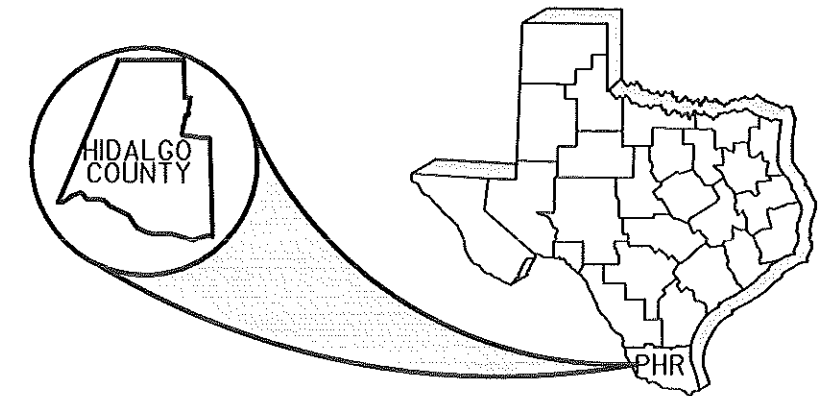


HIDALGO COUNTY PRECINCT NO. 1

CONSTRUCTION PLANS DELTA WEST SUBDIVISION BORDER ACCESS COLONIA PROJECT ROUND III COMPETITIVE CSJ 3C-1080-220



PROJECT LIMITS:
 JEANINE ST = 1019' = 0.19 MI
 ESPERANZA ST = 1017' = 0.19 MI
 PORTILLO ST = 1018' = 0.19 MI
 CENIZO ST = 1109' = 0.21 MI
 CENTRO = 500' = 0.09 MI
 TOTAL LENGTH OF PROJECT = 4663' = 0.88 MI
 TOTAL AREA OF DISTURBED SOIL = 5.27 AC

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	PROJECT LAYOUT
4	SUMMARY OF QUANTITIES
5	GENERAL NOTES
6-7	TYPICAL SECTIONS
8	TRAFFIC CONTROL PLAN GENERAL NOTES
9-10	TRAFFIC CONTROL PLAN TYPICAL SECTIONS
11-18	PLAN & PROFILE
19	DRAINAGE LAYOUT
20-21	DRIVEWAY TABLES
22-25	EARTHWORK
26-38	ROADWAY CROSS-SECTIONS
39	STORM WATER POLLUTION PREVENTION PLAN
40	PAVEMENT MARKINGS

STANDARDS

41-52	BC(1)-14 THRU BC(12)-14
53	WZ(TD)-13
54	WZ(UL)-13
55	WZ(RCD)-13
56	TCP(1-2)-12
57	TCP(2-2)-12
58	TCP(3-3)-14
59	TCP(7-1)-13
60	DRIVEWAY PROFILE DETAILS
61	DRIVEWAY DETAILS PRIVATE
62	EC(1)-09
63	PM(1)-12

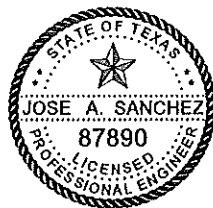
THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

CONSTRUCTION WILL CONSIST OF HOT MIX ASPHALT, FLEXIBLE BASE AND ROADSIDE DITCHES.



LOCATION MAP
N.T.S.

APPROVAL HIDALGO COUNTY COLONIA ACCESS PROGRAM	DATE: 4-20-15
<i>John Paul Fugo</i>	
APPROVAL HIDALGO COUNTY COUNTY PRECINCT No 1	DATE: 4-20-15
<i>AC Cuellar</i>	
APPROVAL HIDALGO COUNTY PLANNER	DATE: 4-20-15
<i>[Signature]</i>	
CONCURRENCE: HIDALGO COUNTY DRAINAGE DISTRICT No 1	DATE: 4/19/15
<i>[Signature]</i> GENERAL MANAGER	

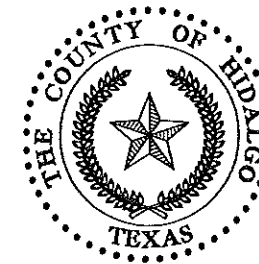


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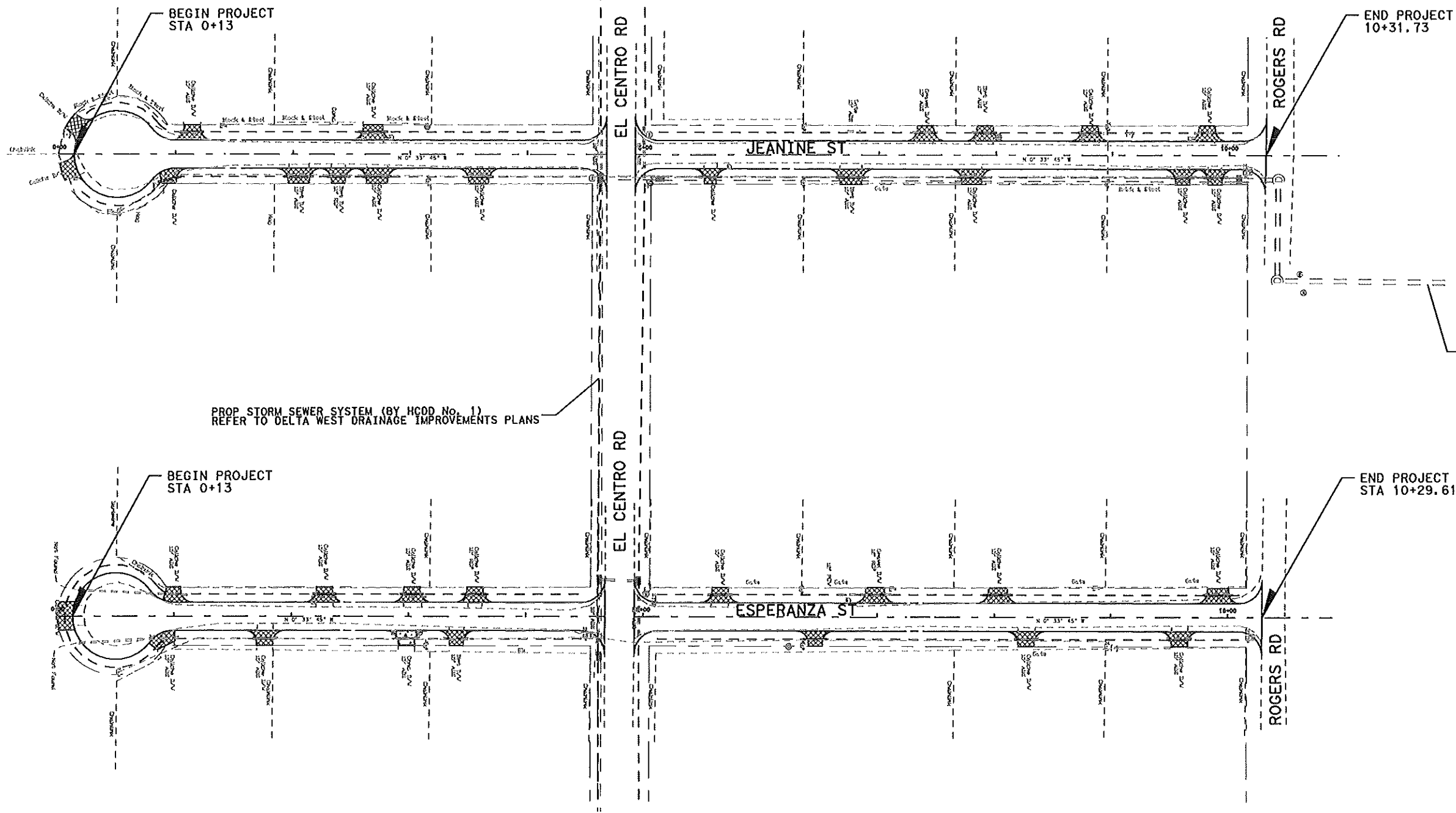
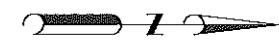
HIDALGO COUNTY OFFICIALS

RAMON GARCIA	- COUNTY JUDGE
A.C. CUELLAR JR	- PCT 1 COMMISSIONER
EDUARDO "EDDIE" CANTU	- PCT 2 COMMISSIONER
JOE M. FLORES	- PCT 3 COMMISSIONER
JOSEPH PALACIOS	- PCT 4 COMMISSIONER



SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, JUNE 1, 2004 AND SPECIFICATION ITEMS LISTED SHALL GOVERN ON THIS PROJECT.

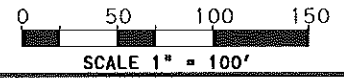
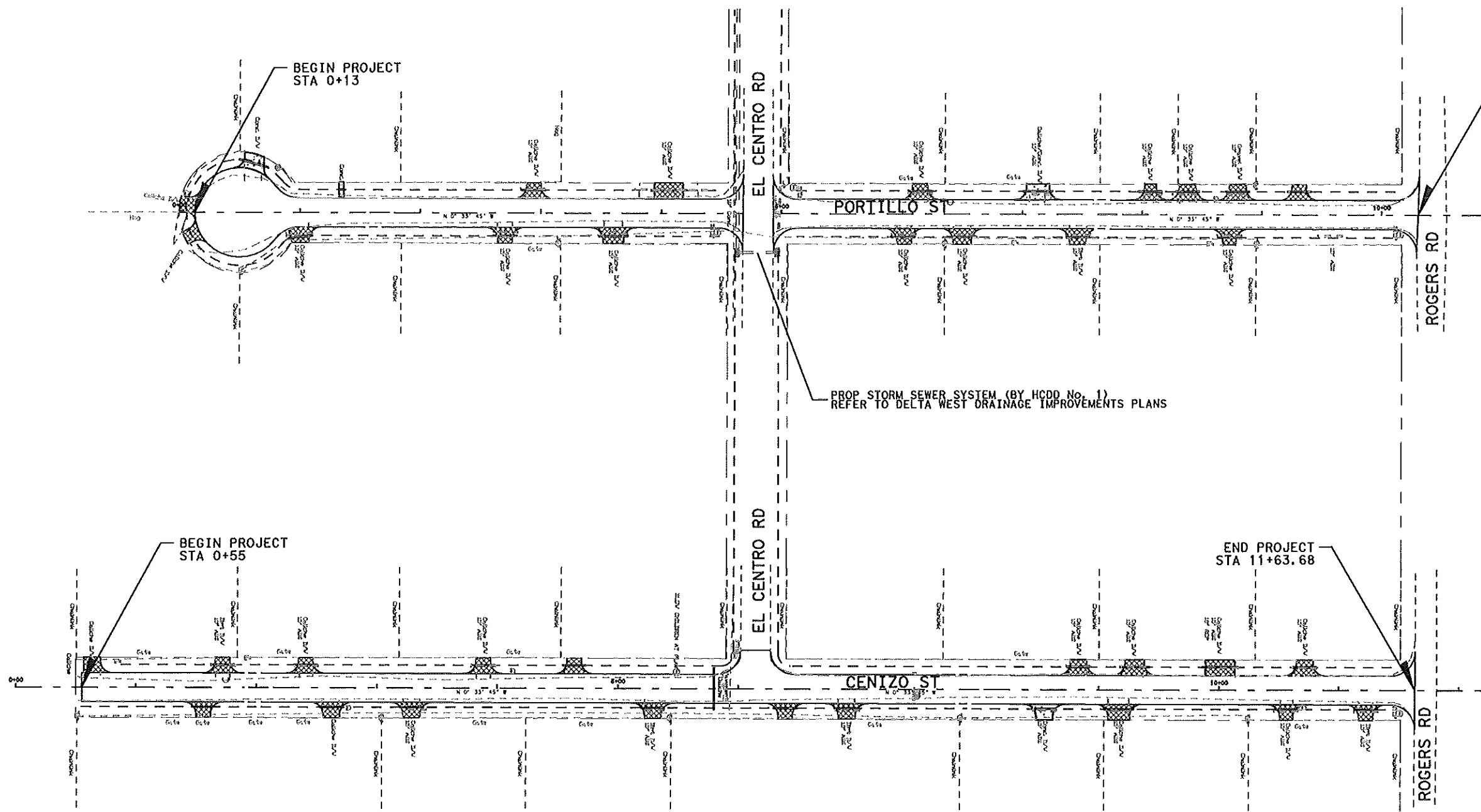
NO EXCEPTIONS
 NO EQUATIONS
 NO RAILROAD CROSSINGS



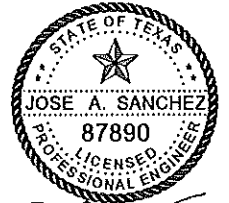
NO.	DATE	REVISION	APP.
 AUTHORIZED 04-08-2015			
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1201 E. Expressway 83 Mission, Texas 78572 (361) 424-7898 TBPE F-1640			
DELTA WEST PROJECT LAYOUT			
SHEET 1 OF 2			
FED. RD. DIV. NO. 6	PROJECT NO.		SHEET NO. 2
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.



[Signature]
 AUTHORIZED 04-08-2015



HIDALGO COUNTY



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898

DELTA WEST

PROJECT LAYOUT

SHEET 2 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 3
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ	PCT 1	HIGHWAY NO. VAR
3C-1080-220		

APPLICATION RATES:
HOT MIX ASPHALT - 1.5" - 171 LB/SY
PRIME COAT - 0.2 GAL/SY
EN-1 ROADBOND - 0.0075 GAL/SY
WATERING - 4 WKS - 3 CYCLES/WK AT 2.5 GAL/SY/CYCLE
FERTILIZER - 100 LBS OF NITROGEN/ACRE
THE N-P-K RATIO TO INCLUDE AT LEAST 5%P AND 5%K

ROADWAY IMPROVEMENT SUMMARY

ITEM CODE	DESCRIPTION	UNIT	TOTAL	JEANNINE ST	ESPERANZA ST	PORTILLO ST	CENIZO ST	EL CENTRO ST
0100-6002	PREPARING ROW	STA	42.2	10.2	10.2	10.2	11.1	0.5
0110-6001	EXCAVATION (ROADWAY)	CY	1844	407	447	651	339	
0132-6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	537	125	156	69	187	
0164-6027	CELL FBR MLCH SEED(PERM)(URBAN)(CLAY)	SY	13457	2961	2950	2953	3148	1445
* 0166-6001	FERTILIZER	AC	2.8	0.62	0.61	0.61	0.66	0.3
0168-6001	VEGETATIVE WATERING	MG	403.9	88.9	88.5	88.6	94.5	43.4
0247-6060	FL BS (CMP IN PLC)(TY E GR 4)(FNAL POS)	CY	1376	514	391	206	265	
0251-6036	REWORK BS MTL (TY C) (8") (DENS CONT)	SY	14059	3510	3473	3504	3572	
0310-6009	PRIME COAT (MC-30)	GAL	2813	702	695	701	715	
0496-6007	REMOV STR (PIPE)	LF	1400	366	344	400	290	
0500-6001	MOBILIZATION	LS	1					
0502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	5					
0666-6012	REFL PAV MRK TY I (W)4"(SLD)(100MIL)	LF	7214	1700	1700	1700	2114	
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	140	42	42	42	14	
0666-6120	REFL PAV MRK TY I (Y)4"(BRK)(100MIL)	LF	730	160	160	160	250	
0666-6126	REFL PAV MRK TY I (Y)4"(SLD)(100MIL)	LF	1600	480	480	480	160	
0341-6039	D-GR HMA TY-D SAC-B PG64-22	TON	1070.1	256.4	296.9	256	260.8	
	EN-1 ROADBOND (0.0075 GAL/SY)	GAL	108	27	27	27	27	
	EN-1 TRT (MIX EXST MATL & NEW BASE)(8")	SY	14059	3510	3473	3504	3572	

* ITEMS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

DRAINAGE IMPROVEMENT SUMMARY

ITEM CODE	DESCRIPTION	UNIT	TOTAL	JEANNINE ST	ESPERANZA ST	PORTILLO ST	CENIZO ST	EL CENTRO ST
0464-6003	RC PIPE (CL III)(18 IN)	LF	36				36	
0530-6004	DRIVEWAYS (CONC)	SY	116		25	66	25	
0530-6005	DRIVEWAYS (ACP)	SY	1664	435	392	388	449	
0760-6001	DITCH CLEANING AND RESHAPING (FOOT)	LF	1000					1000
0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	208	52	52	52	26	26
0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	208	52	52	52	26	26
	THERMOPLASTIC PIPE (12")(HDPE)	LF	160				160	
	THERMOPLASTIC PIPE (15")(HDPE)	LE	1195	350	275	350	220	

NO.	DATE	REVISION	APP.



HIDALGO COUNTY



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(959) 424-7698

DELTA WEST

SUMMARY OF QUANTITIES

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		4
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-220	1	VAR

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GENERAL NOTES AND SPECIFICATION DATA

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 with TxDOT underground lines.

ITEM 5. Control of the Work

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

ITEM 8. Prosecution and Progress

Working days will be computed and charged in accordance with Article 8.3.A.1 Five-Day Workweek.

ITEM 132. Embankment

The native soils within the project area are not considered suitable for use as select fill materials. Borrow used as embankment material in the top two feet (Select Fill) below the bottom of pavement flexible base shall meet the following requirements:

1. TxDOT Bid Item 247, Type E, Grade 4

2. Alternative select fill material

- The following soils, as classified according to the USCS, may be considered satisfactory for use as select fill materials at this site: SC,GC,CL and combinations of these soils.
- In addition to the USCS classification, alternative select fill materials shall have a maximum liquid limit of 35 percent, a plasticity index between 5 and 17 percent and a maximum particle size not exceeding 4 inches or one-half the loose lift thickness, whichever is smaller.
- In addition, if these materials are utilized, grain size analyses and Atterberg Limits must be performed during placement at a minimum rate of one test each per 5,000 cubic yards of material due to the high degree of variability associated with pit-run materials.
- If the above listed alternative materials are being considered for bidding purposes, the materials should be submitted to the Geotechnical Engineer for pre-approval at a minimum of 10 working days or more prior to the bid date. Failure to do so will be the responsibility of the General Contractor.
- The General Contractor will be responsible for ensuring that the properties of all delivered alternate select fill materials are similar to those of the pre-approved submittal. It should also be noted that when using alternative fill materials, difficulties may be experienced with respect to moisture control during and subsequent to fill placement, as well as with erosion, particularly when exposed to inclement weather. This may result in sloughing of beam trenches and/or pumping of the fill materials.
- Soils classified as CH, CL, MH, ML, SM, GM, OH,OL and Pt under the USCS and not meeting the alternative select fill material requirements are not considered suitable for use as select fill materials at this site.
- Select fill should be placed in loose lifts not exceeding 8 inches in thickness and compacted to at least 98 percent of maximum dry density as determined by ASTM D698. The moisture content of the fill should be maintained within the range of two percentage points below the optimum moisture content to two percentage points above the optimum moisture content until the final lift of fill is permanently covered.
- The select fill should be properly compacted in accordance with these recommendations and tested by the Geotechnical Engineer for compaction as specified.

ITEMS 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.

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.

Cool Season or Warm Season Grasses shall be included as part of Item 164 (See Table 4A or 5 in the Standard Specification Manual for dates and seed type).

Seed mixture shall be as specified under Item 164.

Watering rates as follows:

- first 4 weeks - 3 cycles per week at 2.5 gal/SY/cycle
- next 8 weeks - 1 cycle per week at 2.5 gal/SY/cycle

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 percent phosphorous and 5 percent 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.

Blended material for Flexible Base TY E GR 4

Flexible Base TY E GR 4 (caliche base) does not meet the requirements of TY A GR 1 base material. The Contractor may blend base material with another caliche source or with crushed concrete, meeting the requirements for TY "D" materials provided a minimum of 50% caliche is used. The crushed concrete may contain sand or granular materials. Stabilizing additives will not be allowed in the raw crushed concrete base. Acceptance will be under the following conditions:

Condition One (1): When both components of the blend in their individual stockpiles meet all the physical requirements of this Item, then field blending will be allowed.

Condition Two (2): When only one component of the blend passes the physical requirements of this Item, the materials shall be blended through a plant for stockpile testing and approval.

Flexible Base (TY E GR 4) shall conform to the following requirements:
BEFORE LIME IS ADDED

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:	20
Min. Comp. Strength PSI	150 at 15 psi lateral pressure

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

After 1% lime (laboratory) is added to unlimed material

Max PI	12
Min. Comp. Strength PSI:	180 at 15 psi Lateral Pressure
Triaxial Test (Lime Treated)	Tex-121-E

EN-1 will be incorporated into the Flexible Base in the field at the owner's expense.

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.

ITEM 300. Asphalt's, Oils and Emulsions

Temporary ramps/detours and driveways may use performance grade binder 64-22.

ITEM 310. Prime Coat (Cutback Asphaltic Material)

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.

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.

ITEM 496. Removing Old Structures

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

ITEM 502. Barricades, Signs and Traffic Handling

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

Replace/relocate all regulatory signs removed due to construction operations with a 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 replaceable 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.

ITEM 504. Field Office and Laboratory

For this project a field office will not be required at the project site.

ITEM 530. Driveways and Turnouts

Prime coat shall meet the requirements of Item 310.

Daily testing requirements for Hot Mix Asphaltic Concrete Pavements for drives, commercial entrances and/or turnouts may be waived by the Engineer.

Liquid Stabilizer (EN-1) Treatment for Subgrade Soils

Roadbond liquid stabilizer shall be stored and handled in closed, five (5) gallon weatherproof containers until immediate distribution on the road. Roadbond EN 1 materials must be stored in covered storage and well ventilated with adequate protection from flooding or damage. For mixing ease and safety round up to nearest 5 gallon increments (i.e. 72 gallons up to 75 gallons). Follow strict application instructions.

Road Width FT	6" In Depth *0.0056 GAL/SY	8" In Depth *0.0075 GAL/SY	10" In Depth *0.0089 GAL/SY
20'	66 GAL/MILE	88 GAL/MILE	104 GAL/MILE
22'	73 GAL/MILE	73 GAL/MILE	120 GAL/MILE
24'	80 GAL/MILE	106 GAL/MILE	132 GAL/MILE
26'	86 GAL/MILE	115 GAL/MILE	143 GAL/MILE
28'	93 GAL/MILE	124 GAL/MILE	154 GAL/MILE
30'	99 GAL/MILE	132 GAL/MILE	165 GAL/MILE
SQ YD treated/GAL	180 SQ YD	135 SQ YD	108 SQ YD
SQ YD treated/GAL (when using CTB)	171 SQ YD	128 SQ YD	103 SQ YD


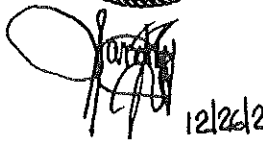

Use 5% more Roadbond EN-1 than the chart calls for when treating Cement Treated Base (calculate 28.5 cu yd/gal).

* Application rate per SQ YD = (Length (ft) X Width (ft))/(9 sq yd) X Application Rate

MISC

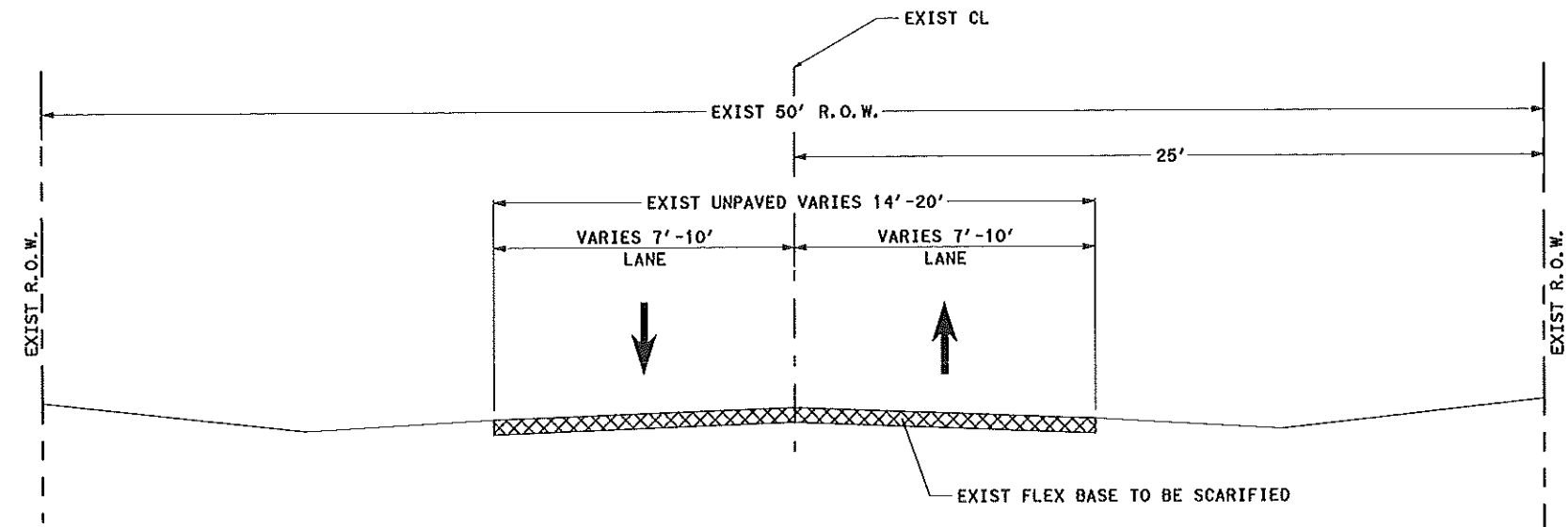
The contractor shall be responsible for maintenance of sediment traps. Damaged/missing sediment traps shall be replaced by the contractor at no additional cost. R.O.W. sediment traps may be shown on plans for clarity purposes only. Actual placement shall be done within R.O.W.

The contractor shall be responsible for securing Notice of Intent, Notice of Termination and any additional permits required by T.E.C.Q.

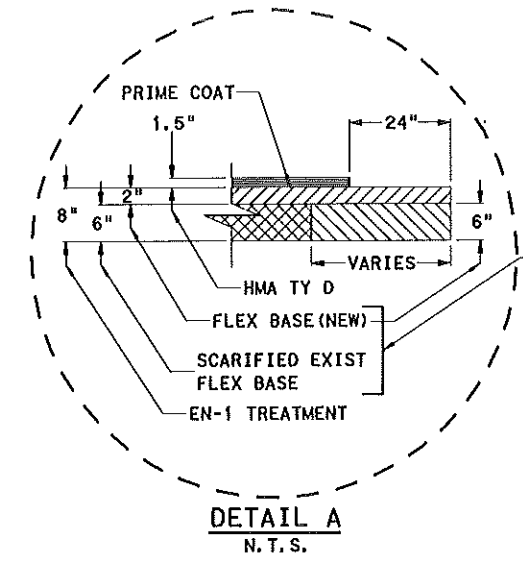
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  12/26/2010			
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1101 E. Expressway 83 Mission, Texas 78172 (956) 424-7498			
DELTA WEST			
GENERAL NOTES			
SHEET 1 OF 1			
FED. RD. DIV. NO. 6	PROJECT NO.		SHEET NO. 5
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ		PCT 1	HIGHWAY NO. VAR
3C-1080-220			

NOTES:

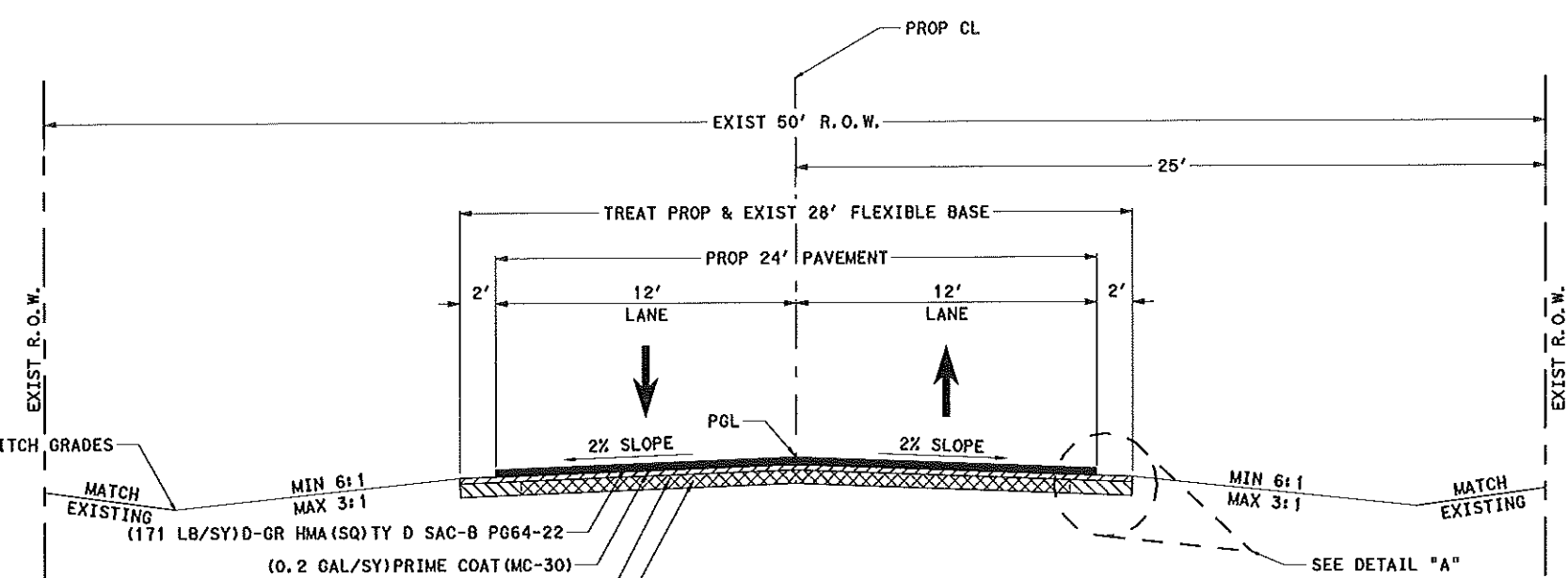
PGL - PROFILE GRADE LINE
 ALL GRADING SHALL BE WITHIN THE EXISTING RIGHT OF WAY LIMITS.
 WHERE REQUIRED BY FIXTURES OR UNUSUAL CONDITIONS THE GOVERNING SLOPES MAY BE VARIED WHEN SPECIFICALLY DIRECTED BY THE ENGINEER.
 PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON THE PROPOSED ROADWAY CENTERLINE.
 REWORKING BASE COURSE TYPES:
 TY A - SCARIFYING ONLY
 TY B - SCARIFYING/SALVAGING/REPLACING
 TY C - SCARIFYING/SALVAGING/STOCKPILING
 TY D - SCARIFYING/RESHAPING
 TY E - REFINISHING
 A STATION IS EQUAL TO 100 FT.
 APPLICATION RATES AS FOLLOWS:
 HOT MIX ASPHALT - 1.5" = 171 LB/SY
 PRIME COAT - 0.2 GAL/SY
 EN-1 ROADBOND - 0.0075 GAL/SY



**ESPERANZA ST
 EXISTING TYPICAL SECTION**
 N. T. S.
 STA 0+13 TO STA 10+29.61



DETAIL A
 N. T. S.



**ESPERANZA ST
 PROPOSED TYPICAL SECTION**
 N. T. S.
 STA 0+13 TO STA 10+29.61

SEE P&P SHEETS FOR DITCH GRADES
 MATCH EXISTING
 MIN 6:1
 MAX 3:1
 W/EN-1 TREATMENT (0.0075 GAL/SY)
 FL BS (CMP IN PLC) (TY E GR 4) (FNAL POS)
 REWORK BS MTL (TY D) (6") (DENS CONT)

NO.	DATE	REVISION	APP.
 AUTHORIZED 09-12-2014			
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1201 E. Expressway 83 Mission, Texas 78572 (956) 424-7898			
DELTA WEST TYPICAL SECTIONS			
N. T. S.		SHEET 2 OF 2	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 7	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	

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GENERAL NOTES

THE CONTRACTOR MAY SUBMIT AN ALTERNATE TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL. APPROVED ALTERNATE TRAFFIC CONTROL PLANS SHALL REQUIRE THE SEAL OF A LICENSED ENGINEER. NO PHASE OF CONSTRUCTION SHALL START UNLESS OTHERWISE APPROVED BY ENGINEER.

BARRICADES/DEVICES/SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY PROPOSED ROADWAY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT AND UNTIL COMPLETION AND ACCEPTANCE OF THE PROJECT BY OWNER.

BARRICADES, SIGNS, CHANNELIZATION DEVICES AND OTHER TRAFFIC HANDLING DEVICES MAY BE ADJUSTED OR SHIFTED TO FIT FIELD CONDITIONS AS REQUIRED FOR CONSTRUCTION.

ADEQUATE SIGNS AND BARRICADES SHALL BE INSTALLED BY THE CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO OPENING ANY ROADWAY SECTIONS TO TRAFFIC. THE ENGINEER MAY DIRECT THE CONTRACTOR TO FURNISH ADDITIONAL SIGNS, BARRICADES AND CHANNELIZING DEVICES AS REQUIRED TO MAINTAIN TRAFFIC AND MOTORIST SAFETY DURING CONSTRUCTION. ANY SUCH ADDITIONAL SIGNS AND BARRICADES, ETC, SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.

THE CONTRACTOR SHALL INSURE THAT BARRICADES, SIGNS, CHANNELIZING DEVICES AND TRAFFIC HANDLING DEVICES ARE MAINTAINED IN A CLEAN AND FUNCTIONAL CONDITIONS AT ALL TIMES, INCLUDING MAINTENANCE DUE TO VANDALISM OR ACCIDENTS. THE CONTRACTOR SHALL HAVE ENOUGH BARRICADES AND SIGNS AVAILABLE, AT ALL TIMES, TO REPLACE THOSE DAMAGED.

ALL STRIPING AND SIGNING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH THE PLANS, BC STANDARDS AND THE LATEST VERSION OF THE TMUTCD.

EXISTING SIGNS SHALL NOT BE REMOVED UNTIL CONSTRUCTION SIGNS HAVE BEEN INSTALLED. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXISTING SIGNS IN CONFLICT WITH PROPOSED CONSTRUCTION SIGNS. ANY SUCH REMOVAL OF SIGNS SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.

WHEN CONNECTING PROPOSED ROADWAY TO SECTIONS OF EXISTING TRAFFIC BEING USED BY TRAFFIC AND SUCH OPERATIONS RESULT IN A DROP-OFF OF MORE THAN 2', A 4' BUFFER ZONE AND 3:1 SLOPE WILL BE REQUIRED. THE SLOPE MUST BE CONSTRUCTED WITH A COMPACTED MATERIAL CAPABLE OF SUPPORTING VEHICLES AND/OR AS APPROVED BY ENGINEER. THIS WORK SHALL BE DONE EXPEDITIOUSLY DURING DAYLIGHT HOURS. FLAGGERS AND APPROPRIATE SIGNING TO SAFELY GUIDE TRAFFIC THROUGH THE WORK ARE WILL BE REQUIRED, AS APPROVED BY ENGINEER.

THE PORTION OF THIS PROJECT WHICH COINCIDES WITH THE EXISTING ROADS AND/OR PRIVATE DRIVEWAYS SHALL BE KEPT OPEN TO TRAFFIC AT ALL TIMES, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR APPROVED BY THE ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH ADJACENT PROPERTY OWNERS TO PROVIDE ADEQUATE EGRESS AND INGRESS DURING ALL PHASES OF CONSTRUCTION.

