| FED.RD. DIV.NO. | PROJECT NO. | | SHEET NO. |
|---|---|---|---|
| 6 | C 169-7-53, ETC | | 1 |
| STATE | STATE DIST. | COUNTY | |
| TEXAS | AMA | GRAY | |
| CONT. | SECT. | JOB | HIGHWAY NO. |
| 0169 | 07 | 053, ETC | US 60 |

## INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | INDEX OF SHEETS |

# STATE OF TEXAS
## DEPARTMENT OF TRANSPORTATION

## PLANS OF PROPOSED
## STATE HIGHWAY IMPROVEMENT
PROJECT NO. - C 169-7-53, ETC

## US 60
## GRAY COUNTY

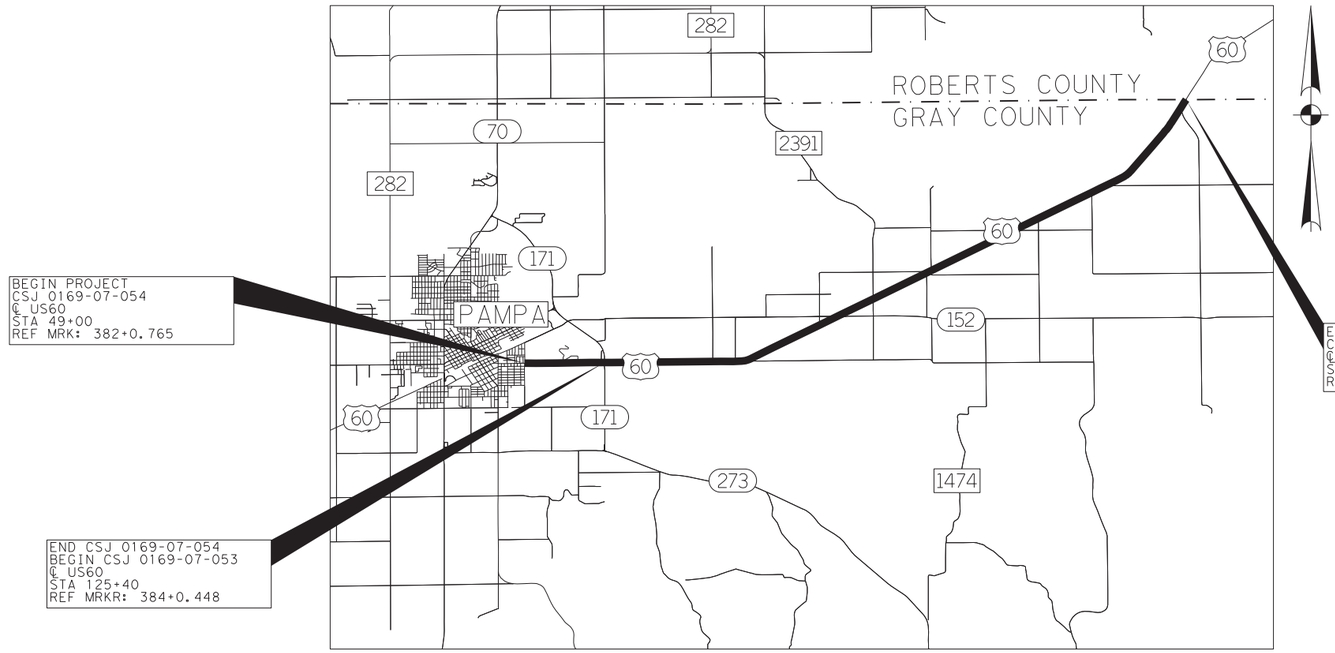
US 60 MAINLANES

FUNCTIONAL CLASSIFICATION = RURAL PRINCIPAL ARTERIAL
CSJ 0169-07-053: SUPER 2 DESIGN SPEED = 60 MPH
CSJ 0169-07-054: IN TOWN DESIGN SPEED = 45 MPH
FROM TIGNOR ST TO SH 152
ADT (2021) = 5,400
ADT (2041) = 7,500
FROM SH 152 TO ROBERTS COUNTY LINE
ADT (2021) = 2,100
ADT (2041) = 2,900

NET LENGTH OF PROJECT: 75,758.79 FT= 14.348 MILES
CSJ 0169-07-053: 68,118.79 FT= 12.901 MILES
CSJ 0169-07-054: 7,640.00 FT = 1.447 MILES

LIMITS: FROM TIGNOR ST TO ROBERTS COUNTY LINE
CSJ 0169-07-053 LIMITS: FROM SL 171 TO ROBERTS COUNTY LINE
CSJ 0169-07-054 LIMITS: FROM TIGNOR ST TO SL 171

FOR THE CONSTRUCTION OF HIGHWAY IMPROVEMENTS AND ROADWAY WIDENING
CONSISTING OF GRADING, PAVEMENT, DRAINAGE EXTENSIONS,
SIGNING & PAVEMENT MARKING




EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000-008).

FINAL PLANS AND QUANTITIES
AS CONSTRUCTED

CONTRACTORS NAME: _____

CONTRACTORS ADDRESS: _____

DATE CONTRACTOR BEGAN WORK: _____

DATE WORK WAS COMPLETED & ACCEPTED: _____

FINAL CONTRACT COST: _____

_____, PE
AREA ENGINEER

_____
DATE


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
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05/28/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

Texas Department of Transportation



RECOMMENDED FOR LETTING:
DocuSigned by: Wes Kimmell 4091D73729A34DC...
DATE: 5/28/2021

DocuSigned by: Kit Black 9B5A6EA6AE8B46E...
DATE: 6/1/2021
...R OF TRANSPORTATION
PLANNING AND DEVELOPMENT

APPROVED FOR LETTING:
DocuSigned by: Blair Johnson 8B80E3AEB2BC43A...
DATE: 6/3/2021

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DATE: 5/28/2021 9:33:26 AM

| SHEET NO. | | DESCRIPTION |
|---|---|---|
| | | **GENERAL** |
| 1 | | TITLE SHEET |
| 2 | | INDEX OF SHEETS |
| 3 | | PROJECT LAYOUT |
| 4 - 6 | | EXISTING TYPICAL SECTIONS |
| 7 - 12 | | PROPOSED TYPICAL SECTIONS |
| 13 - 13G | | GENERAL NOTES |
| 14 - 14B | | ESTIMATE & QUANTITY SHEETS |
| 15 | | REMOVAL QUANTITY SUMMARY |
| 16 - 17 | | ROADWAY QUANTITY SUMMARY |
| 18 | | DRIVEWAY QUANTITY SUMMARY |
| 19 | | MBGF QUANTITY SUMMARY |
| 20 | | DRAINAGE QUANTITY SUMMARY |
| 21 | | PAVEMENT MARKINGS QUANTITY SUMMARY |
| 22 | | SIGNING QUANTITY SUMMARY |
| 23 - 25 | | US 60 EARTHWORK SUMMARY |
| 26 | | SH 152 EARTHWORK SUMMARY |
| 27 | | SW3P QUANTITY SUMMARY |
| | | **TRAFFIC CONTROL PLAN** |
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| 29 - 34 | | TCP TYPICAL SECTIONS PHASE 2 |
| | | **TRAFFIC CONTROL PLAN STANDARDS** |
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| 47 | * | TCP (2-1)-18 |
| 48 | * | TCP (2-2)-18 |
| 49 | * | TCP (2-3)-18 |
| 50 | * | TCP (3-1)-13 |
| 51 | * | TCP (3-3)-14 |
| 52 | * | TCP (7-1)-13 |
| 53 | * | WZ (STPM)-13 |
| 54 | * | WZ (UL)-13 |
| 55 | * | WZ (RS)-16 |
| | | **ROADWAY DETAILS** |
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| 59 - 60 | | CONTROL SHEET |
| 61 | | HORIZONTAL ALIGNMENT DATA SHEET |
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| 69 - 99 | | US 60 ROADWAY PLAN |
| 100 | | SH152 PLAN AND PROFILE |
| 101 | | SH152 REMOVALS |
| 102 | | DRIVEWAY AND INTERSECTION LAYOUT |
| | | **ROADWAY STANDARDS** |
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| 105 | * | GF(31)MS-19 |
| 106 | * | SGT(10S)31-16 |
| 107 | * | SGT(12S)31-18 |
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| 117 - 123 | | DRAINAGE AREA MAP |
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| | | **SIGNING & PAVEMENT MARKING STANDARDS** |
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| 233 | * | D&OM(5)-20 |
| 234 | * | D&OM(VIA)-20 |
| 235 | * | PM(1)-20 |
| 236 | * | PM(2)-20 |
| 237 | * | SMD(GEN)-08 |
| 238 | * | SMD(SLIP-1)-08 |
| 239 | * | SMD(SLIP-2)-08 |
| 240 | * | SMD(SLIP-3)-08 |
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| 244 | * | TSR(4)-13 MOD |
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| 250 | | ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS (EPIC) |
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| | | **ENVIRONMENTAL STANDARDS** |
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| 266 - 268 | * | EC(9)-16 |
| 269 | * | VEGETATION SPECIFICATION SHEET |

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

BO RATTO, P.E. 05/03/2021
DATE

05/03/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

DOCUMENT IS [illegible] AND NOT INTENDED FOR [illegible], BIDDING, OR PERMIT PURPOSES.
BO L. RATTO
113226
TEXAS SERIAL NUMBER
4/28/2021
DATE

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|---|---|---|---|
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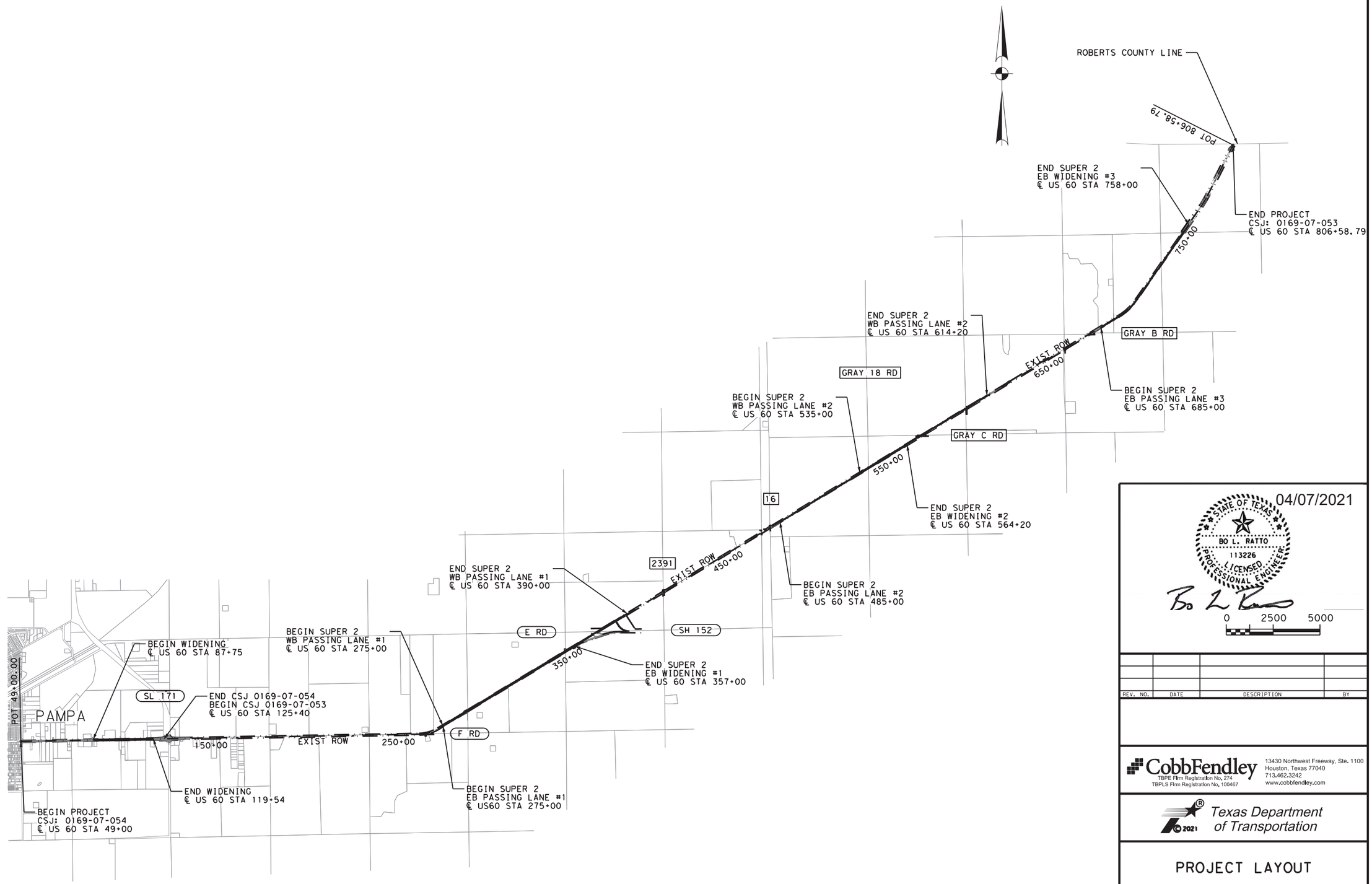
Texas Department of Transportation

# INDEX OF SHEETS

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 2 |




04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 2500 5000

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|---|---|---|---|
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# PROJECT LAYOUT

SHEET 1 OF 1

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 3 |

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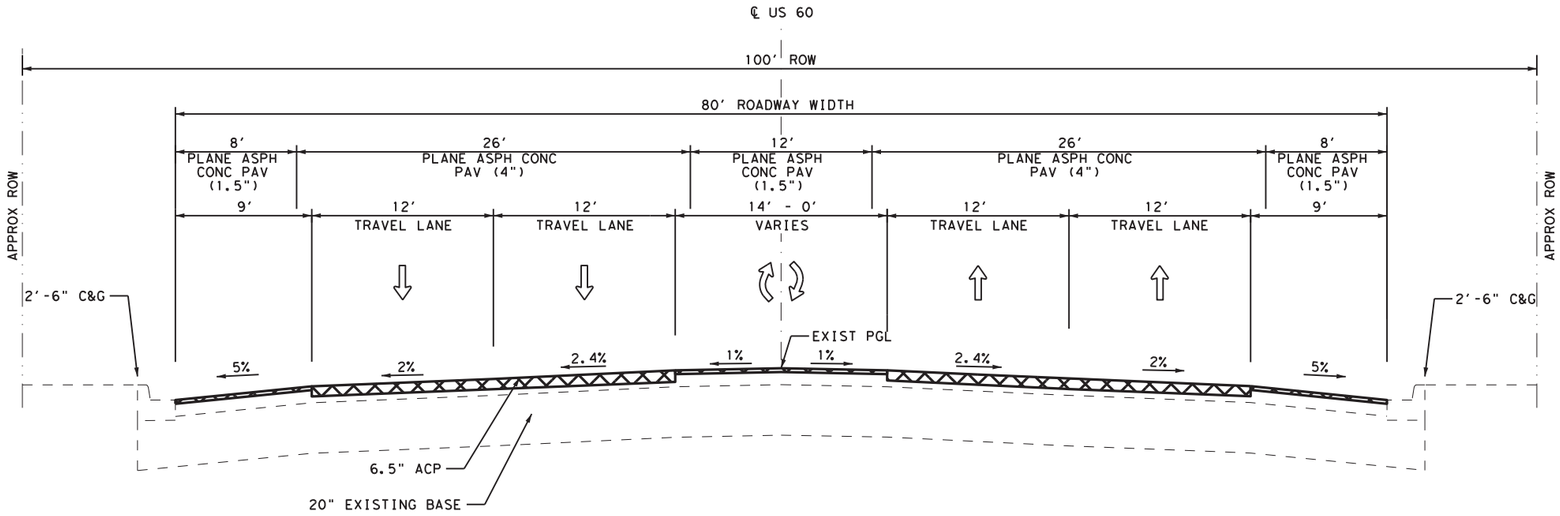
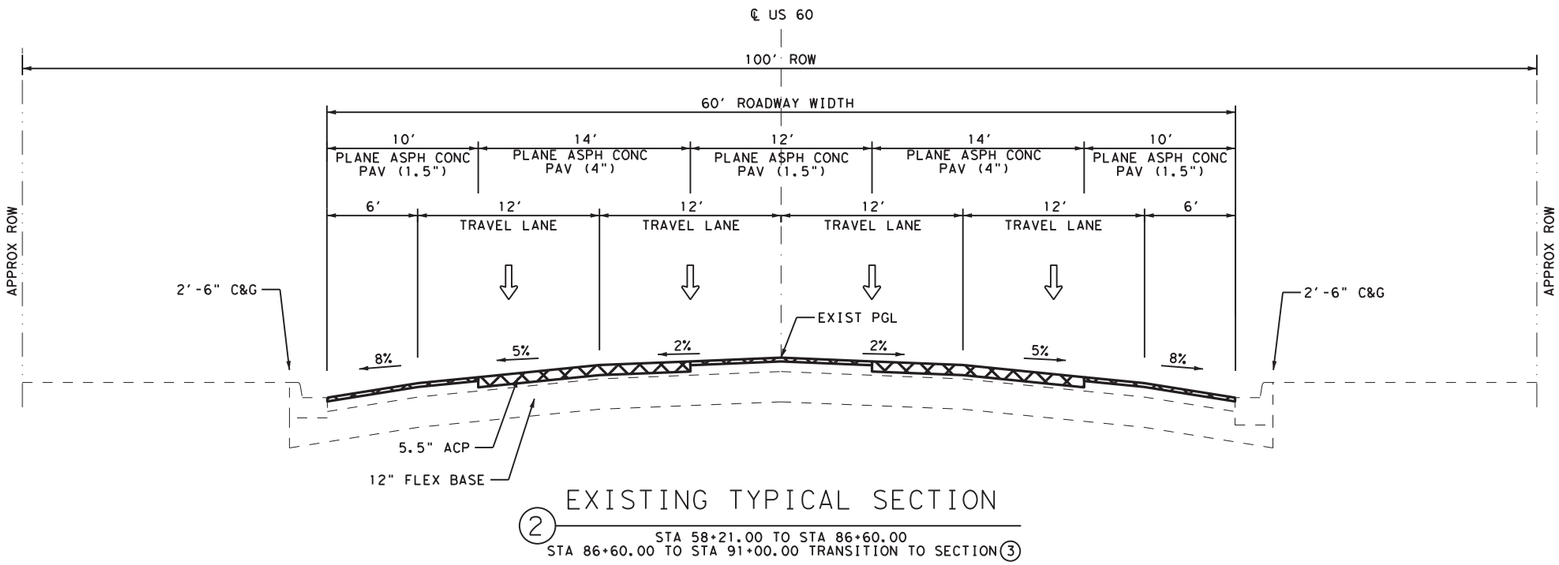
US60_GEN-LAYOUT.dgn




## ① EXISTING TYPICAL SECTION

STA 49+00.00 TO STA 54+83.00
STA 54+83.00 TO STA 58+21.00 TRANSITION TO SECTION ②




## ② EXISTING TYPICAL SECTION

STA 58+21.00 TO STA 86+60.00
STA 86+60.00 TO STA 91+00.00 TRANSITION TO SECTION ③

05/03/2021



STATE OF TEXAS · BO L. RATTO · 113226 · LICENSED PROFESSIONAL ENGINEER

0 2.5 5 10(H)
0 2.5 5(V)

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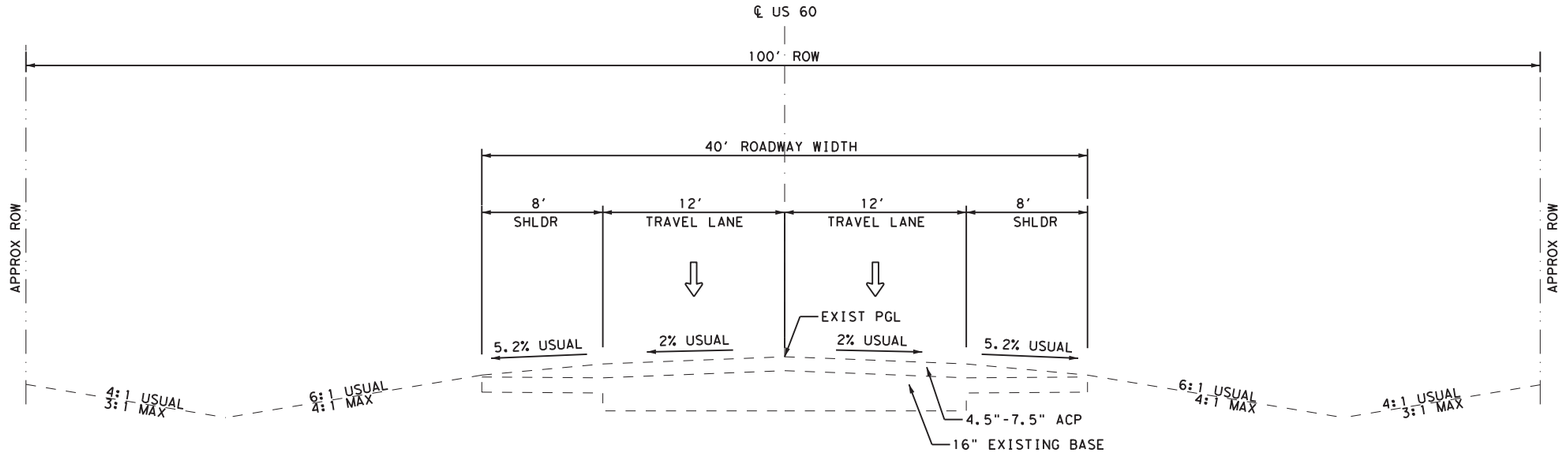
# EXISTING TYPICAL SECTIONS

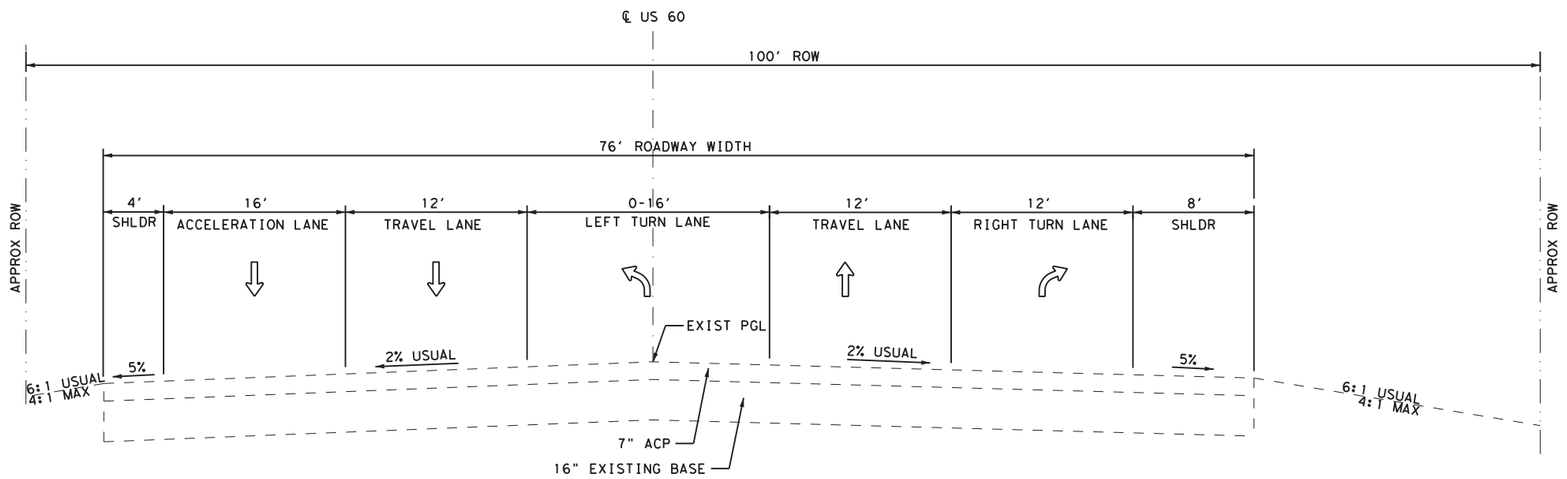
SHEET 1 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 4 |




## ③ EXISTING TYPICAL SECTION

STA 91+00.00 TO STA 117+35.00
STA 117+35.00 TO STA 125+44.00 TRANSITION TO SECTION ④
STA 139+18.00 TO STA 215+50.00
STA 262+00.00 TO STA 789+00.00
STA 789+00.00 TO STA 798+00.00 TRANSITION FROM 40' TO 52'
STA 798+00.00 TO END OF PROJECT




## ④ EXISTING TYPICAL SECTION

STA 125+44.00 TO STA 128+00.00

05/03/2021

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TEXAS SERIAL NUMBER
4/27/2021
DATE

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0 2.5 5(V)

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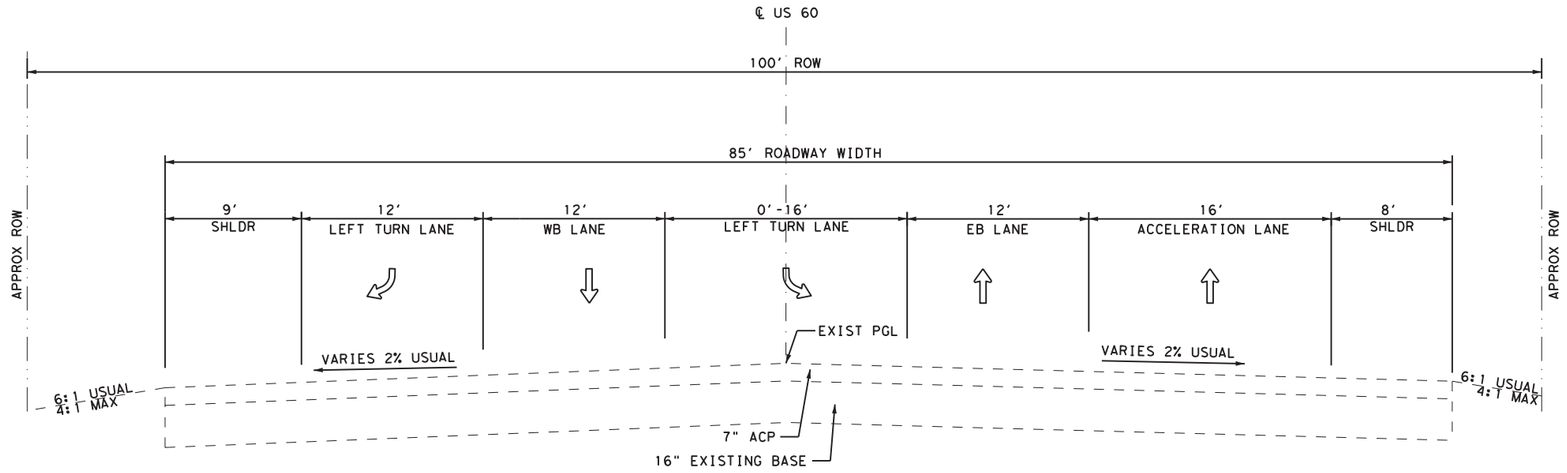
# EXISTING TYPICAL SECTIONS

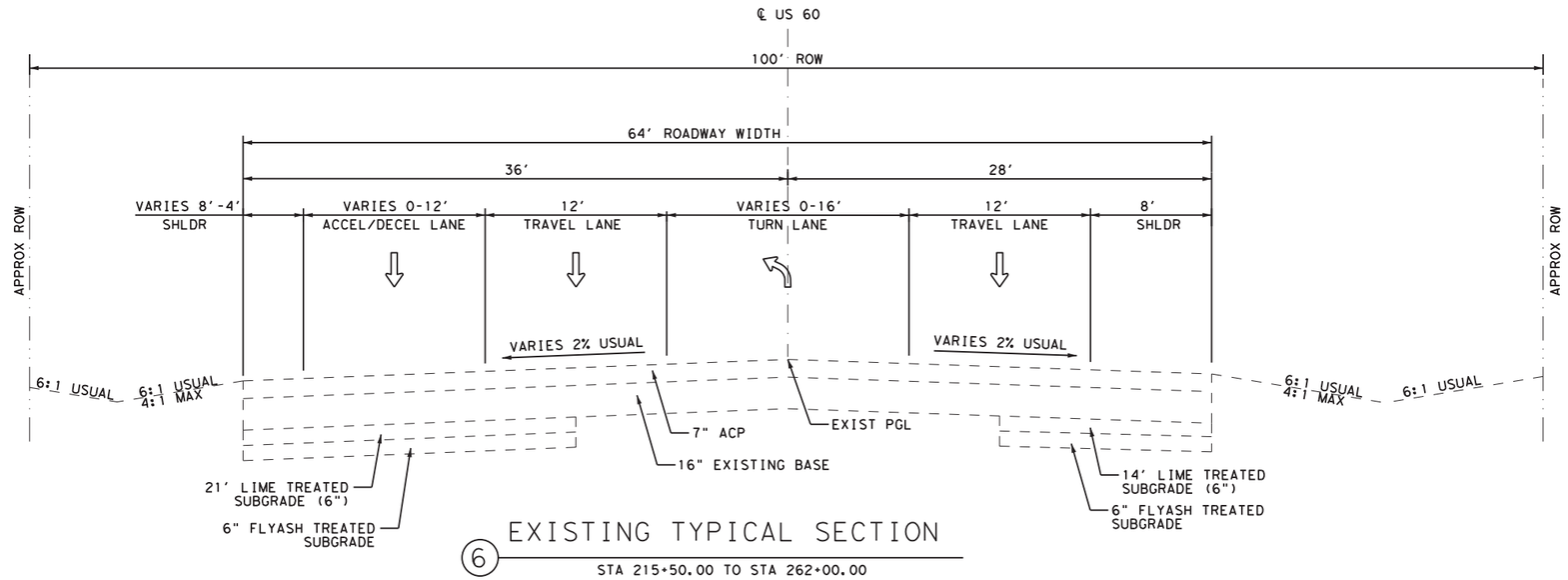
SHEET 2 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 5 |




## (5) EXISTING TYPICAL SECTION

STA 128+00.00 TO STA 132+52.00
STA 132+52.00 TO STA 139+18.00 TRANSITION TO SECTION (3)




## (6) EXISTING TYPICAL SECTION

STA 215+50.00 TO STA 262+00.00

04/07/2021

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0 2.5 5 10(H)
0 2.5 5(V)

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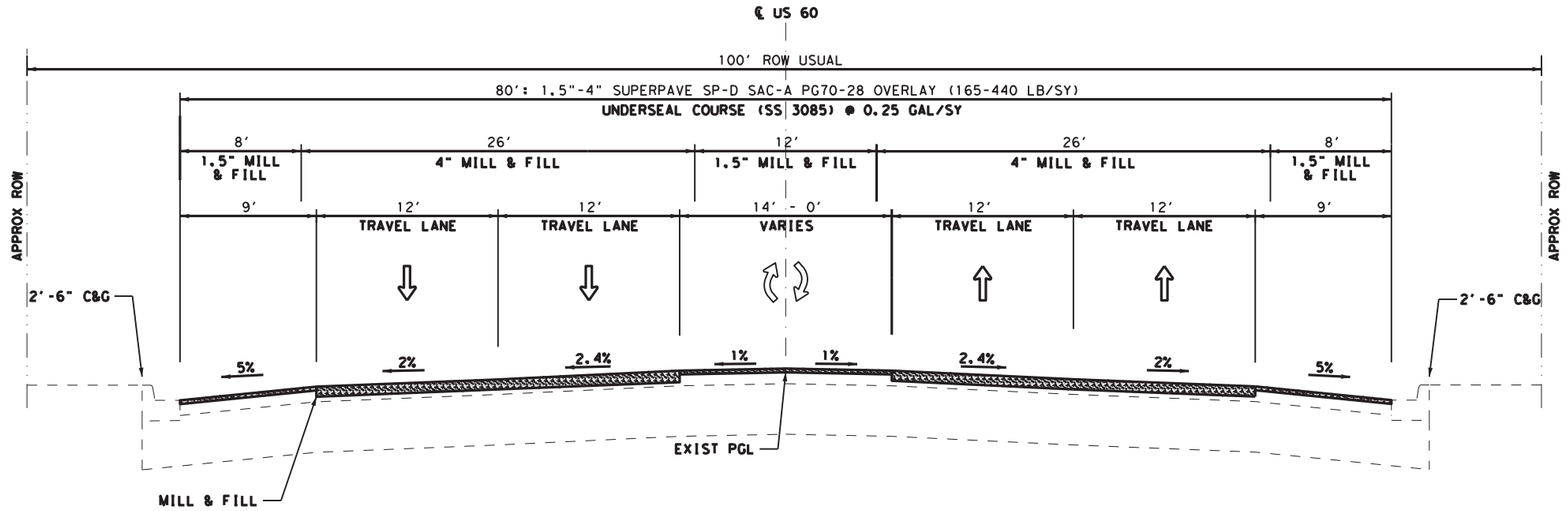
# EXISTING TYPICAL SECTIONS

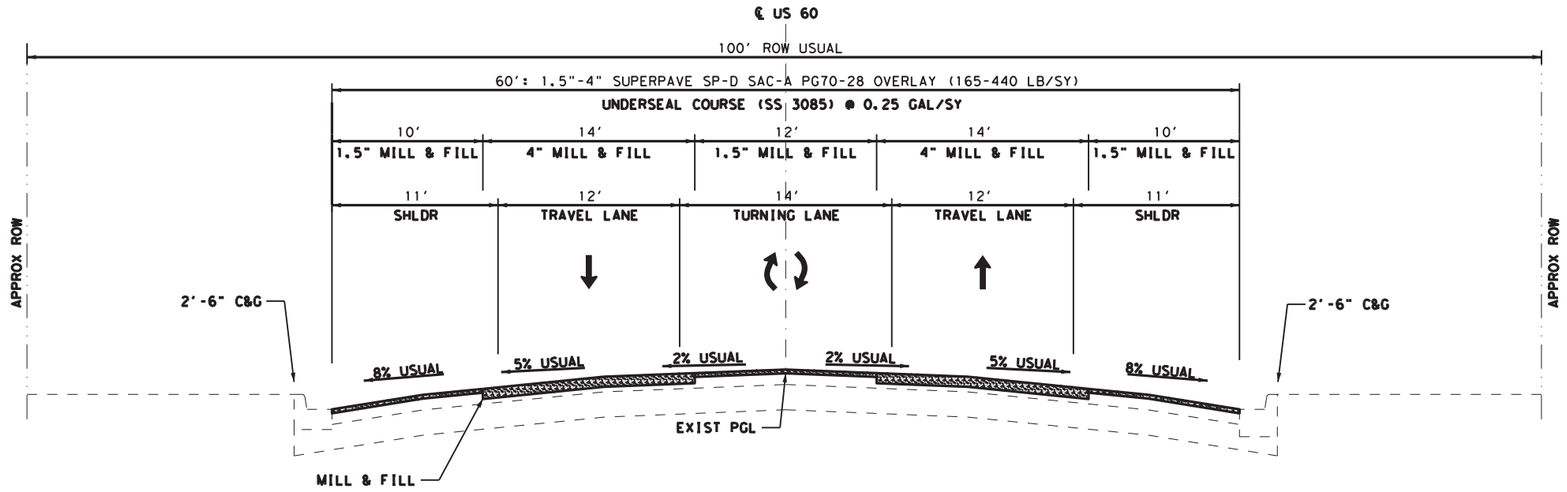
SHEET 3 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 6 |




## (A) PROPOSED TYPICAL SECTION
## US 60

STA 49+00.00 TO STA 54+83.00
STA 54+83.00 TO STA 58+21.00 TRANSITION TO TYP B (80' TO 60' = AVG 70')

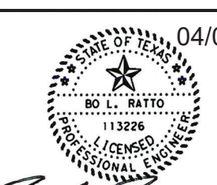



## (B) PROPOSED TYPICAL SECTION
## US 60

STA 58+21.00 TO STA 86+60.00
STA 86+60.00 TO STA 87+75.00 TRANSITION TO TYP C(60' TO 58' = AVG 59')

NOTE:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS




04/07/2021

0 2.5 5 10(H)
0 2.5 5(V)

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|---|---|---|---|
| | | | |

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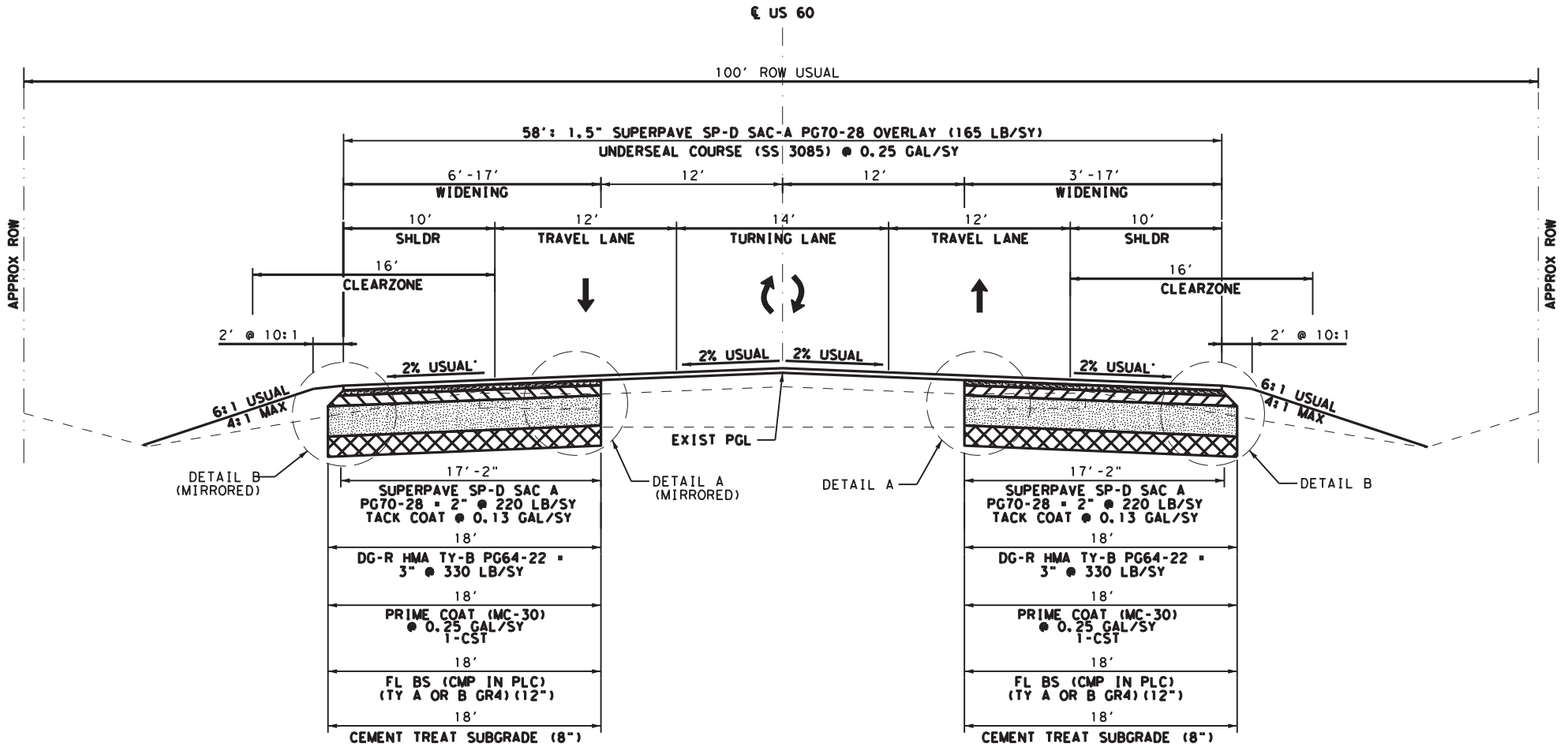
# PROPOSED TYPICAL SECTIONS

SHEET 1 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 7 |

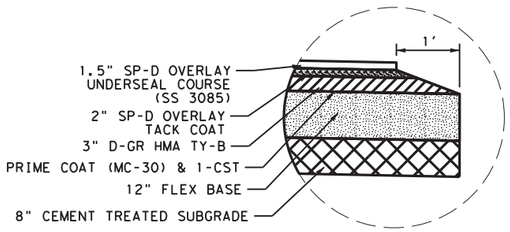



## Ⓒ PROPOSED TYPICAL SECTION
## US 60
**STA 87+75.00 TO STA 119+54.00**

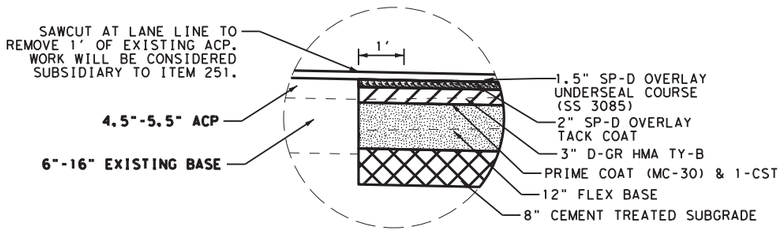
NOTES:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS

* MATCH EXISTING TRAVEL LANE CROSS SLOPE, NOT EXISTING SHOULDER CROSS SLOPE




DETAIL B EDGE OF PAVEMENT
N.T.S.




DETAIL A WIDENING JOINT
N.T.S.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER
04/07/2021

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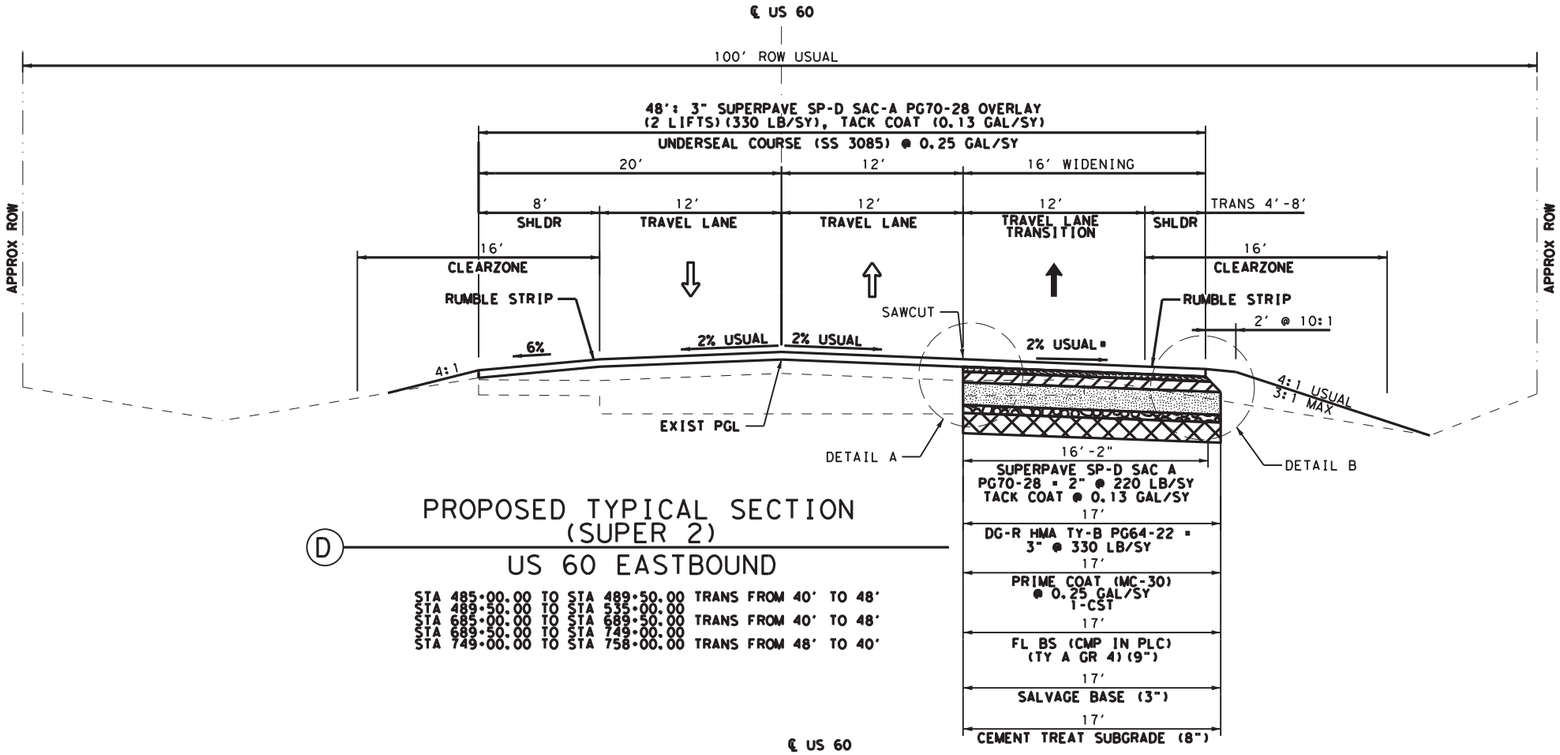
# PROPOSED TYPICAL SECTIONS

SHEET 2 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 8 |

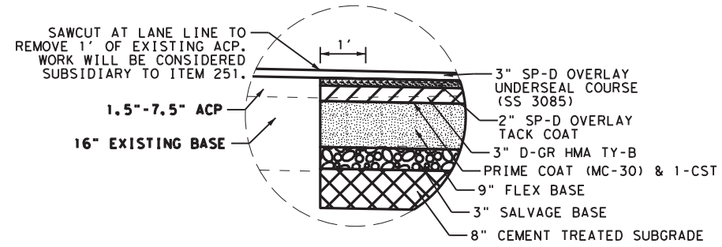



## PROPOSED TYPICAL SECTION (SUPER 2)

Ⓓ

## US 60 EASTBOUND

STA 485+00.00 TO STA 489+50.00 TRANS FROM 40' TO 48'
STA 489+50.00 TO STA 535+00.00
STA 685+00.00 TO STA 689+50.00 TRANS FROM 48' TO 40'
STA 689+50.00 TO STA 749+00.00
STA 749+00.00 TO STA 758+00.00 TRANS FROM 40' TO 48'



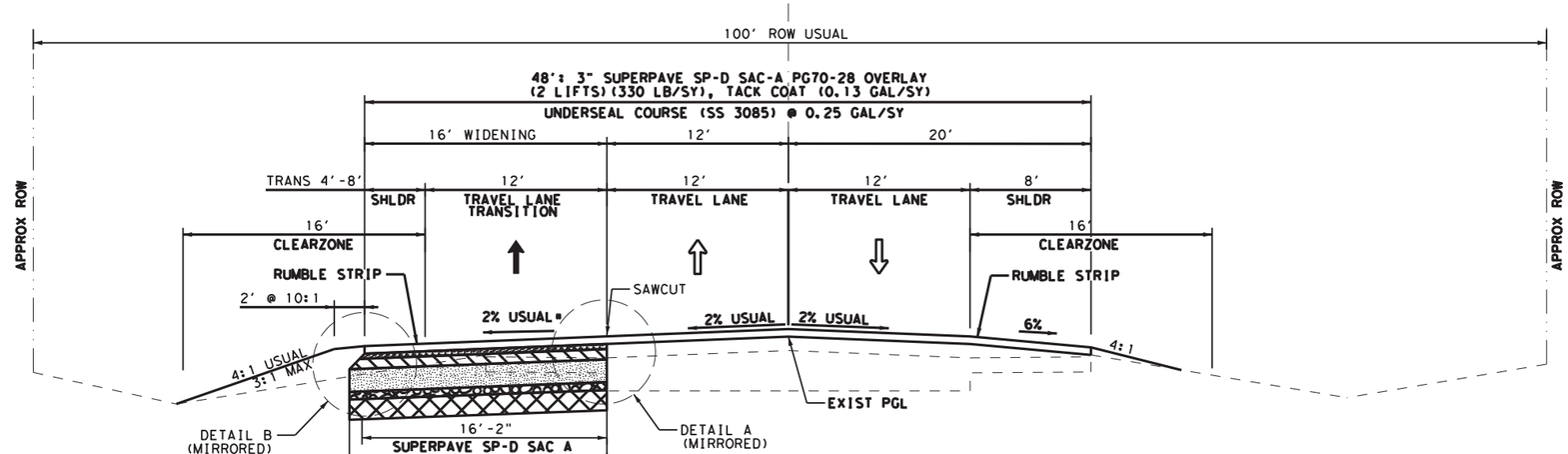

## DETAIL A WIDENING JOINT

N. T. S.

NOTES:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS

* MATCH EXISTING TRAVEL LANE CROSS SLOPE, NOT EXISTING SHOULDER CROSS SLOPE

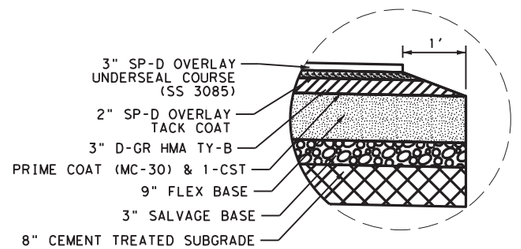



## PROPOSED TYPICAL SECTION (SUPER TWO)

Ⓔ

## US 60 WESTBOUND

STA 362+43.48 TO STA 369+36.00 TRANS FROM 30' LT TO 34' LT
STA 369+36.00 TO STA 386+40.00
STA 386+40.00 TO STA 390+00.00 TRANS FROM 34' LT TO 20' LT
STA 564+20.00 TO STA 609+70.00
STA 609+70.00 TO STA 614+20.00 TRANS FROM 48' TO 40'




## DETAIL B EDGE OF PAVEMENT

N. T. S.

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 2.5 5 10(H)
0 2.5 5(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# PROPOSED TYPICAL SECTIONS

SHEET 3 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 9 |

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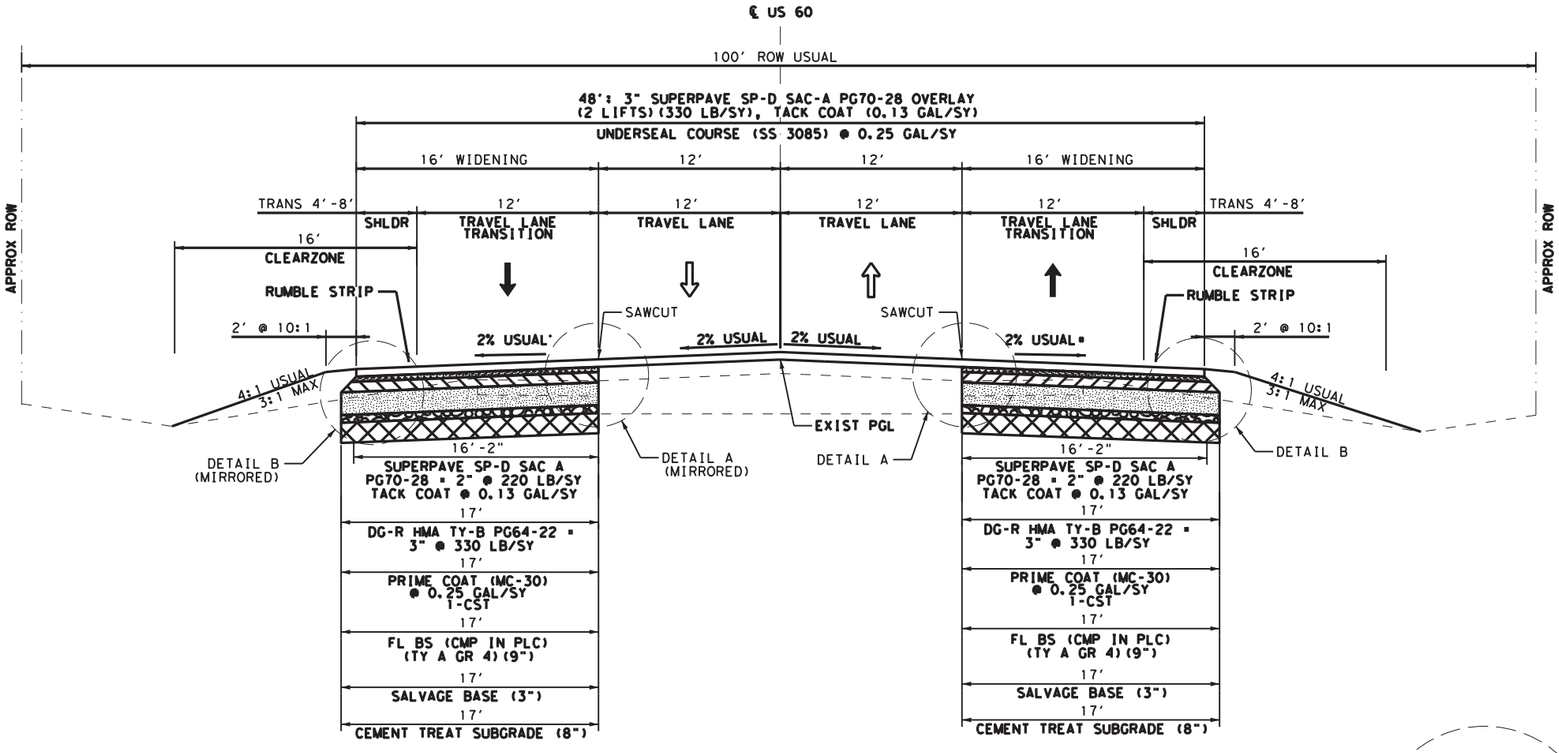
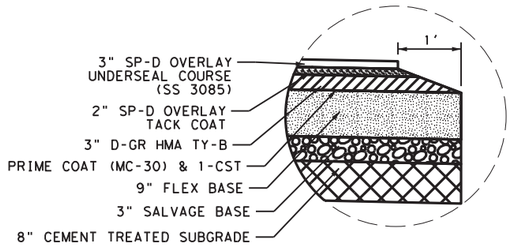



## PROPOSED TYPICAL SECTION (SUPER 2)

Ⓕ

## US 60 EASTBOUND & WESTBOUND

STA 275+00.00 TO STA 284+00.00 TRANS FROM 40' TO 56'
STA 284+00.00 TO STA 357+00.00
STA 357+00.00 TO STA 362+43.48 TRANS FROM 28' RT TO 52' RT
STA 357+00.00 TO STA 362+43.48 TRANS FROM 28' LT TO 30' LT
STA 535+00.00 TO STA 544+00.00 TRANS FROM 48' TO 56'
STA 544+00.00 TO STA 555+20.00
STA 555+20.00 TO STA 564+20.00 TRANS FROM 56' TO 48'

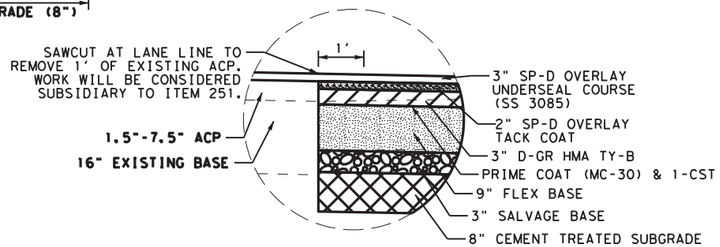



## DETAIL B EDGE OF PAVEMENT

N. T. S.

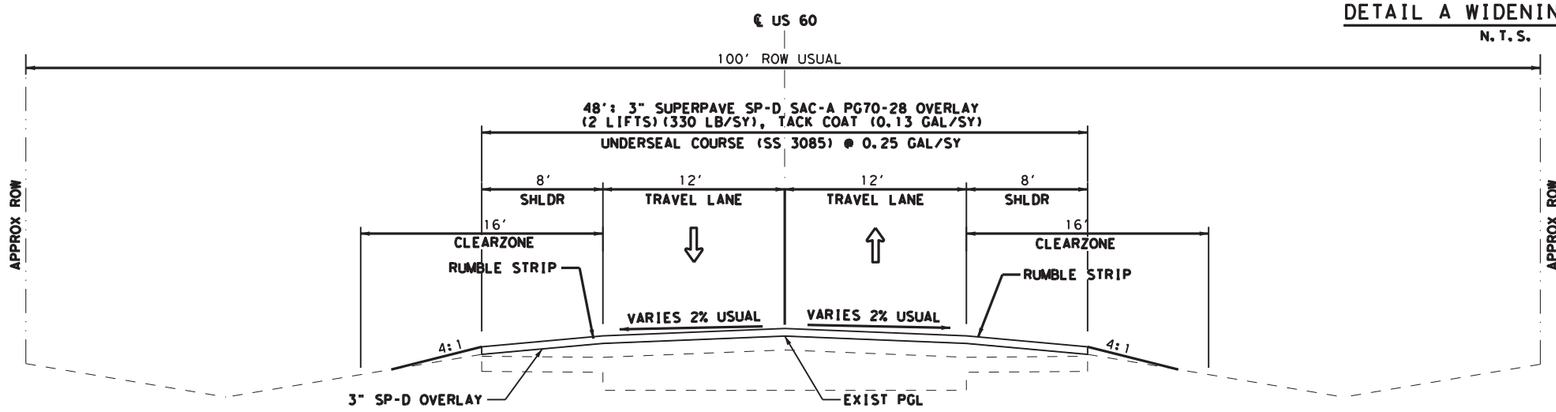
NOTES:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS
* MATCH EXISTING TRAVEL LANE CROSS SLOPE, NOT EXISTING SHOULDER CROSS SLOPE




## DETAIL A WIDENING JOINT

N. T. S.




## PROPOSED TYPICAL SECTION (OVERLAY)

Ⓖ

## US 60

STA 139+18.00 TO STA 215+50.00
STA 262+00.00 TO STA 275+00.00
STA 390+00.00 TO STA 485+00.00
STA 614+20.00 TO STA 685+00.00
STA 758+00.00 TO STA 789+00.00

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 2.5 5 10(H)
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| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

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TBPE Firm Registration No. 274
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Houston, Texas 77040
713.462.3242
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# PROPOSED TYPICAL SECTIONS

SHEET 4 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 10 |



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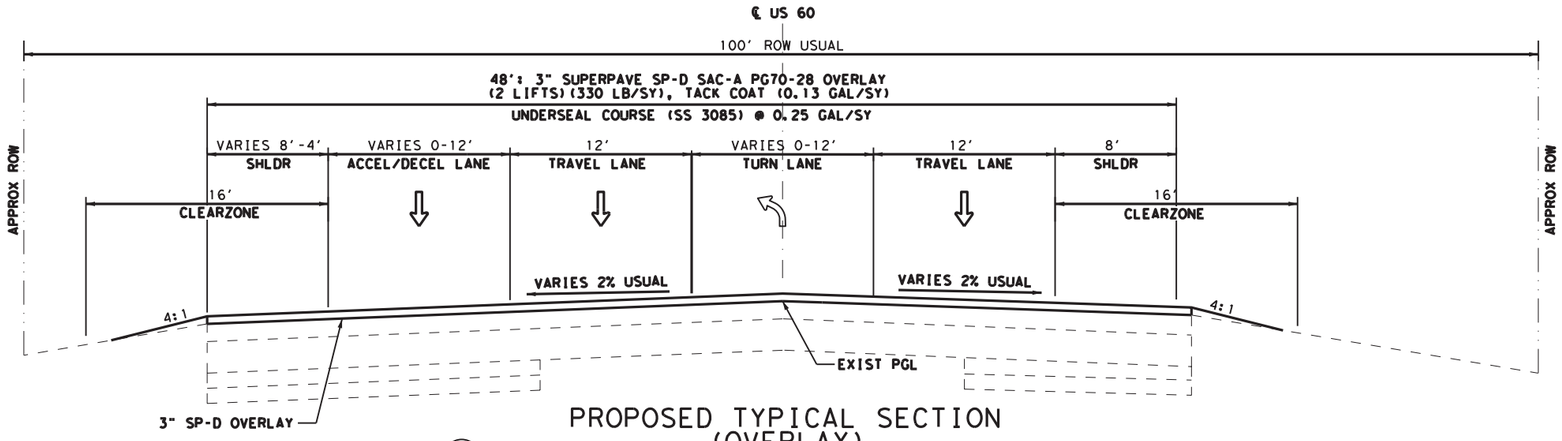
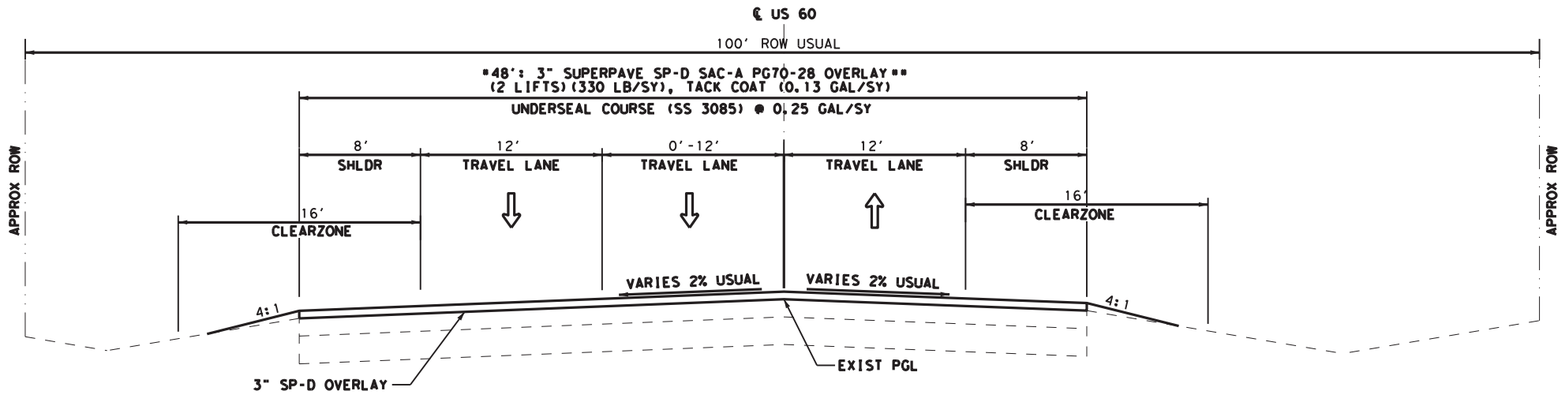



PROPOSED TYPICAL SECTION
(OVERLAY)

Ⓗ US 60

STA 215+50.00 TO STA 262+00.00




PROPOSED TYPICAL SECTION
(OVERLAY)

Ⓘ US 60

STA 789+00.00 TO END OF PROJECT
* TRANSITION FROM 40' TO 52' FROM STA 789+00.00 TO STA 798+00.00
** STA 804+58.00 TO END OF PROJECT 0" TO 3" PLANING

NOTE:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 2.5 5 10(H)
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| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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www.cobbfendley.com

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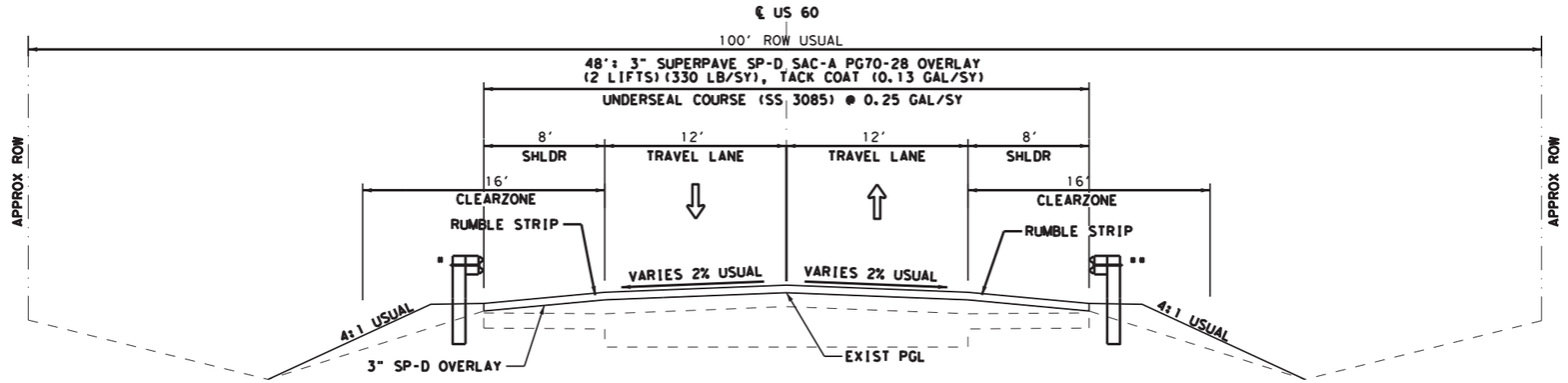
# PROPOSED TYPICAL SECTIONS

SHEET 5 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 11 |



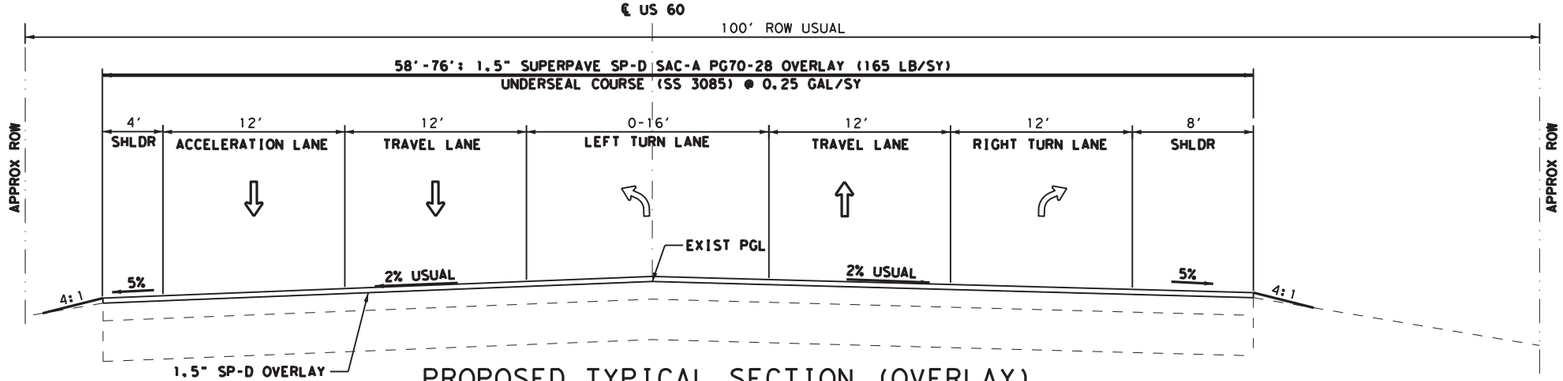

## PROPOSED TYPICAL SECTION (OVERLAY WITH MBGF)

Ⓙ

## US 60

* STA 758+25.00 TO STA 767+25.00
STA 769+33.00 TO STA 779+56.00
STA 783+67.00 TO STA 791+66.00

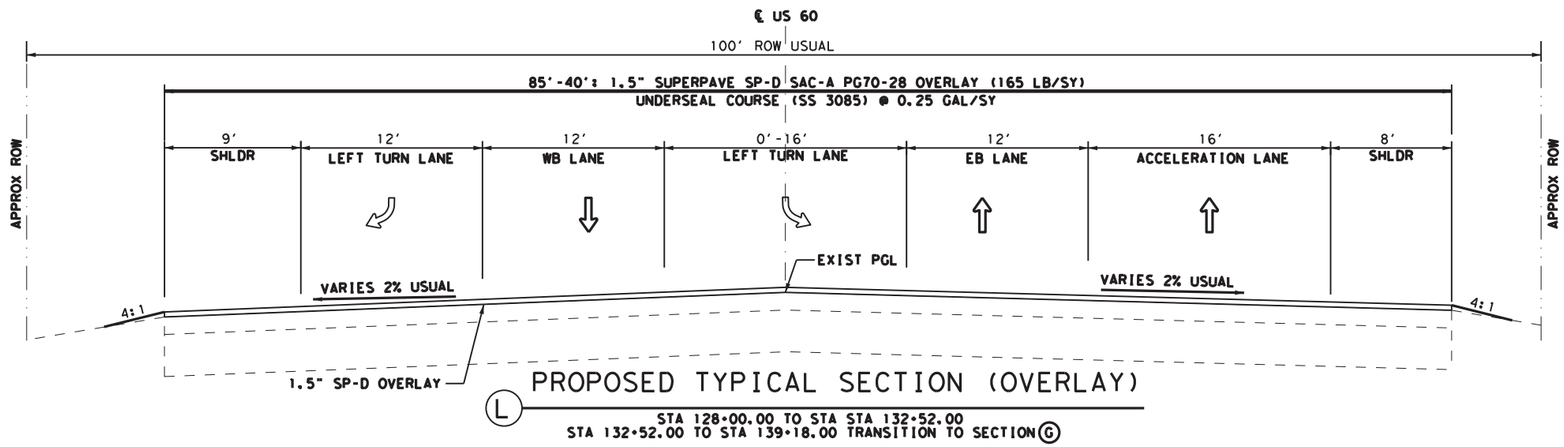
** STA 758+00.00 TO STA 766+05.00
STA 768+34.00 TO STA 778+82.00
STA 782+59.00 TO STA 790+58.00




## PROPOSED TYPICAL SECTION (OVERLAY)

Ⓚ

STA 119+54.00 TO STA 125+44.00 TRANSITION FROM SECTION Ⓒ TO SECTION Ⓚ
STA 125+44.00 TO STA 128+00.00




## PROPOSED TYPICAL SECTION (OVERLAY)

Ⓛ

STA 128+00.00 TO STA STA 132+52.00
STA 132+52.00 TO STA 139+18.00 TRANSITION TO SECTION Ⓖ

NOTE:

1. CONTRACTOR TO MATCH EXISTING CROSS SLOPE ON OVERLAY SECTIONS

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 2.5 5 10(H)
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| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

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Houston, Texas 77040
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# PROPOSED TYPICAL SECTIONS

SHEET 6 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. / SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC / 12 |

## GENERAL NOTES

**CSJ:** *0169-07-053, ETC*

**BASIS OF ESTIMATE FOR CONSTRUCTION**

| Item | Description | Unit | Rate | |
|---|---|---|---|---|
| 164 | SEEDING | | SEE PLAN SHEETS | |
| 166 | FERTILIZER | | SEE PLAN SHEETS | |
| 275 | CEMENT TREAT (8") | SY | 3% Cement at 21.6 LBS/SY | |
| 310 | PRIME COAT (MC-30) | GAL | 0.25 GAL/SY | |
| 314 | EMULSION ASPHALT (MULTI) (MS-2 OR SS-1) | GAL | SEE NOTE 2 | |
| 316 | ASPH (AC-5) | GAL | 0.38 GAL/SY | |
| | AGGR (TY-B GR-4 SAC-B) | CY | 110 SY/CY | |
| 3076(1) | D-GR HMA | TON | 3” | 330 LB/SY/2000 |
| 3076(3) or 3077(3) | TACK COAT (TRAIL) | GAL | .13 GAL / SY | |
| 3077(1) | SUPERPAVE MIXTURES | TON | 4” | 440 LB/SY/2000 |
| | | TON | 3” | 330 LB/SY/2000 |
| | | TON | 2” | 220 LB/SY/2000 |
| | | TON | 1.5” | 165 LB/SY/2000 |
| 3085 | UNDERSEAL COURSE | GAL | SEE GENERAL NOTE FOR RATE INFORMATION | |

**NOTE:**

| | |
|---|---|
| (1) | *“D-GR HMA and SUPERPAVE MIXTURES”* Weight Based On 110Lbs/SY/In |
| (2) | 40% Emulsified Asphalt 60% Water Mixture Applied At 0.25 Gal/Sy. Paid using 0.1 Gal/Sy. |
| (3) | The TRAIL hot asphalt type options will only be allowed. |



**General**

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

| | | |
|---|---|---|
| TO: | Pampa Area Engineer | Wes.Kimmell@txdot.gov (interim) |
| CC: | Assistant Area Engineer | Zachary.Mayer@txdot.gov |
| | Director of Construction | Kenneth.Petr@txdot.gov |
| | Construction Manager | Thomas.Nagel@txdot.gov |

Contractor questions will be accepted through email, phone, or 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 responses will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

Verify all survey control prior to beginning construction. Notify Engineer of any discrepancies in control prior to beginning construction.

There are approximately *8* "reference markers" within the project limits. If a marker needs to be moved for any reason during construction operations, the Contractor is to remove it, install it in a temporary location and then reinstall it in its correct permanent location. Both the temporary and permanent locations are to be on a line that is perpendicular to the original "station" along the roadway. The temporary location is to be at or near the right-of-way. The permanent location is to be directed by the Engineer.

The following Standard Detail Sheets have been modified:

*TSR(3)-13* (MOD)
*TSR(4)-13* (MOD)

The Contractor is advised that *45 and 65* mph construction speed zones will be applicable for this project. The construction speed zone is to be limited to the actual work areas under construction.

Remove all excess material from bridge substructure resulting from all construction including planing, seal coat and ACP overlays. This work will not be paid for directly, but will be considered subsidiary to various bid items in the contract.

If Contractor damages any sprinkler heads, risers or water lines that are not to be relocated, he or she is required to replace or repair all damage at his or her own expense and to the Engineer’s satisfaction.

If portions of the right-of-way is used to store materials, equipment, and other uses with the approval of the Engineer, materials, equipment, etc., must either be located outside the *30* feet traffic safety clearance zone or be adequately protected.

Contractor facilities, such as asphalt plants, concrete plants, rock crushers, etc. are not allowed to be located within Department right of way.

The slopes indicated on the typical sections may be varied when fixed features required slopes are re-established as directed by the Engineer.

Dust caused by construction operations is to be controlled by applying water in conformance with the requirements of Item 204, "Sprinkling". Sprinkling for dust control will not be paid for directly, but will be considered as subsidiary work to the various bid items.

Any work necessary to provide temporary ingress and egress during construction (such as building gravel ramps, etc.) Will not be paid for directly, but will be considered as subsidiary work to the various bid items.

Verify all existing grades, elevations, and cross slopes that will connect to any proposed grades and elevations. If adjustments are warranted, the Contractor is to submit proposed changes to the Engineer for verification.

**Item 7 Legal Relations and Responsibilities**

No significant traffic generator events identified.

The total area disturbed for this project is approximately *28* acres. The disturbed area in this project, all project locations in the Contract, and the Contractor Project Specific Locations (PSLs), within 1 mile of the project limits, for the Contract will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer and to the local government that operates a separate storm sewer system.

**Item 8 Prosecution and Progress**

Create, maintain, and submit for approval, a Critical Path Method (CPM) project schedule and a Project Schedule Summary Report (PSSR) using computer software that is fully compatible with the latest version of Primavera Systems, Inc. or Primavera P6.



**Item 100 Preparing Right Of Way**

Preparing right of way will consist exclusively of mowing the vegetation to the width shown in the plans for Backfilling Pavement Edges. Set mower cutting height to cut as low as practical but no higher than 6 inches. Payment for Preparing Right Of Way will be made only in the case where mowing is actually used.

All tree removal activities are to take place outside nesting season. The nesting season is April 1st thru August 30th.

Remove trees of various diameters as shown on the plans, or as directed. Remove tree stumps to at least 12 in. below the surrounding terrain. Before backfilling holes treat the remainder of the stump with the following herbicide: Manufacture - Dow AgroScience; Product - Remedy or other as approved by the Engineer. Follow manufacture recommendations for herbicide. Backfill holes with acceptable material and compact flush with surrounding areas.
Identify each individual tree proposed to be removed. Obtain approval from the Engineer in the field for each individual tree proposed to be removed prior to any tree being removed.

**Item 110 Excavation**

Prior to excavation and placement of embankment, the top-soil (6-inch depth) within the areas to be disturbed will be bladed into a windrow, or stockpiled, outside the limits of the fill slope. After all grading is completed; the top soil (6-inch depth) will be spread over the disturbed areas that will not receive concrete riprap. This work is not paid for directly, but will be considered as subsidiary work to the various bid items.

**Item 132 Embankment**

The plasticity index for *TY B* will not exceed 25.

Materials excavated from the project will be allowed to be used on the project as directed by the Engineer.

**Item 134 Backfilling Pavement Edges**

Mow according to Item 100 just prior to backfill pavement edge operations.

Do not overlay any roadway unless the pavement edges can be backfilled within 24 hours. Preferably, both edges of all roadways should be completely backfilled at the end of each day's overlay operations. Damage to delineators, signs, or other roadside features will be repaired or replaced at the expense of the Contractor.

**Item 164 Seeding for Erosion Control**

Perform planting operations in accordance with the recommendations contained in the latest version of the TxDOT manual "A Guide to Roadside Vegetation Establishment" developed by the Vegetation Management Section of the Maintenance Division.

Seeding may require more than one mobilization, depending upon the Contractor's sequence of work.

**Item 166 Fertilizer**

Fertilize all areas of project to be seeded or sodded in accordance with the Amarillo District Vegetation Specification Sheet.

**Item 169 Soil Retention Blankets**

All Class 1 Slope Protection will be the roll-out type, having netting on both sides. Hydraulically placed materials will not be allowed.

**Item 247 Flexible Base**

| SPECIFICATION FOR FLEX BASE TY A OR B GR 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ***GRADING REQUIREMENTS PERCENT RETAINED – SIEVES SIEVE SIZES INCHES*** | | | | | ***SOIL CONSTANTS*** | | ***MAX WET BALL **** | ***MAX % INCREASE IN PASSING # 40 **** |
| ***1 3/4*** | ***7/8*** | ***3/8*** | ***# 4*** | ***# 40*** | *L.L. MAX* | *P.I. MAX* | | |
| *0* | *17-32* | *40-60* | *50-70* | *70-85* | *40* | *12* | *45* | *20* |

*Applies to TY A material only.

**Item 275 Cement Treatment (Road-Mixed)**

The intent of this item is to pulverize existing ACP and blend with the existing flexible base. Consider the existing ACP and flexible base as existing base material, and payment made under this item includes pulverizing the existing materials.

All required moisture added for the mixing and compaction operation is to be injected through the mixing process. Sprinkle the base material to prevent excessive loss of moisture as directed by the Engineer.

Backfill any vertical edge nightly with a material approved by the Engineer and at a minimum slope of 3:1.



**Item 300 Asphalts, Oils, and Emulsions**

Asphalt from different sources is not to be blended.

The "Open" seasons for applying asphaltic materials and mixtures for the listed items are to be as follows, unless authorized otherwise in writing by the Engineer:

| ITEMS | OPEN SEASON |
|---|---|
| 310, 314 | All Year |
| 316 | From May 1st through August 31st |
| 316 (Underseal Application) | From April 15th through October 31st |
| 351, 3076, 3077 | From April 15th through October 31st |

**Item 305 Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement**

Ensure that 100% of the reclaimed material passes a 2-in. sieve.

Stockpile the material at *SH 152/US 60 Intersection*

**Item 314 Emulsified Asphalt Treatment**

A *10* foot (min) wide strip of finished material adjacent to each shoulder is to be treated with an emulsified asphalt mixture. The mixture may be placed in one or more applications at a total rate of 0.25 gallons per square yard, unless directed otherwise by the Engineer. The homogeneous mixture may be composed of approximately 40% asphalt (MS-2 or SS-1) and 60% water, unless directed otherwise by the Engineer.

**Item 316 Seal Coat**

Place one course surface treatment on finished base course as soon as practical, but no later than 7 calendar days after completion of the base treatment process.

For items of work that include both summer and winter materials or the Asphalt (Multi Option), the Engineer will determine which asphalt to apply based on timing and prevailing weather conditions. The Asphalt (Multi Option) is to consist of the following choices and rates:

- AC-10 @ 0.38 GAL/SY
- CRS-2P @ 0.38 GAL/SY

The rates shown are for estimating purposes and that the Engineer can dictate higher or lower rates based on roadway conditions

**Item 320 Equipment for Asphalt Concrete Pavement**

A self-propelled, wheel mounted material transfer vehicle (MTV) capable of receiving hot mix from the haul trucks separate from the paver is required on all courses and all types of hot mix for this project. The MTV is to have a minimum storage capacity of approximately 25 tons, and equipped with a pivoting discharge conveyor and a means of completely remixing the hot mix prior to placement. The paver hopper is to be equipped with a separate surge storage insert with a minimum capacity of approximately 20 tons.

If used, the IR bar read out screen must be visible at all times to the Engineer.

When performing any scheduled work during night time hours (sunset to sunrise) all work areas will be fully illuminated using devices designed to not incumber or distract oncoming traffic. All illumination equipment must be approved by the Engineer in writing 48 hours before any scheduled night time work can begin. All associated equipment and labor is considered subsidiary to the item of work and will not be paid for directly.

**Item 354 Planing and Texturing Pavement**

The material planed from existing roadway is estimated at *2,632* CY for this project.

*2,632* CY of this material will be available for the Contractor for use as RAP.

The material planed and not utilized as RAP, is to remain the property of the state. The maximum size of the planed material is to be 2 in. The Contractor is to salvage and stockpile the material within the right-of-way at the following location:

- *SH 152/US 60 Intersection*

The stockpile(s) will be shaped as directed by the Engineer so that adequate measurement can be done. The excess material is not to be compacted by the equipment used in the stockpiling operation.

**Item 420 Concrete Substructures**

The Engineer will perform all job control testing for acceptance.

The Engineer will provide strength-testing equipment when required in accordance with the Contract-controlling tests.

Furnish and maintain the following testing equipment.

- Test Molds
- Wheelbarrow or other container acceptable for the sampling of the concrete.



**Item 432 Riprap**

24" tie bars (#3 bars at 18" c-c) are to be used across all construction joints. Tie bars should be 12'' into each side of the construction joint. When tying new riprap into existing riprap drill and epoxy grout 8" minimum into existing concrete. This is to be considered subsidiary to the payment for riprap.

**Item 462 Concrete Box Culverts and Storm Drains**

Joint material for reinforced concrete pipe is to be either cold applied preformed plastic gaskets or cold applied plastic asphalt sewer joint compound.

Backfill pipe up to the springline with granular material. The ponding method of backfilling will be allowed for the granular material only.

**Item 464 Reinforced Concrete Pipe**

Joint material for all pipes will be cold applied plastic asphalt sewer joint compound.

Bedding for pipe culverts is to be 6 inches of sand. The excavation required to place the sand will not be paid for directly but will be considered subsidiary to this item.

**Item 466 Headwalls and Wingwalls**

Do not use precast headwalls/wingwalls.

Use Class *C* concrete for headwalls/wingwalls

**Item 467 Safety End Treatment**

Pre-cast Safety End Treatments are allowed; however, a cast-in-place concrete apron will be required as shown on the plans & will be subsidiary to the Safety End Treatment.

Use Class *C* concrete.

**Item 496 Removing Structures**

Existing driveway culverts are to be retained by the landowner if they desire. If the condition of structure is beyond future use, or is destroyed during removal, it is to be disposed of by the Contractor.

**Item 502 Barricades, Signs, and Traffic Handling**

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 Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Temporary rumble strips will be required as shown on WZ(RS)-16 regardless of loose gravel, and/or soft or bleeding asphalt. Adjust the traffic control setup such that rumble strips are not placed in areas of heavily rutted pavements, unpaved surfaces, or horizontal curves. Temporary rumble strips will not be allowed on interstate highway.

The Contractor is to have the option of using either plastic drums, vertical panels, grabber cones or a combination where drums are shown as channelizing devices, as approved by the Engineer. Plastic drums are to be used in all transition areas in accordance with BC(8)-14 and WZ(TD)-17.

Furnish and install "soft shoulder" signs as directed by the Engineer. This work will not be paid for directly, but will be considered as subsidiary to item 502, "Barricades, Signs and Traffic Handling".

Provide a 3:1 backfill "safety slope" at the end of the day for any drop off exceeding 2" that is adjacent to a travel lane.

Lane closures are to be limited to a maximum of 5 miles.

If more than one lane closure location is desired a minimum of 2 miles passing zone is required between each location.

Notify the Engineer 24 hours prior to any lane closure.

**Item 504 Field Office and Laboratory**

The following buildings will be required for this project:

One Type (D) structure, asphalt mix control laboratory

Each building is to be provided before work is begun on the pertinent construction items for which it is needed.

Any laboratory furnished is to be a minimum of 10 ft in width.

Chain link security fence will be required to be placed around the perimeter of all field offices. The dimensions of the fence will be as directed by the Engineer.

The Type D structures are to be equipped with the following in addition to requirements specified under item 504:

a. Safety equipment
   (1) One eye wash station
   (2) One fire extinguisher
   (3) One first aid kit





Furnish a Type D structure for the asphalt mix control laboratory for the Engineer's exclusive use. In addition to requirements of item 504, this structure is to have a minimum height of 8 feet and provide a minimum 400 square feet gross floor area for permanently located plants or 200 square feet for temporary located plants serving one project. The floor area will be partitioned into a minimum of two interconnected rooms, each room furnished with an exterior door and a minimum of two windows. The floor is to have sufficient strength to support the testing equipment and have an impervious covering.

The Type D structures are to be adequately air conditioned and be furnished with a minimum of one desk, three chairs, one file cabinet, a telephone and one built-in equipment storage cabinet for the storage of nuclear equipment. The cabinet is to be a minimum of 3 feet wide by 2 feet deep by 3 feet high and have provisions for locking security. The structure is to be provided with a 240-volt electrical service entrance. The service is to consist of a minimum of 4 - 120 volt circuits with 20 amp breakers and no more than two grounded convenience outlets per circuit and provisions for a minimum of two 220-volt ovens with vents to the outside. The structure is to have a minimum of 2 convenience outlets per wall, and a utility sink with an adequate clean potable water supply for testing. The state building is to be equipped with at minimum a hot water dispenser or hot water heater capable of generating 1 gallon of water per use at 140º F with adequate water pressure. Space heaters for heating the structure are unacceptable. Portable structures are to be support blocked for stability and are to be tied down.

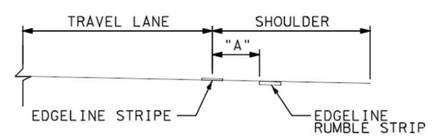
If needed, each building is to be moved to a new location as directed by the Engineer. Any building that is no longer required on the job after completion of the pertinent construction items may be released to the Contractor upon consent of the Engineer.

**Item 506 Temporary Erosion, Sedimentation, and Environmental Controls**

Erosion control devices are to be installed as needed in coordination with the work progress, or as directed by the Engineer.

**Item 533 Milled Rumble Stripes**

Use the applicable option in the table below for installation of the continuous milled depressions, as shown on the Depressed Shoulder Texturing Standard Sheet RS(4)-13.




EDGELINE RUMBLE STRIP DETAIL
NTS
(MIRROR FOR INSIDE SHOULDER)

| Shoulder Width (SW) | Rumble Strip Width (RS) | Placement "A" | Standard Option RS(1)-13 or RS(4)-13 |
|---|---|---|---|
| SW ≤ 2' | 8" RS | | Option 1 |
| 2' < SW < 6' | 8" - 16" RS | 4" off edgeline* | Option 3 |
| SW ≥ 6' | 16" RS | 24" off edgeline* | Option 4 |
| *All inside shoulders on divided highways will be placed 4" off the edgeline | | | |

**Item 540 Metal Beam Guard Fence**

Drive steel posts for metal beam guard fence a minimum of 1/3 of the post length to final specified depth.

**Item 542 Removing Metal Beam Guard Fence**

All MBGF, GET & TAS materials determined by the Engineer to be salvageable will remain property of the Department. Haul and stockpile all salvageable materials to the TxDOT Maintenance yard in Recreation Park, 12139 Frederick St, Pampa, TX 79065.

**Item 544 Guardrail End Treatments**

Use Single Guardrail End Treatment (Ty III)(Steel Post).

**Item 585 Ride Quality for Pavement Surfaces**

Use Surface Test Type B pay adjustment schedule 2 to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces."

**Item 644 Small Roadside Sign Supports and Assemblies**

All slip base signs will have a triangular slip base with a 2-bolt clamp to prevent rotation of signpost. Set screw type slip base will not be allowed.

A 7" x 1/2" diameter galvanized rod or #4 rebar is to be installed in the sign stub as shown on SMD(SLIP-1)-08 to prevent rotation of the sign stub in the concrete footing.

The exact locations of the large and small roadside signs are to be as designated by the Engineer.

The existing riprap aprons are to be removed and disposed of as approved by the Engineer. This work is not to be paid for directly, but will be considered subsidiary to the removal of foundations under this item.

Probe before drilling for foundations to determine the location of all utilities and structures. This work will not be paid for directly, but will be considered subsidiary to bid items involved.





Details for standard signs not shown on the signing standards of the signing detail plan sheets are to be in conformance with the department's "Standard Highway Sign Designs for Texas" Manual, Latest Edition.

Install a wrap of retroreflective sheeting conforming to DMS-8300 on all posts for small road sign assemblies. Sign post wraps will not be paid for directly, but are considered subsidiary to Item 644.

Install red sheeting on the posts containing the following signs:
Stop, Yield, Wrong Way & Do Not Enter

Install yellow sheeting on all other small sign posts.

Install all retroreflective wraps at a height of 4 ft. from bottom of the wrap to the edge of the travel lane surface. All retroreflective wraps will cover the full circumference of the sign post for a vertical width of 12 inches.

**Item 658 Delineator and Object Marker Assemblies**

For all ground mount applications provide hollow or tubular posts embedded in concrete using plastic wedged anchor system.

For all concrete barrier, bridge rail, and guard fence post mounted applications provide hollow or tubular posts with approved anchorage.

**Item 662 Work Zone Pavement Markings**

The adhesive used for temporary flexible-reflective roadway marker tabs is to be butyl rubber pads.

**Item 666 Reflectorized Pavement Markings**

Retroreflectivity Requirements:

All Type I markings must meet the minimum retroreflectivity values for edgeline markings, centerline or no passing barrier-line, and lane lines when measured any time after 3 days, but not later than 10 days after application:

- White markings: 250 millicandelas per square meter per lux (mcd/$m^2$/lx)
- Yellow markings: 175 mcd/$m^2$/lx

Retroreflectivity Measurements: Mobile or portable retroreflectometers may be used at the Contractor's discretion.

All Type I markings must meet the minimum retroreflectivity values for edgeline markings, centerline or no passing barrier-line, and lane lines when measured any time after 3 days, but not later than 10 days after application.

## Item 677 Eliminating Existing Pavement Markings and Markers

Do not remove any existing pavement markings in any area in which the contractor is not able to place work zone pavement markings at the proper location within the same day.

## Item 3076 Dense Graded Hot Mix Asphalt

Use aggregate that meets the SAC requirement of class A.

Use of RAS is not allowed.

Only fractionated RAP is allowed.

Provide a laboratory mixture design with the minimum target asphalt binder content shown below:

D-GR HMA TY B 4.6%

When laying ACP on a roadway that has two or more lanes and the work is being done under traffic, then the adjacent lane or lanes are to be overlaid by the end of the following day.

Make a smooth, clean, minimum 1 inch deep butt joint where each end of the new pavement joins the existing pavement. Any method approved by the Engineer can be used to make the joint.

The District Lab will perform a maximum of 2(two) design verification tests. If additional verification tests are needed, the Contractor will be billed $3,500.00 per each additional verification test required to obtain an approved asphaltic concrete pavement mix design.

Provide a Hot Asphalt type Tracking Resistant Asphalt Interlayer (TRAIL) for tack coat found on the TxDOT Material Producer List. The Emulsified Asphalt options will not be allowed.

If lime is not used as an antistrip agent, then the production and placement testing frequency for the Boil test (TEX-530-C) shown in the table below.

| Description | Test Method | Minimum Contractor Testing Frequency | Minimum Engineer Testing Frequency |
|---|---|---|---|
| Boil test | Tex-530-C | 1 per lot | 1 per 12 sublots |

If used, the IR bar read out screen must be visible at all times to the Engineer.





## Item 3077 Superpave Mixtures

Use aggregate that meets the SAC requirement of class

A. Only fractionated RAP is allowed.

Use of RAS is not allowed.

When laying ACP on a roadway that has two or more lanes and the work is being done under traffic, then the adjacent lane or lanes are to be overlaid by the end of the following day.

Make a smooth, clean, minimum 1 inch deep butt joint where each end of the new pavement joins the existing pavement. Any method approved by the Engineer can be used to make the joint.

The District Lab will perform a maximum of 2(two) design verification tests. If additional verification tests are needed, the Contractor will be billed $3,500.00 per each additional verification test required to obtain an approved asphaltic concrete pavement mix design.

Provide a Hot Asphalt type Tracking Resistant Asphalt Interlayer (TRAIL) for tack coat found on the TxDOT Material Producer List. The Emulsified Asphalt options will not be allowed.

If lime is not used as an antistrip agent, then the production and placement testing frequency for the Boil test (TEX-530-C) shown in the table below.

| Description | Test Method | Minimum Contractor Testing Frequency | Minimum Engineer Testing Frequency |
|---|---|---|---|
| Boil test | Tex-530-C | 1 per lot | 1 per 12 sublots |

If used, the IR bar read out screen must be visible at all times to the Engineer.

## Item 3085 Underseal Course

For estimating purposes the Underseal Course is applied at a rate of 0.25 Gal/SY.

| Item | Option | Material | Application Rate | Conversion Rate |
|---|---|---|---|---|
| 316 | Seal Coat | AGGR[4] | 110 SY/CY | 0.66[1] |
| | | ASPH[5] | 0.38 Gal/SY | |
| 3002 | Spray Applied Underseal Membrane | ASPH | 0.25 Gal/SY | 1.0[2] |
| 3019 | TRAIL-Ultrafuse and Jebro | ASPH | 0.15 Gal/SY | 1.67[3] |

1. Aggregate is considered subsidiary to the asphalt. For estimating purposes 0.66 Gallons of Seal Coat Asphalt is equivalent to 1.0 Gallons of Underseal Course. Refer to Item 316 in these General notes for more information on this option.
2. For estimating purposes 1.0 Gallon of Spray Applied Underseal Membrane is equivalent to 1.0 Gallon of Underseal Course. Refer to Special Specification SS3002 for more information on this item.
3. For estimating purposes 1.67 Gallons of TRAIL is equivalent to 1.0 Gallons of Underseal Course. Refer to Special Specification SS3085 for more information on this item.
4. Use GR4 TY B SAC B in accordance with Item 316
5. Use AC-10 or other equivalent as approved by the Engineer.

| Example: If TRAIL Option Is Selected For Use. |
|---|
| A conversion rate of 1.67 will be applied to every one gallon of oil that is used. |
| If the NET gallons determined after strapping the tank is 1,000 gallons. Then the 1,000 gallons will be multiplied by the 1.67 conversion rate in the table above. |
| 1,000 GAL * 1.67 CR = 1670 gallons for payment. |

Ultrafuse and Jebro is the only allowed “seal” for the TRAIL option. None of the “tack” options are allowed.

If the Spray Applied Underseal Membrane or TRAIL options are used, the use of tack is not required.

**Item 6001 Portable Changeable Message Sign**

Supply *4* Portable Changeable Message Signs (Type II – Lamp Matrix) for this project. This work will be paid at the unit price bid for each unit, which will include any moving, maintenance, and removing of the PCMS. No payment will be made for removing and replacing damaged PCMS. The Portable Changeable Message Signs will become property of the Contractor at the completion of the project.

If the Contractor chooses to have more than one lane closure set-up at a time, provide additional PCMS in accordance with TCP at no additional charge to the department.

**Item 6185 Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)**

In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for this project, provide 0 additional shadow vehicle(s) with TMA for TCP *(2-1)-18, (2–2)-18, (2–3)-18, (3–1)-13, (3–3)-14, (7–1)-13* as detailed on the General Notes of this standard sheets.

Therefore, *2* total shadow vehicles with TMA will be required for this type of work. The Contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

# QUANTITY SHEET

**CONTROLLING PROJECT ID** 0169-07-053 **DISTRICT** Amarillo **COUNTY** Gray
**HIGHWAY** US 60

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **CONTROL SECTION JOB** | **0169-07-053** | | **0169-07-054** | | TOTAL EST. | TOTAL FINAL |
| | | | **PROJECT ID** | **A00122774** | | **A00133040** | | | |
| | | | **COUNTY** | **Gray** | | **Gray** | | | |
| | | | **HIGHWAY** | **US 60** | | **US 60** | | | |
| **ALT** | **BID CODE** | **DESCRIPTION** | **UNIT** | EST. | FINAL | EST. | FINAL | | |
| | 100-6009 | PREPARING ROW (TREE) (6" TO 24" DIA) | EA | 64.000 | | 8.000 | | 72.000 | |
| | 105-6020 | REMOVING STAB BASE & ASPH PAV (12") | SY | 4,996.000 | | 5,494.000 | | 10,490.000 | |
| | 105-6041 | REMOVING STAB BASE AND ASPH PAV(8") | SY | 1,336.000 | | 595.000 | | 1,931.000 | |
| | 110-6001 | EXCAVATION (ROADWAY) | CY | 12,421.000 | | 1,845.000 | | 14,266.000 | |
| | 132-6004 | EMBANKMENT (FINAL)(DENS CONT)(TY B) | CY | 16,261.000 | | 2,495.000 | | 18,756.000 | |
| | 134-6011 | BACKFILLING PAVEMENT EDGES | CY | 800.000 | | 19.000 | | 819.000 | |
| | 150-6001 | BLADING | STA | | | 32.000 | | 32.000 | |
| | 164-6036 | DRILL SEEDING (PERM) (RURAL) (CLAY) | AC | 19.860 | | 6.480 | | 26.340 | |
| | 164-6053 | DRILL SEEDING (TEMP)(WARM OR COOL) | AC | 10.410 | | 6.480 | | 16.890 | |
| | 169-6003 | SOIL RETENTION BLANKETS (CL 1) (TY C) | SY | 526.000 | | | | 526.000 | |
| | 247-6228 | FL BS (CMP IN PLC)(TY A OR B GR 4)(9") | SY | 81,091.000 | | | | 81,091.000 | |
| | 247-6258 | FL BS (CMP IN PLC)(TY A OR B GR4)(12") | SY | 2,583.000 | | 12,197.000 | | 14,780.000 | |
| | 251-6028 | REWORK BS MTL (TY B) (8") (DENS CONT) | SY | 19,709.000 | | | | 19,709.000 | |
| | 251-6081 | REWORK BS MTL (TY B)(12")(DENS CONT) | SY | 19,605.000 | | | | 19,605.000 | |
| | 275-6001 | CEMENT | TON | 904.000 | | 132.000 | | 1,036.000 | |
| | 275-6010 | CEMENT TREAT (SUBGRADE) (8") | SY | 83,674.000 | | 12,197.000 | | 95,871.000 | |
| | 310-6009 | PRIME COAT (MC-30) | GAL | 20,921.000 | | 3,049.000 | | 23,970.000 | |
| | 314-6014 | EMULS ASPH (EROSN CONT)(MS-2) | GAL | 12,137.000 | | 3,919.000 | | 16,056.000 | |
| | 316-6001 | ASPH (MULTI OPTION) | GAL | 31,796.000 | | 4,635.000 | | 36,431.000 | |
| | 316-6175 | AGGR(TY-B GR-4 SAC-B) | CY | 758.000 | | 111.000 | | 869.000 | |
| | 354-6021 | PLANE ASPH CONC PAV(0" TO 2") | SY | 1,174.000 | | | | 1,174.000 | |
| | 354-6041 | PLANE ASPH CONC PAV (1.5") | SY | | | 13,444.000 | | 13,444.000 | |
| | 354-6057 | PLANE ASPH CONC PAV (4") | SY | | | 14,048.000 | | 14,048.000 | |
| | 432-6001 | RIPRAP (CONC)(4 IN) | CY | 223.000 | | 1.000 | | 224.000 | |
| | 432-6045 | RIPRAP (MOW STRIP)(4 IN) | CY | 30.000 | | | | 30.000 | |
| | 462-6045 | CONC BOX CULV (3 FT X 2 FT)(EXTEND) | LF | 58.000 | | 28.000 | | 86.000 | |
| | 462-6046 | CONC BOX CULV (3 FT X 3 FT)(EXTEND) | LF | 16.000 | | | | 16.000 | |
| | 462-6051 | CONC BOX CULV (5 FT X 3 FT)(EXTEND) | LF | 7.000 | | | | 7.000 | |
| | 464-6005 | RC PIPE (CL III)(24 IN) | LF | 104.000 | | | | 104.000 | |
| | 466-6180 | WINGWALL (PW - 1) (HW=5 FT) | EA | 4.000 | | | | 4.000 | |
| | 467-6101 | SET (TY I)(S=3 FT)(HW=2FT)(4:1)(C) | EA | 5.000 | | 2.000 | | 7.000 | |
| | 467-6172 | SET (TY I)(S= 5 FT)(HW= 3 FT)(4:1) (C) | EA | 1.000 | | | | 1.000 | |
| | 467-6391 | SET (TY II) (24 IN) (RCP) (4: 1) (P) | EA | 2.000 | | | | 2.000 | |
| | 496-6006 | REMOV STR (HEADWALL) | EA | 4.000 | | | | 4.000 | |
| | 496-6007 | REMOV STR (PIPE) | LF | 306.000 | | | | 306.000 | |
| | 500-6001 | MOBILIZATION | LS | 100.00% | | | | 100.00% | |
| | 502-6001 | BARRICADES, SIGNS AND TRAFFIC HANDLING | MO | 20.000 | | | | 20.000 | |

# QUANTITY SHEET

**CONTROLLING PROJECT ID** 0169-07-053 **DISTRICT** Amarillo **COUNTY** Gray
**HIGHWAY** US 60

| | | | | CONTROL SECTION JOB | 0169-07-053 | | 0169-07-054 | | TOTAL EST. | TOTAL FINAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PROJECT ID | A00122774 | | A00133040 | | | |
| | | | | COUNTY | Gray | | Gray | | | |
| | | | | HIGHWAY | US 60 | | US 60 | | | |
| ALT | BID CODE | DESCRIPTION | UNIT | | EST. | FINAL | EST. | FINAL | | |
| | 506-6040 | BIODEG EROSN CONT LOGS (INSTL) (8") | LF | | 1,960.000 | | 420.000 | | 2,380.000 | |
| | 506-6043 | BIODEG EROSN CONT LOGS (REMOVE) | LF | | 1,960.000 | | 420.000 | | 2,380.000 | |
| | 530-6004 | DRIVEWAYS (CONC) | SY | | | | 101.000 | | 101.000 | |
| | 530-6005 | DRIVEWAYS (ACP) | SY | | 2,038.000 | | 493.000 | | 2,531.000 | |
| | 530-6008 | TURNOUTS (ACP) | SY | | 85.000 | | 67.000 | | 152.000 | |
| | 533-6001 | RUMBLE STRIPS (SHOULDER) | LF | | 131,616.000 | | | | 131,616.000 | |
| | 533-6002 | RUMBLE STRIPS (CENTERLINE) | LF | | 66,276.000 | | | | 66,276.000 | |
| | 540-6002 | MTL W-BEAM GD FEN (STEEL POST) | LF | | 7,150.000 | | | | 7,150.000 | |
| | 542-6001 | REMOVE METAL BEAM GUARD FENCE | LF | | 1,970.000 | | | | 1,970.000 | |
| | 544-6001 | GUARDRAIL END TREATMENT (INSTALL) | EA | | 18.000 | | | | 18.000 | |
| | 544-6003 | GUARDRAIL END TREATMENT (REMOVE) | EA | | 4.000 | | | | 4.000 | |
| | 560-6001 | MAILBOX INSTALL-S (TWG-POST) TY 1 | EA | | 3.000 | | 9.000 | | 12.000 | |
| | 560-6002 | MAILBOX INSTALL-D (TWG-POST) TY 1 | EA | | | | 9.000 | | 9.000 | |
| | 560-6025 | RELOCATE EXISTING MAILBOX | EA | | 3.000 | | 2.000 | | 5.000 | |
| | 644-6001 | IN SM RD SN SUP&AM TY10BWG(1)SA(P) | EA | | 27.000 | | 1.000 | | 28.000 | |
| | 644-6004 | IN SM RD SN SUP&AM TY10BWG(1)SA(T) | EA | | 57.000 | | 7.000 | | 64.000 | |
| | 644-6007 | IN SM RD SN SUP&AM TY10BWG(1)SA(U) | EA | | 2.000 | | 1.000 | | 3.000 | |
| | 644-6030 | IN SM RD SN SUP&AM TYS80(1)SA(T) | EA | | 10.000 | | 1.000 | | 11.000 | |
| | 644-6068 | RELOCATE SM RD SN SUP&AM TY 10BWG | EA | | 4.000 | | | | 4.000 | |
| | 644-6076 | REMOVE SM RD SN SUP&AM | EA | | 80.000 | | 11.000 | | 91.000 | |
| | 658-6060 | REMOVE DELIN & OBJECT MARKER ASSMS | EA | | 50.000 | | 9.000 | | 59.000 | |
| | 658-6062 | INSTL DEL ASSM (D-SW)SZ 1(BRF)GF2(BI) | EA | | 65.000 | | | | 65.000 | |
| | 658-6087 | INSTL DEL ASSM (D-SY)SZ 1(YFLX)GND(BR) | EA | | 14.000 | | | | 14.000 | |
| | 658-6099 | INSTL OM ASSM (OM-2Z)(WFLX)GND | EA | | 7.000 | | 1.000 | | 8.000 | |
| | 662-6001 | WK ZN PAV MRK NON-REMOV (W)4"(BRK) | LF | | 11,119.000 | | | | 11,119.000 | |
| | 662-6004 | WK ZN PAV MRK NON-REMOV (W)4"(SLD) | LF | | 88,950.000 | | 6,358.000 | | 95,308.000 | |
| | 666-6005 | REFL PAV MRK TY I (W)4"(DOT)(090MIL) | LF | | 2,088.000 | | | | 2,088.000 | |
| | 666-6035 | REFL PAV MRK TY I (W)8"(SLD)(090MIL) | LF | | 2,210.000 | | | | 2,210.000 | |
| | 666-6047 | REFL PAV MRK TY I (W)24"(SLD)(090MIL) | LF | | 160.000 | | | | 160.000 | |
| | 666-6054 | REFL PAV MRK TY I (W)(ARROW)(100MIL) | EA | | 5.000 | | | | 5.000 | |
| | 666-6071 | REFL PAV MRK TY I(W)(LNDP ARW)(090MIL) | EA | | 8.000 | | | | 8.000 | |
| | 666-6078 | REFL PAV MRK TY I (W)(WORD)(100MIL) | EA | | 4.000 | | | | 4.000 | |
| | 672-6007 | REFL PAV MRKR TY I-C | EA | | 522.000 | | 14.000 | | 536.000 | |
| | 672-6009 | REFL PAV MRKR TY II-A-A | EA | | 2,760.000 | | 326.000 | | 3,086.000 | |
| | 3076-6001 | D-GR HMA TY-B PG64-22 | TON | | 13,806.000 | | 2,013.000 | | 15,819.000 | |
| | 3077-6058 | SP MIXESSP-DSAC-A PG70-28 | TON | | 65,163.000 | | 7,538.000 | | 72,701.000 | |
| | 3077-6075 | TACK COAT | GAL | | 51,108.000 | | 1,509.000 | | 52,617.000 | |

# QUANTITY SHEET

**CONTROLLING PROJECT ID** 0169-07-053 **DISTRICT** Amarillo **COUNTY** Gray
**HIGHWAY** US 60

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **CONTROL SECTION JOB** | | **0169-07-053** | | **0169-07-054** | | TOTAL EST. | TOTAL FINAL |
| | | **PROJECT ID** | | **A00122774** | | **A00133040** | | | |
| | | **COUNTY** | | **Gray** | | **Gray** | | | |
| | | **HIGHWAY** | | **US 60** | | **US 60** | | | |
| **ALT** | **BID CODE** | **DESCRIPTION** | **UNIT** | EST. | FINAL | EST. | FINAL | | |
| | 3085-6001 | UNDERSEAL COURSE | GAL | 90,525.000 | | 13,169.000 | | 103,694.000 | |
| | 6001-6002 | PORTABLE CHANGEABLE MESSAGE SIGN | EA | 4.000 | | | | 4.000 | |
| | 6024-6002 | HPPM W/RET REQ TY I(W)4"(BRK)(090MIL) | LF | 8,633.000 | | 278.090 | | 8,911.090 | |
| | 6024-6005 | HPPM W/RET REQ TY I(W)4"(SLD)(090MIL) | LF | 146,115.000 | | 11,957.000 | | 158,072.000 | |
| | 6024-6014 | HPPM W/RET REQ TY I(Y)4"(BRK)(090MIL) | LF | 6,304.000 | | 3,259.000 | | 9,563.000 | |
| | 6024-6017 | HPPM W/RET REQ TY I(Y)4"(SLD)(090MIL) | LF | 102,802.000 | | 13,035.000 | | 115,837.000 | |
| | 6185-6002 | TMA (STATIONARY) | DAY | 200.000 | | | | 200.000 | |
| | 6185-6003 | TMA (MOBILE OPERATION) | HR | 80.000 | | | | 80.000 | |
| | 18 | EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART) | LS | 1.000 | | | | 1.000 | |
| | | SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING) | LS | 1.000 | | | | 1.000 | |

| SUMMARY OF REMOVAL ITEMS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| LOCATION | | 100 6009 | 105 6020 | 105 6041 | 354 6041 | 354 6021 | 354 6057 | 496 6006 | 496 6007 |
| | | PREPARING ROW (TREE) (6" TO 24" DIA) | REMOVING STAB BASE & ASPH PAV (12") | REMOVING STAB BASE AND ASPH PAV(8") | PLANE ASPH CONC PAV (1.5") | PLANE ASPH CONC PAV(0" TO 2") | PLANE ASPH CONC PAV (4") | REMOV STR (HEADWALL) | REMOV STR (PIPE) |
| From | To | EA | SY | SY | SY | SY | SY | EA | LF |
| 49+00 | 54+83 | | | | 1814 | | 3368 | | |
| 54+83 | 58+21 | | | | 1127 | | 1502 | | |
| 58+21 | 87+75 | | | | 10094 | | 8832 | | |
| 87+75 | 91+00 | | 524 | 47 | 409 | | 345 | | |
| 91+00 | 117+35 | 7 | 4684 | 548 | | | | | |
| 117+35 | 119+54 | 1 | 286 | | | | | | |
| **CSJ 0169-07-054 TOTAL** | | **8** | **5494** | **595** | **13444** | | **14048** | | |
| 119+54 | 275+00 | 17 | | 218 | | | | | |
| 275+00 | 362+68 | 2 | | 288 | | | | | |
| 362+68 | 381+00 | 3 | | | | | | 2 | 153 |
| 381+00 | 385+00 | 1 | | | | | | | |
| 385+00 | 485+00 | 2 | | 333 | | | | | |
| 485+00 | 489+50 | | | | | | | | |
| 489+50 | 535+00 | | | | | | | | |
| 535+00 | 544+00 | | | | | | | | |
| 544+00 | 555+20 | 8 | | | | | | | |
| 555+20 | 564+20 | | | | | | | | |
| 564+20 | 609+70 | 10 | | 309 | | | | | |
| 609+70 | 614+20 | | | | | | | | |
| 614+20 | 685+00 | 16 | | 171 | | | | | |
| 685+00 | 758+00 | | | 17 | | | | | |
| 758+00 | 806+59 | | | | | 1174 | | | |
| SH 152 SHEET 1 OF 1 | | 5 | 4996 | | | | | 2 | 153 |
| **CSJ 0169-07-053 TOTAL** | | **64** | **4996** | **1336** | | **1174** | | **4** | **306** |
| **PROJECT TOTALS** | | **72** | **10490** | **1931** | **13444** | **1174** | **14048** | **4** | **306** |

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04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# REMOVAL QUNATITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 15 |

USGO_GEN-SUM-REMOVAL.dgn

| SUMMARY OF ROADWAY ITEMS | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | | 110 6001 | 132 6004 | 150 6001 | 247 6228 | 247 6258 | 251 6028 | 251 6081 | 275 6001 | 275 6010 | 310 6009 | 316 6001 | 316 6175 | 530 6005 | 530 6004 | 533 6001 |
| | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | BLADING | FL BS (CMP IN PLC) (TY A OR B GR 4) (9") | FL BS (CMP IN PLC) (TY A OR B GR4) (12") | REWORK BS MTL (TY B) (8") (DENS CONT) | REWORK BS MTL (TY B) (12") (DENS CONT) | CEMENT 21.6 LBS/SY | CEMENT TREAT (SUBGRADE) (8") | PRIME COAT (MC-30) 0.25 GAL/SY | ASPH (MULTI OPTION) 0.38 GAL/SY | AGGR (TY-B GR-4 SAC-B) 110 SY/CY | DRIVEWAYS (ACP) | DRIVEWAYS (CONC) | RUMBLE STRIPS (SHOULDER) |
| FROM | TO | CY | CY | STA | SY | SY | SY | SY | TON | SY | GAL | GAL | CY | SY | SY | LF |
| 49+00 | 54+83 | | | | | | | | | | | | | | | |
| 54+83 | 58+21 | | | | | | | | | | | | | | | |
| 58+21 | 86+60 | | | | | | | | | | | | | | | |
| 86+60 | 87+75 | | | | | | | | | | | | | | | |
| 87+75 | 119+54 | 1845 | 2495 | 32 | | 12197 | | | 132 | 12197 | 3049 | 4635 | 111 | 493 | 101 | |
| 119+54 | 125+40 | | | | | | | | | | | | | | | |
| **CSJ 0169-07-054 TOTAL** | | **1845** | **2495** | **32** | | **12197** | | | **132** | **12197** | **3049** | **4635** | **111** | **493** | **101** | |
| **125+40** | **139+18** | | | | | | | | | | | | | | | |
| 139+18 | 215+50 | | | | | | | | | | | | | 58 | | 14926 |
| 215+50 | 262+00 | | | | | | | | | | | | | 160 | | 9300 |
| 262+00 | 275+00 | | | | | | | | | | | | | | | 2600 |
| 275+00 | 284+00 | 474 | 392 | | 2800 | | | 1400 | 30 | 2800 | 700 | 1064 | 25 | | | 1800 |
| 284+00 | 362+68 | 4751 | 6379 | | 29531 | | | 14766 | 319 | 29531 | 7383 | 11222 | 268 | 288 | | 14916 |
| 362+68 | 386+40 | 667 | 895 | | 6213 | | | 3107 | 67 | 6213 | 1553 | 2361 | 56 | | | 4208 |
| 386+40 | 390+00 | 166 | 12 | | 665 | | | 333 | 7 | 665 | 166 | 253 | 6 | | | 548 |
| 390+00 | 485+00 | 3 | 19 | | | | | | | | | | | 735 | | 19000 |
| 485+00 | 489+50 | 59 | 120 | | 650 | | 306 | | 7 | 650 | 163 | 247 | 6 | | | 900 |
| 489+50 | 535+00 | 742 | 1320 | | 8594 | | 4044 | | 93 | 8594 | 2149 | 3266 | 78 | | | 9100 |
| 535+00 | 544+00 | 633 | 348 | | 3000 | | 1412 | | 32 | 3000 | 750 | 1140 | 27 | | | 1800 |
| 544+00 | 555+20 | 916 | 414 | | 4231 | | 1991 | | 46 | 4231 | 1058 | 1608 | 38 | | | 2240 |
| 555+20 | 564+20 | 606 | 292 | | 3000 | | 1412 | | 32 | 3000 | 750 | 1140 | 27 | | | 1800 |
| 564+20 | 609+70 | 880 | 1162 | | 8594 | | 4044 | | 93 | 8594 | 2149 | 3266 | 78 | 609 | | 9100 |
| 609+70 | 614+20 | 23 | 239 | | 650 | | 306 | | 7 | 650 | 163 | 247 | 6 | | | 900 |
| 614+20 | 685+00 | 3 | 4 | | | | | | | | | | | 171 | | 14160 |
| 685+00 | 689+50 | 58 | 72 | | 650 | | 306 | | 7 | 650 | 163 | 247 | 6 | | | 900 |
| 689+50 | 749+00 | 996 | 2014 | | 11212 | | 5276 | | 121 | 11212 | 2803 | 4261 | 102 | 17 | | 11900 |
| 749+00 | 758+00 | 31 | 491 | | 1300 | | 612 | | 14 | 1300 | 325 | 494 | 12 | | | 1800 |
| 758+00 | 789+00 | 323 | 1164 | | | | | | | | | | | | | 6200 |
| 789+00 | 798+00 | | | | | | | | | | | | | | | 1800 |
| 798+00 | 806+59 | | | | | | | | | | | | | | | 1718 |
| SH 152 SHEET 1 OF 1 | | 1090 | 924 | | | 2583 | | | 28 | 2583 | 646 | 982 | 23 | | | |
| **CSJ 0169-07-053 TOTAL** | | **12421** | **16261** | | **81091** | **2583** | **19709** | **19605** | **904** | **83674** | **20921** | **31796** | **758** | **2038** | | **131616** |
| **PROJECT TOTALS** | | **14266** | **18756** | **32** | **81091** | **14780** | **19709** | **19605** | **1035** | **95871** | **23970** | **36431** | **869** | **2531** | **101** | **131616** |

| SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS | | | |
|---|---|---|---|
| LOCATION | | 662 6001 | 662 6004 |
| | | WK ZN PAV MRK NON-REMOV (W) 4" (BRK) | WK ZN PAV MRK NON-REMOV (W) 4" (SLD) |
| From | To | LF | LF |
| Phase 2: 3-Lane EB | | | |
| CSJ: 0169-07-054 | | | |
| 87+75 | 119+54 | | 3179 |
| Phase 2: EB Super 2 | | | |
| CSJ: 0169-07-053 | | | |
| 275+00 | 368+60 | 2340 | 18720 |
| 485+00 | 564+20 | 1980 | 15840 |
| 685+00 | 758+00 | 1825 | 14600 |
| Phase 2: EB with MBGF | | | |
| CSJ: 0169-07-053 | | | |
| 285+85 | 290+85 | 125 | 1000 |
| Phase 2: 3-Lane WB | | | |
| CSJ: 0169-07-054 | | | |
| 87+75 | 119+54 | | 3179 |
| Phase 2: WB Super 2 | | | |
| CSJ: 0169-07-053 | | | |
| 275+00 | 385+00 | 2750 | 22000 |
| 535+00 | 614+20 | 1980 | 15840 |
| Phase 2: WB with MBGF | | | |
| CSJ: 0169-07-053 | | | |
| 287+15 | 291+90 | 119 | 950 |
| | | | |
| **CSJ: 0169-07-054 TOTAL** | | | **6358** |
| **CSJ: 0169-07-053 TOTAL** | | **11119** | **88950** |
| **PROJECT TOTALS** | | **11119** | **95308** |

05/17/2021

STATE OF TEXAS
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| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# ROADWAY QUANTITY SUMMARY

SHEET 1 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 16 |

| SUMMARY OF ROADWAY ITEMS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | | 533 6002 | 3076 6001 | 3077 6058 | 3077 6058 | 3077 6058 | 3077 6058 | 3077 6075 | 3085 6001 | 432 6001 |
| | | RUMBLE STRIPS (CENTERLINE) | D-GR HMA TY-B PG64-22 330 LBS/SY | OVERLAY SP MIXES SP-D SAC-A PG70-28 165 LBS/SY | OVERLAY SP MIXES SP-D SAC-A PG70-28 440 LBS/SY | WIDENING SP MIXES SP-D SAC-A PG70-28 220 LBS/SY | OVERLAY SP MIXES SP-D SAC-A PG70-28 330 LBS/SY | TACK COAT 0.13 GAL/SY | UNDERSEAL COURSE 0.25 GAL/SY | RIPRAP (CONC) (4 IN) |
| FROM | TO | LF | TON | TON | TON | TON | TON | GAL | GAL | CY |
| 49+00 | 54+83 | | | 150 | 741 | | | | 1296 | |
| 54+83 | 58+21 | | | 93 | 331 | | | | 657 | |
| 58+21 | 86+60 | | | 833 | 1943 | | | | 4732 | |
| 86+60 | 87+75 | | | 93 | | | | | 188 | |
| 87+75 | 119+54 | | 2013 | 1690 | | 1277 | | 1509 | 5122 | 1 |
| 119+54 | 125+40 | | | 388 | | | | | 1175 | |
| **CSJ 0169-07-054 TOTAL** | | | **2013** | **3246** | **3015** | **1277** | | **1509** | **13169** | **1** |
| 125+40 | 139+18 | | | 1216 | | | | | 3685 | |
| 139+18 | 215+50 | 7632 | | | | | 3731 | | 8480 | |
| 215+50 | 262+00 | 4650 | | | | | 5456 | 4299 | 8267 | |
| 262+00 | 275+00 | 1300 | | | | | 953 | 751 | 1444 | |
| 275+00 | 284+00 | 900 | 462 | | | 290 | 792 | 966 | 1200 | |
| 284+00 | 362+43 | 7843 | 4873 | | | 3089 | 8052 | 9994 | 12200 | 186 |
| 362+43 | 386+40 | 2104 | 1025 | | | 659 | 2109 | 2441 | 3196 | |
| 386+40 | 390+00 | 188 | 110 | | | 70 | 337 | 347 | 510 | |
| 390+00 | 485+00 | 9500 | | | | | 6967 | 5489 | 10556 | |
| 485+00 | 489+50 | 450 | 107 | | | 67 | 363 | 365 | 550 | |
| 489+50 | 535+00 | 4550 | 1418 | | | 899 | 4004 | 4217 | 6067 | |
| 535+00 | 544+00 | 900 | 495 | | | 312 | 858 | 1044 | 1300 | |
| 544+00 | 555+20 | 1120 | 698 | | | 443 | 1150 | 1429 | 1742 | |
| 555+20 | 564+20 | 900 | 495 | | | 312 | 858 | 1044 | 1300 | |
| 564+20 | 609+70 | 4550 | 1418 | | | 899 | 4087 | 4283 | 6193 | |
| 609+70 | 614+20 | 450 | 107 | | | 67 | 363 | 365 | 550 | |
| 614+20 | 685+00 | 7080 | | | | | 5192 | 4091 | 7867 | |
| 685+00 | 689+50 | 450 | 107 | | | 67 | 363 | 365 | 550 | |
| 689+50 | 749+00 | 5950 | 1850 | | | 1177 | 5236 | 5516 | 7933 | |
| 749+00 | 758+00 | 900 | 215 | | | 134 | 726 | 730 | 1100 | 37 |
| 758+00 | 789+00 | 3100 | | | | | 2273 | 1791 | 3444 | |
| 789+00 | 798+00 | 900 | | | | | 759 | 598 | 1150 | |
| 798+00 | 806+59 | 859 | | | | | 819 | 645 | 1240 | |
| SH 152 SHEET 1 OF 1 | | | 426 | | | 15 | | 336 | | |
| **CSJ 0169-07-053 TOTAL** | | **66276** | **13806** | **1216** | | **8498** | **55449** | **51108** | **90525** | **223** |
| **PROJECT TOTALS** | | **66276** | **15819** | **4462** | **3015** | **9775** | **55449** | **52617** | **103694** | **224** |

05/17/2021

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| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# ROADWAY QUANTITY SUMMARY

SHEET 2 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 17 |

| DRIVEWAY SUMMARY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PROPOSED DRIVEWAY DIMENSIONS | | | | | 530 6005 | 530 6004 |
| STATION | DRIVEWAY NUMBER | LT/RT | LOCATION | EXISTING SURFACE | W1 | W2 | R1 | R2 | L | DRIVEWAYS (ACP) | DRIVEWAYS (CONC) |
| | | | | | | | | | | SY | SY |
| US 60 | | | | | | | | | | | |
| 90+87.00 | 1 | RT | US 60 | CONCRETE | 52 | 22 | 24 | 24 | 15 | | 47 |
| 92+52.00 | 2 | RT | US 60 | CONCRETE | 56 | 26 | 24 | 24 | 15 | | 54 |
| 93+35.00 | 3 | RT | US 60 | ASPHALT | 48 | 18 | 24 | 24 | 15 | 41 | |
| 94+44.00 | 4 | RT | US 60 | ASPHALT | 60 | 30 | 24 | 24 | 15 | 61 | |
| 96+36.00 | 5 | RT | US 60 | GRAVEL | 50 | 20 | 24 | 24 | 15 | 44 | |
| 101+10.00 | 6 | RT | US 60 | ASPHALT | 42 | 12 | 24 | 24 | 15 | 31 | |
| 101+89.00 | 7 | LT | US 60 | ASPHALT | 48 | 18 | 24 | 24 | 15 | 41 | |
| 103+04.00 | 8 | LT | US 60 | GRAVEL | 42 | 12 | 24 | 24 | 15 | 31 | |
| 103+40.00 | 9 | RT | US 60 | ASPHALT | 54 | 24 | 24 | 24 | 15 | 51 | |
| 105+64.00 | 10 | RT | US 60 | GRAVEL | 40 | 10 | 24 | 24 | 15 | 27 | |
| 107+91.00 | 11 | RT | US 60 | GRAVEL | 42 | 12 | 24 | 24 | 15 | 31 | |
| 108+14.00 | 12 | RT | US 60 | GRAVEL | 46 | 16 | 24 | 24 | 15 | 37 | |
| 110+06.00 | 13 | RT | US 60 | GRAVEL | 42 | 12 | 24 | 24 | 15 | 31 | |
| 115+64.00 | 14 | LT | US 60 | GRAVEL | 42 | 12 | 24 | 24 | 15 | 31 | |
| 117+66.00 | 15 | LT | US 60 | ASPHALT | 46 | 16 | 24 | 24 | 15 | 37 | |
| 153+60.54 | 16 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 18 | |
| 143+62.27 | 17 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 21 | |
| 153+60.54 | 18 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 19 | |
| 226.05.24 | 19 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 32 | |
| 231+09.69 | 20 | LT | US 60 | ASPHALT | 36 | 18 | 9 | 10 | 4 | 11 | |
| 232+68.65 | 21 | LT | US 60 | ASPHALT | 51 | 21 | 16 | 14 | 4 | 13 | |
| 234+32.59 | 22 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 17 | |
| 234+46.29 | 23 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 23 | |
| 254+62.20 | 24 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 32 | |
| 256+62.44 | 25 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 32 | |
| 296+26.83 | 26 | RT | US 60 | ASPHALT | 50 | 20 | 24 | 24 | 15 | 44 | |
| 320+18.00 | 27 | RT | US 60 | GRAVEL | 50 | 20 | 24 | 24 | 15 | 44 | |
| 351+60.11 | 28 | LT | US 60 | GRAVEL | 82 | 32 | 40 | 40 | 25 | 119 | |
| 356+39.00 | 29 | RT | US 60 | ASPHALT | 74 | 43 | 24 | 24 | 15 | 81 | |
| 387+70.82 | 30 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 77 | |
| 412+22.13 | 31 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 159 | |
| 412+52.93 | 32 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 160 | |
| 473+48.94 | 33 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 41 | |
| 476+06.29 | 34 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 53 | |
| 478+40.87 | 35 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 215 | |
| 479+08.40 | 36 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 30 | |
| 572+52.34 | 37 | LT | US 60 | ASPHALT | 98 | 36 | 24 | 50 | 21 | 136 | |
| 573+83.88 | 38 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 240 | |
| 601+17.69 | 39 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 139 | |
| 601+95.17 | 40 | LT | US 60 | ASPHALT | 67 | 24 | 31 | 139 | 28 | 94 | |
| 626+43.76 | 41 | RT | US 60 | GRAVEL | MATCH EXISTING | | | | | 21 | |
| 627+80.29 | 42 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 41 | |
| 662+19.24 | 43 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 35 | |
| 662+63.16 | 44 | LT | US 60 | GRAVEL | MATCH EXISTING | | | | | 20 | |
| 667+98.64 | 45 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 11 | |
| 678+29.91 | 46 | RT | US 60 | ASPHALT | MATCH EXISTING | | | | | 43 | |
| 693+25.62 | 47 | LT | US 60 | ASPHALT | MATCH EXISTING | | | | | 17 | |

* QUANTITY INCLUDED IN PERTINENENT SUMMARY.

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STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
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Texas Department of Transportation

# DRIVEWAY QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 18 |

US60_GEN-SUM-DRIVE.dgn

## SUMMARY OF MBGF ITEMS

| LOCATION | | 432 6045 | 540 6002 | 542 6001 | 544 6001 | 544 6003 |
|---|---|---|---|---|---|---|
| | | RIPRAP (MOW STRIP)(4 IN) | MTL W-BEAM GD FEN (STEEL POST) | REMOVE METAL BEAM GUARD FENCE | GUARDRAIL END TREATMENT (INSTALL) | GUARDRAIL END TREATMENT (REMOVE) |
| FROM | TO | CY | LF | LF | EA | EA |
| 49+00 | 54+83 | | | | | |
| 54+83 | 58+21 | | | | | |
| 58+21 | 86+60 | | | | | |
| 86+60 | 87+75 | | | | | |
| 87+75 | 119+54 | | | | | |
| 119+54 | 125+40 | | | | | |
| **CSJ 0169-07-054 TOTAL** | | | | | | |
| 125+40 | 138+00 | | | | | |
| 138+00 | 215+50 | | | | | |
| 215+50 | 262+00 | | | | | |
| 262+00 | 275+00 | | | | | |
| 275+00 | 284+00 | | | | | |
| 284+00 | 362+68 | 22 | 1150 | 1324 | 4 | 2 |
| 362+68 | 381+00 | | | 396 | | |
| 381+00 | 385+00 | | | | | |
| 385+00 | 485+00 | | | | | |
| 485+00 | 489+50 | | | | | |
| 489+50 | 535+00 | | | | | |
| 535+00 | 544+00 | | | | | |
| 544+00 | 555+20 | | | | | |
| 555+20 | 564+20 | | | | | |
| 564+20 | 609+70 | | | 250 | | 2 |
| 609+70 | 614+20 | | | | | |
| 614+20 | 685+00 | | | | | |
| 685+00 | 689+50 | | | | | |
| 689+50 | 749+00 | | 160 | | 1 | |
| 749+00 | 758+00 | 8 | 465 | | 1 | |
| 758+00 | 789+00 | | 4950 | | 10 | |
| 789+00 | 798+00 | | 425 | | 2 | |
| 798+00 | 806+59 | | | | | |
| SH 152 SHEET 1 OF 1 | | | | | | |
| **CSJ 0169-07-053 TOTAL** | | **30** | **7150** | **1970** | **18** | **4** |
| **PROJECT TOTALS** | | **30** | **7150** | **1970** | **18** | **4** |

## SUMMARY OF ROADWAY ITEMS

| LOCATION | | 530 6008 | 560 6001 | 560 6002 | 560 6025 |
|---|---|---|---|---|---|
| | | TURNOUTS (ACP) | MAILBOX INSTALL-S (TWG-POST) TY 1 | MAILBOX INSTALL-D (TWG-POST) TY 1 | RELOCATE EXISTING MAILBOX |
| FROM | TO | SY | EA | EA | EA |
| 49+00 | 54+83 | | | | |
| 54+83 | 58+21 | | | | |
| 58+21 | 86+60 | | | | |
| 86+60 | 87+75 | | | | |
| 87+75 | 119+54 | 67 | 9 | 9 | 2 |
| 119+54 | 125+40 | | | | |
| **CSJ 0169-07-054 TOTAL** | | **67** | **9** | **9** | **2** |
| 125+40 | 138+00 | | | | |
| 138+00 | 215+50 | | | | |
| 215+50 | 262+00 | | | | |
| 262+00 | 275+00 | | | | |
| 275+00 | 284+00 | | | | |
| 284+00 | 362+68 | 85 | 3 | | 3 |
| 362+68 | 381+00 | | | | |
| 381+00 | 385+00 | | | | |
| 385+00 | 485+00 | | | | |
| 485+00 | 489+50 | | | | |
| 489+50 | 535+00 | | | | |
| 535+00 | 544+00 | | | | |
| 544+00 | 555+20 | | | | |
| 555+20 | 564+20 | | | | |
| 564+20 | 609+70 | | | | |
| 609+70 | 614+20 | | | | |
| 614+20 | 685+00 | | | | |
| 685+00 | 689+50 | | | | |
| 689+50 | 749+00 | | | | |
| 749+00 | 758+00 | | | | |
| 758+00 | 789+00 | | | | |
| 789+00 | 798+00 | | | | |
| 798+00 | 806+59 | | | | |
| SH 152 SHEET 1 OF 1 | | | | | |
| **CSJ 0169-07-053 TOTAL** | | **85** | **3** | | **3** |
| **PROJECT TOTALS** | | **152** | **12** | **9** | **5** |

04/07/2021

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LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# MBGF QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 19 |

4/7/2021 7:26:16 AM
F:\Projects\2019\U004.1\d07_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\504-General\02-Sheets\US60_GEN-SUM-MBGF.dgn
US60_GEN-SUM-MBGF.dgn

| SUMMARY OF DRAINAGE ITEMS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LOCATION | 462 6045 | 462 6046 | 462 6051 | 464 6005 | 466 6180 | 467 6101 | 467 6172 | 467 6391 |
| | CONC BOX CULV (3 FT X 2 FT)(EXTEND) | CONC BOX CULV (3 FT X 3 FT)(EXTEND) | CONC BOX CULV (5 FT X 3 FT)(EXTEND) | RC PIPE (CL III)(24 IN) | WINGWALL (PW - 1)(HW=5 FT) | SET (TY I)(S=3 FT)(HW=2FT)(4:1)(C) | SET (TY I)(S= 5 FT)(HW= 3 FT)(4:1) (C) | SET (TY II) (24 IN) (RCP)(4: 1)(P) |
| | LF | LF | LF | LF | EA | EA | EA | EA |
| 110+63 | 28 | | | | | 2 | | |
| **CSJ 0169-07-054 TOTAL** | **28** | | | | | **2** | | |
| 289+05 | | 16 | | | 4 | | | |
| 348+11 | 27 | | | | | 2 | | |
| 370+44 | | | 7 | | | | 1 | |
| 503+73 | 11 | | | | | 1 | | |
| 571+74 | 11 | | | | | 1 | | |
| 600+74 | 9 | | | | | 1 | | |
| SH 152 SHEET 1 OF 1 | | | | 104 | | | | 2 |
| **CSJ 0169-07-053 TOTAL** | **58** | **16** | **7** | **104** | **4** | **5** | **1** | **2** |
| **PROJECT TOTALS** | **86** | **16** | **7** | **104** | **4** | **7** | **1** | **2** |

4/7/2021 7:26:16 AM
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04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# DRAINAGE QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | **20** |

USGO_GEN-SUM-DRAIN.dgn

SUMMARY OF PAVEMENT MARKING ITEMS

| LOCATION | 666 6005 | 666 6035 | 666 6047 | 666 6054 | 666 6071 | 666 6078 | 672 6007 | 672 6009 | 6024 6002 | 6024 6005 | 6024 6014 | 6024 6017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REFL PAV MRK TY I (W)4"(DOT)(090MIL) | REFL PAV MRK TY I (W)8"(SLD)(090MIL) | REFL PAV MRK TY I (W)24"(SLD)(090MIL) | REFL PAV MRK TY I (W)(ARROW)(100MIL) | REFL PAV MRK TY I(W)(LNDP ARW)(090MIL) | REFL PAV MRK TY I (W)(WORD)(100MIL) | REFL PAV MRKR TY I-C | REFL PAV MRKR TY II-A-A | HPPM W/RET REQ TY I(W)4"(BRK)(090MIL) | HPPM W/RET REQ TY I(W)4"(SLD)(090MIL) | HPPM W/RET REQ TY I(Y)4"(BRK)(090MIL) | HPPM W/RET REQ TY I(Y)4"(SLD)(090MIL) |
| | LF | LF | LF | EA | EA | EA | EA | EA | LF | LF | LF | LF |
| SHEET 1 OF 35 | | | | | | | 14 | 106 | 278 | 3288 | 1059 | 4235 |
| SHEET 2 OF 35 | | | | | | | | 110 | | 4317 | 1100 | 4400 |
| SHEET 3 OF 35 | | | | | | | | 110 | | 4352 | 1100 | 4400 |
| SHEET 4 OF 35 | | | | | | | | | | | | |
| **CSJ 0169-07-054 TOTAL** | | | | | | | **14** | **326** | **278** | **11957** | **3259** | **13035** |
| SHEET 5 OF 35 | | | | | | | | 45 | | 3600 | 450 | |
| SHEET 6 OF 35 | | | | | | | | 55 | | 4314 | 550 | |
| SHEET 7 OF 35 | | | | | | | | 55 | | 4400 | 550 | |
| SHEET 8 OF 35 | | | | | | | | 55 | | 4400 | 550 | 952 |
| SHEET 9 OF 35 | | | | | | | 14 | 177 | 267 | 5225 | 59 | 7141 |
| SHEET 10 OF 35 | | | | | | | 9 | 134 | 169 | 4901 | | 6206 |
| SHEET 11 OF 35 | 288 | | | | 1 | | 15 | 95 | 288 | 4400 | | 4400 |
| SHEET 12 OF 35 | 78 | | | | 1 | | 52 | 110 | 1022 | 4400 | | 4400 |
| SHEET 13 OF 35 | 75 | | | | | | 52 | 110 | 1025 | 4400 | | 4400 |
| SHEET 14 OF 35 | 550 | | | | | | 28 | 110 | 550 | 4324 | | 4400 |
| SHEET 15 OF 35 | | | | 1 | | | 28 | 110 | 550 | 5207 | | 4400 |
| SHEET 16 OF 35 | | | | | | | 5 | 107 | 97 | 4339 | 275 | 3626 |
| SHEET 17 OF 35 | | | | | | | | 55 | | 4151 | 550 | |
| SHEET 18 OF 35 | | | | | | | | 55 | | 4400 | 550 | |
| SHEET 19 OF 35 | | | | | | | | 55 | | 4400 | 550 | |
| SHEET 20 OF 35 | 100 | | | | | | | 65 | | 4061 | 450 | 800 |
| SHEET 21 OF 35 | 13 | | | | | | 27 | 110 | 538 | 4400 | | 4400 |
| SHEET 22 OF 35 | | | | | | | 28 | 110 | 550 | 4400 | | 4400 |
| SHEET 23 OF 35 | 501 | | | | 4 | | 17 | 110 | 324 | 4400 | | 4400 |
| SHEET 24 OF 35 | 5 | | | | | | 28 | 110 | 550 | 4182 | | 4400 |
| SHEET 25 OF 35 | | | | | | | 28 | 110 | 550 | 4400 | | 4400 |
| SHEET 26 OF 35 | 113 | | | | | | 14 | 93 | 268 | 4327 | 170 | 3040 |
| SHEET 27 OF 35 | | | | | | | | 55 | | 4400 | 550 | |
| SHEET 28 OF 35 | | | | | | | | 55 | | 4310 | 550 | |
| SHEET 29 OF 35 | 50 | | | | | | | 60 | | 4298 | 500 | 400 |
| SHEET 30 OF 35 | 63 | | | | | | 25 | 110 | 489 | 4400 | | 4400 |
| SHEET 31 OF 35 | | | | | | | 28 | 110 | 550 | 4400 | | 4400 |
| SHEET 32 OF 35 | 253 | | | | 2 | | 10 | 110 | 197 | 4400 | | 4400 |
| SHEET 33 OF 35 | | | | | | | | 95 | | 4400 | | 4400 |
| SHEET 34 OF 35 | | | | | | | | 75 | | 4400 | | 4400 |
| SHEET 35 OF 35 | | | | | | | 11 | 48 | 215 | 1817 | | 1918 |
| INTERSECTION OF US 60 & SH 171 | | | | | | | | | | | | |
| SHEET 1 OF 2 | | 1642 | 160 | 4 | | 4 | 104 | 6 | 435 | 6888 | | 6860 |
| SHEET 2 OF 2 | | | | | | | | | | 1000 | | 2000 |
| INTERSECTION OF US 60 & SH 152 | | | | | | | | | | | | |
| SHEET 1 OF 3 | | 568 | | | | | | | | 2145 | | 1604 |
| SHEET 2 OF 3 | | | | | | | | | | 1156 | | 1072 |
| SHEET 3 OF 3 | | | | | | | | | | 1070 | | 1183 |
| **CSJ 0169-07-053 TOTAL** | **2088** | **2210** | **160** | **5** | **8** | **4** | **522** | **2760** | **8633** | **146115** | **6304** | **102802** |
| **PROJECT TOTALS** | **2088** | **2210** | **160** | **5** | **8** | **4** | **536** | **3086** | **8911** | **158072** | **9563** | **115837** |

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# PAVEMENT MARKINGS QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 21 |

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F:\Projects\2019\1004_TxDOT_5x5_PS&E\03_US60_Amarillo\ENG\500-USTN\504-General\02-Sheets\US60_GEN-SUM-SPM.dgn

US60_GEN-SUM-SPM.dgn

SUMMARY OF SIGNING ITEMS

| LOCATION | 644 6001 | 644 6004 | 644 6007 | 644 6030 | 644 6068 | 644 6076 | 658 6087 | 658 6099 | 658 6060 | 658 6062 |
|---|---|---|---|---|---|---|---|---|---|---|
| | IN SM RD SN SUP&AM TY10BWG(1) SA(P) | IN SM RD SN SUP&AM TY10BWG(1) SA(T) | IN SM RD SN SUP&AM TY10BWG(1) SA(U) | IN SM RD SN SUP&AM TYS80(1)SA(T) | RELOCATE SM RD SN SUP&AM TY 10BWG | REMOVE SM RD SN SUP&AM | INSTL DEL ASSM (D-SY)SZ 1(YFLX) GND(BR) | INSTL OM ASSM (OM-2Z)(WFLX)GND | REMOVE DELIN & OBJECT MARKER ASSMS | INSTL DEL ASSM (D-SW)SZ 1(BRF)GF2(BI) |
| | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| SHEET 1 OF 35 | | | | | | | | | | |
| SHEET 2 OF 35 | | | | | | | | | | |
| SHEET 3 OF 35 | 1 | 4 | 1 | | | 7 | | 1 | 6 | |
| SHEET 4 OF 35 | | 3 | | 1 | | 4 | | | 3 | |
| **CSJ 0169-07-054 TOTAL** | **1** | **7** | **1** | **1** | | **11** | | **1** | **9** | |
| SHEET 5 OF 35 | | | | | | | | | | |
| SHEET 6 OF 35 | | 6 | | | | 4 | | | | |
| SHEET 7 OF 35 | | 2 | | | | 2 | | | | |
| SHEET 8 OF 35 | | | | | | | | | | |
| SHEET 9 OF 35 | | 3 | | | | 3 | | | | |
| SHEET 10 OF 35 | | 2 | | | | 2 | | | | |
| SHEET 11 OF 35 | | 1 | | | | | | | | 9 |
| SHEET 12 OF 35 | 1 | 2 | | | | 1 | | | | 3 |
| SHEET 13 OF 35 | | 2 | | 1 | | 2 | | | | |
| SHEET 14 OF 35 | 1 | 5 | | | | 6 | | 2 | 2 | |
| SHEET 15 OF 35 | 1 | 4 | 2 | 1 | | 19 | | 1 | 10 | |
| SHEET 16 OF 35 | 1 | 2 | | 1 | 1 | 3 | | | | |
| SHEET 17 OF 35 | 5 | | | 1 | | 6 | | | | |
| SHEET 18 OF 35 | 1 | | | 1 | | 2 | | | | |
| SHEET 19 OF 35 | | | | | | | 7 | | | |
| SHEET 20 OF 35 | 2 | 3 | | | | 5 | | | | |
| SHEET 21 OF 35 | 1 | | | 1 | | | | 1 | 1 | |
| SHEET 22 OF 35 | 1 | | | 1 | | 1 | | | | |
| SHEET 23 OF 35 | | 2 | | | | | | | 6 | |
| SHEET 24 OF 35 | | 5 | | | | 5 | | 1 | 5 | |
| SHEET 25 OF 35 | | 2 | | 1 | | 2 | | | 3 | |
| SHEET 26 OF 35 | 1 | 2 | | | | 3 | | | | |
| SHEET 27 OF 35 | 1 | 1 | | | | 2 | | | | |
| SHEET 28 OF 35 | | 2 | | | | 3 | | | | |
| SHEET 29 OF 35 | | 4 | | | | 5 | | | 5 | |
| SHEET 30 OF 35 | 1 | | | | | | | | 15 | |
| SHEET 31 OF 35 | | 1 | | 1 | | | | | | |
| SHEET 32 OF 35 | 1 | 1 | | | | 1 | | | 1 | 5 |
| SHEET 33 OF 35 | | 1 | | | | 1 | | | | 27 |
| SHEET 34 OF 35 | 1 | 1 | | 1 | | 2 | | | | 21 |
| SHEET 35 OF 35 | | 1 | | | | | | | | |
| SH 152 SHEET 1 OF 1 | 8 | 2 | | | 3 | | 7 | 2 | 2 | |
| **CSJ 0169-07-053 TOTAL** | **27** | **57** | **2** | **10** | **4** | **80** | **14** | **7** | **50** | **65** |
| **PROJECT TOTALS** | **28** | **64** | **3** | **11** | **4** | **91** | **14** | **8** | **59** | **65** |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
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13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# SIGNING QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 22 |

| SUMMARY OF EARTHWORK QUANTITIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME | | CUMULATIVE VOLUME | |
| | | | | 110 6001 | 132 6004 | | |
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-054 | | | | | | | |
| 87+00 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |
| 88+00 | 0 | 2 | 100 | 12 | 4 | 12 | 4 |
| 89+00 | 6 | 4 | 100 | 36 | 11 | 47 | 15 |
| 90+00 | 13 | 5 | 100 | 77 | 17 | 124 | 32 |
| 91+00 | 28 | 7 | 100 | 88 | 23 | 212 | 55 |
| 92+00 | 19 | 12 | 100 | 79 | 35 | 291 | 89 |
| 93+00 | 23 | 8 | 100 | 75 | 37 | 366 | 126 |
| 94+00 | 17 | 12 | 100 | 64 | 37 | 430 | 163 |
| 95+00 | 17 | 12 | 100 | 63 | 45 | 493 | 207 |
| 96+00 | 17 | 12 | 100 | 58 | 45 | 551 | 252 |
| 97+00 | 15 | 15 | 100 | 54 | 51 | 604 | 303 |
| 98+00 | 14 | 20 | 100 | 48 | 64 | 652 | 367 |
| 99+00 | 11 | 23 | 100 | 42 | 79 | 695 | 447 |
| 100+00 | 11 | 23 | 100 | 42 | 85 | 737 | 532 |
| 101+00 | 11 | 10 | 100 | 54 | 60 | 790 | 592 |
| 102+00 | 18 | 12 | 100 | 84 | 40 | 875 | 632 |
| 103+00 | 28 | 13 | 100 | 84 | 46 | 958 | 677 |
| 104+00 | 17 | 21 | 100 | 62 | 62 | 1020 | 740 |
| 105+00 | 16 | 24 | 100 | 75 | 82 | 1095 | 822 |
| 106+00 | 24 | 32 | 100 | 78 | 103 | 1174 | 925 |
| 107+00 | 18 | 33 | 100 | 70 | 120 | 1243 | 1045 |
| 108+00 | 20 | 12 | 100 | 66 | 83 | 1309 | 1128 |
| 109+00 | 16 | 31 | 100 | 66 | 80 | 1375 | 1208 |
| 110+00 | 20 | 34 | 100 | 48 | 121 | 1422 | 1328 |
| 111+00 | 6 | 75 | 100 | 29 | 202 | 1452 | 1530 |
| 112+00 | 10 | 53 | 100 | 41 | 237 | 1493 | 1767 |
| 113+00 | 12 | 42 | 100 | 47 | 177 | 1539 | 1944 |
| 114+00 | 13 | 36 | 100 | 51 | 145 | 1590 | 2089 |
| 115+00 | 15 | 30 | 100 | 56 | 121 | 1646 | 2210 |
| 116+00 | 16 | 20 | 100 | 62 | 93 | 1708 | 2303 |
| 117+00 | 18 | 19 | 100 | 64 | 72 | 1772 | 2375 |
| 118+00 | 17 | 15 | 100 | 52 | 62 | 1824 | 2437 |
| 119+00 | 11 | 8 | 100 | 21 | 43 | 1845 | 2480 |
| 120+00 | 0 | 0 | 100 | 0 | 15 | 1845 | 2495 |
| US 60 CSJ: 0169-07-053 | | | | | | | |
| 275+00 | 0 | 0 | 100 | 13 | 12 | 1858 | 2507 |
| 276+00 | 7 | 6 | 100 | 31 | 27 | 1889 | 2533 |
| 277+00 | 10 | 8 | 100 | 40 | 33 | 1928 | 2566 |
| 278+00 | 12 | 10 | 100 | 45 | 41 | 1974 | 2607 |
| 279+00 | 13 | 13 | 100 | 51 | 47 | 2025 | 2654 |
| 280+00 | 15 | 13 | 100 | 55 | 48 | 2079 | 2701 |
| 281+00 | 15 | 13 | 100 | 57 | 46 | 2136 | 2747 |
| 282+00 | 16 | 12 | 100 | 61 | 44 | 2197 | 2791 |
| 283+00 | 17 | 12 | 100 | 63 | 46 | 2260 | 2837 |
| 284+00 | 17 | 13 | 100 | 58 | 49 | 2319 | 2886 |
| 285+00 | 14 | 14 | 100 | 61 | 55 | 2379 | 2942 |
| 286+00 | 18 | 16 | 100 | 68 | 65 | 2447 | 3006 |
| 287+00 | 18 | 19 | 100 | 55 | 242 | 2502 | 3248 |
| 288+00 | 11 | 112 | 100 | 42 | 721 | 2544 | 3970 |
| 289+00 | 11 | 278 | 100 | 46 | 675 | 2589 | 4644 |
| 290+00 | 14 | 87 | 100 | 56 | 252 | 2646 | 4896 |
| 291+00 | 17 | 49 | 100 | 65 | 146 | 2710 | 5042 |
| 292+00 | 18 | 30 | 100 | 66 | 104 | 2776 | 5146 |
| 293+00 | 17 | 26 | 100 | 65 | 73 | 2840 | 5219 |
| 294+00 | 18 | 13 | 100 | 63 | 52 | 2903 | 5271 |
| 295+00 | 16 | 15 | 100 | 36 | 55 | 2939 | 5326 |
| 296+00 | 3 | 15 | 100 | 32 | 63 | 2971 | 5389 |
| 297+00 | 14 | 19 | 100 | 54 | 69 | 3025 | 5457 |
| 298+00 | 15 | 18 | 100 | 54 | 70 | 3079 | 5527 |
| 299+00 | 14 | 19 | 100 | 54 | 69 | 3133 | 5596 |
| 300+00 | 15 | 18 | 100 | 52 | 77 | 3185 | 5672 |
| 301+00 | 13 | 24 | 100 | 55 | 73 | 3241 | 5745 |
| 302+00 | 17 | 15 | 100 | 62 | 58 | 3303 | 5802 |
| 303+00 | 17 | 16 | 100 | 61 | 56 | 3364 | 5858 |
| 304+00 | 16 | 14 | 100 | 60 | 57 | 3424 | 5915 |

| SUMMARY OF EARTHWORK QUANTITIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME | | CUMULATIVE VOLUME | |
| | | | | 110 6001 | 132 6004 | | |
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-053 | | | | | | | |
| 305+00 | 16 | 17 | 100 | 58 | 59 | 3482 | 5974 |
| 306+00 | 16 | 15 | 100 | 60 | 61 | 3542 | 6035 |
| 307+00 | 16 | 18 | 100 | 63 | 56 | 3604 | 6090 |
| 308+00 | 18 | 12 | 100 | 65 | 46 | 3670 | 6136 |
| 309+00 | 18 | 12 | 100 | 64 | 51 | 3734 | 6187 |
| 310+00 | 17 | 15 | 100 | 63 | 55 | 3797 | 6242 |
| 311+00 | 17 | 14 | 100 | 64 | 52 | 3861 | 6294 |
| 312+00 | 17 | 14 | 100 | 63 | 48 | 3924 | 6342 |
| 313+00 | 17 | 12 | 100 | 63 | 46 | 3986 | 6388 |
| 314+00 | 17 | 13 | 100 | 64 | 54 | 4051 | 6441 |
| 315+00 | 18 | 16 | 100 | 67 | 52 | 4118 | 6494 |
| 316+00 | 19 | 12 | 100 | 64 | 47 | 4182 | 6541 |
| 317+00 | 16 | 13 | 100 | 63 | 40 | 4244 | 6581 |
| 318+00 | 18 | 9 | 100 | 67 | 37 | 4312 | 6618 |
| 319+00 | 18 | 11 | 100 | 72 | 28 | 4383 | 6646 |
| 320+00 | 20 | 4 | 100 | 67 | 30 | 4450 | 6676 |
| 321+00 | 16 | 12 | 100 | 58 | 46 | 4508 | 6722 |
| 322+00 | 15 | 13 | 100 | 58 | 50 | 4566 | 6771 |
| 323+00 | 16 | 14 | 100 | 62 | 49 | 4628 | 6821 |
| 324+00 | 17 | 13 | 100 | 61 | 44 | 4689 | 6865 |
| 325+00 | 16 | 11 | 100 | 61 | 45 | 4750 | 6910 |
| 326+00 | 17 | 13 | 100 | 63 | 47 | 4813 | 6957 |
| 327+00 | 17 | 12 | 100 | 65 | 47 | 4878 | 7004 |
| 328+00 | 18 | 13 | 100 | 66 | 47 | 4944 | 7051 |
| 329+00 | 18 | 12 | 100 | 63 | 52 | 5007 | 7103 |
| 330+00 | 16 | 16 | 100 | 62 | 55 | 5069 | 7158 |
| 331+00 | 17 | 14 | 100 | 60 | 56 | 5129 | 7214 |
| 332+00 | 15 | 16 | 100 | 59 | 53 | 5188 | 7267 |
| 333+00 | 17 | 12 | 100 | 63 | 45 | 5251 | 7311 |
| 334+00 | 17 | 12 | 100 | 61 | 50 | 5312 | 7361 |
| 335+00 | 16 | 15 | 100 | 61 | 52 | 5373 | 7413 |
| 336+00 | 17 | 13 | 100 | 58 | 55 | 5431 | 7468 |
| 337+00 | 15 | 16 | 100 | 55 | 61 | 5485 | 7529 |
| 338+00 | 15 | 16 | 100 | 52 | 62 | 5537 | 7591 |
| 339+00 | 13 | 17 | 100 | 52 | 63 | 5590 | 7654 |
| 340+00 | 15 | 17 | 100 | 55 | 60 | 5645 | 7714 |
| 341+00 | 15 | 16 | 100 | 68 | 48 | 5713 | 7762 |
| 342+00 | 22 | 10 | 100 | 80 | 44 | 5793 | 7806 |
| 343+00 | 21 | 14 | 100 | 68 | 59 | 5861 | 7865 |
| 344+00 | 15 | 18 | 100 | 56 | 73 | 5916 | 7938 |
| 345+00 | 15 | 22 | 100 | 54 | 91 | 5970 | 8030 |
| 346+00 | 14 | 28 | 100 | 54 | 101 | 6024 | 8131 |
| 347+00 | 15 | 27 | 100 | 52 | 101 | 6076 | 8232 |
| 348+00 | 13 | 28 | 100 | 47 | 116 | 6123 | 8348 |
| 349+00 | 12 | 35 | 100 | 47 | 119 | 6170 | 8467 |
| 350+00 | 13 | 30 | 100 | 61 | 76 | 6231 | 8543 |
| 351+00 | 19 | 12 | 100 | 62 | 41 | 6294 | 8584 |
| 352+00 | 14 | 11 | 100 | 68 | 58 | 6362 | 8642 |
| 353+00 | 22 | 20 | 100 | 92 | 70 | 6453 | 8711 |
| 354+00 | 27 | 17 | 100 | 86 | 59 | 6540 | 8770 |
| 355+00 | 19 | 14 | 100 | 90 | 45 | 6629 | 8815 |
| 356+00 | 29 | 10 | 100 | 108 | 40 | 6737 | 8854 |
| 357+00 | 29 | 12 | 100 | 95 | 61 | 6832 | 8915 |
| 358+00 | 22 | 21 | 100 | 84 | 71 | 6916 | 8987 |
| 359+00 | 23 | 18 | 100 | 87 | 63 | 7003 | 9049 |
| 360+00 | 24 | 16 | 100 | 49 | 59 | 7053 | 9108 |
| 361+00 | 3 | 16 | 100 | 9 | 53 | 7062 | 9162 |
| 362+00 | 2 | 13 | 100 | 7 | 50 | 7069 | 9211 |
| 363+00 | 2 | 14 | 100 | 9 | 54 | 7079 | 9265 |
| 364+00 | 3 | 15 | 100 | 23 | 64 | 7102 | 9329 |
| 365+00 | 10 | 19 | 100 | 21 | 71 | 7123 | 9400 |
| 366+00 | 2 | 19 | 100 | 15 | 65 | 7137 | 9465 |
| 367+00 | 6 | 16 | 100 | 26 | 43 | 7163 | 9507 |
| 368+00 | 7 | 7 | 100 | 37 | 16 | 7200 | 9524 |
| 369+00 | 12 | 1 | 100 | 38 | 3 | 7238 | 9526 |

| CSJ: 0169-07-054 SHEET TOTAL | |
|---|---|
| 110-6001 | 132-6004 |
| EXCAVATION | EMBANKMENT |
| CY | CY |
| 1845 | 2495 |

| CSJ: 0169-07-053 SHEET TOTAL | |
|---|---|
| 110-6001 | 132-6004 |
| EXCAVATION | EMBANKMENT |
| CY | CY |
| 5428 | 7037 |

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# US 60
# EARTHWORK SUMMARY

SHEET 1 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 23 |

## SUMMARY OF EARTHWORK QUANTITIES

| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME 110 6001 | VOLUME 132 6004 | CUMULATIVE VOLUME | |
|---|---|---|---|---|---|---|---|
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-053 | | | | | | | |
| 370+00 | 8 | 0 | 100 | 35 | 5 | 7272 | 9531 |
| 371+00 | 10 | 3 | 100 | 38 | 14 | 7311 | 9546 |
| 372+00 | 10 | 5 | 100 | 35 | 16 | 7346 | 9562 |
| 373+00 | 9 | 4 | 100 | 20 | 48 | 7366 | 9610 |
| 374+00 | 2 | 22 | 100 | 5 | 83 | 7371 | 9693 |
| 375+00 | 0 | 23 | 100 | 1 | 93 | 7372 | 9786 |
| 376+00 | 0 | 27 | 100 | 0 | 98 | 7372 | 9884 |
| 377+00 | 0 | 26 | 100 | 1 | 84 | 7373 | 9967 |
| 378+00 | 1 | 19 | 100 | 3 | 61 | 7375 | 10028 |
| 379+00 | 1 | 14 | 100 | 6 | 46 | 7381 | 10074 |
| 380+00 | 2 | 11 | 100 | 8 | 36 | 7389 | 10111 |
| 381+00 | 2 | 8 | 100 | 16 | 25 | 7404 | 10135 |
| 382+00 | 6 | 5 | 100 | 24 | 17 | 7428 | 10152 |
| 383+00 | 6 | 4 | 100 | 50 | 8 | 7478 | 10160 |
| 384+00 | 21 | 0 | 100 | 77 | 0 | 7556 | 10160 |
| 385+00 | 21 | 0 | 100 | 89 | 0 | 7644 | 10160 |
| 386+00 | 27 | 0 | 100 | 93 | 0 | 7737 | 10160 |
| 387+00 | 23 | 0 | 100 | 74 | 1 | 7811 | 10161 |
| 388+00 | 17 | 0 | 100 | 52 | 2 | 7863 | 10163 |
| 389+00 | 11 | 0 | 100 | 30 | 4 | 7893 | 10166 |
| 390+00 | 5 | 0 | 100 | 10 | 6 | 7902 | 10172 |
| 391+00 | 0 | 0 | 100 | 0 | 10 | 7902 | 10182 |
| 484+00 | 0 | 0 | 100 | 0 | 2 | 7902 | 10184 |
| 485+00 | 0 | 1 | 100 | 3 | 7 | 7905 | 10190 |
| 486+00 | 2 | 3 | 100 | 10 | 11 | 7915 | 10201 |
| 487+00 | 3 | 3 | 100 | 16 | 13 | 7931 | 10215 |
| 488+00 | 5 | 4 | 100 | 17 | 23 | 7947 | 10237 |
| 489+00 | 4 | 8 | 100 | 17 | 28 | 7964 | 10265 |
| 490+00 | 5 | 7 | 100 | 19 | 24 | 7984 | 10289 |
| 491+00 | 6 | 6 | 100 | 21 | 22 | 8004 | 10310 |
| 492+00 | 6 | 6 | 100 | 19 | 22 | 8024 | 10332 |
| 493+00 | 5 | 6 | 100 | 18 | 25 | 8042 | 10357 |
| 494+00 | 5 | 7 | 100 | 17 | 30 | 8059 | 10387 |
| 495+00 | 4 | 9 | 100 | 15 | 34 | 8074 | 10421 |
| 496+00 | 4 | 9 | 100 | 14 | 38 | 8088 | 10459 |
| 497+00 | 3 | 11 | 100 | 12 | 43 | 8099 | 10502 |
| 498+00 | 3 | 12 | 100 | 10 | 52 | 8110 | 10553 |
| 499+00 | 3 | 15 | 100 | 7 | 60 | 8117 | 10613 |
| 500+00 | 1 | 17 | 100 | 5 | 63 | 8122 | 10677 |
| 501+00 | 1 | 17 | 100 | 7 | 61 | 8128 | 10738 |
| 502+00 | 2 | 16 | 100 | 10 | 59 | 8138 | 10797 |
| 503+00 | 3 | 16 | 100 | 7 | 63 | 8145 | 10860 |
| 504+00 | 1 | 18 | 100 | 5 | 58 | 8150 | 10918 |
| 505+00 | 2 | 13 | 100 | 14 | 38 | 8164 | 10956 |
| 506+00 | 6 | 7 | 100 | 21 | 27 | 8185 | 10982 |
| 507+00 | 6 | 7 | 100 | 19 | 25 | 8204 | 11007 |
| 508+00 | 5 | 6 | 100 | 17 | 23 | 8221 | 11030 |
| 509+00 | 5 | 6 | 100 | 17 | 22 | 8238 | 11052 |
| 510+00 | 5 | 6 | 100 | 18 | 22 | 8256 | 11074 |
| 511+00 | 5 | 6 | 100 | 20 | 23 | 8276 | 11097 |
| 512+00 | 5 | 7 | 100 | 19 | 24 | 8295 | 11122 |
| 513+00 | 5 | 6 | 100 | 18 | 24 | 8313 | 11146 |
| 514+00 | 5 | 7 | 100 | 19 | 24 | 8331 | 11169 |
| 515+00 | 5 | 6 | 100 | 17 | 23 | 8349 | 11192 |
| 516+00 | 4 | 6 | 100 | 16 | 22 | 8365 | 11214 |
| 517+00 | 4 | 6 | 100 | 17 | 20 | 8381 | 11234 |
| 518+00 | 5 | 5 | 100 | 19 | 18 | 8401 | 11252 |
| 519+00 | 6 | 5 | 100 | 19 | 19 | 8420 | 11271 |
| 520+00 | 5 | 5 | 100 | 17 | 21 | 8436 | 11292 |
| 521+00 | 4 | 6 | 100 | 16 | 24 | 8452 | 11315 |
| 522+00 | 4 | 7 | 100 | 16 | 25 | 8468 | 11340 |
| 523+00 | 4 | 7 | 100 | 17 | 25 | 8485 | 11365 |
| 524+00 | 5 | 6 | 100 | 16 | 24 | 8500 | 11389 |
| 525+00 | 4 | 6 | 100 | 13 | 25 | 8513 | 11414 |
| 526+00 | 3 | 7 | 100 | 14 | 26 | 8527 | 11440 |

## SUMMARY OF EARTHWORK QUANTITIES

| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME 110 6001 | VOLUME 132 6004 | CUMULATIVE VOLUME | |
|---|---|---|---|---|---|---|---|
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-053 | | | | | | | |
| 527+00 | 4 | 7 | 100 | 17 | 24 | 8544 | 11463 |
| 528+00 | 5 | 6 | 100 | 20 | 21 | 8564 | 11484 |
| 529+00 | 6 | 5 | 100 | 21 | 18 | 8585 | 11503 |
| 530+00 | 6 | 5 | 100 | 19 | 20 | 8603 | 11522 |
| 531+00 | 5 | 6 | 100 | 16 | 22 | 8620 | 11545 |
| 532+00 | 4 | 6 | 100 | 16 | 21 | 8636 | 11565 |
| 533+00 | 5 | 5 | 100 | 17 | 19 | 8652 | 11584 |
| 534+00 | 4 | 5 | 100 | 16 | 20 | 8668 | 11604 |
| 535+00 | 4 | 6 | 100 | 38 | 26 | 8706 | 11630 |
| 536+00 | 16 | 9 | 100 | 61 | 33 | 8768 | 11663 |
| 537+00 | 17 | 9 | 100 | 64 | 34 | 8832 | 11697 |
| 538+00 | 18 | 9 | 100 | 68 | 35 | 8900 | 11732 |
| 539+00 | 19 | 9 | 100 | 71 | 37 | 8972 | 11769 |
| 540+00 | 19 | 11 | 100 | 73 | 40 | 9044 | 11809 |
| 541+00 | 20 | 11 | 100 | 74 | 41 | 9118 | 11850 |
| 542+00 | 20 | 12 | 100 | 73 | 44 | 9191 | 11894 |
| 543+00 | 20 | 12 | 100 | 73 | 44 | 9265 | 11938 |
| 544+00 | 20 | 12 | 100 | 75 | 40 | 9339 | 11978 |
| 545+00 | 20 | 10 | 100 | 75 | 36 | 9414 | 12014 |
| 546+00 | 20 | 10 | 100 | 78 | 38 | 9492 | 12052 |
| 547+00 | 22 | 11 | 100 | 80 | 40 | 9572 | 12093 |
| 548+00 | 21 | 11 | 100 | 79 | 42 | 9651 | 12135 |
| 549+00 | 21 | 12 | 100 | 83 | 42 | 9734 | 12177 |
| 550+00 | 24 | 11 | 100 | 90 | 38 | 9824 | 12215 |
| 551+00 | 25 | 10 | 100 | 91 | 36 | 9915 | 12250 |
| 552+00 | 24 | 9 | 100 | 90 | 35 | 10005 | 12285 |
| 553+00 | 24 | 9 | 100 | 86 | 35 | 10091 | 12320 |
| 554+00 | 22 | 10 | 100 | 84 | 34 | 10175 | 12354 |
| 555+00 | 23 | 9 | 100 | 81 | 37 | 10256 | 12391 |
| 556+00 | 20 | 11 | 100 | 79 | 38 | 10334 | 12429 |
| 557+00 | 22 | 9 | 100 | 72 | 38 | 10407 | 12467 |
| 558+00 | 17 | 11 | 100 | 66 | 42 | 10473 | 12508 |
| 559+00 | 19 | 12 | 100 | 72 | 35 | 10545 | 12543 |
| 560+00 | 20 | 7 | 100 | 72 | 32 | 10617 | 12575 |
| 561+00 | 19 | 10 | 100 | 69 | 33 | 10686 | 12608 |
| 562+00 | 18 | 7 | 100 | 66 | 29 | 10751 | 12637 |
| 563+00 | 18 | 8 | 100 | 64 | 28 | 10816 | 12664 |
| 564+00 | 17 | 7 | 100 | 46 | 19 | 10861 | 12683 |
| 565+00 | 7 | 3 | 100 | 26 | 13 | 10887 | 12696 |
| 566+00 | 6 | 3 | 100 | 19 | 18 | 10906 | 12714 |
| 567+00 | 4 | 6 | 100 | 12 | 28 | 10918 | 12742 |
| 568+00 | 2 | 9 | 100 | 9 | 37 | 10927 | 12778 |
| 569+00 | 3 | 11 | 100 | 10 | 39 | 10937 | 12817 |
| 570+00 | 3 | 10 | 100 | 14 | 37 | 10951 | 12855 |
| 571+00 | 4 | 10 | 100 | 25 | 23 | 10975 | 12878 |
| 572+00 | 9 | 3 | 100 | 39 | 7 | 11015 | 12884 |
| 573+00 | 12 | 1 | 100 | 34 | 21 | 11048 | 12905 |
| 574+00 | 6 | 10 | 100 | 21 | 37 | 11069 | 12942 |
| 575+00 | 5 | 10 | 100 | 23 | 21 | 11092 | 12962 |
| 576+00 | 7 | 1 | 100 | 28 | 12 | 11120 | 12974 |
| 577+00 | 8 | 5 | 100 | 27 | 19 | 11147 | 12993 |
| 578+00 | 7 | 5 | 100 | 25 | 22 | 11172 | 13014 |
| 579+00 | 6 | 6 | 100 | 21 | 24 | 11192 | 13038 |
| 580+00 | 5 | 7 | 100 | 20 | 22 | 11212 | 13060 |
| 581+00 | 6 | 5 | 100 | 22 | 18 | 11234 | 13078 |
| 582+00 | 6 | 5 | 100 | 23 | 18 | 11257 | 13095 |
| 583+00 | 6 | 5 | 100 | 24 | 16 | 11281 | 13111 |
| 584+00 | 7 | 4 | 100 | 24 | 15 | 11305 | 13126 |
| 585+00 | 6 | 4 | 100 | 24 | 14 | 11329 | 13140 |
| 586+00 | 7 | 4 | 100 | 24 | 14 | 11353 | 13154 |
| 587+00 | 6 | 4 | 100 | 24 | 15 | 11377 | 13169 |
| 588+00 | 6 | 4 | 100 | 24 | 14 | 11401 | 13183 |
| 589+00 | 7 | 4 | 100 | 24 | 13 | 11425 | 13196 |
| 590+00 | 6 | 3 | 100 | 25 | 13 | 11449 | 13209 |
| 591+00 | 7 | 4 | 100 | 26 | 13 | 11475 | 13222 |

| CSJ: 0169-07-053 SHEET TOTAL | |
|---|---|
| 110-6001 | 132-6004 |
| EXCAVATION | EMBANKMENT |
| CY | CY |
| 4306 | 3865 |

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# US 60
# EARTHWORK SUMMARY

SHEET 2 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 24 |

| SUMMARY OF EARTHWORK QUANTITIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME | | CUMULATIVE VOLUME | |
| | | | | 110 6001 | 132 6004 | | |
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-053 | | | | | | | |
| 592+00 | 7 | 3 | 100 | 25 | 13 | 11500 | 13235 |
| 593+00 | 6 | 4 | 100 | 23 | 17 | 11523 | 13253 |
| 594+00 | 6 | 6 | 100 | 19 | 26 | 11542 | 13279 |
| 595+00 | 4 | 8 | 100 | 15 | 33 | 11557 | 13311 |
| 596+00 | 4 | 9 | 100 | 12 | 39 | 11569 | 13350 |
| 597+00 | 3 | 12 | 100 | 9 | 46 | 11578 | 13396 |
| 598+00 | 2 | 13 | 100 | 10 | 45 | 11588 | 13441 |
| 599+00 | 3 | 11 | 100 | 14 | 38 | 11602 | 13479 |
| 600+00 | 4 | 10 | 100 | 14 | 37 | 11616 | 13516 |
| 601+00 | 4 | 11 | 100 | 22 | 21 | 11637 | 13538 |
| 602+00 | 8 | 1 | 100 | 24 | 16 | 11661 | 13554 |
| 603+00 | 5 | 8 | 100 | 17 | 27 | 11678 | 13580 |
| 604+00 | 4 | 7 | 100 | 16 | 31 | 11694 | 13611 |
| 605+00 | 4 | 10 | 100 | 14 | 39 | 11708 | 13650 |
| 606+00 | 3 | 11 | 100 | 12 | 42 | 11719 | 13692 |
| 607+00 | 3 | 11 | 100 | 10 | 45 | 11729 | 13737 |
| 608+00 | 3 | 13 | 100 | 7 | 52 | 11736 | 13790 |
| 609+00 | 1 | 15 | 100 | 5 | 56 | 11741 | 13845 |
| 610+00 | 2 | 15 | 100 | 7 | 56 | 11748 | 13901 |
| 611+00 | 2 | 15 | 100 | 8 | 52 | 11756 | 13953 |
| 612+00 | 2 | 13 | 100 | 6 | 52 | 11762 | 14005 |
| 613+00 | 1 | 15 | 100 | 2 | 54 | 11764 | 14058 |
| 614+00 | 0 | 14 | 100 | 0 | 26 | 11764 | 14084 |
| 615+00 | 0 | 0 | 100 | 0 | 0 | 11764 | 14084 |
| 685+00 | 0 | 0 | 100 | 3 | 4 | 11766 | 14088 |
| 686+00 | 1 | 2 | 100 | 8 | 11 | 11775 | 14099 |
| 687+00 | 3 | 3 | 100 | 14 | 12 | 11789 | 14111 |
| 688+00 | 4 | 3 | 100 | 17 | 15 | 11805 | 14125 |
| 689+00 | 5 | 5 | 100 | 19 | 17 | 11824 | 14142 |
| 690+00 | 6 | 4 | 100 | 20 | 15 | 11844 | 14157 |
| 691+00 | 5 | 4 | 100 | 19 | 17 | 11863 | 14173 |
| 692+00 | 5 | 5 | 100 | 23 | 32 | 11886 | 14206 |
| 693+00 | 7 | 12 | 100 | 23 | 35 | 11909 | 14241 |
| 694+00 | 5 | 7 | 100 | 18 | 28 | 11927 | 14269 |
| 695+00 | 5 | 8 | 100 | 21 | 27 | 11948 | 14296 |
| 696+00 | 7 | 6 | 100 | 21 | 34 | 11969 | 14329 |
| 697+00 | 4 | 12 | 100 | 18 | 47 | 11987 | 14376 |
| 698+00 | 5 | 13 | 100 | 20 | 49 | 12006 | 14425 |
| 699+00 | 6 | 13 | 100 | 24 | 45 | 12030 | 14471 |
| 700+00 | 7 | 11 | 100 | 26 | 43 | 12056 | 14513 |
| 701+00 | 7 | 12 | 100 | 23 | 46 | 12079 | 14559 |
| 702+00 | 6 | 13 | 100 | 23 | 48 | 12102 | 14608 |
| 703+00 | 7 | 13 | 100 | 25 | 44 | 12127 | 14652 |
| 704+00 | 7 | 11 | 100 | 26 | 39 | 12154 | 14691 |
| 705+00 | 7 | 10 | 100 | 27 | 39 | 12180 | 14730 |
| 706+00 | 7 | 11 | 100 | 24 | 38 | 12205 | 14768 |
| 707+00 | 6 | 10 | 100 | 20 | 33 | 12225 | 14800 |
| 708+00 | 5 | 8 | 100 | 20 | 26 | 12245 | 14827 |
| 709+00 | 6 | 6 | 100 | 19 | 24 | 12264 | 14851 |
| 710+00 | 4 | 7 | 100 | 16 | 25 | 12280 | 14876 |
| 711+00 | 4 | 7 | 100 | 17 | 23 | 12298 | 14899 |
| 712+00 | 5 | 6 | 100 | 16 | 25 | 12314 | 14925 |
| 713+00 | 4 | 8 | 100 | 12 | 30 | 12326 | 14955 |
| 714+00 | 3 | 9 | 100 | 9 | 34 | 12335 | 14989 |
| 715+00 | 2 | 10 | 100 | 9 | 34 | 12344 | 15022 |
| 716+00 | 3 | 9 | 100 | 12 | 30 | 12356 | 15052 |
| 717+00 | 4 | 7 | 100 | 13 | 26 | 12369 | 15078 |
| 718+00 | 3 | 7 | 100 | 14 | 29 | 12383 | 15107 |
| 719+00 | 4 | 9 | 100 | 16 | 32 | 12399 | 15139 |
| 720+00 | 4 | 8 | 100 | 14 | 32 | 12413 | 15171 |
| 721+00 | 3 | 9 | 100 | 14 | 31 | 12427 | 15202 |
| 722+00 | 5 | 8 | 100 | 16 | 30 | 12443 | 15232 |
| 723+00 | 4 | 8 | 100 | 15 | 30 | 12458 | 15261 |
| 724+00 | 4 | 8 | 100 | 18 | 29 | 12476 | 15291 |
| 725+00 | 6 | 8 | 100 | 20 | 29 | 12496 | 15320 |

| SUMMARY OF EARTHWORK QUANTITIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME | | CUMULATIVE VOLUME | |
| | | | | 110 6001 | 132 6004 | | |
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| US 60 CSJ:0169-07-053 | | | | | | | |
| 726+00 | 5 | 8 | 100 | 17 | 31 | 12513 | 15351 |
| 727+00 | 4 | 9 | 100 | 14 | 32 | 12527 | 15382 |
| 728+00 | 3 | 9 | 100 | 13 | 31 | 12540 | 15414 |
| 729+00 | 4 | 8 | 100 | 13 | 30 | 12553 | 15443 |
| 730+00 | 3 | 8 | 100 | 13 | 29 | 12566 | 15472 |
| 731+00 | 4 | 8 | 100 | 16 | 28 | 12582 | 15499 |
| 732+00 | 5 | 7 | 100 | 17 | 27 | 12599 | 15526 |
| 733+00 | 5 | 7 | 100 | 16 | 28 | 12616 | 15554 |
| 734+00 | 4 | 8 | 100 | 15 | 29 | 12631 | 15583 |
| 735+00 | 4 | 8 | 100 | 13 | 31 | 12644 | 15614 |
| 736+00 | 3 | 9 | 100 | 10 | 34 | 12654 | 15648 |
| 737+00 | 2 | 9 | 100 | 9 | 34 | 12662 | 15682 |
| 738+00 | 3 | 9 | 100 | 11 | 31 | 12673 | 15713 |
| 739+00 | 3 | 8 | 100 | 12 | 30 | 12685 | 15743 |
| 740+00 | 3 | 8 | 100 | 12 | 30 | 12697 | 15772 |
| 741+00 | 3 | 8 | 100 | 12 | 27 | 12709 | 15800 |
| 742+00 | 3 | 7 | 100 | 12 | 25 | 12721 | 15825 |
| 743+00 | 3 | 7 | 100 | 12 | 26 | 12733 | 15851 |
| 744+00 | 4 | 7 | 100 | 14 | 31 | 12747 | 15881 |
| 745+00 | 4 | 9 | 100 | 15 | 38 | 12762 | 15919 |
| 746+00 | 4 | 11 | 100 | 16 | 20 | 12778 | 15939 |
| 747+00 | 5 | 0 | 100 | 21 | 30 | 12799 | 15969 |
| 748+00 | 7 | 16 | 100 | 16 | 72 | 12815 | 16041 |
| 749+00 | 2 | 23 | 100 | 6 | 129 | 12821 | 16171 |
| 750+00 | 1 | 47 | 100 | 3 | 120 | 12824 | 16291 |
| 751+00 | 1 | 18 | 100 | 1 | 65 | 12826 | 16356 |
| 752+00 | 0 | 17 | 100 | 1 | 53 | 12827 | 16409 |
| 753+00 | 1 | 12 | 100 | 3 | 55 | 12830 | 16464 |
| 754+00 | 1 | 18 | 100 | 4 | 50 | 12834 | 16514 |
| 755+00 | 1 | 9 | 100 | 3 | 20 | 12837 | 16534 |
| 756+00 | 1 | 2 | 100 | 2 | 8 | 12838 | 16543 |
| 757+00 | 0 | 3 | 100 | 2 | 32 | 12841 | 16575 |
| 758+00 | 1 | 14 | 100 | 11 | 87 | 12852 | 16662 |
| 759+00 | 5 | 33 | 100 | 324 | 1164 | 13176 | 17826 |
| End Of Project | - | - | - | - | - | 13176 | 17826 |

| CSJ: 0169-07-053 SHEET TOTAL | |
|---|---|
| 110-6001 | 132-6004 |
| EXCAVATION | EMBANKMENT |
| CY | CY |
| 1598 | 4430 |

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# US 60
# EARTHWORK SUMMARY

SHEET 3 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 25 |

| SUMMARY OF EARTHWORK QUANTITIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| STATION | END AREA | | DISTANCE BETWEEN X-S | VOLUME | | CUMULATIVE VOLUME | |
| | | | | 110 | 132 | | |
| | | | | 6001 | 6004 | | |
| | EXCAVATION | EMBANKMENT | | EXCAVATION (ROADWAY) | EMBANKMENT (FINAL) (DENS CONT) (TY B) | EXCAVATION | EMBANKMENT |
| | SF | SF | FT | CY | CY | CY | CY |
| SH 152 CSJ: 0169-07-053 | | | | | | | |
| 10+00 | 0 | 0 | 100 | 58 | 2 | 58 | 2 |
| 11+00 | 32 | 1 | 100 | 112 | 38 | 171 | 40 |
| 12+00 | 29 | 19 | 100 | 65 | 167 | 236 | 207 |
| 13+00 | 6 | 71 | 100 | 18 | 322 | 253 | 529 |
| 14+00 | 3 | 103 | 100 | 10 | 267 | 263 | 796 |
| 15+00 | 2 | 41 | 100 | 46 | 86 | 309 | 882 |
| 16+00 | 23 | 5 | 100 | 134 | 11 | 443 | 892 |
| 17+00 | 50 | 0 | 100 | 184 | 2 | 626 | 894 |
| 18+00 | 50 | 1 | 200 | 250 | 21 | 877 | 915 |
| 20+00 | 18 | 5 | 100 | 213 | 9 | 1090 | 924 |
| 20+58 | 97 | 0 | 0 | 0 | 0 | 1090 | 924 |
| | | | | | | | |

| CSJ: 0169-07-053 PROJECT TOTAL | |
|---|---|
| 110-6001 | 132-6004 |
| EXCAVATION | EMBANKMENT |
| CY | CY |
| 1090 | 924 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# SH 152
# EARTHWORK SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 26 |

| SUMMARY OF EROSION CONTROL ITEMS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| LOCATION | | 134 6011 | 164 6053 | 164 6036 | 169 6003 | 314 6014 | 506 6040 | 506 6043 |
| | | BACKFILLING PAVEMENT EDGES | DRILL SEEDING (TEMP) (WARM OR COOL) | DRILL SEEDING (PERM) (RURAL) (CLAY) | SOIL RETENTION BLANKETS (CL 1) (TY C) | EMULS ASPH (EROSN CONT) (MS-2) | BIODEG EROSN CONT LOGS (INSTL) (8") | BIODEG EROSN CONT LOGS (REMOVE) |
| From | To | CY | AC | AC | SY | GAL | LF | LF |
| 49+00 | 119+54 | 19 | 6.48 | 6.48 | | 3919 | 420 | 420 |
| CSJ 0169-07-054 TOTAL | | 19 | 6.48 | 6.48 | | 3919 | 420 | 420 |
| 119+54 | 215+50 | 30 | | 3.50 | | | | |
| 262+00 | 275+00 | 56 | | 2.73 | | | | |
| 275+00 | 362+68 | | 2.08 | | 346 | 4871 | 900 | 900 |
| 362+68 | 381+00 | 15 | 0.42 | 0.42 | | 509 | | |
| 381+00 | 385+00 | 2 | 0.09 | 0.08 | | 111 | 60 | 60 |
| 385+00 | 485+00 | 97 | | 4.59 | | | | |
| 485+00 | 489+50 | 4 | 0.10 | 0.10 | | 125 | | |
| 489+50 | 535+00 | 26 | 1.15 | | | 1394 | 200 | 200 |
| 535+00 | 564+20 | | 1.34 | | | 1622 | | |
| 564+20 | 609+70 | 18 | 1.04 | 1.04 | | 1264 | 460 | 460 |
| 609+70 | 614+20 | 2 | 0.18 | 0.18 | | 213 | 20 | 20 |
| 615+00 | 685+00 | 283 | | 3.21 | | | 0 | 0 |
| 685+00 | 689+50 | 2 | 0.10 | 0.10 | | 125 | | |
| 689+50 | 749+00 | 24 | 1.43 | 1.43 | 131 | 1653 | 240 | 240 |
| 749+00 | 758+00 | 2 | 0.32 | 0.32 | 49 | 250 | 80 | 80 |
| 760+00 | 806+59 | 239 | 2.14 | 2.14 | | | | |
| **CSJ 0169-07-053 TOTAL** | | **800** | **10.41** | **19.86** | **526** | **12137** | **1960** | **1960** |
| **PROJECT TOTALS** | | **819** | **16.88** | **26.33** | **526** | **16056** | **2380** | **2380** |

05/17/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
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| | | | |

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Texas Department of Transportation

# SW3P
# QUANTITY SUMMARY

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 27 |

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## GENERAL NOTES

1. THE CONTRACTOR MAY USE A DIFFERENT CONSTRUCTION PHASING AND TRAFFIC CONTROL PLAN. ANY VARIATION FROM THE PLANS SHALL BE FORMALLY SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. ANY CHANGES PROPOSED TO THE CONTRACTOR WILL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
2. THE CONTRACTOR WILL NOT BEGIN ANY WORK ASSOCIATED WITH A CHANGE IN THE PLANS WITHOUT THE ENGINEER'S APPROVAL IN WRITING.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND LOCAL STREETS AT ALL TIMES. THE CONTRACTOR SHALL OBTAIN PERMISSION FROM THE RESPECTIVE PROPERTY OWNERS 24 HOURS PRIOR TO THE CONTRACTOR CONSTRUCTING PROPOSED DRIVEWAYS.
4. UNLESS OTHERWISE NOTED, CONSTRUCTION OF TEMPORARY DRIVEWAYS, ROAD, AND STREET CROSSINGS WILL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.
5. USE ONLY TEMPORARY REMOVABLE PAVEMENT MARKINGS ON FINAL PAVEMENT SURFACES.
6. REFER TO STANDARD WZ(UL) FOR SIGNING OF EDGE CONDITIONS/UNEVEN LANES.
7. REFTER TO STANDARD BC (10) CULVERT WIDENING DETAILS FOR CULVERT EXTENSIONS

## CONSTRUCTION SEQUENCE AND TCP

### PHASE 1

OBJECTIVE: EXTEND CULVERTS IN AREAS OF WIDENING.

