INDEX OF SHEETS

INDEX OF SHEETS

FINAL PLANS

SHEET NO. DESCRIPTION TITLE SHEET

DATE OF LETTING: _

DATE WORK BEGAN:
DATE WORK COMPLETED:
DATE WORK ACCEPTED:
FINAL CONTRACT COST: _\$
CONTRACTOR:
LIST OF APPROVED FIELD CHANGES, CHANGE ORDERS & SUPPLEMENTAL AGREEMENTS:
HIS IS TO CERTIFY THAT ALL CONSTRUCTION SUBSTANTIAL
ORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS PECIFICATIONS AND CONTRACT.ALL PROPOSED CONSTRUCTION
AS COMPLETED UNLESS OTHERWISE NOTED.
FRANCISCO CANTU, P.E. DATE ROMA AREA ENGINEER

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

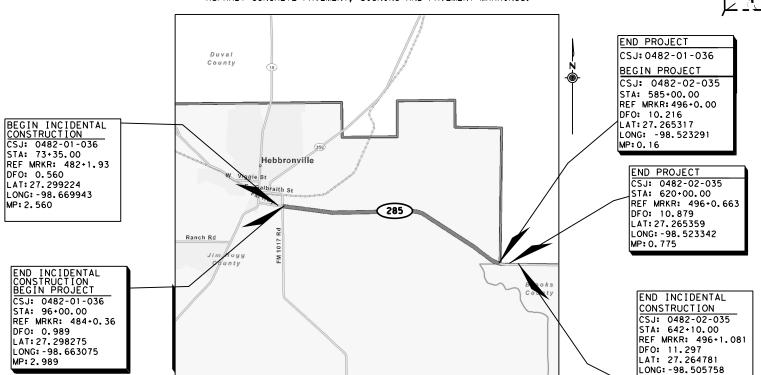
FEDERAL AID PROJECT NUMBER NH 2B24(072) CSJ 0482-01-036, ETC.

NET LENGTH OF PROJECT = 52,400 FEET = 9.924 MILES -- BRIDGE = 135 FEET = 0.026 MILES

JIM HOGG, ETC. SH 285

FROM: FM 1017 TO: JIM HOGG/BROOKS COUNTY LINE

FOR THE CONSTRUCTION OF WIDENING AND REHABILITATION OF EXISTING HIGHWAY (SUPER 2 HIGHWAY) CONSISTING OF: CEMENT TREATED SUBGRADE. CEMENT TREATED FLEX BASE. DRAINAGE STRUCTURES. ASPHALT CONCRETE PAVEMENT, SIGNING AND PAVEMENT MARKINGS.



LOCATION MAP NOT TO SCALE

PROJECT DATA

0482 01 036,Etc.

COUNTY PHR JIM HOGG, E+c. SH 285

SHEET NO.

DESIGN SPEED: 75 MPH

HIGHWAY FUNCTIONAL CLASS: MINOR ARTERIAL

TRAFFIC VOLUMES: 2022 ADT 4,968 2042 ADT 6,951

DIST

PERCENT TRUCKS: 25.8% ADT EXCEPTIONS: NONE EQUATIONS: NONE RAILROAD CROSSINGS: NONE

TDLR INSPECTION NOT REQUIRED

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, OCTOBER 23, 2023).

Texas Department of Transportation ALL RIGHTS RESERVED

RECOMMENDED FOR LETTING:

MP: 1.241

Pedro R. Alvarez

DISTRICT ENGINEER

2/29/2024 DATE:

PROJECT LOCATION

FOR LETTING:

2/29/2024 DATE:

- DocuSigned by:

Romualdo Mena ()r

DISTRICT CENTRAL DESIGN SUPERVISOR

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18-21	ESTIMATE & QUANTITY SHEETS
22-29	GENERAL NOTES
30-37	EARTHWORK SUMMARY