THE CONTRACTOR SHALL KEEP TRAVELED PAVED SURFACES USED IN HIS HAULING OPERATIONS CLEAR AND FREE OF DIRT AND OTHER UNACCEPTABLE MATERIAL AT ALL TIMES. A POWER BROOM SHALL ONLY BE USED TO CLEAN THE ROADWAY.

THE CONTRACTOR SHALL COORDINATE THE TRAFFIC CONTROL PLAN WITH ANY ADJACENT CONSTRUCTION PROJECTS TO INSURE THE UNINTERRUPTED FLOW OF TRAFFIC WITHIN THE VICINITY OF THE PROJECT AREAS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY DRAINAGE DURING CONSTRUCTION THROUGHOUT THE PROJECT LIMITS DURING ALL PHASES OF CONSTRUCTION. EXCAVATED MATERIALS SHALL BE HANDLED BY THE CONTRACTOR IN SUCH WAY IT DOES NOT BLOCK DRAINAGE.

THE CONTRACTOR SHALL NOT LEAVE ANY OPEN TRENCHES OR EXCAVATIONS OVERNIGHT, UNLESS PROPERLY PROTECTED AND/OR AS APPROVED BY THE ENGINEER.

CONSTRUCTION FENCING (4' HIGH MINIMUM) SHALL BE USED AROUND ALL OPEN TRENCHES OR EXCAVATIONS, AS APPROVED BY THE ENGINEER. THIS WORK SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

ALL DRUMS USED IN THIS PROJECT FOR TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE PROJECTS. MATERIALS FURNISHED, INSTALLED AND REMOVED BY THE CONTRACTOR SHALL BECOME PROPERTY OF THE CONTRACTOR.

ALL EXISTING UTILITIES THAT ARE IN CONFLICT WITH THE PROPOSED ROADWAY IMPROVEMENTS FOR THIS PROJECT SHALL BE RELOCATED AND/OR ADJUSTED BY OTHERS EXCEPT AS NOTED IN THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE VARIOUS UTILITY COMPANIES THE RELOCATION, ADJUSTMENT AND INSTALLATION OF UTILITY LINES. THE ROADWAY WORK SHALL BE ONGOING DURING ADJUSTMENT, RELOCATION AND INSTALLATION OF UTILITY LINES.

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF ITEM 7 "LEGAL RELATIONS AND RESPONSIBILITIES" OF THE STANDARD SPECIFICATIONS.

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

THE CONTRACTOR WILL BE ALLOWED TO CLOSE ROADWAY TO THRU TRAFFIC, BUT MUST ALLOW ALL LOCAL TRAFFIC EGRESS AND INGRESS AT ALL TIMES.

THE CONTRACTOR WILL BE ALLOWED TO WORK ONE HALF OF THE PROPOSED SECTION AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE CONTRACTOR MUST REMOVE EXISTING GRASS AND TOPSOIL FROM THE SHOULDER.

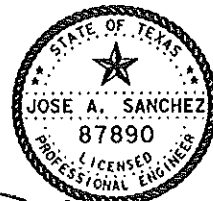



AFTER PREPARATION OF THE SUBGRADE AND/OR FLEXBASE, THE ROADWAY SHALL BE ADEQUATELY FINISHED TO SAFELY CARRY TRAFFIC AFTER WORKING HOURS.

THE CONTRACTOR SHALL WORK ONLY THAT LENGTH OF ROADWAY IN ONE WORKING DAY WHICH HE CAN ADEQUATELY FINISH TO SAFELY CARRY TRAFFIC AFTER WORKING HOURS.

ALL SIGNS AND MAILBOXES AFFECTED BY CONSTRUCTION SHALL BE RELOCATED. RELOCATION WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

ALL SIGNS AND MAILBOXES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED NEW AT CONTRACTOR'S EXPENSE.

ALL EXISTING SIGNS SHALL REMAIN IN PLACE DURING CONSTRUCTION. THE CONTRACTOR IS TO RELOCATE/ADJUST SIGNS DURING CONSTRUCTION AT NO ADDITIONAL COST.

NO.	DATE	REVISION	APP.
  12/26/2010			
 HIDALGO COUNTY			
 TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1101 E. Expressway 83 Mission, Texas 78172 (512) 424-7498			
DELTA WEST			
TRAFFIC CONTROL PLAN GENERAL NOTES			
N. T. S.		SHEET 1 OF 1	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 8	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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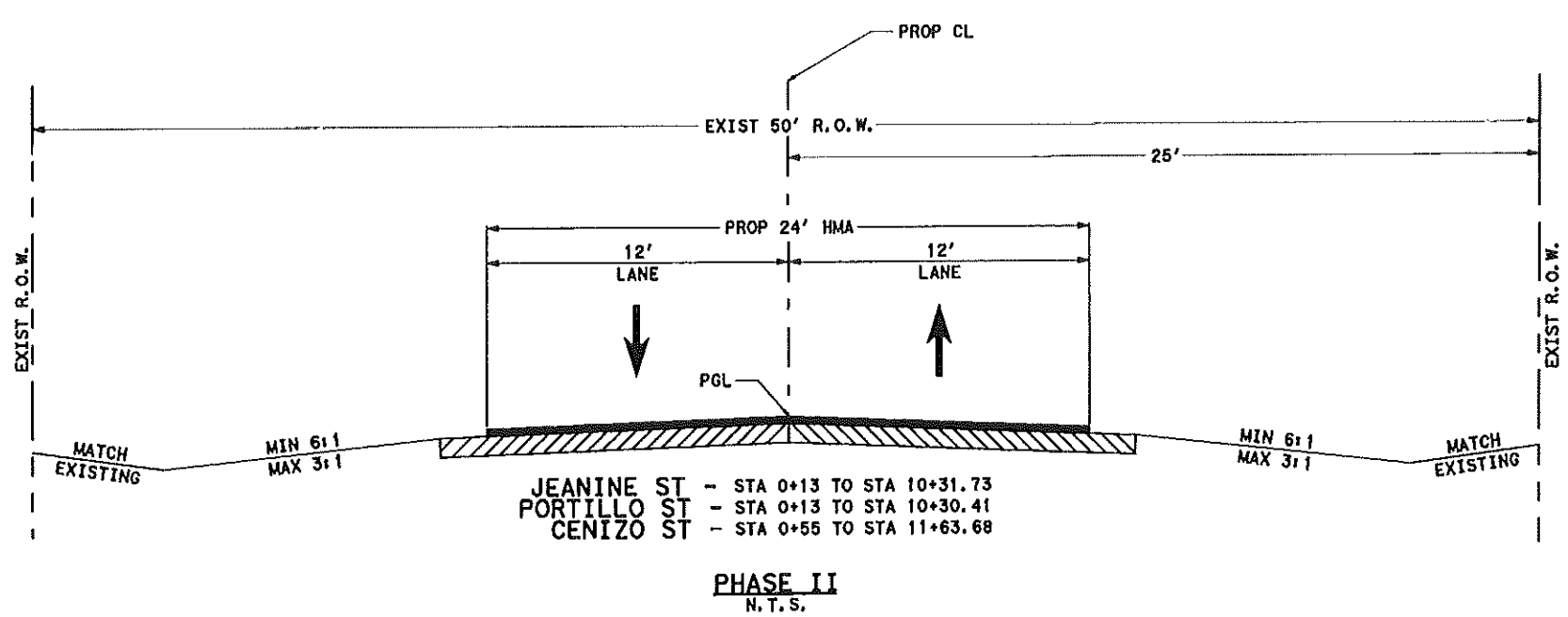
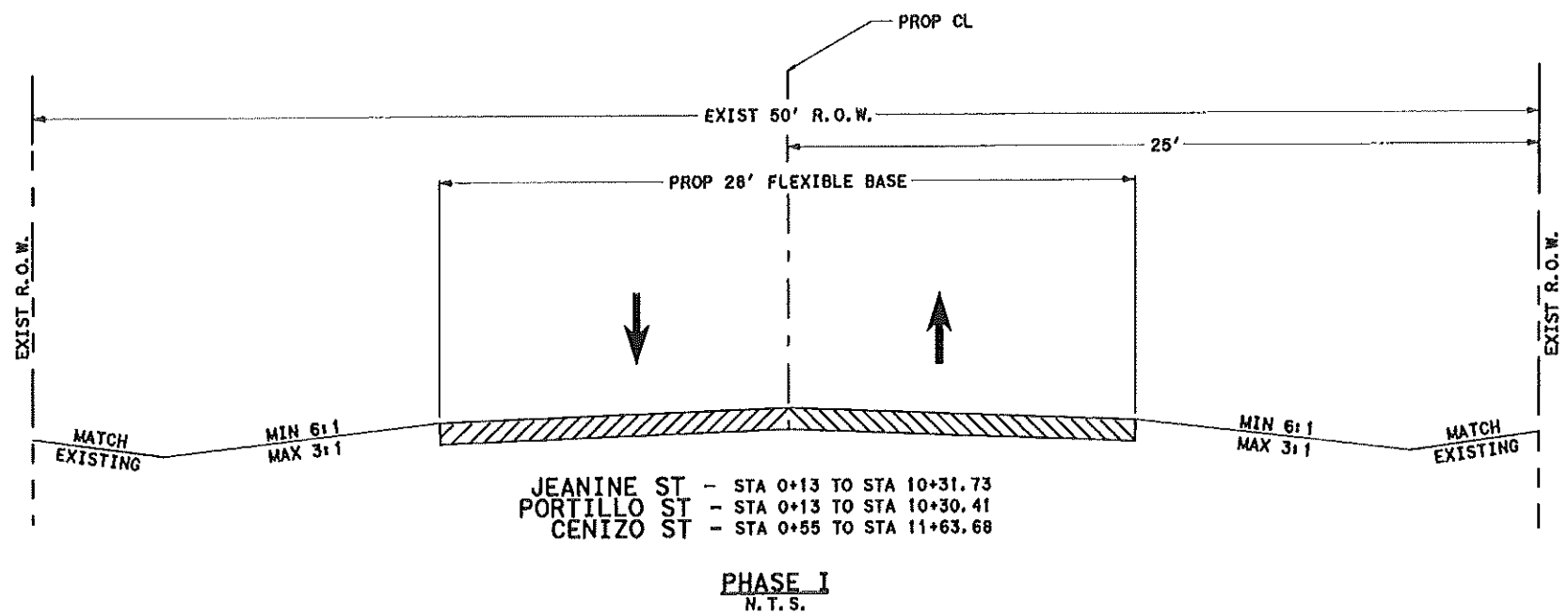
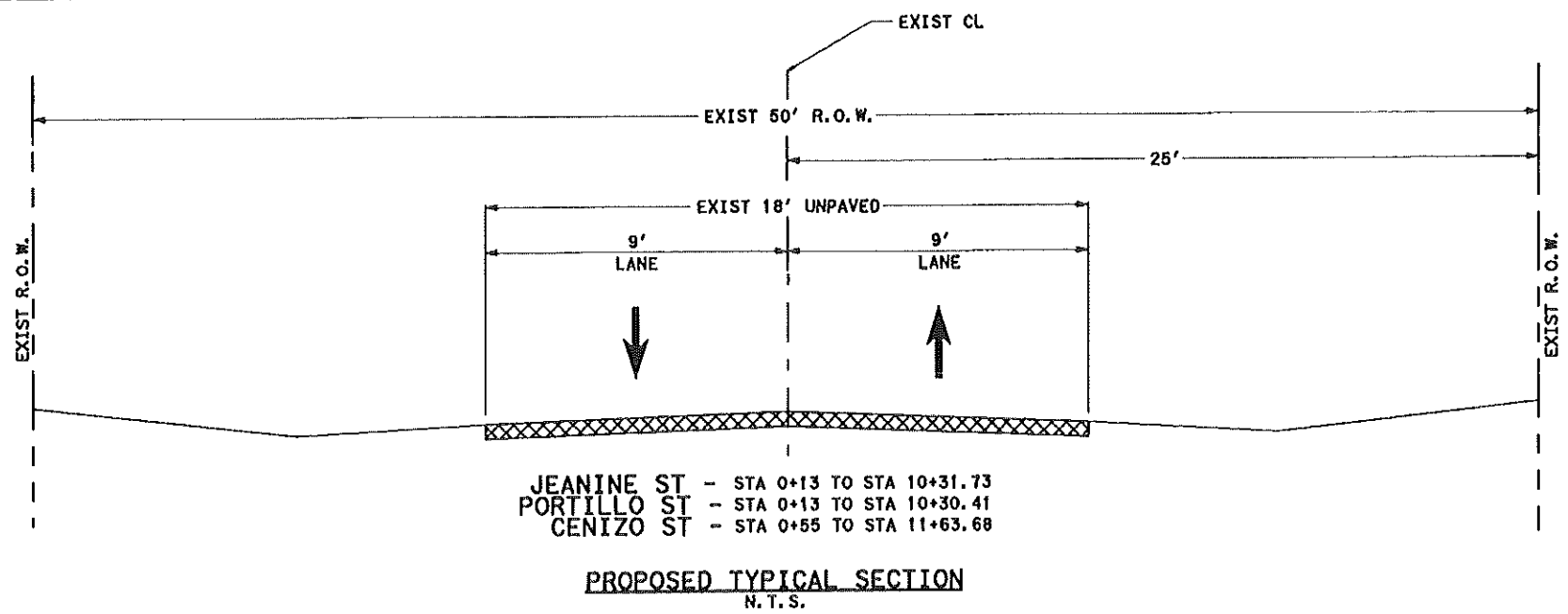
SEQUENCE OF CONSTRUCTION

PHASE I

1. INSTALL PROJECT LIMITS AND ADVANCE WARNING SIGNS
2. INSTALL CROSSROAD BARRICADES/SIGNS, IN ACCORDANCE WITH MUTCD, BC STANDARDS AND/OR AS DIRECTED BY ENGINEER
3. INSTALL STORM WATER POLLUTION CONTROLS
4. CONSTRUCT SIDE DITCHES/INSTALL STORM DRAINAGE STRUCTURES
5. FLEXIBLE BASE WORK

PHASE II

1. APPLY HOT MIX ASPHALT MATERIAL IN ONE COURSE
2. BACKFILL PAVEMENT EDGES
3. REINSTALL EXISTING SIGNS/MAILBOXES
4. REMOVE STORM WATER POLLUTION CONTROLS
5. APPLY PERMANENT SEEDING
6. INSTALL PAVEMENT MARKINGS
7. FINAL CLEANUP



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1101 E. Expressway 83
Mission, Texas 78147
(951) 424-7898

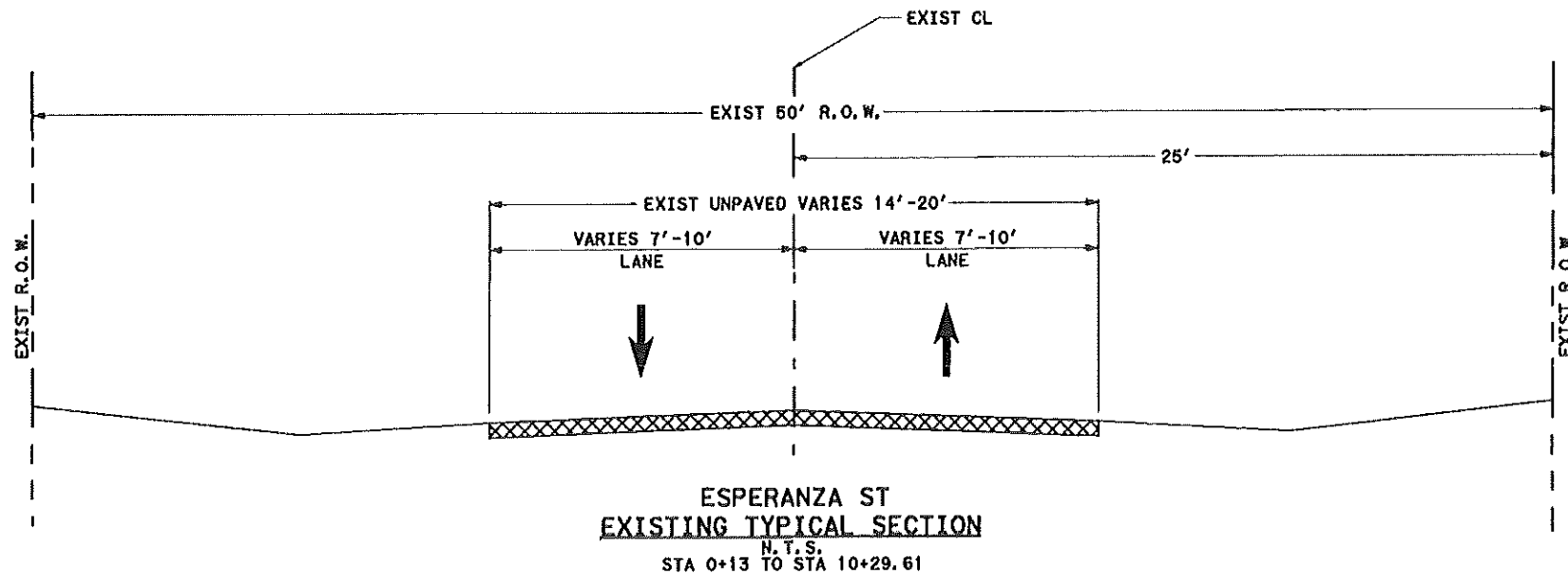
DELTA WEST

TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

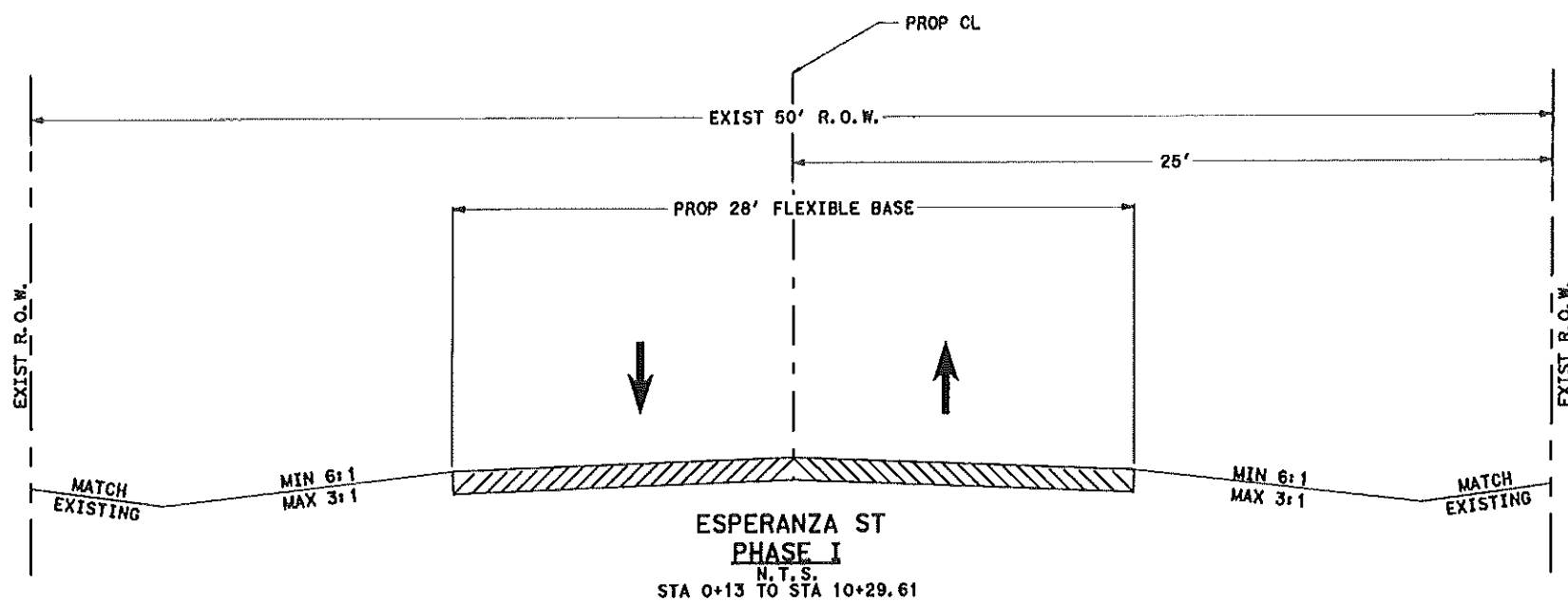
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STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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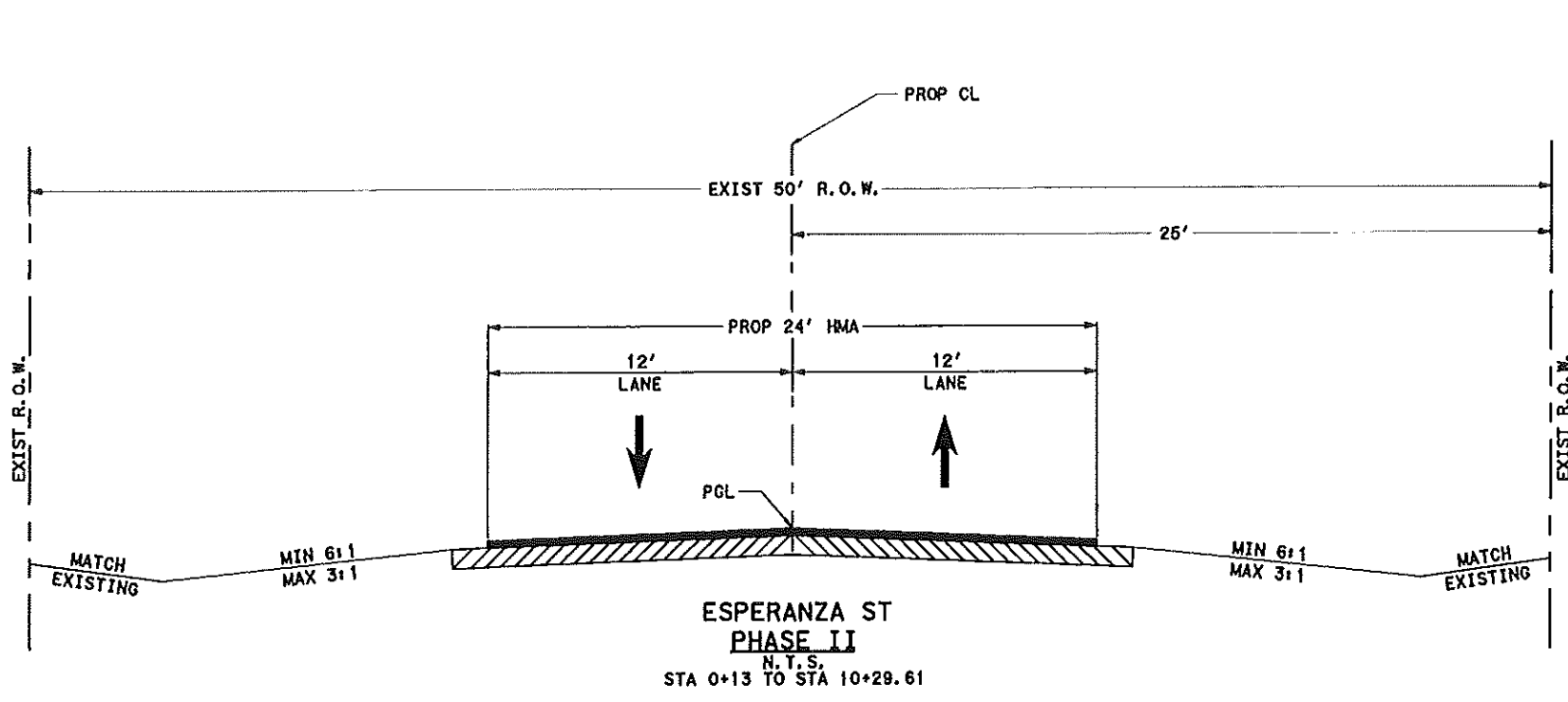
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ESPERANZA ST
EXISTING TYPICAL SECTION
N.T.S.
STA 0+13 TO STA 10+29.61



ESPERANZA ST
PHASE I
N.T.S.
STA 0+13 TO STA 10+29.61



ESPERANZA ST
PHASE II
N.T.S.
STA 0+13 TO STA 10+29.61

SEQUENCE OF CONSTRUCTION

PHASE I

1. INSTALL PROJECT LIMITS AND ADVANCE WARNING SIGNS
2. INSTALL CROSSROAD BARRICADES/SIGNS, IN ACCORDANCE WITH MUTCD, BC STANDARDS AND/OR AS DIRECTED BY ENGINEER
3. INSTALL STORM WATER POLLUTION CONTROLS
4. CONSTRUCT SIDE DITCHES/INSTALL STORM DRAINAGE STRUCTURES
5. FLEXIBLE BASE WORK

PHASE II

1. APPLY HOT MIX ASPHALT MATERIAL IN ONE COURSE
2. BACKFILL PAVEMENT EDGES
3. REINSTALL EXISTING SIGNS/MAILBOXES
4. REMOVE STORM WATER POLLUTION CONTROLS
5. APPLY PERMANENT SEEDING
6. INSTALL PAVEMENT MARKINGS
7. FINAL CLEANUP

NO.	DATE	REVISION	APP.

12/26/2010

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Marion, Texas 78572
(936) 414-7898

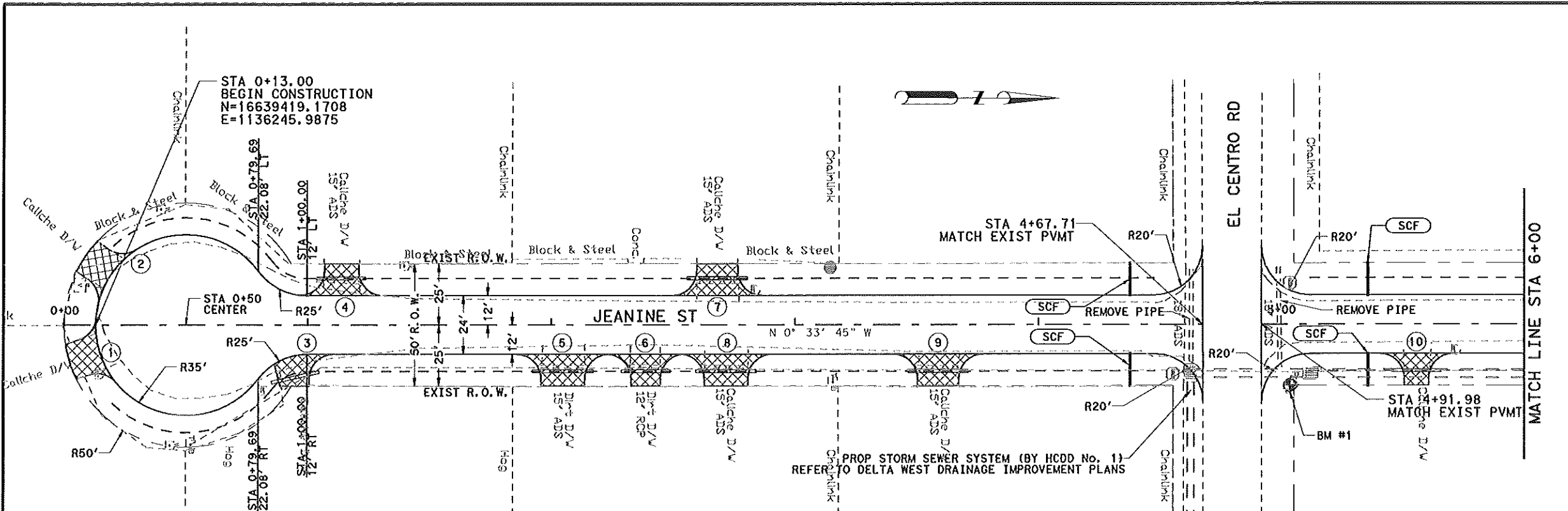
DELTA WEST

**TRAFFIC CONTROL PLAN
TYPICAL SECTIONS**

N. T. S.		SHEET 2 OF 2	
FED. RD. DIST. NO. 6	PROJECT NO.	SHEET NO. 10	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

LEGEND

- GAS — EXIST GAS LINE
- T — EXIST UG PHONE LINE
- W — EXIST WATER LINE
- x-x-x-x- EXIST CHAINLINK FENCE
- ☐ EXIST MAILBOX
- ⊕ EXIST WATER METER
- ⊕ EXIST WATER VALVE
- ⊕ EXIST POWER POLE
- ⊕ EXIST FIRE HYDRANT
- ⊕ EXIST TELEPHONE BOX
- ⊕ EXIST GAS METER
- ⊕ EXIST STEEL POST
- ⊕ DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- SCF PROP TEMP SED CTRL FENCE

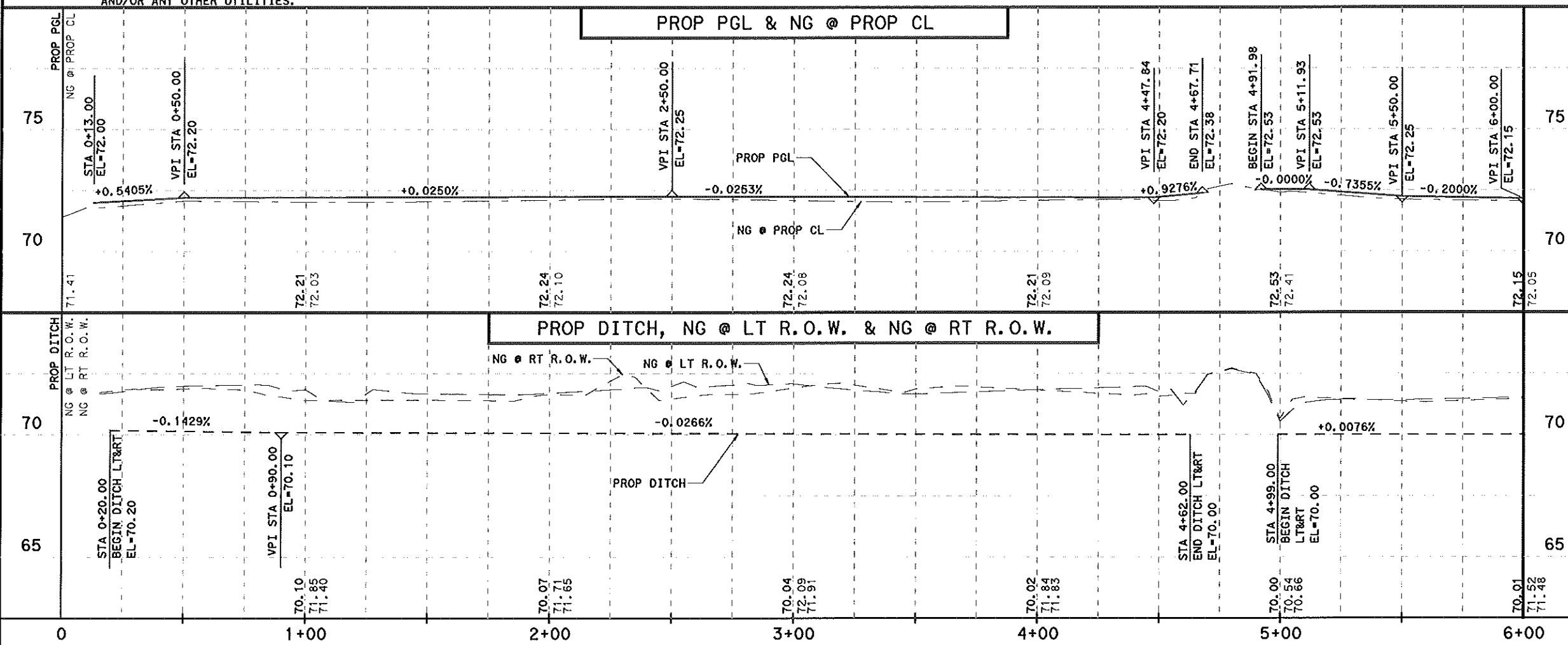


NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. REMOVAL OF TREES OR OTHER OBSTRUCTIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:
RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
COUNTY AND CITY ROADWAYS: 15"
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING NOTICE OF INTENT, NOTICE OF TERMINATION AND ANY ADDITIONAL PERMITS REQUIRED BY T.E.C.O.

BM DATA:

BM #1
60D NAIL ON POWER POLE
JEANINE ST
STA 5+03.64
OFFSET = 24.88 RT
EL = 72.51



NO.	DATE	REVISION	APP.

JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

AUTHORIZED 04-08-2015

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7893

DELTA WEST

**JEANINE ST
PLAN & PROFILE**

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

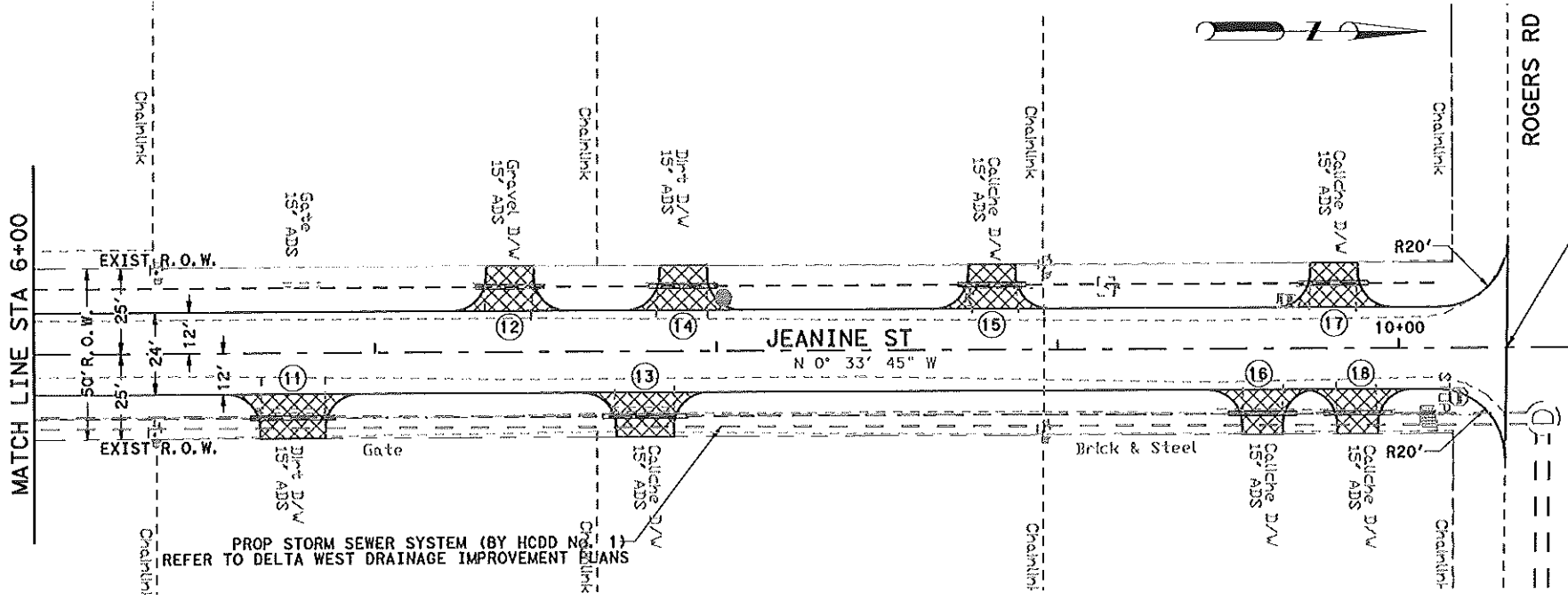
SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		11
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-220	1	VAR

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LEGEND

- GAS — EXIST GAS LINE
- T --- EXIST UG PHONE LINE
- W --- EXIST WATER LINE
- x-x-x-x-x- EXIST CHAINLINK FENCE
- Ⓜ EXIST MAILBOX
- Ⓜ EXIST WATER METER
- Ⓜ EXIST WATER VALVE
- Ⓜ EXIST POWER POLE
- Ⓜ EXIST FIRE HYDRANT
- Ⓜ EXIST TELEPHONE BOX
- Ⓜ EXIST GAS METER
- EXIST STEEL POST
- Ⓜ EXIST DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- Ⓜ SCF PROP TEMP SED CTRL FENCE



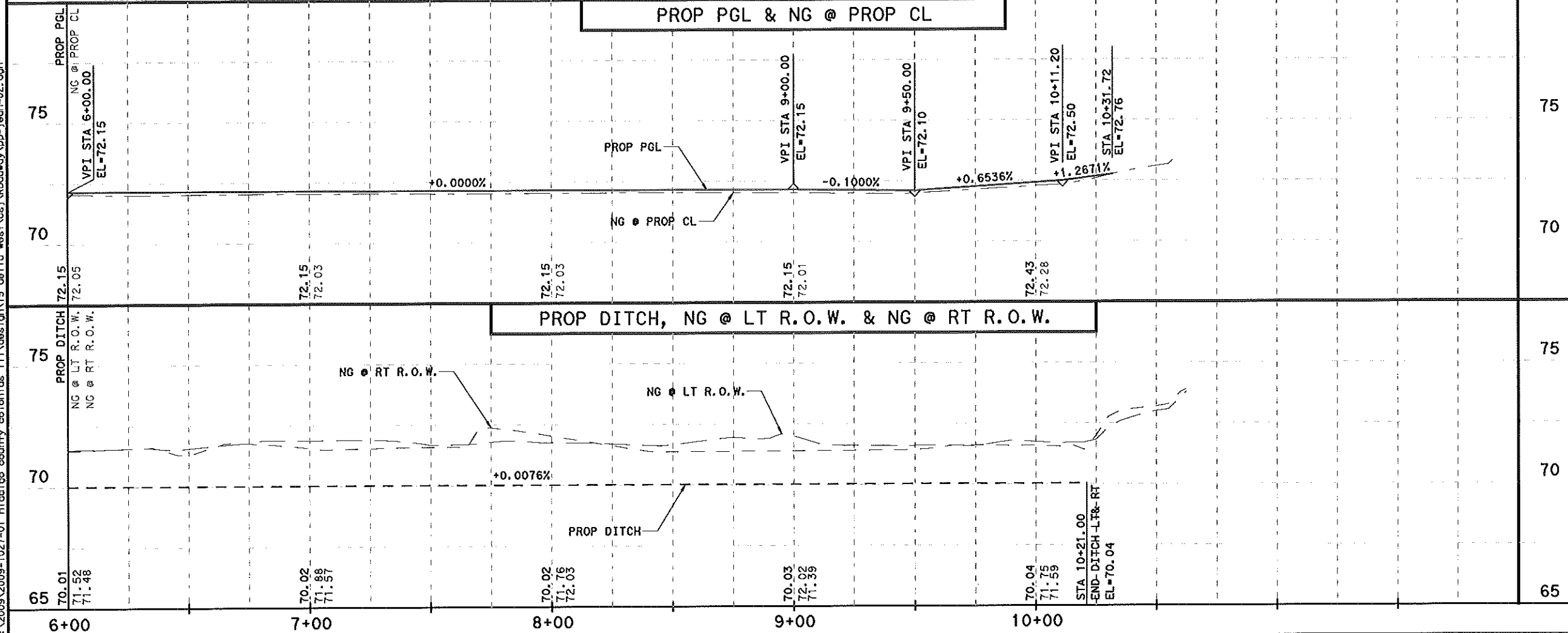
STA 10+31.73
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E=1136235.9855

NOTES:

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6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING NOTICE OF INTENT, NOTICE OF TERMINATION AND ANY ADDITIONAL PERMITS REQUIRED BY T. E. C. Q.

BM DATA:

BM #1
60D NAIL ON POWER POLE
JEANINE ST
STA 5+03.64
OFFSET = 24.88 RT
EL = 72.51



NO.	DATE	REVISION	APP.

AUTHORIZED 04-08-2015

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78172
(956) 414-7898

DELTA WEST

**JEANINE ST
PLAN & PROFILE**

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

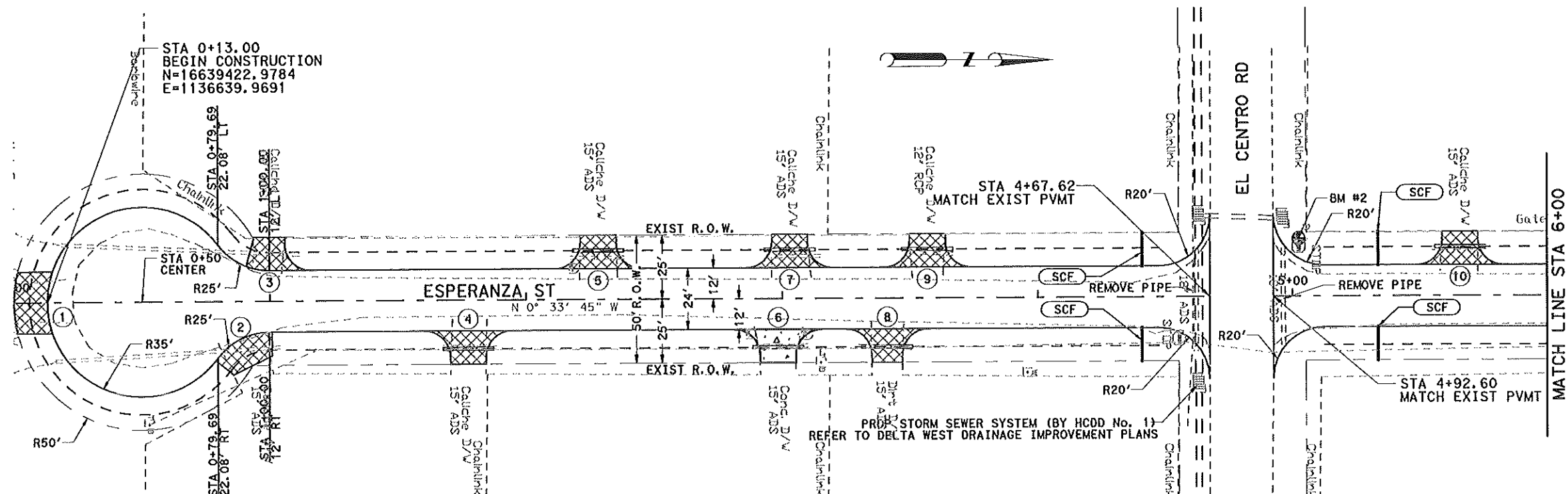
SHEET 2 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 12
STATE TEXAS	DIST. PHR CSJ	COUNTY HIDALGO
	PCT 1	HIGHWAY NO. VAR

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LEGEND

- GAS — EXIST GAS LINE
- T — EXIST UG PHONE LINE
- W — EXIST WATER LINE
- x-x-x-x-x- EXIST CHAINLINK FENCE
- Ⓜ EXIST MAILBOX
- Ⓜ EXIST WATER METER
- Ⓜ EXIST WATER VALVE
- Ⓜ EXIST POWER POLE
- Ⓜ EXIST FIRE HYDRANT
- Ⓜ EXIST TELEPHONE BOX
- Ⓜ EXIST GAS METER
- EXIST STEEL POST
- Ⓜ DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- SCF PROP TEMP SED CTRL FENCE

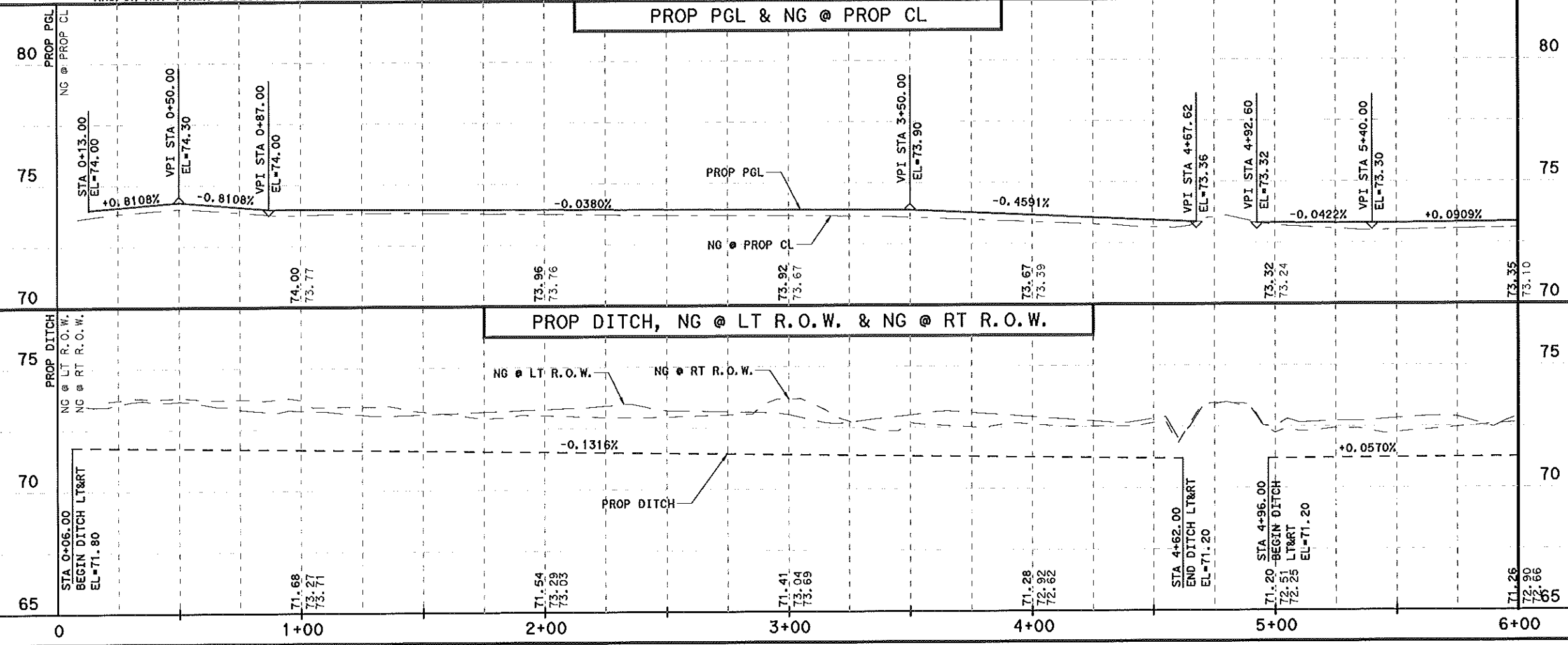


NOTES:

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BM DATA:

BM #2
60D NAIL ON POWER POLE
ESPERANZA ST
STA 5+02.58
OFFSET = 22.49' LT
EL = 73.39



NO.	DATE	REVISION	APP.

JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

AUTHORIZED 04-08-2015

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78172
(956) 424-7898

DELTA WEST

**ESPERANZA ST
PLAN & PROFILE**

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

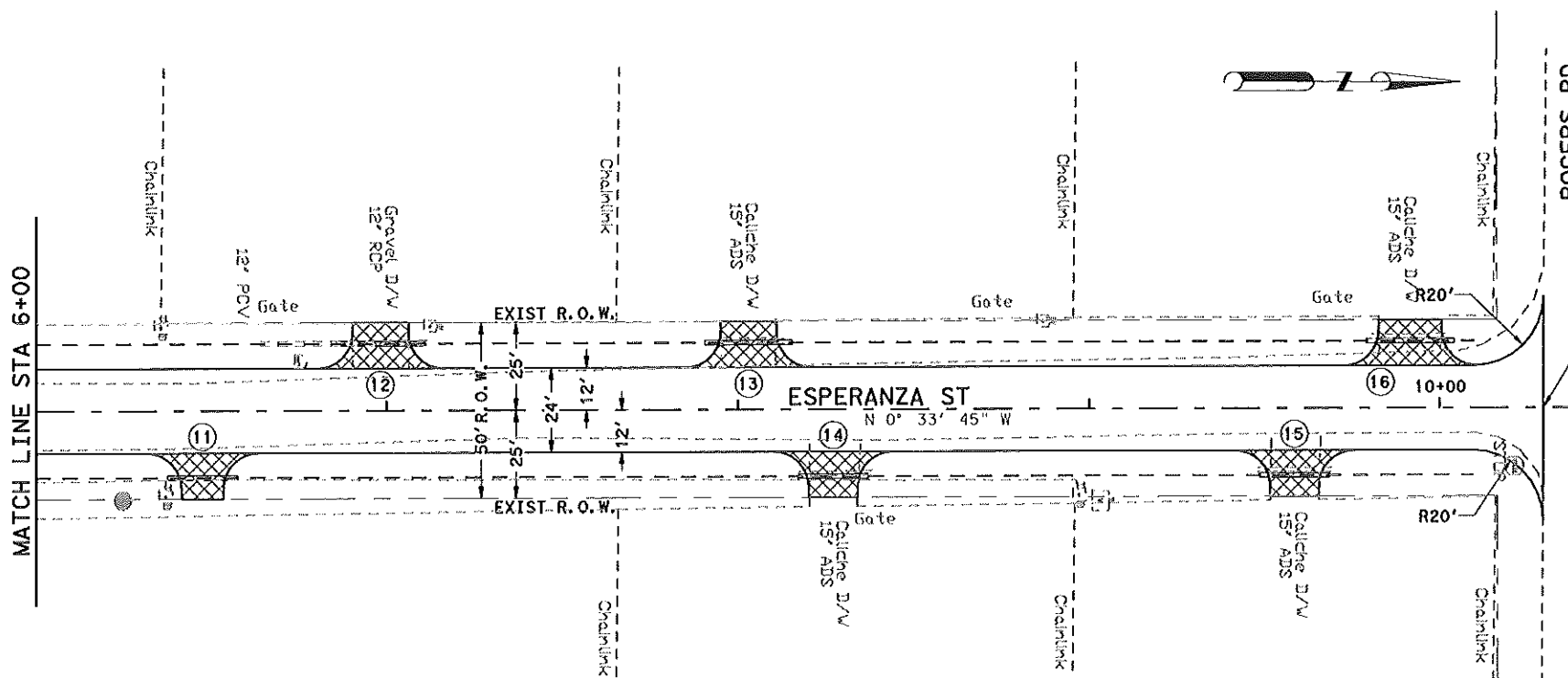
SHEET 1 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 13
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ 3C-1080-220	PCT 1	HIGHWAY NO. VAR

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LEGEND

- GAS — EXIST GAS LINE
- T --- EXIST UG PHONE LINE
- W --- EXIST WATER LINE
- x-x-x-x- EXIST CHAINLINK FENCE
- Ⓜ EXIST MAILBOX
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- Ⓜ EXIST WATER VALVE
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- Ⓜ EXIST FIRE HYDRANT
- Ⓜ EXIST TELEPHONE BOX
- Ⓜ EXIST GAS METER
- EXIST STEEL POST
- Ⓜ EXIST DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- Ⓜ SCF PROP TEMP SED CTRL FENCE

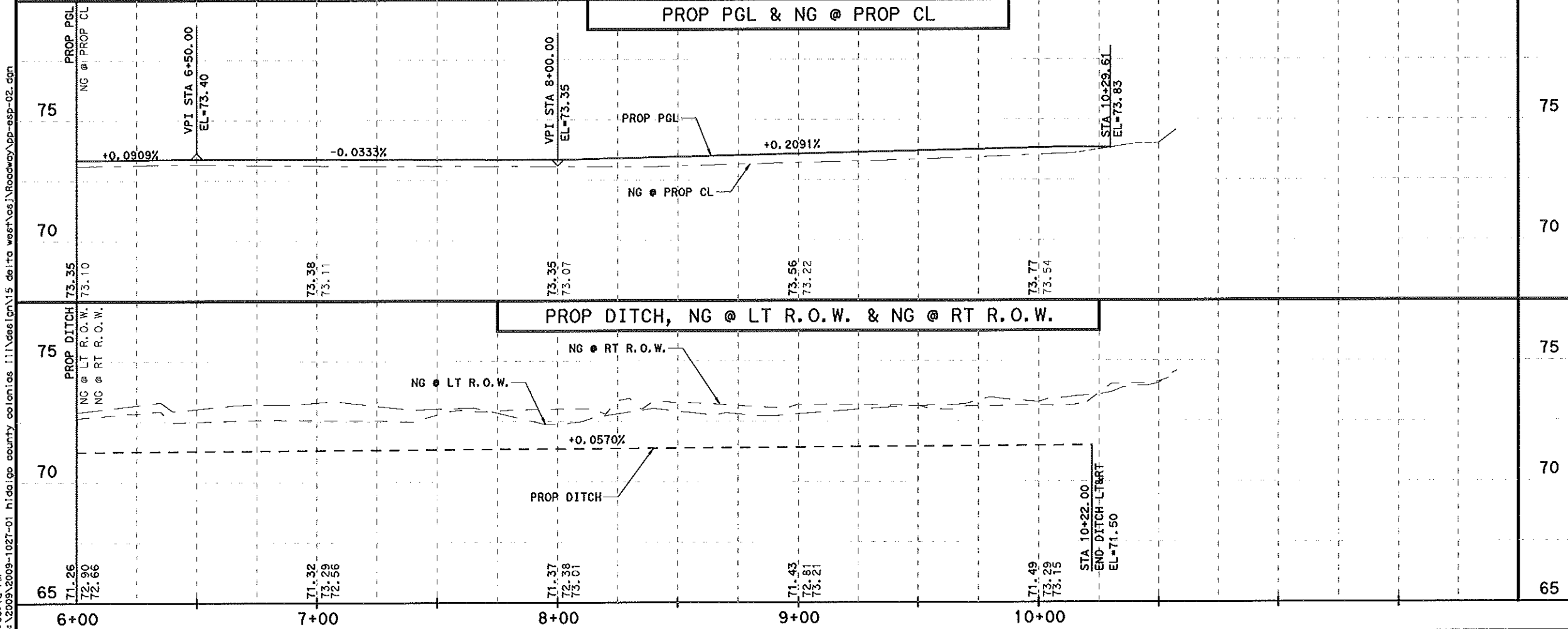


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BM DATA:

BM #2
60D NAIL ON POWER POLE
ESPERANZA ST
STA 5+02.58
OFFSET = 22.49' LT
EL = 73.39



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7893

DELTA WEST

**ESPERANZA ST
PLAN & PROFILE**

SCALE:
HORIZ: 1" = 50'
VERT: 1" = 5'

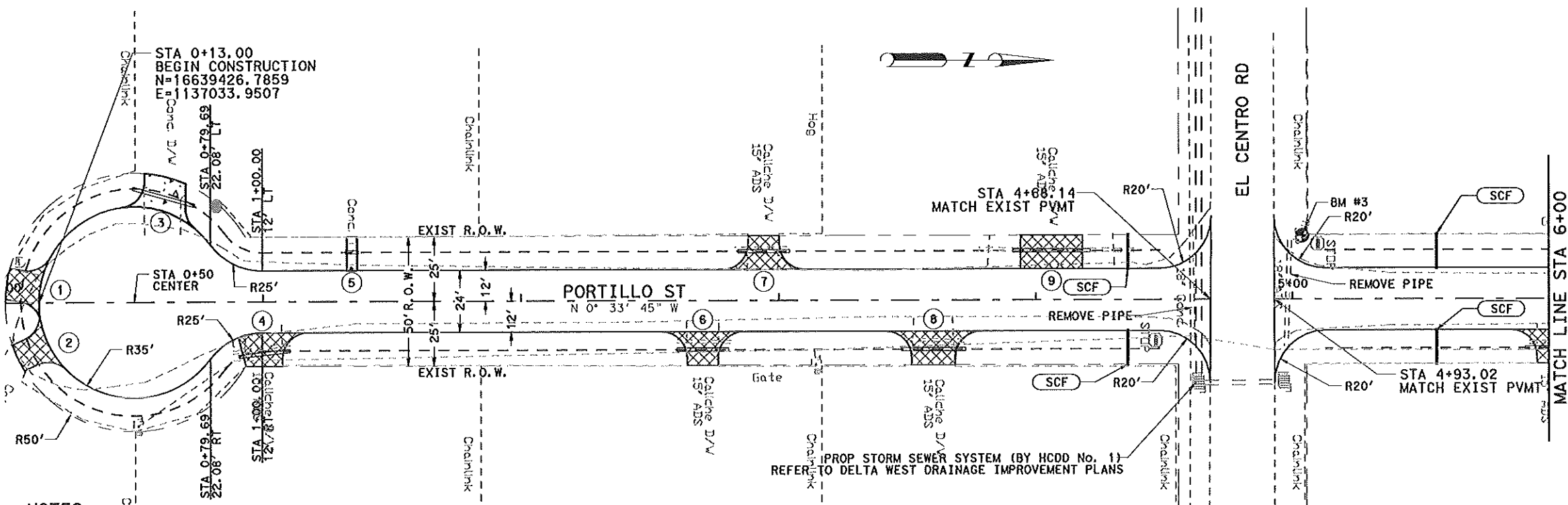
SHEET 2 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 14
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ	PCT 1	HIGHWAY NO. VAR

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LEGEND

- GAS — EXIST GAS LINE
- T — EXIST UG PHONE LINE
- W — EXIST WATER LINE
- x-x-x-x-x- EXIST CHAINLINK FENCE
- Ⓜ EXIST MAILBOX
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- Ⓜ EXIST GAS METER
- Ⓜ EXIST STEEL POST
- Ⓜ DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- Ⓜ SCF PROP TEMP SED CTRL FENCE

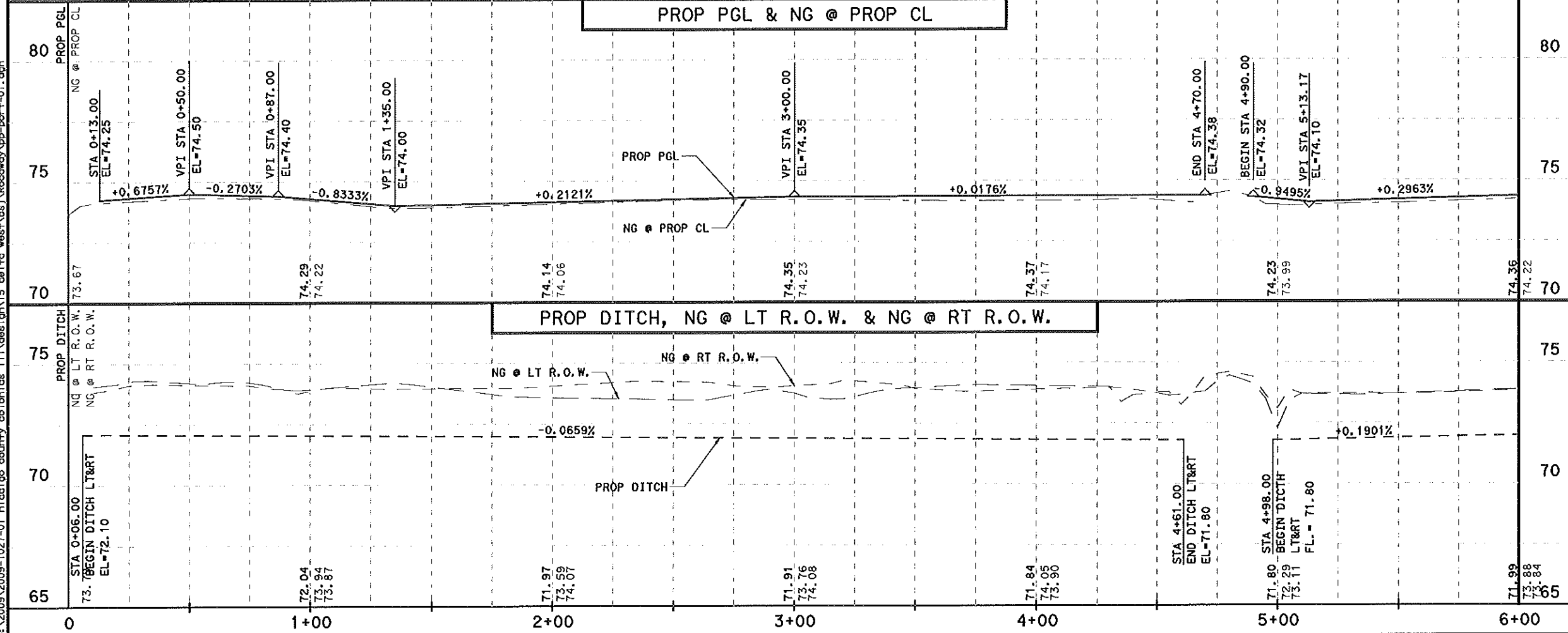


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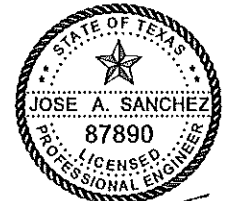
1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. REMOVAL OF TREES OR OTHER OBSTRUCTIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:
RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
COUNTY AND CITY ROADWAYS: 15"
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING NOTICE OF INTENT, NOTICE OF TERMINATION AND ANY ADDITIONAL PERMITS REQUIRED BY T. E. C. Q.

BM DATA:

BM #3
60D NAIL ON POWER POLE
PORTILLO ST
STA 5+03.88
OFFSET = 24.54' LT
EL = 73.88




NO.	DATE	REVISION	APP.



JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

AUTHORIZED 04-08-2015



HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 B. Expressway 83
Mission, Texas 78572
(956) 424-7898

DELTA WEST

**PORTILLO ST
PLAN & PROFILE**

SCALE:
HORIZ: 1" = 50'
VERT: 1" = 5'

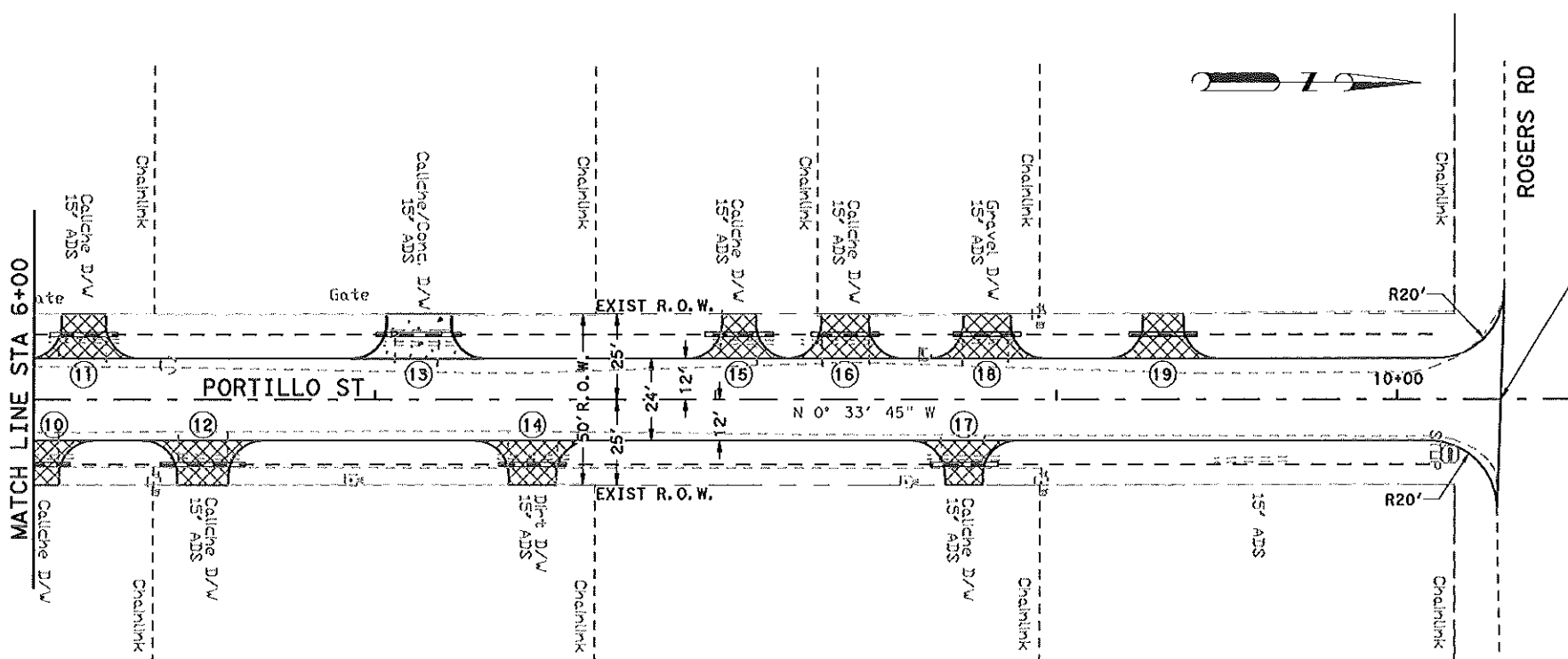
SHEET 1 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 15
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ 3C-1080-220	PCT 1	HIGHWAY NO. VAR

4/8/2015 3:00:13 PM D:\2009\2009-1027-01 hidalgo county colonias III\design\15 delta west\as\Roadway\pp-port-01.dgn

LEGEND

- GAS — EXIST GAS LINE
- T --- EXIST UG PHONE LINE
- W — EXIST WATER LINE
- x-x-x-x- EXIST CHAINLINK FENCE
- ☐ EXIST MAILBOX
- ☐ EXIST WATER METER
- ☐ EXIST WATER VALVE
- ☐ EXIST POWER POLE
- ☐ EXIST FIRE HYDRANT
- ☐ EXIST TELEPHONE BOX
- ☐ EXIST GAS METER
- EXIST STEEL POST
- ① DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - PROP DITCH
- SCF PROP TEMP SED CTRL FENCE



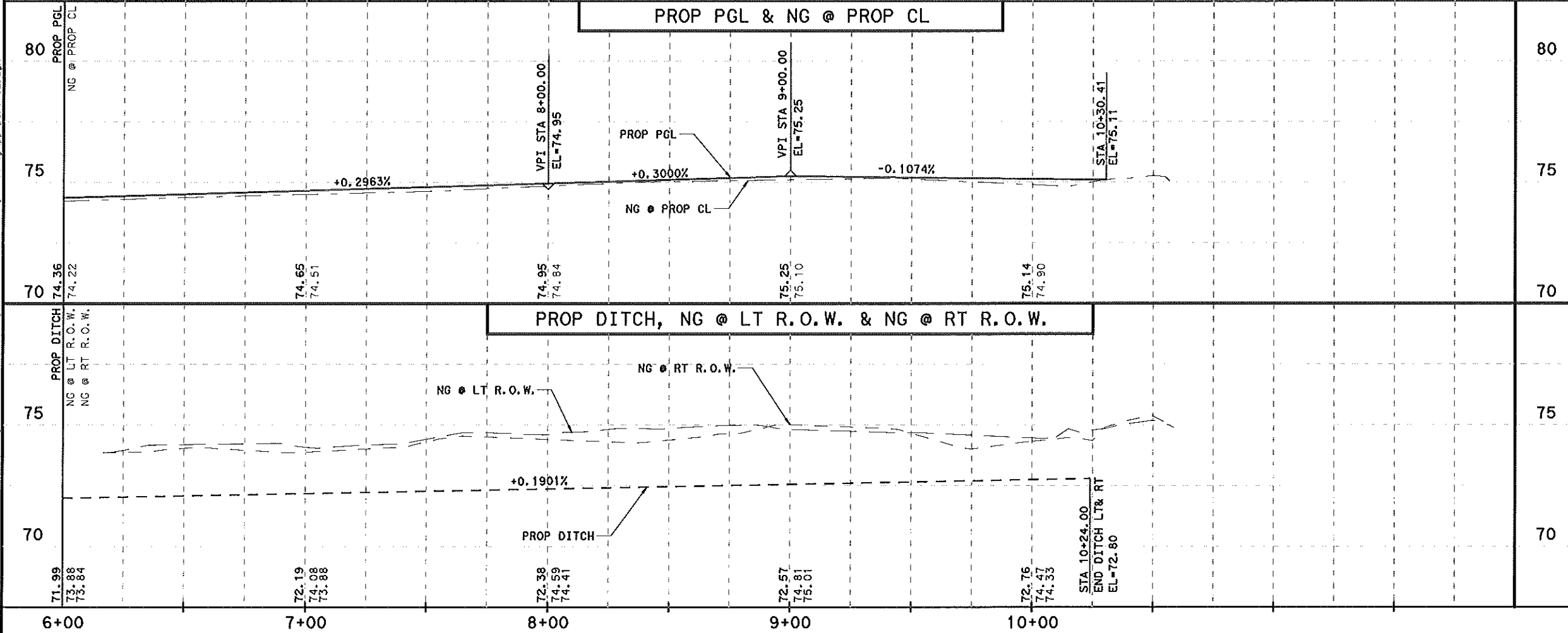
STA 10+30.41
END CONSTRUCTION
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E=1137023.9616

NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
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BM DATA:

BM #3
60D NAIL ON POWER POLE
PORTILLO ST
STA 5+03.88
OFFSET = 24.54' LT
EL = 73.88



NO.	DATE	REVISION	APP.

JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

[Signature]

AUTHORIZED 05-02-2014

HIDALGO COUNTY

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Mission, Texas 78572
(956) 424-7898

DELTA WEST

**PORTILLO ST
PLAN & PROFILE**

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

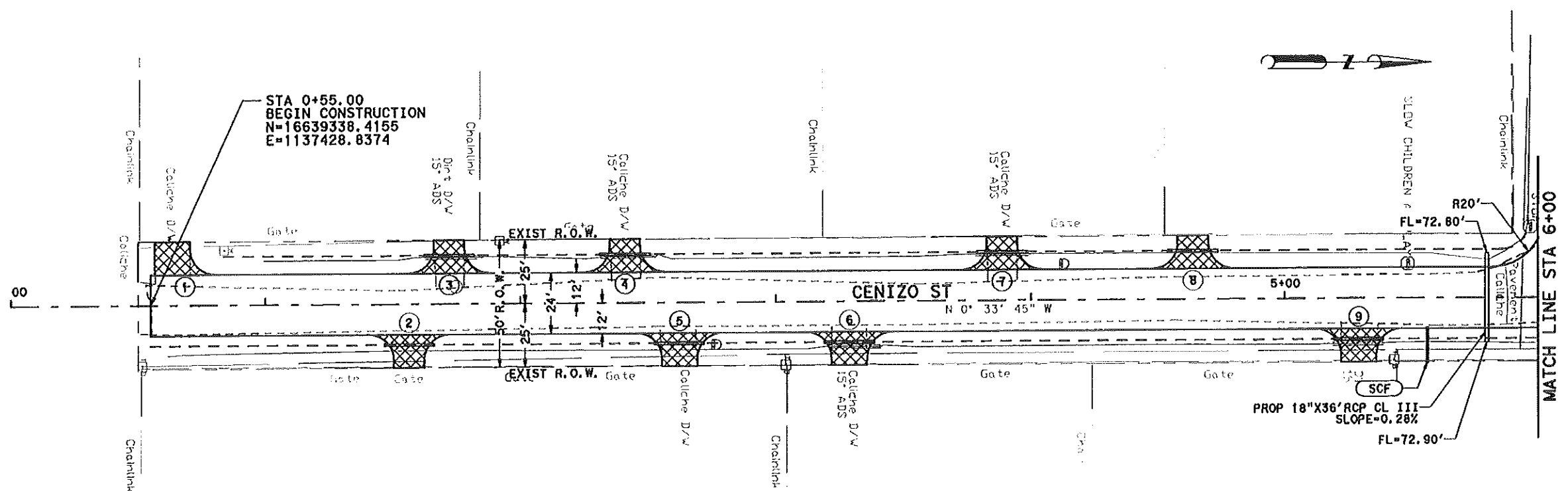
SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		16
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-220	1	VAR

5/2/2014 2:00:17 PM D:\2009\2009-1027-01 hidalgo county\11\cases\gn\15 del to west\as\Roadway\pp-port-02.dgn

LEGEND

- GAS --- EXIST GAS LINE
- T --- EXIST UG PHONE LINE
- W --- EXIST WATER LINE
- x-x-x-x-x- EXIST CHAINLINK FENCE
- ☐ EXIST MAILBOX
- ⊕ EXIST WATER METER
- ⊕ EXIST WATER VALVE
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- ⊕ EXIST FIRE HYDRANT
- ⊕ EXIST TELEPHONE BOX
- ⊕ EXIST GAS METER
- ⊕ EXIST STEEL POST
- ⊕ DRIVEWAY ID NUMBER
- ▨ PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- ▨ PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- - - - - PROP DITCH
- SCF PROP TEMP SED CTRL FENCE



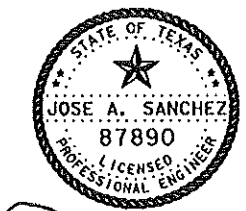
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BM DATA:

BM #3
60D NAIL ON POWER POLE
PORTILLO ST
STA 5+03.88
OFFSET = 24.54' LT
EL = 73.88

NO.	DATE	REVISION	APP.



