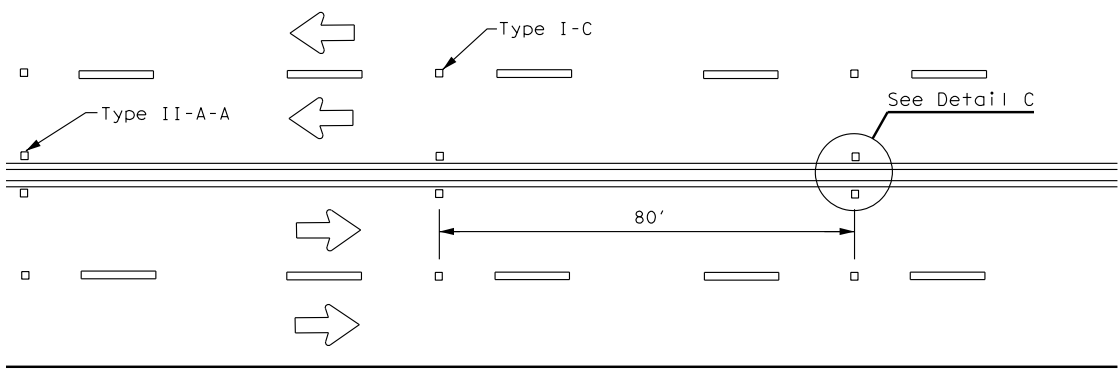
DATE:  
FILE:

# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

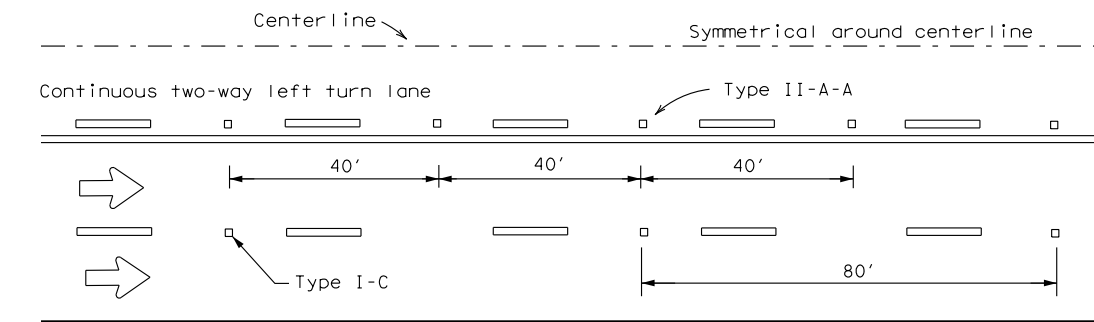
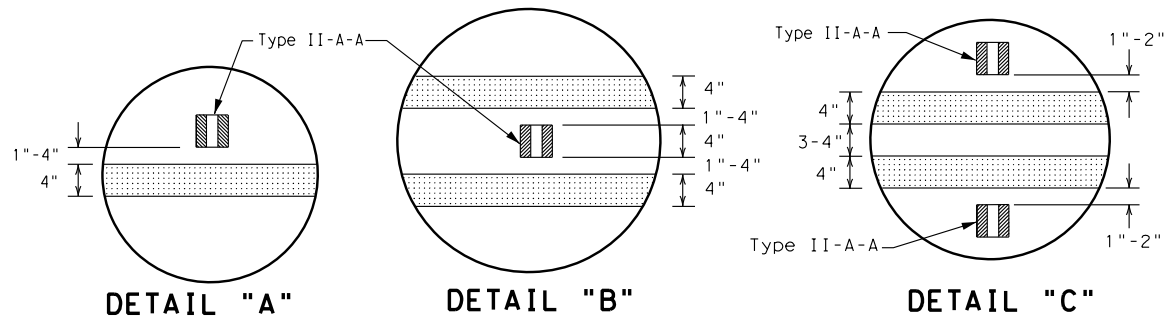
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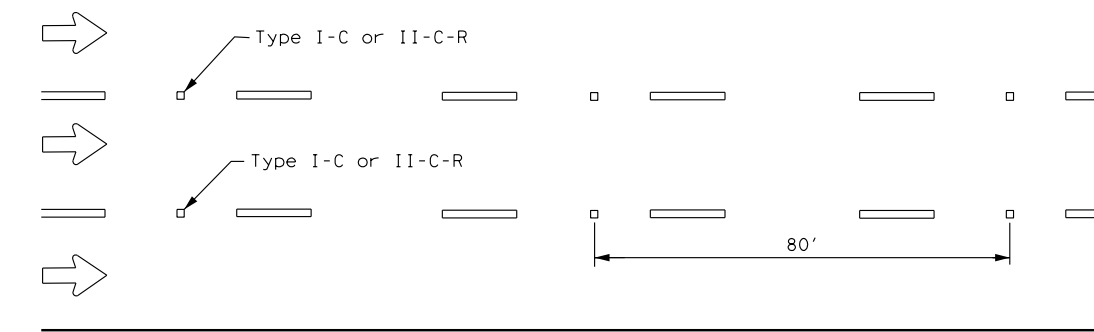
**CENTERLINE FOR ALL TWO LANE ROADWAYS**



**CENTERLINE & LANE LINES  
FOR FOUR LANE TWO-WAY HIGHWAYS**



**CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE**

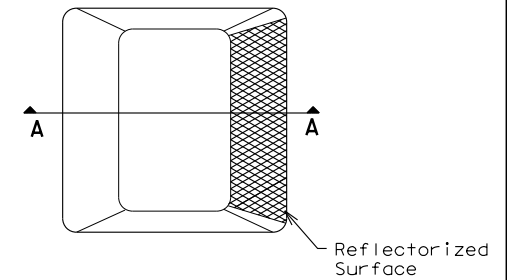


**LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)**

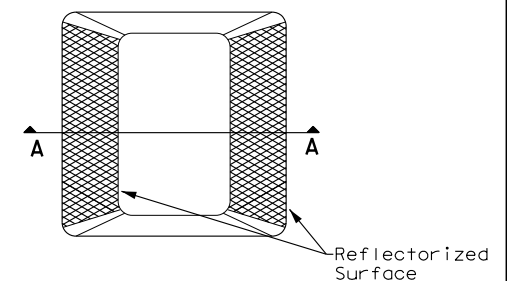
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

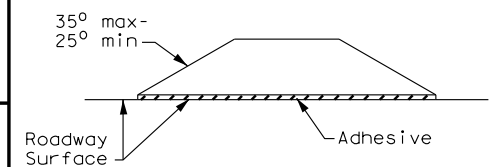
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



**Type I (Top View)**



**Type II (Top View)**



**SECTION A**

**RAISED PAVEMENT MARKERS**

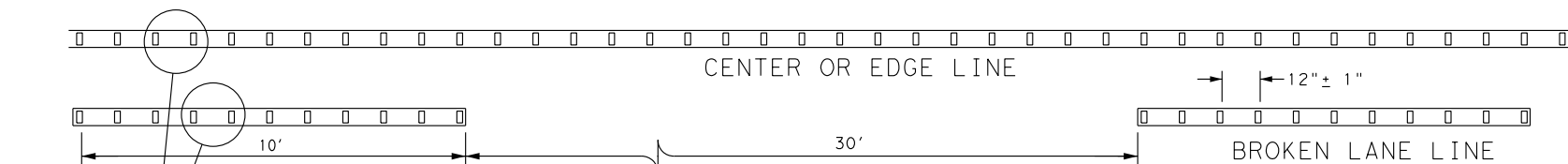


## POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2) - 20

FILE: pm2-20.dgn	DN:	CK:	DW:	CK:
© TxDOT April 1977	CONT	SECT	JOB	HIGHWAY
4-92 2-10 REVISIONS	1064	01	032	FM 676
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	PHR	HIDALGO		361

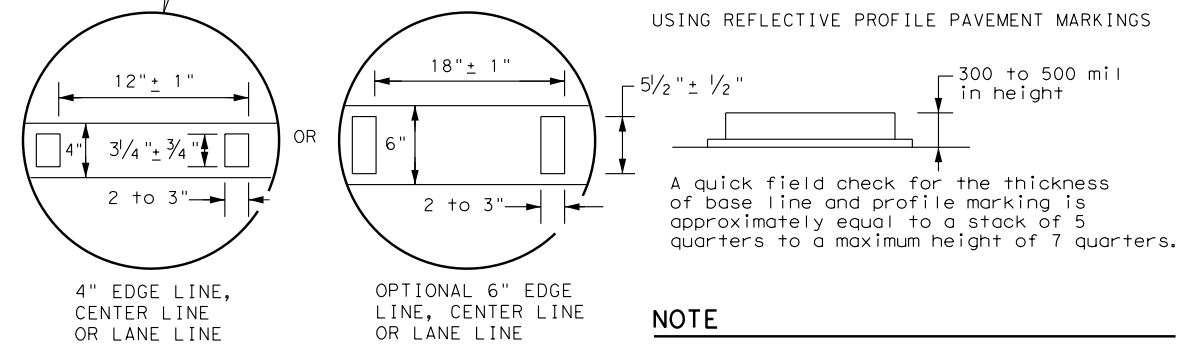
### GENERAL NOTES

- All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.



### REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

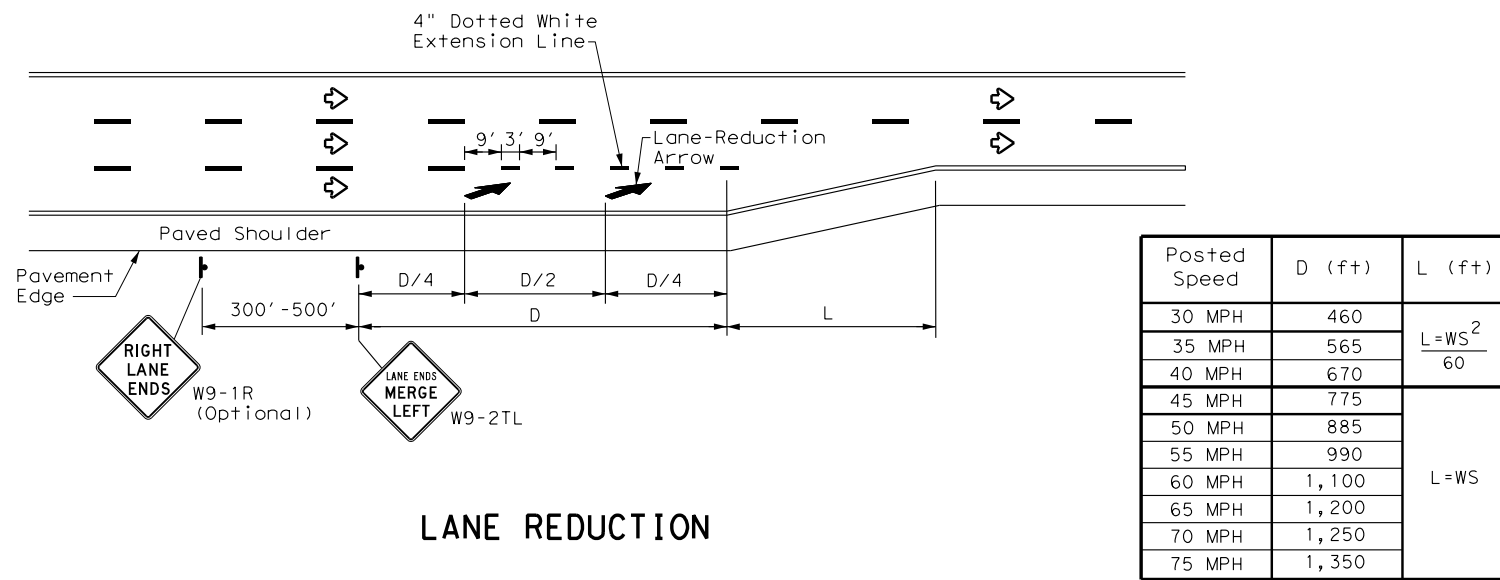


### NOTE

Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

DATE: FILE:

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Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	L=WS
45 MPH	775	
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

**LANE REDUCTION**

**NOTES**

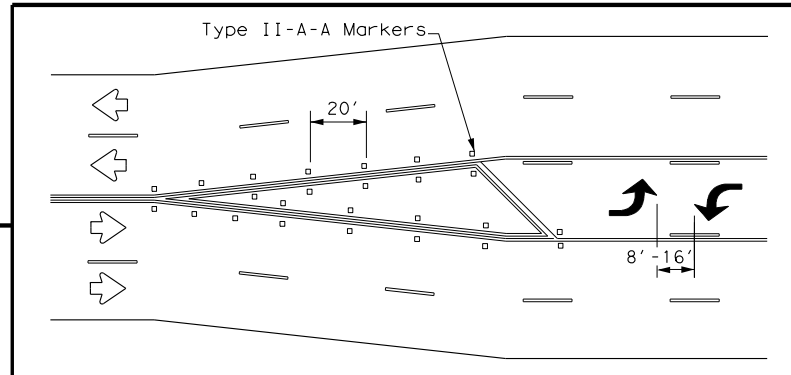
- Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- On divided highways, an additional W9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

**GENERAL NOTES**

- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

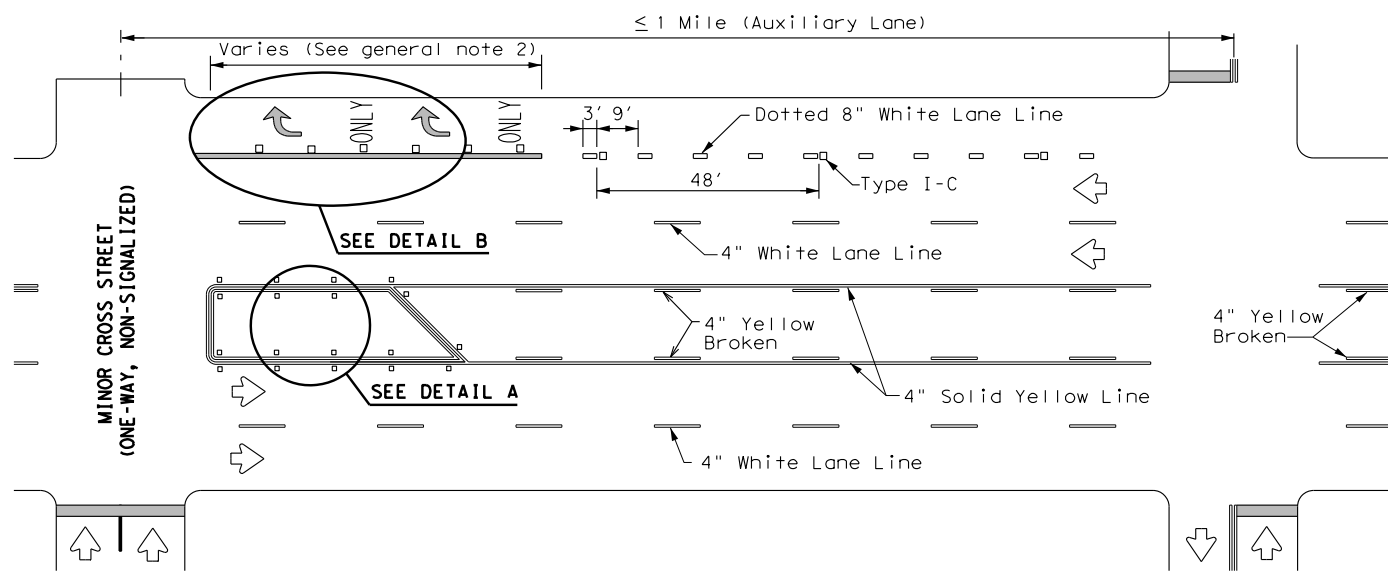
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

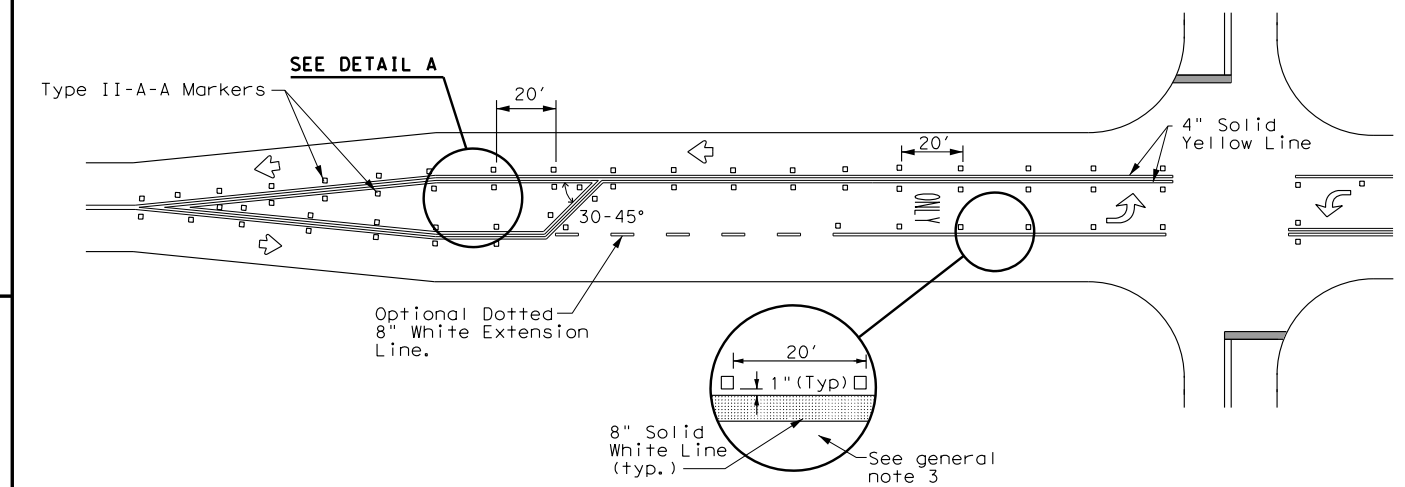


A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

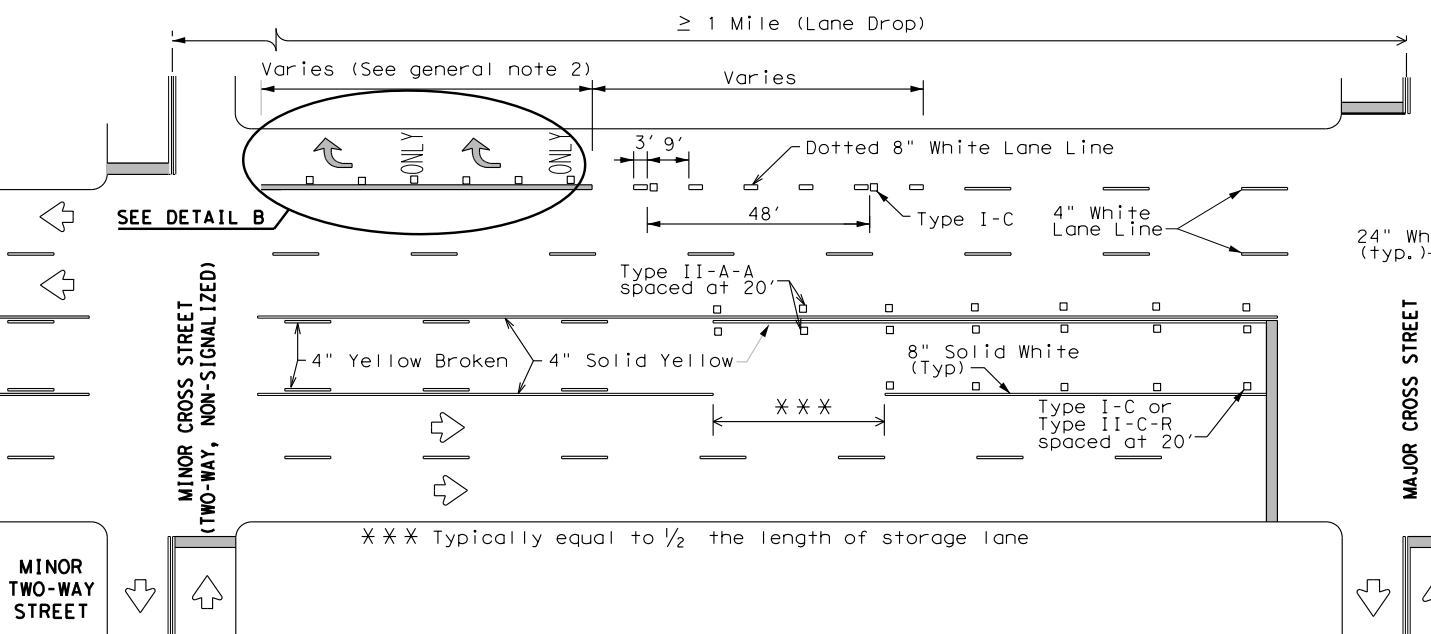
**TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY**



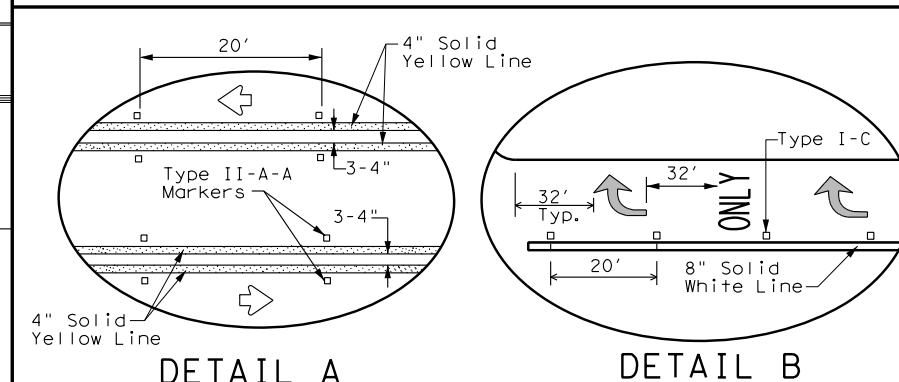
**TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE**



**TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS**



**TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP**



DETAIL A

DETAIL B

Texas Department of Transportation  
Traffic Safety Division Standard

**TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3) - 20**

FILE: pm3-20.dgn	DN:	CK:	DW:	CK:
© TxDOT April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
5-00 2-10	DIST	COUNTY	SHEET NO.	
8-00 2-12	PHR	HIDALGO	362	
3-03 6-20				

DATE:  
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DATE: 11/18/2022  
 FILE: p:\w\j\SD036343\_wsatk\ins.com:ATKNATX01\Documents\Roads and Bridges\Projects\100053456 FM 676 PS&E Update\CADD\STD\TRAFFIC\Smdgen.dgn  
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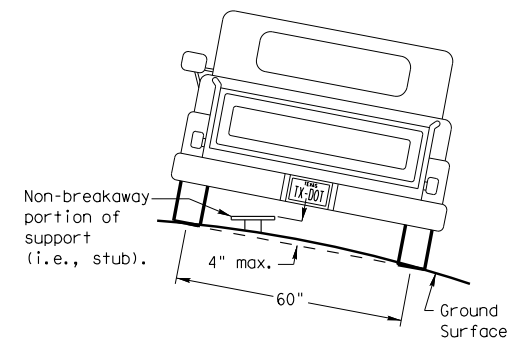
### SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

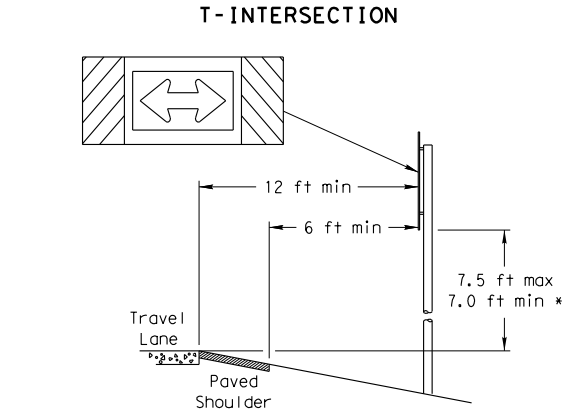
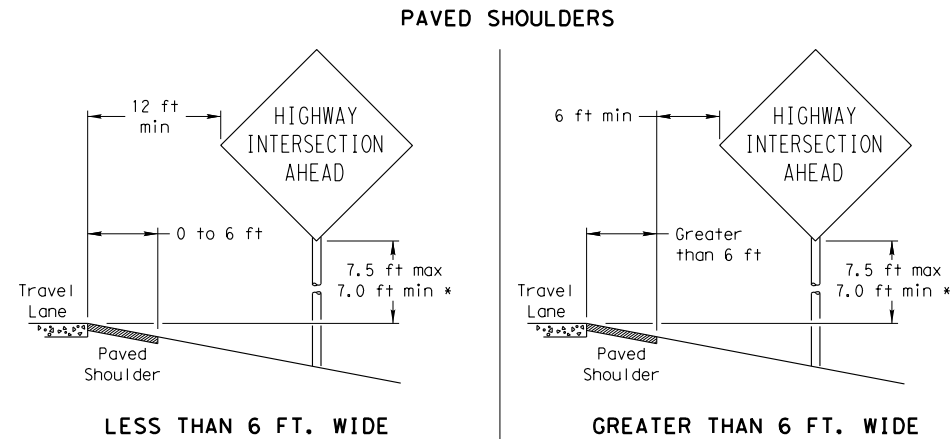
- Post Type**
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
  - TWT = Thin-Walled Tubing (see SMD(TWT))
  - 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
  - S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))
- Number of Posts (1 or 2)**
- Anchor Type**
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
  - UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
  - WS = Wedge Anchor Steel - (see SMD(TWT))
  - WP = Wedge Anchor Plastic (see SMD(TWT))
  - SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
  - SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))
- Sign Mounting Designation**
- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
  - T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
  - U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
  - IF REQUIRED
  - 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
  - BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
  - WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
  - EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

### REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

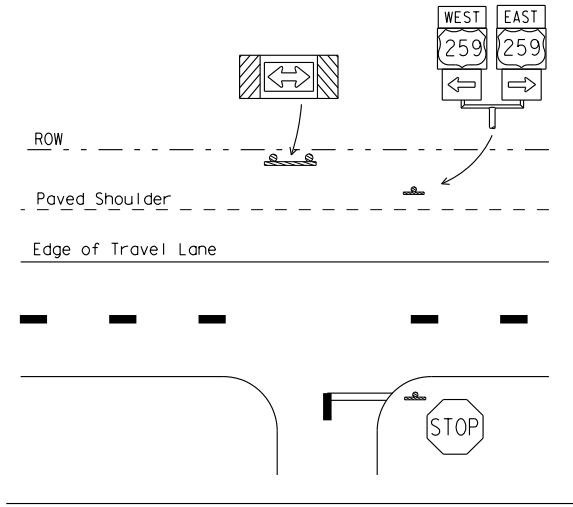
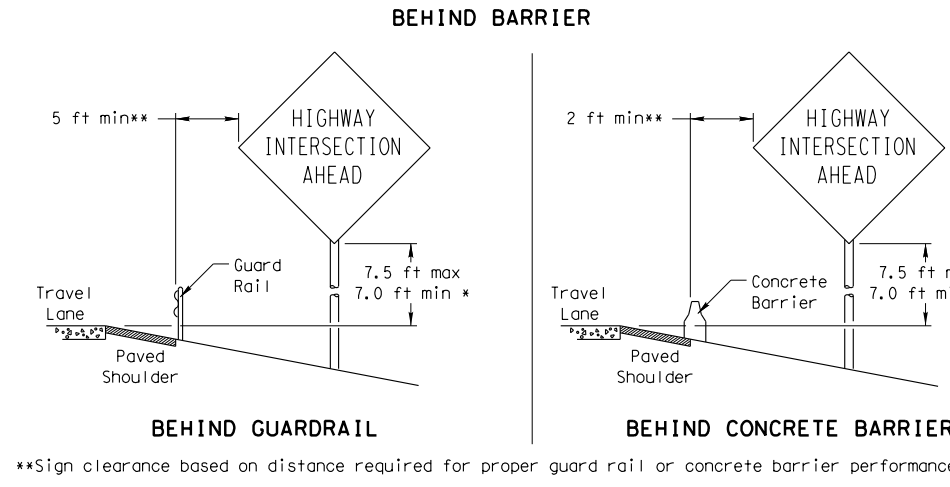
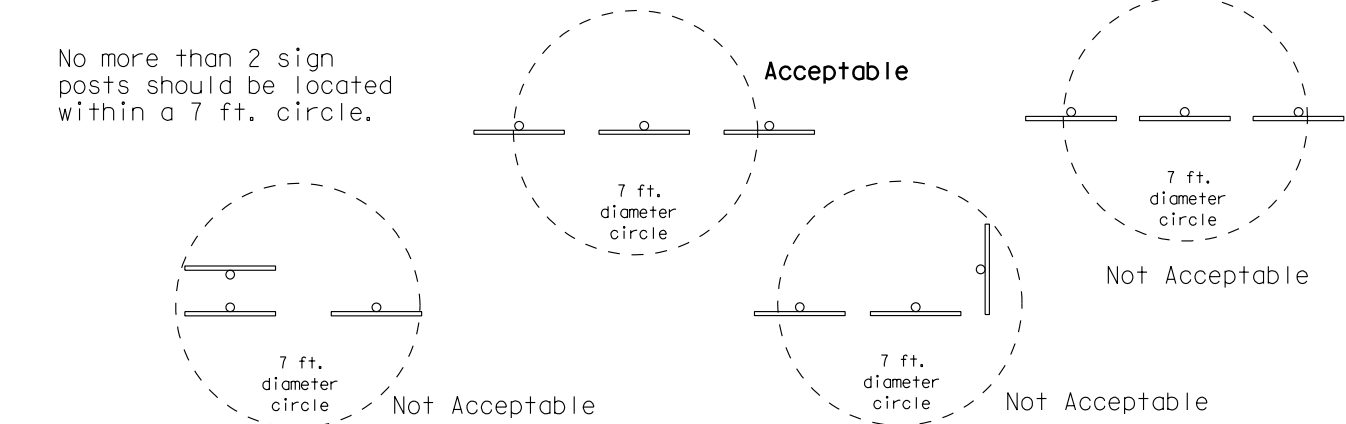


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

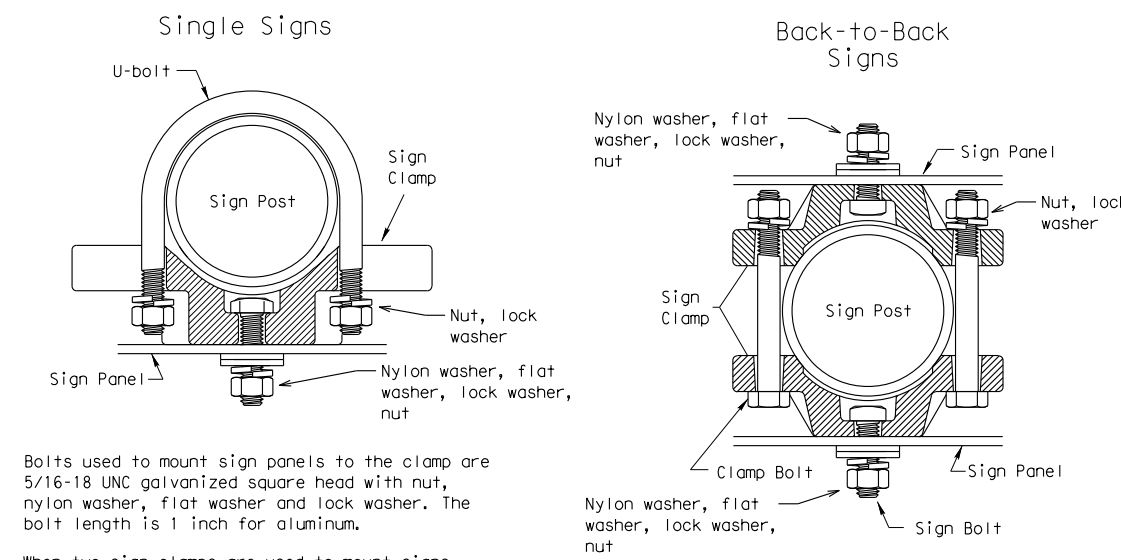
### SIGN LOCATION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



### TYPICAL SIGN ATTACHMENT DETAIL



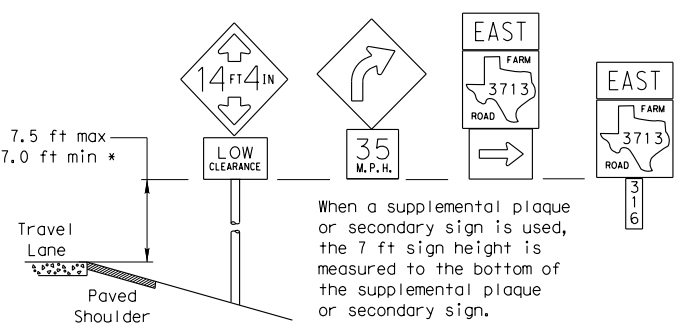
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

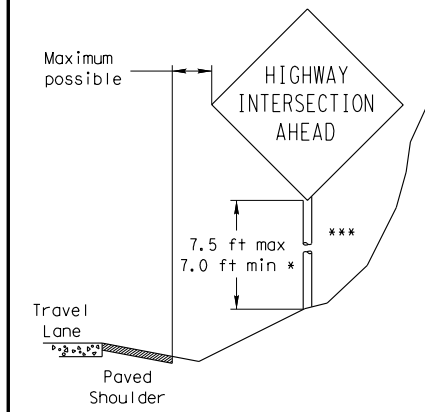
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

### SIGNS WITH PLAQUES



When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

### RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)

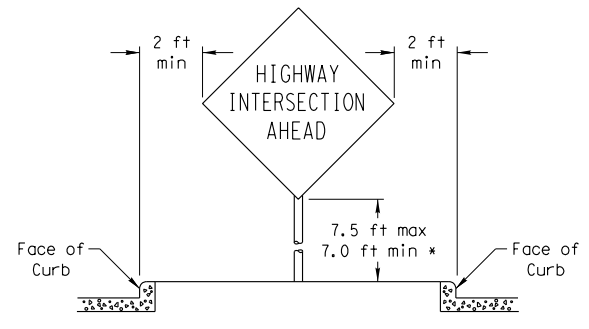


Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

\*\*\* Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

### CURB & GUTTER OR RAISED ISLAND



- \* Signs shall be mounted using the following condition that results in the greatest sign elevation:
- a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.
- The maximum values may be increased when directed by the Engineer.
- See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.
- The website address is:  
<http://www.txdot.gov/publications/traffic.htm>

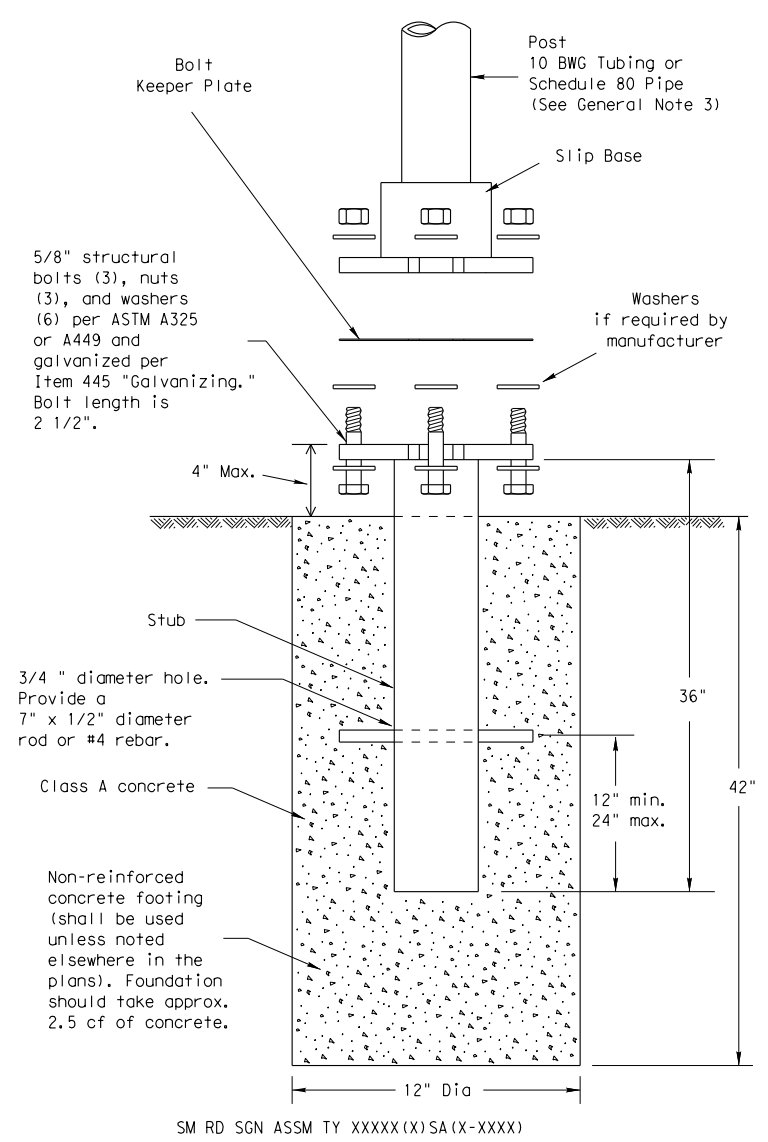
**Texas Department of Transportation**  
Traffic Operations Division

## SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

### SMD (GEN) - 08

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		1064	01	032	FM 676
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		363

# TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

## NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. [http://www.txdot.gov/business/producer\\_list.htm](http://www.txdot.gov/business/producer_list.htm) The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

## GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
  - 10 BWG Tubing (2.875" outside diameter)
    - 0.134" nominal wall thickness
    - Seamless or electric-resistance welded steel tubing or pipe
    - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
    - Other steels may be used if they meet the following:
      - 55,000 PSI minimum yield strength
      - 70,000 PSI minimum tensile strength
      - 20% minimum elongation in 2"
    - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
    - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
    - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
  - Schedule 80 Pipe (2.875" outside diameter)
    - 0.276" nominal wall thickness
    - Steel tubing per ASTM A500 Gr C
    - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
      - 46,000 PSI minimum yield strength
      - 62,000 PSI minimum tensile strength
      - 21% minimum elongation in 2"
    - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
    - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
    - Galvanization per ASTM A123
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

## ASSEMBLY PROCEDURE

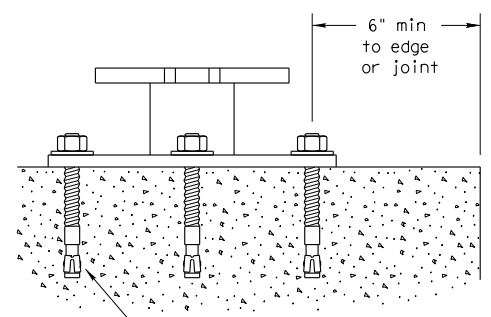
### Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

### Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

## CONCRETE ANCHOR




5/8" diameter Concrete Anchor - 8 places (embed a minimum of 5 1/2" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.

SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

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Texas Department of Transportation  
Traffic Operations Division

### SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

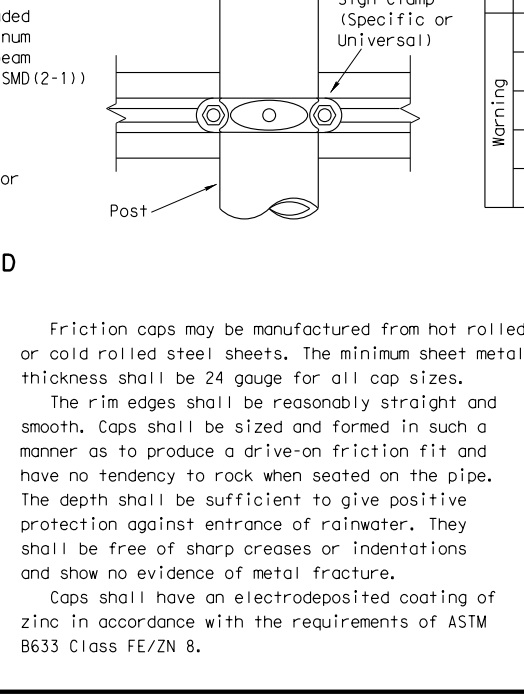
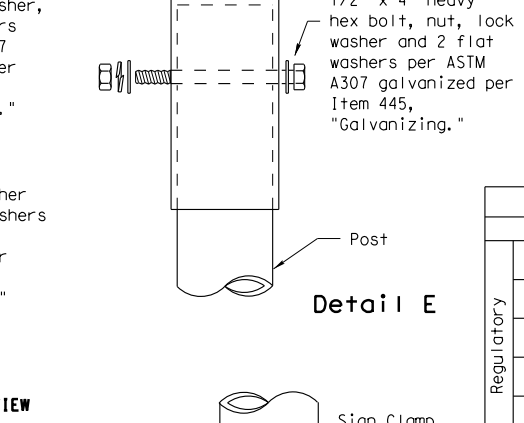
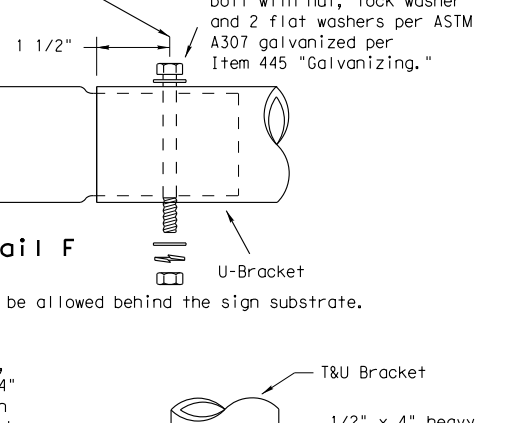
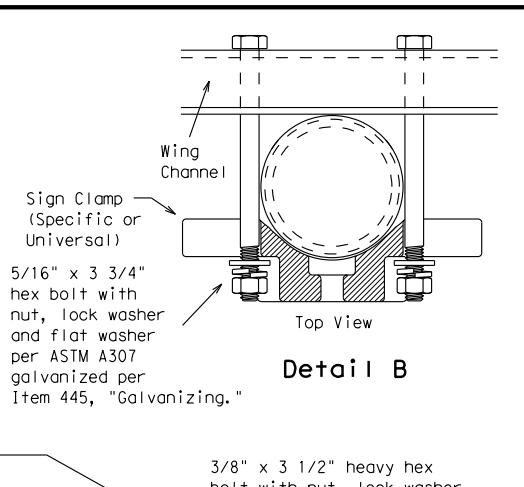
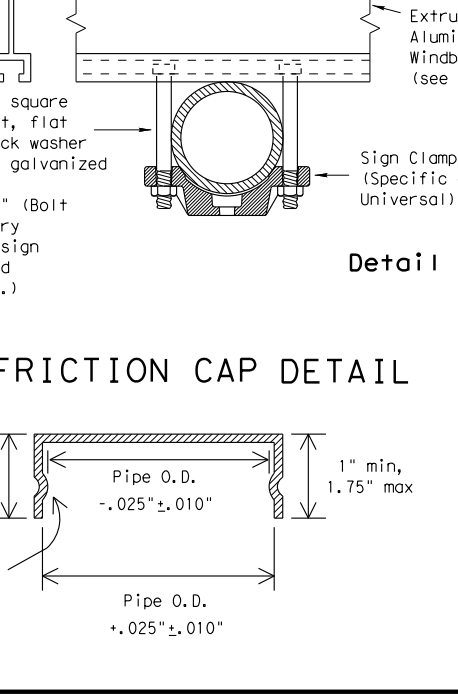
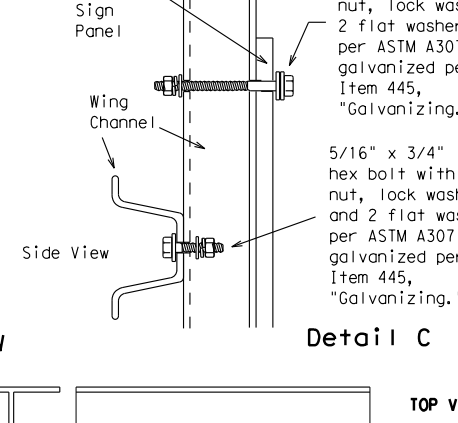
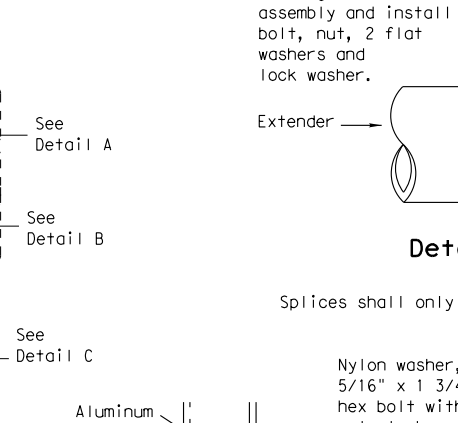
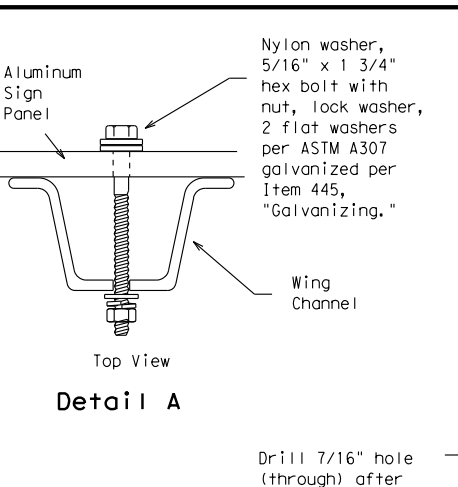
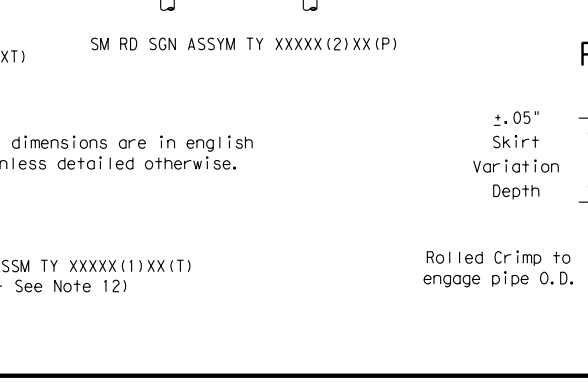
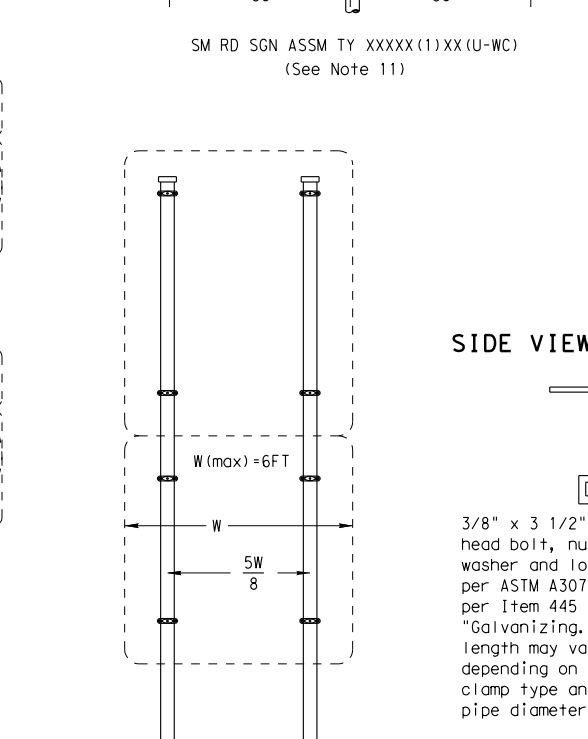
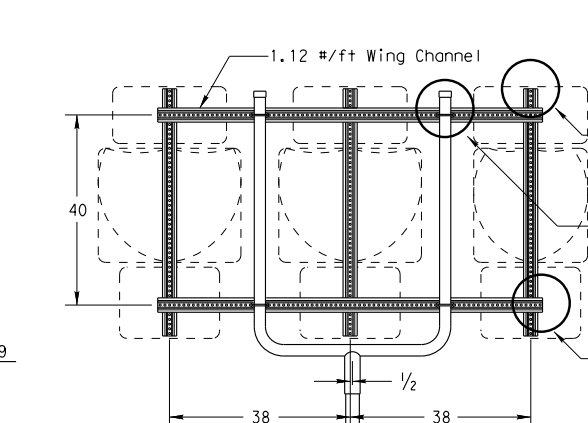
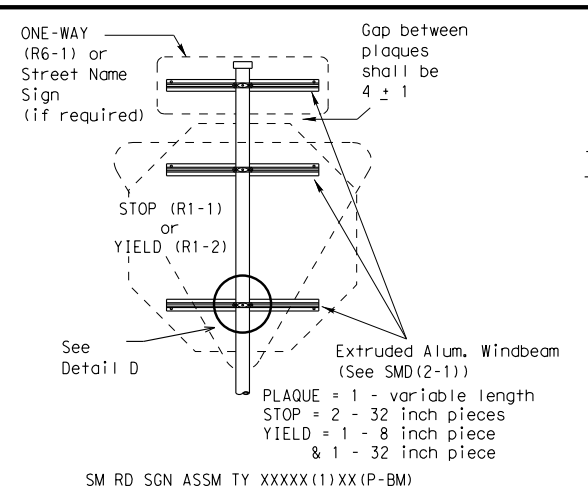
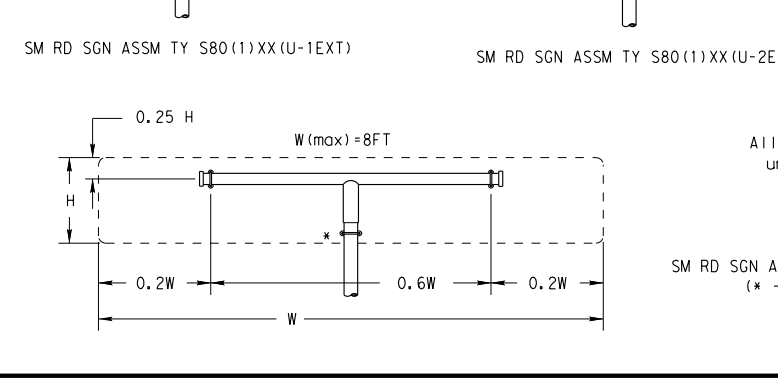
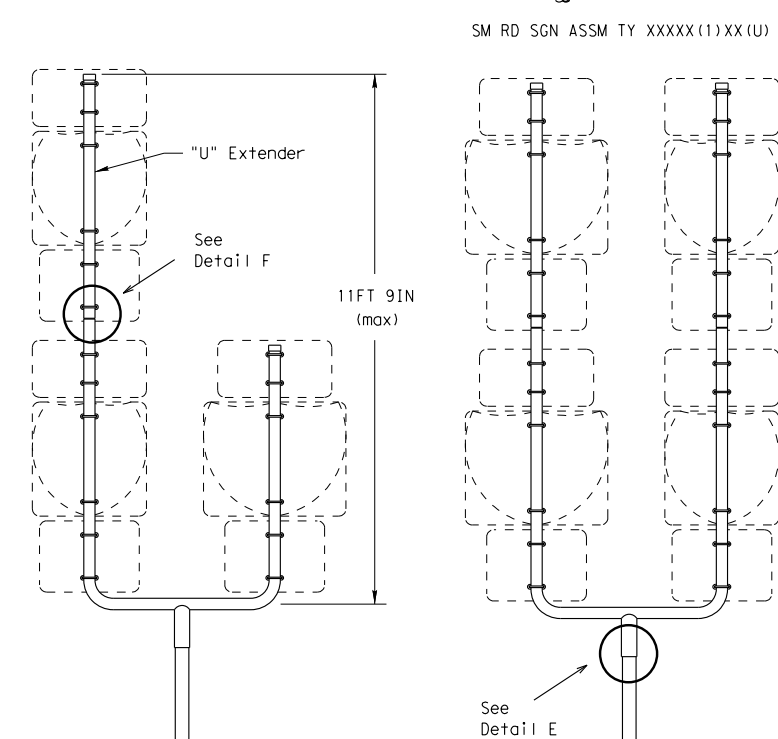
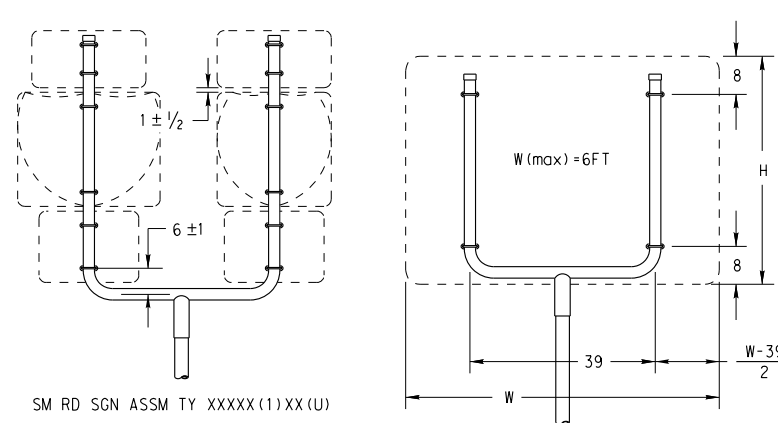
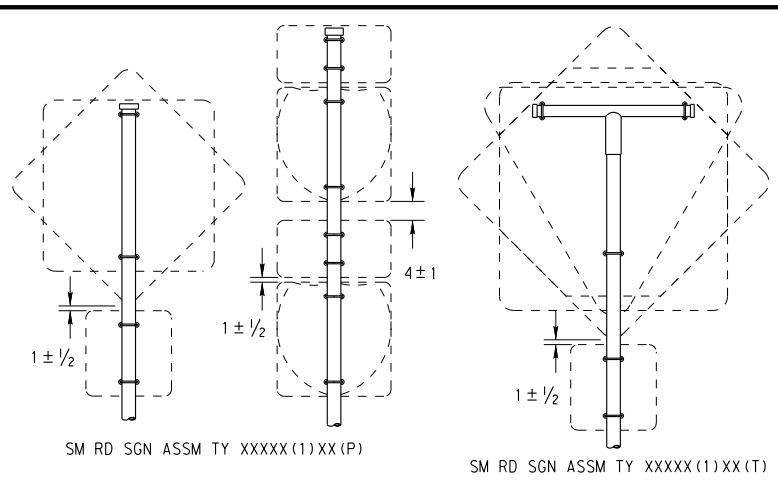
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			DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		364	



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**GENERAL NOTES:**

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
- Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.
- Sign blanks shall be the sizes and shapes shown on the plans.

	REQUIRED SUPPORT	
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

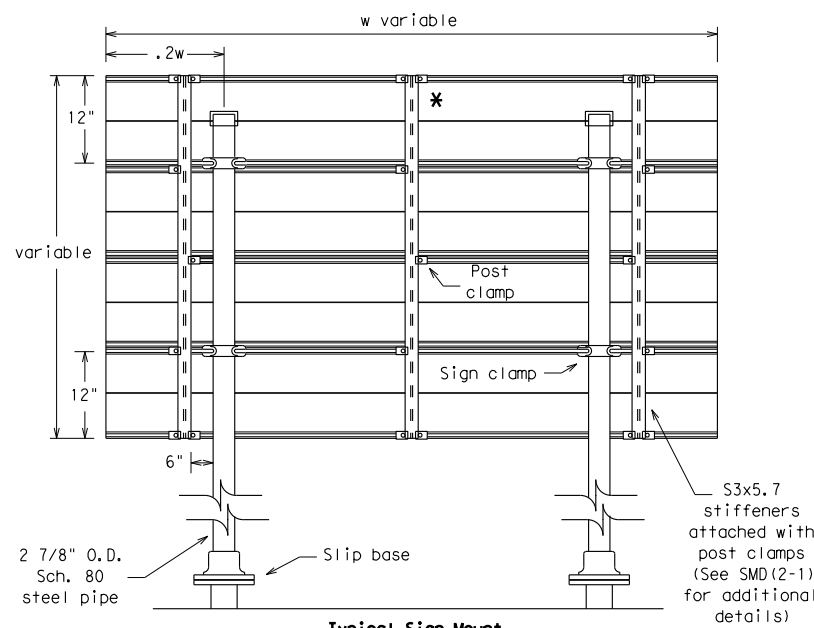
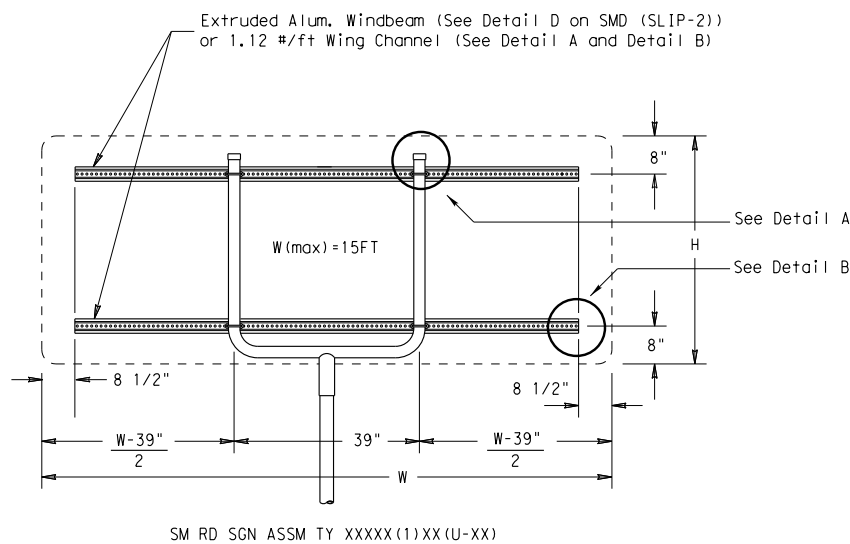
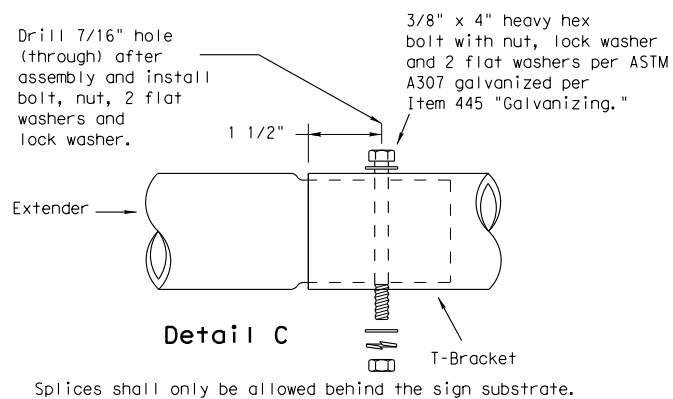
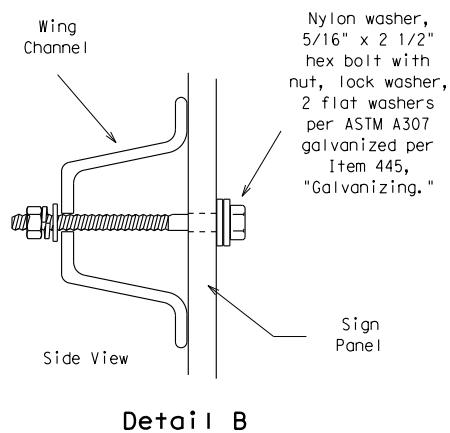
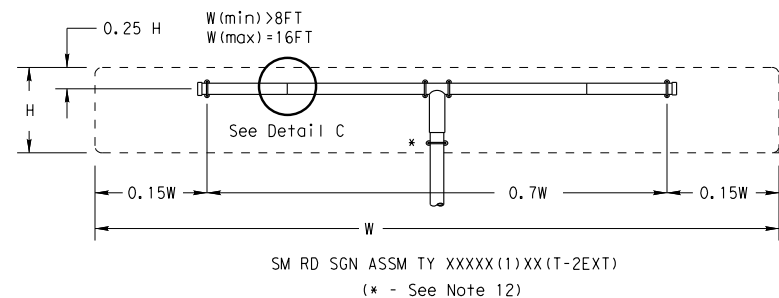
Texas Department of Transportation  
 Traffic Operations Division

**SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-2)-08**

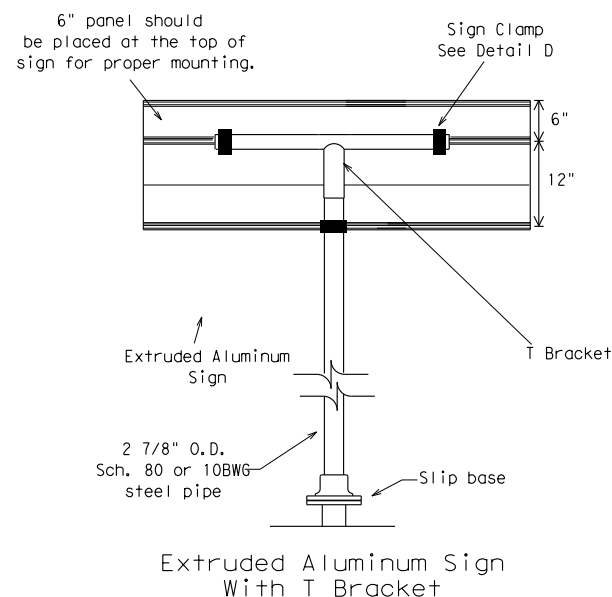
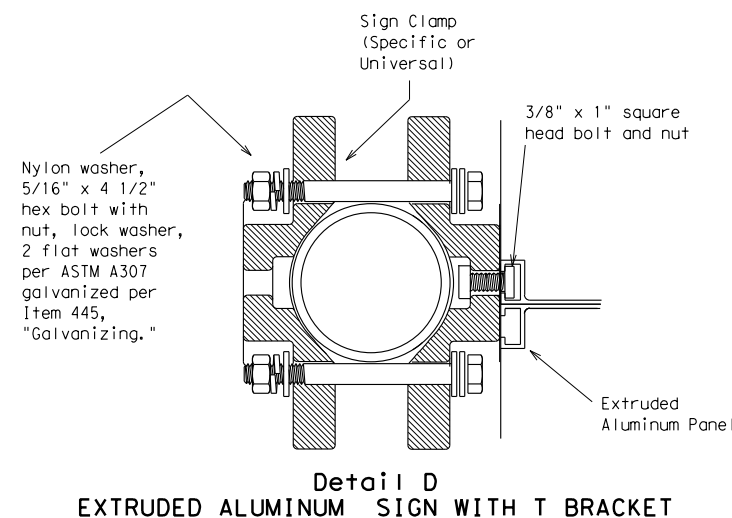
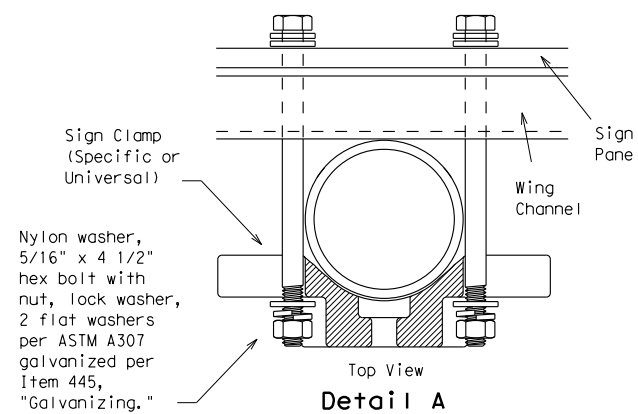
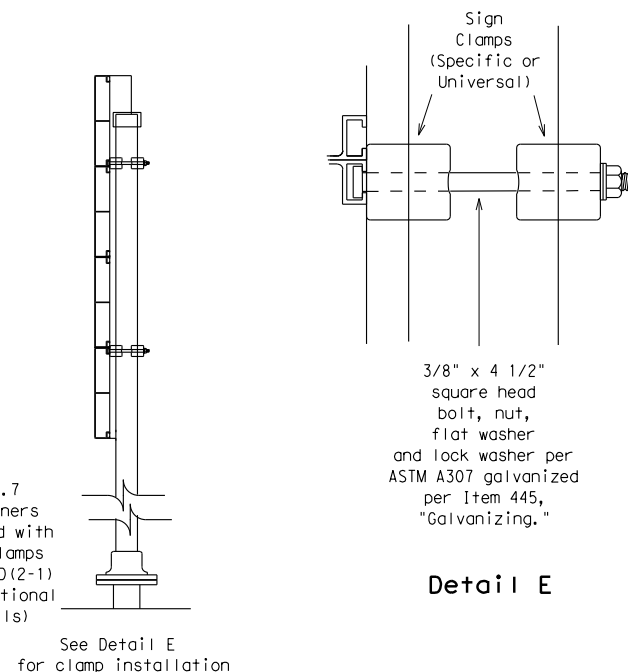
© TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
		1064	01	032
		DIST	COUNTY	HIGHWAY
		PHR	HIDALGO	FM 676
				SHEET NO.
				365

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 11/18/2022  
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\* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Use Extruded Alum. Windbeam as stiffeners See SMD (2-1) for additional details  
 See Detail E for clamp installation

GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG       | 1          | 16 SF          |
| 10 BWG       | 2          | 32 SF          |
| Sch 80       | 1          | 32 SF          |
| Sch 80       | 2          | 64 SF          |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Sign blanks shall be the sizes and shapes shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



**SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-3) -08**

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		1064	01	032	FM 676
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		366

During the planning phase of project development, the following Environmental Permits, Issues and Commitments have been developed during coordination with resource agencies, local governmental entities and the general public. Any change orders and/or deviations from the final design must be reported to the Engineer prior to the commencement of construction activities as additional environmental clearances may be required.

**I. Clean Water Act, Section 402; Stormwater Pollution Prevention**

Action Items Required :  No Action Required

- 1.  The contractor must implement the SW3P by installing Best Management Practices (BMPs) as indicated in the construction plans and maintained appropriately throughout construction. BMPs must be in place prior to the start of construction. The SW3P may need to be revised as necessary as construction progresses.
- 2.  For all construction PSL's off the ROW, the contractor must certify compliance with all applicable laws, rules and regulations pertaining to the preservation of cultural resources, natural resources and the environment.
- 3.  Based on the acreage of impact, select the appropriate box below:
  - This project will disturb less than 1 acre of soil and is not part of a larger common plan of development; therefore, a NOI and TPDES Site Notice are not required for this project.
  - or
  - This project will disturb equal to or more than 1 acre of soil but less than 5 acres; therefore a NOI is not required but a TPDES Site Notice is required. The Construction Site Notice (CSN) is required to be posted at the construction site in a publicly accessible location for review by the public, TCEQ, EPA and other Inspectors.
  - or
  - This project will disturb equal to or more than 5 acres of soil and will require a NOI and TPDES Site Notice. The NOI and Site Notice are required to be posted at the construction site in a publicly accessible location.
- 4.  Need to address MS4 requirements (Cameron & Hidalgo Counties only)  MS4 requirements not needed

**II. Clean Water Act, Sections 401 and 404 Compliance**

Action Items Required :  No Action Required

- 1.  Filling, dredging or excavating in any water bodies, rivers, creeks, streams, wetlands or wet areas is prohibited unless specified in the USACE permit and approved by the Engineer. The contractor shall adhere to all agreements, mitigation plans, and BMPs required by the NWP as regulated by the USACE.  
  
The Contractor must adhere to all of the terms and conditions associated with the following permit(s):
  - No Permit Required
  - Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
  - Nationwide Permit 14 - PCN Required (1/10th to <1/2 acre, 1/3 in tidal waters)
  - Individual 404 Permit Required
  - Other Nationwide Permit Required: NWP# \_\_\_\_\_
- 2.  The contractor is responsible for obtaining new or revised Section 404 permit(s) for Contractor initiated changes in construction methods that change impacts To Waters Of The U.S., including wetlands. The Contractor will ensure that the water quality of the State will be maintained and not degraded.
- 3.  Best Management Practices for applicable Section 401 General Conditions:

General Condition 12 - Categories I and II BMPs required  
Category I (Erosion Control)

- Temporary Vegetation Blankets, Matting
- Mulch
- Sodding
- Interceptor Swale
- Diversion Dike
- Erosion Control Compost
- Mulch Filter Berms and/or Socks
- Compost Filter Berms and/or Socks
- Compost Blankets

Category II (Sedimentation Control)

- Silt Fence
- Rock Berm
- Triangular Filter Dike
- Sand Bag Berm
- Hay (Straw) Bale Dike
- Brush Berms
- Sediment Basins
- Erosion Control Compost
- Mulch Filter Berms and/or Socks
- Compost Filter Berms and/or Socks
- Stone Outlet Sediment Traps

General Condition 21 - Category III BMPs required

Category III (Post-Construction TSS Control)

- Vegetative Filter Strips
- Retention/Irrigation
- Extended Detention Basin
- Constructed Wetlands
- Wet Basins
- Grassy Swales
- Vegetation-Lined Ditches
- Erosion Control Compost
- Mulch Filter Berms and/or Socks
- Compost Filter Berms and/or Socks
- Sand Filter Systems
- Sedimentation Chambers

**II. Clean Water Act, Sections 401 and 404 Compliance - Continued:**

- 4.  The Contractor's designated and qualified Contractor Responsible Person Environmental (CRPe) will monitor the project site daily to ensure compliance with SW3P and TPDES General Permit TXR 150000. Daily Monitoring Reports shall be provided to TxDOT within 48 hours, in accordance with Item 506.3.1.
- 5.  Other Project Specific Actions:
  - 1.
  - 2.

**III. Cultural Resources**

Action Items Required :  No Action Required

- 1.  Refer to the 2014 TxDOT Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges, Item 7.7.1., in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.
- 2.  Other Project Specific Actions:
  - 1.
  - 2.

**IV. Vegetation Resources**

Action Items Required :  No Action Required

- 1.  In accordance with the 2014 TxDOT Standard Specifications; Item 164 - Seeding For Erosion Control; provide and install temporary or permanent seeding for erosion control as shown on the plans or as directed by the Engineer for all seeding and replanting of right of way where possible. (Required for Urban Settings)
- 2.  In accordance with Executive Order 13112 on invasive species and the Executive Memorandum on Beneficial Landscaping, native species of plants shall be used for all seeding and replanting of right of way where possible for rural roadways. (Required for Rural Settings)
- 3.  Preserve vegetation where possible throughout the project and minimize clearing, grubbing and excavation within stream banks, bed and approach sections.
- 4.  Other Project Specific Actions:
  - 1.
  - 2.

Pharr District Contact No. 956-702-6100

Revised 01/30/2017

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NOT: Notice of Termination	USFWS: U.S. Fish and Wildlife Service



**ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)**

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			FM 676
STATE	DISTRICT	COUNTY	
TEXAS	PHR	HIDALGO	SHEET NO.
CONTROL	SECTION	JOB	
1064	01	032	367

**V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds**

Action Items Required :  No Action Required

1.  Under the Migratory Bird Treaty Act (MBTA) of 1918, codified at 16 U.S.C. § 703-712 and as enforced by the USFWS, the proposed construction work will not remove active nests from bridges, trees, ground and other structures during migratory bird nesting season, (February 1st. through October 1st.). If the Contractor needs to perform work within the right of way during nesting season, a qualified Biologist shall conduct a survey to determine if active nests are present. If present, the Contractor shall maintain a buffer zone around the nest(s) as directed by the Biologist. The buffer zone will be protected from clearing and disturbance until such time as the Biologist has determined that the nest(s) is no longer active. Prior to the nesting season, existing bridges and culverts should be treated against migratory bird nesting by utilizing Bird Exclusion Methods. Bird Exclusion Methods should be monitored and maintained throughout the nesting season. Refer to Standard Bird Exclusion Details.
2.  There is the potential for the presence of state-listed species & species of concern in the project area and state law prohibits the taking (incidental or otherwise) of state-listed species. Taking is defined as the collection, hooking, hunting, netting, shooting, or share by any means or devices. If any listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately.
3.  Other Project Specific Actions:
  1. Contractors will be advised of the potential occurrences, and to avoid harming the following State-listed threatened/endangered Species, which may be present within the project area: Sheep frog (*Hypopachus variolosus*), Black-striped snake (*Coniophanes imperialis*), Texas horned lizard (*Phrynosoma cornutum*), Texas tortoise (*Gopherus berlandieri*), and Texas Botteri's Sparrow (*Aimophila botteri texana*).
  2. Contractors will be advised of the potential occurrences, and to avoid harming the following Species of Greatest Conservation Need (SGN), which may be present within the project area: Arrowleaf milkvine (*Matelea sagittifolia*), Chihuahua balloonvine (*Cardiospermum dissectum*), Jones' nailwort (*Paronychia jonesii*), Sandsheet leaf-flower (*Phyllanthus abnormis* var. *riograndensis*), Shortcrown milkvine (*Matelea brevicoronata*), Siler's huaco (*Manfreda sileri*), Stinking rushpea (*Pomaria austrotexana*), Texas peachbush (*Prunus texana*), Vasey's adelia (*Adelia vaseyi*), Yellow-flowered alicocha (*Echinocereus papillosus*), a tiger beetle (*Tetracha affinis angustata*), subtropical blue-black tiger beetle (*Cicindela nigrocoerulea subtropica*) and Neojvenile tiger beetle (*Cicindela obsoleta neojjuvenilis*).
  3. TxDOT-Pharr District Informative flyers on Harvester Ants & Texas Horned Lizards, Texas Tortoises, and the Migratory Bird Treaty Act will be made available at the Pre-Construction Meeting.

**VI. Hazardous Materials on Contamination Issues**

Action Items Required :  No Action Required

General (applies to all projects):

Comply with the Hazard Communication Act (HCA) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labeling as required by the HCA.

Maintain an adequate supply of on-site spill response materials as indicated in the MSDS. In the event of a spill, take immediate action to mitigate the spill as indicated in the MSDS and in accordance with safe work practices. Contact the TxDOT Pharr District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- Dead or distressed vegetation (identified as not normal)
- Trash piles, drums, canisters, barrels, etc.
- Undesirable smells or odors
- Evidence of leaching or seepage of contaminant substances

Any other evidence indicating possible hazardous materials or contamination discovered on site.

1.  If potentially hazardous material and/or contaminated media (i.e.: soil, groundwater, surface water, sediment, building materials) are unexpectedly encountered during construction, assure that such materials and contamination are handled according to applicable federal and state regulations, cease work in the immediate area and contact the Engineer immediately.

**VI. Hazardous Materials on Contamination Issues - Continued:**

2. Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?
  - Yes  No

If "No", then no further action required.  
If "Yes", then TxDOT is responsible for completing an asbestos assessment/inspection.

3. Are the results of the asbestos inspection positive (is asbestos present)?
  - Yes  No

If "Yes", then TxDOT must retain a Texas Department of State Health Services (DSHS) licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled abatement activities and/or demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

4.  The Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and an Asbestos Consultant in order to minimize construction delays and subsequent claims.

**VII. Other Environmental Issues**

Action Items Required :  No Action Required

1.  Noise

Contractor shall make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and proper maintenance of equipment mufflers.

2.  Air

Contractor shall practice common dust control techniques such as surface chemical treatment or watering of unpaved road surfaces and vehicle speed reduction shall be implemented to minimize and prevent airborne dust during construction.

Contractor should minimize MSAT by utilizing measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increase use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.

Pharr District Contact No. 956-702-6100

Revised 01/30/2017

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PHARR DISTRICT

**ENVIRONMENTAL PERMITS,  
ISSUES AND COMMITMENTS  
(EPIC)**

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
6				FM 676
STATE	DISTRICT	COUNTY		SHEET NO.
TEXAS	PHR	HIDALGO		
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TPWD BMPs

The Programmatic Agreement defines Best Management Practices (BMPs) to be implemented by Texas Department of Transportation (TxDOT) per §2.213 (Programmatic Agreements) of the 2017 Memorandum of Understanding (MOU) between TxDOT and Texas Parks and Wildlife Department (TPWD). These BMPs are measures that TxDOT and TPWD agree will result in avoidance and minimization of potential impacts to natural resources and in some cases apply to particular types of TxDOT projects.

The purpose of this section is to provide BMPs to minimize impacts to species or groups of species. Implementation of these BMPs by TxDOT eliminates the need for coordination under §2.206(1) of the MOU, except as noted.

Due diligence should be used to avoid killing or harming any wild-life species in the implementation of TxDOT projects.

Bird BMPs (Required)

In addition to complying with the Migratory Bird Treaty Act (MBTA) perform the following BMPs:

- Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed.
- Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season.
- Avoid the removal of unoccupied, inactive nests, as practicable.
- Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair.
- Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

Bald Eagle (*Haliaeetus leucocephalus*)

- Bird BMPs and Bald and Golden Eagle Protection Act compliance

Reddish Egret (*Egretta rufescens*) or White-faced Ibis (*Plegadis chihii*)

- Bird BMPs unless project is within 300 meters (984 feet) of a known colonial water bird rookery then coordinate with TPWD.

Rookeries (Recommendations)

In general, nesting dates for herons and egrets range from early February to late August in Texas, depending on the species. Great Blue Herons (GBHE) are usually the first to nest. When GBHE get disrupted from the nest and abandon nesting, then the other species of herons and egrets may not attempt to nest at the colony that year. Breeding dates for rookery species are approximately as follows:

Species	Dates
Cattle Egret	Early April to late October
Little Blue Heron	Late March to late July
Snowy Egret	Late March to early August
Great Egret	Early March to early August
Black-crowned Night Heron	Early February to late July
Great Blue Heron	February to late August

Rookeries (Recommendations) (Continued)

- Vegetation clearing in a primary buffer area of 300 meters (984 feet) from a heronry periphery should be avoided. Utilizing areas that have already been cleared within this buffer area may be acceptable depending on site-specific characteristics. Additionally, human foot-traffic or machinery use should not occur within this buffer area during the nesting season.
- Clearing activities or construction using heavy machinery in a secondary buffer area of 1,000 meters (3,281 feet) from the heronry periphery should be avoided during the breeding season (courting and nesting).

Bat BMPs (Required)

To determine the appropriate BMP to avoid or minimize impacts to bats, review the habitat description for the species of interest on the TPWD Rare, Threatened, and Endangered Species of Texas by County List or other trusted resources. All bat surveys and other activities that include direct contact with bats shall comply with TPWD' recommended white-nose syndrome protocols located on the TPWD Wildlife Habitat Assessment Program website under "Project Design and Construction".

The following survey and exclusion protocols should be followed prior to commencement of construction activities. For the purposes of this document, structures are defined as bridges, culverts (concrete or metal), wells, and buildings.