1. INSTALL TRAFFIC CONTROL DEVICES INCLUDING ADVANCED WARNING SIGNS.
2. PLACE SW3P DEVICES NEEDED FOR THIS PHASE.
3. EXTEND CULVERTS AND INSTALL PROPOSED SET'S

### PHASE 2

OBJECTIVE: CONSTRUCT SUPER 2 LANES, SH 152, AND SHOULDER (3-LANE) WIDENING.

IT WILL BE NECESSARY TO BACKFILL PAVEMENT EDGES WITH 3:1 OR FLATTER SLOPES AT THE END OF EACH WORKING DAY OR ONCE WORK HAS CEASED WITHIN THE AREA.

THE CONTRACTOR WILL ONLY BE ALLOWED TO PERFORM WORK ON ONE SIDE OF THE ROADWAY AT A TIME, THROUGH COMPLETION, BEFORE STARTING ON THE OPPOSITE SIDE.

1. PLACE SW3P DEVICE NEEDED FOR THIS PHASE.
2. REMOVE CONFLICTING SIGNING AND MARKINGS. PLACE WORK ZONE SIGNING AND CHANNELIZATION DEVICES PER TXDOT BC AND TCP STANDARDS, THE LATEST EDITION OF THE TEXAS MUTCD, AND AS DIRECTED BY THE ENGINEER.
3. USE EXISTING EDGELINE TO MATCH EXISTING CROSS SLOPE AND WIDEN PAVEMENT. REFER TO TRAFFIC CONTROL PLAN TYPICAL SECTIONS FOR WIDENING THE PAVEMENT IN AREAS THAT HAVE EXISTING METAL BEAM GUARD FENCE.
4. REMOVE CHANNELIZATION DEVICES TO OPEN THE SUPER 2 12' PASSING LANE, 4' AND 10' SHOULDER AFTER PAVEMENT WIDENING IS COMPLETED. PLACE WORKZONE STRIPING ON US 60 EASTBOUND & WESTBOUND AS SHOWN ON THE PHASE 2 TCP TYPICAL SECTIONS.
5. EXISTING SH 152 CONFIGURATION TO REMAIN IN PLACE UNTIL NEW LANE IS BUILT SO TRAFFIC PATTERNS ARE NOT INTERRUPTED.

### PHASE 3

OBJECTIVE: PLACE 2" OVERLAY AT SUPER 2 WIDENING LOCATION, 1.5"/4" MILL & FILL AT CURB & GUTTER SECTION AND INSTAL MBGF AT STEEP SLOPE LOCATIONS. SEE PROPOSED TYPICAL SECTIONS A AND B FOR MILL & FILL INFORMATION, AND PROPOSED TYPICAL SECTION J FOR MBGF LOCATIONS.

1. PLACE SW3P DEVICE NEEDED FOR THIS PHASE.
2. REMOVE CONFLICTING SIGNING AND MARKINGS. PLACE WORK ZONE SIGNING AND CHANNELIZATION DEVICES PER TXDOT BC AND TCP STANDARDS, THE LATEST EDITION OF THE TEXAS MUTCD, AND AS DIRECTED BY THE ENGINEER.
3. PLACE SUPERPAVE MIXTURES (FULL WIDTH) IN ACCORDANCE WITH TCP (7-1) AND USE EXISTING EDGE LINE TO MATCH CROSS SLOPE FOR PAVEMENT WIDENING.
4. AFTER FINAL SURFACE IS PLACED, PERFORM FINAL GRADING AND PERMANENT SEEDING.
5. INSTALL PERMANENT SIGNING AND PAVEMENT MARKINGS ACCORDING TO LATEST EDITION OF TEXAS MUTCD, SINGING AND PAVEMENT MARKING STANDARDS, SINGING AND PAVEMENT MARKING LAYOUTS, OR AS DIRECTED BY THE ENGINEER. UTILIZE TCP (3-1) AND TCP (3-3).
6. PERFORM FINAL PROJECT CLEANUP AND REMOVE ALL PROJECT BARRICADES. TEMPORARY SIGNS, AND SW3P ONCE AUTHORIZED OR DIRECTED BY THE AREA ENGINEER.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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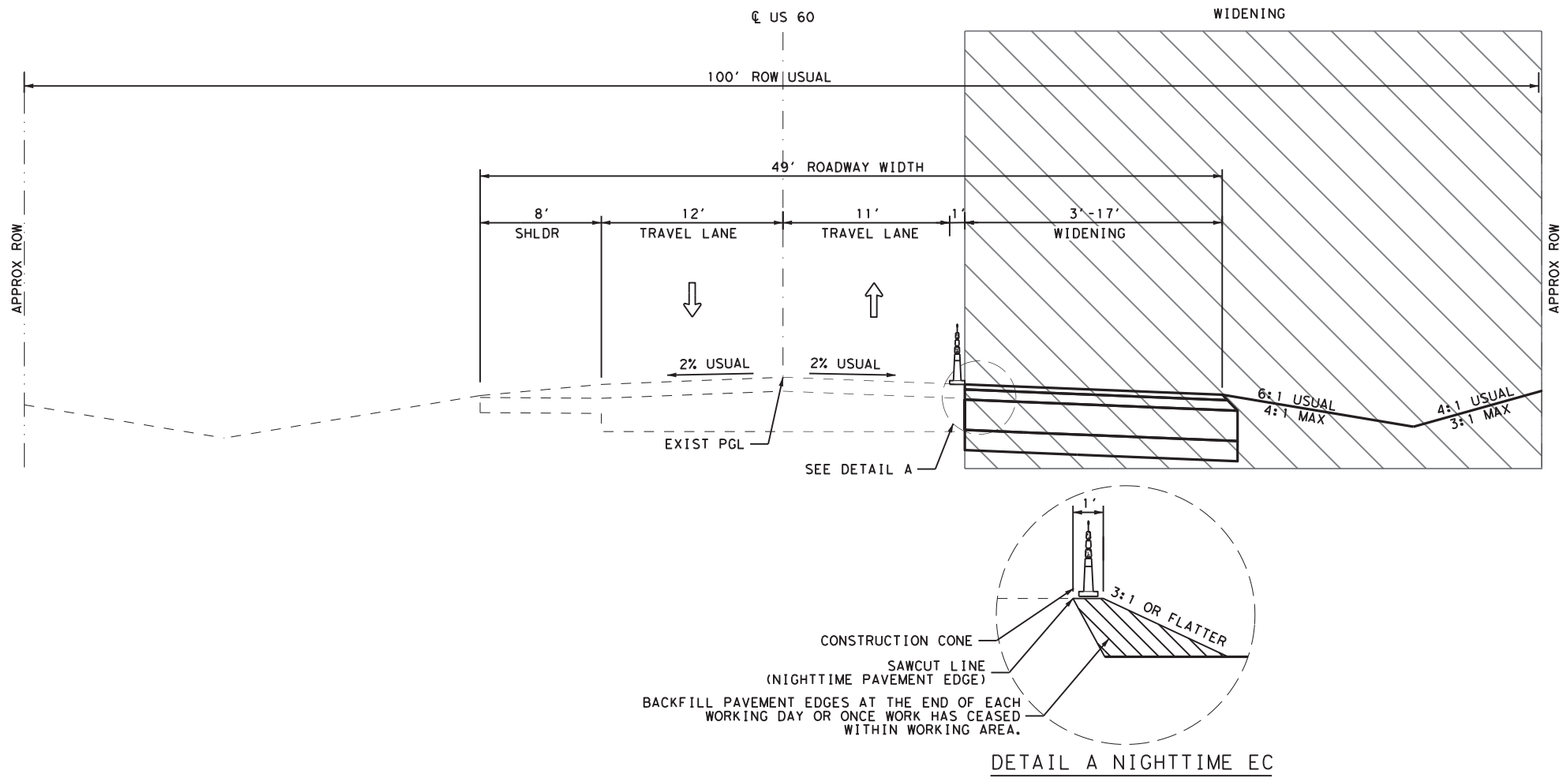
# TCP NARRATIVE

SHEET 1 OF 1

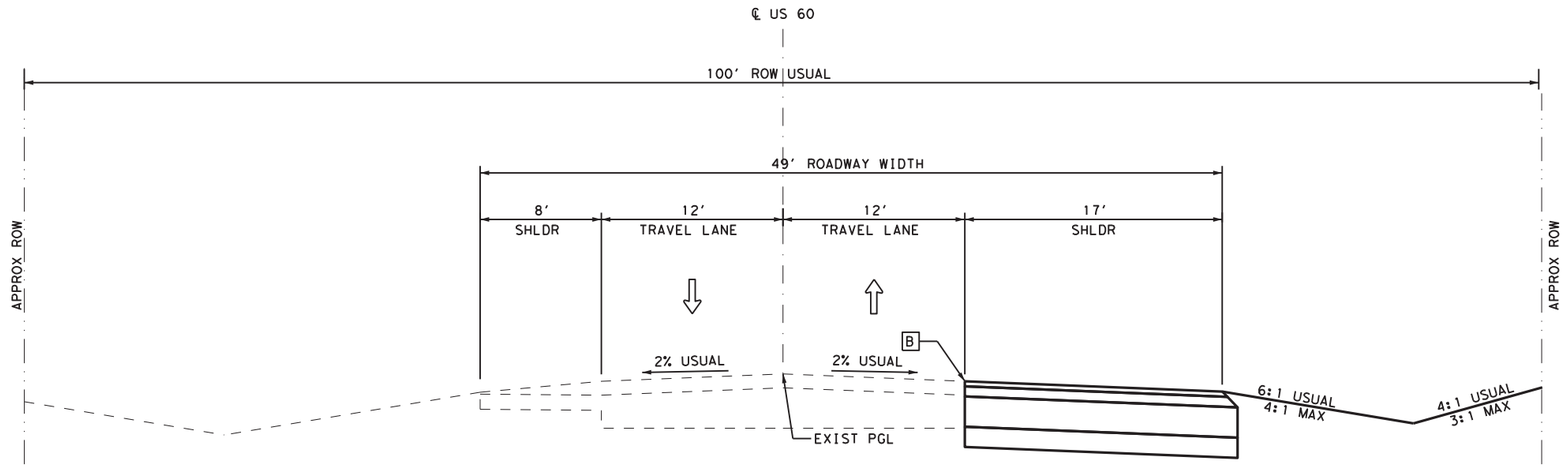
| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 28 |







DETAIL A NIGHTTIME EC




PHASE 2

3 LANE WIDENING EASTBOUND

STA 87+75.00 TO STA 119+54.00

LEGEND

- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A — WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B — WK ZN PAV MRK NON REMOV (W)4"(SLD)

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

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| REV. NO. | DATE | DESCRIPTION | BY |
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# TCP
# TYPICAL SECTIONS
## PHASE 2

SHEET 1 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 29 |

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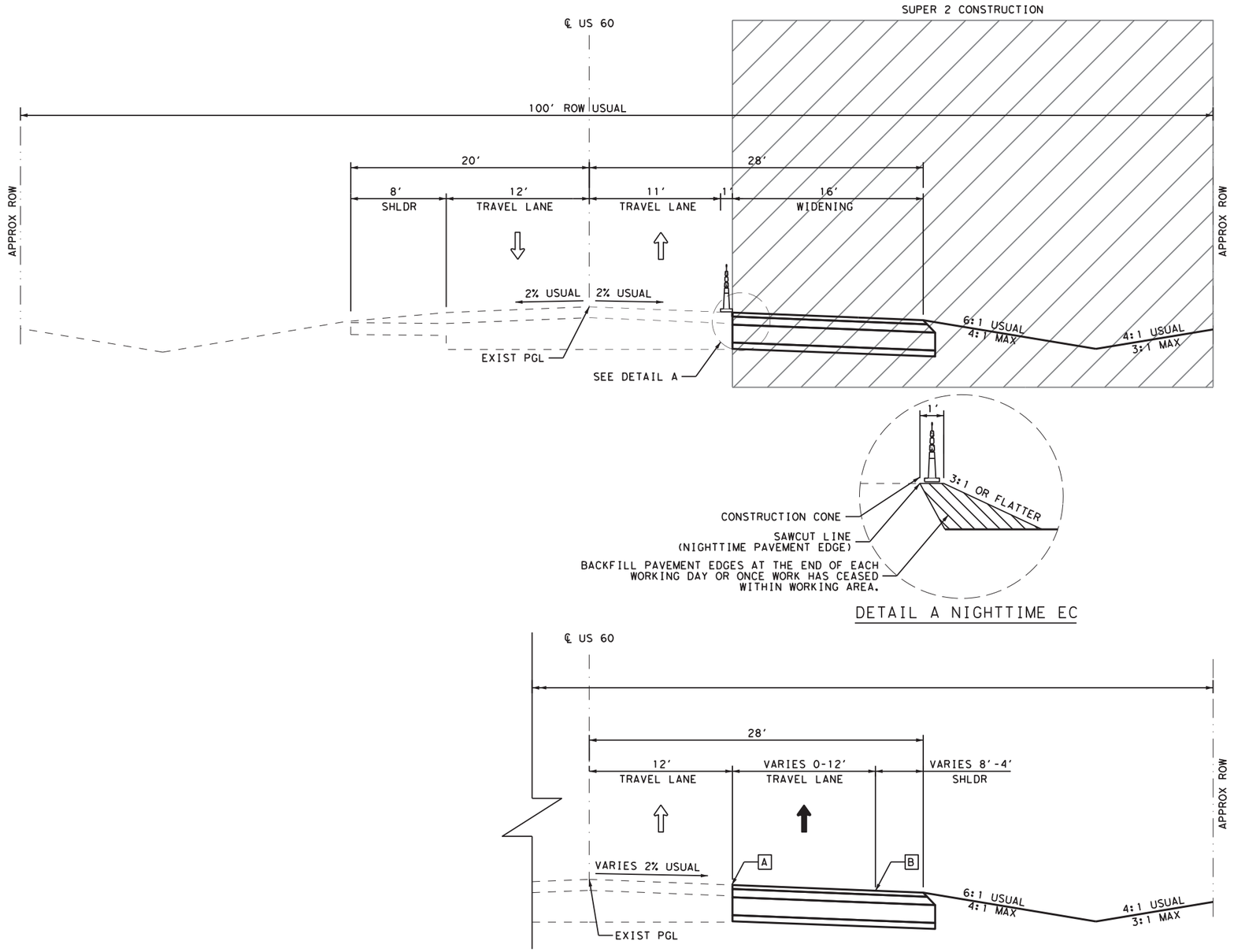





DETAIL A NIGHTTIME EC




LEGEND

- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B WK ZN PAV MRK NON REMOV (W)4"(SLD)

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.

PHASE 2

US 60 EASTBOUND SUPER 2

STA 275+00.00 TO STA 362+43.48
STA 485+00.00 TO STA 564+20.00
STA 685+00.00 TO STA 758+00.00

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

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0 2.5 5(V)

| REV. NO. | DATE | DESCRIPTION | BY |
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TCP
TYPICAL SECTIONS
PHASE 2

SHEET 2 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 30 |



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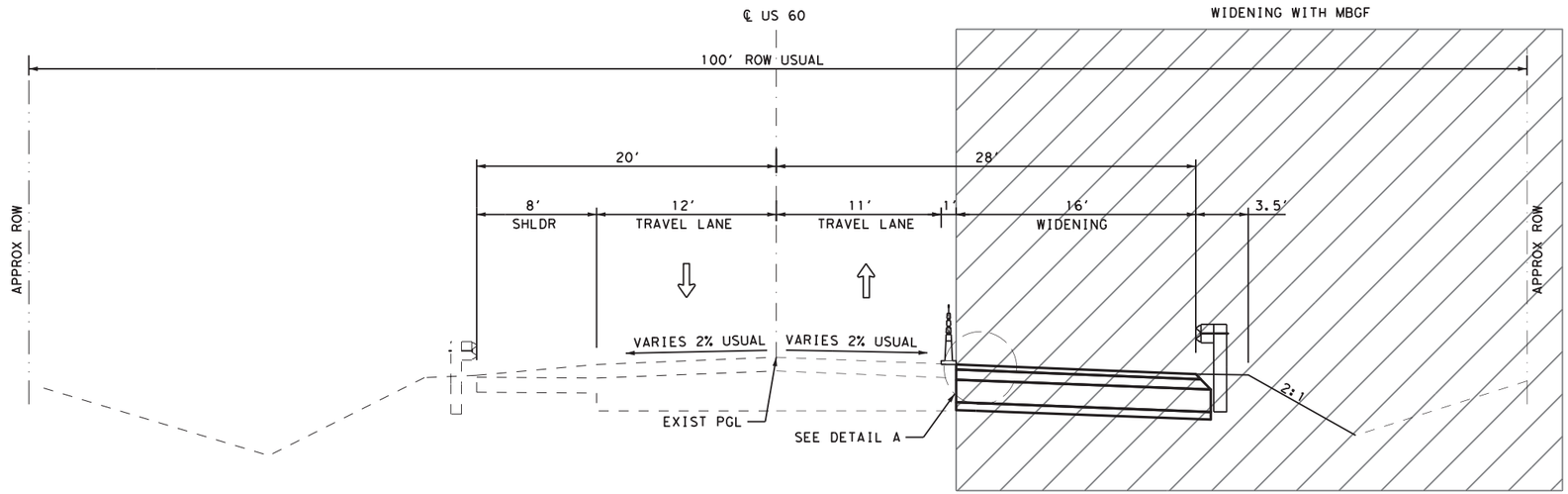


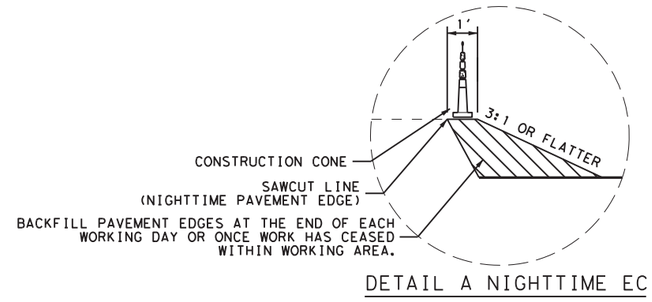


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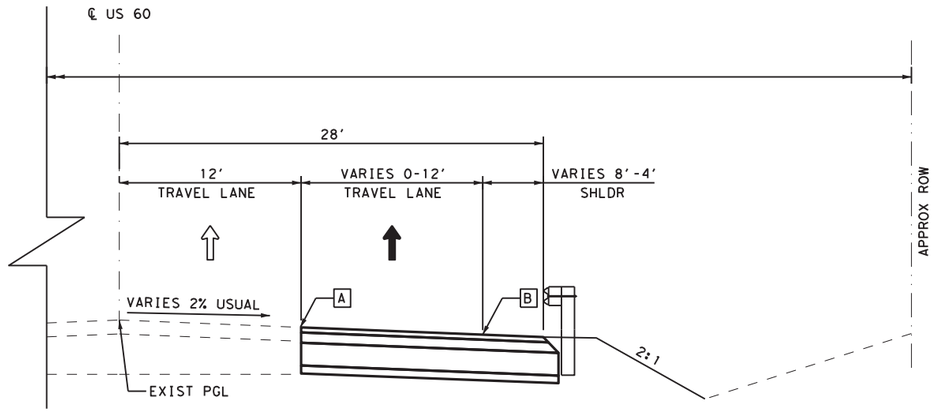


## PHASE 2

## PAVEMENT WIDENING WITH MBGF EASTBOUND

STA 285+50.00 TO STA 291+25.00
STA 747+40.00 TO STA 751+65.00
STA 757+00.00 TO STA 758+00.00

LEGEND

- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A — WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B — WK ZN PAV MRK NON REMOV (W)4"(SLD)

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 2.5 5 10(H)
0 2.5 5(V)

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# TCP
# TYPICAL SECTIONS
## PHASE 2

SHEET 3 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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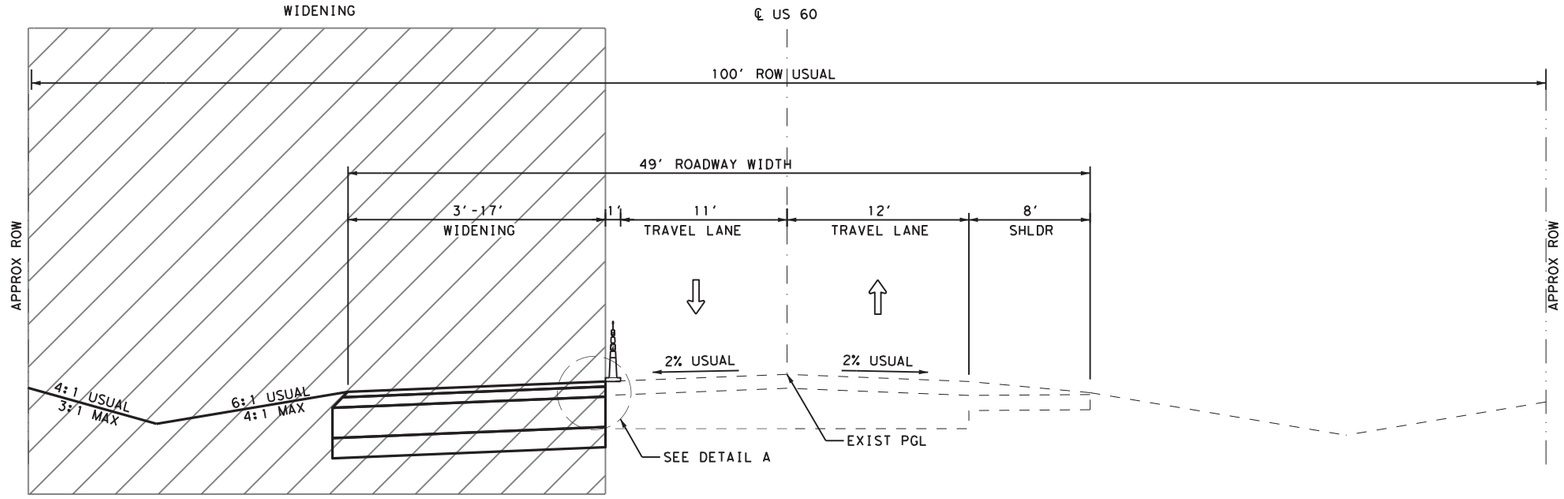


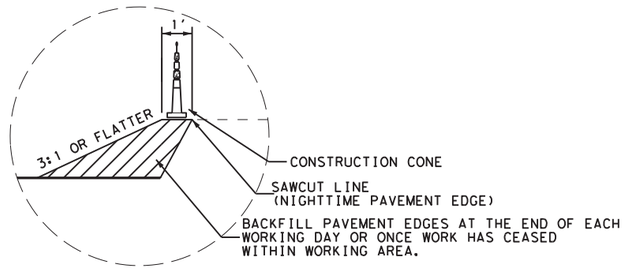


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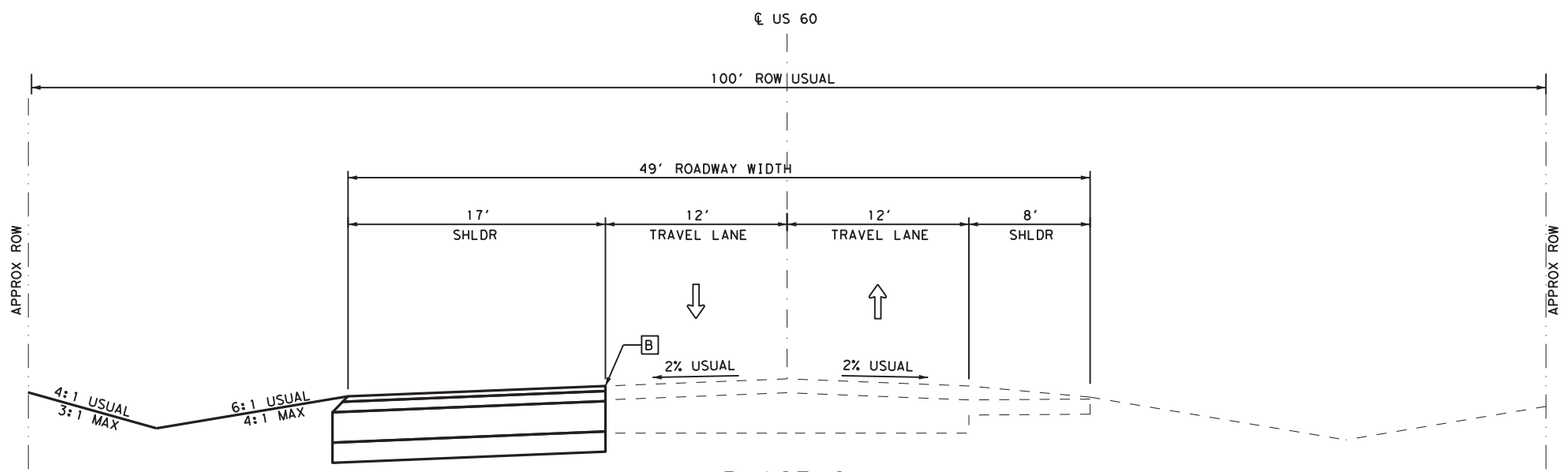


PHASE 2

3 LANE WIDENING WESTBOUND

STA 87+75.00 TO STA 119+54.00

LEGEND

- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B WK ZN PAV MRK NON REMOV (W)4"(SLD)

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.

04/07/2021

STATE OF TEXAS
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113226
LICENSED
PROFESSIONAL ENGINEER

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| REV. NO. | DATE | DESCRIPTION | BY |
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# TCP
# TYPICAL SECTIONS
## PHASE 2

SHEET 4 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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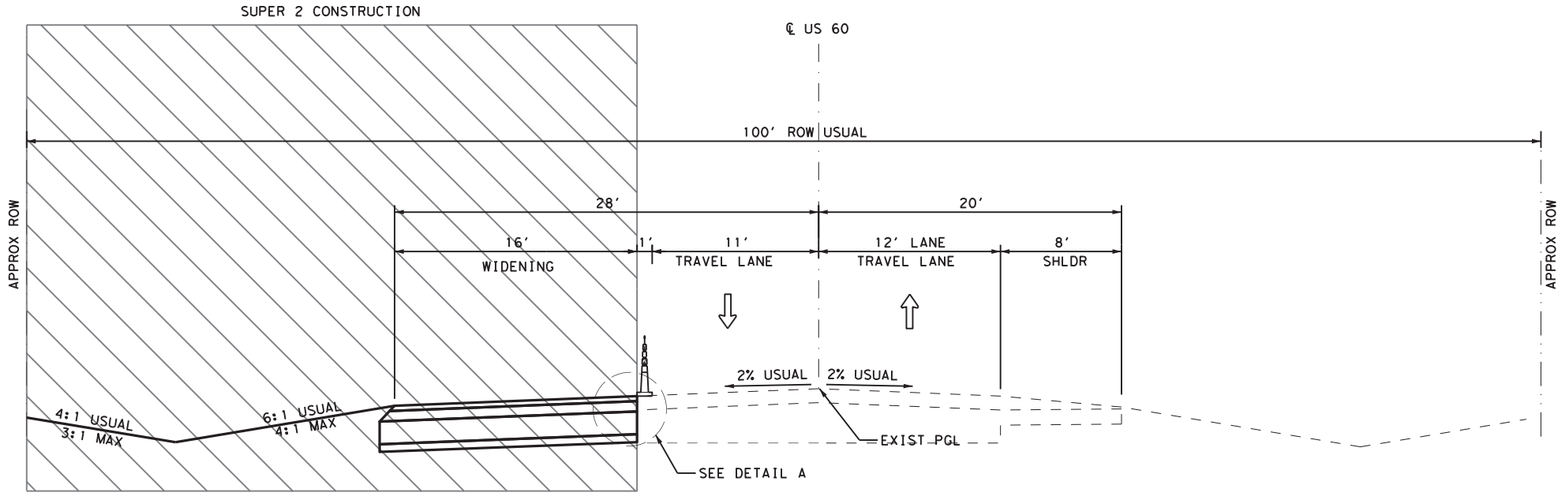


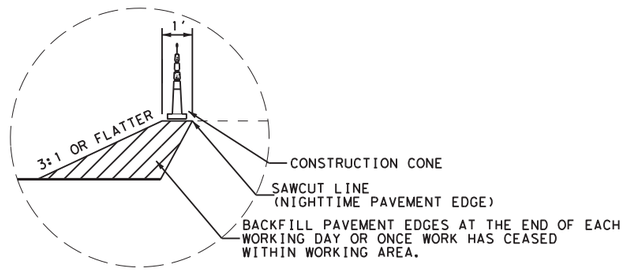


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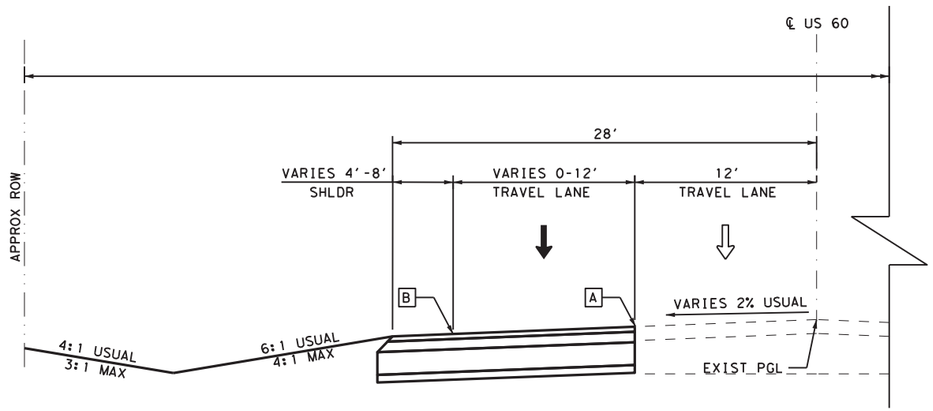


LEGEND

- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B WK ZN PAV MRK NON REMOV (W)4"(SLD)

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.

# PHASE 2
## US 60 WESTBOUND SUPER 2

STA 275+00.00 TO STA 390+00.00
STA 535+00.00 TO STA 614+20.00

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER
04/07/2021

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| REV. NO. | DATE | DESCRIPTION | BY |
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TCP
TYPICAL SECTIONS
PHASE 2

SHEET 5 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 33 |

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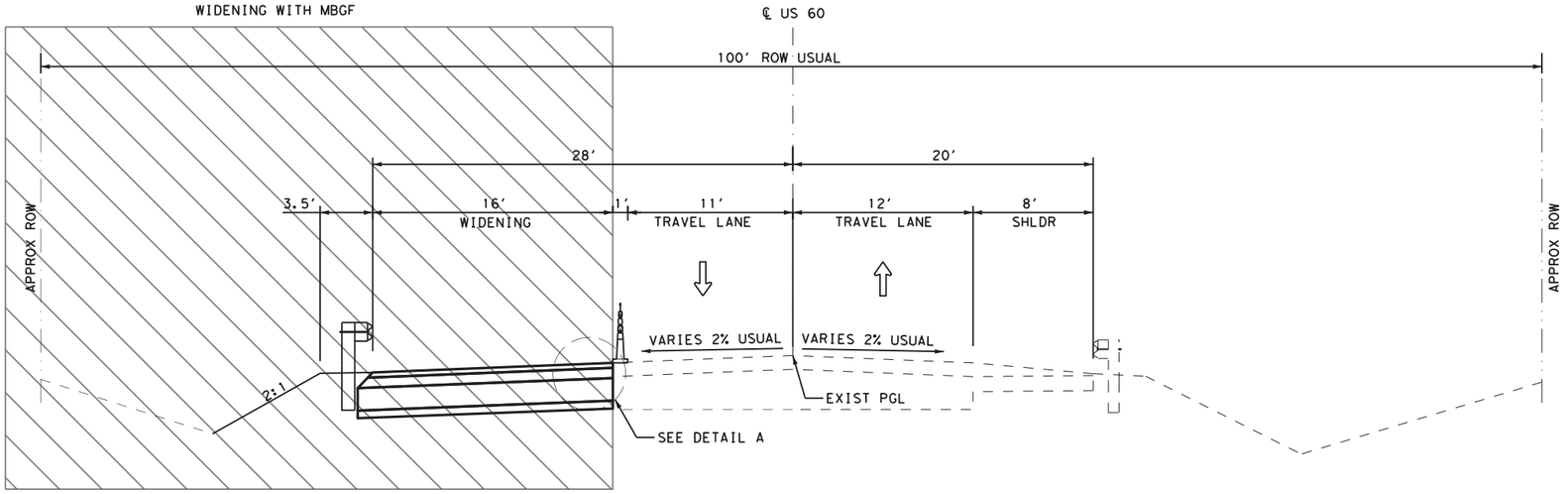
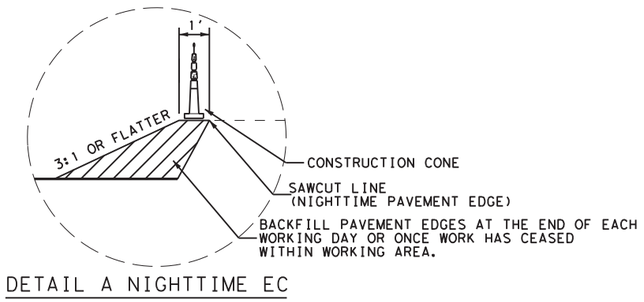



LEGEND

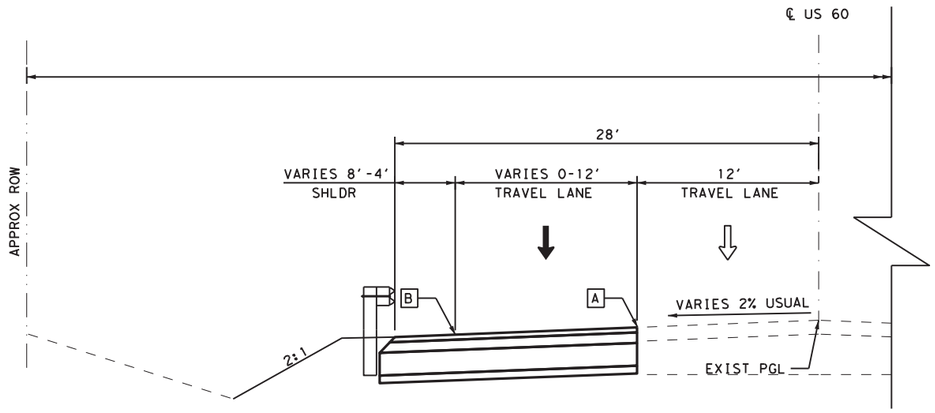
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- WORK ZONE THIS PHASE
- CONSTRUCTION CONE
- A WK ZN PAV MRK NON REMOV (W)4"(BRK)
- B WK ZN PAV MRK NON REMOV (W)4"(SLD)




DETAIL A NIGHTTIME EC

NOTE:

1. NIGHTTIME EDGE CONDITION WORK IS SUBSIDIARY TO ITEM 502.




PHASE 2

PAVEMENT WIDENING WITH MBGF
WESTBOUND

STA 287+33.00 TO STA 293+08.00

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

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| REV. NO. | DATE | DESCRIPTION | BY |
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# TCP
# TYPICAL SECTIONS
## PHASE 2

SHEET 6 OF 6

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 34 |

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## 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. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

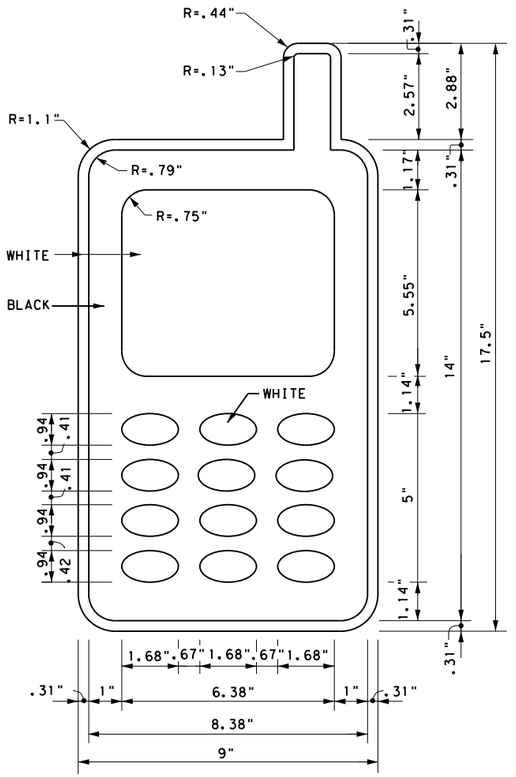
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

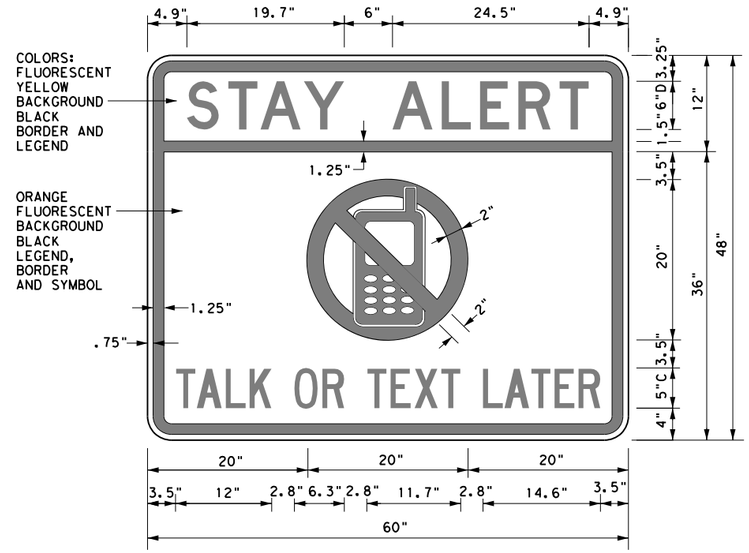
12. The Engineer has the final decision on the location of all traffic control devices.

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 APPAREL 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.




3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

## SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

| THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov |
|---|
| 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 |



Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

# BC(1)-14

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| © TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 4-03 5-10 8-14 | DIST | COUNTY | | SHEET NO. |
| 9-07 7-13 | AMA | GRAY | | 35 |

DATE: 4/7/2021 7:26:26 AM
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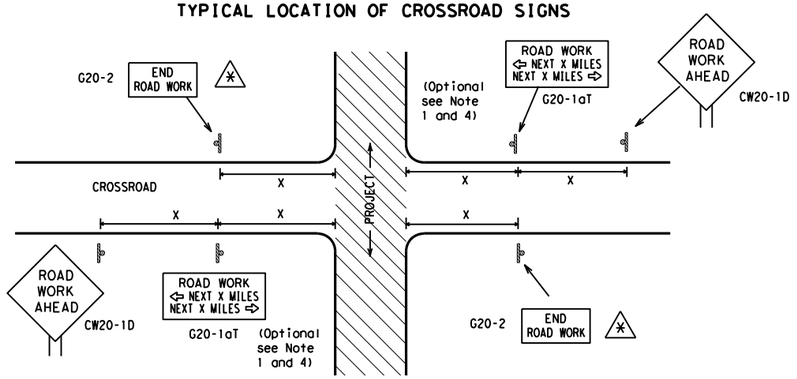
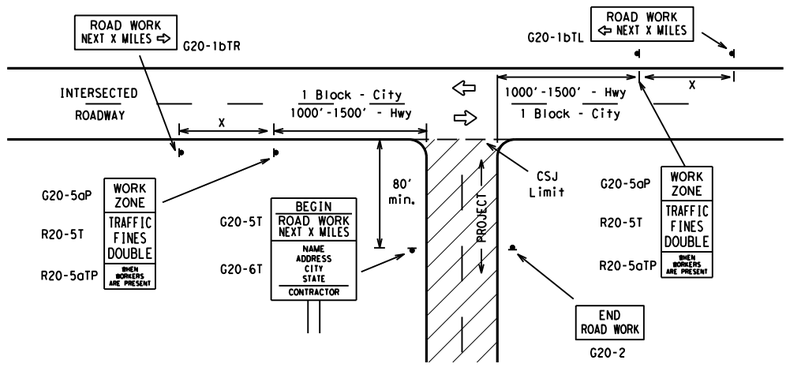
## TYPICAL LOCATION OF CROSSROAD SIGNS




(*) May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. 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.
2. 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. This information shall be shown in the plans.
3. 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.
4. 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.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. 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

1. 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.
2. 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]

### SIZE

| Sign Number or Series | Conventional Road | Expressway/ Freeway |
|---|---|---|
| CW20[4] CW21 CW22 CW23 CW25 | 48" x 48" | 48" x 48" |
| CW1, CW2, CW7, CW8, CW9, CW11, CW14 | 36" x 36" | 48" x 48" |
| CW3, CW4, CW5, CW6, CW8-3, CW10, CW12 | 48" x 48" | 48" x 48" |

### SPACING

| Posted Speed | Sign Spacing "X" (△) |
|---|---|
| MPH | Feet (Apprx.) |
| 30 | 120 |
| 35 | 160 |
| 40 | 240 |
| 45 | 320 |
| 50 | 400 |
| 55 | 500[2] |
| 60 | 600[2] |
| 65 | 700[2] |
| 70 | 800[2] |
| 75 | 900[2] |
| 80 | 1000[2] |
| * | *[3] |

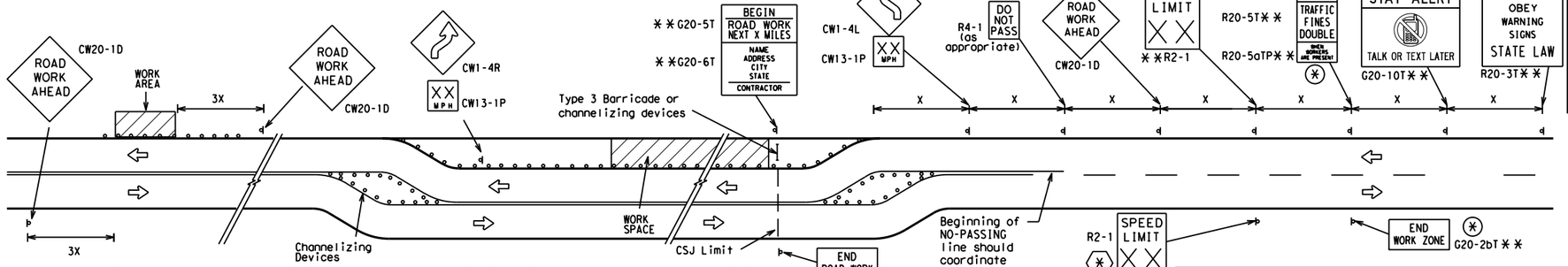
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

### GENERAL NOTES

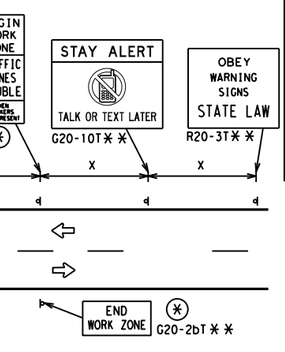
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. 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

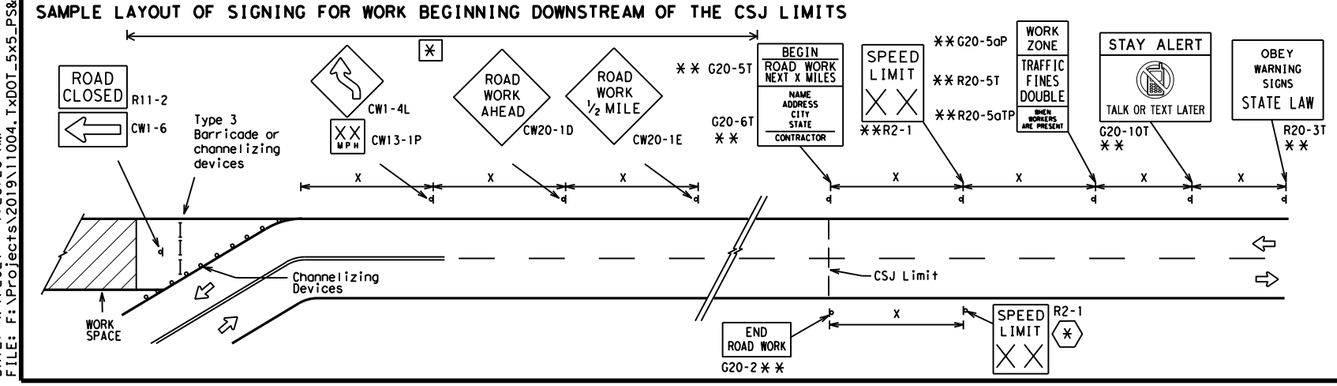



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

## SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS




## 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.

* * Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

[*] 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. |



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PROJECT LIMIT

## BC(2)-14

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| ©TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 9-07 8-14 | DIST | COUNTY | | SHEET NO. |
| 7-13 | AMA | GRAY | | 36 |

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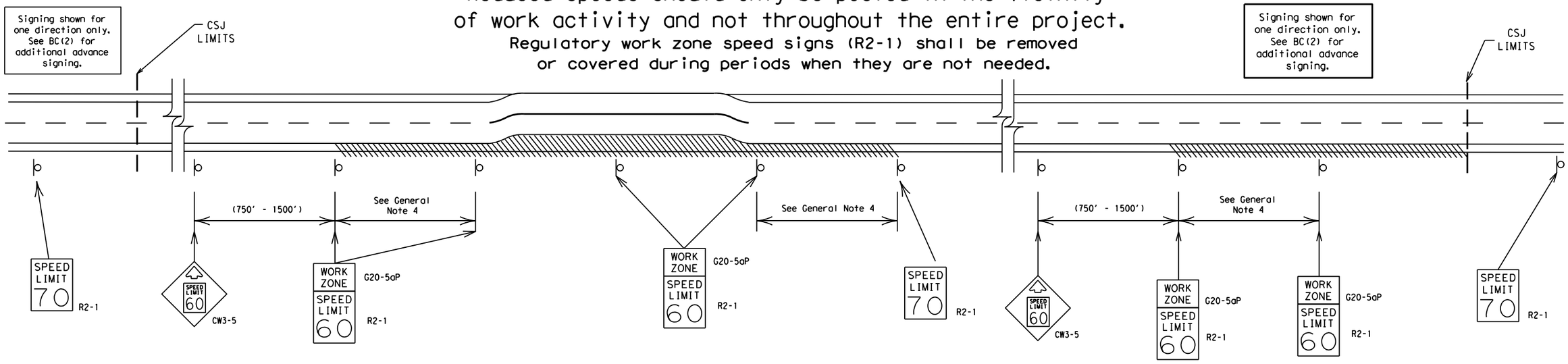
# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

**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:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) 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 travelled 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

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. 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
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. 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.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. 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.



Texas Department of Transportation

Traffic Operations Division Standard

## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

## BC(3)-14

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| REVISIONS 9-07 8-14 7-13 | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
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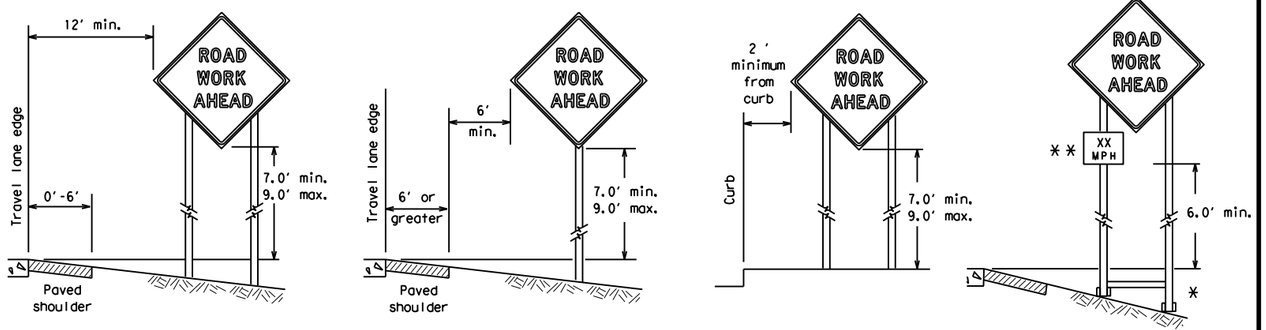
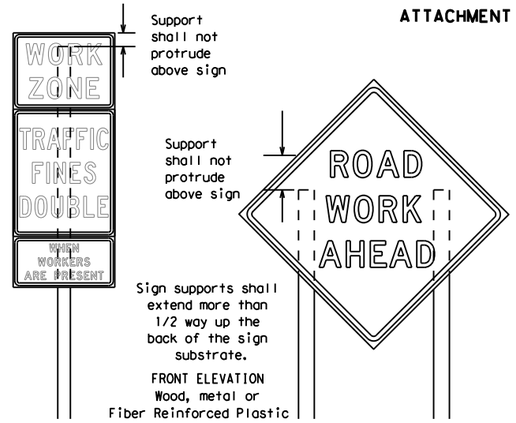
## TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



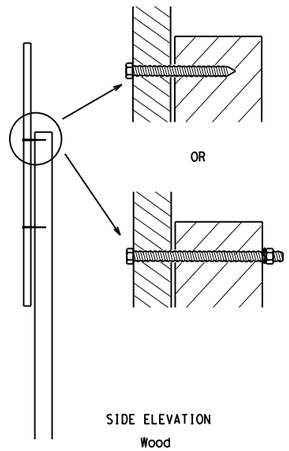

* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

## ATTACHMENT FOR SIGN SUPPORTS




Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

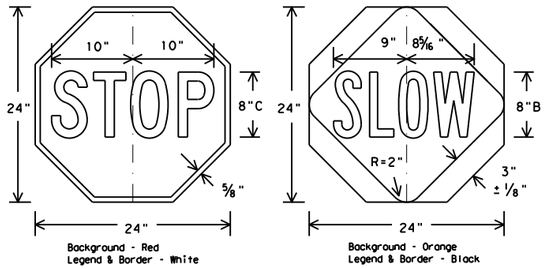



Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

**Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.**

## STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.




## CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

## GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. 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 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

## DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

## SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

## SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

## SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

## REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type $B_{FL}$ or Type $C_{FL}$, shall be used for rigid signs with orange backgrounds.

## SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

## REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. 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.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

## SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
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 shall 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.

## FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

# BC(4)-14

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|---|---|---|---|---|
| © TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 9-07 8-14 | DIST | COUNTY | | SHEET NO. |
| 7-13 | AMA | GRAY | | 38 |

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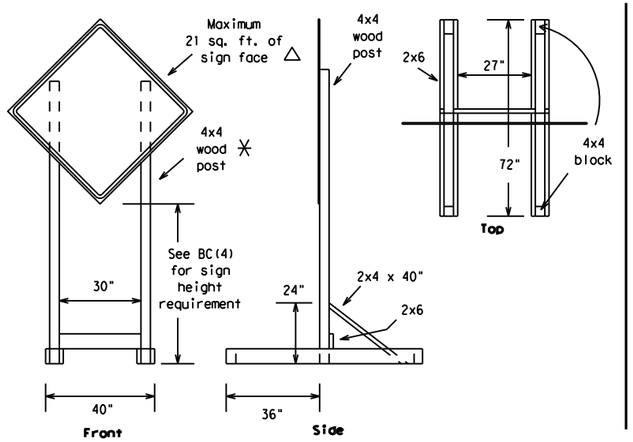
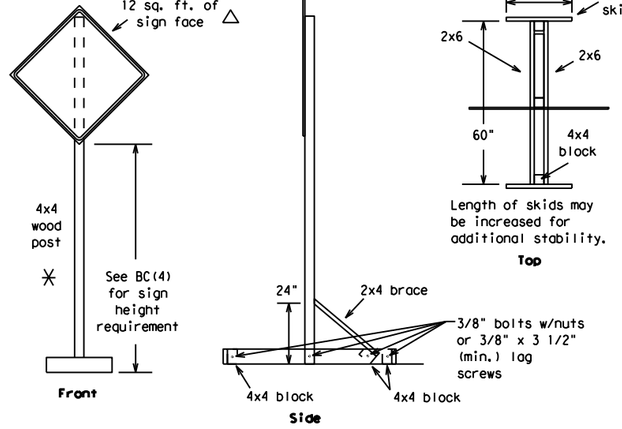
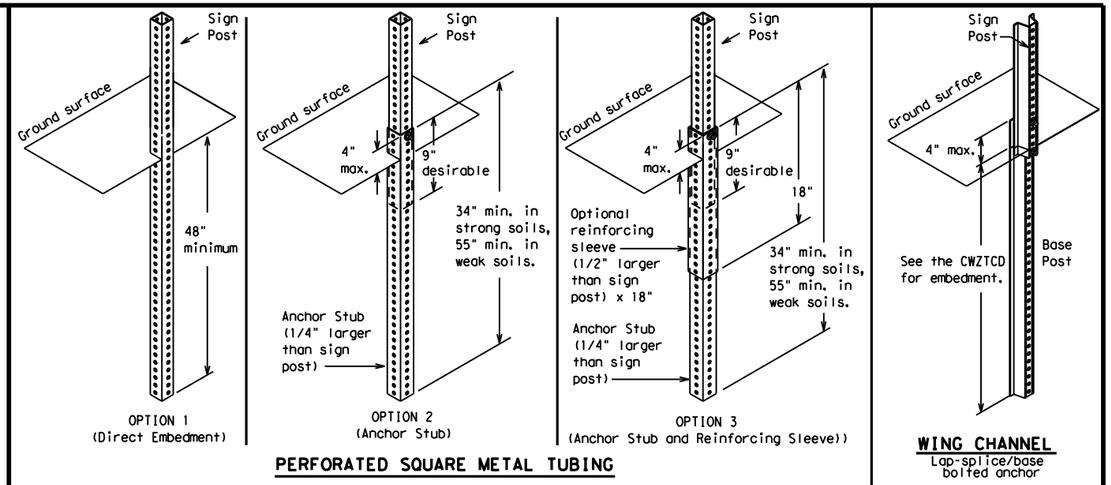


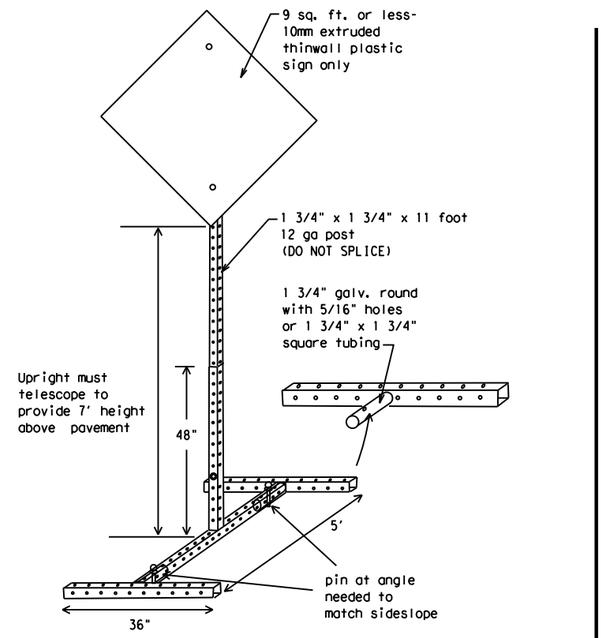

# SKID MOUNTED WOOD SIGN SUPPORTS

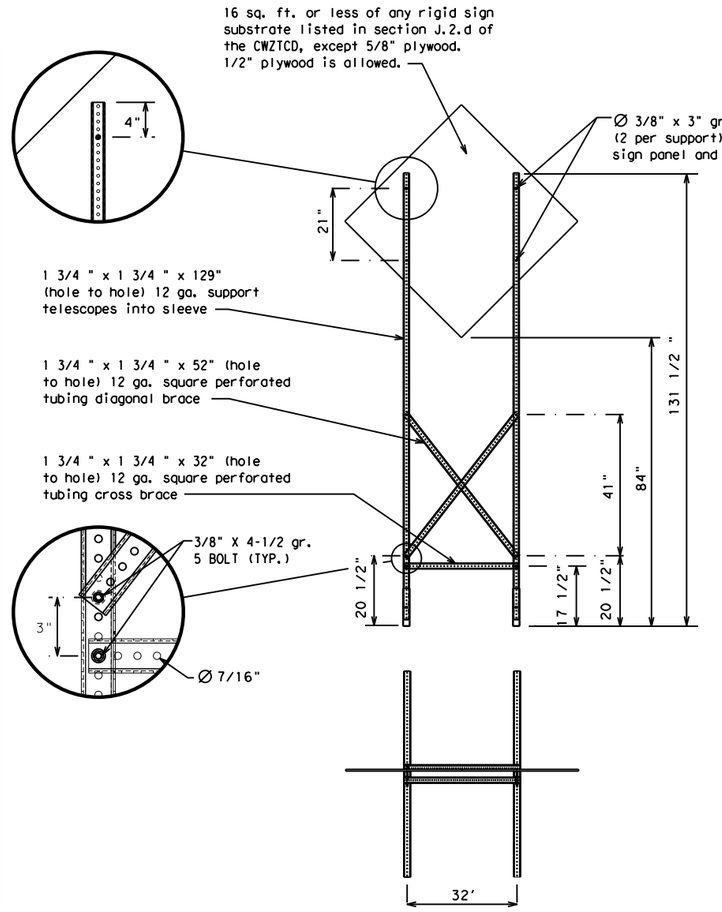
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

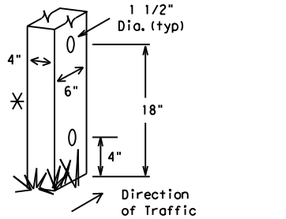



# GROUND MOUNTED SIGN SUPPORTS

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.

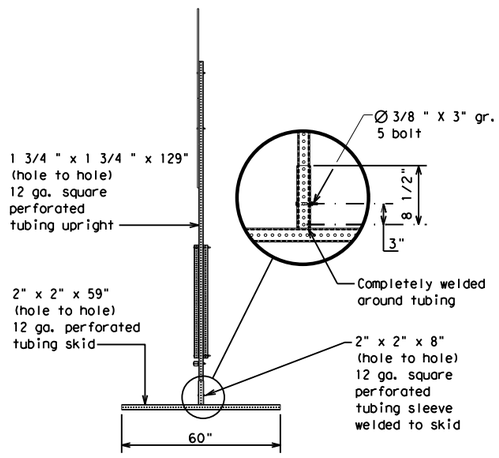



| Nominal Post Size | Number of Posts | Maximum Sq. feet of Sign Face | Minimum Soil Embedment | Drilled Hole(s) Required |
|---|---|---|---|---|
| 4 x 4 | 1 | 12 | 36" | NO |
| 4 x 4 | 2 | 21 | 36" | NO |
| 4 x 6 | 1 | 21 | 36" | YES |
| 4 x 6 | 2 | 36 | 36" | YES |

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS




# SKID MOUNTED PERFORATED SQUARE STEEL TUBING 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

1. 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.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. 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.



Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

# BC(5)-14

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| ©TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
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| 7-13 | AMA | GRAY | | 39 |

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

## PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

| WORD OR PHRASE | ABBREVIATION |
|---|---|
| Access Road | ACCS RD |
| Alternate | ALT |
| Avenue | AVE |
| Best Route | BEST RTE |
| Boulevard | BLVD |
| Bridge | BRDG |
| Cannot | CANT |
| Center | CTR |
| Construction Ahead | CONST AHD |
| CROSSING | XING |
| Detour Route | DETOUR RTE |
| Do Not | DONT |
| East | E |
| Eastbound | (route) E |
| Emergency | EMER |
| Emergency Vehicle | EMER VEH |
| Entrance, Enter | ENT |
| Express Lane | EXP LN |
| Expressway | EXPWY |
| XXXX Feet | XXXX FT |
| Fog Ahead | FOG AHD |
| Freeway | FRWY, FWY |
| Freeway Blocked | FWY BLKD |
| Friday | FRI |
| Hazardous Driving | HAZ DRIVING |
| Hazardous Material | HAZMAT |
| High-Occupancy | HOV |
| Vehicle Highway | HWY |
| Hour(s) | HR, HRS |
| Information | INFO |
| It Is | ITS |
| Junction | JCT |
| Left | LFT |
| Left Lane | LFT LN |
| Lane Closed | LN CLOSED |
| Lower Level | LWR LEVEL |
| Maintenance | MAINT |

| WORD OR PHRASE | ABBREVIATION |
|---|---|
| Major | MAJ |
| Miles | MI |
| Miles Per Hour | MPH |
| Minor | MNR |
| Monday | MON |
| Normal | NORM |
| North | N |
| Northbound | (route) N |
| Parking | PKING |
| Road | RD |
| Right Lane | RT LN |
| Saturday | SAT |
| Service Road | SERV RD |
| Shoulder | SHLDR |
| Slippery | SLIP |
| South | S |
| Southbound | (route) S |
| Speed | SPD |
| Street | ST |
| Sunday | SUN |
| Telephone | PHONE |
| Temporary | TEMP |
| Thursday | THURS |
| To Downtown | TO DWNTN |
| Traffic | TRAF |
| Travelers | TRVLRS |
| Tuesday | TUES |
| Time Minutes | TIME MIN |
| Upper Level | UPR LEVEL |
| Vehicles (s) | VEH, VEHS |
| Warning | WARN |
| Wednesday | WED |
| Weight Limit | WT LIMIT |
| West | W |
| Westbound | (route) W |
| Wet Pavement | WET PVMT |
| Will Not | WONT |

Roadway designation # IH-number, US-number, SH-number, FM-number

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

| | |
|---|---|
| FREEWAY CLOSED X MILE | FRONTAGE ROAD CLOSED |
| ROAD CLOSED AT SH XXX | SHOULDER CLOSED XXX FT |
| ROAD CLSD AT FM XXXX | RIGHT LN CLOSED XXX FT |
| RIGHT X LANES CLOSED | RIGHT X LANES OPEN |
| CENTER LANE CLOSED | DAYTIME LANE CLOSURES |
| NIGHT LANE CLOSURES | I-XX SOUTH EXIT CLOSED |
| VARIOUS LANES CLOSED | EXIT XXX CLOSED X MILE |
| EXIT CLOSED | RIGHT LN TO BE CLOSED |
| MALL DRIVEWAY CLOSED | X LANES CLOSED TUE - FRI |
| XXXXXXXX BLVD CLOSED | |

### Other Condition List

| | |
|---|---|
| ROADWORK XXX FT | ROAD REPAIRS XXXX FT |
| FLAGGER XXXX FT | LANE NARROWS XXXX FT |
| RIGHT LN NARROWS XXXX FT | TWO-WAY TRAFFIC XX MILE |
| MERGING TRAFFIC XXXX FT | CONST TRAFFIC XXX FT |
| LOOSE GRAVEL XXXX FT | UNEVEN LANES XXXX FT |
| DETOUR X MILE | ROUGH ROAD XXXX FT |
| ROADWORK PAST SH XXXX | ROADWORK NEXT FRI-SUN |
| BUMP XXXX FT | US XXX EXIT X MILES |
| TRAFFIC SIGNAL XXXX FT | LANES SHIFT * |

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

## Phase 2: Possible Component Lists

### Action to Take/Effect on Travel List

| | |
|---|---|
| MERGE RIGHT | FORM X LINES RIGHT |
| DETOUR NEXT X EXITS | USE XXXXX RD EXIT |
| USE EXIT XXX | USE EXIT I-XX NORTH |
| STAY ON US XXX SOUTH | USE I-XX E TO I-XX N |
| TRUCKS USE US XXX N | WATCH FOR TRUCKS |
| WATCH FOR TRUCKS | EXPECT DELAYS |
| EXPECT DELAYS | PREPARE TO STOP |
| REDUCE SPEED XXX FT | END SHOULDER USE |
| USE OTHER ROUTES | WATCH FOR WORKERS |
| STAY IN LANE * | |

### Location List

| |
|---|
| AT FM XXXX |
| BEFORE RAILROAD CROSSING |
| NEXT X MILES |
| PAST US XXX EXIT |
| XXXXXXX TO XXXXXXX |
| US XXX TO FM XXXX |

### Warning List

| |
|---|
| SPEED LIMIT XX MPH |
| MAXIMUM SPEED XX MPH |
| MINIMUM SPEED XX MPH |
| ADVISORY SPEED XX MPH |
| RIGHT LANE EXIT |
| USE CAUTION |
| DRIVE SAFELY |
| DRIVE WITH CARE |

### ** Advance Notice List

| |
|---|
| TUE-FRI XX AM- X PM |
| APR XX-XX X PM-X AM |
| BEGINS MONDAY |
| BEGINS MAY XX |
| MAY X-X XX PM - XX AM |
| NEXT FRI-SUN |
| XX AM TO XX PM |
| NEXT TUE AUG XX |
| TONIGHT XX PM- XX AM |

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

** See Application Guidelines Note 6.

### APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

### WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

### FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

# BC(6)-14

| FILE: bc-14.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 9-07 8-14 | DIST | COUNTY | | SHEET NO. |
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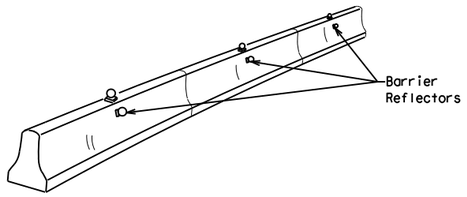
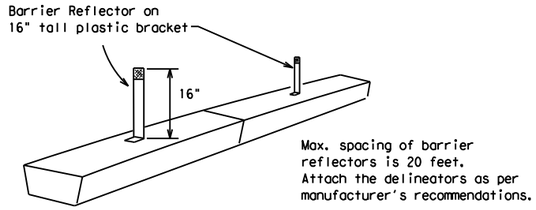
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

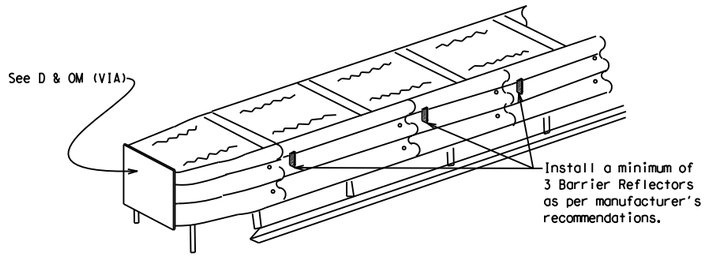



## CONCRETE TRAFFIC BARRIER (CTB)

3. 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.
4. 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.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.




## LOW PROFILE CONCRETE BARRIER (LPCB)

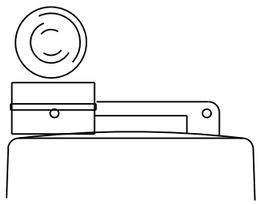



## DELINEATION OF END TREATMENTS

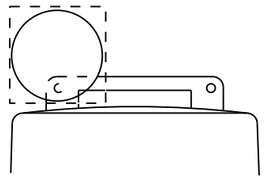
**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

# BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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

## WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. 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 $B_{FL}$ or $C_{FL}$ Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. 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".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. 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.
7. 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.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

## WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

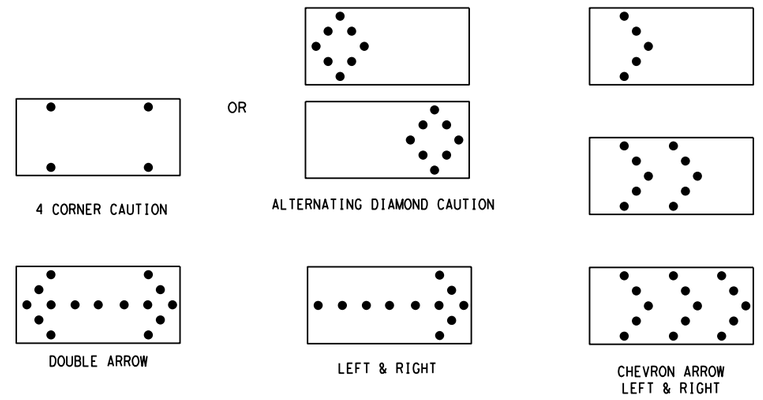
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.
4. 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.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. 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

1. 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.
2. 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.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. 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.
6. 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.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

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.

1. 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.
2. 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.
3. 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.
4. The Flashing Arrow Board should be able to display the following symbols:




5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. 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.
8. 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.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. 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.
14. 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



## TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. 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.
6. 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.

Texas Department of Transportation

*Traffic Operations Division Standard*

# BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

# BC(7)-14

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| ©TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
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## GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. 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.
3. 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.
4. 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).
5. 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.
6. 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:

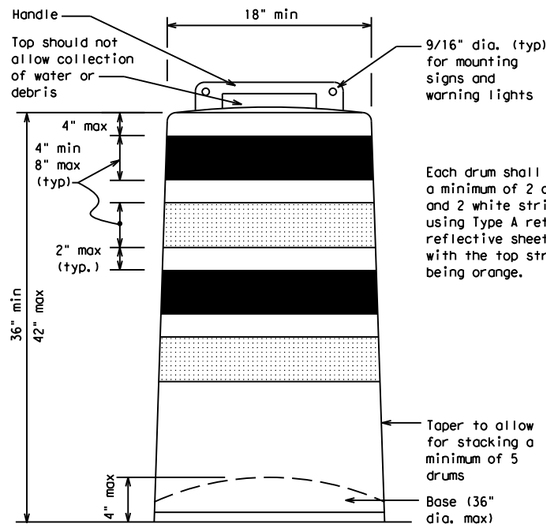
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

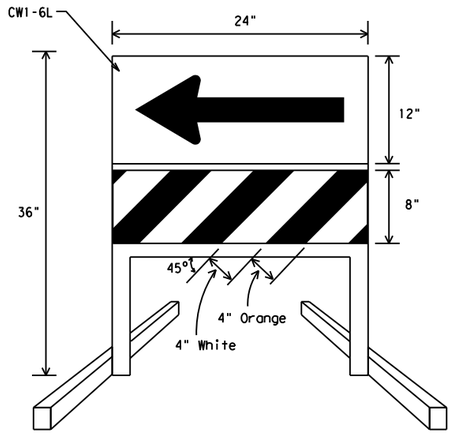
## RETROREFLECTIVE SHEETING

1. 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 reflective sheeting shall be supplied unless otherwise specified in the plans.
2. 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

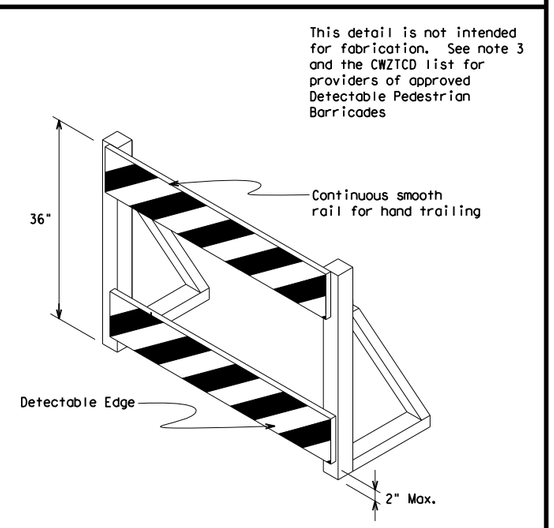
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other 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.
2. 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.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. 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.
5. 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.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.



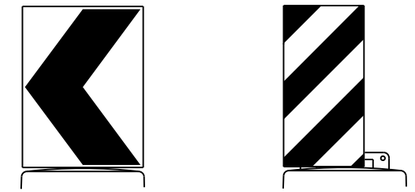

## DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type $B_{FL}$ or Type $C_{FL}$ Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.




## DETECTABLE PEDESTRIAN BARRICADES

1. 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.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. 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.
4. 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 for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may 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

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type $B_{FL}$ or Type $C_{FL}$ Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. 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.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. 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.
8. 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.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

# BC(8)-14

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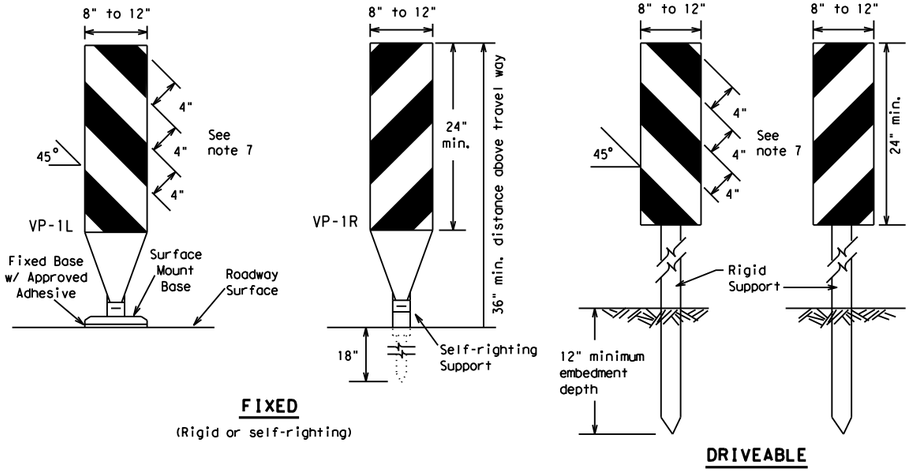
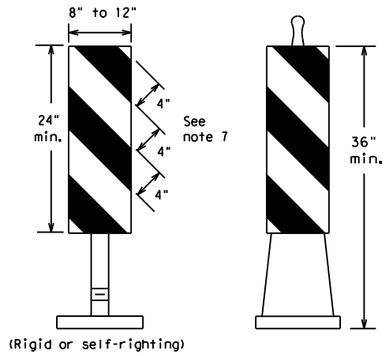



**FIXED**
(Rigid or self-righting)

**DRIVEABLE**

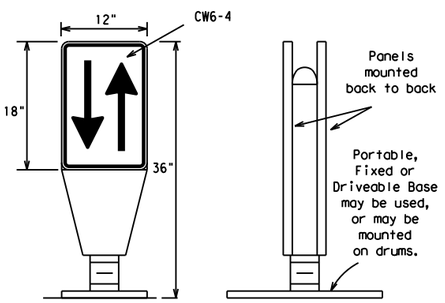



(Rigid or self-righting)

**PORTABLE**

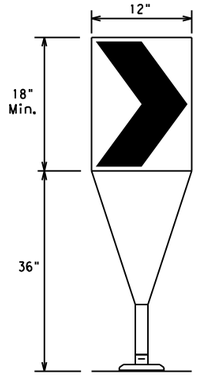
## VERTICAL PANELS (VPs)

1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. 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 Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. 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.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. 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)

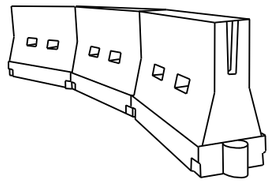
1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type $B_{FL}$ or Type $C_{FL}$ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.




Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. 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.
3. 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.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type $B_{FL}$ or Type $C_{FL}$ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. 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)

1. 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.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. 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) placed near the top of the LCD along the full length of the device.

## WATER BALLASTED SYSTEMS USED AS BARRIERS

1. 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 NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. 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.
3. 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.
4. 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.
5. 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

1. 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).
2. 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.
3. 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).
4. 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.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. 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.
7. 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 ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices 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' |

** 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

Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

# BC(9)-14

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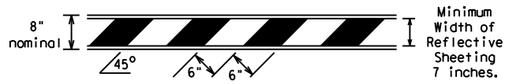
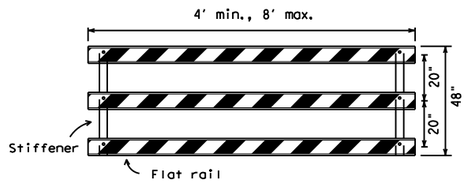
## TYPE 3 BARRICADES

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 conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



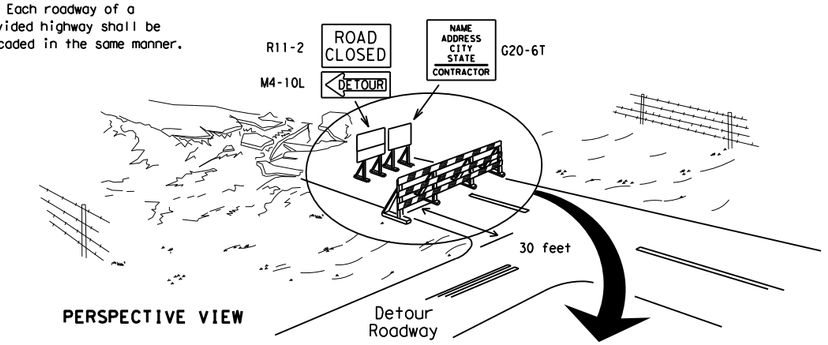

### TYPICAL STRIPING DETAIL FOR BARRICADE RAIL




Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

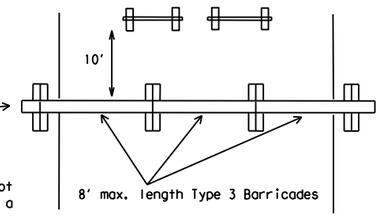
### TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.




PERSPECTIVE VIEW

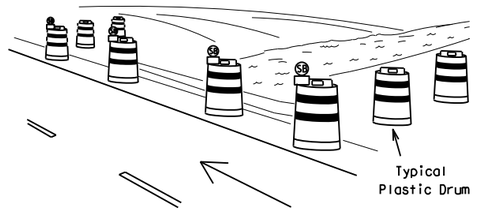
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.




PLAN VIEW

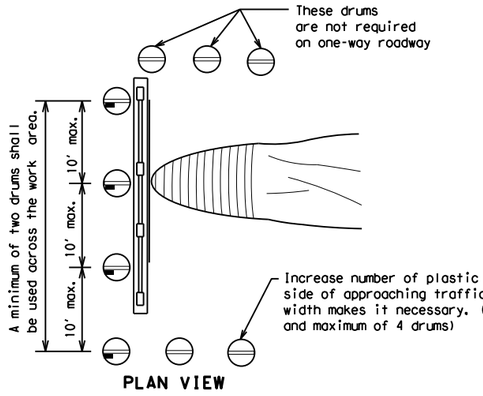
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

### TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION




PERSPECTIVE VIEW

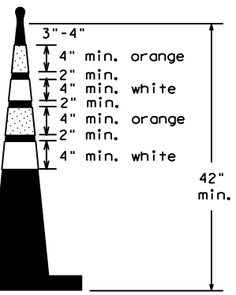
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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.



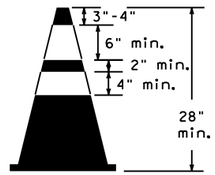

PLAN VIEW

| LEGEND | |
|---|---|
| | Plastic drum |
| | Plastic drum with steady burn light or yellow warning reflector |
| SB | Steady burn warning light or yellow warning reflector |

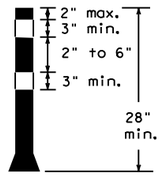
### CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS




Two-Piece cones




One-Piece cones

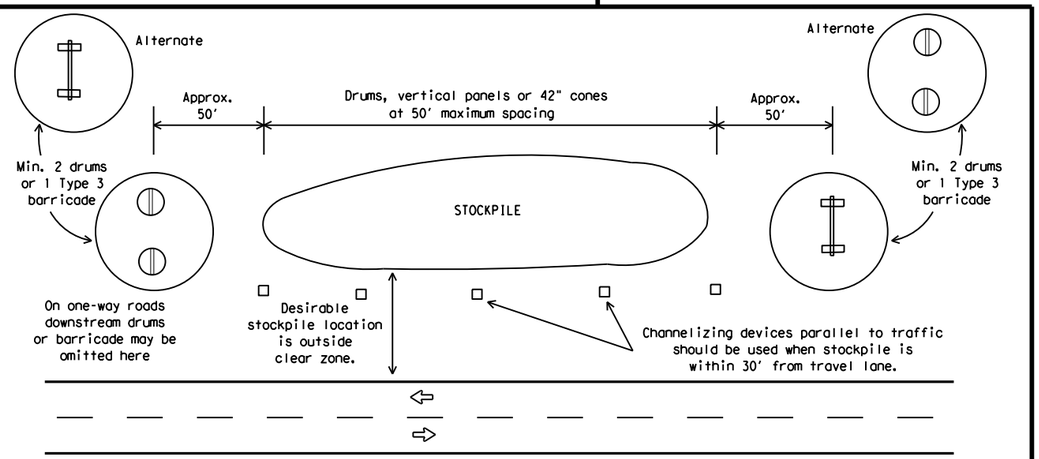



Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

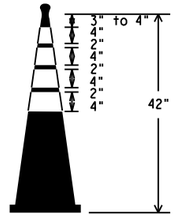
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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 used at night 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.
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

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.




EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.



Texas Department of Transportation — Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

## BC(10)-14

| FILE: bc-14.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| © TxDOT November 2002 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 9-07 8-14 7-13 | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 44 |

DATE: 4/7/2021 7:26:30 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.1-TCP\05-Standards\bc-14.dgn

# WORK ZONE PAVEMENT MARKINGS

## GENERAL

1. 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.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. 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).
6. 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.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

## RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. 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

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

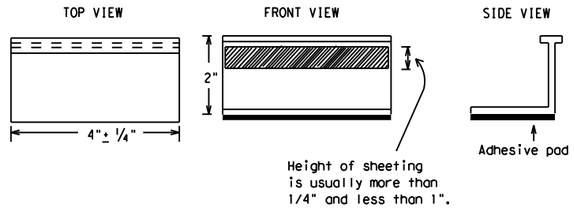
## MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. 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.
3. 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.
4. 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

1. 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.
2. 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.
3. 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".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. 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.
10. 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**

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. 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.
   A. 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.
   B. 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.
3. Small design variances may be noted between tab manufacturers.
4. 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

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. 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).



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

## BC(11)-14

| FILE: bc-14.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT February 1998 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-98 9-07 | DIST | COUNTY | | SHEET NO. |
| 1-02 7-13 | AMA | GRAY | | 45 |
| 11-02 8-14 | | | | |

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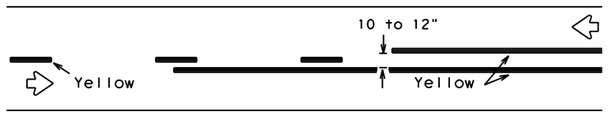
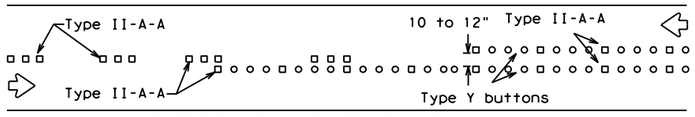
DATE: 4/7/2021 7:26:30 AM
FILE: F:\Projects\2019\1004_TxDOT_5x5_PS&E\03_US60_Amarillo\ENG\500-USTIN\511_1-TCP\05-Standards\bc-14.dgn

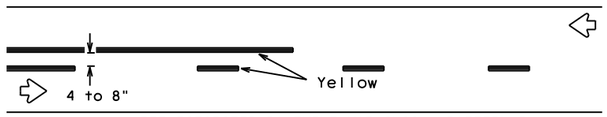
# PAVEMENT MARKING PATTERNS



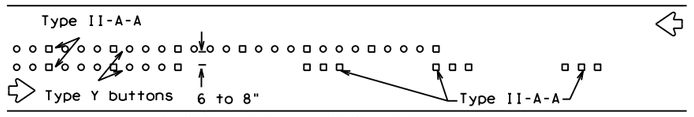

REFLECTORIZED PAVEMENT MARKINGS - PATTERN A




RAISED PAVEMENT MARKERS - PATTERN A



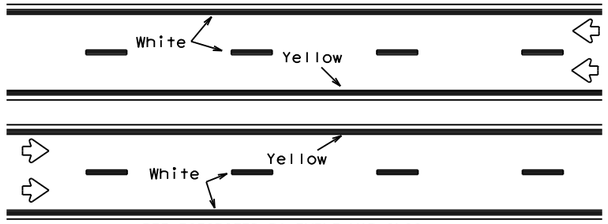

REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



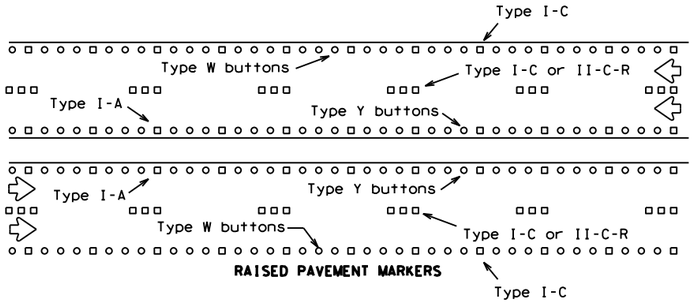

RAISED PAVEMENT MARKERS - PATTERN B

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.

## CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



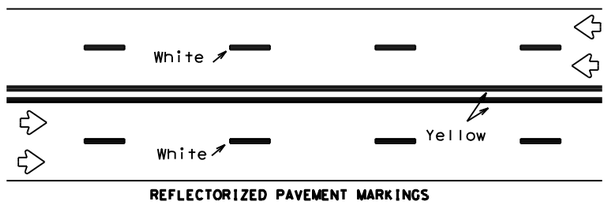

REFLECTORIZED PAVEMENT MARKINGS



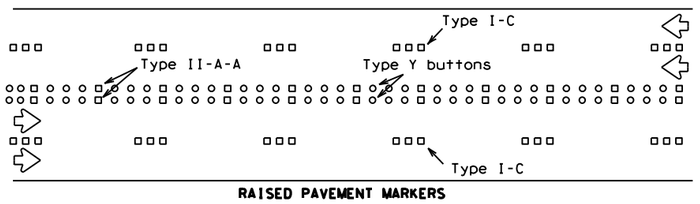

RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



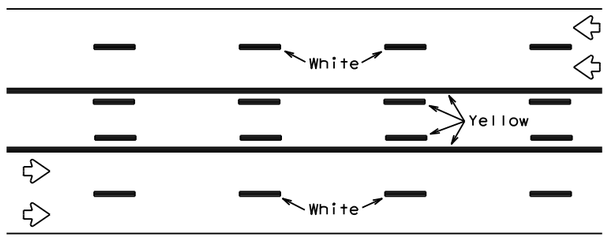

REFLECTORIZED PAVEMENT MARKINGS



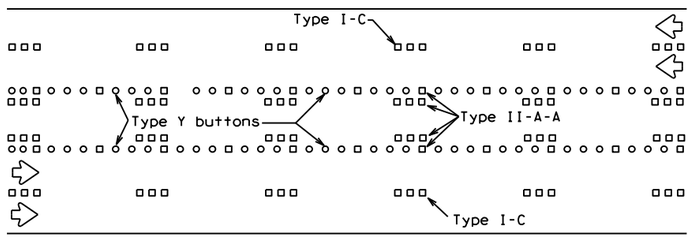

RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS




REFLECTORIZED PAVEMENT MARKINGS




RAISED PAVEMENT MARKERS

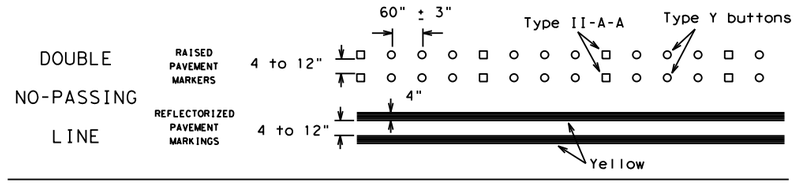
Prefabricated markings may be substituted for reflectorized pavement markings.

## TWO-WAY LEFT TURN LANE

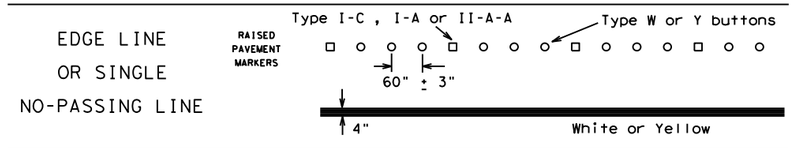
# STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

## SOLID LINES

### DOUBLE NO-PASSING LINE

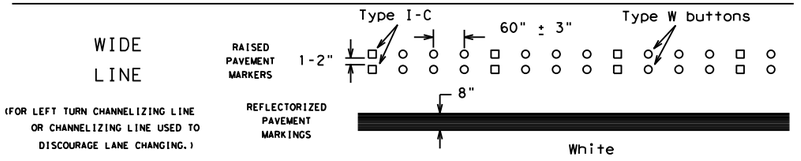



### EDGE LINE OR SINGLE NO-PASSING LINE



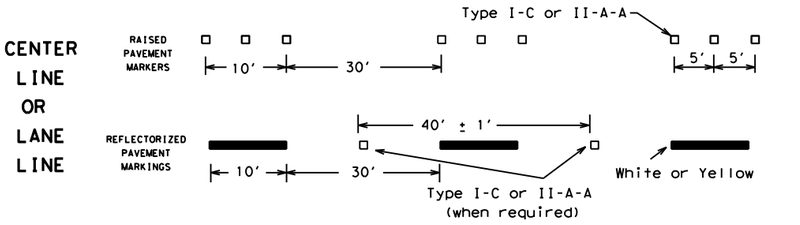

### WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

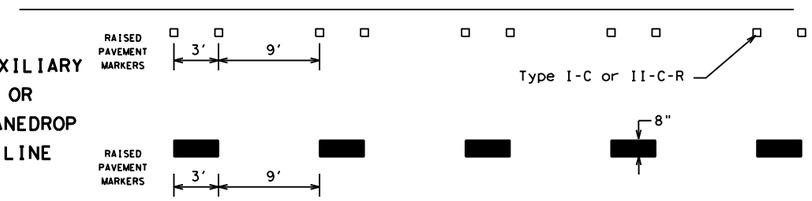



## BROKEN LINES

### CENTER LINE OR LANE LINE

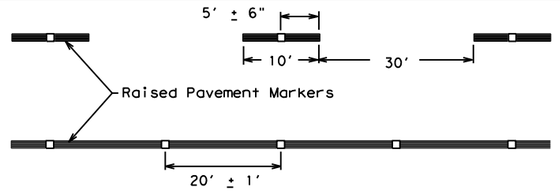



### AUXILIARY OR LANEDROP LINE




### 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.




Centerline only - not to be used on edge lines

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."



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

## BC(12)-14

| FILE: bc-14.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
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| © TxDOT February 1998 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 1-97 9-07 | DIST | COUNTY | | SHEET NO. |
| 2-98 7-13 | AMA | GRAY | | 46 |
| 11-02 8-14 | | | | |

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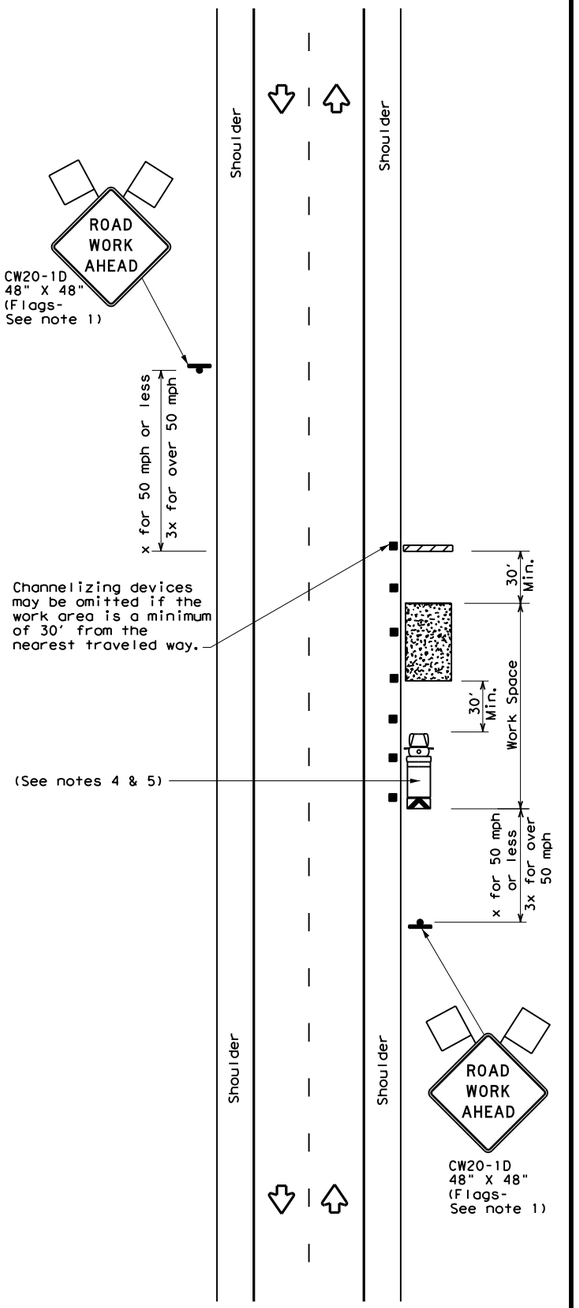
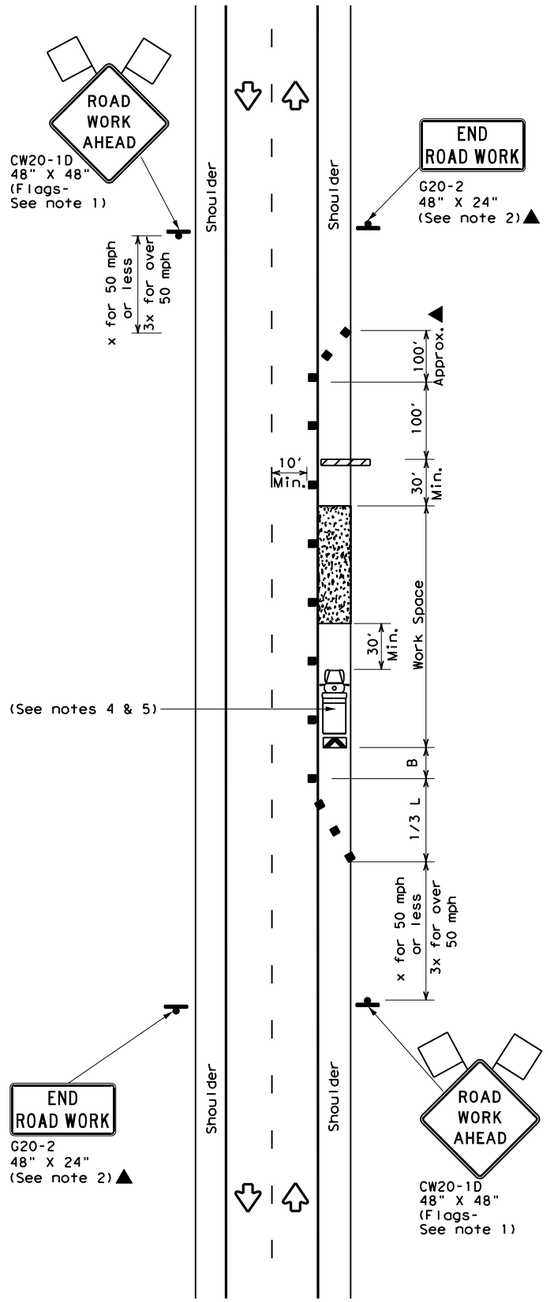


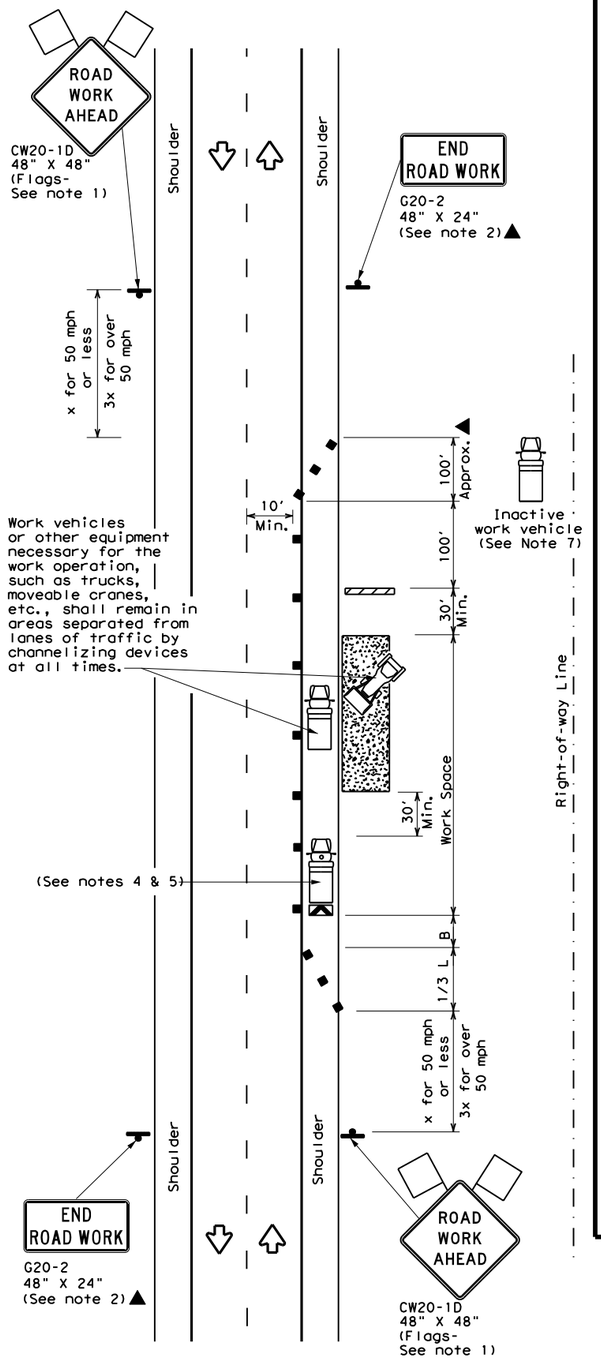

TCP (2-1a)

## WORK SPACE NEAR SHOULDER
Conventional Roads




TCP (2-1b)

## WORK SPACE ON SHOULDER
Conventional Roads




TCP (2-1c)

## WORK VEHICLES ON SHOULDER
Conventional Roads

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | | Channelizing Devices |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Trailer Mounted Flashing Arrow Board | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices: On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" |
|---|---|---|---|---|---|---|---|---|
| 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. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

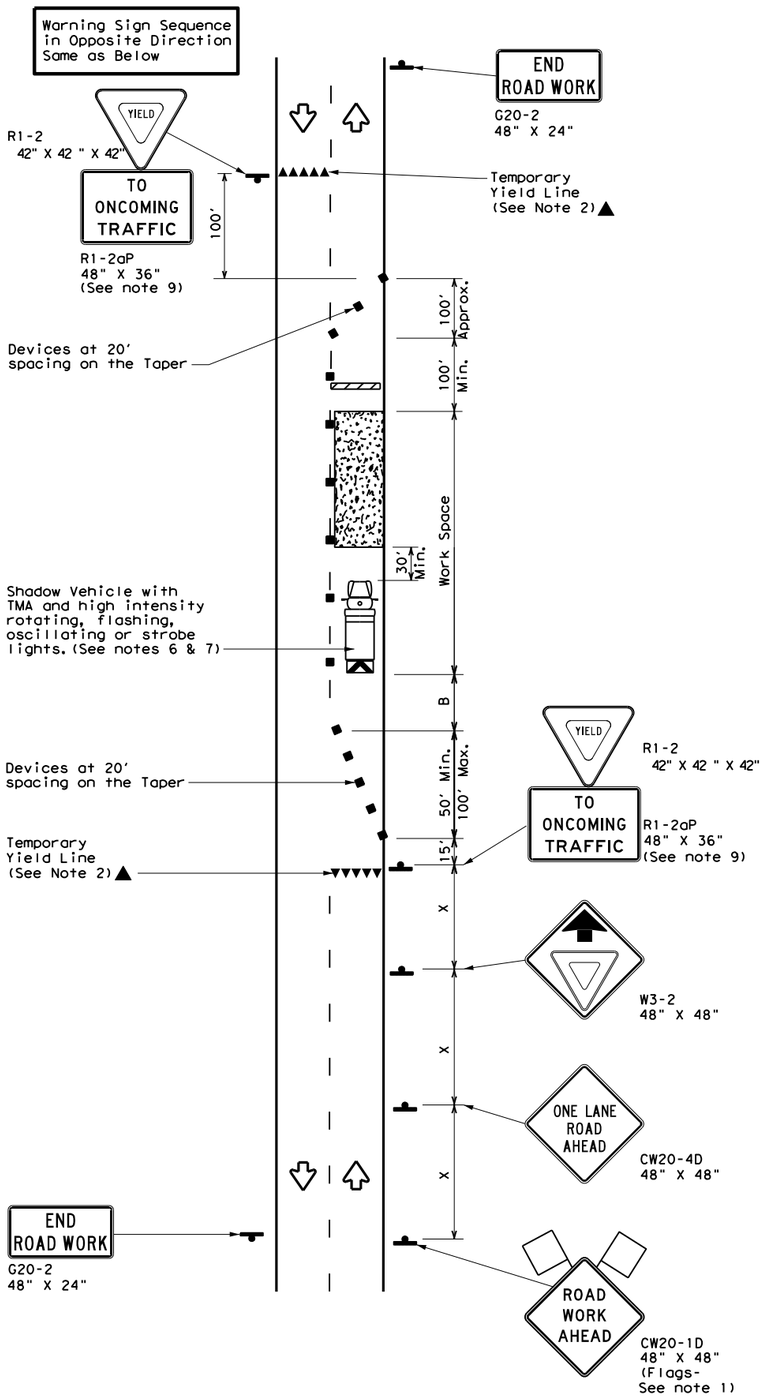
*Traffic Operations Division Standard*

# TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

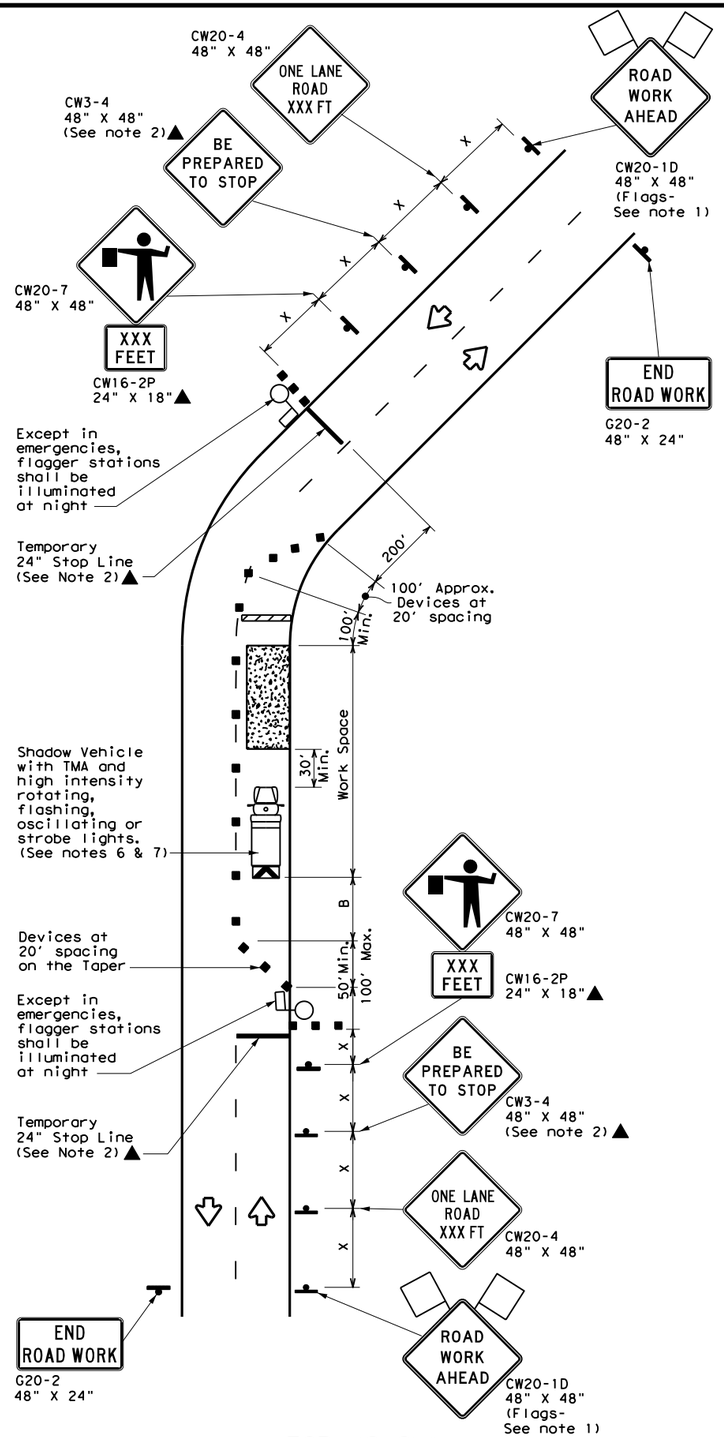
# TCP(2-1)-18

| FILE: tcp2-1-18.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT December 1985 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-94 4-98 | DIST | COUNTY | | SHEET NO. |
| 8-95 2-12 | AMA | GRAY | | 47 |
| 1-97 2-18 | | | | |

DATE: 4/7/2021 7:26:31 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\SHT\TCP2-2-18.dgn




TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)




TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | ■ ■ | Channelizing Devices |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Trailer Mounted Flashing Arrow Board | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices: On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" | Stopping Sight Distance |
|---|---|---|---|---|---|---|---|---|---|
| 30 | $L=\frac{WS^2}{60}$ | 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

1. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. 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.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. 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.
7. 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)

8. 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.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

### TCP (2-2b)

10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. 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).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

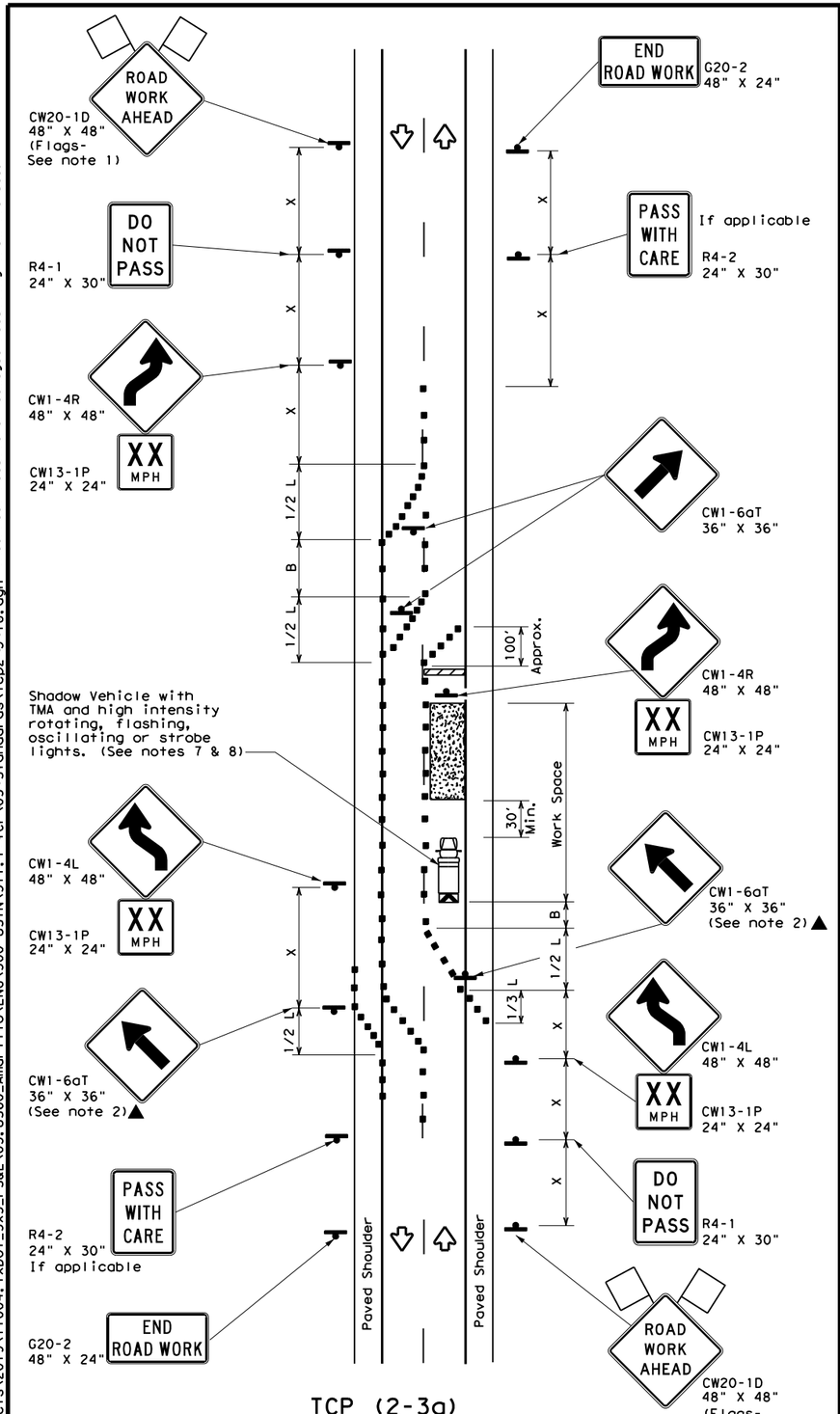
Texas Department of Transportation
Traffic Operations Division Standard

# TRAFFIC CONTROL PLAN
# ONE-LANE TWO-WAY
# TRAFFIC CONTROL

## TCP(2-2)-18

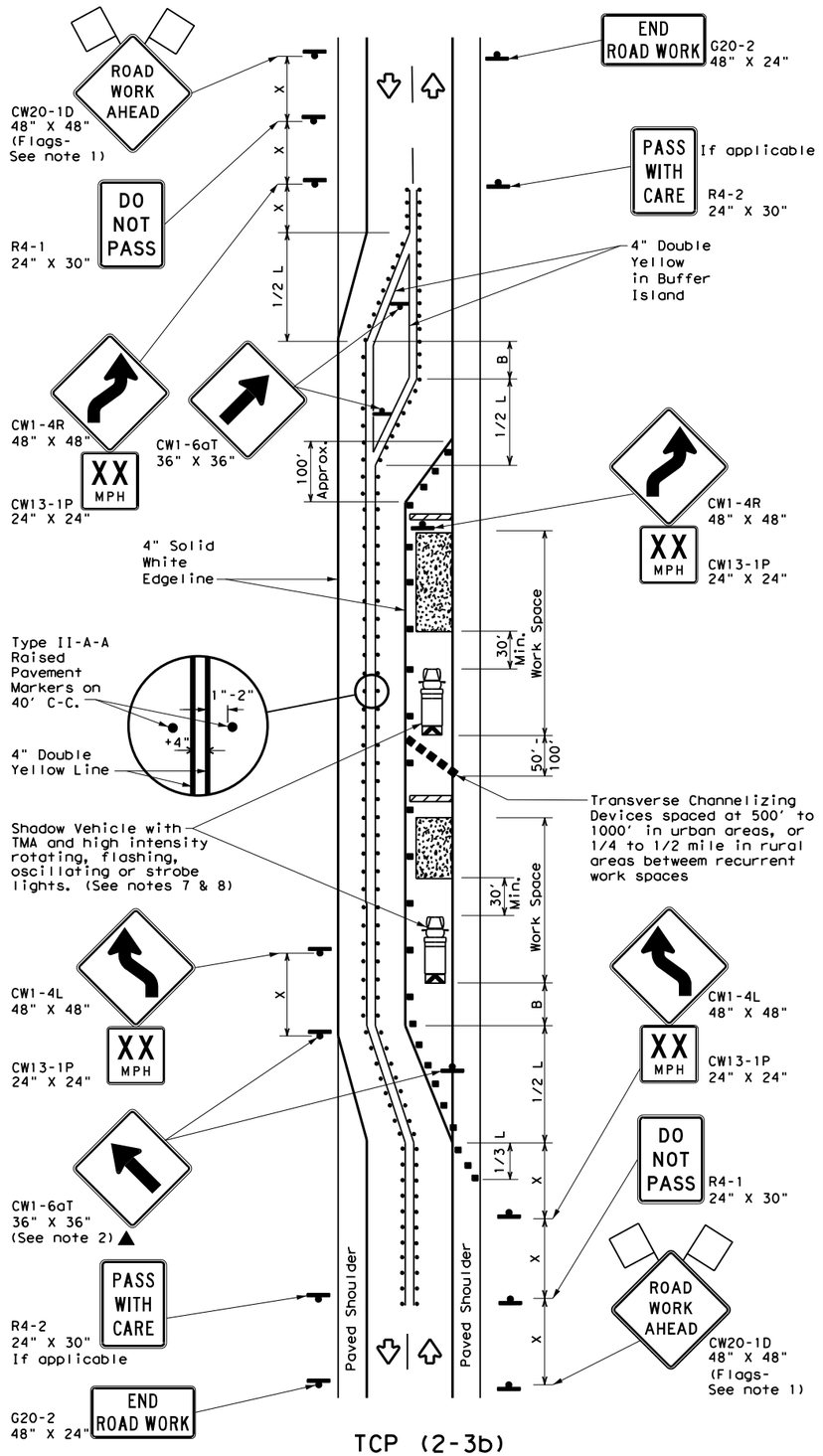
| FILE: tcp2-2-18.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| ©TxDOT December 1985 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 8-95 3-03 1-97 2-12 4-98 2-18 | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 48 |

DATE: 4/7/2021 7:26:32 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\SH\TCP(2-3)-18-F.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 * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" |
|---|---|---|---|---|---|---|---|---|
| 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 |
| | | | | TCP(2-3b)ONLY |
| | | | ✓ | ✓ |

## GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. 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.
4. 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.
5. 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.
6. Conflicting pavement marking shall be removed for long term projects.
7. 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.
8. 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)

9. 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 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 8-95 3-03 | DIST | COUNTY | | SHEET NO. |
| 1-97 2-12 | AMA | GRAY | | 49 |
| 4-98 2-18 | | | | |

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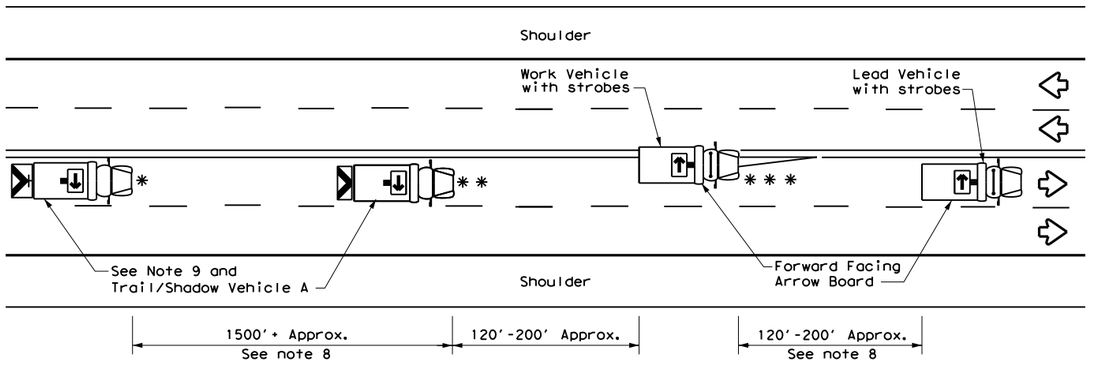
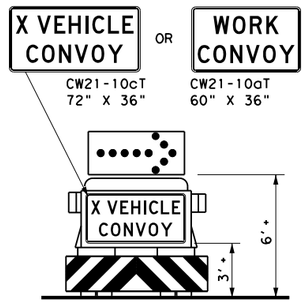


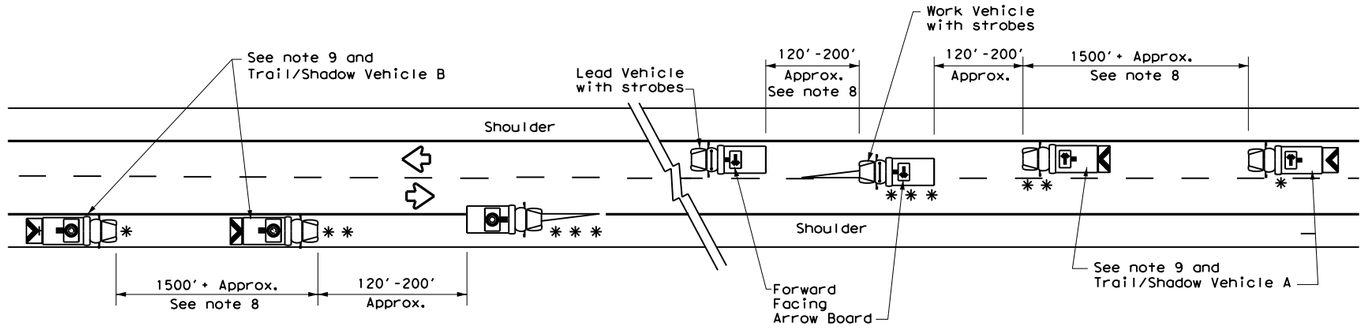

TCP (3-1a)

## UNDIVIDED MULTILANE ROADWAY




## TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

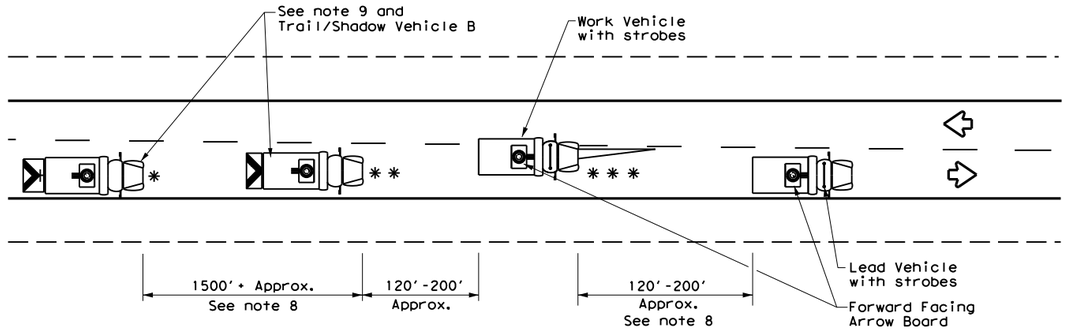



WORK ON SHOULDER

WORK ON TRAVEL LANE

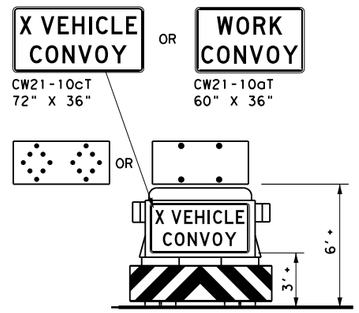
TCP (3-1b)

## TWO-WAY ROADWAY WITH PAVED SHOULDERS




TCP (3-1c)

## TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS




## TRAIL/SHADOW VEHICLE B

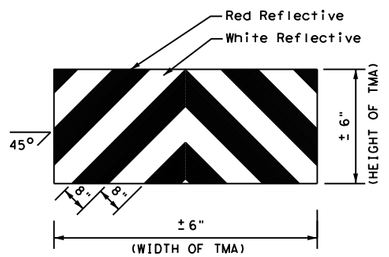
with Flashing Arrow Board in CAUTION display

| 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 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.




## STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

# TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

# TCP(3-1)-13

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|---|---|---|---|---|
| © TxDOT December 1985 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 2-94 4-98 8-95 7-13 1-97 | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 50 |

DATE: 4/7/2021 7:26:33 AM
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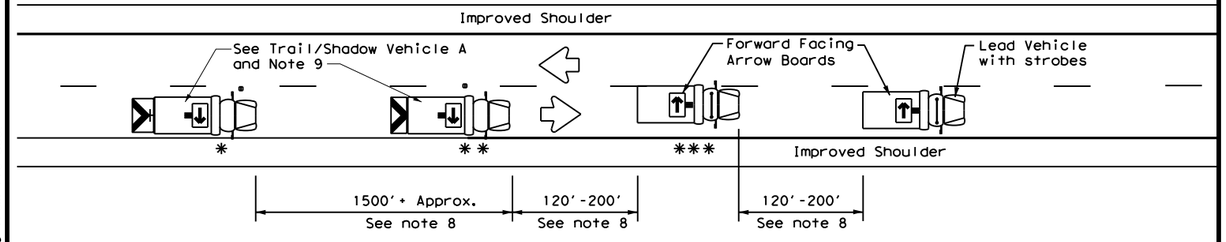
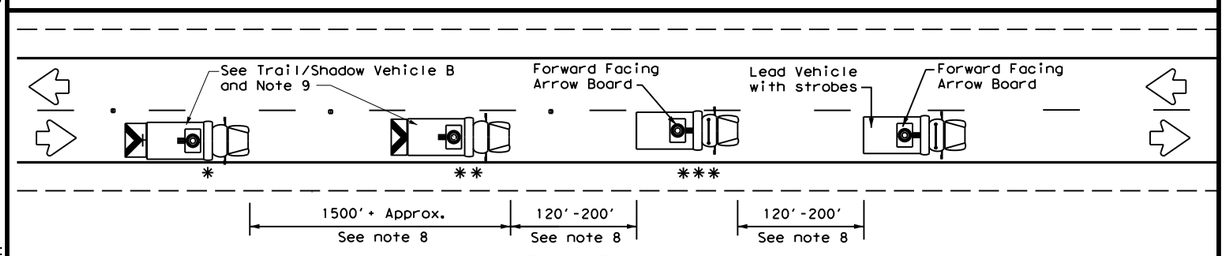


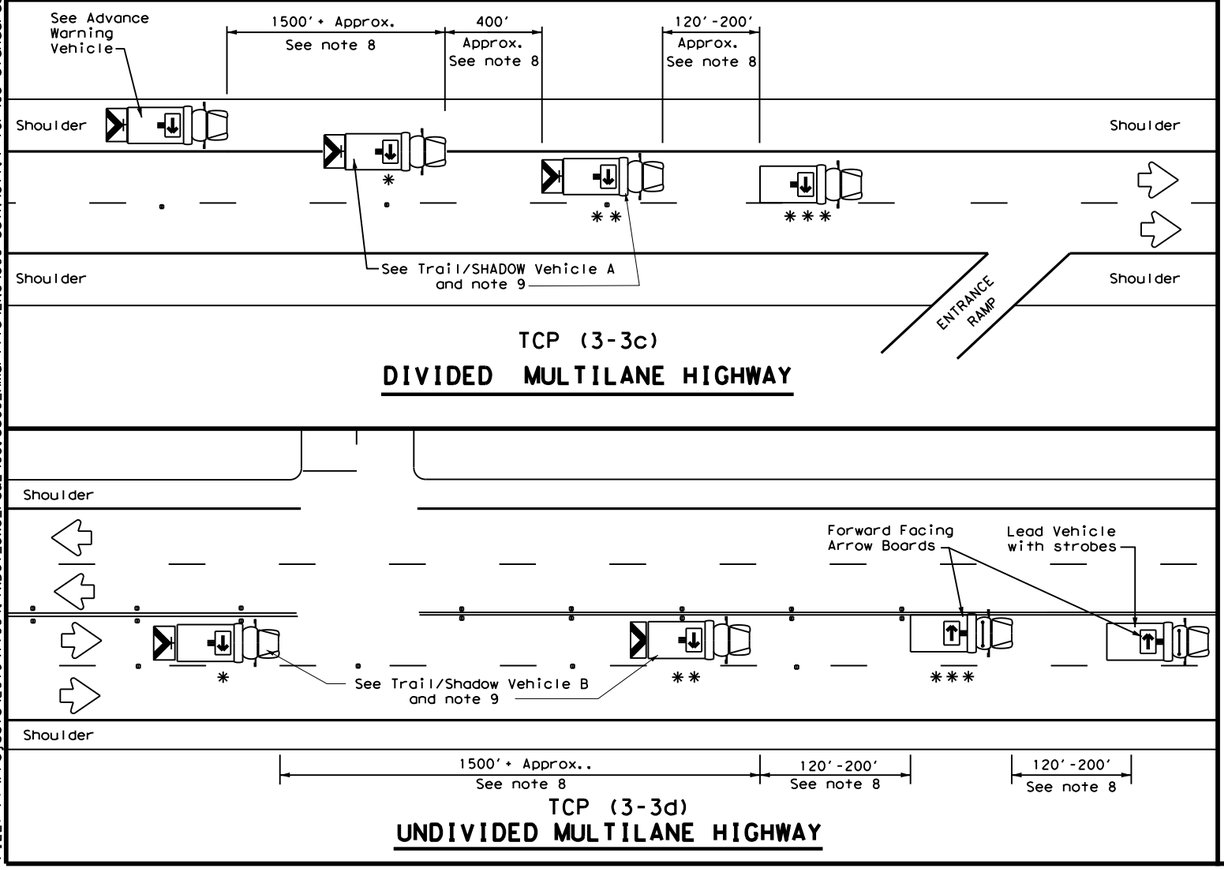

TCP (3-3a)

## TWO LANE HIGHWAY WITH PAVED SHOULDERS (WORK ON TRAVEL LANE)




TCP (3-3b)

## TWO LANE HIGHWAY WITHOUT PAVED SHOULDERS (WORK ON TRAVEL LANE)

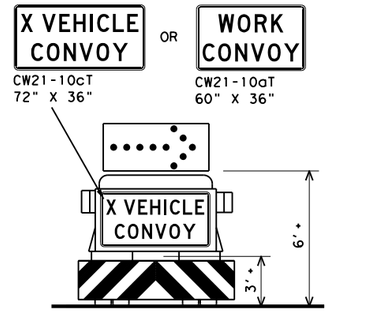



TCP (3-3c)

## DIVIDED MULTILANE HIGHWAY

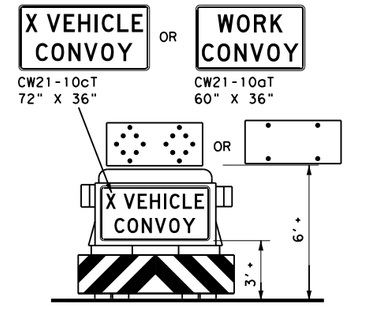
TCP (3-3d)

## UNDIVIDED MULTILANE HIGHWAY



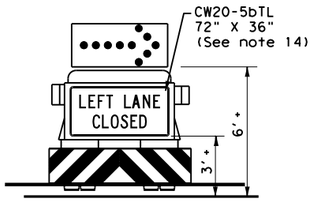

## TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

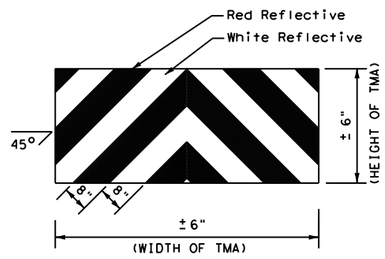



## TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board
in Caution Mode




## ADVANCE WARNING VEHICLE




## STRIPING FOR TMA

| 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

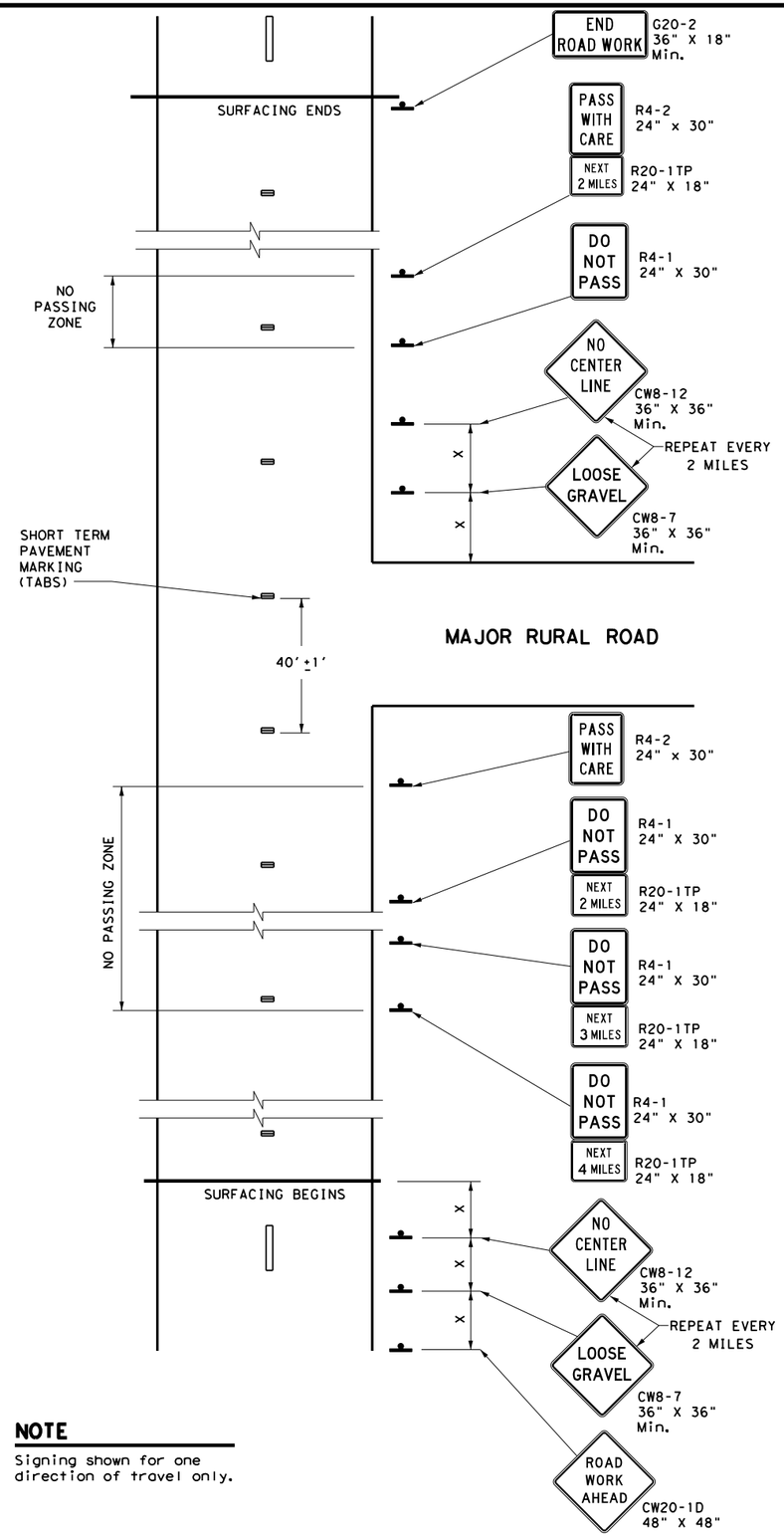
Traffic Operations Division Standard

# TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL

# TCP(3-3)-14

| FILE: tcp3-3.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT September 1987 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-94 4-98 | DIST | COUNTY | | SHEET NO. |
| 8-95 7-13 | AMA | GRAY | | 51 |
| 1-97 7-14 | | | | |

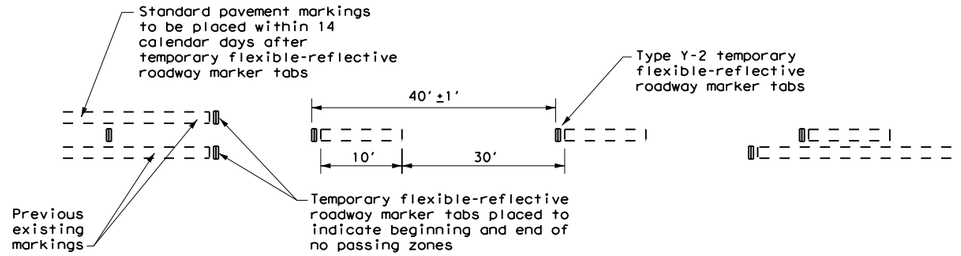
DATE: 4/7/2021 7:26:34 AM
FILE: F:\Projects\2019\1004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\SPF1.tcp7-1.dgn




**NOTE**

Signing shown for one direction of travel only.

## NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS




# TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS

For seal coat, micro-surface or similar operations

## "DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

A. 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.

B. 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.

C. 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 days 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.

D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

## "NO CENTER LINE" SIGN (CW8-12)

A. 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.

B. 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.

C. The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

## "LOOSE GRAVEL" SIGN (CW8-7)

A. 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.

B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

## PAVEMENT MARKINGS

A. 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.

B. Tabs shall not be used to simulate edge lines.

C. Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

## COORDINATION OF SIGN LOCATIONS

A. 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.

B. 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

1. 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.
2. 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.
3. 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.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. 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.

Texas Department of Transportation

Traffic Operations Division Standard

# TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS

# TCP(7-1)-13

| FILE: tcp7-1.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT March 1991 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 4-92 4-98 | DIST | COUNTY | | SHEET NO. |
| 1-97 7-13 | AMA | GRAY | | 52 |

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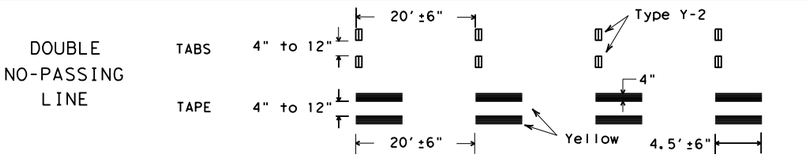
FILE: F:\Projects\2019\1004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTNX\Sht\wzstpm-13.dgn

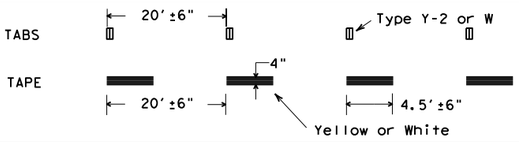
# WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS

## SOLID LINES

DOUBLE NO-PASSING LINE

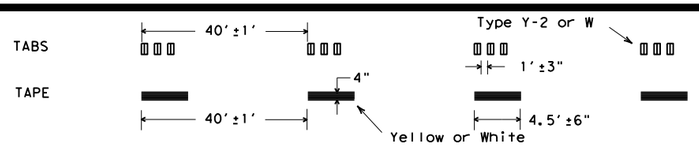



SINGLE NO-PASSING LINE or CHANNELIZATION LINE



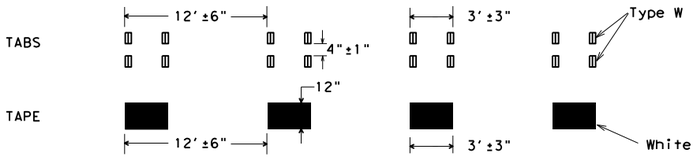

## BROKEN LINES

(FOR CENTER LINE OR LANE LINE)

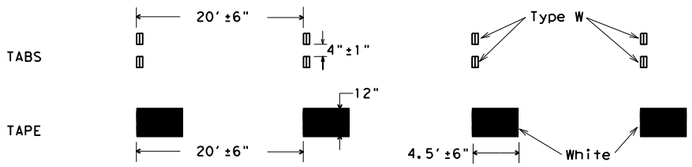



## WIDE DOTTED LINES

(FOR LANE DROP LINES)




## WIDE GORE MARKINGS



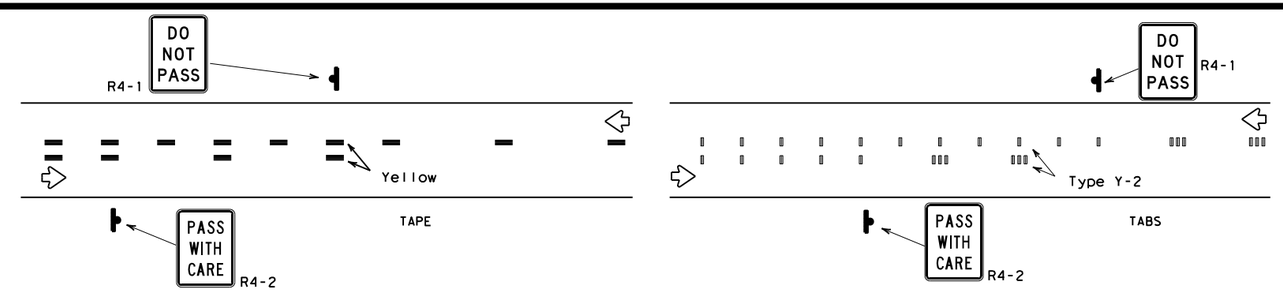

## NOTES:

1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible-reflective roadway marker tabs unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
4. Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with an ADT per lane of up to 7500 vehicles with no more than 10% truck mix. When roadways exceed these values, additional maintenance replacement of devices should be planned.
5. No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
6. For two lane, two-way roadways, DO NOT PASS signs shall be erected to mark the beginning of sections where passing is prohibited and PASS WITH CARE signs shall be erected to mark the beginning of sections where passing is permitted. Signs shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and may be used to indicate the limits of no-passing zones for up to 14 calendar days. Permanent pavement markings should then be placed.
7. For low volume two lane, two-way roadways of 4000 ADT or less, no-passing lines may be omitted when approved by the Engineer. DO NOT PASS and PASS WITH CARE signs shall be erected (see note 6).
8. For exit gores where a lane is being dropped place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are not allowed for this purpose.

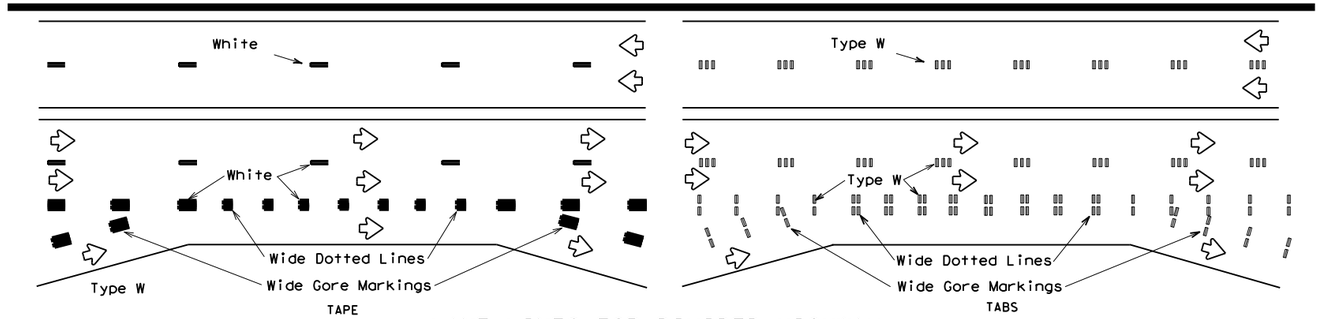
## TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
2. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
3. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
4. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

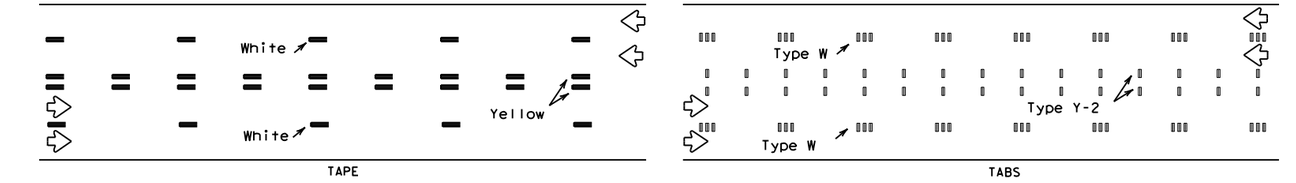
# WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



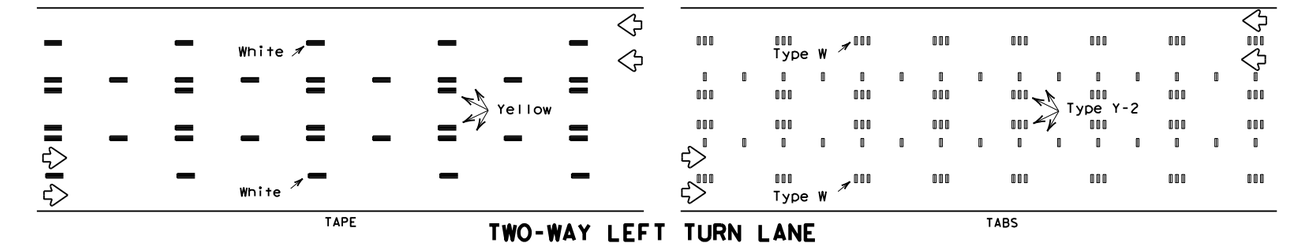

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



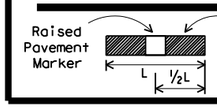

LANE LINES FOR DIVIDED HIGHWAY




LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS




TWO-WAY LEFT TURN LANE




If raised pavement markers are used to supplement REMOVABLE short term markings, the markers shall be applied to the top of the tape at the approximate mid length of the tape. This allows an easier removal of raised markers and tape.

## PREFABRICATED PAVEMENT MARKINGS

1. Temporary Removable Prefabricated Pavement Markings shall meet the requirements of DMS-8241.
2. Non-removable Prefabricated Pavement Markings shall meet the requirements of either DMS-8240 "Permanent Prefabricated Pavement Markings" or DMS-8243 "Temporary Costruction-Grade Prefabricated Pavement Markings."

## RAISED PAVEMENT MARKERS

1. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and DMS-4200.

## DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

1. DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:
   http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm

Texas Department of Transportation

Traffic Operations Division Standard

# WORK ZONE SHORT TERM PAVEMENT MARKINGS

## WZ(STPM)-13

| FILE: | wzstpm-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|---|
| ©TxDOT | April 1992 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | 0169 | 07 | 053,ETC | US60 |
| 1-97 | | DIST | COUNTY | | SHEET NO. |
| 3-03 | | AMA | GRAY | | 53 |
| 7-13 | | | | | |

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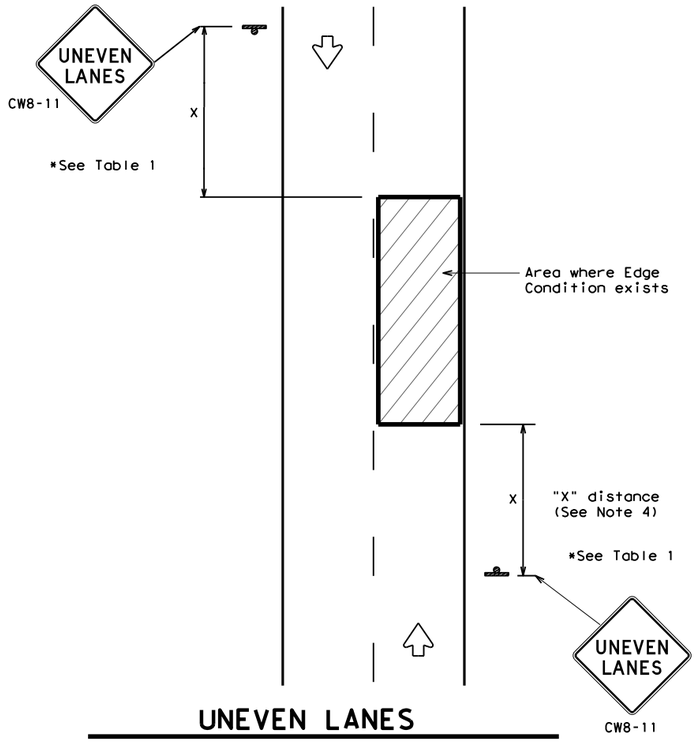
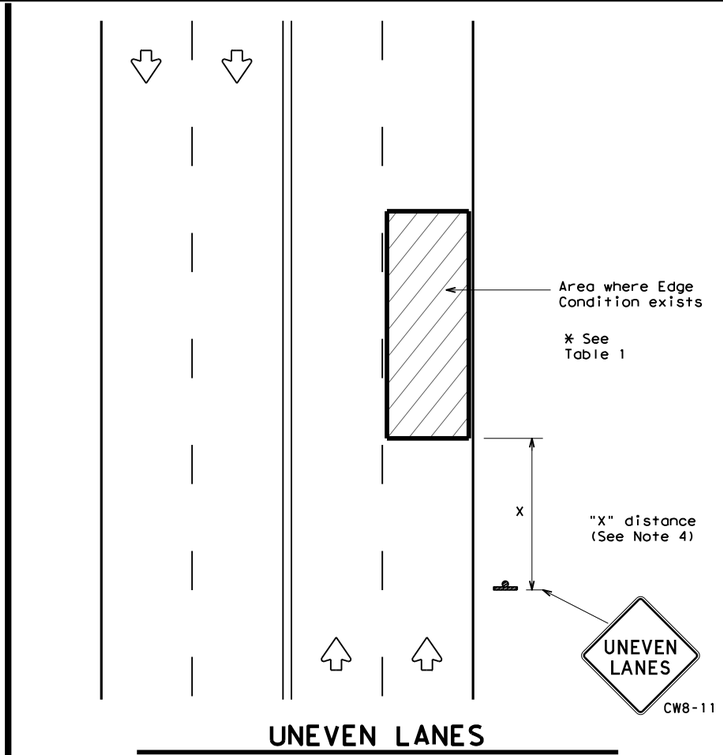
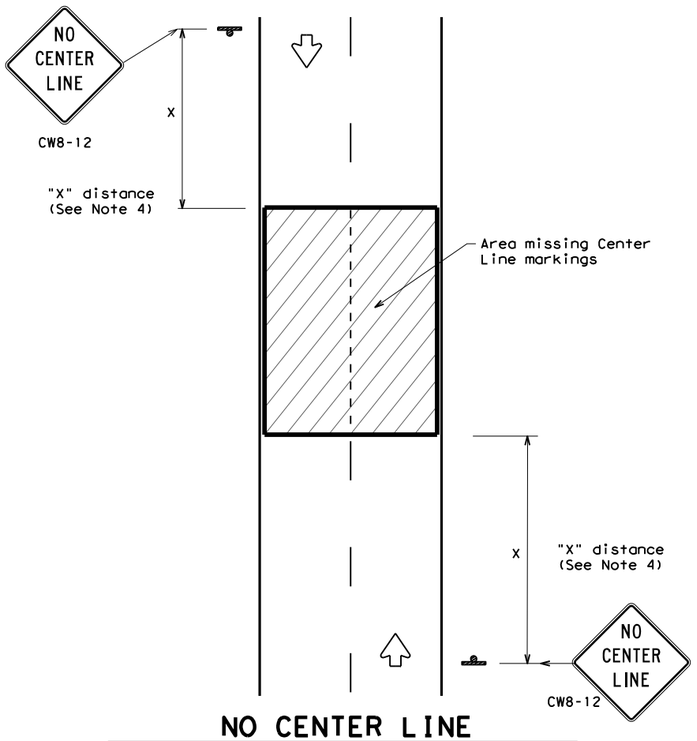


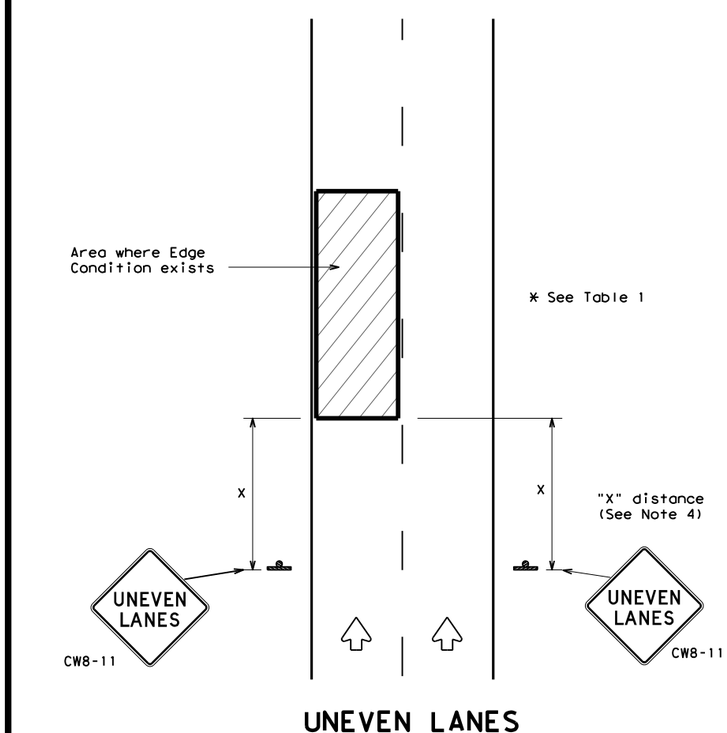

## UNEVEN LANES
## TWO LANE CONVENTIONAL ROAD




## UNEVEN LANES
## FOUR LANE CONVENTIONAL ROAD




## NO CENTER LINE
## TWO LANE CONVENTIONAL ROAD




## UNEVEN LANES
## DIVIDED ROADWAY

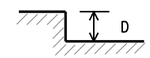
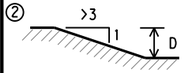
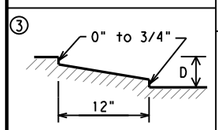
| DEPARTMENTAL MATERIAL SPECIFICATIONS | |
|---|---|
| PERMANENT PREFABRICATED PAVEMENT MARKINGS | DMS-8240 |
| TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS | DMS-8241 |
| SIGN FACE MATERIALS | DMS-8300 |

| COLOR | USAGE | SHEETING MATERIAL |
|---|---|---|
| ORANGE | BACKGROUND | TYPE $B_{FL}$ OR TYPE $C_{FL}$ 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.

**TABLE 1**

| Edge Condition | Edge Height (D) | * Warning Devices |
|---|---|---|
| ①   | Less than or equal to: 1¼" (maximum-planing) 1½" (typical-overlay) | Sign: CW8-11 |
| | Distance "D" may be a maximum of 1 1/4 " for planing operations and 2" for overlay operations if uneven lanes with edge condition 1 are open to traffic after work operations cease. | |
| ②   | Less than or equal to 3" | Sign: CW8-11 |
| ③   Notched Wedge Joint | 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

| FILE: | wzul-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|---|
| ©TxDOT | April 1992 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | 0169 | 07 | 053,ETC | US60 |
| 8-95 2-98 7-13 | | DIST | COUNTY | | SHEET NO. |
| 1-97 3-03 | | AMA | GRAY | | 54 |

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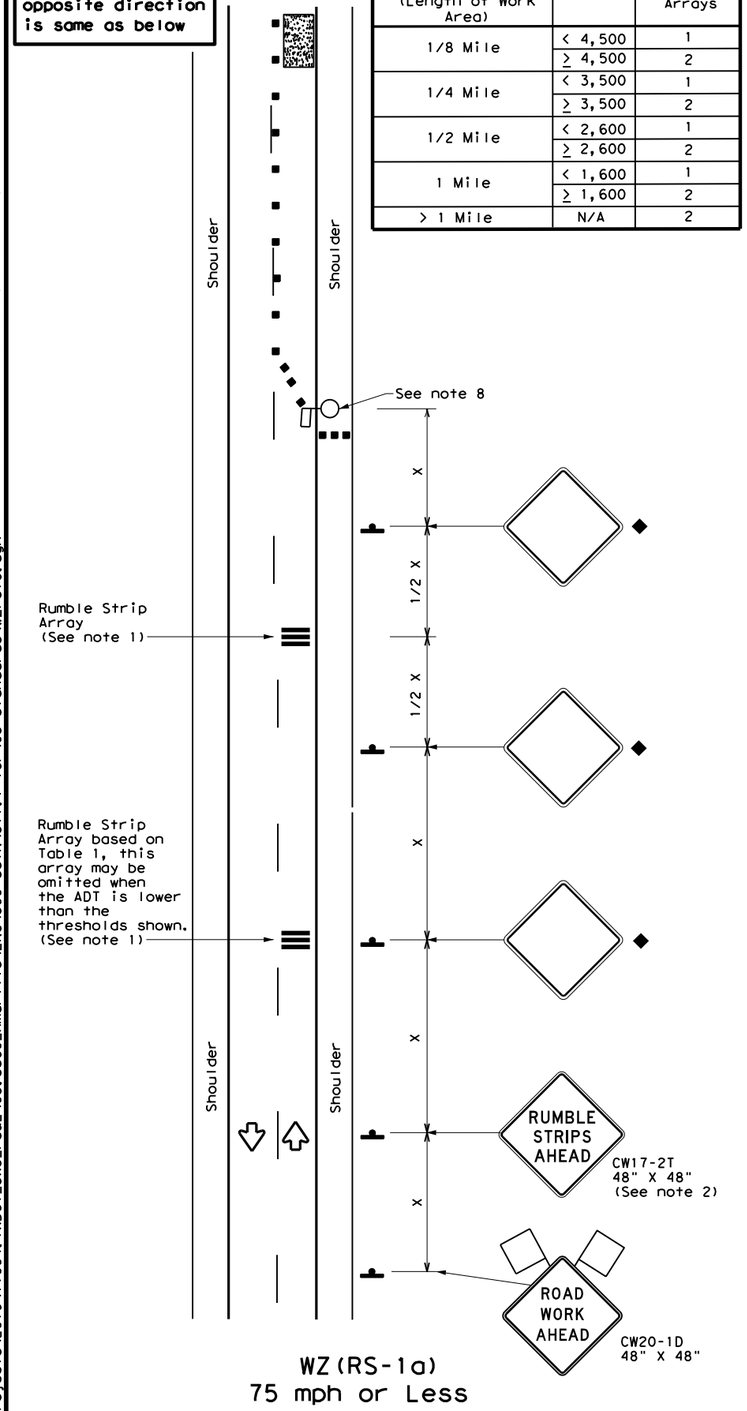
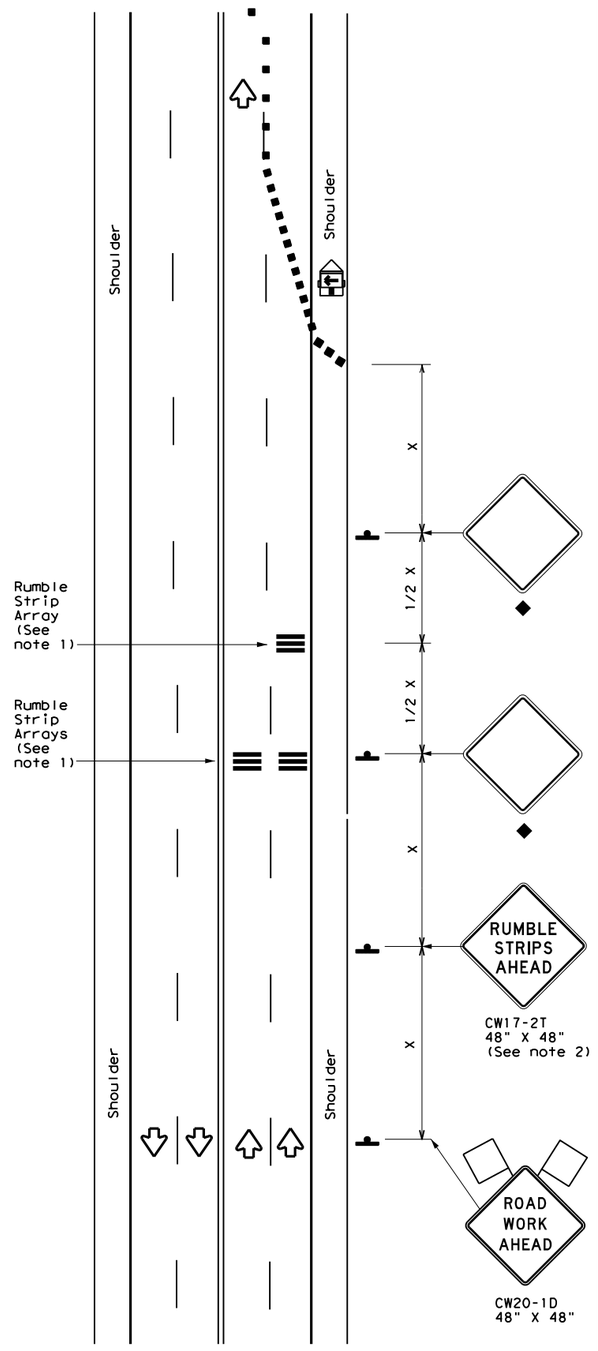
**Warning sign and rumble strip sequence in opposite direction is same as below**

| TABLE 1 | | |
|---|---|---|
| Flagger to Flagger (Length of Work Area) | ADT | # of Rumble Strip Arrays |
| 1/8 Mile | < 4,500 | 1 |
| | ≥ 4,500 | 2 |
| 1/4 Mile | < 3,500 | 1 |
| | ≥ 3,500 | 2 |
| 1/2 Mile | < 2,600 | 1 |
| | ≥ 2,600 | 2 |
| 1 Mile | < 1,600 | 1 |
| | ≥ 1,600 | 2 |
| > 1 Mile | N/A | 2 |




WZ(RS-1a)
75 mph or Less

## RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION




WZ(RS-1b)
75 mph or Less

## RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

## GENERAL NOTES

1. Each Rumble Strip Array should consist of three rumble strips spaced center to center at the spacing shown in Table 2, placed transverse across the lane at locations shown.
2. The CW17-2T "RUMBLE STRIPS AHEAD" sign should be located after the CW20-1D "ROAD WORK AHEAD sign and spaced as shown. If traffic is observed to be queuing, or is expected to queue beyond the Rumble Strips, the CW17-2T sign and the first Rumble Strip Array may be located upstream of the CW20-1D sign as necessary to provide needed warning.
3. Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
4. Removal of the Temporary Rumble Strips should be accomplished before removing the advance warning signs.
5. Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
6. Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
7. This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
8. The one-lane two-way application may utilize a flagger, an AFAD or a portable traffic signal.
9. Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment.