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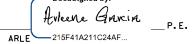
	THAT I'V CONTINUE I LAI
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```
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>> 165
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          [S] SLED - 19
           [S] TREATMENT FOR VARIOUS EDGE CONDITIONS
```



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



2/8/2024

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242	CULVERT CROSSING STA. 273+78 & STA. 285+13
243	CULVERT CROSSING STA. 311+00 & STA. 360+24
244	CULVERT CROSSING STA. 392+01 & STA. 415+36
245	CULVERT CROSSING STA. 442+00 & STA. 456+74
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____ P.E.

2/8/2024

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[S] STATE STANDARDS [D] DISTRICT STANDARDS



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Pharr District Central Design



SH 285 INDEX OF SHEETS

			SHE	ET	1 OF 1
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.	SH 285	
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		2

2/8/2024

PHR

JIM HOGG

PHR

JIM HOGG



Pharr District Central Design



SH 285 PROJECT LAYOUT

SCALE=	1 " = 350	ο,	SHEET 4 OF 4							
© 2024	CONT	SECT	JOB		HIGHWAY					
	0482	01	036,etc.		SH 285					
	DIST		COUNTY		SHEET NO.					
	PHR		JIM HOGG		6					

STA 199+95 TO STA 201+30

LEGEND

€ - CENTER LINE

PGL - PROFILE GRADE LINE

PCJ - PERMISSIBLE CONSTRUCTION JOINT

R.O.W. - RIGHT OF WAY

SHLDR - SHOULDER

NOTES:

A MINIMUM OF 4" OF THE PROPOSED BASE LAYER SHALL BE NEW. IF SALVAGE AND DETOUR MATERIAL PERMITS, 8" OF THE PROPOSED BASE LAYER SHALL BE USED FROM SALVAGE MATERIAL REMOVED UNDER ITEM 105-6020 AND REWORKED AS PER PERTINENT ITEM 251-6158.

THERE SHALL BE NO WORK DONE ON BRIDGE SECTION APART FROM REMOVING AND REPLACING THE METAL BEAM GUARD FENCE.

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

WHERE POSSIBLE AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER, PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON STRIPING LINES AS SHOWN ON THE PAVEMENT MARKINGS LAYOUTS.

ALL GRADING SHALL BE DONE WITHING R.O.W. LIMITS UNLESS OTHERWISE NOTED ON PLANS. TOPSOIL TO BE SCARCIFIED, SALVAGED, AND STOCKPILED IN THE R.O.W.

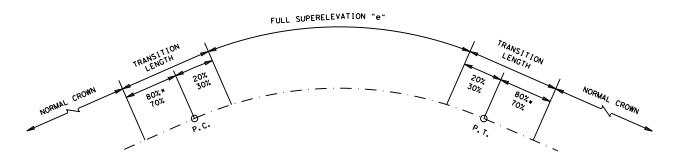


Pharr District Central Design



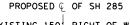
SH 285 PROPOSED TYPICAL SECTIONS

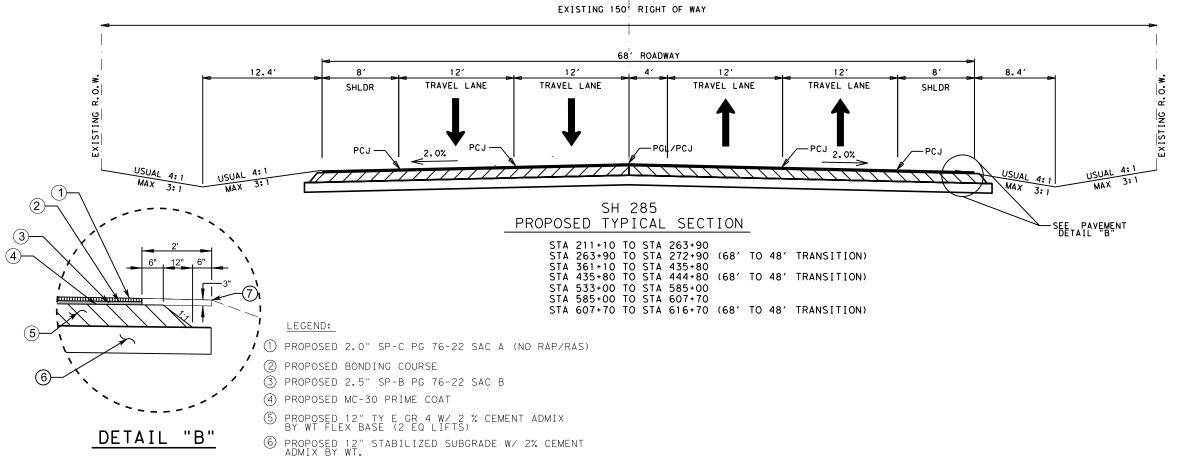
SUPERELEVATION DATA & SH 285



						TRANSIT	ION LENGTHS	AT P.C.	TRANSITION LENGTHS AT P.T.			
CURVE ID	P.C. STA	P.T. STA	RADIUS (FT)	e%	STATION LIMITS FULL "e"	BEGIN STA	END STA	LENGTH	BEGIN STA	END STA	LENGTH	
CURVE 08	176+74.99	181+58.98	11,459.16	2.2%	177+21.49 TO 181+12.48	175+66.49	177+21.49	155	181+12.48	182+67.48	155	
* CURVE 11	219+40.36	224+87.03	5,729.58	3.8%	219+99.96 TO 224+27.43	217+01.96	219+99.96	298	224+27.43	227+25.43	298	
* CURVE 14	371+47.04	398+45.71	4,583.66	4.6%	372+14.84 TO 397+77.91	368+75.84	372+14.84	339	397+77.91	401+16.91	339	
CURVE 17	518+05.58	524+05.58	5,729.58	3.8%	518+69.78 TO 523+41.38	516+55.78	518+69.78	214	523+41.38	525+55.38	214	
CURVE 20	561+00.00	599+00.00	5,729.58	3.8%	561+89.40 TO 598+10.60	558+91.40	561+89.40	298	598+10.60	601+08.6	298	

AS PER TABLE 2-4 MINIMUM RADAII AND SUPERELEVATION RATES FOR HIGH-SPEED OR NON-URBAN FACILITIES, emox =6% AS PER TABLE 2-8 PORTION OF SUPERELEVATION TRANSITION LOCATED ON THE TANGENT





7 PROPOSED TY "A" BACKFILL (ITEM 134)

LEGEND

된 - CENTER LINE

PGL - PROFILE GRADE LINE

PCJ - PERMISSIBLE CONSTRUCTION JOINT

R.O.W. - RIGHT OF WAY

SHLDR - SHOULDER

NOTES:

A MINIMUM OF 4" OF THE PROPOSED BASE LAYER SHALL BE NEW. IF SALVAGE AND DETOUR MATERIAL PERMITS, 8" OF THE PROPOSED BASE LAYER SHALL BE USED FROM SALVAGE MATERIAL REMOVED UNDER ITEM 105-6020 AND REWORKED AS PER PERTINENT ITEM 251-6158.

THERE SHALL BE NO WORK DONE ON BRIDGE SECTION APART FROM REMOVING AND REPLACING THE METAL BEAM GUARD FENCE.

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

WHERE POSSIBLE AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER, PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON STRIPING LINES AS SHOWN ON THE PAVEMENT MARKINGS LAYOUTS.

ALL GRADING SHALL BE DONE WITHING R.O.W. LIMITS UNLESS OTHERWISE NOTED ON PLANS. TOPSOIL TO BE SCARCIFIED, SALVAGED, AND STOCKPILED IN THE R.O.W.



Pharr District Central Design



SH 285 PROPOSED TYPICAL SECTIONS

SHEET 3 OF 3

© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG	10	

ATE: 2/7/2024 10:49:13 AM 11F: pw://+ydot.projectwiseonline.com:TXDOT5/Documents/21 -

	SUMMARY OF REMOVAL ITEMS 1.04														
104 104 496 496 496 496 542 542 544 * * * 6028 6054 6004 6005 6006 6007 6008 6001 6004 6003															
	6028	6054	6004	6005	6006	6007	6008	6001	6004	6003	-				
SH 285	REMOVING CONC (MISC)	REMOVING CONCRETE (MOW STRIP)	REMOV STR (SET)	REMOV STR (WINGWAL L)	REMOV STR (HEADWAL L)	REMOV STR (PIPE)	REMOV STR (BOX CULVERT)	REMOVE METAL BEAM GUARD FENCE	RM MTL BM GD FENCE TRANS (THRIE-B EAM)	GUARDRAIL END TREATMENT (REMOVE)	ASPHALT	REMOVE GRAVEL DRIVEWAY	REMOVE DIRT DRIVEWAY		
	SY	LF	EΑ	EΑ	EA	LF	LF	LF	EΑ	EΑ	SY	SY	SY		
SHEET 1 OF 22	9			2	4	138	76					500			
SHEET 2 OF 22	3				2	76					112				
SHEET 3 OF 22	10			4			152				60				
SHEET 4 OF 22	-										352				
SHEET 5 OF 22	-	872						475	4	4	210	111			
SHEET 6 OF 22	3			2			68								
SHEET 7 OF 22	3			2			76				1056				
SHEET 8 OF 22	17			2			132								
SHEET 9 OF 22	-														
SHEET 10 OF 22	10			2			66					548	97		
SHEET 11 OF 22	-														
SHEET 12 OF 22	13			2			66								
SHEET 13 OF 22	7			2			71								
SHEET 14 OF 22	17			2			132				202				
SHEET 15 OF 22	11			2		30	66					308			
SHEET 16 OF 22	11			2	2	136	66					253			
SHEET 17 OF 22	1 4			2			132				242				
SHEET 18 OF 22	4			2			66								
SHEET 19 OF 22	14			2			132				309	75			
SHEET 20 OF 22	-														
SHEET 21 OF 22 (UP TO STA 585+00)	10			2			72								
CSJ 0482-01-036 TOTALS	156	872	0	32	8	380	1373	475	4	4	2543	1 795	97		
SHEET 21 OF 22 (FROM STA 585+00)											194	234			
SHEET 22 OF 22			2			160									
CSJ 0842-02-035 TOTALS	0	0	2	0	0	160	0	0	0	0	194	234	0		
PROJECT TOTALS	156	872	2	32	8	540	1373	475	4	4	2737	2029	97		

* FOR CONTRACTOR INFORMATION ONLY (NON-PAY).

PROJECT TOTALS	1.00	74	4	1140	50
	LS	MO	EA	DAY	DAY
SH 285	MOBILIZATI ON	BARRICADES, SIGNS AND TRAFFIC HANDLING	PORTABLE CHANGEAB LE MESSAGE SIGN	TMA (STATIONA RY)	TMA (MOBIL OPERATION
	500 6001	502 6001	6001 6002	6185 6002	6185 6005
9				EMS	





			SHE	EΤ	1 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY	SHEET NO.	
	PHR		ли носс		11

						SUMMAF		ZONE TRAF	FIC CONTRO	L ITEMS										
	508 6001	510 6003	512 6001	512 6025	512 6049	545 6019	545 6003	545 6005	662 6008	662 6037	662 6067	662 6071	662 6075	662 6080	662 6090	662 6098	662 6050	662 6096	677 6001	678 6002
SH 285		ONE WAY	PORT CTB (FUR & INST) (SGL SLOPE) (TY	PORT CTB	PORT CTB	CRASH CUSH ATTEN (INSTL) (S) (N) (TL3	CRASH CUSH ATTEN (MOVE & RESET)												ELIM EXT PAV MRK & MRKS (4")	
	SY	MO	LF	LF	LF	EA	EA	EA	LF	LF	LF	LF	LF	EA	EA	LF	EΑ	LF	LF	LF
PHASE I																				
PHASE I STEP I	-	1	3210	-	-	4	-	-	5010	-	751		40			7200	180		12530	270
PHASE I STEP II	-		-	3210	-	4	4		-	-	9640		-			10240	258		3560	540
STA. 189+20 TO STA. 215+60	-		-	-	-								-			-				
PHASE II																				
PHASE II STEP I (DETOUR)	14779		-	-	-	-	-	-			-		-			-			-	
PHASE II STEP II	-		5340	3210		2	10		18640	18640	7830		-			7830	665		24430	
PHASE II STEP II STAGE A	-		300	-		2	1		7200	7200	320		36			640	16		4200	
PHASE II STEP II STAGE B	-		-	300		-	5				8340		36			7920	18		3896	
PHASE II STEP III			300	8550			12				21834	82	28	1	1	21834	654			
STA. 96+00 TO STA. 189+20																				
PHASE III																				
PHASE III STEP I (DETOUR)	14093		-	-	-	-	-	-			-									
PHASE III STEP II			150	8850			10		17980	17980	10240					10240	708		27060	
PHASE III STEP III				8280			4			-	23420	-	-	-	-	23420	578	220		
STA. 215+60 TO STA. 305+50											-	-	-	-	-	-				
PHASE IV																				
PHASE IV STEP I (DETOUR)	22932																			
PHASE IV STEP II			7650	9000			12		34380	34380	8840					8840	1139		33460	
PHASE IV STEP III			360	16550			12	4			37640					38320	944		2400	
STA. 305+50 TO STA. 477+40																				
PHASE V																				
PHASE V STEP I (DETOUR)	13581																			
PHASE V STEP II				10120			5		20120	20120	8660					8660	725		25265	
PHASE V STEP III				10610			5	5			24840					25520	621		2040	
STA. 477+40 TO STA. 585+00 and 620+00 to 62	?7+00				17310															
CSJ 0482-01-036 TOTALS	65385	1	17310	78680	17310	12	80	9	103330	98320	162355	82	140	1	1	170664	6506	220	138841	810
PHASE V (585+00 TO 620+00)																				
PHASE V STEP I (DETOUR)	4803		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-		
PHASE V STEP II			-	3430	0		3	2	7000	7000	0						175		4355	
PHASE V STEP III				3430			1	1			7000					7000	175		0	
STA. 585+00 TO STA. 620+00																				
CSJ 0482-02-035 TOTALS	4803	0	0	6860	0	0	4	3	7000	7000	7000	0	0	0	0	7000	350	0	4355	0
PROJECT TOTALS	70188	1	17310	85540	17310	12	84	12	110330	105320	169355	82	140	1	1	177664	6856	220	143196	810





			SHE	EΤ	2 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		12

SUAMARY OF ROADWAY ITEMS												
	1 100	134	204	354	400	400	402	432	432	464	467	530
	6002	6001	6003	6021	6001	6011	6001	6045	6003	6003	6363	6005
SH 285	PREPARING ROW	BACKFILL (TY A)	SPRINKLIN G (DUST CONTROL)	PLANE ASPH CONC PAV(0" TO 2")	STRUCT EXCAV	SAND BACKFILL	TRENCH EXCAVATI ON PROTECTI ON	RIPRAP (MOW STRIP) (4 IN)	RIPRAP (CONC) (6 IN)	RC PIPE (CL III) (18 IN)	SET (TY II) (18 IN) (RCP) (6: 1) (P	DRIVEWAYS (ACP)
	STA	STA	MG	SY	CY	CY	LF	CY	CY	LF	EA	SY
SHEET 1 OF 44	12	12	48	190	-	-	-	-	-	104	6	355
SHEET 2 OF 44	12	12	48	-	-	-	-	-	=	32	2	111
SHEET 3 OF 44	12	12	48	-	-	-	-	-	-	32	2	111
SHEET 4 OF 44	12	12	48	-	-	-	-	-		-	-	-
SHEET 5 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 6 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 7 OF 44	12	12	48	-	-	-	-	-	-	72	4	256
SHEET 8 OF 44	12	12	48	-	-	-	-	-	-	32	2	126
SHEET 9 OF 44	12	12	48	-	-	-	-	56	-	-	-	-
SHEET 10 OF 44	12	12	48	-	-	-	-	-	-	72	4	227
SHEET 11 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 12 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 13 OF 44	12	12	48	-	-	-	-	-	=	32	2	96
SHEET 14 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 15 OF 44	12	12	48	-	-	-	-	-		32	2	109
SHEET 16 OF 44	12	12	48	-	-	-	-	-		-	-	-
SHEET 17 OF 44	12	12		-	-	-	_	-			-	-
SHEET 18 OF 44	12	12	48	-	-	-	-	-				
SHEET 19 OF 44 SHEET 20 OF 44	12	12	48	_	-	-		_		32	2	111 358
SHEET 21 OF 44	12	12	48	-						96	-	- 336
SHEET 22 OF 44	12	12	48	_						_	-	_
SHEET 23 OF 44	12	12	48	_	_	_	_	_	_	_	_	_
SHEET 24 OF 44	12	12	48	_	_			_	_	_	_	
SHEET 25 OF 44	12	12	48	-	-	-	-	_	_	-	-	-
SHEET 26 OF 44	12	12	48	-	-	-	-	-	-	32	2	146
SHEET 27 OF 44	12	12	48	-	_	-	-	-	_	-	-	-
SHEET 28 OF 44	12	12	48	-	-	-	-	-	_	-	-	-
SHEET 29 OF 44	12	12	48	-	18	-	44	-	1.63	80	4	253
SHEET 30 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 31 OF 44	12	12	48	-	-	-	-	-	-	40	2	145
SHEET 32 OF 44	12	12	48	-	-	-	-	-	-	32	2	111
SHEET 33 OF 44	12	12	48	-	-	-	-	-	=	40	2	145
SHEET 34 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 35 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 36 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 37 OF 44	12	12	48	-	-	-	-	-	ı	-	-	-
SHEET 38 OF 44	12	12	48	-	-	-	-	-	-	80	4	248
SHEET 39 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 40 OF 44	12	12	48	-	-	-	-	-	-	-	-	-
SHEET 41 OF 44 (UP TO STA 585+00)	9	9	36	-	-	-	-	-	-			
CC 0402-01 076 TOTALE	400	400	1056	100	10	1.63	44	5.	1 42	840	-	3000
CSJ 0482-01-036 TOTALS SHEET 41 OF 44 (FROM STA 585+00)	489	489	1 956	190	18	1.63		56	1.63	840 80	46	2908 336
SHEET 41 OF 44 (FROM STA 585+00)	12	12	48			-				80	 "	336
SHEET 43 OF 44	12	12	48			l					l	
SHEET 44 OF 44	8	8	32									
CSJ 0482-02-035 TOTALS	35	35	140	0	0	0	0	0		80	4	336
PROJECT TOTALS	524	524	2096	190	18	1,63	44	56	1.63	920	50	3244
			1770	- 34					-,,,,	V		, ,,,,,

SUMMARY OF BRIDGE	ITEMS		NBI:	2112500	48201001	
<u> </u>		420 6136	450 6006	540 6001	540 6006	544 6001
SH 285		CL C CONC (RAC-R)	RAIL (TY T223)	MTL W-BEAM GD FEN (TIM POST)		GUARDRAIL END TREATMENT (INSTALL)
		CY	LF	LF	EΑ	EA
RAIL RETROFIT LA	YOUT	8	80	475	4	4
PROJECT TOTAL	S	8	80	475	4	4

Pharr District Central Design



			SHE	EΤ	3 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		13

	SUMMARY OF ROADWAY MATERIALS ITEMS																				
SH 285	&	&	&	&	&	105 6020	&	110 6001	132 6006	247 6225	251 6158	251 6210	275 6001	275 6032	275 6374	275 6005	305 6005	310 6009	3077 6033	3077 6010	3084 6001
	AVAILABLE SALVAGE FLEX BASE OF EXISTING ROADWAY	## FLEX BASE FROM DETOUR TO BE REUSED	TOTAL FLEXBASE NEEDED (12")	INTERSECT ION TOTAL FLEXBASE NEEDED (16")	MINIMUM 4" REQUIRED NEW FLEX BASE		REMOVING STAB BASE & ASPH PAV (12")	EXCAVATIO N (ROADWAY)	EMBANKMEN	FL BS (RDWY DEL) (TY E GR 4) (FNAL POS)	RWRK BS MTL(TY B)(12")(DC)(ORG POS)	## RWRK BS MTL (TY B) (14") (DC) (ORG POS)	CEMENT	INTERSECTION CEMENT TREAT (NEW BASE) (16")	CMT TRT (MX EXST MTL & NW BS) (12") (DC)	CEMENT TREAT (EXIST	X SALV, HAUL & STKPL RCL APH PV (6 TO 8")	PRIME COAT (MC-30)	SP MIXES SP-C SAC-A PG76-22	SP MIXES SP-B SAC-B PG76-22	BOND I NG COURSE
	CY	CY	CY	CY	CY	SY	CY	CY	CY	CY	CY	CY	TON	SY	SY	SY	SY	GAL	TON	TON	GAL
								143574.4	58474												
PHASE I STEP I	2639	-	2966		989	1987	662	-	-	989	1977	-	192	-	8898	9176	7637	1780		1229	
PHASE I STEP II	1601	-	2020		674	765	255	-	-	674	1346	-	132	-	6060	6338	4530	1212		824	
PHASE II STEP I	-	-	-	-	-	-		-	-				-				-				
PHASE II STEP II	9067	-	9719		3240	7765	2588	-	-	3240	6479	-	628		29157	30165	26497	5832		4012	
PHASE II STEP II STAGE A	235	-	-	314	-	706	235	-	-	314	-	-	11	706	-	-	706	143		101	
PHASE II STEP II STAGE B	247	-	-	329	-	739	247	-	-	329	-	-	12	739	1	-	739	148		106	
PHASE II STEP III	6553	5380	7270	-	2479	19676	6559	-	-	2479	-	4791	478	-	22311	22845	18640	4463		2961	
PHASE III STEP I	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-			
PHASE III STEP II	9680	-	12755	-	4252	5303	1768	-	-	4252	7914	589	821	-	38264	39348	27994	7653		5300	
PHASE III STEP III	6320	4214	8557	-	2853	1 4505	4835	-	-	2853	1490	4214	554	-	25670	26669	17980	5134		3516	
PHASE IV STEP I	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-			
PHASE IV STEP II	17173	-	22184	-	7395	7153	2384	-	-	7395	14789	-	1427	-	66550	68460	49660	13310		9212	
PHASE IV STEP III	8817	9283	12226	-	4076	26452	8817	-	-	4076	-	8150	790	-	36677	38069	34380	7336		5029	
PHASE V STEP I (UP TO STA 585+00)	-		-	-	-	-		-	-	-	-	-	-	-	-	-	-	-			
PHASE V STEP II (UP TO STA 585+00)	9874	-	13546	-	4516	2532	844	-	-	4516	8199	831	869	-	40638	41644	29062	8128		5576	
PHASE V STEP III (UP TO STA 585+00)	7516	6129	10172	-	3391	2205	735	-	-	3391	629	6152	658	-	30517	31812	21520	6103		4124	
PHASE VI	<u> </u>	<u> </u>	-	-	-	-				-	-	-	-	-	-	-	-	-	33591		20626
CSJ 0482-01-036 TOTALS	79722	25006	101415	643	33865	89788	29929	143574.4		34508	42823	24727	6572	1445	304742	314526	239345	61242	33591	41990	20626
		ļ						12522.2	5781.4			1									
PHASE V STEP I (585+00 TO 620+00)		ļ																			
PHASE V STEP II (585+00 TO 620+00)	3685		4912		1637	4637	1546			1637	2973	302	318		14736	15236	10112	2948			
PHASE V STEP III (585+00 TO 620+00)	2518	2053	3357		1119	25414	8471			1119	208	2030	217	-	10070	10360	7000	2014			
PHASE VI		2053										L					.		2828	3534	1737
CSJ 0482-02-035 TOTALS	6203	2053	8269	0	2756	30051	10017	12522.2		2756	3181	2332	535	1 0	24806	25596	17112	4962	2828	3534	1737
PROJECT TOTALS	85925	27059	109684	643	36621	119839	39946	156096.6	04255.4	37264	46004	27059	7107	1445	329548	340122	256457	66204	36419	45524	22363

- ## REWORK (SALVAGE) MATERIAL IS TAKEN FROM DETOUR MATERIAL (##) AND EXISTING BASE (//) PAID UNDER ITEM 251
- \star ALL RAP MATERIAL 256457 SY SHALL BECOME PROPERTY OF THE CONTRACTOR.

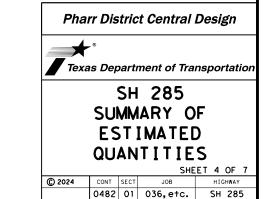
BONDING COURSE RATE IS FOR ESTIMATING PURPOSES ONLY AND MAY BE MODIFIED BY ENGINEER AS PER PERTINENT ITEM 3077.

& FOR CONTRACTOR INFORMATION ONLY (NON-PAY).

EXCESS SALVAGE MATERIAL TO BE HAULED OFF AND SHALL BECOME PROPERTY OF THE CONTRACTOR AFTER PROJECT COMPLETION.

- EST. WEIGHT OF FLEXIBLE BASE = 3375 LBS/CY (COMPACTED DRY WEIGHT)
- EST. WEIGHT OF SUBGRADE = 2970 LBS/CY (COMPACTED)
- EST. APPL. RATE OF PRIME COAT(MC-30) = 0.20 GAL/SY
- EST. APPL. RATE OF SP MIXES = 114 LBS/SY/IN
- EST. APPL. RATE OF BONDING COURSE = 0.07 GAL/SY

ITEM 105 SPECIFIED FOR EXISTING BASE THAT WILL NOT BE INCORPORATED INTO NEW FLEX BASE. CONTRACTOR CAN NOT REMOVE MATERIAL UNTIL THE END OF THE PROJECT OR UNDER AREA ENGINEER WRITTEN PERMISSION.



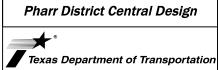
JIM HOGG

PHR

SHEET NO

SUMMARY OF DRAINAGE ITEMS												
	I	400	400	400	402	420	432	462	464	466	467	467
		6001	6005	6010	6001	6009	6002	6006	6060	6150	6390	6392
SH 285		* STRUCT EXCAV	CEM STABIL BKFL	STRUCT EXCAV (SPECIAL)	TRENCH EXCAVATI ON PROTECTI	CL A CONC (COLLAR)	RIPRAP (CONC) (5 IN)	CONC BOX CULV (5 FT X 2 FT)	RC PIPE (CL IV) (24 IN) (SPL)	WINGWALL (FW - 0) (HW=3 FT)	SET (TY II) (24 IN) (RCP) (4: 1) (C)	SET (TY II) (24 IN) (RCP) (5: 1) (C)
		CY	CY	CY	ON LF	EA	CY	LF	LF	EA	EA	EA
		CI	CI	C	Lr	EA	CI	LF	LF	LA	CA	EA
SHEET 1 OF 11	674 00 40	4.5	22	4.7								
	STA. 99+10	45	29	17	-	-	-	-	68	-	-	2 -
CUEET 2 OF 11	STA. 101+51	82	49	28	-	-	-	-	136	-	2	-
SHEET 2 OF 11	CTA 111.00	0.1	4.0	20					120			
	STA. 111+00	81	46	28	-	-	-	-	128 144	-	2	2 -
SHEET 3 OF 11	STA. 121+00	107	51	29	-			-	144			-
SHEET 3 OF 11	STA, 158+55	104	39	22	_	-	51	72	-	2	_	_
	STA. 164+40	122	37	21		_	71	68	=	2	_	_
SHEET 4 OF 11	51A. 104.40	122	31				, ,	00				
311221 1 01 11	STA. 219+76	234	92	57	117	-	55	200	-	2	-	-
	STA. 259+51	228	81	50	-	-	109	176	-	2	_	-
SHEET 5 OF 11	01711 200 01			""								
3/1227 0 01 71	STA, 273+78	266	70	44	-	-	55	152	-	2	-	-
	STA, 285+13	248	37	21	-	-	95	68	-	2	-	-
SHEET 6 OF 11												
	STA. 311+00	193	61	39	-	-	109	136	-	2	-	-
	STA. 360+24	238	88	55	-	-	81	192	-	2	-	-
SHEET 7 OF 11												
	STA. 392+01	160	54	31	122	-	51	100	-	2	-	-
	STA. 415+36	278	120	77	-	-	111	276	ı	2	-	-
SHEET 8 OF 11												
	STA. 442+00	184	67	44	-	-	109	152	-	2	-	-
	STA. 456+74	121	37	21	-	-	71	68	-	2	-	-
SHEET 9 OF 11												
	STA, 473+39	194	51	30	-	-		-	144	-	-	2
	STA. 491+99	182	63	39	-	-	109	136	-	2	-	-
SHEET 10 OF 11				I								
	STA. 509+85	78	51	31	-	-	-	- 176	144	-	-	2
CHEET 11 OF 11	STA. 530+01	199	81	50	-	-	81	176	-	2	-	-
SHEET 11 OF 11	CTA E 77:00	704	0.0	F.0	121		E E	200	-	 	-	-
TEMPORARY CULVERT CROSSING	STA. 573+99	304	96	59	121	-	55	208	-	2	-	-
TEMPURARI CULVERI CRUSSING	STA. 99+10		_	_		1	_	_	16	_	_	1
	STA. 99+10		-	-	-	1		_	12	-	1	-
	STA. 111+00		-	-	-	1	-	-	8	-	-	1
CSJ 0482-01-036 TOTA	LS	3648	1 300	793	360	3	1213	2180	800	30	5	10
SHEET 11 OF 11								2.00				· •
3	STA 606+22	234	84	53			109	184		2		
CSJ 0482-02-035 TOTA		234	84	53	0	0	109	184	0	2	0	0
PROJECT TOTALS		3882	1384	846	360	3	1322	2364	800	32	5	10

* FOR CONTRACTOR INFORMATION ONLY (NON-PAY). SUBSIDIARY TO PERTINENT BID ITEMS.



			SHE	EΤ	5 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
1	PHR		ли носс		15

SUMMARY OF EROSION CONTROL ITEMS											
	164 6023	164 6029	*	168 6001	506 6003	506 6011	506 6021	506 6024	506 6041	506 6043	5088 6001
SH 285	CELL FBR MLCH SEED(PER M)(RURAL) (CLAY)	CELL FBR MLCH SEED(TEMP)(WARM)	FERTILIZE R	VEGETATIV E	ROCK FILTER DAMS (INSTALL) (TY 3)	ROCK FILTER DAMS (REMOVE)	CONSTRUCT ION EXITS (INSTALL) (TY 2)	CONSTRUCT	BIODEG EROSN CONT LOGS (INSTL) (12")	BIODEG EROSN CONT LOGS (REMOVE)	BIRD EXCLUSIO METHOD
	SY	SY	TON	MG	LF	LF	SY	SY	LF	LF	SF
SHEET 1 OF 22	27389	27389	Ø. 283	476			156	156	720	720	152
SHEET 2 OF 22	27Ø51	27Ø51	Ø. 28	469					38Ø	380	-
SHEET 3 OF 22	27200	27200	Ø. 28	472	150	150			400	400	3Ø4
SHEET 4 OF 22	26931	26931	Ø. 28	467			156	156	36Ø	360	-
SHEET 5 OF 22	31694	31694	Ø. 33	550					390	390	-
SHEET 6 OF 22	21839	21839	0.23	379			156	156	470	470	136
SHEET 7 OF 22	21764	21764	0.22	378					380	380	152
SHEET 8 OF 22	25467	25467	0.26	442					460	460	660
SHEET 9 OF 22	27198	27198	0.28	472					360	360	-
SHEET 10 OF 22	26728	26728	0.28	464			156	156	500	500	330
SHEET 11 OF 22	26484	26484	0.27	460					240	240	-
SHEET 12 OF 22	21888	21888	0.23	38Ø					440	440	462
SHEET 13 OF 22	21844	21844	0.23	379					320	320	213
SHEET 14 OF 22	21719	21719	0.22	377					38Ø	380	660
SHEET 15 OF 22	24458	24458	0.25	424					560	560	396
SHEET 16 OF 22	27055	27055	Ø. 28	47Ø					580	580	33Ø
SHEET 17 OF 22	26944	26944	Ø. 28	468			156	156	420	420	660
SHEET 18 OF 22	27113	27113	Ø. 28	471					320	320	198
SHEET 19 OF 22	21954	21954	0.23	381					440	440	66Ø
SHEET 20 OF 22	22189	22189	0.23	385					320	320	-
SHEET 21 OF 22 (UP TO STA 585+00)	10158	10158	0.11	176					120	120	360
CSJ 0482-01-036 TOTALS	515067	515067	5. 333	8940	150	150	780	780	8560	8560	5673
SHEET 21 OF 22 (FROM STA 585+00)	11924	11924	0.12	207					360	360	
SHEET 22 OF 22	21509	21509	0.22	373			156	156	320	320	-
CSJ 0482-02-035 TOTALS	33433	33433	0. 34	580	0	0	156	156	680	680	0
PROJECT TOTALS	548500	548500	5. 673	9520	150	150	936	936	9240	9240	5673

SUMMARY OF SIGNING ITEMS											
	636 6001	644 6027	644 6030	644 6033	644 6076	658 6100	658 6060				
SH 285	ALUMINUM SIGNS (TY A)	SN SUP&AM	IN SM RD SN SUP&AM TYS80(1) SA(T)	SN SUP&AM	REMOVE SM RD SN SUP&AM	INSTL OM ASSM (OM-2Z)(WFLX)GND(BI)	REMOVE DELIN & OBJECT MARKER ASSMS				
	SF	EA	EA	EA	EA	EA	EΑ				
SHEET 1 OF 22	59	9	7	2	16	6	6				
SHEET 2 OF 22	=	2	1	=	3	3	3				
SHEET 3 OF 22	-	-	-	-	-	7	7				
SHEET 4 OF 22	16	-	2	-	2	-	-				
SHEET 5 OF 22	10.5	3	1	-	3	-	ı				
SHEET 6 OF 22	-	-	2	-	-	2	2				
SHEET 7 OF 22	-	1	2	-	1	2	2				
SHEET 8 OF 22	-	1	-	1	-	4	2				
SHEET 9 OF 22	-	-	-	-	-	-	-				
SHEET 10 OF 22	-	-	-	-	-	2	2				
SHEET 11 OF 22	-	2	-	1	1	-	-				
SHEET 12 OF 22	-	-	2	-	-	2	2				
SHEET 13 OF 22	-	-	-	-	-	2	2				
SHEET 14 OF 22	-	-	2	-	-	2	2				
SHEET 15 OF 22	-	2	-	1	1	2	3				
SHEET 16 OF 22	-	-	-	-	-	4	4				
SHEET 17 OF 22	-	-	-	-	-	2	2				
SHEET 18 OF 22	-	-	-	1	-	2	2				
SHEET 19 OF 22	-	1	1	-	-	2	2				
SHEET 20 OF 22	-	1	1	-	2	2	-				
HEET 21 OF 22 (UP TO STA 585+00)	-	2	-	-	2	-	1				
CSJ 0482-01-036 TOTALS	85.5	24	21	6	31	46	44 1				
SHEET 21 OF 22 (FROM STA 585+00) SHEET 22 OF 22	21	3 2	5	-	6		2				
CSJ 0482-02-035 TOTALS	-	5	-	1	-	2	3				
PROJECT TOTALS	106,5	29	5 26	7	6 37	48	47				
PROJECT TOTALS	100.3	1 27	20	<u> </u>	<u> </u>	40	47				

PERMANENT SEEDING TO BE DONE AFTER THE ROADWAY CONSTRUCTION IS COMPLETE.

FERTILIZER QUANTITIES (TON) ARE BASED ON A RATE OF 100 LSB OF NITROGEN ACRE NPK 10-5-5.

VEGETATIVE WATERING APPLICATION RATE = 7,000 GAL/ACRE @ 12 CYCLES/1000(MG)

EROSION CONTROL LOG MAX LENGTH = 30 FEET

EROSION CONTROL LOG STD LENGTH = 10 FEET

EROSION CONTROL DEVICES MAY BE MODIFIED TO MEET FIELD CONDITIONS OR AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONSULT WITH THE FIELD ENGINEER BEFORE ANY EROSION CONTROL DEVICE IS INSTALLED.

* FOR CONTRACTOR INFORMATION ONLY.





			SHE	EΤ	6 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.	5	H 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		16

	SUMMARY OF PAVEMENT MARKING ITEMS																				
	662 6109	662 6111	666 6018	666 6021	666 6036	666 6048	666 6306	666 6318	666 6321	666 6343	668 6077	668 6083	668 6085	668 6116	672 6007	672 6009	672 6017	672 6018	678 6002	6038 6004	6038 6017
SH 285	WK ZN PAV MRK SHT TERM (TAB) TY W	WK ZN PAV MRK SHT TERM	REFL PAV MRK TY I	REFL PAV	REFL PAV	REFL PAV MRK TY I	RE PM W/RET REQ TY I	RE PM W/RET REQ TY I	RE PM W/RET REC TY I	REF PROF PAV MRK TY	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (LNDP ARROW)	PREFAB PAV MRK TY C (W) (WORD)	PREFAB	REFL PAV	REFL PAV		TRAFFIC	PAV SURF (PREP FOR MRK (6")	MULTIPOLY MER PAV	/ MULTIPOLY MER PAV MRK (Y)(6")(SLD)
	EΑ	EA	LF	LF	LF	LF	LF	LF	LF	LF	EA	EΑ	EA	EA	EA	EΑ	EA	EA	LF	LF	LF
SHEET 1 OF 22	8	404	-	-	98	55	-	845	2319	8298	1	-	1	1	5	118	465	1186	-	-	-
SHEET 2 OF 22	-	180	-	-	-	-	-	600	-	4800	-	-	-	-	-	30	-	960	-	-	-
SHEET 3 OF 22	-	180	-	-	-	-	-	600	-	4800	-	-	-	-	-	30	-	960	-	-	-
SHEET 4 OF 22	-	180	-	-	-	-	-	600	-	4800	-	-	-	-	-	30	-	960	-	-	-
SHEET 5 OF 22	178	230	114	-	-	-	80	115	3880	4530	-	-	-	-	4	93	776	184	540	270	270
SHEET 6 OF 22	610	240	-	255	-	-	910	-	4800	4800	-	2	-	-	45	60	960		-	-	-
SHEET 7 OF 22	523	240	=	207	-	=	990	-	4800	4800	-	2	-	=	50	60	960		-	-	-
SHEET 8 OF 22	236	236	114	48	-	-	160	50	4406	4800	-	-	-	-	8	83	921	40	-	-	-
SHEET 9 OF 22	-	270	-	-	-	-	-	400	3000	4800	-	-	-	-	-	114	600	360	-	-	-
SHEET 10 OF 22	-	180	=	-	-	=	-	600	=	4800	-	=	-	=	-	30	-	960	-	-	-
SHEET 11 OF 22	111	224	105	-	-	-	40	171	3436	4800	-	-	-	-	2	79	687	273	-	-	-
SHEET 12 OF 22	526	240	-	252	-	-	870	-	4800	4800	-	2	-	-	45	60	960		-	-	-
SHEET 13 OF 22	360	240	=	-	-	=	1200	-	4800	4800	-	=	-	=	60	60	960		-	-	-
SHEET 14 OF 22	471	240	-	108	-	-	1090	-	4800	4800	-	1	-	-	54	60	960		-	-	-
SHEET 15 OF 22	408	240	114	147	-	-	260	-	4800	4800	-	1	-	-	13	81	960	-	-	-	-
SHEET 16 OF 22	-	251	=	-	-	-	-	410	2556	4800	-	-	-	-	-	97	511	449	-	-	-
SHEET 17 OF 22	-	225	-	-	-	-	-	600	900	4800	-	-	-	-	-	63	180	780	-	-	-
SHEET 18 OF 22	36	215	48	-	-	-	-	250	2800	4800	-	-	-	-	-	83	560	400	-	-	-
SHEET 19 OF 22	650	240	64	255	-	=	710	-	4800	4800	-	2	=	=	34	60	960		-	-	-
SHEET 20 OF 22	360	240	-	-	-	-	1200	-	4800	4800	-	-	-	-	60	60	960		-	-	-
SHEET 21 OF 22 (UP TO 585+00)	165	110		-	-	-	550	-	2200	2200	-		-	-	28	28	440		-	-	-
SHEET 22 OF 22 (FROM 620+00 TO 642+10)		190						328	1800	4420						40	360	524			
CSJ 0482-01-036 TOTALS	4642	4995	559	1272	98	55	8060	5569	65697	105848	1	10	1	1	408	1419	13180	8036	540	270	270
SHEET 21 OF 22 (FROM 585+00 TO 598+00)	195	130	12				650		2600	2600		1			32	32	520				
SHEET 22 OF 22 (UP TO 620+00)	566	220	114	243			360		4400	4400		1		1	18	64	880				
CSJ 0482-02-035 TOTALS	761	350	126	243	0	0	1010	0	7000	7000	0	2	0	1	50	96	1400	0	0	0	0
PROJECT TOTALS	5403	5345	685	1515	98	55	9070	5569	72697	112848	1	12	1	2	458	1515	14580	8036	540	270	270

Pharr District Central Design



			SHE	EΤ	7 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		17



CONTROLLING PROJECT ID 0482-01-036

DISTRICT Pharr **HIGHWAY** SH 285

COUNTY Brooks, Jim Hogg

	CONTROL SECTION JOB		0482-01-036		0482-02-035				
		PRO	JECT ID	A00123	8534	A00204	054		
			COUNTY	NTY Jim Hogg		Brooks		TOTAL EST.	TOTAL FINAL
			GHWAY	SH 2	85	SH 285			FINAL
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	100-6002	PREPARING ROW	STA	489.000		35.000		524.000	
	104-6028	REMOVING CONC (MISC)	SY	156.000				156.000	
	104-6054	REMOVING CONCRETE(MOW STRIP)	LF	872.000				872.000	
	105-6020	REMOVING STAB BASE & ASPH PAV (12")	SY	89,788.000		30,051.000		119,839.000	
	110-6001	EXCAVATION (ROADWAY)	CY	143,574.400		12,522.200		156,096.600	
	132-6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	58,474.000		5,781.400		64,255.400	
	134-6001	BACKFILL (TY A)	STA	489.000		35.000		524.000	
	164-6023	CELL FBR MLCH SEED(PERM)(RURAL)(CLAY)	SY	515,067.000		33,433.000		548,500.000	
	164-6029	CELL FBR MLCH SEED(TEMP)(WARM)	SY	515,067.000		33,433.000		548,500.000	
	168-6001	VEGETATIVE WATERING	MG	8,940.000		580.000		9,520.000	
	204-6003	SPRINKLING (DUST CONTROL)	MG	1,956.000		140.000		2,096.000	
	247-6225	FL BS (RDWY DEL)(TY E GR 4)(FNAL POS)	CY	34,508.000		2,756.000		37,264.000	
	251-6158	RWRK BS MTL(TY B)(12")(DC)(ORG POS)	CY	42,823.000		3,181.000		46,004.000	
	251-6210	RWRK BS MTL (TY B)(14")(DC)(ORG POS)	CY	24,727.000		2,332.000		27,059.000	
	275-6001	CEMENT	TON	6,572.000		535.000		7,107.000	
	275-6005	CEMENT TREAT (EXIST MATL)(12")	SY	314,526.000		25,596.000		340,122.000	
	275-6032	CEMENT TREAT (NEW BASE) (16")	SY	1,445.000				1,445.000	
	275-6374	CMT TRT(MX EXST MTL & NW BS)(12")(DC)	SY	304,742.000		24,806.000		329,548.000	
	305-6005	SALV, HAUL & STKPL RCL APH PV (6 TO 8")	SY	239,345.000		17,112.000		256,457.000	
	310-6009	PRIME COAT (MC-30)	GAL	61,242.000		4,962.000		66,204.000	
	354-6021	PLANE ASPH CONC PAV(0" TO 2")	SY	190.000				190.000	
	400-6001	STRUCT EXCAV	CY	18.000				18.000	
	400-6005	CEM STABIL BKFL	CY	1,300.000		84.000		1,384.000	
	400-6010	STRUCT EXCAV (SPECIAL)	CY	793.000		53.000		846.000	
	400-6011	SAND BACKFILL	CY	1.630				1.630	
	402-6001	TRENCH EXCAVATION PROTECTION	LF	404.000				404.000	
	420-6009	CL A CONC (COLLAR)	EA	3.000				3.000	
	420-6136	CL C CONC (RAC-R)	CY	8.000				8.000	
	432-6002	RIPRAP (CONC)(5 IN)	CY	1,213.000		109.000		1,322.000	
	432-6003	RIPRAP (CONC)(6 IN)	CY	1.630				1.630	
	432-6045	RIPRAP (MOW STRIP)(4 IN)	CY	56.000				56.000	
	450-6006	RAIL (TY T223)	LF	80.000				80.000	
	462-6006	CONC BOX CULV (5 FT X 2 FT)	LF	2,180.000		184.000		2,364.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	840.000		80.000		920.000	
	464-6060	RC PIPE (CL IV) (24 IN) (SPL)	LF	800.000				800.000	
	466-6150	WINGWALL (FW - 0) (HW=3 FT)	EA	30.000		2.000		32.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	46.000		4.000		50.000	



DISTRICT COUNTY		CCSJ	SHEET
Pharr	Jim Hogg, Etc.	0482-01-036, Etc.	18



CONTROLLING PROJECT ID 0482-01-036

DISTRICT Pharr **HIGHWAY** SH 285

COUNTY Brooks, Jim Hogg

Report Created On: Mar 15, 2024 9:44:15 AM

	CONTROL SECTION JO		ON JOB	OB 0482-01-036		0482-02-035			
		PROJECT		A00123	3534	A00204	1054		
	HIGH		OUNTY Jim Hogg		Brooks		TOTAL EST.	TOTAL FINAL	
			HWAY	SH 2	85	SH 2	85		TINAL
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	467-6390	SET (TY II) (24 IN) (RCP) (4: 1) (C)	EA	5.000				5.000	
	467-6392	SET (TY II) (24 IN) (RCP) (5: 1) (C)	EA	10.000				10.000	
	496-6004	REMOV STR (SET)	EA			2.000		2.000	
	496-6005	REMOV STR (WINGWALL)	EA	32.000				32.000	
	496-6006	REMOV STR (HEADWALL)	EA	8.000				8.000	
	496-6007	REMOV STR (PIPE)	LF	380.000		160.000		540.000	
	496-6008	REMOV STR (BOX CULVERT)	LF	1,373.000				1,373.000	
	500-6001	MOBILIZATION	LS	1.000				1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	МО	74.000				74.000	
	506-6003	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	150.000				150.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	150.000				150.000	
	506-6021	CONSTRUCTION EXITS (INSTALL) (TY 2)	SY	780.000		156.000		936.000	
	506-6024	CONSTRUCTION EXITS (REMOVE)	SY	780.000		156.000		936.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	8,560.000		680.000		9,240.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	8,560.000		680.000		9,240.000	
	508-6001	CONSTRUCTING DETOURS	SY	65,385.000		4,803.000		70,188.000	
	510-6003	ONE-WAY TRAF CONT (PORT TRAF SIG)	МО	1.000				1.000	
	512-6001	PORT CTB (FUR & INST)(SGL SLOPE)(TY 1)	LF	17,310.000				17,310.000	
	512-6025	PORT CTB (MOVE)(SGL SLP)(TY 1)	LF	78,680.000		6,860.000		85,540.000	
	512-6049	PORT CTB (REMOVE)(SGL SLP)(TY 1)	LF	17,310.000				17,310.000	
	530-6005	DRIVEWAYS (ACP)	SY	2,908.000		336.000		3,244.000	
	540-6001	MTL W-BEAM GD FEN (TIM POST)	LF	475.000				475.000	
	540-6006	MTL BEAM GD FEN TRANS (THRIE-BEAM)	EA	4.000				4.000	
	542-6001	REMOVE METAL BEAM GUARD FENCE	LF	475.000				475.000	
	542-6004	RM MTL BM GD FENCE TRANS (THRIE-BEAM)	EA	4.000				4.000	
	544-6001	GUARDRAIL END TREATMENT (INSTALL)	EA	4.000				4.000	
	544-6003	GUARDRAIL END TREATMENT (REMOVE)	EA	4.000				4.000	
	545-6003	CRASH CUSH ATTEN (MOVE & RESET)	EA	80.000		4.000		84.000	
	545-6005	CRASH CUSH ATTEN (REMOVE)	EA	9.000		3.000		12.000	
	545-6019	CRASH CUSH ATTEN (INSTL)(S)(N)(TL3)	EA	12.000				12.000	
	636-6001	ALUMINUM SIGNS (TY A)	SF	85.500		21.000		106.500	
	644-6027	IN SM RD SN SUP&AM TYS80(1)SA(P)	EA	24.000		5.000		29.000	
	644-6030	IN SM RD SN SUP&AM TYS80(1)SA(T)	EA	21.000		5.000		26.000	
	644-6033	IN SM RD SN SUP&AM TYS80(1)SA(U)	EA	6.000		1.000		7.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	31.000		6.000		37.000	
	658-6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	44.000		3.000		47.000	
	658-6100	INSTL OM ASSM (OM-2Z)(WFLX)GND(BI)	EA	46.000		2.000		48.000	



DISTRICT	COUNTY	CCSJ	SHEET
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CONTROLLING PROJECT ID 0482-01-036

DISTRICT Pharr **HIGHWAY** SH 285

COUNTY Brooks, Jim Hogg

Report Created On: Mar 15, 2024 9:44:15 AM

	CONTROL SECTION J PROJECT		N JOB	OB 0482-01-036		0482-02	2-035	_	
			ECT ID	A00123	3534	A0020	4054		
CO		OUNTY Jim Hogg		Brooks		TOTAL EST.	TOTAL		
		HIG	HIGHWAY		SH 285		85		FINAL
LT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	662-6008	WK ZN PAV MRK NON-REMOV (W)6"(SLD)	LF	103,330.000		7,000.000		110,330.000	
	662-6037	WK ZN PAV MRK NON-REMOV (Y)6"(SLD)	LF	98,320.000		7,000.000		105,320.000	
	662-6050	WK ZN PAV MRK REMOV (REFL) TY II-A-A	EA	6,506.000		350.000		6,856.000	
	662-6067	WK ZN PAV MRK REMOV (W)6"(SLD)	LF	162,355.000		7,000.000		169,355.000	
	662-6071	WK ZN PAV MRK REMOV (W)8"(SLD)	LF	82.000				82.000	
	662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	140.000				140.000	
	662-6080	WK ZN PAV MRK REMOV (W)(ARROW)	EA	1.000				1.000	
	662-6090	WK ZN PAV MRK REMOV (W)(WORD)	EA	1.000				1.000	
	662-6096	WK ZN PAV MRK REMOV (Y)6"(BRK)	LF	220.000				220.000	
	662-6098	WK ZN PAV MRK REMOV (Y)6"(SLD)	LF	170,664.000		7,000.000		177,664.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	4,642.000		761.000		5,403.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	4,995.000		350.000		5,345.000	
	666-6018	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	559.000		126.000		685.000	
	666-6021	REFL PAV MRK TY I (W)6"(LNDP)(100MIL)	LF	1,272.000		243.000		1,515.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	98.000				98.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	55.000				55.000	
	666-6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	8,060.000		1,010.000		9,070.000	
	666-6318	RE PM W/RET REQ TY I (Y)6"(BRK)(100MIL)	LF	5,569.000				5,569.000	
	666-6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	65,697.000		7,000.000		72,697.000	
	666-6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	105,848.000		7,000.000		112,848.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	1.000				1.000	
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA	10.000		2.000		12.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	1.000				1.000	
	668-6116	PREFAB PAV MRK TY C(EVAC SYM, BLUE/WHT)	EA	1.000		1.000		2.000	
	672-6007	REFL PAV MRKR TY I-C	EA	408.000		50.000		458.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,419.000		96.000		1,515.000	
	672-6017	TRAFFIC BUTTON TY Y	EA	13,180.000		1,400.000		14,580.000	
	672-6018	TRAFFIC BUTTON TY B	EA	8,036.000				8,036.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	138,841.000		4,355.000		143,196.000	
	678-6002	PAV SURF PREP FOR MRK (6")	LF	1,350.000				1,350.000	
	3077-6010	SP MIXES SP-B SAC-B PG76-22	TON	41,990.000		3,534.000		45,524.000	
	3077-6033	SP MIXES SP-C SAC-A PG76-22	TON	33,591.000		2,828.000		36,419.000	
	3084-6001	BONDING COURSE	GAL	20,626.000		1,737.000		22,363.000	
	5088-6001	BIRD EXCLUSION METHOD	SF	5,673.000				5,673.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	4.000				4.000	
	6038-6004	MULTIPOLYMER PAV MRK (W)(6")(SLD)	LF	270.000				270.000	
	6038-6017	MULTIPOLYMER PAV MRK (Y)(6")(SLD)	LF	270.000				270.000	



DISTRICT	COUNTY	CCSJ	SHEET
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CONTROLLING PROJECT ID 0482-01-036

DISTRICT Pharr **HIGHWAY** SH 285

COUNTY Brooks, Jim Hogg

Report Created On: Mar 15, 2024 9:44:15 AM

		CONTROL SECTIO	N JOB	0482-01-036		0482-02-035			
		PROJE	ECT ID	A00123534		A00204054			
	COUNTY		Jim Hogg		Brooks		TOTAL EST.	TOTAL FINAL	
	HIGHWAY		SH 2	85	SH 285				
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	6185-6002	TMA (STATIONARY)	DAY	1,140.000				1,140.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	50.000				50.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000				1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000				1.000	



DISTRICT	COUNTY	CCSJ	SHEET
Pharr	Jim Hogg, Etc.	0482-01-036, Etc.	21

County: Jim Hogg, Etc. Control: 0482-01-036, Etc.

Highway: SH 285

2014 SPECS GENERAL NOTES:

General Requirements and Covenants to ITEMS 1 thru 9:

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

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

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

ITEM 2: Instructions to Bidders

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

Francisco Cantu, P.E., Roma Area Engineer; Francisco.J.Cantu@txdot.gov

Danny Flores, P.E., Transportation Engineer; Danny.Flores@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals. Questions may also be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

Information found on TxDOT's FTP server will be considered for informational purposes only. Index of /pub/txdot-info/Pre-Letting Responses/Pharr District/21-Pharr District (Construction) (state.tx.us)

Project Number:

County: Jim Hogg, Etc. Control: 0482-01-036, Etc.

Highway: SH 285

ITEM 5: Control of the Work

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

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

When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with "Standard Operating Procedure for Alternate Precast Proposal Submission" found online at https://www.txdot.gov/business/resources/highway/bridge/bridge-publications.html#design. Acceptance or denial of an alternate is at the sole discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

ITEM 6: Control of Materials

To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit an original of the TxDOT Construction Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

Refer to the Buy America Material Classification Sheet for clarification on material categorization.

The Buy America Material Classification Sheet is located at the below link.

https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html for clarification on material categorization.

ITEM 7: Legal Relations and Responsibilities

Roadway or Lane closures during the following key dates and/or special events are prohibited:

- National Holidays
- The day before a National Holiday
- During emergency events such as natural disasters or as directed by the Engineer
- Local Special Event

County: Jim Hogg, Etc. Control: 0482-01-036, Etc.

Highway: SH 285

ITEM 8: Prosecution and Progress

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

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

ITEM 100: Preparing Right of Way

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

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

ITEM 132: Embankment

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

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

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

ITEM 134: Backfilling Pavement Edges

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

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

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

Project Number:

County: Jim Hogg, Etc. Control: 0482-01-036, Etc.

Highway: SH 285

ITEM 160: Topsoil

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

ITEM 164: Seeding for Erosion Control

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

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

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

Seed mixture shall be as specified under Item 164.

ITEM 166: Fertilizer

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

Fertilizer shall be homogenized.

ITEM 247: Flexible Base

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

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

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Table 1: Gradation Requirements for Flexible Base

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

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

Flexible Base (TY E GR 4) caliche shall meet minimum compressive strength specified on Table 1 Gradation Requirements for Flexible Base above.

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

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

For water added under Item 247, the sulfate content will not exceed 3000-ppm and the chloride content will not exceed 3000-ppm.

ITEM 251: Reworking Base Courses

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

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

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

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

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Proof roll the roadbed in accordance with Item 216, "Proof Rolling." Correct soft spots as directed.

ITEM 275: Cement Treatment (Road-Mixed)

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

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

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

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

ITEM 3096: Asphalts, Oils, and Emulsions

Temporary ramps/detours and driveways may use Performance Grade Binder 64-22.

ITEM 301: Asphalt Antistripping Agents

Hydrated Lime shall be added as an Antistripping additive between the rates of 1% minimum and 2.0% maximum by weight for Items 292, 3076, 3077, and 3080. If the Hamburg Wheel Test cannot be met within these limits, Liquid Antistripping agents as approved by the Engineer may be used in conjunction with lime for Items 3076, 3077, and 3080.

ITEM 310: Prime Coat

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

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

ITEM 3077: Superpave Mixtures

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

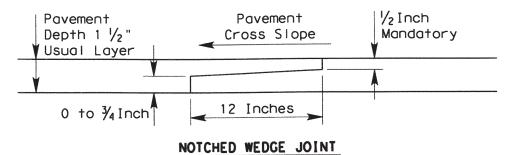
Blading (not to exceed more than 3-ft from the pavement edge) may also be necessary to clean dirt and grass from pavement edges and turnout areas as work under this bid Item. The cost of this blading will not be paid for directly but shall be considered subsidiary to this bid Item.

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

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

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

All unconfined longitudinal joints shall be constructed with a joint maker providing a maximum ½-inch vertical edge and a minimum 6:1 edge taper or as approved by the Engineer. The Engineer may waive this requirement when no impacts to the traveling public are foreseen.



The engineer may allow for variances to the dimensions shown.

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

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The use of RAP and RAS (recycled asphalt shingles) will not be allowed as part of the mix design for the final riding surface.

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

The percentage of RAS used in the total mix shall not exceed 3% when allowed.

SAC B aggregate must have material properties that require 10 or less on the magnesium sulfate soundness test and 20 or less on the Micro-Deval test.

ITEM 3084 – Bonding Course

The minimum application rates are listed in Table BC.

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

Table BC

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

Table BCS (For Informational Tests)

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

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ITEM 400: Excavation and Backfill for Structures

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

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

Structural Excavation Special (Gravel):

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

ITEM 421: Hydraulic Cement Concrete

Provide Sulfate Resistant Concrete for all concrete piling and drilled shafts.

Provide equipment at the batch plant for determining the free moisture and/or absorption of aggregates in accordance with applicable TXDOT Test.

Provide the following items for concrete batch inspection in accordance with specifications outlined in DMS-10101, "Computer Equipment":

- (1) One Desktop Microcomputer or One Laptop Microcomputer
- (2) One Integrated Printer/Scanner/Copier/Fax Unit
- (3) Contractor-Furnished Software
- (4) Hardware

Submit to the Engineer for approval the project locations for all Portland Cement concrete washout areas prior to starting any concrete work.

Fiber Reinforced Concrete is not permitted.

ITEM 432: Riprap

Provide Class "A" concrete minimum for riprap aprons placed around all box culvert and pipe safety end treatments. Provide ¼-inch thick dummy joints at least every 15-ft for riprap aprons placed around box and pipe culverts.

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

ITEM 462: Concrete Box Culverts and Drains

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

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

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

ITEM 464: Reinforced Concrete Pipe

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

Do not use mortar joints.

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

ITEM 466: Headwalls and Wingwalls

Do not use pre-cast headwalls/wingwalls.

ITEM 467: Safety End Treatment

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

ITEM 502: Barricades, Signs, and Traffic Handling

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

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

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

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

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

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

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

ITEM 504: Field Office and Laboratory

Furnish (1) Field Office (Type C).

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

Laboratory room:

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

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

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ITEM 506: Temporary Erosion, Sedimentation, and Environmental Controls

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

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

ITEM 508: Constructing Detours

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

ITEM 512: Portable Traffic Barrier

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

ITEM 530: Intersections, Driveways, and Turnouts

Prime coat shall meet the requirements of Item 310.

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

General Notes General Notes Sheet 27

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ITEM 540: Metal Beam Guard Fence

The optional terminal anchor post with the terminal connector will be required as shown on the Metal Beam Guard Fence Standard.

Galvanize the rail elements supplied for this project using a Type II Zinc Coating.

ITEM 542: Removing Metal Beam Guard Fence

Dispose all metal beam guard fence materials unless shown otherwise in the plans.

ITEM 544: Guardrail End Treatments

Label "end treatment type" on backside of unit at time of installation.

ITEM 585: Ride Quality for Pavement Surfaces

Use Surface Test Type "B" for service roads and ramps.

Quality control results shall be submitted to TxDOT the next working day after each day's paving.

Pavement areas with public turnout intersections that carry major traffic volumes will not be subjected to inertial profiler testing. These areas shall be evaluated using the 10-ft. straightedge.

Diamond grinding shall be used to remove localized roughness.

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

ITEMS 636: Signs

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

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ITEM 644: Small Roadside Sign Assemblies

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

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

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

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

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

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

ITEM 658: Delineator and Object Marker Assemblies

Delineator assemblies shall be installed 8 feet from the edge of the shoulder unless restricted by some obstruction, in which case, the delineator assembly shall be placed between 2 and 8 feet from the edge of the shoulder.

Bi-directional object markers shall be in accordance with the D&OM standard sheets. The Contractor is directed to the standards when instructed where and how to install the object markers.

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

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

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

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

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

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

ITEM 677: Eliminating Existing Pavement Markings and Markers

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

ITEM 5088: Bird Exclusion Methods

Contractor's attention is directed to the plan's EPIC sheets, Bird Exclusion Detail standard sheets and shall refer to the Migratory Bird Treaty Act requirements. Also, refer to the TPWD BMPSs sheets for specific adherence to the environmental requirements of the Best Management Practices.

ITEM 6185: Truck Mounted Attenuator/Trailer Attenuator

In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for the project, provide <u>2</u> additional shadow vehicle(s) with TMA as per TCP (2-1) -18 as detailed on General Note 5 of this standard sheet; or as per TCP (2-3) -23 as detailed on General Note 8 of this standard sheet.

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

CUT SHRINK/SWELL

FACTOR

BASEL INE

STATION

STATION

CUT

STATION

ADJUSTED

STATION

CUT

FILL

FACTOR

SHRINK/SWELL FILL

STATION STATION

AREA

FILL

VOLUME

ADJUSTED

STATION

MASS

ORDINATE

155.6

309.3

403.7

517.1

786.3

1086.6

1401.4

1729.2

2038.4

2340.3

2675.5

3038.4

3381.0

3677.3

3838.4

3931.0

4034.7

4116.2

4153.3

4216.2

4329.2

4403.3

4451.4

4529.2

4564.4

4610.7

4764.4

4908.8

5084.7

5360.7

5693.1

6055.4

6541.7

7127.9

7692.7

8200.1

8633.4

9011.2

9398.3

9868.6

NOTE:

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



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© 2024	CONT	SECT	JOB	JOB HIGHWAY				
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	DIST		COUNTY		s	HEET	NO.	
	PHR		JIM HOGG			30	C	

BASEL INE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION STATION FILL FILL AREA VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
165+00.0000 R	1	53.0	172.2	172.2	1	34.0 144.4	144.4	15487.7
166+00.0000 R	i	44.0	179.6	179.6	1	35.0 127.8	127.8	15539.6
167+00.0000 R	i	49.0	172.2	172.2	i	32.0 124.1	124.1	15587.7
168+00.0000 R	i	51.0	185.2	185.2	1	27.0 109.3	109.3	15663.6
169+00.0000 R	i	67.0	218.5	218.5	1	22.0 90.7	90.7	15791.4
170+00.0000 R	1	71.0	255.6	255.6	i	24.0 85.2	85.2	15961.8
171+00.0000 R	i	76.0	272.2	272.2	i	27.0 94.4	94.4	16139.6
172+00.0000 R	i	87.0	301.9	301.9	i	25.0 96.3	96.3	16345.1
173+00.0000 R		113.0	370.4	370.4	i	19.0 81.5	81.5	16634.0
174+00.0000 R	1	130.0	450.0	450.0	1	18.0 68.5	68.5	17015.5
175+00.0000 R		144.0	507.4	507.4	1	18.0 66.7	66.7	17456.2
176+00.0000 R	1	136.0	518.5	518.5	1	18.0 66.7	66.7	17908.1
177+00.0000 R	1	127.0	487.0	487.0	1	31.0 90.7	90.7	18304.4
178+00.0000 R	1	130.0	475.9	475.9	1	36.0 124.1	124.1	18656.2
179+00.0000 R	1	123.0	468.5	468.5	i	37.0 135.2	135.2	18989.6
180+00.0000 R		129.0	466.7	466.7	i	35.0 133.3	133.3	19322.9
181+00.0000 R	i	143.0	503.7	503.7	1	30.0 120.4	120.4	19706.2
182+00.0000 R	1	141.0	525.9	525.9	1	21.0 94.4	94.4	20137.7
183+00.0000 R	i	139.0	518.5	518.5	i	22.0 79.6	79.6	20576.6
184+00.0000 R	1	147.0	529.6	529.6	1	27.0 90.7	90.7	21015.5
185+00.0000 R	1	149.0	548.1	548.1	i	28.0 101.9	101.9	21461.8
186+00.0000 R	i	142.0	538.9	538.9	1	25.0 98.1	98.1	21902.5
187+00.0000 R	i	151.0	542.6	542.6	1	20.0 83.3	83.3	22361.8
188+00.0000 R	i	154.0	564.8	564.8	i	21.0 75.9	75.9	22850.7
189+00.0000 R	1	147.0	557.4	557.4	i	20.0 75.9	75.9	23332.2
190+00.0000 R	1	147.0	544.4	544.4	1	21.0 75.9	75.9	23800.7
191+00.0000 R	1	155.0	559.3	559.3	1	18.0 72.2	72.2	24287.7
192+00.0000 R	i	151.0	566.7	566.7	1	18.0 66.7	66.7	24787.7
193+00.0000 R	i	144.0	546.3	546.3	1	19.0 68.5	68.5	25265.5
194+00.0000 R	1	137.0	520.4	520.4	1	22.0 75.9	75.9	25709.9
195+00.0000 R	1	121.0	477.8	477.8	1	18.0 74.1	74.1	26113.6
196+00.0000 R	1	99.0	407.4	407.4	1	22.0 74.1	74.1	26447.0
197+00.0000 R	1	159.0	477.8	477.8	1	15.0 68.5	68.5	26856.2
198+00.0000 R	1	4.0	301.9	301.9	1	61.8 142.2	142.2	27015.9
199+00.0000 R	1	7.0	20.4	20.4	1	60.1 225.7	225.7	26810.6
202+00.0000 R	1	4.2	20.7	20.7	1	56.0 215.1	215.1	26616.2
203+00.0000 R	1	42.9	87.3	87.3	1	51.7 199.5	199.5	26504.0
204+00.0000 R	1	126.0	312.8	312.8	1	21.0 134.7	134.7	26682.1
205+00.0000 R	1	142.0	496.3	496.3	1	17.0 70.4	70.4	27108.1
206+00.0000 R	1	146.0	533.3	533.3	1	14.0 57.4	57.4	27584.0
207+00.0000 R	1	145.0	538.9	538.9	1	18.0 59.3	59.3	28063.6
208+00.0000 R	1	144.0	535.2	535.2	1	20.0 70.4	70.4	28528.4
209+00.0000 R	1	154.0	551.9	551.9	1	19.0 72.2	72.2	29008.1
210+00.0000 R	1	160.0	581.5	581.5	1	14.0 61.1	61.1	29528.4
211+00.0000 R	1	183.0	635.2	635.2	1	18.0 59.3	59.3	30104.3
212+00.0000 R	1	175.0	663.0	663.0	1	21.0 72.2	72.2	30695.1
213+00.0000 R	1	166.0	631.5	631.5	1	26.0 87.0	87.0	31239.5
214+00.0000 R	1	159.0	601.9	601.9	1	27.0 98.1	98.1	31743.2
215+00.0000 R	1	120.0	516.7	516.7	1	27.0 100.0	100.0	32159.9
216+00.0000 R	1	86.0	381.5	381.5	1	29.0 103.7	103.7	32437.7
217+00.0000 R	1	71.0	290.7	290.7	1	29.0 107.4	107.4	32621.0
218+00.0000 R	1	64.0	250.0	250.0	1	28.0 105.6	105.6	32765.5
219+00.0000 R	1	41.0	194.4	194.4	1	49.0 142.6	142.6	32817.3
220+00.0000 R	1	29.0	129.6	129.6	1	93.0 263.0	263.0	32684.0
221+00.0000 R	1	38.0	124.1	124.1	1	66.0 294.4	294.4	32513.6
222+00.0000 R	1	38.0	140.7	140.7	1	72.0 255.6	255.6	32398.8
223+00.0000 R	1	44.0	151.9	151.9	1	67.0 257.4	257.4	32293.2
224+00.0000 R	1	47.0	168.5	168.5	1	66.0 246.3	246.3	32215.5
225+00.0000 R	1	39.0	159.3	159.3	1	55.0 224.1	224.1	32150.6
226+00.0000 R	1	37.0	140.7	140.7	1	37.0 170.4	170.4	32121.0
227+00.0000 R	1	47.0	155.6	155.6	1	28.0 120.4	120.4	32156.2
228+00.0000 R	1	41.0	163.0	163.0	1	33.0 113.0	113.0	32206.2
229+00.0000 R	1	41.0	151.9	151.9	1	35.0 125.9	125.9	32232.1
230+00.0000 R	1	42.0	153.7	153.7	1	30.0 120.4	120.4	32265.5
231+00.0000 R	1	40.0	151.9	151.9	1	31.0 113.0	113.0	32304.3

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



SH 285 EARTHWORK SUMMARY

BASELINE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION FILL AREA	STATION FILL VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
232+00.0000 R	1	36.0	140.7	140.7	1	33.0 1	18.5	118.5	32326.6
233+00.0000 R	1	44.0	148.1	148.1	1		16.7	116.7	32358.1
234+00.0000 R	1	40.0	155.6	155.6	i		20.4	120.4	32393.2
235+00.0000 R	1	41.0	150.0	150.0	1		31.5	131.5	32411.8
236+00.0000 R	1	43.0	155.6	155.6	1		38.9	138.9	32428.4
237+00.0000 R	1	45.0	163.0	163.0	1		50.0	150.0	32441.4
238+00.0000 R	1	43.0	163.0	163.0	1		42.6	142.6	32461.8
239+00.0000 R	1	49.0	170.4	170.4	1		31.5	131.5	32500.6
240+00.0000 R	1	62.0	205.6	205.6	1		16.7	116.7	32589.5
241+00.0000 R	1	72.0	248.1	248.1	1		98.1	98.1	32739.5
242+00.0000 R	1	113.0	342.6	342.6	1		72.2	72.2	33009.9
243+00.0000 R		109.0	411.1	411.1	1		55.6	55.6	33365.5
244+00.0000 R	1	90.0	368.5	368.5	1		54.8	64.8	33669.2
245+00.0000 R	1	96.0	344.4	344.4	1		75.9	75.9	33937.7
246+00.0000 R	1	108.0	377.8	377.8	1		31.5	81.5	34234.0
		118.0	418.5	418.5	1		79.6	79.6	34572.9
247+00.0000 R 248+00.0000 R		116.0	433.3	433.3	1		75. 9	79. 6 75. 9	34930.3
			433.5		1		75.9 35.2	85.2	
249+00.0000 R 250+00.0000 R		117.0		431.5	1				35276.6
		121.0	440.7	440.7	1		94.4	94.4	35622.9
251+00.0000 R		133.0	470.4	470.4	1		79.6	79.6	36013.6
252+00.0000 R		140.0	505.6	505.6	1		70.4	70.4	36448.8
253+00.0000 R		130.0	500.0	500.0	1		79.6	79.6	36869.2
254+00.0000 R		121.0	464.8	464.8	1		38.9	88.9	37245.1
255+00.0000 R		111.0	429.6	429.6	1		98.1	98.1	37576.6
256+00.0000 R		88.0	368.5	368.5			09.3	109.3	37835.8
257+00.0000 R	1	70.0	292.6	292.6	1		18.5	118.5	38009.9
258+00.0000 R	1	57.0	235.2	235.2	1		40.7	140.7	38104.3
259+00.0000 R	1	48.0	194.4	194.4	1		53.7	153.7	38145.1
260+00.0000 R	1	63.0	205.6	205.6	1		38.9	138.9	38211.8
261+00.0000 R	1	79.0	263.0	263.0	1		24.1	124.1	38350.6
262+00.0000 R		104.0	338.9	338.9	1		13.0	113.0	38576.6
263+00.0000 R		124.0	422.2	422.2	1		96.3	96.3	38902.5
264+00.0000 R		142.0	492.6	492.6	1		77.8	77.8	39317.3
265+00.0000 R		161.0	561.1	561.1	1		58.5	68.5	39809.9
266+00.0000 R		171.0	614.8	614.8	1		57.4	57.4	40367.3
267+00.0000 R		182.0	653.7	653.7	1		42.6	42.6	40978.4
268+00.0000 R		165.0	642.6	642.6	1		48.1	48.1	41572.9
269+00.0000 R		155.0	592.6	592.6	1		53.7	53.7	42111.8
270+00.0000 R		173.0	607.4	607.4	1		42.6	42.6	42676.6
271+00.0000 R		179.0	651.9	651.9	1		37.0	37.0	43291.4
272+00.0000 R		171.0	648.1	648.1	1		50.0	50.0	43889.5
273+00.0000 R		157.0	607.4	607.4	1		53.0	63.0	44434.0
274+00.0000 R		133.0	537.0	537.0	1		61.1	61.1	44909.9
275+00.0000 R		137.0	500.0	500.0	1		74.1	74.1	45335.8
276+00.0000 R		154.0	538.9	538.9	1		94.4	94.4	45780.3
277+00.0000 R	1	161.0	583.3	583.3	1	30.0 10	03.7	103.7	46259.9
278+00.0000 R	1	169.0	611.1	611.1	1	26.0 10	03.7	103.7	46767.3
279+00.0000 R	1	172.0	631.5	631.5	1	25.0	94.4	94.4	47304.3
280+00.0000 R	1	168.0	629.6	629.6	1		79.6	79.6	47854.3
281+00.0000 R	1	148.0	585.2	585.2	1	25.0	79.6	79.6	48359.9
282+00.0000 R	1	137.0	527.8	527.8	1	24.0	90.7	90.7	48796.9
283+00.0000 R	1	116.0	468.5	468.5	1	29.0	98.1	98.1	49167.3
284+00.0000 R	1	97.0	394.4	394.4	1	31.0 1	11.1	111.1	49450.6
285+00.0000 R	1	92.2	350.4	350.4	1	29.9 1	12.8	112.8	49688.3
286+00.0000 R	1	103.2	362.0	362.0	1	27.2 10	05.8	105.8	49944.4
287+00.0000 R	1	130.0	431.9	431.9	1	26.0	98.5	98.5	50277.7
288+00.0000 R	1	152.0	522.2	522.2	1	25.0	94.4	94.4	50705.5
289+00.0000 R		161.0	579.6	579.6	1		92.6	92.6	51192.6
290+00.0000 R		163.0	600.0	600.0	1	25.0	92.6	92.6	51700.0
291+00.0000 R		167.0	611.1	611.1	1		96.3	96.3	52214.8
292+00.0000 R		168.0	620.4	620.4	1		96.3	96.3	52738.9
293+00.0000 R		166.0	618.5	618.5	1		0.0	100.0	53257.4
294+00.0000 R		145.0	575.9	575.9	1		09.3	109.3	53724.0
295+00.0000 R		128.0	505.6	505.6	1		01.9	101.9	54127.7
296+00.0000 R		128.0	474.1	474.1	1		31.5	81.5	54520.3
297+00.0000 R		153.0	520.4	520.4	1		54.8	64.8	54975.9
20. 00.0000 11	,			J_J	'				

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



			SHE	ET 3 OF 8
© 2024	CONT	SECT	JOB	HIGHWAY
	0482	01	036,etc.	SH 285
	DIST		COUNTY	SHEET NO.
	PHR		JIM HOGG	32

BASEL INE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION FILL AREA	STATION FILL VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
298+00.0000 R	1	148.0	557.4	557.4	1	23.0	72.2	72.2	55461.1
299+00.0000 R	1	131.0	516.7	516.7	1		88.9	88.9	55888.9
300+00.0000 R	1	106.0	438.9	438.9	1	23.0	88.9	88.9	56238.9
301+00.0000 R	1	90.0	363.0	363.0	1	21.0	81.5	81.5	56520.3
302+00.0000 R	1	73.0	301.9	301.9	1	26.0	87.0	87.0	56735.2
303+00.0000 R	1	61.0	248.1	248.1	1		01.9	101.9	56881.4
304+00.0000 R	1	65.0	233.3	233.3	1	26.0 1	01.9	101.9	57012.9
305+00.0000 R	1	59.0	229.6	229.6	1	17.0	79.6	79.6	57162.9
306+00.0000 R	1	71.0	240.7	240.7	1	20.0	68.5	68.5	57335.2
307+00.0000 R	1	64.0	250.0	250.0	1	20.0	74.1	74.1	57511.1
308+00.0000 R	1	71.0	250.0	250.0	1	21.0	75.9	75.9	57685.2
309+00.0000 R	1	63.0	248.1	248.1	1	19.0	74.1	74.1	57859.2
310+00.0000 R	1	72.0	250.0	250.0	1	14.0	61.1	61.1	58048.1
311+00.0000 R	1	38.0	203.7	203.7	1	39.0	98.1	98.1	58153.7
312+00.0000 R	1	54.0	170.4	170.4	1	25.0 1	18.5	118.5	58205.5
313+00.0000 R	1	85.0	257.4	257.4	1	30.0 1	01.9	101.9	58361.1
314+00.0000 R	1	81.0	307.4	307.4	1	26.0 1	03.7	103.7	58564.8
315+00.0000 R	1	114.0	361.1	361.1	1	18.0	81.5	81.5	58844.4
316+00.0000 R	1	96.0	388.9	388.9	1	25.0	79.6	79.6	59153.7
317+00.0000 R	1	84.0	333.3	333.3	1	18.0	79.6	79.6	59407.4
318+00.0000 R	1	54.0	255.6	255.6	1	18.0	66.7	66.7	59596.3
319+00.0000 R	1	43.0	179.6	179.6	1	14.0	59.3	59.3	59716.6
320+00.0000 R	1	18.0	113.0	113.0	1		87.0	87.0	59742.6
321+00.0000 R	1	13.0	57.4	57.4	1		29.6	129.6	59670.3
322+00.0000 R	1	16.0	53.7	53.7	1		34.9	134.9	59589.1
323+00.0000 R	1	38.4	100.7	100.7	1		29.0	129.0	59560.8
324+00.0000 R	1	32.0	130.4	130.4	1		157.1	157.1	59534.1
325+00.0000 R	1	47.0	146.3	146.3	1		96.3	196.3	59484.1
326+00.0000 R	1	68.0	213.0	213.0	1		214.8	214.8	59482.2
327+00.0000 R	1	47.0	213.0	213.0	1		27.8	227.8	59467.4
328+00.0000 R	1	53.0	185.2	185.2	1		224.1	224.1	59428.5
329+00.0000 R	1	60.0	209.3	209.3	1		214.8	214.8	59423.0
330+00.0000 R	1	69.0	238.9	238.9	1		94.4	194.4	59467.4
331+00.0000 R	1	69.0	255.6	255.6	1		79.6	179.6	59543.4
332+00.0000 R	1	86.0	287.0	287.0	1		57.4	157.4	59673.0
333+00.0000 R	1	114.0	370.4	370.4	1		09.3	109.3	59934.1
334+00.0000 R	1	154.0	496.3	496.3	1	16.0	72.2	72.2	60358.2
335+00.0000 R	1	144.0	551.9	551.9	1	9.0	46.3	46.3	60863.7
336+00.0000 R	1	151.0	546.3	546.3	1	7.0	29.6	29.6	61380.4
337+00.0000 R	1	191.0	633.3	633.3	1	9.0	29.6	29.6	61984.1
338+00.0000 R	1	173.0	674.1	674.1	1	7.0	29.6	29.6	62628.5
339+00.0000 R	1	175.0	644.4	644.4	1	8.0	27.8	27.8	63245.2
340+00.0000 R	1	179.0	655.6	655.6	1	9.0	31.5	31.5	63869.3
341+00.0000 R 342+00.0000 R	1	179.0	663.0	663.0	1	14.0	42.6	42.6	64489.7
342+00.0000 R 343+00.0000 R	1	183.0 186.0	670.4 683.3	670.4 683.3	1	10.0 13.0	44.4 42.6	44.4 42.6	65115.6 65756.3
344+00.0000 R	1	198.0	711.1	711.1	1		50.0	50.0	
345+00.0000 R	1	201.0	738.9	738.9	1	14.0 21.0	64.8	64.8	66417.4 67091.5
346+00.0000 R	1	190.0	724.1	724.1	1	34.0 1		101.9	67713.7
347+00.0000 R		173.0	672.2	672.2	1	42.0 1		140.7	68245.2
348+00.0000 R	1	168.0	631.5	631.5	1	40.0 1		151.9	68724.8
349+00.0000 R	i	173.0	631.5	631.5	1		148.1	148.1	69208.2
350+00.0000 R	i	171.0	637.0	637.0	1	41.0 1		150.0	69695.2
351+00.0000 R	i	180.0	650.0	650.0	i		31.5	131.5	70213.7
352+00.0000 R	i	186.0	677.8	677.8	i		03.7	103.7	70787.8
353+00.0000 R	i	172.0	663.0	663.0	1	20.0	85.2	85.2	71365.6
354+00.0000 R	1	162.0	618.5	618.5	1	18.0	70.4	70.4	71913.7
355+00.0000 R	1	130.0	540.7	540.7	1	23.0	75.9	75.9	72378.5
356+00.0000 R	i	78.0	385.2	385.2	1		09.3	109.3	72654.5
357+00.0000 R	1	54.0	244.4	244.4	1		40.7	140.7	72758.2
358+00.0000 R	1	53.0	198.1	198.1	1		148.1	148.1	72808.2
359+00.0000 R	1	56.0	201.9	201.9	i		46.3	146.3	72863.7
360+00.0000 R	i	40.0	177.8	177.8	i	71.0 2		203.7	72837.8
361+00.0000 R	1	54.0	174.1	174.1	1		203.7	203.7	72808.2
362+00.0000 R	1	53.0	198.1	198.1	1	34.0 1		135.2	72871.1
363+00.0000 R	1	49.0	188.9	188.9	1	32.0 1		122.2	72937.8

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.





			SHE	ET 4 OF 8
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	0482	01	036,etc.	SH 285
	DIST		COUNTY	SHEET NO.
	PHR		JIM HOGG	33

BASEL INE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION STATION FILL FILL AREA VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
364+00.0000 R	1	36.0	157.4	157.4	1	48.0 148.1	148.1	72947.1
365+00.0000 R	1	27.0	116.7	116.7	1	44.0 170.4	170.4	72893.4
366+00.0000 R	1	17.0	81.5	81.5	1	66.0 203.7	203.7	72771.1
367+00.0000 R	1	20.0	68.5	68.5	1	63.0 238.9	238.9	72600.8
368+00.0000 R	1	36.0	103.7	103.7	1	45.0 200.0	200.0	72504.5
369+00.0000 R	1	56.0	170.4	170.4	1	33.0 144.4	144.4	72530.4
370+00.0000 R	1	50.0	196.3	196.3	1	36.0 127.8	127.8	72598.9
371+00.0000 R	1	48.0	181.5	181.5	1	43.0 146.3	146.3	72634.1
372+00.0000 R	1	51.0	183.3	183.3	1	49.0 170.4	170.4	72647.1
373+00.0000 R	1	43.0	174.1	174.1	1	54.0 190.7	190.7	72630.4
374+00.0000 R	1	32.0	138.9	138.9	1	61.0 213.0	213.0	72556.3
375+00.0000 R	1	32.3	119.0	119.0	1	51.7 208.7	208.7	72466.6
376+00.0000 R	1	30.0	115.3	115.3	1	46.0 181.0	181.0	72400.9
377+00.0000 R	1	33.0	116.7	116.7	1	50.0 177.8	177.8	72339.8
378+00.0000 R	1	28.0	113.0	113.0	1	64.0 211.1	211.1	72241.7
379+00.0000 R	1	25.0	98.1	98.1	1	68.0 244.4	244.4	72095.4
380+00.0000 R	1	17.0	77.8	77.8	1	78.0 270.4	270.4	71902.8
381+00.0000 R	1	18.6	65.9	65.9	1	60.9 257.2	257.2	71711.5
382+00.0000 R	1	22.6	76.2	76.2	1	70.9 244.0	244.0	71543.7
383+00.0000 R	1	26.1	90.2	90.2	1	65.6 252.7	252.7	71381.2
384+00.0000 R	1	41.0	124.3	124.3	1	64.0 239.9	239.9	71265.6
385+00.0000 R	1	48.0	164.8	164.8	1	60.0 229.6	229.6	71200.8
386+00.0000 R	1	66.0	211.1	211.1	1	56.0 214.8	214.8	71197.1
387+00.0000 R	1	80.0	270.4	270.4	1	48.0 192.6	192.6	71274.9
388+00.0000 R	1	66.0	270.4	270.4	1	48.0 177.8	177.8	71367.5
389+00.0000 R	1	31.0	179.6	179.6	1	61.0 201.9	201.9	71345.3
390+00.0000 R	1	12.0	79.6	79.6	1	80.0 261.1	261.1	71163.8
391+00.0000 R	1	20.0	59.3	59.3	1	70.0 277.8	277.8	70945.3
392+00.0000 R	1	10.4	56.3	56.3	1	154.5 415.8	415.8	70585.8
393+00.0000 R	1	27.0	69.3	69.3	1	55.0 388.0	388.0	70267.1
394+00.0000 R	1	41.4	126.7	126.7	1	48.9 192.4	192.4	70201.4
395+00.0000 R	1	27.1	126.9	126.9	1	50.7 184.4	184.4	70143.9
396+00.0000 R	1	63.4	167.6	167.6	1	38.9 166.0	166.0	70145.5
397+00.0000 R	1	61.0	230.4	230.4	1	37.0 140.6	140.6	70235.4
398+00.0000 R	1	53.0	211.1	211.1	1	36.0 135.2	135.2	70311.3
399+00.0000 R	1	44.0	179.6	179.6	1	38.0 137.0	137.0	70353.9
400+00.0000 R	1	39.0	153.7	153.7	1	25.0 116.7	116.7	70390.9
401+00.0000 R	1	44.0	153.7	153.7	1	28.0 98.1	98.1	70446.5
402+00.0000 R	1	49.0	172.2	172.2	1	28.0 103.7	103.7	70515.0
403+00.0000 R	1	52.0	187.0	187.0	1	19.0 87.0	87.0	70615.0
404+00.0000 R	1	52.0	192.6	192.6	1	23.0 77.8	77.8	70729.8
405+00.0000 R	1	45.0	179.6	179.6	1	31.0 100.0	100.0	70809.4
406+00.0000 R	1	49.0	174.1	174.1	1	30.0 113.0	113.0	70870.5
407+00.0000 R	1	53.0	188.9	188.9	1	32.0 114.8	114.8	70944.6
408+00.0000 R	1	63.0	214.8	214.8	1	29.0 113.0	113.0	71046.5
409+00.0000 R	1	68.0	242.6	242.6	1	30.0 109.3	109.3	71179.8
410+00.0000 R	1	74.0	263.0	263.0	1	30.0 111.1	111.1	71331.6
411+00.0000 R		102.0	325.9	325.9	1	20.0 92.6	92.6	71565.0
412+00.0000 R	1	98.0	370.4	370.4	1	22.0 77.8	77.8	71857.6
413+00.0000 R	1	87.0	342.6	342.6	1	22.0 81.5	81.5	72118.7
414+00.0000 R	1	60.0	272.2	272.2	1	30.0 96.3	96.3	72294.6
415+00.0000 R	1	39.0	183.3	183.3	1	53.0 153.7	153.7	72324.2
416+00.0000 R	1	32.0	131.5	131.5	1	37.0 166.7	166.7	72289.1
417+00.0000 R	1	59.0	168.5	168.5	1	27.0 118.5	118.5	72339.1
418+00.0000 R	1	87.0	270.4	270.4	1	24.0 94.4	94.4	72515.0
419+00.0000 R	1	90.0	327.8	327.8	1	24.0 88.9	88.9	72753.9
420+00.0000 R	1	88.0	329.6	329.6	1	17.0 75.9	75.9	73007.6
421+00.0000 R	1	87.0	324.1	324.1	1	15.0 59.3	59.3	73272.4
422+00.0000 R	1	76.0	301.9	301.9	1	24.0 72.2	72.2	73502.0
423+00.0000 R	1	83.0	294.4	294.4	1 1	28.0 96.3	96.3	73700.2
424+00.0000 R	1	86.0	313.0 325.9	313.0 325.9	1	29.0 105.6	105.6	73907.6 74126.1
425+00.0000 R		90.0				29.0 107.4	107.4	
426+00.0000 R	1	91.0	335.2	335.2	1	25.0 100.0	100.0	74361.3
427+00.0000 R	1	88.0	331.5	331.5	1 1	22.0 87.0 20.0 77.8	87.0 77.8	74605.7
428+00.0000 R 429+00.0000 R		102.0	351.9 388.9	351.9 388.9	1	20.0 77.8 21.0 75.9	77.8 75.9	74879.8 75192.8
423.00.0000 K	1	100.0	500.5	200. 3	ı	L1.0 1J.J	10.5	10102.0

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



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	0482	01	036,etc.	SH 285
	DIST		COUNTY	SHEET NO.
	PHR		JIM HOGG	34

BASEL INE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION STATION FILL FILL AREA VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
430+00.0000 R	1	130.0	440.7	440.7	1	16.0 68.5	68.5	75565.0
431+00.0000 R	1	105.0	435.2	435.2	1	15.0 57.4	57.4	75942.8
432+00.0000 R	1	63.0	311.1	311.1	1	33.0 88.9	88.9	76165.0
433+00.0000 R	1	30.0	172.2	172.2	1	53.0 159.3	159.3	76177.9
434+00.0000 R	1	70.0	185.2	185.2	1	32.0 157.4	157.4	76205.7
435+00.0000 R	1	29.0	183.3	183.3	1	48.0 148.1	148.1	76240.9
436+00.0000 R	1	44.0	135.2	135.2	1	39.0 161.1	161.1	76215.0
437+00.0000 R	1	66.0	203.7	203.7	1	35.0 137.0	137.0	76281.6
438+00.0000 R	1	48.0	211.1	211.1	1	39.0 137.0	137.0	76355.7
439+00,0000 R	1	45.0	172.2	172.2	1	38.0 142.6	142.6	76385.4
	1	45.0	166.7		1	28.0 122.2	122.2	76429.8
440+00.0000 R	1			166.7				
441+00.0000 R	1	35.0	148.1	148.1	1	22.0 92.6	92.6	76485.4
442+00.0000 R	l .	36.0	131.5	131.5	1	57.0 146.3	146.3	76470.5
443+00.0000 R	1	32.0	125.9	125.9	1	16.0 135.2	135.2	76461.3
444+00.0000 R	1	23.0	101.9	101.9	1	26.0 77.8	77.8	76485.4
445+00.0000 R	1	28.0	94.4	94.4	1	20.0 85.2	85.2	76494.6
446+00.0000 R	1	17.0	83.3	83.3	1	27.0 87.0	87.0	76490.9
447+00.0000 R	1	6.6	43.8	43.8	1	28.3 102.4	102.4	76432.3
448+00.0000 R	1	5.7	22.9	22.9	1	36.6 120.1	120.1	76335.0
449+00.0000 R	1	6.0	21.7	21.7	1	61.0 180.7	180.7	76176.1
450+00.0000 R	1	10.0	29.6	29.6	1	67.0 237.0	237.0	75968.7
451+00.0000 R	1	6.0	29.6	29.6	1	67.0 248.1	248.1	75750.1
452+00,0000 R	1	10.0	29.6	29.6	1	66.0 246.3	246.3	75533.5
453+00.0000 R	1	12.0	40.7	40.7	1	77.0 264.8	264.8	75309.4
454+00.0000 R	1	18.0	55.6	55.6	1	69.0 270.4	270.4	75094.6
	1				1			
455+00,0000 R	1	27.0	83.3	83.3	1	52.0 224.1	224.1	74953.8
456+00.0000 R		35.0	114.8	114.8	1	43.0 175.9	175.9	74892.7
457+00.0000 R	1	29.0	118.5	118.5	1	42.0 157.4	157.4	74853.8
458+00.0000 R	1	51.0	148.1	148.1	1	44.0 159.3	159.3	74842.7
459+00.0000 R	1	69.0	222.2	222.2	1	38.0 151.9	151.9	74913.1
460+00.0000 R	1	69.0	255.6	255.6	1	35.0 135.2	135.2	75033.5
461+00.0000 R	1	72.0	261.1	261.1	1	29.0 118.5	118.5	75176.1
462+00.0000 R	1	61.0	246.3	246.3	1	27.0 103.7	103.7	75318.7
463+00.0000 R	1	52.0	209.3	209.3	1	26.0 98.1	98.1	75429.8
464+00.0000 R	1	42.0	174.1	174.1	1	30.0 103.7	103.7	75500.1
465+00.0000 R	1	36.0	144.4	144.4	1	27.0 105.6	105.6	75539.0
466+00.0000 R	1	34.0	129.6	129.6	1	22.0 90.7	90.7	75577.9
467+00.0000 R	1	36.0	129.6	129.6	1	19.0 75.9	75.9	75631.6
468+00.0000 R	1	77.0	209.3	209.3	1	16.0 64.8	64.8	75776.1
	1	52.0	238.9	238.9	1			75940.9
469+00.0000 R	1				·		74.1	
470+00.0000 R	1	55.0	198.1	198.1	1	17.0 75.9	75.9	76063.1
471+00.0000 R	l .	56.0	205.6	205.6	1	20.0 68.5	68.5	76200.1
472+00.0000 R	1	65.0	224.1	224.1	1	19.0 72.2	72.2	76352.0
473+00.0000 R	1	47.0	207.4	207.4	1	10.0 53.7	53.7	76505.7
474+00.0000 R	1	52.0	183.3	183.3	1	8.0 33.3	33.3	76655.7
475+00.0000 R	1	62.0	211.1	211.1	1	6.0 25.9	25.9	76840.9
476+00.0000 R	1	54.0	214.8	214.8	1	7.0 24.1	24.1	77031.6
477+00.0000 R	1	45.0	183.3	183.3	1	15.0 40.7	40.7	77174.2
478+00.0000 R	1	47.0	170.4	170.4	1	9.0 44.4	44.4	77300.1
479+00.0000 R	1	55.0	188.9	188.9	1	8.0 31.5	31.5	77457.5
480+00.0000 R	1	58.0	209.3	209.3	1	7.0 27.8	27.8	77639.0
481+00.0000 R	1	50.0	200.0	200.0	1	15.0 40.7	40.7	77798.3
482+00.0000 R	1	49.0	183.3	183.3	1	12.0 50.0	50.0	77931.6
	1							
483+00.0000 R	1	49.0	181.5	181.5	1	11.0 42.6	42.6	78070.5
484+00.0000 R	1	31.0	148.1	148.1	1	27.0 70.4	70.4	78148.3
485+00.0000 R	1	23.0	100.0	100.0	1	52.0 146.3	146.3	78102.0
486+00.0000 R	1	11.0	63.0	63.0	1	69.0 224.1	224.1	77940.9
487+00.0000 R	1	6.6	32.5	32.5	1	51.9 223.8	223.8	77749.5
488+00.0000 R	1	11.0	32.5	32.5	1	52.0 192.4	192.4	77589.7
489+00.0000 R	1	12.0	42.6	42.6	1	36.0 163.0	163.0	77469.3
490+00.0000 R	1	27.0	72.2	72.2	1	38.0 137.0	137.0	77404.5
491+00.0000 R	1	32.0	109.3	109.3	1	37.0 138.9	138.9	77374.9
492+00.0000 R	1	15.0	87.0	87.0	1	61.0 181.5	181.5	77280.4
493+00.0000 R	1	22.0	68.5	68.5	1	32.0 172.2	172.2	77176.7
494+00.0000 R	1	26.0	88.9	88.9	1	32.0 172.2	118.5	77147.1
495+00.0000 R	1	37.0			1	30.0 114.8		77149.0
495+00.0000 R	I	51.0	116.7	116.7	I	JU.U 114.8	114.8	11149.0

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



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	0482	01	036,etc.	SH 285
	DIST		COUNTY	SHEET NO.
	PHR		JIM HOGG	35

BASEL INE STATION	CUT SHRINK/SWELL FACTOR	STATION CUT AREA	STATION CUT VOLUME	ADJUSTED STATION CUT	FILL SHRINK/SWELL FACTOR	STATION FILL AREA	STATION FILL VOLUME	ADJUSTED STATION FILL	MASS ORDINATE
496+00.0000 R	1	39.0	140.7	140.7	1	30.0	111.1	111.1	77178.6
497+00.0000 R	1	53.0	170.4	170.4	1		03.7	103.7	77245.3
498+00.0000 R	1	38.0	168.5	168.5	1		01.9	101.9	77311.9
499+00.0000 R	1	24.0	114.8	114.8	1		31.5	131.5	77295.3
500+00.0000 R	1	16.0	74.1	74.1	1		161.1	161.1	77208.2
501+00.0000 R	1	11.0	50.0	50.0	1		38.7	138.7	77119.5
502+00.0000 R	1	6.5	32.5	32.5	1		26.9	126.9	77025.1
503+00.0000 R	1	5.6	22.6	22.6	1		44.9	144.9	76902.8
504+00.0000 R	1	6.0	21.6	21.6	1		69.7	169.7	76754.8
505+00.0000 R	1	11.0	31.5	31.5	1		83.3	183.3	76602.9
506+00.0000 R	1	24.0	64.8	64.8	1		63.0	163.0	76504.8
507+00.0000 R	1	40.0	118.5	118.5	1		35.2	135.2	76488.1
508+00.0000 R	1	38.0	144.4	144.4	1		25.9	125.9	76506.6
509+00.0000 R	1	26.0	118.5	118.5	1		33.3	133.3	76491.8
510+00.0000 R	1	31.0	105.5	105.5	1		15.8	115.8	76481.5
511+00.0000 R	1	54.2	157.7	157.7	1	25.3	96.0	96.0	76543.1
512+00.0000 R	1	32.0	159.6	159.6	1		15.4	115.4	76587.4
513+00.0000 R	1	37.0	127.8	127.8	1		20.4	120.4	76594.8
514+00.0000 R	1	40.0	142.6	142.6	1	24.0	96.3	96.3	76641.1
515+00.0000 R	1	17.0	105.6	105.6	1	36.0	111.1	111.1	76635.5
516+00.0000 R	1	13.0	55.6	55.6	1		44.4	144.4	76546.6
517+00.0000 R	1	20.0	61.1	61.1	1		37.0	137.0	76470.7
518+00.0000 R	1	23.0	79.6	79.6	1		14.8	114.8	76435.5
519+00.0000 R	1	27.0	92.6	92.6	1		01.9	101.9	76426.3
520+00.0000 R	1	39.0	122.2	122.2	1	24.0	90.7	90.7	76457.8
521+00.0000 R	1	50.0	164.8	164.8	1	17.0	75.9	75.9	76546.6
522+00.0000 R	1	36.0	159.3	159.3	1	29.0	85.2	85.2	76620.7
523+00.0000 R	1	34.0	129.6	129.6	1		01.9	101.9	76648.5
524+00.0000 R	1	43.0	142.6	142.6	1	19.0	83.3	83.3	76707.8
525+00.0000 R	1	67.0	203.7	203.7	1	18.0	68.5	68.5	76842.9
526+00.0000 R	1	83.0	277.8	277.8	1	25.0	79.6	79.6	77041.1
527+00.0000 R	1	76.0	294.4	294.4	1	30.0 1	01.9	101.9	77233.7
528+00.0000 R	1	56.0	244.4	244.4	1	28.0 1	07.4	107.4	77370.7
529+00.0000 R	1	46.0	188.9	188.9	1	35.0 1	16.7	116.7	77442.9
530+00.0000 R	1	41.0	161.1	161.1	1	89.0 2	29.6	229.6	77374.4
531+00.0000 R	1	45.0	159.3	159.3	1	35.0 2	29.6	229.6	77304.1
532+00.0000 R	1	49.0	174.1	174.1	1	30.0 1	20.4	120.4	77357.8
533+00.0000 R	1	52.0	187.0	187.0	1	32.0 1	14.8	114.8	77430.0
534+00.0000 R	1	37.0	164.8	164.8	1	39.0 1	31.5	131.5	77463.3
535+00.0000 R	1	33.0	129.6	129.6	1	47.0 1	59.3	159.3	77433.7
536+00.0000 R	1	31.0	118.5	118.5	1	49.0 1	77.8	177.8	77374.4
537+00.0000 R	1	47.0	144.4	144.4	1	36.0 1	57.4	157.4	77361.5
538+00.0000 R	1	56.0	190.7	190.7	1	38.0 1	37.0	137.0	77415.2
539+00.0000 R	1	67.0	227.8	227.8	1	38.0 1	40.7	140.7	77502.2
540+00.0000 R	1	100.0	309.3	309.3	1		14.8	114.8	77696.6
541+00.0000 R	1	107.0	383.3	383.3	1	22.0	85.2	85.2	77994.8
542+00.0000 R	1	93.0	370.4	370.4	1	27.0	90.7	90.7	78274.4
543+00.0000 R	1	94.0	346.3	346.3	1	17.0	81.5	81.5	78539.2
544+00.0000 R	1	73.0	309.3	309.3	1		79.6	79.6	78768.9
545+00.0000 R	1	53.0	233.3	233.3	1		14.8	114.8	78887.4
546+00.0000 R	1	62.0	213.0	213.0	1		22.2	122.2	78978.1
547+00.0000 R	1	57.0	220.4	220.4	1	35.0 1		120.4	79078.1
548+00.0000 R	1	64.0	224.1	224.1	1		20.4	120.4	79181.8
549+00.0000 R	1	78.0	263.0	263.0	1	25.0 1		101.9	79342.9
550+00.0000 R	1	76.0	285.2	285.2	1	28.0	98.1	98.1	79530.0
551+00.0000 R	1	74.0	277.8	277.8	1		13.0	113.0	79694.8
552+00.0000 R	1	99.0	320.4	320.4	1		09.3	109.3	79905.9
553+00.0000 R		113.0	392.6	392.6	1	27.0	98.1	98.1	80200.3
554+00.0000 R		121.0	433.3	433.3	1	23.0	92.6	92.6	80541.1
555+00.0000 R		131.0	466.7	466.7	1	19.0	77.8	77.8	80930.0
556+00.0000 R		134.0	490.7	490.7	1	17.0	66.7	66.7	81354.1
557+00.0000 R		115.0	461.1	461.1	1	19.0	66.7	66.7	81748.5
558+00.0000 R		109.0	414.8	414.8	1	17.0	66.7	66.7	82096.6
559+00.0000 R		118.0	420.4	420.4	1	14.0	57.4	57.4	82459.6
560+00.0000 R	1	97.0	398.1	398.1	1	17.0	57.4	57.4	82800.3
561+00.0000 R	1	75.0	318.5	318.5	1	27.0	81.5	81.5	83037.4

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VOLUMES SHOWN ARE IN CUBIC YARDS.

Pharr District Central Design



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	0482	01	036,etc.	SH 285
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FILL STATION STATION STATION STATION ADJUSTED ADJUSTED MASS BASEL INE SHRINK/SWELL SHRINK/SWELL FILL STATION FILL STATION CUT STATION ORDINATE FACTOR **FACTOR** VOLUME AREA VOLUME CUT FILL AREA 562+00.0000 R 55.0 240.7 240.7 36.0 116.7 116.7 83161.5 563+00.0000 R 42.0 179.6 179.6 55.0 168.5 168.5 83172.6 564+00.0000 R 31.9 136.8 136.8 31.7 160.6 160.6 83148.7 30.4 565+00.0000 R 115.4 115.4 40.7 134.2 134.2 83129.9 104.8 104.8 166.9 566+00.0000 R 26.2 49.4 166.9 83067.9 567+00.0000 R 21.4 88.2 88.2 45.7 176.2 176.2 82979.8 568+00.0000 R 50.2 50.2 44.0 166.1 82863.9 5.7 166.1 569+00.0000 R 41.0 86.5 86.5 43.0 161.1 161.1 82789.3 570+00.0000 R 188.9 39.0 151.9 151.9 82826.4 61.0 188.9 571+00.0000 R 66.0 235.2 235.2 44.0 153.7 153.7 82907.8 572+00.0000 R 66.0 244.4 244.4 41.0 157.4 157.4 82994.9 573+00.0000 R 227.8 48.0 164.8 83057.8 57.0 227.8 164.8 574+00.0000 R 155.0 375.9 32.0 82846.7 164.8 164.8 375.9 575+00.0000 R 92.0 229.6 229.6 47.0 374.1 374.1 82702.3 576+00.0000 R 99.0 353.7 353.7 41.0 163.0 163.0 82893.0 577+00.0000 R 108.0 383.3 383.3 39.0 148.1 148.1 83128.2 578+00.0000 R 139.0 457.4 457.4 34.0 135.2 135.2 83450.4 124.1 579+00.0000 R 154.0 542.6 542.6 33.0 124.1 83869.0 551.9 580+00.0000 R 144.0 551.9 33.0 122.2 122.2 84298.6 581+00.0000 R 117.0 483.3 483.3 34.0 124.1 124.1 84657.8 350.0 582+00.0000 R 72.0 350.0 40.0 137.0 137.0 84870.8 583+00.0000 R 67.0 257.4 257.4 46.0 159.3 159.3 84969.0 584+00.0000 R 59.0 233.3 233.3 50.0 177.8 177.8 85024.5 76.0 174.1 174.1 585+00.0000 R 250.0 250.0 44.0 85100.4 586+00.0000 R 95.0 316.7 316.7 38.0 151.9 151.9 85265.2 587+00.0000 R 124.0 405.6 405.6 33.0 131.5 131.5 85539.3 141.0 125.9 125.9 490.7 35.0 85904.1 588+00.0000 R 490.7 589+00.0000 R 160.0 557.4 557.4 34.0 127.8 127.8 86333.8 590+00.0000 R 180.0 629.6 629.6 124.1 124.1 86839.3 33.0 124.1 591+00.0000 R 176.0 659.3 659.3 34.0 124.1 87374.5 592+00.0000 R 145.0 594.4 594.4 39.0 135.2 135.2 87833.8 513.0 132.0 41.0 148.1 148.1 593+00.0000 R 513.0 88198.6 594+00.0000 R 119.0 464.8 464.8 41.0 151.9 151.9 88511.5 595+00.0000 R 95.0 396.3 396.3 50.0 168.5 168.5 88739.3 80.0 324.1 596+00.0000 R 324.1 59.0 201.9 201.9 88861.5 597+00.0000 R 74.0 285.2 285.2 66.0 231.5 231.5 88915.2 59.0 231.5 231.5 88970.8 598+00.0000 R 81.0 287.0 287.0 599+00.0000 R 145.0 418.5 418.5 36.0 175.9 175.9 89213.4 600+00.0000 R 112.0 475.9 475.9 35.0 131.5 131.5 89557.8 38.0 135.2 135.2 89794.9 601+00.0000 R 89.0 372.2 372.2 602+00.0000 R 62.0 279.6 279.6 53.0 168.5 168.5 89906.0 603+00.0000 R 213.0 213.0 58.0 205.6 205.6 89913.4 53.0 604+00.0000 R 52.0 194.4 194.4 65.0 227.8 227.8 89880.1 73.0 255.6 255.6 605+00.0000 R 50.0 188.9 188.9 89813.4 55.0 194.4 194.4 79.0 281.5 89726.4 606+00.0000 R 281.5 607+00.0000 R 64.0 220.4 220.4 259.3 259.3 89687.5 61.0 608+00.0000 R 57.0 224.1 224.1 57.0 218.5 218.5 89693.0 609+00.0000 R 57.0 211.1 211.1 53.0 203.7 203.7 89700.4 610+00.0000 R 61.0 218.5 218.5 45.0 181.5 181.5 89737.5 611+00.0000 R 77.0 255.6 255.6 41.0 159.3 159.3 89833.8 612+00.0000 R 106.0 338.9 338.9 36.0 142.6 142.6 90030.1 117.0 413.0 35.0 90311.5 613+00.0000 R 413.0 131.5 131.5 614+00.0000 R 129.0 455.6 455.6 33.0 125.9 125.9 90641.2 615+00-0000 R 127.0 474.1 474.1 32.0 120.4 120.4 90994.9 442.6 616+00.0000 R 112.0 442.6 32.0 118.5 118.5 91319.0 617+00.0000 R 375.9 375.9 120.4 91574.5 91.0 33.0 120.4 73.0 91757.8 618+00.0000 R 303.7 303.7 32.0 120.4 120.4 619+00.0000 R 52.0 231.5 231.5 35.0 124. 124.1 91865.2 620+00.0000 R 0.0 96.3 96.3 30.0 120.4 120.4 91841.2

<u>156,096.</u>6 CY

64,255.4 CY

TOTAL

NOTE:

SHRINKAGE AND SWELLING FACTORS WERE NOT CONSIDERED IN DETERMINING QUANTITIES. VOLUMES WERE MEASURED AS ORIGINAL AND FINAL POSITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VALUES WHEN NEEDED.

VOLUMES SHOWN ARE IN CUBIC YARDS.

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SH 285 EARTHWORK SUMMARY

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TRAFFIC CONTROL PLAN COVER SHEET

Pharr District Central Design



Texas Department of Transportation

SH 285

TCP COVER SHEET

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GENERAL NOTES AND SPECIFICATIONS DATA:

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

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

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

DO NOT BLOCK DRAINAGE WHEN HANDLING AND STOCKPILING EXCAVATED MATERIAL.

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

MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF CONSTRUCTION.

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

TRAFFIC CONTROL DEVICES:

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

NOTIFY THE AREA ENGINEER (AE) IN WRITING (E-MAIL IS ACCEPTABLE) ONCE THE TRAFFIC CONTROL PLAN (TCP) AND ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED AS PER PLANS ON THE PROJECT SO THAT THE DEPARTMENT'S RESPONSIBLE PERSON ACCOMPANIED BY THE CONTRACTOR'S RESPONSIBLE PERSON CAN CONDUCT AN INSPECTION ON THE SAID TCP AND TRAFFIC CONTROL DEVICES. COMMENCEMENT OF WORK WILL NOT BE AUTHORIZED OR ALLOWED UNTIL THE AE NOTIFIES THE CONTRACTOR IN WRITING TO PROCEED WITH WORK.

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

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

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

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

COORDINATE THE TRAFFIC CONTROL PLAN AND THE VARIOUS SEQUENCES OF CONSTRUCTION WITH ADJACENT CONSTRUCTION PROJECTS IF APPLICABLE,

TO ENSURE THE UNINTERRUPTED AND SAFE FLOW OF TRAFFIC.

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

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

SAFETY:

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

PROJECT SPECIFIC NOTES:

THE TRAFFIC CONTROL PLAN AND VARIOUS PHASES AND SEQUENCES OF CONSTRUCTION SERVE AS A GUIDE FOR THE SAFE HANDLING OF TRAFFIC DURING CONSTRUCTION OF THE PROJECT'S ROADWAY, UTILITIES AND OTHER RELATED ITEMS. IT DOES NOT ATTEMPT TO ADDRESS EVERY ASPECT OF CONSTRUCTION THAT IS REQUIRED DURING EACH PHASE OF CONSTRUCTION. ALSO, THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONSTRUCTING THE COMPLETE ROADWAYS, UTILITIES AND OTHER RELATED ITEMS, AS NOTED ON THE PLANS AND SPECIFICATIONS.