- For activities that have the potential to impact structures, cliffs or caves, or trees; a qualified biologist will perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before project letting.
- For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.
- If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction.
- Exclusion devices can be installed by a qualified individual between September 1 and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F and minimum daytime temperatures are above 70°F. Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, installation of alternate roosts is recommended to replace the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area. See Additional Bat BMPs (Recommendations) for recommended acceptable methods for excluding bats from structures.
- If feature(s) used by bats are removed as a result of construction, replacement structures should incorporate bat-friendly design or artificial roosts should be constructed to replace these features, as practicable.
- Conversion of property containing cave or cliff features to transportation purposes should be avoided where feasible.

Bat BMPs (Required) (Continued)

- Avoid unnecessary removal of dead fronds on native and ornamental palm trees in south Texas (Cameron, Hidalgo, Willacy, Kenedy, Brooks, Kleberg, Nueces, and San Patricio counties) from April 1st through October 31st. If removal of dead fronds is necessary at other times of the year, limit frond removal to extended warm periods (nighttime temperatures: 55°F for at least two consecutive nights), so bats can move away from the disturbance and find new roosts.
- Large hollow trees, snags (dead standing trees), and trees with shaggy bark should be surveyed for colonies and, if found, should not be disturbed until the bats are no longer occupying these features. Post-occupancy surveys should be conducted by a qualified biologist prior to tree removal from the landscape.
- Retain mature, large diameter hardwood forest species and native/ornamental palm trees where feasible.
- In all instances, avoid harm or death to bats. Bats should only be handled as a last resort and after communication with TPWD.

Mexican Long-tongues Bat (*Choeronycteris mexicana*)

- Avoid unnecessary impacts to cacti and agave species.
- Bat BMPs.

Additional Bat BMPs (Recommendations)

- Bat surveys of structures should include visual inspections of structural fissures (cracked or spalled concrete, damaged or split beams, split or damaged timber railings), crevices (expansion joints, space between parallel beams, spaces above supports piers), and alternative structures (drainage pipes, bolt cavities, open sections between support beams, swallow nests) for the presence of bats.
- Before excluding bats from any occupied structure, bat species, weather, temperature, season, and geographic location must be incorporated into any exclusion plans to avoid unnecessary harm or death to bats. Winter exclusion must entail a survey to confirm either, 1) bats are absent or 2) present but active (i.e. continuously active - not intermittently active due to arousals from hibernation).
- Avoid using materials that degrade quickly, like paper, steel wool or rags, to close holes.
- Avoid using products or making structural modifications that may block natural ventilation, like hanging plastic sheeting over an active roost entrance, thereby altering roost micro-climate.
- Avoid using chemical and ultrasonic repellents.
- Avoid use of silicone, polyurethane or similar non-water-based caulk products.
- Avoid use of expandable foam products at occupied sites.
- Avoid the use of flexible netting attached with duct tape.

Pharr District Contact No. 956-702-6100

Revised 07/12/2017

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PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS

TPWD BMPs

SHEET 1 OF 3

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
6				FM 676
STATE	DISTRICT	COUNTY		SHEET NO.
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CONTROL	SECTION	JOB		
1064	01	032		369

Additional Bat BMPs (Recommendations) (Continued)

- In order to avoid entombing bats, exclusion activities should be only implemented by a qualified individual. A qualified individual or company should possess at least the following minimum qualifications:
  - Experience in bat exclusion (the individual, not just the company).
  - Proof of rabies pre-exposure vaccinations.
  - Demonstrated knowledge of the relevant bat species, including maternity season date range and habitat requirements.
  - Demonstrated knowledge of rabies and histoplasmosis in relation to bat roosts.
- Contact TPWD for additional resources and information to assist in executing successful bat exclusions that will avoid unnecessary harm or death in bats.

Fossorial Mammal BMPs (Required)

- If black-tailed prairie dog (BTPD) burrows or pocket gopher mounds are to be excavated/directly impacted coordinate with TPWD WHAB.
- When a construction zone is adjacent to active BTPD burrows or pocket gopher mounds, erect barriers to discourage individuals moving through or into the construction area.
- When seeding or revegetation is planned in an area adjacent to BTPD burrows or pocket gopher mounds, a vegetative barrier should be considered in the planting to discourage dispersal into the ROW.

Coues' Rice Rat (*Oryzomys couesi*)

- Minimize impacts to wetland, Resaca, oxbow lakes, and marsh habitats.
- Contractors will be advised of potential occurrence in the project area and to avoid harming the species if encountered.
- Water Quality BMPs.

Plains Spotted Skunk (*Spilogale putorius interrupta*) or Swift Fox (*Vulpes velox*)

- Contractor will be advised of potential occurrence in the project area and to avoid harming the species if encountered and to avoid unnecessary impacts to dens.

White nosed Coati (*Nasua narica*)  
 Yellow nosed Cotton Rat (*Sigmodon ochrognathus*)

- Contractors will be advised of potential occurrence in the project area and to avoid harming the species if encountered.

Terrestrial Reptile BMPs (Required)

- Apply hydro mulching and/or hydro seeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydro mulching and/or hydro seeding are not feasible due to site conditions, utilize erosion control blankets or mats that contain no netting or contain loosely woven, natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable.
- For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1 :1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling.
- Inform contractors that if reptiles are found on project site allow species to safely leave the project area.
- Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible.
- Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Texas Tortoise (*Gopherus berlandieri*)

- Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
- Utility trenches should be covered overnight or visually inspected before filling to avoid burial of the species.
- Terrestrial Reptile BMPs.

Texas Horned Lizard (*Phrynosoma cornutum*)

- Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible.
- Terrestrial Reptile BMPs.

Additional Reptile BMPs (Recommendations)

- Due to increased activity (mating) of reptiles during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (April-May) season. Also, timing ground disturbing activities before October when reptiles become less active and may be using burrows in the project area is also encouraged.
- When designing roadways with curbs, consider using Type I or Type III curbs to provide a gentle slope to enable turtles and small animals to get out of roadways.
- If Texas Tortoises are present in a project area, they should be removed from the area. After removal of the tortoises, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude tortoises and other reptiles. The exclusion fence should be constructed and maintained as follows:
  - a. The exclusion fence should be constructed with metal flashing or drift fence material.
  - b. Rolled erosion control mesh material should not be used.
  - c. The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
  - d. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.

Amphibian and Aquatic Reptile BMPs (Required)

Unless absence of the species can be demonstrated, assume presence in suitable habitat and implement the following BMPs. Absence can only be demonstrated using TPWD-approved survey efforts (contact TPWD for minimum survey protocols for species and project site conditions).

- For projects within one mile of a known occupied location or observation of the species recorded from 1980 until the current year and suitable habitat is present, coordinate with TPWD.
- For new location roadway projects, coordinate with TPWD.
- For projects within existing right-of-way (ROW) when work is in water or will permanently impact a water feature and potential habitat exists for the target species complete the following:
  - a) Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
  - b) Minimize impacts to wetland, temporary and permanent open water features, including depressions, and riverine habitats.
  - c) Maintain hydrologic regime and connections between wetlands and other aquatic features.

Pharr District Contact No. 956-702-6100

Revised 07/12/2017

List of Abbreviations

BMP: Best Management Practice  
 CGP: Construction General Permit  
 CRPe: Contractor Responsible Person Environmental  
 DSHS: Texas Department of State Health Services  
 FEMA: Federal Emergency Management Agency  
 FHWA: Federal Highway Administration  
 MOA: Memorandum of Agreement  
 MOU: Memorandum of Understanding  
 MS4: Municipal Separate Stormwater Sewer System

MSAT: Mobile Source Air Toxic  
 MBTA: Migratory Bird Treaty Act  
 NOI: Notice of Intent  
 NOT: Notice of Termination  
 NWP: Nationwide Permit  
 PCN: Pre-Construction Notification  
 PSL: Project Specific Location  
 SPCC: Spill Prevention Control and Countermeasure  
 SW3P: Storm Water Pollution Prevention Plan

TCEQ: Texas Commission on Environmental Quality  
 THC: Texas Historical Commission  
 TPDES: Texas Pollutant Discharge Elimination System  
 TPWD: Texas Parks and Wildlife Department  
 TxDOT: Texas Department of Transportation  
 T&E: Threatened and Endangered Species  
 USACE: U.S. Army Corp of Engineers  
 USFWS: U.S. Fish and Wildlife Service

Amphibian and Aquatic Reptile BMPs (Continued)

- d) Use barrier fencing to direct animal movements away from construction activities and areas of potential wildlife-vehicle collisions in construction areas directly adjacent, or that may directly impact, potential habitat for the target species.
- e) Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydromulching and/or hydroseeding are not feasible due to site conditions, using erosion control blankets or mats that contain no netting, or only contain loosely woven natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable.
- f) Project specific locations (PSLs) proposed within state-owned ROW should be located in uplands away from aquatic features.
- g) When work is directly adjacent to the water, minimize impacts to shoreline basking sites (e.g., downed trees, sand bars, exposed bedrock) and overwinter sites (e.g., brush and debris piles, crayfish burrows) where feasible.
- h) Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter, which may be refugia for terrestrial amphibians, where feasible.
- i) If gutters and curbs are part of the roadway design, where feasible install gutters that do not include the side box inlet and include sloped (i.e. mountable) curbs to allow small animals to leave roadway. If this modification to the entire curb system is not possible, install sections of sloped curb on either side of the storm water drain for several feet to allow small animals to leave the roadway. Priority areas for these design recommendations are those with nearby wetlands or other aquatic features.

For projects that require acquisition of additional ROW and work within that new ROW is in water or will permanently impact a water feature, implement a) - i) above plus j) -l) below, where applicable:

- j) For sections of roadway adjacent to wetlands or other aquatic features, install wildlife barriers that prevent climbing. Barriers should terminate at culvert openings in order to funnel animals under the road. The barriers should be of the same length as the adjacent feature or 80 feet long in each direction, or whichever is the lesser of the two.
- k) For culvert extensions and culvert replacement/installation, incorporate measures to funnel animals toward culverts such as concrete wingwalls and barrier walls with overhangs.
- l) When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of terrestrial or aquatic wildlife through the water feature. Where feasible, biotechnical streambank stabilization methods using live native vegetation or a combination of vegetative and structural materials should be used.



**EPIC SHEET SUPPLEMENTALS**  
**TPWD BMPs**

SHEET 2 OF 3

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
6				FM 676
STATE	DISTRICT	COUNTY		SHEET NO.
TEXAS	PHR	HIDALGO		
CONTROL	SECTION	JOB		
1064	01	032		370

Sheep Frog (*Hypopachus variolosus*)

- Minimize disturbance to burrows or downed woody debris.
- Water Quality BMPs.
- Amphibian BMPs.

South Texas Siren (Large Form) (*Siren sp 1*)

- Minimize impacts to warm, shallow waters with vegetative cover such as ponds and ditches.
- Water Quality BMPs.
- Amphibian BMPs.

Freshwater Mussel BMPs (Required)

- When work is in the water; survey project footprints for state listed species where appropriate habitat exists.
- When work is in the water and mussels are discovered during surveys; relocate state listed and SGCN mussels under TPWD authorization and implement Water Quality BMPs.
- When work is adjacent to the water; Water Quality BMPs implemented as part of the SWPPP for a construction general permit or any conditions of the Section 401 water quality certification for the project will be implemented.

Fish BMPs (Required)

- For projects within the range of a SGCN or State-Listed fish and work is adjacent to water: Use Water Quality BMPs. No TPWD Coordination required.
- For projects within the range of a SGCN or State-Listed fish, and work is in the water: TPWD coordination is required.

Water Quality BMPs (Required)

In addition to BMPs required for a TCEQ Storm Water Pollution Prevention Plan and/or Section 401 water quality permit:

- Minimize the use of equipment in streams and riparian areas during construction. When possible, equipment access should be from banks, bridge decks, or barges.
- When temporary stream crossings are unavoidable, remove stream crossings once they are no longer needed and stabilize banks and soils around the crossing.

Additional Water Quality BMPs (Recommendations)

- Wet-Bottomed detention ponds are recommended to benefit wildlife and downstream water quality. Consider potential wildlife-vehicle interactions when siting detention ponds.
- Rubbish found near bridges on TxDOT ROW should be removed and disposed of properly to minimize the risk of pollution. Rubbish does not include brush piles or snags.

Aquatic Mitigation (Recommendations)

- In-kind compensatory mitigation should be considered for all unavoidable impacts to aquatic resources including, but not limited to streams, wetlands, oysters, seagrass and mudflats, regardless of their jurisdictional status.
- Compensatory mitigation plans should be developed in consultation with TPWD Transportation Conservation Coordinator.

Stream Crossings (Recommendations)

- Use spanning bridges rather than culverts when feasible.
- If using a culvert, staggered culverts that concentrate low flows but provide conveyance of higher flows through staggered culverts placed at higher elevations is recommended.
- Bottomless culverts are recommended to allow for fish and other aquatic wildlife passage in the low flow channel. If bottomless culverts are not feasible, making a low flow channel for fish passage is recommended.
- Avoid placing riprap across stream channels and instead use alternative stabilization such as biotechnical stream bank stabilization methods including live native vegetation or a combination of vegetative and structural materials. When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of aquatic and terrestrial wildlife underneath the bridge. In some instances, riprap may be buried, back-filled with topsoil and planted with native vegetation.
- Incorporate bat-friendly design into bridges and culverts.
- Design bridges for adequate vertical and horizontal clearances under the roadway to allow for terrestrial wildlife to safely pass under the road.
- A span wide enough to cross the stream and allow for dry ground and a natural surface path under the roadway is encouraged. For culverts, incorporation of an artificial ledge inside the culvert on one or both sides for use by terrestrial wildlife is recommended.
- Riparian buffer zones should remain undisturbed where possible.

Vegetation BMPs (Recommendations)

- Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided to the greatest extent practicable. Wherever practicable, impacted vegetation should be replaced with in-kind on-site replacement/restoration of native vegetation.
- To minimize adverse effects, activities should be planned to preserve mature trees, particularly acorn, nut or berry producing varieties. These types of vegetation have high value to wildlife as food and cover.
- It is strongly recommended that trees greater than 12 inches in diameter at breast height (dbh) that are removed be replaced. TPWD's experience indicates that for ecologically effective replacement, a ratio of three trees for every one (3:1) lost should be provided to the extent practicable either on-site or off-site. Trees less than 12 inches dbh should be replaced at a 1:1 ratio.
- Replacement trees should be of equal or better wildlife quality than those removed and be regionally adapted native species.
- When trees are planted, a maintenance plan that ensures at least an 85 percent survival rate after three (3) years should be developed for the replacement trees.
- The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.
- The use of seed mix that contains seeds from only locally adapted native species is recommended.
- Avoid vegetation clearing activities during the general bird nesting season, March through August, to minimize adverse impacts to birds.

Invasive Species BMPs (Recommendations)

- For all work in waters listed in the distribution of Zebra mussels on <http://texasinvasives.org/> as well as those waters specified in 31 TAC §57.972 and any TPWD emergency orders regarding prevention of the spread of Zebra mussels all machinery, equipment, or vehicles coming in contact with such waters should follow clean/drain/dry protocols to prevent the potential spread of invasive Zebra mussels.
- Care should be taken to avoid the spread of aquatic invasive plants (such as Giant Salvinia, Hydrilla, Hyacinth, Watermilfoil, Water Lettuce, and Alligatorweed) from infested water bodies into areas not currently infested. All machinery/equipment/vehicles coming in contact with waters containing aquatic invasive plant species should follow clean/drain/dry protocols to prevent the potential spread of invasive plants.
- Colonization by invasive plants should be actively prevented on disturbed sites in terrestrial habitats. Vegetation management should include removing invasive species as soon as practical while allowing the existing native plants to revegetate the disturbed areas. If using hay bales for sediment control, use locally grown weed-free hay to prevent the spread of invasive species. Leave the hay bales in place and allow them to break down, as this acts as mulch assisting in revegetation.

Wildlife Crossings (Recommendations)

- Design roadways on new location to incorporate wildlife crossings, particularly in areas that bisect wildlife travel corridors or seasonal movement routes.
- Consider using cable median barrier instead of concrete traffic barrier when feasible to increase permeability for animals encountering barriers.

Pharr District Contact No. 956-702-6100

Revised 07/12/2017

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PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS

TPWD BMPs

SHEET 3 OF 3

FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
6				FM 676
STATE	DISTRICT	COUNTY		SHEET NO.
TEXAS	PHR	HIDALGO		
CONTROL	SECTION	JOB		371
1064	01	032		

**SITE DESCRIPTION**

PROJECT LIMITS: \_\_\_\_\_  
(Same as stated on the Title Sheet)

PROJECT SITE MAPS: \_\_\_\_\_  
\*Project Location Map: Title Sheet (Sheet 1)  
\*Drainage Patterns: Drainage Area Maps (Sheets 223-231)  
\*Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Typ Sects (Sheets 9-16)  
\*Major Controls and Locations of Stabilization Practices: SW3P Site Map Sheets (Sheets 375-420)  
\*Project Specific Locations: To be specified by Project Field Office and located in the Project SW3P File  
\*Surface Waters and Discharge Locations: Drainage and Culvert Layout Sheets (Sheets 232-265)

PROJECT DESCRIPTION: \_\_\_\_\_  
(Same as stated on the Title Sheet)

MAJOR SOIL DISTURBING ACTIVITIES: Soil disturbing activities will include preparing the right-of-way; channel excavation, excavation and embankment for the roadway; installation of proposed storm sewer, inlets, and culverts; placement of topsoil for establishment of both temporary and final planting and seeding. Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume within 21 days. Final seeding should be accomplished on all areas as soon as construction stage is complete.

TOTAL PROJECT AREA: 27.84 Acres

TOTAL AREA TO BE DISTURBED: 27.84 Acres

WEIGHTED RUNOFF COEFFICIENT: \_\_\_\_\_  
Before Construction: 0.38  
After Construction: 0.56

EXISTING CONDITION OF SOIL & VEGETATIVE \_\_\_\_\_  
Hidalgo fine sandy loam and Hidalgo Urban Land complex. Mapped vegetative covers include Urban Low Intensity, Sandy Mesquite Savanna Grassland, South Texas, Sandy Mesquite and Shrubland, and Row crops

NAME OF RECEIVING WATERS: \_\_\_\_\_  
Outfalls into roadside ditch leading to Mission Main Canal, ultimately ending in the Rio Grande River.

ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORICAL PROPERTY: \_\_\_\_\_

The following State-listed threatened/endangered species, which may be present within the project area: Sheep frog (*Hypopachus variolosus*), Black-striped snake (*Coniophanes imperialis*), Texas horned lizard (*Phrynosoma cornutum*), Texas tortoise (*Gopherus berlandieri*), and Texas Botteri's Sparrow (*Amophila botteri texana*).

The following Species of Greatest Conservation Need (SGN), which may be present within the project area: Arrowleaf milkvine (*Matelea sagittifolia*), Chihuahuan balloonvine (*Cardiospermum dissectum*), Jones' nailwort (*Paronychia jonesii*), Sandsheet leaf-flower (*Phyllanthus abnormis var. riograndensis*), Shortcrown milkvine (*Matelea brevicoronata*), Siler's huaco (*Manfreda sileri*), Stinking rushpea (*Pomaria austroripariana*), Texas peachbush (*Prunus texana*), Vasey's adella (*Adella vaseyi*), Yellow-flowered allcacho (*Echinocereus papillosus*), a tiger beetle (*Tetracha affinis angustata*), subtropical blue-black tiger beetle (*Cicindela nigrocoerulea subtropica*) and Neojuvenile tiger beetle (*Cicindela obsolata neojuvenile*).

The documentation satisfying TPDES Construction General Permit eligibility pertaining to the existence or of any protective action taken with regards to endangered species or designated critical habitat or historical property in this project area is contained in the project's Environmental Impact Study and can be viewed under the State Open Records Act at the address shown below:

TEXAS DEPARTMENT OF TRANSPORTATION  
PHARR DISTRICT HEADQUARTERS  
ATTN: ENVIRONMENTAL COORDINATOR  
600 W. INTERSTATE 2 EXPRESSWAY  
PHARR, TX 78577-6535  
PHONE: 956-702-6100

**EROSION AND SEDIMENT CONTROLS**

SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- T TEMPORARY SEEDING
- MULCHING (Hay or Straw)
- BUFFER ZONES
- PLANTING
- P SEEDING
- SODDING
- OTHER: (Specify Practice)
- P PRESERVATION OF NATURAL RESOURCES
- FLEXIBLE CHANNEL LINER
- RIGID CHANNEL LINER
- T SOIL RETENTION BLANKET
- COMPOST MANUFACTURED COMPOST
- T BIODEGRADABLE EROSION CONTROL SOCKS

STRUCTURAL PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- SILT FENCES
- T BIODEGRADABLE EROSION CONTROL SOCKS
- HAY BALES
- T ROCK FILTER DAMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- T TIMBER MATTING AT CONSTRUCTION EXIT
- PIPE MATTING OR EQUAL AT CONSTRUCTION EXIT
- CHANNEL LINERS
- T SEDIMENT TRAPS
- SEDIMENT BASINS
- T STORM INLET SEDIMENT TRAP
- STONE OUTLET STRUCTURES
- P CURBS AND GUTTERS
- P STORM SEWERS
- VELOCITY CONTROL DEVICES
- OTHER: (Specify Practice)

STORM WATER MANAGEMENT: \_\_\_\_\_  
Storm water drainage will be provided by storm sewer networks. This storm drain system will carry drainage within the row to low points in the highway where cross drainage may occur and ultimately to the designated outfall.

STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction) \_\_\_\_\_  
(Describe Storm Water Management Activities by Phases, See Example Below):  
The order of activities will be as follows:

1. Install perimeter controls, clear R.O.W. on side where construction will take place, and make required utility adjustments
2. Install Proposed trunk lines/inlets, install silt fence along roadway storm sewer network outfalls as shown on Plan & Profile Sheets.
3. Construct proposed roadway.
4. Seed each section completed with temp. seeding from sidewalk to right of way.
5. Once all construction activity is complete, permanent seeding on proposed areas shall be done according to plans or as instructed by the engineer.

Refer to TCP Sequence of Construction for more information.

NON-STORM WATER MANAGEMENT DISCHARGES: \_\_\_\_\_  
Non-storm water discharges should be filtered, or held in retention basins, before being allowed to mix with storm water. These discharges consist of non-polluted ground water, spring water, foundation and/or footing drain water; and water used for dust control, pavement washing and vehicle wastewater containing no detergents.

**OTHER REQUIREMENTS & PRACTICES**

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: For areas of the construction site that have not been finally stabilized, area used for storage of materials, structural control measures, and locations where vehicles enter or exit the site, personnel provided by the permittee and familiar with the SW3P must inspect disturbed areas at least once every fourteen (14) calendar days and within twenty-four (24) hours of the end of a storm event 0.5 inches or greater.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded dumpster. All trash and construction debris from the site will be deposited as necessary at a local dump. No construction waste material will be buried on site.

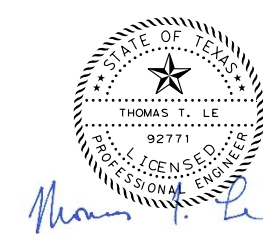
HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories to be hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalt products, Chemical additives for soil stabilization, or Concrete curing compounds and additives. In the event of a spill which may be hazardous, the spill coordinator should be contacted immediately. Emptying of excess concrete should not be allowed on site. Likewise, washout of concrete trucks should not be performed on site. These discharges are considered non-allowable non-storm water discharges. Concrete trucks should never be allowed to dump into storm drains or sanitary sewers.

SANITARY WASTE: All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.

OFFSITE VEHICLE TRACKING: The Contractor shall be required, on a regular basis or as may be directed by the Engineer, to dampen haul roads for dust control, stabilize construction entrances and to remove excess dirt from the roadway.

MANAGEMENT PRACTICES:  
1. Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, water body or stream bed.  
2. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.  
3. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, or debris or other obstructions placed during construction operations that are not a part of the finished work.

OTHER: Contractor shall adhere to the following:  
1. Construction Materials List of materials stored on job site to be provided by Contractor.  
2. The project SW3P File shall be located at the project field office or within the Contractor's mobile office at all times and shall contain the N.O.I., CGP, Signature Authorization, Certification/Qualification Statements, Inspection Reports, Required Maps, and the TPDES Permit, Part II. This File to be presented to authorized State and Federal Agents upon request.



11/18/2022

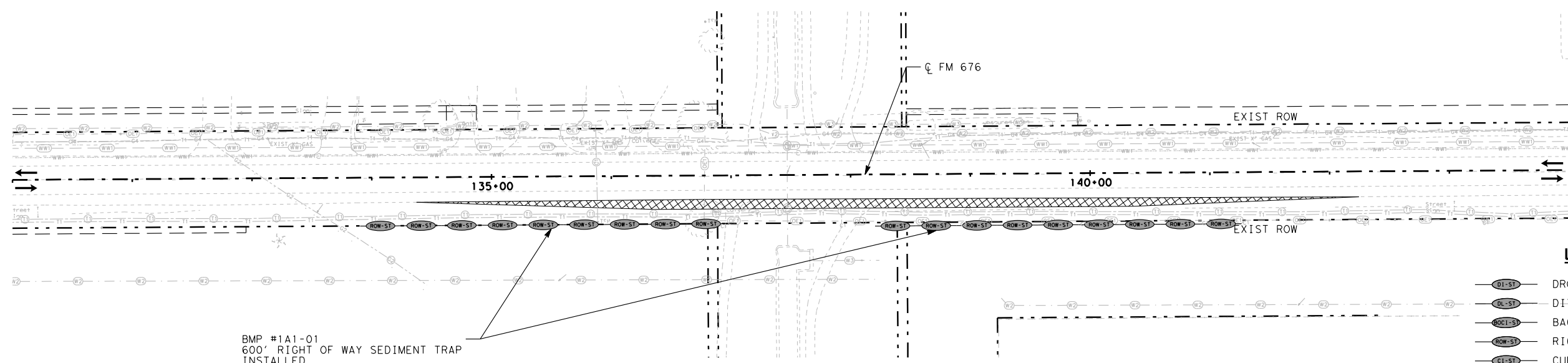
\_\_\_\_\_, P.E.  
Signature of Registrant & Date

© 2014  
Texas Department of Transportation  
**TxDOT STORM WATER POLLUTION PREVENTION PLAN (SW3P)**  
REV. 2-20-14 SW3P. DGN  
FED. RD. DIV. NO. 6 PROJECT NO. SHEET NO. 372  
STATE TEXAS DIST. PHARR COUNTY HIDALGO  
CONT. SECT. JOB HIGHWAY NO. 1064 01 032 FM 676





PLAN SCALE: 1"=100'  
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 DISTANCE IN FEET

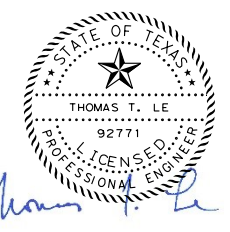


BMP #1A1-01  
 600' RIGHT OF WAY SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOC-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RF03 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THESE PHASES
- CONSTRUCTION AREA PREVIOUS PHASES

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE IA STEP 1

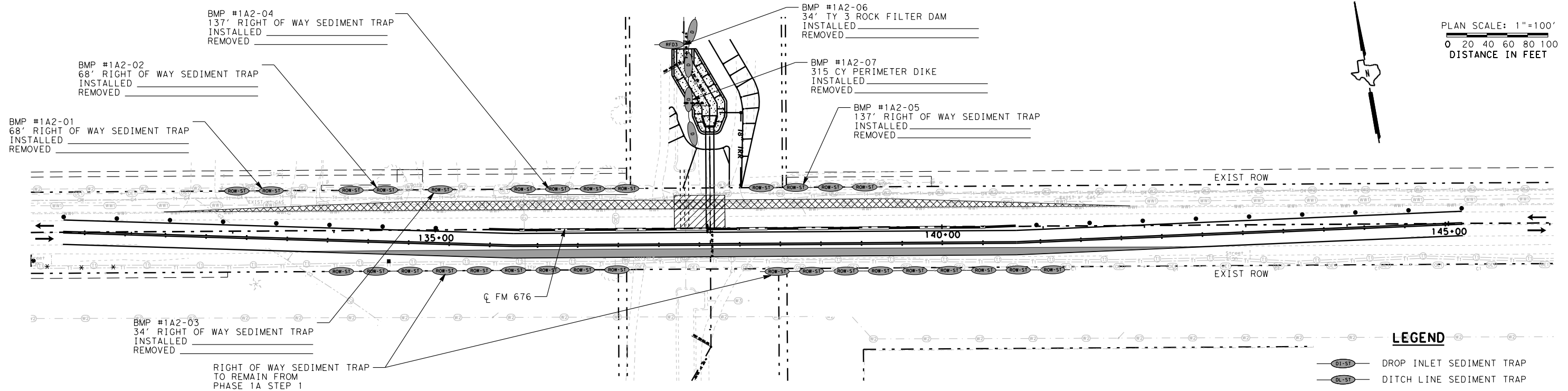
SHEET 1 OF 4

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			373
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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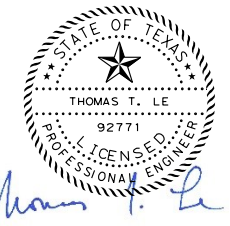


PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET

**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOC1-S BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THESE PHASES
- CONSTRUCTION AREA PREVIOUS PHASES

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

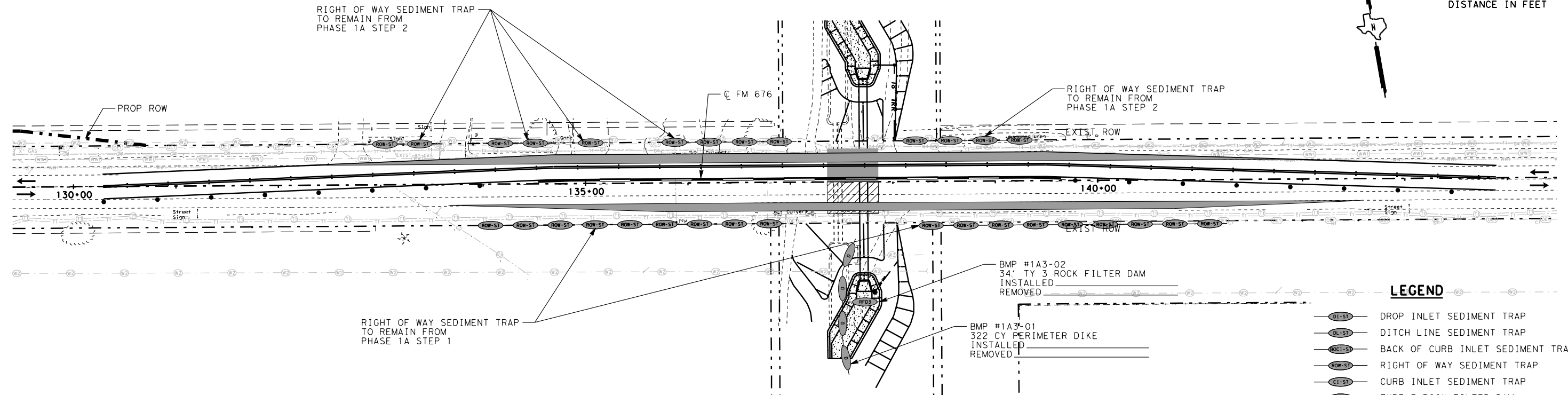
FM 676  
 SW3P  
 PHASE IA STEP 2

SHEET 2 OF 4

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			374
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOC1-S BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RF03 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THESE PHASES
- CONSTRUCTION AREA PREVIOUS PHASES

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE IA STEP 3

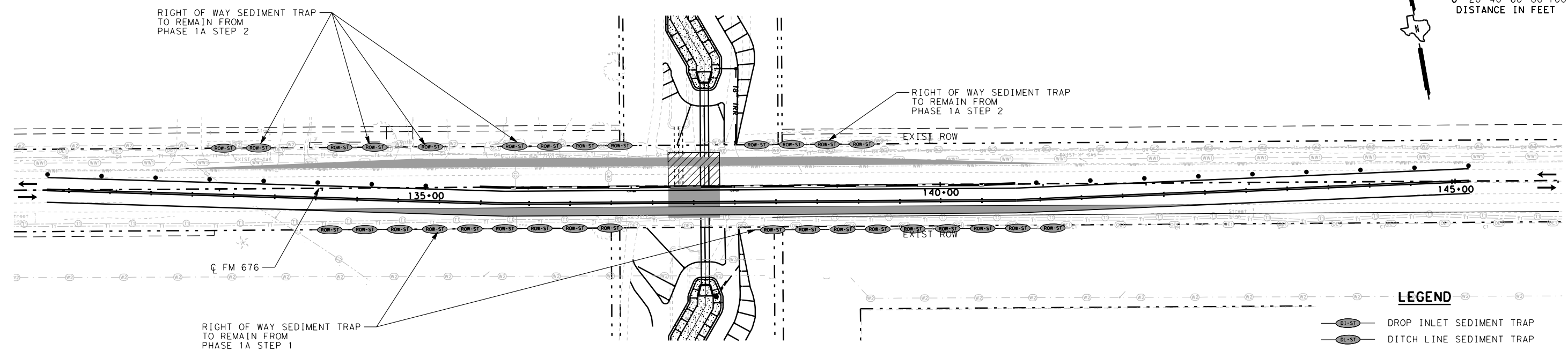
SHEET 3 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			375
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=100'  
 0 20 40 60 80 100  
 DISTANCE IN FEET



**LEGEND**

- DROP INLET SEDIMENT TRAP
- DITCH LINE SEDIMENT TRAP
- BACK OF CURB INLET SEDIMENT TRAP
- RIGHT OF WAY SEDIMENT TRAP
- CURB INLET SEDIMENT TRAP
- TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THESE PHASES
- CONSTRUCTION AREA PREVIOUS PHASES

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE IA STEP 4

SHEET 4 OF 4

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			376
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

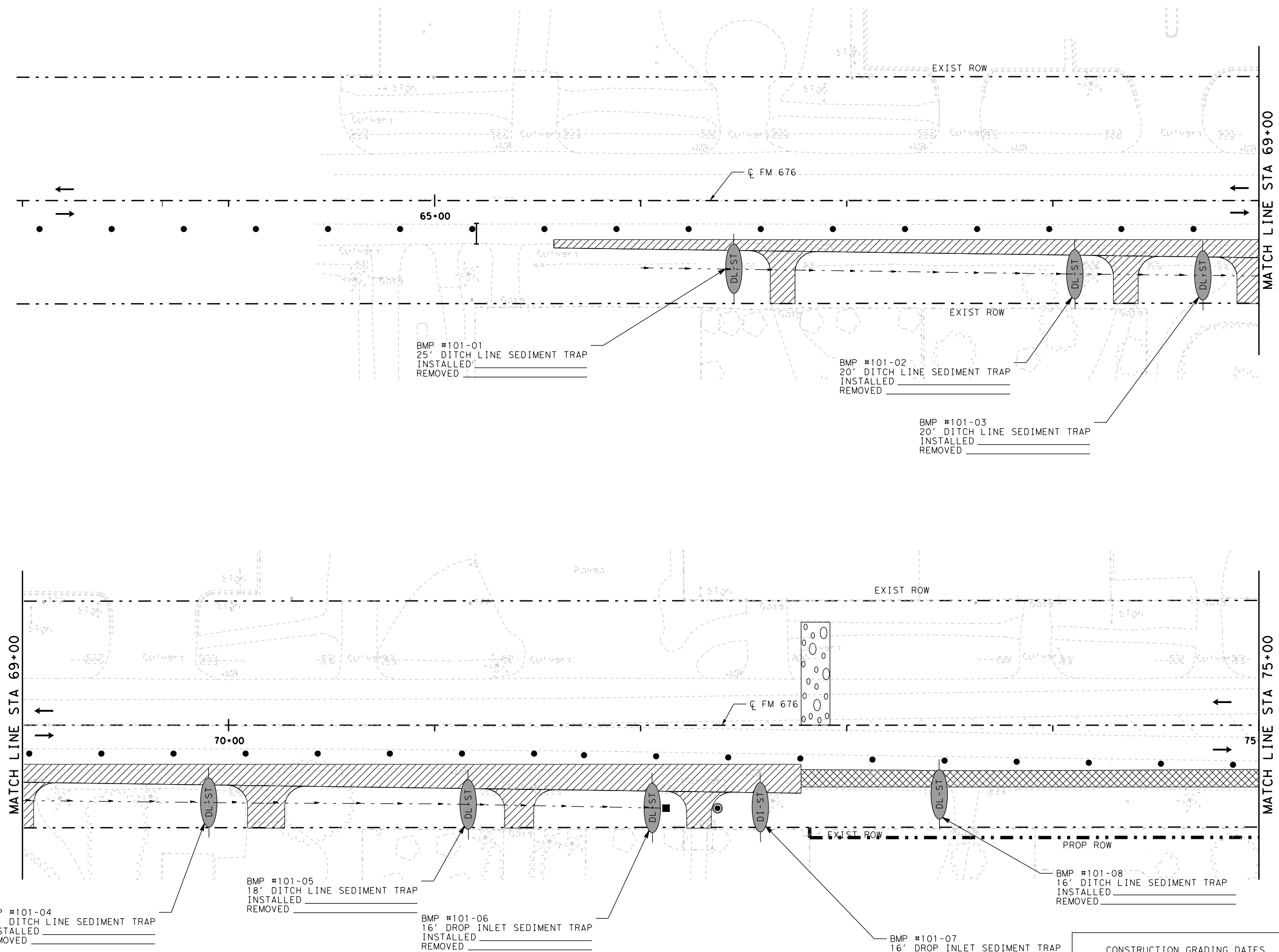
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DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

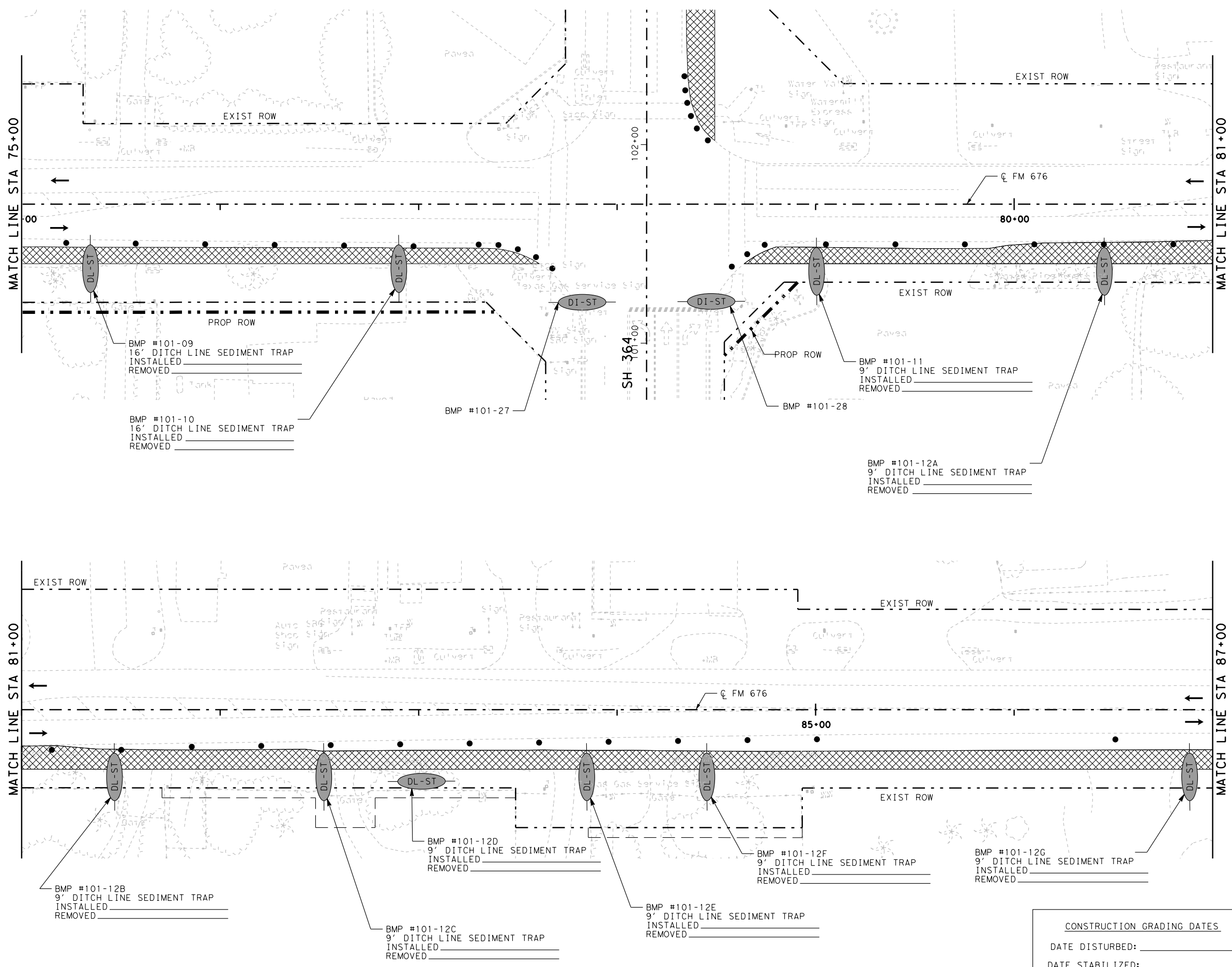
FM 676  
 SW3P  
 PHASE I STEP 1

SHEET 1 OF 11			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			377
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