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | | Channelizing Devices |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Trailer Mounted Flashing Arrow Panel | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" |
|---|---|---|---|---|---|---|---|---|
| 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 |
| | ✓ | ✓ | | |

◆ **Signs are for illustrative purposes only. Signs required may vary depending on the TCP, TMUTCD Typical Application, or project specific details for the project.**

| TABLE 2 | |
|---|---|
| Speed | Approximate distance between strips in an Array |
| ≤ 40 MPH | 10' |
| > 40 MPH & ≤ 55 MPH | 15' |
| > 55 MPH | 20' |

Texas Department of Transportation

Traffic Operations Division Standard

# TEMPORARY RUMBLE STRIPS

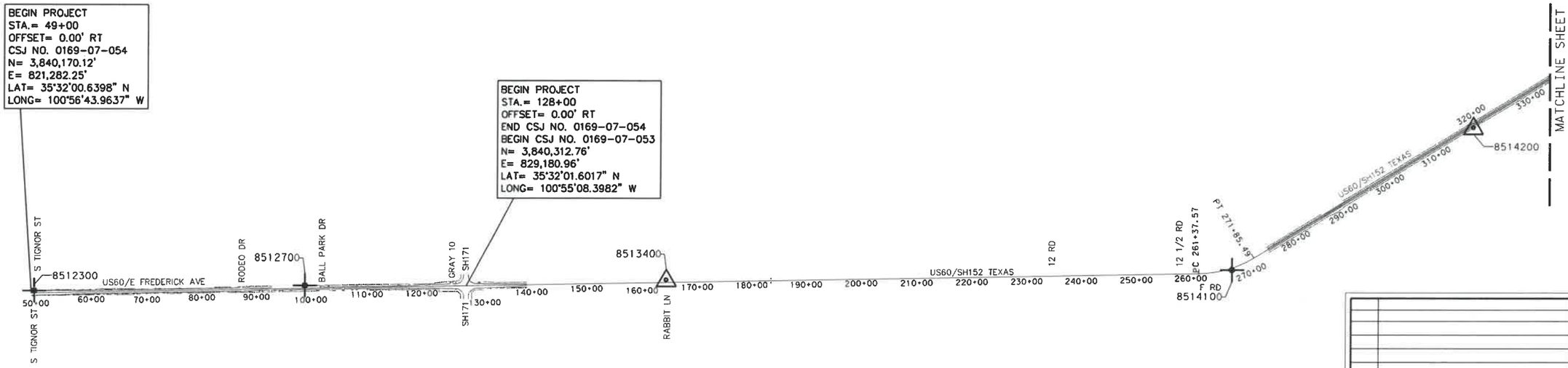
## WZ(RS)-16

| FILE: wzrs16.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT November 2012 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-14 | DIST | COUNTY | | SHEET NO. |
| 4-16 | AMA | GRAY | | 55 |

GRAPHIC SCALE
0' 1000' 2000' 4000'

N

| PRIMARY CONTROL POINTS (SURFACE) | | | | | |
|---|---|---|---|---|---|
| CP | NORTHING | EASTING | ELEVATION | STATION | OFFSET |
| 8512300 | 3,840,214.82' | 821,333.83' | 3,222.59' | 49+52.38 | 43.68' LT |
| 8512700 | 3,840,315.04' | 826,257.23' | 3,219.18' | 98+76.78 | 55.07' LT |
| 8513400 | 3,840,427.63' | 832,822.82' | 3,214.49' | 164+43.33 | 49.10' LT |
| 8514100 | 3,840,621.48' | 843,115.70' | 3,196.48' | 267+36.96 | 34.04' RT |
| 8514200 | 3,843,217.80' | 847,524.64' | 3,196.59' | 318+49.79 | 46.79' RT |




NOTE:
TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH ZONE (4201)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00019
COORDINATES ARE SURFACE

DATE: JUNE 10-22, 2020

STATE OF TEXAS
REGISTERED
ROBERT L. DAVIS
5830
PROFESSIONAL
LAND SURVEYOR
31 March 2021

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

CONTROL POINT LEGEND

△ DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL"), UNLESS OTHERWISE NOTED

DENOTES PRIMARY CONTROL POINT (2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL" SET IN A CONCRETE STRUCTURE), UNLESS OTHERWISE NOTED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LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TX 75093
P 214-440-3600
F 214-440-3601
TBPLS # 10048300

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 10046?
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



Texas Department of Transportation

US60

# SURVEY CONTROL INDEX MAP

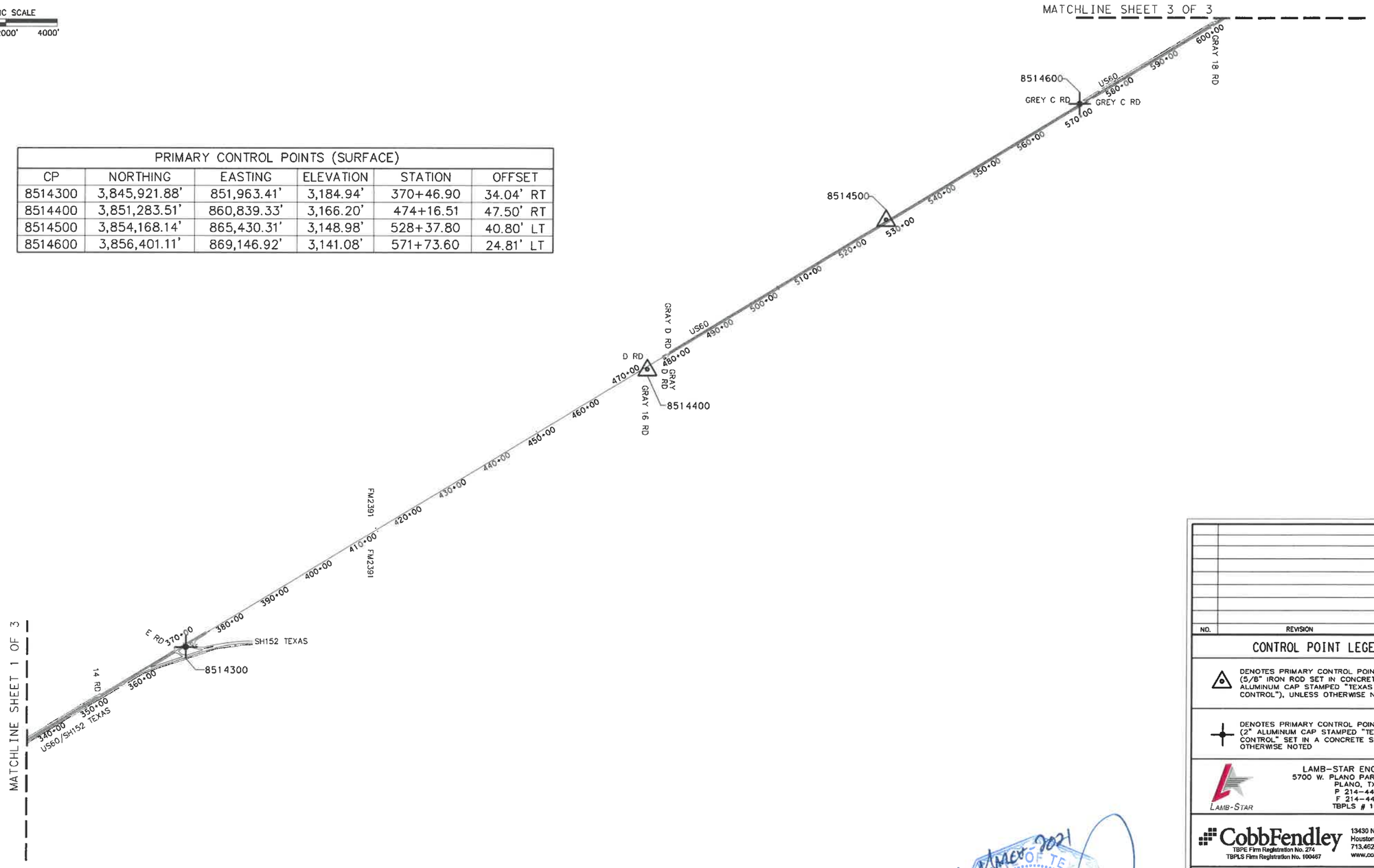
SHEET 1 OF 3

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,054 | 56 |

GRAPHIC SCALE
0' 1000' 2000' 4000'

N

| PRIMARY CONTROL POINTS (SURFACE) | | | | | |
|---|---|---|---|---|---|
| CP | NORTHING | EASTING | ELEVATION | STATION | OFFSET |
| 8514300 | 3,845,921.88' | 851,963.41' | 3,184.94' | 370+46.90 | 34.04' RT |
| 8514400 | 3,851,283.51' | 860,839.33' | 3,166.20' | 474+16.51 | 47.50' RT |
| 8514500 | 3,854,168.14' | 865,430.31' | 3,148.98' | 528+37.80 | 40.80' LT |
| 8514600 | 3,856,401.11' | 869,146.92' | 3,141.08' | 571+73.60 | 24.81' LT |




NOTE:
TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH ZONE (4201)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00019
COORDINATES ARE SURFACE

DATE: JUNE 10-22, 2020

31-MAR-2021
STATE OF TEXAS
REGISTERED
ROBERT L. DAVIS
5836
PROFESSIONAL
LAND SURVEYOR

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

CONTROL POINT LEGEND

△ DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL"), UNLESS OTHERWISE NOTED

✛ DENOTES PRIMARY CONTROL POINT (2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL" SET IN A CONCRETE STRUCTURE), UNLESS OTHERWISE NOTED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F 214-440-3601
TBPLS # 10048300

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

US60

SURVEY CONTROL INDEX SHEET

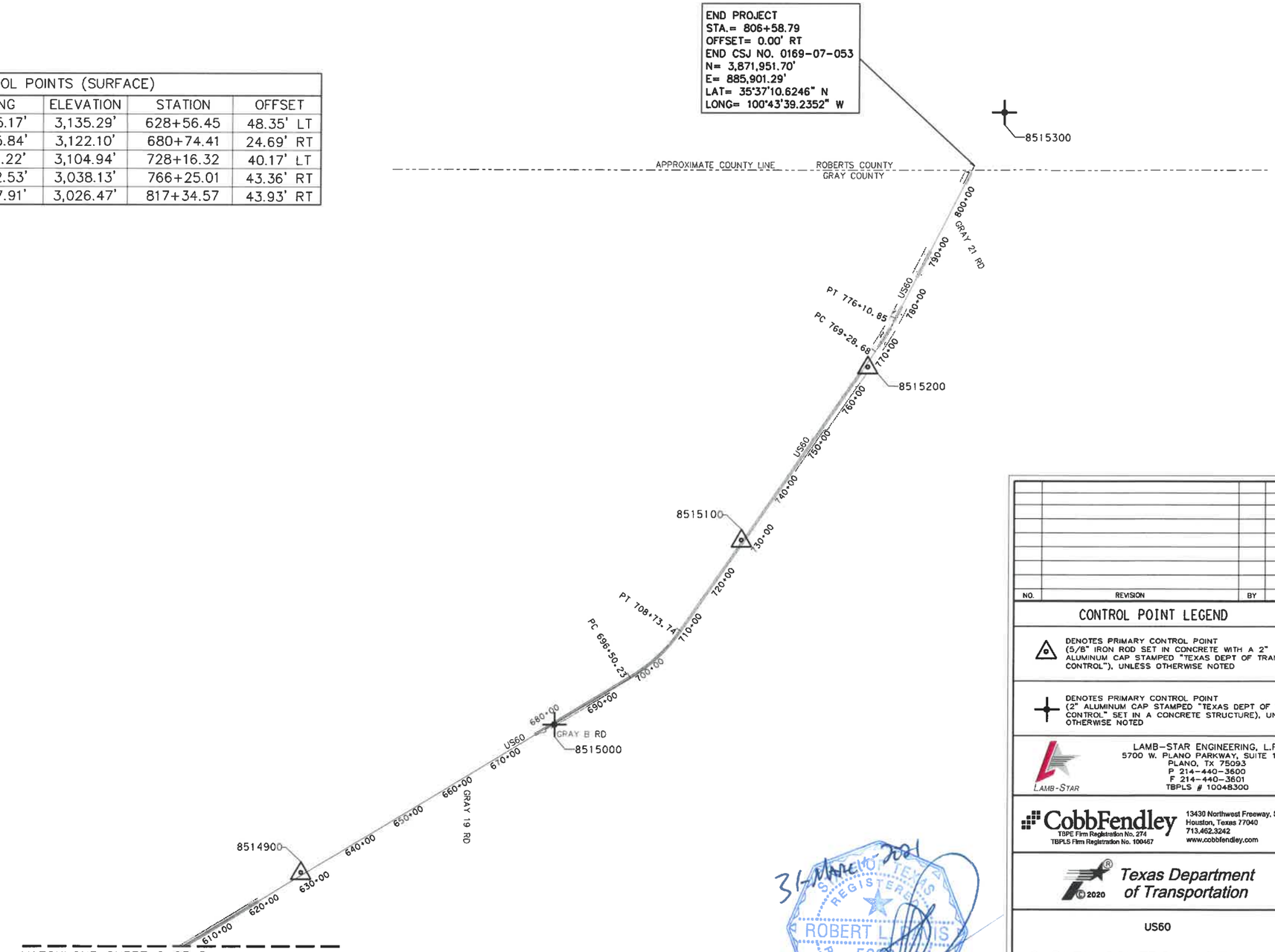
SHEET 2 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,054 | 57 |

GRAPHIC SCALE
0' 1000' 2000' 4000'

N

| PRIMARY CONTROL POINTS (SURFACE) | | | | | |
|---|---|---|---|---|---|
| CP | NORTHING | EASTING | ELEVATION | STATION | OFFSET |
| 8514900 | 3,859,365.89' | 873,995.17' | 3,135.29' | 628+56.45 | 48.35' LT |
| 8515000 | 3,862,007.17' | 878,495.84' | 3,122.10' | 680+74.41 | 24.69' RT |
| 8515100 | 3,865,294.82' | 881,791.22' | 3,104.94' | 728+16.32 | 40.17' LT |
| 8515200 | 3,868,375.36' | 884,032.53' | 3,038.13' | 766+25.01 | 43.36' RT |
| 8515300 | 3,872,890.59' | 886,427.91' | 3,026.47' | 817+34.57 | 43.93' RT |




NOTE:
TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH ZONE (4201)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00019
COORDINATES ARE SURFACE

DATE: JUNE 10-22, 2020

31 MARCH 2021
STATE OF TEXAS
REGISTERED
ROBERT L. [illegible]
5880
PROFESSIONAL
LAND SURVEYOR

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

CONTROL POINT LEGEND

△ DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL"), UNLESS OTHERWISE NOTED

+ DENOTES PRIMARY CONTROL POINT (2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL" SET IN A CONCRETE STRUCTURE), UNLESS OTHERWISE NOTED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Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation
2020

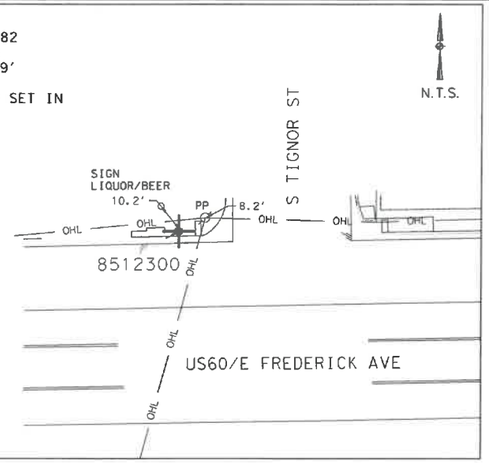
US60

SURVEY CONTROL INDEX MAP

SHEET 3 OF 3

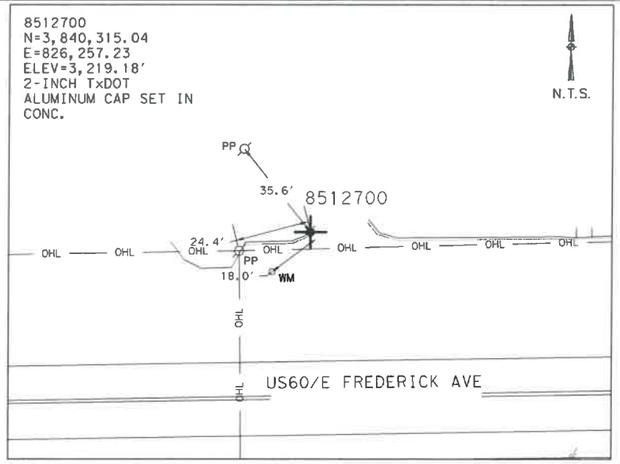
| FED. RD. DIV. NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,054 | 58 |

8512300
N=3,840,214.82
E=821,333.83
ELEV=3,222.59'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



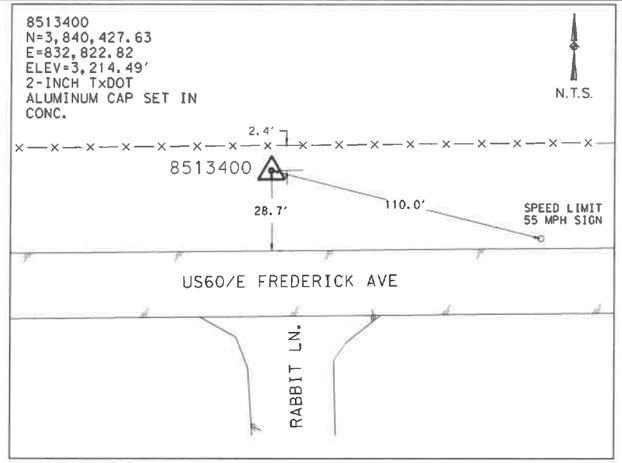

STATION IS LOCATED ON THE NORTH SIDE OF US 60 AT THE NORTHWEST CORNER OF THE INTERSECTION OF US 60 AND S TIGNOR ST. BEING LOCATED 10.2' SOUTHEAST FROM A LIQUOR BEER SIGN, 8.2' SOUTHWEST OF A POWER POLE AND 7.6' EAST OF A STORM MANHOLE/CURB INLET.

8512700
N=3,840,315.04
E=826,257.23
ELEV=3,219.18'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



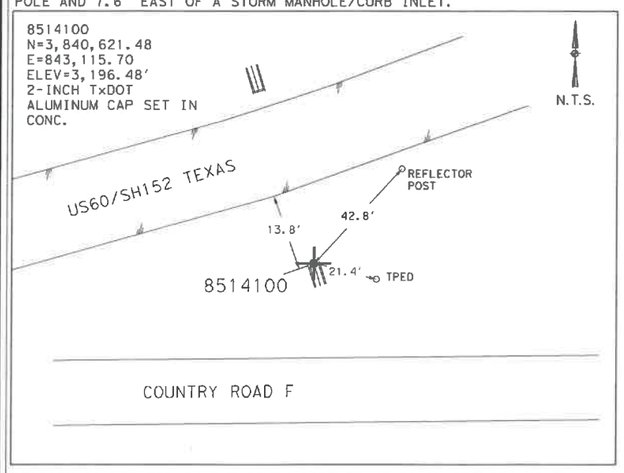

STATION IS LOCATED ON THE NORTH SIDE OF US 60 BEING APPROXIMATELY 300' WEST OF BALL PARK DR., 35.6' SOUTHWEST OF A POWER POLE, 24.4' EAST OF A POWER POLE ON THE NORTH ROW OF US 60 AND 18.0' EAST OF A WATER METER.

8513400
N=3,840,427.63
E=832,822.82
ELEV=3,214.49'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



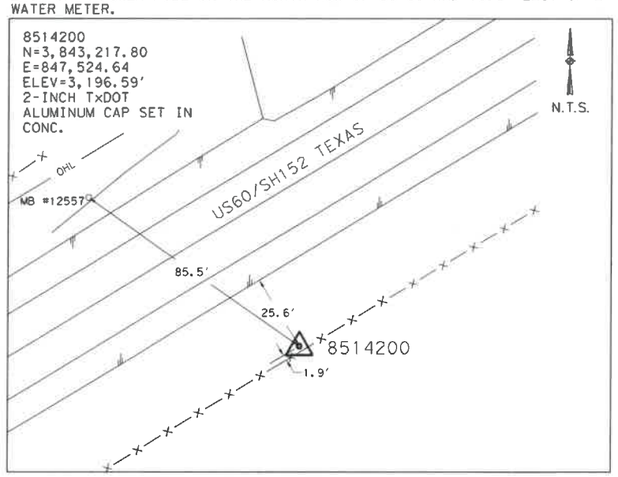

STATION IS LOCATED ON THE NORTH SIDE OF US 60 ACROSS THE HIGHWAY OF RABBIT LN., BEING APPROXIMATELY 2.4' SOUTH OF A BARBED WIRE FENCE, 28.7' NORTH OF THE NORTHERLY EDGE OF PAVEMENT OF US 60 AND 110.0' WEST OF A SPEED LIMIT SIGN (55 MPH).

8514100
N=3,840,621.48
E=843,115.70
ELEV=3,196.48'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



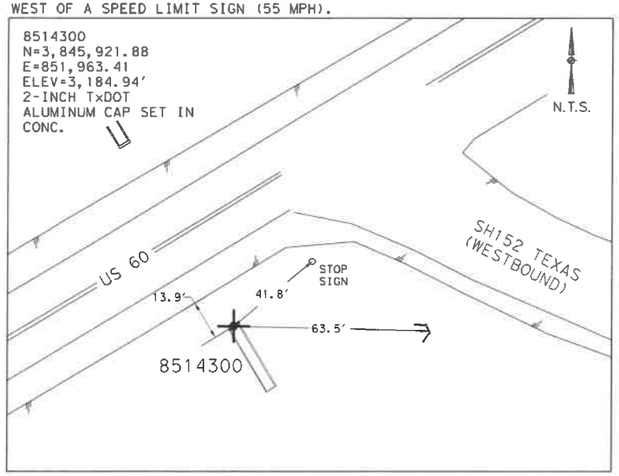

STATION IS LOCATED ON THE SOUTH SIDE OF US 60 IN BETWEEN US 60 AND COUNTRY ROAD F. APPROXIMATELY 13.8' SOUTHEAST OF THE SOUTHERLY EDGE OF PAVEMENT OF US 60, 42.8' SOUTHWEST OF A REFLECTOR POST AND 21.4' WEST OF A TELEPHONE PEDESTAL.

8514200
N=3,843,217.80
E=847,524.64
ELEV=3,196.59'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



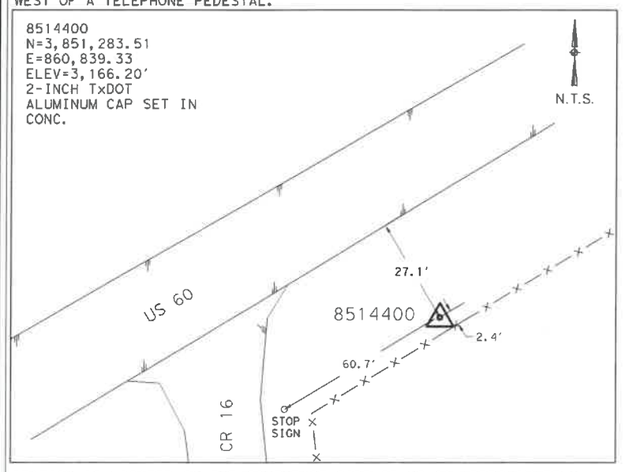

STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 APPROXIMATELY 1.9' NORTHWEST OF A BARBED WIRE FENCE, 25.6' SOUTHEAST OF THE SOUTHERLY EDGE OF PAVEMENT AND 85.5 FEET SOUTHEAST OF A MAILBOX #12557 LOCATED ON THE NORTH SIDE OF US 60.

8514300
N=3,845,921.88
E=851,963.41
ELEV=3,184.94'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



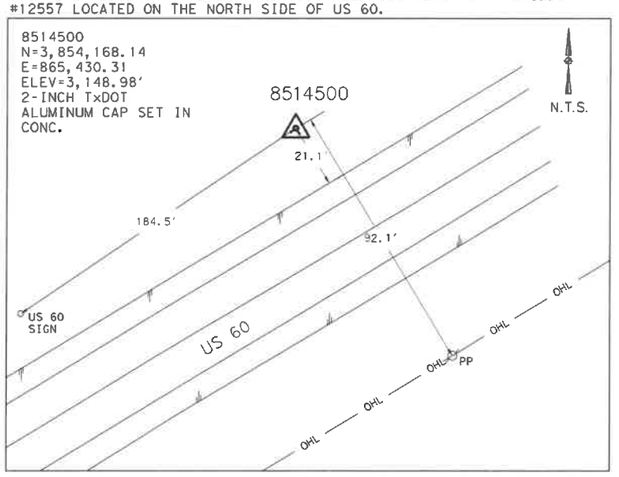

STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 WEST OF THE EXIT TO SH 152, APPROXIMATELY 13.9' SOUTHEAST OF THE SOUTHERLY EDGE OF PAVEMENT OF US 60, 41.8' SOUTHWEST OF A STOP SIGN AND 63.5' NORTHWEST OF A 24" RCP.

8514400
N=3,851,283.51
E=860,839.33
ELEV=3,166.20'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.



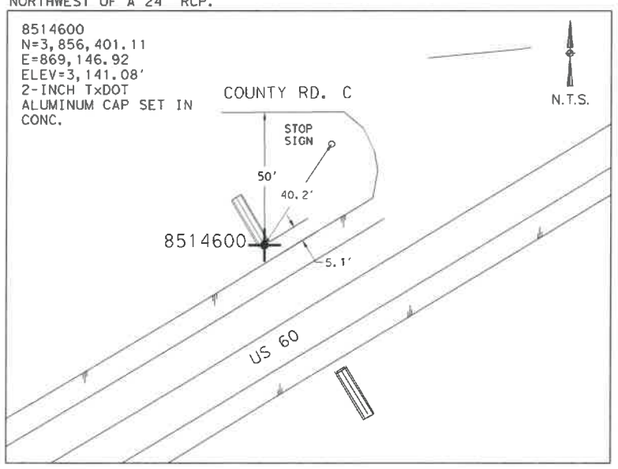

STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 APPROXIMATELY 450' SOUTHWEST OF COUNTY ROAD NO. 16, BEING 27.1' SOUTH OF THE SOUTHERLY EDGE OF PAVEMENT OF US 60, 60.7' NORTHEAST OF A STOP SIGN, 2.4' NORTHWEST OF A BARBWIRE FENCE.

8514500
N=3,854,168.14
E=865,430.31
ELEV=3,148.98'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.




STATION IS LOCATED ON THE NORTHWEST SIDE OF US 60 APPROXIMATELY 4,400' SOUTHWEST OF COUNTY ROAD C, BEING 21.1' NORTH OF THE NORTHERLY EDGE OF PAVEMENT OF US 60, 184.5' NORTHEAST OF US 60 (W) SIGN, AND 92.1' NORTHWEST OF A POWER POLE.

8514600
N=3,856,401.11
E=869,146.92
ELEV=3,141.08'
2-INCH TxDOT
ALUMINUM CAP SET IN
CONC.




STATION IS LOCATED ON THE NORTHWEST SIDE OF US 60 APPROXIMATELY 50' SOUTHWEST OF COUNTY ROAD C, BEING 5.1' NORTH OF THE NORTHERLY EDGE OF PAVEMENT OF US 60, 40.2' SOUTHWEST OF A STOP SIGN.

I HEREBY CERTIFY THAT THE HORIZONTAL AND VERTICAL DATA SHOWN HEREON WAS DETERMINED BY A FIELD SURVEY ON JUNE 10-22, 2020 AND IS CORRECTLY SHOWN HEREON

31 March 2021

STATE OF TEXAS
REGISTERED
ROBERT L. DAVIS
5836
PROFESSIONAL
LAND SURVEYOR

Robert Davis
Registered Professional Land Surveyor
No. 5836

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY,
SUITE 1000
PLANO, TX. 75093
TBPLS # 10048300

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

## CONTROL POINT LEGEND

△ DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL"), UNLESS OTHERWISE NOTED

✚ DENOTES PRIMARY CONTROL POINT (2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL" SET IN A CONCRETE STRUCTURE), UNLESS OTHERWISE NOTED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www.cobbfendley.com


Texas Department of Transportation
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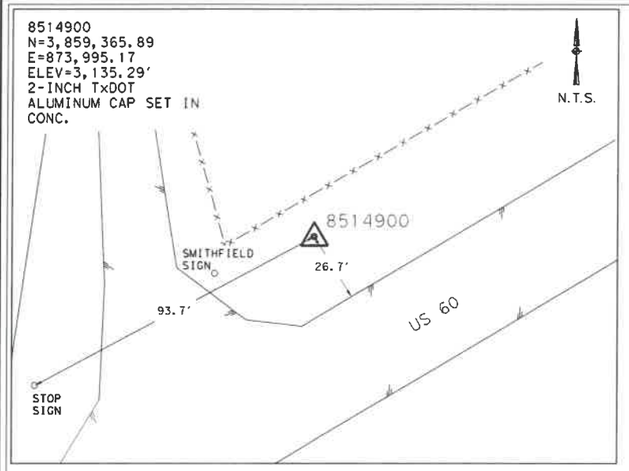
US60

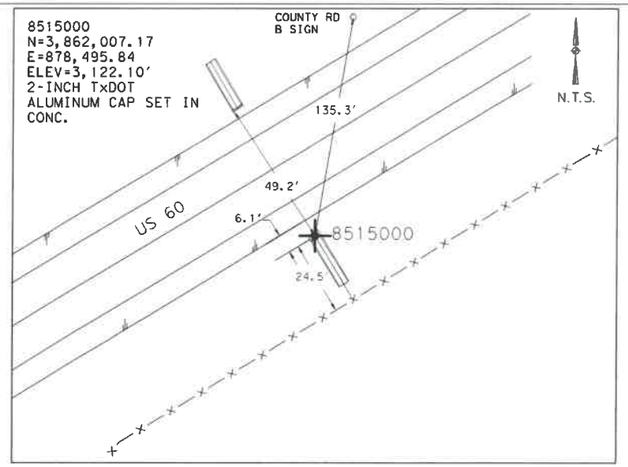
## CONTROL SHEET



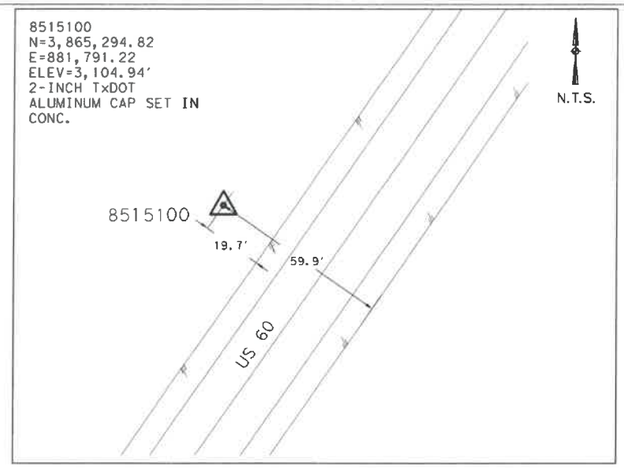
| FED. RD. DIV. NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,054 | 59 |



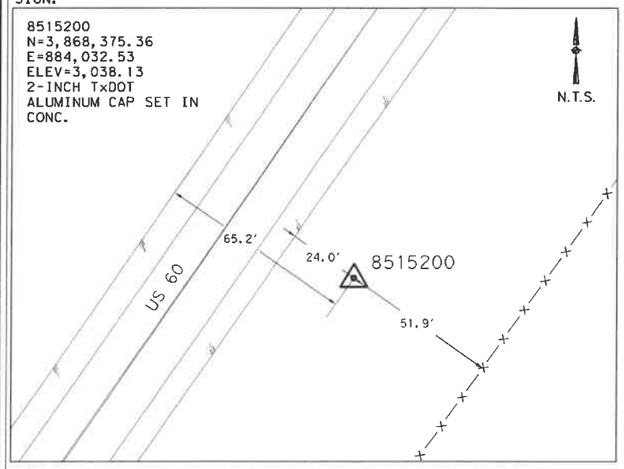

STATION IS LOCATED ON THE NORTHWEST SIDE OF US 60 APPROXIMATELY 3,380' SOUTHWEST OF COUNTY ROAD 19, BEING 26.7' NORTH OF THE NORTHERLY EDGE OF PAVEMENT OF US 60, 93.7'NORTHEAST OF A STOP SIGN.



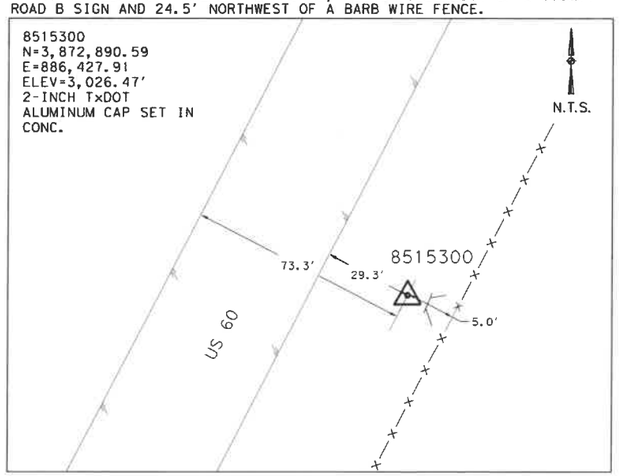

STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 APPROXIMATELY 1840' NORTHEAST OF COUNTY ROAD 19, BEING 6.1' SOUTH OF THE SOUTHERLY EDGE OF PAVEMENT OF US 60, 135.3' SOUTHWEST OF A COUNTY ROAD B SIGN AND 24.5' NORTHWEST OF A BARB WIRE FENCE.




STATION IS LOCATED ON THE NORTHWEST SIDE OF US 60 APPROXIMATELY 6,950' SOUTHWEST OF COUNTY ROAD 21, BEING 19.7' NORTHWEST OF THE NORTHWESTERLY EDGE OF PAVEMENT OF US 60, 59.9' NORTHWEST OF THE SOUTHEASTERLY EDGE OF PAVEMENT OF US 60.




STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 APPROXIMATELY 3150' SOUTHWEST OF COUNTY ROAD 21, BEING 24' EAST OF THE EASTERLY EDGE OF PAVEMENT OF US 60, 51.9' WEST OF A BARBED WIRE FENCE.




STATION IS LOCATED ON THE SOUTHEAST SIDE OF US 60 APPROXIMATELY 1960' NORTHEAST OF COUNTY ROAD 21, BEING 29.3' EAST OF THE EASTERLY EDGE OF PAVEMENT OF US 60, 5.0' WEST OF A BARBED WIRE FENCE.

I HEREBY CERTIFY THAT THE HORIZONTAL AND VERTICAL DATA SHOWN HEREON WAS DETERMINED BY A FIELD SURVEY ON JUNE 10-22, 2020 AND IS CORRECTLY SHOWN HEREON

31-March-2021

STATE OF TEXAS
REGISTERED
ROBERT L. DAVIS
5836
PROFESSIONAL
LAND SURVEYOR

Robert Davis
Registered Professional Land Surveyor
No. 5836

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY,
SUITE 1000
PLANO, TX. 75093
TBPLS # 10048300

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

## CONTROL POINT LEGEND

△ DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL"), UNLESS OTHERWISE NOTED

DENOTES PRIMARY CONTROL POINT (2" ALUMINUM CAP STAMPED "TEXAS DEPT OF TRANS CONTROL" SET IN A CONCRETE STRUCTURE), UNLESS OTHERWISE NOTED

LAMB-STAR
LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TX 75093
P 214-440-3600
F 214-440-3601
TBPLS # 10048300

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



US60

# CONTROL SHEET



| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,054 | 60 |

Beginning chain US60 description

Point 1 X 821,282.25 Y 3,840,170.12 Sta 49+00.00

Course from 1 to PC US601 N 88° 57′ 55.63" E Dist 21,237.57

| Curve Data | | | | | |
|---|---|---|---|---|---|
| Curve US601 | (Chord Definition) | | | | |
| P.I. Station | 266+74.04 | X | 843,052.74 | Y | 3,840,563.26 |
| Delta = | 30° 10′ 28.32" | (LT) | | | |
| Degree = | 2° 52′ 46.16" | | | | |
| Tangent = | 536.47 | | | | |
| Length = | 1,047.91 | | | | |
| Radius = | 1,990.00 | | | | |
| External = | 71.04 | | | | |
| Long Chord = | 1,035.95 | | | | |
| Mid. Ord. = | 68.59 | | | | |
| P.C. Station | 261+37.57 | X | 842,516.36 | Y | 3,840,553.57 |
| P.T. Station | 271+85.49 | X | 843,511.57 | Y | 3,840,841.23 |
| C.C. | | X | 842,480.43 | Y | 3,842,543.24 |
| Back = N | 88° 57′ 55.63" E | | | | |
| Ahead = N | 58° 47′ 27.31" E | | | | |
| Chord Bear = N | 73° 52′ 41.47" E | | | | |

Course from PT US601 to PC US602 N 58° 47′ 27.31" E Dist 42,464.75

| Curve Data | | | | | |
|---|---|---|---|---|---|
| Curve US602 | (Chord Definition) | | | | |
| P.I. Station | 702+71.13 | X | 880,361.95 | Y | 3,863,166.60 |
| Delta = | 24° 00′ 31.15" | (LT) | | | |
| Degree = | 1° 57′ 44.21" | | | | |
| Tangent = | 620.90 | | | | |
| Length = | 1,223.51 | | | | |
| Radius = | 2,920.00 | | | | |
| External = | 65.28 | | | | |
| Long Chord = | 1,214.64 | | | | |
| Mid. Ord. = | 63.85 | | | | |
| P.C. Station | 696+50.23 | X | 879,830.91 | Y | 3,862,844.87 |
| P.T. Station | 708+73.74 | X | 880,716.15 | Y | 3,863,676.56 |
| C.C. | | X | 878,317.88 | Y | 3,865,342.30 |
| Back = N | 58° 47′ 27.31" E | | | | |
| Ahead = N | 34° 46′ 56.15" E | | | | |
| Chord Bear = N | 46° 47′ 11.73" E | | | | |

Course from PT US602 to PC US603 N 34° 46′ 56.15" E Dist 6,054.94

| Curve Data | | | | | |
|---|---|---|---|---|---|
| Curve US603 | (Chord Definition) | | | | |
| P.I. Station | 772+70.30 | X | 884,365.13 | Y | 3,868,930.22 |
| Delta = | 7° 49′ 58.29" | (LT) | | | |
| Degree = | 1° 08′ 53.63" | | | | |
| Tangent = | 341.62 | | | | |
| Length = | 682.17 | | | | |
| Radius = | 4,990.00 | | | | |
| External = | 11.68 | | | | |
| Long Chord = | 681.65 | | | | |
| Mid. Ord. = | 11.65 | | | | |
| P.C. Station | 769+28.68 | X | 884,170.25 | Y | 3,868,649.64 |
| P.T. Station | 776+10.85 | X | 884,519.95 | Y | 3,869,234.74 |
| C.C. | | X | 880,071.83 | Y | 3,871,496.23 |
| Back = N | 34° 46′ 56.15" E | | | | |
| Ahead = N | 26° 56′ 57.86" E | | | | |
| Chord Bear = N | 30° 51′ 57.01" E | | | | |

Course from PT US603 to 2 N 26° 56′ 57.86" E Dist 3,047.94

Point 2 X 885,901.29 Y 3,871,951.70 Sta 806+58.79

Ending chain US60 description

04/07/2021

BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |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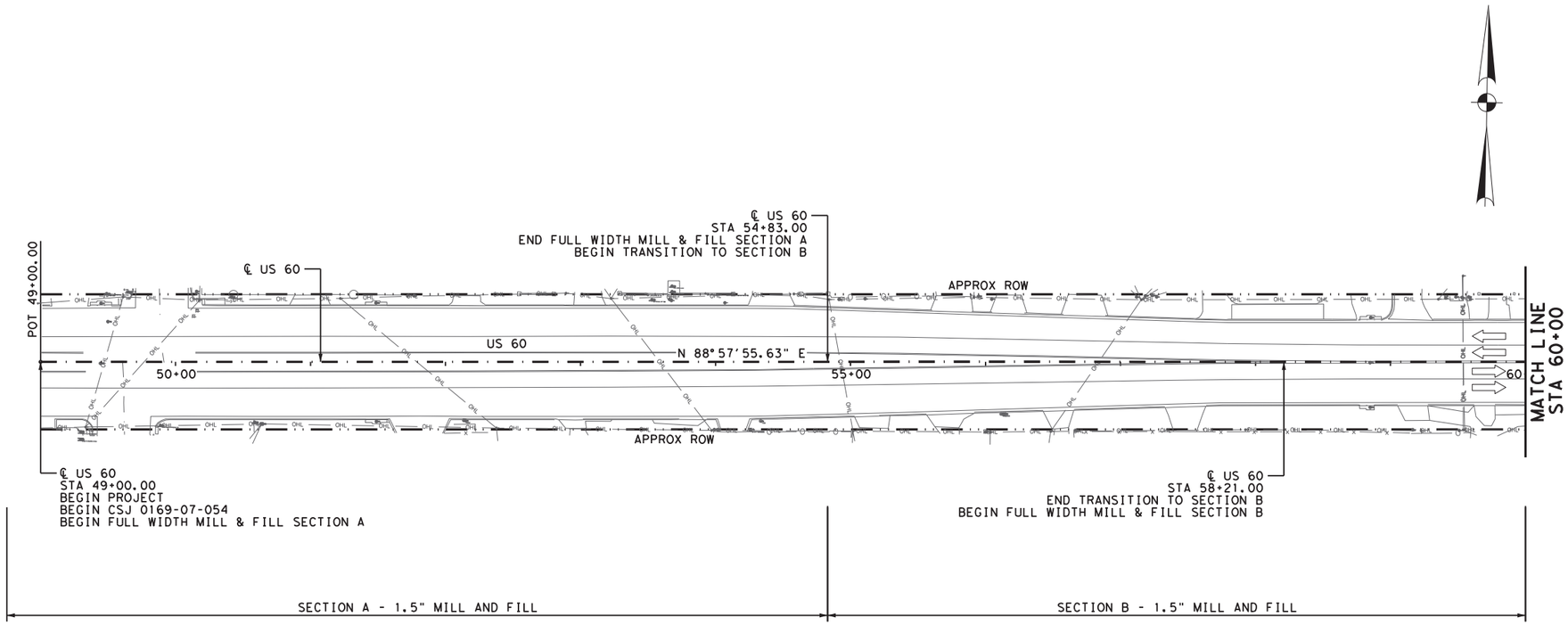
Texas Department of Transportation

# HORIZONTAL ALIGNMENT DATA SHEET

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 61 |

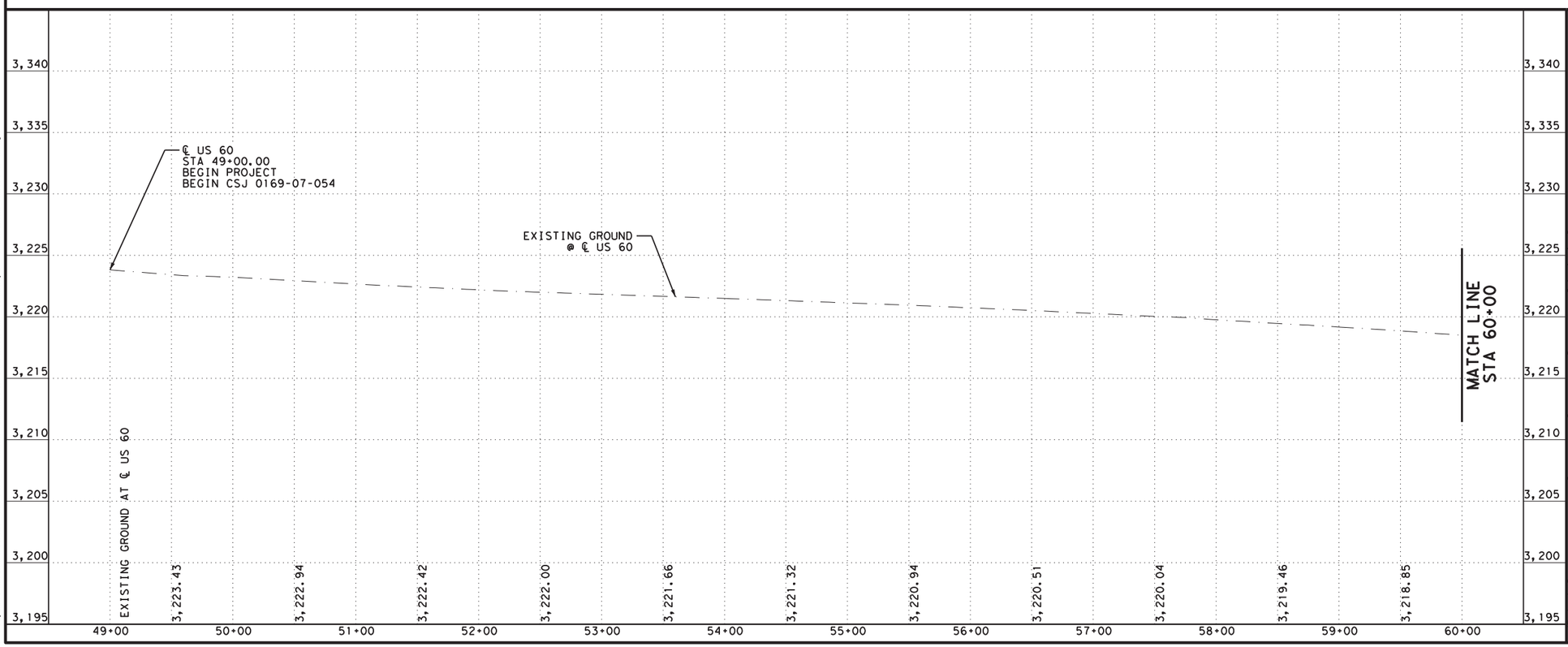



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




04/07/2021

0 25 50 100(H)

0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE

**STA 49+00 TO STA 60+00**

SHEET 1 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | HIGHWAY NO. |
|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | US60 |

| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
|---|---|---|---|---|---|
| AMA | GRAY | 0169 | 07 | 053,ETC | 62 |

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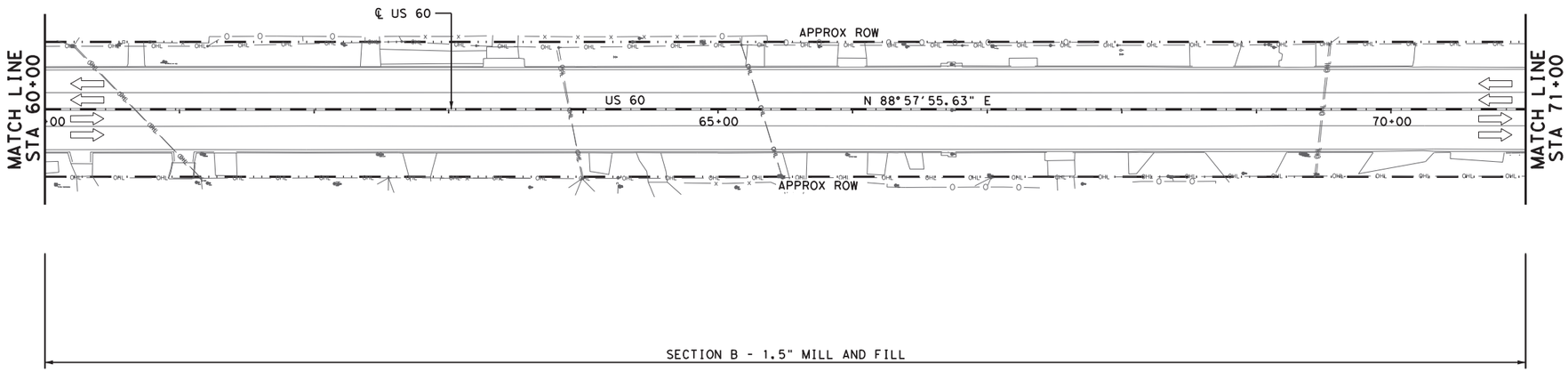
USGO_ROAD-P&P-01.dgn

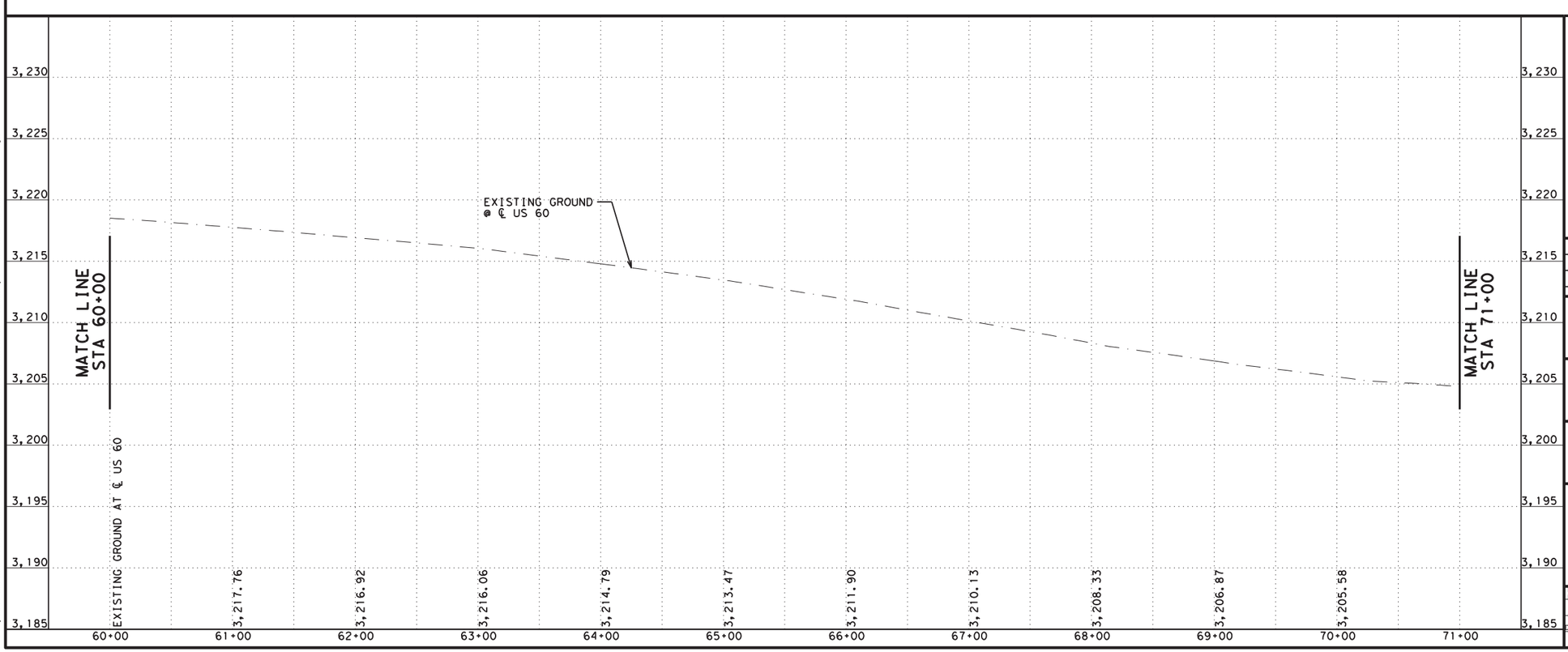



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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TBPLS Firm Registration No. 100467
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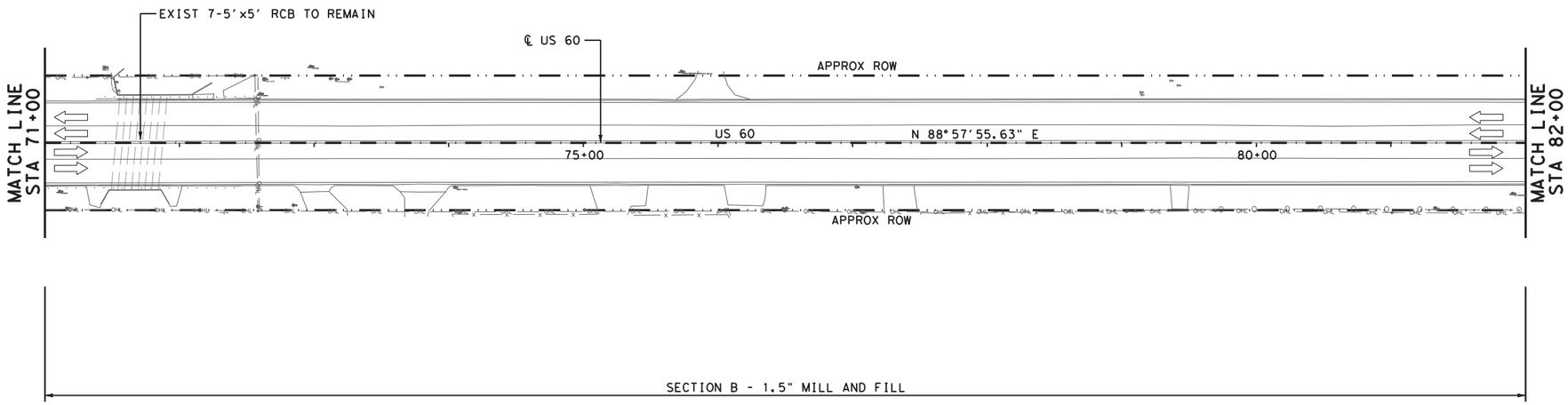
Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE

STA 60+00 TO STA 71+00

SHEET 2 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 63 |

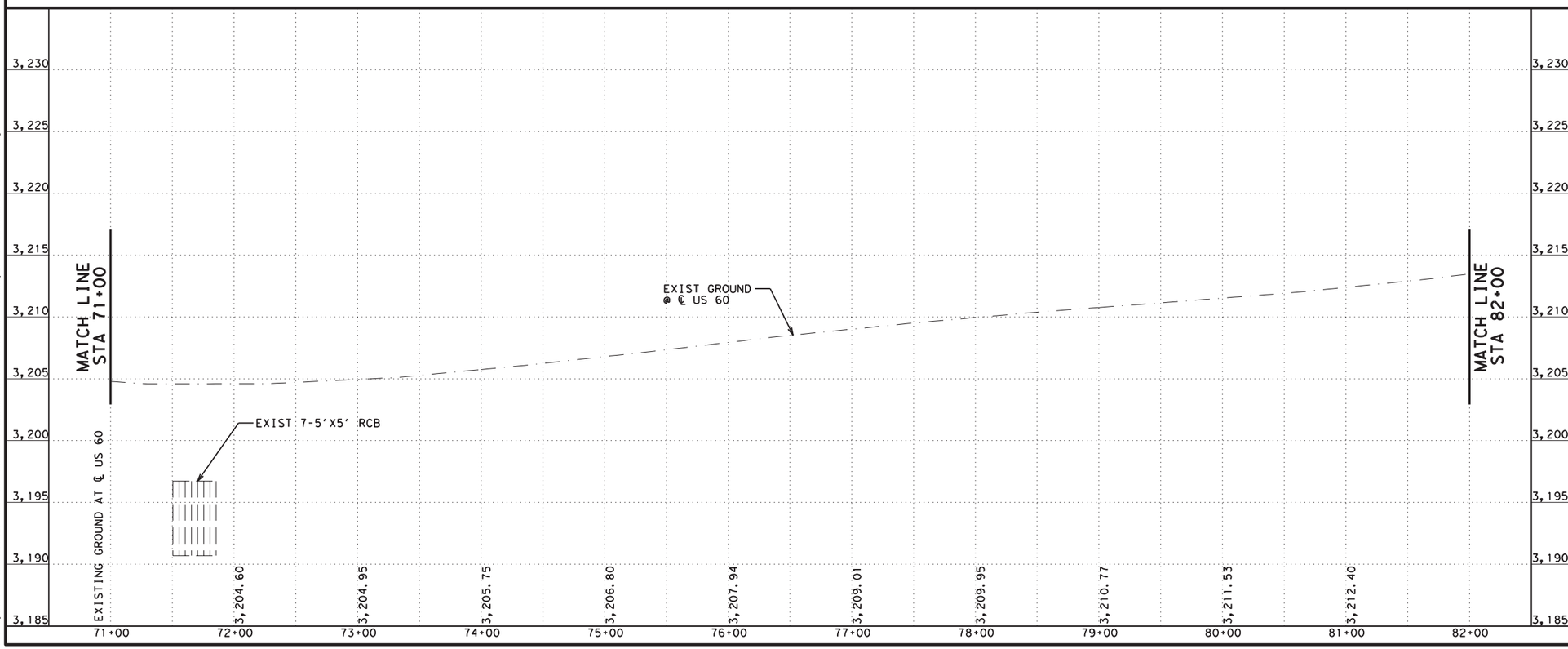



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.






0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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# US 60
# ROADWAY PLAN & PROFILE

**STA 71+00 TO STA 82+00**

SHEET 3 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 64 |

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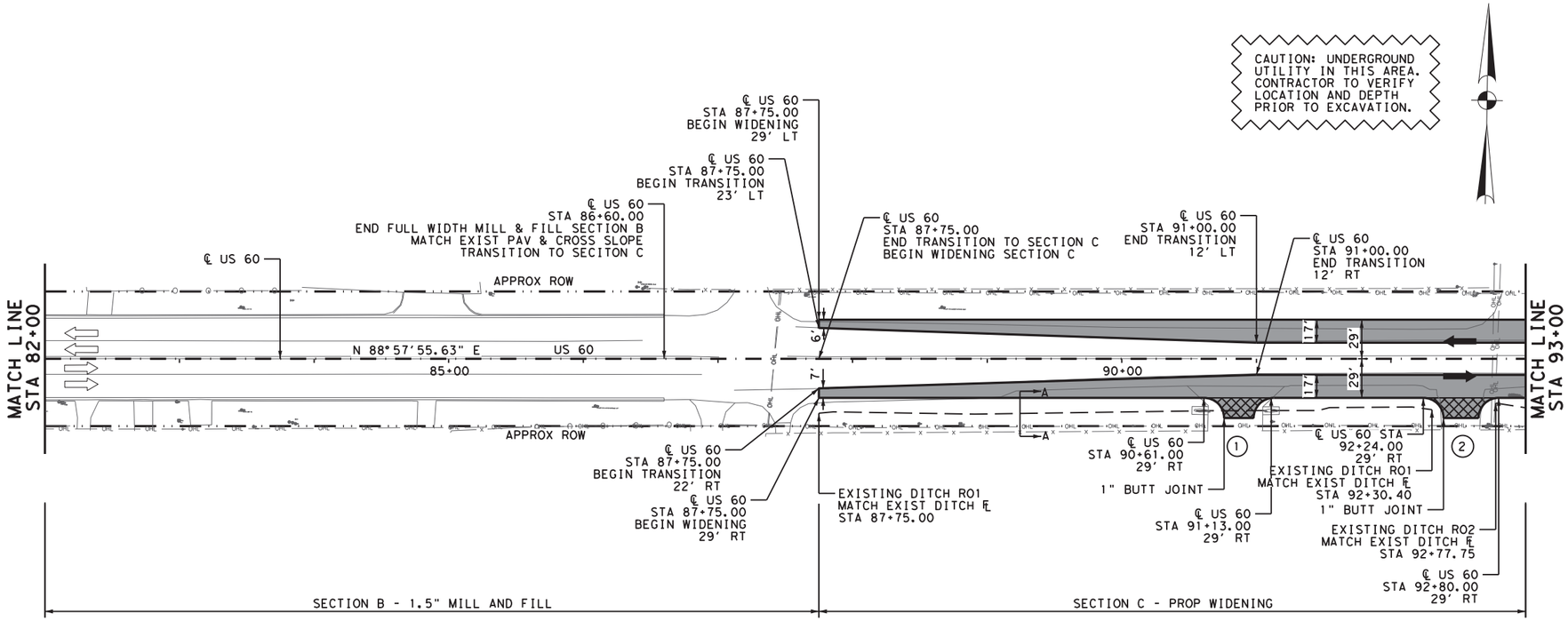
US60_ROAD-P&P-03.dgn



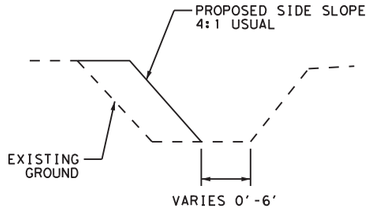

CAUTION: UNDERGROUND UTILITY IN THIS AREA. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO EXCAVATION.

LEGEND

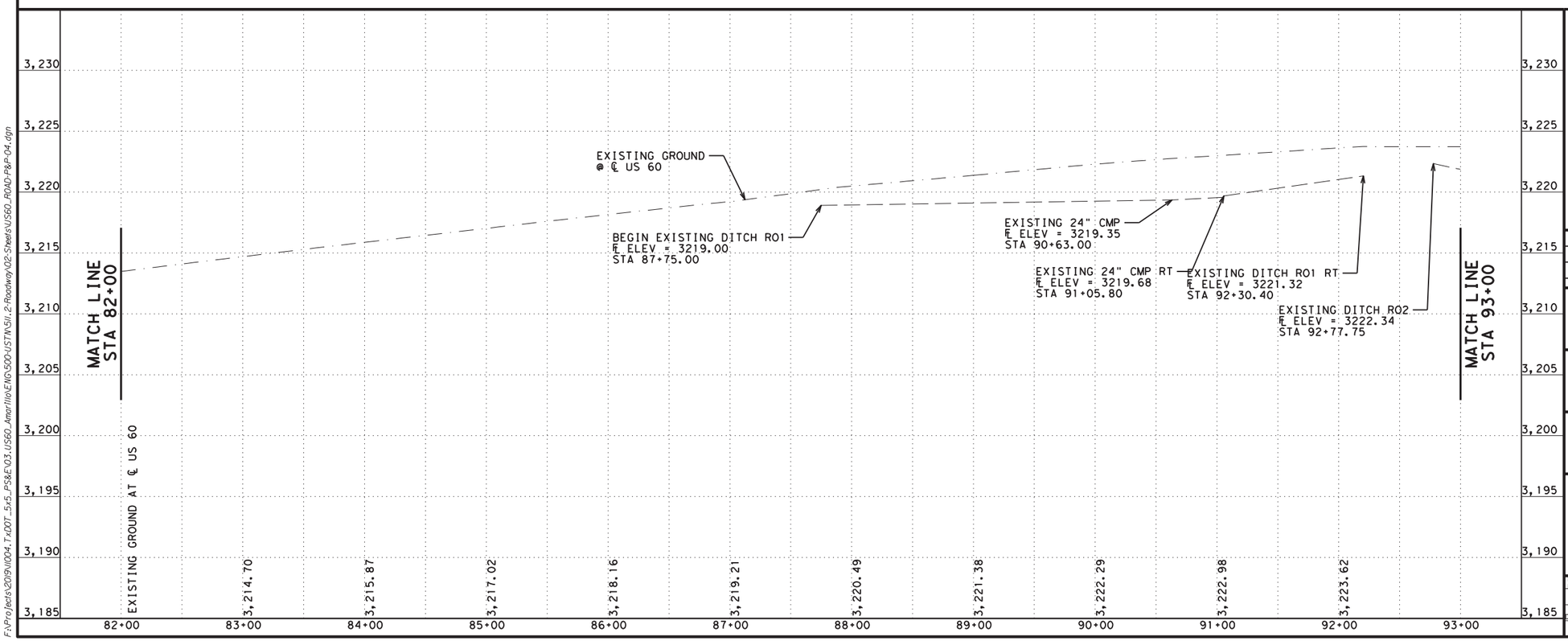
- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄
- DITCH CENTERLINE RT
- DITCH CENTERLINE RT

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




DITCH SECTION A-A




04/07/2021

BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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TBPLS Firm Registration No. 100467
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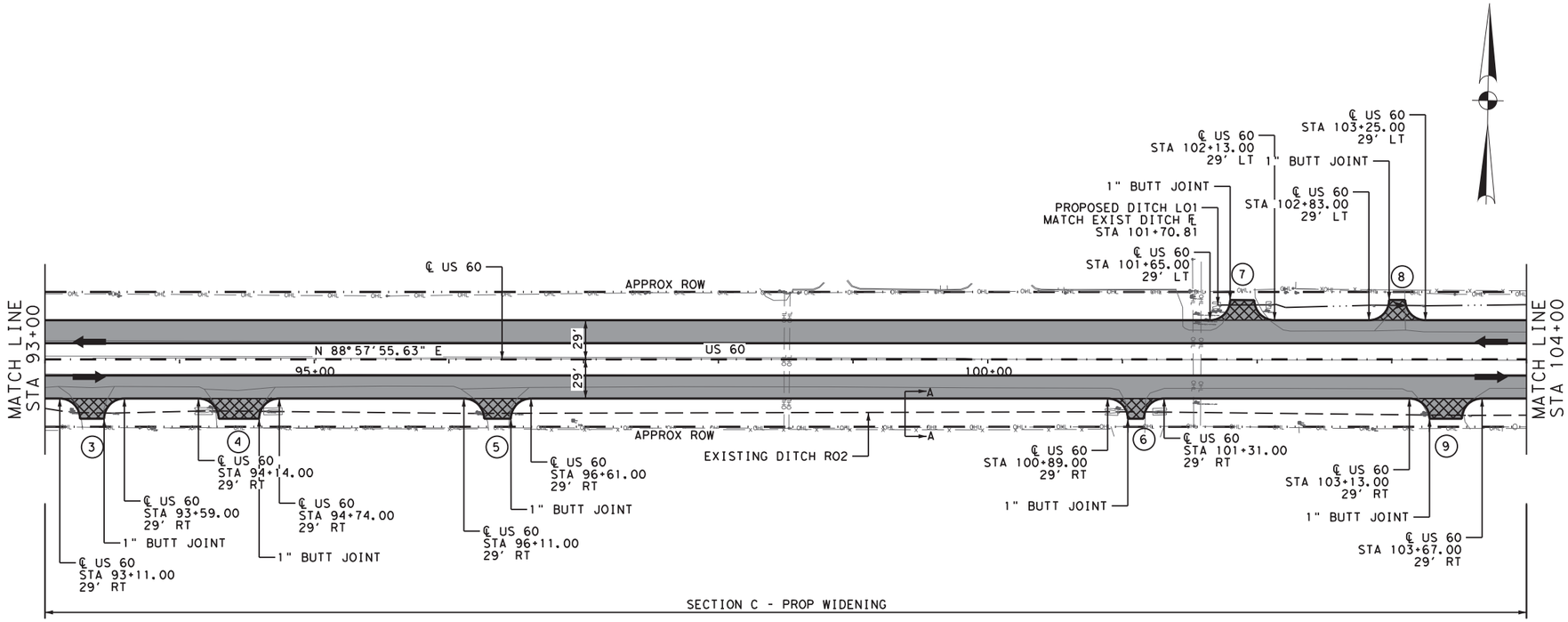
Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE

**STA 82+00 TO STA 93+00**

SHEET 4 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 65 |

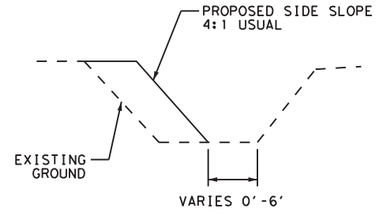



LEGEND

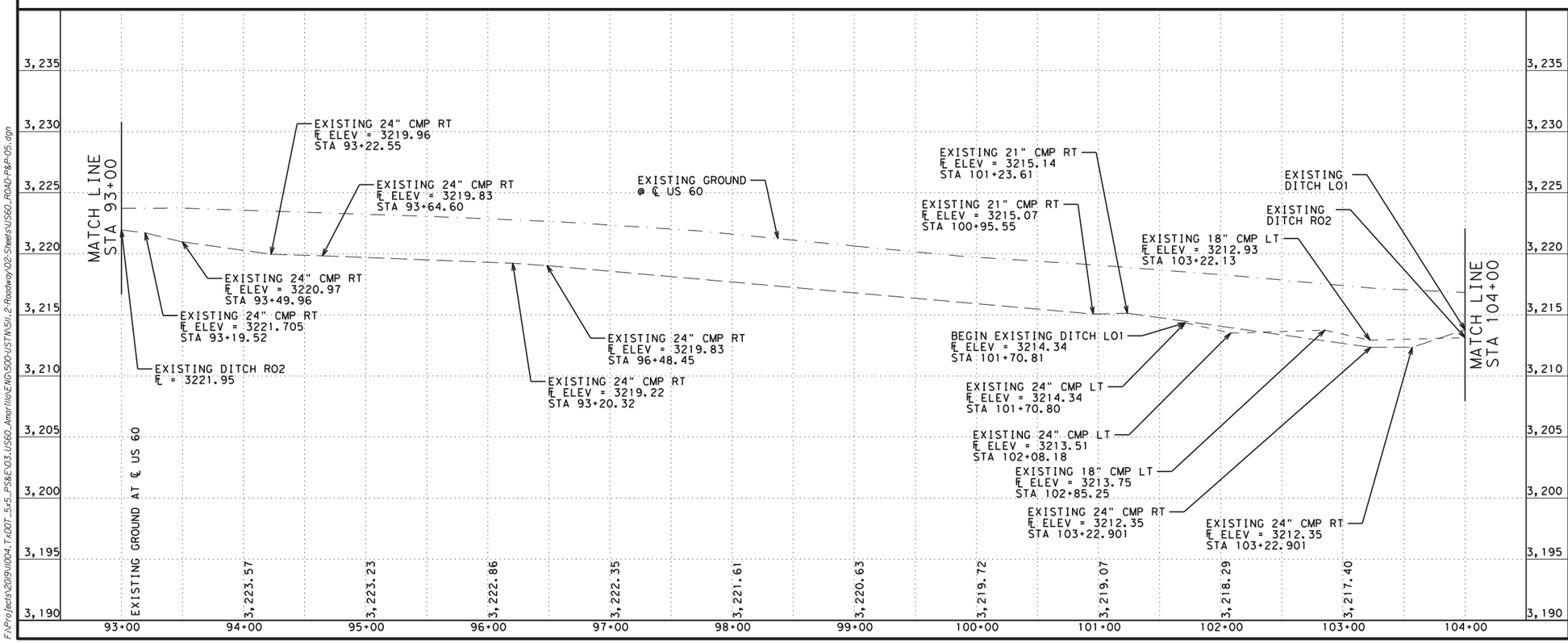
- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄
- DITCH CENTERLINE RT
- DITCH CENTERLINE LT

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




DITCH SECTION A-A




04/07/2021

0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|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TBPLS Firm Registration No. 100467
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Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE

**STA 93+00 TO STA 104+00**

SHEET 5 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 66 |

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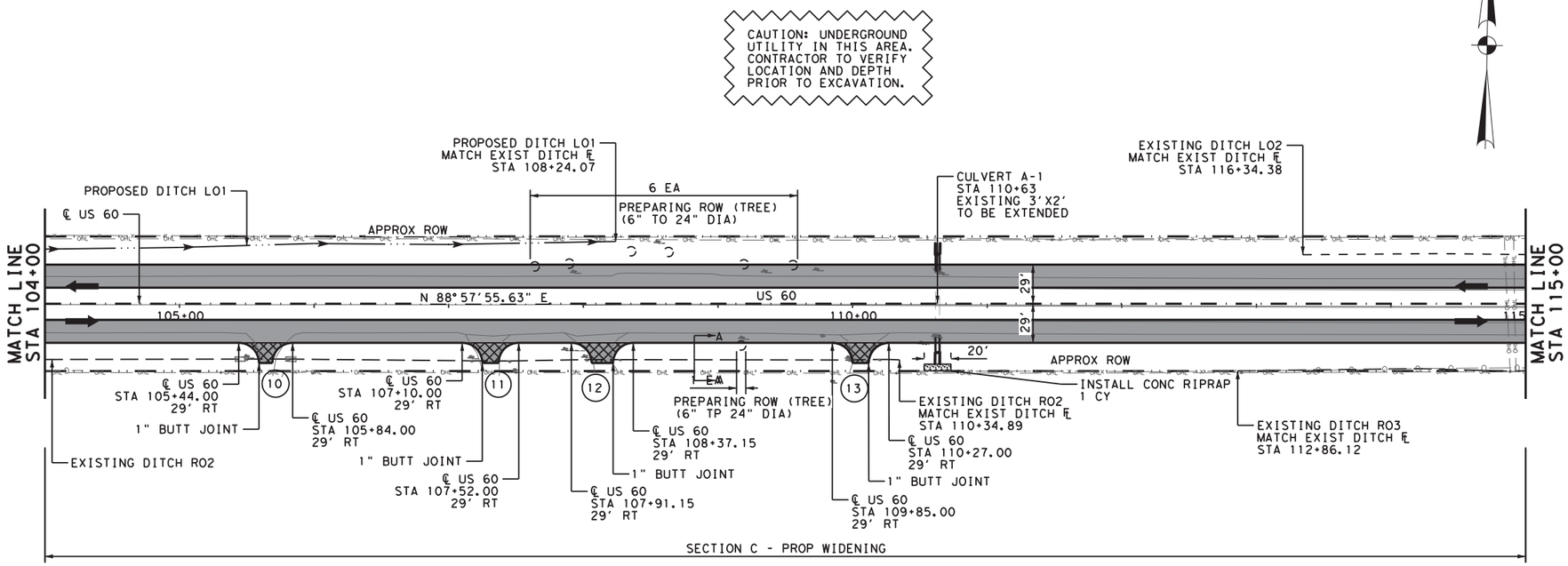
USGO_ROAD-P&P-05.dgn

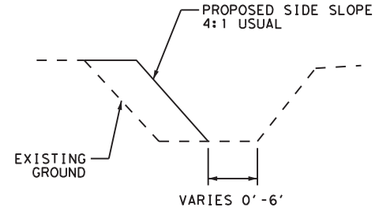



LEGEND

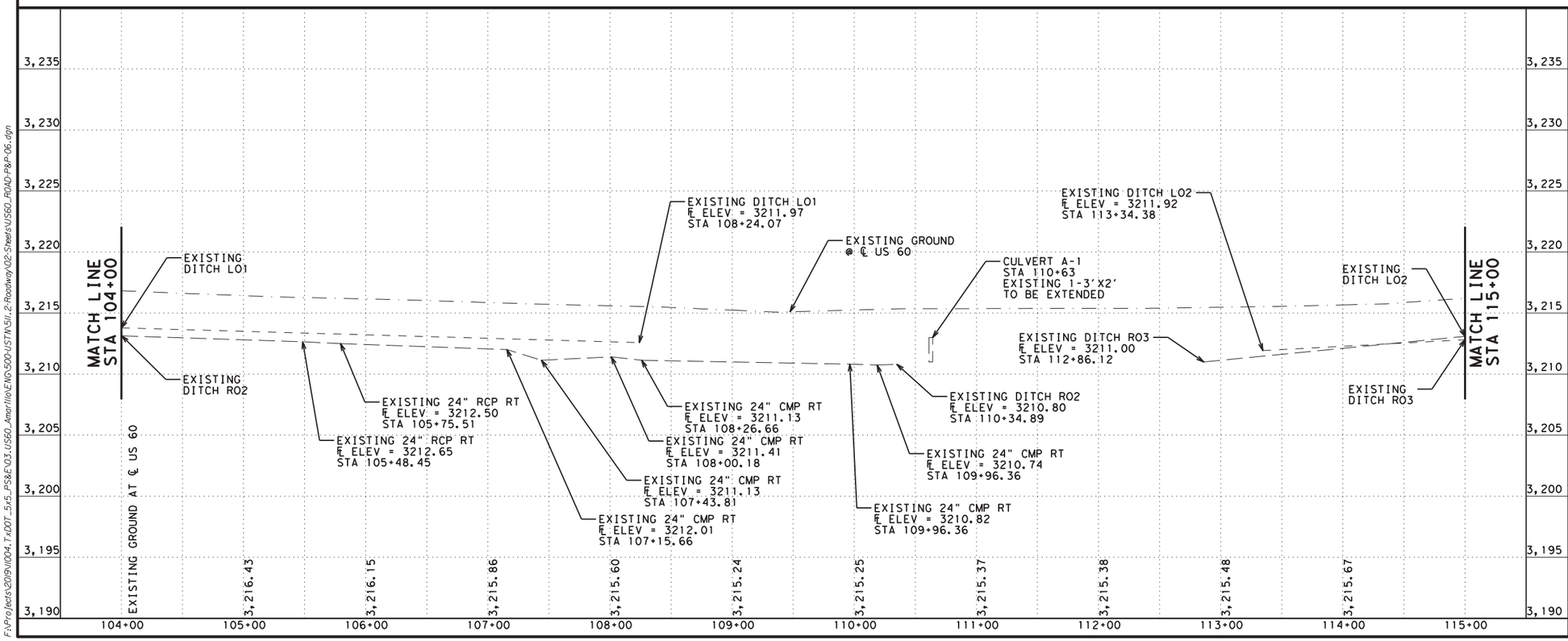
- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄
- DITCH CENTERLINE RT
- DITCH CENTERLINE LT

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




DITCH SECTION A-A




04/07/2021

BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE
## STA 104+00 TO STA 115+00

SHEET 6 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 67 |

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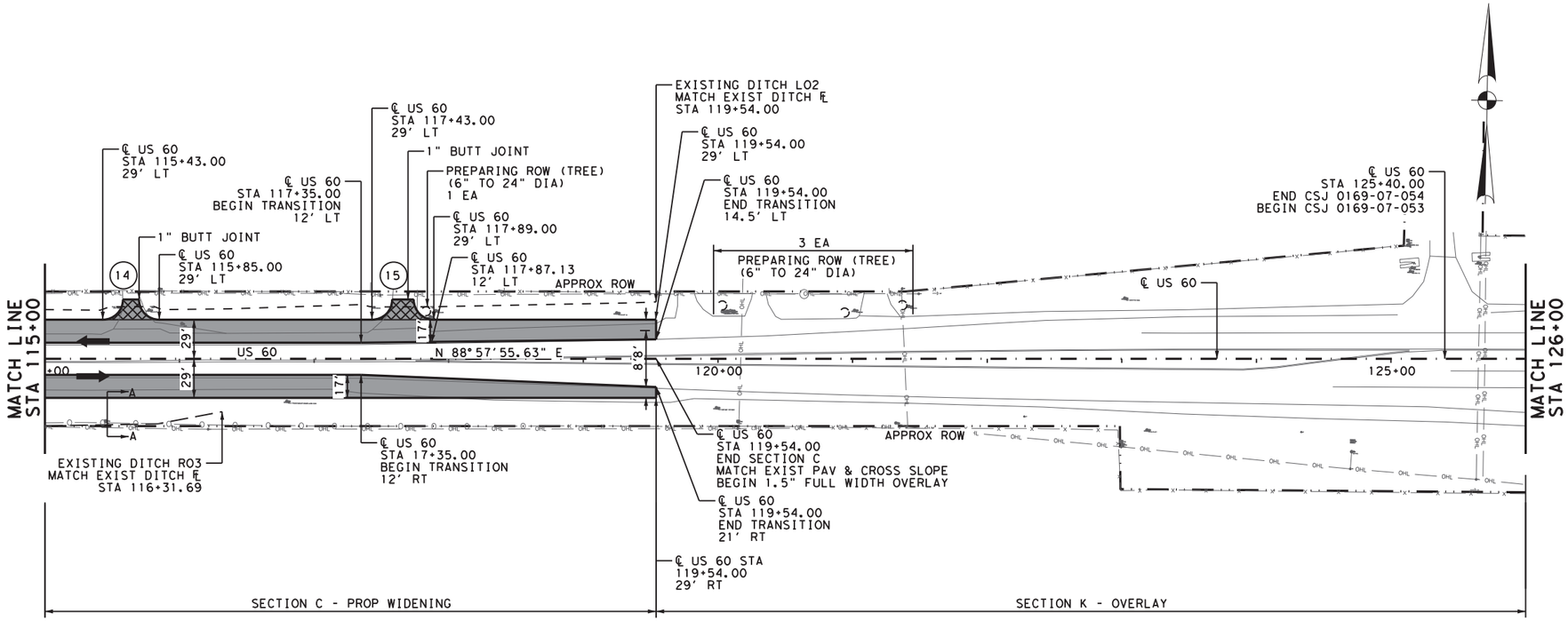
US60_ROAD-P&P-06.dgn

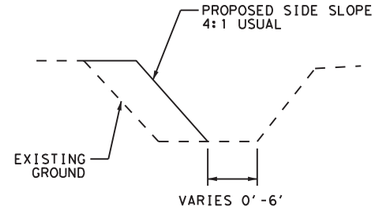



LEGEND

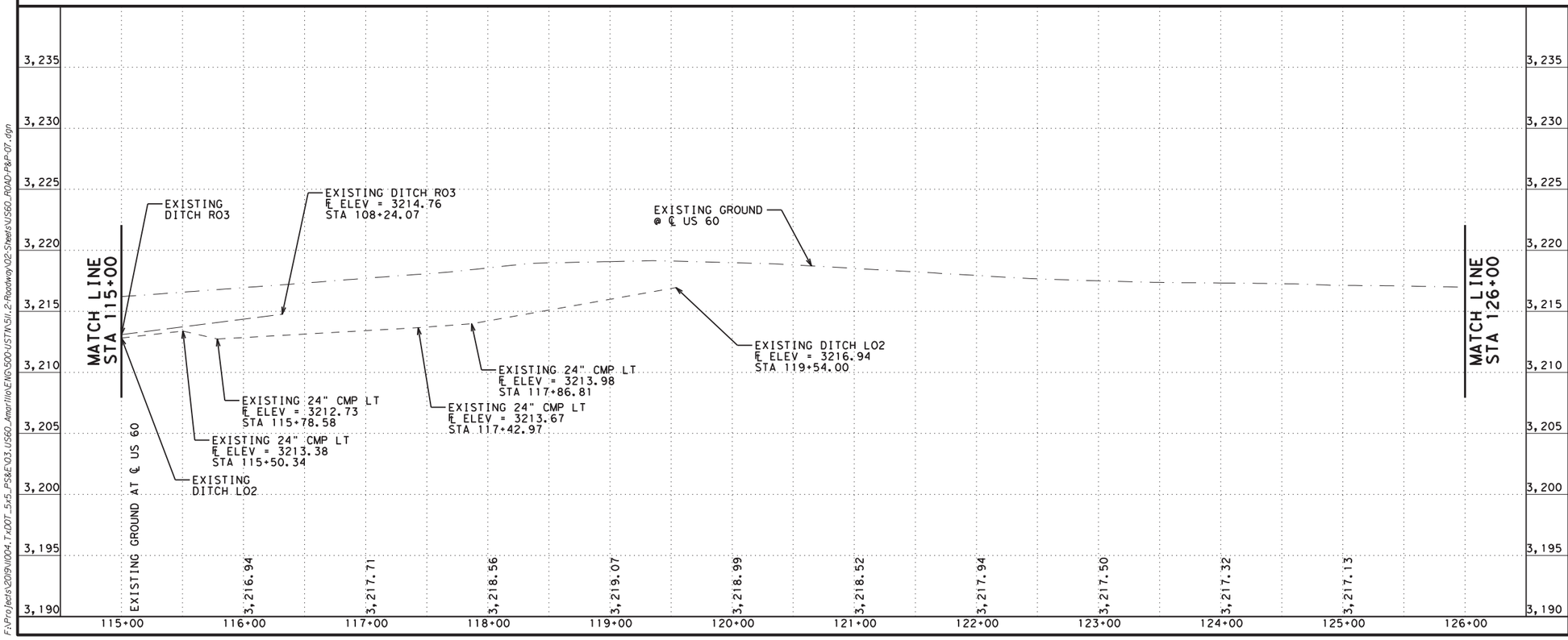
- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄
- DITCH CENTERLINE RT
- DITCH CENTERLINE LT

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




DITCH SECTION A-A




04/07/2021

BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100(H)
0 5 10(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
# ROADWAY PLAN & PROFILE

**STA 115+00 TO STA 126+00**

SHEET 7 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | HIGHWAY NO. |
|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | US60 |

| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
|---|---|---|---|---|---|
| AMA | GRAY | 0169 | 07 | 053,ETC | 68 |

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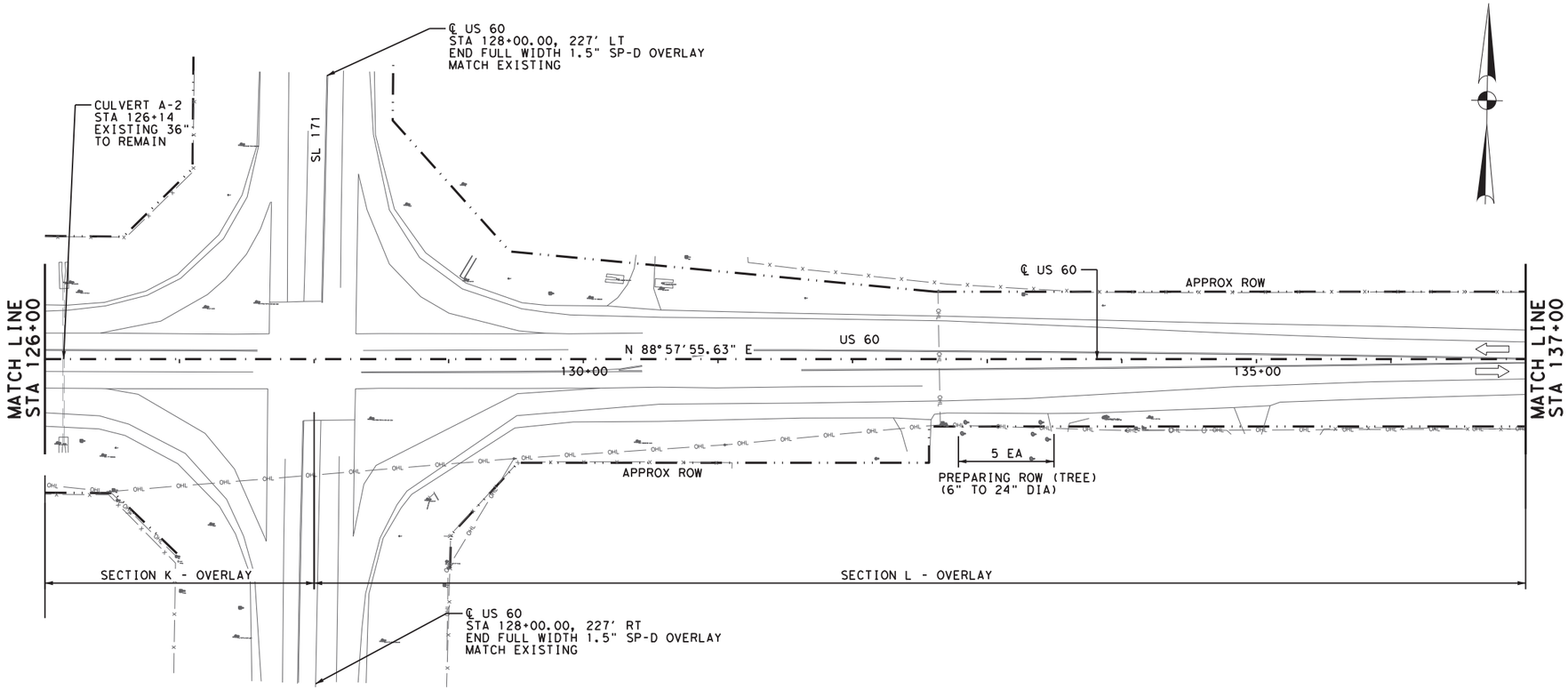


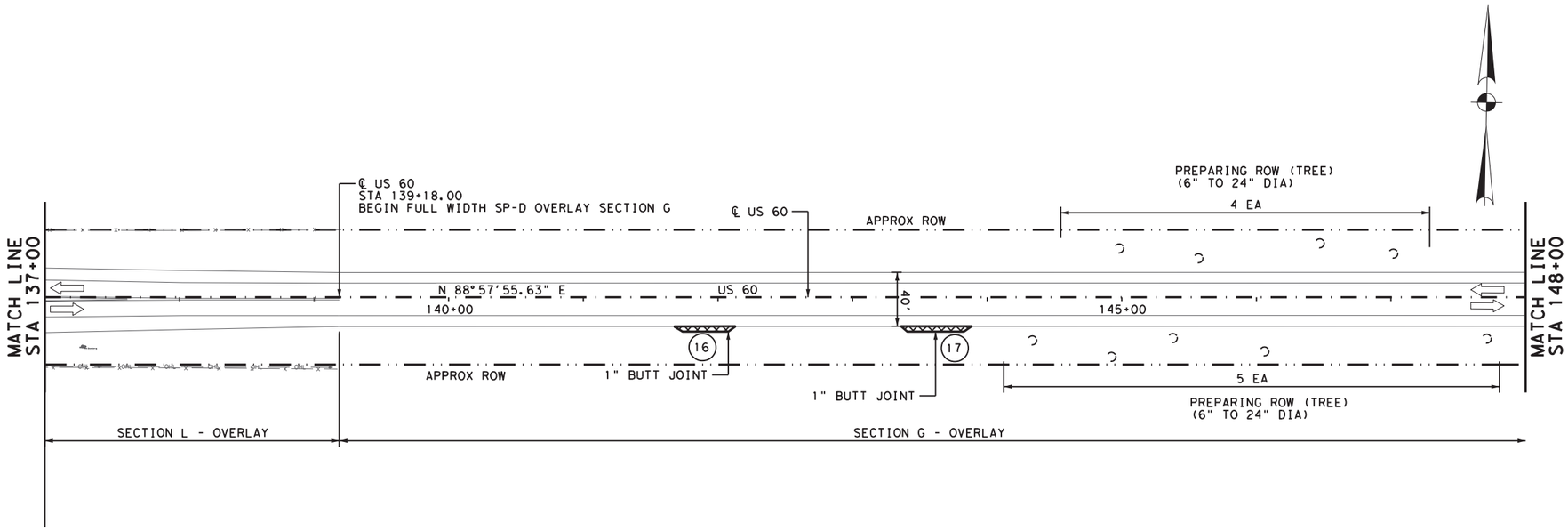


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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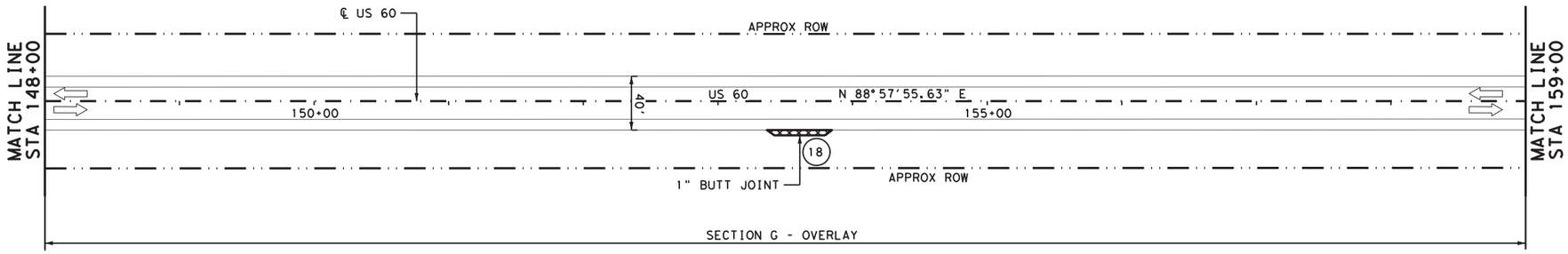
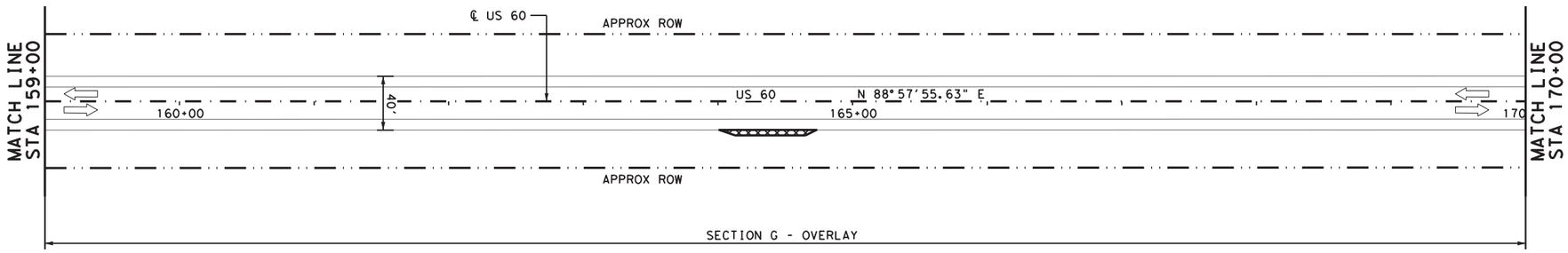
Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 126+00 TO STA 148+00

SHEET 8 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 69 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
### STA 148+00 TO STA 170+00

SHEET 9 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 70 |

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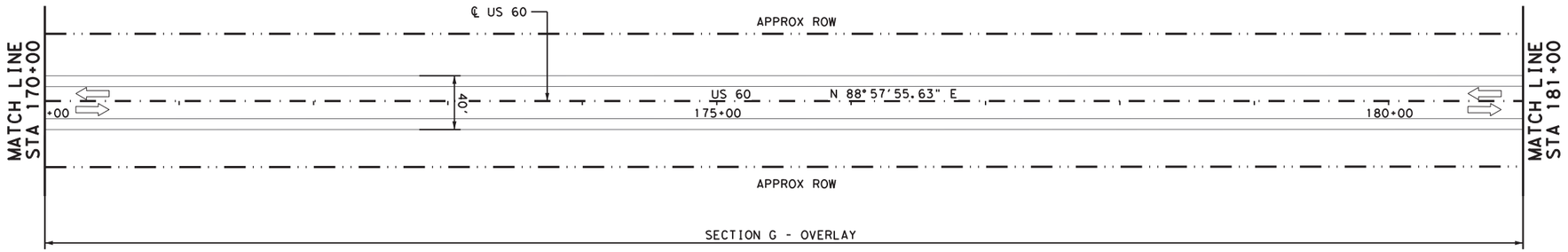


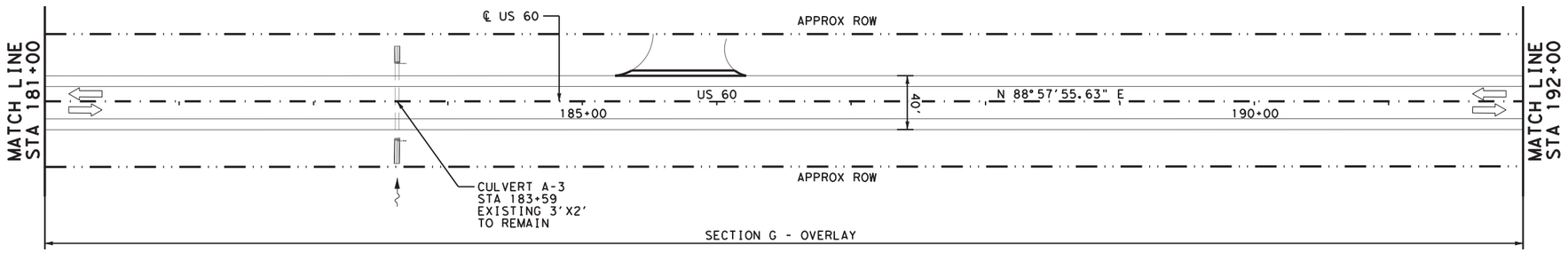


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
# ROADWAY PLAN
## STA 170+00 TO STA 192+00

SHEET 10 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 71 |

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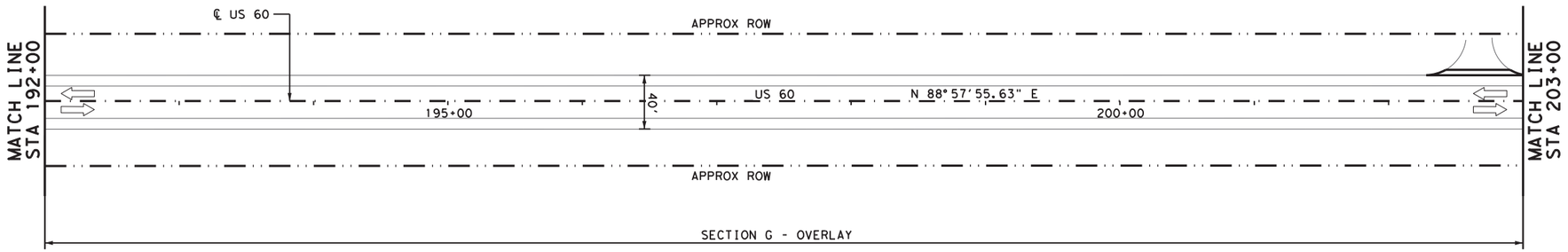


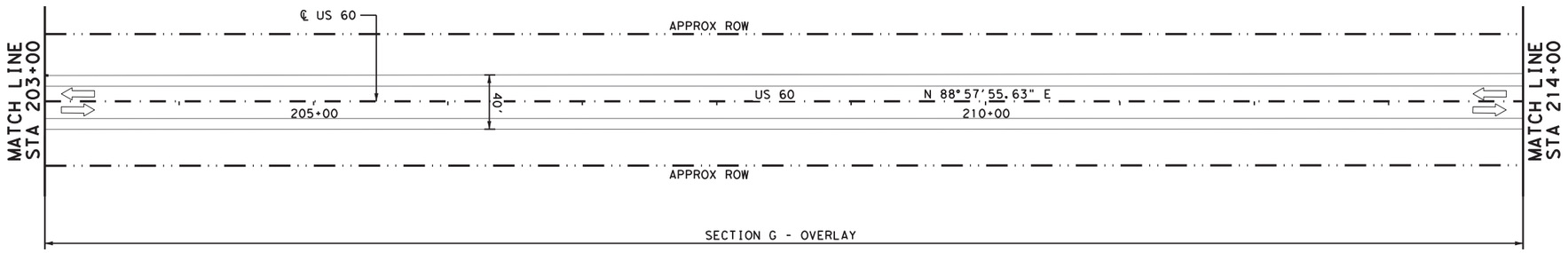


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
### STA 192+00 TO STA 214+00

SHEET 11 OF 38

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 72 |

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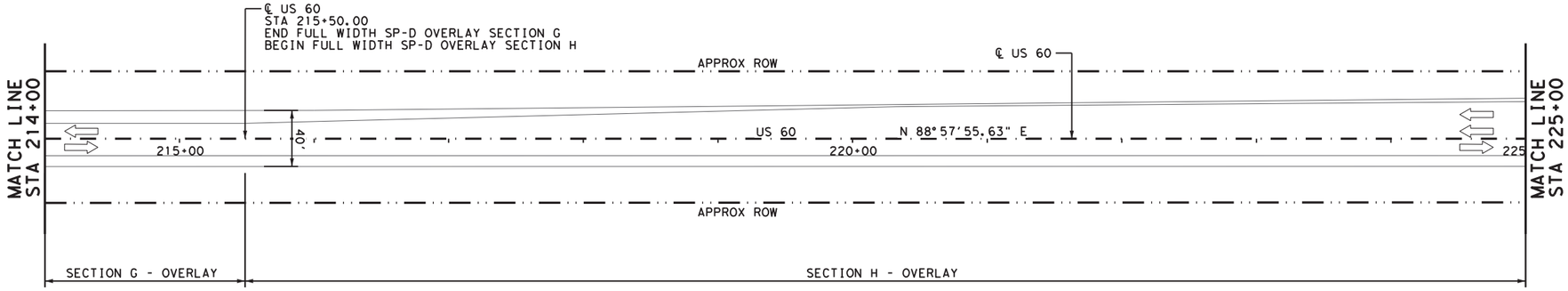


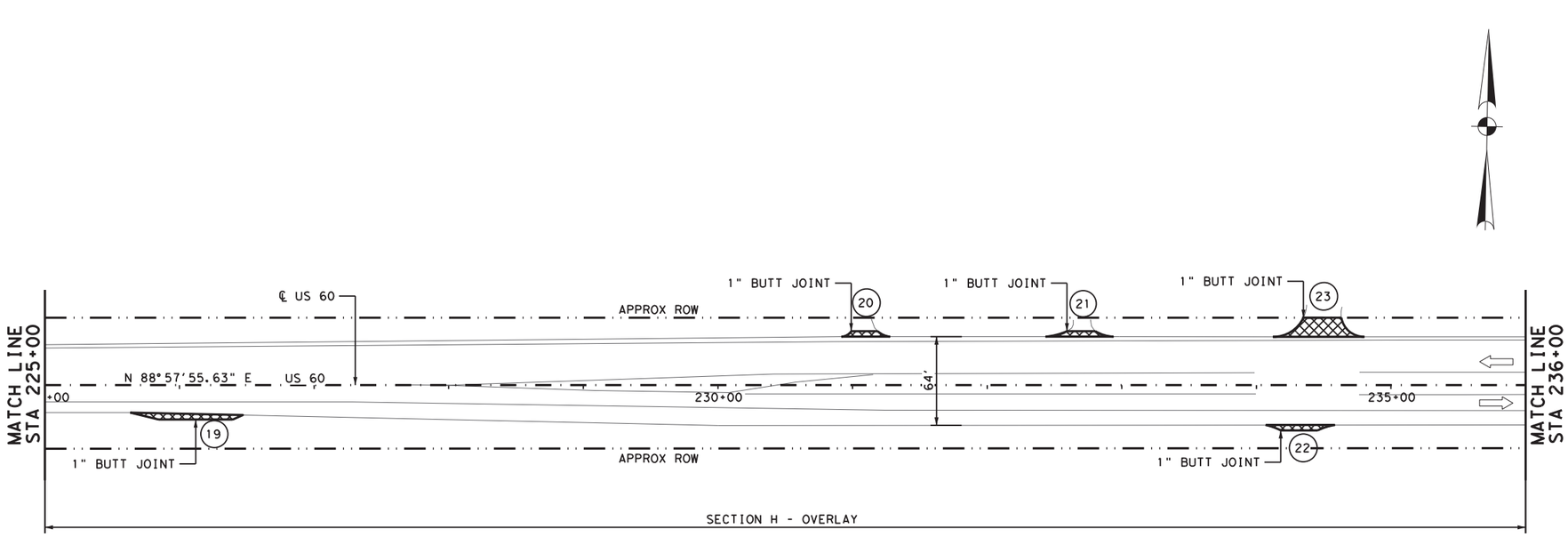


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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# US 60
## ROADWAY PLAN
### STA 214+00 TO STA 236+00

SHEET 12 OF 38

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 73 |

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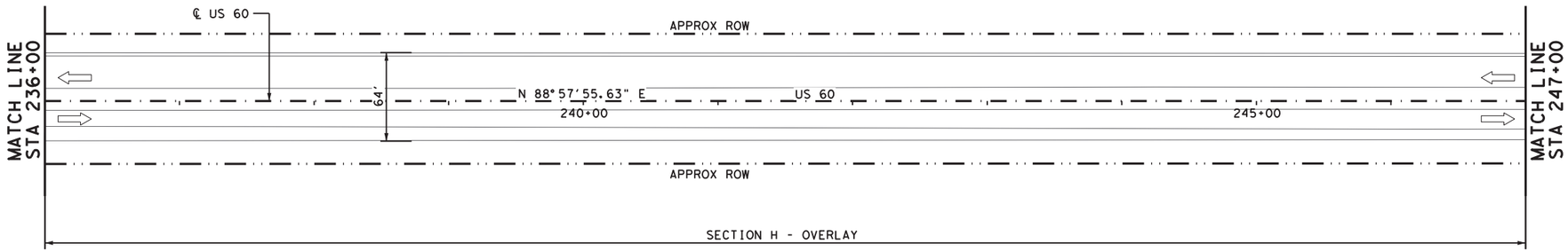


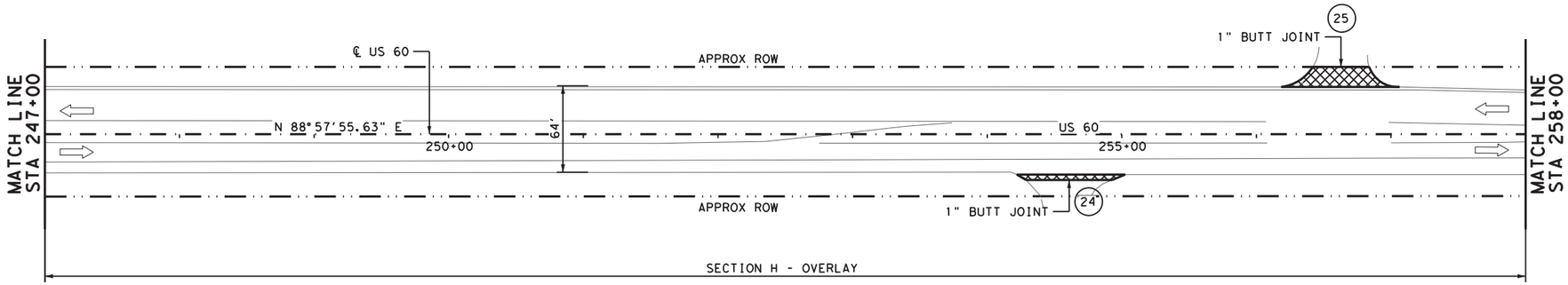


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
# ROADWAY PLAN
## STA 236+00 TO STA 258+00

SHEET 13 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 74 |



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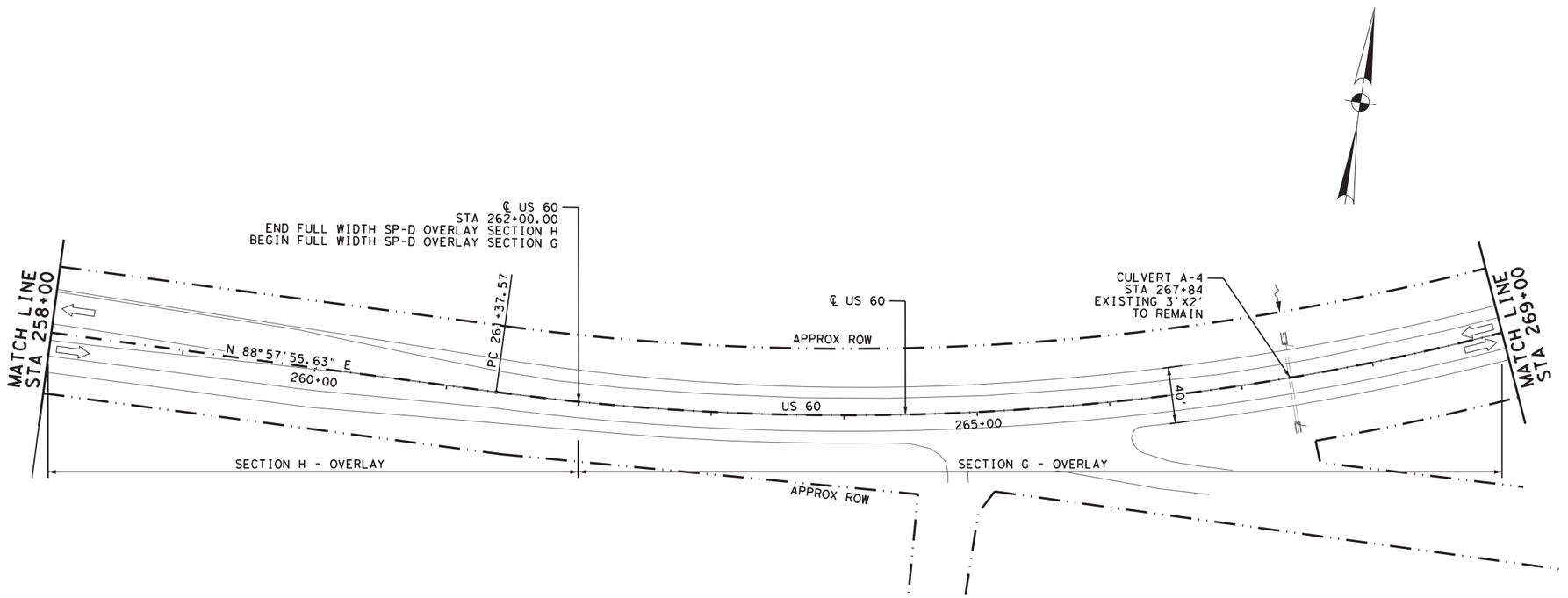


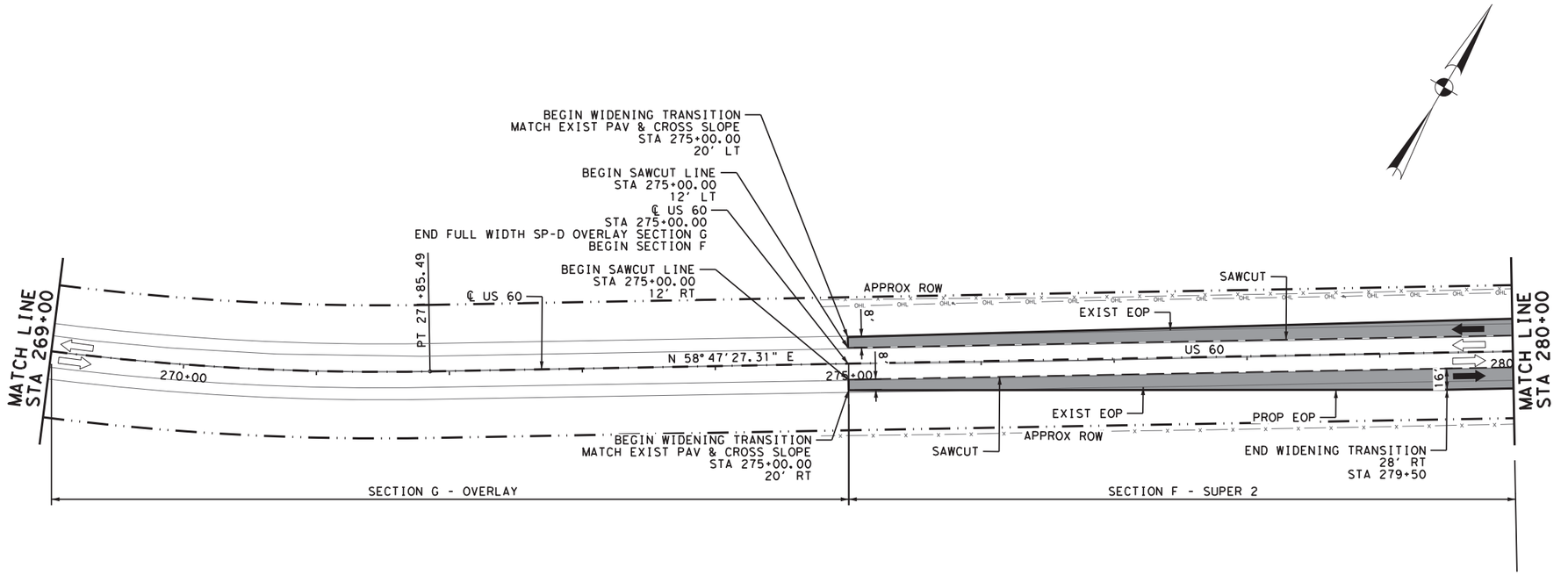


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 258+00 TO STA 280+00

SHEET 14 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 75 |

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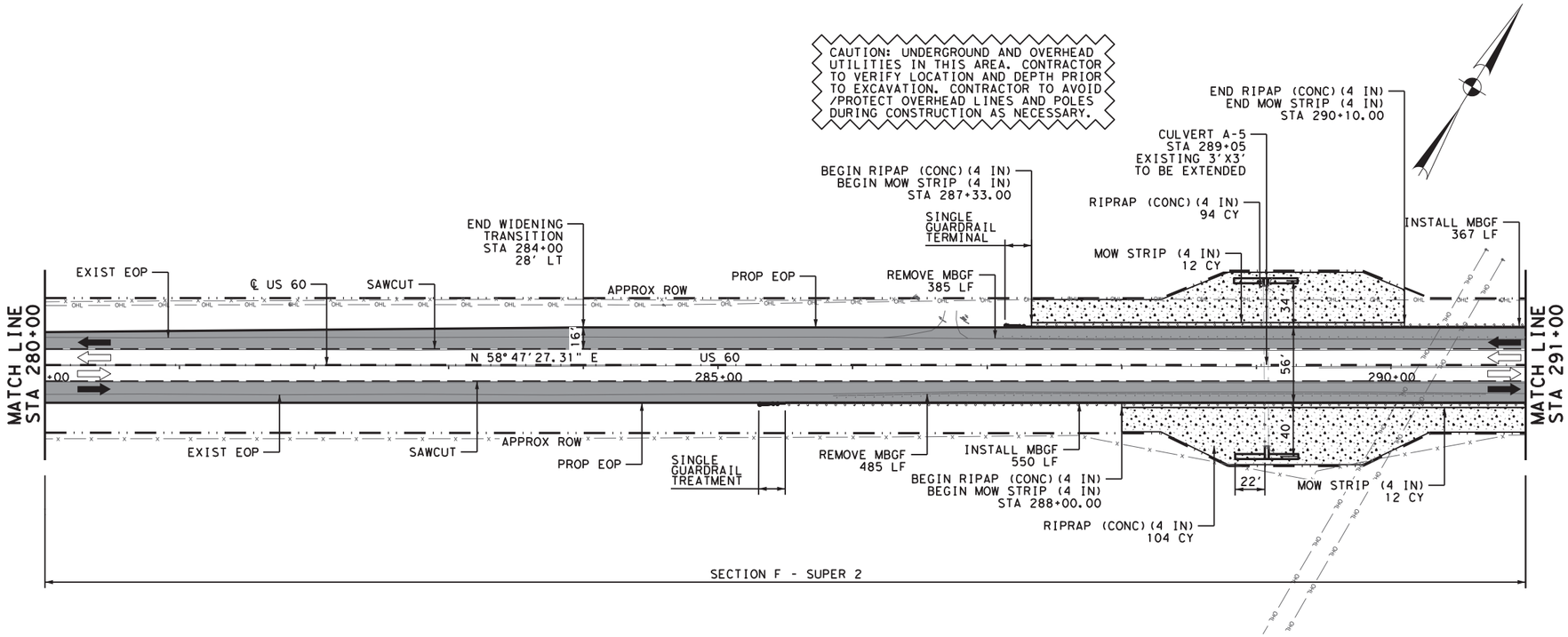


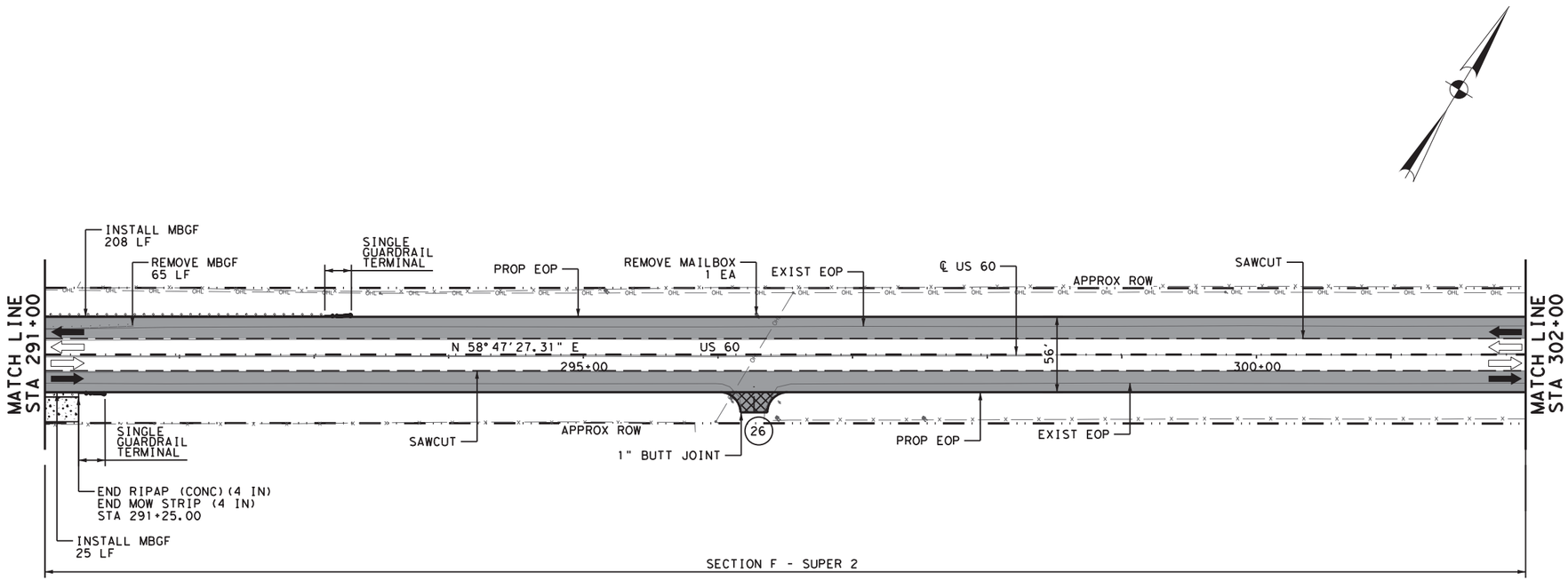


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BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 280+00 TO STA 302+00**

SHEET **15** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 76 |

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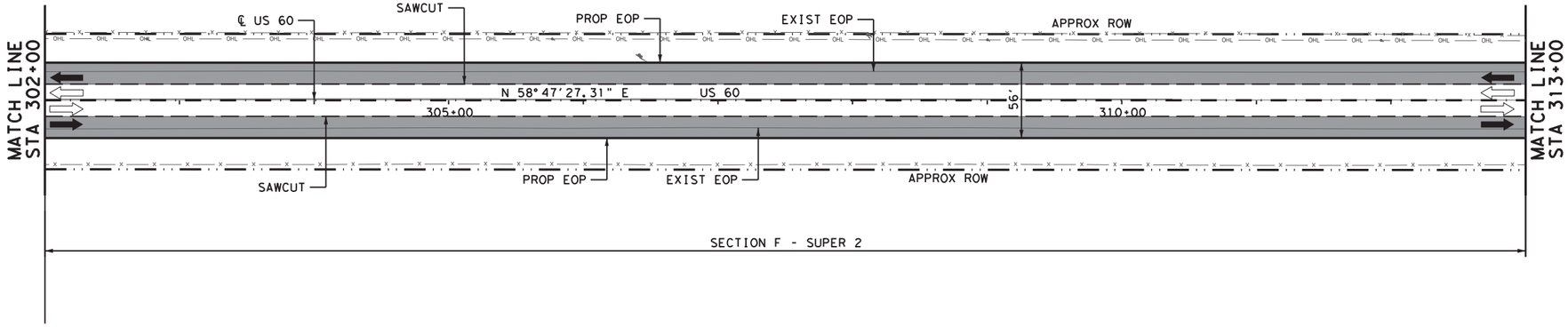
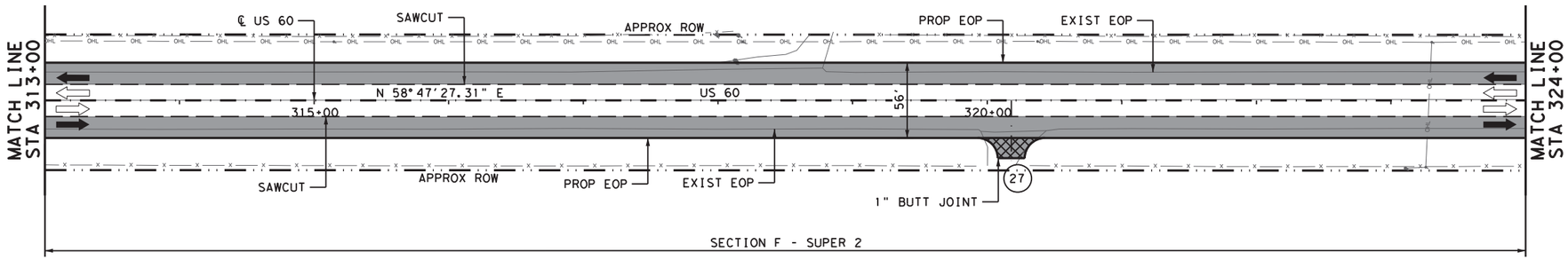
USGD_ROAD-P&P-15.dgn




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
### STA 302+00 TO STA 324+00

SHEET 16 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 77 |

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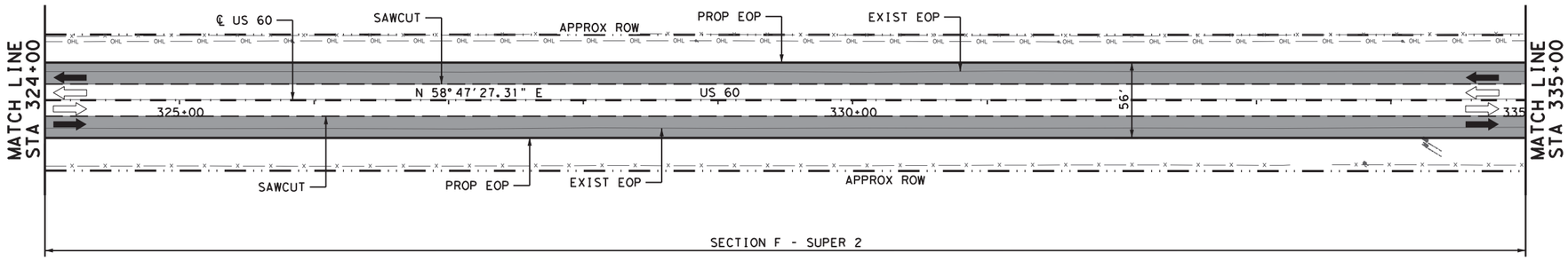


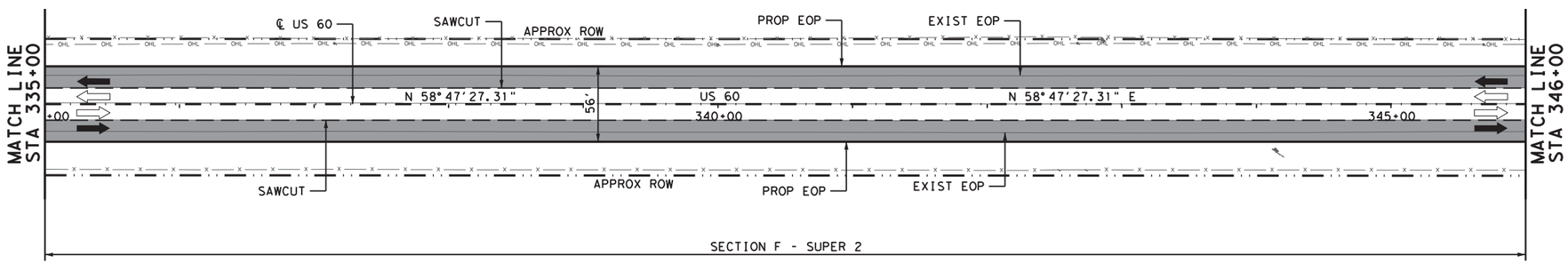


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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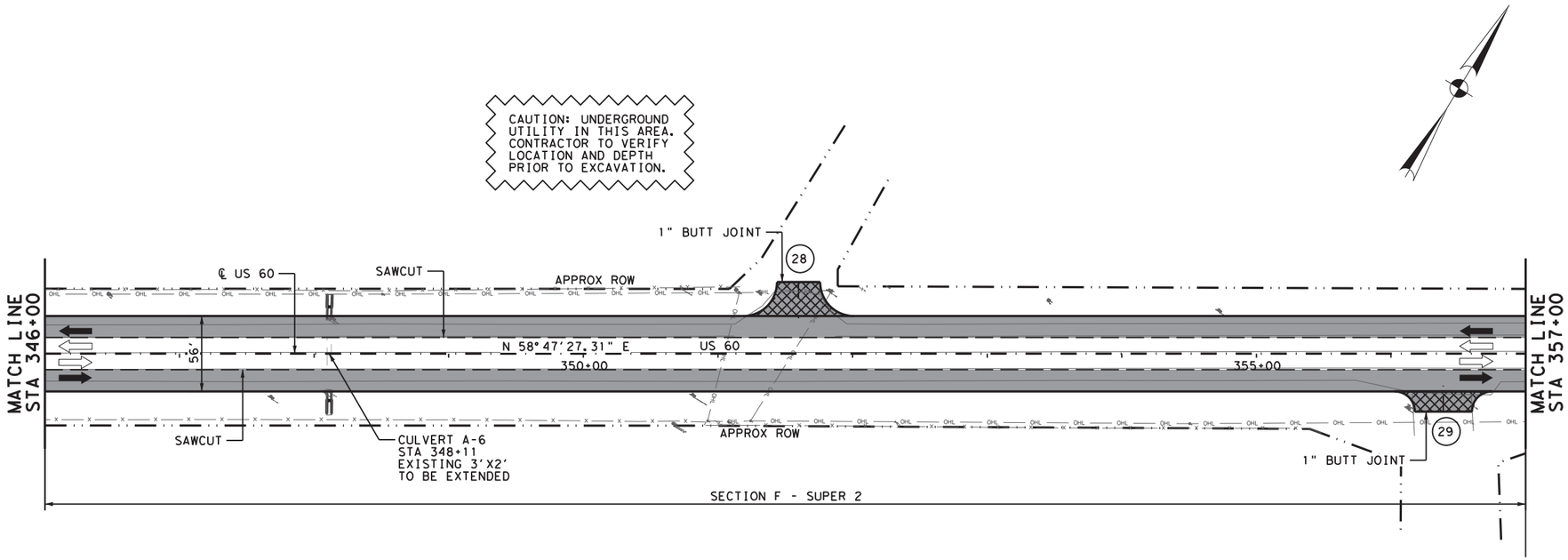
Texas Department of Transportation

# US 60
# ROADWAY PLAN
## STA 324+00 TO STA 346+00

SHEET 17 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 78 |

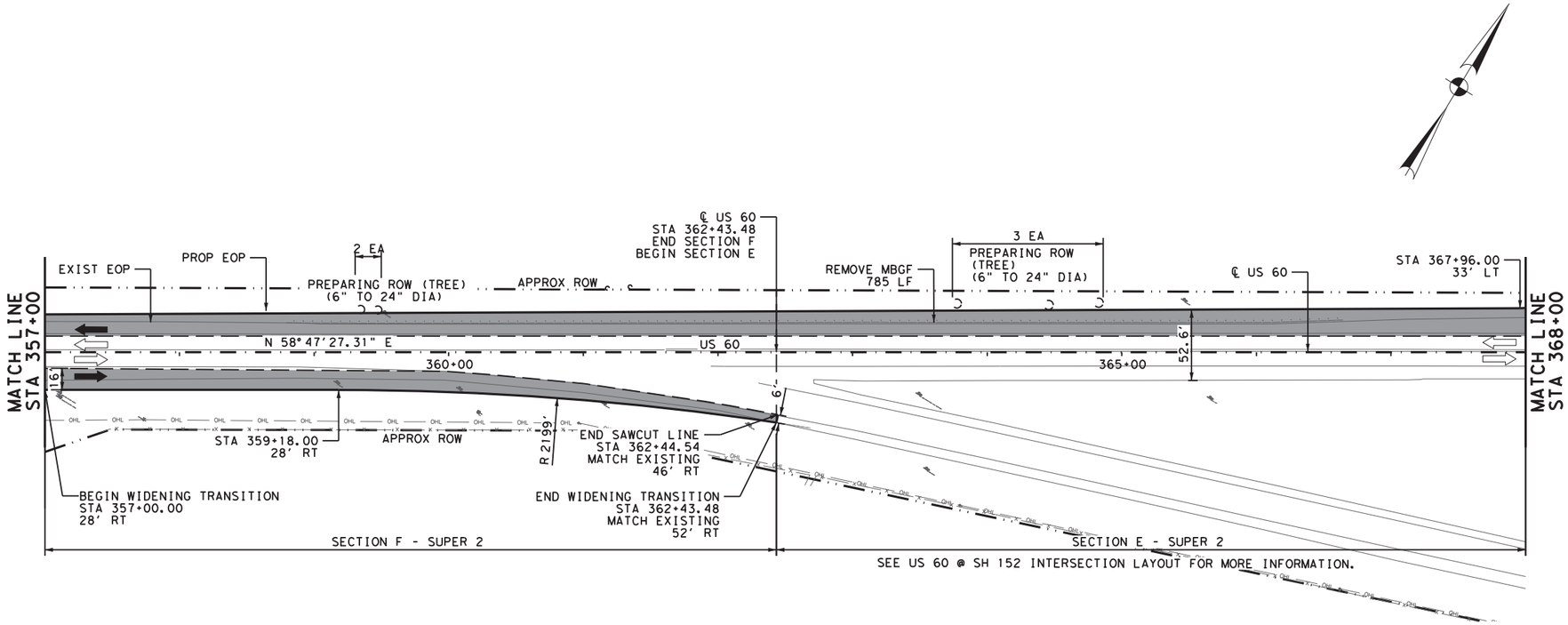



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




04/07/2021

BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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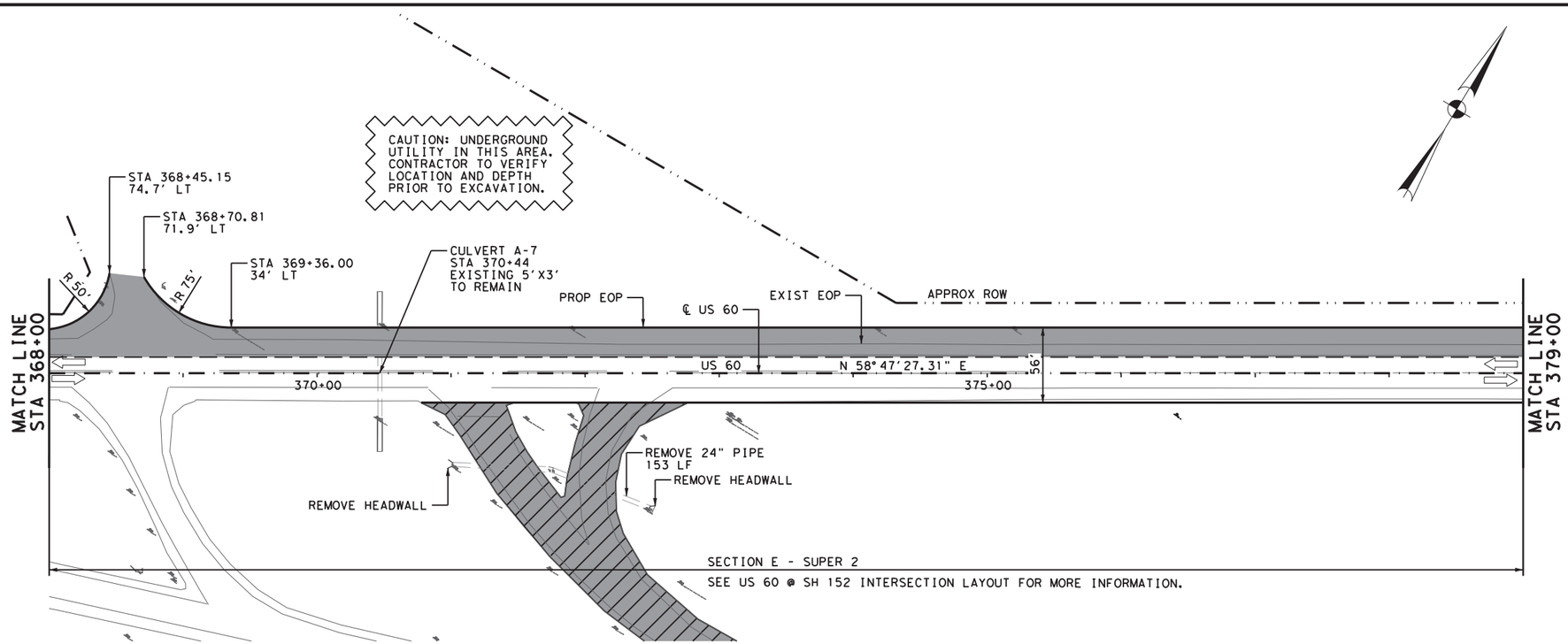
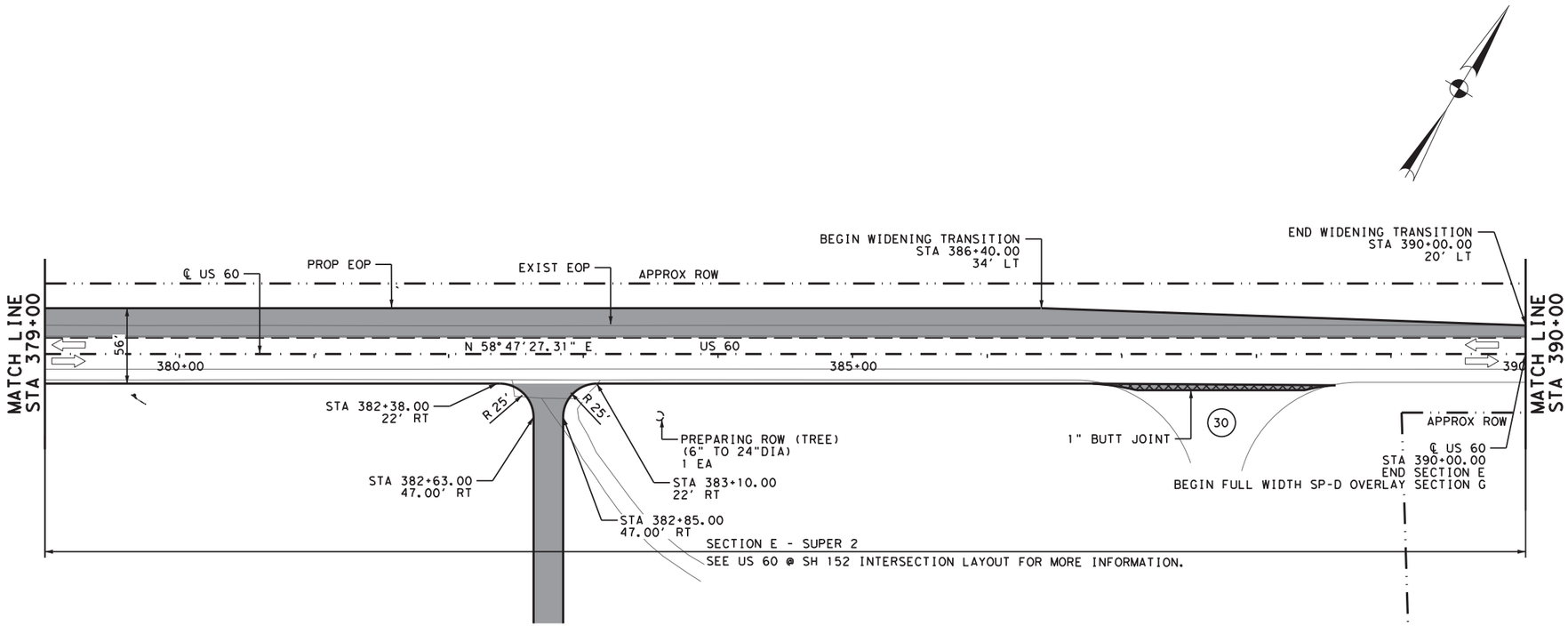
Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 346+00 TO STA 368+00

SHEET 18 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 79 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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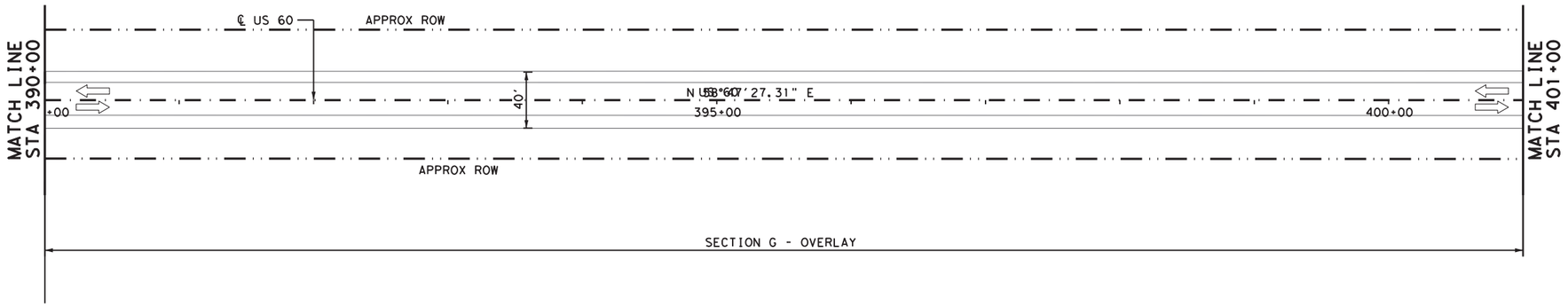
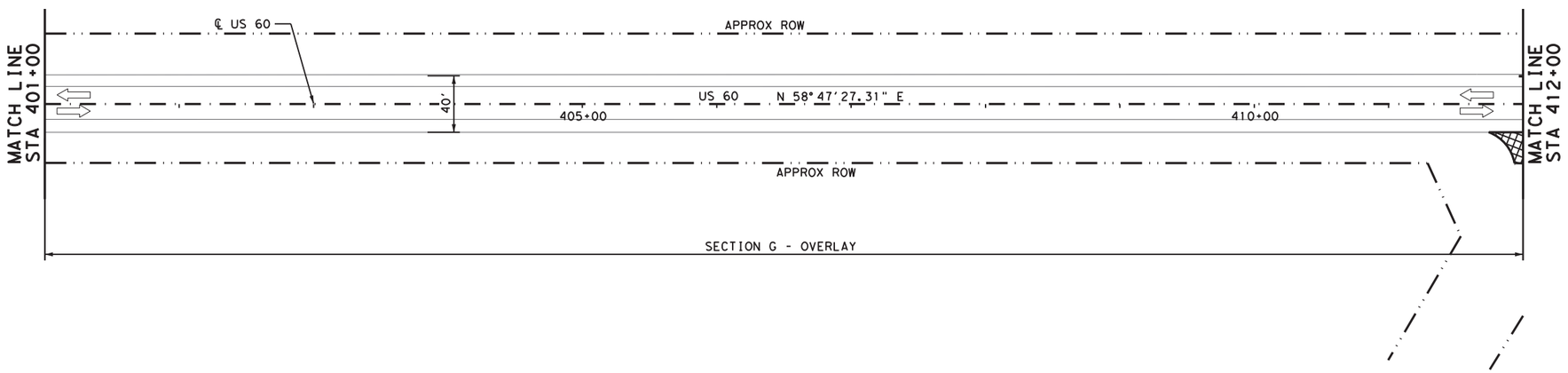
Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 368+00 TO STA 390+00

SHEET 19 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 80 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
### STA 390+00 TO STA 412+00

SHEET 20 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 81 |

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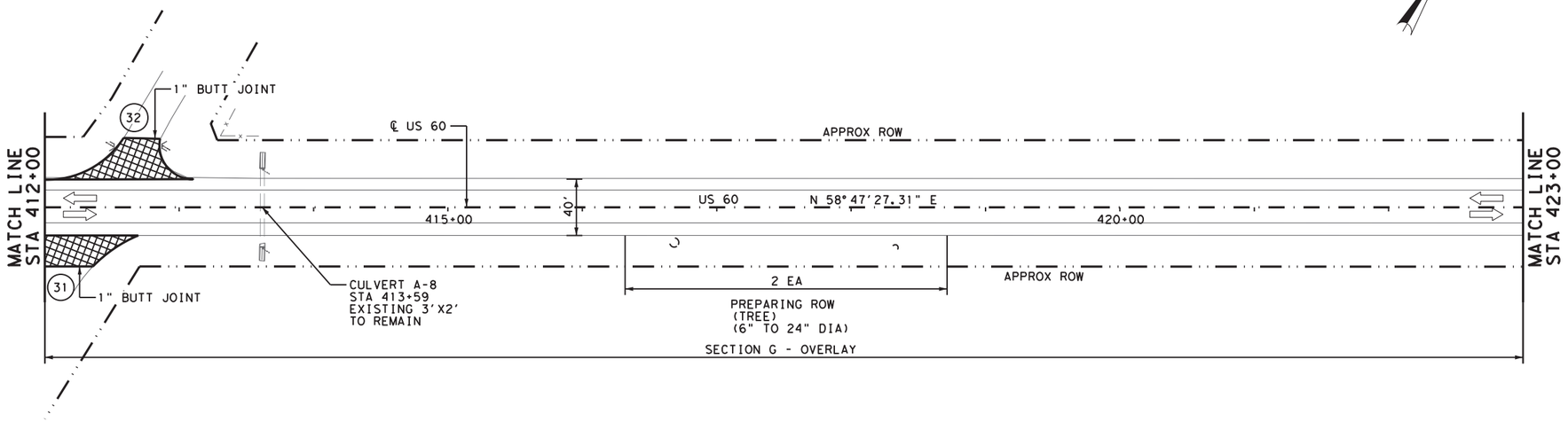
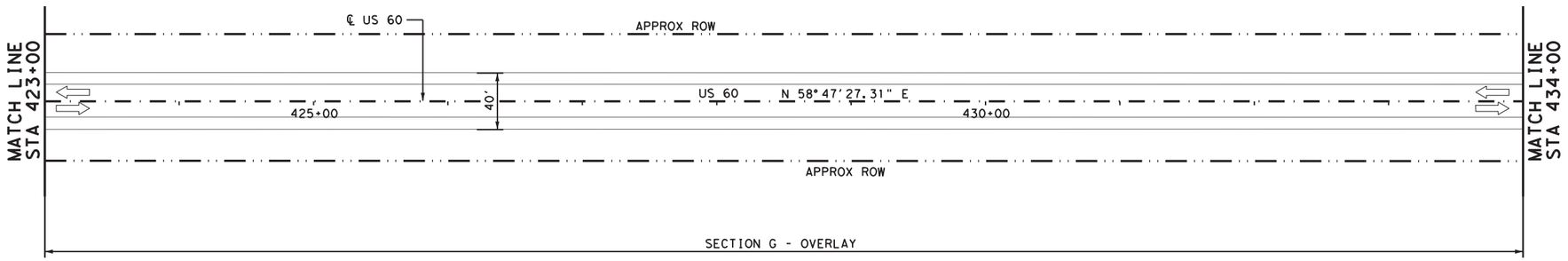
US60_ROAD-P&P-20.dgn




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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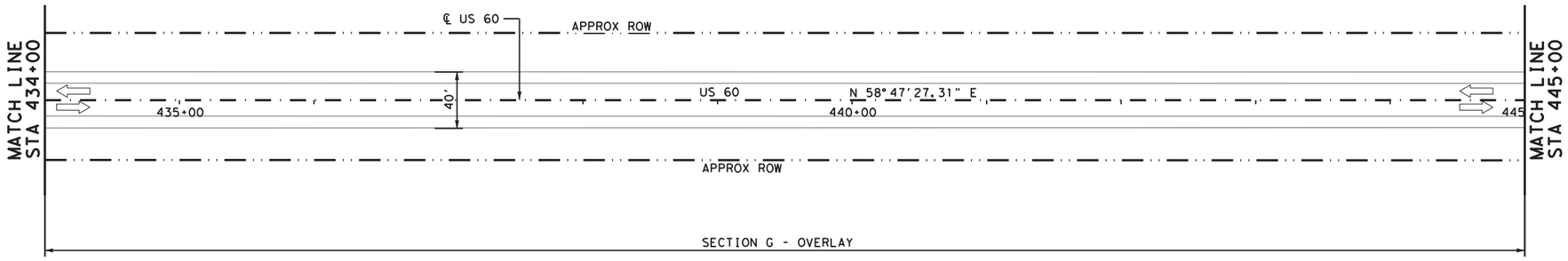
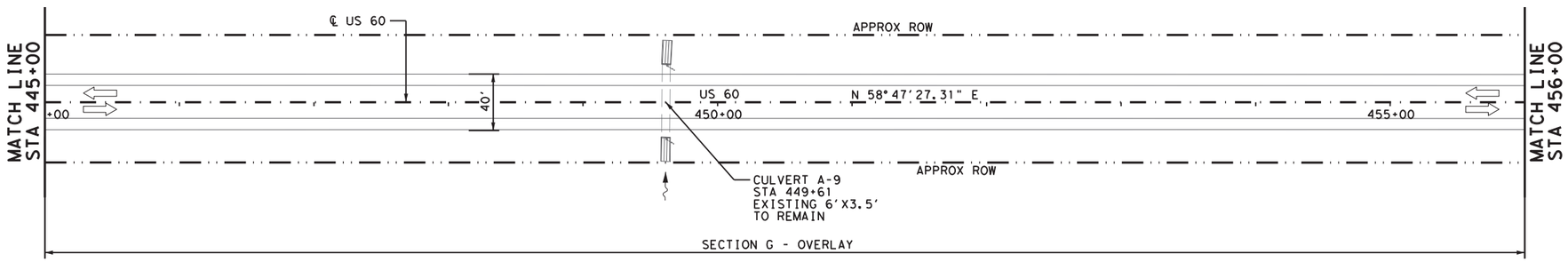
# US 60
## ROADWAY PLAN
**STA 412+00 TO STA 434+00**

SHEET **21** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 82 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 434+00 TO STA 456+00**

SHEET **22** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 83 |

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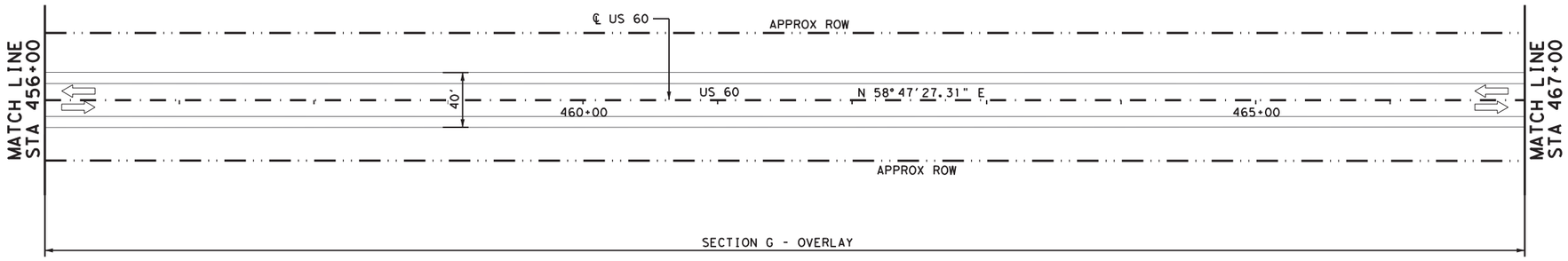


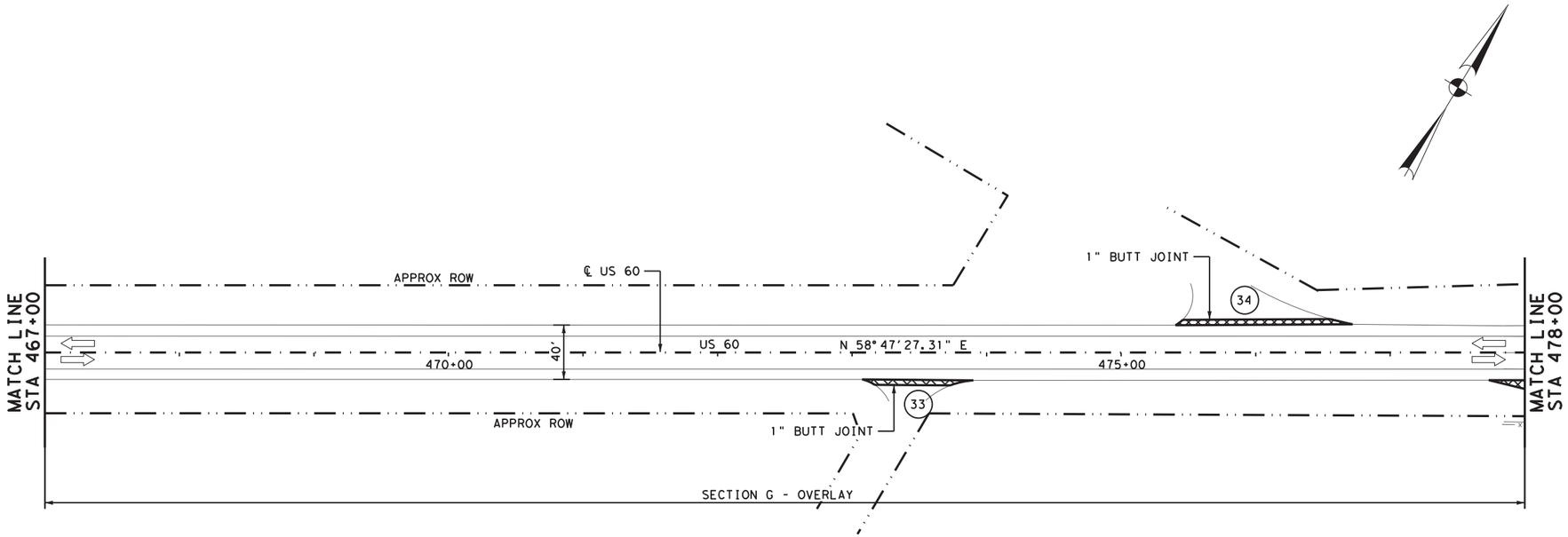


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
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0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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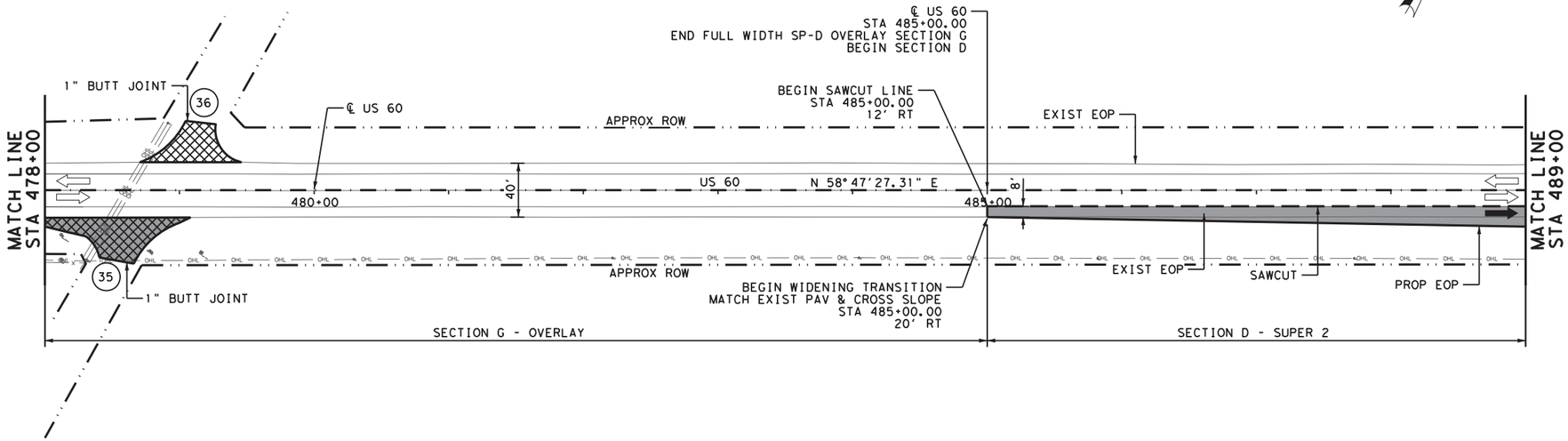
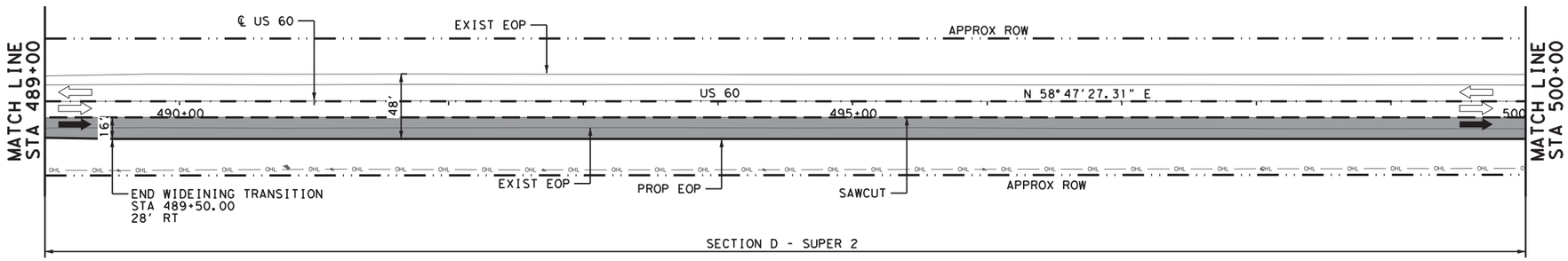
# US 60
## ROADWAY PLAN
**STA 456+00 TO STA 478+00**

SHEET **23** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | **84** |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
# ROADWAY PLAN
## STA 478+00 TO STA 500+00

SHEET 24 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 85 |

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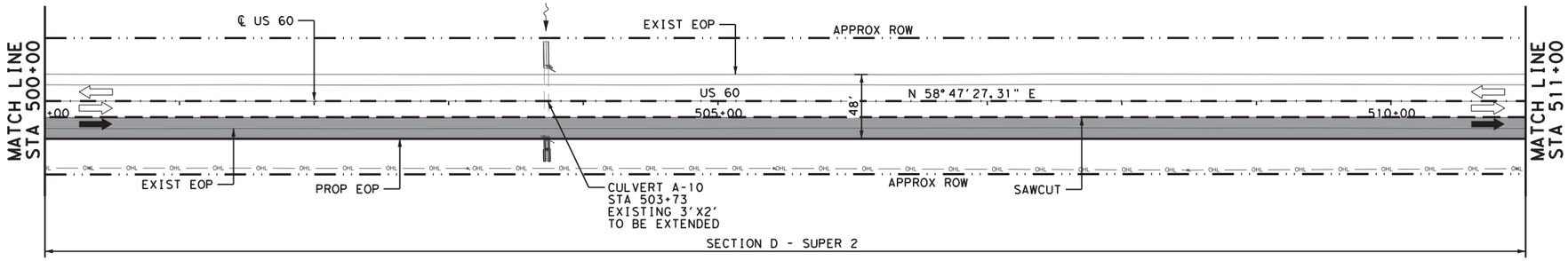


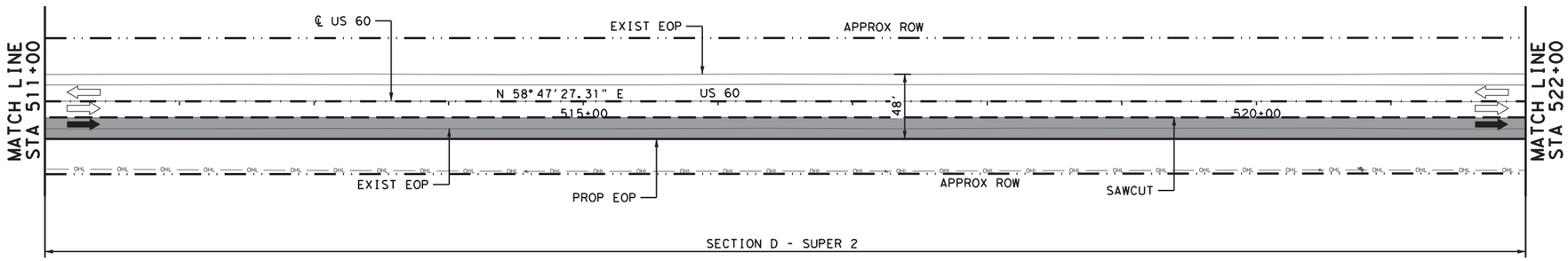


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
**STA 500+00 TO STA 522+00**

SHEET **25** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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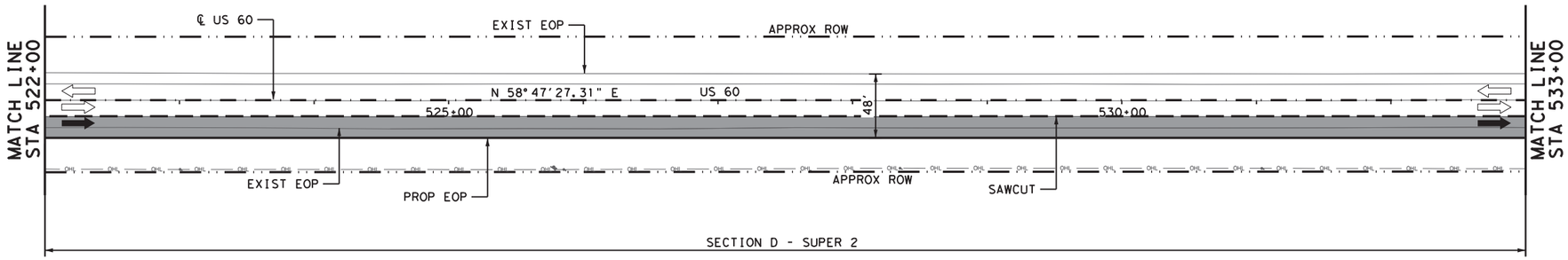


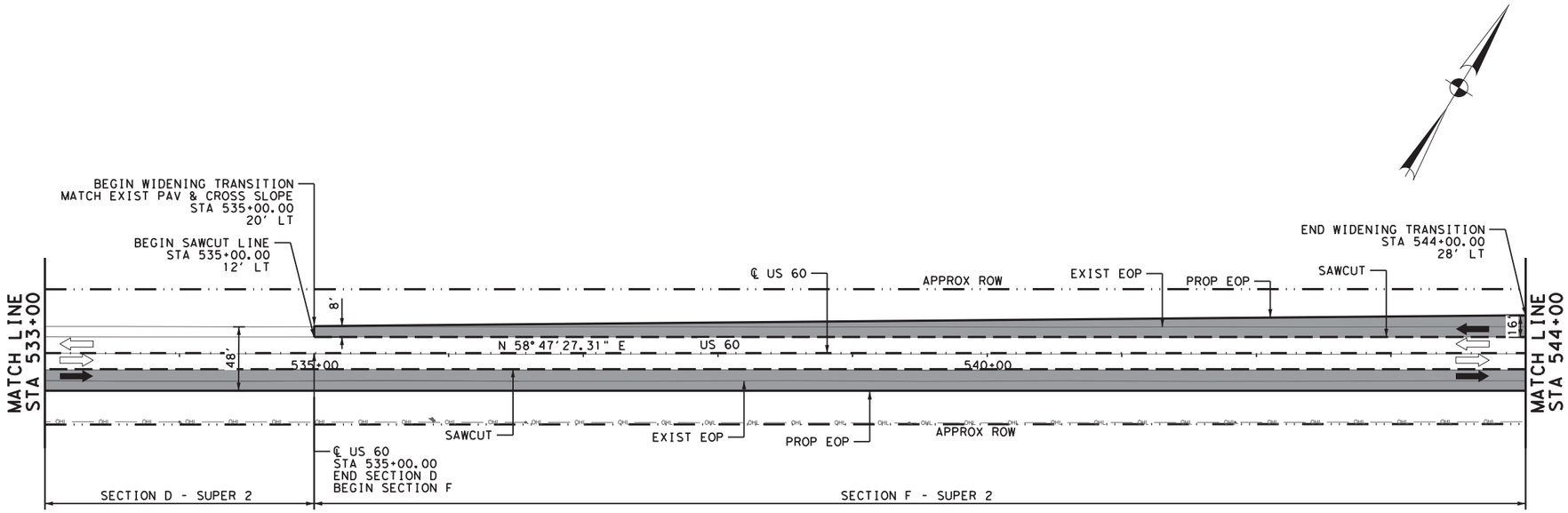


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 522+00 TO STA 544+00

SHEET 26 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 87 |

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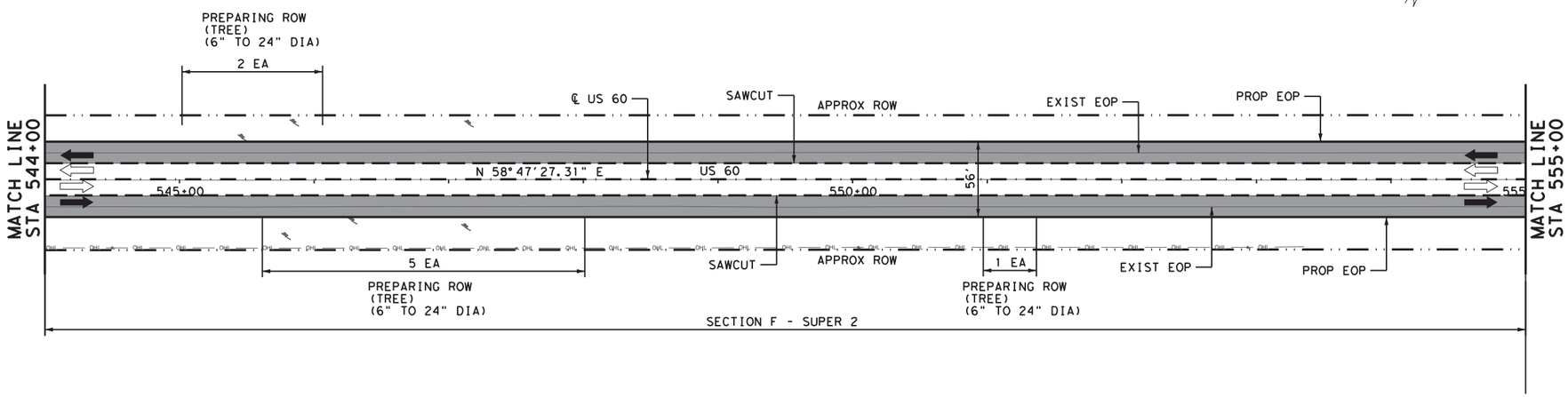


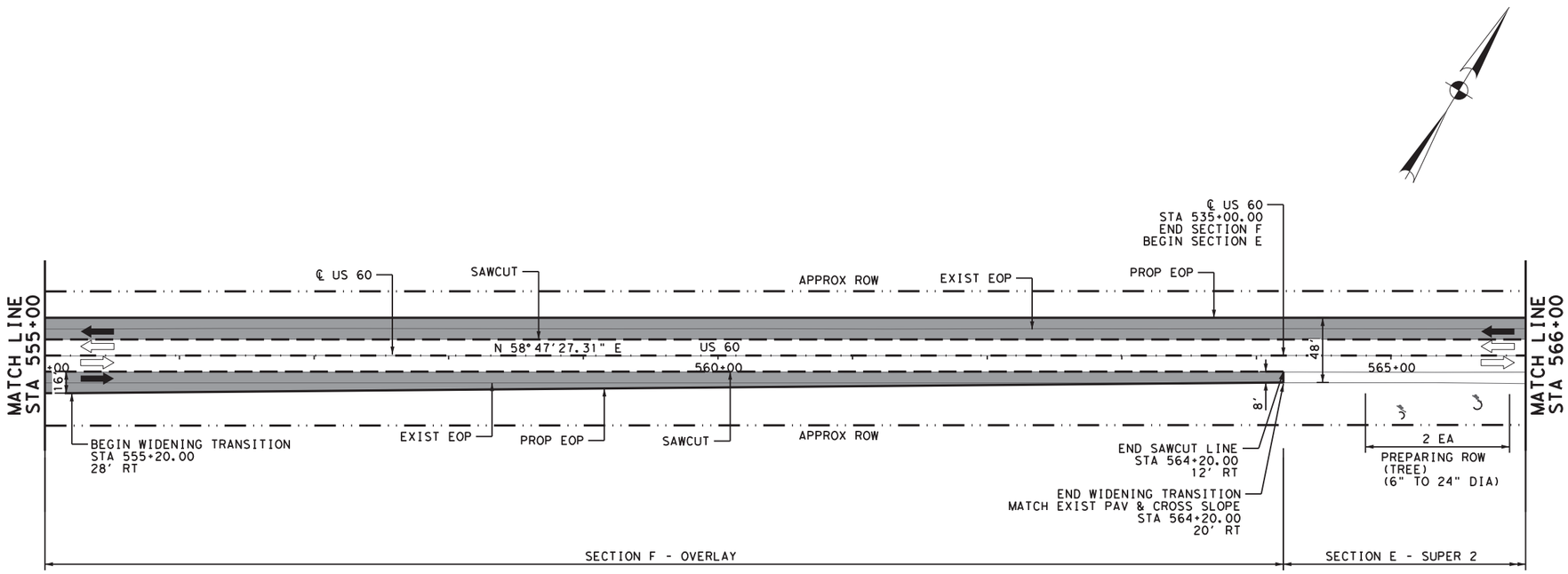


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
## ROADWAY PLAN
**STA 544+00 TO STA 566+00**

SHEET **27** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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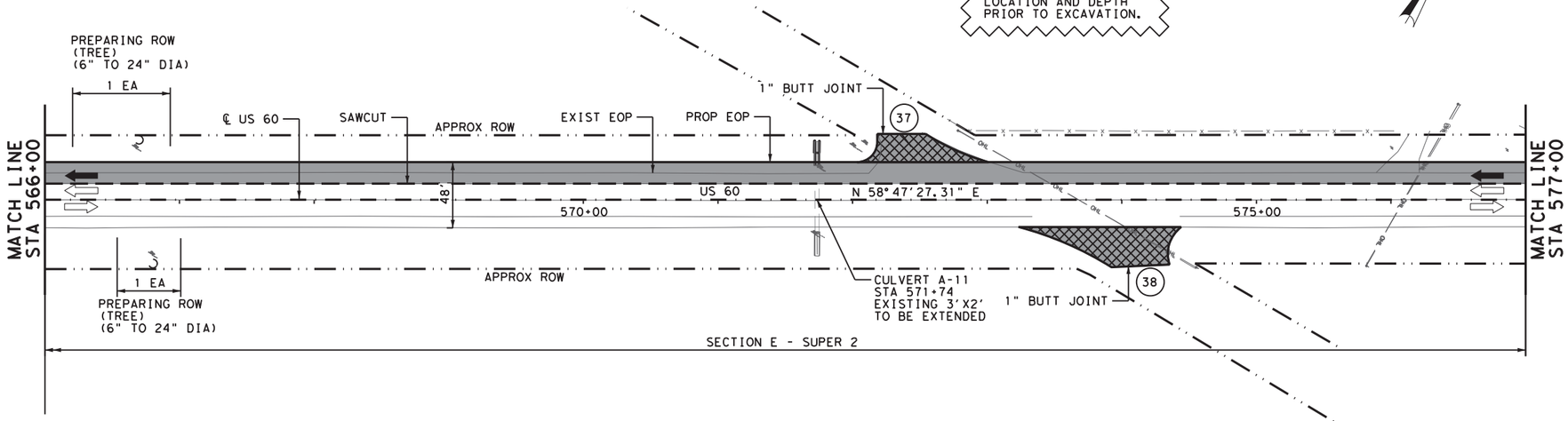


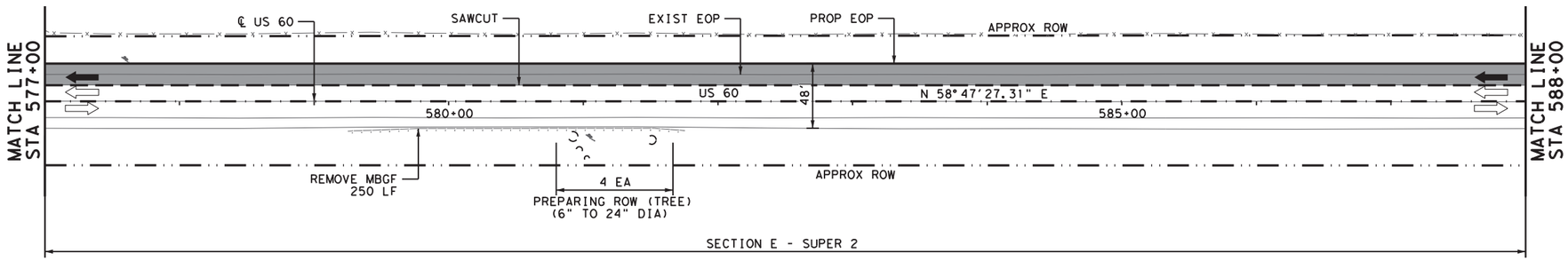

CAUTION: UNDERGROUND UTILITY IN THIS AREA. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO EXCAVATION.

LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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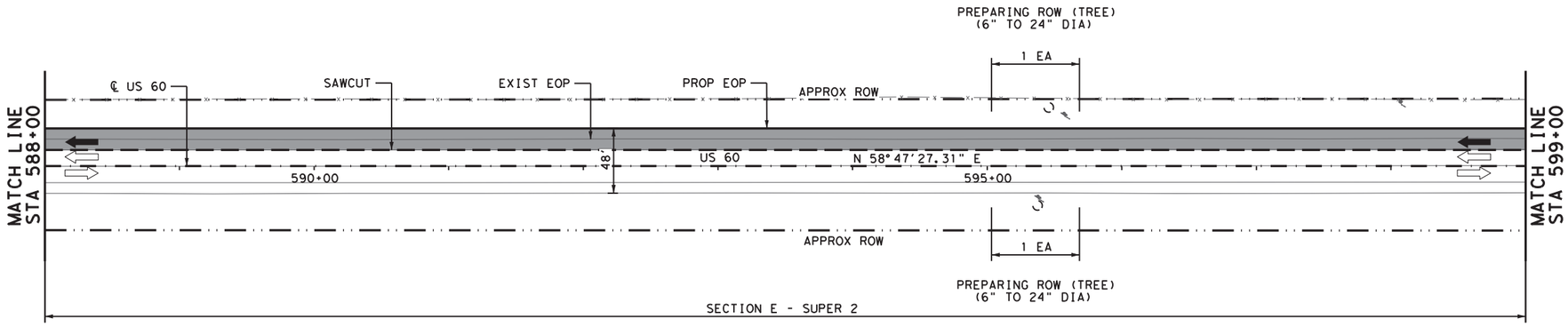
Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 566+00 TO STA 588+00**

SHEET 28 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 89 |

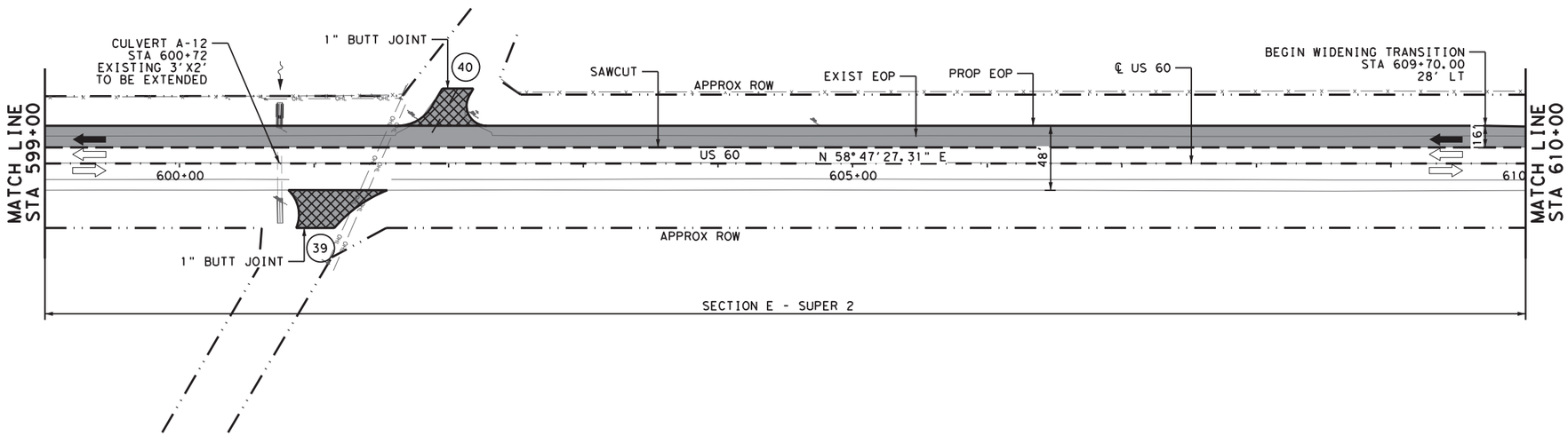



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
# ROADWAY PLAN
## STA 588+00 TO STA 610+00

SHEET **29** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 90 |

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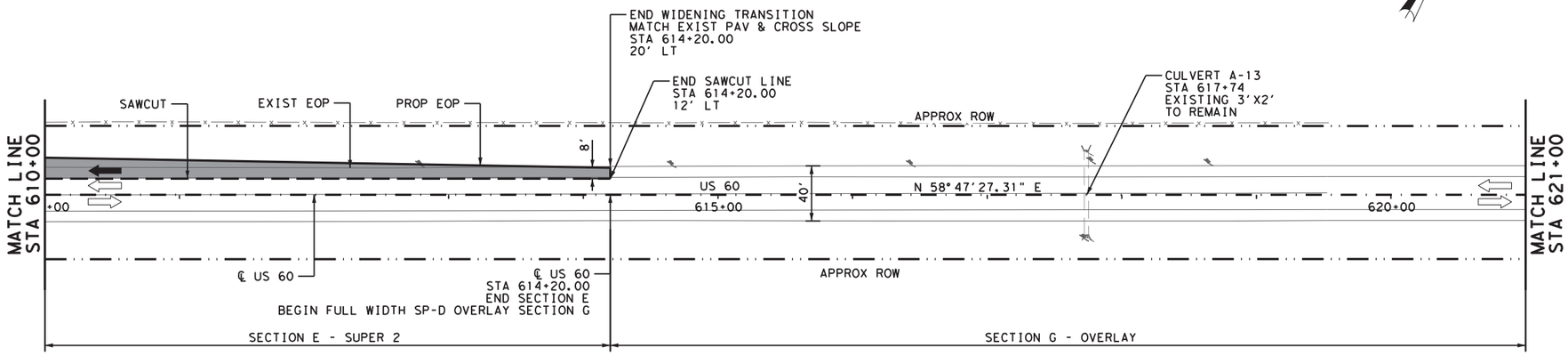
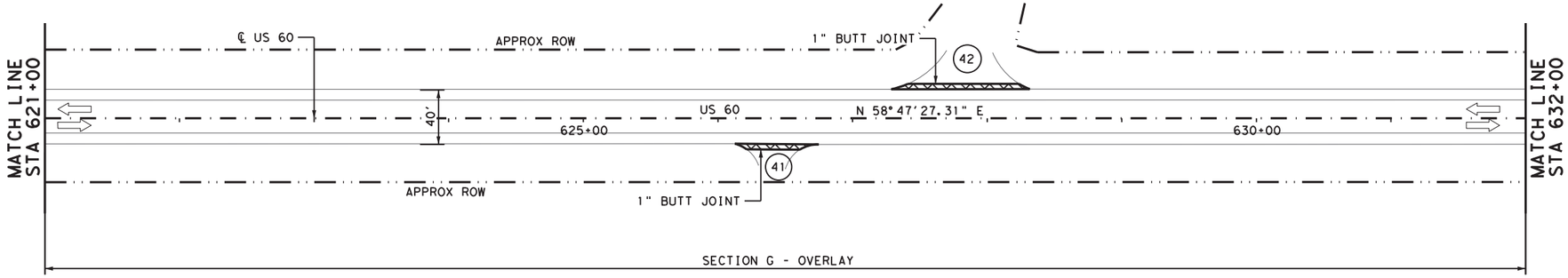



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.