[Signature]
12/26/2010

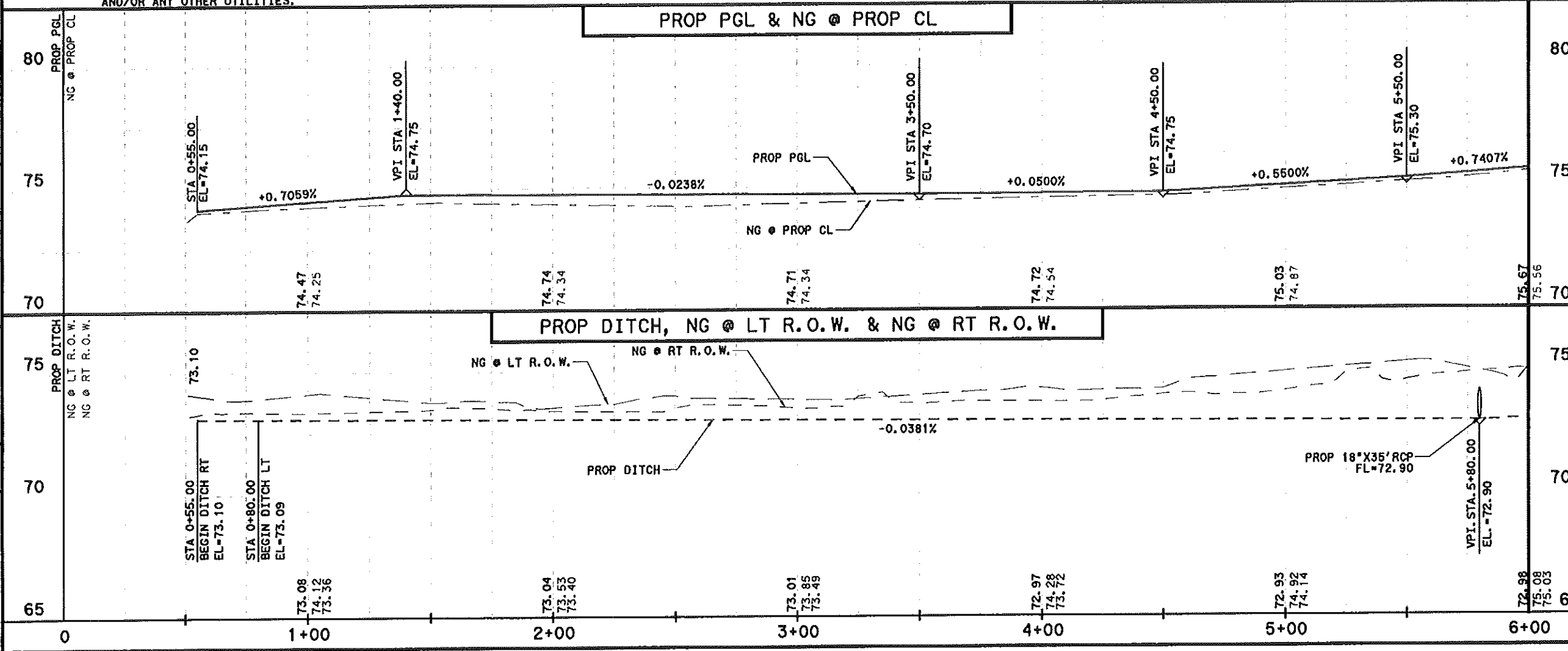


TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1101 E. Expressway 83
Marion, Texas 75572
(936) 424-7893

DELTA WEST
CENIZO ST
PLAN & PROFILE

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

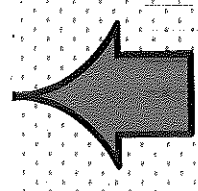
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6		17
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-220	1	VAR



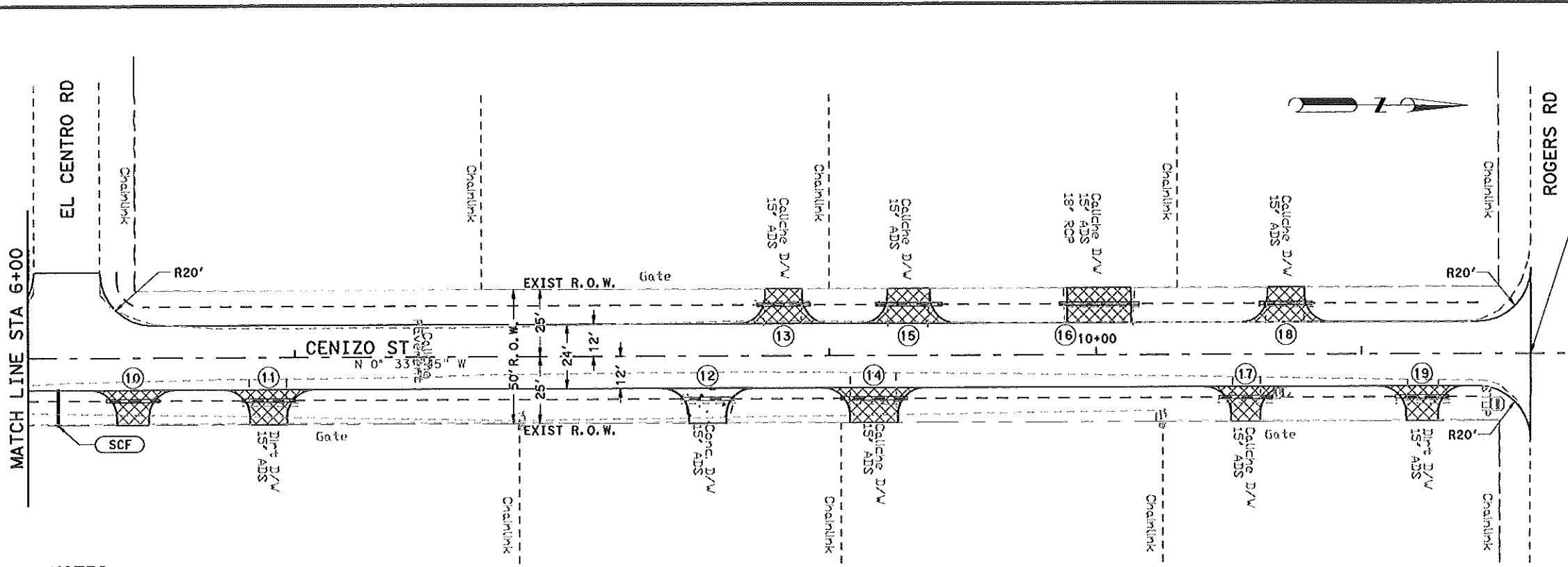
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LEGEND

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- EXIST UG PHONE LINE
- EXIST WATER LINE
- EXIST CHAINLINK FENCE
- EXIST MAILBOX
- EXIST WATER METER
- EXIST WATER VALVE
- EXIST POWER POLE
- EXIST FIRE HYDRANT
- EXIST TELEPHONE BOX
- EXIST GAS METER
- EXIST STEEL POST
- DRIVEWAY ID NUMBER
- PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)
- PROP CONCRETE DRIVEWAY (SEE DRIVEWAY TABLE)
- PROP DITCH
- PROP TEMP SED CTRL FENCE



STA 11+63.68
END CONSTRUCTION
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E=1137417.9523

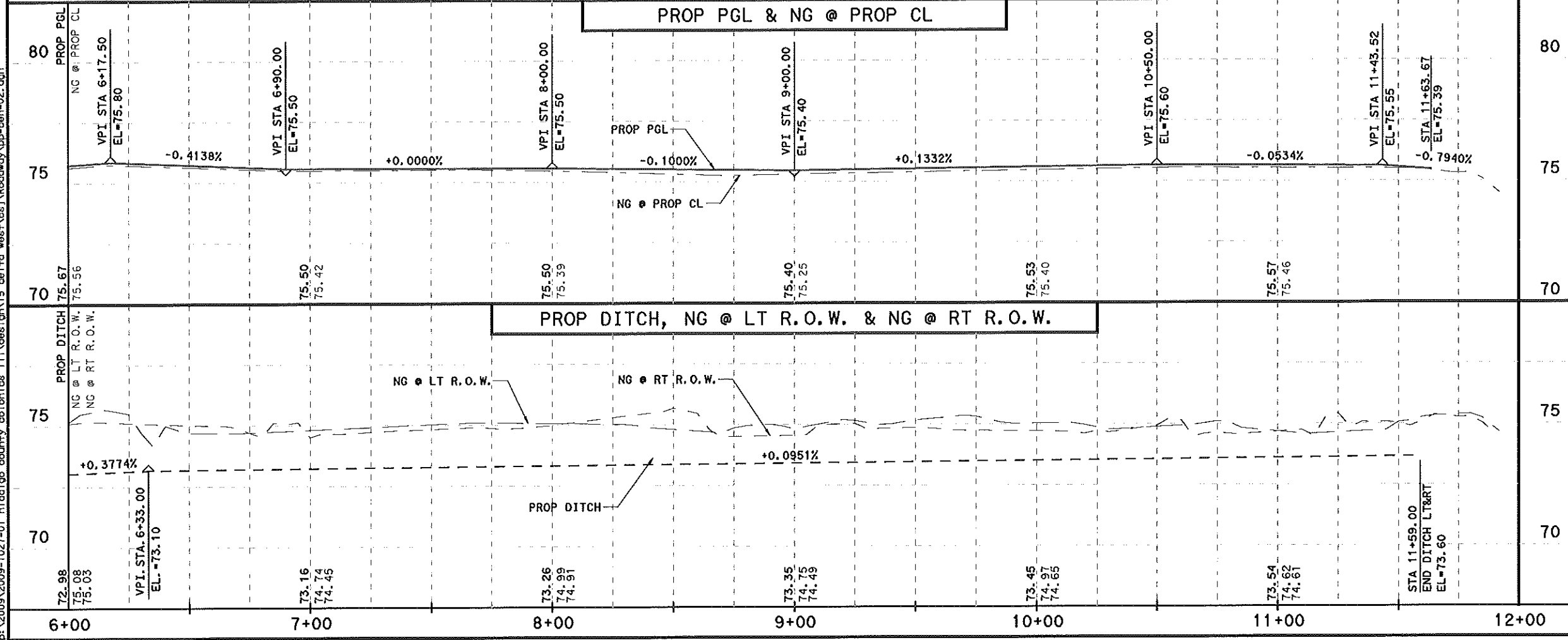


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BM DATA:

BM #3
60D NAIL ON POWER POLE
PORTILLO ST
STA 5+03.88
OFFSET = 24.54' LT
EL = 73.88



NO.	DATE	REVISION	APP.

AUTHORIZED 05-02-2014

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7898

DELTA WEST

**CENIZO ST
PLAN & PROFILE**

SCALE:
HORZ: 1" = 50'
VERT: 1" = 5'

SHEET 2 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 18
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ	PCT 1	HIGHWAY NO. VAR

5/2/2014 2:00:21 PM D:\2009\2009-1027-01 hidalgo county caltonias 111\des\on15 delra west\ac\Roadway\pp-cen-02.dgn

FM 493

EXIST FM 493 EAST ROADSIDE DITCH



PROP DITCH LT&RT
REGRADE DITCH TO ESTABLISH POSITIVE FLOW TOWARDS JEANINE ST

(SCF)

PROP LT&RT DITCH FL=70.00

JEANINE ST

OUTFALL

MONTE CRISTO OUTFALL

PROP STORM SEWER SYSTEM (BY HCDD No. 1)
REFER TO DELTA WEST DRAINAGE IMPROVEMENT PLANS

PROP STORM SEWER SYSTEM (BY HCDD No. 1)
REFER TO DELTA WEST DRAINAGE IMPROVEMENT PLANS

ESPERANZA ST

EL CENTRO RD

ROGERS RD

PORTILLO ST

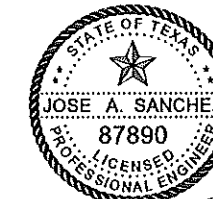
CENIZO ST

NOTES:

EXISTING DRIVEWAYS ALONG EL CENTRO ST TO
REMAIN IN PLACE.

EXISTING EL CENTRO PAVEMENT TO REMAIN.

NO.	DATE	REVISION	APP.



AUTHORIZED 04-08-2015



HIDALGO COUNTY



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7893

DELTA WEST

DRAINAGE LAYOUT

SHEET 1 OF 1

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 19
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ	PCT 1	HIGHWAY NO. VAR
3C-1080-220		

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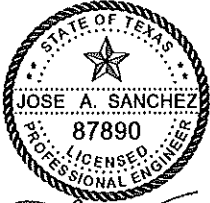
JEANINE ST								
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	4378	0496-2016	0530-2010	0530-2011
					THERMO PLASTIC (15 IN) HDPE	REMOV STR (PIPE)	DRWY (CONC)	DRWY (ACP)
					LF	LF	SY	SY
1	0+15	RT		UNPAVED				24
2	0+20	LT		UNPAVED				24
3	0+95	RT		UNPAVED	20			20
4	1+14	LT	20'X15" ADS	UNPAVED	20	20		26
5	2+05	RT	20'X15" ADS	UNPAVED	25	20		31
6	2+39	RT	16'X12" RCP	UNPAVED	20	16		23
7	2+68	LT	20'X15" ADS	UNPAVED	25	20		30
8	2+72	RT	20'X15" ADS	UNPAVED	25	20		31
9	3+59	RT	20'X15" ADS	UNPAVED	25	20		30
10	5+56	RT		UNPAVED	20			20
11	6+76	RT	20'X15" ADS	UNPAVED	25	20		
12	7+40	LT	20'X15" ADS	UNPAVED	20	20		25
13	7+79	RT	20'X15" ADS	UNPAVED	25	20		30
14	7+90	LT	20'X15" ADS	UNPAVED	20	20		25
15	8+81	LT	20'X15" ADS	UNPAVED	20	20		25
16	9+60	RT	20'X15" ADS	UNPAVED	20	20		23
17	9+81	LT	25'X15" ADS	UNPAVED	20	25		25
18	9+88	RT	25'X15" ADS	UNPAVED	20	25		23
TOTAL					350	286		435

DRIVEWAY NOTES:
 ASPHALT THICKNESS = 1.5"
 CONCRETE THICKNESS = 4"
 FLEXIBLE BASE THICKNESS = 8"

ESPERANZA ST								
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	4378	0496-2016	0530-2010	0530-2011
					THERMO PLASTIC (15 IN) HDPE	REMOV STR (PIPE)	DRWY (CONC)	DRWY (ACP)
					LF	LF	SY	SY
1	0+00			UNPAVED				36
2	0+89	RT		UNPAVED				25
3	1+00	LT		UNPAVED				23
4	1+77	RT	20'X15" ADS	UNPAVED	20	20		25
5	2+28	LT	20'X15" ADS	UNPAVED	20	20		25
6	2+99	RT	20'X15" ADS	CONCRETE	20	20	25	
7	3+03	LT	20'X15" ADS	UNPAVED	20	20		25
8	3+41	RT	20'X15" ADS	UNPAVED	20	20		23
9	3+57	LT	16'X12" RCP	UNPAVED	20	16		25
10	5+66	LT	20'X15" ADS	UNPAVED	20	20		25
11	6+48	RT		UNPAVED	20			23
12	6+98	LT	48'X12" RCP	UNPAVED	25	48		28
13	8+03	LT	20'X15" ADS	UNPAVED	25	20		28
14	8+27	RT	20'X15" ADS	UNPAVED	20	20		25
15	9+59	RT	20'X15" ADS	UNPAVED	20	20		25
16	9+92	LT	20'X15" ADS	UNPAVED	25	20		31
TOTAL					275	264	25	392

DRIVEWAY NOTES:
 ASPHALT THICKNESS = 1.5"
 CONCRETE THICKNESS = 4"
 FLEXIBLE BASE THICKNESS = 8"

NO.	DATE	REVISION	APP.



AUTHORIZED 09-12-2014



HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898

DELTA WEST

DRIVEWAY TABLES

SHEET 1 OF 2

FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 20
STATE TEXAS	DIST. PHR	COUNTY HIDALGO
CSJ	PCT 1	HIGHWAY NO. VAR
3C-1080-220		

9/12/2014 9:27:31 AM P:\2009\2009-1027-01.hidalgo_county_colonias\11\des\gn\15 de tra west\os\Roadway\del tra-drwy.dgn

9/12/2014 9:27:33 AM p:\2009\2009-1027-01_hidalgo_county_co\lan\as_11\des\gn\15 de\to west\as\Roadway\del\to-drwy.dgn

PORTILLO ST								
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	4378	0496-2016	0530-2010	0530-2011
					THERMO PLASTIC (15 IN) HDPE	REMOV STR (PIPE)	DRWY (CONC)	DRWY (ACP)
					LF	LF	SY	SY
1	0+14	LT		UNPAVED				20
2	0+17	RT		UNPAVED				19
3	0+60	LT		CONCRETE	20		27	
4	1+01	RT	20'X15" ADS	UNPAVED	20	20		25
5	1+34	LT	SIDEWALK	CONCRETE	5		6	
6	2+71	RT	20'X15" ADS	UNPAVED	20	20		23
7	2+94	LT	20'X15" ADS	UNPAVED	20	20		23
8	3+60	RT	20'X15" ADS	UNPAVED	25	20		30
9	4+06	LT	60'X15" ADS	UNPAVED	30	60		35
10	6+01	RT	20'X15" ADS	UNPAVED	20	20		23
11	6+15	LT	20'X15" ADS	UNPAVED	20	20		24
12	6+50	RT	20'X15" ADS	UNPAVED	25	20		27
13	7+13	LT	20'X15" ADS	CONCRETE	25	20	33	
14	7+47	RT	20'X15" ADS	UNPAVED	20	20		25
15	8+07	LT	20'X15" ADS	UNPAVED	20	20		20
16	8+38	LT	20'X15" ADS	UNPAVED	20	20		25
17	8+73	RT	20'X15" ADS	UNPAVED	20	20		21
18	8+80	LT	20'X15" ADS	UNPAVED	20	20		25
19	9+31	LT		UNPAVED	20			23
TOTAL					350	320	66	388

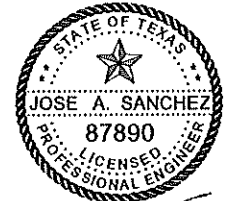


DRIVEWAY NOTES:

- ASPHALT THICKNESS = 1.5"
- CONCRETE THICKNESS = 4"
- FLEXIBLE BASE THICKNESS = 8"

CENIZO ST									
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	4378	4378	0496-2016	0530-2010	0530-2011
					THERMO PLASTIC (12 IN) HDPE	THERMO PLASTIC (15 IN) HDPE	REMOV STR (PIPE)	DRWY (CONC)	DRWY (ACP)
					LF	LF	LF	SY	SY
1	0+64	LT		UNPAVED					23
2	1+56	RT		UNPAVED	20				23
3	1+72	LT	20'X15" ADS	UNPAVED	20		20		23
4	2+41	LT	20'X15" ADS	UNPAVED	20		20		23
5	2+62	RT		UNPAVED	20				25
6	3+29	RT	20'X15" ADS	UNPAVED	20		20		25
7	3+89	LT	20'X15" ADS	UNPAVED	20		20		23
8	4+64	LT		UNPAVED	20				23
9	5+29	RT	20'X15" ADS	UNPAVED	20		20		25
10	6+39	RT		UNPAVED		20			23
11	6+90	RT	20'X15" ADS	UNPAVED		20	20		25
12	8+55	RT	20'X15" ADS	CONCRETE		20	20	25	
13	8+83	LT	20'X15" ADS	UNPAVED		20	20		25
14	9+17	RT	20'X15" ADS	UNPAVED		25	20		31
15	9+30	LT	20'X15" ADS	UNPAVED		25	20		28
16	10+01	LT	30'X15" ADS	UNPAVED		30	30		35
17	10+56	RT	20'X15" ADS	UNPAVED		20	20		21
18	10+72	LT	20'X15" ADS	UNPAVED		20	20		25
19	11+23	RT	20'X15" ADS	UNPAVED		20	20		23
TOTAL					160	220	290	25	449
GRAND TOTAL					160	1195	1160	116	1664

DRIVEWAY NOTES:



- ASPHALT THICKNESS = 1.5"
- CONCRETE THICKNESS = 4"
- FLEXIBLE BASE THICKNESS = 8"

NO.	DATE	REVISION						APP.		
 AUTHORIZED 09-12-2014										
 HIDALGO COUNTY										
 TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1201 E. Expressway 83 Mission, Texas 78572 (916) 424-7898										
DELTA WEST DRIVEWAY TABLES										
SHEET 2 OF 2										
FED. RD. DIV. NO.	PROJECT NO.						SHEET NO.			
6							21			
STATE	DIST.	COUNTY								
TEXAS	PHR	HIDALGO								
CSJ	PCT	HIGHWAY NO.								
3C-1080-220	1	VAR								

FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Area (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Multi Factor	Mass Ordinate
0+50.00	PROP Exoavation Fill	0.0 1.2	0 0	0 0	1.00 1.00	0
	EXIST Exoavation Fill	32.7 0.0	0 0	0 0	1.00 1.00	0
2+00.00	PROP Exoavation Fill	0.0 1.9	0 9	0 9	1.00 1.00	-9
	EXIST Exoavation Fill	15.6 0.0	134 0	134 0	1.00 1.00	125
3+00.00	PROP Exoavation Fill	0.0 3.8	0 11	0 11	1.00 1.00	114
	EXIST Exoavation Fill	8.7 0.0	45 0	45 0	1.00 1.00	159
4+00.00	PROP Exoavation Fill	0.0 2.5	0 12	0 12	1.00 1.00	147
	EXIST Exoavation Fill	12.3 0.0	39 0	39 0	1.00 1.00	186
4+50.00	PROP Exoavation Fill	0.0 2.3	0 4	0 4	1.00 1.00	182
	EXIST Exoavation Fill	13.1 0.0	24 0	24 0	1.00 1.00	206
5+15.00	PROP Exoavation Fill	0.0 4.5	0 8	0 8	1.00 1.00	198
	EXIST Exoavation Fill	9.4 0.0	27 0	27 0	1.00 1.00	225
6+00.00	PROP Exoavation Fill	0.0 3.9	0 13	0 13	1.00 1.00	212
	EXIST Exoavation Fill	9.0 0.0	29 0	29 0	1.00 1.00	241
7+00.00	PROP Exoavation Fill	0.0 5.4	0 17	0 17	1.00 1.00	224
	EXIST Exoavation Fill	5.5 0.0	27 0	27 0	1.00 1.00	251
8+00.00	PROP Exoavation Fill	0.0 2.2	0 14	0 14	1.00 1.00	237
	EXIST Exoavation Fill	7.5 0.0	24 0	24 0	1.00 1.00	261
9+00.00	PROP Exoavation Fill	0.0 6.6	0 16	0 16	1.00 1.00	245
	EXIST Exoavation Fill	7.6 0.0	28 0	28 0	1.00 1.00	273
10+00.00	PROP Exoavation Fill	0.0 5.0	0 21	0 21	1.00 1.00	252
	EXIST Exoavation Fill	8.6 0.0	30 0	30 0	1.00 1.00	282

GRAND SUMMARY		TOTALS	
Material Name	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Multi Factor
PROP Exoavation Fill	0 125	0 125	1.00 1.00
EXIST Exoavation Fill	407 0	407 0	1.00 1.00



NO.	DATE	REVISION	APP.
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i>  1201 E. Expressway 83 Marlin, Texas 76572 (936) 424-7888			
DELTA WEST JEANINE ST EARTHWORK			
SHEET 1 OF 4			
FED. RD. DIV. NO. 6	PROJECT NO.		SHEET NO. 22
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Area (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+50.00	PROP Excavation Fill	0.0 2.7	0 0	0 0	1.00 1.00	0
	EXIST Excavation Fill	18.5 0.0	0 0	0 0	1.00 1.00	0
1+00.00	PROP Excavation Fill	0.0 2.8	0 5	0 5	1.00 1.00	-5
	EXIST Excavation Fill	21.0 0.0	37 0	37 0	1.00 1.00	32
2+00.00	PROP Excavation Fill	0.0 8.0	0 20	0 20	1.00 1.00	12
	EXIST Excavation Fill	7.3 0.0	52 0	52 0	1.00 1.00	64
3+00.00	PROP Excavation Fill	0.0 2.6	0 20	0 20	1.00 1.00	44
	EXIST Excavation Fill	22.6 0.0	55 0	55 0	1.00 1.00	99
4+00.00	PROP Excavation Fill	0.0 5.8	0 16	0 16	1.00 1.00	83
	EXIST Excavation Fill	10.0 0.0	60 0	60 0	1.00 1.00	143
4+50.00	PROP Excavation Fill	0.0 5.3	0 10	0 10	1.00 1.00	133
	EXIST Excavation Fill	10.2 0.0	19 0	19 0	1.00 1.00	152
5+11.00	PROP Excavation Fill	0.0 0.4	0 6	0 6	1.00 1.00	146
	EXIST Excavation Fill	11.2 0.0	24 0	24 0	1.00 1.00	170
6+00.00	PROP Excavation Fill	0.0 4.0	0 7	0 7	1.00 1.00	163
	EXIST Excavation Fill	8.7 0.0	33 0	33 0	1.00 1.00	196
7+00.00	PROP Excavation Fill	0.0 4.1	0 15	0 15	1.00 1.00	181
	EXIST Excavation Fill	15.1 0.0	44 0	44 0	1.00 1.00	225
8+00.00	PROP Excavation Fill	0.0 4.2	0 15	0 15	1.00 1.00	210
	EXIST Excavation Fill	8.3 0.0	43 0	43 0	1.00 1.00	253
9+00.00	PROP Excavation Fill	0.0 7.5	0 22	0 22	1.00 1.00	231
	EXIST Excavation Fill	9.0 0.0	32 0	32 0	1.00 1.00	263
10+00.00	PROP Excavation Fill	0.0 3.4	0 20	0 20	1.00 1.00	243
	EXIST Excavation Fill	17.1 0.0	48 0	48 0	1.00 1.00	291

GRAND SUMMARY		TOTALS		
Material Name	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	
PROP Excavation Fill	0 156	0 156	1.00 1.00	
EXIST Excavation Fill	447 0	447 0	1.00 1.00	


NO.	DATE	REVISION	APP.
 HIDALGO COUNTY			
 TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1101 E. Esperanza St. Mission, Texas 78172 (512) 424-7894			
DELTA WEST ESPERANZA ST EARTHWORK			
SHEET 2 OF 4			
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			23
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+50.00	PROP Excavation Fill	0.0 0.1	0 0	0 0	1.00 1.00	0
	EXIST Excavation Fill	44.3 0.0	0 0	0 0	1.00 1.00	0
1+00.00	PROP Excavation Fill	0.0 0.0	0 0	0 0	1.00 1.00	0
	EXIST Excavation Fill	19.6 0.0	59 0	59 0	1.00 1.00	59
2+00.00	PROP Excavation Fill	0.0 0.8	0 2	0 2	1.00 1.00	57
	EXIST Excavation Fill	20.3 0.0	74 0	74 0	1.00 1.00	131
3+00.00	PROP Excavation Fill	0.0 0.8	0 3	0 3	1.00 1.00	128
	EXIST Excavation Fill	22.0 0.0	78 0	78 0	1.00 1.00	206
4+00.00	PROP Excavation Fill	0.0 3.0	0 7	0 7	1.00 1.00	199
	EXIST Excavation Fill	20.4 0.0	79 0	79 0	1.00 1.00	278
4+50.00	PROP Excavation Fill	0.0 1.6	0 4	0 4	1.00 1.00	274
	EXIST Excavation Fill	17.1 0.0	35 0	35 0	1.00 1.00	309
5+12.00	PROP Excavation Fill	0.0 0.0	0 2	0 2	1.00 1.00	307
	EXIST Excavation Fill	20.0 0.0	43 0	43 0	1.00 1.00	350
6+00.00	PROP Excavation Fill	0.0 1.6	0 3	0 3	1.00 1.00	347
	EXIST Excavation Fill	16.7 0.0	60 0	60 0	1.00 1.00	407
7+00.00	PROP Excavation Fill	0.0 3.4	0 9	0 9	1.00 1.00	398
	EXIST Excavation Fill	14.1 0.0	57 0	57 0	1.00 1.00	455
8+00.00	PROP Excavation Fill	0.0 2.8	0 11	0 11	1.00 1.00	444
	EXIST Excavation Fill	14.5 0.0	53 0	53 0	1.00 1.00	497
9+00.00	PROP Excavation Fill	0.0 4.4	0 13	0 13	1.00 1.00	484
	EXIST Excavation Fill	16.2 0.0	57 0	57 0	1.00 1.00	541
10+00.00	PROP Excavation Fill	0.0 3.7	0 15	0 15	1.00 1.00	526
	EXIST Excavation Fill	14.2 0.0	56 0	56 0	1.00 1.00	582

GRAND SUMMARY		TOTALS		
Material Name	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	
PROP	Excavation	0	0	1.00
	Fill	69	69	1.00
EXIST	Excavation	651	651	1.00
	Fill	0	0	1.00


NO.	DATE	REVISION	APP.
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1201 E. Expressway 83 Merion, Texas 76372 (936) 424-7838			
DELTA WEST PORTILLO ST EARTHWORK			
SHEET 3 OF 4			
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			24
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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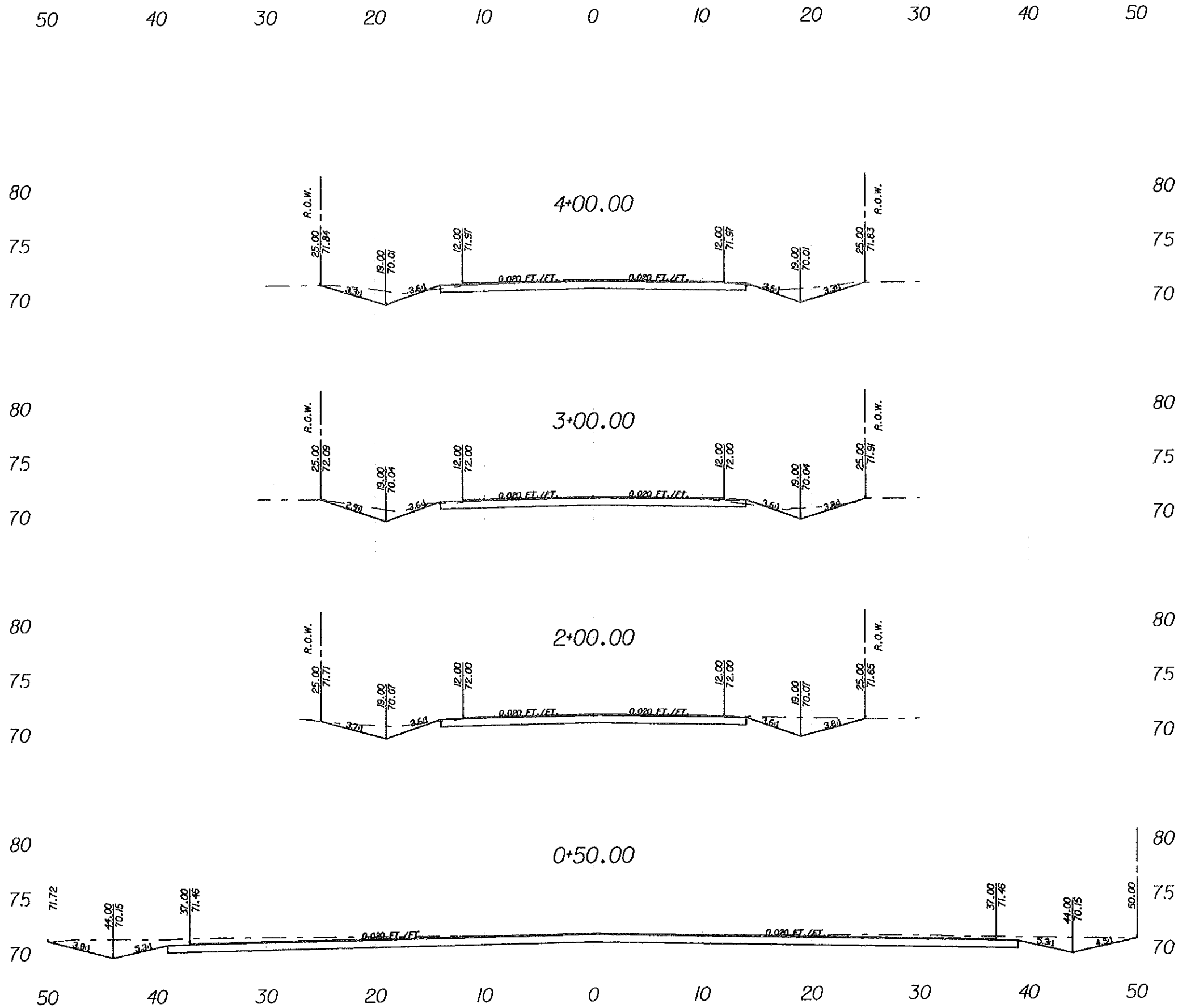
Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+56.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	4.5	0	0	1.00	
1+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	2.6	6	6	1.00	-6
2+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	1.3	7	7	1.00	-36
3+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	1.8	6	6	1.00	-84
4+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	4.1	11	11	1.00	-104
5+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	9.3	25	25	1.00	-91
6+15.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	11.1	43	43	1.00	-55
7+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	12.9	38	38	1.00	-23
8+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	15.5	53	53	1.00	24
9+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	9.4	46	46	1.00	66
10+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	14.9	45	45	1.00	104
11+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	8.6	44	44	1.00	140
11+40.00	PROP					
	Excavation	0.0	0	0	1.00	
	EXIST					
	Excavation	11.4	15	15	1.00	152

GRAND SUMMARY		TOTALS	
Material Name	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
PROP	0	0	1.00
EXIST	339	339	1.00

NO.	DATE	REVISION	APP.
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1201 E. Expressway 83 Mission, Texas 78172 (512) 424-7898			
DELTA WEST CENIZO ST EARTHWORK			
SHEET 4 OF 4			
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			25
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.