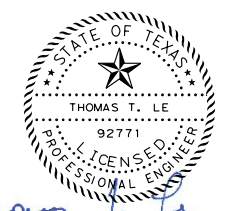
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SW3P**  
**PHASE I STEP 1**

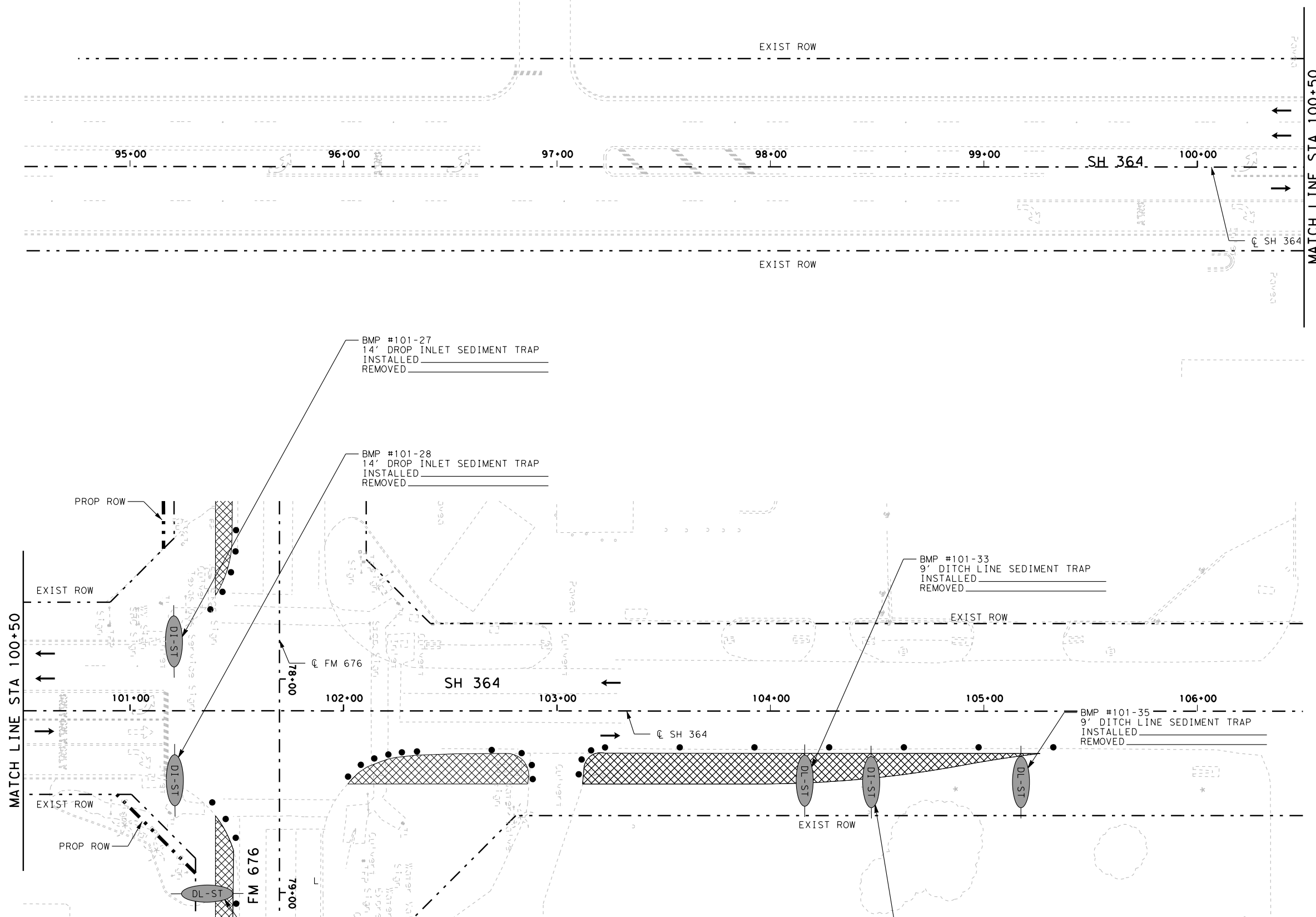
SHEET 2 OF 11

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				378	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE I STEP 1

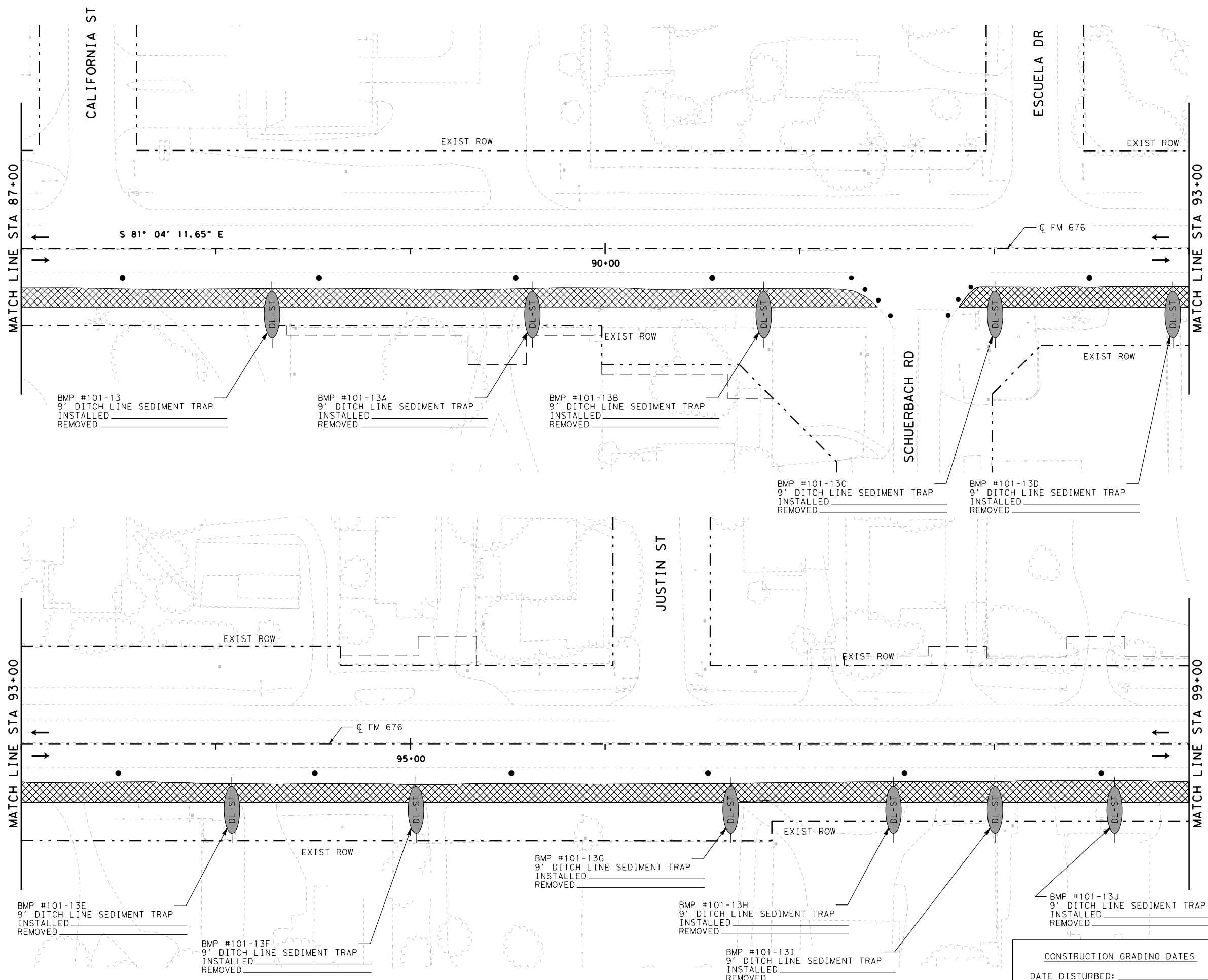
SHEET 3 OF 11

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			379
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

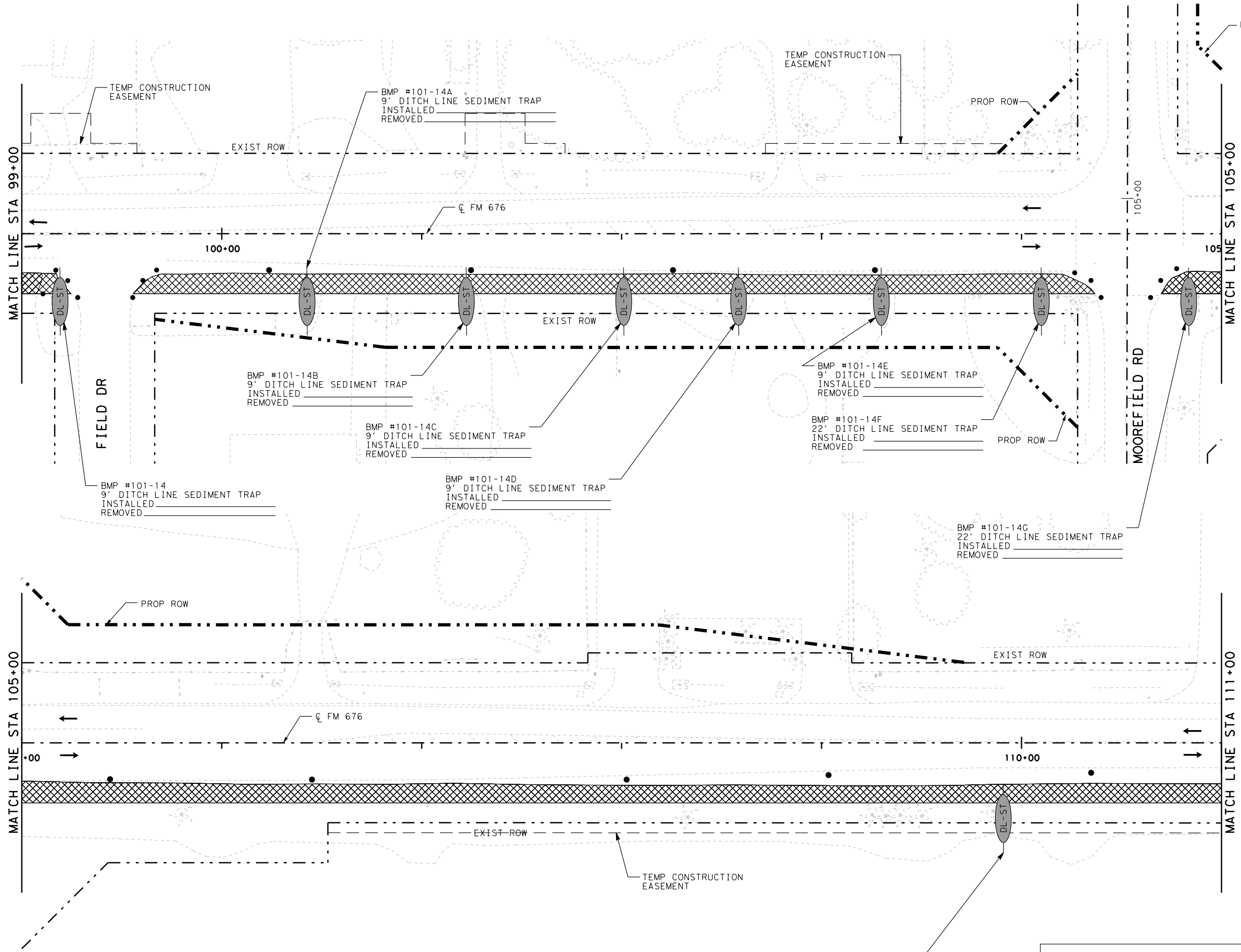
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 SW3P  
 PHASE I STEP 1

SHEET 4 OF 11			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			380
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_



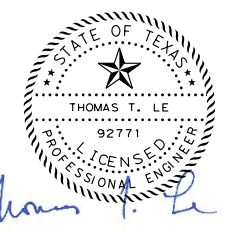
PLAN SCALE: 1"=50'  
0 10 20 30 40 50  
DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
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*Thomas T. Le*

11/18/2022



**ATKINS**  
TBPE REG. #F-474

FM 676  
SW3P  
PHASE I STEP 1

SHEET 5 OF 11

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			381
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

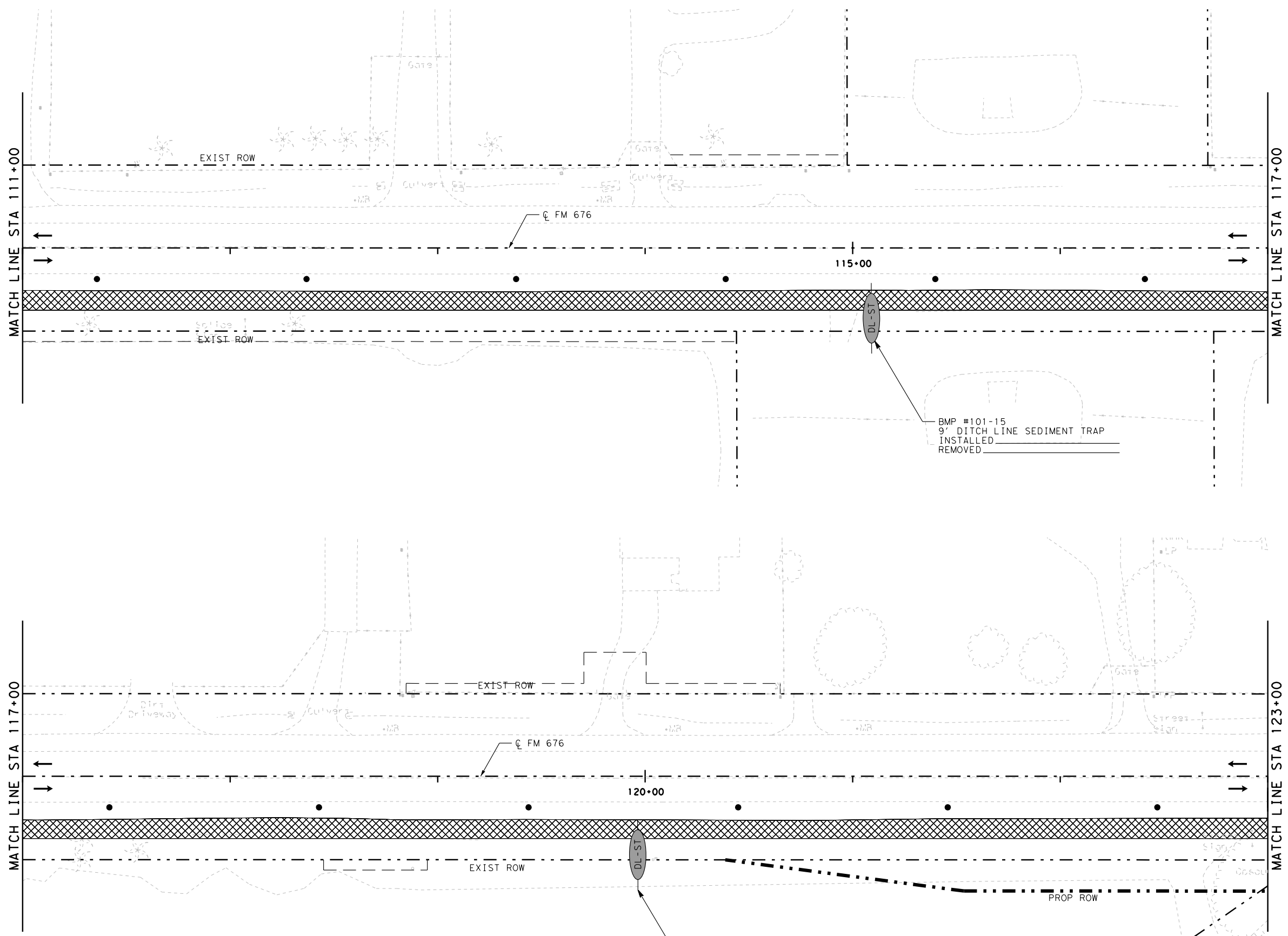
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DATE STABILIZED: \_\_\_\_\_

BMP #101-14H  
9' DITCH LINE SEDIMENT TRAP  
INSTALLED  
REMOVED

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- DI-ST DROP INLET SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SW3P**  
**PHASE I STEP 1**

SHEET 6 OF 11

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			382
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

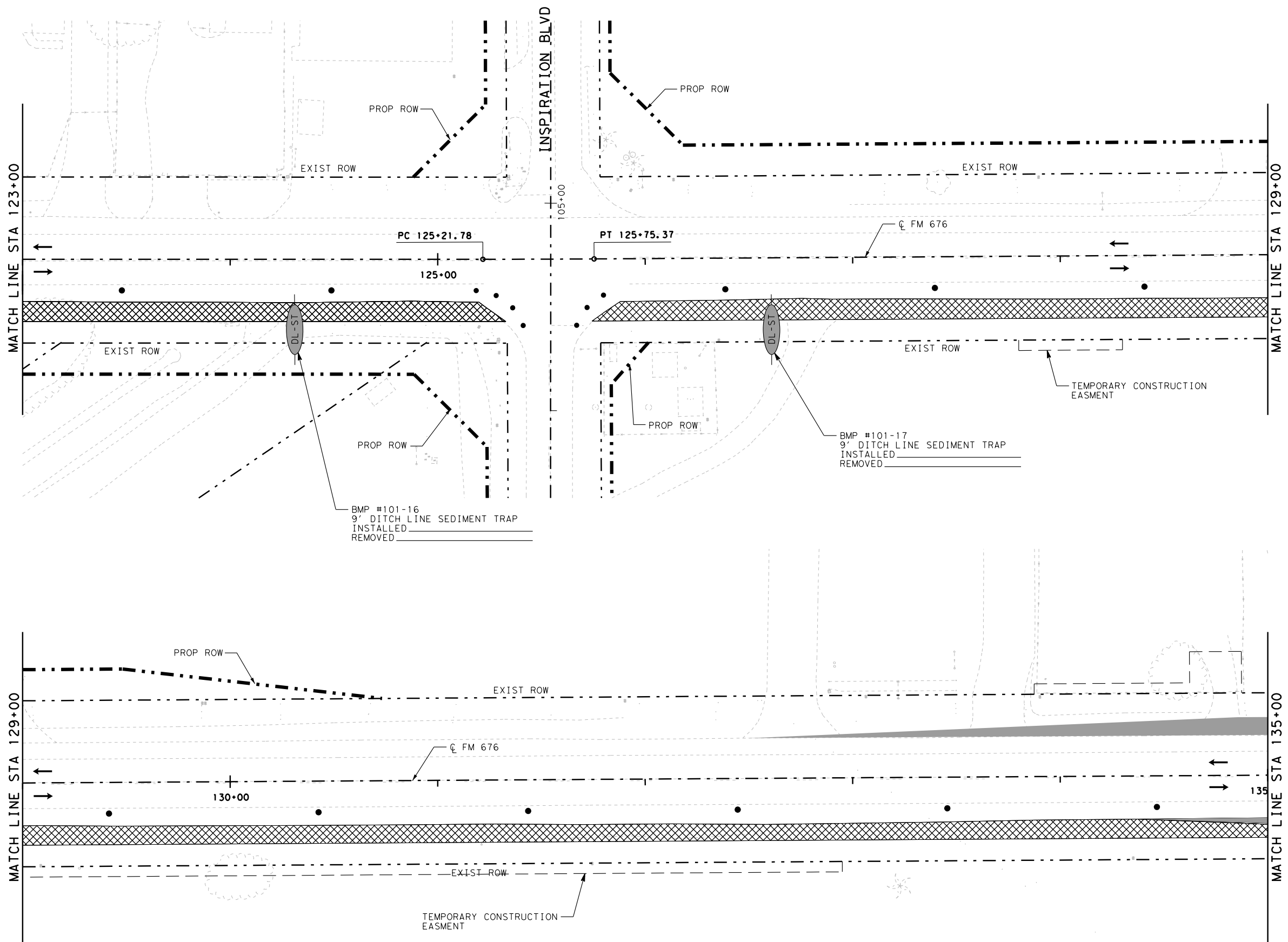
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
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11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE I STEP 1

SHEET 7 OF 11

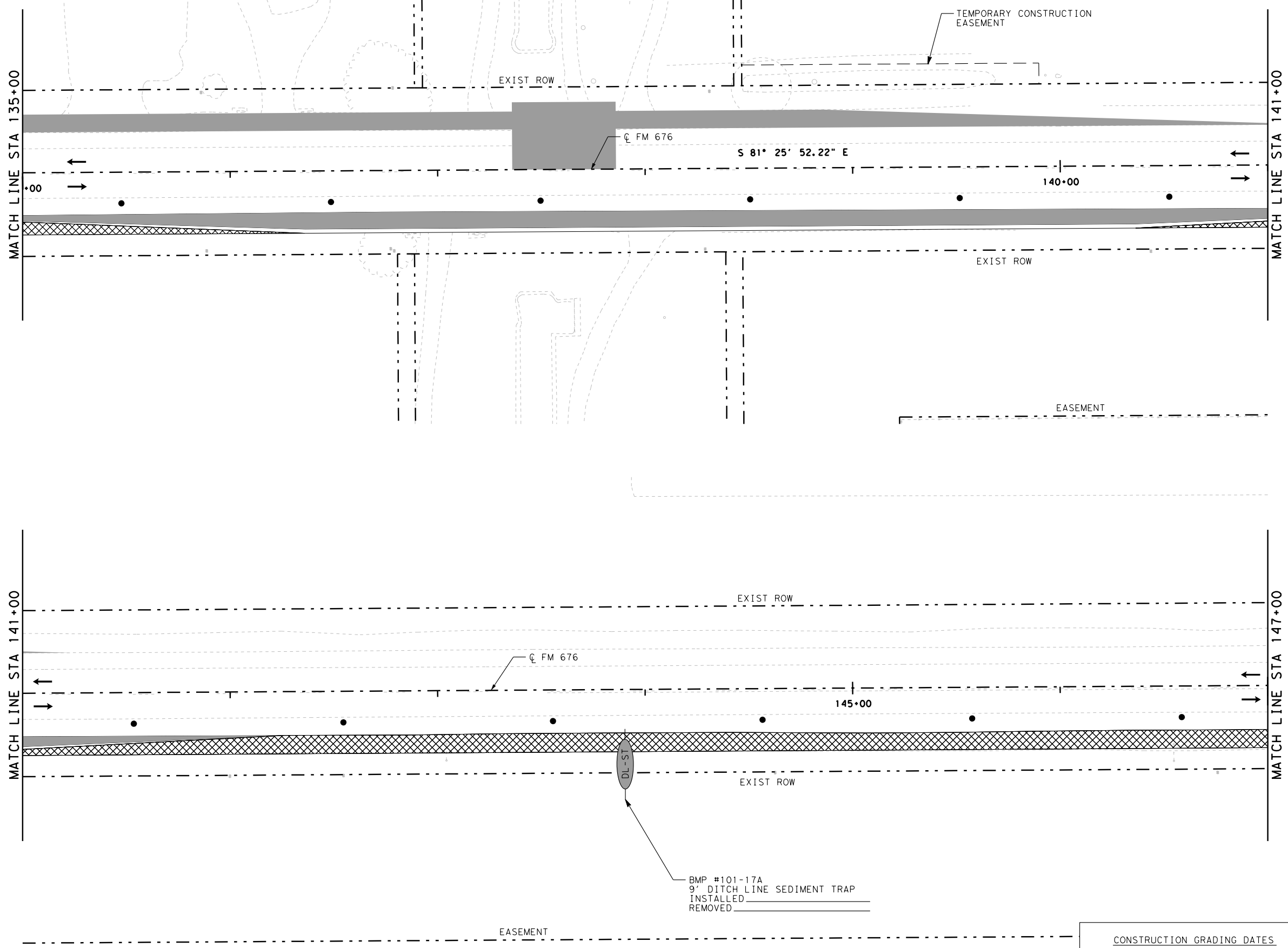
CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			383
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SW3P**  
**PHASE I STEP 1**

SHEET 8 OF 11

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			384
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

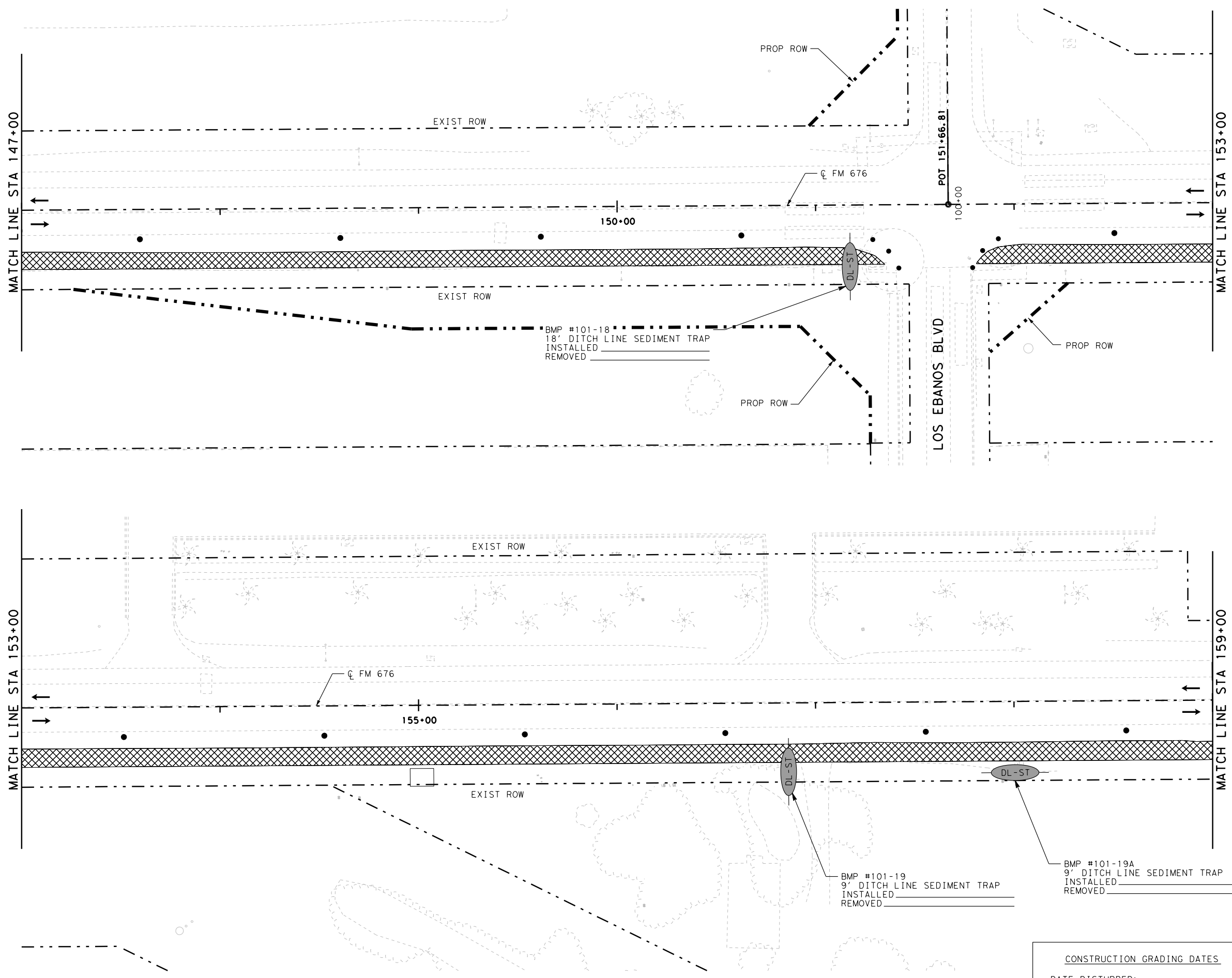
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

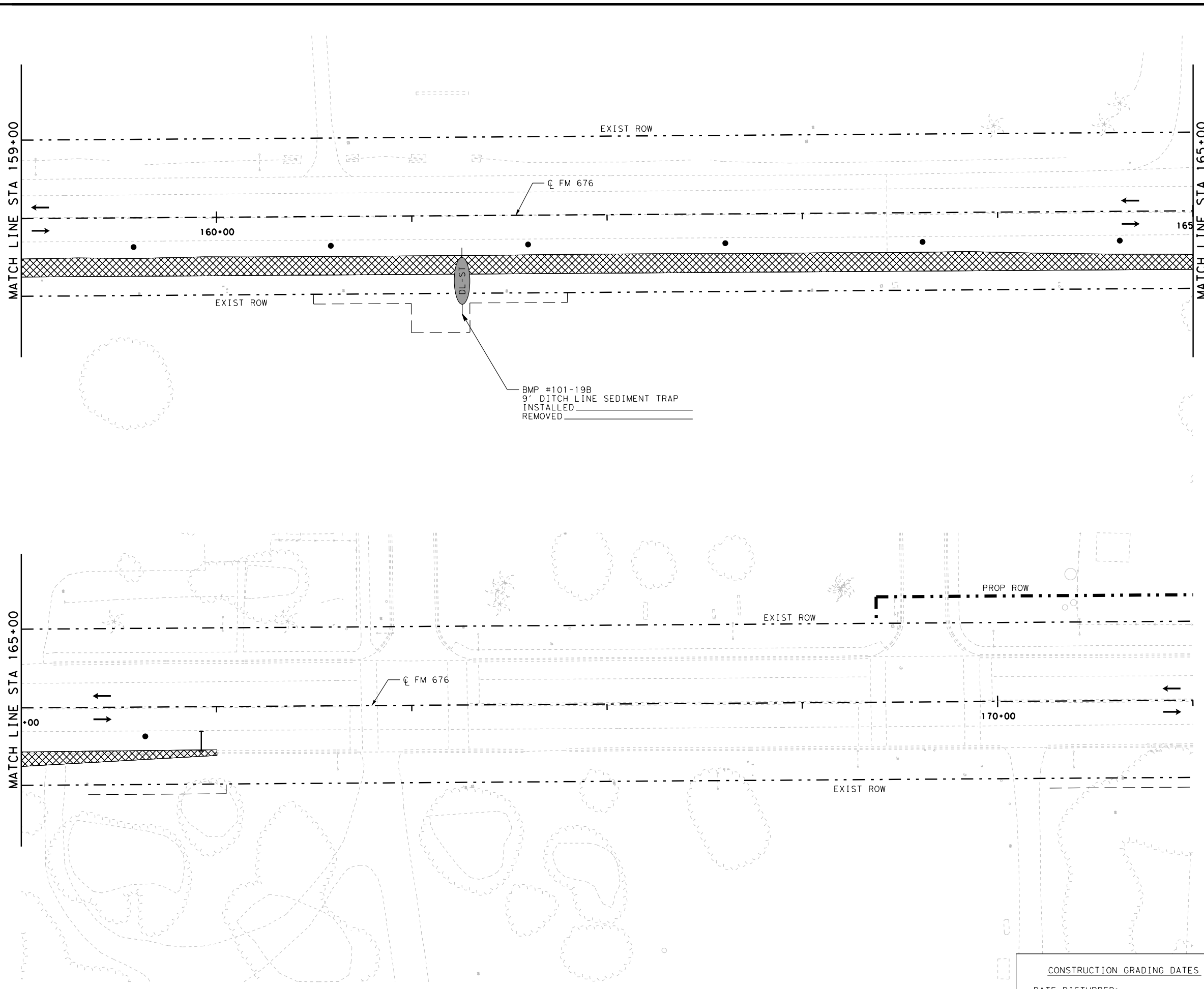
FM 676  
 SW3P  
 PHASE I STEP 1

SHEET 9 OF 11

CONSTRUCTION GRADING DATES	
DATE DISTURBED:	_____
DATE STABILIZED:	_____

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			385
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE I STEP 1

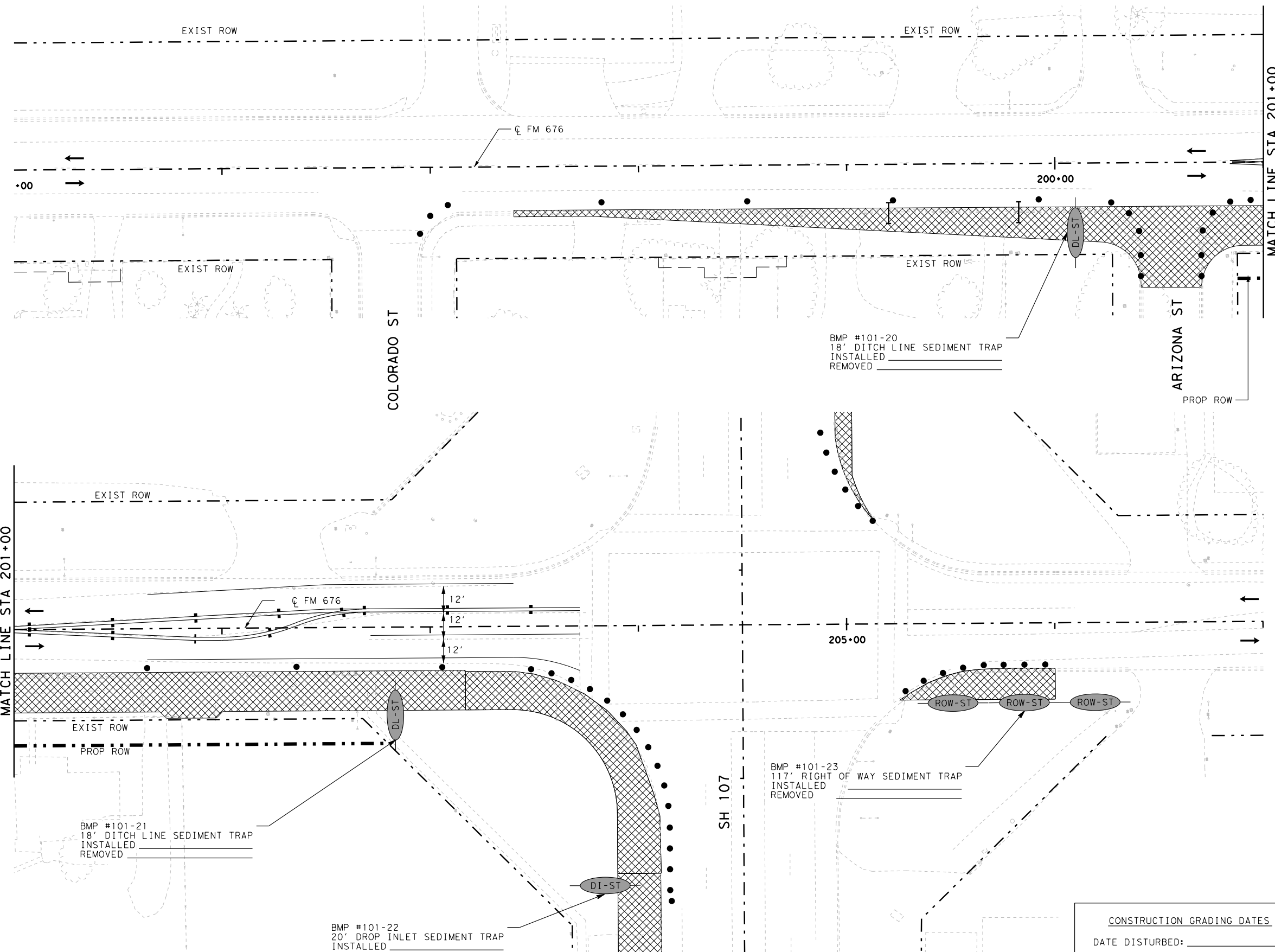
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FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			386
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



- LEGEND**
- DI-ST DROP INLET SEDIMENT TRAP
  - DL-ST DITCH LINE SEDIMENT TRAP
  - BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
  - ROW-ST RIGHT OF WAY SEDIMENT TRAP
  - CI-ST CURB INLET SEDIMENT TRAP
  - RFD3 TYPE 3 ROCK FILTER DAM
  - CONSTRUCTION EXIT
  - CONSTRUCTION AREA THIS PHASE
  - CONSTRUCTION AREA PREVIOUS PHASES
  - TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