04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 610+00 TO STA 632+00**

SHEET **30** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 91 |

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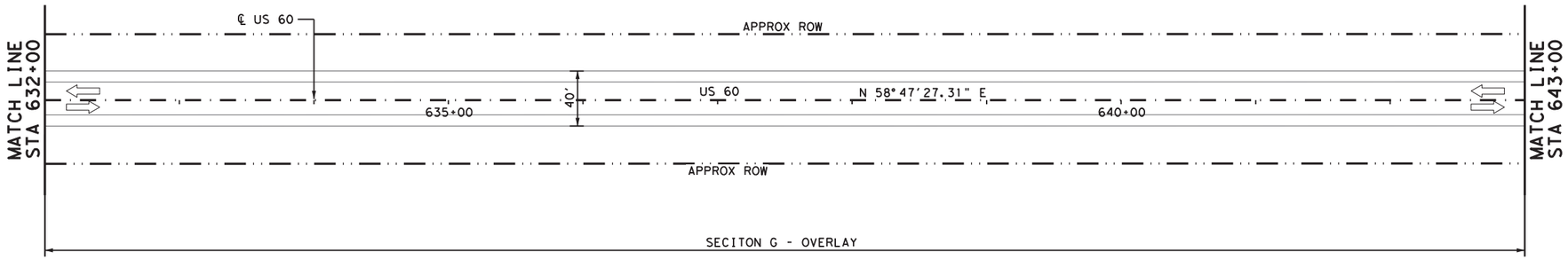


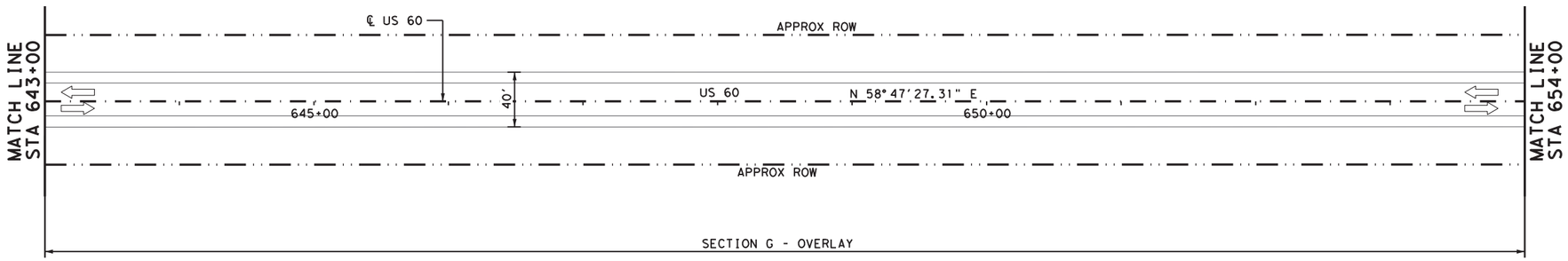


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
### STA 632+00 TO STA 654+00

SHEET 31 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 92 |

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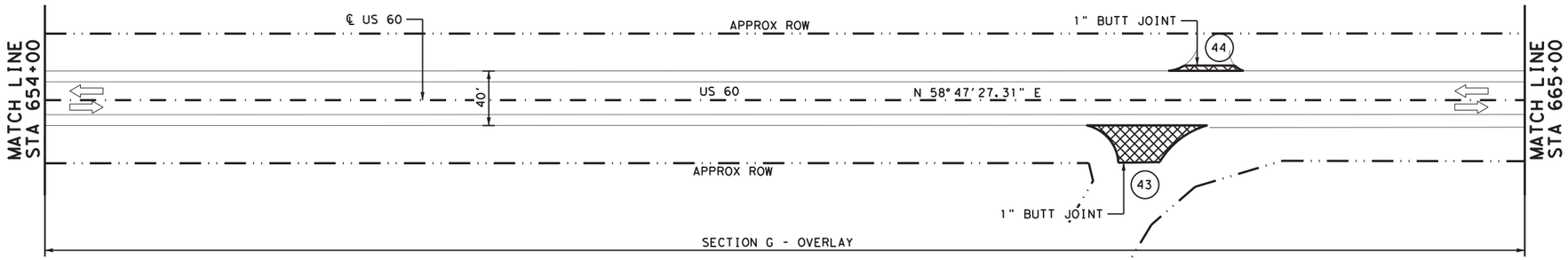


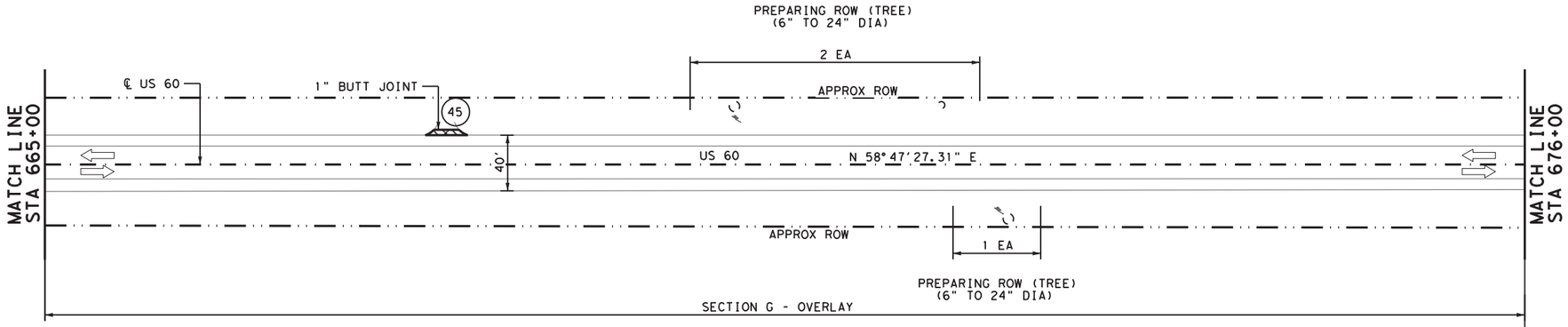


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

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0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
# ROADWAY PLAN
## STA 654+00 TO STA 676+00

SHEET 32 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 93 |

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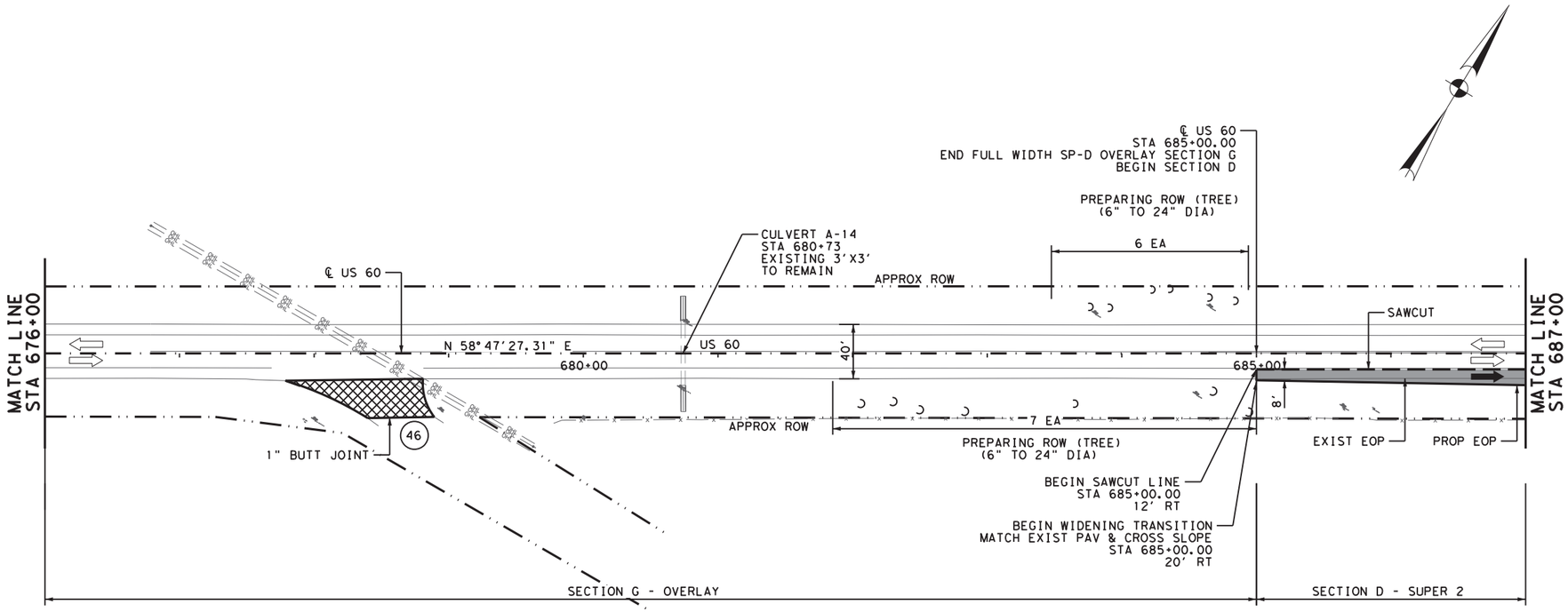


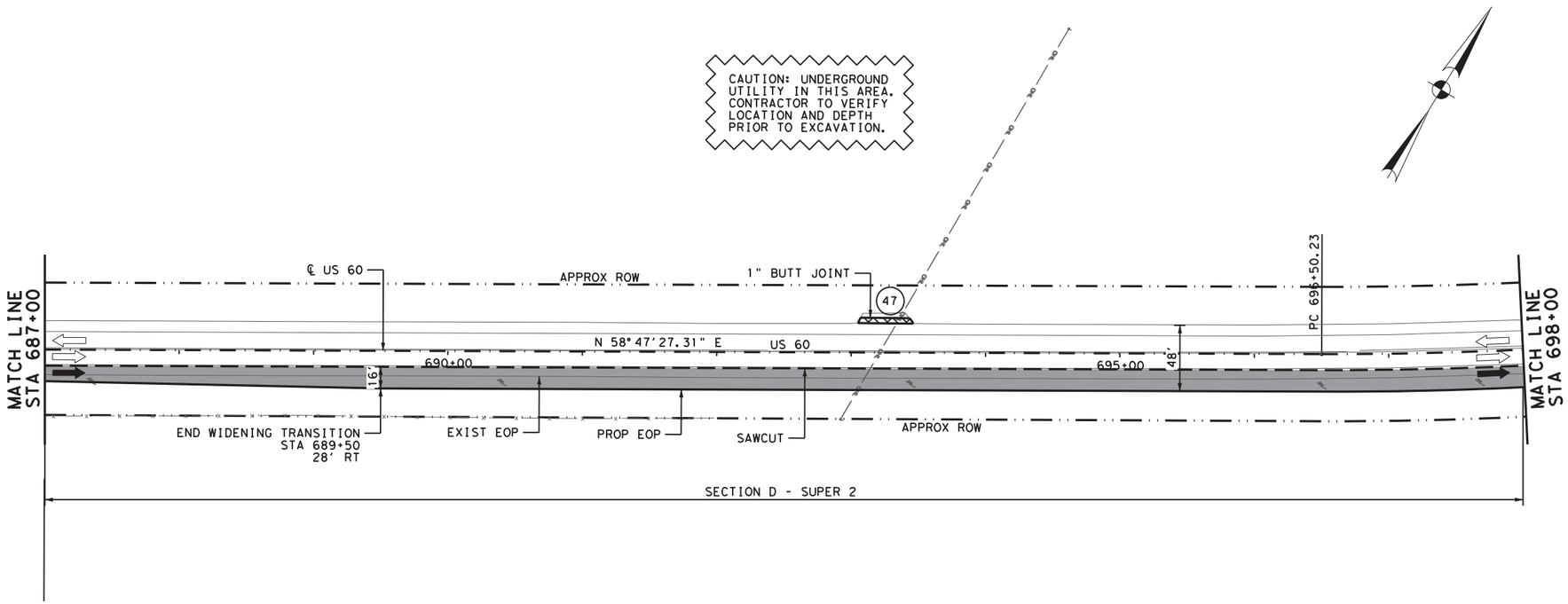


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

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STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

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|---|---|---|---|
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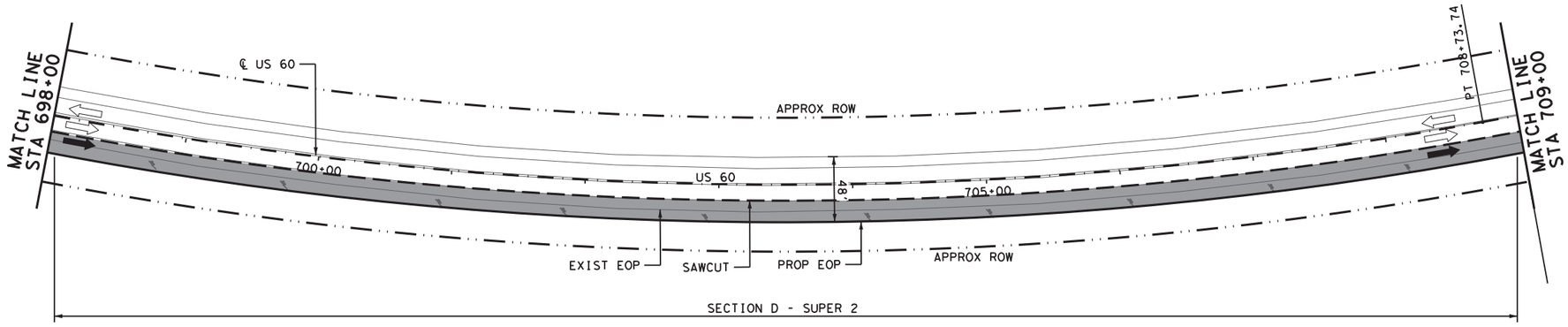
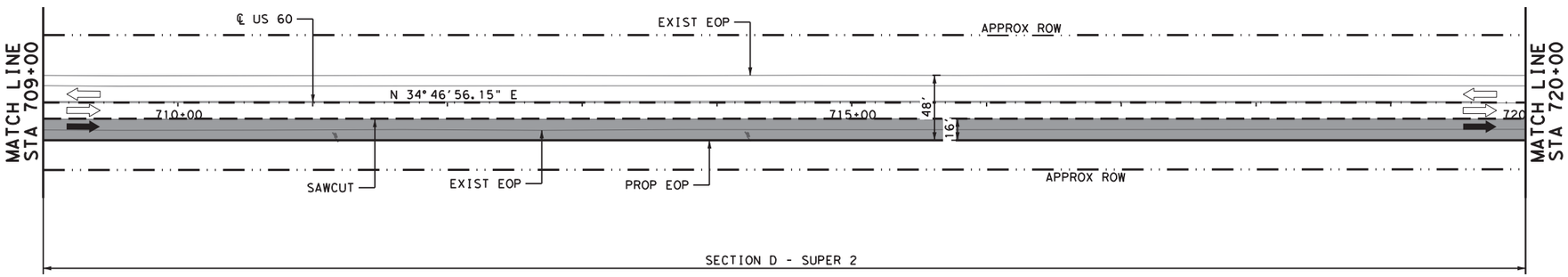
# US 60
## ROADWAY PLAN
**STA 676+00 TO STA 698+00**

SHEET **33** OF **38**

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 94 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# US 60
# ROADWAY PLAN
## STA 698+00 TO STA 720+00

SHEET 34 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 95 |

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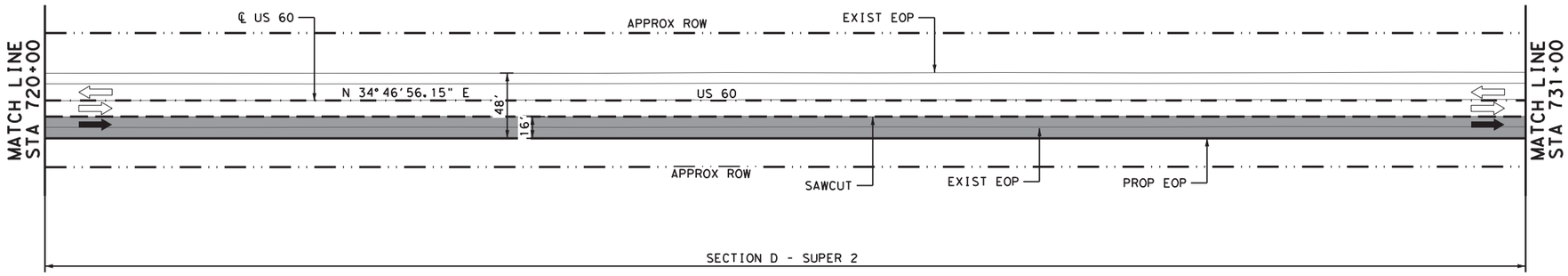


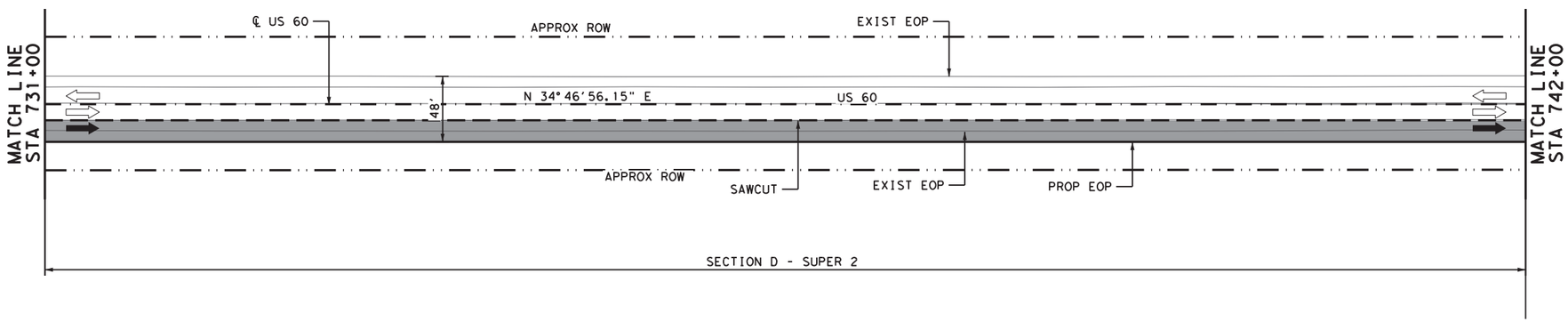


LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
# ROADWAY PLAN
## STA 720+00 TO STA 742+00

SHEET 35 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 96 |

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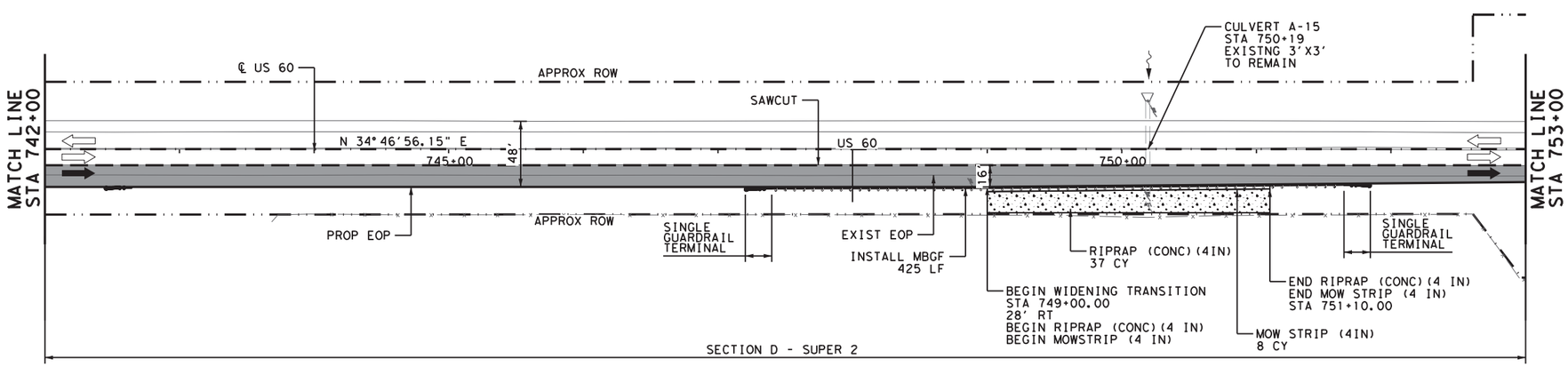
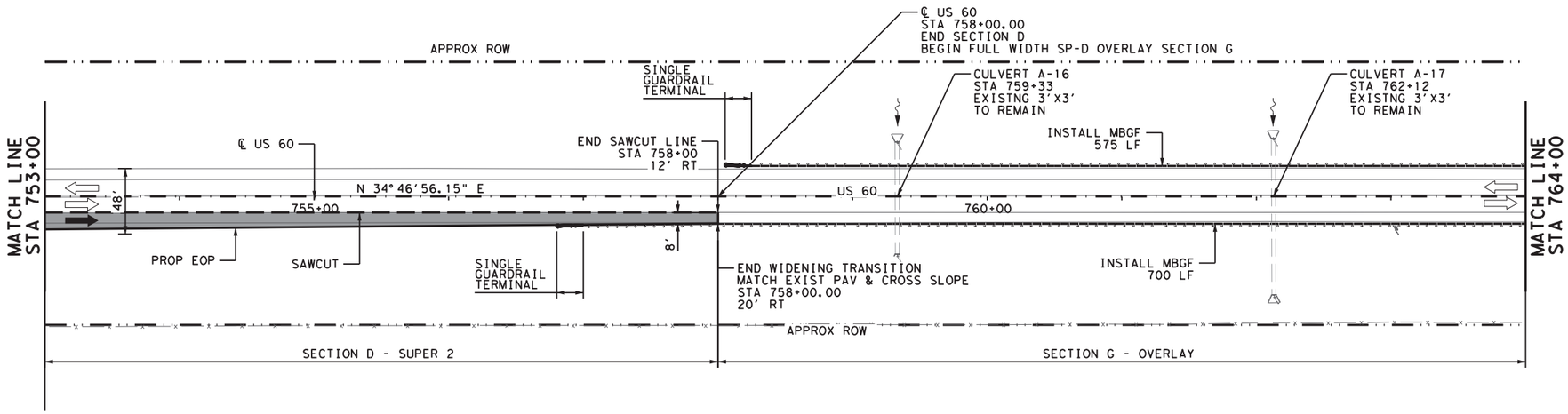



LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

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STATE OF TEXAS
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113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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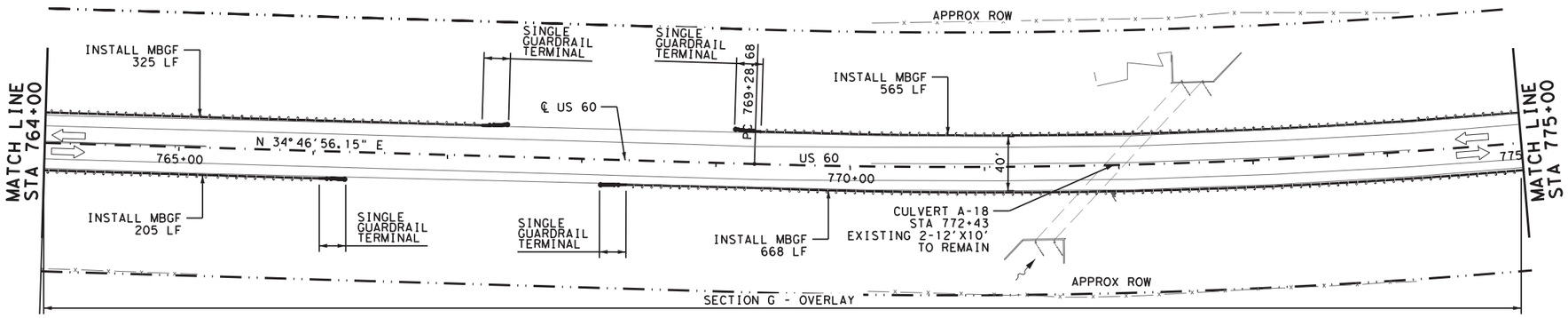
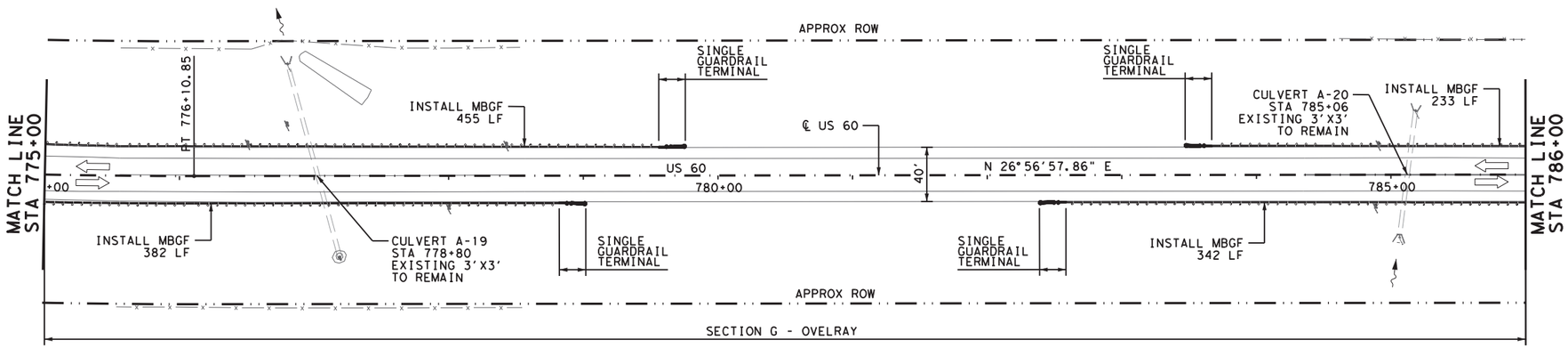
Texas Department of Transportation

# US 60
# ROADWAY PLAN
## STA 742+00 TO STA 764+00

SHEET 36 OF 38

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 97 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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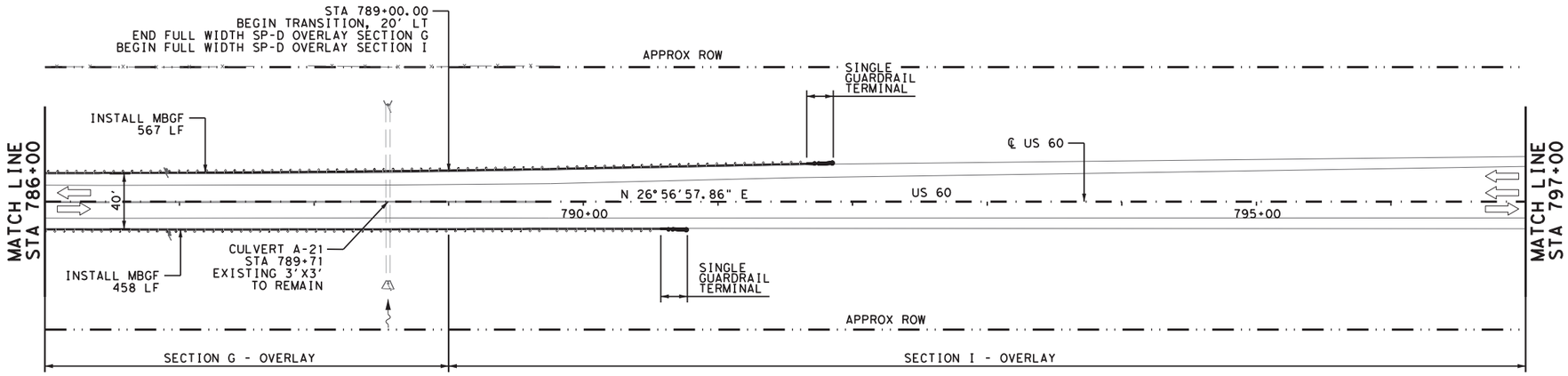
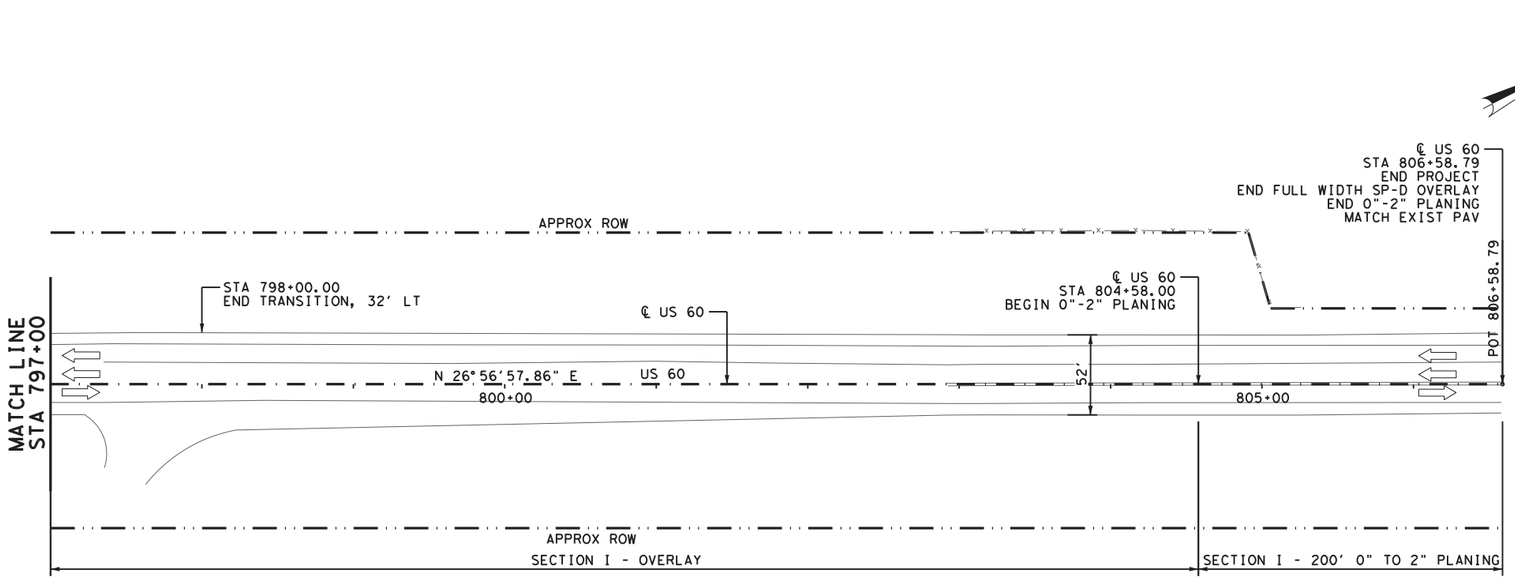
Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 764+00 TO STA 786+00**

SHEET **37** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 98 |




LEGEND

- PROPOSED PAVEMENT
- PROPOSED DRIVEWAY
- PROPOSED RIPRAP
- PAVEMENT REMOVAL
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- APPROX ROW
- (#) DRIVEWAY NUMBER
- PROP DITCH ℄

NOTE:

1. REFER TO MISCELLANEOUS DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# US 60
## ROADWAY PLAN
**STA 786+00 TO END**

SHEET **38** OF **38**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 99 |

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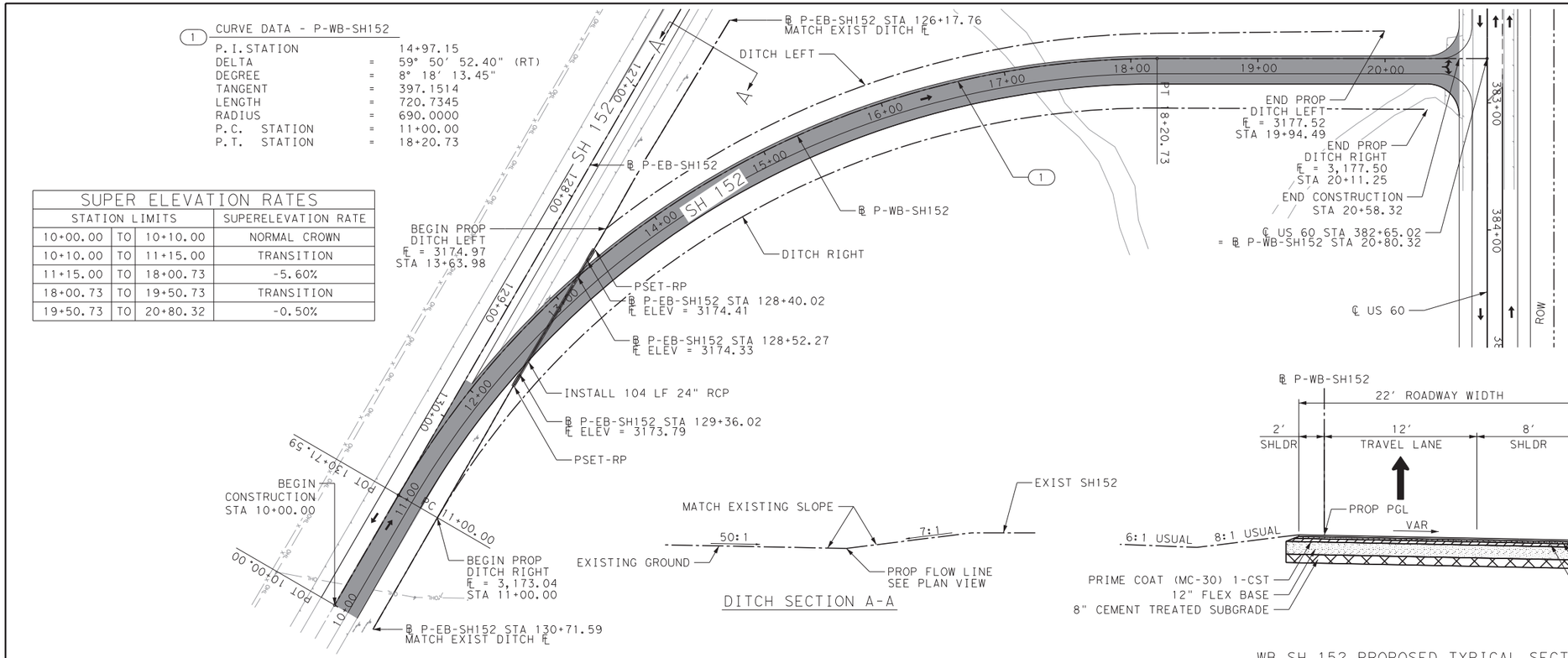
US60_ROAD-P&P-38.dgn

(1) CURVE DATA - P-WB-SH152

| | | |
|---|---|---|
| P.I. STATION | | 14+97.15 |
| DELTA | = | 59° 50′ 52.40" (RT) |
| DEGREE | = | 8° 18′ 13.45" |
| TANGENT | = | 397.1514 |
| LENGTH | = | 720.7345 |
| RADIUS | = | 690.0000 |
| P.C. STATION | = | 11+00.00 |
| P.T. STATION | = | 18+20.73 |

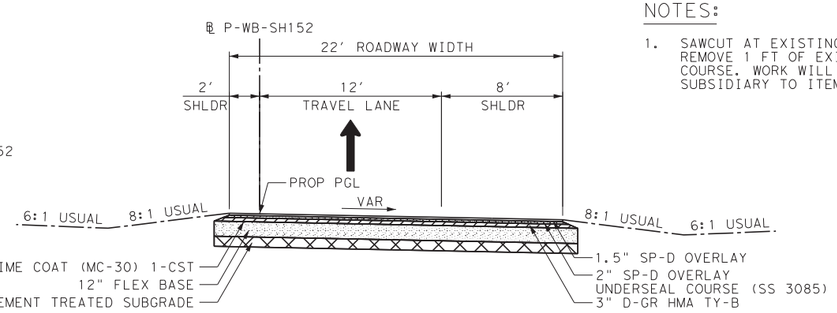
| SUPER ELEVATION RATES | | | |
|---|---|---|---|
| STATION LIMITS | | | SUPERELEVATION RATE |
| 10+00.00 | TO | 10+10.00 | NORMAL CROWN |
| 10+10.00 | TO | 11+15.00 | TRANSITION |
| 11+15.00 | TO | 18+00.73 | -5.60% |
| 18+00.73 | TO | 19+50.73 | TRANSITION |
| 19+50.73 | TO | 20+80.32 | -0.50% |







DITCH SECTION A-A



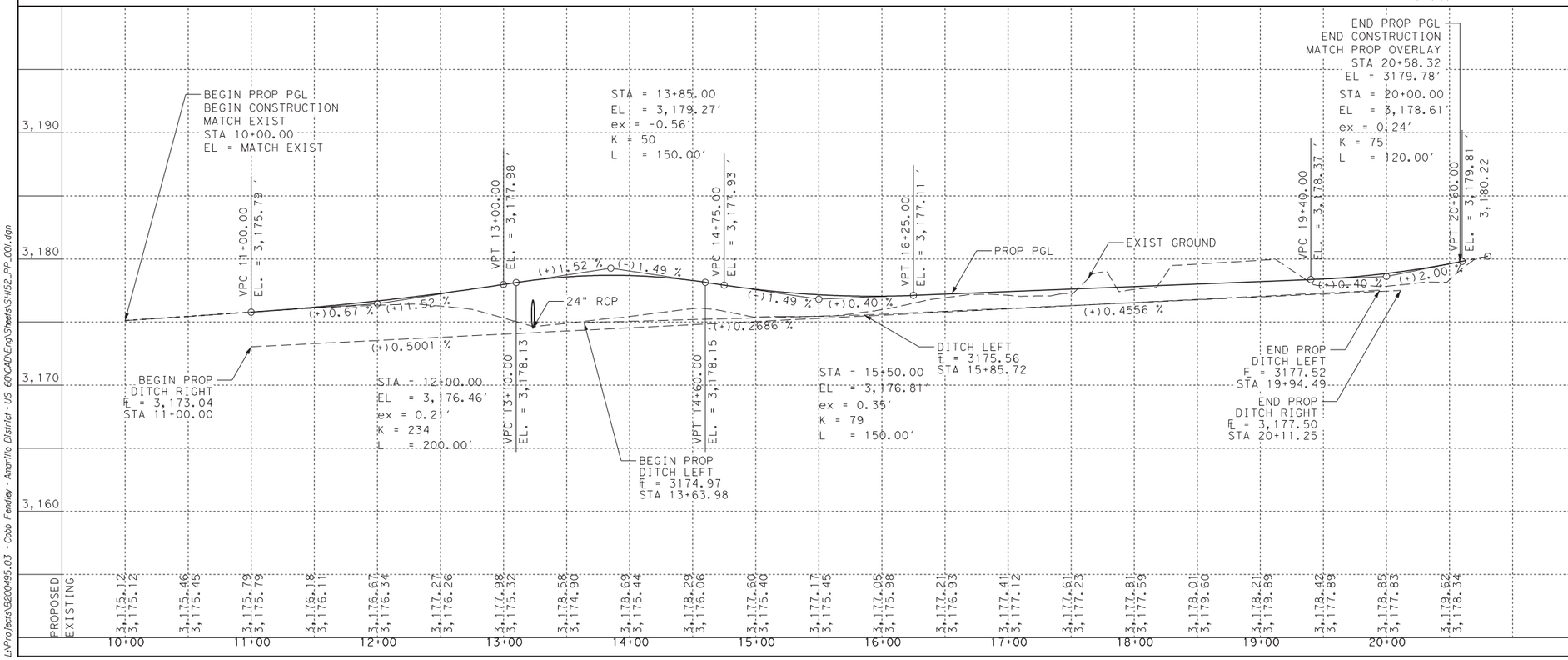

WB SH 152 PROPOSED TYPICAL SECTION
N.T.S.

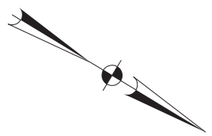
LEGEND:

- → TRAFFIC FLOW ARROW
- PROPOSED PAVEMENT
- PROPOSED DITCH

NOTES:

1. SAWCUT AT EXISTING SH 152 LANE LINE. REMOVE 1 FT OF EXISTING SURFACE COURSE. WORK WILL BE CONSIDERED SUBSIDIARY TO ITEM 251.




| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |


LAMB-STAR ENGINEERING, L.L.C.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073




Texas Department of Transportation

# SH 152
# PLAN AND PROFILE

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 100 |

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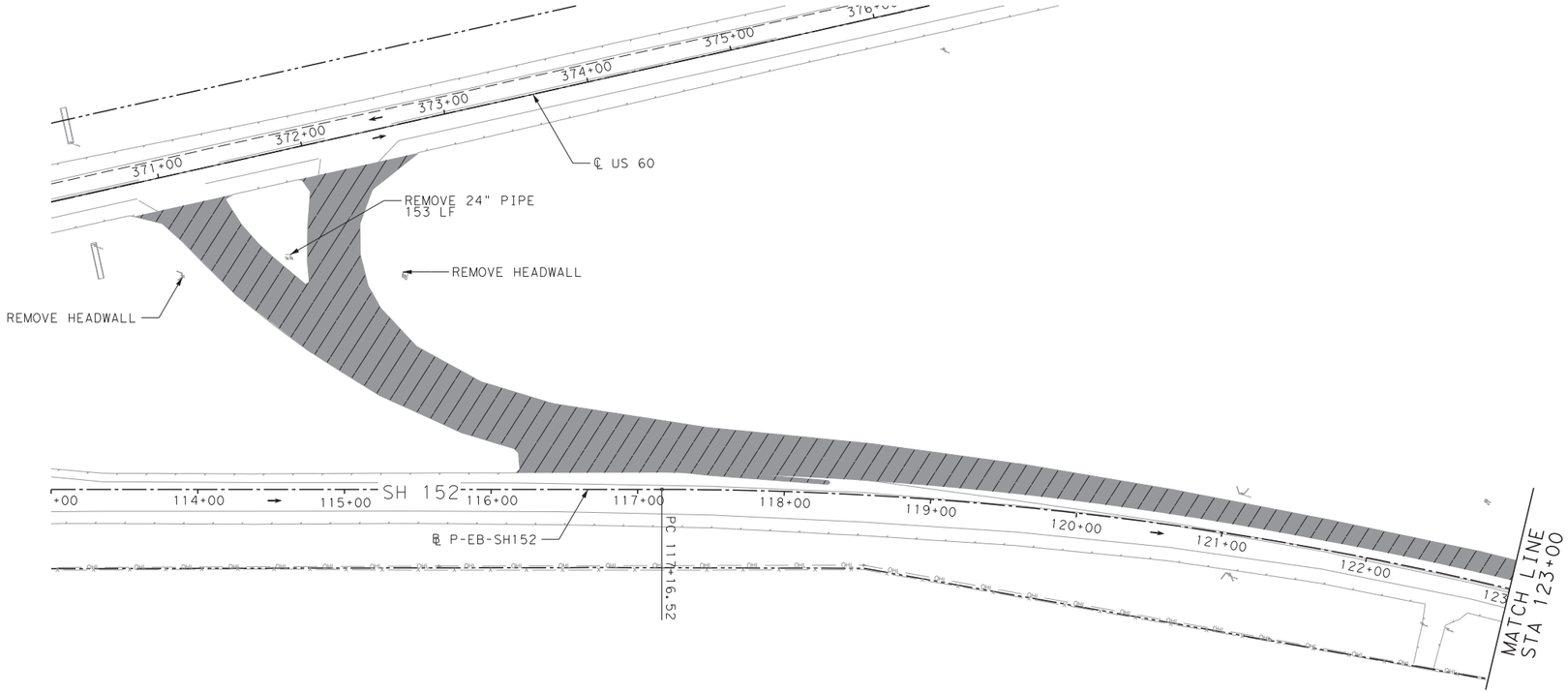
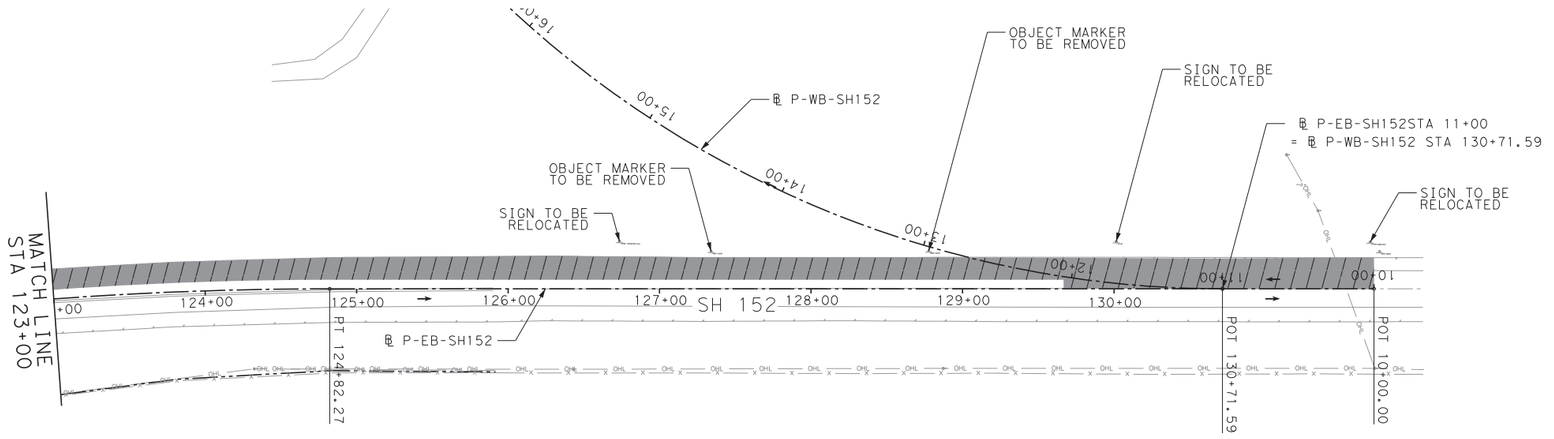



LEGEND:

→ TRAFFIC FLOW ARROW

PAVEMENT REMOVAL




STATE OF TEXAS
COURTNEY KINTNER
129701
PROFESSIONAL LICENSED ENGINEER
3/31/2021

0 25 50 100

1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

LAMB-STAR ENGINEERING, L.L.C.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073

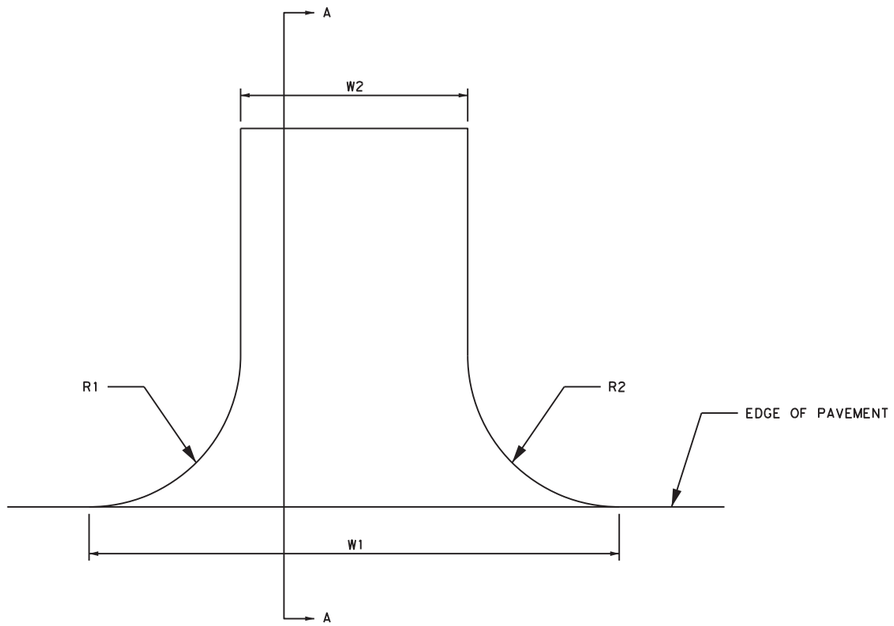


Texas Department of Transportation

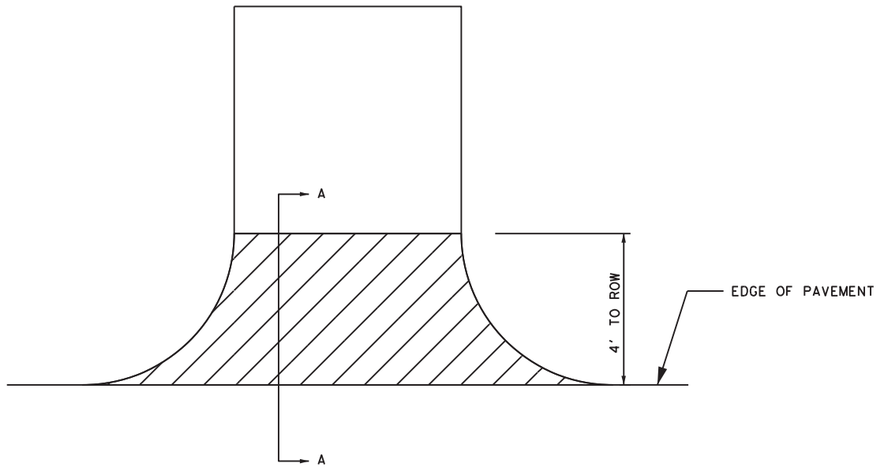
# SH 152
# REMOVALS

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 101 |



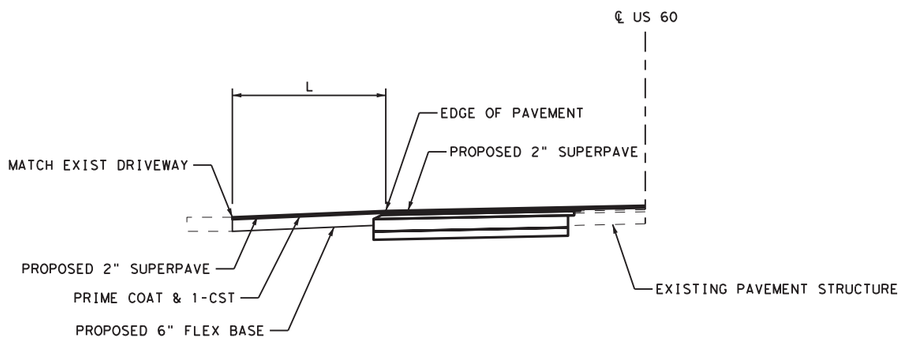

TYPICAL CR INTERSECTION AND DRIVEWAY LAYOUT DETAIL
WIDENING SECTION



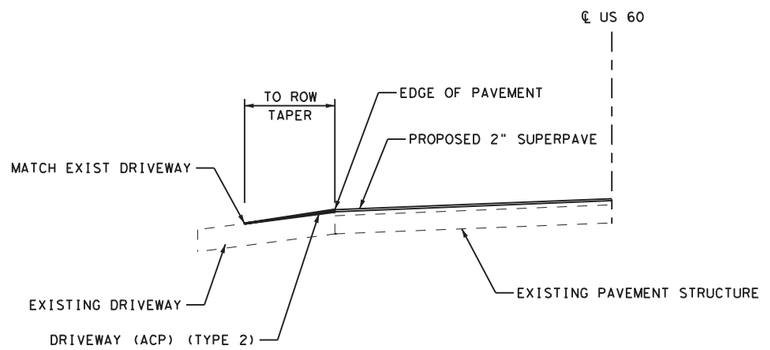

TYPICAL CR INTERSECTION AND DRIVEWAY LAYOUT DETAIL
OVERLAY SECTION

NOTE:

1. DRIVEWAY INFORMATION PROVIDED IN THESE PLANS IS APPROXIMATE. EXACT LOCATIONS AND DIMENSIONS SHALL BE ESTABLISHED DURING CONSTRUCTION BY THE FIELD ENGINEER AS REQUIRED.
2. THE CONTRACTOR SHALL OBTAIN PERMISSION FROM THE RESPECTIVE PROPERTY OWNER 24 HOURS PRIOR TO THE CONTRACTOR CONSTRUCTING PROPOSED DRIVEWAYS.
3. ALL CR INTERSECTIONS SHALL BE PAVED TO THE ROW LINE AND DRIVEWAYS SHALL BE PAVED A LENGTH OF 4' FROM EDGE OF PAVEMENT IN OVERLAY SECTIONS.




SECTION A-A (WIDENING SECTION)




SECTION A-A (OVERLAY SECTION)

04/07/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 10467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# DRIVEWAY AND INTERSECTION LAYOUT DETAILS

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 102 |

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USGO_ROAD-DRIVE.dgn

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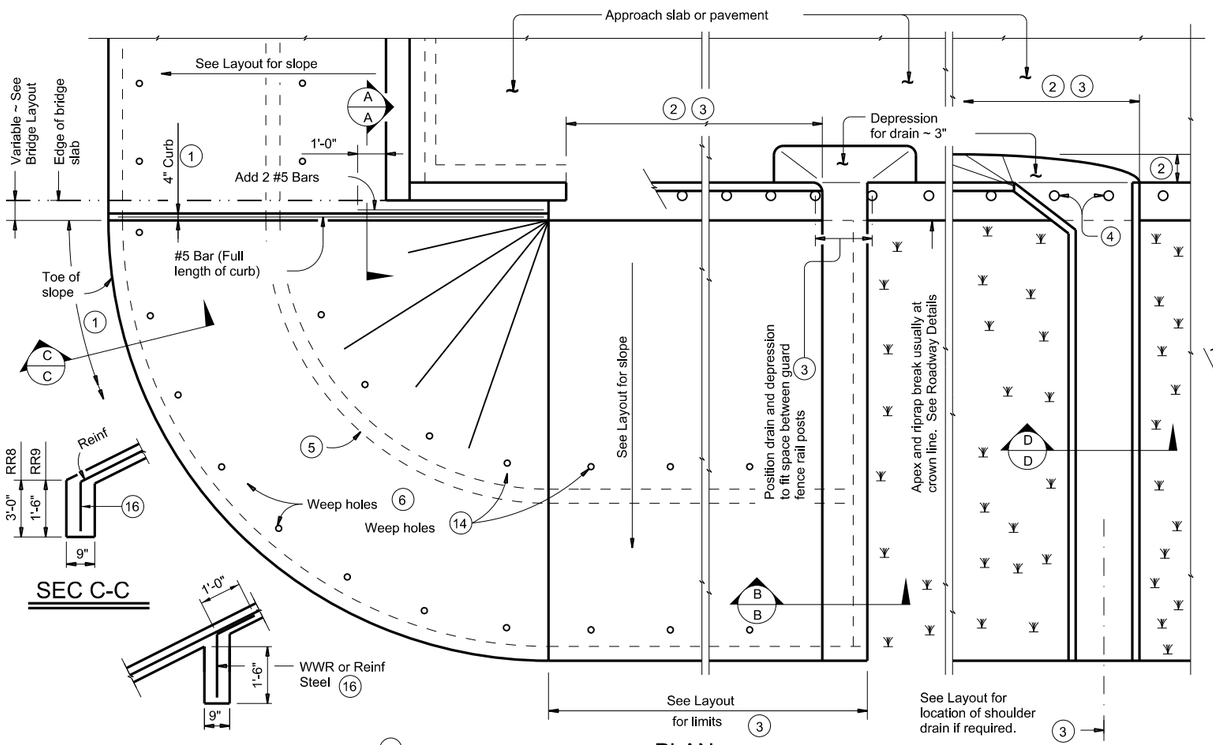
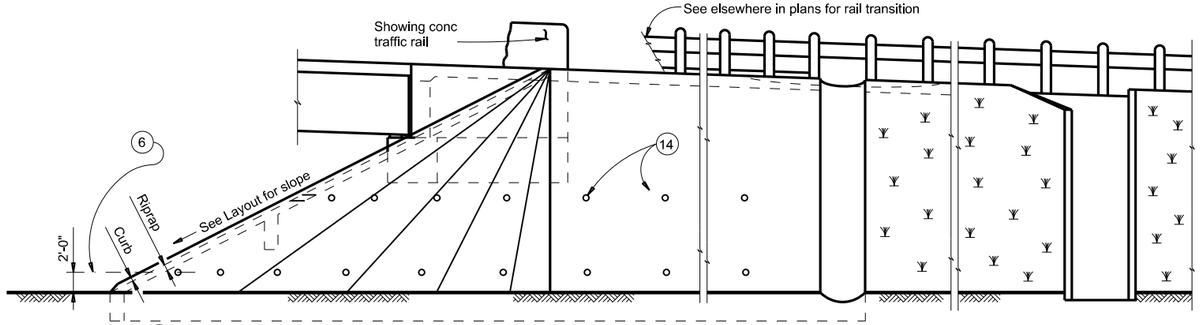
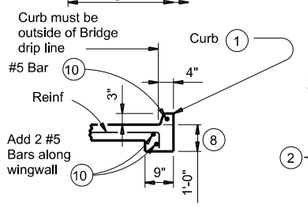
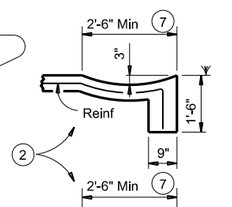
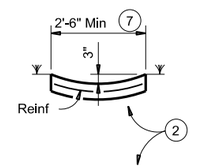
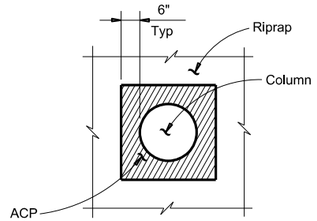


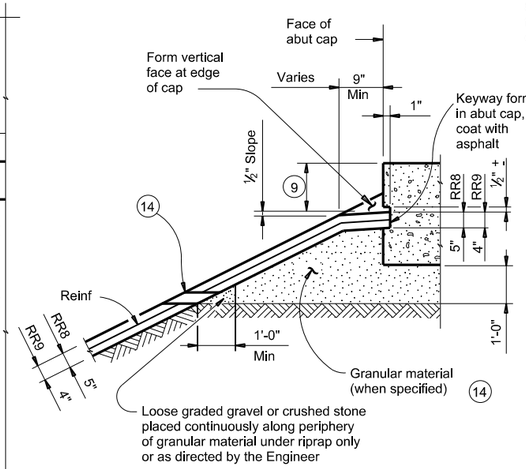



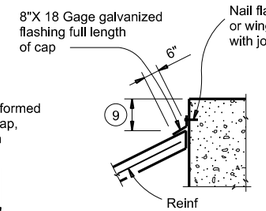




RIPRAP DETAIL AT COLUMNS

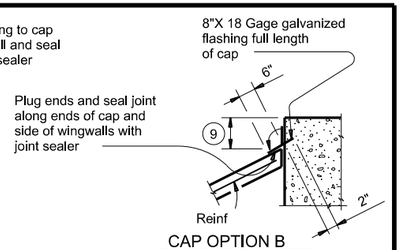
(As directed by the Engineer)



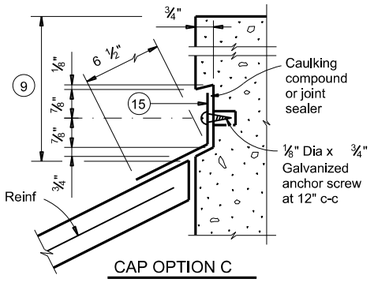

SHOWING KEYWAY OPTION



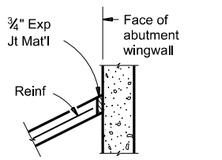

CAP OPTION A




CAP OPTION B

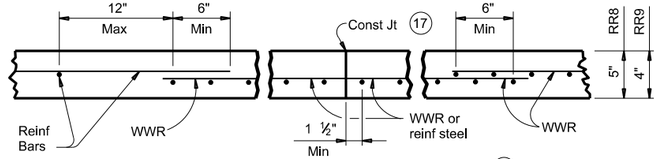



CAP OPTION C




SECT THRU RIPRAP AT WINGWALL (12)

SECTIONS THRU RIPRAP AT CAP (11)




REINFORCEMENT DETAILS (13)

See General Notes for optional synthetic fiber reinforcement.

1. When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.
2. Limits and configuration of drains and depressions are as shown elsewhere in plans or as directed by the Engineer.
3. Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.
4. See details elsewhere in plans for installation of guard fence posts through concrete riprap.
5. Provide intermediate toewall only when designated elsewhere in the plans or included in the specifications.
6. Provide lower level of 2" Dia weep holes at 10' c-c backed by 1 CF packet of gravel and galvanized hardware cloth at all locations unless directed by the Engineer to eliminate.
7. Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer.
8. Wall extension may be reduced or modified if approved by the Engineer. Increase wall extension to 1'-6" whenever the optional intermediate toewall is called for in the plans.
9. Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.
10. #5 bars shown are required even when synthetic fiber reinforcing option is selected.
11. Provide sealing option for joint between the face of cap and riprap as designated by the Engineer or as shown elsewhere on plans.
12. Flashing (shown in Cap Option A) may be used at wingwall in addition to Exp Jt Mat'l if shown on plans or directed by the Engineer.
13. Provide #3 reinforcing bars at 18" Spa c-c. Provide Welded Wire Reinforcement (WWR) as 6x6-D2.9xD2.9 or D3xD3. Combinations of WWR and reinforcing bars may be used if both are permitted. Use lap splices of a minimum 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.
14. If granular material is specified, provide upper level of 2" Dia weep holes at 10' c-c backed by galvanized hardware cloth.
15. 8" x 18 Gage Galv Sheet Metal
16. Provide WWR or #3 bars, with 1'-0" extension into slope.
17. WWR or reinforcing steel is continuous through riprap construction joints. Provide WWR or reinforcing steel that extends 1'-1" minimum into adjacent riprap on each side of construction joint even if synthetic reinforcing fiber is utilized.

FOR CONTRACTOR'S INFORMATION ONLY:
5" of RR8 = 0.015 CY/SF
4" of RR9 = 0.012 CY/SF
#3 Reinf at 18" c-c = 0.501 Lbs/SF
6x6-D3xD3 = 0.408 Lbs/SF

GENERAL NOTES:

Provide Class "B" concrete (f'c = 2,000 psi) unless noted elsewhere in plans.

Provide Grade 60 reinforcing steel.

Provide deformed welded wire reinforcement (WWR) meeting ASTM A1064, unless otherwise shown.

Provide reinforcing bars, deformed WWR, or any suitable combination of both types for riprap reinforcing, unless specified elsewhere in the plans.

Optionally synthetic fibers may be used if approved by the Engineer. Provide synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) in lieu of steel reinforcing in riprap concrete.

Install construction joints or grooved joints extending the full slant slope height at intervals of approximately 20 feet unless otherwise directed by the Engineer.

Hardware cloth, loose grade stone behind weep holes, flashing, or other sealing material are subsidiary to the bid item "Riprap".

See Layout for limits of riprap.

RR8 is to be used on stream crossings.

RR9 is to be used on other embankments.

Texas Department of Transportation

Bridge Division Standard

# CONCRETE RIPRAP AND SHOULDER DRAINS
## EMBANKMENTS AT BRIDGE ENDS (TYPES RR8 & RR9)

CRR

| FILE: crrstde1-19.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT April 2019 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 103 |

DATE: 4/7/2021
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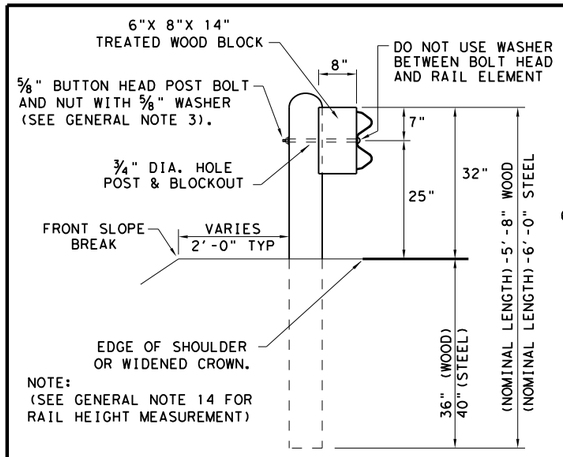
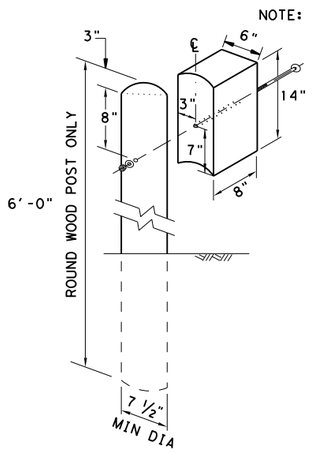
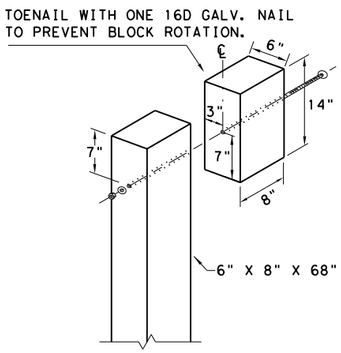



**TYPICAL POST PLACEMENT**

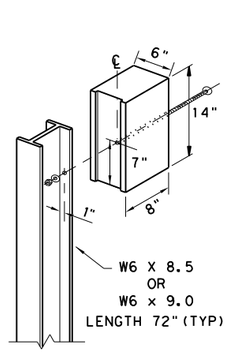



**WOOD BLOCK TO ROUND WOOD POST**

NOTE: TOENAIL WITH ONE 16D GALV. NAIL TO PREVENT BLOCK ROTATION.

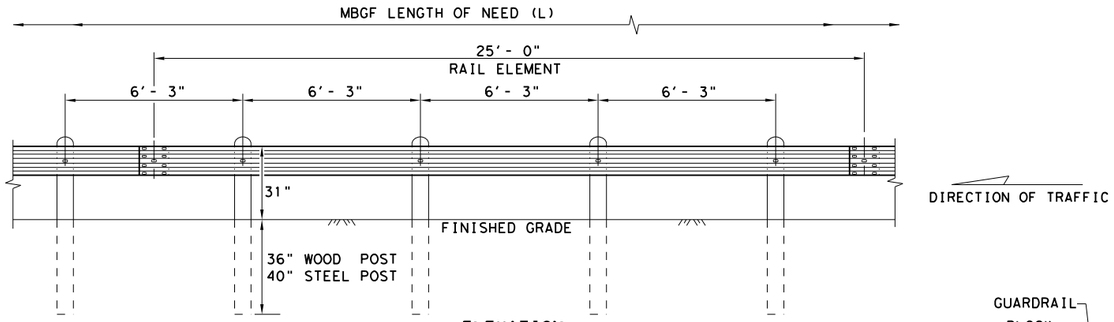



**WOOD BLOCK TO RECTANGULAR WOOD POST**



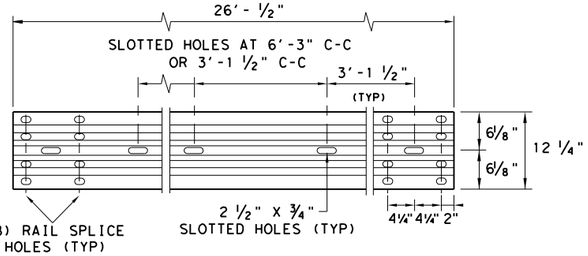

**ROUTED WOOD BLOCK TO I-BEAM STEEL POST**

NOTE: ** "WOOD" INDICATES DIMENSIONS FOR BOTH ROUND AND RECTANGULAR WOOD POST SYSTEMS.




**ELEVATION**
**MID-SPAN RAIL SPLICE**

SHOWING A 25'- 0" SECTION OF W-BEAM RAIL. (SEE GENERAL NOTE 2)




**ELEVATION 25'- 0" (NOM.) W-BEAM SECTION**

NOTES: SEE GENERAL NOTE 2 FOR ALLOWABLE RAIL TYPES.
SEE RAIL SPLICE DETAIL FOR REQUIRED HARDWARE.

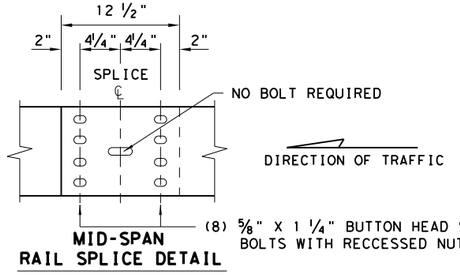
NOTE:
FOUR TYPES OF BUTTON-HEAD GUARD RAIL BOLTS COME WITH A RECCESSED NUT.

SPLICE BOLT LENGTH — VARIES
FBBO1 = 1 ¼"
FBBO2 = 2"
⅝"

POST & BLOCK LENGTH
FBBO3 = 10"
FBBO4 = 18"

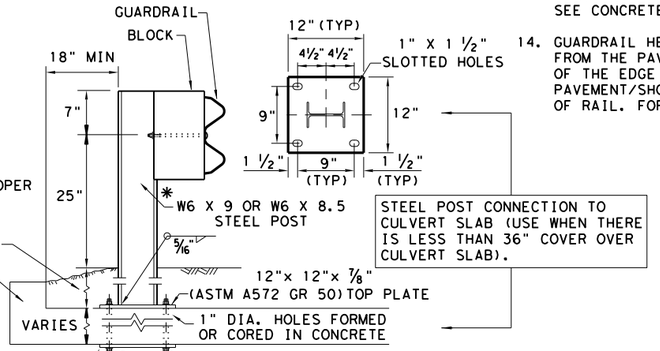
**BUTTON HEAD BOLT**

NOTE: SEE GENERAL NOTE 3 FOR SPLICE & POST BOLT DETAILS.




**MID-SPAN RAIL SPLICE DETAIL**

NOTE: GF(31), MID-SPAN RAIL SPLICES ARE REQUIRED WITH 6'-3" POST SPACINGS.




12" X 12" X ¼" (ASTM A36) STEEL BOTTOM PLATE WITH 1" DIA. HOLES REQUIRED WITH BOLT-THROUGH INSTALLATION.

**LOW FILL CULVERT POST**

NOTE: TWO INSTALLATION OPTIONS.

1. BOLT-THROUGH OPTION: REQUIRES A 6" MIN. SLAB THICKNESS. ⅞" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS.
   NOTE: BOLT LENGTH = SLAB PLUS 2 ¼" MIN.

2. EPOXY ANCHOR OPTION: THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE ⅞" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS ¼" MIN. BEYOND NUT.

NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF(31)LS STANDARD FOR "LONG SPAN" OPTION.

NOTE: TRANSISTIONS TO BRIDGE RAILS OR TRAFFIC BARRIERS.
SEE GF(31)TL3 TR STANDARD FOR HIGH-SPEED TL-3 TRANSITIONS.
SEE GF(31)TL2 TR STANDARD FOR LOW-SPEED TL-2 TRANSITIONS.

## GENERAL NOTES

1. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
2. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'- 0", OR 12'- 6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 ½" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND ⅝" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
4. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
5. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
6. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
7. IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
8. UNLESS OTHERWISE SHOWN IN THE PLANS, GUARD FENCE PLACED IN THE VICINITY OF CURBS SHALL BE POSITIONED SO THAT THE FACE OF CURB IS LOCATED DIRECTLY BELOW OR BEHIND THE FACE OF THE RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
9. APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
10. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
11. SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
12. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TXDOT MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210 ONLY PRODUCERS ON THE MPL MAY FURNISH COMPOSITE MATERIAL BLOCKS.
13. FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MD.
14. GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.

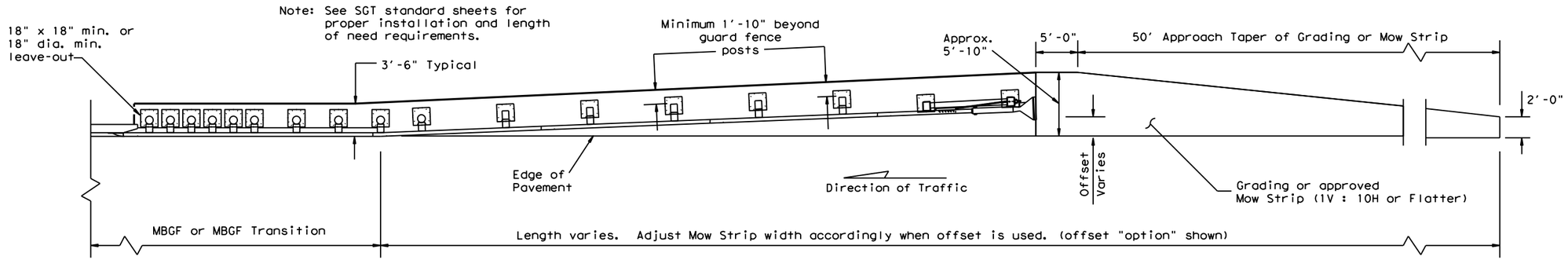
Texas Department of Transportation

Design Division Standard

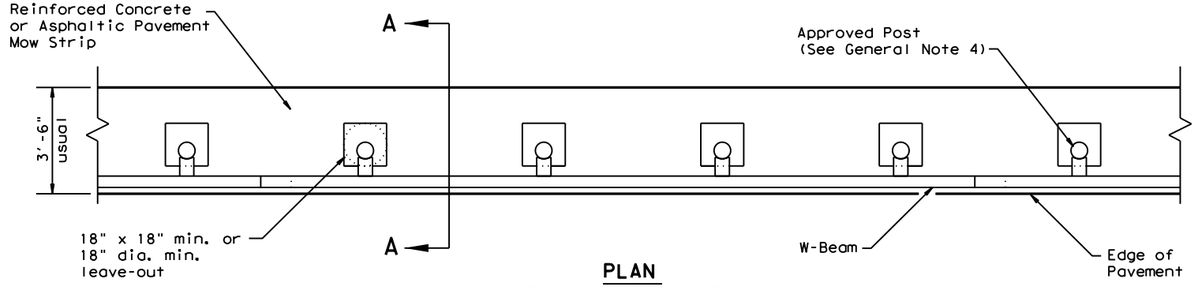
# METAL BEAM GUARD FENCE
# TL-3 MASH COMPLIANT
# GF(31)-19

| | | | | |
|---|---|---|---|---|
| FILE: gf3119.dgn | DN: TxDOT | CK: KM | DW: VP | CK: CGL/AG |
| ©TxDOT: NOVEMBER 2019 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 104 |

DATE: 4/7/2021
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.2-Roadway\05-Standards\gf31ms19.dgn

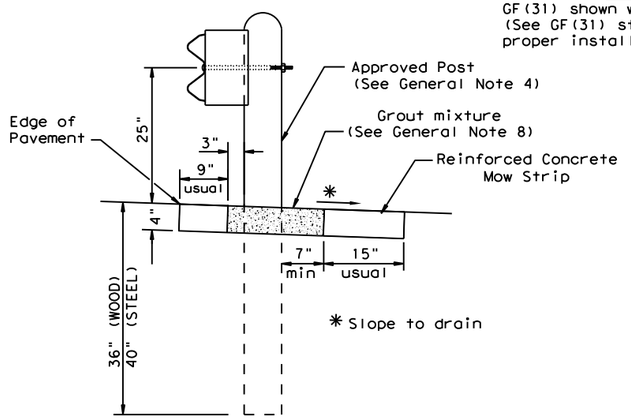



## GRADING AND MOW STRIP AT GUARDRAIL END TREATMENTS



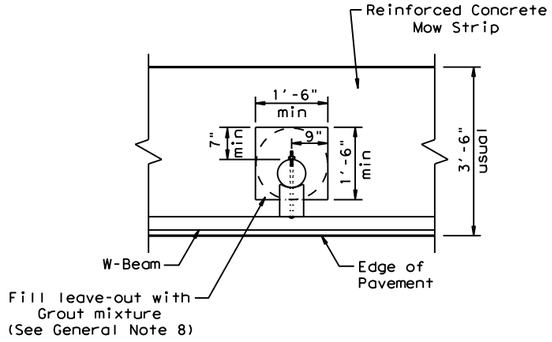

### PLAN

GF(31) shown with Mow Strip
(See GF(31) standard sheet for proper installation)



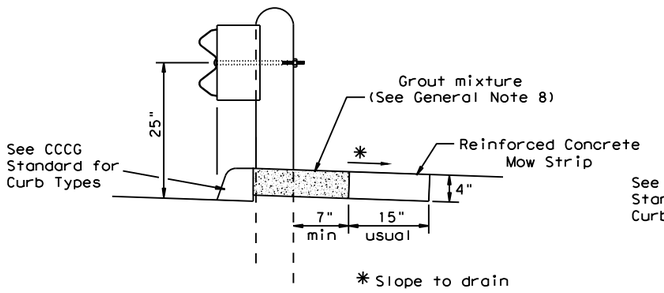

### SECTION A-A

Typical



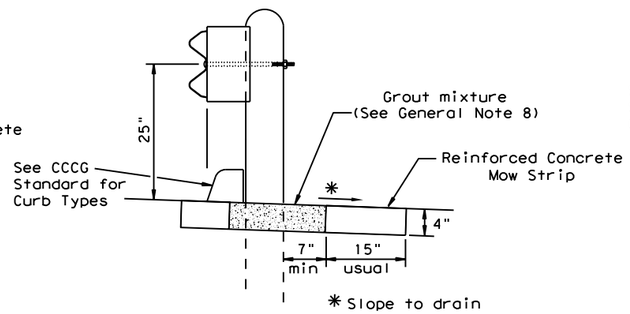

### MOW STRIP DETAIL

Reinforced Concrete Mow Strip with 18" x 18" Square or 18" Dia. minimum leave-out.



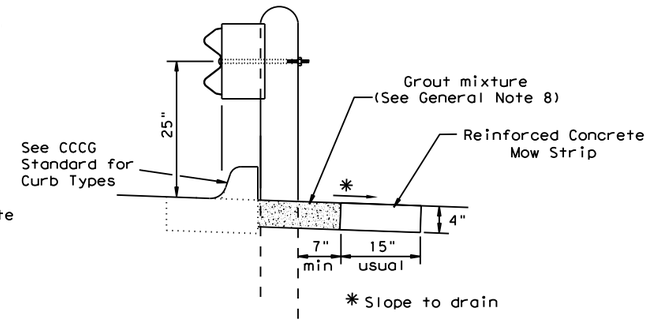

### CURB OPTION (1)

This option will increase the post embedment throughout the system.




### CURB OPTION (2)

Curb shown on top of mow strip




### CURB OPTION (3)

Note: Site Condition(s)

Site conditions may exist where grading is required for the proper installation of metal guard fence and end treatments.

Approach grading or mow strip may be decreased or eliminated, as directed by the Engineer.

## GENERAL NOTES

1. This mow strip design is for use with metal beam guard fence, guard fence transitions, and guard fence end treatments. See applicable GF(31) MBGF or GF(31) Transition Standard sheet for additional information.
2. Mow strips shall be reinforced concrete with (wire mesh or synthetic fiber), as shown on the plans and will be paid for under the pertinent bid item. Reinforced concrete shall be placed in accordance with Item 432, "Riprap." The use of the synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Material Producer List (MPL), maintained by TxDOT, Construction Division.
3. The leave-out behind the post shall be a minimum of 7".
4. Only steel (W6 x 8.5 or W6 x 9.0), or 7 ½" Dia. round wood posts are acceptable for use in the mow strip. See GF(31) Standard for additional details.
5. Other curb placement options may be used. Curbs are not considered part of the mow strip and will be paid for under other pertinent bid item.
6. Thickness of the mow strip will be 4".
7. The limits of payment for reinforced concrete will include leave-outs for the posts.
8. The leave-outs shall be filled with a Grout mixture consisting of: 2719 pounds sand, 188 pounds Type 1 or II cement, and 550 pounds of water per cubic yard, with a 28-day compressive strength of approximately 230 psi or less. Provide grout with a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (Suggested Maximum leave-out of 20"). Payment for furnishing and placing the grout mixture will be subsidiary to the pay item of riprap mow strip.

Texas Department of Transportation

Design Division Standard

# METAL BEAM GUARD FENCE (MOW STRIP) TL-3 MASH COMPLIANT

# GF(31)MS-19

| FILE: gf31ms19.dgn | DN: TxDOT | CK: KM | DW: VP | CK: CGL/AG |
|---|---|---|---|---|
| © TxDOT: NOVEMBER 2019 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 105 |

DATE: 4/7/2021
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.2-Roadway\05-Standards\sgt10s3116.dgn

NOTE: STEEL I-BEAM POST W6 X 8.5 (6'-0") PN: 533G
STANDARD WOOD BLOCKOUTS (6"X8"X14") PN: 4076B
AT (POSTS 2 THRU 8)

⅝" X 10" HGR BOLT PN: 3500G
⅝" HGR NUT PN: 3340G

LINE AT THE BACK OF POST #2 THRU #8

FROM THE CENTERLINE OF POST(1) & POST(0)

ANCHOR PADDLE PN: 15204A

ANGLE STRUT PN: 15202G

16"

POST(8) POST(7) POST(6) POST(5) POST(4) POST(3) POST(2) POST(1) POST(0)

DO NOT BOLT ANCHOR RAIL TO - POST (2)

SEE DETAIL 1

BEGIN LENGTH OF NEED

TRAFFIC FLOW

## PLAN VIEW

MASH TEST LEVEL 3 (TL-3) LENGTH OF SoftStop TERMINAL (50'-9 ½")

50'-9 ½" STANDARD INSTALLATION LENGTH (MASH TL-3 SoftStop)

BEGIN STANDARD MBGF

END PAYMENT FOR SGT

6¼" 3'-1 ½" 6'-3" 6'-3"

ANCHOR RAIL WITH SLOTS - (THREADED THRU HEAD)
SEE SoftStop MANUAL FOR COMPLETE DETAILS

MIDDLE SLOT CUTOUT (1) 1 ¾" X 6'-10 ¼"

OUTSIDE SLOTS CUTOUT (2) 1½" X 6'-9 ⅝"

SoftStop FACE SEE GN(3) & NOTE: B

MBGF LAPPED IN DIRECTION OF TRAFFIC FLOW

25'-0" DOWNSTREAM W-BEAM GUARDRAIL PN: 61G

SoftStop ANCHOR RAIL (12GA) PN: 15215G

3'-1 ½"(+/-) 6'-3" 6'-3" 6'-3" 6'-3" 6'-3" 6'-3" 5'-8" 4'-7"

SEE NOTE: C

ANCHOR PADDLE PN: 15204A

END OF ANCHOR RAIL PN: 15215G

SEE NOTE: A

POST 32" HEIGHT

31" RAIL HEIGHT

RAIL 25'-0" PN: 61G

RAIL 25'-0" PN: 15215G

(8) ⅝"× 1- ¼" GR BOLTS PN: 3360G
⅝" HEX NUTS PN: 3340G

POST 40" DEPTH (TYP 1-8)

(8) ⅝"× 1- ¼" HGR BOLTS PN: 3360G
⅝" HEX NUTS PN: 3340G

DO NOT BOLT ANCHOR RAIL TO POST(2)

SEE DETAIL 2

13/16" DIA. YIELDING HOLES

13/16" DIA. YIELDING HOLES

SEE DETAIL 3

6'-1⅜"

POST(8) POST(7) POST(6) POST(5) POST(4) POST(3) POST(2) 6'-0" (SYTP) PN: 15000G POST(1) 4'-9 ½" SYTP PN: 15203G POST(0) 6'-5 ⅜" PN: 15205A

## ELEVATION VIEW

HARDWARE FOR POST(2) THRU POST(8)
(1) ⅝"× 10" HGR BOLT PN: 3500G
(1) ⅝" HGR HEX NUT PN: 3340G

NOTE: DO NOT BOLT ANCHOR RAIL PANEL TO POST(2)

ALTERNATE BLOCKOUT SEE GENERAL NOTE: 6

4" X 7 ½" X 14" BLOCKOUT COMPOSITE PN: 6777B

6" X 8" X 14" BLOCKOUT WOOD PN: 4076B

NOTE: DO NOT BOLT ANCHOR RAIL TO POST(2)

8" 6" 14"

⅝" HGR NUT PN: 3340G

⅝" X 10" HGR POST BOLT PN: 3500G

13/16" DIAMETER YIELDING HOLES LOCATED IN FLANGES

FINISHED GRADE

(HOLES APROXIMATELY CENTERED AT FINISHED GRADE)

## ISOMETRIC VIEW POST(1 & 2)

W6 X 8.5 I-BEAM POST SHOWING STANDARD WOOD BLOCKOUT

NOTE: NO BLOCKOUT INSTALLED AT POST(1)

(1) ⅝" x 1 ¾" HEX HD BOLT PN 3391G

ANGLE STRUT PN: 15202G

(2) ⅝" WASHERS PN 4372G

(1) ⅝" HGR HEX NUT PN 3340G

## DETAIL 1

SHOWN AT POST(1) NEAR GROUND

(1) ⅝" HEX NUT

(1) ⅝" x 1- ½" HEX HD BOLT-GR-5 PN: 105286

(2) ⅝" ROUND WASHERS PN: 3240G

## DETAIL 2

SHOWN AT POST(1)

ANCHOR KEEPER PLATE (24 GA) PN: 15207G

ANCHOR PLATE WASHER ½" THICK PN: 15206G

1" ROUND WASHER F463 PN: 4902G

(2) ⅝" x 2 ½" HEX HD BOLT GR-5 PN: 105285G

ALTERNATE BLOCKOUT SEE GENERAL NOTE: 6

(2) ⅝" ROUND WASHER (WIDE) PN: 3240G

ANCHOR PADDLE PN: 15204A

(2) ⅝" HEX NUT A563 GR. DH PN: 3245G

1" NUT PN: 3908G SHALL BE SECURELY TIGHTENED AFTER FINAL ASSEMBLY, BUT NOT DEFORMING THE KEEPER PLATE.

W-BEAM FLATTENED (4 PLIES)

ANGLE STRUT PN: 15202G

SEE NOTE: A

(2) ¾" x 2 ½" HEX BOLT (TYP) PN: 3717G

(4) ¾" FLAT WASHER (TYP) PN: 3701G

(2) ¾" HEX NUT (TYP) PN: 3704G

6'-1 ⅜" POST DEPTH

(2) ANCHOR POST ANGLE PN: 15201G

## DETAIL 3 AT POST(0)

6'-5 ⅜" (W6 X 15) I-BEAM POST PN: 15205A

TRAFFIC FLOW

W-BEAM RAIL 25'-0"

6" X 8" X 14" BLOCKOUT WOOD

⅝" X 10" HGR POST BOLT PN: 3500G

⅝" HGR NUT PN: 3340G

POST HEIGHT 32"

31" RAIL HEIGHT

40"

FINISHED GRADE

LINE POST (3, 4, 5, 6, 7 & 8)

## SECTION VIEW B-B

6'-0" (W6 X 8.5) I-BEAM POST PN: 533G

POST(2)

## SECTION VIEW A-A

6'-0" (W6 X 8.5) (SYTP) I-BEAM POST PN: 15000G

NOTE: DO NOT BOLT ANCHOR RAIL PANEL TO POST(2)

POST 17"- ½" HEIGHT

4'- 9 ½"

13/16" DIA. YIELDING HOLES

40"

POST(1)

## FRONT VIEW POST(1)

4'-9 ½" (W6 X 8.5) (SYTP) I-BEAM POST PN: 15203G

NOTE: NO BLOCKOUT INSTALLED AT POST(1)

APPROX 5'-10"

5'-0"

50' APPROACH GRADING

2'-0"

STANDARD MBGF

EDGE OF PAVEMENT

NOTE: ADJUST WIDTH ACCORDINGLY WHEN OFFSET IS USED. (OFFSET "OPTION" SHOWN)

2'-0" MAX. RAIL OFFSET

APPROACH GRADING (1V:10H OR FLATTER) SEE PRODUCT ASSEMBLY MANUAL FOR ADDITIONAL GUIDANCE.

## APPROACH GRADING AT GUARDRAIL END TREATMENTS

### GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: TRINITY HIGHWAY AT 1(888)323-6374. 2525 N. STEMMONS FREEWAY, DALLAS, TX 75207
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE; SoftStop END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL. PN: 620237B
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
6. A COMPOSITE MATERIAL BLOCKOUT THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
7. IF SOLID ROCK IS ENCOUNTERED SEE THE MANUFACTURER'S INSTALLATION MANUAL AND REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
8. POSTS SHALL NOT BE SET IN CONCRETE.
9. IT IS ACCEPTABLE TO INSTALL THE SoftStop IMPACT HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT.
10. DO NOT ATTACH THE SoftStop SYSTEM DIRECTLY TO A RIGID BARRIER.
11. UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE SoftStop SYSTEM BE CURVED.
12. A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCROACHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.

| | |
|---|---|
| NOTE: A | THE INSTALLATION HEIGHT OF FULLY ASSEMBLED ANCHOR POST WILL VARY FROM 3-¾" MIN. TO 4" MAX. ABOVE FINISHED GRADE. |
| NOTE: B | PART PN: 5852B RIGHT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING)<br>PART PN: 5851B LEFT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING) |
| NOTE: C | W-BEAM SPLICE LOCATED BETWEEN LINE POST(4) AND LINE POST(5)<br>GUARDRAIL PANEL 25'-0" PN: 61G<br>ANCHOR RAIL 25'-0" PN: 15215G<br>LAP GUARDRAIL IN DIRECTION OF TRAFFIC FLOW. |

| PART | QTY | MAIN SYSTEM COMPONENTS |
|---|---|---|
| 620237B | 1 | PRODUCT DESCRIPTION ASSEMBLY MANUAL (LATEST REV.) |
| 15208A | 1 | SoftStop HEAD (SEE MANUAL FOR RIGHT-LEFT APPROACH) |
| 15215G | 1 | SoftStop ANCHOR RAIL (12GA) WITH CUTOUT SLOTS |
| 61G | 1 | SoftStop DOWNSTREAM W-BEAM RAIL (12GA) (25'- 0") |
| 15205A | 1 | POST #0 - ANCHOR POST (6'- 5 ⅜") |
| 15203G | 1 | POST #1 - (SYTP) (4'- 9 ½") |
| 15000G | 1 | POST #2 - (SYTP) (6'- 0") |
| 533G | 6 | POST #3 THRU #8 - I-BEAM (W6 x 8.5) (6'- 0") |
| 4076B | 7 | BLOCKOUT - WOOD (ROUTED) (6" x 8" x 14") |
| 6777B | 7 | BLOCKOUT - COMPOSITE (4" x 7 ½" x 14") |
| 15204A | 1 | ANCHOR PADDLE |
| 15207G | 1 | ANCHOR KEEPER PLATE (24 GA) |
| 15206G | 1 | ANCHOR PLATE WASHER ( ½" THICK ) |
| 15201G | 2 | ANCHOR POST ANGLE (10" LONG) |
| 15202G | 1 | ANGLE STRUT |
| | | **HARDWARE** |
| 4902G | 1 | 1" ROUND WASHER F436 |
| 3908G | 1 | 1" HEAVY HEX NUT A563 GR. DH |
| 3717G | 2 | ¾" x 2 ½" HEX BOLT A325 |
| 3701G | 4 | ¾" ROUND WASHER F436 |
| 3704G | 2 | ¾" HEAVY HEX NUT A563 GR. DH |
| 3360G | 16 | ⅝" x 1 ¼" W-BEAM RAIL SPLICE BOLTS HGR |
| 3340G | 25 | ⅝" W-BEAM RAIL SPLICE NUTS HGR |
| 3500G | 7 | ⅝" x 10" HGR POST BOLT A307 |
| 3391G | 1 | ⅝" x 1 ¾" HEX HD BOLT A325 |
| 4489G | 1 | ⅝" x 9" HEX HD BOLT A325 |
| 4372G | 4 | ⅝" WASHER F436 |
| 105285G | 2 | ⅝" x 2 ½" HEX HD BOLT GR-5 |
| 105286G | 1 | ⅝" x 1 ½" HEX HD BOLT GR-5 |
| 3240G | 6 | ⅝" ROUND WASHER (WIDE) |
| 3245G | 3 | ⅝" HEX NUT A563 GR. DH |
| 5852B | 1 | HIGH INTENSITY REFLECTIVE SHEETING - SEE NOTE: B |

NOTE:
THIS STANDARD IS A BASIC REPRESENTATION OF THE SoftStop END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

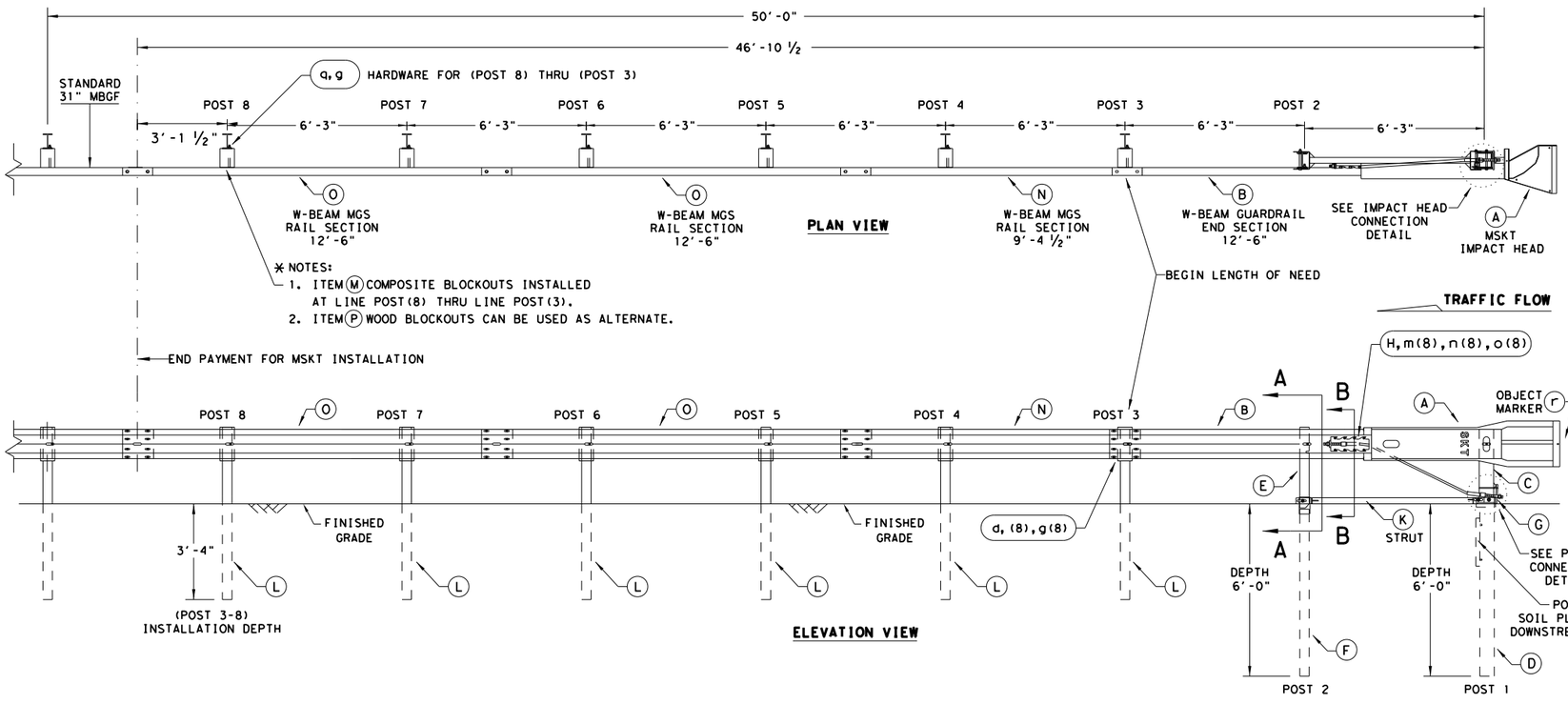
Texas Department of Transportation

Design Division Standard

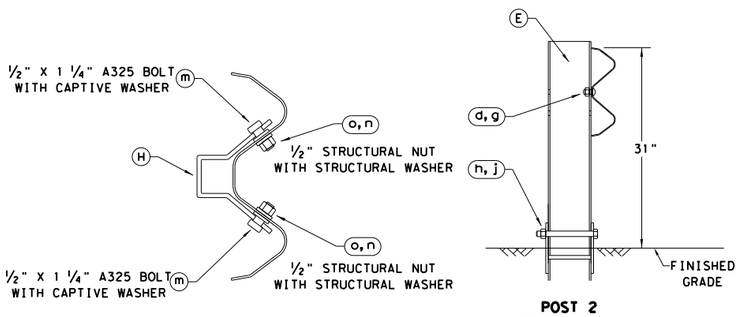
# TRINITY HIGHWAY
# SOFTSTOP END TERMINAL
# MASH - TL-3
# SGT(10S)31-16

| FILE: sgt10s3116 | DN: TxDOT | CK: KM | DW: VP | CK: MB/VP |
|---|---|---|---|---|
| ©TxDOT: JULY 2016 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 106 |

DATE: 4/7/2021
FILE: F:\Projects\2019\11004_TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.2-Roadway\05-Standards\sgt12s3118.dgn



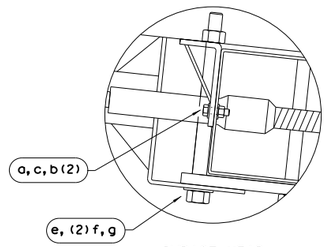

NOTE: SEE (GENERAL NOTE 14) FOR DRIVING CAP INFORMATION.



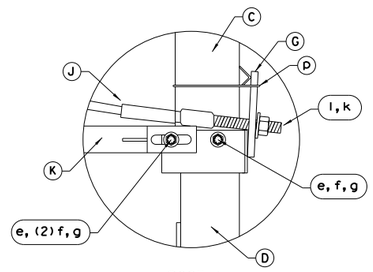

SECTION B-B
ANCHOR BRACKET




POST 2
SECTION A-A




IMPACT HEAD
CONNECTION DETAIL




POST 1
CONNECTION DETAIL

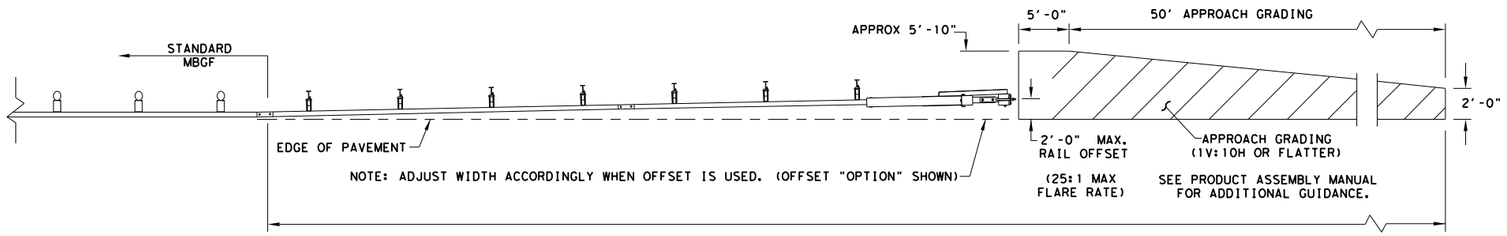
SEE NOTES: *

ALTERNATIVE ITEMS NOT SHOWN. **
* ITEM(P) 8" WOOD-BLOCKOUT
** ITEM(Q) 25'GUARD FENCE PANEL

## GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: ROAD SYSTEMS, INC. (432)263-2435. 3616 OLD HOWARD COUNTY AIRPORT, BIG SPRING, TX 79720
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE; MSKT END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL (PUBLICATION~062717).
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
6. SYSTEM SHOWN USING STEEL WIDE FLANGE POSTS WITH COMPOSITE BLOCKOUTS.
7. A COMPOSITE MATERIAL BLOCKOUTS THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
8. IF SOLID ROCK IS ENCOUNTERED IN THE AREA OF (POST 1) AND / OR (POST 2) CONTACT THE MANUFACTURER, & REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
9. POSTS SHALL NOT BE SET IN CONCRETE.
10. SYSTEM MUST BE ATTACHED TO STANDARD 31" MBGF.
11. UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE MSKT SYSTEM BE CURVED.
12. A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCROACHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.
13. THE SYSTEM IS SHOWN WITH TWO 12'-6" MBGF PANELS, ONE 25'-0" MBGF PANEL IS ALSO ALLOWED IN THEIR PLACE.
14. A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POSTS 3-8 TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST. SPECIAL DRIVING CAP TO BE USED ON LOWER POSTS 1 & 2 TO PREVENT DAMAGE TO THE WELDED PLATES.

| ITEM | QTY | MAIN SYSTEM COMPONENTS | ITEM NUMBERS |
|---|---|---|---|
| A | 1 | MSKT IMPACT HEAD | MS3000 |
| B | 1 | W-BEAM GUARDRAIL END SECTION, 12 Ga. | SF1303 |
| C | 1 | POST 1 - TOP (6" X 6" X 1/8" TUBE) | MTPHP1A |
| D | 1 | POST 1 - BOTTOM (6' W6X15) | MTPHP1B |
| E | 1 | POST 2 - ASSEMBLY TOP | UHP2A |
| F | 1 | POST 2 - ASSEMBLY BOTTOM (6' W6X9) | HP2B |
| G | 1 | BEARING PLATE | E750 |
| H | 1 | CABLE ANCHOR BOX | S760 |
| J | 1 | BCT CABLE ANCHOR ASSEMBLY | E770 |
| K | 1 | GROUND STRUT | MS785 |
| L | 6 | W6x9 OR W6x8.5 STEEL POST | P621 |
| M | 6 | COMPOSITE BLOCKOUTS | CBSP-14 |
| N | 1 | W-BEAM MGS RAIL SECTION (9'-4 1/2") | G12025 |
| O | 2 | W-BEAM MGS RAIL SECTION (12'-6") | G1203A |
| P | 6 | WOOD BLOCKOUT 6" X 8" X 14" | P675 |
| Q | 1 | W-BEAM MGS RAIL SECTION (25'-0") | G1209 |
| | | **SMALL HARDWARE** | |
| a | 2 | 5/16" x 1" HEX BOLT (GRD 5) | B5160104A |
| b | 4 | 5/16" WASHER | W0516 |
| c | 2 | 5/16" HEX NUT | N0516 |
| d | 25 | 5/8" Dia. x 1 1/4" SPLICE BOLT (POST 2) | B580122 |
| e | 2 | 5/8" Dia. x 9" HEX BOLT (GRD A449) | B580904A |
| f | 3 | 5/8" WASHER | W050 |
| g | 33 | 5/8" Dia. H.G.R NUT | N050 |
| h | 1 | 3/4" Dia. x 8 1/2" HEX BOLT (GRD A449) | B340854A |
| j | 1 | 3/4" Dia. HEX NUT | N030 |
| k | 2 | 1 ANCHOR CABLE HEX NUT | N100 |
| l | 2 | 1 ANCHOR CABLE WASHER | W100 |
| m | 8 | 1/2" x 1 1/4" A325 BOLT WITH CAPTIVE WASHER | SB12A |
| n | 8 | 1/2" STRUCTURAL NUTS | N012A |
| o | 8 | 1 1/16" O.D. x 5/16" I.D. STRUCTURAL WASHERS | W012A |
| p | 1 | BEARING PLATE RETAINER TIE | CT-100ST |
| q | 6 | 5/8" x 10" H.G.R. BOLT | B581002 |
| r | 1 | OBJECT MARKER 18" X 18" | E3151 |




APPROACH GRADING AT GUARDRAIL END TREATMENTS

NOTE: TXDOT GENERIC APPROACH GRADING LAYOUT USED FOR ALL TANGENT TYPE END TREATMENTS.

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE MSKT END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Texas Department of Transportation

Design Division Standard

# SINGLE GUARDRAIL TERMINAL
# MSKT-MASH-TL-3
# SGT(12S)31-18

| | | | | | | |
|---|---|---|---|---|---|---|
| FILE: sgt12s3118.dgn | DN: TxDOT | CK: KM | DW: VP | CK: CL | | |
| © TxDOT: APRIL 2018 | CONT | SECT | JOB | | HIGHWAY | |
| REVISIONS | 0169 | 07 | 053, ETC | | US60 | |
| | DIST | COUNTY | | | SHEET NO. | |
| | AMA | GRAY | | | 107 | |

4/7/2021 7:27:12 AM
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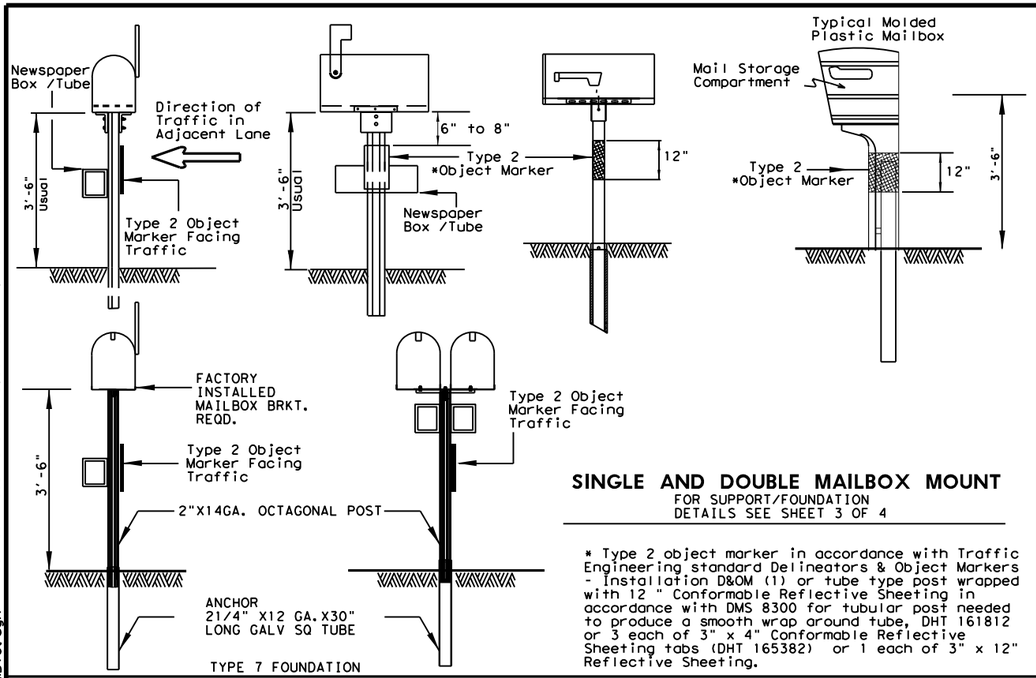


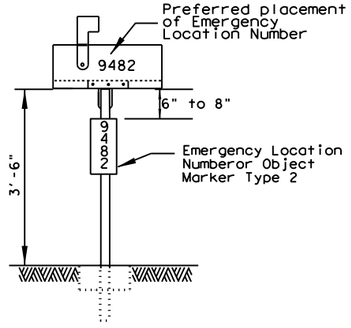

## SINGLE AND DOUBLE MAILBOX MOUNT

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4

* Type 2 object marker in accordance with Traffic Engineering standard Delineators & Object Markers - Installation D&OM (1) or tube type post wrapped with 12 " Conformable Reflective Sheeting in accordance with DMS 8300 for tubular post needed to produce a smooth wrap around tube, DHT 161812 or 3 each of 3" x 4" Conformable Reflective Sheeting tabs (DHT 165382) or 1 each of 3" x 12" Reflective Sheeting.

Note: Mailbox installations in sidewalk areas shall be in accordance with the latest TxDOT Pedestrian Facilities Curb ramps standard *PED-XX for pedestrian facilities.

*PED-XX: XX is the standard year for example PED- 12 , PED-13,etc.




## PLACEMENT OF EMERGENCY LOCATION NUMBER

Location Number shall be placed on: 1. A yellow, type A plate with class 1 flat surface reflective sheeting in accordance with DMS 8600. The color of numbers shall be black. or 2: A green or blue plate with white numbers attached to post beside the object marker. Other contrasting color configuration, as approved , may be used. (Use Same type plate as used for the type 2 Object Marker. Recommended sign size is 6" by 15")

## MAILBOX SIZES

| TYPICAL MAILBOX SIZE | | | | LIGHT WEIGHT MATERIAL | |
|---|---|---|---|---|---|
| | | | | SHEET METAL | **PLASTIC |
| SIZE | LENGTH (INCHES) | WIDTH (INCHES) | HEIGHT (INCHES) | MAXIMUM WEIGHT (POUNDS) | |
| SMALL | 19 ½ | 6 | 7 | 5 | 5 |
| MEDIUM | 22 ½ | 8 | 11 ½ | 7 | 7 |
| LARGE | 23 ½* | 11 ½* | 13 ½* | 10 | 10 |

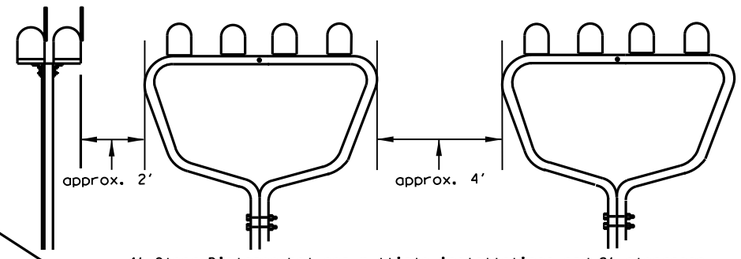
* Maximum allowed dimensions for mailbox
** Excluding Molded Plastic on 4 X 4 Post

| LOCKABLE ARCHITECTURAL MAILBOX SIZE (INCHES) | | | | | |
|---|---|---|---|---|---|
| VIEW | TOP | BOTTOM | FRONT SIDE | BACK SIDE | WEIGHT (POUNDS) |
| SIDE | 18 | 15 | 18.3 | 15 | 22.4 |
| BACK | 11 ½ | 11 ½ | | 15 | |

SEE TOP RIGHT CORNER OF SHEET 2 OF 4

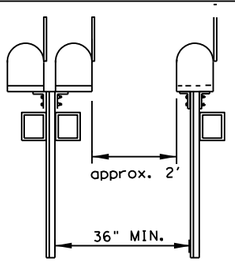
Mailboxes shall be made of light weight sheet metal or light weight plastic. Lockable architectural mailboxes shall meet the requirements of the above table.

Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.



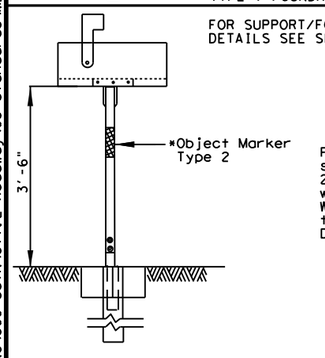

4' Clear Distance between multiple installations and 2' clearance between double or single installations and the multiple installation. DHT #'s 164116 or 149339.

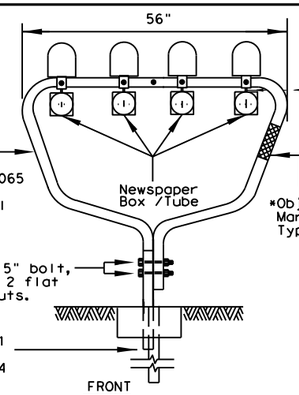
## MULTIPLE MAILBOX PLACEMENT

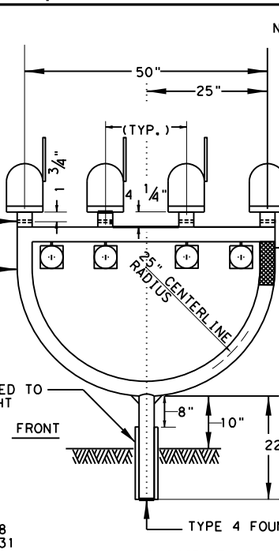



Clear Distance between single or double mounted posts. (Normally when 3 or more mailboxes are in one location, a multiple support is used).

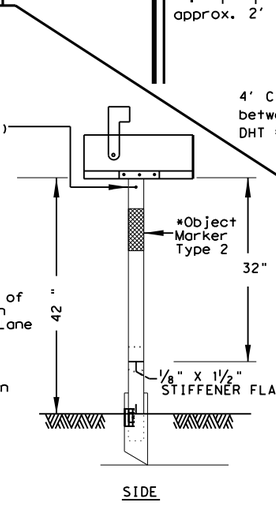
## SINGLE & DOUBLE MAILBOX PLACEMENT



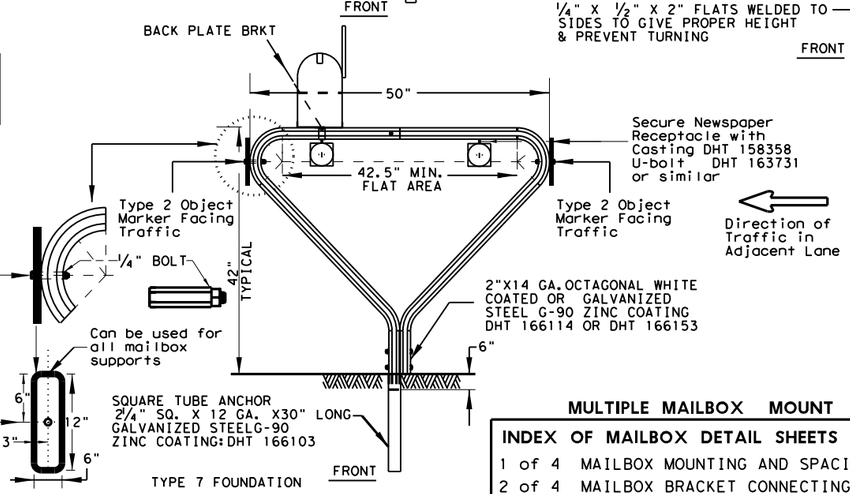



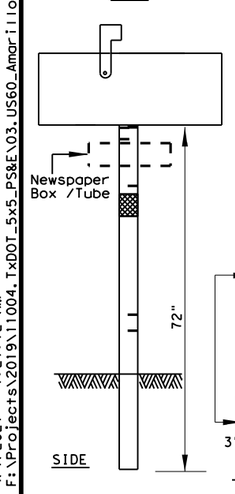

NOTE: - ALL WELDS ¼" AROUND ALL JOINTS. POWDERCOAT WHITE




## DOUBLE AND MULTIPLE MAILBOX MOUNT

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4
FOR DHT NUMBERS SEE SHEET 4 OF 4




## MULTIPLE MAILBOX MOUNT

### INDEX OF MAILBOX DETAIL SHEETS

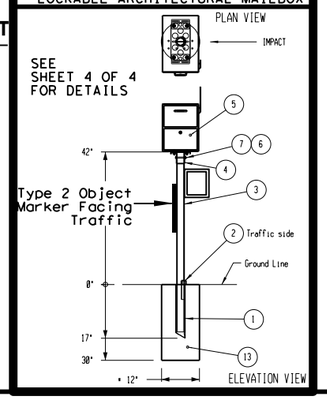


## NEWSPAPER RECEPTACLE

A light weight receptacle for newspaper delivery can be attached to mailbox posts as shown on this page if the receptacle:

- Does not touch the mailbox.
- Does not present a hazard to traffic or delivery of the mail.
- Does not extend beyond the front of the mailbox.
- Does not display advertising, except the publication title.
- Newspaper receptacles on separate supports are prohibited.

LOCKABLE ARCHITECTURAL MAILBOX




SHEET 1 OF 4

Texas Department of Transportation

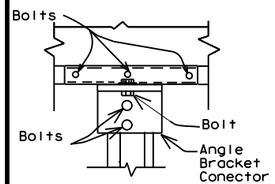
Maintenance Division Standard

# MAILBOX MOUNTING AND SPACING

# MB-15(1)

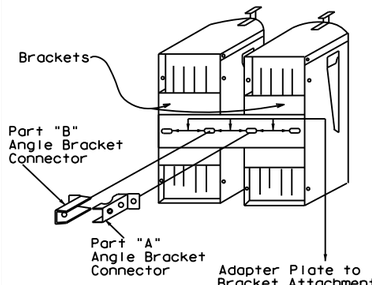
| FILE: MB14(1).DGN | DN: JEO | CK: JEO | DW: | CK: |
|---|---|---|---|---|
| ©TxDOT APRIL 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS: Added additional newspaper receptacle for double mailbox support | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 108 |

4/7/2021 7:27:13 AM
F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\SHT\12-ROADWAY\05-SIGNS\DGN\MB14(1).dgn



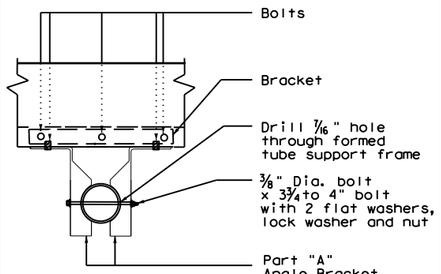

For bolt sizes see details below for "SMALL MAILBOX" and "MEDIUM AND LARGE MAILBOXES"

**SINGLE MAILBOX**

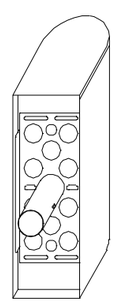



(Not permitted for Large Mailboxes)

**DOUBLE MAILBOX**

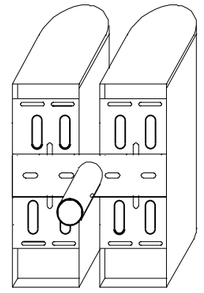



**MULTIPLE MAILBOX**



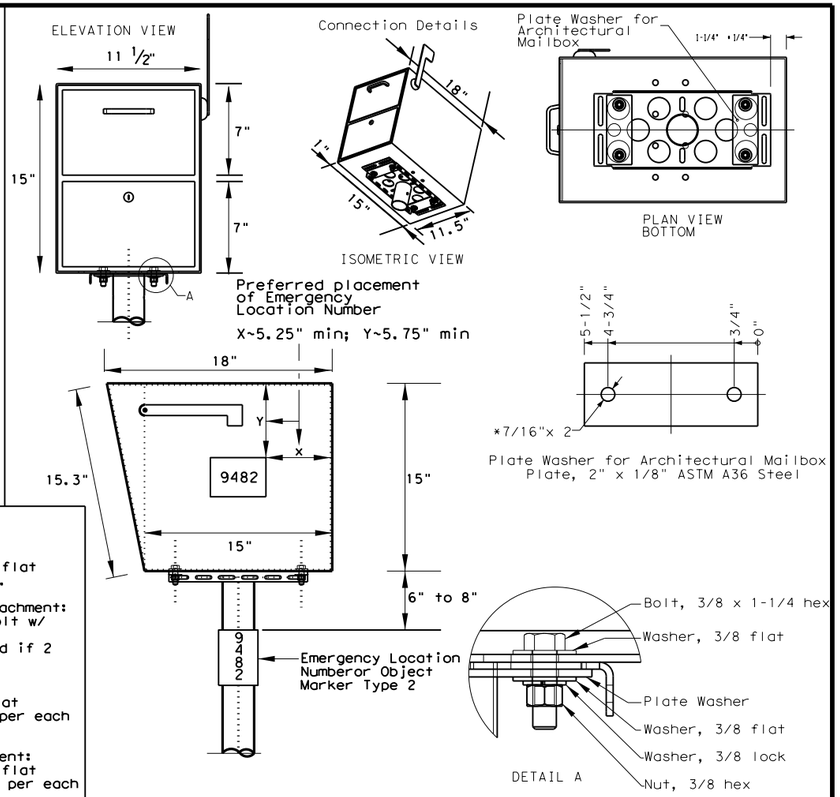
To be used with 2⅜" OD RR or thinwall Steel posts.

**WELDED SINGLE MAILBOXBRACKET**

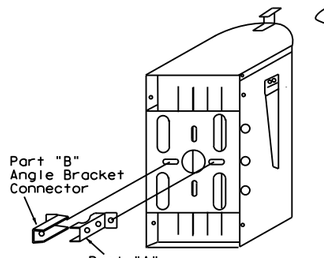


To be used with thinwall Steel posts. Not to be used with RR posts.

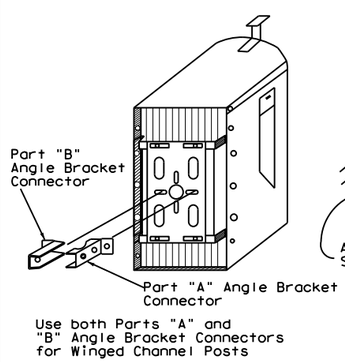
**WELDED DOUBLE MAILBOX BRACKET WITHADAPTER PLATE**




**LOCKABLE ARCHITECTURAL MAILBOX CONNECTION DETAILS**



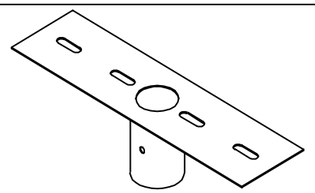

**SMALL MAILBOX**




**MEDIUM AND LARGE MAILBOXES**

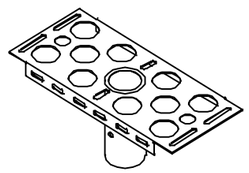
**GENERAL NOTES**

1. Connecting hardware detailed on this sheet is for the hardware that the Department stocks at the Regional Warehouses. This hardware is available to the contractor only when so stated elsewhere in the plans or specification.
2. Hardware for mounting mailboxes to the support/foundation furnished by industry should be used when shown on the Maintenance Divisions "Approved Products List." Only mailbox hardware that have been crash tested in accordance with NCHRP Report 350, will be on the approved list.
3. Hardware furnished by industry shall be erected in accordance with the manufacturer's recommendation.
4. Bracket and bracket extension shall be constructed of 14 gauge galvanized steel sheet metal.
5. The angles, brackets and adapter plates shall be constructed of 12 gauge galvanized steel sheet metal.
6. Items with evidence of damage to the galvanized coating or wet storage stains (white rust) will not be accepted.



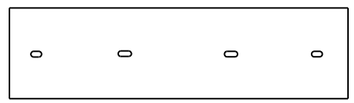
**DHT 162323**

For use with galvanized thinwall steel posts DHT # 143426 or powder-coated thinwall steel post DHT # 162911.



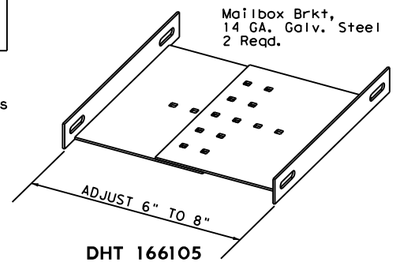
**DHT 161443**

For use with RCR post DHT # 161442 or galvanized thinwall steel post DHT # 143426 or powder-coated thinwall steel post. DHT # 162911.

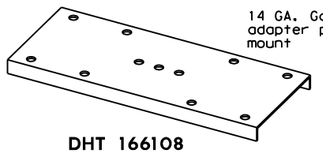


**DHT #3789**

Used for mounting two Mailboxes on the same post.

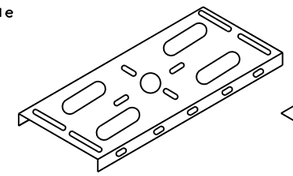



**DHT 166105**



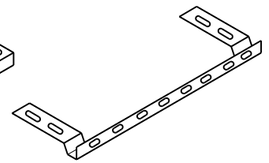
14 GA. Galv. Steel adapter plate for double mount

**DHT 166108**



**DHT 148939**

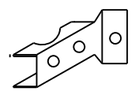
Mailbox Bracket



**DHT 148938**

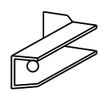
Used for extending 6" wide bracket to attach larger mailboxes.

Bracket Extension



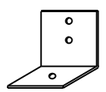
**DHT 159489**

Part "A" Angle Bracket Connector



**DHT 159490**

Part "B" Angle Bracket Connector



**DHT 2917**

Angle Bracket For Temporary Mailbox

**HARDWARE AT TXDOT REGIONAL WAREHOUSES**

Brackets and adapter plate shown in this section should be available to the Contractor when stated elsewhere in plans or specifications.

See Table of Applicable DHT Numbers on sheet 4 of 4 for DHT description and unit of measure.

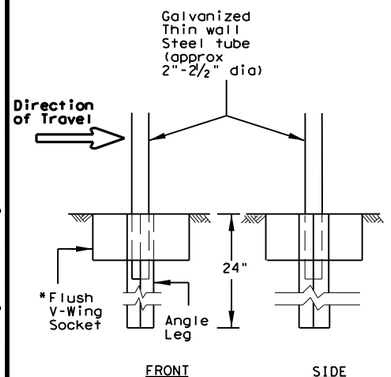


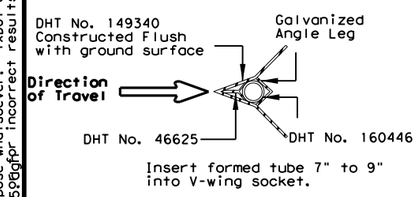
Texas Department of Transportation | Maintenance Division Standard

# MAILBOX BRACKET CONNECTING DETAILS

# MB-15(1)

| FILE:MB14(1).DGN | DN: JEO | CK: | DW: JEO | CK: |
|---|---|---|---|---|
| ©TxDOT APRIL 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS ADDED DHT 163730 | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 109 |

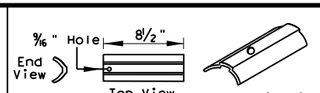



Insert formed tube 7" to 9" into V-wing socket.

## TYPE 1 SUPPORT/FOUNDATION

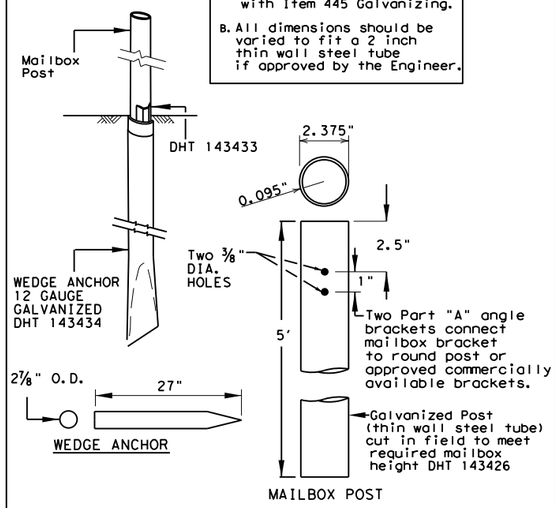
THIN WALL STEEL TUBE w/ V-LOC ANCHORAGE




NOTES FOR TYPE 2 SUPPORT/FOUNDATION

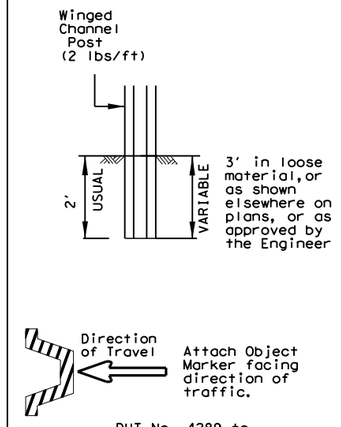
A. Galvanize steel support foundation in accordance with Item 445 Galvanizing.

B. All dimensions should be varied to fit a 2 inch thin wall steel tube if approved by the Engineer.




## TYPE 2 SUPPORT/FOUNDATION

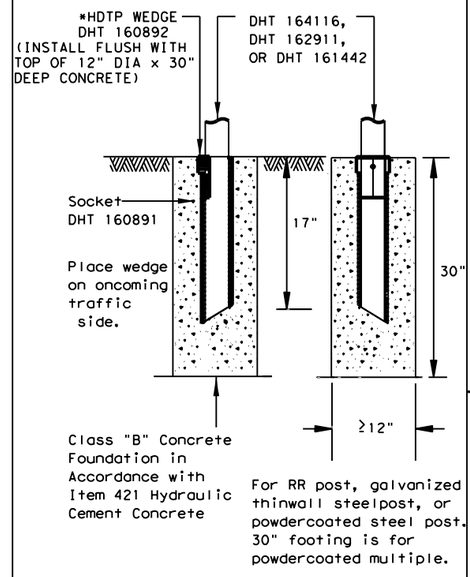
THIN WALL STEEL TUBE w/ WEDGE ANCHOR SYSTEM




## TYPE 3 SUPPORT/FOUNDATION

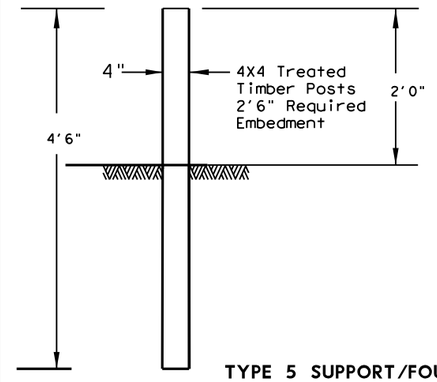
WINGED CHANNEL POST

Note on DHT Number
See Table of Applicable DHT Numbers on this sheet 4 for DHT description.




## TYPE 4 SUPPORT/FOUNDATION

FOR WHITECOATED STEEL POST, MULTIPLE POST, AND RECYCLED RUBBER.

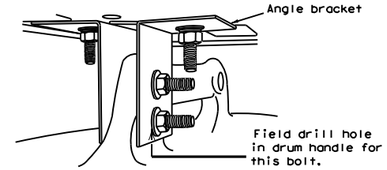



## TYPE 5 SUPPORT/FOUNDATION

FOR ONE PIECE MOLDED PLASTIC MAILBOX

## ONE PIECE MOLDED PLASTIC MAILBOXES

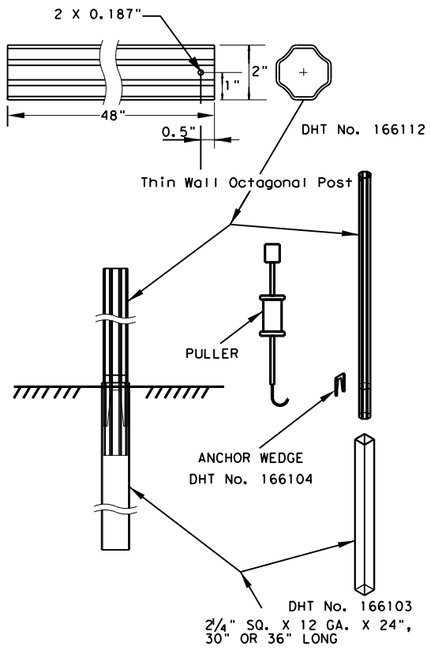
Molded Plastic Mailboxes shall be installed on 4"x4" treated timber posts only. The use of steel pipe or structural tubing in place of timber post is prohibited.




Placed on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD).
Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

## TYPE 6 TEMPORARY MAILBOX SUPPORT

CONNECTION DETAIL




## TYPE 7 MAILBOX SUPPORT/FOUNDATION

CONNECTION DETAIL

MB-(X) ASSM TY (XXX) (X) (XX) (OPTIONAL)

Type of Mailbox
- S = Single
- D = Double
- M = Multiple
- SP = Single Plastic

Type of Post
- WC = Winged Channel Post
- RR = Recycled Rubber
- TWW = Thin Walled White Tubing
- TWG = Thin Walled Galvanized Tubing
- TIM = Timber

Type of Foundation
- Ty 1 = V-Loc
- Ty 2 = Wedge Anchor Steel System
- Ty 3 = Winged Channel post
- Ty 4 = Wedge Anchor Plastic System
- Ty 5 = 4 X 4 Post
- Ty 7 = Wedge Anchor

Type of Bracket
- AB = Angle Bracket.
- TB = 2.375" Tube Bracket

GENERAL NOTES
1. Erect post plumb or vertical.
2. When galvanized part is required galvanize in accordance with Item 445.
3. type 1, 2, 3, 4 or 7 supports or foundation can be used for single or double mailbox installations. The RCR post should be used only for a single installation with a small mailbox. The Type 5 support/foundation is used for the single molded plastic mailbox. The Type 4 support/foundation is used for the 2.375" O.D. RR post, thin wall steel post, and white multiple mailbox post.
4. The Type 1 or type 7 support/foundation can be used for a multiple mailbox mount.
5. The Type 4 support should be used with thin wall steel pipe for the medium, large and double mailbox installations.
6. 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.

DOUBLE AND LARGE MAILBOXES MUST BE ON STEEL POST.

*HDTP: High density thermoplastic polyesters



Texas Department of Transportation — Maintenance Division Standard

# MAILBOX SUPPORT AND FOUNDATION

# MB-15(1)

| FILE: MB14(1).DGN | DN: JEO | CK: | DW: JEO | CK: |
|---|---|---|---|---|
| ©TxDOT APRIL 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 110 |

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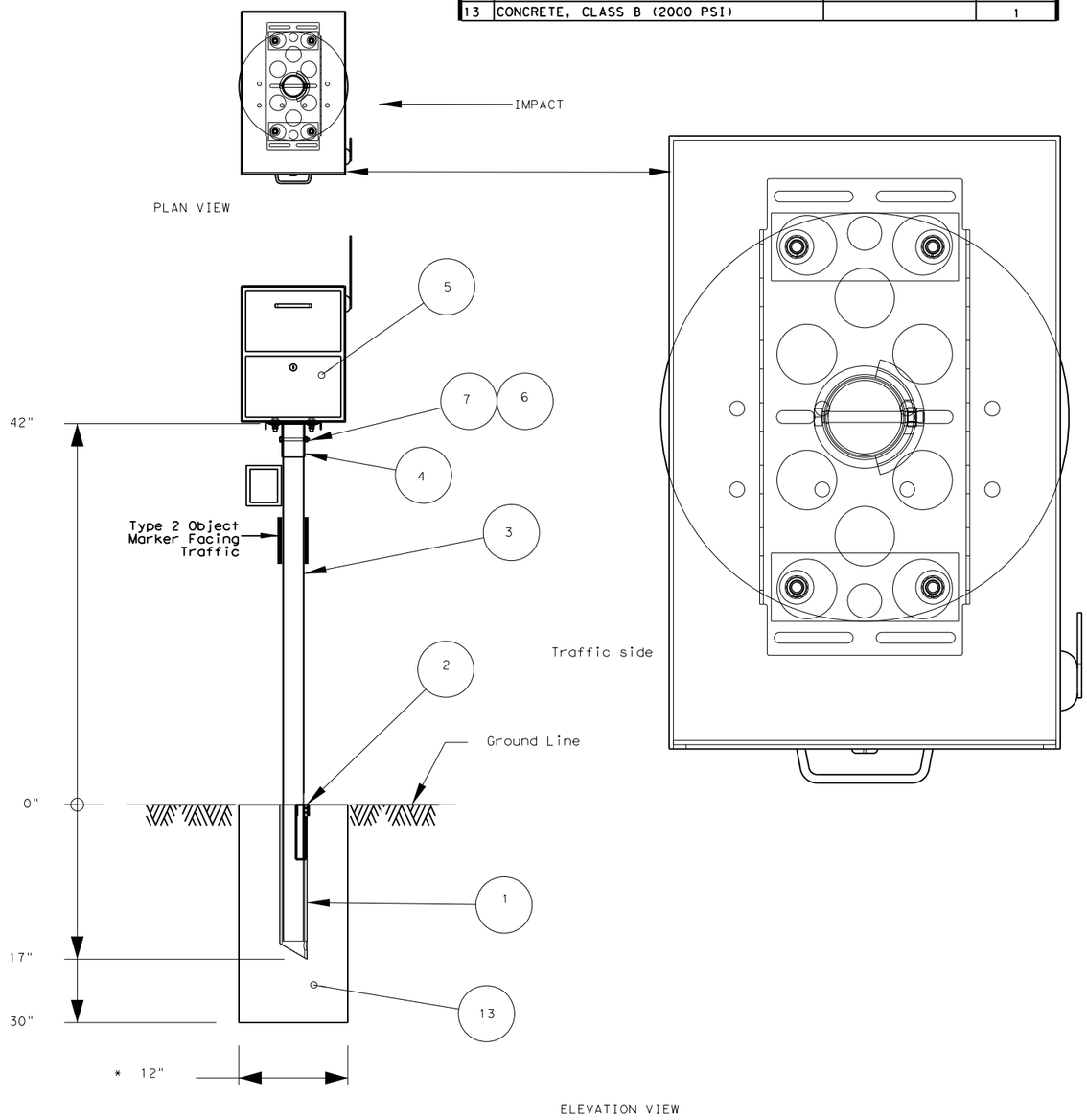
# LOCKABLE ARCHITECTURAL MAILBOX

| SINGLE-MOUNT INSTALLATION PARTS | | | |
|---|---|---|---|
| # | PART NAME | PART/DHT # | QTY |
| 1 | SOCKET, TYPE 4 FOUNDATION | 160891 | 1 |
| 2 | WEDGE FOR TYPE 4 FOUNDATION | 160892 | 1 |
| 3 | THIN-WALL WHITE STEEL TUBE 2.375 OD | 162911 | 1 |
| 4 | BRACKET FOR ATTACHING MAILBOX | 161443 | 1 |
| 5 | ARCHITECTURAL MAILBOX | SEE NOTE | 1 |
| 6 | NUT, 5/16" HEX | NUT, 5/16" HEX | 1 |
| 7 | BOLT, 5/16 X 3 HEX | GRADE 5 | 1 |
| 8 | PLATE WASHER FOR ARCHITECTURAL MAILBOX | SEE SEE SHEET 2 | 2 |
| 9 | WASHER, 3/8 FLAT | | 8 |
| 10 | WASHER, 3/8 LOCK | | 4 |
| 11 | NUT, 3/8 HEX | | 4 |
| 12 | BOLT, 3/8 X 1-1/4 HEX | GRADE 5 | 4 |
| 13 | CONCRETE, CLASS B (2000 PSI) | | 1 |

LOCKABLE ARCHITECTURAL MAILBOX DETAILS




| TABLE OF APPLICABLE DHT NUMBERS | |
|---|---|
| DHT NUMBER | DESCRIPTION |
| | FOUNDATIONS |
| 46625 | WEDGE FOR V-WING SOCKET FOR TYPE 1 FOUNDATION |
| 149340 | V-WING SOCKET FOR TYPE 1 FOUNDATION |
| 143433 | WEDGE FOR TYPE 2 FOUNDATION |
| 143434 | ANCHOR FOR TYPE 2 FOUNDATION |
| 166103 | ANCHOR FOR TYPE 7 FOUNDATION |
| 160891 | SOCKET FOR TYPE 4 FOUNDATION |
| 160892 | WEDGE FOR TYPE 4 FOUNDATION |
| 166104 | WEDGE FOR TYPE 7 FOUNDATION |
| | POSTS |
| 4289 | WINGED CHANNEL MAILBOX POST |
| 149339 | MULTIPLE MAILBOX POST (GALVANIZED TUBING) |
| 164116 | MULTIPLE MAILBOX POST (WHITE COATED) |
| 166114 | MULTIPLE MAILBOX POST (WHITE COATED OCTAGONAL) |
| 166153 | MULTIPLE MAILBOX POST (GALVANIZED OCTAGONAL) |
| 161442 | RECYCLED RUBBER POST. FOR SMALL MAILBOX ONLY |
| 143426 | THIN-WALL GALVANIZED STEEL TUBE 2.375" OUTER DIAMETER |
| 162911 | THINWALL WHITE STEEL TUBE 2.375" OUTER DIAMETER |
| 166152 | SINGLE OR DOUBLE THIN-WALL MAILBOX POST GALVANIZED 2" OCTAGONAL |
| 166112 | SINGLE OR DOUBLE THIN-WALL MAILBOX POST WHITECOATED 2" OCTAGONAL |
| | REFLECTIVE SHEETING |
| 161812 | REFLECTIVE SHEETING FOR EMERGENCY LOCATION NUMBER PANEL |
| | CONNECTING HARDWARE |
| 2917 | ANGLE BRACKET USED FOR TEMPORARY MAILBOX SUPPORT |
| 166105 | BRACKET FOR SINGLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 3789 | PLATE FOR DOUBLE MOUNTING OF MAILBOXES |
| 166108 | BRACKET FOR DOUBLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 166111 | BRACKET FOR MULTIPLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 148939 | BRACKET FOR ATTACHING SMALL OR MEDIUM SIZE MAIL BOX |
| 148938 | EXTENDER TO BRACKET FOR ATTACHING LARGE MAILBOX |
| 159489 | ANGLE BRACKET PART A |
| 159490 | ANGLE BRACKET PART B |
| 162323 | BRACKET FOR DOUBLE MOUNTING OF MAILBOXES ON THINWALL STEEL POST, GALVANIZED OR POWDERCOATED. |
| 161443 | BRACKET FOR ATTACHING MAILBOX TO RECYCLED RUBBER POST AND TO MULTIPLE WHITE MAILBOX POST |
| 158358 | CASTING (NEWSPAPER RECEPTACLE BRACKET) |
| 163731 | U-BOLT (NEWSPAPER RECEPTACLE BRACKET) |
| 160698 | BOLT;HEX HEAD, GALV;3/8"DIA X 3/4"L HD, W/2-FLAT WASHERS |
| 163750 | BOLT;HEX HEAD, GALV;3/8" X 1-1/2, 16 NC, W/WASHERS |
| 160701 | BOLT;HEX HEAD, GALV;3/8"DIA X 2-1/2"L, HD, W/2-FLAT WASHERS |
| 163730 | BOLT;HEX HEAD, GALV;3/8" X 3-1/2", NC, W/NUT, 2 FLAT WASHERS |
| 160699 | BOLT;HEX HEAD, GALV;3/8"DIA X 3-3/4"L HD, W/2-FLAT WASHERS |
| 160700 | BOLT;HEX HEAD, GALV;3/8"DIA X 4"L HD, W/2-FLAT WASHERS |



Texas Department of Transportation | Maintenance Division Standard

## DHT NUMBERS TABLE

## MB-15(1)

| FILE:MB14(1).DGN | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| ©TxDOT APRIL 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 111 |

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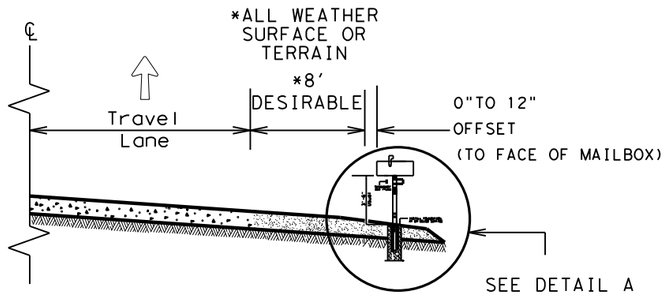
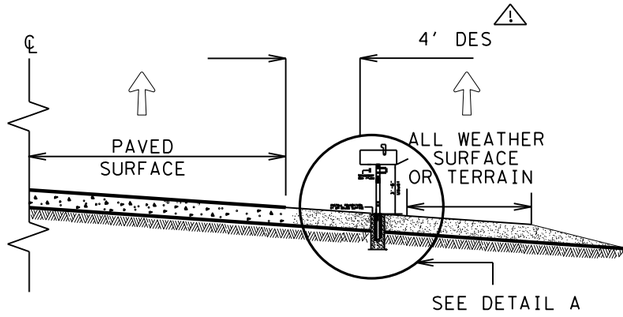
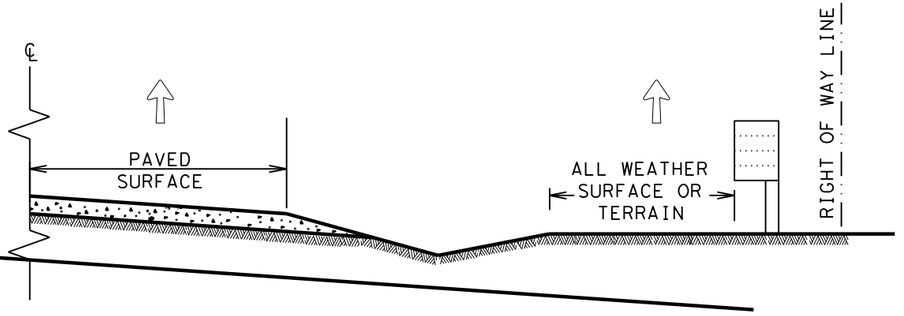


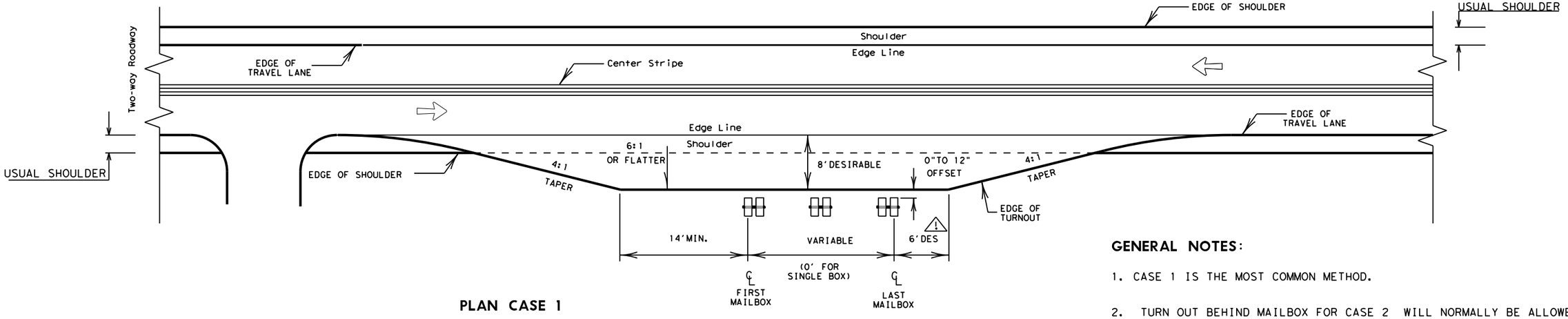

**CASE 1. OFF TRAVEL WAY DELIVERY**



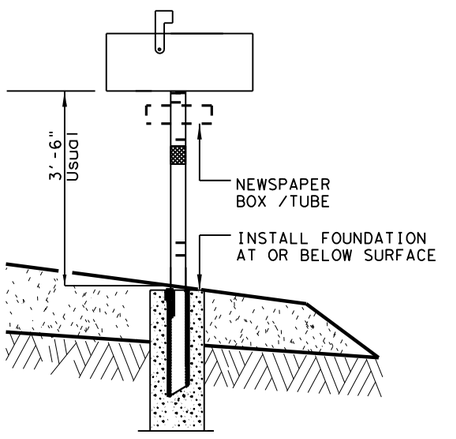

**CASE 2. BACK SIDE DELIVERY**



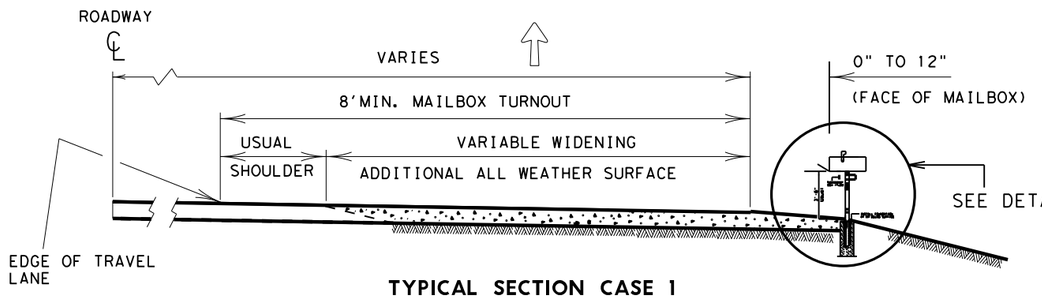

**CASE 3. DELIVERY NEAR RIGHT OF WAY LINE**




**PLAN CASE 1**




**DETAIL A**




**TYPICAL SECTION CASE 1**

**MAIL DELIVERY VEHICLE TRAVEL DIRECTION**

## 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.



Texas Department of Transportation

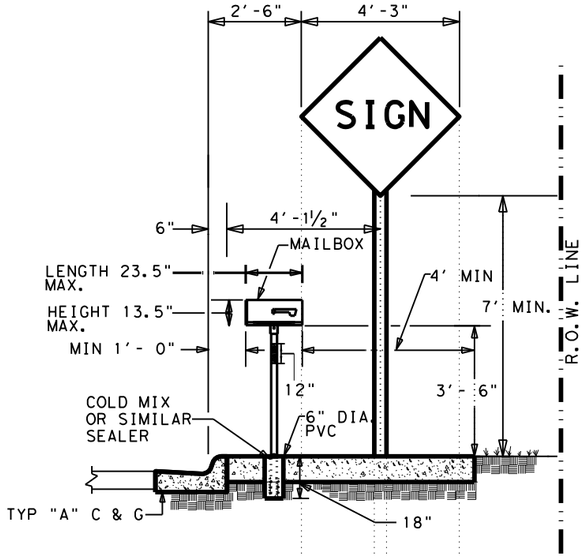
Maintenance Division Standard

*Guideline*

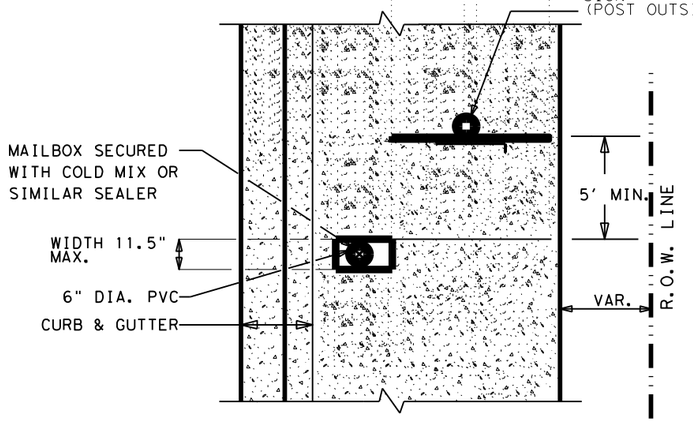
# MAILBOX SIDE ROAD PLACEMENT AND TURNOUTS
# MB-14(2)

| | | | | | | |
|---|---|---|---|---|---|---|
| FILE: MB14(2).DGN | DN: JEO | CK: | DW: JEO | CK: | | |
|  | CONT | SECT | JOB | | HIGHWAY | |
| REVISIONS DECEMBER 2012-NEW TXDOT TITLE BLOCK | 0169 | 07 | 053, ETC | | US60 | |
| | DIST | COUNTY | | | SHEET NO. | |
| | AMA | GRAY | | | 112 | |

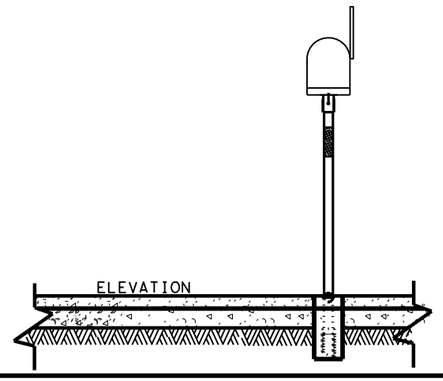
DATE: 4/7/2021
FILE: F:\Projects\2019\1004_TxDOT_5x5_PS&E\03_US60_Amarillo\ENG\500-USTN\5pf_24Roadways\5-Standard dgns\mb14-2a.dgn 7:27:18 AM

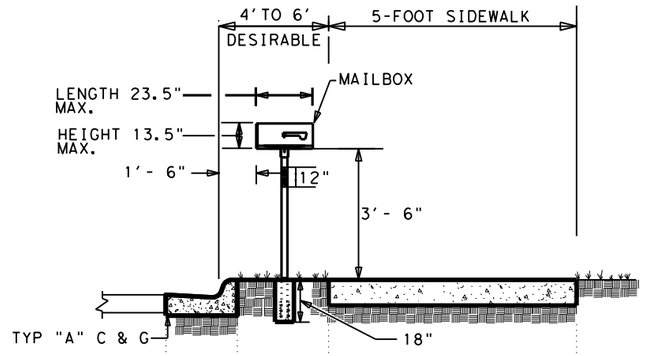



MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN
(MINIMUM BORDER DISTANCE)

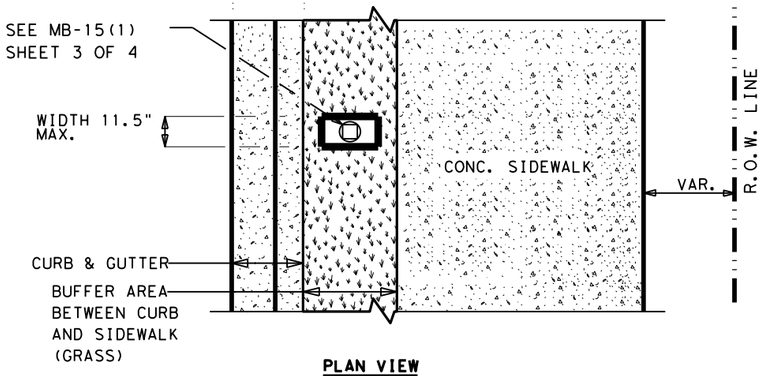



PLAN VIEW




MAILBOX SIDEWALK INSTALLATION
(DESIRABLE BORDER DISTANCE)




PLAN VIEW

SHEET 2 OF 3

Texas Department of Transportation | Maintenance Division Standard

# SINGLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

# MB-14(2A)

| FILE: MB-14(2A) | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
|  | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 113 |

DATE: 4/7/2021 7:27:19 AM
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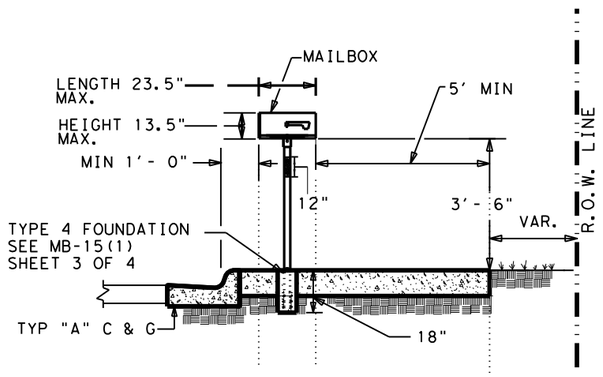
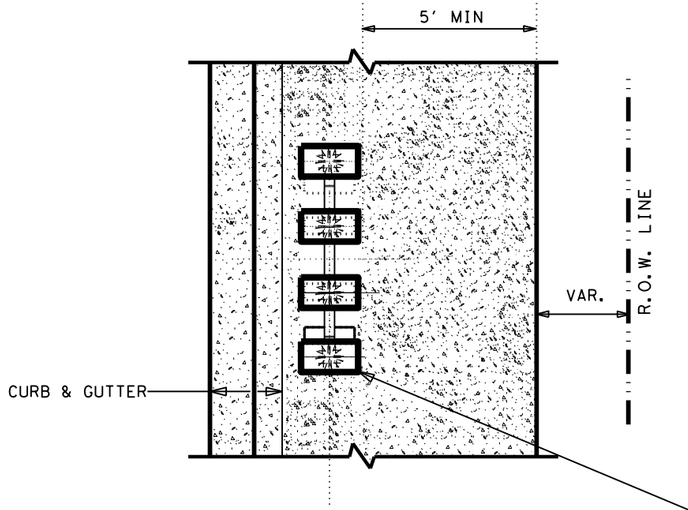
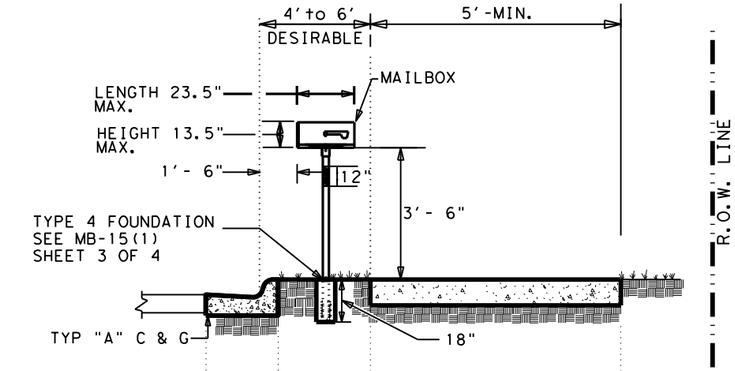


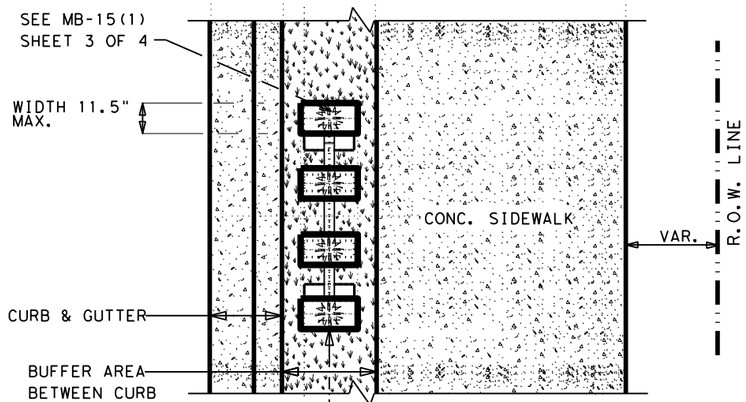

MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN
(MINIMUM BORDER DISTANCE)



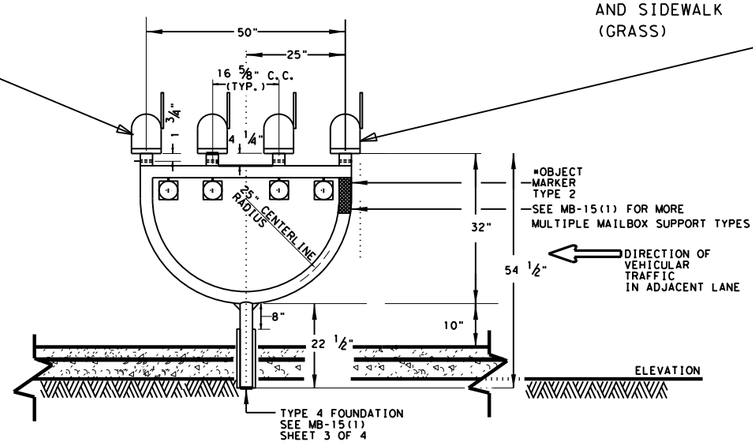

PLAN VIEW




MAILBOX SIDEWALK INSTALLATION
(DESIRABLE BORDER DISTANCE)




PLAN VIEW




ELEVATION

SHEET 3 OF 3

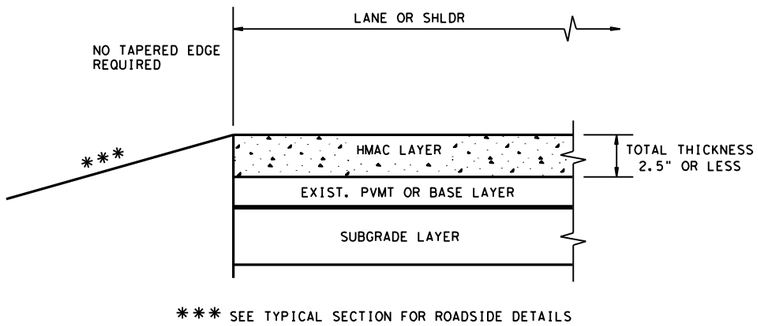
Texas Department of Transportation | Maintenance Division Standard

# MULTIPLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

# MB-14(2B)

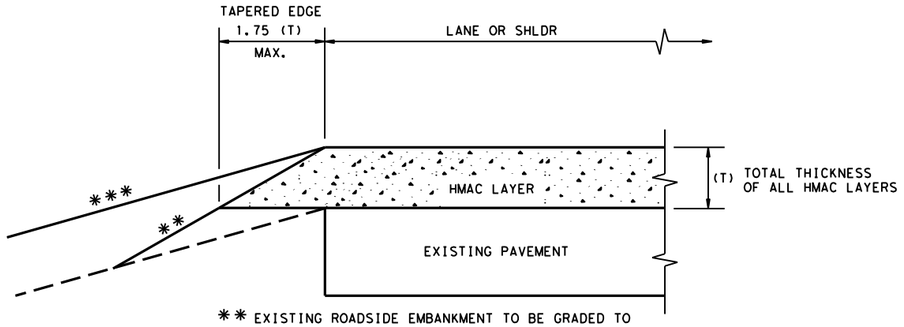
| FILE: MB-14(2A) | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT MAY 2014 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 114 |

DATE: 4/7/2021
FILE: F:\Projects\2019\11004_TxDOT_5x5_PS&E\03_US60_Amarillo\ENG\500-USTN\511_2-Roadway\05-Standards\tehmac11.dgn




*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

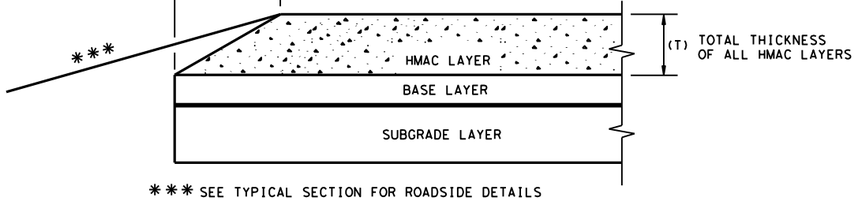
## CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY WITH THICKNESS OF 2.5" OR LESS




** EXISTING ROADSIDE EMBANKMENT TO BE GRADED TO PRODUCE A SMOOTH LEVEL SURFACE FOR PLACEMENT OF TAPERED EDGE. THIS WORK IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

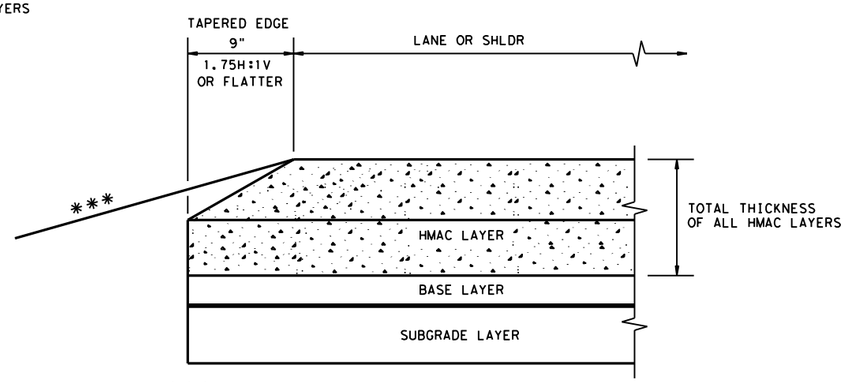
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

## CONDITION - 2
OVERLAY OF EXISTING PAVEMENT HMAC THICKNESS 2.5" TO 5"




*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

## CONDITION - 3
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 2.5" TO 5"




*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

## CONDITION - 4
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 5" OR GREATER

(NOT TO SCALE)

## GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, A VERTICAL EDGE IS PERMISSIBLE FOR HMAC PLACED GREATER THAN 5" BELOW THE EDGE OF PAVEMENT AND FOR THICKNESS OF HMAC LESS THAN 2.5".
2. FOR FURTHER INFORMATION REGARDING THE ROADSIDE AND PAVEMENT DETAILS, SEE TYPICAL SECTIONS.
3. PAYMENT FOR TAPERED EDGE WILL BE IN ACCORDANCE WITH APPLICABLE ITEMS IN THE CONTRACT.
4. THE SLOPE OF THE TAPERED EDGE SHALL BE 1.75H:1V OR FLATTER.
5. THE TAPERED EDGE SHALL BE PRODUCED BY USE OF A SCREED ATTACHMENT CAPABLE OF PRODUCING A SMOOTH COMPACTED SURFACE. ADDITIONAL COMPACTING EFFORT BEHIND THE SCREED IS NOT REQUIRED.