HIDALGO COUNTY

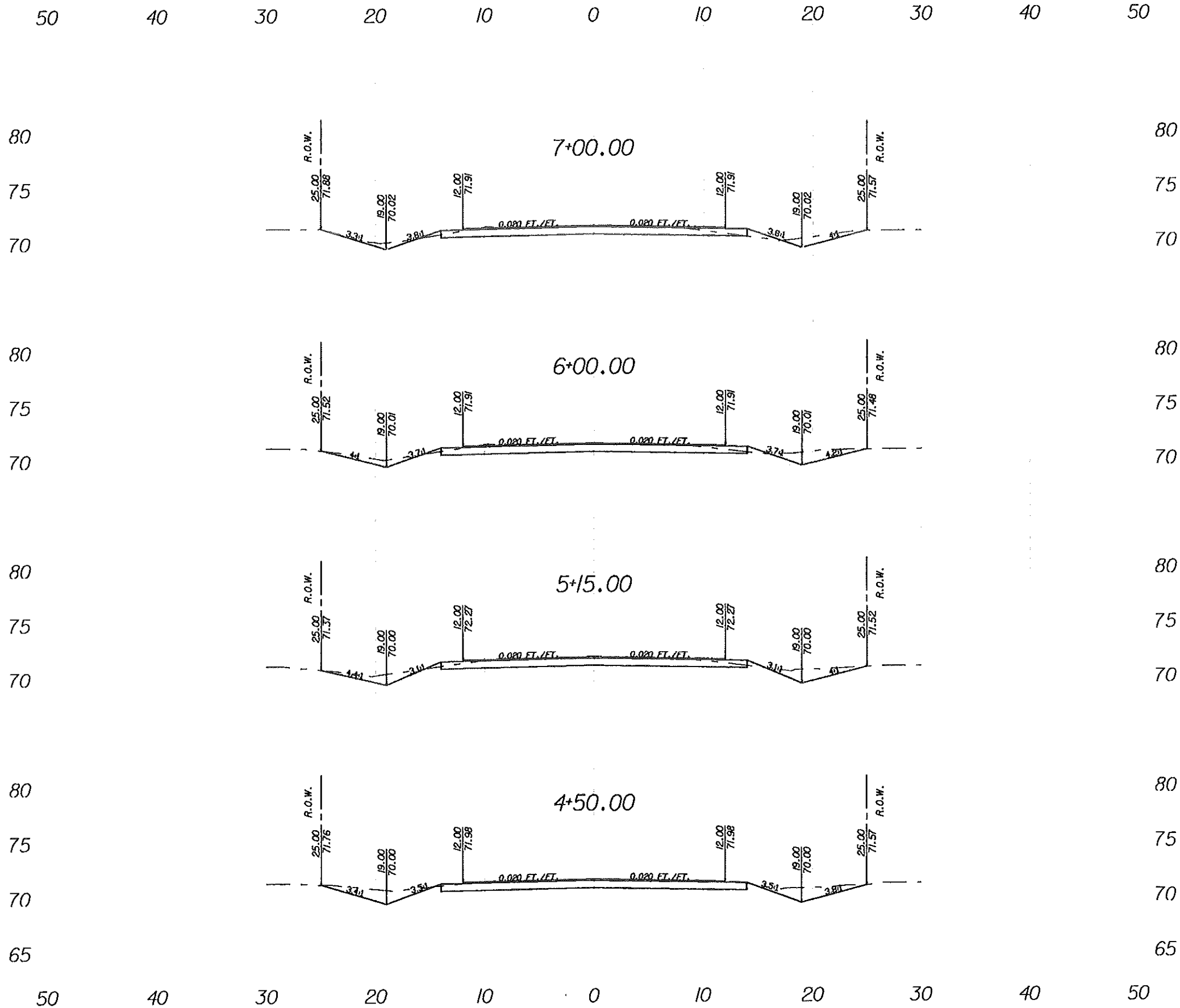
TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Marlin, Texas 76572
 (817) 424-7883

DELTA WEST

**JEANINE ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 26	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

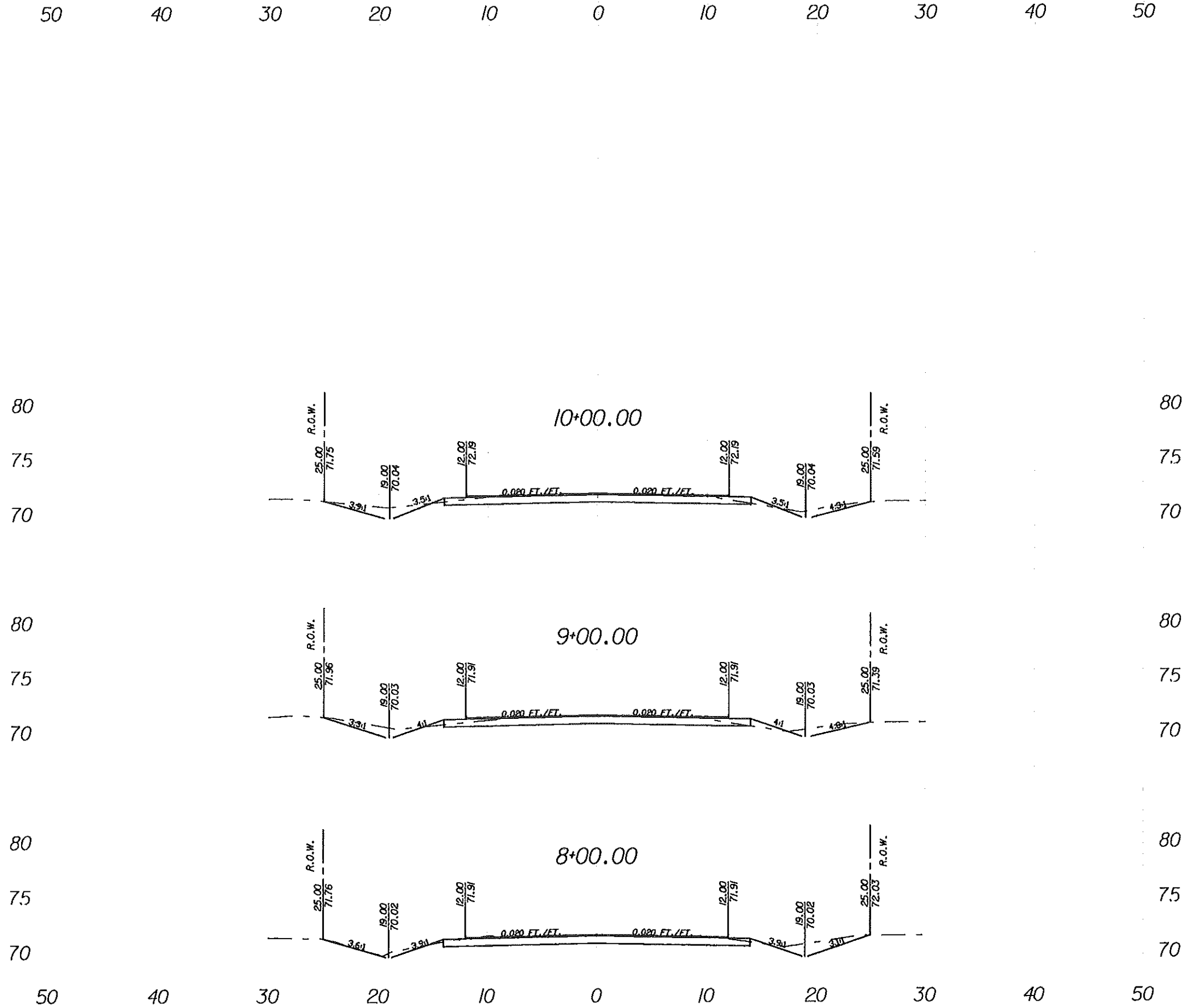
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NO.	DATE	REVISION	APP.
HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1101 E. Espinosa St. Edinburg, Texas 78173 (361) 424-7898			
DELTA WEST JEANINE ST ROADWAY CROSS-SECTIONS			
N. T. S.		SHEET 2 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.		SHEET NO. 27
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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NO.	DATE	REVISION	APP.

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1101 E. Expressway 81
 Marlin, Texas 76572
 (951) 424-7492

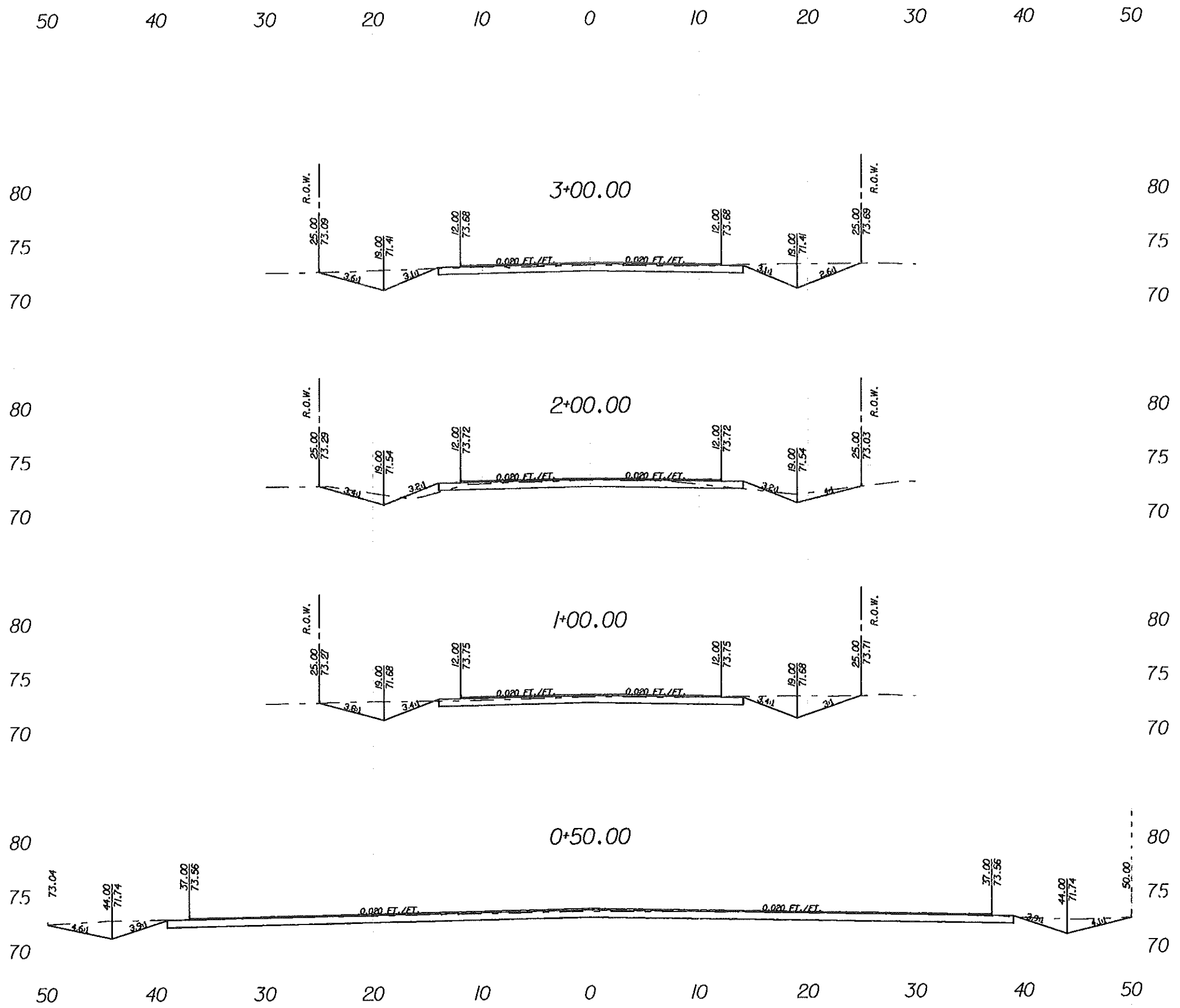
DELTA WEST

**JEANINE ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 3 OF 3	
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.	
6		28	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.



HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78172
 (351) 424-7888

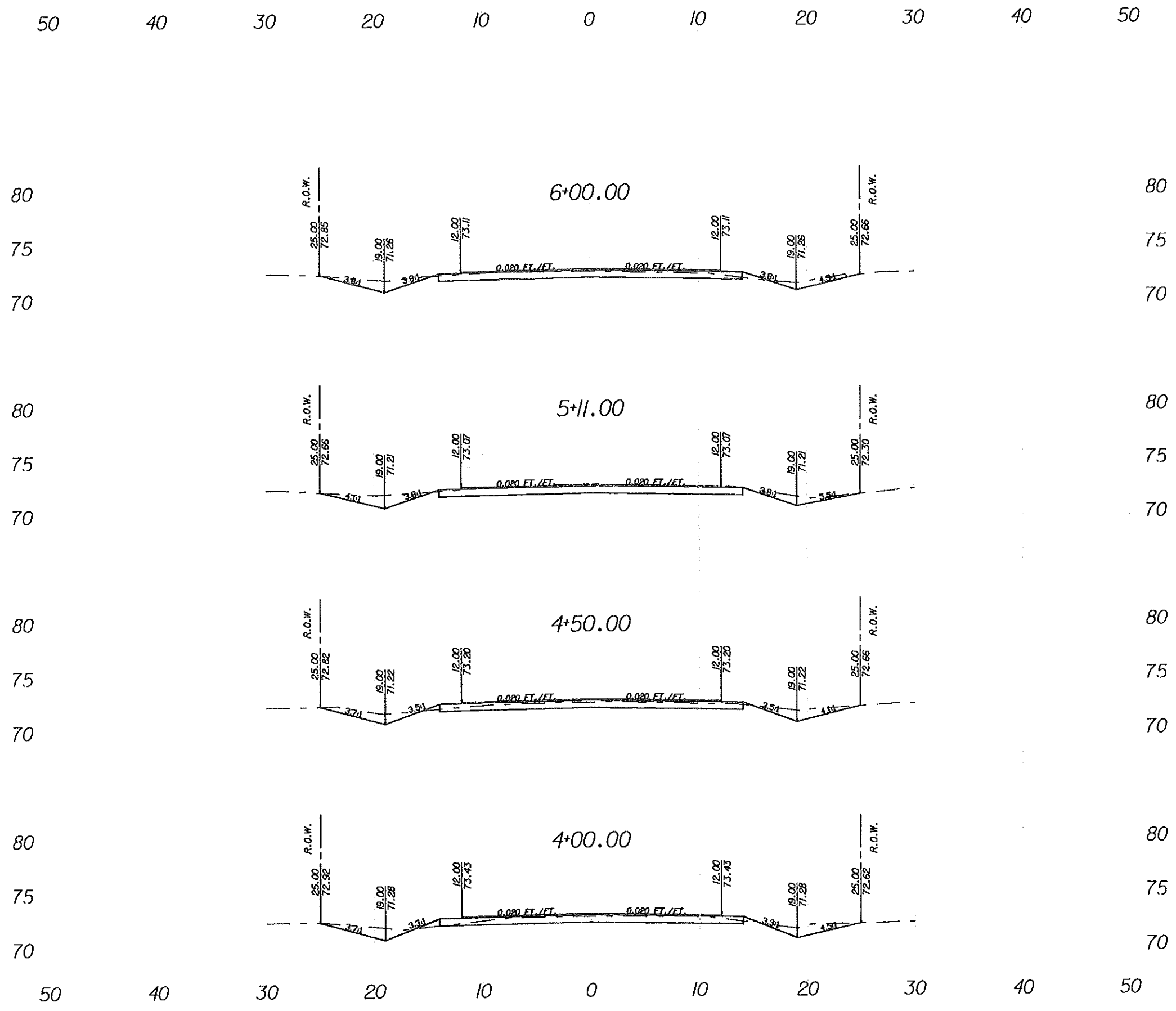
DELTA WEST

**ESPERANZA ST
 ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 29	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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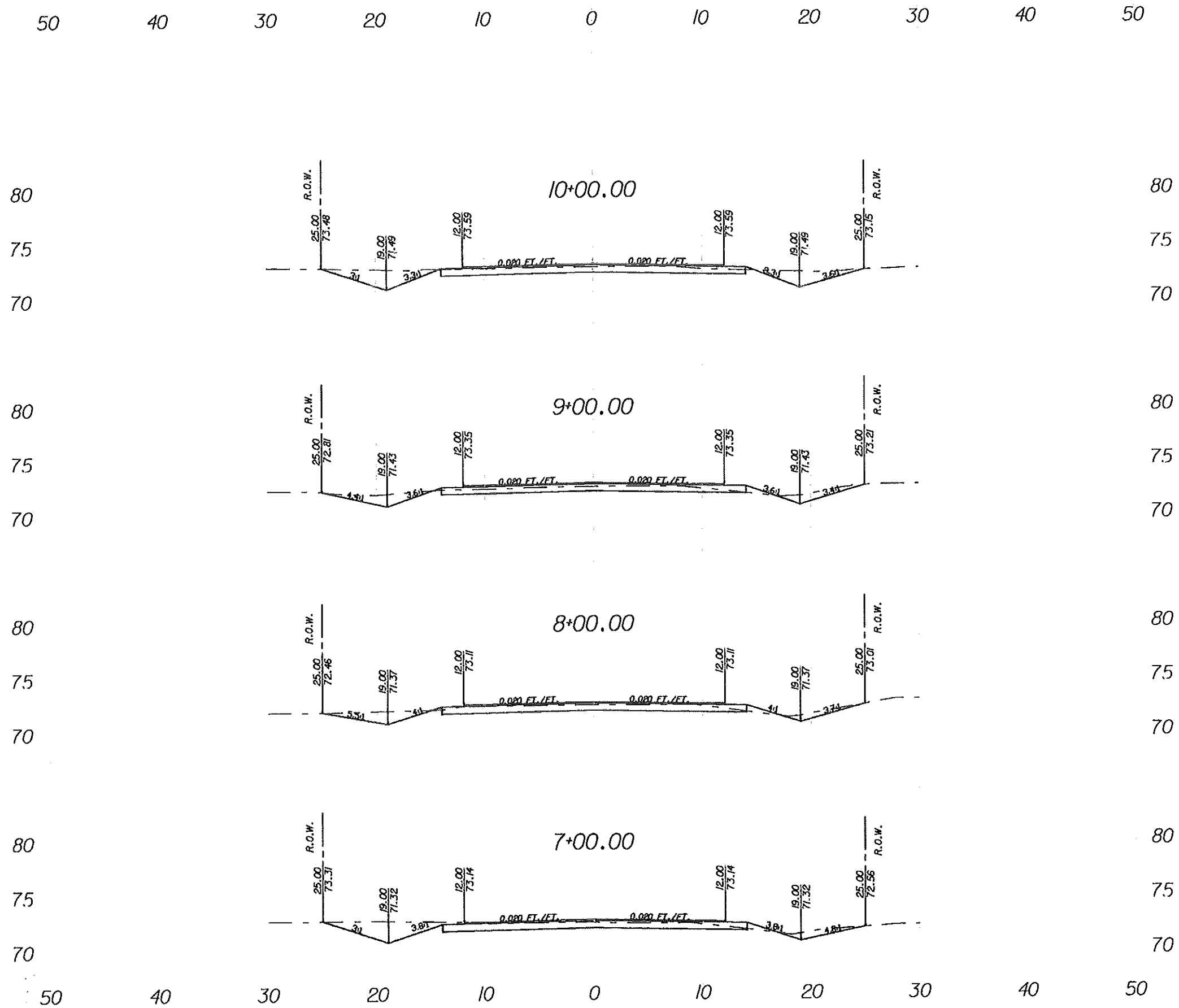
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NO.	DATE	REVISION	APP.
HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1101 E. Expressway 41 Mission, Texas 78171 (512) 434-7898			
DELTA WEST ESPERANZA ST ROADWAY CROSS-SECTIONS			
N. T. S.		SHEET 2 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.		SHEET NO. 30
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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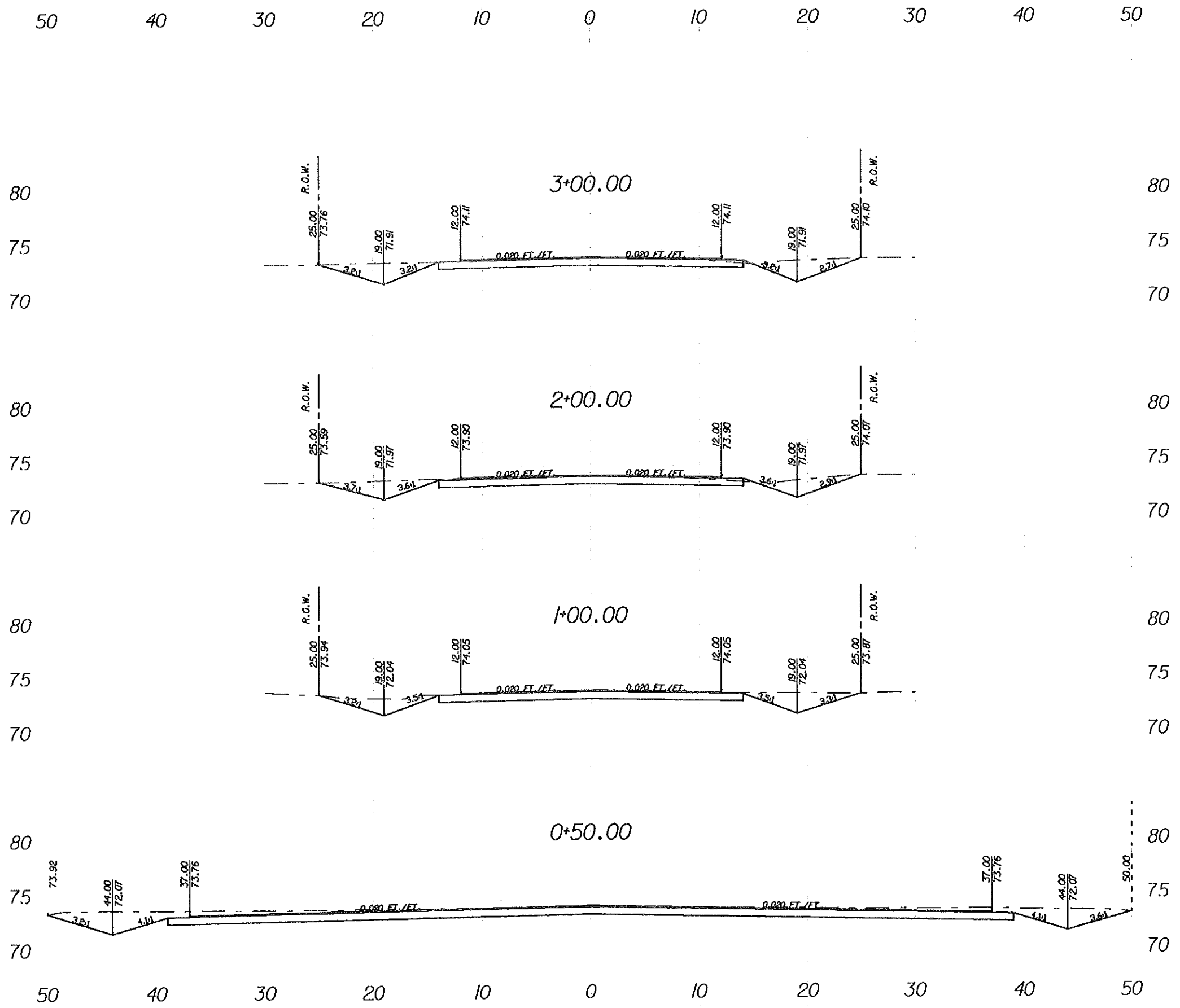
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NO.	DATE	REVISION	APP.
HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1201 E. Expressway 83 Mission, Texas 78172 (916) 424-7893			
DELTA WEST ESPERANZA ST ROADWAY CROSS-SECTIONS			
N. T. S.		SHEET 3 OF 3	
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			31
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.



HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Marlin, Texas 75771
 (817) 414-7000

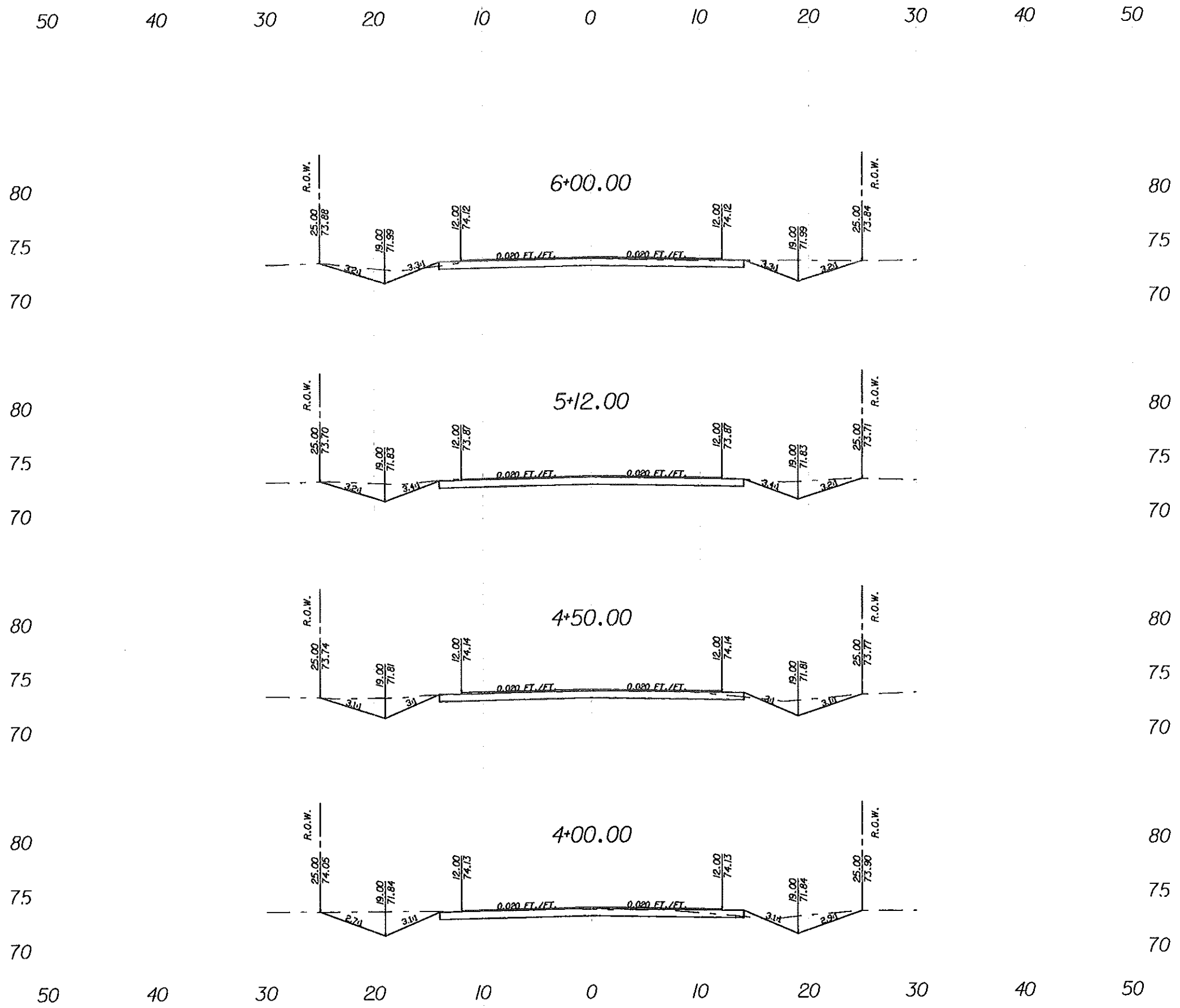
DELTA WEST

**PORTILLO ST
 ROADWAY CROSS-SECTIONS**


N. T. S.		SHEET 1 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 32	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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NO.	DATE	REVISION	APP.



HIDALGO COUNTY



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 43
 Mission, Texas 78172
 (361) 414-7884

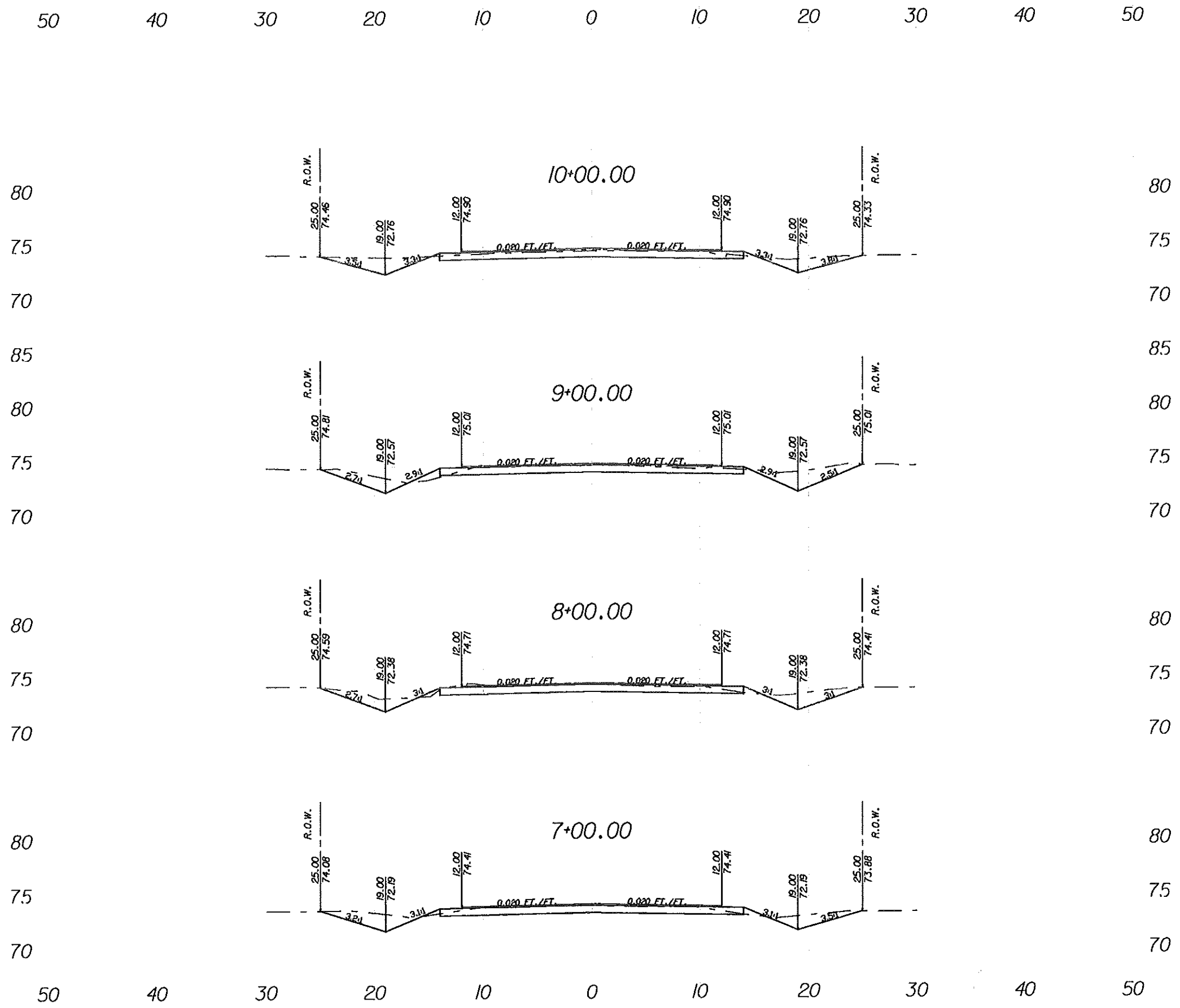
DELTA WEST

**PORTILLO ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 2 OF 3	
FED. RD. DIV. NO.	PROJECT NO.	COUNTY	SHEET NO.
6		HIDALGO	33
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.

HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78172
 (512) 414-7488

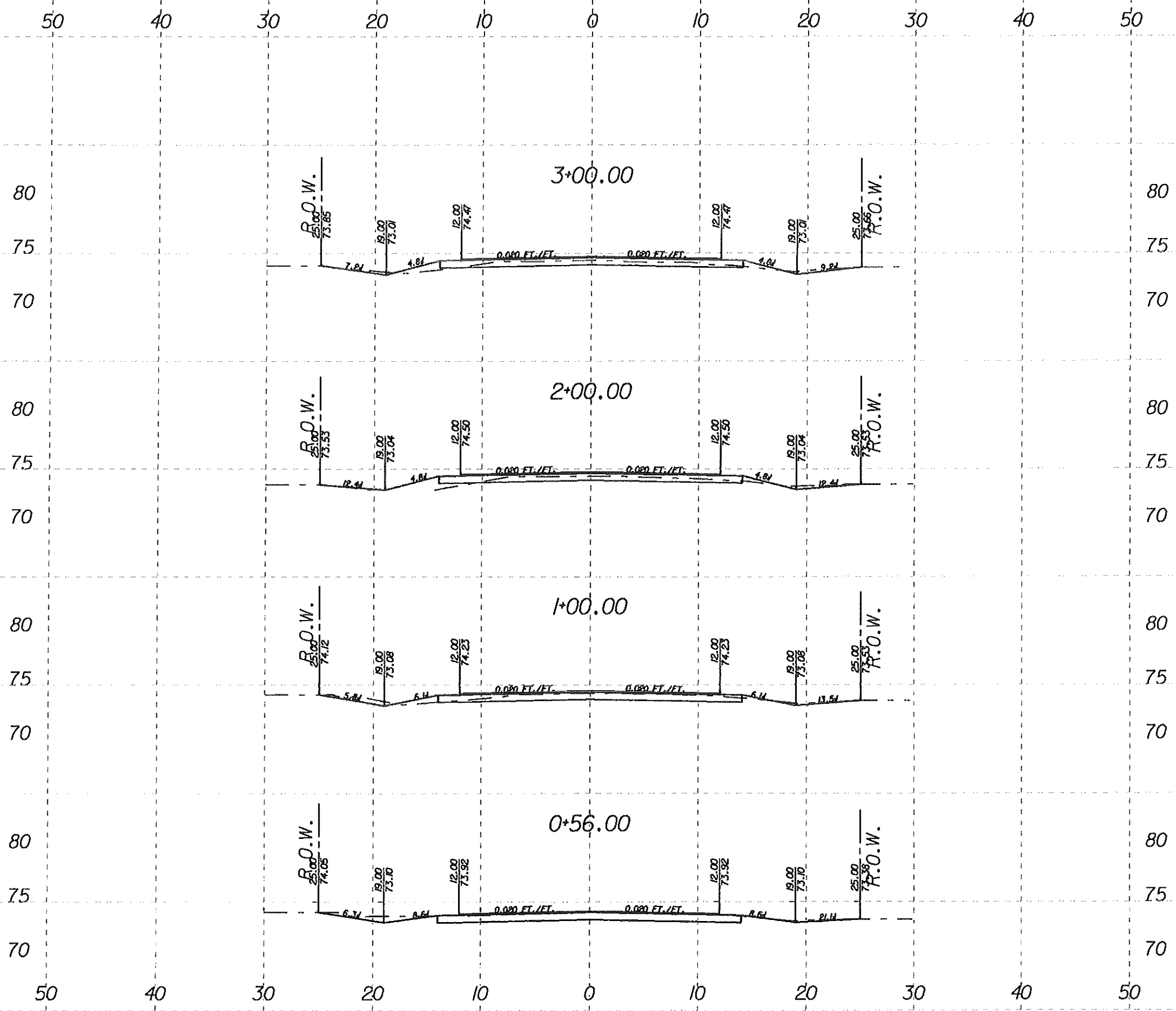
DELTA WEST

**PORTILLO ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 3 OF 3	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 34	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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NO.	DATE	REVISION	APP.