**FM 676**  
**SW3P**  
**PHASE I STEP 1**

SHEET 11 OF 11

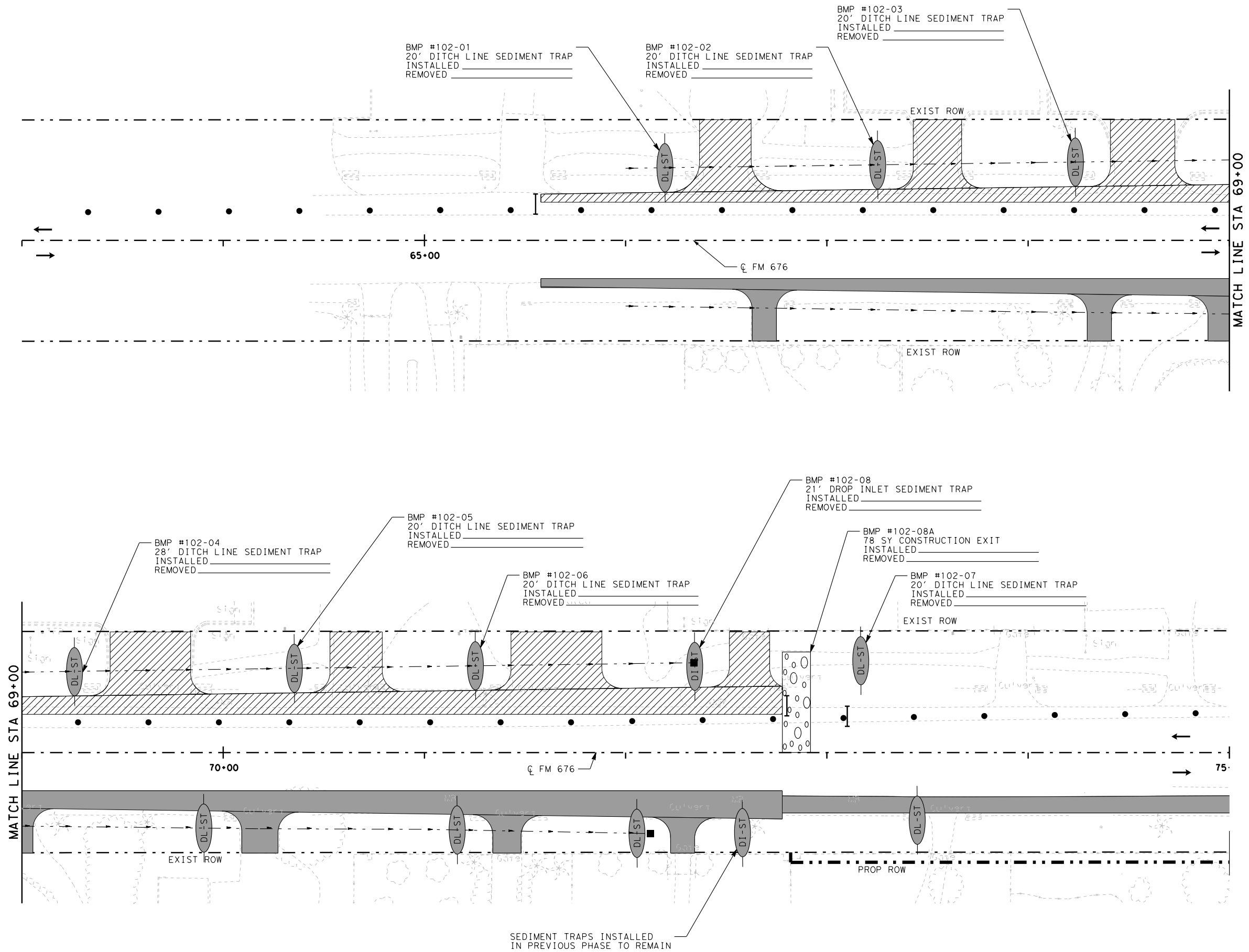
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6			387
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE I STEP 2

SHEET 1 OF 1			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			388
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

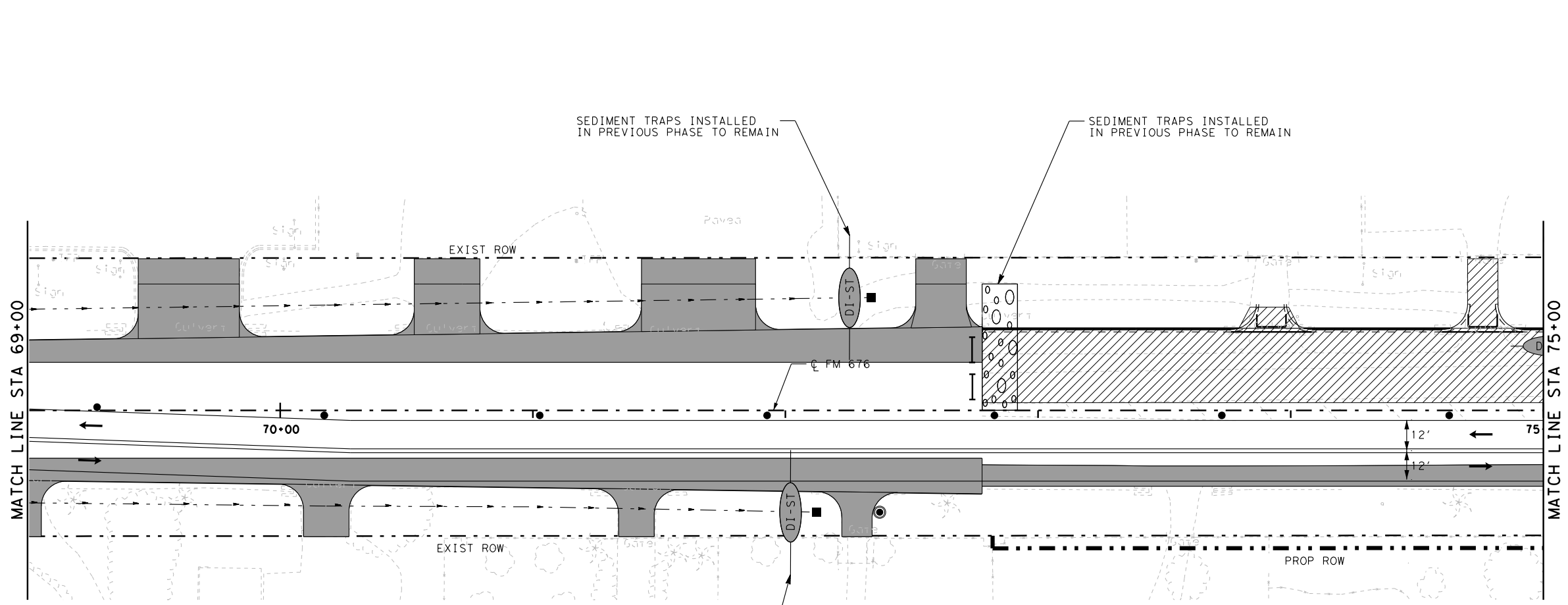
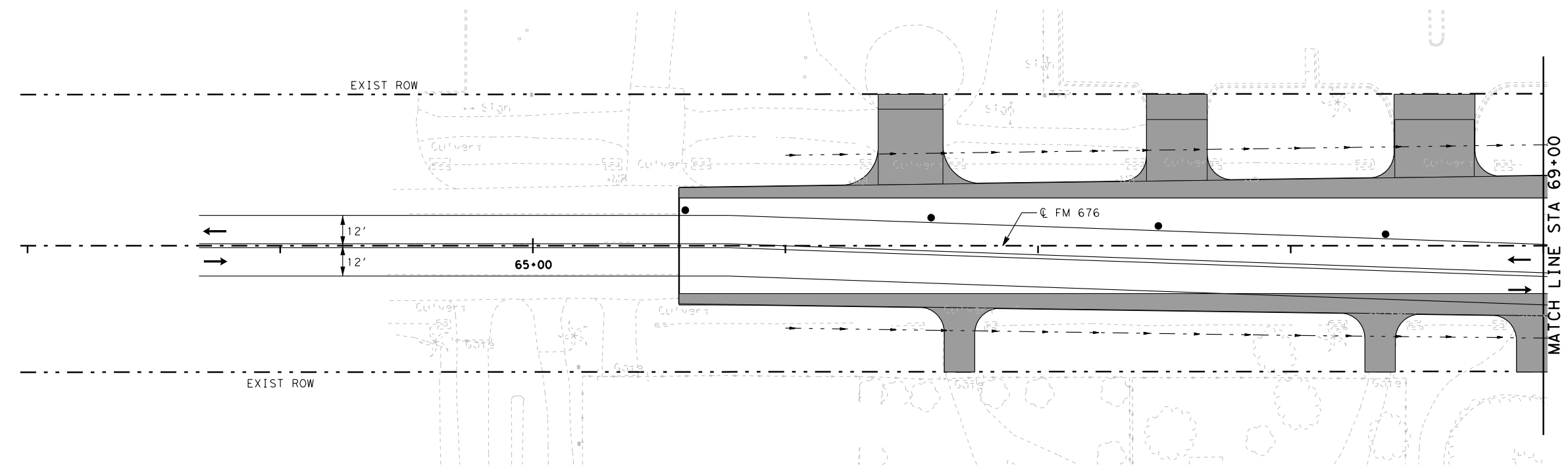
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DATE STABILIZED: \_\_\_\_\_

SEDIMENT TRAPS INSTALLED IN PREVIOUS PHASE TO REMAIN



PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



- LEGEND**
- DI-ST DROP INLET SEDIMENT TRAP
  - DL-ST DITCH LINE SEDIMENT TRAP
  - BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
  - ROW-ST RIGHT OF WAY SEDIMENT TRAP
  - CI-ST CURB INLET SEDIMENT TRAP
  - RFD3 TYPE 3 ROCK FILTER DAM
  - CONSTRUCTION EXIT
  - CONSTRUCTION AREA THIS PHASE
  - CONSTRUCTION AREA PREVIOUS PHASES
  - TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

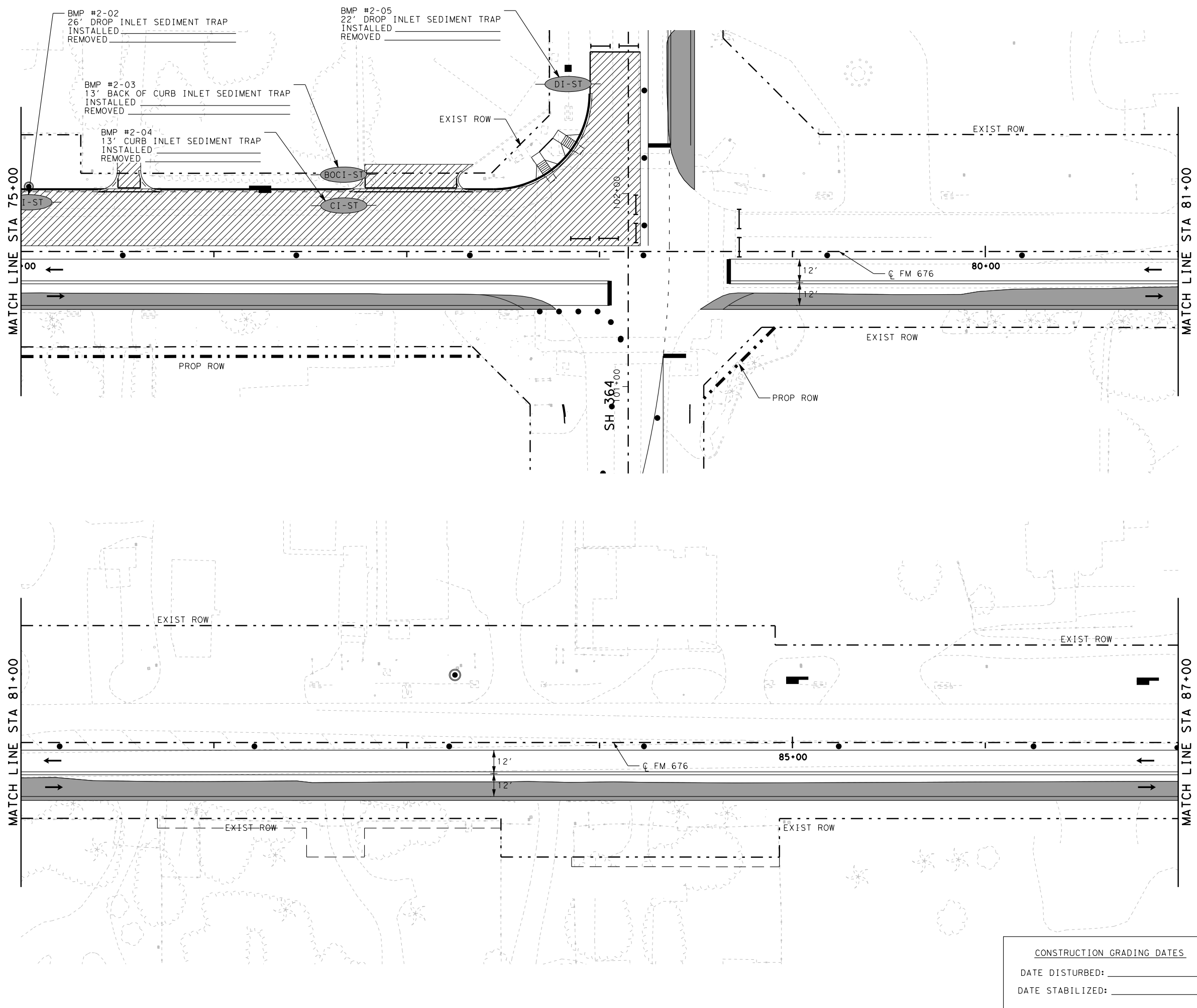
SHEET 1 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			389
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
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 DATE STABILIZED: \_\_\_\_\_

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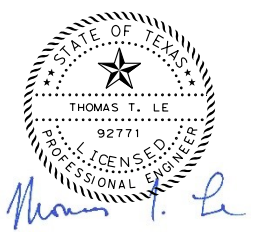
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 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 2 OF 15

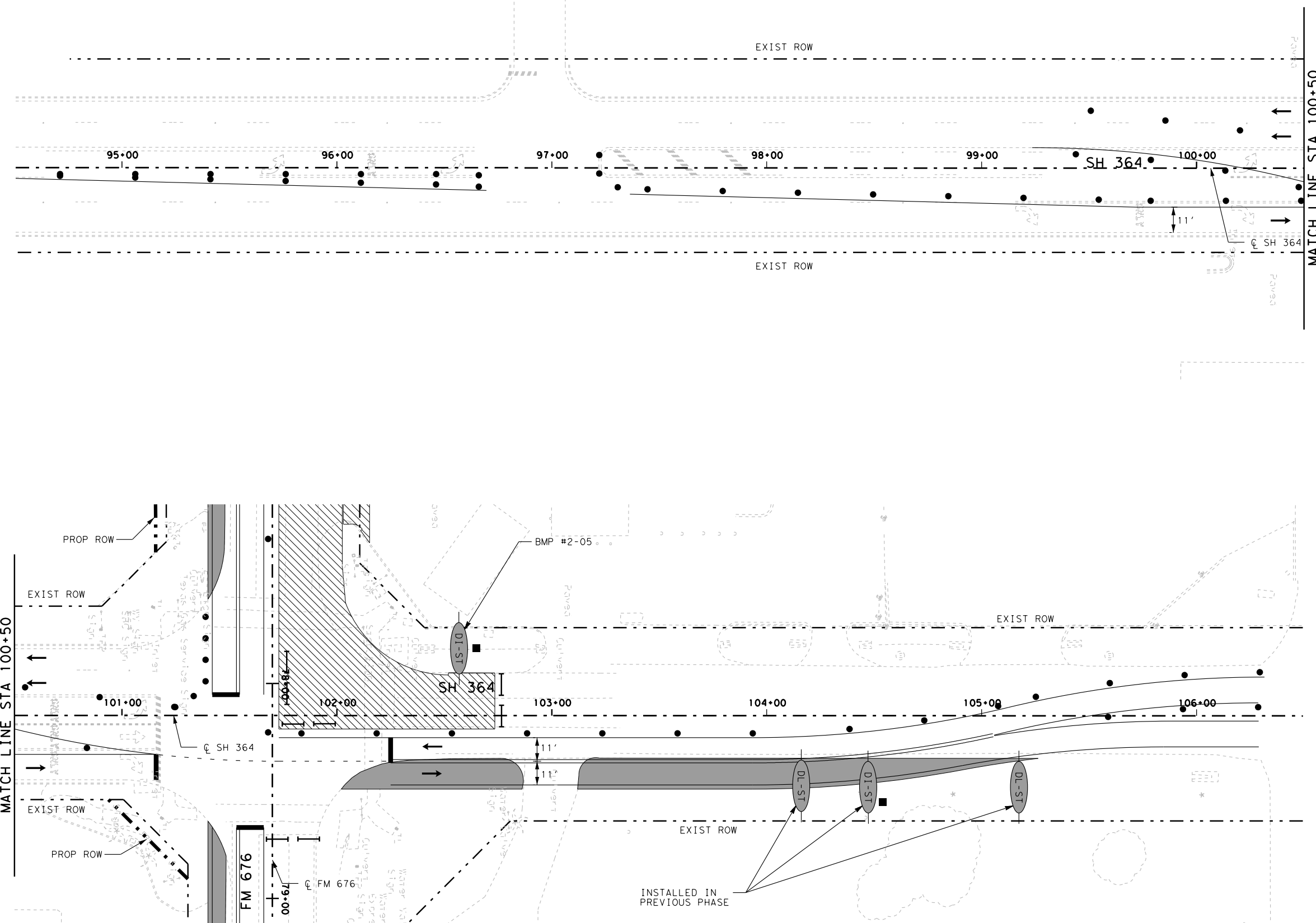
CONSTRUCTION GRADING DATES

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DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			390
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
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- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
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NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676

SW3P  
 PHASE II

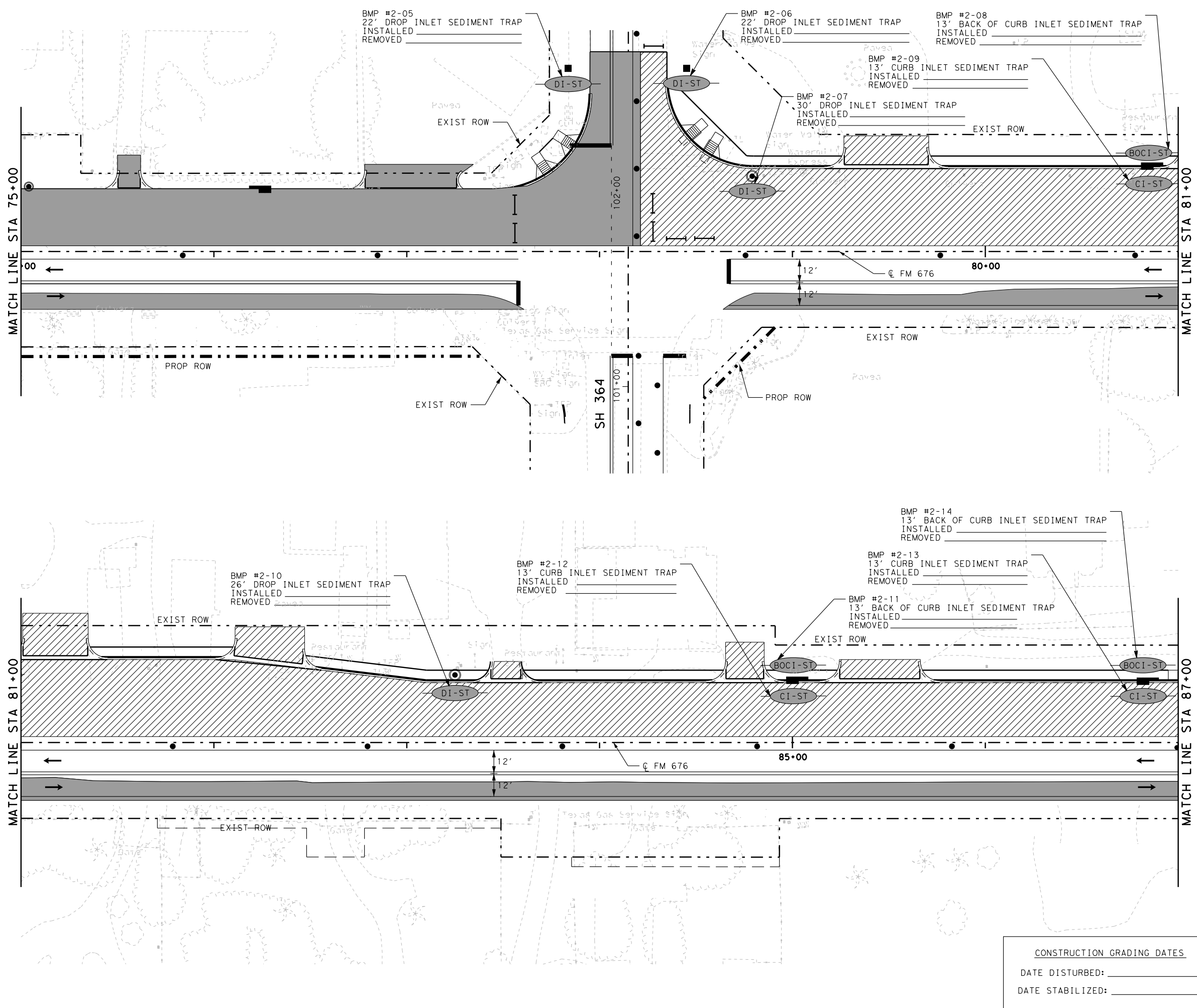
SHEET 3 OF 12

CONSTRUCTION GRADING DATES	
DATE DISTURBED:	_____
DATE STABILIZED:	_____

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			391
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

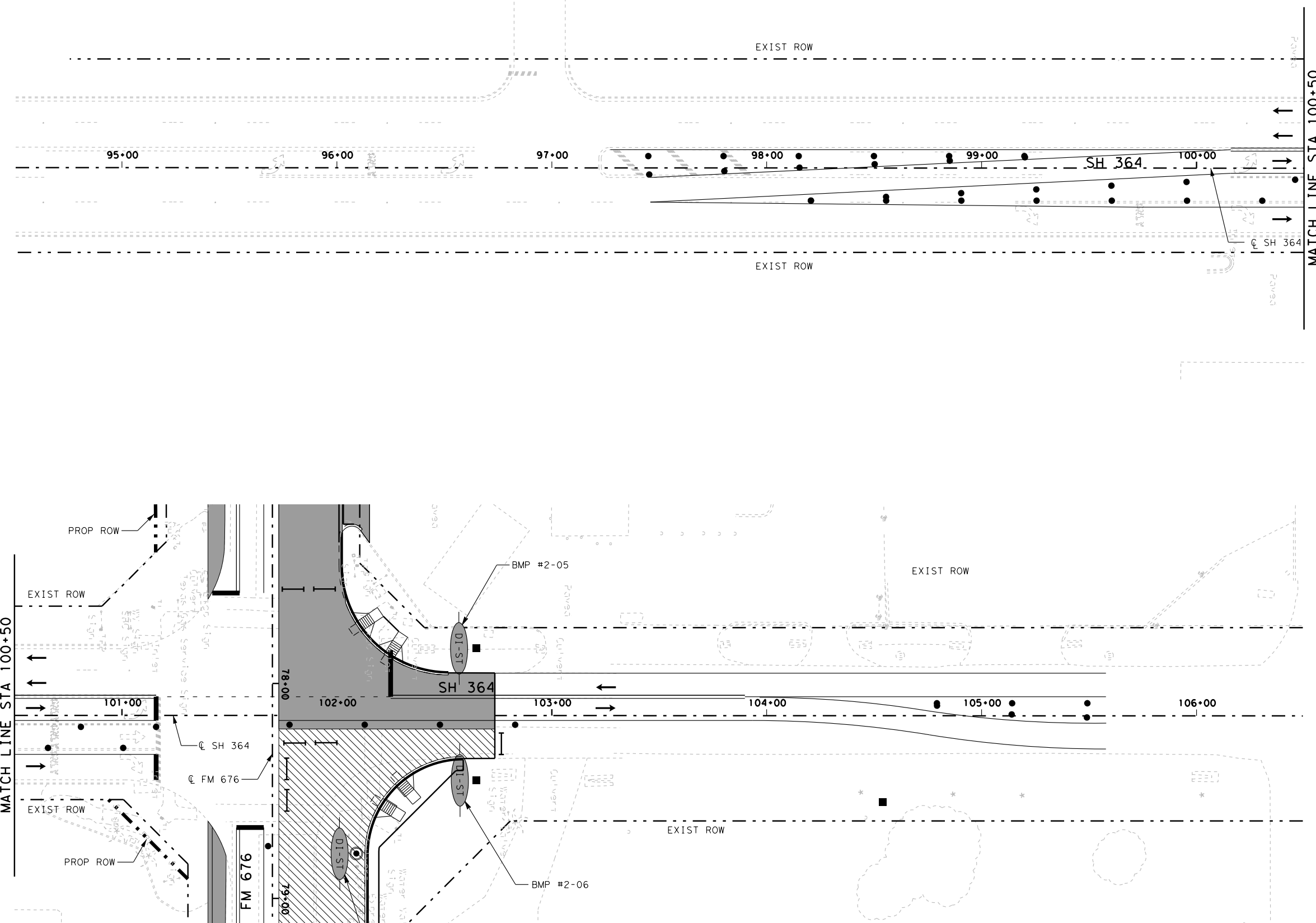
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FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			392
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

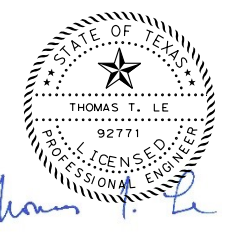
PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
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- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
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NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

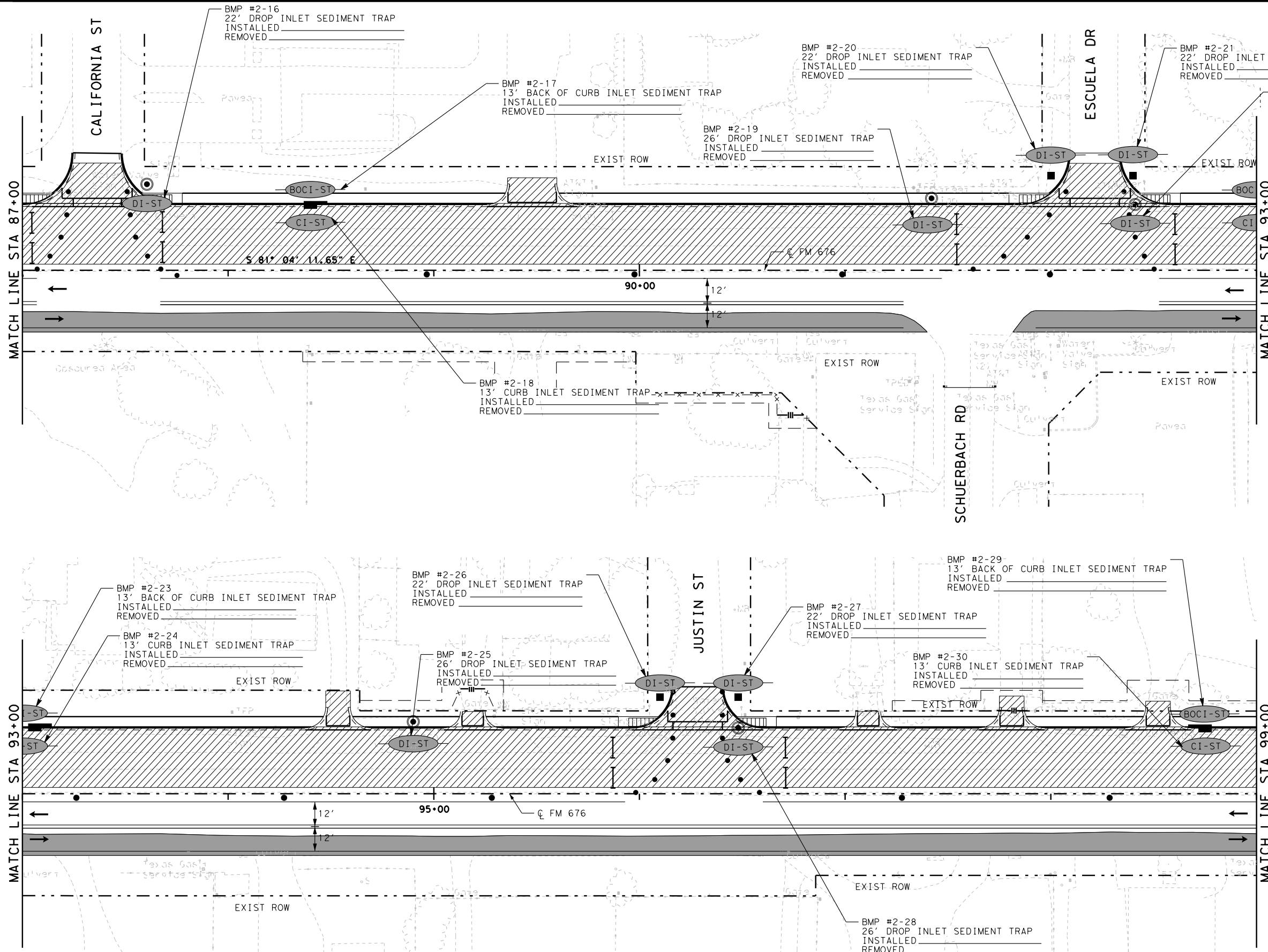
SHEET 5 OF 12

CONSTRUCTION GRADING DATES  
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 DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			393
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

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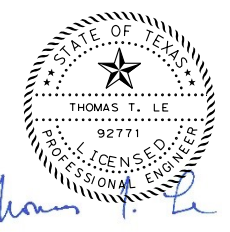


PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
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- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



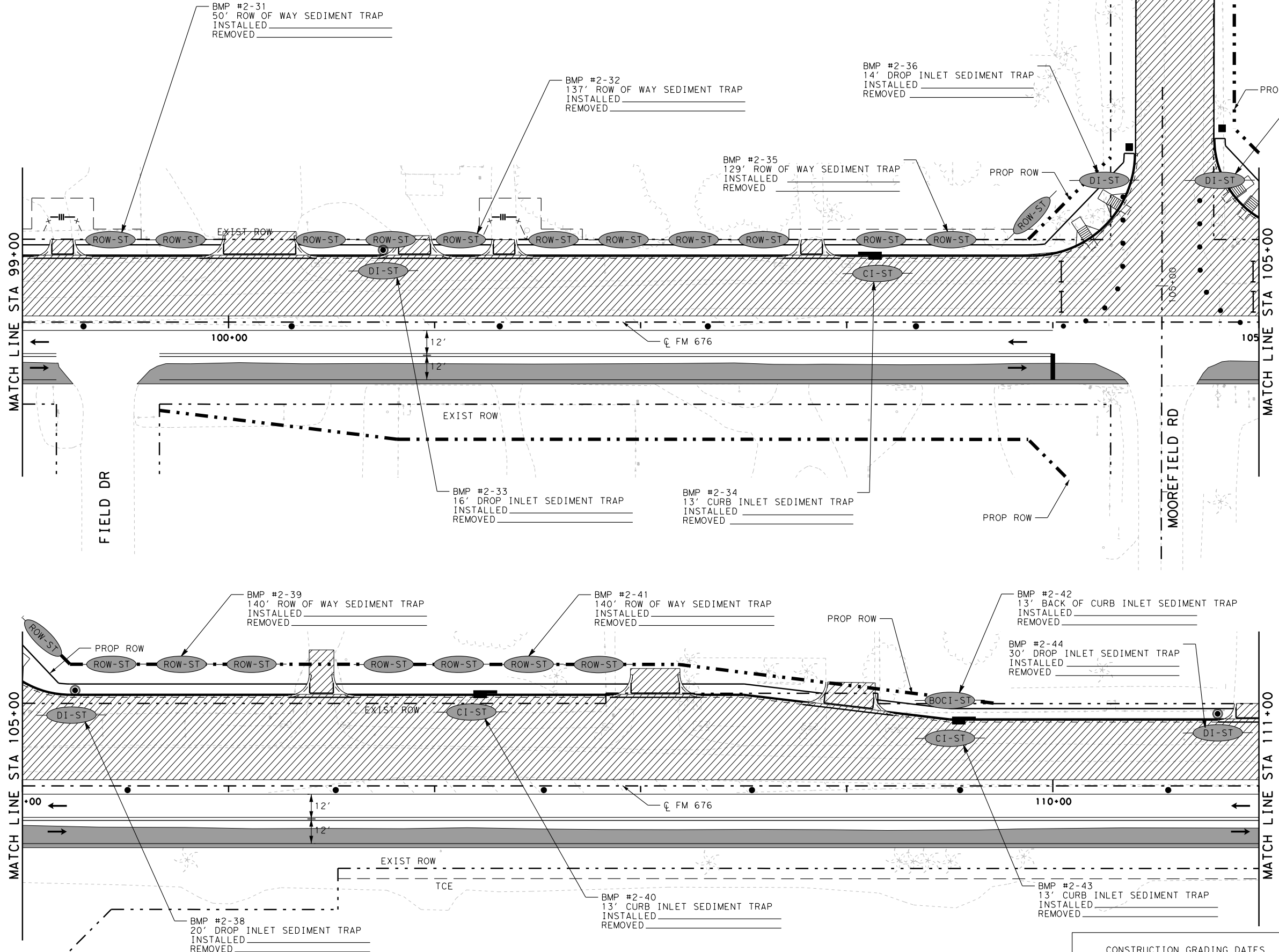
**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 6 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			394
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- ▨ CONSTRUCTION EXIT
- ▨ CONSTRUCTION AREA THIS PHASE
- ▨ CONSTRUCTION AREA PREVIOUS PHASES
- ▨ TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 7 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			395
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

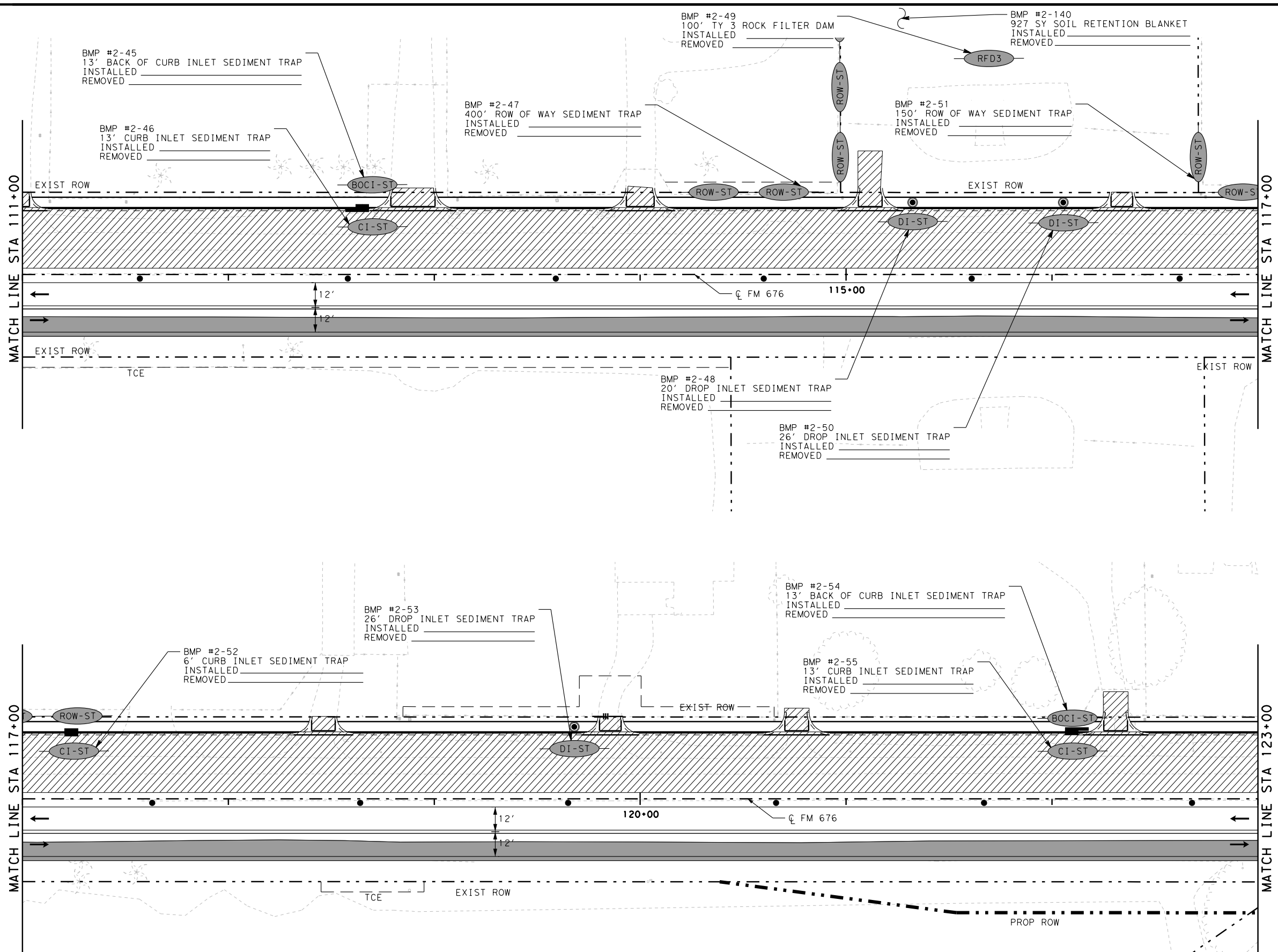
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DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 8 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			396
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

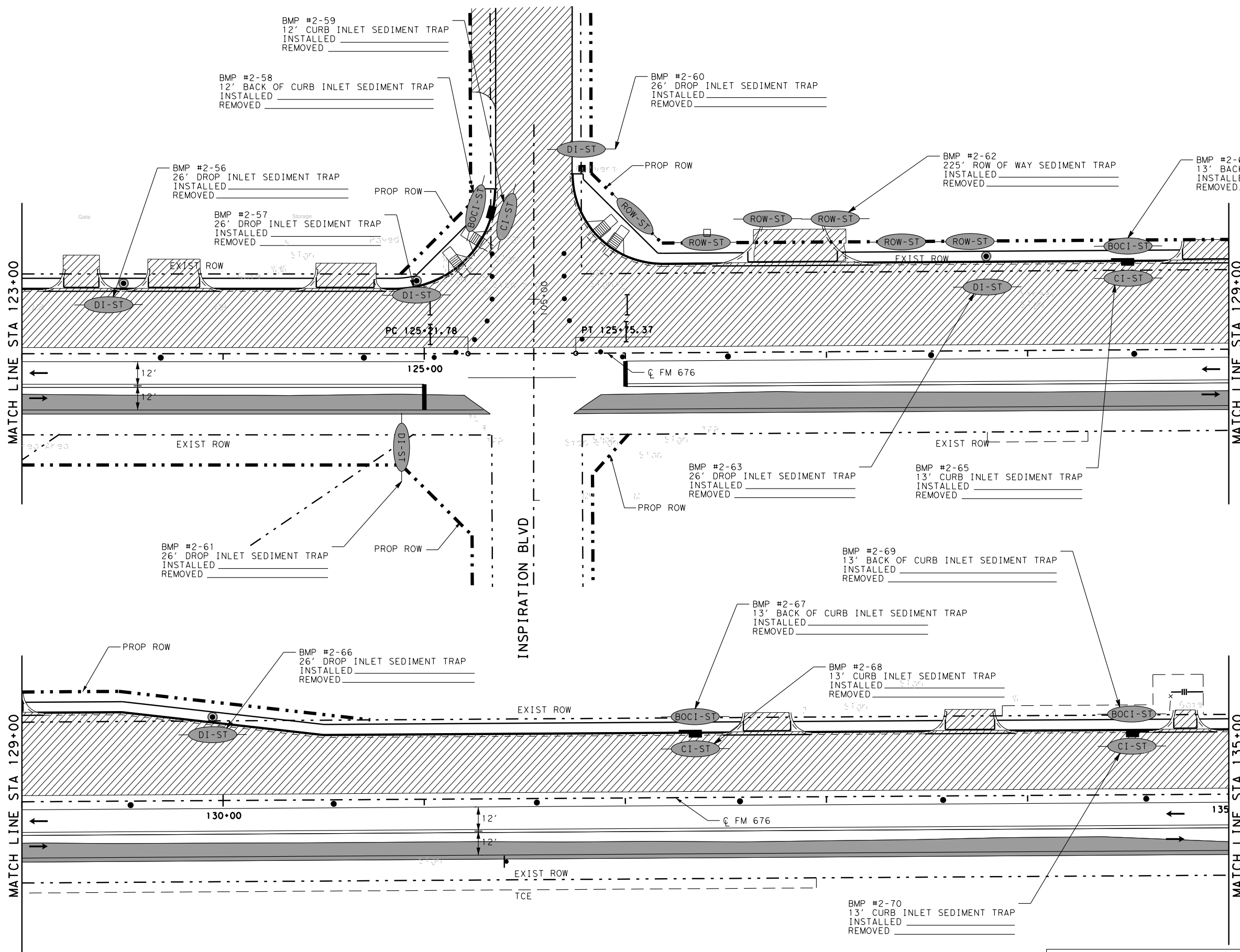
**CONSTRUCTION GRADING DATES**

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_



PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 9 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			397
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