Texas Department of Transportation | Design Division Standard

# TAPERED EDGE DETAILS
# HMAC PAVEMENT

## TE(HMAC)-11

| FILE: tehmac11.dgn | DN: TxDOT | CK: RL | DW: KB | CK: |
|---|---|---|---|---|
| ©TxDOT January 2011 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
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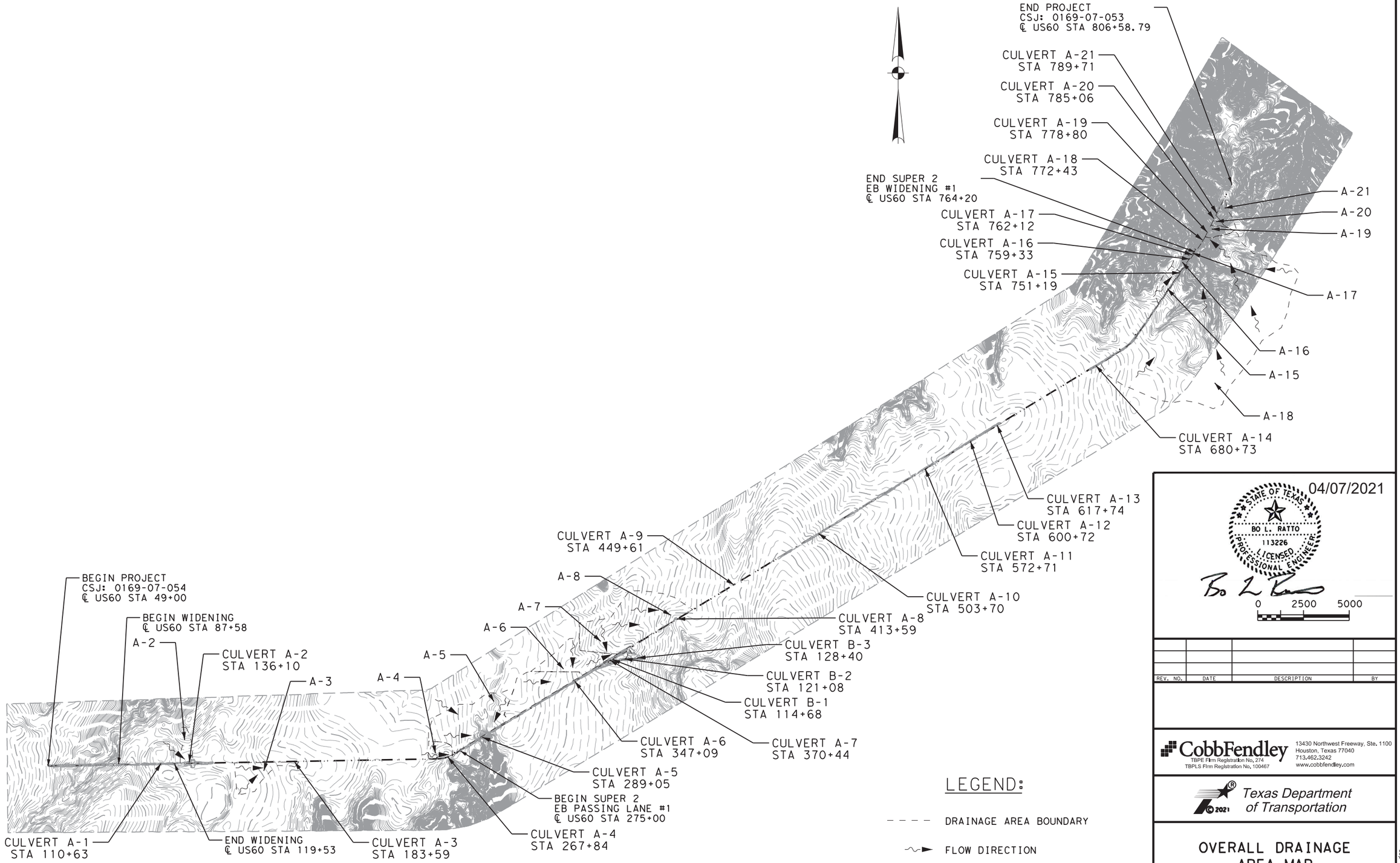


04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 2500 5000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# OVERALL DRAINAGE AREA MAP

SHEET 1 OF 1

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 116 |

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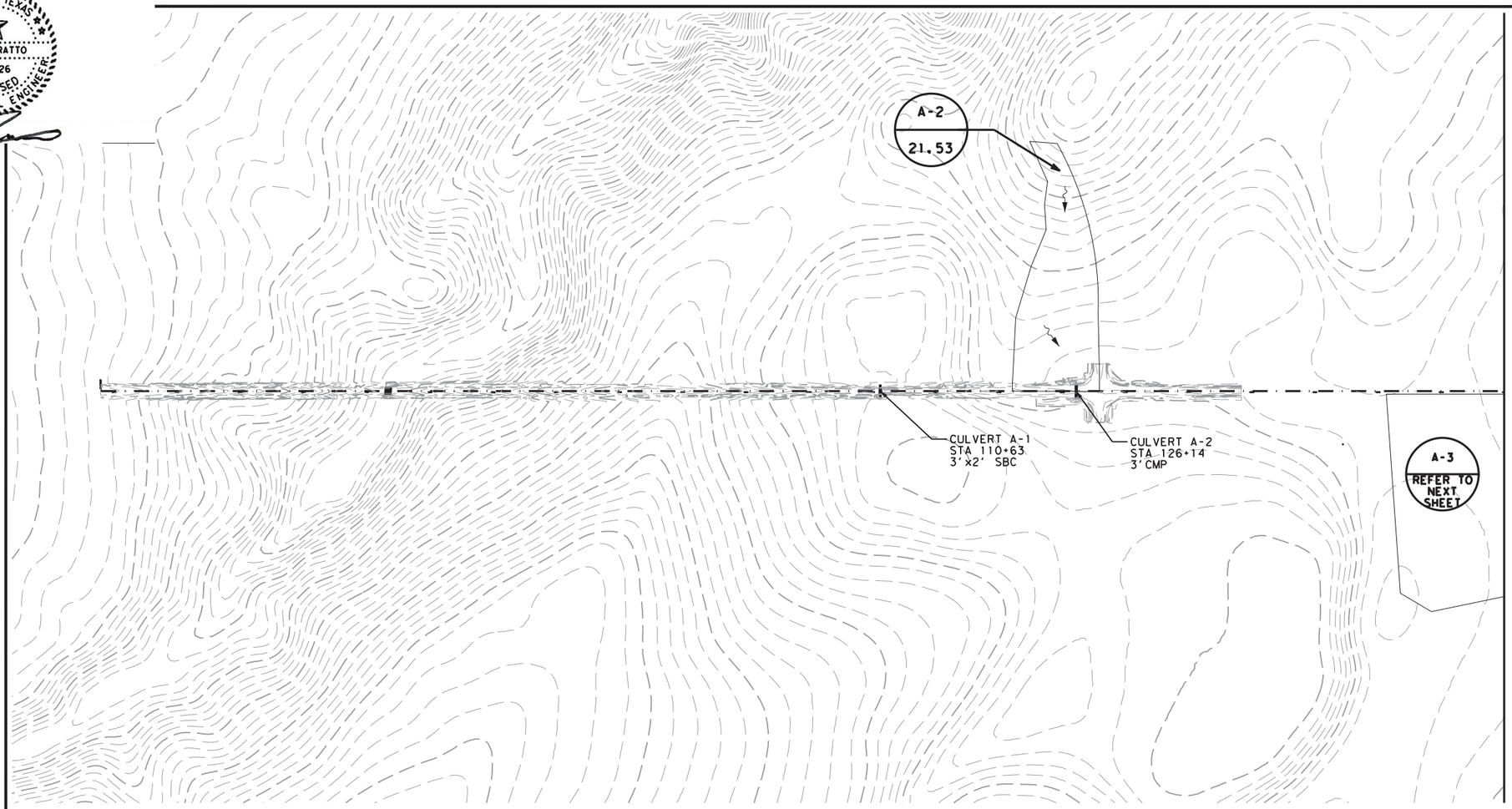
US60_OVERALL-DRAIN-MAP.dgn

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER




LEGEND:

A-XX / XXX.XX — AREA ID / AREA (ACRES)

DRAINAGE AREA BOUNDARY

FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES
BO L. RATTO, PE
113226
TEXAS SERIAL NO.
4/7/2021
DATE

0 250 500 1000

| RATIONAL METHOD | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DA ID | DA AREA | C | | | | WEIGHTED "C" | Tc CALC | Tc | 2 YR | | 5 YR | | 10 YR | | 25 YR | | 50 Yr | | 100 YR | |
| | | | | | | | | | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q |
| | (acres) | PVMT 0.90 | COMM 0.65 | RESID 0.45 | GROUND 0.25 | (none) | (min) | (min) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) |
| A-2 | 21.53 | - | - | - | 21.53 | 0.25 | 24.87 | 25 | 2.6 | 14.1 | 3.5 | 18.9 | 4.2 | 22.4 | 4.9 | 26.2 | 5.6 | 30.3 | 6.1 | 32.6 |

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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Texas Department of Transportation

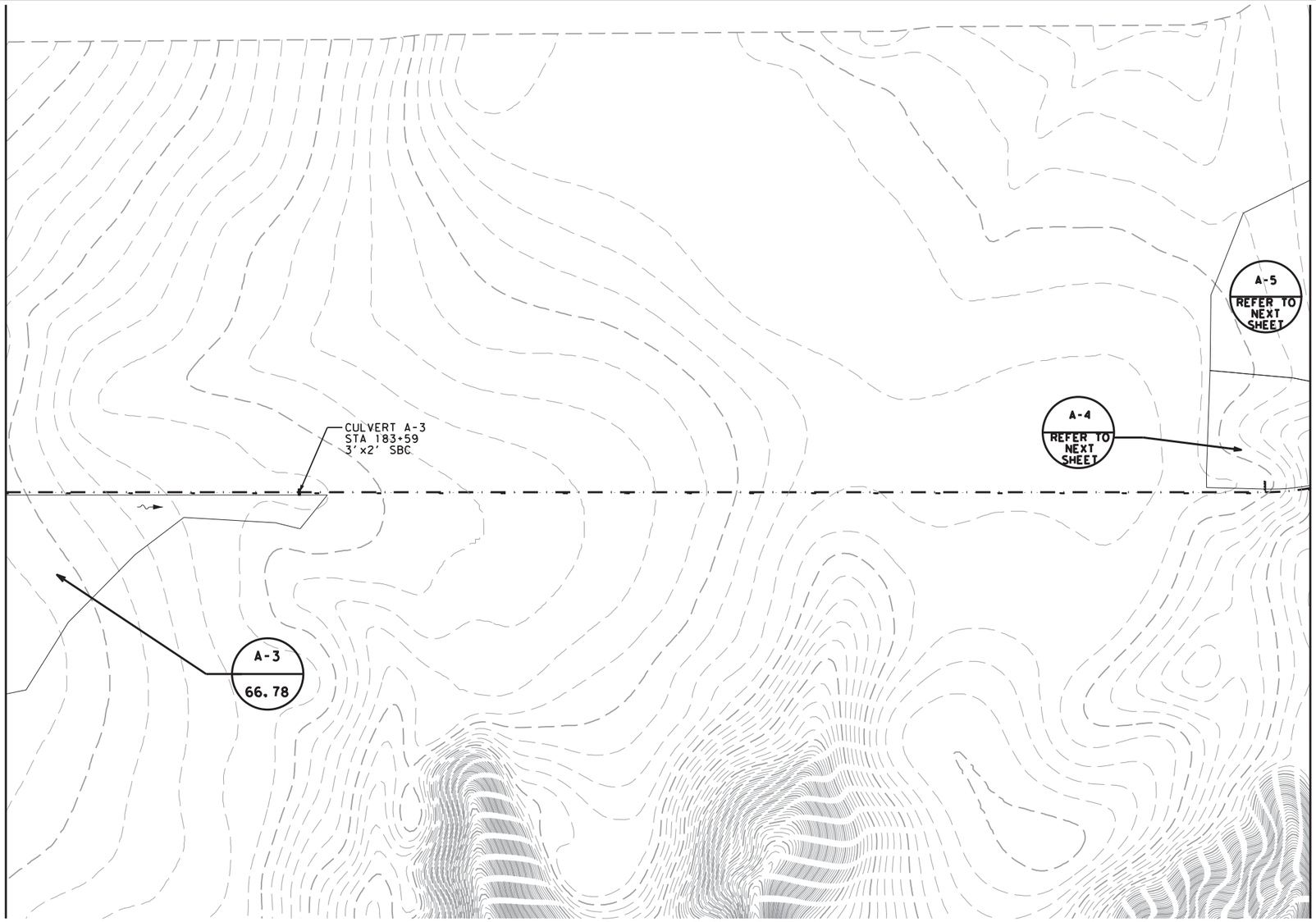
# DRAINAGE AREA MAP

SHEET 1 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 117 |

4/7/2021 7:27:25 AM
F:\Projects\2019\1004_TxDOT_5x5_PS&E\03.USGO_Amarillo\ENG\500-USTN\Sii.3-Drainage\02-Sheets\USGO_DRAIN-MAP-01.dgn

USGO_DRAIN-MAP-01.dgn




LEGEND:

- A-XX / XXX.XX — AREA ID / AREA (ACRES)
- DRAINAGE AREA BOUNDARY
- FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

| DA ID | DA AREA | C | | | | WEIGHTED "C" | Tc CALC | Tc | 2 YR | | 5 YR | | 10 YR | | 25 YR | | 50 Yr | | 100 YR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q |
| | (ACRES) | PVMT 0.90 | COMM 0.65 | RESID 0.45 | GROUND 0.25 | (NONE) | (MIN) | (MIN) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) |
| A-3 | 66.78 | - | - | 9.08 | 57.70 | 0.22 | 97.47 | 97 | 1.0 | 14.9 | 1.4 | 20.1 | 1.7 | 23.9 | 1.9 | 27.8 | 2.2 | 32.1 | 2.4 | 34.4 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 250 500 1000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 2 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 118 |

4/7/2021 7:27:26 AM
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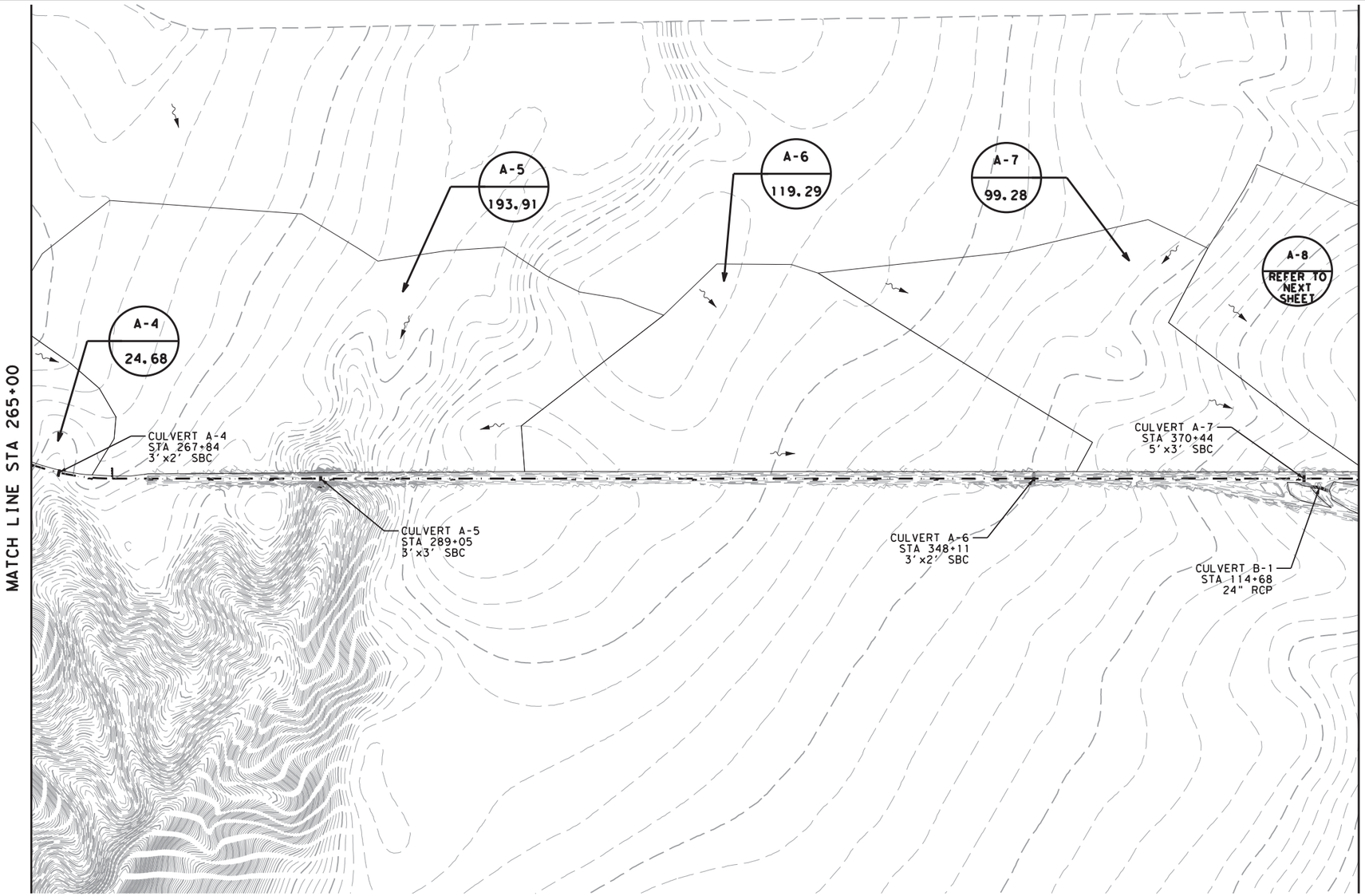
US60_DRAIN-MAP-02.dgn




LEGEND:

- A-XX / XXX.XX — AREA ID / AREA (ACRES)
- DRAINAGE AREA BOUNDARY
- FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

| DA ID | DA AREA | C | | | | WEIGHTED "C" | Tc CALC | Tc | 2 YR | | 5 YR | | 10 YR | | 25 YR | | 50 Yr | | 100 YR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q |
| | (ACRES) | PVMT 0.90 | COMM 0.65 | RESID 0.45 | GROUND 0.25 | (NONE) | (MIN) | (MIN) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) | (IN/HR) | (CFS) |
| A-4 | 24.68 | - | 9.38 | - | 15.30 | 0.40 | 57.89 | 58 | 1.5 | 15.0 | 2.0 | 20.1 | 2.4 | 24.0 | 2.8 | 27.9 | 3.2 | 32.2 | 3.5 | 34.6 |
| A-5 | 193.91 | - | - | - | 193.91 | 0.25 | 57.89 | 58 | 1.5 | 73.3 | 2.0 | 98.3 | 2.4 | 117.1 | 2.8 | 136.1 | 3.2 | 157.4 | 3.5 | 169.0 |
| A-6 | 119.29 | - | - | - | 119.29 | 0.25 | 134.06 | 134.00 | 0.81 | 24.0 | 1.1 | 32.4 | 1.3 | 38.7 | 1.5 | 44.8 | 1.7 | 51.8 | 1.9 | 55.4 |
| A-7 | 99.28 | - | - | - | 99.28 | 0.25 | 66.27 | 66.00 | 1.38 | 34.2 | 1.8 | 45.9 | 2.2 | 54.7 | 2.6 | 63.5 | 3.0 | 73.5 | 3.2 | 78.8 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 250 500 1000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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TBPLS Firm Registration No. 100467
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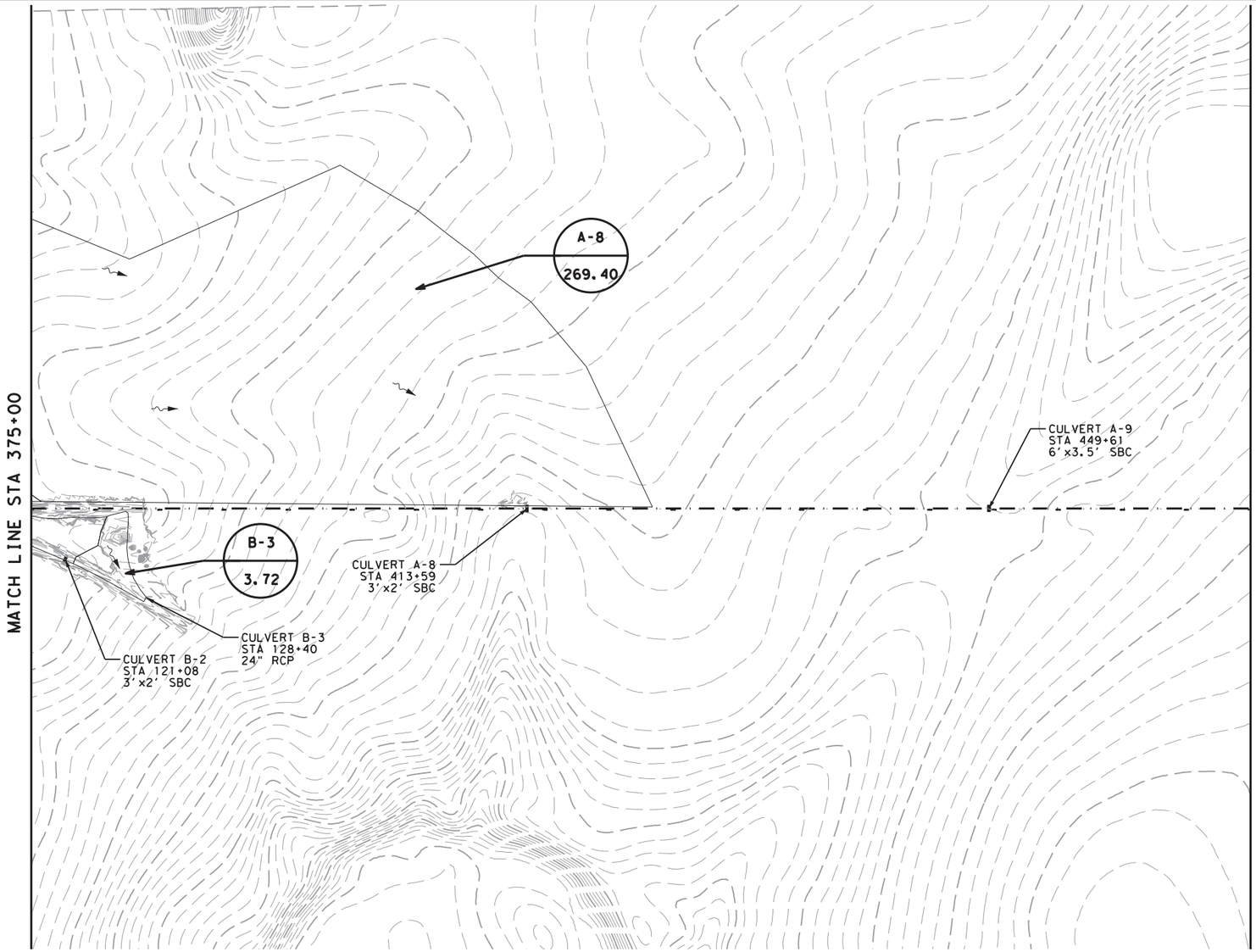
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 3 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. / SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC / 119 |




LEGEND:

- A-XX / XXX.XX — AREA ID / AREA (ACRES)
- DRAINAGE AREA BOUNDARY
- FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

RATIONAL METHOD

| DA ID | DA AREA | C | | | | WEIGHTED "C" | Tc CALC | Tc | 2 YR | | 5 YR | | 10 YR | | 25 YR | | 50 Yr | | 100 YR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q |
| | (acres) | PVMT 0.90 | COMM 0.65 | RESID 0.45 | GROUND 0.25 | (none) | (min) | (min) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) |
| B-3 | 3.72 | - | - | - | 3.72 | 0.25 | 38.66 | 39 | 2.0 | 1.8 | 2.7 | 2.5 | 3.2 | 2.9 | 3.7 | 3.4 | 4.3 | 4.0 | 4.6 | 4.3 |

NRCS RUNOFF CURVE NUMBER HYDROLOGY

| DA ID | HYDROLOGY METHOD | DESIGN FREQUENCY | DRAINAGE AREA | | TC | Weighted CN | PEAK DISCHARGE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AC | SQ MI | MIN | | 2 YR | 5 YR | 10 YR | 25 YR | 50 YR | 100 YR |
| | | | | | | | CFS | CFS | CFS | CFS | CFS | CFS |
| A-8 | SCS UNIT HYDROGRAPH | 25 YR | 269.40 | 0.42 | 121.5 | 75 | 71.25 | 134.60 | 190.84 | 250.09 | 303.62 | 342.64 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 250 500 1000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 4 OF 7

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 120 |

MATCH LINE STA 470+00

MATCH LINE STA 580+00

CULVERT A-10
STA 503+70
3'x2' SBC

CULVERT A-10
STA 503+70
3'x2' SBC

LEGEND:

A-XX — AREA ID

XXX.XX — AREA (ACRES)

DRAINAGE AREA BOUNDARY

FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 250 500 1000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 5 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 121 |

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US60_DRAIN-MAP-05.dgn

MATCH LINE STA 580+00

MATCH LINE STA 690+00

CULVERT A-12
STA 600+72
3'x2' SBC

CULVERT A-13
STA 617+74
3'x2' SBC

CULVERT A-14
STA 680+73
3'x2' SBC

A-18
REFER TO NEXT SHEET

LEGEND:

A-XX — AREA ID
XXX.XX — AREA (ACRES)
DRAINAGE AREA BOUNDARY
FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
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4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 250 500 1000

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |


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Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 6 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 122 |


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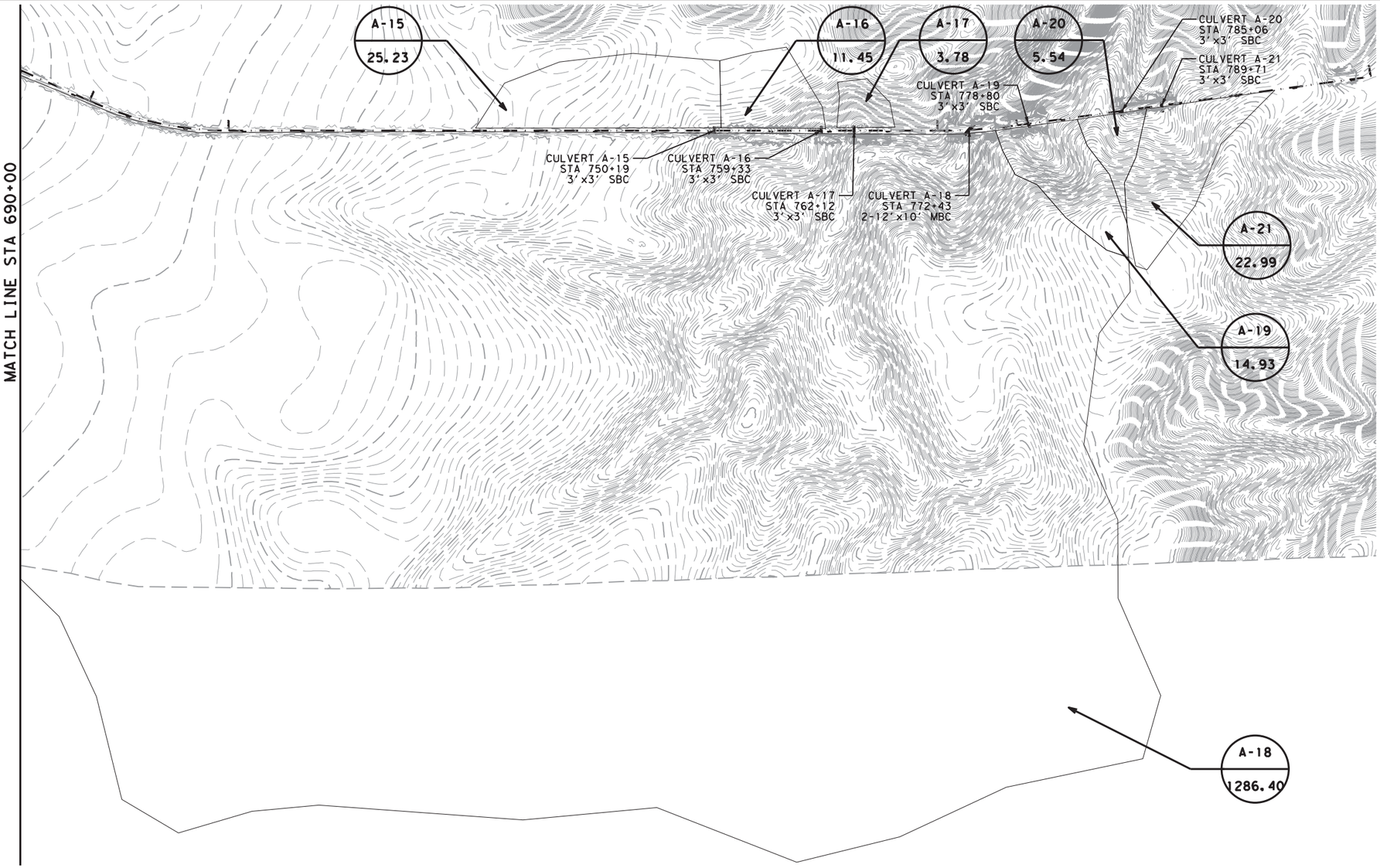
US60_DRAIN-MAP-06.dgn




LEGEND:

- A-XX / XXX.XX — AREA ID / AREA (ACRES)
- DRAINAGE AREA BOUNDARY
- FLOW DIRECTION

NOTES:

1. CONTOURS DISPLAYED REFLECT 2018 USGS PANHANDLE LIDAR DEM.
2. CALCULATIONS ARE BASED ON TxDOT HYDRAULIC DESIGN MANUAL (SEPTEMBER 2019) PROCEDURES FOR THE RATIONAL MATHOD FOR DRAINAGE AREAS UP TO 200 ACRES AND THE NRCS METHOD FOR DRAINAGE AREAS GREATER THAN 200 ACRES.
3. STRUCTURES WITH NO DEFINED DRAINAGGE AREA BOUNDARY ARE EQUALIZERS CULVERTS.
4. TC IS DETERMINED BY THE NRCS METHOD

| 24-HR RAINFALL DEPTH | | | | | |
|---|---|---|---|---|---|
| 2-YR | 5-YR | 10-YR | 25-YR | 50-YR | 100-YR |
| 2.9 | 2.9 | 4.7 | 5.5 | 6.2 | 6.7 |

| DA ID | DA AREA | C | | | | WEIGHTED "C" | Tc CALC | Tc | 2 YR | | 5 YR | | 10 YR | | 25 YR | | 50 Yr | | 100 YR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q | INTENSITY | Q |
| | (acres) | PVMT 0.90 | COMM 0.65 | RESID 0.45 | GROUND 0.25 | (none) | (min) | (min) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) | (in/hr) | (cfs) |
| A-15 | 25.23 | - | - | - | 25.23 | 0.25 | 60.69 | 61 | 1.5 | 9.2 | 2.0 | 12.3 | 2.3 | 14.7 | 2.7 | 17.1 | 3.1 | 19.8 | 3.4 | 21.2 |
| A-16 | 11.45 | - | - | - | 11.45 | 0.25 | 20.69 | 21 | 2.9 | 8.3 | 3.9 | 11.1 | 4.6 | 13.2 | 5.4 | 15.4 | 6.2 | 17.8 | 6.7 | 19.2 |
| A-17 | 3.78 | - | - | - | 3.78 | 0.25 | 11.21 | 11 | 4.0 | 3.8 | 5.3 | 5.0 | 6.3 | 6.0 | 7.4 | 7.0 | 8.5 | 8.1 | 9.2 | 8.7 |
| A-19 | 14.93 | - | - | - | 14.93 | 0.25 | 22.79 | 23 | 2.8 | 10.3 | 3.7 | 13.7 | 4.4 | 16.3 | 5.1 | 19.1 | 5.9 | 22.0 | 6.4 | 23.7 |
| A-20 | 5.54 | - | - | - | 5.54 | 0.25 | 53.65 | 54 | 1.6 | 2.2 | 2.1 | 3.0 | 2.5 | 3.5 | 3.0 | 4.1 | 3.4 | 4.7 | 3.7 | 5.1 |
| A-21 | 22.99 | - | - | - | 22.99 | 0.25 | 131.78 | 132 | 0.8 | 4.7 | 1.1 | 6.3 | 1.3 | 7.5 | 1.5 | 8.7 | 1.8 | 10.1 | 1.9 | 10.8 |

| DA ID | HYDROLOGY METHOD | DESIGN FREQUENCY | DRAINAGE AREA | | TC | Weighted CN | PEAK DISCHARGE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AC | SQ MI | MIN | | 2 YR | 5 YR | 10 YR | 25 YR | 50 YR | 100 YR |
| | | | | | | | CFS | CFS | CFS | CFS | CFS | CFS |
| A-18 | SCS UNIT HYDROGRAPH | 25 YR | 1286.40 | 2.01 | 92.52 | 79 | 551.84 | 962.41 | 1317.55 | 1682.95 | 2010.69 | 2245.15 |

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

04/07/2021

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113226
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Texas Department of Transportation

# DRAINAGE AREA MAP

SHEET 7 OF 7

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 123 |

| CULVERT HYDRAULIC DATA (HY-8, v7.60) | | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 YR (DESIGN) | | | | | | | | | | | |
| US 60 STA | DESCRIPTION | DRAINAGE AREA ID | ALLOW HW FT | FLOW "Q" CFS | HW ELEV FT | HW DEPTH FT | TW ELEV FT | TW DEPTH FT | TW VEL FT/S | BYPASS RUNOFF CFS | |
| 110+63 | (EXIST) 3' x 2' x 46.73' SBC | A-1 | - | - | - | - | - | - | - | - | EQUALIZER CULVERT |
| | (PROP) 3' x 2' x 75.40' SBC | | | | - | - | - | - | - | - | |
| 126+14 | (EXIST) 3' x 119.58' CMP | A-2 | 3215.95 | 44.41 | 3214.55 | 2.81 | 3211.93 | 1.40 | 2.17 | - | |
| 183+59 | (EXIST) 3' x 2' x 57.79' SBC | A-3 | 3211.20 | 27.78 | 3210.95 | 2.40 | 3209.68 | 1.71 | 1.65 | - | |
| 267+84 | (EXIST) 3' x 2' x 60.77' SBC | A-4 | 3198.00 | 20.85 | 3196.58 | 2.50 | 3195.56 | 1.84 | 1.47 | - | |
| 289+05 | (EXIST) 3' x 3' x 119.83' SBC | A-5 | 3187.25 | 136.12 | 3178.66 | 11.92 | 3166.10 | 1.94 | 5.12 | - | |
| | (PROP) 3' x 3' x 135.68' SBC | | | | 3178.66 | 11.92 | 3166.10 | 1.94 | 5.12 | - | |
| 348+11 | (EXIST) 3' x 2' x 53.66' SBC | A-6 | 3189.59 | 44.75 | 3187.96 | 1.33 | 3187.44 | 1.36 | 3.90 | - | |
| | (PROP) 3' x 2' x 70.40' SBC | | | | 3188.00 | 1.28 | 3187.37 | 1.36 | 3.90 | - | |
| 370+44 | (EXIST) 3' x 3' x 71.82' SBC | A-7 | 3186.58 | 66.20 | 3185.56 | 4.32 | 3183.00 | 2.41 | 2.24 | - | |
| | (PROP) 3' x 3' x 79.31' SBC | | | | 3185.57 | 4.33 | 3182.90 | 2.31 | 2.24 | - | |
| 413+59 | (EXIST) 3' x 2' x 58.67' SBC | A-8 | 3163.50 | 250.09 | 3163.52 | 3.79 | 3162.58 | 3.67 | 3.85 | 238.79 | EQUALIZER CULVERT |
| 449+61 | (EXIST) 6' x 3.5' x 54.70' SBC | A-9 | - | - | - | - | - | - | - | - | EQUALIZER CULVERT |
| 503+73 | (EXIST) 3' x 2' x 53.38' SBC | A-10 | - | - | - | - | - | - | - | - | |
| | (PROP) 3' x 2' x 64.00' SBC | | | | - | - | - | - | - | - | EQUALIZER CULVERT |
| 571+74 | (EXIST) 3' x 2' x 49.46' SBC | A-11 | - | - | - | - | - | - | - | - | EQUALIZER CULVERT |
| | (PROP) 3' x 2' x 60.10' SBC | | | | - | - | - | - | - | - | |
| 600+72 | (EXIST) 3' x 2' x 54.08' SBC | A-12 | - | - | - | - | - | - | - | - | |
| | (PROP) 3' x 2' x 62.80' SBC | | | | - | - | - | - | - | - | EQUALIZER CULVERT |
| 617+74 | (EXIST) 3' x 2' x 65.58' SBC | A-13 | - | - | - | - | - | - | - | - | EQUALIZER CULVERT |
| 680+73 | (EXIST) 3' x 3' x 50.34' SBC | A-14 | - | - | - | - | - | - | - | - | EQUALIZER CULVERT |
| 750+19 | (EXIST) 3' x 3' x 77.35' SBC | A-15 | 3082.10 | 17.09 | 3076.70 | 1.65 | 3072.45 | 0.98 | 2.52 | - | |
| 759+33 | (EXIST) 3' x 3' x 84.15' SBC | A-16 | 3055.32 | 15.39 | 3046.21 | 2.05 | 3041.49 | 0.61 | 4.62 | - | |
| 762+12 | (EXIST) 3' x 3' x 117.30' SBC | A-17 | 3047.56 | 7.40 | 3035.05 | 0.87 | 3020.43 | 0.41 | 3.91 | - | |
| 772+43 | (EXIST) 2-12' x 10' x 162.25' MBC | A-18 | 3033.00 | 1682.95 | 3014.03 | 11.11 | 3008.90 | 6.17 | 6.10 | - | |
| 778+80 | (EXIST) 3' x 3' x 149.52' SBC | A-19 | 3041.04 | 19.07 | 3026.82 | 22.48 | 3005.71 | 1.55 | 1.33 | - | |
| 785+06 | (EXIST) 3' x 3' x 94.28' SBC | A-20 | 3055.66 | 4.09 | 3041.39 | 16.26 | 3007.48 | 0.35 | 2.67 | - | |
| 788+55 | (EXIST) 3' x 3' x 132.30' SBC | A-21 | 3061.92 | 8.83 | 3041.79 | 1.05 | 3039.15 | 0.56 | 3.00 | - | |

NOTES:

1. EDGE OF TRAVEL LANE ELEVATION OR DITCH HIGH POINT OR DITCH BLOCK ELEVATION IS USED AS ALLOWABLE HW ELEVATION.
2. HY-8 VERSION 7.60 IS USED FOR HYDRAULIC ANALYSIS OF CULVERTS.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com

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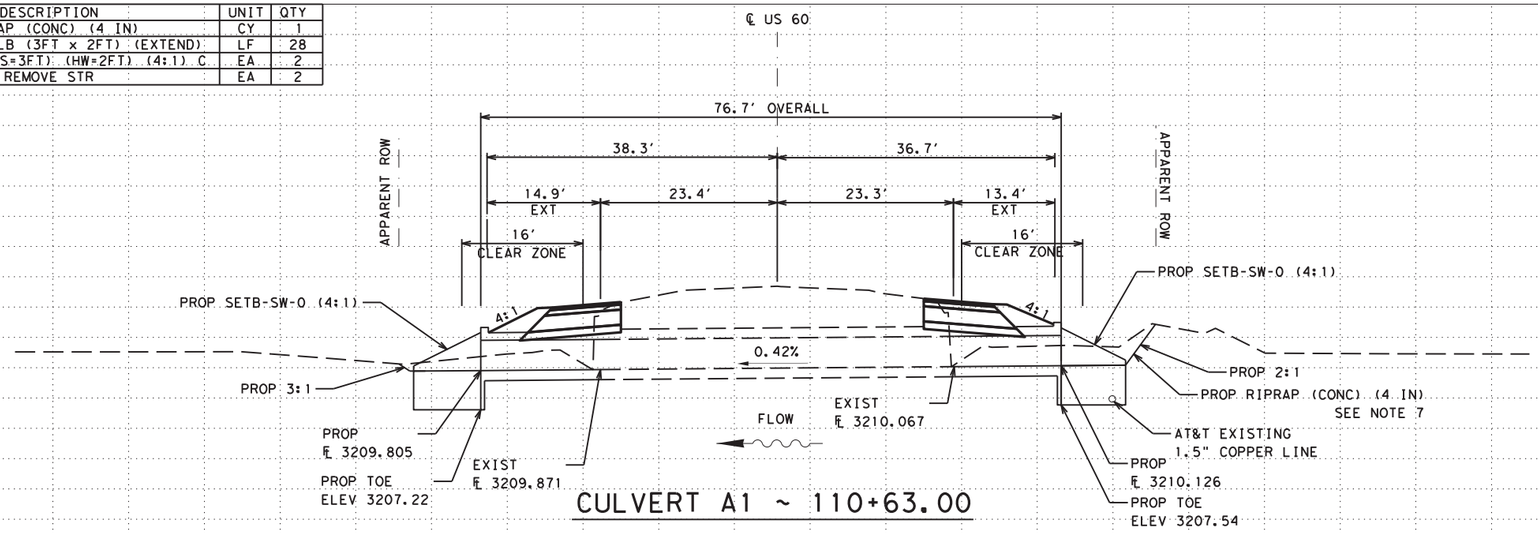
# CULVERT HYDRAULIC DATA SHEET

SHEET 1 OF 1

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 124 |

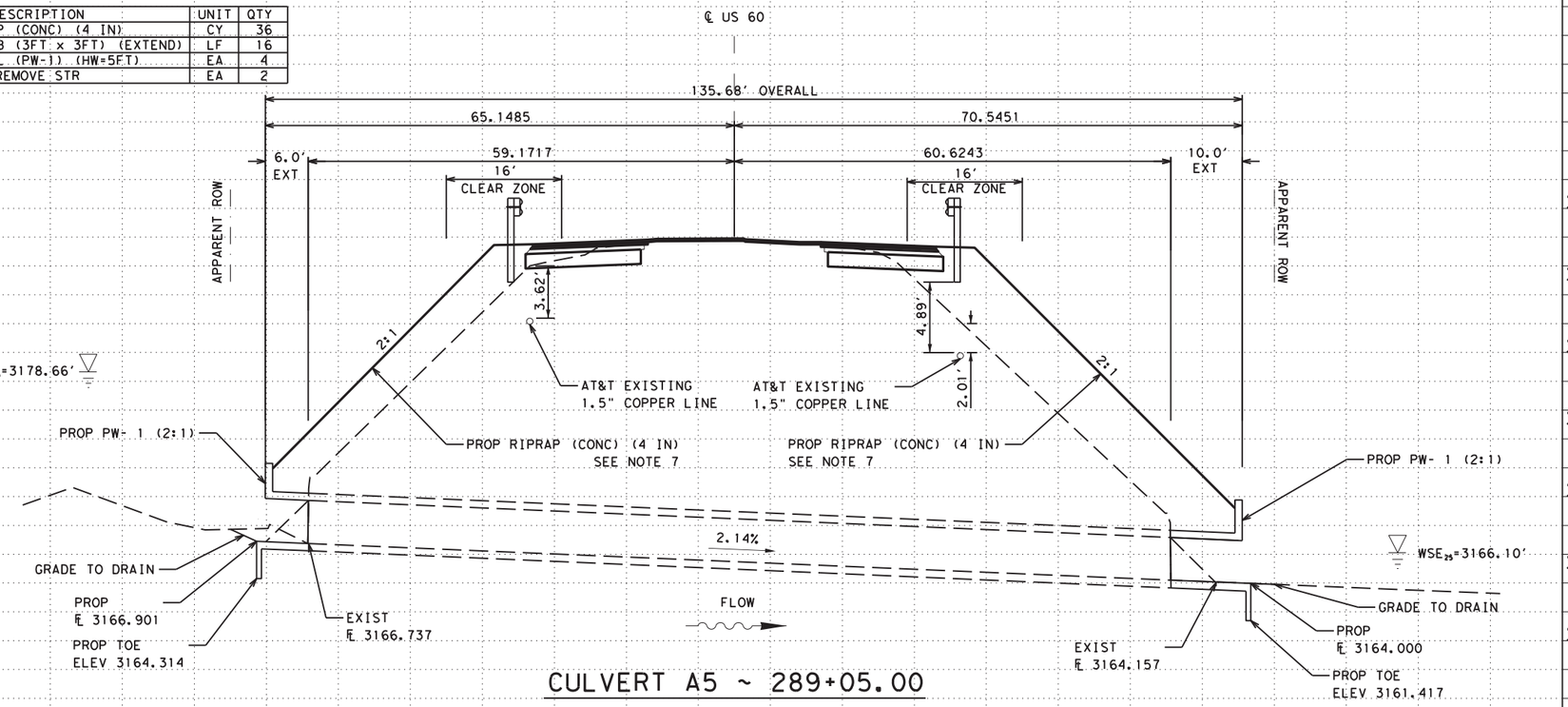
| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 432 | RIPRAP (CONC) (4 IN) | CY | 1 |
| 462 | CONC BOX CULB (3FT x 2FT) (EXTEND) | LF | 28 |
| 467 | SET (TY I) (S=3FT) (HW=2FT) (4:1) C | EA | 2 |
| 496 | REMOVE STR | EA | 2 |




## CULVERT A1 ~ 110+63.00

EXIST: 3' X 2' X 46.7 LF SBC EQUALIZER
PROP: EXTEND 15.7' LT AND 14.2' RT

| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 432 | RIPRAP (CONC) (4 IN) | CY | 36 |
| 462 | CONC BOX CULB (3FT x 3FT) (EXTEND) | LF | 16 |
| 466 | WINGWALL (PW-1) (HW=5FT) | EA | 4 |
| 496 | REMOVE STR | EA | 2 |




## CULVERT A5 ~ 289+05.00

EXIST: 3' X 3' X 119.83 LF SBC W/ FLARED WINGWALLS EACH END
PROP: EXTEND 6.0' LT AND 10.0' RT W/ PW-1 BOTH SIDES

NOTES:

1. DEWATERING MAY BE REQUIRED FOR CULVERT EXTENSIONS.
2. REGRADE PARALLEL DITCHES TO FLOW TO PROPOSED CULVERT END ELEVATIONS AS NECESSARY.
3. REGRADE DITCHLINE TO ENSURE PROPER DRAINAGE.
4. CULVERT EXTENSION SHOULD MATCH THE EXISTING CULVERT FLOWLINES AND SLOPES UNLESS OTHERWISE NOTED.
5. SEE DRAINAGE AREA MAP FOR HYDROLOGIC DATA.
6. SEE CULVERT HYDRAULIC SHEET FOR HYDRAULIC DATA.
7. SEE ROADWAY P&P SHEETS FOR CONCRETE RIPRAP DIMENSIONS.

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113226
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1" = 20' (H) 0 5 10 20(H)
1" = 10' (V) 0 2.5 5 10(V)


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
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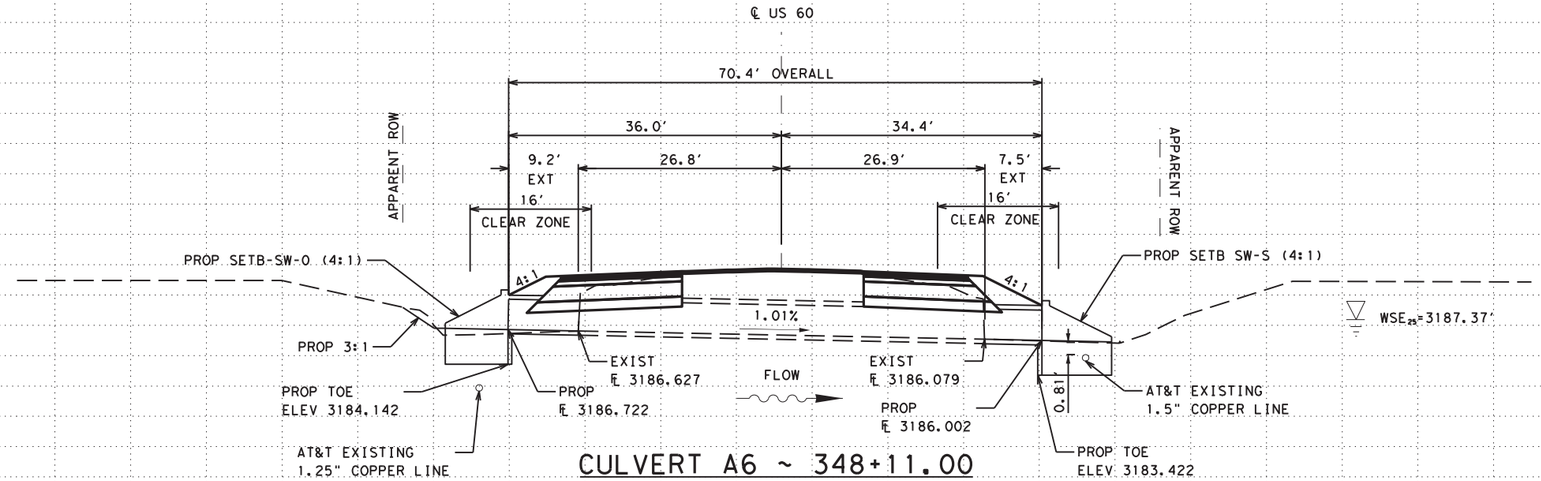
# CULVERT EXTENSION LAYOUTS

SHEET 1 OF 4

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 125 |

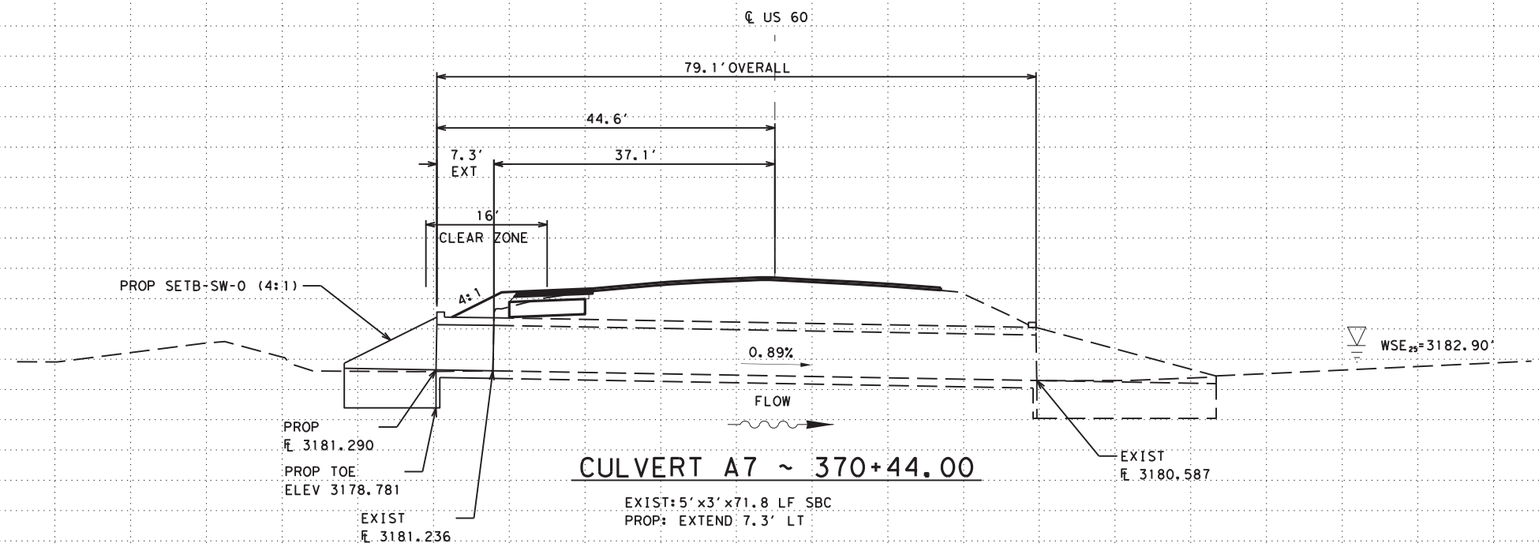
| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 462 | CONC BOX CULB (3FT x 2FT) (EXTEND) | LF | 17 |
| 467 | SET (TY I) (S=3FT) (HW=2FT) (4:1) C | EA | 2 |
| 496 | REMOVE STR | EA | 2 |




## CULVERT A6 ~ 348+11.00

EXIST: 3' X 2' X 53.66 LF SBC
PROP: EXTEND 9.2' LT AND 7.5' RT

| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 462 | CONC BOX CULB (5FT x 3FT) (EXTEND) | LF | 8 |
| 467 | SET (TY I) (S=5FT) (HW=3FT) (4:1) C | EA | 1 |
| 496 | REMOVE STR | EA | 1 |




## CULVERT A7 ~ 370+44.00

EXIST: 5'x3'x71.8 LF SBC
PROP: EXTEND 7.3' LT

120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

NOTES:

1. DEWATERING MAY BE REQUIRED FOR CULVERT EXTENSIONS.
2. REGRADE PARALLEL DITCHES TO FLOW TO PROPOSED CULVERT END ELEVATIONS AS NECESSARY.
3. REGRADE DITCHLINE TO ENSURE PROPER DRAINAGE.
4. CULVERT EXTENSION SHOULD MATCH THE EXISTING CULVERT FLOWLINES AND SLOPES UNLESS OTHERWISE NOTED.
5. SEE DRAINAGE AREA MAP FOR HYDROLOGIC DATA.
6. SEE CULVERT HYDRAULIC SHEET FOR HYDRAULIC DATA.
7. SEE ROADWAY P&P SHEETS FOR CONCRETE RIPRAP DIMENSIONS.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1" = 20' (H) 0 5 10 20(H)
1" = 10' (V) 0 2.5 5 10(V)

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13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
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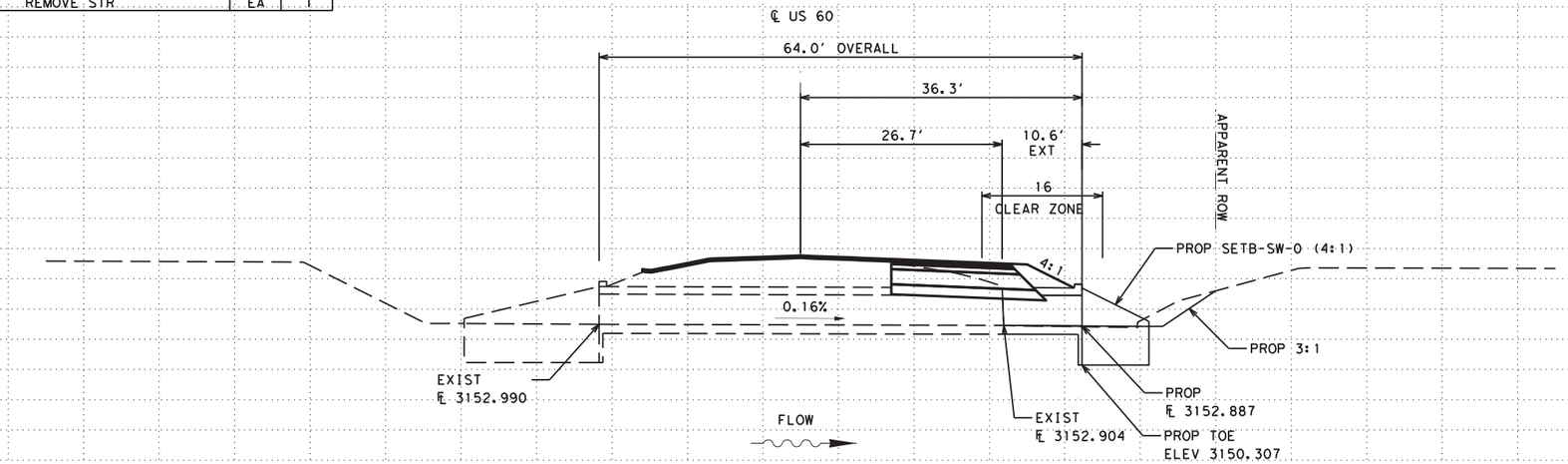
# CULVERT EXTENSION LAYOUTS

SHEET 2 OF 4

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 126 |

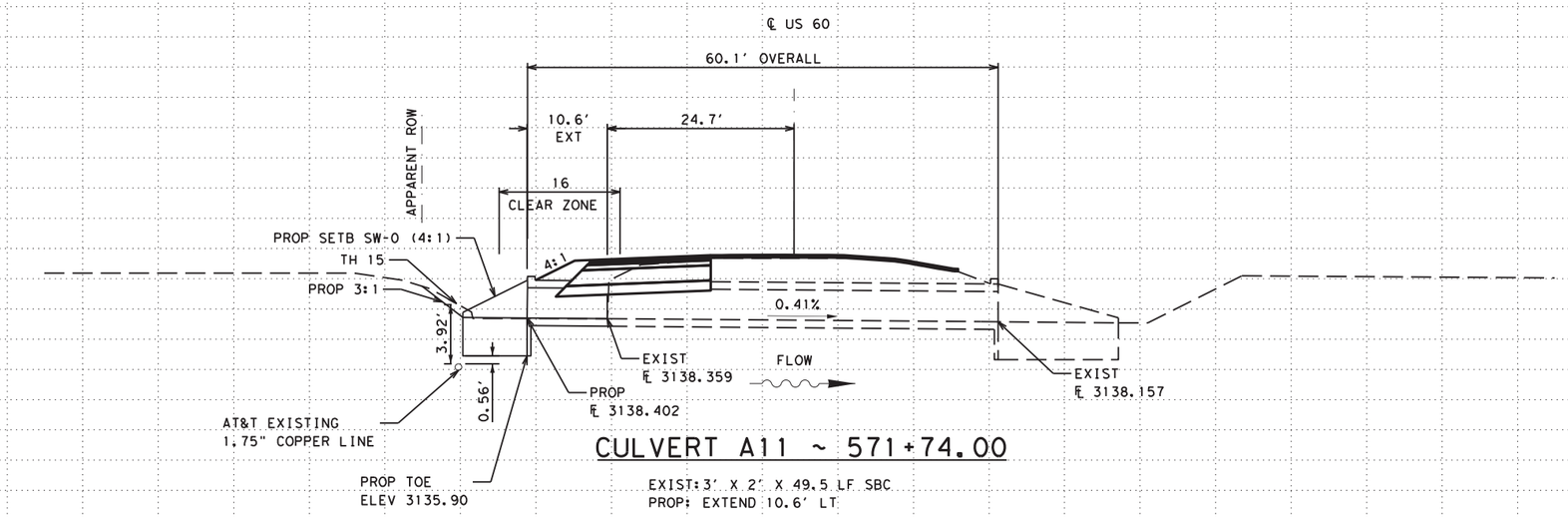
| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 462 | CONC BOX CULB (3FT x 2FT) (EXTEND) | LF | 11 |
| 467 | SET (TY I) (S=3FT) (HW=2FT) (4:1) C | EA | 1 |
| 496 | REMOVE STR | EA | 1 |




## CULVERT A10 ~ 503+73.00

EXIST: 3' X 2' X 53.4 LF SBC
PROP: EXTEND 10.6' RT

| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 462 | CONC BOX CULB (3FT x 2FT) (EXTEND) | LF | 11 |
| 467 | SET (TY I) (S=3FT) (HW=2FT) (4:1) C | EA | 1 |
| 496 | REMOVE STR | EA | 1 |




## CULVERT A11 ~ 571+74.00

EXIST: 3' X 2' X 49.5 LF SBC
PROP: EXTEND 10.6' LT

120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

NOTES:

1. DEWATERING MAY BE REQUIRED FOR CULVERT EXTENSIONS.
2. REGRADE PARALLEL DITCHES TO FLOW TO PROPOSED CULVERT END ELEVATIONS AS NECESSARY.
3. REGRADE DITCHLINE TO ENSURE PROPER DRAINAGE.
4. CULVERT EXTENSION SHOULD MATCH THE EXISTING CULVERT FLOWLINES AND SLOPES UNLESS OTHERWISE NOTED.
5. SEE DRAINAGE AREA MAP FOR HYDROLOGIC DATA.
6. SEE CULVERT HYDRAULIC SHEET FOR HYDRAULIC DATA.
7. SEE ROADWAY P&P SHEETS FOR CONCRETE RIPRAP DIMENSIONS.

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BO L. RATTO
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1" = 20' (H) 0 5 10 20(H)
1" = 10' (V) 0 2.5 5 10(V)


CobbFendley
TBPE Firm Registration No. 274
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13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
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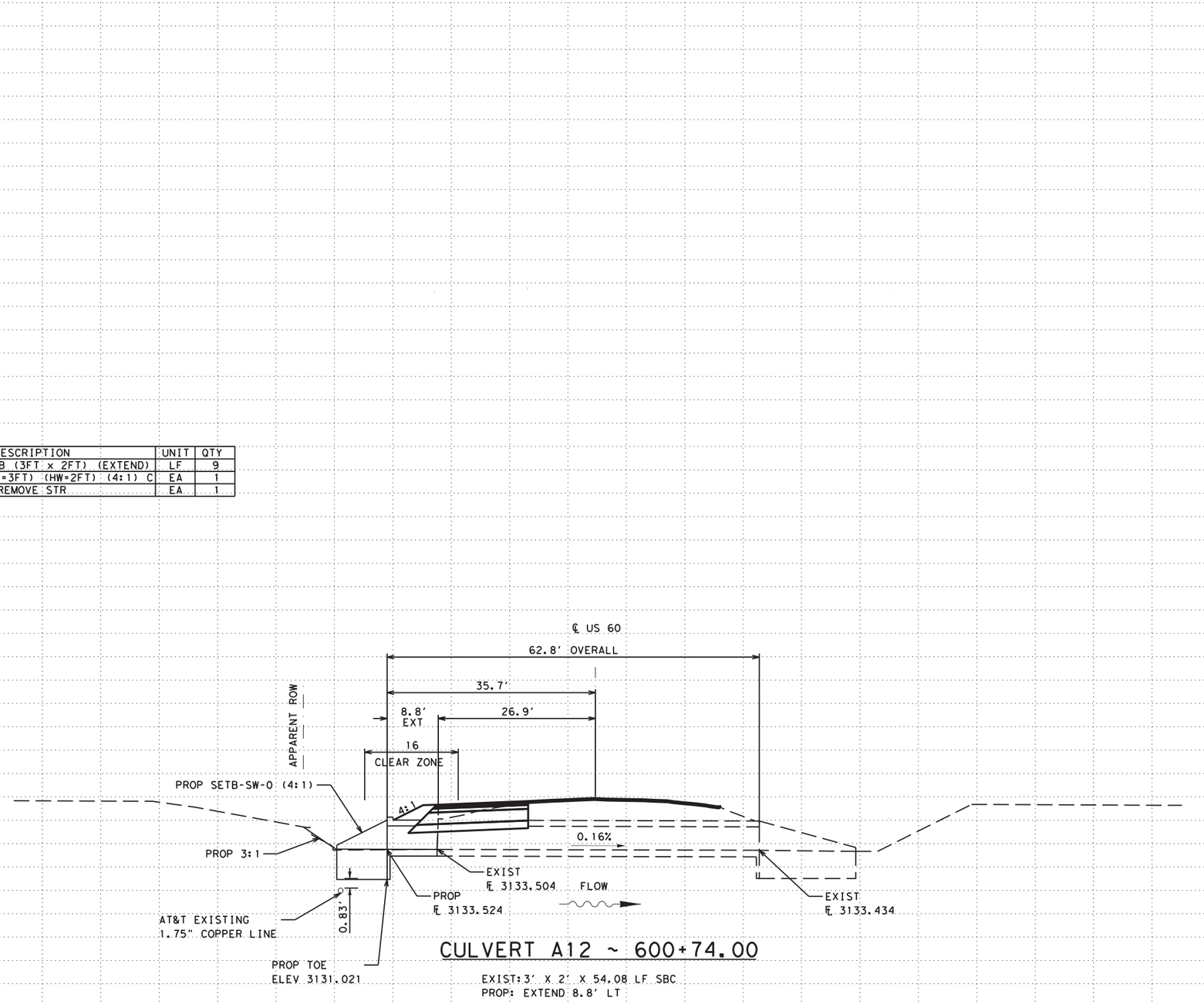
# CULVERT EXTENSION LAYOUTS

SHEET 3 OF 4

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 127 |

| ITEM | DESCRIPTION | UNIT | QTY |
|---|---|---|---|
| 462 | CONC BOX CULB (3FT x 2FT) (EXTEND) | LF | 9 |
| 467 | SET (TY I) (S=3FT) (HW=2FT) (4:1) C | EA | 1 |
| 496 | REMOVE STR | EA | 1 |




## CULVERT A12 ~ 600+74.00

EXIST: 3' X 2' X 54.08 LF SBC
PROP: EXTEND 8.8' LT

NOTES:

1. DEWATERING MAY BE REQUIRED FOR CULVERT EXTENSIONS.
2. REGRADE PARALLEL DITCHES TO FLOW TO PROPOSED CULVERT END ELEVATIONS AS NECESSARY.
3. REGRADE DITCHLINE TO ENSURE PROPER DRAINAGE.
4. CULVERT EXTENSION SHOULD MATCH THE EXISTING CULVERT FLOWLINES AND SLOPES UNLESS OTHERWISE NOTED.
5. SEE DRAINAGE AREA MAP FOR HYDROLOGIC DATA.
6. SEE CULVERT HYDRAULIC SHEET FOR HYDRAULIC DATA.
7. SEE ROADWAY P&P SHEETS FOR CONCRETE RIPRAP DIMENSIONS.

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1" = 20' (H) 0 5 10 20(H)
1" = 10' (V) 0 2.5 5 10(V)


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# CULVERT EXTENSION LAYOUTS

SHEET 4 OF 4

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 128 |

| Culvert Station and/or Creek Name followed by applicable end (Lt, Rt or Both) | Description of Box Culvert<br>No. Spans ~ Span X Height | Max Fill Height<br>(Ft) | Applicable Box Culvert Standard (4) | Applicable Wingwall or End Treatment Standard | Skew Angle<br>(0°,15°, 30° or 45°) | Side Slope or Channel Slope Ratio<br>(SL:1) | T Culvert Top Slab Thickness<br>(In) | U Culvert Wall Thickness<br>(In) | C Estimated Curb Height<br>(Ft) | Hw Height of Wingwall (1)<br>(Ft) | A Curb to End of Wingwall<br>(Ft) | B Offset of End of Wingwall<br>(Ft) | Lw Length of Longest Wingwall<br>(Ft) | Ltw Culvert Toewall Length<br>(Ft) | Atw Anchor Toewall Length<br>(Ft) | Riprap Apron<br>(CY) | Class "C" Conc (Curb) (2)<br>(CY) | Class "C" Conc (Wingwall) (3)<br>(CY) | Total Wingwall Area<br>(SF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STA: 110+63 (CULV - A1) (Both) | 1 ~ 3'x2' | 2.7' | SCC-3&4 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 2.667' | N/A | N/A | 9.333' | 4.167' | 3.000' | 0.0 | 0.0 | 5.4 | N/A |
| STA: 289+05 (CULV - A5) (Both) | 1 ~ 3'x3' | 19' | SCC-3&4 | PW-1 | 0° | 2:1 | 8" | 7" | 2.250' | 5.197' | N/A | N/A | 11.833' | 4.167' | N/A | 0.0 | 0.6 | 18.0 | 280 |
| STA: 348+11 (CULV - A6) (Both) | 1 ~ 3'x2' | 2.8' | SCC-3&4 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 2.667' | N/A | N/A | 9.333' | 4.167' | 3.000' | 0.0 | 0.0 | 5.4 | N/A |
| STA: 370+44 (CULV - A7) (Lt) | 1 ~ 5'x3' | 3.1' | SCC-5&6 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 3.667' | N/A | N/A | 13.333' | 6.167' | 5.000' | 0.0 | 0.1 | 4.3 | N/A |
| STA: 503+73 (CULV - A10) (Rt) | 1 ~ 3'x2' | 1.8' | SCC-3&4 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 2.667' | N/A | N/A | 9.333' | 4.167' | 3.000' | 0.0 | 0.0 | 2.7 | N/A |
| STA: 571+74 (CULV - A11) (Lt) | 1 ~ 3'x2' | 1.9' | SCC-3&4 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 2.667' | N/A | N/A | 9.333' | 4.167' | 3.000' | 0.0 | 0.0 | 2.7 | N/A |
| STA: 600+74 (CULV - A12) (Lt) | 1 ~ 3'x2' | 1.6' | SCC-3&4 | SETB-SW0 | 0° | 4:1 | 8" | 7" | 0.250' | 2.667' | N/A | N/A | 9.333' | 4.167 | 3.000' | 0.0 | 0.0 | 2.7 | N/A |



DATE: 4/7/2021 7:27:36 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511 sheets\bcsstde1-20.dgn

NOTES:
Skew = 0° on SW-0, FW-0, SETB-CD, SETB-SW-0, and SETB-FW-0 standard sheets;
30° maximum for safety end treatment

SL:1 = Horizontal : 1 Vertical
· Side slope at culvert for flared or straight wingwalls.
· Channel slope for parallel wingwalls.
· Slope must be 3:1 or flatter for safety end treatments.

T = Box culvert top slab thickness. Dimension can be found on the applicable box culvert standard sheet.

U = Box culvert wall thickness. Dimension can be found on the applicable box culvert standard sheet.

C = Curb height

See applicable wing or end treatment standard sheets for calculations of Hw, A, B, Lw, Ltw, Atw, and Total Wingwall Area.

Hw = Height of wingwall

A = Distance from face of curb to end of wingwall (not applicable to parallel or straight wingwalls)

B = Offset of end of wingwall (not applicable to parallel or straight wingwalls)

Lw = Length of longest wingwall.

Ltw = Length of culvert toewall (not applicable when using riprap apron)

Atw = Length of anchor toewall (applicable to safety end treatment only)
Total Wingwall Area = Wingwall area in sq. ft. for two wingwalls (one structure end) if Lt or Rt.
Area for four wingwalls (two structure ends) if Both.

(1) Round the wall heights shown to the nearest foot for bidding purposes.

(2) Concrete volume shown is for box culvert curb only. For curbs using the Box Culvert Rail Mounting Details (RAC) standard sheet quantities shown must be increased by a factor of 2.25. If Class S concrete is required for the top slab of the culvert, also provide Class S concrete for the curb. Curb concrete is considered part of the Box Culvert for payment.

(3) Concrete volume shown is total of wings, footings, culvert toewall (if any), anchor toewalls (if any) and wingwall toewalls. Riprap aprons, culverts, and curb quantities are not included.

(4) Regardless of the type of culvert shown on this sheet, the Contractor has the option of furnishing cast-in-place or precast culverts unless otherwise shown elsewhere on the plans. If the Contractor elects to provide culverts of a different type than those shown on this sheet, it is the Contractor's responsibility to make the necessary adjustments to the dimensions and quantities shown.

SPECIAL NOTE:

This sheet is a supplement to the box culvert standards. It is to be filled out by the culvert specifier and provides dimensions for the construction of the box culvert wingwalls and safety end treatments.

An Excel 2010 spreadsheet to assist in completing this table can be downloaded from the Bridge Standards (English) web page on the TxDOT web site. The completed sheet must be signed, sealed, and dated by a licensed Professional Engineer.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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Texas Department of Transportation

Bridge Division Standard

# BOX CULVERT SUPPLEMENT
## WINGS AND END TREATMENTS

BCS

| FILE: bcsstde1-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 129 |

DATE: 4/7/2021 7:27:36 AM
FILE: F:\Projects\2019\1004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\941%20Bridge%20Standards\pwstde01-20.dgn

## TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

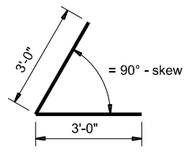
| Dimensions | | | | | Variable Reinforcing | | | | Estimated Quantities per ft of wing (2~wings) (4) | | Estimated Quantities per ft of Toewall (1~toewall) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Wingwall Height Hw | W | X | Y | Z | Bars J1 | | Bars J2 | | | | | |
| | | | | | Size | Spa | Size | Spa | Reinf (Lb/Ft) | Conc (CY/Ft) | Reinf (Lb/Ft) | Conc (CY/Ft) |
| 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)

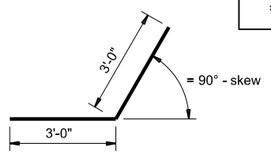
| Bar | Size | No. | Spa |
|---|---|---|---|
| D1 | #6 | ~ | 1'-0" |
| D2 | #6 | ~ | 1'-0" |
| E1 | #4 | ~ | 1'-0" |
| F | #4 | ~ | 1'-0" |
| G | #6 | ~ | 8" |
| M1 | #4 | 4 | ~ |
| P | #4 | ~ | 1'-0" |
| V | #4 | ~ | 1'-0" |

## TABLE OF TOEWALL REINFORCING

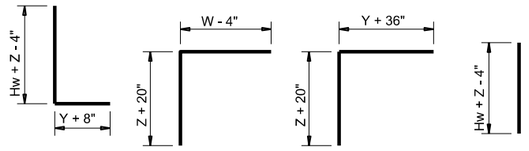
| Bar | Size | No. | Spa |
|---|---|---|---|
| J3 | #4 | ~ | 1'-0" |
| M2 | #4 | 2 | ~ |
| E2 | #4 | ~ | 1'-0" |



BARS D1



BARS D2



BARS J1 BARS J2 BARS J3 BARS V

### WING DIMENSION FORMULAS:

(All values are in feet.)

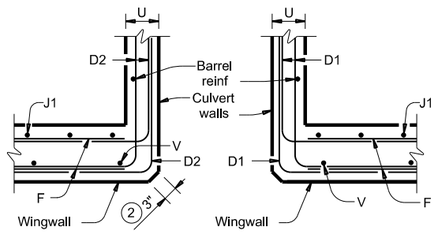
Hw = H + T + C
Lw = (Hw) (SL) ÷ cosine (θ) for Type PW-1
= (Hw - 1') (SL) ÷ cosine (θ) for Type PW-2 and Hw 4' ≤ Hw < 4'
= (Hw - 0.5') (SL) ÷ cosine (θ) for Type PW-2 and Hw 4' ≥ Hw

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ cosine (θ)

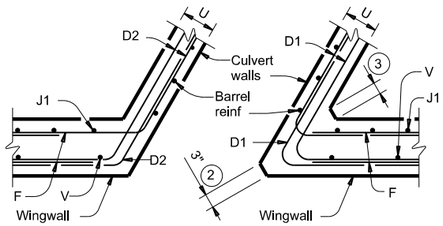
For precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ cosine (θ)
Total Wingwall Area (two wings ~ SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw 4' ≤ Hw < 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw 4' ≥ Hw

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)
θ = Culvert skew

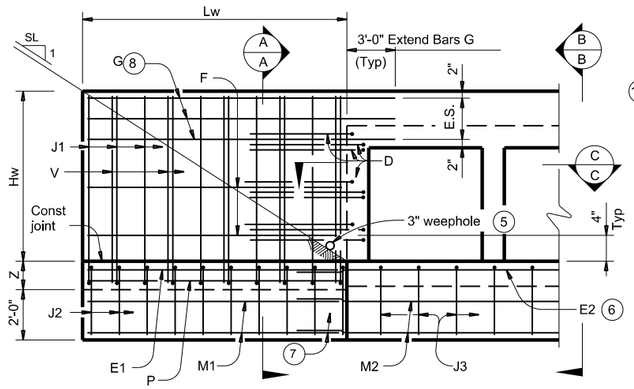
See applicable box culvert standard sheet for S, H, T, and U values.



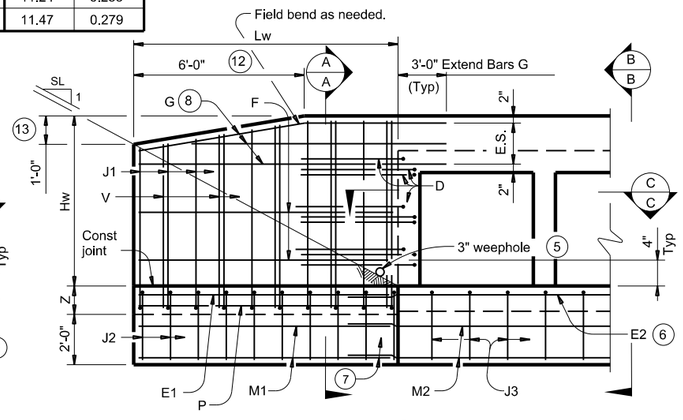
SECTION C-C - PW-1



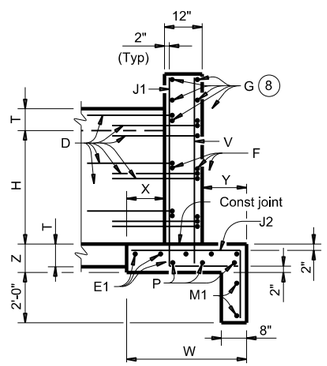
SECTION C-C - PW-2



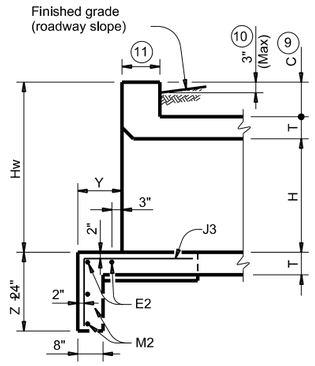
PARTIAL ELEVATION - PW-1



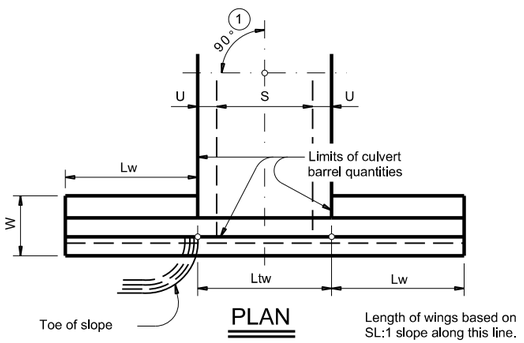
PARTIAL ELEVATION - PW-2



SECTION A-A
(Showing wing reinforcement.)



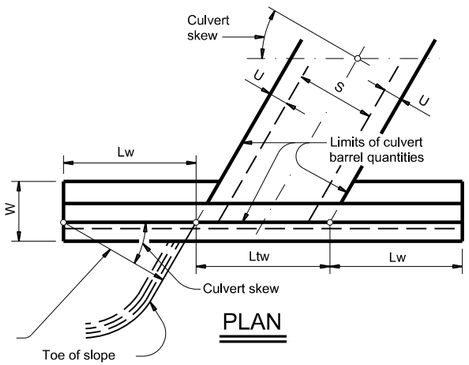
SECTION B-B
(Showing wing reinforcement.)



PLAN

Length of wings based on SL:1 slope along this line.

DETAILS FOR NON-SKEWED BOX CULVERTS



PLAN

DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° skew.)

1. Skew = 0°
2. At discharge end, chamfer may be ¾" minimum.
3. For 15° skew ~ 1"
   For 30° skew ~ 2"
   For 45° skew ~ 3"
4. 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.
5. Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
6. Extend Bars E2 1'-6" minimum into the wingwall footing.
7. Lap Bars M1 1'-6" minimum with Bars M2.
8. Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
9. 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.
10. 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.
11. 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elswhere in the plans.
12. 3'-0" for Hw < 4'.
13. 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 reinforing 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.

Texas Department of Transportation

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 |
|---|---|---|---|---|
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 130 |

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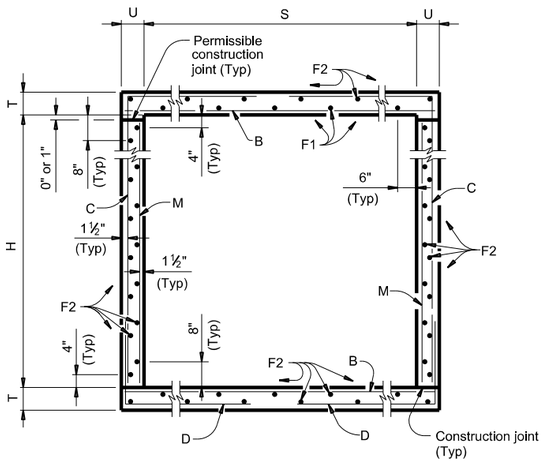
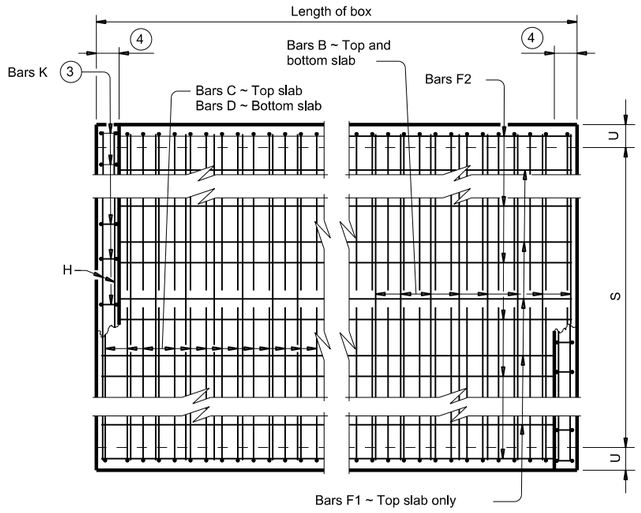
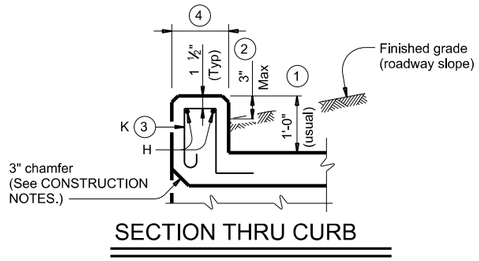



TYPICAL SECTION




PLAN OF REINF STEEL




SECTION THRU CURB

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.

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.

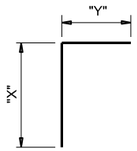
## MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
· culverts with overlay,
· culverts with 1-to-2 course surface treatment, or
· culverts with the top slab as the final riding surface.
Provide bar laps, where required, as follows:
· Uncoated or galvanized ~ #4 = 1'-8" Min
· Uncoated or galvanized ~ #5 = 2'-1" Min

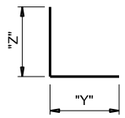
## GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications 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.

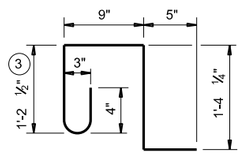
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.




BARS C




BARS D




BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

# SINGLE BOX CULVERTS CAST-IN-PLACE
## 0' TO 30' FILL

## SCC-3 & 4

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| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 04/2021 Updated X values. | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 131 |

| SECTION DIMENSIONS | | | | (5) FILL HEIGHT | BILLS OF REINFORCING STEEL (For Box Length = 40 feet) | | | | | | | | | | | | | | | | | | | | | | | | | | | QUANTITIES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Bars B | | | | | Bars C | | | | | | | Bars D | | | | | | | Bars M ~ #4 | | | | Bars F1 ~ #4 at 18" Spa | | | Bars F2 ~ #4 at 18" 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. | Spa | Length | Weight | No. | Length | Wt | No. | Length | Weight | Length | Wt | No. | Wt | Conc (CY) | Reinf (Lb) | Conc (CY) | Reinf (Lb) | Conc (CY) | Reinf (Lb) |
| 3' - 0" | 2' - 0" | 8" | 7" | 30' | 108 | #5 | 9" | 3' - 11" | 441 | 108 | #4 | 9" | 5' - 4" | 385 | 2' - 6" | 2' - 10" | 108 | #4 | 9" | 5' - 1" | 367 | 2' - 10" | 2' - 3" | 108 | 9" | 2' - 0" | 144 | 3 | 39' - 9" | 80 | 19 | 39' - 9" | 505 | 3' - 11" | 10 | 10 | 28 | 0.292 | 48.1 | 0.3 | 38 | 12.0 | 1,960 |
| 3' - 0" | 3' - 0" | 8" | 7" | 30' | 108 | #5 | 9" | 3' - 11" | 441 | 108 | #4 | 9" | 6' - 4" | 457 | 3' - 6" | 2' - 10" | 108 | #4 | 9" | 5' - 1" | 367 | 2' - 10" | 2' - 3" | 108 | 9" | 3' - 0" | 216 | 3 | 39' - 9" | 80 | 23 | 39' - 9" | 611 | 3' - 11" | 10 | 10 | 28 | 0.335 | 54.3 | 0.3 | 38 | 13.7 | 2,210 |
| 4' - 0" | 2' - 0" | 8" | 7" | 30' | 108 | #5 | 9" | 4' - 11" | 554 | 162 | #4 | 6" | 5' - 8" | 613 | 2' - 6" | 3' - 2" | 162 | #4 | 6" | 5' - 5" | 586 | 3' - 2" | 2' - 3" | 108 | 9" | 2' - 0" | 144 | 3 | 39' - 9" | 80 | 21 | 39' - 9" | 558 | 4' - 11" | 13 | 12 | 33 | 0.342 | 63.4 | 0.4 | 46 | 14.1 | 2,581 |
| 4' - 0" | 3' - 0" | 8" | 7" | 30' | 108 | #5 | 9" | 4' - 11" | 554 | 162 | #4 | 6" | 6' - 8" | 721 | 3' - 6" | 3' - 2" | 162 | #4 | 6" | 5' - 5" | 586 | 3' - 2" | 2' - 3" | 108 | 9" | 3' - 0" | 216 | 3 | 39' - 9" | 80 | 25 | 39' - 9" | 664 | 4' - 11" | 13 | 12 | 33 | 0.385 | 70.5 | 0.4 | 46 | 15.8 | 2,867 |
| 4' - 0" | 4' - 0" | 8" | 7" | 30' | 108 | #5 | 9" | 4' - 11" | 554 | 162 | #4 | 6" | 7' - 8" | 830 | 4' - 6" | 3' - 2" | 162 | #4 | 6" | 5' - 5" | 586 | 3' - 2" | 2' - 3" | 108 | 9" | 4' - 0" | 289 | 3 | 39' - 9" | 80 | 25 | 39' - 9" | 664 | 4' - 11" | 13 | 12 | 33 | 0.428 | 75.1 | 0.4 | 46 | 17.5 | 3,049 |

(5) For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.

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HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

# SINGLE BOX CULVERTS CAST-IN-PLACE
## 0' TO 30' FILL

## SCC-3 & 4

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| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 04/2021 Updated X values. | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 132 |

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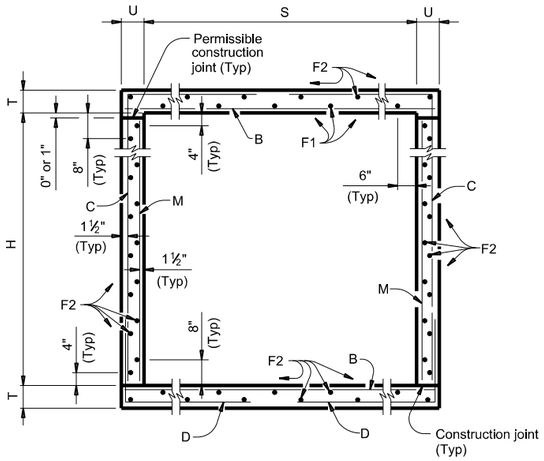
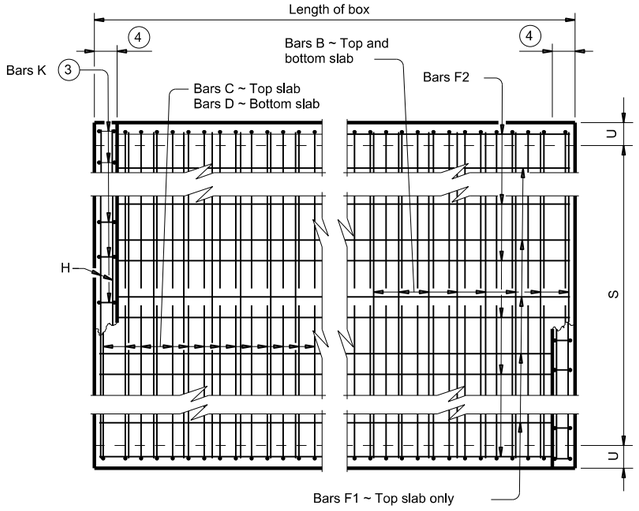
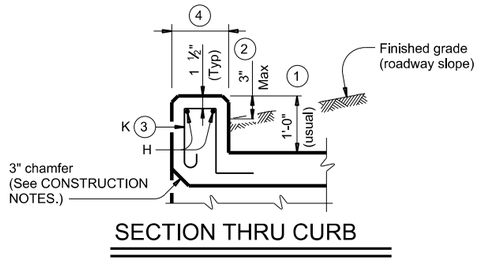



TYPICAL SECTION




PLAN OF REINF STEEL




SECTION THRU CURB

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.

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.

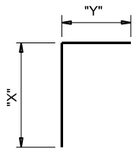
## MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
· culverts with overlay,
· culverts with 1-to-2 course surface treatment, or
· culverts with the top slab as the final riding surface.
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

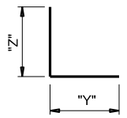
## GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications 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.

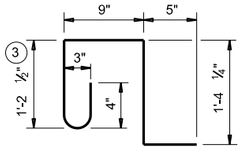
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.




BARS C




BARS D




BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

# SINGLE BOX CULVERTS CAST-IN-PLACE
## 0' TO 30' FILL

# SCC-5 & 6

| | | | | | |
|---|---|---|---|---|---|
| FILE: scc56ste-21.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT | |
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY | |
| REVISIONS | 0169 | 07 | 053, ETC | US60 | |
| 04/2021 Updated X values. | DIST | COUNTY | | SHEET NO. | |
| | AMA | GRAY | | 133 | |

| SECTION DIMENSIONS | | | | ⑤ FILL HEIGHT | BILLS OF REINFORCING STEEL (For Box Length = 40 feet) | | | | | | | | | | | | | | | | | | | | | | | | | | | | QUANTITIES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Bars B | | | | | Bars C | | | | | | | Bars D | | | | | | | Bars M ~ #4 | | | | Bars F1 ~ #4 at 18" Spa | | | Bars F2 ~ #4 at 18" 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. | Spa | Length | Weight | No. | Length | Wt | No. | Length | Weight | Length | Wt | No. | Wt | Conc (CY) | Reinf (Lb) | Conc (CY) | Reinf (Lb) | Conc (CY) | Reinf (Lb) |
| 5' - 0" | 2' - 0" | 8" | 7" | 26' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 6' - 3" | 704 | 2' - 6" | 3' - 9" | 108 | #5 | 9" | 6' - 5" | 723 | 3' - 9" | 2' - 8" | 108 | 9" | 2' - 0" | 144 | 4 | 39' - 9" | 106 | 22 | 39' - 9" | 584 | 5' - 11" | 16 | 14 | 39 | 0.391 | 80.5 | 0.5 | 55 | 16.1 | 3,276 |
| 5' - 0" | 2' - 0" | 9" | 7" | 30' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 6' - 4" | 713 | 2' - 7" | 3' - 9" | 108 | #5 | 9" | 6' - 6" | 732 | 3' - 9" | 2' - 9" | 108 | 9" | 2' - 0" | 144 | 4 | 39' - 9" | 106 | 22 | 39' - 9" | 584 | 5' - 11" | 16 | 14 | 39 | 0.429 | 81.0 | 0.5 | 55 | 17.6 | 3,294 |
| 5' - 0" | 3' - 0" | 8" | 7" | 26' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 7' - 3" | 817 | 3' - 6" | 3' - 9" | 108 | #5 | 9" | 6' - 5" | 723 | 3' - 9" | 2' - 8" | 108 | 9" | 3' - 0" | 216 | 4 | 39' - 9" | 106 | 26 | 39' - 9" | 690 | 5' - 11" | 16 | 14 | 39 | 0.434 | 87.8 | 0.5 | 55 | 17.8 | 3,567 |
| 5' - 0" | 3' - 0" | 9" | 7" | 30' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 7' - 4" | 826 | 3' - 7" | 3' - 9" | 108 | #5 | 9" | 6' - 6" | 732 | 3' - 9" | 2' - 9" | 108 | 9" | 3' - 0" | 216 | 4 | 39' - 9" | 106 | 26 | 39' - 9" | 690 | 5' - 11" | 16 | 14 | 39 | 0.472 | 88.3 | 0.5 | 55 | 19.3 | 3,585 |
| 5' - 0" | 4' - 0" | 8" | 7" | 26' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 8' - 3" | 929 | 4' - 6" | 3' - 9" | 108 | #5 | 9" | 6' - 5" | 723 | 3' - 9" | 2' - 8" | 108 | 9" | 4' - 0" | 289 | 4 | 39' - 9" | 106 | 26 | 39' - 9" | 690 | 5' - 11" | 16 | 14 | 39 | 0.477 | 92.4 | 0.5 | 55 | 19.5 | 3,752 |
| 5' - 0" | 4' - 0" | 9" | 7" | 30' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 8' - 4" | 939 | 4' - 7" | 3' - 9" | 108 | #5 | 9" | 6' - 6" | 732 | 3' - 9" | 2' - 9" | 108 | 9" | 4' - 0" | 289 | 4 | 39' - 9" | 106 | 26 | 39' - 9" | 690 | 5' - 11" | 16 | 14 | 39 | 0.515 | 92.9 | 0.5 | 55 | 21.1 | 3,771 |
| 5' - 0" | 5' - 0" | 8" | 7" | 26' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 9' - 3" | 1,042 | 5' - 6" | 3' - 9" | 108 | #5 | 9" | 6' - 5" | 723 | 3' - 9" | 2' - 8" | 108 | 9" | 5' - 0" | 361 | 4 | 39' - 9" | 106 | 30 | 39' - 9" | 797 | 5' - 11" | 16 | 14 | 39 | 0.521 | 99.7 | 0.5 | 55 | 21.3 | 4,044 |
| 5' - 0" | 5' - 0" | 9" | 7" | 30' | 108 | #6 | 9" | 5' - 11" | 960 | 108 | #5 | 9" | 9' - 4" | 1,051 | 5' - 7" | 3' - 9" | 108 | #5 | 9" | 6' - 6" | 732 | 3' - 9" | 2' - 9" | 108 | 9" | 5' - 0" | 361 | 4 | 39' - 9" | 106 | 30 | 39' - 9" | 797 | 5' - 11" | 16 | 14 | 39 | 0.559 | 100.2 | 0.5 | 55 | 22.8 | 4,062 |
| 6' - 0" | 2' - 0" | 8" | 7" | 20' | 108 | #6 | 9" | 6' - 11" | 1,122 | 108 | #5 | 9" | 6' - 7" | 742 | 2' - 6" | 4' - 1" | 108 | #5 | 9" | 6' - 9" | 760 | 4' - 1" | 2' - 8" | 108 | 9" | 2' - 0" | 144 | 5 | 39' - 9" | 133 | 25 | 39' - 9" | 664 | 6' - 11" | 18 | 16 | 45 | 0.440 | 89.1 | 0.5 | 63 | 18.1 | 3,628 |
| 6' - 0" | 2' - 0" | 9" | 7" | 26' | 108 | #6 | 9" | 6' - 11" | 1,122 | 162 | #5 | 6" | 6' - 8" | 1,126 | 2' - 7" | 4' - 1" | 162 | #5 | 6" | 6' - 10" | 1,155 | 4' - 1" | 2' - 9" | 108 | 9" | 2' - 0" | 144 | 5 | 39' - 9" | 133 | 25 | 39' - 9" | 664 | 6' - 11" | 18 | 16 | 45 | 0.485 | 108.6 | 0.5 | 63 | 19.9 | 4,407 |
| 6' - 0" | 2' - 0" | 10" | 8" | 30' | 108 | #6 | 9" | 7' - 1" | 1,149 | 162 | #5 | 6" | 6' - 10" | 1,155 | 2' - 8" | 4' - 2" | 162 | #5 | 6" | 7' - 0" | 1,183 | 4' - 2" | 2' - 10" | 82 | 12" | 2' - 0" | 110 | 5 | 39' - 9" | 133 | 25 | 39' - 9" | 664 | 7' - 1" | 19 | 18 | 50 | 0.551 | 109.9 | 0.5 | 69 | 22.6 | 4,463 |
| 6' - 0" | 3' - 0" | 8" | 7" | 20' | 108 | #6 | 9" | 6' - 11" | 1,122 | 108 | #5 | 9" | 7' - 7" | 854 | 3' - 6" | 4' - 1" | 108 | #5 | 9" | 6' - 9" | 760 | 4' - 1" | 2' - 8" | 108 | 9" | 3' - 0" | 216 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 6' - 11" | 18 | 16 | 45 | 0.484 | 96.4 | 0.5 | 63 | 19.9 | 3,918 |
| 6' - 0" | 3' - 0" | 9" | 7" | 26' | 108 | #6 | 9" | 6' - 11" | 1,122 | 162 | #5 | 6" | 7' - 8" | 1,295 | 3' - 7" | 4' - 1" | 162 | #5 | 6" | 6' - 10" | 1,155 | 4' - 1" | 2' - 9" | 108 | 9" | 3' - 0" | 216 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 6' - 11" | 18 | 16 | 45 | 0.528 | 117.3 | 0.5 | 63 | 21.6 | 4,754 |
| 6' - 0" | 3' - 0" | 10" | 8" | 30' | 108 | #6 | 9" | 7' - 1" | 1,149 | 162 | #5 | 6" | 7' - 10" | 1,324 | 3' - 8" | 4' - 2" | 162 | #5 | 6" | 7' - 0" | 1,183 | 4' - 2" | 2' - 10" | 82 | 12" | 3' - 0" | 164 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 7' - 1" | 19 | 18 | 50 | 0.601 | 118.1 | 0.5 | 69 | 24.6 | 4,792 |
| 6' - 0" | 4' - 0" | 8" | 7" | 20' | 108 | #6 | 9" | 6' - 11" | 1,122 | 108 | #5 | 9" | 8' - 7" | 967 | 4' - 6" | 4' - 1" | 108 | #5 | 9" | 6' - 9" | 760 | 4' - 1" | 2' - 8" | 108 | 9" | 4' - 0" | 289 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 6' - 11" | 18 | 16 | 45 | 0.527 | 101.0 | 0.5 | 63 | 21.6 | 4,104 |
| 6' - 0" | 4' - 0" | 9" | 7" | 26' | 108 | #6 | 9" | 6' - 11" | 1,122 | 162 | #5 | 6" | 8' - 8" | 1,464 | 4' - 7" | 4' - 1" | 162 | #5 | 6" | 6' - 10" | 1,155 | 4' - 1" | 2' - 9" | 108 | 9" | 4' - 0" | 289 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 6' - 11" | 18 | 16 | 45 | 0.571 | 123.3 | 0.5 | 63 | 23.4 | 4,996 |
| 6' - 0" | 4' - 0" | 10" | 8" | 30' | 108 | #6 | 9" | 7' - 1" | 1,149 | 162 | #5 | 6" | 8' - 10" | 1,493 | 4' - 8" | 4' - 2" | 162 | #5 | 6" | 7' - 0" | 1,183 | 4' - 2" | 2' - 10" | 82 | 12" | 4' - 0" | 219 | 5 | 39' - 9" | 133 | 29 | 39' - 9" | 770 | 7' - 1" | 19 | 18 | 50 | 0.650 | 123.7 | 0.5 | 69 | 26.5 | 5,016 |
| 6' - 0" | 5' - 0" | 8" | 7" | 20' | 108 | #6 | 9" | 6' - 11" | 1,122 | 108 | #5 | 9" | 9' - 7" | 1,080 | 5' - 6" | 4' - 1" | 108 | #5 | 9" | 6' - 9" | 760 | 4' - 1" | 2' - 8" | 108 | 9" | 5' - 0" | 361 | 5 | 39' - 9" | 133 | 33 | 39' - 9" | 876 | 6' - 11" | 18 | 16 | 45 | 0.570 | 108.3 | 0.5 | 63 | 23.3 | 4,395 |
| 6' - 0" | 5' - 0" | 9" | 7" | 26' | 108 | #6 | 9" | 6' - 11" | 1,122 | 162 | #5 | 6" | 9' - 8" | 1,633 | 5' - 7" | 4' - 1" | 162 | #5 | 6" | 6' - 10" | 1,155 | 4' - 1" | 2' - 9" | 108 | 9" | 5' - 0" | 361 | 5 | 39' - 9" | 133 | 33 | 39' - 9" | 876 | 6' - 11" | 18 | 16 | 45 | 0.614 | 132.0 | 0.5 | 63 | 25.1 | 5,343 |
| 6' - 0" | 5' - 0" | 10" | 8" | 30' | 108 | #6 | 9" | 7' - 1" | 1,149 | 162 | #5 | 6" | 9' - 10" | 1,661 | 5' - 8" | 4' - 2" | 162 | #5 | 6" | 7' - 0" | 1,183 | 4' - 2" | 2' - 10" | 82 | 12" | 5' - 0" | 274 | 5 | 39' - 9" | 133 | 33 | 39' - 9" | 876 | 7' - 1" | 19 | 18 | 50 | 0.700 | 131.9 | 0.5 | 69 | 28.5 | 5,345 |
| 6' - 0" | 6' - 0" | 8" | 7" | 20' | 108 | #6 | 9" | 6' - 11" | 1,122 | 108 | #5 | 9" | 10' - 7" | 1,192 | 6' - 6" | 4' - 1" | 108 | #5 | 9" | 6' - 9" | 760 | 4' - 1" | 2' - 8" | 108 | 9" | 6' - 0" | 433 | 5 | 39' - 9" | 133 | 37 | 39' - 9" | 982 | 6' - 11" | 18 | 16 | 45 | 0.613 | 115.6 | 0.5 | 63 | 25.0 | 4,685 |
| 6' - 0" | 6' - 0" | 9" | 7" | 26' | 108 | #6 | 9" | 6' - 11" | 1,122 | 162 | #5 | 6" | 10' - 8" | 1,802 | 6' - 7" | 4' - 1" | 162 | #5 | 6" | 6' - 10" | 1,155 | 4' - 1" | 2' - 9" | 108 | 9" | 6' - 0" | 433 | 5 | 39' - 9" | 133 | 37 | 39' - 9" | 982 | 6' - 11" | 18 | 16 | 45 | 0.657 | 140.7 | 0.5 | 63 | 26.8 | 5,690 |
| 6' - 0" | 6' - 0" | 10" | 8" | 30' | 108 | #6 | 9" | 7' - 1" | 1,149 | 162 | #5 | 6" | 10' - 10" | 1,830 | 6' - 8" | 4' - 2" | 162 | #5 | 6" | 7' - 0" | 1,183 | 4' - 2" | 2' - 10" | 82 | 12" | 6' - 0" | 329 | 5 | 39' - 9" | 133 | 37 | 39' - 9" | 982 | 7' - 1" | 19 | 18 | 50 | 0.749 | 140.2 | 0.5 | 69 | 30.5 | 5,675 |

⑤ For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.



DATE: 4/30/2021 1:38:02 PM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511_superstructure\scc56ste-21.dgn

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

# SINGLE BOX CULVERTS CAST-IN-PLACE
## 0' TO 30' FILL

## SCC-5 & 6

| FILE: scc56ste-21.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 04/2021 Updated X values. | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 134 |

DATE: 4/7/2021 7:27:39 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amar\ill\ENG\500-USTN\SHT\setbs0se-20.dgn

## TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for One Structure End)

| Maximum Wingwall Height Hw (9) | W | X | Y | Z | Variable Reinforcing Bars J1 Size | Bars J1 Spa | Bars J2 Size | Bars J2 Spa | Estimated Quantities per ft of wing length (Two~Wings) (3) Reinf (Lb/Ft) | Conc (CY/Ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

## TABLE OF WINGWALL REINFORCING (Two~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 |

## TABLE OF ESTIMATED ANCHOR TOEWALL QUANTITIES

| Bar | Size | No. | Spa |
|---|---|---|---|
| K | #4 | ~ | 1'-0" |
| N | #5 | 6 | ~ |
| OL | #4 | 6 | ~ |
| Reinf (Lb/Ft) | | | 9.82 |
| Conc (CY/Ft) | | | 0.074 |

(1) Extend Bars P 3'-0" Min into bottom slab of box culvert.

(2) Adjust to fit as necessary to maintain 1 1#2" clear cover and 4" Min between bars.

(3) 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.

(4) Recommended values of slope are: 3:1, 4:1, and 6:1. Provide 3:1 or flatter slope.

(5) 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, 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 is not required.

(6) At Contractor's option, end the culvert toewall flush with wingwall toewall. Adjust reinforcing as needed.

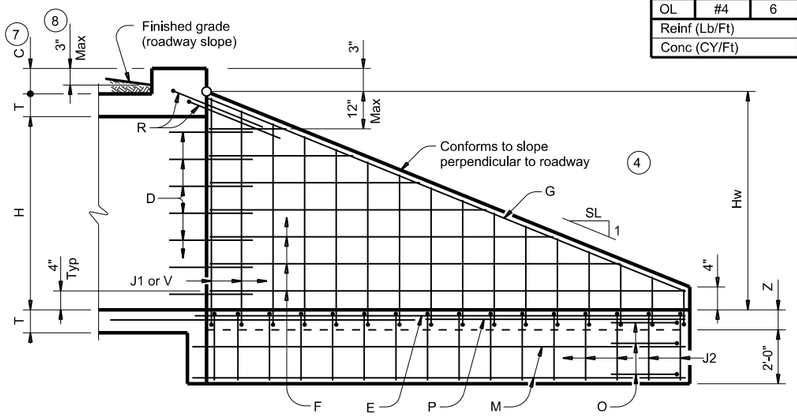
(7) 3" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to Extended Curb Details (ECD) standard sheet.

(8) For vehicle safety, reduce curbs height, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

(9) See Table of Maximum Wing Heights for various slopes. Height is limited based on a 33'-6" maximum safety pipe runner length.

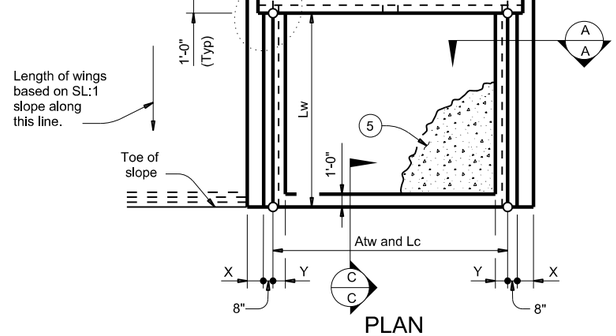
## TABLE OF MAXIMUM WING HEIGHTS (9)

| Side Slope | Hw Max |
|---|---|
| 3:1 | 11'- 5" |
| 4:1 | 8'-10" |
| 6:1 | 6'- 1" |



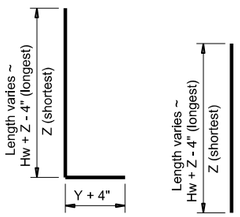

INSIDE ELEVATION OF WINGWALL

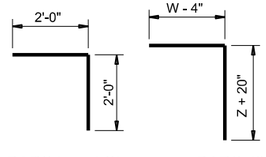
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

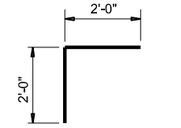


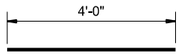

PLAN

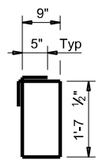
(Showing dimensions.)




### WING DIMENSION CALCULATIONS:

Hw = H + T + C - 0.250' (9)
Lw = (Hw - 0.333') (SL)

For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)
For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.500')

Lc = (Ltw) - (2U)
Atw = Lc
Total Wingwall Area (two wings ~ SF)
= (Hw + 0.333') (Lw)

Hw = Height of wingwall (feet)
SL:1 = Side slope ratio (horizontal : 1 vertical)
Lw = Length of wingwall (feet)
Ltw = Culvert toewall length (feet)
Lc = Culvert curb between wings (feet)
Atw = Anchor toewall length (feet)
N = Number of culvert spans

See applicable box culvert standard for H, S, T, and U values. See Table of Maximum Wall Heights for limits on Hw.

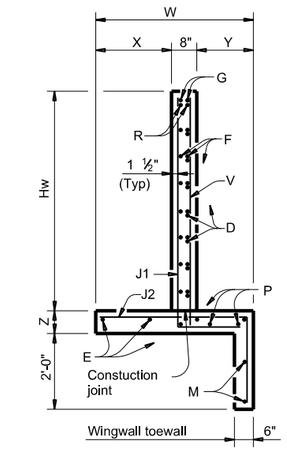
### MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
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 Class "C" concrete (f'c = 3,600 psi).
Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½".
Provide pipe runners and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.
Provide ASTM A307 bolts and nuts.
Provide ASTM A36 steel plates.
Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with the Item 445, "Galvanizing".
For optional adhesive anchors, install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Provide anchorage rods that are clean and free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

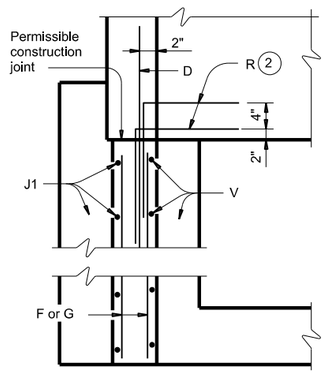
### GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the pipe runners.
Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
All bolts, nuts, washers, brackets, angles, and pipe runners are considered parts of the safety end treatment for payment.
The quantities for pipe runners, reinforcing steel, and concrete, resulting from the formulas given herein are for Contractor's information only.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

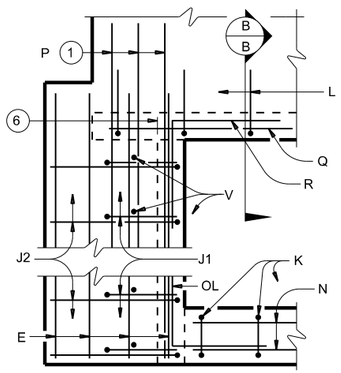
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.




SECTION A-A



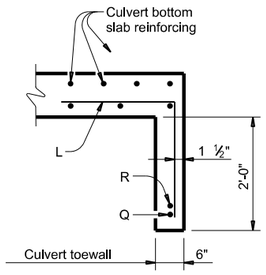

WINGWALL



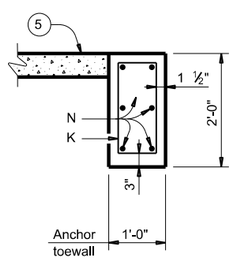

FOOTING AND TOEWALL

CORNER DETAILS

(Culvert and culvert toewall reinforcing not shown for clarity.)




SECTION B-B (5)




SECTION C-C

SHEET 1 OF 3

Texas Department of Transportation — Bridge Division Standard

# SAFETY END TREATMENT WITH STRAIGHT WINGS

FOR 0° SKEW BOX CULVERTS
TYPE I ~ CROSS DRAINAGE

## SETB-SW-O

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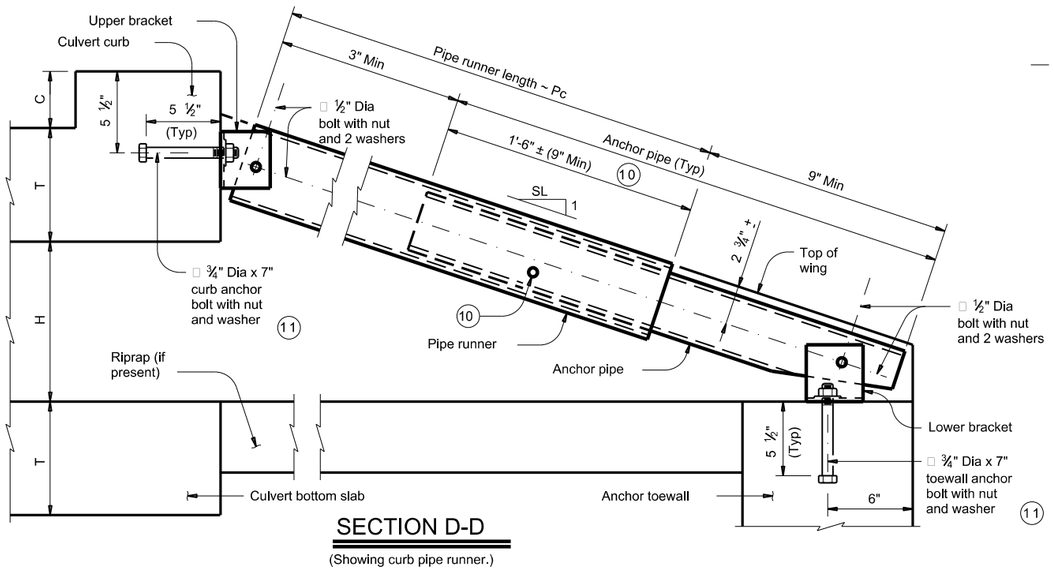
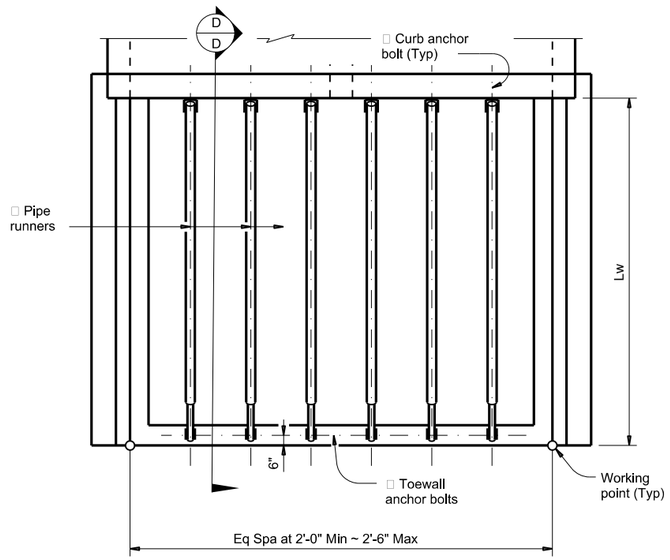
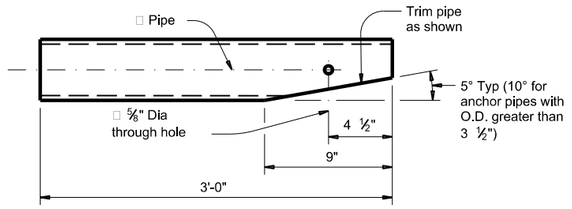



## SECTION D-D

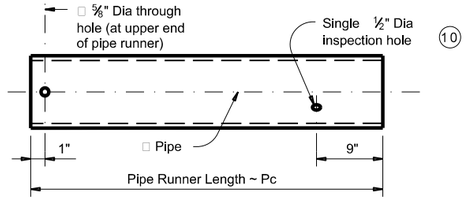
(Showing curb pipe runner.)



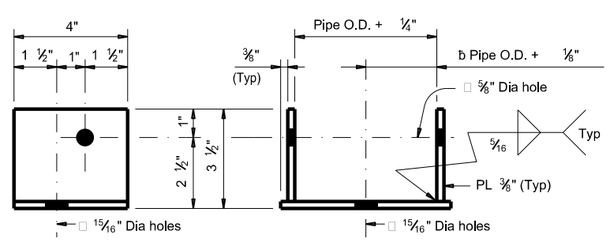

## PIPE RUNNER PLAN




## ANCHOR PIPE DETAILS




## PIPE RUNNER DETAILS




SIDE VIEW ELEVATION

Note: Upper and lower brackets match the required pipe diameters as shown in the table.

## UPPER AND LOWER BRACKET DETAILS

### MAXIMUM PIPE RUNNER LENGTHS AND REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES

| Maximum Pipe Runner Length (Pc) | Required Pipe Runner Size | | | Required Anchor Pipe Size | | |
|---|---|---|---|---|---|---|
| | Pipe Size | Pipe O.D. | Pipe I.D. | Pipe Size | Pipe O.D. | Pipe I.D. |
| 9'-4" | 3" STD | 3.500" | 3.068" | 2" STD | 2.375" | 2.067" |
| 19'-0" | 4" STD | 4.500" | 4.026" | 3" STD | 3.500" | 3.068" |
| 33'-6" | 5" STD | 5.563" | 5.047" | 4" STD | 4.500" | 4.026" |

(10) After installation of pipe runner, use the ½" inspection hole to ensure that the lap of the anchor pipe with the pipe runner is adequate.

(11) At Contractor's option, an adhesive anchor may be used. Provide ¾" Dia adhesive anchors that meet the requirements of ASTM A307. Gr A fully threaded rods. Embed threaded rods into curb, wingwalls, and toewall using a Type III, Class C, D, E, or F anchor adhesive. Minimum embedment depth is 5 ½". Provide anchor adhesive able to achieve a basic bond strength in tension, Nba, of 20 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.

**PIPE RUNNER DIMENSION CALCULATIONS:**

Pc = (Lw) (K) - (1.688)

Pc = Pipe runner length (feet)

K = Constant values for use in formulas

| Slope SL:1 | K |
|---|---|
| 3:1 | ~ 1.054 |
| 4:1 | ~ 1.031 |
| 6:1 | ~ 1.014 |



Texas Department of Transportation

Bridge Division Standard

# SAFETY END TREATMENT WITH STRAIGHT WINGS

FOR 0° SKEW BOX CULVERTS
TYPE I ~ CROSS DRAINAGE

## SETB-SW-O

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| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 136 |

| Culvert Station and/or Creek name followed by applicable end (Lt, Rt or Both) (12) | Lc (Ft) | L2 | | | Pipe Runner (Pc) | | | | 3'-0" Anchor Pipe | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | No. Spa | Spa at (Ft) | Overall Length (Ft) | No. | Length (Ft) | Size (3",4" or 5") | Total Length (Ft) (12) | Size (2",3" or 4") | Total Length (Ft) (12) |
| STA: 110+63 (CULV - A1) (Both) | 3.000' | 0 | N/A | 2.000' | 0 | N/A | N/A | 0 | N/A | N/A |
| STA: 348+11 (CULV - A6) (Both) | 3.000' | 0 | N/A | 2.000' | 0 | N/A | N/A | 0 | N/A | N/A |
| STA: 370+44 (CULV - A7) (Lt) | 5.000' | 2 | 2.500' | 5.000' | 1 | 12.058' | 3" | 12.058' | 2" | 3.000' |
| STA: 503+73 (CULV - A10) (Rt) | 3.000' | 0 | N/A | 2.000' | 0 | N/A | N/A | 0 | N/A | N/A |
| STA: 571+74 (CULV - A11) (Lt) | 3.000' | 0 | N/A | 2.000' | 0 | N/A | N/A | 0 | N/A | N/A |
| STA: 600+74 (CULV - A12) (Lt) | 3.000' | 0 | N/A | 2.000' | 0 | N/A | N/A | 0 | N/A | N/A |
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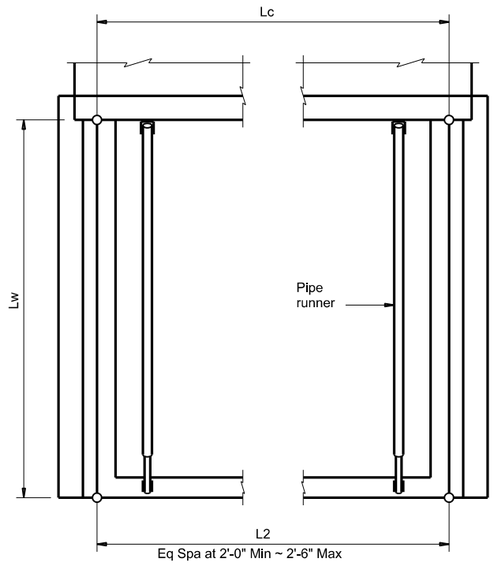
(12) Quantities shown are for one structure end if Lt or Rt. Quantities shown are for two structure ends if Both.




PIPE RUNNER LAYOUT

SPECIAL NOTE:

This tabular sheet is to be filled out by the culvert specifier and provides information for the construction details and quantities of pipe runners.

An Excel 2010 spreadsheet to assist in completing this table can be downloaded from the Bridge Standards (English) web page on the TxDOT web site. The completed sheet must be signed, sealed, and dated by a licensed Professional Engineer.

Note that the tabular quantities are given for estimating purposes only. It is likely that these quantities will change due to field conditions. Therefore, all dimensions must be verified by the Contractor in the field prior to fabrication of the safety end treatment components.



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SHEET 3 OF 3

Texas Department of Transportation

Bridge Division Standard

# SAFETY END TREATMENT WITH STRAIGHT WINGS

FOR 0° SKEW BOX CULVERTS
TYPE I ~ CROSS DRAINAGE

## SETB-SW-O

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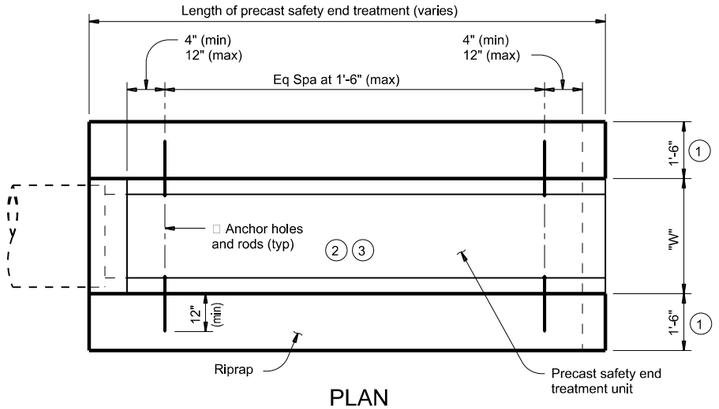
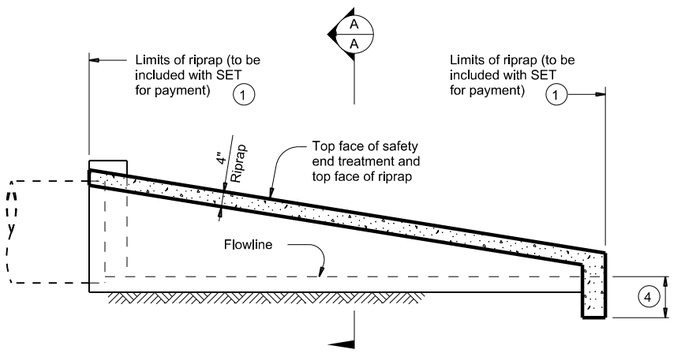
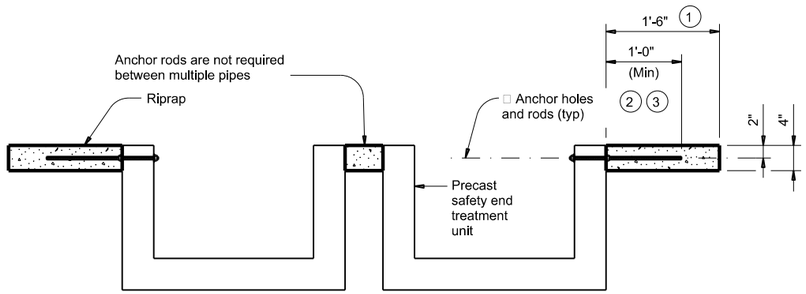


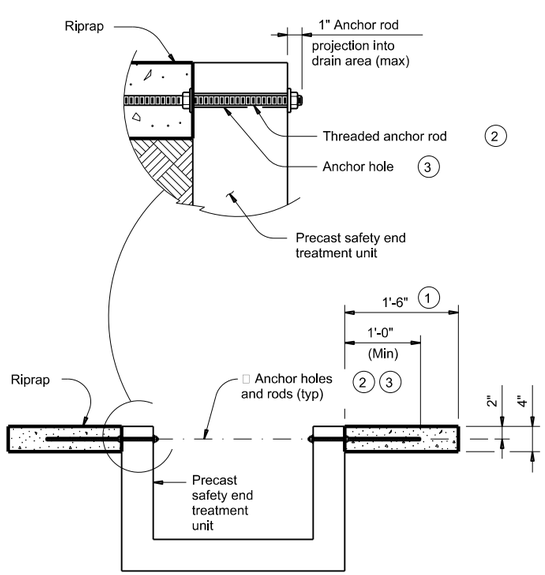

PLAN




LONGITUDINAL ELEVATION




MULTIPLE PIPE INSTALLATION




SINGLE PIPE INSTALLATION

SECTION A-A

## ESTIMATED CONCRETE RIPRAP QUANTITIES (CY)

5

| Nominal Culvert (Pipe) I.D. | PSET-SC and PSET-SP Standards | | | | PSET-RC and PSET-RP Standards | | | |
|---|---|---|---|---|---|---|---|---|
| | Unit Width "W" | Side Slope | | | Unit Width "W" | Side Slope | | |
| | | 3:1 | 4:1 | 6:1 | | 3:1 | 4:1 | 6:1 |
| 12" | 23.0" | 0.1 | 0.2 | 0.2 | 16.0" | 0.1 | 0.1 | 0.2 |
| 15" | 26.5" | 0.2 | 0.2 | 0.3 | 19.5" | 0.1 | 0.2 | 0.2 |
| 18" | 30.0" | 0.2 | 0.2 | 0.3 | 23.0" | 0.2 | 0.2 | 0.3 |
| 24" | 37.0" | 0.3 | 0.3 | 0.5 | 30.0" | 0.2 | 0.3 | 0.4 |
| 30" | 44.5" | 0.3 | 0.4 | 0.6 | 37.0" | 0.3 | 0.3 | 0.5 |
| 36" | 51.5" | 0.4 | 0.5 | 0.7 | 44.0" | 0.3 | 0.4 | 0.6 |
| 42" | 58.5" | 0.5 | 0.6 | 0.8 | 51.0" | 0.4 | 0.5 | 0.7 |

(1) Riprap placed beyond the limits shown will be paid as concrete riprap in accordance with Item 432, "Riprap". When riprap is cast integrally with the precast safety end treatment, this dimension is 1'-0" minimum.

(2) 1#2" Dia ASTM A307 Gr A threaded anchor rod with 2 nuts and 2 washers. Galvanize all components in accordance with Item 445, "Galvanizing". Repair galvanizing that is damaged during transport or construction in accordance with the specifications.

(3) 3#4" through holes in walls of safety end treatment for riprap anchor rods may be drilled with rotary (coring or masonry) type drilling equipment or may be formed. Do not use percussive (star) type drilling equipment. If holes are drilled, patch spalls in the inside face of the wall exceeding 1#2" from the holes.

(4) Provide riprap toe wall when dimension is shown elsewhere in the plans or when field conditions require a toe wall.

(5) Quantities shown are for one end of one reinforced concrete pipe culvert. For multiple pipe culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only. Quantities are based on the minimum unit lengths shown on the Precast Saftey End Treatment (SET) standard sheets.

### MATERIAL NOTES:

Provide Class "B" riprap in accordance with Item 432, "Riprap".
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. The anchor rods shown are always required.

### GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment".
Refer to PSET-SC or PSET-SP standard sheets for details of square safety end treatments not shown. Refer to PSET-RC or PSET-RP standard sheets for details of round safety end treatments not shown.
For precast units with integrally cast riprap, substitute reinforcing steel in the amount on 0.26 in./ft. minimum for the threaded anchor rods shown. When requested, submit sealed engineering drawings for approval prior to construction. Shop drawings will not be required. Note that a proprietary precast unit with integral riprap is available from L&R Precast Concrete Works, Inc. (956) 583-6293 or www.lrprecast.com.
Payment for riprap and toewalls is included in the price bid for each safety end treatment.

These riprap details are only applicable when notes that require placement of riprap with precast safety end treatments are shown elsewhere in the plans.

Precast units with integrally cast riprap are permitted unless noted otherwise on the plans.

Texas Department of Transportation

Bridge Division Standard

# PRECAST SAFETY END TREATMENT
## TYPE II
## RIPRAP DETAILS

# PSET-RR

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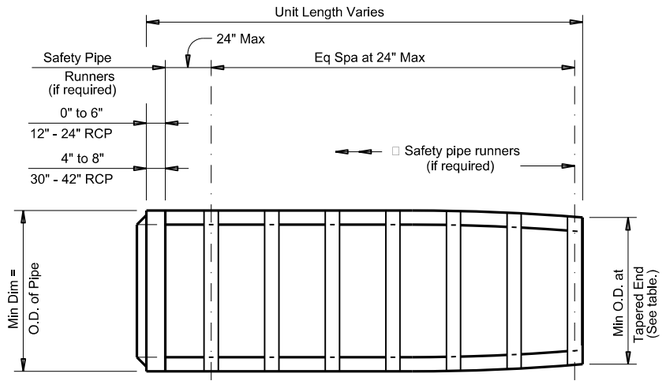
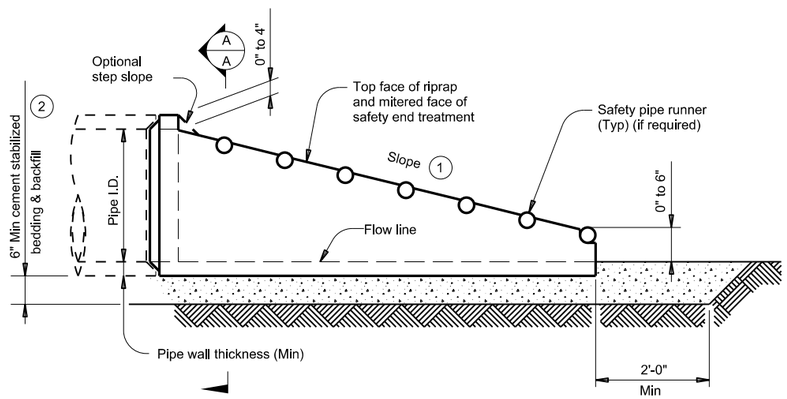



## PLAN VIEW - 12" THRU 24"

(Showing spigot end connection.)




## LONGITUDINAL ELEVATION - 12" THRU 24"

(Showing spigot end connection.)

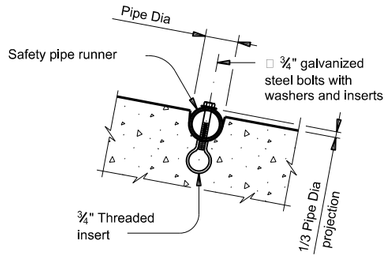
1. Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

   Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

3. Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

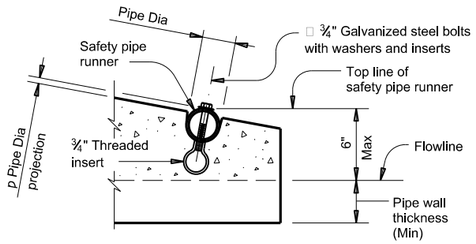
4. Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

5. Safety pipe runners are required for multiple pipe culverts with more than two pipes.

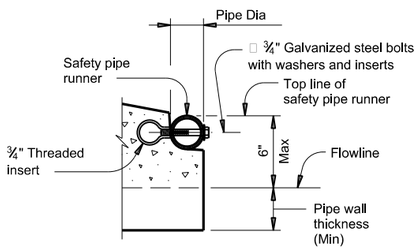



## INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



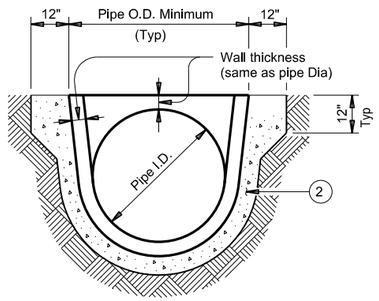

OPTION A



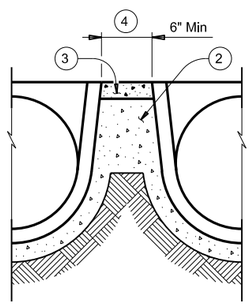

OPTION B

## END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)




## SECTION A-A




## MULTIPLE PIPE INSTALLATION

## REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

| Pipe I.D. | Min Wall Thickness | Min O.D. | Min O.D. at Tapered End | Min Reinf Requirements (sq. in. per ft. of Pipe) | Max Slope | Min Length of Unit | Pipe Runner Requirements | | Required Pipe Runner Sizes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Single Pipe | Multiple Pipe | Nominal Dia | O.D. | I.D. |
| 12" | 2" | 16" | 16" | 0.07 Circ. | 6:1 | 4' - 0" | No | (5) | 3" STD | 3.500" | 3.068" |
| 15" | 2 ¼" | 19 ½" | 19" | 0.07 Circ. | 6:1 | 5' - 8" | No | (5) | 3" STD | 3.500" | 3.068" |
| 18" | 2 ½" | 23" | 21 ½" | 0.07 Circ. | 6:1 | 7' - 3" | No | (5) | 3" STD | 3.500" | 3.068" |
| 24" | 3" | 30" | 27" | 0.07 Circ. | 6:1 | 10' - 6" | No | (5) | 3" STD | 3.500" | 3.068" |
| 30" | 3 ½" | 37" | 31" | 0.18 Circ. | 6:1 | 12' - 1" | No | Yes | 4" STD | 4.500" | 4.026" |
| 36" | 4" | 44" | 36" | 0.19 Ellip. | 6:1 | 15' - 4" | Yes | Yes | 4" STD | 4.500" | 4.026" |
| 42" | 4 ½" | 51" | 41 ½" | 0.23 Ellip. | 6:1 | 18' - 7" | Yes | Yes | 4" STD | 4.500" | 4.026" |

### 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 pipe runners meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Galvanize steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

### GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.

Provide precast concrete end sections with a spigot or bell end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.

Methods of lifting shall be provided by the manufacturer for ease of loading, unloading and installation.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Texas Department of Transportation

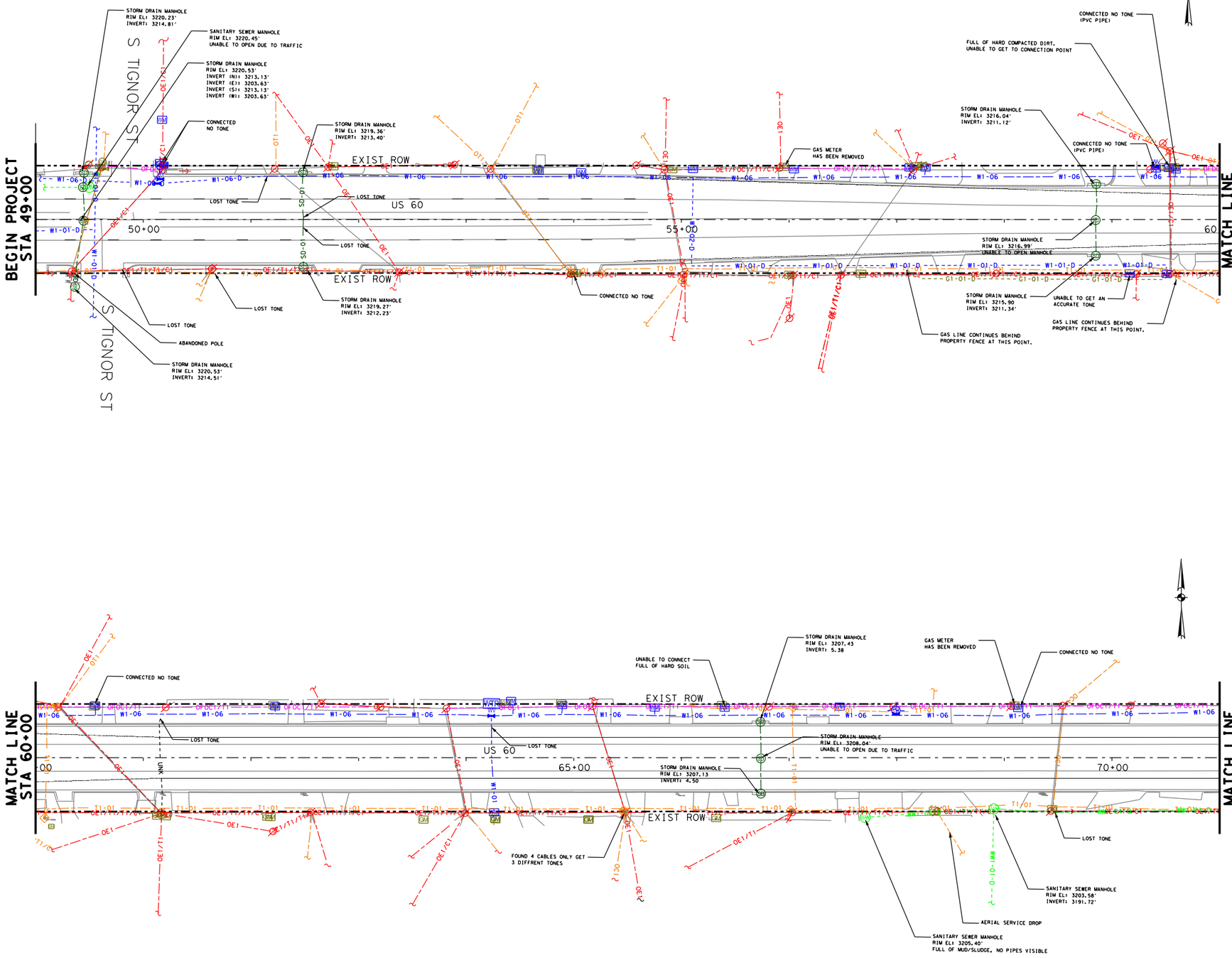
Bridge Division Standard

# PRECAST SAFETY END TREATMENT

## TYPE II ~ PARALLEL DRAINAGE

## PSET-RP

| FILE: psetrpss-20.dgn | DN: RLW | CK: KLR | DW: JTR | CK: GAF |
|---|---|---|---|---|
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 138A |







LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# US 60
# EXISTING UTILITY PLANS
STA 49+00 TO STA 71+00

SHEET 01 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 139 |

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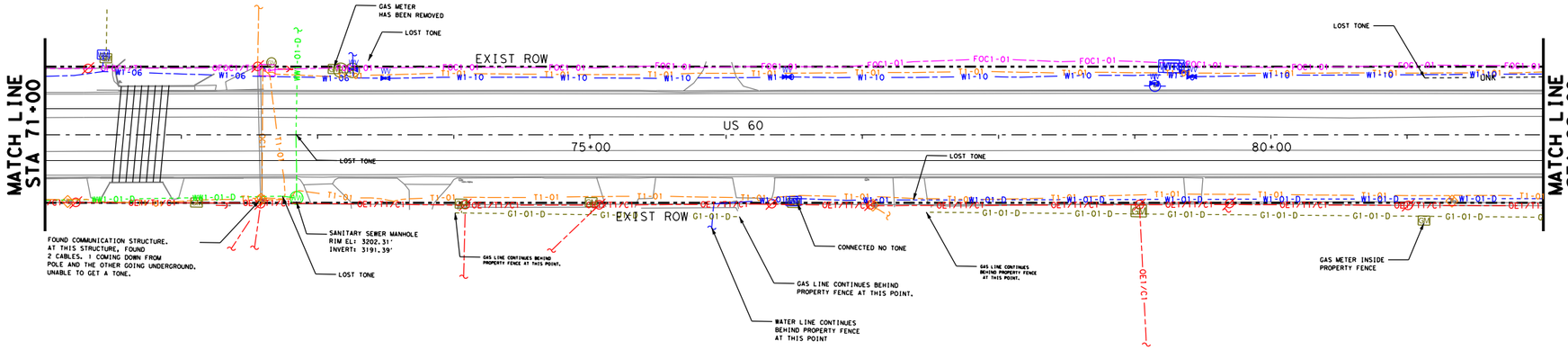


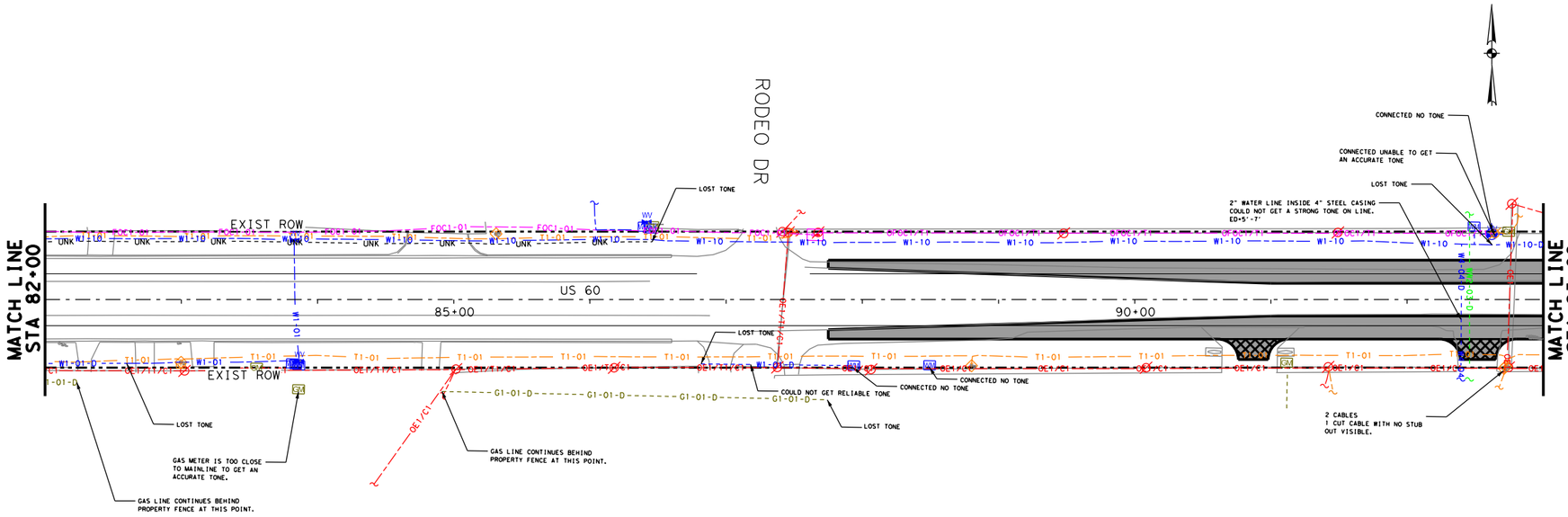


LEGEND

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- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
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- ELECTRIC CABINET
- ELECTRIC MARKER
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- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
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- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
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QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
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- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
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- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'


CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com




# US 60
## EXISTING UTILITY PLANS
STA 71+00 TO STA 93+00

SHEET 02 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 140 |


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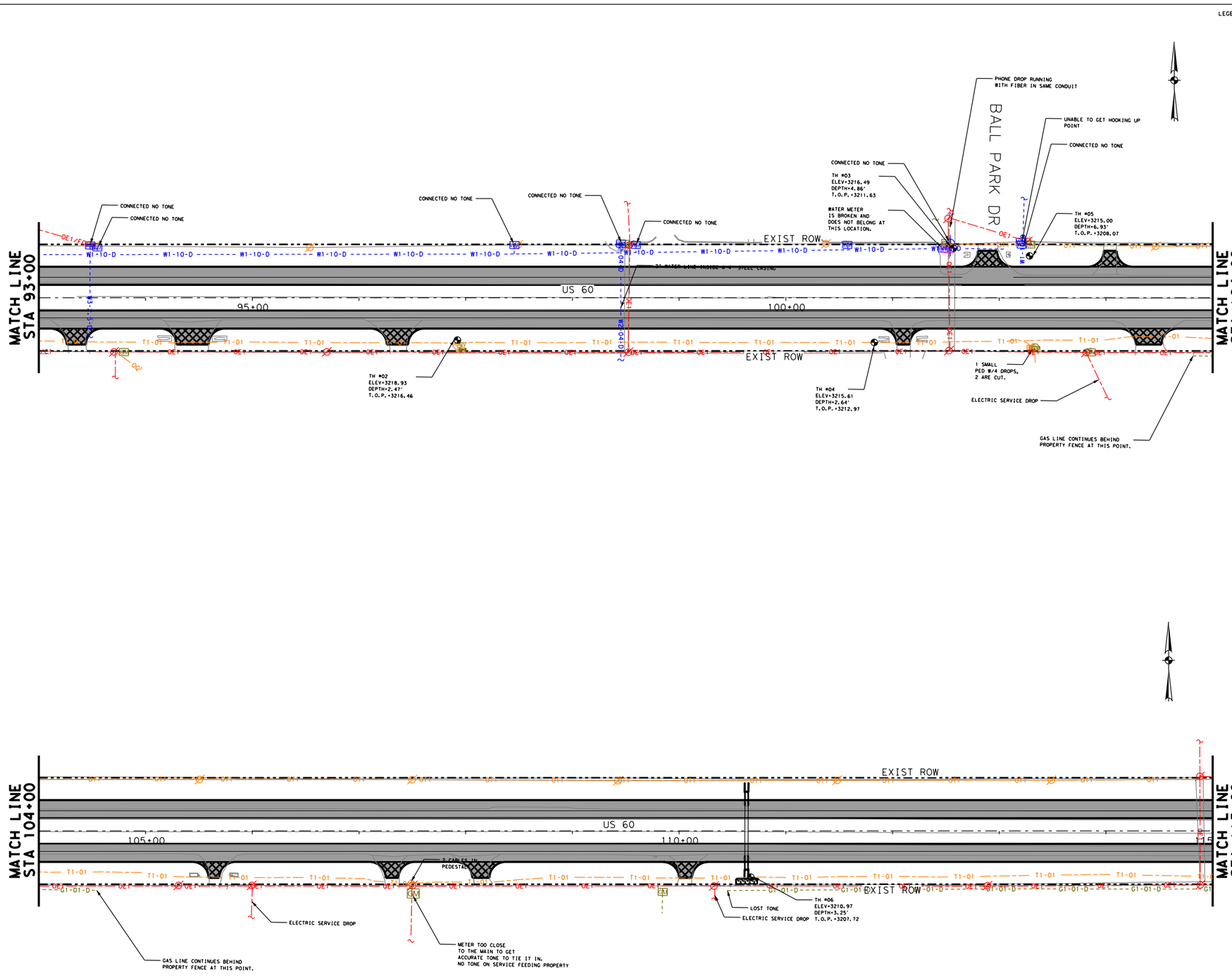


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
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- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
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- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
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- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
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- WATER TEST STATION
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QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
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- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
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- SD-01-D — STORM - CITY OF PAMPA
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OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE




NOTES:

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THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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0 25 50 100
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CobbFendley
TBPE Firm Registration No. 274
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# US 60
## EXISTING UTILITY PLANS
STA 93+00 TO STA 115+00

SHEET 03 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 141 |

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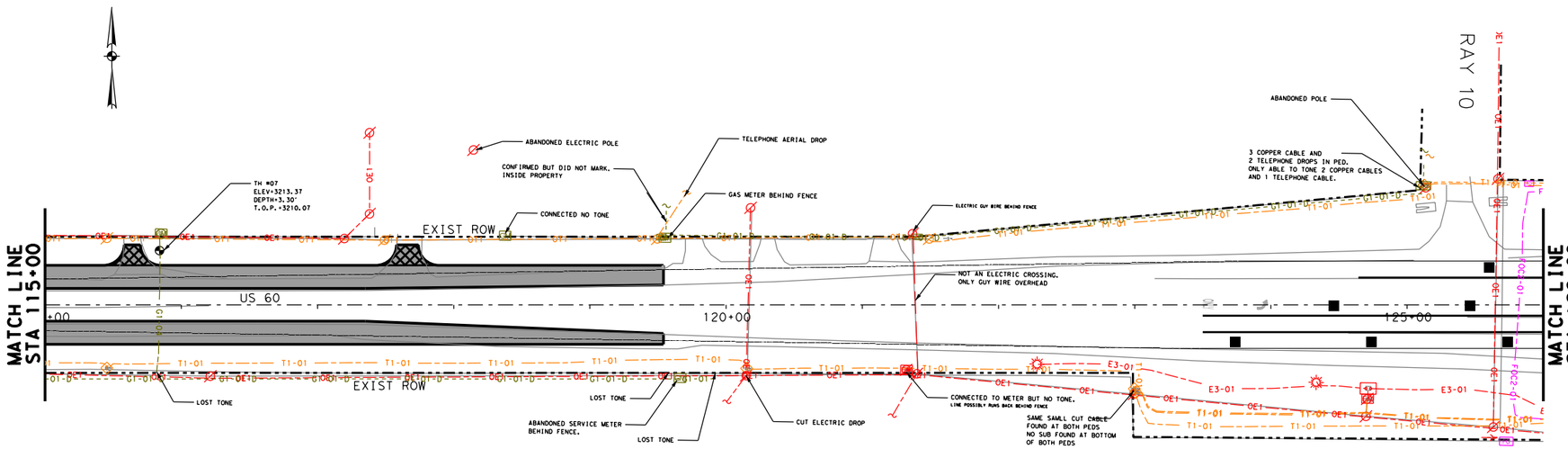


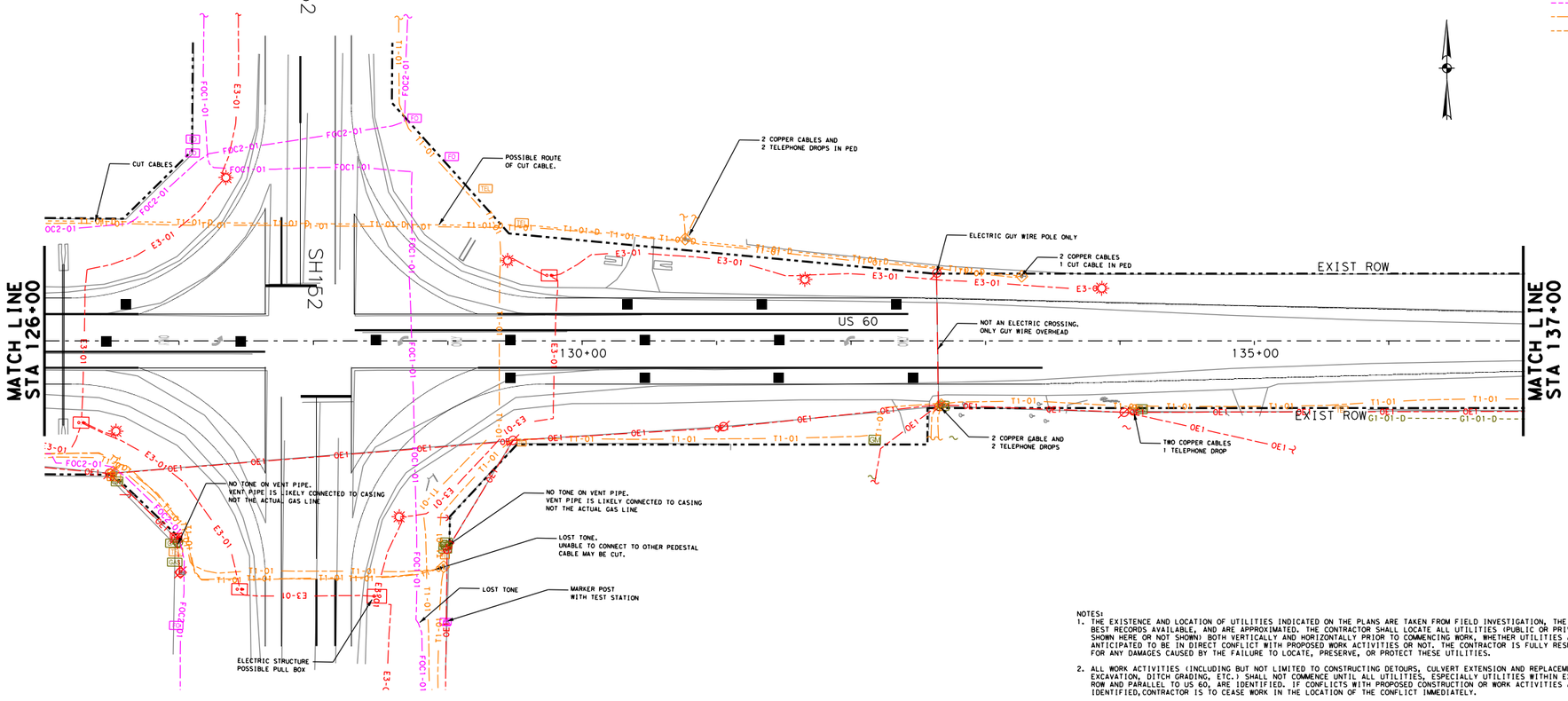


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
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- TELEPHONE PEDESTAL
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- WATER MANHOLE
- WATER MARKER
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QL LEVEL B

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- E3-01 — ELECTRIC - TXDOT
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- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 115+00 TO STA 137+00

SHEET 04 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 142 |

4/2/2021 9:45:53 AM
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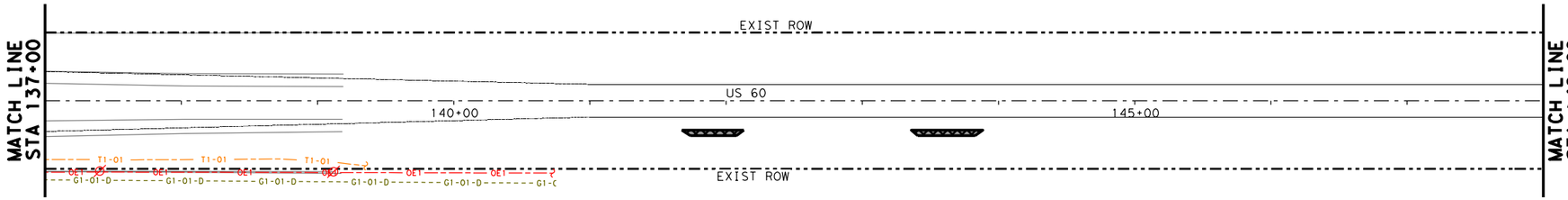
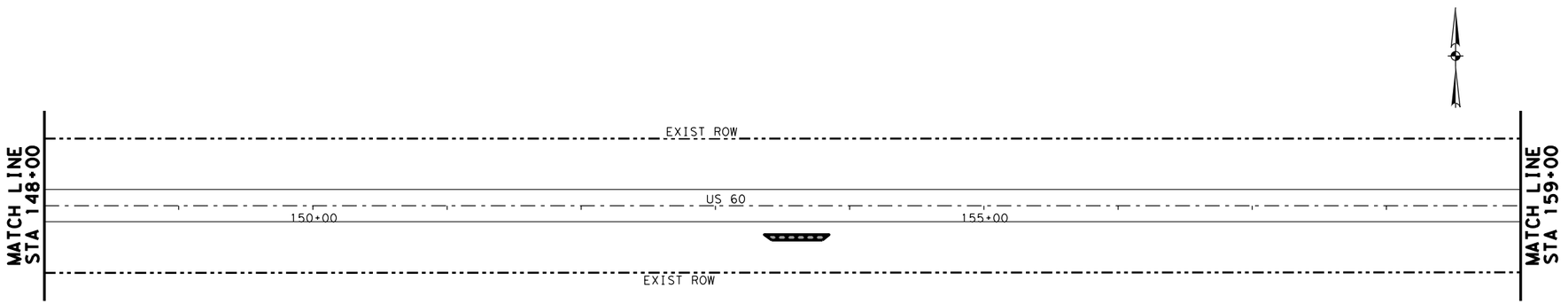



SUE RESEARCH NOT PERFORMED AFTER STA.141+00.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 137+00 TO STA 159+00

SHEET 05 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 143 |

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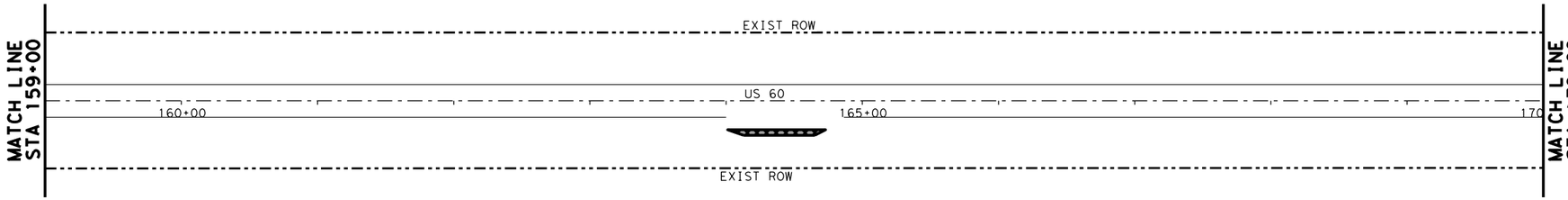



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

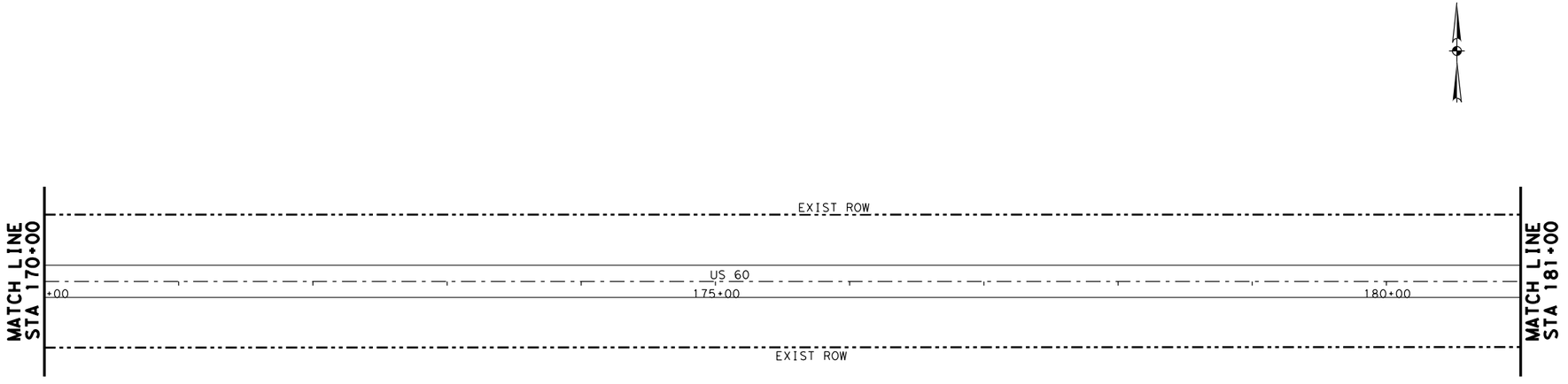
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE




SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

NOTES:
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 159+00 TO STA 181+00

SHEET 06 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 144 |

4/2/2021 9:45:54 AM
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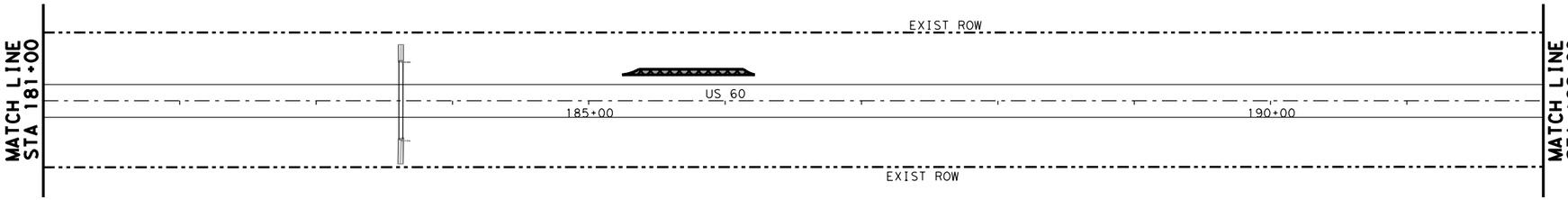
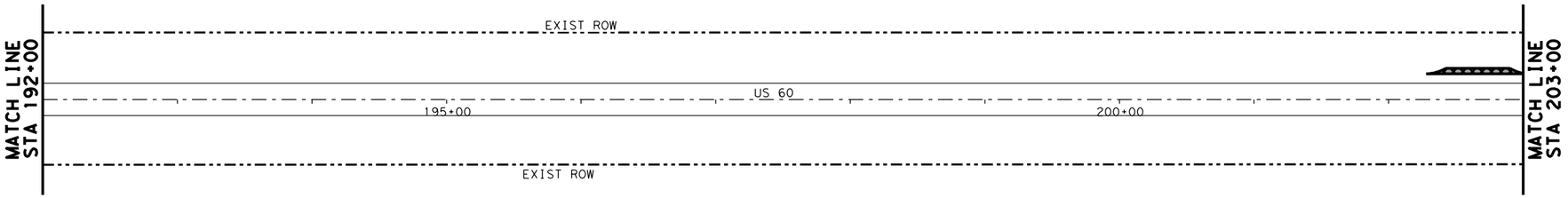



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 181+00 TO STA 203+00

SHEET 07 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 145 |

4/2/2021 9:45:55 AM
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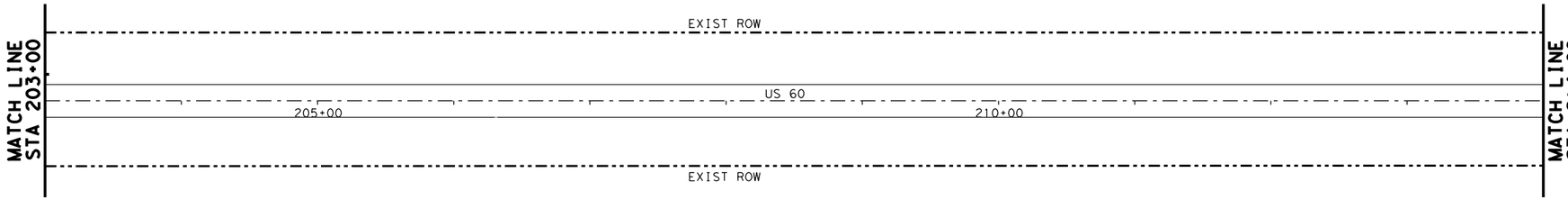
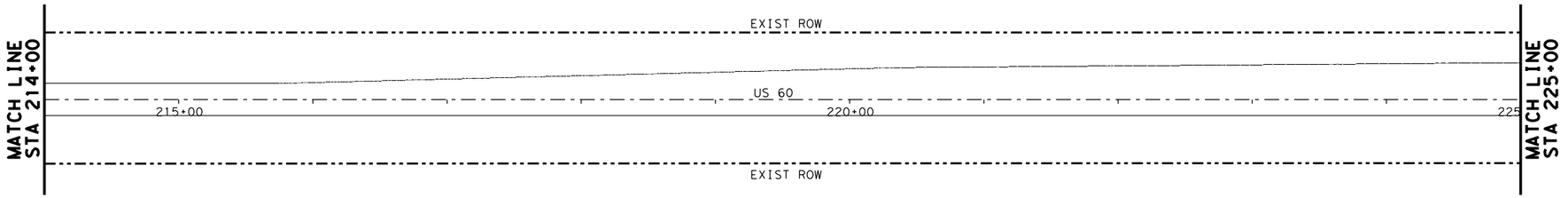



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

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LEGEND
- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D
- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
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- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
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- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
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- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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0 25 50 100
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CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS
STA 203+00 TO STA 225+00

SHEET 08 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 146 |

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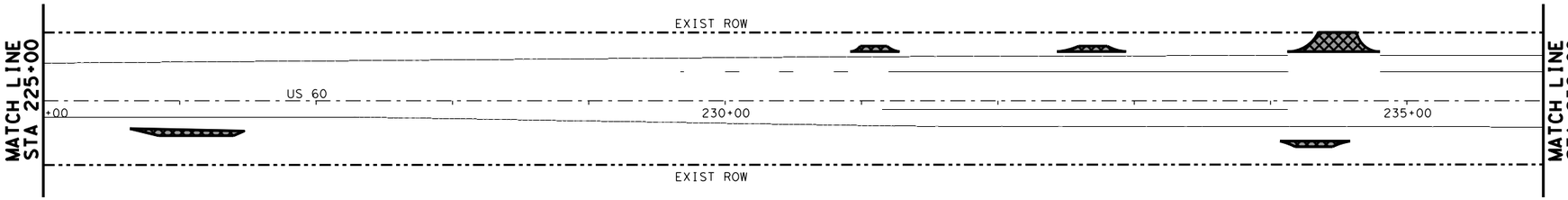
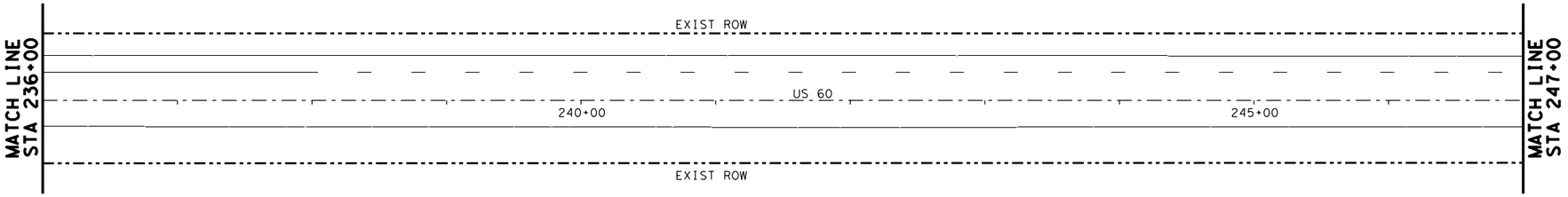



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

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LEGEND
- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
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- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D
- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
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- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD
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- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
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THOMAS EDWARD HUNT II
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LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

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0 25 50 100
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CobbFendley
TBPE Firm Registration No. 274
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# US 60
# EXISTING UTILITY PLANS
STA 225+00 TO STA 247+00

SHEET 09 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 147 |

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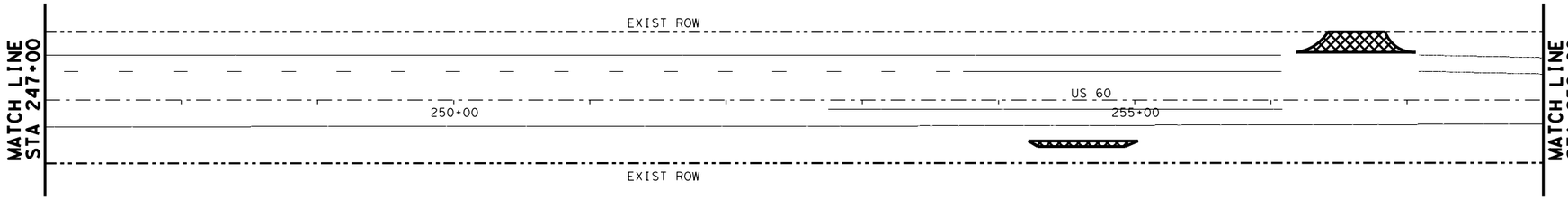


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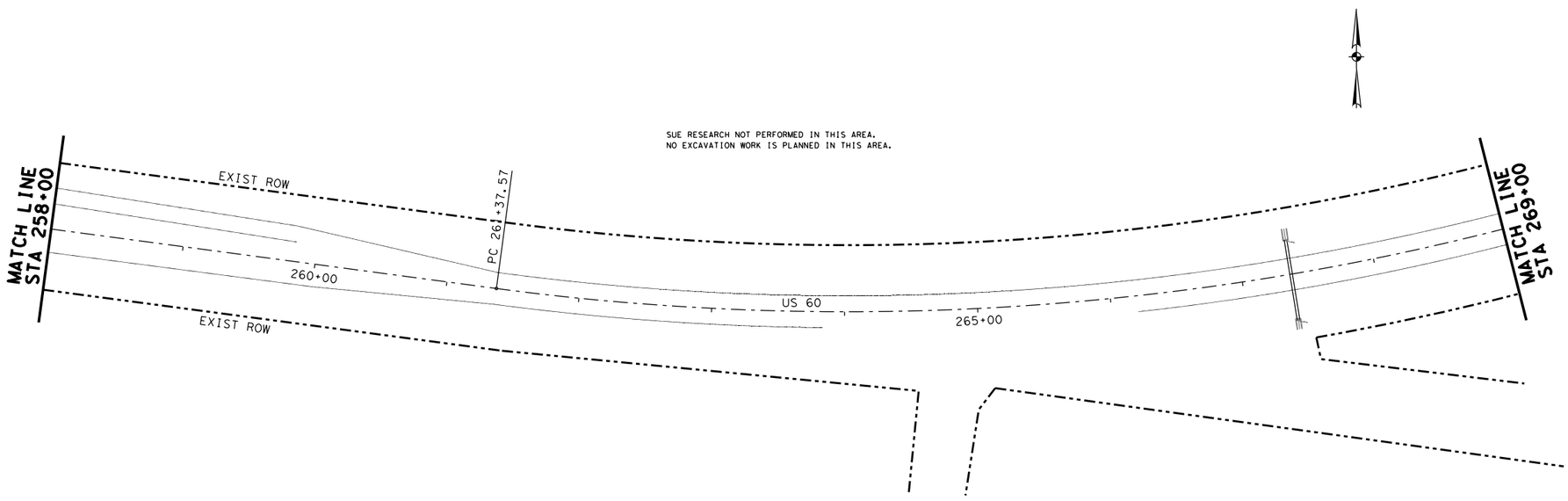


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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
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- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 247+00 TO STA 269+00

SHEET 10 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 148 |

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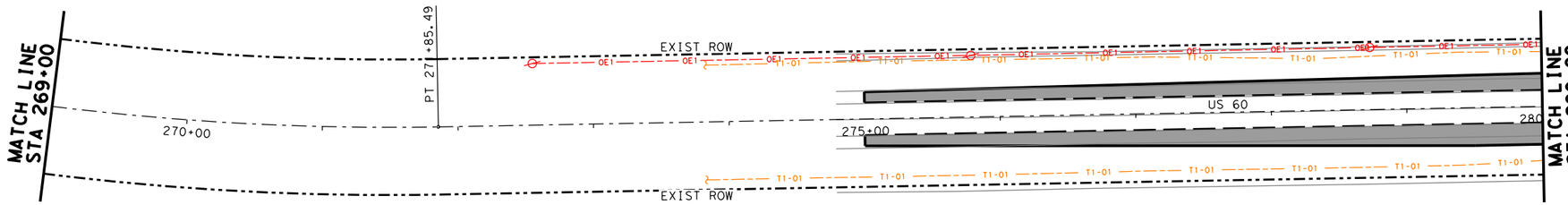
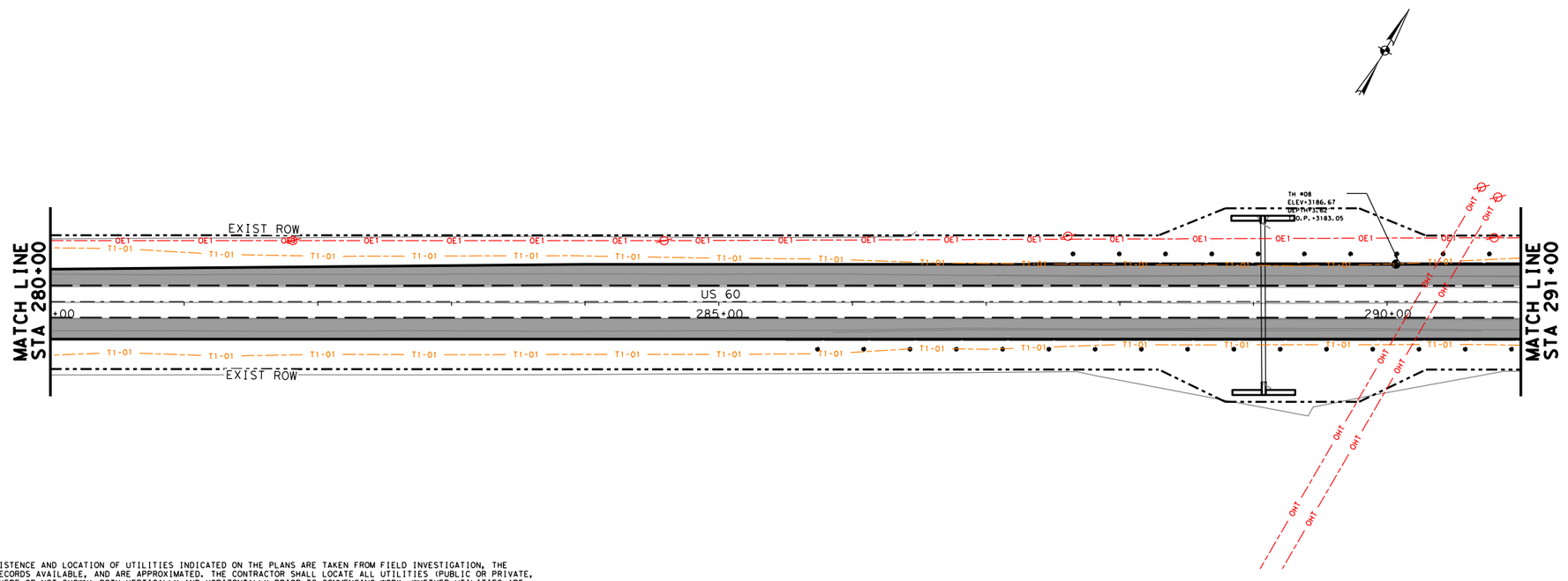



SUE RESEARCH NOT PERFORMED BEFORE STA. 274+00
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

2. ALL WORK ACTIVITIES (INCLUDING BUT NOT LIMITED TO CONSTRUCTING DETOURS, CULVERT EXTENSION AND REPLACEMENTS, EXCAVATION, DITCH GRADING, ETC.) SHALL NOT COMMENCE UNTIL ALL UTILITIES, ESPECIALLY UTILITIES WITHIN EXISTING ROW AND PARALLEL TO US 60, ARE IDENTIFIED. IF CONFLICTS WITH PROPOSED CONSTRUCTION OR WORK ACTIVITIES ARE IDENTIFIED, CONTRACTOR IS TO CEASE WORK IN THE LOCATION OF THE CONFLICT IMMEDIATELY.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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# US 60
# EXISTING UTILITY PLANS
STA 269+00 TO STA 291+00

SHEET 11 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 149 |

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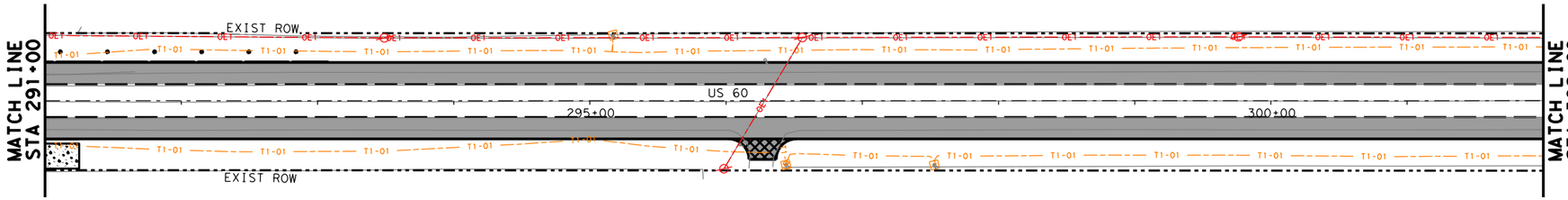


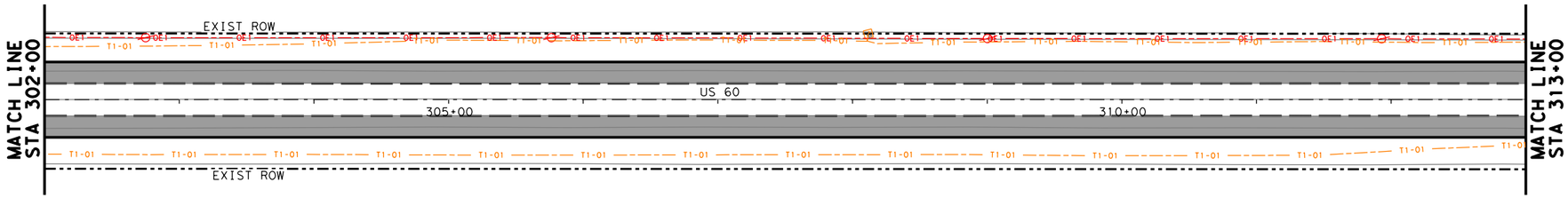


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 291+00 TO STA 313+00

SHEET 12 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 150 |

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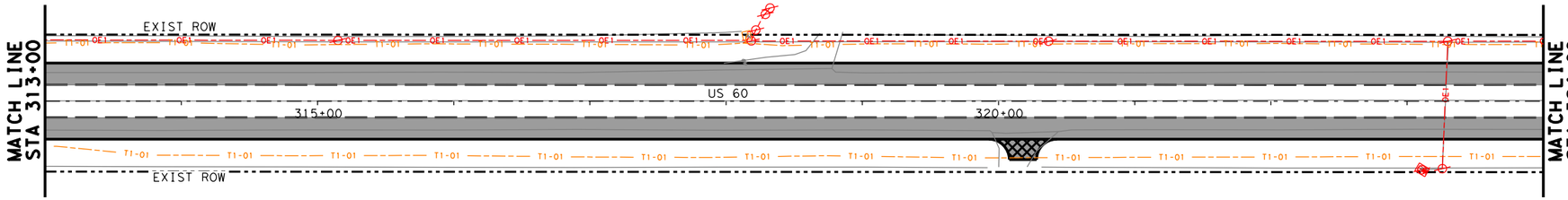


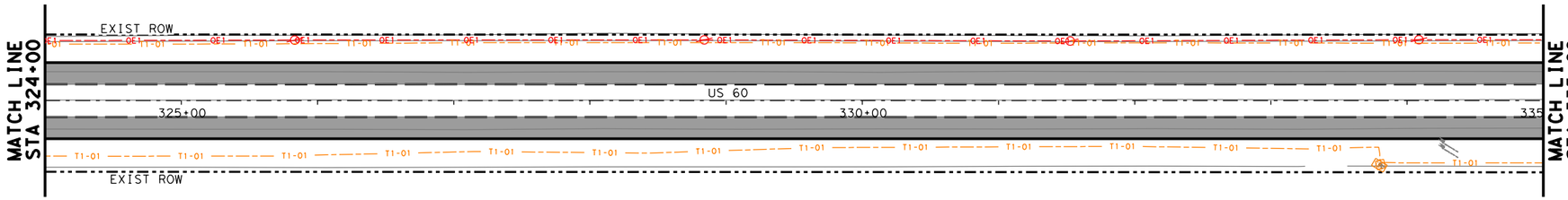


LEGEND

- TELEPHONE POLE
- POWER POLE
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- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
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- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

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- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
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- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
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- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
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OVERHEAD

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- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
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# US 60
## EXISTING UTILITY PLANS
STA 313+00 TO STA 335+00

SHEET 13 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 151 |

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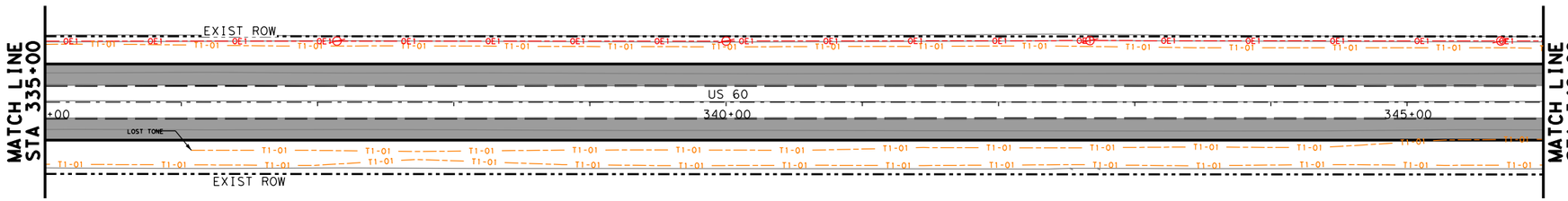


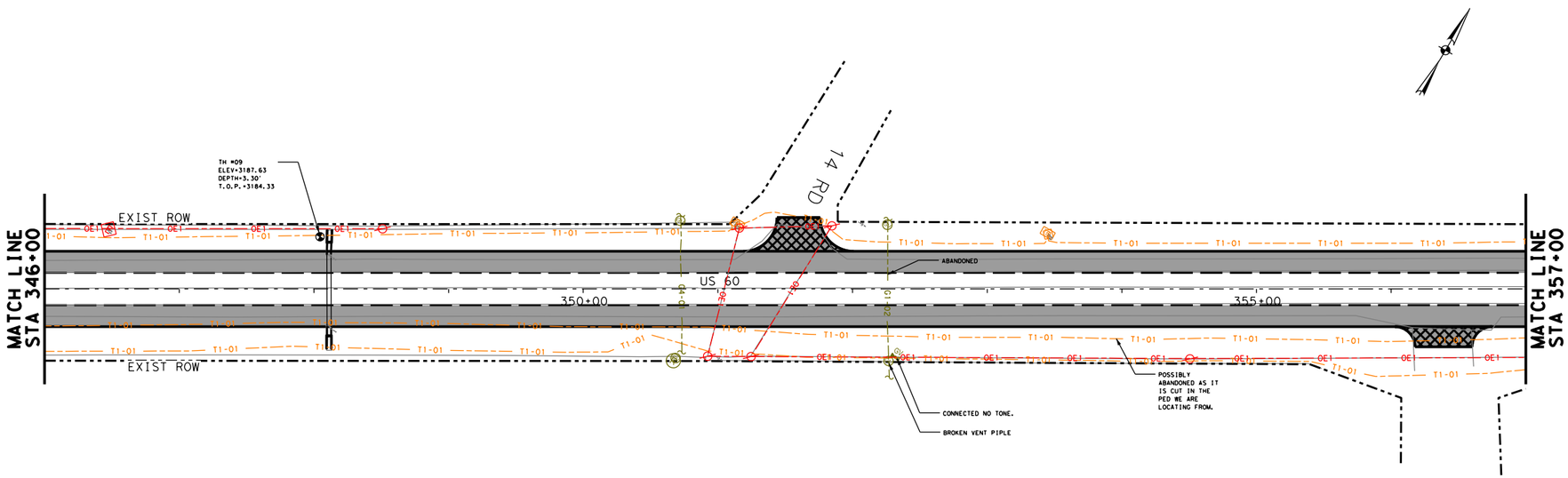


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 335+00 TO STA 357+00

SHEET 14 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 152 |

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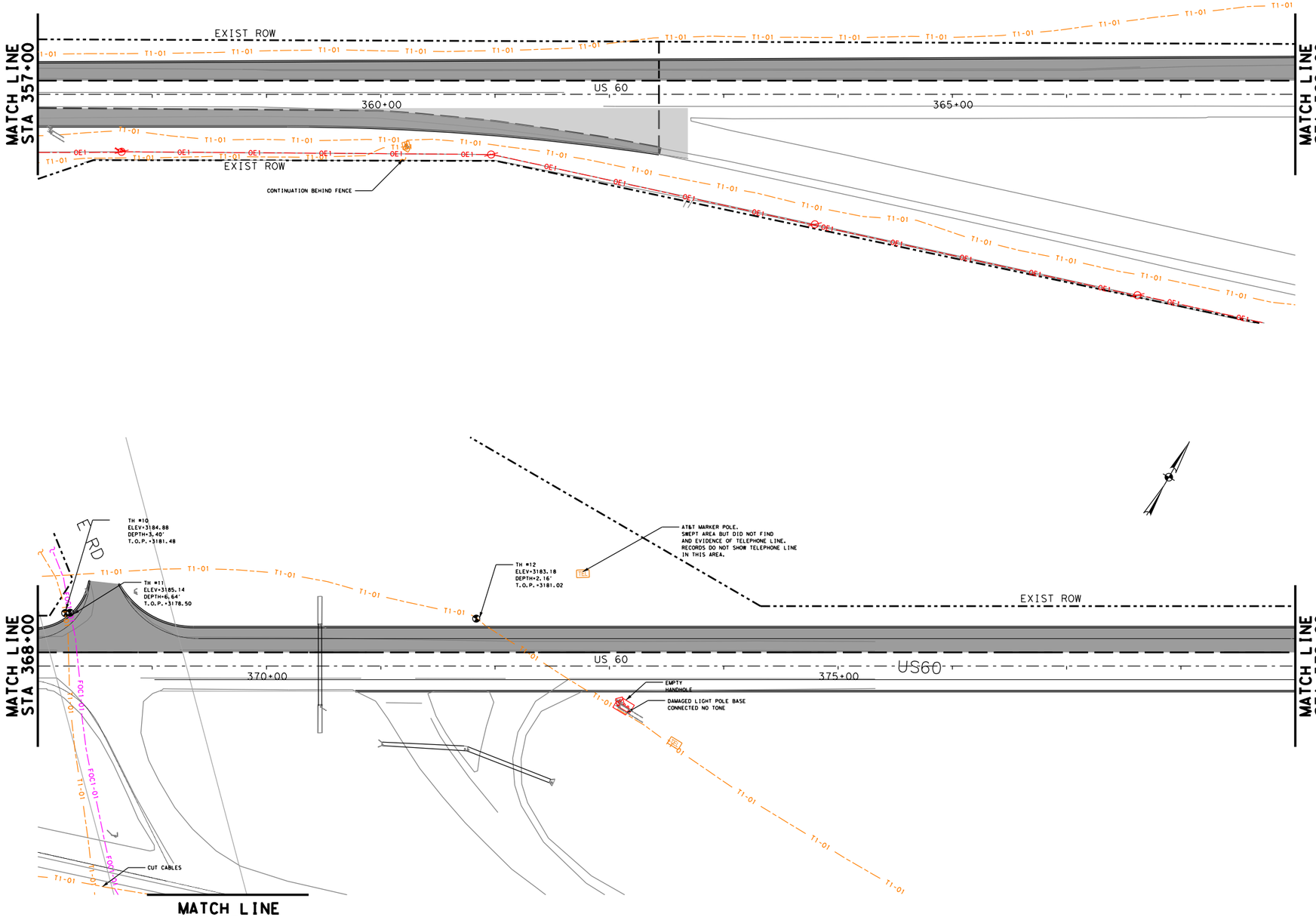
USGO_SUE14.dgn




LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 357+00 TO STA 379+00

SHEET 15 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 153 |

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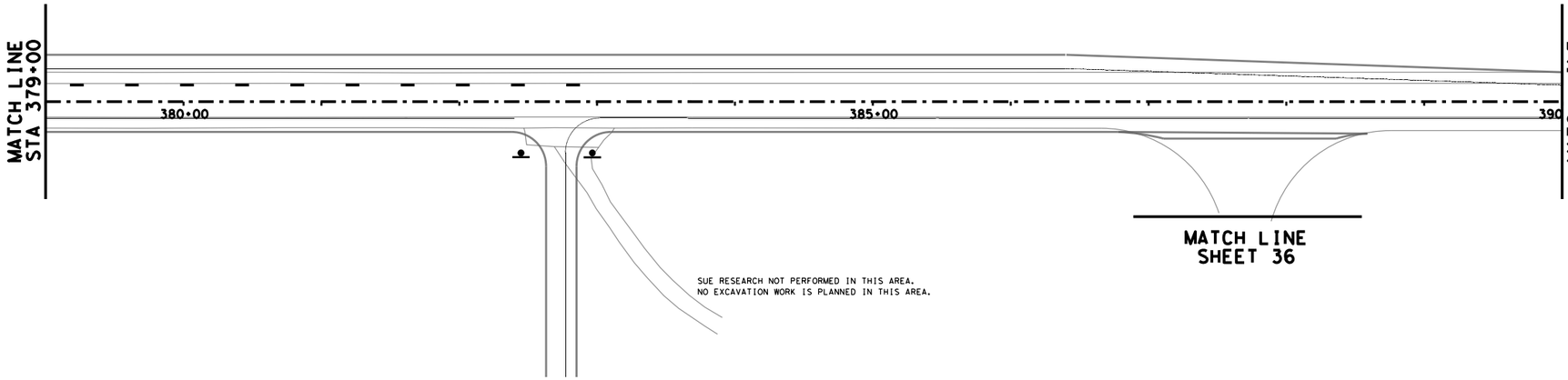


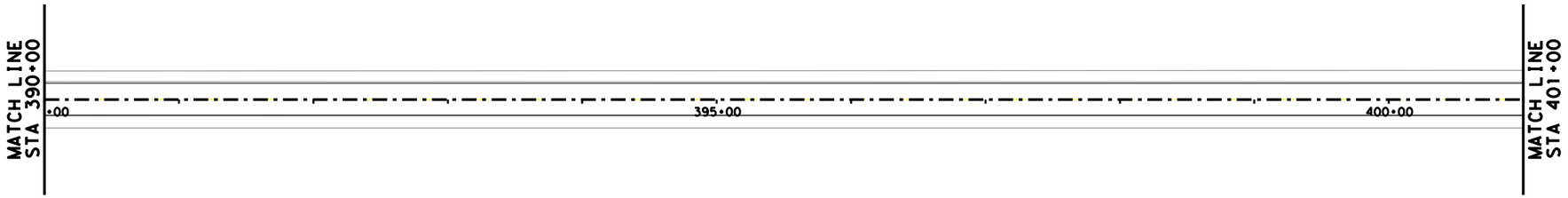


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

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THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 379+00 TO STA 401+00

SHEET 16 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 154 |

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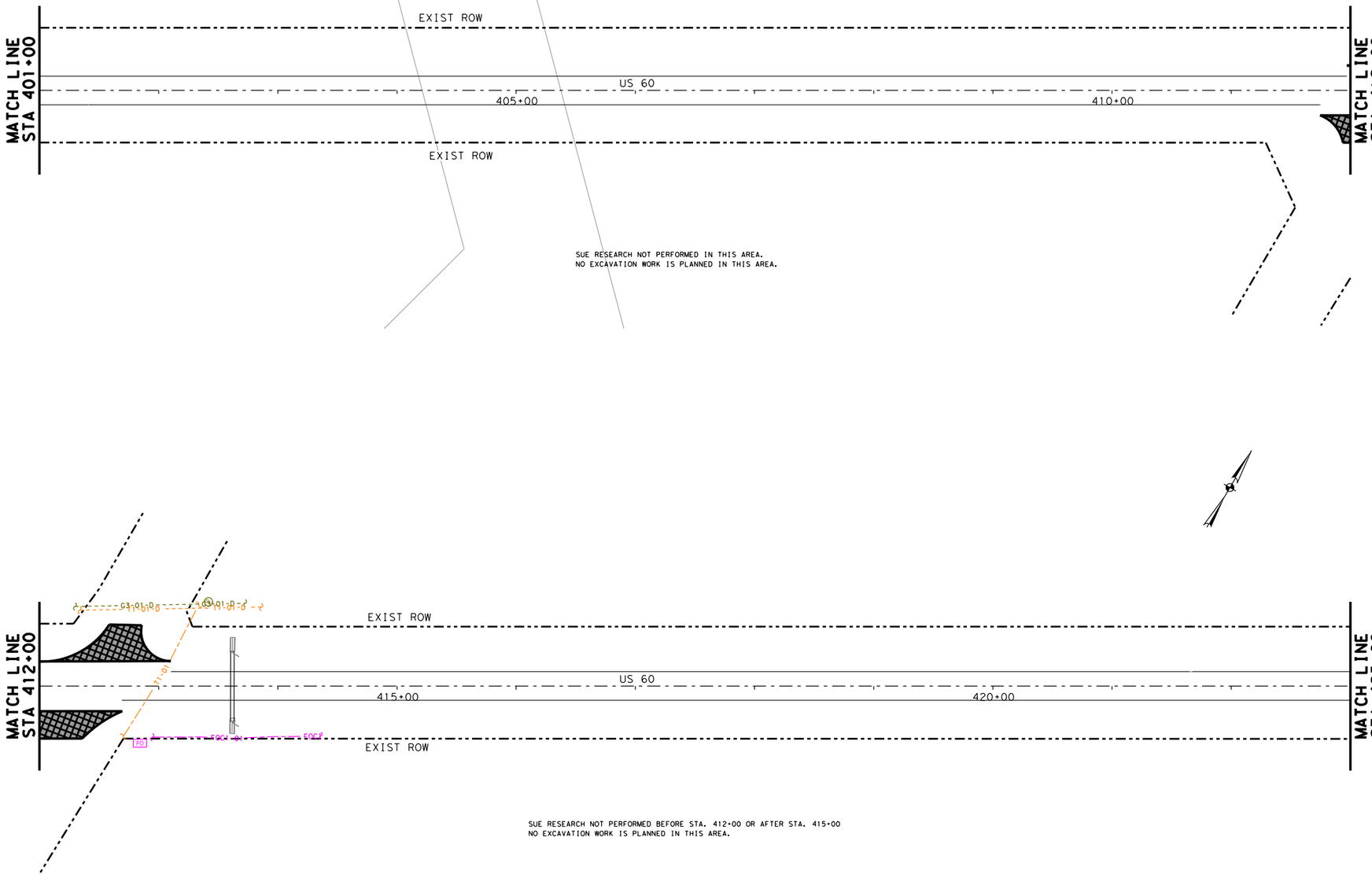


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
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- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
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- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
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- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK. WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 401+00 TO STA 423+00

SHEET 17 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 155 |

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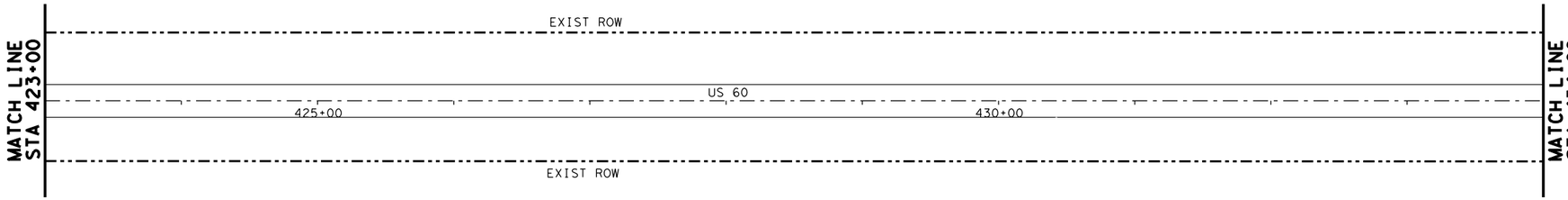



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

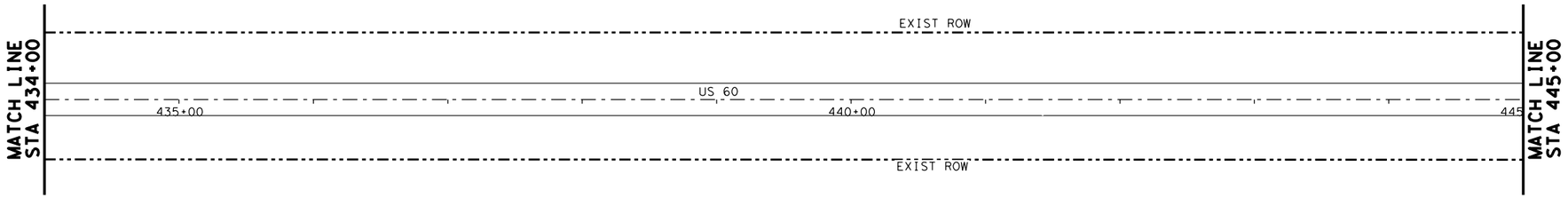
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE




SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# US 60
## EXISTING UTILITY PLANS
STA 423+00 TO STA 445+00

SHEET 18 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 156 |

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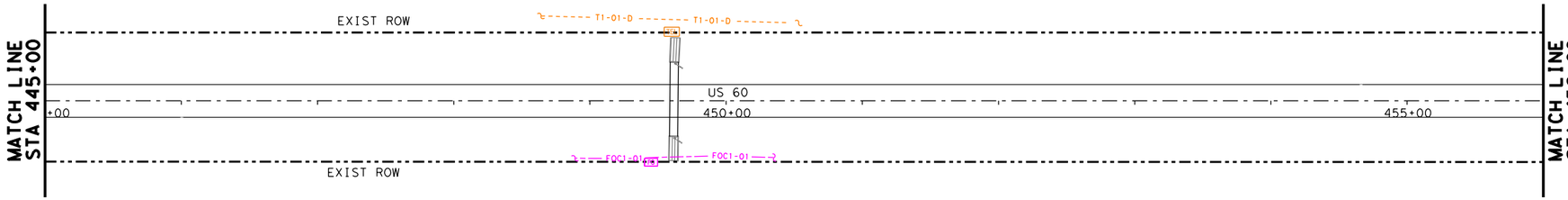
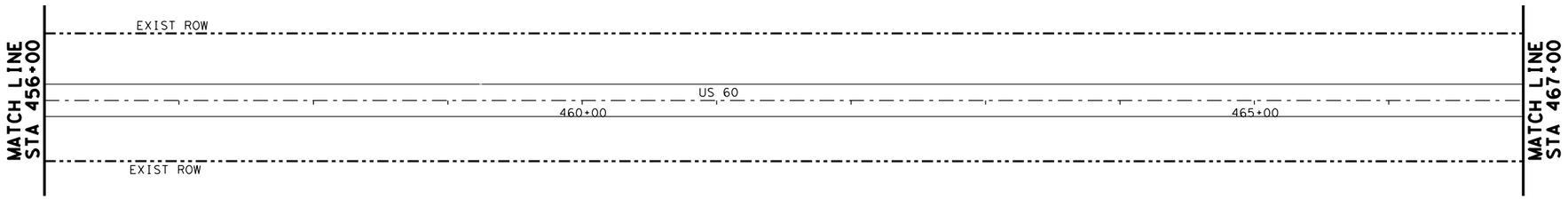



SUE RESEARCH NOT PERFORMED BEFORE STA. 448+00 OR AFTER STA. 451+00
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




SUE RESEARCH NOT PERFORMED IN THIS AREA.
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NOTES:
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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 445+00 TO STA 467+00

SHEET 19 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 157 |

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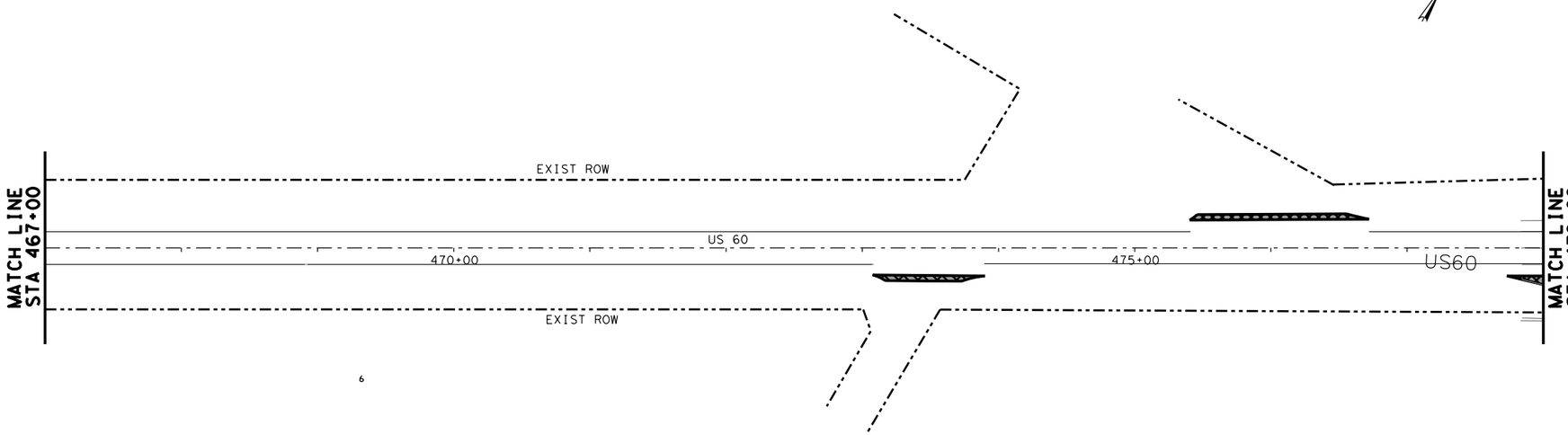
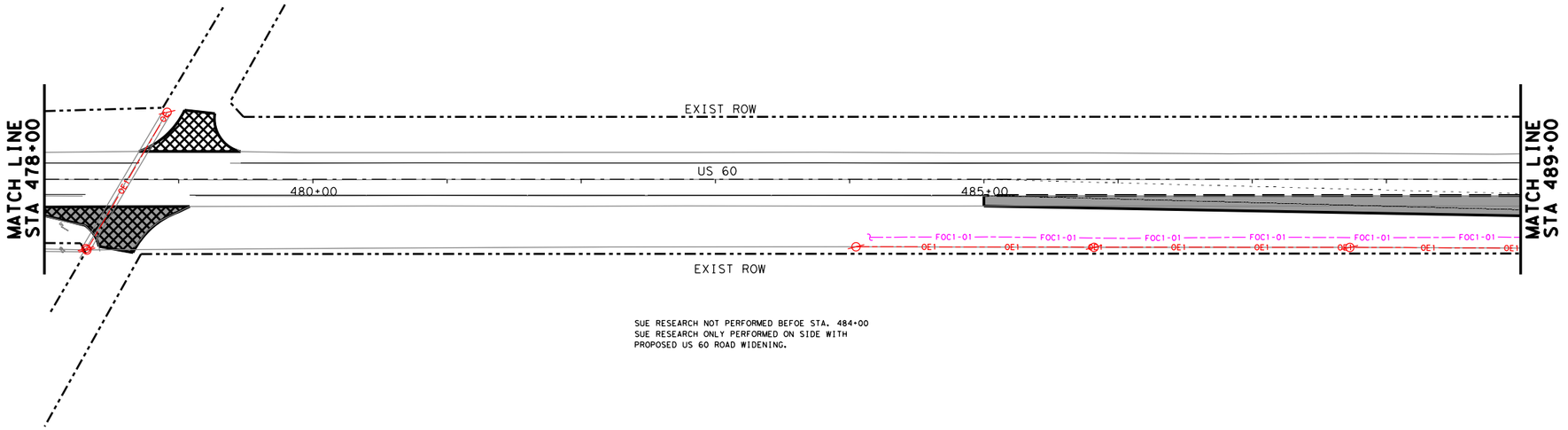
USGO_SUE19.dgn




SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




SUE RESEARCH NOT PERFORMED BEFOE STA. 484+00
SUE RESEARCH ONLY PERFORMED ON SIDE WITH
PROPOSED US 60 ROAD WIDENING.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
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- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
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- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
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- UNK — UNKNOWN

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- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

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CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS
STA 467+00 TO STA 489+00

SHEET 20 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 158 |

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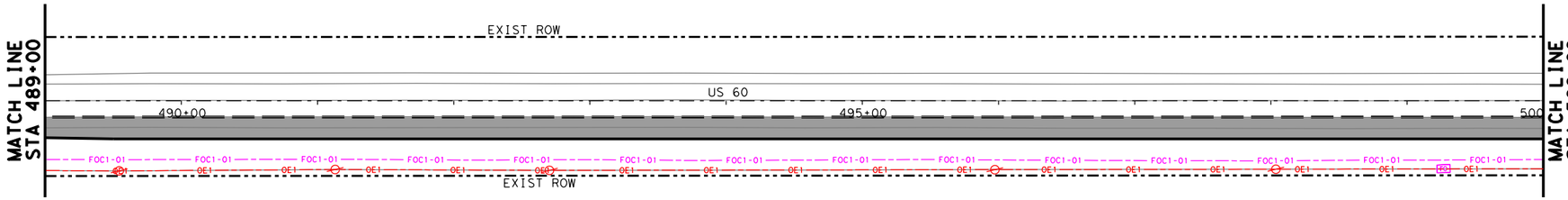
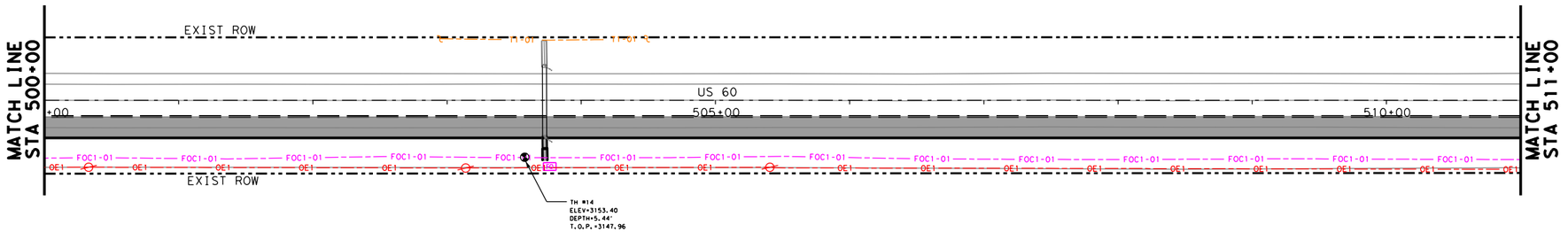



SUE RESEARCH NOT PERFORMED BEFOE STA. 484+00
SUE RESEARCH ONLY PERFORMED ON SIDE WITH
PROPOSED US 60 ROAD WIDENING.