IF NECESSARY, TEMPORARY LANE CLOSURES SHALL BE DONE DURING OFF-PEAK HOURS, BETWEEN 9:00 AM TO 3:00 PM AND AT NIGHT-TIME, OR AS DIRECTED BY THE ENGINEER. DURING THE DAY-TIME PEAK HOURS OF 6:00 AM TO 8:30 AM AND 3:00 PM TO 7:00 PM, THE CONTRACTOR SHALL MAINTAIN THE NUMBER OF LANES OPEN TO TRAFFIC SHOWN ON THE TRAFFIC CONTROL PLANS.

WHERE THE CONTRACTOR DESIRES TO MOVE ANY CONSTRUCTION EQUIPMENT NOT LICENSED FOR OPERATION ON PUBLIC HIGHWAYS OR ACROSS ANY PAVEMENT, HE/SHE SHALL PROTECT THE PAVEMENT FROM ALL DAMAGE AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL KEEP TRAVELED SURFACES USED IN HIS HAULING OPERATIONS CLEAR AND FREE OF DIRT, DEBRIS, OR OTHER MATERIAL. SURFACE CLEARING AND CLEANING OPERATIONS SHALL BE PERFORMED IMMEDIATELY UPON THE OCCURRANCE OF ANY DEBRIS ON THE TRAVEL LANES. FAILURE TO COMPLY CAN RESULT IN CONTRACTOR BEING PENALIZED BY THE ENGINEER.

THE CONTRACTOR SHALL MAINTAIN ALL INTERSECTING ROADS OPEN AND DRIVEABLE TO THE PUBLIC. IN AREAS WHERE EXISTING AND PROPOSED INTERSECTING ROADS DO NOT PROVIDE A SMOOTH TRAVEL WAY TRANSITION OR TURN RADIUS FOR TRUCK TRAFFIC, THE CONTRACTOR SHALL PLACE TEMPORARY RAP OR OTHER MATERIAL AS DIRECTED BY THE ENGINEER TO PROVIDE FOR A SMOOTH TRANSITION.



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SH 285 TCP GENERAL NOTES

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PROJECT SPECIFIC NOTES (CONTINUED):

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

CHANGES TO MESSAGES ON PORTABLE CHANGEABLE MESSAGE SIGNS ARE PERMITTED WITH APPROVAL BY AREA ENGINEER. CONTRACTOR MUST MAKE USE OF TCP STANDARDS, BC STANDARDS AND WORKZONE STANDARDS FOR THIS OPERATION.

PLACE PCMS ONE WEEK PRIOR TO SETTING BARRICADES. COORDINATE WITH THE ENGINEER FOR CORRECT PLACEMENT/APPROVE MESSAGE TO BE DISPLAYED PRIOR TO PLACEMENT.

ALL SIGNS SHOWN FOR CONSTRUCTION ARE SPACED AT MINIMUM AND MAY BE ADJUSTED DUE TO FIELD CONDITIONS.

EXISTING SIGNS THAT ARE IN CONFLICT WITH THE PROPOSED WK ZN SIGNS SHALL BE REMOVED OR COVERED.

EXISTING STRIPING THAT IS IN CONFLICT WITH THE PROPOSED WK ZN PAVEMENT MARKINGS SHALL BE REMOVED.

REFER TO PUBLIC AND PRIVATE DRIVEWAY TABLES, PLAN LAYOUT, & SEQUENCE OF CONSTRUCTION FOR ADDITIONAL INFORMATION REGARDING PROPOSED DRIVEWAYS, RCP'S, AND SET'S.

CONTRACTOR MUST MAINTAIN ACCESS TO PUBLIC/PRIVATE DRIVEWAYS & CROSS STREETS DURING CONSTRUCTION USING ALL WEATHER MATERIALS, AND MUST COORDINATE WITH AFFECTED PROPERTY OWNERS REGARDING ACCESS 3 DAYS PRIOR TO CONSTRUCTION.

INSTALLATION AND REMOVAL OF TEMPORARY DRAINAGE STRUCTURES TO BE PAID UNDER ITEM 508-6001. DAMAGE TO DRAINAGE STRUCTURES WILL NEED TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

ALL DETOURS MUST BE CONSTRUCTED TO MATCH THE EXISTING ROADWAY CROSS SLOPE AND PROVIDE POSITIVE DRAINAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.

CONTRACTOR SHALL TEMPORARILY RELOCATE EXISTING MAILBOXES THAT WILL BE IN CONFLICT WITH TEMPORARY DETOUR AND PROPOSED ROADWAY. CONTRACTOR SHALL REMOVE MATERIAL AS NEEDED TO CONSTRUCT TEMPORARY DETOUR WITHIN THE SAME DAY OF PLACING DETOUR.

CONTRACTOR SHALL MINIMIZE UNEVEN LANE DIFFERENTIAL WHEN SHIFTING TRAFFIC BETWEEN PHASING ACCORDING TO "WZ(UL)-13."

EXCESS SALVAGE MATERIAL WILL BE AVAILABLE TO BE USED FOR THE CORRECTION OF SOFT SPOTS ENCOUNTERED ON THE PROJECT LIMITS OR AS APPROVED BY THE ENGINEER.

TO ACCOMMODATE THE VARIOUS PHASES OF CONSTRUCTION, CONTRACTOR WILL BE RESPONSIBLE FOR THE TEMPORARY ADJUSTMENTS AND RELOCATION OF EXISTING SIGNAL HEADS, POLES, PRECAST CONCRETE SAFETY BARRIER, SIGNING, AND ANY OTHER INCIDENTAL WORK NECESSARY TO PROVIDE FOR PROPER TRAFFIC SIGNAL OPERATION. THE ADJUSTMENTS AND RELOCATIONS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502: "BARRICADES, SIGNS AND TRAFFIC HANDLING."

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

PROVIDE TEMPORARY ILLUMINATION AT TEMPORARY TRAFFIC SIGNAL TO SAFELY GUIDE TRAFFIC. PLACE ONE LUMINAIRE POST AT EACH TEMPORARY SIGNAL AREA OR ATTACHMENT TO THE TEMPORARY TRAFFIC SIGNAL. THE PORTABLE ILLUMINATION EQUIPMENT WILL BE POWERED WITH A GENERATOR OR AS APPROVED BY THE ENGINEER. PROVIDE BACKUP AND KEEP OPERATIONAL AND AVAILABLE ON THE JOB SITE AT ALL TIMES DURING TRAFFIC CONTROL. (TO BE CONSIDERED SUBSIDIARY TO ITEM 502, "BARRICADES, SIGNS AND TRAFFIC HANDLING"). TIMING FOR TEMPORARY SIGNALS SHALL BE PROVIDED BY CONTRACTOR AND APPROVED BY THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING TIMINGS AFTER IMPLEMENTATION.

DO NOT FACE LUMINAIRES AT UPCOMING TRAFFIC.

LIMIT THE LANE CLOSURE TO ONLY THE REQUIRED DISTANCE TO COVER THE HALF (0.5) MILE CONSTRUCTION WORKZONE AS SHOWN ON THE TCP LAYOUT. ONE LANE TWO-WAY TRAFFIC CONTROL WITH A TEMPORARY TRAFFIC SIGNAL WILL REMAIN IN PLACE OVERNIGHT AND DURING NON-WORKING HOURS UNTIL WORK IS COMPLETE. PROVIDE NECESSARY ILLUMINATION AS NOTED IN THE CONSTRUCTION SEQUENCE NOTES.

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

RELOCATION OF EXISTING UTILITIES CONFLICTING WITH ANY PROPOSED ROADWAY AND DRAINAGE IMPROVEMENTS SHALL BE ADJUSTED PRIOR TO COMMENCING ANY PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL INFORMATION, THEREFORE THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO VERIFY UTILITIES PRIOR TO CONSTRUCTION.

ADEQUATE SIGNS AND BARRICADES SHALL BE INSTALLED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO OPENING ANY SECTION TO TRAFFIC. SIGNS ADDITIONAL TO THOSE REQUIRED BY THE BARRICADE STANDARDS OR DEEMED NECESSARY AND APPROVED BY THE ENGINEER WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

TEMPORARY EROSION CONTROL DEVICES MUST BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION.



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SH 285 TCP GENERAL NOTES

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CONSTRUCTION SEQUENCE

NOTE

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

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

TO ACCOMMODATE THE VARIOUS PHASES OF CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE TEMPORARY ADJUSTMENTS AND RELOCATION OF EXISTING SIGNAL HEADS, POLES, LOW-PROFILE CONCRETE TRAFFIC BARRIER, SIGNING, AND ANY OTHER INCIDENTAL WORK NECESSARY TO PROVIDE FOR PROPER TRAFFIC SIGNAL OPERATION. THE ADJUSTMENTS AND RELOCATIONS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDARY TO ITEM 502, "BARRICADES, SIGNS AND TRAFFIC HANDLING."

ALL INTERSECTIONS SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.

ADEQUATE SIGNS AND BARRICADES SHALL BE INSTALLED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO OPENING ANY SECTION TO TRAFFIC. SIGNS ADDITIONAL TO THOSE REQUIRED BY THE BARRICADE STANDARDS OR DEEMED NECESSARY AND APPROVED BY THE ENGINEER WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

TEMPORARY EROSION CONTROL DEVICES MUST BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION.

PHASE I STEP I

- 1. PRIOR TO THE BEGINNING OF THIS PHASE, INSTALL TEMPORARY SIGNS, INCLUDING REDUCED SPEED LIMIT SIGNS, TRAFFIC CONTROL DEVICES, AND SW3P ITEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMNENCING ANY CONSTRUCTION AND SHALL BE IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE. CONSTRUCTION WORK WILL NOT BEGIN UNTIL THE ENGINEER GIVES APPROVAL OF THE ABOVE REFERENCED ITEMS.
- 2. CONSTRUCT DRAINAGE CULVERTS UTILIZING TXDOT TCP LATEST STANDARDS (TCP 2-1 THRU TCP 2-7). USING OPEN CUT METHOD, THE CONTRACTOR SHALL BACKFILL ALL OPEN-CUT SECTIONS AT THE END OF EACH WORK DAY, AND CUT & RESTORE EXISTING PAVEMENT. USE ONE LANE, TWO WAY TRAFFIC CONTROL. ALL DRAINAGE CULVERTS ON THE RESPECTIVE PHASE LIMITS MUST BE COMPLETED ON THEIR DESIGNATED PHASE.

CONSTRUCTION SEQUENCE (CONTINUED)

- 3. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 4. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 5. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 6. CONTRACTOR SHALL CONSTRUCT THE NORTH PORTION OF SH 285 FROM STATIONS 189+20 TO STATION 215+60. DURING THIS CONSTRUCTION, THE SOUTH PORTION OF SH 285 WILL BECOME A 12' LANE WITH BI-DIRECTIONAL TRAFFIC THAT IS GUIDED WITH THE USE OF PORTABLE TRAFFIC SIGNALS.
- 7. CONTRACTOR SHALL ADD RETRO-FIT RAIL TO EXISTING BRIDGE CLASS CULVERT FROM STA. 142+70 TO STA. 143+10.
- 8. THERE SHALL BE NO CONSTRUCTION WITHIN THE EXISTING BRIDGE LIMITS FROM STATION 199+95 TO STATION 201+30.
- 9. ONCE PHASE I STEP I NORTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE I STEP II

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE NORTH SIDE OF SH 285.
- 5. CONSTRUCT THE SOUTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 189+20 TO STATION 222+60, AS SHOWN IN THE TCP TYPICAL SECTIONS AND LAYOUT.
- 6. THERE SHALL BE NO CONSTRUCTION WITHIN THE EXISTING BRIDGE LIMITS WHICH ARE FROM STATION 199+95 TO STATION 201+30.
- 7. ONCE PHASE I STEP II SOUTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS IN THE EXISTING PRE-CONSTRUCTION LANE CONFIGURATION FROM STA. 189+20 TO STA. 222+60 USING REMOVABLE STRIPING, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.



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CONSTRUCTION SEQUENCE (CONTINUED)

PHASE II STEP I

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. EXTEND EXISTING DRAINAGE STRUCTURES FOR STA 99+10, STA 101+51 AND STA 111+00 AS FAR AS NECESSARY TO ACCOMODATE TEMPORARY PAVEMENT. CULVERT EXTENSIONS SHALL BE PERMANENT/TEMPORARY IN NATURE DURING THIS CONSTRUCTION PHASE.INSTALL SET'S AND/OR HEADWALLS FOR ALL CROSS CULVERT LOCATIONS THROUGH ENTIRE PHASE LIMIT. FOLLOW LIMITS DEFINED IN TCP TYPICAL SECTIONS SHEET AND EXTEND STRUCTURES ON THE FIRST HALF OF THE ROADWAY.
- 3. CONTRACTOR SHALL CONSTRUCT THE TEMPORARY ROADWAY WIDENING DETOUR ON THE NORTH SIDE OF SH 285 AND MAINTAIN TRAVEL LANES OPEN AS SHOWN ON THE PROPOSED TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS FROM STATION 87+50 TO STATION 194+80. THE DETOUR WILL CHANGE FROM 10'TO 16' ON STATION 93+05 AND REMAIN 16' UNTIL STATION 103+85. FOR APPROPRIATE TRANSITIONS PLEASE REFER TO PHASE II TYPICAL SECTIONS.

PHASE II STEP II

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE NORTH SIDE OF SH 285.
- 5. CONSTRUCT THE SOUTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 96+00 TO STATION 189+20, AS SHOWN IN THE TCP TYPICAL SECTIONS AND LAYOUT.
- 6. ONCE SEGMENT FROM 96+00 TO 99+28 IS COMPLETED, CONSTRUCT THE LEFT PORTION OF THE ROADWAY ON THE INTERSECTION OF SH 285 AND FM 1017 FROM STATION 99+28 TO STATION 100+35 (STEP II STAGE A CONSTRUCTION.) REFER TO PHASE II STEP II STAGE A SHEET FOR PAVEMENT DESIGN AND ADDITIONAL DETAILS. OVERNIGHT CONSTRUCTION OPERATIONS SHOULD BE USED.
- 7. CONSTRUCT THE RIGHT PORTION OF THE ROADWAY ON THE INTERSECTION OF SH 285 AND FM 1017 FROM STATION 100+35 TO STATION 101+80 (STEP II STAGE B CONSTRUCTION.) REFER TO PHASE II STEP II STAGE B SHEET FOR PAVEMENT DESIGN AND ADDITIONAL DETAILS. OVERNIGHT CONSTRUCTION OPERATIONS SHOULD BE USED.

CONSTRUCTION SEQUENCE (CONTINUED)

8. ONCE PHASE II STEP II SOUTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE II STEP III

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE NORTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 96+00 TO STATION 189+20, AS SHOWN IN THE TCP TYPICAL SECTIONS AND REMOVE TEMPORARY DETOUR PREVIOUSLY CONSTRUCTED ON PHASE II STEP I FROM STATION 87+50 TO STATION 193+80.
- 6. ONCE PHASE II STEP III NORTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS IN THE EXISTING PRE-CONSTRUCTION LANE CONFIGURATION FROM STA. 96+00 TO STA. 189+20 USING REMOVABLE STRIPING, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE III STEP I

- 1. CONSTRUCT DRAINAGE CULVERTS UTILIZING TXDOT TCP LATEST STANDARDS (TCP 2-1 THRU TCP 2-7). USING OPEN CUT METHOD, THE CONTRACTOR SHALL BACKFILL ALL OPEN-CUT SECTIONS AT THE END OF EACH WORK DAY, AND CUT & RESTORE EXISTING PAVEMENT. USE ONE LANE, TWO WAY TRAFFIC CONTROL. ALL DRAINAGE CULVERTS ON THE RESPECTIVE PHASE LIMITS MUST BE COMPLETED ON THEIR DESIGNATED PHASE.
- 2. CONSTRUCTION OF DRAINAGE CULVERTS SHALL BE DONE DURING OFF-PEAK HOURS, AT NIGHT TIME HOURS, OR DURING WEEKEND HOURS. CONTRACTOR MUST COORDINATE WITH ENGINEER AND TXDOT HEBBRONVILLE MAINTENANCE OFFICE FOR LANE CLOSURES DURING THIS WORK.
- 3. PRIOR TO THE BEGINNING OF THIS PHASE, INSTALL ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES, AND SW3P ITEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CONSTRUCTION WORK WILL NOT BEGIN UNTIL THE ENGINEER GIVES APPROVAL OF THE ABOVE REFERENCED ITEMS.



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CONSTRUCTION SEQUENCE (CONTINUED)

4. CONTRACTOR SHALL CONSTRUCT THE TEMPORARY ROADWAY WIDENING DETOUR ON THE NORTH SIDE OF SH 285 AND MAINTAIN TRAVEL LANES OPEN AS SHOWN ON THE PROPOSED TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS FROM STATION 222+60 TO STATION 319+50.

PHASE III STEP II

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE NORTH SIDE OF SH 285.
- 5. CONSTRUCT THE SOUTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 215+60 TO STATION 312+50, AS SHOWN IN THE TCP TYPICAL SECTIONS AND LAYOUT.
- 6. ONCE PHASE III STEP II SOUTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE III STEP III

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE NORTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 215+60 TO STATION 305+50, AS SHOWN IN THE TCP TYPICAL SECTIONS AND REMOVE TEMPORARY DETOUR PREVIOUSLY CONSTRUCTED ON PHASE III STEP I FROM STATION 208+60 TO STATION 305+50; TEMPORARY DETOUR FROM STATION 305+50 TO STATION 319+50 TO REMAIN FOR PHASE IV CONSTRUCTION.

CONSTRUCTION SEQUENCE (CONTINUED)

6. ONCE PHASE III STEP III NORTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH REFL (TY II) PAVEMENT MARKINGS (ITEM 666) IN THE PROPOSED/FINAL LANE CONFIGURATION FROM STA. 96+00 TO STA. 305+50 USING NON-REMOVABLE STRIPING, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE IV STEP I

- 1. CONSTRUCT DRAINAGE CULVERTS UTILIZING TXDOT TCP LATEST STANDARDS (TCP 2-1 THRU TCP 2-7). USING OPEN CUT METHOD, THE CONTRACTOR SHALL BACKFILL ALL OPEN-CUT SECTIONS AT THE END OF EACH WORK DAY, AND CUT & RESTORE EXISTING PAVEMENT. USE ONE LANE, TWO WAY TRAFFIC CONTROL. ALL DRAINAGE CULVERTS ON THE RESPECTIVE PHASE LIMITS MUST BE COMPLETED ON THEIR DESIGNATED PHASE.
- 2. CONSTRUCTION OF DRAINAGE CULVERTS SHALL BE DONE DURING OFF-PEAK HOURS, AT NIGHT TIME HOURS, OR DURING WEEKEND HOURS. CONTRACTOR MUST COORDINATE WITH ENGINEER AND TXDOT HEBBRONVILLE MAINTENANCE OFFICE FOR LANE CLOSURES DURING THIS WORK.
- 3. PRIOR TO THE BEGINNING OF THIS PHASE, INSTALL ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES, AND SW3P ITEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CONSTRUCTION WORK WILL NOT BEGIN UNTIL THE ENGINEER GIVES APPROVAL OF THE ABOVE REFERENCED ITEMS.
- 4. CONTRACTOR SHALL CONSTRUCT THE TEMPORARY ROADWAY WIDENING DETOUR ON THE NORTH SIDE OF SH 285 AND MAINTAIN TRAVEL LANES OPEN AS SHOWN ON THE PROPOSED TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS FROM STATION 319+50 TO STATION 491+40.

PHASE IV STEP II

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE SOUTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 312+50 TO STATION 484+40, AS SHOWN IN THE TCP TYPICAL SECTIONS AND LAYOUT.
- 6. ONCE PHASE IV STEP II SOUTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.



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CONSTRUCTION SEQUENCE (CONTINUED)

PHASE IV STEP III

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE NORTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 305+50 TO STATION 477+40, AS SHOWN IN THE TCP TYPICAL SECTIONS AND REMOVE TEMPORARY DETOUR PREVIOUSLY CONSTRUCTED ON PHASE IV STEP I FROM STATION 319+50 TO STATION 477+40; TEMPORARY DETOUR FROM STATION 477+40 TO STATION 491+40 TO REMAIN FOR PHASE V CONSTRUCTION.
- 6. ONCE PHASE IV STEP III NORTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH REFL (TY II) PAVEMENT MARKINGS (ITEM 666) IN THE PROPOSED/FINAL LANE CONFIGURATION FROM STA. 305+50 TO STA. 477+40 USING NON-REMOVABLE STRIPING, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE V STEP I

- 1. CONSTRUCT DRAINAGE CULVERTS UTILIZING TXDOT TCP LATEST STANDARDS (TCP 2-1 THRU TCP 2-7). USING OPEN CUT METHOD, THE CONTRACTOR SHALL BACKFILL ALL OPEN-CUT SECTIONS AT THE END OF EACH WORK DAY, AND CUT & RESTORE EXISTING PAVEMENT. USE ONE LANE, TWO WAY TRAFFIC CONTROL. ALL DRAINAGE CULVERTS ON THE RESPECTIVE PHASE LIMITS MUST BE COMPLETED ON THEIR DESIGNATED PHASE.
- 2. CONSTRUCTION OF DRAINAGE CULVERTS SHALL BE DONE DURING OFF-PEAK HOURS, AT NIGHT TIME HOURS, OR DURING WEEKEND HOURS. CONTRACTOR MUST COORDINATE WITH ENGINEER AND TXDOT HEBBRONVILLE MAINTENANCE OFFICE FOR LANE CLOSURES DURING THIS WORK.
- 3. PRIOR TO THE BEGINNING OF THIS PHASE, INSTALL ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES, AND SW3P ITEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CONSTRUCTION WORK WILL NOT BEGIN UNTIL THE ENGINEER GIVES APPROVAL OF THE ABOVE REFERENCED ITEMS.
- 4. CONTRACTOR SHALL CONSTRUCT THE TEMPORARY ROADWAY WIDENING DETOUR ON THE NORTH SIDE OF SH 285 AND MAINTAIN TRAVEL LANES OPEN AS SHOWN ON THE PROPOSED TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS FROM STATION 491+40 TO STATION 627+00.

CONSTRUCTION SEQUENCE (CONTINUED) PHASE V STEP II

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE SOUTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 484+40 TO STATION 620+00, AS SHOWN IN THE TCP TYPICAL SECTIONS AND LAYOUT.
- 6. ONCE PHASE V STEP II SOUTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH WORK ZONE PAVEMENT MARKINGS, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.

PHASE V STEP III

- 1. INSTALL TEMPORARY SIGNS, AS SHOWN ON THE TRAFFIC CONTROL PLANS (TCP) AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PHASE.
- 2. REMOVE ALL EXISTING CONFLICTING STRIPING AND RAISED REFLECTIVE PAVEMENT MARKERS ON EXISTING ROADWAY WHICH ARE NOT BEING USED AND INSTALL PAVEMENT MARKINGS AS SHOWN ON TCP TYPICAL SECTIONS AND LAYOUTS.
- 3. INSTALL TEMPORARY TRAFFIC CONTROL CHANNELIZING DEVICES AS SHOWN IN TCP TYPICAL SECTIONS AND LAYOUT.
- 4. ONCE TRAFFIC CONTROL SETUP HAS BEEN COMPLETED EXISTING TRAFFIC SHALL BE SHIFTED TO THE SOUTH SIDE OF SH 285.
- 5. CONSTRUCT THE NORTH PORTION OF SH 285 ROADWAY TO ITS FINAL CONFIGURATION FROM STATION 477+40 TO STATION 620+00, AS SHOWN IN THE TCP TYPICAL SECTIONS AND REMOVE TEMPORARY DETOUR PREVIOUSLY CONSTRUCTED ON PHASE V STEP I FROM STATION 491+40 TO STATION 627+00.
- 6. ONCE PHASE V STEP III NORTH PORTION OF THE PROPOSED SH 285 ROADWAY IS COMPLETED, STRIPE WITH REFL (TY II) PAVEMENT MARKINGS (ITEM 666) IN THE PROPOSED/FINAL LANE CONFIGURATION FROM STA. 477+40 TO STA. 620+00 USING NON-REMOVABLE STRIPING, INSTALL PROPOSED DRIVEWAY CULVERTS, SEED/SOD AND INSTALL EROSION CONTROL DEVICES AS SHOWN IN THE TRAFFIC CONTROL PLAN LAYOUTS AND SW3P TYPICAL LAYOUTS.



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PHASE VI

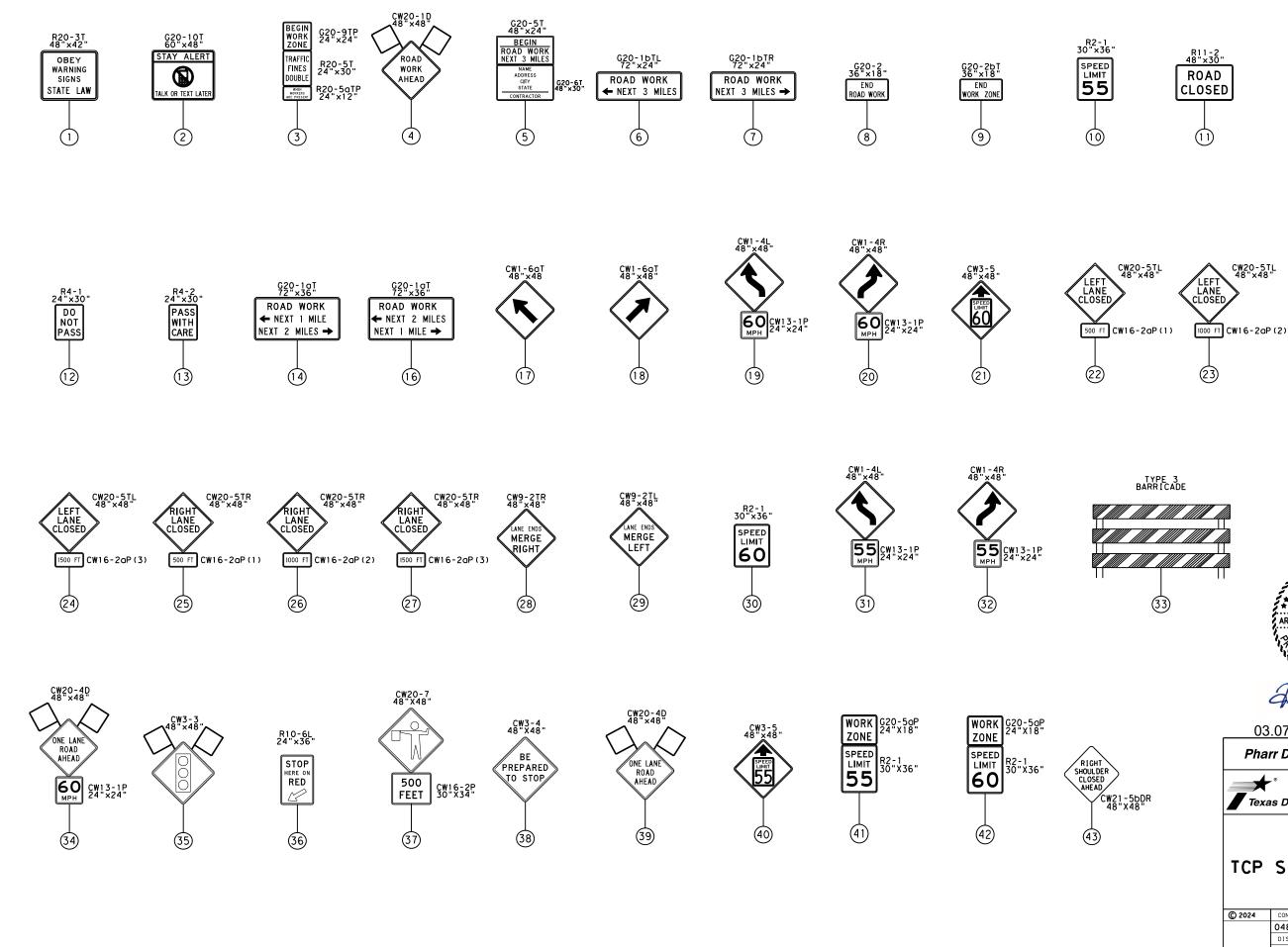
- 1. PRIOR TO THE BEGINNING OF THIS PHASE, INSTALL ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES, AND SW3P ITEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CONSTRUCTION WORK WILL NOT BEGIN UNTIL THE ENGINEER GIVES APPROVAL OF THE ABOVE REFERENCED ITEMS.
- 2. PERFORM MILLING/PLANING OPERATIONS FOR INCIDENTAL AREAS OF CONSTRUCTION FROM STATION TO STATION.
- 3. APPLY FINAL 2" LAYER OF ASPHALT AS SHOWN IN THE PROPOSED TYPICAL SECTIONS.
- 4. DELINIATE ALL COMPLETED ROADWAY SECTIONS TEMPORARILY USING SHORT TERM WORK ZONE PAVEMENT MARKINGS.
- 5. INSTALL PERMANENT PAVEMENT MARKINGS IN ACCORDANCE WITH TXDOT STANDARDS AND PROPOSED PAVEMENT MARKINGS LAYOUT.



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Frank Cystal Garcia 03.07.2024

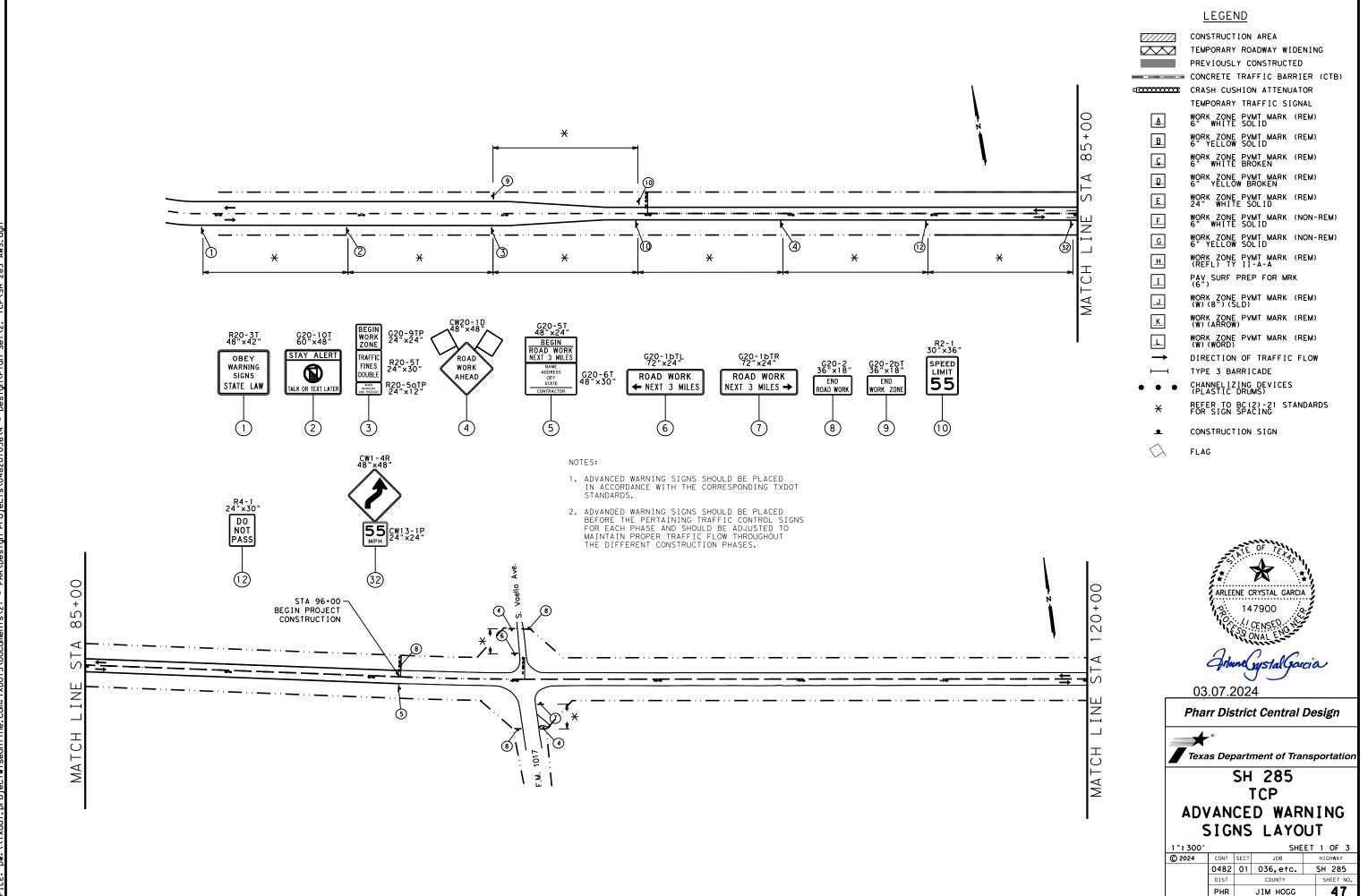
ARLEENE CRYSTAL GARCIA

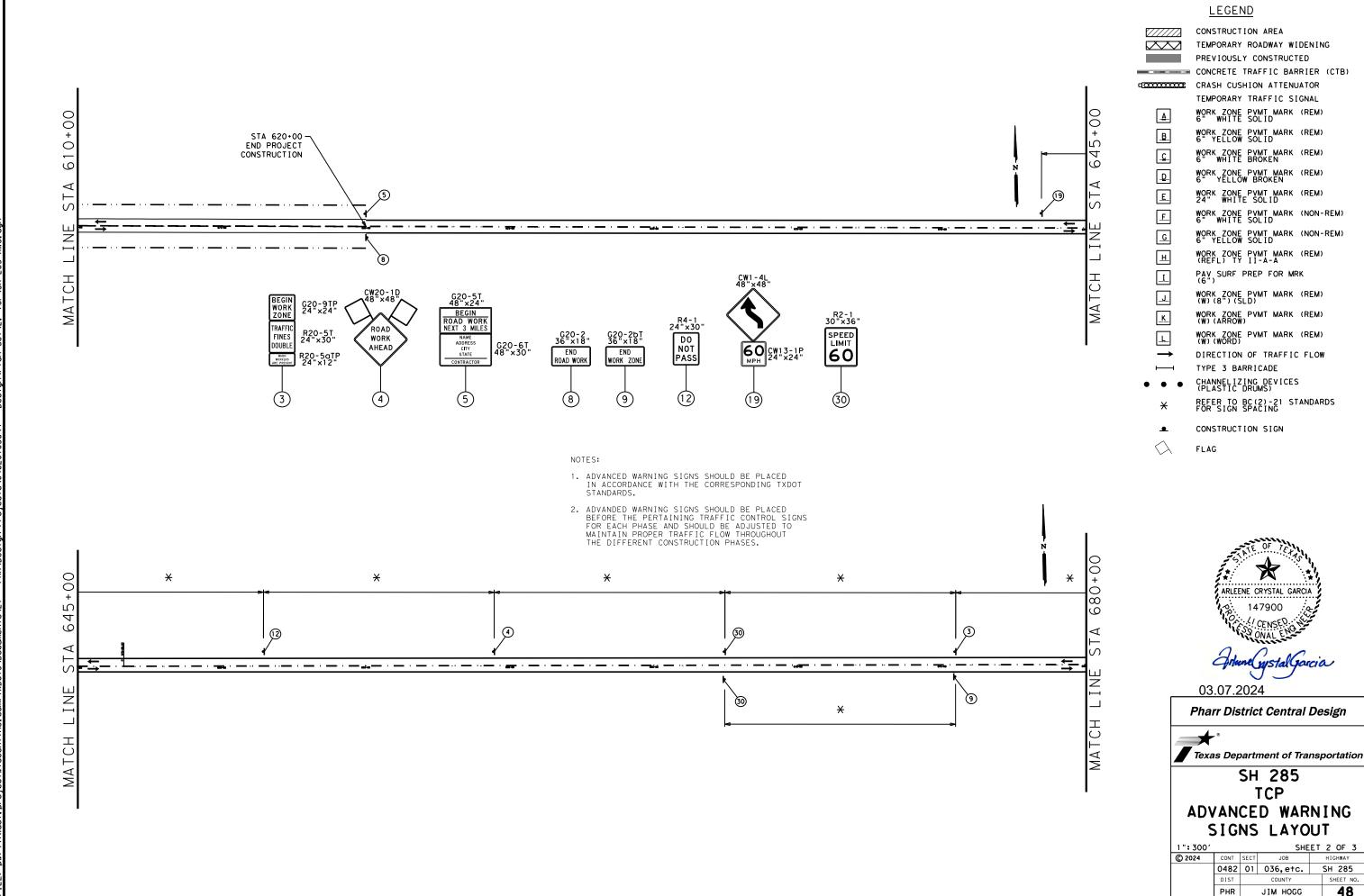
Pharr District Central Design

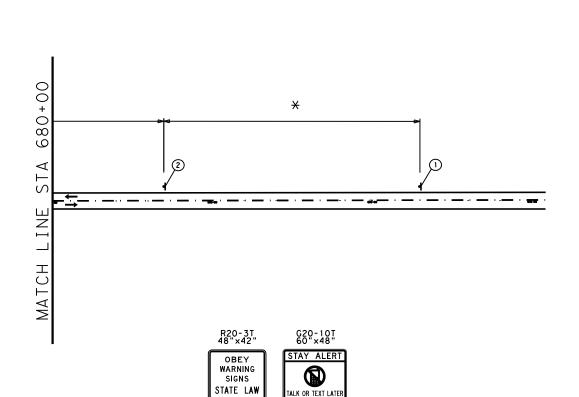


SH 285 TCP SIGN INVENTORY

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- 1. ADVANCED WARNING SIGNS SHOULD BE PLACED IN ACCORDANCE WITH THE CORRESPONDING TXDOT
- 2. ADVANDED WARNING SIGNS SHOULD BE PLACED BEFORE THE PERTAINING TRAFFIC CONTROL SIGNS FOR EACH PHASE AND SHOULD BE ADJUSTED TO MAINTAIN PROPER TRAFFIC FLOW THROUGHOUT THE DIFFERENT CONSTRUCTION PHASES.

LEGEND



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CONSTRUCTION AREA TEMPORARY ROADWAY WIDENING PREVIOUSLY CONSTRUCTED

CONCRETE TRAFFIC BARRIER (CTB) CRASH CUSHION ATTENUATOR

> TEMPORARY TRAFFIC SIGNAL WORK ZONE PVMT MARK (REM) 6" WHITE SOLID

WORK ZONE PYMT MARK (REM) 6" YELLOW SOLID

WORK ZONE PVMT MARK (REM) 6" WHITE BROKEN

D WORK ZONE PVMT MARK (REM) 6" YELLOW BROKEN WORK ZONE PVMT MARK (REM) 24" WHITE SOLID

WORK ZONE PVMT MARK (NON-REM)
6" WHITE SOLID

WORK ZONE PYMT MARK (NON-REM)
6" YELLOW SOLID

WORK ZONE PYMT MARK (REM) (REFL) TY II-A-A

PAV SURF PREP FOR MRK I

WORK ZONE PVMT MARK (REM) (W) (8") (SLD)

WORK ZONE PVMT MARK (REM)
(W) (ARROW) WORK ZONE PYMT MARK (REM)
(W) (WORD)

DIRECTION OF TRAFFIC FLOW TYPE 3 BARRICADE

CHANNELIZING DEVICES (PLASTIC DRUMS)

REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING

CONSTRUCTION SIGN



FLAG



03.07.2024

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Texas Department of Transportation

SH 285 TCP ADVANCED WARNING SIGNS LAYOUT

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				DE	ARY OF TOUR		CRETE T BARRIE	ER	(CUSHIO TENUAT	N				SUMMARY	Y OF W	ORK ZONE		MENT	MARKII	NGS			ISTINO	G MAR MARKE	RKINGS ERS	NATING S AND		PAV SURF
				354	508		512			545		6001					66								677				678
				6045	6001	6001	6025	6049	6003	6005		6002	6067	6071	6080	6090	6098	6096	6075	6050	6008	6037	6001	6003	6005	_	60086		6002
LOCATION	SHEET	FROM STATION	TO STATI ON	CONC PAV (2")	CONST RUCTIN G DETOUR	SLP) (TY	SLP) (TY I)	PORT CTB (REMOVE) (SGL SLP) (T) I)	ATTEN (MOVE & RESE T)		CRASH CUSH ATTEN (INS TL) (S)(N) (TL3)	PORT. CHANG. MESS AGE SIGN	SLD	8" (W) SLD	(W) ARROW		6" (Y) SLD		24" (W) SLD	PAV MRK TY II- A-A	6" (W) SLD	WK ZN PAV MRK REMOV (Y) 6" (SLD)	MRK & MRKS (4")	V EXT MRK & MRKS (8")	MRK & MRKS (12	EXT MRK & SMRKS (24 ")	PAV F MRK M & MR& KS (AR ROW)	EXT PAV MRK MR KS (WO N RD)	PAV SURF PREP FOR MRK"4'
				SY	SY	LF	LF	LF	EA	EΑ	EA	EΑ	LF	LF	EA	EA	LF	LF	LF	EA	LF	LF	LF	LF	LF	LF	EA	EΑ	
PHASE 1	2 05 5	160+00	107.00								2						7 (00	-		90			7 (00	+		\vdash	\vdash	\rightarrow	
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		231+00															1,600			40	1,,,,,,	<u> </u>	1,600						
	2 OF 5	162+00	186+00						3				840				840			22									
STEP 2	3 OF 5	186+00					1,990		1		1		4,800				4,800			120									540
0,2,	4 OF 5	210+00					1,220				3		4,000				4,000			100		<u> </u>	2,960				\longrightarrow		
	5 OF 5	234+00	<u> 258+00</u>														600	1		16		 	600	+	+	\vdash	+-+	\rightarrow	
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312' '	3 OF 4	180+00																		\Box				+	+	\vdash		$\overline{}$	
	4 OF 4	204+00																						1					
	1 OF 5	69+00	93+00						1				3,530				3,530			90			7,060						
	2 OF 5		117+00				1380		6				600				600			120	4,200	4,200	2,900			<u> </u>			
CTED O	7 05 5	117+00				0.070	1,700											-		1005		1 200	F 000			<u> </u>		\rightarrow	
STEP 2	3 OF 5	134+00				2,270			2											205	8,200	8,200	5,800	+	+-	\vdash	\vdash	\dashv	
	4 OF 5	180+00				990			1				2,960				2,960			230	6,240	6,240	7,560	+	_			\neg	
		204+00											740				740			20			1,110						
PHASE A						300					2		320				640		36	16	7,200	7,200	4,200					\rightarrow	
PHASE B							300		5				8,340				7,920		36	18		<u> </u>	3,896				\longrightarrow		
-	1 OF 5 2 OF 5	69+00					1.870		7				1,530 4,564	82	1	1	1,530	-	28	38 220		 '		+			+-+	\rightarrow	
-	<u> 2 UF 5</u>	93+00					1,550		2				4,504	02	1	'	4,564		20	[220]		 		+	+	\vdash	-	\rightarrow	
STEP 3		134+00					2,400						8,200				8,200			206				+				\rightarrow	
		158+00					2,050		2		1						0,200							1					
	4 OF 5	180+00				300	680		1		1		7,540				7,540			190				\perp					
	5 OF 5	204+00	216+00		1 1 770															\vdash		<u> </u>					\longrightarrow	_	
					14,779													+ +		\vdash				+			++	\rightarrow	
PHASE 2	TOTAL			0	14,779	5,940	12,060	0	27	0	4	0	38,324	82	1	1	38,224	0	100	1,353	25,840	25,840	32,526	5 0	0	0	0	0	0
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-		186+00												-						\vdash	<u> </u>	<u> </u>		+	+	<u> </u>	+-+	\rightarrow	
STEP 1		210+00 319+00																		\vdash		 		+	+	\vdash	+	\rightarrow	
		343+00																		$\overline{}$		 		+	+	\vdash		+	
		190+00											4,100				4,100			104			8,200						
	2 OF 4	214+00					410		7				1,720				1,720			300	10,280	10,280	8,120						
		226+00					3,480		2									\sqcup		igspace			<u> </u>			↓ ¹	$\perp \perp \downarrow$		
STEP 2		262+00					1,200													\vdash		 		+	+	\vdash	+-+	\rightarrow	
	7 05 4	274+00				150	3,400		4				7 000				7 000				7 700	7 700	0.700	+	+	\vdash	+	\rightarrow	
	3 OF 4	308+00				150	360		1				3,900				3,900			290	7,700	7,700	9,700			<u> </u>	\longrightarrow	\longrightarrow	
	4 OF 4	332+00											520	<u> </u>			520			14			1,040			L_			
		190+00											1,300				1,300			38					$\perp \overline{}$	\perp	\Box	\Box	
	2 OF 4	214+00					410		1				12,400				12,400	+		300		 		+	+		+-+	\longrightarrow	
STEP 3		226+00					3,600 1,070		2											\vdash		 	-	+	+	\vdash	+	\rightarrow	
SIEF 3		274+00					2,700		2											$\overline{}$		 		+	+	\vdash	+	\rightarrow	
							500		1				9,720				9,720	1		240				+-	+-	\vdash	+	\rightarrow	
	3 OF 4	1 301 +001	323.00																										
		325+00			14,093													220											



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			SHE	EΤ	1 OF 2
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
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SJ 0482	2-02-035	TOTAL		0	4,803 4,803	0	6, 860	0	4	3	0	0	7,000	0	0	0	7,000	0	0	350	7,000	7,000	4, 355	0	0	0	0	0	0
		607+00					1,300		1	1			7,000				7,000			175									
STEP 3		585+00					2,130																						
	1 OF 4		00+100																										
J1L1 Z	3 OF 4	607+00	631+00				1,300		3											175	7,000	7,000	4,355						
STEP 2	2 OF 4		607+00				2,130		.3	2																			
	4 OF 4 1 OF 4	631+00	651+00																										
STEP 1	3 OF 4	607+00	631+00																										
	1 OF 4	585+00	607+00																										
HASE 5																													
J 0482	2-01-036	TOTAL		0	65, 385	17, 31(78, 680	17,310	80	9	12	0	162, 355	82	1	1	170,664	220	140	6,506	103, 330	98, 320	138,841	0	0	0	0	0	81
HASE 5	TOTAL			0	13,581	0	20,730	17,310	11	5	0	0	33,500	0	0	0	34,180	0	0	1,346	20,120	20,120	27,305	0	0	0	0	0	
					13,581			17,310																					
	4 OF 4						00						12,020				12,020			500									
STEP 3	3 OF 4	535+00					4,850		3				12,020				12,020			300									
	1 OF 4 2 OF 4	452+00 476+00					5,700		3	5			1,020 11,800				1,700 11,800			26 295			2,040						
	4 OF 4		47.2				00						2,220				2,220			56	10,000	10,000	4,440						
STEP 2	3 OF 4	535+00	585+00				4,940		2				2,020				2,020			305		10,000							
	1 OF 4 2 OF 4						5,120		3				3,340 1,080				3,340 1,080			84 280	10 <u>,</u> 120	10,120	6,680 6,680	<u> </u>					
	4 OF 4		470 05																										
STEP 1	2 OF 4 3 OF 4		585+00																										
IASE 5	1 OF 4	470+00																											
HASE 4	4 TOTAL	1 400.00	300.72		22,932 22,932	8.010	25,550	0	24	4	0	0	300 46,480	0	0	0	300 47 , 160	0	0	2,083	34,380	34,380	35,860	0	0	0	0	0	
	3 OF 4 4 OF 4	435+00	486+00		22 072	360	3,940		1	4			24,600				24,600			616 8									
STEP 3	2 OF 4	305+00 363+00					5,510 7,100		9				11,600				11,600			290									
	1 OF 4	281+00	305+00										2,700 1,140				2,700 1,820			65 30			5,400 2,400						
_	3 OF 4 4 OF 4	434+00	493+00			4,800			6				1,720				1,720			710	24,280	24,280							
STEP 2	2 OF 4	307+00 363+00				2.850	4,880		3				1,100				1,100			280	10,100	10,100	6,700						
HASE 4	1 OF 4												3,320				3,320			84			6,640						
																			1										
				SY	SY	(TY LF	LF	I.F.	T) EA	EΑ	(TL3) EA	EΑ	LF	LF	EA	EA	LF	LF	LF	EΑ	LF	LF	LF	LF	") LF	") LF	ROW)	RD)	IVII (I (
				CONC PAV (2")	DETOUR			SLP) (T)	RESE	(REM OVE)	TL) (S) (N)	AGE SIGN		3LU				BILK	SLD	II-A-A	SLD	(Y) 6" (SLD)	MRKS (4")	& MRKS (8")	\ _	MRKS	& MR KS (AR	KS	FO MRK'
		317111011	ON	E ASPH	CONST RUCTIN G	(FUR & INST)	(MOVE)	CTB (REMOVE) (SGL	CRASH CUSH ATTEN (MOVE	CUSH ATTEN	(INS	PORT. CHANG. MESS	6" (W) SLD	8" (W) SLD	(W) ARROW	(W) WORD	6" (Y) SLD	(Y)	24" (W)	PAV MRK TY	6" (W)	PAV MRK REMOV	ELIM EXT PAV MRK &	EXT MRK	EXT MRK &	&	MRK	PAV MRK & MR	SUR PRE
OCATION	SHEET	FROM STATION		PLAN		PORT	PORT	PORT	CRASH	CRASH	CRASH CUSH	PORT.		0.11				6.11				WK 7N	FLIM	ELIM	EL IM FXT	EL IM FXT	EL IM EXT PAV	EXT	PA.
				6045		6001	6025	6049	6003			6002	6067	6071	6080	6090	6098	6096	6075	6050	6008	6037	6001	6003	6005	6007	6008		
				354	508		BARRIE 512	<u>-</u> R	AII	545	ORS	6001					66	2						N	MARKE 677				678
					ARY OF TOUR	CON	CRETE T	RAFFIC		RY OF CUSHIO	N				SUMMAR	Y OF W	ORK ZONE	PAVE	MENT I	MARKING	S			STING	MAR	KINGS	NATIN S AND		PA' SUR

Pharr District Central Design



SH 285 TCP ESTIMATED QUANTITIES

			SHE	ET	2 OF 2
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
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		PLAN				DIRECTION	FOUNDAT]	ION PAD	BACKUP	SUPPORT		AVAILABLE	_		CUSHI			
LOC. No.		SHEET NUMBER	LOCATION	STATION	LEVEL	OF TRAFFIC (UNI/BI)	PROPOSED MATERIAL	PROPOSED THICKNESS	DESCRIPTION	WIDTH	HEIGHT	SITE LENGTH		REMOVE MOVE/ RESET	FROM	L L F	R S W N	_
1 ==	PHASE 1 - STEP 1	63	WESTBOUND SH 285	142+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1				×	
2#	PHASE 1 - STEP 1	63	WESTBOUND SH 285	143+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1				X	
1	PHASE 1 - STEP 1	66	WESTBOUND SH 285	212+85	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1				×	:
2	PHASE 1 - STEP 1	66	WESTBOUND SH 285	214+35	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1				×	
3	PHASE 1 - STEP 2	68	EASTBOUND SH 285	142+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	1 #		×	
4	PHASE 1 - STEP 2	68	EASTBOUND SH 285	143+80	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"		1	2#		×	
5	PHASE 1 - STEP 2	70	EASTBOUND SH 285	188+60	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	1		x	,
6	PHASE 1 - STEP 2	70	EASTBOUND SH 285	190+40	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	2		X	
7	PHASE 1 - STEP 2	70	EASTBOUND SH 285	191+90	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"	1				X	
8	PHASE 1 - STEP 2	70	EASTBOUND SH 285	213+20	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"	1				X	
9	PHASE 1 - STEP 2	70	EASTBOUND SH 285	214+70	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"	1				X	
10	PHASE 1 - STEP 2	70	EASTBOUND SH 285	223+40	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"	1				X	
11	PHASE 2 - STEP 2	82	EASTBOUND SH 285	95+40	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	3		x	,
12	PHASE 2 - STEP 2	82	EASTBOUND SH 285	99+00	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	4		X	
12A	PHASE 2 - STEP 2		EASTBOUND SH 285	100+14	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	12		X	
120	PHASE 2 - STEP 2	F	FM 1017 INTERSECTION	*	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1				X	
12C	PHASE 2 - STEP 2	F	FM 1017 INTERSECTION	*	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1				X	
12D	PHASE 2 - STEP 2		EASTBOUND SH 285	102+00	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	5		X	
126	PHASE 2 - STEP 2		EASTBOUND SH 285	99+00	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"		1	12A		X	
125	PHASE 2 - STEP 2	F	FM 1017 INTERSECTION	*	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		-	12B		X	
126	PHASE 2 - STEP 2	F	FM 1017 INTERSECTION	*	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		-	12C		X	
12H	PHASE 2 - STEP 2		EASTBOUND SH 285	100+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	12D		X	
13	PHASE 2 - STEP 2	82	EASTBOUND SH 285	102+00	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	12H		×	
	PHASE 2 - STEP 2	82	EASTBOUND SH 285	104+40	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	6		X	
15	PHASE 2 - STEP 2	82	EASTBOUND SH 285	106+05	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	7		X	
16	PHASE 2 - STEP 2	82	EASTBOUND SH 285	106+95	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	12F		X	
17	PHASE 2 - STEP 2	82	EASTBOUND SH 285	108+45	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	12G		X	
												SHEET	10	- 17				

LEGEND: L=LOW MAINTENANCE R=REUSABLE S=SACRIFICIAL N=NARROW W=WIDE

*MOVE TO CONTRACTOR'S STOCKPILE LOCATION TEMPORARILY.
TO BE PAID UNDER ITEM 545-6003

CRASH CUSHION SUMMARY SHEET

TILE: CCSS. dgn	DN: T×D	тс	СК	•	CK:	
C) T×DOT	CONT	SE	СТ	JOB	H I GHV	VAY
REVISIONS	0482	0	1 0	36,etc	. SH 2	85
	DIST			COUNTY		
	PHF		JΙ	M HOGG		
	FEDERA	L A	ID	PROJECT	SHEET	NO.
					5	2

FOR DEFINITIONS SEE THE "CRASH CUSHION CATEGORIZATION CHART.PDF" AT THE DESIGN DIVISION (ROADWAY STANDARDS) WEBSITE. USE QUICK LINKS TO ACCESS ATTENUATORS / CRASH CUSHIONS SECTION. http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm

						DIRECTION	FOUNDAT	ION PAD	BACKUP	SUPPORT				CRASE	CUSHI	ON			
LOC. No.	TCP PHASE	PLAN SHEET NUMBER	LOCATION	STATION	TEST LEVEL	OF TRAFFIC	PROPOSED	PROPOSED	DECODIDATION	WIDIL	LIE I CLIT	AVAILABLE SITE LENGTH		MOVE/F	RESET	LLL	R	R S	S
		NOMBLI				(UNI/BI)	MATERIAL	THICKNESS	DESCRIPTION	WIDTH	HEIGHT	LLINGTH	INSTALL	MOVE/ RESET	FROM LOC. #	N W	N	WN	W
18	PHASE 2 - STEP 2	82	EASTBOUND SH 285	108+75	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	8			X	
19	PHASE 2 - STEP 2	82	EASTBOUND SH 285	110+40	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	9			X	
20	PHASE 2 - STEP 2		EASTBOUND SH 285	168+15	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	10			X	
21	PHASE 2 - STEP 2		EASTBOUND SH 285	169+35	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1	1 *				×	
22	PHASE 2 - STEP 2	84	EASTBOUND SH 285	189+75	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1	1 *				X	
23	PHASE 2 - STEP 3	91	WESTBOUND SH 285	95+40	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	11			x	
24	PHASE 2 - STEP 3	91	WESTBOUND SH 285	99+60	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	12E			X	
25	PHASE 2 - STEP 3	91	WESTBOUND SH 285	101+10	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1 *	13			X	
26	PHASE 2 - STEP 3	91	WESTBOUND SH 285	106+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	1 4			×	
27	PHASE 2 - STEP 3	91	WESTBOUND SH 285	108+20	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	15			X	
28	PHASE 2 - STEP 3		WESTBOUND SH 285	129+20	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	16			X	
29	PHASE 2 - STEP 3		WESTBOUND SH 285	130+70	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	17			X	
30	PHASE 2 - STEP 3		WESTBOUND SH 285	168+50	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	18			X	
31	PHASE 2 - STEP 3		WESTBOUND SH 285	170+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	19			×	
32	PHASE 2 - STEP 3	93	WESTBOUND SH 285	189+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	20			×	
33	PHASE 3 - STEP 2	103	EASTBOUND SH 285	221+90	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4		1	21			×	
34	PHASE 3 - STEP 2		EASTBOUND SH 285	241+70	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"		1	22			x	
35	PHASE 3 - STEP 2		EASTBOUND SH 285	242+90	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	23			x	
36	PHASE 3 - STEP 2	104	EASTBOUND SH 285	313+10	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	24			X	
31	PHASE 3 - STEP 3	107	WESTBOUND SH 285	215+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	33			x	
	PHASE 3 - STEP 3	108	WESTBOUND SH 285	271+40	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	34			x	
39	PHASE 3 - STEP 3	108	WESTBOUND SH 285	272+70	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	35			x	\perp
40	PHASE 3 - STEP 3	108	WESTBOUND SH 285	306+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	36			X	
41	PHASE 4- STEP 2	117	EASTBOUND SH 285	311+90	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4		1	37			x	
42	PHASE 4 - STEP 2		EASTBOUND SH 285	325+10	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	38			X	
												SHEET TOTALS	2	- 31					

*MOVE TO CONTRACTOR'S STOCKPILE LOCATION TEMPORARILY. TO BE PAID UNDER ITEM 545-6003

CRASH CUSHION SUMMARY SHEET

ILE: CCSS. dgn	DN: T×D	тс	СК	•	CK:	
T×DOT	CONT	SE	СТ	JOB	H I GH	NAY
REVISIONS	0482	0	1 0	36,etc	. SH 2	85
	DIST			COUNTY		
	PHF		JΙ	M HOGG		
	FEDERA	L A	ΙD	PROJECT	SHEET	NO.
					5	3

FOR DEFINITIONS SEE THE "CRASH CUSHION CATEGORIZATION CHART.PDF" AT THE DESIGN DIVISION (ROADWAY STANDARDS) WEBSITE. USE QUICK LINKS TO ACCESS ATTENUATORS / CRASH CUSHIONS SECTION.

http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm

		PLAN				DIRECTION	FOUNDATI	ON PAD	BACKUP S	UPPORT		AVAILABLE		CRASH	CUSHI	ON		
LOC. No.	TCP PHASE	SHEET NUMBER	LOCATION	STATION	TEST	OF TRAFFIC (UNI/BI)	PROPOSED MATERIAL	PROPOSED THICKNESS	DESCRIPTION	WIDTH	HEIGHT	SITE	LREMOVE	MOVE/ MOVE/ RESET	RESET FROM LOC. #	NI W	R F	R S S W N W
43	PHASE 4 - STEP 2		EASTBOUND SH 285	326+60	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	39			X
44	PHASE 4 - STEP 2		EASTBOUND SH 285	406+90	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	40			×
45	PHASE 4 - STEP 2		EASTBOUND SH 285	407+50	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1	25			×
46	PHASE 4 - STEP 2		EASTBOUND SH 285	433+30	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	26			×
47	PHASE 4 - STEP 2	118	EASTBOUND SH 285	434+80	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"		1	27			×
48	PHASE 4 - STEP 2		EASTBOUND SH 285	466+70	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"		1	28			×
49	PHASE 4 - STEP 2		EASTBOUND SH 285	468+20	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	29			X
50	PHASE 4 - STEP 2		EASTBOUND SH 285	479+30	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1 *	30			X
51	PHASE 4 - STEP 2		EASTBOUND SH 285	480+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	31			X
52	PHASE 4 - STEP 2	118	EASTBOUND SH 285	485+00	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"		1 *	32			X
53	PHASE 4 - STEP 3	120	WESTBOUND SH 285	305+00	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1	1	41			×
54	PHASE 4 - STEP 3		WESTBOUND SH 285	320+60	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1	1	42			X
55	PHASE 4 - STEP 3		WESTBOUND SH 285	322+05	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"	1	1	43			X
56	PHASE 4 - STEP 3		WESTBOUND SH 285	324+75	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"	1	1	44			X
57	PHASE 4 - STEP 3		WESTBOUND SH 285	326+20	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1 *	45			X
58	PHASE 4 - STEP 3		WESTBOUND SH 285	433+00	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"		1 *	46			×
59	PHASE 4 - STEP 3		WESTBOUND SH 285	434+50	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"		1	47			X
60	PHASE 4 - STEP 3	122	WESTBOUND SH 285	478+00	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	48			X
61	PHASE 5 STEP 2	133	EASTBOUND SH 285	483+80	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	49			×
62	PHASE 5 STEP 2		EASTBOUND SH 285	542+60	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"		1	50			×
63	PHASE 5 STEP 2		EASTBOUND SH 285	544+20	3	UNI			PCTB	24"	3′-6"	20' -11 3/4"		1	51			X
64	PHASE 5 STEP 2		EASTBOUND SH 285	588+00	3	UNI			PCTB	24"	3′-6"	20′ -11 3/4"		1	52			X
65	PHASE 5 STEP 2		EASTBOUND SH 285	588+50	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1	1	59			X
66	PHASE 5 STEP 2	134	EASTBOUND SH 285	620+60	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"	1	1	60			X
67	PHASE 5 STEP 3	137	WESTBOUND SH 285	476+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1	1	61			X
68	PHASE 5 STEP 3	137	WESTBOUND SH 285	482+80	3	UNI			РСТВ	24"	3′-6"	20' -11 3/4"	1	1	62			X
69	PHASE 5 STEP 3	137	WESTBOUND SH 285	484+00	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"	1	1	63		\perp	X
70	PHASE 5 STEP 3		WESTBOUND SH 285	541+90	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"	1	1	64			X
71	PHASE 5 STEP 3		WESTBOUND SH 285	543+20	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"	1	1	57		\perp	X
72	PHASE 5 STEP 3	138	WESTBOUND SH 285	620+60	3	UNI			РСТВ	24"	3′-6"	20′ -11 3/4"	1	1	58			X
												SHEET TOTALS 0	12	36				

*MOVE TO CONTRACTOR'S STOCKPILE LOCATION TEMPORARILY.
TO BE PAID UNDER ITEM 545-6003

LEGEND: L=LOW MAINTENANCE R=REUSABLE S=SACRIFICIAL N=NARROW W=WIDE

FOR DEFINITIONS SEE THE "CRASH CUSHION CATEGORIZATION CHART.PDF" AT THE DESIGN DIVISION (ROADWAY STANDARDS) WEBSITE. USE QUICK LINKS TO ACCESS ATTENUATORS / CRASH CUSHIONS SECTION. http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm

CRASH CUSHION SUMMARY SHEET

FILE: CCSS.dgn	DN: T×D	ОТ	ск	;	CK:	
C T×DOT	CONT	SE	СТ	JOB	HIGHV	VAY
REVISIONS	0482	0	1 0	36,etc	SH 2	85
	DIST			COUNTY		
	PHR	?	JΙ	M HOGG		
	FEDERA	AL A	ΙD	PROJECT	SHEET	NO.
					5	4

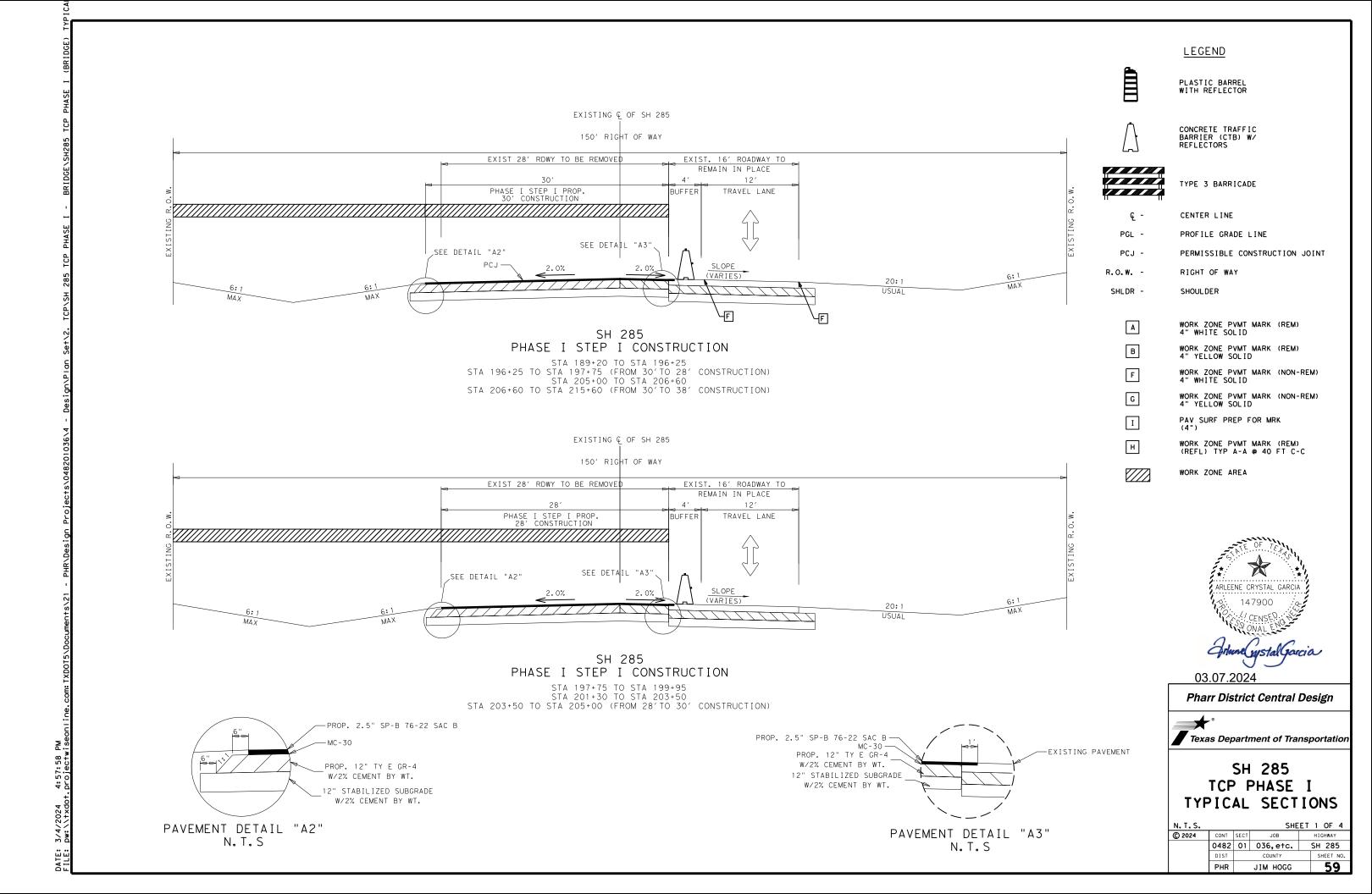
SCALE =	1 " = 350	o <i>'</i>	SHE	ЕΤ	1 OF 4
© 2024	CONT	SECT	JOB	HIGHWAY	
	0482	01	036,etc.	SH 285	
	DIST		COUNTY	SHEET NO.	
	PHR		JIM HOGG		55

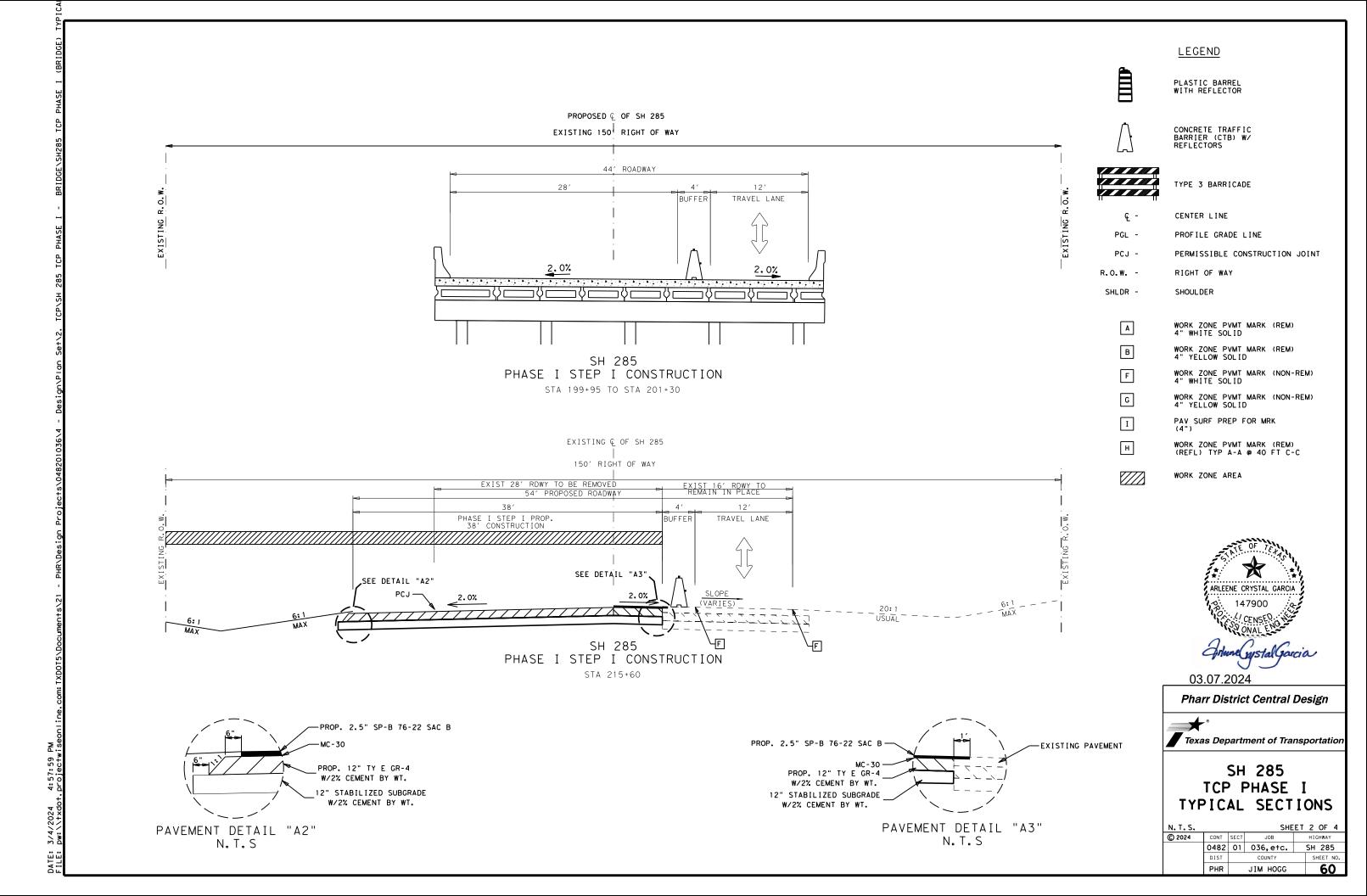
02/46/2024 Pharr District Central Design

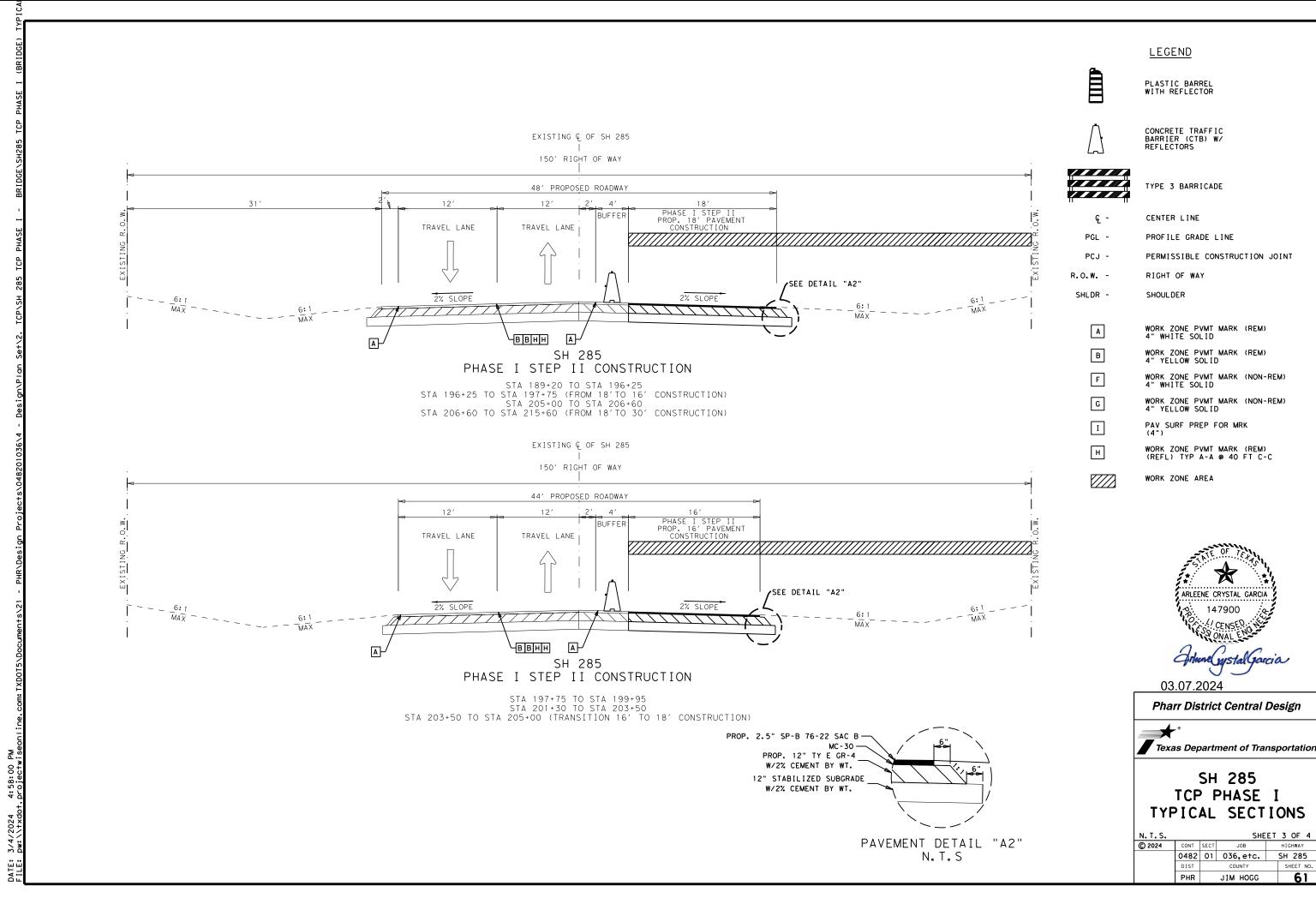


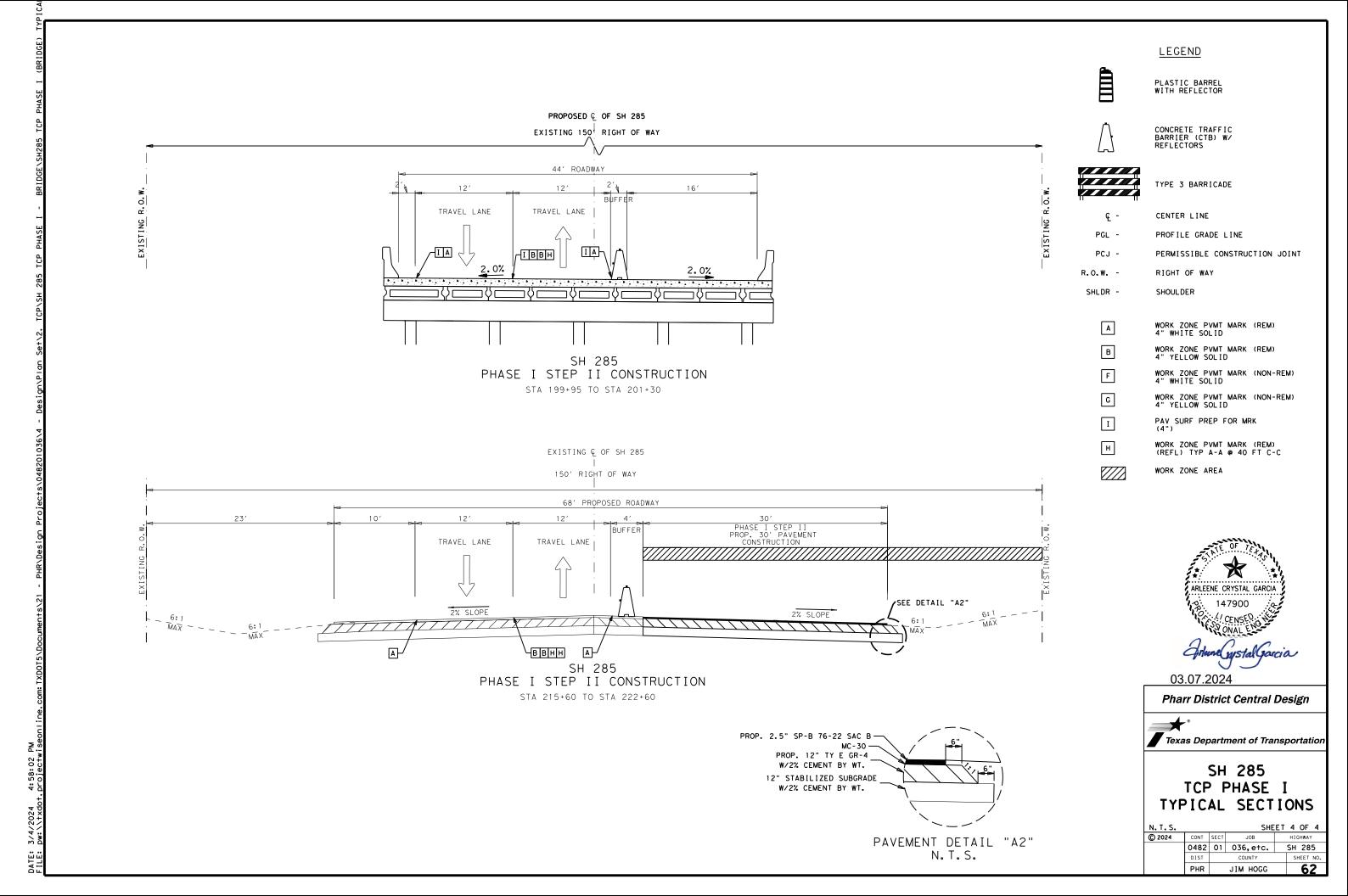
SH 285 TCP PHASE LAYOUT

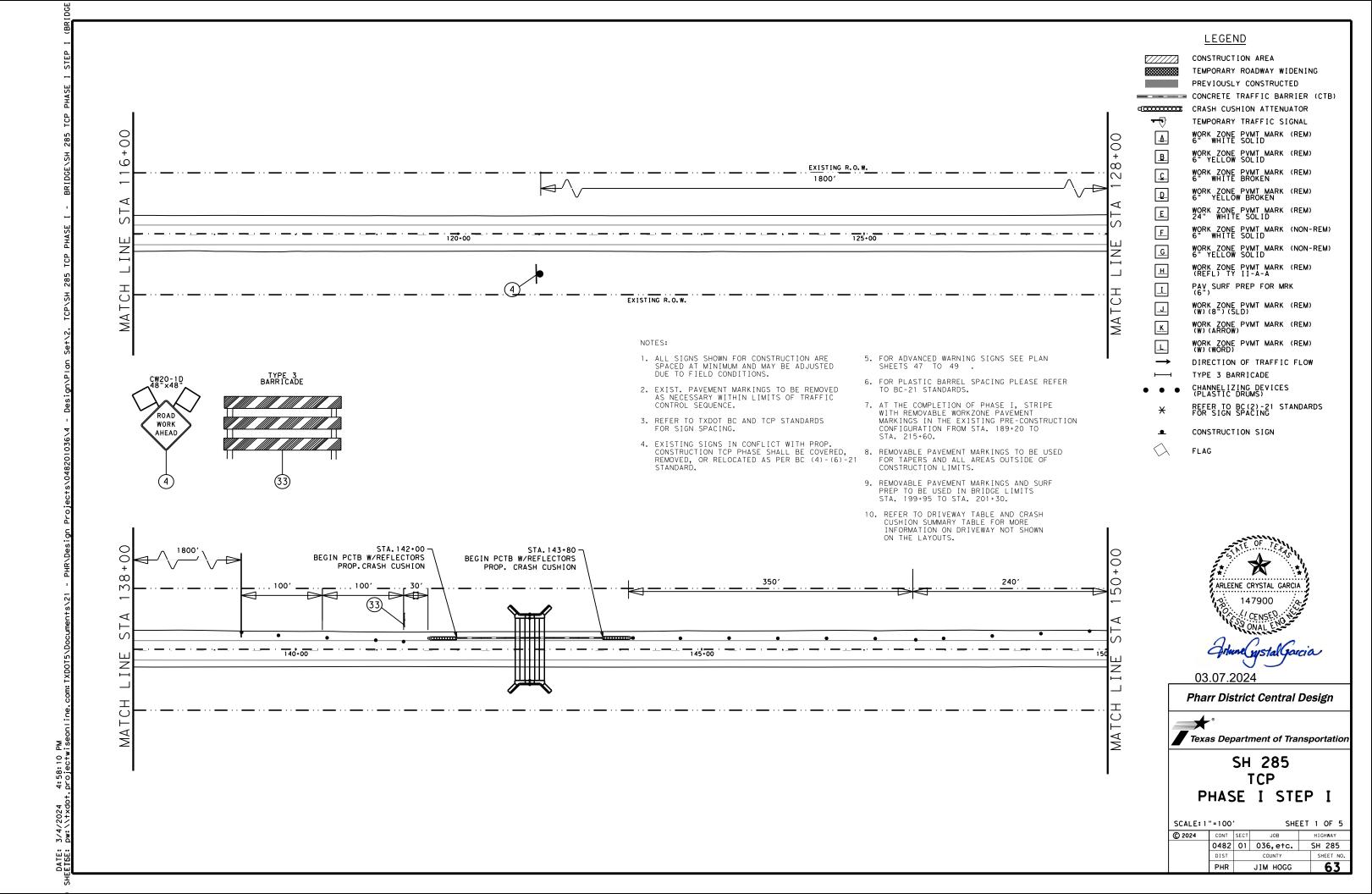
CALE=	1 " = 350	٥,	SHE	ЕΤ	4 OF 4
2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		58

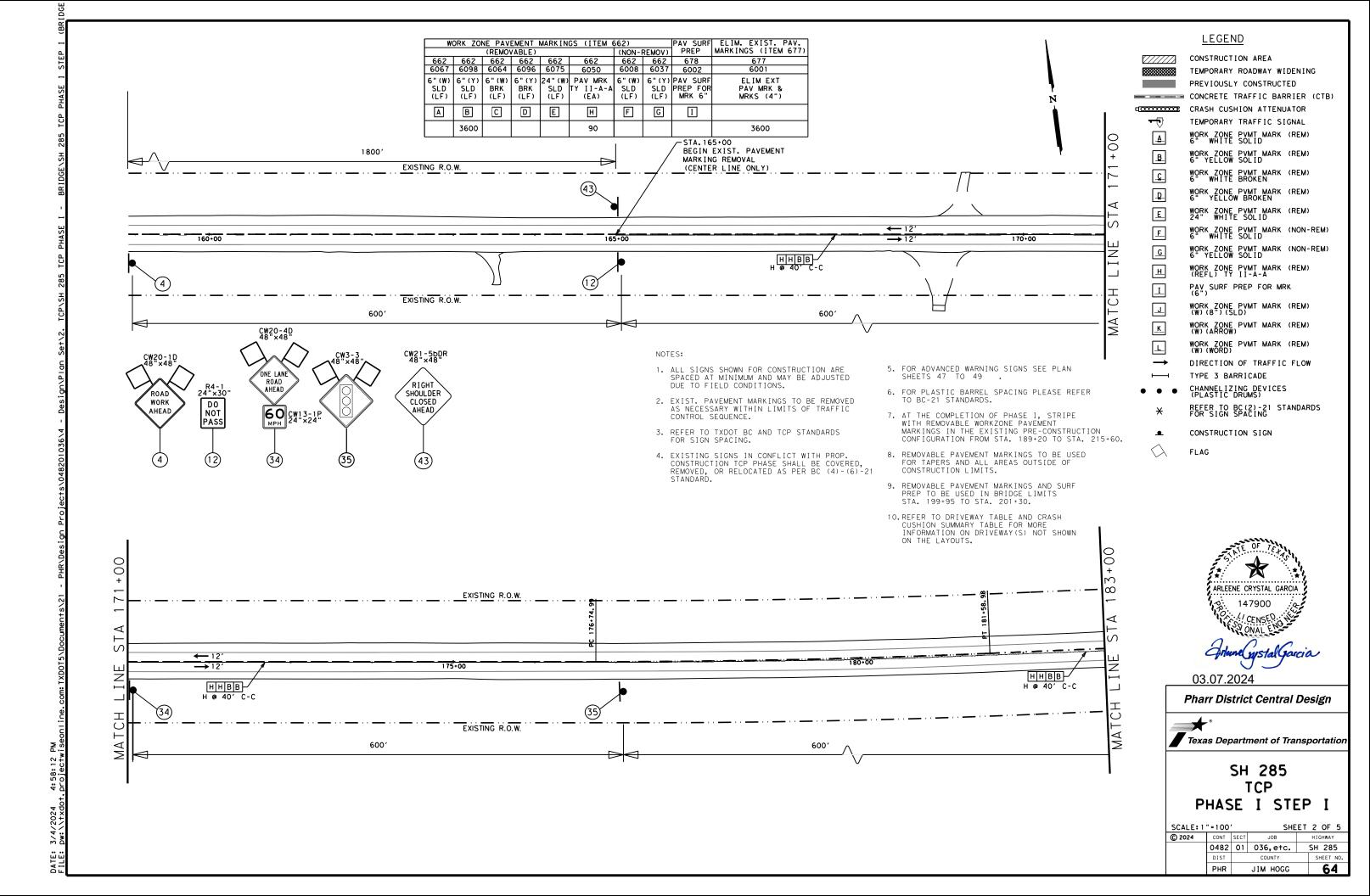


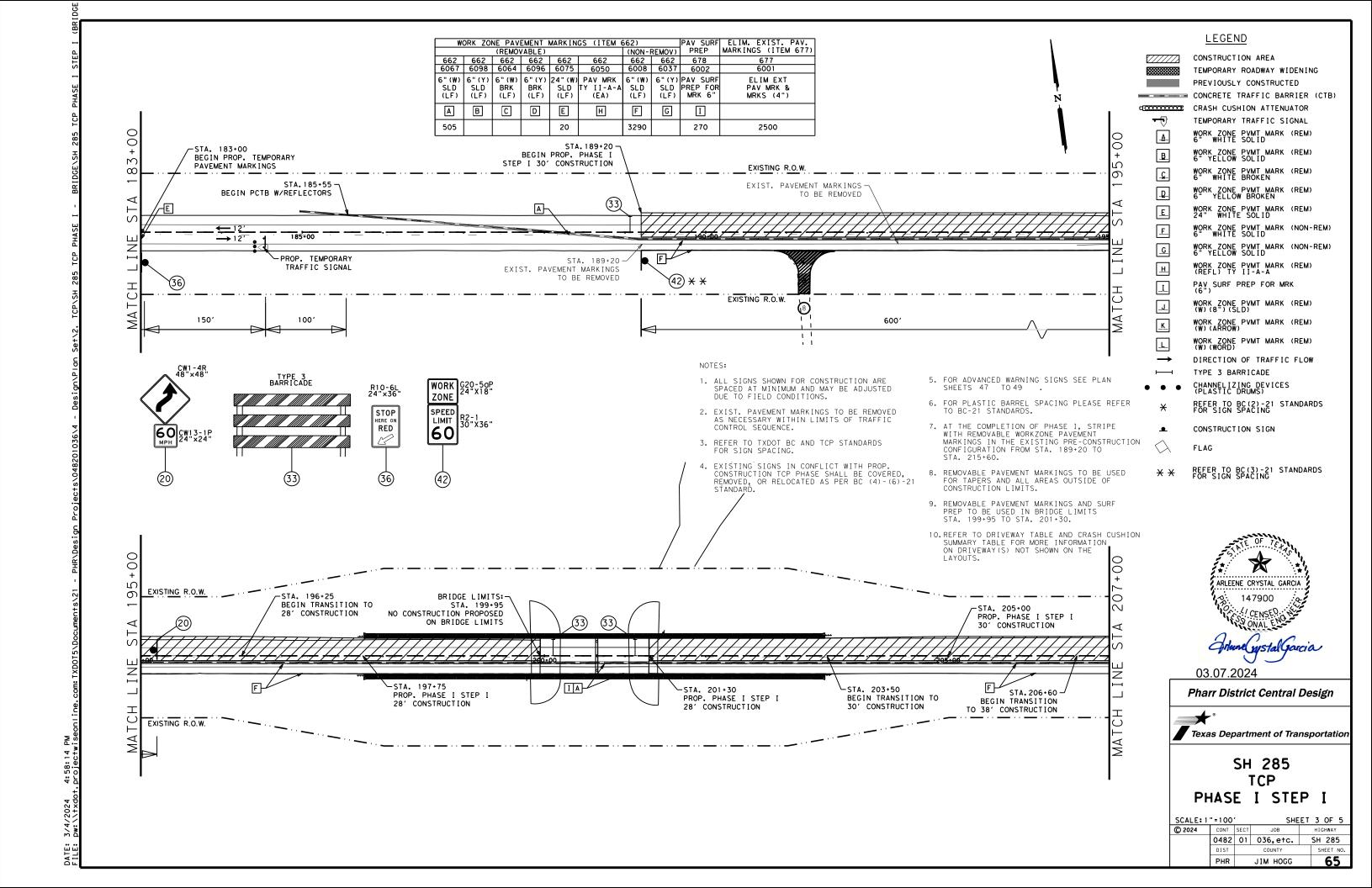


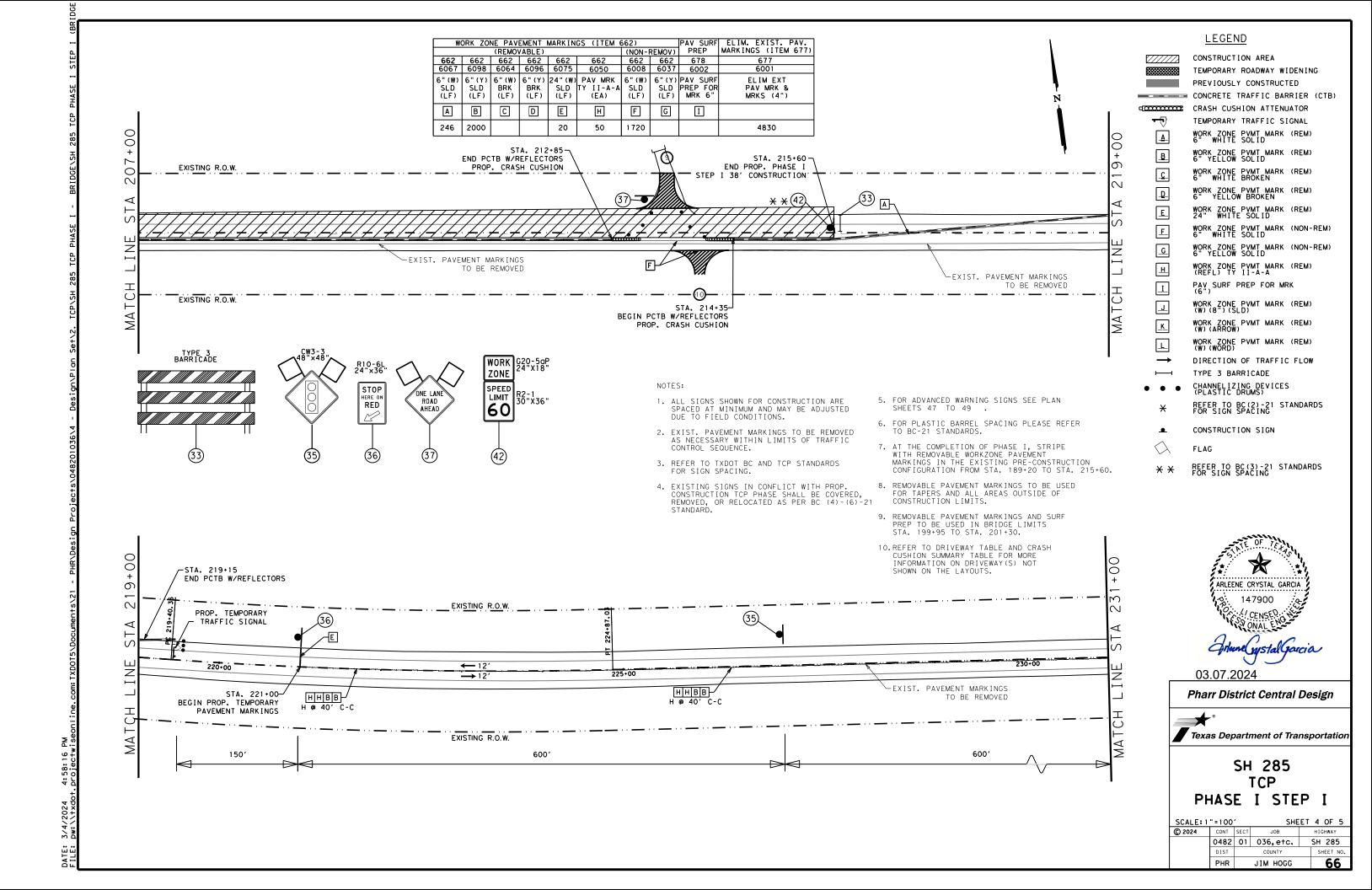


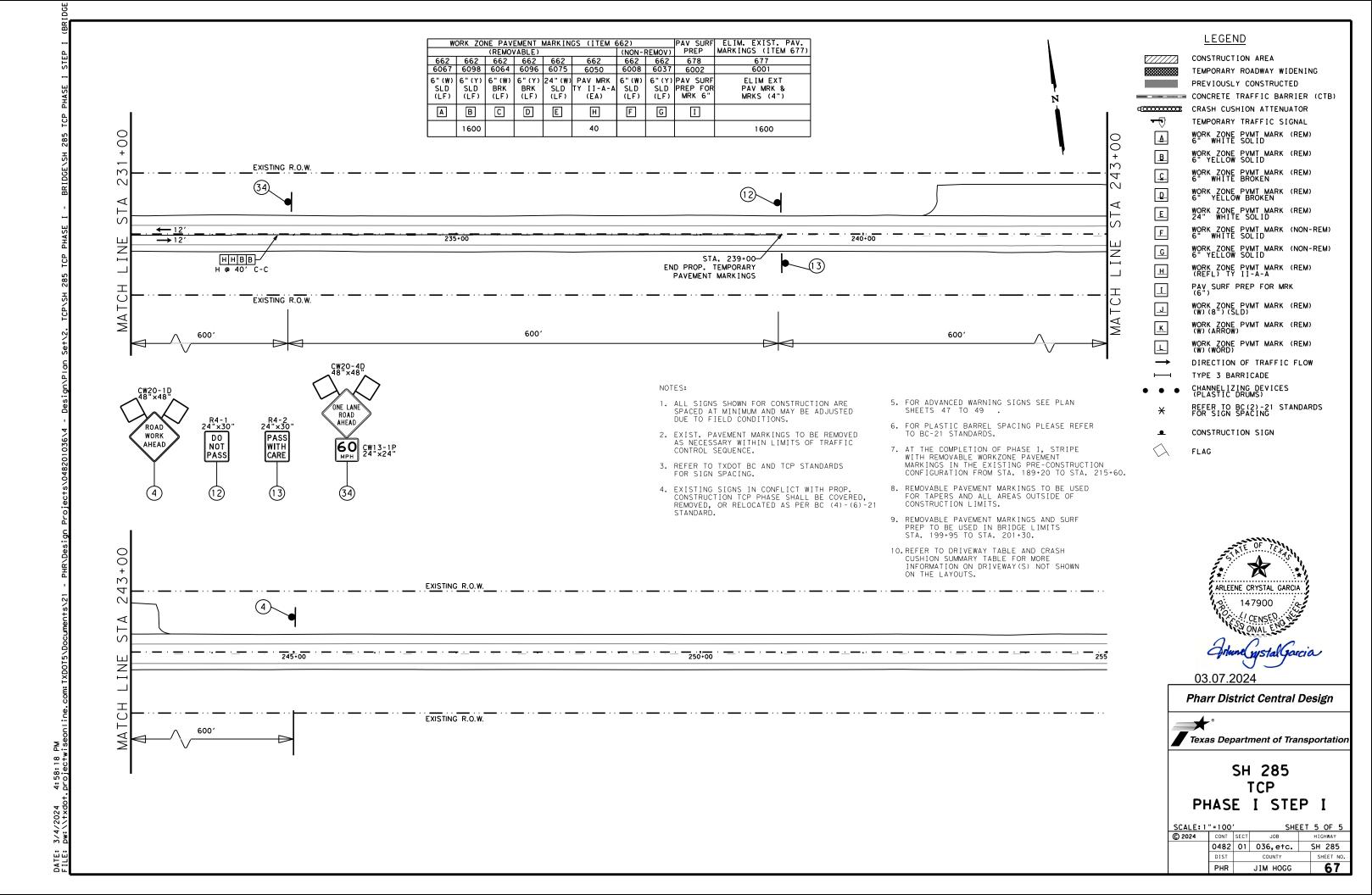


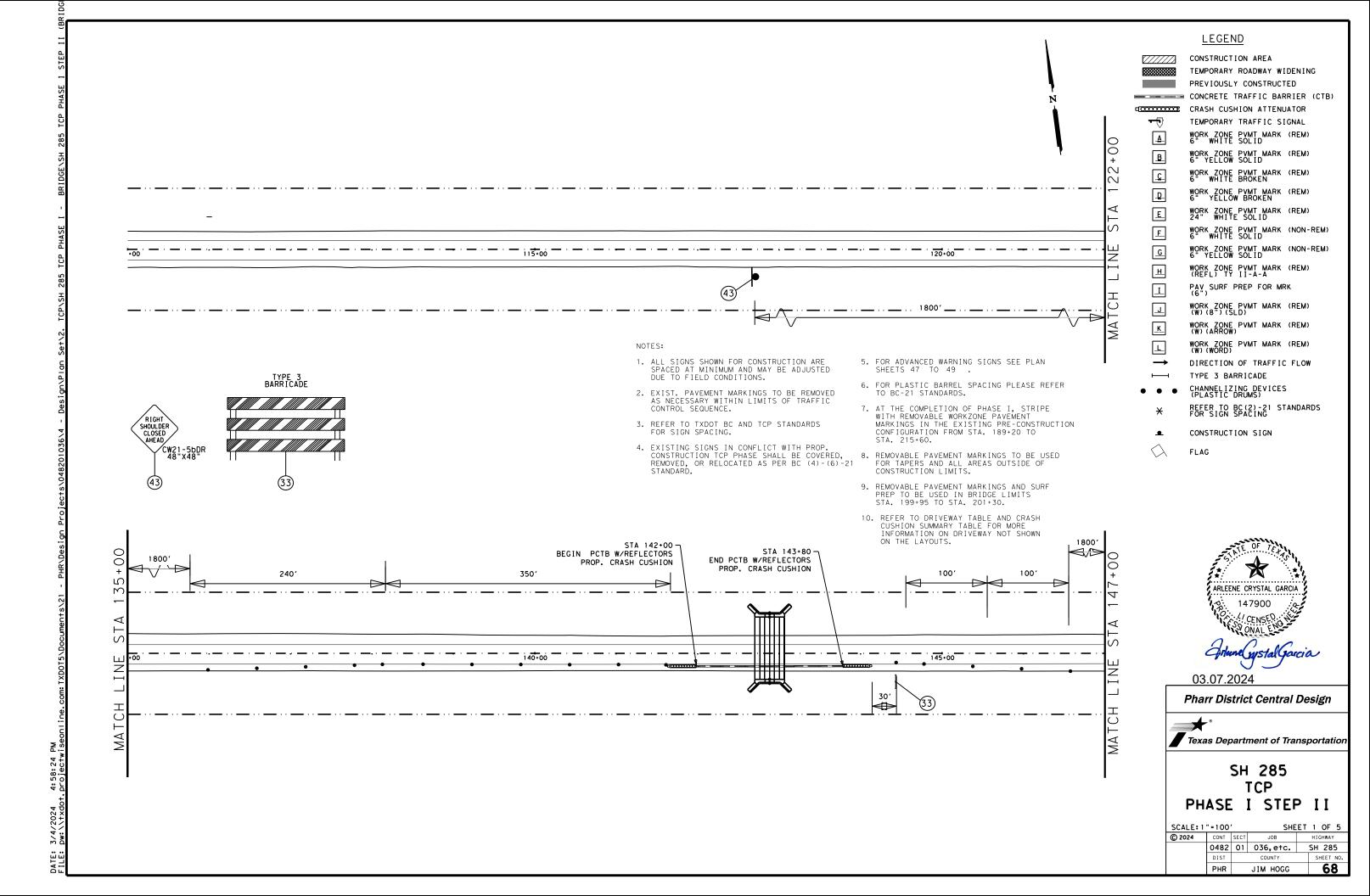


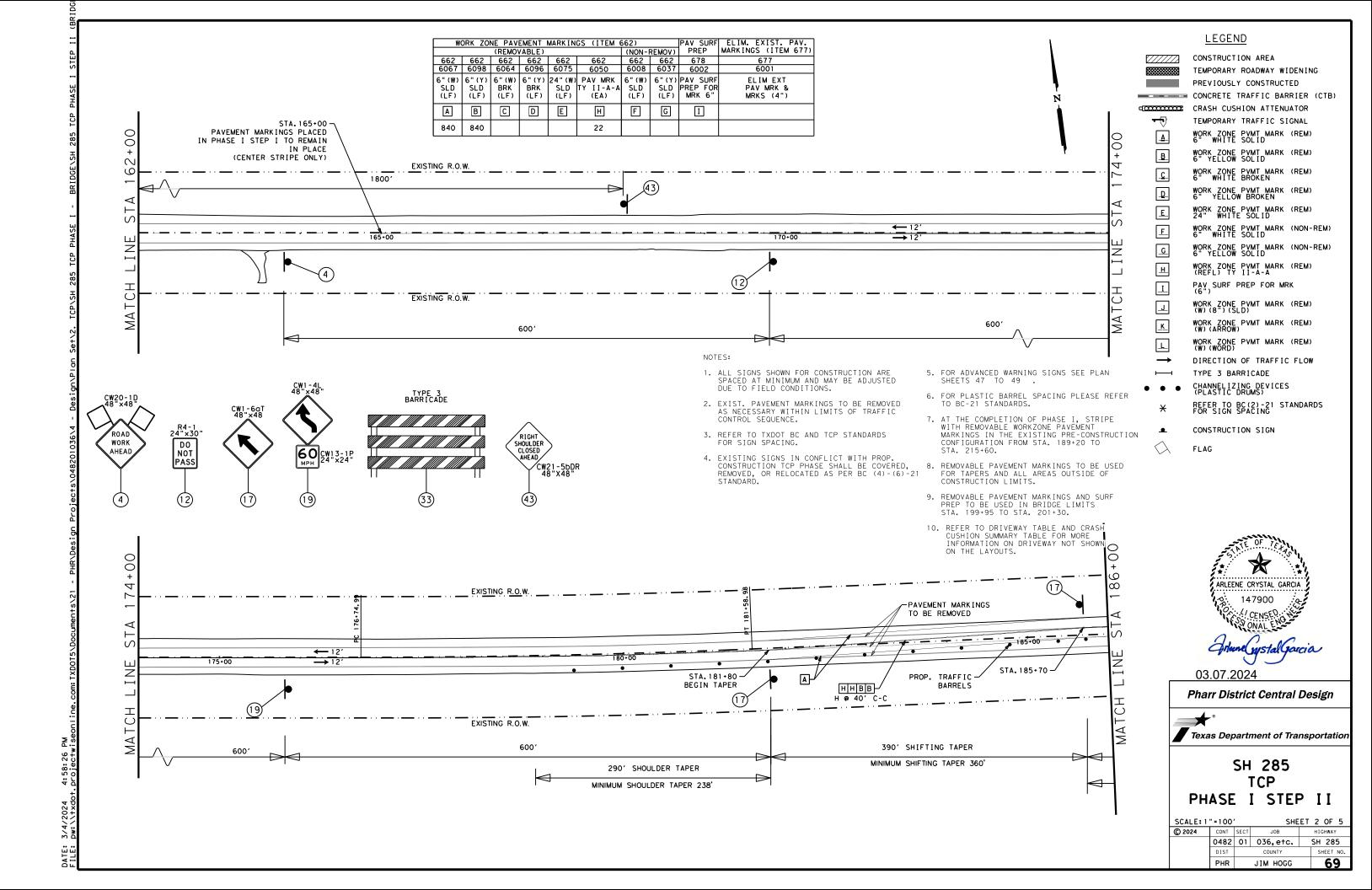


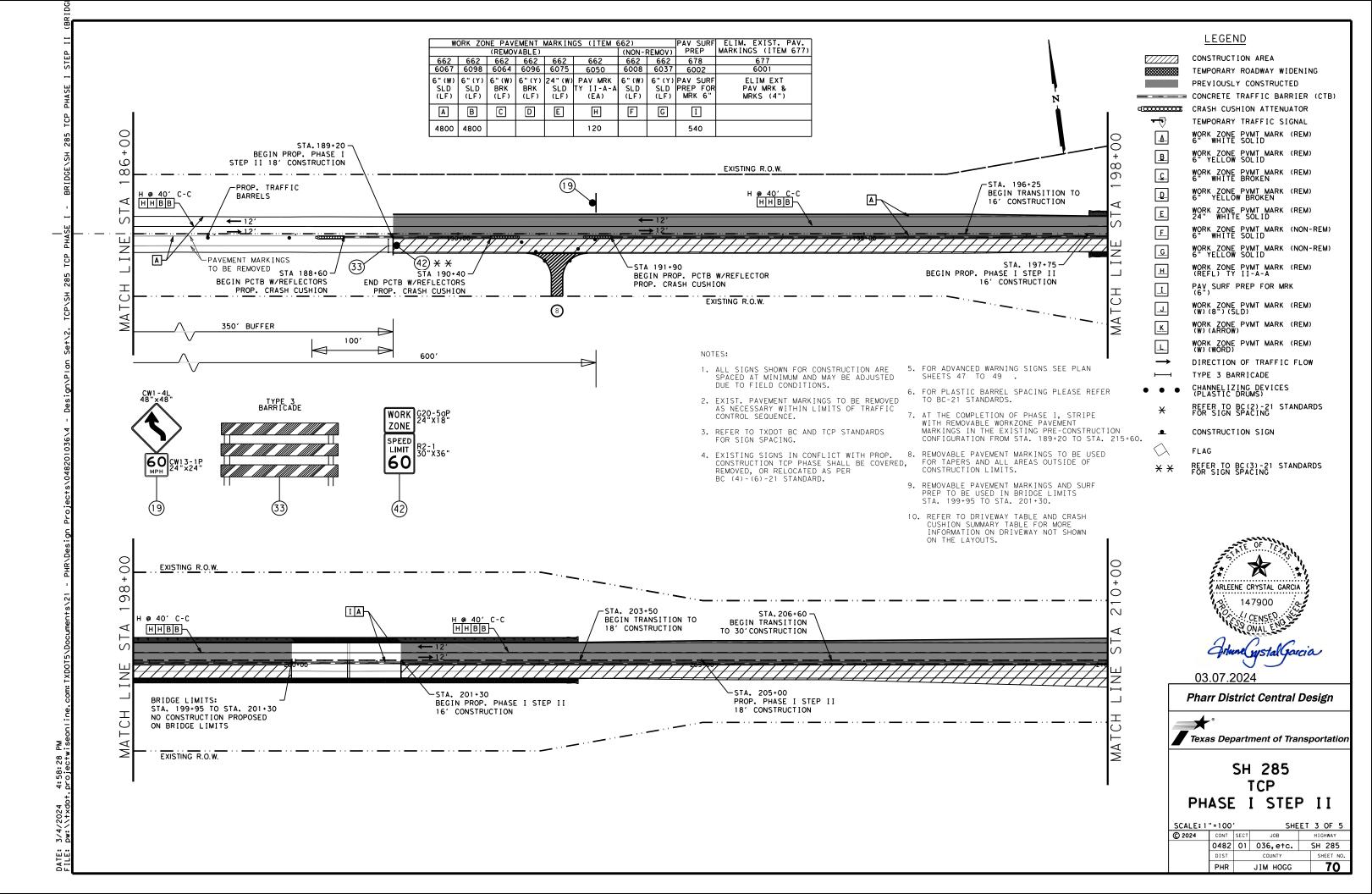


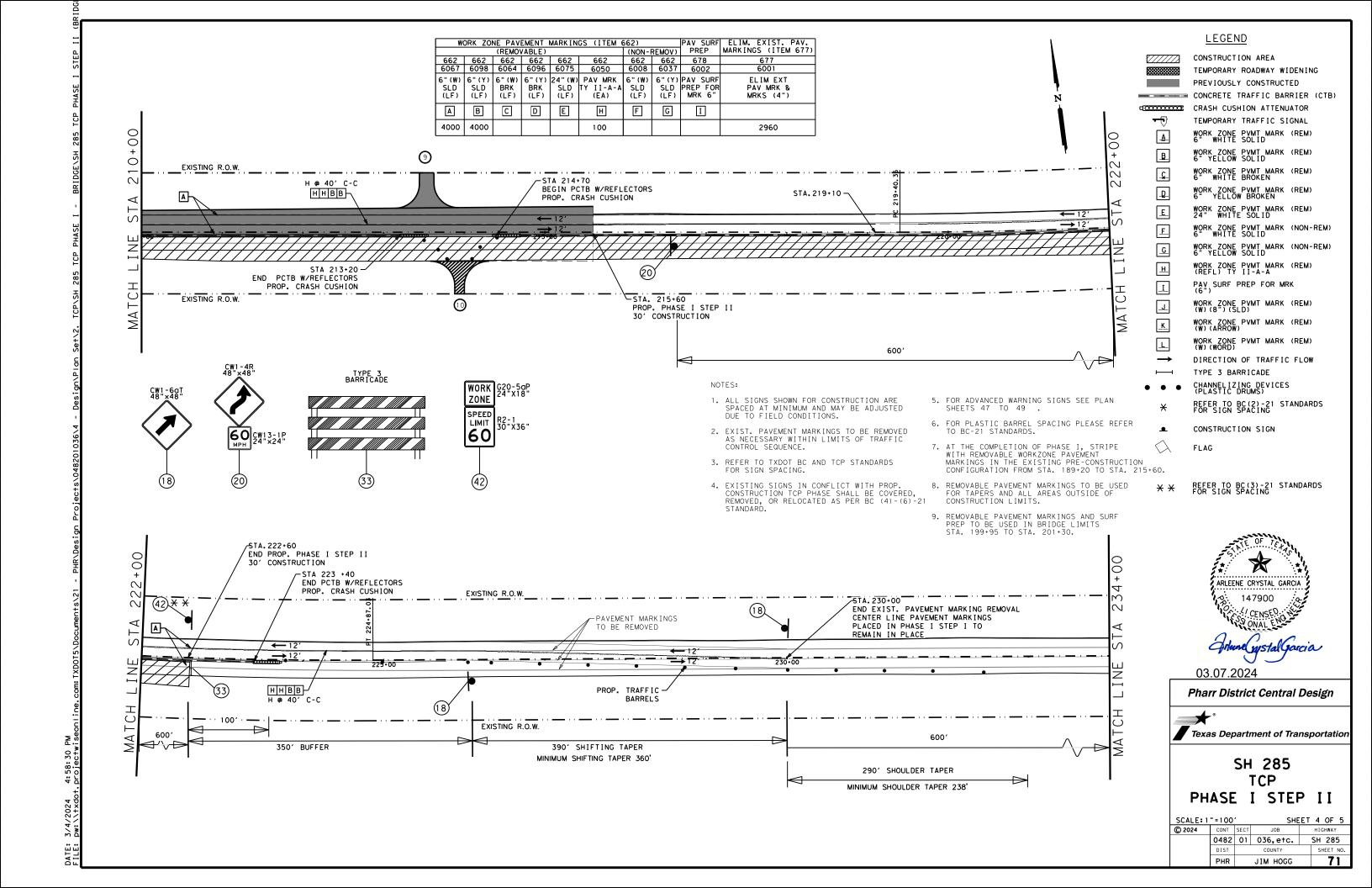


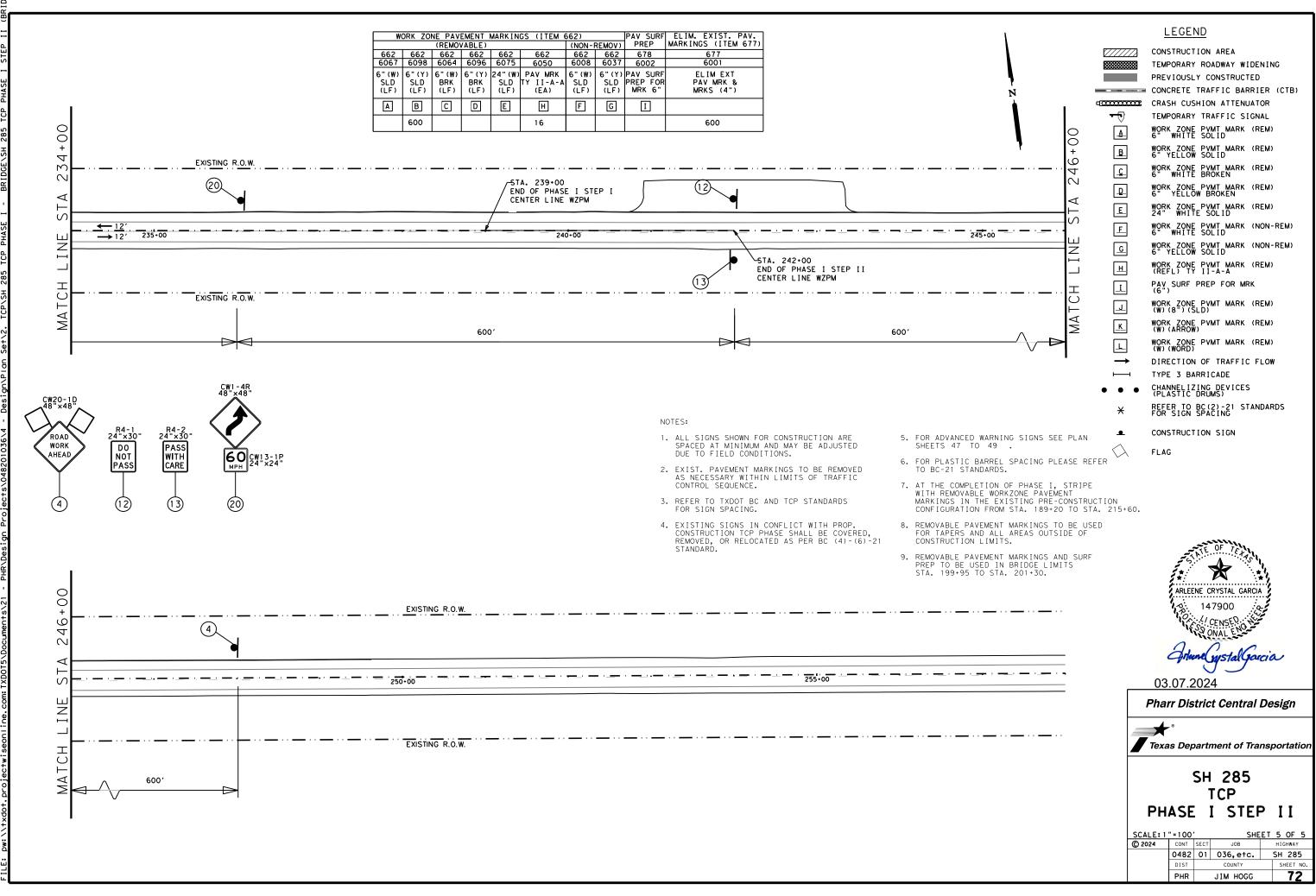




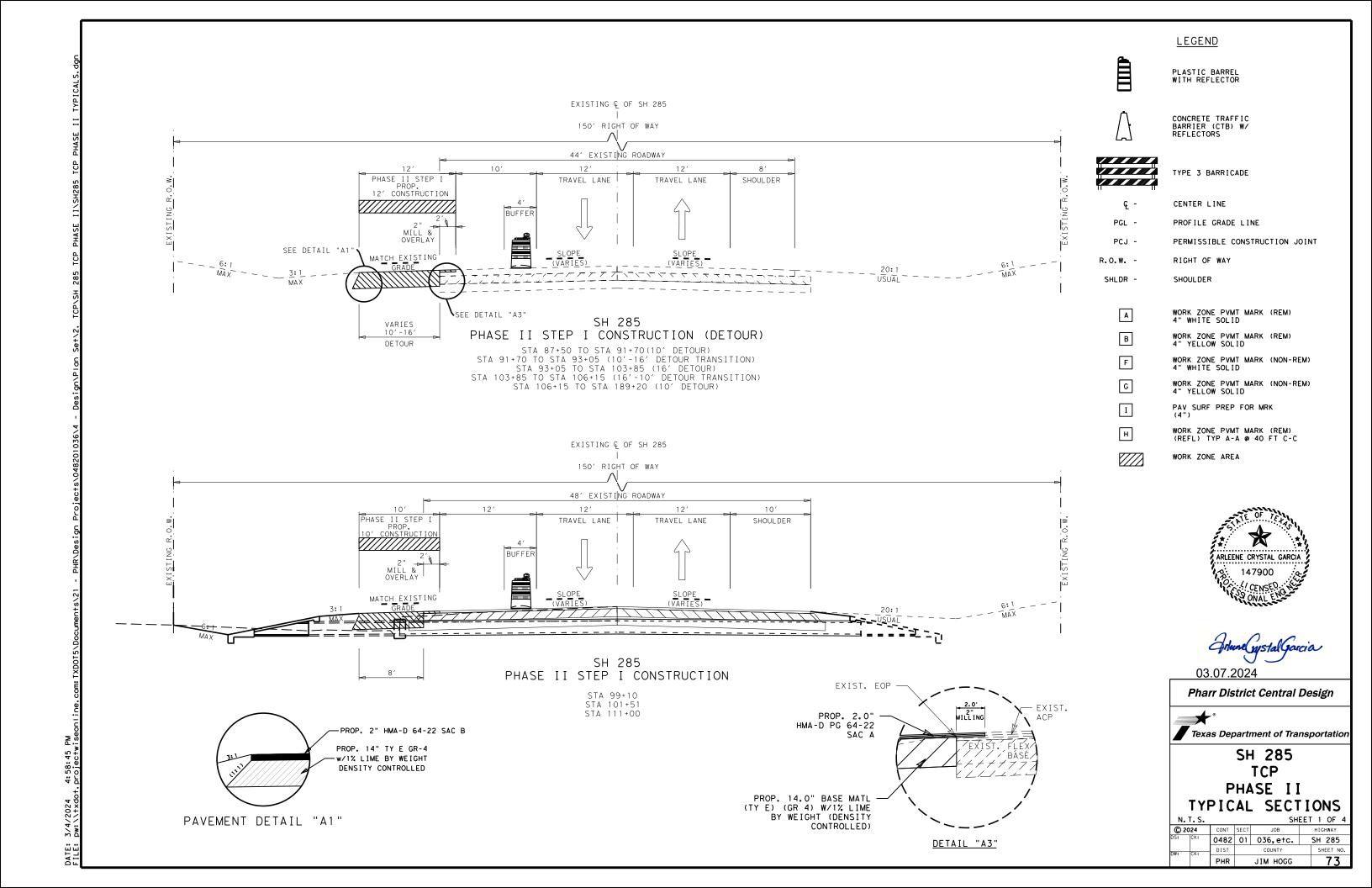


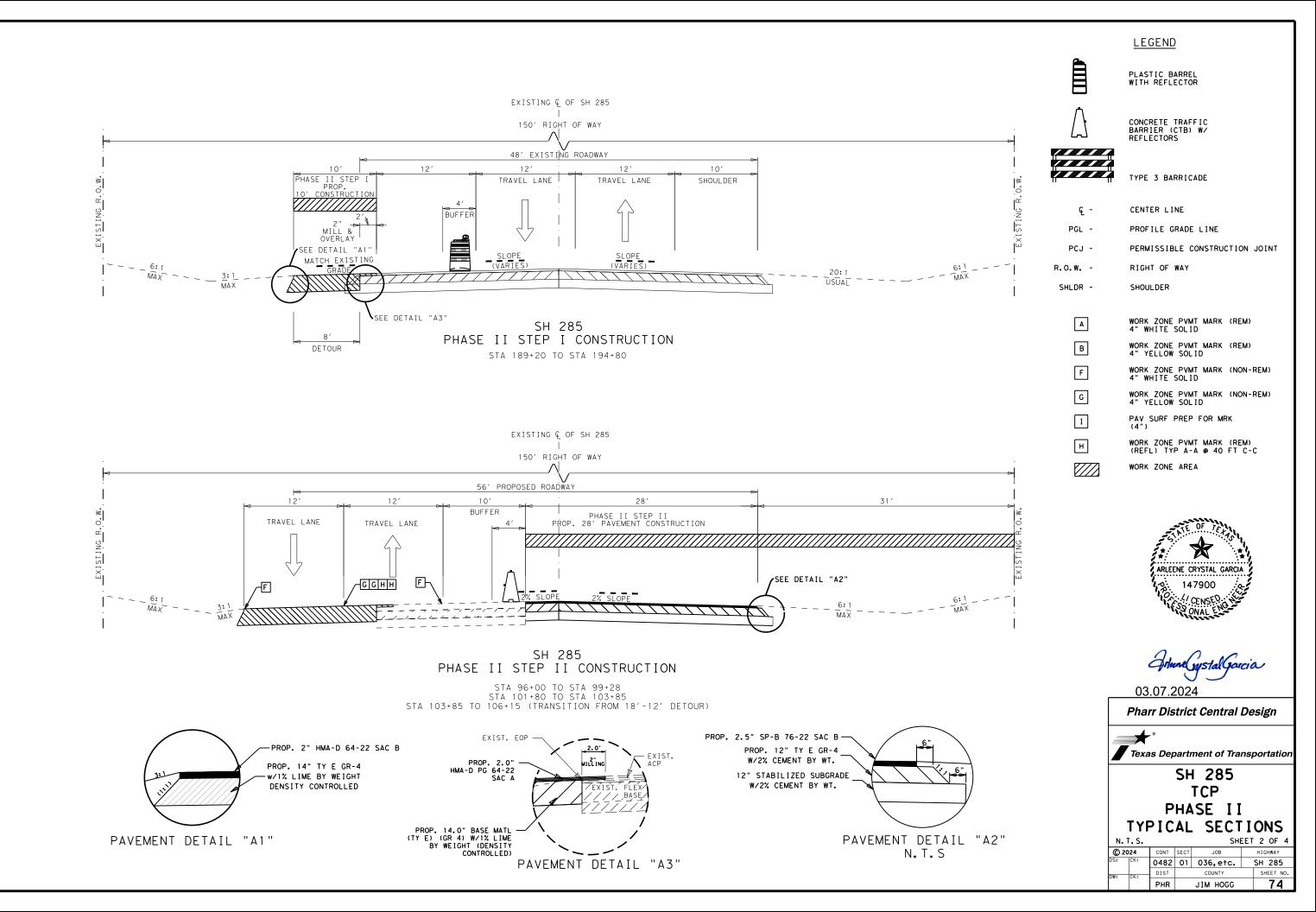


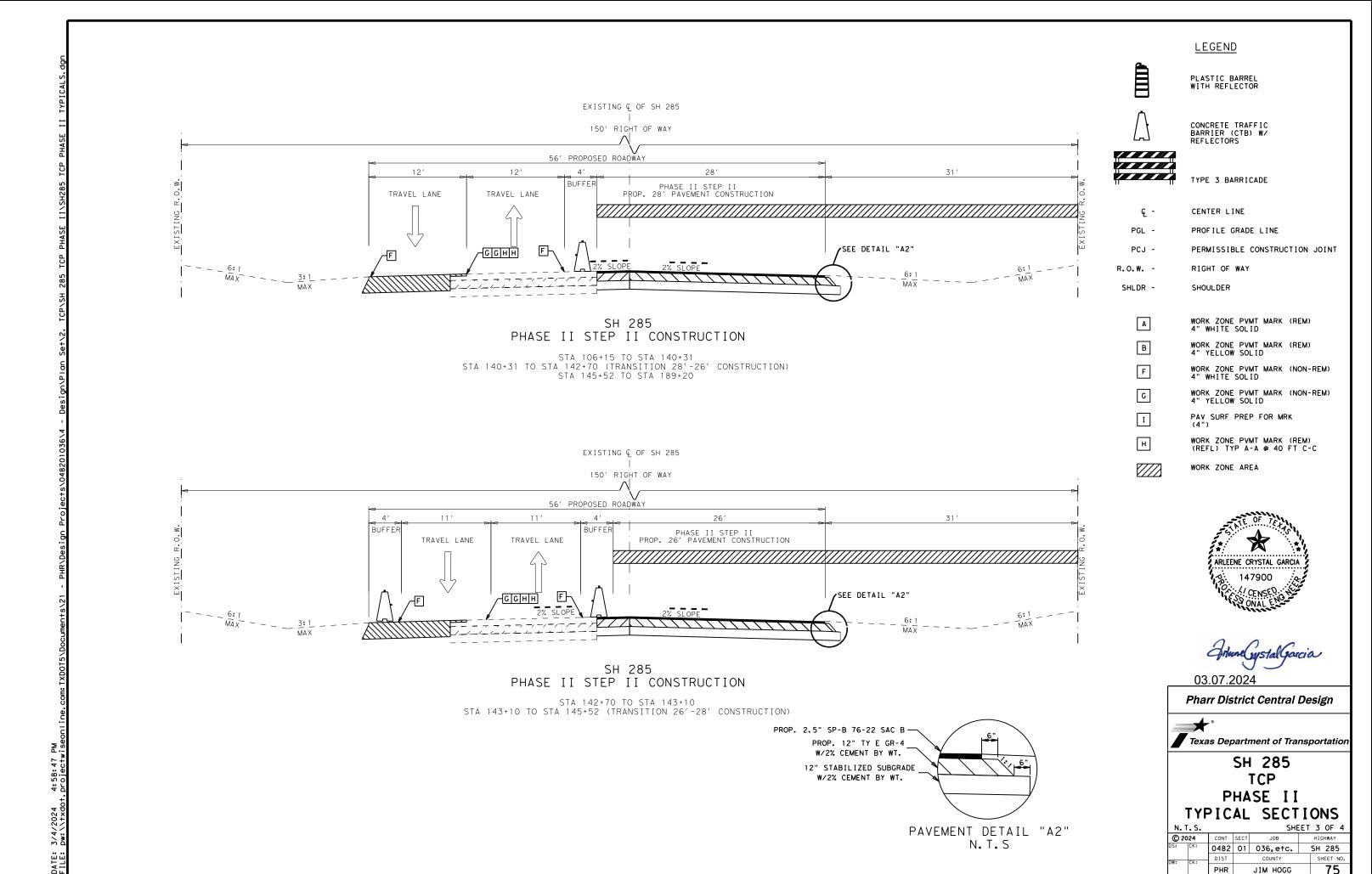




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PLASTIC BARREL WITH REFLECTOR



Α

CONCRETE TRAFFIC BARRIER (CTB) W/ REFLECTORS

TYPE 3 BARRICADE

> CENTER LINE **ૄ**-

PGL -PROFILE GRADE LINE

PERMISSIBLE CONSTRUCTION JOINT PCJ -

R.O.W. -RIGHT OF WAY

SHLDR -SHOULDER

> WORK ZONE PVMT MARK (REM) 4" WHITE SOLID

WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID В WORK ZONE PVMT MARK (NON-REM)

4" YELLOW SOLID

4" WHITE SOLID WORK ZONE PVMT MARK (NON-REM)

PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM) (REFL) TYP A-A @ 40 FT C-C

WORK ZONE AREA

ARLEENE CRYSTAL GARCIA

03.07.2024

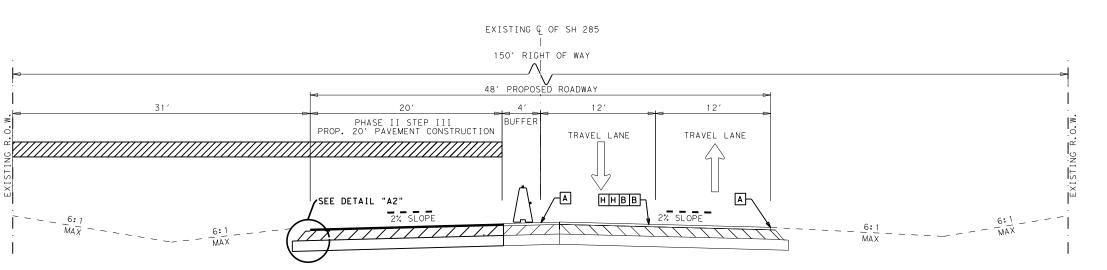
Pharr District Central Design



Texas Department of Transportation

SH 285 TCP PHASE II TYPICAL SECTIONS

l		IC	~_	JLCI	1	CI43
N.	T.S.			SHE	EET	4 OF 4
© 2		CONT	SECT	JOB		HIGHWAY
DS: CK:		0482	01	036,etc.		SH 285
DW:	CK:	DIST		COUNTY		SHEET NO.
		PHR		JIM HOGG		76



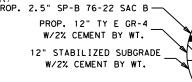
SH 285 PHASE II STEP III CONSTRUCTION

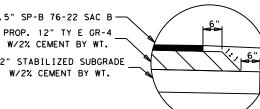
STA 96+00 TO STA 140+31 STA 140+31 TO STA 142+70 (TRANSITION 20' TO 22' CONSTRUCTION) STA 145+52 TO STA 189+20

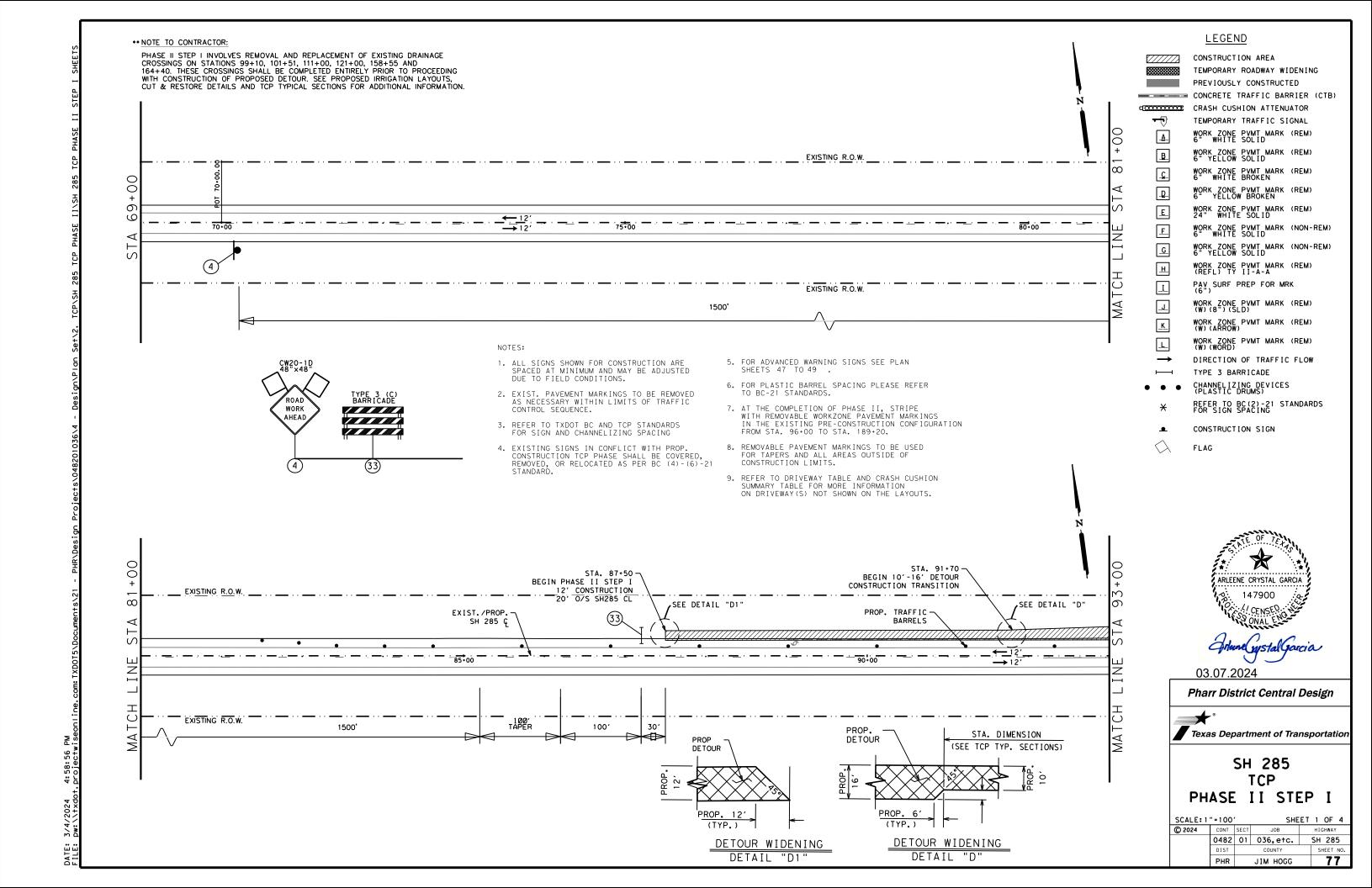
EXISTING & OF SH 285 150' RIGHT OF WAY 48' PROPOSED ROADWAY 22′ PHASE II STEP III PROP. 22' PAVEMENT CONSTRUCTION TRAVEL LANE TRAVEL LANE SEE DETAIL "A2" 2% SLOPE MAX MAX

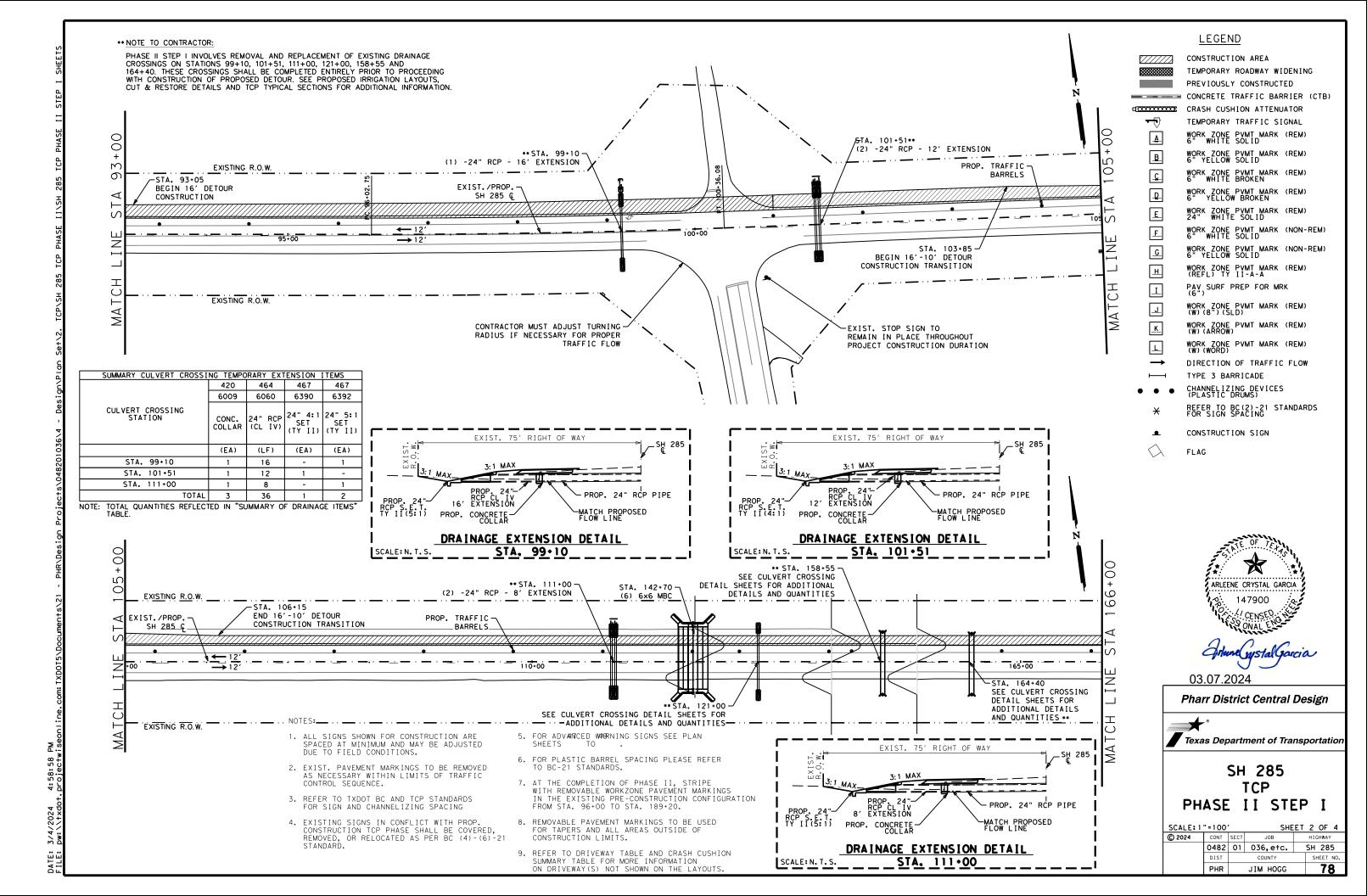
SH 285 PHASE II STEP III CONSTRUCTION

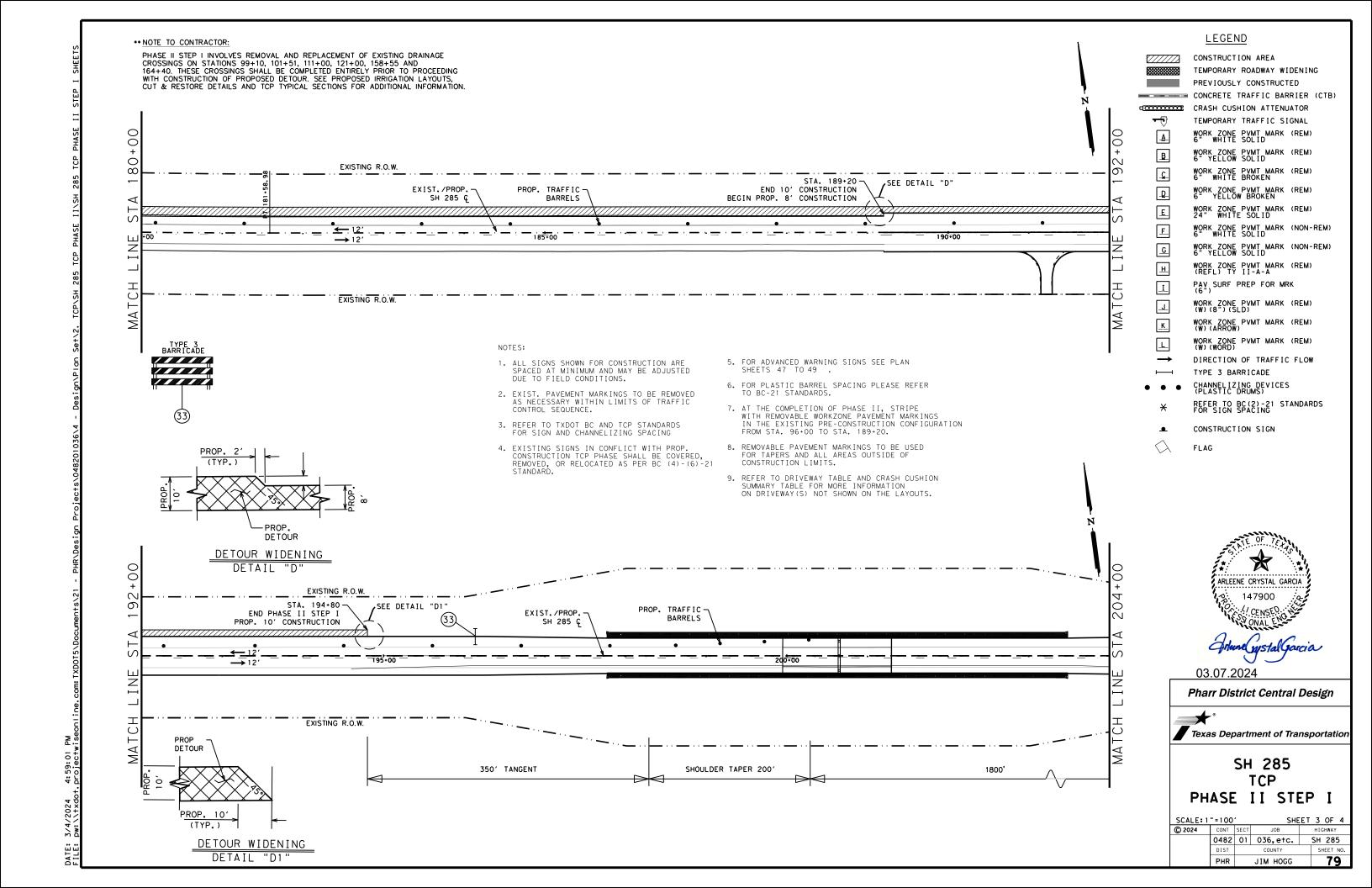
STA 142+70 TO STA 143+10
STA 143+10 TO STA 145+52 (TRANSITION 22'-20' CONSTRUCTION)
PROP. 2.5" SP-B 76-22 SAC B-

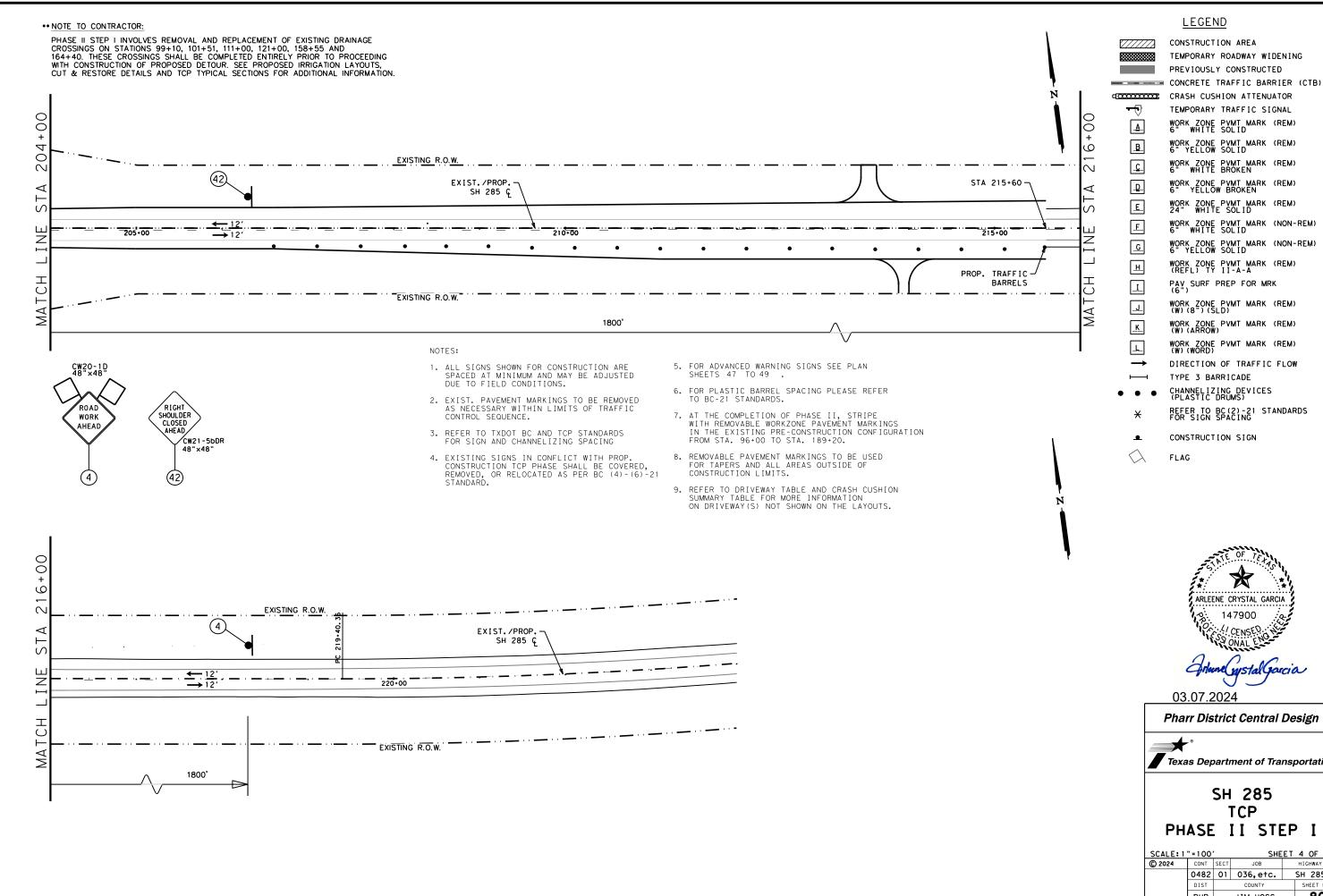












WORK ZONE PVMT MARK (REM)
(W) (WORD)

REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING

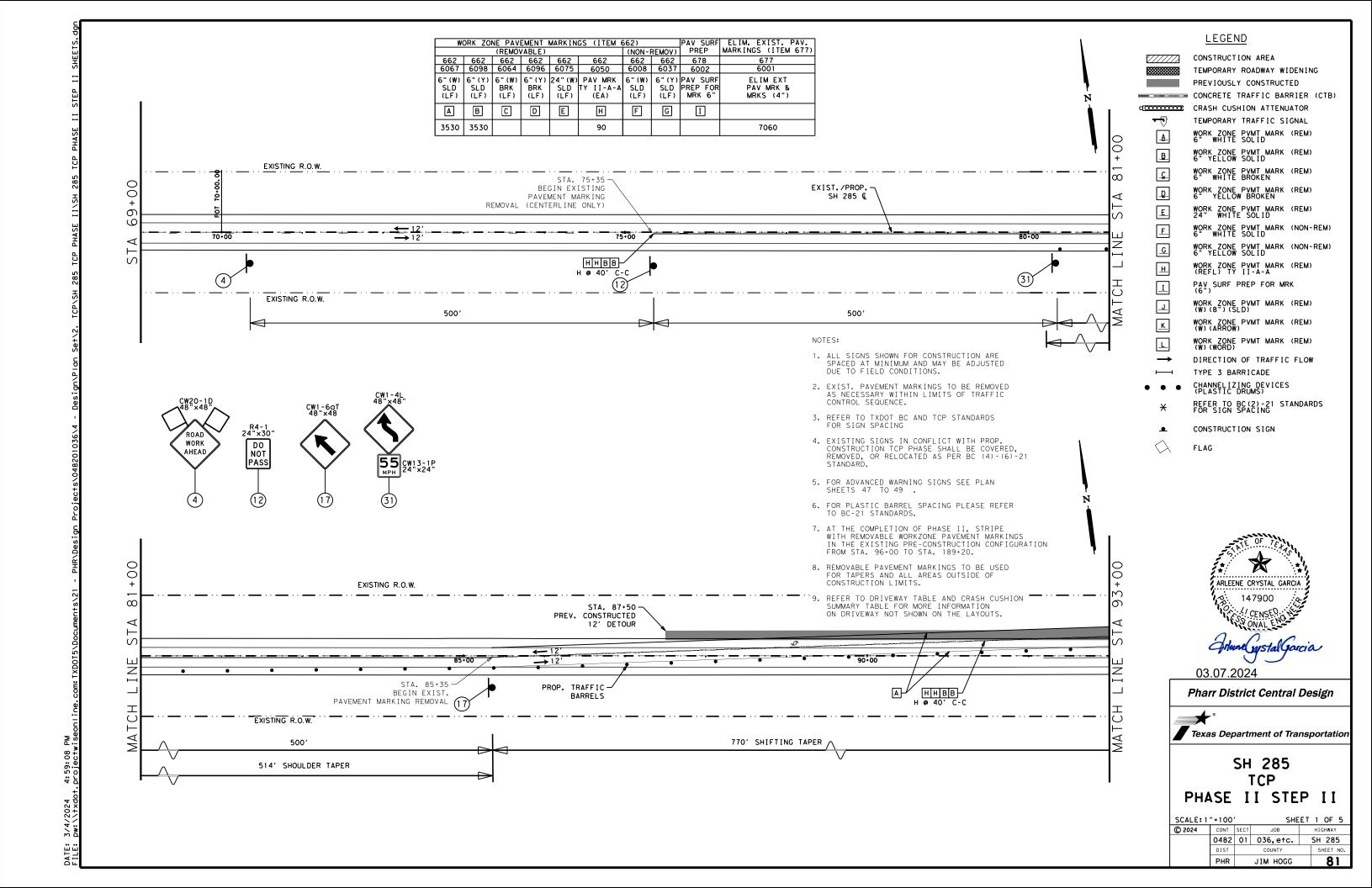


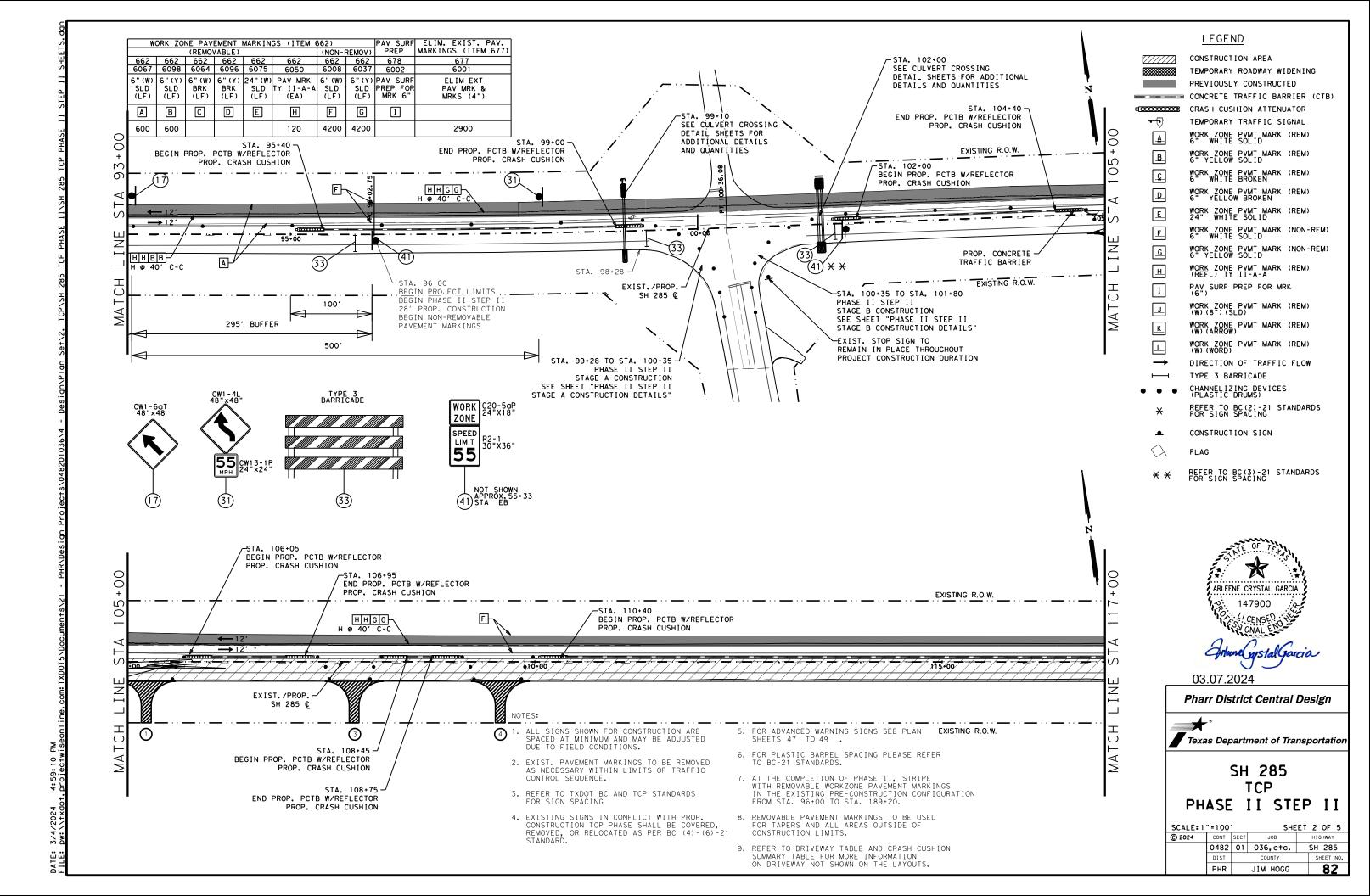
Pharr District Central Design

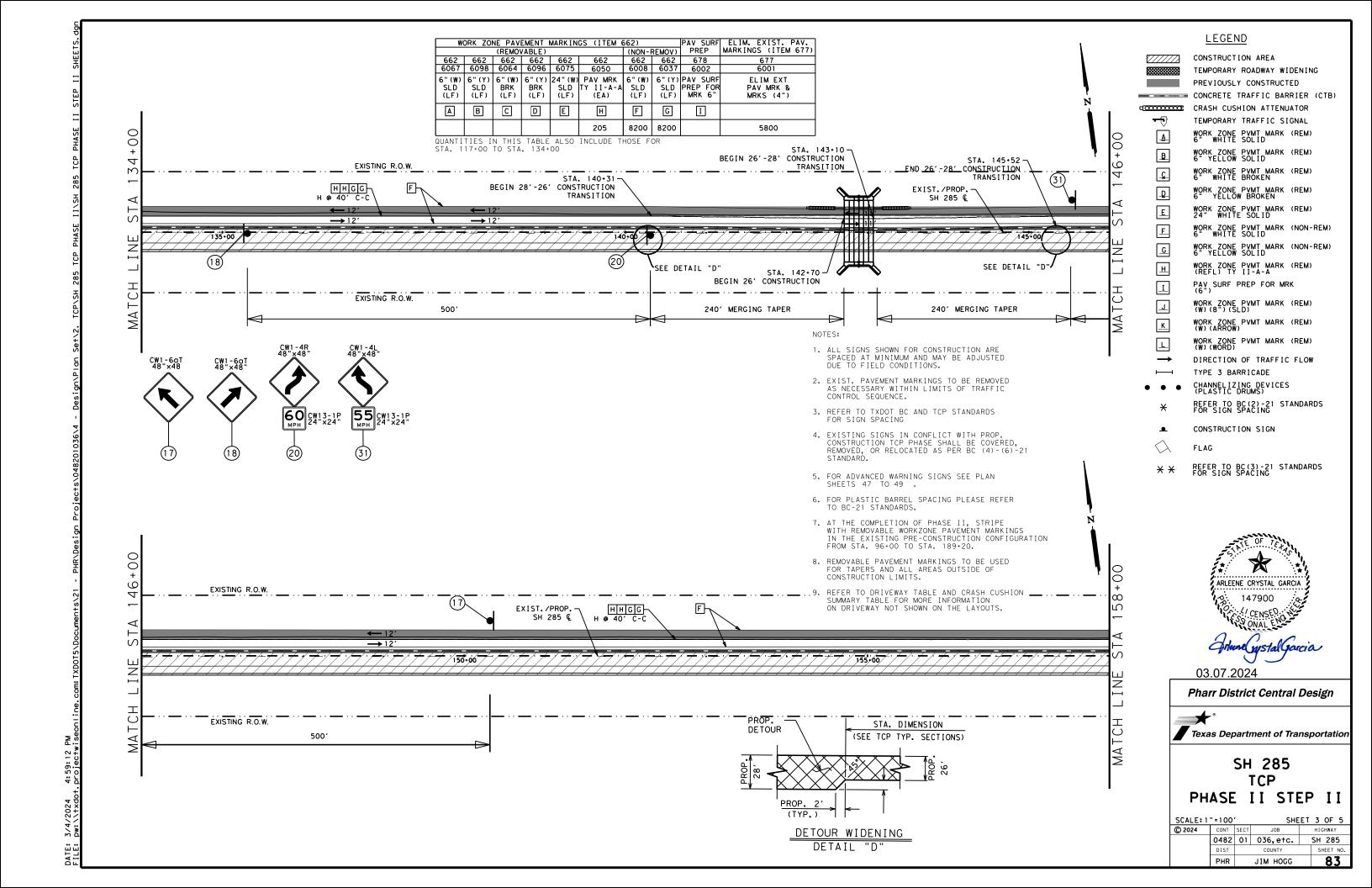
Texas Department of Transportation

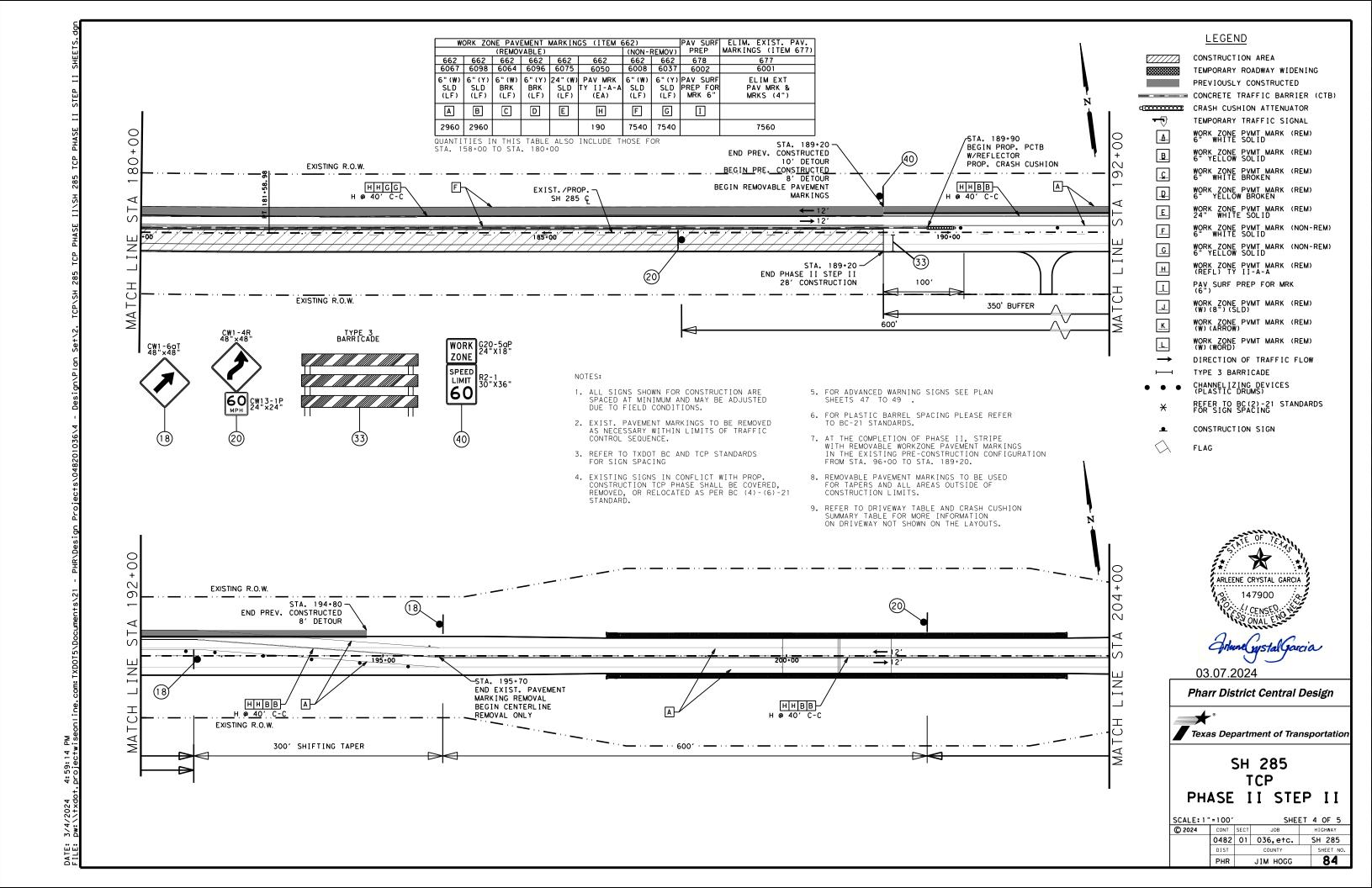
PHASE II STEP I

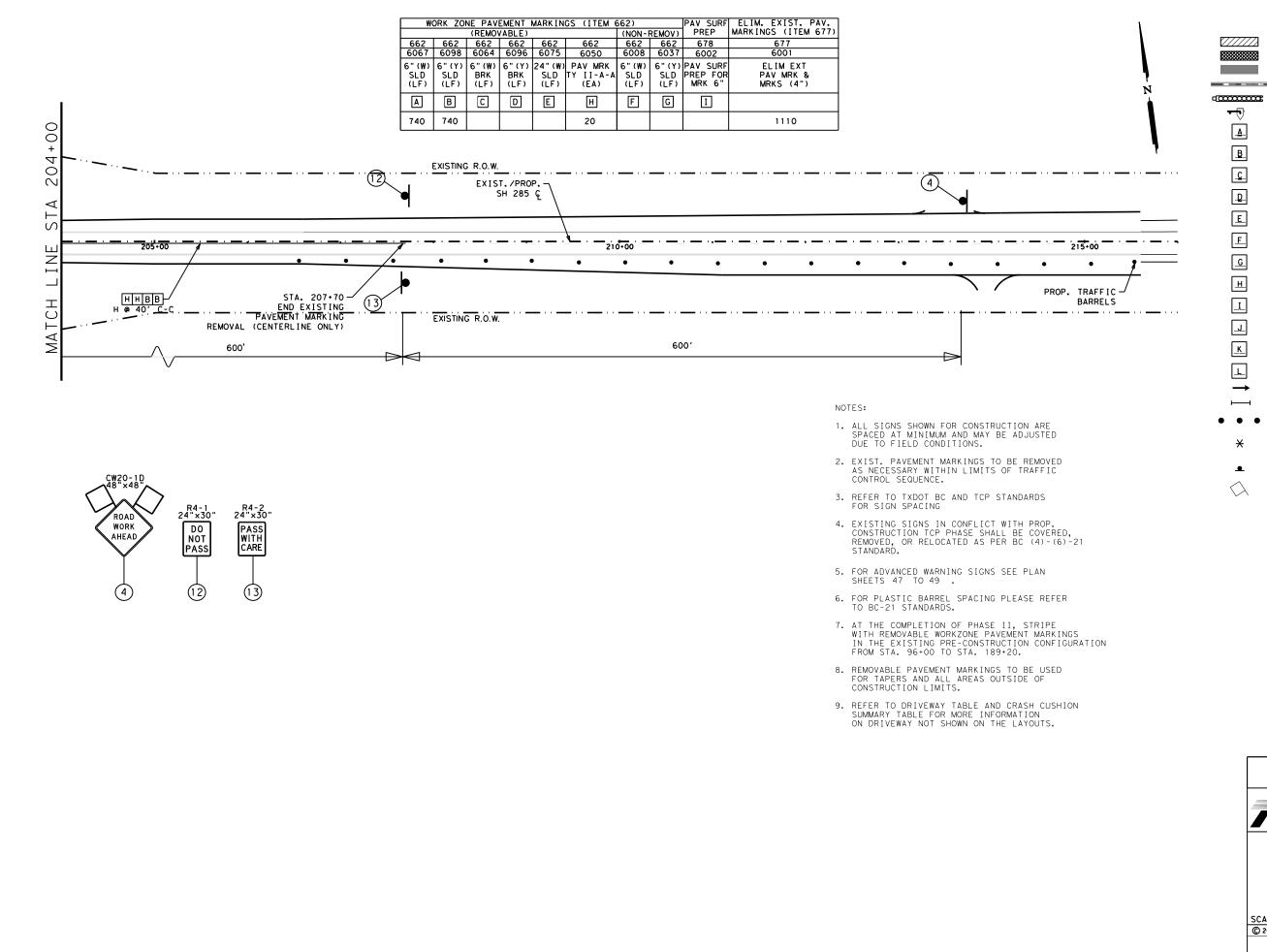
HIGHWAY 0482 01 036,etc. SH 285 PHR 80











LEGEND

CONSTRUCTION AREA

TEMPORARY ROADWAY WIDENING PREVIOUSLY CONSTRUCTED

CONCRETE TRAFFIC BARRIER (CTB) CRASH CUSHION ATTENUATOR TEMPORARY TRAFFIC SIGNAL

> WORK ZONE PVMT MARK (REM) 6" WHITE SOLID WORK ZONE PVMT MARK (REM) 6" YELLOW SOLID

WORK ZONE PYMT MARK (REM) 6" WHITE BROKEN

WORK ZONE PYMT MARK (REM) 6" YELLOW BROKEN WORK ZONE PVMT MARK (REM) 24" WHITE SOLID

WORK ZONE PYMT MARK (NON-REM)
6" WHITE SOLID

WORK ZONE PVMT MARK (NON-REM) 6" YELLOW SOLID WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A

PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM) (W) (8") (SLD)

WORK ZONE PVMT MARK (REM)
(W) (ARROW) WORK ZONE PVMT MARK (REM)

DIRECTION OF TRAFFIC FLOW TYPE 3 BARRICADE

CHANNELIZING DEVICES (PLASTIC DRUMS)

REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING

CONSTRUCTION SIGN



FLAG



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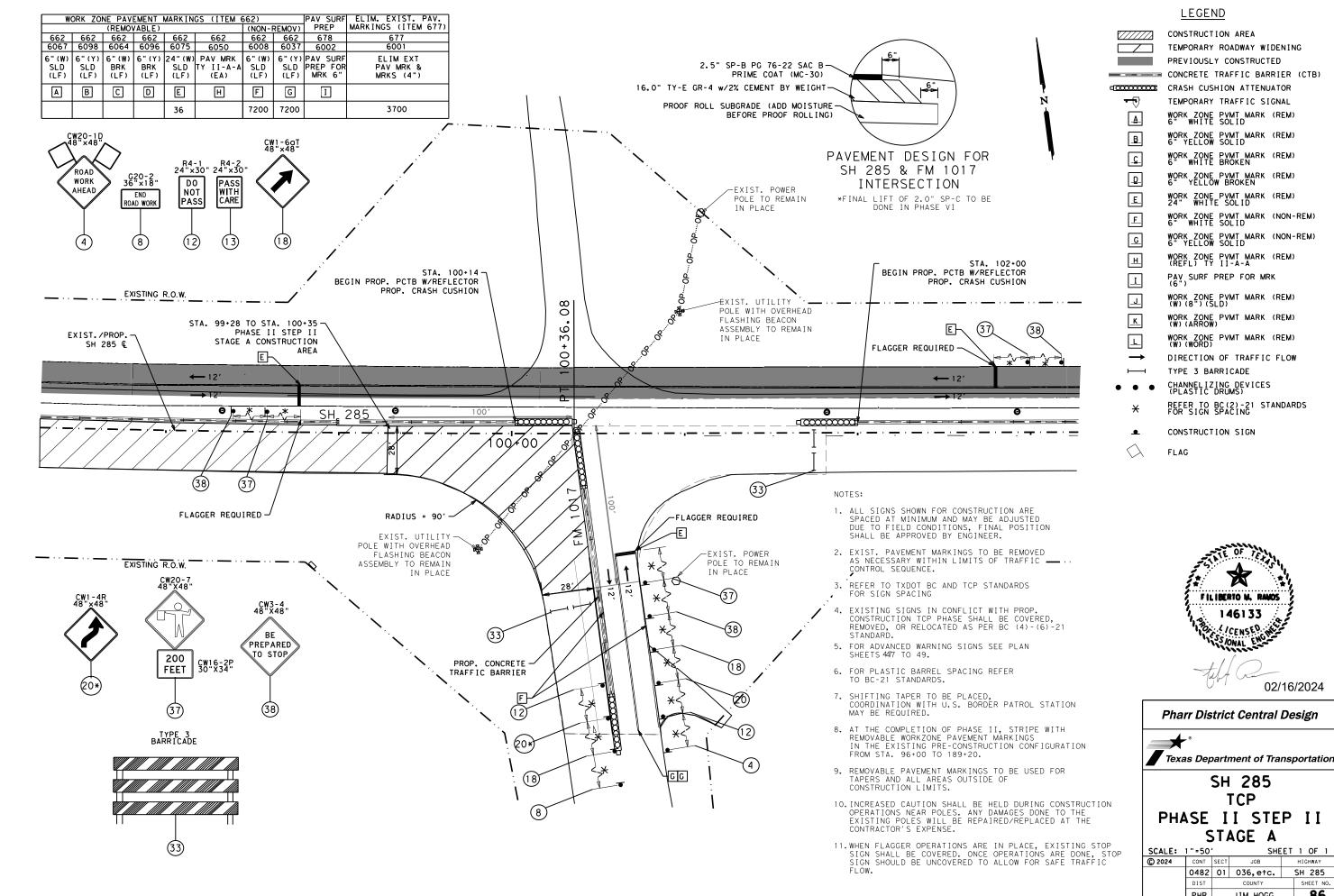
Pharr District Central Design



Texas Department of Transportation

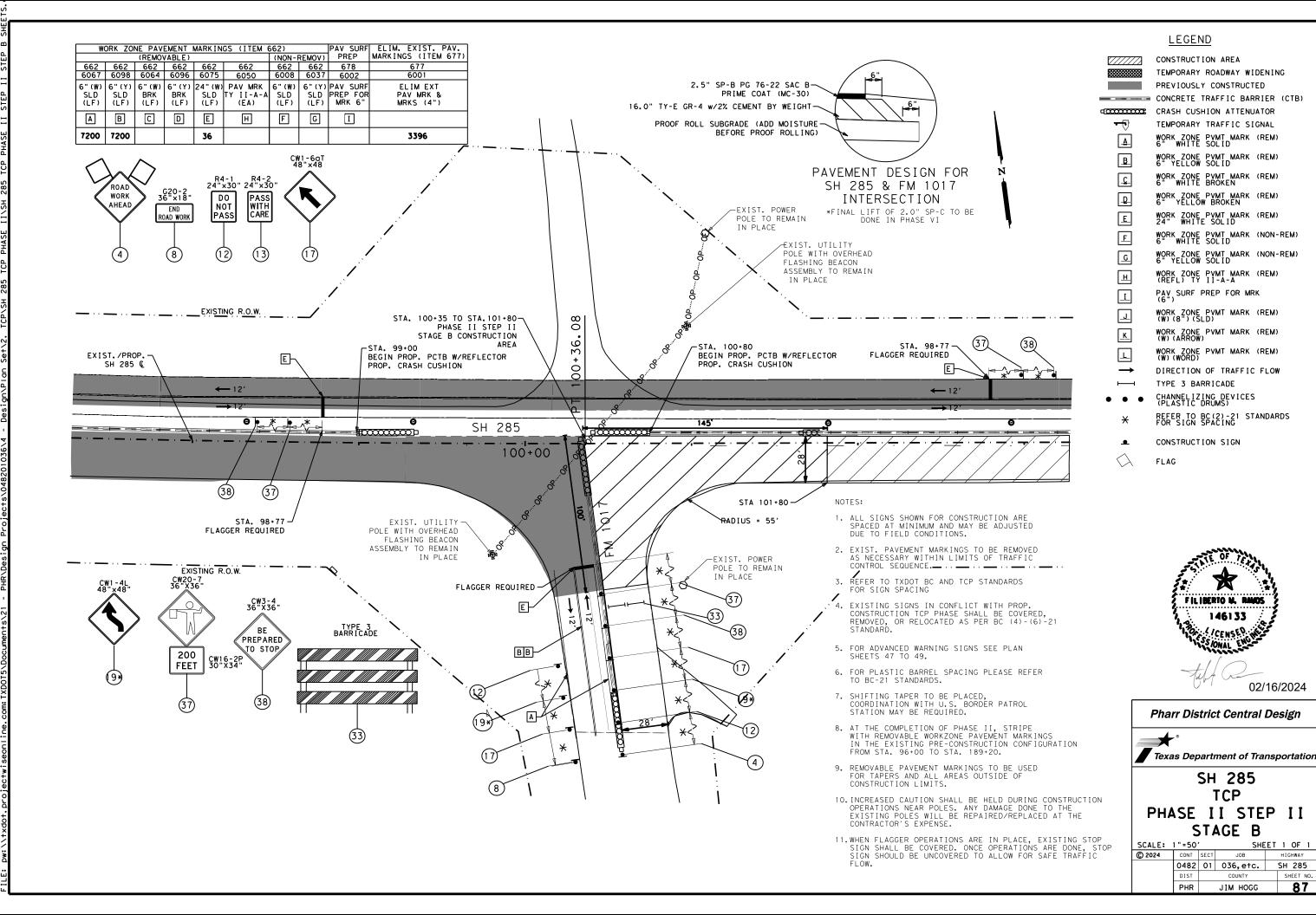
SH 285 TCP PHASE II STEP II

SCALE: 1"	=100′		SHEET 5 OF 5				
© 2024 CONT S			JOB	HIGHWAY			
0482		01	036,etc.	SH 285			
DIST		COUNTY			SHEET NO.		
	PHR		JIM HOGG		85		

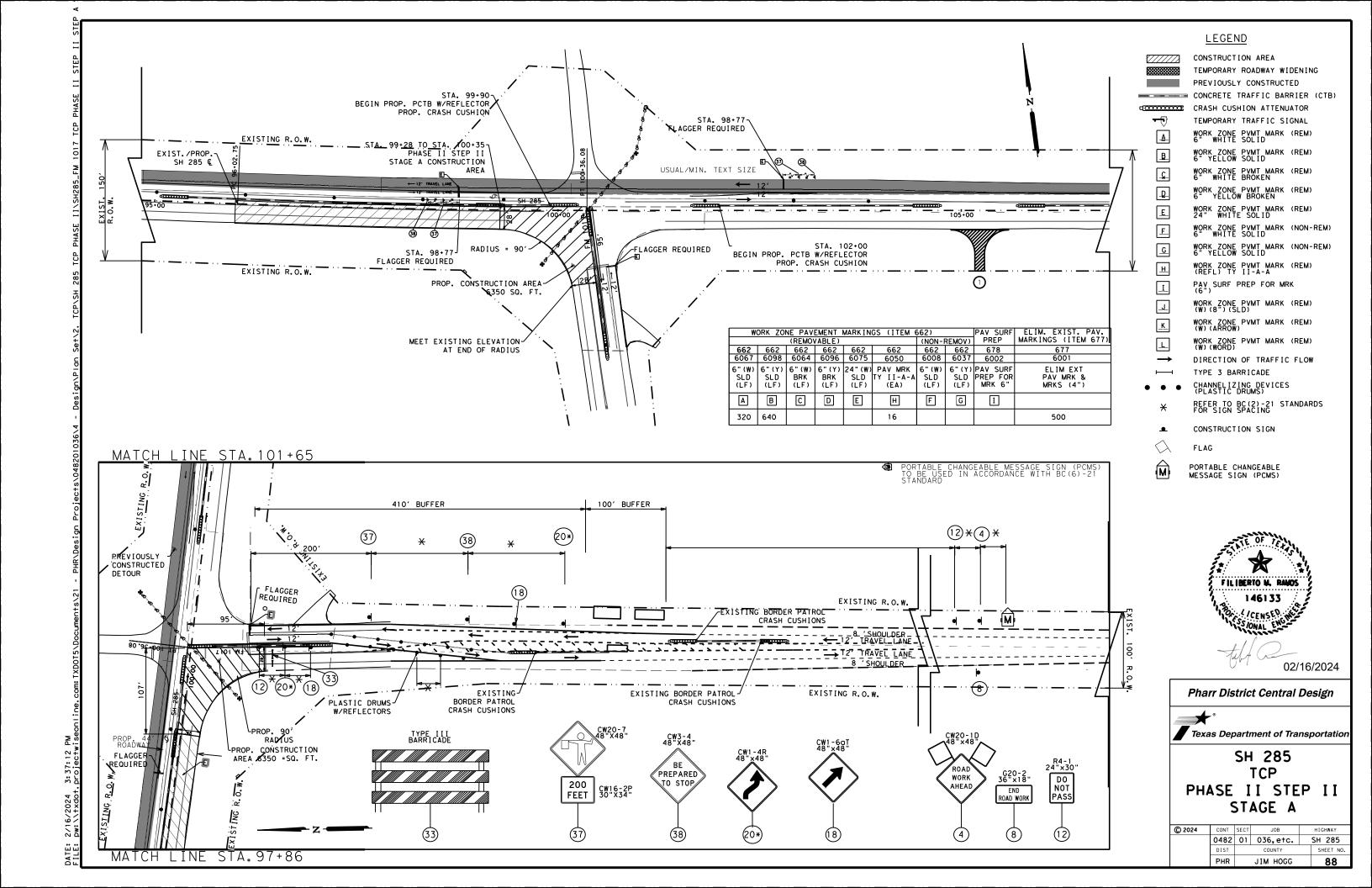


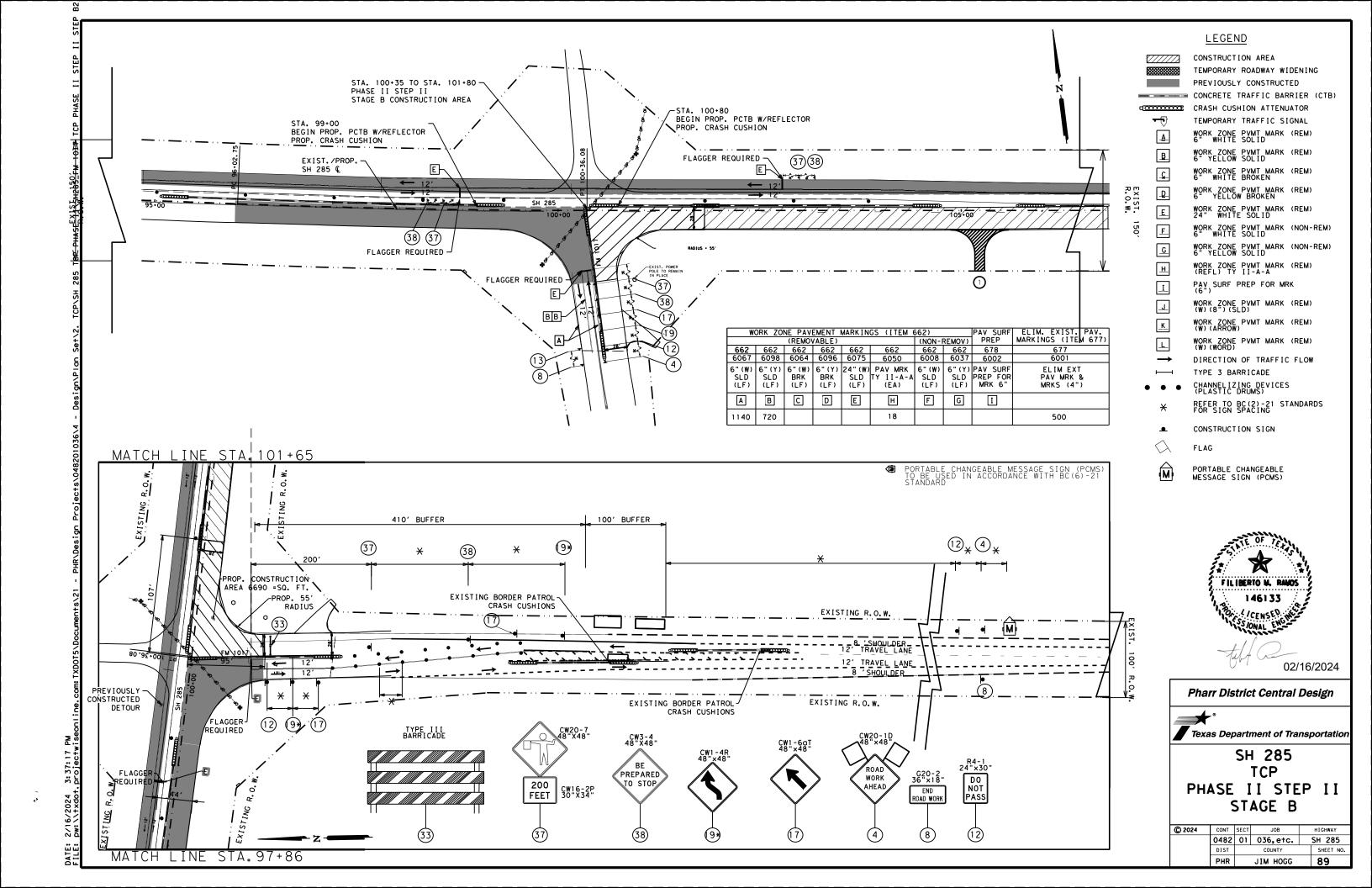
PHASE II STEP II

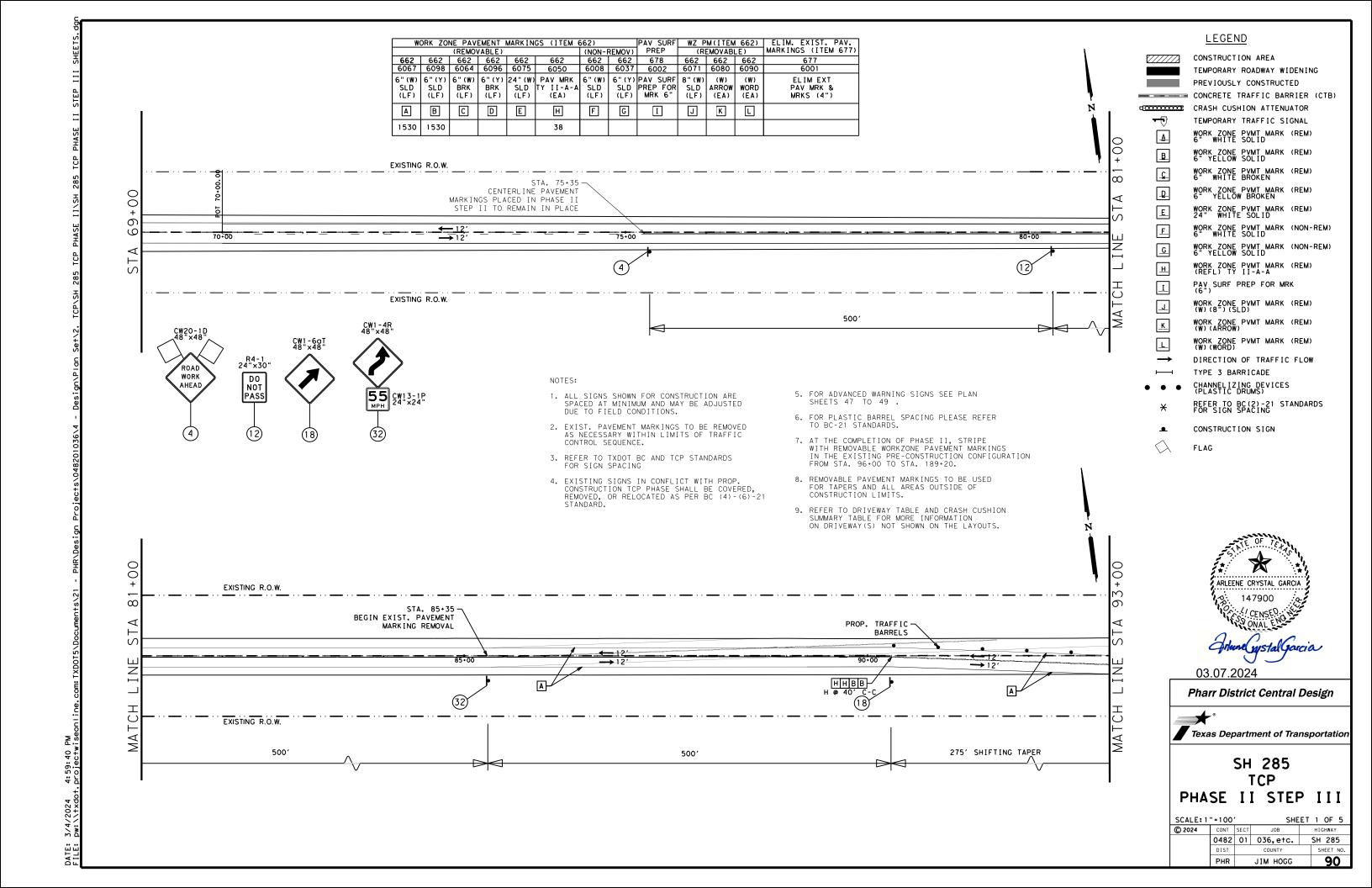
	_	-					
SCALE:	1 " = 50	,	SHE	EΤ	1	OF	1
C) 2024	CONT	SECT	JOB	HIGHWAY			
	0482	01	036,etc.	SH 28		28	0
	DIST		COUNTY		SHEET NO.		NO.
	PHR		JIM HOGG	86		U.	

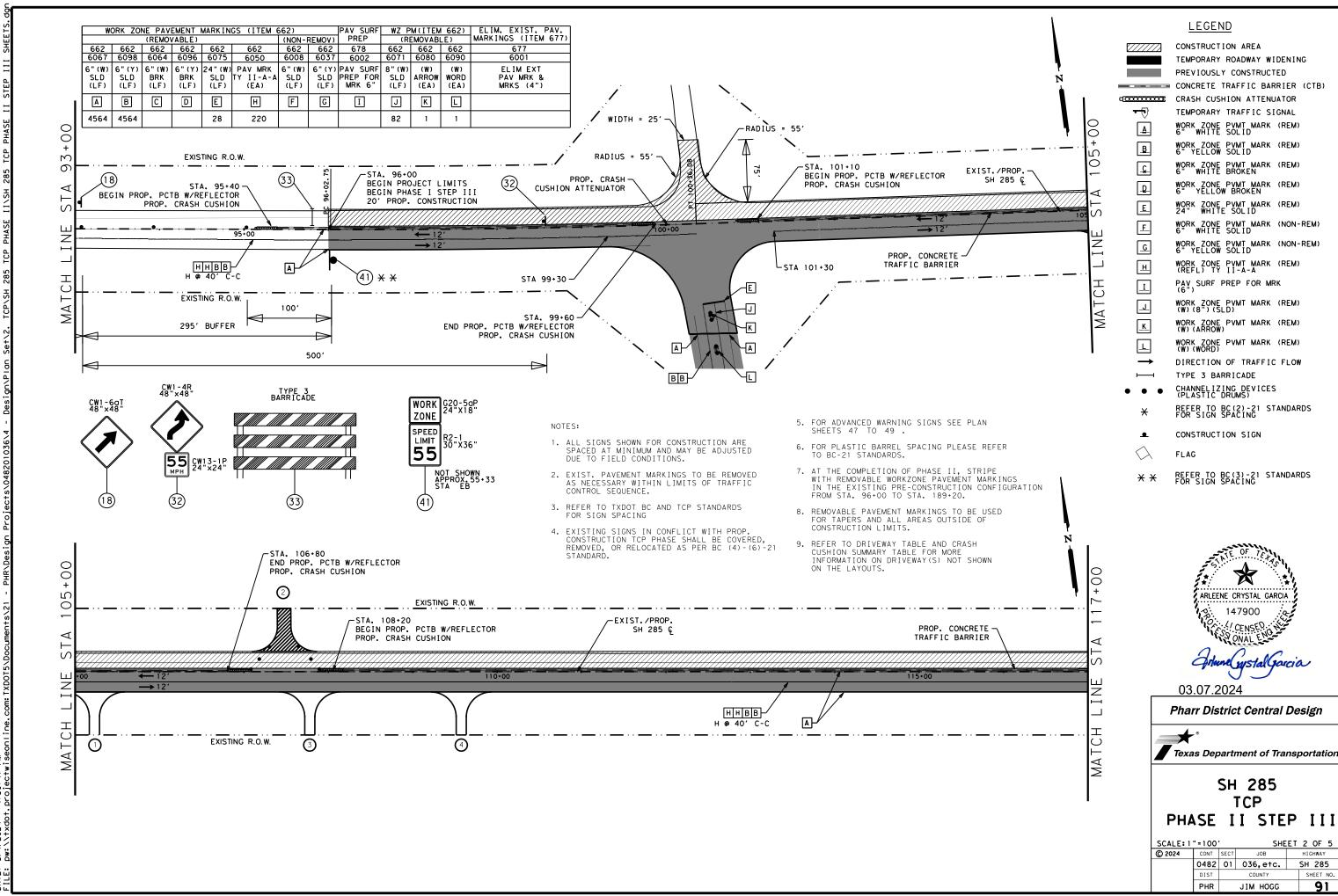


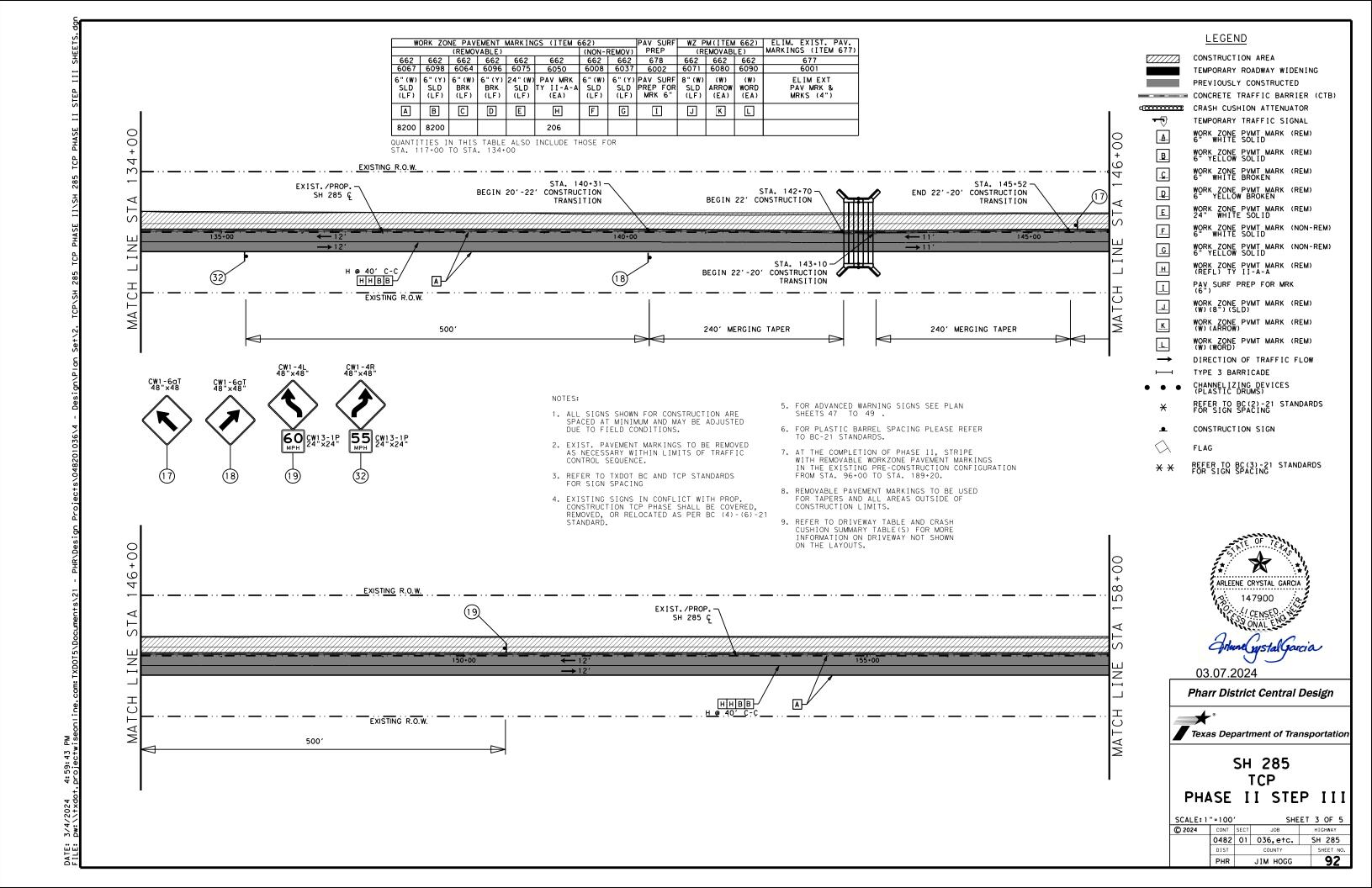
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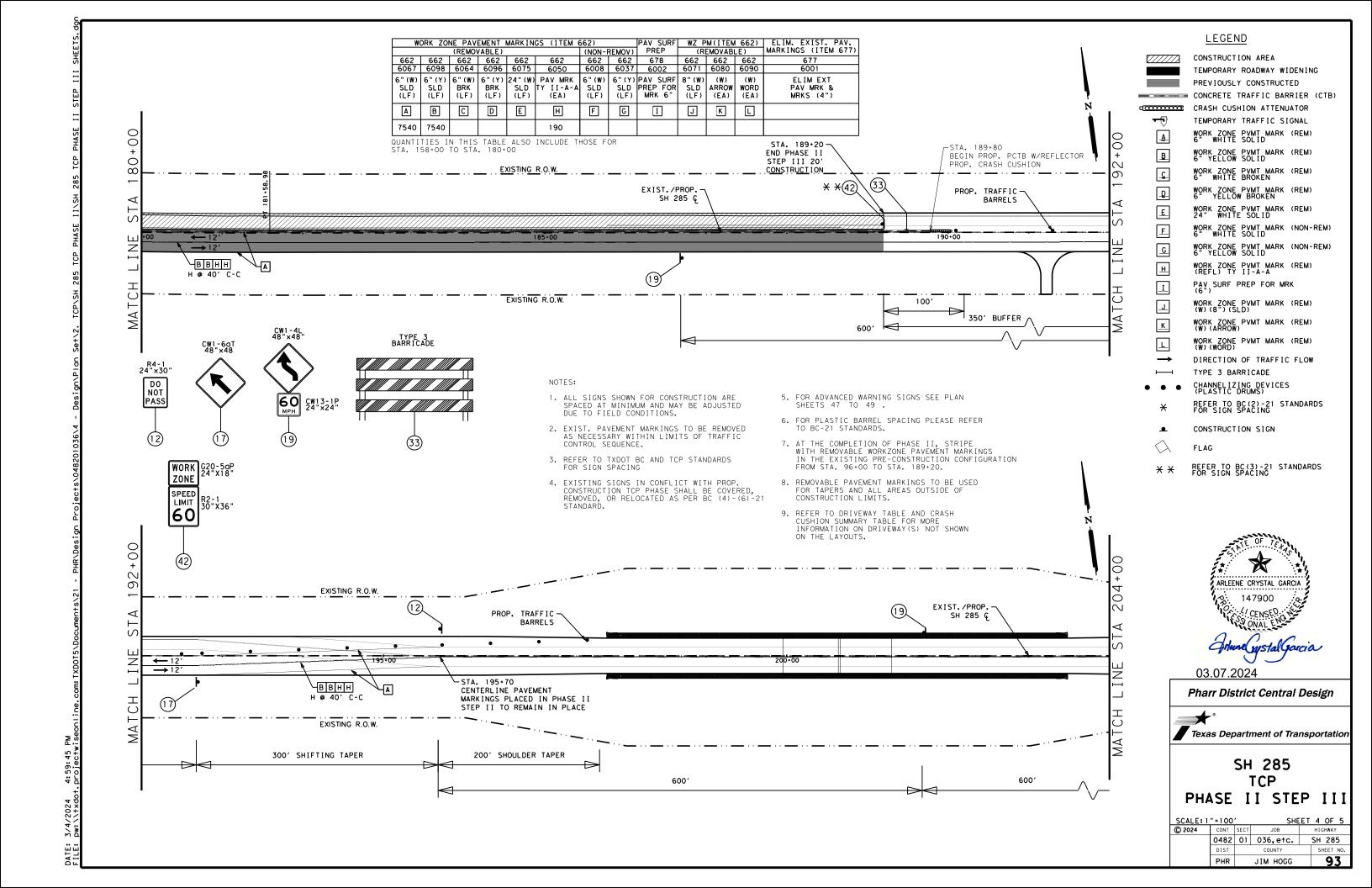


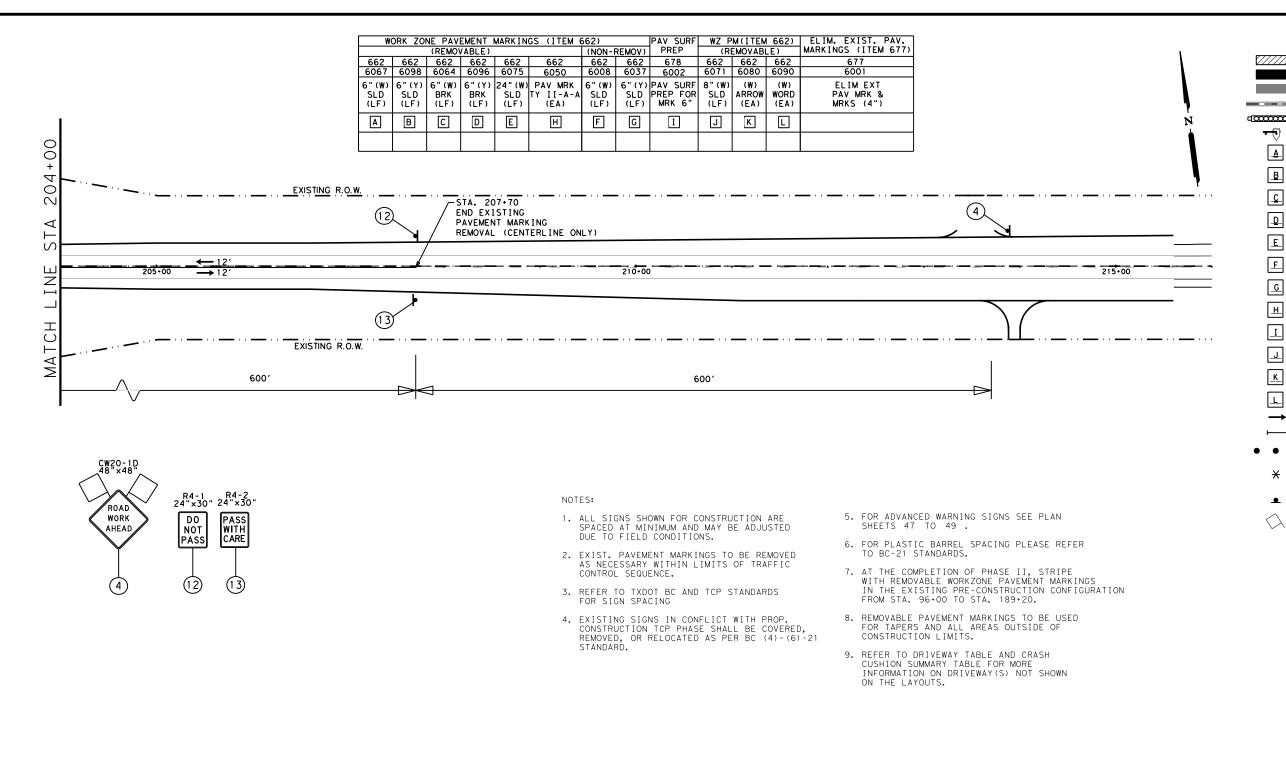












LEGEND

CONSTRUCTION AREA TEMPORARY ROADWAY WIDENING PREVIOUSLY CONSTRUCTED

G

CONCRETE TRAFFIC BARRIER (CTB) CRASH CUSHION ATTENUATOR TEMPORARY TRAFFIC SIGNAL

WORK ZONE PVMT MARK (REM) 6" WHITE SOLID

WORK ZONE PVMT MARK (REM) 6" YELLOW SOLID WORK ZONE PYMT MARK (REM) 6" WHITE BROKEN

WORK ZONE PYMT MARK (REM) 6" YELLOW BROKEN

E WORK ZONE PVMT MARK (REM) 24" WHITE SOLID WORK ZONE PYMT MARK (NON-REM)
6" WHITE SOLID

WORK ZONE PYMT MARK (NON-REM) 6" YELLOW SOLID

WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A Н PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM) (W) (8") (SLD) J

WORK ZONE PVMT MARK (REM)
(W) (ARROW)

WORK ZONE PVMT MARK (REM)
(W) (WORD)

DIRECTION OF TRAFFIC FLOW TYPE 3 BARRICADE

CHANNELIZING DEVICES (PLASTIC DRUMS) REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING

CONSTRUCTION SIGN



FLAG



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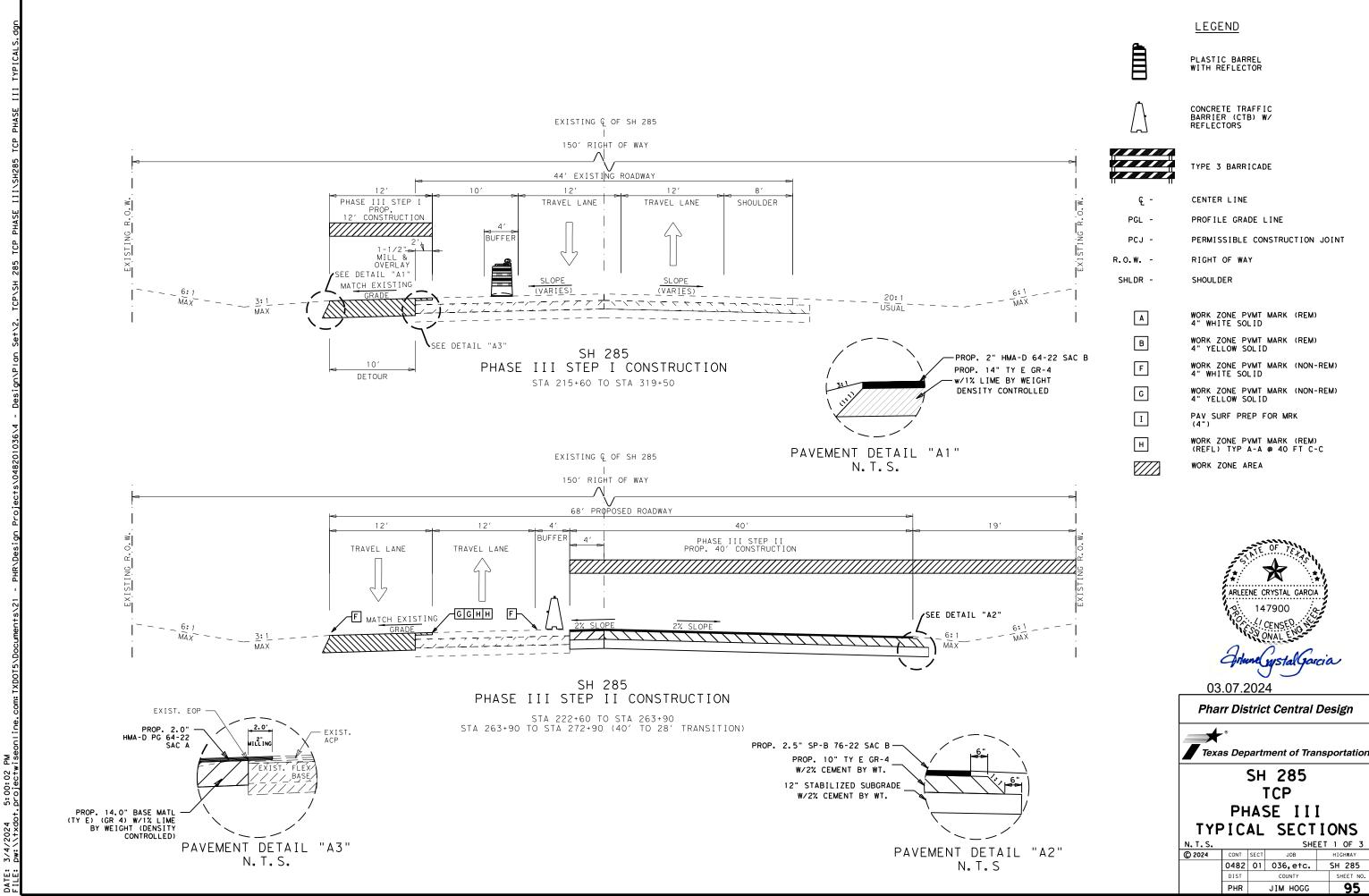
Pharr District Central Design



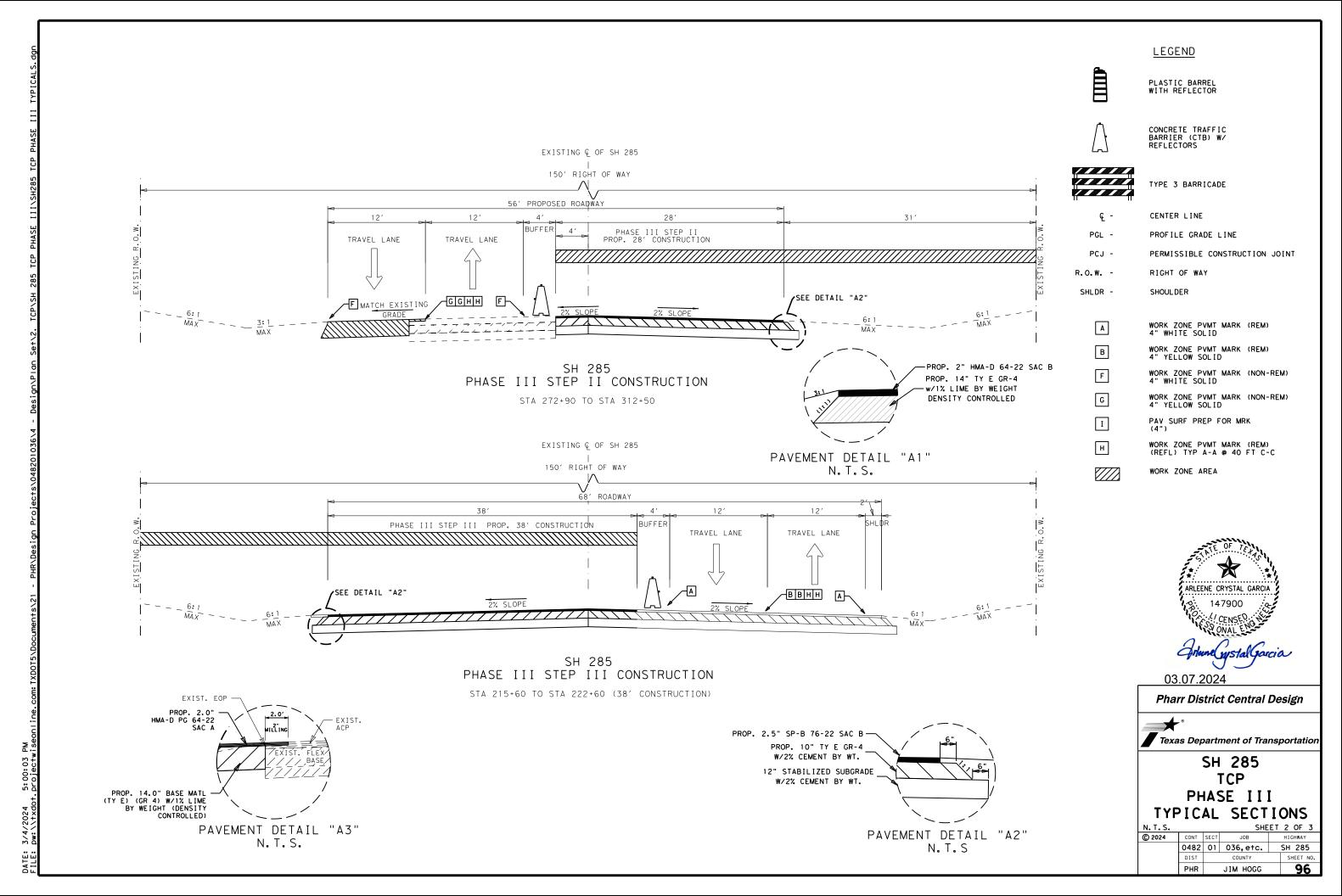
Texas Department of Transportation

SH 285 TCP PHASE II STEP III

SCALE: 1 " = 100' © 2024 CONT SECT JOB HIGHWAY 0482 01 036,etc. SH 285 PHR JIM HOGG 94



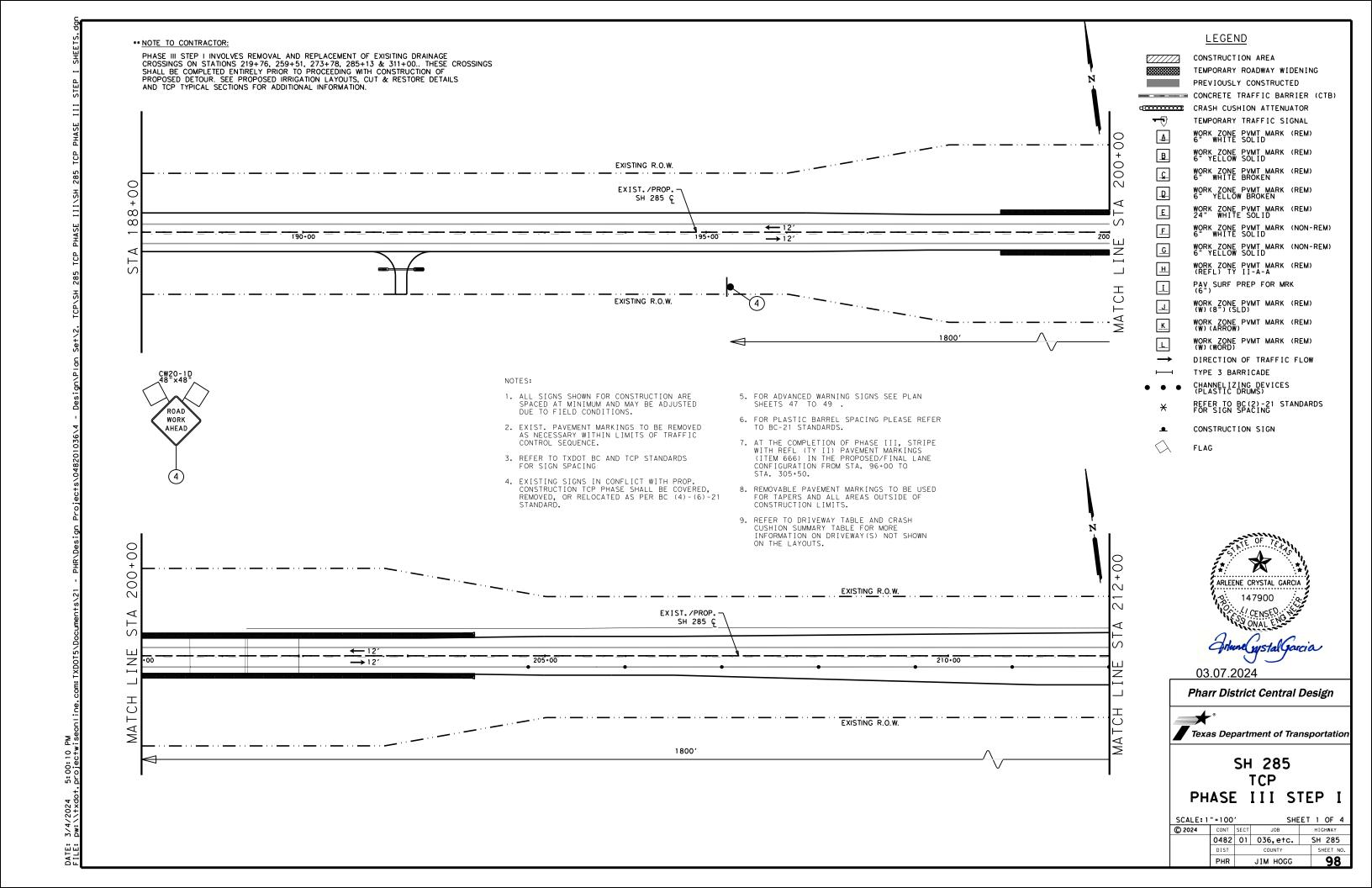
N. T. S.			SHE	EΤ	1	OF	3
2024	CONT	SECT	JOB	HIGHWAY			
	0482	01	036,etc.	SH 285		5	
	DIST		COUNTY	SHEET I		NO.	
	PHR		JIM HOGG			9:	<u>.</u>

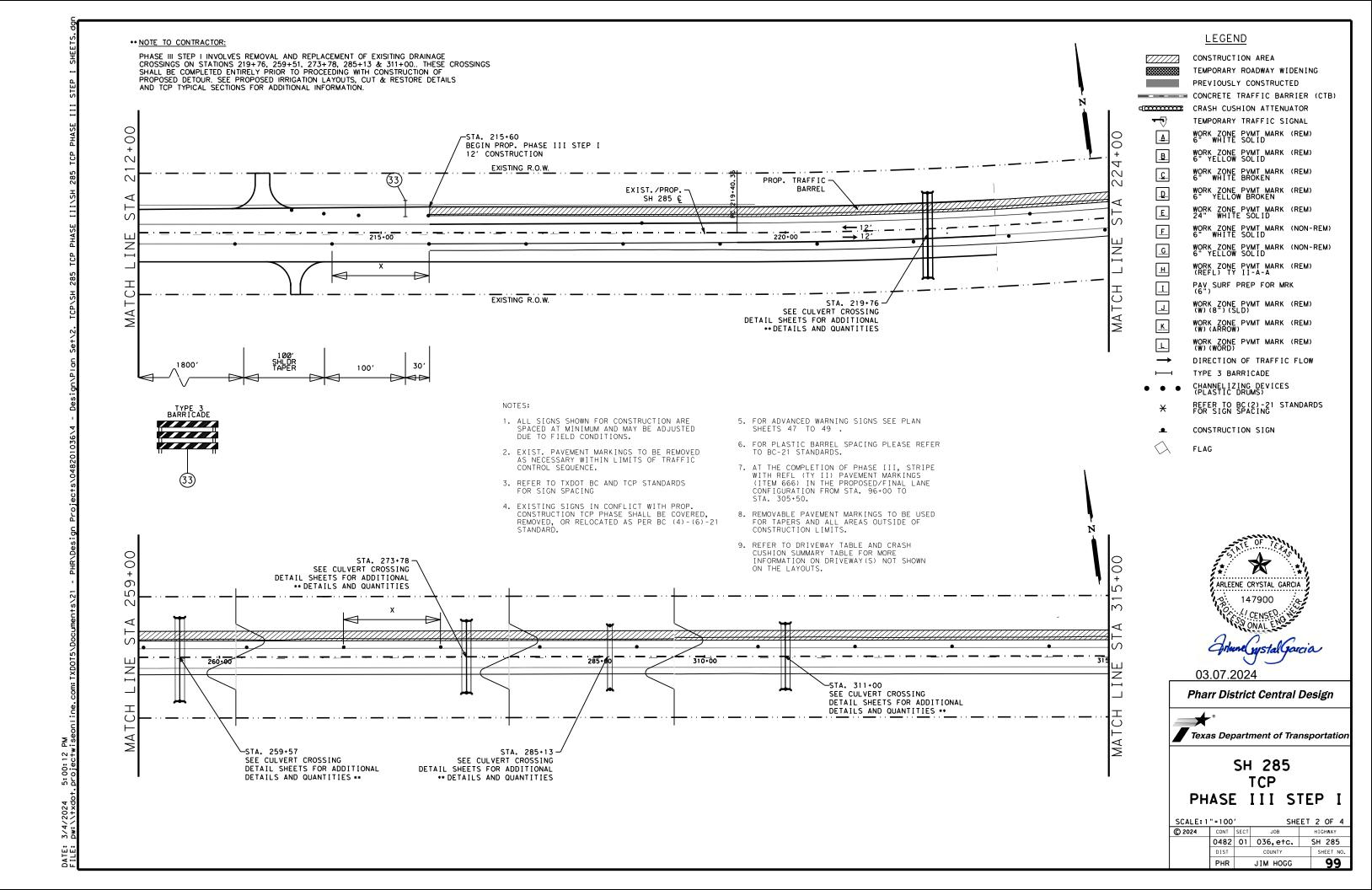


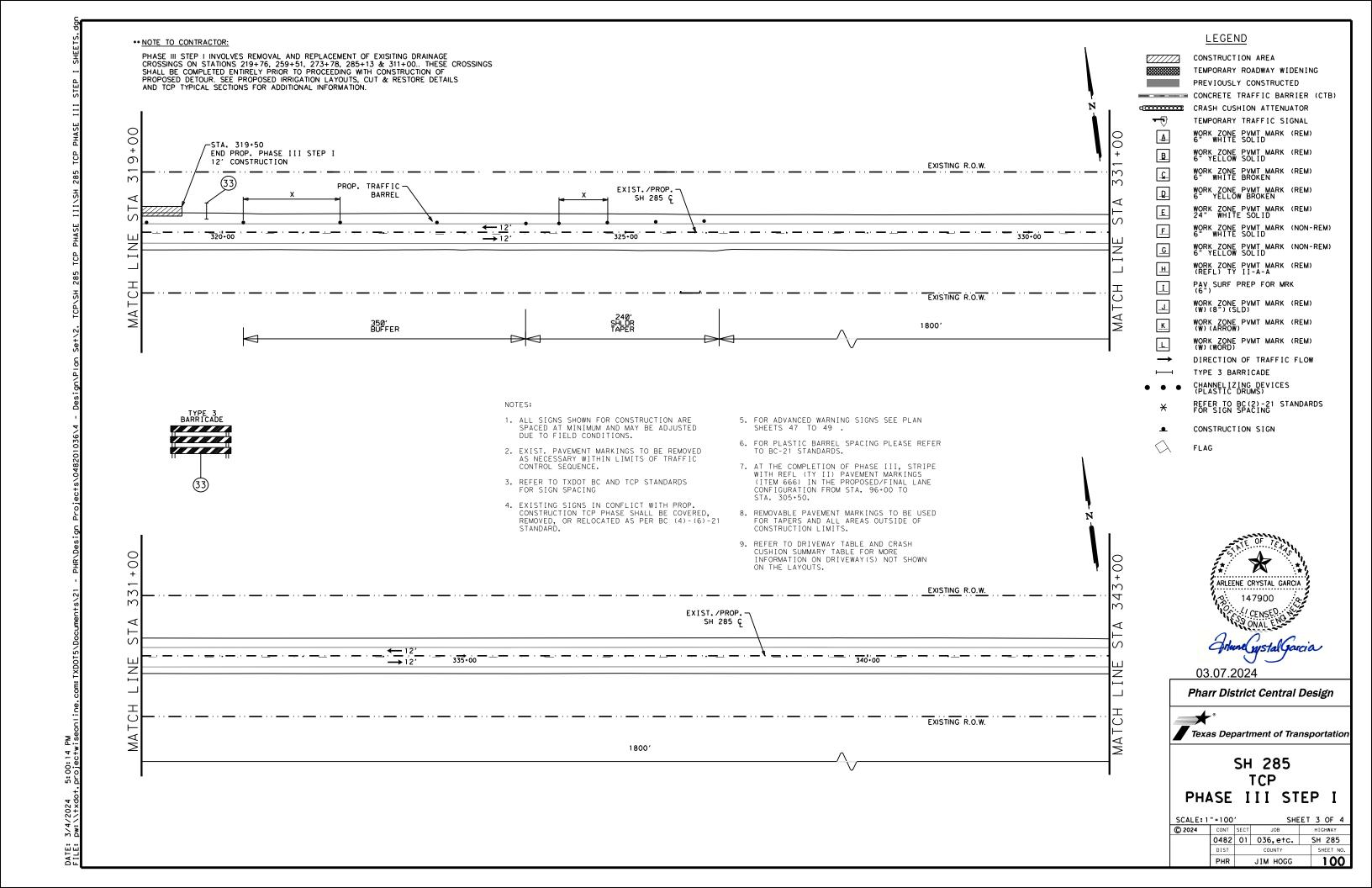
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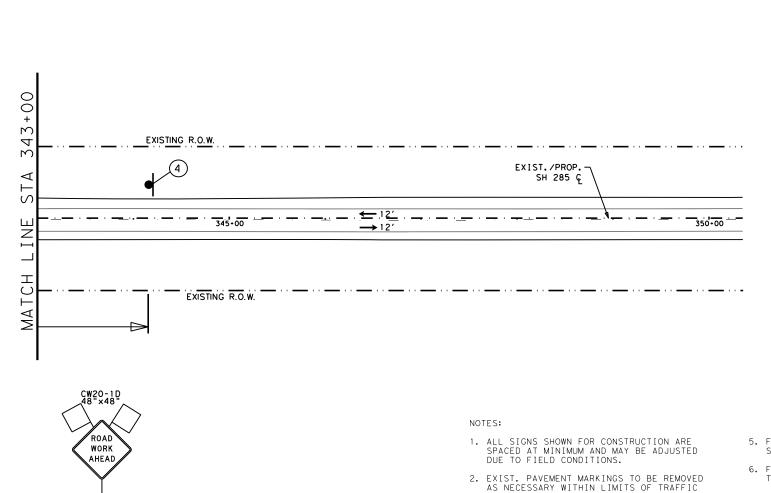
PHR

JIM HOGG









CONTROL SEQUENCE.

FOR SIGN SPACING

3. REFER TO TXDOT BC AND TCP STANDARDS

4. EXISTING SIGNS IN CONFLICT WITH PROP. CONSTRUCTION TCP PHASE SHALL BE COVERED, REMOVED, OR RELOCATED AS PER BC (4)-(6)-21 STANDARD.

5. FOR ADVANCED WARNING SIGNS SEE PLAN SHEETS 47 TO 49 .

6. FOR PLASTIC BARREL SPACING PLEASE REFER TO BC-21 STANDARDS.

7. AT THE COMPLETION OF PHASE III, STRIPE WITH REFL (TY II) PAVEMENT MARKINGS (ITEM 666) IN THE PROPOSED/FINAL LANE CONFIGURATION FROM STA. 96+00 TO STA. 305+50.

8. REMOVABLE PAVEMENT MARKINGS TO BE USED FOR TAPERS AND ALL AREAS OUTSIDE OF CONSTRUCTION LIMITS.

9. REFER TO DRIVEWAY TABLE AND CRASH CUSHION SUMMARY TABLE FOR MORE INFORMATION ON DRIVEWAY(S) NOT SHOWN ON THE LAYOUTS.

LE<u>GEND</u>



TEMPORARY ROADWAY WIDENING PREVIOUSLY CONSTRUCTED CONCRETE TRAFFIC BARRIER (CTB)

CONSTRUCTION AREA

CRASH CUSHION ATTENUATOR

E

G Н

TEMPORARY TRAFFIC SIGNAL WORK ZONE PVMT MARK (REM) 6" WHITE SOLID

WORK ZONE PYMT MARK (REM) 6" YELLOW SOLID В

WORK ZONE PVMT MARK (REM) 6" WHITE BROKEN

D WORK ZONE PYMT MARK (REM) 6" YELLOW BROKEN WORK ZONE PVMT MARK (REM) 24" WHITE SOLID

WORK ZONE PVMT MARK (NON-REM)
6" WHITE SOLID

WORK ZONE PVMT MARK (NON-REM) 6" YELLOW SOLID

WORK ZONE PYMT MARK (REM) (REFL) TY II-A-A

PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM)
(W) (8") (SLD)

WORK ZONE PVMT MARK (REM)
(W) (ARROW)

WORK ZONE PVMT MARK (REM)
(W) (WORD) DIRECTION OF TRAFFIC FLOW

TYPE 3 BARRICADE CHANNELIZING DEVICES (PLASTIC DRUMS)

REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING

CONSTRUCTION SIGN



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03.07.2024

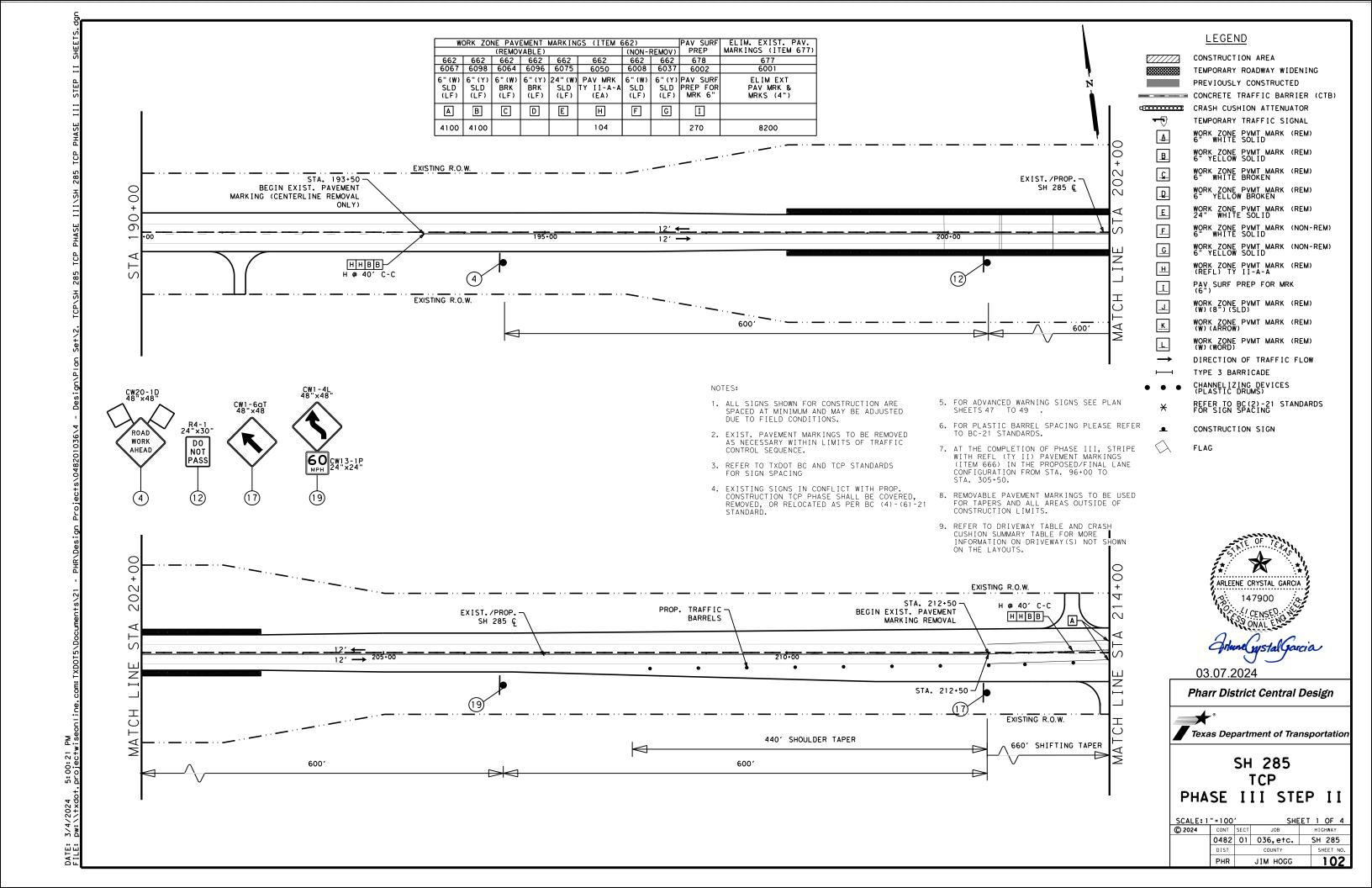
Pharr District Central Design

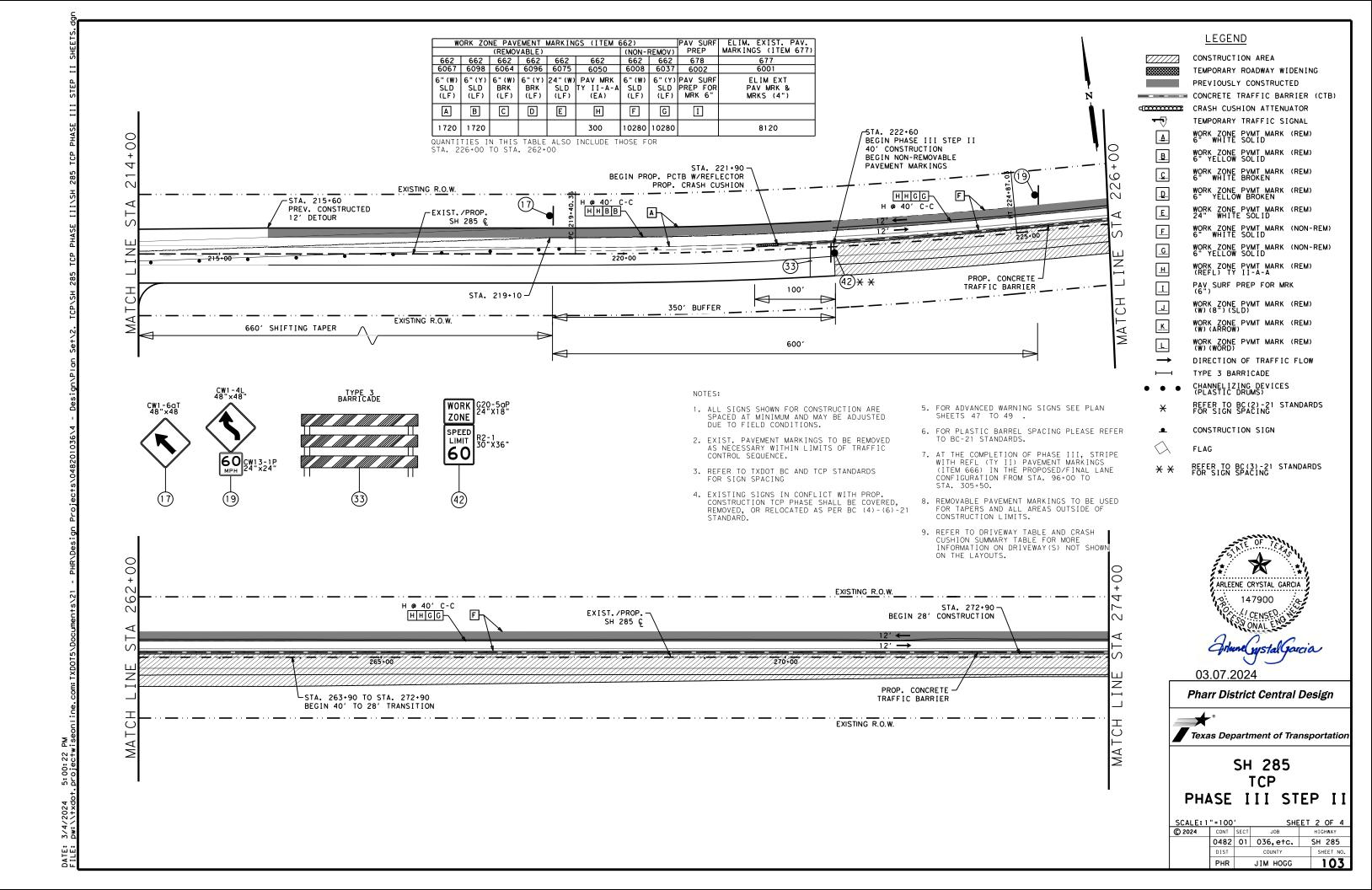


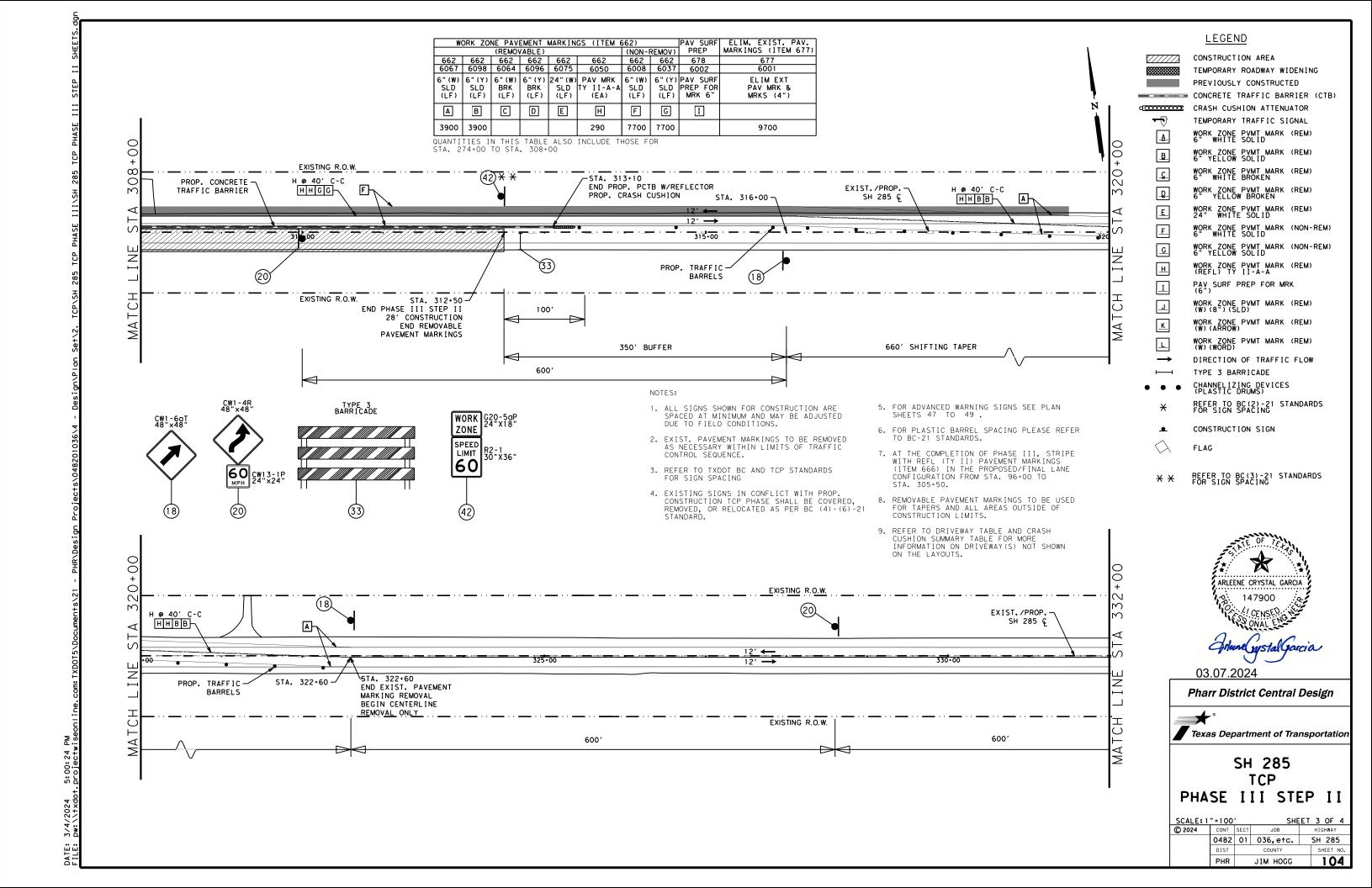
Texas Department of Transportation

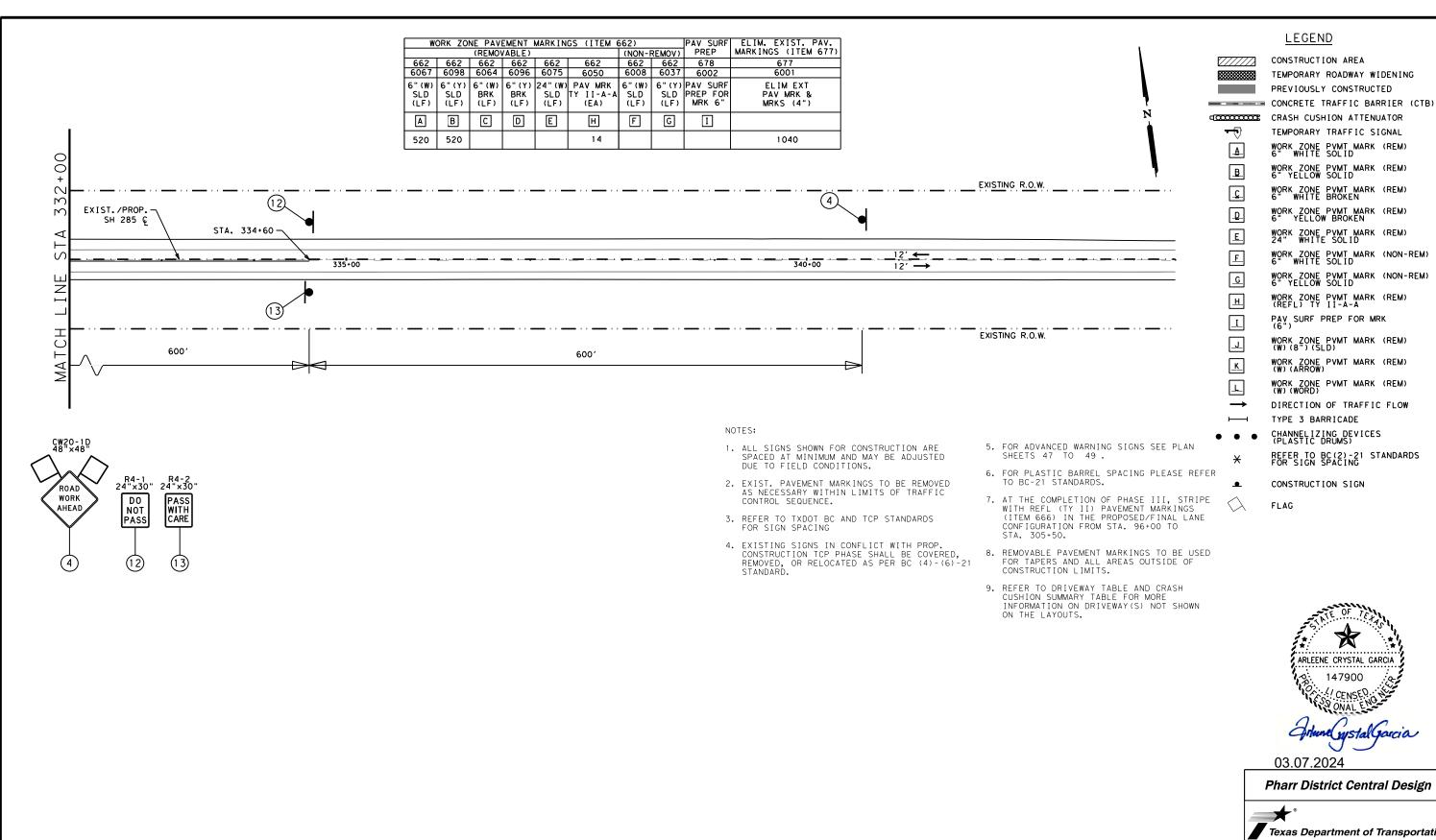
SH 285 TCP PHASE III STEP I

SCALE: 1	" = 100		SHE	ЕТ	4 OF 4	
© 2024	CONT	ONT SECT JOB HIGHWAY			HIGHWAY	
	0482	01	036,etc.		SH 285	
	DIST		COUNTY		SHEET NO.	
	PHR	JIM HOGG		101		









LEGEND

CONSTRUCTION AREA

TEMPORARY ROADWAY WIDENING

PREVIOUSLY CONSTRUCTED

TEMPORARY TRAFFIC SIGNAL

WORK ZONE PVMT MARK (REM) 6" WHITE SOLID

WORK ZONE PVMT MARK (REM) 6" YELLOW SOLID

WORK ZONE PYMT MARK (REM) 6" WHITE BROKEN

WORK ZONE PYMT MARK (REM) 6" YELLOW BROKEN

WORK ZONE PVMT MARK (REM) 24" WHITE SOLID WORK ZONE PVMT MARK (NON-REM)
6" WHITE SOLID

WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A

WORK ZONE PVMT MARK (NON-REM) 6" YELLOW SOLID

PAV SURF PREP FOR MRK WORK ZONE PVMT MARK (REM) (W) (8") (SLD)

WORK ZONE PVMT MARK (REM)
(W) (ARROW) WORK ZONE PVMT MARK (REM)
(W) (WORD) DIRECTION OF TRAFFIC FLOW

TYPE 3 BARRICADE CHANNELIZING DEVICES (PLASTIC DRUMS)

REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING CONSTRUCTION SIGN

FLAG



03.07.2024

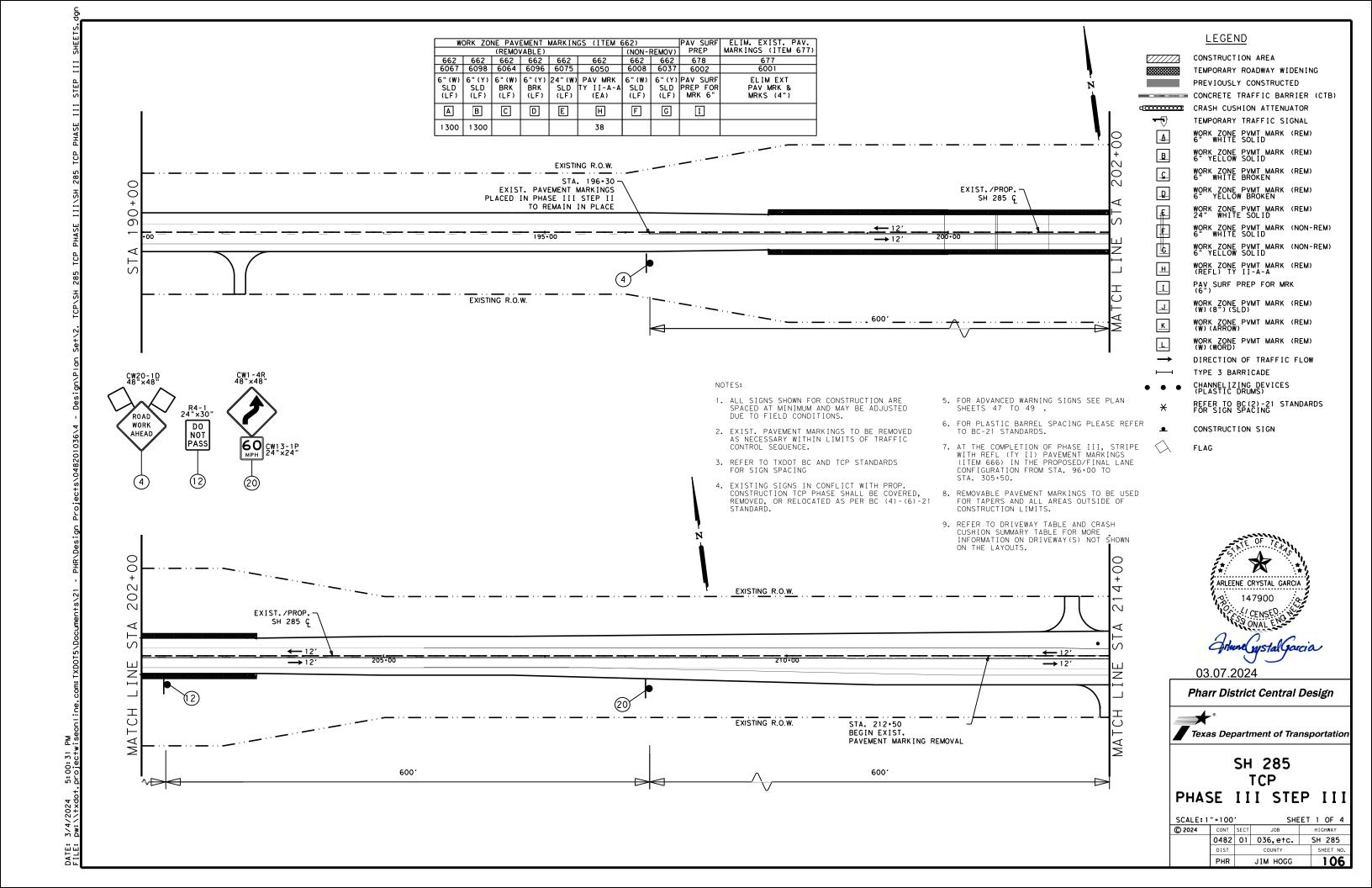
Pharr District Central Design

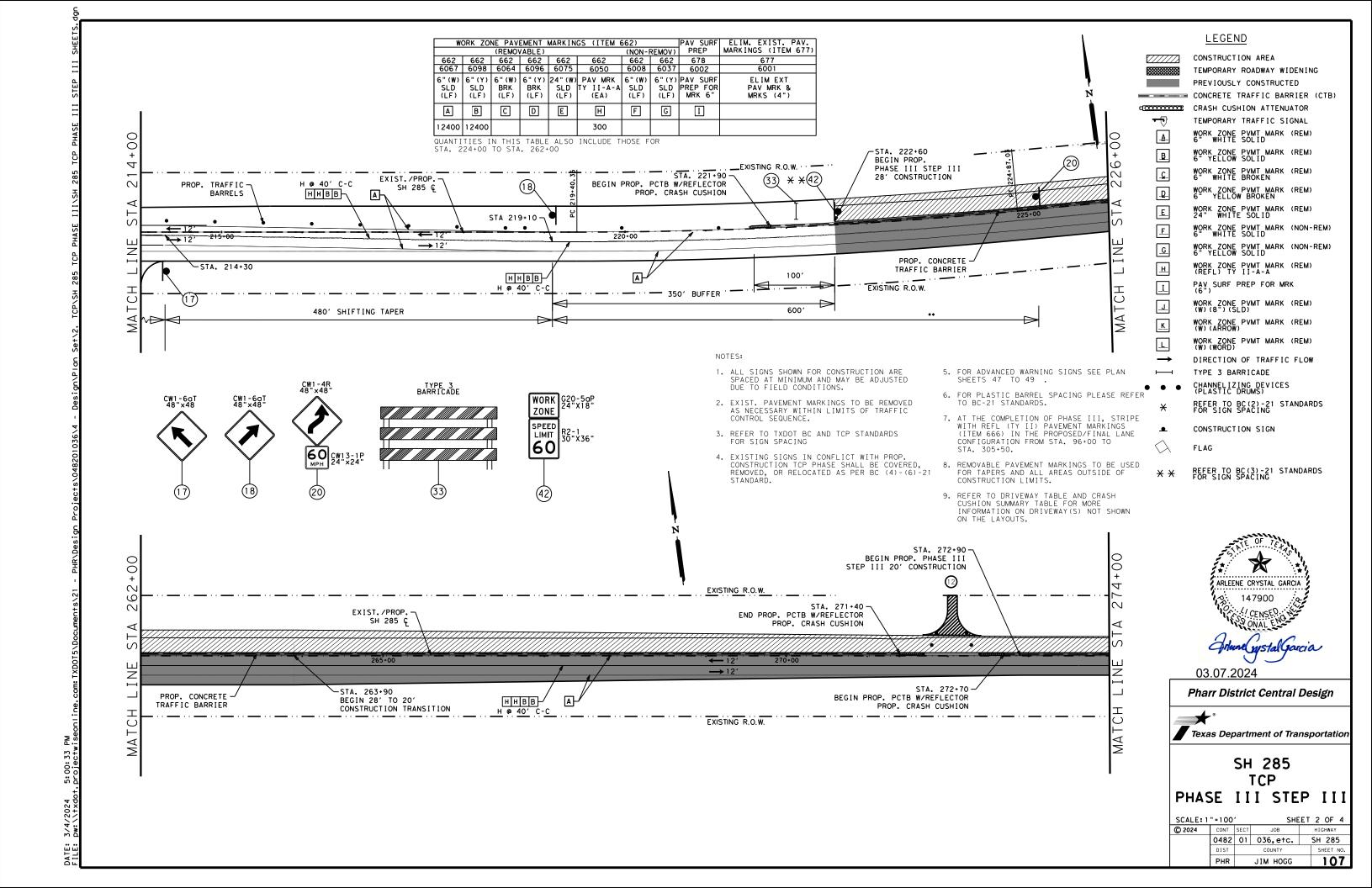


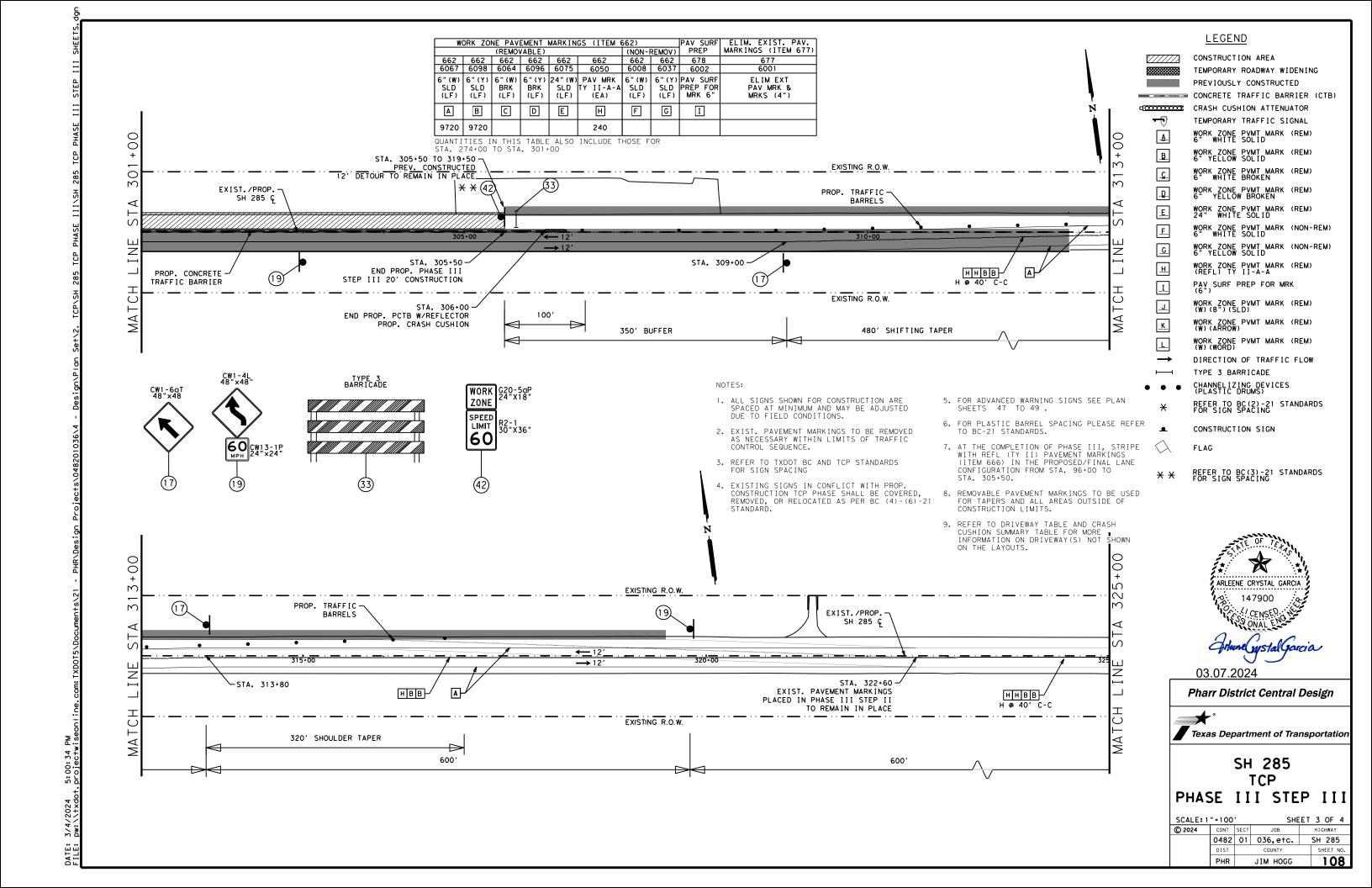
Texas Department of Transportation

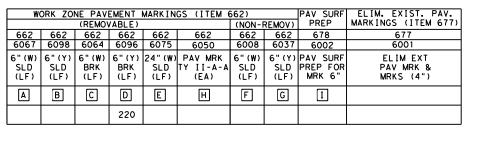
SH 285 TCP PHASE III STEP II

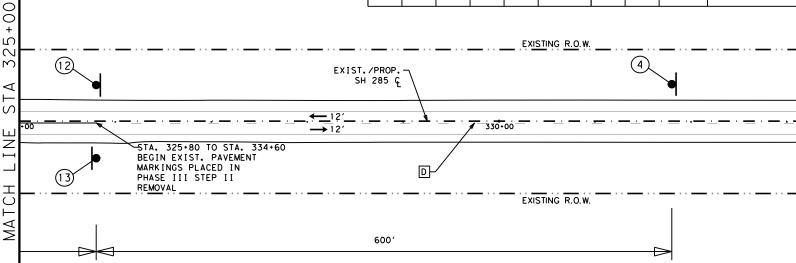
SCALE: 1"=100' SHEET 4 OF 4								
© 2024	CONT	SECT	JOB	HIGHWAY				
	0482	01	036,etc.		SH 285			
	DIST		COUNTY	SHEET NO				
	PHR		JIM HOGG	ogg 1 0 !				

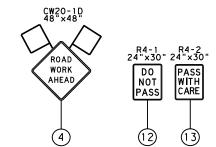












- 1. ALL SIGNS SHOWN FOR CONSTRUCTION ARE SPACED AT MINIMUM AND MAY BE ADJUSTED DUE TO FIELD CONDITIONS.
- 2. EXIST. PAVEMENT MARKINGS TO BE REMOVED AS NECESSARY WITHIN LIMITS OF TRAFFIC CONTROL SEQUENCE.
- 3. REFER TO TXDOT BC AND TCP STANDARDS FOR SIGN SPACING
- 4. EXISTING SIGNS IN CONFLICT WITH PROP. CONSTRUCTION TCP PHASE SHALL BE COVERED, REMOVED, OR RELOCATED AS PER BC (4)-(6)-21 STANDARD.
- 5. FOR ADVANCED WARNING SIGNS SEE PLAN SHEETS 47 TO 49 .
- 6. FOR PLASTIC BARREL SPACING PLEASE REFER TO BC-21 STANDARDS.
- 7. AT THE COMPLETION OF PHASE III, STRIPE WITH REFL (TY II) PAVEMENT MARKINGS (ITEM 666) IN THE PROPOSED/FINAL LANE CONFIGURATION FROM STA. 96+00 TO STA. 305+50.
- REMOVABLE PAVEMENT MARKINGS TO BE USED FOR TAPERS AND ALL AREAS OUTSIDE OF CONSTRUCTION LIMITS.
- 9. REFER TO DRIVEWAY TABLE AND CRASH CUSHION SUMMARY TABLE FOR MORE INFORMATION ON DRIVEWAY(S) NOT SHOWN

CONSTRUCTION AREA

TEMPORARY ROADWAY WIDENING

PREVIOUSLY CONSTRUCTED

TEMPORARY TRAFFIC SIGNAL



CONCRETE TRAFFIC BARRIER (CTB)

CRASH CUSHION ATTENUATOR

В

C

D

F

G

Н

- WORK ZONE PVMT MARK (REM) 6" WHITE SOLID WORK ZONE PVMT MARK (REM) 6" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) 6" WHITE BROKEN
- WORK ZONE PYMT MARK (REM) 6" YELLOW BROKEN WORK ZONE PVMT MARK (REM) 24" WHITE SOLID
- WORK ZONE PVMT MARK (NON-REM)
 6" WHITE SOLID
- WORK ZONE PYMT MARK (NON-REM) 6" YELLOW SOLID
- WORK ZONE PVMT MARK (REM) (REFL) TY II-A-A PAV SURF PREP FOR MRK
- WORK ZONE PVMT MARK (REM)
 (W) (8") (SLD)
 - WORK ZONE PVMT MARK (REM)
 (W) (ARROW)
 - WORK ZONE PYMT MARK (REM)
 (W) (WORD)
 - DIRECTION OF TRAFFIC FLOW TYPE 3 BARRICADE
 - CHANNELIZING DEVICES (PLASTIC DRUMS) REFER TO BC(2)-21 STANDARDS FOR SIGN SPACING
- CONSTRUCTION SIGN





03.07.2024

Pharr District Central Design



Texas Department of Transportation

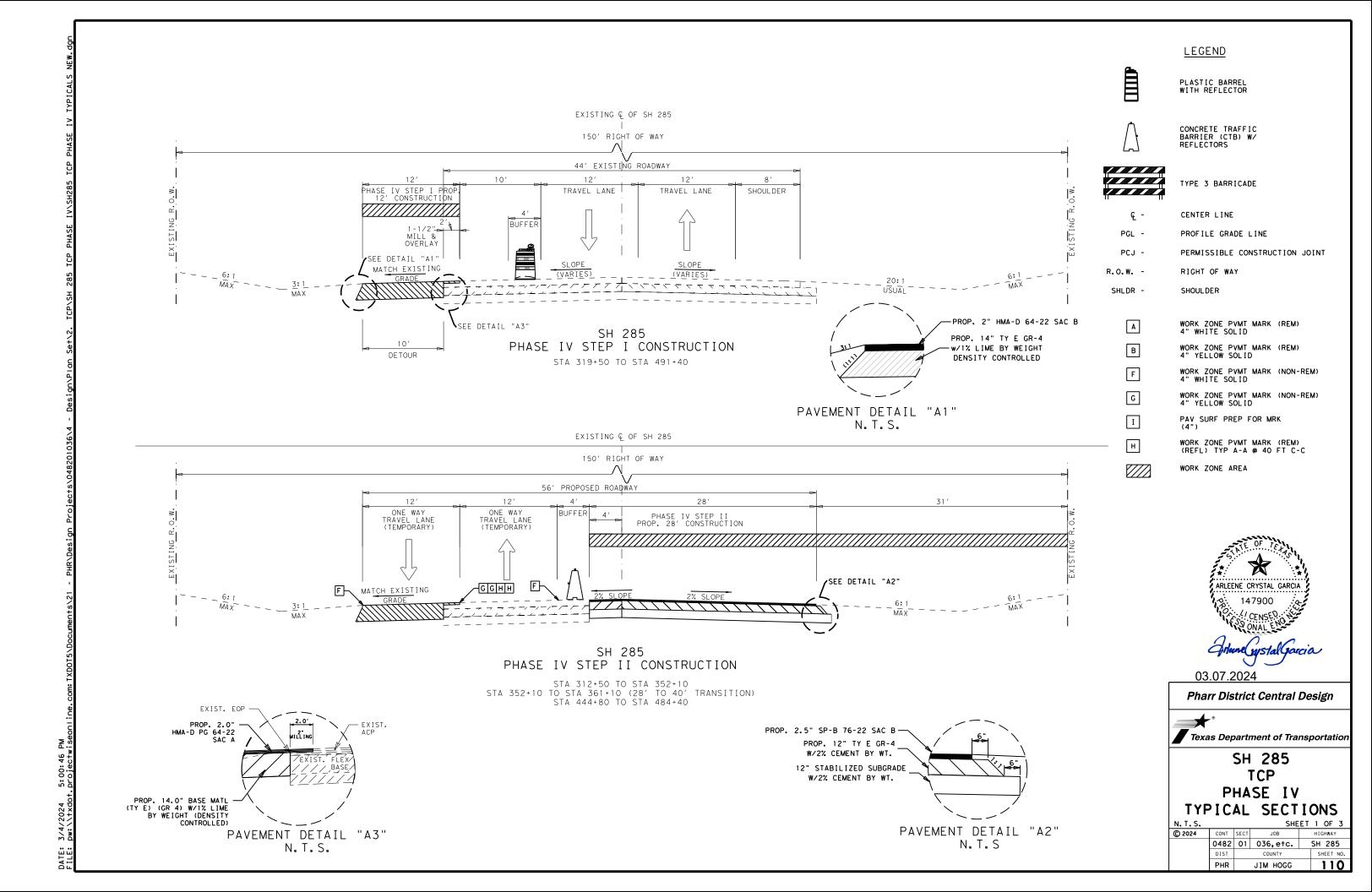
SH 285 TCP PHASE III STEP III

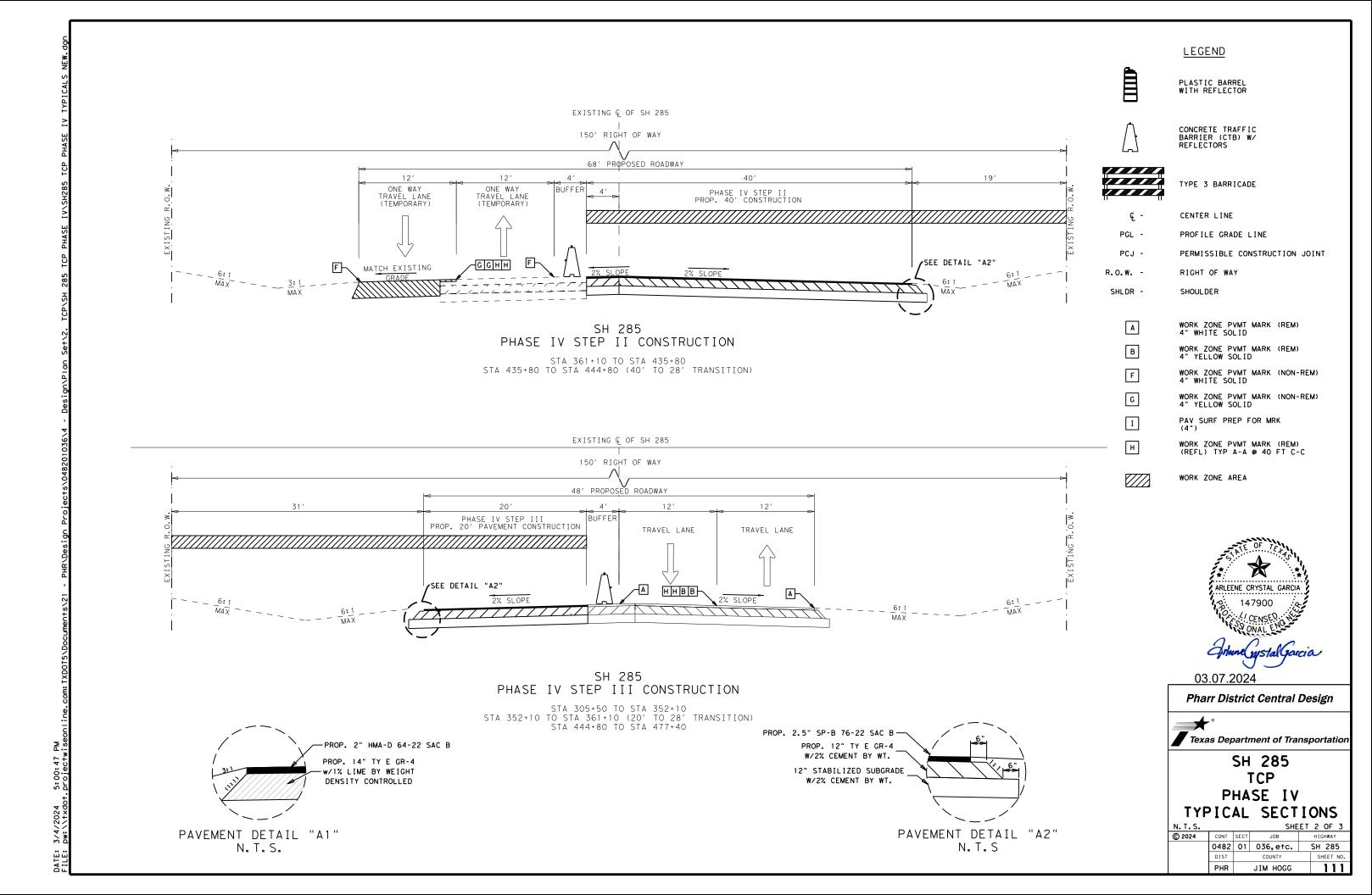
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S







PLASTIC BARREL WITH REFLECTOR



CONCRETE TRAFFIC BARRIER (CTB) W/ REFLECTORS



TYPE 3 BARRICADE

CENTER LINE

PROFILE GRADE LINE

PERMISSIBLE CONSTRUCTION JOINT

RIGHT OF WAY R.O.W. -

SHLDR -SHOULDER

> WORK ZONE PVMT MARK (REM) 4" WHITE SOLID Α

WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID В

WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID

PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM) (REFL) TYP A-A @ 40 FT C-C

WORK ZONE AREA

ፍ -PGL -

WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID

ARLEENE CRYSTAL GARCIA

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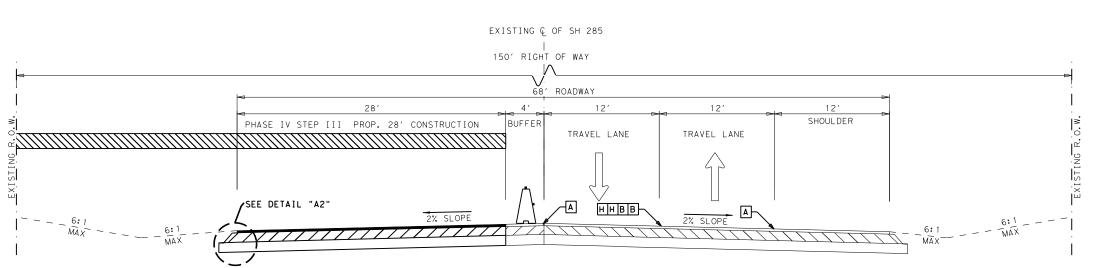
Pharr District Central Design



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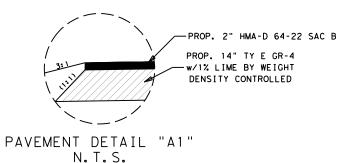
SH 285 TCP PHASE IV TYPICAL SECTIONS

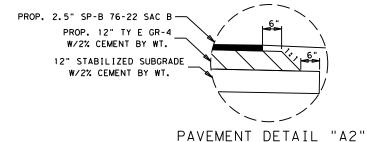
SHEET 3 OF 3 © 2024 CONT SECT JOB HIGHWAY 0482 01 036,etc. SH 285 PHR JIM HOGG 112



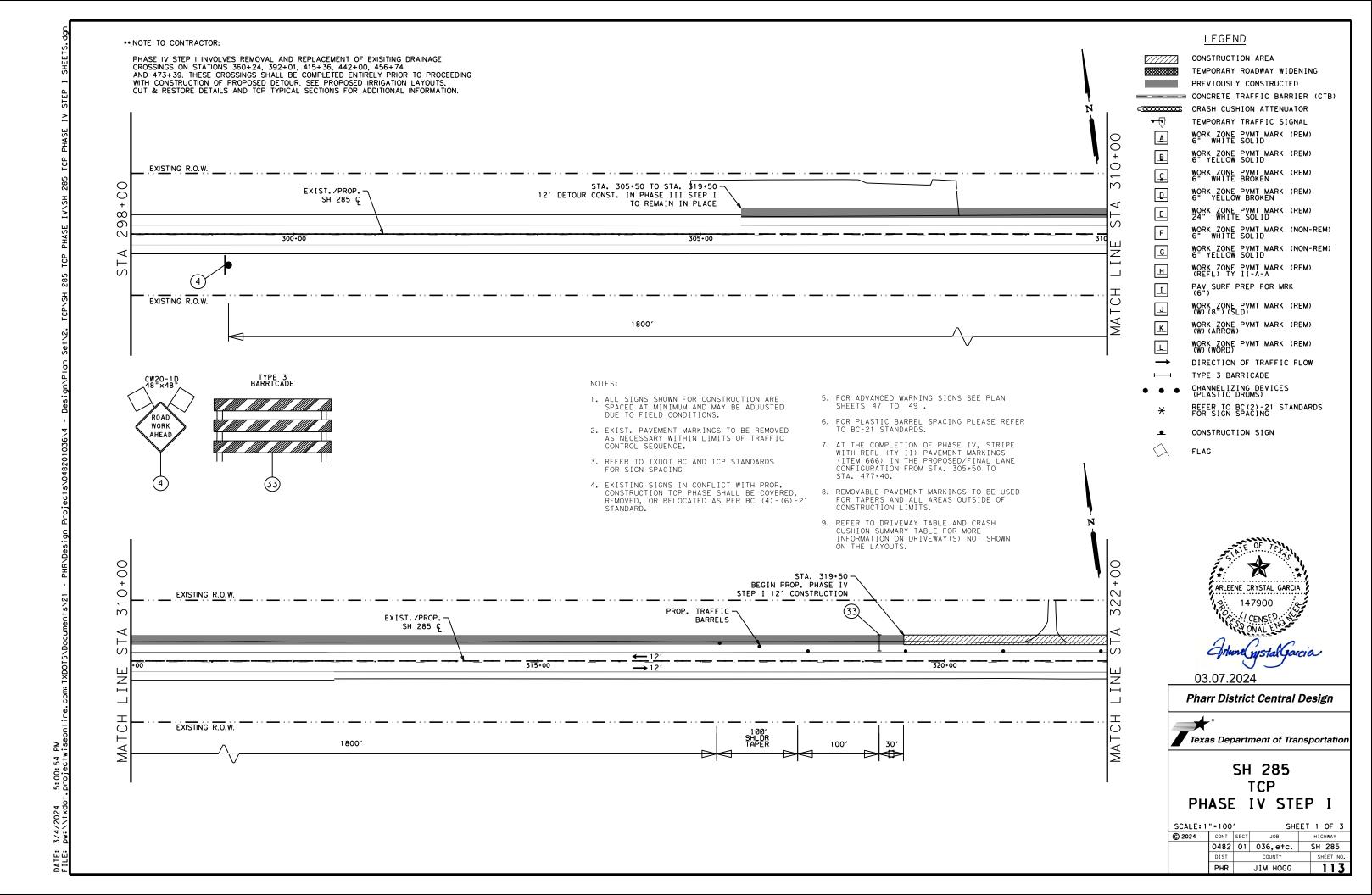
SH 285 PHASE IV STEP III CONSTRUCTION

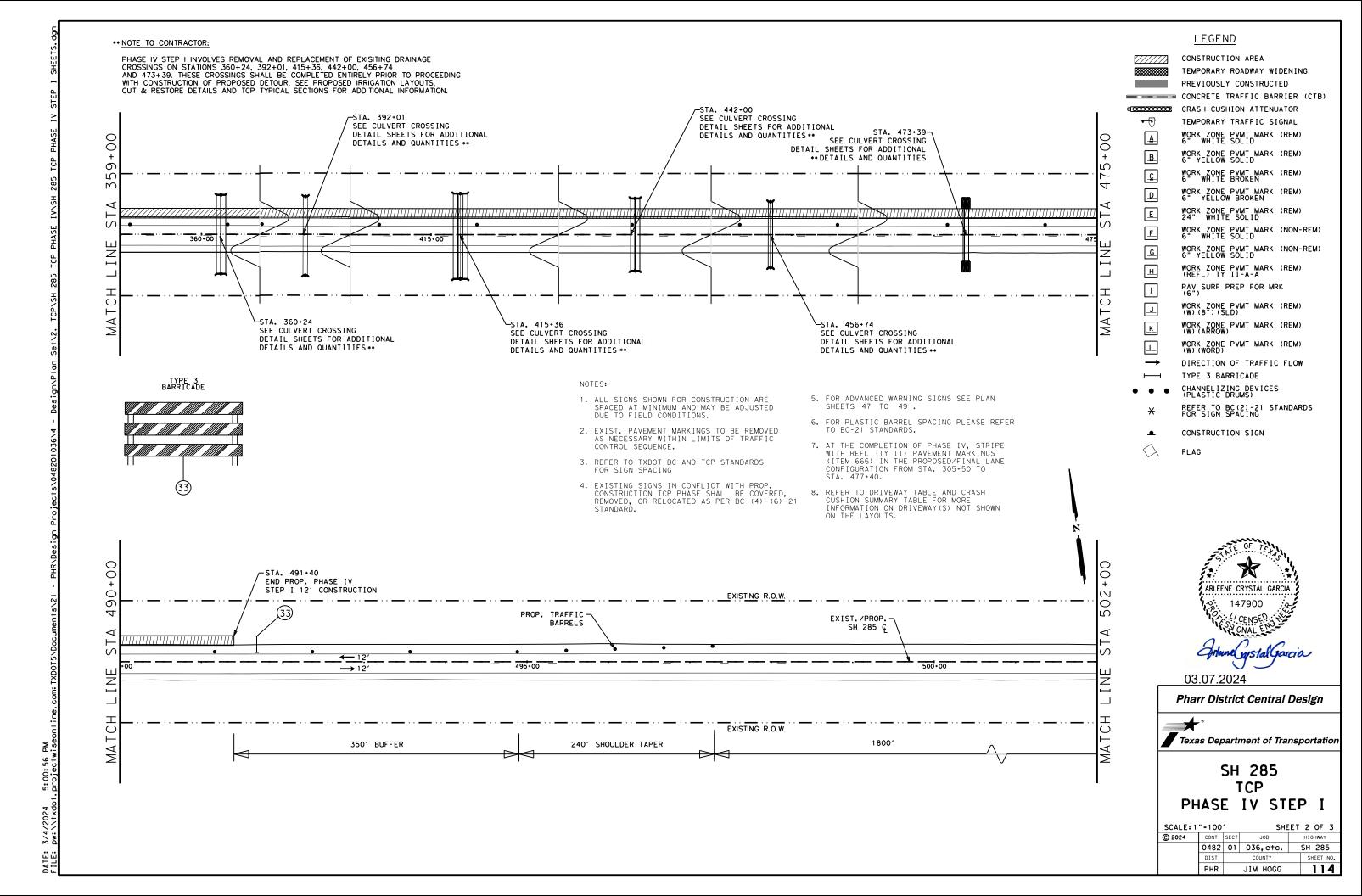
STA 361+10 TO STA 435+80 STA 435+80 TO STA 444+80 (28' TO 20'TRANSITION)

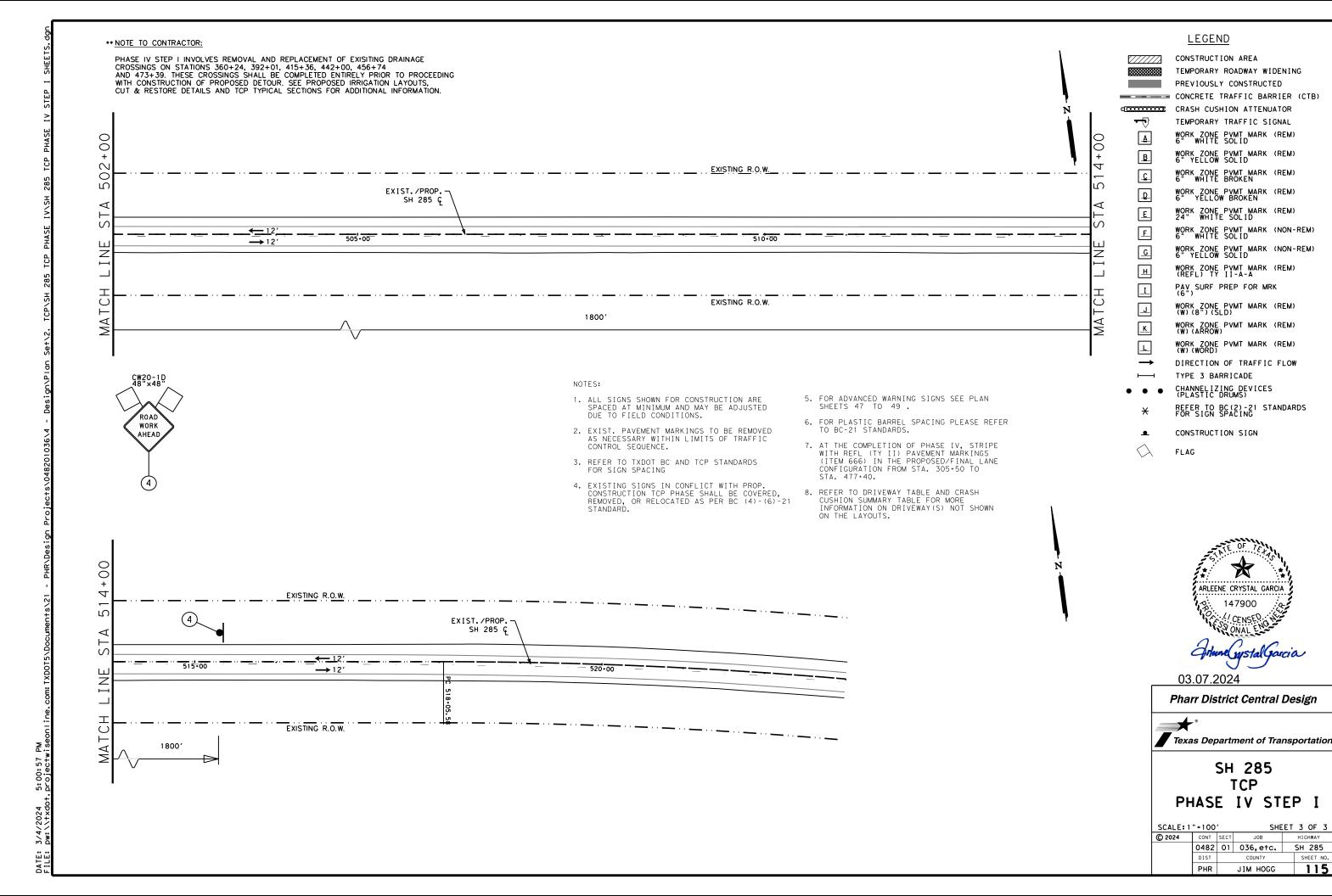


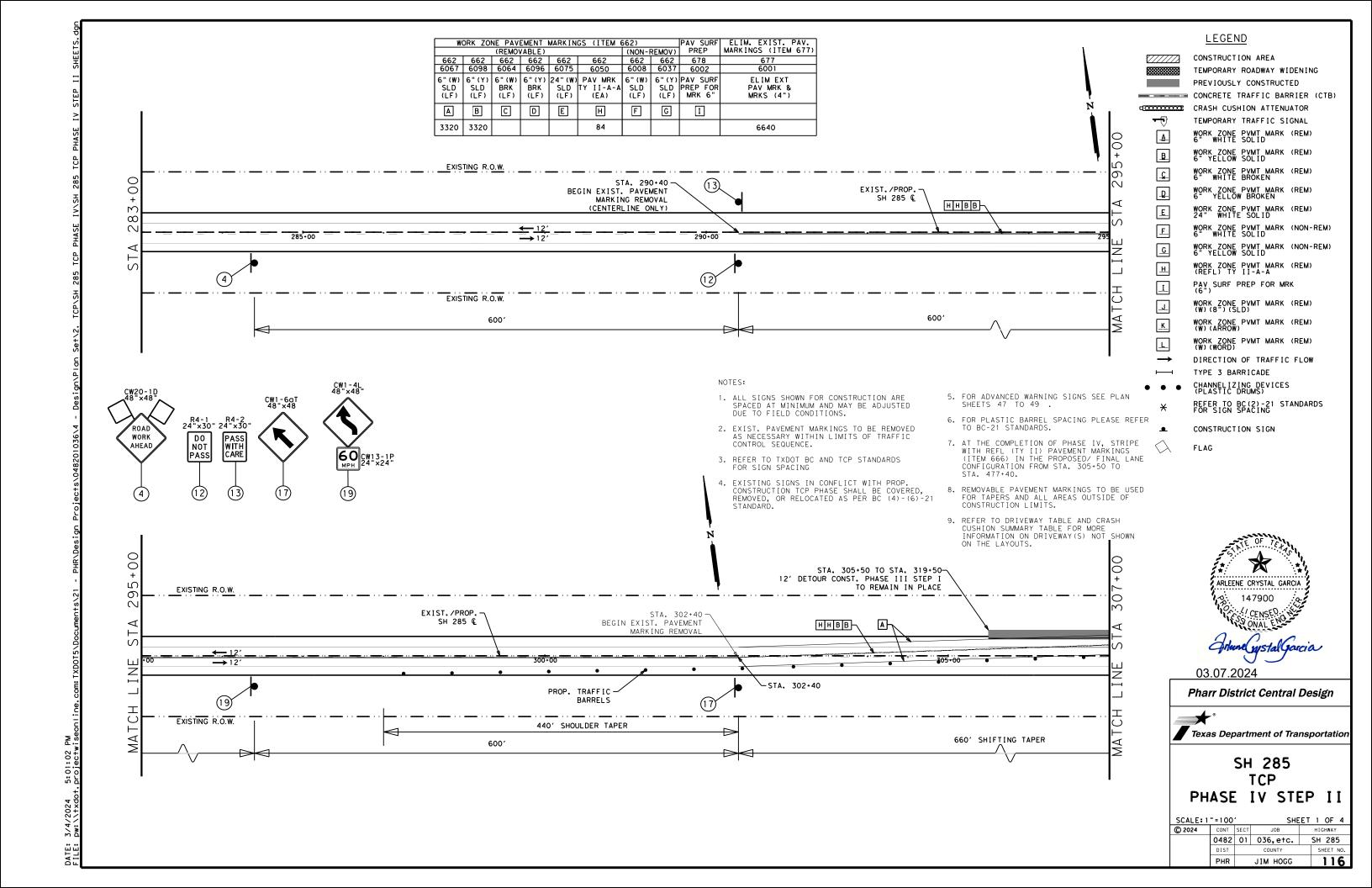


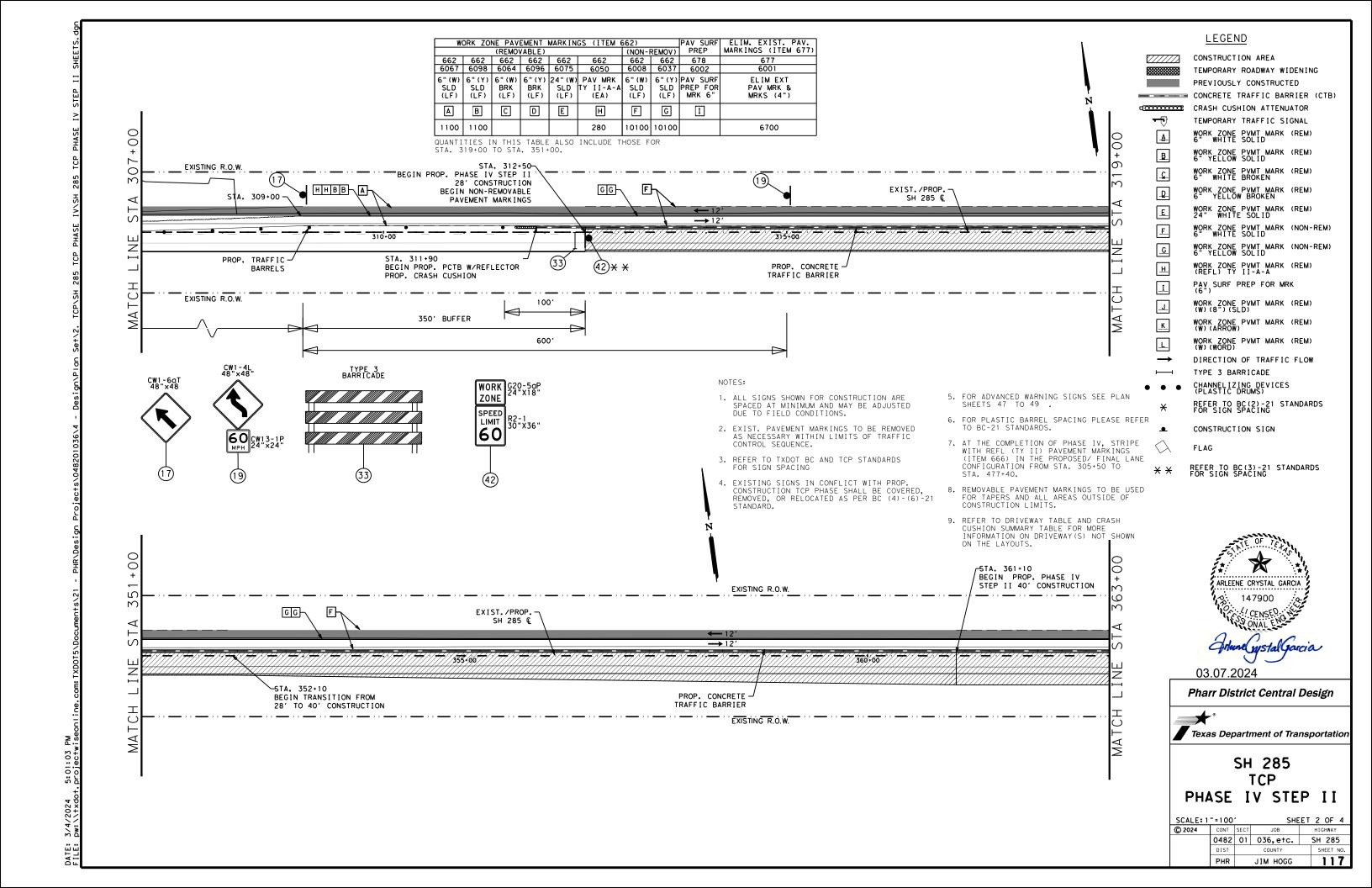
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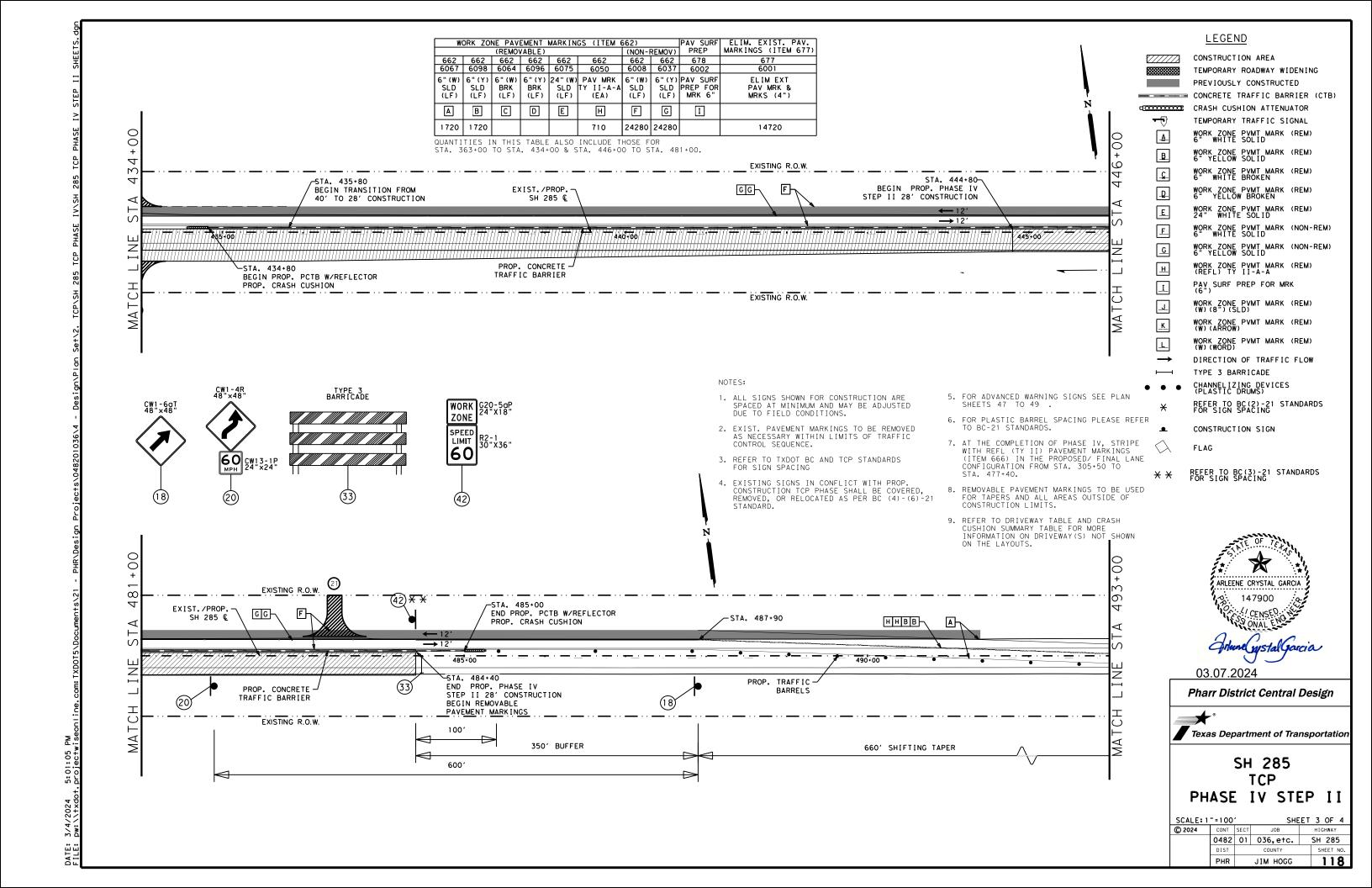


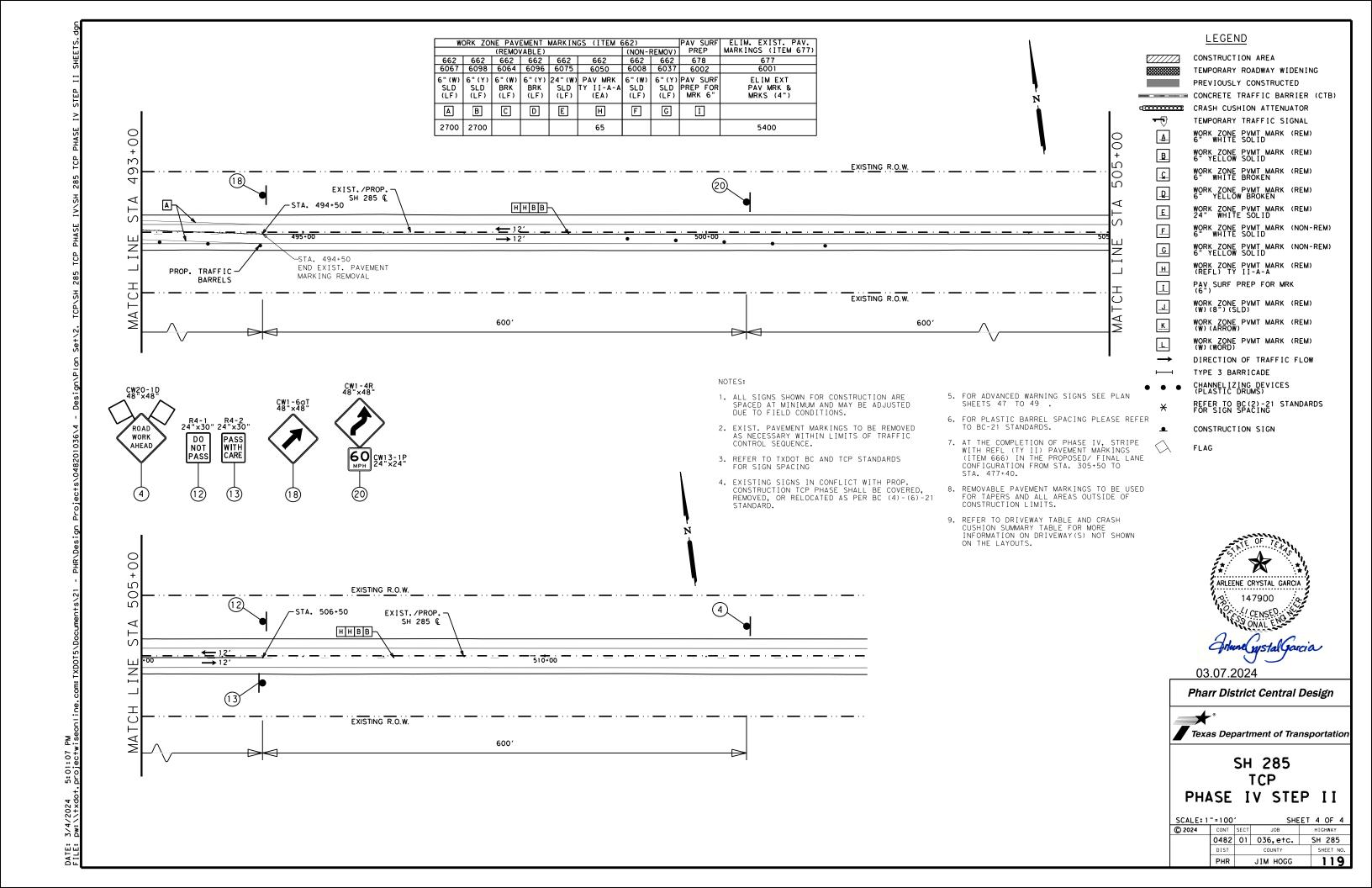


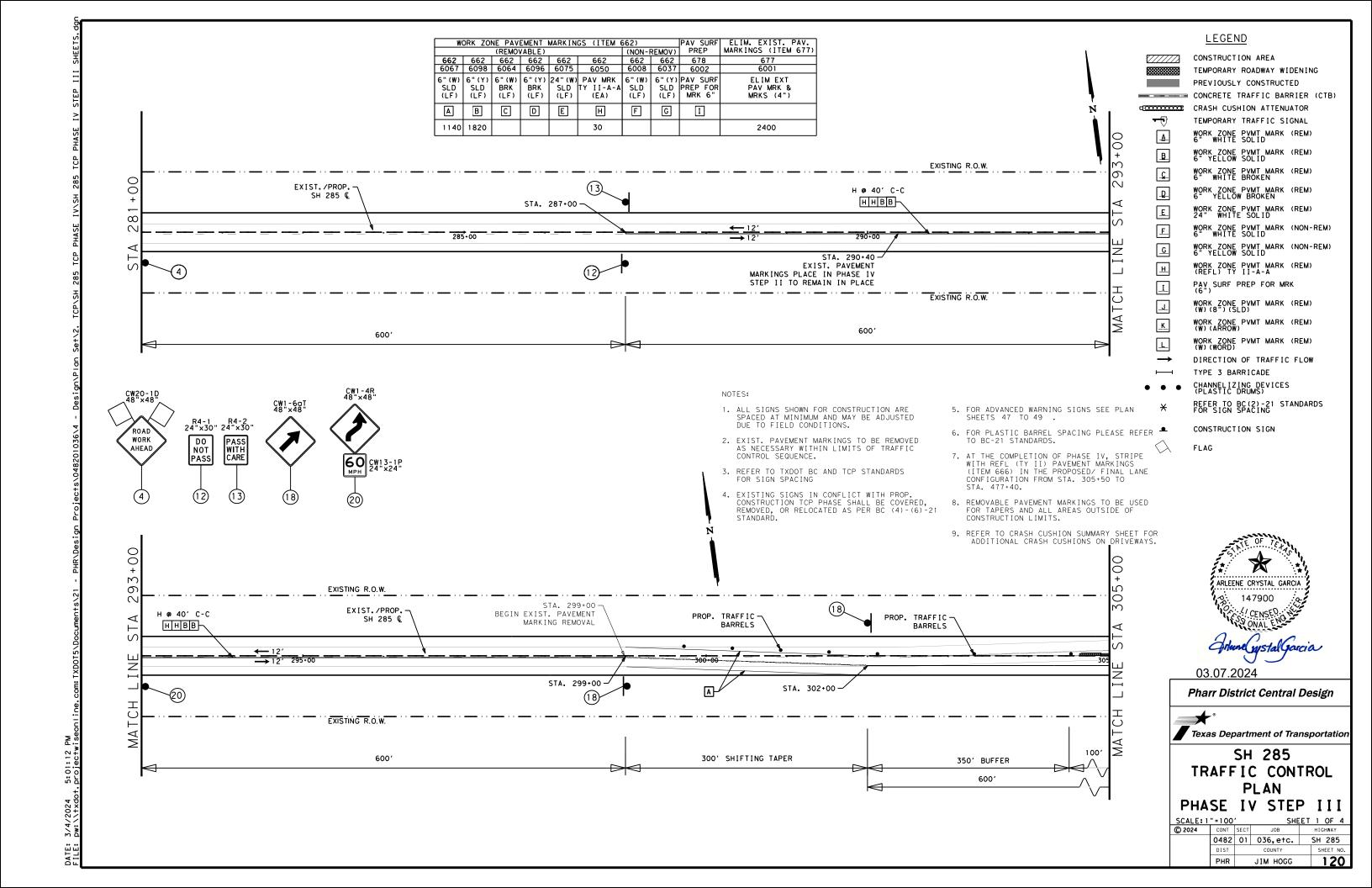


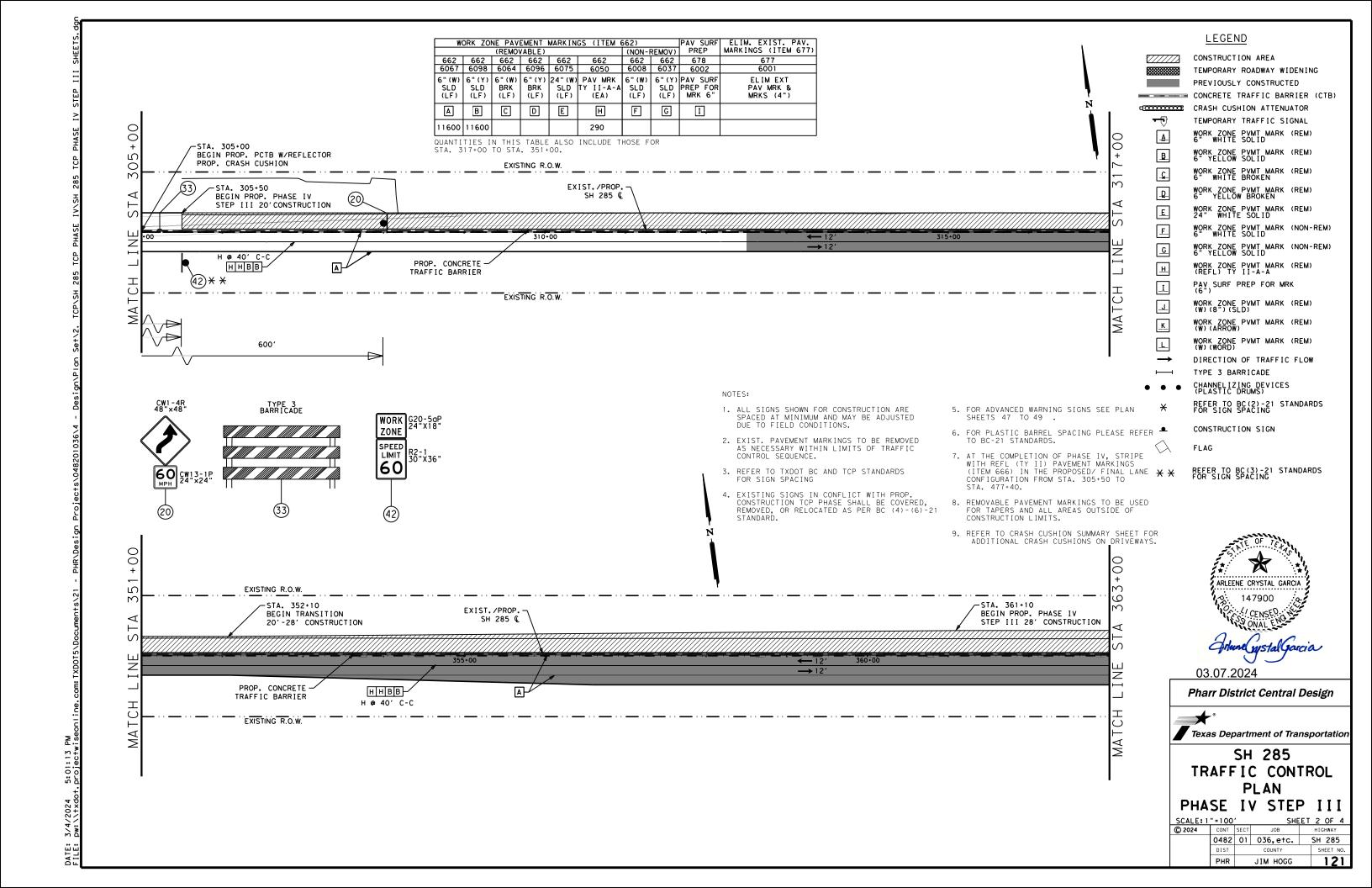


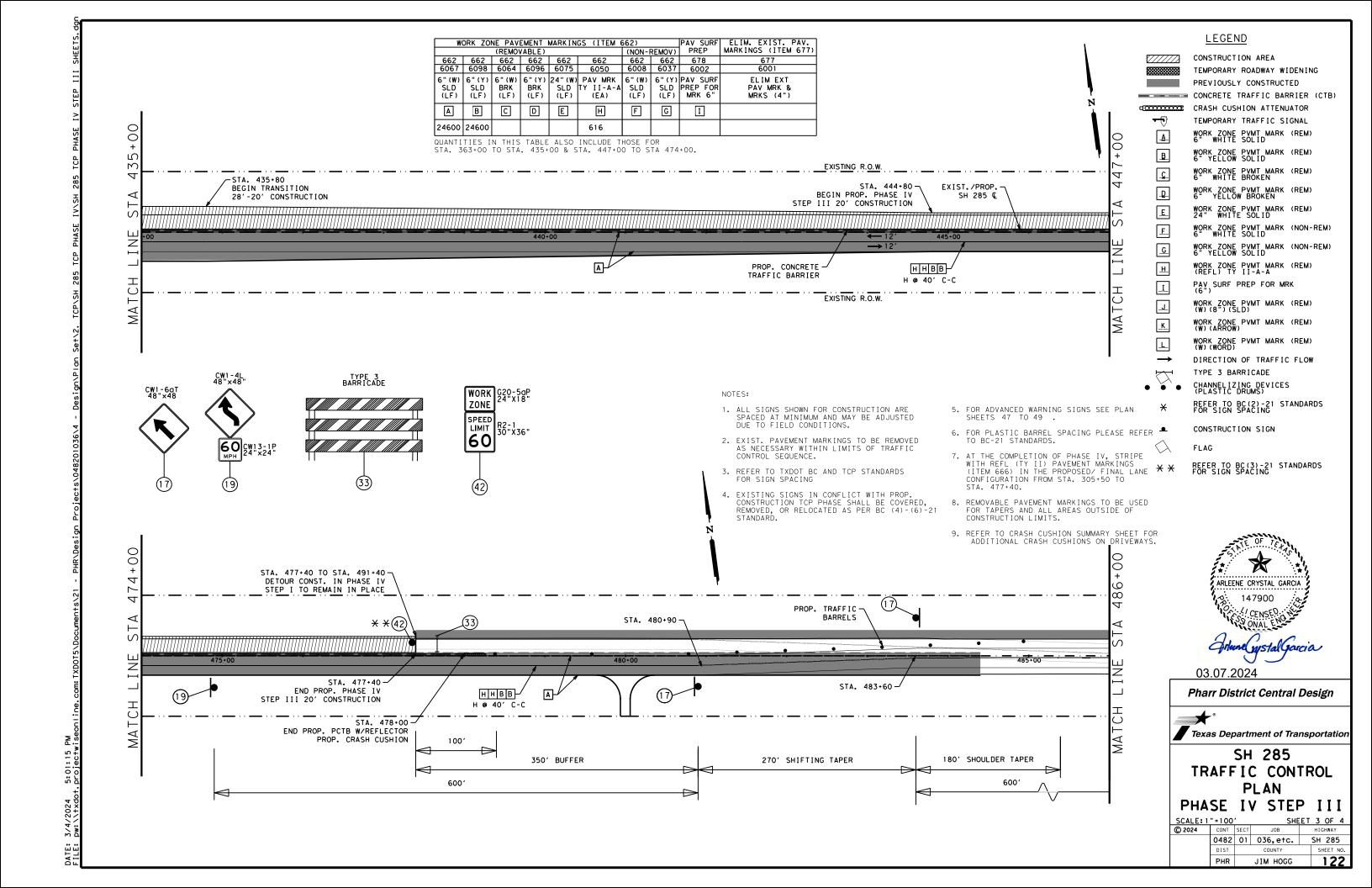


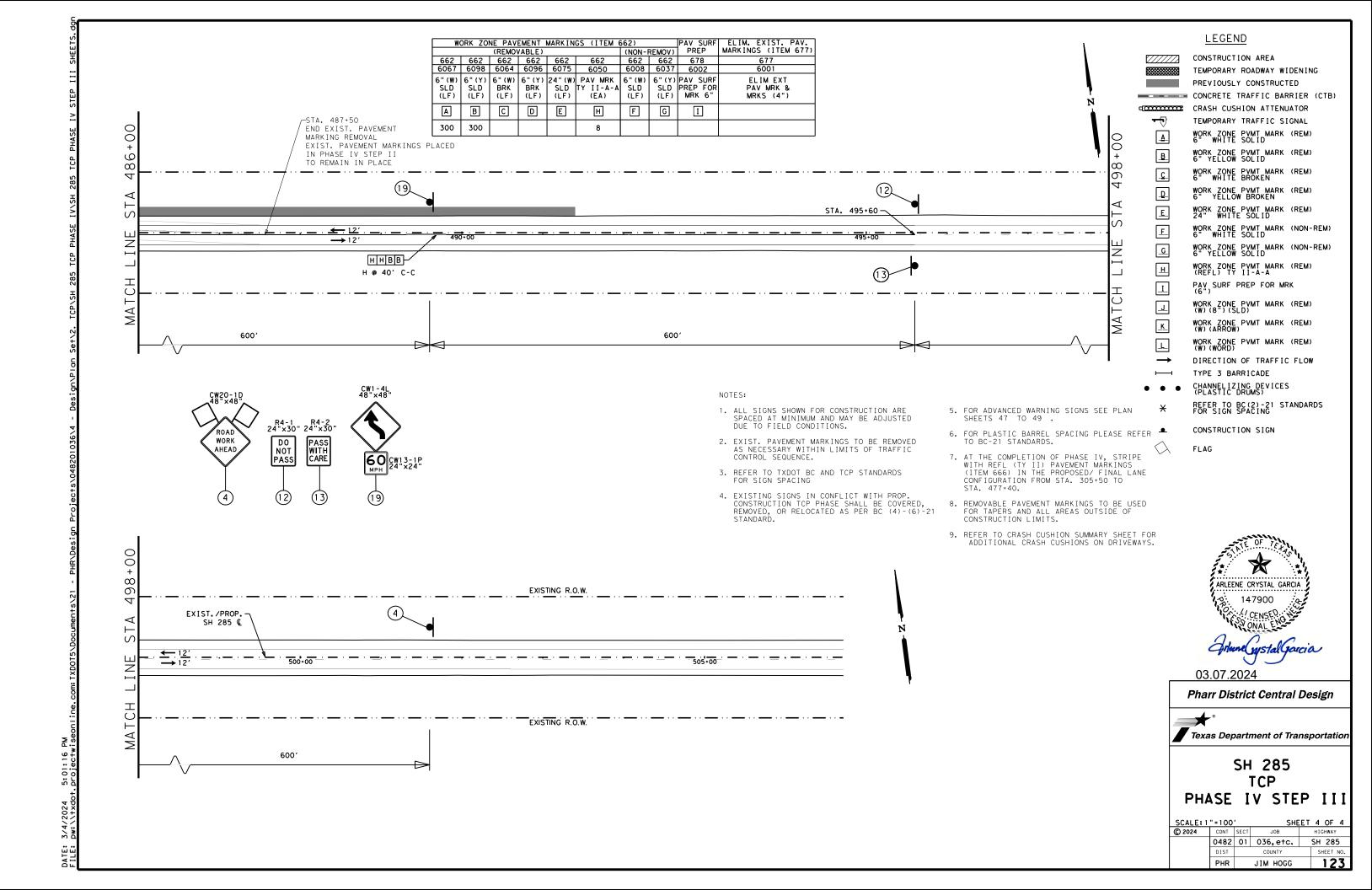


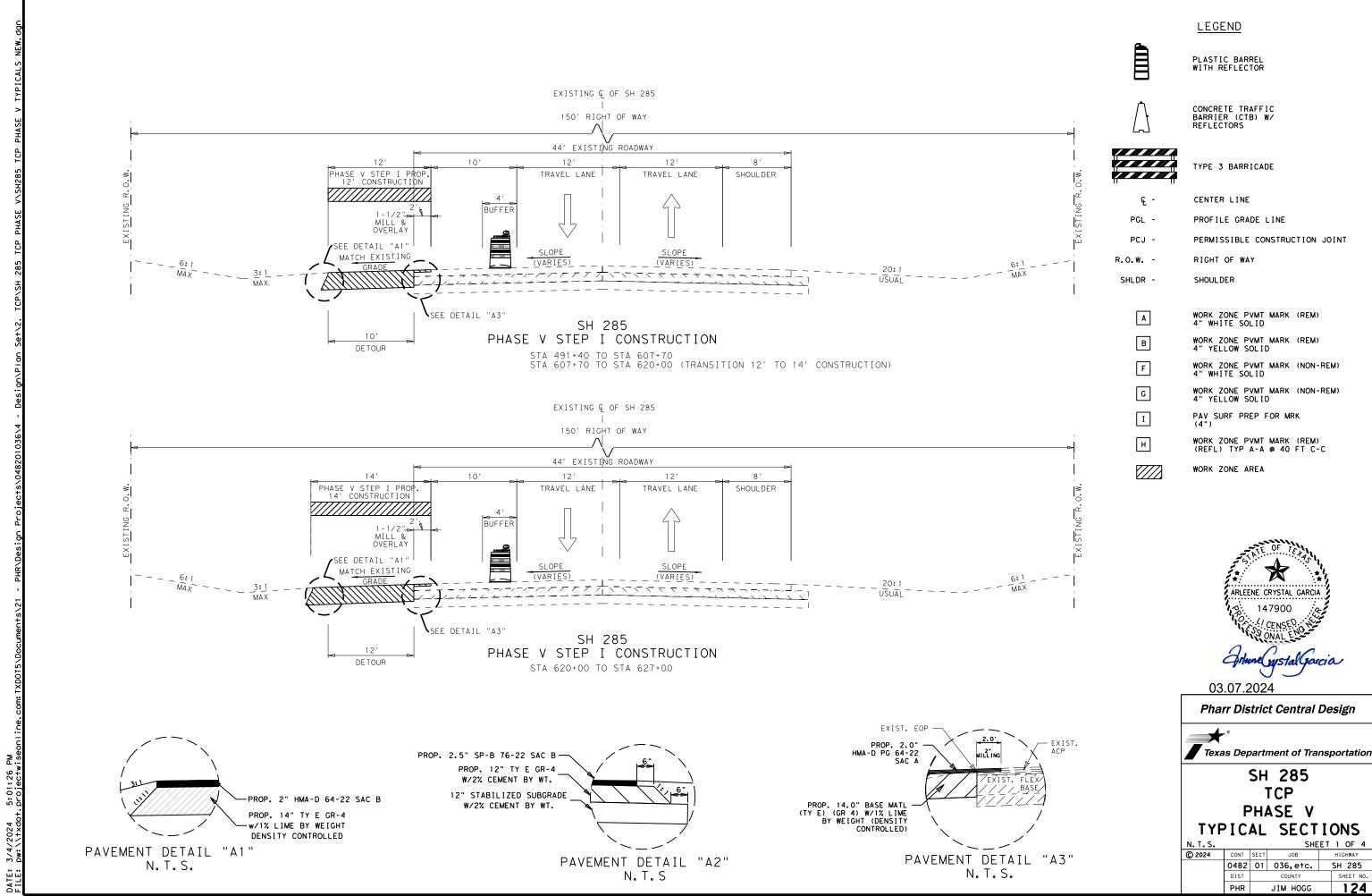












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	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		124



PLASTIC BARREL WITH REFLECTOR



CONCRETE TRAFFIC BARRIER (CTB) W/ REFLECTORS



TYPE 3 BARRICADE

CENTER LINE

PGL -PROFILE GRADE LINE

PERMISSIBLE CONSTRUCTION JOINT

RIGHT OF WAY R.O.W. -

SHLDR -SHOULDER

> WORK ZONE PVMT MARK (REM) 4" WHITE SOLID Α

> WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID В

WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID

PAV SURF PREP FOR MRK

WORK ZONE PVMT MARK (REM) (REFL) TYP A-A @ 40 FT C-C

WORK ZONE AREA



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SH 285 TCP PHASE V TYPICAL SECTIONS

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PROP. 2.5" SP-B 76-22 SAC B-PROP. 12" TY E GR-4 W/2% CEMENT BY WT. 12" STABILIZED SUBGRADE W/2% CEMENT BY WT.

191

/SEE DETAIL "A2"

PAVEMENT DETAIL "A2" N.T.S

CONCRETE TRAFFIC BARRIER (CTB) W/ REFLECTORS

TYPE 3 BARRICADE

PROFILE GRADE LINE

WORK ZONE PVMT MARK (REM) 4" WHITE SOLID

WORK ZONE PVMT MARK (REM) 4" YELLOW SOLID

WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID

WORK ZONE AREA



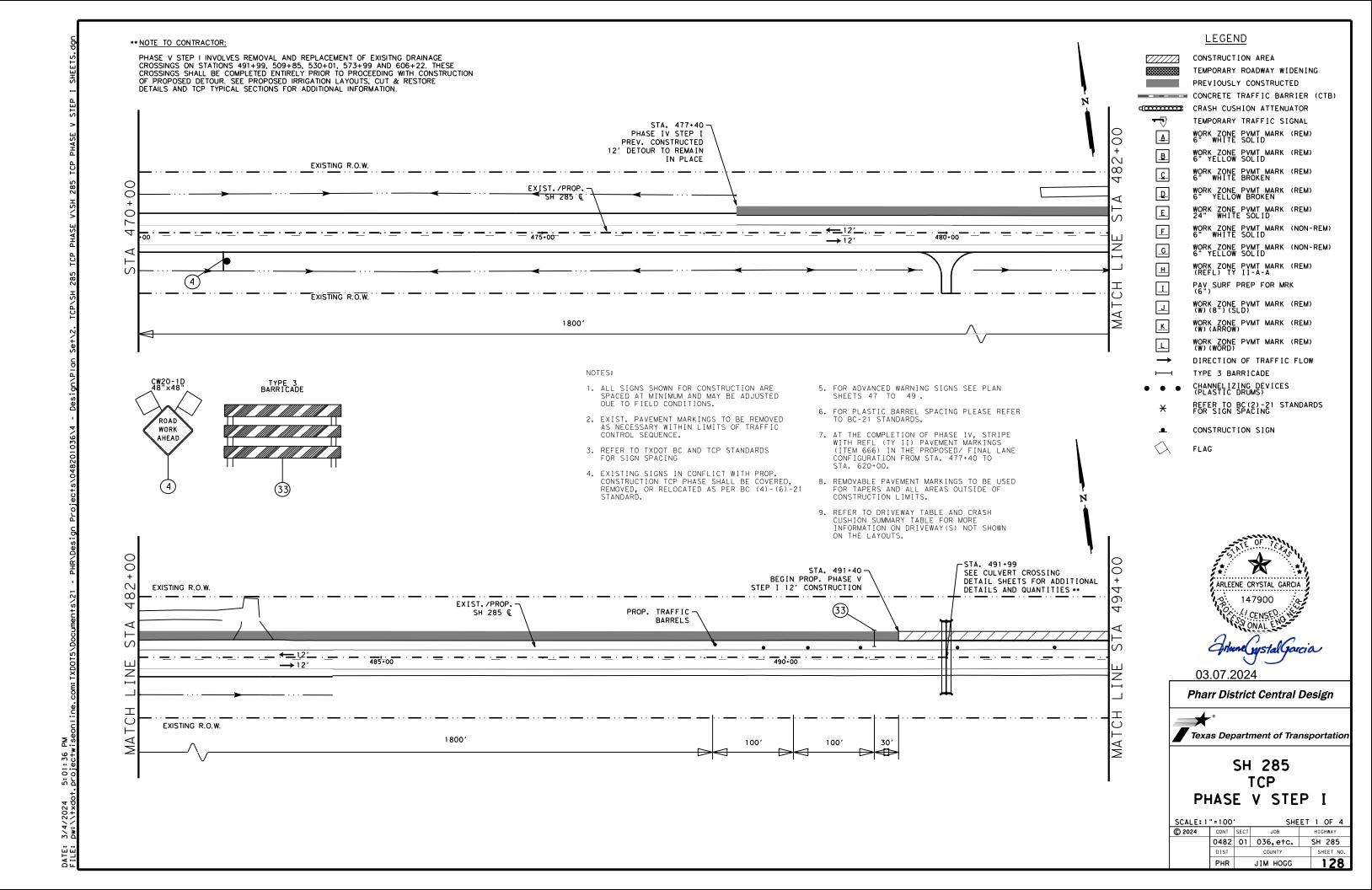
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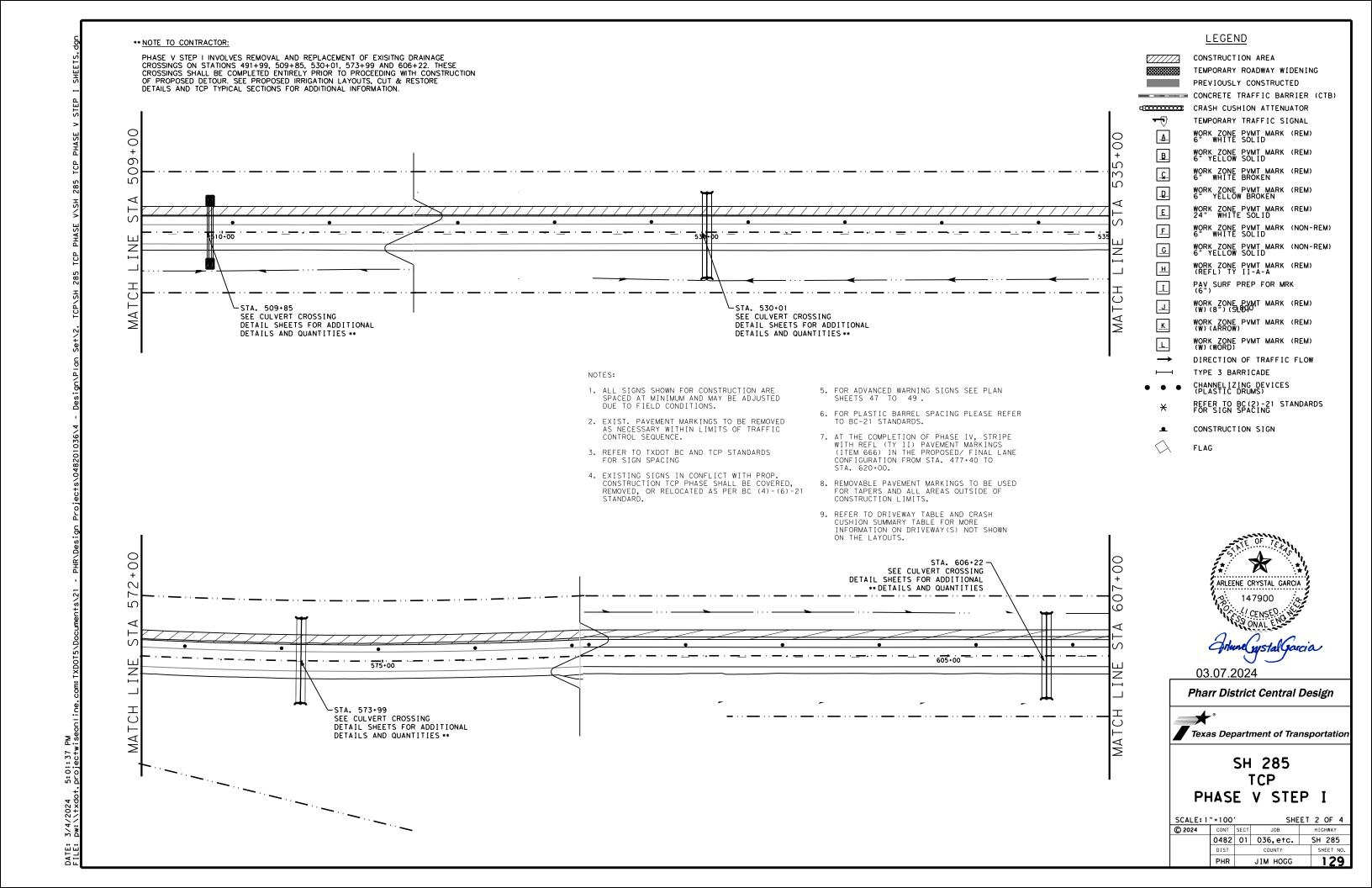
Pharr District Central Design

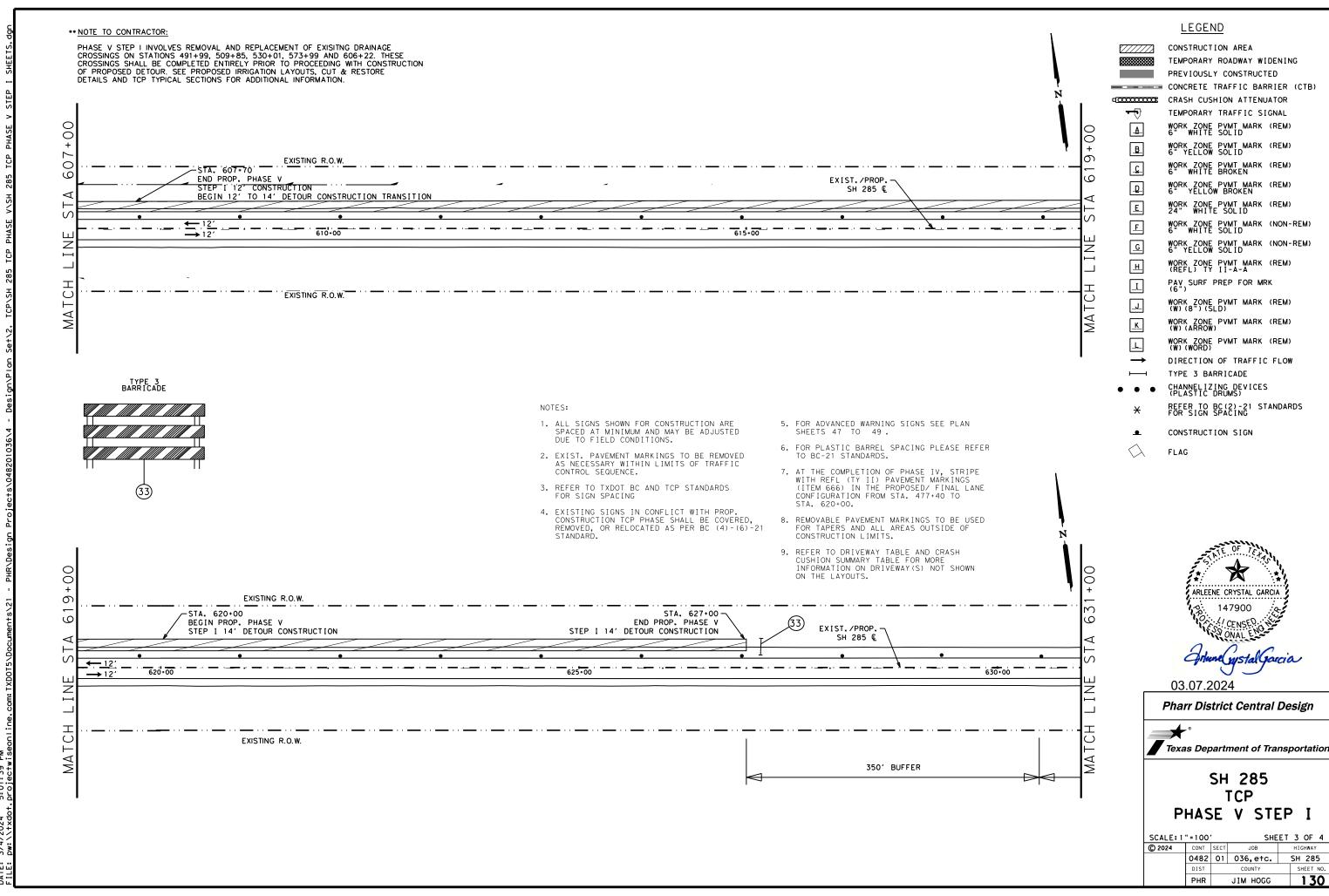
Texas Department of Transportation

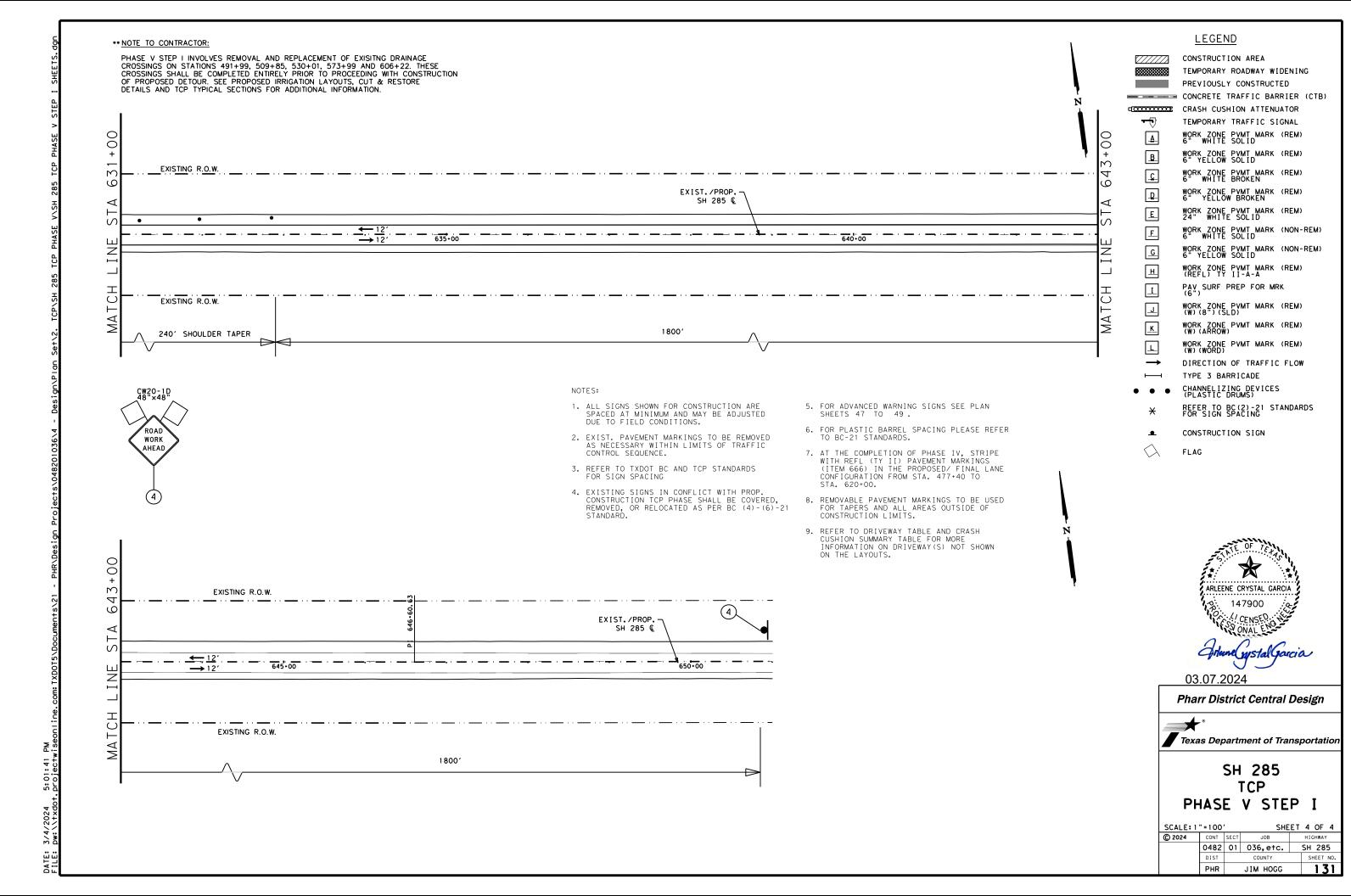
SH 285 TCP PHASE V TYPICAL SECTIONS

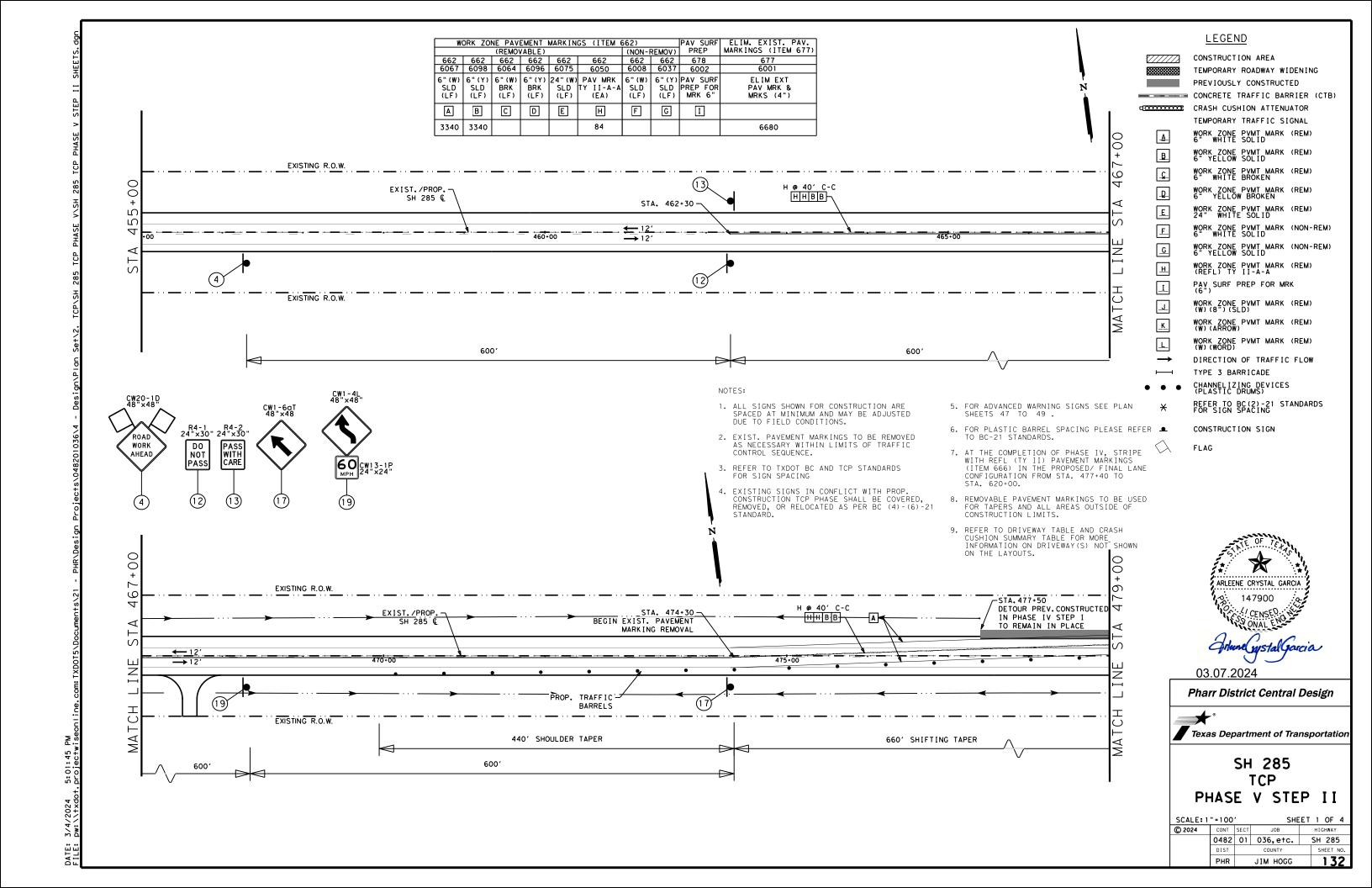
SHEET 4 OF 4 CONT SECT JOB HIGHWAY 0482 01 036,etc. SH 285 127 PHR JIM HOGG

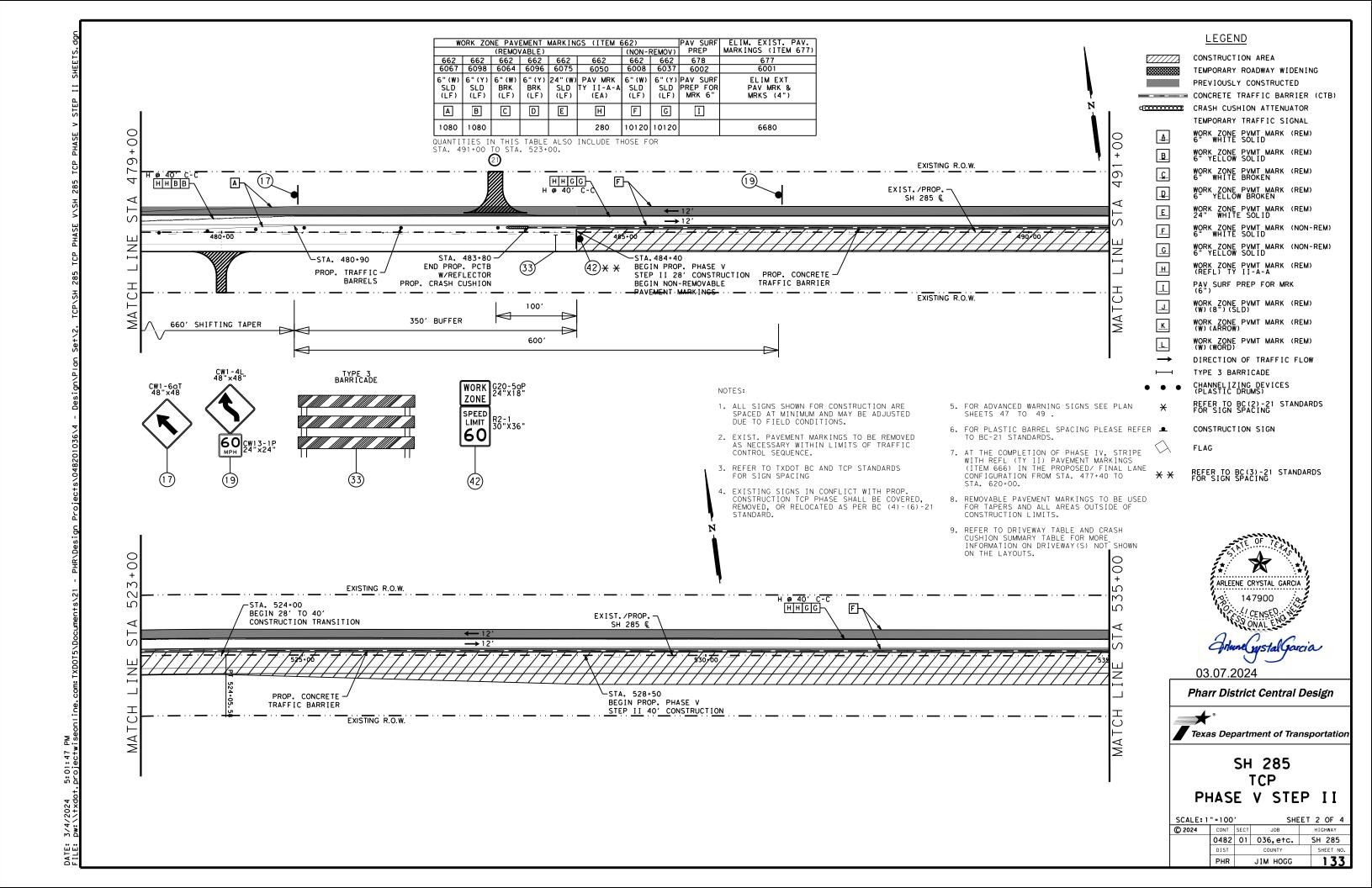


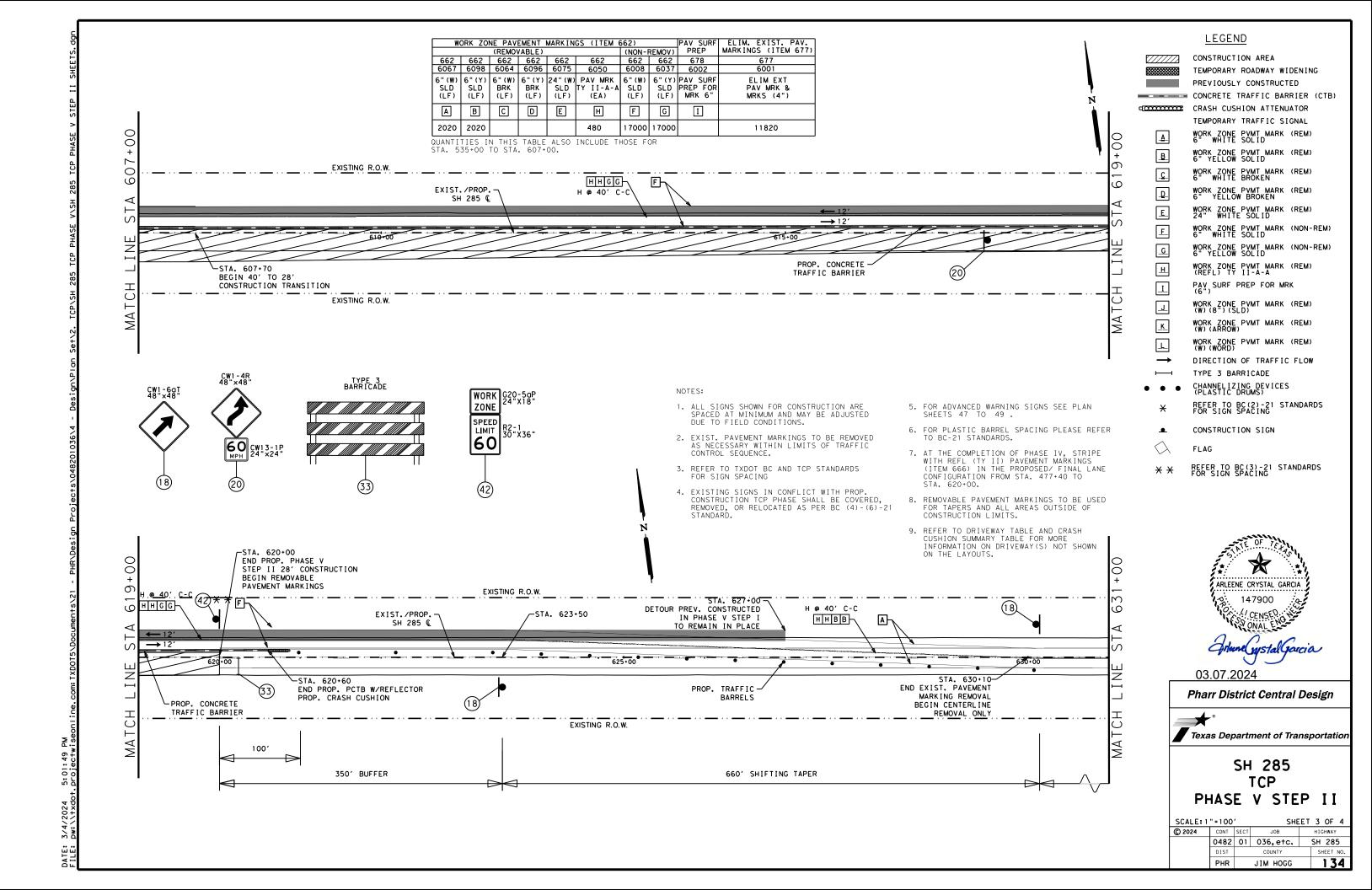


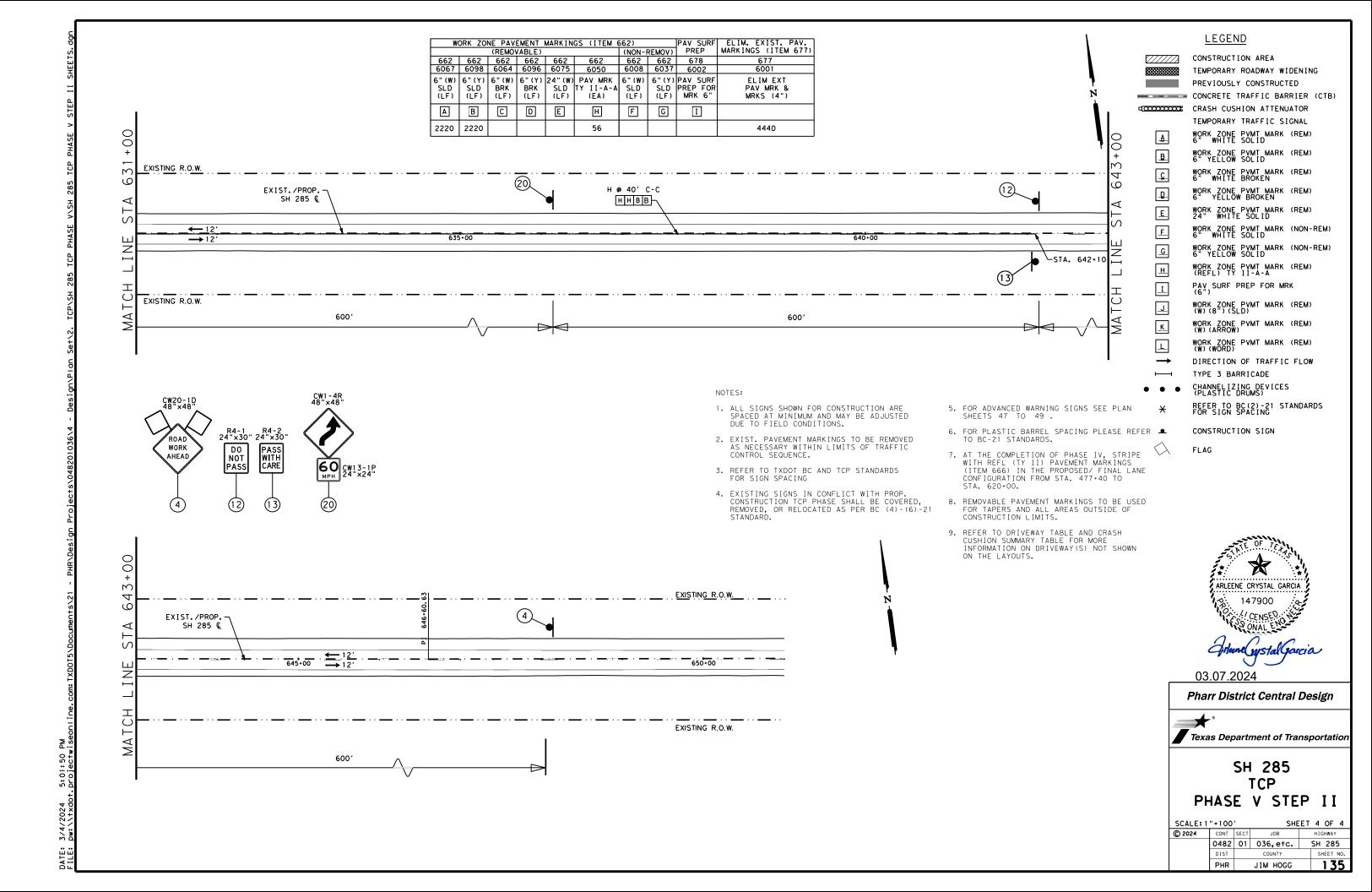


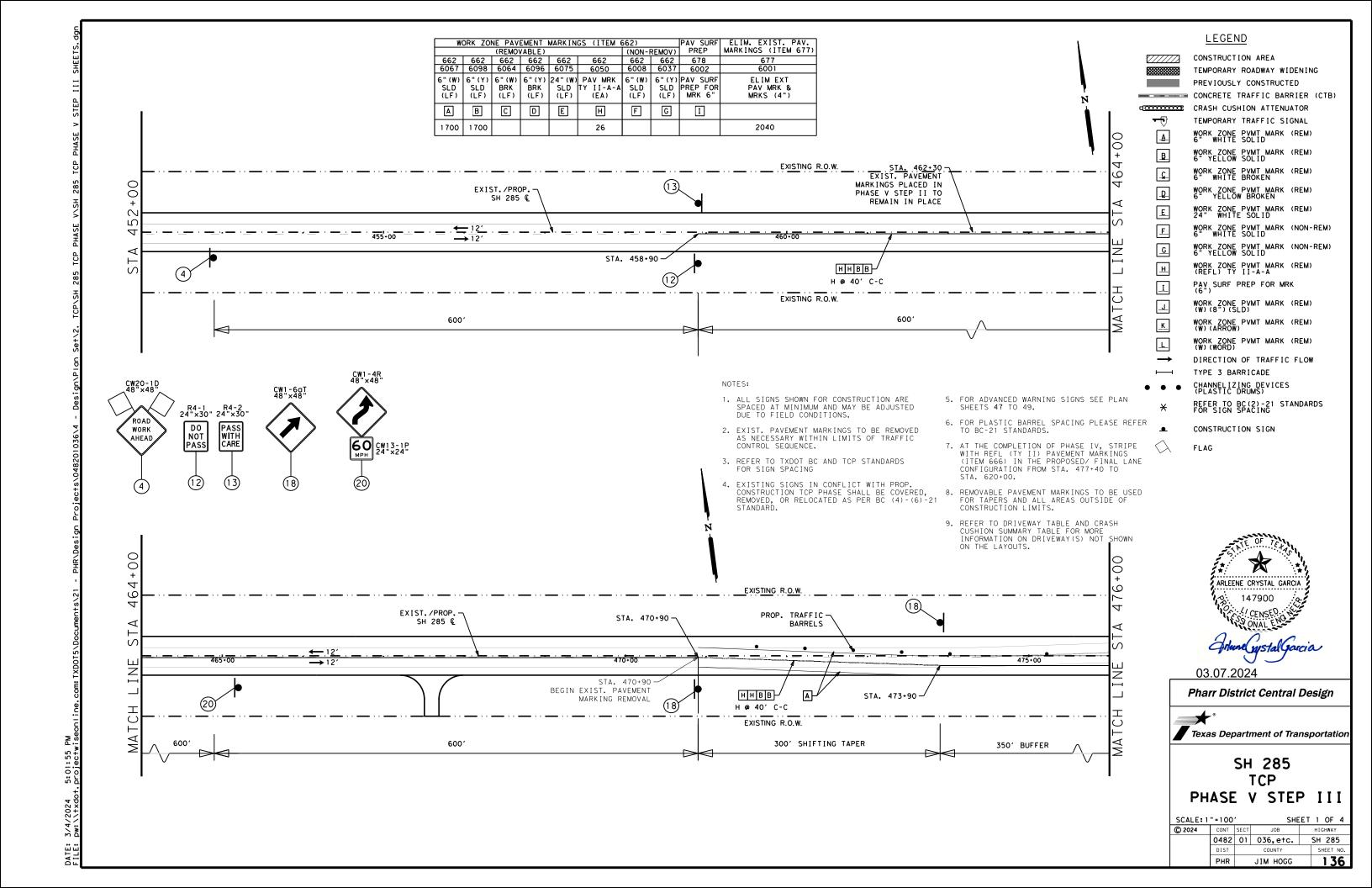


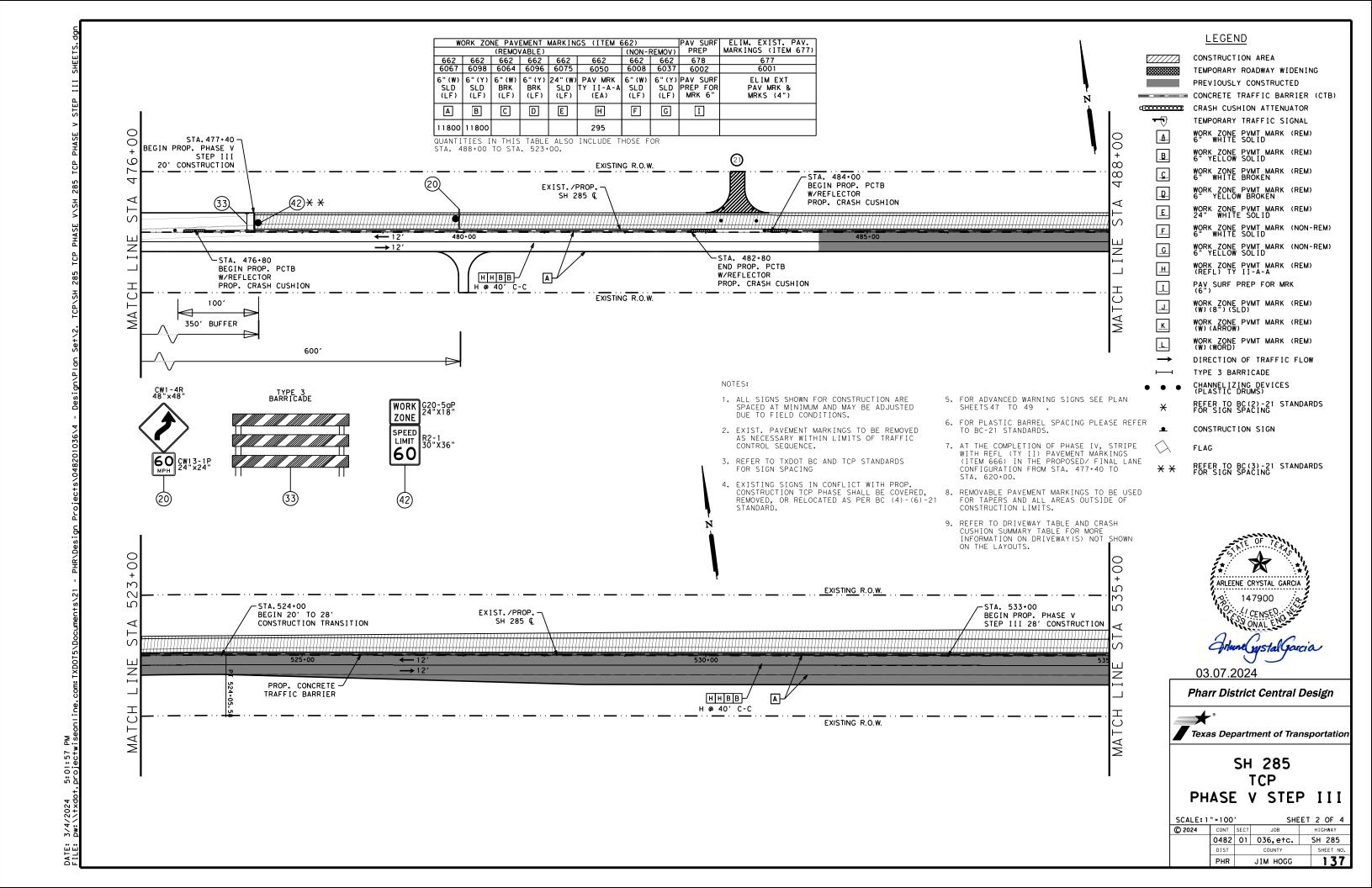


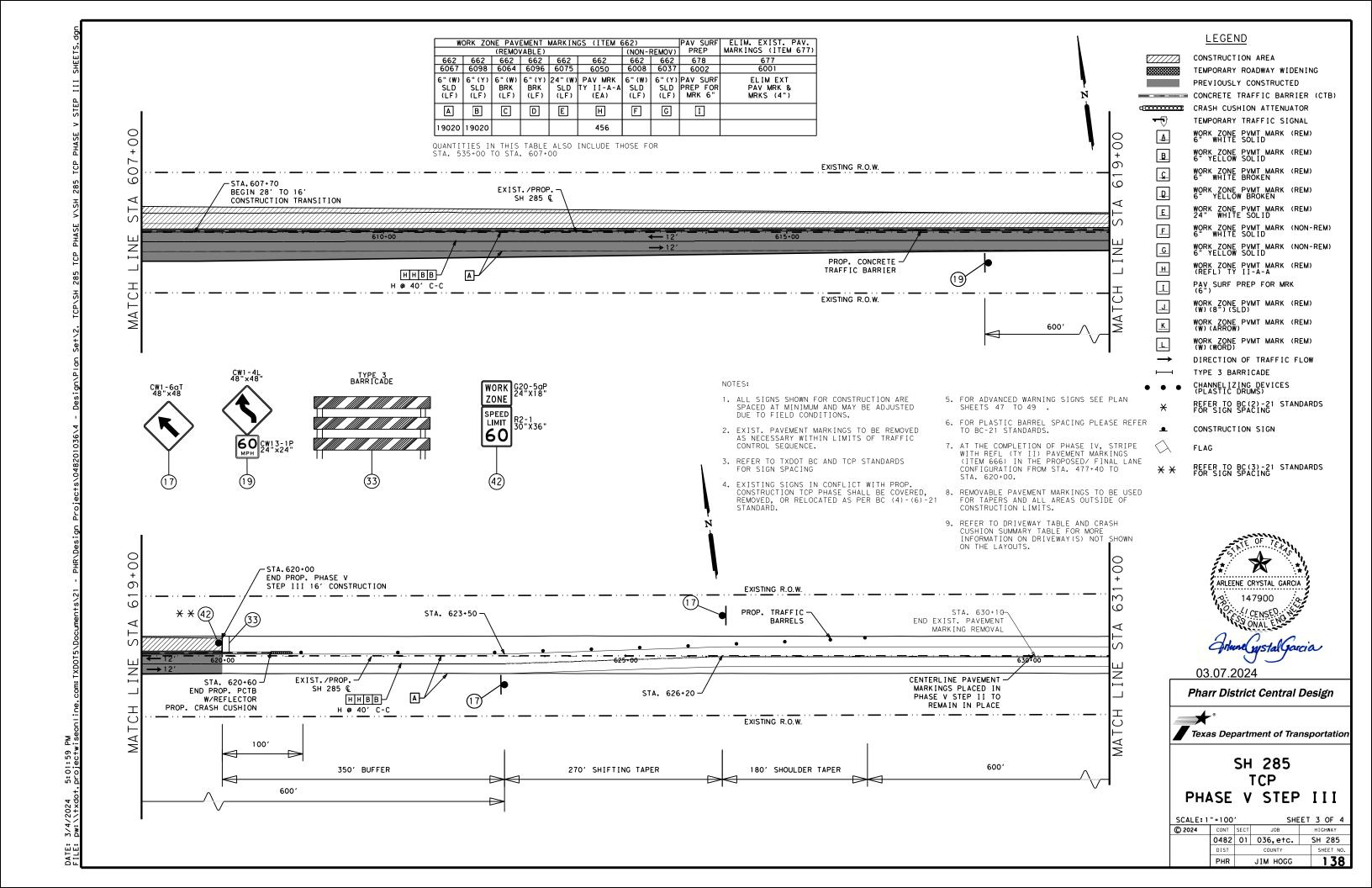


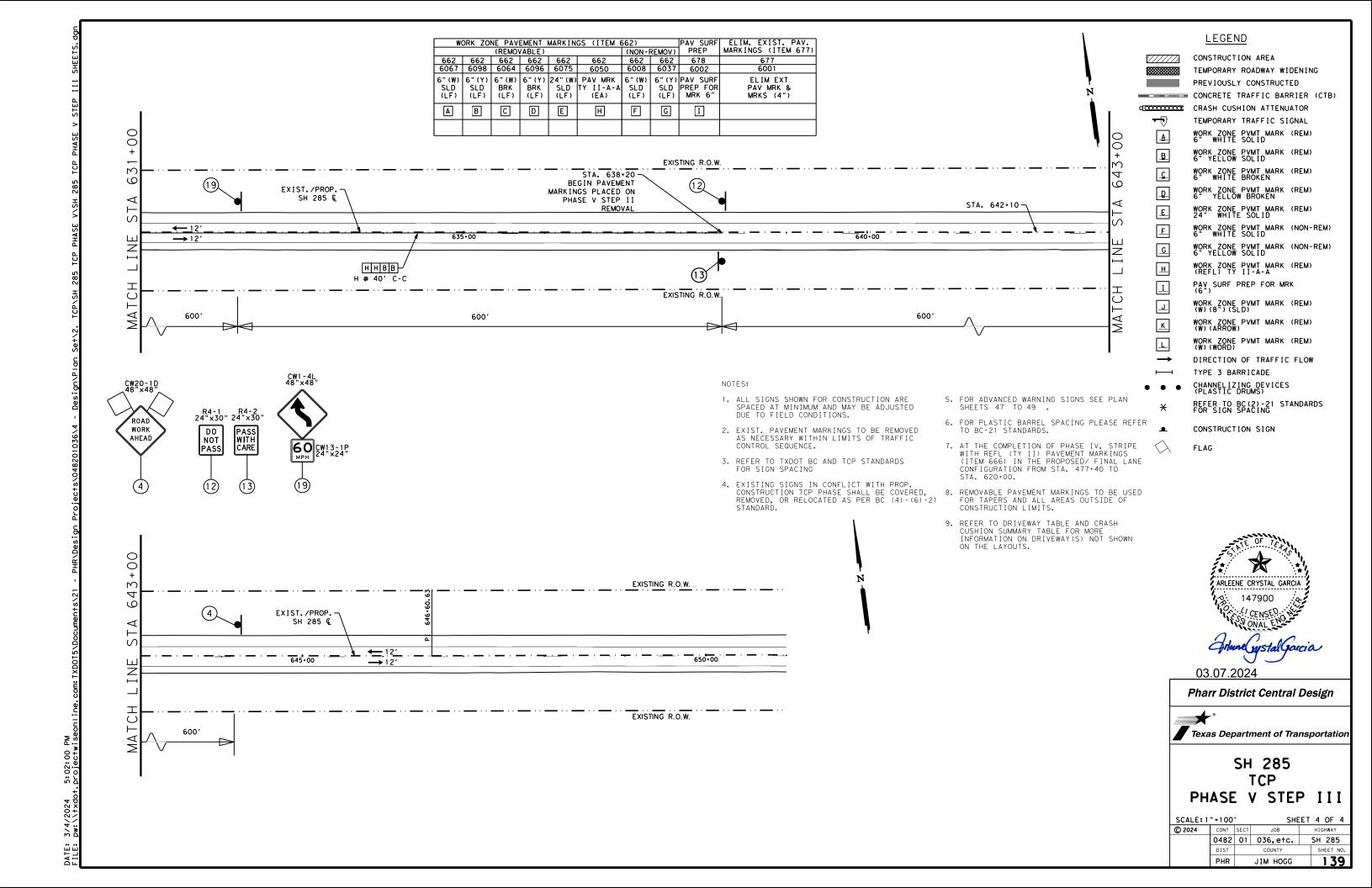


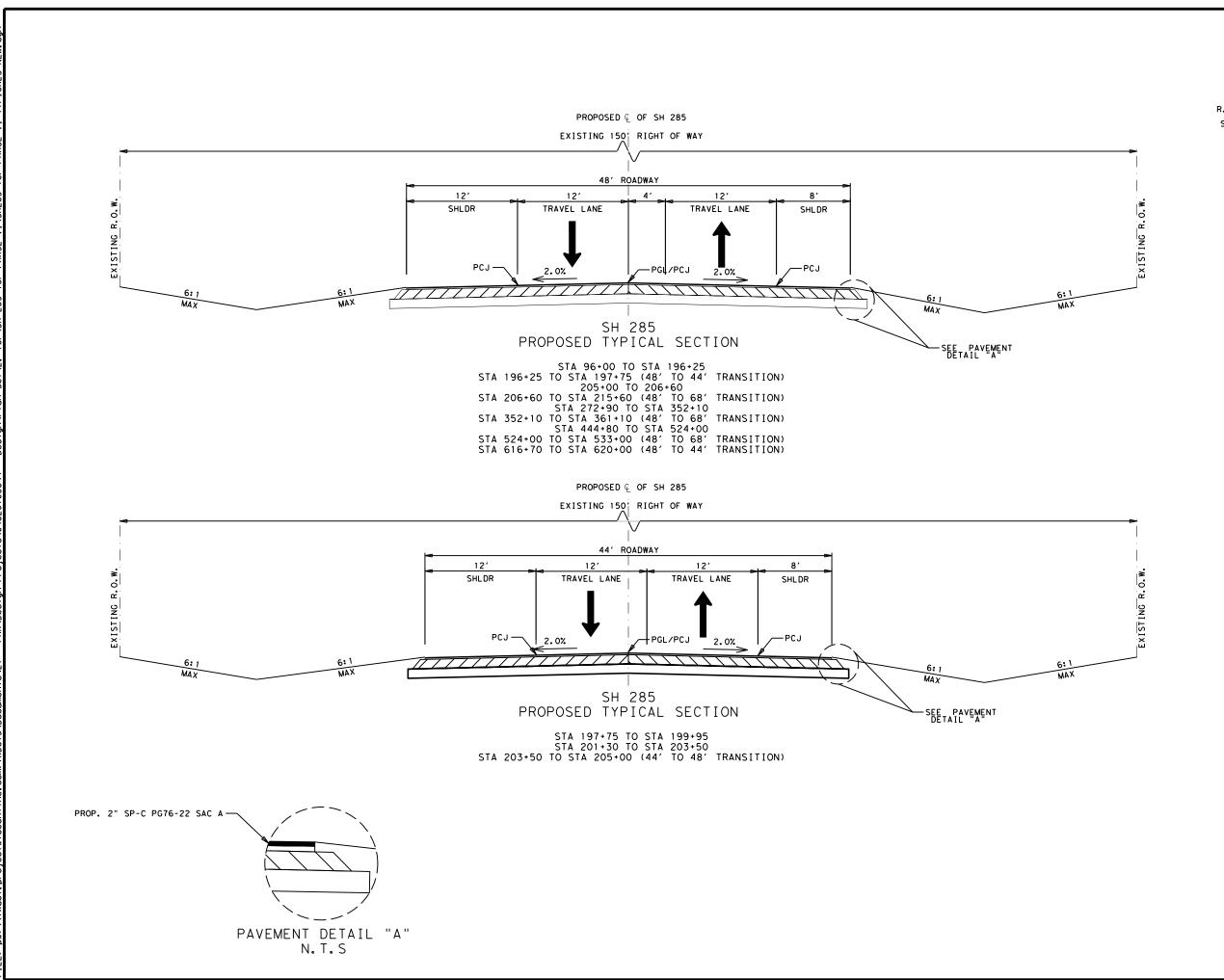












မှ - CENTER LINE

PGL - PROFILE GRADE LINE

PCJ - PERMISSIBLE CONSTRUCTION JOINT

R.O.W. - RIGHT OF WAY

SHLDR - SHOULDER



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SH 285 TCP PHASE VI TYPICAL SECTIONS

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	DIST		COUNTY		s	HEET NO.
	PHR		JIM HOGG			140

မှ - CENTER LINE

PGL - PROFILE GRADE LINE

PCJ - PERMISSIBLE CONSTRUCTION JOINT

R.O.W. - RIGHT OF WAY

SHLDR - SHOULDER

SHLDR



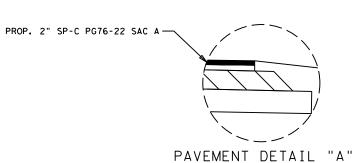
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SH 285 TCP PHASE VI TYPICAL SECTIONS

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N. T. S

- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- 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.
- 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.
- 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.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- 10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES. CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, ČSJ limit signs are not required.
- 11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- 12. The Engineer has the final decision on the location of all traffic control devices.
- 13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

- 1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel." or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
- 2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- 1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- 2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

SHEET 1 OF 12



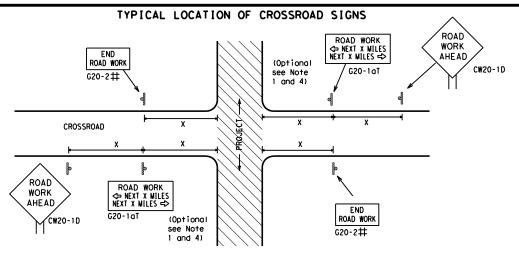
BARRICADE AND CONSTRUCTION **GENERAL NOTES** AND REQUIREMENTS

BC(1)-21

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of this standard is governed by the "Texas Engineering Practice Act". by TxD01 for any purpose Whatsoever. TxD01 assumes no responsibility address of for incorrect results or damages resulting for 01364 - best formals or for incorrect results or damages Resulting for 01364 - best best Set 14. SH 268 5 Standards\285 FLP 585 FLP 585



- \sharp May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
- 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 as per TMUTCD Part 5. This information shall be shown in the plans.
- Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
- The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
- 5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

BEGIN T-INTERSECTION WORK ZONE ★ ★ G20-9TP ★ ★ R20-5T FINES DOUBL X R20-50TP MORKERS ARE PRESENT ROAD WORK ⟨⇒ NEXT X WILES X X G20-2bT WORK ZONE G20-1bTI INTERSECTED 1000'-1500' - Hwy 1 Block - City 1000'-1500' - Hwy 1 Block - City ROADWAY \Rightarrow ROAD WORK G20-1bTR NEXT X MILES => WORK ZONE G20-2bT * * Limit BEGIN * * G20-9TP ZONE TRAFFI G20-6T * * R20-5T FINES DOUBLE X R20-5aTP #HEN HORKERS ROAD WORK G20-2

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

	Posted Speed	Sign∆ Spacing "X"
	MPH	Feet (Apprx.)
	30	120
	35	160
	40	240
	45	320
	50	400
	55	500 ²
	60	600²
	65	700 ²
	70	800 ²
	75	900 ²
	80	1000²
ı	*	* 3

SPACING

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

* 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.

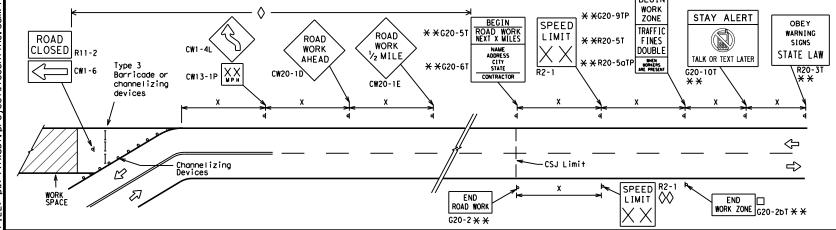
 \triangle Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

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 as per TMUTCD Part 5. 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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS	SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS
ROAD WORK AREA AHEAD 3X CW20-1D XX LWPH CW13-1P	** \$\frac{1}{2} \frac{1}{2} \f
Channelizing Devices	WORK SPACE SPEED
When extended distances occur between minimal work spaces, the Engineer/I "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas	to remind drivers they are still G20-2 ** location NOTES
within the project limits. See the applicable TCP sheets for exact location channelizing devices.	on and spacing of signs and The Contractor shall determine the appropria

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



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.

- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2b1 shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- ** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
- Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic
- Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND						
горов Туре 3 Barricade						
0	Channelizing Devices					
þ	Sign					
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.					

SHEET 2 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

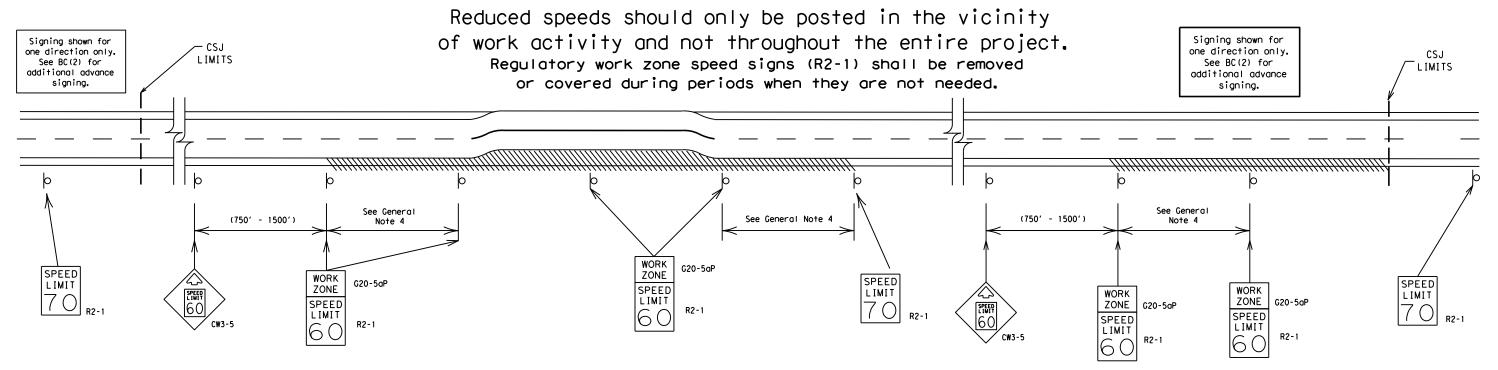
BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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9-07	8-14	DIST	IST COUNTY				SHEET NO.	
7-13	5-21	PHR	PHR JIM HOGG				143	

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.



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 traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- 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)).
- 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.
- 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.

SHEET 3 OF 12



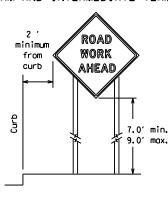
Traffic Safety Division Standard

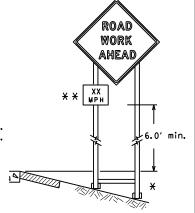
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

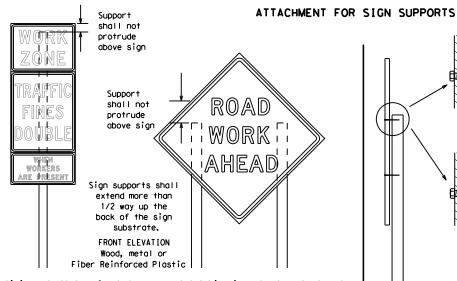
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warranty of any the conversion ts use.





- * 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.



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 SIDE ELEVATION above and two below the spice point. Splice must be located entirely behind Wood the sign substrate, not near the base of the support. Splice insert lengths

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.

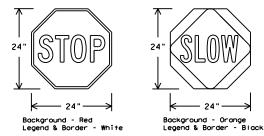
STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24". STOP/SLOW paddles shall be retroreflectorized when used at night.

should be at least 5 times nominal post size, centered on the splice and

of at least the same gauge material.

- 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.



SHEETING RE	QUIREMEN'	TS (WHEN USED AT NIGHT)
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- 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, specific service (LOGO), 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.
- 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. For details for covering large guide signs see the TS-CD standard.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- 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.
- If permanent signs are to be removed and relocated using temporary supports. the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CW7TCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- 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

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- 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.
- 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.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question reaardina 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.
- 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.
- 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.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

<u>DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)</u>

- 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.
- 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.
- Short-term stationary daytime work that occupies a location for more than 1 hour in a single daylight period.
- Short, duration work that occupies a location up to 1 hour. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- 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 plagues mounted below other signs.
- 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. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- 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.
- 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

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

- 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.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- 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).
- 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

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- 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.
- 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.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs. Duct tape or other adhesive material shall NOT be affixed to a sign face.
- 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. The sandbags will be tied shut to keep the sand from spilling and to maintain a
- constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted
- for use as sign support weights. 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. 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. 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.
- 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.

SHEET 4 OF 12



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

Traffic Safety Division Standard

BC(4)-21

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going in opposite directions. Minimum

back fill puddle.

weld starts here

weld, do not

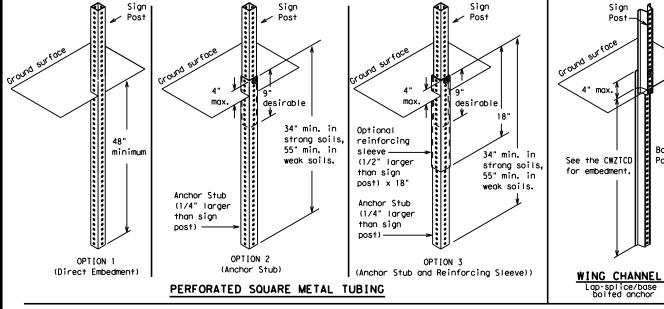
¥ Maximum 12 sq. ft. of * Maximum wood 21 sq. ft. of sign face sign face 4×4 block block 72" Length of skids may Top be increased for wood additional stability. post for sign Top 2x4 x 40" 30" height 24" 2x4 brace for sign requirement height 3/8" bolts w/nuts requiremen or 3/8" x 3 1/2" (min.) lag screws Front 4x4 block 40" 4x4 block 36" Side Front SKID MOUNTED WOOD SIGN SUPPORTS * LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

-2" x 2"

12 ga. upright

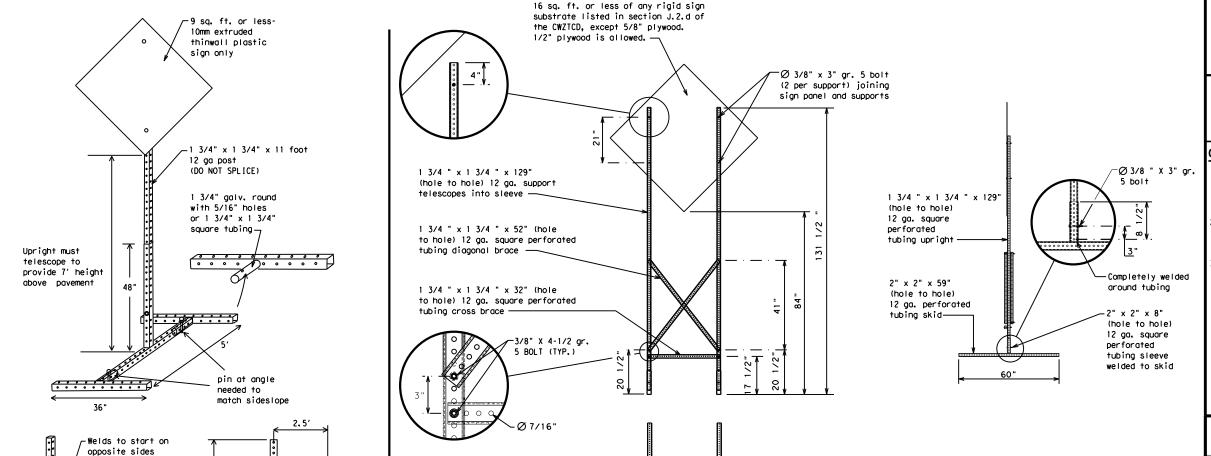
2"

SINGLE LEG BASE



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.



WEDGE ANCHORS

Post

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final
- No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
- When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
 - ★ See BC(4) for definition of "Work Duration."
- Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- ☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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SKID MOUNTED	PERFORATED	SQUARE	STEEL	TUBING	SIGN	<u>SUPPORTS</u>	

32'

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

PORTABLE CHANGEABLE MESSAGE SIGNS

- 1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- 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.
- 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
- 4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED," Do not use the term "RAMP,"
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- 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.
- 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	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking Road	PK ING RD
CROSSING	XING	Right Lane	RT LN
Detour Route	DETOUR RTE	Saturday	SAT
Do Not	DONT	Service Road	SERV RD
East	F	Shoulder	SHLDR
Eastbound	(route) E	Slippery	SLIP
Emergency	EMER	South	S
Emergency Vehicle		Southbound	(route) S
Entrance, Enter	ENT	Speed	SPD
Express Lane	EXP LN	Street	ST
Expressway	EXPWY	Sunday	SUN
XXXX Feet	XXXX FT	Telephone	PHONE
Fog Ahead	FOG AHD	Temporary	TEMP
Freeway	FRWY, FWY	Thursday	THURS
Freeway Blocked	FWY BLKD	To Downtown	TO DWNTN
Friday	FRI	Traffic	TRAF
Hazardous Driving	HAZ DRIVING	Travelers	TRVLRS
Hazardous Material	HAZMAT	Tuesday	TUES
High-Occupancy	HOV	Time Minutes	TIME MIN
Vehicle	HWY	Upper Level	UPR LEVEL
Highway		Vehicles (s)	VEH. VEHS
Hour (s)	HR, HRS	Warning	WARN
Information	INFO	Wednesday	WED
I† Is	ITS	Weight Limit	WT LIMIT
Junction	JCT	West	W
Left	LFT	Westbound	(route) W
Left Lane	LFT LN	Wet Pavement	WET PVMT
Lane Closed	LN CLOSED	Will Not	WONT
Lower Level	LWR LEVEL	L WILLI MOI	I MONI
Maintenance	MAINT		

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/Ram 	p Closure List	Other Cond	dition List
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT
xxxxxxxx			

APPLICATION GUIDELINES

Phase Lists".

1. Only 1 or 2 phases are to be used on a PCMS.

2. The 1st phase (or both) should be selected from the

is not included in the first phase selected.

and should be understandable by themselves.

no more than one week prior to the work.

"Road/Lane/Ramp Closure List" and the "Other Condition List".

a minimum of 1000 ft. Each PCMS shall be limited to two phases,

of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for

6. For advance notice, when the current date is within seven days

3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice

4. A Location Phase is necessary only if a distance or location

5. If two PCMS are used in sequence, they must be separated by

LANE

Phase 2: Possible Component Lists

111000 11 001		•			•		
mp Closure List	Other Cond	dition List	Action to Take/E Li		Location List	Warning List	* * Advance Notice List
FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT	MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM- X PM
SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT	DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX- XX X PM-X AM
RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE	USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT	STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT	TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT	WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN	EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES	REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX
X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *	USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM- XX AM
* LANES SHIFT in Phos	se 1 must be used wit	h STAY IN LANE in Phos	STAY IN		* * Se	e Application Guidelin	nes Note 6.

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.
- 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.
- 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.

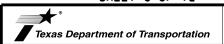
FULL MATRIX PCMS SIGNS

BLVD

CLOSED

- 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
- 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.

SHEET 6 OF 12



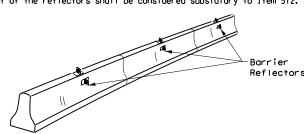
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

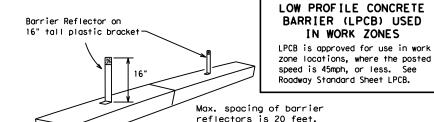
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of pregualified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- 2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

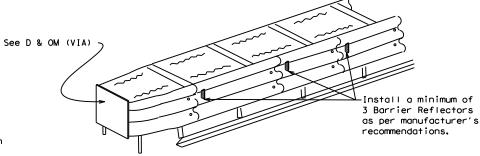
- 3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. 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.
- 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
- 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)

Attach the delineators as per manufacturer's recommendations.

IN WORK ZONES



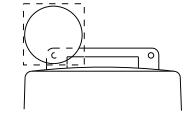
DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH), Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

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.

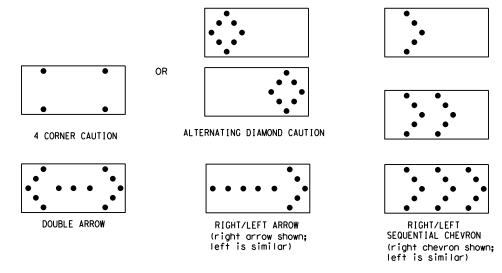
WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- 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
- 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.
- 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.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage.
 The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
 Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal

- intervals of 25 percent for each sequential phase of the flashing chevron.

 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								
В	30 × 60	13	3/4 mile								
С	48 × 96	15	1 mile								

ATTENTION Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE
TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- 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.
- 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.



Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL. REFLECTORS. WARNING LIGHTS & ATTENUATOR

BC(7)-21

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- 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

GENERAL NOTES

Pre-qualified plastic drums shall meet the following requirements:

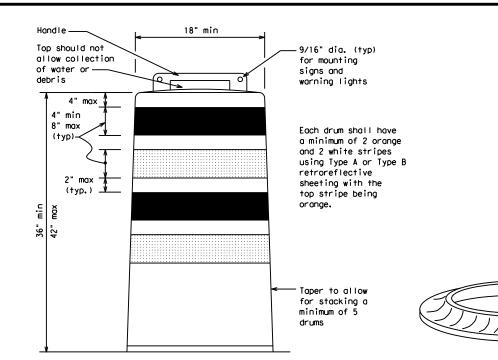
- 1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- 2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but 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
- 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
- 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.

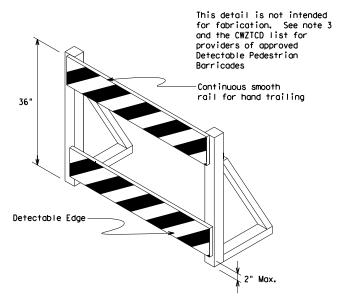
RETROREFLECTIVE SHEETING

- 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 or Type B reflective sheeting shall be supplied unless otherwise specified
- 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

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.
- 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.





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. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- 2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- 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
- 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 (ADAAG)" and should not be used as a control for pedestrian
- 5. Warning lights shall not be attached to detectable pedestrian barricades.
- 6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign (Maximum Sign Dimension) Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer

See Ballast



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 or Type B. 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
- 6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2
- 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.

SHEET 8 OF 12



Traffic Safety

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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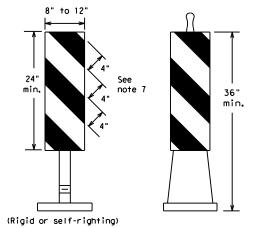
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36"

Fixed Base w/ Approved Adhesive

(Driveable Base, or Flexible

Support can be used)



PORTABLE

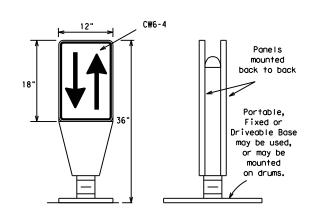
VP-1R

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Support

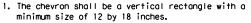
- 1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- 2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use 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"
- 6. Sheeting for the VP's shall be retroreflective Type A or Type B 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.

VERTICAL PANELS (VPs)



- 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"
- 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 nonreflective 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.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

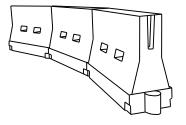


- 2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- 3. Chevrons, when used, shall be erected on the out side of a sharp 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

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.
- 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.



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). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- 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.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

D	d Formu	De	linimum esirab er Lenç ** *	le	Suggested Maximum Spacing of Channelizing Devices			
10' Offset		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
150′	- , <u> </u>	1501	165′	180′	30′	60′		
205′	_L = <u>\</u> 6	2051	225′	245′	35′	70′		
265′	T °	2651	295′	320′	40′	80′		
450′		450′	495′	540′	45′	90′		
500′		500′	550′	600′	50`	100′		
550′	_ L = W	550′	605′	660′	55 `	110′		
600′] - "	600'	660′	7201	60,	120'		
650′		650′	715′	780′	65`	130′		
700′		700′	770′	840′	70′	140′		
750′		750′	825′	900'	75′	150′		
800′		8001	880'	960′	80′	160′		
-	<u> </u>	-						

XX 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



Traffic Safety Division Standard

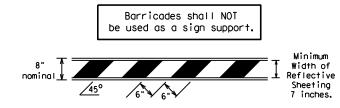
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) -21

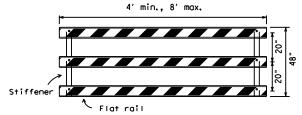
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7-13		PHR	JIM HOGG			150	

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.
- Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
- 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.
- 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.
- 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.
- Warning lights shall NOT be installed on barricades.
- 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.
- Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

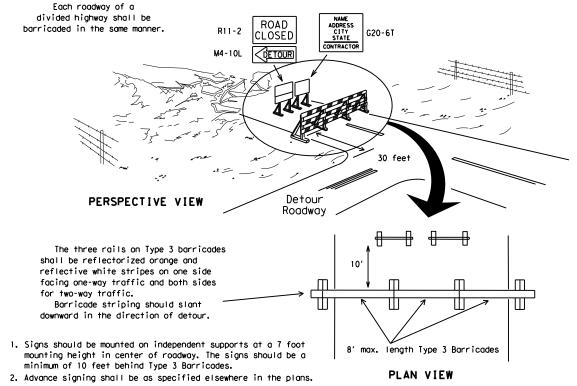


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



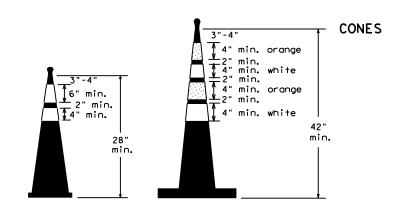
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

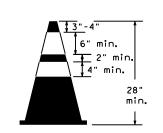


TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION

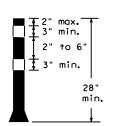
1. Where positive redirectional capability is provided, drums may be omitted. 2. Plastic construction fencing may be used with drums for safety as required in the plans. 3. Vertical Panels on flexible support may be substituted for drums when the Typical shoulder width is less than 4 feet. Plastic Drum 4. When the shoulder width is greater than 12 feet. steady-burn lights PERSPECTIVE VIEW may be omitted if drums are used. 5. Drums must extend the length These drums are not required of the culvert widening. on one-way roadway LEGEND Plastic drum Plastic drum with steady burn light um of two drums s coross the work or yellow warning reflector Steady burn warning light or yellow warning reflector Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums) PLAN VIEW CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



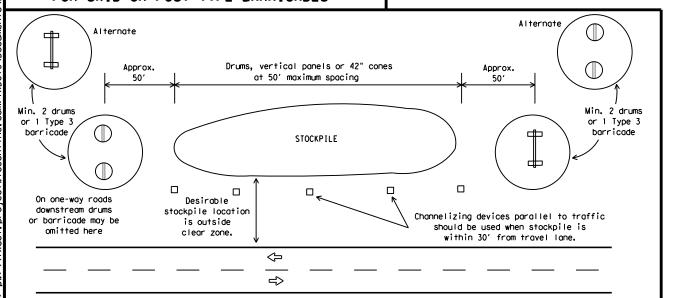
Two-Piece cones



One-Piece cones



Tubular Marker



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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

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

- 1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
- 2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
- 3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
- 4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
- 5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
- 6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
- 7. Cones or tubular markers used on each project should be of the same size and shape.





Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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		PHR		JIM HO	GG		151

WORK ZONE PAVEMENT MARKINGS

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
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.

"Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

- 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

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

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

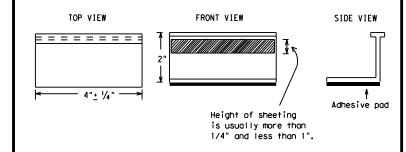
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- 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

REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- 7. Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- 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

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - 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

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIO	NS
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



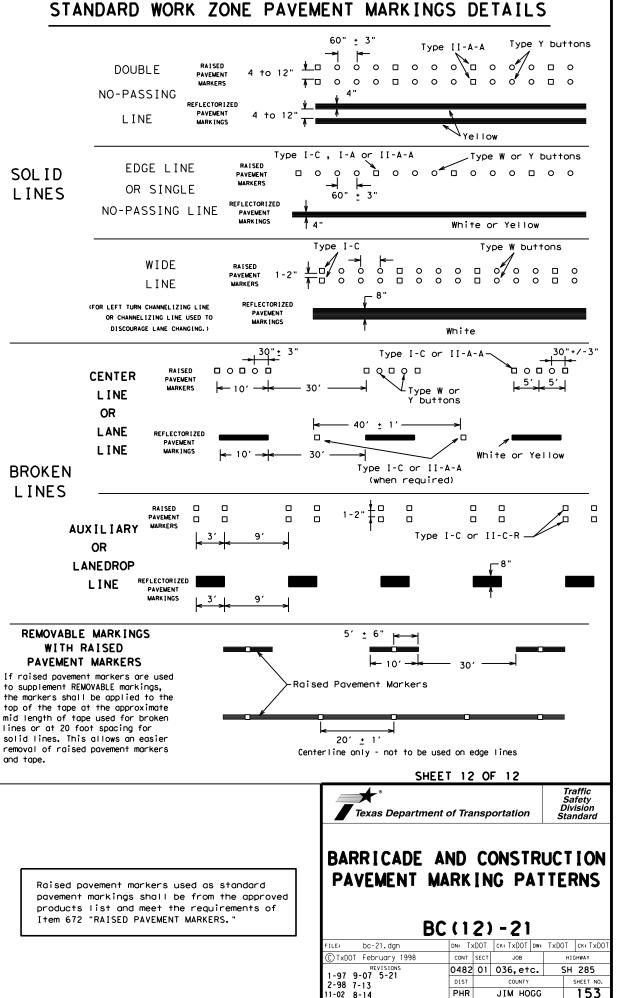
Traffic Safety Division Standard

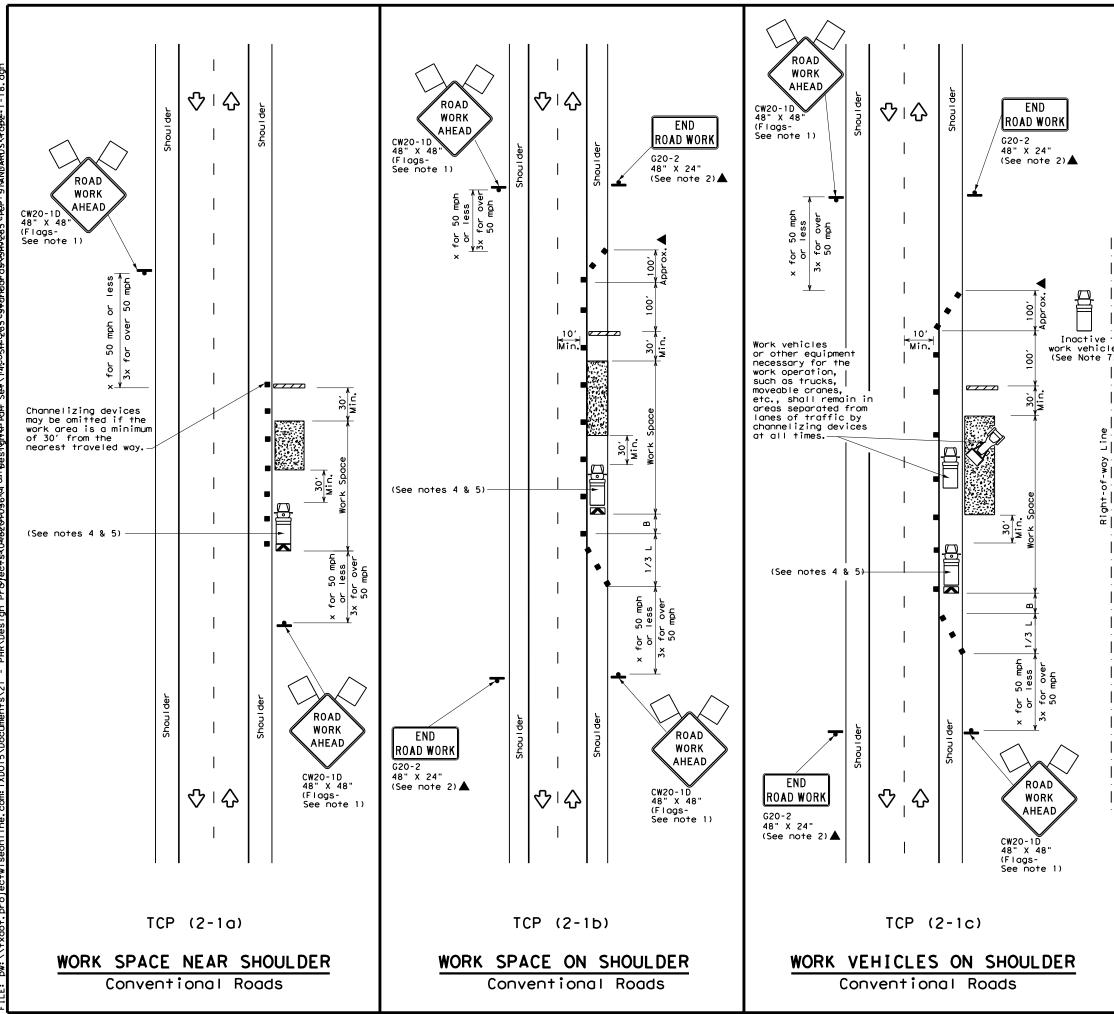
BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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11-02





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

Posted Speed	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	WS ²	150′	1651	1801	30'	60′	120′	90,
35	L = WS	2051	2251	245'	35′	701	160′	120′
40	60	265′	2951	3201	40′	80′	240′	155′
45		450′	4951	540′	45′	90′	320′	195′
50		500'	5501	6001	50′	100′	400′	240′
55	L=WS	550′	605′	660′	55′	110'	500′	295′
60	L-W5	600'	660′	720′	60′	120′	600′	350′
65		650′	715′	7801	65′	130′	700′	410′
70		700′	770′	840'	701	140′	800'	475′
75		750′	8251	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		
	1	1	1	1		

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
- 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

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3-95 2-12	DIST		COUNTY		SHEET NO.
-97 2-18	PHR		JIM HO	GG	154

	LEGEND								
~~~	Type 3 Barricade		Channelizing Devices						
	Heavy Work Vehicle	K	Truck Mounted Attenuator (TMA)						
<b></b>	Trailer Mounted Flashing Arrow Board	••••	Raised Pavement Markers Ty II-AA						
4	Sign	∿	Traffic Flow						
$\Diamond$	Flag	Ф	Flagger						