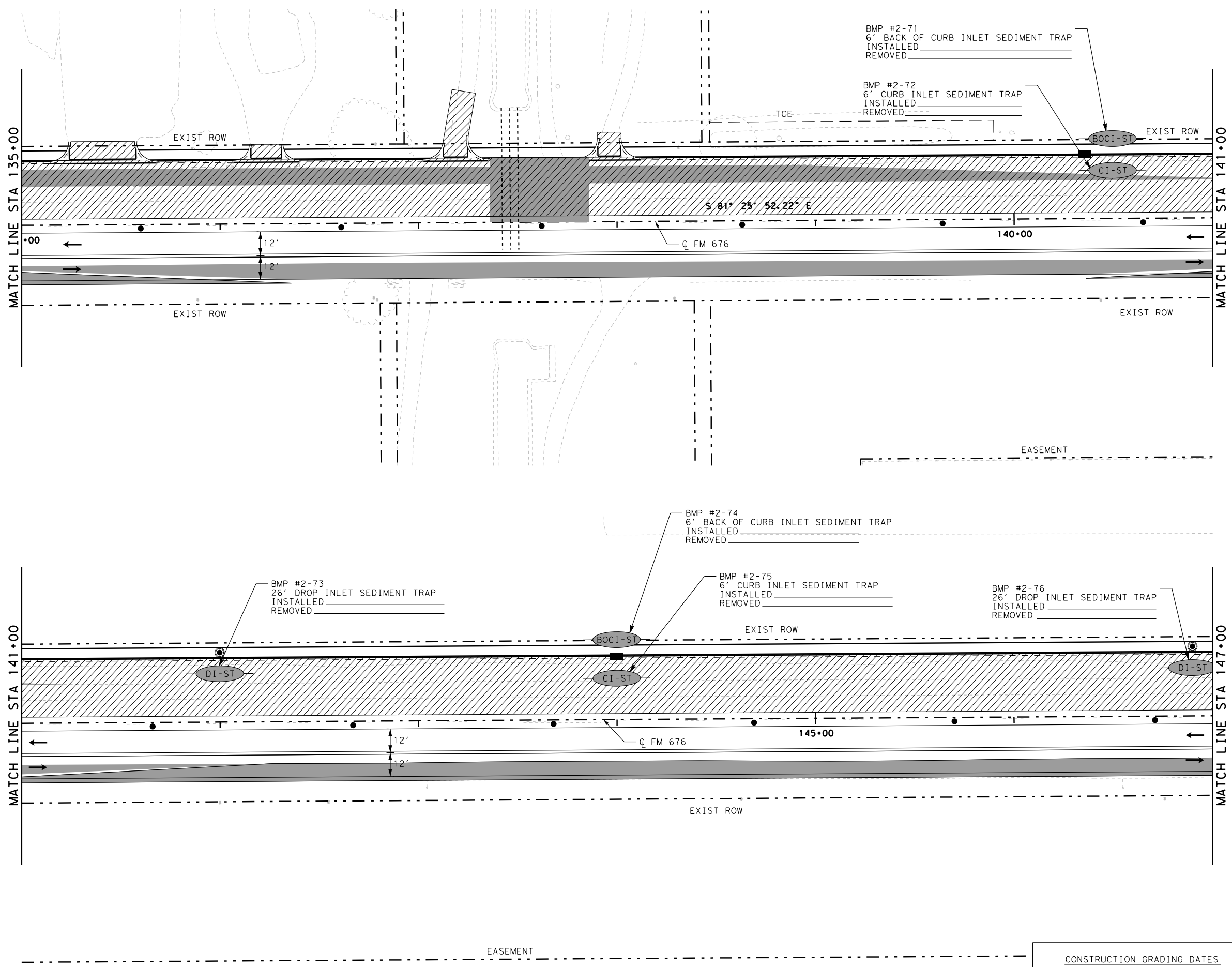
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
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NOTE:  
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*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 10 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			398
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



BMP #2-79  
 22' DROP INLET SEDIMENT TRAP  
 INSTALLED  
 REMOVED

BMP #2-80  
 26' DROP INLET SEDIMENT TRAP  
 INSTALLED  
 REMOVED

BMP #2-77  
 6' BACK OF CURB INLET SEDIMENT TRAP  
 INSTALLED  
 REMOVED

BMP #2-78  
 6' CURB INLET SEDIMENT TRAP  
 INSTALLED  
 REMOVED

**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
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NOTE:  
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 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



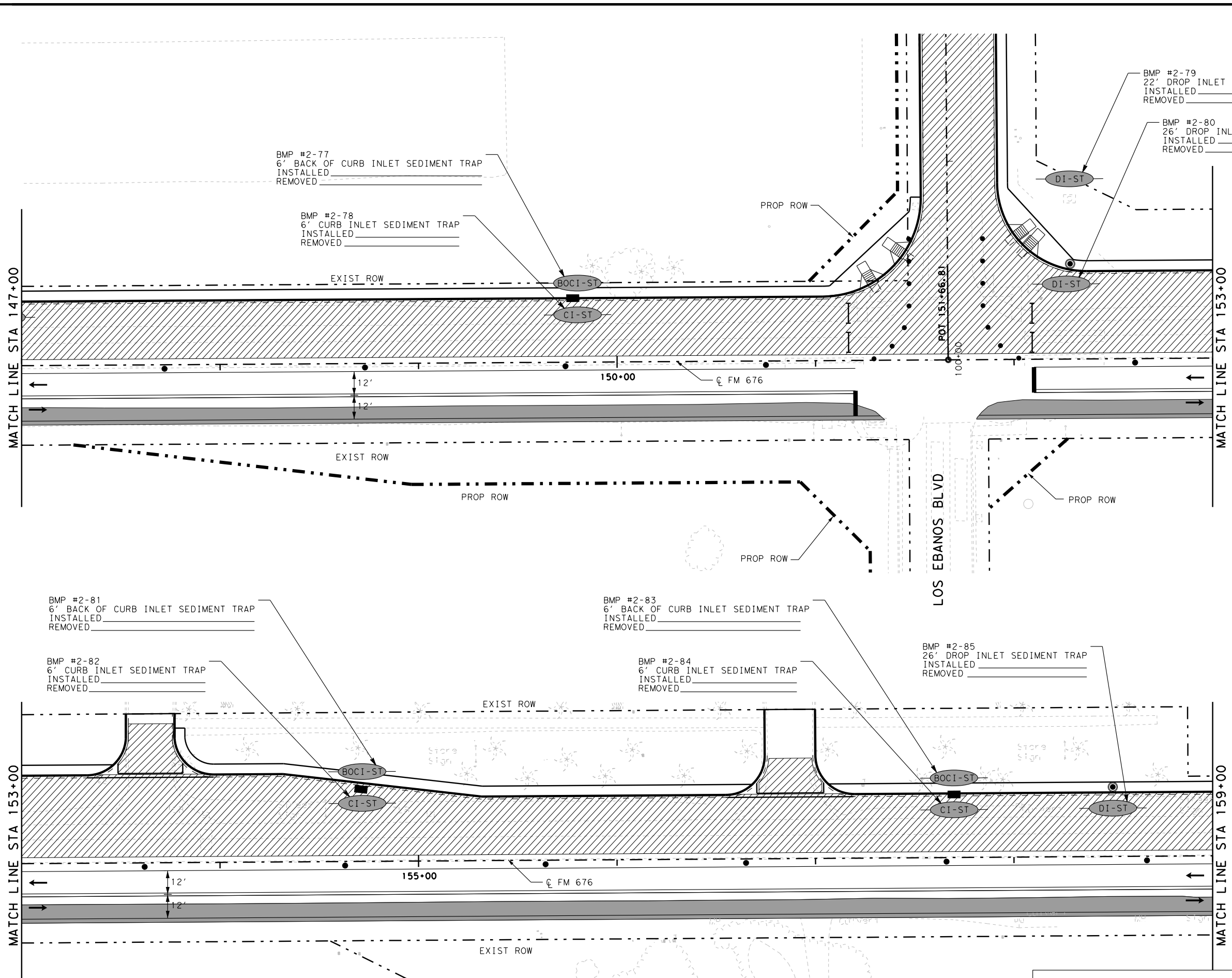
**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

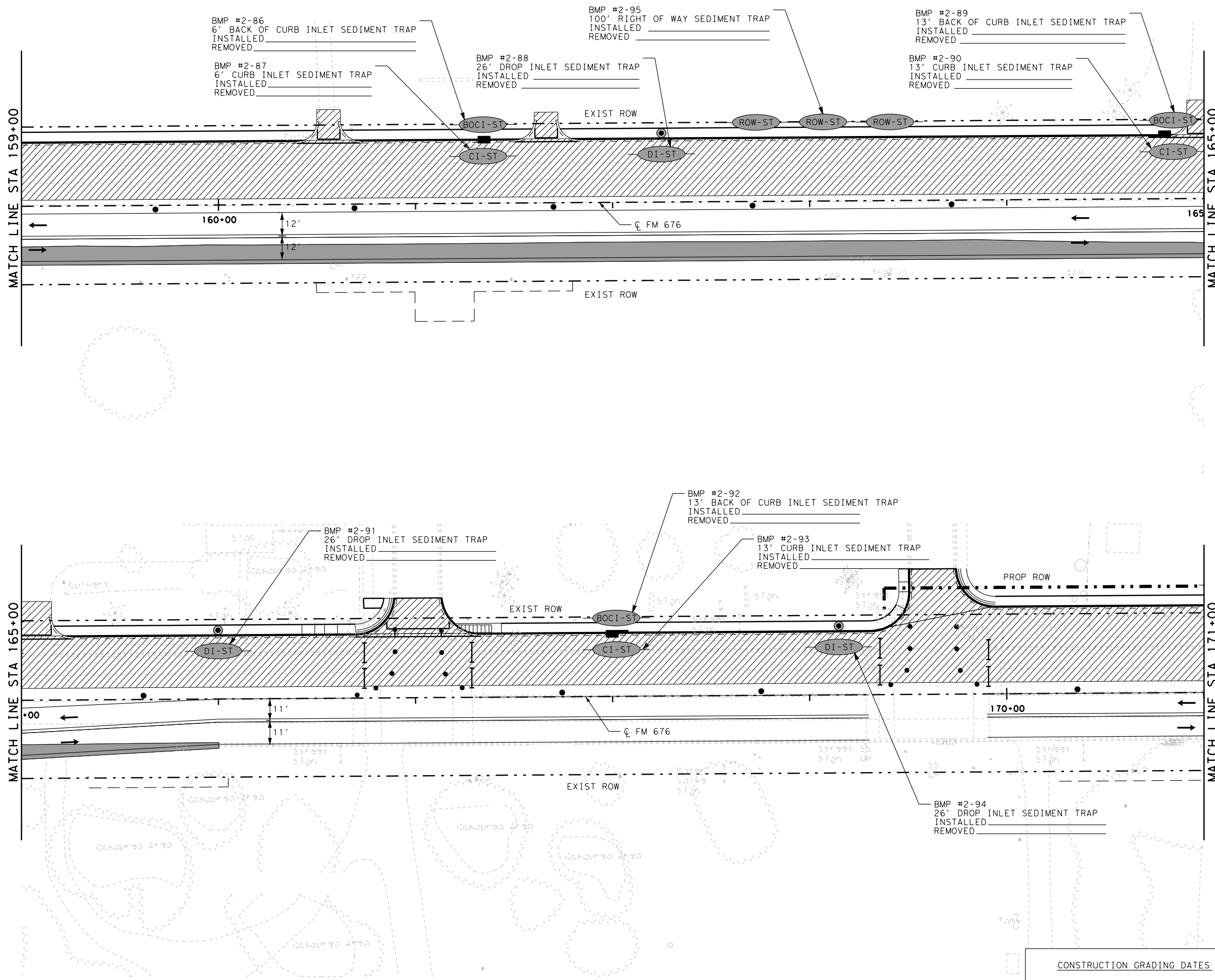
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FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			399
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET

**LEGEND**

- DI-ST — DROP INLET SEDIMENT TRAP
- DL-ST — DITCH LINE SEDIMENT TRAP
- BOCI-ST — BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST — RIGHT OF WAY SEDIMENT TRAP
- CI-ST — CURB INLET SEDIMENT TRAP
- RFD3 — TYPE 3 ROCK FILTER DAM
- ▨ CONSTRUCTION EXIT
- ▨ CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- ▨ TEMPORARY PAVEMENT THIS PHASE

NOTE:  
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11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 12 OF 15

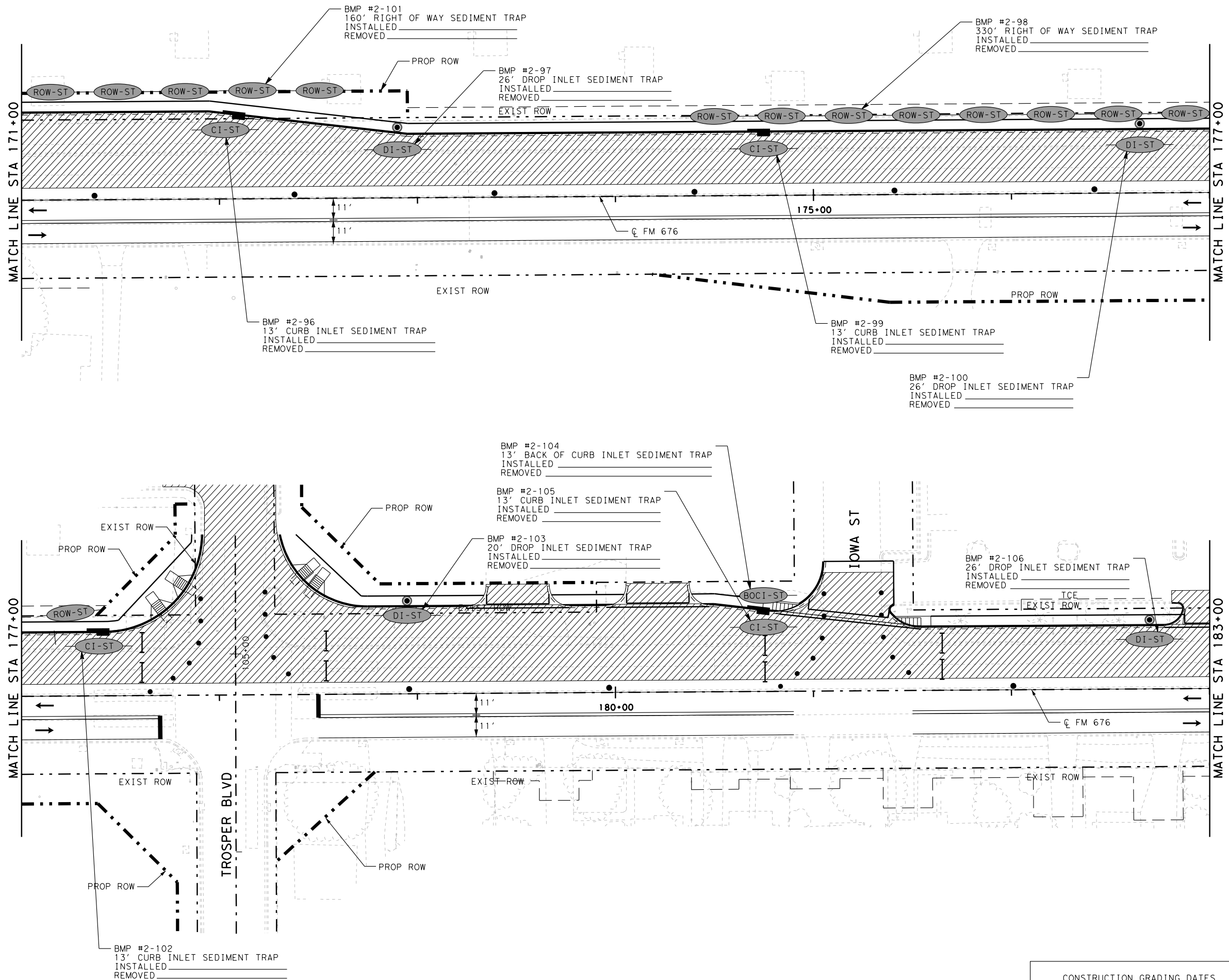
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6			400
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**CONSTRUCTION GRADING DATES**

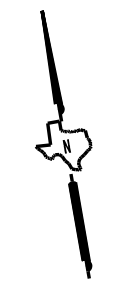
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DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



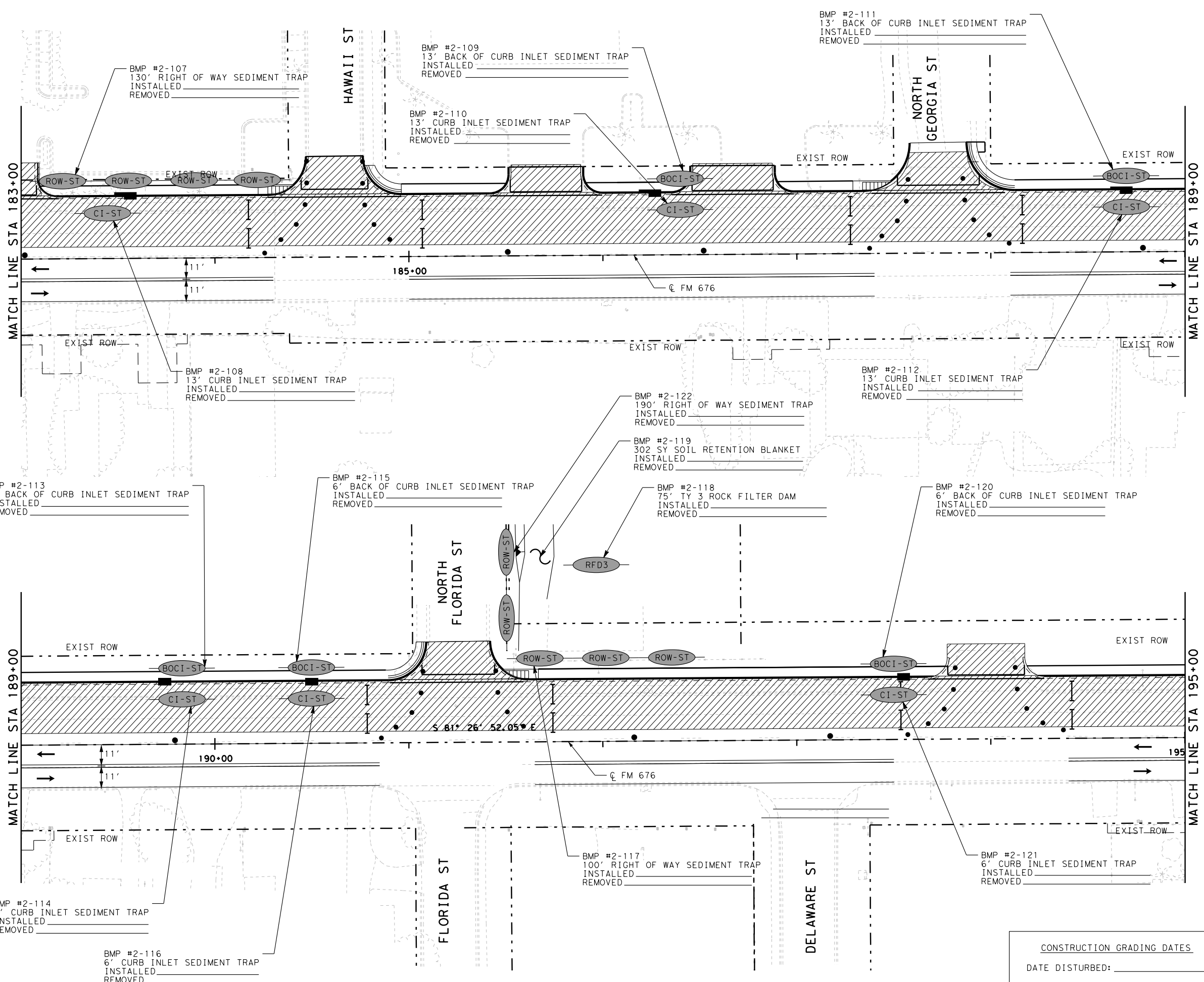
**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 13 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			401
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
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- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 14 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			402
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

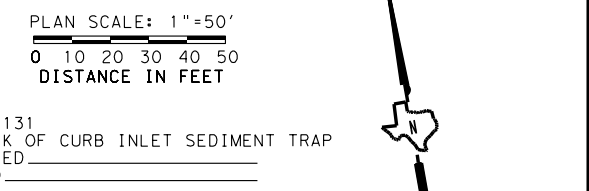
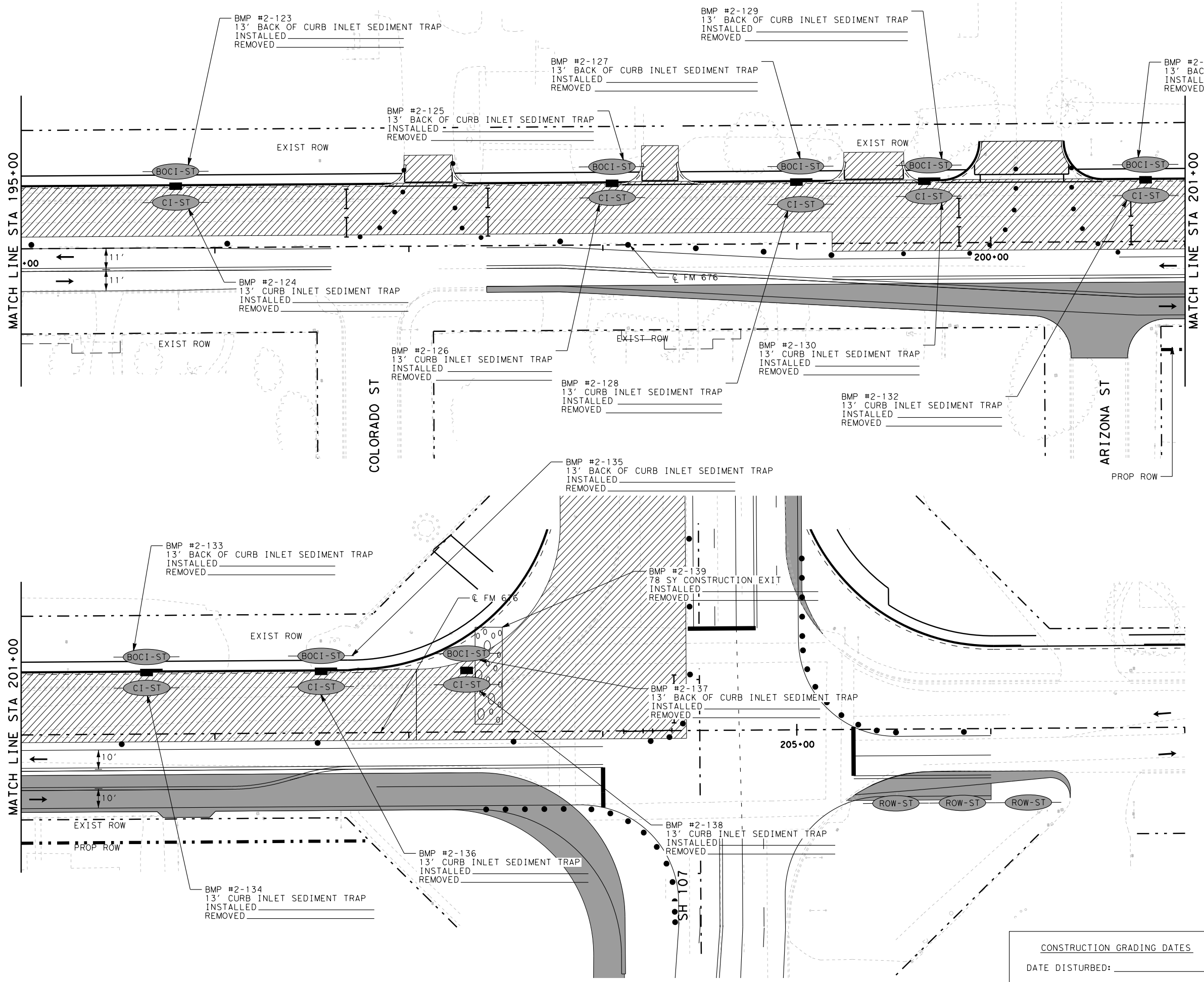
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DATE DISTURBED: \_\_\_\_\_

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**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE II

SHEET 15 OF 15

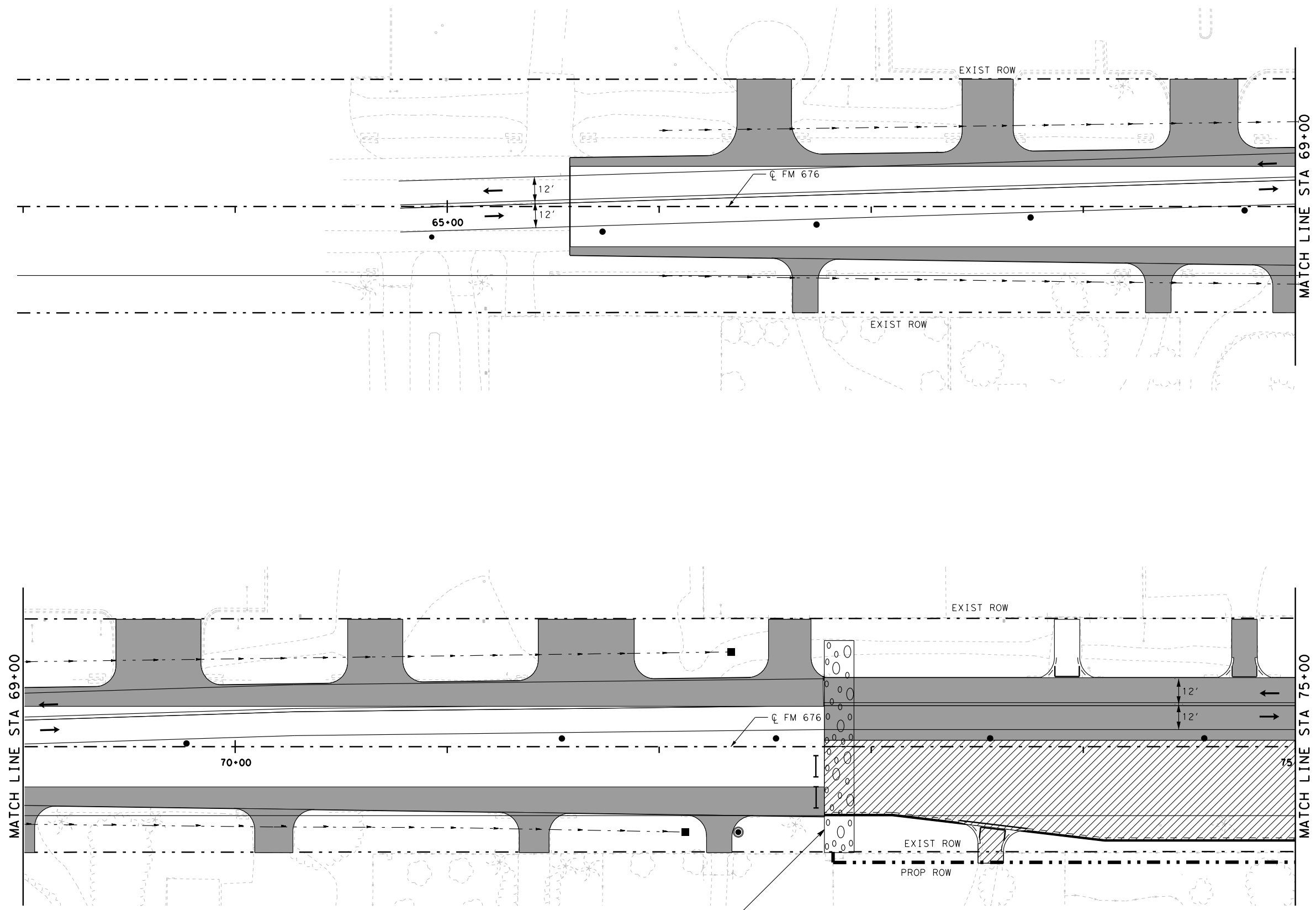
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6			403
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**CONSTRUCTION GRADING DATES**

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 1 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			404
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

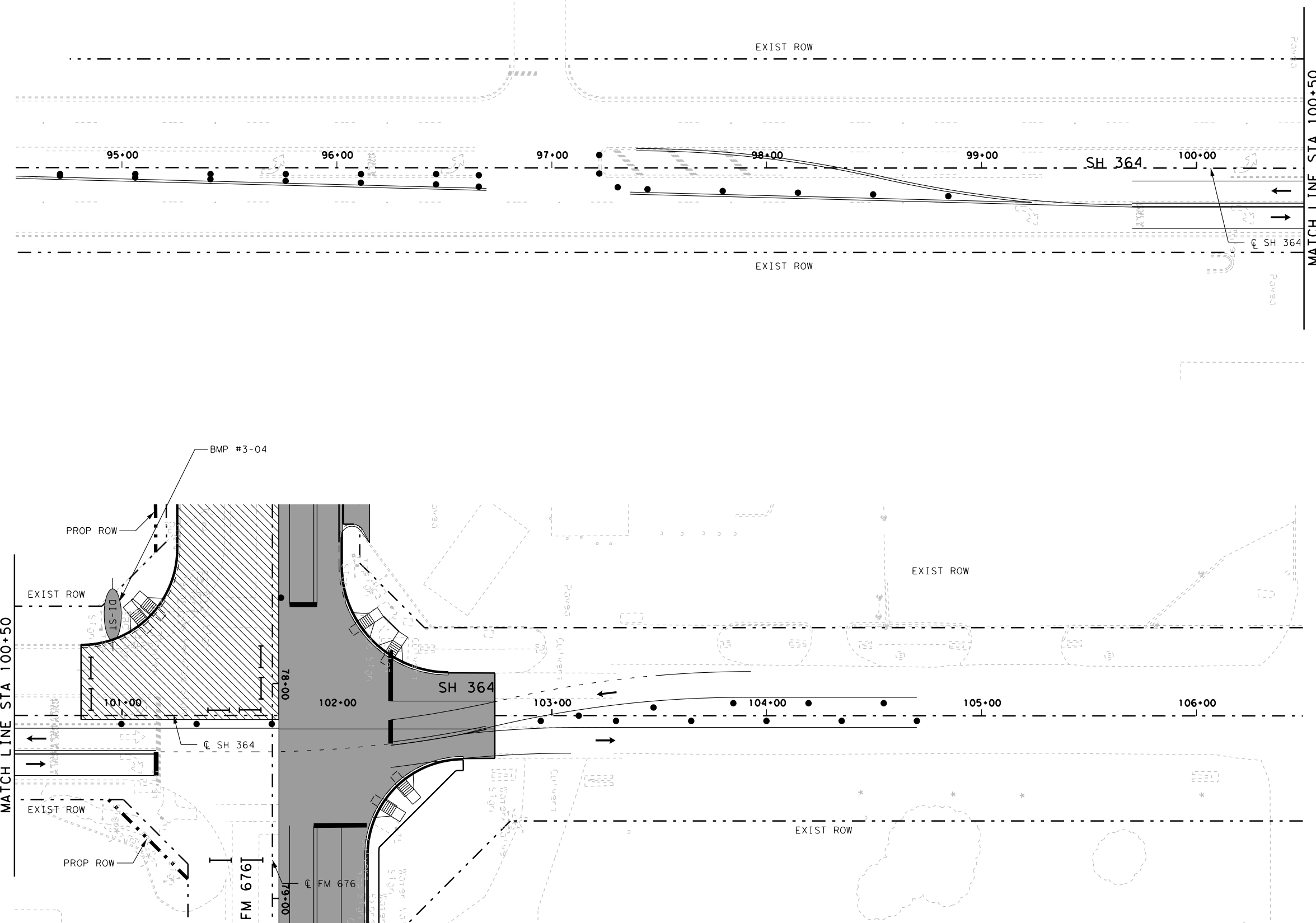
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 78' SY CONSTRUCTION EXIT  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

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













PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

-  DI-ST DROP INLET SEDIMENT TRAP
-  DL-ST DITCH LINE SEDIMENT TRAP
-  BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
-  ROW-ST RIGHT OF WAY SEDIMENT TRAP
-  CI-ST CURB INLET SEDIMENT TRAP
-  RFD3 TYPE 3 ROCK FILTER DAM
-  CONSTRUCTION EXIT
-  CONSTRUCTION AREA THIS PHASE
-  CONSTRUCTION AREA PREVIOUS PHASES
-  TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676

SW3P  
 PHASE III

SHEET 3 OF 15

CONSTRUCTION GRADING DATES

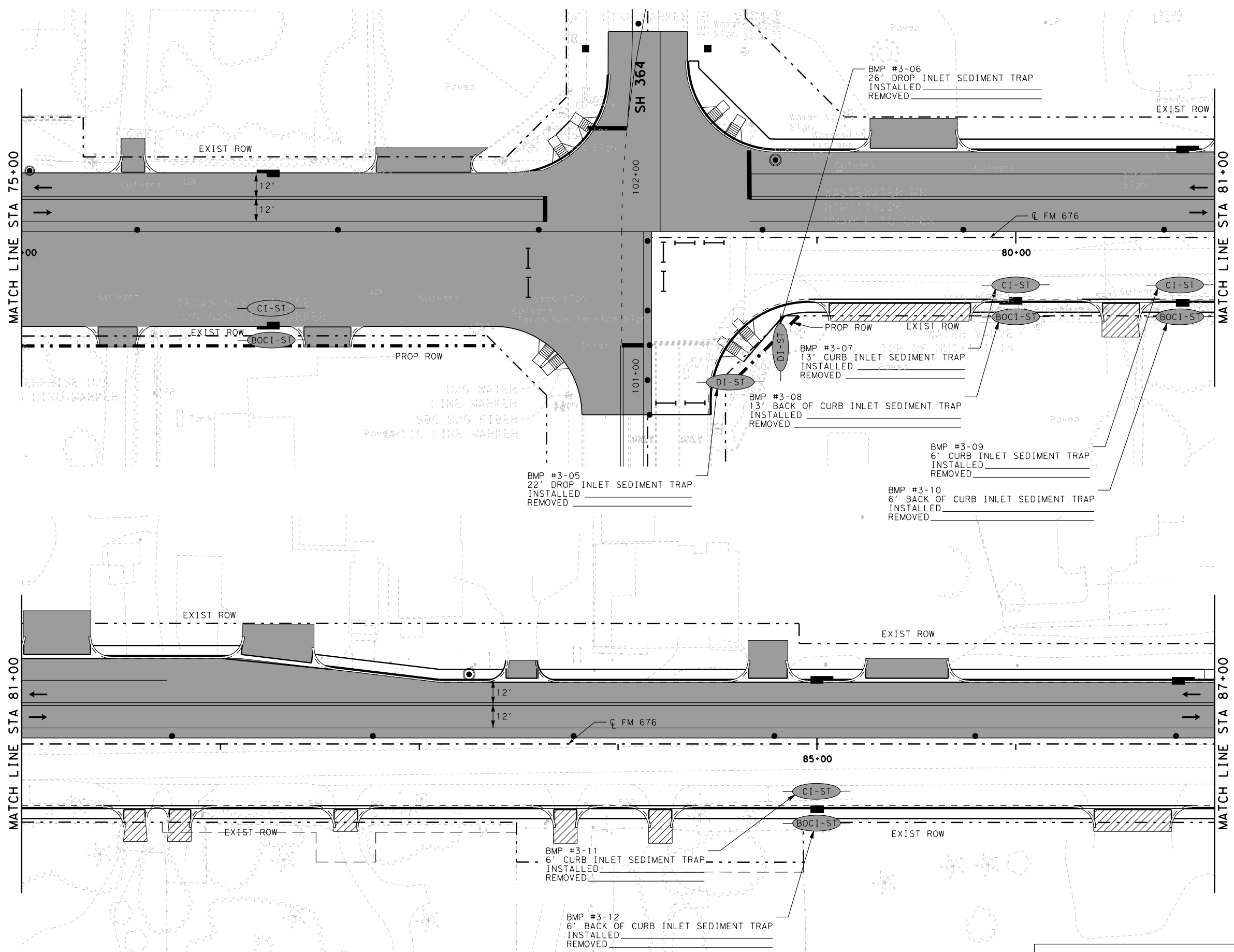
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DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				406	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 4 OF 15			
FED. RD. DIV. NO. 6	STATE PROJECT NO.		SHEET NO. 407
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CONT. 1064	SECT. 01	JOB 032	HIGHWAY NO. FM 676

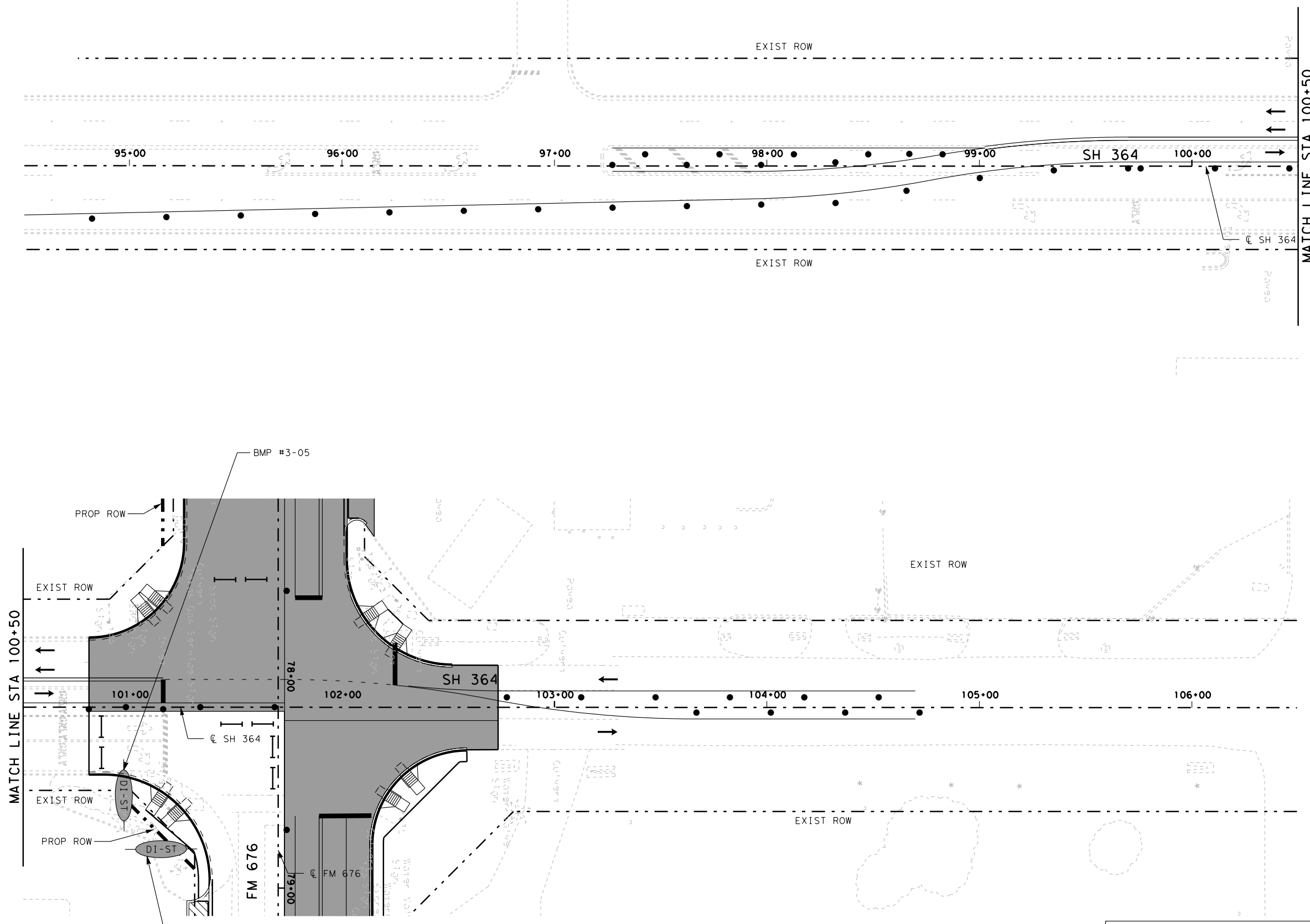
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT  
 THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676