SUE RESEARCH ONLY PERFORMED ON AREAS WITH
PROPOSED US 60 ROAD WIDENING AND PROPOSED
DRAINAGE.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

2. ALL WORK ACTIVITIES (INCLUDING BUT NOT LIMITED TO CONSTRUCTING DETOURS, CULVERT EXTENSION AND REPLACEMENTS, EXCAVATION, DITCH GRADING, ETC.) SHALL NOT COMMENCE UNTIL ALL UTILITIES, ESPECIALLY UTILITIES WITHIN EXISTING ROW AND PARALLEL TO US 60, ARE IDENTIFIED. IF CONFLICTS WITH PROPOSED CONSTRUCTION OR WORK ACTIVITIES ARE IDENTIFIED, CONTRACTOR IS TO CEASE WORK IN THE LOCATION OF THE CONFLICT IMMEDIATELY.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
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1" = 100'

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# US 60
# EXISTING UTILITY PLANS
STA 489+00 TO STA 511+00

SHEET 21 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 159 |

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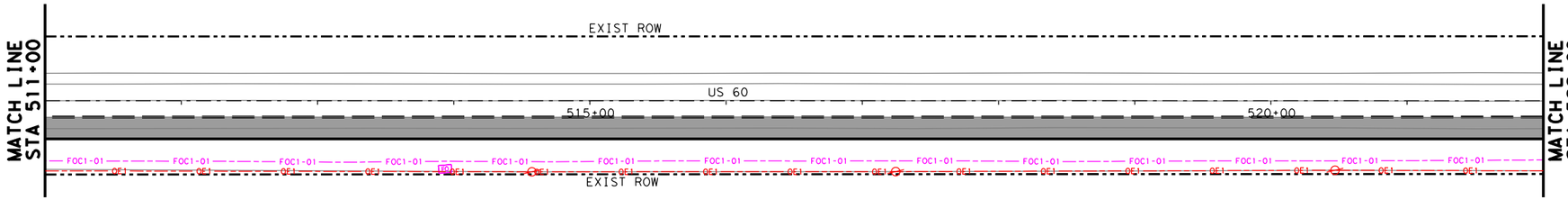
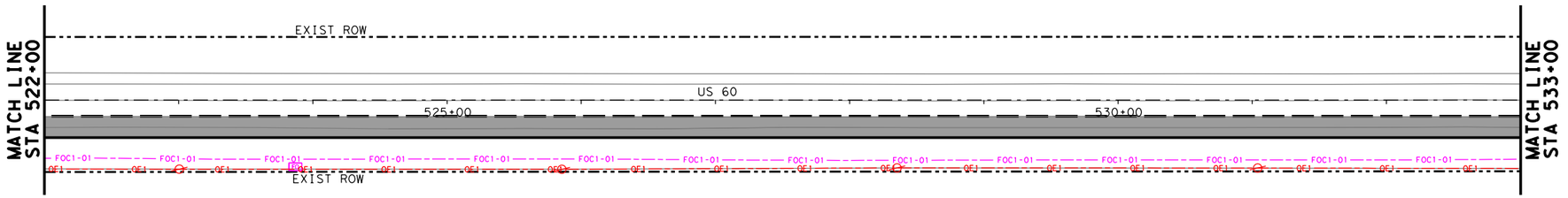



SUE RESEARCH ONLY PERFORMED ON SIDE WITH
PROPOSED US 60 ROAD WIDENING.




SUE RESEARCH ONLY PERFORMED ON SIDE WITH
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LEGEND

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- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 511+00 TO STA 533+00

SHEET 22 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 160 |

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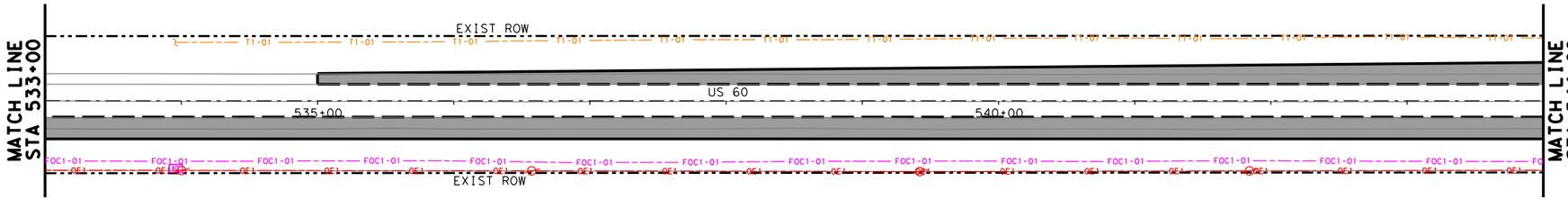


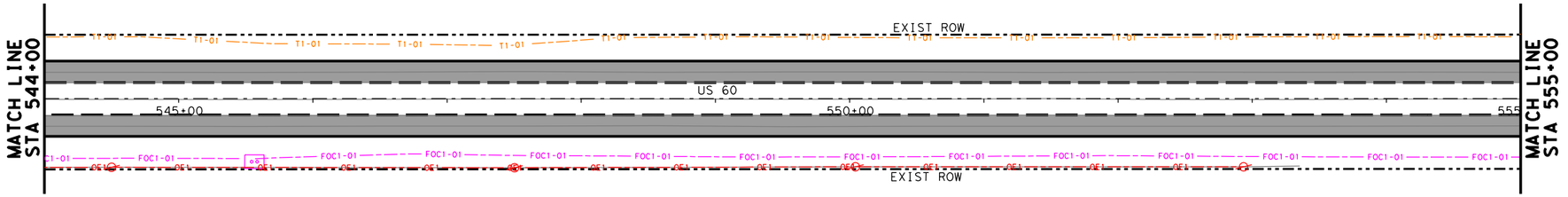


LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
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- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
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- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

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- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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THOMAS EDWARD HUNT II
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LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

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TBPLS Firm Registration No. 100467
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# US 60
# EXISTING UTILITY PLANS

STA 533+00 TO STA 555+00

SHEET 23 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 161 |

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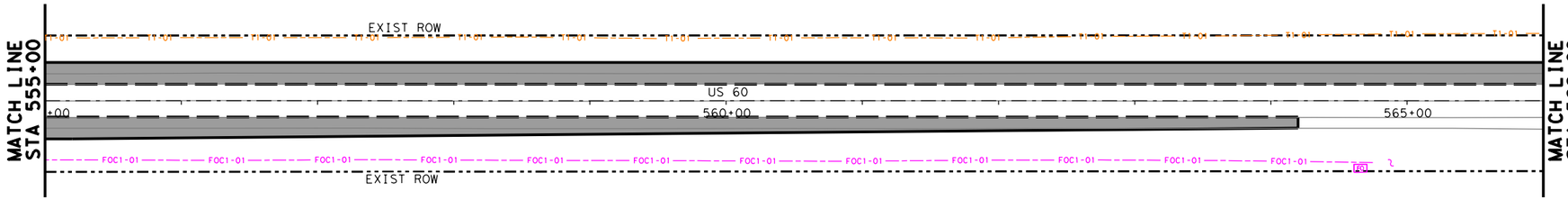


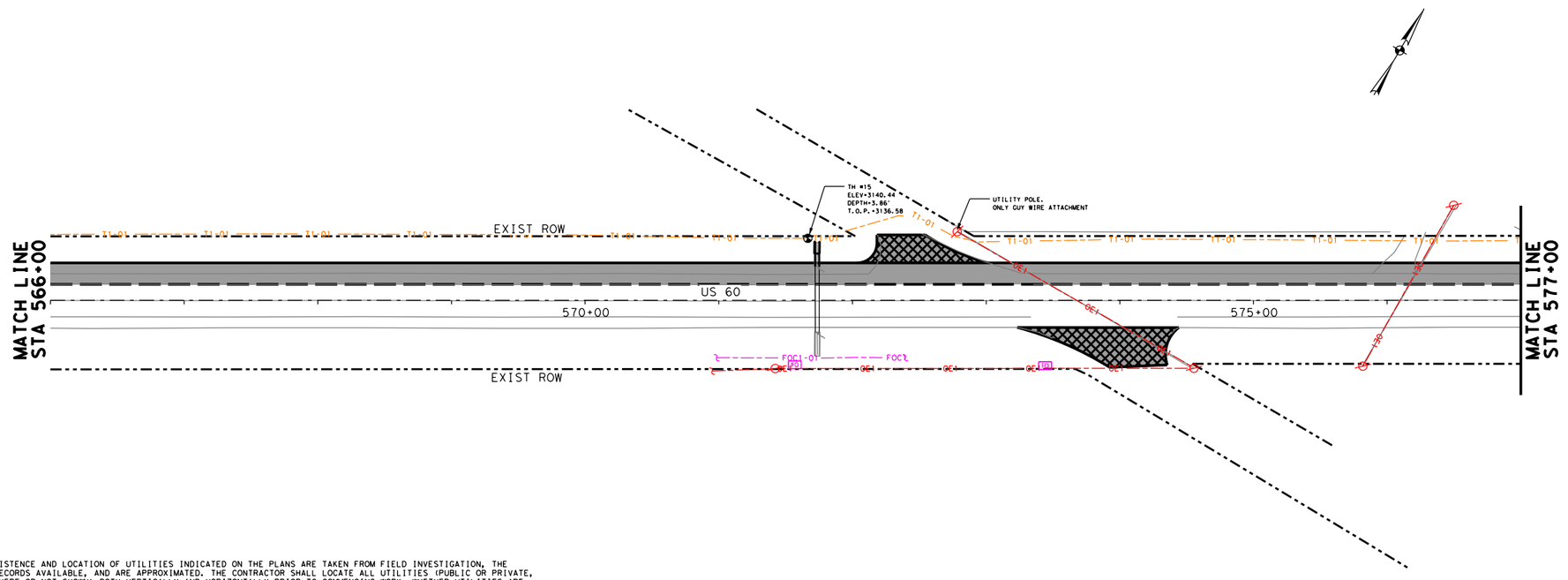


LEGEND

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- ELECTRIC STREET LIGHT
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- TELEPHONE MARKER
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- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK. WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 555+00 TO STA 577+00

SHEET 24 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 162 |

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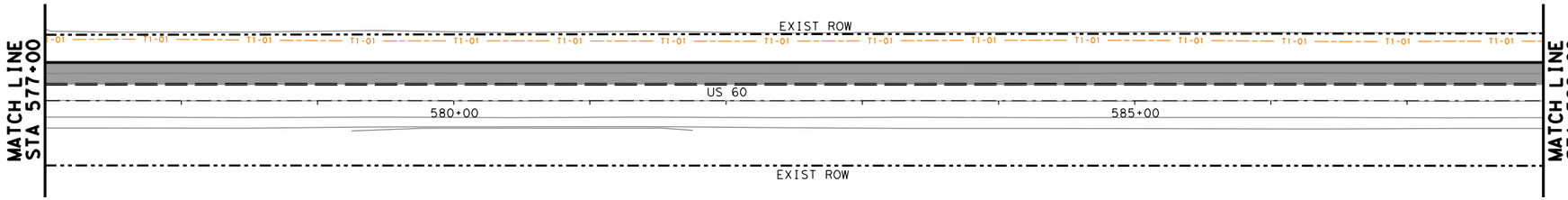
USGO_SUE-24.dgn




SUE RESEARCH ONLY PERFORMED ON SIDE WITH
PROPOSED US 60 ROAD WIDENING.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

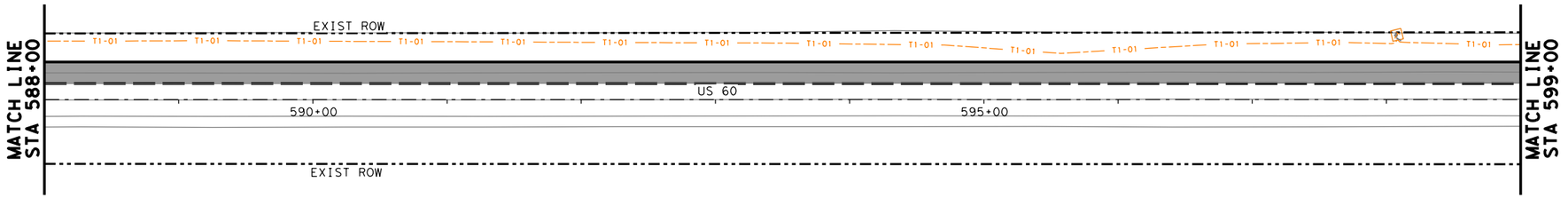
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE




SUE RESEARCH ONLY PERFORMED ON SIDE WITH
PROPOSED US 60 ROAD WIDENING.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK. WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS
STA 577+00 TO STA 599+00

SHEET 25 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 163 |



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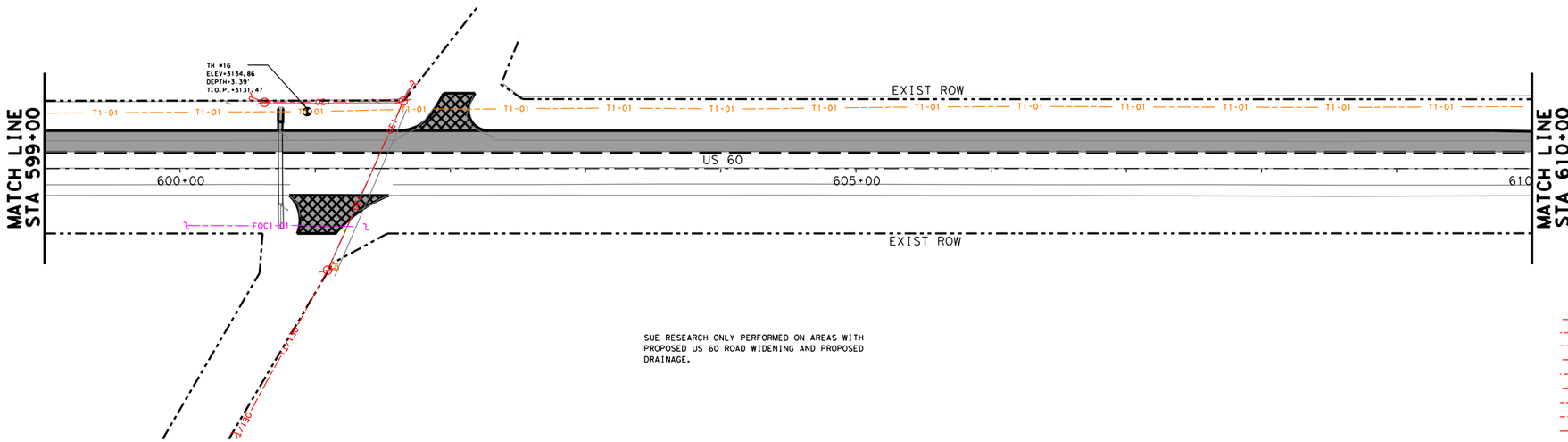
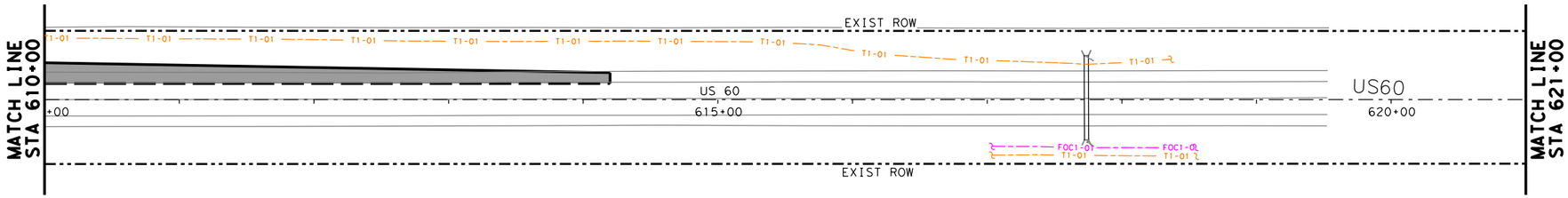



SUE RESEARCH ONLY PERFORMED ON AREAS WITH PROPOSED US 60 ROAD WIDENING AND PROPOSED DRAINAGE.




SUE RESEARCH ONLY PERFORMED ON AREAS WITH PROPOSED US 60 ROAD WIDENING AND PROPOSED DRAINAGE.

NOTES:
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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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0 25 50 100
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CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com


Texas Department of Transportation

# US 60
# EXISTING UTILITY PLANS
STA 599+00 TO STA 621+00

SHEET 26 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 164 |

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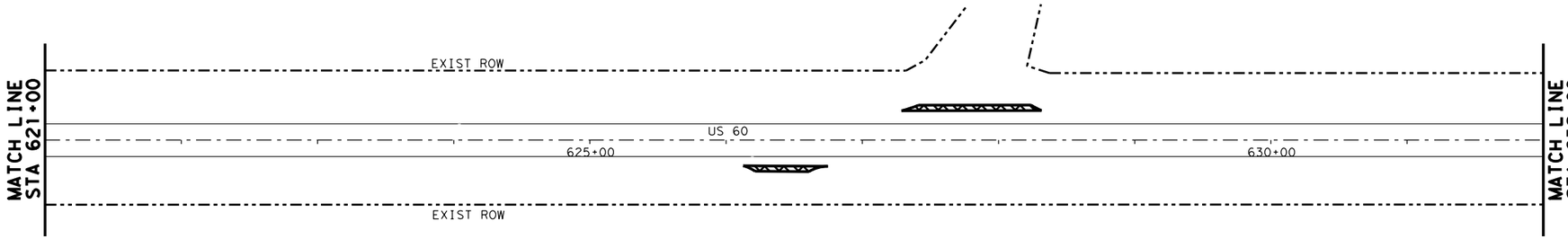
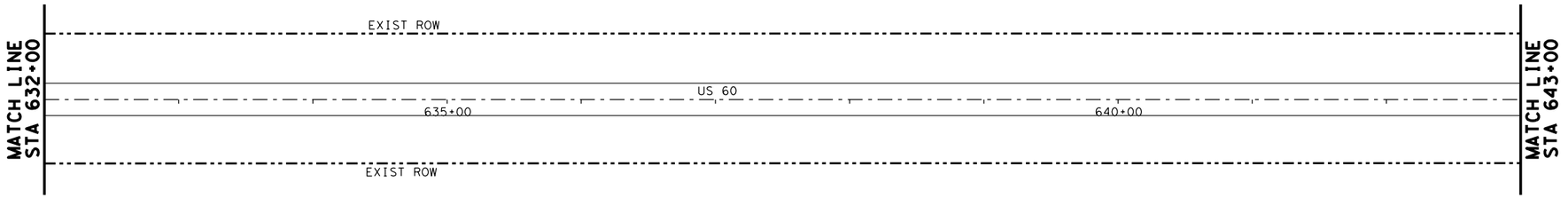



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




SUE RESEARCH NOT PERFORMED IN THIS AREA.
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LEGEND
- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
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- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
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QL LEVEL B
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
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- G3-01 — GAS - UNKNOWN
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- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D
- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD
- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS
STA 621+00 TO STA 643+00

SHEET 27 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 165 |

4/2/2021 9:46:09 AM
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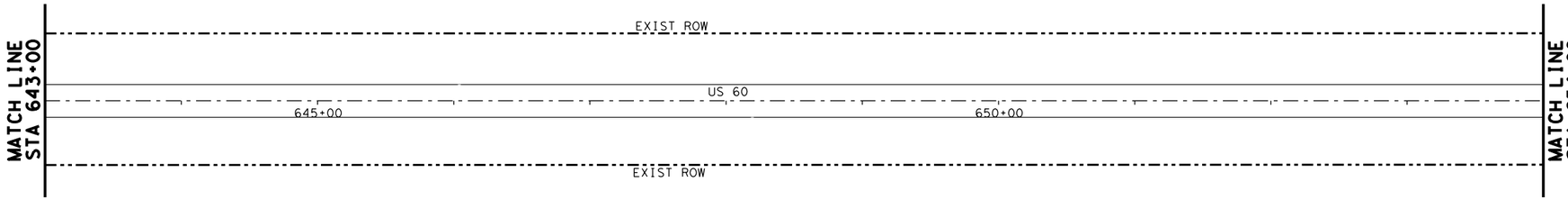
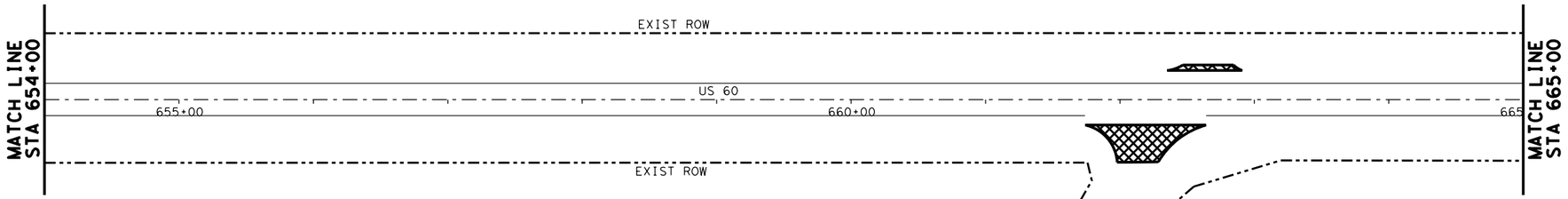



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.




SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK, WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

2. ALL WORK ACTIVITIES (INCLUDING BUT NOT LIMITED TO CONSTRUCTING DETOURS, CULVERT EXTENSION AND REPLACEMENTS, EXCAVATION, DITCH GRADING, ETC.) SHALL NOT COMMENCE UNTIL ALL UTILITIES, ESPECIALLY UTILITIES WITHIN EXISTING ROW AND PARALLEL TO US 60, ARE IDENTIFIED. IF CONFLICTS WITH PROPOSED CONSTRUCTION OR WORK ACTIVITIES ARE IDENTIFIED, CONTRACTOR IS TO CEASE WORK IN THE LOCATION OF THE CONFLICT IMMEDIATELY.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |
| | | | |
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 643+00 TO STA 665+00

SHEET 28 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 166 |

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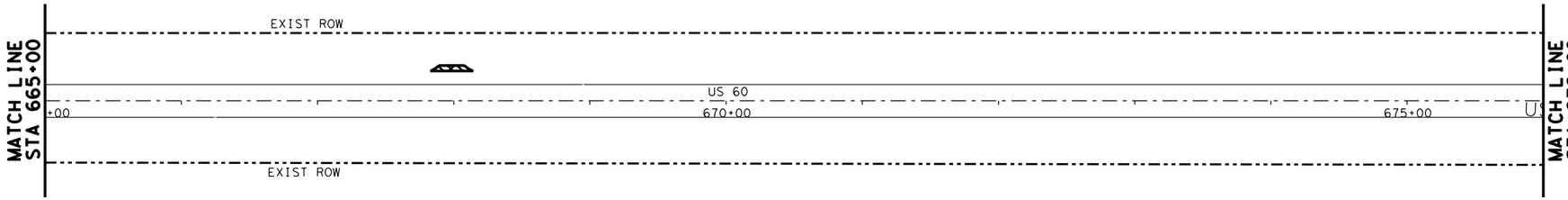



B

SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

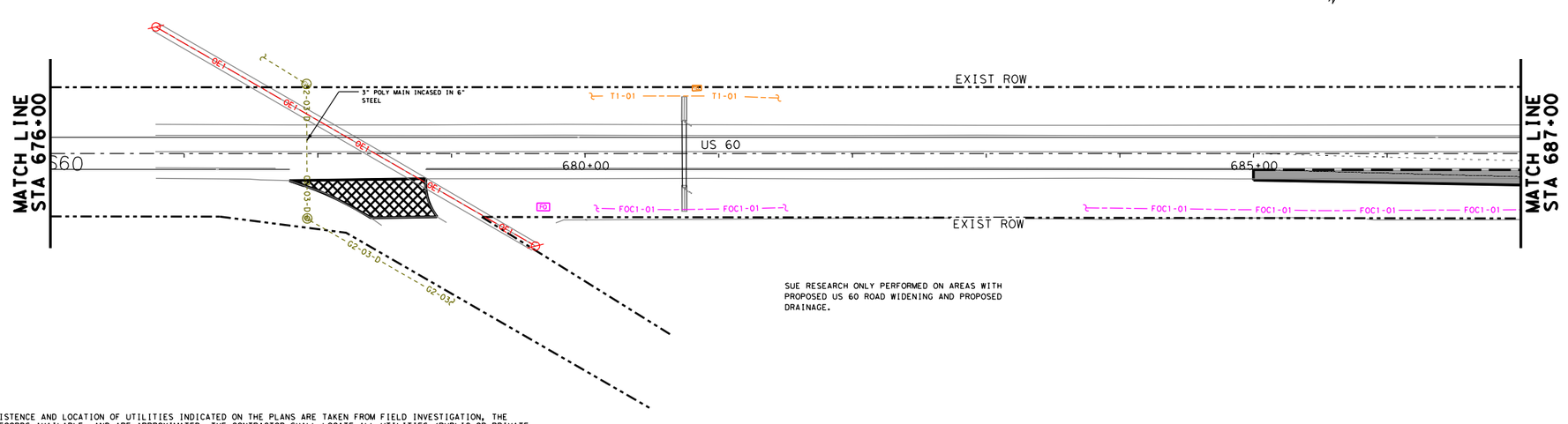
QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

B




SUE RESEARCH ONLY PERFORMED ON AREAS WITH PROPOSED US 60 ROAD WIDENING AND PROPOSED DRAINAGE.

NOTES:

1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK. WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 665+00 TO STA 687+00

SHEET 29 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 167 |

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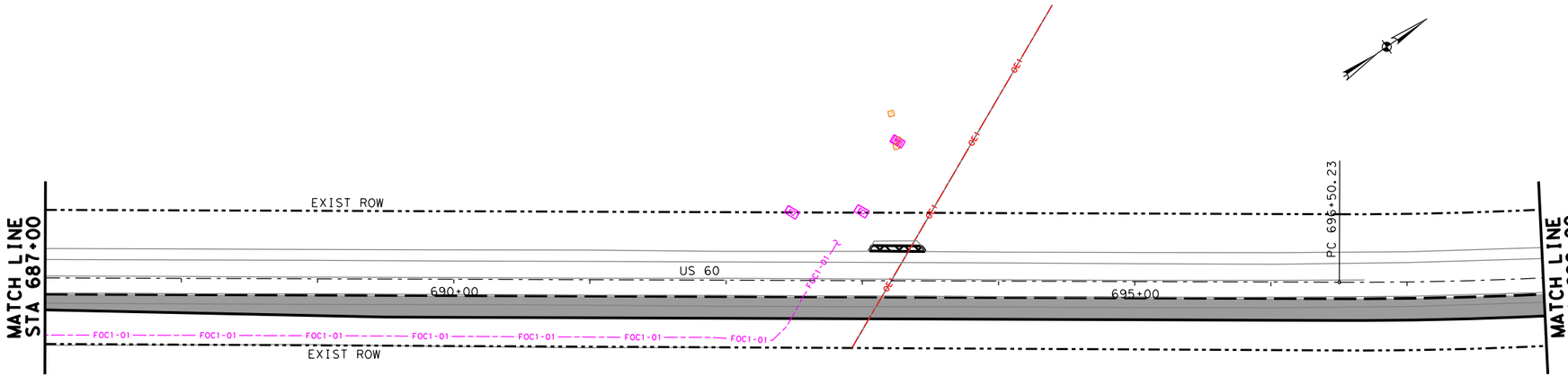
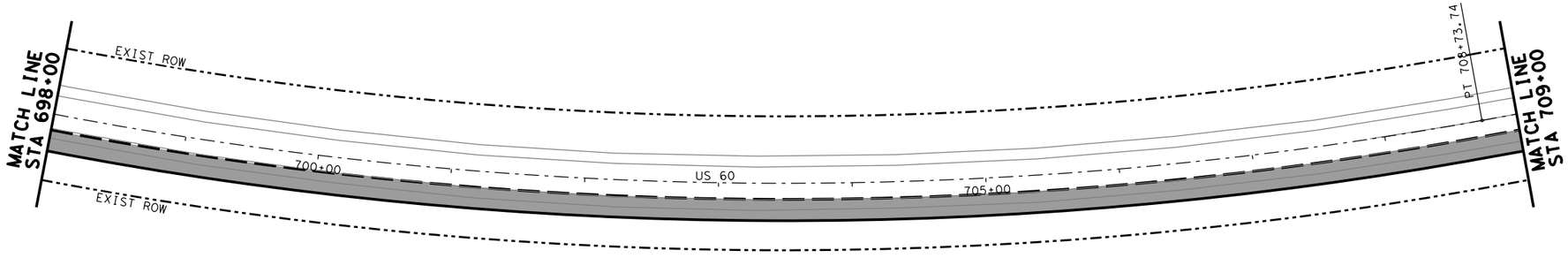
USGO_SUE-29.dgn

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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
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- GAS VALVE
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- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

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- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
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- G1-01 — GAS - ATMOS ENERGY
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- G3-01 — GAS - UNKNOWN
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- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

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- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
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OVERHEAD

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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER

4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 687+00 TO STA 709+00

SHEET 30 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 168 |

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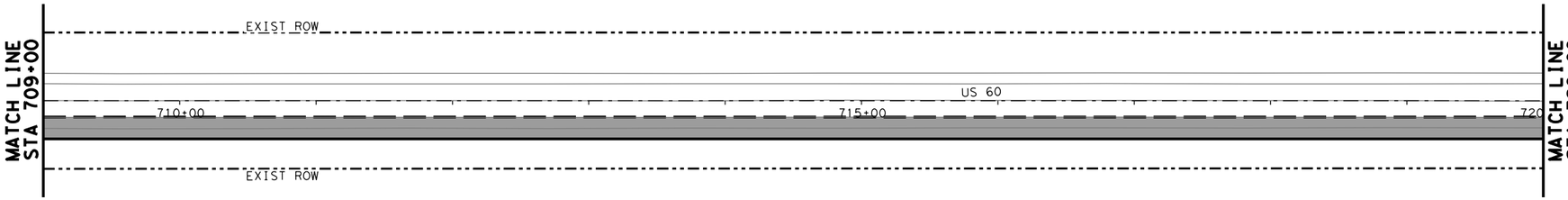



SUE RESEARCH NOT PERFORMED IN AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

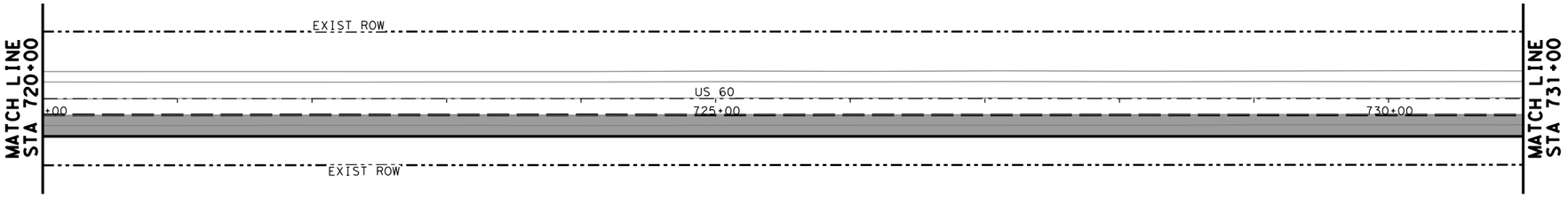
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

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NOTES:
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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0 25 50 100
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CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILITY PLANS
STA 709+00 TO STA 731+00

SHEET 31 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 169 |

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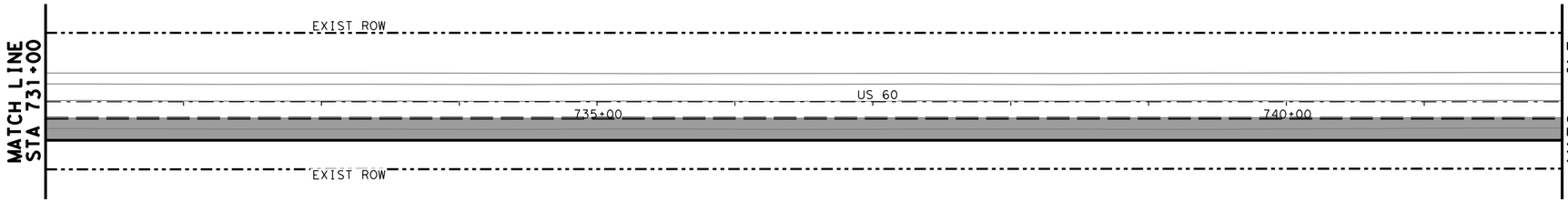


SUE RESEARCH NOT PERFORMED IN AREA.
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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

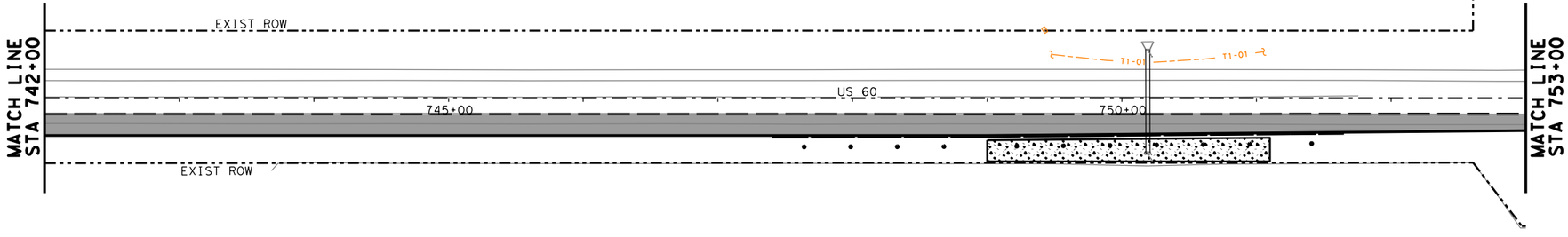
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE




SUE RESEARCH ONLY PERFORMED IN AREAS
WITH PROPOSED DRAINAGE.

NOTES:
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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLANS

STA 731+00 TO STA 753+00

SHEET 32 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 170 |

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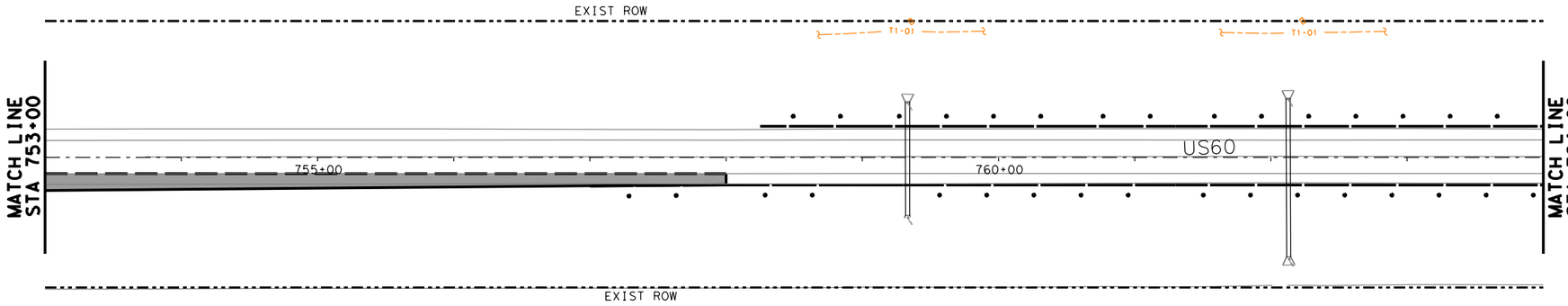


SUE RESEARCH ONLY PERFORMED IN AREAS
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LEGEND

- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
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- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
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- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
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- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
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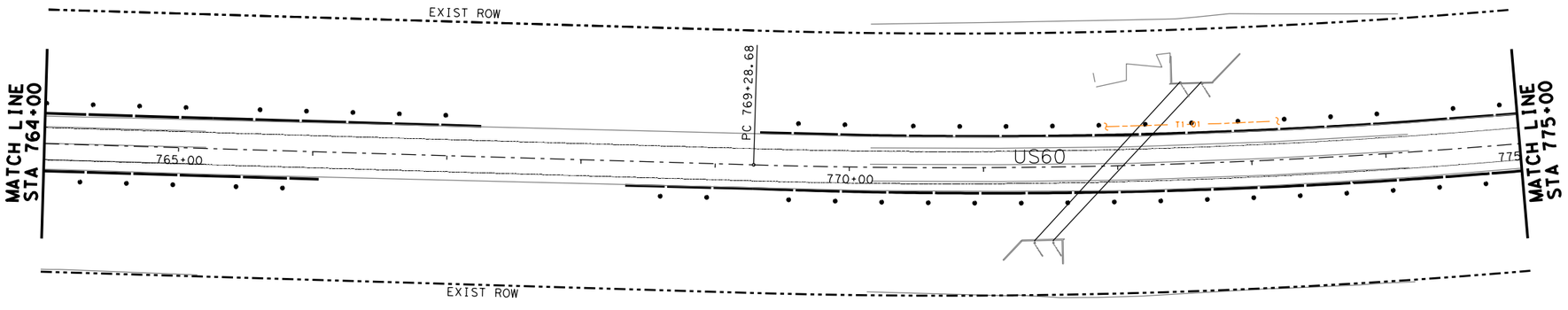
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

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# US 60
# EXISTING UTILITY PLANS

STA 753+00 TO STA 775+00

SHEET 33 OF 36

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 171 |

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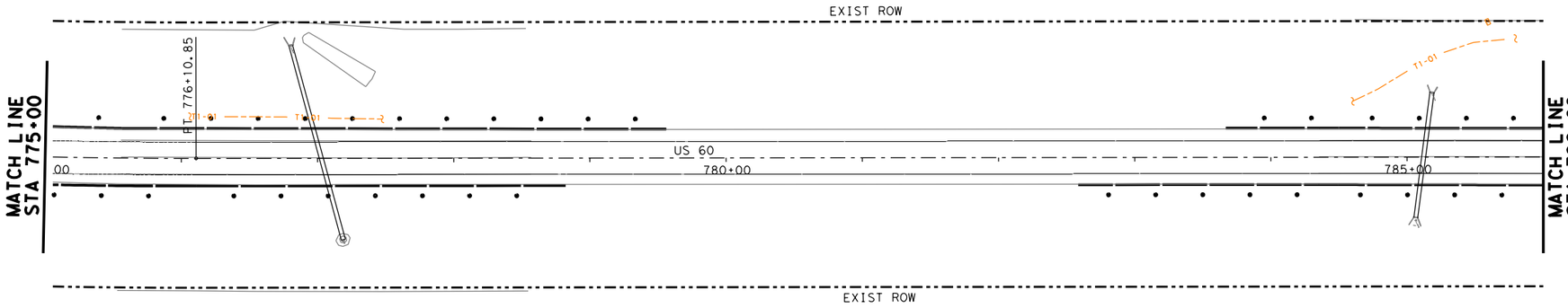
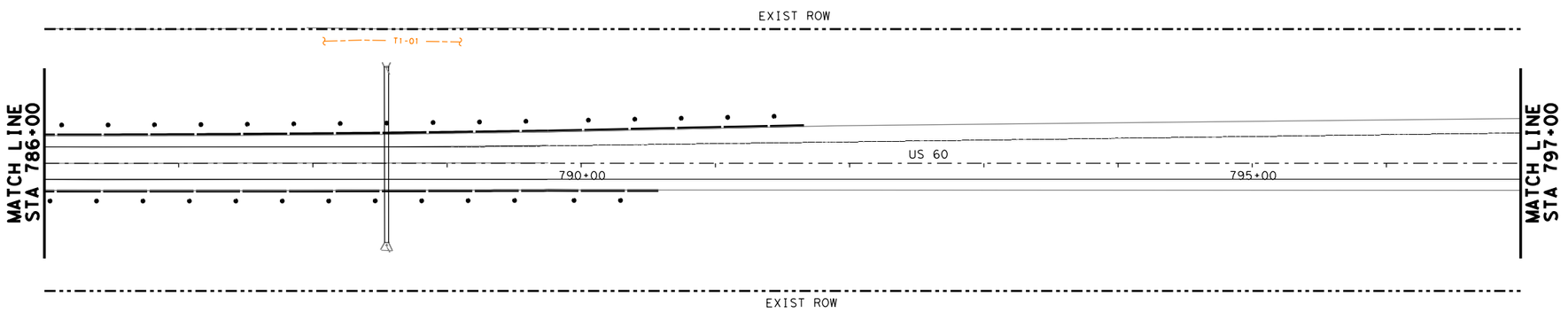



SUE RESEARCH ONLY PERFORMED IN AREAS
WITH PROPOSED DRAINAGE.




SUE RESEARCH ONLY PERFORMED IN AREAS
WITH PROPOSED DRAINAGE.

NOTES:
1. THE EXISTENCE AND LOCATION OF UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM FIELD INVESTIGATION, THE BEST RECORDS AVAILABLE, AND ARE APPROXIMATED. THE CONTRACTOR SHALL LOCATE ALL UTILITIES (PUBLIC OR PRIVATE, SHOWN HERE OR NOT SHOWN) BOTH VERTICALLY AND HORIZONTALLY PRIOR TO COMMENCING WORK. WHETHER UTILITIES ARE ANTICIPATED TO BE IN DIRECT CONFLICT WITH PROPOSED WORK ACTIVITIES OR NOT. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE FAILURE TO LOCATE, PRESERVE, OR PROTECT THESE UTILITIES.

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LEGEND
- TELEPHONE POLE
- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
- ELECTRIC SWITCH
- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B
- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D
- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
- W1-10-D — WATER - CITY OF PAMPA (10")
- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD
- OHT — OVERHEAD ELECTRIC TRANSMISSION - XCEL/SOUTHWESTERN PUBLIC SERVICE CO
- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
# EXISTING UTILITY PLAN
STA 775+00 TO STA 797+00

SHEET 34 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 172 |

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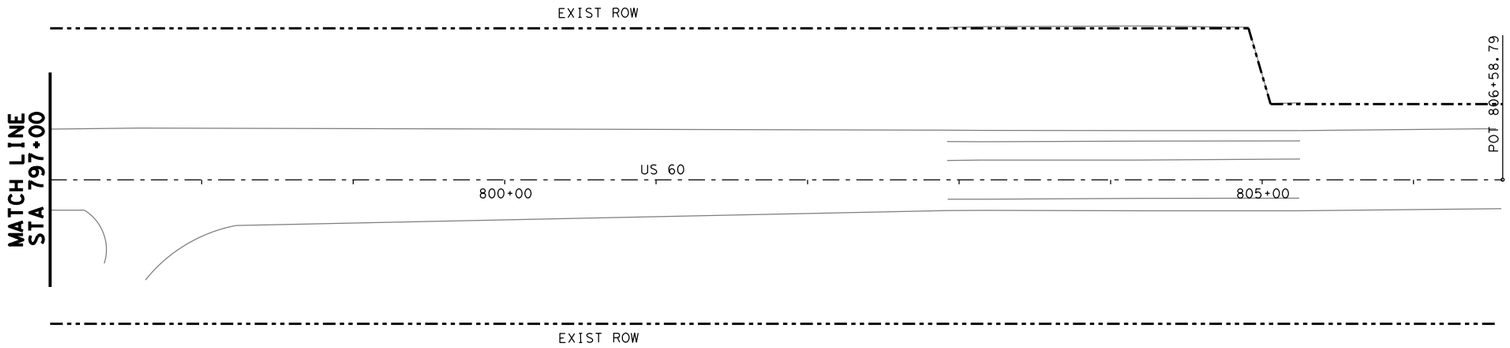
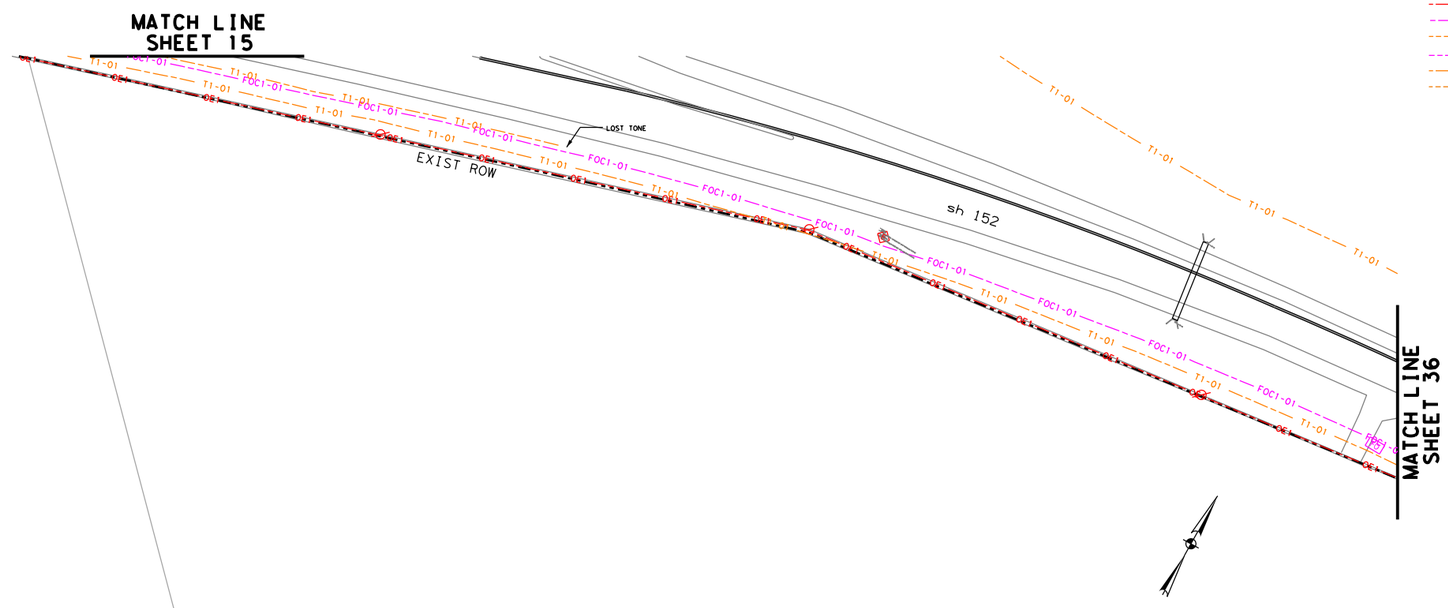



SUE RESEARCH NOT PERFORMED IN THIS AREA.
NO EXCAVATION WORK IS PLANNED IN THIS AREA.

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- TELEPHONE POLE
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- ELECTRIC PULLBOX
- ELECTRIC METER
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- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
- ELECTRIC CABINET
- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
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- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
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- WATER MANHOLE
- WATER MARKER
- WATER TEST STATION
- WATER VALVE

QL LEVEL B

- E1-01 — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01 — ELECTRIC - TXDOT
- FOC1-01 — FIBER OPTIC - AT&T
- FOC2-01 — FIBER OPTIC - DOBSON FIBER CO
- T1-01 — TELEPHONE - AT&T
- C1-01 — CABLE TV - CABLE ONE
- G1-01 — GAS - ATMOS ENERGY
- G1-02 — GAS - ATMOS ENERGY (2")
- G3-01 — GAS - UNKNOWN
- G4-01 — GAS - AMARILLO NATURAL GAS
- W1-01 — WATER - CITY OF PAMPA
- W1-06 — WATER - CITY OF PAMPA (6")
- W1-10 — WATER - CITY OF PAMPA (10")
- WW1-01 — SANITARY SEWER - CITY OF PAMPA
- SD-01 — STORM - CITY OF PAMPA
- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
- W1-02-D — WATER - CITY OF PAMPA (2")
- W1-06-D — WATER - CITY OF PAMPA (6")
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- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

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- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
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- OC1 — OVERHEAD CATV - CABLE ONE

STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED
PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
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| | | | |
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0 25 50 100
1" = 100'

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TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
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Houston, Texas 77040
713.462.3242
www.cobbfendley.com



# US 60
## EXISTING UTILTIY PLANS
STA 797+00 TO STA 806+58.79
& SHEET 15

SHEET 35 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | HIGHWAY NO. |
|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | US 60 |

| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
|---|---|---|---|---|---|
| AMA | GRAY | 0619 | 07 | 053,ETC | 173 |

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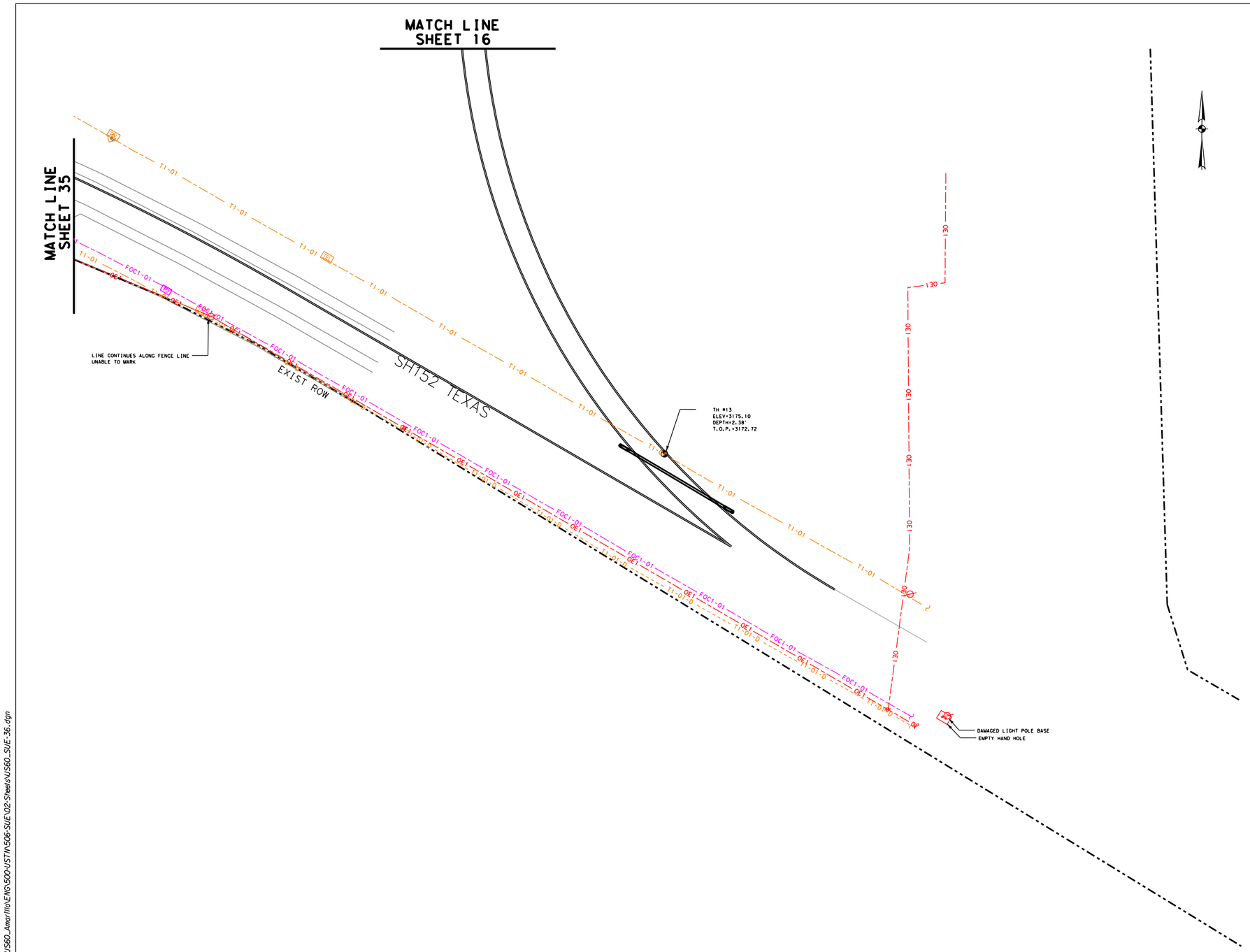


LEGEND

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- POWER POLE
- ELECTRIC PULLBOX
- ELECTRIC METER
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- ELECTRIC STREET LIGHT
- ELECTRIC LANDSCAPE LIGHT
- ELECTRIC TRAFFIC SIGNAL
- ELECTRIC TRAFFIC SWITCH BOX
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- ELECTRIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TELEPHONE MARKER
- VIDEO-READY ACCESS DEVICE
- FIBER OPTIC PULLBOX
- FIBER OPTIC MARKER
- FIBER OPTIC TEST STATION
- GAS METER
- GAS MARKER
- GAS REGULATOR
- GAS TEST STATION
- GAS VALVE
- GAS VENT
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- WATER MARKER
- WATER TEST STATION
- WATER VALVE

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- FOC1-01 — FIBER OPTIC - AT&T
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- WW1-01 — SANITARY SEWER - CITY OF PAMPA
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- UNK — UNKNOWN

QL LEVEL D

- E1-01-D — ELECTRIC-XCEL/SOUTHWEST PUBLIC SERVICE.CO
- E3-01-D — ELECTRIC - TXDOT
- FOC1-01-D — FIBER OPTIC - AT&T
- T1-01-D — TELEPHONE - AT&T
- C1-01-D — CABLE TV - CABLE ONE
- G1-01-D — GAS - ATMOS ENERGY
- G2-01-D — GAS - WEST TEXAS GAS
- G2-03-D — GAS - WEST TEXAS GAS (3")
- G3-01-D — GAS - UNKNOWN
- W1-01-D — WATER - CITY OF PAMPA (UNKNOWN SIZE)
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- W2-04-D — WATER - TXDOT (4")
- W3-2.5-D — WATER - PRIVATE (2.5")
- W4-04-D — WATER - WESTERN EQUIPMENT (4")
- WW1-01-D — SANITARY SEWER - CITY OF PAMPA
- WW2-03-D — SANITARY SEWER - WESTERN EQUIPMENT (3")
- SD-01-D — STORM - CITY OF PAMPA
- UNK — UNKNOWN

OVERHEAD

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- OE1 — OVERHEAD ELECTRIC - XCEL ENERGY-SOUTHWESTERN PUBLIC SERVICE CO
- OE1/FOC1/T1/C1 — OVERHEAD ELEC/FOC/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/FOC1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T
- OE1/FOC1/T1 — OVERHEAD ELEC/FOC/TEL - XCEL/AT&T/AT&T
- OE1/T1 — OVERHEAD ELEC/TEL - XCEL ENERGY/AT&T
- OE1/T1/T1/C1/C1 — OVERHEAD ELEC/TEL/TEL/CATV/CATV - XCEL/AT&T/AT&T/CABLE ONE/CABLE ONE
- OE1/T1/T1/C1 — OVERHEAD ELEC/TEL/TEL/CATV - XCEL/AT&T/AT&T/CABLE ONE
- OE1/T1/C1 — OVERHEAD ELEC/TEL/CATV - XCEL/AT&T/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OE1/C1 — OVERHEAD ELEC/CATV - XCEL ENERGY/CABLE ONE
- OFOC1 — OVERHEAD FOC - AT&T
- OT1 — OVERHEAD TEL - AT&T
- OFOC1/T1/C1 — OVERHEAD TEL/FOC/CATV - AT&T/AT&T/CABLE ONE
- OT1/C1 — OVERHEAD TEL/CATV - AT&T/CABLE ONE
- OC1 — OVERHEAD CATV - CABLE ONE

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STATE OF TEXAS
THOMAS EDWARD HUNT II
102567
LICENSED PROFESSIONAL ENGINEER
4/2/2021

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
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0 25 50 100
1" = 100'

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
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713.462.3242
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# US 60
## EXISTING UTILITY PLANS
SHEET 35 & SHEET 16

SHEET 36 OF 36

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | US 60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0619 | 07 | 053,ETC | 174 |

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DATE:
FILE:

# SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

| PLAN SHEET NO. | SIGN NO. | SIGN NOMENCLATURE | SIGN | DIMENSIONS | FLAT ALUMINUM (TYPE A) | EXAL ALUMINUM (TYPE G) | POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | U | | |
| | | M1-6T | 152 TEXAS | 24 x 24 | | | | | | | | |
| | | I-2aT | Pampa CITY LIMITS | 30 x 24 | | | | | | | | |
| | | D10-7aT | 3 8 4 | 3 x 10 | | | | | | | | |
| | 3 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 5 | I-2aT | Pampa CITY LIMITS | 30 x 24 | | | 10BWG | 1 | SA | T | | |
| | 6 | R2-1 | SPEED LIMIT 55 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| | 7 | D3-2 | WOODIE GUTHRIE MEMORIAL HIGHWAY (BROWN BACKGROUND) | 36 x 30 | | | 10BWG | 1 | SA | T | | |
| | 8 | M2-1 | JCT | 21 x 15 | | | 10BWG | 1 | SA | P | | |
| | | M1-6L | LOOP 171 | 24 x 24 | | | | | | | | |
| 4 | 1 | D1-3 | Miami<br>Wheeler<br>Lefors | 66 x 36 | | | S80 | 1 | SA | T | | |
| | 2 | R2-1 | SPEED LIMIT 55 | 30 x 36 | | | 10BWG | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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**NOTE:**

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Traffic Operations Division Standard

## SUMMARY OF SMALL SIGNS

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| 4-16 | DIST | COUNTY | | SHEET NO. |
| 8-16 | AMA | GRAY | | 175 |

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# SUMMARY OF SMALL SIGNS

| 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) POST TYPE | POSTS | ANCHOR TYPE | MOUNTING DESIGNATION PREFABRICATED | MOUNTING DESIGNATION 1EXT or 2EXT = # of Ext | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | 1 or 2 | UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | P = "Plain"<br>T = "T"<br>U = "U" | BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | TY N<br>TY S |
| 4 | 3 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 6 | D20-1TR | CO RD 10 ⇨ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| 6 | 1 | D21-1TR | RABBIT LANE ⇨ | VAR x 12 | | | 10BWG | 1 | SA | T | | |
| | 2 | R2-1 | SPEED LIMIT 55 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| | 3 | R2-1 | SPEED LIMIT 70 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| | 4 | D21-1TL | ⇦ RABBIT LANE | 72 x 12 | | | 10BWG | 1 | SA | T | | |
| | 5 | D15-10T | PASSING LANE 2 MILES | 54 x 42 | | | 10BWG | 1 | SA | T | | |
| | 6 | W17-9T | HITCHHIKERS MAY BE ESCAPING INMATES | 78 x 24 | | | 10BWG | 1 | SA | T | | |
| 7 | 1 | R2-1 | SPEED LIMIT 75 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | R2-1 | SPEED LIMIT 70 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| 9 | 1 | D20-1TL | CO RD 12 ⇦ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 3 | D20-1TR | CO RD 12 ⇨ | 24 x 24 | | | 10BWG | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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## SUMMARY OF SMALL SIGNS

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# SUMMARY OF SMALL SIGNS

| 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) POST TYPE | POSTS | ANCHOR TYPE | MOUNTING DESIGNATION PREFABRICATED | MOUNTING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 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 | P = "Plain" T = "T" U = "U" | | TY N TY S |
| 9 | 4 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| 10 | 1 | D21-1TL | ⇦ CO RD 12 1/2 | 78 x 12 | | | 10BWG | 1 | SA | T | | |
| | 2 | D20-3TR | CO RD F ⇗ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| 11 | 4 | R4-3 | SLOWER TRAFFIC KEEP RIGHT | 24 x 30 | | | 10BWG | 1 | SA | T | | |
| 12 | 1 | W9-2TL | LANE ENDS MERGE LEFT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | W9-1R | RIGHT LANE ENDS | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 3 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | M1-6T | 152 TEXAS | 24 X 24 | | | | | | | | |
| | | D10-7aT | 3 8 6 | 3 x 10 | | | | | | | | |
| 13 | 1 | W17-9T | HITCHHIKERS MAY BE ESCAPING INMATES | 78 x 24 | | | 10BWG | 1 | SA | T | | |
| | 2 | R3-33R | RIGHT LANE MUST EXIT | 78 x 36 | | | 10BWG | 1 | SA | T | | |
| | 3 | D8-1T | CMV INSPECTION STATION 1 MILE | 60 x 48 | | | S80 | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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**NOTE:**

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Traffic Operations Division Standard

## SUMMARY OF SMALL SIGNS

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| 8-16 | AMA | GRAY | | 177 |

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# SUMMARY OF SMALL SIGNS

| 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) POST TYPE | POSTS | ANCHOR TYPE | MOUNTING DESIGNATION PREFABRICATED | MOUNTING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 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 | P = "Plain" T = "T" U = "U" | | TY N TY S |
| 14 | 1 | M2-1 | JCT | 21 x 15 | | | 10BWG | 1 | SA | P | | |
| | | M1-6T | 152 TEXAS | 24 X 24 | | | | | | | | |
| | 2 | D20-1TL | CO RD 14 ⇦ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 3 | D1-2 | ⇧ Miami Wheeler ⇨ | 66 x 24 | | | 10BWG | 1 | SA | T | | |
| | 4 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 6 | R3-7R | RIGHT LANE MUST TURN RIGHT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 7 | D20-1TR | CO RD 14 ⇨ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| 15 | 1 | D8-1aT | CMV INSPECTION STATION 1/2 MILE | 60 x 48 | | | S80 | 1 | SA | T | | |
| | 2 | M3-2 | EAST | 24 x 12 | | | 10BWG | 1 | SA | U | | |
| | | M1-4 | 60 | 24 x 24 | | | | | | | | |
| | | M6-3 | ⇧ | 21 x 15 | | | | | | | | |
| | | M3-2 | EAST | 24 x 12 | | | | | | | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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| 8-16 | AMA | GRAY | | 178 |

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# SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

- XXXXX: POST TYPE
- (X): POSTS
- XX: ANCHOR TYPE
- (X-XXXX): MOUNTING DESIGNATION

| PLAN SHEET NO. | SIGN NO. | SIGN NOMENCLATURE | SIGN | DIMENSIONS | FLAT ALUMINUM (TYPE A) | EXAL ALUMINUM (TYPE G) | POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 2 | M1-6T | 152 TEXAS | 24 X 24 | | | 10BWG | 1 | SA | U | | |
| | | M6-2R | | 21 x15 | | | | | | | | |
| | 4 | D20-1TL | CO RD E | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 5 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 6 | R1-2 | YIELD | 48 x 48 x 48 | | | 10BWG | 1 | SA | T | | |
| | 7 | M3-2 | EAST | 24 x 12 | | | S80 | 1 | SA | U | | |
| | | M1-6T | 152 TEXAS | 24 X 24 | | | | | | | | |
| | | M6-1 | | 21 x 15 | | | | | | | | |
| | | M3-4 | WEST | 24 x 12 | | | | | | | | |
| | | M1-4 | 60 | 24 x 24 | | | | | | | | |
| | | M1-6T | 152 TEXAS | 24 X 24 | | | | | | | | |
| | | M6-3 | | 21 x 15 | | | | | | | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
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| 4-16<br>8-16 | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 179 |

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# SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

| PLAN SHEET NO. | SIGN NO. | SIGN NOMENCLATURE | SIGN | DIMENSIONS | FLAT ALUMINUM (TYPE A) | EXAL ALUMINUM (TYPE G) | POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | MOUNTING DESIGNATION<br>1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 9 | D1-2 | ⇧ Pampa<br>⇦ Wheeler | 66 x 24 | | | 10BWG | 1 | SA | T | | |
| | 10 | M2-1 | JCT | 21 x 15 | | | 10BWG | 1 | SA | P | | |
| | | M1-6T | 152<br>TEXAS | 24 X 24 | | | | | | | | |
| | 11 | D20-1TR | CO RD<br>E<br>⇨ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 13 | M3-2 | EAST | 24 x 12 | | | 10BWG | 1 | SA | P | | |
| | | M1-4 | 60 | 24 x 24 | | | | | | | | |
| 16 | 1 | D15-10T | NEXT PASSING LANE 2 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| | 4 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | P | BM | |
| | | W4-4P | CROSS TRAFFIC DOES NOT STOP | 36 x 24 | | | | | | | | |
| | 5 | R4-3 | SLOWER TRAFFIC KEEP RIGHT | 24 x 30 | | | 10BWG | 1 | SA | P | | |
| | 6 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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# SUMMARY OF SMALL SIGNS

| 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) POST TYPE | POSTS | ANCHOR TYPE | MOUNTING DESIGNATION PREFABRICATED | MOUNTING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 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 | P = "Plain" T = "T" U = "U" | | TY N TY S |
| 16 | 7 | M2-1 | JCT | 21 x 15 | | | 10BWG | 1 | SA | P | | |
| | | M1-6F | FARM 2391 ROAD | 24 x 24 | | | | | | | | |
| 17 | 1 | M1-6F | FARM 2391 ROAD | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | M6-4 | | 21 x 15 | | | | | | | | |
| | 2 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | M6-4 | | 21 x 15 | | | | | | | | |
| | 3 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | M6-4 | | 21 x 15 | | | | | | | | |
| | 4 | M1-6F | FARM 2391 ROAD | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | M6-4 | | 21 x 15 | | | | | | | | |
| | 5 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | D10-7aT | 390 | 3 x 10 | | | | | | | | |

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| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 4-16 | DIST | COUNTY | | SHEET NO. |
| 8-16 | AMA | GRAY | | 181 |

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# SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

| PLAN SHEET NO. | SIGN NO. | SIGN NOMENCLATURE | SIGN | DIMENSIONS | FLAT ALUMINUM (TYPE A) | EXAL ALUMINUM (TYPE G) | POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 6 | D8-1aT | CMV INSPECTION STATION 1/2 MILE | 60 x 48 | | | S80 | 1 | SA | T | | |
| 18 | 1 | M2-1 | JCT | 21 x 15 | | | 10BWG | 1 | SA | P | | |
| | | M1-6F | FARM 2391 ROAD | 24 x 24 | | | | | | | | |
| | 2 | D8-1T | CMV INSPECTION STATION 1 MILE | 60 x 48 | | | S80 | 1 | SA | T | | |
| 20 | 1 | D20-5T | CO RD 16 ⇨ D ⇦ | 24 x 42 | | | 10BWG | 1 | SA | P | | |
| | 2 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 3 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 4 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 5 | D20-5T | CO RD 16 ⇨ D ⇦ | 24 x 42 | | | 10BWG | 1 | SA | P | | |
| 21 | 1 | R4-3 | SLOWER TRAFFIC KEEP RIGHT | 24 x 30 | | | 10BWG | 1 | SA | P | | |
| | 2 | D15-10T | NEXT PASSING LANE 2 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| 22 | 1 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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# SUMMARY OF SMALL SIGNS

| 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) POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 1 | D10-7aT | 3<br>9<br>2 | 3 x 10 | | | 10BWG | 1 | SA | P | | |
| | 2 | D15-11T | NEXT PASSING LANE 3 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| 23 | 1 | W9-1R | RIGHT LANE ENDS | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | W9-2TL | LANE ENDS MERGE LEFT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| 24 | 1 | W9-2TL | LANE ENDS MERGE LEFT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | W9-1R | RIGHT LANE ENDS | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 3 | D20-2T | CO RD C | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 4 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 5 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| 25 | 1 | D20-2T | CO RD C | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 2 | D15-10T | NEXT PASSING LANE 2 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| | 3 | D20-1TR | CO RD 18 | 24 x 24 | | | 10BWG | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

**NOTE:**

1. 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.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



DATE:
FILE:

Texas Department of Transportation

Traffic Operations Division Standard

## SUMMARY OF SMALL SIGNS

SOSS

| FILE: sums16.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT May 1987 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 4-16 | DIST | COUNTY | | SHEET NO. |
| 8-16 | AMA | GRAY | | 183 |

TB

# SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

| PLAN SHEET NO. | SIGN NO. | SIGN NOMENCLATURE | SIGN | DIMENSIONS | FLAT ALUMINUM (TYPE A) | EXAL ALUMINUM (TYPE G) | POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 | 1 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | D20-1TL | CO RD 18 ⇐ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 3 | R4-3 | SLOWER TRAFFIC KEEP RIGHT | 24 x 30 | | | 10BWG | 1 | SA | P | | |
| 27 | 1 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | D10-7aT | 3 / 9 / 4 | 3 x 10 | | | | | | | | |
| 28 | 1 | D20-1TR | CO RD 19 ⇒ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 2 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| 29 | 1 | D20-1TL | CO RD 19 ⇐ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 2 | D20-1TR | CO RD B ⇒ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | 3 | R1-1 | STOP | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 4 | D20-1TL | CO RD B ⇐ | 24 x 24 | | | 10BWG | 1 | SA | T | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

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**NOTE:**

1. 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.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



DATE:
FILE:

Texas Department of Transportation

Traffic Operations Division Standard

## SUMMARY OF SMALL SIGNS

## SOSS

| FILE: sums16.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| © TxDOT May 1987 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 4-16 | DIST | COUNTY | | SHEET NO. |
| 8-16 | AMA | GRAY | | 184 |

TB

# SUMMARY OF SMALL SIGNS

| 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) POST TYPE<br>FRP = Fiberglass<br>TWT = Thin-Wall<br>10BWG = 10 BWG<br>S80 = Sch 80 | POSTS<br>1 or 2 | ANCHOR TYPE<br>UA=Universal Conc<br>UB=Universal Bolt<br>SA=Slipbase-Conc<br>SB=Slipbase-Bolt<br>WS=Wedge Steel<br>WP=Wedge Plastic | MOUNTING DESIGNATION<br>PREFABRICATED<br>P = "Plain"<br>T = "T"<br>U = "U" | 1EXT or 2EXT = # of Ext<br>BM = Extruded Wind Beam<br>WC = 1.12 #/ft Wing Channel<br>EXAL= Extruded Alum Sign Panels | BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)<br>TY = TYPE<br>TY N<br>TY S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 1 | R4-3 | SLOWER TRAFFIC KEEP RIGHT | 24 x 30 | | | 10BWG | 1 | SA | P | | |
| 31 | 1 | D15-10T | NEXT PASSING LANE 2 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| | 2 | W9-1R | RIGHT LANE ENDS | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| 32 | 1 | W9-2TL | LANE ENDS MERGE LEFT | 36 x 36 | | | 10BWG | 1 | SA | T | | |
| | 2 | M1-4 | 60 | 24 x 24 | | | 10BWG | 1 | SA | P | | |
| | | D10-7aT | 3 9 6 | 3 x 10 | | | | | | | | |
| 33 | 1 | R2-1 | SPEED LIMIT 75 | 30 x 36 | | | 10BWG | 1 | SA | T | | |
| 34 | 1 | R4-1 | DO NOT PASS | 24 x 30 | | | 10BWG | 1 | SA | P | | |
| | 2 | D15-11T | NEXT PASSING LANE 3 MILES | 54 x 48 | | | S80 | 1 | SA | T | | |
| | 3 | D20-1TR | CO RD 21 ⇨ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| 35 | 2 | D20-1TL | CO RD 21 ⇦ | 24 x 24 | | | 10BWG | 1 | SA | T | | |
| | | | | | | | | | | | | |

| ALUMINUM SIGN BLANKS THICKNESS | |
|---|---|
| Square Feet | Minimum Thickness |
| Less than 7.5 | 0.100" |
| 7.5 or Greater | 0.125" |

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2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

## SUMMARY OF SMALL SIGNS

## SOSS

| FILE: | sums16.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|---|
| © TxDOT | May 1987 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | 0169 | 07 | 053,ETC | US60 |
| 4-16 | | DIST | COUNTY | | SHEET NO. |
| 8-16 | | AMA | GRAY | | 185 |

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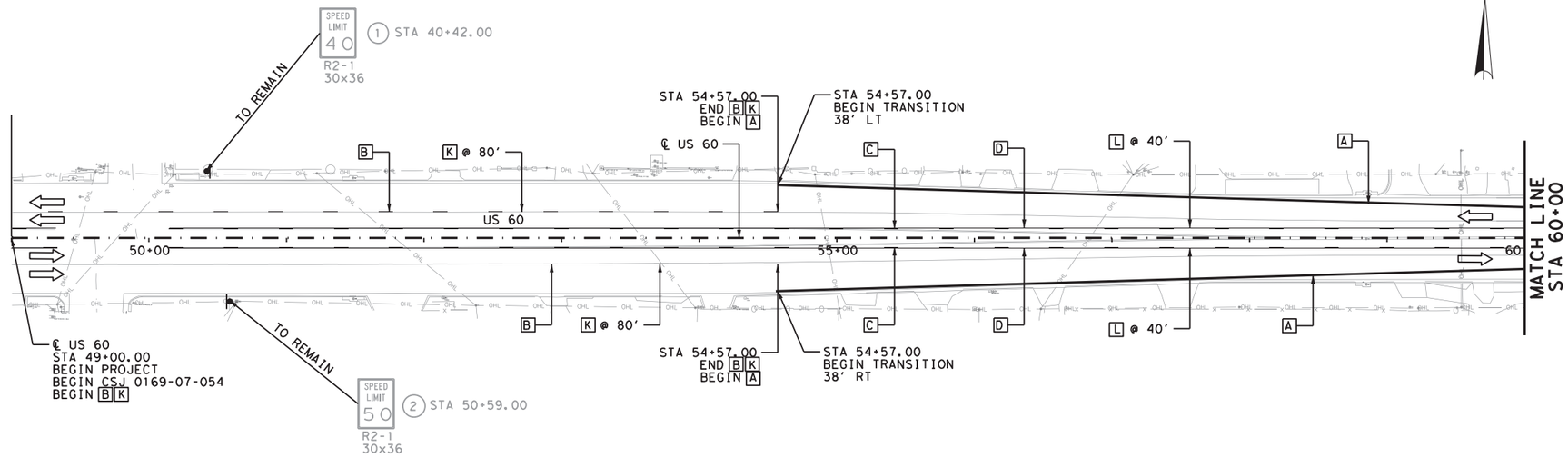


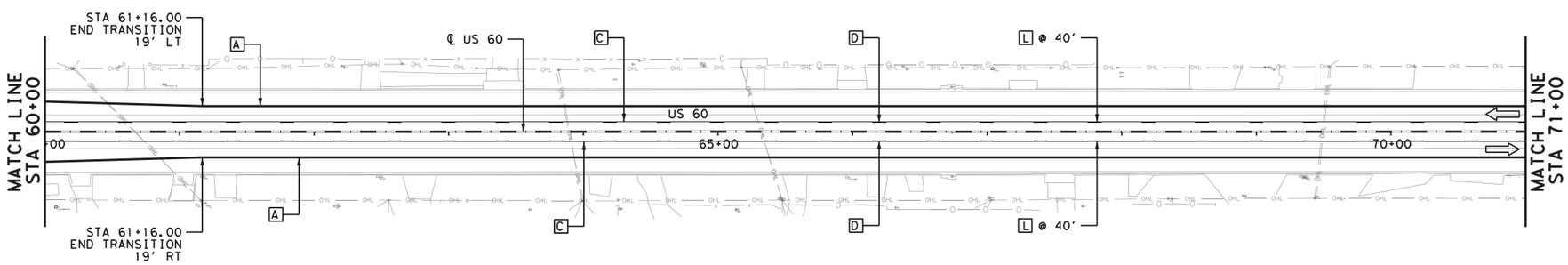


LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 49+00 TO STA 71+00**

SHEET 1 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 186 |

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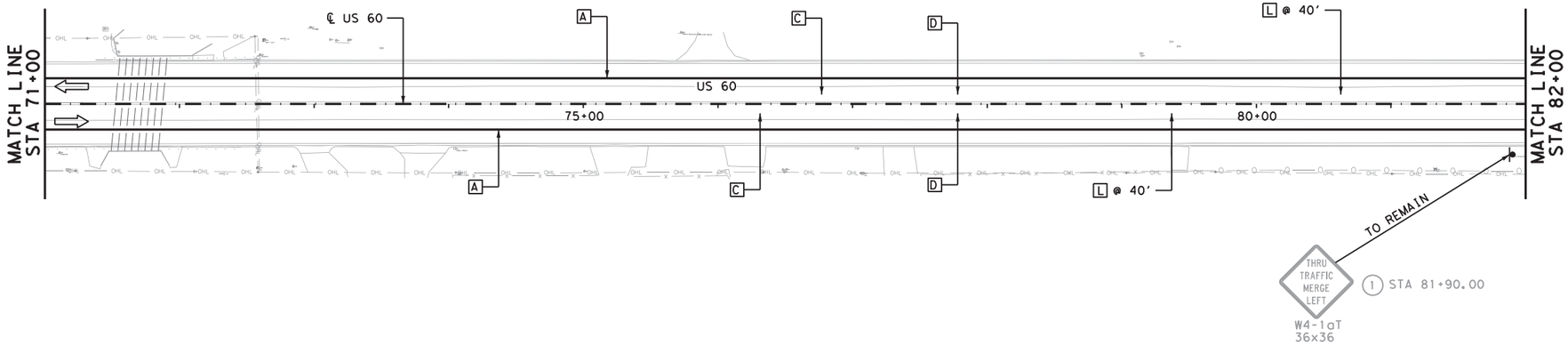


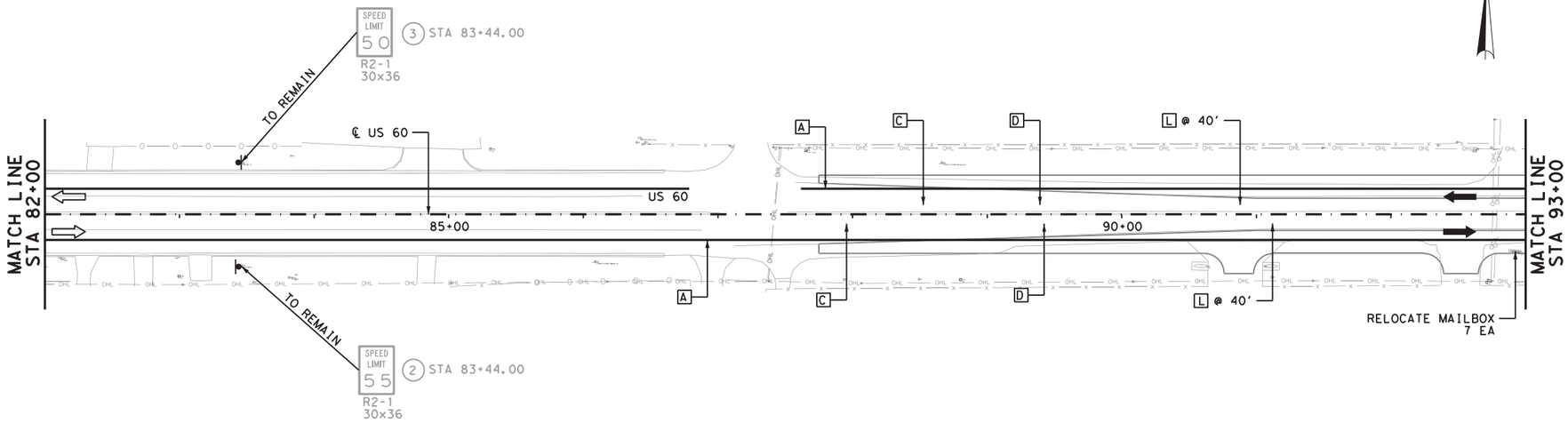


LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

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TBPLS Firm Registration No. 100467
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Houston, Texas 77040
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 71+00 TO STA 93+00**

SHEET 2 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 187 |

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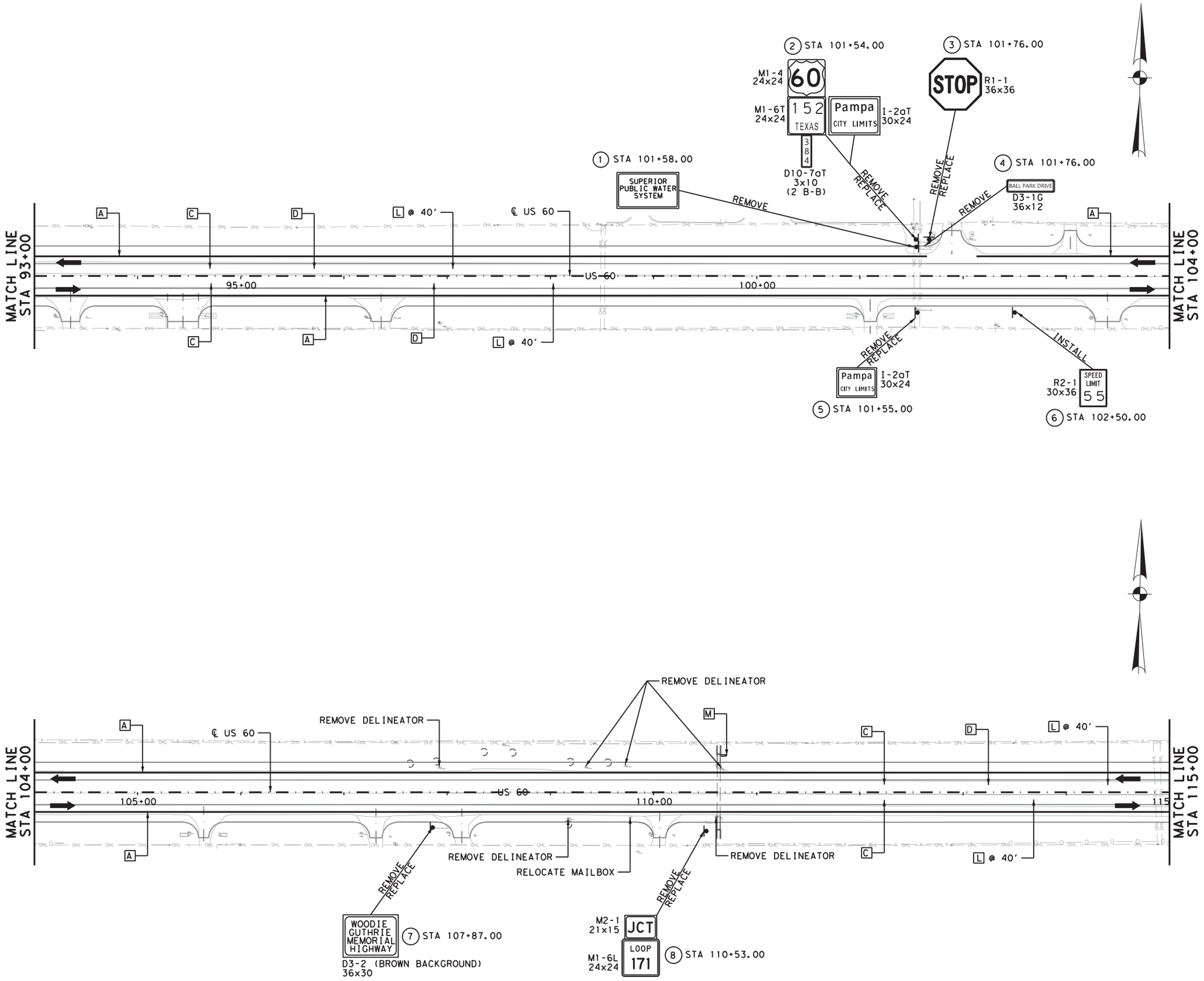


LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

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04/07/2021

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1" = 100'

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 93+00 TO STA 115+00**

SHEET 3 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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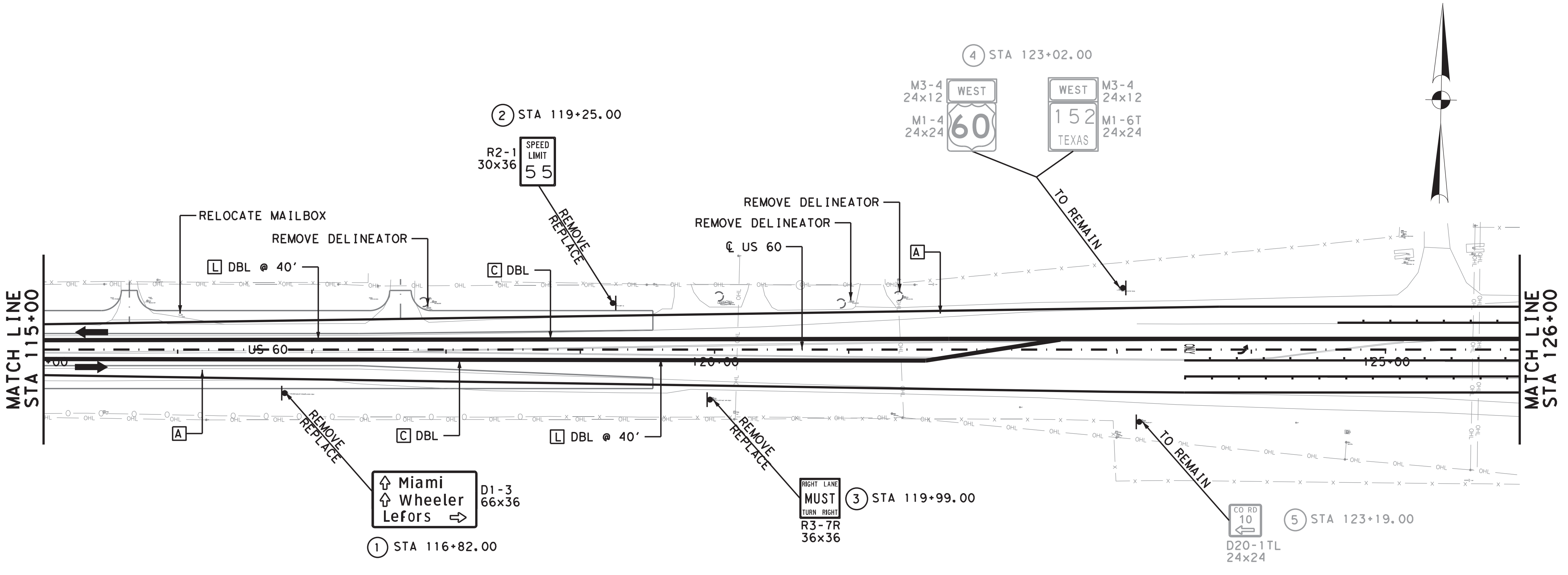

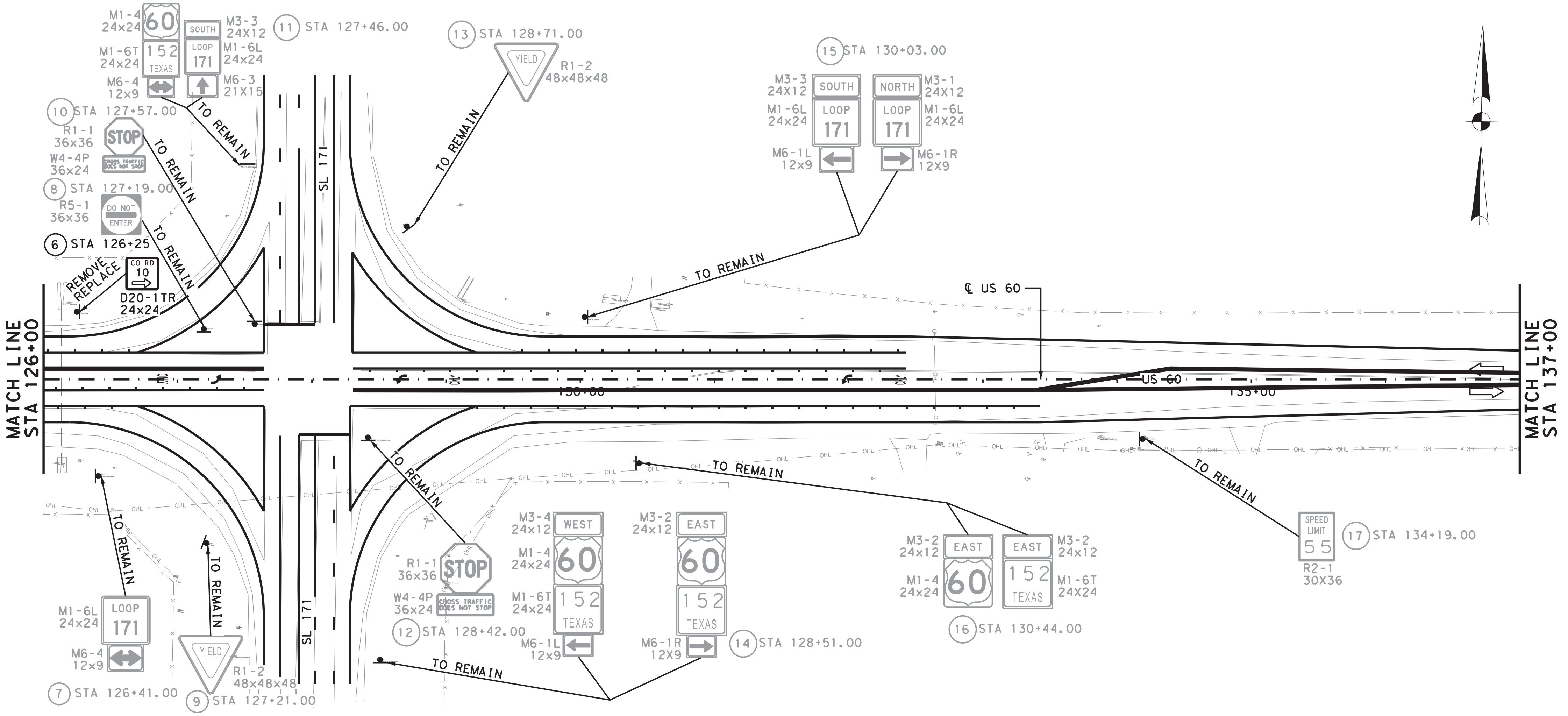

LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| ⇨ | EXIST DIRECTION OF TRAFFIC |
| ➡ | PROP DIRECTION OF TRAFFIC |
| ✳ | PROP WHITE FLX GF2 DELINEATOR (BI) |

NOTE:

1. SEE US60 & SH171 PAVEMENT MARKINGS SHEET FOR MORE DETAIL

04/07/2021

BO L. RATTO
113226

Bo L Ratto

0 25 50 100
1" = 100'

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## SIGNING AND PAVEMENT MARKING PLANS

STA 115+00 TO STA 137+00

SHEET 4 OF 35

| FED. RD. DIV. NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 189 |

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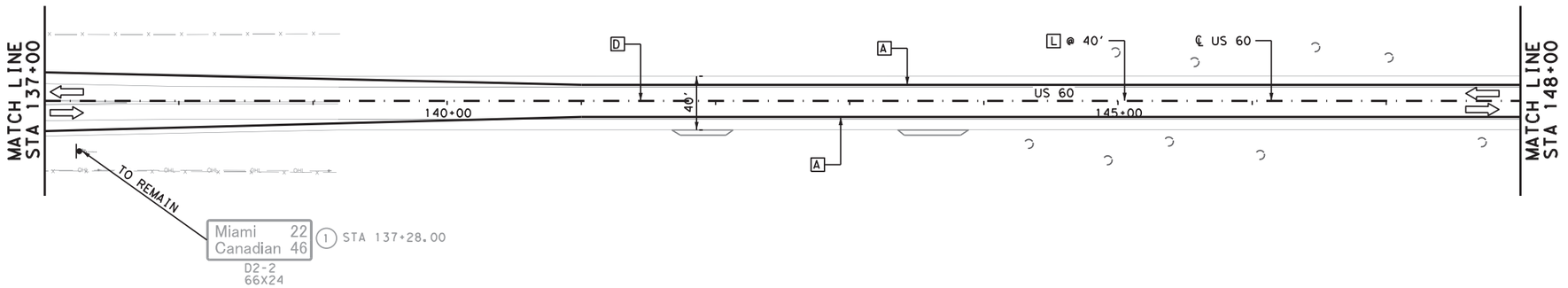


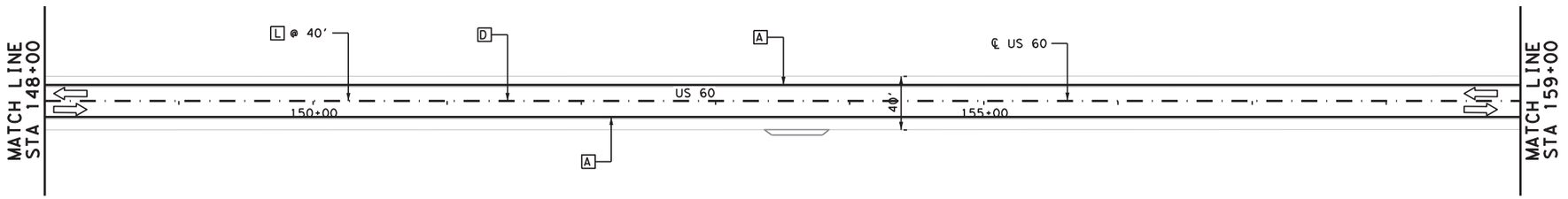


LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
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- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 137+00 TO STA 159+00**

SHEET 5 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 190 |

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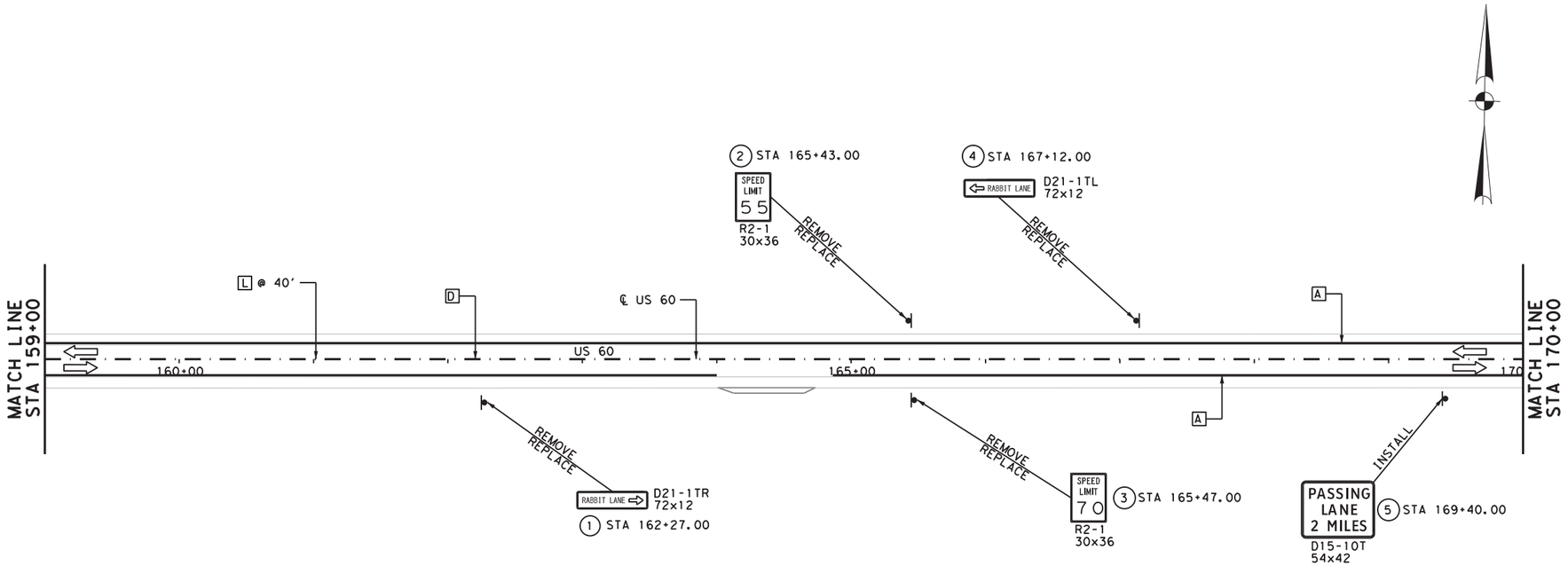
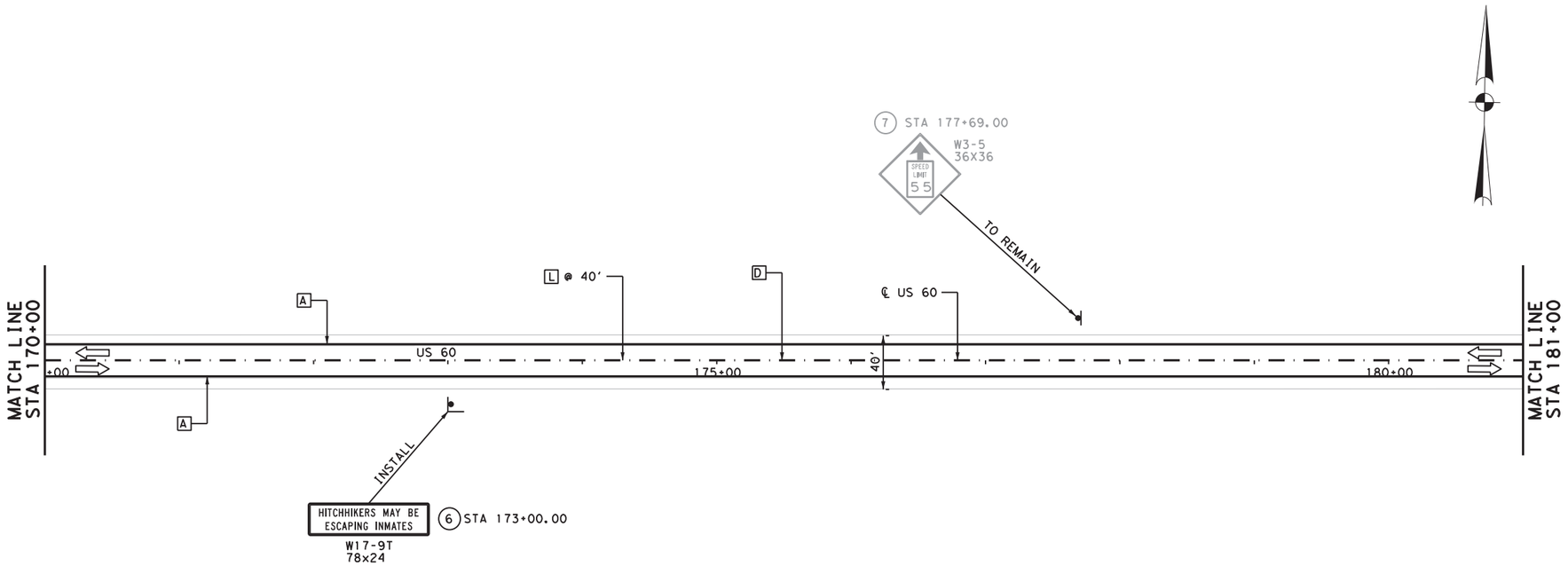
US60_TRAF-SPM-05.dgn




## LEGEND

- A — RE PM W/RET REQ TY I (W)4"(SLD)
- B — RE PM W/RET REQ TY I (W)4"(BRK)
- C — RE PM W/RET REQ TY I (Y)4"(SLD)
- D — RE PM W/RET REQ TY I (Y)4"(BRK)
- E — REFL PAV MRK TY I (W)4"(DOT)
- F — REFL PAV MRK TY I (W)8"(SLD)
- G — REFL PAV MRK TY I (W)12"(SLD)
- H — REFL PAV MRK TY I (W)24"(SLD)
- I — REFL PAV MRK TY I (Y)24"(SLD)
- J — REFL PAV MRK TY I (W)(LNDPARW)
- K — REFL PAV MRKR TY I-C
- L — REFL PAV MRKR TY II-A-A
- M — OBJECT MARKER
- N — RELF PAV MRK TY I (W)(ARROW)
- (#) — SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 159+00 TO STA 181+00**

SHEET 6 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 191 |

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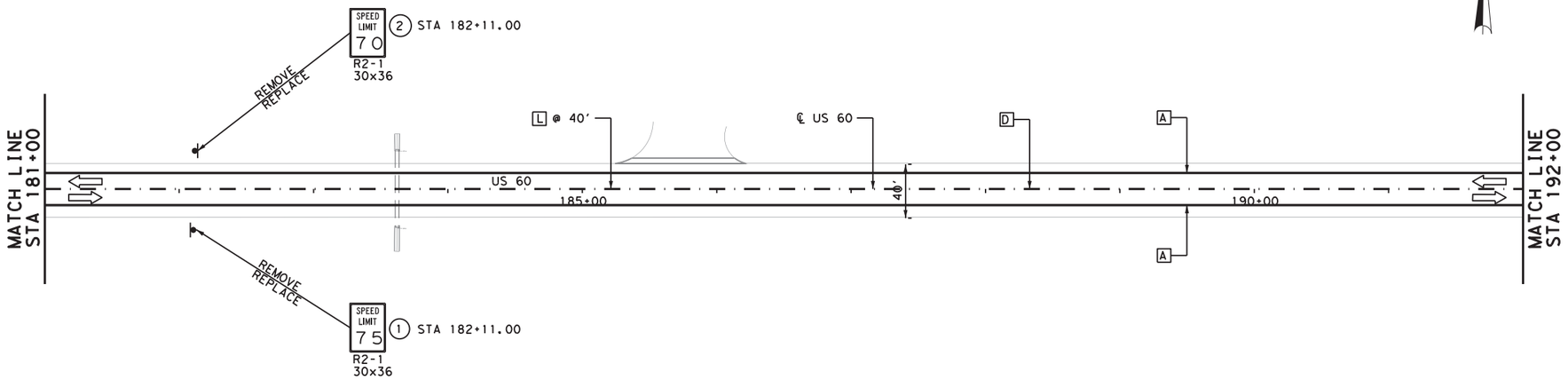


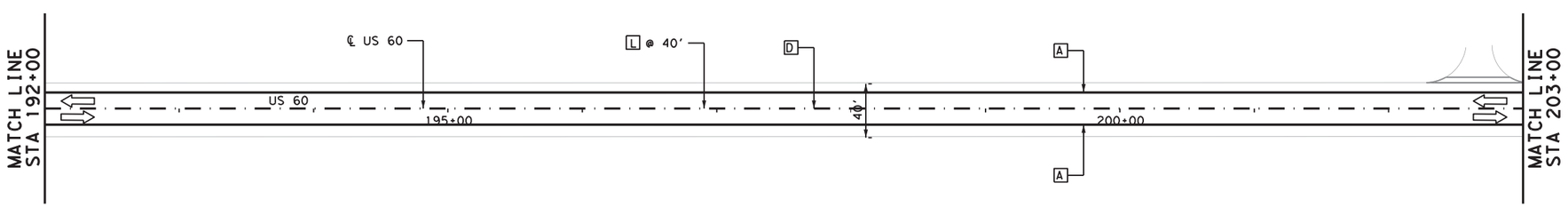


LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 181+00 TO STA 203+00**

SHEET 7 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 192 |

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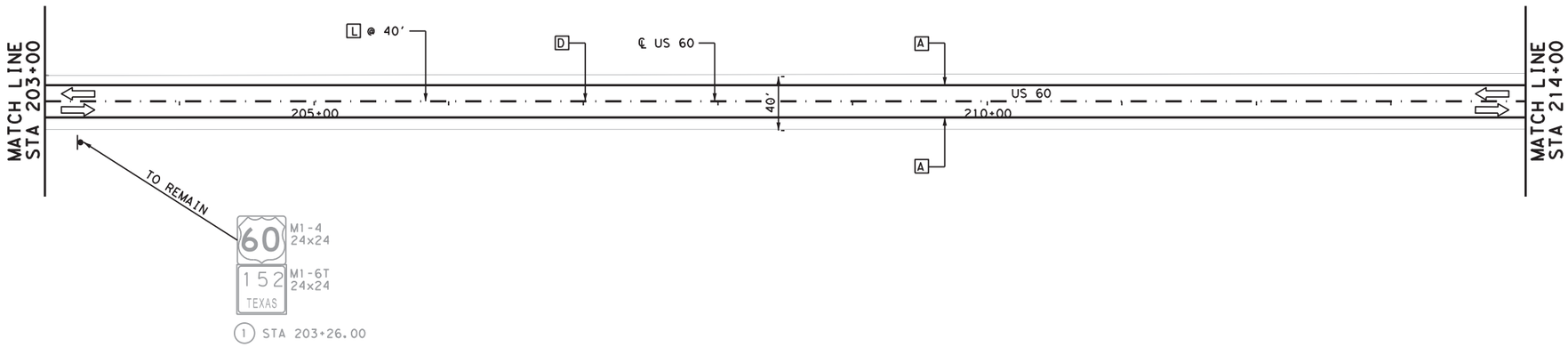
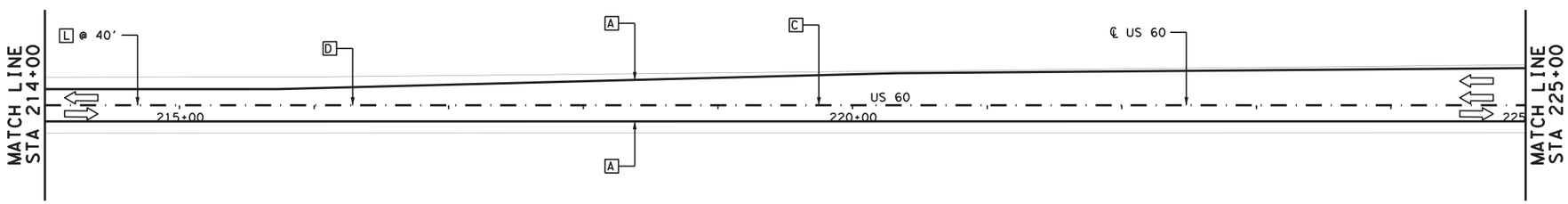
US60_TRAF-SPM-07.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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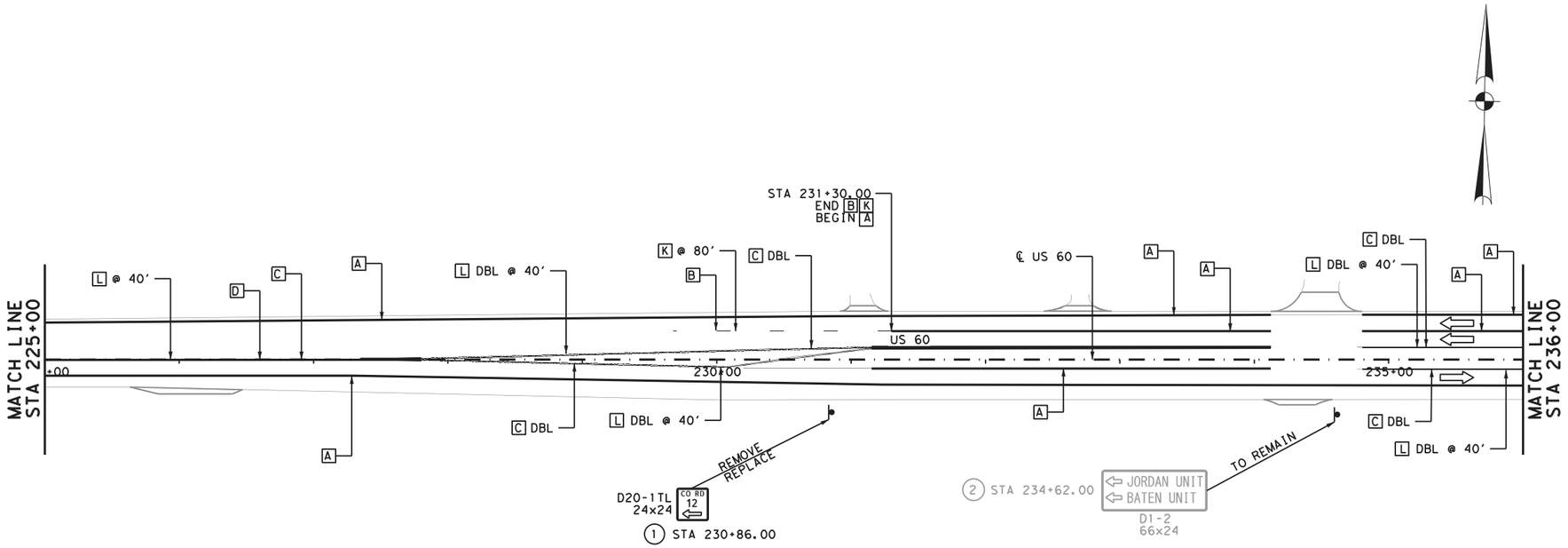
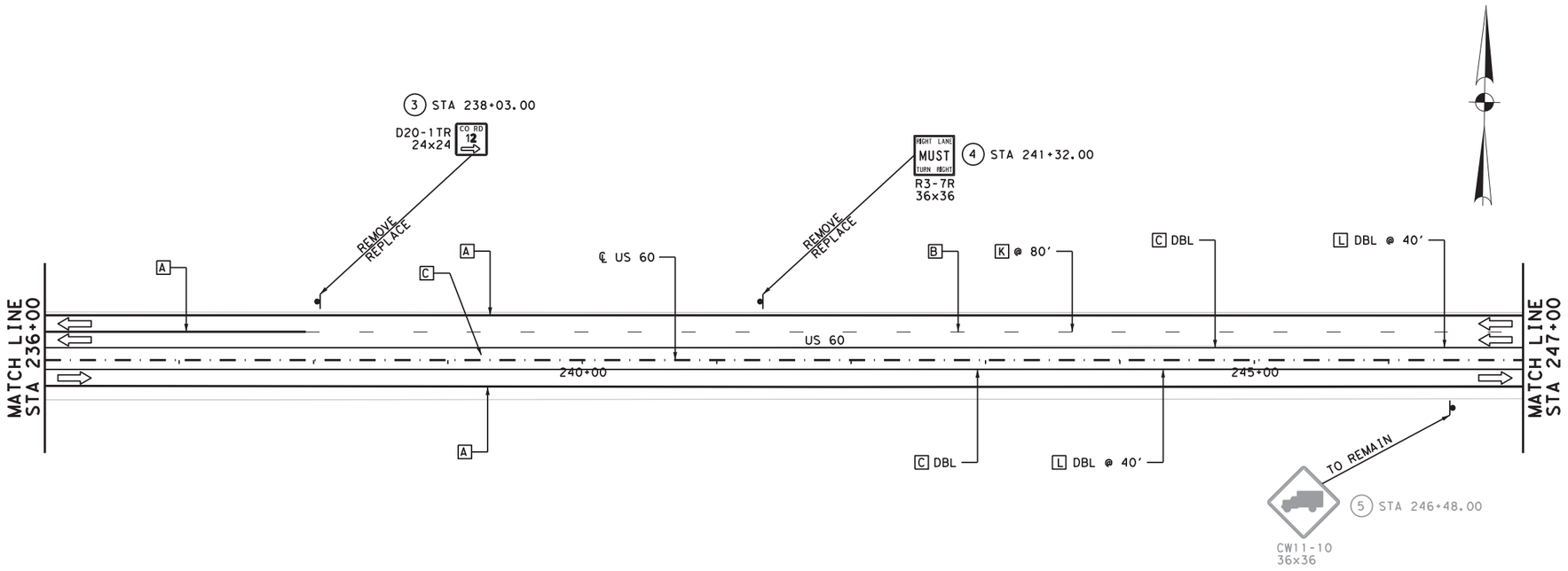
# SIGNING AND PAVEMENT MARKING PLANS

**STA 203+00 TO STA 225+00**

SHEET 8 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 193 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 225+00 TO STA 247+00**

SHEET 9 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 194 |

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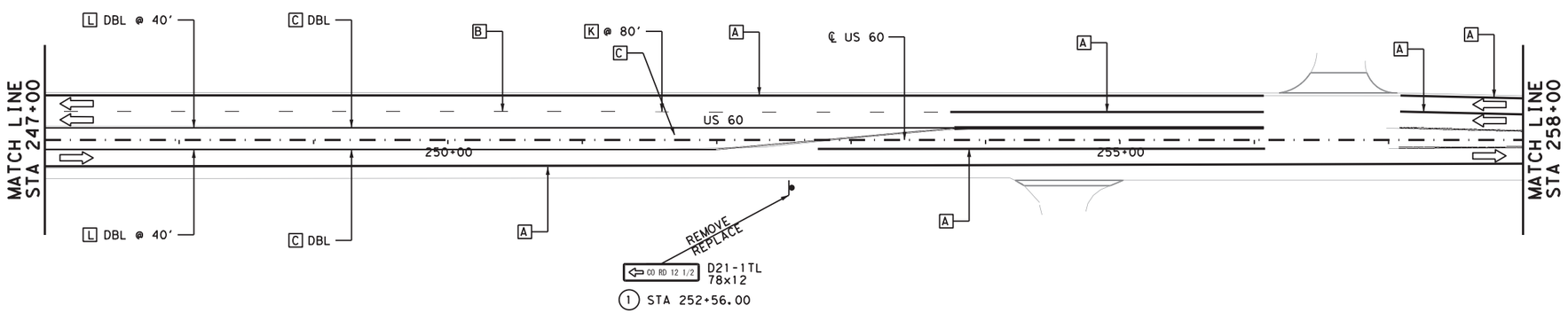


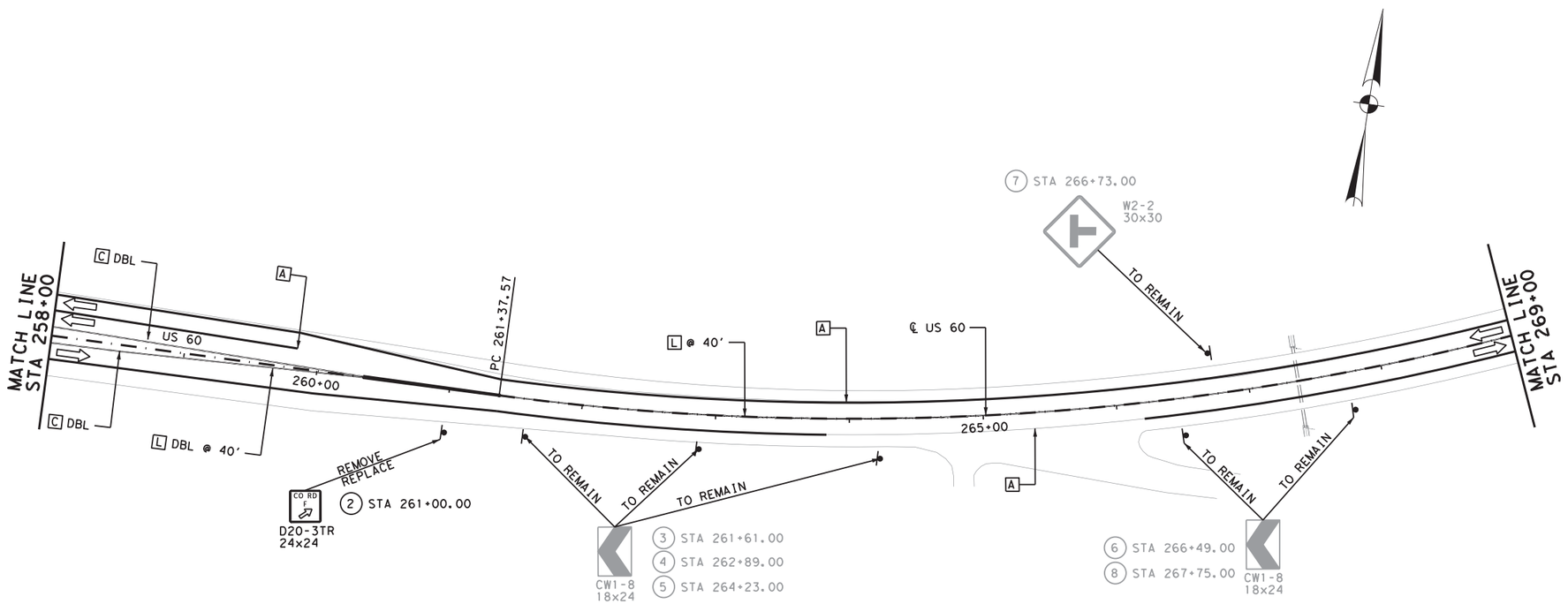


LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 247+00 TO STA 269+00**

SHEET **10** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 195 |

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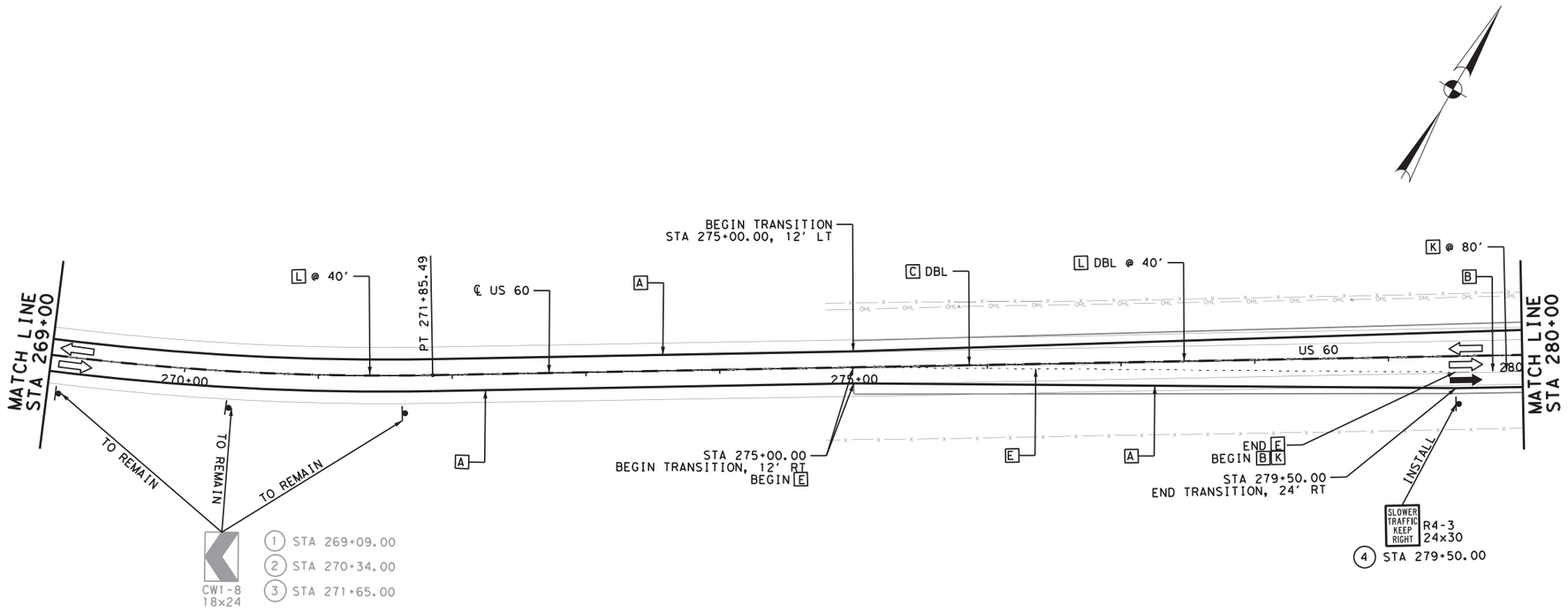
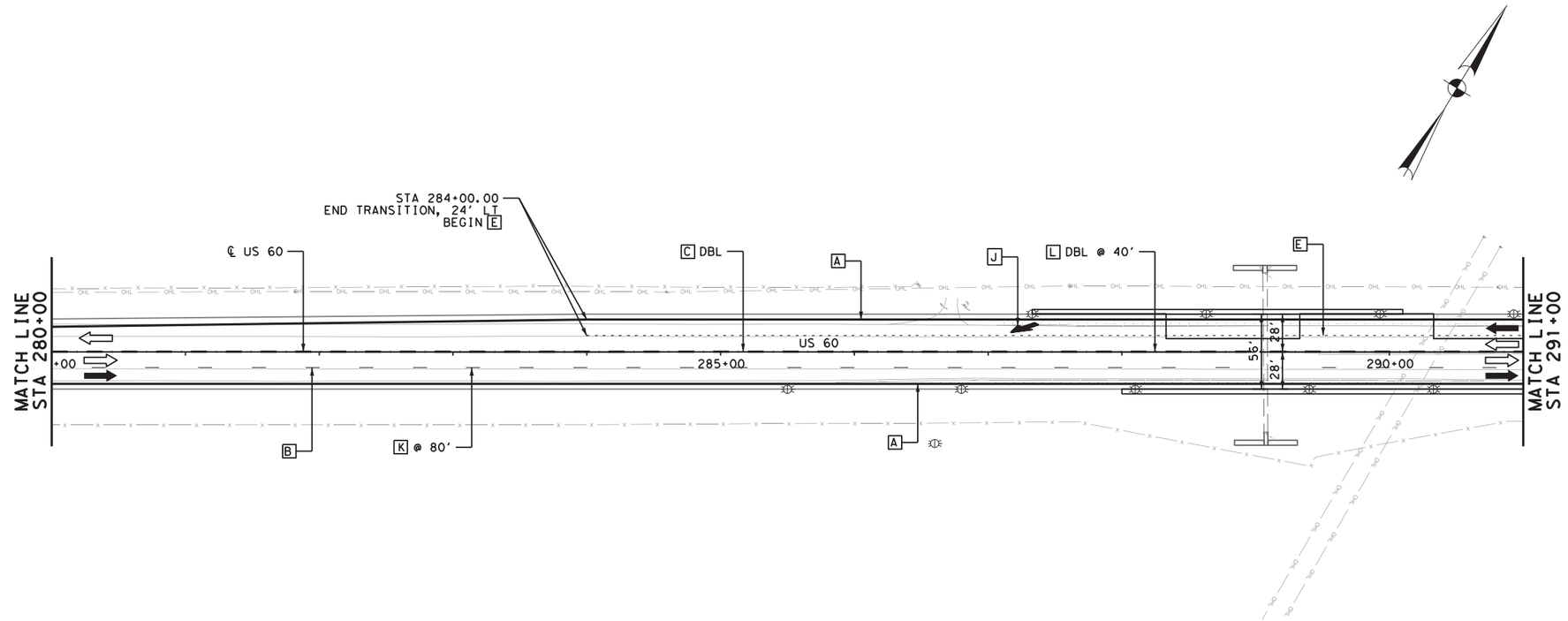
US60_TRAF-SPM-10.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
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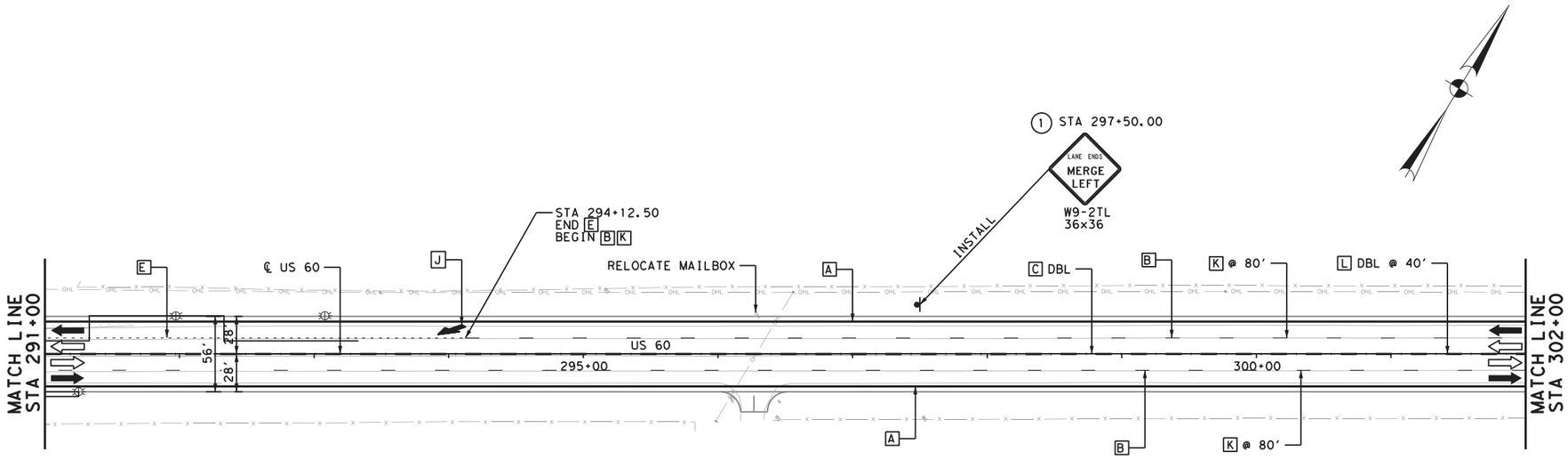
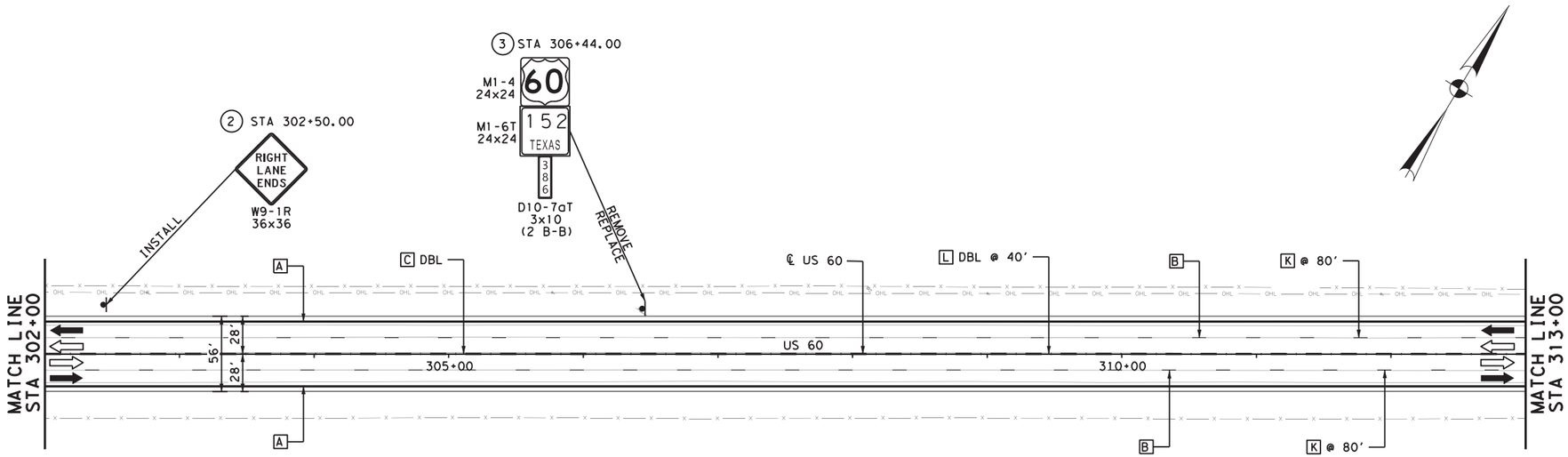
# SIGNING AND PAVEMENT MARKING PLANS

**STA 269+00 TO STA 291+00**

SHEET 11 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 196 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| (#) | SIGN NUMBER |

EXIST DIRECTION OF TRAFFIC

PROP DIRECTION OF TRAFFIC

PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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TBPLS Firm Registration No. 100467
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 291+00 TO STA 313+00**

SHEET 12 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 197 |

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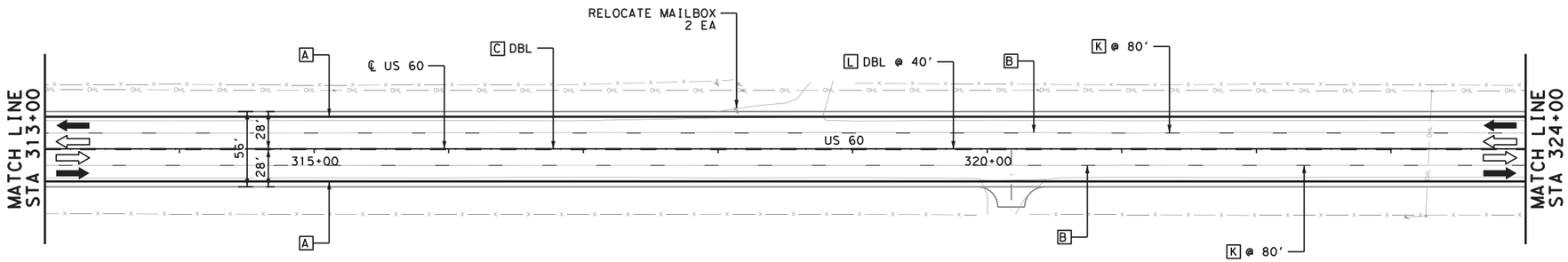
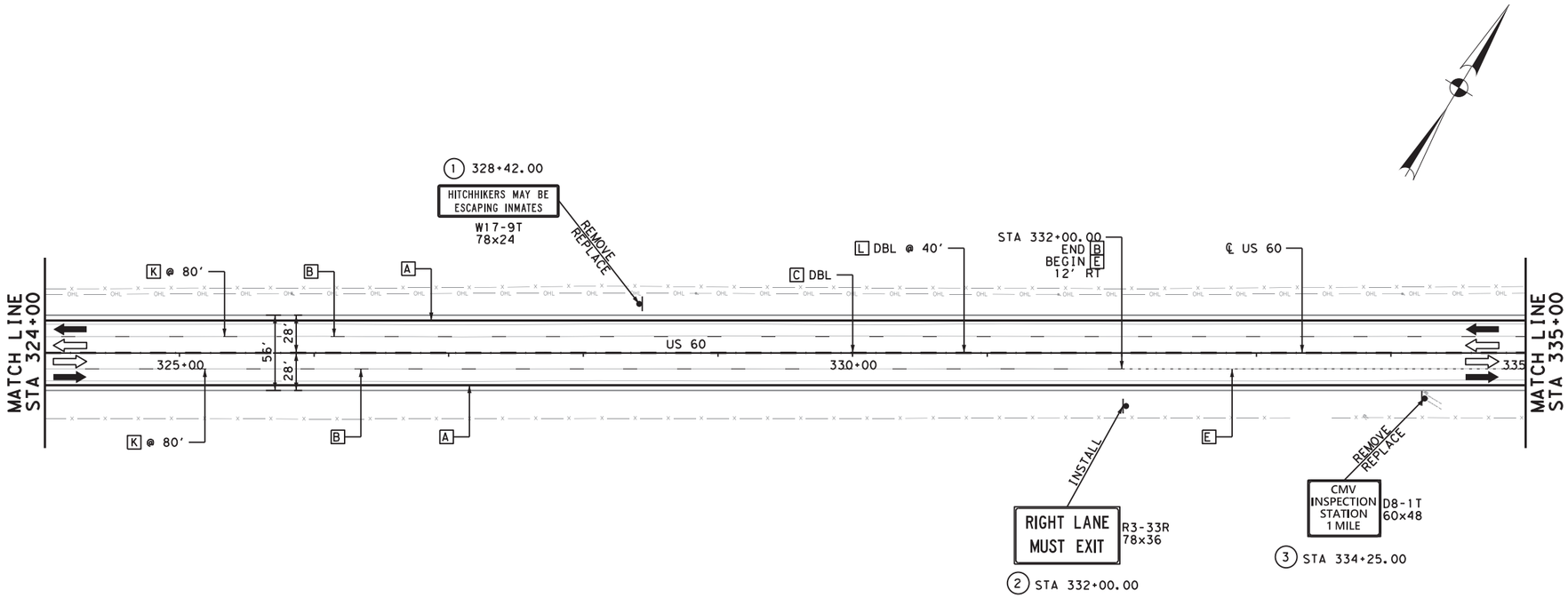
US60_TRAF-SPM12.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 313+00 TO STA 335+00**

SHEET 13 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 198 |

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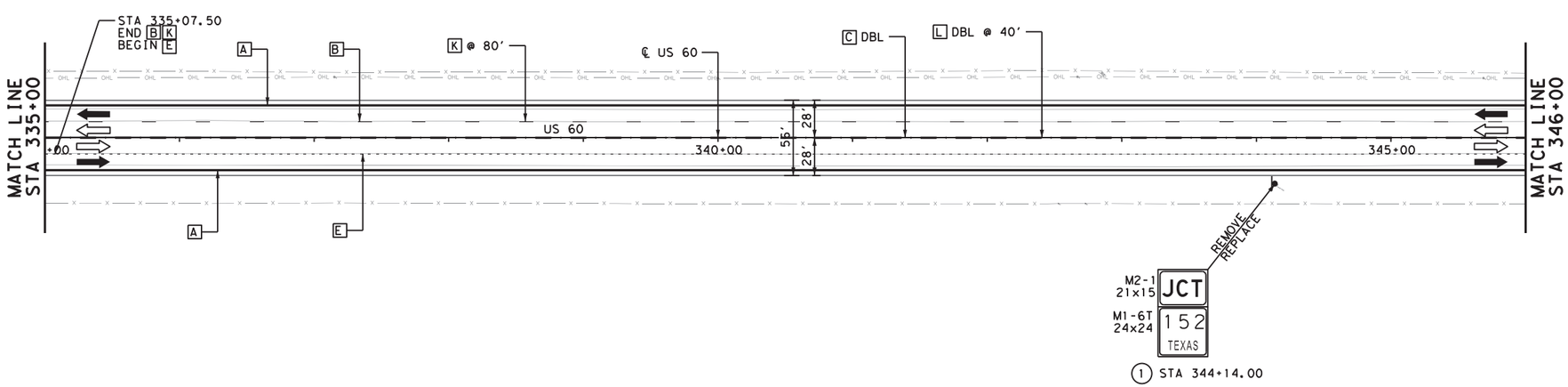
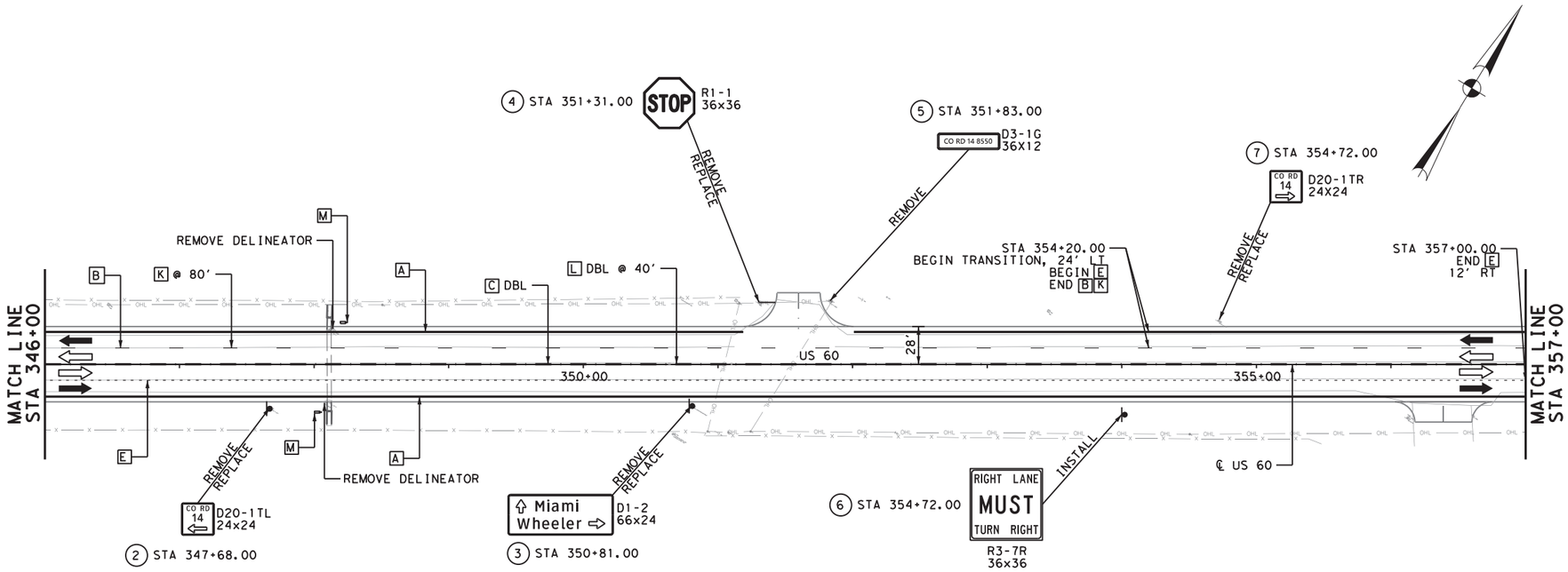
US60_TRAF-SPM-13.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 335+00 TO STA 357+00**

SHEET **14** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 199 |

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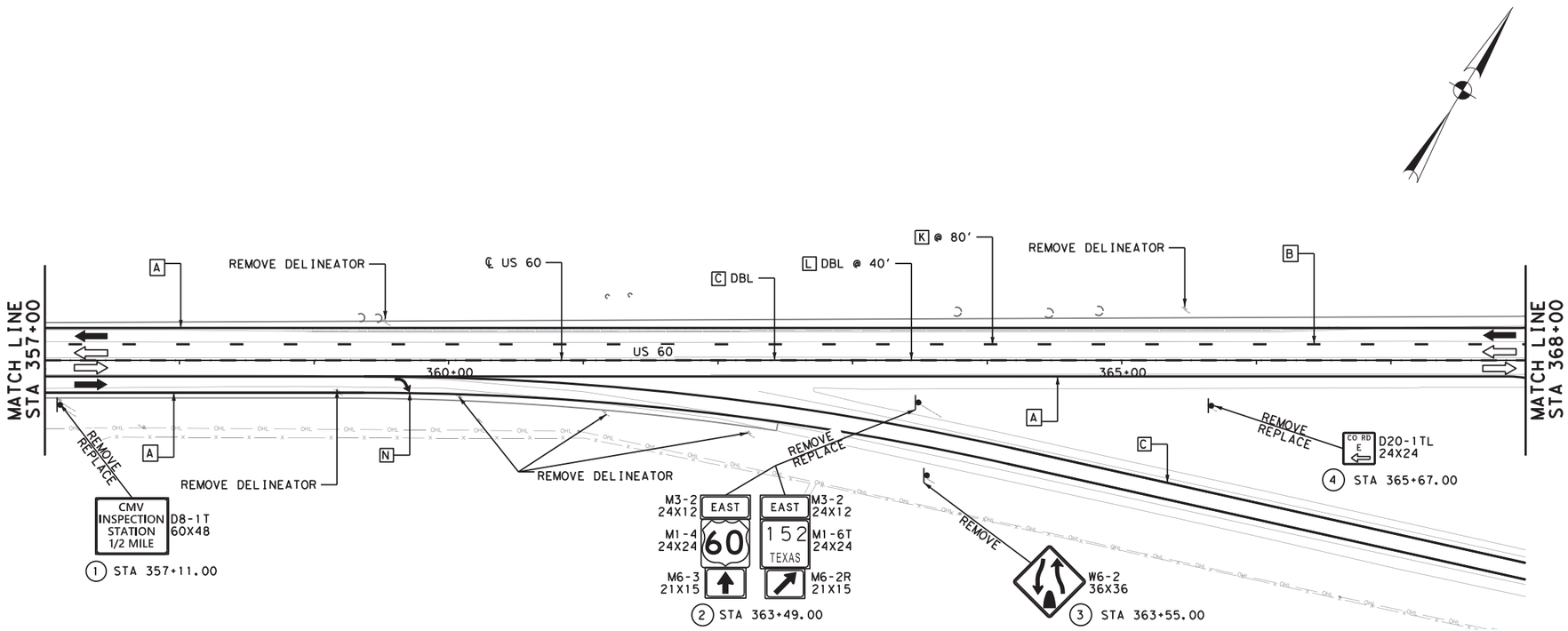
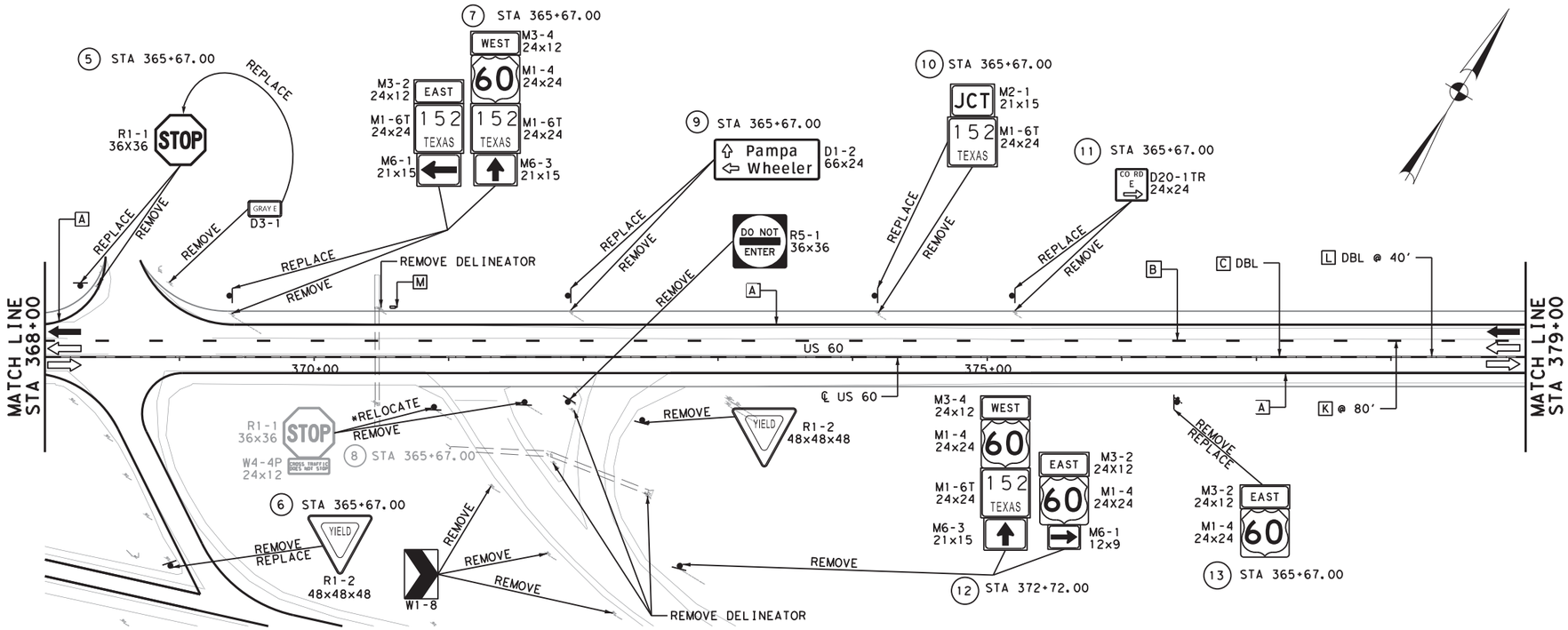
US60_TRAF-SPM14.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

NOTE:

1. SEE US60 & SH152 INTERSECTION LAYOUT FOR PAVEMENT MARKING LAYOUT.

* STOP SIGN WITH SOLAR PANEL UNIT TO BE RELOCATED TO STA 382+04.00 AT NEW PROPOSED SH 152 AND US 60 INTERSECTION.