Posted Speed	Speed		Desirable Taper Lengths **		Spacii Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	е "В"
30	2	150′	1651	1801	30'	60′	120′	90'
35	L= WS ²	2051	225′	245'	35′	70′	160′	120′
40	b	265′	295′	3201	40′	80′	240′	155′
45		4501	4951	540′	45′	90′	3201	195′
50		500'	550′	6001	50′	100′	400′	240′
55	L=WS	550′	6051	660′	55′	110′	500′	295′
60	- "3	600'	660′	7201	60′	120′	600,	350′
65		650′	715′	7801	65′	1301	700′	410′
70		7001	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					
			<b>√</b>	<b>√</b>					

### 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.
- 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
- Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue. The R4-1 "DO NOT PASS," R4-2 " PASS WITH CARE" and construction
- regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
- Conflicting pavement marking shall be removed for long term projects.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned  $30\ \text{to}\ 100\ \text{feet}$  in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place. Type 3 Barricades or other channelizing devices may be substituted.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

### TCP (2-3a)

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.

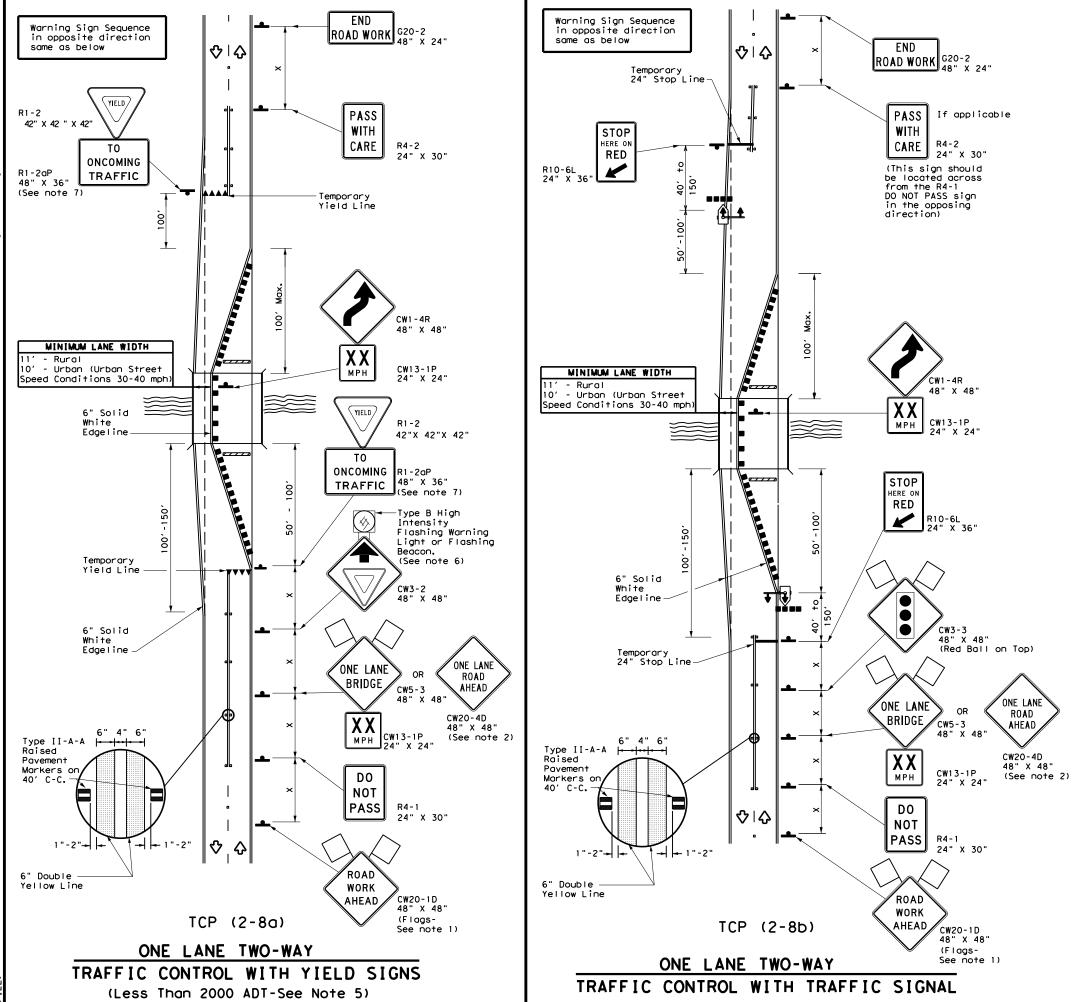


TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO-LANE ROADS

Traffic Safety Division Standard

TCP (2-3) -23

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8-95 3-03		DIST		COUNTY		SHEET NO.
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	LEGEND										
	Type 3 Barricade		Channelizing Devices								
þ	Sign	∿	Traffic Flow								
$\Diamond$	Flag	9	Flagger								
•••	Raised Pavement Markers Ty II-AA	₩	Temporary or Portable Traffic Signal								

Speed	Formula	Minimum Desirable Taper Lengths **		rable Spacing of Channelizing		Desirable Spacing of Channelizing		Channelizing		Suggested Longitudinal Buffer Space	Stopping Sight Distance
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	"x" Distance	"B"			
30	. <u>ws²</u>	150′	165′	1801	30'	60′	120′	90,	2001		
35	L = WS	2051	2251	245'	35′	70′	160′	120′	250′		
40	60	265′	2951	3201	40'	80′	240′	155′	305′		
45		450′	4951	540'	45′	90'	320′	195′	360′		
50		500′	550′	600'	50′	1001	400′	240′	425′		
55	L=WS	550′	6051	660′	55′	110′	500′	295′	495′		
60	L - W 5	600′	660′	720′	60′	120′	600′	350′	570′		
65		650′	715′	780′	65′	130′	700′	410′	645′		
70		700′	770′	840′	701	140′	800′	475′	730′		
75		750′	825′	9001	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				
			<b>√</b>	<b>√</b>				

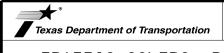
### **GENERAL NOTES**

- 1. Flags attached to signs where shown are REQUIRED.
- 2. When this TCP is used at a location which does not involve a bridge, a 48" x 48" CW20-4D "ONE LANE ROAD AHEAD" signs should be used in lieu of the CW5-3 "ONE LANE BRIDGE" signs. The CW13-1P Advisory Speed Plaque is required with either warning sign.
- Raised pavement markers shall be placed 40 feet c-c on centerline between DO NOT PASS signs and stop or yield lines.
- . For intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 20 feet is recommended. The 20 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.

### TCP (2-8a)

- 5. Traffic control by CW3-2 "YIELD AHEAD" symbol signs for one lane two-way traffic control operations should be limited to work spaces less than 400 feet long and roadways with less than 2000 ADT. Otherwise, portable traffic signals should be used.
- 6. If power is available, a flashing beacon should be attached to the CW3-2 "YIELD AHEAD" symbol sign for emphasis.
- 7. The R1-2 "YIELD" and R1-2aP "TO ONCOMING TRAFFIC" signs and other regulatory signs shall be installed at 7 foot minimum mounting height.

- 8. A list of approved Portable Traffic Signals can be found in the "Compliant Work Zone Traffic Control Devices" list.
- 9. Portable traffic signals should be located to provide adequate stopping sight distance for approaching motorist (See table above).



Traffic Safety Division Standard

TRAFFIC CONTROL PLAN LONG TERM ONE-LANE TWO-WAY CONTROL

TCP(2-8)-23

FILE: tcp2-8-23.dgn	DN:		CK:	DW:	CK:
© TxDOT April 2023	CONT	SECT	JOB		HIGHWAY
REVISIONS 12-85 4-98 2-18	0482	01	036,e	tc. S	SH 285
8-95 3-03 4-23	DIST		COUNTY		SHEET NO.
1-97 2-12	PHR		JIM	HOGG	156

# WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS DOUBLE **TABS** NO-PASSING

LINE TAPE SOLID 20' ± 6" **LINES** 20' ± 6" Type Y-2 or W SINGLE TABS NO-PASSING LINE or CHANNELIZATION LINE Yellow or White Type Y-2 or W 40' ± 1

**BROKEN TABS**  $\mathsf{m}\,\mathsf{m}\,\mathsf{m}$ → 1' ± 3" LINES TAPE (FOR CENTER LINE OR LANE LINE) → 4.5' ± 6" Yellow or White ----12' ± 6" TABS **WIDE DOTTED LINES** (FOR LANE DROP LINES) **TAPE** ----12' ± 6" White

20' ± 6" **TABS** WIDE GORE **MARKINGS** TAPE

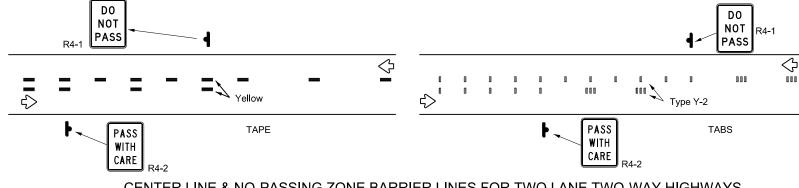
20' ± 6"

- 1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible reflective roadway
- 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.

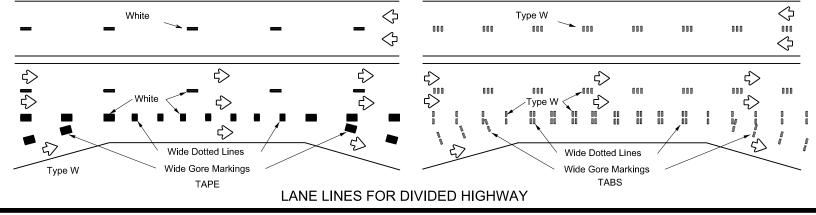
### TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

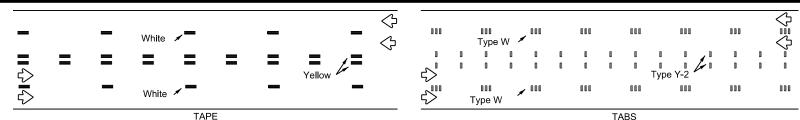
- 1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may 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

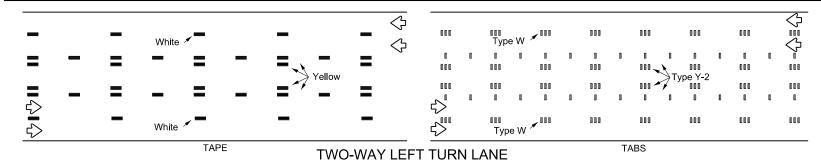


# CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS





# LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



Removable Short Term Raised Pavement Marker Marking (Tape)

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

# Texas Department of Transportation

Traffic Safety Division Standard

### 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

# WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-23

FILE: wzstpm-23.dgn		DN:		CK:	DW:	CK:
© TxDOT February 2023		CONT	SECT	JOB		HIGHWAY
REVISIONS		0482	01	036,etc		SH 285
I-92 7-1 I-97 2-2		DIST		COUNTY		SHEET NO.
3-03	•	PHR		JIM HOO	G G	157

DEPARTMENTAL MATERIAL SPECIFICAT	IONS
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

- 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.
- 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
- 4. Signs shall be spaced at the distances recommended as per BC standards.
- 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"
- 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				
0	Less than or equal to: $1\frac{1}{4}$ " (maximum-planing) $1\frac{1}{2}$ " (typical-overlay)	Sign: CW8-11				
7/// 🛧 D	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 >3	Less than or equal to 3"	Sign: CW8-11				
3 0" to 3/4"7						
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".						
Notched Wedge Joint						

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

MINIMUM	WARNING	SIGN	SIZE
Convention	nal roads	36" >	36"
Freeways/ex divided	kpressways, roadways	48" x	48"

SIGNING FOR UNEVEN LANES

Texas Department of Transportation

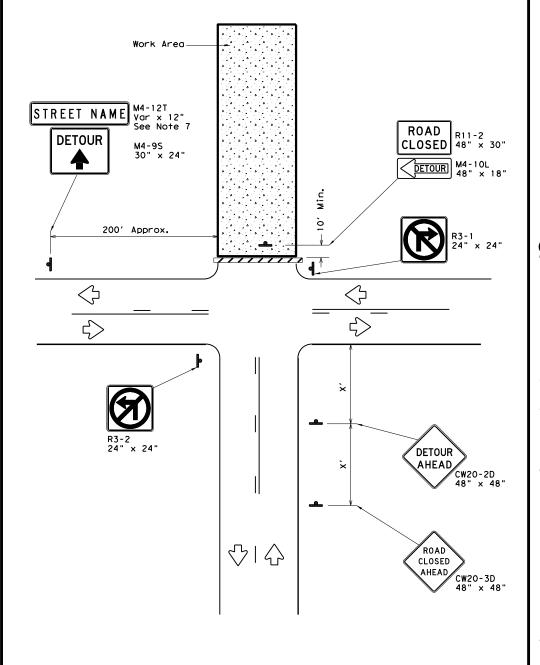
Traffic Operations Division Standard

WZ (UL) -13

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©⊺xDOT April 1992	CONT	SECT	JOB		Н	GHWAY
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8-95 2-98 7-13	DIST		COUNTY			SHEET NO.
1-97 3-03	PHR		JIM HO	GG		158

WNEVEN LANES  UNEVEN LANES  TWO LANE CONVENTIONAL ROAD	Area where Edge Condition exists  * See Table 1  **T" distance (See Note 4)  **UNEVEN LANES  FOUR LANE CONVENTIONAL ROAD
CENTER LINE  "X" distance (See Note 4)  Area missing Center Line markings   X  "X" distance (See Note 4)	Area where Edge Condition exists   * See Table 1   "X" distance (See Note 4)  UNEVEN LANES  CW8-11

TWO LANE CONVENTIONAL ROAD



# ROAD CLOSURE AT THE INTERSECTION

Signing for an Un-numbered Route with an Off-Site Detour

LEGEND				
////	Type 3 Barricade			
-	Sign			

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120′
35	160′
40	240′
45	320′
50	400′
55	500′
60	600′
65	700′
70	800′
75	900'

* Conventional Roads Only

### GENERAL NOTES

- This sheet is intended to provide details for temporary work zone road closures. For permanent road closure details see the D&OM standards
- Barricades used shall meet the requirements shown on Barricade and Construction Standard BC(10) and listed on the Compliant Work Zone Traffic Control Devices list (CWZTCD).
- Stockpiled materials shall not be placed on the traffic side of barricades.
- Barricades at the road closure should extend from pavement edge to pavement edge.
- 5. Detour signing shown is intended to illustrate the type of signing that is appropriate for numbered routes or un-numbered routes as labeled. It does not indicate the full extent of detour signing required. Detour routes should be signed as shown elsewhere in the plans.
- 6. If the road is open for a significant distance beyond the intersection or there are significant origin/destination points beyond the intersection, the signs and barricades at this location should be located at the edge of the traveled way.
- 7. The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
- 8. For urban areas where there is a shorter distance between the intersection and the actual closure location, the ROAD CLOSED XX MILES AHEAD (R11-3a) sign may be replaced with a ROAD CLOSED TO THRU TRAFFIC (R11-4) sign. If adequate space does not exist between the intersection and the closure a single ROAD CLOSED AHEAD (CW20-3D) sign spaced as per the table above may replace the ROAD CLOSED 1000 FT (CW20-3B) and ROAD CLOSED 500 FT (CW20-3C) signs.
- Signs and barricades shown shall be subsidiary to Item 502. Locations where these details will be required shall be as shown elsewhere in the plans.



Traffic Operations Division Standard

WORK ZONE ROAD CLOSURE DETAILS

WZ (RCD) -13

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© TxDOT	August 1995	CONT	SECT			HIGHWAY	
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1-97 4-98		DIST		COUNTY			SHEET NO.
2-98 3-03		PHR		JIM HO		159	



SIGNAL WORK AHEAD

CW20SG-1

SIGNAL WORK AHEAD

CW20SG-1

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SIGNAL WORK AHEAD

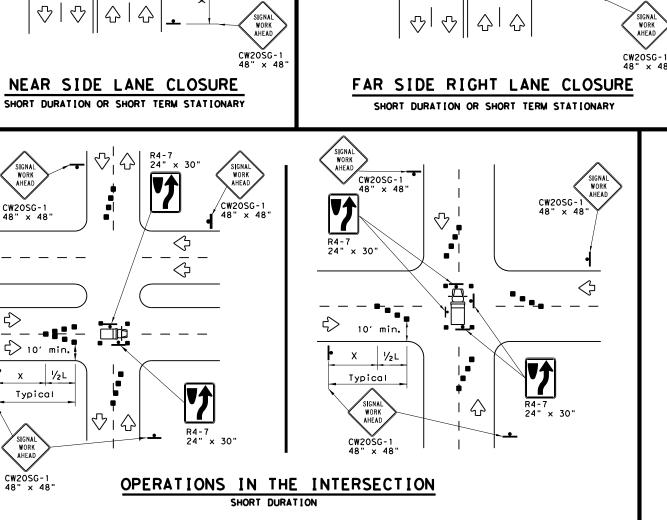
CW20SG-1

Typical

SIGNAL WORK AHEAD

CW20SG-1 48" x 48"

1/2L



SIGNAL WORK AHEAD

CW20SG-1 48" × 48'

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SIGNAL WORK AHEAD

CW20SG-1

SIGNAL WORK AHEAD

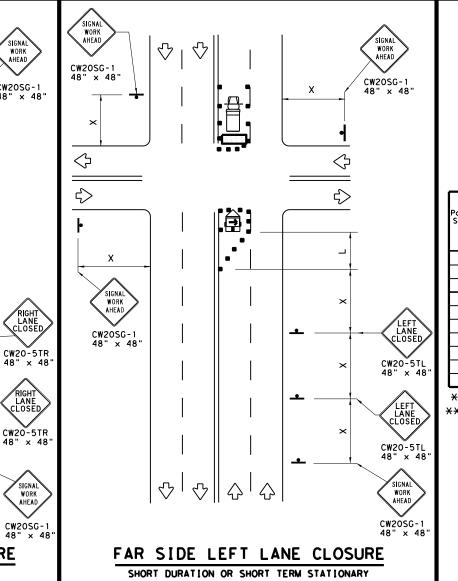
CW20SG-1

-See Note 8

LANE CLOSE

CW20-5TR

See Note



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

Posted Speed	Formula	D	Minimur esirab er Lend **	le	Spacin Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	
*		10' Offset	11' Offset			Distance	"В"		
30	ws ²	150′	1651	180′	30'	60′	120′	90′	
35	L = WS	2051	225′	245'	35′	70′	160′	120′	
40	80	265′	295′	3201	40'	80′	240′	155′	
45		450′	4951	540′	45′	90′	320′	195′	
50		5001	550′	600,	50′	100′	400′	240′	
55	L=WS	550′	6051	660′	55′	110′	500′	295′	
60	L - 11 3	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′	8251	900′	75'	150′	900′	540′	

* Conventional Roads Only

** Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.

GENERAL NOTES

SIGNAL WORK AHEAD

CW20SG-1

RIGHT LANE CLOSED

RIGHT LANE CLOSED

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- 1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- 2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- 3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- 4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- 5. High level warning devices (flag trees) may be used at corners of the vehicle.
- 6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- 7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- 8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

SHEET 1 OF 2



Traffic Operations Division Standard

TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

98 3-03	PHR	IR JIM HOGG 1				160		
98 10-99 7-13	DIST	DIST COUNTY				SHEET NO.		
REVISIONS	0482	01	036,et	c.	SH 285			
)TxDOT April 1992	CONT	SECT	JOB		HIGHWAY			
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GENERAL NOTES FOR WORK ZONE SIGNS

Wooden sign posts shall be painted white.

directed by the Engineer.

directed by the Engineer.

DURATION OF WORK

SIGN MOUNTING HEIGHT

REMOVING OR COVERING

Barricades shall NOT be used as sign supports.

Nails shall NOT be used to attach signs to any support.

Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

Signs shall be installed and maintained in a straight and plumb condition.

All signs shall be installed in accordance with the plans or as

Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as

The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).

The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.

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".

Work zone durations are defined in Part 6, Section 66.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.

Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.

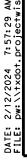
When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.

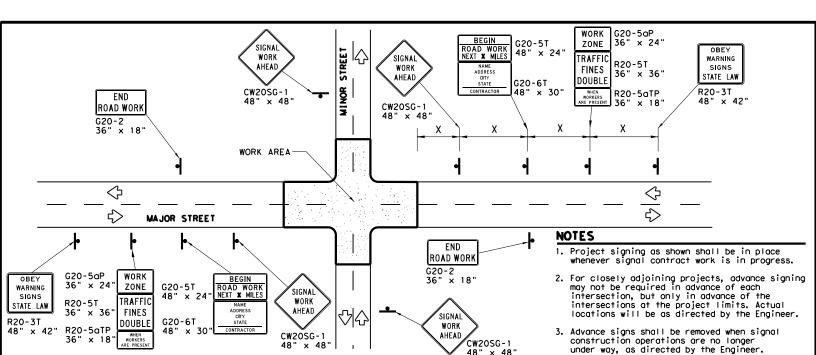
When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.

Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

Duct tape or other adhesive material shall NOT be affixed to a sign face. $\,$

Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.





TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

warning sign spacing. REFLECTIVE SHEETING

All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

Warning sign spacing shown is typical for both directions.

5. See the Table on sheet 1 of 2 for Typical

SIGN SUPPORT WEIGHTS

- Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
- 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.
- 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
- 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 fastners. Sandbags shall be placed along the length of the skids to weigh down the
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

עי	Dor'rs praced on stopes.							
	LEGEND							
	4	Sign						
	■ ■ Channelizing Device							
		Type 3 Barricade						

DEPARTMENTAL MATERIAL	SPECIFICATIONS
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:

http://www.txdot.gov/txdot_library/publications/construction.htm

See Note 8 36" × 36" **SIDEWALK** See Note 6 R9-11aR CLOSED R9-11L 24" x 12" CROSS HERE 24" x 12" CW11-2 36" × 36" WORK AHEAD See Note 6 AHEAD CW16-9P CW16-7PL 24" x 12" 24" x 12" K \bigcirc 仑 CW20SG-1 -Work Area 48" × 48" \Diamond \Diamond ♦ ➾ ♡ SIGNA 89-10DBL IDEWALK CLOSE CROSSWALK CLOSURES

SIDEWALK DETOUR

Temporary Traffic Barrier See Note 4 below

SIDEWALK DIVERSION

-Work Area

10' Min.

SIDEWALK

CLOSED

R9-9 24" x 12"

 $^{ ilda{}}$ 4' Min.(See Note 7 below

CROSS HERE

R9-11aL 24" x 12"

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SIDEWALK CLOSE

CROSS HERE

24" x 12'

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PEDESTRIAN CONTROL

USE OTHER SIDE

Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.

CW2OSG-

AHEAD

- "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the
- location shown. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9)
- and manufacturer's recommendations. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
- Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3
- The width of existing sidewalk should be maintained if practical.
- Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.

When crosswalks or other pedestrian facilities are closed or relocated. temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian SHEET 2 OF 2

Texas Department of Transportation

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ(BTS-2)-13

Operations Division Standard

CW20SG-1

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CW20SG-1 48" x 48

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2-98 10-99 7-13 4-98 3-03		DIST		COUNTY			SHEET NO.	
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Work

DIVIDED HIGHWAY

elsewhere in the plans.

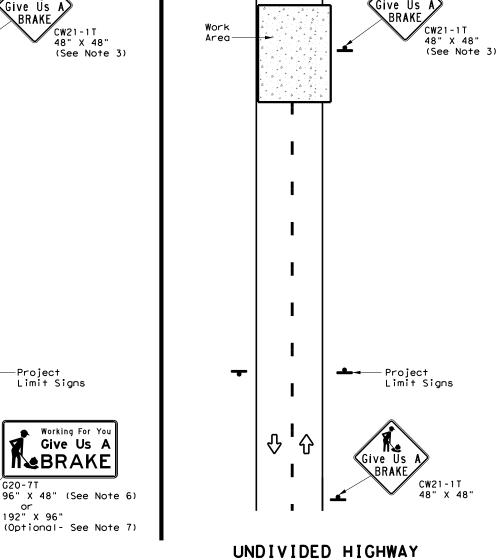
CW21-1T

48" X 48"

(See Note 3)

SIGNS ARE SHOWN FOR ONE DIRECTION OF TRAVEL

* When the optional larger WORKING FOR YOU GIVE US A BRAKE (G20-7T) 192" x 96" sign is required, the locations shall be noted



SUMMARY OF LARGE SIGNS GAL VANIZED STRUCTURAL DRILLED SHAF T REFLECTIVE **BACKGROUND** SIGN SIGN STEEL SQ FT SIGN DIMENSIONS SHEETING COLOR DESIGNATION 24" DIA. (LF) (LF) Size \bigcirc Give Us A G20-7T lack0range 96" X 48" Type B_{FL} or C_{FL} 32 Working For You Give Us A BRAKE G20-7T 192" X 96" Oranae Type B_{FL} or C_{FL} 128 W8×18 16 17 12

▲ See Note 6 Below

LEGEND				
≗ Sign				
Large Sign				

DEPARTMENTAL MATERIAL SPEC	IFICATIONS
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

COLOR	LOR USAGE SHEETING MATERIAL				
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL}			
BLACK	LEGEND & BORDERS	NON-REFLECTIVE ACRYLIC FILM			

GENERAL NOTES

- 1. See BC and SMD sheets for additional sign support details.
- 2. Sign locations shall be approved by the Engineer.
- 3. For projects more than two miles in length, Give Us a BRAKE signs should be repeated halfway through the project. The Give Us a Brake (CW21-1T) may be used for this purpose.
- 4. Work zone speed limits are sometimes used in conjunction with GIVE US A BRAKE signing. See BC(3) for location and spacing of construction speed zone signing when required.
- 5. Give Us a Brake (CW21-1T) signs and supports shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling."
- 6. The 96" X 48" Working For You Give Us A BRAKE (G20-7T) may use a 1/2" or 5/8" plywood substrate or 0.125" aluminum sheeting substrate and may be supported by two $4" \times 6"$ wood posts with drilled holes for breakaway as per BC(5) and will be subsidiary to Item 502.
- 7. The Working For You Give Us A BRAKE (G20-7T) 192" X 96" sign shall be paid for under the following specification items:

Item 636 - Aluminum Signs

Item 647 - Large Roadside Sign Supports and Assemblies.

Item 416 - Drilled Shaft Foundations

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.

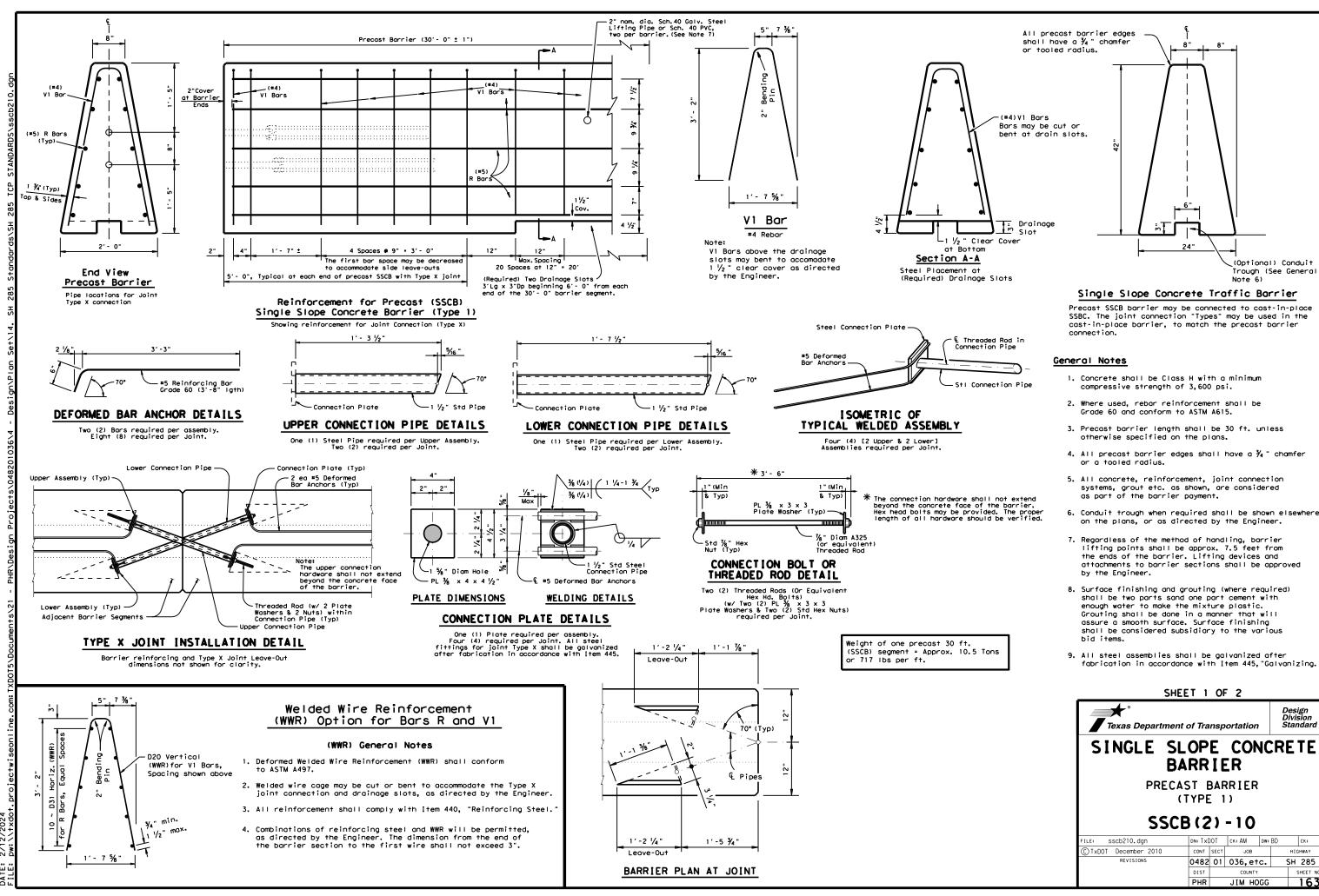


Traffic Operations Division Standard

WORK ZONE "GIVE US A BRAKE" SIGNS

WZ (BRK) - 13

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SHEET 1 OF 2

BARRIER

PRECAST BARRIER

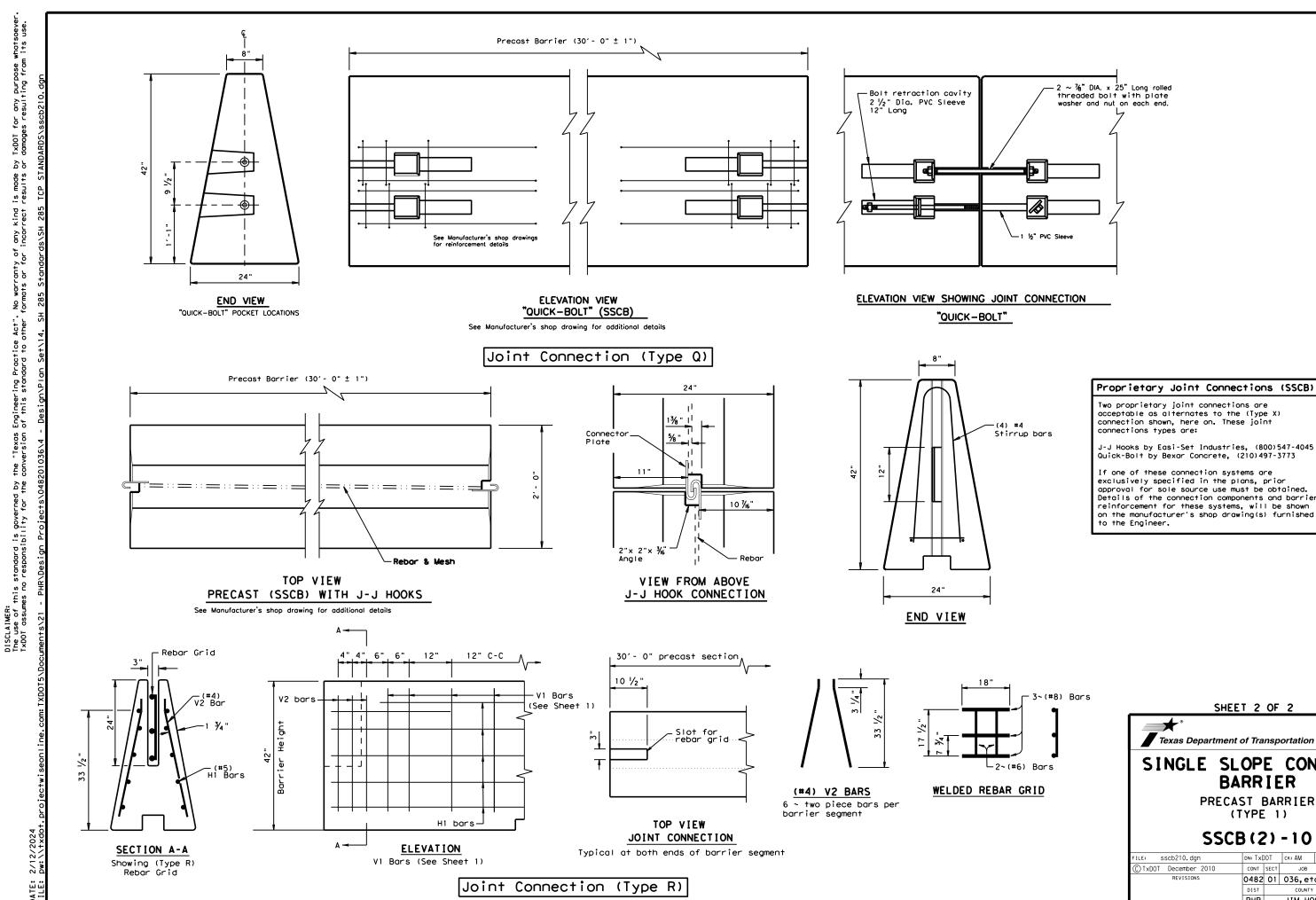
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(TYPE 1)

CONT SECT JOB 0482 01 036,etc. SH 285 JIM HOGG

(Optional) Conduit

Trough (See General



DN: TxDOT CK: AM DW: VP CTxDOT December 2010 JOB 0482 01 036,etc. SH 285 JIM HOGG

SHEET 2 OF 2

SINGLE SLOPE CONCRETE

BARRIER

PRECAST BARRIER

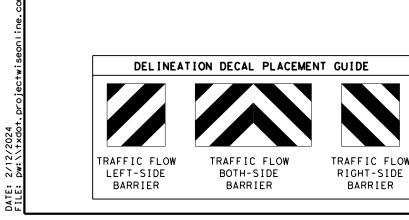
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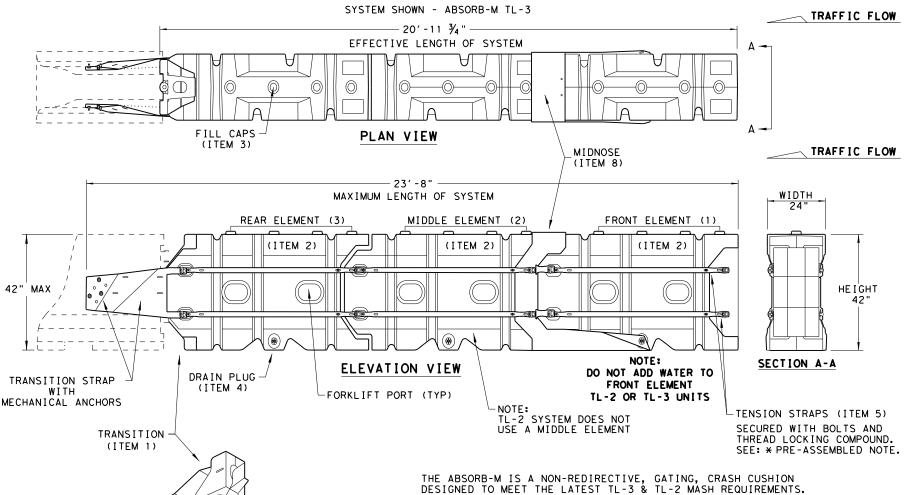
(TYPE 1)

Texas Department of Transportation

MECHANICAL

ANCHORS (ITEM 13)





PINS

(ITEM 12)

THE SYSTEM IS DESIGNED TO ACCOMMODATE A VARIETY OF F-SHAPE AND SINGLE SLOPE CONCRETE BARRIERS. CONTACT THE MANUFACTURER FOR GUIDANCE REGARDING OTHER ALLOWABLE SHAPES.

TEST LEVEL	NUMBER OF ELEMENTS	EFFECTIVE LENGTH	MAXIMUM LENGTH	
TL-2	2	14' - 7 3/4"	17'- 4"	
TL-3	3	20' - 11 ¾"	23' - 8"	

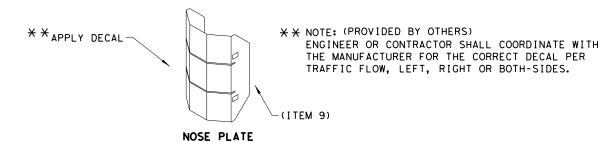
CROSS SLOPES OF UP TO 8% (OR 1:12 SLOPE) CAN BE ACCOMMODATED WITH STANDARD HARDWARE SHOWN WITHIN THE INSTRUCTIONS MANUAL. FOR SLOPES WITH EXCESS OF 8% (OR 1:12) CONTACT, LINDSAY TRANSPORTATION SOLUTIONS.

GENERAL NOTES

- 1. FOR SPECIFIC INFORMATION REGARDING THE INSTALLATION AND TECHNICAL GUIDANCE, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800. 180 RIVER ROAD, RIO VISTA, CA 94571
- 2. THE ABSORB-M SYSTEM IS ONLY APPROVED FOR USE IN (TEMPORARY WORK ZONE) LOCATIONS.
- 3. THE ABSORB-M IS A WATER FILLED NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO A FOUNDATION AND CAN BE INSTALLED ON TOP OF CONCRETE. ASPHALT, OR ANY SURFACE CAPABLE OF BEARING THE WEIGHT OF THE SYSTEM.
- 4. MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
- 5. THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- 6. THE ABSORB-M SHOULD BE LOCATED APPROXIMATELY PARALLEL WITH THE BARRIER.
- 7. THE USE OF THE ABSORB-M IS RESTRICTED TO A BARRIER HEIGHT OF UP TO 42 INCHES.
- 8. DO NOT ADD WATER TO FRONT ELEMENT (TL-2 OR TL-3 UNIT).

	BILI	OF MATERIALS	(BOM) ABSORB-M TL-3 & TL-2 SYSTEMS	QTY	QTY
	ITEM #	PART NUMBER	PART DESCRIPTION	TL-2 SYSTEM	TL-3 SYSTEM
	1	BSI-1809036-00	TRANSITION- (GALV)	1	1
гΙ	2	BSI-1808002-00	PRE-ASSEMBLED ABSORBING (ELEMENTS)	2	3
	3	BSI-4004598	FILL CAPS	8	12
	4	BSI-4004599	DRAIN PLUGS	2	3
	5	BSI-1809053-00	809053-00 TENSION STRAP-(GALV)		12
	6	BSI-2001998	C-SCR FH 3/8-16 X 1 1/2 GR5 PLT	8	12
-	7	BSI-2001999	C-SCR FH 3/8-16 X 1 GR5 PLT	8	12
	8	BSI-1809035-00	MIDNOSE - (GALV)	1	1
	9	BSI-1808014-00	NOSE PLATE	1	1
	10	BSI-1809037-00	TRANSITION STRAP (LEFT-HAND) - (GALV)	1	1
	11	BSI-1809038-00	TRANSITION STRAP (RIGHT-HAND) - (GALV)	1	1
	12	BSI-1808005-00	PIN ASSEMBLY	8	10
	13	BSI-2002001	ANC MECH 5/8-11X5 (GALV)	6	6
	1 4	ABSORB-M	INSTALLATION AND INSTRUCTIONS MANUAL	1	1

*COMPONENTS PRE-ASSEMBLED WITH ELEMENT ASSEMBLY



APPLY A HIGH REFLECTIVE DECAL TO THE NOSE PLATE. DELINEATION DECAL ORIENTATION IS SHOWN ON THE CONSTRUCTION PLAN SET AND SHALL BE IN ACCORDANCE WITH THE TEXAS MUTCD FOR (TRAFFIC CONTROL DEVICES). DECALS ARE AVAILABLE FOR TRAFFIC FLOW ON THE LEFT-SIDE, BOTH -SIDES AND RIGHT-SIDE.

THIS STANDARD IS A BASIC REPRESENTATION OF THE INSTALLATION INSTRUCTIONS MANUAL.

THE ABSORB-M, IT IS NOT INTENDED TO REPLACE

Texas Department of Transportation

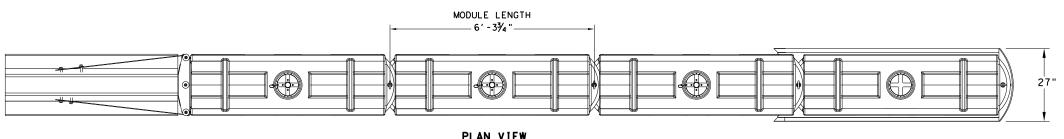
LINDSAY TRANSPORTATION SOLUTIONS CRASH CUSHION

(MASH TL-3 & TL-2) TEMPORARY - WORK ZONE

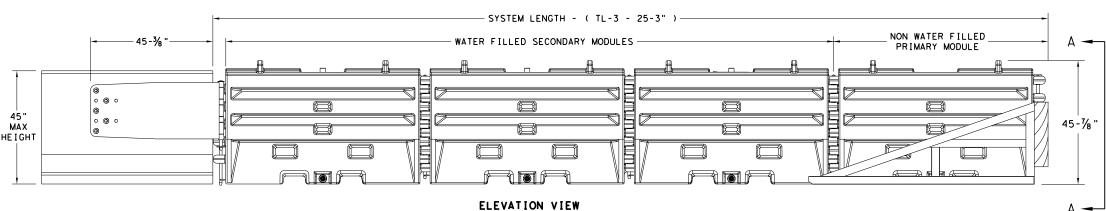
ABSORB (M) - 19

FILE: absorbm19 DN: TxDOT CK: KM DW: VP CK: C) TxDOT: JULY 2019 CONT SECT JOB HIGHWAY 0482 01 036,etc. SH 285 JIM HOGG

SACRIFICIAL



PLAN VIEW

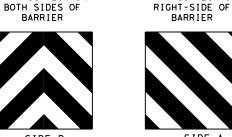




SECTION A-A

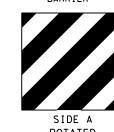


TRAFFIC FLOW ON





TRAFFIC FLOW ON

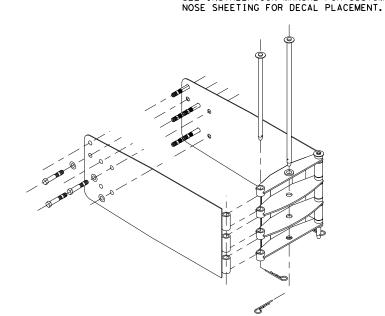


TRAFFIC FLOW ON

LEFT-SIDE OF

ROTATED 90 DEGREES

NOSE SHEETING PANEL DELINEATION SEE INSTALLATION MANUAL FOR CUSTOMIZED DELINEATION



TRANSITION OPTIONS
SLED TRANSITION TO CONCRETE TRAFFIC BARRIER (TEMPORARY OR PERMANENT)
SLED TRANSITION TO STEEL TRAFFIC BARRIER (CONTACT MFGR FOR PROPER TRANSITION)
SLED TRANSITION TO PLASTIC TRAFFIC BARRIER (CONTACT MFGR FOR PROPER TRANSITION)
SLED TRANSITION TO W-BEAM OR THRIE BEAM GUARD RAIL (CONTACT MFGR FOR PROPER TRANSITION
SLED TRANSITION TO CONCRETE BRIDGE ABUTMENT

TEST LEVEL

TL-3

NUMBER OF

SECONDARY MODULES

SYSTEM LENGTH

25' 3"

SLED TRANSITION COMPONENTS FOR ATTACHMENT TO CMB

SEE MANUFACTURER'S INSTALLATION MANUAL FOR FURTHER DETAILS.

THIS STANDARD IS A BASIC REPRESENTATION OF THE SLED, IT IS NOT INTENDED TO REPLACE THE INSTALLATION INSTRUCTIONS MANUAL.

GENERAL NOTES

- 1. REFER TO THE INSTALLATION MANUAL FOR SPECIFIC SYSTEM ASSEMBLY AND MODULE ORIENTATION. FOR ADDITIONAL INFORMATION, CONTACT TRAFFIX, INC. AT (949) 361-5663.
- 2. THE SLED SYSTEM IS A MASH APPROVED TEST LEVEL 3 (TL-3) CRASH CUSHION APPROVED FOR USE IN TEMPORARY WORK ZONES. THE SLED SYSTEM IS A NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO THE GROUND AND CAN BE INSTALLED ON CONCRETE, ASPHALT, GRAVEL OR COMPACTED SOIL.
- 3. MAXIMUM PERMISSIBLE CROSS SLOPE IS 8° (DEGREES) (14%).
- 4. THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- 5. THE SLED SYSTEM CAN BE ATTACHED TO:
 - CONCRETE BARRIER, TEMPORARY OR PERMANENT, 45" MAXIMUM HEIGHT
 - STEEL BARRIER
 - . PLASTIC BARRIER CONCRETE BRIDGE ABUTMENTS
 - W-BEAM GUARD RAIL
 - THRIE BEAM GUARD RAIL

BILL OF MATERIAL						
PART NUMBER	DESCRIPTION	QTY: TL-3				
45131	TRANSITION FRAME, GALVANIZED	1				
45150	TRANSITION PANEL, GALVANIZED	2				
45147-CP	TRANSITION SHORT DROP PIN W/ KEEPER PIN, GALVANIZED	2				
45148-CP	TRANSITION LONG DROP PIN W/ KEEPER PIN, GALVANIZED	1				
45050	ANCHOR BOLTS	9				
12060	WASHER, 3/4" ID X 2" OD	9				
45044-Y	SLED YELLOW WATER FILLED MODULE	3				
45044-YH	SLED YELLOW "NO FILL" MODULE	1				
45044-S	CIS (CONTAINMENT IMPACT SLED), GALVANIZED	1				
45043-CP	T-PIN W/ KEEPER PIN	4				
18009-B-I	FILL CAP W/ "DRIVE BY" FLOAT INDICATOR	3				
45033-RC-B	DRAIN PLUG	3				
45032-DPT	DRAIN PLUG REMOVAL TOOL	1				



SLED CRASH CUSHION TL-3 MASH COMPLIANT (TEMPORARY, WORK ZONE)

SLED-19

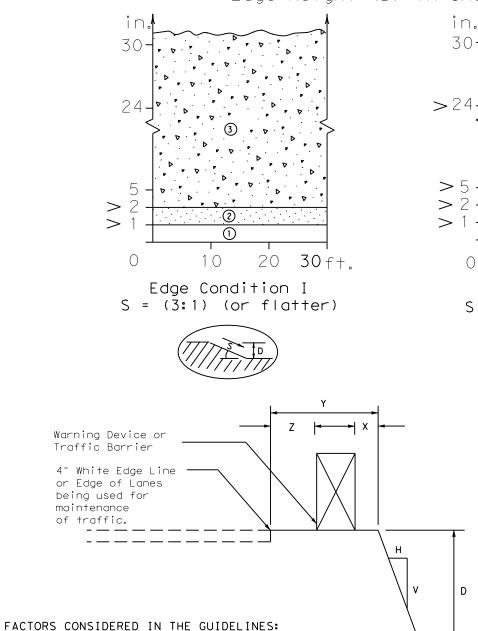
DN: TxDOT CK: KM DW: VP C) TxDOT: DECEMBER 2019 CONT SECT JOB 0482 01 036,etc. SH 285

SACRIFICIAL

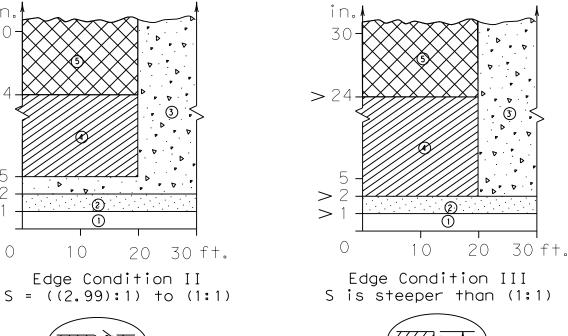
JIM HOGG

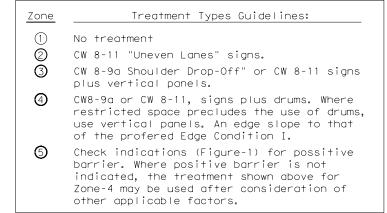
DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet



- 1. The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height is the depth of the drop-off "D".
- Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.
- 3. In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.
- 4. The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.
- 5. If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

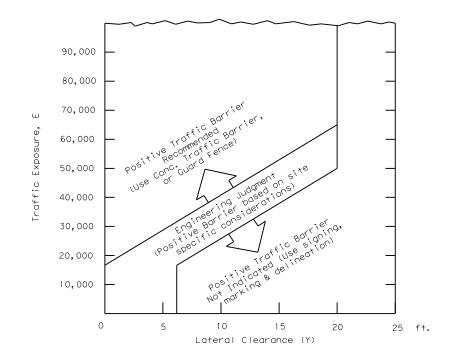




Edge Condition Notes:

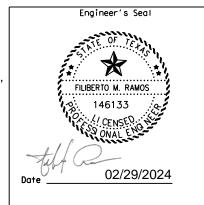
- 1. Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.
- 2. Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exceeds 24 inches, the possibility for rollover is greater in most vehicles.
- 3. Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularily those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.
- 4. Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

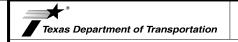
FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 ()



- E = ADT x T Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.
- 2. Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.
- An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's one-line manuals.





TREATMENT FOR VARIOUS EDGE CONDITIONS

Traffic Safety Division Standard

LE: edgecon.dgn	DN:		CK:	DW:		CK:
TxDOT August 2000	CONT	SECT	JOB		HIC	HWAY
REVISIONS 03-01	0482	01	036,et	c.	SH	285
08-01 9-21	DIST		COUNTY			SHEET NO.
3-21	PHR		JIM HC	GG		167

ROADWAY COVER SHEET

Pharr District Central Design



Texas Department of Transportation

SH 285 ROADWAY COVER SHEET

© 2024 CONT SECT JOB HIGHWAY

0482 01 036, etc. SH 285

DIST COUNTY SHEET NO.

PHR JIM HOGG 168

BEGIN PROJECT CSJ: 0482-01-036 STA. 100+00.00 N = 16,997,959.47E = 931,300.21 LAT. = 27°17′58.8397"N LONG. = 98°39′47.3938"W \triangle HEBBRNVILLE MNT SH285-1 100+00 SH 285 BASEL INE 170+00 EXISTING R.O.W. H-201 CURVE SH285-1 PI STATION = 98+19.44 PI SIATION = 98+19, 44

N = 16,997,981.14

E = 931,120.90

DELTA = 00° 30′ 00" (RT)

DEGREE OF CURVE = 00° 30′ 00"

RADIUS = 11,459.16′ H-203 H-205 = 11,459.16 = 433.33' = 216.69' = 433.31' = \$ 82°00'33" E LENGTH TANGENT LONG CHORD CHORD BEAR

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.

2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/N=16,997,912.987 E=927,621.055; TXRS/N=13,750,195.46 E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637 E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL. HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER TXDOT RTN (VRS)

3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH, 2021.

6. EXISTING RIGHT-OF-WAY LINES SHOWN HEREON ARE APPROXIMATE.

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

08-26-2021

TIE TO EXIS	STING NATIONAL GE	EODETIC SURVEY	(NGS) MONUMENTS						
POINT NO.	CALLED NORTHING (Y)	CALLED EASTING(X)	NAVD88 CALLED ELEVATION	NAVD88 FOUND ELEVATION	DESCRIPTION				
PID AJ0288	16,972,544.14	1,090,441.72	136.47′	135.53′	BRASS DISC STAMPED "Y 203 1934" IN TOP OF A CONCRETE MONUMENT AT THE NORTHWEST CORNER OF SH 285 AND FM 754				
PID AJ0394	16,981,059.33	1,020,628.14	315.01′	314.79' (RTK ELEV)	BRASS DISC IN TOP OF A CONCRETE MONUMENT (LEANING) ON THE WEST SIDE OF CR 107, 0.7 MILES SOUTH OF SH 285				
PID AJ0286	N/A	N/A	123.90′	122.77′	BRASS DISC STAMPED "V 203 1934" IN TOP CONCRETE STEP ON THE WEST ENTRANCE TO THE COUNTY COURT HOUSE IN FALFURRIAS, TX				

SURVEY CONTROL MONUMENTATION TABLE									
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION			
HEBBRNVILLE MNT	N/A	N/A	16,998,592.90	927,658.16	541.22'	FND. 9/16"STEEL DATUM RODWSLEEVE			
H-201	102+00.50	78.63′(RT)	16,997,857.24	931,489.80	532.07′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "201"			
H-202	111+47,09	72.09′(RT)	16,997,749.89	932,430.30	526.70′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "202"			
H-203	120+95.41	73.64′(RT)	16,997,634.29	933,371.55	520.94'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "203"			
H-204	130+39.97	75.06′(RT)	16,997,519.29	934,309.09	518.14'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "204"			
H-205	139+86.45	74.97′(RT)	16,997,405.55	935,248.70	507.82'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "205"			
H-206	149+32.96	74.10′(RT)	16,997,292.57	936,188.44	510.26′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "206"			

SURVEY CONTROL MONUMENT INVERSE TABLE							
FROM POINT	BEARING	DISTANCE	TO POINT				
HEBBRNVILLE MNT	S 79°07′54" E	3,901.62	H-201				
H-201	S 83°29′17" E	946.61′	H-202				
H-202	S 82°59′55" E	948.32′	H-203				
H-203	S 83°00′24" E	944.57′	H-204				
H-204	S 83°05′52" E	946.47′	H-204				
H-205	S 83°08′42" E	946.51′	H-206				
H-206	S 83°04′56" E	946.03'	H-207				



UNIT OF MEASURE: U.S. SURVEY FEET



LANDTECH

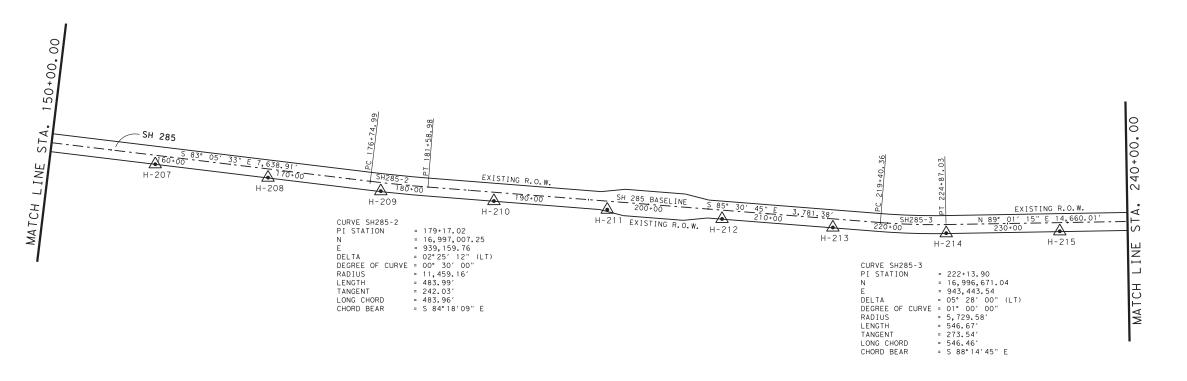
2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285

SURVEY CONTROL INDEX SHEET

				SH	HEET 1	OF 6
ED. RD. IV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г NO.	HIGHWAY NO.
6	TX					SH 285
STATE ST. NO. COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.	
PHARR JIM HOGG		OGG	0482	01	036	169

S:\2019\1920068\CADD\SURVEY CONTROL MAP\048201036*SCM*01.



1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.

2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE
MNT/N=16,997,912.987 E=927,621.055; TXRS/N=13,750,195.46
E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637
E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES
DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL.
HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER
TXDOT RTN (VRS)

3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH, 2021.

6. EXISTING RIGHT-OF-WAY LINES SHOWN HEREON ARE APPROXIMATE.

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

08-26-2021

	SURVEY CONTROL MONUMENTATION TABLE								
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION			
H-207	158+78.99	74,27'(RT)	16,997,178.63	937,127.59	505.00′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "207"			
H-208	168+25.27	72.03'(RT)	16,997,067.04	938,067.27	506.61′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "208"			
H-209	177+71.12	71.47′(RT)	16,996,954.18	939,006.96	506.12′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "209"			
H-210	187+15.05	73.15′(RT)	16,996,871.87	939,949.69	502.82'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "210"			
H-211	196+62.35	70.94′(RT)	16,996,799.96	940,894.26	497.87′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "211"			
H-212	206+22.08	73.11′(RT)	16,996,722.70	941,850.88	497.53′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "212"			
H-213	215+48.39	71.93′(RT)	16,996,651.40	942,774.44	494.59′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "213"			
H-214	224+88.03	71.87′(RT)	16,996,603.87	943,719.27	491.55′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "214"			
H-215	234+34.47	72.03′(RT)	16,996,619.88	944,665.58	488.18′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "215"			

SURVEY CONTROL MONUMENT INVERSE TABLE							
FROM POINT	BEARING	DISTANCE	TO POINT				
H-206	S 83°04′56" E	946.03'	H-207				
H-207	S 83°13′41" E	946.29′	H-208				
H-208	S 83°09′05" E	946.44′	H-209				
H-209	S 85°00′37" E	946.32'	H-210				
H-210	S 85° 38′ 47" E	947.30′	H-211				
H-211	S 85° 22′ 56" E	959.73′	H-212				
H-212	S 85° 35′09" E	926.31′	H-213				
H-213	S 87°07′12" E	946.03′	H-214				
H-214	N 89°01′51" E	946.45′	H-215				
H-215	N 88°54′58" E	946.32'	H-216				

0 400 80 SCALE: 1"= 800'

UNIT OF MEASURE: U.S. SURVEY FEET



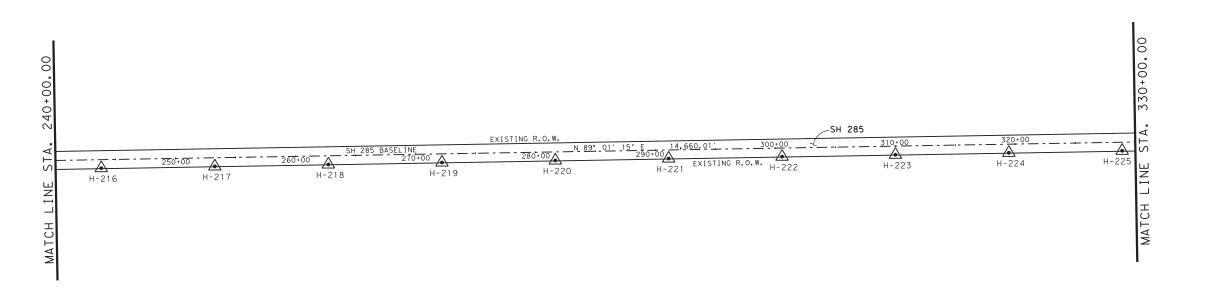
LANDTECH

2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285

SURVEY CONTROL INDEX SHEET

				SH	HEET 2	OF 6
ED. RD. IV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	T NO.	HIGHWAY NO.
6	TX					SH 285
STATE ST. NO. COUN		ГҮ	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR JIM HO		ogg	0482	01	036	170



1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.

2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE
MNT/N=16,997,912.987 E=927,621.055; TXRS/N=13,750,195.46
E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637
E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES
DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL.
HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER
TXDOT RTN (VRS)

3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH, 2021.

6. EXISTING RIGHT-OF-WAY LINES SHOWN HEREON ARE APPROXIMATE.

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

	SURVEY CONTROL MONUMENTATION TABLE									
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION				
H-216	243+80.80	70.30′(RT)	16,996,637.78	945,611.73	487,42'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "216"				
H-217	253+27.22	72.06′(RT)	16,996,652.19	946,558.05	484.51′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "217"				
H-218	262+73.73	71.89′(RT)	16,996,668.53	947,504.42	480.87'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "218"				
H-219	272+20.06	72.02′(RT)	16,996,684.58	948,450.61	477.99'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "219"				
H-220	281+65.08	71.04′(RT)	16,996,701.70	949,395.47	480.57'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "220"				
H-221	291+09.86	71.01′(RT)	16,996,717.88	950,340.12	488.09'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "221"				
H-222	300+54.98	71.57′(RT)	16,996,733.46	951,285.11	484.60′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "222"				
H-223	309+99.98	71.88′(RT)	16,996,749.30	952,229.97	474.85′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "223"				
H-224	319+45.25	71.72′(RT)	16,996,765.62	953,175.10	478.79′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "224"				
H-225	328+89.71	70.83′(RT)	16,996,782.64	954,119.41	474.43'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "225"				

SURVE	Y CONTROL MONUME	NT INVERSE	TABLE
FROM POINT	BEARING	DISTANCE	TO POINT
H-215	N 88°54′58" E	946.32'	H-216
H-216	N 89°07′39" E	946.42′	H-217
H-217	N 89°00′39" E	946.52′	H-218
H-218	N 89°01′42" E	946.32′	H-219
H-219	N 88° 57′ 43" E	945.02′	H-220
H-220	N 89°01′08" E	944.78′	H-221
H-221	N 89°03′19" E	945.13′	H-222
H-222	N 89°02′23" E	944.99′	H-223
H-223	N 89°00′39" E	945.27′	H-224
H-224	N 88°58′01" E	944.46′	H-225
H-225	N 89°04′45" E	945.43′	H-226

0 400 80 SCALE: 1"= 800'

UNIT OF MEASURE: U.S. SURVEY FEET



LANDTECH

2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285

SURVEY CONTROL INDEX SHEET

SHEET 3 0										
ED. RD. IV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г но.	HIGHWAY NO.				
6	TX					SH 285				
STATE ST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.				
PHARR	JIM HOGG		0482	01	036	171				

S: \2019\1920068\CADD\SURVEY CONTROL MAP\048201036*SCM*03.dgn

CENTRING D.O. N. SH 285

H-230

H-226

H-227

EXISTING D.O. N. H-224

H-230

H-231

H-230

H-231

H-230

H-231

H-230

H-231

H-230

H-231

H-233

H-233

H-233

H-233

H-234

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H-235

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H-238

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H-235

H-236

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H-237

H-238

H-236

H-237

H-237

H-237

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.

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MNT/N=16,997,912.987 E=927,621.055; TXRS/N=13,750,195.46
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HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER
TXDOT RTN (VRS)

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THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

	SURVEY CONTROL MONUMENTATION TABLE										
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION					
H-226	338+35.14	71.79′(RT)	16,996,797.84	955,064.72	471.88′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "226"					
H-227	347+80.01	72,64'(RT)	16,996,813.13	956,009.47	467.83′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "227"					
H-228	357+25.05	72,50'(RT)	16,996,829.42	956,954.36	458.54′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "228"					
H-229	366+70.00	71.97′(RT)	16,996,846.10	957,899.17	457.79′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "229"					
H-230	376+26.25	71.89′(LT)	16,996,980.98	958,859.89	462.25′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "230"					
H-231	385+81.85	72.69′(LT)	16,996,797.15	959,811.20	456.68′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "231"					
H-232	395+20.83	71.84′(LT)	16,996,427.04	960,688.44	454.34′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "232"					
H-233	404+68.54	72.17'(LT)	16,995,921.79	961,496.01	454.21′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "233"					
H-234	414+21.20	71.89′(LT)	16,995,406.13	962,297.05	447.96′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "234"					

SURVE	Y CONTROL MONUME	NT INVERSE	TABLE
FROM POINT	BEARING	DISTANCE	TO POINT
H-225	N 89°04′45" E	945.43′	H-226
H-226	N 89°04′22" E	944.87′	H-227
H-227	N 89°00′43" E	945.04	H-228
H-228	N 88°59′20" E	944.96′	H-229
H-229	N 82°00′30" E	970.14′	H-230
H-230	S 79°03′48" E	968.91′	H-231
H-231	S 67°07′29" E	952.12′	H-232
H-232	S 57°58′07" E	952.60′	H-233
H-233	S 57°13′44" E	952.66′	H-234
H-234	S 57°15′15" E	952.91′	H-235

0 400 800

UNIT OF MEASURE: U.S. SURVEY FEET



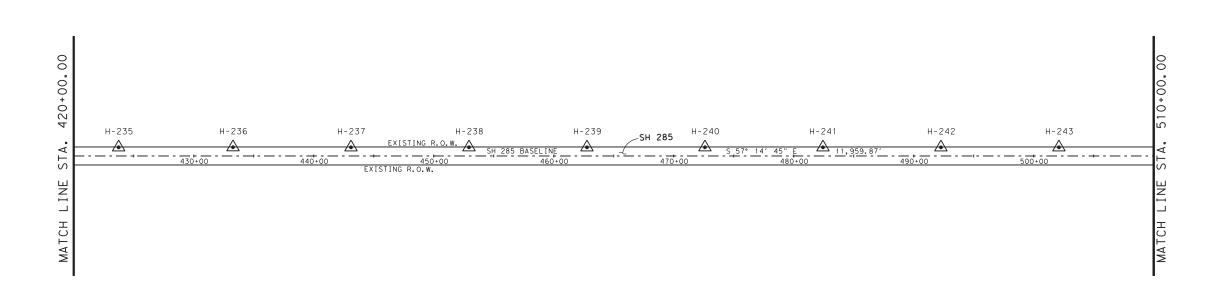
LANDTECH

2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285

SURVEY CONTROL INDEX SHEET

				SI	HEE 4	OF 6
ED. RD.	STATE	FEDI	HIGHWAY NO.			
6	TX					SH 285
STATE IST. NO.	COUN	COUNTY		SECTION NO.	JOB NO.	SHEET NO.
PHARR	JIM H	ogg	0482	01	036	172



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HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER
TXDOT RTN (VRS)

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4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

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THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

08-26-2021

SURVEY CONTROL MONUMENT INVERSE TABLE										
FROM POINT	BEARING	DISTANCE	TO POINT							
H-234	S 57° 15′ 15" E	952.91'	H-235							
H-235	S 57° 18′ 34" E	953.15′	H-236							
H-236	S 57°11′03" E	983.26′	H-237							
H-237	S 57°16′10" E	983.39′	H-238							
H-238	S 57° 13′ 19" E	983.14′	H-239							
H-239	S 57°16′05" E	983.22'	H-240							
H-240	S 57° 13′ 14" E	983.63′	H-241							
H-241	S 57°14′50" E	982.98′	H-243							
H-243	S 57°01′27" E	986.60′	H-244							

	SURVEY CONTROL MONUMENTATION TABLE										
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION					
H-235	423+74.11	72.03′(LT)	16,994,890.69	963,098.52	451.97'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "235"					
H-236	433+27.27	73.09′(LT)	16,994,375.88	963,900.70	442.93'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "236"					
H-237	443+10.53	72.03′(LT)	16,993,843.01	964,727.05	440.17'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "237"					
H-238	452+93.93	72.44′(LT)	16,993,311.30	965,554.30	439.83'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "238"					
H-239	462+77.06	72.03′(LT)	16,992,779.05	966,380.90	445.11'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "239"					
H-240	472+60.29	72.41′(LT)	16,992,247.41	967, 207. 99	441.56′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "240"					
H-241	482+43.92	71.98′(LT)	16,991,714.86	968,034.99	440.07'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "241"					
H-242	492+26.90	72.01′(LT)	16,991,183.06	968,861.69	430.72'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "242"					
H-243	502+10.23	72.12′(LT)	16,990,651.14	969,688.74	427.88′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "243"					



UNIT OF MEASURE: U.S. SURVEY FEET



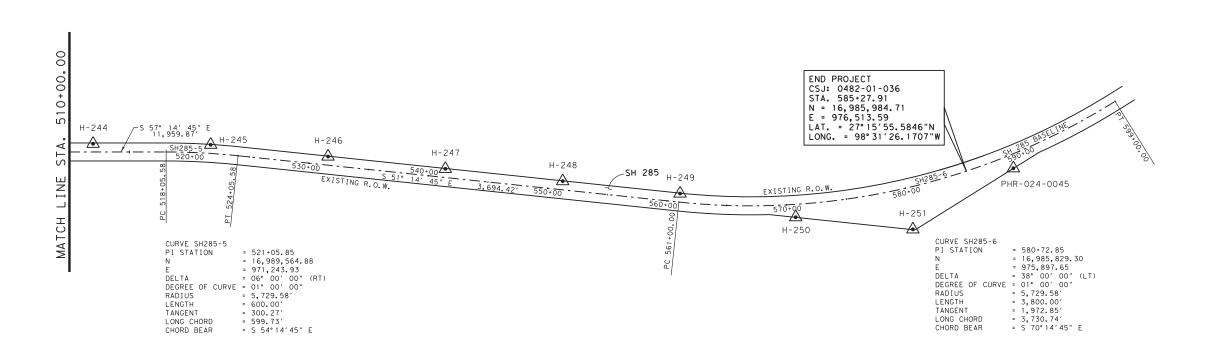
LANDTECH

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SH 285

SURVEY CONTROL INDEX SHEET

SHEET 5									
ED. RD. IV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г NO.	HIGHWAY NO.			
6	TX					SH 285			
STATE ST. NO.	COUN.	COUNTY		SECTION NO.	JOB NO.	SHEET NO.			
PHARR	JIM H	OGG	0482	01	036	173			



SURVE	SURVEY CONTROL MONUMENT INVERSE TABLE										
FROM POINT	BEARING	DISTANCE	TO POINT								
H-243	S 57°01′27" E	986.60′	H-244								
H-244	S 56° 46′11" E	979.75′	H-245								
H-245	S 51°31′22" E	983.29′	H-246								
H-246	S 51°14′42" E	983.08′	H-247								
H-247	S 51°15′28" E	983.26′	H-248								
H-248	S 51°13′39" E	983.52′	H-249								
H-249	S 45° 40′ 49" E	983.59′	H-250								
H-250	S 51°19′52" E	981.75′	H-251								
H-251	S 88°31′51" E	979.91′	PHR-024-0045								

	SURVEY CONTROL MONUMENTATION TABLE										
POINT	STATION	OFFSET	NORTHING (Y)	EASTING(X)	ELEVATION	DESCRIPTION					
H-244	511+96.82	68.31′(LT)	16,990,114.14	970,516.40	426.27'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "244"					
H-245	521+72.18	72.04'(LT)	16,989,577.24	971,335,93	430.51′	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "245"					
H-246	531+52.59	71.98′(LT)	16,988,965.43	972,105.71	428.30'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "246"					
H-247	541+35.67	71.97′(LT)	16,988,350.03	972,872,34	433.34'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "247"					
H-248	551+18.93	72.18′(LT)	16,987,734.69	973,639,25	431.33'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "248"					
H-249	561+02.48	71.87′(LT)	16,987,118.78	974,406.04	428.80'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "249"					
H-250	570+68.07	106,63'(RT)	16,986,431.58	975,109.76	424.20'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "250"					
H-251	579+84.58	347.87'(RT)	16,985,818.17	975,876.28	423.91'	SET TXDOT ALUMINUM CAP IN CONCRETE STAMPED "251"					
PHR-024-0045	589+00,20	112.36'(RT)	16.985.793.04	976.855.87	424.66	FND. 9/16" STEEL DATUM RODWSLEEVE					

O 400 80 SCALE: 1"= 800'

UNIT OF MEASURE: U.S. SURVEY FEET

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THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.

08-26-2021



LANDTECH

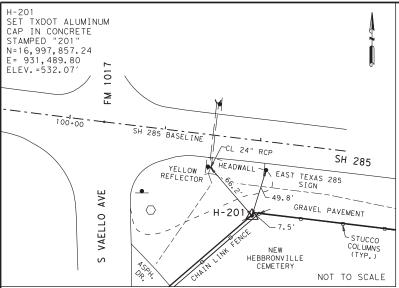
2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285

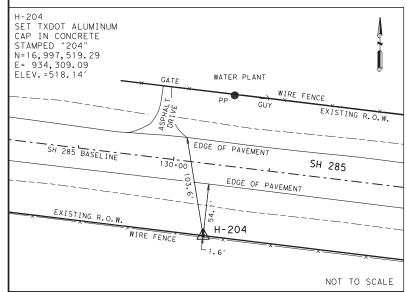
SURVEY CONTROL INDEX SHEET

SHEET 6 OF										
ED. RD. IV. NO.	STATE	FEDE	HIGHWAY NO.							
6	TX									
STATE ST. NO.	TATE T. NO. COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.				
PHARR	JIM H	ogg	0482	01	036	174				

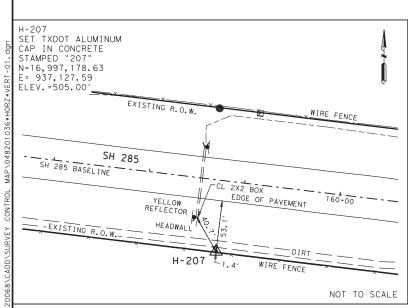
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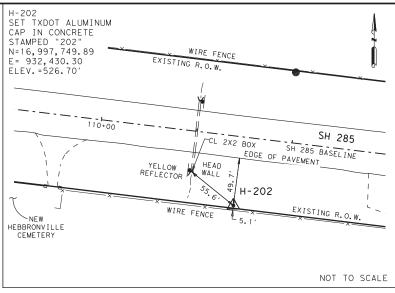
H-201: LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE AND THE NORTHWEST CORNER OF NEW HEBBRONVILLE CEMETERY.



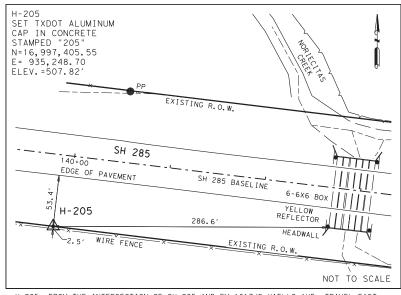
H-204: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE TRAVEL EAST ALONG SH 285 0.57 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, ACROSS FROM AND 60 FEET EAST OF THE ENTRANCE TO A WATER TREATMENT PLANT.



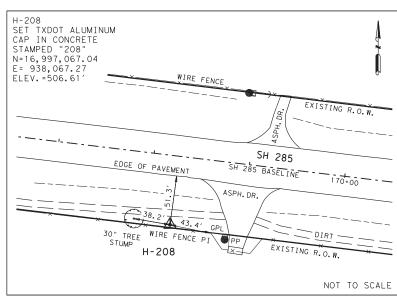
H-207: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 1.1 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1,600 FEET EAST OF NORIECITAS CREEK.



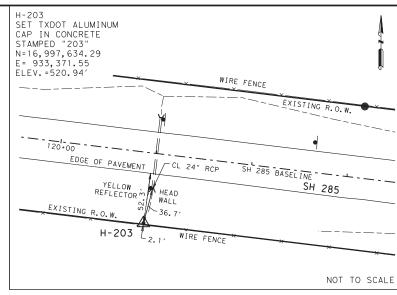
H-202: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE TRAVEL EAST ALONG SH 285 1,100 FEET, LOCATED ON THE SOUTH SIDE OF SH 285 180 FEET EAST OF NEW HEBBRONVILLE CEMETERY.



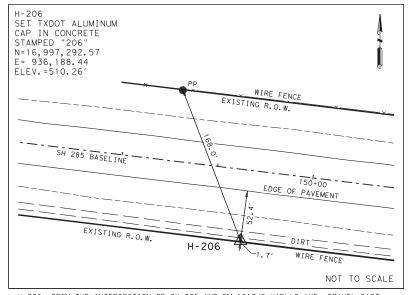
H-205: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 0.75 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 300 FEET WEST OF NORIECITAS CREEK.



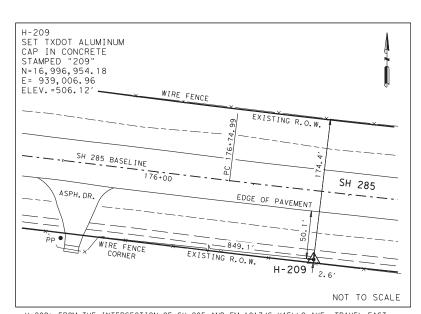
H-208: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 1.3 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2,500 FEET EAST OF NORIECITAS CREEK AND 70 FEET WEST OF A DRIVEWAY.



H-203: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE TRAVEL EAST ALONG SH 285 2,050 FEET, LOCATED ON THE SOUTH SIDE OF SH 285, ACROSS FROM AND 890 FEET WEST OF THE ENTRANCE TO A WATER TREATMENT PLANT.



H-206: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 0.90 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 650 FEET EAST OF NORIECITAS CREEK.



H-209: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 1.5 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2,300 FEET WEST OF MESQUITE CREEK.

- 1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.
- 2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNI/N=16,997,912,987 E=927,621.055; TXR5/N=13,750,195.46 E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637 E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL. HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER TXDOT RTN (VRS)
- 3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- 4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING
- 5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND
- 6. UNIT OF MEASURE: U.S. SURVEY FEET



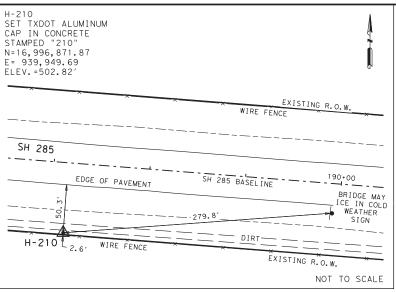
THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



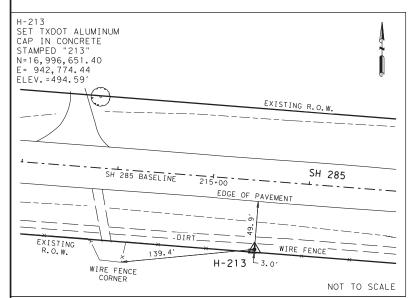
LANDTECH

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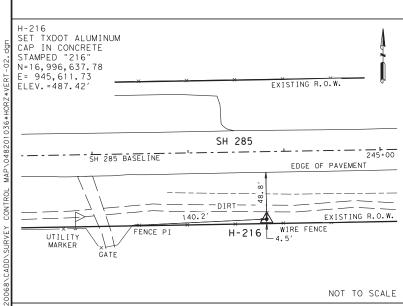
				31	1001	OF 0
FED. RD. DIV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г но.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUN.	ΤΥ	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
DUADD	IIM HOGG		0482	01	036	175



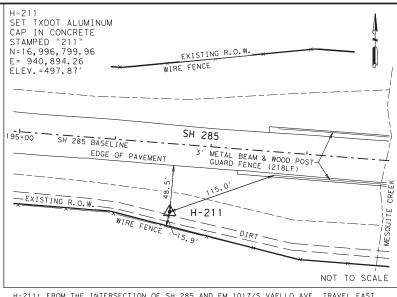
H-210: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 1.65 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1,350 FEET WEST OF MESQUITE CREEK.



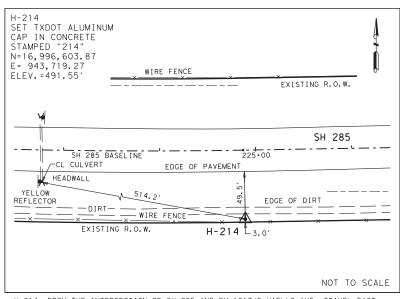
H-213: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.2 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1,500 FEET EAST OF MESQUITE CREEK.



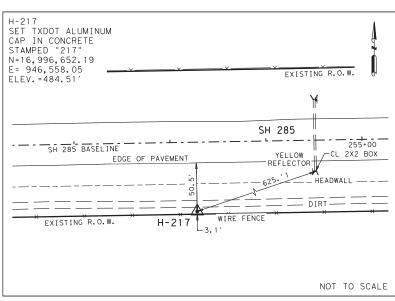
H-216: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.7 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 0.8 MILES EAST OF MESQUITE CREEK AND 170 FEET EAST OF A DRIVEWAY.



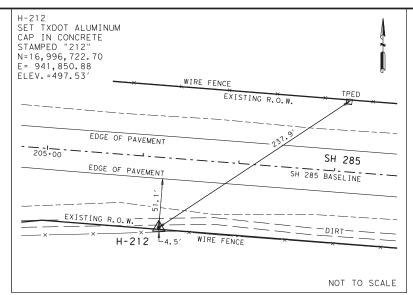
H-211: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 1.8 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 400 FEET WEST OF MESQUITE CREEK.



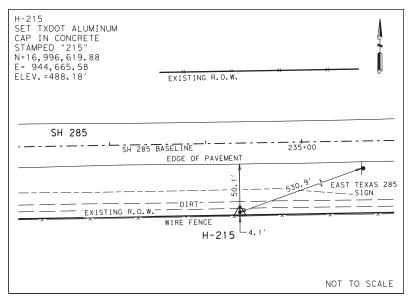
H-214: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.4 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2,400 FEET EAST OF MESQUITE CREEK.



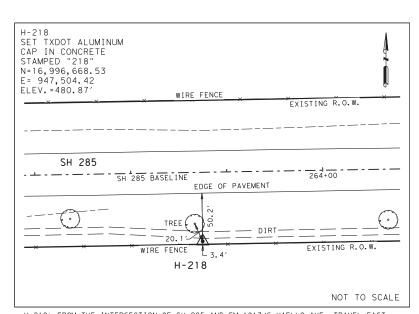
H-217: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.9 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.0 MILES EAST OF MESQUITE CREEK.



H-212: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.0 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 560 FEET EAST OF MESQUITE CREEK.



H-215: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 2.5 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 0.6 MILES EAST OF MESQUITE CREEK.



H-218: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 3.1 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.2 MILES EAST OF MESQUITE CREEK.

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.

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3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH, 2021.

6. UNIT OF MEASURE: U.S. SURVEY FEET

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



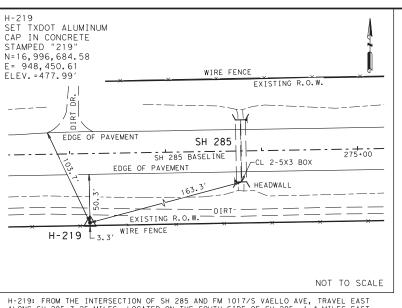
THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



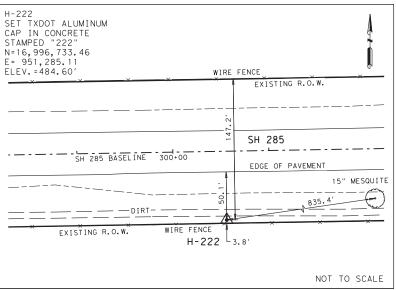
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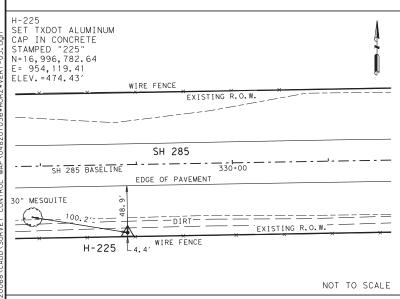
		SHEET 2 OF 6				UF 6
FED. RD. DIV. NO.	STATE	FEDI	ERAL AID	PROJEC ⁻	г но.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR	IIM HOGG		0482	01	036	176



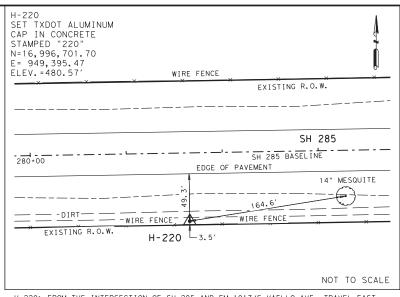
H-219: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 3.25 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.4 MILES EAST OF MESQUITE CREEK AND ACROSS FROM A DRIVEWAY.



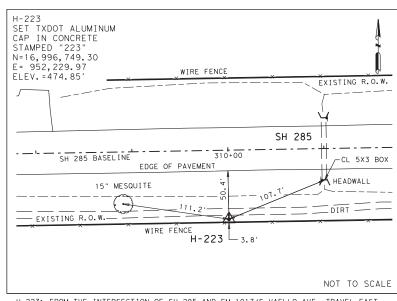
H-222: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 3.8 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.9 MILES EAST OF MESQUITE CREEK.



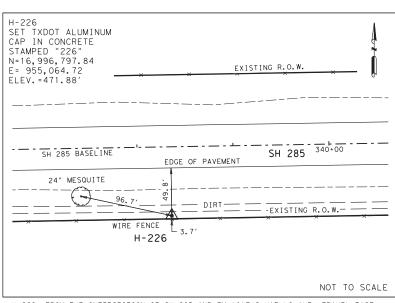
H-225: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.35 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2.4 MILES EAST OF MESQUITE CREEK AND 300 FEET EAST OF A DRIVEWAY.



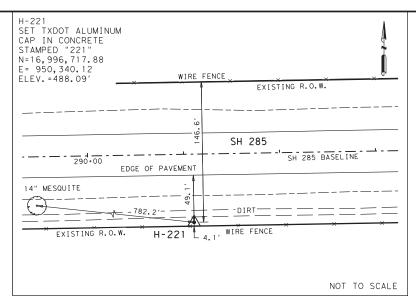
H-220: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 3.45 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.5 MILES EAST OF MESQUITE CREEK.



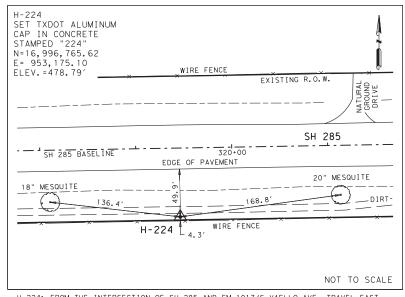
H-223: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.0 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2.1 MILES EAST OF MESQUITE CREEK.



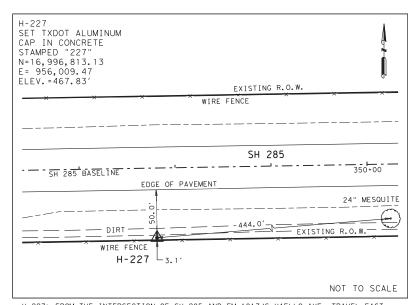
H-226: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.5 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2.6 MILES EAST OF MESQUITE CREEK.



H-221: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 3.6 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 1.7 MILES EAST OF MESQUITE CREEK.



H-224: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.2 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2.25 MILES EAST OF MESQUITE CREEK AND 625 FEET WEST OF A DRIVEWAY.



H-227: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.7 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 2.8 MILES EAST OF MESQUITE CREEK.

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3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING

5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH, 2021.

6. UNIT OF MEASURE: U.S. SURVEY FEET

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION. SURVEY DATE: MARCH, 2021



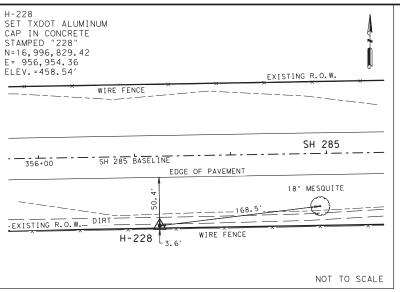
THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



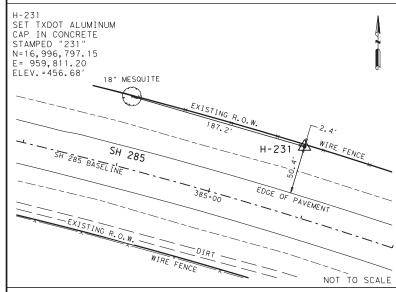
LANDTECH

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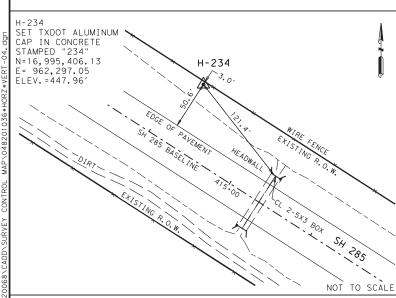
				SI	HEET 3	5 OF 6
FED. RD. DIV. NO.	STATE	FEDI	ERAL AID	PROJEC ⁻	г NO.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR	JIM HOGG		0482	01	036	177



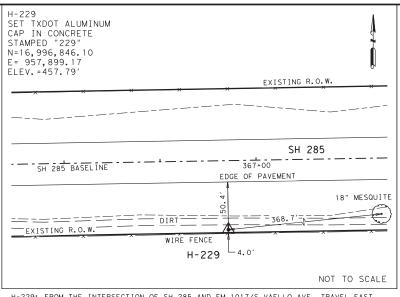
H-228: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 4.9 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 3.0 MILES EAST OF MESQUITE CREEK.



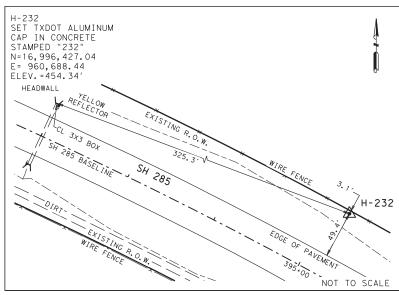
H-231: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.4 MILES, LOCATED ON THE NORTH SIDE OF SH 285, 3.5 MILES EAST OF MESQUITE CREEK AND 3.8 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



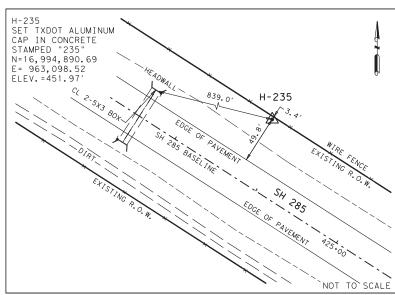
H-234: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.95 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 3.2 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



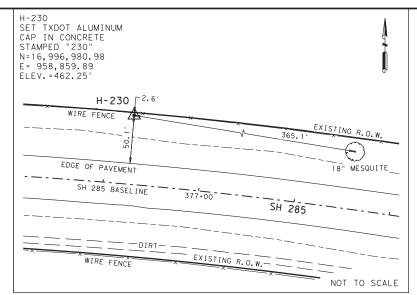
H-229: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.05 MILES, LOCATED ON THE SOUTH SIDE OF SH 285, 3.15 MILES EAST OF MESQUITE CREEK.



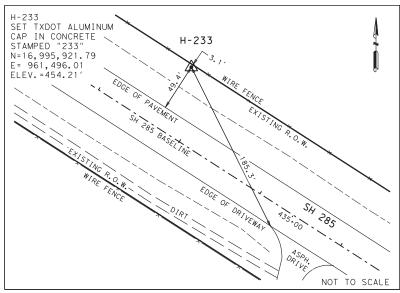
H-232: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.6 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 3.7 MILES EAST OF MESQUITE CREEK AND 3.6 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



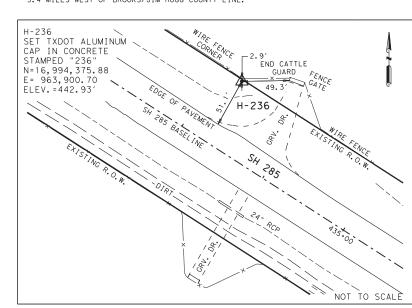
H-235: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 6.1 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 3.05 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-230: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.2 MILES, LOCATED ON THE NORTH SIDE OF SH 285, 3.3 MILES EAST OF MESQUITE CREEK.



H-233: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 5.8 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 3.9 MILES EAST OF MESQUITE CREEK, ACROSS FROM AND 200 FEET WEST OF A DRIVEWAY AND 3.4 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-236: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 6.3 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 55 FEET WEST OF A DRIVEWAY AND 2.9 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.

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- 5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND
- 6. UNIT OF MEASURE: U.S. SURVEY FEET



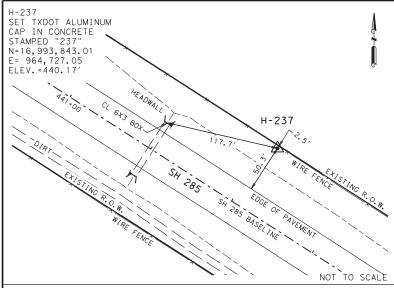
THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



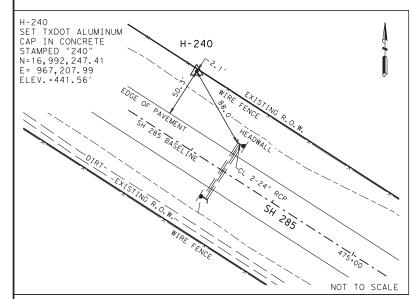
LANDTECH

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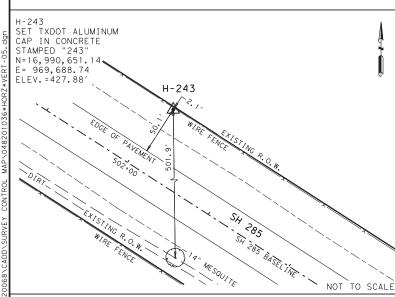
				SI	HEET 4	1 OF 6
FED. RD. DIV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г но.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR	JIM HOGG		0482	01	036	178



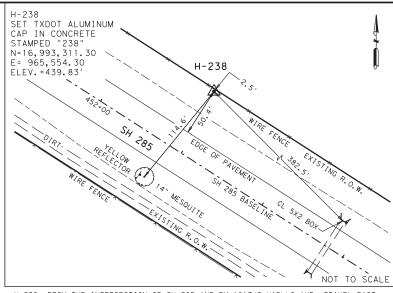
H-237: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 6.5 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 2.7 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



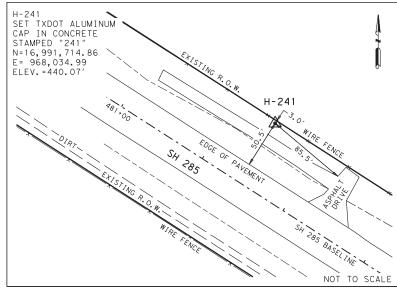
H-240: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 7.1 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, ACROSS FROM AND 500 FEET EAST OF A DRIVEWAY AND 2.1 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



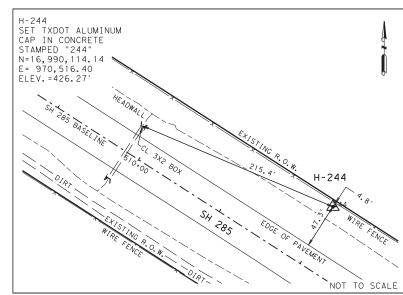
H-243: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 7.6 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.6 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



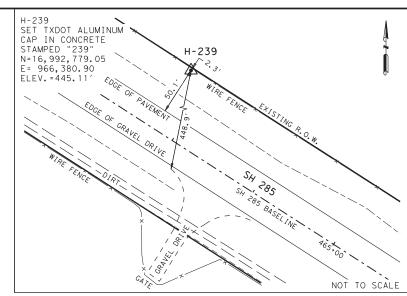
H-238: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 6.7 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 2.5 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



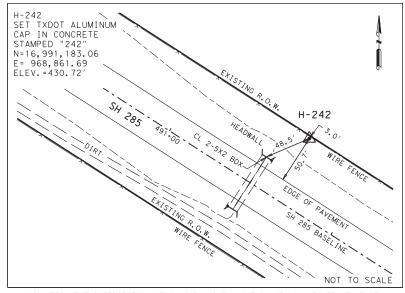
H-241: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 7.2 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.95 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



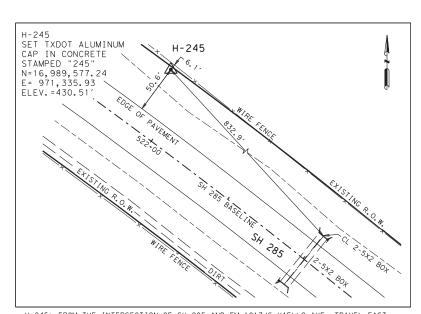
H-244: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 7.8 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.4 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-239: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 6.9 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, ACROSS FROM AND 500 FEET WEST OF A DRIVEWAY AND 2.3 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-242: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 7.4 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.8 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-245: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.0 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.2 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.

- 1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.
- 2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/N=16,997,912,987 E=927,621.055; TXRS/N=13,750,195.46 E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637 E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL. HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER TXDOT RTN (VRS)
- 3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- 4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING
- 5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND
- 6. UNIT OF MEASURE: U.S. SURVEY FEET



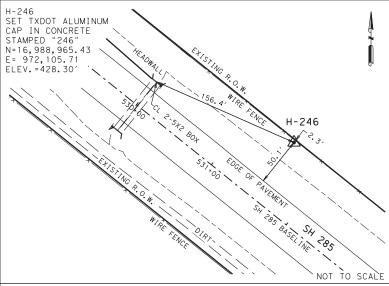
THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



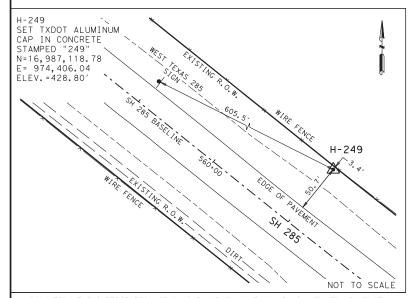
LANDTECH

2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

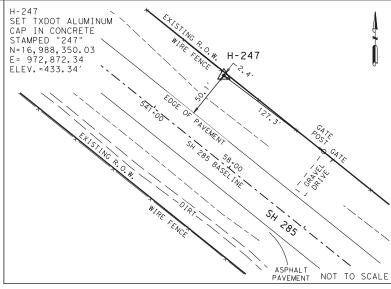
				SH	HEET 5	OF 6
FED. RD. DIV. NO.	STATE	FEDI	ERAL AID	PROJEC ⁻	г NO.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR	JIM HOGG		0482	01	036	179



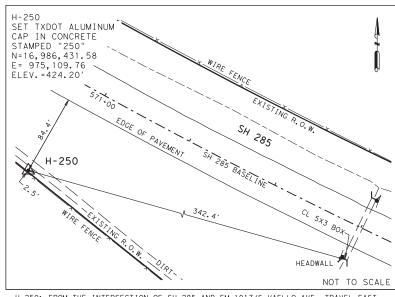
H-246: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.2 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 1.0 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



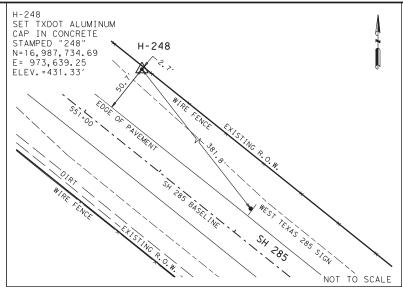
H-249: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.7 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 2,425 FEET WEST OF BROOKS/JIM HOGG COUNTY LINE.



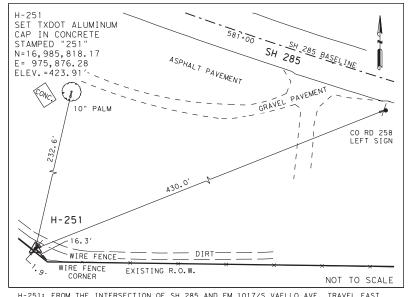
H-274: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.35 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, ACROSS FROM AND 200 FEET WEST OF A DRIVEWAY AND 0.80 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-250: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.9 MILES, LOCATED ON THE SOUTHWEST SIDE OF SH 285, 1,450 FEET WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-248: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 8.55 MILES, LOCATED ON THE NORTHEAST SIDE OF SH 285, 0.65 MILES WEST OF BROOKS/JIM HOGG COUNTY LINE.



H-251: FROM THE INTERSECTION OF SH 285 AND FM 1017/S VAELLO AVE, TRAVEL EAST ALONG SH 285 9.1 MILES, LOCATED ON THE SOUTHWEST SIDE OF SH 285, 600 FEET WEST OF BROOKS/JIM HOGG COUNTY LINE AND ACROSS FROM AND 850 FEET WEST OF CO RD 258.

- 1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH ZONE, (4205), NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.00004.
- 2. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/N=16,997,912,987 E=927,621.055; TXRS/N=13,750,195.46 E=2,984,381.03; AND PHR-024-0045/N=16,985,113.637 E=976,816.795 PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR HORIZONTAL CONTROL. HORIZONTAL SURVEY METHOD: BASE STATION (RTK) AND ROVER TXDOT RTN (VRS)
- 3. ALL ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- 4. TXDOT PRIMARY CONTROL POINTS HEBBRONVILLE MNT/541.219'; PHR-024-0045/424.660' PREPARED BY COBB, FENDLEY & ASSOCIATES DATED NOVEMBER 4, 2015, WERE HELD FOR VERTICAL CONTROL. VERTICAL SURVEY METHOD: DIGITAL LEVELING
- 5. FIELD SURVEYS WERE PERFORMED BETWEEN JUNE, 2019 AND MARCH 2021
- 6. UNIT OF MEASURE: U.S. SURVEY FEET



THIS SURVEY INFORMATION HAS BEEN ACCEPTED INTO THIS PS&E.



LANDTECH

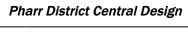
2525 North Loop West, Suite 300, Houston, Texas 77008 T: 713-861-7068 F: 713-861-4131 TBPELS Registration No. 10019100

SH 285 HORIZONTAL & VERTICAL CONTROL

		SHEET 6 OF 6				
FED. RD. DIV. NO.	STATE	FEDE	ERAL AID	PROJEC ⁻	г но.	HIGHWAY NO.
6	TX					SH 285
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
PHARR	JIM HOGG		0482	01	036	180

320068\CADD\SURVEY CONTROL MAP\048201036*HORZ*VERT-06.dgn

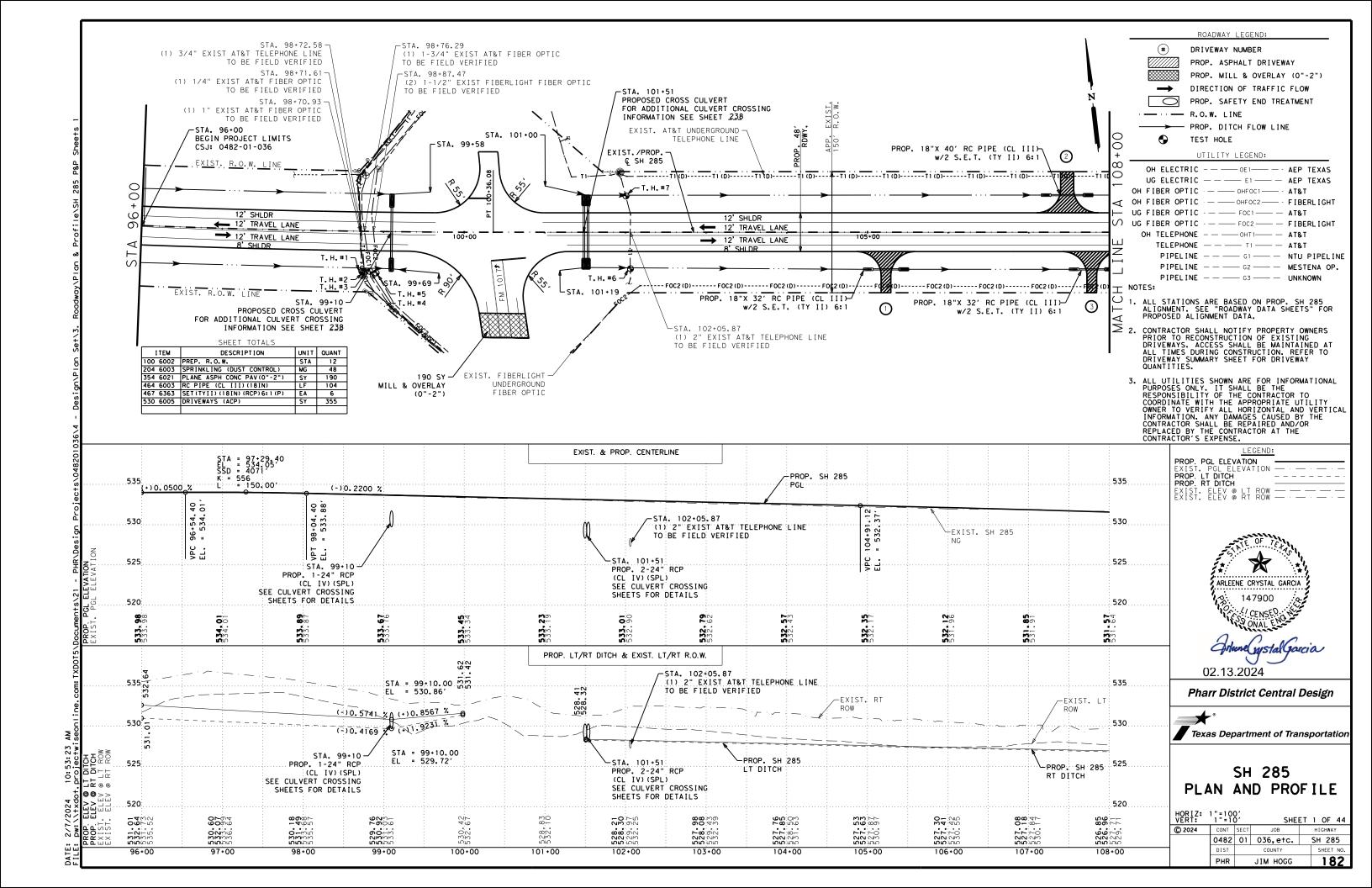
pint 4	N 16,998,0	15.7436	E 930,904.2091	Sta	96+00.00	Curve Data **
ourse from 4 to P(C PROP_SH285_3 S	Curve	5′ 32.73" E Dist 2.	7450		Curve PROP_SH285_14 P.I. Station
rve PROP_SH285_3 I. Station elta = gree = angent =	98+19.44 2° 10′ 00.00" 0° 30′ 00.00" 216.6925 433.3333	N	16,997,981.1352 E		931,120.9003	Tangent = 1,389.7127 Length = 2,698.6700 Radius = 4,583.6600 External = 206.0415 Long Chord = 2,659.8611 Mid. Ord. = 197.1781
dius = ternal = ng Chord = d. Ord. = C. Station	11, 459. 1558 2. 0486 433. 3075 2. 0483 96+02. 75	N	16,998,015.3107 E		930, 906. 9198	P.C. Station 371+47.04 N 16,996,926.2087 E 958,374.9146 P.T. Station 398+45.71 N 16,996,198.0672 E 960,933.1700 C.C. N 16,992,343.2179 E 958,453.2355 Ahead = S 57° 14′ 44.40" E Chord Bear = S 74° 06′ 44.51" E
	100+36.08 0° 55′ 32.73" E 3° 05′ 32.72" E	N	16,997,955.0740 E 17,009,331.0530 E		931, 336. 0199 932, 714. 1909	Course from PT PROP_SH285_14 to PC PROP_SH285_17 S 57° 14′ 44.62" E Dist 11,959
ord Bear = S 82						Curve Data **
int 5 ourse from 5 to P(N 16,997,95		E 931,336.0199 5′32.73" E Dist 7,		100+36.08	Curve PROP_SH285_17 P.I. Station 521+05.85 N 16,989,564.8752 E 971,243.9325 Delta = 5° 59′ 59.99" (RT) Degree = 1° 00′ 00.00"
			e Data			Tangent = 300.2745 Length = 600.0000
rve PROP_SH285_8 I. Station Ita	179+17.02 2° 25′ 11.82″ 0° 30′ 00.00″ 242.0310 483.9900 11,459.1600 2.5557	N	16,997,007.2481 E		939, 159. 7570	Radius = 5,729.5800 External = 7.8630 Long Chord = 599.7259 Mid. Ord. = 7.8522 P.C. Station 518+05.58 N 16,989,727.3348 E 970,991.4021 P.T. Station 524+05.58 N 16,989,376.9089 E 971,478.0978 C.C. N 16,984,908.7657 E 967,891.4861 Back = S 57° 14′ 44.62" E Ahead = S 51° 14′ 44.62" E
ad = S 85	483.9540 2.5551 176+74.99 181+58.98 3° 05′ 32.73" E 5° 30′ 44.54" E		16,997,036.3567 E 16,996,988.3107 E 17,008,412.3398 E		938, 919. 4828 939, 401. 0459 940, 297. 6543	Chord Bear = S 54° 14′ 44.62" E Course from PT PROP_SH285_17 to PC PROP_SH285_20 S 51° 14′ 44.62" E Dist 3,694. Curve Data ** Curve PROP_SH285_20
ord Bear = S 84						P.I. Station 580+72.85 N 16,985,829.3010 E 975,897.6503 Delta = 37° 59′ 59.95" (LT)
		Curve	H285_11 S 85° 30′ 4 e Data *	4.62" E	Dist 3,781.3850	Degree = 1° 00′ 00.00" Tangent = 1,972.8518 Length = 3,800.0000 Radius = 5,729.5800
rve PROP_SH285_1′ i. Station ta	222+13.91 5° 28′ 00.11" 1° 00′ 00.00" 273.5425 546.6700 5,729.5800 6.5260 546.4627		16,996,671.0391 E		943, 443. 5423	External = 330.1421 Long Chord = 3,730.7363 Mid. Ord. = 312.1555 P.C. Station 561+00.00 N 16,987,064.2700 E 974,359.1459 P.T. Station 599+00.00 N 16,985,803.3295 E 977,870.3312 C.C. N 16,991,532.4130 E 977,945.7578 Back = S 51° 14′ 44.62″ E Ahead = S 89° 14′ 44.57″ E Chord Bear = S 70° 14′ 44.59″ E
. Ord. = . Station	6.5186 219+40.36 224+87.03		16,996,692.4420 E 16,996,675.7133 E		943,170.8383 943,717.0449	Course from PT PROP_SH285_20 to 6 S 89° 14′ 44.66" E Dist 2,100.0001
. Station : :k = S 85	224+87.03 5° 30′ 44.62″ E	N	17,002,404.4568 E		943,717.0449	Point 6 N 16,985,775.6852 E 979,970.1494 Sta 620+00.00

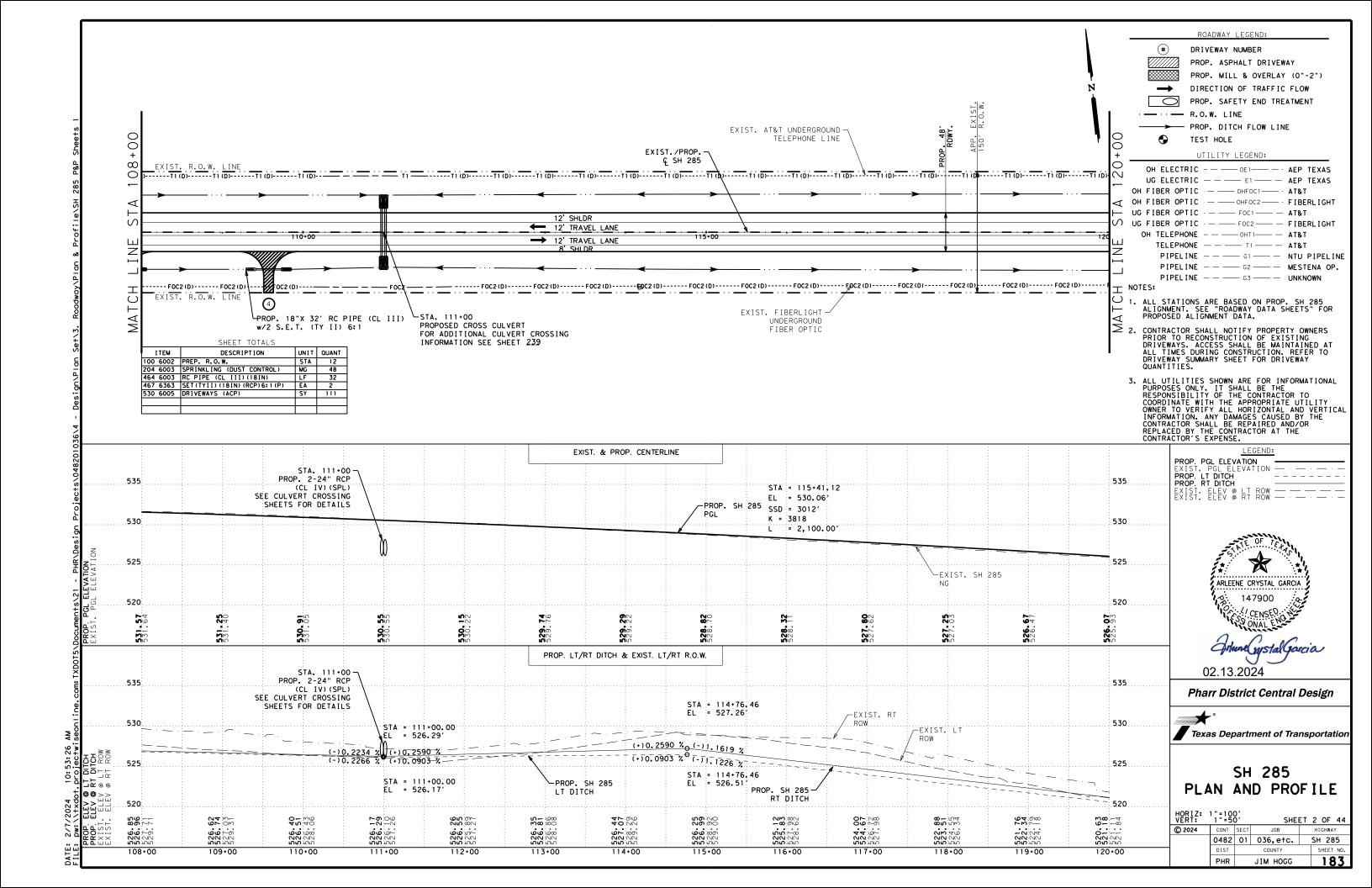


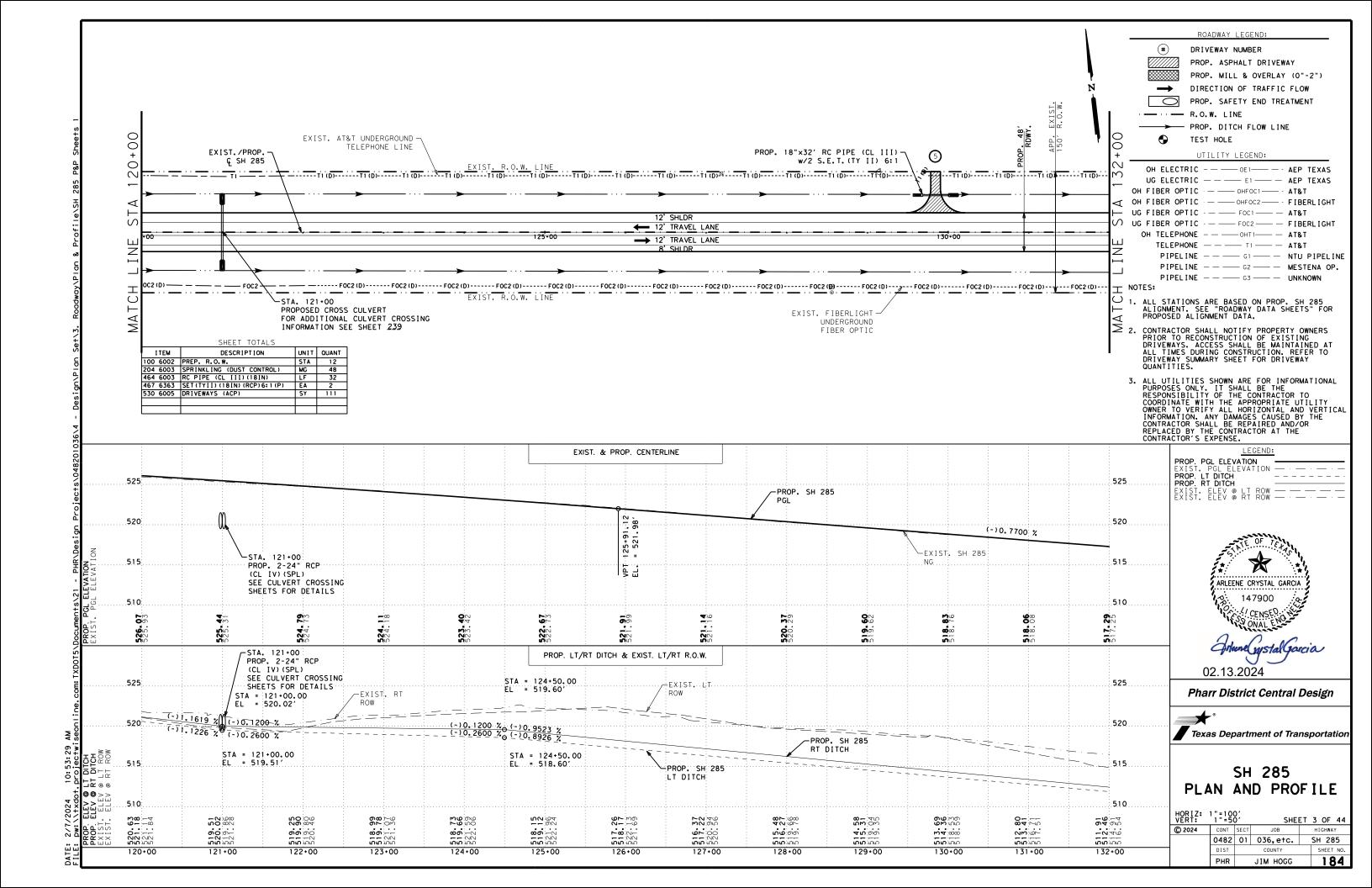


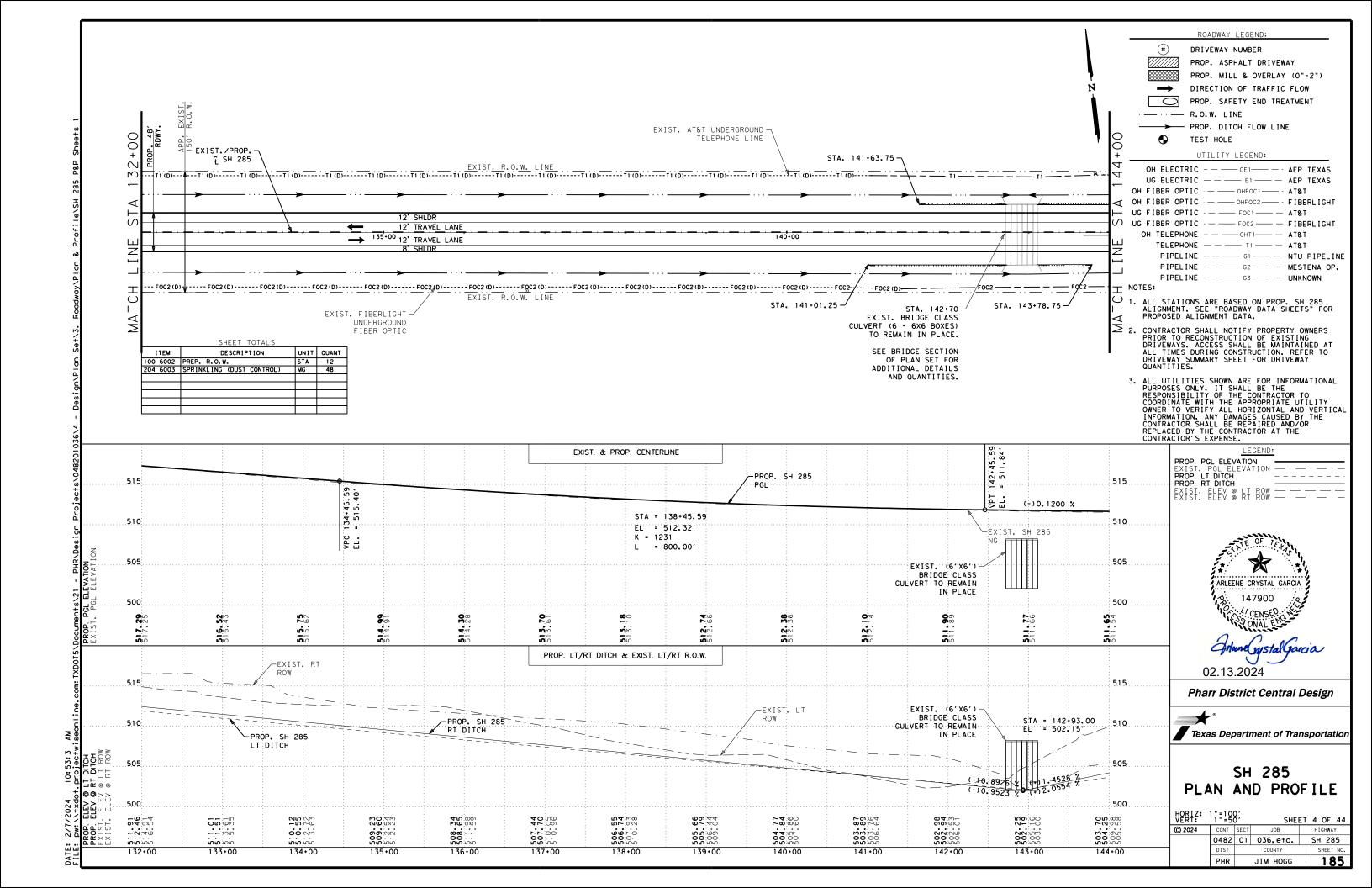
SH 285 ROADWAY DATA SHEET

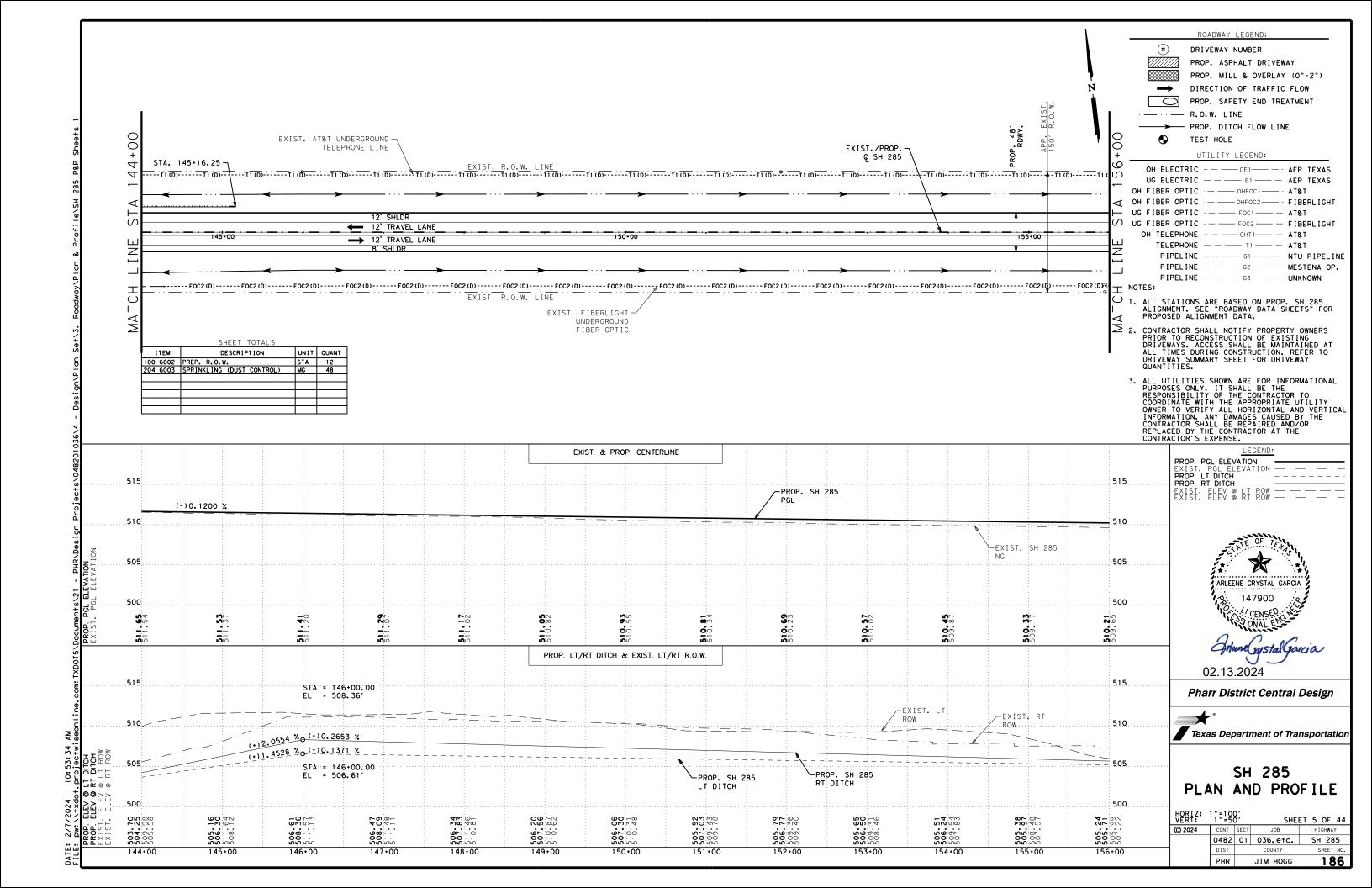
N.T.S.			SHE	EΤ	1	OF 1
© 2024	CONT	SECT	JOB		ΗI	GHWAY
	0482	01	036,etc.	SH 285		
	DIST		COUNTY		S	HEET NO.
	PHR		JIM HOGG			181