SW3P  
 PHASE III

SHEET 5 OF 15

CONSTRUCTION GRADING DATES

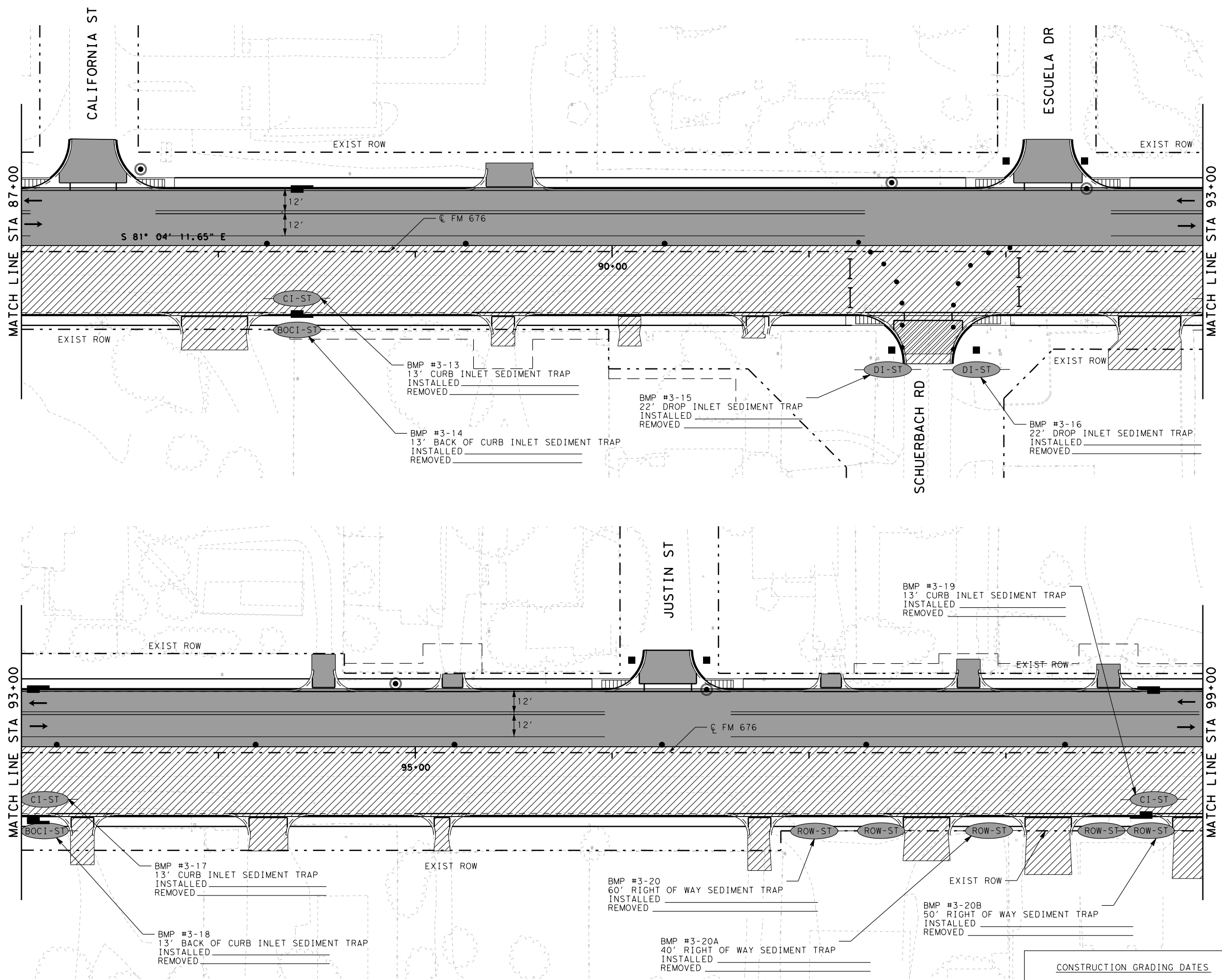
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DATE STABILIZED: \_\_\_\_\_

FED. RD. DIV. NO.		STATE PROJECT NO.		SHEET NO.	
6				408	
STATE	DIST.	COUNTY			
TEXAS	PHR	HIDALGO			
CONT.	SECT.	JOB	HIGHWAY NO.		
1064	01	032	FM 676		

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

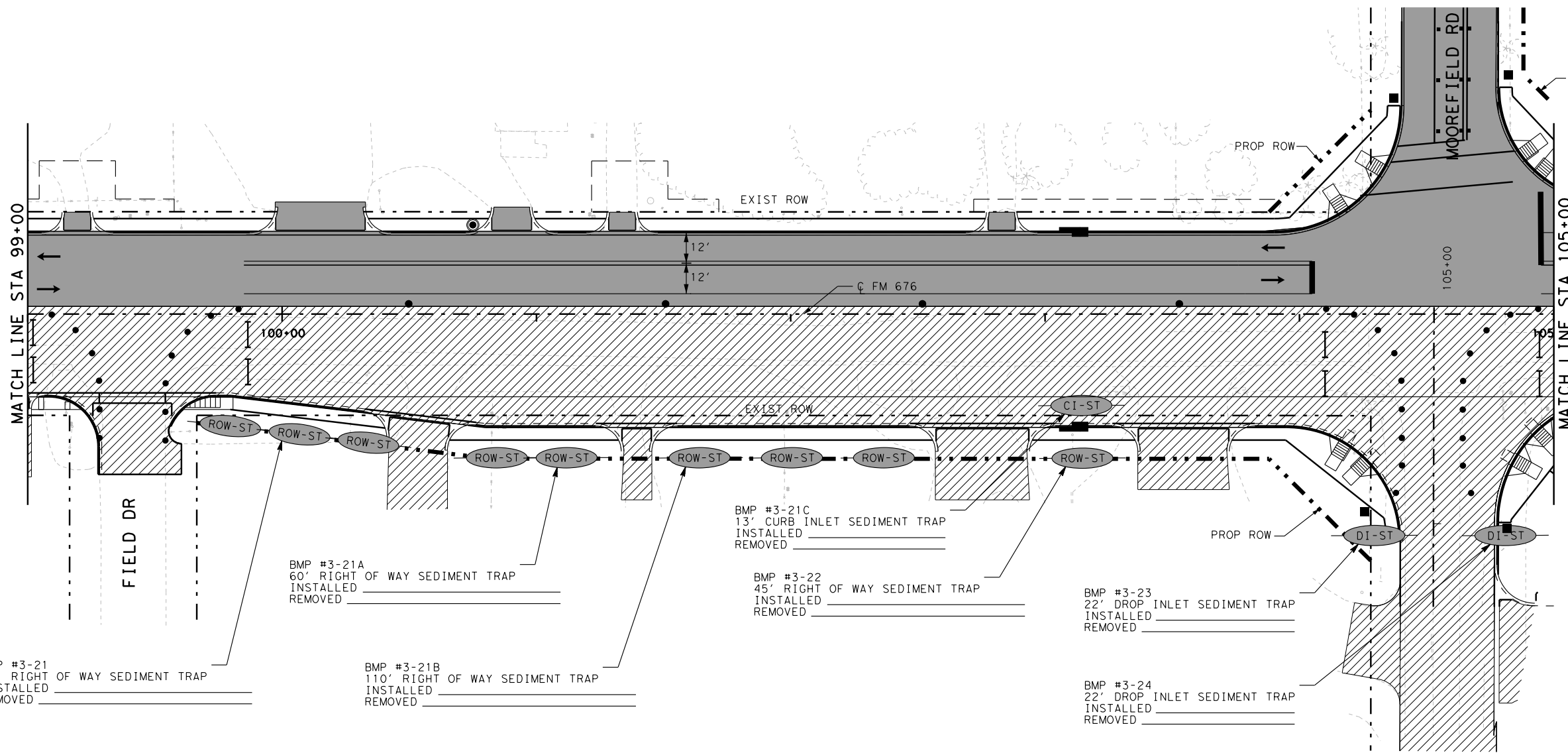
SHEET 6 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			409
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

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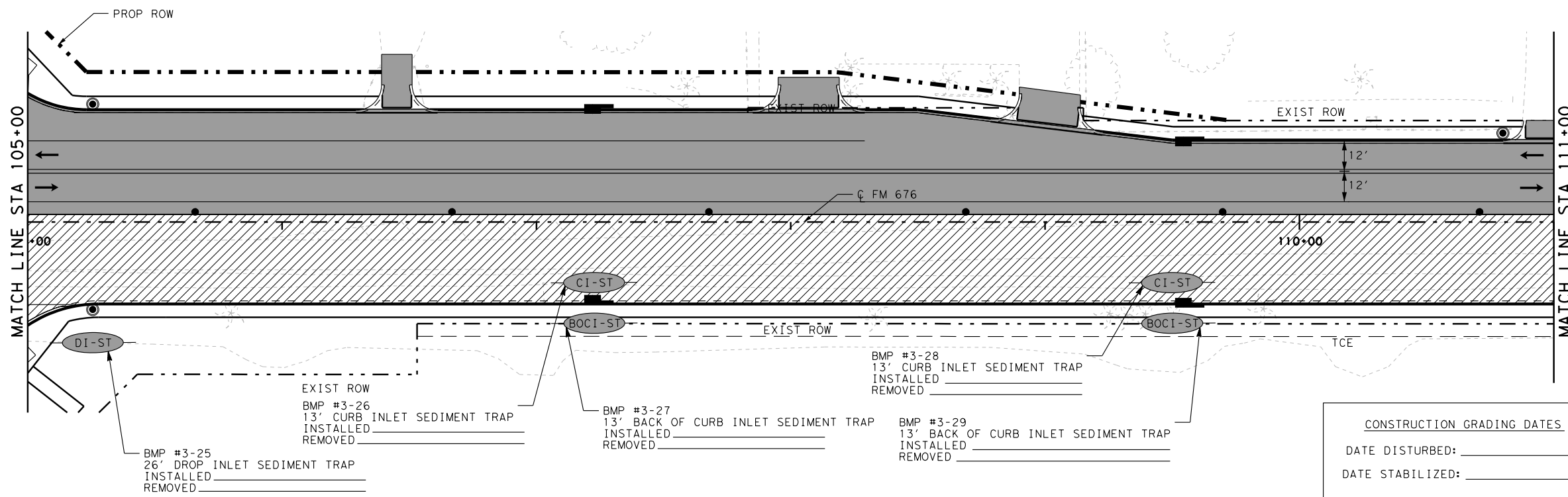
PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 7 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			410
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

EXIST ROW  
 BMP #3-26  
 13' CURB INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-25  
 26' DROP INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-27  
 13' BACK OF CURB INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-28  
 13' CURB INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-29  
 13' BACK OF CURB INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-21  
 80' RIGHT OF WAY SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-21A  
 60' RIGHT OF WAY SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-21B  
 110' RIGHT OF WAY SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

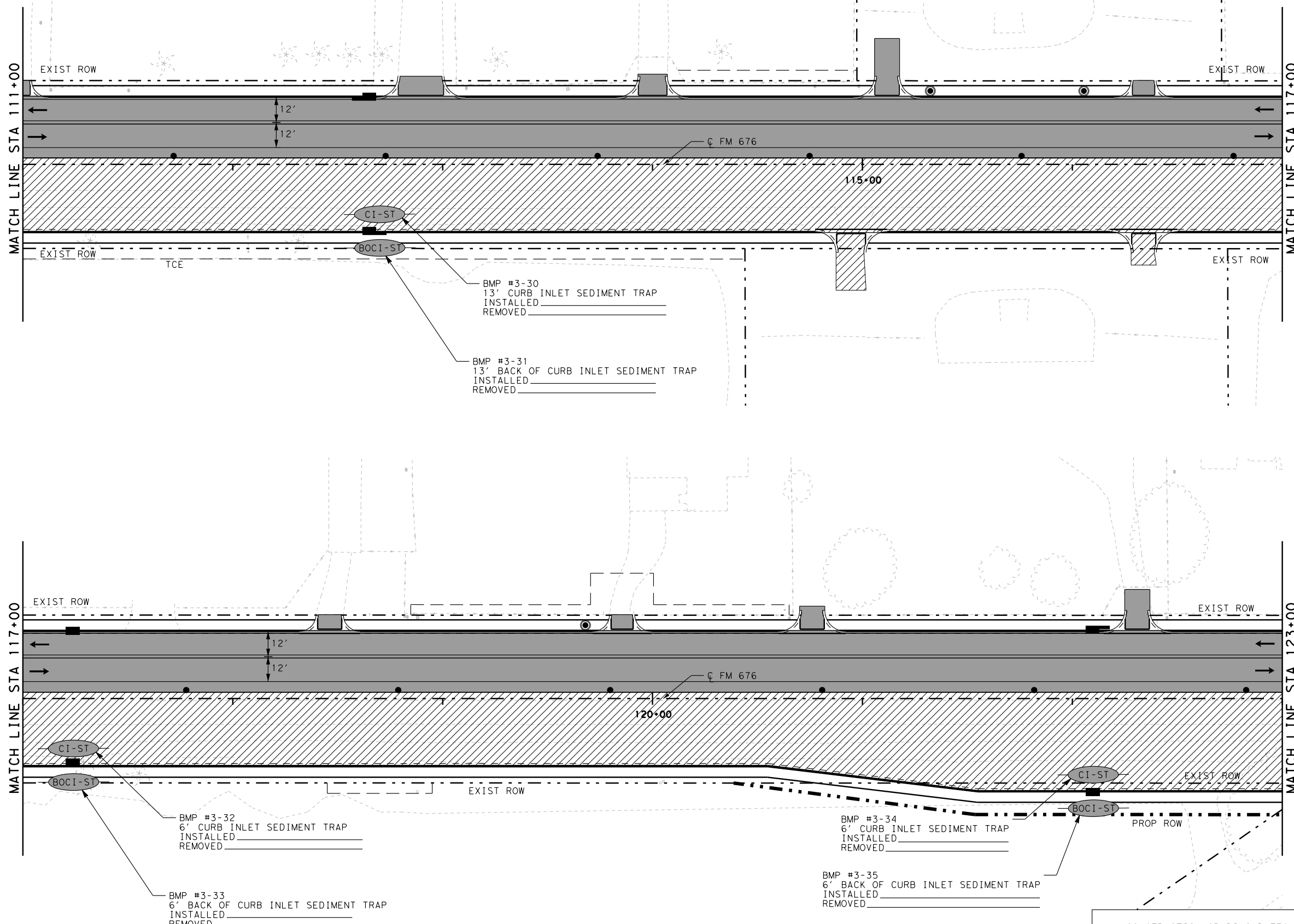
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 13' CURB INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-22  
 45' RIGHT OF WAY SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-23  
 22' DROP INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

BMP #3-24  
 22' DROP INLET SEDIMENT TRAP  
 INSTALLED \_\_\_\_\_  
 REMOVED \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 8 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			411
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

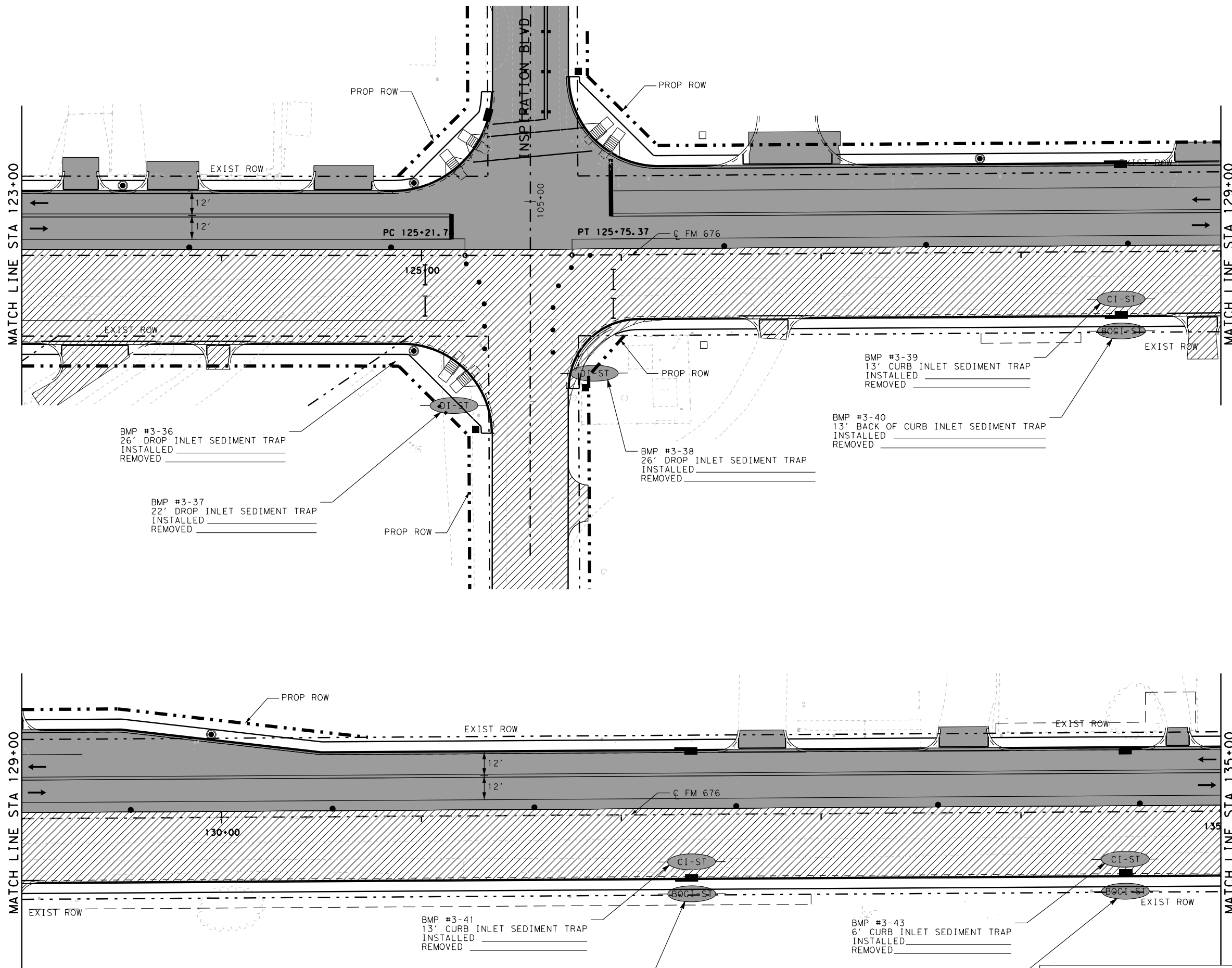
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DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 9 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			412
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

**CONSTRUCTION GRADING DATES**

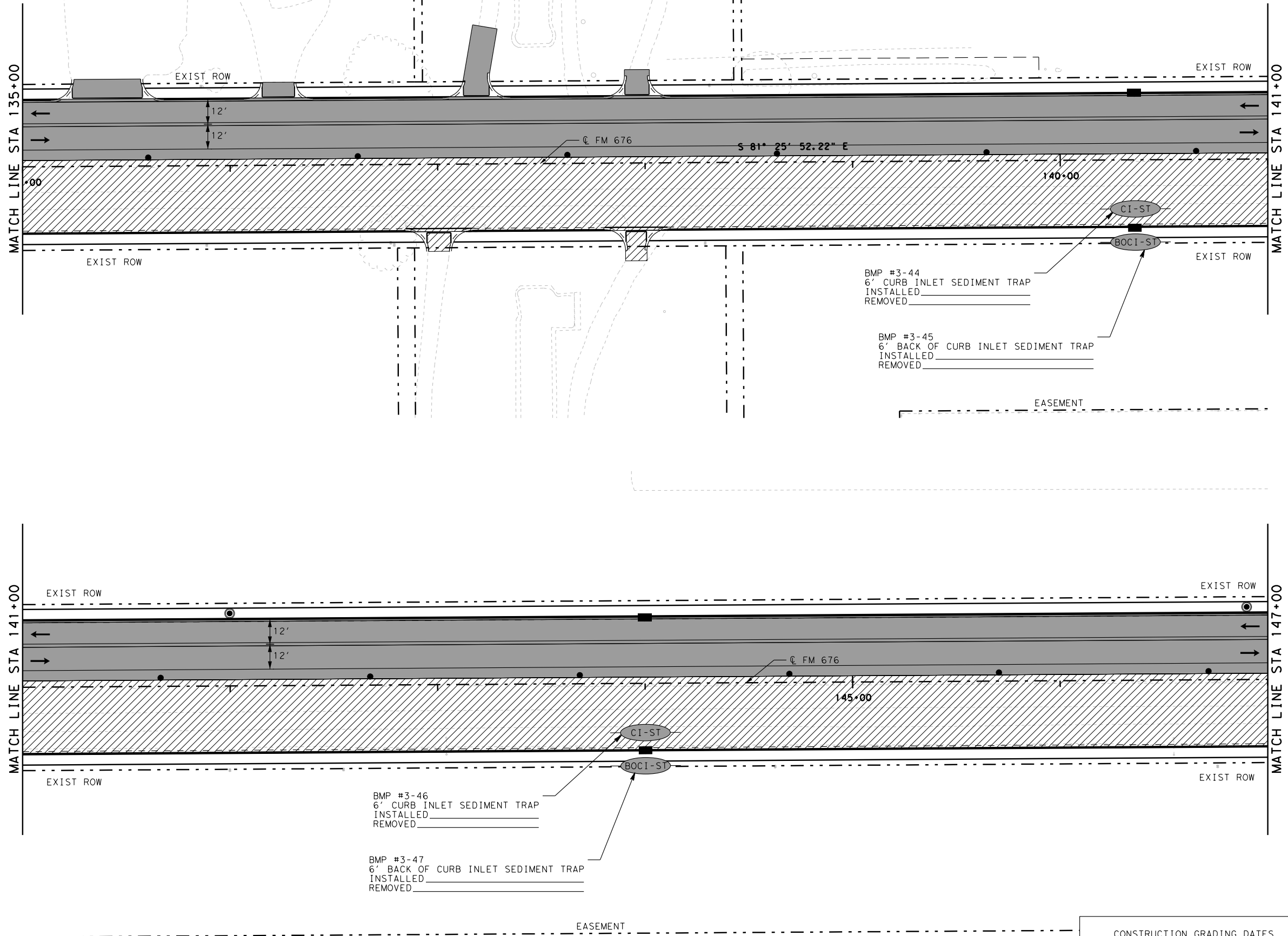
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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 10 OF 15

CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

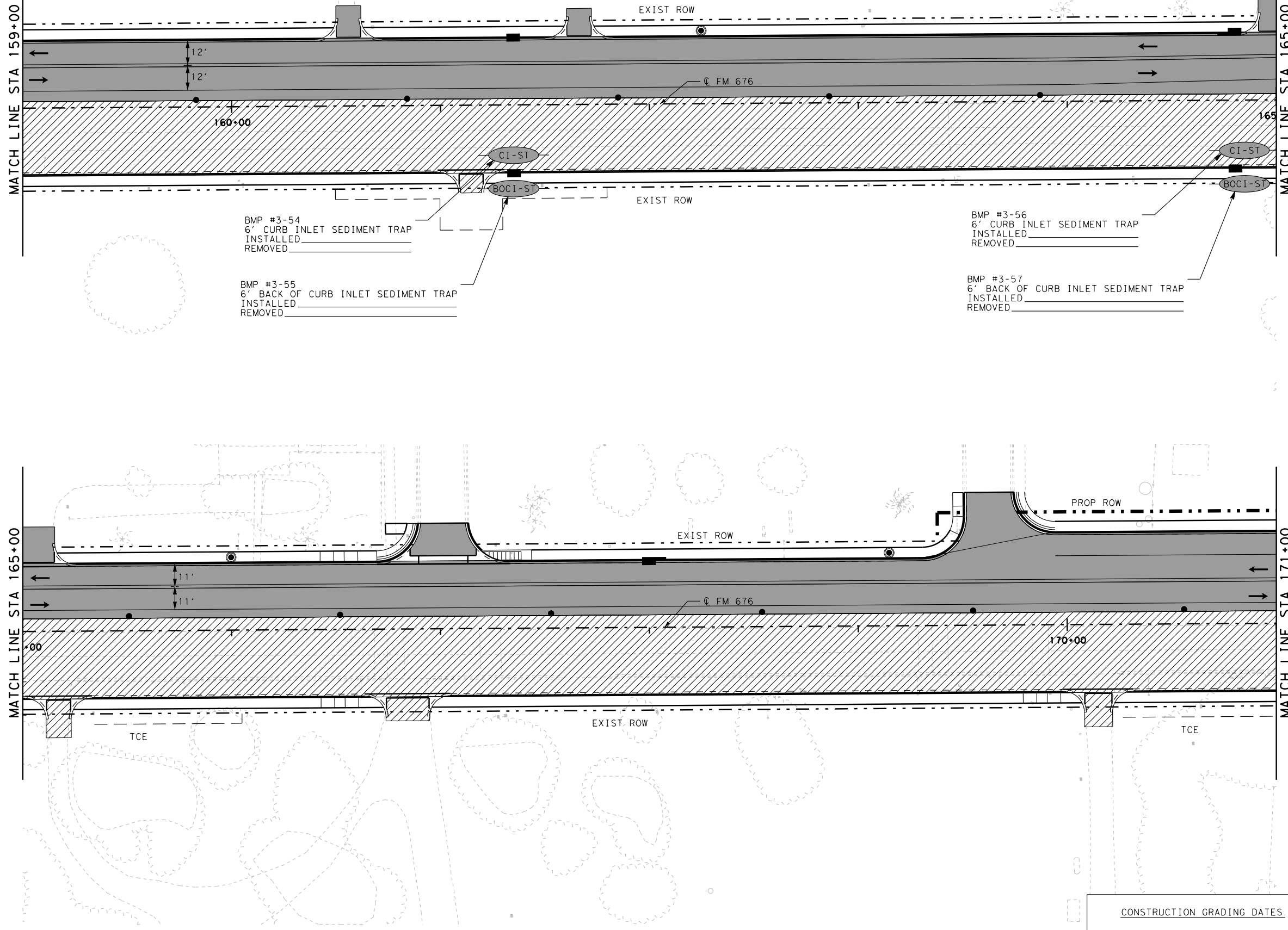
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6			413
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

PLOT DRIVER: RD\*11x17\*PDF.d1+  
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PLAN SCALE: 1"=50'  
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 DISTANCE IN FEET

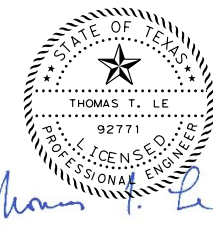


- NOTES:  
 1. ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.  
 2. PHASE II STEP 1 CURB INLET SEDIMENT TRAPS TO REMAIN IN PLACE FROM STA 164+00 TO STA 199+00.

**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES

ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

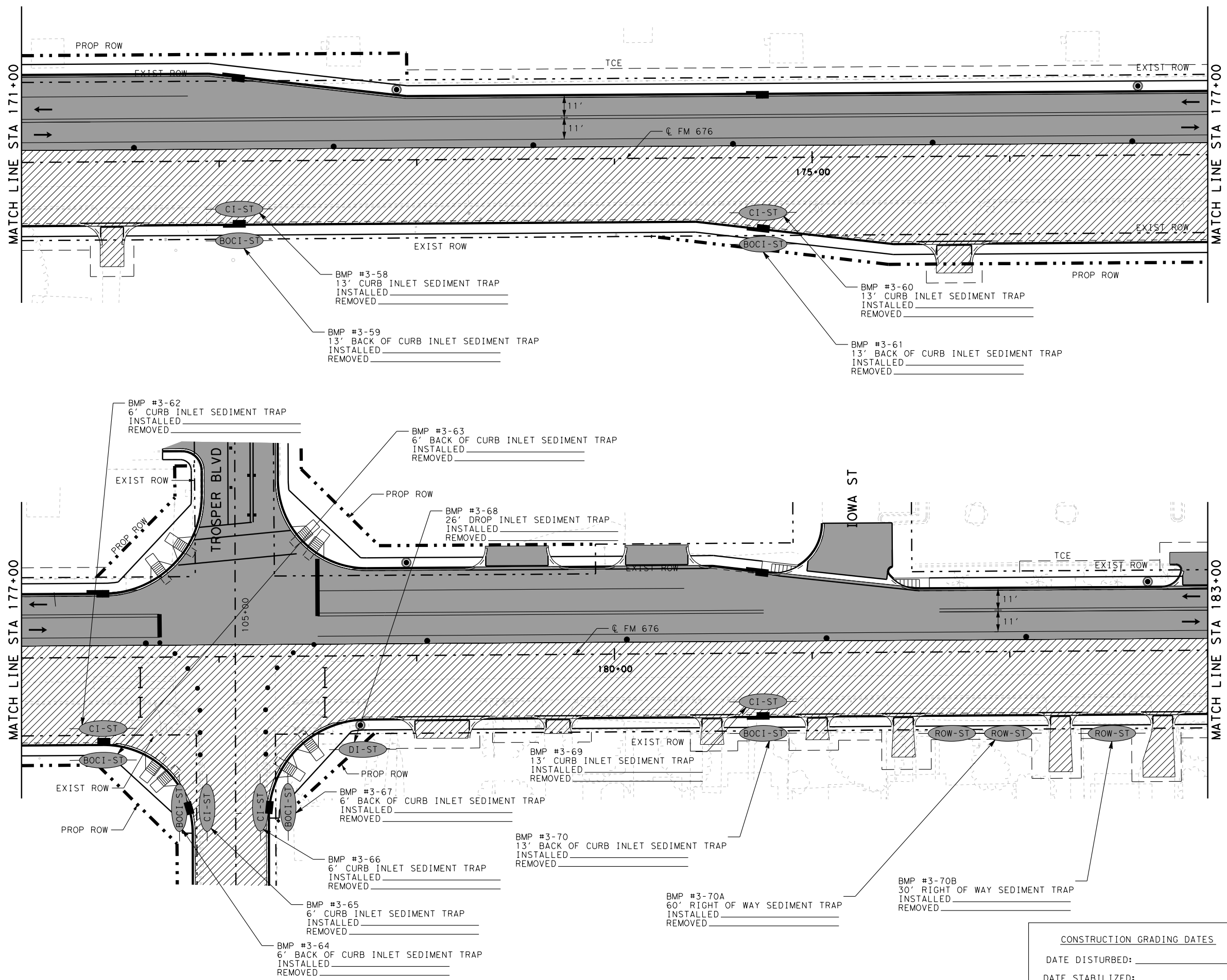
FM 676  
 SW3P  
 PHASE III

SHEET 12 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			415
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES  
 DATE DISTURBED: \_\_\_\_\_  
 DATE STABILIZED: \_\_\_\_\_

PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 13 OF 15

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			416
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

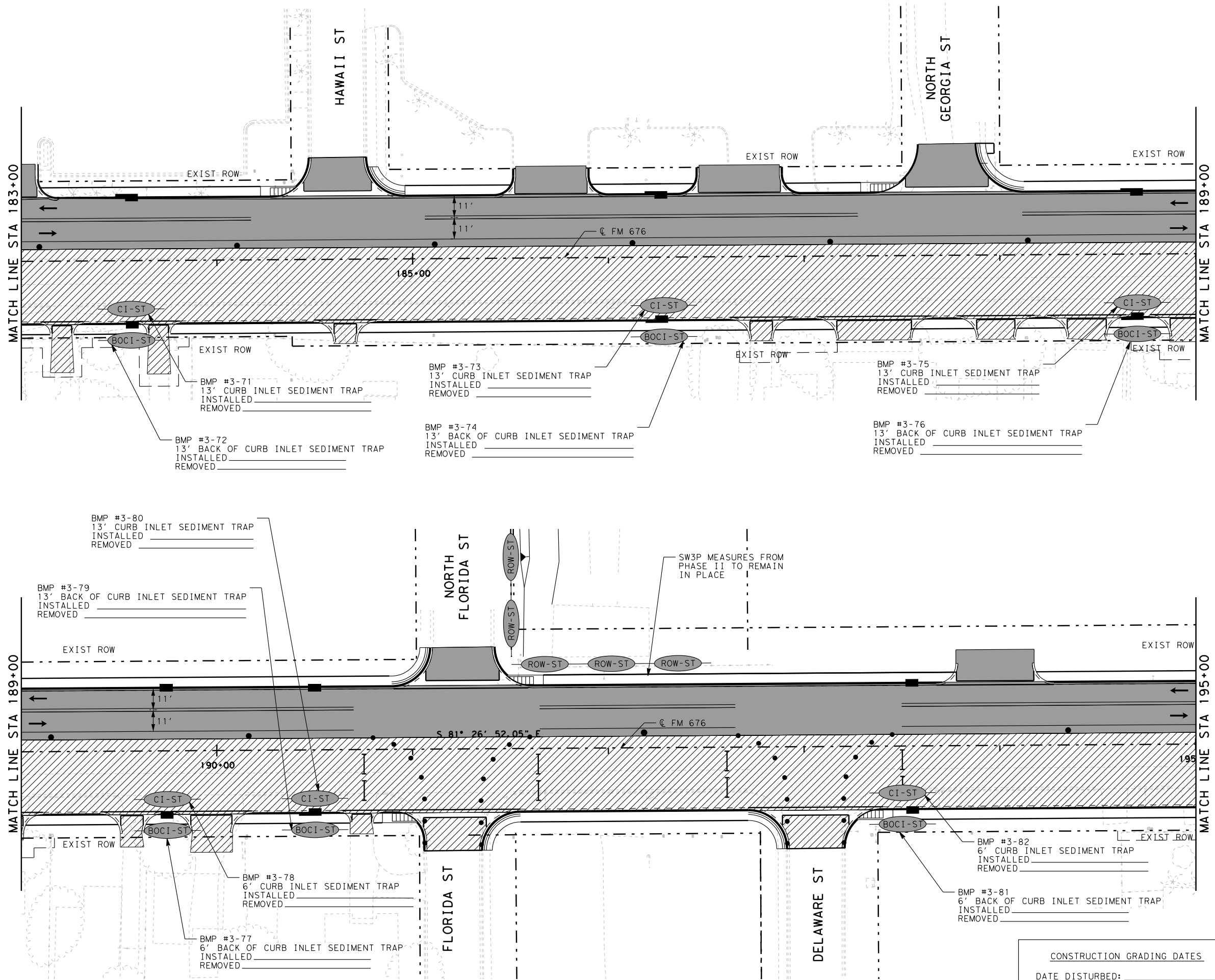
CONSTRUCTION GRADING DATES

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DATE STABILIZED: \_\_\_\_\_

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PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 14 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			417
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

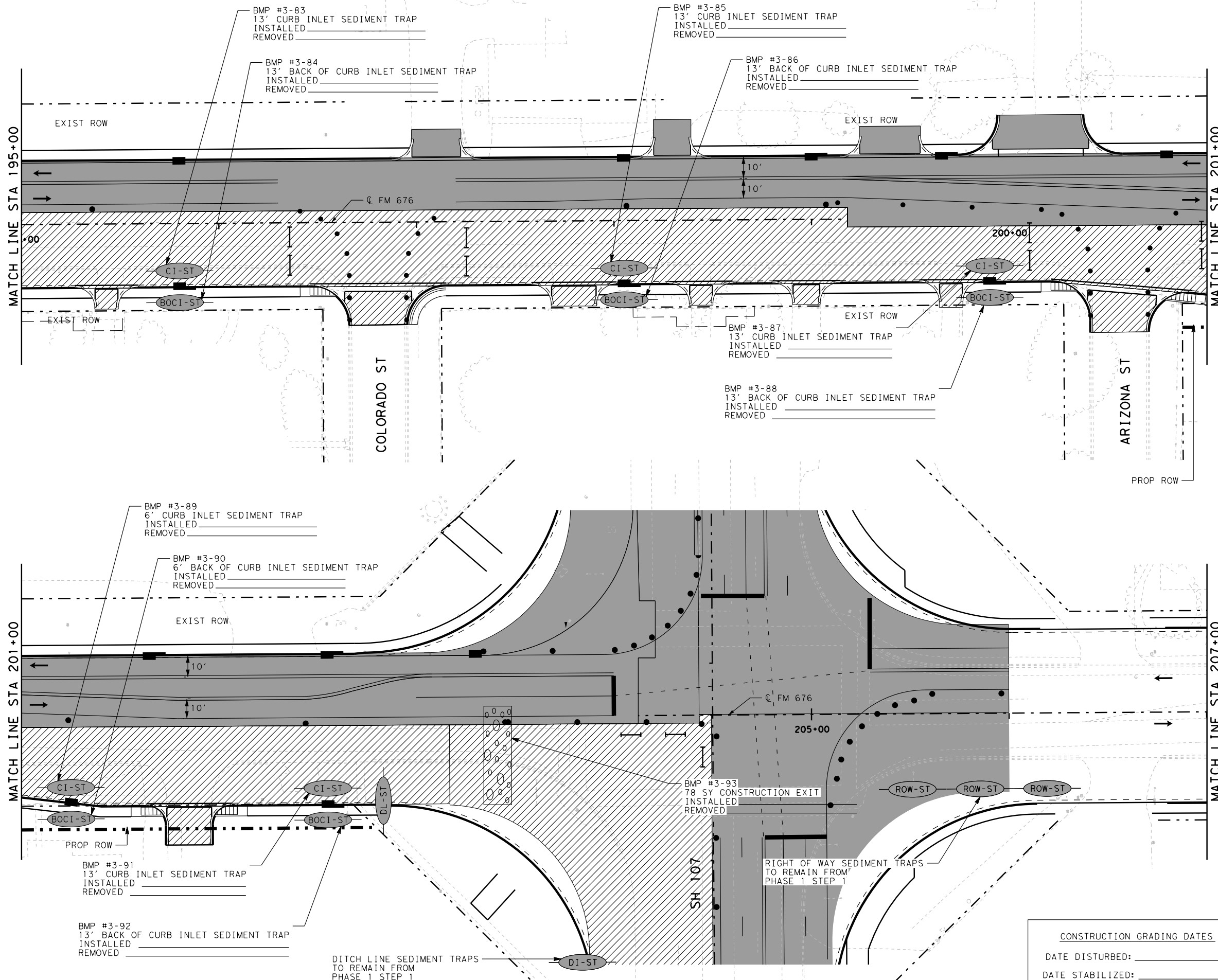
CONSTRUCTION GRADING DATES

DATE DISTURBED: \_\_\_\_\_

DATE STABILIZED: \_\_\_\_\_

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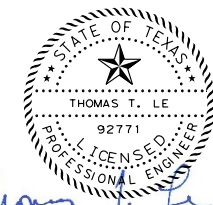
PLAN SCALE: 1"=50'  
 0 10 20 30 40 50  
 DISTANCE IN FEET



**LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP
- RFD3 TYPE 3 ROCK FILTER DAM
- CONSTRUCTION EXIT
- CONSTRUCTION AREA THIS PHASE
- CONSTRUCTION AREA PREVIOUS PHASES
- TEMPORARY PAVEMENT THIS PHASE

NOTE:  
 ALL SW3P MEASURES TO BE INSTALLED AT THE BEGINNING OF THE PHASES THEY APPEAR.