04/07/2021

STATE OF TEXAS
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0 25 50 100
1" = 100'

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|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 357+00 TO STA 379+00**

SHEET **15** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 200 |

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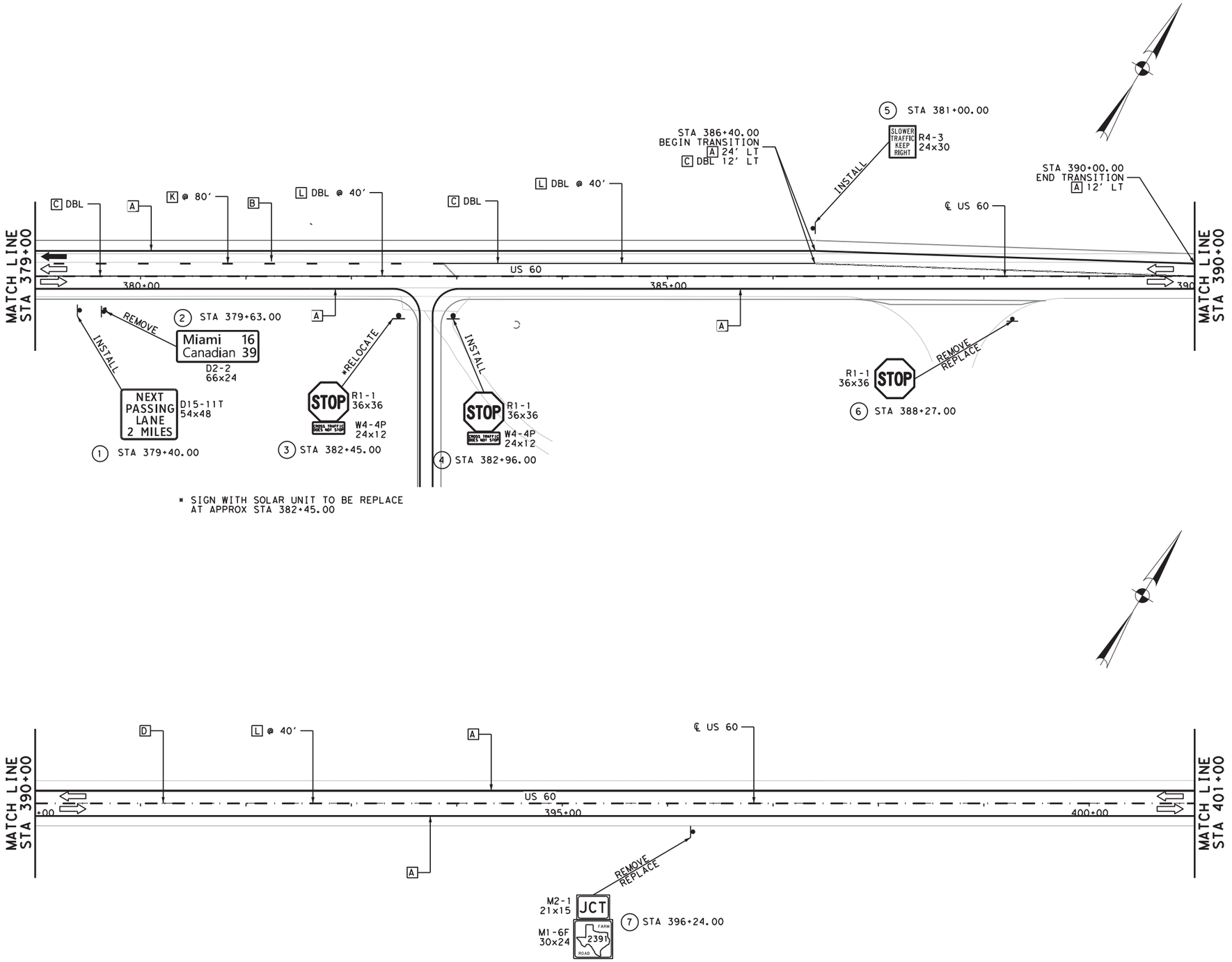
US60_TRAF-SPM-I5.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |

EXIST DIRECTION OF TRAFFIC

PROP DIRECTION OF TRAFFIC

PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 379+00 TO STA 401+00**

SHEET **16** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 201 |

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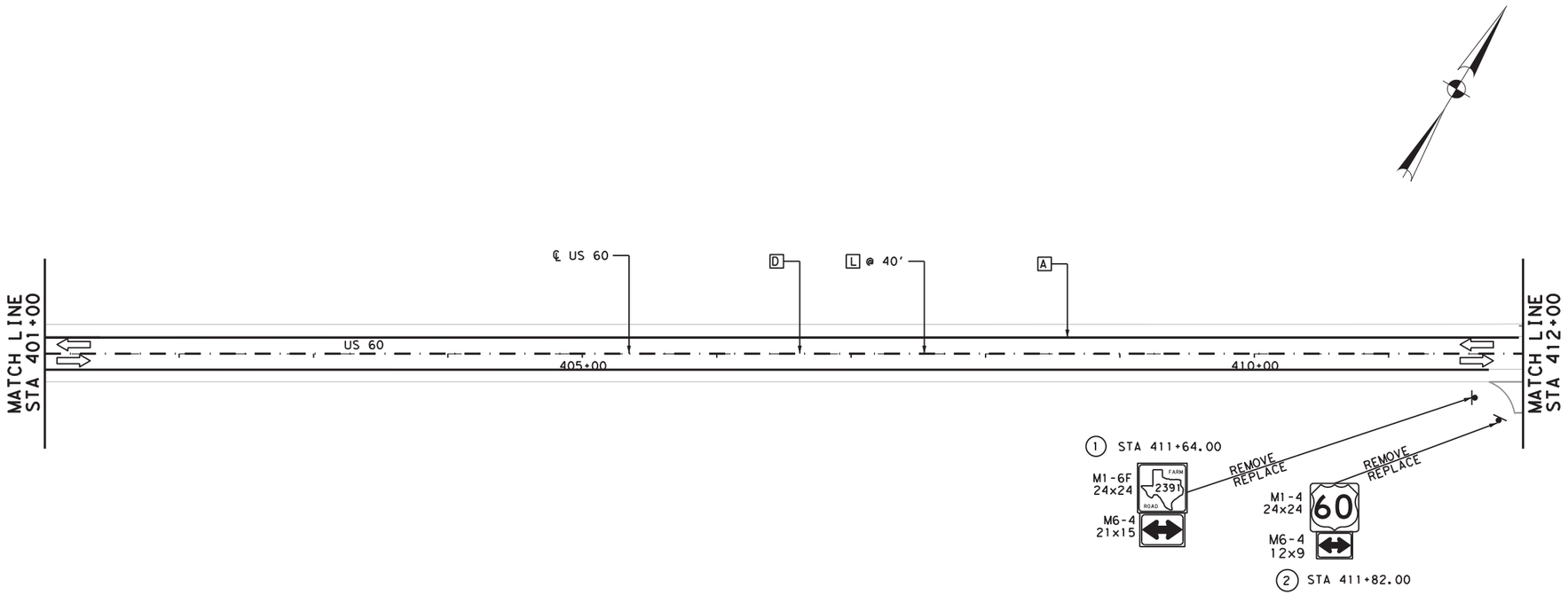
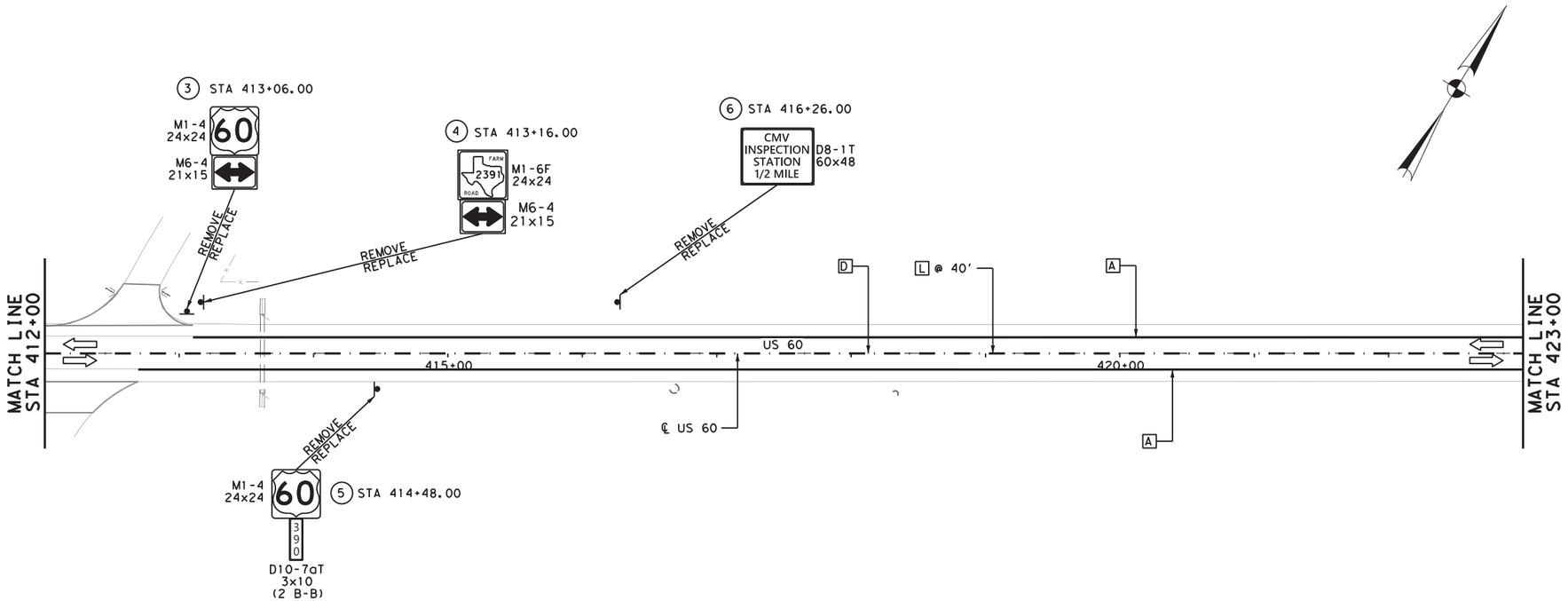
US60_TRAF-SPM-16.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
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0 25 50 100
1" = 100'

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| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 401+00 TO STA 423+00**

SHEET 17 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 202 |

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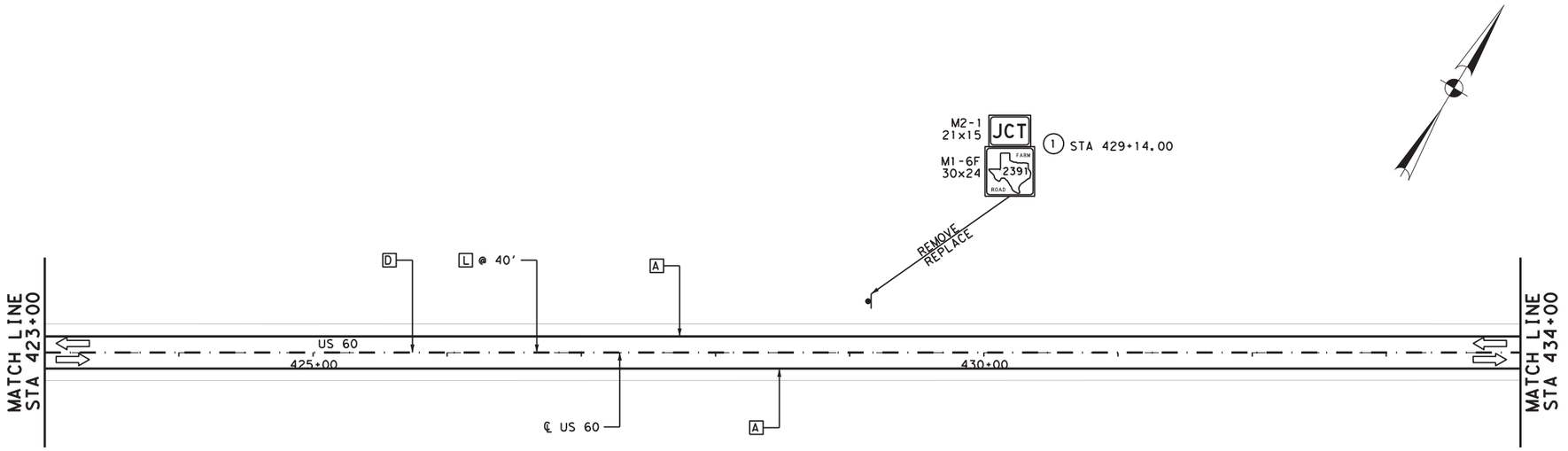


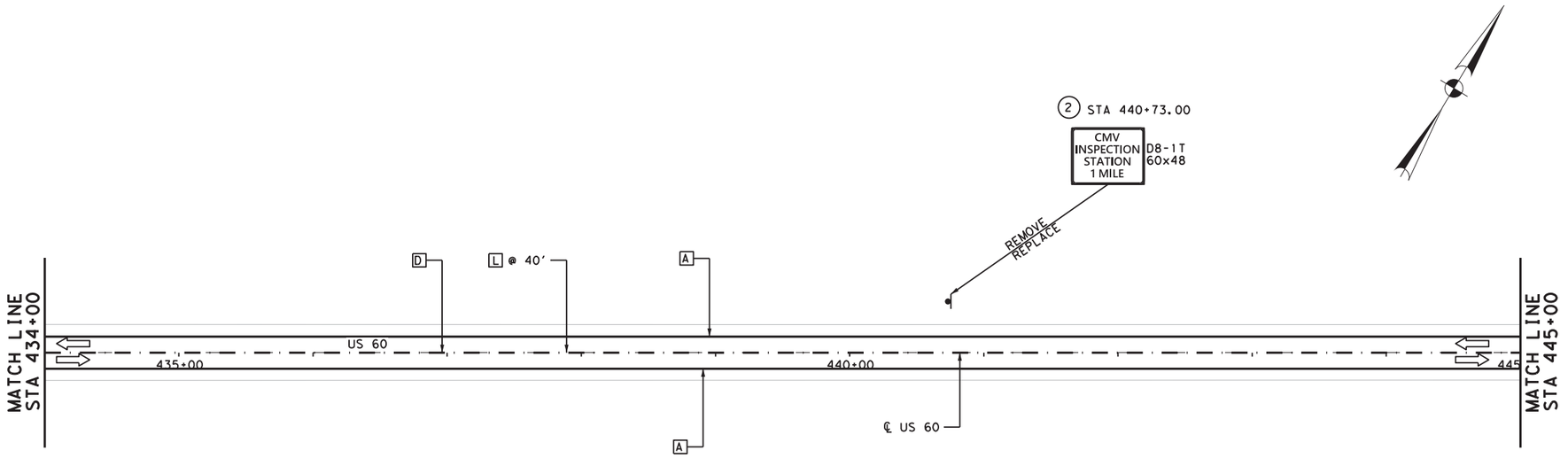


LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
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# SIGNING AND PAVEMENT MARKING PLANS

**STA 423+00 TO STA 445+00**

SHEET 18 OF 35

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 203 |

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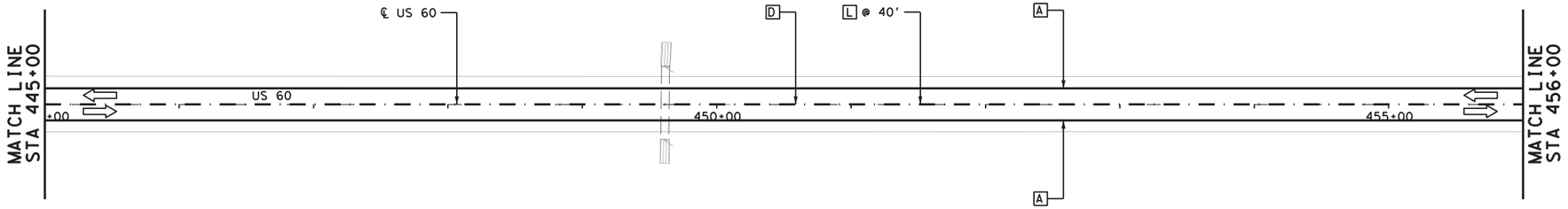


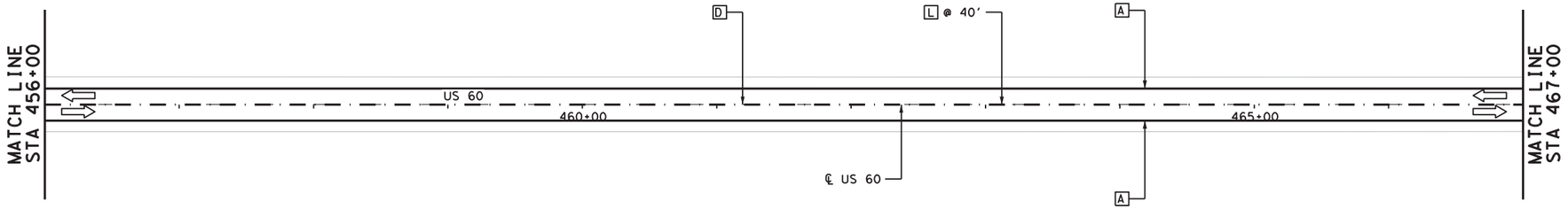


LEGEND

- A — RE PM W/RET REQ TY I (W)4"(SLD)
- B — RE PM W/RET REQ TY I (W)4"(BRK)
- C — RE PM W/RET REQ TY I (Y)4"(SLD)
- D — RE PM W/RET REQ TY I (Y)4"(BRK)
- E — REFL PAV MRK TY I (W)4"(DOT)
- F — REFL PAV MRK TY I (W)8"(SLD)
- G — REFL PAV MRK TY I (W)12"(SLD)
- H — REFL PAV MRK TY I (W)24"(SLD)
- I — REFL PAV MRK TY I (Y)24"(SLD)
- J — REFL PAV MRK TY I (W)(LNDPARW)
- K — REFL PAV MRKR TY I-C
- L — REFL PAV MRKR TY II-A-A
- M — OBJECT MARKER
- N — RELF PAV MRK TY I (W)(ARROW)
- (#) — SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

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0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 445+00 TO STA 467+00**

SHEET **19** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | **204** |

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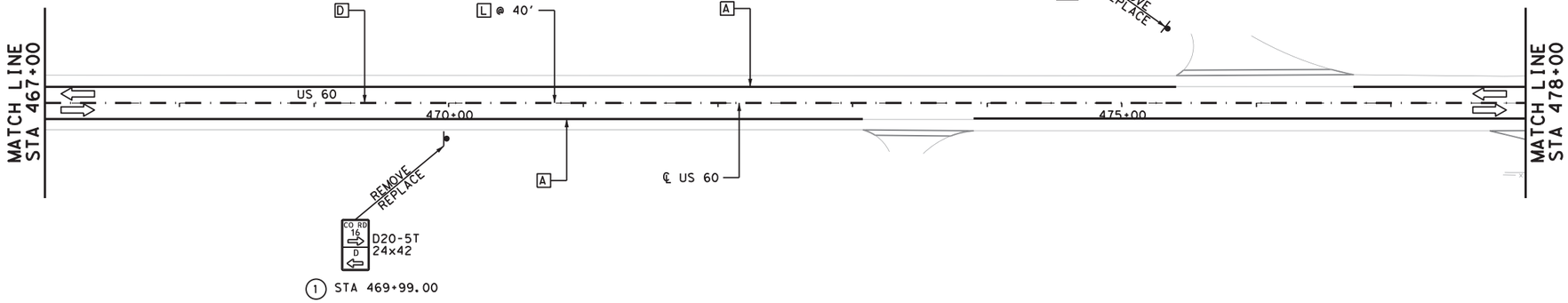
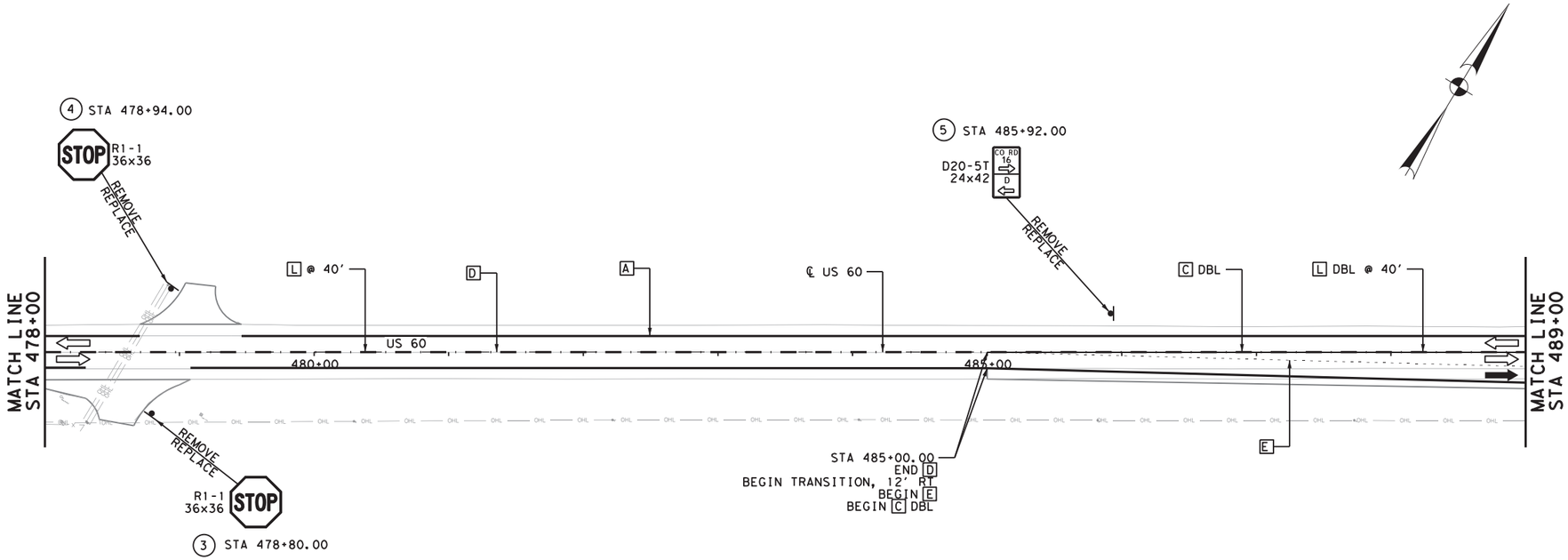
US60_TRAF-SPM-19.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| (#) | SIGN NUMBER |
| ⇨ | EXIST DIRECTION OF TRAFFIC |
| ➡ | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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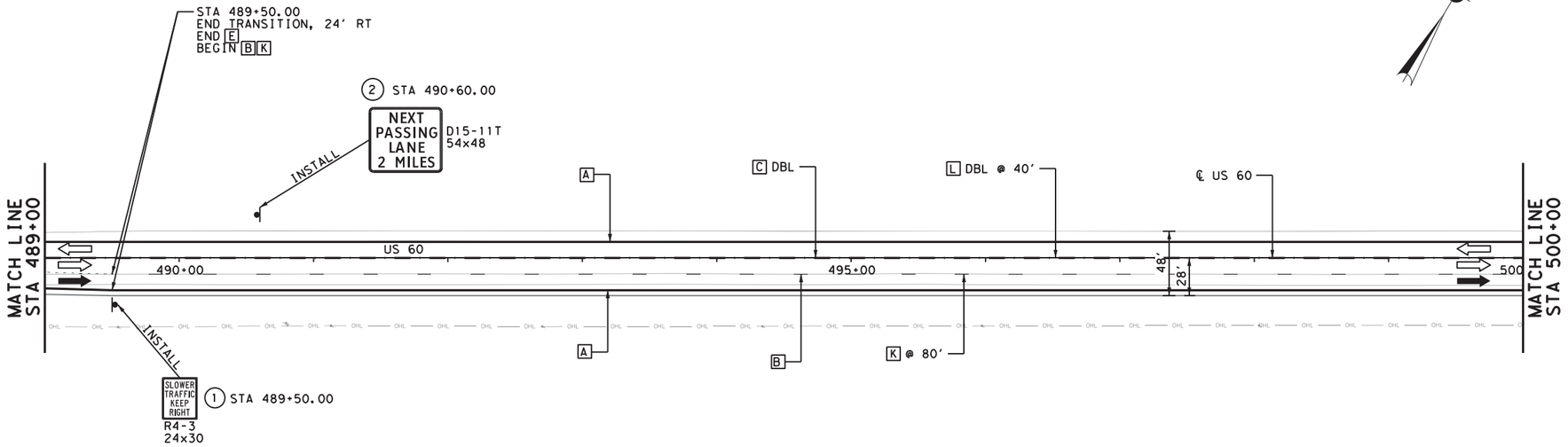
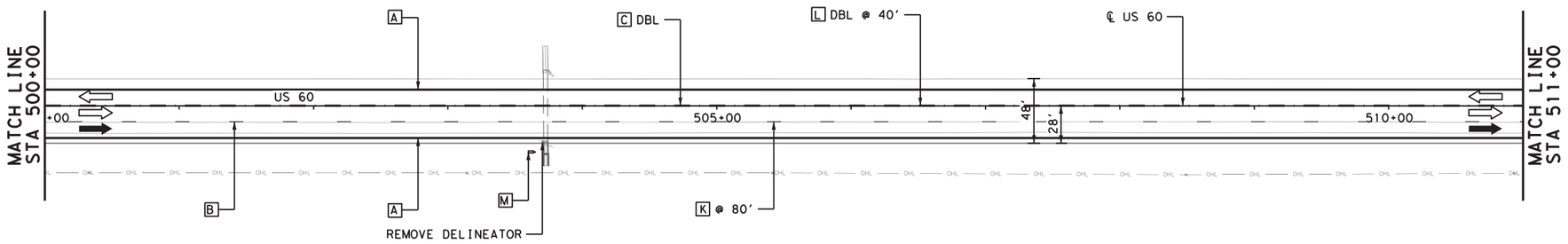
# SIGNING AND PAVEMENT MARKING PLANS

**STA 467+00 TO STA 489+00**

SHEET **20** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 205 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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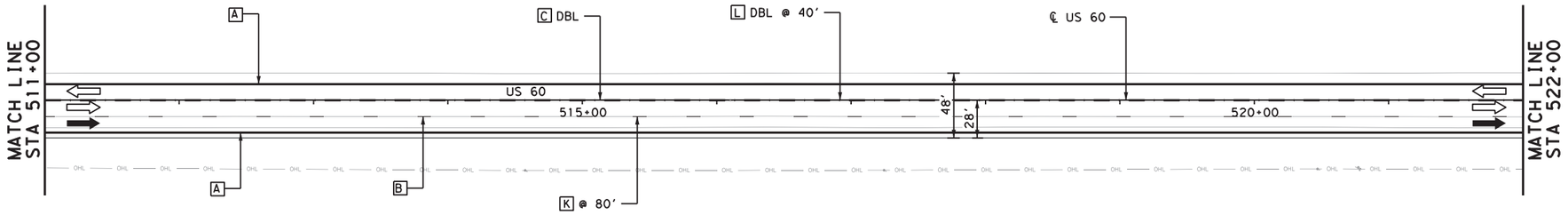
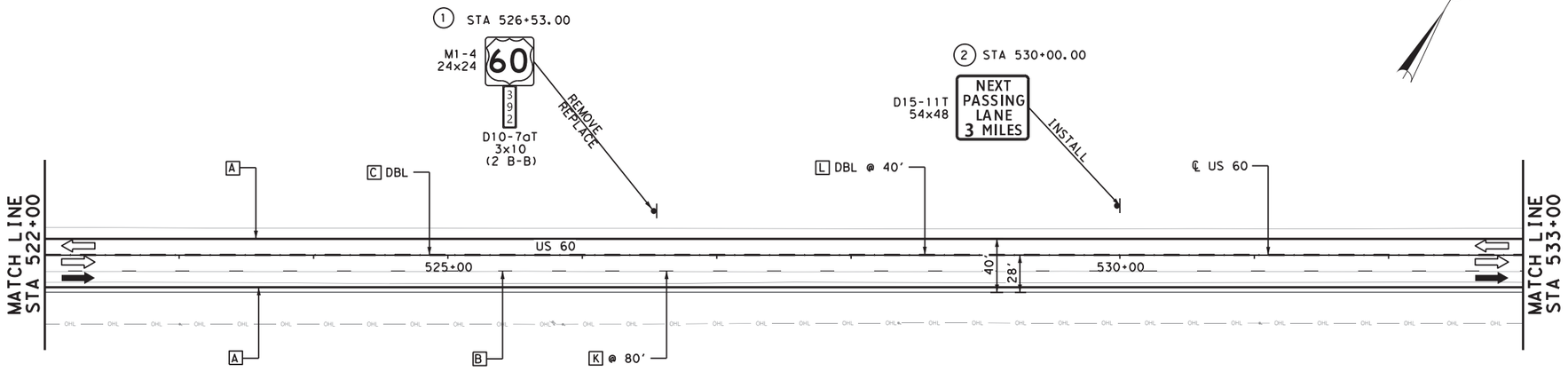
# SIGNING AND PAVEMENT MARKING PLANS

**STA 489+00 TO STA 511+00**

SHEET **21** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 206 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 511+00 TO STA 533+00**

SHEET **22** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 207 |

4/7/2021 7:28:05 AM
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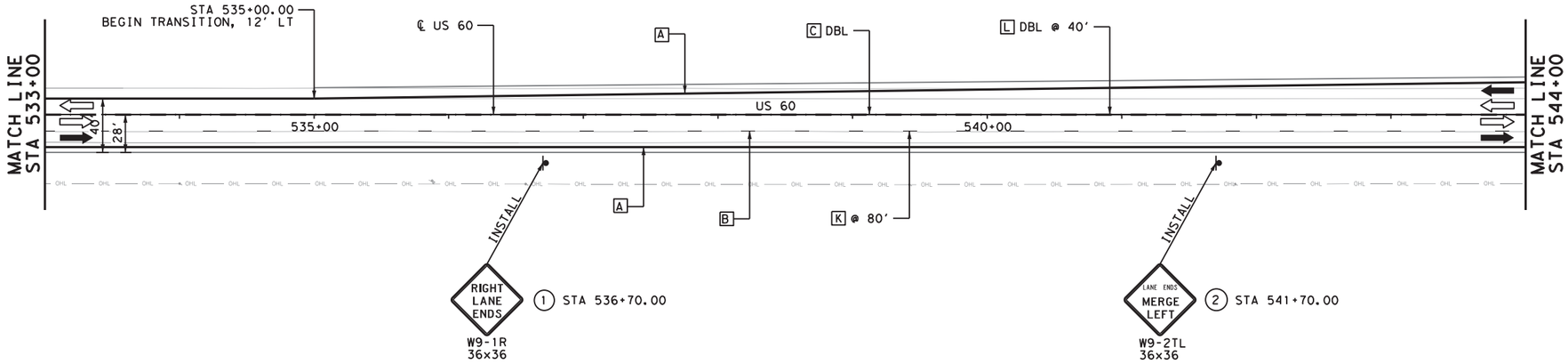
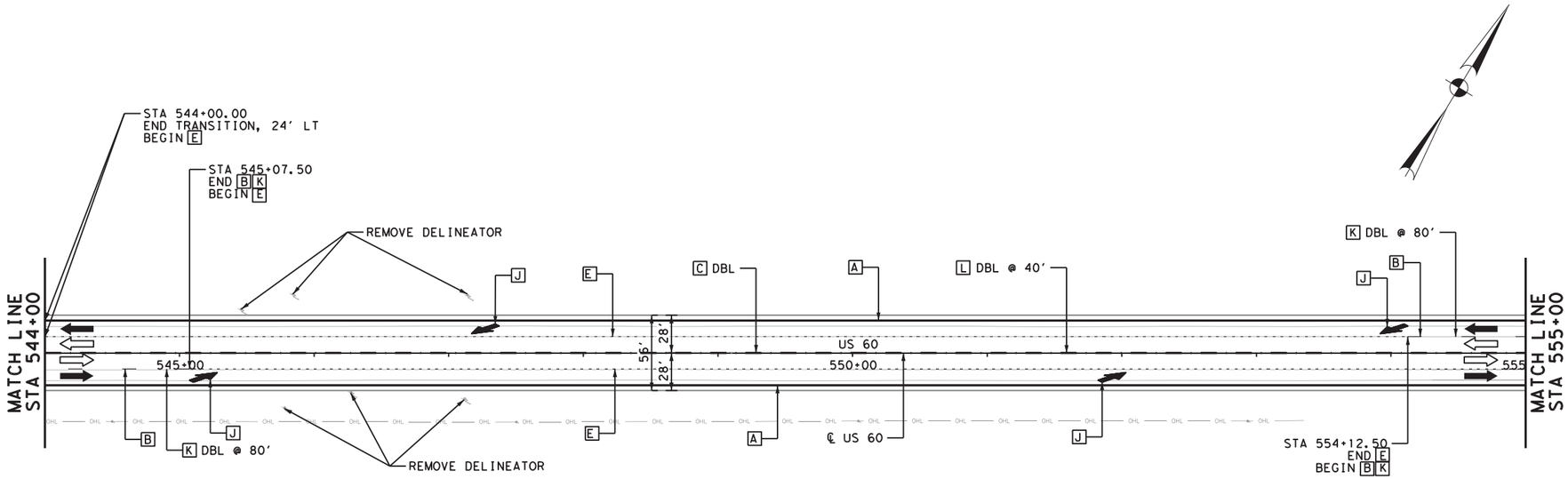
US60_TRAF-SPM-22.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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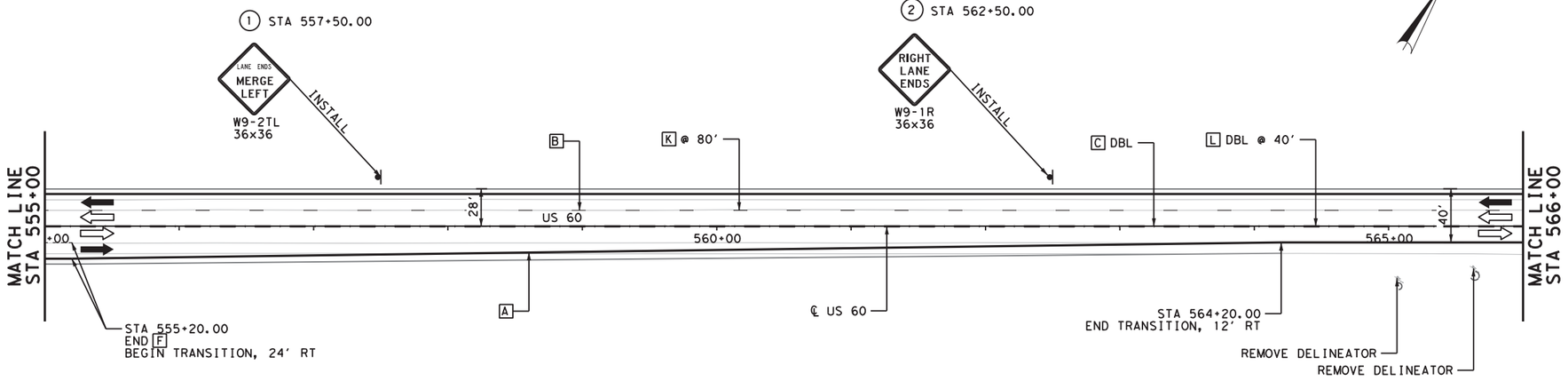
Texas Department of Transportation

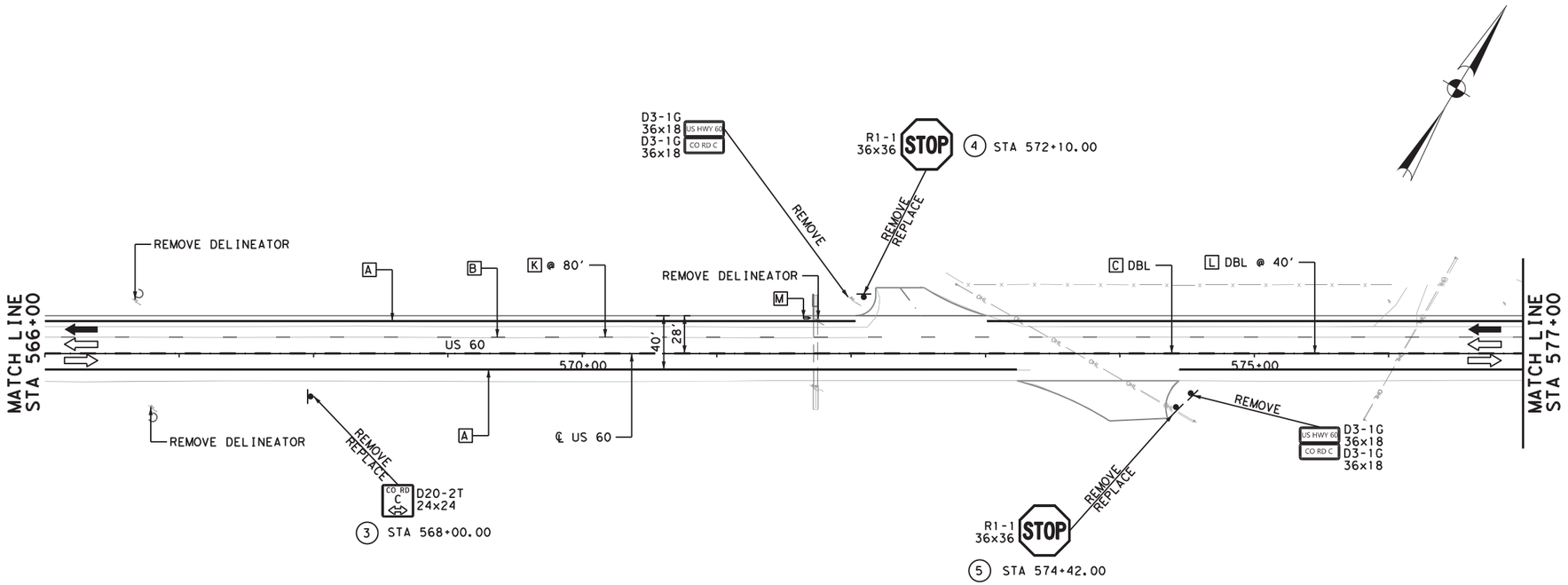
# SIGNING AND PAVEMENT MARKING PLANS

**STA 533+00 TO STA 555+00**

SHEET **23** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 208 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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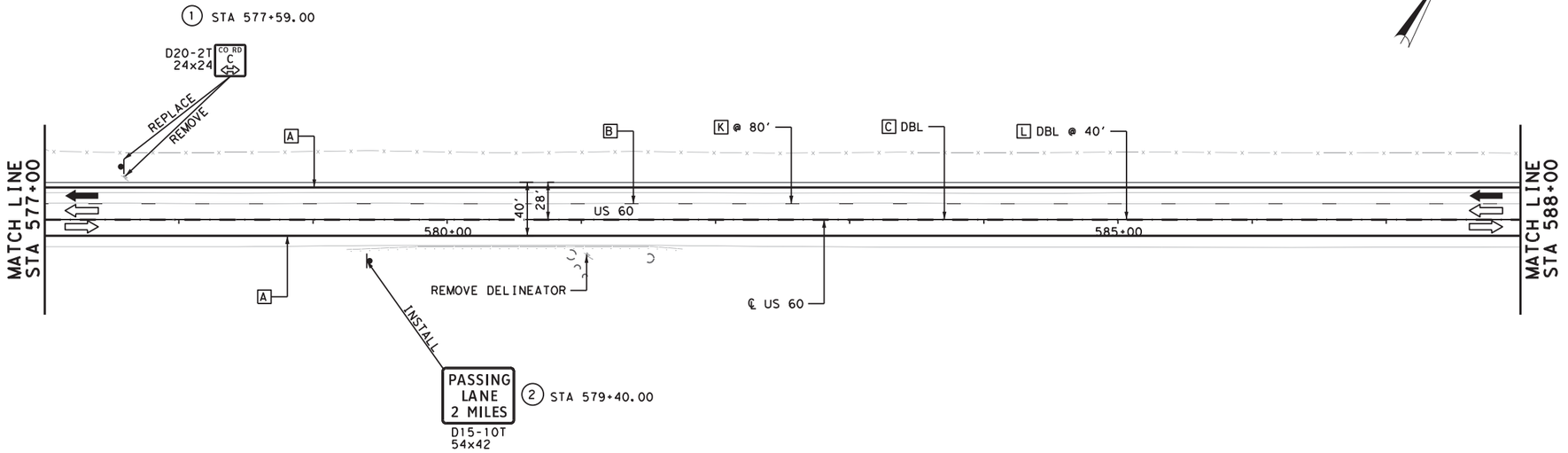
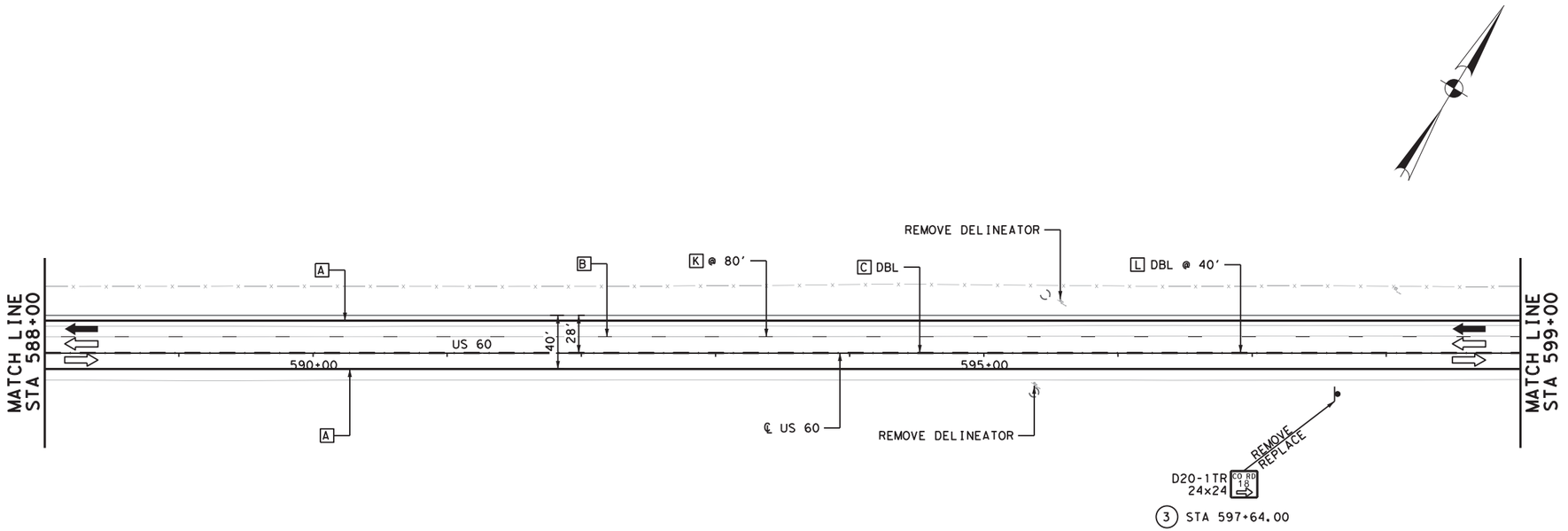
# SIGNING AND PAVEMENT MARKING PLANS

**STA 555+00 TO STA 577+00**

SHEET **24** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 209 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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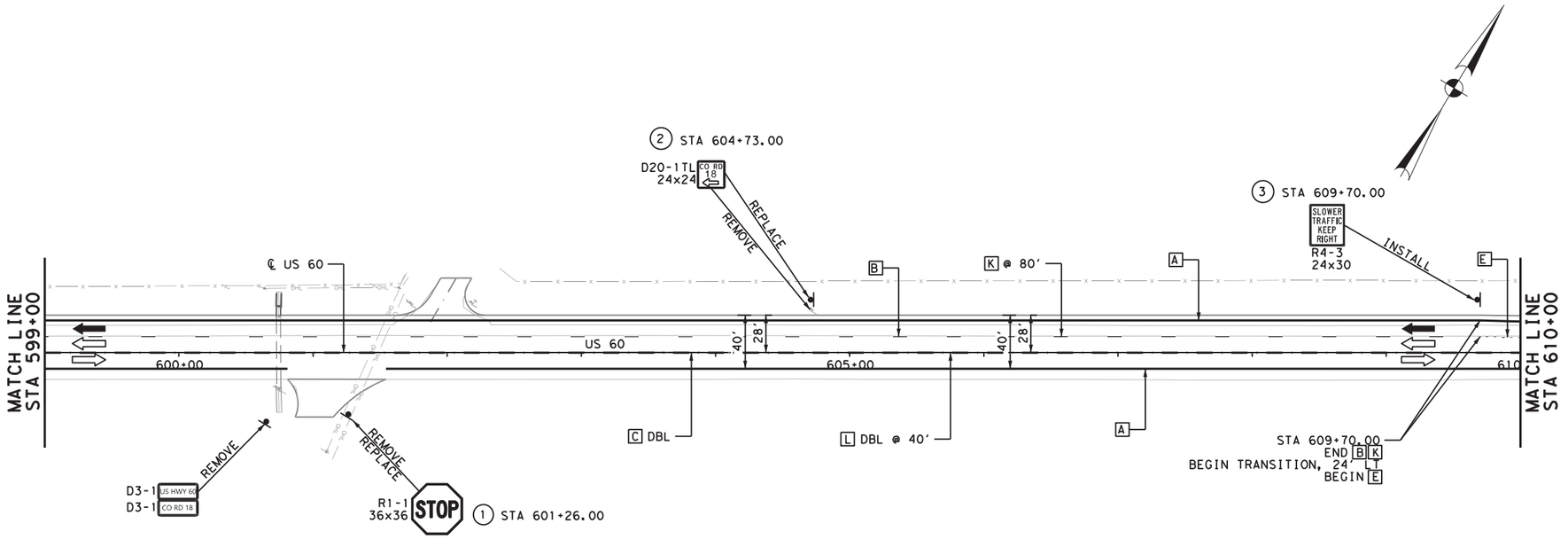
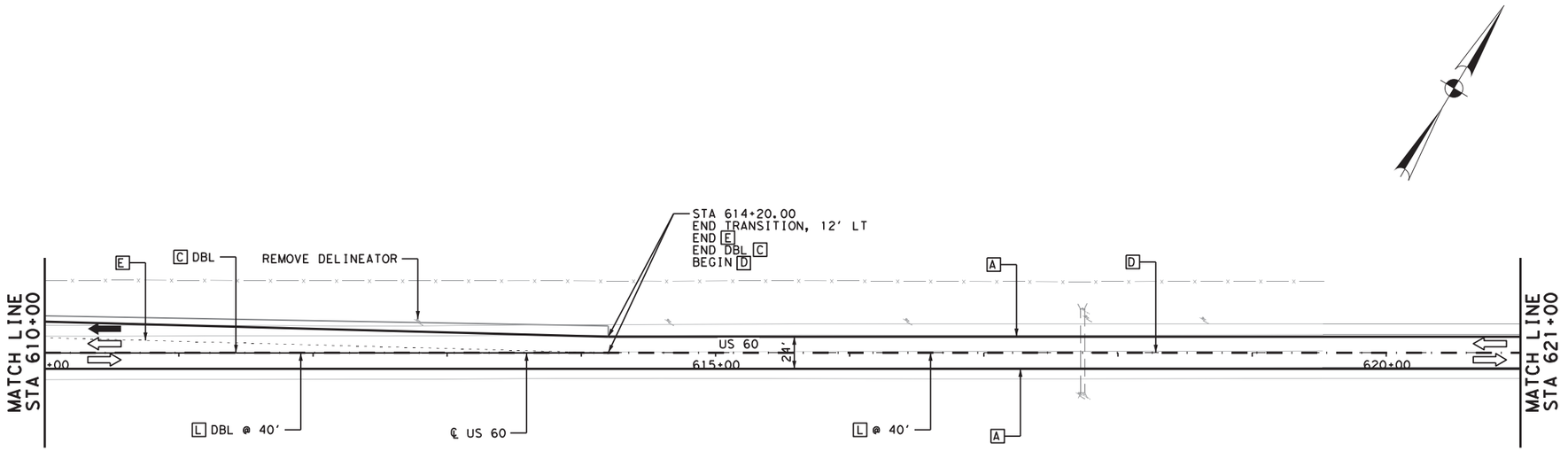
# SIGNING AND PAVEMENT MARKING PLANS

**STA 577+00 TO STA 599+00**

SHEET **25** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 210 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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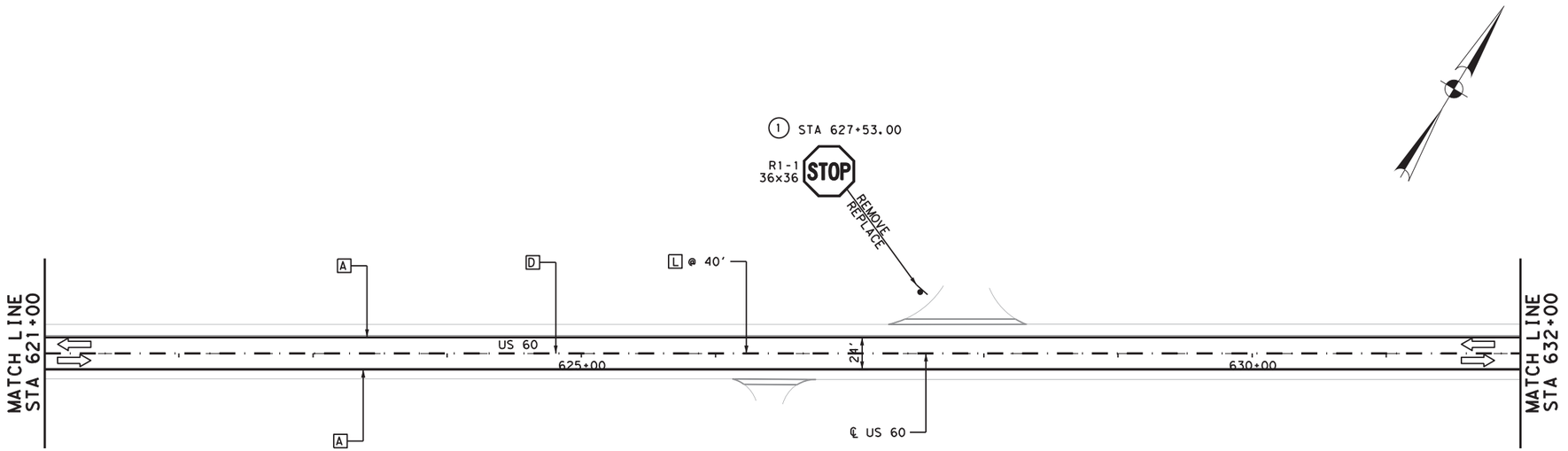
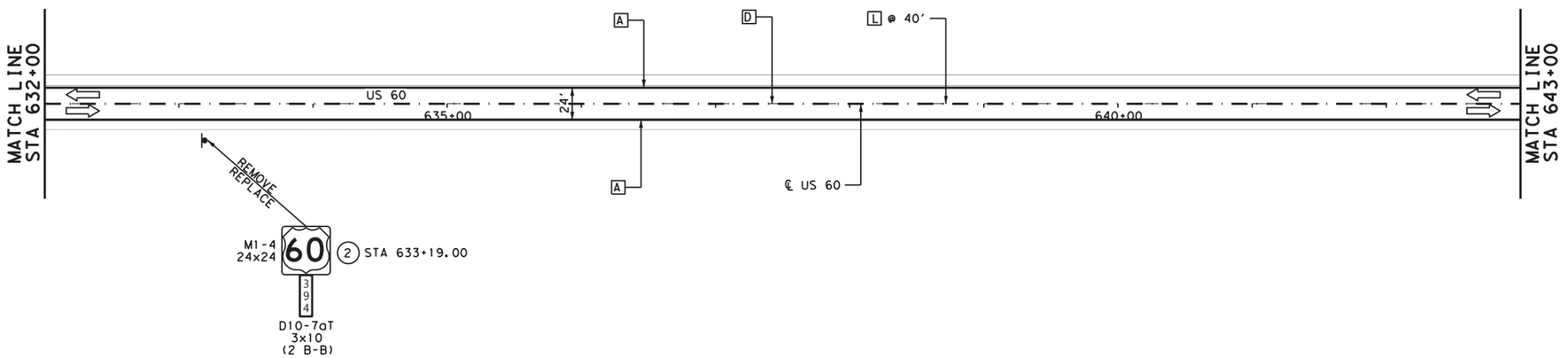
# SIGNING AND PAVEMENT MARKING PLANS

**STA 599+00 TO STA 621+00**

SHEET **26** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. / SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC / 211 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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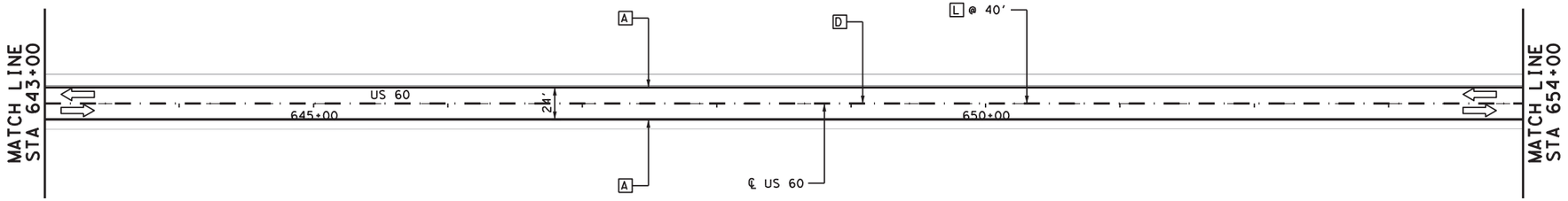
Texas Department of Transportation

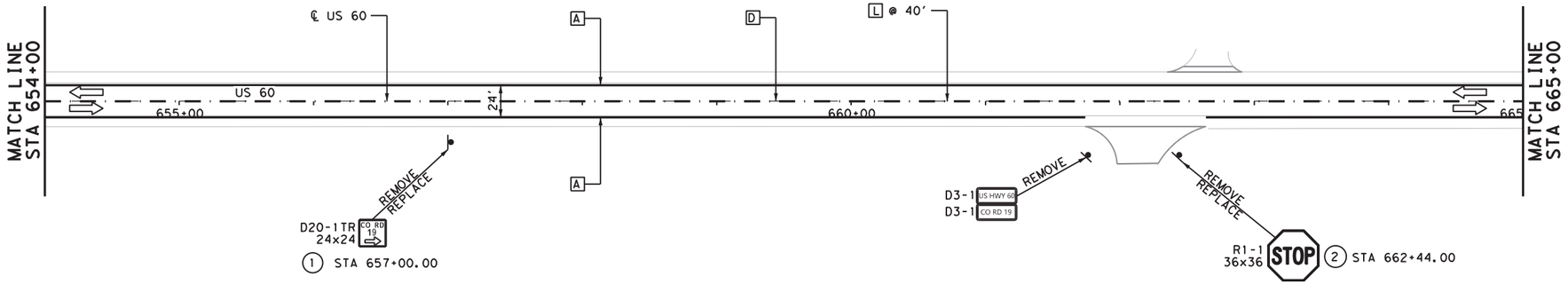
# SIGNING AND PAVEMENT MARKING PLANS

**STA 621+00 TO STA 643+00**

SHEET **27** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 212 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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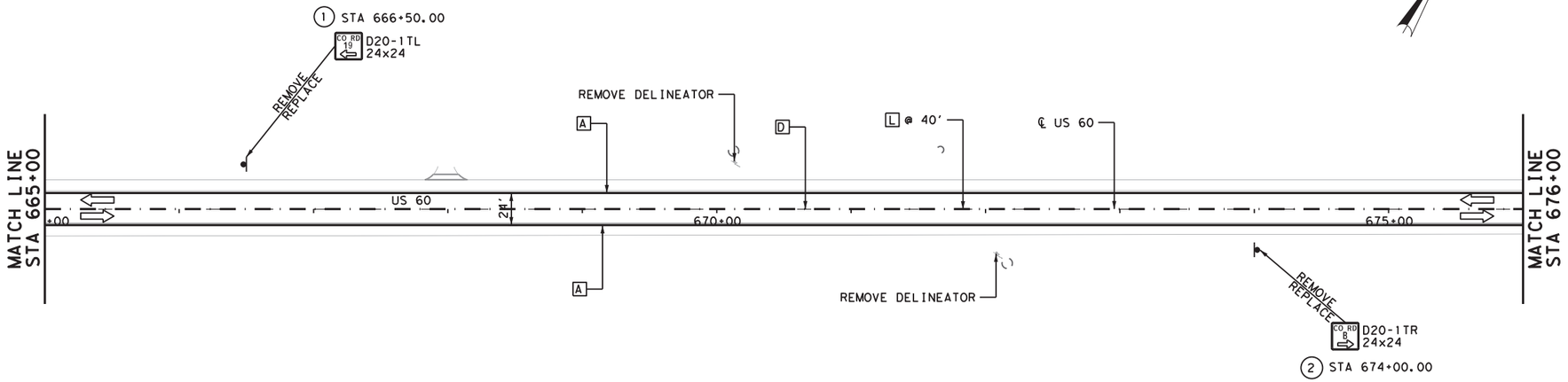
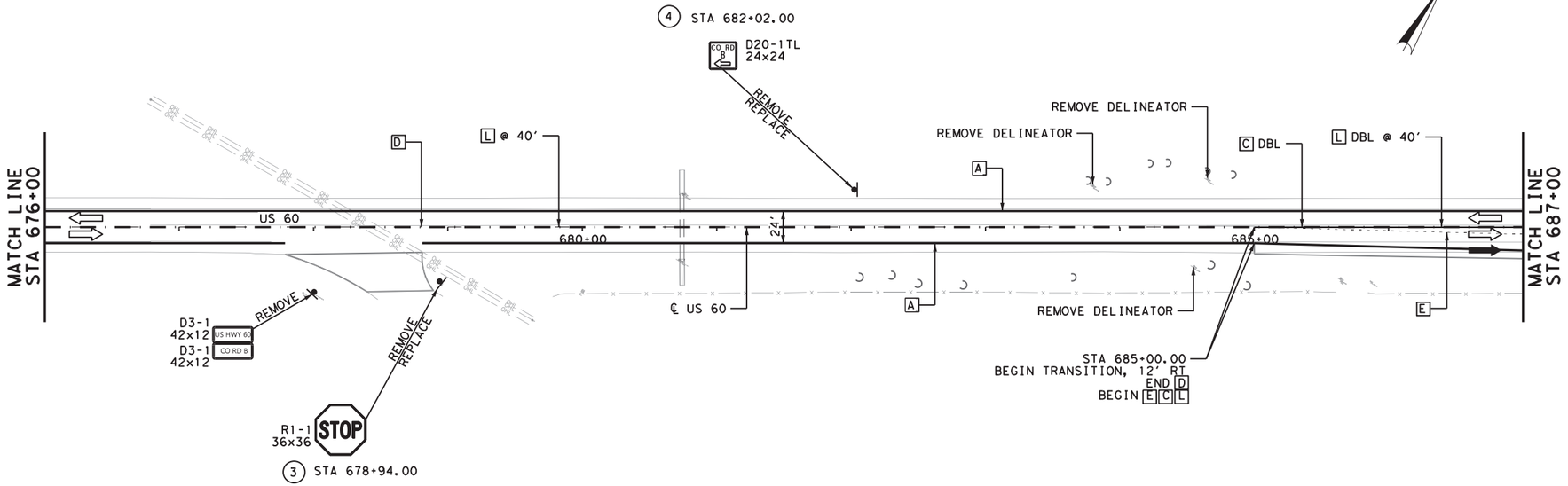
# SIGNING AND PAVEMENT MARKING PLANS

**STA 643+00 TO STA 665+00**

SHEET **28** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 213 |




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| ⇨ | EXIST DIRECTION OF TRAFFIC |
| ➡ | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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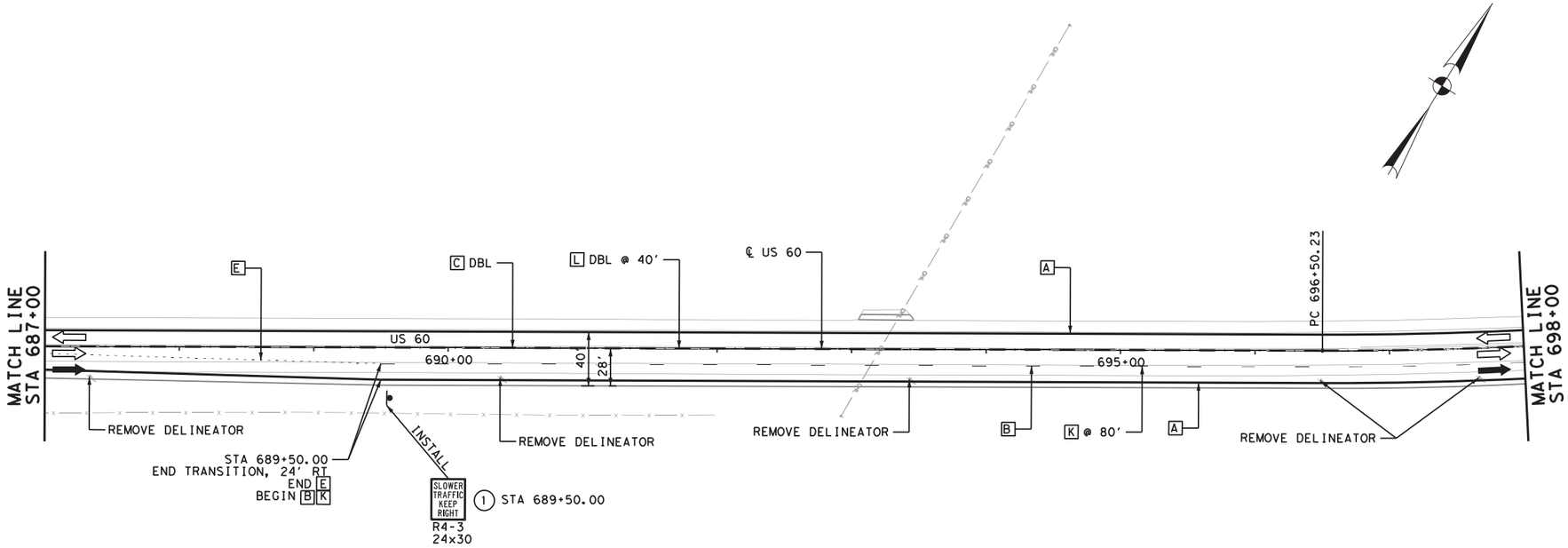
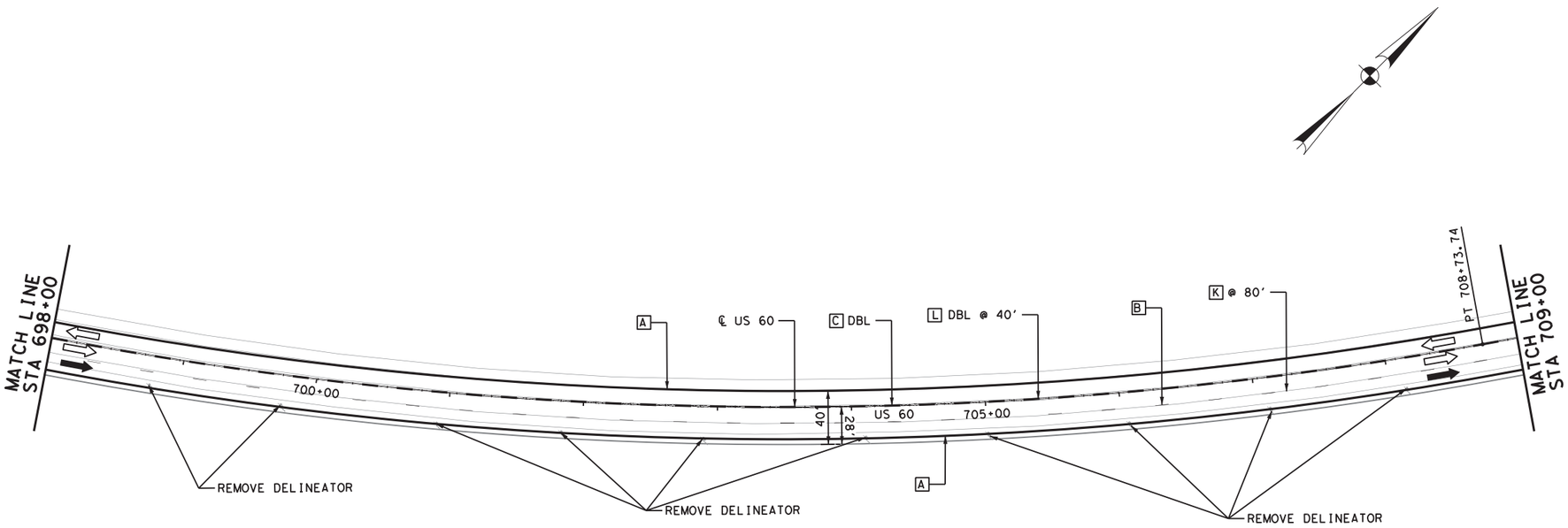
# SIGNING AND PAVEMENT MARKING PLANS

**STA 665+00 TO STA 687+00**

SHEET **29** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 214 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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TBPLS Firm Registration No. 100467
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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 687+00 TO STA 709+00**

SHEET **30** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 215 |

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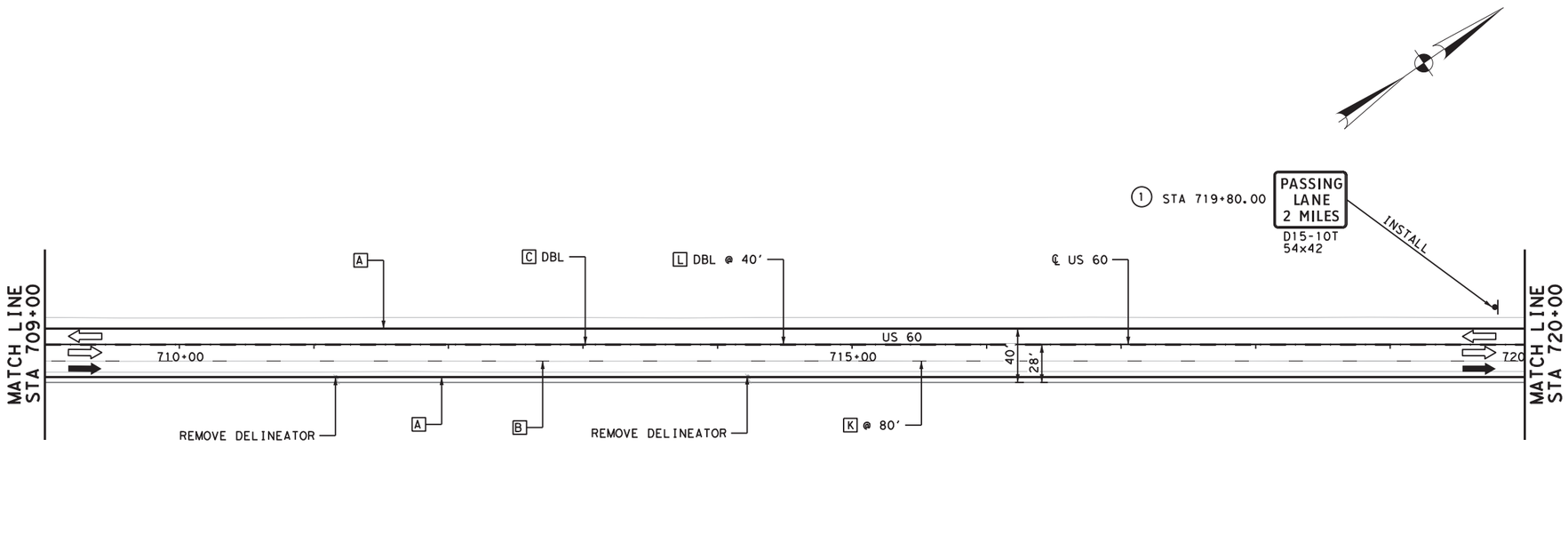
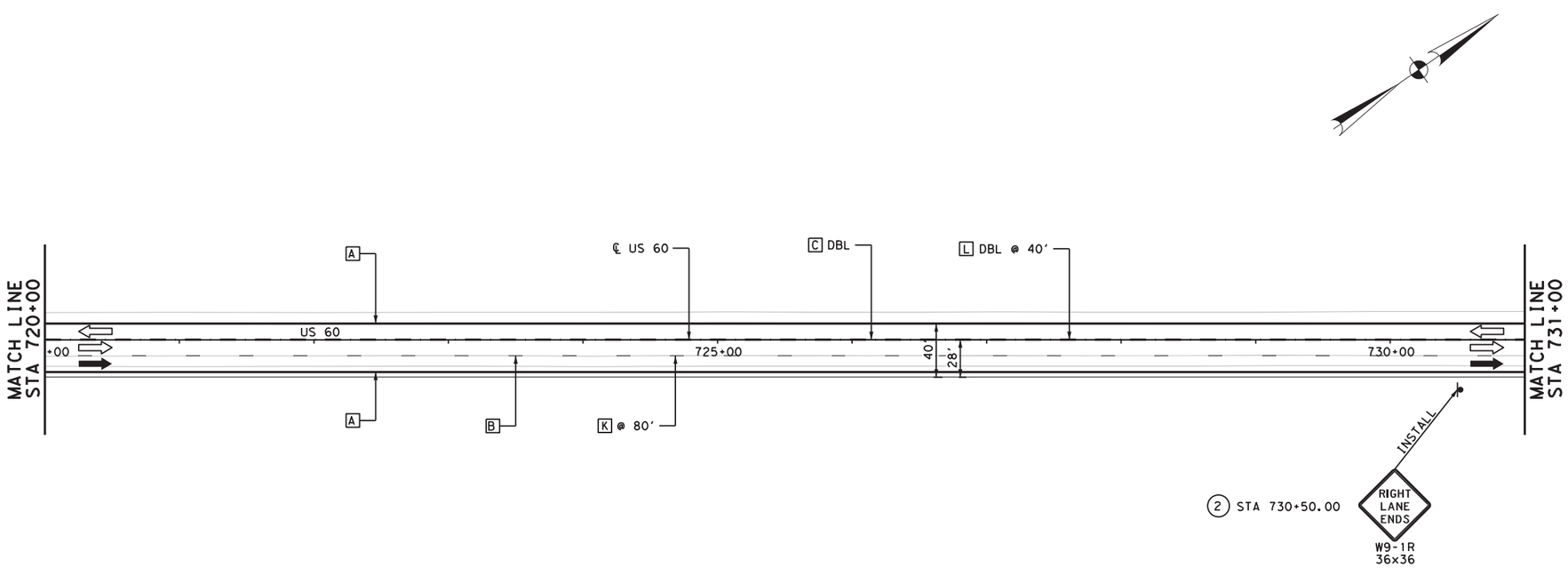
US60_TRAF-SPM-30.dgn




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

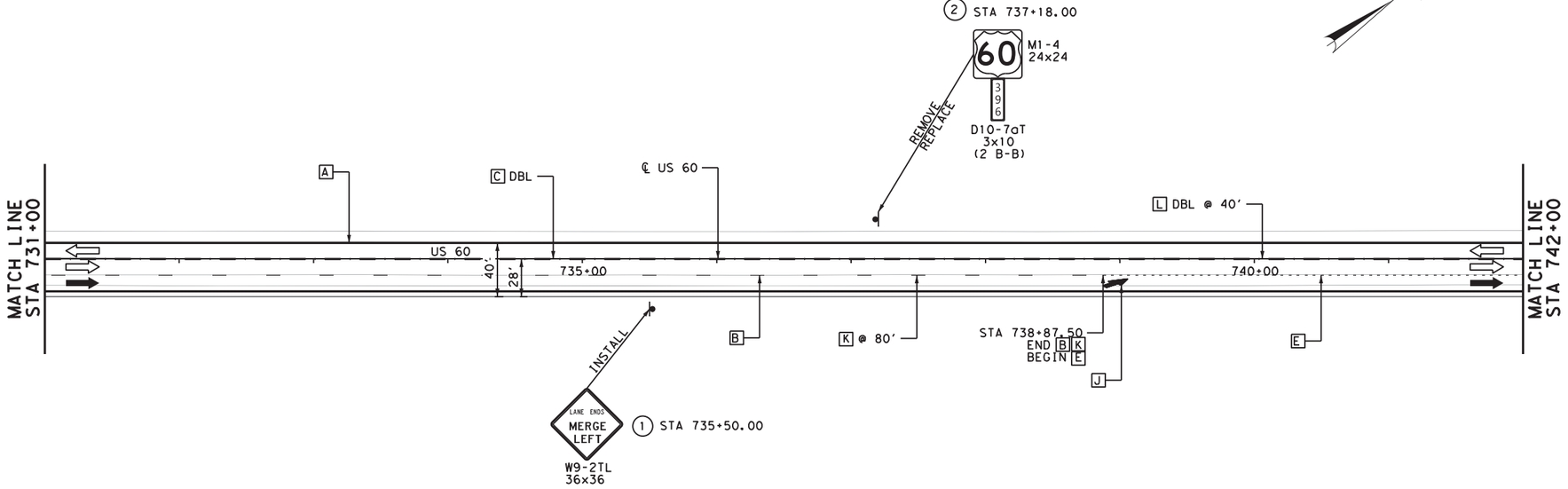
Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 709+00 TO STA 731+00**

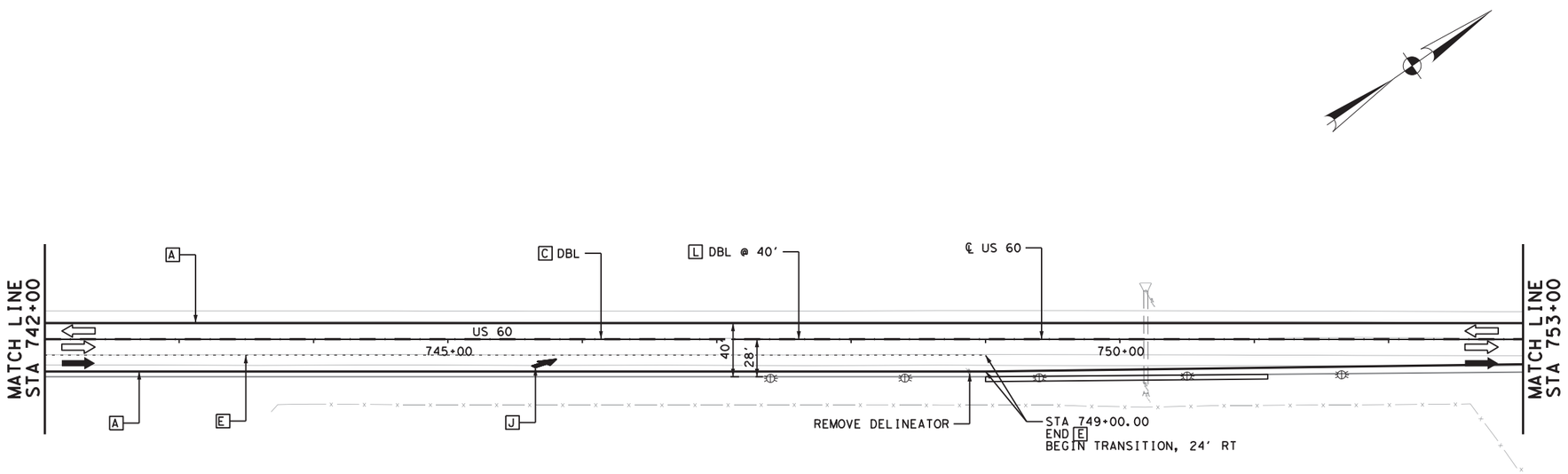
SHEET **31** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 216 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)




04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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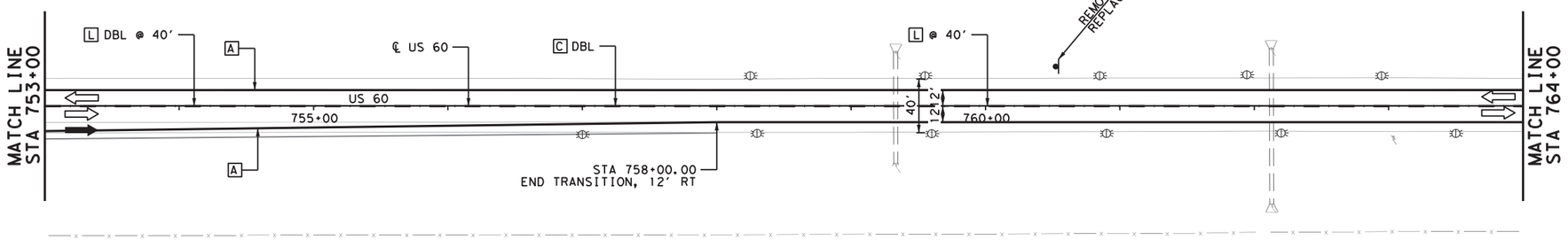
Texas Department of Transportation

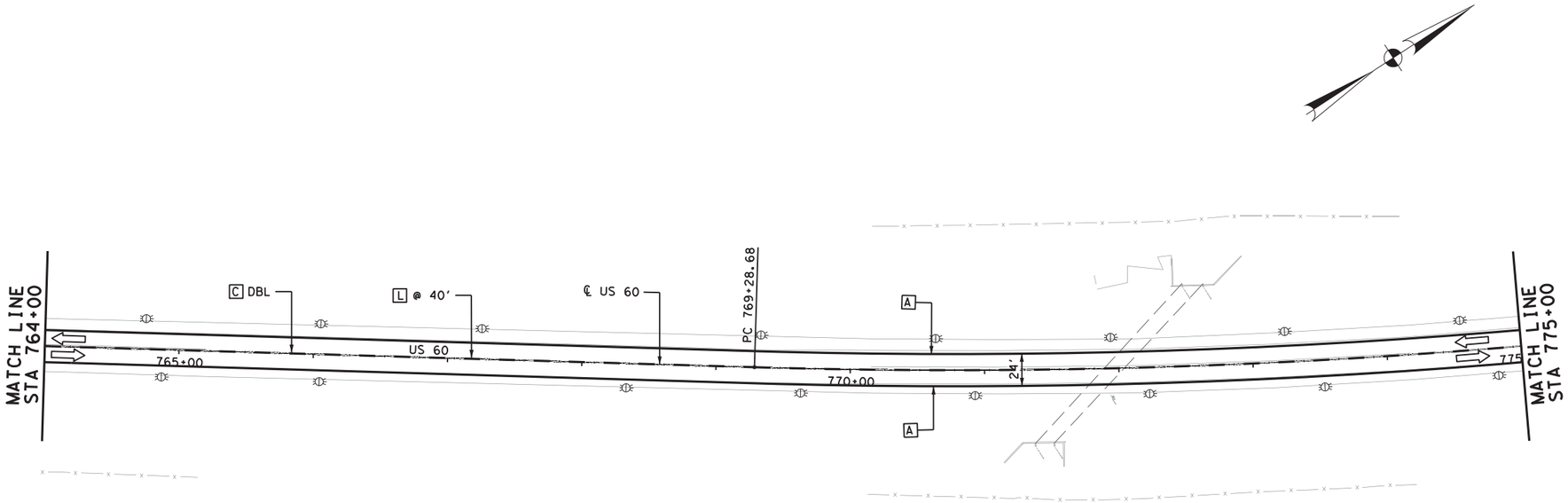
# SIGNING AND PAVEMENT MARKING PLANS

**STA 731+00 TO STA 753+00**

SHEET **32** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 217 |




LEGEND

- A RE PM W/RET REQ TY I (W)4"(SLD)
- B RE PM W/RET REQ TY I (W)4"(BRK)
- C RE PM W/RET REQ TY I (Y)4"(SLD)
- D RE PM W/RET REQ TY I (Y)4"(BRK)
- E REFL PAV MRK TY I (W)4"(DOT)
- F REFL PAV MRK TY I (W)8"(SLD)
- G REFL PAV MRK TY I (W)12"(SLD)
- H REFL PAV MRK TY I (W)24"(SLD)
- I REFL PAV MRK TY I (Y)24"(SLD)
- J REFL PAV MRK TY I (W)(LNDPARW)
- K REFL PAV MRKR TY I-C
- L REFL PAV MRKR TY II-A-A
- M OBJECT MARKER
- N RELF PAV MRK TY I (W)(ARROW)
- (#) SIGN NUMBER
- EXIST DIRECTION OF TRAFFIC
- PROP DIRECTION OF TRAFFIC
- PROP WHITE FLX GF2 DELINEATOR (BI)

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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# SIGNING AND PAVEMENT MARKING PLANS

**STA 753+00 TO STA 775+00**

SHEET **33** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 218 |

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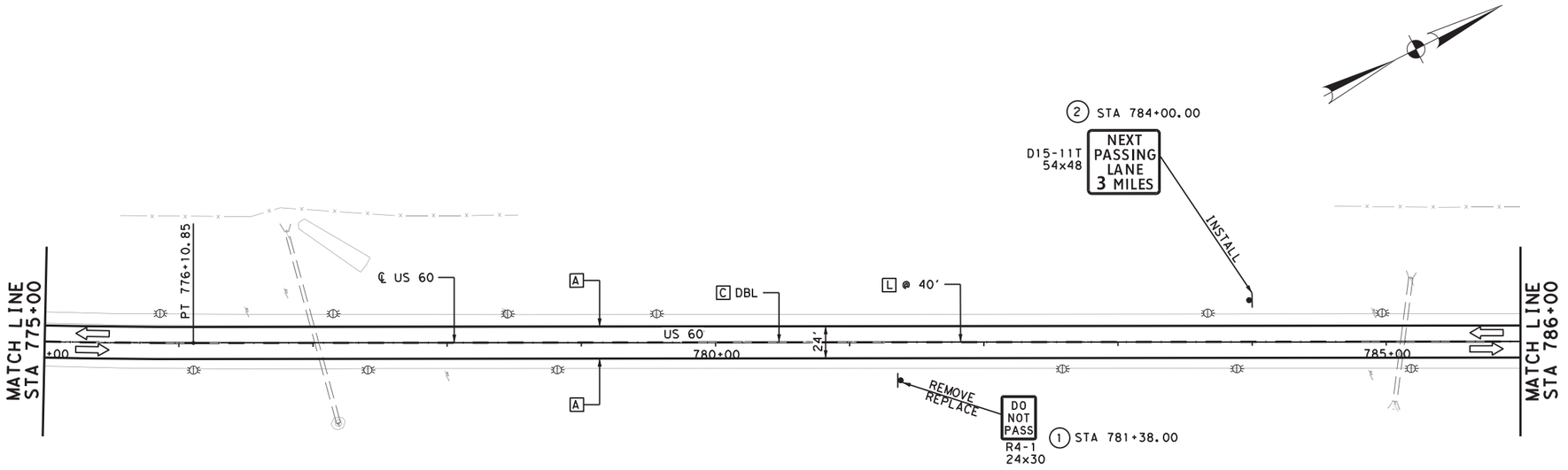
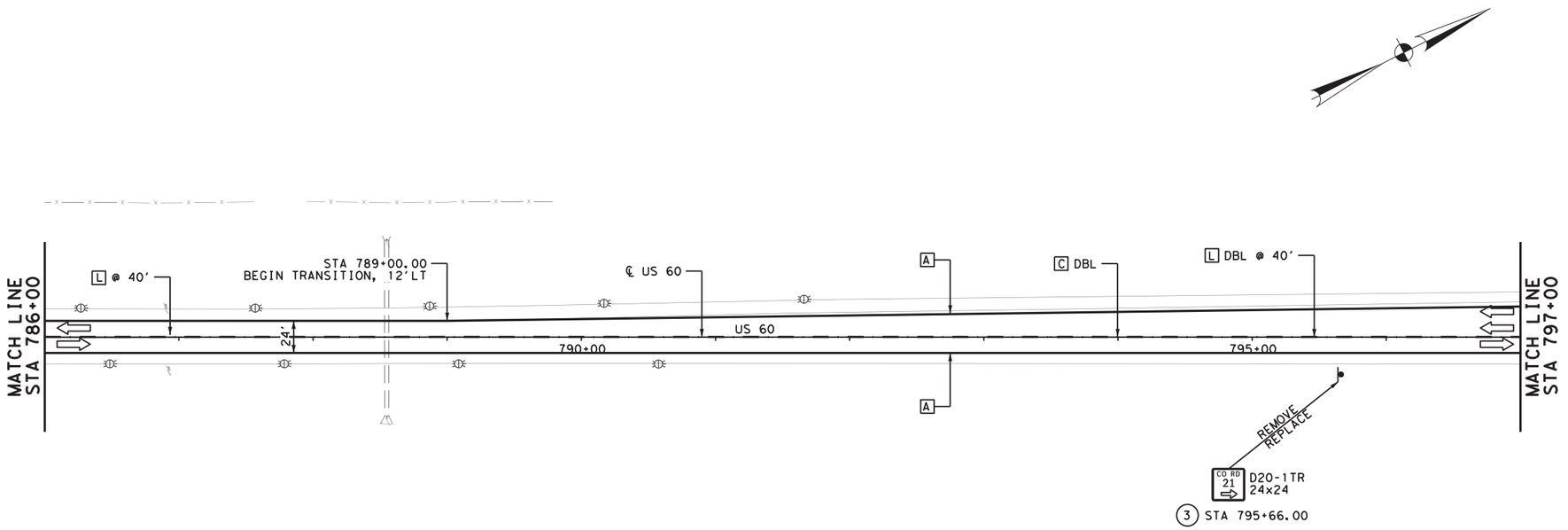
US60_TRAF-SPM-33.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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TBPLS Firm Registration No. 100467
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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 775+00 TO STA 797+00**

SHEET **34** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 219 |

4/7/2021 7:28:17 AM
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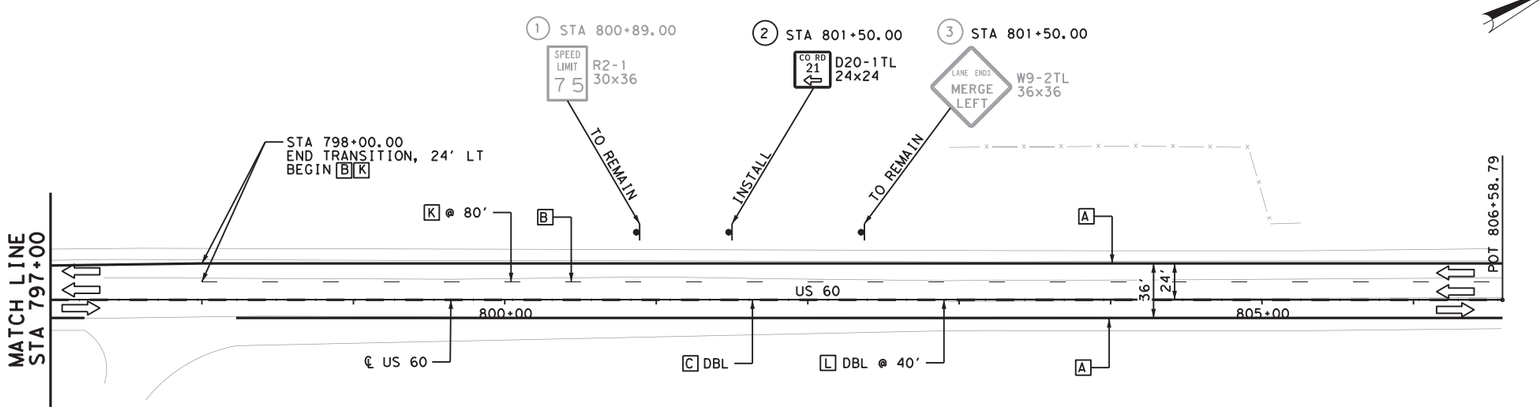
USGO_TRAF-SPM-34.dgn




LEGEND

| | |
|---|---|
| A | RE PM W/RET REQ TY I (W)4"(SLD) |
| B | RE PM W/RET REQ TY I (W)4"(BRK) |
| C | RE PM W/RET REQ TY I (Y)4"(SLD) |
| D | RE PM W/RET REQ TY I (Y)4"(BRK) |
| E | REFL PAV MRK TY I (W)4"(DOT) |
| F | REFL PAV MRK TY I (W)8"(SLD) |
| G | REFL PAV MRK TY I (W)12"(SLD) |
| H | REFL PAV MRK TY I (W)24"(SLD) |
| I | REFL PAV MRK TY I (Y)24"(SLD) |
| J | REFL PAV MRK TY I (W)(LNDPARW) |
| K | REFL PAV MRKR TY I-C |
| L | REFL PAV MRKR TY II-A-A |
| M | OBJECT MARKER |
| N | RELF PAV MRK TY I (W)(ARROW) |
| # | SIGN NUMBER |
| | EXIST DIRECTION OF TRAFFIC |
| | PROP DIRECTION OF TRAFFIC |
| | PROP WHITE FLX GF2 DELINEATOR (BI) |

04/07/2021

BO L. RATTO
113226
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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TBPLS Firm Registration No. 100467
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Texas Department of Transportation

# SIGNING AND PAVEMENT MARKING PLANS

**STA 797+00 TO STA 806+58.79**

SHEET **35** OF **35**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | **220** |

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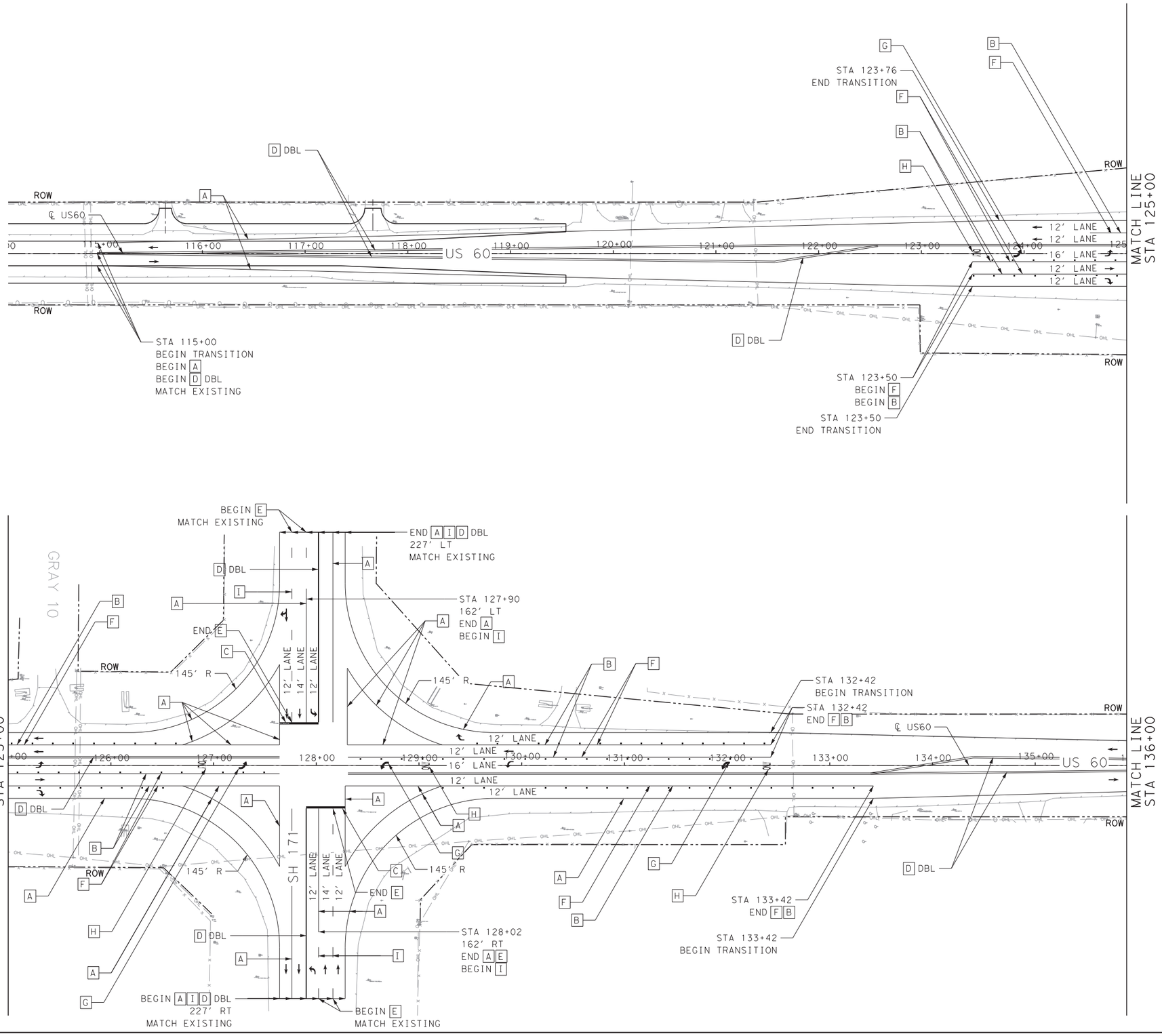


LEGEND:

| | |
|---|---|
| → | TRAFFIC FLOW ARROW |
| A | REFL PAV MRK TY I(W)4"(SLD) |
| B | REFL PAV MRK TY I(W)8"(SLD) |
| C | REFL PAV MRK TY I(W)24"(SLD) |
| D | REFL PAV MRK TY I (Y)4"(SLD) |
| E | REFL PAV MRKR TY II-A-A @ 80' O.C. |
| F | REFL PAV MRKR TY I-C @ 20' O.C. |
| G | REFL PAV MRKR TY I(W)(ARROW) |
| H | REFL PAV MRKR TY I(W)(WORD) |
| I | REFL PAV MRKR TY I(W)4"(BRK) |
| ● | INSTL DEL ASSM (D-SY)SZ1(YFLX) GND(BR) @ 75' SPA |

STATE OF TEXAS
COURTNEY KINTNER
129701
PROFESSIONAL LICENSED ENGINEER
3/31/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |


LAMB-STAR ENGINEERING, L.L.C.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073



Texas Department of Transportation

# US60 & SH171
# PAVEMENT MARKINGS

SHEET 1 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 221 |


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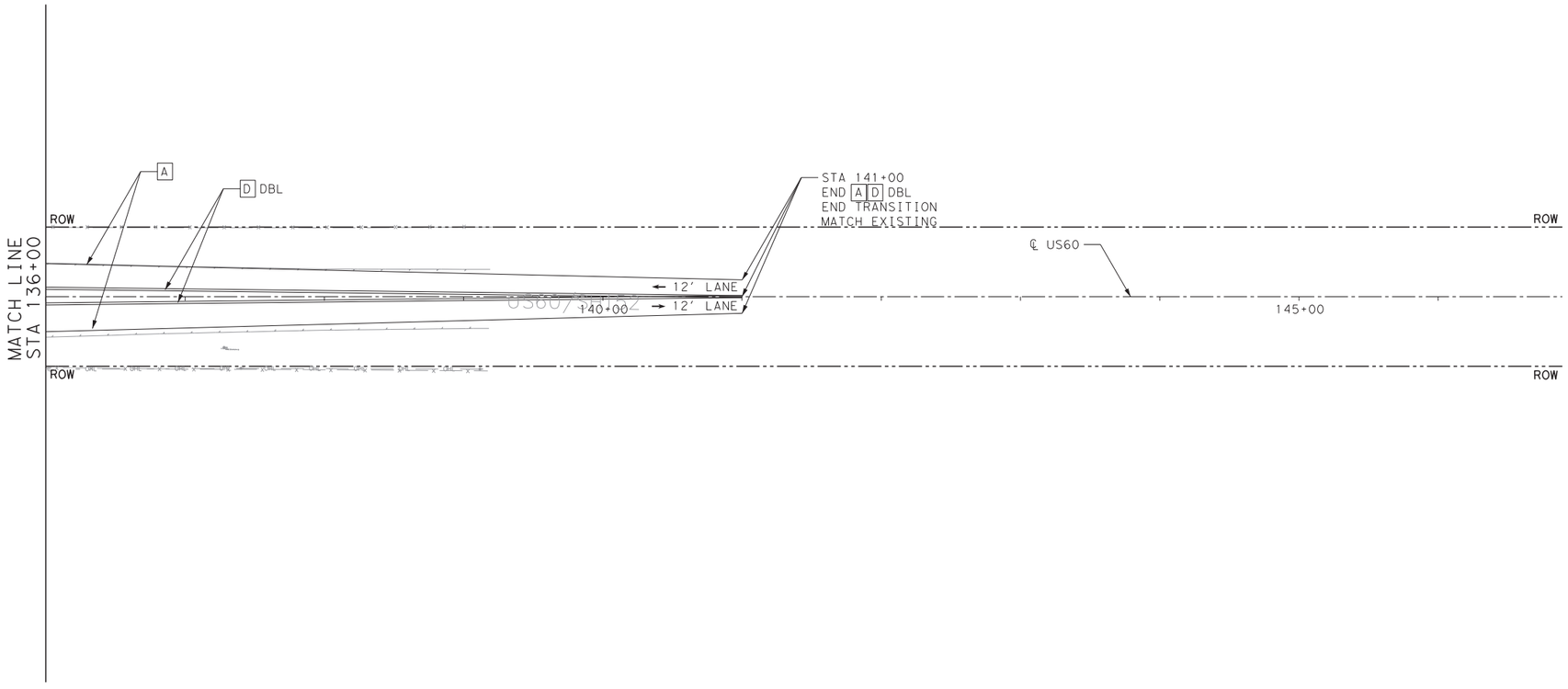


LEGEND:

| | |
|---|---|
| → | TRAFFIC FLOW ARROW |
| A | REFL PAV MRK TY I(W)4"(SLD) |
| B | REFL PAV MRK TY I(W)8"(SLD) |
| C | REFL PAV MRK TY I(W)24"(SLD) |
| D | REFL PAV MRK TY I (Y)4"(SLD) |
| E | REFL PAV MRKR TY II-A-A @ 80' O.C. |
| F | REFL PAV MRKR TY I-C @ 20' O.C. |
| G | REFL PAV MRKR TY I(W)(ARROW) |
| H | REFL PAV MRKR TY I(W)(WORD) |
| I | REFL PAV MRKR TY I(W)4"(BRK) |
| ● | INSTL DEL ASSM (D-SY)SZ1(YFLX) GND(BR) @ 75' SPA |

STATE OF TEXAS
COURTNEY KINTNER
129701
PROFESSIONAL LICENSED ENGINEER
Courtney Kintner 3/31/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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| | | | |

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PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073



# US60 & SH171
# PAVEMENT MARKINGS

SHEET 2 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 222 |

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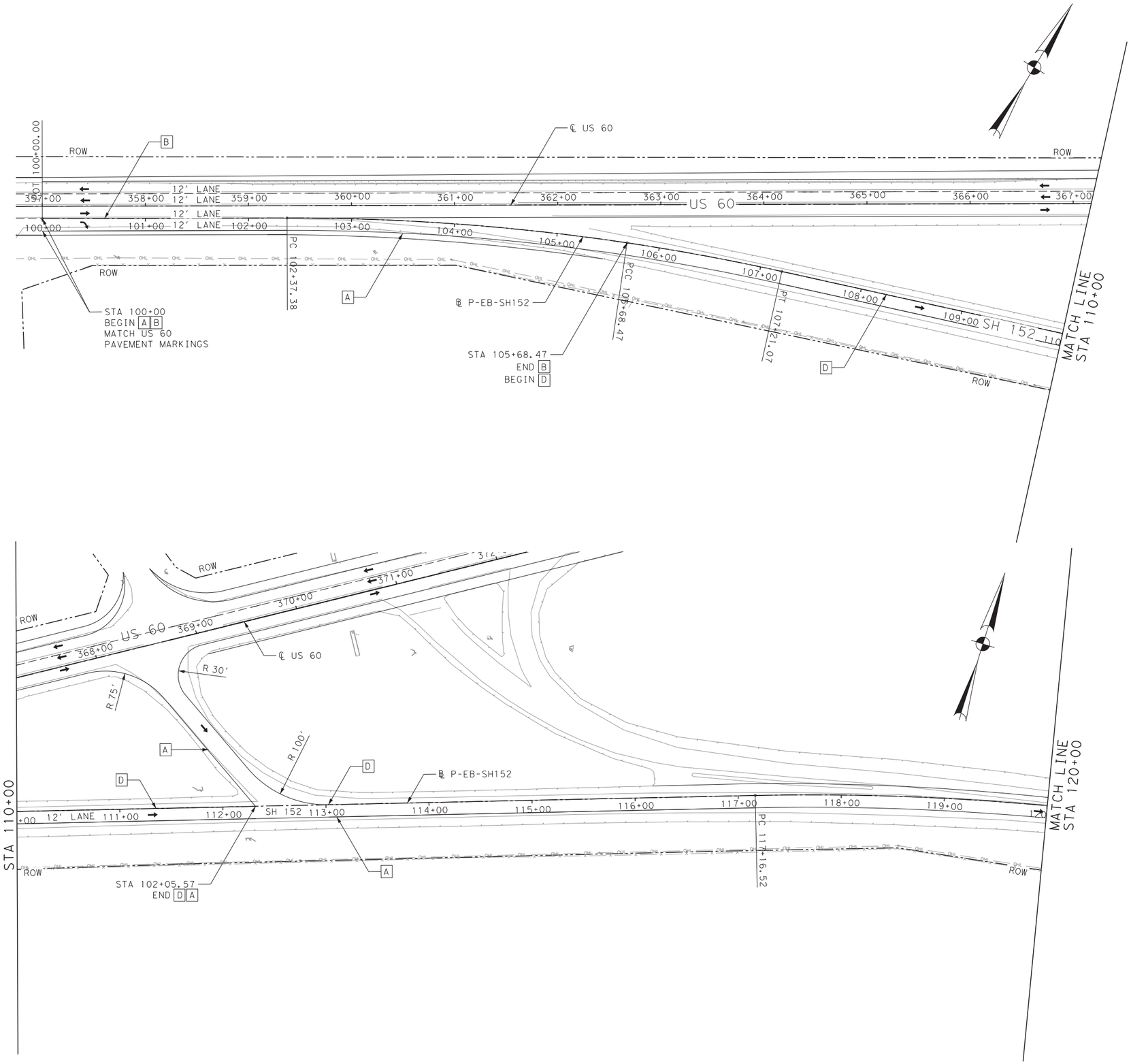


LEGEND:

- → TRAFFIC FLOW ARROW
- [A] REFL PAV MRK TY I(W)4"(SLD)
- [B] REFL PAV MRK TY I(W)8"(SLD)
- [C] REFL PAV MRK TY I(W)24"(SLD)
- [D] REFL PAV MRK TY I (Y)4"(SLD)
- [E] REFL PAV MRKR TY II-A-A @ 80' O.C.
- [F] REFL PAV MRKR TY I-C @ 20' O.C.
- [G] REFL PAV MRKR TY I(W)(ARROW)
- [H] REFL PAV MRKR TY I(W)(WORD)
- [I] REFL PAV MRKR TY I(W)4"(BRK)
- INSTL DEL ASSM (D-SY)SZ1(YFLX) GND(BR) @ 75' SPA

STATE OF TEXAS
JILL M. VAN HOEWYK
110940
LICENSED
PROFESSIONAL ENGINEER
3/31/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

LAMB-STAR ENGINEERING, L.L.C.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073



# SH152
# PAVEMENT MARKINGS

SHEET 1 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 223 |

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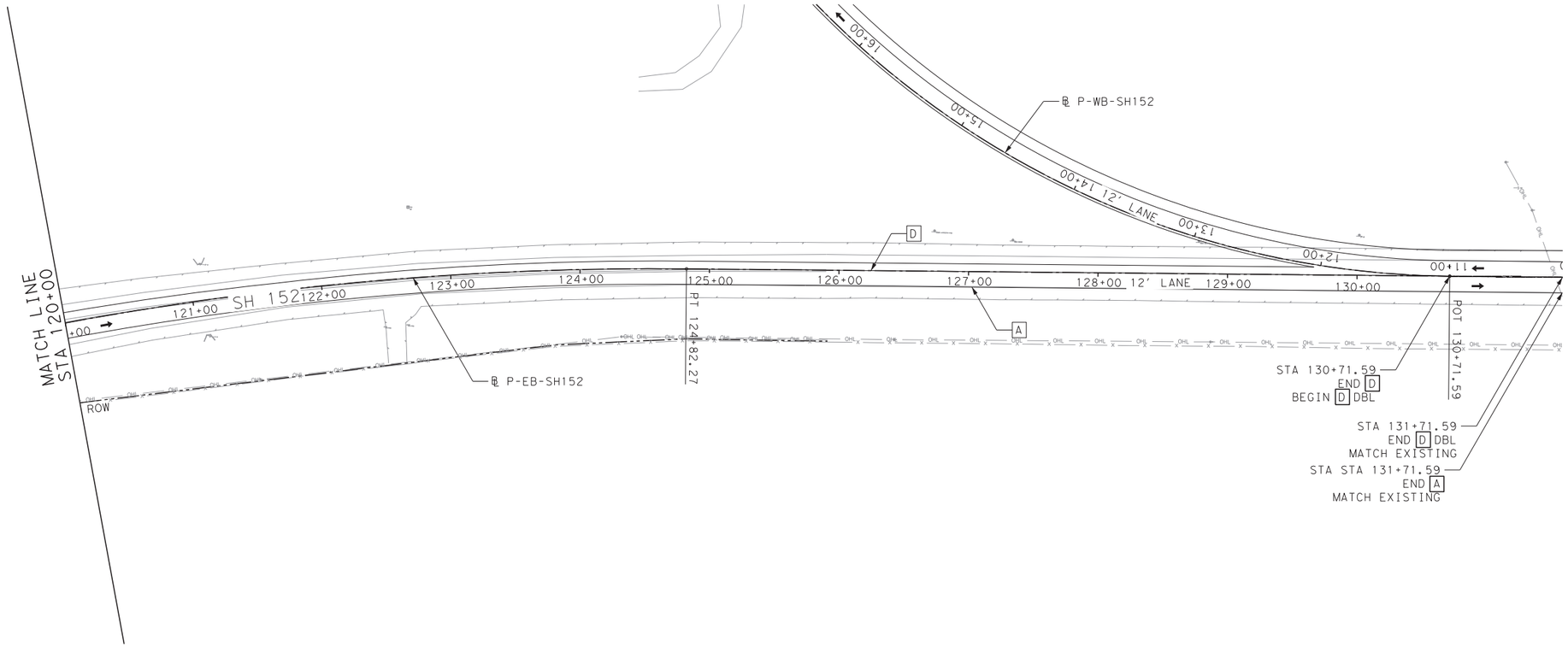


LEGEND:

| | |
|---|---|
| → | TRAFFIC FLOW ARROW |
| A | REFL PAV MRK TY I(W)4"(SLD) |
| B | REFL PAV MRK TY I(W)8"(SLD) |
| C | REFL PAV MRK TY I(W)24"(SLD) |
| D | REFL PAV MRK TY I (Y)4"(SLD) |
| E | REFL PAV MRKR TY II-A-A @ 80' O.C. |
| F | REFL PAV MRKR TY I-C @ 20' O.C. |
| G | REFL PAV MRKR TY I(W)(ARROW) |
| H | REFL PAV MRKR TY I(W)(WORD) |
| I | REFL PAV MRKR TY I(W)4"(BRK) |
| ✹ | INSTL DEL ASSM (D-SY)SZ1(YFLX) GND(BR) @ 75' SPA |

STATE OF TEXAS
JILL M. VAN HOEWYK
110940
PROFESSIONAL ENGINEER
3/31/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073



# SH152
# PAVEMENT MARKINGS

SHEET 2 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 224 |

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3/31/2021
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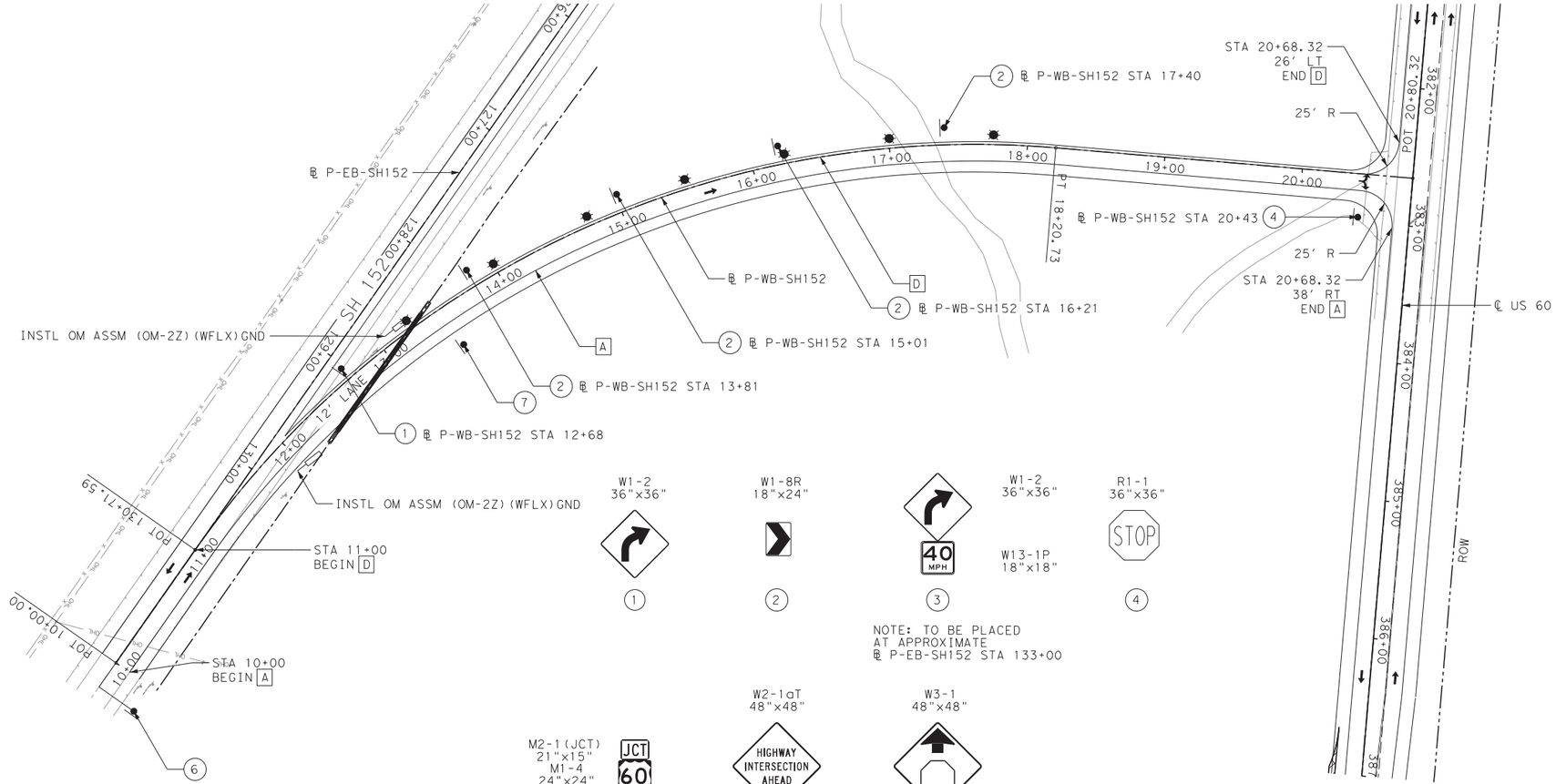


LEGEND:

| | |
|---|---|
| → | TRAFFIC FLOW ARROW |
| A | REFL PAV MRK TY I(W)4"(SLD) |
| B | REFL PAV MRK TY I(W)8"(SLD) |
| C | REFL PAV MRK TY I(W)24"(SLD) |
| D | REFL PAV MRK TY I (Y)4"(SLD) |
| E | REFL PAV MRKR TY II-A-A @ 80' O.C. |
| F | REFL PAV MRKR TY I-C @ 20' O.C. |
| G | REFL PAV MRKR TY I(W)(ARROW) |
| H | REFL PAV MRKR TY I(W)(WORD) |
| I | REFL PAV MRKR TY I(W)4"(BRK) |
| ● | INSTL DEL ASSM (D-SY)SZ1(YFLX) GND(BR) @ 75' SPA |

STATE OF TEXAS
JILL M. VAN HOEWYK
110940
LICENSED
PROFESSIONAL ENGINEER
3/31/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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PLANO, TEXAS 75093 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073



# SH 152
# PAVEMENT MARKINGS

SHEET 3 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | SEE TITLE SHEET | | | US 60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 225 |

3/31/2021 3:59:03 PM
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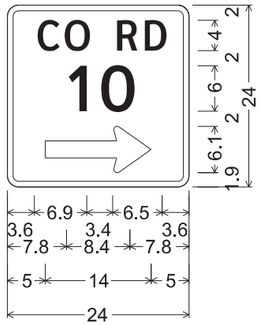
SH152_PVMRK_003.dgn




Identifier : D20-1TR_24x24;
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[CO RD] ClearviewHwy-3-W;
[10] ClearviewHwy-3-W;
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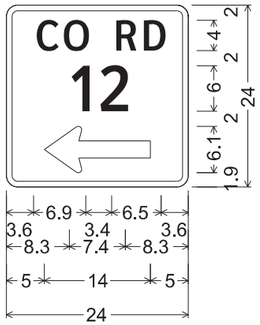


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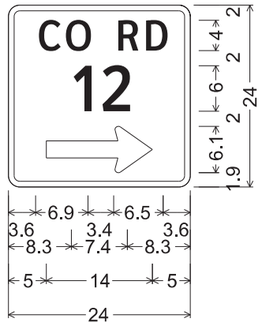
Standard Arrow Custom 14.0" X 6.1" 180º;

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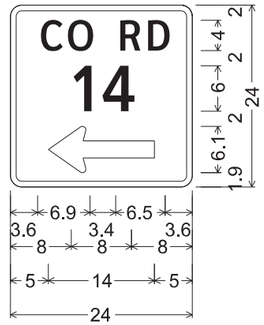


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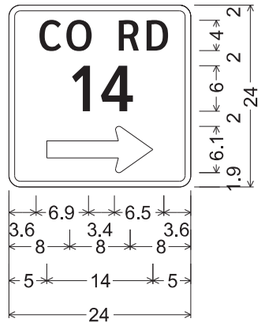


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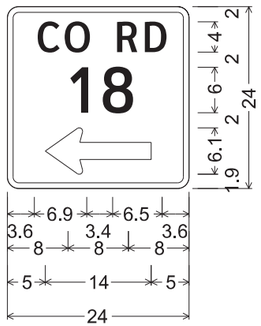


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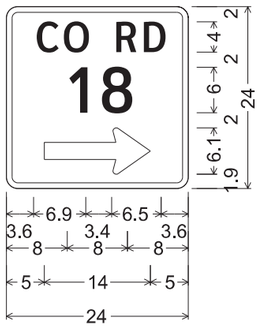
Standard Arrow Custom 14.0" X 6.1" 180º;

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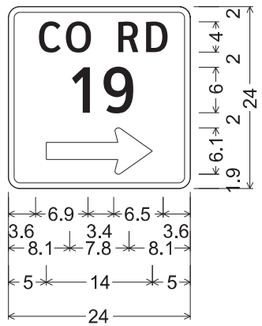


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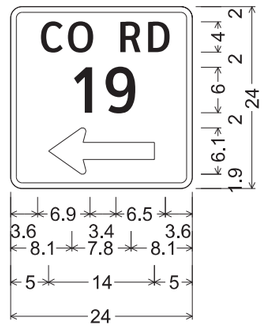


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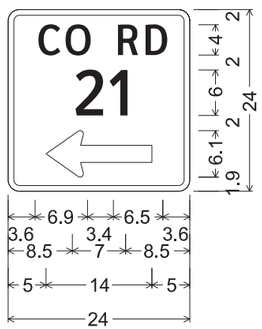


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[21] ClearviewHwy-3-W;
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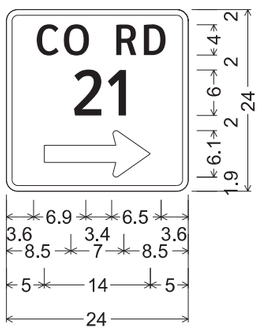


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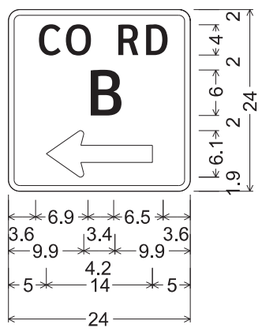


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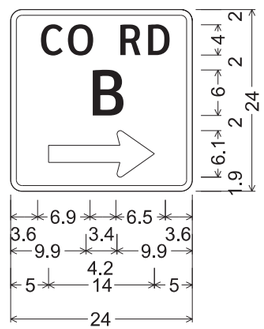


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1.5" Radius, 0.8" Border, White on Green;
[CO RD] ClearviewHwy-3-W;
[B] ClearviewHwy-3-W;
Standard Arrow Custom 14.0" X 6.1" 0º;

04/07/2021

SCALE: NTS

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

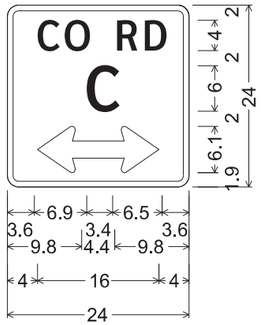
CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# SIGN DETAIL

SHEET 1 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 226 |

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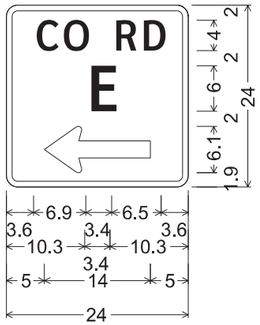


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1.5" Radius, 0.8" Border, White on Green;
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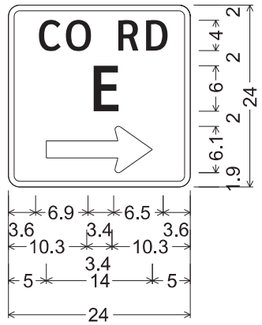


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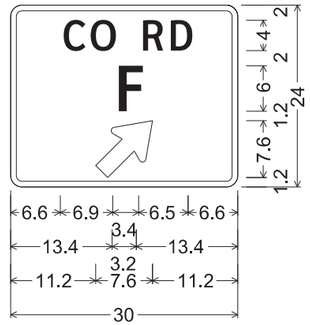


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[F] ClearviewHwy-3-W;
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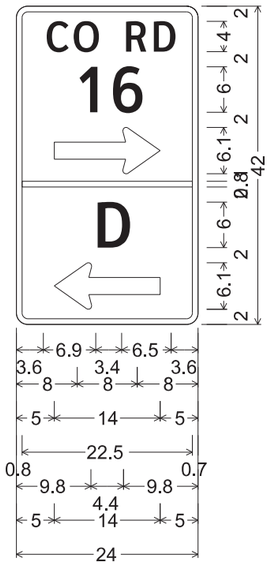


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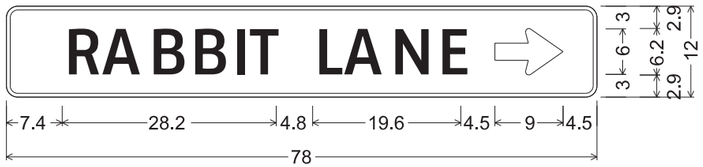
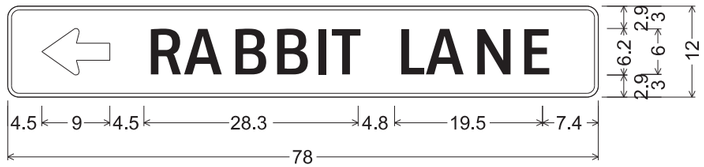
[CO RD] ClearviewHwy-3-W;
[16] ClearviewHwy-3-W;
Standard Arrow Custom 14.0" X 6.1" 0º;
[D] ClearviewHwy-3-W;
Standard Arrow Custom 14.0" X 6.1" 180º;




Identifier : D21-1TR_VARx12;
1.5" Radius, 0.5" Border, White on Green;
[RABBIT LANE] ClearviewHwy-3-W;
Standard Arrow Custom 9.0" X 6.1" 0º;




Identifier : D21-1TL_VARx12;
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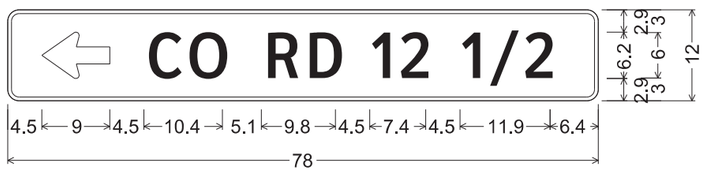
Standard Arrow Custom 9.0" X 6.1" 180º;
[RABBIT LANE] ClearviewHwy-3-W;




Identifier : D21-1TL_VARx12;
1.5" Radius, 0.5" Border, White on Green;
Standard Arrow Custom 9.0" X 6.1" 180º;
[CO RD 12 1/2] ClearviewHwy-3-W;

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

SCALE: NTS

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

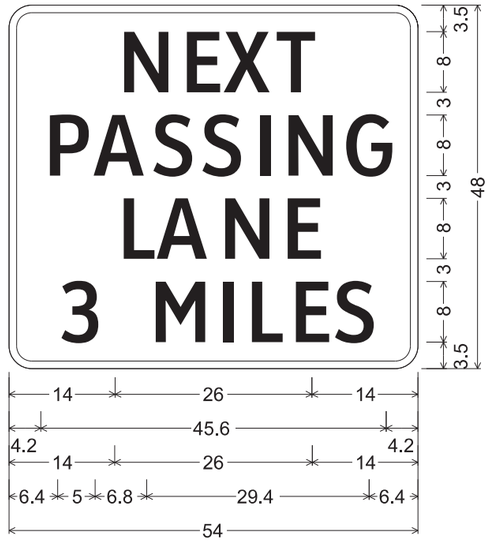
Texas Department of Transportation

# SIGN DETAIL

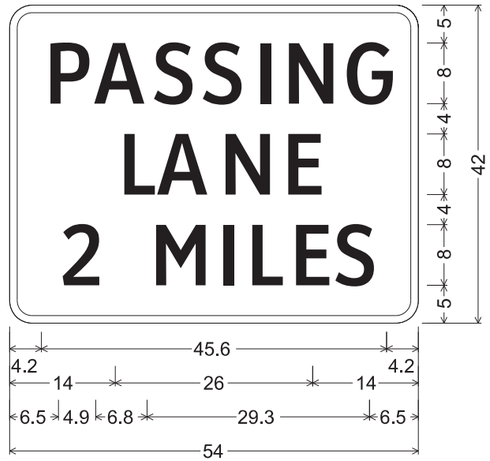
SHEET 2 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 227 |


Identifier : D15-11T_54x48;
3.0" Radius, 1.0" Border, White on Green;
[NEXT] ClearviewHwy-3-W;
[PASSING] ClearviewHwy-3-W;
[LANE] ClearviewHwy-3-W;
[2 MILES] ClearviewHwy-3-W;




Identifier : D15-11T_54x48;
3.0" Radius, 1.0" Border, White on Green;
[NEXT] ClearviewHwy-3-W;
[PASSING] ClearviewHwy-3-W;
[LANE] ClearviewHwy-3-W;
[3 MILES] ClearviewHwy-3-W;

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[PASSING] ClearviewHwy-3-W;
[LANE] ClearviewHwy-3-W;
[2 MILES] ClearviewHwy-3-W;


04/07/2021

SCALE: NTS

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# SIGN DETAIL

SHEET 3 OF 3

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 228 |

4/7/2021 7:28:9 AM
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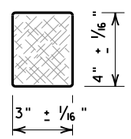
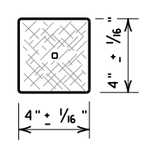
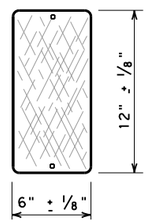
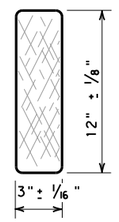
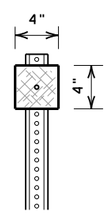
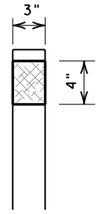
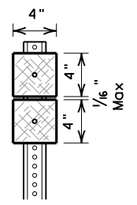
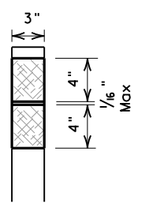
US60_TRAF-SIGN-DETAIL.dgn

DATE: 4/7/2021 7:28:20 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\509-the-Plates\dgn\dam1-20.dgn

## REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS

| | SIZE 1 | SIZE 2 | SIZE 3 | SIZE 4 |
|---|---|---|---|---|
| DEVICE |   |   |   |   |
| SHEETING | Yellow, White or Red Type B or C reflective sheeting | | | |
| NOTE | 1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx).<br>2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes. | | | |

## DELINEATORS

| | SINGLE | | DOUBLE | |
|---|---|---|---|---|
| DEVICE |   |   |   |   |
| | 1-Size 2 reflector unit | 1-Size 1 reflector unit | 2-Size 2 reflector units | 2-Size 1 reflector units |
| SHEETING | Yellow, White or Red Type B or C Reflective Sheeting | | | |
| POST TYPE | WC | YFLX, WFLX | WC | YFLX, WFLX |
| MOUNT TYPE | GND | GND, SRF | GND | GND, SRF |

## D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX(XX)

**NUMBER OF REFLECTORS**
S = Single
D = Double

**COLOR OF REFLECTORS**
W = White
Y = Yellow
R = Red

**REFLECTOR UNIT SIZE**
1 or 2

**TYPE OF POST OR DELINEATOR**
WC = Wing Channel Post
YFLX = Yellow Flexible Post
WFLX = White Flexible Post
BRF = Barrier Reflector

**TYPE OF MOUNT**
GND = Embedded (drivable or set in concrete)
CTB = Concrete Barrier Mount
GF1 or GF2 = Guard Fence Attachment
SRF = Surface Mount

**DIRECTION**
If Required
BI = Bi-Directional
BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXXX)XXX(XX)

**TYPE OF OBJECT MARKER**
1, 2, 3, or 4

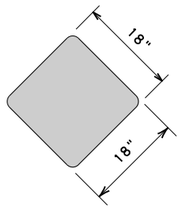
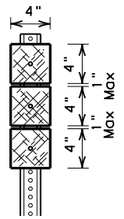
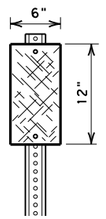
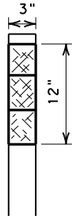
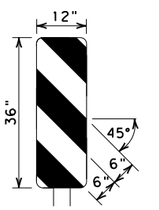
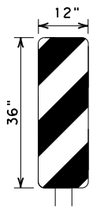
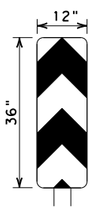
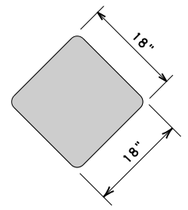
**NUMBER OF REFLECTORS OR DIRECTION**
X = 3-Size 2 reflector units (Type 2 only)
Y = 1-Size 3 reflector unit (Type 2 only)
Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only)
L = Left Side (Type 3 Object Marker only)
R = Right Side (Type 3 Object Marker only)
C = Center (Type 3 Object Marker only)

**TYPE OF POST**
WC = Wing Channel Post
WFLX = White Flexible Post
TWT = Thin Walled Tubing

**TYPE OF MOUNT**
GND = Embedded (drivable)
SRF = Surface Mount
WAS = Wedge Anchor Steel
WAP = Wedge Anchor Plastic

**DIRECTION**
If Required
BI = Bi-Directional

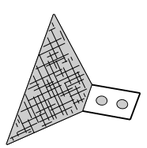
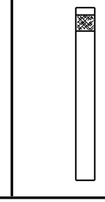
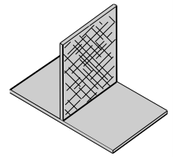
## OBJECT MARKERS

| | Type 1 (OM-1) | Type 2 (OM-2) | | | Type 3 (OM-3) | | | Type 4 (OM-4) |
|---|---|---|---|---|---|---|---|---|
| | OM-1 | OM-2X | OM-2Y | OM-2Z | OM-3L | OM-3R | OM-3C | OM-4 |
| DEVICE |   |   |   |   |   |   |   |   |
| | | 3-Size 2 reflector units | 1-Size 3 reflector unit | 3-Size 1 reflector units or 1-Size 4 reflector unit | | | | |
| SHEETING | Yellow-Type $B_{FL}$ or $C_{FL}$ Sheeting | Yellow - Type B or C Sheeting | | | Alternating acrylic black and retroflective yellow - Type $B_{FL}$ or $C_{FL}$ Sheeting | | | Red -Type $B_{FL}$ or $C_{FL}$ Sheeting |
| POST TYPE | TWT | WC | WC | WFLX | TWT | | | TWT |
| MOUNT TYPE | WAS, WAP | GND | GND | GND, SRF | WAS, WAP | | | WAS, WAP |

## DEPARTMENTAL MATERIAL SPECIFICATIONS

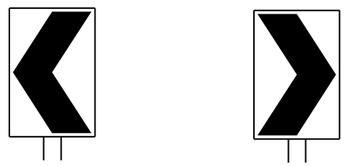
| | |
|---|---|
| FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES) | DMS-4400 |
| SIGN FACE MATERIALS | DMS-8300 |
| DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS | DMS-8600 |

## BARRIER REFLECTORS (BRF)

| | GF1 | GF2 | CTB |
|---|---|---|---|
| DEVICE |  |  |  |
| | 1. Barrier reflectors shall meet the requirements of DMS 8600.<br>2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov. | | |
| SHEETING | Yellow, White, Red | | |
| NOTE | 1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches. | | |

## CHEVRONS

DEVICE

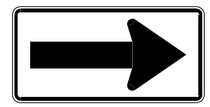



| SIZE (W x L) | 18"x 24" (Conventional) | 24"x 30" (Conventional Oversize) | 30"x 36" (Expressway) | 36" x 48" (Freeway) |
|---|---|---|---|---|
| MOUNTING HEIGHT | 4'-0" or 7'-0" | | 7'-0" Only | |

NOTE
1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies).
2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).

## ONE DIRECTION LARGE ARROW

DEVICE




| SIZE (W x L) | 48" x 24" (Conventional) | 60" x 30" (Expressway & Freeway) |
|---|---|---|
| MOUNTING HEIGHT | 7'-0" | |

## NOTE:

Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.

Texas Department of Transportation

Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION

# D & OM(1)-20

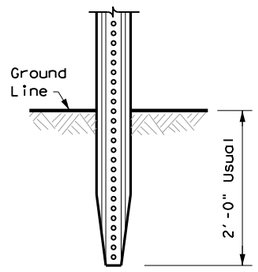
| FILE: dam1-20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|---|
| ©TxDOT August 2004 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 10-09 3-15 | DIST | COUNTY | | SHEET NO. |
| 4-10 7-20 | AMA | GRAY | | 229 |

20A

# POST TYPE AND SUPPORT FOUNDATION DETAILS

## WING CHANNEL (WC)

### GND

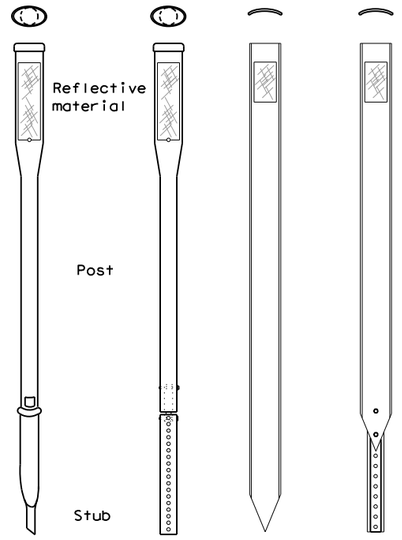



**NOTES**

1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

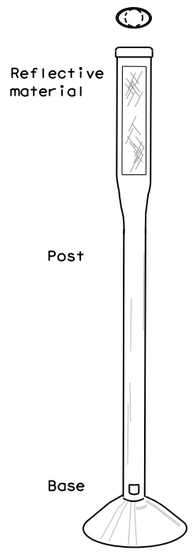
## FLEXIBLE POSTS (YFLX, WFLX)

### GND




EMBEDDED

### SRF



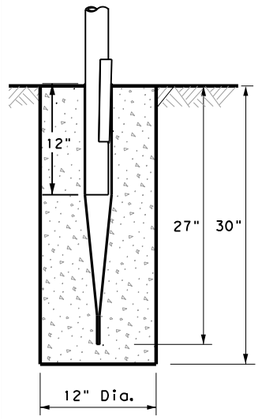

SURFACE MOUNT

**NOTES**

1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.
4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.

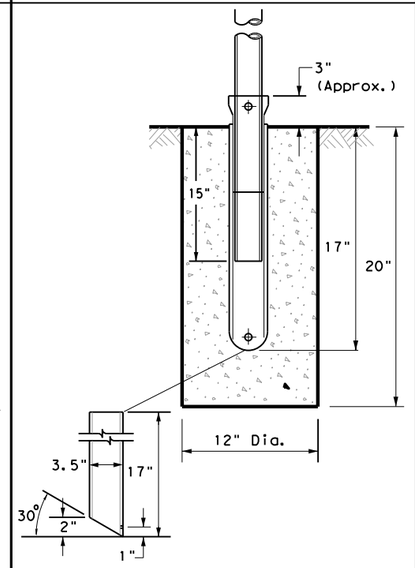
## WEDGE ANCHOR SYSTEMS

### WAS




STEEL

### WAP




PLASTIC

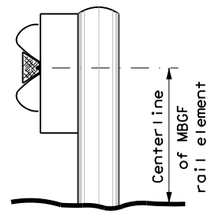
**NOTE**

1. Install per manufacturer's recommendations.

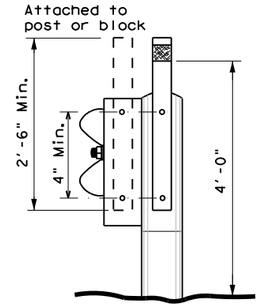
# TYPE OF BARRIER MOUNTS

## GUARD FENCE ATTACHMENT

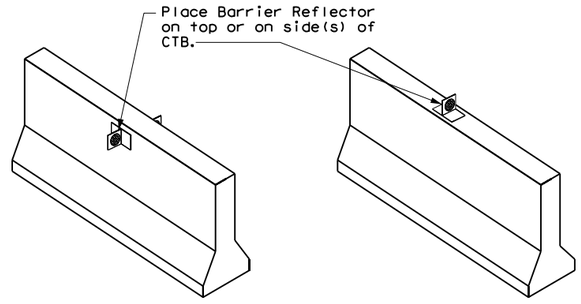
### GF1




### GF2



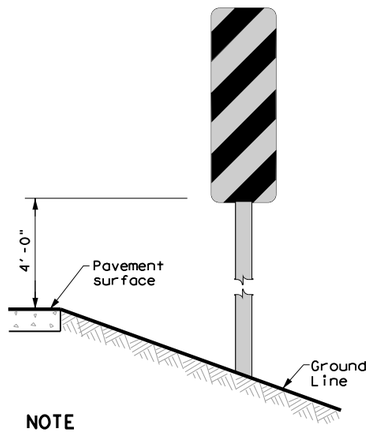

## CONCRETE TRAFFIC BARRIER (CTB)




**GENERAL NOTES**

1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

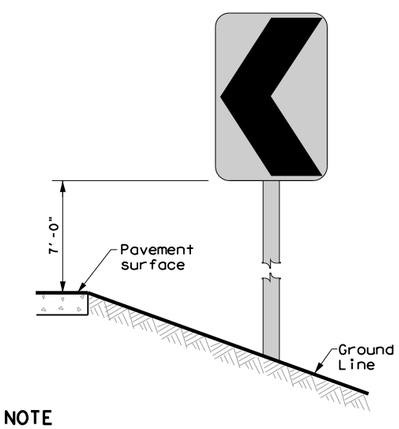
## TYPES 1, 3, AND 4 OBJECT MARKERS AND CHEVRONS




**NOTE**

Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)

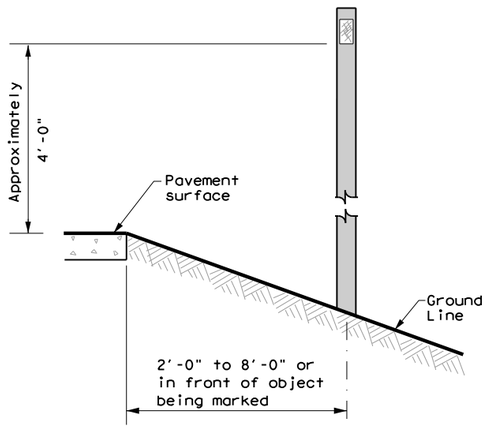
## CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN




**NOTE**

Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.

## DELINEATORS AND TYPE 2 OBJECT MARKERS




See general notes 1, 2 and 3.

Texas Department of Transportation — Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER INSTALLATION

# D & OM(2)-20

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|---|---|---|---|---|
| © TxDOT August 2004 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 10-09 3-15 | DIST | COUNTY | | SHEET NO. |
| 4-10 7-20 | AMA | GRAY | | 230 |

20B



DATE: 4/7/2021 7:28:21 AM
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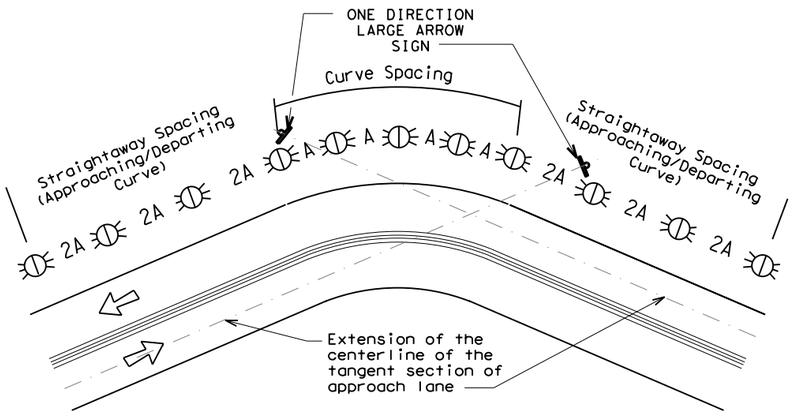
## MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

| Amount by which Advisory Speed is less than Posted Speed | Curve Advisory Speed | |
|---|---|---|
| | Turn (30 MPH or less) | Curve (35 MPH or more) |
| 5 MPH & 10 MPH | • RPMs | • RPMs |
| 15 MPH & 20 MPH | • RPMs and One Direction Large Arrow sign | • RPMs and Chevrons; or<br>• RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons. |
| 25 MPH & more | • RPMs and Chevrons; or<br>• RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons | • RPMs and Chevrons |

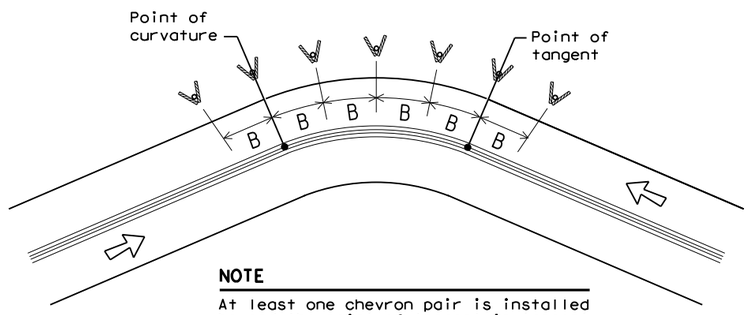
## SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES




**NOTE**

ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

## SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES




**NOTE**

At least one chevron pair is installed beyond the point of tangent in tangent section.

## DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN

| Degree of Curve | FEET | | | |
|---|---|---|---|---|
| | Radius of Curve | Spacing in Curve | Spacing in Straightaway | Chevron Spacing in Curve |
| | | A | 2A | B |
| 1 | 5730 | 225 | 450 | — |
| 2 | 2865 | 160 | 320 | — |
| 3 | 1910 | 130 | 260 | 200 |
| 4 | 1433 | 110 | 220 | 160 |
| 5 | 1146 | 100 | 200 | 160 |
| 6 | 955 | 90 | 180 | 160 |
| 7 | 819 | 85 | 170 | 160 |
| 8 | 716 | 75 | 150 | 160 |
| 9 | 637 | 75 | 150 | 120 |
| 10 | 573 | 70 | 140 | 120 |
| 11 | 521 | 65 | 130 | 120 |
| 12 | 478 | 60 | 120 | 120 |
| 13 | 441 | 60 | 120 | 120 |
| 14 | 409 | 55 | 110 | 80 |
| 15 | 382 | 55 | 110 | 80 |
| 16 | 358 | 55 | 110 | 80 |
| 19 | 302 | 50 | 100 | 80 |
| 23 | 249 | 40 | 80 | 80 |
| 29 | 198 | 35 | 70 | 40 |
| 38 | 151 | 30 | 60 | 40 |
| 57 | 101 | 20 | 40 | 40 |

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

## DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN

| Advisory Speed (MPH) | Spacing in Curve | Spacing in Straightaway | Chevron Spacing in Curve |
|---|---|---|---|
| | A | 2xA | B |
| 65 | 130 | 260 | 200 |
| 60 | 110 | 220 | 160 |
| 55 | 100 | 200 | 160 |
| 50 | 85 | 170 | 160 |
| 45 | 75 | 150 | 120 |
| 40 | 70 | 140 | 120 |
| 35 | 60 | 120 | 120 |
| 30 | 55 | 110 | 80 |
| 25 | 50 | 100 | 80 |
| 20 | 40 | 80 | 80 |
| 15 | 35 | 70 | 40 |

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

## DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

| CONDITION | REQUIRED TREATMENT | MINIMUM SPACING |
|---|---|---|
| Frwy./Exp. Tangent | RPMs | See PM-series and FPM-series standard sheets |
| Frwy./Exp. Curve | Single delineators on right side | See delineator spacing table |
| Frwy/Exp.Ramp | Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 3 on D&OM(4)) | 100 feet on ramp tangents<br>Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves) |
| Acceleration/Deceleration Lane | Double delineators (see Detail 3 on D&OM(4)) | 100 feet (See Detail 3 on D & OM (4)) |
| Truck Escape Ramp | Single red delineators on both sides | 50 feet |
| Bridge Rail (steel or concrete)and Metal Beam Guard Fence | Bi-Directional Delineators when undivided with one lane each direction<br>Single Delineators when multiple lanes each direction | Equal spacing (100'max) but not less than 3 delineators |
| Concrete Traffic Barrier (CTB) or Steel Traffic Barrier | Barrier reflectors matching the color of the edge line | Equal spacing 100' max |
| Cable Barrier | Reflectors matching the color of the edge line | Every 5th cable barrier post (up to 100'max) |
| Guard Rail Terminus/Impact Head | Divided highway - Object marker on approach end<br>Undivided 2-lane highways - Object marker on approach and departure end | Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end<br>See D & OM (5) and D & OM (6) |
| Bridges with no Approach Rail | Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail | See D & OM(5) |
| Reduced Width Approaches to Bridge Rail | Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge | Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end<br>See D & OM (5) |
| Culverts without MBGF | Type 2 Object Markers | See Detail 2 on D & OM(4) |
| Crossovers | Double yellow delineators and RPMs | See Detail 1 on D & OM (4) |
| Pavement Narrowing (lane merge) on Freeways/Expressway | Single delineators adjacent to affected lane for full length of transition | 100 feet |

## NOTES

1. Unless indicated otherwise, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
2. Barrier reflectors may be used to replace required delineators.
3. Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications

## LEGEND

| | |
|---|---|
| | Bi-directional Delineator |
| | Delineator |
| | Sign |

Texas Department of Transportation

Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

# D & OM(3)-20

| FILE: dom3-20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|---|
| © TxDOT August 2004 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 3-15 8-15 | DIST | COUNTY | | SHEET NO. |
| 8-15 7-20 | AMA | GRAY | | 231 |

20C

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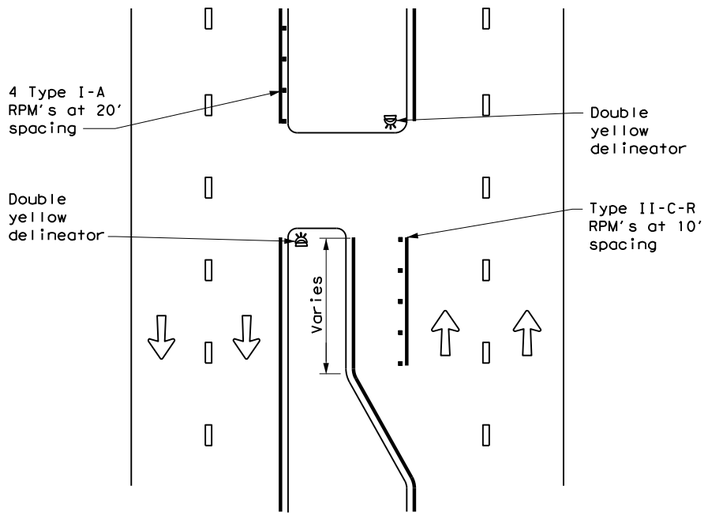
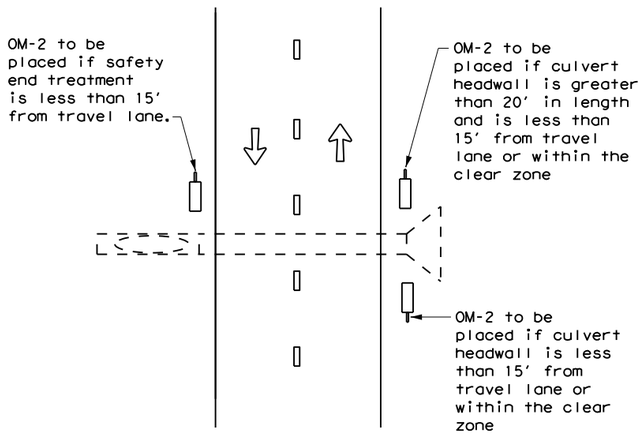
## CROSSOVERS



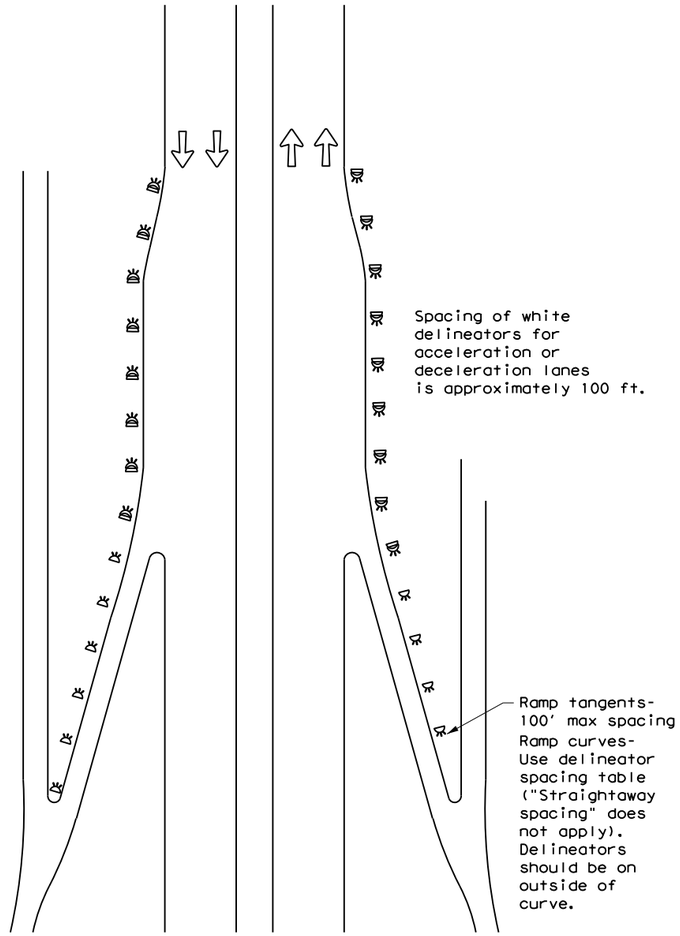

DETAIL 1

## FOR CULVERTS WITHOUT MBGF



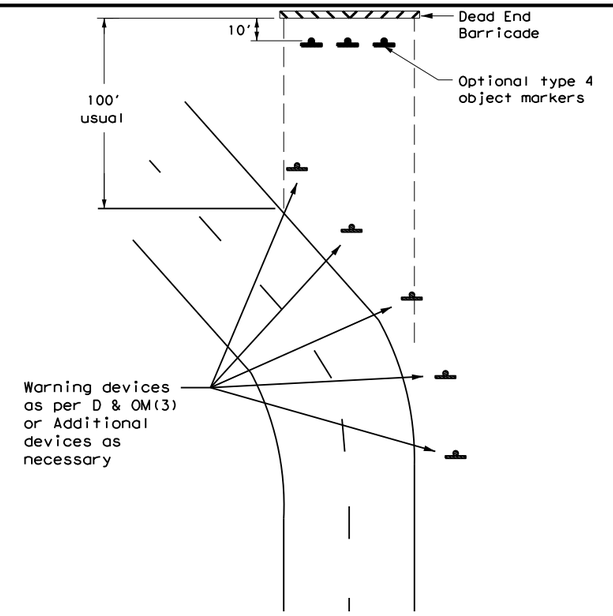

DETAIL 2

## FREEWAY DELINEATION FOR RAMPS AND ACCELERATION/DECELERATION LANES



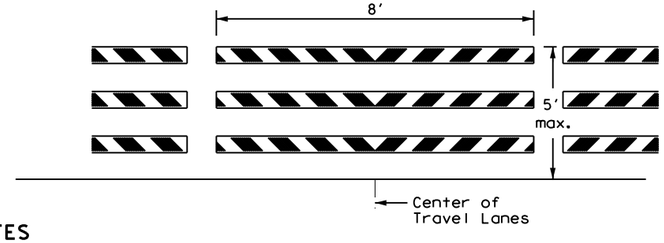

DETAIL 3

## TYPICAL APPLICATION OF DEAD END BARRICADE




DETAIL 4

## TYPICAL DEAD END BARRICADE INSTALLATION




NOTES

1. Barricade striping shall be red and white reflective sheeting for all permanent road closures.
2. Barricade striping is red and white sloping toward the center of the roadway.
3. Type 3 Barricade Supports should be anchored to soil or pavement as described in compliant Work Zone Traffic Control Devices List, section D.2.f and D.2.g.

DETAIL 5

| LEGEND | |
|---|---|
| | Bidirectional Delineator |
| | Delineator |
| | OM-3 |
| | Barricade |
| | Sign |
| | OM-2 |
| | Double Delineator |

Texas Department of Transportation

Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

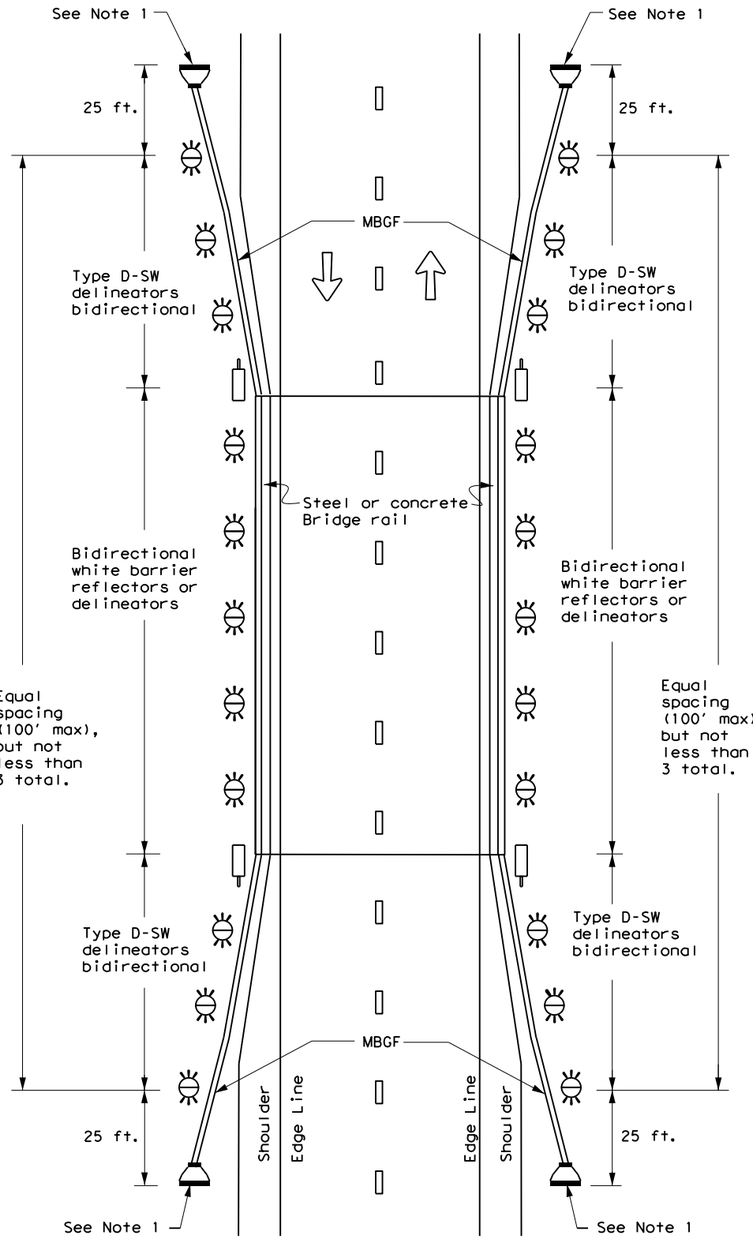
# D & OM(4)-20

| FILE: dom4-20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|---|
| ©TxDOT August 2004 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 3-15 | DIST | COUNTY | | SHEET NO. |
| 7-20 | AMA | GRAY | | 232 |

20D

DATE: 4/7/2021 7:28:27 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\509-Traffic\Standards\dom5-20.dgn

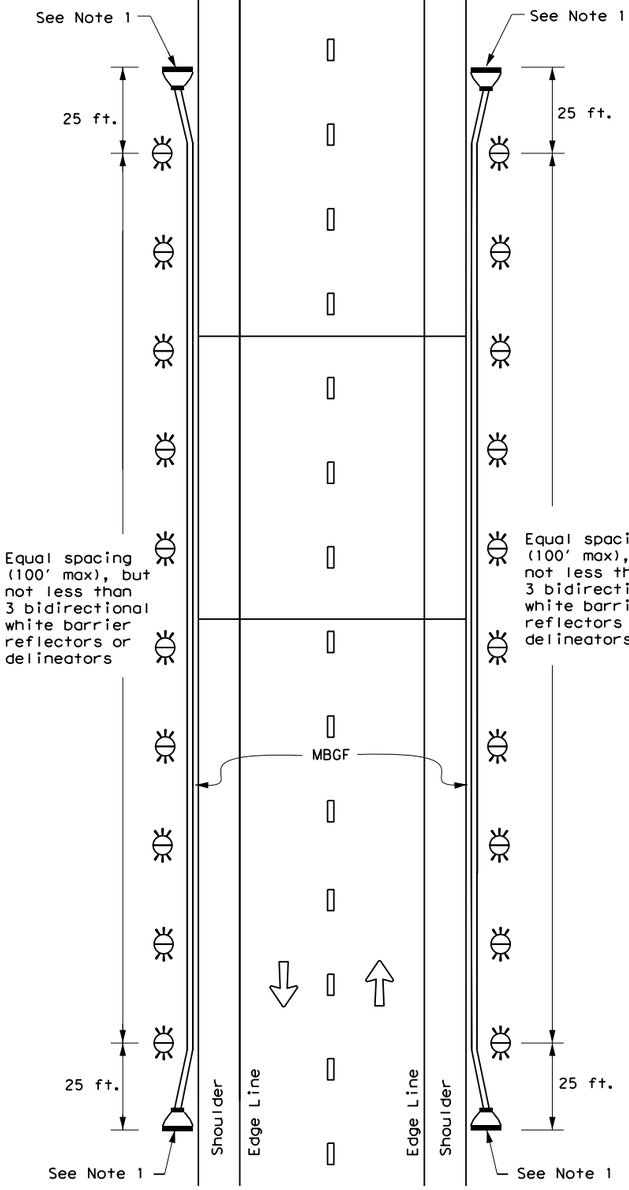
## TWO-WAY, TWO LANE ROADWAY WITH REDUCED WIDTH APPROACH RAIL




**NOTE:**

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

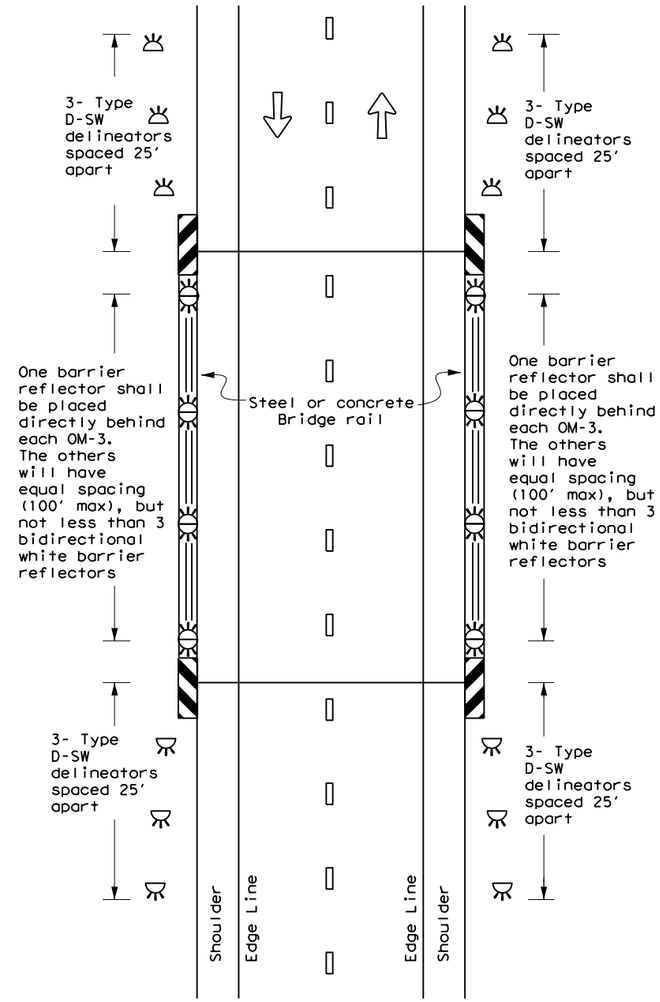
## TWO-WAY, TWO LANE ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)




**NOTE:**

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

## TWO-WAY, TWO LANE ROADWAY BRIDGE WITH NO APPROACH RAIL




## LEGEND

| | |
|---|---|
| | Bidirectional Delineator |
| | Delineator |
| | OM-3 |
| | OM-2 |
| | Terminal End |
| | Traffic Flow |

Texas Department of Transportation

Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

# D & OM(5)-20

| FILE: dom5-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| © TxDOT August 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| 7-20 | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 233 |

20E

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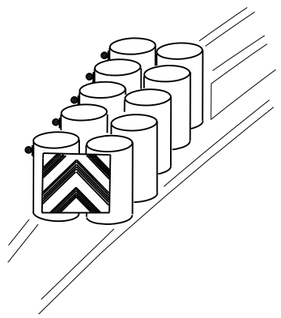
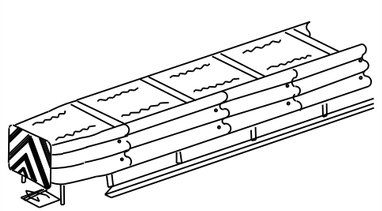
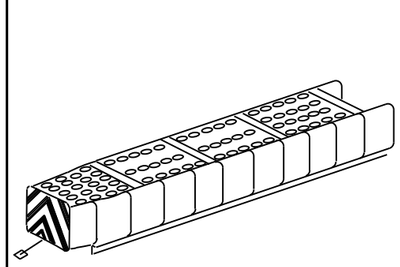
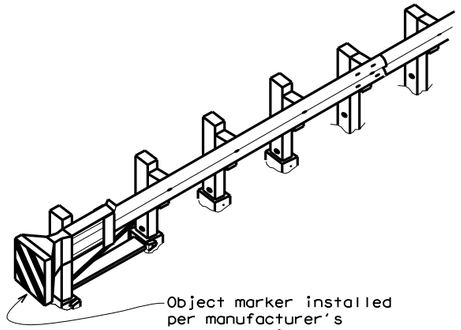
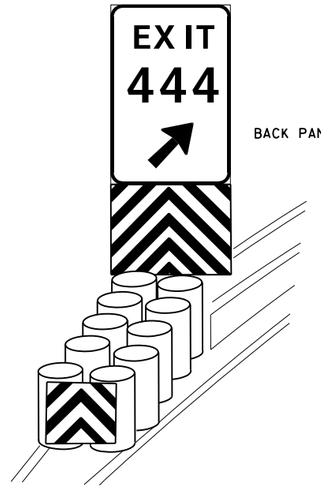
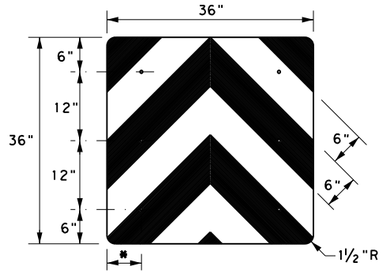


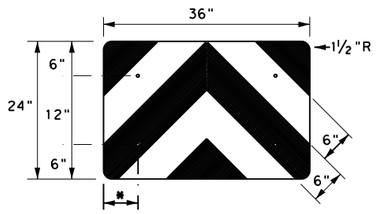




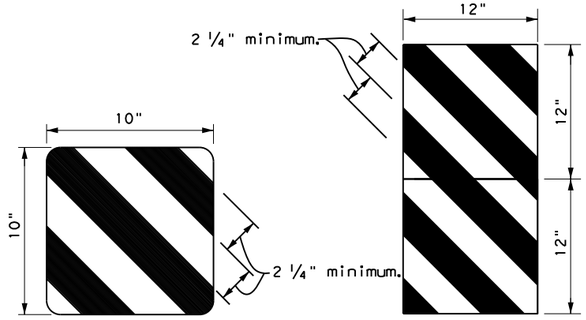


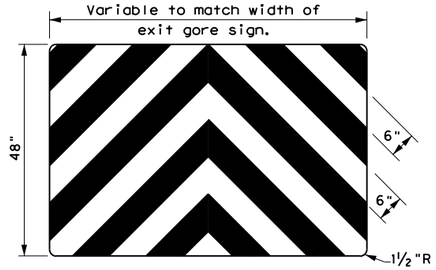



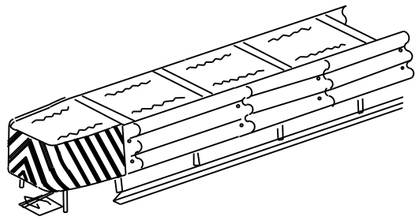



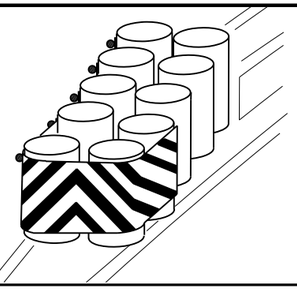

* Adjust to fit attenuator per manufacturer's recommendation, or as directed by the Engineer

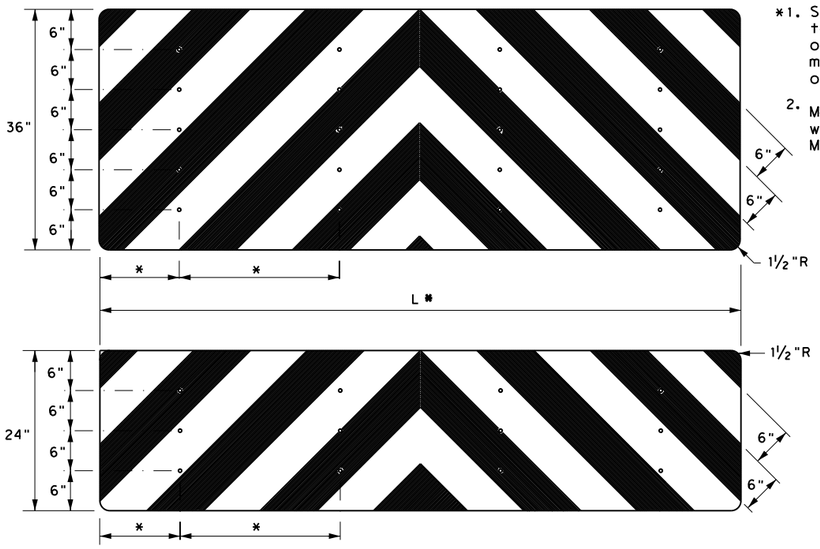



OBJECT MARKERS SMALLER THAN 3 FT$^2$








## NOTES

*1. Spacing should be adjusted to attach through centerline of drum, per attenuator manufacturers recommendation, or as directed by the Engineer.

2. Mounting should be flush with top of attenuator. Minimum size 96" x 24".

## NOTES

1. Object Markers shall conform to the Texas MUTCD and meet the color and reflectivity requirement of Department Material Specification DMS 8300. Background shall be yellow reflective sheeting (Type B or C) and Chevron shall be black.

2. Object Markers may be fabricated from adhesive backed reflective sheeting applied directly to guardrail end treatment, or applied directly to an "end cap" as per the manufacturer's recommendation. Direct applied sheeting shall provide a smooth surface and have no wrinkles, air bubbles, cuts or tears. A radius at the corners is not required for direct applied sheeting.

3. Object Marker size may be reduced to fit smaller devices. Width of alternating black and yellow stripes are typically 6". Object Markers smaller than 3ft may have reduced width stripes of a minimum of 2 ¼".

4. Pop rivets, screws, or nuts and bolts may be used to attach object markers and reflectors. Holes, slots or other openings may be cut or drilled through object markers to allow cable or other attachments.

5. Object Marker at nose of attenuator is subsidiary to the attenuator.

6. See D & OM (1-4) for required barrier reflectors.

Texas Department of Transportation

Traffic Safety Division Standard

# DELINEATOR & OBJECT MARKER FOR VEHICLE IMPACT ATTENUATORS

# D & OM(VIA)-20

| FILE: domvia20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|---|
| ©TxDOT December 1989 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 4-92 8-04 | DIST | COUNTY | | SHEET NO. |
| 8-95 3-15 | AMA | GRAY | | 234 |
| 4-98 7-20 | | | | |

20G

DATE: 4/7/2021 7:28:28 AM
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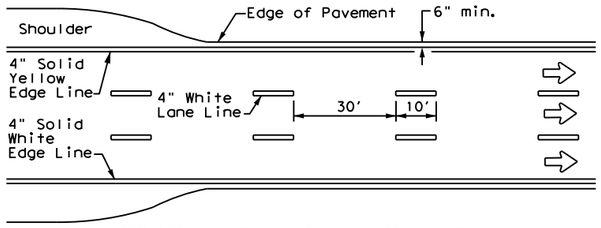
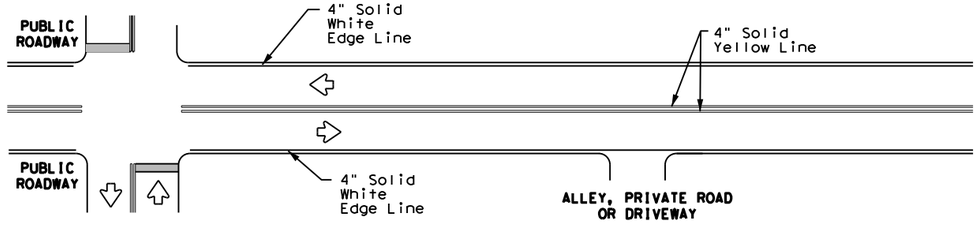
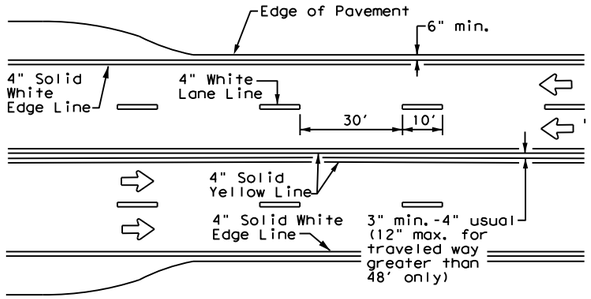


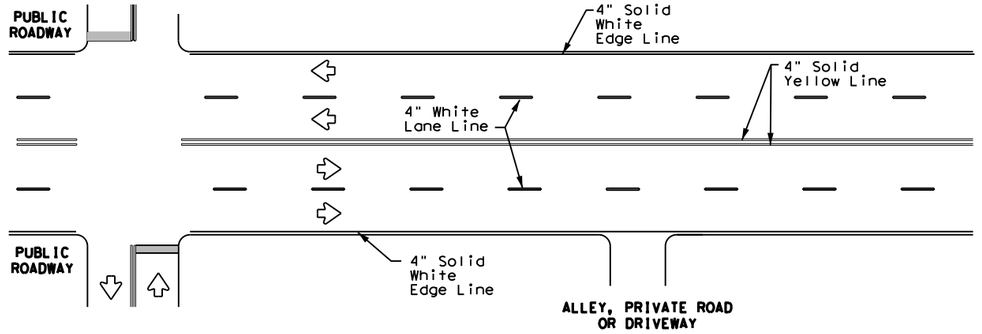

## EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



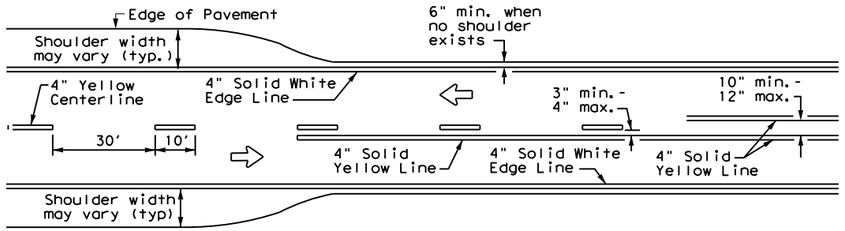

## TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



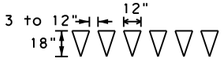

## CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



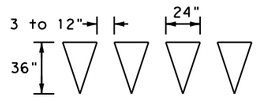

## TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS




## TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

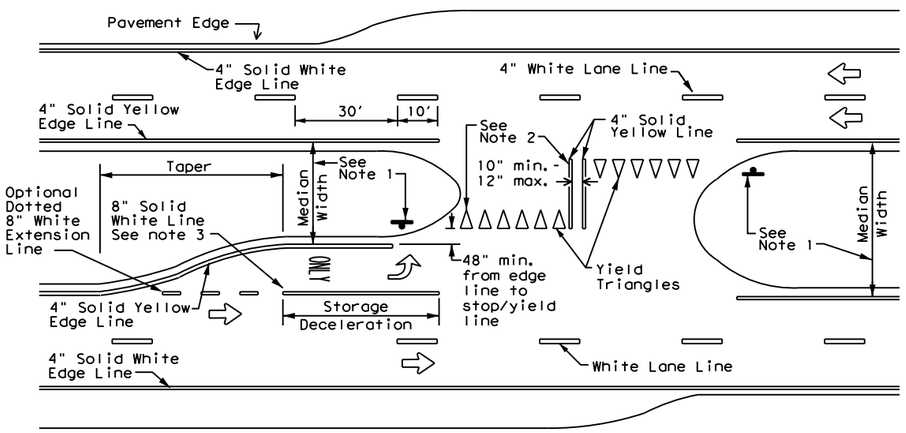



For posted speed on road being marked equal to or less than 40 MPH.




For posted speed on road being marked equal to or greater than 45 MPH.

## YIELD LINES




## FOUR LANE DIVIDED ROADWAY CROSSOVERS

### NOTES

1. 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.

2. 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 traingles shall only be used with yield signs.

3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

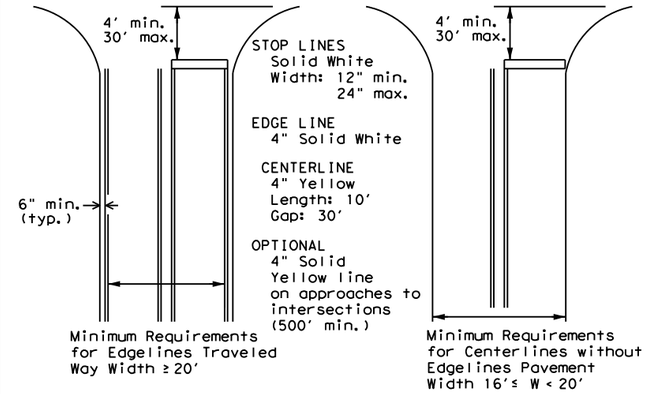
### GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less 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.

2. 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

Texas Department of Transportation

Traffic Safety Division Standard

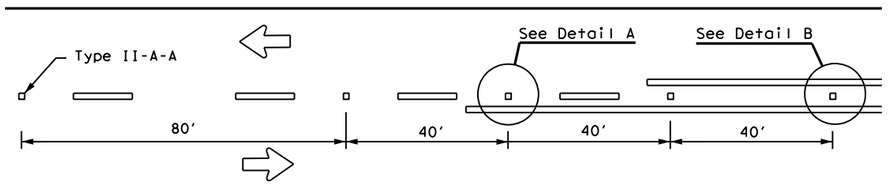
# TYPICAL STANDARD PAVEMENT MARKINGS

# PM(1)-20

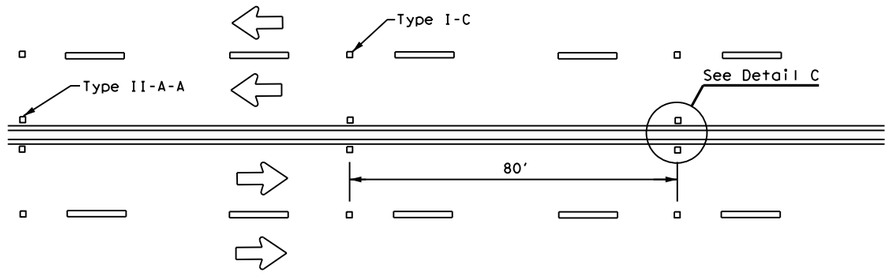
| FILE: pm1-20.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT November 1978 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 8-95 3-03 | 0169 | 07 | 053, ETC | US60 |
| 5-00 2-12 | DIST | COUNTY | | SHEET NO. |
| 8-00 6-20 | AMA | GRAY | | 235 |

22A

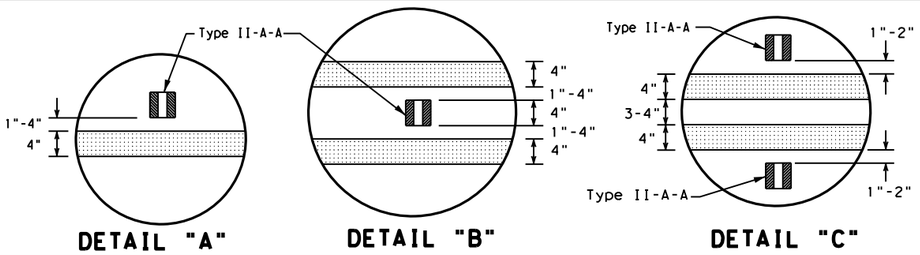
# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



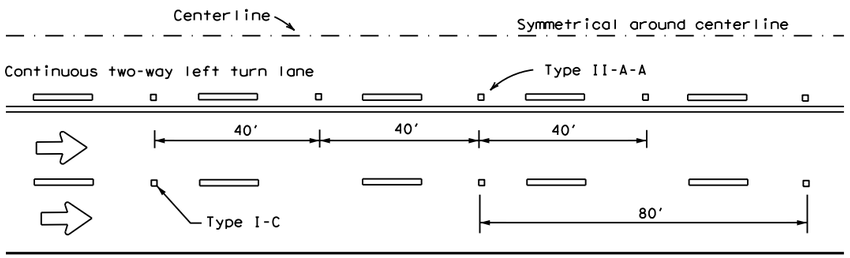

## CENTERLINE FOR ALL TWO LANE ROADWAYS



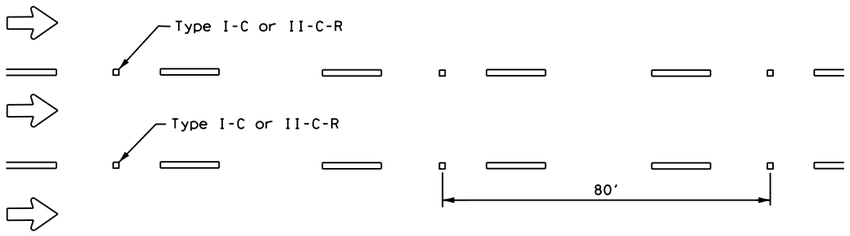

## CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS




**DETAIL "A"** **DETAIL "B"** **DETAIL "C"**

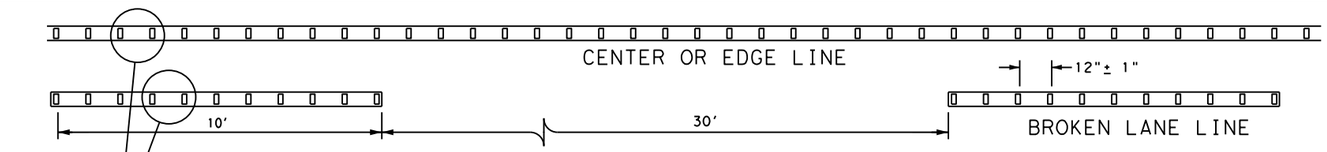



## CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



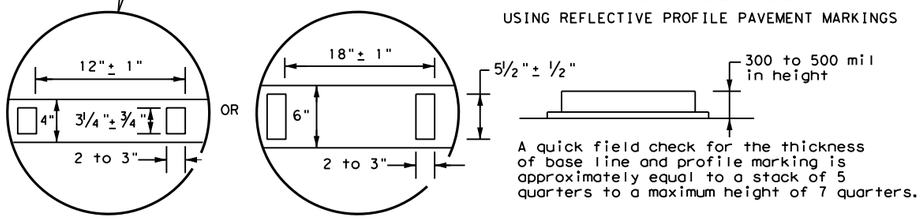

## LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.




## REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS




4" EDGE LINE, CENTER LINE OR LANE LINE

OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

### NOTE

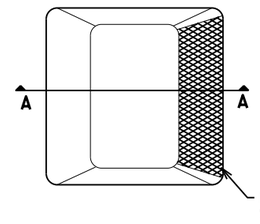
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

### GENERAL NOTES

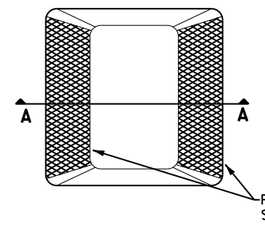
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

| 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 |

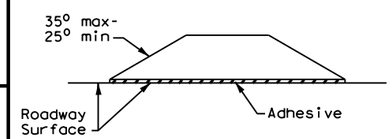
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.




Type I (Top View)




Type II (Top View)




SECTION A

## RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

# POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-20

| FILE: pm2-20.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| ©TxDOT April 1977 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 4-92 2-10 5-00 2-12 8-00 6-20 | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 236 |

22B



DATE: 4/7/2021 7:28:28 AM
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FILE: F:\Projects\2019\11004.TxDOT#5x5#PS&E\03.US60#Amarillo\ENG\500-USTN\509-Traffic\05-Standards\smdgen.dgn

# 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)**

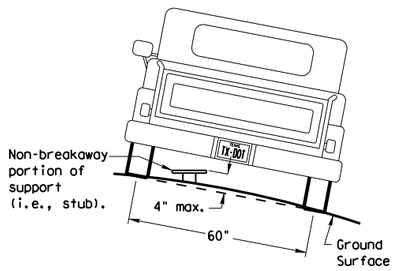
**Anchor Type**

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-1) to (SLIP-3))

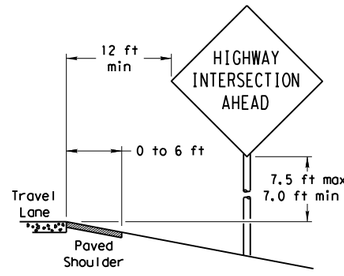
# REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT




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).

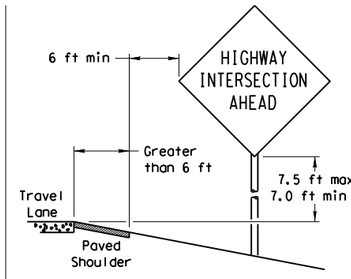
# SIGN LOCATION

## PAVED SHOULDERS




**LESS THAN 6 FT. WIDE**

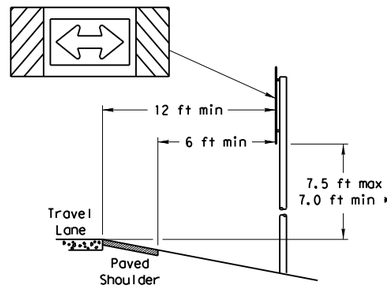
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



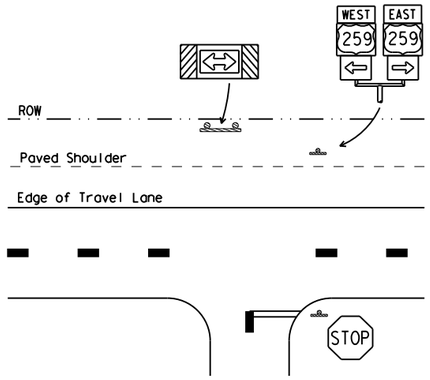

**GREATER THAN 6 FT. WIDE**

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

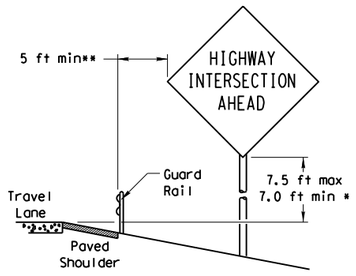
## T-INTERSECTION



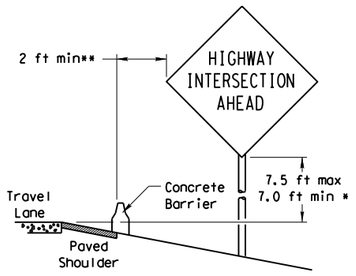

When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.




## BEHIND BARRIER




**BEHIND GUARDRAIL**




**BEHIND CONCRETE BARRIER**

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

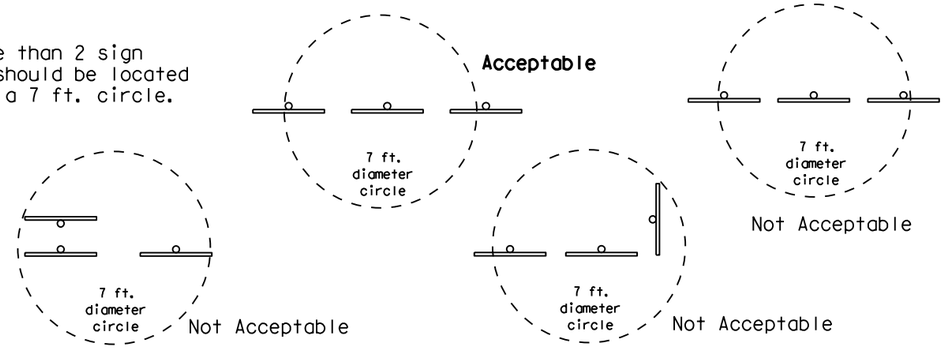
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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.

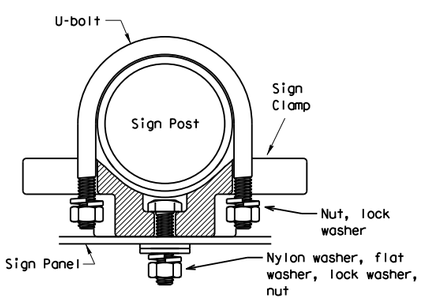
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.




# TYPICAL SIGN ATTACHMENT DETAIL

## Single Signs

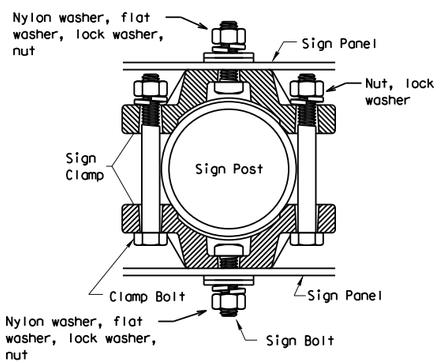



Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

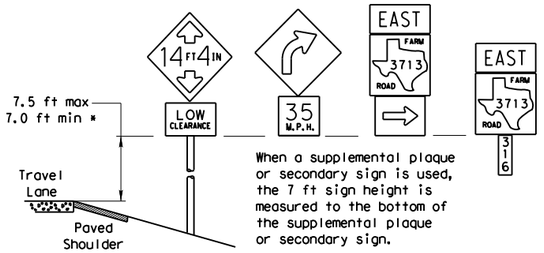
Sign clamps may be either the specific size clamp or the universal clamp.

## Back-to-Back Signs



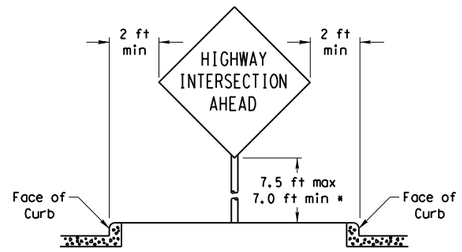

| Pipe Diameter | Approximate Bolt Length | |
|---|---|---|
| | Specific Clamp | Universal Clamp |
| 2" nominal | 3" | 3 or 3 1/2" |
| 2 1/2" nominal | 3 or 3 1/2" | 3 1/2 or 4" |
| 3" nominal | 3 1/2 or 4" | 4 1/2" |

## SIGNS WITH PLAQUES



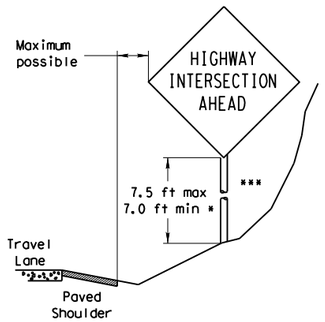

When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

## CURB & GUTTER OR RAISED ISLAND




## 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.

Texas Department of Transportation
Traffic Operations Division

# SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

## SMD(GEN)-08

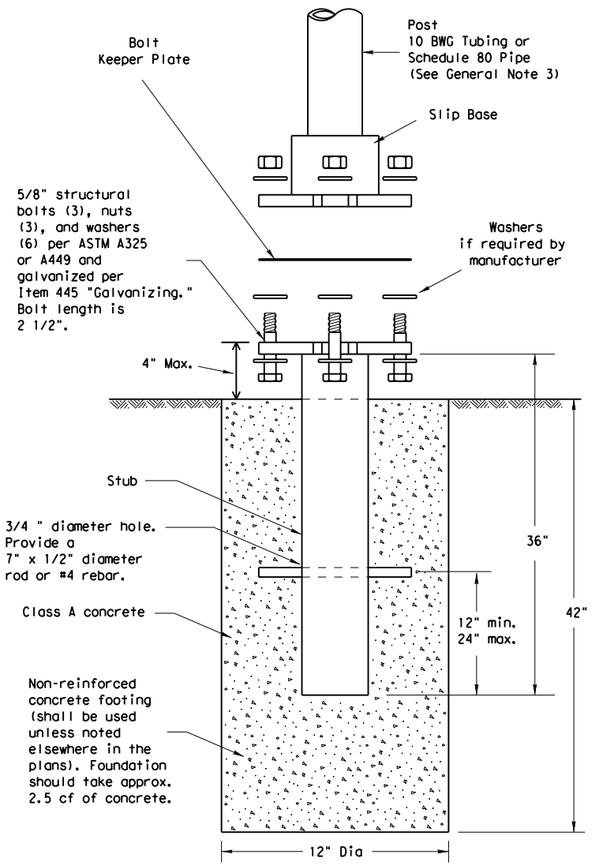


| DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|
| CONT | SECT | JOB | HIGHWAY |
| 0169 | 07 | 053,ETC | US60 |
| DIST | COUNTY | | SHEET NO. |
| AMA | GRAY | | 237 |

9-08 REVISIONS

DATE: 4/7/2021 7:28:30 AM
FILE: F:\Projects\2019\11004_TxDOT*5x5*PS&E\03_US60*Amarillo\ENGV\500-USTNV\509-Traffic\05-Standards\smds1.dgn

# 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 The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.**

GENERAL NOTES:

1. 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.
2. 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.

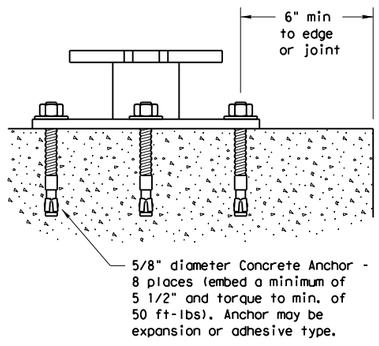
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum 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
3. 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
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. 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.
2. 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.
3. 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.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. 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.
2. 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




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, "Epoxies 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.

Texas Department of Transportation
Traffic Operations Division

# SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

## SMD(SLIP-1)-08



| DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|

REVISIONS 9-08

| CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|
| 0169 | 07 | 053,ETC | US60 |

| DIST | COUNTY | SHEET NO. |
|---|---|---|
| AMA | GRAY | 238 |

DATE: 4/7/2021 7:28:30 AM
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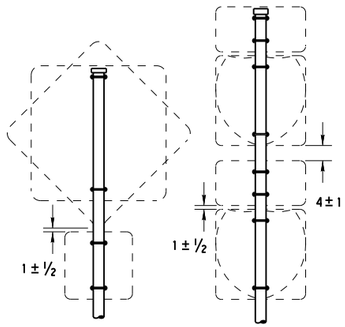
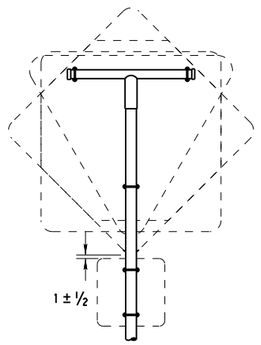



SM RD SGN ASSM TY XXXXX(1)XX(P)

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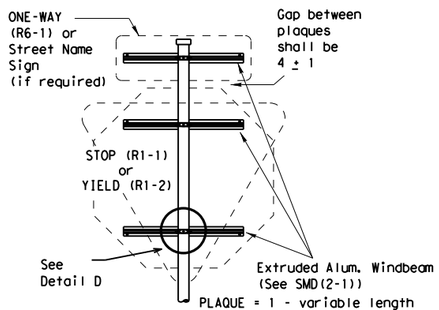
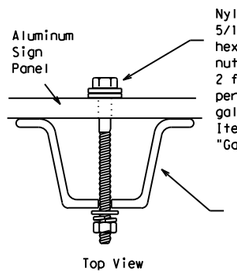
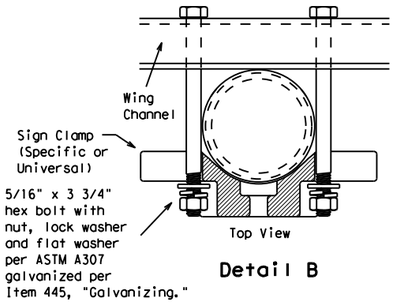


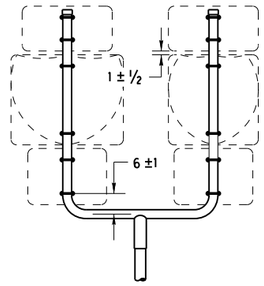

SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



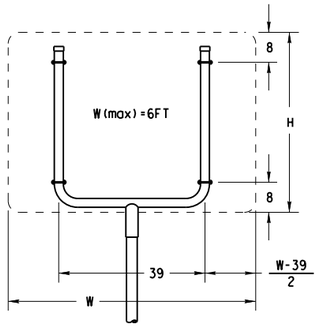

**Detail A**



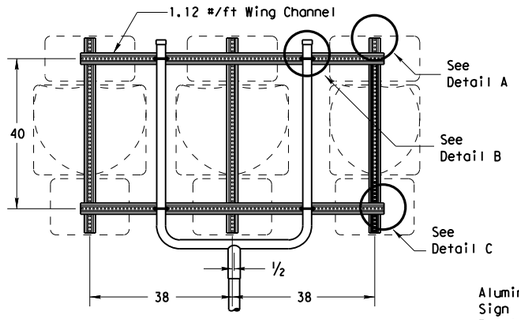

**Detail B**



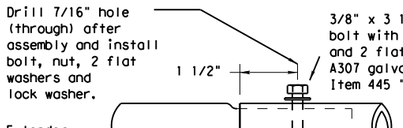

SM RD SGN ASSM TY XXXXX(1)XX(U)




SM RD SGN ASSM TY XXXXX(1)XX(U)

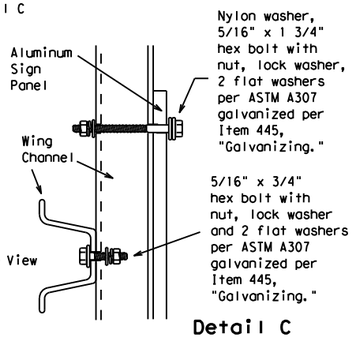



SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

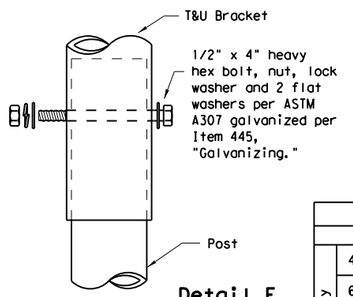



**Detail F**

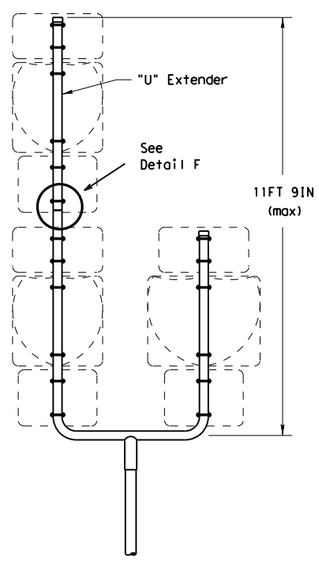
Splices shall only be allowed behind the sign substrate.