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
TEDSI
 TRPE P-1640
 1201 E. Expressway 43
 Houston, Texas 77072
 (832) 424-7894

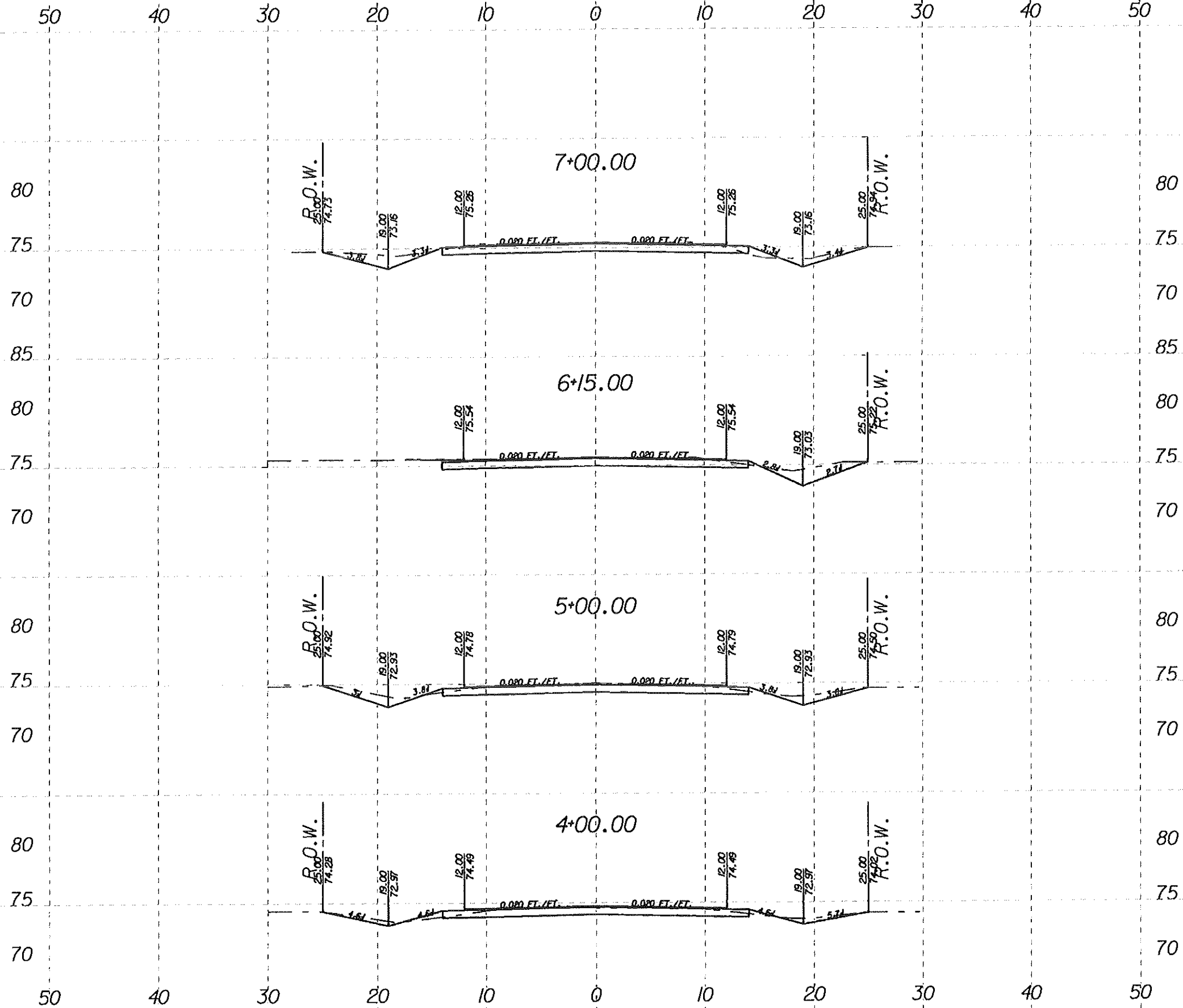
DELTA WEST

**GENIZO ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 1 OF 4	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 35	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT	HIGHWAY NO. VAR	
3C-1080-220	1	VAR	

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FOR CONTRACTOR'S INFORMATION ONLY



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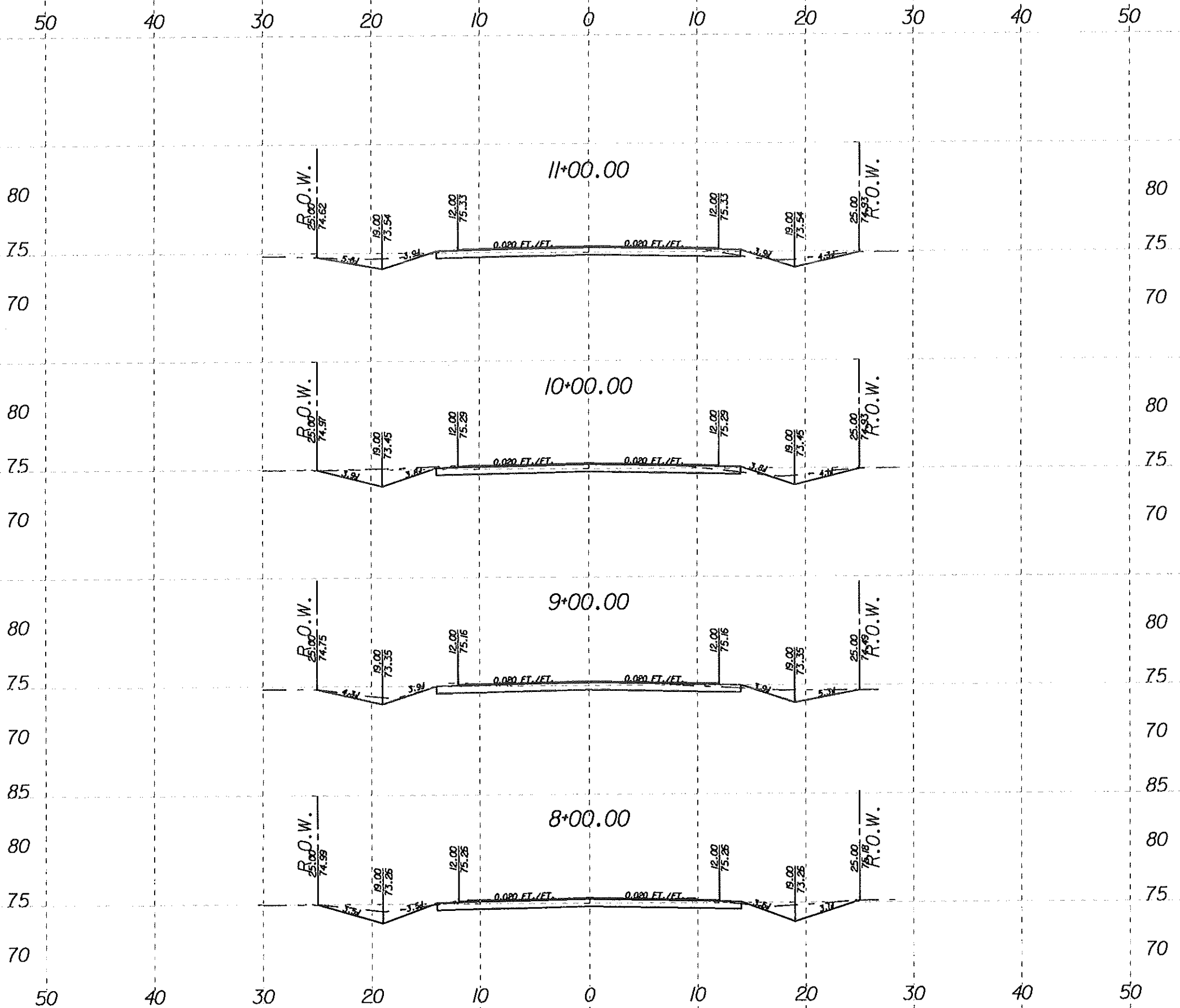
HIDALGO COUNTY

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78172
 (956) 424-7898

DELTA WEST
CENIZO ST
ROADWAY CROSS-SECTIONS

N. T. S.		SHEET 2 OF 4	
FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO. 36	
STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

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HIDALGO COUNTY

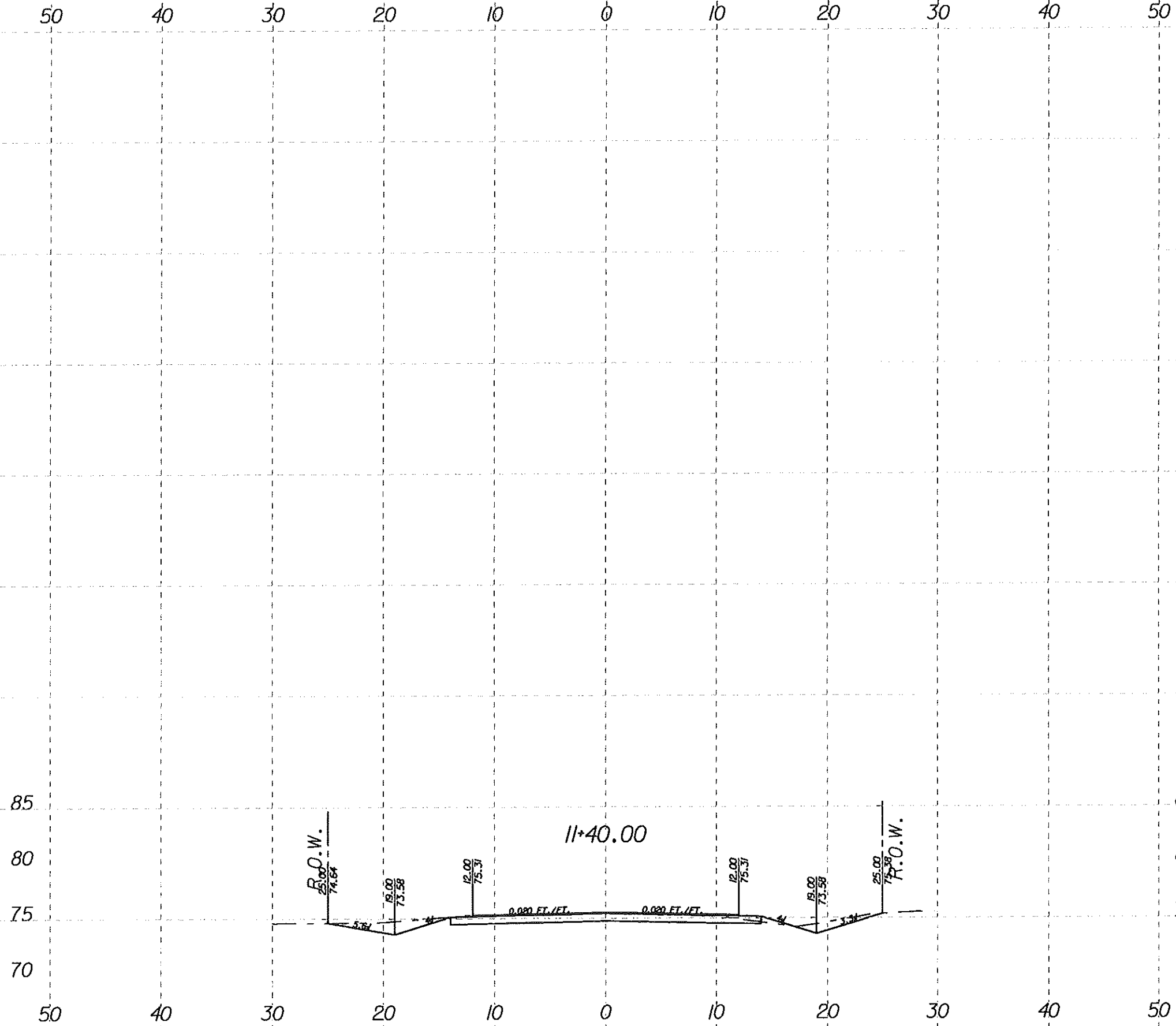
TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78172
 (956) 424-7893



DELTA WEST

**GENIZO ST
ROADWAY CROSS-SECTIONS**

N. T. S.		SHEET 3 OF 4	
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.	
6		37	
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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NO.	DATE	REVISION	APP.
 HIDALGO COUNTY			
TEDSI INFRASTRUCTURE GROUP  TEDSI <small>CONSULTING ENGINEERS</small> <small>1201 E. ESPERANZA ST.</small> <small>MISSION, TEXAS 78172</small> <small>(512) 424-7898</small>			
DELTA WEST CENIZO ST ROADWAY CROSS-SECTIONS			
N. T. S.			SHEET 4 OF 4
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			38
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ	PCT	HIGHWAY NO.	
3C-1080-220	1	VAR	

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SITE DESCRIPTION

PROJECT LIMITS: Delta West Subdivision: Cenizo St-1109', Esperanza St-1017', Jeanine St-1019', Portillo St-1018' Centro 1700'

PROJECT SITE MAPS: *Project Location Map: Title Sheet (Sheet 1)
*Approx. Slopes Anticipated After Major Gradients and Areas of Soil Disturbance: Typ Sects (Sheet 6-7)
*Major Controls and Locations of Stabilization Practices: SW3P Site Map Sheets (Sheets 11-18)
*Project Specific Locations: To be specified by Project Field Office and located in the Project SW3P File

PROJECT DESCRIPTION: Construction will consist of hot mix asphalt, flexible base, and roadside ditches.

MAJOR SOIL DISTURBING ACTIVITIES: Roadway reconstruction

TOTAL PROJECT AREA: 5.27 Acres

TOTAL AREA TO BE DISTURBED: 5.27 Acres (100%)

WEIGHTED RUNOFF COEFFICIENT: Before Construction: 0.33
After Construction: 0.67

EXISTING CONDITION OF SOIL & VEGETATIVE: Existing asphalt roadway (43%), Short grass between edge of pavement and ROW (57%)

NAME OF RECEIVING WATERS: Drainage from site drains into the IBWC Levee System which eventually empties into the lower Laguna Madre.

ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORICAL PROPERTY:

A. No Endangered Species, Designated Critical Habitat or Historic Property has not been found on this project site.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- TEMPORARY SEEDING
- MULCHING (Hay or Straw)
- BUFFER ZONES
- PLANTING
- SEEDING
- SODDING
- PRESERVATION OF NATURAL RESOURCES
- FLEXIBLE CHANNEL LINER
- RIGID CHANNEL LINER
- SOIL RETENTION BLANKET
- COMPOST MANUFACTURED COMPOST
- OTHER: (Specify Practice)

STRUCTURAL PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- SILT FENCES
- HAY BALES
- ROCK FILTER DAMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT BASINS
- STORM INLET SEDIMENT TRAP
- STONE OUTLET STRUCTURES
- CURBS AND GUTTERS
- STORM SEWERS
- VELOCITY CONTROL DEVICES
- OTHER: (Specify Practice)

STORM WATER MANAGEMENT:

Storm water drainage is provided by existing open ditches and culverts. System will carry drainage within the ROW to designated outfalls

STORM WATER MANAGEMENT ACTIVITIES:

The order of activities will be as follows:
1. Install perimeter controls, clear R.O.W. on side where construction will take place, and make required utility adjustments
2. Install proposed culverts, install sediment control fence as specified in plans.
3. Construct proposed roadway.
4. Once all construction activity is complete, permanent seeding on proposed areas shall be done according to plans or as instructed by the engineer.

NON-STORM WATER MANAGEMENT DISCHARGES:

Non-storm water discharges should be filtered, or held in retention basins, before being allowed to mix with storm water. These discharges consist of non-polluted ground water, spring water, foundation and/or footing drain water, and water used for dust control, pavement washing and vehicle wastewater containing no detergents.

OTHER REQUIREMENTS & PRACTICES

OTHER EROSION AND SEDIMENT CONTROLS:
 MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: For areas of the construction site that have not been finally stabilized, area used for storage of materials, structural control measures, and locations where vehicles enter or exit the site, personnel provided by the permittee and familiar with the SW3P must inspect disturbed areas at least once every fourteen (14) calendar days and within twenty-four (24) hours of the end of a storm event 0.5 inches or greater.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded dumpster. All trash and construction debris from the site will be deposited as necessary at a local dump. No construction waste material will be buried on site.

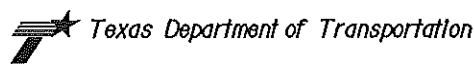
HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories to be hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalt products, Chemical additives for soil stabilization, or Concrete curing compounds and additives. In the event of a spill which may be hazardous, the spill coordinator should be contacted immediately. Emptying of excess concrete should not be allowed on site. Likewise, washout of concrete trucks should not be performed on site. These discharges are considered non-allowable non-storm water discharges. Concrete trucks should never be allowed to dump into storm drains or sanitary sewers.

SANITARY WASTE: All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.

OFFSITE VEHICLE TRACKING: The Contractor shall be required, on a regular basis or as may be directed by the Engineer, to dampen haul roads for dust control, stabilize construction entrances and to remove excess dirt from the roadway.

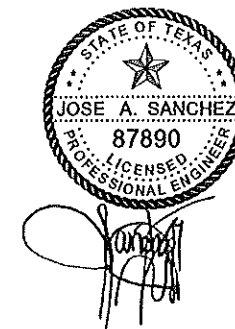
MANAGEMENT PRACTICES: (Example Below - May be used as applicable, revised or expanded)
 1. Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wet land, water body or stream bed.
 2. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.
 3. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, or debris or other obstructions placed during construction operations that are not a part of the finished work.

OTHER:
 1. Construction materials stored on site to be provided by Project Field Office.
 2. The project SW3P File located at the project field office shall contain the N.O.I and any additional permits required by T.E.C.O.

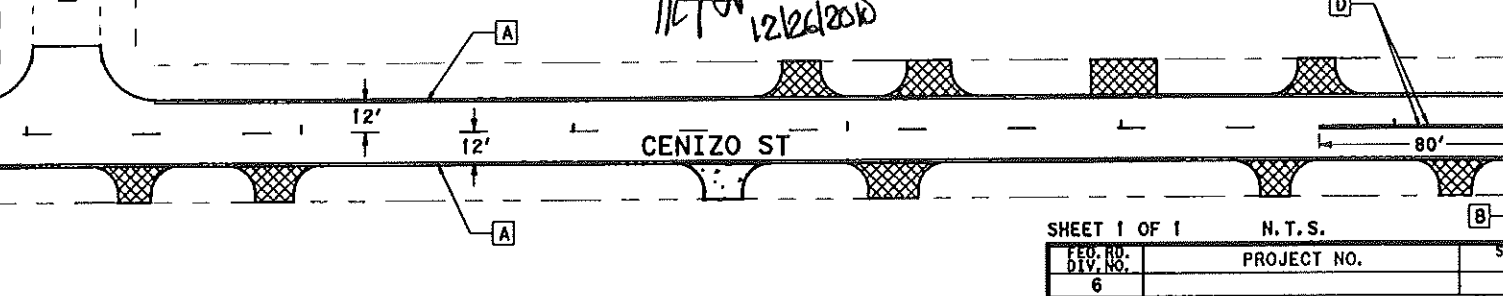
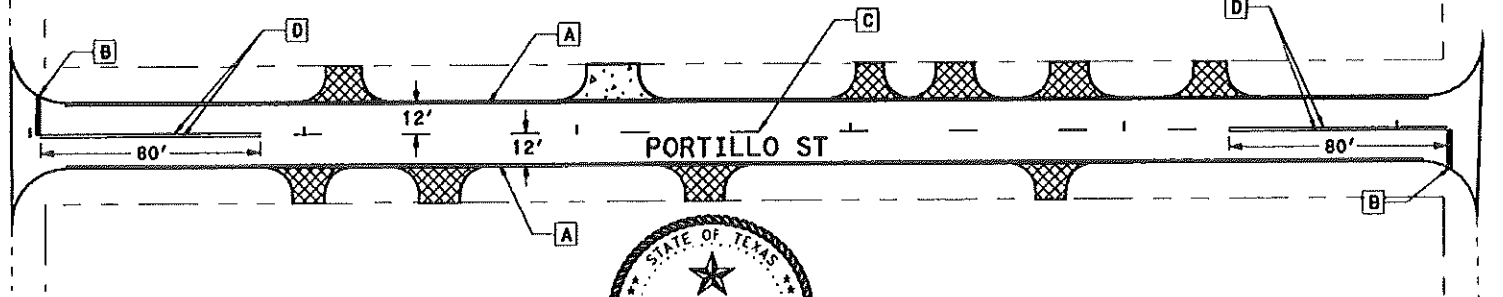
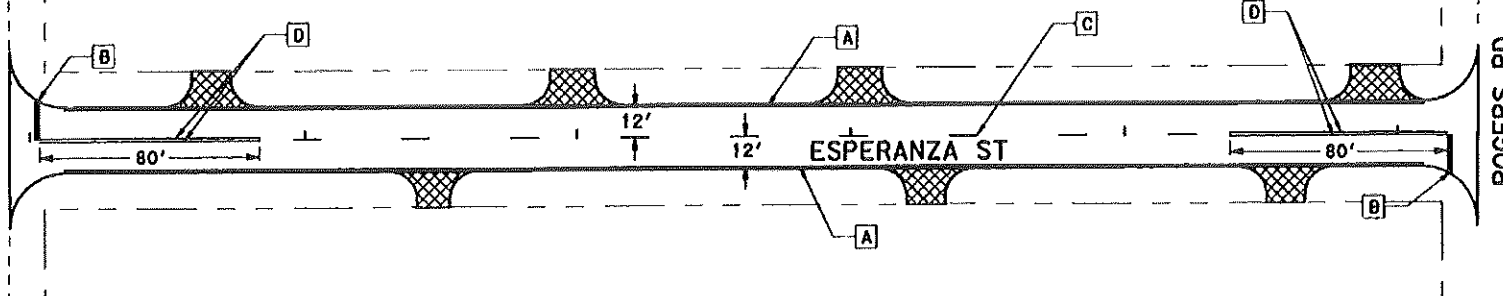
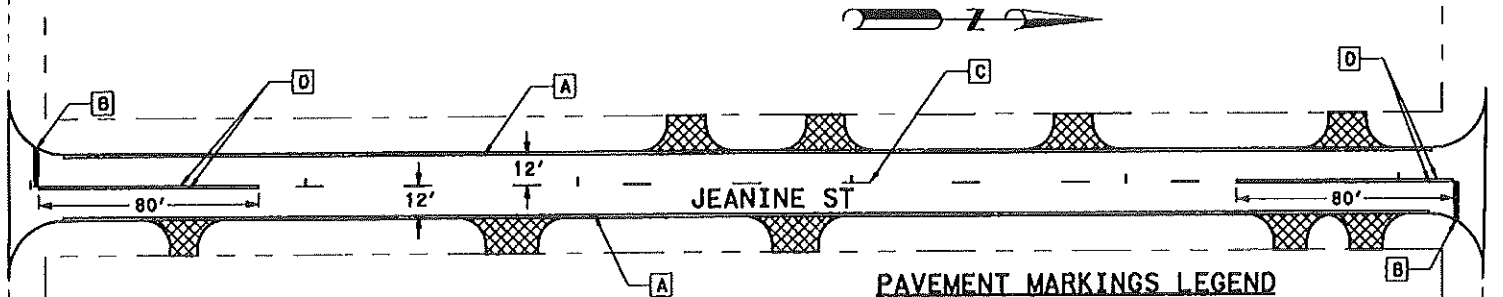
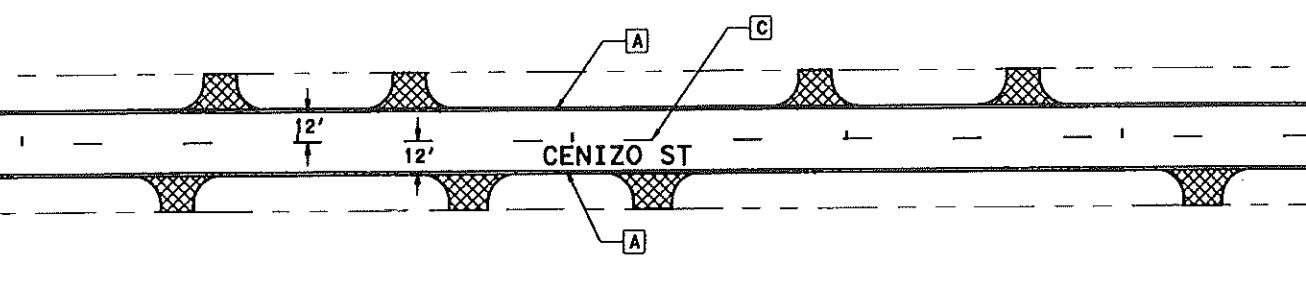
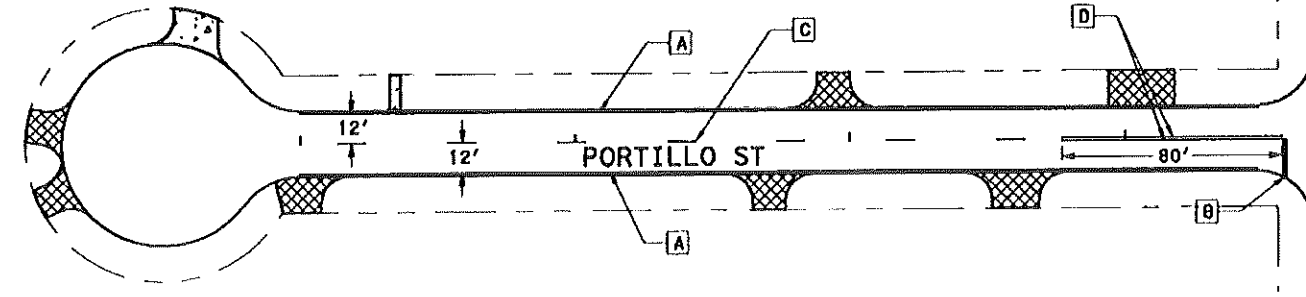
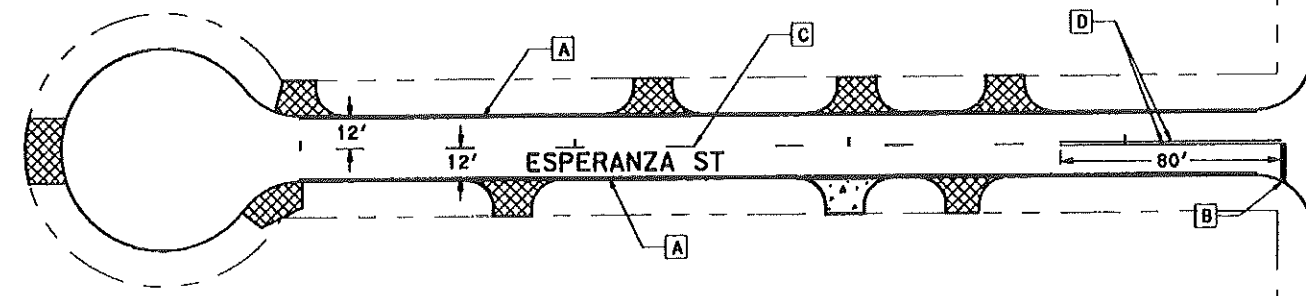
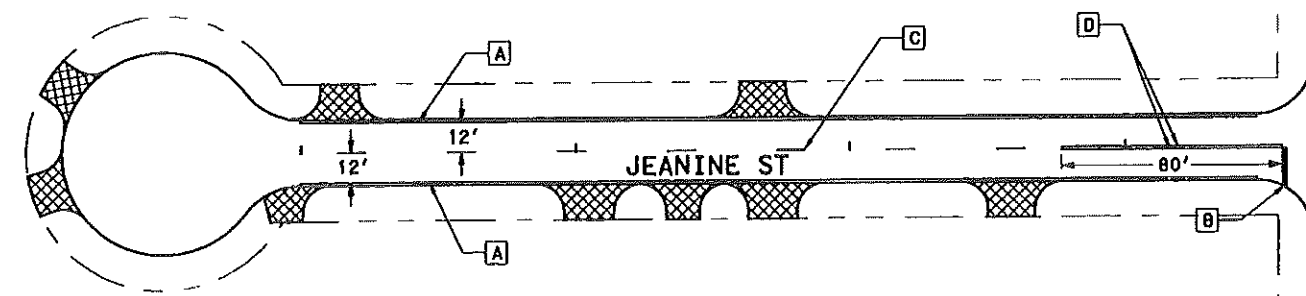
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TxDOT STORM WATER POLLUTION PREVENTION PLAN (SW3P)

REV. 4/04 PROJECT NO. _____ SHEET NO. 39
 STATE DIST. COUNTY
 TEXAS PHARR HIDALGO
 CONT. SECT. JOB HIGHWAY NO.
 3C 1080 220 VAR

AUTHORIZED 04-08-2015

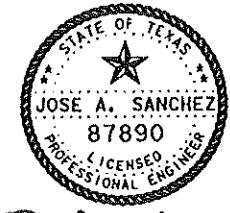


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PAVEMENT MARKINGS LEGEND
 (REFL PAV MRK TYPE I) (100 MIL)

- A (W) (04") (SLD)
- B (W) (24") (SLD)
- C (Y) (04") (BRK)
- D (Y) (04") (SLD)



[Signature]
 12/26/2010

**DELTA WEST SUBDIVISION
 PAVEMENT MARKINGS LAYOUT**

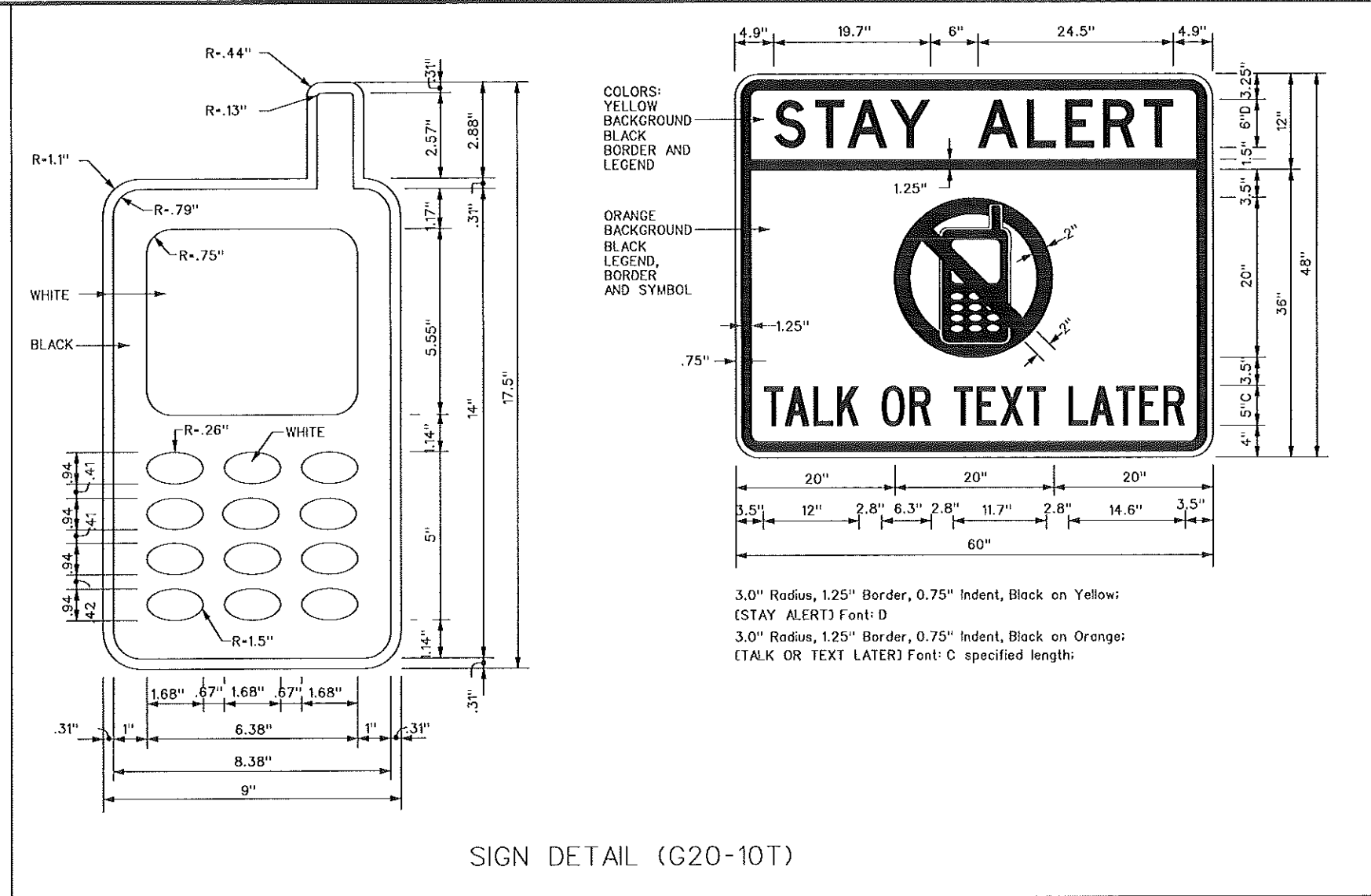
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STATE TEXAS	DIST. PHR	COUNTY HIDALGO	
CSJ	PCT 1	HIGHWAY NO. VAR	
3C-1080-220			

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- 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.
- 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.
- 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.
- 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.
- As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
- Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

- 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.