*Thomas T. Le*

11/18/2022



**ATKINS**  
 TBPE REG. #F-474

FM 676  
 SW3P  
 PHASE III

SHEET 15 OF 15			
FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			418
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
1064	01	032	FM 676

CONSTRUCTION GRADING DATES

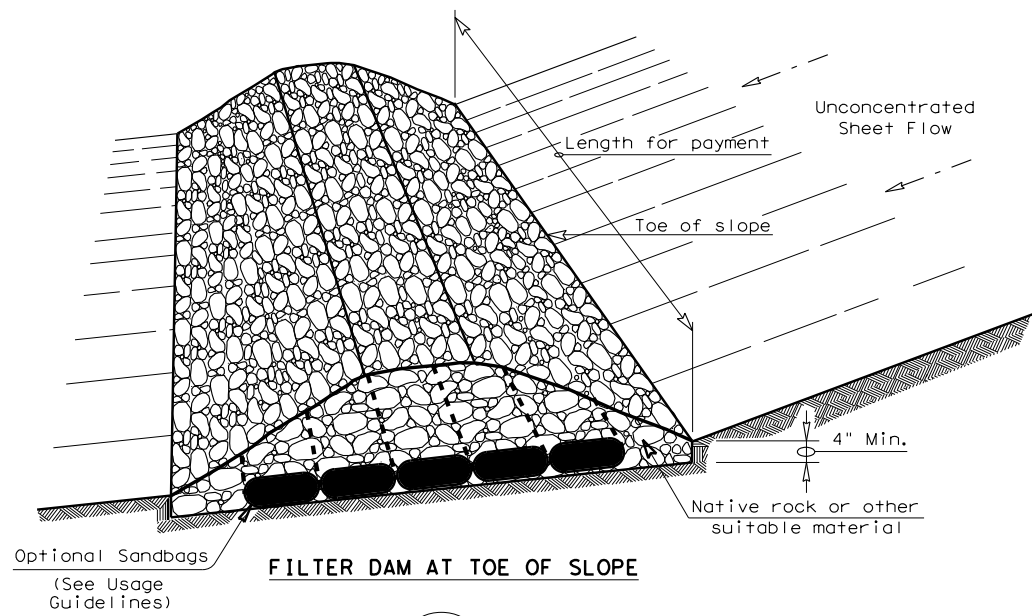
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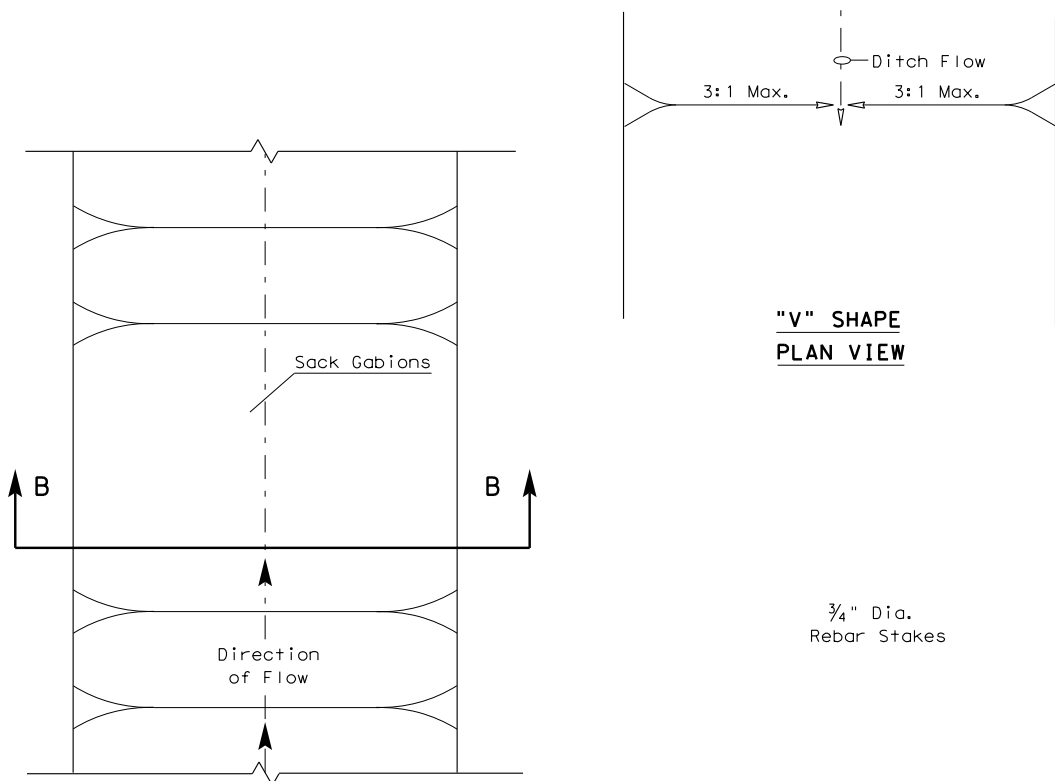
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DATE: 11/18/2022  
 FILE: ... \CADD\STD\SW3P\ec216.dgn



**FILTER DAM AT TOE OF SLOPE**

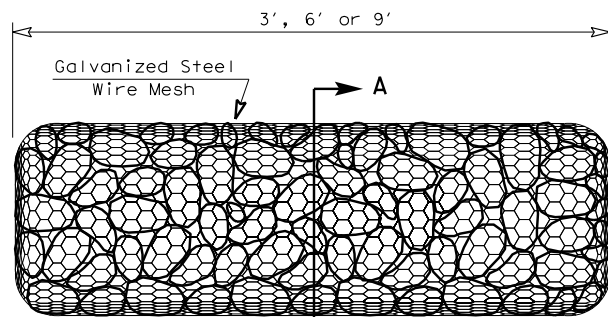
— (RFD1) —



**"V" SHAPE PLAN VIEW**

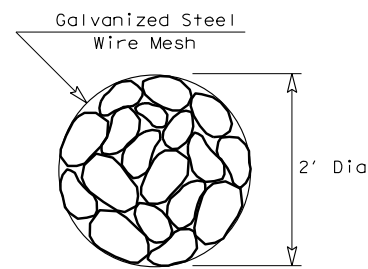
**PLAN VIEW**

**SECTION B-B**

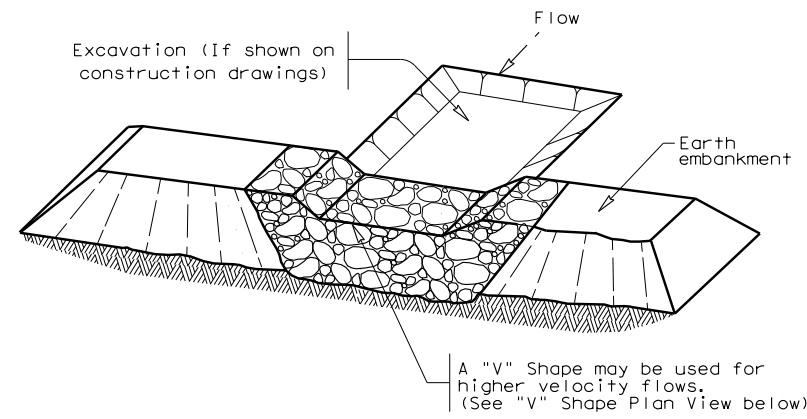


**TYPE 4 (SACK GABIONS)**

— (RFD4) —

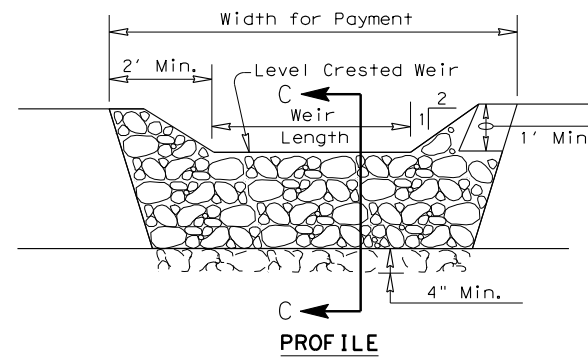


**SECTION A-A**

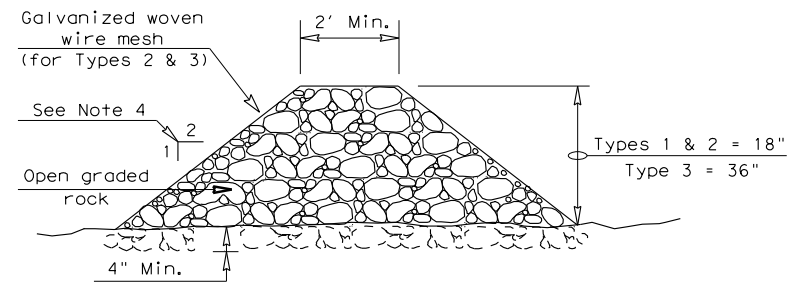


**FILTER DAM AT SEDIMENT TRAP**

— (RFD1) — OR — (RFD2) —



**PROFILE**



**SECTION C-C**

**ROCK FILTER DAM USAGE GUIDELINES**

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

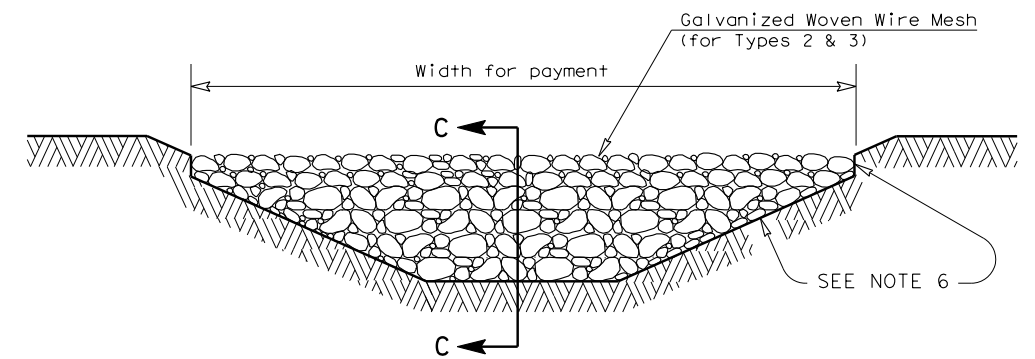
**Type 1 (18" high with no wire mesh) (3" to 6" aggregate):** Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

**Type 2 (18" high with wire mesh) (3" to 6" aggregate):** Type 2 may be used in ditches and at dike or swale outlets.

**Type 3 (36" high with wire mesh) (4" to 8" aggregate):** Type 3 may be used in stream flow and should be secured to the stream bed.

**Type 4 (Sack gabions) (3" to 6" aggregate):** Type 4 May be used in ditches and smaller channels to form an erosion control dam.

**Type 5:** Provide rock filter dams as shown on plans.



**FILTER DAM AT CHANNEL SECTIONS**

— (RFD1) — OR — (RFD2) — OR — (RFD3) —

**GENERAL NOTES**

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

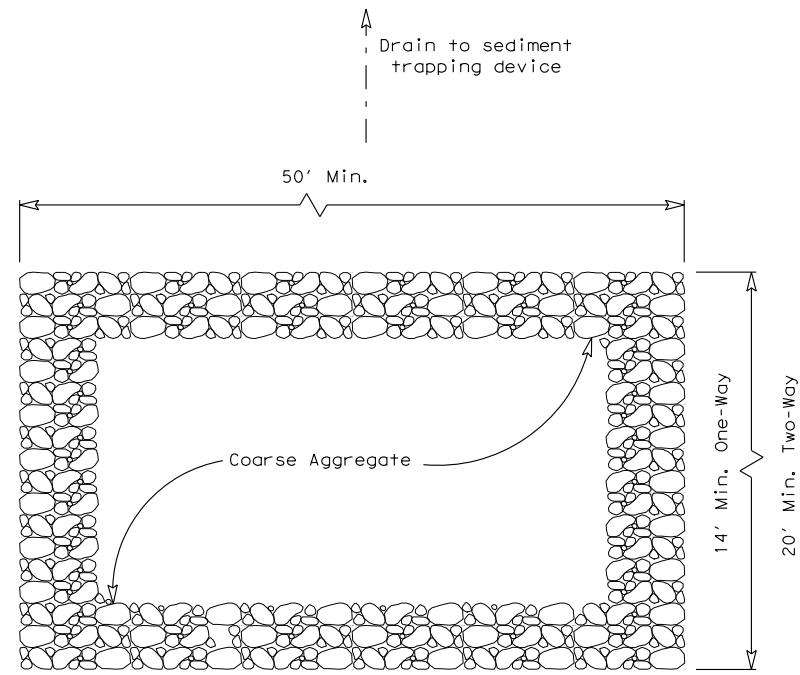
**PLAN SHEET LEGEND**

- Type 1 Rock Filter Dam — (RFD1) —
- Type 2 Rock Filter Dam — (RFD2) —
- Type 3 Rock Filter Dam — (RFD3) —
- Type 4 Rock Filter Dam — (RFD4) —

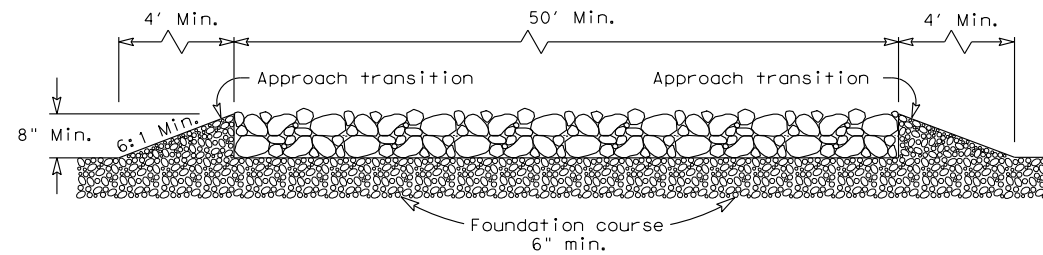
		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>ROCK FILTER DAMS</b> <b>EC (2) - 16</b>			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT: 1064	SECT: 01	JOB: 032
REVISIONS	DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 419

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DATE: 11/18/2022  
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PLAN VIEW

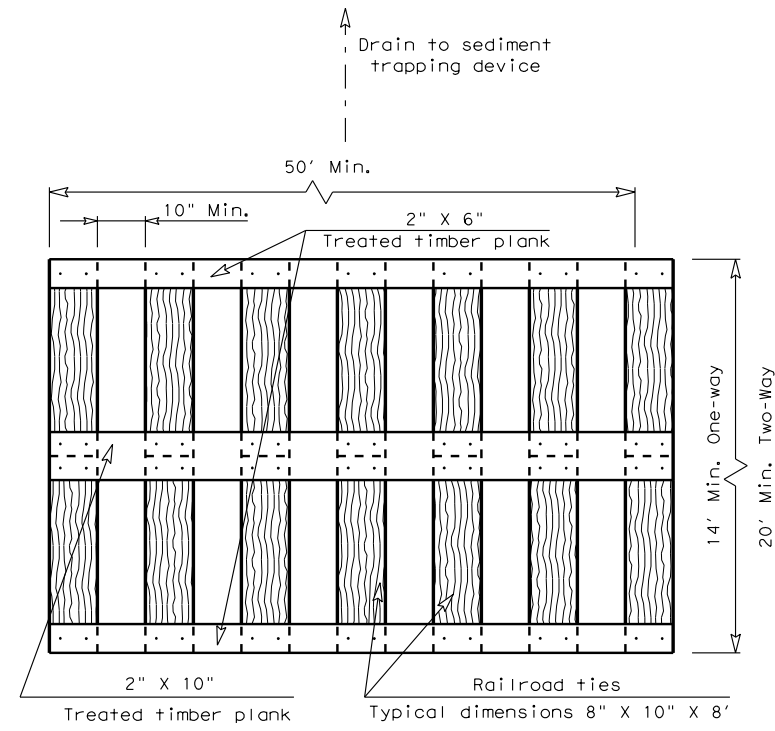


ELEVATION VIEW

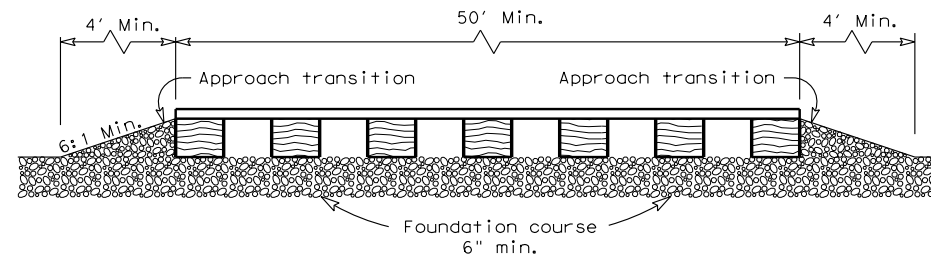
CONSTRUCTION EXIT (TYPE 1)  
 ROCK CONSTRUCTION (LONG TERM)

**GENERAL NOTES (TYPE 1)**

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

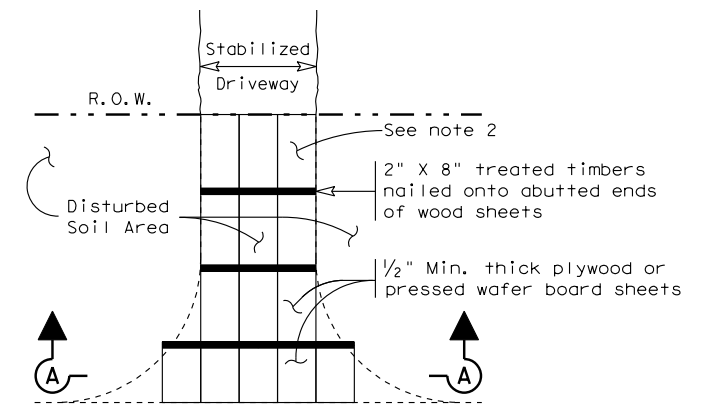


ELEVATION VIEW

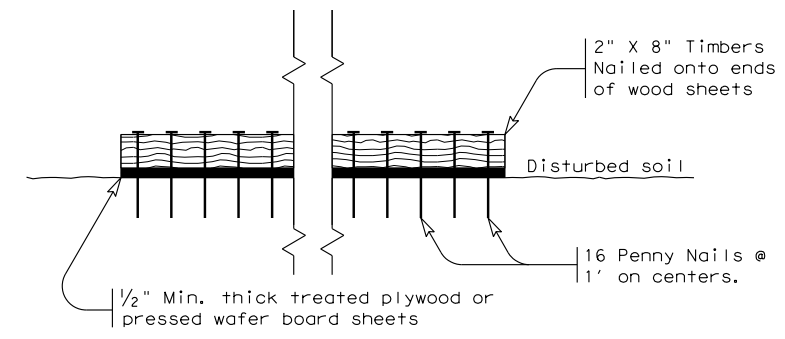
CONSTRUCTION EXIT (TYPE 2)  
 TIMBER CONSTRUCTION (LONG TERM)

**GENERAL NOTES (TYPE 2)**

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



SECTION A-A  
 CONSTRUCTION EXIT (TYPE 3)  
 SHORT TERM

**GENERAL NOTES (TYPE 3)**

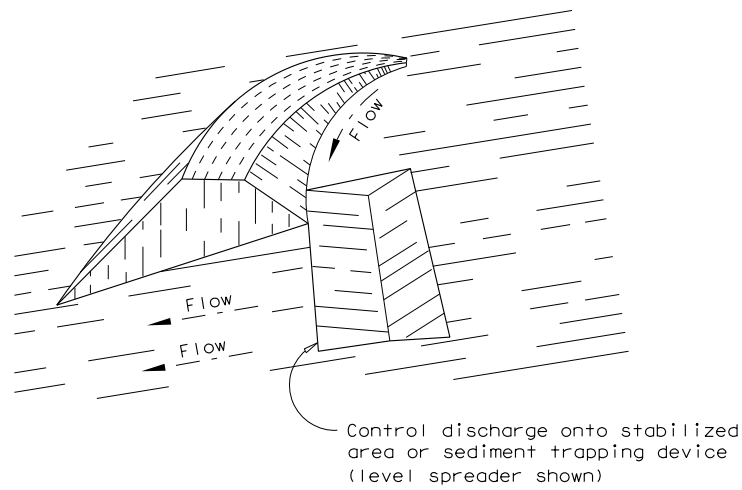
1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

			<b>Design Division Standard</b>		
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS EC(3)-16</b>					
FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS		1064	01	032	FM 676
	DIST	COUNTY		SHEET NO.	
	PHR	HIDALGO		420	

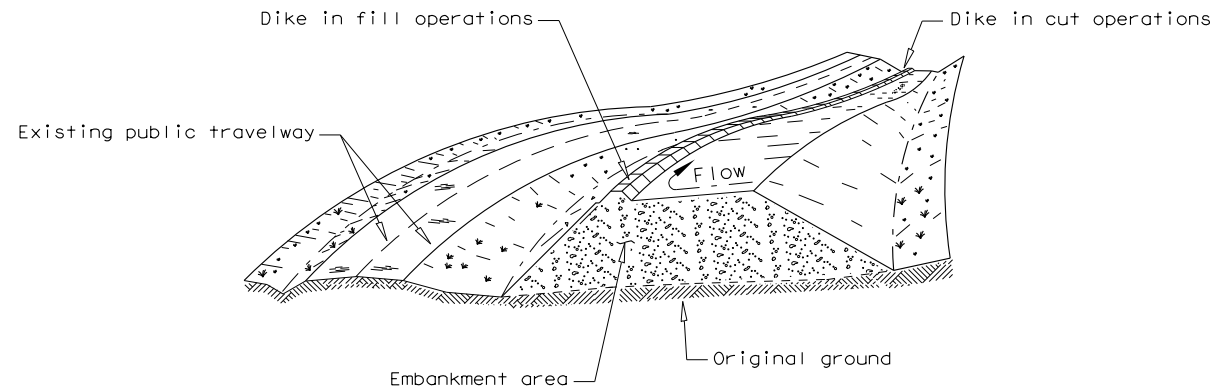
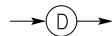


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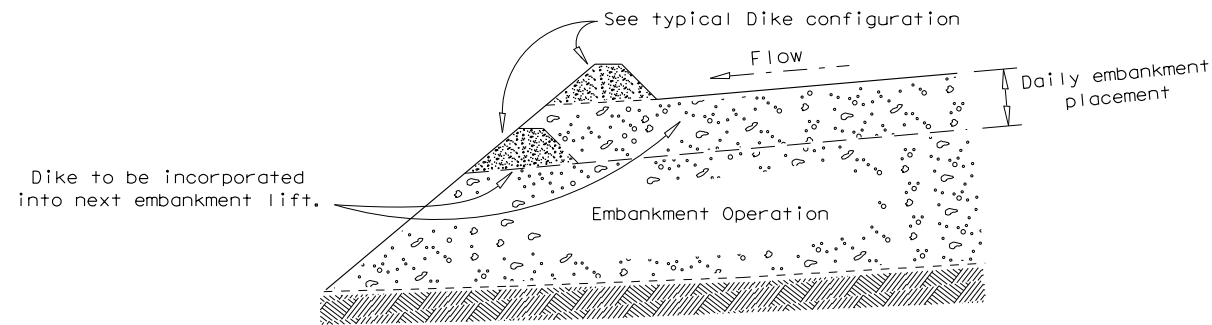
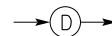
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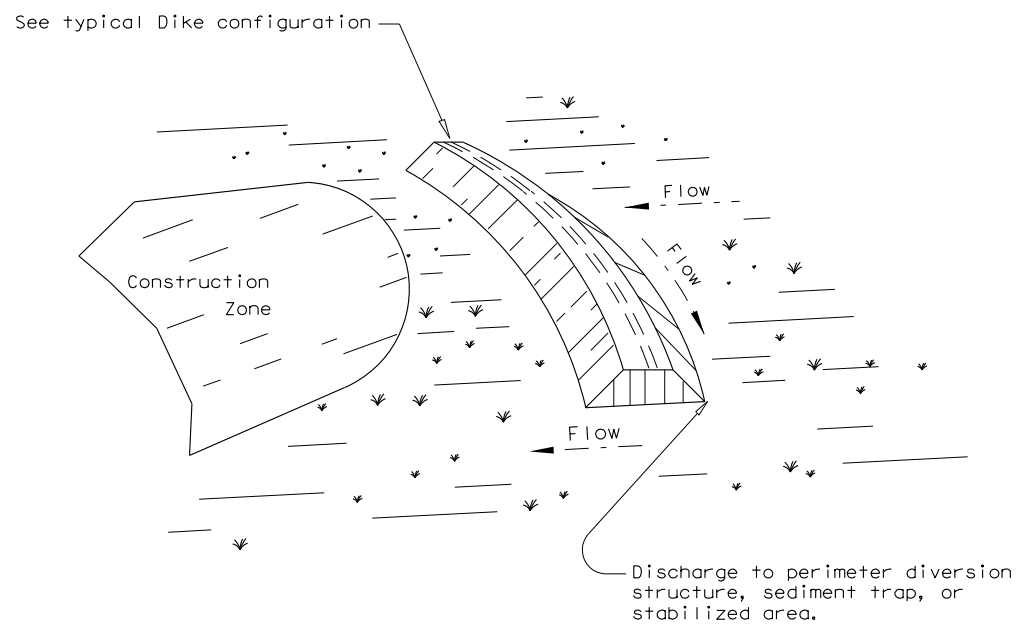
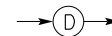
**PERIMETER DIKE**



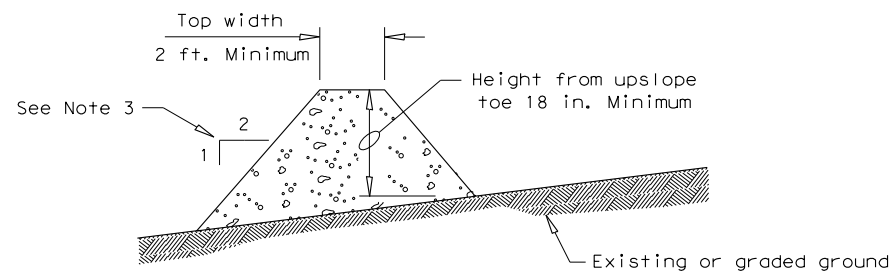
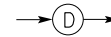
**DIVERSION DIKE**



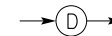
**EMBANKMENT SECTION - DIVERSION DIKE**



**INTERCEPTOR DIKE**



**TYPICAL DIKE CONFIGURATION**



**GENERAL NOTE**

1. Soil used in dike construction shall be machine compacted.
2. Top width and height of dike may be modified with prior approval of the Engineer.
3. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
4. Grading shall be shown elsewhere in the plans or as directed by the Engineer.
5. The Engineer reserves the right to modify the dimensions shown for the dike dependent on runoff volume characteristics.
6. Dikes that are in place for more than 14 calendar days should be stabilized to prevent sediment runoff.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Remove sediment and debris when accumulation affects the performance of the devices, after a rain and when directed by the engineer.

**DIKE USAGE GUIDELINES**

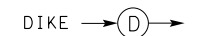
A Dike may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

The drainage area contributing runoff to a dike should not exceed 5 acres. The spacing of dikes should be as follows:

Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100'	200'	300'

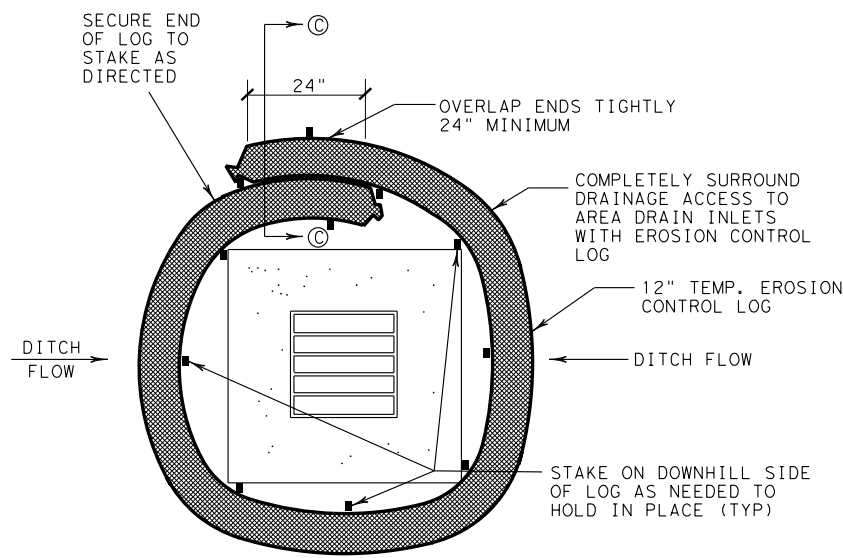
Intercepted runoff flowing along a dike should outlet to a stabilized area (vegetation, rock, etc.).

**PLANS SHEET LEGEND**



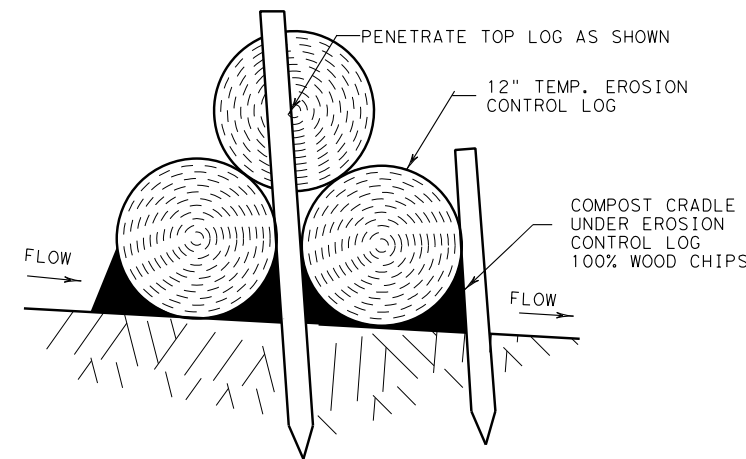
				<b>Design Division Standard</b>
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES DIKES (EARTHWORK FOR EROSION CONTROL) EC (4) - 16</b>				
FILE: ec416	DN: TxDOT	CK: KM	DN: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	1064	01	032	FM 676
	DIST	COUNTY	SHEET NO.	
	PHR	HIDALGO	<b>421</b>	

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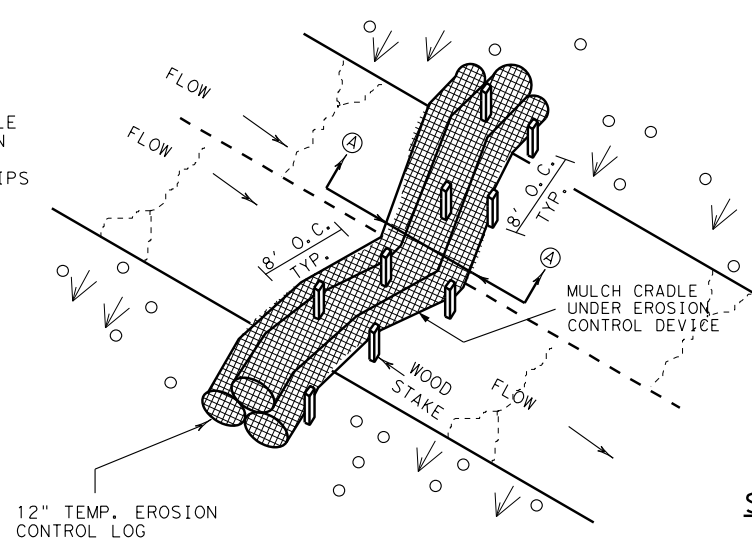
**DROP INLET SEDIMENT TRAP**

DI-ST



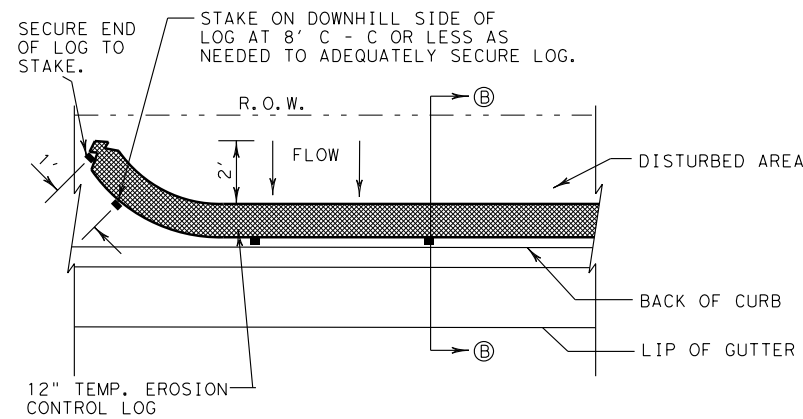
**DITCH LINE SEDIMENT TRAP A-A**

DL-ST



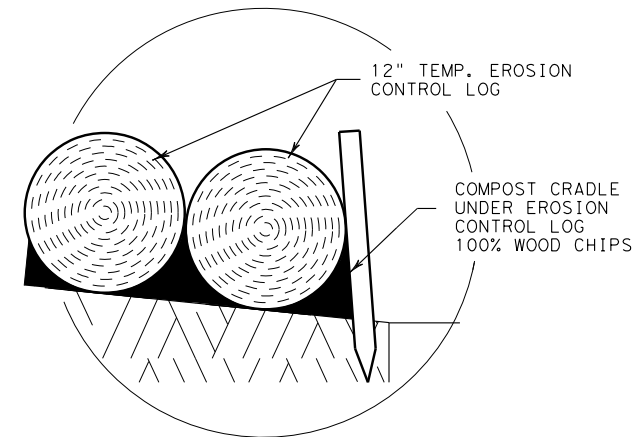
**DITCH LINE SEDIMENT TRAP**

DL-ST

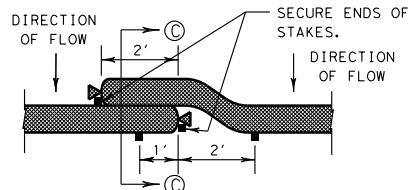


**PLAN VIEW**

NTS

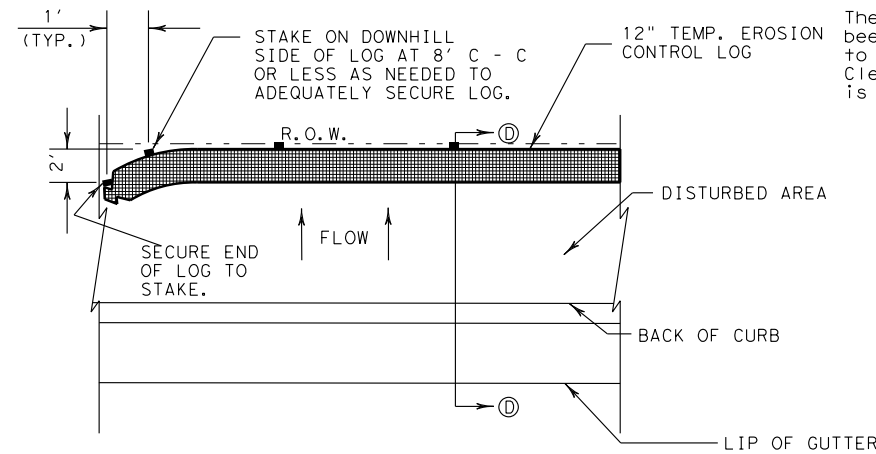


**SECTION C-C  
OVERLAP WITH  
COMPOST CRADLE**



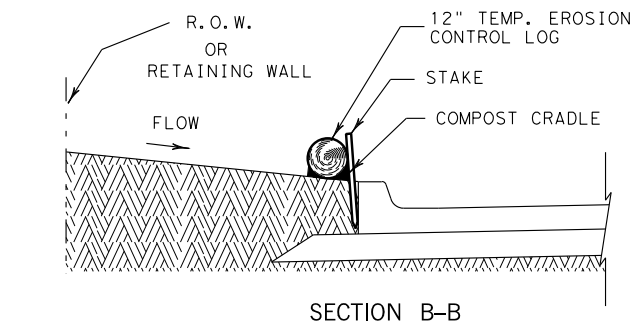
**OVERLAP DETAIL  
PLAN VIEW**

NTS



**PLAN VIEW**

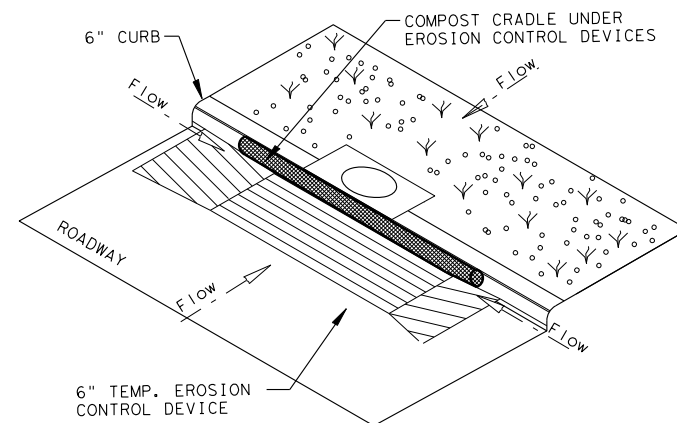
NTS



**SECTION B-B**

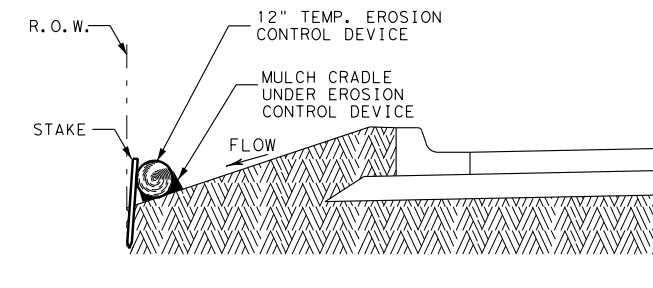
**BACK OF CURB INLET SEDIMENT TRAP**

BOCI-ST



**CURB INLET SEDIMENT TRAP**

CI-ST



**SECTION D-D**

**RIGHT-OF-WAY SEDIMENT TRAP**

ROW-ST

**PLANS SHEET LEGEND**

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP

**SEDIMENT BASIN & TRAP USAGE GUIDELINES**

A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

**Traps:** the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

1. Immediately preceding drain inlets
2. Just before the drainage enters a water course
3. Just before the drainage leaves the right of way
4. Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by 1/2" or the sediment has accumulated to a depth of 1", whichever is less. Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

**GENERAL NOTES**

1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
3. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
4. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.

LEVELS DISPLAYED  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

PHARR DISTRICT STANDARD



**TEMPORARY EROSION CONTROL LOGS  
TECL-17 (PHR)**

FED. RD. DIV. NO. 6	PROJECT NO.		HIGHWAY NO. FM 676
STATE TEXAS	DISTRICT PHARR	COUNTY HIDALGO	SHEET NO. 422
CONTROL 1064	SECTION 01	JOB 032	