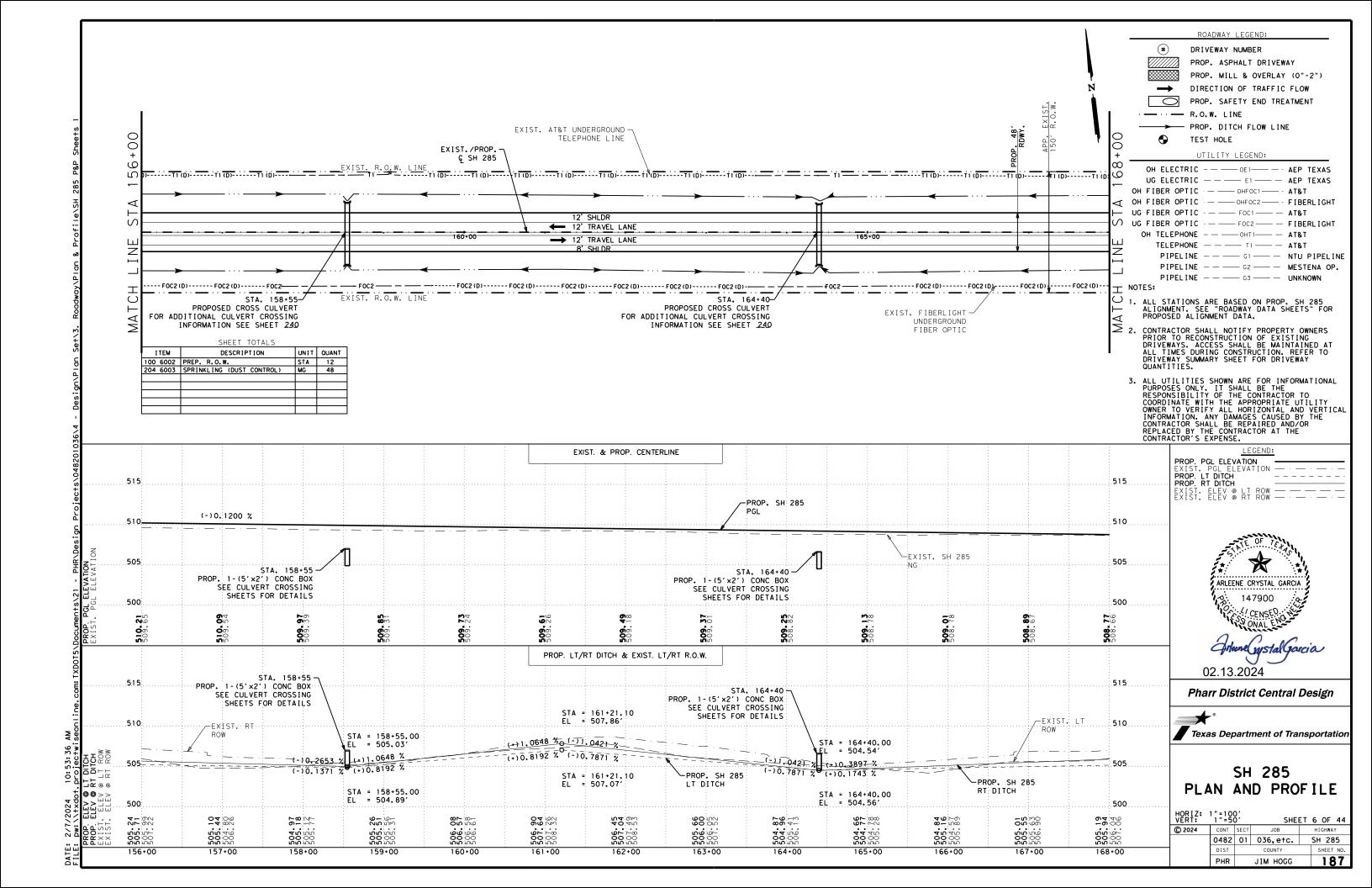


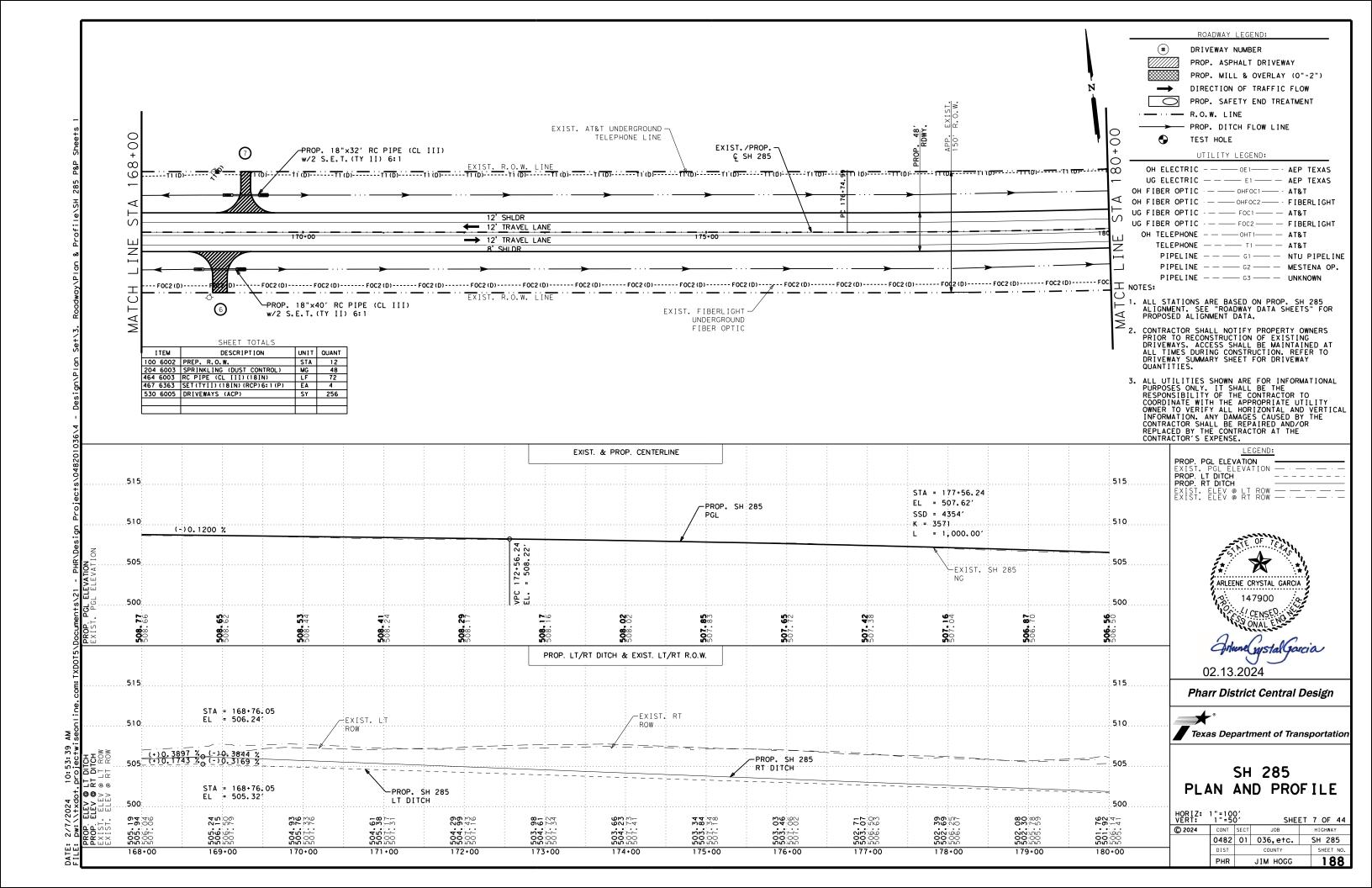


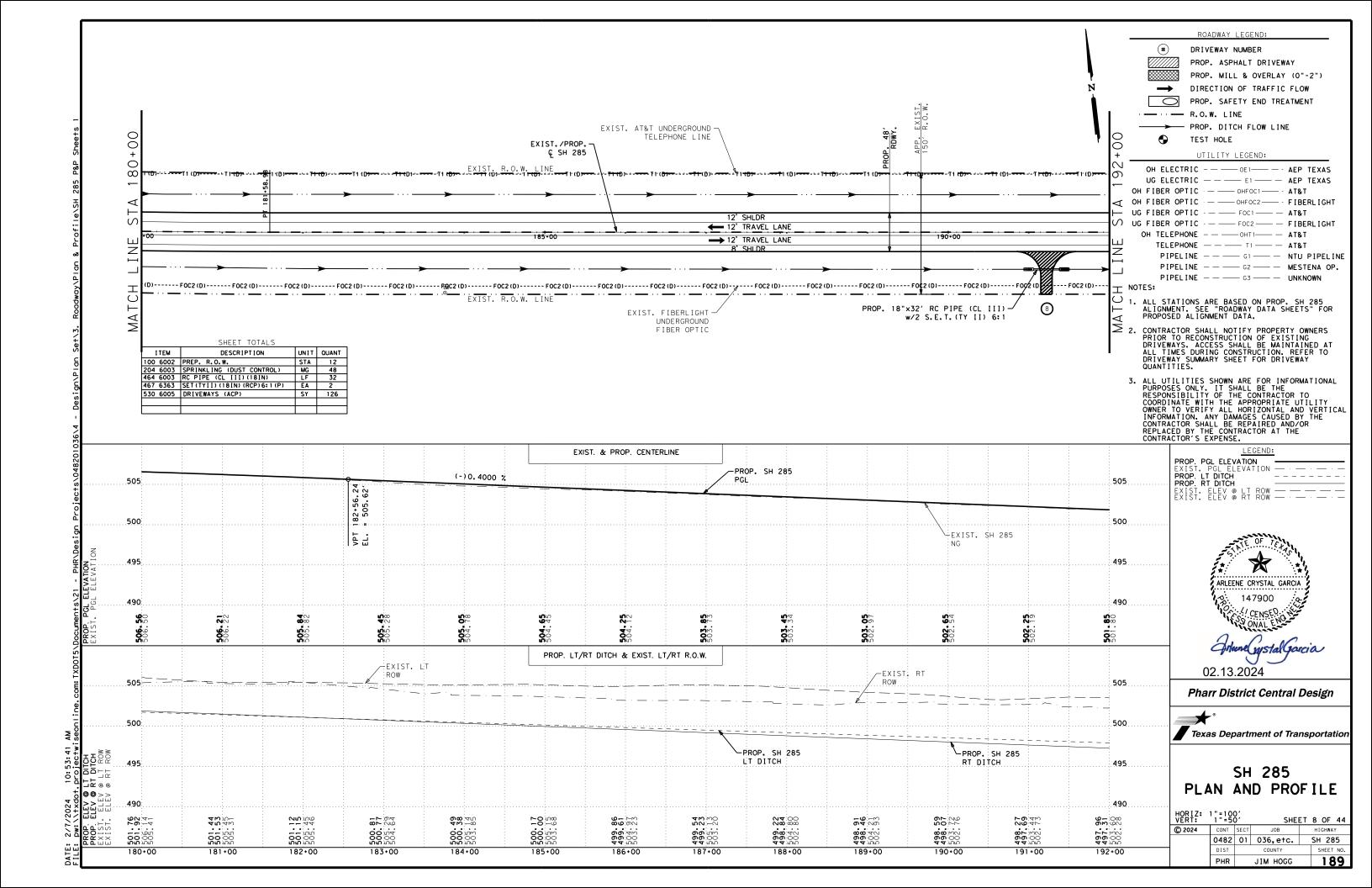


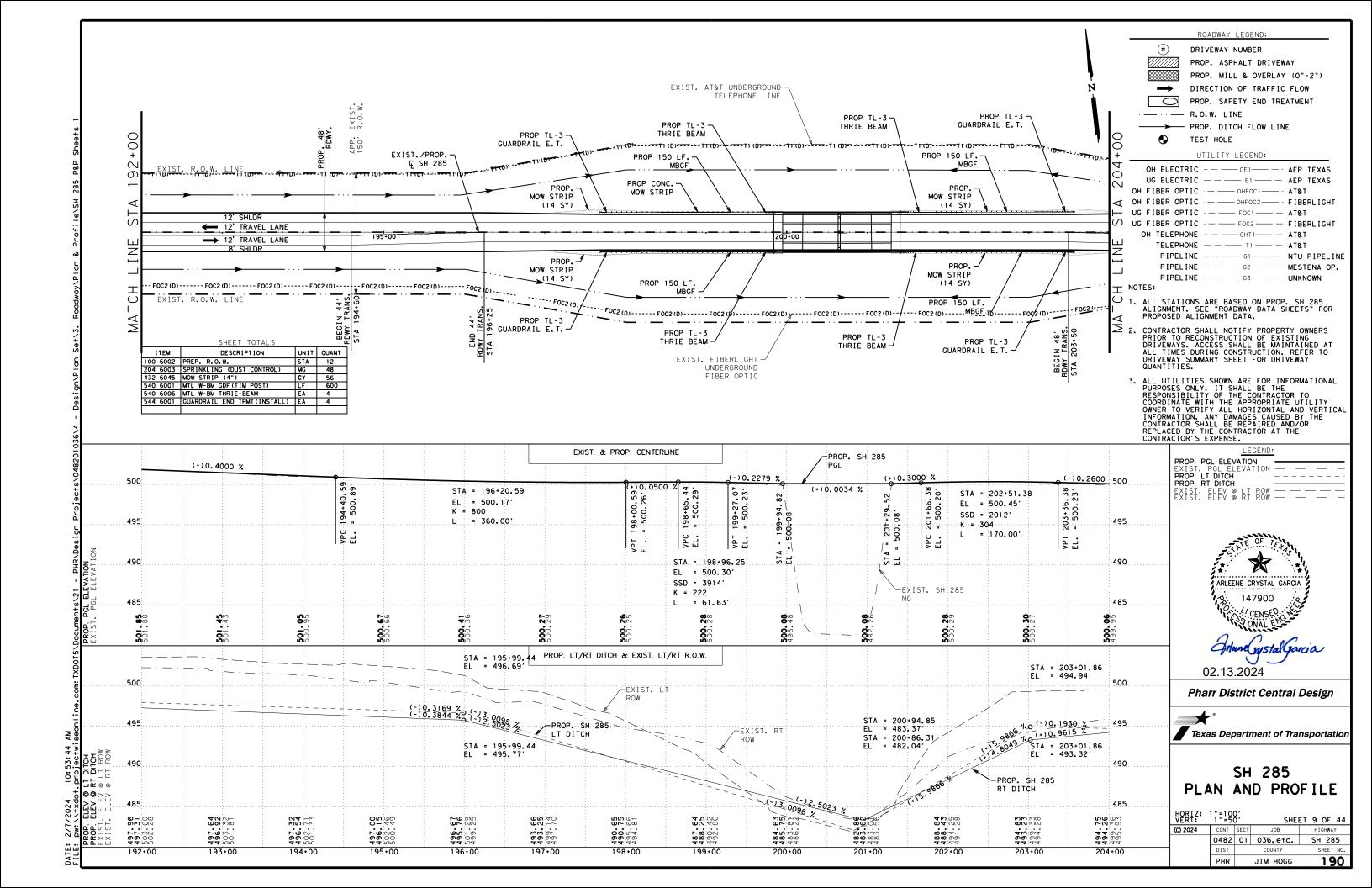


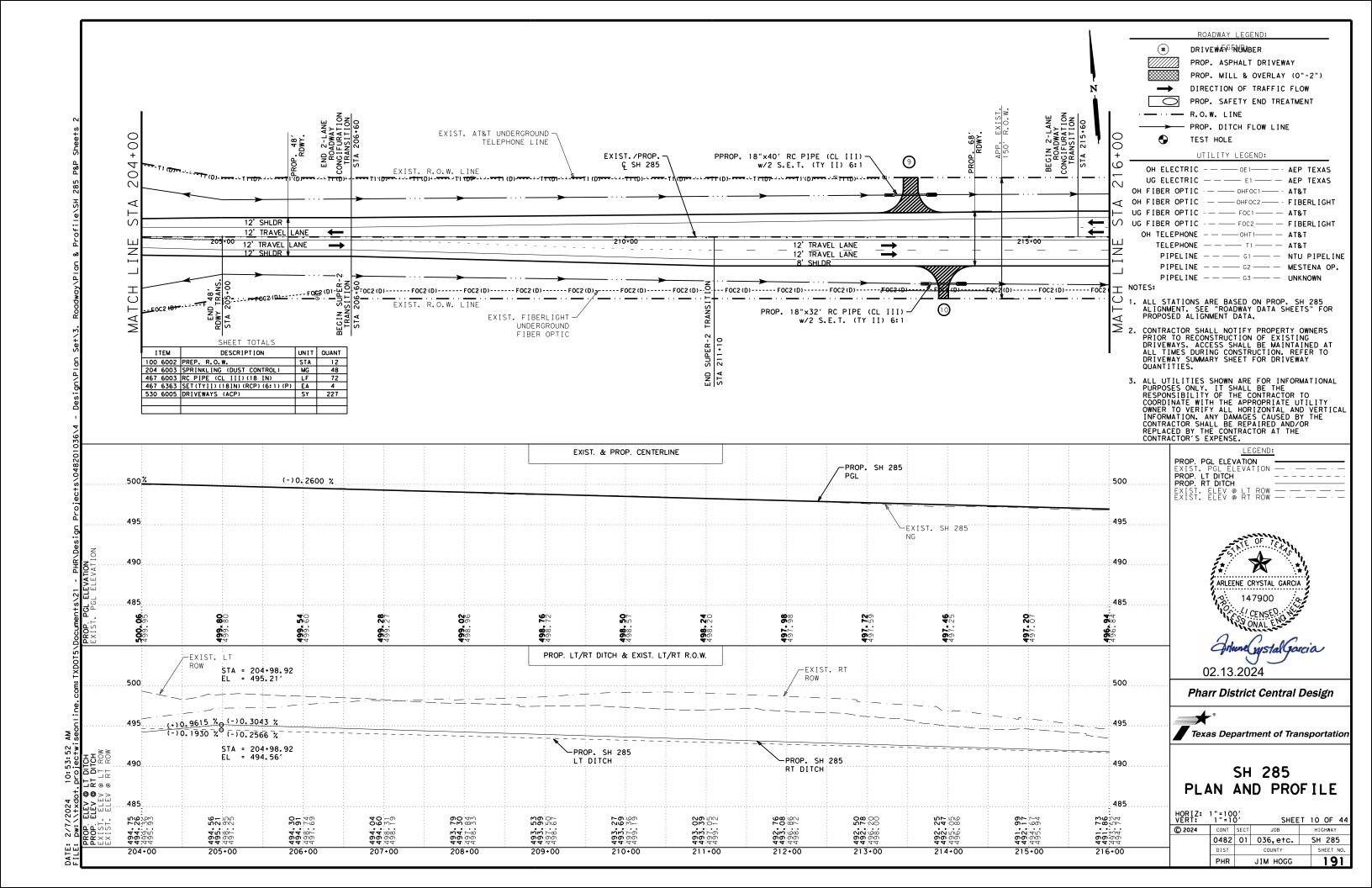


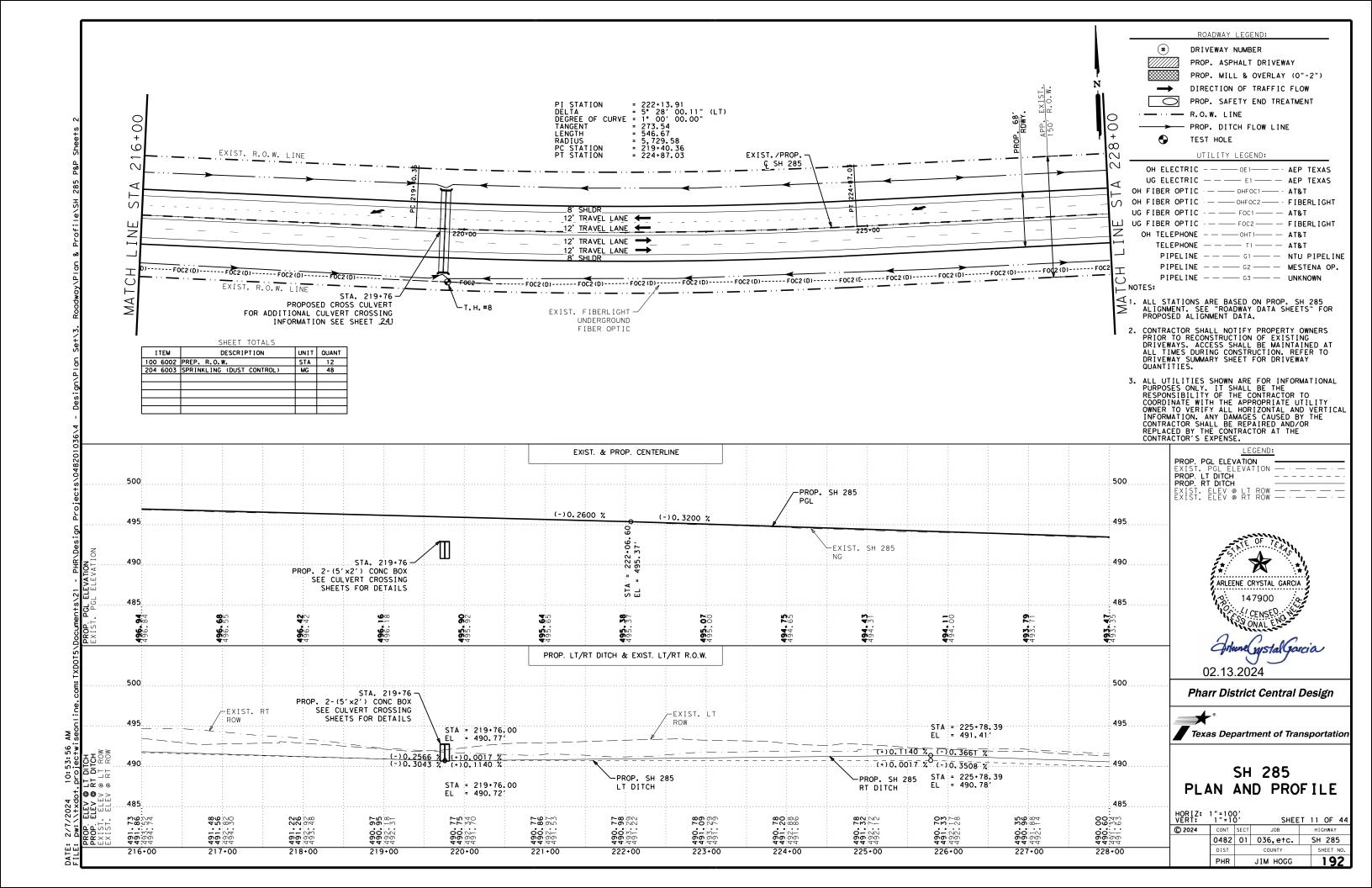


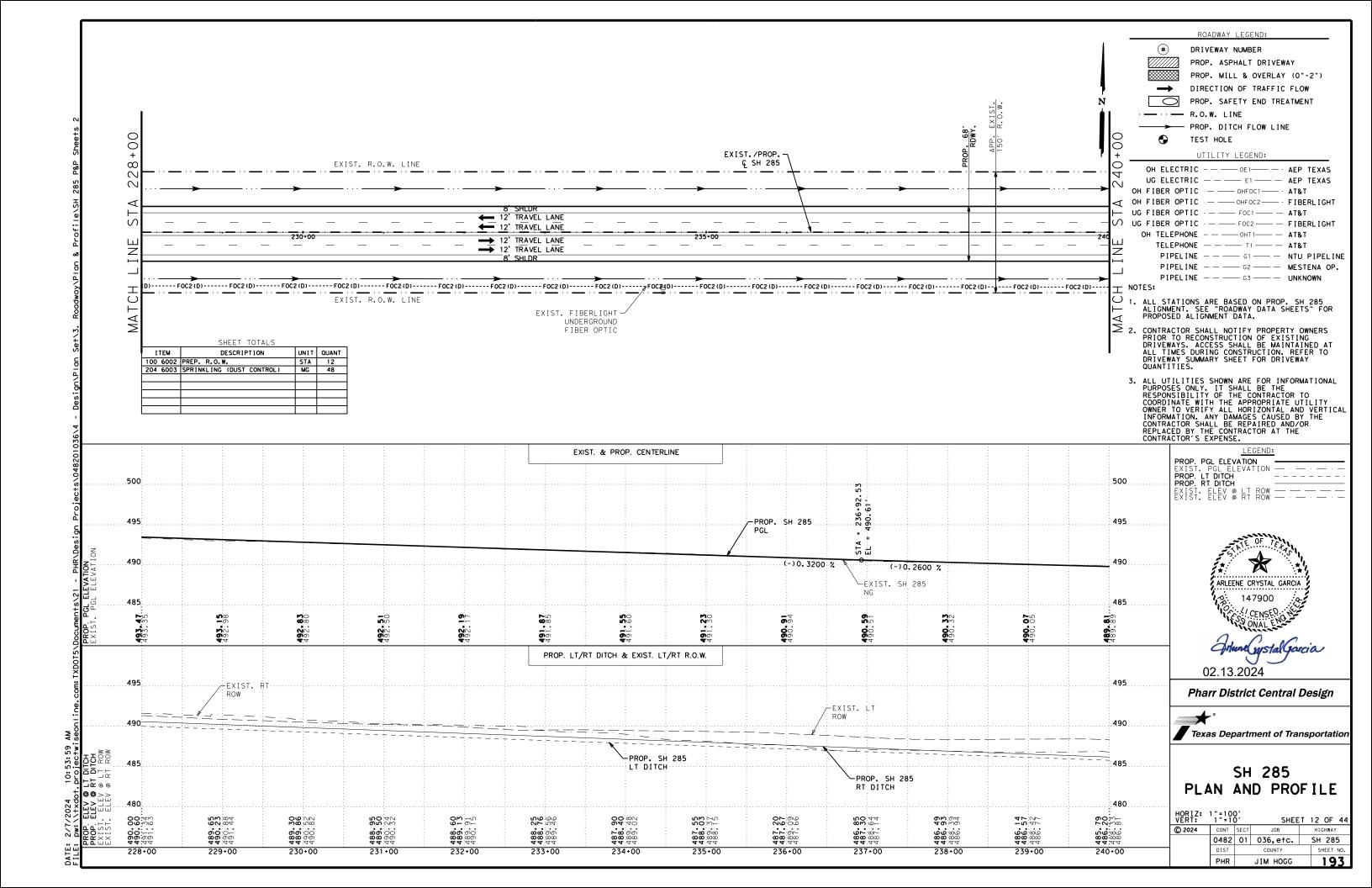


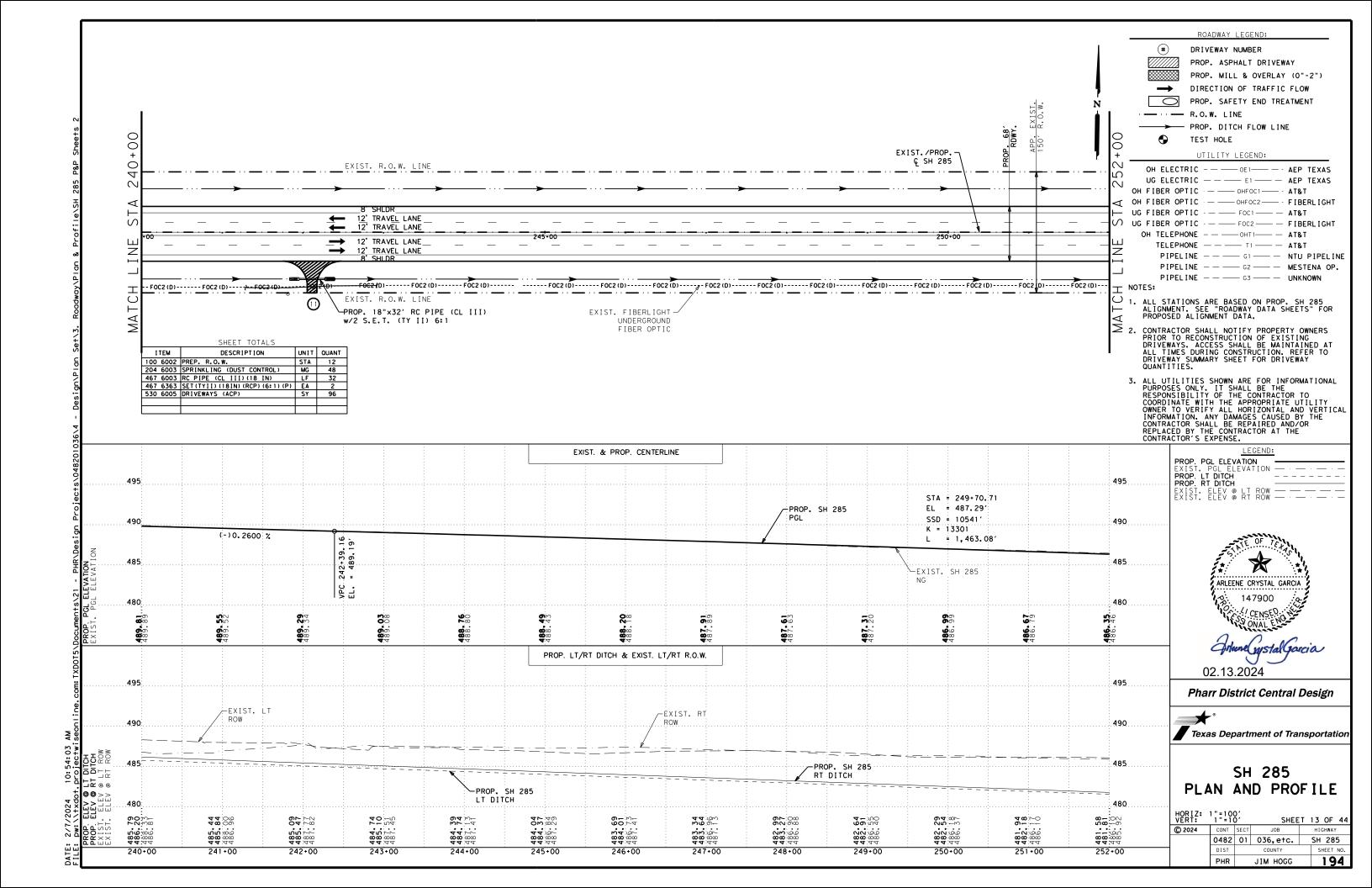


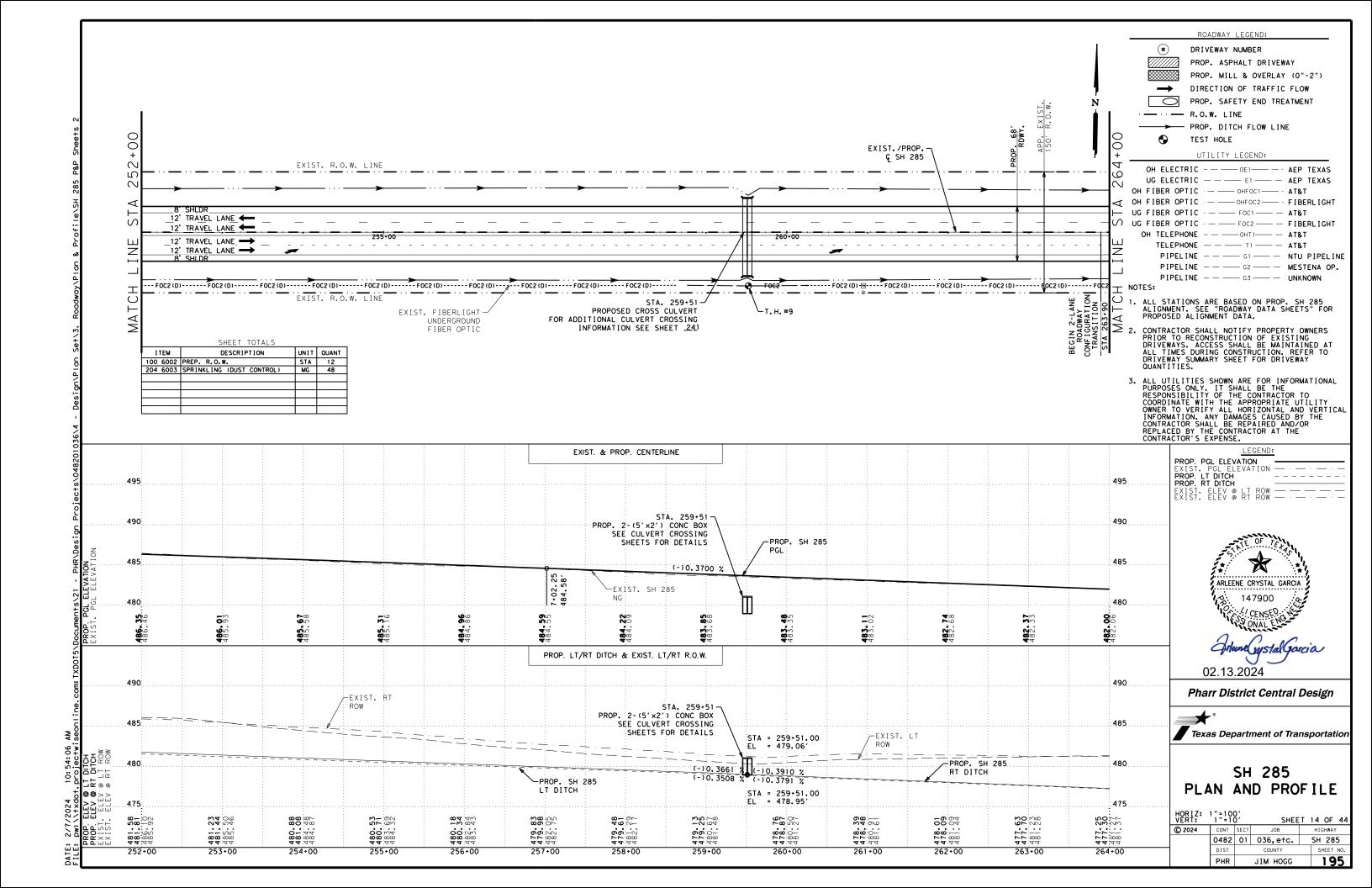


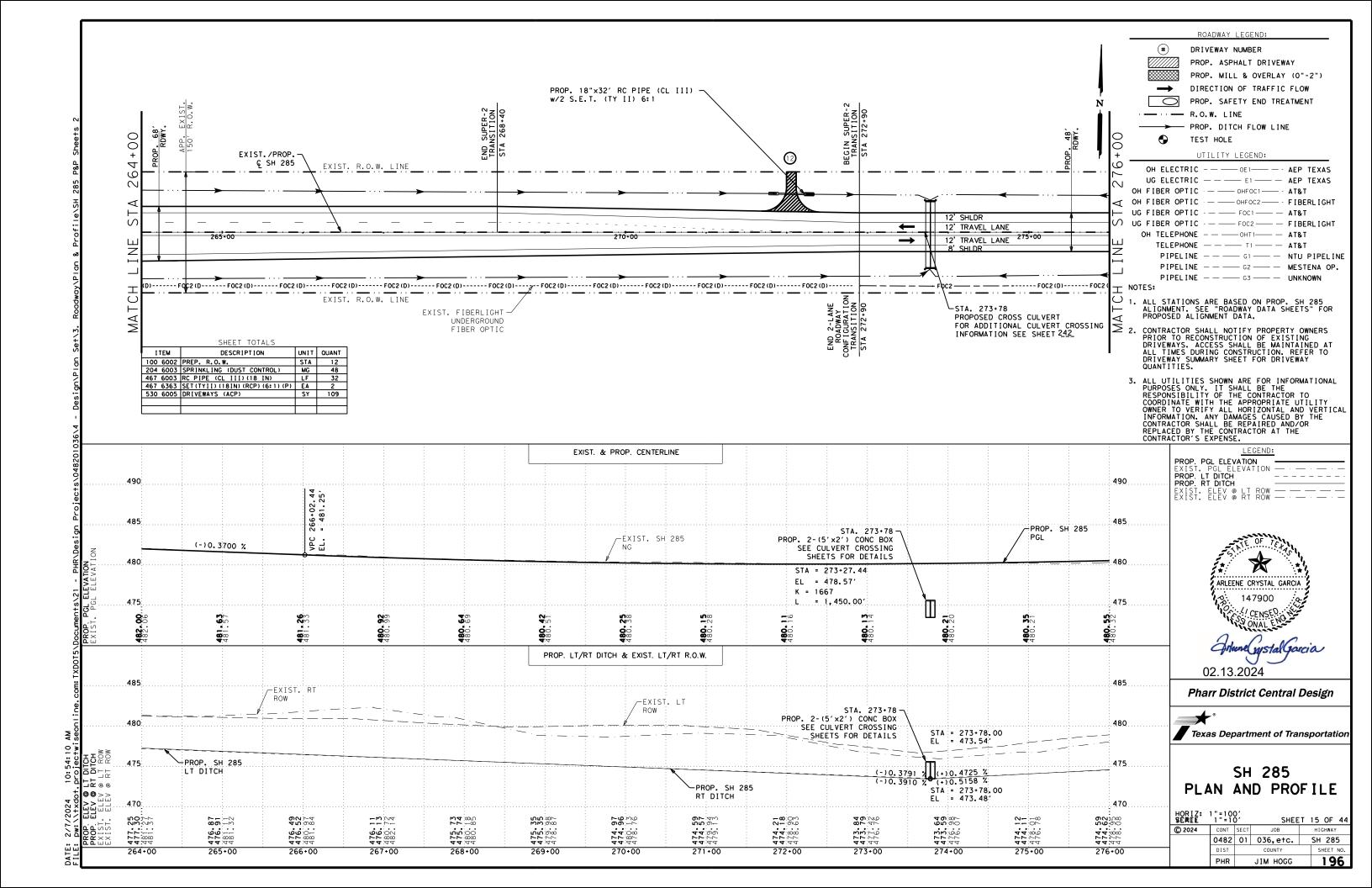


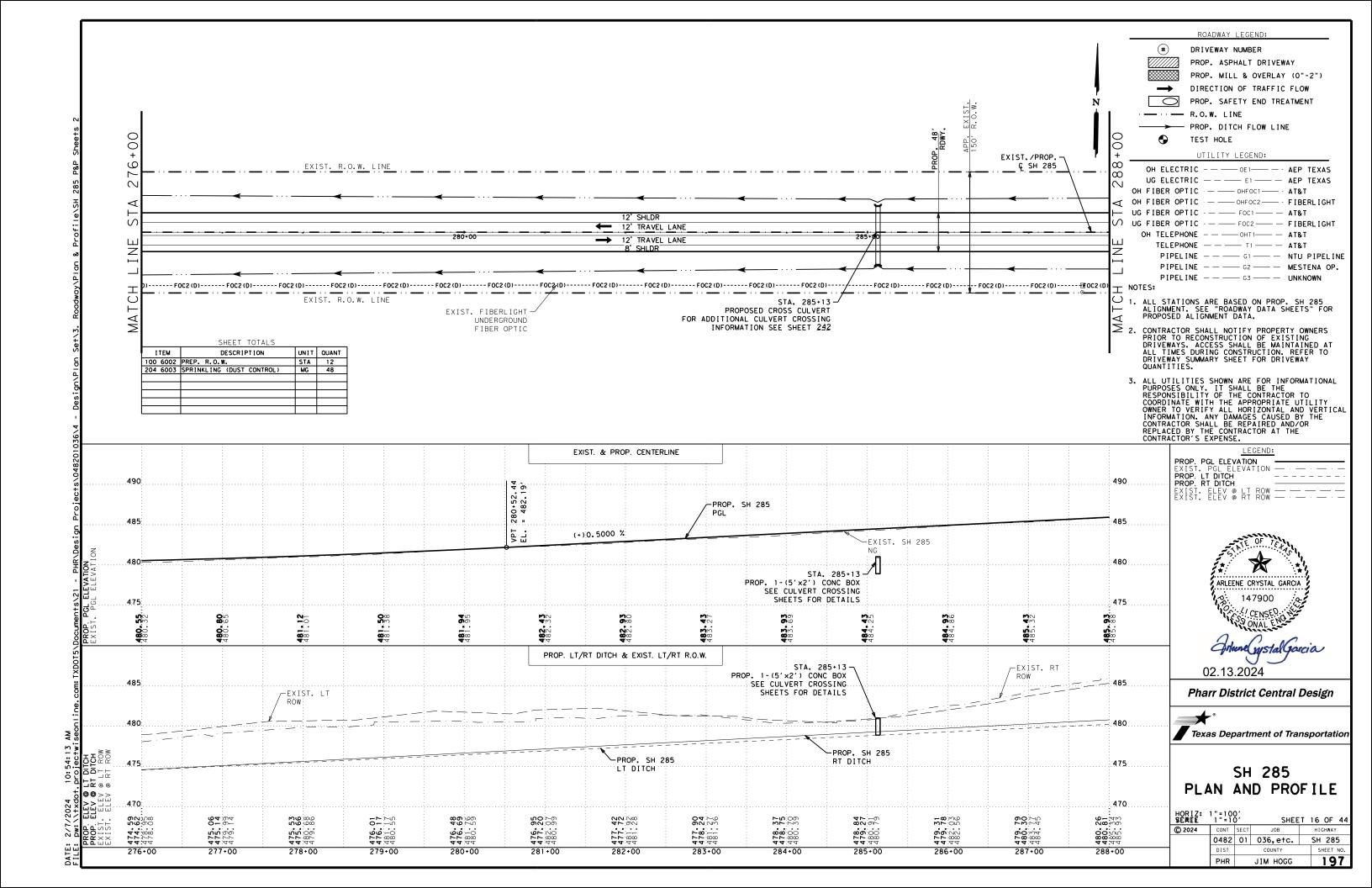


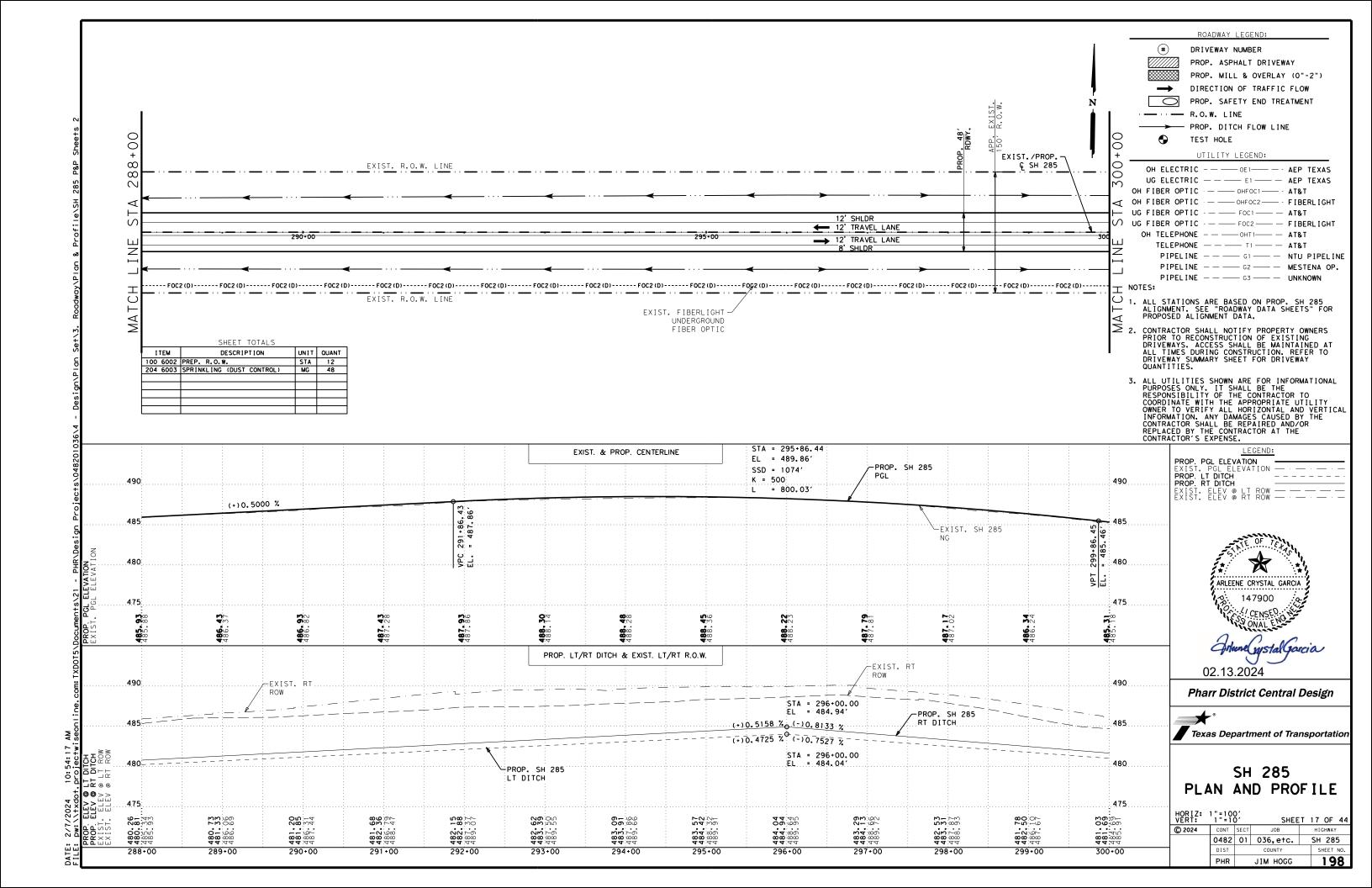


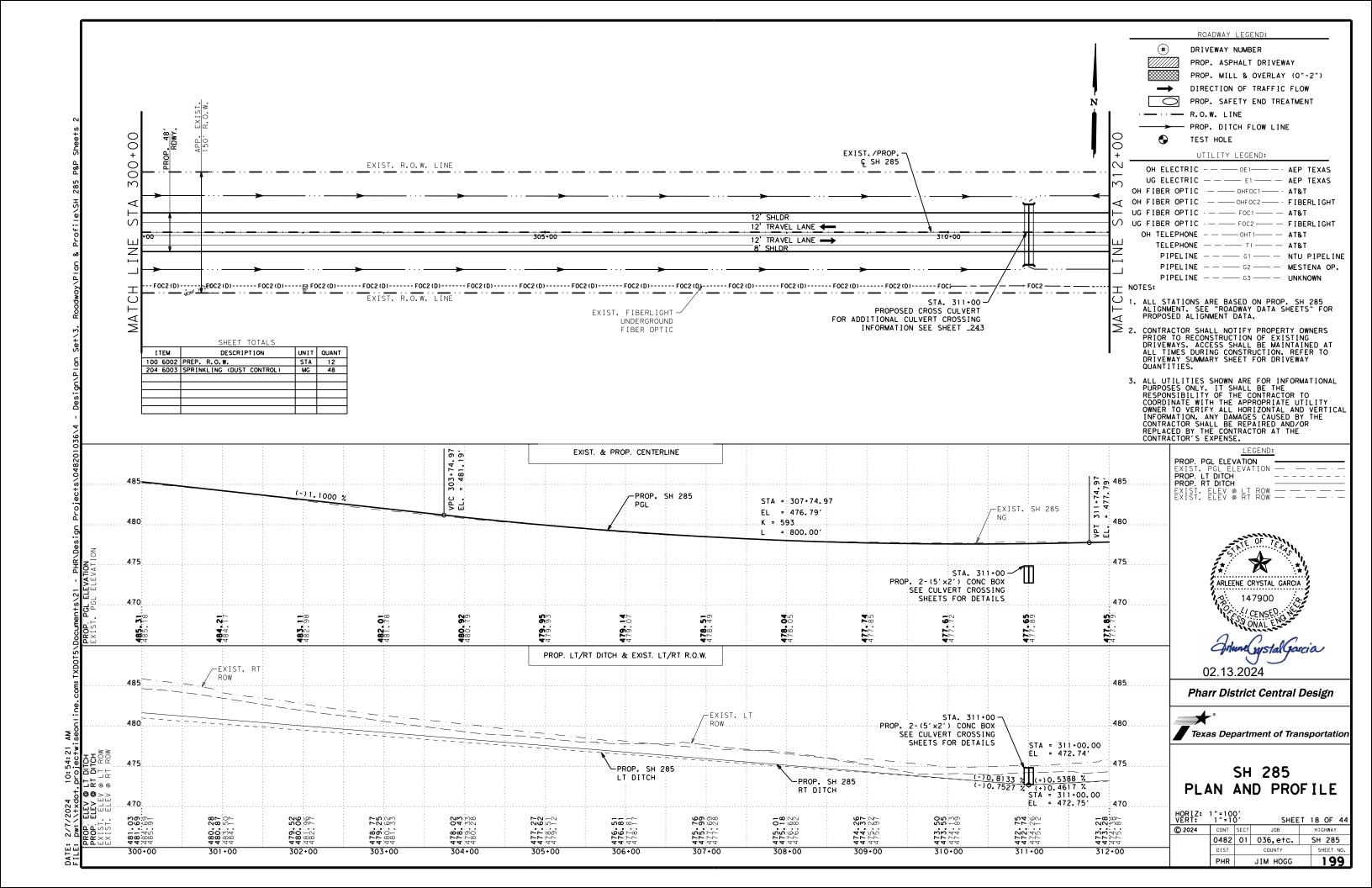


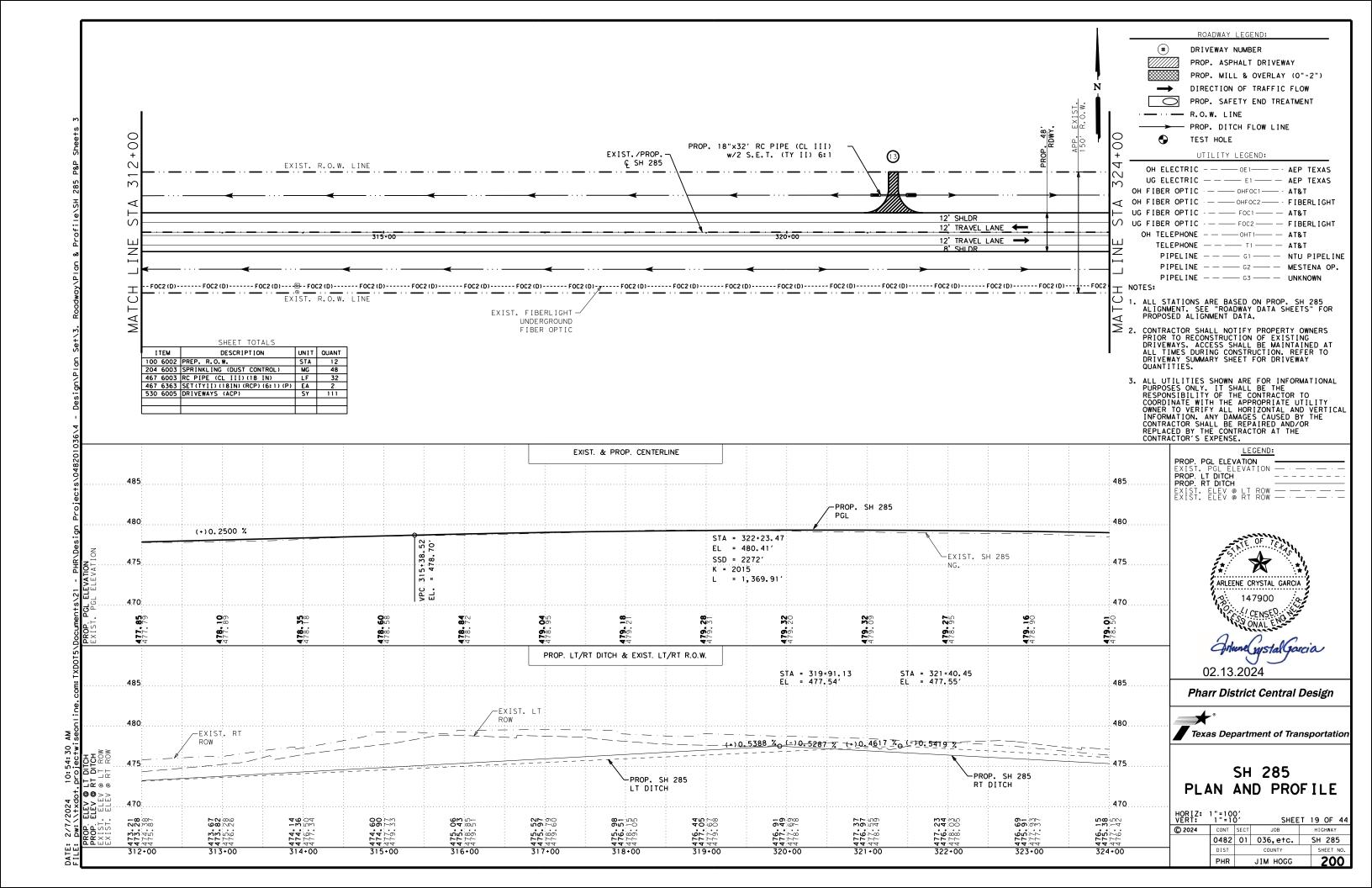


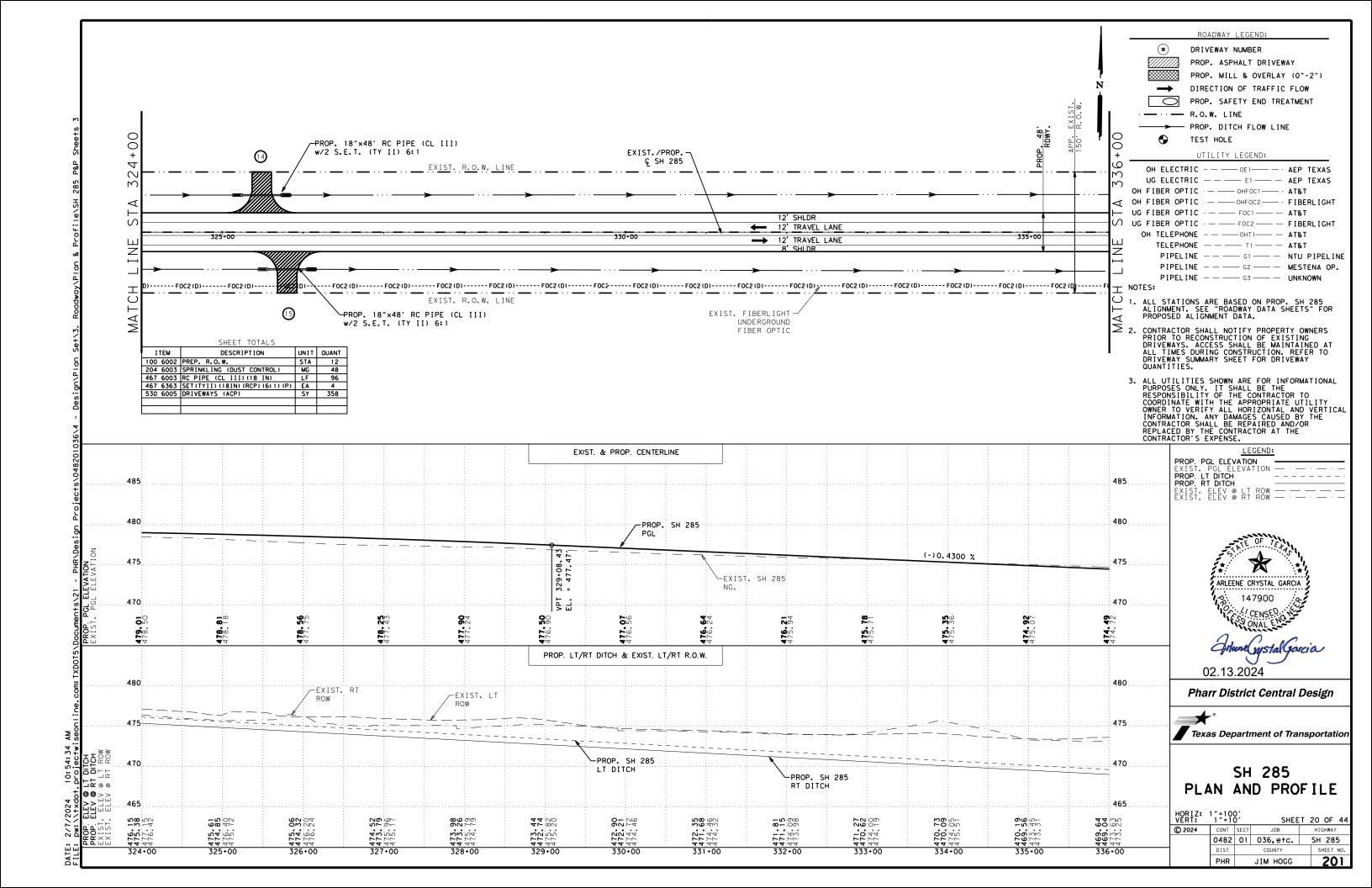


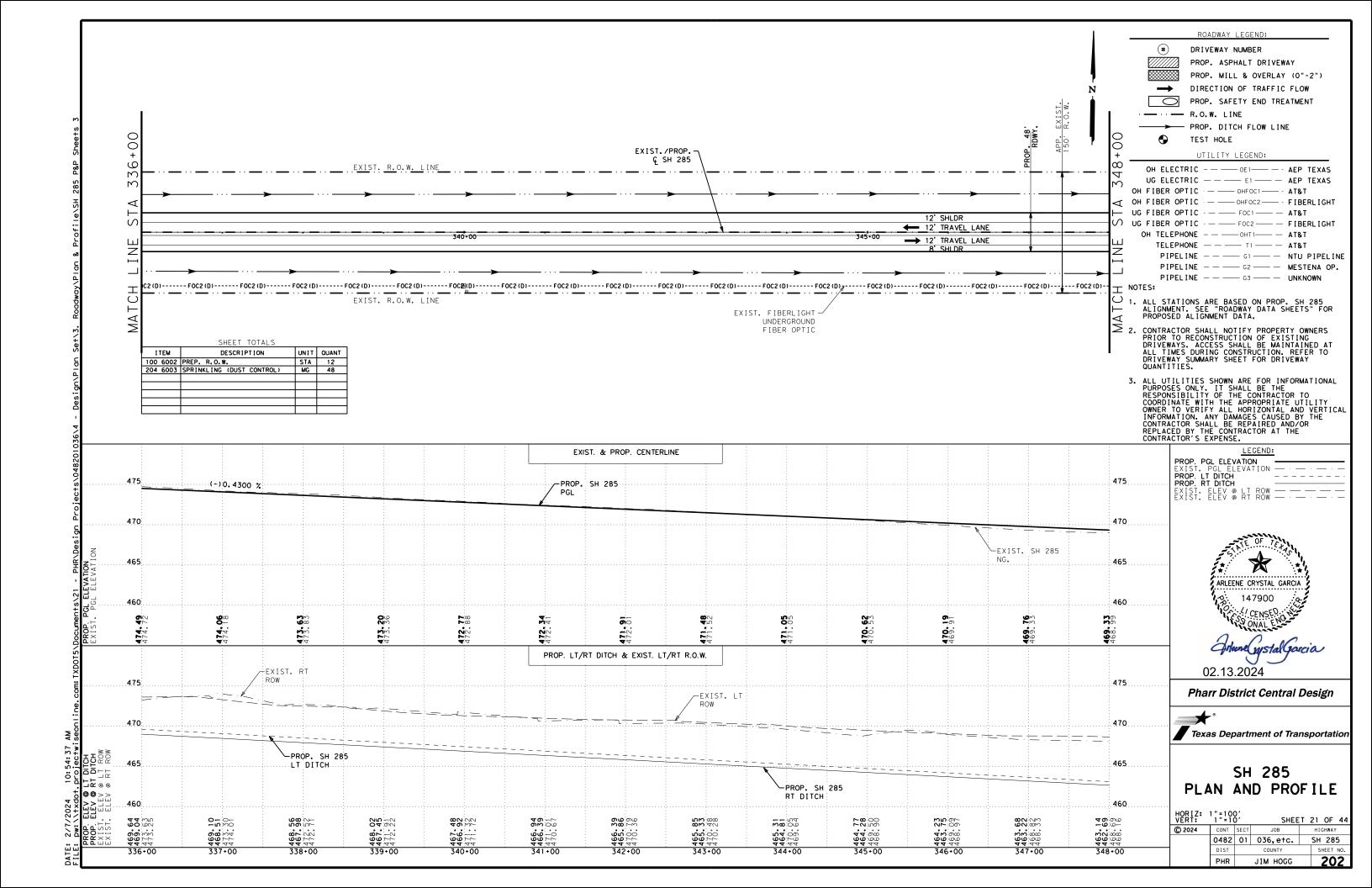


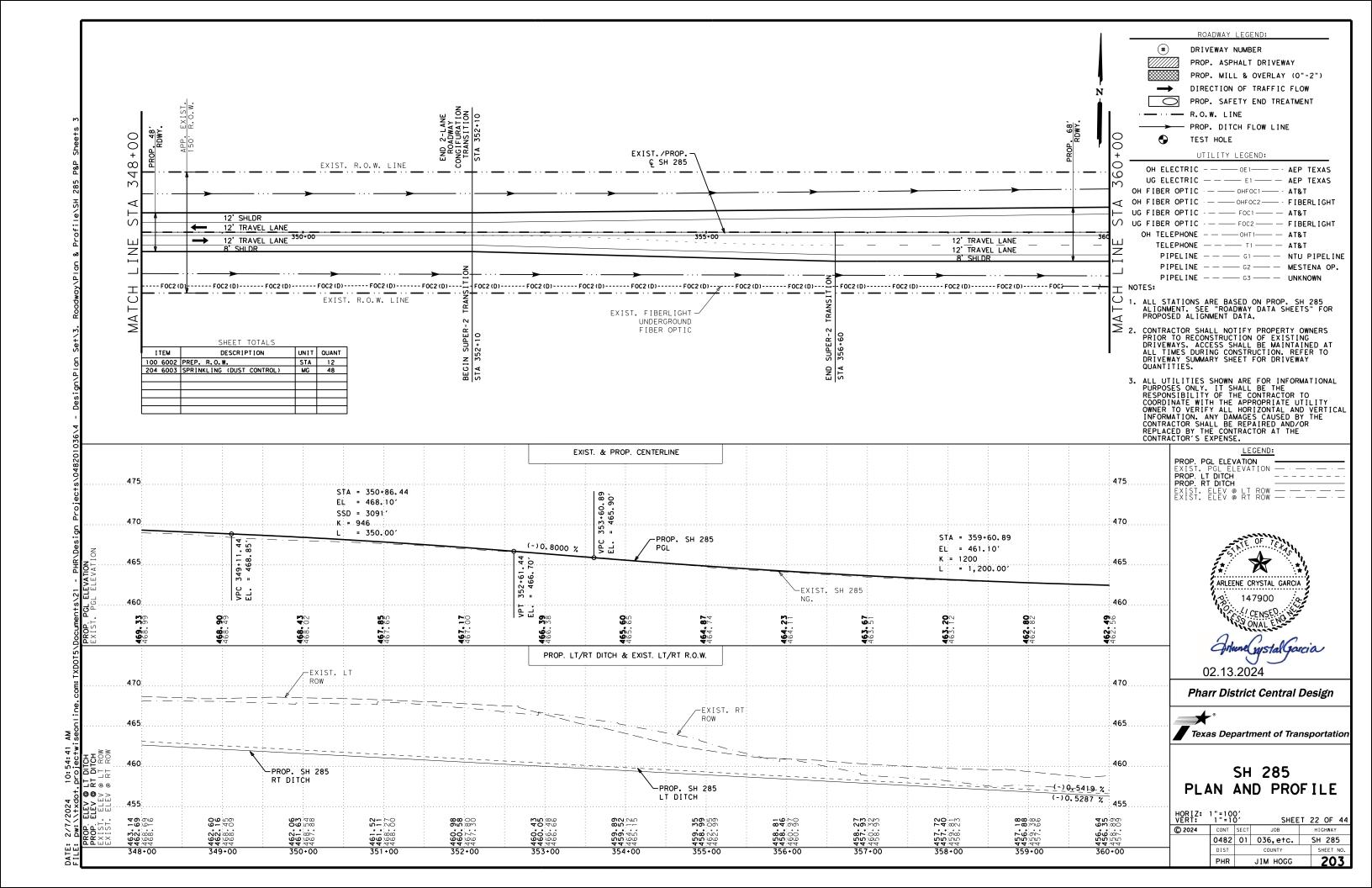


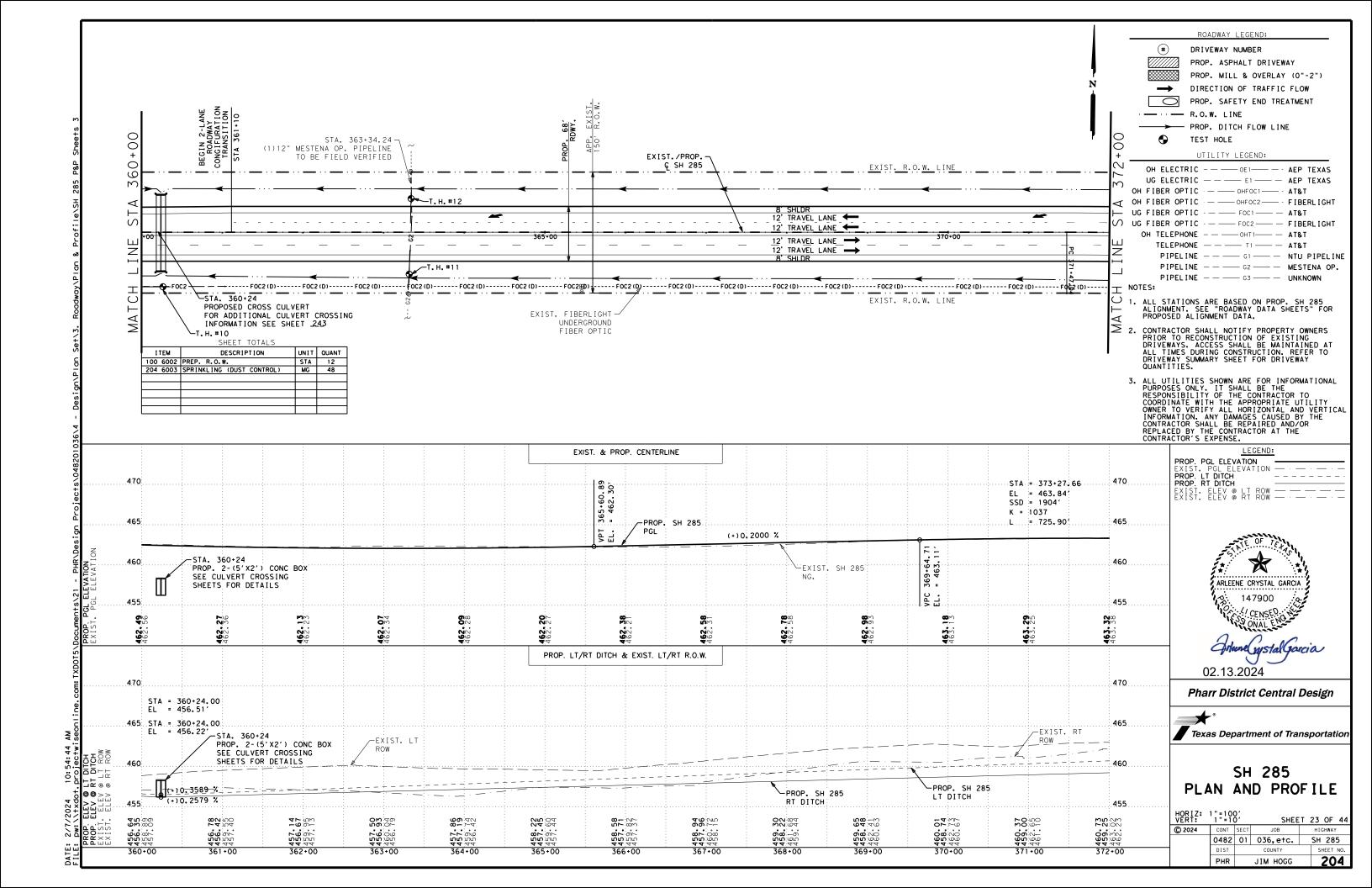


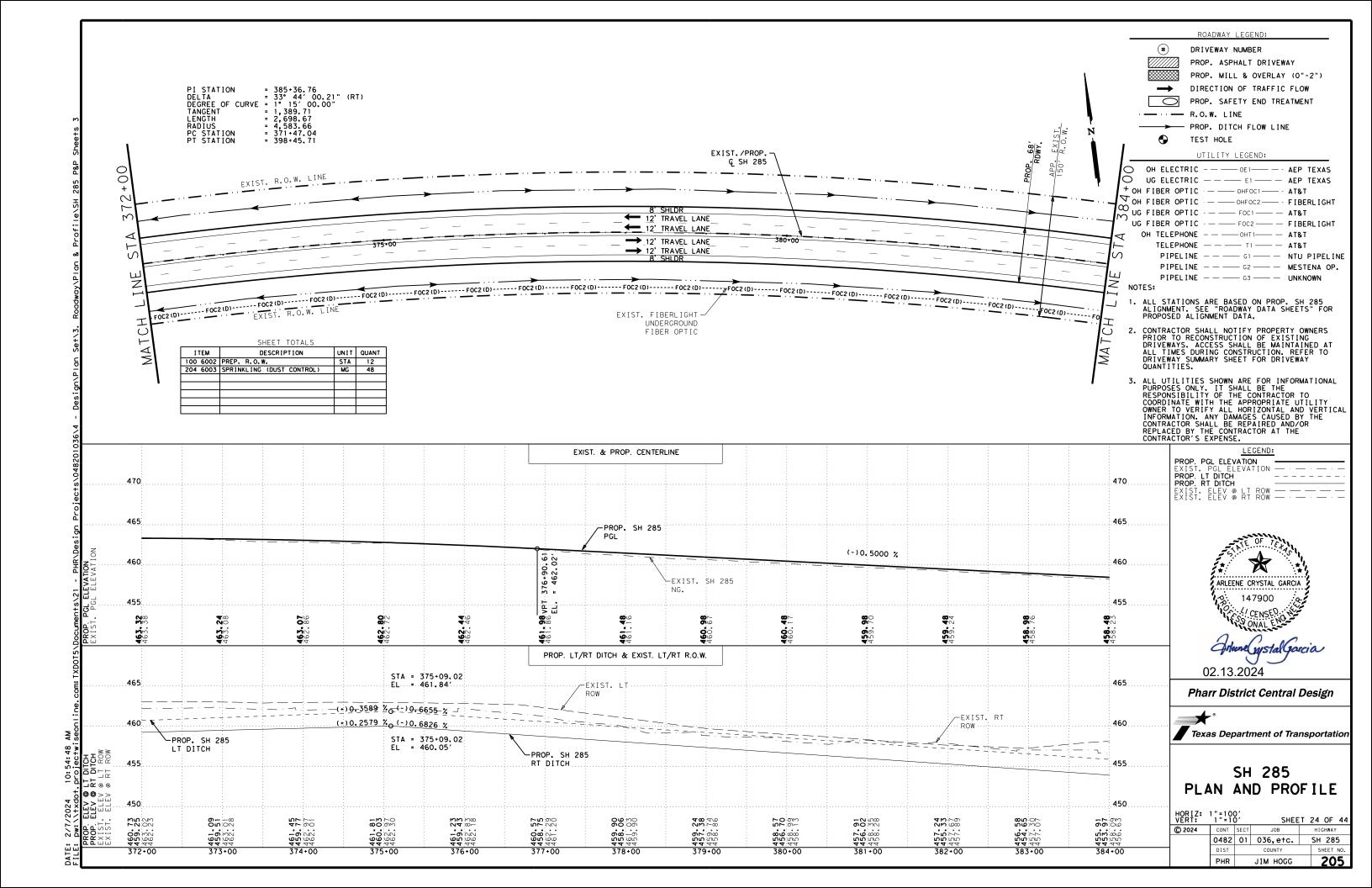


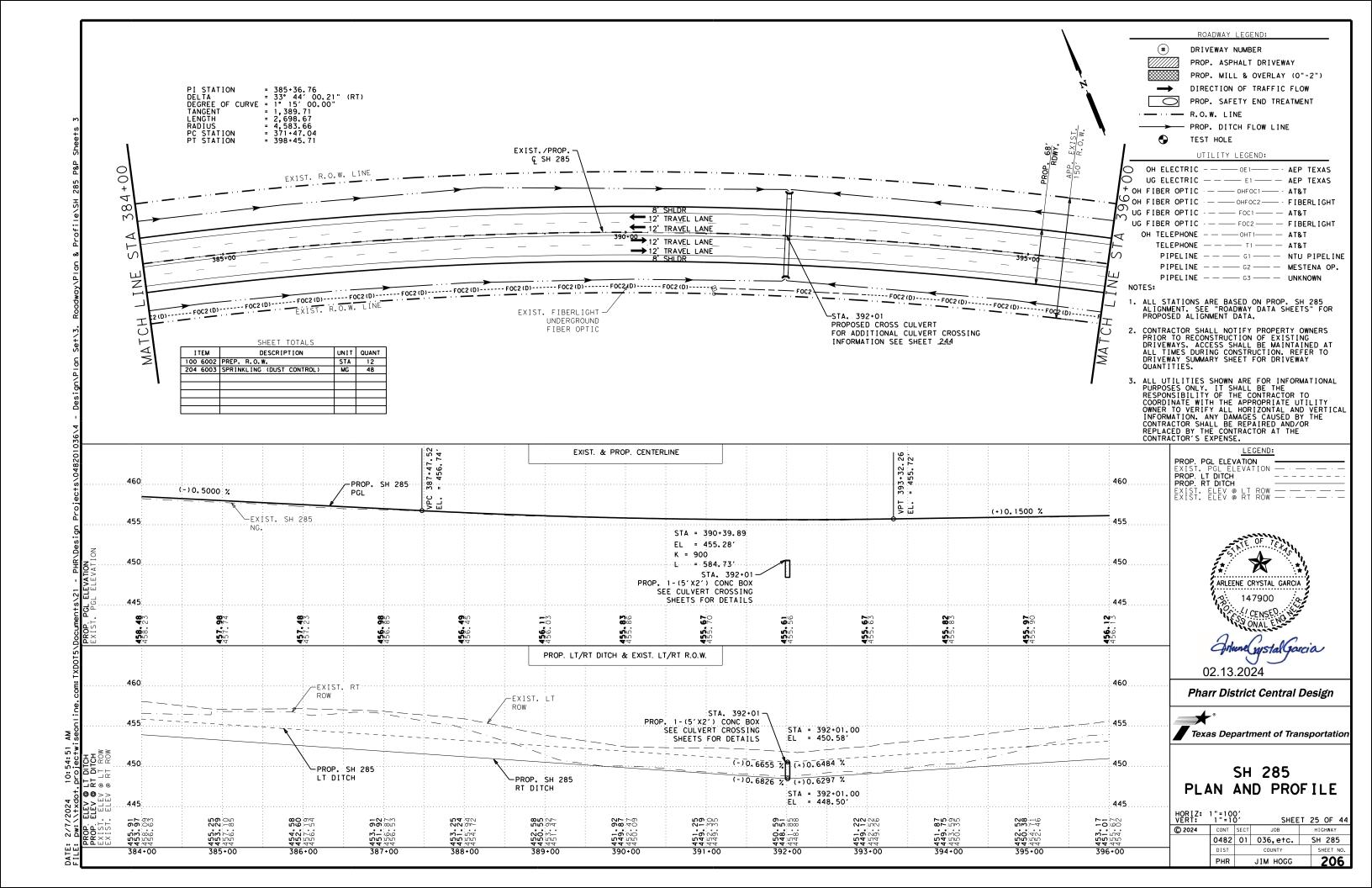


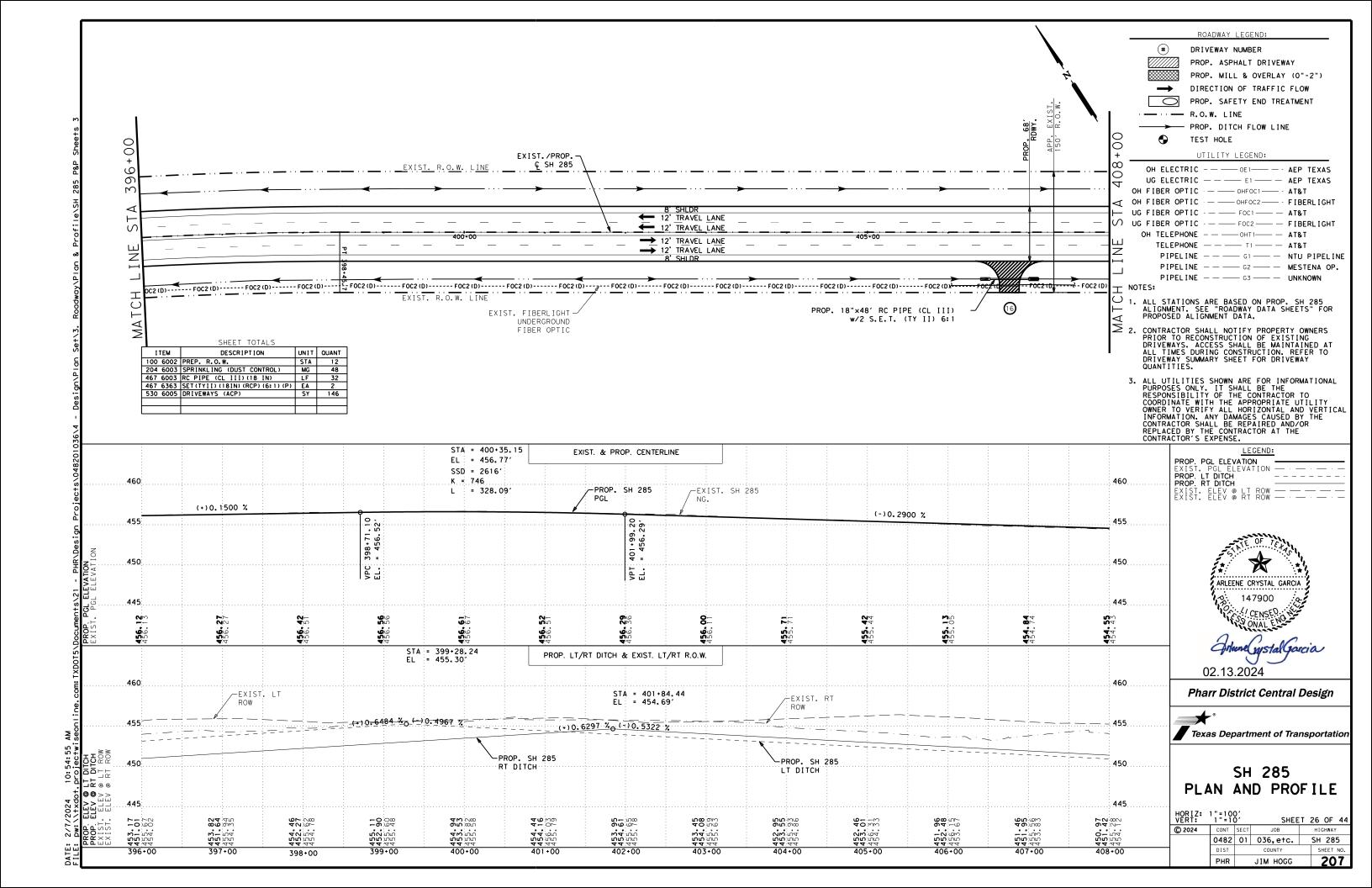


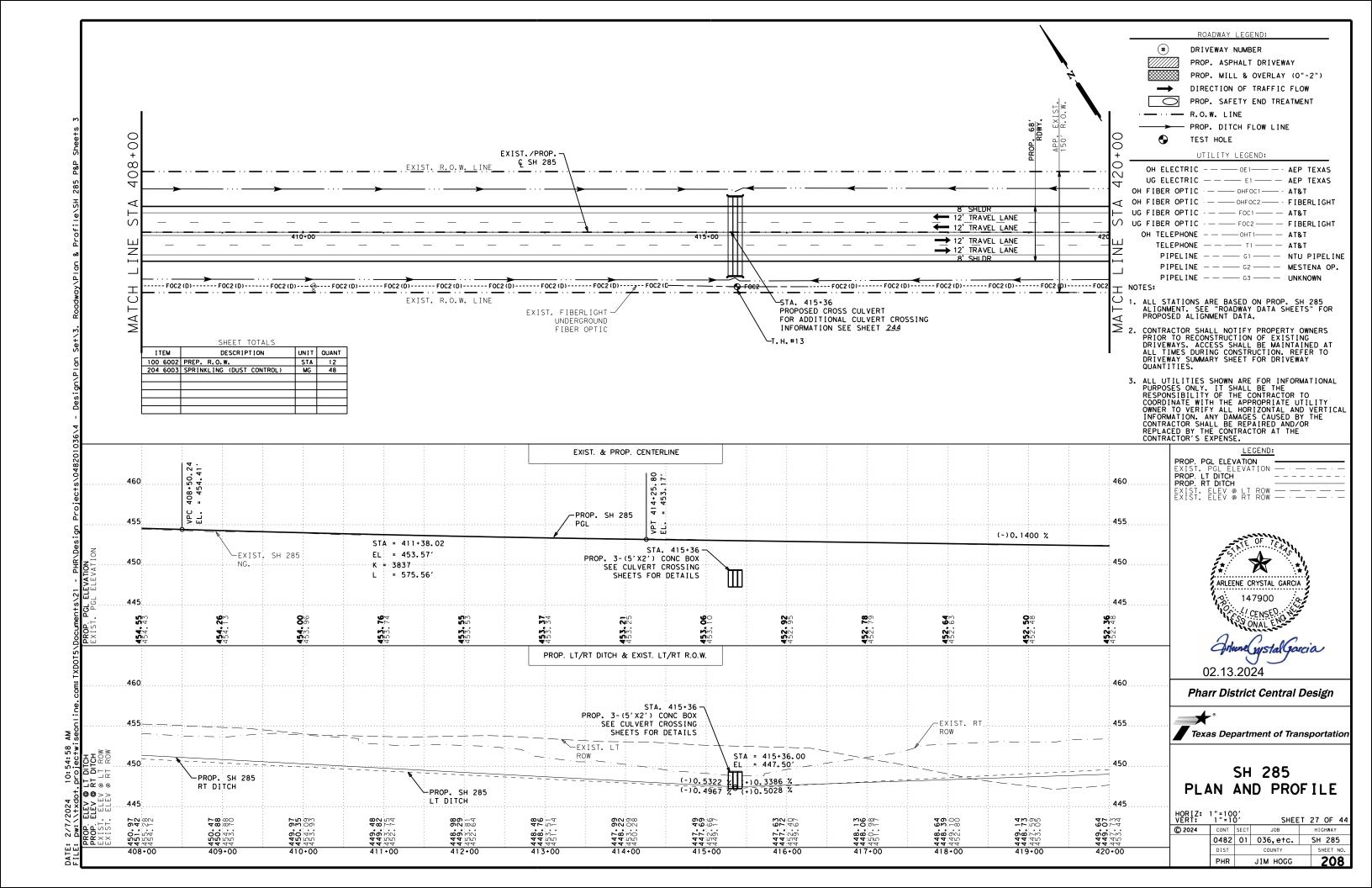


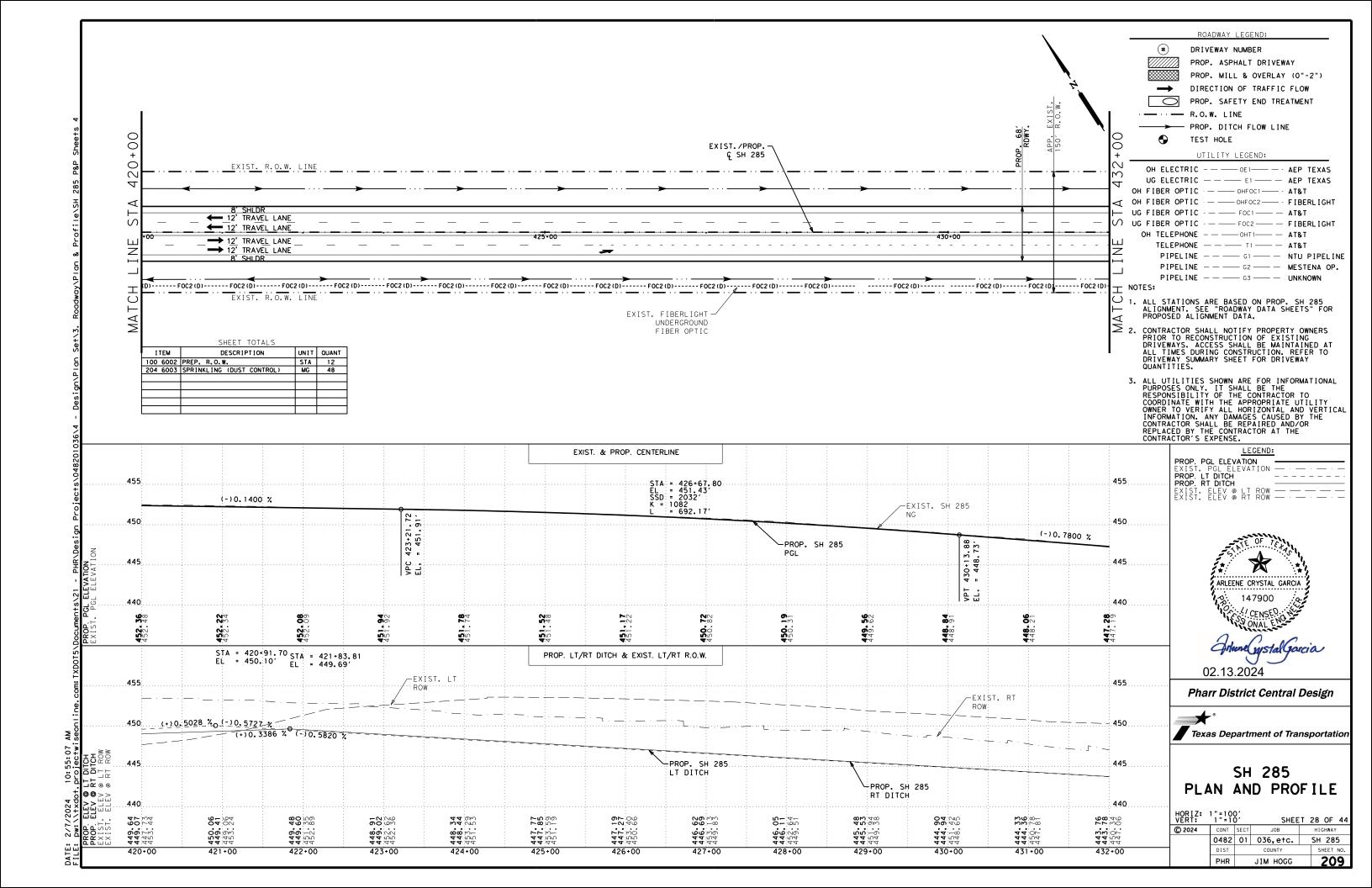


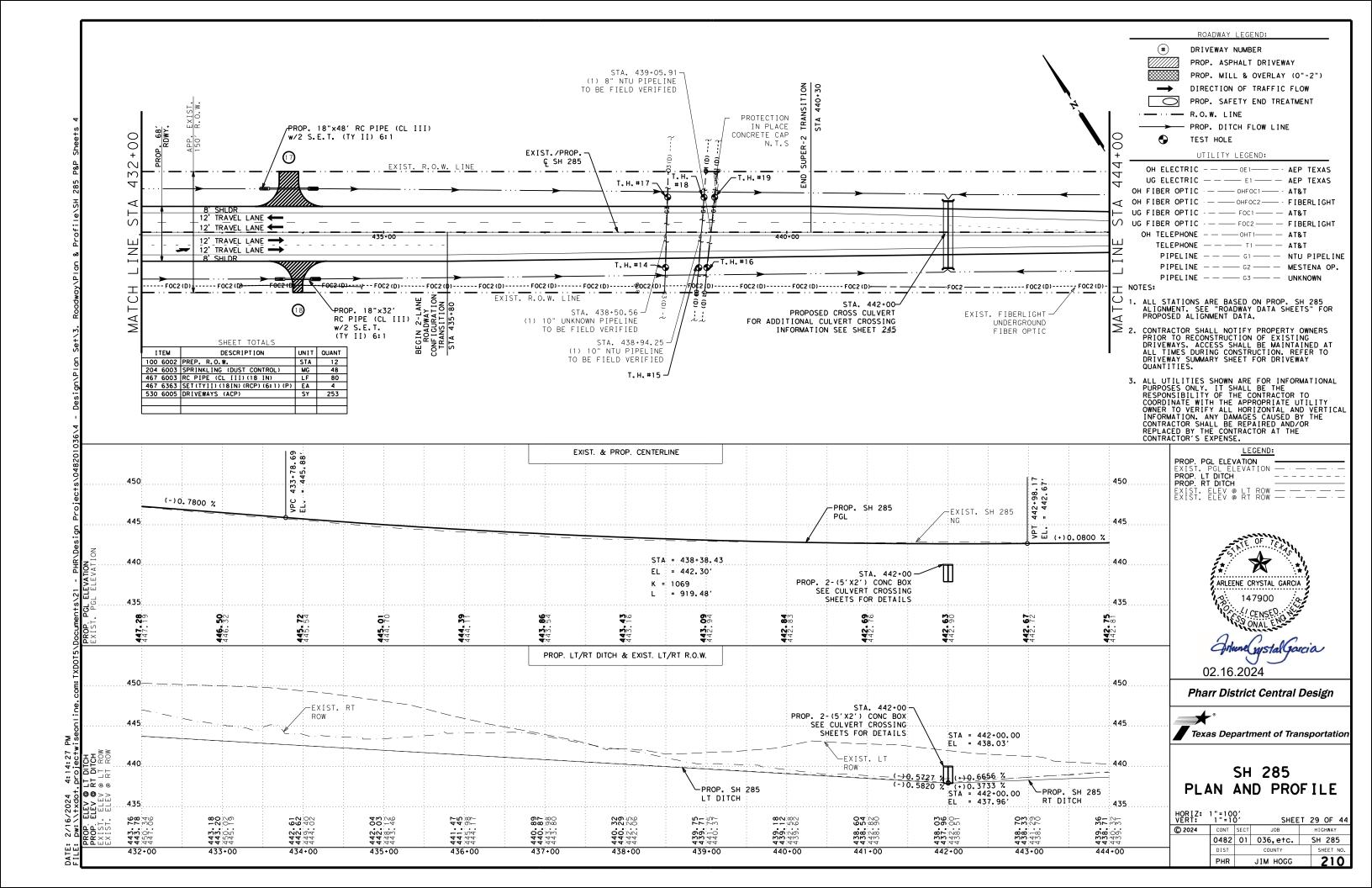


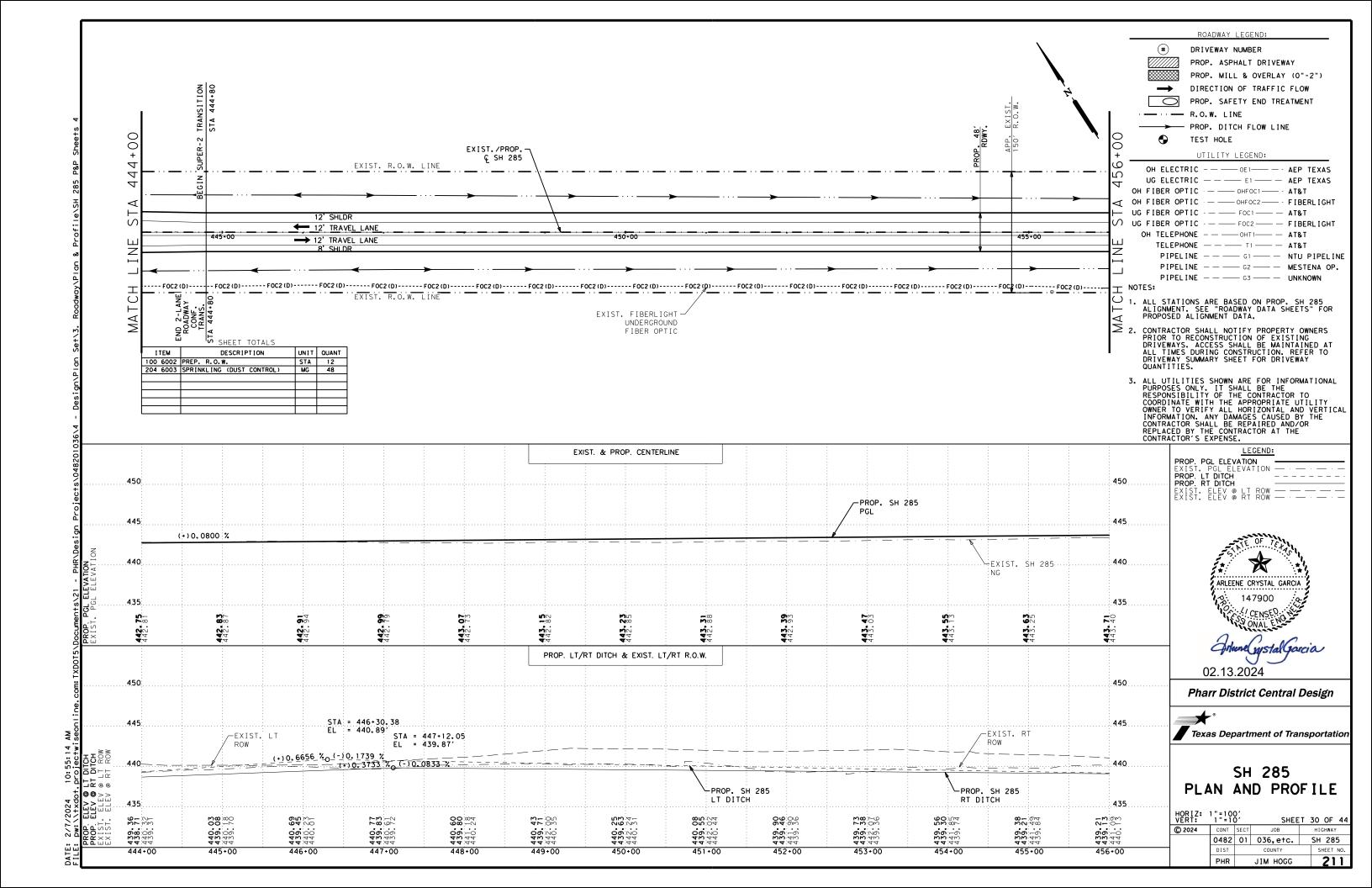


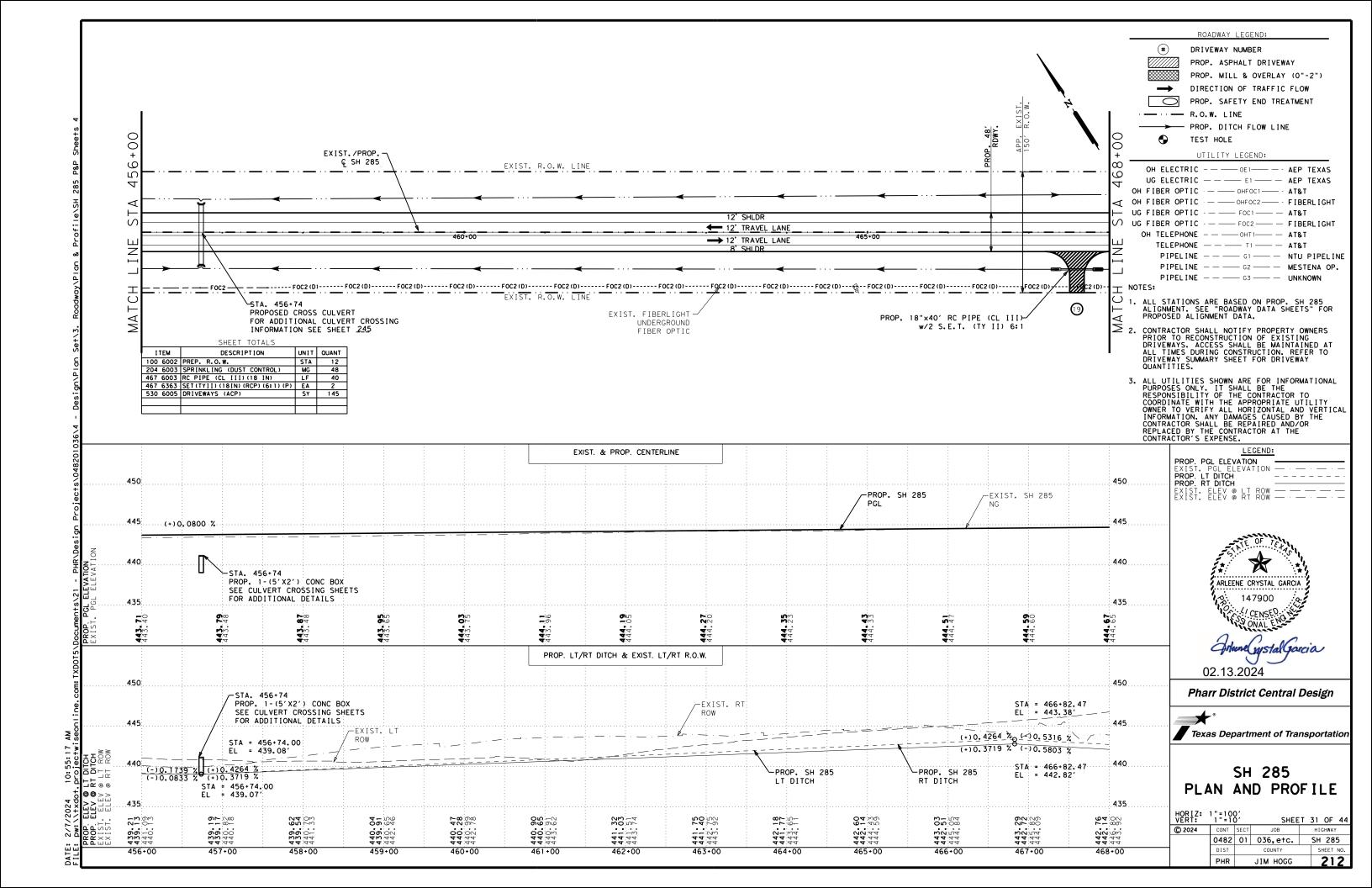


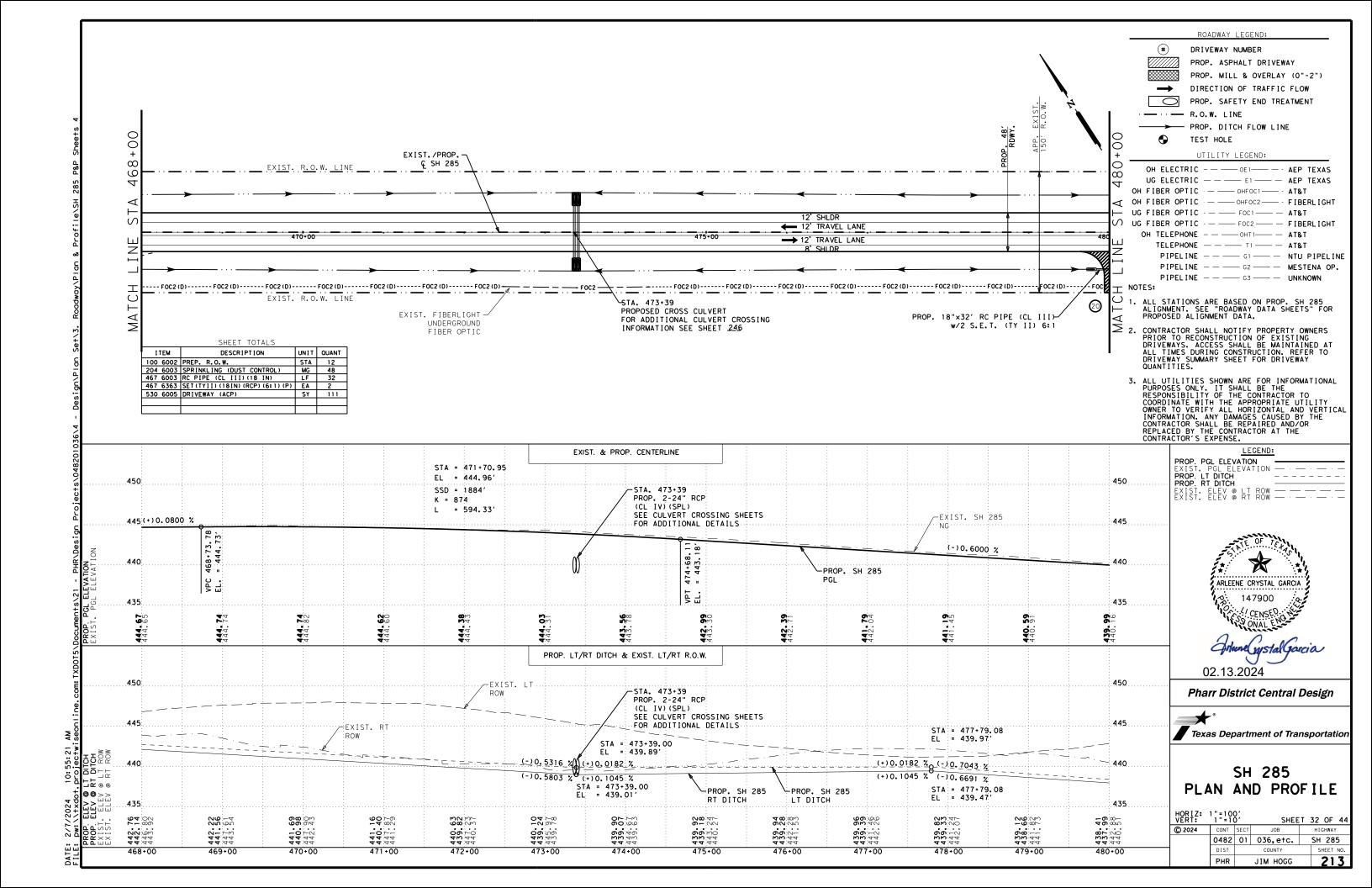


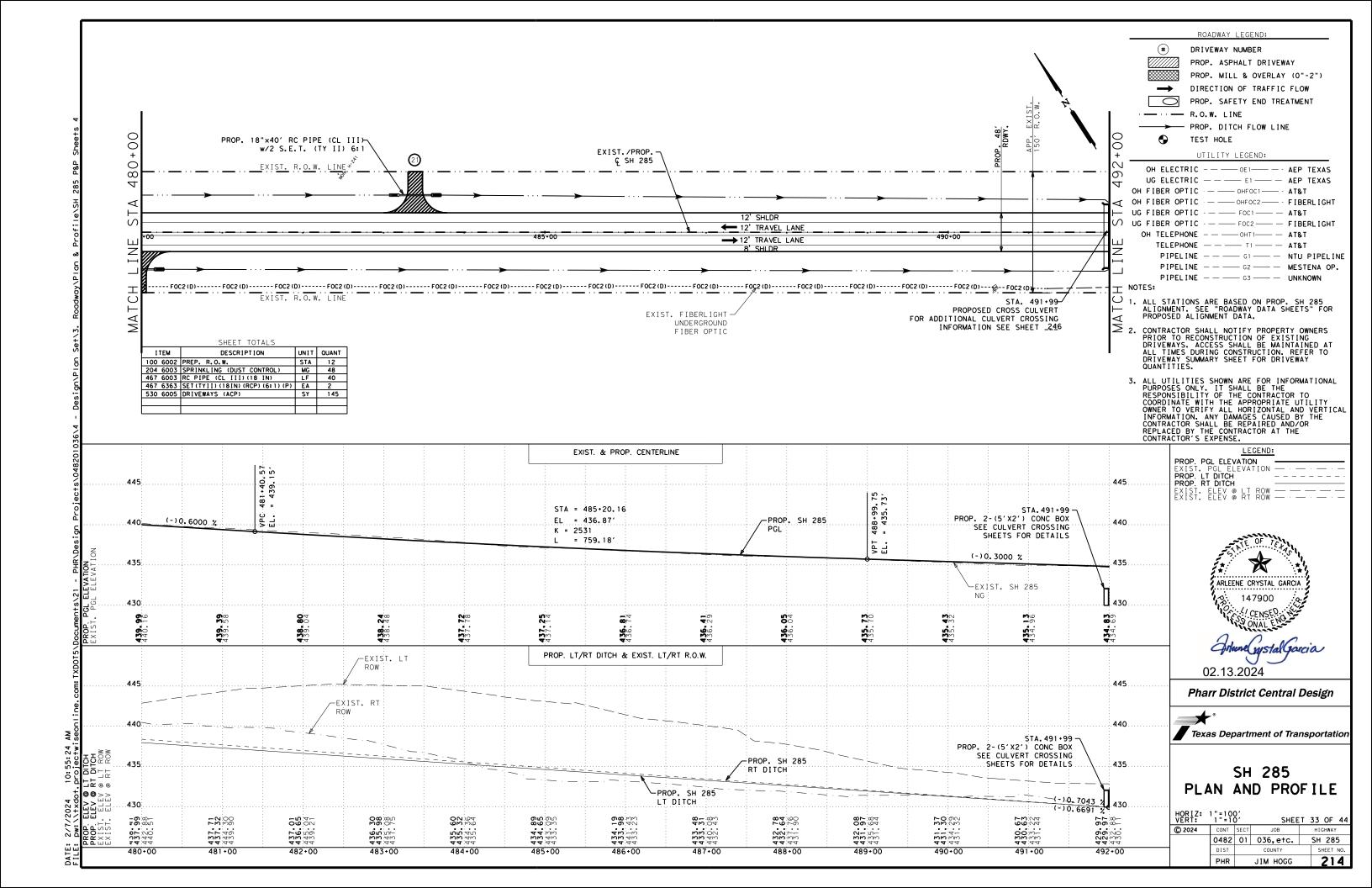


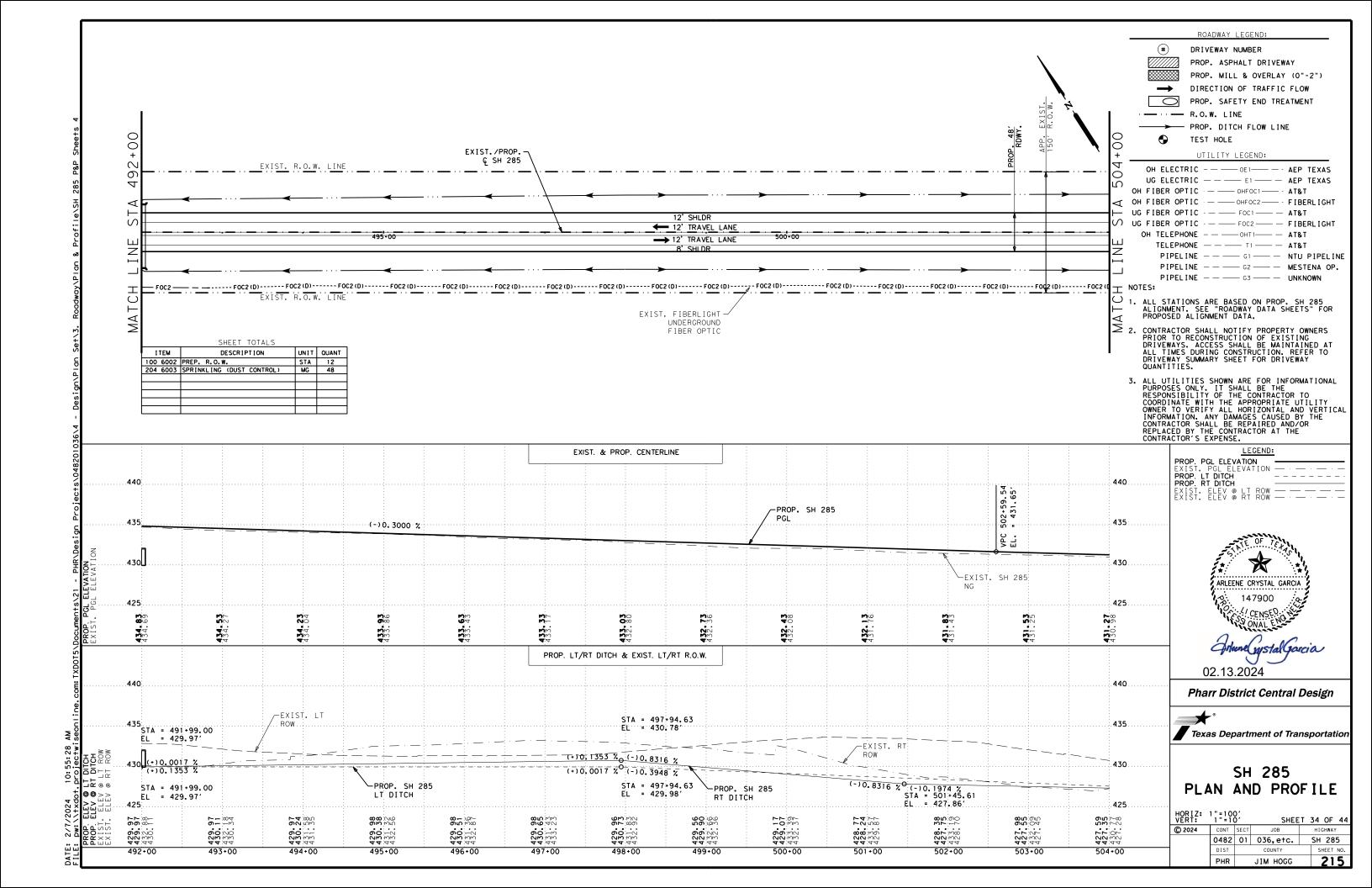


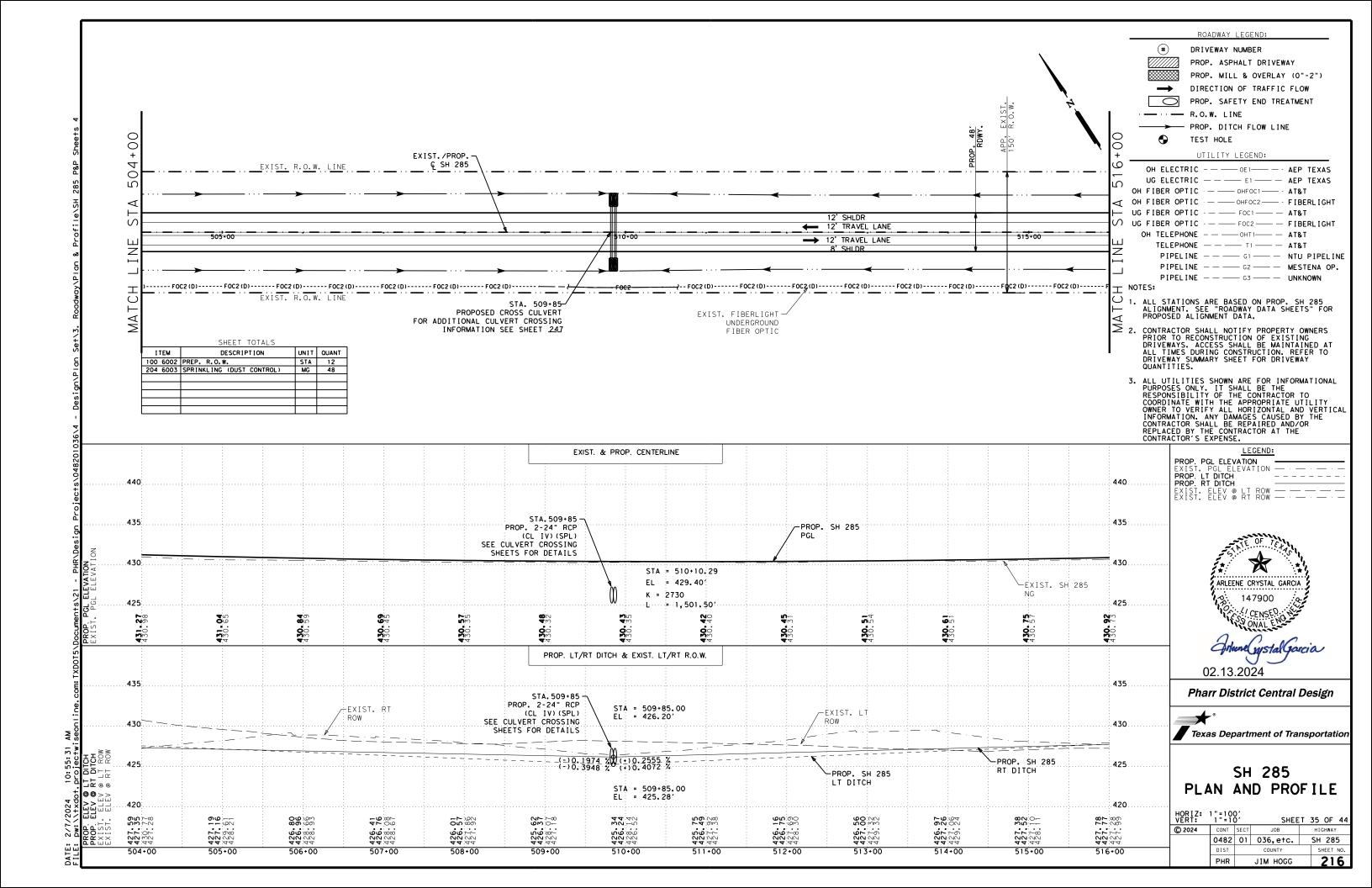


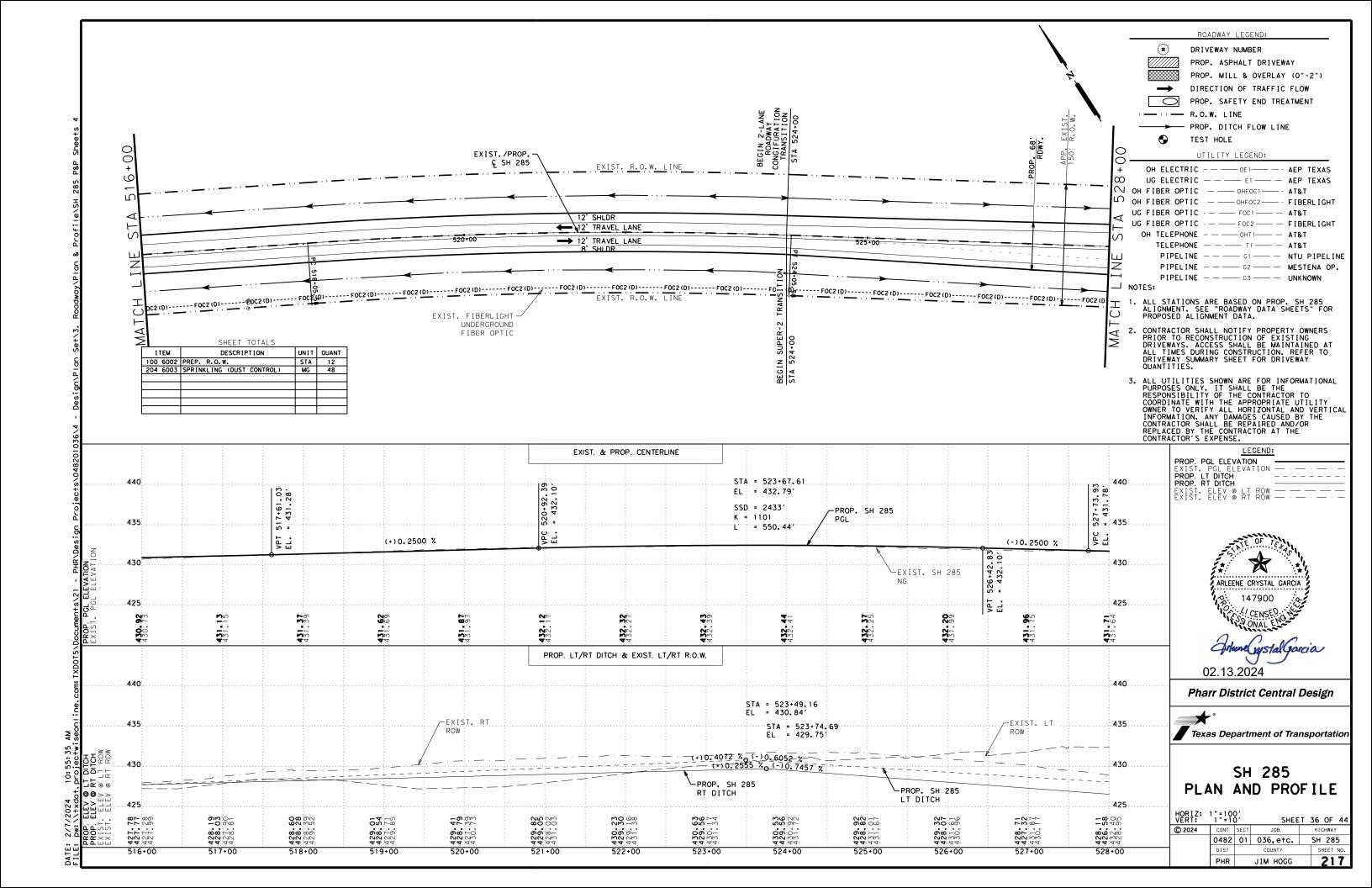


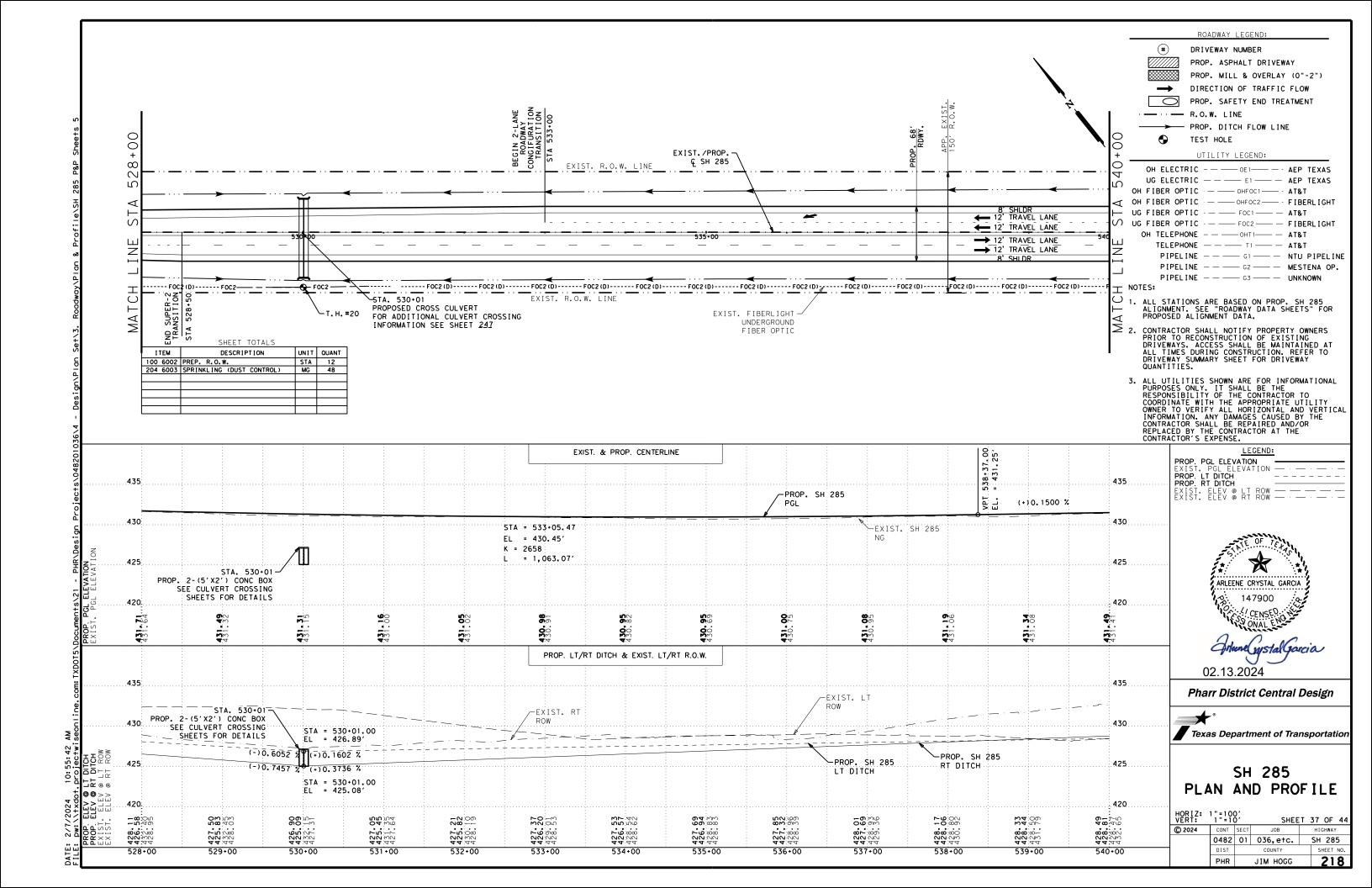


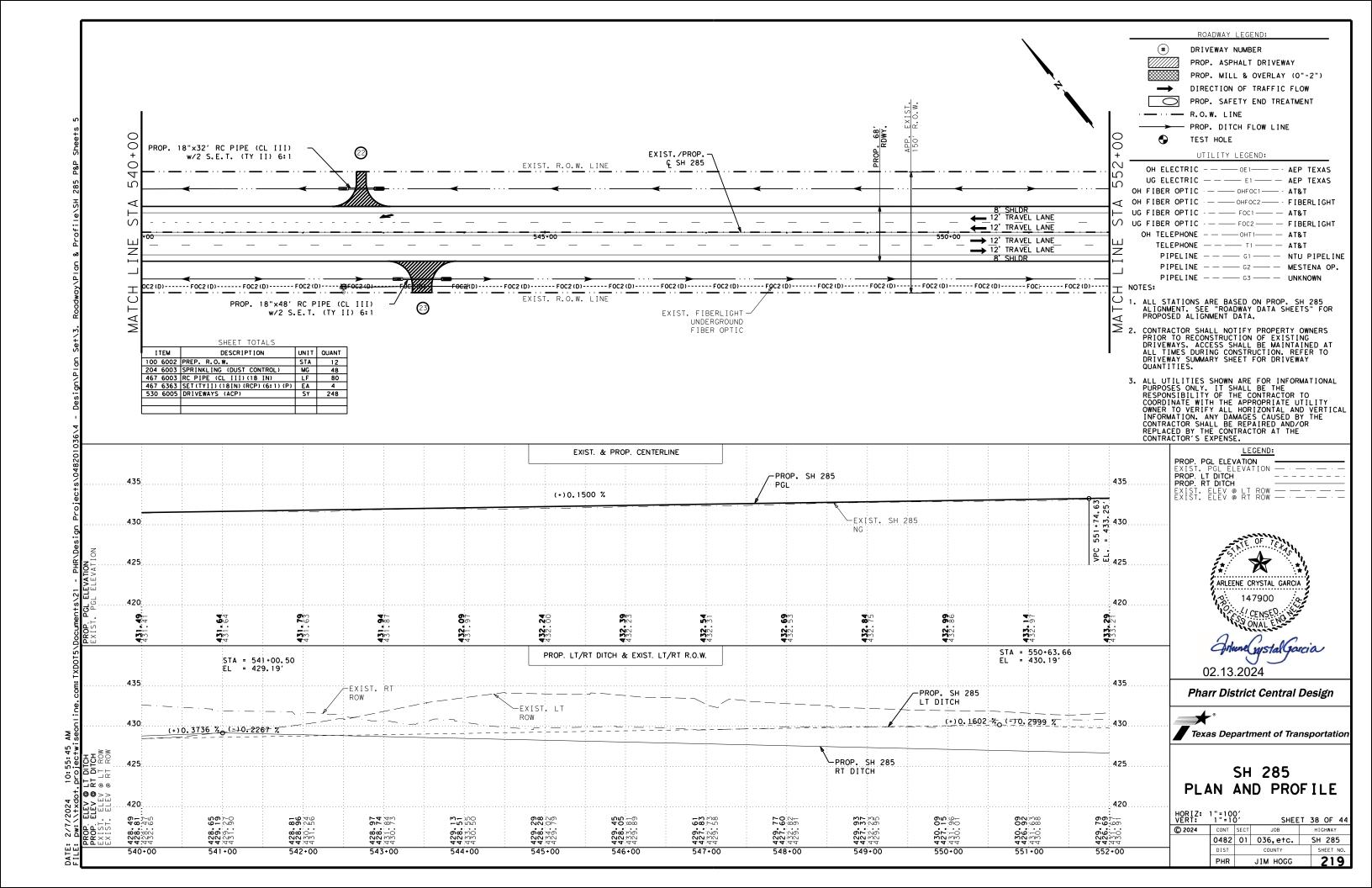


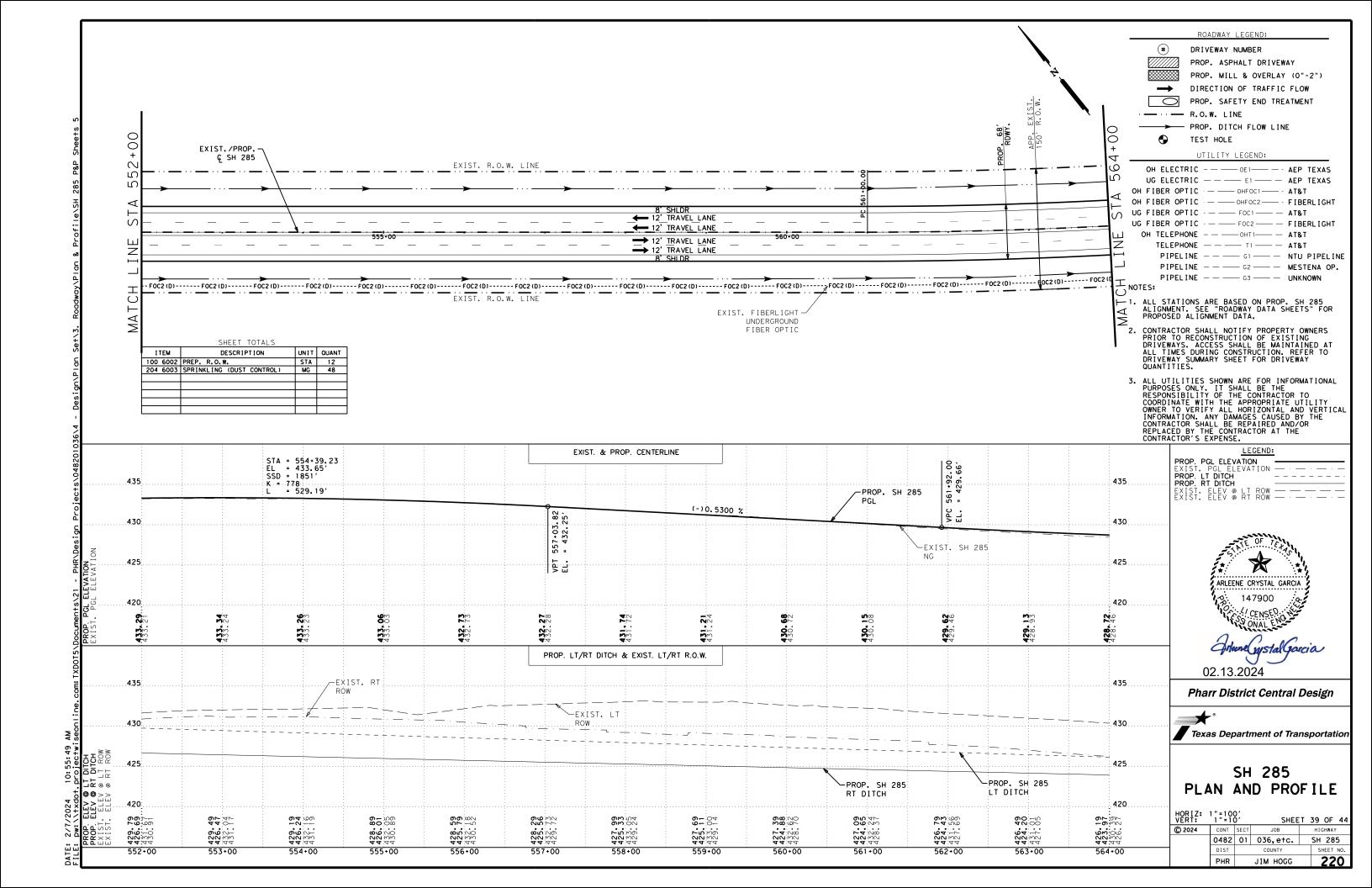


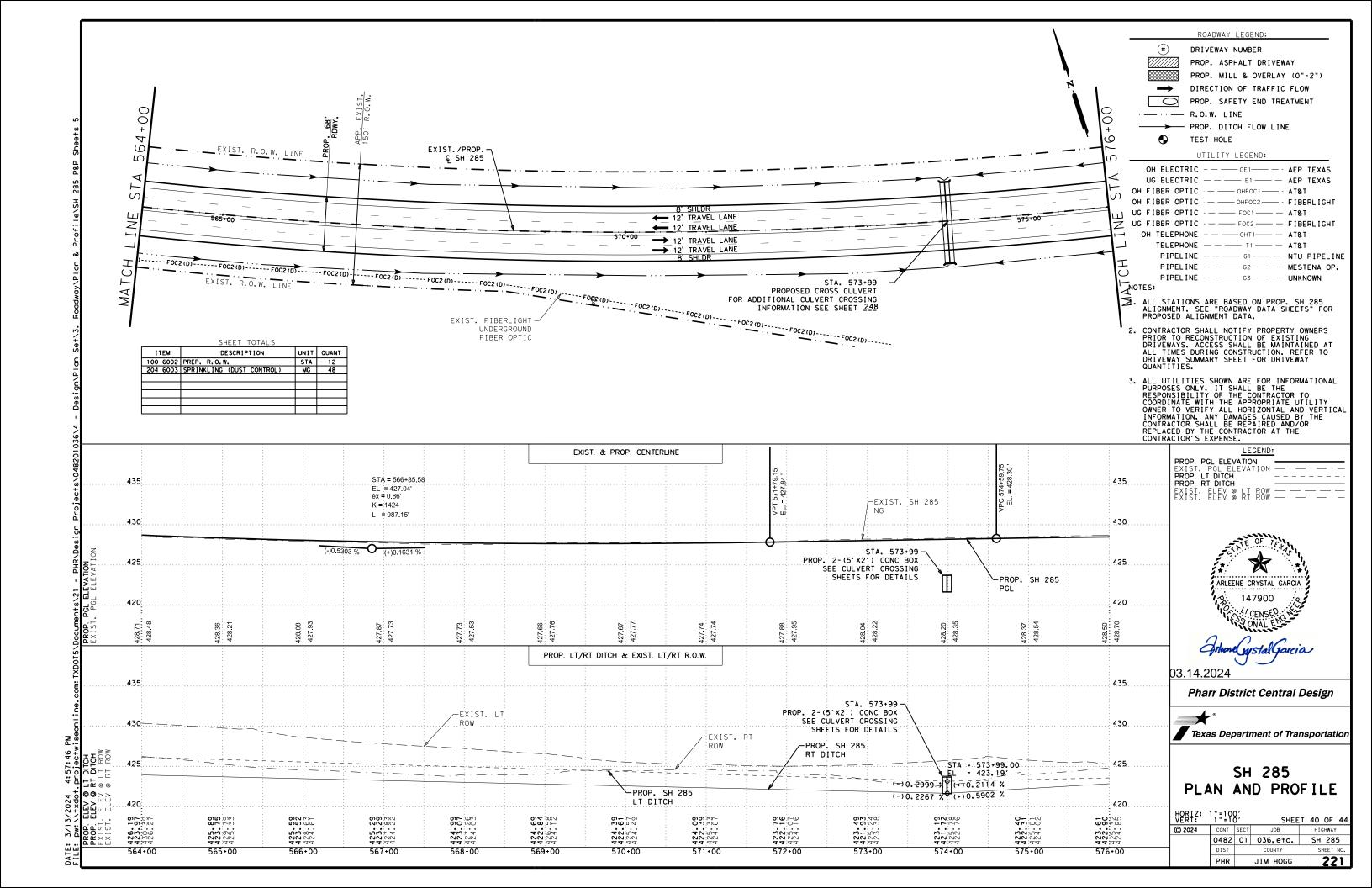


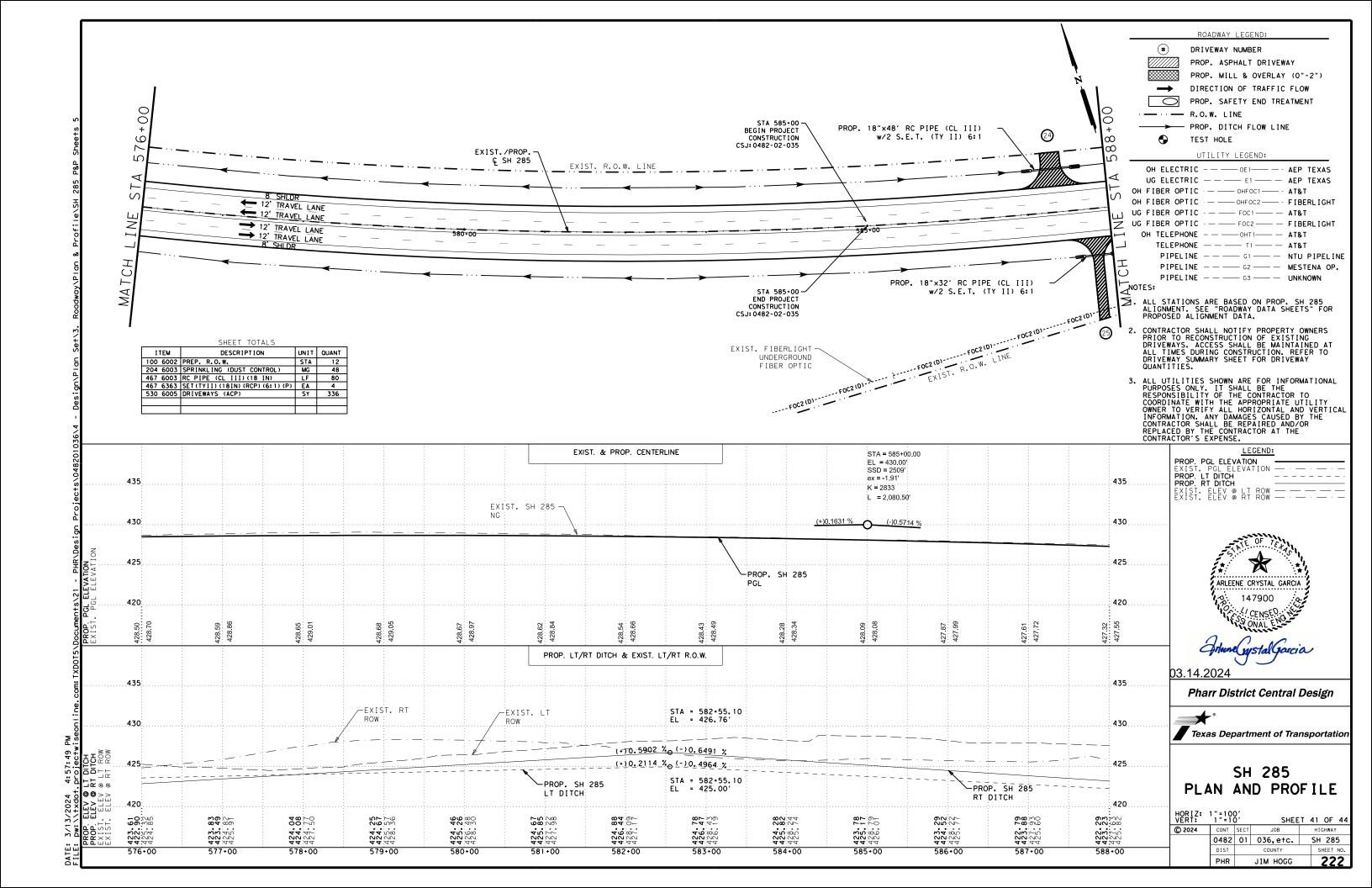


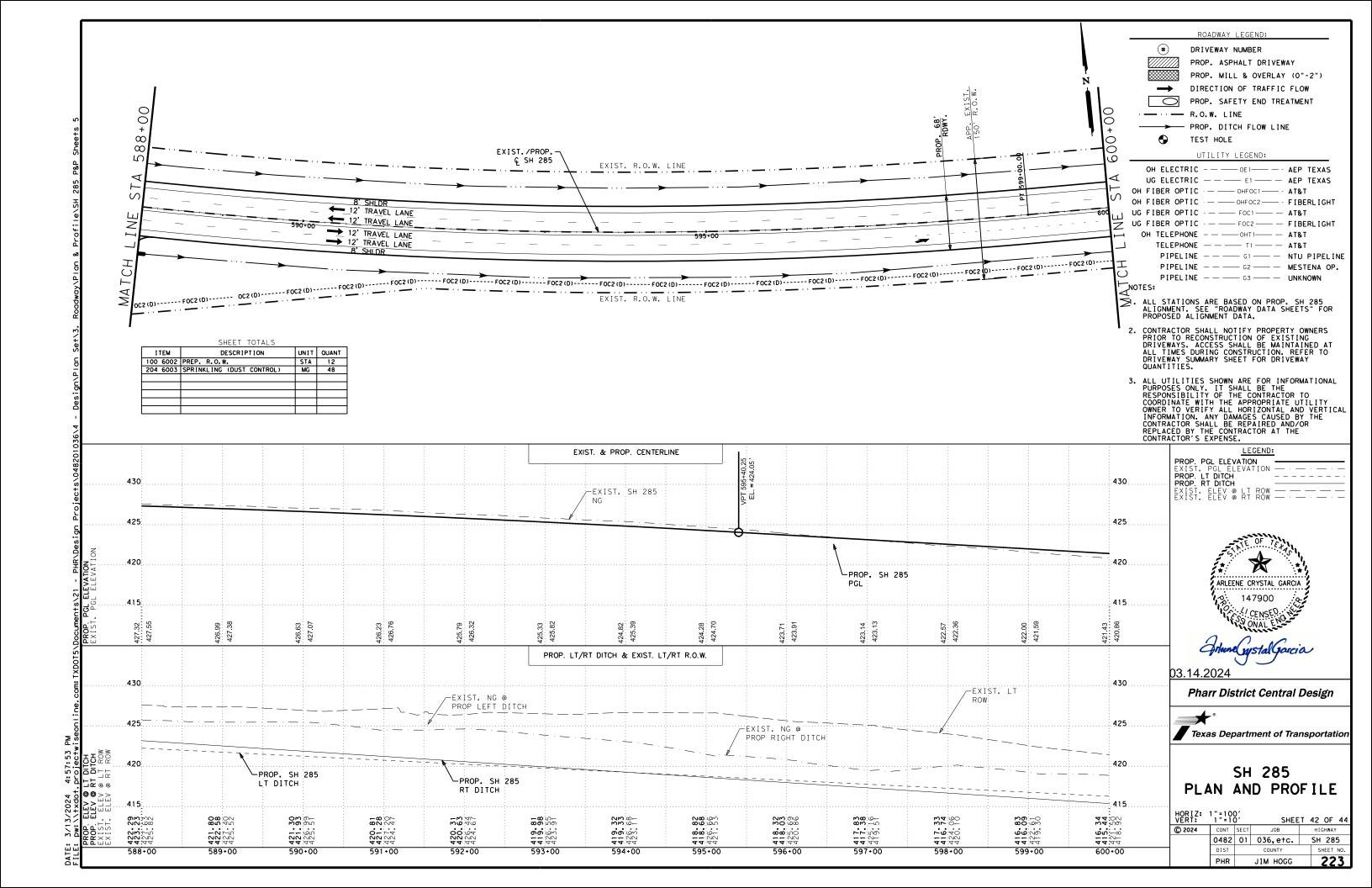


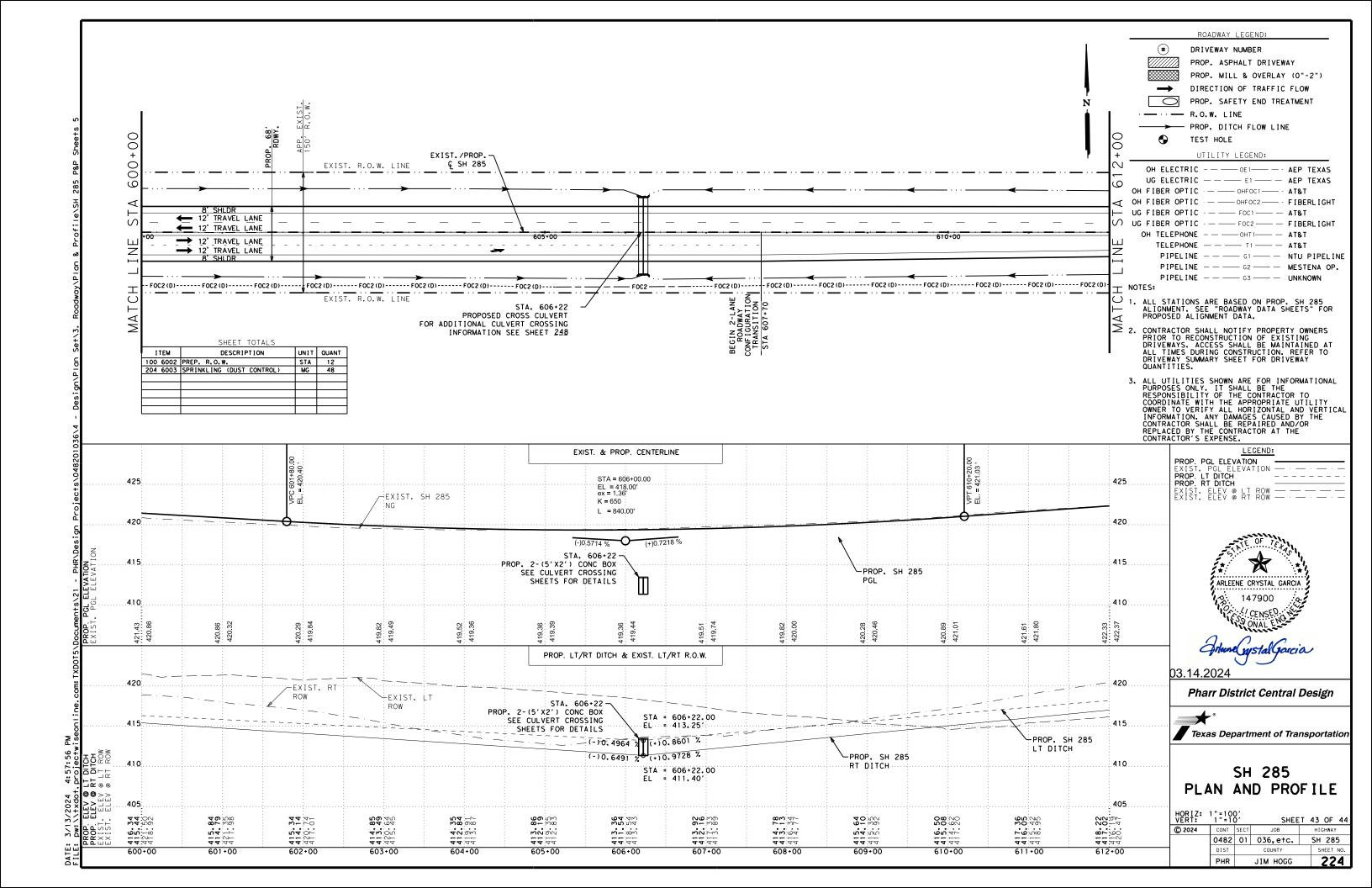


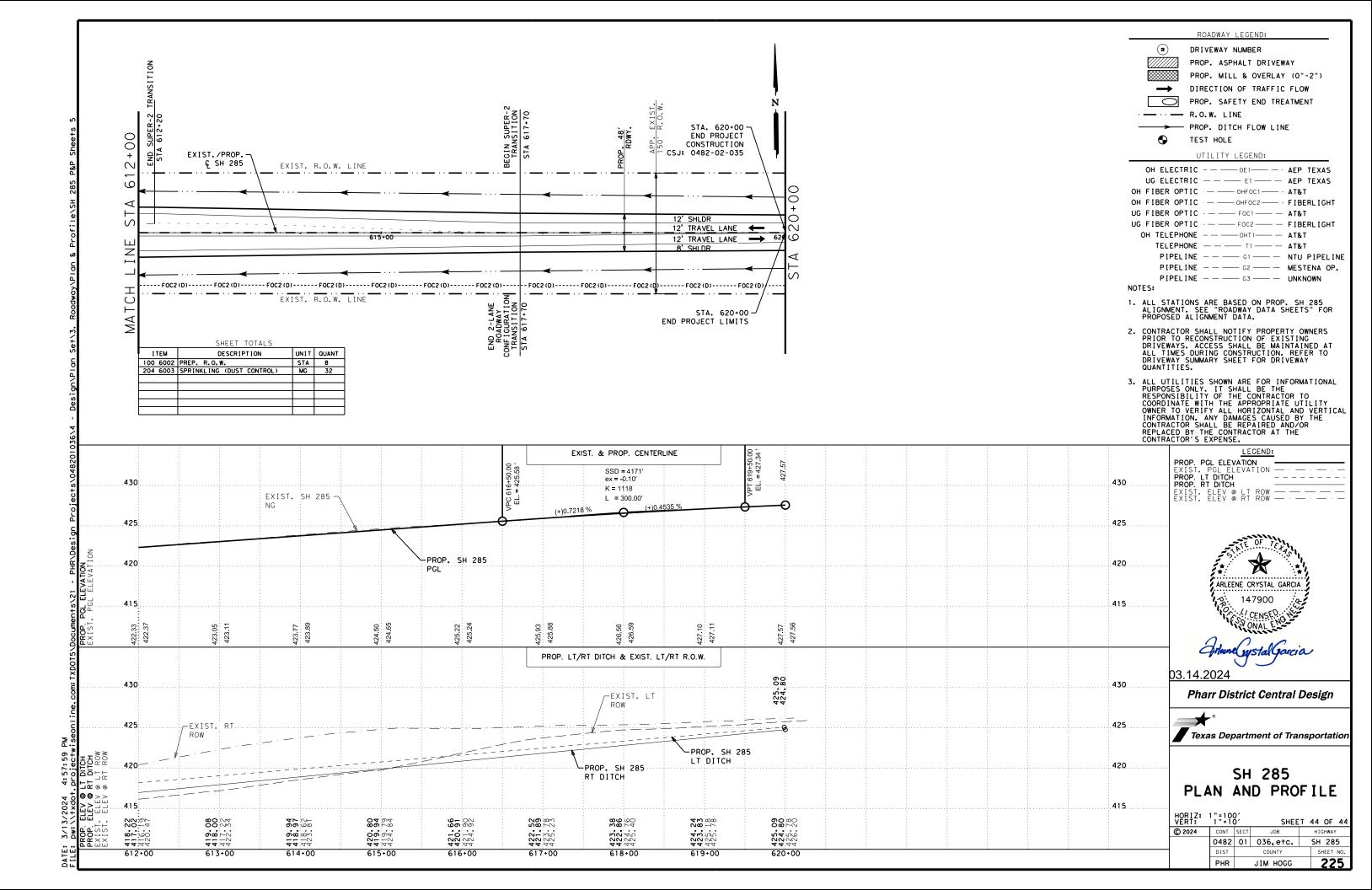


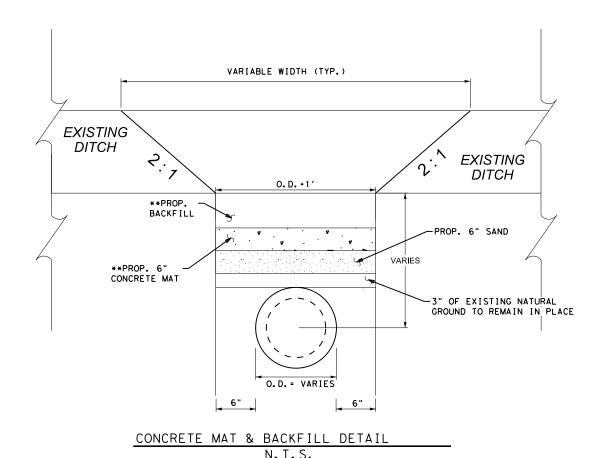












CONCRETE TO BE PAID BY ITEM 432

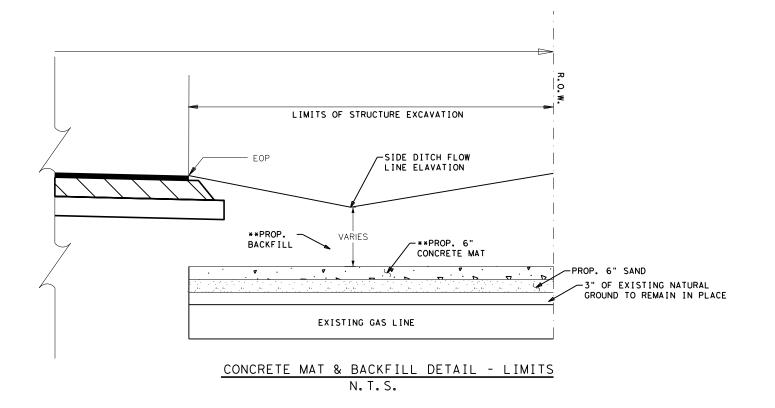
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITY OWNER
TO VERIFY HORIZONTAL AND VERTICAL INFORMATION. ANY DAMAGES CAUSED BY THE CONTRACTOR SHALL BE REPAIED AND/OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

TXDOT AND UTILITY OWNER PERSONNEL SHALL BE PRESENT DURING OPERATION.

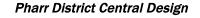
BACKFILL TO BE TAMPED AND JETTED

** PROP. BACKFILL TO BE PAID SUBSIDIARY TO PERTINENT BID ITEMS PER ITEM 400 SPECIFICATIONS.

REINFROCEMENT NO. 4 BARS @ 12" CENTERS EACH WAY OR EQUIVALENT WIRE MESH.





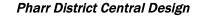




SH 285 CONCRETE MAT FOR UTILITY CROSSING

			SHE	ET 1 OF 1
© 2024	CONT	SECT	JOB	HIGHWAY
	0482	01	036,etc.	SH 285
	DIST		COUNTY	SHEET NO.
	PHR		JIM HOGG	226

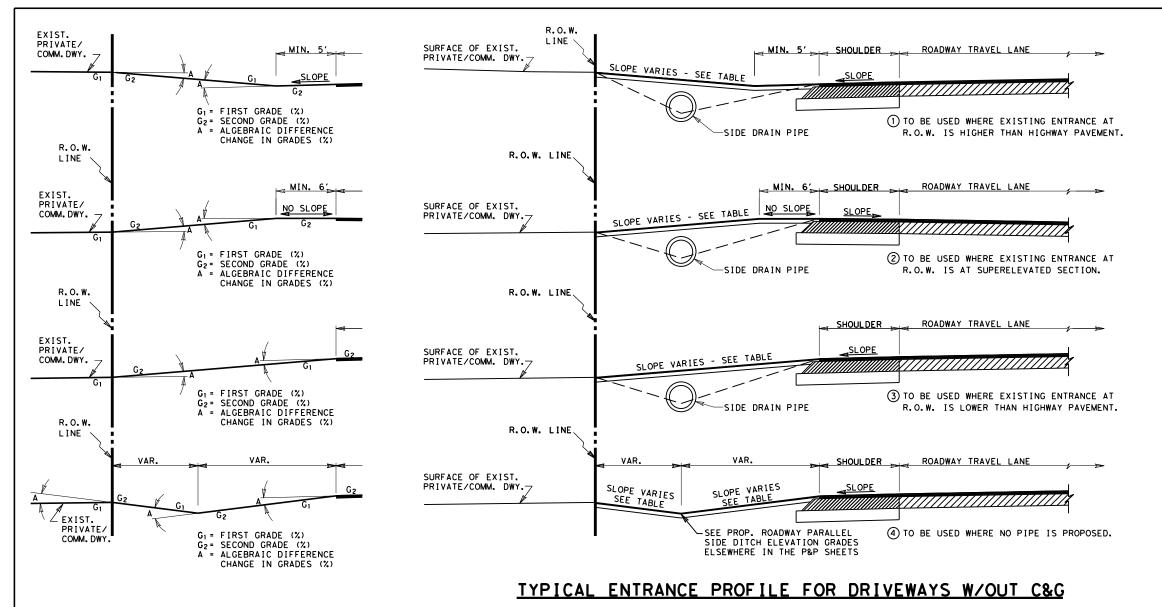
*FOR CONTRACTORS INFORMATION ONLY. NO PAY ITEM.





SH 285 DRIVEWAY TABLE

© 2024	CONT	SECT	JOB	HIGHWAY	
	0482	01	036,etc.	SH 285	
	DIST	COUNTY		SHEET NO.	
	PHR		JIM HOGG	227	



PROPOSED DRIVEWAY SLOPE TABLE

COMMERCIAL DRIVEWAYS @ 12:1 MAX.
RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PROP. DWY ALGEBRAIC DIFFERENCE TABLE

COMMERCIAL DRIVEWAYS @ A = 6% DESIRABLE
RESIDENTIAL DRIVEWAYS @ A = 8% DESIRABLE
FORMULA, A=G2-G1

DRIVEWAY PROP. WIDTH TO MATCH EXIST. MIN. 12" FOR DWYS (RES. & COMM.)AND/OR MIN. 15" FOR DWYS (CTY. RD. & CITY ST.) TO BE SET AT PROP. FLOWLINES DRIVEWAY PAVEMENT AT R.O.W. (BOTH SIDES) EDGE OF SHOULDER SLOPE TO MATCH SLOPE TO MATCH ROADWAY PARALLEL * 6:1 REQUIRED -ROADWAY PARALLEL * 6:1 REQUIRED SIDE DITCH GRADE SIDE DITCH GRADE PROP. NEW EXIST./PROP. SIDE DRAIN PIPE PROP. NEW PROP. S.E.T. PROP. S.E.T. R.C.P. (CL III) R.C.P. (CL III) EXTENSION EXTENSION

☐ - 1' MIN. ON DRIVEWAYS (RES. & COMM.)
2' MIN. ON DRIVEWAYS (COUNTY RD. & CITY ST.)

* - 6:1 SLOPE REQUIRED

NOTES:

ALL ENTRANCES CONSTRUCTED ON THIS PROJECT ARE SUBJECT TO CONCURRENCE WITH EXISTING GOVERNING REGULATIONS AS SET OUT BY THE STATE - TEXAS TRANSPORTATION COMMISSION.

ENTRANCE'S BASE AND SURFACING MAY BE EXTENDED BEYOND R.O.W. LINE AS REQUIRED TO MEET EXISTING DRIVEWAY GRADE IN A SATISFACTORY MANNER OF WHICH NO STEEPER THAN 12:1 FOR COMMERCIAL DRIVEWAY AND 8:1 FOR RESIDENTIAL DRIVEWAY SLOPE WILL BE CONSTRUCTED.

ALL FLEXIBLE BASE USED FOR PRIVATE DRIVES & COMMERCIAL DRIVES WILL NOT REQUIRE LIME TREATMENT.

EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER.

PROP. WIDTH OF DRIVEWAYS TO MATCH EXISTING WIDTH AT R.O.W. LINE.

114 #/SY ACP (COMPACTED) IS EQUAL TO 1 IN. DEPTH, 171 #/SY ACP (COMPACTED) IS EQUAL TO $1\frac{1}{2}$ IN. DEPTH.

SIDE DRAIN PIPES TO BE INSTALLED WHERE ROADWAY DITCH DRAINAGE IS NECESSARY, AS INDICATED ON PLANS AND/OR AS DIRECTED BY THE ENGINEER.

SIDE DRAIN PIPES TO BE INSTALLED WITH A MINIMUM OF 12" COVER WITH PROPOSED RESIDENTIAL & COMMERCIAL DRIVEWAY MATERIAL OR 15" COVER WITH PROPOSED COUNTY ROAD & CITY STREET ROADWAY MATERIAL.

AVERAGE DRIVEWAY DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS (ELSEWHERE IN PLANS) ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL DRIVEWAY DIMENSIONS MAY BE CHANGED BY THE ENGINEER BASED ON EXISTING FIELD CONDITIONS.

THE RATE OF PRIME COAT SHALL BE 0.10 GAL/SY FOR PRIVATE AND/OR COMMERCIAL DRIVEWAYS AND 0.20 GAL/SY FOR PUBLIC DRIVEWAYS (COUNTY ROADS AND/OR CITY STREETS).

TYPICALLY A CHANGE IN GRADE OF THREE PERCENT (3%) OR LESS AND A DISTANCE BETWEEN CHANGES IN GRADE OF AT LEAST ELEVEN FEET (11') ACCOMMODATES MOST VEHICLES. HOWEVER, LITERATURE SUGGESTS THAT A SIX PERCENT (6%) TO EIGHT PERCENT (8%) CHANGE IN GRADE MAY OPERATE EFFECTIVELY. INDIVIDUAL SITE CONDITIONS SHOULD BE EVALUATED TO ACCOMMODATE THE VEHICLE FLEET USING THE DRIVEWAY.

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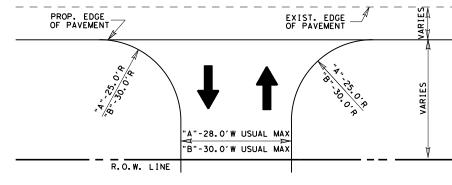
PHARR DISTRICT STANDARD



DRIVEWAY
PROFILE DETAILS

RE۷	1. 3/	/2020	DRIVEWAY1. DGN						
D. RD. V. NO.	STATE	AID PROJECT NO.	FILE NO. SHEET NO.						
6						228			
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.			
FXAS	21	JIM HOGG	0482	01	036. etc.	SH 285			

DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS

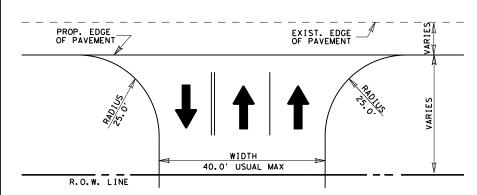


"A"- ONE ENTRY LANE AND ONE EXIT LANE, FEWER THAN 4

LARGE VEHICLES PER HOUR

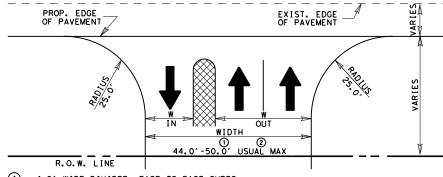
"B"- ONE ENTRY LANE AND ONE EXIT LANE, 4 OR MORE SINGLE UNIT VEHICLES OPER HOUR

1 - DRIWEWAY DESIGNS FOR LARGER VEHICLES WILL BE CONSIDERED ON A CASE BY CASE BASIS

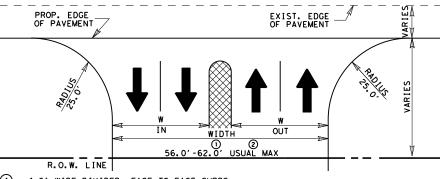


ONE ENTRY LANE AND TWO EXIT LANES (WITHOUT DIVIDERS)

DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS

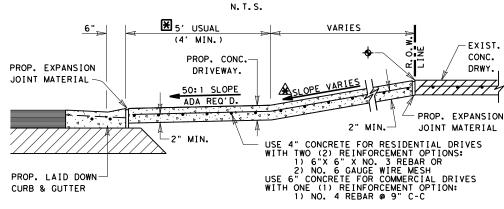


- 1 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 2 10.0' WIDE DIVIDER, FACE-TO-FACE-CURBS
- ONE ENTRY LANE AND TWO EXIT LANES (WITH A DIVIDER)



- 1 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 2 10.0' WIDE DIVIDER, FACE-TO-FACE-CURBS
- TWO ENTRY LANES AND TWO EXIT LANES (WITH A DIVIDER)

¥5' USUAL VARIES (4' MIN.) EXIST. DRWY. PROP. ACP EXIST. SURFACE -FLUSH TIF-IN DRIVEWAY. ELEV. TO LAID DOWN -OPE VARIES 50:1 SLOPE ADA REQ'D. CURB & GUTTER - 4" MIN. -4" MIN. PROP. 4" NEW/SALVAGE FLEXBASE MATERIAL PROP. LAID DOWN-TYPICAL ASPH. CONC. PVM'T. CURB & GUTTER DRIVEWAY SECTION



TYPICAL CONCRETE DRIVEWAY SECTION N.T.S.

PROP./FUTURE SIDEWALK CROSSING LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS.

SEE P&P SHEETS FOR PROP. SIDEWALK LOCATION IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

PROP. DWY ALGEBRAIC DIFFERENCE TABLE

COMMERCIAL DRIVEWAYS @ A = 6% MAX.

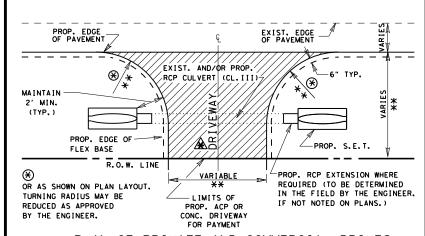
RESIDENTIAL DRIVEWAYS @ A = 8% MAX.

ENTRANCE'S BASE AND SURFACING MAY
BE EXTENDED BEYOND R.O.W. LINE AS
REQUIRED TO MEET EXISTING GRADE IN
A SATISFACTORY MANNER OF WHICH NO
STEEPER THAN 12:1 FOR COMMERCIAL
DRIVEWAY AND 8:1 FOR RESIDENTIAL
DRIVEWAY SLOPE WILL BE CONSTRUCTED.

PROPOSED DRIVEWAY SLOPE TABLE

COMMERCIAL DRIVEWAYS @ 12:1 MAX.
RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER

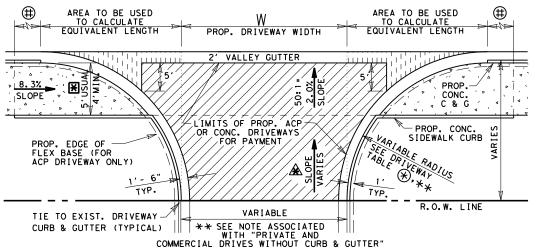


PLAN OF PRIVATE AND COMMERCIAL DRIVES

** FOR PRIVATE RESIDENTIAL DRIVES, TRY TO MATCH EXISTING WITH A MINIMUM WIDTH OF 12 FT. AND A MAXIMUM WIDTH OF 24 FT. WITH 15 FT. USUAL RADIUS. FOR COMMERCIAL DRIVES, USE ABOVE COMMERCIAL DRIVEWAY DETAILS.

A SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER



PLAN OF PRIVATE AND COMMERCIAL DRIVES SEE P&P SHEETS FOR LOCATIONS OF DRIVES N.T.S.

PROP./FUTURE CONC. SIDEWALK LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

- LIMITS OF SLOPE FOR PROP. CONC. CURB BASED ON 8.3% SLOPE FOR SIDEWALK.
 - SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

CUT TO THE LIMITS OF

REMOVAL WHERE APPLICABLE.

	E X1 AND X2 MAY VARY PENDING ON RADIUS				
Prop. Driveway Radius	X1 Or X2 (Sq Ft Area / 2') Equivalent LF Length				
5′	1				
8′	2				
10'	4				
12'	6				
15′	9				
18′	12				
201	15				
22'	18				
25′	24				
28′	30				
30′	34				

SEE DRIVEWAY TABLE FOR LIMITS
OF LAID DOWN CURB TO BE PAID
FOR AS CURB AND GUTTER

DRIVEWAY TYPES

TY PB-1
EXIST. PRIVATE OR COMMERCIAL DRIVEWAYS TO BE
CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE
FLEX. BASE, PRIMED AND SURFACED WITH 171#/SY ACP.

(HMA-D PG 64-22 SAC B MEETING ITEM 340)

CONCRETE (RESIDENTIAL)

EXIST. PRIVATE DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" CONCRETE. TO BE PAID FOR BY THE SQ.YD.

CONCRETE (COMMERCIAL)

EXIST. BUSINESS DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 6" CONCRETE. TO BE PAID FOR BY THE SQ.YD.

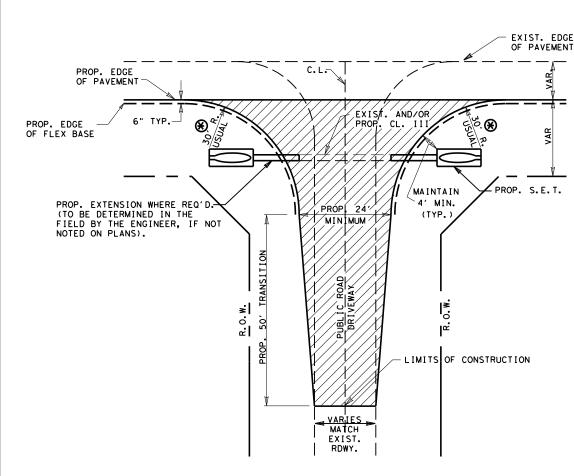
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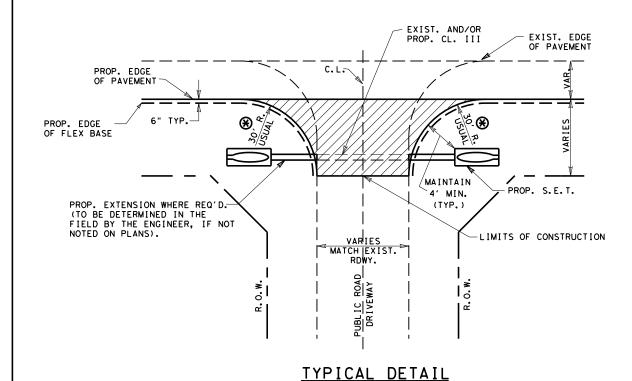
PRIVATE

(RESIDENTIAL-COMMERCIAL)

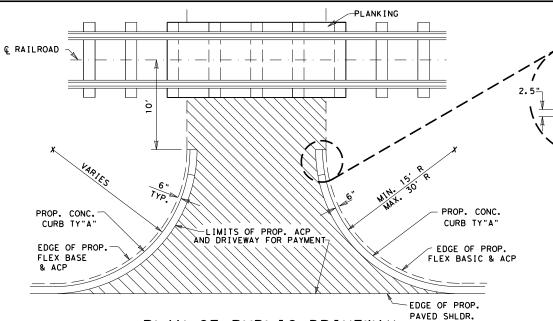
REV	. 08/2	22			DRIV	EWAY	2. DGN
FED.RD. DIV.NO.	F	PROJECT NO.		F	ILE NO.		SHEET NO.
6							229
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGH	HWAY NO.
TEXA	S 21	JIM HOGG	0482	01	036, etc.	SE	285



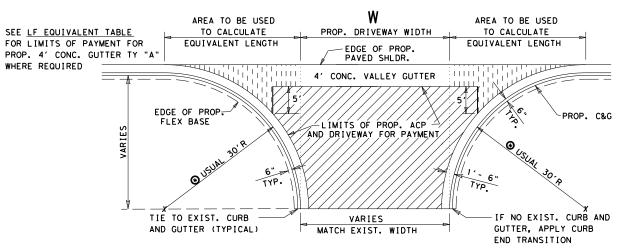
TYPICAL DETAIL (WHEN EXIST. ROADWAY WIDTH LESS THAN 24'.)



(WHEN EXIST. ROADWAY WIDTH EQUAL TO OR GREATER THAN 24'.)



PLAN OF PUBLIC DRIVEWAY ADJACENT TO R.R. CROSSING



PLAN OF PUBLIC DRIVEWAY

GENERAL NOTES:

AVERAGE DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS ARE FOR ESTIMATING PURPOSES ONLY.

CURB END

Prop.

Driveway

Radius

10

15

20 25

30

35

40

45

50

55

60

65

70

TRANSITION_

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF

4'CONC. GUTTER TY. "A"

LF OF VALLEY GUTTER= W + X1 + X2

WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS

X1 or X2

(Sq Ft Area / 4')

Equivalent LF Length

19

27

37

48

61

75

91

109

127

148

170

LOCATIONS LISTED ON THE TABLE ARE APPROXIMATE, EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER AS REQUIRED.

SEE DRIVEWAY TABLE, TURNING RADIUS MAY BE REDUCED AS APPROVED BY THE ENGINEER.

SEE TABLE OF DRIVEWAYS FOR TOTAL LENGTH OF PROP. 4' CONC. VALLEY GUTTER FOR EACH LOCATION.

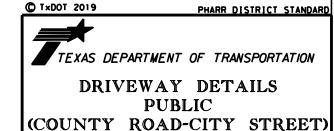
TY PBS1

EXIST. UNPAVED PUBLIC DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 12" LIME TREAT. SUBGRADE, 8" FLEX. BASE 1% LIME, THEN PRIMED AND SURFACED WITH 171#/SY ACP.

(HMA-D PG 64-22 SAC B MEETING ITEM 340)

TY PBS2

EXIST. DRIVEWAY TO BE CONSTRUCTED SAME AS PROPOSED ROADWAY.



REV.	8/	22		DRIVEWAY3. DGN						
D. RD. V. NO.	STATE	AID PROJECT NO.		FII	LE NO.	SHEET NO.				
6						230				
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.				
EVAC	21	LIM HOGG	0482	01	036 etc	SH 285				

DRAINAGE COVER SHEET

Pharr District Central Design



Texas Department of Transportation

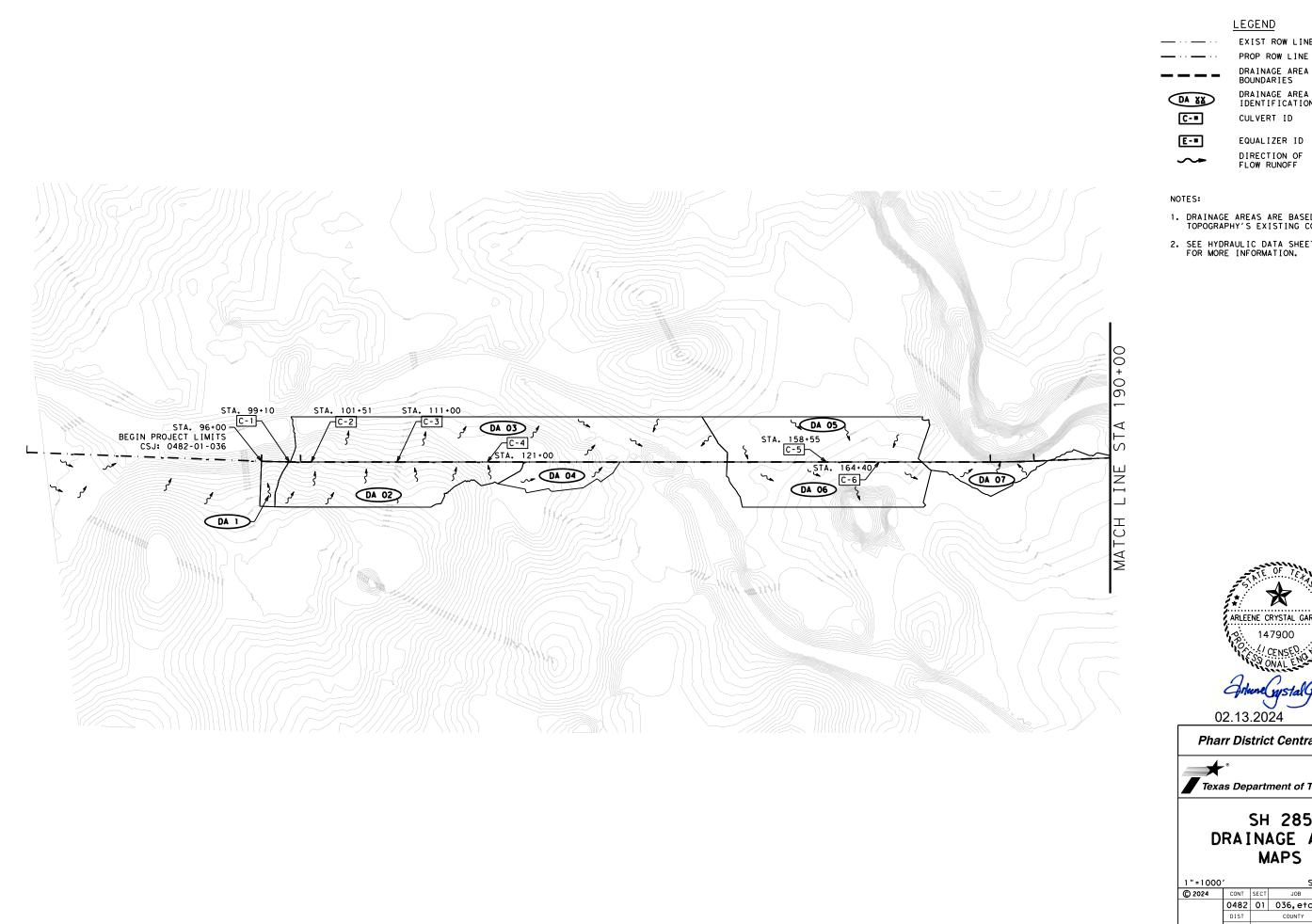
SH 285 DRAINAGE COVER SHEET

© 2024 CONT SECT JOB HIGHWAY

0482 01 036, etc. SH 285

DIST COUNTY SHEET NO.

PHR JIM HOGG 231



EXIST ROW LINE

DRAINAGE AREA IDENTIFICATION

EQUALIZER ID

- 1. DRAINAGE AREAS ARE BASED ON TOPOGRAPHY'S EXISTING CONDITIONS.
- 2. SEE HYDRAULIC DATA SHEETS FOR MORE INFORMATION.

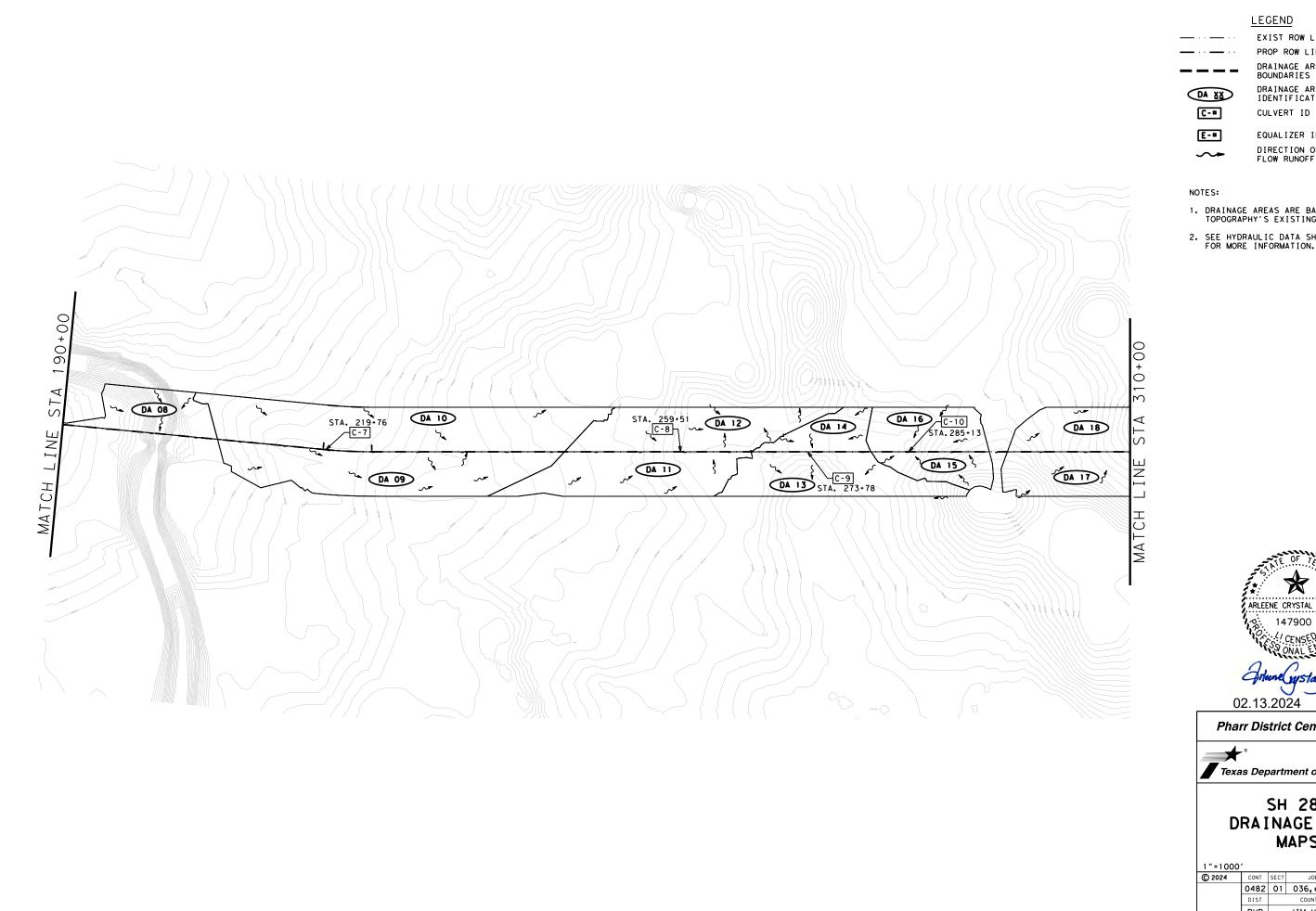


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SH 285 DRAINAGE AREA MAPS

1 " = 1 000	•		SHE	EΤ	1	OF	5
2024	CONT	SECT	JOB		ΗI	GHWAY	Ì
	0482	01	036,etc.		SH	28	5
	DIST	COUNTY			s	HEET	NO.
	PHR		JIM HOGG			23	Ŋ



EXIST ROW LINE

PROP ROW LINE

DRAINAGE AREA BOUNDARIES

DRAINAGE AREA IDENTIFICATION

EQUALIZER ID

DIRECTION OF FLOW RUNOFF

- 1. DRAINAGE AREAS ARE BASED ON TOPOGRAPHY'S EXISTING CONDITIONS.
- 2. SEE HYDRAULIC DATA SHEETS FOR MORE INFORMATION.



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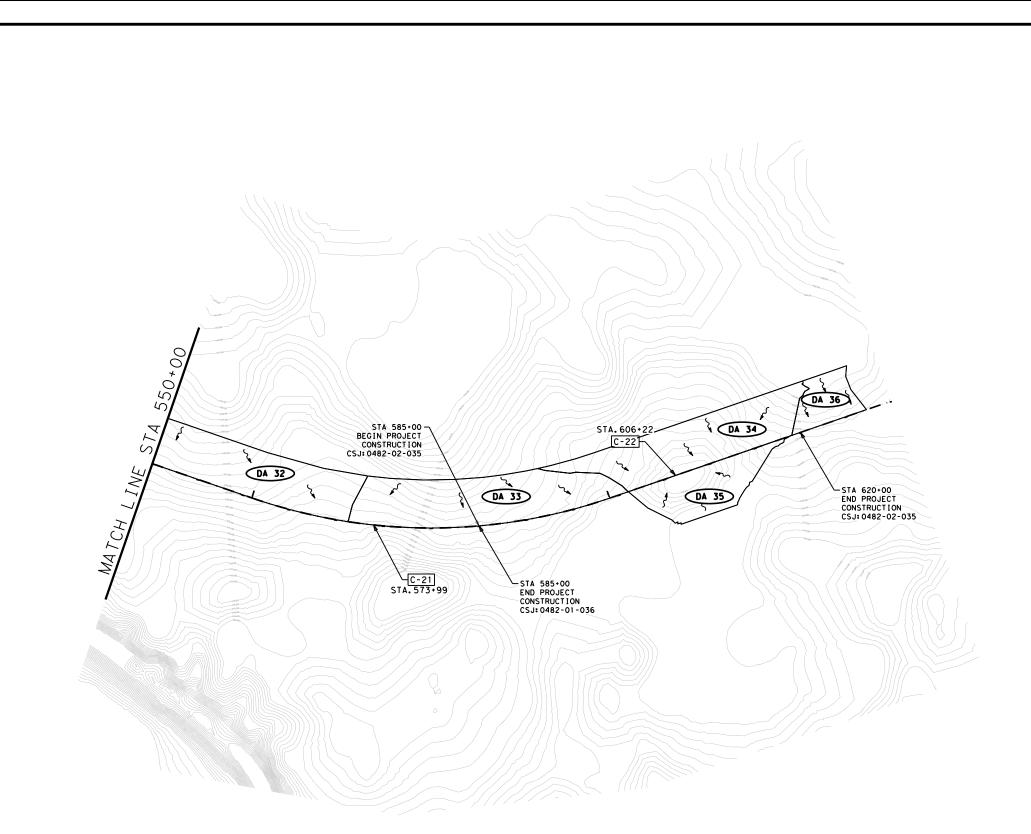


SH 285 DRAINAGE AREA MAPS

1 " = 1 000	,		SHE	EΤ	2	OF	5
C) 2024	CONT	SECT	JOB	HIGHWAY			
	0482	01	036,etc.		SH	28	5
	DIST		COUNTY			HEET	NO.
	PHR		JIM HOGG			23	Š







LEGEND

EXIST ROW LINE

PROP ROW LINE DRAINAGE AREA BOUNDARIES

DRAINAGE AREA IDENTIFICATION CULVERT ID



EQUALIZER ID

DIRECTION OF FLOW RUNOFF

NOTES:

- DRAINAGE AREAS ARE BASED ON TOPOGRAPHY'S EXISTING CONDITIONS.
- 2. SEE HYDRAULIC DATA SHEETS FOR MORE INFORMATION.



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SH 285 DRAINAGE AREA MAPS

1 " = 1000	,		SHE	EΤ	5	OF 5
© 2024	CONT	SECT	JOB		нΙ	GHWAY
	0482	01	036,etc.		SH	285
	DIST		COUNTY			HEET NO.
	PHR		JIM HOGG			236

$$= \frac{b}{(Tc + d)^2}$$

WHERE:

SH 285 HYDRAULIC DATA (RATIONAL METHOD)

5.71

5.56

5.87

5.42

6.81

5.87

5.29

6.03

5.56

5.87

5.42

5.87

5.42

5.05

5.56

6.81

5.71

5.29

5.71

5.29

5.56

5.05

3.01

6.03

<u>5.56</u>

5.87

5.87

6.21

5.56

6.03

5.71

5.87

5.71

6.03

6.81

4.93

100 YEAR STORM INTENSITY (IN/HR)

8.95

9.38

8.75

10.67

9.38

8.56

9.61

8.95

9.38

8.75

9.38

8.75

8.21

8.95

10.67

9.16

8.56

9.16

8.56

8.95

8.21

5.09

9.61

8.95

<u>9.38</u>

9.38

9.85

8.95

9.61

<u>9.16</u>

9.38

9.16

9.61

10.67

8.04

DISCHARGE 10 YEAR STORM O. (CFS)

35.2

79.0

9.6

44.9

36.1

8.3

22.8

53.0

71.9

35.0

<u>39.3</u>

31.7

11.9

13.1

25.0

43.4

46.2

24.4

16.1

40.0

14.8

9.1

30.0

6.8

21.4

22.6

25.8

17.4

20.5

29.1

41.5

41.3

39.0

22.6

8.5

DRAINAGE AREA (AC)

RUNOFF CONCENTRATION STORM INTENSITY (IN/HR)

16

17

15

18

10

15

19

14

17

15

18

15

18

21

17

10

16

19

16

19

17

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52

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DA 01

DA 02

DA 03

DA 04

DA 05

DA 06

DA 07

DA 08

DA 09

DA 10

DA 11

DA 12

DA 13

DA 14

DA 15

DA 16

DA 17

DA 18

DA 19

DA 20

DA 21

DA 22

DA 23

DA 24

DA 25

DA 26

DA 27

DA 28

DA 29

DA 30

DA 31

DA 32

DA 33

DA 34

DA 35

DA 36 | 6.9

2.3

25.3

53.8

7.1

26.4

24.6

6.3

15.1

38.1

49.0

25.8

26.8

9.4

9.4

14.7

30.4

34.9

17.1

12.2

28.8

11.7

12.1

19.9

4.9

14.6

16.6

12.5

13.6

20.4

28.3

28.9

25.9

13.3

PEAK DISCHARGE 100 YEAR STORM O (CFS)

5.3

56.6

126.2

15.5

70.4

57.7

13.5

36.3

85.2

114.9

<u>56.4</u>

62.8

51.2

19.3

21.0

39.2

69.6

74.7

39.2

26.1

64.4

24.0

15.4

47.8

11.0

34.2

36.1

40.9

28.0

32.7

46.7

66.4

66.2

62.2

35.5

13.9

DISCHARGE 25 YEAR STORM Co (CFS)

42.3

94.7

11.6

53.5

43.3

10.0

27.3

63.7

86.2

42.1

47.2

38.2

14.3

15.7

29.8

52.1

55.6

29.3

0.0

48.2

17.8

11.1

36.0

8.2

25.7

27.1

30.8

20.9

24.6

35.0

49.8

49.6

46.8

27.0

10.3

MAXIMUM RUNOFF RATE (CFS)

DRAINAGE AREA (ACRE) RUNOFF COEFFICIENT

I = AVERAGE RAINFALL INTENSITY (IN/HR)
TC = TIME OF CONCENTRATION (MIN)

e, b, d = RAINFALL INTENSITY FACTORS (PER COUNTY)

NOTES:

1. EQUATIONS AND "C" VALUES DERIVED FROM TXDOT 2019 HYDRAULIC DESIGN MANUAL CHAPTER 4 SECTION 12 "RATIONAL METHOD".

2. RAINFALL DEPTH AND INTENSITY ARE BASED ON VALUES FOUND IN THE "NOAA ATLAS OF DEPTH-FREQUENCY PRECIPITATION MANUAL MAXIMA FOR TEXAS".

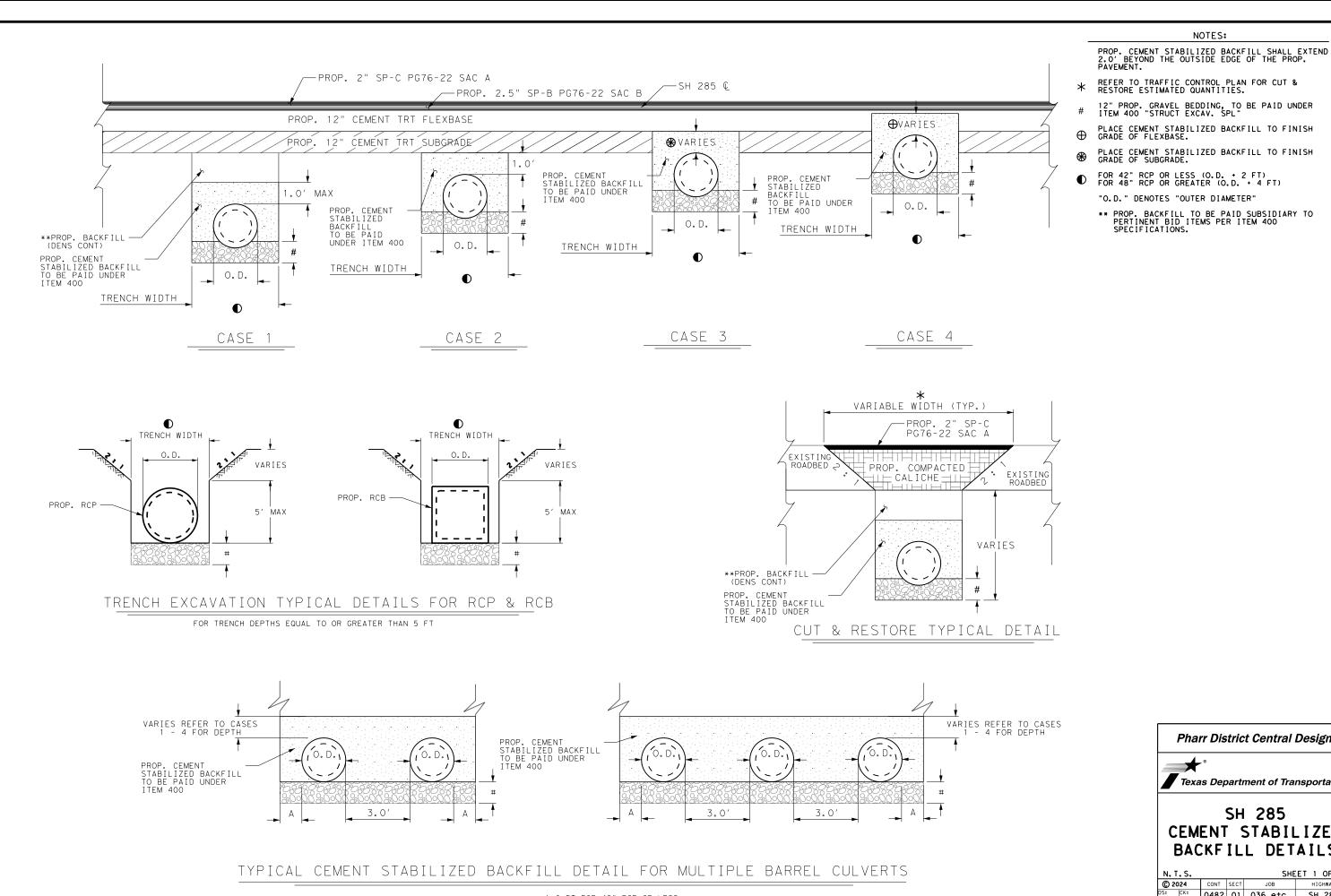


Pharr District Central Design



SH 285 **HYDRAUL I C** DATA

N. T. S.			SHE	ET 1 OF 1		
© 2024	CONT	SECT	JOB	HIGHWAY		
	0482	01	036,etc.	SH 285		
	DIST		COUNTY	SHEET NO.		
	PHR		JIM HOGG	237		



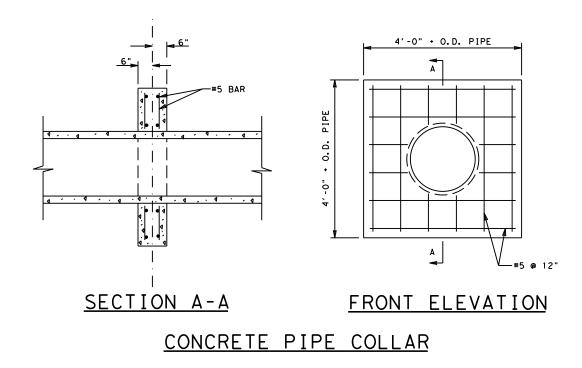
Pharr District Central Design

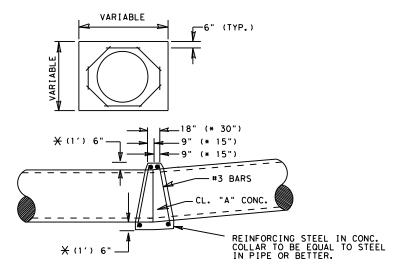
NOTES:



SH 285 CEMENT STABILIZED BACKFILL DETAILS

	N. T	. S.			SHE	ET	1	OF	1
	C) 20	24	CONT	SECT	JOB		НΙ	GHWAY	,
DS	:	CK:	0482	01	036,etc.		SH	28	5
DW		CK:	DIST		COUNTY		S	HEET	NO.
			PHR		JIM HOGG			<u>24</u>	9



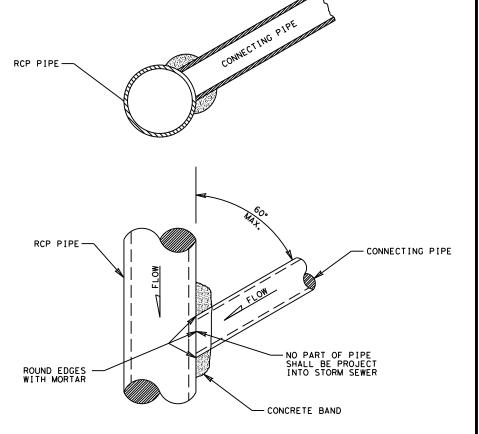


DETAIL FOR CONC. COLLARS

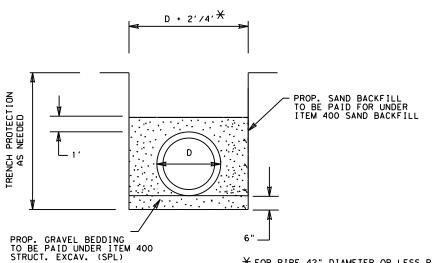
DRAINAGE STRUCTURES AND PIPE
SIPHONS (HORIZ. & VERT. BENDS

NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.

X FOR 42" DIAMETER AND LARGER PIPE

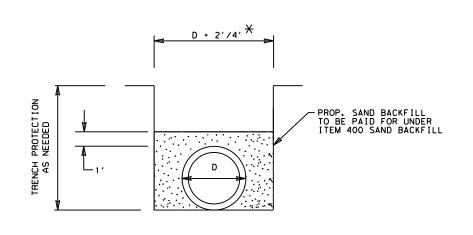


TYPICAL REINFORCED CONC. PIPE CONNECTION WITHOUT MANHOLE



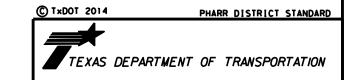
* FOR PIPE 42" DIAMETER OR LESS PLACE 1'OF FILL ON EACH SIDE OF THE PIPE. FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.

SPIRAL RIB CMP
TYPICAL BACKFILL DETAIL
GRAVEL & SAND



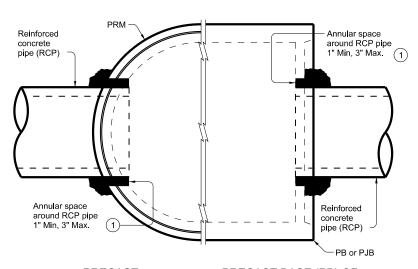
X FOR PIPE 42" DIAMETER OR LESS PLACE 1'OF FILL ON EACH SIDE OF THE PIPE. FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.

REINFORCED CONCRETE PIPE
TYPICAL BACKFILL DETAIL-SAND



MISCELLANEOUS PIPE DETAILS

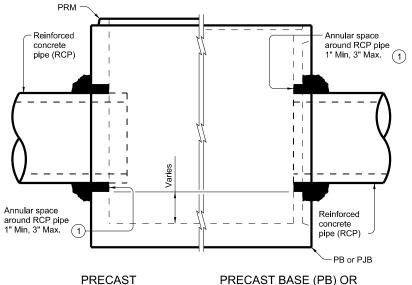
REV	. 8/	1 4	COLLAR, DGN					
FED. RD. FEDERAL AID PROJECT NO. FILE NO. SHE								
6							250	
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGH	WAY NO.	
TEXA:	5 21	JIM HOGG	0482	01 0	36, et	c. SH	285	



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

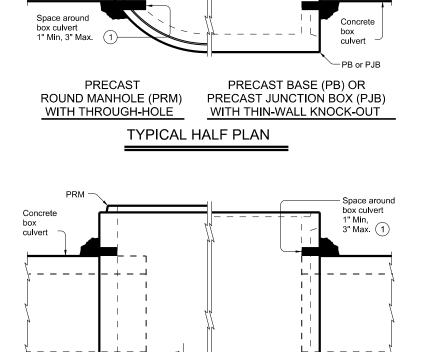
TYPICAL HALF PLAN



ROUND MANHOLE (PRM) WITH THROUGH-HOLE

PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

TYPICAL HALF ELEVATION



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

around

1" Min,

3" Max.

box culvert

Concrete

box

PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

Concrete

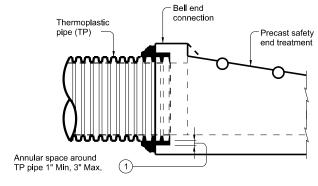
-PB or PJB

culvert

Space around box culvert

3" Max. (1)

TYPICAL HALF ELEVATION



(1) Completely fill the void between the precast structure and the connecting pipe or box with cementitious grouts and mortars in accordance with DMS-4675 "Cementitious Grouts and Mortars for Miscellaneous Application".