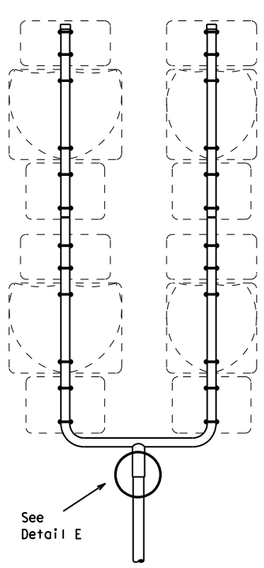

**Detail C**




**Detail E**




SM RD SGN ASSM TY S80(1)XX(U-1EXT)

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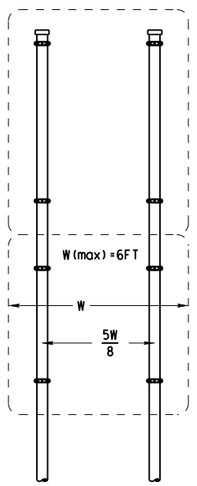
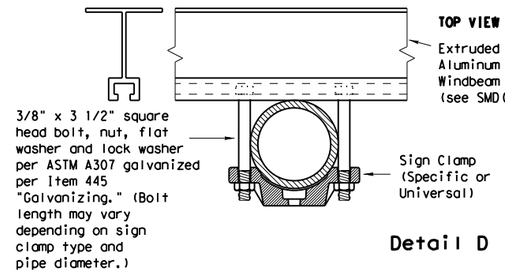
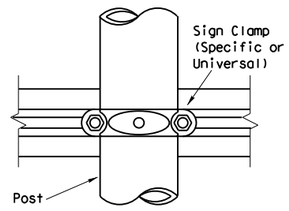


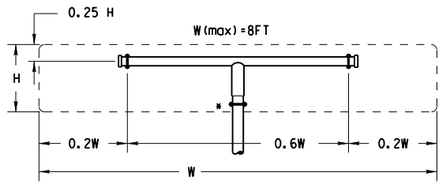

SM RD SGN ASSYM TY XXXXX(2)XX(P)

**SIDE VIEW**



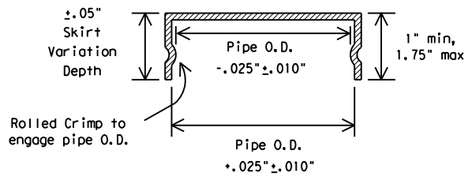

**Detail D**




SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

## FRICTION CAP DETAIL




Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

**GENERAL NOTES:**

1.

| 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 |

2. 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.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. 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.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. 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.
7. 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.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. 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."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. 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.
12. Post open ends shall be fitted with Friction Caps.
13. 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) |
| | 48x60-inch signs | TY S80(1)XX(T) |
| Warning | 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



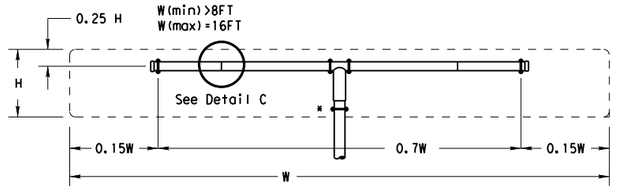
| DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|

9-08 REVISIONS

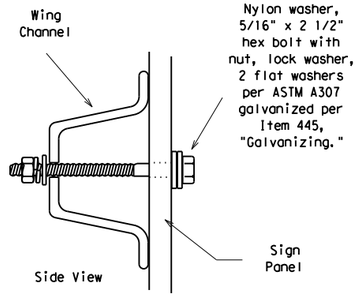
| CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|
| 0169 | 07 | 053,ETC | US60 |

| DIST | COUNTY | SHEET NO. |
|---|---|---|
| AMA | GRAY | 239 |

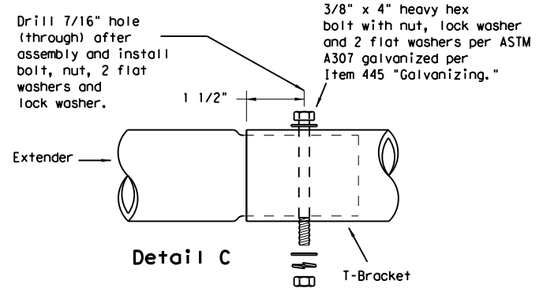
DATE: 4/7/2021 7:28:31 AM
FILE: F:\Projects\2019\1004,TxDOT*5x5*PS&E\03,US60*Amarillo\ENG\500-USTN\509-Traffic\05-Standards\smd3.dgn




SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)




**Detail B**



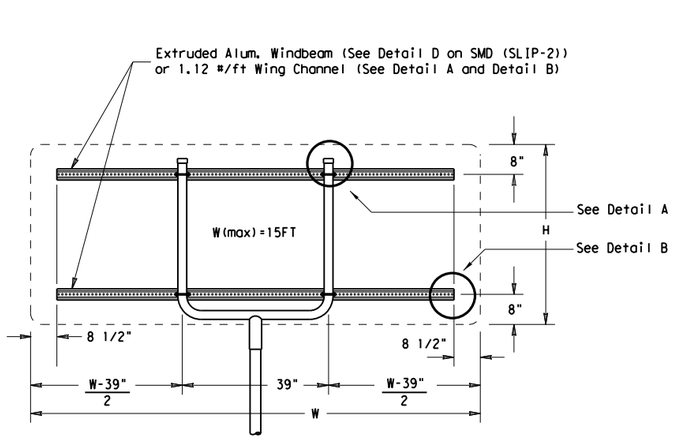

**Detail C**

Splices shall only be allowed behind the sign substrate.

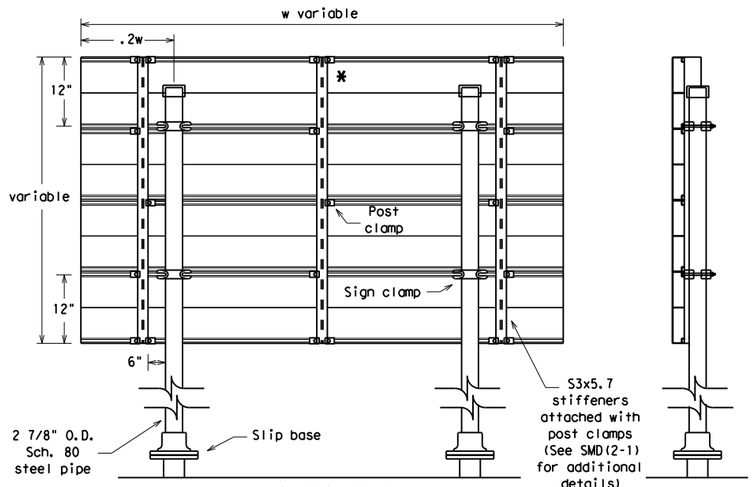
**GENERAL NOTES:**

| 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 |

1. 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.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. 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.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. 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.
6. 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.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. 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."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. 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.
11. Post open ends shall be fitted with Friction Caps.




SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



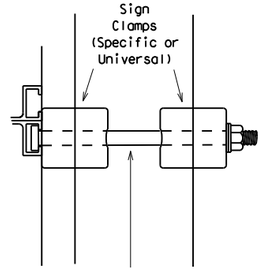

**Typical Sign Mount**

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

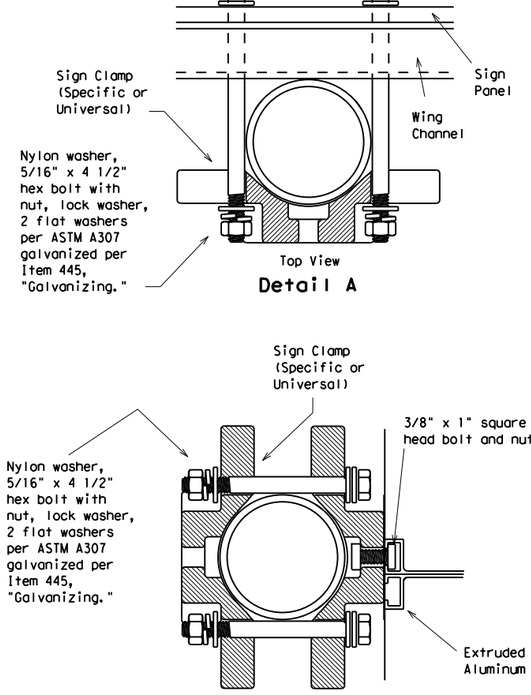
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



See Detail E
for clamp installation



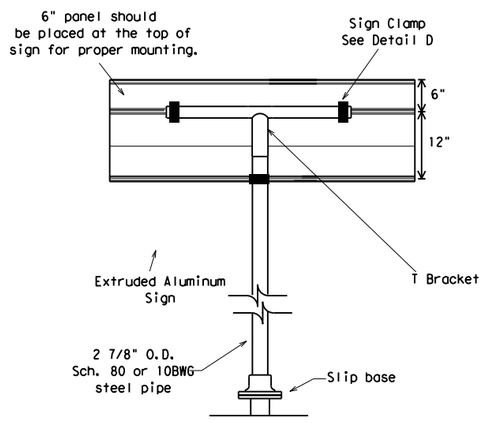

**Detail E**



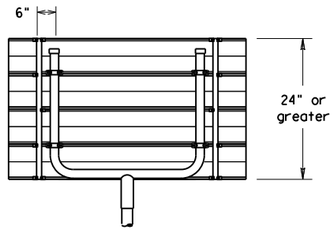

**Detail A**




**Detail D**
**EXTRUDED ALUMINUM SIGN WITH T BRACKET**




Extruded Aluminum Sign
With T Bracket




Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

| 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) |
| | 48x60-inch signs | TY S80(1)XX(T) |
| Warning | 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

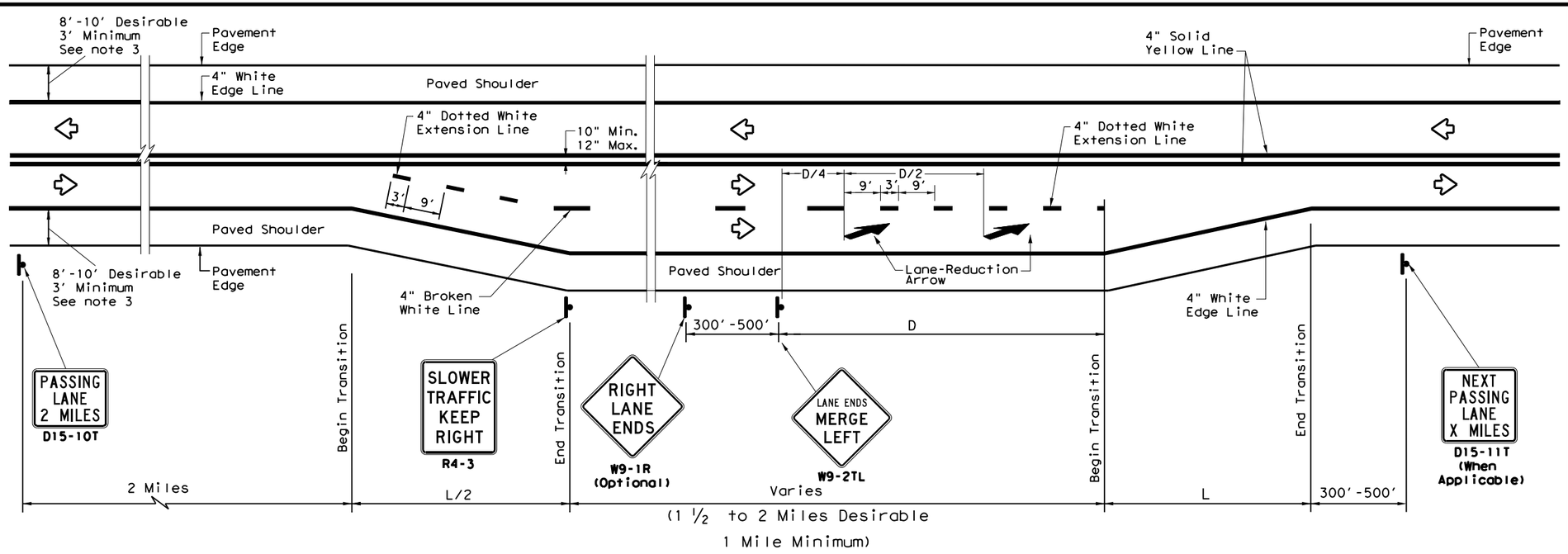
## SMD(SLIP-3)-08



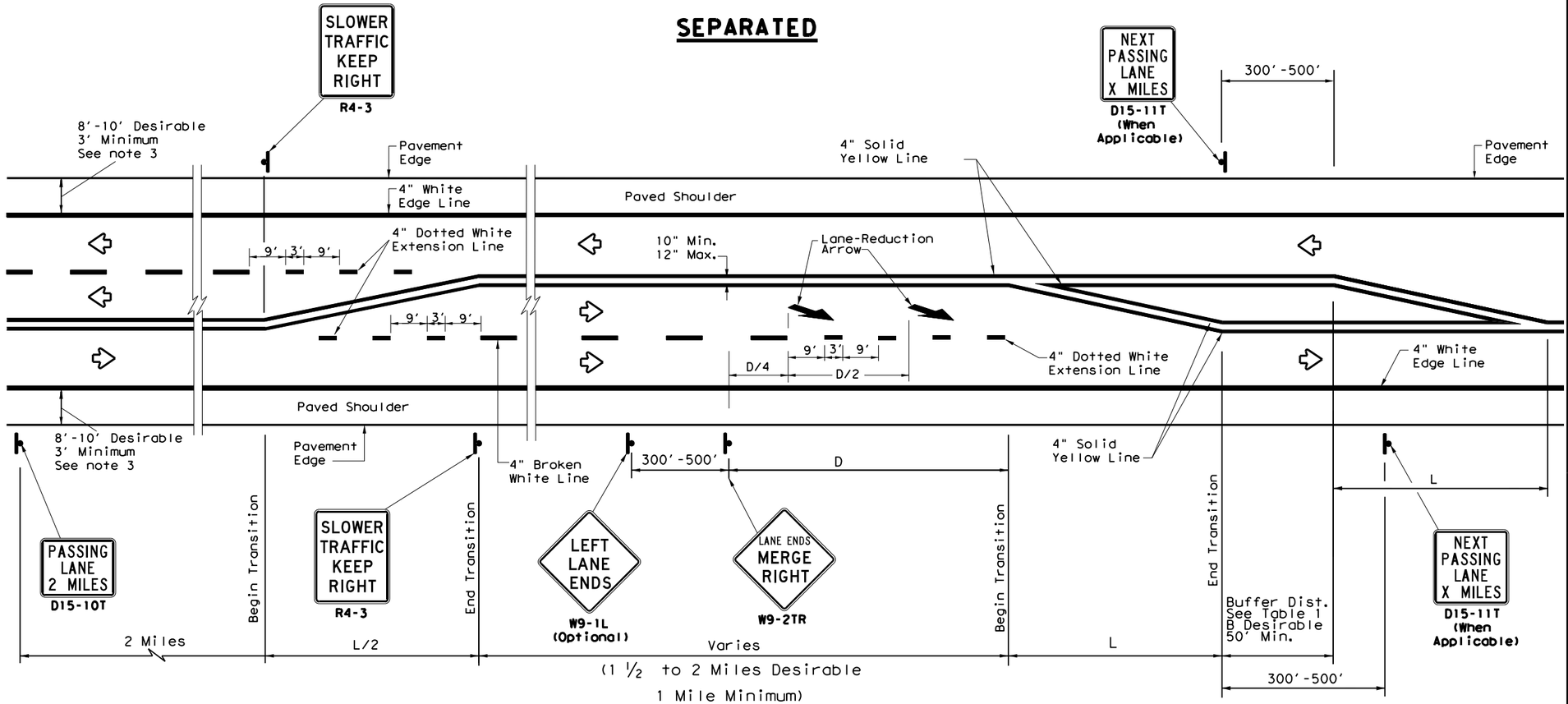
REVISIONS
9-08

| DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT |
|---|---|---|---|
| CONT | SECT | JOB | HIGHWAY |
| 0169 | 07 | 053,ETC | US60 |
| DIST | COUNTY | | SHEET NO. |
| AMA | GRAY | | 240 |

DATE: 4/7/2021 7:28:31 AM
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\504-TRAFFICSTANDARDS\ts2-1-18.dgn




## SEPARATED




## ALTERNATING

| LEGEND | |
|---|---|
| | Sign |
| | Traffic Flow |

**TYPICAL TAPER LENGTH (L)**

| Formula * | L = WS |
|---|---|

* Transition length should be rounded up to nearest 5 foot increment.

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

**EXAMPLE**

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

**TABLE 1**
**ADVANCE WARNING SIGN DISTANCE (D) AND BUFFER DISTANCE (B)**

| Posted Speed | D (FT) | B (FT) |
|---|---|---|
| 40 | 670 | 305 |
| 45 | 775 | 360 |
| 50 | 885 | 425 |
| 55 | 990 | 495 |
| 60 | 1100 | 570 |
| 65 | 1200 | 645 |
| 70 | 1250 | 730 |
| 75 | 1350 | 820 |

## GENERAL NOTES

1. For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
2. For Raised Pavement Markers(RPM)details, see Pavement Markings Standard sheet, PM(2). Note that RPMs are not recommended on the 4" dotted white extension lines.
3. For rumble strip options available for the designed shoulder width, see rumble strip standard sheet RS(4).

Texas Department of Transportation

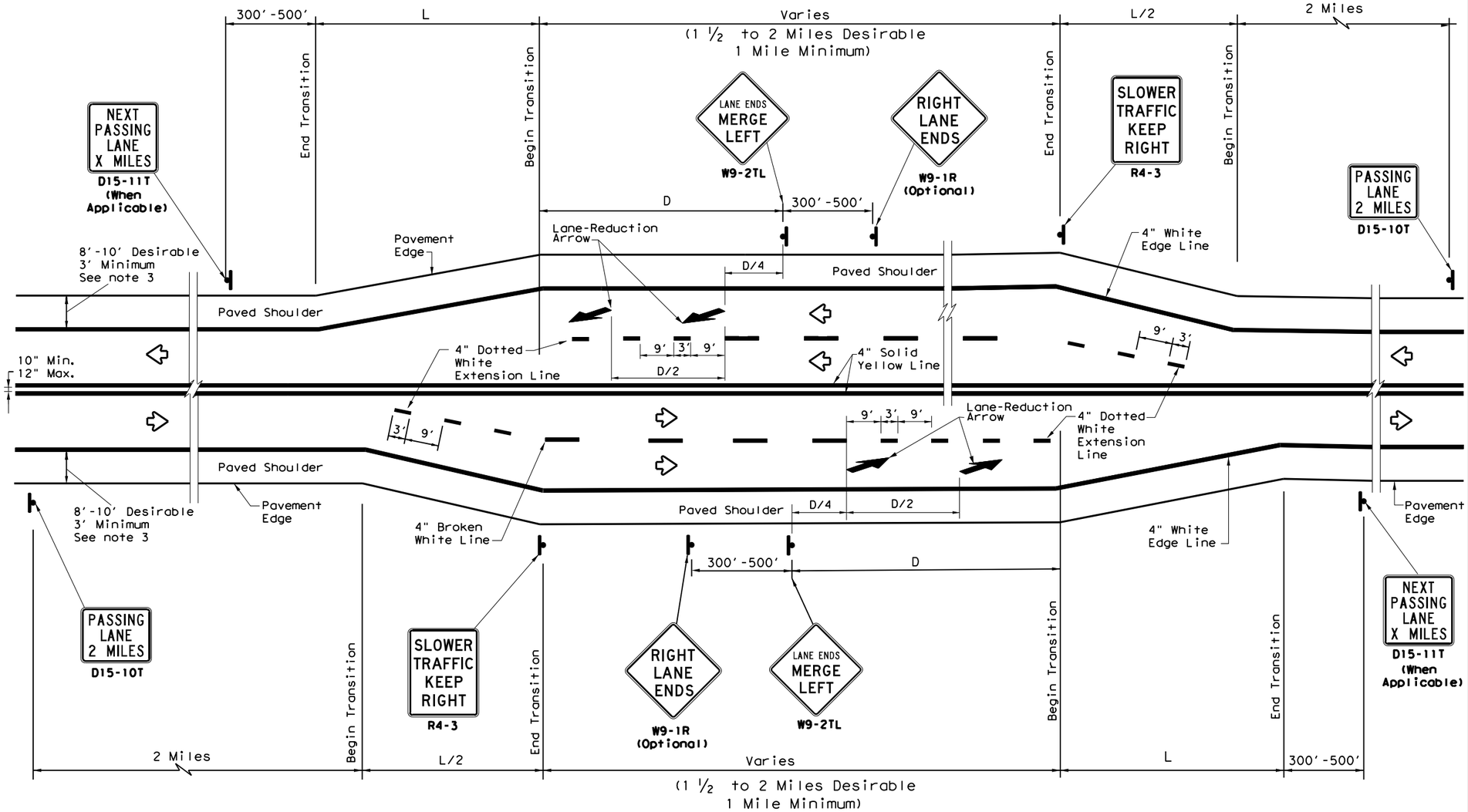
*Traffic Operations Division Standard*

# TEXAS SUPER 2 PASSING LANES

# TS2(PL-1)-18

| FILE: ts2-1-18.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT May 2010 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-12 | DIST | COUNTY | | SHEET NO. |
| 3-12 | AMA | GRAY | | 241 |
| 3-18 | | | | |

DATE: 4/7/2021 7:28:32 AM
FILE: F:\Projects\2019\1004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\509-TRF\RDWY\SHT\ROADWAYS\ts2-18.dgn




# SIDE BY SIDE PASSING LANES

## LEGEND

| | |
|---|---|
| | Sign |
| | Traffic Flow |

## TYPICAL TAPER LENGTH (L)

| Formula * | L = WS |
|---|---|

* Transition length should be rounded up to nearest 5 foot increment.

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

**EXAMPLE**

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

## TABLE 1 ADVANCE WARNING SIGN DISTANCE (D)

| Posted Speed | D (FT) |
|---|---|
| 40 | 670 |
| 45 | 775 |
| 50 | 885 |
| 55 | 990 |
| 60 | 1100 |
| 65 | 1200 |
| 70 | 1250 |
| 75 | 1350 |

## GENERAL NOTES

1. For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
2. For Raised Pavement Markers(RPM)details, see Pavement Markings Standard sheet, PM(2). Note that RPMs are not recommended on the 4" dotted white extension lines.
3. For rumble strip options available for the designed shoulder width, see rumble strip standard sheet RS(4).

Texas Department of Transportation

Traffic Operations Division Standard

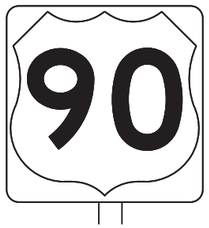
# TEXAS SUPER 2 PASSING LANES

# TS2(PL-2)-18

| FILE: ts2-2-18.dgn | DN: | CK: | DW: | CK: |
|---|---|---|---|---|
| © TxDOT May 2010 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 2-12 | DIST | COUNTY | | SHEET NO. |
| 3-12 | AMA | GRAY | | 242 |
| 3-18 | | | | |

# 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

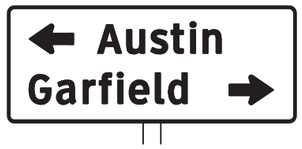
# REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

| 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:

1. 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).

2. 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 |

3. 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).

4. 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.

5. 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.

6. 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.

7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.

8. 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~~ **0.100** |
| ~~7.5 to 15~~ | ~~0.100~~ |
| ~~7.5 or Greater~~ ~~Greater than 15~~ | 0.125 |

1

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

1 REVISED MINIMUM SIGN BLANK THICKNESS

US 60
TYPICAL SIGN REQUIREMENTS

TSR(3)-13 (MOD)

2021 Texas Department of Transportation

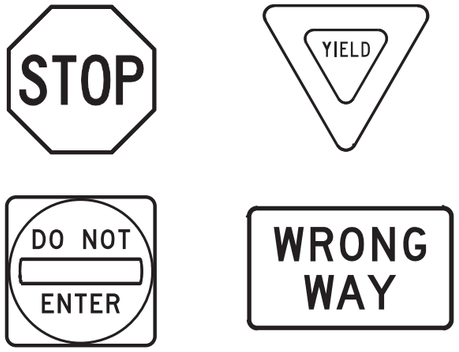
SHEET 1 OF 1

| DSN | CK | CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|---|---|
| $D1$ | $C1$ | 0169 | 07 | 053,ETC | US60 |
| DRWN | CK | DIST | COUNTY | | SHEET NO. |
| $D2$ | $C2$ | AMA | GRAY | | 243 |

DATE: 4/7/2021 7:28:32 AM
FILE: F:\Projects\2019\1004, TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\509-Traffic\05-Standards\TSR(3)-13_MOD.DGN

## 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 |

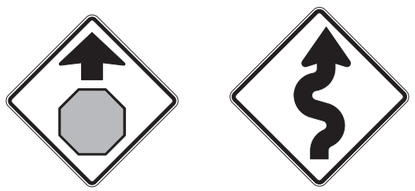
## REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

(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 $B_{FL}$ OR $C_{FL}$ 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 $B_{FL}$ OR $C_{FL}$ SHEETING |
| LEGEND, BORDERS AND SYMBOLS | BLACK | ACRYLIC NON-REFLECTIVE FILM |
| SYMBOLS | RED | TYPE B OR C SHEETING |

## GENERAL NOTES:

1. 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).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. 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.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. 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.
6. 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.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. 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~~ 0.100 |
| ~~7.5 to 15~~ | ~~0.100~~ |
| ~~7.5 or Greater Greater than 15~~ | 0.125 |

1

| 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/

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

1 REVISED MINIMUM SIGN BLANK THICKNESS

# US 60 TYPICAL SIGN REQUIREMENTS

## TSR(4)-13 (MOD)

2021 Texas Department of Transportation

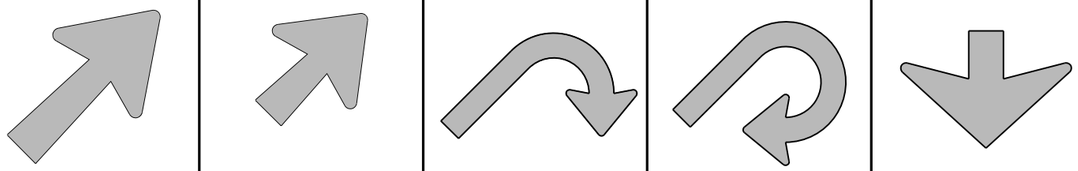
SHEET 1 OF 1

| DSN | CK | CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|---|---|
| $D1$ | $C1$ | 0169 | 07 | 053, ETC | US60 |
| DRWN | CK | DIST | COUNTY | | SHEET NO. |
| $D2$ | $C2$ | AMA | GRAY | | 244 |

DATE: 4/7/2021 7:28:33 AM
FILE: F:\Projects\2019\1004, TxDOT_5x5_PS&E\03, US60_Amarillo\ENG\500-USTN\509-Traffic\05-Standards\TSR(4)-13_MOD.DGN

# ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs




| TYPE | LETTER SIZE | USE |
|---|---|---|
| A-1 | 10.67" U/L and 10" Caps | Single Lane Exits |
| A-2 | 13.33" U/L and 12" Caps | |
| A-3 | 16" & 20" U/L | |
| B-1 | 10.67" U/L and 10" Caps | Multiple Lane Exits |
| B-2 | 13.33" U/L and 12" Caps | |
| B-3 | 16" & 20" U/L | |

| CODE | USED ON SIGN NO. |
|---|---|
| E-3 | E5-1aT |
| E-4 | E5-1bT |

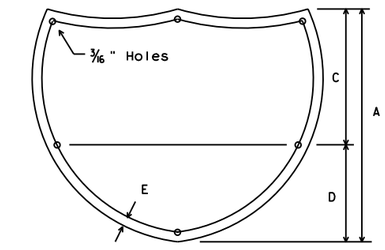
**NOTE**

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

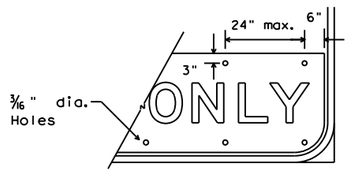
http://www.txdot.gov/

# SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)

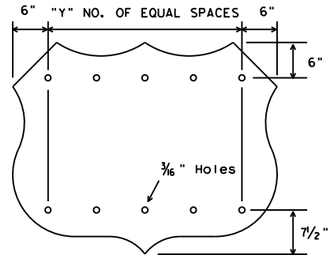



INTERSTATE ROUTE MARKERS

| A | C | D | E |
|---|---|---|---|
| 36 | 21 | 15 | 1 1/2 |
| 48 | 28 | 20 | 1 3/4 |

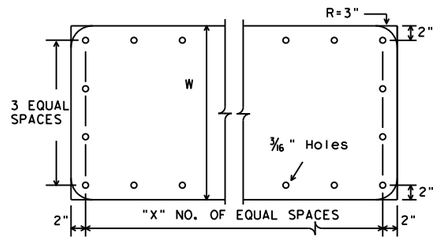



EXIT ONLY PANEL




U.S. ROUTE MARKERS

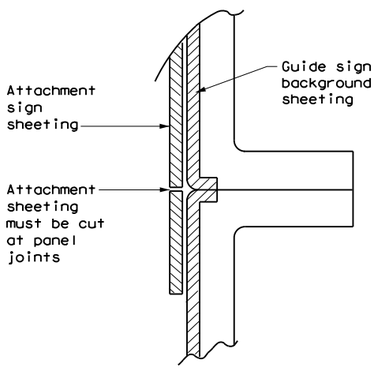
| Sign Size | "Y" |
|---|---|
| 24x24 | 2 |
| 30x24 | 3 |
| 36x36 | 3 |
| 45x36 | 4 |
| 48x48 | 4 |
| 60x48 | 5 |




STATE ROUTE MARKERS

| No. of Digits | W | X |
|---|---|---|
| 4 | 24 | 4 |
| 4 | 36 | 5 |
| 4 | 48 | 6 |
| 3 | 24 | 3 |
| 3 | 36 | 4 |
| 3 | 48 | 5 |

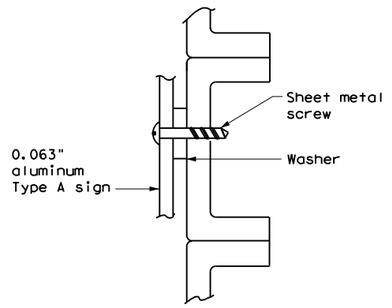
# MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



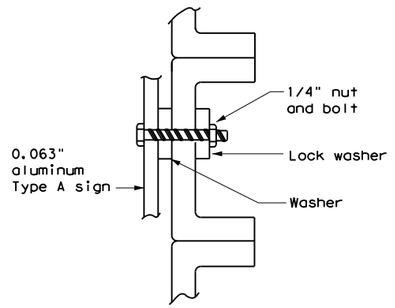

DIRECT APPLIED ATTACHMENT

**NOTE:**

1. Sheeting for legend, symbols, and borders must be cut at panel joints.
2. Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".




SCREW ATTACHMENT



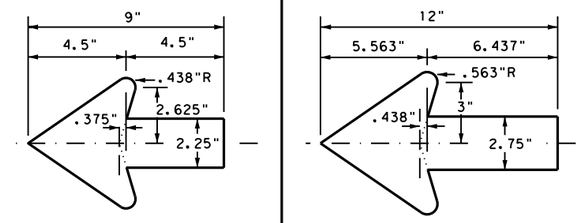

NUT/BOLT ATTACHMENT

**NOTE:**

Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

# ARROW DETAILS

for Destination Signs (Type D)




Standard arrow to be used with 6 inch letters.

Standard arrow to be used with 8 inch letters.

Texas Department of Transportation

Traffic Operations Division Standard

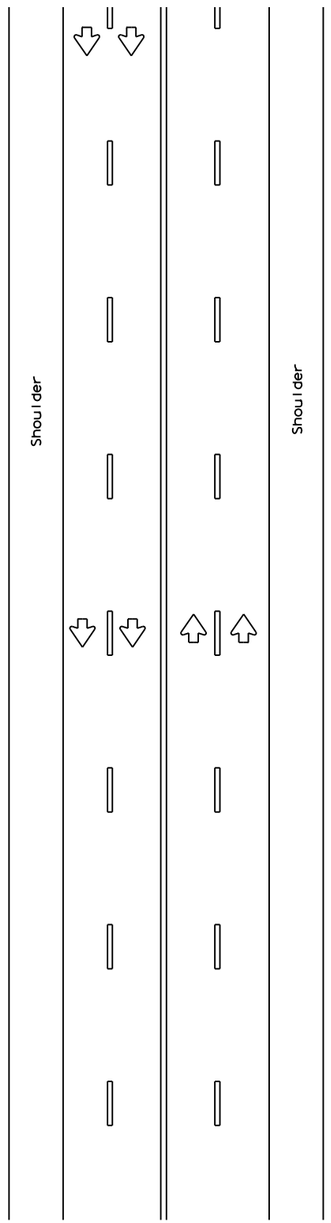
# TYPICAL SIGN REQUIREMENTS

## TSR(5)-13

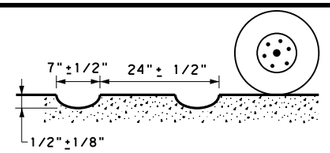
| FILE: tsr5-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT October 2003 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 12-03 7-13 | DIST | COUNTY | | SHEET NO. |
| 9-08 | AMA | GRAY | | 245 |

5

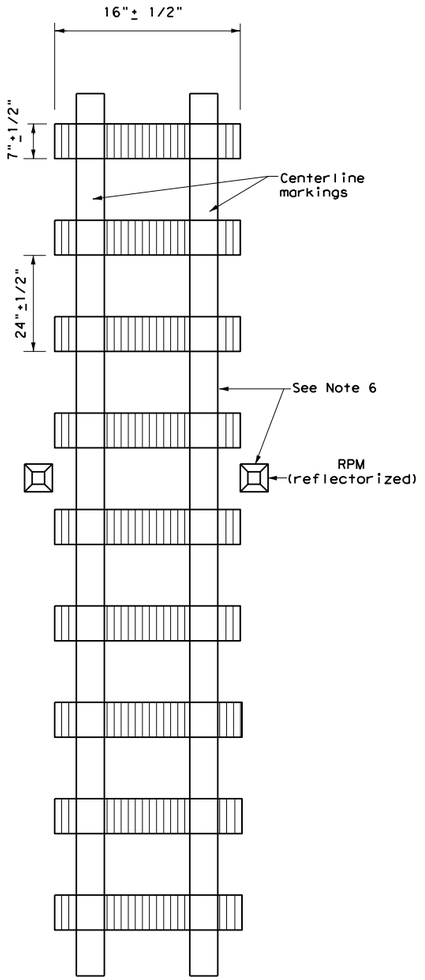
# CENTERLINE RUMBLE STRIPS




MULTILANE UNDIVIDED HIGHWAY WITH SHOULDER

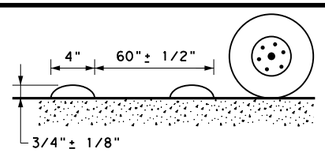



PROFILE VIEW

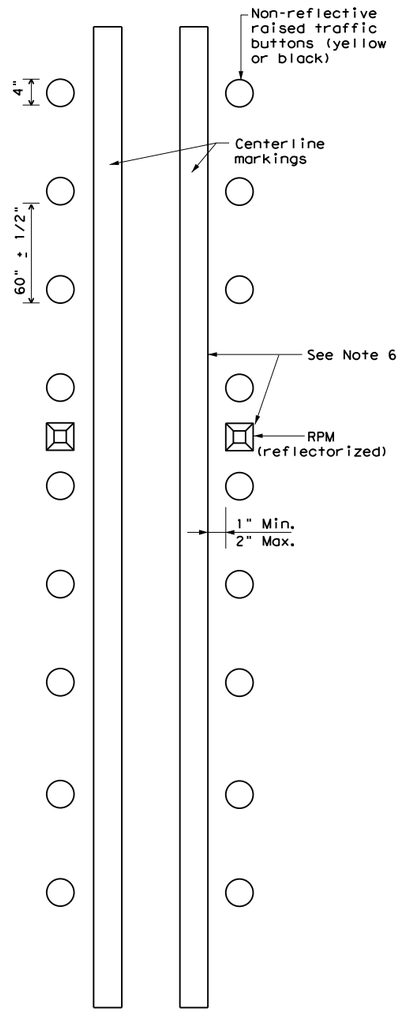



PLAN VIEW
OPTION 1

MILLED CENTERLINE RUMBLE STRIPS

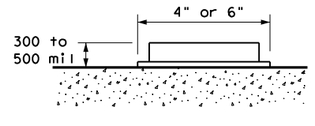



PROFILE VIEW

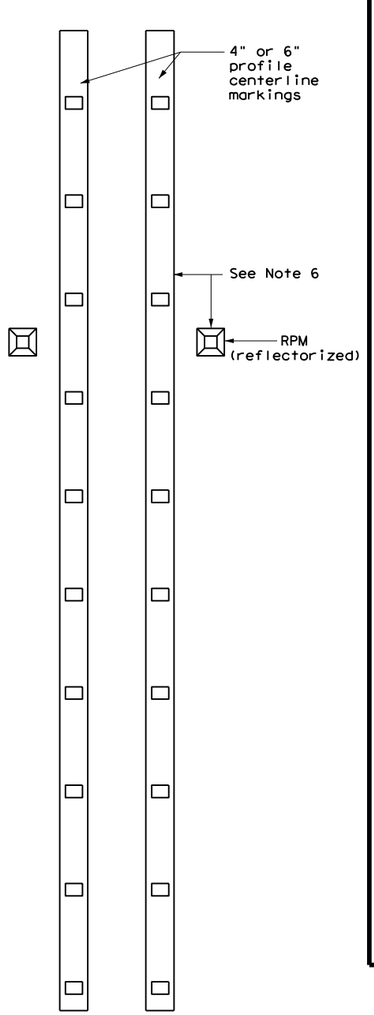



PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS




PROFILE VIEW




PLAN VIEW
OPTION 3

PROFILE CENTERLINE MARKINGS

## GENERAL NOTES

1. This standard sheet provides guidelines for installing centerline rumble strips on multilane undivided highways.
2. Centerline and edgeline rumble strips or profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
3. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks.
6. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings and profile markings.
7. Consideration should be given to noise levels when centerline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inch depth of milled rumble strip may be considered in these areas.
8. Pavement markings must be applied over milled centerline rumble strips for normal centerline spacing. For wider medians, specify in the plans the exact placement of the rumble strips. Place the rumble strips under each centerline marking or centered in the middle of the median.

## WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

9. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per manufacturer's recommendations.
10. When using non-reflective raised traffic buttons as a centerline rumble strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The color of the button should be yellow for a continuous no passing roadway. The button will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.

## WHEN INSTALLING EDGELINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS:

11. See standard sheet RS(4).

Texas Department of Transportation®

*Traffic Operations Division Standard*

# CENTERLINE RUMBLE STRIPS ON MULTILANE UNDIVIDED HIGHWAYS

## RS(2)-13

| FILE: rs(2)-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| © TxDOT October 2013 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 246 |



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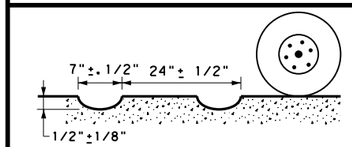
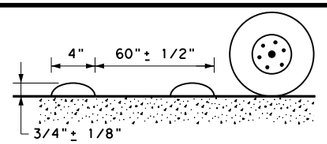
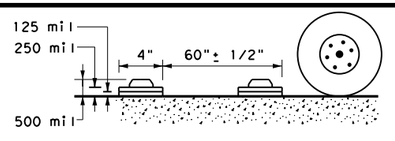
# CENTERLINE RUMBLE STRIPS



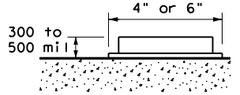

MILLED RUMBLE STRIPS




RAISED TRAFFIC BUTTONS

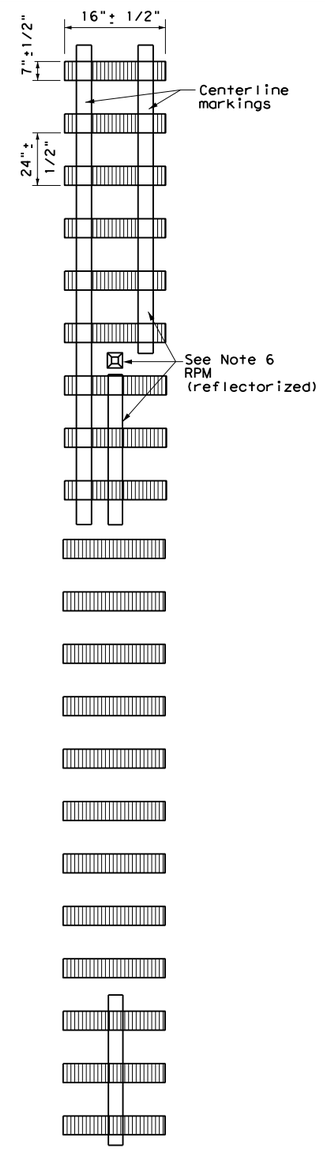



PREFORMED THERMOPLASTIC STRIPS




PROFILE MARKINGS

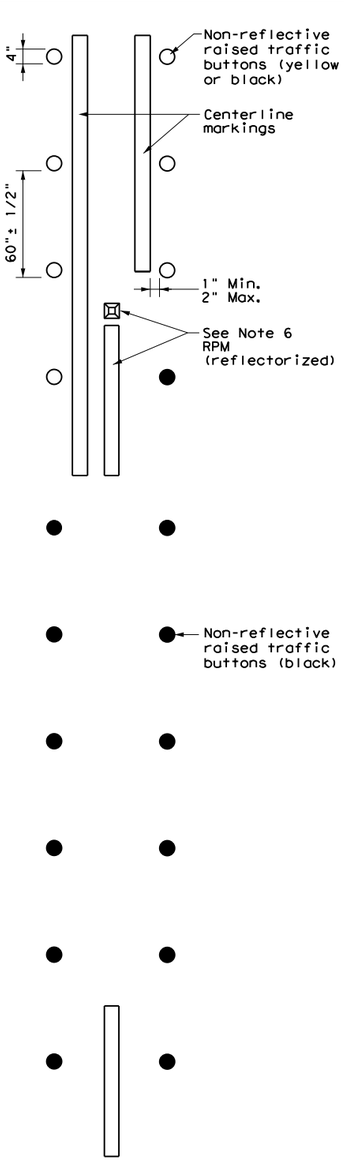
PROFILE VIEW




PLAN VIEW
OPTION 1

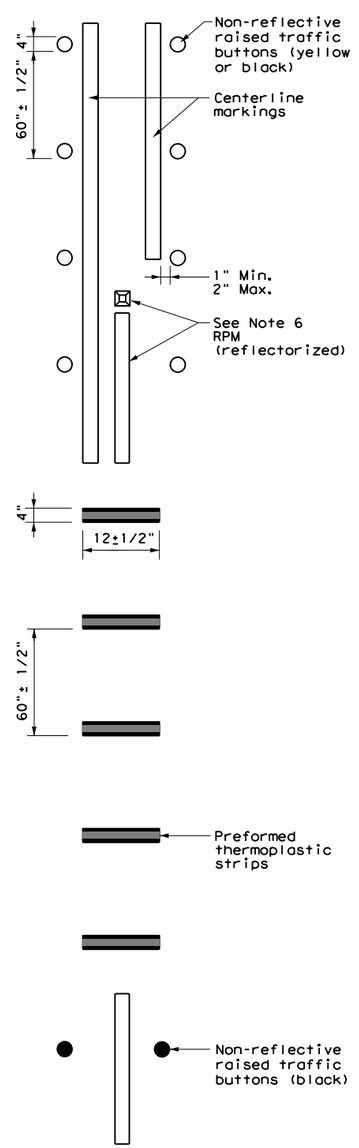
TWO LANE TWO-WAY ROADWAYS

MILLED CENTERLINE RUMBLE STRIPS



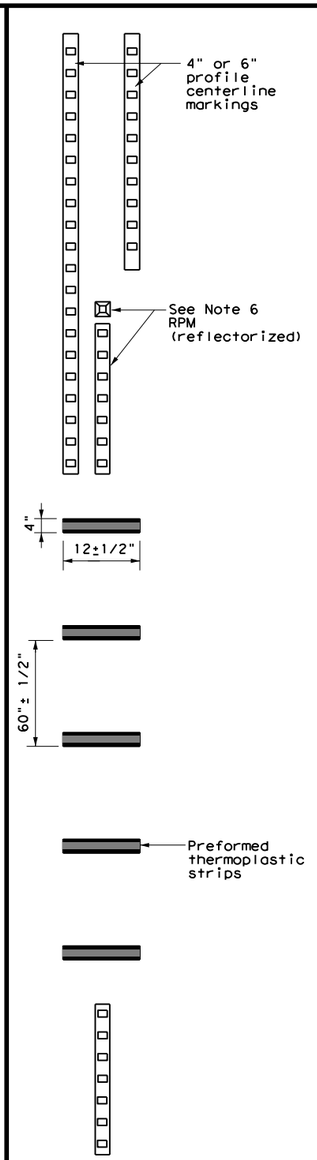

PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS




PLAN VIEW
OPTION 3

RAISED CENTERLINE RUMBLE STRIPS AND PREFORMED THERMOPLASTIC STRIPS




PLAN VIEW
OPTION 4

PROFILE CENTERLINE MARKINGS AND PREFORMED THERMOPLASTIC STRIPS

## GENERAL NOTES

1. This standard sheet provides guidelines for installing centerline rumble strips on two-lane highways with or without shoulders.
2. Centerline and edgeline rumble strips or profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
3. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks.
6. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, and dimensions pavement markings and profile markings.
7. Consideration should be given to noise levels when centerline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inch depth of milled rumble strip may be considered in these areas.
8. Pavement markings must be applied over milled centerline rumble strips.

**WHEN INSTALLING CENTERLINE RUMBLE STRIPS:**

9. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per manufacturer's recommendations.
10. When using non-reflective raised traffic buttons as a centerline rumble strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
11. The color of the button should be yellow for a continuous no passing roadway. Black buttons should be used in areas where passing is allowed.

**WHEN INSTALLING EDGELINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS:**

12. See standard sheet RS(4).

Texas Department of Transportation®
*Traffic Operations Division Standard*

# CENTERLINE RUMBLE STRIPS ON TWO LANE TWO-WAY HIGHWAYS

## RS(3)-13

| FILE: rs(3)-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT October 2013 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 247 |

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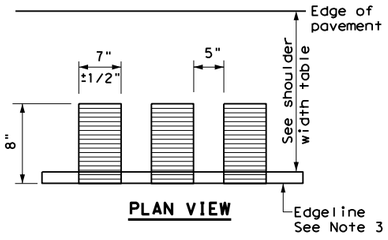
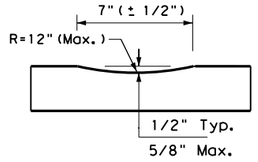
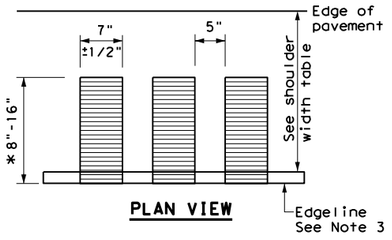



PLAN VIEW

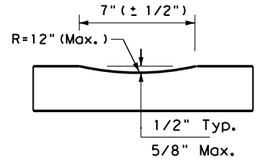



PROFILE VIEW
OPTION 1

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



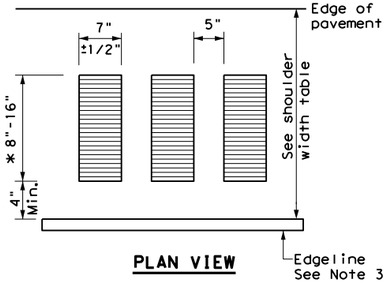

PLAN VIEW




* This distance may vary based on width of shoulder

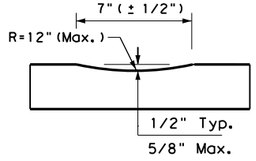
PROFILE VIEW
OPTION 2

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



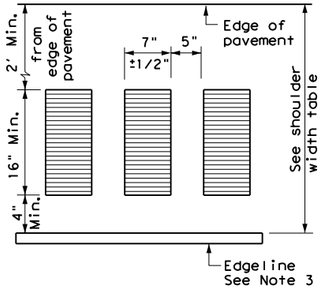

PLAN VIEW

* This distance may vary based on width of shoulder

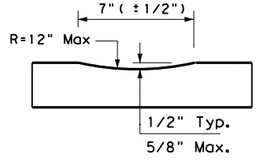



PROFILE VIEW
OPTION 3

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)

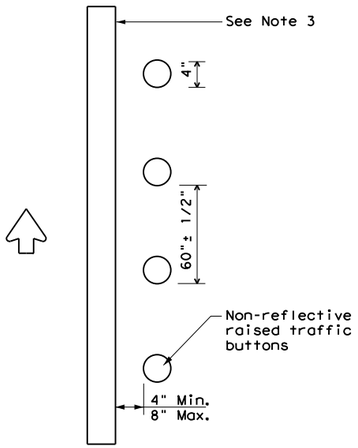



PLAN VIEW



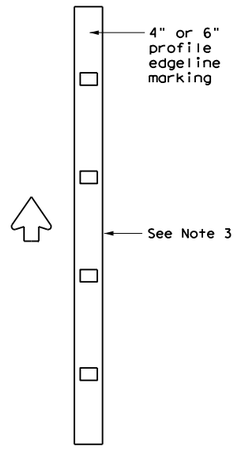

PROFILE VIEW
OPTION 4

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)




PLAN VIEW
OPTION 5

RAISED EDGELINE RUMBLE STRIPS




PLAN VIEW
OPTION 6

PROFILE EDGELINE MARKINGS

| SHOULDER WIDTH TABLE | | |
|---|---|---|
| EQUAL TO OR LESS THAN 2 FEET | GREATER THAN 2 FEET LESS THAN 4 FEET | EQUAL TO OR GREATER THAN 4 FEET |
| Option 1, 5 OR 6 | Option 1, 2, 3 5 OR 6 | Option 2, 4, 5 OR 6 |

## GENERAL NOTES

1. Rumble strips and profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
2. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
3. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings, and profile markings.
4. See the table below for determining what options may be used for edgeline rumble strips.

**WHEN INSTALLING MILLED DEPRESSION EDGELINE RUMBLE STRIPS:**

5. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
6. Pavement markings can be applied over milled shoulder rumble strips to create an edgeline rumble stripe.
7. Breaks in edgeline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks when installed on conventional highways.
8. Rumble strips shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
9. Consideration should be given to noise levels when edgeline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inches depth of milled rumble strip may be considered in these areas.
10. On roadways with high bicycle activity, consideration should be given before the installation of edgeline rumble strips. Things to consider include size of rumble strips, rumble strip material and location of rumble strips on the shoulder. If the designer determines that gaps are needed in the rumble strips due to bicycle use of the road, then follow the requirement shown in FHWA Technical Advisory T5040.39, or latest version. A detail of the spacing shall be included in the plans.

**WHEN INSTALLING RAISED OR PROFILE EDGELINE RUMBLE STRIPS:**

11. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per the manufacturer's recommendations.
12. Non-reflective traffic buttons shall be placed adjacent to the pavement marking delineating the edgeline when used as a rumble strip. The color of the button should match the color of the adjacent edgeline marking (white or yellow). The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
13. Non-reflective traffic buttons shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
14. Breaks in edgeline rumble strips using raised traffic buttons shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks when installed on conventional highways.
15. The minimum distance between the edgeline and the buttons should be used if the shoulder is less than 8 feet in width.
16. Raised profile thermoplastic markings used as edgelines may substitute for buttons.

Texas Department of Transportation

Traffic Operations Division Standard

# EDGELINE RUMBLE STRIPS ON UNDIVIDED OR TWO LANE HIGHWAYS
# RS(4)-13

| FILE: rs(4)-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
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| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 248 |

## SITE DESCRIPTION

PROJECT LIMITS: US 60 FROM TIGNOR ST IN PAMPA TO ROBERTS COUNTY LINE

PROJECT DESCRIPTION: WORK CONSISTS OF SUPER 2 ROADWAY WIDENING AND OVERLAY

MAJOR SOIL DISTURBING ACTIVITIES:

MAJOR SOIL DISTURBING ACTIVITIES MAY INCLUDE BUT ARE NOT LIMITED TO RIGHT-OF-WAY PREPARATION, EXCAVATION OF BASE MATERIALS, SOIL STABILIZATION EXTENSION OF EXISTING DRAINAGE STRUCTURES, DITCH GRADING, AND FINAL GRADING AND PLACEMENT OF TOPSOIL.

TOTAL PROJECT AREA: 173.9 ACRES

TOTAL AREA TO BE DISTURBED: 27.8 ACRES

WEIGHTED RUNOFF COEFFICIENT
(BEFORE CONSTRUCTION): 0.52
(AFTER CONSTRUCTION): 0.60

EXPLANATION OF THE TECHNICAL BASIS USED TO SELECT THE PRACTICES TO CONTROL POLLUTION WHERE FLOWS EXCEED PRE-DEVELOPMENT LEVELS

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

EXISTING SOIL IS PREDOMINANTLY PULLMAN CLAY LOAM

VEGETATION CONSISTS OF NATIVE GRASSES WITH APPROXIMATELY 70% COVER

NAME OF RECEIVING WATERS: RED DEER CREEK AND THUT CREEK

### *SOIL STABILIZATION PRACTICES:*

- [X] TEMPORARY SEEDING
- [X] PERMANENT PLANTING, SODDING, OR SEEDING
- [ ] MULCHING
- [ ] SOIL RETENTION BLANKET
- [ ] BUFFER ZONES
- [X] PRESERVATION OF NATURAL RESOURCES

OTHER:

FILENAME SW3PNARR SEAL.dgn

## EROSION AND SEDIMENT CONTROLS

### *STRUCTURAL PRACTICES:*

| Permanent | Temporary | |
|---|---|---|
| | | SILT FENCES |
| | | HAY BALES |
| | | ROCK BERMS |
| | | 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 |
| | | TIMBER MATTING AT CONSTRUCTION EXIT |
| | | CHANNEL LINERS |
| | | SEDIMENT TRAPS |
| | | SEDIMENT BASINS |
| | | STORM INLET SEDIMENT TRAP |
| | | STONE OUTLET STRUCTURES |
| | | CURBS AND GUTTERS |
| | | STORM SEWERS |
| | | VELOCITY CONTROL DEVICES |

OTHER: TEMPORARY EROSION CONTROL LOGS
TEMPORARY SOIL RETENTION BLANKETS

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. PLACE SW3P DEVICES NEEDED FOR EACH PHASE
2. MAINTAIN AND UPGRADE DEVICES AS NEEDED
3. REMOVE TEMPORARY SW3P DEVICES UPON COMPLETION OF CONSTRUCTION AND PERMANENT SEEDING HAS BEEN PLACED

STORM WATER MANAGEMENT:

CARE SHALL BE TAKEN TO DISTURB AS LITTLE OF THE NATURAL AREA AS POSSIBLE

STORM WATER DRAINAGE WILL BE PROVIDED BY EXISTING DITCHES. STORM WATER SHALL BE FILTERED THROUGH TEMPORARY EROSION CONTROL LOGS BEFORE LEAVING THE PROJECT SITE.

DESCRIPTION OF ANY MEASURES INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL STORM WATER DISCHARGES AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED:

DISTURBED AREAS WILL BE SEEDED UPON COMPLETION OF CONSTRUCTION

### *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.*

### *OTHER EROSION AND SEDIMENT CONTROLS CONTINUED:*

INSPECTION: *An inspection will be performed by a TxDOT Inspector of the construction site at least once every 7 calendar days regardless of rainfall. An inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.*

WASTE MATERIALS: *All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation, and the trash will be hauled to a permitted landfill. No construction waste material will be buried on site.*

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): *At a minimum, any products in the following catagories are considered 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.*

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.*

OFF SITE VEHICLE TRACKING:

- [ ] HAUL ROADS DAMPENED FOR DUST CONTROL
- [X] LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- [X] EXCESS DIRT ON ROAD REMOVED DAILY
- [ ] STABILIZED CONSTRUCTION ENTRANCE

OTHER:

REMARKS: *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, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.*

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

# TxDOT STORM WATER POLLUTION PREVENTION PLAN (SW3P)

Texas Department of Transportation


| FED.RD. DIV.NO. | PROJECT NO. | | SHEET NO. |
|---|---|---|---|
| | SEE TITLE SHEET | | 249 |
| STATE | DIST. | COUNTY | |
| TEXAS | AMA. | GRAY | |
| CONT. | SECT. | JOB | HIGHWAY NO. |
| 0169 | 07 | 053, ETC | US 60 |

sw3p.dgn

DATE: 4/7/2021
FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.4-Environmental\02-Sheets\US60_ENV-EPIC.dgn

## I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

☒ No Action Required ☐ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. Submit NOI to TCEQ.

## II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

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 (1/10 to <1/2 acre, 1/3 in tidal waters)
☐ Individual 404 Permit Required
☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

| Erosion | Sedimentation | Post-Construction TSS |
|---|---|---|
| ☐ Temporary Vegetation | ☐ Silt Fence | ☐ Vegetative Filter Strips |
| ☐ Blankets/Matting | ☐ Rock Berm | ☐ Retention/Irrigation Systems |
| ☐ Mulch | ☐ Triangular Filter Dike | ☐ Extended Detention Basin |
| ☐ Sodding | ☐ Sand Bag Berm | ☐ Constructed Wetlands |
| ☐ Interceptor Swale | ☐ Straw Bale Dike | ☐ Wet Basin |
| ☐ Diversion Dike | ☐ Brush Berms | ☐ Erosion Control Compost |
| ☒ Erosion Control Compost | ☒ Erosion Control Compost | ☐ Mulch Filter Berm and Socks |
| ☐ Mulch Filter Berm and Socks | ☐ Mulch Filter Berm and Socks | ☐ Compost Filter Berm and Socks |
| ☐ Compost Filter Berm and Socks | ☐ Compost Filter Berm and Socks | ☒ Vegetation Lined Ditches |
| | ☐ Stone Outlet Sediment Traps | ☐ Sand Filter Systems |
| | Sediment Basins | ☐ Grassy Swales |
| | ☐ | |

## III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications 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.

☐ No Action Required ☒ Required Action

Action No.

1. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and TxDOT archeological staff will be contacted to initiate post-review discovery procedures.

## IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☐ No Action Required ☒ Required Action

Action No.

1. Comply with Executive Order 13112 on Invasive Species and the intent of the Executive Order Memorandum on Beneficial Landscapes for re-vegetating the project area. The proposed seed mixture (both grasses and forbs) would be in accordance with Item 164, Seeding for Erosion Control in TxDOT's Standard Specifications for the construction of Highways, Streets, and Bridges.

## V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☐ No Action Required ☒ Required Action

Action No.

1. If any species on the Gray County Threatened & Endangered Lists is sighted in the project area during construction, stop construction and notify the Area Engineer.

2. American Badger, Eastern Spotted Skunk, Thirteen-lined Ground Squirrel, Prairie Vole, Swift Fox: Contractors 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.

3. Texas Horned Lizard, Woodhouse Toad, Western Box Turtle, Prairie Rattlesnake, Western Hognose Snake: Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. This should include avoiding harvester ant beds in the selection of Project Specific Locations (PSL's).

4. Bird BMP's: a) Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season; b) avoid the removal of unoccupied, inactive nests, as practicable; c) do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

5. The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, egg in part or in whole, without a Federal permit issued in accordance within the Act's policies and regulations. Migratory birds (swallows) will likely be encountered on-site in the bridge culvert during bridge demolition. Adverse impacts on these protected birds, active nests, eggs, and/or young will be avoided. Swallow nests should be removed before April 1, when they are not occupied and preventative measures would be taken to prevent re-colonization in the bridge culvert prior to and during demolition. If active nests are established with eggs laid, bridge demolition work would not begin until the young have left the nest (August 1st).

6. Tree removal should be planned to take place outside the bird nesting season (April 1-Aug 31). If the tree removal occurs between April 1 and August 31, the contractor shall complete a survey of active bird nests and will coordinate with the TxDOT Amarillo District Environmental Coordinator to determine appropriate survey procedures in accordance with TxDOT requirements.

### LIST OF ABBREVIATIONS

| | | | |
|---|---|---|---|
| BMP: | Best Management Practice | SPCC: | Spill Prevention Control and Countermeasure |
| CGP: | Construction General Permit | SW3P: | Storm Water Pollution Prevention Plan |
| DSHS: | Texas Department of State Health Services | PCN: | Pre-Construction Notification |
| FHWA: | Federal Highway Administration | PSL: | Project Specific Location |
| MOA: | Memorandum of Agreement | TCEQ: | Texas Commission on Environmental Quality |
| MOU: | Memorandum of Understanding | TPDES: | Texas Pollutant Discharge Elimination System |
| MS4: | Municipal Separate Stormwater Sewer System | TPWD: | Texas Parks and Wildlife Department |
| MBTA: | Migratory Bird Treaty Act | TxDOT: | Texas Department of Transportation |
| NOT: | Notice of Termination | T&E: | Threatened and Endangered Species |
| NWP: | Nationwide Permit | USACE: | U.S. Army Corps of Engineers |
| NOI: | Notice of Intent | USFWS: | U.S. Fish and Wildlife Service |

## VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) 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 labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the 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 (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

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 is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a 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 demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action No.

1.

## VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☐ No Action Required ☒ Required Action

Action No.

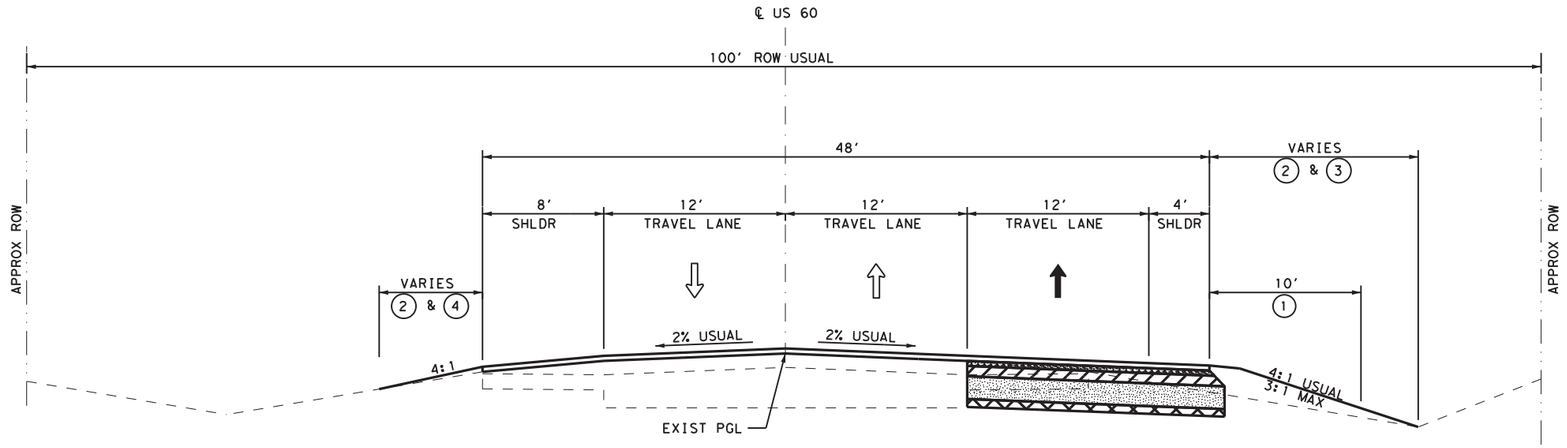
1. Avoid direct impacts to playa lakes adjacent to the ROW during construction including selection of and access to project specific locations (PSLs). Ensure sediment and erosion controls near the playa lakes are adequate to prevent additional sedimentation into these ephemeral water bodies.

Texas Department of Transportation — Design Division Standard

# ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

# EPIC

| FILE: epic.dgn | DN: TxDOT | CK: RG | DW: | CK: |
|---|---|---|---|---|
| © TxDOT: February 2015 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| 12-12-2011 (DS) | DIST | COUNTY | | SHEET NO. |
| 05-07-14 ADDED NOTE SECTION IV. | AMA | GRAY | | 250 |
| 01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES. | | | | |




## PROPOSED TYPICAL SECTION (SUPER 2)
## (A) EASTBOUND

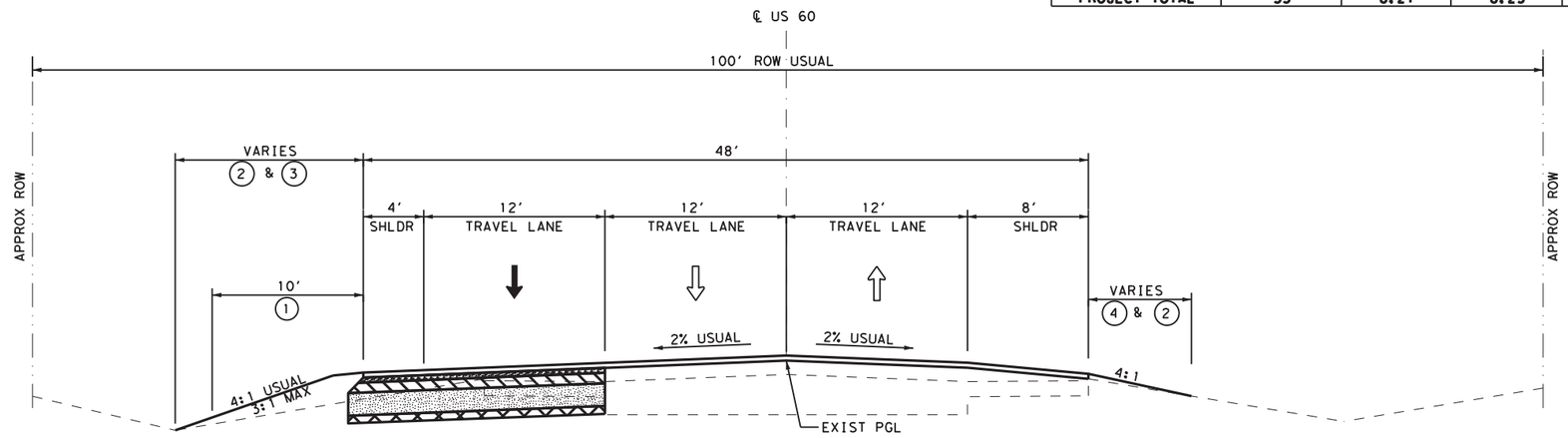
STA 485+00.00 TO STA 489+50.00 TRANS FROM 40' TO 48'
STA 489+50.00 TO STA 535+00.00
STA 685+00.00 TO STA 689+50.00 TRANS FROM 40' TO 48'
STA 689+50.00 TO STA 749+00.00
STA 749+00.00 TO STA 758+00.00 TRANS FROM 48' TO 40'

LEGEND

1. EMULS ASPH (EROSN CONT) (MS-2)
2. DRILL SEEDING (TEMP) (WARM OR COLD)
3. DRILL SEEDING (PERM) (RUAL) (CLAY)
4. BACKFILLING PAVEMENT EDGES

SUMMARY OF EROSION CONTROL ITEMS

| LOCATION | 134 6011 BACKFILLING PAVEMENT EDGES CY | 164 6036 DRILL SEEDING (PERM) (RURAL) (CLAY) AC | 164 6053 DRILL SEEDING (TEMP) (WARM OR COOL) AC | 169 6003 SOIL RETENTION BLANKETS (CL 1) (TY C) SY | 314 6014 EMULS ASPH (EROSN CONT) (MS-2) 0.25 GAL/SY GAL | 506 6040 BIODEG EROSN CONT LOGS (INSTL) (8") LF | 506 6043 BIODEG EROSN CONT LOGS (REMOVE) LF |
|---|---|---|---|---|---|---|---|
| TYPICAL SECTION A | 17 | 4.45 | 4.45 | 180 | 5169 | 520 | 520 |
| TYPICAL SECTION B | 16 | 3.81 | 3.80 | 346 | 6968 | 1440 | 1440 |
| **CSJ: 0169-07-053** | **33** | **8.27** | **8.25** | **526** | **12137** | **1960** | **1960** |
| **PROJECT TOTAL** | **33** | **8.27** | **8.25** | **526** | **12137** | **1960** | **1960** |




## PROPOSED TYPICAL SECTION (SUPER TWO)
## (B) WESTBOUND

STA 362+43.48 TO STA 369+36.00 TRANS FROM 30' LT TO 34' LT
STA 369+36.00 TO STA 386+40.00
STA 386+40.00 TO STA 390+00.00 TRANS FROM 34' LT TO 20' LT
STA 564+20.00 TO STA 609+70.00
STA 609+70.00 TO STA 614+20.00 TRANS FROM 48' TO 40'

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER
04/07/2021

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| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

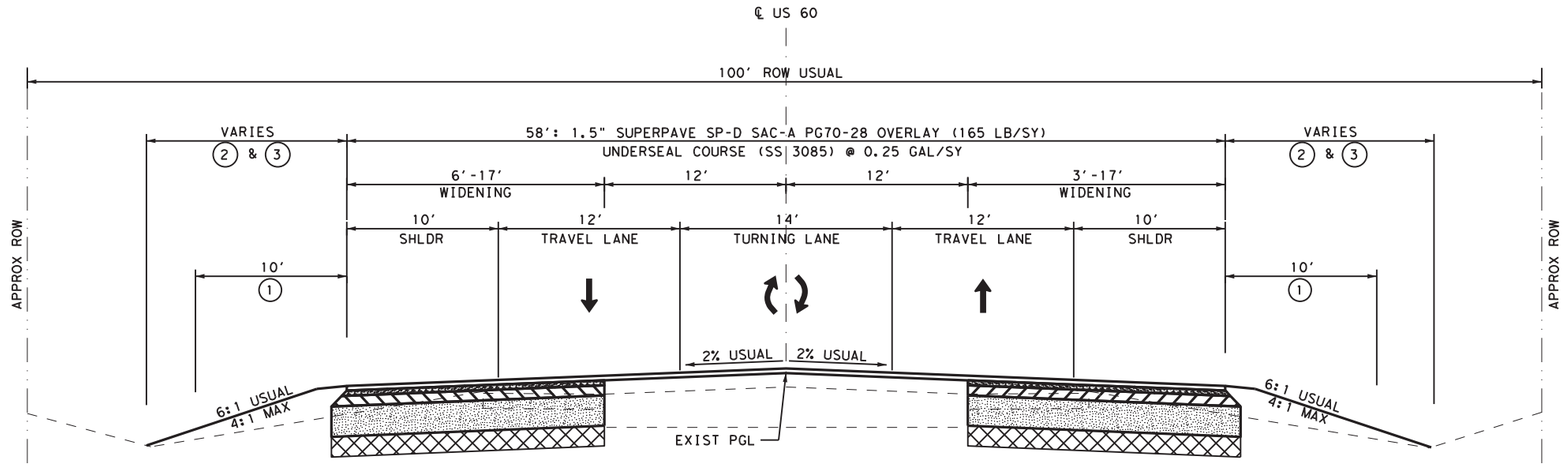
CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# SW3P DRILL SEEDING DETAIL

SHEET 1 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053, ETC | 251 |




## PROPOSED TYPICAL SECTION (WIDENING)

Ⓒ US 60

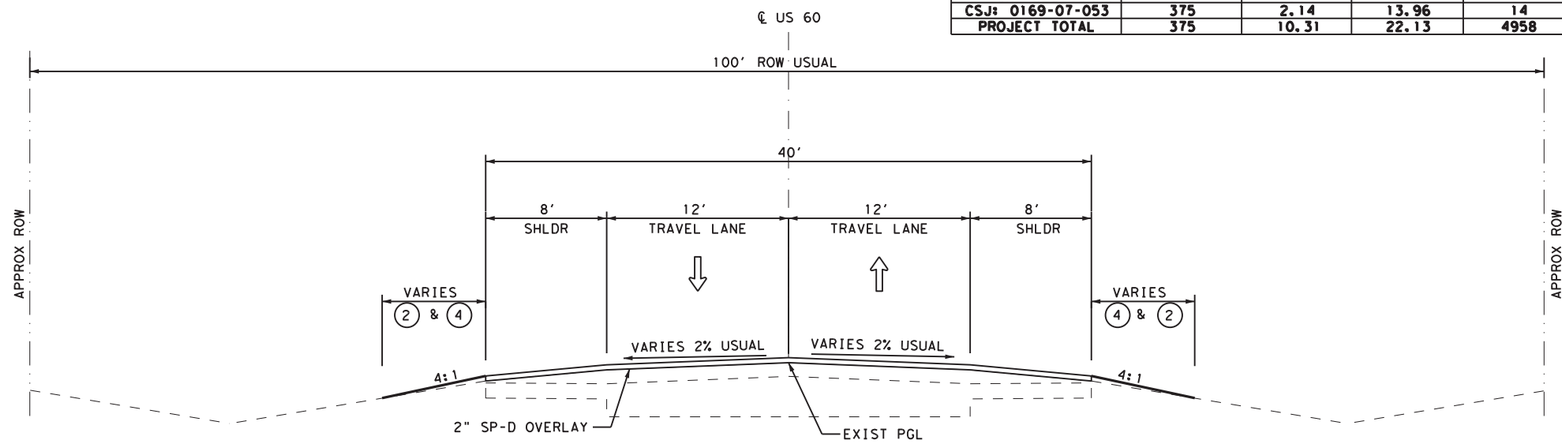
STA 87+75.00 TO STA 119+54.00

LEGEND

1. EMULS ASPH (EROSN CONT) (MS-2)
2. DRILL SEEDING (TEMP) (WARM OR COLD)
3. DRILL SEEDING (PERM) (RUAL) (CLAY)
4. BACKFILLIG PAVEMENT EDGES

SUMMARY OF EROSION CONTROL ITEMS

| LOCATION | 134 6011 BACKFILLING PAVEMENT EDGES | 164 6036 DRILL SEEDING (PERM) (RURAL) (CLAY) | 164 6053 DRILL SEEDING (TEMP) (WARM OR COOL) | 314 6014 EMULS ASPH (EROSN CONT) (MS-2) 0.25 GAL/SY | 506 6040 BIODEG EROSN CONT LOGS (INSTL) (8") | 506 6043 BIODEG EROSN CONT LOGS (REMOVE) |
|---|---|---|---|---|---|---|
| | CY | AC | AC | SY | LF | LF |
| TYPICAL SECTION C | | 8.17 | 8.17 | 4944 | 420 | 420 |
| **PROJECT TOTAL** | | **8.17** | **8.17** | **4944** | **420** | **420** |
| TYPICAL SECTION D | 375 | 2.14 | 13.96 | 14 | 20 | 20 |
| **CSJ: 0169-07-053** | **375** | **2.14** | **13.96** | **14** | **20** | **20** |
| **PROJECT TOTAL** | **375** | **10.31** | **22.13** | **4958** | **440** | **440** |




## PROPOSED TYPICAL SECTION (OVERLAY)

Ⓓ

STA 139+18.00 TO STA 215+50.00
STA 262+00.00 TO STA 275+00.00
STA 390+00.00 TO STA 485+00.00
STA 614+20.00 TO STA 685+00.00
STA 758+00.00 TO END OF PROJECT

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

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0 2.5 5(V)

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

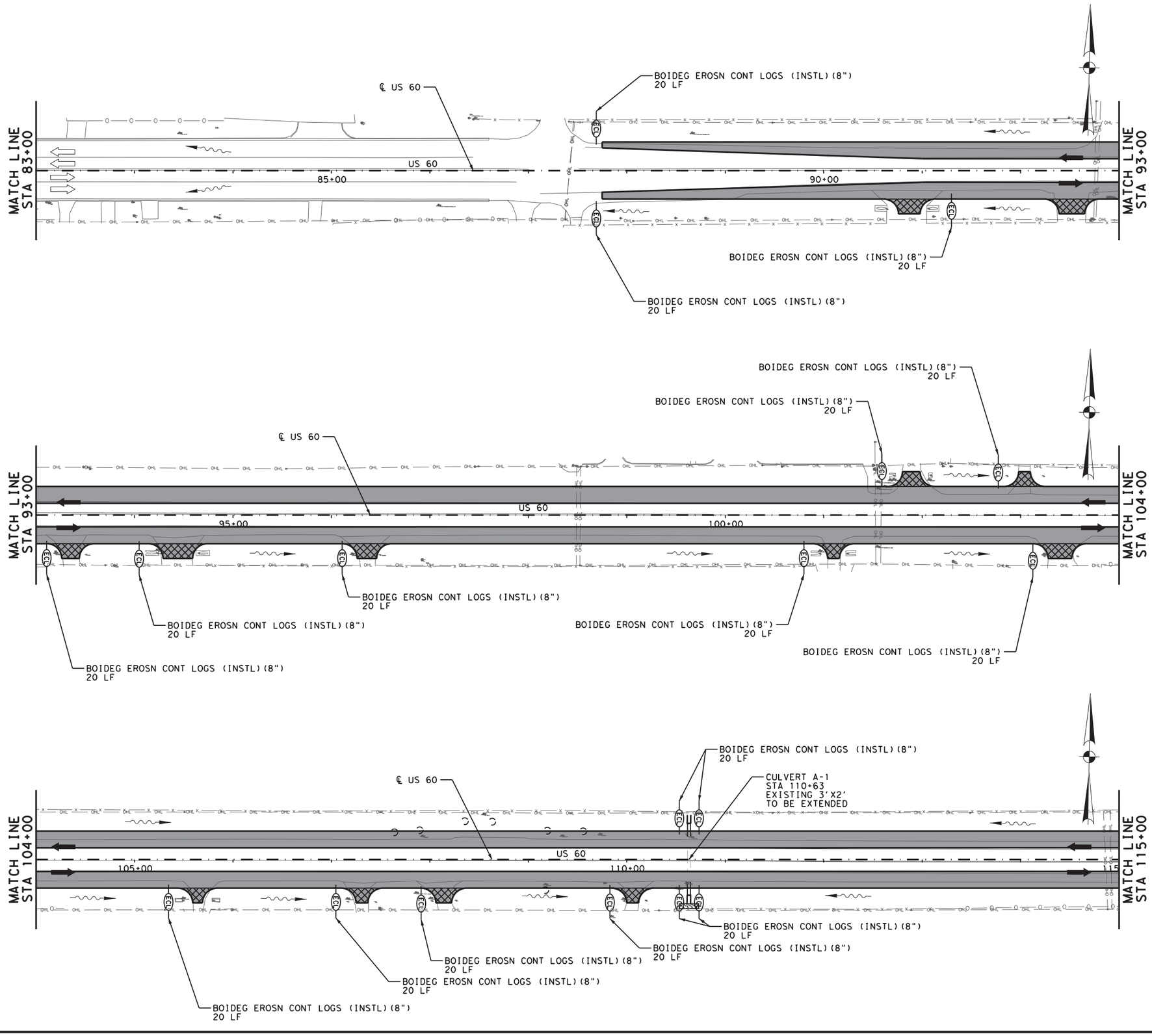
CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
www.cobbfendley.com

Texas Department of Transportation

# SW3P DRILL SEEDING DETAIL

SHEET 2 OF 2

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 252 |




LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER
04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |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Texas Department of Transportation
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# US 60
## SW3P LAYOUT
**STA 83+00 TO STA 115+00**

SHEET 1 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 253 |


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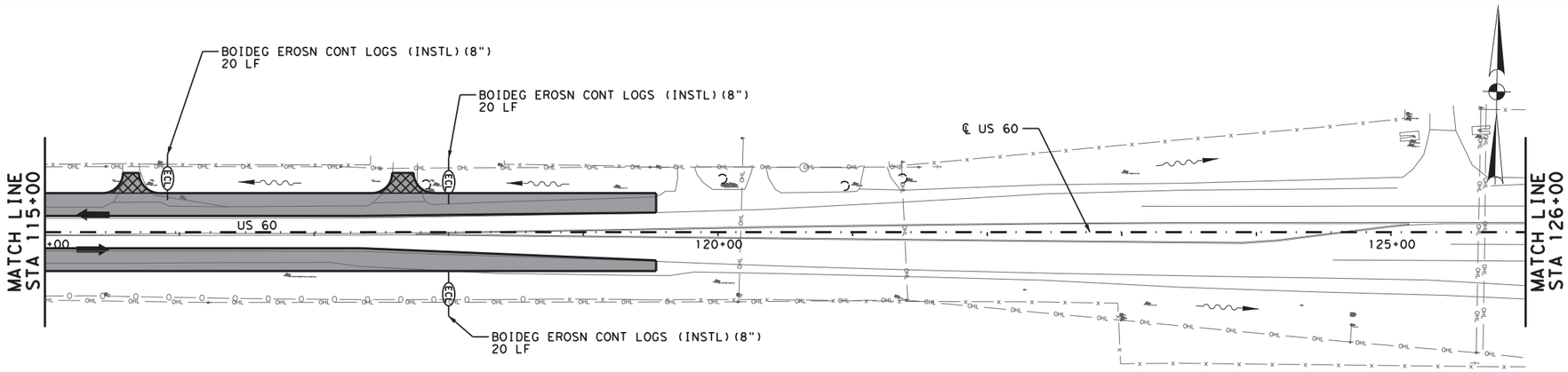


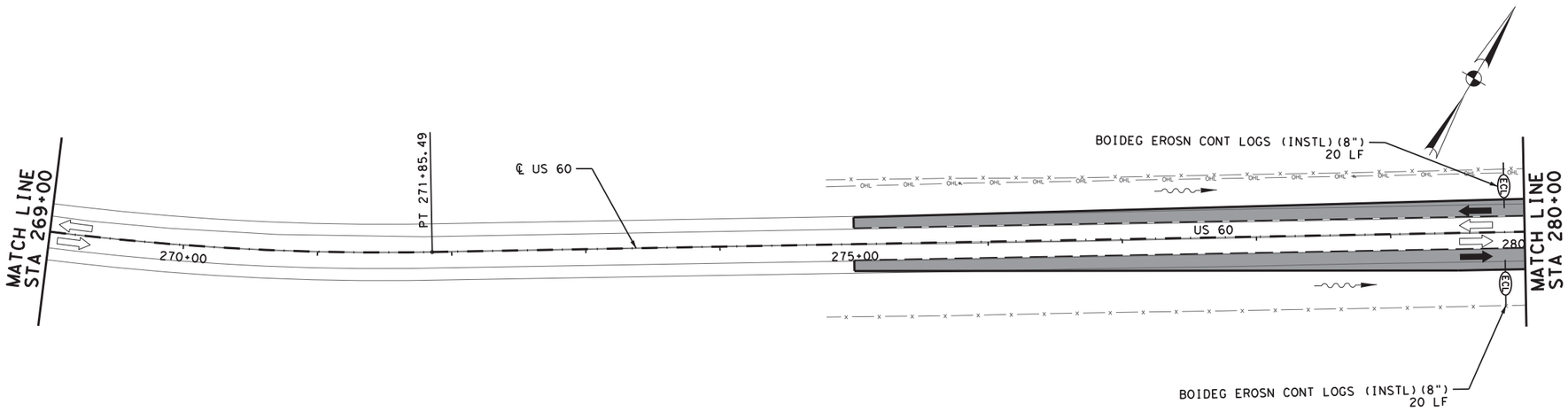


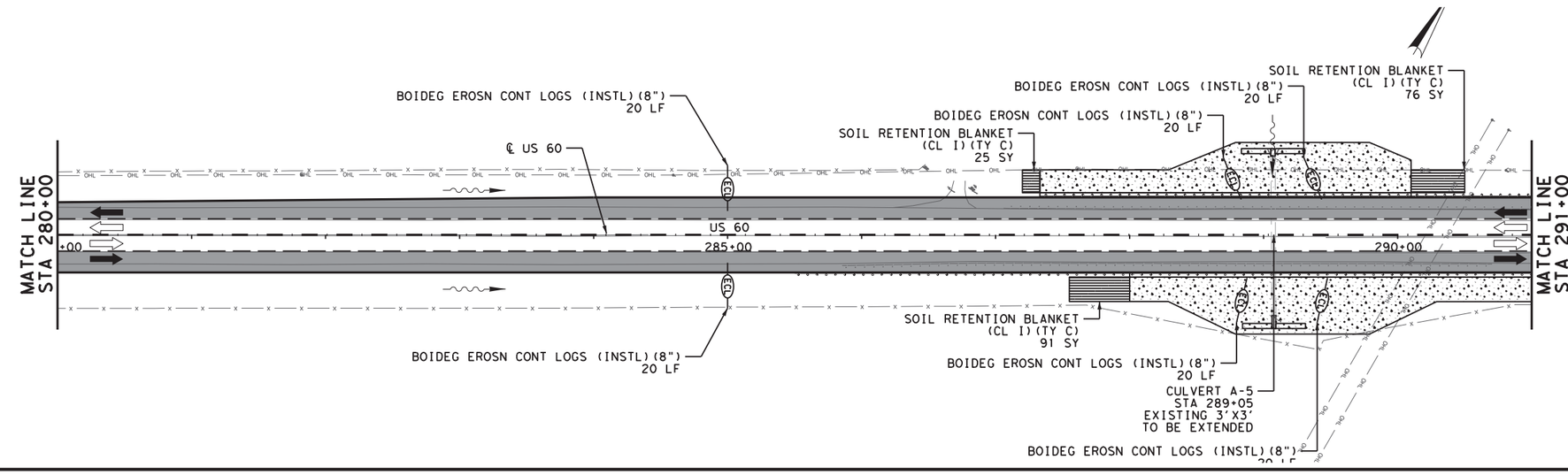


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

04/07/2021

BO L. RATTO
113226
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PROFESSIONAL ENGINEER
STATE OF TEXAS

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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# US 60
## SW3P LAYOUT
### STA 115+00 TO STA 291+00

SHEET 2 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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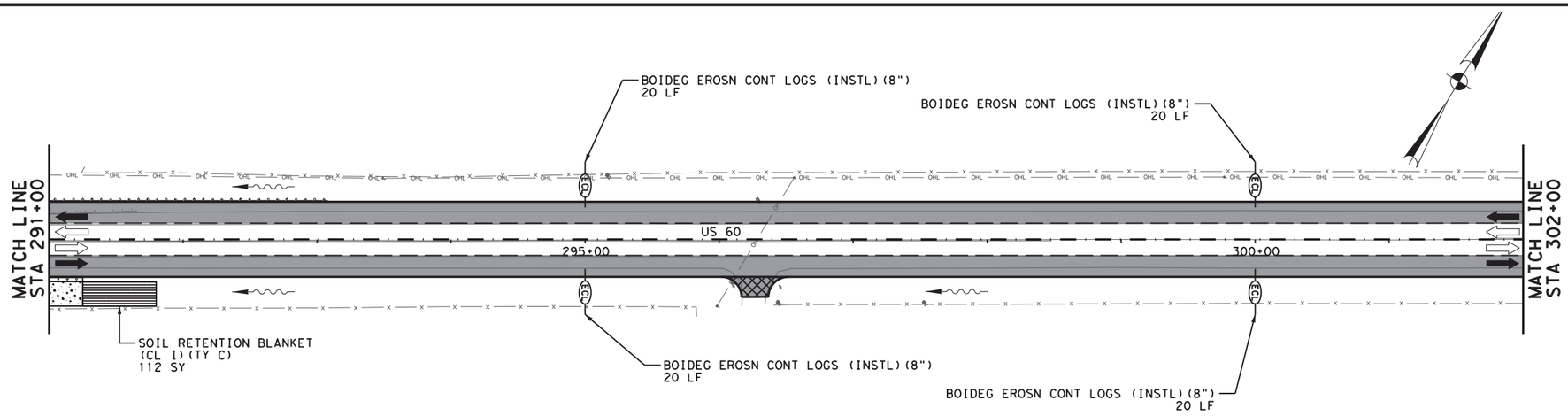


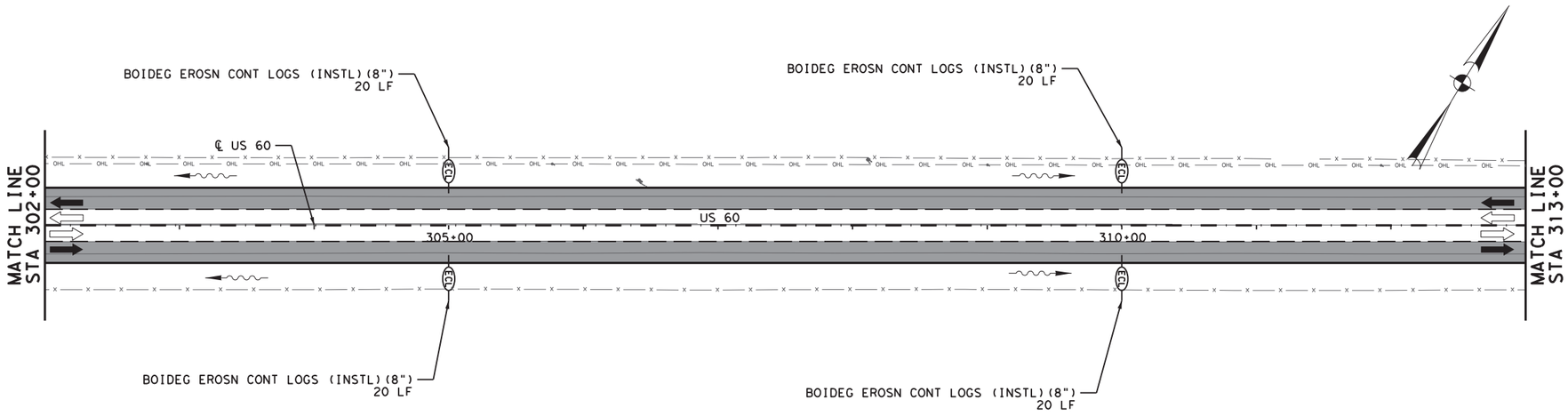


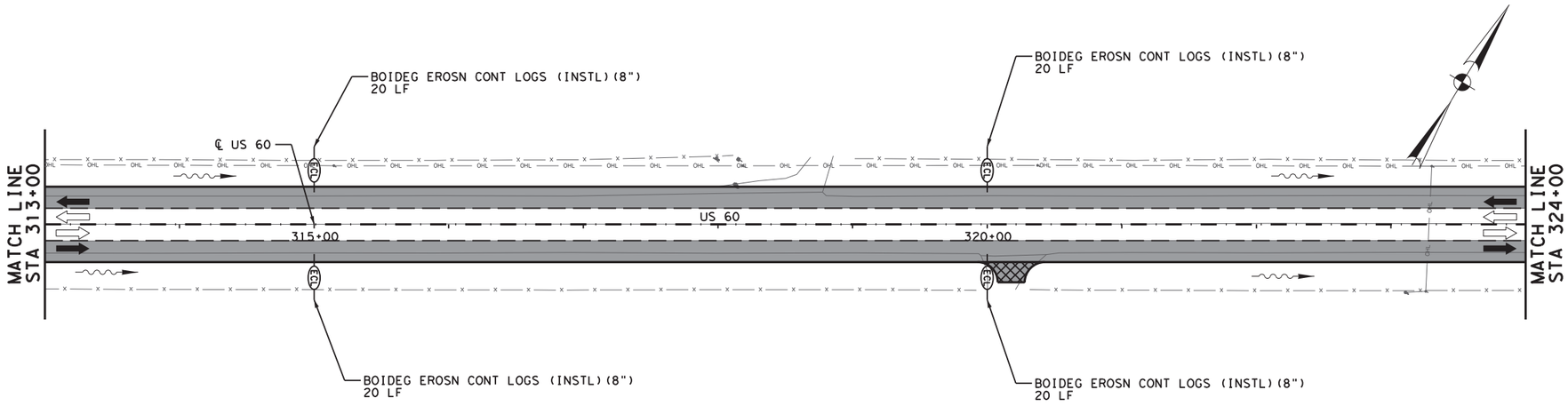


LEGEND

ECL — EROSION CONTROL LOG

FLOW

SOIL RETENTION BLANKET

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
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# US 60
## SW3P LAYOUT
**STA 291+00 TO STA 324+00**

SHEET 3 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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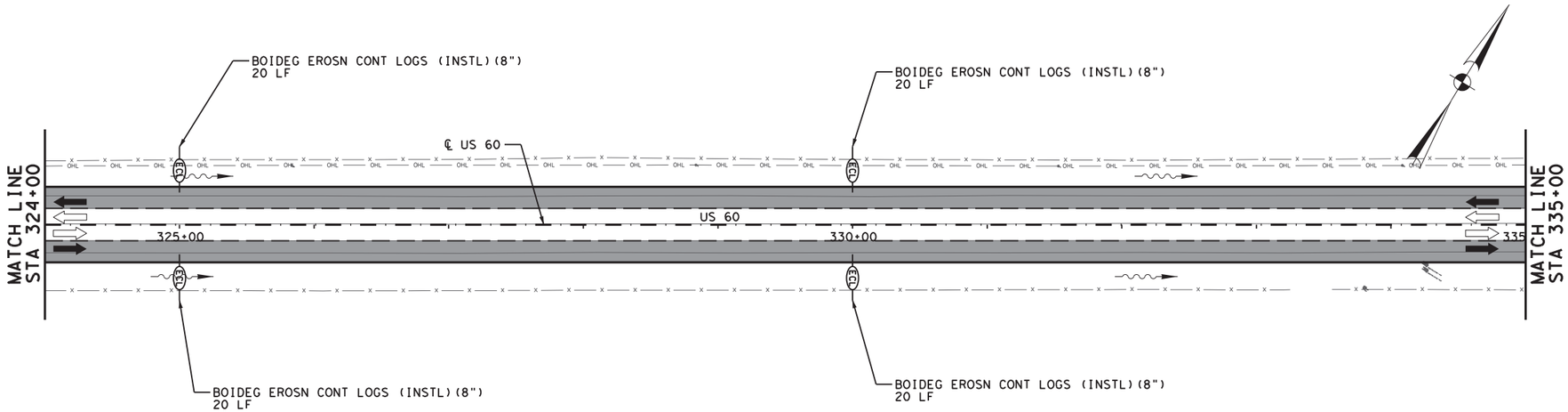


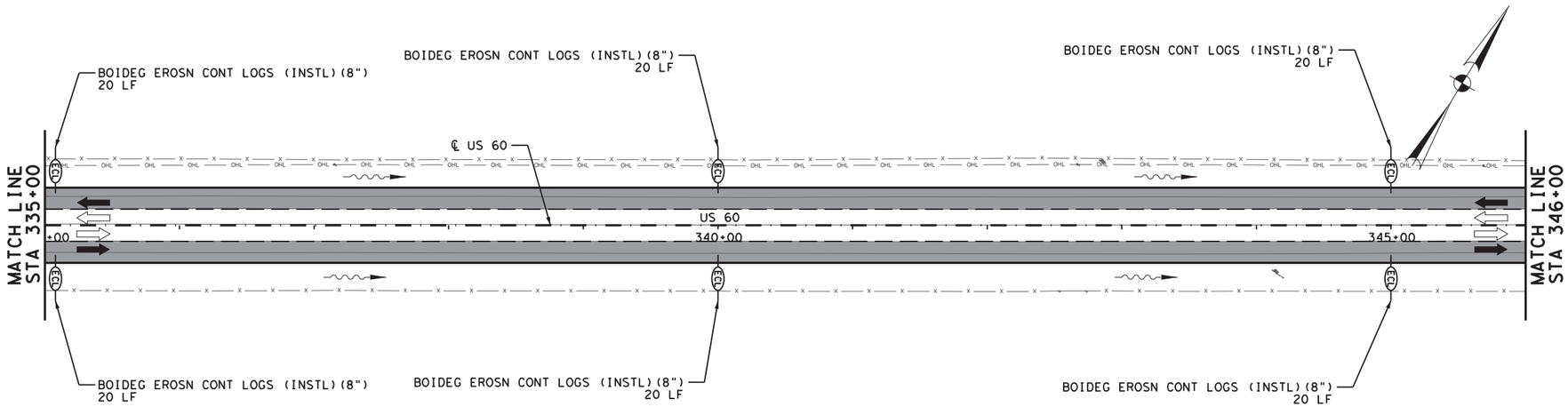


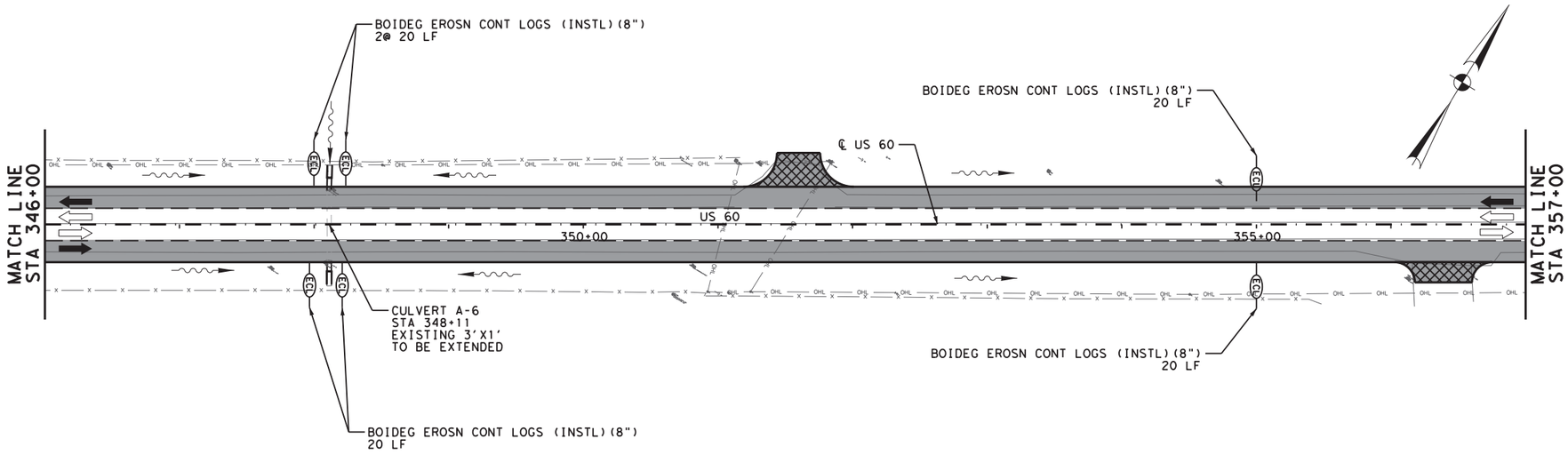


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
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# US 60
## SW3P LAYOUT
**STA 324+00 TO STA 357+00**

SHEET 4 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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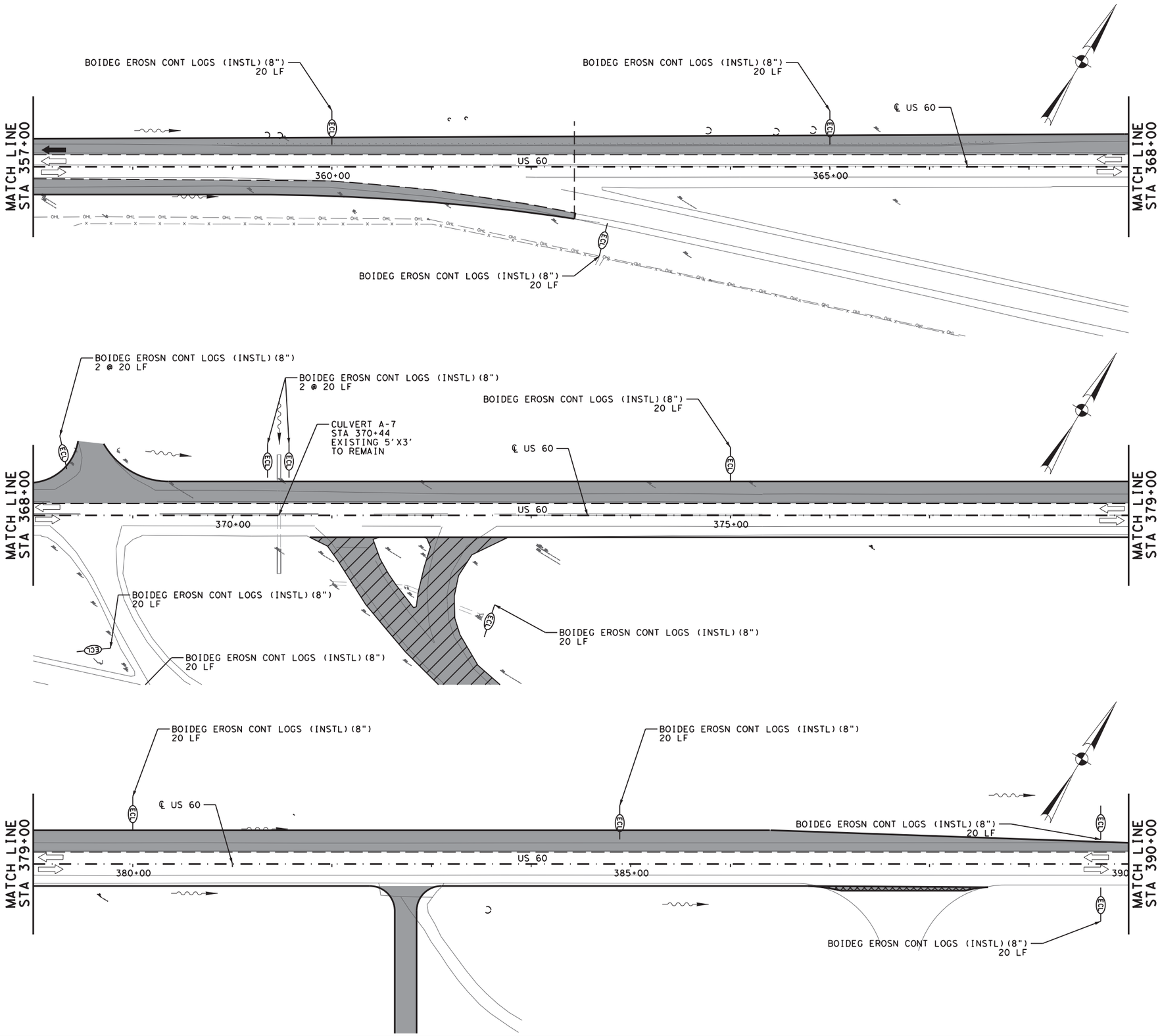


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

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# US 60
# SW3P LAYOUT
## STA 357+00 TO STA 390+00

SHEET 5 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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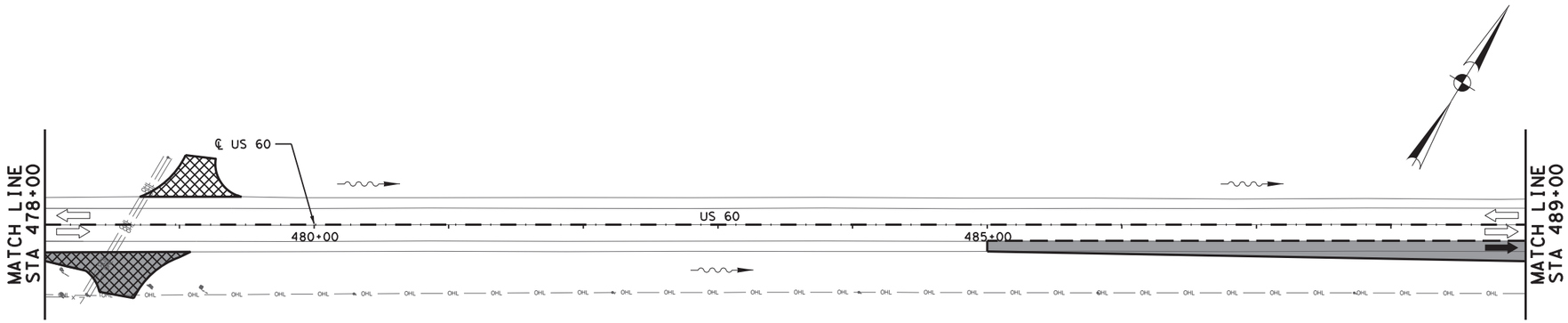


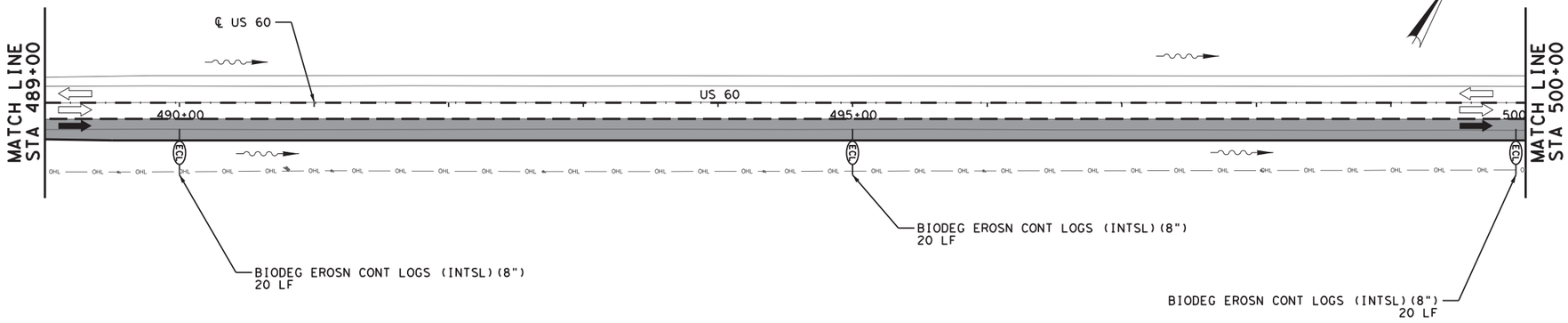


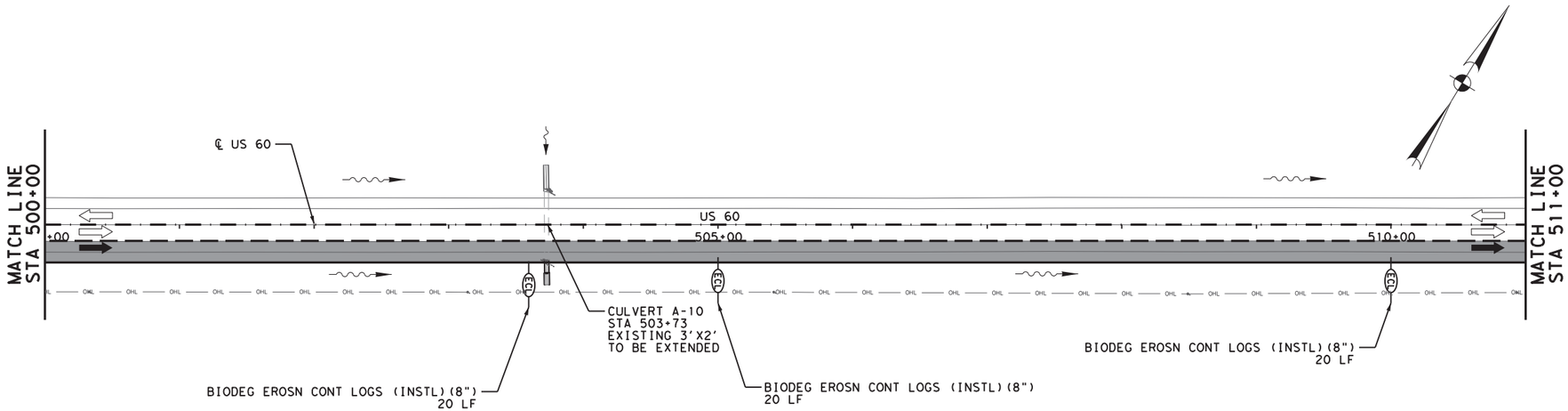


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

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1" = 100'

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# US 60
# SW3P LAYOUT
## STA 478+00 TO STA 511+00

SHEET 6 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 258 |

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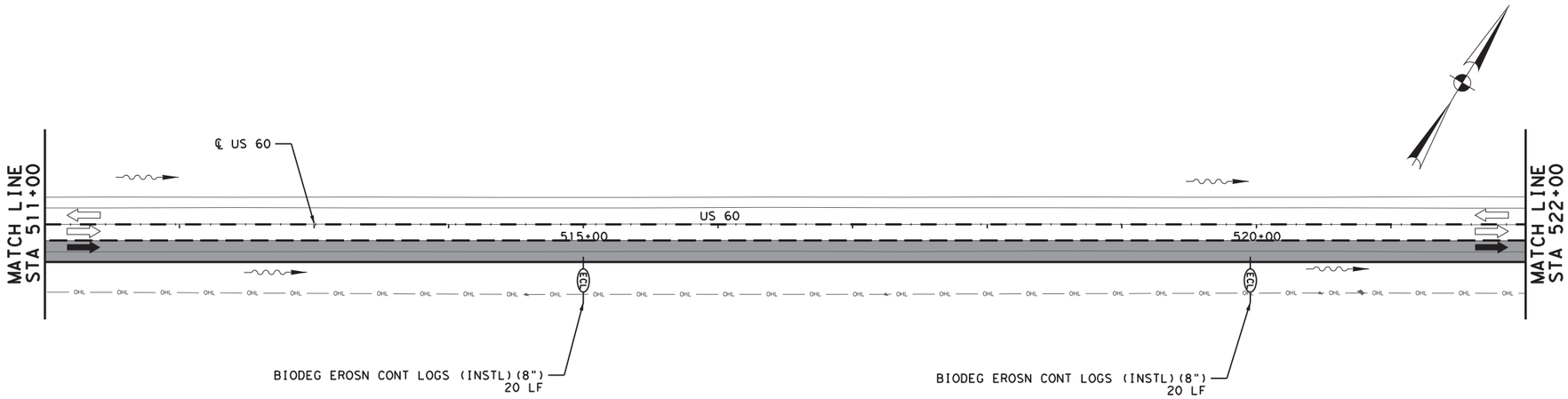


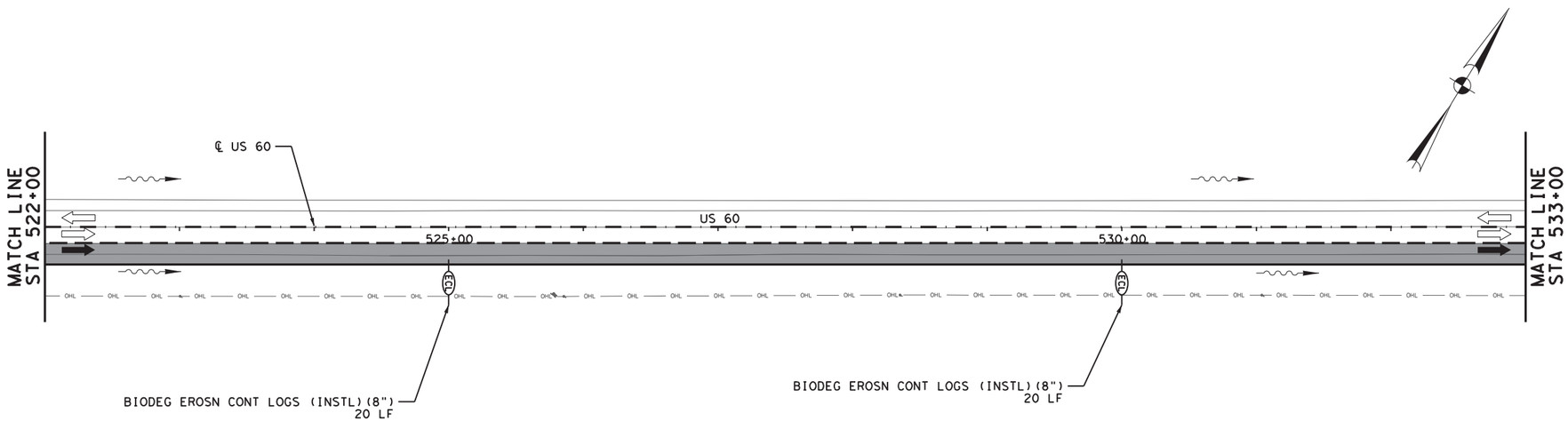


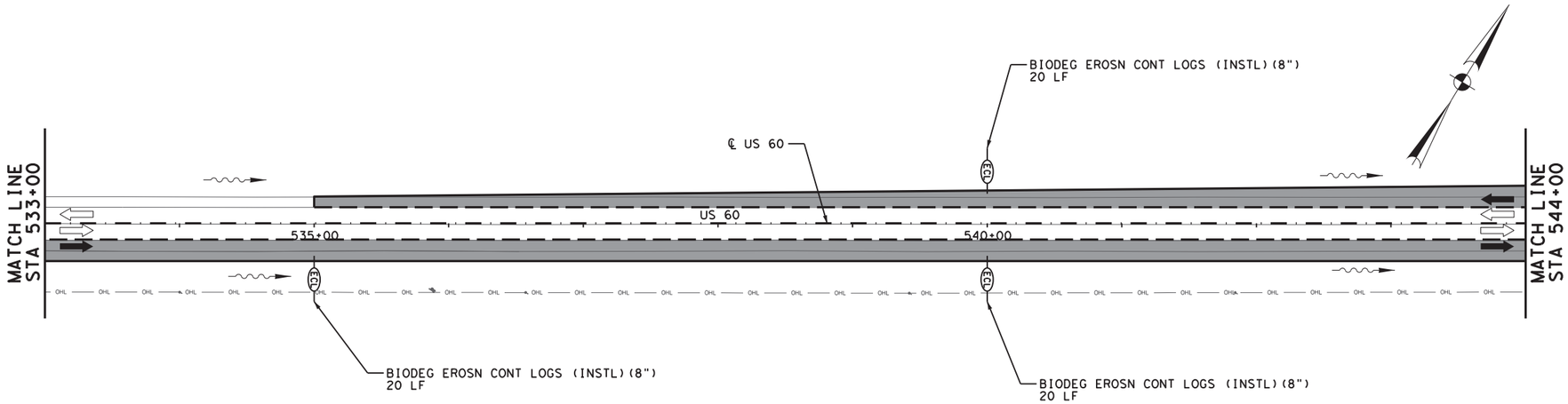


LEGEND

ECL — EROSION CONTROL LOG

FLOW

SOIL RETENTION BLANKET

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PROFESSIONAL ENGINEER

0 25 50 100

1" = 100'

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|---|---|---|---|
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# US 60
## SW3P LAYOUT
### STA 511+00 TO STA 544+00

SHEET 7 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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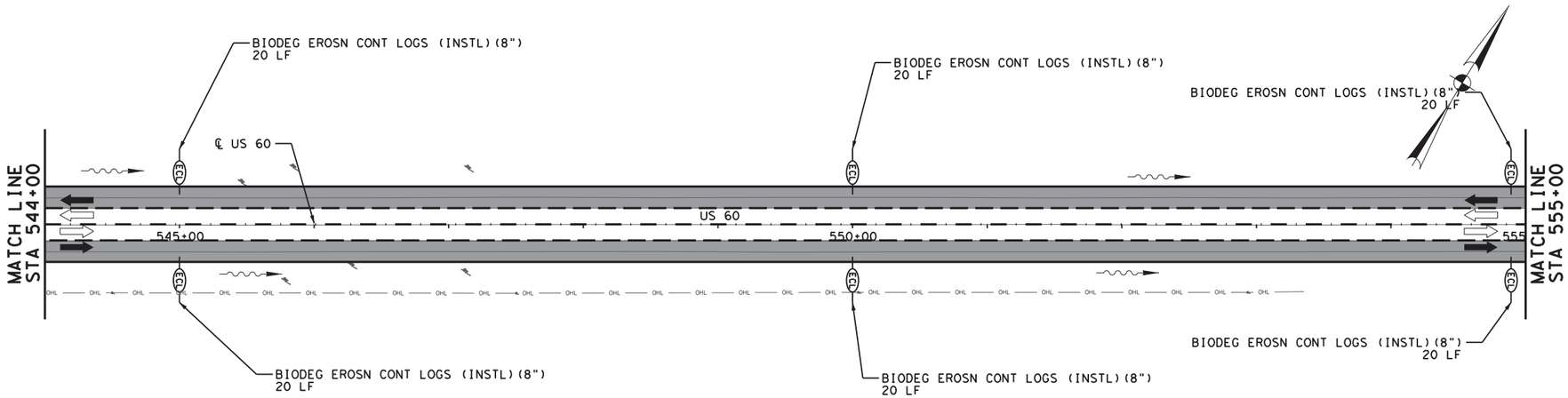


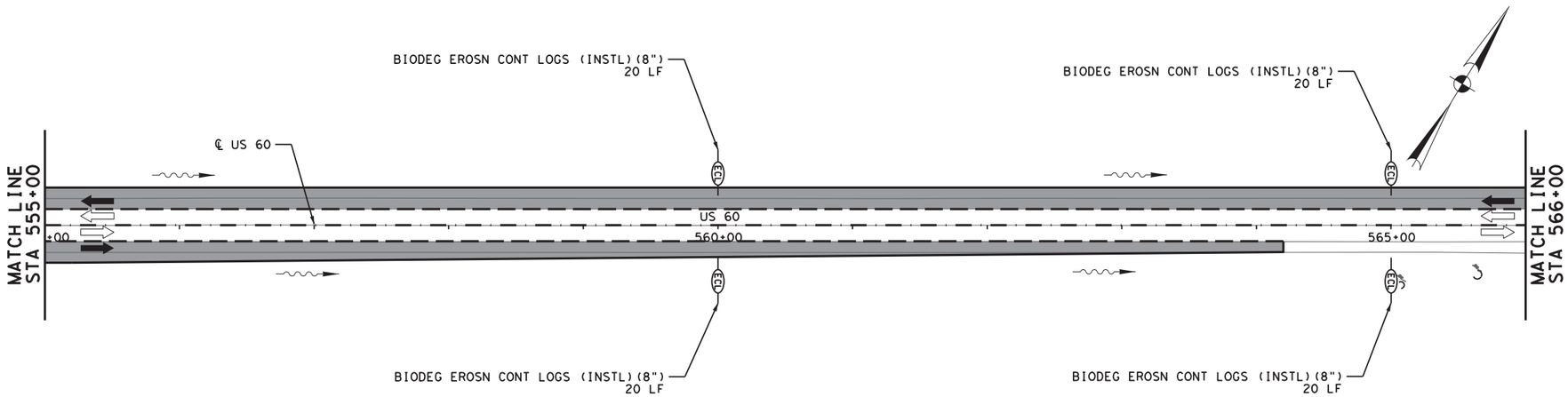


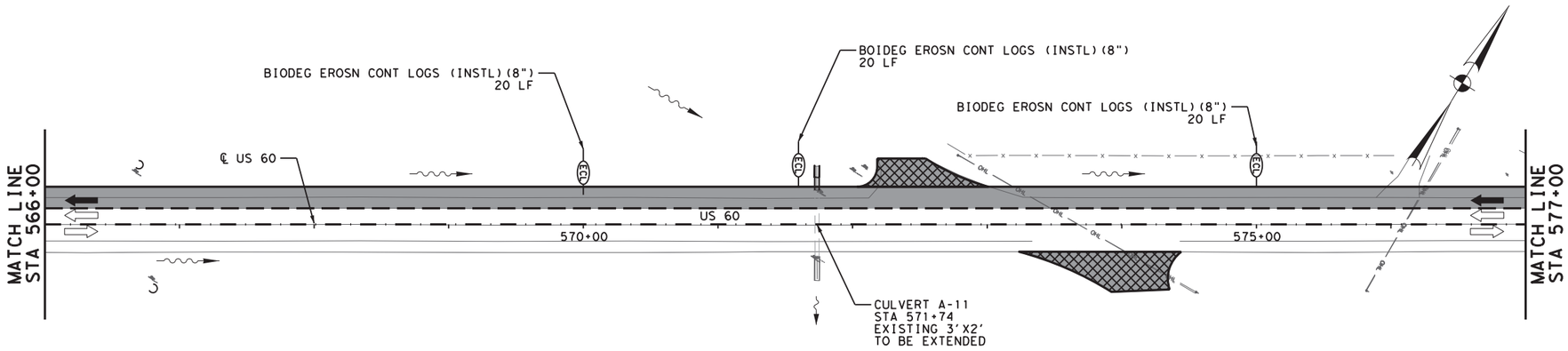


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

04/07/2021

STATE OF TEXAS
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1" = 100'

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# US 60
## SW3P LAYOUT
STA 544+00 TO STA 577+00

SHEET 8 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | | HIGHWAY NO. |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | | US60 |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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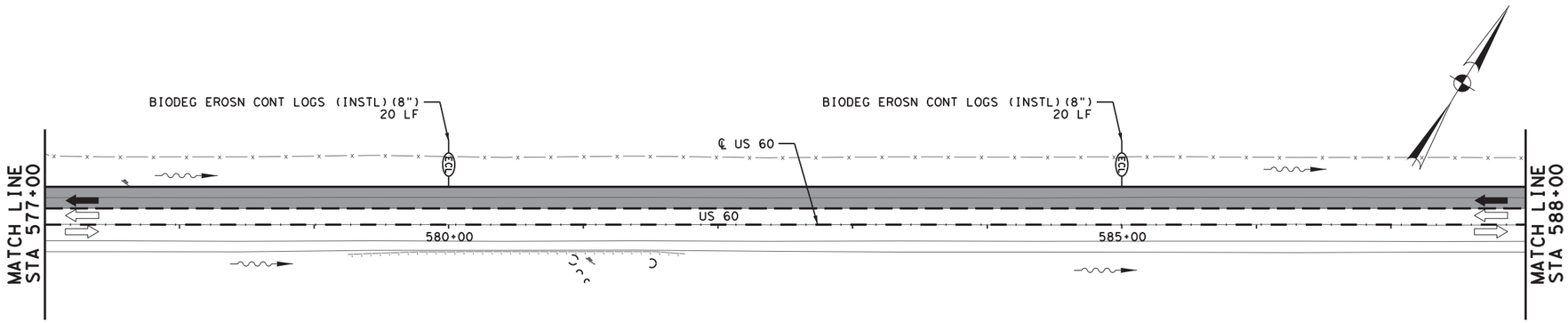


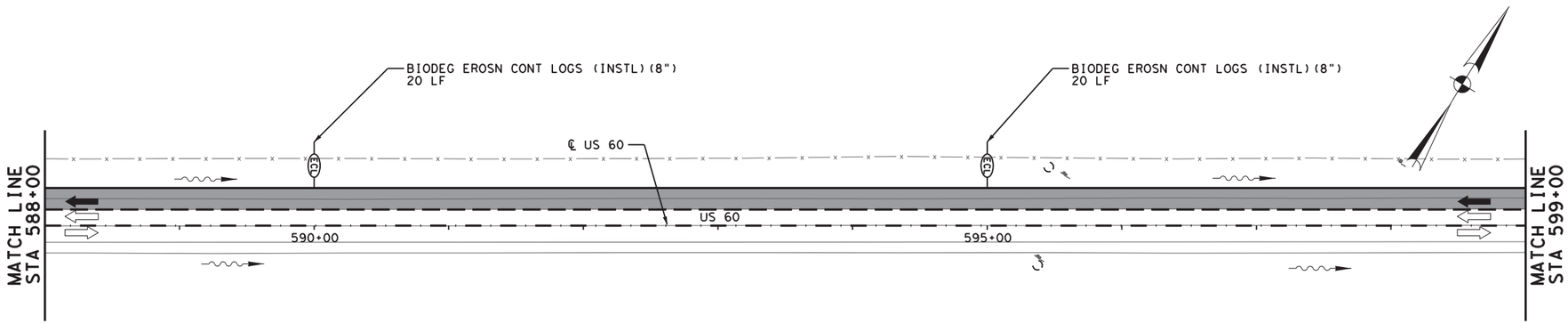


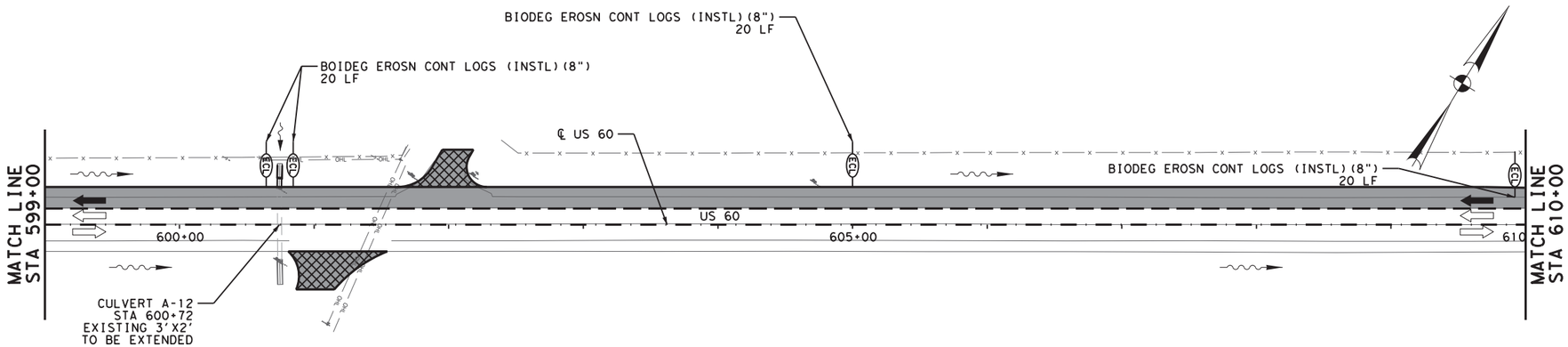


LEGEND

- ECL — EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
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PROFESSIONAL ENGINEER

0 25 50 100
1" = 100'

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|---|---|---|---|
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# US 60
# SW3P LAYOUT
## STA 577+00 TO STA 610+00

SHEET 9 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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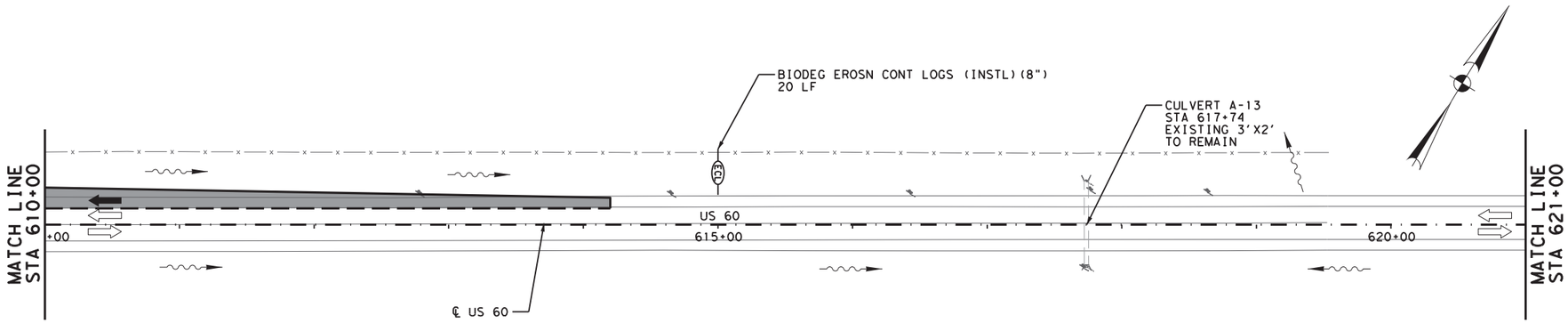


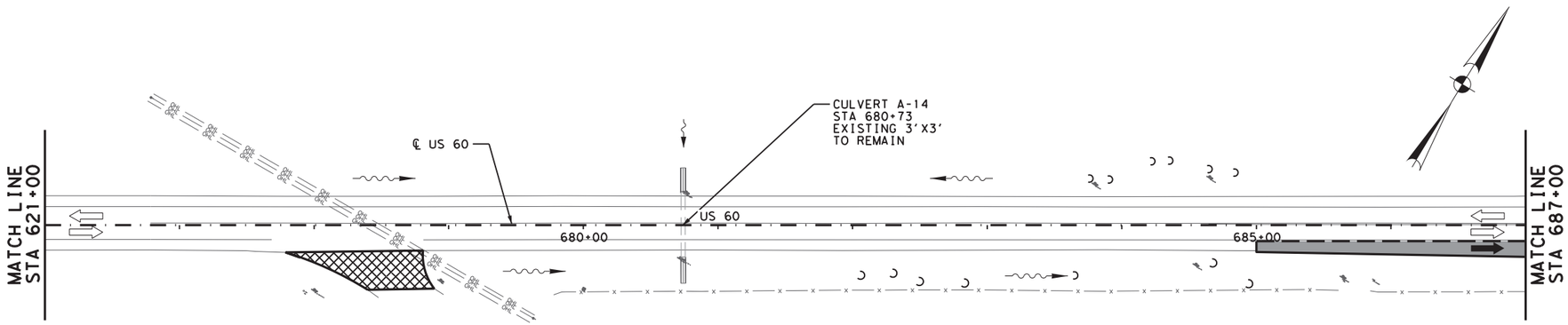


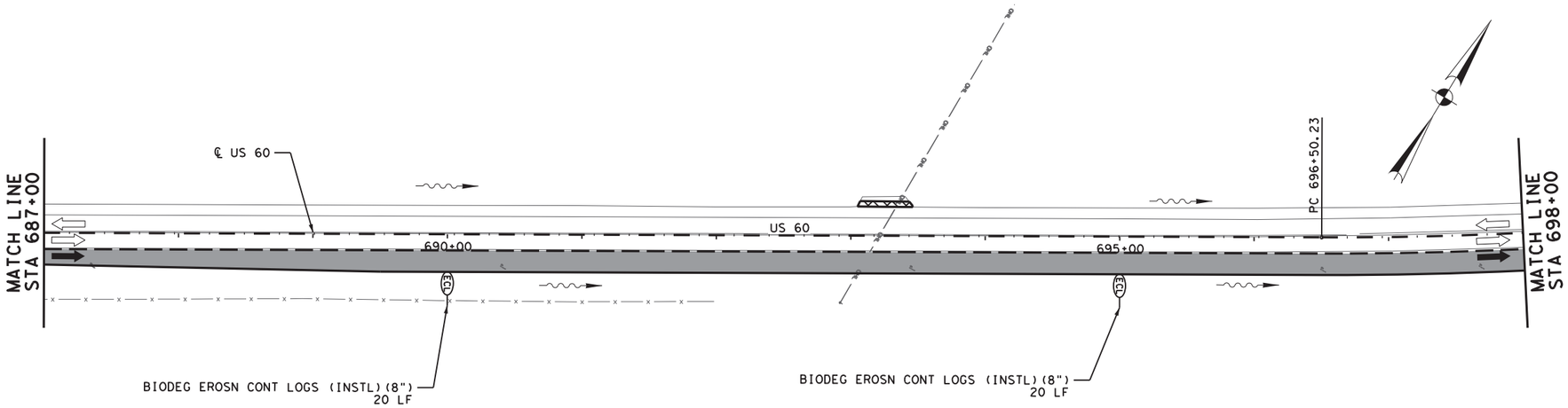


LEGEND

- EROSION CONTROL LOG
- FLOW
- SOIL RETENTION BLANKET

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100
1" = 100'

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# US 60
# SW3P LAYOUT

**STA 610+00 TO STA 689+00**

SHEET **10** OF **12**

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
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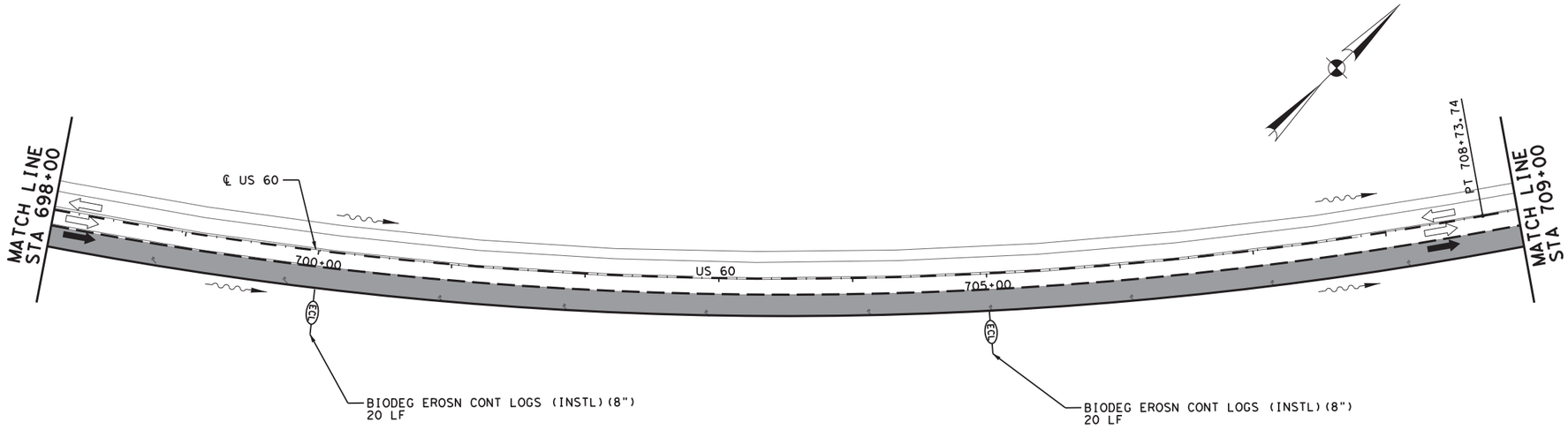


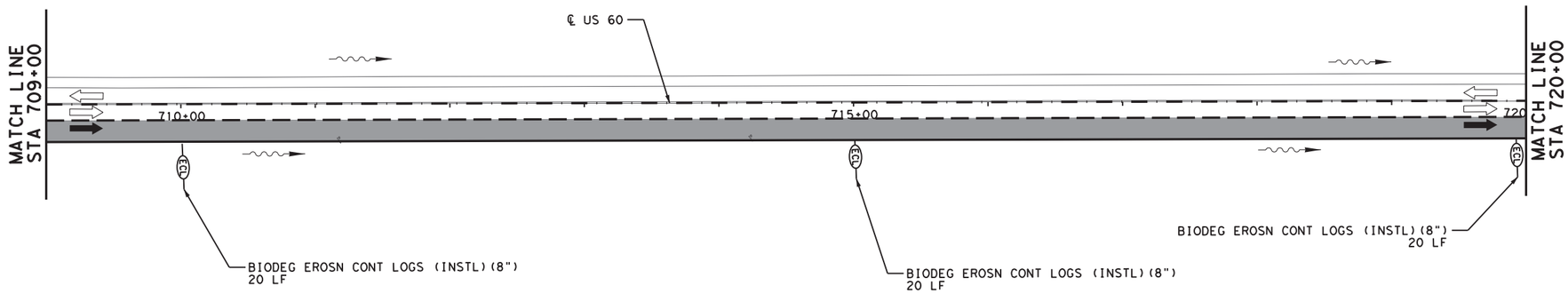


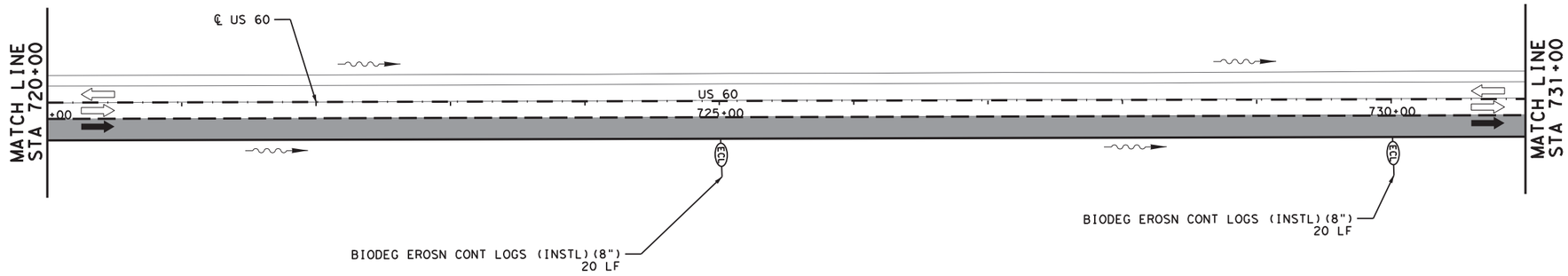


LEGEND

EC1 EROSION CONTROL LOG

FLOW

SOIL RETENTION BLANKET

04/07/2021

STATE OF TEXAS
BO L. RATTO
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PROFESSIONAL ENGINEER

0 25 50 100

1" = 100'

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|---|---|---|---|
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# US 60
## SW3P LAYOUT
**STA 689+00 TO STA 731+00**

SHEET 11 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 263 |

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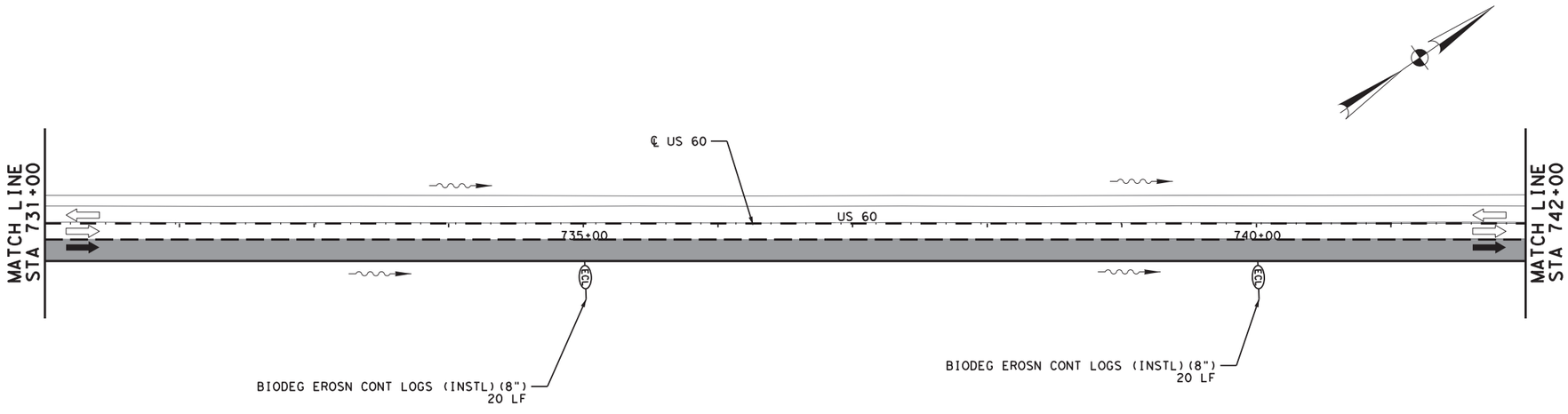


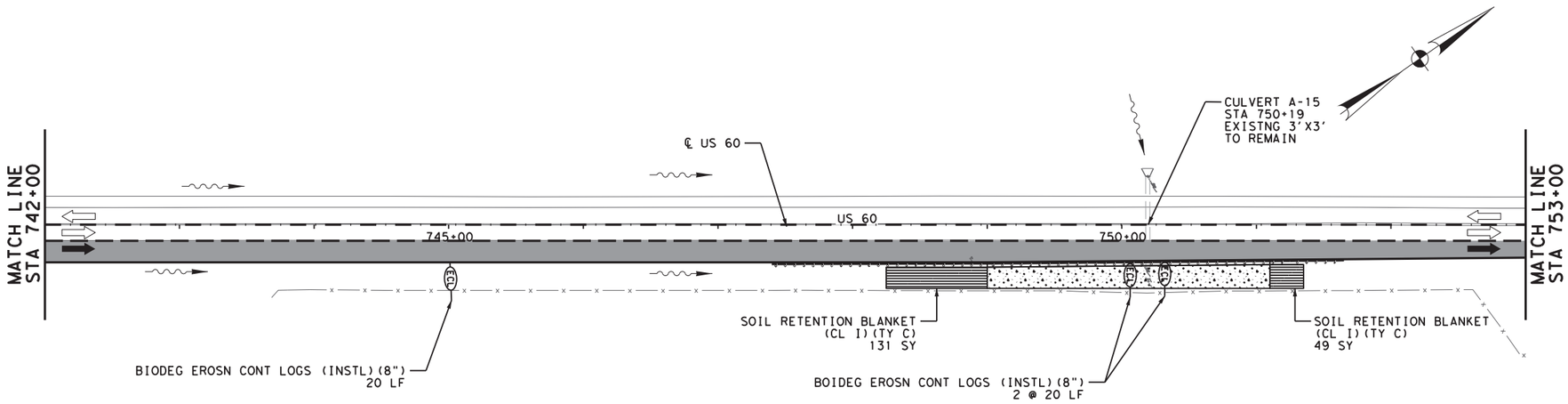


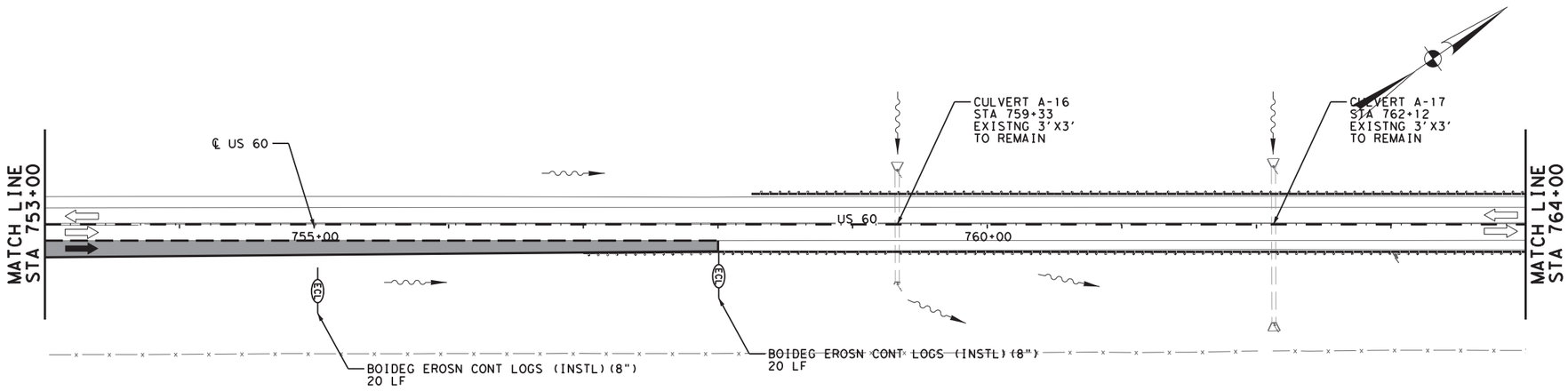


LEGEND

ECL EROSION CONTROL LOG

FLOW

SOIL RETENTION BLANKET

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER

04/07/2021

0 25 50 100

1" = 100'

| REV. NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Ste. 1100
Houston, Texas 77040
713.462.3242
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Texas Department of Transportation

# US 60
# SW3P LAYOUT
## STA 731+00 TO STA 764+00

SHEET 12 OF 12

| FED.RD. DIV.NO. | STATE | PROJECT NO. | | HIGHWAY NO. | |
|---|---|---|---|---|---|
| 6 | TEXAS | (SEE TITLE SHEET) | | US60 | |
| STATE DISTRICT | COUNTY | CONTROL NO. | SECTION NO. | JOB NO. | SHEET NO. |
| AMA | GRAY | 0169 | 07 | 053,ETC | 264 |

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US60_ENV-SW3P-12.dgn

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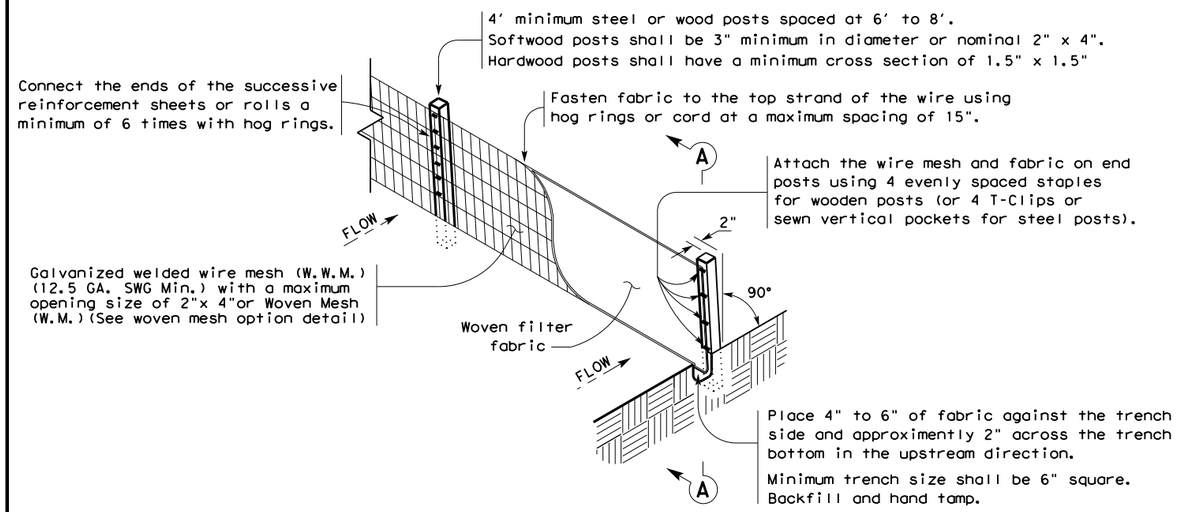
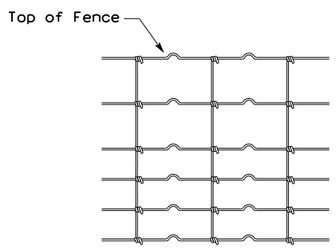
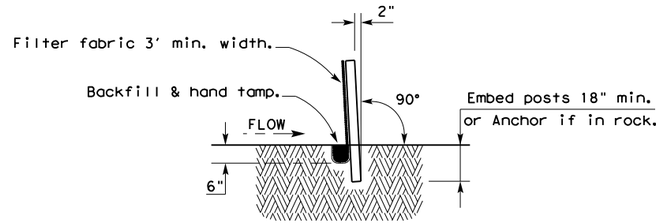



## TEMPORARY SEDIMENT CONTROL FENCE

SCF




## SECTION A-A

## HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

### SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT$^2$. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

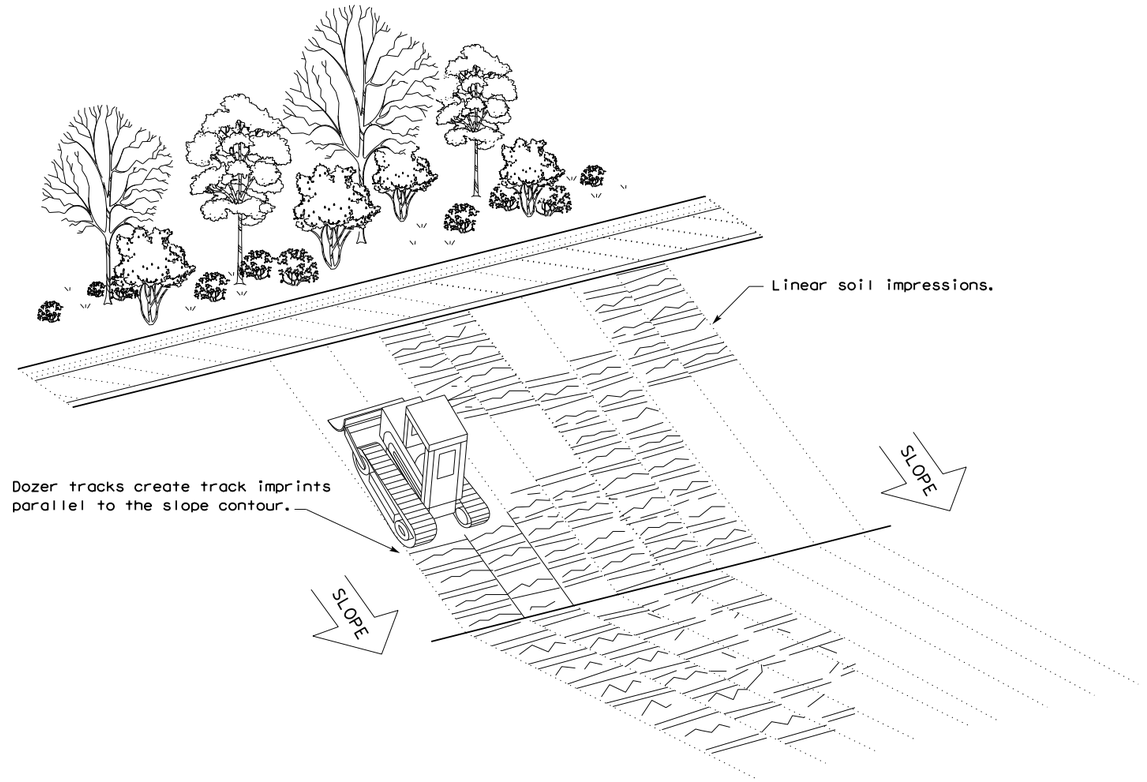
### LEGEND

Sediment Control Fence

SCF

## GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.




## VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

# TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

## FENCE & VERTICAL TRACKING

## EC(1)-16

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE: ec116 | DN: TxDOT | CK: KM | DW: VP | DN/CK: LS | | | |
| © TxDOT: JULY 2016 | CONT | SECT | JOB | HIGHWAY | | | |
| REVISIONS | 0169 | 07 | 053, ETC | US60 | | | |
| | DIST | COUNTY | | SHEET NO. | | | |
| | AMA | GRAY | | 265 | | | |

DATE: 4/7/2021
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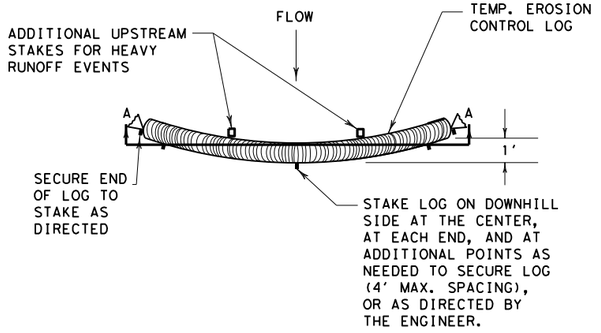
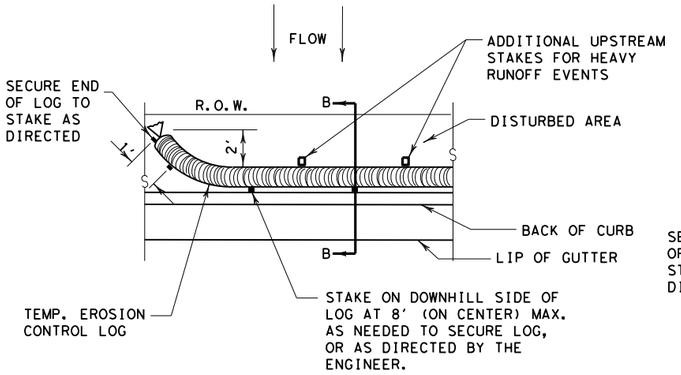
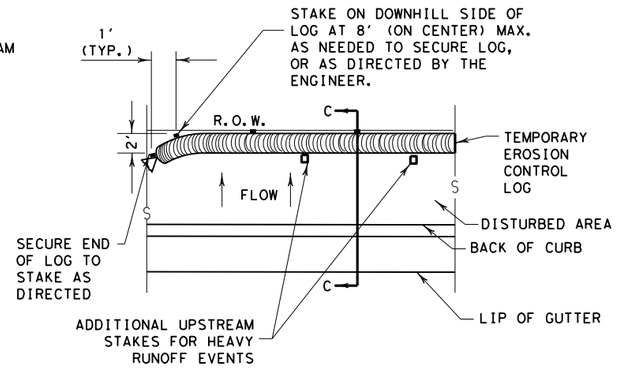


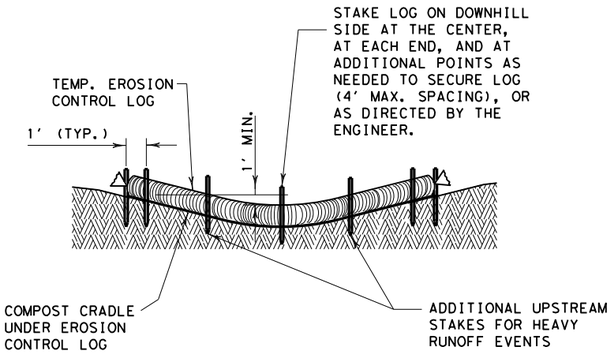

PLAN VIEW




PLAN VIEW



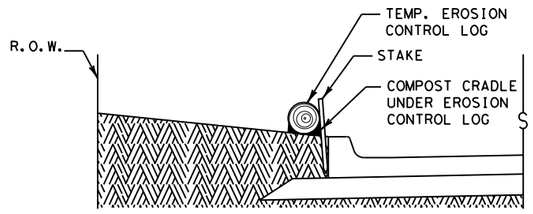

PLAN VIEW




SECTION A-A

EROSION CONTROL LOG DAM

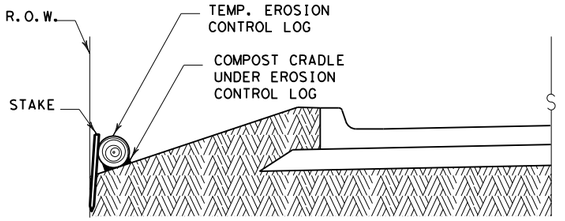
CL-D




SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

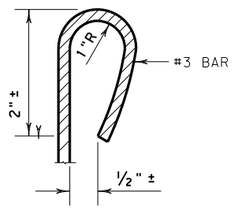
CL-BOC




SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW




REBAR STAKE DETAIL

## GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. 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.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

## LEGEND

- CL-D — EROSION CONTROL LOG DAM
- CL-BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW — EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI — EROSION CONTROL LOG AT DROP INLET
- CL-CI — EROSION CONTROL LOG AT CURB INLET
- CL-GI — EROSION CONTROL LOG AT CURB & GRATE INLET

## SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

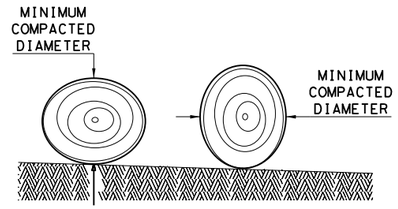
Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.




DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SHEET 1 OF 3

Texas Department of Transportation

Design Division Standard

# TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

## EROSION CONTROL LOG

## EC(9)-16

| FILE: ec916 | DN: TxDOT | CK: KM | DW: LS/PT | CK: LS |
|---|---|---|---|---|
| © TxDOT: JULY 2016 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053, ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 266 |

DATE: 4/7/2021
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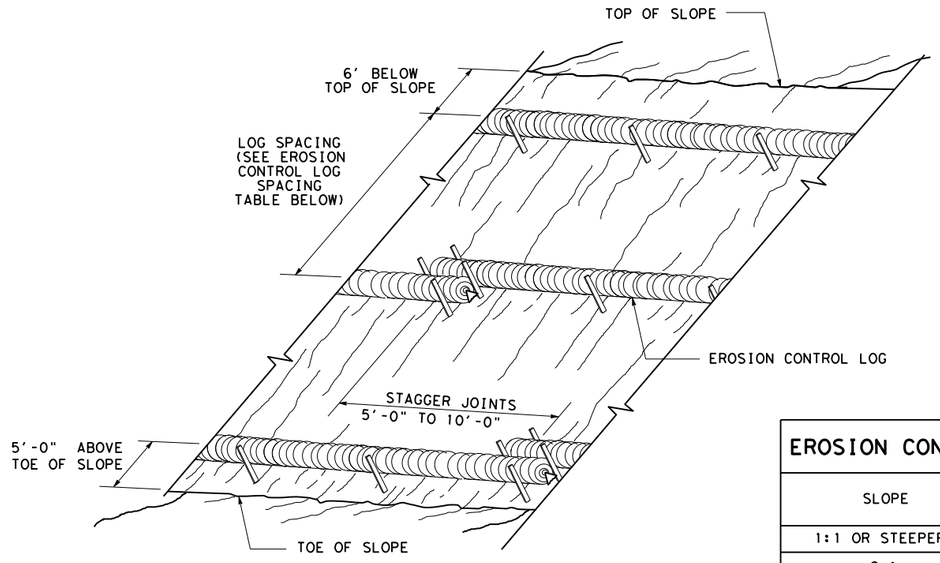
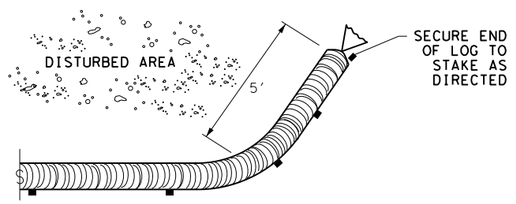



## EROSION CONTROL LOGS ON SLOPES
## STAKE AND TRENCHING ANCHORING

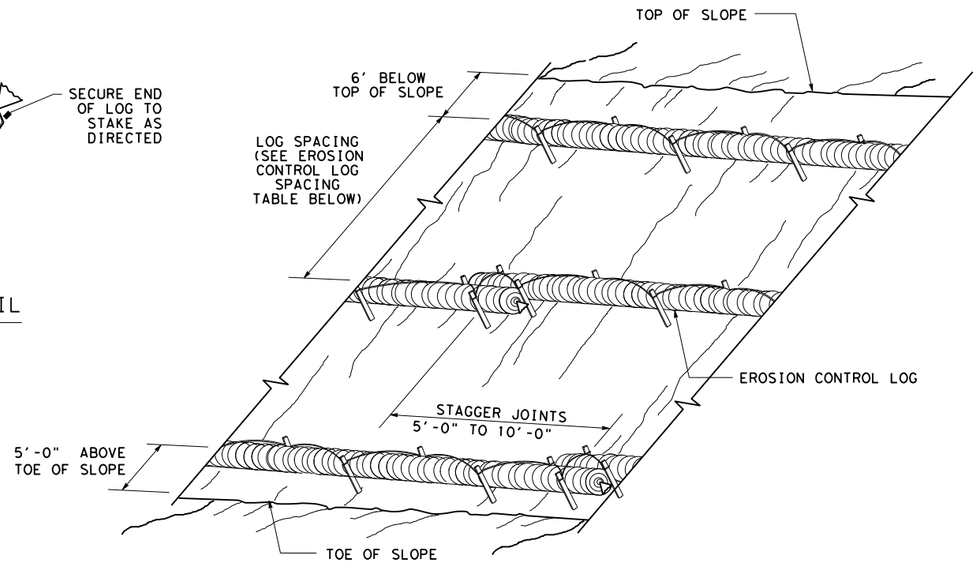
CL-SST




END SECTION RAP DETAIL

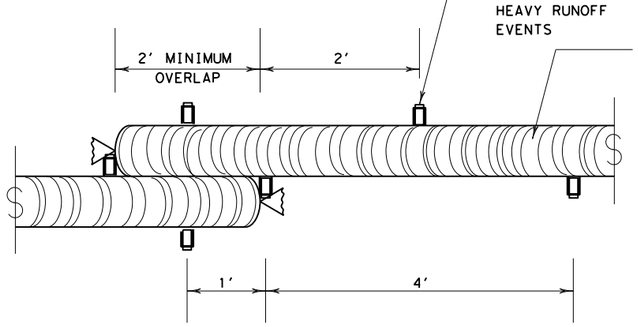
| EROSION CONTROL LOG SPACING TABLE | | | | |
|---|---|---|---|---|
| SLOPE | LOG DIAMETER | | | |
| | 6" | 8" | 12" | 18" |
| 1:1 OR STEEPER | 5' | 10' | 15' | 20' |
| 2:1 | 10' | 20' | 30' | 40' |
| 3:1 | 15' | 30' | 45' | 60' |
| 4:1 OR FLATTER | 20' | 40' | 60' | 80' |

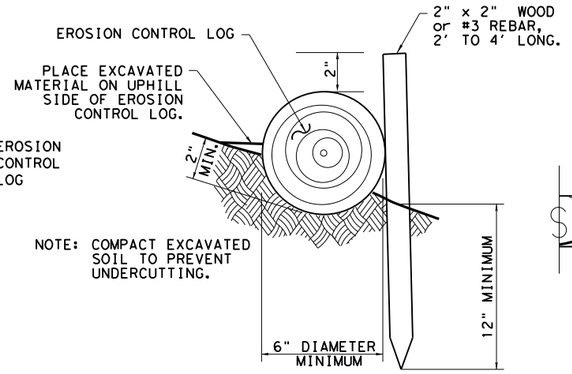
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART




## EROSION CONTROL LOGS ON SLOPES
## STAKE AND LASHING ANCHORING

CL-SSL

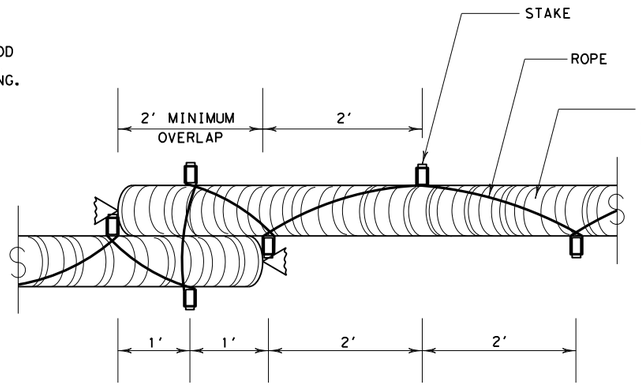


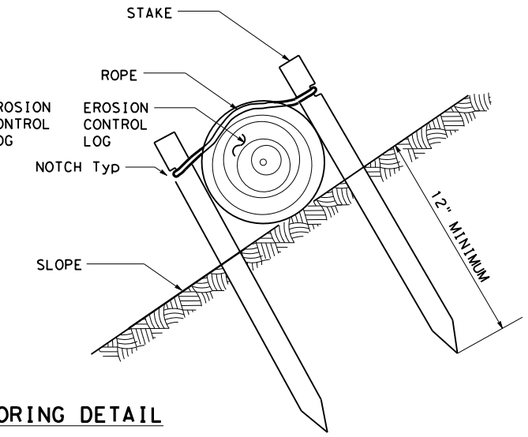




## STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

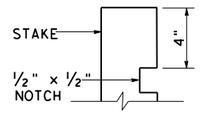
| TRENCH DEPTH TABLE | |
|---|---|
| LOG DIAMETER | DEPTH |
| 6" | 2" |
| 8" | 3" |
| 12" | 4" |
| 18" | 5" |




## STAKE AND LASHING ANCHORING DETAIL

CL-SSL




## STAKE NOTCH DETAIL



Texas Department of Transportation | Design Division Standard

# TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
## EROSION CONTROL LOG
## EC(9)-16

| FILE: ec116 | DN: TxDOT | CK: KM | DW: LS/PT | CK: LS |
|---|---|---|---|---|
| © TxDOT: JULY 2016 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 267 |

DATE: 4/7/2021
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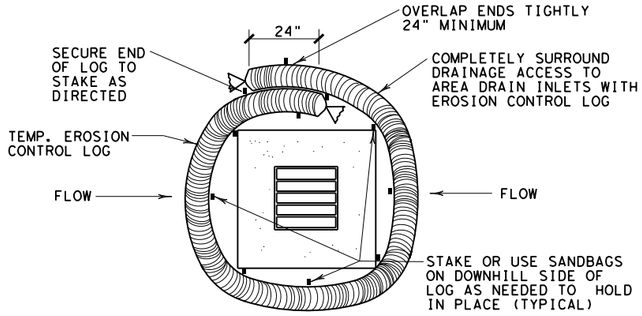
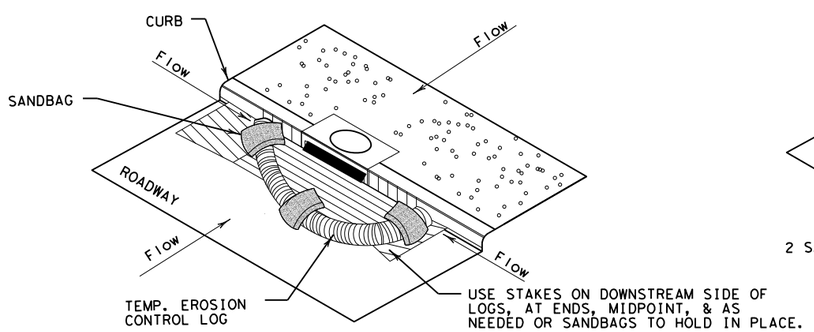


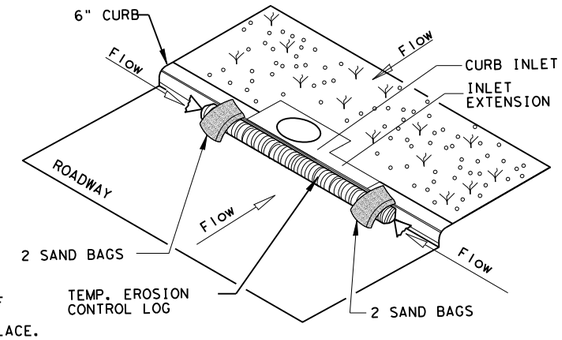

## EROSION CONTROL LOG AT DROP INLET

CL-DI




## EROSION CONTROL LOG AT CURB INLET

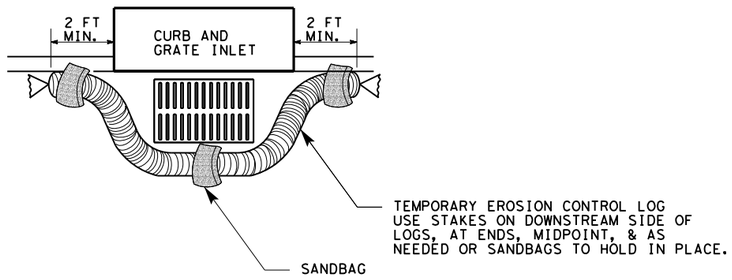
CL-CI




## EROSION CONTROL LOG AT CURB INLET

CL-CI

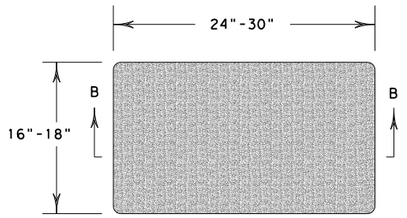
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.




## EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI


SECTION B-B




SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

# TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

## EROSION CONTROL LOG

## EC(9)-16

| FILE: ec916 | DN: TxDOT | CK: KM | DW: LS/PT | CK: LS |
|---|---|---|---|---|
| © TxDOT: JULY 2016 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | 0169 | 07 | 053,ETC | US60 |
| | DIST | COUNTY | | SHEET NO. |
| | AMA | GRAY | | 268 |

## ITEM 164 SEEDING FOR EROSION CONTROL

### SEED (PERM) (RURAL or URBAN) (SAND or CLAY)

| "WARM SEASON" PLANTING DATES | SEED MIXTURE | PURE LIVE SEED RATE & PLANT DEPTH |
|---|---|---|
| PERMANENT: EARLY SPRING<br>SEED FROM FEBRUARY 15th THROUGH May 15th. AS AREAS OF THE ROW ARE PREPARED AND DETERMINED READY FOR DRILL SEEDING. | NEW CROP SEED:<br>TYPE:<br>BUFFALO GRASS (Texoka) "Fluffy"<br>WESTERN WHEATGRASS (ARRIBA) "Hard"<br>BERMUDA GRASS (BLACK JACK) "Hard Tiny Seed" 100% "Unhulled" | 3.0 LBS PLS / ACRE<br>6.0 LBS PLS / ACRE<br>5.0 LBS PLS / ACRE<br>@ 1/4" -1/2" Soil Depth |
| PERMANENT and TEMP. LATE SPRING<br>SEED FROM MAY 15th THROUGH AUGUST 1st AS AREAS OF THE ROW THAT ARE LAID BY BUT DETERMINED TO BE OUT OF SEASON FOR PERMANENT DRILL SEEDING. | TYPE:<br>MILLET (BROWN TOP) "Hard Shell, Small Seed" - Nurse crop<br>BERMUDA GRASS (BLACK JACK) "Hard Tiny Seed" 100% "Unhulled" | 30. LBS PLS / ACRE @ 1/4" Soil Depth<br>5.0 LBS PLS / ACRE |
| SOIL PREPARATION EQUIPMENT AND PRACTICES:<br>RIPPER --- DISK --- HARROW --- CULTI-PACKER. | | |

NOTES:

1. ALL SEED MIXTURE TYPES SHALL BE PURCHASED IN PRE- MIXED BAGS, "BY TYPE" BLENDED BY THE GROWER SHIPPER.
2. SOILS THAT ARE COMPACTED, HAVE CLODS, SHALL BE REWORKED UNTIL READY FOR SEEDING. AS DIRECTED.
3. ALL SOIL SURFACES SHALL BE LEVEL WITH NATURAL FLOWING SMOOTH GRADES. NO TIRE RUTS OR FURTHER TRAFFIC ALLOWED.
4. SOIL SURFACE SHALL BE FIRM BUT NOT COMPACTED, ALLOWING 1/4" DEPRESSION UNDER NORMAL FOOT TRAFFIC.
5. SEED 100% OF THE BED AREA. NO SKIPS OR VOID AREAS ALLOWED. EXAMPLE: AREAS AROUND SIGN POSTS AND INLETS.
6. SEED UP TO THE FIRST 6" OF THE EDGE OF PAVEMENT. AS DIRECTED, HAND RAKE ISOLATED SEEDED AREAS.
7. WEIGH ALL CALIBRATED SEED SAMPLES FOR ACCURACY AND PRESENT DOCUMENTATION TO ENGINEER.

FOR DRILL SEEDING
1. USE ONLY PROFESSIONAL NATIVE GRASS OR TURF GRASS ( MULTI- 3 BIN ) DRILL SEEDERS.
2. CALIBRATE DRILL SEEDER FOR SPECIFIED ( PLS ) PER ACRE BEFORE DRILL SEEDING.
3. DRILL SEEDER MUST BE EQUIPPED WITH THE LARGE FRONT CUTTING COULTERS DURING THE INSPECTION OF DRILL SEEDER.

FOR BROADCAST SEEDING
1. USE ONLY COMMERCIAL TYPE CYCLONE TYPE SPREADERS.
2. CALIBRATE CYCLONE SPREADER FOR 1000 Sq. Ft. ( PLS ) PER ACRE BEFORE SEEDING.
3. TO PREVENT SEED SEPARATION IN SPREADERS, SPREAD ALL SEED TYPES INDEPENDENTLY IN A SEPARATE APPLICATION.
4. IMMEDIATELY AFTER SEEDING, IN ONE OR TWO OPERATIONS, CULTI-PACK THE SEEDED SOILS AND FIRM SEED INTO SURFACE.
5. DISCONTINUE SEEDING IF WIND EXCEEDS 10 MPH.

## ITEM 164 SEEDING FOR EROSION CONTROL

### SEED ( TEMPORARY ) COOL SEASON SEEDING

| "COOL SEASON" PLANTING DATES | SEED MIXTURE | PURE LIVE SEED RATE & PLANT DEPTH |
|---|---|---|
| TEMPORARY: EARLY FALL<br>SEED FROM AUGUST 1st THROUGH DECEMBER 1st. AS AREAS OF THE ROW ARE PREPARED AND DETERMINED READY FOR DRILL SEEDING. | NEW CROP SEED:<br>TYPE:<br>WESTERN WHEATGRASS "Hard Shell"<br>RED WINTER WHEAT, VAR: TAM III "Hard Shell" | 6.0 LBS PLS / ACRE<br>34. LBS PLS / ACRE @ 1" Soil Depth |
| TEMPORARY: LATE FALL<br>SEED FROM DECEMBER 1st THROUGH DECEMBER 31ST. AS AREAS OF THE ROW ARE PREPARED AND DETERMINED READY FOR DRILL SEEDING. | NEW CROP SEED:<br>TYPE:<br>RED WINTER WHEAT, VAR: TAM III "Hard Shell" | 34. LBS ACRE / PLS @ 1" Soil Depth |
| SOIL PREPARATION EQUIPMENT AND PRACTICES:<br>RIPPER --- DISK --- HARROW --- CULTI-PACKER. | | |

## ITEM 314 EMULSIFIED ASPHALT TREATMENT

**TIME SCHEDULE:**

IMMEDIATELY AFTER SOIL PREPARATION OR WITHIN 24 HOURS AFTER SEEDING, APPLY THE TACK COAT TO DESIGNATED SOIL SURFACES.

**FUNCTIONAL USE:**

SOIL EROSION CONTROL, OR MOISTURE RETENTION BARRIER.

NOTES:

1. ALL TRUCK APPLICATIONS SHALL BE COMPLETED IN ONE PASS OF THE DISTRIBUTOR. ALL TOUCH UP WORK WILL BE FINISHED BY HAND AND HOSE PROCEDURES. APPLY FROM EDGE OF PAVEMENT THROUGH THE FULL SPECIFIED AREAS.
2. ENGINEER WILL INSPECT FOR ACCURACY THE OVERALL DEPTH OF THE APPLIED TACK COAT MATERIALS.
3. FURTHER VEHICULAR TRAFFIC IS NOT ALLOWED ON LAID BY TACK COAT SURFACES. AT THE CONTRACTORS EXPENSE ALL DAMAGES TO TACK COAT SURFACES WILL BE RE -SHOT AS DIRECTED BY THE ENGINEER.

## ITEM 166 FERTILIZER

**TIME SCHEDULE:**

AFTER TOPSOIL PLOWING PEPARATIONS ARE COMPLETED, FERTILIZE R.O.W. SOIL SURFACES AND HARROW 2" TO 4" DEEP INTO PLACE.

**FUNCTIONAL USE:**

PLANT NUTRIENTS FOR PLANT AND ROOT DEVELOPMENT.

FERTILIZER SHALL BE EVENLY DISTRIBUTED AT A RATE OF 28 LBS OF NITROGEN PER ACRE.
THE BREAK DOWN OF THE NITROGEN ELEMENT SHALL BE IN A 50% SLOW RELEASE FORM.
ANALYSIS OF THE (NPK) IS: 1-5-0 A HIGH PHOSPHATE BLEND. AS DIRECTED BY THE VEGETATION MANAGER.

ITEM 166 NOTES:

1. BROADCAST SPECIFIED FERTILIZER FROM THE EDGE OF PAVEMENT, THROUGH THE ENTIRE ROW SEED BED AREA. APPLICATIONS FOR EDGE OF PAVEMENT, CULVERTS, SIGN POST AREAS, GUARD RAILS AND ISOLATED AREAS SHALL BE APPLIED BY WALK BEHIND SPREADERS AND BY HAND. NO FERTILIZER ALLOWED ON PAVEMENT SURFACES.

2. ALL SPREADERS SHALL BE CALIBRATED BY THE CONTRACTOR AND THE ENGINEER FOR ACCURACY AND PERFORMANCE. SHALL USE UNOPENED 50# BAGS OF SPECIFIED FERTILIZER FOR DAILY CALIBRATIONS. APPLICATION SHALL BE A EVEN DISTRIBUTION OF PRODUCT ON DESIGNATED SOIL SURFACES.

3. FERTILIZER SHALL BE DELIVERED IN 50# BAGS UNLESS OTHERWISE SPECIFIED OR APPROVED PRIOR TO DELIVERY. BAGS SHALL BE CLEARLY LABELED SHOWING CONTENTS. IF BULK FERTILIZER IS APPROVED, DOCUMENTATION WILL BE REQUIRED FOR EACH LOAD OF MATERIAL DELIVERED VERIFYING AUTHENTICITY OF THE MATERIAL. CULTURAL PROCEDURES ARE UNDER THE DIRECTION OF THE TXDOT VEGETATION MANAGER.

04/07/2021

STATE OF TEXAS
BO L. RATTO
113226
LICENSED
PROFESSIONAL ENGINEER



Texas Department of Transportation

# VEGETATION SPECIFICATION SHEET

| FED. RD. DIV. NO. | CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|---|
| 6 | 0169 | 07 | 053, ETC | US60 |
| FEDERAL AID PROJECT NO. | DIST | COUNTY | | SHEET NO. |
| SEE TITLE SHEET | AMA | GRAY | | 269 |

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FILE: F:\Projects\2019\11004.TxDOT_5x5_PS&E\03.US60_Amarillo\ENG\500-USTN\511.4-Environmental\05-Standards\Vegetation Specs.dgn