TYPICAL PARTIAL ELEVATION OF PRECAST SAFETY END TREATMENTS

Showing square PSET for parallel drainage, cross drainage shown similar.

CONSTRUCTION NOTES:

Do not grout rubber gasket joints without Manufacturer's recommendations.

Do not use bricks, masonry blocks, native stone, or similar materials in conjunction with grouted connections when filling void spaces around pipes or box culverts.

MATERIAL NOTES:

Provide grouted connections in accordance with DMS-4675 "Cementitious Grouts and Mortars for Miscellaneous

GENERAL NOTES: See applicable standards for notes and details not shown:

Precast Base (PB)

Precast Junction Box (PJB)
Precast Round Manhole (PRM)
Precast Safety End Treatments C/D Square (PSET-SC) Precast Safety End Treatments P/D Square (PSET-SP)

Provide Concrete Box Culverts in accordance with Item 462 "Concrete Box Culverts and Drains".

Provide Reinforced Concrete Pipe (RCP) in accordance with Item 464 "Reinforced Concrete Pipe".

Provide Thermoplastic Pipe (TP) in accordance with Special

Specification Thermoplastic Pipe.

Payment for grouted connections is considered subsidiary to other bid Items

Texas Department of Transportation

PIPE AND BOX **GROUTED CONNECTIONS** FOR PRECAST STRUCTURES

PBGC

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xDOT	February 2020	CONT	SECT	JOB		HIG	HWAY
	REVISIONS	0482	01	036,et	c.	SH	285
		DIST		COUNTY			SHEET NO.
				JIM HC	GG		251

Skews thru 45°

Skews thru 30°

Skews thru 15°

Skews thru 15°

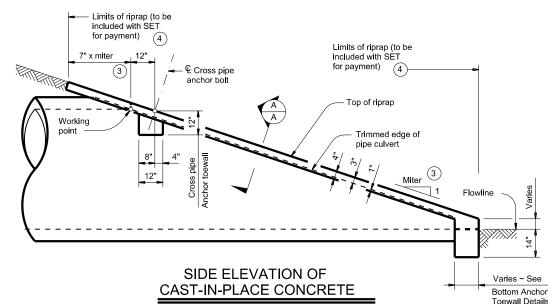
Always required

Always required

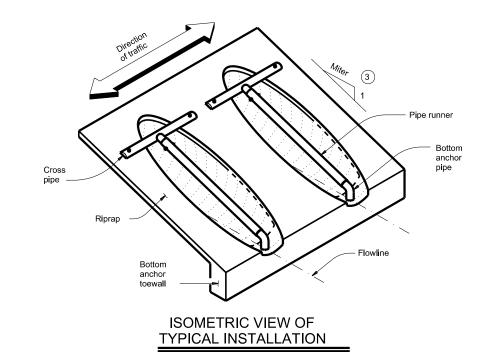
Always required

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing corrugated metal pipe (CMP) culvert. Details of reinforced concrete pipe (RCP) culvert are similar.)



(Showing reinforced concrete pipe (RCP) culvert. Details of corrugated metal pipe (CMP) culvert are similar. Pipe runners not shown for clarity)



(Showing installation with no skew.)

0° Skew 15° Skew 30° Skew 45° Skew 0° Skew 15° Skew 45° Skew 0° Skew 15° Skew 30° Skew 45° Skew 30° Skew 24" 1' - 7' N/A N/A N/A N/A N/A 12' - 9" 3' - 5" N/A N/A 5' - 10" N/A N/A 8' - 1' 1' - 8' N/A N/A N/A N/A 14' - 11" 27" 3' - 8" N/A 5' - 5" 6' - 11" N/A 7' - 7' 9' - 7" 11' - 11" 1' - 10" 30" 3' - 11" N/A N/A 6' - 4" 8' - 0" N/A N/A 8' - 9" 11' - 0" N/A N/A 13' - 8" 17' - 0" 10' - 0" 12' - 5" 13' - 9" 15' - 5" 19' - 2" 33" 1' - 11' 4' - 2" 6' - 2" 6' - 5' 7' - 3" 9' - 1" 8' - 6" 8' - 10" 13' - 3" 36" 2' - 1" 4' - 5" 6' - 11" 7' - 3" 8' - 2" 10' - 2" 9' - 6" 9' - 11" 11' - 2" 13' - 10" 14' - 9" 15' - 3" 17' - 2" 21' - 3" 42" 2' - 4" 4' - 11" 8' - 6" 8' - 10" 9' - 11" 12' - 4" 11' - 7" 12' - 0" 13' - 6" 16' - 8" 17' - 9" 18' - 5" 20' - 8" 25' - 7" 48" 2' - 7" 5' - 5" 10' - 1" 10' - 5" 11' - 9" N/A 13' - 7" 14' - 2" 15' - 10" N/A 20' - 9" 21' - 6" 24' - 2" N/A 54" 11' - 8" N/A N/A 15' - 8" 16' - 3" N/A 23' - 10" 24' - 8" N/A 3' - 0" 5' - 11" 12' - 1" N/A N/A 3' - 3" 17' - 9" 26' - 10" 60" 6' - 5" 13' - 3" N/A N/A N/A N/A N/A N/A N/A N/A N/A

12" thru 21"

24"

27"

30"

33"

36"

42" thru 60"

TYPIC	TYPICAL PIPE CULVERT MITERS								
Side Slope	0° Skew	15° Skew	30° Skew	45° Skew					
3:1	3:1	3.106:1	3.464:1	4.243.1					

4.141.1

6.212:1

4.619.1

6.928:1

5.657:1

8.485.1

Pipe Culvert

Culvert I.D

Cross Pipe

Length

4:1

6:1

4:1

6:1

	CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED ②				
Nominal	Single	Multiple			
Culvert I.D.	Pipe Culvert	Pipe Culverts			

Skews thru 45°

Skews thru 45°

Skews thru 30°

Skews thru 15°

Skews thru 15°

Normal (no skew

Always required

Pipe Runner Length

MAX P	IPE RUNN	IER LENG	THS
Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10' - 0"
4" STD	4.500"	4.026"	19' - 8"
5" STD	5.563"	5.047"	34' - 2"

STANDARD PIPE SIZES AND

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY)

(5	Ú)	
'	_			

Nominal		3:1 Side Slope			4:1 Side Slope			6:1 Side Slope				
Culvert I.D.	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A

- 1 Provide pipe runner of the size shown in the tables. Provide cross pipe of the same size as the pipe runner. Provide cross pipe stub out and bottom anchor pipe of the next smaller size pipe as shown in the Standard Pipe Sizes and Max Pipe Runner Lengths table.
- 2 This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°. For 54" culvert pipes, the skew must not exceed 15°. For 48" culvert pipes, the skew must not exceed 30°. For all culvert pipe sizes 42" and less, the skew must

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT Roadway Design Manual.

- 3 Miter = slope of mitered end of pipe culvert.
- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap"
- (5) Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

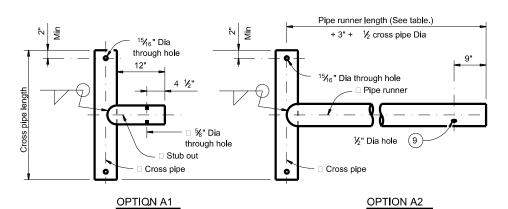
SHEET 1 OF 2



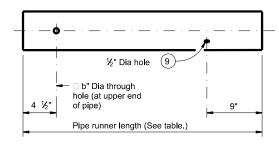
SAFETY END TREATMENT FOR 12" DIA TO 60" DIA

PIPE CULVERTS TYPE II ~ CROSS DRAINAGE

		_						
8	setpcdse-20.dgn		DN: GAF CK: CAT DW:		JRP ck: GAF			
TxDOT	February 2020	CONT	SECT	JOB		HIG	HWAY	
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		DIST	ST COUNTY				SHEET NO.	
		PHR	JIM HOGG				252	

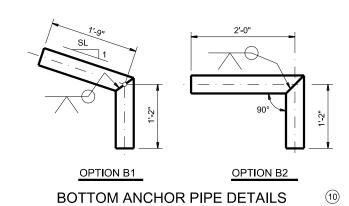


CROSS PIPE AND CONNECTIONS DETAILS



NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS



- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

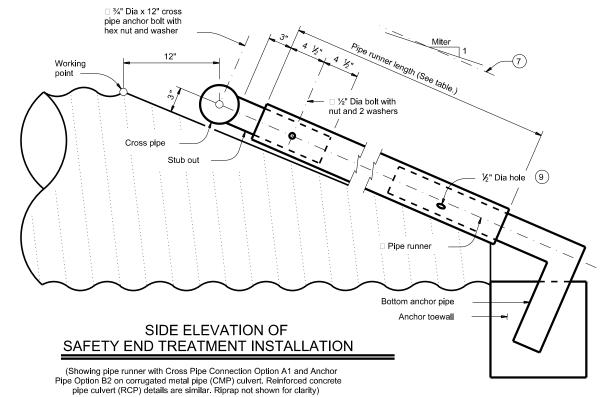
 Recommended values of side slope are 3:1, 4:1, and 6:1. All quantities, calculations, and dimensions shown herein are

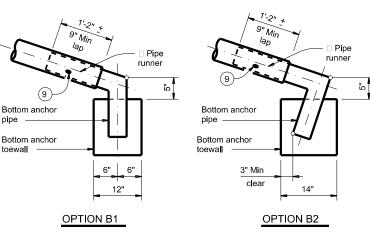
based on these recommended values. Slope of 3:1 or flatter

7 Note that actual slope of pipe runner may vary slightly from side slope of riprap and trimmed culvert pipe edge.

is required for vehicle safety.

- 8 Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.
- (10) At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.





BOTTOM ANCHOR TOEWALL DETAILS

(Culvert and riprap not shown for clarity.)

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, cross pipes, and anchor pipes conforming to the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication.

Repair galvanizing damaged during transport or construction in accordance with the specifications.

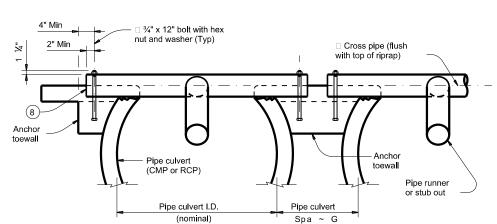
GENERAL NOTES

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. Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the

openings approximately perpendicular to the pipe runners.

Payment for riprap and toewall is included in the price bid for each safety end treatment.

Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".



SHOWING CROSS PIPE AND ANCHOR TOEWALL



SET skew

PLAN OF SKEWED

INSTALLATION

SECTION A-A



Limits of riprap (to be included with SET

Tangent to widest portion

of pipe culvert

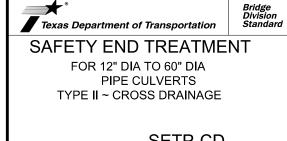
Pipe culvert

for payment)

(Typ)

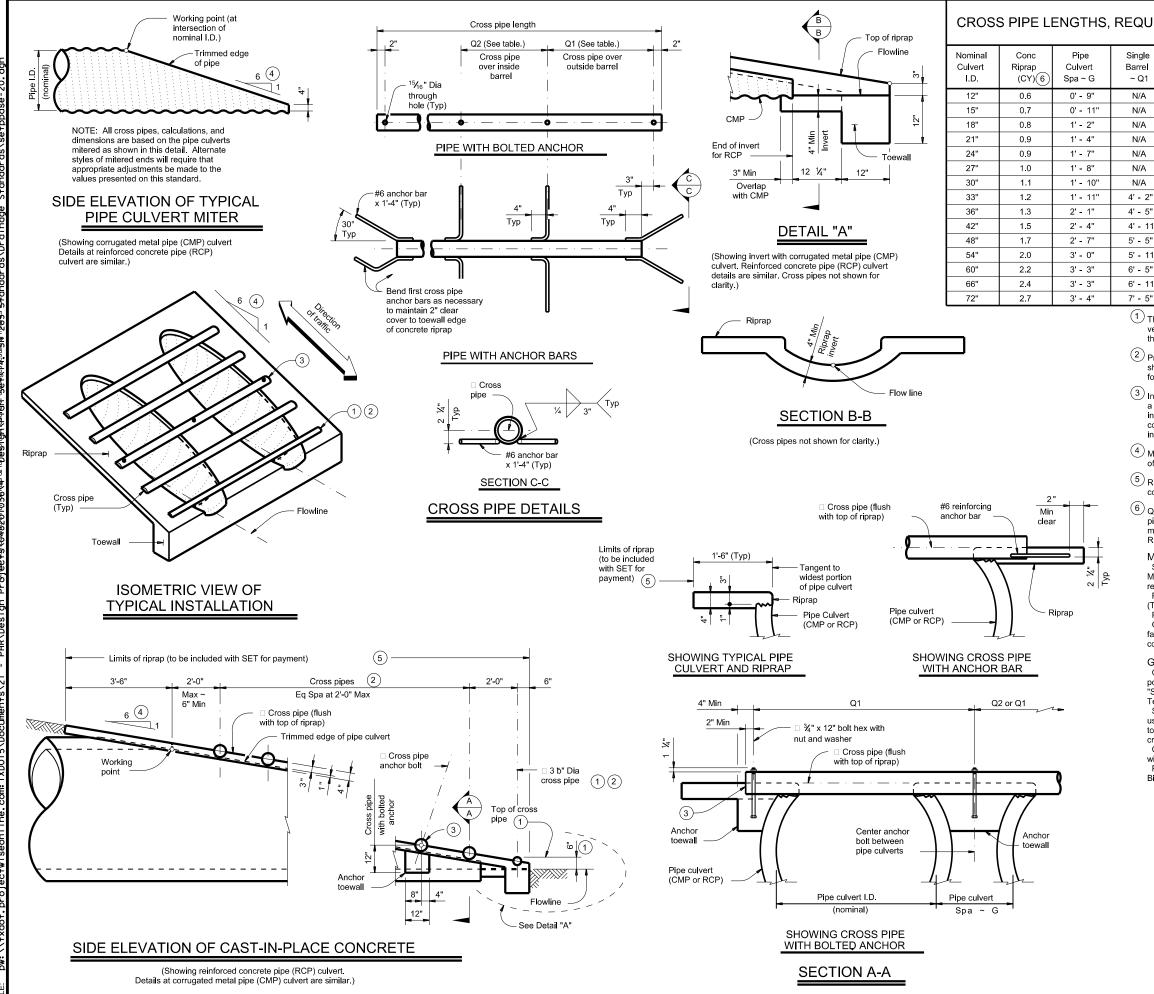
Limits of

riprap



		3		1P-C	ט					
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		DIST		COUNTY	r			SHEE	T NO.	
		PHR		JIM HO	GG			25	53	





CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES

Nominal Culvert I.D.	Conc Riprap (CY) 6	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi- Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"		
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"	3 or more pipe culverts	3" Std (3.500" O.D.)
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		(0.000 0.5.)
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"		
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"	3 or more pipe culverts	
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	2 or more pipe culverts	3 ½" Std
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	(4.000" O.D.)
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All wine subsents	4" Std
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"	All pipe culverts	(4.500" O.D.)
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"		
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"	All pipe culverts	5" Std (5.563" O.D.)
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		(0.000 0.5.)
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

- 1 The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.
- 2 Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.
- (3) Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
- 4 Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
- (5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
- Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete"
Material Producer List (MPL) may be used in lieu of steel
reinforcing in riprap concrete unless noted otherwise.
Provide cross pipes that meet the requirements of ASTM A53
(Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52.
Provide ASTM A307 bolts and nuts.
Galvanize all steel components, excent concrete reinforcing at

Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.

Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.



Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

SETP-PD

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				JIM HC	റ്റ		254

MAX SAFETY PIPE RUNNER LENGTHS AND REQUIRED SAFETY PIPE RUNNER SIZES

Max Safety	Required Pipe Runner Size						
Pipe Runner Length	Pipe Size	Pipe O.D.	Pipe I.D.				
11' - 2"	3" STD	3.500"	3.068"				
15' - 6"	3 ½" STD	4.000"	3.548"				
20' - 10"	4" STD	4.500"	4.026"				
35' - 4"	5" STD	5.563"	5.047"				

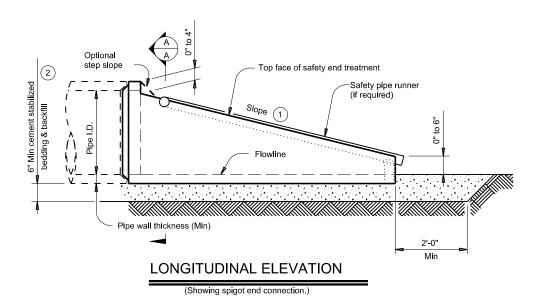
- (1) Slope as shown elsewhere in the plans. Slope of 3:1 or flatter is required for vehicle safety.
- 2 Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item "Safety End Treatment". 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 be considered subsidiary to the Item "Safety End Treatment".
- 4 Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

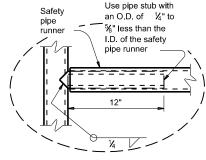
CULVERT PIPES AND SAFETY PIPE RUNNERS

				l <u>-</u>			Single	Pipe	Multiple	Pipe
Pipe I.D.	Min Wall Thickness	Min O.D.	Min O.D. at Tapered End	Min Reinf Requirements (sq. in. / ft. of pipe)	Slope	Minimum Length of Unit	Skew	Pipe Runners Required	Skew	Pipe Runners Required
					3:1	2' - 0"				
12"	2"	16"	16"	0.07 Circ.	4:1	2' - 8"	≤ 45°	No	≤ 45°	No
					6:1	4' - 0"	1			
					3:1	2' - 10"				
15"	2 1⁄4"	19 ½"	19"	0.07 Circ.	4:1	3' - 9"	≤ 45°	No	≤ 45°	No
					6:1	5' - 8"				
					3:1	3' - 8"				
18"	2 ½"	23"	21 ½"	0.07 Circ.	4:1	4' - 10"	≤ 45°	No	≤ 45°	No
					6:1	7' - 3"				
					3:1	5' - 3"			≤ 30°	No
24"	3"	30"	27"	0.07 Circ.	4:1	7' - 0"	≤ 45°	No	> 30°	
					6:1	10' - 6"			7 30	Yes
					3:1	6' - 3"	≤ 15°	No	≤ 15°	No
30"	3 ½"	37"	31"	0.18 Circ.	4:1	8' - 2"				V
					6:1	12' - 1"	> 15°	Yes	> 15°	Yes
					3:1	7' - 10"	= 0°	No		
36"	4"	44"	36"	0.19 Ellip.	4:1	10' - 4"	> 0°		≥ 0 °	Yes
					6:1	15' - 4"	> 0-	Yes		
					3:1	9' - 6"				
42"	4 ½"	51"	41 ½"	0.23 Ellip.	4:1	12' - 6"	≥ 0 °	Yes	≥ 0 °	Yes
					6:1	18' - 7"				

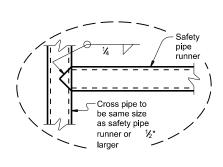
REQUIREMENTS FOR

(Showing spigot end connection.)



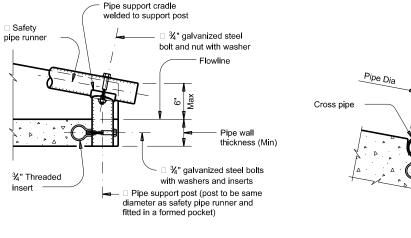


OPTION A



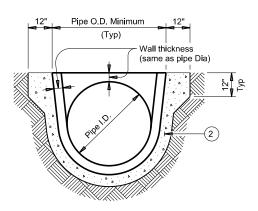
OPTION B

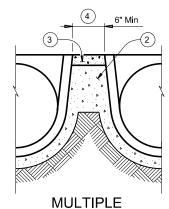
DETAIL A



⅓" galvanized steel bolts with washers and inserts p" Pipe Dia projection 3/4" Threaded insert

> **INSTALLATION DETAIL FOR** SAFETY PIPE RUNNERS





PIPE INSTALLATION

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

Provide safety pipe runners, cross pipes, pipe support posts, and pipe stubs meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Galvanize all 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 (CRP) may be used for TYPE II end treatment as specified in Item 467, "Safety End

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on

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 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.



PRECAST SAFETY END TREATMENT

TYPE II ~ CROSS DRAINAGE

PSET-RC

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TXDOT	February 2020	CONT	SECT	JOB		н	IGHWAY
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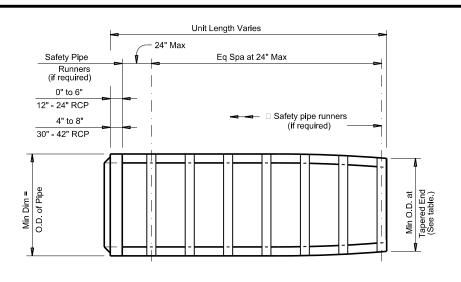
OF SAFETY PIPE RUNNERS

(If required)

END DETAIL FOR INSTALLATION

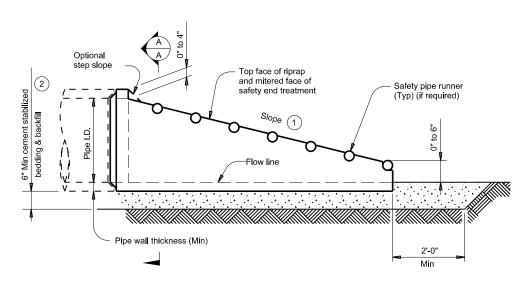
(If required)

SECTION A-A



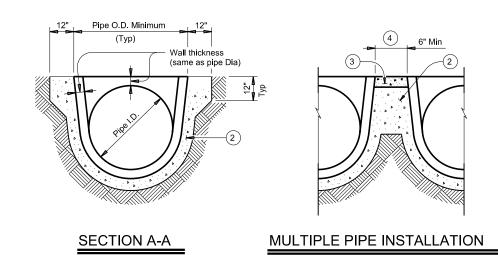
PLAN VIEW - 12" THRU 24"

(Showing spigot end connection.)

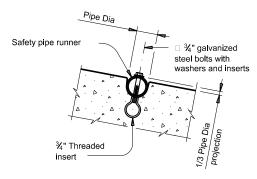


LONGITUDINAL ELEVATION - 12" THRU 24"

(Showing spigot end connection.)

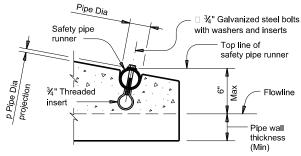


- Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- 2 Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment. backfill as directed by Engineer.
- 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.

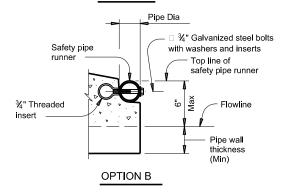


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



OPTION A



END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

REQUIREMENTS FOR **CULVERT PIPES AND SAFETY PIPE RUNNERS**

			Min O.D.	Min Reinf Requirements		Min Length		unner ments	Required Pipe Runner Sizes		
Pipe I.D.	Min Wall Thickness	Min O.D.	at Tapered End	(sq. in. per ft. of Pipe)	Max Slope	Length of Unit	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 1/4"	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,

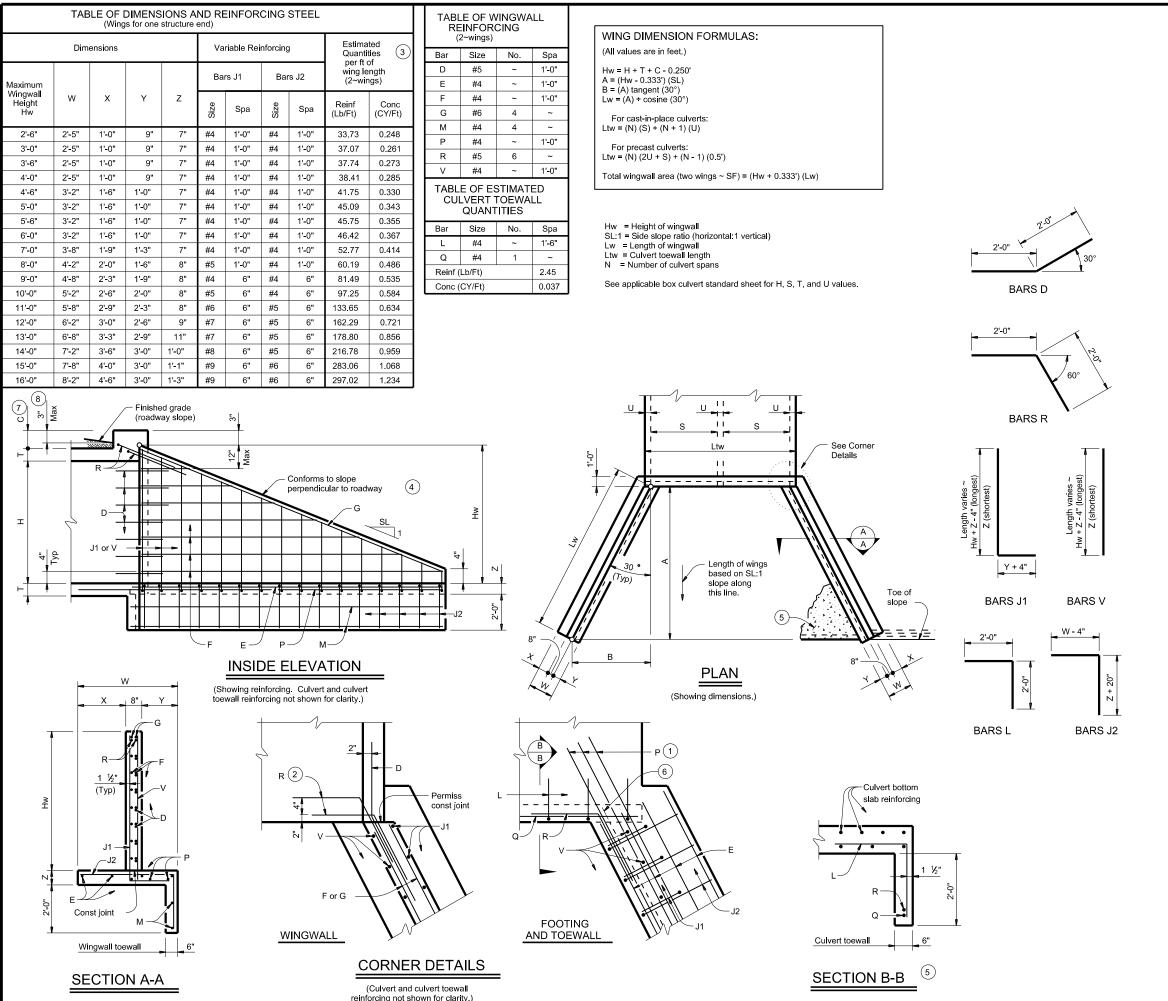


PRECAST SAFETY END **TREATMENT**

TYPE II ~ PARALLEL DRAINAGE

PSI	ET-R	P		
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CONT SECT	JOB			HIG

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		DIST		COUNTY				SHEET NO.
		PHR		JIM HC	GG			256



8:11:23 projectw

- (1) Extend Bars P 3'-0" minimum into bottom slab of box culvert
- (2) Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum 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
- (4) Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
- (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, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
- (6) At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
- 7 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.
- 8 For vehicle safety, the following requirements must be met: For structures without bridge rail, construct curbs
 - no more than 3" above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:

Provide Class C concrete (fc=3,600 psi). Provide Grade 60 reinforcing steel. Provide galvanized reinforcing steel if required elsewhere in the plans. In riprap concrete synthetic fibers listed on the

"Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

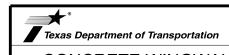
GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer. See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are

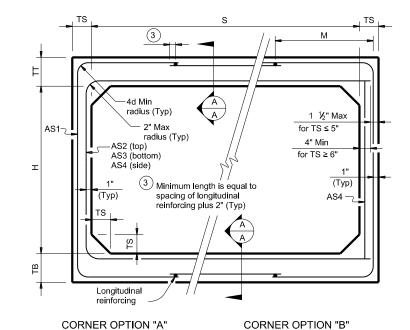
Cover dimensions are clear dimensions, unless noted otherwise Reinforcing dimensions are out-to-out of bars.



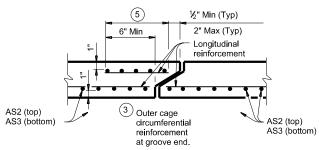
CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

FW-0

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		DIST		COUNTY	,		SHEET NO.
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FILL HEIGHT 2 FT AND GREATER



radius (Typ)

2" Max

radius

(Typ)

I" (Typ unless

(Typ)

CORNER OPTION "A"

FILL HEIGHT LESS THAN 2 FT

4 Length is equal to spacing of longitudinal

reinforcing plus 2". (10" Min) (Typ)

-AS2

_AS7

– AS5

1" Max

for TS ≤ 5"

4" Min

for TS ≥ 6"

CORNER OPTION "B"

4

— AS1

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING



Bridge Division Standard SINGLE BOX CULVERTS

PRECAST 5'-0" SPAN

SCP-5

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SECTION A-A

(Showing top and bottom slab joint reinforcement.)

1) For box length = 8'-0"

2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

BRIDGE COVER SHEET

Pharr District Central Design



Texas Department of Transportation

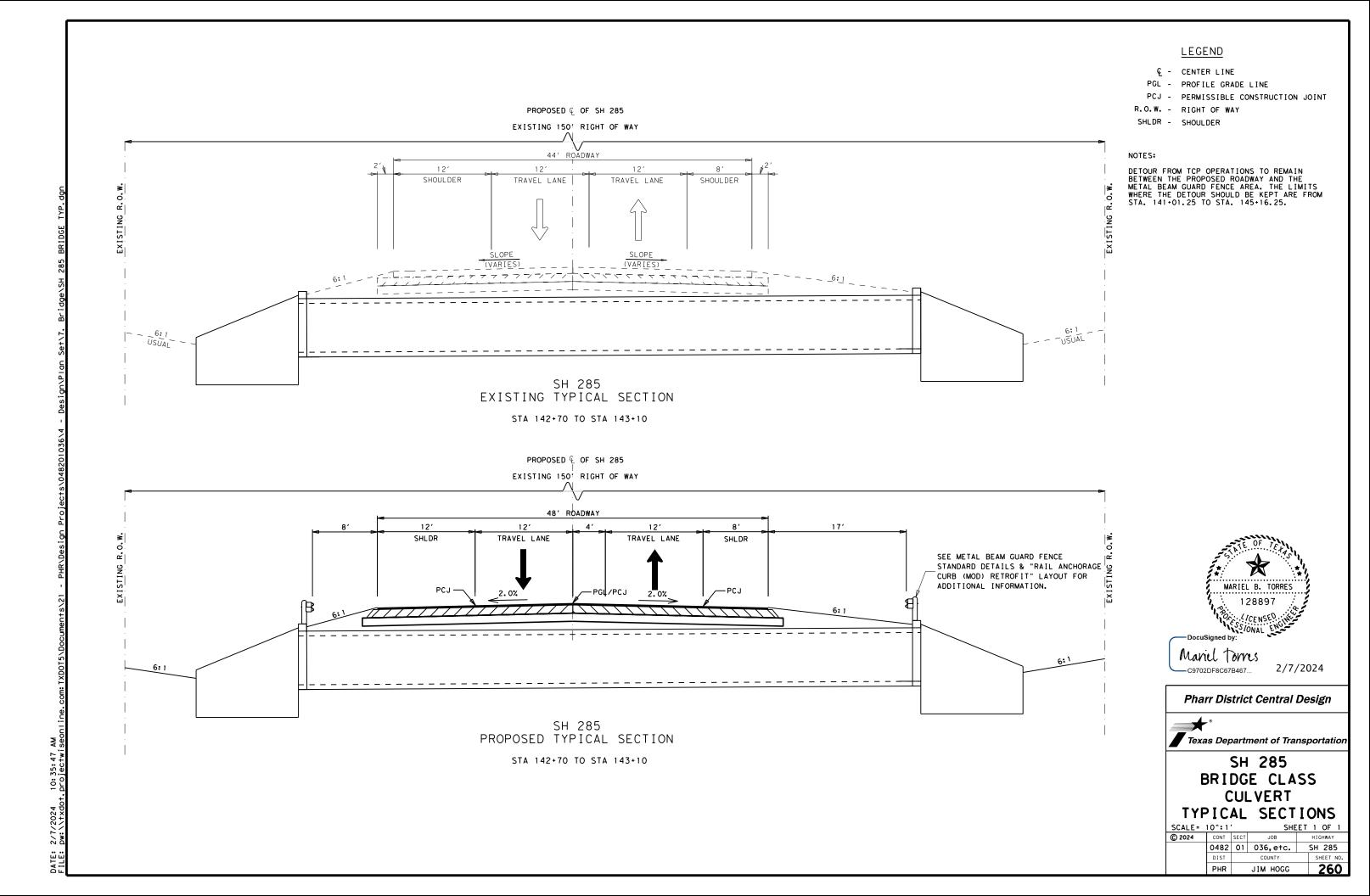
SH 285 BRIDGE COVER SHEET

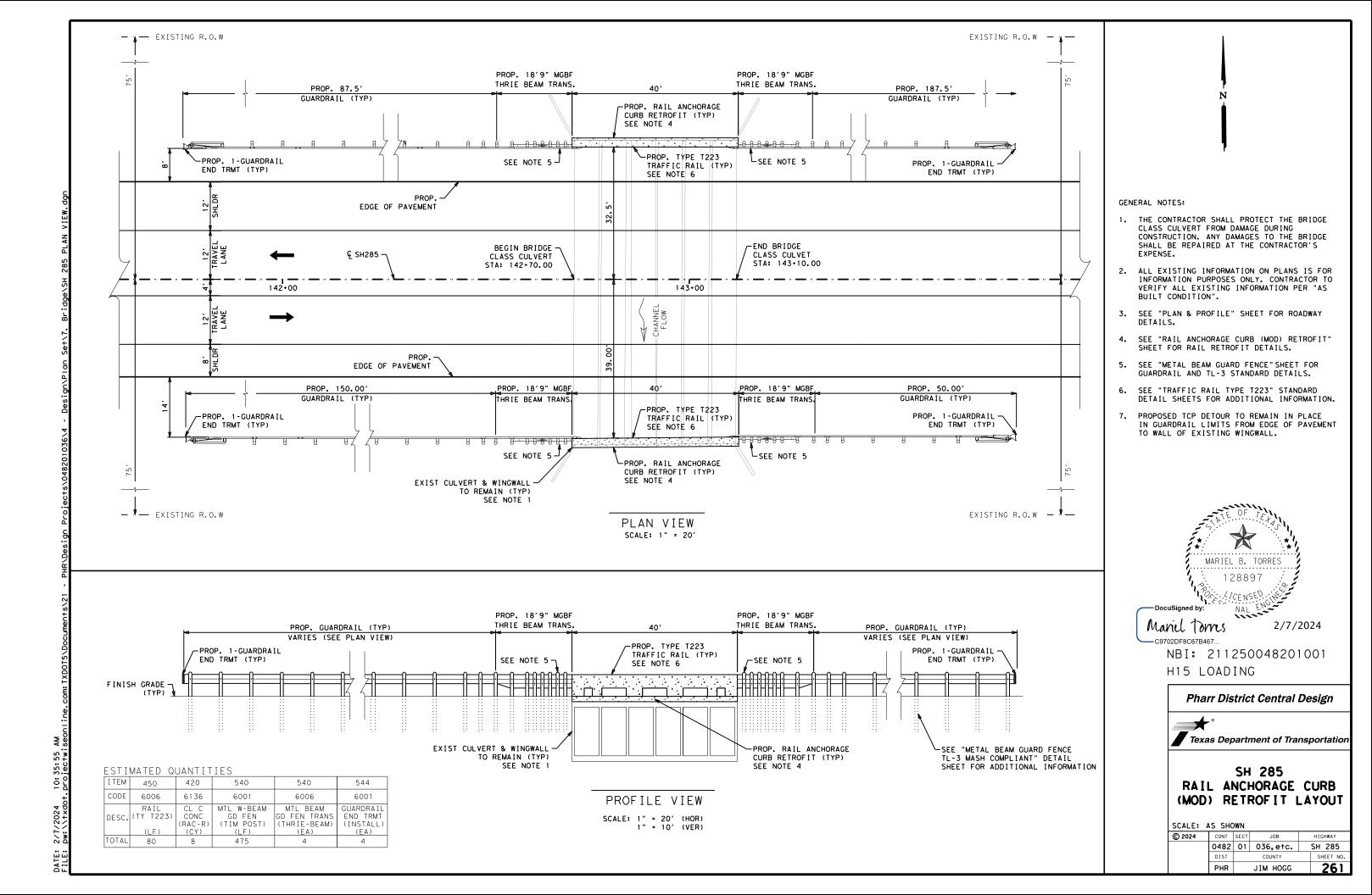
© 2024 CONT SECT JOB HIGHWAY

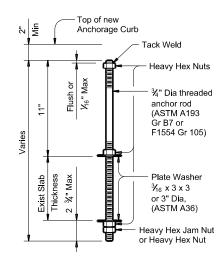
O482 O1 O36, etc. SH 285

DIST COUNTY SHEET NO.

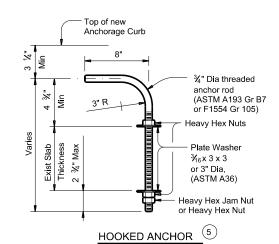
PHR JIM HOGG 259



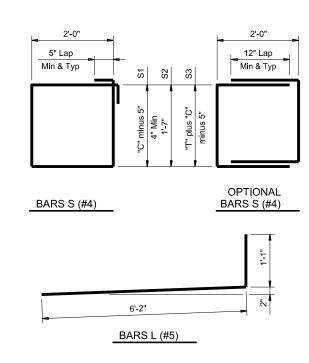


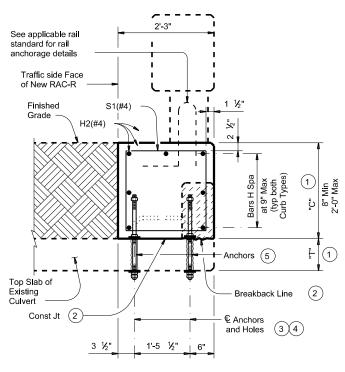


STRAIGHT ANCHOR (5)



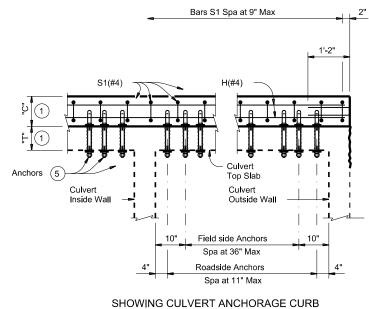
ANCHOR DETAILS





TYPICAL SECTION ~ TYPE 2

Used when the Retrofit Curb is 8" in height or greater Showing T223 Rail, other rails similar. (Bars L(#5) on T223 and C223 Rails are not used for this structure). Bars RH(#5) required on standards T80HT, T80SS and T224 are not required when used with the RAC-R standard.



Showing Anchorage Curb Type 2. Anchor and Bars S spacing are the same for Anchorage Type 1

TYPICAL ELEVATIONS OF INSTALLATION

- "T" is equal to the existing culvert top slab thickness. If "T" is less than 6", a special design will be required. "C" is equal to the Retrofit Rail Anchorage Curb thickness.
- 2 Saw cut (score) 1" deep flush with top of existing culvert slab, on the field side face of existing curb, if present.

 After scoring, remove shaded portion of existing concrete to Breakback Line shown. Do not damage existing reinforcing. Clean, bend and incorporate existing reinforcing into new concrete construction. Note that new anchors, as shown in the detail, are required even when existing reinforcing remains in use. Remove existing overlay and/or base material to flush with top of culvert in areas of new construction. Care must be taken to not damage the existing slab. In order to prevent existing asphalt remnants from acting as a bond breaker between the exposed, existing concrete and the retrofitted concrete curb, clean the newly exposed concrete with abrasive blasting or shot blasting. Remove all loose debris prior to placing new anchorage curb.
- 3 Core drill 1" diameter holes through existing slab. Percussion drilling is not permitted. Patch spalls, when directed by the Engineer, in accordance with Item 429, "Concrete Structure Repair", at the Contractor's expense. Tighten nuts snug tight.
- 4 Space field side anchors at 36" maximum. Space traffic side anchors at 11" maximum. Do not align field side and traffic side anchors transversely.
- (5) Use straight anchors if retrofit anchorage curb is 1'-2" or greater in thickness. Use hooked anchors for retrofit anchorage curb less than 1'-2" thick.

CONSTRUCTION NOTES:

Field verify dimensions before commencing work and ordering materials.

MATERIAL NOTES:

Provide Class "C" concrete (f'c=3,600 psi). Provide Class "C" (HPC) concrete if shown elsewhere in the plans.

Chamfer all exposed corners ¾" unless shown otherwise

Provide Grade 60 reinforcing steel.

Galvanize all reinforcing steel if required elsewhere.

Provide bar laps, where required, as follows: Uncoated or galvanized ~ #4 = 1'-11"

Galvanize 3/4" Dia threaded rods, heavy hex nuts and plate washers, unless otherwise shown on plans.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

The rail anchorage curb details have sufficient strength for use with all standard rail types. See appropriate rail standard for approved speed restrictions, notes and details not shown For vehicle safety, the top of the new curb must be flush with the finished grade.

These details are for use with curbs with a maximum height of 2-0" only. Curb heights greater than 2'-0" will require special design.

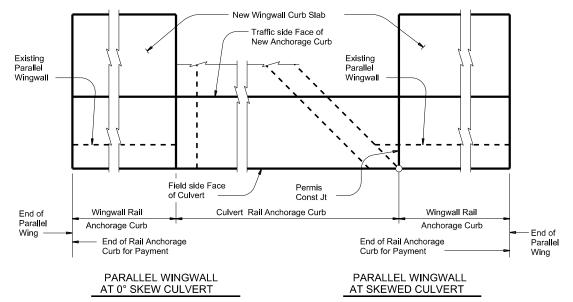
Removal and replacement of backfill, subgrade, and asphalt or concrete pavement necessary.

for this installation is considered subsidiary to the rail anchorage curb.

Payment for rail anchorage curb (including wingwall curb slab) will be by CY of Class "C" or Class "C" (HPC) concrete.

Not all possible combinations of existing box culverts, curbs, wingwalls etc. have been show on this sheet. Other combinations and reinforcement arrangements are permissible if they meet the same strength requirements as indicated on this sheet.

Cover dimensions are clear dimensions, unless noted otherwise Reinforcing bar dimensions shown are out-to-out of bar.



Note that Wingwall Rail Anchorage Curb is used only at culverts with parallel wingwalls.





SHEET 1 OF 1

Texas Department of Transportation

SH 285 RAIL ANCHORAGE CURB (MOD) RETROFIT

BOX CULVERT RAIL MOUNTING DETAILS

RAC-R

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BUTTON HEAD BOLT

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

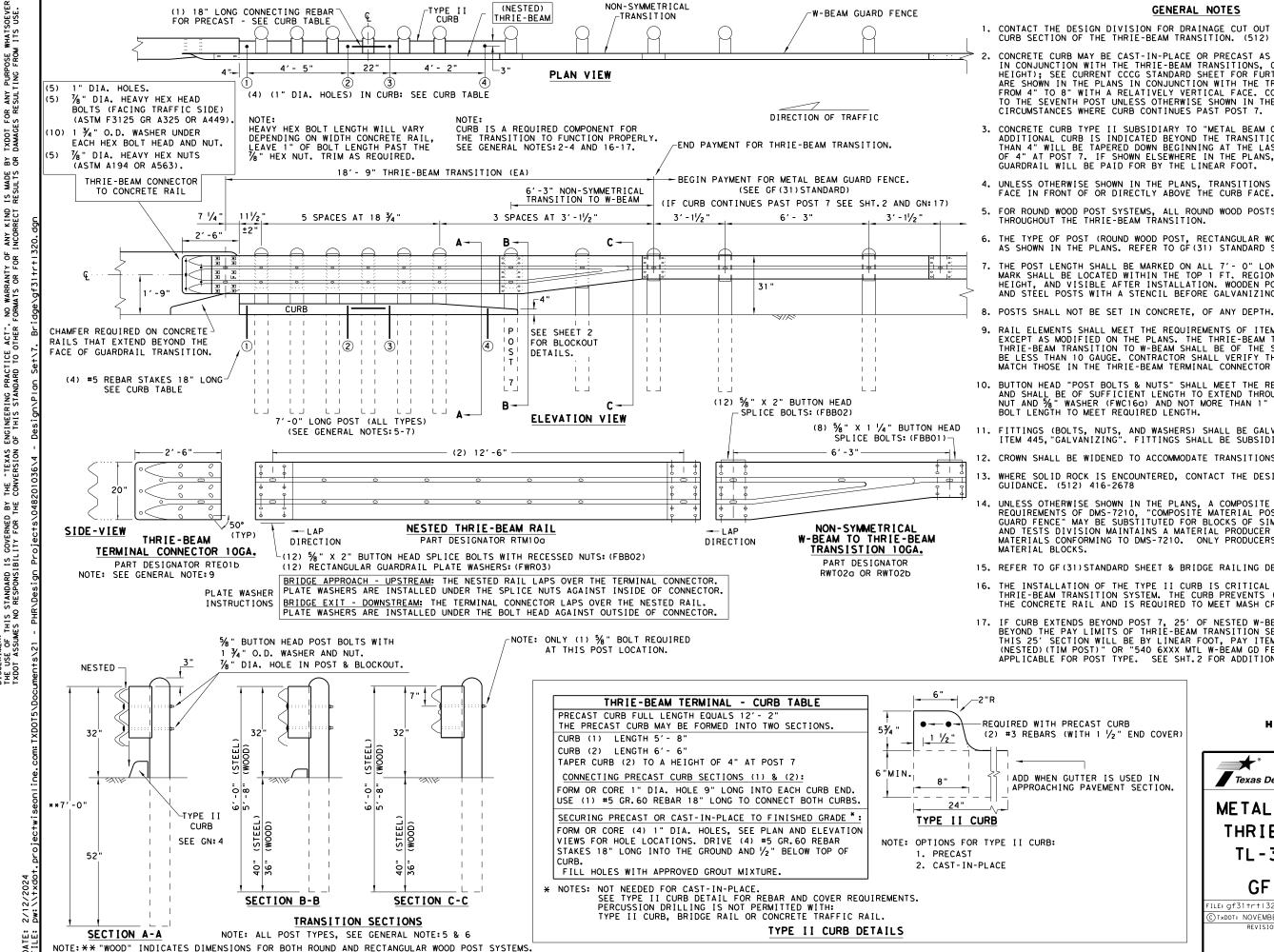
NOTE: GF(31), MID-SPAN RAIL SPLICES ARE REQUIRED WITH 6'-3" POST SPACINGS.

RAIL SPLICE DETAIL

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

METAL BEAM GUARD FENCE

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GENERAL NOTES

- CONTACT THE DESIGN DIVISION FOR DRAINAGE CUT OUT OPTIONS NEEDED WITHIN THE CURB SECTION OF THE THRIE-BEAM TRANSITION. (512) 416-2678
- CONCRETE CURB MAY BE CAST-IN-PLACE OR PRECAST AS SHOWN ON THIS SHEET. WHEN USED IN CONJUNCTION WITH THE THRIE-BEAM TRANSITIONS, CURB SHALL BE TYPE II (5- ¾" HEIGHT); SEE CURRENT CCCG STANDARD SHEET FOR FURTHER DETAILS. IF OTHER CURB HEIGHTS ARE SHOWN IN THE PLANS IN CONJUNCTION WITH THE TRANSITION, THE CURB HEIGHT MAY BE FROM 4" TO 8" WITH A RELATIVELY VERTICAL FACE. CONCRETE CURB SHALL BE CONTINUOUS TO THE SEVENTH POST UNLESS OTHERWISE SHOWN IN THE PLANS. SEE GENERAL NOTE: 17 FOR CIRCUMSTANCES WHERE CURB CONTINUES PAST POST 7.
- CONCRETE CURB TYPE II SUBSIDIARY TO "METAL BEAM GUARD FENCE TRANSITION". IF NO ADDITIONAL CURB IS INDICATED BEYOND THE TRANSITION, THEN ANY CURB HEIGHT GREATER THAN 4" WILL BE TAPERED DOWN BEGINNING AT THE LAST 7 FT. POST TO A MAXIMUM HEIGHT OF 4" AT POST 7. IF SHOWN ELSEWHERE IN THE PLANS, ADDITIONAL CURB UNDERNEATH GUARDRAIL WILL BE PAID FOR BY THE LINEAR FOOT.
- 4. UNLESS OTHERWISE SHOWN IN THE PLANS, TRANSITIONS SHALL BE PLACED WITH THE BLOCKOUT FACE IN FRONT OF OR DIRECTLY ABOVE THE CURB FACE. SEE SECTION A-A.
- 5. FOR ROUND WOOD POST SYSTEMS, ALL ROUND WOOD POSTS SHALL BE 7 $\frac{1}{2}$ " DIA. MINIMUM THROUGHOUT THE THRIE-BEAM TRANSITION.
- THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. REFER TO GF (31) STANDARD SHEET.
- THE POST LENGTH SHALL BE MARKED ON ALL 7'- O" LONG POSTS BY THE MANUFACTURER. THE MARK SHALL BE LOCATED WITHIN THE TOP 1 FT. REGION OF THE POST, AT LEAST $\frac{1}{8}$ " IN HEIGHT, AND VISIBLE AFTER INSTALLATION. WOODEN POSTS SHALL BE MARKED WITH A BRAND, AND STEEL POSTS WITH A STENCIL BEFORE GALVANIZING.
- 9. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED ON THE PLANS. THE THRIE-BEAM TERMINAL CONNECTOR AND THE THRIE-BEAM TRANSITION TO W-BEAM SHALL BE OF THE SAME MATERIAL, BUT SHALL NOT BE LESS THAN 10 GAUGE. CONTRACTOR SHALL VERIFY THAT THE LOCATIONS OF BOLT HOLES MATCH THOSE IN THE THRIE-BEAM TERMINAL CONNECTOR PRIOR TO ORDERING MATERIALS.
- 10. 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 5/6" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING
- 11. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
- 12. CROWN SHALL BE WIDENED TO ACCOMMODATE TRANSITIONS.
- 13. WHERE SOLID ROCK IS ENCOUNTERED, CONTACT THE DESIGN DIVISION FOR ADDITIONAL GUIDANCE. (512) 416-2678
- 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. TXDOT'S MATERIALS AND TESTS DIVISION MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210. ONLY PRODUCERS ON THE MPL CAN FURNISH COMPOSITE
- 15. REFER TO GF (31) STANDARD SHEET & BRIDGE RAILING DETAILS FOR ADDITIONAL DETAILS.
- 16. THE INSTALLATION OF THE TYPE II CURB IS CRITICAL FOR THE PERFORMANCE OF THE THRIE-BEAM TRANSITION SYSTEM. THE CURB PREVENTS (VEHICLE WHEEL SNAGGING) AT THE CONCRETE RAIL AND IS REQUIRED TO MEET MASH CRASH TEST CRITERIA.
- 17. IF CURB EXTENDS BEYOND POST 7, 25' OF NESTED W-BEAM GUARDRAIL SHALL BE INSTALLED BEYOND THE PAY LIMITS OF THRIE-BEAM TRANSITION SECTION, (SEE SHT.2). PAYMENT FOR THIS 25' SECTION WILL BE BY LINEAR FOOT, PAY ITEM "0540 6XXX MTL W-BEAM GD FEN (NESTED) (TIM POST)" OR "540 6XXX MTL W-BEAM GD FEN (NESTED) (STEEL POST)" AS APPLICABLE FOR POST TYPE. SEE SHT.2 FOR ADDITIONAL INFORMATION.

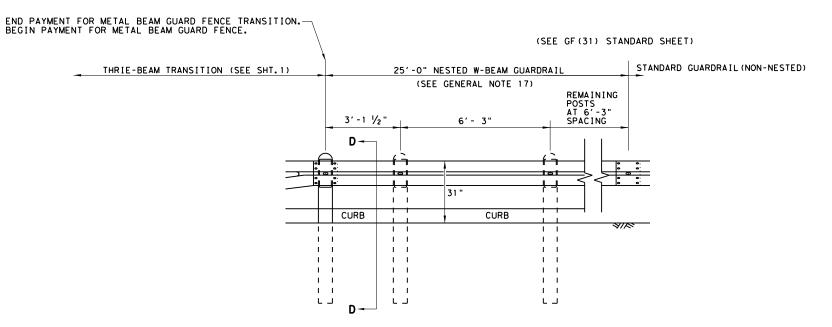
HIGH-SPEED TRANSITION SHEET 1 OF 2



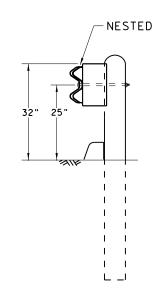
METAL BEAM GUARD FENCE THRIE-BEAM TRANSITION TL-3 MASH COMPLIANT

GF (31) TR TL3-20

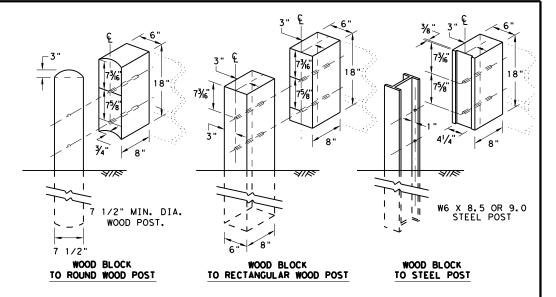
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ELEVATION VIEW



SECTION D-D



THRIE BEAM TRANSITION BLOCKOUT DETAILS

HIGH-SPEED TRANSITION

SHEET 2 OF 2



METAL BEAM GUARD FENCE THRIE-BEAM TRANSITION TL-3 MASH COMPLIANT

GF (31) TR TL3-20

	PHR		OH MIL.			36E NO.
	DIST		COUNTY			SHEET NO.
REVISIONS	0482	01	036,et	c.	5	SH 285
©TXDOT: NOVEMBER 2020	CONT	SECT	JOB			HIGHWAY
FILE: gf31trt1320.dgn	DN: Tx	DOT	ck: KM	DW:	KM	CK:CGL/AG

STANDARD

POST 8

3'-1 /2" T

31" MBGF

50'-0'

POST 5

PLAN VIEW

(O)

W-BEAM MGS RAIL SECTION 12'-6"

POST 4

POST 3

 \sqrt{N}

W-BEAM MGS RAIL SECTION 9'-4 1/2"

POST 2

SEE IMPACT HEAD

CONNECTION

IMPACT HEAD

DETAIL

 $\backslash (B)$

W-BEAM GUARDRAIL END SECTION

12'-6"

BEGIN LENGTH OF NEED

q, g) HARDWARE FOR (POST 8) THRU (POST 3)

POST 6

POST

 $\sqrt{0}$

W-BEAM MGS RAIL SECTION

* NOTES:

- 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.
- 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.
 - 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.

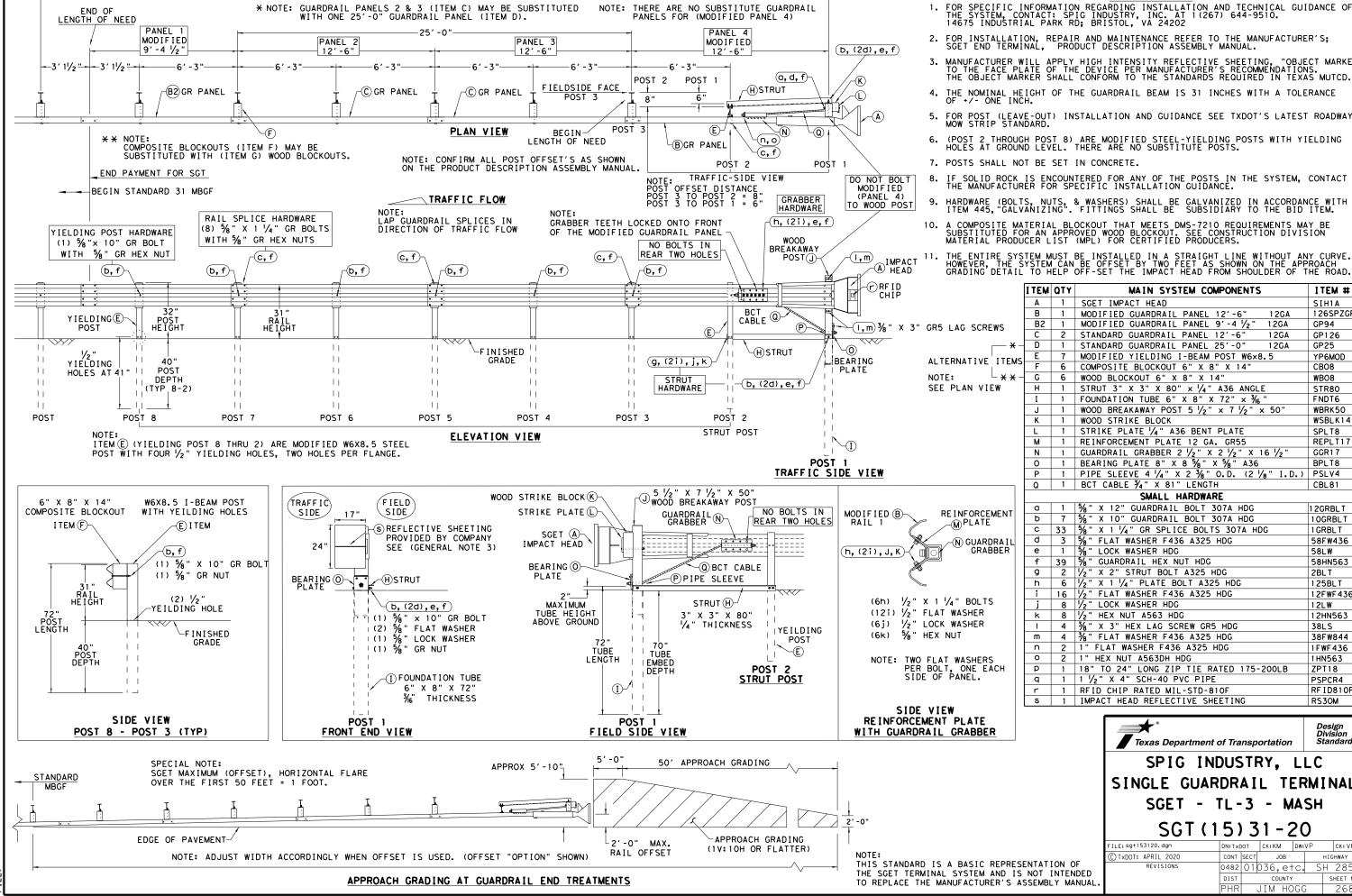
Α		MAIN SYSTEM COMPONENTS	I TEM NUMBERS
	1	MSKT IMPACT HEAD	MS3000
В	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF 1 3 0 3
С	1	POST 1 - TOP (6" X 6" X 1/8" TUBE)	MTPHP1A
D	1	POST 1 - BOTTOM (6' W6X15)	MTPHP1B
E	1	POST 2 - ASSEMBLY TOP	UHP2A
F	1	POST 2 - ASSEMBLY BOTTOM (6' W6X9)	HP2B
G	1	BEARING PLATE	E750
Н	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	GROUND STRUT	MS785
L	6	W6×9 OR W6×8.5 STEEL POST	P621
М	6	COMPOSITE BLOCKOUTS	CBSP-14
N	1	W-BEAM MGS RAIL SECTION (9'-4 1/2")	G12025
0	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
Р	6	WOOD BLOCKOUT 6" X 8" X 14"	P675
Q	1	W-BEAM MGS RAIL SECTION (25'-0")	G1209
		SMALL HARDWARE	
a	2	% " × 1" HEX BOLT (GRD 5)	B5160104A
b	4	% " WASHER	W0516
С	2	% " HEX NUT	N0516
đ	25	%" Dia. × 1 ¼" SPLICE BOLT (POST 2)	B580122
е	2	%" Dia. × 9" HEX BOLT (GRD A449)	B580904A
f	3	%" WASHER	W050
g	33	%" Dia. H.G.R NUT	N050
h	1	¾" Dia. × 8 ½" HEX BOLT (GRD A449)	B340854A
j	1	¾" Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
ı	2	1 ANCHOR CABLE WASHER	W100
m	8	1/2" x 1 1/4" A325 BOLT WITH CAPTIVE WASHER	SB12A
n	8	√2" STRUCTURAL NUTS	N012A
0	8	1 1/6 " O.D. × 1/6 " I.D. STRUCTURAL WASHERS	W012A
P	1	BEARING PLATE RETAINER TIE	CT-100ST
q	6	%" × 10" H.G.R. BOLT	B581002
r	1	OBJECT MARKER 18" X 18"	E3151

Texas Department of Transportation

SINGLE GUARDRAIL TERMINAL MSKT-MASH-TL-3

SGT (12S) 31-18

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	DIST		COUNTY	,		SHEET NO.
	PHR		JIM HO	GG		267



GENERAL NOTES

- FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: SPIG INDUSTRY, INC. AT 1 (267) 644-9510. 14675 INDUSTRIAL PARK RD; BRISTOL, VA 24202
- 2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE MANUFACTURER'S; SGET END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL.
- 3. MANUFACTURER WILL APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER' TO THE FACE PLATE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. THE OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
- 4. THE NOMINAL HEIGHT OF THE GUARDRAIL BEAM IS 31 INCHES WITH A TOLERANCE OF +/- ONE INCH.
- 6. (POST 2 THROUGH POST 8) ARE MODIFIED STEEL-YIELDING POSTS WITH YIELDING HOLES AT GROUND LEVEL. THERE ARE NO SUBSTITUTE POSTS.
- IF SOLID ROCK IS ENCOUNTERED FOR ANY OF THE POSTS IN THE SYSTEM, CONTACT THE MANUFACTURER FOR SPECIFIC INSTALLATION GUIDANCE.
- HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
- 10. A COMPOSITE MATERIAL BLOCKOUT THAT MEETS DMS-7210 REQUIREMENTS MAY BE SUBSTITUTED FOR AN APPROVED WOOD BLOCKOUT. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
 - THE ENTIRE SYSTEM MUST BE INSTALLED IN A STRAIGHT LINE WITHOUT ANY CURVE. HOWEVER, THE SYSTEM CAN BE OFFSET BY TWO FEET AS SHOWN ON THE APPROACH GRADING DETAIL TO HELP OFF-SET THE IMPACT HEAD FROM SHOULDER OF THE ROAD.

Α	1	SGET IMPACT HEAD	SIH1A
В	1	MODIFIED GUARDRAIL PANEL 12'-6" 12GA	126SPZGP
B2	1	MODIFIED GUARDRAIL PANEL 9'-4 1/2" 12GA	GP94
С	2	STANDARD GUARDRAIL PANEL 12'-6" 12GA	GP126
D	1	STANDARD GUARDRAIL PANEL 25'-0" 12GA	GP25
s E	7	MODIFIED YIELDING I-BEAM POST W6×8.5	YP6MOD
F	6	COMPOSITE BLOCKOUT 6" X 8" X 14"	CBO8
G	6	WOOD BLOCKOUT 6" X 8" X 14"	WBO8
Н	1	STRUT 3" X 3" X 80" x 1/4" A36 ANGLE	STR80
I	1	FOUNDATION TUBE 6" X 8" X 72" x 36"	FNDT6
J	1	WOOD BREAKAWAY POST 5 1/2" x 7 1/2" x 50"	WBRK50
K	1	WOOD STRIKE BLOCK	WSBLK14
L	1	STRIKE PLATE 1/4" A36 BENT PLATE	SPLT8
М	1	REINFORCEMENT PLATE 12 GA. GR55	REPLT17
N	1	GUARDRAIL GRABBER 2 1/2" X 2 1/2" X 16 1/2"	GGR17
0	1	BEARING PLATE 8" X 8 % " X % " A36	BPLT8
Р	1	PIPE SLEEVE 4 1/4" X 2 3/8" O.D. (2 1/8" I.D.)	PSLV4
Q	1	BCT CABLE ¾" X 81" LENGTH	CBL81
		SMALL HARDWARE	
а	1	5%" X 12" GUARDRAIL BOLT 307A HDG	12GRBLT
Ь	7	5% " X 10" GUARDRAIL BOLT 307A HDG	1 OGRBL T
С	33	5% " X 1 ¼ " GR SPLICE BOLTS 307A HDG	1 GRBL T
d	3	%" FLAT WASHER F436 A325 HDG	58FW436
е	1	%" LOCK WASHER HDG	58LW
f	39	%" GUARDRAIL HEX NUT HDG	58HN563
9	2	1/2" X 2" STRUT BOLT A325 HDG	2BLT
h	6	½" X 2" STRUT BOLT A325 HDG ½" X 1 ¼" PLATE BOLT A325 HDG	125BLT
i	16	√2" FLAT WASHER F436 A325 HDG	12FWF436
j	8	1/2" LOCK WASHER HDG	12LW
k	8	√2" HEX NUT A563 HDG	12HN563
I	4	¾" X 3" HEX LAG SCREW GR5 HDG	38LS
m	4	¾" FLAT WASHER F436 A325 HDG	38FW844
n	2	1" FLAT WASHER F436 A325 HDG	1FWF436
0	2	1" HEX NUT A563DH HDG	1 HN563
р	1	18" TO 24" LONG ZIP TIE RATED 175-200LB	ZPT18
q	1	1 1/2" X 4" SCH-40 PVC PIPE	PSPCR4
r	1	RFID CHIP RATED MIL-STD-810F	RF I D810F
S	1	IMPACT HEAD REFLECTIVE SHEETING	RS30M



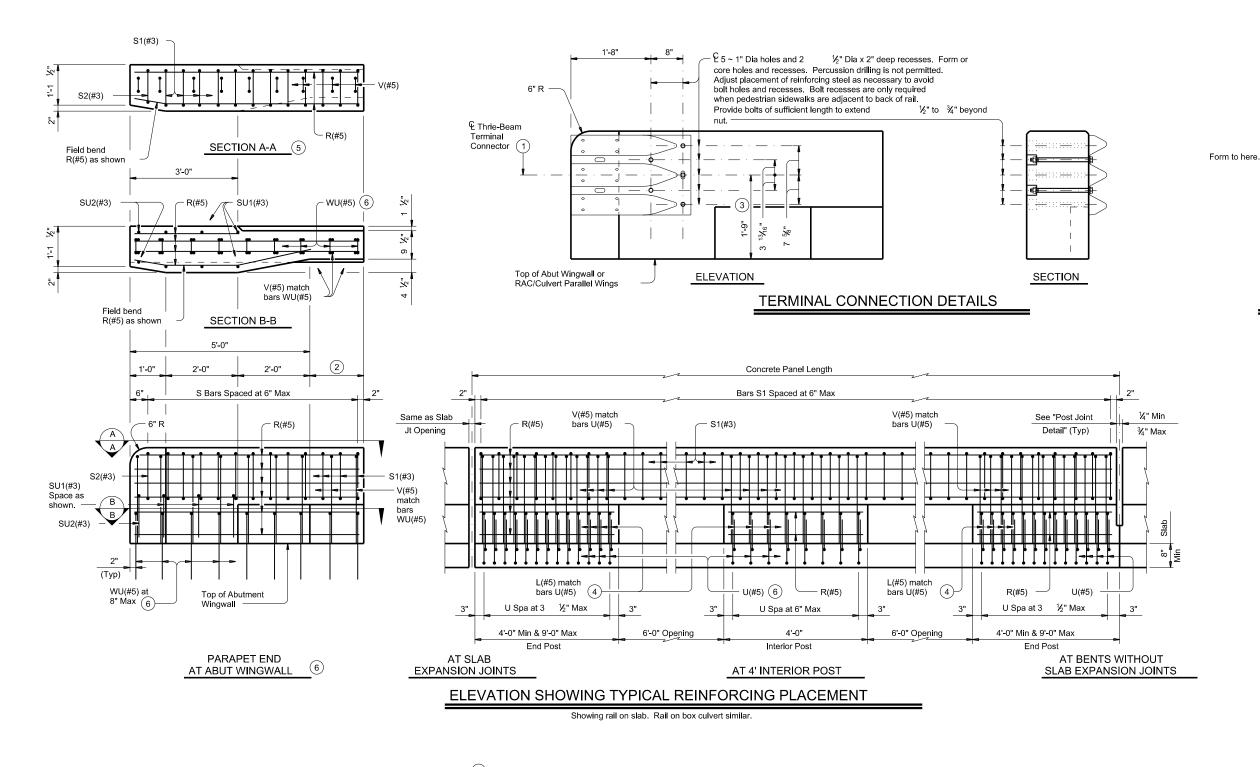
ITEM #

SPIG INDUSTRY, LLC SINGLE GUARDRAIL TERMINAL SGET - TL-3 - MASH SGT (15) 31-20

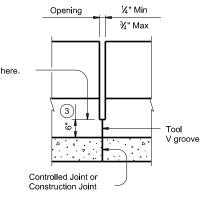
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JIM HOGG

269



- 1 Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- Wingwall Length minus 5'-0" (Varies)
- 3 Increase 2" for structures with overlay.
- 4 Bars L(#5) are part of rail reinforcing and are included in unit price bid for railing. Space with Bars U. Bars L match slab bar cover. Bars L may be bundled with top slab reinforcing if spacing is equivalent.
- 5 Bars SU1(#3), SU2(#3) and WU(#5) not shown for clarity.
- 6 Substitute Bars U(#5) for Bars WU(#5) when parapet end is located on achorage curb over culvert top slab. Use Bars WU(#5) in culvert parallel wings.



POST JOINT DETAIL

Provide at all interior bents without slab expansion joints.

SHEET 2 OF 3



TRAFFIC RAIL

TYPE T223

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© TxDOT	September 2019	CONT	SECT	JOB			HIGHWAY
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		DIST		COUNTY	,		SHEET NO.
		PHR		JIM HC	GG		270

BARS S (#3)

BARS SU (#3)

BARS V (#5)

9

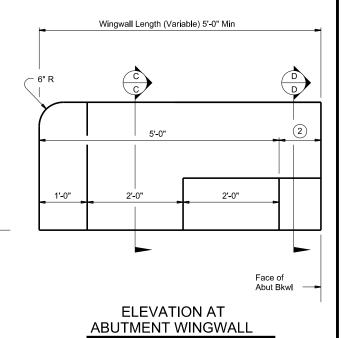
BARS L (#5)

BARS U (#5)

(9)

1'-3 ½"

1'-3 ½"



CONSTRUCTION NOTES:

1'-3 ½"

Nominal

Face of Rail

S1(#3)

Typical Water

AT OPENING

ON BRIDGE SLAB

3 ¾" Dia

Bending Pin

BARS WU (#5)

Barrier (if used)

Top of

Slab

₹\[3]

1'-0"

Post

1 ½"

Face of rail and parapet must be vertical transversely unless otherwise shown in the plans or approved by the Engineer.

Provide water barriers at openings draining onto undercrossing roadways and sidewalks. They may be cast-in-place or precast in convenient lengths and bonded to the bridge deck with an approved epoxy cement.

Chamfer all exposed corners

MATERIAL NOTES:

Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.

Provide Grade 60 reinforcing steel.

Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.

Deformed Welded Wire Reinforcing (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U, V, and WU unless noted otherwise. Provide the same laps as required for reinforcing

Provide bar laps, where required, as follows: Uncoated or galvanized ~ #5 = 2'-0" Epoxy coated ~ #5 = 3'-0"

GENERAL NOTES:

This rail has been evaluated by full-scale crash test to meet MASH TL-3 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.

Do not use this railing on bridges with expansion joints providing more than 5" movement

Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Shop drawings are not required for this rail. Average weight of railing with no overlay is 358 plf.

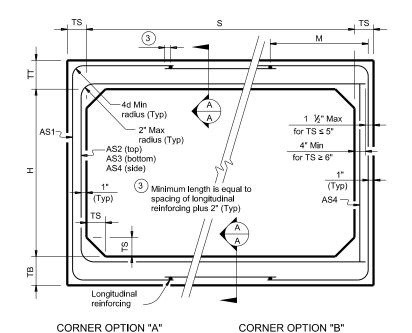
Cover dimensions are clear dimensions, unless noted otherwise Reinforcing bar dimensions shown are out-to-out of bar.



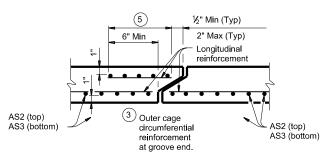


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	PHR		JIM HC	GG			271

		SECTIO	N DIMEN	SIONS		Fill	М		RE	INFORCI	NG (sq. ir	n. / ft.)	2		1 Lift
	S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Height (ft.)	(Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Weight (tons)
	6	2	8	7	7	< 2	-	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
	6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	-	-	-	6.8
	6	2	7	7	7	3-5	43	0.20	0.17	0.17	0.17	_	_	_	6.8
	6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	-	-	-	6.8
	6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	-	-	-	6.8
	6	2	7	7	7	20	39	0.34	0.26	0.26	0.17	-	-	-	6.8
	6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	-	-	_	6.8
	6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	-	-	-	6.8
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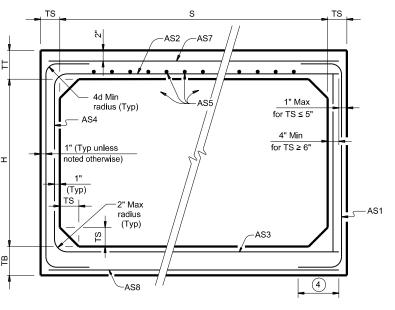


FILL HEIGHT 2 FT AND GREATER



SECTION A-A

(Showing top and bottom slab joint reinforcement.)



CORNER OPTION "A"

CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

4 Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD)

standard sheet for details and notes not shown. In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING



SINGLE BOX CULVERTS **PRECAST** 6'-0" SPAN

SCP-6

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		PHR		JIM H	OGG		272

1) For box length = 8'-0"

2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

SIGNING & DELINEATION COVER SHEET

Pharr District Central Design



Texas Department of Transportation

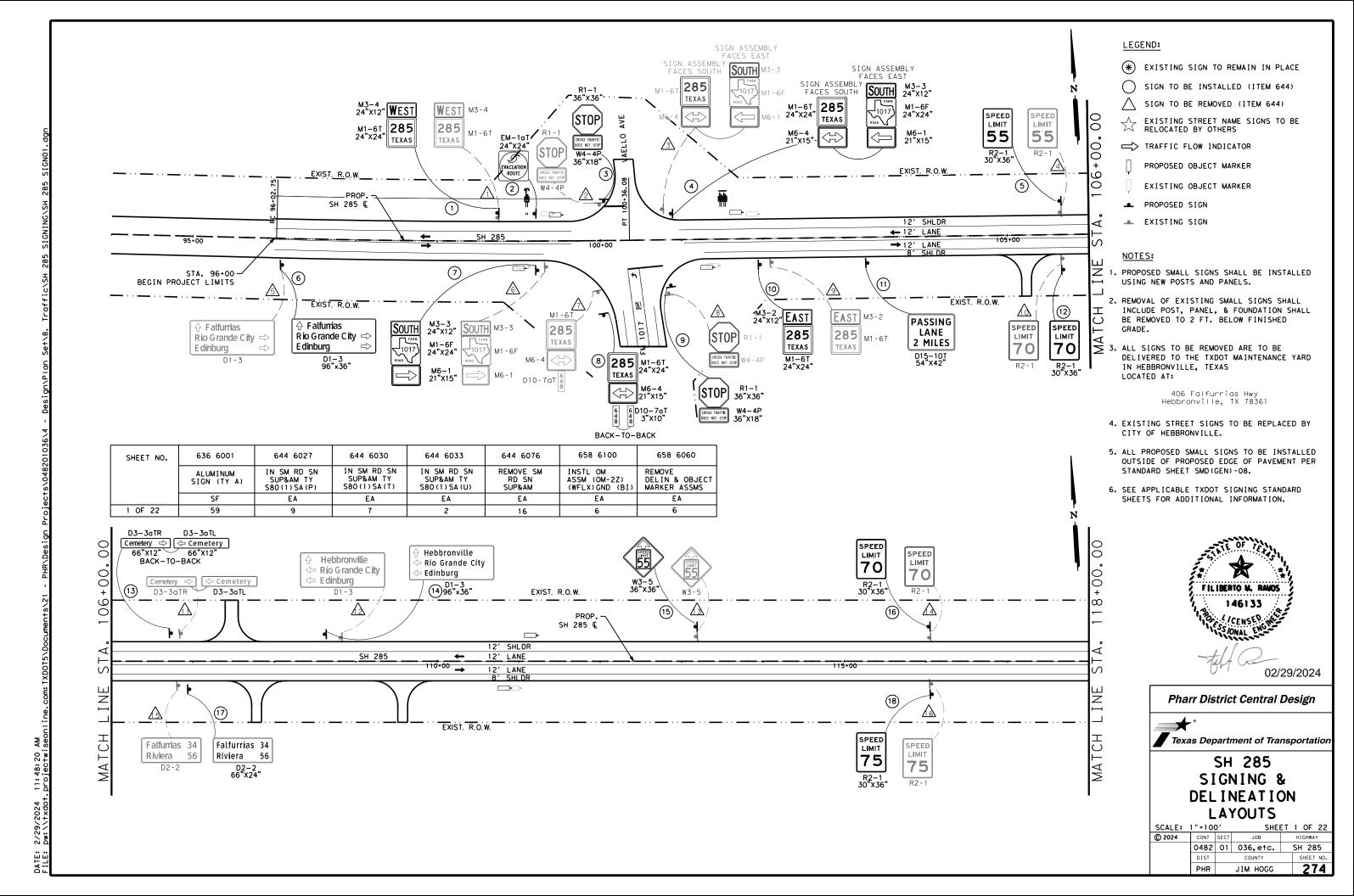
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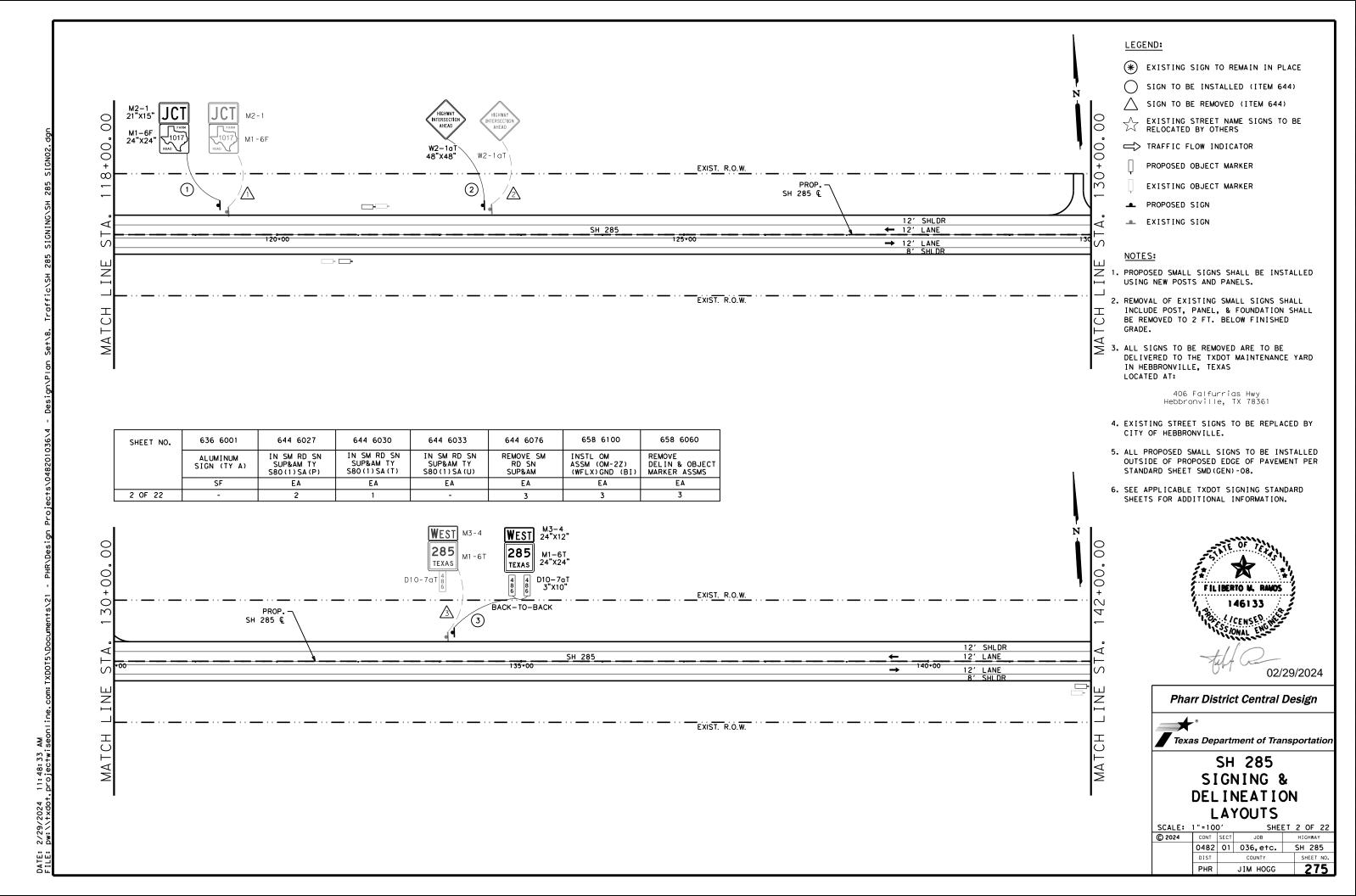
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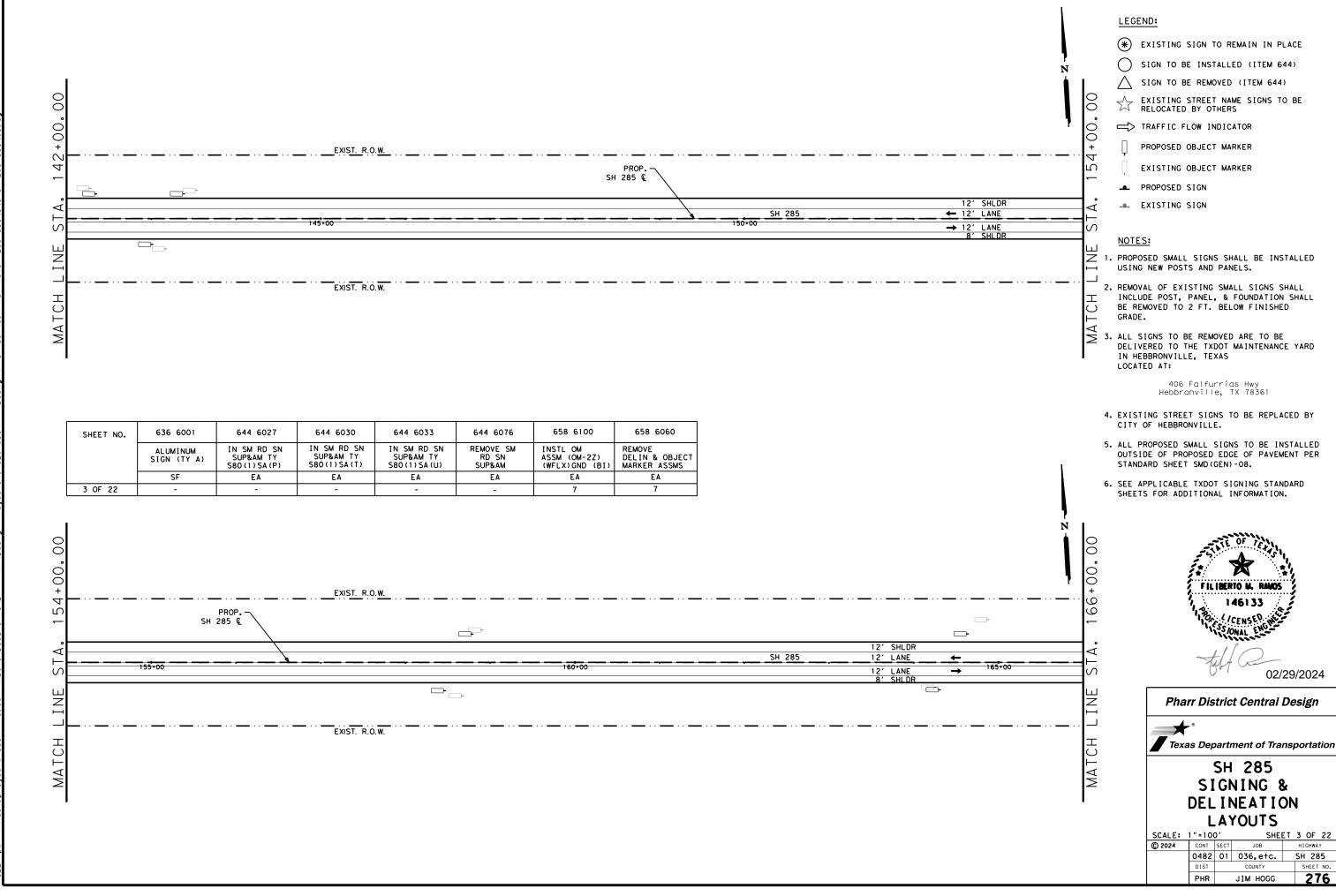
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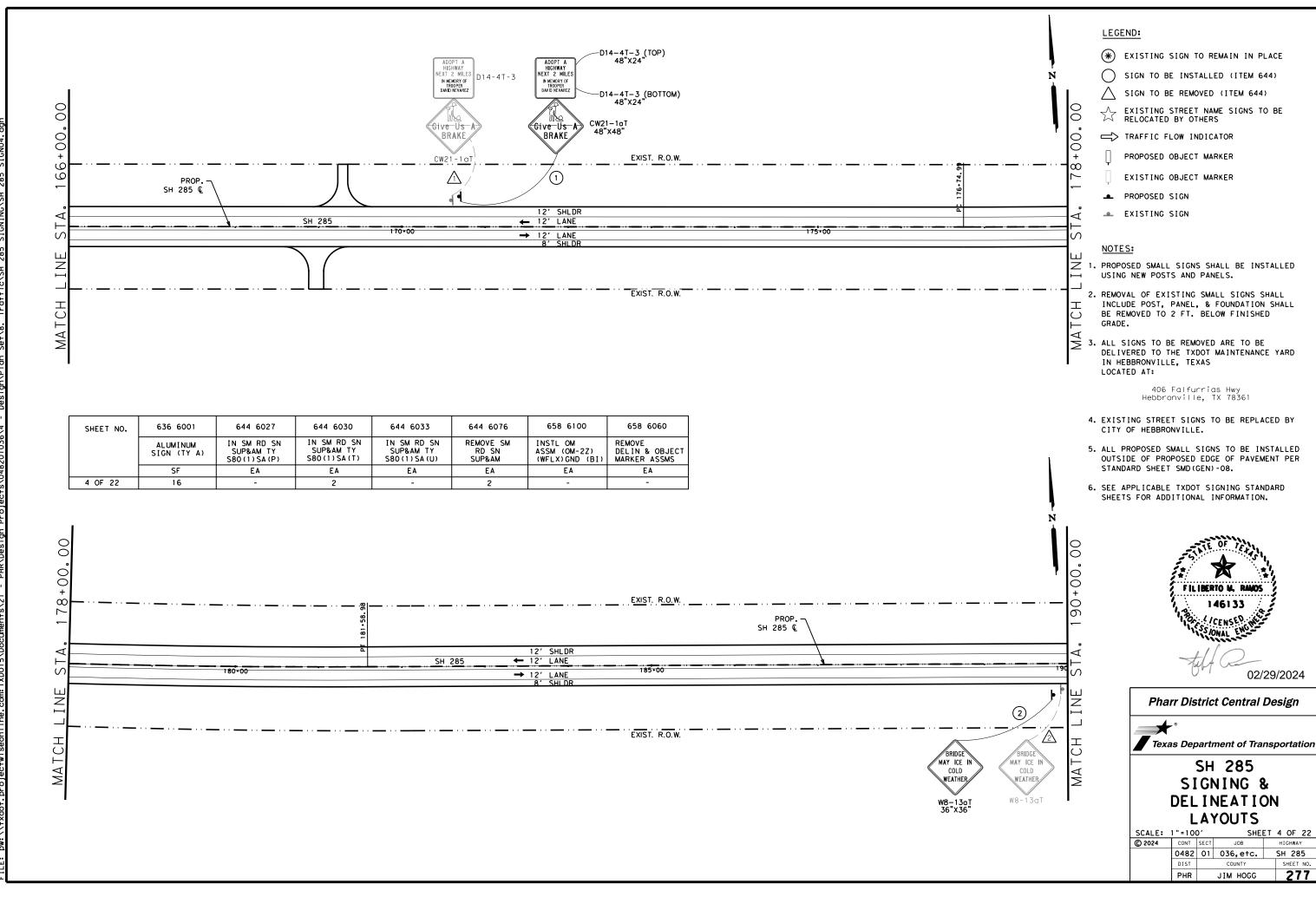
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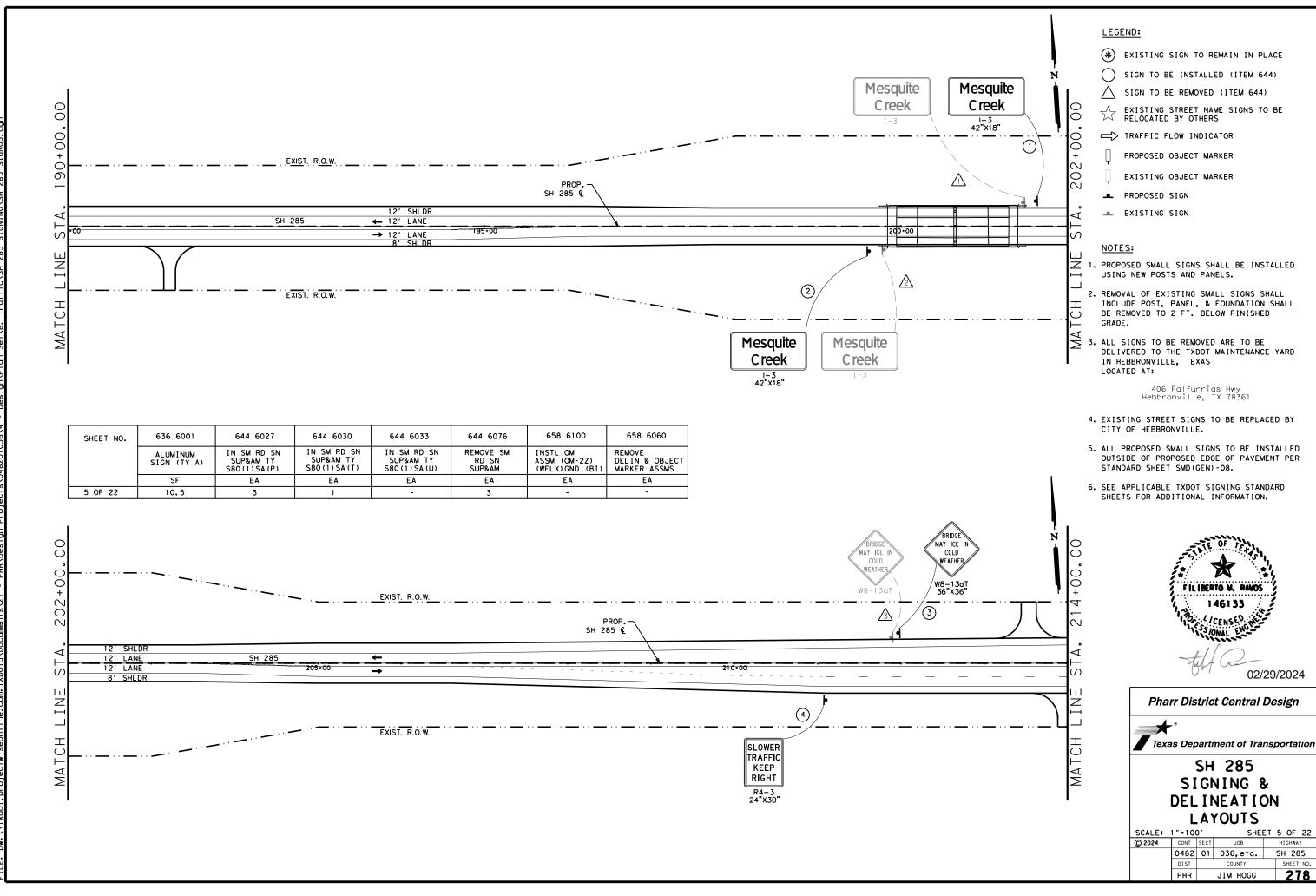


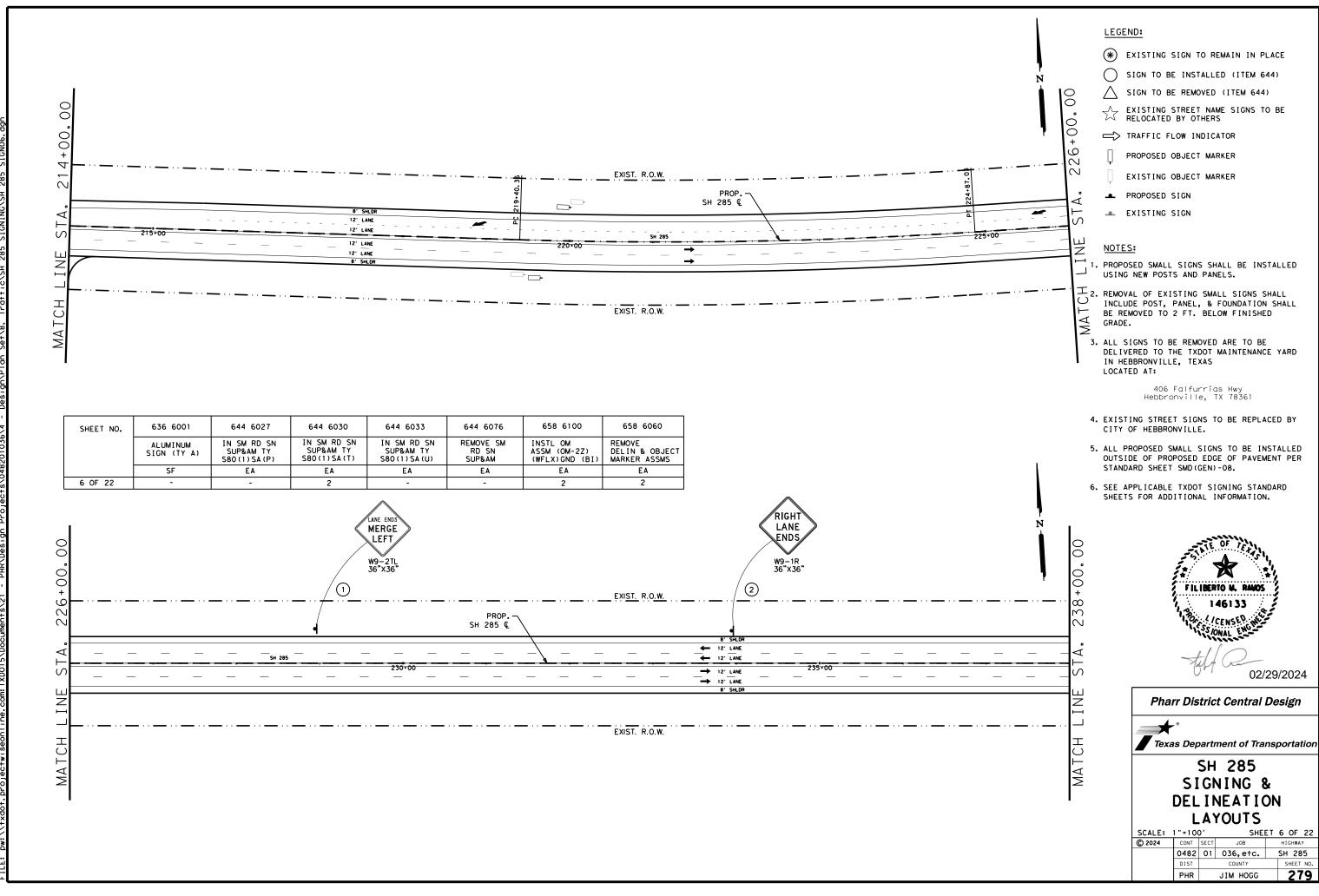


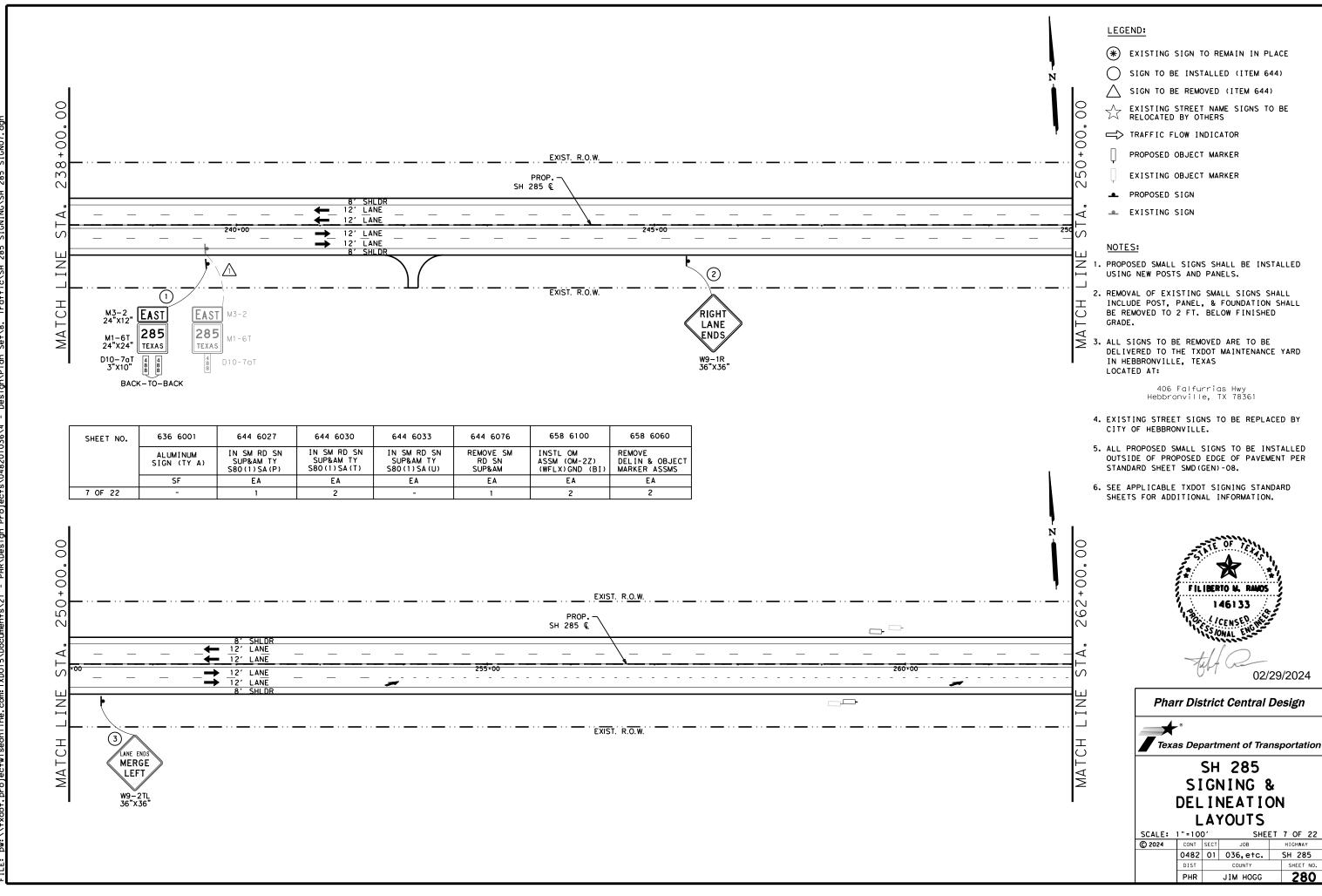




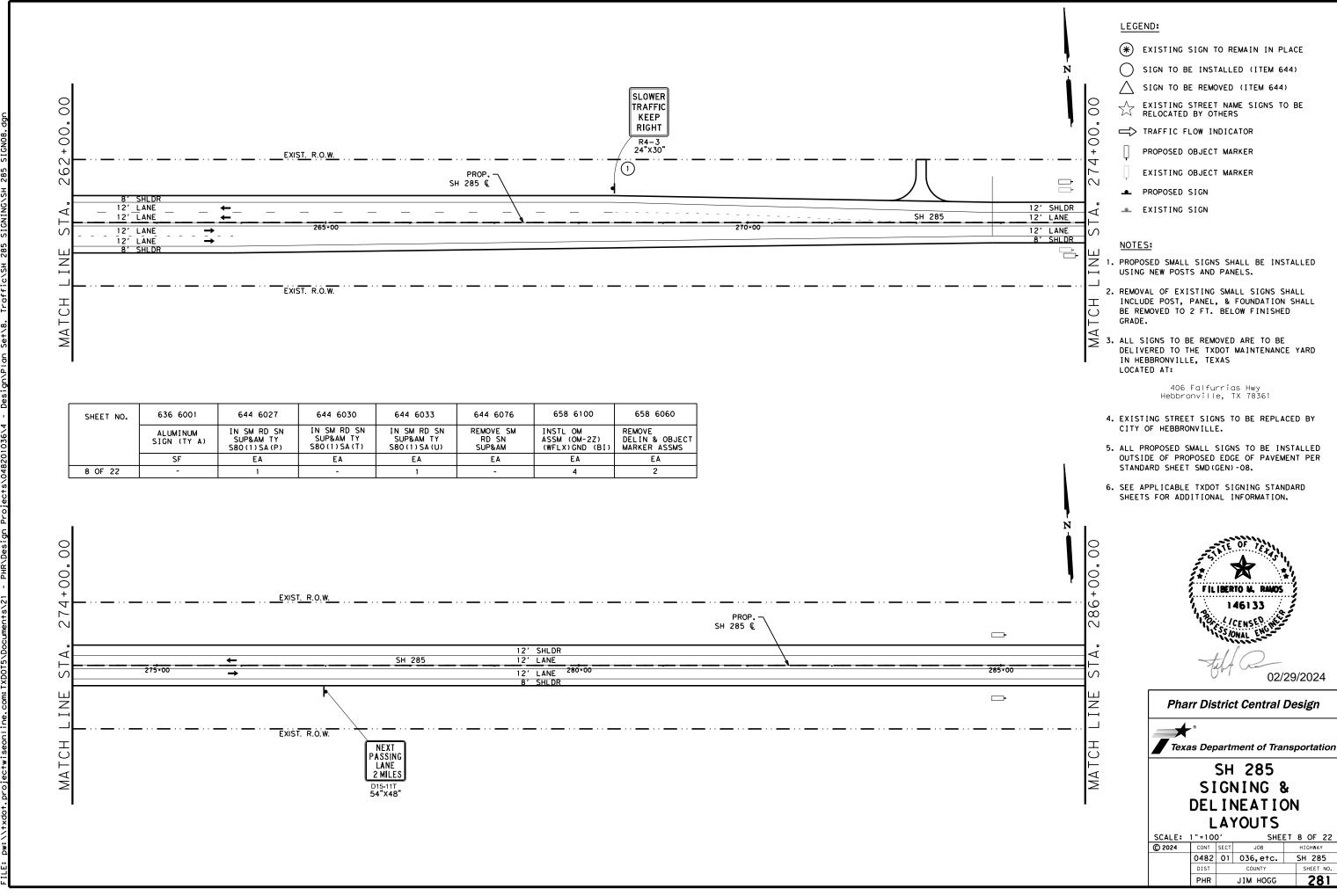
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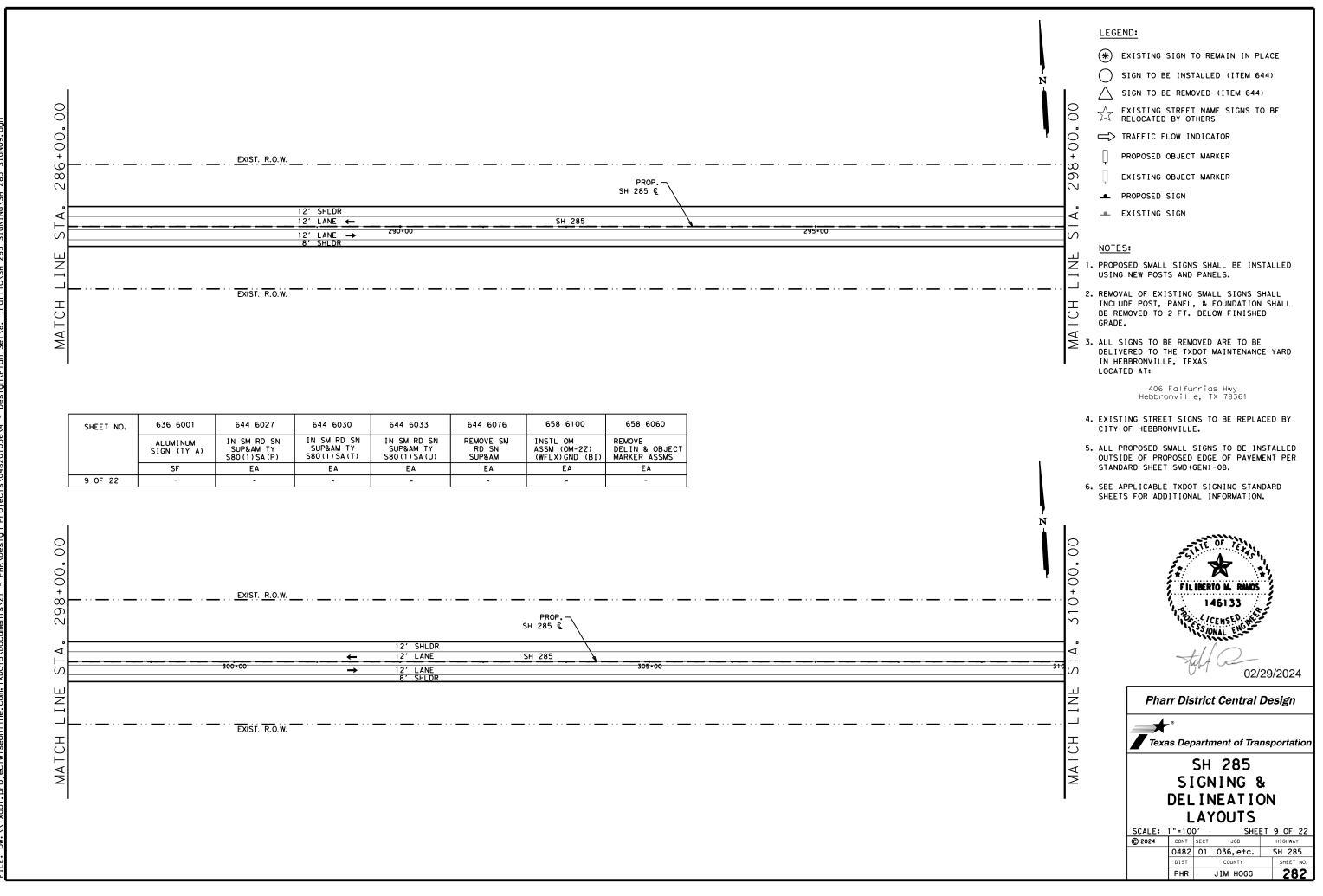


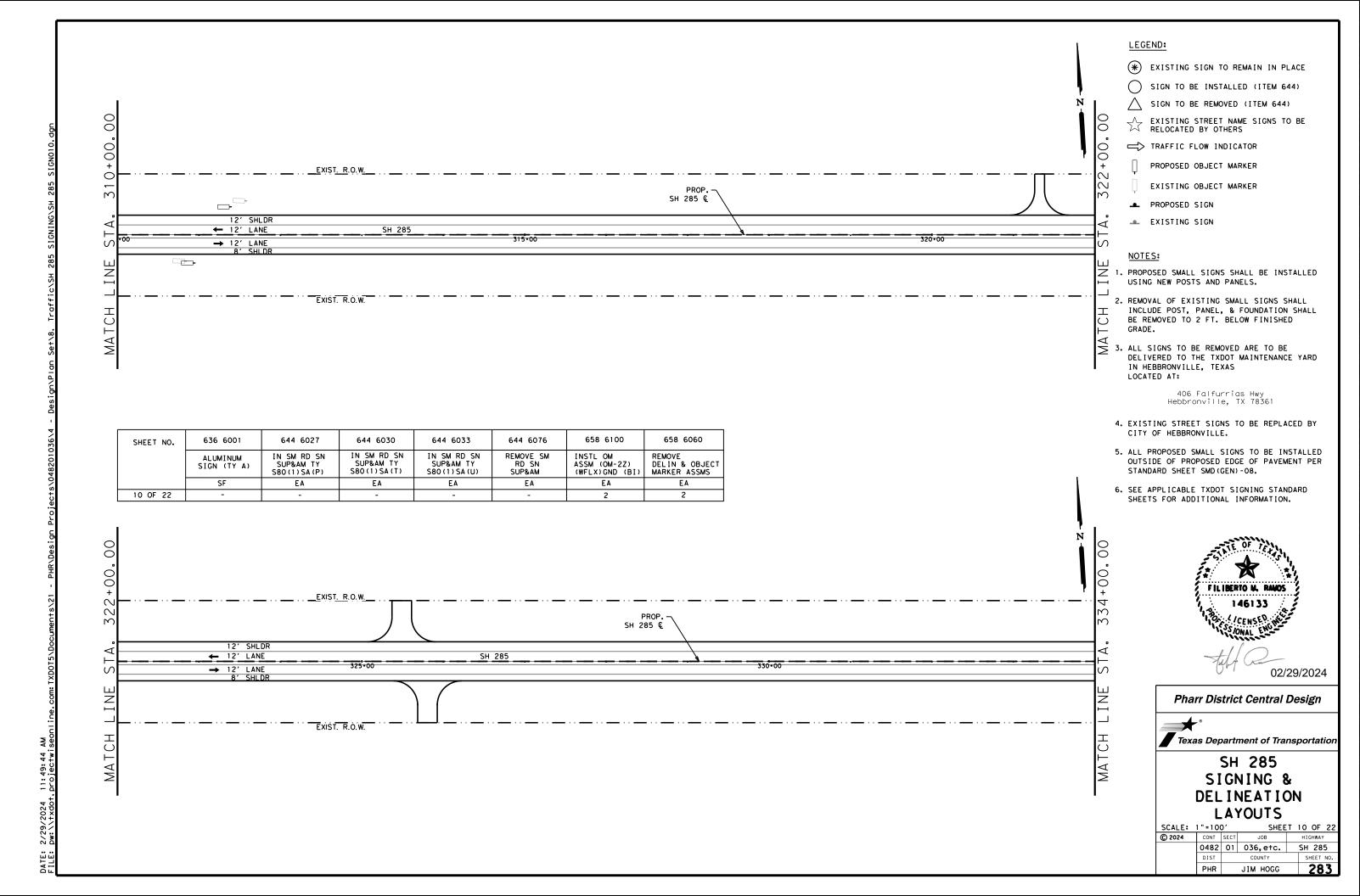


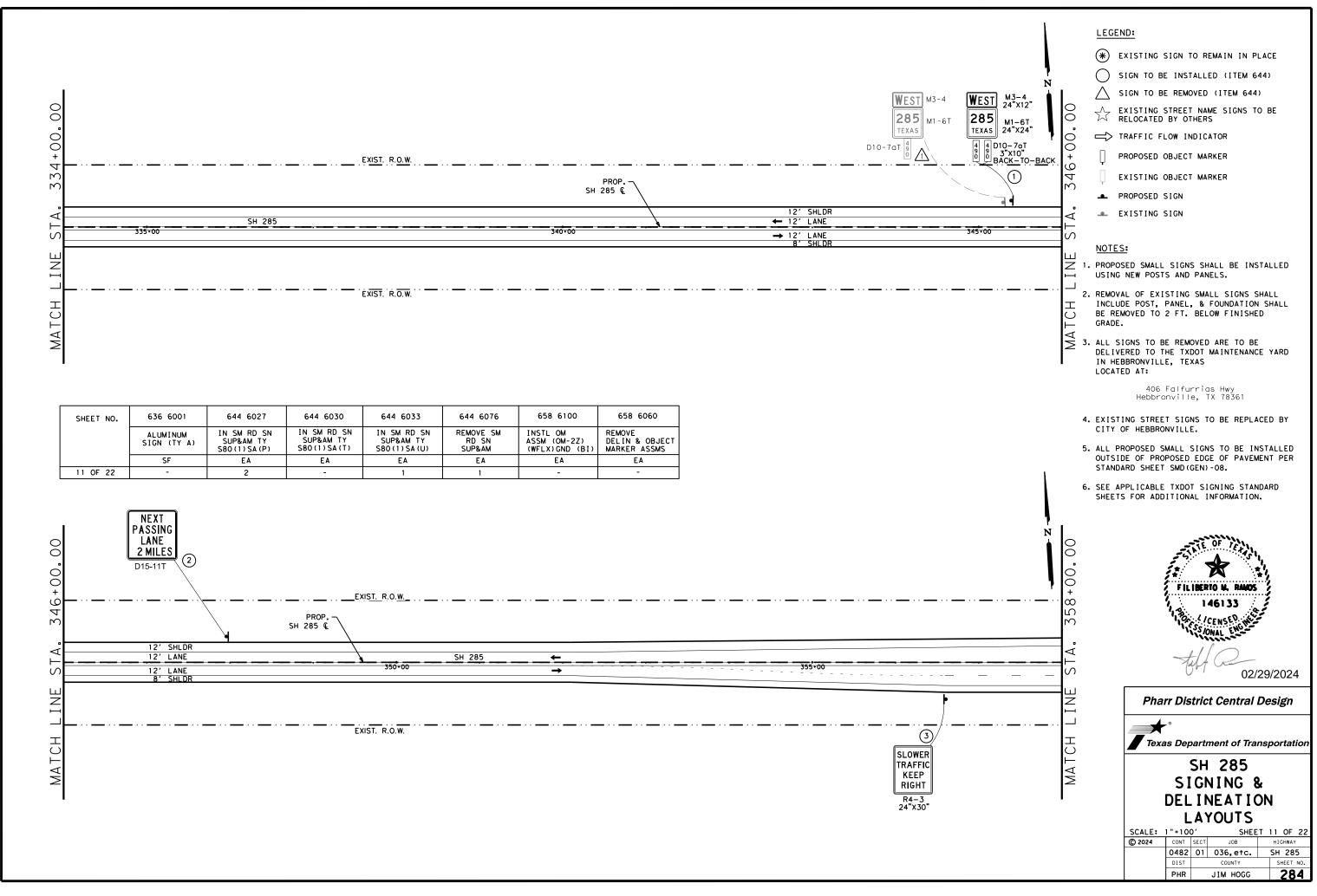


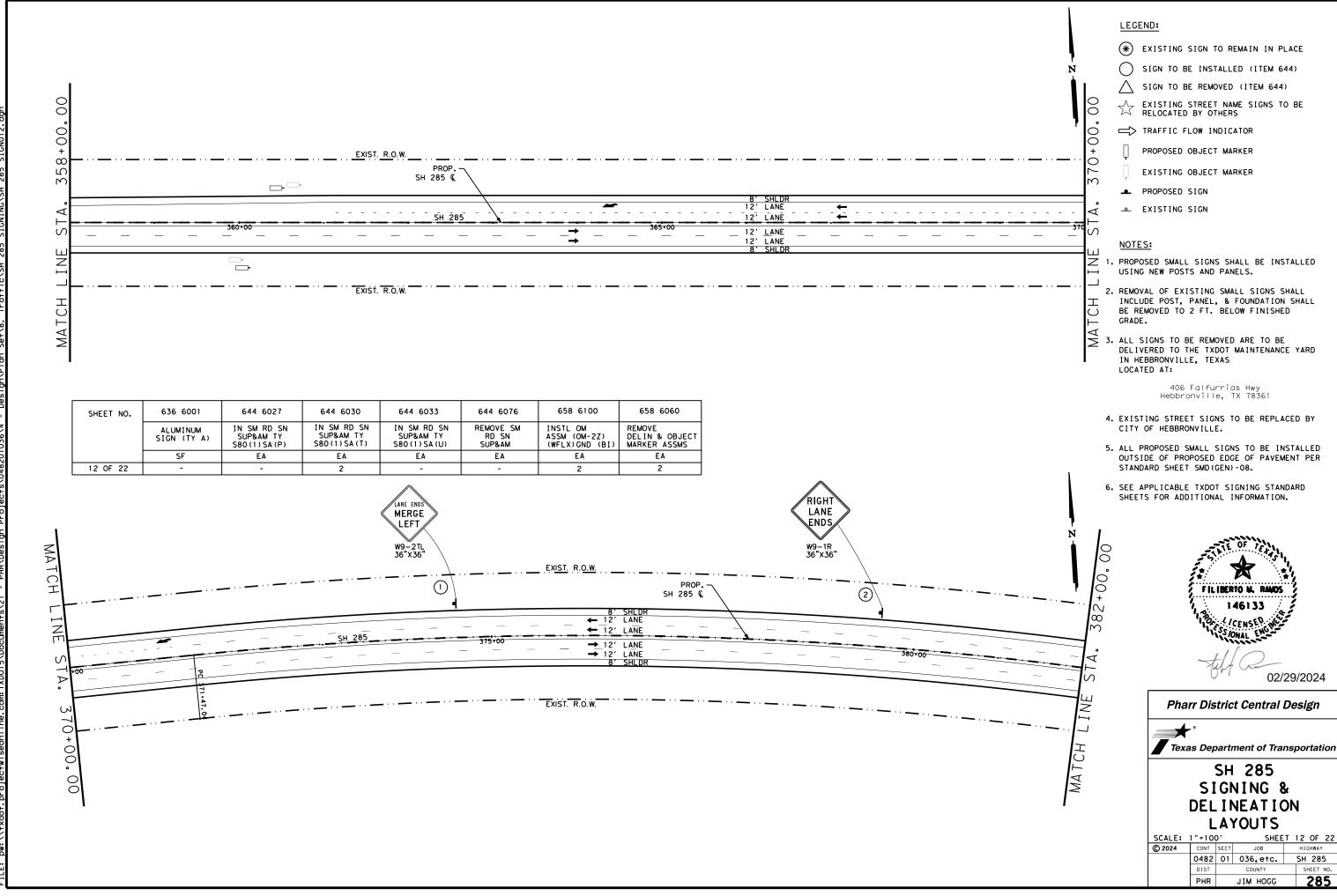
DATE: 2/29/2024 11:49:21 AM



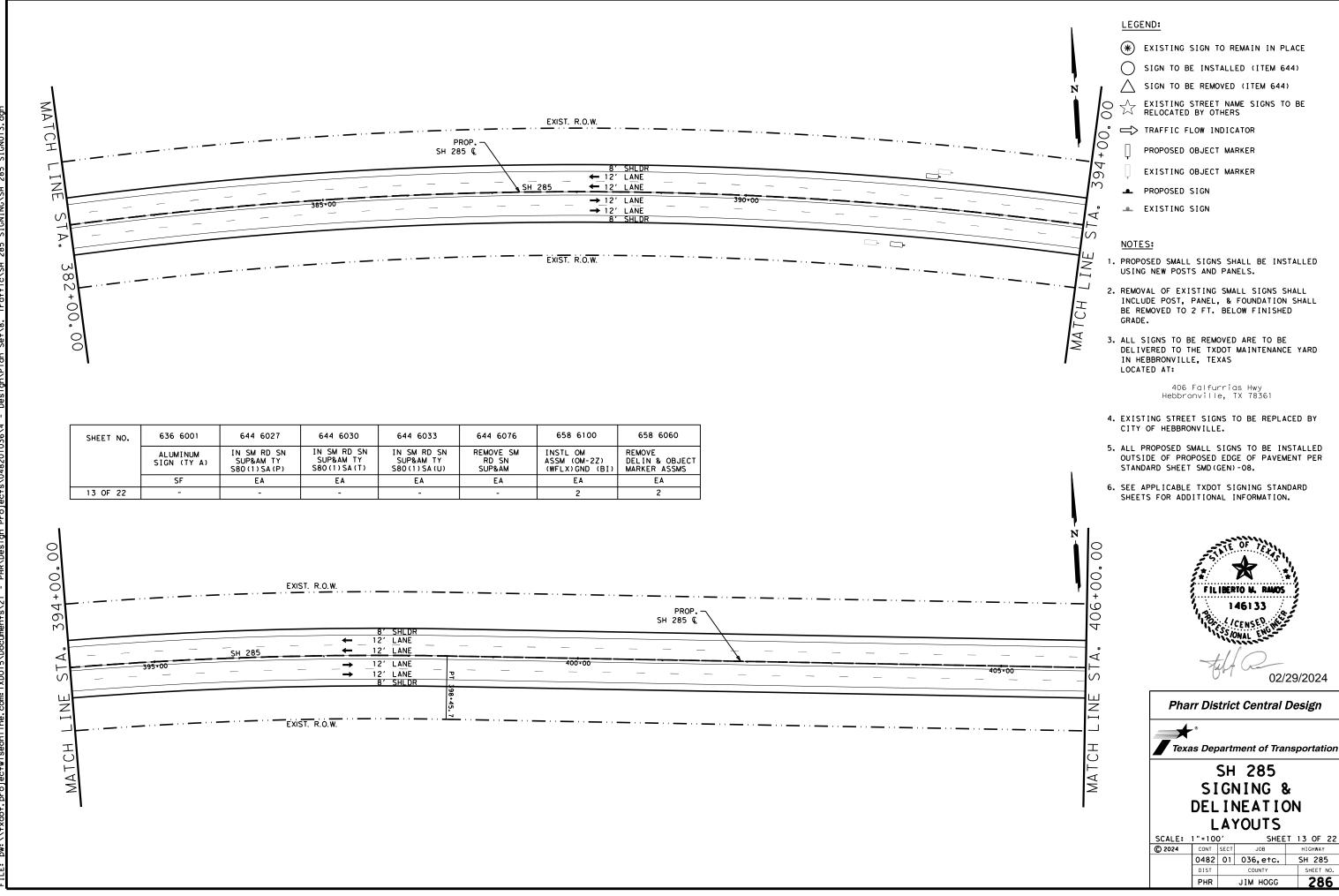




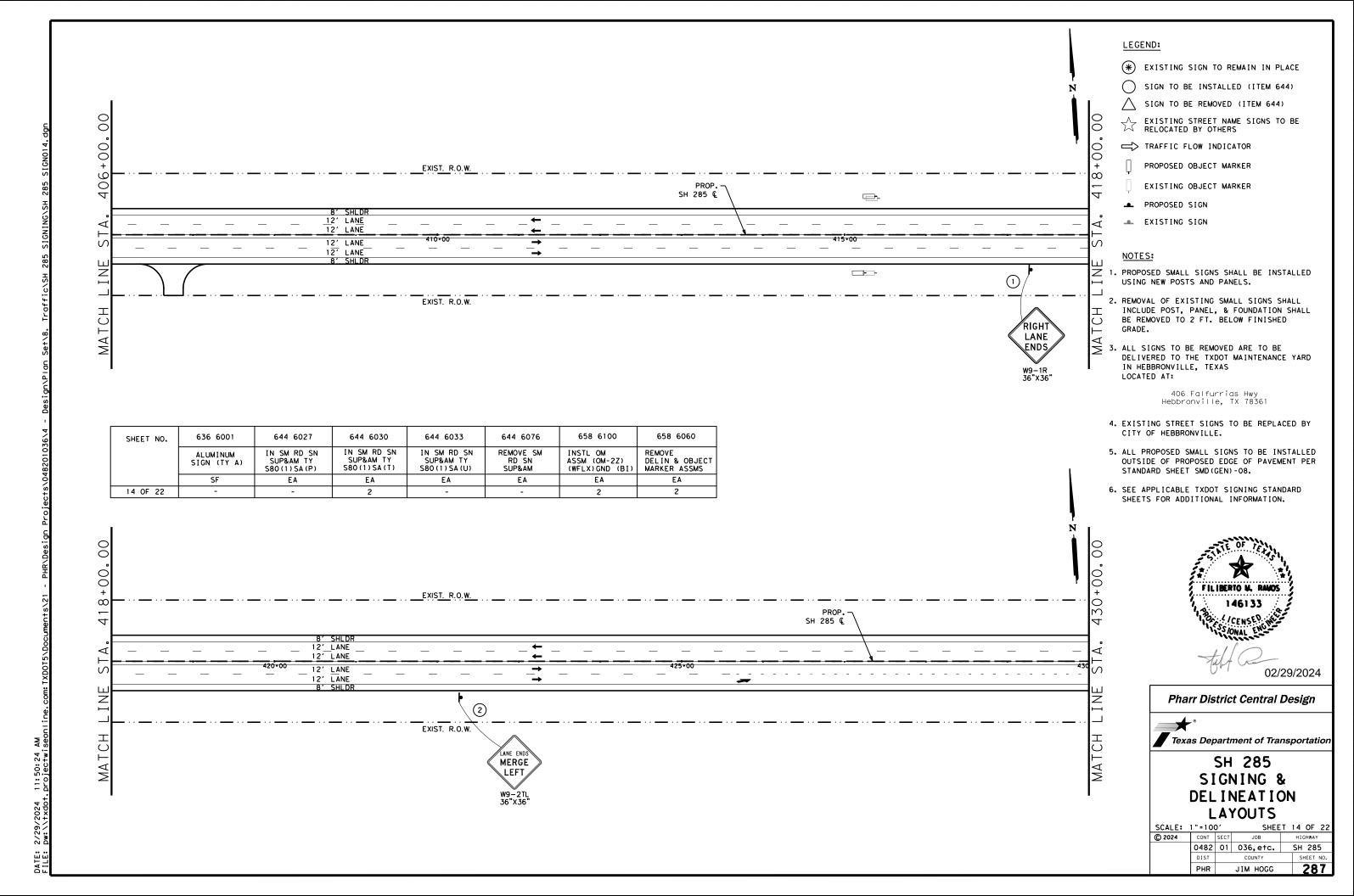


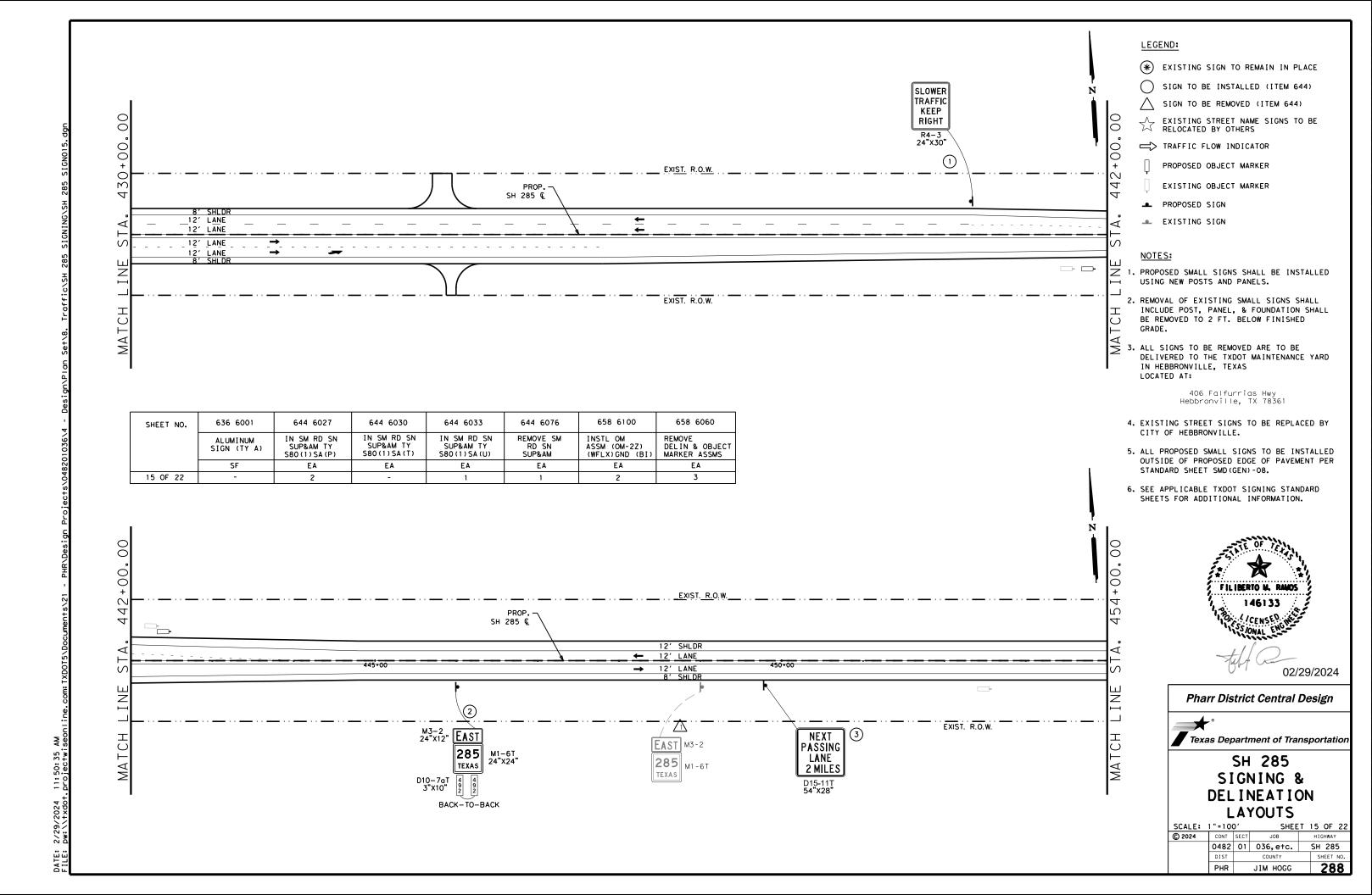


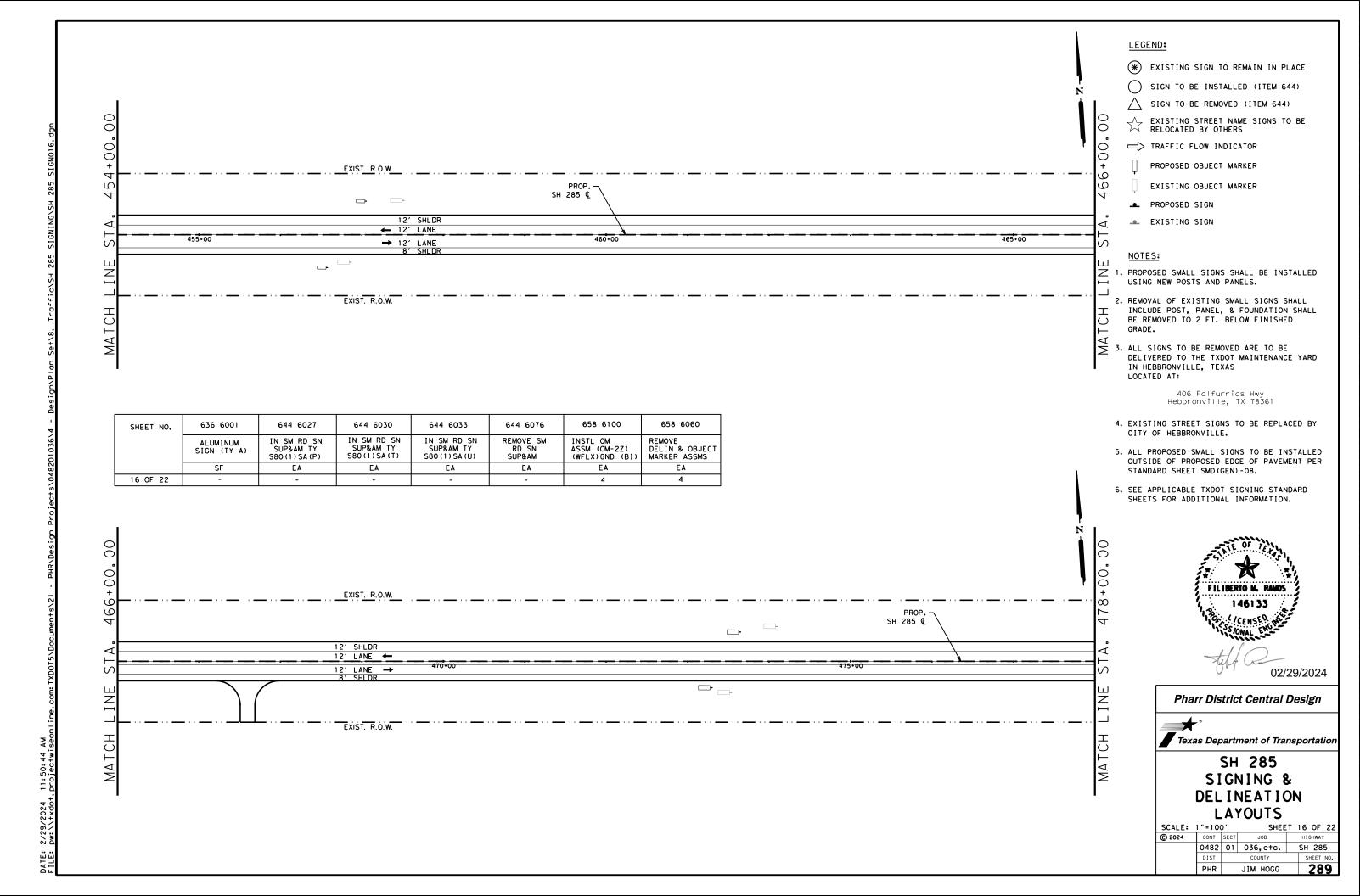
DATE: 2/29/2024 11:50:03 AM

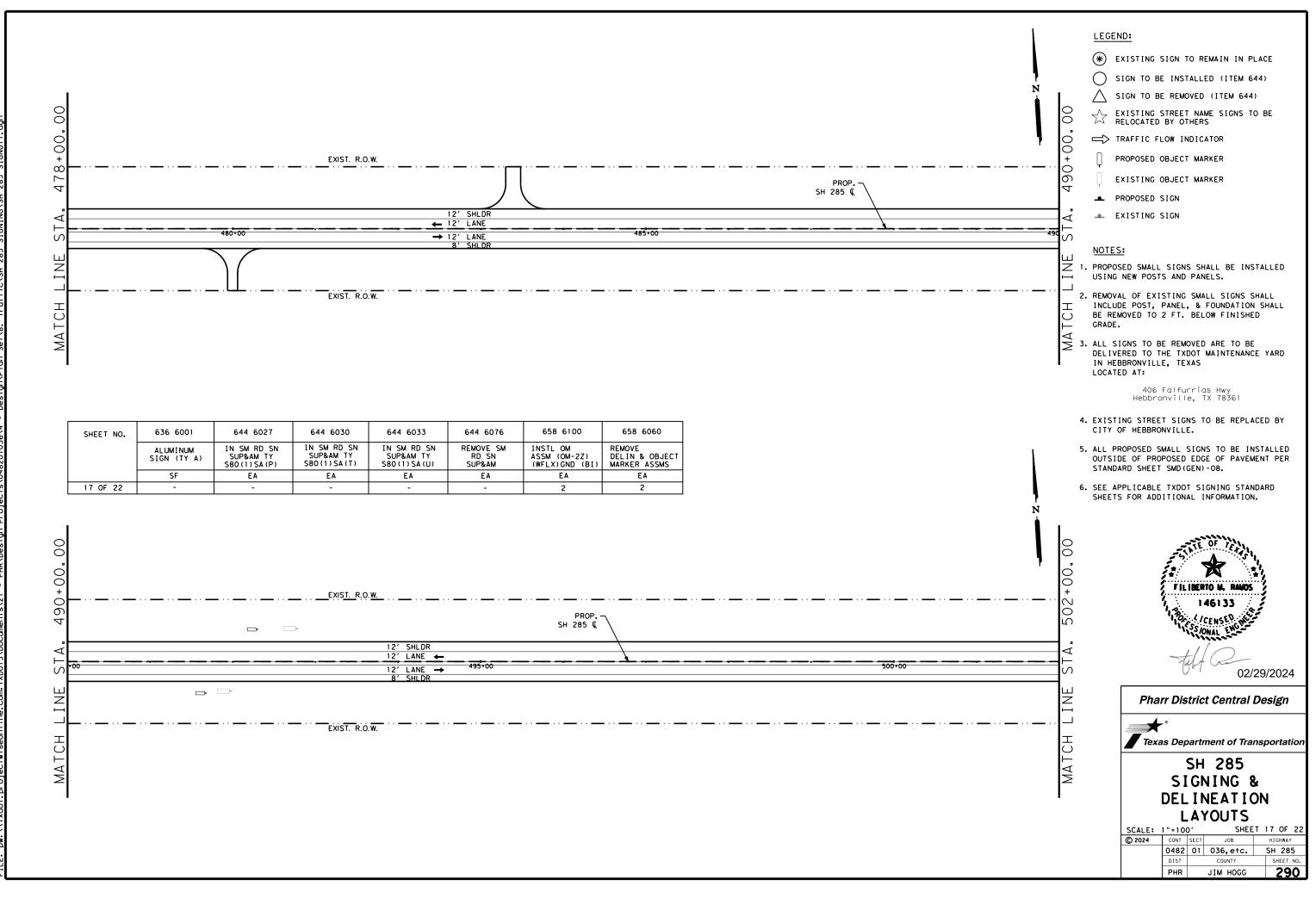


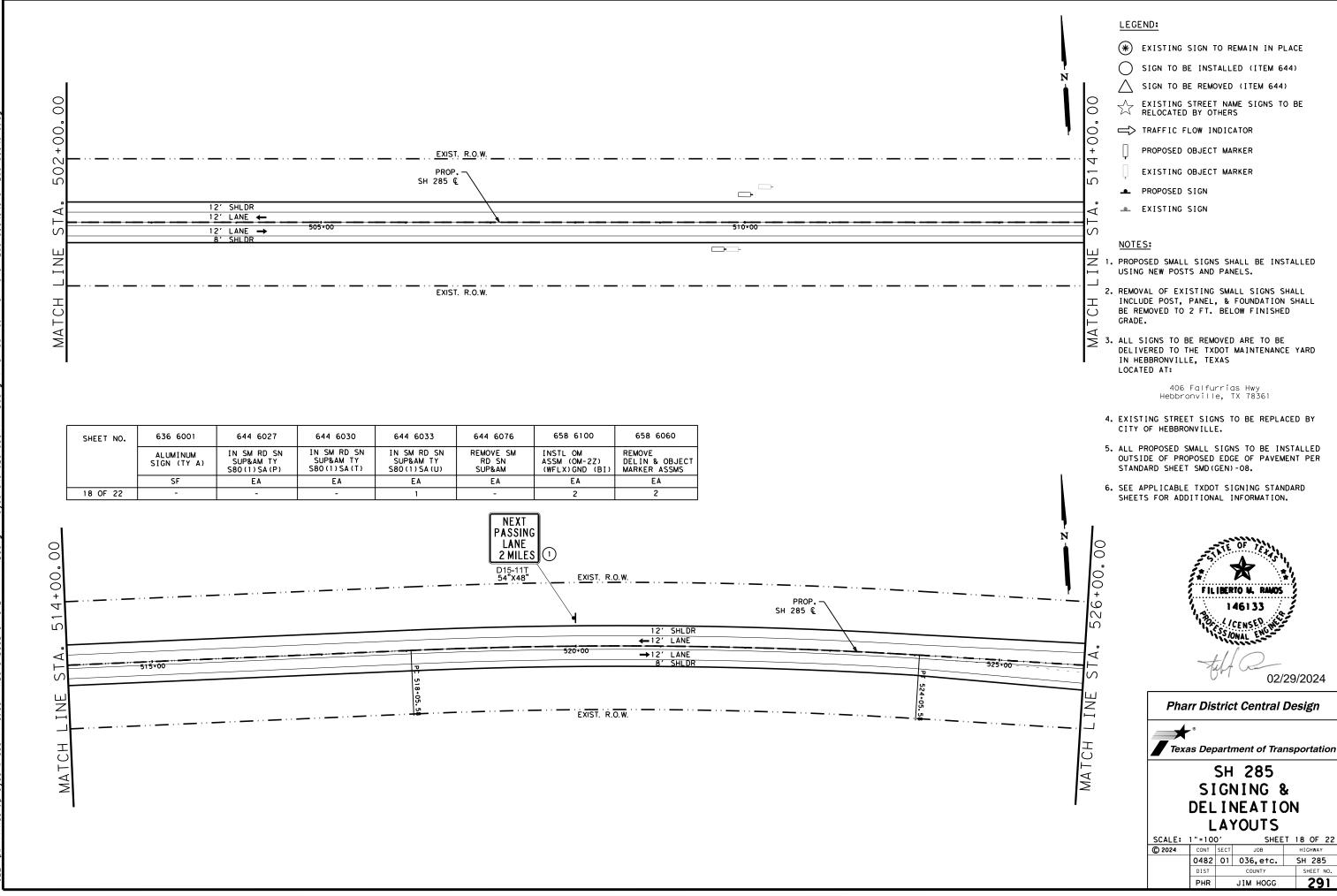
DATE: 2/29/2024 11:50:14 AM

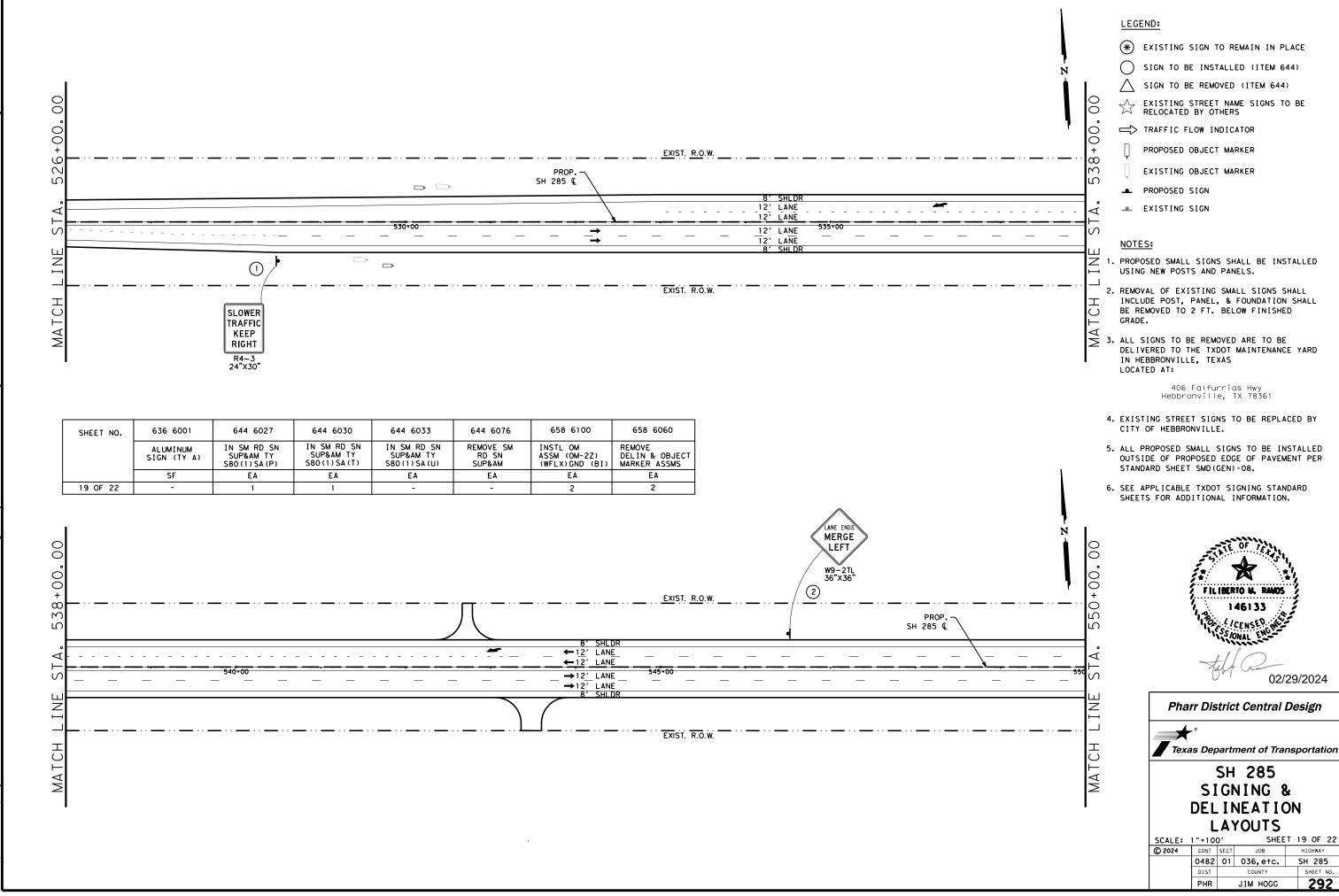


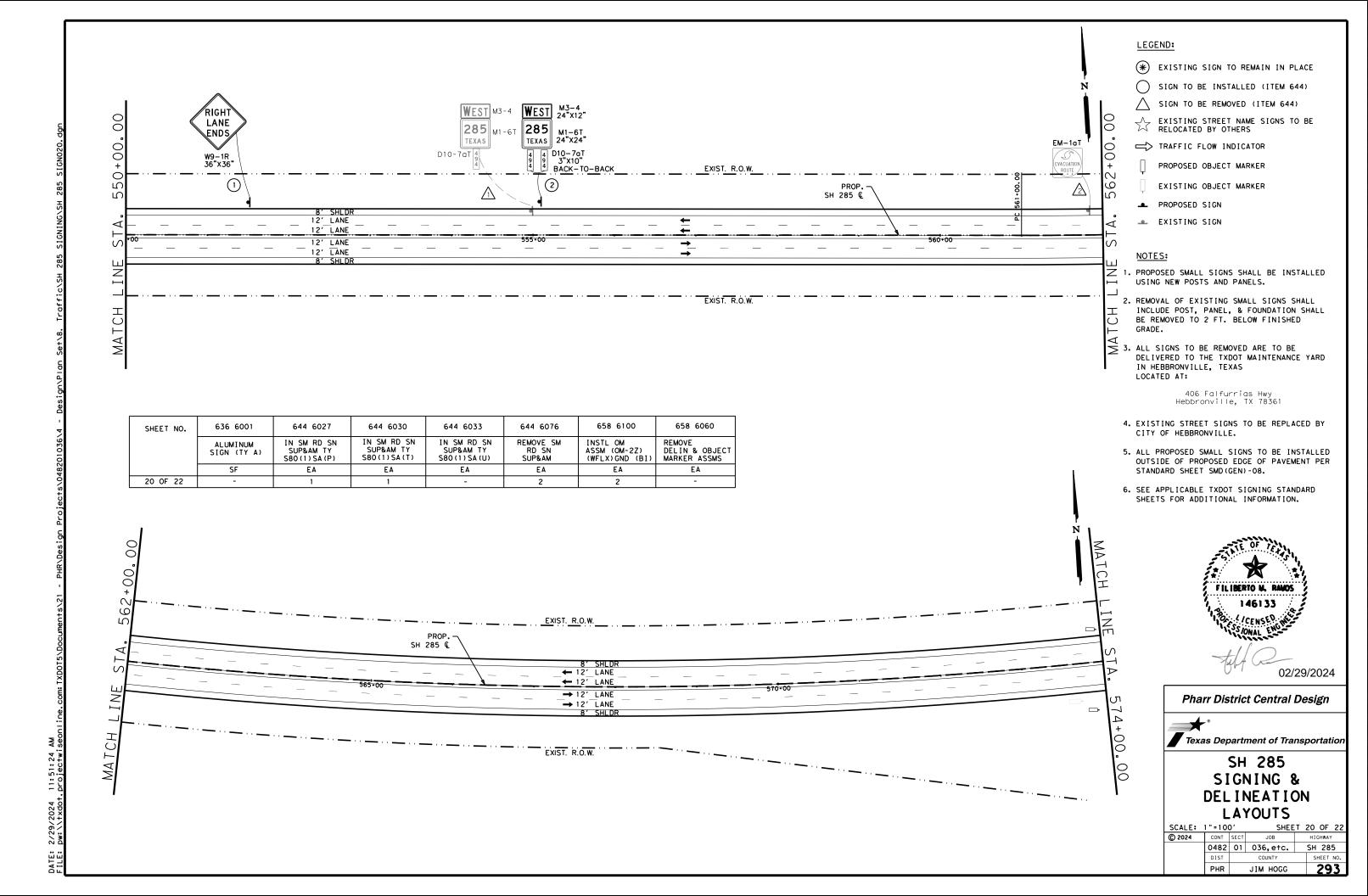


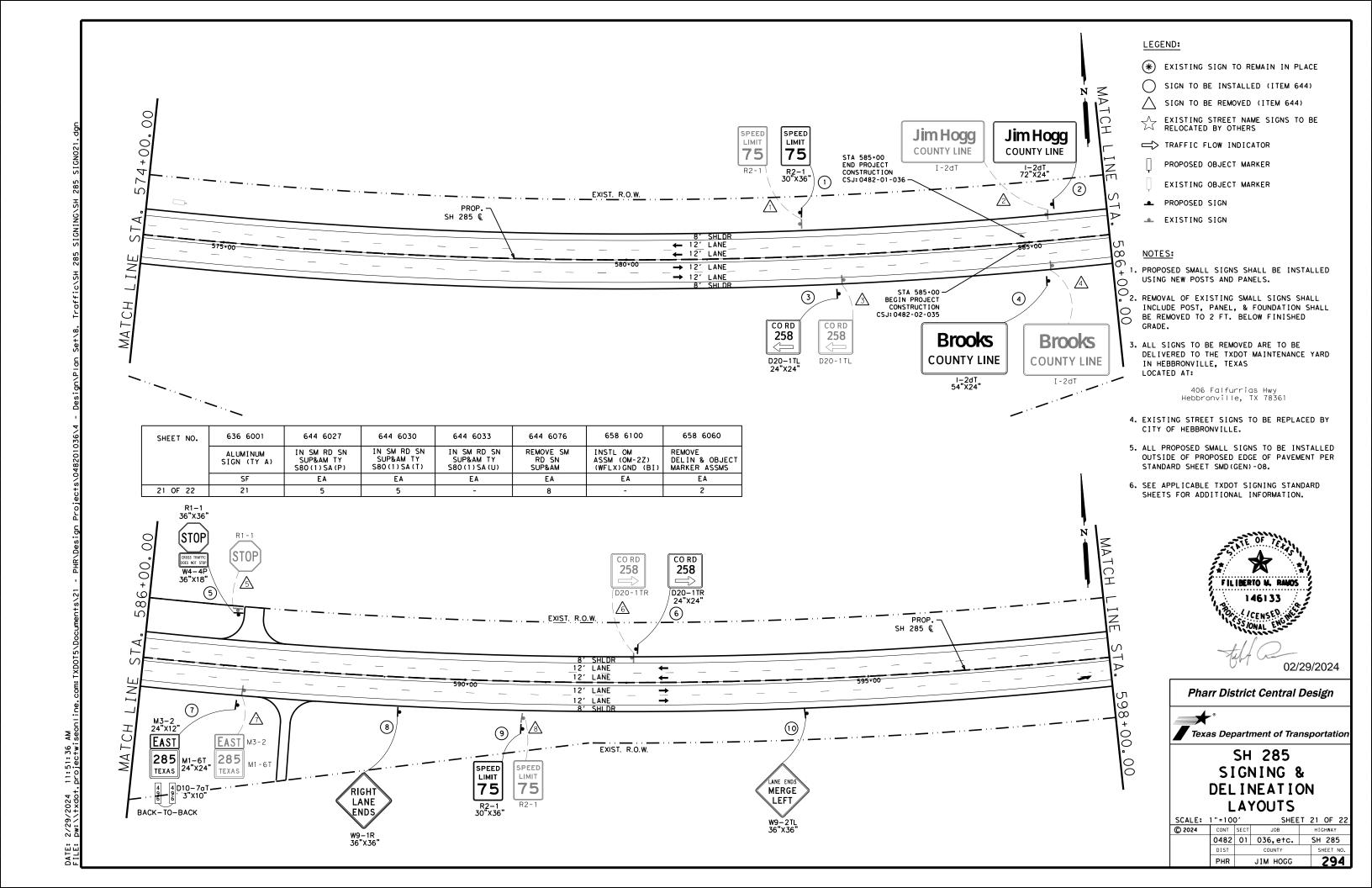


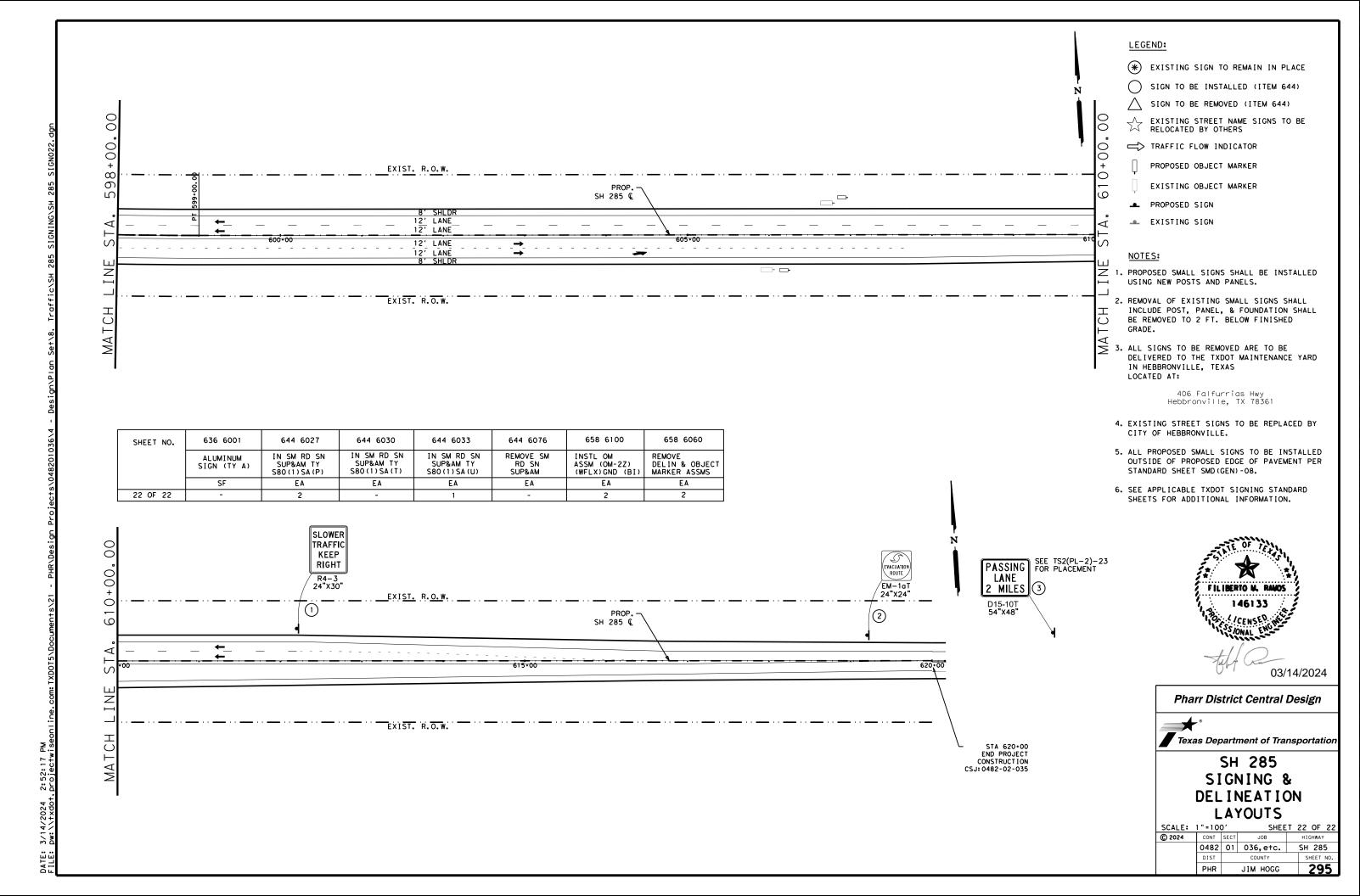






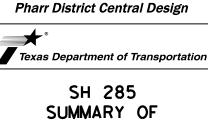






Γ			SUMMARY	OF SN	1 4	4 L	L SIG	NS					
version SIGNS	AN	Ch. CICh.				A (TYPE G)		D SGN Posts	ANCHOR TYPE	Moul	XX (X-XXXX)	BRIDGE MOUNT CLEARANCE SIGNS	
		GN SIGN O. NOMENCLA	SIGN	DIMENSIONS	FLAT ALUMINUA	AL ALU	FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	IEXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	(See Note 2) TY = TYPE TY N TY S	
sibili 85139	1 OF 2	2 1 M3-4	WEST	24×12	1		\$80	1	SA	P			
S S S S S S S S S S S S S S S S S S S		M1 -6T	285	24×24									ALUMINUM SIGN BLANKS THICKNESS
2 8			TEXAS		╁	+							Square Feet Minimum Thickness
Sumes ors 149		2 EM-10		24×24	1		S80	1	SA	Р			Less than 7.5 0.080"
1 2893			EVACUATION										7.5 to 15 0.100"
T C C S T		3 R1-1		36×36	1		\$80	1	SA	т			Greater than 15 0.125"
rver.		W4-4P	(STOP)	36×18									
whatsoe			CROSS TRAFFIC DOES NOT STOP										The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.
r pose		4 M1-6T	285	24×24	1		\$80	1	SA	U			http://www.txdot.gov/
any pu		M6-4	TEXAS	21×15									•
for for these													NOTE:
ν Ε δ Α Σ Ε δ Ε δ Ε δ Ε δ Ε δ Ε δ Ε δ Ε δ Ε δ Ε δ					t								 Sign supports shall be located as sho on the plans, except that the Engineer
1 py 1		M3-3	SOUTH	24×12	╁	╀							may shift the sign supports, within design guidelines, where necessary to
s made s ostage		M1 -6F	1017 ROAD	24×24									secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the
vind is		M6-1		21x15									Contractor shall stake and the Engined will verify all sign support locations
Pr6													 For installation of bridge mount clear signs, see Bridge Mounted Clearance S
sig		5 R2-1	SPEED	30×36	1		\$80	1	SA	Р			Asšembly (BMCS)Štandard Sheet.
HANDA —			LIMIT										3. For Sign Support Descriptive Codes, s
- - -			<u> </u>										 For Sign Support Descriptive Codes, so Sign Mounting Details Small Roadside Signs General Notes & Details SMD (GEN)
1+8\2		6 D1-3		96×36	1		S80	1	SA	Т			
			↑ Falfurrias Rio Grande City →										
15\Dc		- 142 2	Edinburg □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	24:12	<u> </u>	Ļ	500						
TXDC		7 M3-3	SOUTH	24×12	Ľ		\$80	1	SA	Р			
e com		M1 - 6F	1017 ROAD	24×24									Pharr District Central Desi
i.		M6-1		21×15									*
wised													Texas Department of Transpo
11:51:51 projectwi		8 M1-6T		24×24	1	\perp	\$80	1	SA	P			SH 285
		M6-4	285 TEXAS	21×15									SUMMARY OF SMALL SIGNS
2/29/2024 pw:\\t×dot		D10-70		3×10									SHEET 1
DATE: 2/2 FILE: pw:		D10-70	6 6 4 8 BK TO BK	3×10									© 2024 CONT SECT JOB HI 0482 01 036,etc. SH DIST COUNTY S
FI													PHR JIM HOGG

- hall be located as shown xcept that the Engineer except that the Engineer sign supports, within les, where necessary to lesirable location or to with utilities. Unless on the plans, the I stake and the Engineer sign support locations.
- n of bridge mount clearance ge Mounted Clearance Sign Standard Sheet.
- t Descriptive Codes, see etails Small Roadside otes & Details SMD(GEN).



			SHEET 1 OF						
© 2024	CONT	SECT	JOB		HIGHWAY				
	0482	01	036,etc.		SH 285				
	DIST		COUNTY		SHEET NO.				
	PHR		JIM HOGG		296				

			OF SI	\ <u>\</u>	_				XXXX (X)	XX (<u>X</u> - <u>X</u> X X X X)	BDIBGE	
					, FE	필			<u></u>			BR I DGE MOUNT
LAN					(TYPE	Ĕŀ	POST TYPE	POSTS	ANCHOR TYPE	I MOUN	ITING DESIGNATION	CLEARANCI SIGNS
HEET	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	ALUMINUM	Ĭ		1 0313			1EXT or 2EXT = # of Ext	(See
NO.	NO.	NOMENCLATURE	3101		=	=	FRP = Fiberglass	1	UB=Universal Bolt		BM = Extruded Wind Beam	Note 2)
							TWT = Thin-Wall 10BWG = 10 BWG	1 or 2	SA=Slipbase-Conc SB=Slipbase-Bolt	P = "Plain" T = "T"	WC = 1.12 #/ft Wing Channel	TY = TYP
					FLAT	EXAL	S80 = Sch 80		WS=Wedge Steel	U = "U"	EXAL= Extruded Alum Sign Panels	
	9	R1 - 1		36×36	+		S80	1	WP=Wedge Plastic	T	Pariets	TY S
			STOP									
		W4-4P		36×18	+							
			CROSS TRAFFIC DOES NOT STOP									
	10	M3-2		24×12	+	\vdash	S80	1	SA	P		
			<u>EAST</u>	21212	11		300	•	34	'		
		M1-6T		24×24								
			285 TEXAS		+							
\dashv	11	D15-10T	PASSING	54×42		\vdash	S80	1	SA	U		
			LANE									
			2 MILES		+							
	12	R2-1		30×36	17		S80	1	SA	Р		
			SPEED									
					+							
			70		\perp							
	13	D3-3aTR		66×12	+/	Н	S80	1	SA	T		
			C emetery ⇒									
		D3-3aTL	← Cemetery ←	66×12	+							
	14	D1-3	↑ Hebbronville	96×36			S80	1	SA	Т		
			< Edinburg		++							
	15	₩3-5		36×36	1		\$80	1	SA	Т		
					+							
			<u> </u>									
-	16	R2-1	SPEED	30×36		$\ \cdot\ $	\$80	1	SA	P		
			LIMIT									
-			70		++	\vdash						
	17	D2-2		66×24	1		S80	1	SA	Т		
			Falfurrias 34		+	ig						
			Riviera 56									
	18	R2-1		30×36	1		S80	1	SA	Р		
-			SPEED LIMIT		+	\vdash			1			
			75									
-					++	\vdash						
2 OF	- 22				\pm	団						
	1	M2-1	JCT	21×15	1	igsqcup	S80	1	SA	Р		
		M1 - 6F		24×24	+	H						
			1017 ROAD		1 1							

LUMINUM SIGN BLANKS THICKNESS Square Feet Minimum Thickness Less than 7.5 0.080" 7.5 to 15 0.100" reater than 15 0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

- gn supports shall be located as shown the plans, except that the Engineer shift the sign supports, within sign guidelines, where necessary to cure a more desirable location or to oid conflict with utilities. Unless herwise shown on the plans, the ntractor shall stake and the Engineer II verify all sign support locations.
- installation of bridge mount clearance gns, see Bridge Mounted Clearance Sign sembly (BMCS)Standard Sheet.
- r Sign Support Descriptive Codes, see gn Mounting Details Small Roadside gns General Notes & Details SMD(GEN).



Texas Department of Transportation

SH 285 SUMMARY OF SMALL SIGNS

			SHEET 2 OF 7							
© 2024	CONT	SECT	JOB		HIGHWAY					
	0482	01	036,etc.		SH 285					
	DIST		COUNTY		SHEET NO.					
	PHR		JIM HOGG		297					

	_	-	т	SUMMAR	1 01 5					.,,,,,,	.,, ,,	_	
						يا <u>ب</u> ا		D SGN	I ASSM TY <u>X</u>	XXXX (X)	\overline{XX} (X- \overline{XXXX})	BR I DGE MOUNT	
PLAN						(TYPE	POST TYPE	POSTS	ANCHOR TYPE	I MOUI	NTING DESIGNATION	CLEARANCE	
SHEE!	r sı		SIGN NOMENCLATURE	SIGN	DIMENSIONS	30 2	POST TIPE	P0515			1EXT or 2EXT = # of Ext	SIGNS (See	
140.	"	·.	NOMENCE A LONE	0.00		ALUMINUM	FRP = Fiberglass	1 or 2	UB=Universal Bolt SA=Slipbase-Conc	P = "Plain"	BM = Extruded Wind Beam WC = 1.12 #/ft Wing		
								1 0 2	SB=Slipbase-Bolt WS=Wedge Steel	T = "T"	Channel EXAL= Extruded Alum Sign	TY = TYPE	
						FLAT			WP=Wedge Plastic	U = "U"	Panels	TY N TY S	
	+ 3	2	W2-10T		48×48	1	\$80	1	SA	T			
				HIGHWAY INTERSECTION AHEAD									ALUMINUM SIGN BLANKS THICKNESS
													Square Feet Minimum Thickness
	3	3	M3-4	WEST	24×12	1	580	1	SA	Р			Less than 7.5 0.080"
	+		M1 - 6T		24×24								7.5 to 15 0.100"
	-		D10-7aT	285	3×10	+							Greater than 15 0.125"
			D10-7aT	4 8 8 BK TO BK	3×10								The Standard Highway Sign Designs
	+	-+				++		1					for Texas (SHSD) can be found at the following website.
4	OF 2	2	D14-4T-3 (TOP)	ADOPT A HIGHWAY	48×24		\$80	1	SA	т			http://www.txdot.gov/
				NEXT 2 MILES ————————————————————————————————————			360	<u> </u>	3A	'			
			D14-4T-3 (BOTTOM)	TROOPER DAVID NEVAREZ	48×24								NOTE:
													1. Sign supports shall be located as shown
			CW21-1aT	Give Us A	48×48								on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to
				BRAKE									secure a more desirable location or to avoid conflict with utilities. Unless
	+-	2	W8-13oT		36×36	1	\$80	1	SA	T			otherwise shown on the plans, the Contractor shall stake and the Engineer
				BRIDGE									will verify all sign support locations.
				MAY ICE IN									For installation of bridge mount cleared signs, see Bridge Mounted Clearance Signs
				WEATHER									Assembly (BMCS)Standard Sheet.
5	OF 23	2											 For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside
		i	1-3	Mesquite	42×18	1	\$80	1	SA	Р			Signs General Notes & Details SMD(GEN).
				Creek									
								\perp					
	1	2	1-3	Mocauito	42×18	1	\$80	1	SA	Р			
				Mesquite									
				Creek									Pharr District Central Desig
	-	3	W8-13aT		36×36	1	S80	1	SA	T			
				BRIDGE MAY ICE IN				1					Tours Department of Transport
				COLD									Texas Department of Transport
								<u>L</u>					SH 285
	-	4	R4-3	(a) away	24×30	1	\$80	1	SA	Р			SUMMARY OF
													SMALL SIGNS
				KEEP									SHEET 3 0
				KIGHT									0482 01 036,etc. SH 2
													PHR JIM HOGG 2

			SUMMARY	OF SM								
					E A)		D SGN	N ASSM TY X	XXXX (X)	<u>XX</u> (<u>X</u> - <u>XXXX</u>)	BRIDGE MOUNT	
PLAN					(TYPE	DOCT TWO	DOSTS	ANGUOD TYPE	1 140111	UTING DESIGNATION	CLEARANCE	
	SIGN NO.	SIGN	SIGN	DIMENSIONS		POST TIPE	POSTS			TING DESIGNATION DESTRUCTION DESTRUCTION	SIGNS (See	
NO.	NO.	NOMENCLATURE	3101		AL UM I NUM	FRP = Fiberglass	, 2	UB=Universal Bolt SA=Slipbase-Conc		BM = Extruded Wind Beam WC = 1.12 #/ft Wing	Note 2)	
					⊢	⋖ 10BWG = 10 BWG	1 or 2	SB=Slipbase-Bolt	T = "T"	Channe I	TY = TYPE	
					FLA	S80 = Sch 80		WS=Wedge Steel WP=Wedge Plastic	U = "U"	EXAL= Extruded Alum Sign Panels	TY N TY S	
6 OF	F 22	W9-2TL		36×36		\$80	1	SA	T			
		W 2 1 2	LANE ENDS MERGE	30,30	Ť	300						A
			LEFT	1	+							ALUMINUM SIGN BLAN
												Square Feet Mi
	2	₩9-1R		36×36	1	\$80	1	SA	T			7.5 to 15
			RIGHT		+							Greater than 15
			《 LANE 》									
			ENDS —	1	+				1			
7.0	F 22			3413	$\downarrow \downarrow$	500		64				The Standard Highway
7 OF	F 22	M3-2	EAST	24×12	1	S80	1	SA	P			for Texas (SHSD) car the following websit
		M1-6T		24×24	\blacksquare							http://www.txdo
				3×10	\parallel							-
		D10-7aT		3×10	+							NOTE:
		D10-7aT	4 8 8 BK TO BK		\Box							NOTE: 1. Sign supports shall be
					+							on the plans, except t
	2	W9-1R		36×36	1	S80	1	SA	Ţ			may shift the sign sur design guidelines, who secure a more desirabl
			RIGHT									avoid conflict with ut otherwise shown on the
			LANE ENDS		+							Contractor shall stake will verify all sign s
			END3/									2. For installation of br
	3	W9-2TL	•	36×36	1	\$80	1	SA	T			signs, see Bridge Mour Assembly (BMCS)Standar
												 For Sign Support Descr Sign Mounting Details Signs General Notes &
			LEFT									Signs General Notes &
8 0	F 22	R4-3	SLOWER	24×30		\$80	1	SA	P			
			TRAFFIC									
			KEEP		+							
					\blacksquare							
	2	D15-11T	NEXT	54×48	1	\$80	1	SA	U			Pharr Distr
			PASSING LANE									*
			2 MILES									Texas Depar
11 0)F 22				+							
Ĭ	1	M3-4	WEST	24×12	1	\$80	1	SA	Р			S
		M1-6T	285	24×24	+				+			SUM
		D10-7gT	TEXAS	3×10	\Box							SMAL
												© 2024 CONT SE
		D10-7aT	9 9 0 ВК ТО ВК	3×10	+1							© 2024 CONT SE 0482 C DIST
\dashv		+		1	+				1	†		PHR

ANKS THICKNESS Minimum Thickness 0.080" 0.100" 0.125"

hway Sign Designs can be found at bsite.

txdot.gov/

- be located as shown of that the Engineer pt that the Engineer supports, within where necessary to rable location or to h utilities. Unless the plans, the take and the Engineer gn support locations.
- bridge mount clearance Mounted Clearance Sign ndard Sheet.
- escriptive Codes, see ils Small Roadside s & Details SMD(GEN).



SECT JOB 2 01 036,etc. JOB HIGHWAY SH 285 299 JIM HOGG

					₹	S	SM R	D SGN	ASSM TY X	XXXX (X)	\overline{XX} ($\overline{X} - \overline{XXXX}$)	BRIDGE	
PLAN					(TYPE	(TYPE	POST TYPE	DOSTS	ANCHOR TYPE	1 140111	NTING DESIGNATION	MOUNT CLEARANCE	
	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	MUN I MO	FRP = Fiberglass	POSTS	UA=Universal Conc UB=Universal Bolt	PREFABRICATED) 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam	SIGNS (See Note 2)	
					AT ALU	KAL ALI	TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel	P = "Plain" T = "T" U = "U"	EXAL= Extruded Alum Sign	TY = TYPE TY N	
					<u> [</u>	E)			WP=Wedge Plastic		Pane I s	TY S	
	2	D15-11T	NEXT PASSING	54×48	1		\$80	1	SA	U			AL
			LANE 2 MILES										
	3	R4-3		24×30	1		\$80	1	SA	Р			Gr
			SLOWER TRAFFIC KEEP		\Box								
			RIGHT										T f
12 OF	1	W9-2TL	LANE ENDS	36×36	1		S80	1	SA	Ţ			
			MERGE LEFT		\Box							- I	NOTE:
												1	1. Sign on may
	2	₩9-1R	RIGHT	36×36			S80	1	SA	Т			des sec avo
			LANE ENDS										oth Con wil
14 0	F 22				$\downarrow \downarrow$							2	2. For sign Asso
14 0	1	₩9-1R	RIGHT	36×36	1		\$80	1	SA	т			
			LANE										3. For Sign Sign
	2	₩9-2TL		36×36	1		\$80	1	SA	Т			
			LANE ENDS MERGE										
			LEFT										
15 OF	- 22				\blacksquare								
	1	R4-3	SLOWER TRAFFIC KEEP	24×30			\$80	1	SA	P			
			RIGHT		\Box								
	2	M3-2	EAST	24×12	1		\$80	1	SA	Р			
		M1-6T D10-7aT	285	24x24 3x10	\Box								
		D10-7oT	TEXAS BK TO BK	3×10									

ALUMINUM SIGN BLANKS THICKNESS

Square Feet Minimum Thickness

Less than 7.5 0.080"

7.5 to 15 0.100"

Greater than 15 0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

- I. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
- For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
- For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).





SH 285 SUMMARY OF SMALL SIGNS

			SHE	ET.	5 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		300

					ž A)	PE GJ	SM R	D SGN	ASSM TY X	XXXX (X)	<u>xx</u> (x-xxxx)	BR I DGE MOUNT
PLAN					(TYPE	(TYPE	DOCT THE	D05=5	ANGUAR TURE	140,-1	TIME DESIGNATION	CLEARANCE
HEET	SIGN	SIGN			ALUMINUM	3	POST TYPE	POSTS	ANCHOR TYPE UA=Universal Conc		TING DESIGNATION	SIGNS
NO.	NO.	NOMENCLATURE	SIGN	DIMENSIONS	₹	AL UM I NUM	FRP = Fiberglass		UB=Universal Bolt	PREFABRICATED	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam	(See Note 2)
					₹	🖺	TWT = Thin-Wall	1 or 2	SA=Slipbase-Conc	P = "Plain"	WC = 1.12 #/ft Wing	
							10BWG = 10 BWG		SB=Slipbase-Bolt	T = "T"	Channe I	TY = TYP
					FLAT	EXAL	S80 = Sch 80		WS=Wedge Steel	U = "U"	EXAL= Extruded Alum Sign	
					4-	<u> </u>			WP=Wedge Plastic		Panels	TY S
	3	D15-11T	NEXT	54×48	1		S80	1	SA	U		
		5.5	PASSING —	37270	Ť		300	<u> </u>	J -			
			LANE 2 MILES									
			ZMILES									
18 OF	22		NEXT -		+							
	1	D15-11T	PASSING	54×48	1		S80	1	SA	U		
		0.3	LANE	31210	Ť		300	<u> </u>	<u> </u>			
			<u>2 MILES</u>									
19 OF					\top							
	1	R4-3	SLOWER	24×30	1		S80	1	SA	Р		
			TRAFFIC		+	\vdash						
\dashv			KEEP RIGHT		+					 		1
					\top					1		
	2	W9-2TL		36×36	1		S80	1	SA	T		
			LANE ENDS									
			MERGE —		-							
			LEFT //		+							<u> </u>
					+							
20 0)F 22		•		+							<u> </u>
	1	W9-1R		36×36	1		S80	1	SA	T		
			RIGHT		_							
			《 LANE 》		+							<u> </u>
- +			ENDS//		+							
	2	M3-4		24×12	1		S80	1	SA	Р		
		141 67			+							
		M1 - 6T	285 TEXAS	24×24	+							<u> </u>
		D10-7aT	TEXAS -	3×10	+							
ı												
		D10-7aT		3×10								
					+	\vdash						<u> </u>
21 O)F 22	R2-1	SPEED	30×36	1		S80	1	SA	P		
	•	1,2 1	SPEED LIMIT 75	30,30	Ť		300	<u>'</u>	<u> </u>	'		
			75									
\Box												
-	2	I-2dT		72×24	-		\$80	1	SA	Т		
			Jim Hogg		+							
			COUNTY INF		\top					1		
			COUNTY LINE									
	3	D20-1TL	CO RD	24×24	1		\$80	1	SA	Р		
-+			CO RD 258		+	\vdash		1		1		
					+							
					土					<u></u>		
	4	I-2dT		54×24	1		S80	1	SA	Т		
\Box			Drootes		\perp	\Box						
			Brooks ====		+			-		1		
\dashv			COUNTY LINE		+	\vdash				-		
- 1		I	∥ COUNTY LINE ∥	i			i	1	ī	I .	I	

LUMINUM SIGN BLANKS THICKNESS Square Feet Minimum Thickness Less than 7.5 0.080" 7.5 to 15 0.100" reater than 15 0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

- ign supports shall be located as shown the plans, except that the Engineer by shift the sign supports, within esign guidelines, where necessary to ecure a more desirable location or to void conflict with utilities. Unless herwise shown on the plans, the intractor shall stake and the Engineer II verify all sign support locations.
- or installation of bridge mount clearance igns, see Bridge Mounted Clearance Sign sembly (BMCS)Standard Sheet.
- or Sign Support Descriptive Codes, see ign Mounting Details Small Roadside igns General Notes & Details SMD(GEN).



Texas Department of Transportation

SH 285 SUMMARY OF SMALL SIGNS

© 2024 CONT SECT JOB HIGHWAY 0482 01 036,etc. SH 285 301 PHR JIM HOGG

			SUMMARY	OF SI		_							
						(TYPE G)		SGN	I ASSM TY X	XXXX (X)	<u>xx</u> (x-xxxx)	BRIDGE MOUNT CLEARANCE	
PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	ALUMINUM	EXAL ALUMINUM C	FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG	POSTS	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic		ITING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL = Extruded Alum Sign Panels	SIGNS (See Note 2) TY = TYPE TY N	
	5	R1-1		36×36	7	_	\$80	1	SA	Т	rulets	TY S	
		W4-4P	(STOP)	36×18									ALUMINUM SIGN
			CROSS TRAFFIC DOES NOT STOP			F							Square Feet
		222 172		24:24	<u> </u>		500		64				Less than 7.5
	6	D20-1TR	CORD	24×24	 		S80	1	SA	Р			7.5 to 15
			258										Greater than 19
	7	M3-2	EAST	24×12	1		\$80	1	SA	Р			The Standard R
		M1-6T	285	24×24		+							for Texas (SH) the following
		D10-7aT	TEXAS	3×10									http://w
		D10-7aT	4 9 6 BK TO BK	3×10									NOTE:
	8	₩9-1R		36×36	1		\$80	1	SA	Т			NOTE: 1. Sign supports sl
		#3 TW	RIGHT LANE ENDS	3000			300						on the plans, exmay shift the sidesign guideline secure a more deavoid conflict wotherwise shown Contractor shall
	9	R2-1		30×36	1		\$80	1	SA	Р			will verify all 2. For installation
			SPEED LIMIT										signs, see Brid Assembly (BMCS)
					1	╘							3. For Sign Suppor Sign Mounting D
	10	W9-2TL	LANE ENDS	36×36	1		\$80	1	SA	T			Signs General N
			MERGE LEFT										
22	OF 22												
	1	R4-3	SLOWER TRAFFIC	24×30	1		\$80	1	SA	Р			Phai
			KEEP RIGHT										
	2	EM-1oT		24×24	1		\$80	1	SA	P			Texa
		24.01	EVACUATION	67067			300	•	Un Un	,			
			NUIL		+								
	3	D15-10T	PASSING LANE	54×42	1		\$80	1	SA	U			© 2024
			2 MILES										© 2024

ALUMINUM SIGN BLANKS THICKNESS

Square Feet Minimum Thickness

Less than 7.5 0.080"

7.5 to 15 0.100"

Greater than 15 0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

nttp://www.txdot.gov/

- . Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
- For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
- 5. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

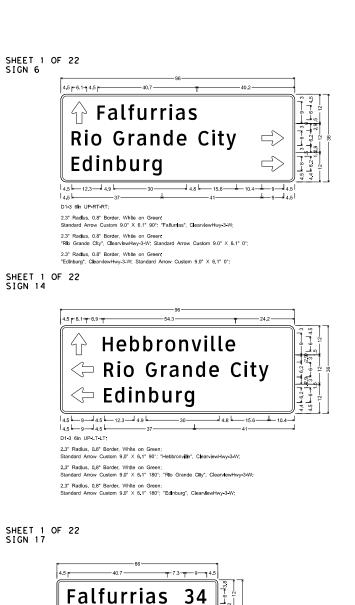




SH 285 SUMMARY OF SMALL SIGNS

			SHE	ET	7 OF 7
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	036,etc.		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		302



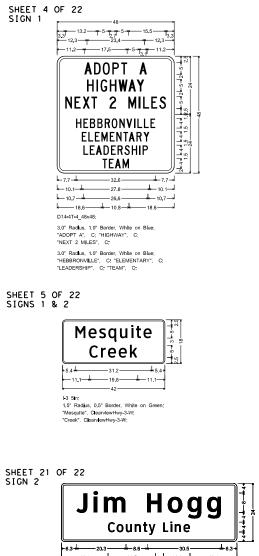


56

19.3 - 4.5 |

Riviera

1.5" Radius, 0.8" Border, White on Green, "Falfurrias", ClearviewHwy-3-W; "34", ClearviewHwy-3-W; 1.5" Radius, 0.8" Border, White on Green, "Riviera", ClearviewHwy-3-W; "56", ClearviewHwy-3-W;



SHEET 21 OF 22 SIGN 4

Brooks

County Line

19.5 10.9 10.9 10.2

1-2aT 8in;
1.5" Radlus, 0.8" Border, White on Green;
"Brooks", ClearvlewHwy-5-W-R;
"County Line", ClearvlewHwy-3-W;

Pharr District Central Design



SH 285 SMALL SIGN DETAILS

			SHE	EΤ	1	OF 1
© 2024	CONT	SECT	JOB		ніс	CHWAY
	0482	01	036,etc.		SH	285
	DIST		COUNTY		SH	HEET NO.
	PHR		JIM HOGG			<u> 303</u>

	ı	I			644
					6076
PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSIONS (INCHES)	REMOVE SM RD SN SUP&AM TY S80
					EA
SHEET 1 OF	22				
	1	M3-4	WEST	24×12	1
		M1-6T	285 TEXAS	24×24	
	2	R1-1	STOP	36×36	1
	_	W4-4P	CROSS TRAFFIC DOES NOT STOP	36×18	
	3	M1-6T	285 TEXAS	24×24	1
		M6-4 M3-3	DOUBLE ARROW SOUTH	12×15 24×12	
		M1-6F	FM 1017	24×24	
		M6-1	DIRECTIONAL ARROW	21×15	
	4	R2-1	SPEED LIMIT	24×30	1
	5	D1 - 3	FALFURRIAS/RGC/EDINBURG	126×42	1
	6	M3-3	SOUTH FM 1017	24×12 24×24	1
		M1-6F			
		M6-1	DIRECTIONAL ARROW	21×15	
	7	M1-6T	285 TEXAS	24×24	1
		M6-4	DOUBLE ARROW	21×15	
		D10-7aT	MILE MARKER	3×10	
	8	R1-1	STOP	36×36	1
		W4-4P	CROSS TRAFFIC DOES NOT STOP	36×18	
	9	M3-2	EAST	24×12	1
	<u> </u>	M1-6T	285 TEXAS	24×24	
	10	R2-1	SPEED LIMIT	24×30	1
	11	D3-3aTR	CEMETERY	66×12	1
		D3-3aTL	CEMETERY	66×12	
	12	D1-3	HEBBRONVILLE/RGC/EDINBURG	126×42	1
	13	W3-5	REDUCED SPEED LIMIT AHEAD	36×36	1
	14	R2-1	SPEED LIMIT	24×30	1
	15	D2-2	FALFURRIAS/RIVIERA	90×30	1
	16	R2-1	SPEED LIMIT	24×30	1
SHEET 2 OF	22	1			
	1	M2 - 1	JCT	21×15	1
		M1-6F	FM 1017	24×24	
	2	W2-1aT	HIGHWAY INTERSECTION AHEAD	48×48	1
	3	M3-4	WEST	24×12	1
		M1-6T	285 TEXAS	24×24	
		D10-7aT	MILE MARKER	3×10	
SHEET 4 OF		D14 47 7	ADODT A UZGUMAN	4040	
	1	D14-4T-3	ADOPT A HIGHWAY	48×48	1
	2	CW21-10T	WORKER AHEAD BRIDGE MAY ICE IN COLD WEATHER	36"X36"	•
SHEET 5 OF		W8-13aT	BRIDGE MAY ICE IN COLD WEATHER	36×36	1
SHEET 5 OF	1	I-3	MESQUITE CREEK	36×18	1
	2	1-3	MESQUITE CREEK	36×18	1
	3	W8-13aT	BRIDGE MAY ICE IN COLD WEATHER	36×36	1
SHEET 7 OF					· · · · · · · · · · · · · · · · · · ·
	1	M3-2	EAST	24×12	1
		M1-6T	285 TEXAS	24×24	
		D10-7aT	MILE MARKER	3×10	
SHEET 11 O	F 22				
	1	M3-4	WEST	24×12	1
		M1 - 6T	285 TEXAS	24×24	
		D10-7aT	MILE MARKER	3×10	

		SU	MMARY OF SIGNS TO BE RE	MOVED	
					644 6076
PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSIONS (INCHES)	REMOVE SM RD SN SUP&AM TY S80
				•	EA
SHEET 15 O	F 22				
	1	M3-2	EAST	24×12	1
		M1-6T	285 TEXAS	24×24	
SHEET 20 O	F 22				
·	1	M3-4	WEST	24×12	1
		M1-6T	285 TEXAS	24×24	
		D10-7aT	MILE MARKER	3×10	
	2	EM-1aT	EVACUATION ROUTE	24×24	1
SHEET 21 O	F 22				
	1	R2-1	SPEED LIMIT	24×30	1
	2	I-2dT	JIM HOGG CTY LINE	72×36	1
	3	D20-1TL	CO RD 258	24×24	1
	4	I-2dT	BROOKS CTY LINE	60×36	1
	5	R1 - 1	STOP	36×36	1
	6	D20-1TL	CO RD 258	24×24	1
	7	M3-2	EAST	24×12	1
		M1-6T	285 TEXAS	24×24	
	8	R2-1	SPEED LIMIT	24×30	1
				TOTAL :	37

Pharr District Central Design



SH 285 SUMMARY OF SIGNS TO BE REMOVED

				_	
© 2024	CONT	SECT	JOB		HIGHWAY
	0482	01	1 036,etc. SH 2		SH 285
	DIST		COUNTY		SHEET NO.
	PHR		JIM HOGG		304

REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

SHEETING REQUIREMENTS					
USAGE	COLOR	SIGN FACE MATERIAL			
BACKGROUND	WHITE	TYPE A SHEETING			
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING			
LEGEND & BORDERS	WHITE	TYPE A SHEETING			
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM			
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING			



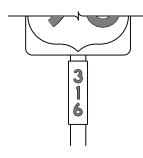




TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS					
USAGE	COLOR	SIGN FACE MATERIAL			
BACKGROUND	ALL	TYPE B OR C SHEETING			
LEGEND & BORDERS	WHITE	TYPE D SHEETING			
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING			













TYPICAL EXAMPLES

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- 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.

В	CV-1W
C	CV-2W
D	CV-3W
Ε	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 SPEC	IFICATIONS
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

ALUMINUM SIGN BLANKS THICKNESS				
Square Feet	Minimum Thickness			
Less than 7.5	0.080			
7.5 to 15	0.100			
Greater than 15	0.125			

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/



Traffic Operations Division Standard

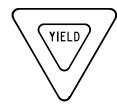
TYPICAL SIGN REQUIREMENTS

TSR(3)-13

	FILE:	tsr3-13.dgn	DN: T	KD0T	ck: TxDOT	DW:	TxDOT	ck: TxDOT
	© TxD0T	October 2003	CONT	SECT	JOB		H.	GHWAY
	12-03 7-13		0482	01	036,et	ů.	SH	1 285
ı			DIST		COUNTY			SHEET NO.
	9-08		PHR		JIM HO	GG		305

(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 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 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 SCHOOL SIGNS





TYPICAL EXAMPLES

SHEETING REQUIREMENTS							
USAGE	COLOR	SIGN FACE MATERIAL					
BACKGROUND	WHITE	TYPE A SHEETING					
BACKGROUND FLOURESCENT YELLOW GREE		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
- 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
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPEC	CIFICATIONS
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/



Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

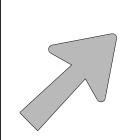
TSR(4)-13

<i>-</i> 00		PHR	JIM HOGG				306
2-03 7-1. 9-08)	DIST		COUNTY		SHEET NO.	
REVISIONS 2-03 7-13		0482	01	036,etc.		SH 285	
)TxDOT	October 2003	CONT	SECT	JOB		HIGHWAY	
LE:	tsr4-13.dgn	DN: TxDOT		CK: TXDOT DW:		: TxDOT ck: TxD	

ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)

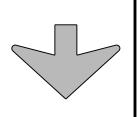






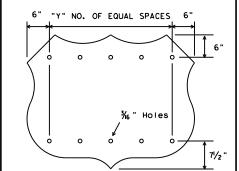
E-3

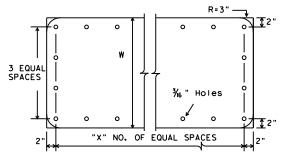




Down Arrow

‰" Ho∣es





U.S. ROUTE MARKERS

Sign Size

24×24

30×24 36×36 45×36 48×48

60×48

STATE ROUTE MARKERS

No.of Digits	W	Х
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5

Type A

Type B

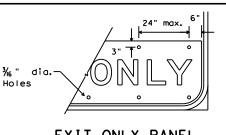
TYPE	LETTER SIZE	USE
A-I	10 . 67" U/L and 10" Caps	Single
A-2	13.33" U/L and 12" Caps	Lane
A-3	16" & 20" U/L	Exits
B-I	10 . 67" U/L and 10" Caps	Multiple
B-2	13.33" U/L and 12" Caps	Lane
B-3	16" & 20" U/L	Exits
	·	

CODE	USED ON SIGN NO.
E-3	E5-laT
E-4	E5-lbT

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/



INTERSTATE ROUTE MARKERS

15

21

28

36

48

11/2

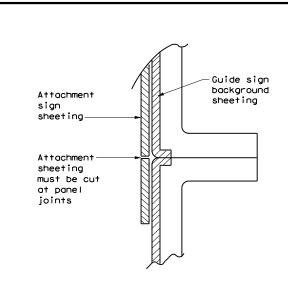
20 13/4

/ 24" max. 6"	
% "_ dia	
EXIT ONLY PANEL	

MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)

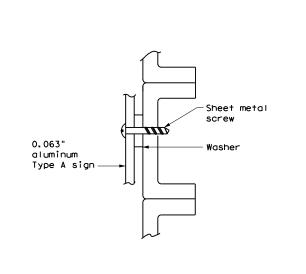
ARROW DETAILS

for Destination Signs (Type D)

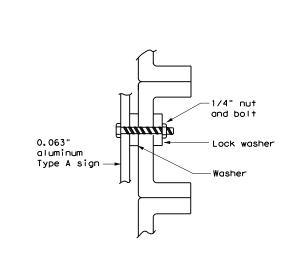




- 1. Sheeting for legend, symbols, and borders must be cut at panel joints.
- 2. Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".



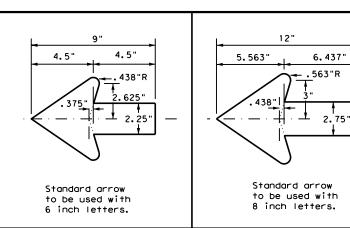
SCREW ATTACHMENT





NOTE:

Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".





TSR(5)-13

REQUIREMENTS

	_		_	_			
LE:	tsr5-13.dgn	DN: T	KDOT	ck: TxDOT	DW:	TxDOT	ck: TxDOT
)TxDOT	October 2003	CONT	SECT	JOB		HIC	SHWAY
	REVISIONS	0482	01	036,et	c.	SH	285
2-03 7 9-08	-13	DIST		COUNTY			SHEET NO.
9-00		PHR		JIM HO	GG		307

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))

No more than 2 sign

posts should be located

within a 7 ft. circle.

- 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))

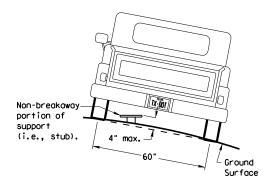
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3)) WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))

diameter

circle / Not Acceptable

EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

Not Acceptable

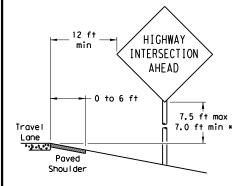
7 ft. diameter

circle

Not Acceptable

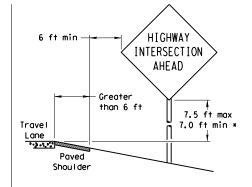
SIGN LOCATION

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.

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.

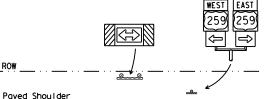
Travel

Lane

Paved

Shou I der

When this sign is needed at the end of a two-lane,



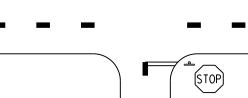
T-INTERSECTION

12 ft min

← 6 ft min ·

7.5 ft max

7.0 ft min *



- * Signs shall be mounted using the following condition
- (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

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System

The website address is:

Paved Shoulder Edge of Travel Lane



that results in the greatest sign elevation:

components and Wedge Anchor System components.

http://www.txdot.gov/publications/traffic.htm

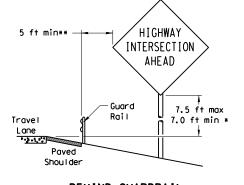
Texas Department of Transportation Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

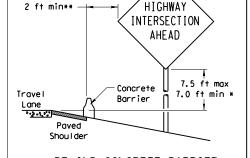
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	DIST	COUNTY			SHEET NO.		
	PHR		JIM HO	GG		308	

BEHIND BARRIER



BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER $\hbox{\tt **Sign clearance based on distance required for proper guard rail or concrete barrier performance.}$

RESTRICTED RIGHT-OF-WAY

Maximum

Travel

Lane

possible

(When 6 ft min, is not possible,)

7.5 ft max

7.0 ft min *

HIGHWAY

INTERSECTION

AHEAD

TYPICAL SIGN ATTACHMENT DETAIL SIGNS WITH PLAQUES

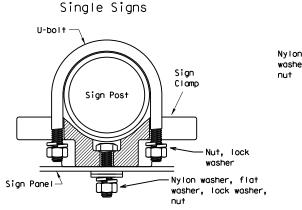
diameter

circle

Acceptable

diameter

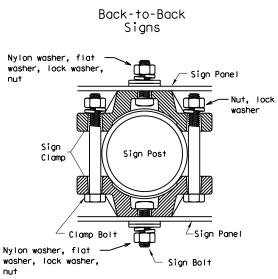
circle



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.

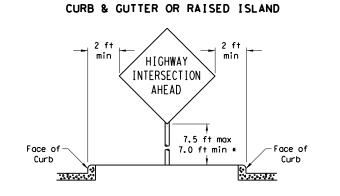
When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

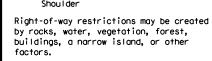
Sign clamps may be either the specific size clamp



	Approximate Bolt Length						
Pipe Diameter	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"					

EAST 7.5 ft max-7.0 ft min * When a supplemental plaque Travel or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque Payed or secondary sign. Shou I der





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



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	DIST		COUNTY		9	SHEET NO.
	PHP	ITM HOGG				3/12

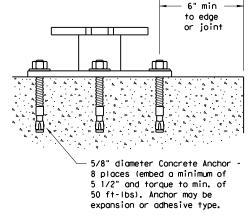
10 BWG Tubing or Keeper Plate Schedule 80 Pipe (See General Note 3) Slip Base \Box 5/8" structural bolts (3), nuts (3), and washers Washers (6) per ASTM A325 if required by or A449 and manufacturer galvanized per Item 445 "Galvanizing." Bolt length is 2 1/2". 3/4 " diameter hole. 36" Provide a 7" x 1/2" diameter rod or #4 rebar. Class A concrete 42 12" min. 24" max. Non-reinforced concrete footing (shall be used unless noted elsewhere in the plans). Foundation should take approx. 2.5 cf of concrete. 12" Dia

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.

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 normalweight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

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.
- 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.

Foundation

ASSEMBLY PROCEDURE

- 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.

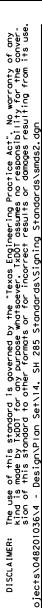
- 1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lame) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and
- 2. 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.



SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

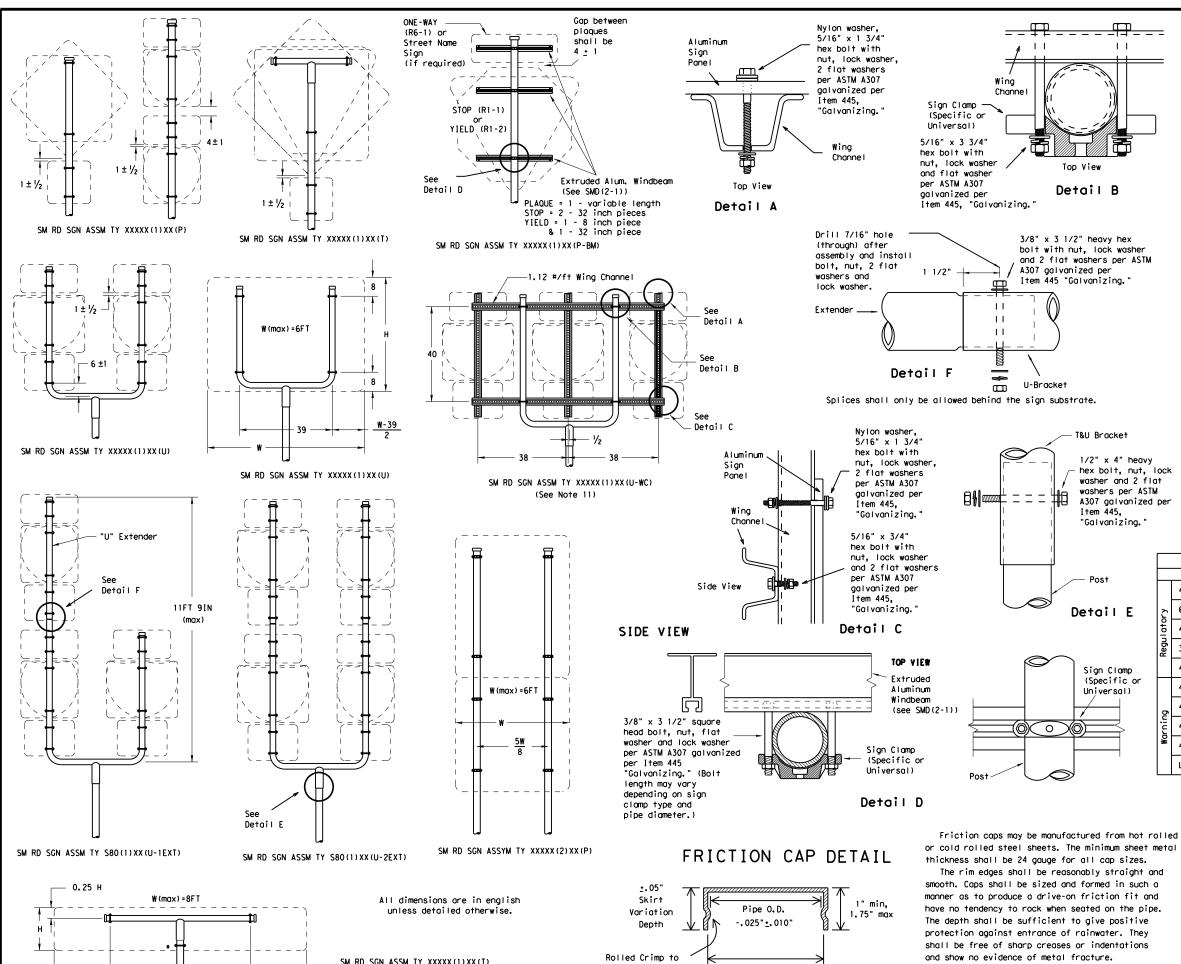
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		DIST		COUNTY			SHEET NO.
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8:21:34



engage pipe 0.D.

(* - See Note 12)

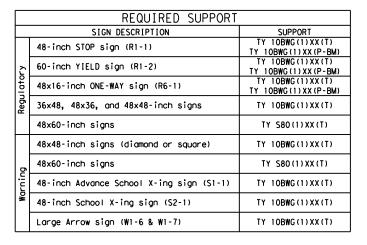
Pipe O.D.

+. 025" +. 010"

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

- 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.
- 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.
- 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 sian 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.



Texas Department of Transportation Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

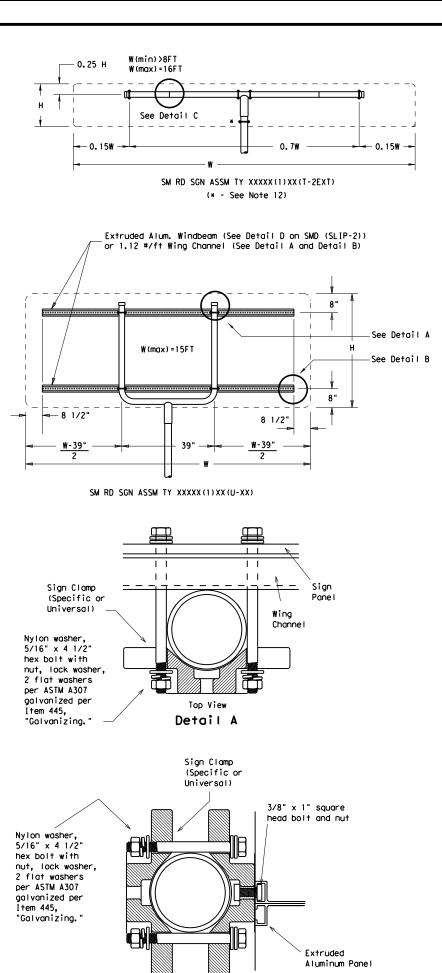
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	DIST		COUNTY			SHEET NO.	
	PHR		JIM HO	GG		310	

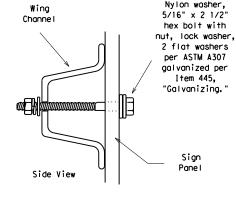
Caps shall have an electrodeposited coating of

zinc in accordance with the requirements of ASTM

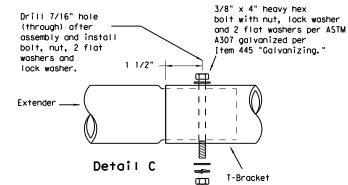
B633 Class FE/ZN 8.



EXTRUDED ALUMINUM SIGN WITH T BRACKET



Detail B



Splices shall only be allowed behind the sign substrate.

Sign

Clamps

(Specific or

Universal)

3/8" x 4 1/2"

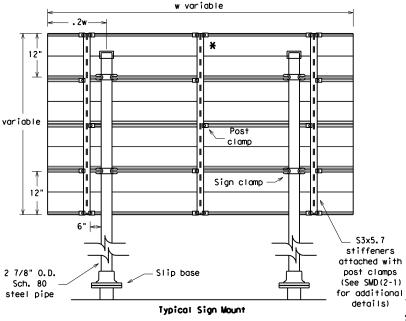
square head bolt, nut, flat washer and lock washer per

ASTM A307 galvanized

per Item 445.

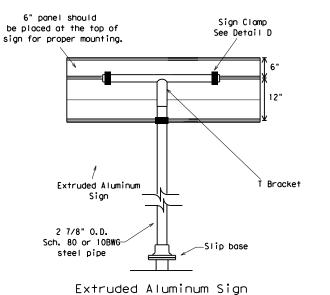
"Galvanizina.

Detail E

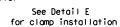


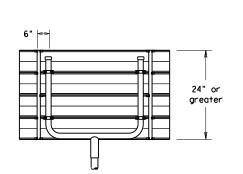
SM RD SGN ASSM TY S80(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



With T Bracket





Use Extruded Alum. Windbeam as stiffeners See SMD (2-1) for additional details See Detail E for clamp installation

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

- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- 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.
- 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
- 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.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut
 off so that it does not extend beyond the sign panel
 (i.e., excess support shall not be visible when the
 sign is viewed from the front.) Repair galvanized
 coating at cut support ends per Item 445, "Galvanizing."
- 10. Sign blanks shall be the sizes and shapes shown on the plans.
- 11. Additional sign clamp required on the "I-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
- 12. Post open ends shall be fitted with Friction Caps.

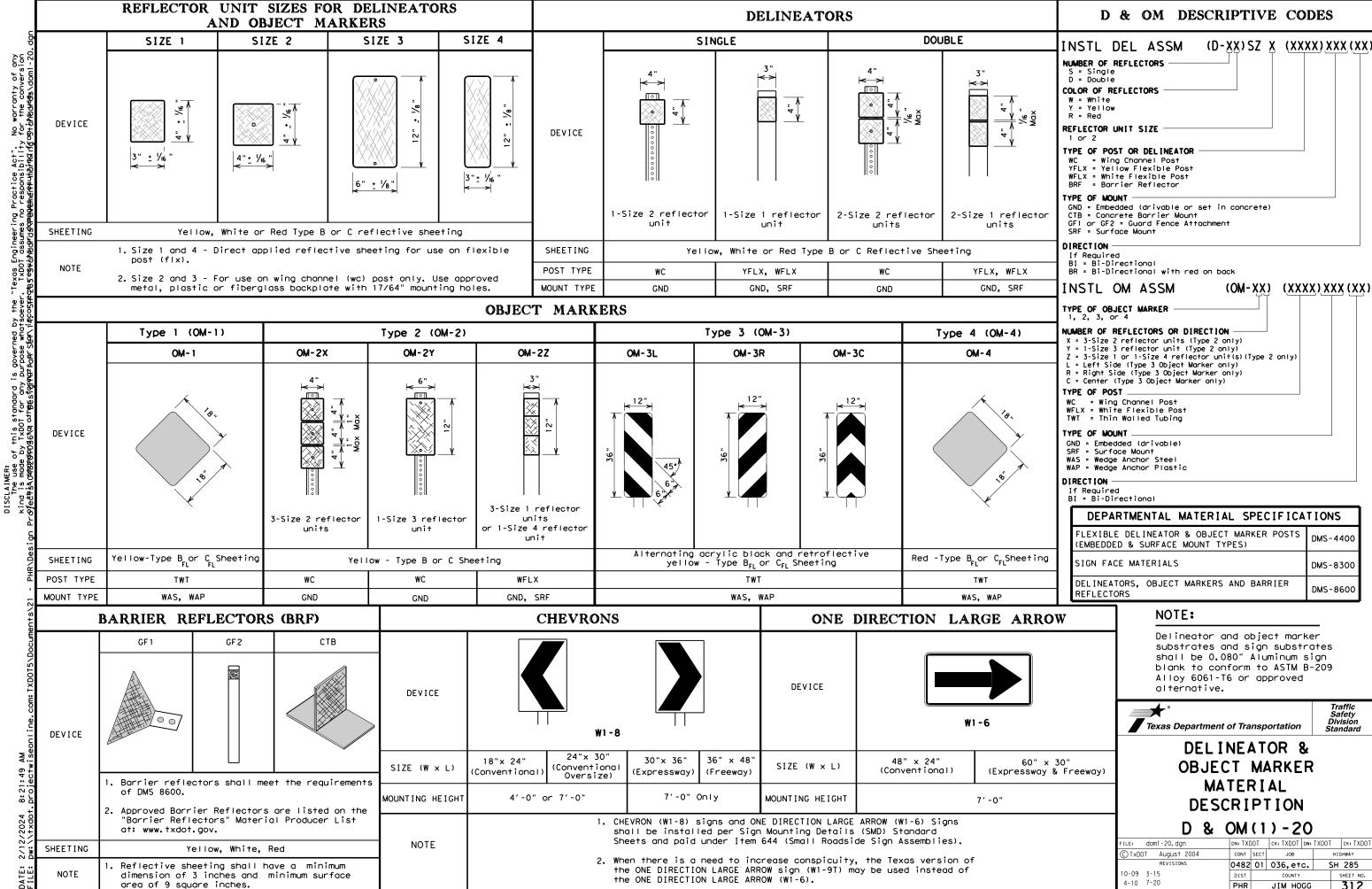
	REQUIRED SUPPORT	
	SIGN DESCRIPTION	SUPPORT
	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
,	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
-	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

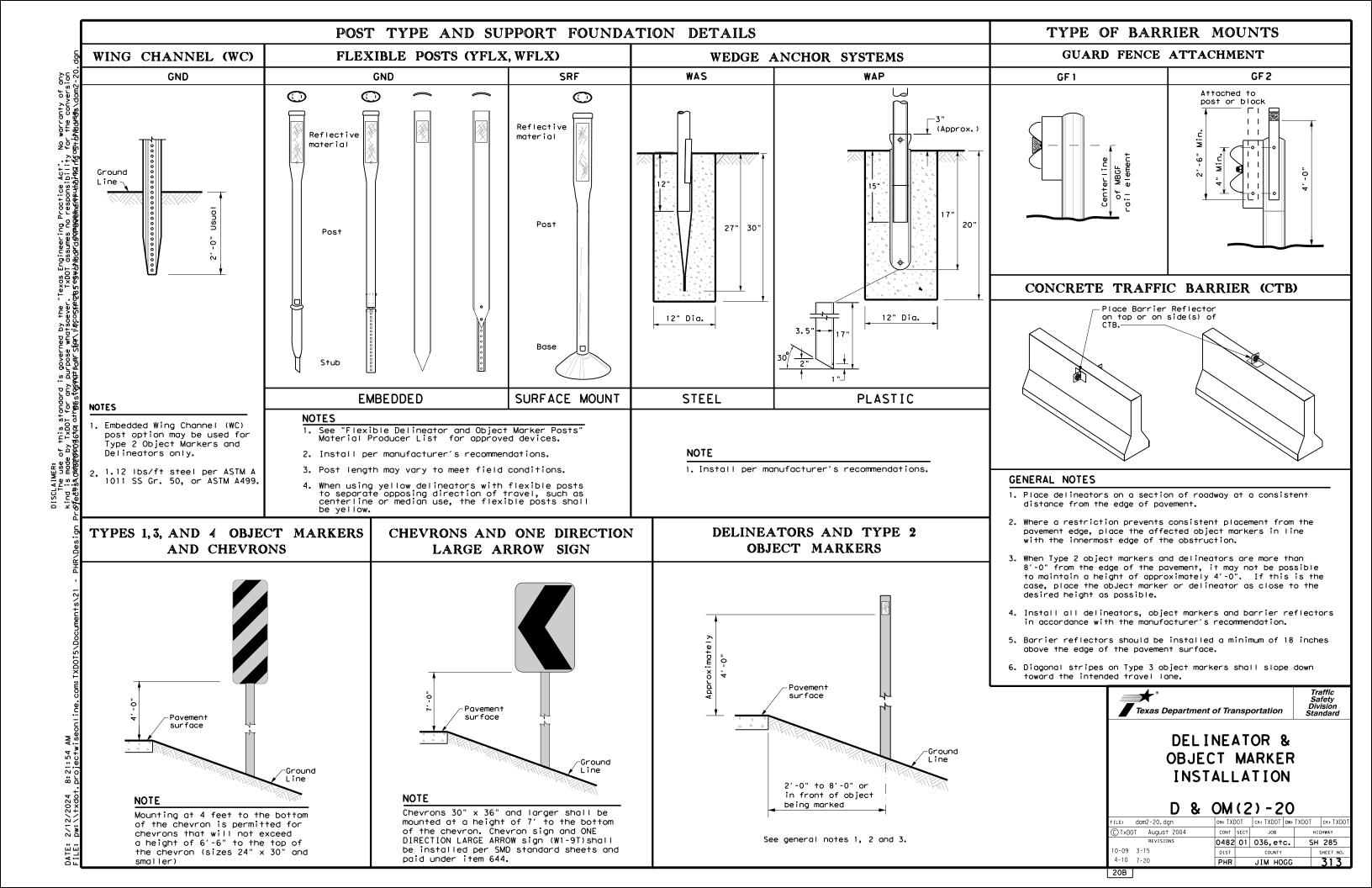
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JIM HOGG

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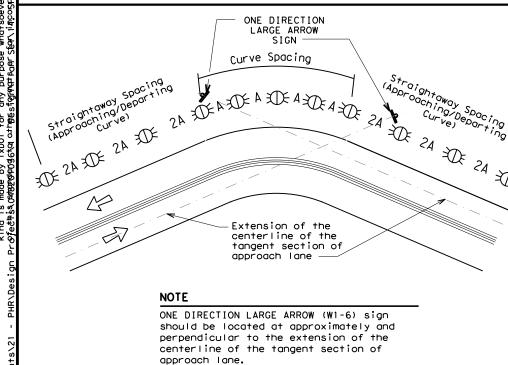
20A



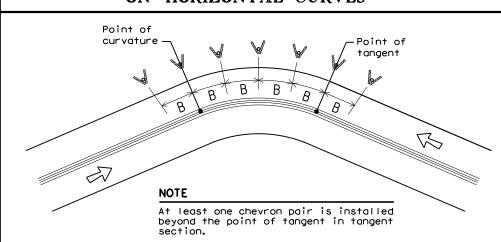
MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

Amount by which Advisory Speed	Curve Advisory Speed				
is less than Posted 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 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 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



SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN

			FEET	
Degree of Curve	Radius of Curve	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
		Α	2A	В
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
	Α	2×A	В
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 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 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 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 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
Culverts without MBGF	Type 2 Object Markers	See D & OM (5)
Crossovers	Double yellow delineators and RPMs	See Detail 2 on D & OM(4) See Detail 1 on D & OM (4)
Pavement Narrowing (Iane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet
NOTES		

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

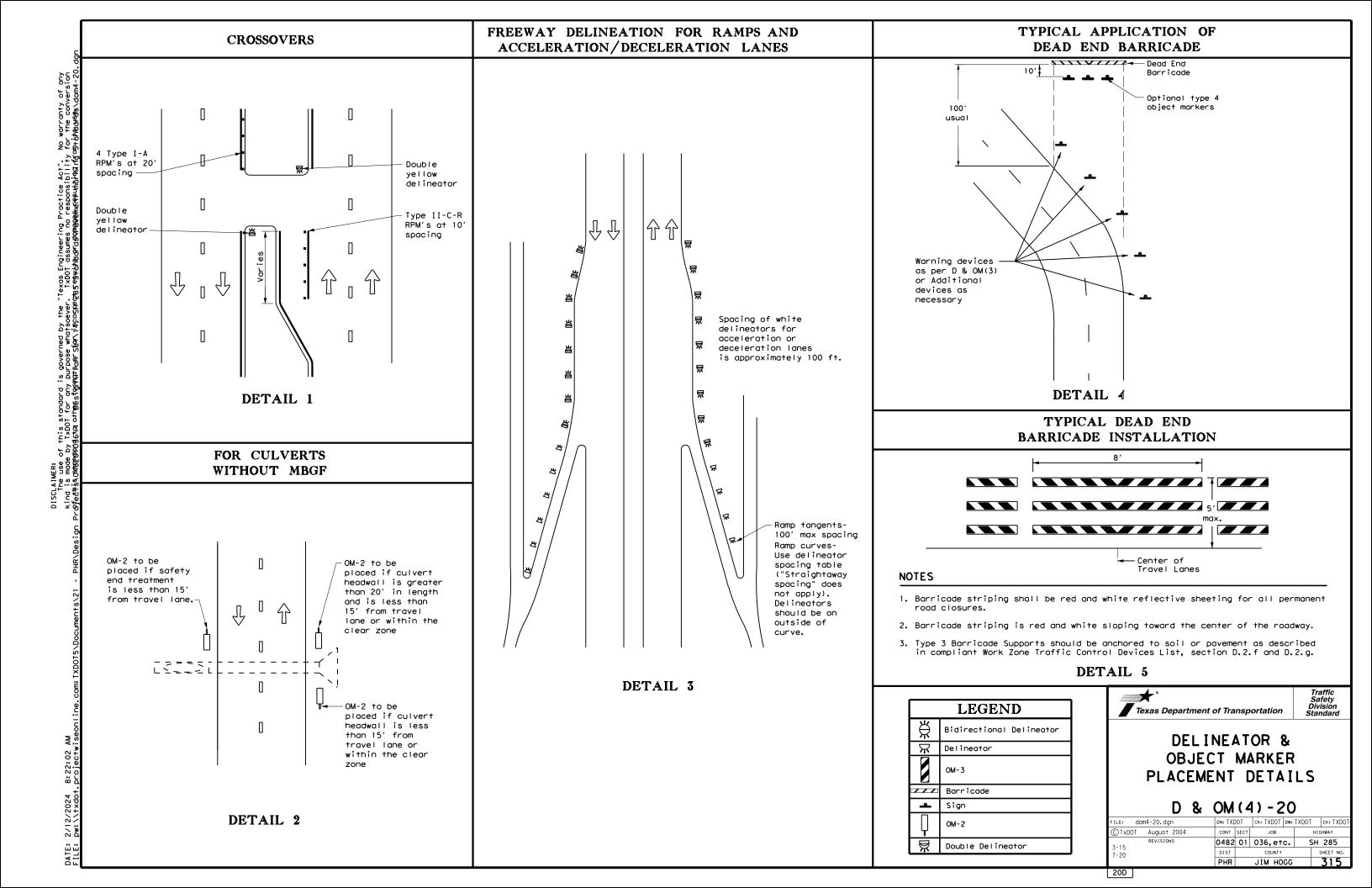
LEGEND Bi-directional Delineator \mathbf{x} Delineator Sign



DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(3) - 20

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C)TxDOT August 2004	CONT	SECT	JOB		н	CHWAY
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3-15 8-15	DIST		COUNTY			SHEET NO.
8-15 7-20	PHR		JIM HO	GG		314



PAVEMENT MARKINGS COVER SHEET

Pharr District Central Design



Texas Department of Transportation

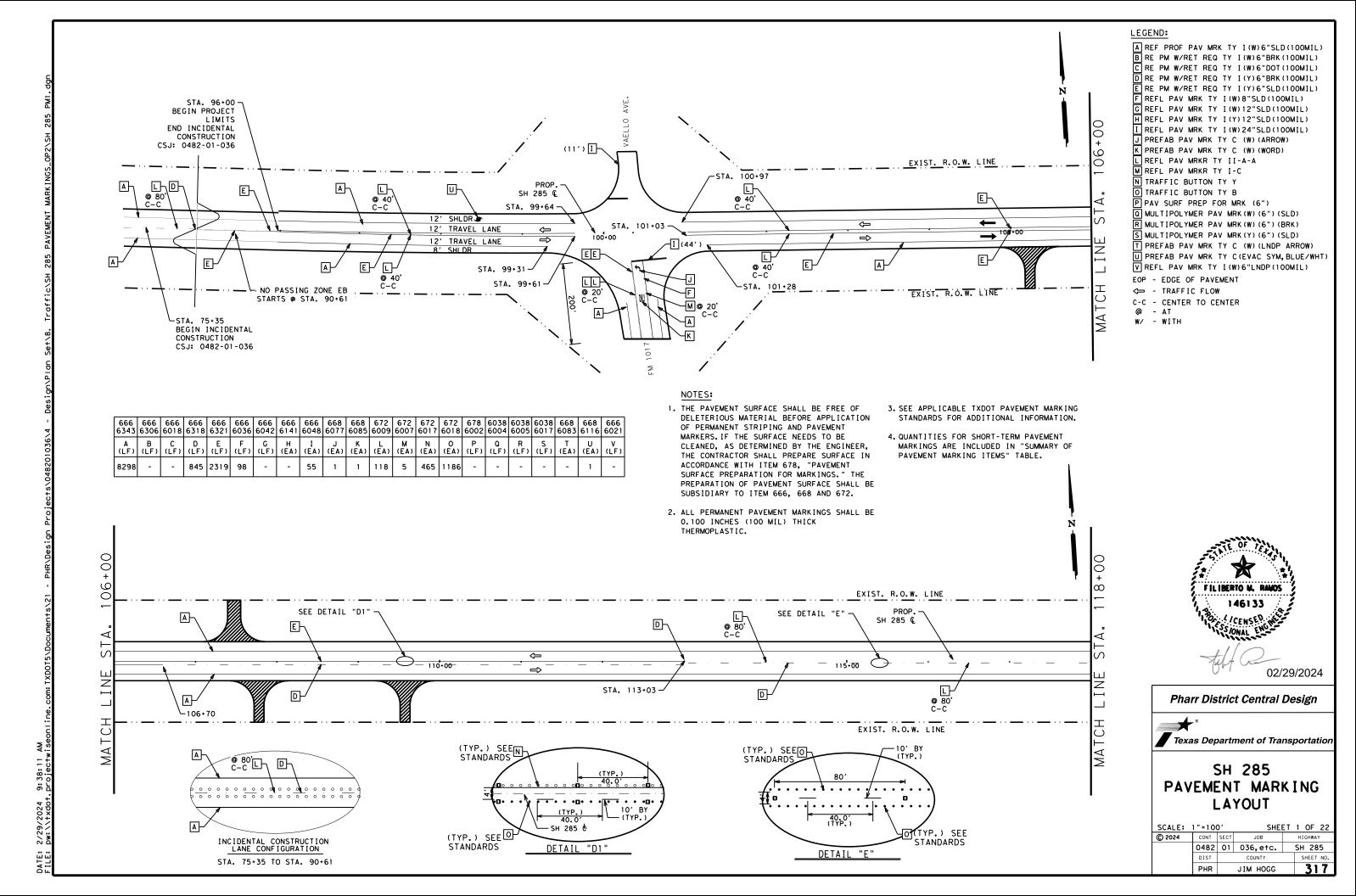
SH 285
PAVEMENT MARKINGS
COVER SHEET

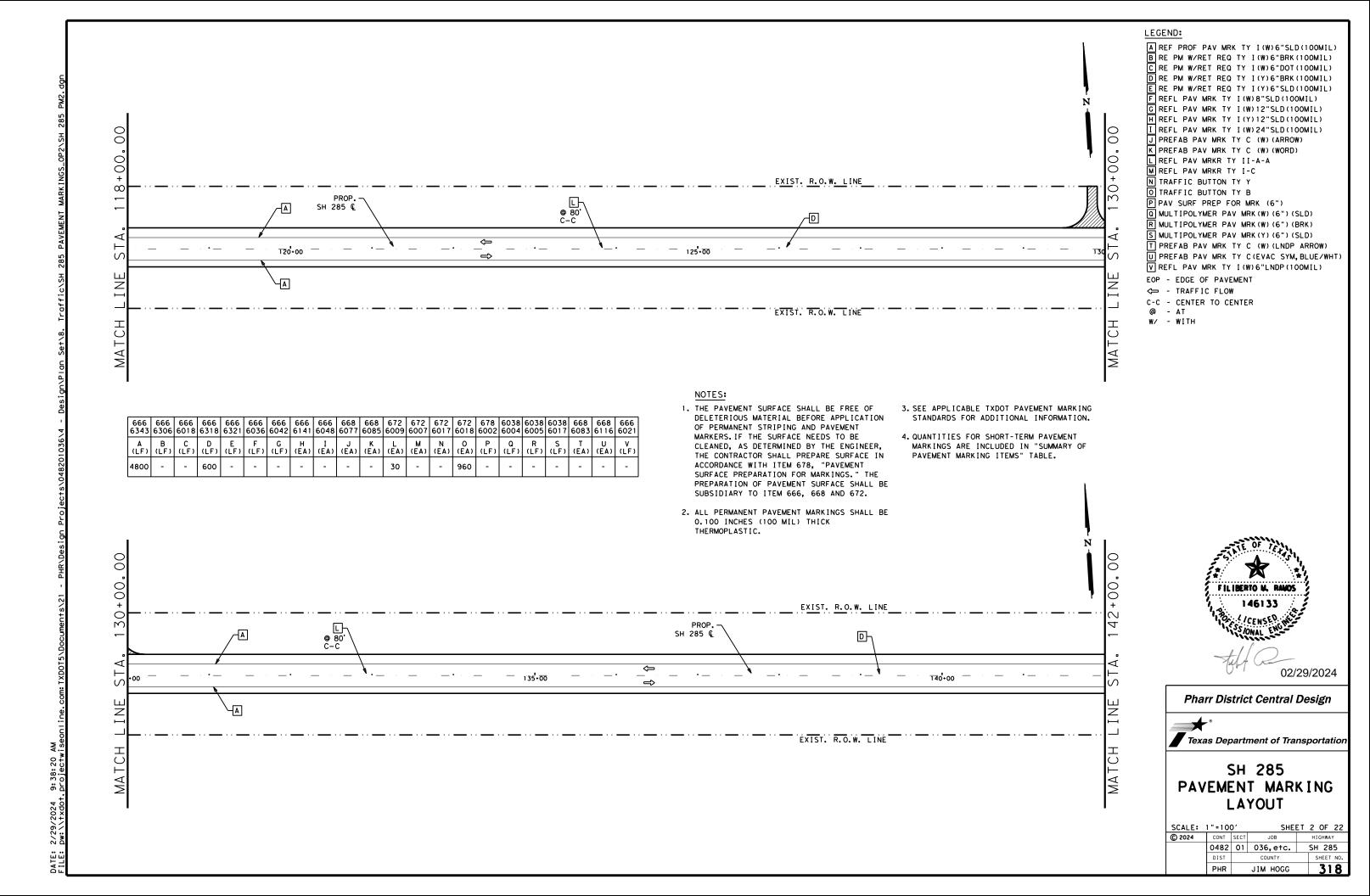
© 2024 CONT SECT JOB HIGHWAY

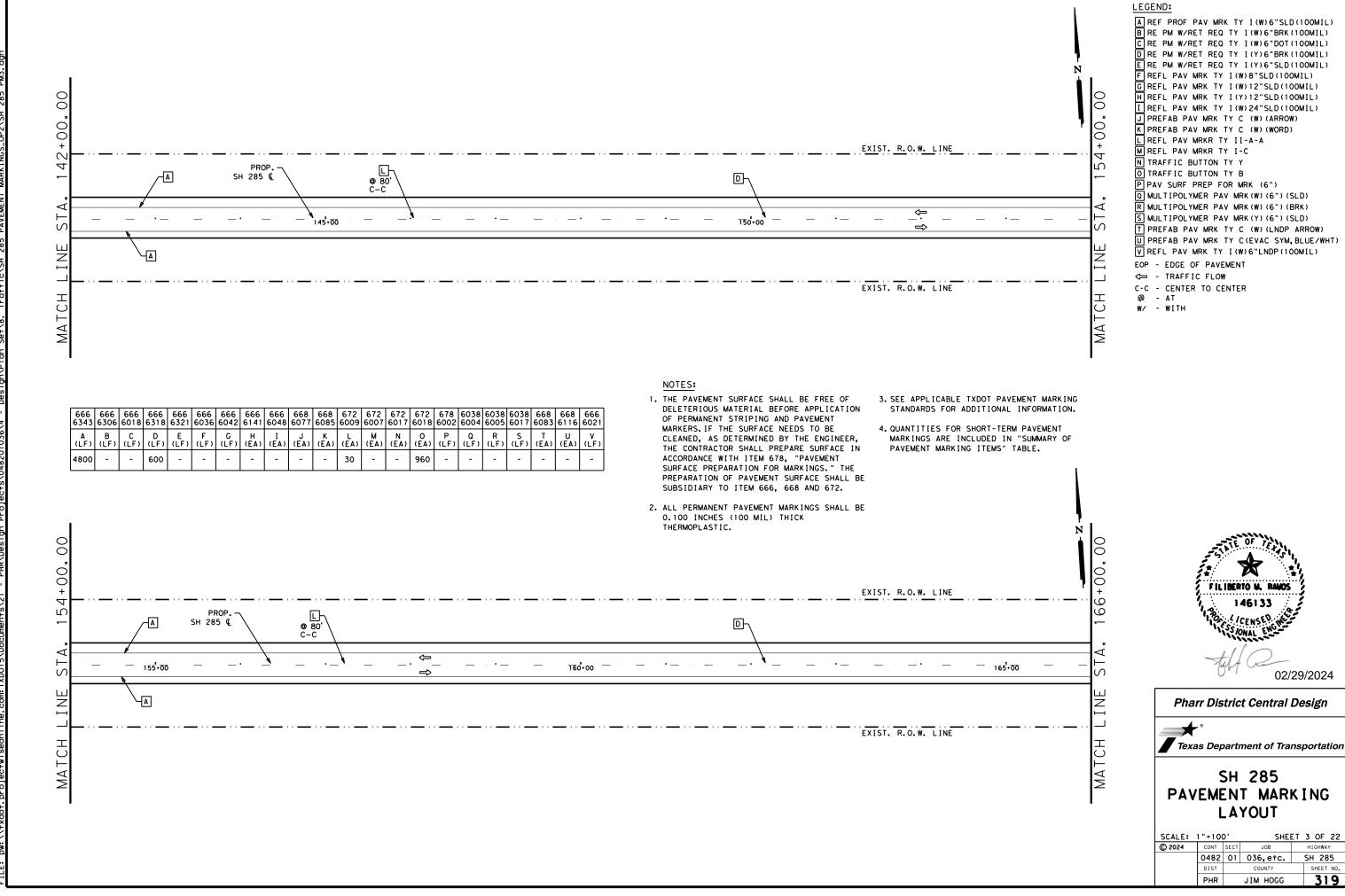
0482 01 036, etc. SH 285

DIST COUNTY SHEET NO.

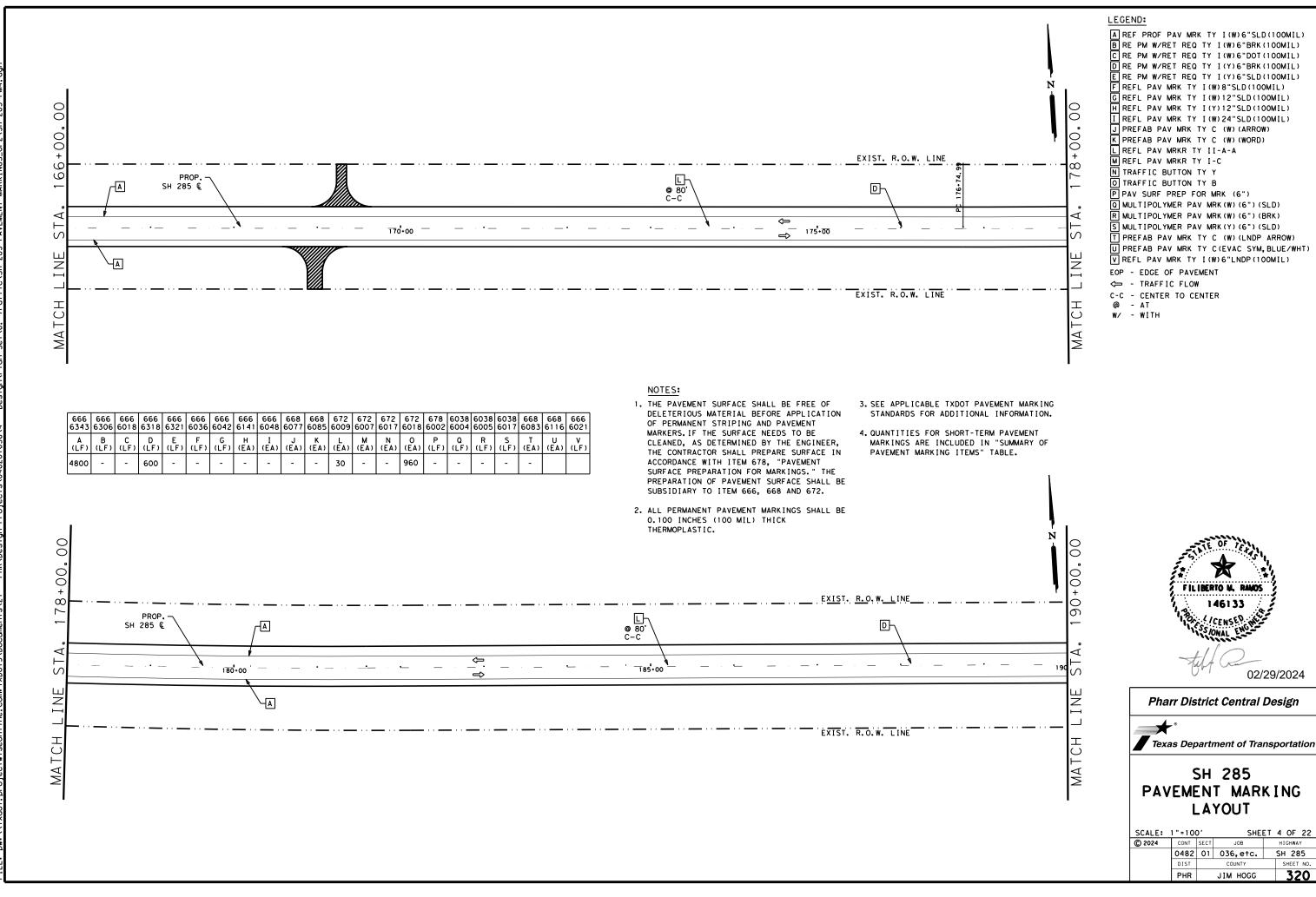
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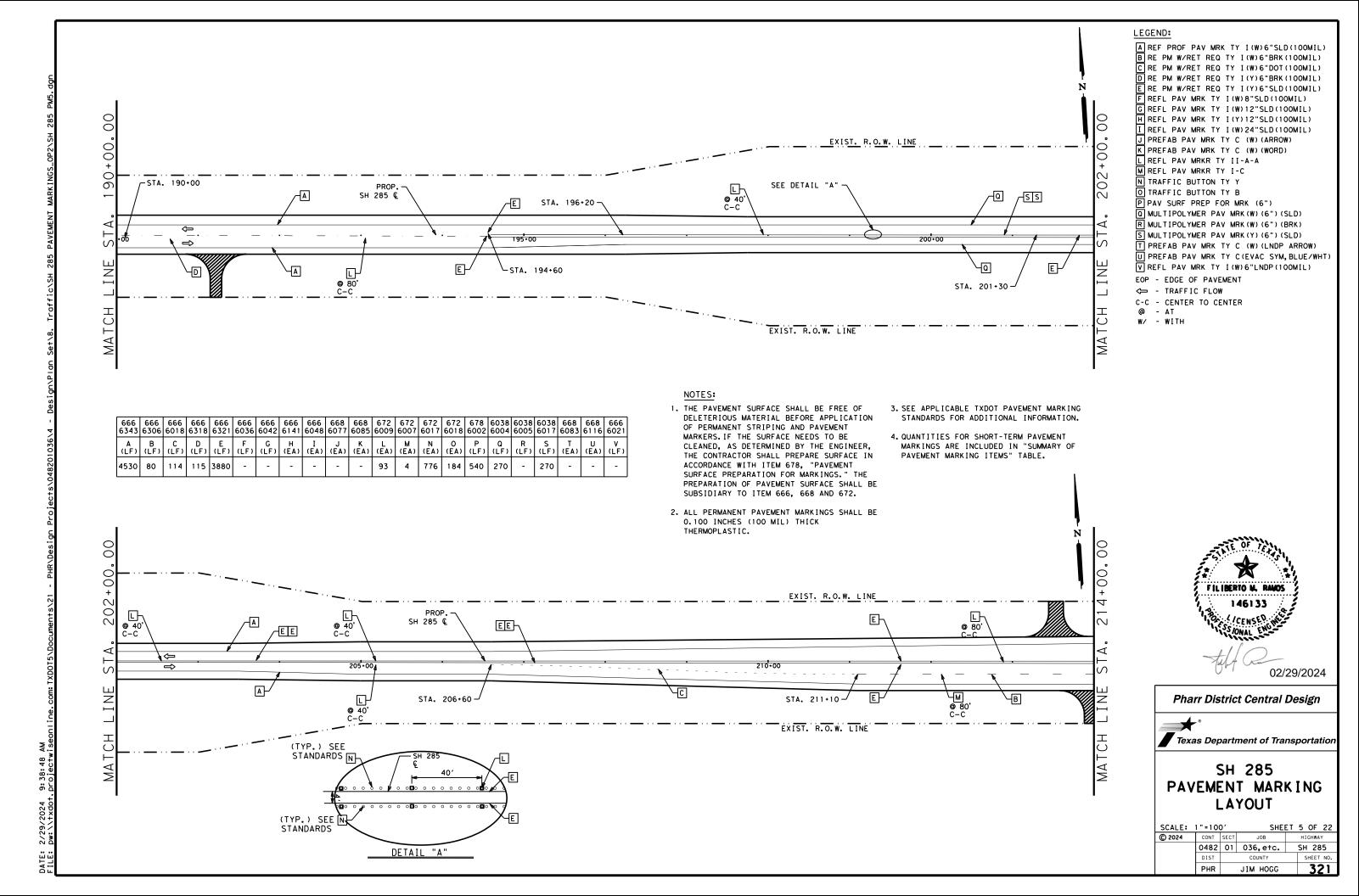


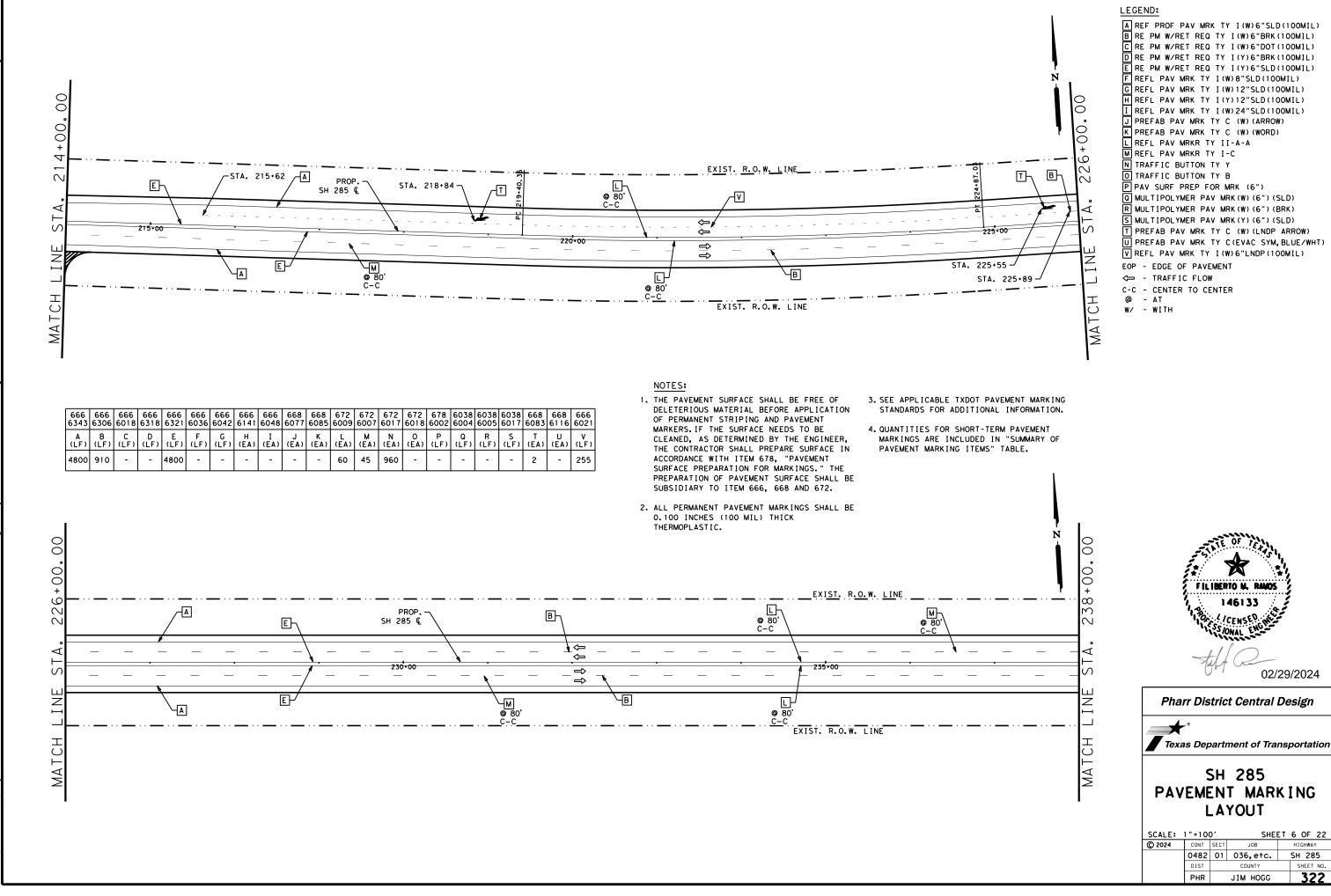


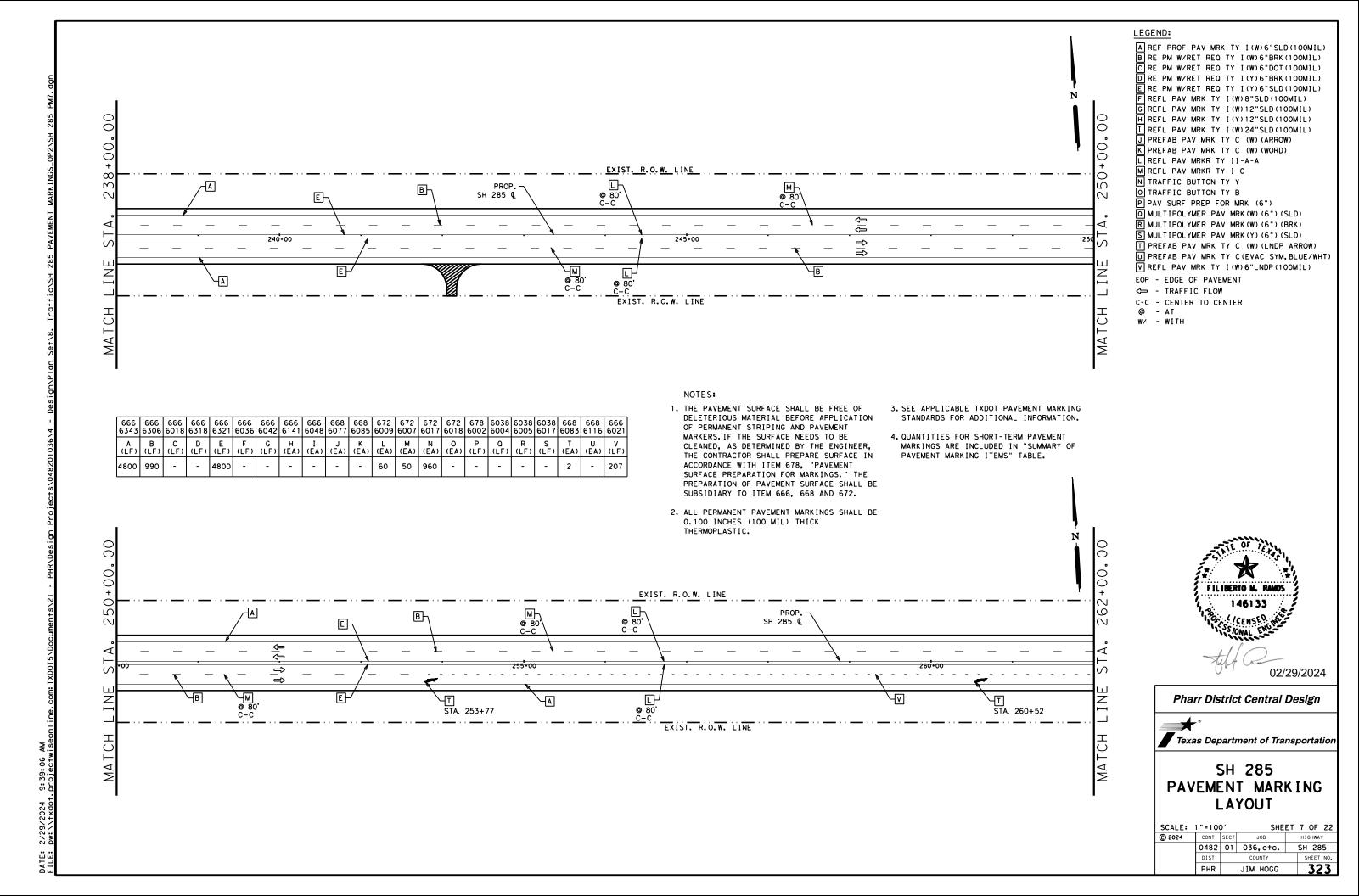
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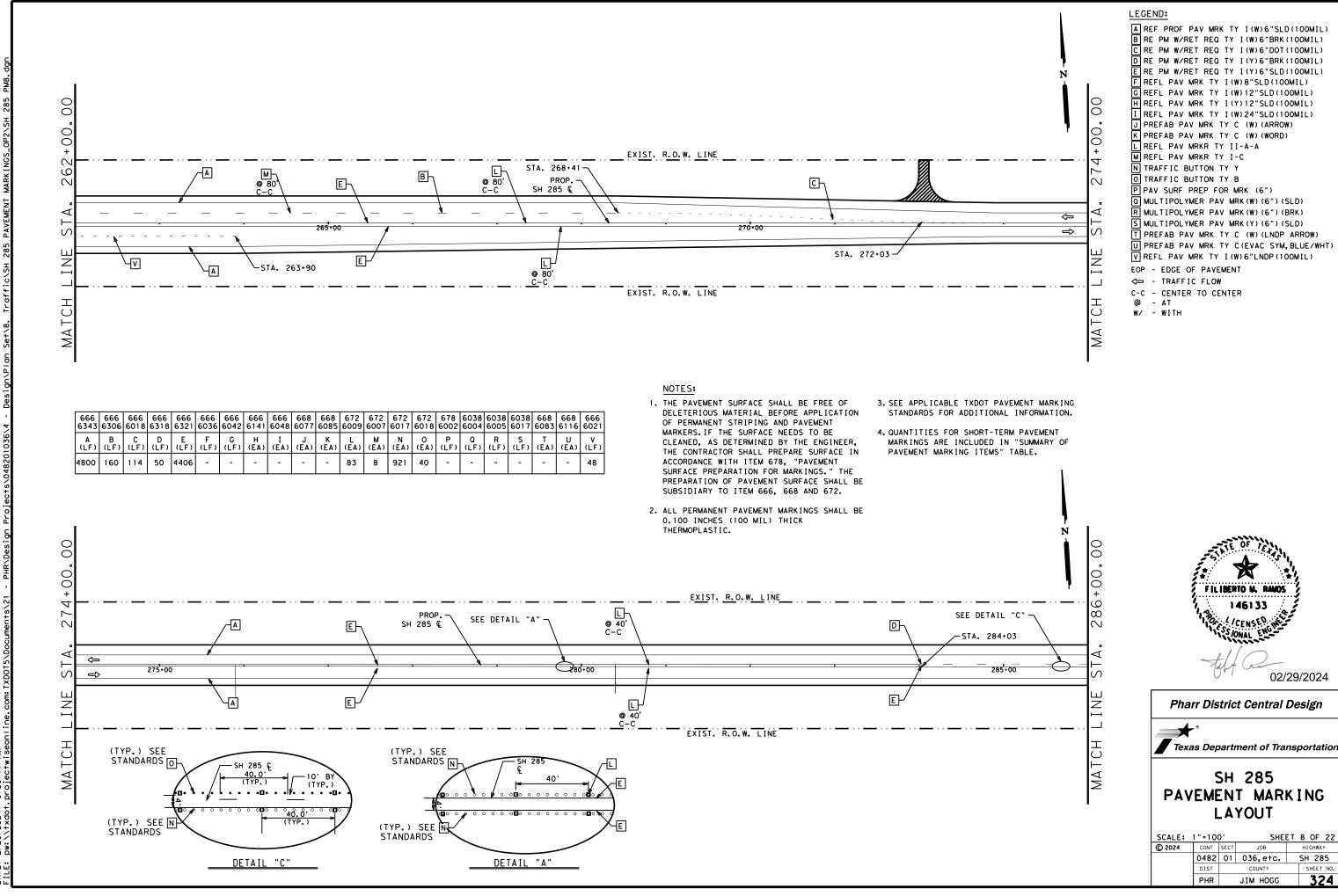


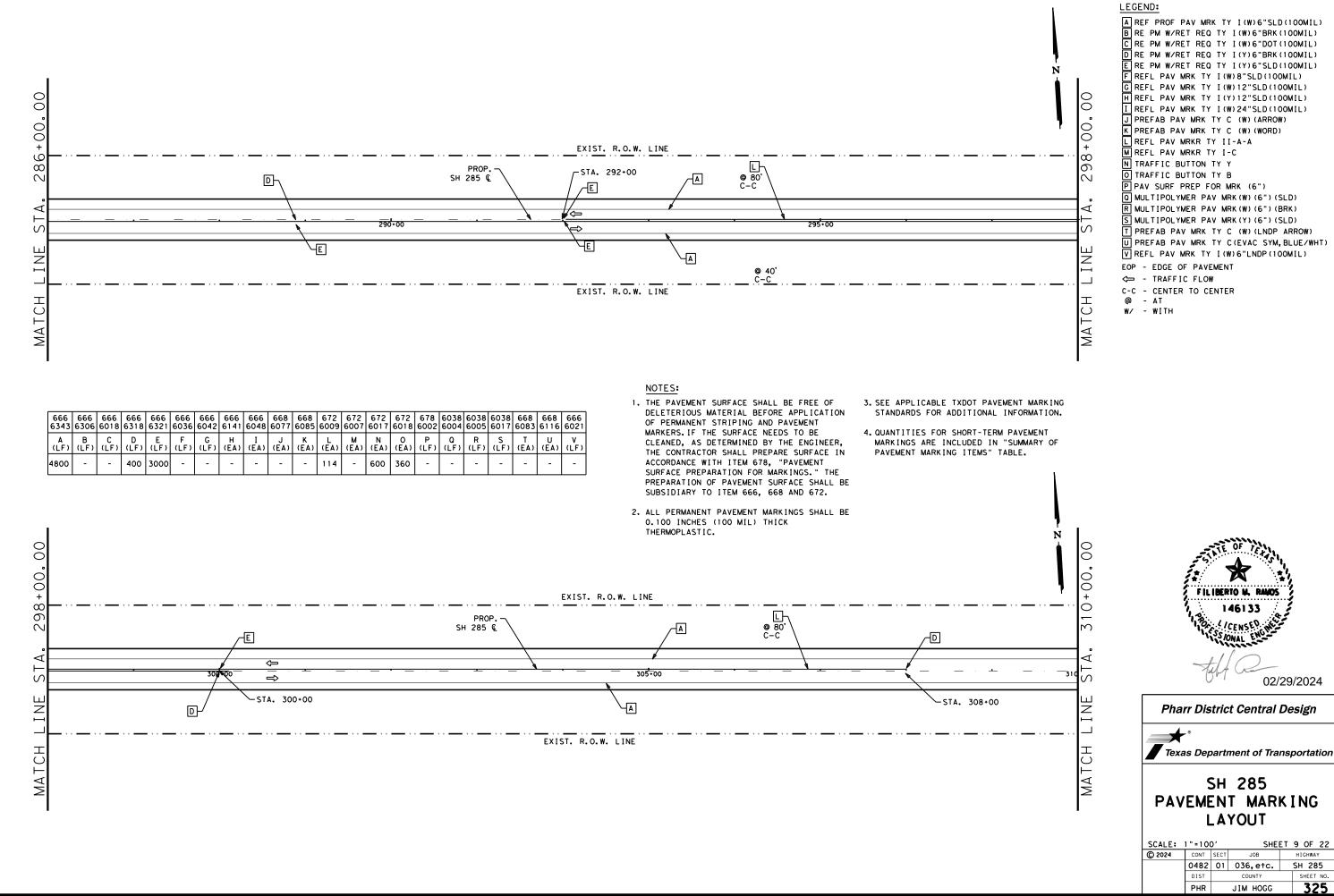
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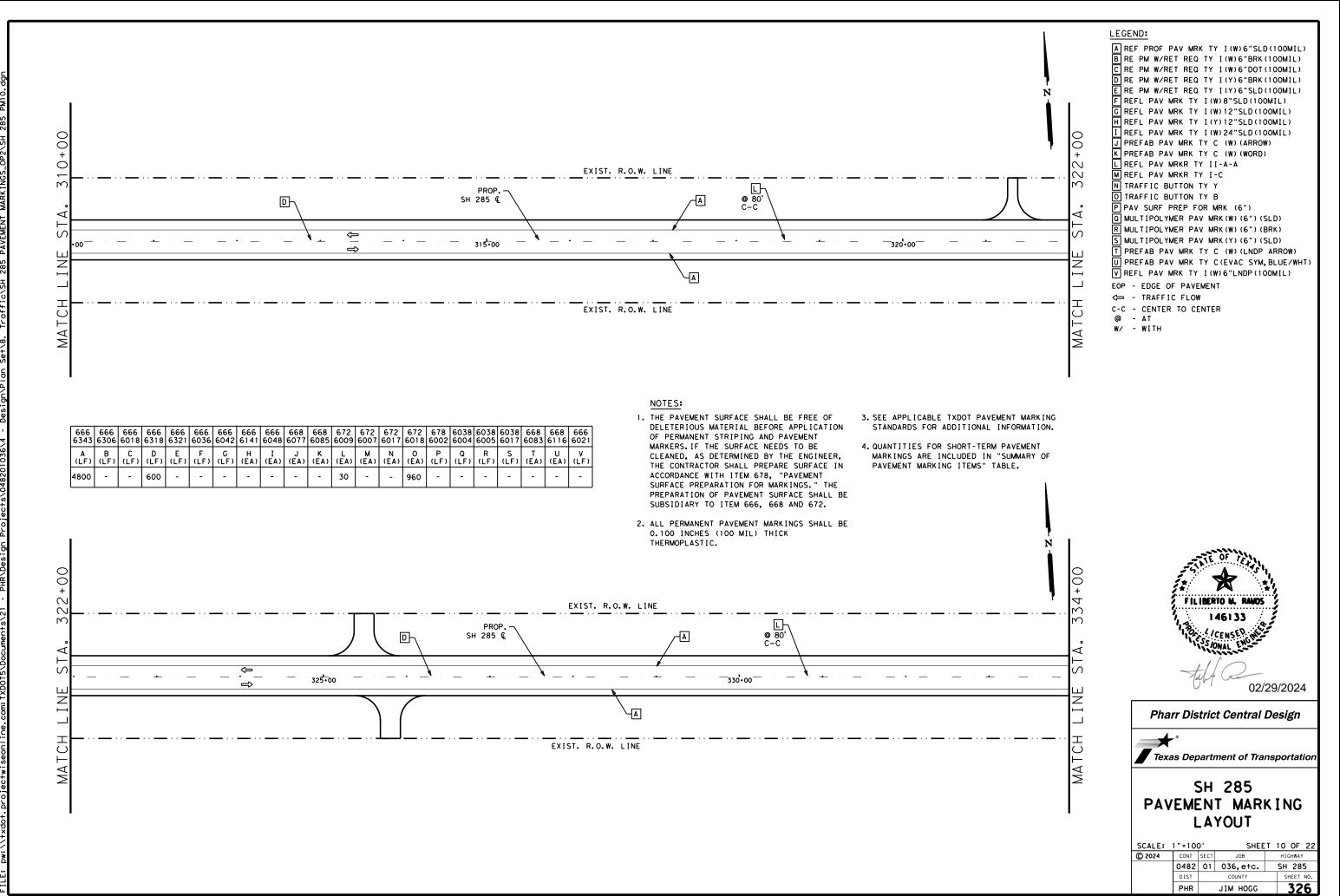




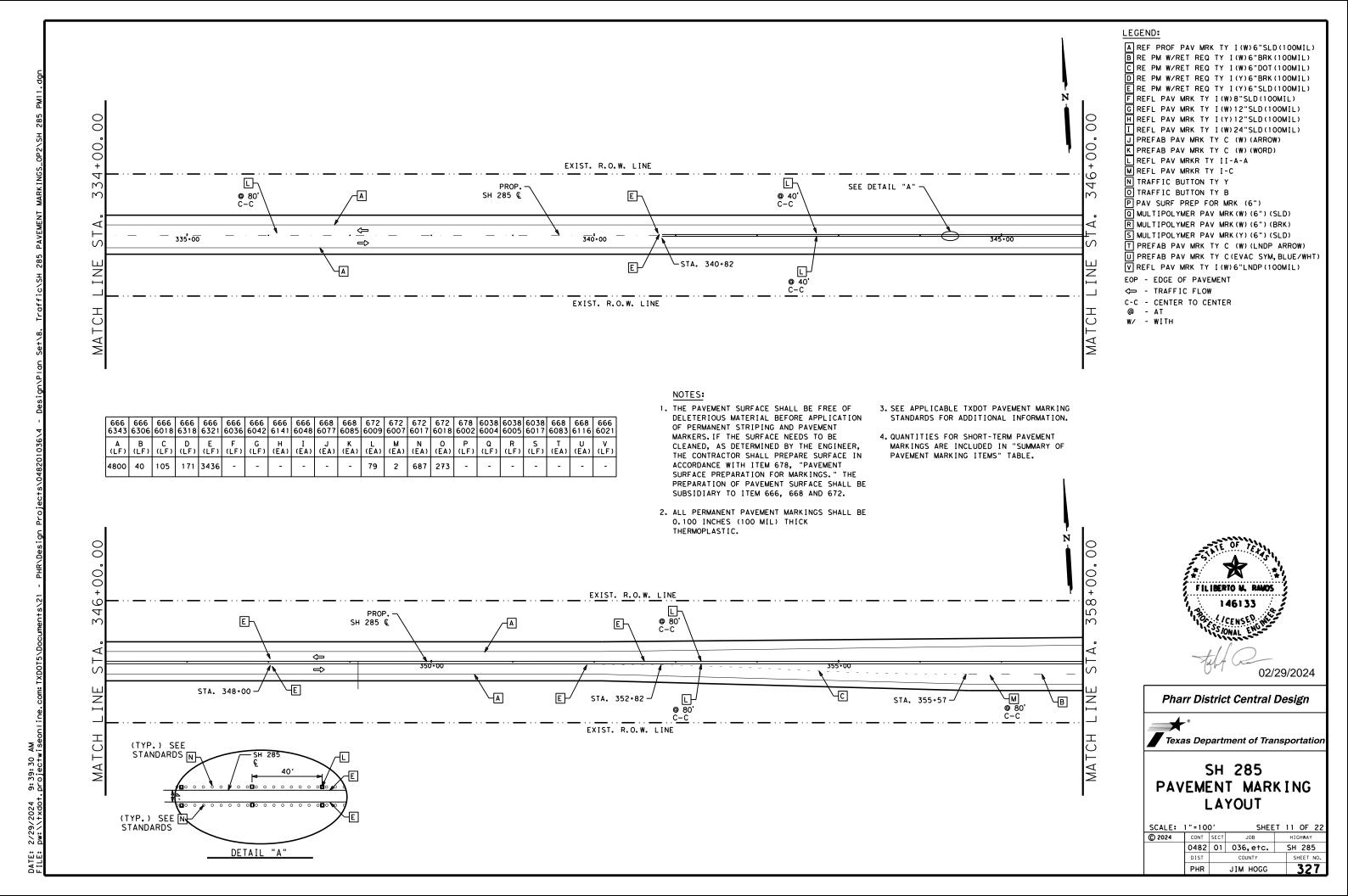


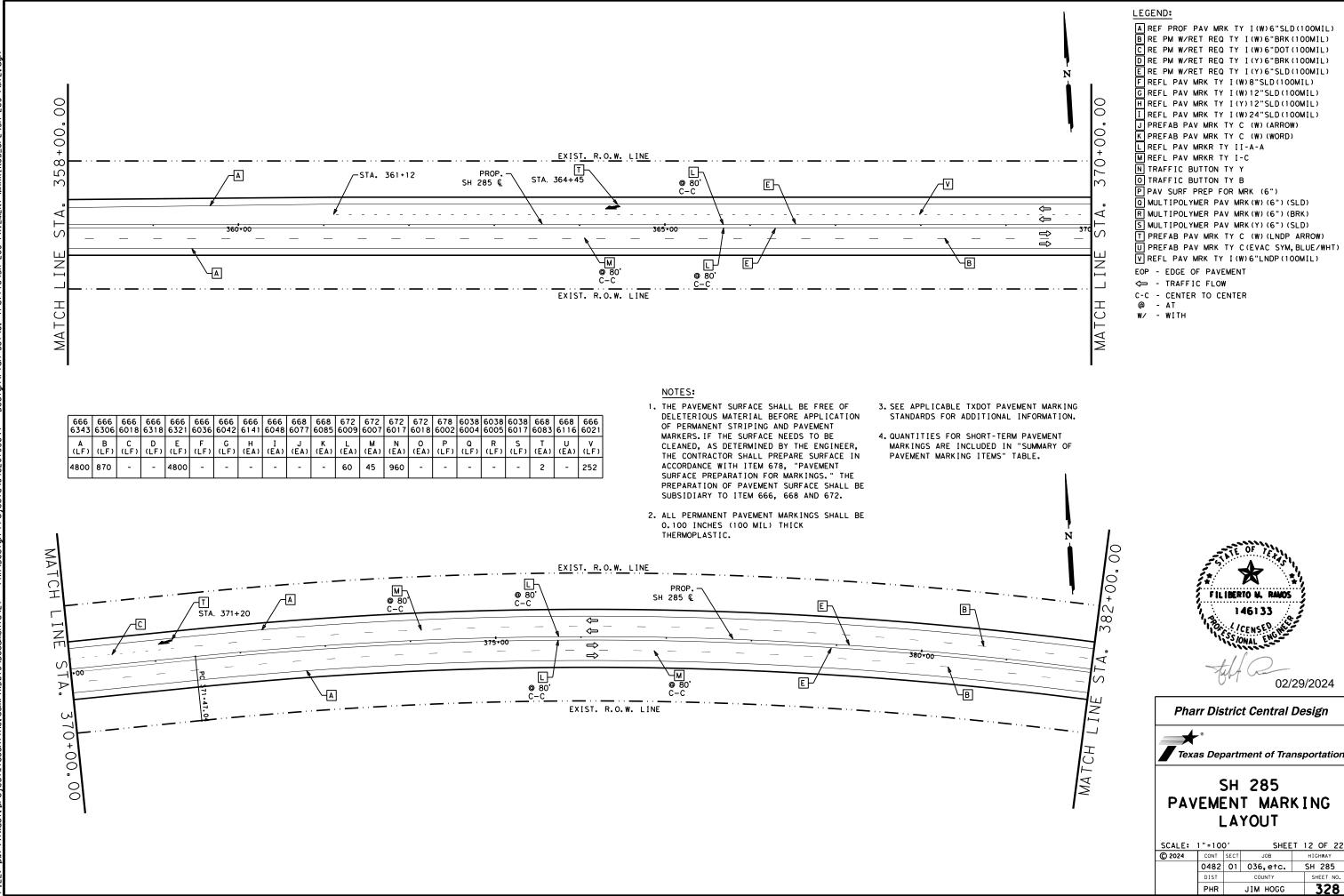


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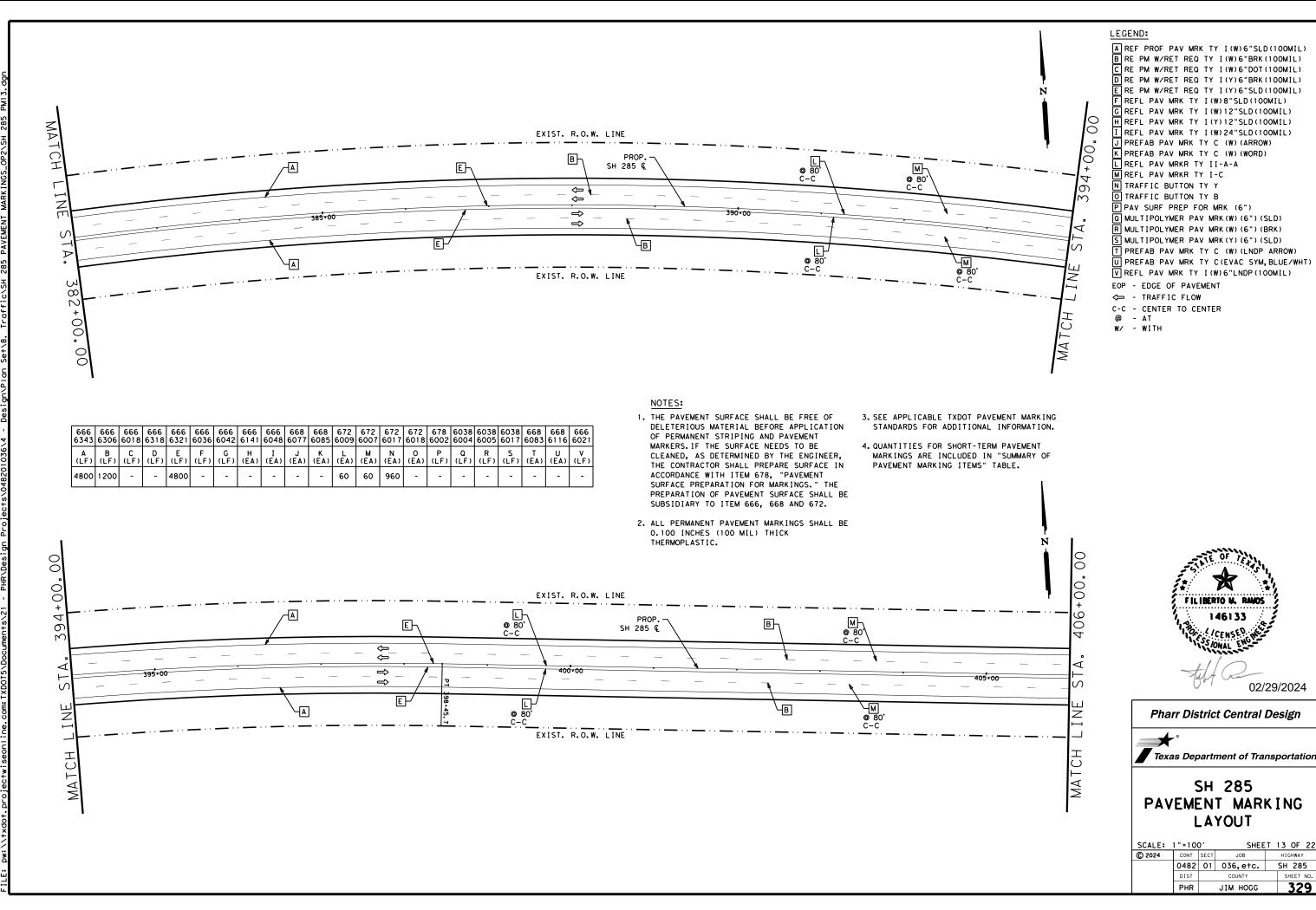


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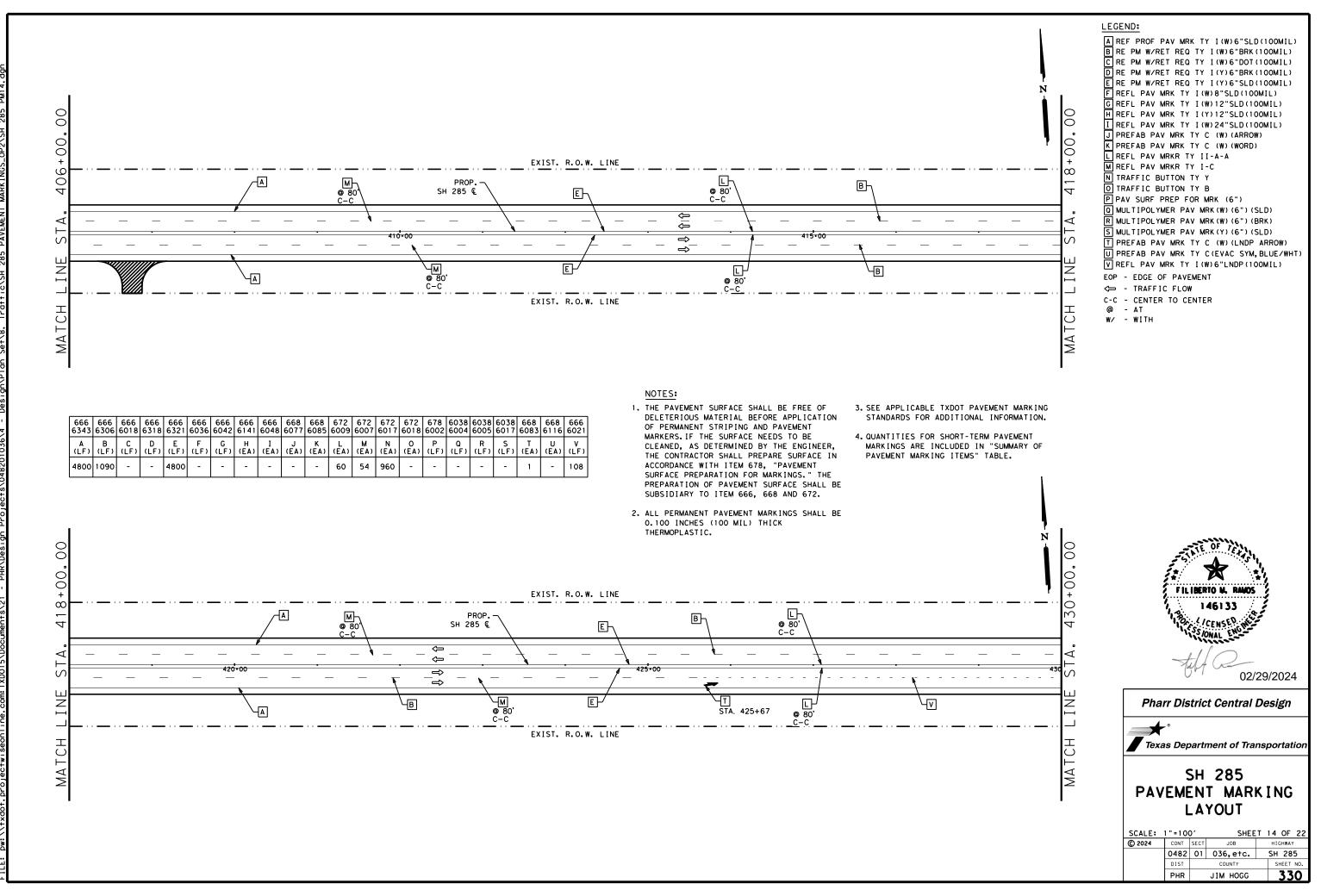




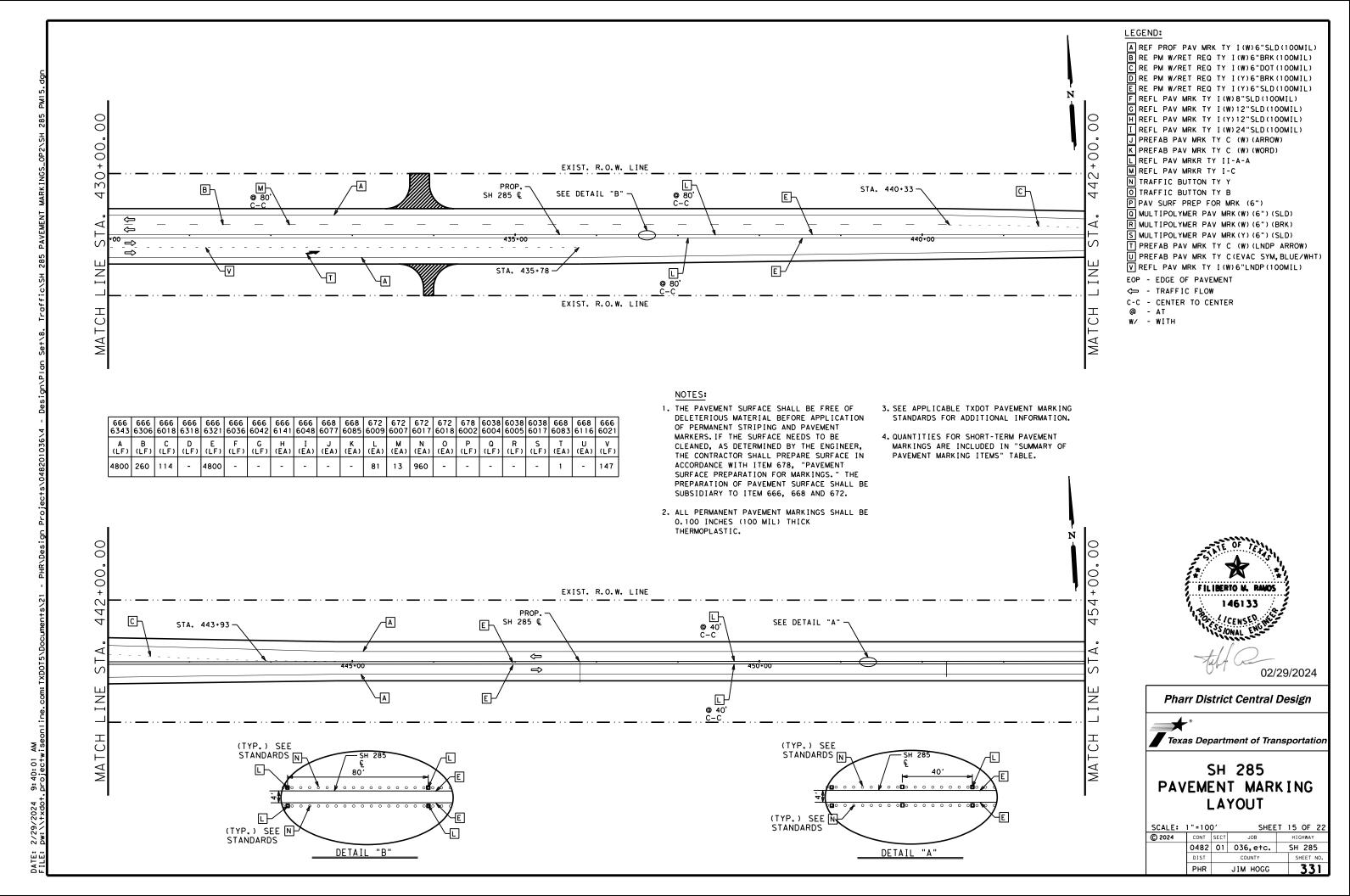
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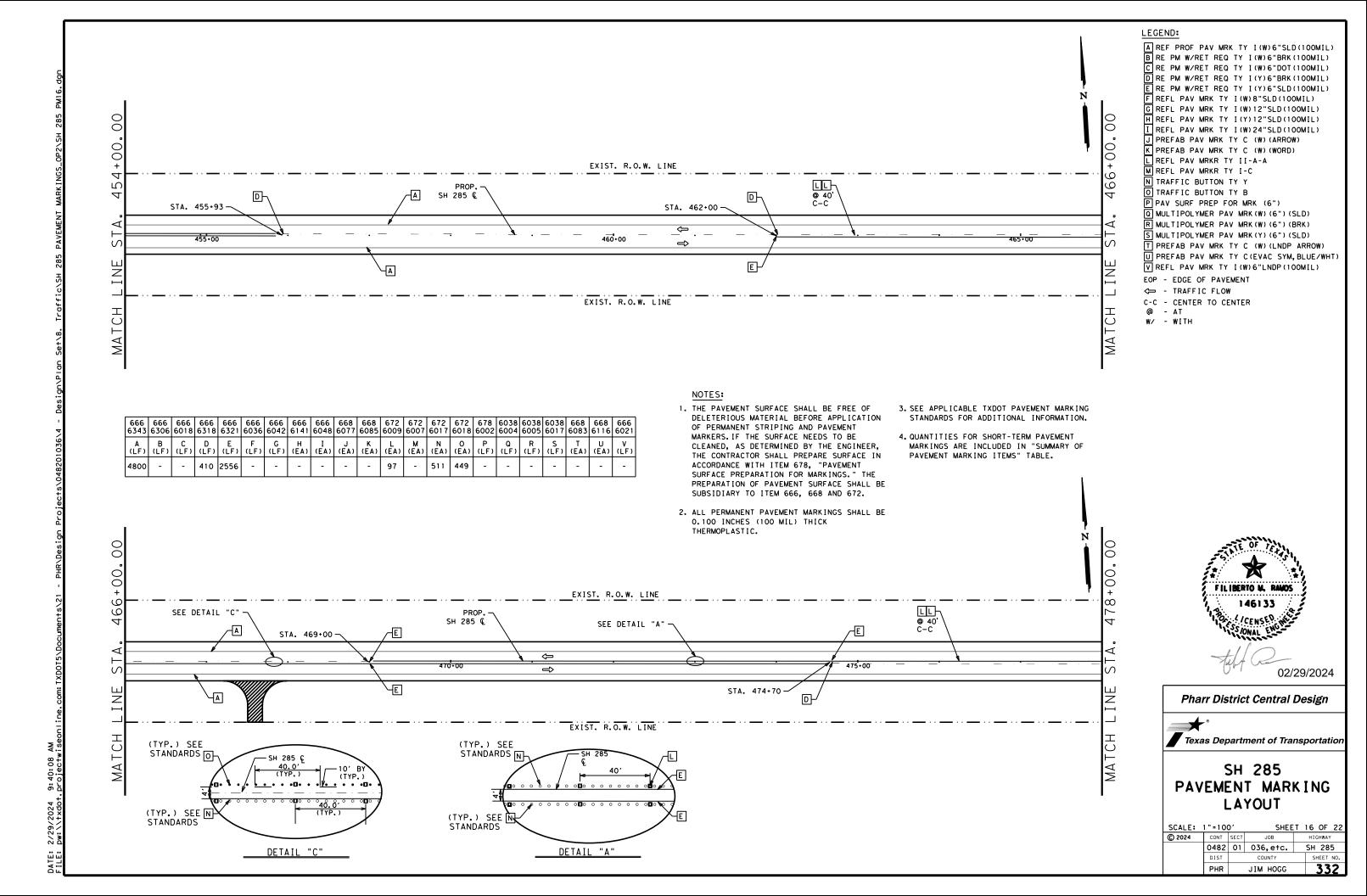


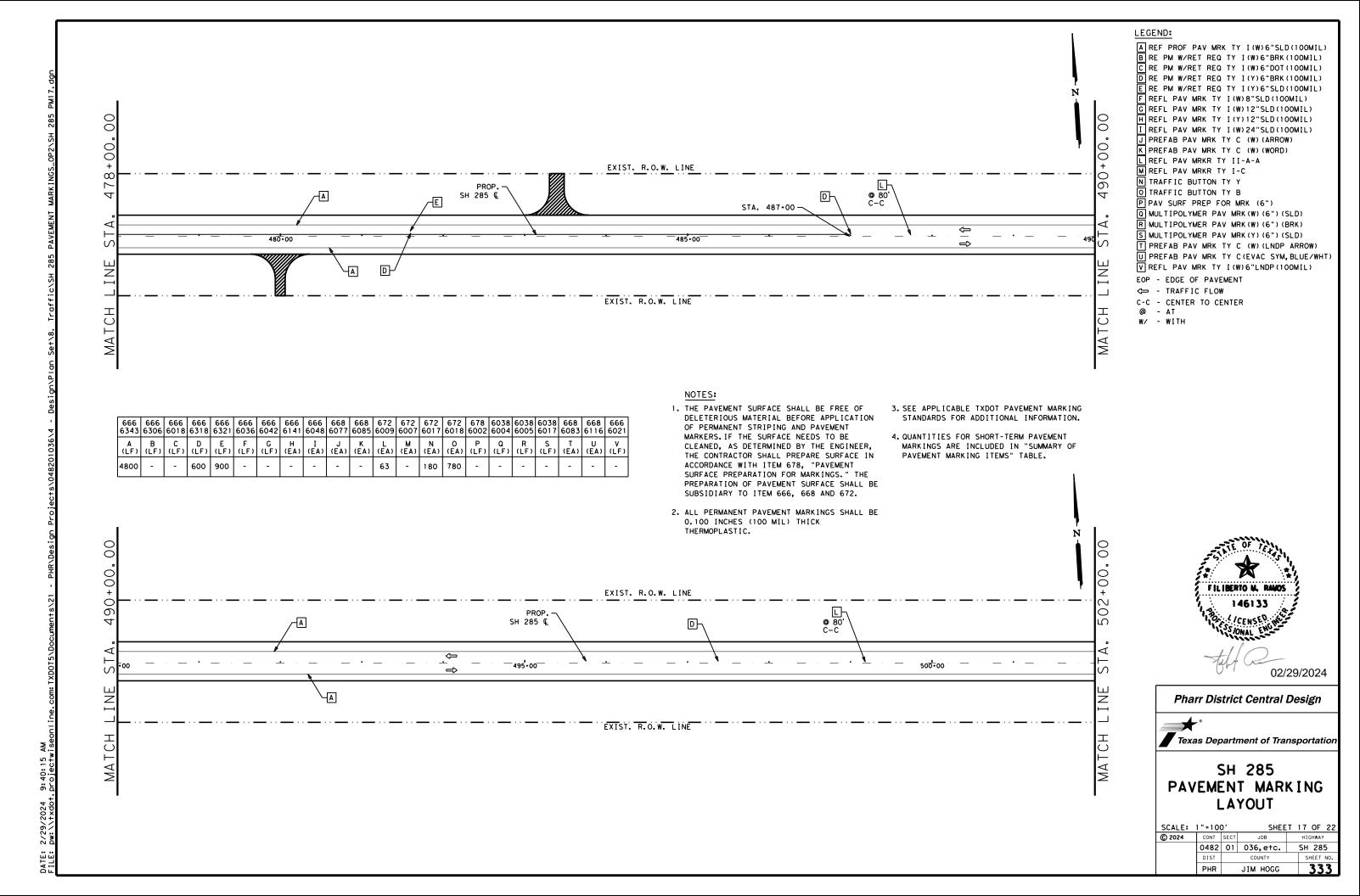
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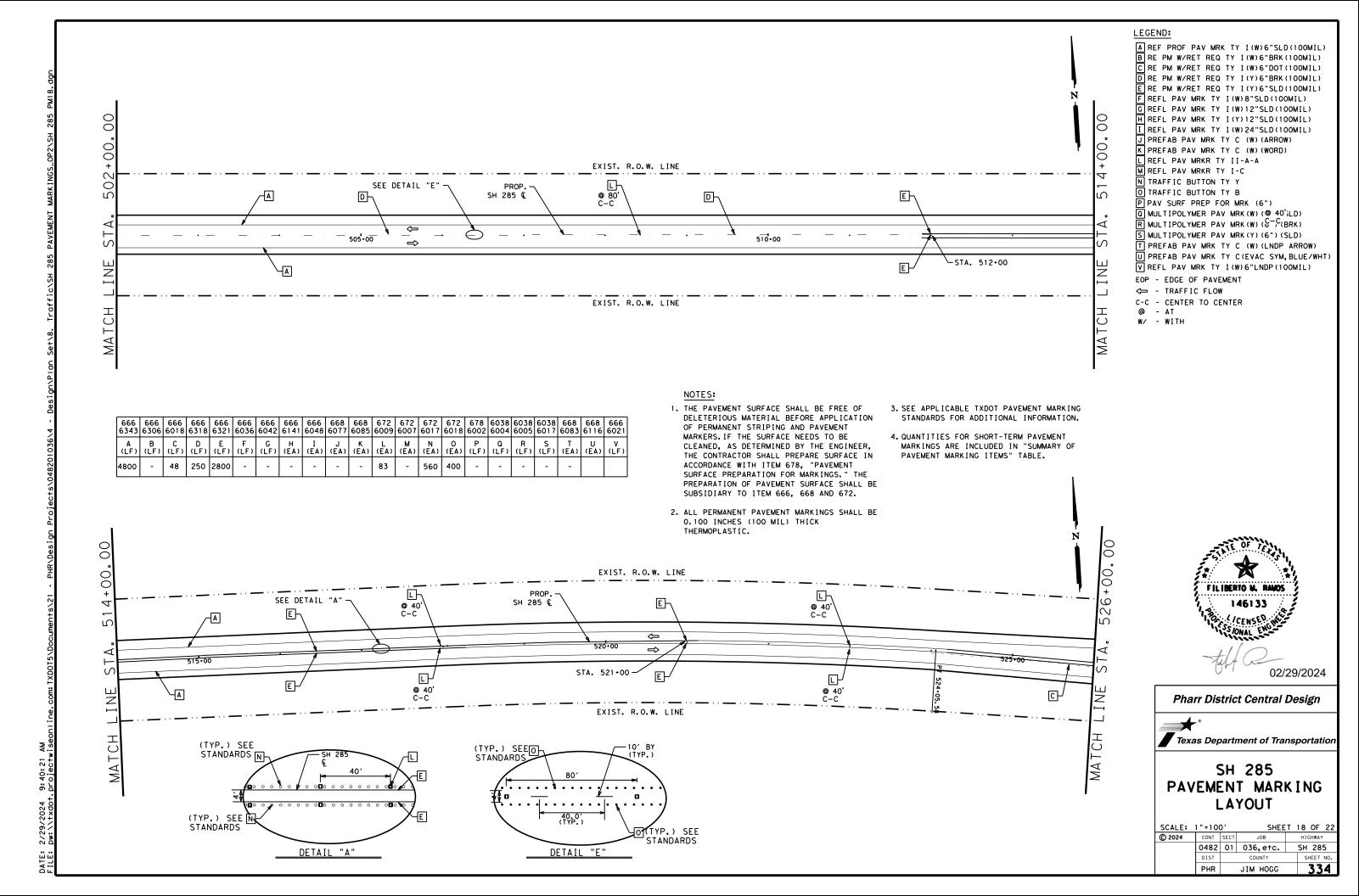


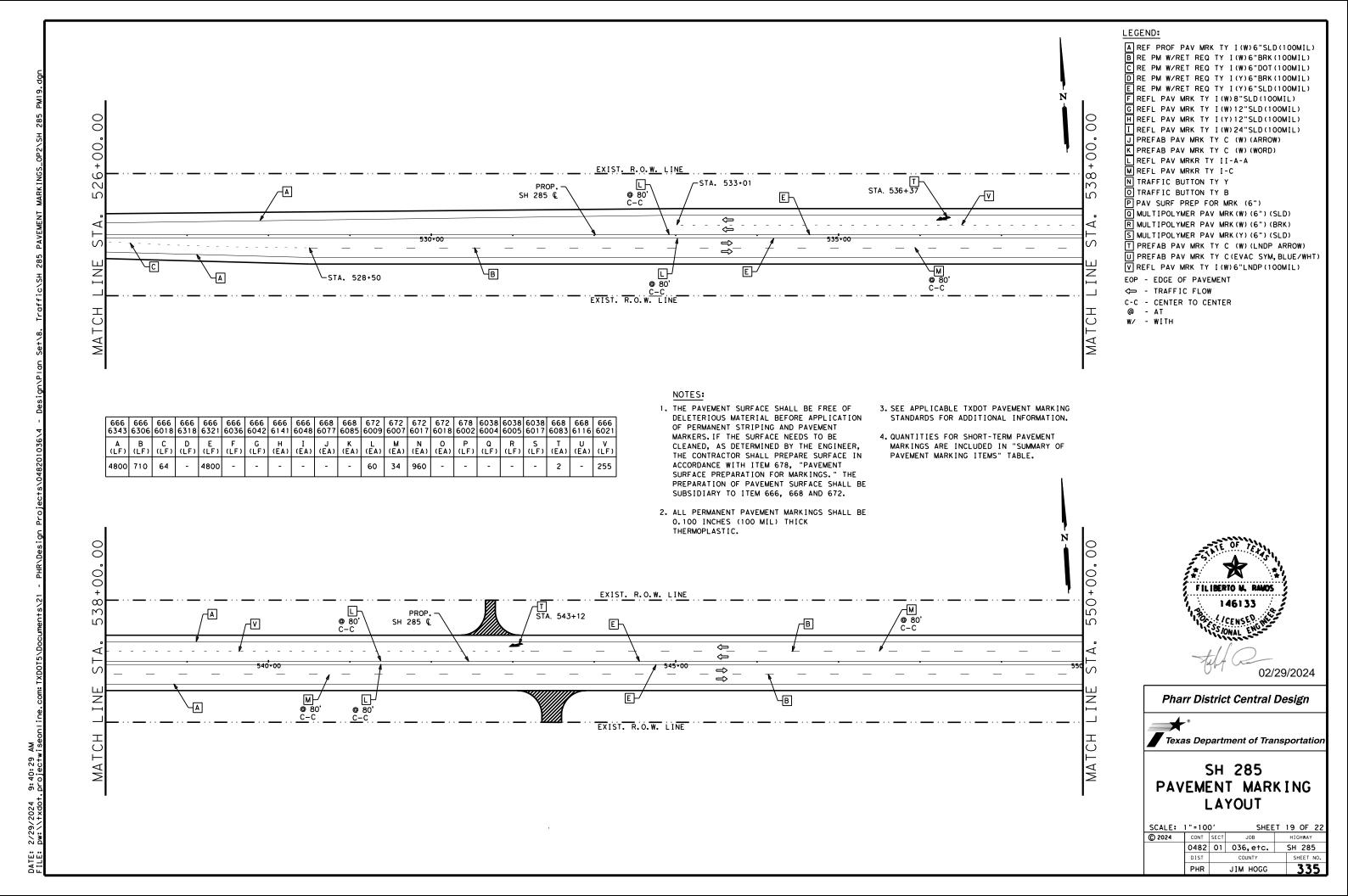
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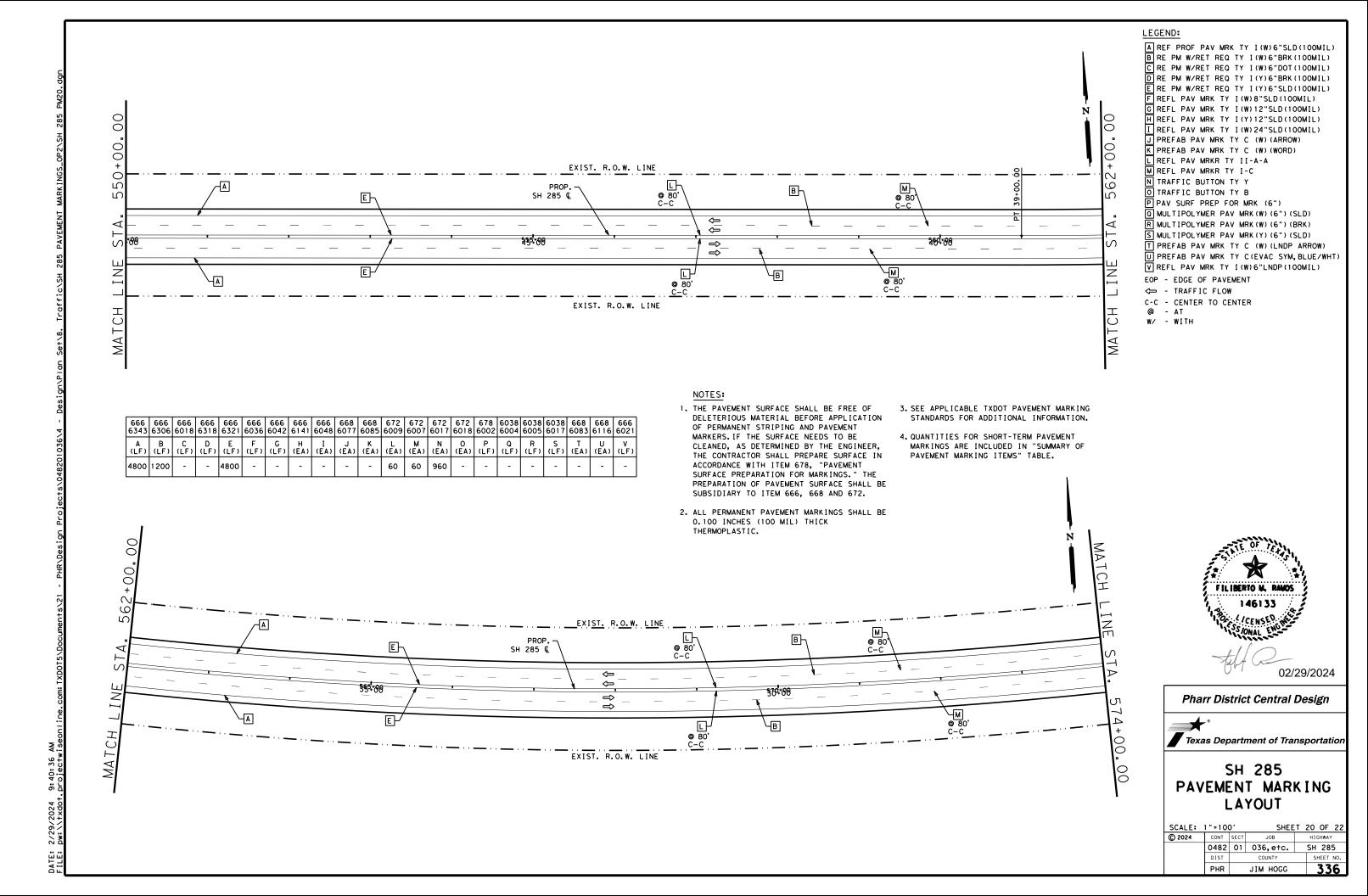


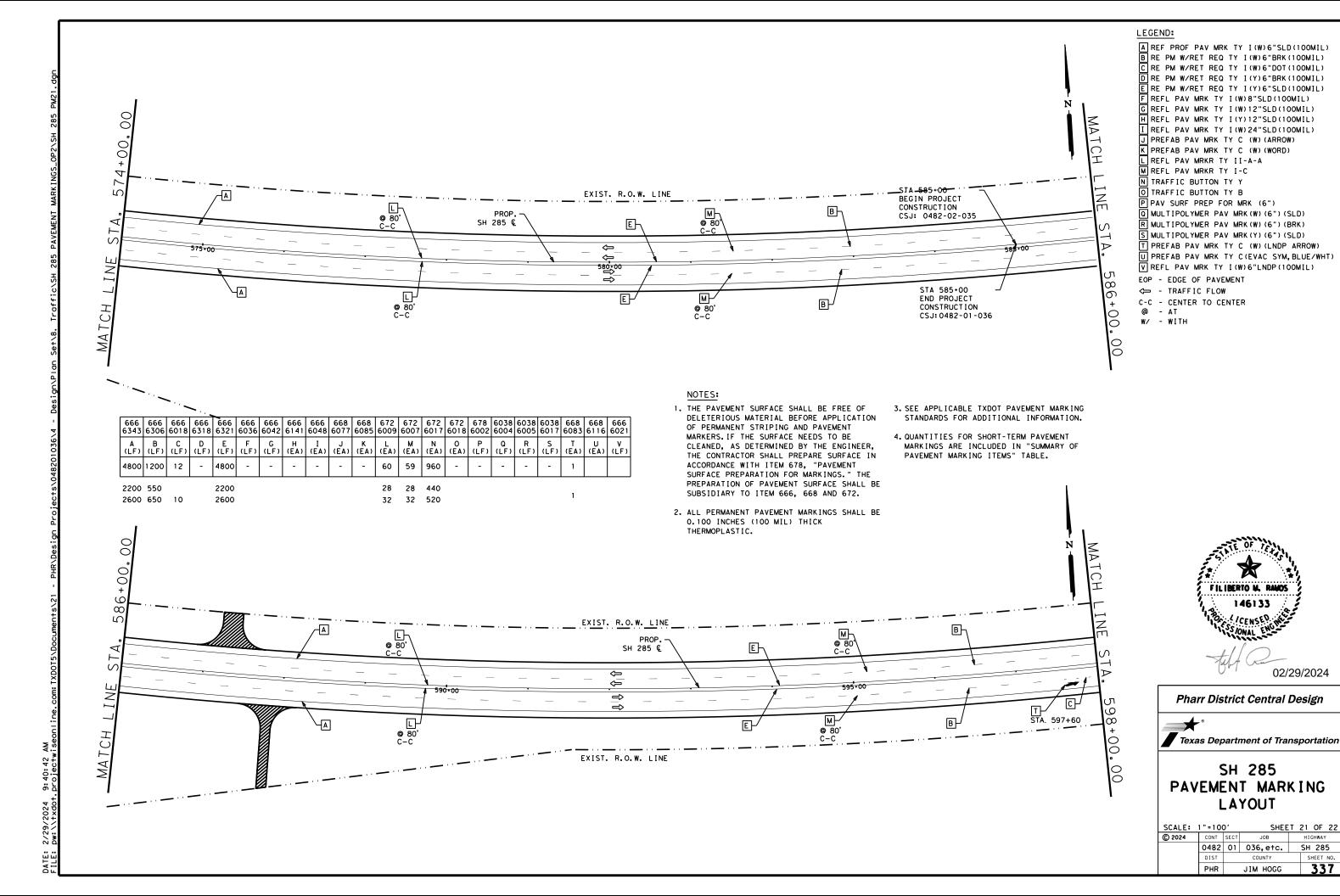


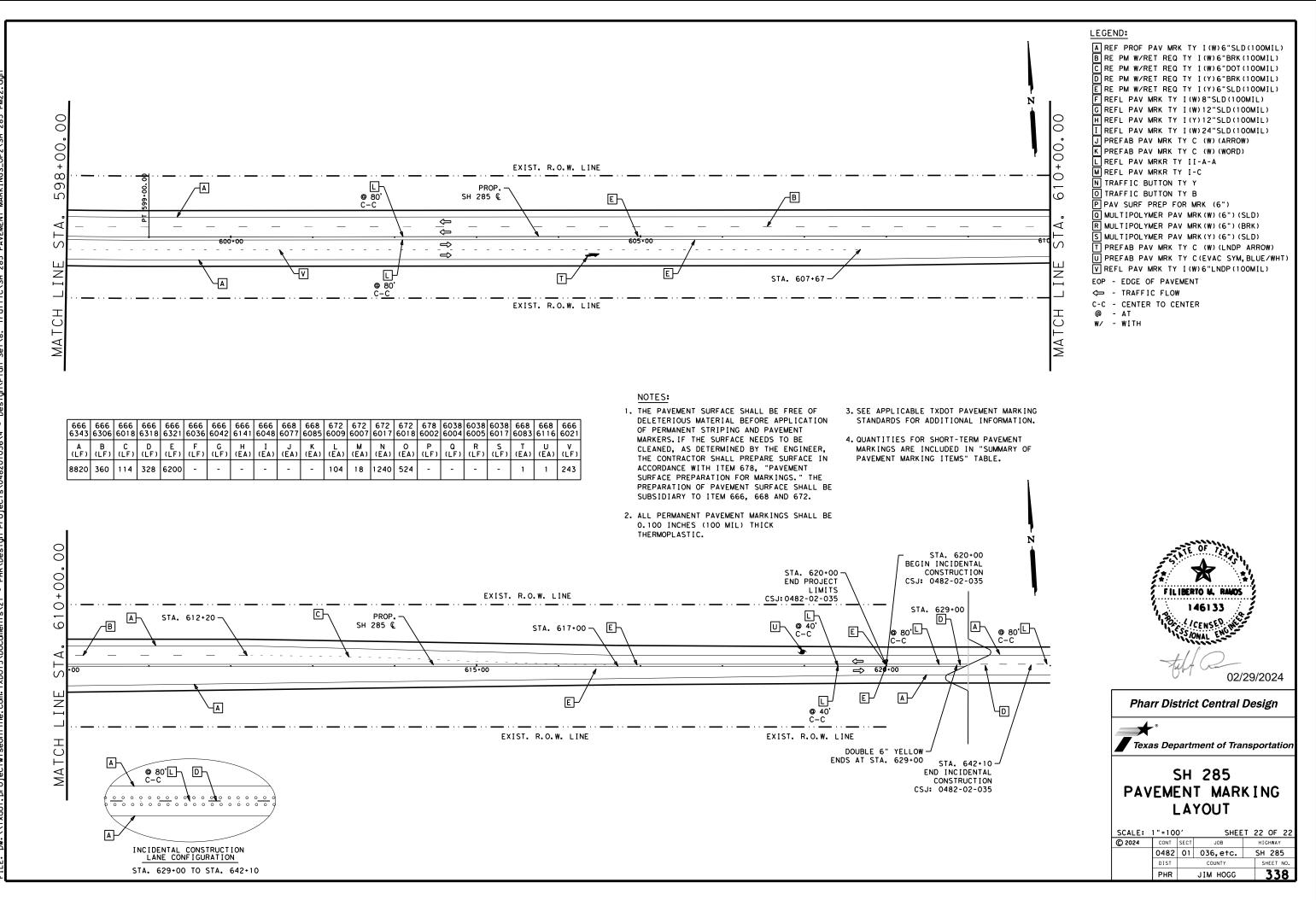






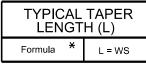






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LEGEND Sign ♦ Traffic Flow



* 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)

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) -Centerline for All Two Lane Two-Way Roadways. Note that RPMs are not recommended on the 6" dotted white extension lines.
- 3. For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet
- 4. For pavement marking details, see Pavement Marking Standard sheet PM(1).



Traffic Safety Division Standard

TEXAS SUPER 2 PASSING LANES

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FOUR LANE DIVIDED ROADWAY CROSSOVERS

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GENERAL NOTES

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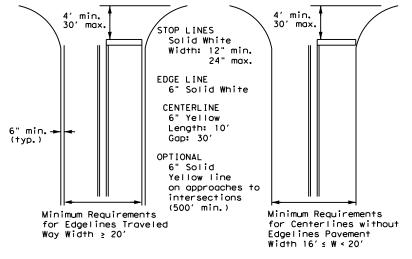
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- 1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines 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 center of edge line to the center of edge line 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.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES. EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways



Texas Department of Transportation

Traffic Safety Division Standard

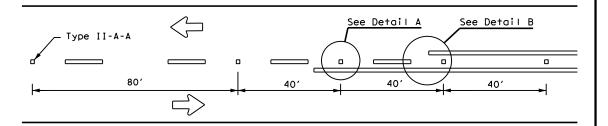
PM(1)-22

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95 3-03 12-22	DIST		COUNTY			SHEET NO.
00 2-12	PHR		JIM HC	GG		340

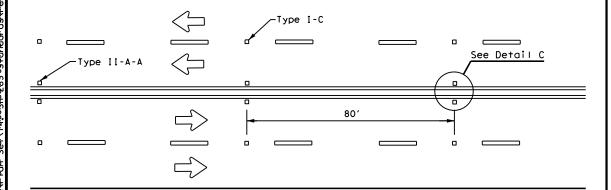
Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the

- 2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with
- 3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

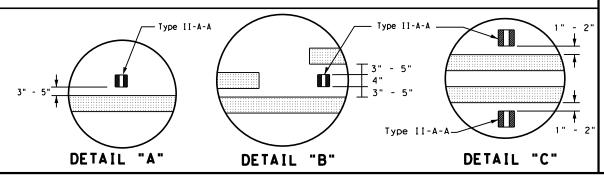
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

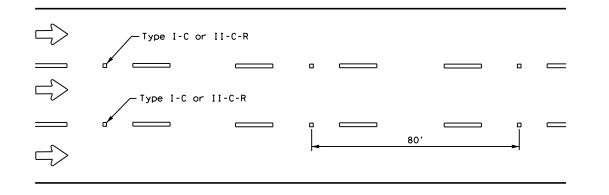


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS



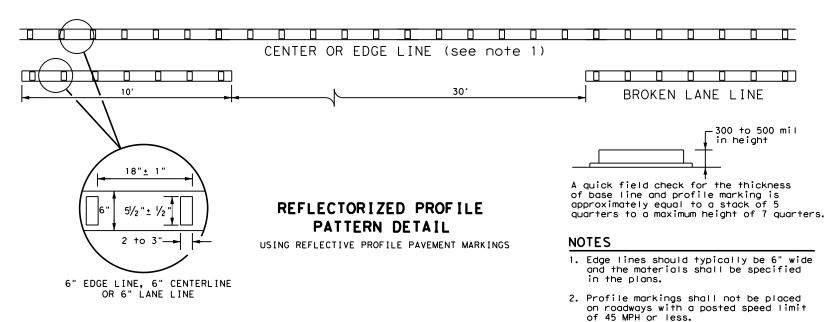
Centerline Symmetrical around centerline Continuous two-way left turn lane Type II-A-A 40 80' Type I-C

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. See Note 3.

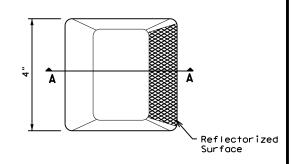


GENERAL NOTES

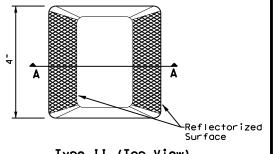
- All raised pavement markers placed along broken lines shall be placed in line with and midway between
- 2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal
- Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

DMS-4200
DMS-6100
DMS-6130
DMS-8200
DMS-8220
DMS-8240
D

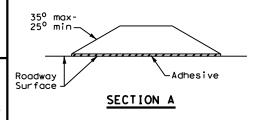
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



RAISED PAVEMENT MARKERS



Traffic Safety Division Standard

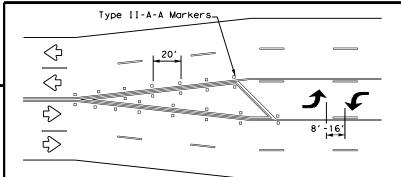
POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE **MARKINGS** PM(2) - 22

FILE: pm2-22.dgn	DN:		CK:	DW:		CK:
ℂTxDOT December 2022	CONT	SECT	JOB		ніс	SHWAY
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4-92 2-10 12-22	DIST		COUNTY			SHEET NO.
5-00 2-12	PHR		JIM HC	GG		341

NOTES

- 1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on_street parking in_what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- 2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- 3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

	D WARNING ISTANCE (
Posted Speed	D (ft)	L (f†)
30 MPH	460	wc2
35 MPH	565	$L = \frac{WS^2}{60}$
40 MPH	670	00
45 MPH	775	
50 MPH	885	
55 MPH	990	
60 MPH	1,100	L=WS
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

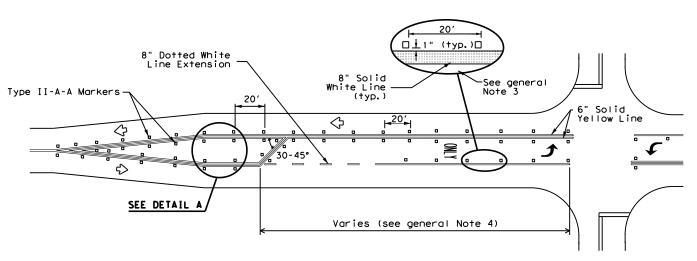
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

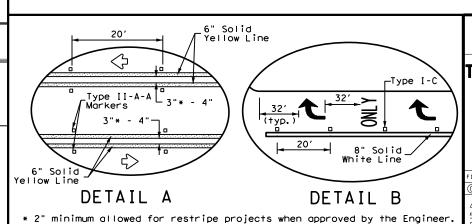
- 1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- 2. When lane-use words and arrow markings are used. two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- 3. Use raised payement marker Type I-C with undivided highways, flush medians and two way left turn Use raised pavement marker Type II-C-R with divided highways and raised medians.
- 4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

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.



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS

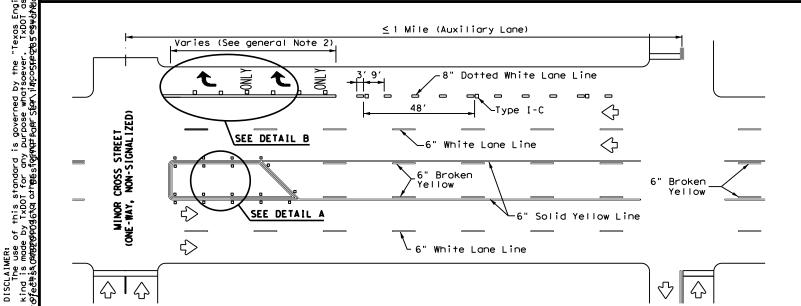




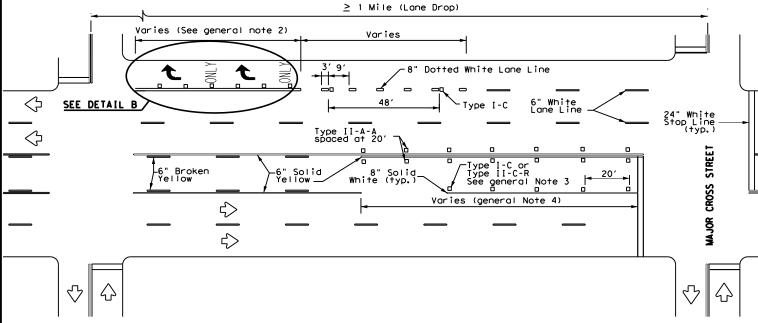
Traffic Safety Division Standard

'WO-WAY LEFT TURN LANES. RURAL LEFT TURN BAYS. AND LANE REDUCTION PAVEMENT MARKINGS PM(3) - 22

FILE: pm3-22.dgn	DN:		CK:	DW:	CK:
ℂTxDOT December 2022	CONT	SECT	JOB		HIGHWAY
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5-00 2-10 12-22	DIST		COUNTY		SHEET NO.
8-00 2-12	PHR		JIM HC	GG	342



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP

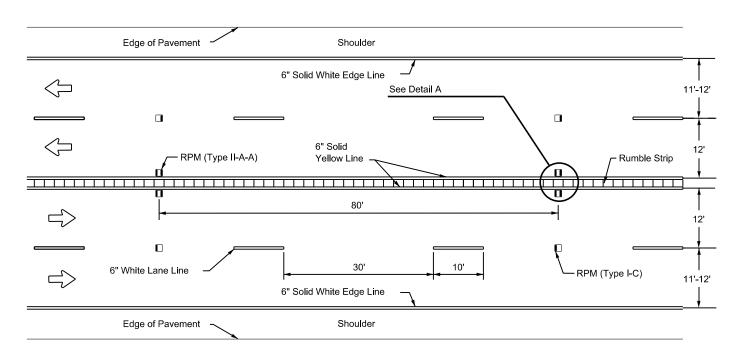
JIM HOGG

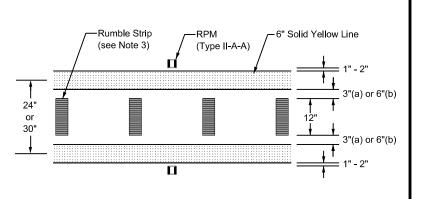
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DISCLAIMER:
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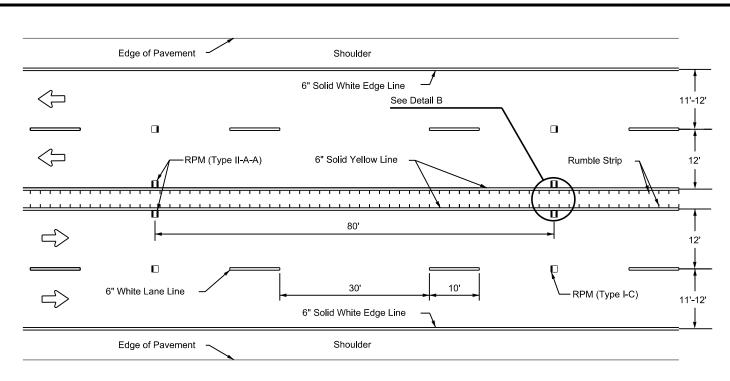


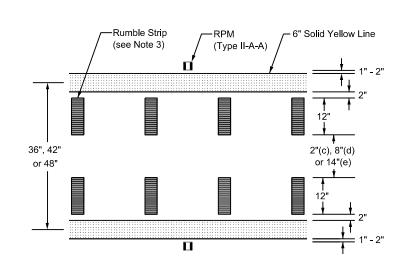


DETAIL "A"

CENTERLINE BUFFER FOR MULTI-LANE UNDIVIDED ROADWAYS

FOR BUFFER WIDTHS OF 24 INCHES(a) OR 30 INCHES(b)





DETAIL "B"

WIDE CENTERLINE BUFFER FOR MULTI-LANE UNDIVIDED ROADWAYS

FOR BUFFER WIDTHS OF 36 INCHES(c), 42 INCHES(d) OR 48 INCHES(e)

GENERAL NOTES:

- 1. A buffer shall not be implemented if it will require reducing the width of inside travel lanes to be less than 12 feet.
- 2. See standard sheet PM(2) for additional details regarding retroreflectorized raised pavement markers (RPMs).
- This sheet shows the application of milled rumble strips, though other types may be used. See the Rumble Strips (RS) standard for installation details.
- Dimension notations (a) through (e) correspond to the following buffer widths: a = 24 inches; b = 30 inches; c = 36 inches; d = 42 inches; and e = 48 inches.
- The Engineer must consider bicycle accommodation during the planning and implementation of all construction and rehabilitation projects. See standard sheet RS(6) and the TxDOT Roadway Design Manual (RDM) Bicycle Facilities section for applicable policies, references and guidance.

MATERIAL SPECIFICATIONS	
avement Markers (Reflectorized)	DMS-4200
poxies and Adhesives	DMS-6100
ituminous Adhesive for Pavement Markers	DMS-6130
raffic Paint	DMS-8200
lot Applied Thermoplastic	DMS-8220
ermanent Prefabricated Pavement Markings	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications.



Traffic Safety Division Standard

CENTERLINE BUFFER MULTI-LANE ROADWAYS

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REVISIONS		0482	01	036,etc.		SH	SH 285	
		DIST		COUNTY			SHEET NO.	
		PHR		JIM HO	3G		344	

CENTERLINE RUMBLE STRIPS 1. This standard sheet provides guidelines for installing centerline rumble strips on multilane undivided highways. 24" ±½" 60" ±½" 60" ±½" 18" ±1" 2. Centerline and edge line rumble strips or profile markings shall not be placedon roadways with a posted speed limit of 45 MPH or less. 3. Milled rumble strips are preferred when adequate pavement depth is -500 mil - 3/4" ± 1/8" - ½" ± 1/8" available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed PROFILE VIEW PROFILE VIEW PROFILE VIEW PROFILE VIEW 4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Safety Division. 5. Breaks in milled centerline rumble strips shall occur at least 50 feet and nomore than 150 feet in advance of bridges, railroad crossing, 4^LO intersections ordriveways with high usage of large trucks. Centerline Profile centerline Centerline markings 6. Use standard sheet PM(2) for positioning, dimensioning, and spacing of markings markings all reflective raised pavement markers, pavement markings and profile 0 7. Consideration should be given to noise levels when centerline rumble __1" Min. 2" Max. strips are to be installed near residential areas, schools, churches, etc. A 3/8 inch deep (minimum) 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 0 \circ -See Note 6 plans the exact placement of the rumble strips. Place the rumble strips See Note 6 See Note 6 under each centerline marking or centered in the middle of the median. Ħ 闰 闰 - RPM (reflectorized) WHEN INSTALLING CENTERLINE RUMBLE STRIPS: RPM (reflectorized) See Note 6 (reflectorized) 0 0 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 oxdivRPM recommendations. (reflectorized) 10. When using non-reflective raised traffic buttons as a centerline rumble 0 0 strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The color of the button should be yellow for 16" ±½" 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. 12" ±½" 11. Consideration shall be given to bicyclists. See RS(6). 0 Preformed Non-reflective thermoplastic WHEN INSTALLING EDGE LINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS: raised traffic rumble strips buttons (yellow) 12. See standard sheet RS(2). 0 0 0 Ω Traffic Safety Division Standard Texas Department of Transportation 0 0 **CENTERLINE RUMBLE STRIPS** ON MULTILANE PLAN VIEW PLAN VIEW PLAN VIEW PLAN VIEW OPTION 1 OPTION 2 OPTION 3 OPTION 4 **UNDIVIDED HIGHWAYS** MULTILANE UNDIVIDED RS(3)-23 **HIGHWAY WITH** MILLED CENTERLINE PREFORMED THERMOPLASTIC PROFILE CENTERLINE RAISED CENTERLINE SHOULDER **RUMBLE STRIPS RUMBLE STRIPS MARKINGS** DN: TXDOT CK:TXDOT DW: TXDOT CK:TXDO RUMBLE STRIPS FILE: rs(3)-23.dgn © TxDOT January 2023 JOB 0482 01 036,etc. SH 285 JIM HOGG 345

CENTERLINE RUMBLE STRIPS **GENERAL NOTES** 1. This standard sheet provides guidelines for installing centerline rumble strips on two-lane highways with or without shoulders. 24" ±½" 18"±½" 2. Centerline and edge line 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 PROFILE VIEW PROFILE VIEW PROFILE VIEW PROFILE VIEW bridge decks. 4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Safety Division. 5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no <u>4</u> raised traffic more than 150 feet in advance of bridges, railroad crossings, intersections Centerline centerline or driveways with high usage of large trucks. or black) markings markings Centerline Centerline 6. Use standard sheet PM(2) for positioning, dimensioning, and spacing of all markings markings reflective raised pavement markers, pavement markings and profile 0 O 7. Consideration should be given to noise levels when centerline rumble 60" ±1/2" strips are to be installed near residential areas, schools, churches, etc. A 3/8 inch deep (minimum) milled rumble strip may be considered in these 10 8. Pavement markings must be applied over milled centerline rumble strips. 国。 See Note 6 See Note 6 -See Note 6 RPM □--See Note 6 RPM (reflectorized) 0 WHEN INSTALLING CENTERLINE RUMBLE STRIPS: (reflectorized) (reflectorized) 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. Non-reflective raised traffic 10. When using non-reflective raised traffic buttons as a centerline rumble buttons (black) 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 16" ±1/2" roadway. Black buttons should be used in areas where passing is allowed. 12. Consideration shall be given to bicyclists. See RS(6). WHEN INSTALLING EDGE LINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS: 13. See standard sheet RS(2). -Preformed Preformed thermonlastic thermoplastic ♡ | 0 Texas Department of Transportation CENTERLINE **RUMBLE STRIPS** ON TWO LANE TWO-WAY HIGHWAYS PLAN VIEW PLAN VIEW PLAN VIEW PLAN VIEW OPTION 4 OPTION 1 OPTION 2 OPTION 3 RS(4)-23 PROFILE CENTERLINE MARKINGS DN: TXDOT CK:TXDOT DW: TXDOT CK:TXDO FILE: rs(4)-23.dgn MILLED CENTERLINE PREFORMED THERMOPLASTIC TWO LANE TWO-WAY RAISED CENTERLINE © TxDOT January 2023 AND PREFORMED THERMOPLASTIC **RUMBLE STRIPS** 0482 01 036,etc. **HIGHWAYS RUMBLE STRIPS RUMBLE STRIPS RUMBLE STRIPS**

Traffic Safety Division Standard

SH 285

346

JOB

JIM HOGG

ENVIRONMENTAL COVER SHEET

Pharr District Central Design



Texas Department of Transportation

SH 285 ENVIRONMENTAL COVER SHEET

© 2024 CONT SECT JOB HIGHWAY

0482 01 036, e+c. SH 285

DIST COUNTY SHEET NO.

PHR JIM HOGG 347

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0482-01-036

1.2 PROJECT LIMITS:

From: FM 1017

To: JIM HOGG/BROOKS COUNTY LINE

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 27.298275 -98.663075

_,(Long) -98.523342 END: (Lat) 27.265359

1.4 TOTAL PROJECT AREA (Acres): ~ 181 Acres

1.5 TOTAL AREA TO BE DISTURBED (Acres): ~ 181 Acres

1.6 NATURE OF CONSTRUCTION ACTIVITY:

Construction of Preventive Maintenance and Rehabilitation (Super 2) consisting of cement treated subgrade, cement treated flexbase, asphalt concrete pavement, singing and pavement markings.

1.7 MAJOR SOIL TYPES:

Description
Very deep, well drained soil, low runoff.
Very deep, moderately well drained soil, low runoff.
Deep, well drained to moderately drained soil.
Moderately deep, well drained to moderately drained soil.
Deep, moderately rapidly permeable soil, low runoff.

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below: ▼ PSLs determined during preconstruction meeting

☐ PSLs determined during construction

☐ No PSLs planned for construction

Гуре	Sneet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- Mobilization
- ▼ Install sediment and erosion controls
- ☒ Blade existing topsoil into windrows, prep ROW, clear and grub
- Remove existing pavement
- ☑ Grading operations, excavation, and embankment
- X Excavate and prepare subgrade for proposed pavement widenina
- ▼ Remove existing culverts, safety end treatments (SETs)
- □ Remove existing metal beam guard fence (MBGF), bridge rail
- Install proposed pavement per plans
- ▼ Install culverts, culvert extensions, SETs
- ▼ Install mow strip, MBGF, bridge rail
- ▼ Place flex base
- ☑ Blade windrowed material back across slopes
- Revegetation of unpaved areas
- X Achieve site stabilization and remove sediment and erosion control measures

Other:				
•	 •	•	•	
- · · ·				

Other:		

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- X Sediment laden stormwater from stormwater conveyance over disturbed area
- ▼ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- X Solvents, paints, adhesives, etc. from various construction
- ▼ Transported soils from offsite vehicle tracking
- X Construction debris and waste from various construction
- X Contaminated water from excavation or dewatering pump-out
- Sanitary waste from onsite restroom facilities
- ▼ Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste

Other:			
Other:			

1.11 RECEIVING WATERS:

Other:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Noriacitas Creek	Unclassified
Palo Blanco Creek	Unclassified

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- X Development of plans and specifications
- X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- X Post Construction Site Notice
- X Submit NOI/CSN to local MS4
- X Perform SWP3 inspections

Other:

- X Maintain SWP3 records and update to reflect daily operations
- X Complete and submit Notice of Termination to TCEQ
- 🛚 Maintain SWP3 records for 3 years

□ Other:			
□ Other			

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

X Day To Day Operational Control

X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)

X Post Construction Site Notice

X Submit NOI/CSN to local MS4

X Maintain schedule of major construction activities

X Install, maintain and modify BMPs

X Complete and submit Notice of Termination to TCEQ

X Maintain	SWP3	records	for	3	years
□ Other					

□ Other:		
□ Other.		
_		

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER **SYSTEM (MS4) OPERATOR COORDINATION:**

	MS4 Entity	
N/A		



STORMWATER POLLUTION PREVENTION PLAN (SWP3)



* July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO. SHEET NO.					
		348				
STATE		STATE DIST.	(COUNTY		
TEXA	S	PHARR	JIM HOGG			
CONT.		SECT.	JOB	HIGHWAY NO.		
0482		01	036, ETC.	SH 285		

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:
T/P
 □ Protection of Existing Vegetation □ Vegetated Buffer Zones □ Soil Retention Blankets □ Geotextiles □ Mulching/ Hydromulching □ Soil Surface Treatments ☒ Temporary Seeding ☒ Permanent Planting, Sodding or Seeding
□ Biodegradable Erosion Control Logs □ Rock Filter Dams/ Rock Check Dams
□ Vertical Tracking □ Interceptor Swale □ Riprap □ Diversion Dike □ Temporary Pipe Slope Drain □ Embankment for Erosion Control □ Paved Flumes □ Other:
Other:
□ □ Other:
□ □ Other:
2.2 SEDIMENT CONTROL BMPs: T / P

□ Other: _____

□ Other: □ □ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets

□ □ Vegetated Filter Strips

located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T/P

□ □ Sediment Trap

 □ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area □ 3,600 cubic feet of storage per acre drained
□ Sedimentation Basin
□ Not required (<10 acres disturbed)
☐ Required (>10 acres) and implemented.
 Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
☐ 3,600 cubic feet of storage per acre drained
☐ Required (>10 acres), but not feasible due to:
☐ Available area/Site geometry
☐ Site slope/Drainage patterns
☐ Site soils/Geotechnical factors
□ Public safety
☐ Other:

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Туре	Stationing			
Туре	From	То		
N/A				

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- X Haul roads dampened for dust control
- ▼ Loaded haul trucks to be covered with tarpaulin
- X Stabilized construction exit Daily street sweeping

☐ Other:			

Othor		
Utner:		

□ Other:

2.5 POLLUTION PREVENTION MEASURES:

- X Chemical Management
- X Concrete and Materials Waste Management

□ Other:

- X Debris and Trash Management
- X Dust Control
- X Sanitary Facilities

☐ Other:		
☐ Other:		

Other:			

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Stationing	
From	То
	From

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- X Fire hydrant flushings
- X Irrigation drainage
- X Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- X Potable water sources
- X Springs
- X Uncontaminated groundwater
- X Water used to wash vehicles or control dust
- X Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE: Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

> STORMWATER POLLUTION **PREVENTION PLAN (SWP3)**



* July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.			PROJECT NO.	SHEET NO.		
					349	
STATE	•	STATE DIST.	COUNTY			
TEXA	S	PHARR	JIM HOGG			
CONT.		SECT.	JOB HIGHWAY		HIGHWAY NO.	
0482		01	036 FTC	SH 285		

During the planning phase of project development, the following Environmental Permits, Issues and Commitments have been	II. Clean Water Act, Sections 401 and 404 Compliance - Continued:			
developed during coordination with resource agencies, local governmental entities and the general public. Any change orders and/or deviations from the final design must be reported to the Engineer prior to the commencement of constructi activities as additional environmental clearances may be required.	4. The Contractor's designated and qualified Contractor Responsible Person Environmental (CRPe) will monitor the project site daily to ensue compliance with SW3P and TPDES General Permit TXR 150000. Daily Monitoring Reports shall be provided to TxD0T within 48 hours, in accordance with Item 506.3.1.			
I. Clean Water Act, Section 402; Stormwater Pollution Prevention	5. Other Project Specific Actions:			
Action Items Required: No Action Required	1. Contractor must sweep roadway & remove aggregate upon completed daily operations.			
1. The contractor must implement the SW3P by installing Best Management Practices (BMPs) as indicated in the construct plans and maintained appropriately throughout construction. BMPs must be in place prior to the start of construction. The SW3P may need to be revised as necessary as construction progresses.	ion on. 2. Contractor shall not place removed aggregate along with adjacent grass areas.			
2. For all construction PSL's off the ROW, the contractor must certify compliance with all applicable laws, rules and regulations pertaining to the preservation of cultural resources, natural resources and the environment.	III. Cultural Resources			
3. 🔀 Based on the acreage of impact, select the appropriate box below:	Action Items Required:			
☐ This project will disturb less than 1 acre of soil and is not part of a larger common plan of development; therefore, a NOI and TPDES Site Notice are not required for this project.	1. Refer to the 2014 TxDOT Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges, Item 7.7.1., in the event historical issues or archeological artifacts are found during construction.			
This project will disturb equal to or more than 1 acre of soil but less than 5 acres; therefore a NOI is not required but a TPDES Site Notice is required. The Construction Site Notice (CSN) is required to be posted at the construction site in a publicly accessible location for review by the public, TCEQ, EPA and other Inspectors or	Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately. 2. Other Project Specific Actions:			
This project will disturb equal to or more than 5 acres of soil and will require a NOI and TPDES Site Notice. The NOI and Site Notice are required to be posted at the construction site in a publicly accessible location.				
4. Need to address MS4 requirements (Cameron & Hidalgo Counties only)				
	IV. Vegetation Resources			
II. Clean Water Act, Sections 401 and 404 Compliance	Action Items Required:			
Action Items Rquired: No Action Required	1.▼ In accordance with the 2014 TxDOT Standard Specifications; Item 164 - Seeding For Erosion Control; provide and			
1. Filling, dredging or excavating in any water bodies, rivers, creeks, streams, wetlands or wet areas is prohibited unless specified in the USACE permit and approved by the Engineer. The contractor shall adhere to all agreements, mitigation plans, and BMPs required by the NWP as regulated by the USACE.	install temporary or permanent seeding for erosion control as shown on the plans or as directed by the Engineer for all seeding and replanting of right of way where possible. (Required for Urban Settings) 2. In accordance with Executive Order 13112 on invasive species and the Executive Memorandum on Beneficial Landscaping, native species of plants shall be used for all seeding and replanting of right of way where possible			
The Contractor must adhere to all of the terms and conditions associated with the following permit(s):				
■ No Permit Required	for rural roadways. (Required for Rural Settings)			
☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)	3. Preserve vegetation where possible throughout the project and minimize clearing, grubbing and excavation within stream banks, bed and approach sections.			
☐ Nationwide Permit 14 - PCN Required (1/10th to <1/2 acre, 1/3 in tidal waters)	4.☒ Other Project Specific Actions:			
☐ Individual 404 Permit Required	1. Vegetation clearing activities would be avoided during the general bird nesting season, Feb, 1 to Oct. 1, to minimize adverse impacts to birds.			
Other Nationwide Permit Required: NWP#	To infilinize daver se impacts to bit as.			
2. The contractor is responsible for obtaining new or revised Section 404 permit(s) for Contractor initiated changes i construction methods that change Impacts To Waters Of The U.S., including wetlands. The Contractor will ensure the water quality of the State will be maintained and not degraded.	2. Colonization by invasive plants would be actively prevented. Vegetation management would include the removal of invasive specias as soon as practicable while allowing the existing native plants to revegetate disturbed areas.			
3. Best Management Practices for applicable Section 401 General Conditions:				
General Condition 12 - Categories I and II BMPs required Category I (Erosion Control)				
▼ Temporary Vegetation □ Interceptor Swale ▼ Mulch Filter Berms and/or Socks	Texas Department of Transportation			
□ Blankets, Matting □ Diversion Dike ☒ Compost Filter Berms and/or Socks □ Mulch ☒ Erosion Control Compost □ Compost Blankets	PHARR DISTRICT			
Sodding	FRARE DISTRICT			
Category II (Sedimentation Control)	ENVIRONMENTAL PERMITS,			
☐ Silt Fence ☐ Hay (Straw) Bale Dike Mulch Filter Berms and/or Socks	Pharr District Contact No. 956-702-6100 Revised 01/30/2017 List of Abbreviations ISSUES AND COMMITMENTS			
☐ Triangular Filter Dike☐ Sediment Basins☐ Stone Outlet Sediment Traps☐ Sand Bag Berm☒ Erosion Control Compost	BMP: Best Management Practice NWP: Nationwide Permit (FPIC)			
General Condition 21 - Category III BMPs required	CRP: Construction General Permit CRPe: Contractor Responsible Person Environmental PSL: Project Specific Location SHEFT 1 OF 2			
<u>Category III (Post-Construction TSS Control)</u>	FEMA: Federal Emergency Management Agency FHWA: Federal Highway Administration MO4: Memorandum of Agreement MO54: Memorandum of Understanding MS4: Municipal Separate Stormwater Sewer System MS4: Mobile Source Air Toxic MBTA: Migratory Bird Treaty Act MBTA: Migratory Bird Treaty Act MS4: Notice of Intents MS4: Intents of Intents MS4: Intents of Intents MS4: Intents of Intents MS4: Motice of Intents MS4: MS4: MS4: MS4: MS4: MS4: MS4: MS4:			
X Vegetative Filter Strips ☐ Wet Basins ☐ Mulch Filter Berms and/or Socks☐ Retention/Irrigation ☐ Grassy Swales ☐ Compost Filter Berms and/or Socks	MOA: Memorandum of Ágreement MOU: Memorandum of Understanding MS4: Municipal Separate Stormwater Sewer System TPWD: Texas Historical Commission TPDES: Texas Pollutant Discharge Elimination System TPWD: Texas Parks and Wildlife Department 6 STATE DISTRICT COUNTY SH 285			
☐ Extended Detention Basin ☐ Vegetation-Lined Ditches ☐ Sand Filter Systems	MS4: Municipal Separate Stormwater Sewer System MSAT: Mobile Source Air Toxic MBTA: Migratory Bird Treaty Act NOI: Notice of Intent MSACE: U.S. Army Corp of Engineers TPWD: Texas Parks and Wildlife Department TEXAS PHR JIM HOGG SHEET NO.			
☐ Constructed Wetlands	NOI: Notice of Iremination NOI: Notice of Termination NO			

X

VI. Hazardous Materials on Contamination Issues - Continued: V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds 2. Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)? Action Items Required: ☐ No Action Required 1.☑ Under the Migratory Bird Treaty Act (MBTA) of 1918, codified at 16 U.S.C. § 703-712 and as enforced by the USFWS, the proposed construction work will not remove active nests from bridges, trees, ground and other structures during migratory bird nesting season, (February 1st. through October 1st.). If the Contractor needs to perform ☐ Yes X No If "No", then no further action required. work within the right of way during nesting season, a qualified Biologist shall conduct a survey to determine if active nests are present. If present, the Contractor shall maintain a buffer zone around the nest(s) as directed by the Biologist. The buffer zone will be protected from clearing and disturbance until such time as the Biologist has determined that the nest(s) is no longer active. Prior to the nesting season, existing bridges and culverts If "Yes", then TxDOT is responsible for completing an asbestos assessment/inspection. 3. Are the results of the asbestos inspection positive (is asbestos present)? should be treated against migratory bird nesting by utilizing Bird Exclusion Methods. Bird Exclusion Methods should be monitored and maintained throughout the nesting season. Refer to Standard Bird Exclusion Details. If "Yes", then TxDOT must retain a Texas Department of State Health Services (DSHS) licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days 2.🔀 There is the potential for the presence of state-listed species & species of concern in the project area and state law prohibits the taking (incidental or otherwise) of state-listed species. Taking is defined as the collection. hooking, hunting, netting, shooting, or share by any means or devices. If any listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. prior to scheduled abatement activities and/or demolition. If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition. 3. Other Project Specific Actions: The Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and an Asbestos Consultant in order to minimize construction delays and subsequent claims. 1. The removal of unoccupied, inactive nests would be avoided, where practicable. 2. The establishment of active nest during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair would be prevented. VII. Other Environmental Issues 3. The collection, capture, relocation, or transportation of birds, eggs, young, or active nests without a permit Action Items Required: No Action Required would be prohibited. . X Noise 4. Due to increased activity (mating) of reptiles during the spring, construction activities such as clearing and arading, where practicable, would be scheduled outside of the spring (April-May) season. Contractor shall make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and proper maintenance of equipment mufflers. 5. Ground-disturbing activities, where practicable, would be scheduled before October when reptiles become less 2. **X** Air active and may be using burrows within the protected area. Contractor shall practice common dust control techniques such as surface chemical treatment or watering of unpaved road surfaces and vehicle speed reduction shall be implemented to minimize and prevent airborne dust during construction. VI. Hazardous Materials on Contamination Issues Contractor should minimize MSAT by utilizing measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increase use of cleaner burning diesel engines, and other emission limitation techniques, Action Items Required: ☐ No Action Required as appropriate. General (applies to all projects): Comply with the Hazard Communication Act (HCA) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used. Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the HCA. Maintain an adequate supply of on-site spill response materials as indicated in the MSDS. In the event of a spill, take immediate action to mitigate the spill as indicated in the MSDS and in accordance with safe work practices. Contact the TxDOT Pharr District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills. Texas Department of Transportation Contact the Engineer if any of the following are detected: PHARR DISTRICT Dead or distressed vegetation (identified as not normal) • Trash piles, drums, canisters, barrels, etc. • Undesirable smells or odors ENVIRONMENTAL PERMITS. • Evidence of leaching or seepage of contaminant substances ISSUES AND COMMITMENTS Pharr District Contact No. 956-702-6100 Revised 01/30/2017 Any other evidence indicating possible hazardous materials or contamination discovered on site. List of Abbreviations I.Ϫ If potentially hazardous material and/or contaminated media (i.e.: soil, groundwater, surface water, sediment, (FPIC) BMP: Best Management Practice NWP: Nationwide Permit building materials) are unexpectedly encountered during construction, assure that such materials and contamination are handled according to applicable federal and state regulations, cease work in the immediate area and Pre-Construction Notification Project Specific Location Spill Prevention Control and Countermeasure CGP: Construction General Permit CRPe: Contractor Responsible Person Environmental contact the Engineer immediately. Texas Department of State Health Services FEMA: Federal Emergency Management Agency FHWA: Federal Highway Administration MOA: Memorandum of Agreement SW3P: Storm Water Pollution Prevention Plan TCEQ: Texas Commission on Environmental Quality THC: Texas Historical Commission TPDES:Texas Pollutant Discharge Elimination System 6 Memorandum of Understanding

MS4: Municipal Separate Stormwater Sewer System

MSAT: Mobile Source Air Toxic

NOT: Notice of Termination

MBTA: Migratory Bird Treaty Act NOI: Notice of Intent

TPWD: Texas Parks and Wildlife Department

Threatened and Endangered Species

TxDOT: Texas Department of Transportation

USACE: U.S. Army Corp of Engineers USFWS: U.S. Fish and Wildlife Service

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HIGHWAY PROJECT NO. SH 285 COUNTY STATE DISTRICT PHR JIM HOGG TEXAS SHEET NO. CONTROL SECTION JOB 0482 01 036,etc. 351

SHEET 2 OF 2

TPWD BMPs

X

Under Section 12.0011 of the Texas Parks and Wildlife Code. Texas Parks and Wildlife Department (TPWD) is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

The purpose of this section is to provide beneficial management practices (BMP) that should be implemented during construction, and maintenance activities statewide for transportation projects with the goal of avoidance and minimization of impacts to natural resources. Statewide Standard BMP pertain to all fish and wildlife species, including state-listed species and other Species of Greatest Conservation Need (SGCN). Implementing the recommendations as outlined below will improve conservation of species and their habitat.

■ General Design/Construction BMPs

Prior to start of construction, information will be provided to personnel of the potential for all state-listed threatened species or other SGCN to occur within the project area and should be advised of relevant rules and regulations to protect plants, fish, and wildlife.

Contractor should avoid harming all wildlife species if encountered and allow them to safely leave the project site. Due diligence should be used to avoid killing or harming any wildlife species in the implementation of transportation projects.

Contractors should install wildlife exclusion fencing and should examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities.

Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas around wetlands and in riparian areas.

Contractor should use woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.

Project staging areas, stockpiles, temporary construction easements, and other project related sites should be situated in previously disturbed areas to avoid or minimize impacts to sensitive or unique habitats including intact native vegetation, floodplains, riparian corridors, wetlands, playa lakes, and habitat for wildlife species.

When lighting is added, consider wildlife impacts from light pollution and incorporating dark-sky practices into design strategies. Minimize sky glow by focusing light downward, with full cutoff luminaries to avoid light emitting above the horizontal. The minimum amount of night-time lighting needed for safety and security should be used.

■ Vegetation BMPs

Minimize the amount of vegetation cleared, Removal of native vegetation, particularly mature native trees and shrubs should be avoided. Impacted vegetation should be replaced with in-kind on- site replacement /restoration of native vegetation.

It is strongly recommended that trees greater than 12 inches in diameter at breast height (DBH) that are removed be replaced. TPWD/1/2 s experience indicates that for ecologically effective replacement, a ratio of three trees for every one (3:1) lost should be provided to either on-site or off-site. Trees less than 12 inches DBH should be replaced at a 1:1 ratio.

The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species

The use of seed mix that contains seeds from only regional ecotype native species is recommended

☐ Invasive Species BMPs

- \square For all work in water bodies designated as $\frac{3}{32}$ infested $\frac{5}{32}$ /₃₂ positive5/₃₂ for invasive zebra (Dreissena polymorpha) OR quagga mussels (Dreissena bugensis) as well as waters downstream of these lakes, all machinery, equipment, vessels, or vehicles coming in contact with such waters should be cleaned prior to leaving the site to remove any mud, plants, organisms, or debris, water drained (if applicable), and dried completely before use in another water body to prevent the potential spread of invasive mussels.
- Care should be taken to prevent the spread of aquatic and terrestrial invasive plants during construction activities.
 Care should be taken to avoid the spread of aquatic invasive plants such as giant Salvinia (Salvinia molesta), common salvinia (Salvinia minima), hydrilla (Hydrilla verticillata), water hyacinth (Eichhornia spp.), Eurasian watermilfoil (Myriophyllum spicatum), water lettuce (Pistia stratiotes), and alligatorweed (Alternanthera philoxeroides) from infested water bodies into areas not currently infested. All machinery, equipment, vessels, boat trailers, or vehicles coming in contact with waters containing aquatic invasive plant species should be cleaned prior to leaving the site to remove all aquatic plant material and dried completely before use on another water body to prevent the potential spread of invasive plants. Removed plants should be transported for
- disposal in a secure manner to prevent dispersal. Only native or non-invasive plants should be planted. Care should be taken to avoid mowing invasive giant reed (Arundo donax), which spreads by fragmentation, and to clean equipment if inadvertently mowed to prevent spread. If using hay bales for sediment control, use locally grown weed-free hay to prevent the spread of invasive species. Leave the hay bales in place and allow them to break down, as this acts as mulch assisting in revegetation.

☐ Stream Crossinas BMPs

Riparian buffer zones should remain undisturbed.

☐ Dewatering BMPs

☐ Impact avoidance measures for aquatic organisms, including all native fish and freshwater mussel species, regardless of state-listing status, should be considered during project planning and construction activities.

☐ Wildlife Crossing BMPs

☐ Incorporate wildlife crossings with fencing, particularly in areas that bisect wildlife travel corridors or seasonal movement routes to avoid further habitat fragmentation and minimize wildlife-vehicle interactions.

☐ Rare Plant BMPs

Best Management Practice

Memorandum of Agreement

FEMA: Federal Emergency Management Agency FHWA: Federal Highway Administration

Memorandum of Understanding

CGP: Construction General Permit CRPe: Contractor Responsible Person Environmental

MS4: Municipal Separate Stormwater Sewer System

Texas Department of State Health Services

Avoid impacts and minimize unavoidable impacts. Plant locations should be protected with temporary barrier fencing and contractors should be instructed to avoid protected areas. Conducting construction outside of the growing season or after a plant has produced mature fruit is the preferred way to avoid/minimize impacts to SGCN plant populations. Staging areas, stockpiles, and other project related sites on TxDOT ROW should not impact SGCN plant populations. After construction begins, minimize herbicide use near SGCN plant populations (if possible, use hand-held spot sprayers, several meters from rare plants, on still or days with little wind).

Pharr District Contact No. 956-702-6100

List of Abbreviations

MSAT: Mobile Source Air Toxic

MBTA: Migratory Bird Treaty Act NOI: Notice of Intent NOI: Notice of Termination

PCN: Pre-Construction Notification
PSL: Project Specific Location

SW3P: Storm Water Pollution Prevention Plan

NWP: Nationwide Permit

☐ Rare Plants BMPs (Continued)

If there are unintended impacts to SGCN populations, these impacts should be reported to TPWD Transportation Staff. During project period, conduct work during times of the year when plants are dormant and/or conditions minimize disturbance of the habitat.

X Bird BMPs

- Avoid vegetation clearing activities during the general bird nesting season, February 15th to October 1st to minimize adverse impacts to birds.
- Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.
- Minimize extended human presence near nesting birds during construction and maintenance activities. Protect sensitive habitat areas with temporary barriers or fencing to limit human foot- traffic and off-road vehicle use to alert and discourage contractors from causing any unintentional impacts.
- Minimize construction noise above ambient levels during general bird nesting season to minimize adverse impacts
- Minimize construction lighting during the general bird nesting season by scheduling work activities between dawn

☐ Rookeries BMPs

- ☐ In general, nesting dates for herons and egrets range from early February to late August in Texas, depending on the species. Great blue herons (GBHE) (Ardea herodis) are usually the first to nest. When GBHE get disrupted from the nest and abandon nesting, then the other species of herons and egrets may not attempt to nest at the colony that year. If rookeries are encountered, avoid and minimize
- disturbance during nesting to protect rookery species and their habitat. Vegetation clearing in a primary buffer area of 300 meters
- (984 feet) from a rookery or heronry periphery should be avoided. Utilizing areas that have already been cleared within this buffer area may be acceptable depending on site-specific characteristics. Additionally, human foot-traffic or machinery use should not occur within this buffer area during the nesting season.
- Clearing activities or construction using heavy machinery in a secondary buffer area of 1000 meters (3281 feet) from the heronry periphery should be avoided during the breeding season (courting and nesting).

Texas Department of Transportation PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS TPWD BMPs

Revised 02/24/2022

SHEET 1 OF 3

[CEQ: Texas Commission on Environmental Quality THC: Texas Historical Commission TPDES:Texas Pollutant Discharge Elimination System IPWD: Texas Parks and Wildlife Department [xDOT: Texas Department of Transportation T&E: Threatened and Endangered Species USACE:U.S. Army Corp of Engineers USFWS:U.S. Fish and Wildlife Service Spill Prevention Control and Countermeasure

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285 STATE PHR JIM HOGG TEXAS SHEET NO. CONTROL SECTION JOB 0482 01 352 036,etc.

Memorandum of Agreement

Memorandum of Understanding

Municipal Separate Stormwater Sewer System

PCN: Pre-Construction Notification
PSL: Project Specific Location

SW3P: Storm Water Pollution Prevention Plan

Spill Prevention Control and Countermeasure

PHR

SECTION

01

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T&E: Threatened and Endangered Species

USACE: U.S. Army Corp of Engineers USFWS: U.S. Fish and Wildlife Service

JIM HOGG

JOB

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SHEET NO.

353

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Aguatic Amphibian and Reptile BMP (Continued)

If gutters and curbs are part of the roadway design, install autters that do not include the side box inlet and include sloped (i.e., mountable) curbs to allow small animals to leave roadway. If this modification to the entire curb system is not possible, install sections of sloped curb on either side of the storm water drain for several feet to allow small animals to leave the roadway. Priority areas for these design recommendations are those with nearby wetlands or other aquatic features.

For projects that require acquisition of additional ROW and work within that new ROW is in water or will permanently impact a water feature. implement BMP for projects within existing ROW above plus those below:

- For sections of roadway adjacent to wetlands or other aquatic features. install wildlife barriers that prevent climbing. Barriers should terminate at culvert openings in order to funnel animals under the road. The barriers should be of the same length as the adjacent feature or 80 feet long in each direction, or whichever is the lesser of the two.
- For culvert extensions and culvert replacement/installation, incorporate measures to funnel animals toward culverts such as concrete wingwalls and barrier walls with overhangs.
- When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of terrestrial or aquatic wildlife through the water feature. Biotechnical streambank stabilization methods using live native vegetation, or a combination of vegetative and structural materials should be used.

▼ Terrestrial Amphibian and Reptile BMP

- For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling
- Avoid or minimize disturbing or removing cover objects, such as downed trees, rotting stumps, brush piles, and leaf litter. If avoidance or minimization is not practicable, consider removing cover objects prior to the start of the project and
- replace them at project completion.

 Examine heavy equipment stored on site before use, particularly after rain events when reptile and amphibian movements occur more often, to ensure use will not harm
- individuals that might be seeking temporary refuge.

 Due to increased activity (mating) of reptiles and amphibian during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (March-May) season.

Also, timing ground disturbing activities before October when reptiles and amphibians become less active and may be using

- burrows in the project area is also encouraged.

 If Texas tortoises (Gopherus berlandieri) or box turtles (Terrepene spp.) are present in a project area, they should be removed from the area and relocated between 100 and 200 meters from the project area. After removal of the individuals, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude reentry by turtles, tortoises, and other reptiles. The exclusion fence should be constructed and maintained as follows:
 - The exclusion fence should be constructed with metal flashing or drift fence material.
 - Rolled erosion control mesh material should not be used.
 - The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
 - The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.

▼ Terrestrial Amphibian and Reptile BMP (Continued)

- 🛮 After project is complete, revegetate disturbed areas with an appropriate locally sourced native seed mix. If erosion control blankets or mats will be used, the product should not contain nylon netting, but should only contain loosely woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.
- Black-spotted newt/Mexican Burrowing toad/ Mexican treefrog/ Strecker's chorus from/White-Lipped from/Woodhouse's toad
 - Aquatic Amphibian and Reptile BMP Terrestrial Amphibian and Reptile BMP Water Quality BMP Veaetation BMP

X Sheep Frog

Minimize disturbance to burrows or downed woody debris Aquatic Amphibian and Reptile BMP Terrestrial Amphibian and Reptile BMP Water Quality BMP Vegetation BMP

South Texas Siren (Large Form)

- Minimize impacts to warm, shallow waters with vegetative cover such as ponds and ditches
- Aquatic Amphibian and Reptile BMP Water Quality BMP

Black-striped snake/ Eastern box turtle/Northern cat-eyed snake/Plateau spot-tailed earless lizard/ Reticulate collared lizard/ Slender glass lizard/ Speckler racer/Tamaulipan spot-tailed earless lizard/ Texas Indigo snake/ Western box turtle/Western hognose

- - Terrestrial Amphibian and Reptile BMP Vegetation BMP

☐ Rio Grande River Cooter

Aquatic Amphibian and Reptile BMP Water Quality BMP

X Texas Horned Lizard

- 🛮 Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs).
- Terrestrial Amphibian and Reptile BMP Vegetation BMP

X Texas Tortoise

- Utility trenches should be covered overnight or visually inspected before filling to avoid burial of the species
- Terrestrial Amphibian and Reptile BMP Vegetation BMP

Pharr District Contact No. 956-702-6100

List of Abbreviations

Best Management Practice MSAT: Mobile Source Air Toxic

CGP: Construction General Permit CRPe: Contractor Responsible Person Environmental Texas Department of State Health Services

- FEMA: Federal Emergency Management Agency FHWA: Federal Highway Administration MOA: Memorandum of Agreement
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Revised 02/24/2022

[xDOT: Texas Department of Transportation T&E: Threatened and Endangered Species USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service

OTHER PERTINENT INFORMATION

<u>Trifold Available</u>
Ocelot information Pelican information Ashy dogweed

☐ Stockcards Available

H	Mitigatory Texas Tor Harvester	y Biro	d Tre	eaty /	4ct
	Harvester	Ants	and	Horn	Lizards

Texas Department of Transportation PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS TPWD BMPs

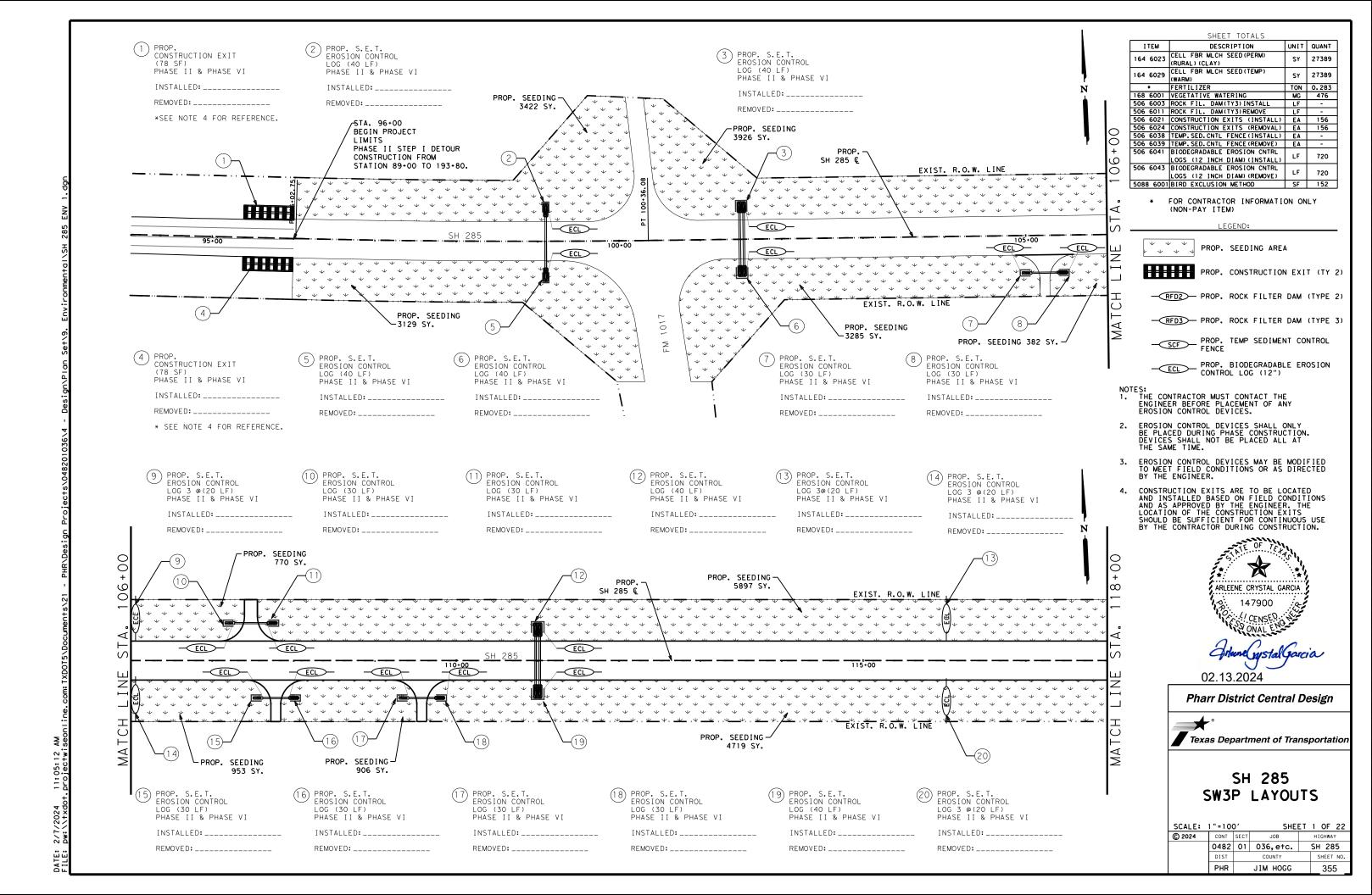
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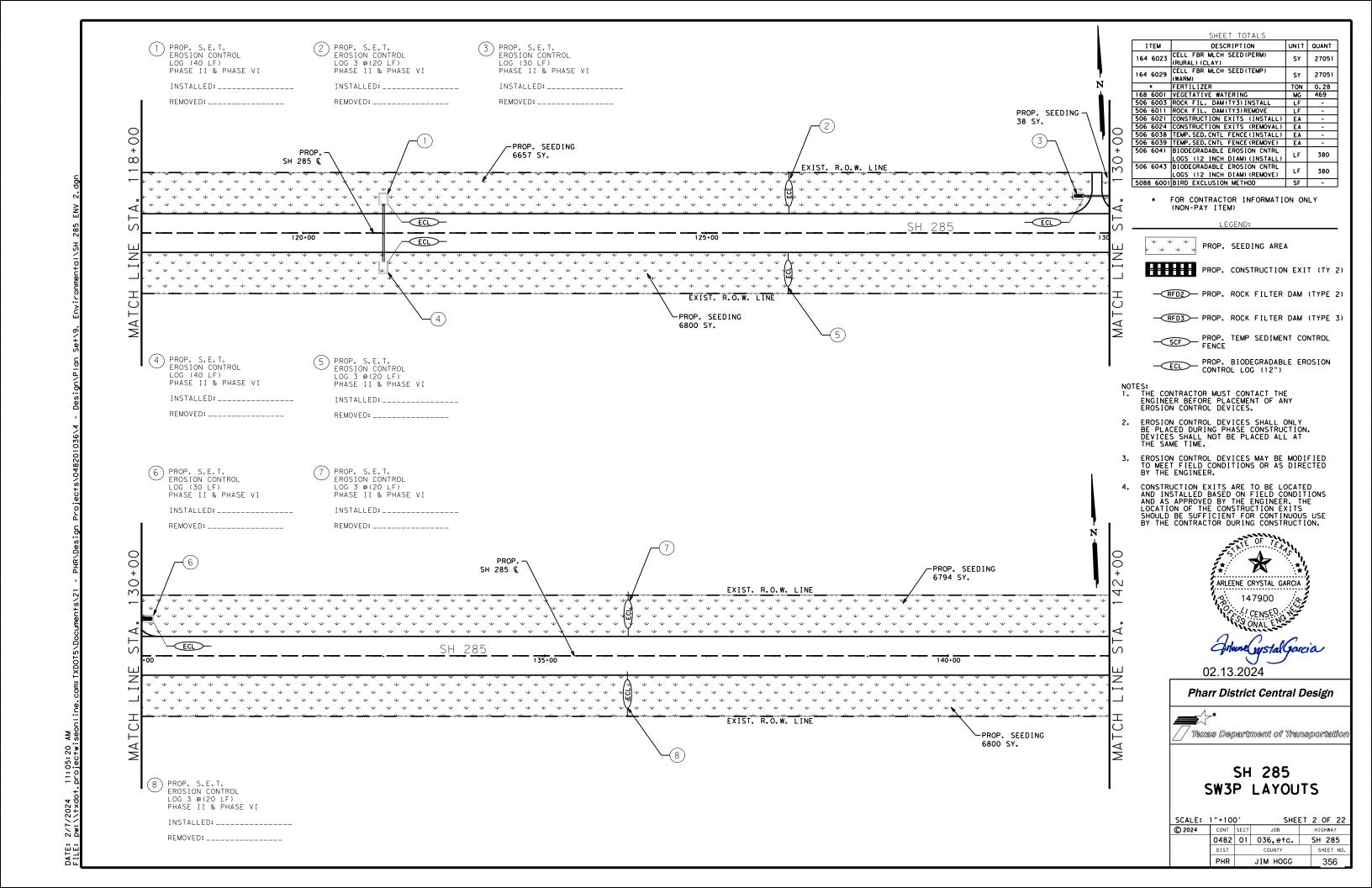
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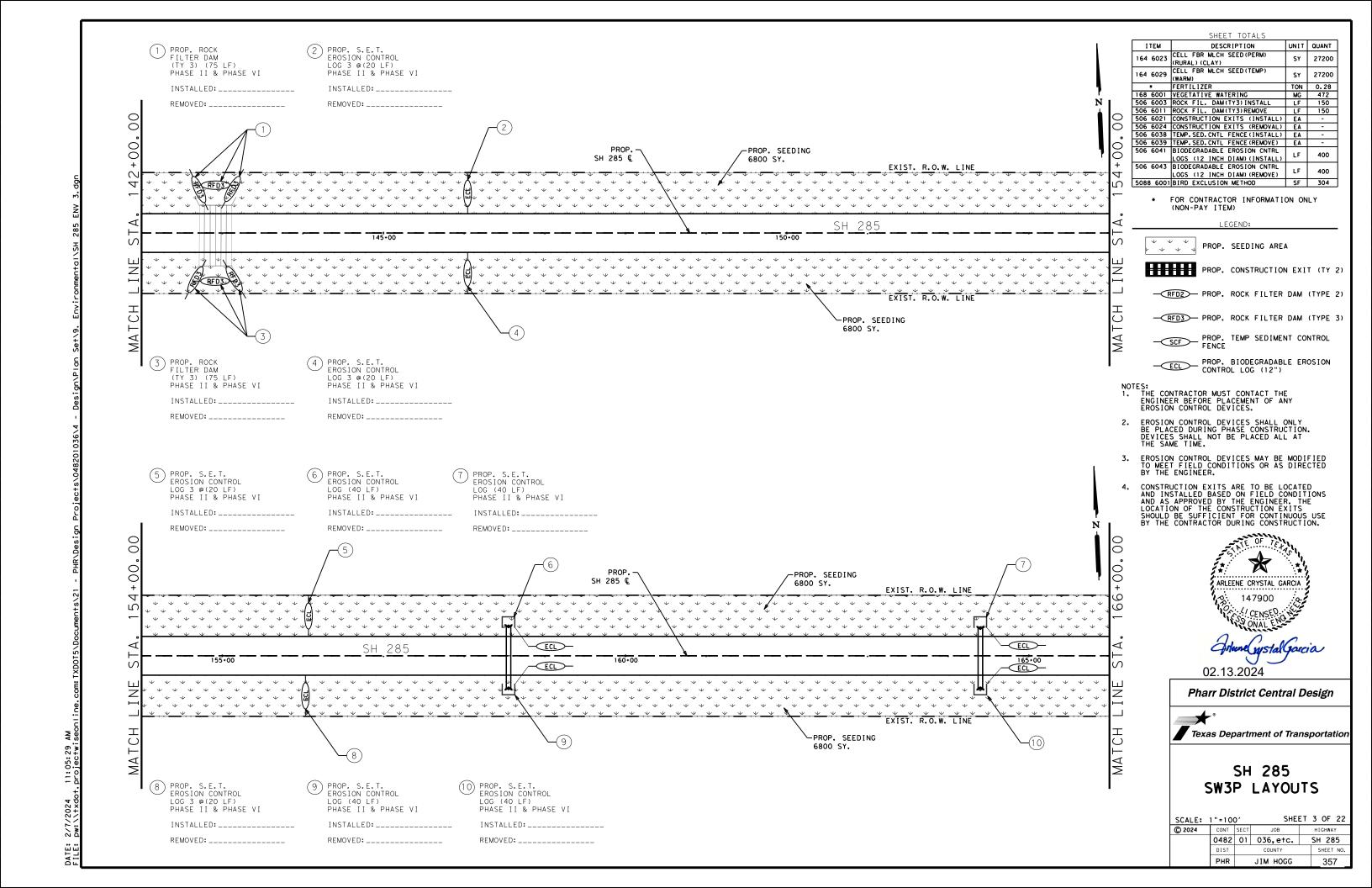
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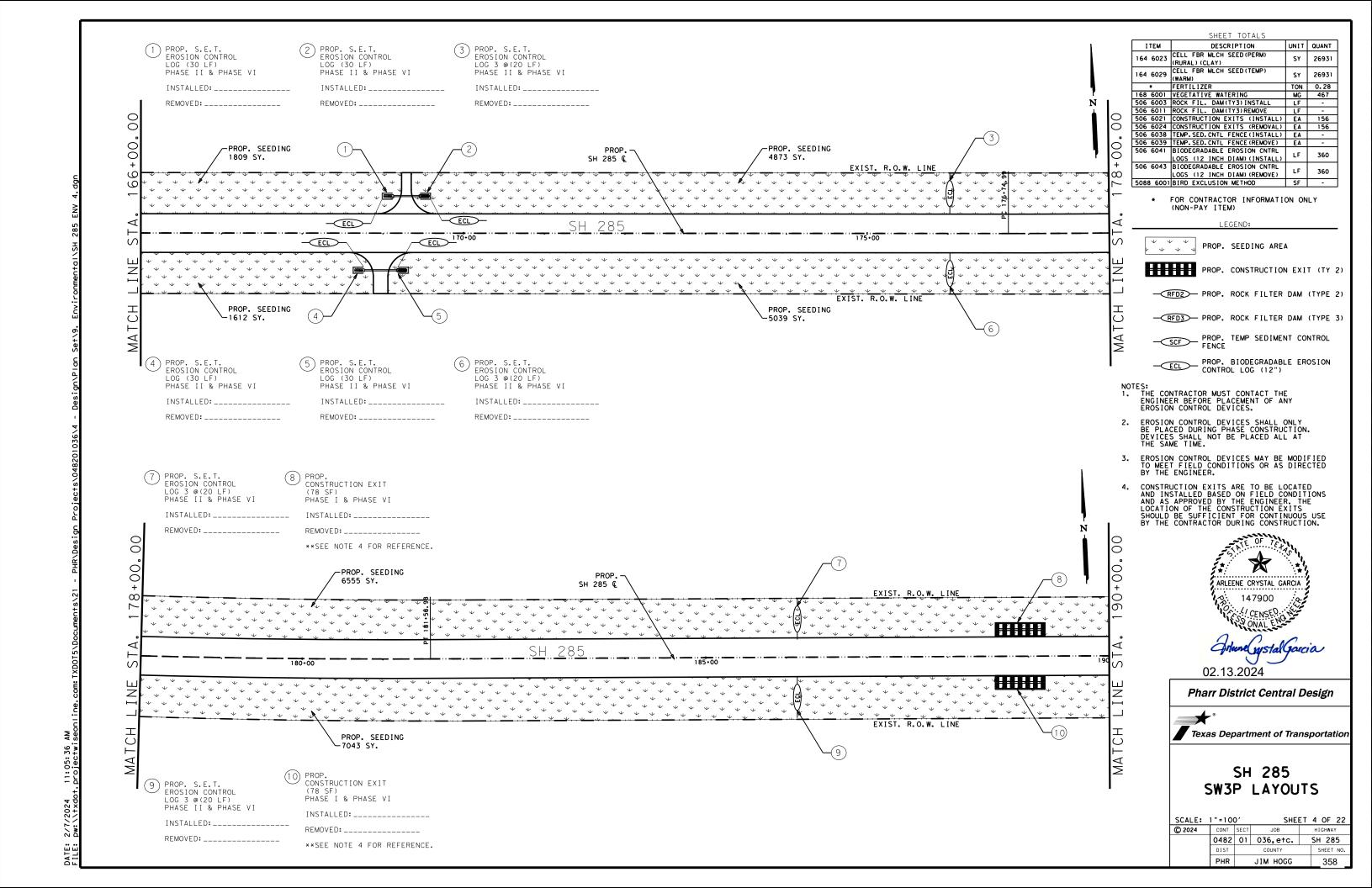
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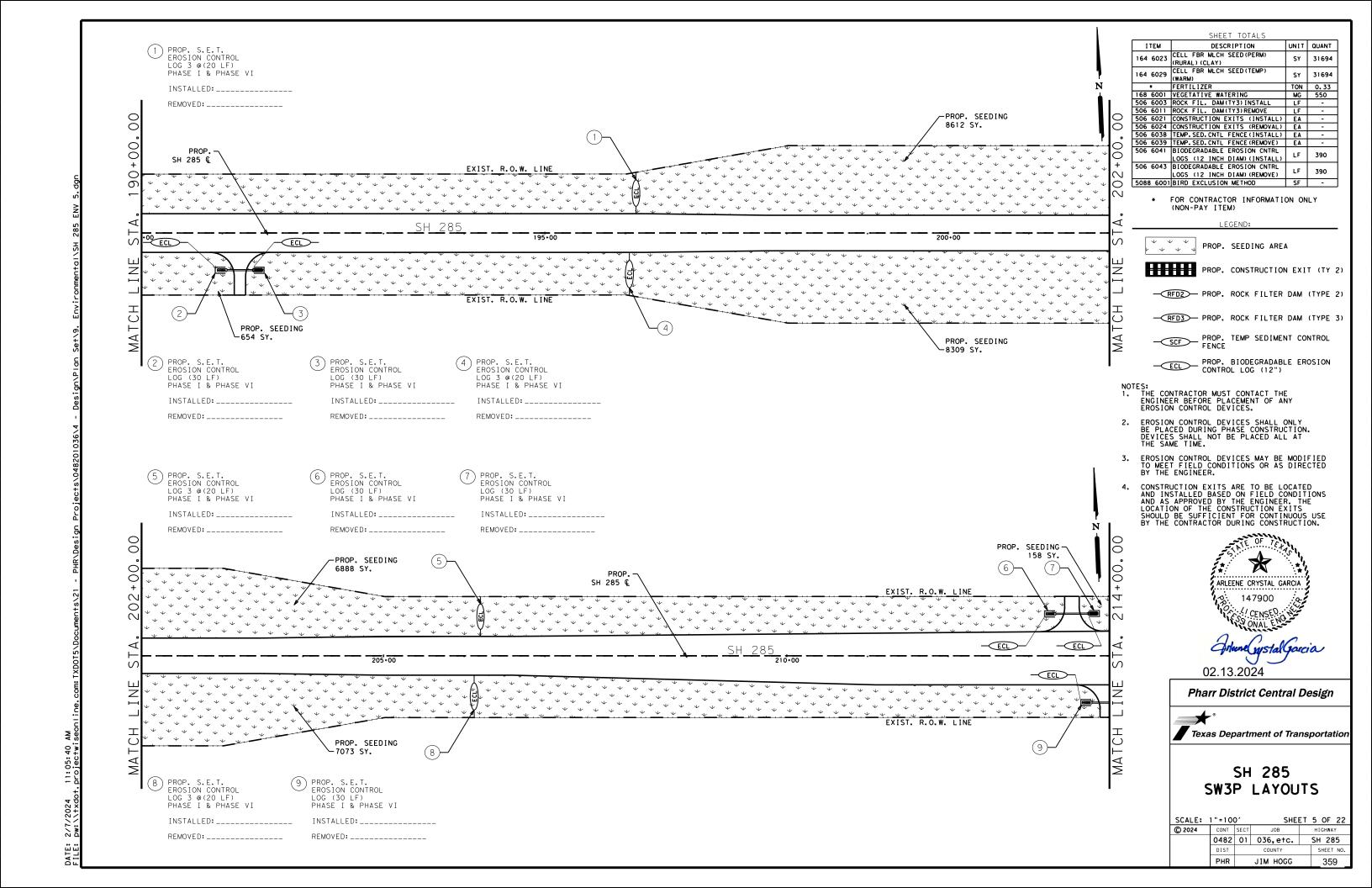
STATE PHR JIM HOGG TEXAS SHEET NO. CONTROL SECTION JOB 0482 01 036,etc. 354

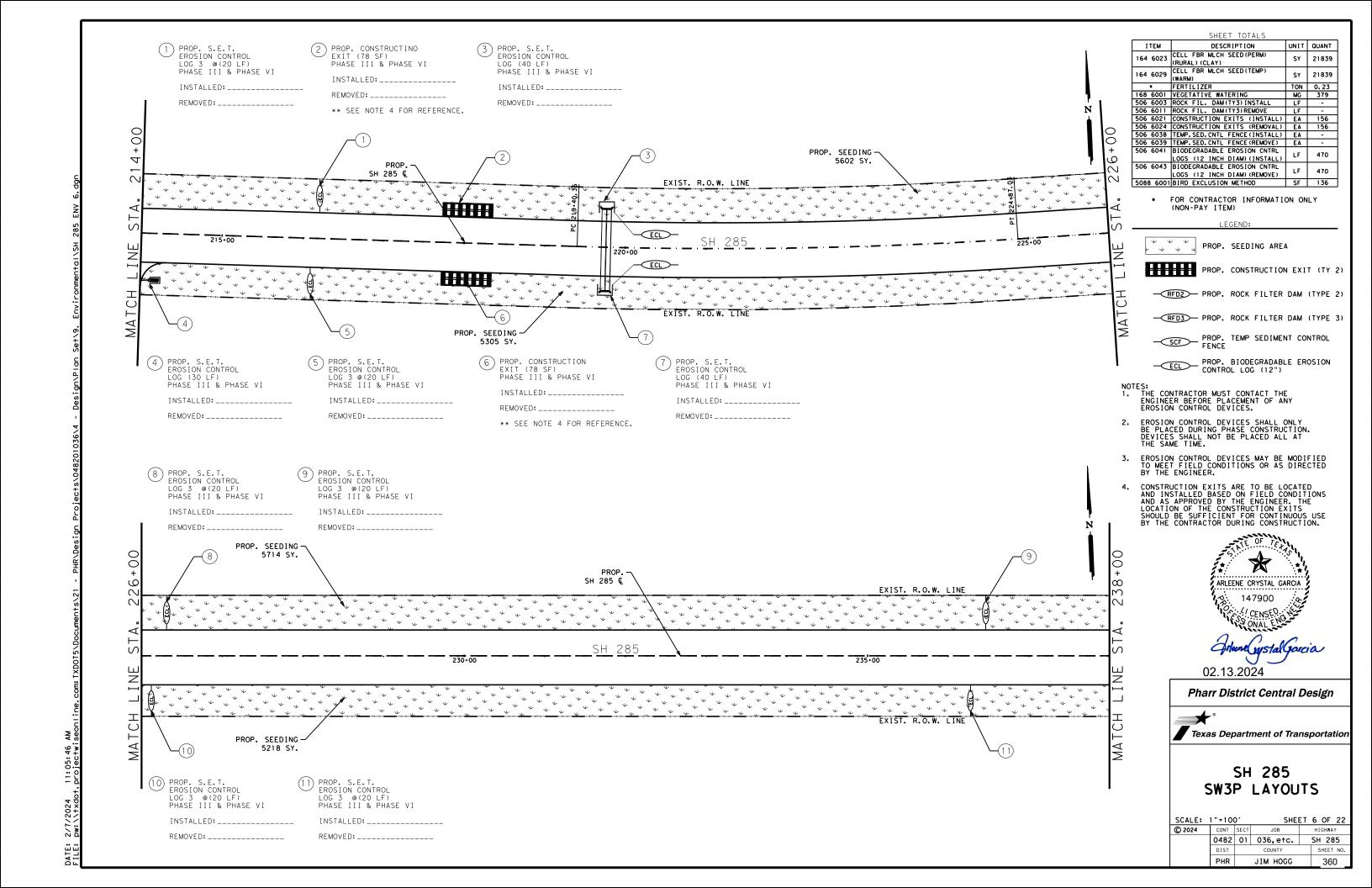


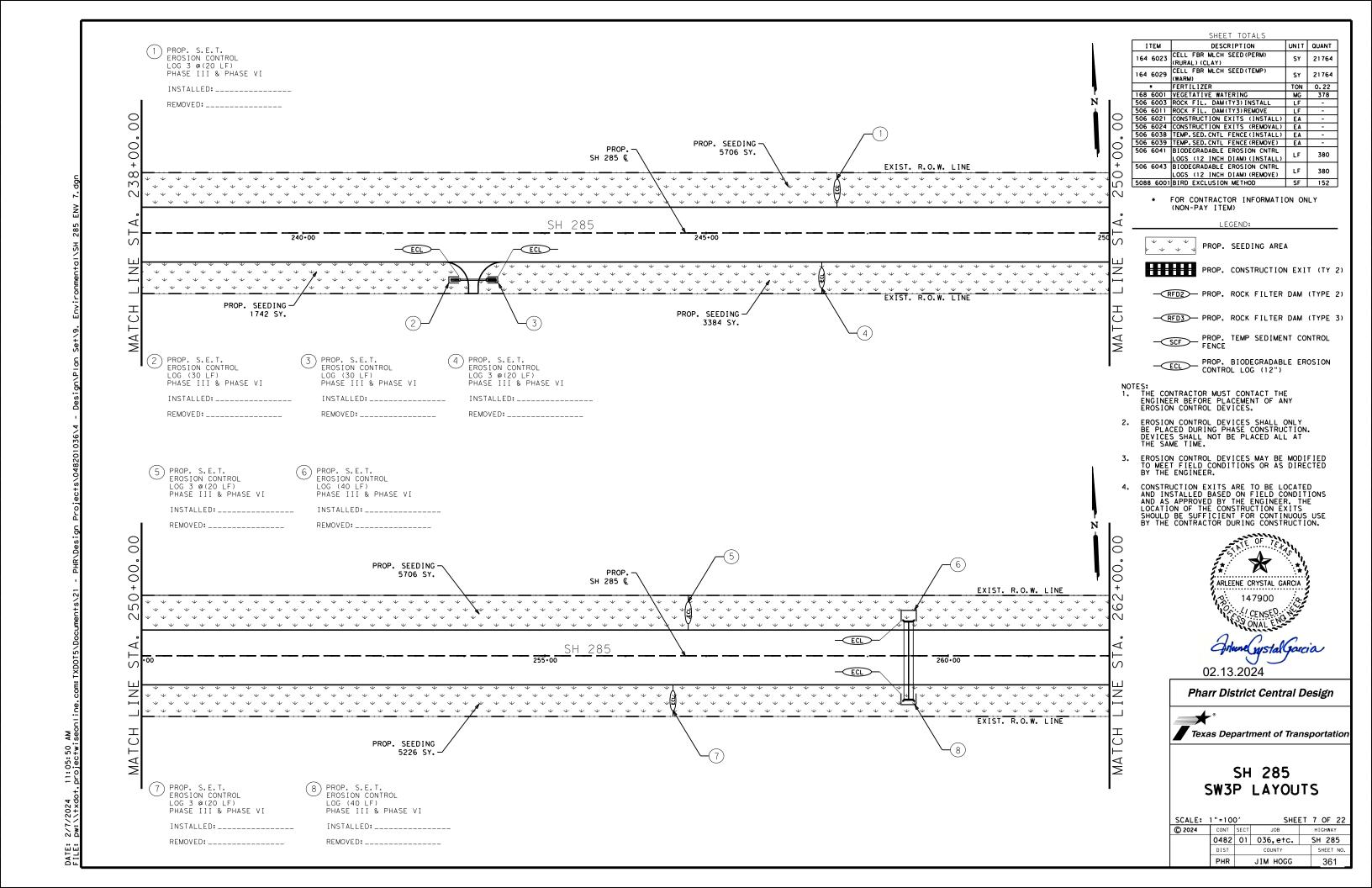


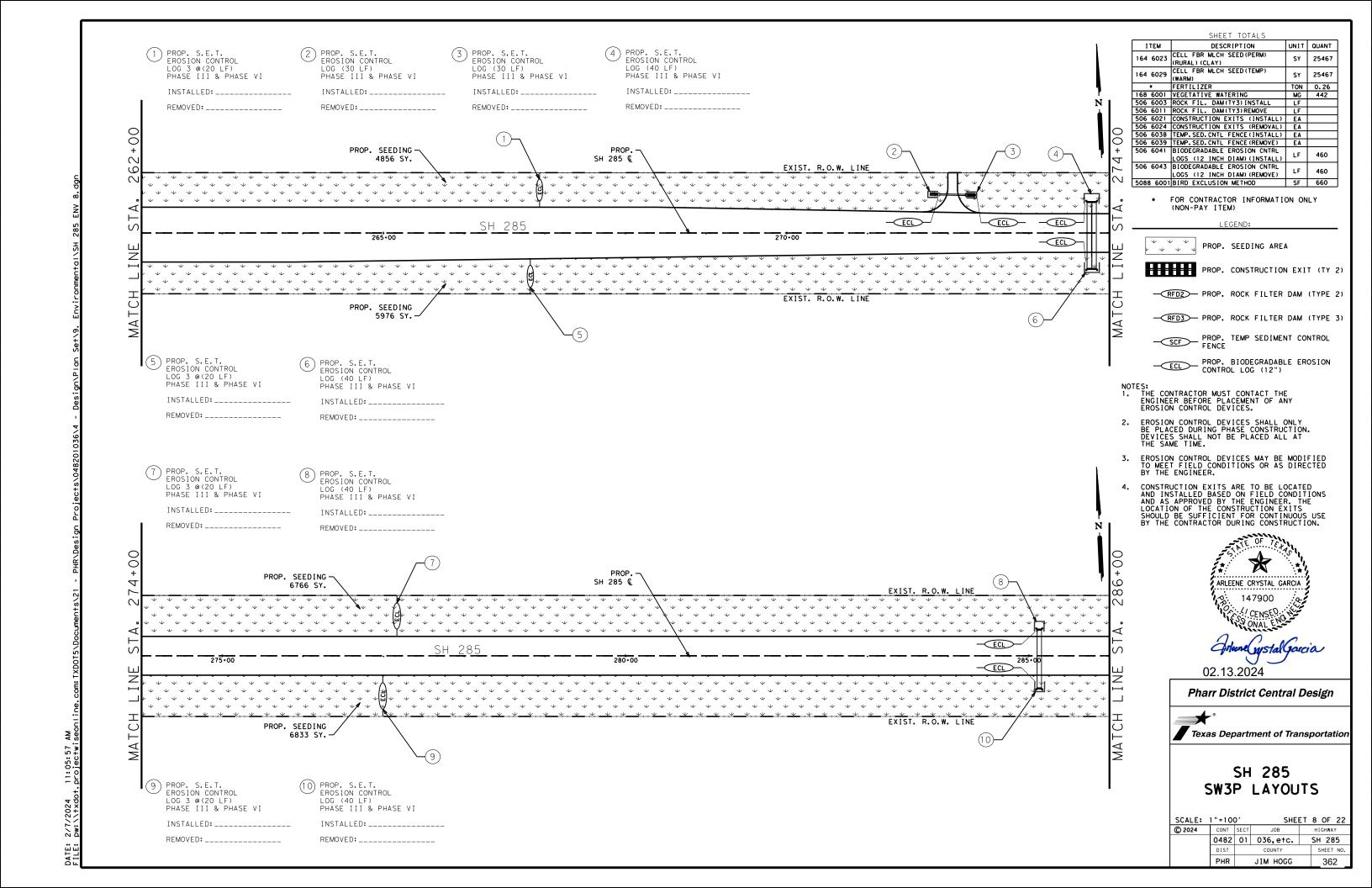


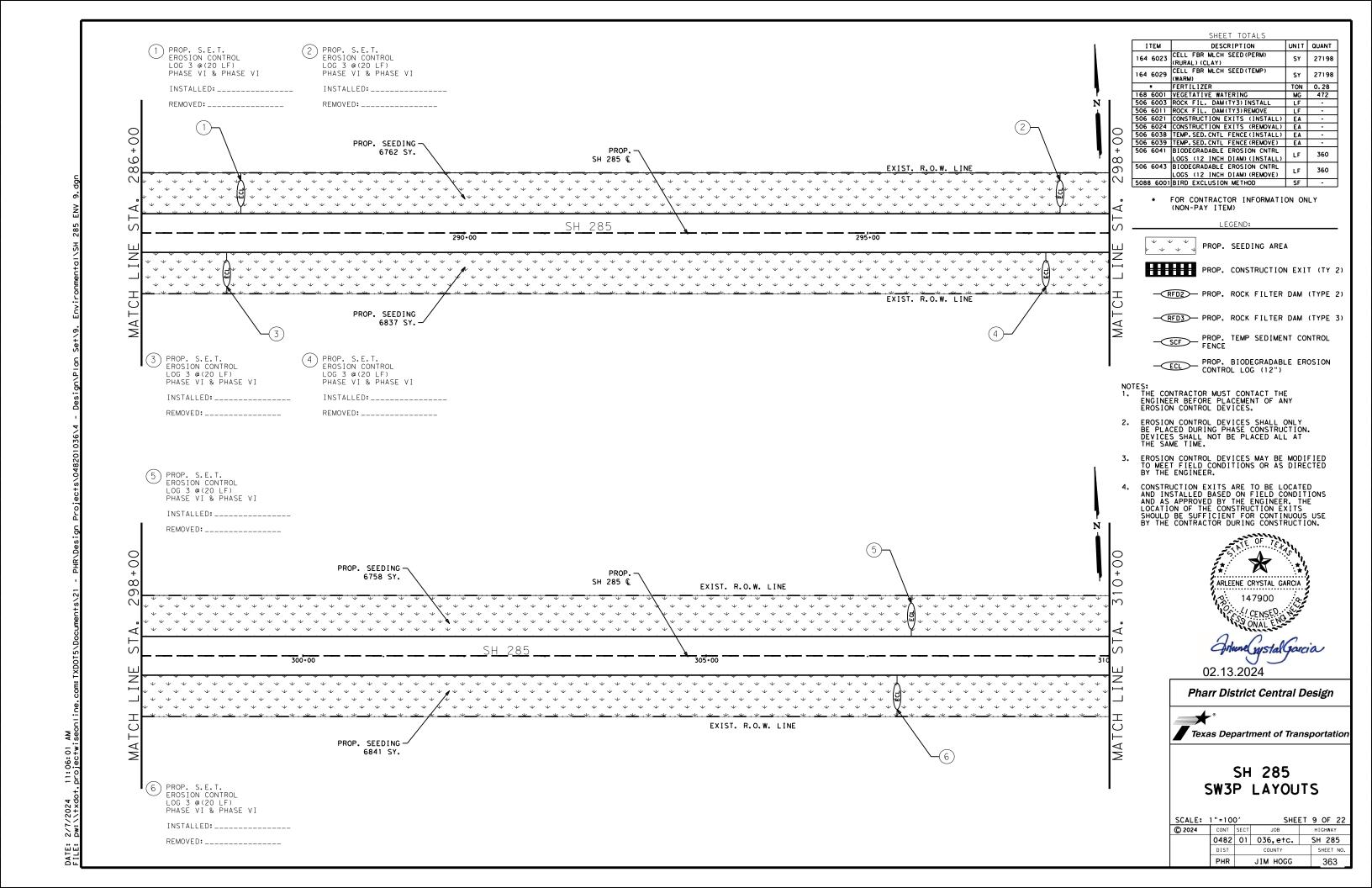


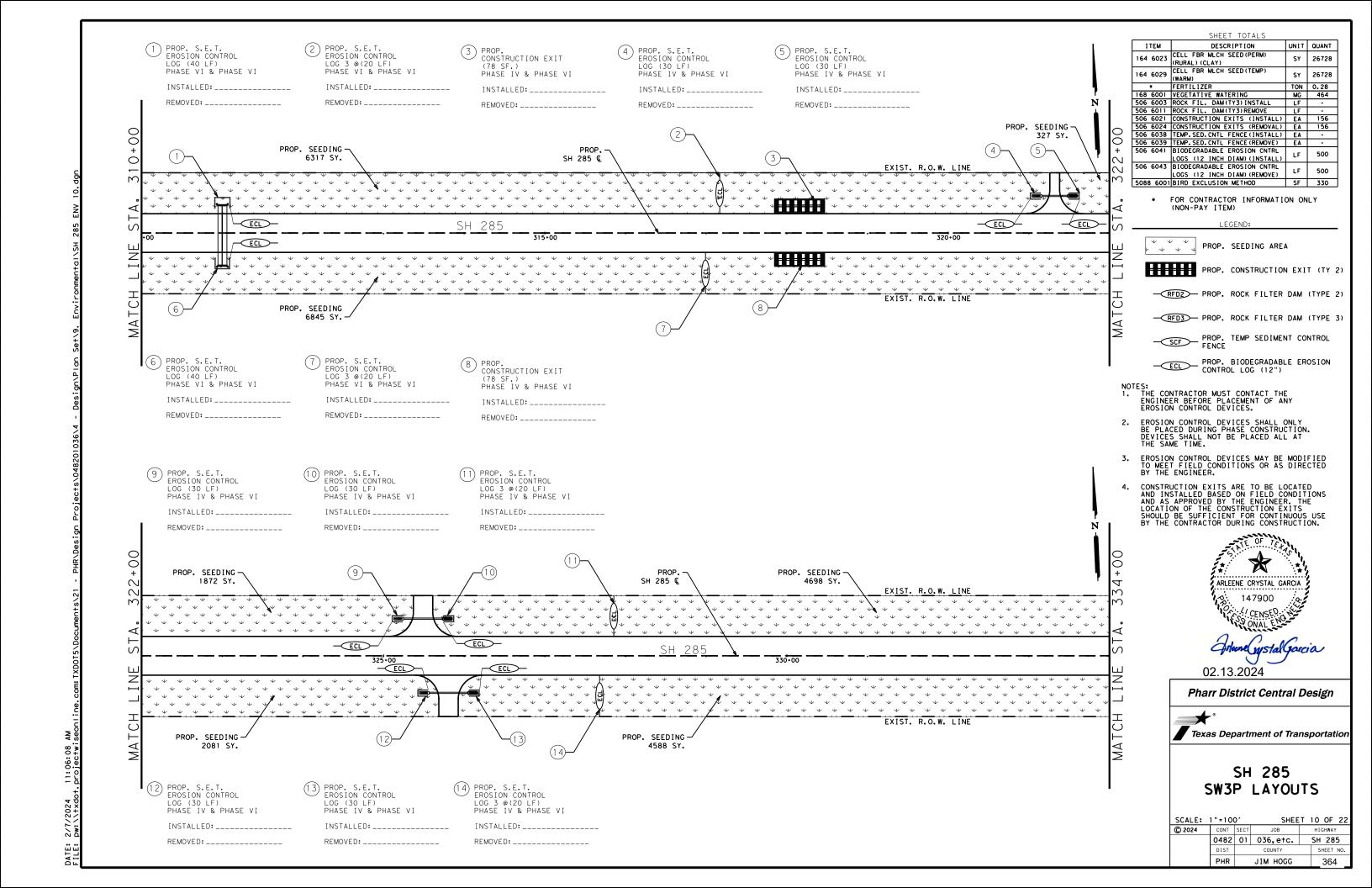


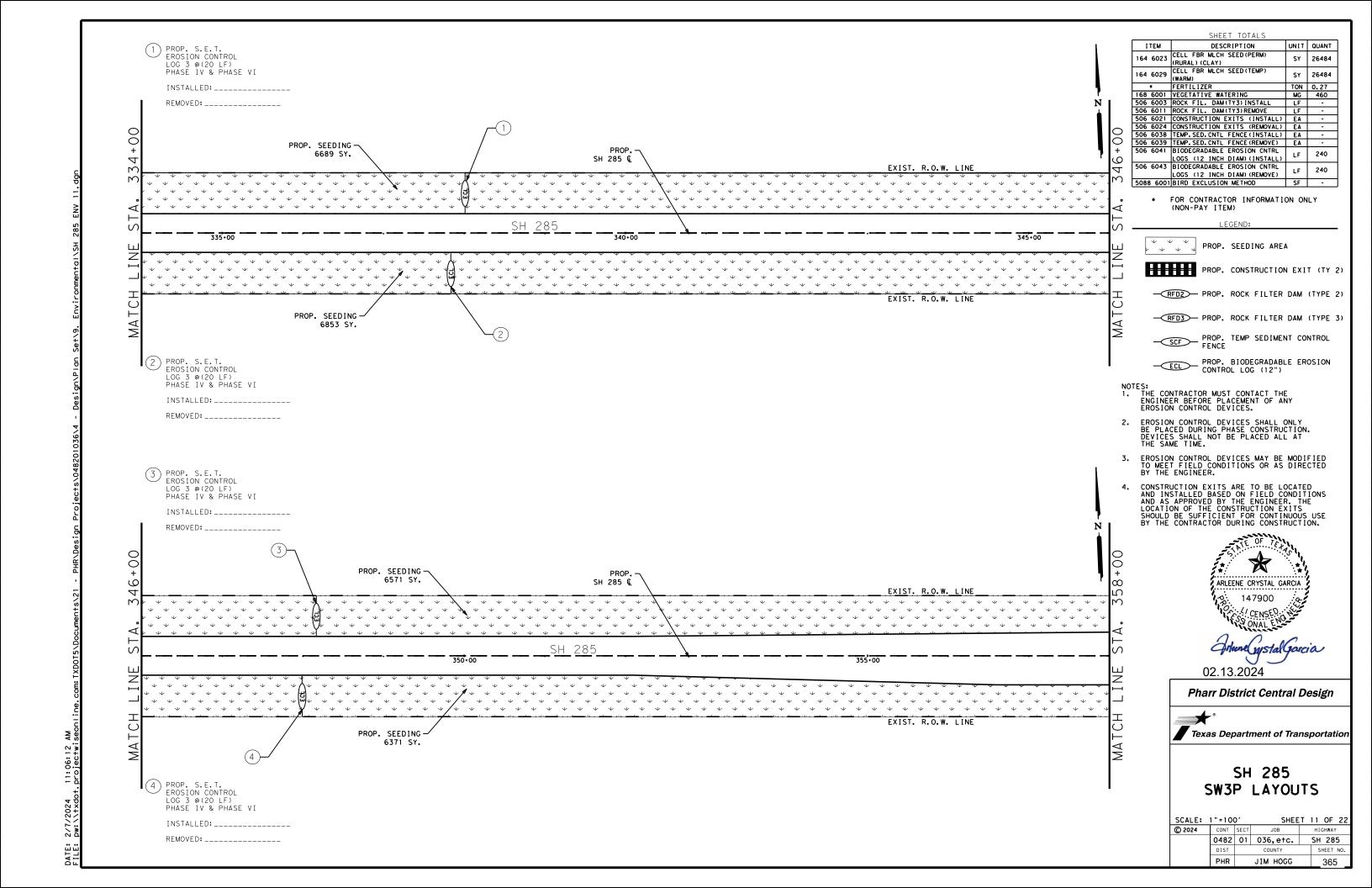


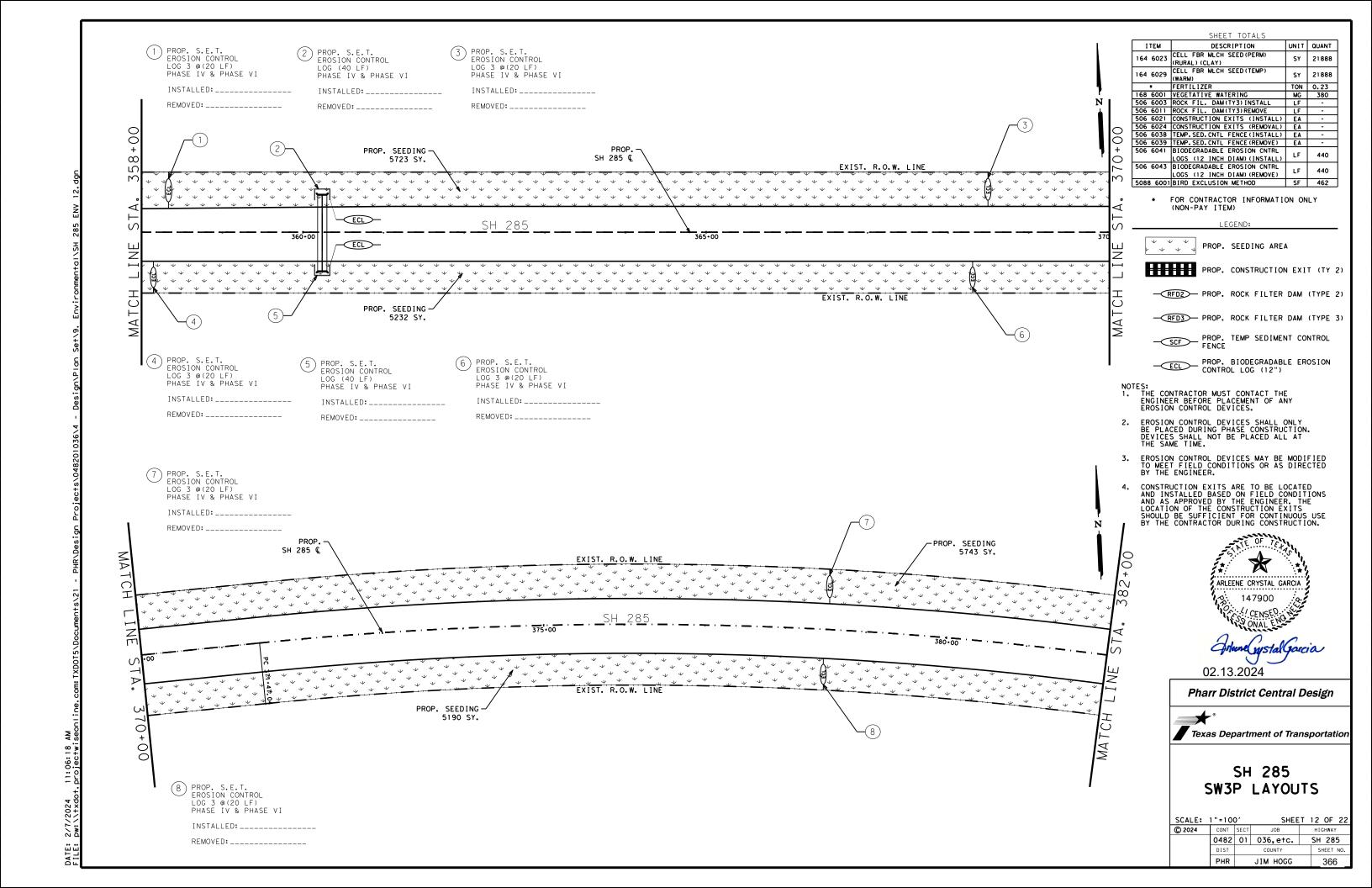


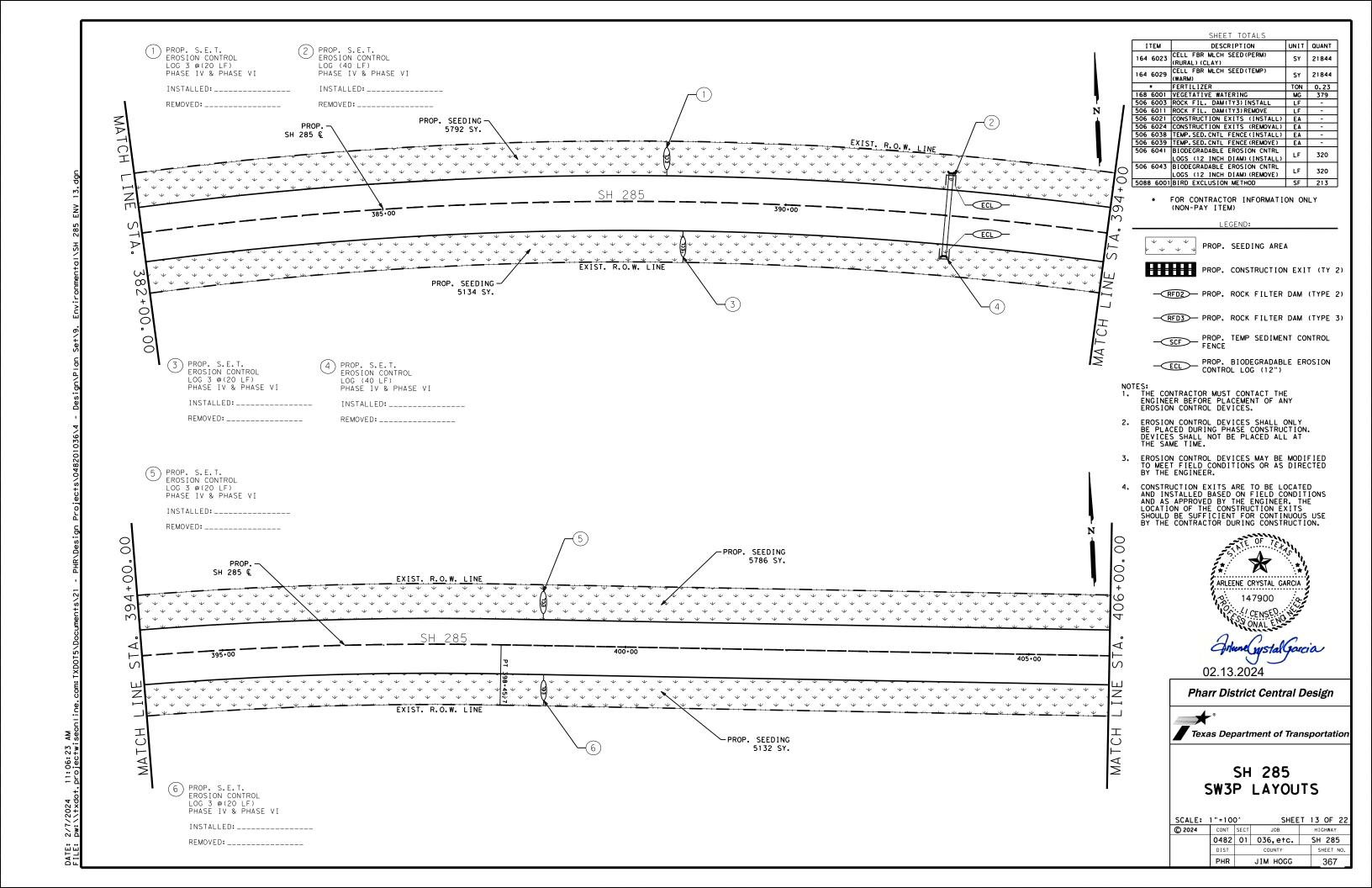


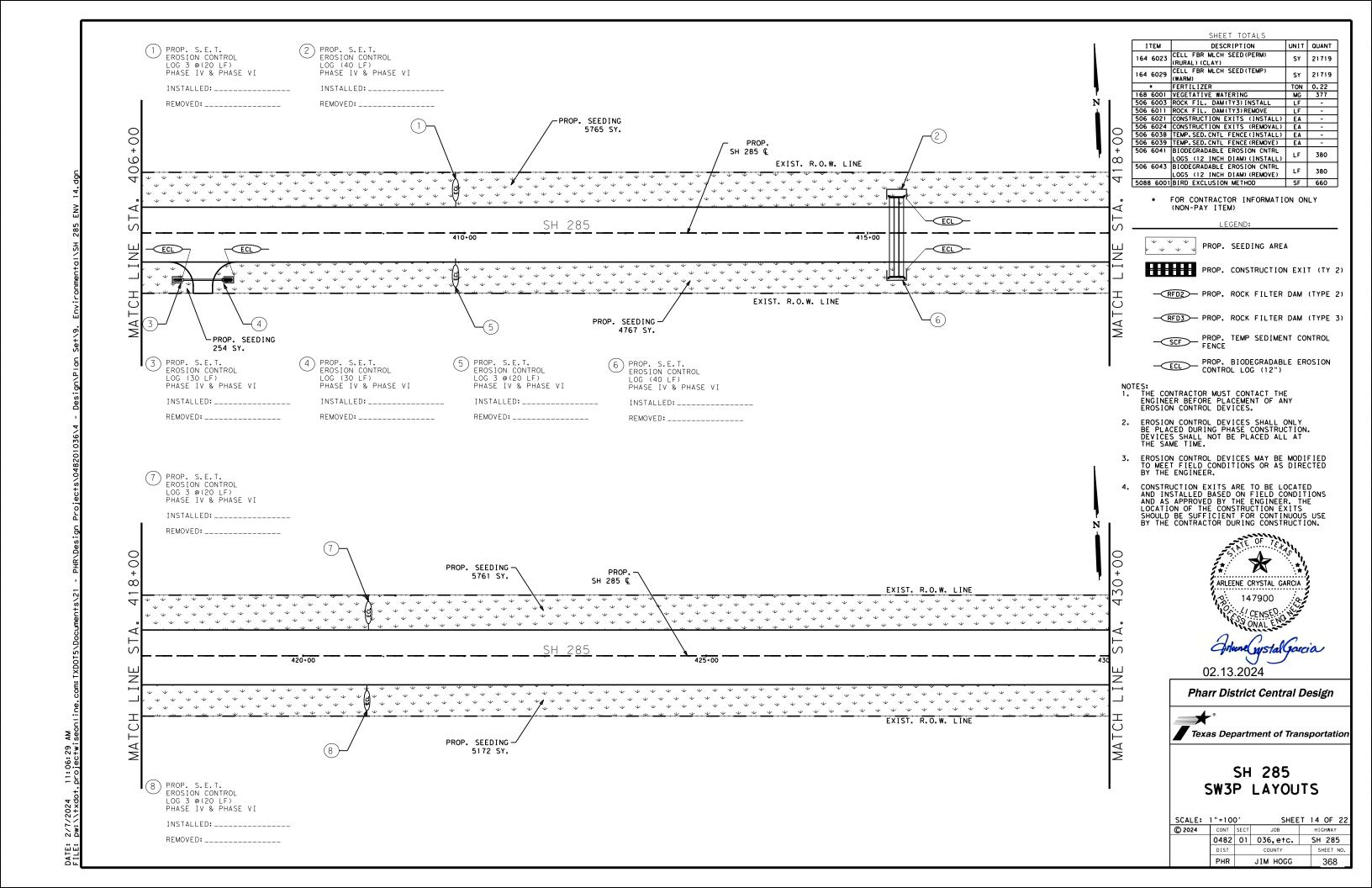


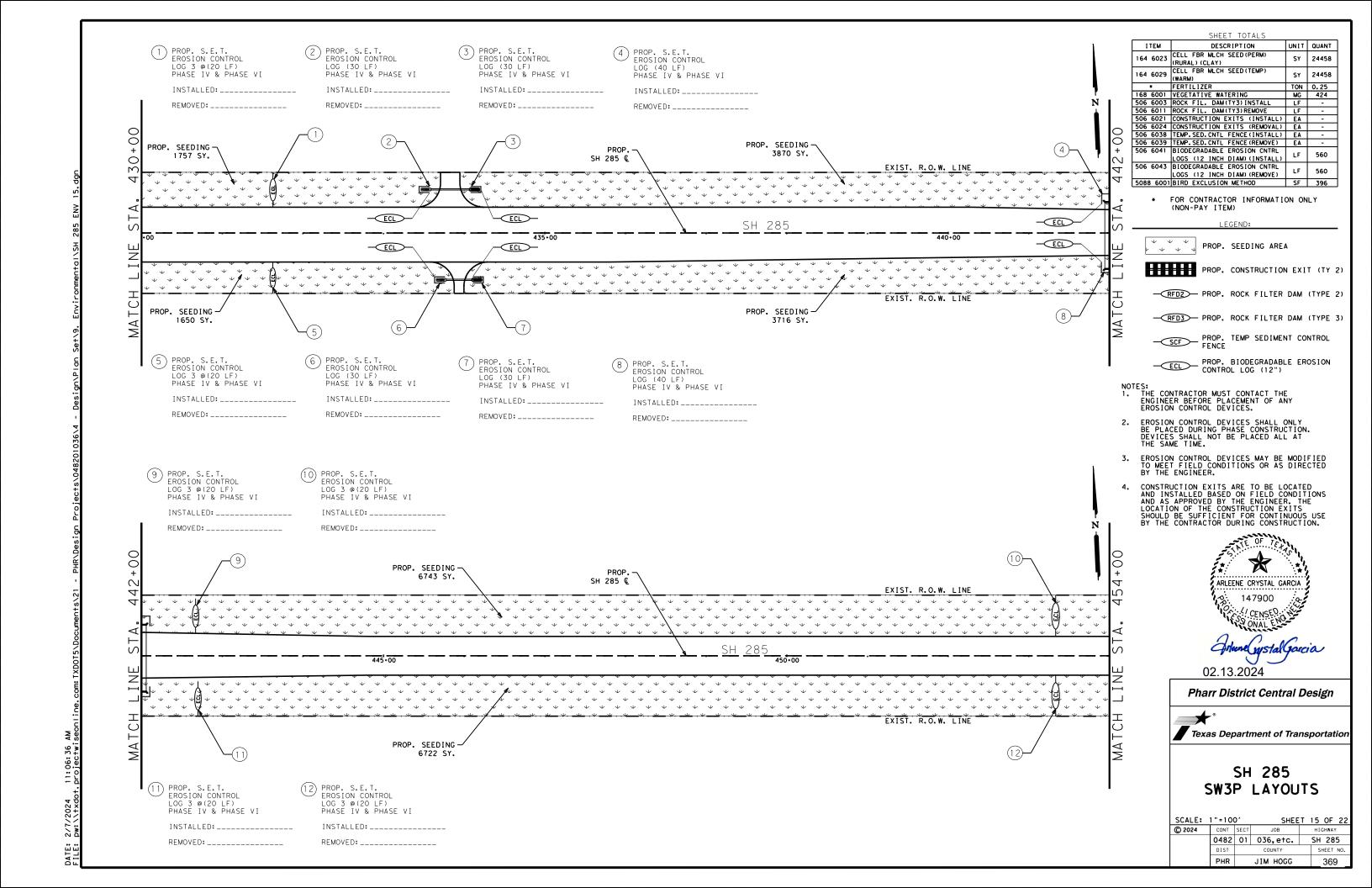


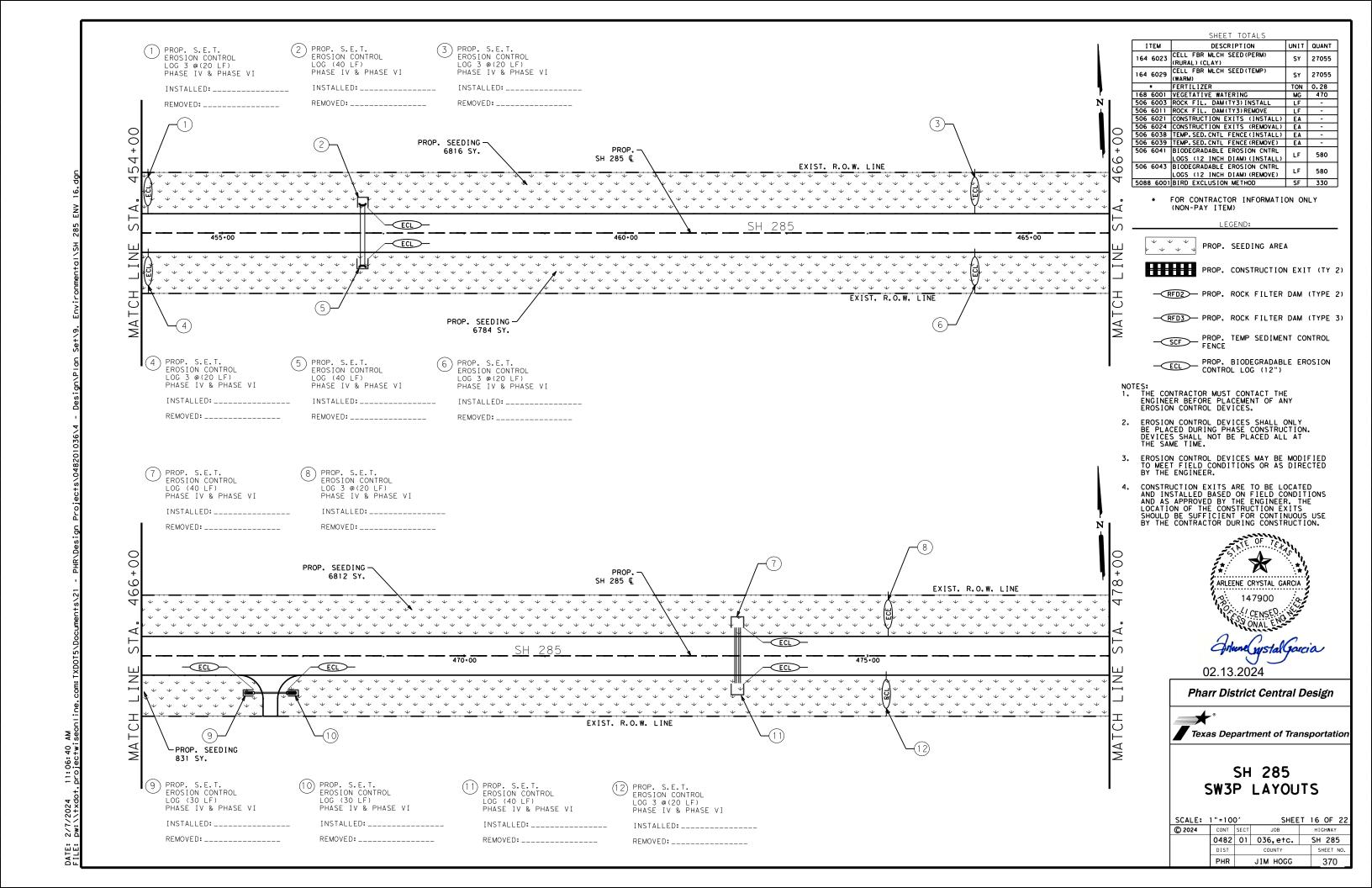


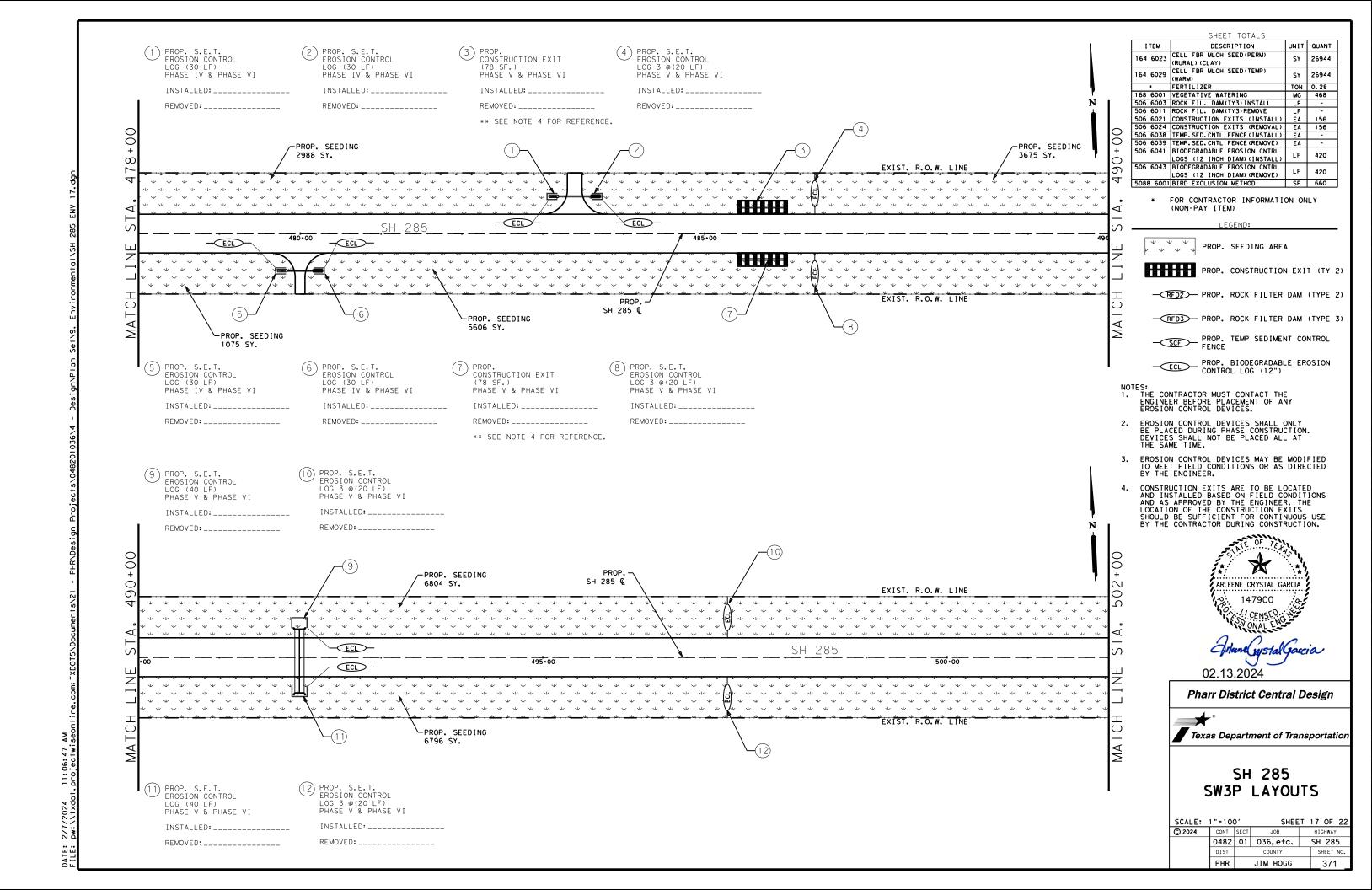


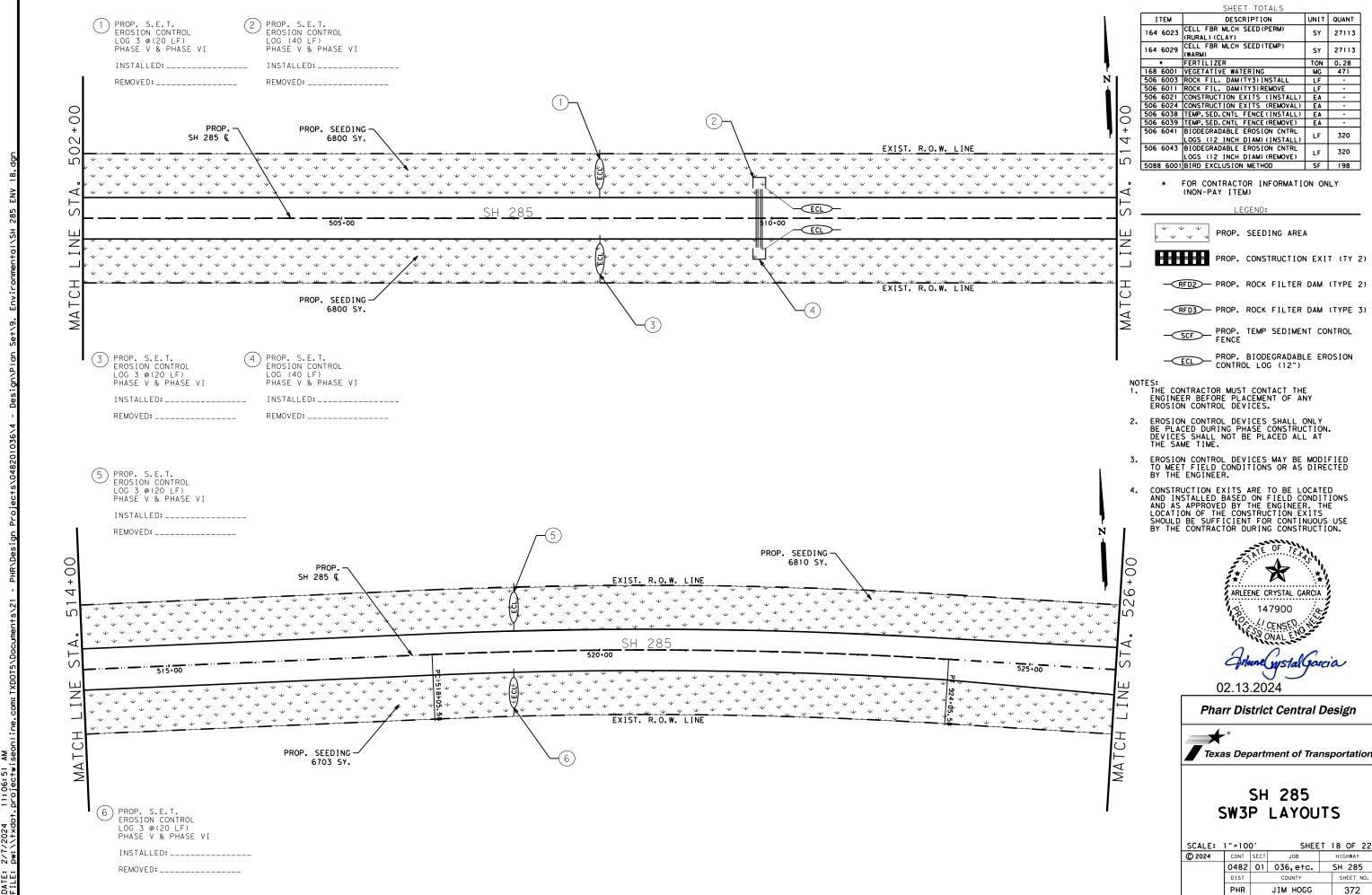


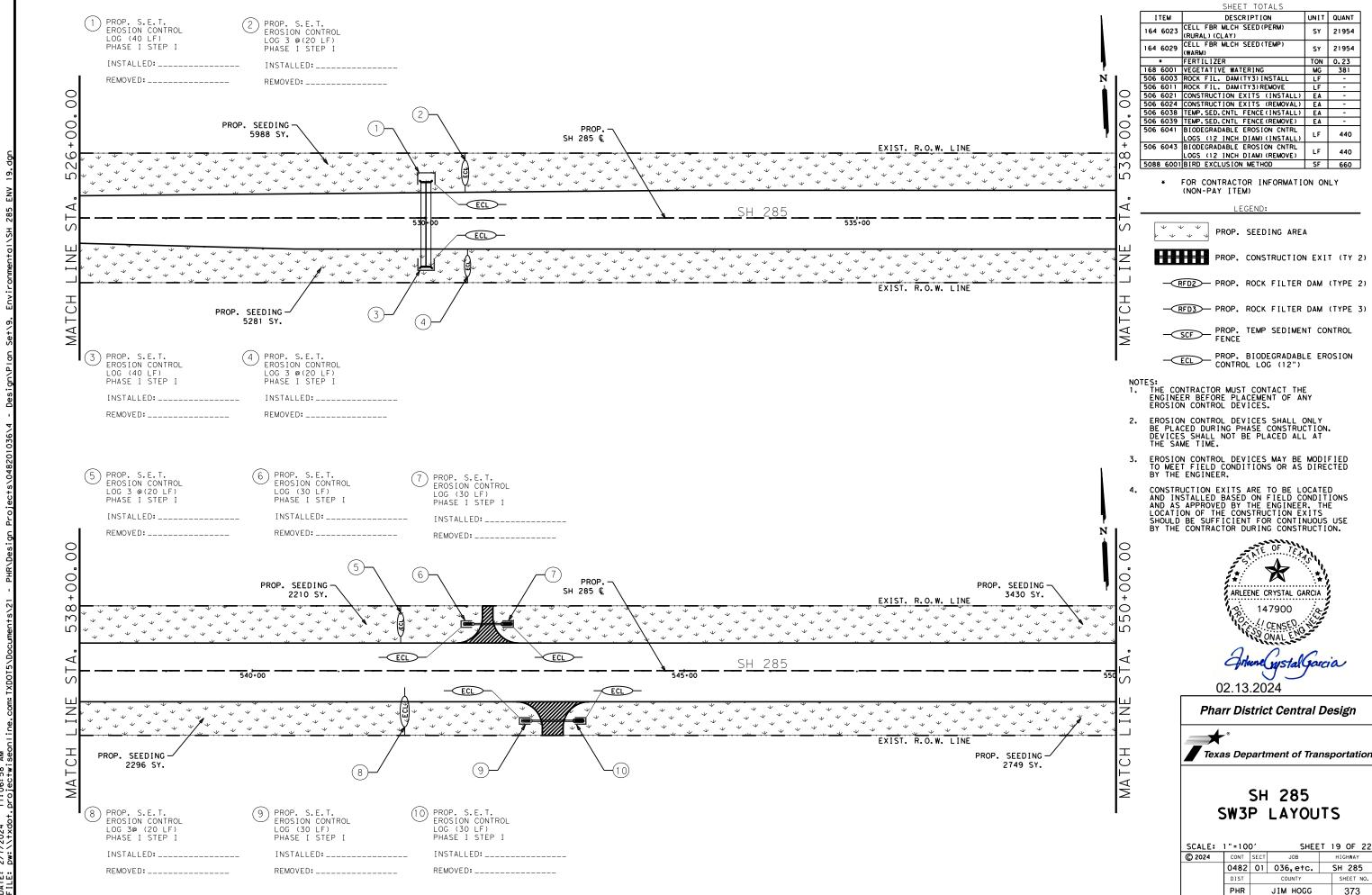


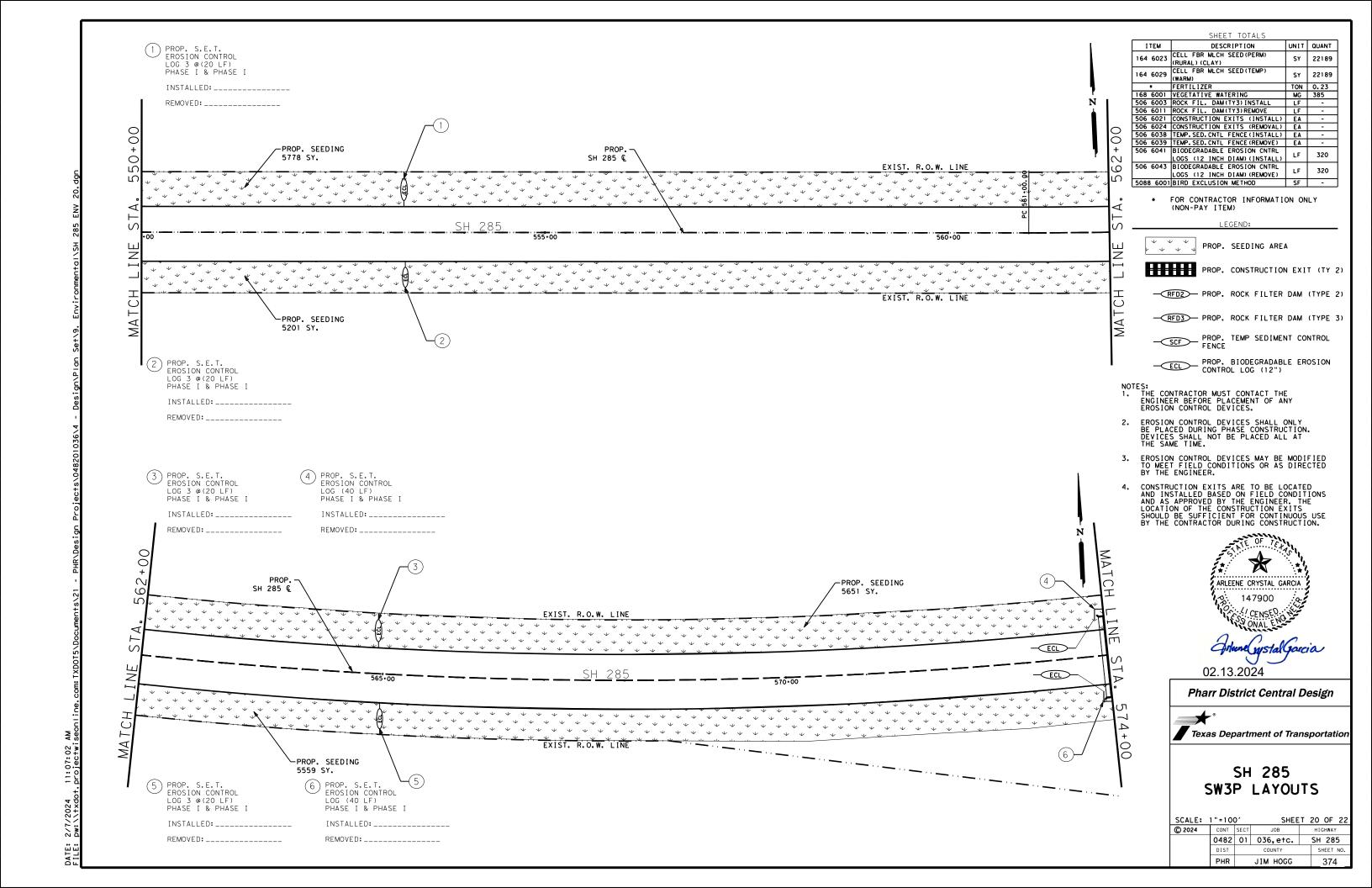


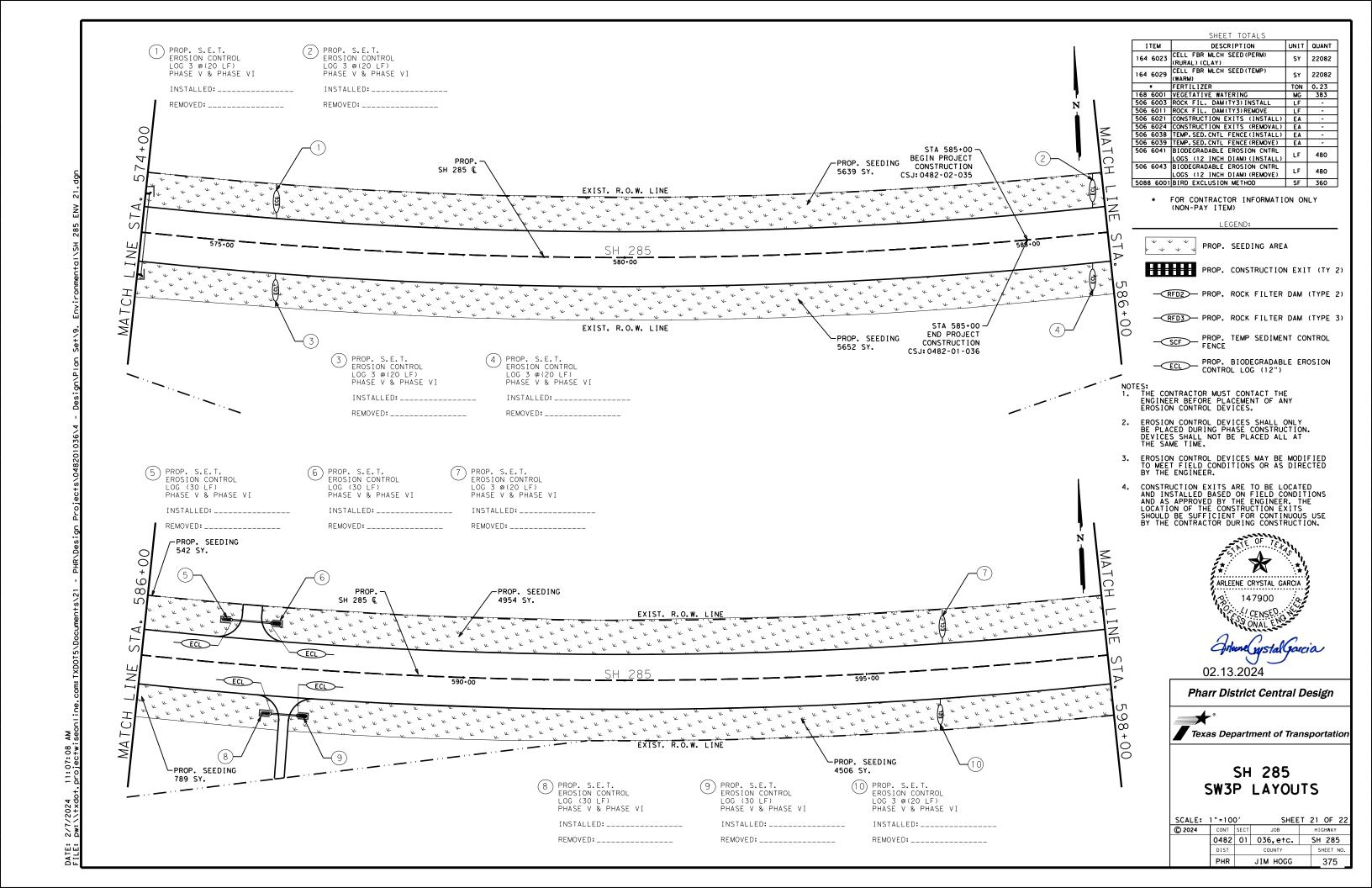


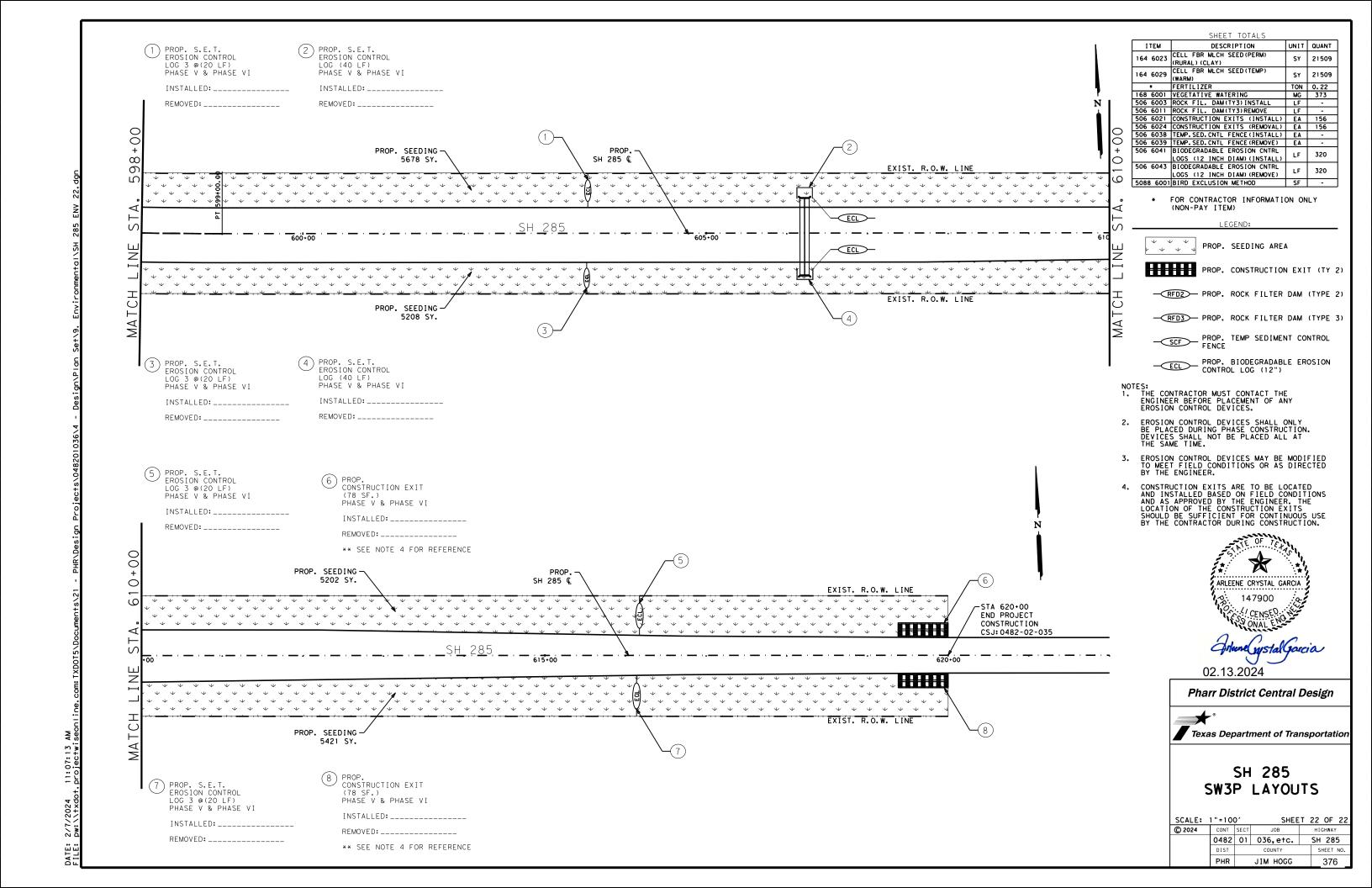






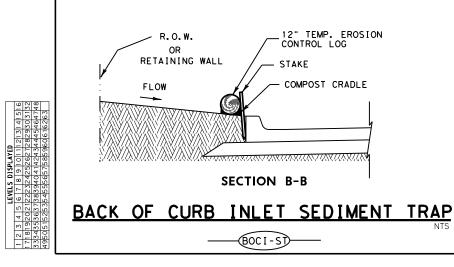






SECURE END OF LOG TO STAKE.

12" TEMP. EROSION-CONTROL LOG



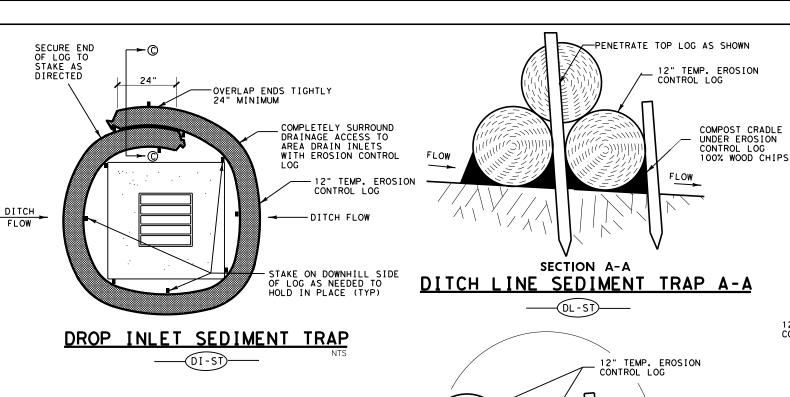
STAKE ON DOWNHILL SIDE OF

PLAN VIEW

R.O.W.

LOG AT 8' C - C OR LESS AS NEEDED TO ADEQUATELY SECURE LOG.

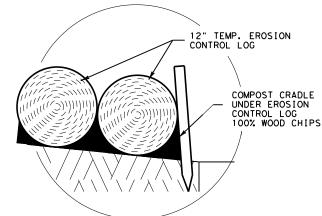
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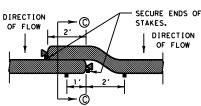
DISTURBED AREA

BACK OF CURB

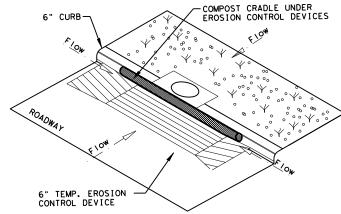
LIP OF GUTTER



SECTION C-C OVERLAP WITH COMPOST CRADLE



OVERLAP DETAIL PLAN VIEW



CURB INLET SEDIMENT TRAP



PLANS SHEET LEGEND

(DI-ST) DROP INLET SEDIMENT TRAP OL-ST) DITCH LINE SEDIMENT TRAP -BOCI-ST) -BACK OF CURB INLET SEDIMENT TRAP (ROW-ST) RIGHT OF WAY SEDIMENT TRAP (CI-ST) CURB INLET SEDIMENT TRAP

SEDIMENT BASIN & TRAP USAGE GUIDELINES

A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

 $\overline{\text{Traps}}$: the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following

- locations:

 1. Immediately preceding drain inlets
 2. Just before the drainage enters a water course
 - Just before the drainage leaves the right of way Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by $\frac{1}{2}$ or the sediment has accumulated to a depth of 1', whichever is less. Cleaning and removal of accumulated sediment deposits 12" TEMP. EROSION is incidental and will not be paid for seperately.

GENERAL NOTES

- 1. LENGTHS OF EROSION CONTROL LOGS SHALL
 BE IN ACCORDANCE WITH MANUFACTURER'S
 RECOMMENDATIONS AND AS REQUIRED FOR
 THE PURPOSE INTENDED. MAXIMUM LENGTH
 OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
 2. UNLESS OTHERWISE DIRECTED, USE
 BIODEGRADABLE OR PHOTODEGRADABLE
 CONTAINMENT MESS! ONLY WEEPE LOCK WILL
- CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE
- SYSTEM. FOR TEMPORARY INSTALLATIONS,
 USE RECYCLABLE CONTAINMENT MESH.

 3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL
 TO ACHIEVE DENSITY THAT WILL HOLD SHAPE
- WITHOUT EXCESSIVE DEFORMATION.

 4. STAKES SHALL BE 2" X 2" WOOD

 4' LONG, EMBEDDED SUCH THAT

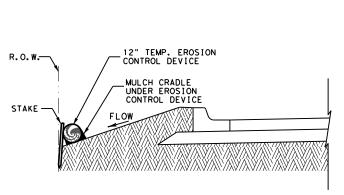
 2" PROTRUDES ABOVE LOG.

 5. COMPOST CRADLE MATERIAL IS INCIDENTAL
 AND WILL NOT BE PAID FOR SEPARATELY.



TEMPORARY EROSION CONTROL LOGS TECL-17 (PHR)

FED.RD. DIV.NO.		HIGHWAY NO.	
6			SH 285
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	PHARR	JIM HOGG	
CONTROL	SECTION	JOB	377
0482	01	036,etc.	



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DITCH LINE SEDIMENT TRAP

STAKE ON DOWNHILL SIDE OF LOG AT 8' C - C OR_LESS_AS NEEDED TO

ADEQUATELY SECURE LOG.

PLAN VIEW

R.O.W.

FLOW

0

0

CONTROL LOG

- DISTURBED AREA

BACK OF CURB

-LIP OF GUTTER

MULCH CRADLE UNDER EROSION CONTROL DEVICE

FLOW

FLOW

√ °

12" TEMP. EROSION

SECURE END OF LOG TO STAKE.

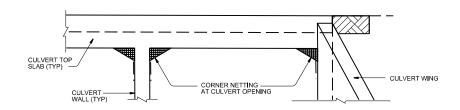
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SECTION D-D

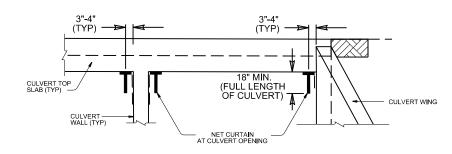
RIGHT-OF-WAY SEDIMENT TRAP

TYPICAL BIRD EXCLUSION MEASURE INSTALLATION DETAILS FOR A BOX CULVERT

TYPICAL CORNER NETTING INSTALLATION



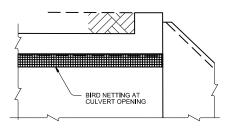
TYPICAL PARAPET CURTAIN **INSTALLATION DETAILS**



GENERAL NOTES:

- CLIFF SWALLOWS AND OTHER MIGRATORY BIRDS ARE FEDERALLY PROTECTED UNDER THE FEDERAL MIGRATORY BIRD TREATY ACT. THIS STATUTE INCLUDES LIVE AND DEAD BIRDS, ANY PART, NEST, OR EGG. UNLESS PERMITTED BY REGULATIONS, IT PROHIBITS PURSUIT, HUNTING, TAKING, CAPTURING, KILLING, AND ATTEMPTING TO TAKE ANY MIGRATORY BIRD. NESTING ACTIVITY TYPICALLY OCCURS DURING THE MONTHS OF FEBRUARY THROUGH SEPTEMBER.
- ANY PROJECT WITH A CULVERT(S) HAS POTENTIAL FOR NESTING BY SWALLOWS OR OTHER MIGRATORY BIRDS. ROADWAY CONSTRUCTION THAT DOES NOT INCLUDE SPECIFIC WORK ON CULVERT(S) WITHIN THE PROJECT AREA MAY ALSO HAVE THE POTENTIAL TO RESULT IN A 'TAKE' OF MIGRATORY BIRDS.
- THE CONTRACTOR SHALL IMPLEMENT EXCLUSIONARY MEASURES TO PREVENT SWALLOWS FROM BUILDING NEW NESTS PRIOR TO OR DURING THE NESTING SEASON (FEBRUARY 15 - OCTOBER 1) ON ANY CULVERT(S) WITH EVIDENCE OF PRIOR NESTING.
- 'NON-ACTIVE' NESTS SHOULD BE REMOVED PRIOR TO OR DURING THE NESTING SEASON IN ACCORDANCE WITH STANDARD SPECIFICATION ITEM 427 BLAST CLEANING OR MANUFACTURER DIRECTION. HOWEVER, NO NESTS SHOULD BE REMOVED PRIOR TO COORDINATION WITH THE DISTRICT ENVIRONMENTAL COORDINATOR.
- EXCLUSION MEASURES GENERALLY INCLUDE THE FOLLOWING: FOR CULVERTS A VARIETY OF OPTIONS EXIST; PAINTING OF SPECIAL 'STICKY' COATINGS TO THE UPPER SURFACES, INSTALLATION OF NET CURTAINS FROM THE CEILING, AND INSTALLATION OF TRIANGULAR 'CORNER' STRUCTURES. SEE LAYOUTS FOR MORE DETAIL.
- FOR LIQUID OR GEL METHODS, THE SURFACE PREPARATION AND COATING INSTALLATION WILL BE MADE IN ACCORDANCE WITH ITEM 427 SURFACE FINISH FOR CONCRETE OR MANUFACTURER DIRECTION. LIQUID OR GEL USED SHALL BE NON-TOXIC, TACKY BIRD REPELLENT LIQUID - BIRD X BIRD PROOF (OR EQUIVALENT). PAYMENT WILL BE SUBSIDIARY TO THE STRUCTURE ITEMS.
- NETTING APPLICATIONS FOR TRIANGULAR 'CORNER' STRUCTURES AND/OR 'CURTAINS' WILL BE IN ACCORDANCE WITH SPECIAL SPECIFICATION BIRD EXCLUSION METHOD.
- ALL EXCLUSION MEASURES MUST BE ACCOMPANIED BY ACTIVE (DAILY) MONITORING BY A TRAINED OBSERVER (CONTRACTOR PROVIDED). NOTE: BIRDS AND OTHER WILDLIFE MAY BECOME ENTRAPPED WITH ANY EXCLUSION MEASURE.
- THE CONTRACTOR SHALL REMOVE ALL STRUCTURAL EXCLUSIONARY MEASURES IMMEDIATELY AFTER PROJECT COMPLETION.

TYPICAL CORNER **NETTING INSTALLATION**



TYPICAL LONGITUDINAL SECTION AT CULVERT OPENING



Pharr District Standard

BIRD EXCLUSION DETAILS

FILE:		DN:		CK:	DW:		CK:
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		PHR		JIM HO	OGG		378

TYPICAL BRIDGE SIDE ELEVATION

- 3. THE CONTRACTOR SHALL IMPLEMENT EXCLUSIONARY MEASURES TO PREVENT SWALLOWS FROM BUILDING NEW NESTS PRIOR TO OR DURING THE NESTING SEASON (FEBRUARY 15 OCTOBER 1) ON ANY BRIDGE(S) WITH EVIDENCE OF PRIOR NESTING.
- 4. 'NON-ACTIVE' NESTS SHOULD BE REMOVED PRIOR TO OR DURING THE NESTING SEASON IN ACCORDANCE WITH STANDARD ITEM 427 BLAST CLEANING OR MANUFACTURER DIRECTION. HOWEVER, NO NESTS SHOULD BE REMOVED PRIOR TO COORDINATION WITH THE DISTRICT ENVIRONMENTAL COORDINATOR.
- 5. EXCLUSION MEASURES GENERALLY INCLUDE THE FOLLOWING: FOR BRIDGES, NETTING IS THE MOST EFFECTIVE OPTION, NOTING INSTALLATION WILL BE IN ACCORDANCE WITH SPECIAL SPECIFICATION BIRD EXCLUSION METHOD. SEE LAYOUTS FOR MORE DETAIL.
- 6. ALL EXCLUSION MEASURES MUST BE ACCOMPANIED BY ACTIVE (DAILY) MONITORING BY A TRAINED OBSERVER (CONTRACTOR PROVIDED). NOTE: BIRDS AND OTHER WILDLIFE MAY BECOME ENTRAPPED WITH ANY EXCLUSION MEASURE.
- 7. THE CONTRACTOR SHALL REMOVE ALL STRUCTURAL EXCLUSIONARY MEASURES AFTER PROJECT COMPLETION.



DISCLAIMER:
The use of this standard is governed by the "Texas Engir kind is made by XDOT for any purpose whatsoever. TXDC of this standard to other formats or for incorrect results or do if this standard to other formats or for incorrect results or do

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

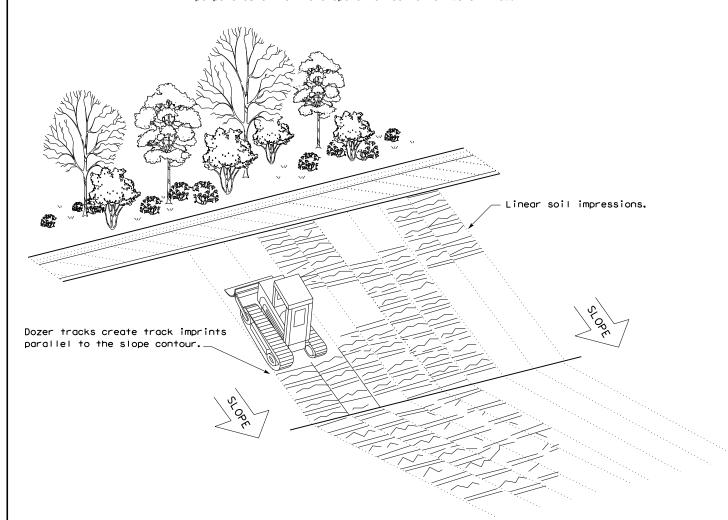
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

LEGEND

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



TEMPORARY EROSION. SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING

EC(1) - 16

ILE: ec116	DN: TxD	OT	ck: KM	DW: V	Р	DN/CK: LS
TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0482	01	036,et	c.	Sł	1 285
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	PHR		JIM HO	GG		380

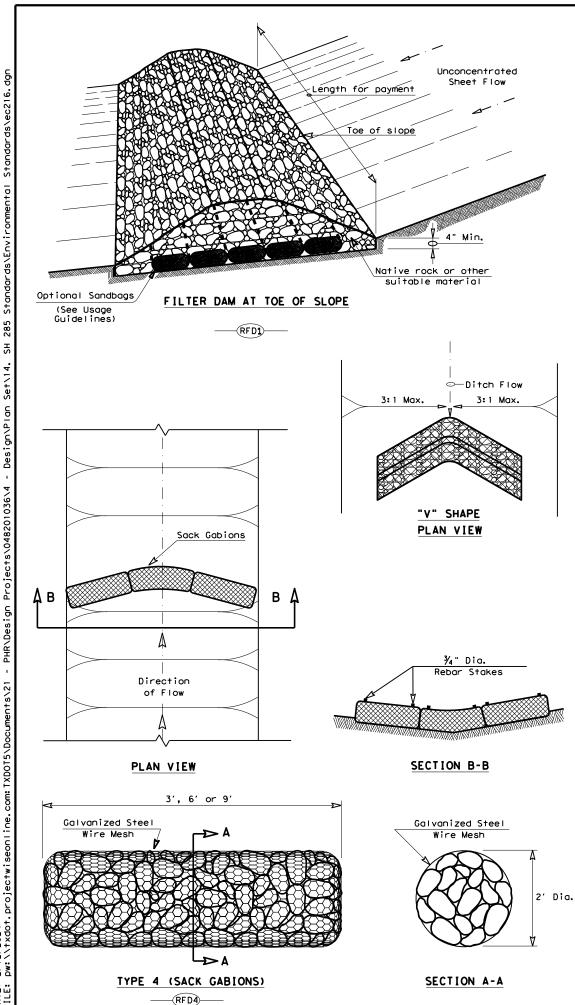
Embed posts 18" min. or Anchor if in rock.

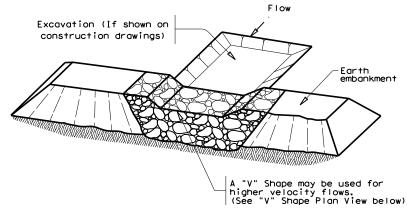
Sediment Control Fence —(SCF)—

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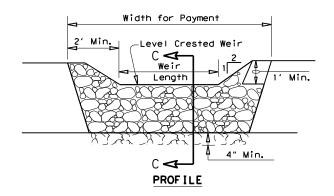
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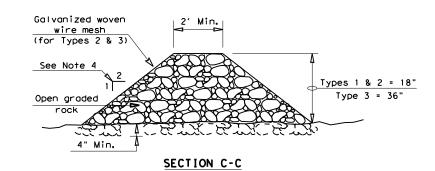




FILTER DAM AT SEDIMENT TRAP







ROCK FILTER DAM USAGE GUIDELINES

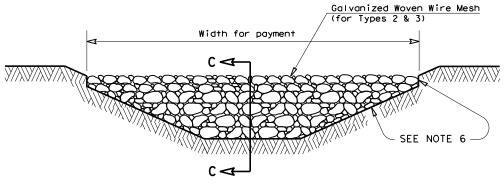
Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 ${\rm CPM/FT}^2$ of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

 $\underline{\text{Type 5:}} \ \ \text{Provide rock filter dams as shown on plans.}$



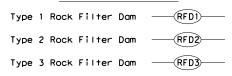
FILTER DAM AT CHANNEL SECTIONS

GENERAL NOTES

- If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
- Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
- 3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
- Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
- Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
- 6. Filter dams should be embedded a minimum of 4" into existing ground.
- 7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
- 8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified.

 The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
- 9. Sack Gabions should be staked down with $\frac{3}{4}$ " dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 $\frac{1}{2}$ " x 3 $\frac{1}{4}$ "
- 10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
- 11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND





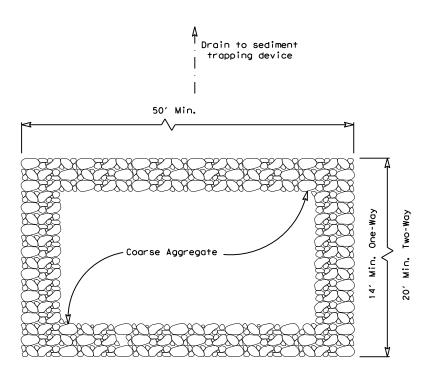
Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

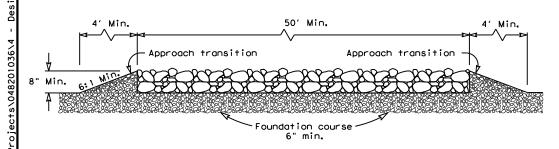
ROCK FILTER DAMS
EC (2) -16

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PLAN VIEW



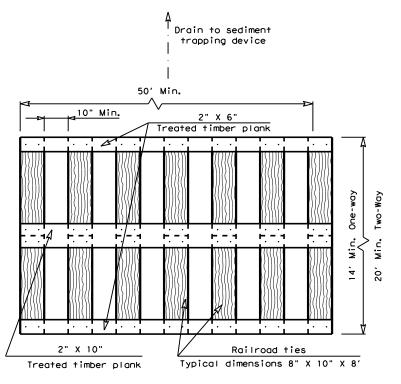
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

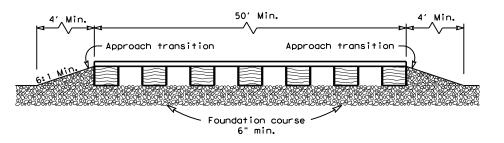
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

- 1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
- 2. The coarse aggregate should be open graded with a size of 4" to 8".
- 3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
- 4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materialas approved
- 5. The construction exit shall be graded to allow drainage to a sediment trappina device.
- 6. The guidelines shown hereon are suggestions only and may be modified
- 7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



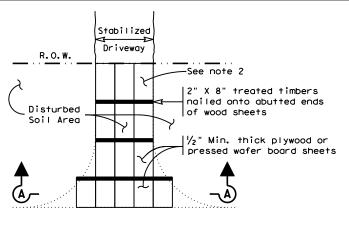
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

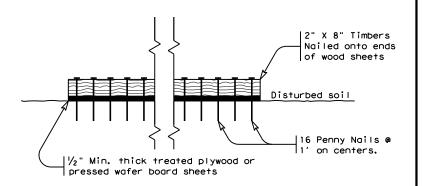
GENERAL NOTES (TYPE 2)

- 1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
- The treated timber planks shall be attached to the railroad ties with $\frac{1}{2}$ "x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
- The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
- 5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
- The construction exit should be graded to allow drainage to a sediment trapping device.
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.
- Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the



Paved Roadway

PLAN VIEW



SECTION A-A CONSTRUCTION EXIT (TYPE 3)

SHORT TERM

GENERAL NOTES (TYPE 3)

- 1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
- 2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
- 3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- 4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



TEMPORARY EROSION. SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS

EC(3) - 16

FILE: ec316	DN: <u>Tx</u> [<u>100</u>	ск: КМ	Dw: VP	DN/CK: LS
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REVISIONS	0482	01	1 036,etc. SH 2		SH 285
	DIST		COUNTY		SHEET NO.
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CL-D EROSION CONTROL LOG DAM -(cl-boc)- EROSION CONTROL LOG AT BACK OF CURB EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY (CL-ROW EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING -(CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING -(CL-SSL) -(cL-DI)→ EROSION CONTROL LOG AT DROP INLET 2/12/2024 DW:\\txdot (CL-CI) EROSION CONTROL LOG AT CURB INLET (cl-gi)— EROSION CONTROL LOG AT CURB & GRATE INLET

FLOW ADDITIONAL UPSTREAM STAKES FOR HEAVY RUNOFF EVENTS SECURE END OF LOG TO STAKE AS DISTURBED AREA DIRECTED BACK OF CURB LIP OF GUTTER STAKE ON DOWNHILL SIDE OF TEMP. EROSION LOG AT 8' (ON CENTER) MAX. AS NEEDED TO SECURE LOG, CONTROL LOG OR AS DIRECTED BY THE ENGINEER.

TEMP. EROSION

CONTROL LOG

STAKE LOG ON DOWNHILL

SIDE AT THE CENTER,

AT EACH END, AND AT

ADDITIONAL POINTS AS

NEEDED TO SECURE LOG

STAKE LOG ON DOWNHILL

R.O.W.

SIDE AT THE CENTER,

AT EACH END, AND AT

AS DIRECTED BY THE

ENGINEER.

ADDITIONAL POINTS AS

NEEDED TO SECURE LOG

(4' MAX. SPACING), OR

ADDITIONAL UPSTREAM

STAKES FOR HEAVY

RUNOFF EVENTS

(4' MAX. SPACING),

OR AS DIRECTED BY

THE ENGINEER.

FLOW

PLAN VIEW

ΝΪΝ

SECTION A-A

EROSION CONTROL LOG DAM

CL-D

LEGEND

TEMP. EROSION-

CONTROL LOG

(TYP.)

COMPOST CRADLE UNDER EROSION

CONTROL LOG

ADDITIONAL UPSTREAM

STAKES FOR HEAVY

SECURE END

OF LOG TO

STAKE AS

DIRECTED

RUNOFF EVENTS

PLAN VIEW

SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

(CL - BOC)

½" ±

REBAR STAKE DETAIL

TEMP. EROSION

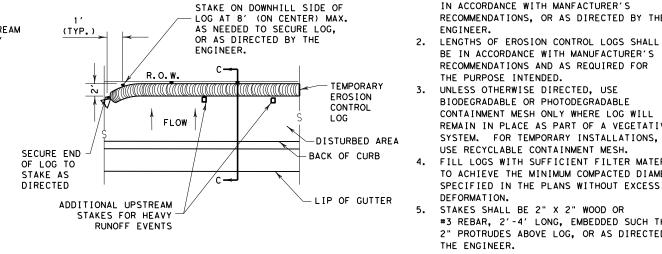
COMPOST CRADLE

UNDER EROSION

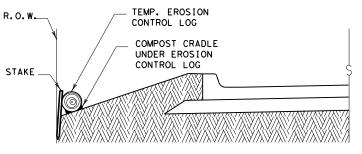
CONTROL LOG

///\///\\///\\///\\///\\///\\

CONTROL LOG

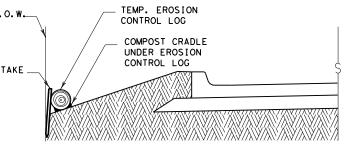


PLAN VIEW



SECTION C-C





EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY



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).

Control logs should be placed in the following locations:

- 1. Within drainage ditches spaced as needed or min. 500' on center

- limits where drainage flows away from the project.

DIAMETER MEASUREMENTS OF EROSION

CONTROL LOGS SPECIFIED IN PLANS

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S

ENGINEER.

DEFORMATION.

THE ENGINEER.

MESH.

LOG.

MINIMUM

COMPACTED

DIAMETER

RECOMMENDATIONS, OR AS DIRECTED BY THE

BE IN ACCORDANCE WITH MANUFACTURER'S

RECOMMENDATIONS AND AS REQUIRED FOR

CONTAINMENT MESH ONLY WHERE LOG WILL

SYSTEM. FOR TEMPORARY INSTALLATIONS,

REMAIN IN PLACE AS PART OF A VEGETATIVE

FILL LOGS WITH SUFFICIENT FILTER MATERIAL

TO ACHIEVE THE MINIMUM COMPACTED DIAMETER

SPECIFIED IN THE PLANS WITHOUT EXCESSIVE

#3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT

2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY

SANDBAGS USED AS ANCHORS SHALL BE PLACED

ON TOP OF LOGS & SHALL BE OF SUFFICIENT

TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE

TO PREVENT RUNOFF FROM FLOWING AROUND THE

UPSTREAM STAKES MAY BE NECESSARY TO KEEP

MINIMUM

COMPACTED DIAMETER

6. DO NOT PLACE STAKES THROUGH CONTAINMENT

7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.

SIZE TO HOLD LOGS IN PLACE.

10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL

LOG FROM FOLDING IN ON ITSELF.

BIODEGRADABLE OR PHOTODEGRADABLE

USE RECYCLABLE CONTAINMENT MESH.

STAKES SHALL BE 2" X 2" WOOD OR

THE PURPOSE INTENDED.

3. UNLESS OTHERWISE DIRECTED, USE



TEMPORARY EROSION. SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9) - 16

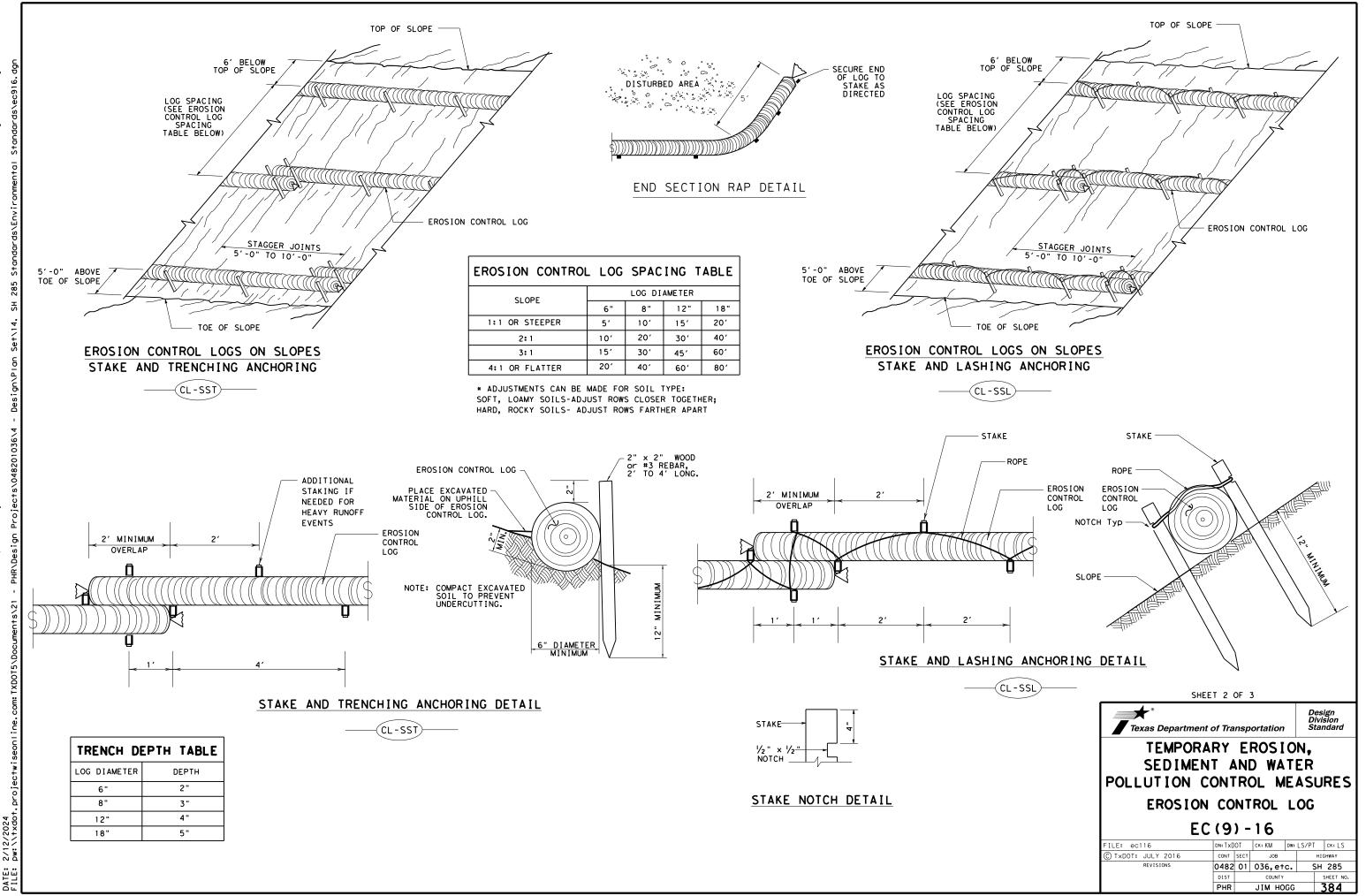
FILE: ec916	DN: TxD	OT	ck: KM	DW:	LS/PT	ck: LS
C TxDOT: JULY 2016	CONT	SECT	JOB		HIC	HWAY
REVISIONS	0482	01	036,et	c.	SH	285
	DIST		COUNTY			SHEET NO.
	PHR		JIM HO	GG	7	383

The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over

- 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

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.

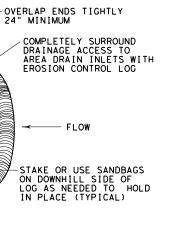


SECURE END OF LOG TO STAKE AS DIRECTED

TEMP. EROSION-CONTROL LOG

FLOW

(CL - GI)



6" CURB-CURB CURB INLET _INLET EXTENSION SANDBAG ROADWAY 2 SAND BAGS TEMP. EROSION CONTROL LOG USE STAKES ON DOWNSTREAM SIDE OF LOGS, AT ENDS, MIDPOINT, & AS NEEDED OR SANDBAGS TO HOLD IN PLACE. TEMP. EROSION CONTROL LOG - 2 SAND BAGS

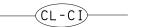
EROSION CONTROL LOG AT DROP INLET



EROSION CONTROL LOG AT CURB INLET

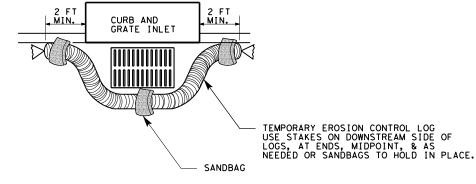






EROSION CONTROL LOG AT CURB INLET

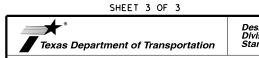
NOTE: EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET



SANDBAG DETAIL



TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES **EROSION CONTROL LOG**

EC(9)-16

FILE: ec916	DN: TxD	ОТ	CK: KM	DW:	LS/PT	ck: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		ΗI	GHWAY
REVISIONS	0482	01	1 036,etc. SH		285	
	DIST		COUNTY			SHEET NO.
	PHR		JIM HO	GG		385

MISCELLANEOUS COVER SHEET

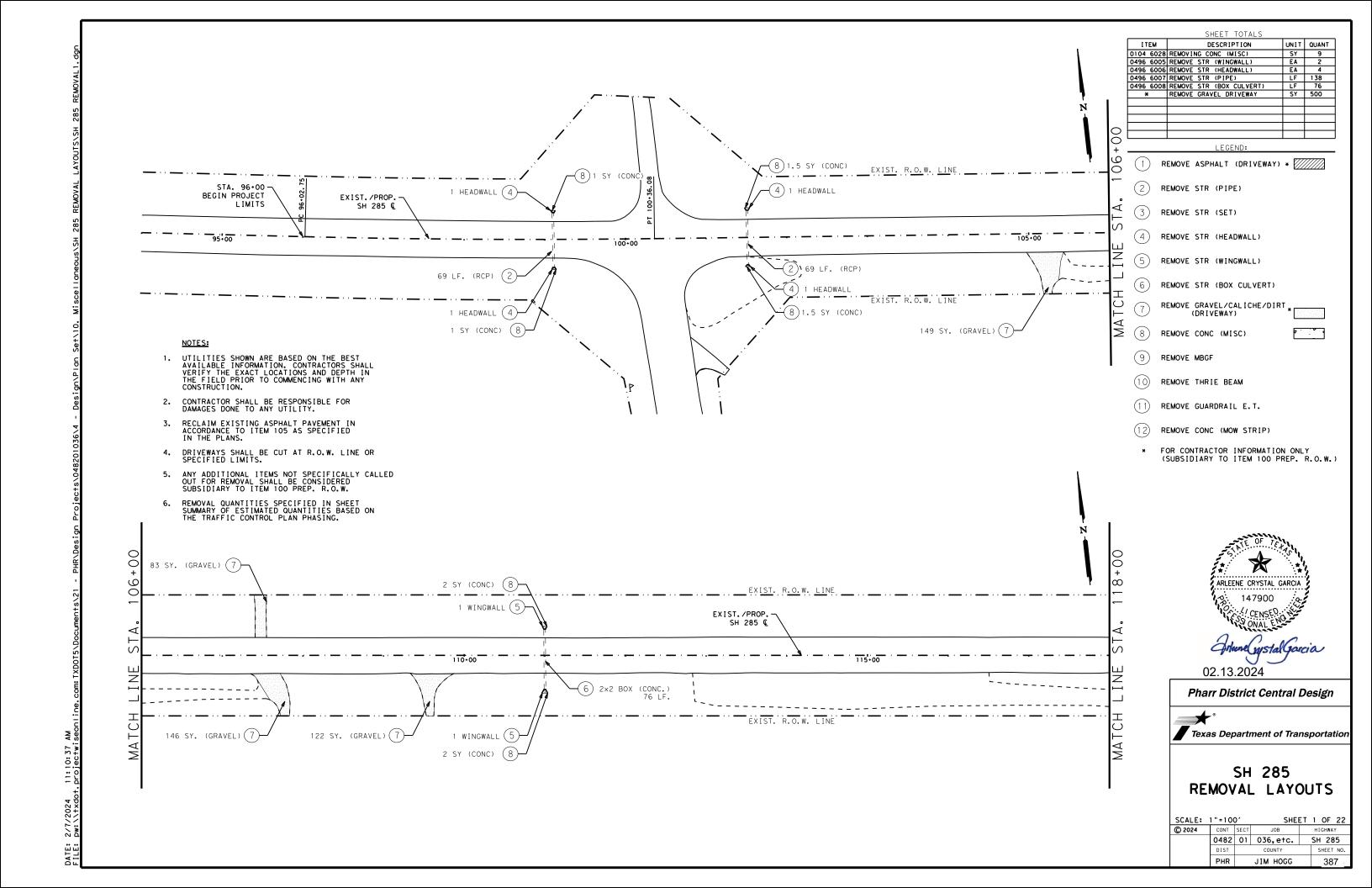
Pharr District Central Design

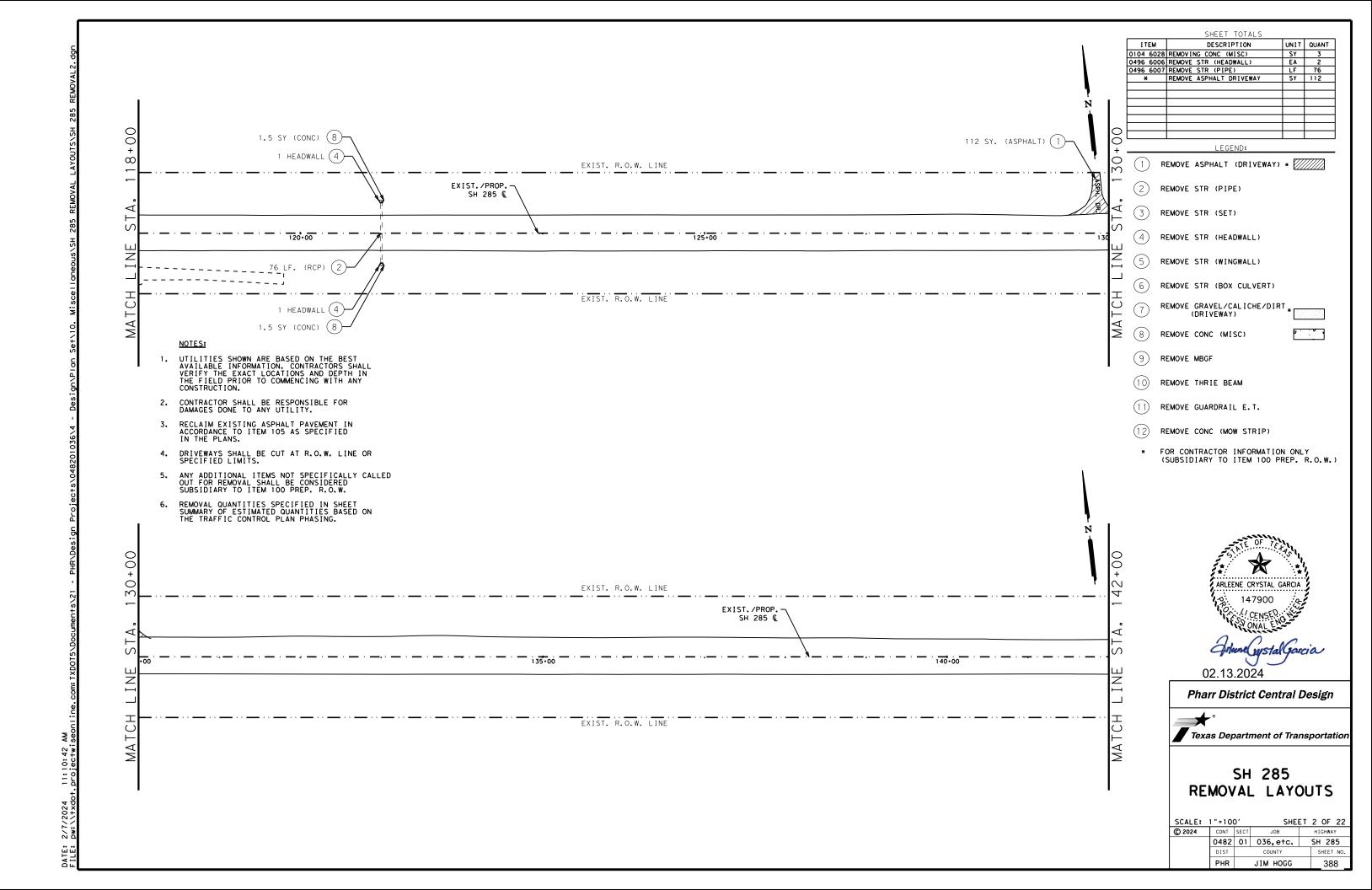


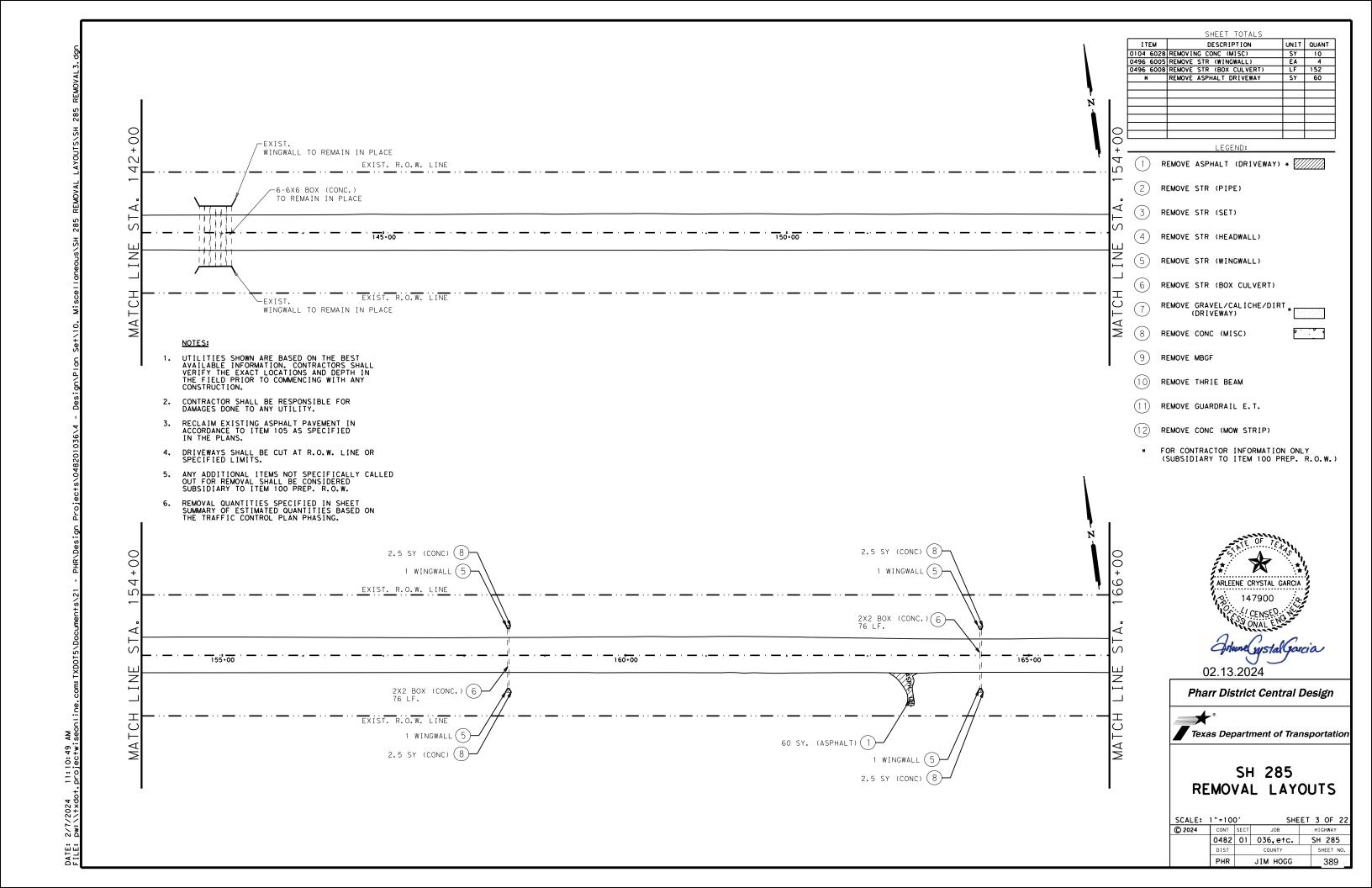
Texas Department of Transportation

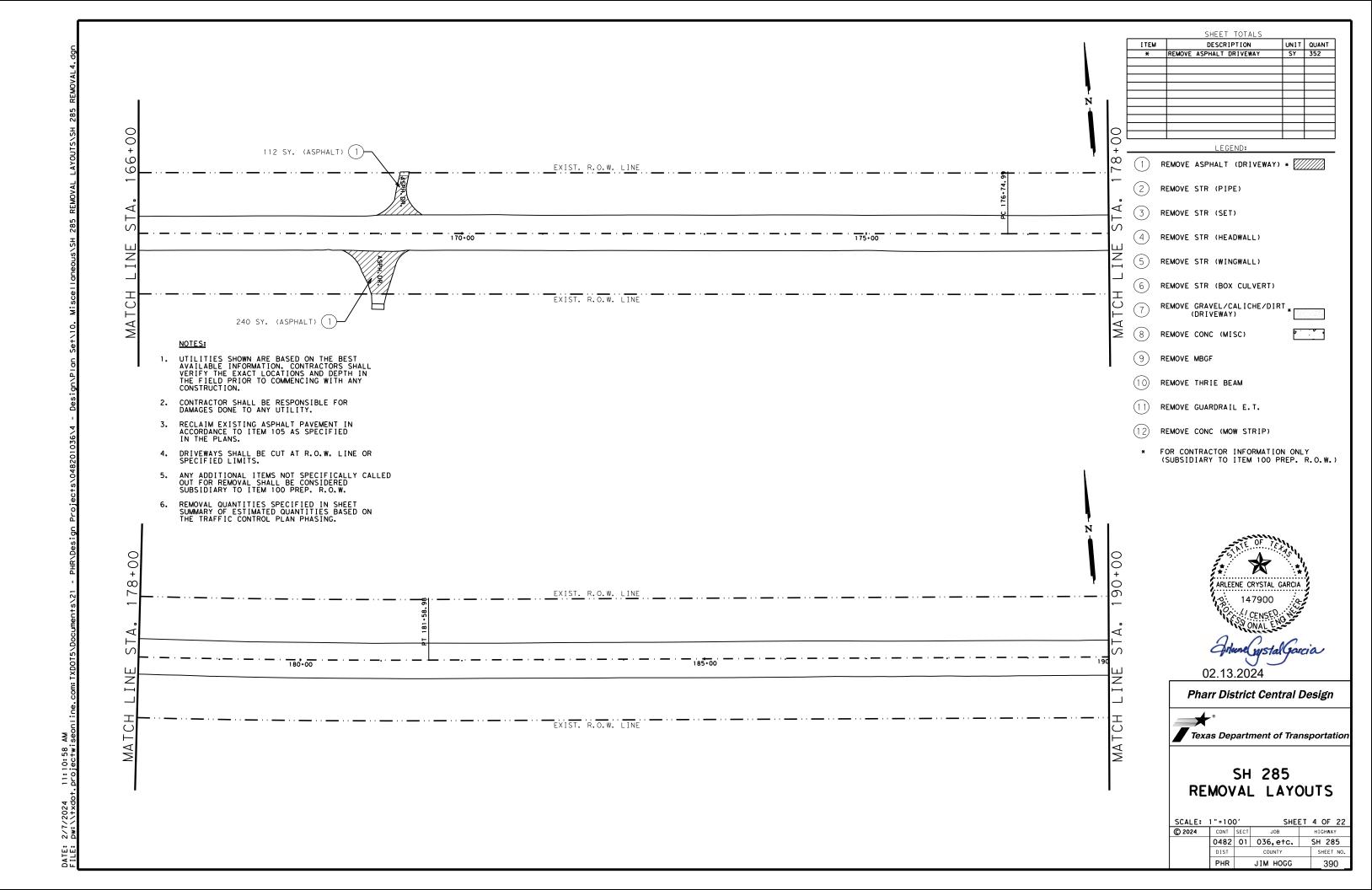
SH 285
MISCELLANEOUS
COVER SHEET

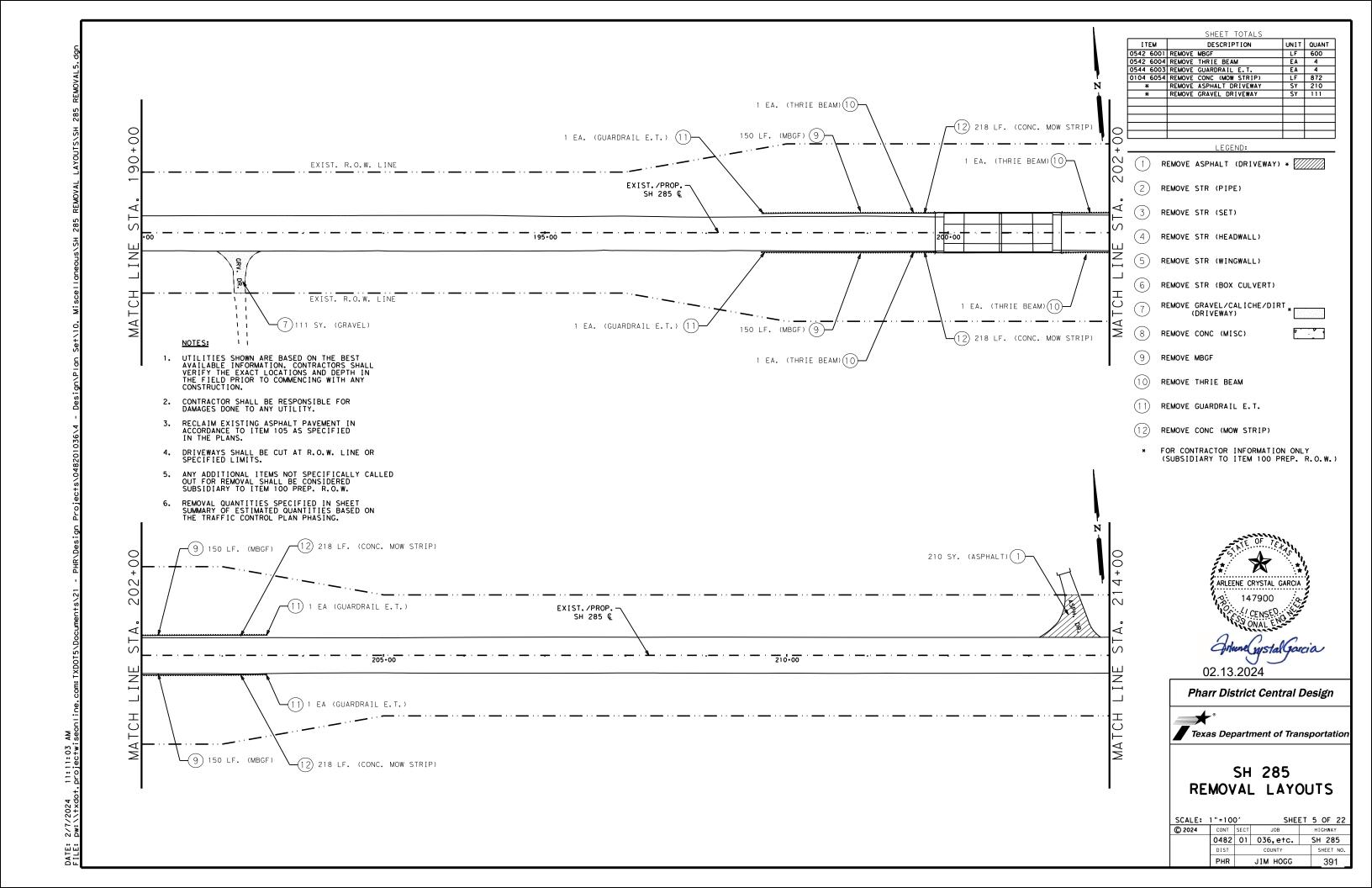
	PHR		JIM HOGG	SHEET NO.
	0482	01	036,etc.	SH 285
© 2024	CONT	SECT	JOB	HIGHWAY



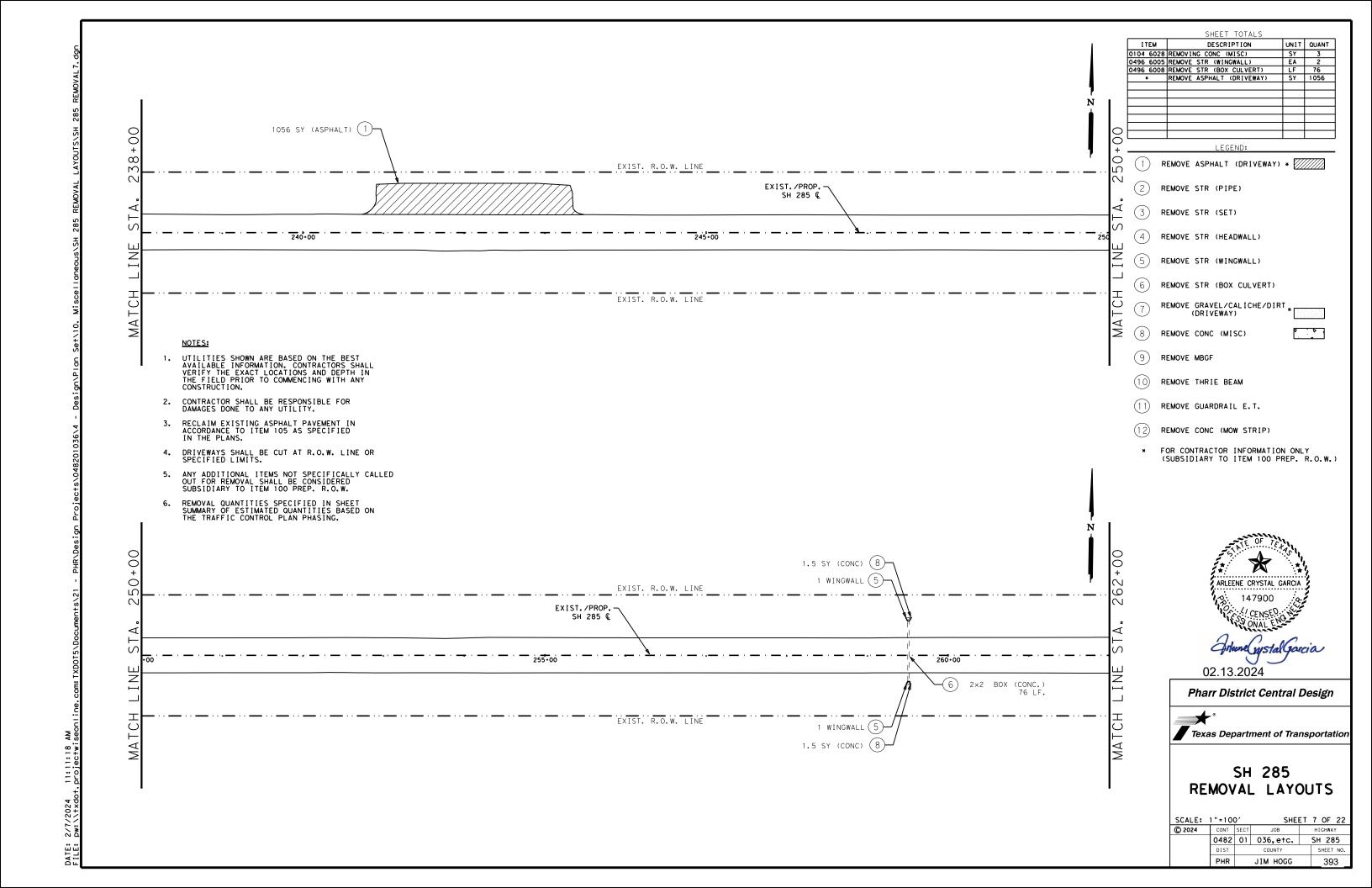








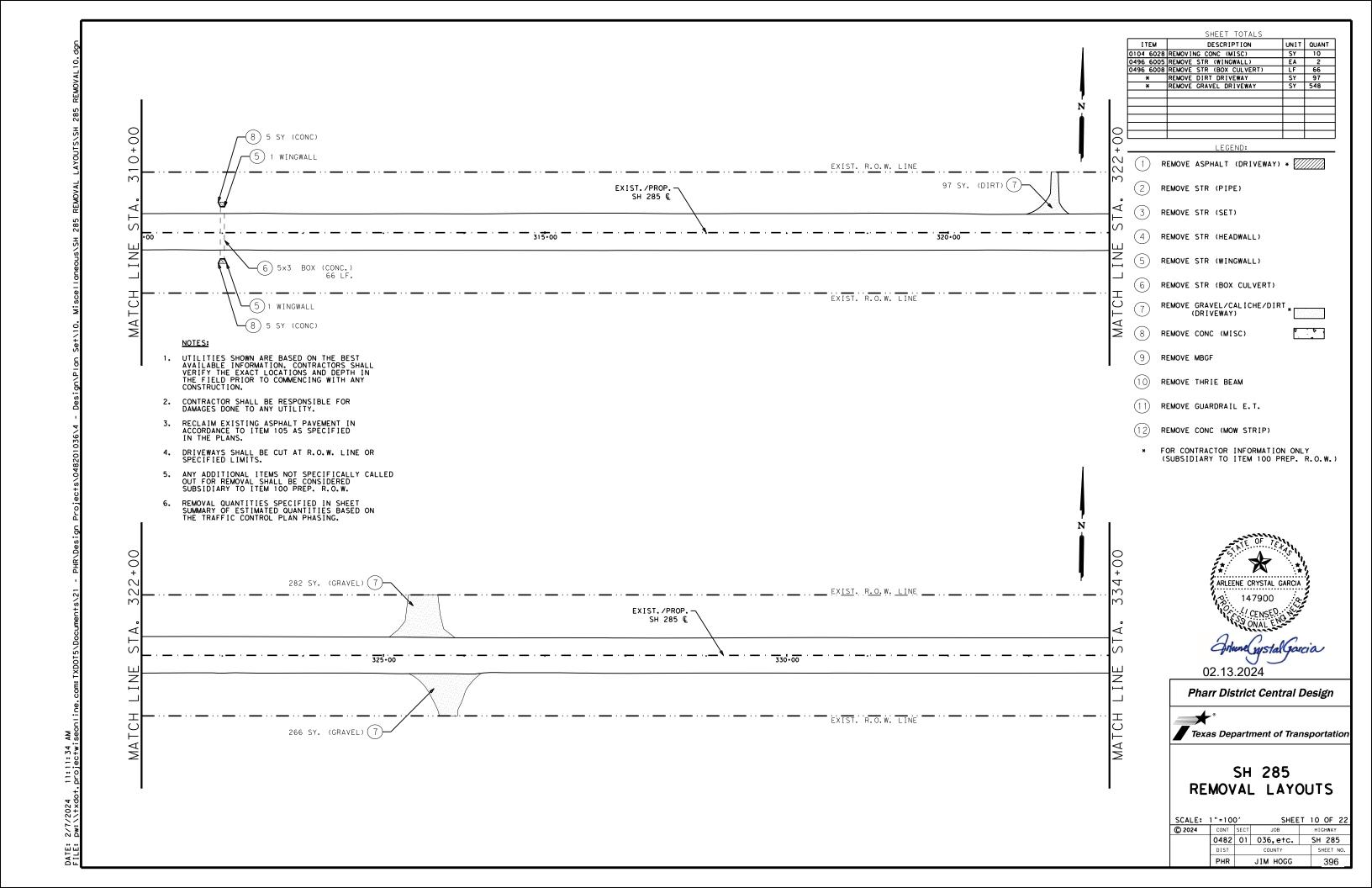
SHEET TOTALS UNIT QUANT DESCRIPTION 0104 6028 REMOVING CONC (MISC) 0496 6005 REMOVE STR (WINGWALL) EA 2 LF 68 0496 6008 REMOVE STR (BOX CULVERT) 00 1.5 SY (CONC) (8)REMOVE ASPHALT (DRIVEWAY) * 1 WINGWALL (5 EXIST. R.O.W. LINE 2 REMOVE STR (PIPE) SH 285 🤄 3 REMOVE STR (SET) \mathcal{O} (4) REMOVE STR (HEADWALL) 5 REMOVE STR (WINGWALL) 2×2 BOX (CONC.) 68 LF. 6 REMOVE STR (BOX CULVERT) REMOVE GRAVEL/CALICHE/DIRT EXIST. R.O.W. LINE (DRIVEWAY) 1 WINGWALL (5) ₹ 8 REMOVE CONC (MISC) 1.5 SY (CONC) (8) UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTORS SHALL VERIFY THE EXACT LOCATIONS AND DEPTH IN THE FIELD PRIOR TO COMMENCING WITH ANY CONSTRUCTION. REMOVE MBGF 10 REMOVE THRIE BEAM 2. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES DONE TO ANY UTILITY. REMOVE GUARDRAIL E.T. RECLAIM EXISTING ASPHALT PAVEMENT IN ACCORDANCE TO ITEM 105 AS SPECIFIED IN THE PLANS. REMOVE CONC (MOW STRIP) FOR CONTRACTOR INFORMATION ONLY (SUBSIDIARY TO ITEM 100 PREP. R.O.W.) 4. DRIVEWAYS SHALL BE CUT AT R.O.W. LINE OR SPECIFIED LIMITS. 5. ANY ADDITIONAL ITEMS NOT SPECIFICALLY CALLED OUT FOR REMOVAL SHALL BE CONSIDERED SUBSIDIARY TO ITEM 100 PREP. R.O.W. 6. REMOVAL QUANTITIES SPECIFIED IN SHEET SUMMARY OF ESTIMATED QUANTITIES BASED ON THE TRAFFIC CONTROL PLAN PHASING. 00 ARLEENE CRYSTAL GARCIA EXIST. R.O.W. LINE EXIST./PROP. SH 285 € \mathcal{C} 02.13.2024 Pharr District Central Design EXIST. R.O.W. LINE Texas Department of Transportation ΜA SH 285 REMOVAL LAYOUTS SCALE: 1"=100' CONT SECT © 2024 JOB HIGHWAY 0482 01 036,etc. SH 285 SHEET NO. PHR JIM HOGG



SHEET TOTALS UNIT QUANT
SY 17
EA 2
LF 132 DESCRIPTION 0104 6028 REMOVING CONC (MISC) 0496 6005 REMOVE STR (WINGWALL) 0496 6008 REMOVE STR (BOX CULVERT) 8.5 SY (CONC) (8) 1 WINGWALL (5 EXIST. R.O.W. LINE 1) REMOVE ASPHALT (DRIVEWAY) * EXIST./PROP REMOVE STR (PIPE) SH 285 🕻 3 REMOVE STR (SET) \mathcal{O} (4) REMOVE STR (HEADWALL) 5 REMOVE STR (WINGWALL) 2-5×3 BOX (CONC.) 66 LF EA. 6 132 LF. TOTAL 6 REMOVE STR (BOX CULVERT) EXIST. R.O.W. LINE 1 WINGWALL (5) REMOVE GRAVEL/CALICHE/DIRT (DRIVEWAY) ∀ ∑ 8.5 SY (CONC) (8) 8 REMOVE CONC (MISC) UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTORS SHALL VERIFY THE EXACT LOCATIONS AND DEPTH IN THE FIELD PRIOR TO COMMENCING WITH ANY CONSTRUCTION. REMOVE MBGF 10 REMOVE THRIE BEAM 2. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES DONE TO ANY UTILITY. REMOVE GUARDRAIL E.T. RECLAIM EXISTING ASPHALT PAVEMENT IN ACCORDANCE TO ITEM 105 AS SPECIFIED IN THE PLANS. (12) REMOVE CONC (MOW STRIP) FOR CONTRACTOR INFORMATION ONLY (SUBSIDIARY TO ITEM 100 PREP. R.O.W.) 4. DRIVEWAYS SHALL BE CUT AT R.O.W. LINE OR SPECIFIED LIMITS. 5. ANY ADDITIONAL ITEMS NOT SPECIFICALLY CALLED OUT FOR REMOVAL SHALL BE CONSIDERED SUBSIDIARY TO ITEM 100 PREP. R.O.W. 6. REMOVAL QUANTITIES SPECIFIED IN SHEET SUMMARY OF ESTIMATED QUANTITIES BASED ON THE TRAFFIC CONTROL PLAN PHASING. 00 ARLEENE CRYSTAL GARCIA EXIST. R.O.W. LINE 147900 EXIST./PROP. SH 285 € \mathcal{C} 275+00 02.13.2024 Pharr District Central Design EXIST. R.O.W. LINE Texas Department of Transportation ΜA SH 285 REMOVAL LAYOUTS SCALE: 1"=100' SHEET 8 OF 22 CONT SECT © 2024 JOB HIGHWAY 0482 01 036,etc. SH 285 SHEET NO.

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