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

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

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

Texas Department of Transportation
Traffic Operations Division Standard

**BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS**

BC(1)-14

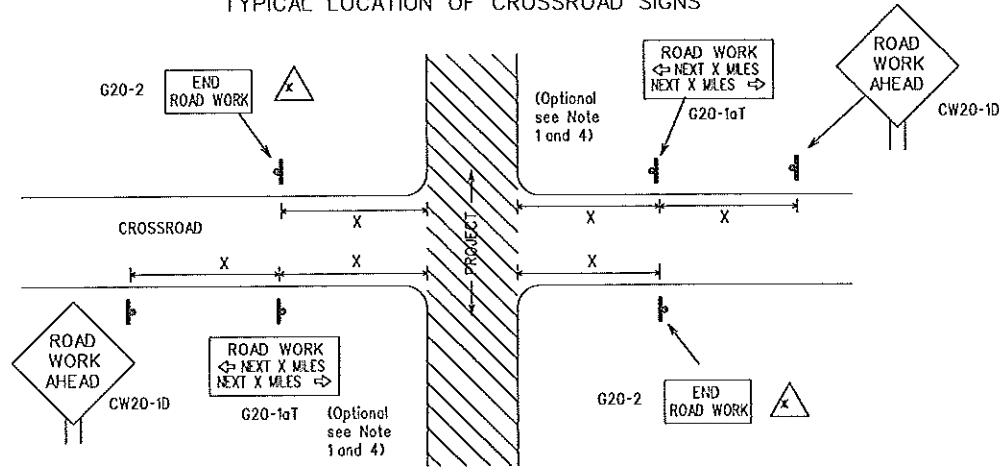
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9-07	7-13			
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PHR	HIDALGO		41	

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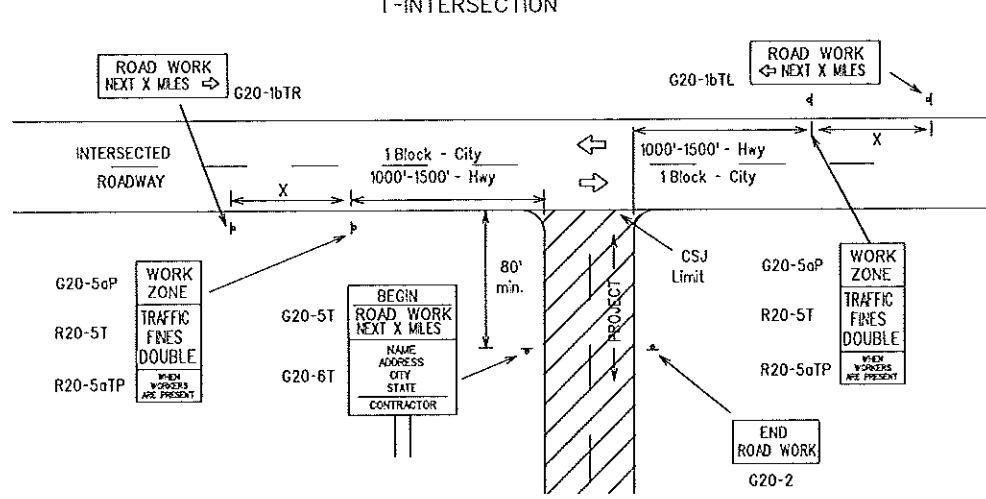
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TYPICAL LOCATION OF CROSSROAD SIGNS



- △ May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
 - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
 - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
 - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
 - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
 - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING 1,5,6

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed	Sign Spacing "X"
CW20 ⁴			MPH	Feet (Apprx.)
CW21			30	120
CW22	48" x 48"	48" x 48"	35	160
CW23			40	240
CW25			45	320
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	50	400
			55	500 ²
			60	600 ²
			65	700 ²
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	70	800 ²
			75	900 ²
			80	1000 ²
			*	* ³

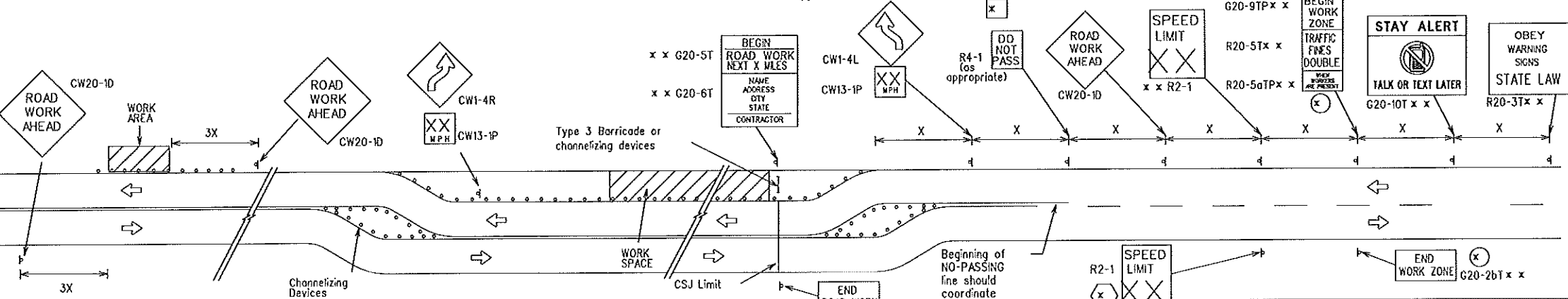
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

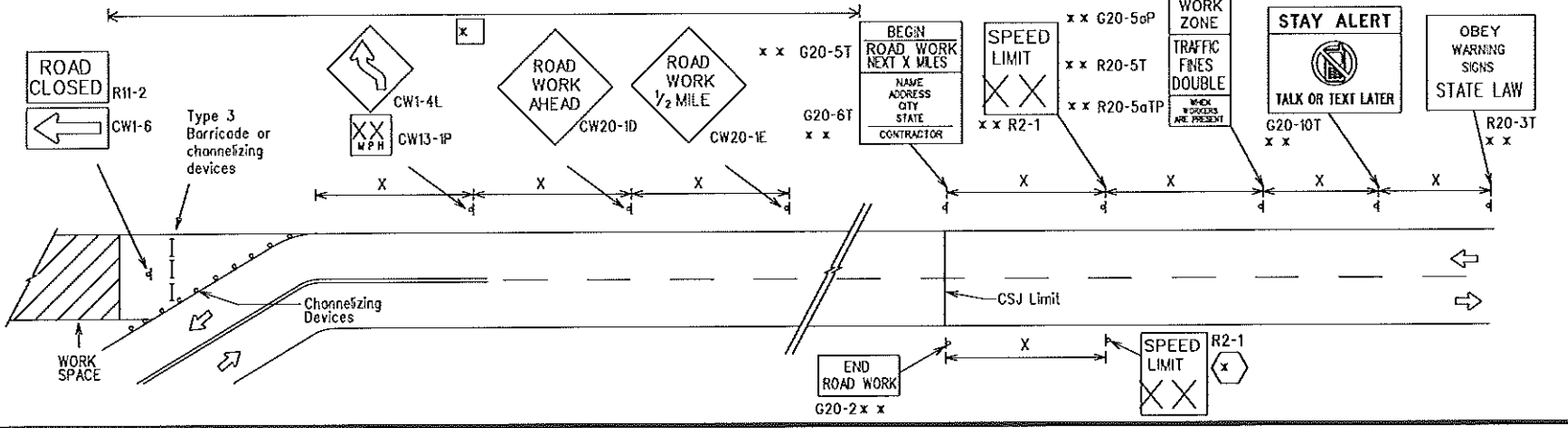
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

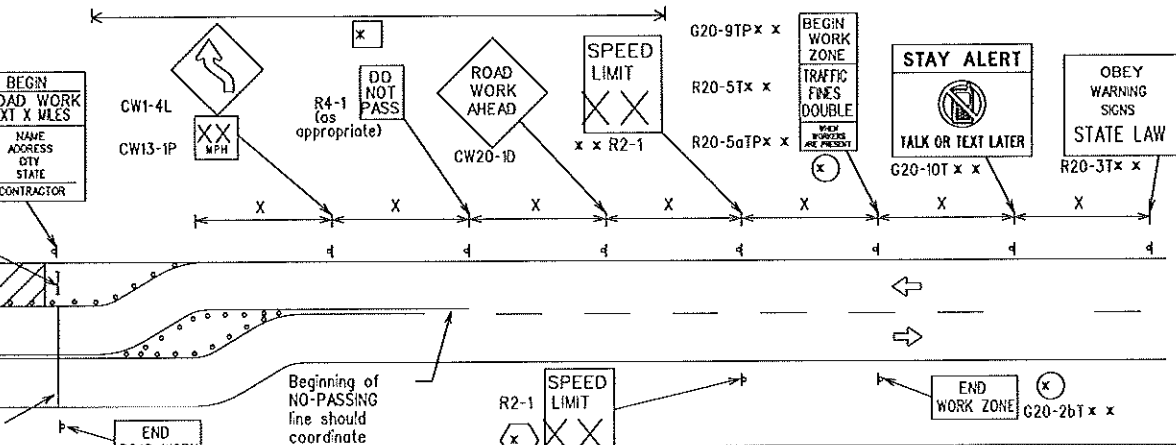


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
 - Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.
 - Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
 - Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
— —	Type 3 Barricade
○ ○ ○	Channelizing Devices
—	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

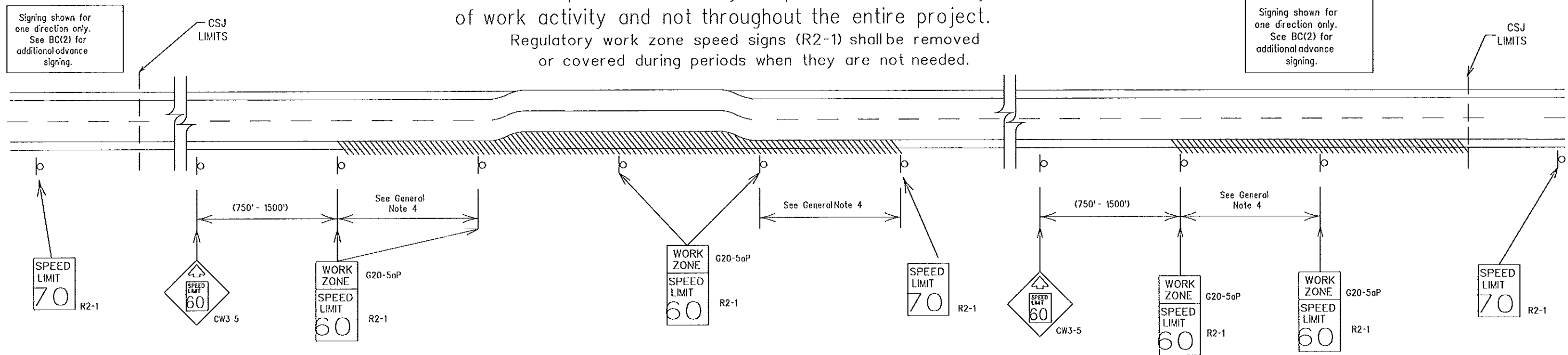
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REVISIONS:	DIST: PHR	COUNTY: HIDALGO	SHEET NO. 42	
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7-13				

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

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

GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 - 40 mph and greater 0.2 to 2 miles
 - 35 mph and less 0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
 - Law enforcement.
 - Flagger stationed next to sign.
 - Portable changeable message sign (PCMS).
 - Low-power (drone) radar transmitter.
 - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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SHEET 3 OF 12

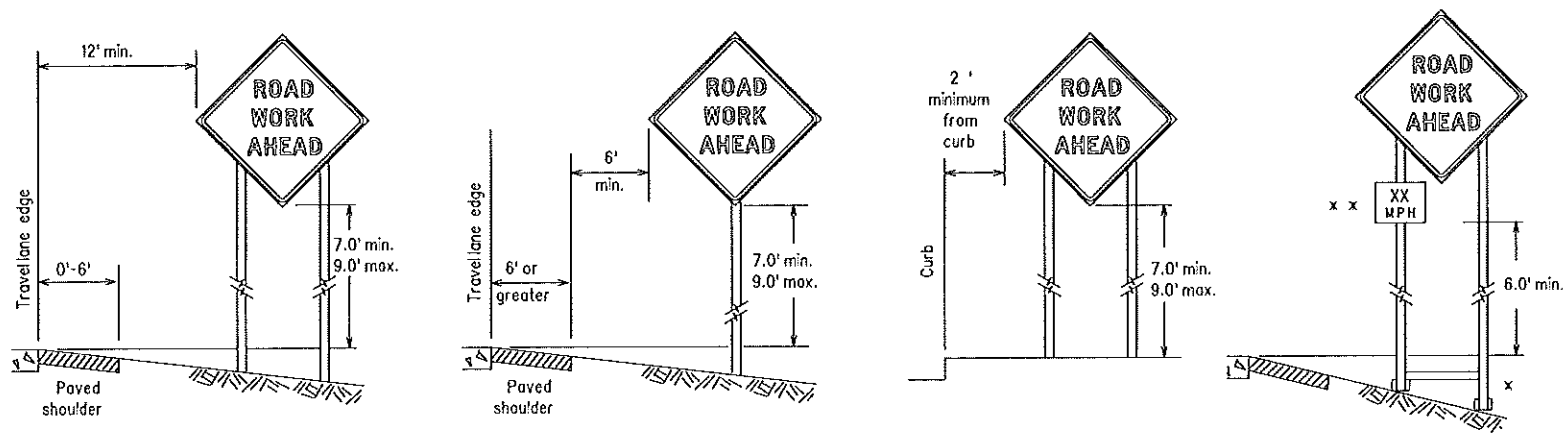


BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

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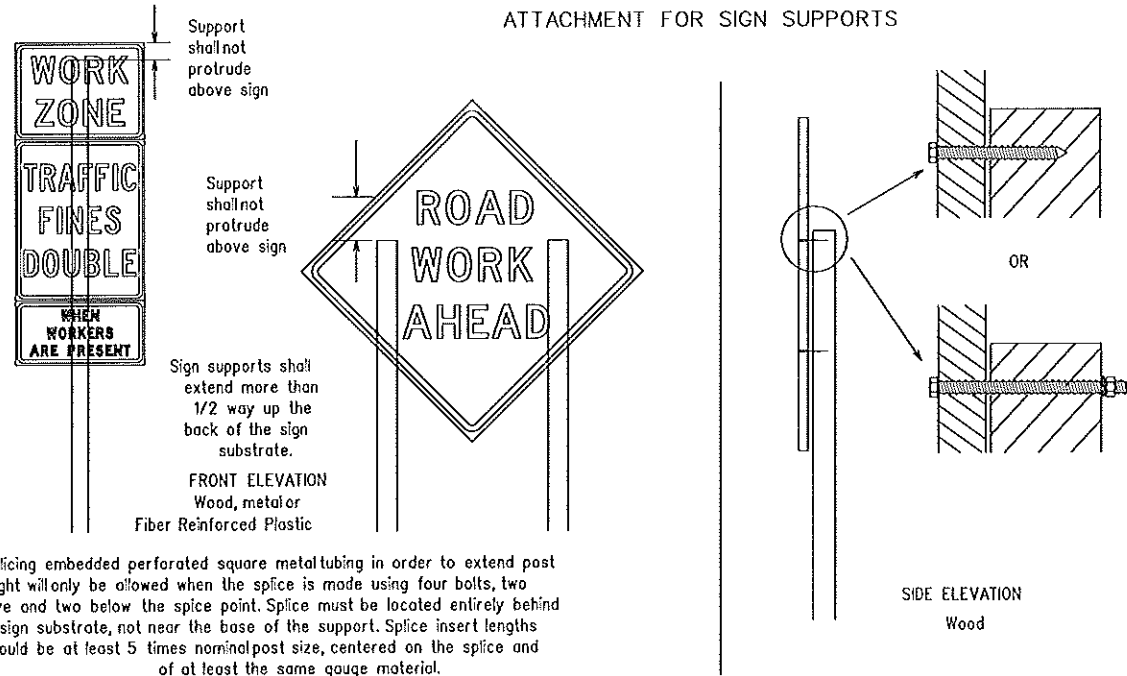
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



x When placing skid supports on uneven 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.

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

ATTACHMENT FOR SIGN SUPPORTS



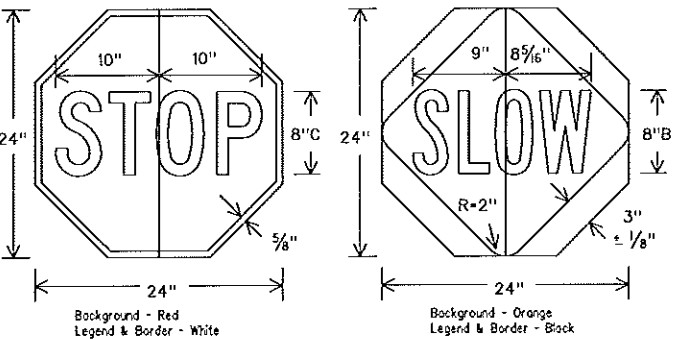
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

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

STOP/SLOW PADDLES

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



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
 2. Wooden sign posts shall be painted white.
 3. Barricades shall NOT be used as sign supports.
 4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
 5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
 6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
 7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
 8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
 9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
- DURATION OF WORK** (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)
1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - a. Long-term stationary - work that occupies a location more than 3 days.
 - b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - d. Short duration - work that occupies a location up to 1 hour.
 - e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes).

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

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



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

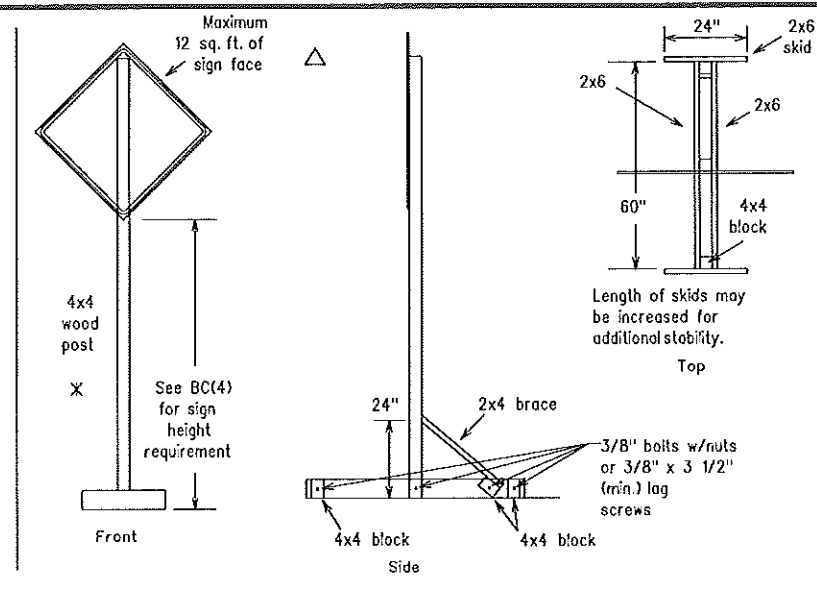
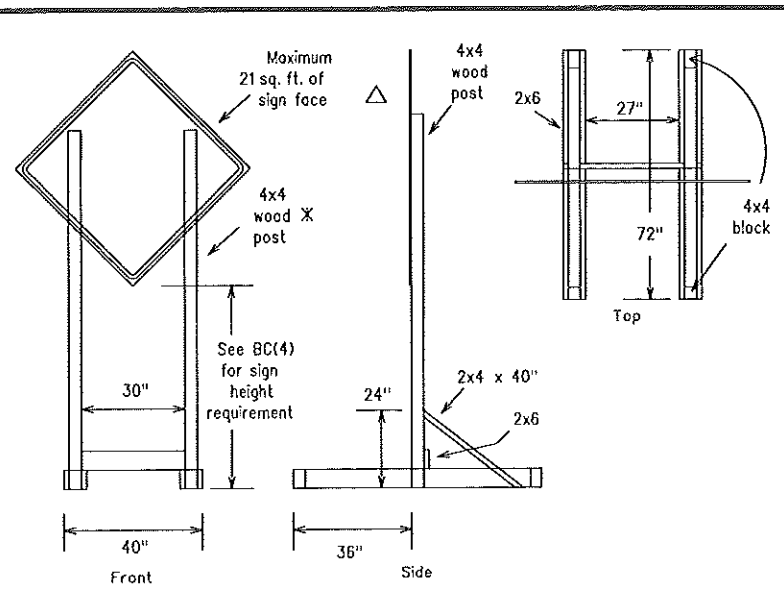
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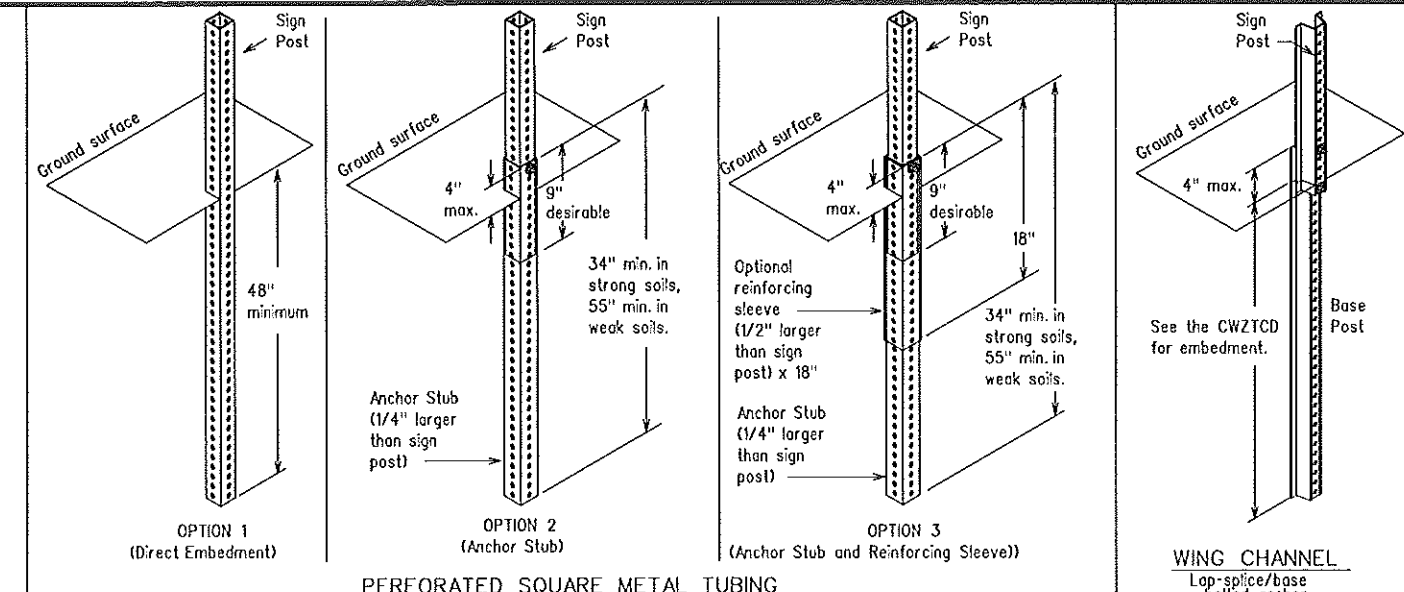
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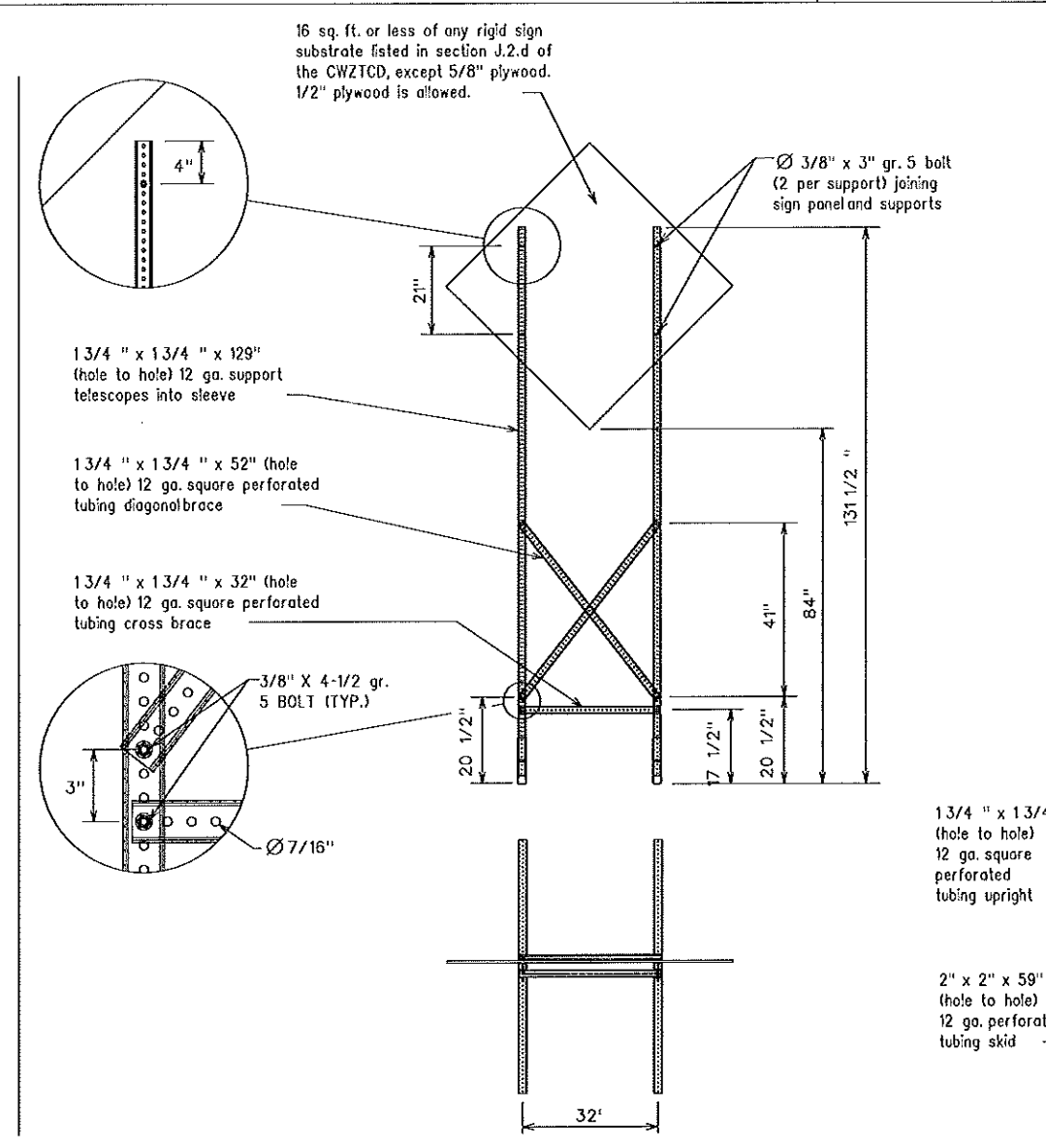
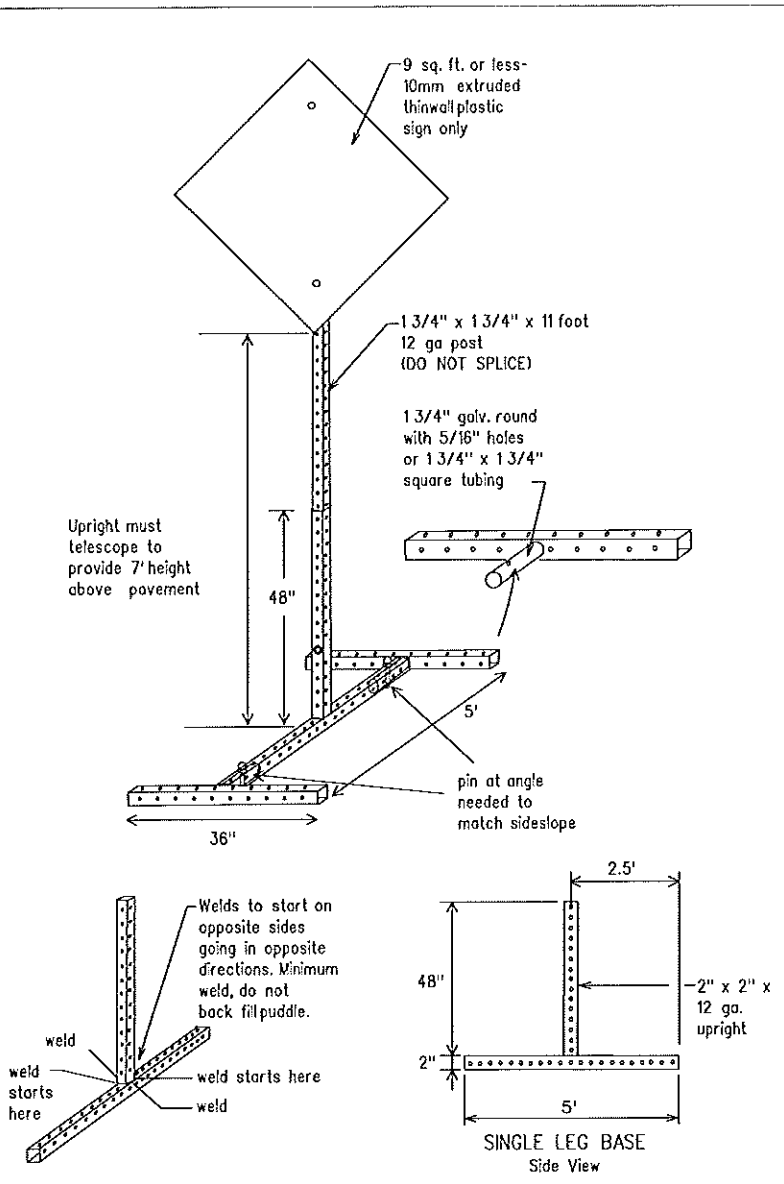
SKID MOUNTED WOOD SIGN SUPPORTS

LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

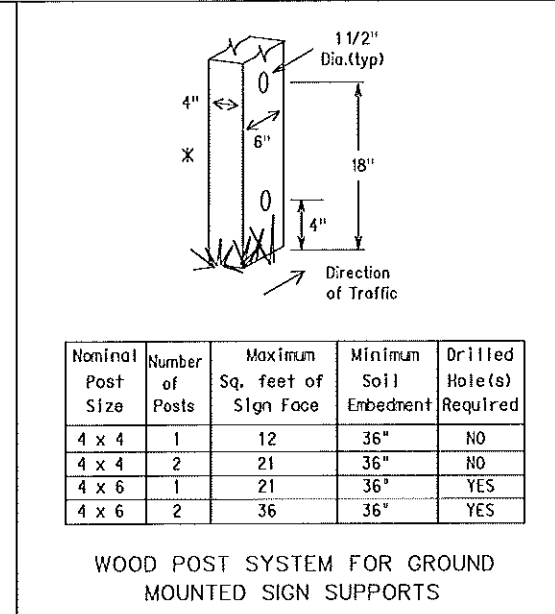


GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



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



WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to item 502.

- See BC(4) for definition of "Work Duration."
- ✕ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- △ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation
 Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

- 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 itself.
- 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.
- 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.
- 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.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- 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.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (1.5) 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.
- Each line of text should be centered on the message board rather than left or right justified.
- 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.

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXXX BLVD CLOSED

Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI

ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

FORM X LINES RIGHT
USE XXXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXXX TO XXXXXXXX
US XXX TO FM XXXX

Warning List

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

** Advance Notice List

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

* * See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- 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.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and M, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- 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

- 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.
- When symbols, 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 symbols 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.
- 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.

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
Canal	CANT	North	N
Center	CTR	Northbound (route) N	
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound (route) E		Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound (route) S	
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DNTH
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLRS
High-Occupancy	HOV	Tuesday	TUES
Vehicle	HWY	Time Minutes	TIME MIN
Highway	HR, HRS	Upper Level	UPR LEVEL
Hour(s)	HR, HRS	Vehicles (s)	VEH, VEHS
Information	INFO	Warning	WARN
It Is	ITS	Wednesday	WED
Junction	JCT	Weight Limit	WT LIMIT
Left	LFT	West	W
Left Lane	LFT LN	Westbound (route) W	
Lane Closed	LN CLOSED	West Pavement	WET PVMT
Lower Level	LWR LEVEL	Will Not	WONT
Maintenance	MAINT		

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



Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-14

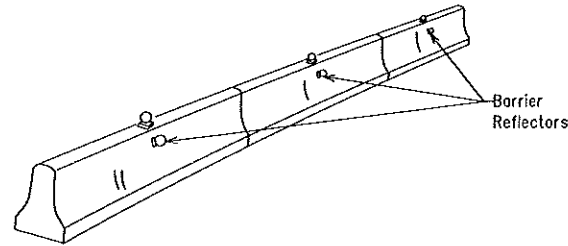
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© TXDOT November 2002	CONT: 3C	SECT: 08C	JOB: 220	HIGHWAY: VAR
9-07 8-14	DIST: 7-13	COUNTY: HIDALGO	SHEET NO. 46	

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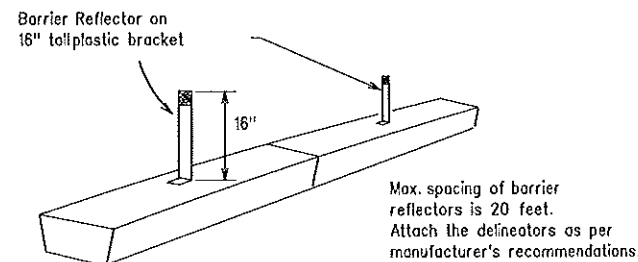
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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

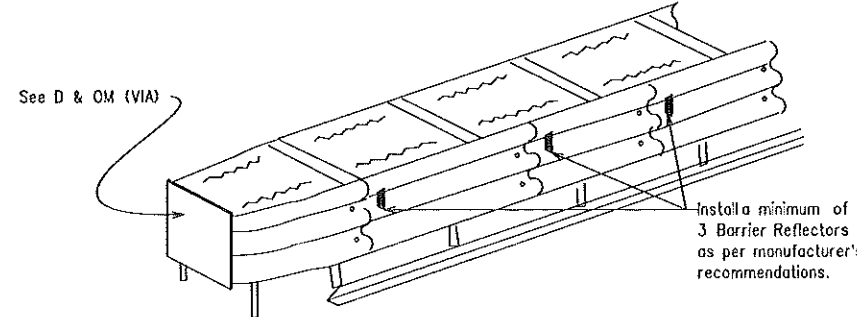


CONCRETE TRAFFIC BARRIER (CTB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

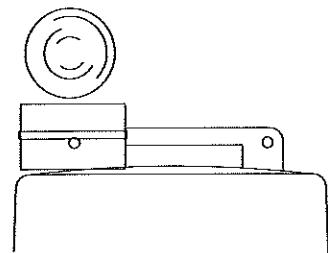
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B or C sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

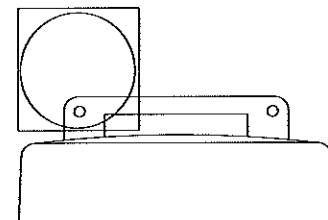
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

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

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



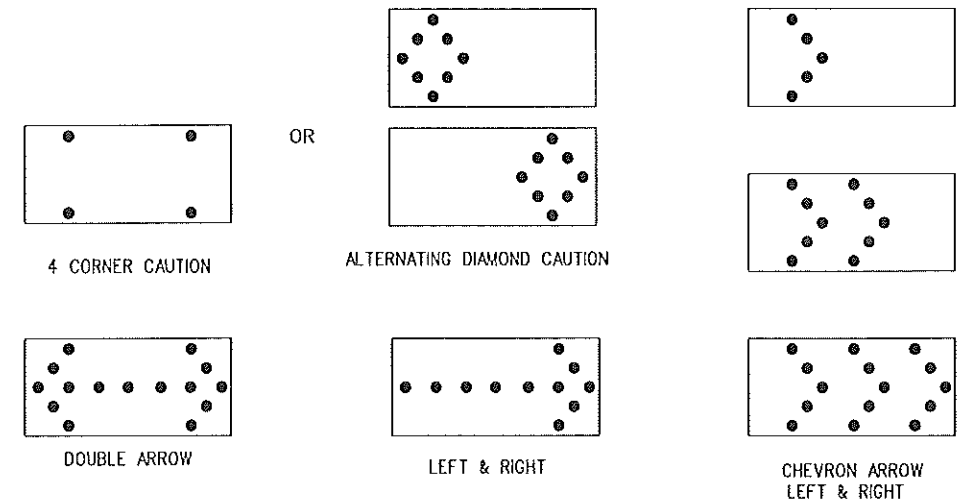
Type C Warning Light or approved substitute mounted on a drum adjacent to the travelway.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



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

BC(7)-14

FILE: bc-14.dgn	DATE: 9-07	BY: TXDOT	CHK: TXDOT	APP: TXDOT	REV: TXDOT
© TxDOT November 2002	CONT: 3C	SECT: 08C	JOB: 220	HGMWAY: VAR	
REVISIONS: 9-07 8-14	DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 47		

GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

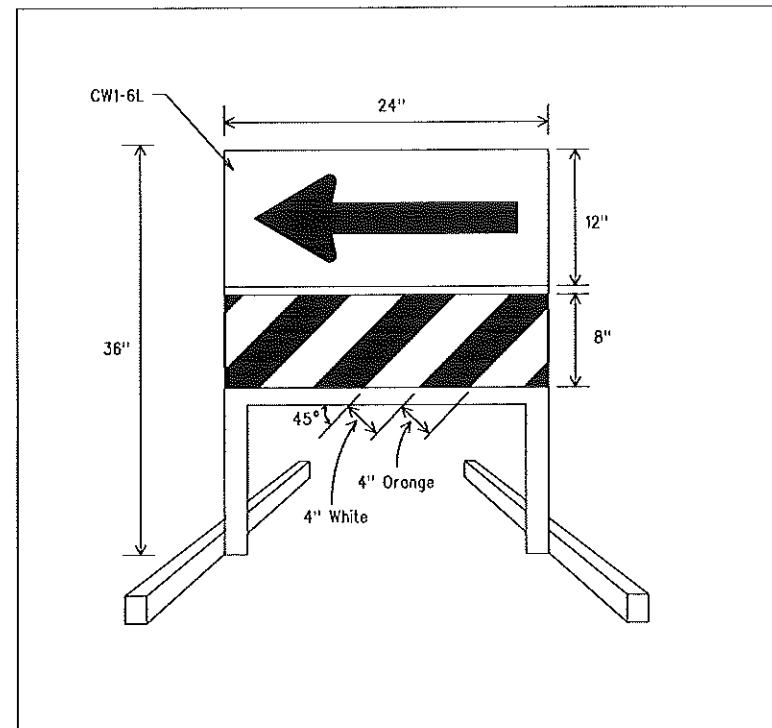
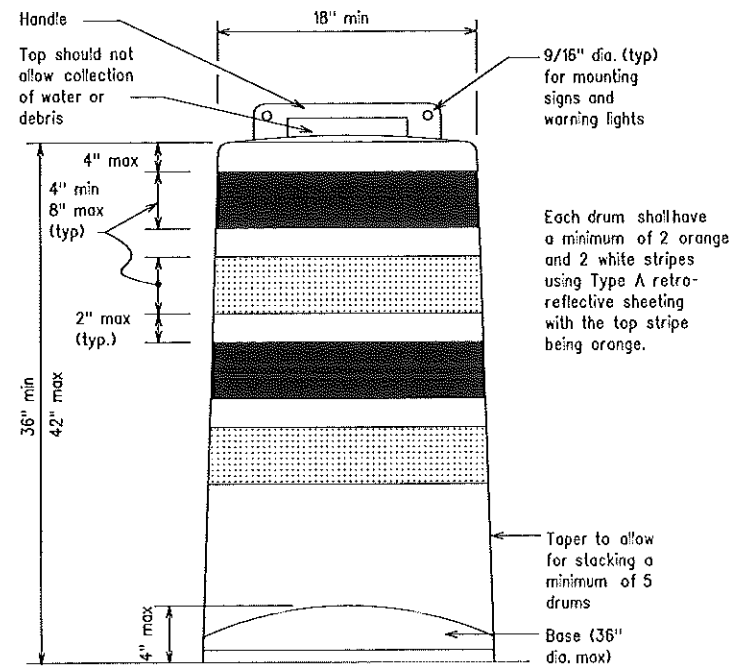
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelizing devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

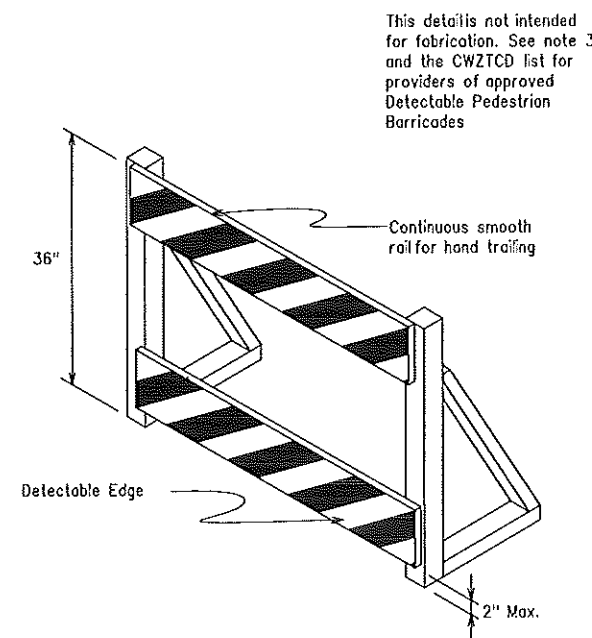
BALLAST

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



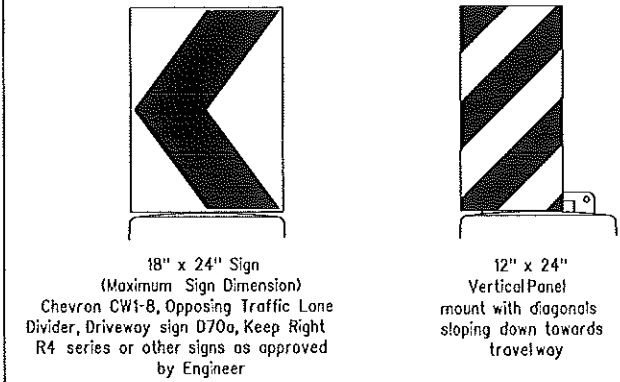
DIRECTION INDICATOR BARRICADE

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



DETECTABLE PEDESTRIAN BARRICADES

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous railsuitable for hand trailing with no splinters, burrs, or sharp edges.



Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B or Type C Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

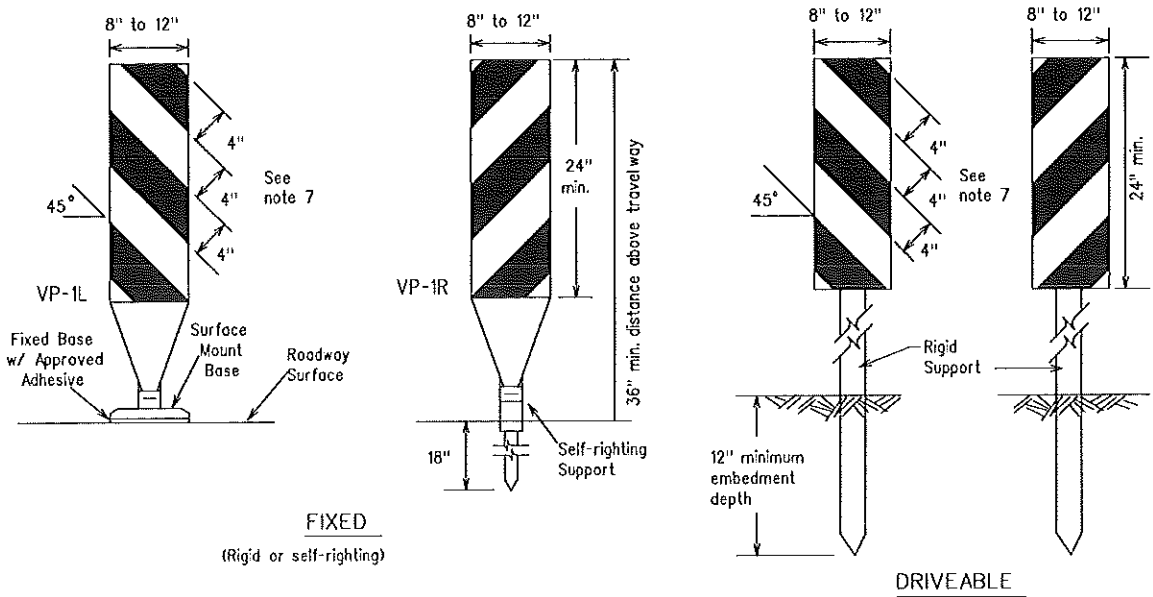
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DIST: 4-03	COUNTY: 7-13	COUNTY: 9-07	COUNTY: 8-14	SHEET NO: 48
PHR: PHR	HIDALGO			

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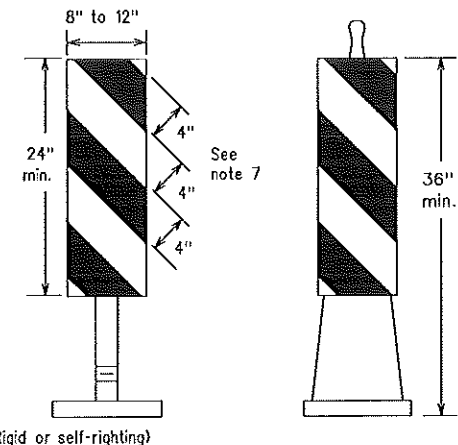
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FIXED
(Rigid or self-righting)

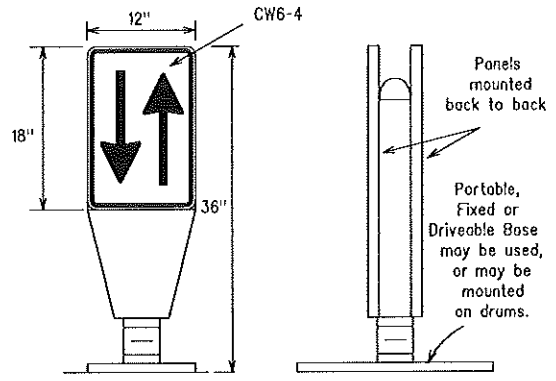
DRIVEABLE



PORTABLE

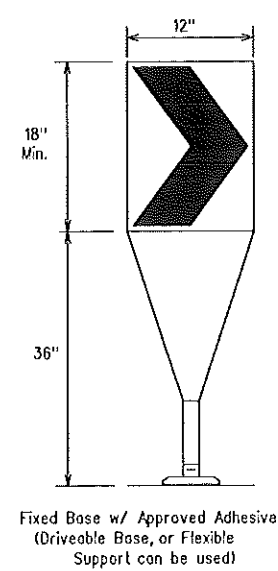
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime definition is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panels 36 inches or greater, a panel stripe of 6 inches shall be used.



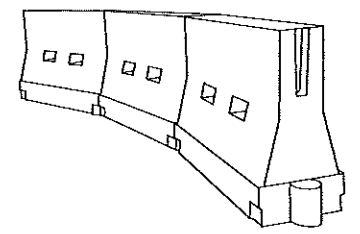
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

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



CHEVRONS

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B or Type C conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rolls as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

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

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

GENERAL NOTES

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve application and removal procedures of fixed bases.

Posted Speed x	Formula	Minimum Desirable Taper Lengths x x			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70	700'	770'	840'	70'	140'	
75	750'	825'	900'	75'	150'	
80	800'	880'	960'	80'	160'	

X X Taper lengths have been rounded off.
 L- Length of Taper (FT.) W- Width of Offset (FT.)
 S- Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

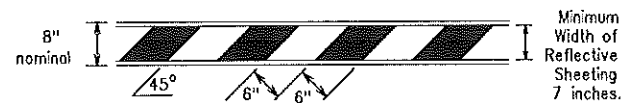
BC(9)-14

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© TxDOT November 2002	CONT: 3C	SECT: 080	JOB: 220	HC/MAY: VAR
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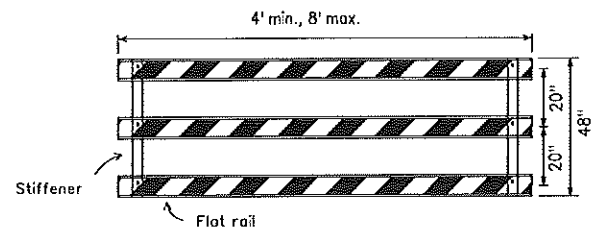
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

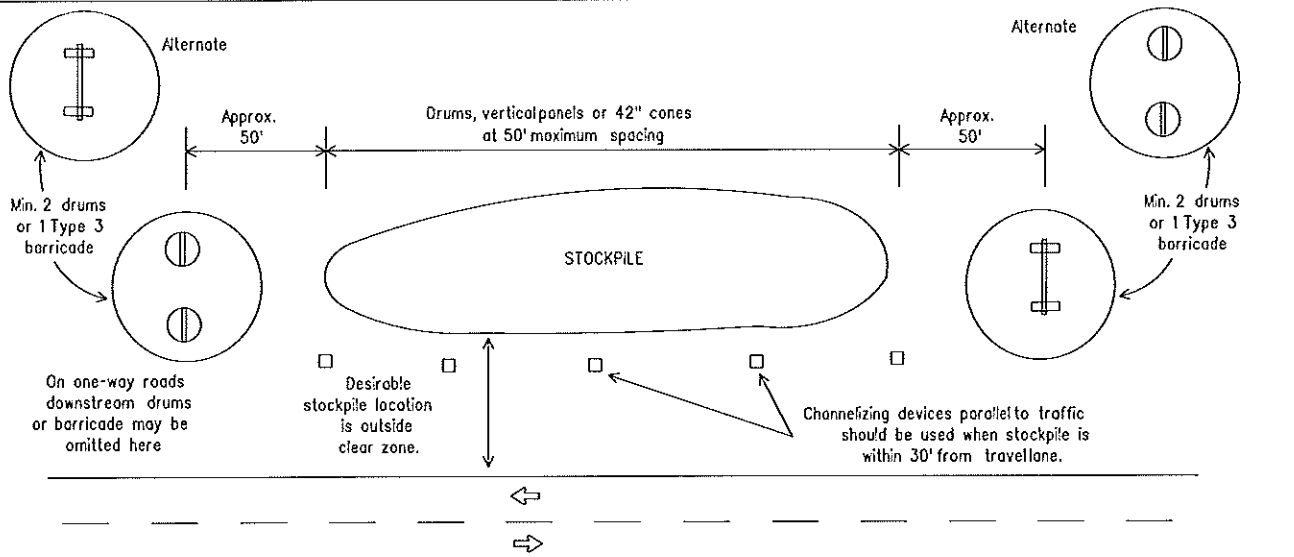
Barricades shall NOT be used as a sign support.



TYPICAL STRIPING DETAIL FOR BARRICADE RAIL

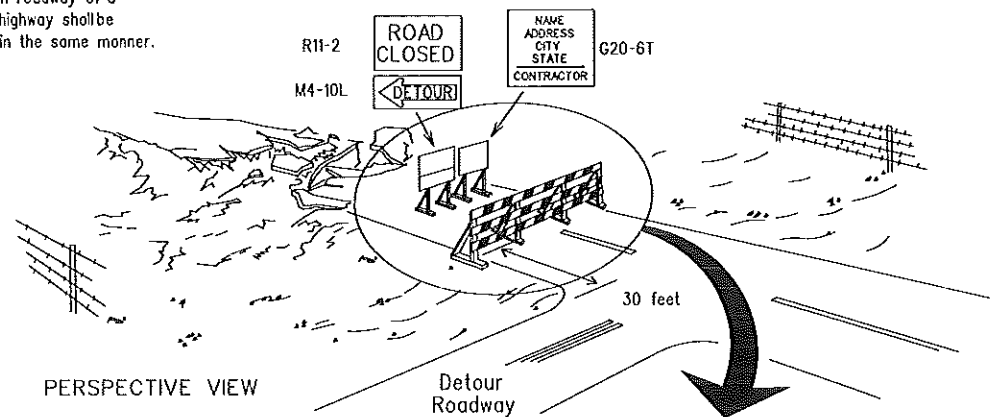


TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



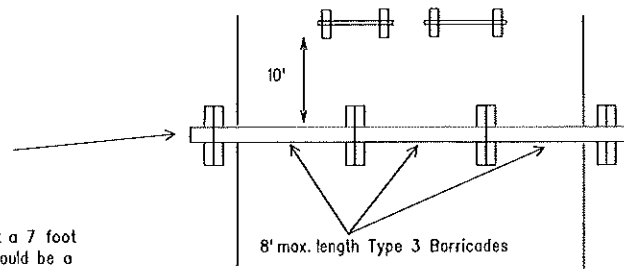
TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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



PERSPECTIVE VIEW

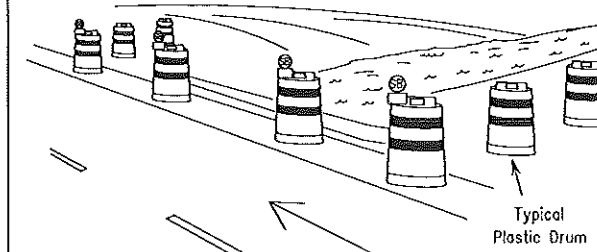
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



PLAN VIEW

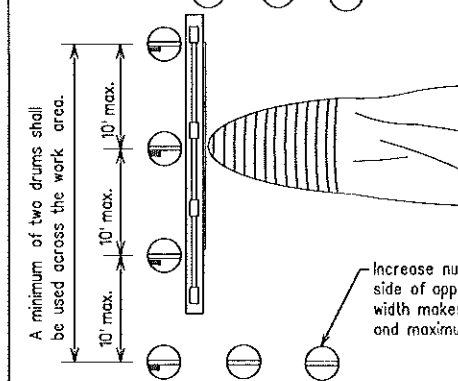
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

These drums are not required on one-way roadway



PLAN VIEW

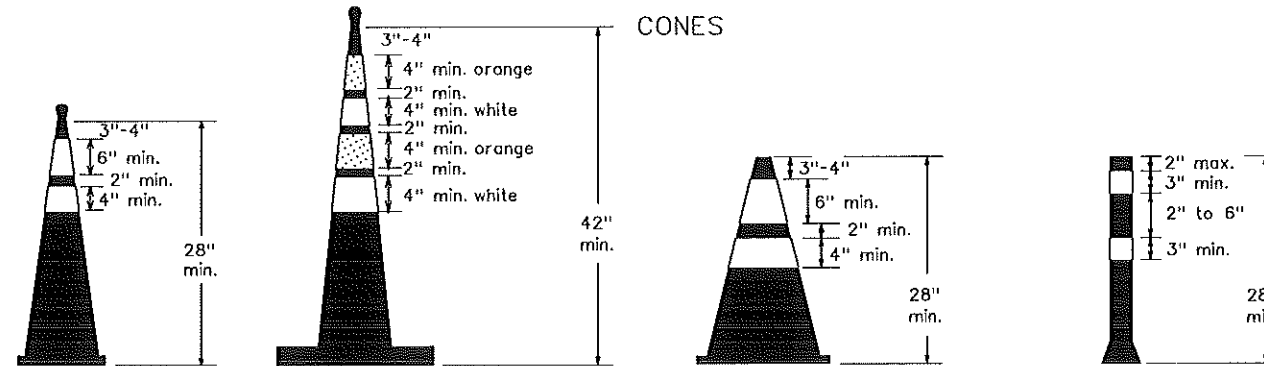
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

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

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Two-Piece cones

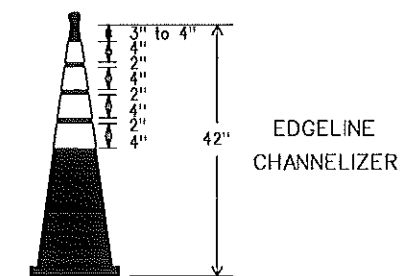
One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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

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



EDGE LINE CHANNELIZER

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

SHEET 10 OF 12

		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES			
BC(10)-14			
FILE:	bc-14.dgn	DATE:	TXDOT
REVISED:	November 2002	DATE:	TXDOT
9-07	8-14	DATE:	TXDOT
7-13		DATE:	TXDOT
REVISED:	3C 108C	DATE:	TXDOT
	220	DATE:	TXDOT
	VAR	DATE:	TXDOT
DIST:	PHR	COUNTY:	HIDALGO
SHEET NO.:			50

WORK ZONE PAVEMENT MARKINGS

GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

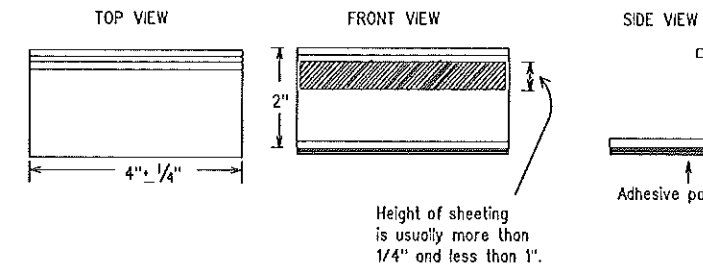
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER
TABS TO THE PAVEMENT SURFACE

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on sealcoat 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 oil surfaces, or thermoplastic for concrete surfaces.

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

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

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

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

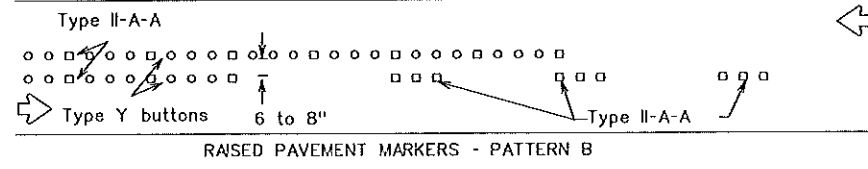
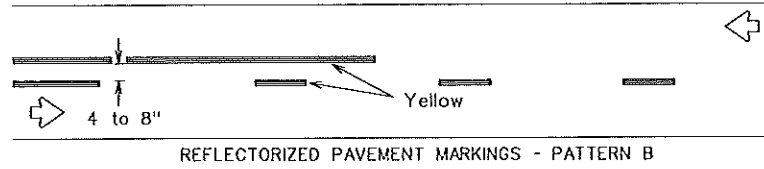
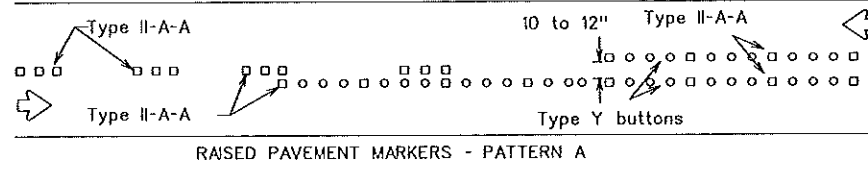
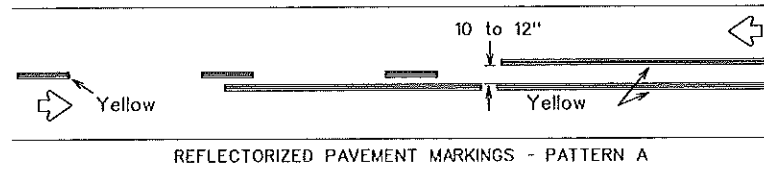
BC(11)-14

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REVISIONS				
2-98 9-07	3C	08C	220	VAR
1-02 7-13	DIST	COUNTY		SHEET NO.
11-02 8-14	PHR	HIDALGO		51

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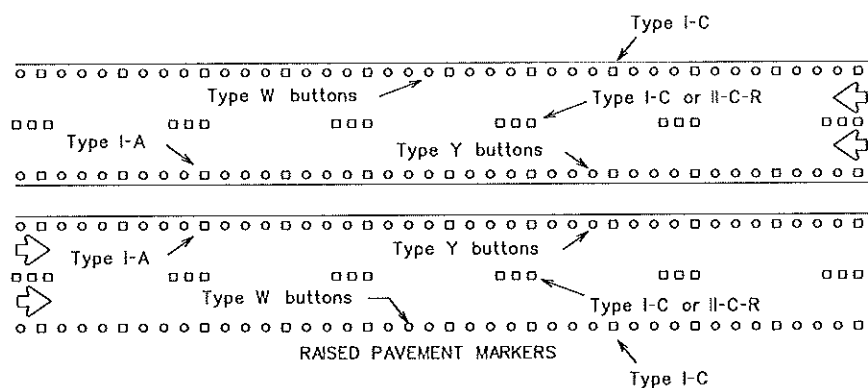
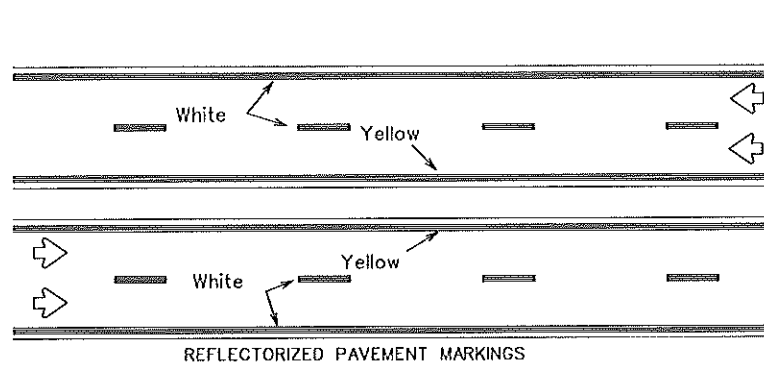
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PAVEMENT MARKING PATTERNS



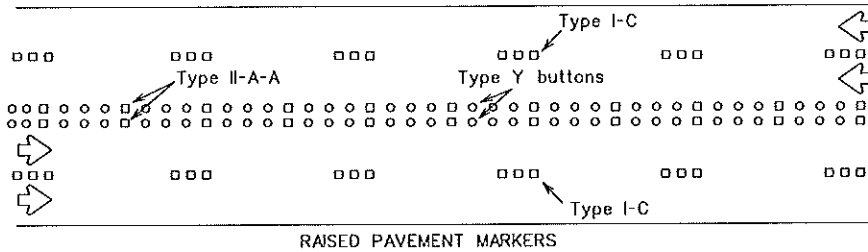
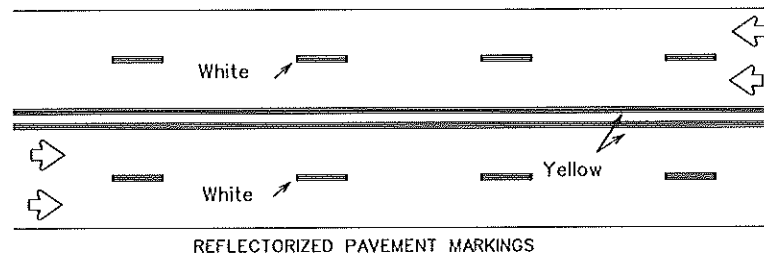
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

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



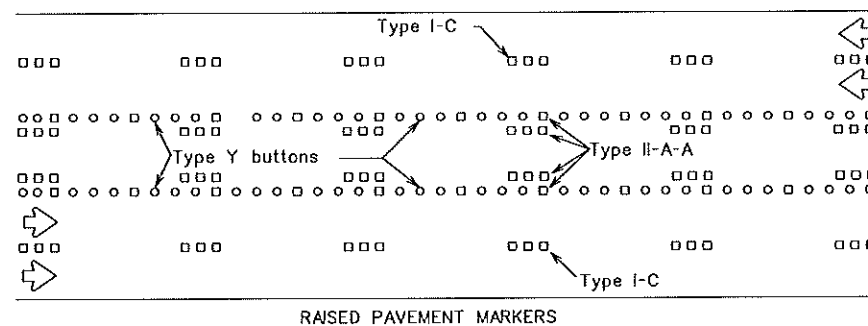
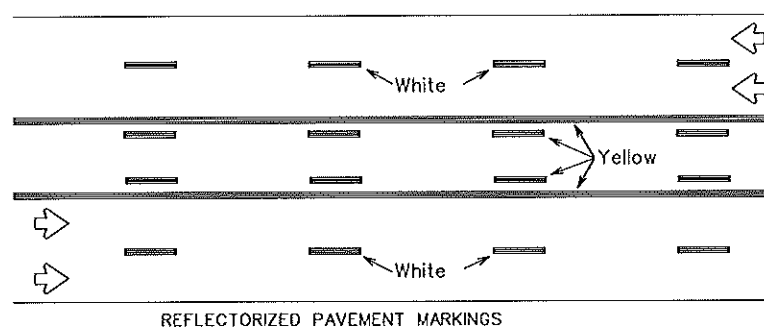
Prefabricated markings may be substituted for reflectORIZED pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectORIZED pavement markings.

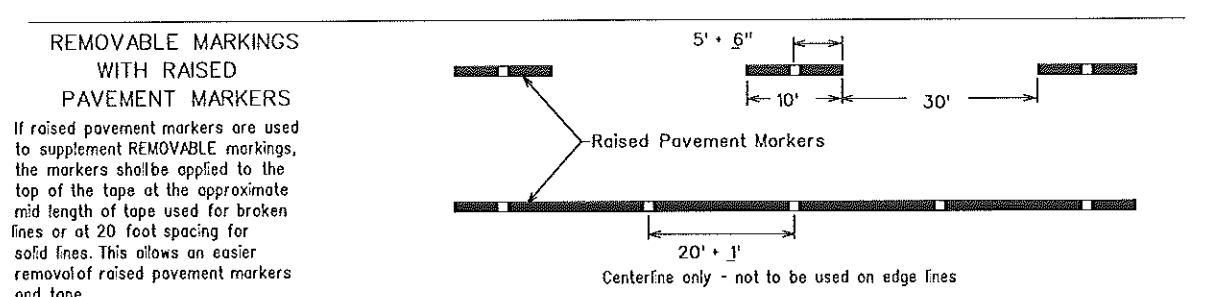
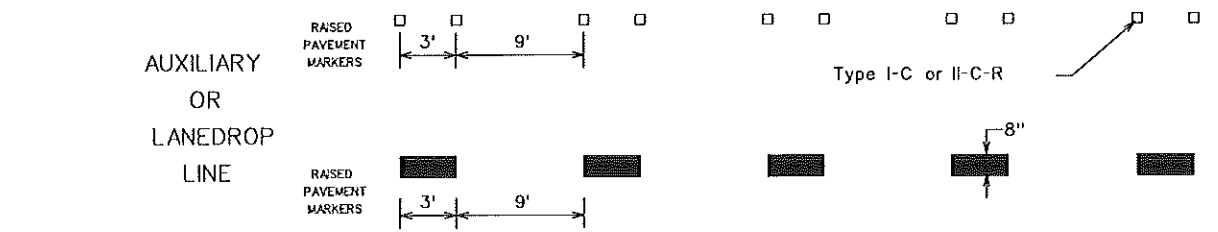
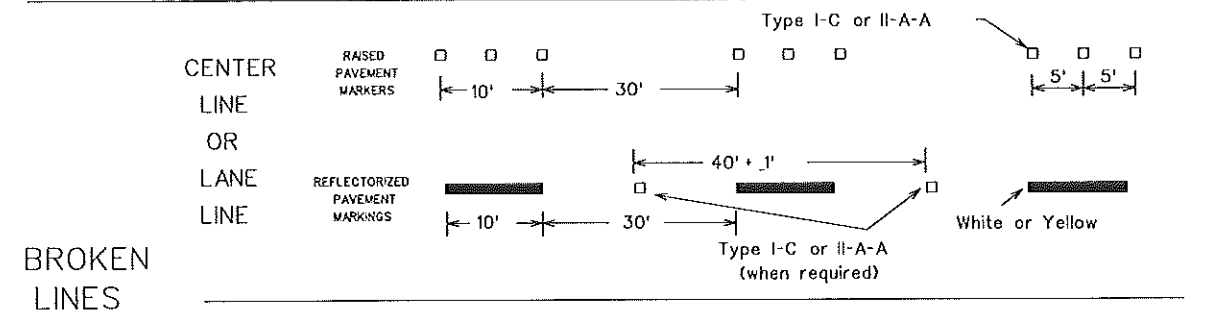
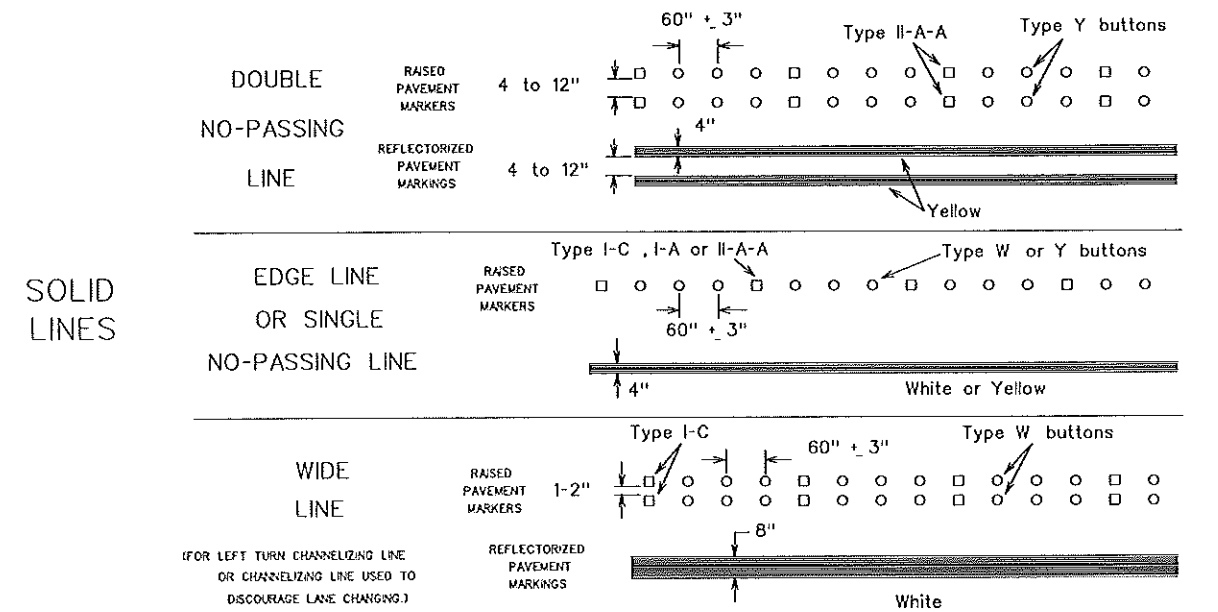
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



Prefabricated markings may be substituted for reflectORIZED pavement markings.

TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

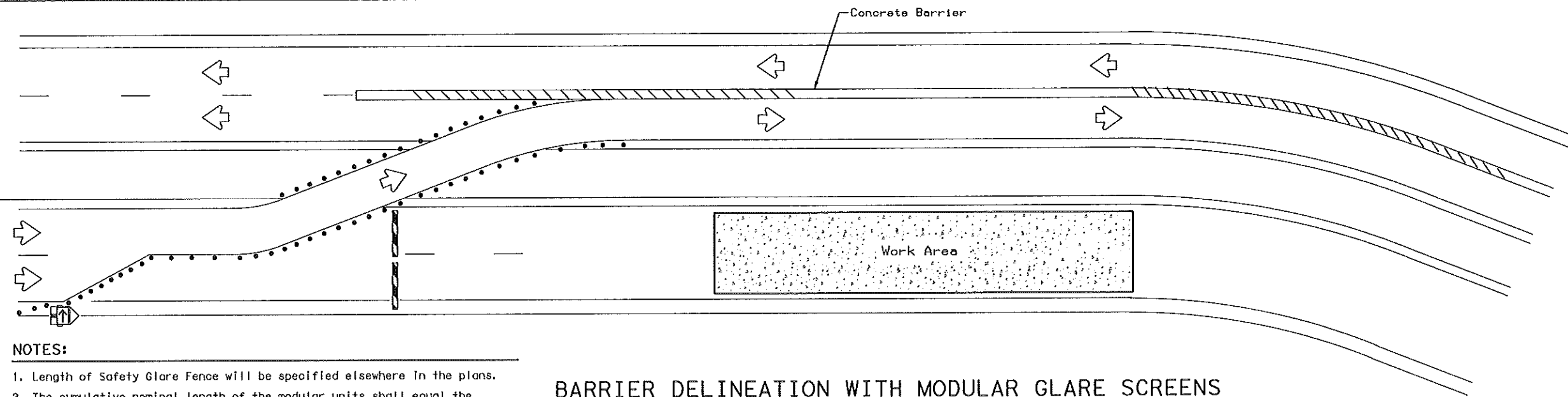
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REVISIONS	DIST: PHR	COUNTY: HIDALGO	SHEET NO.: 52		
1-97 9-07					
2-98 7-13					
11-02 8-14					

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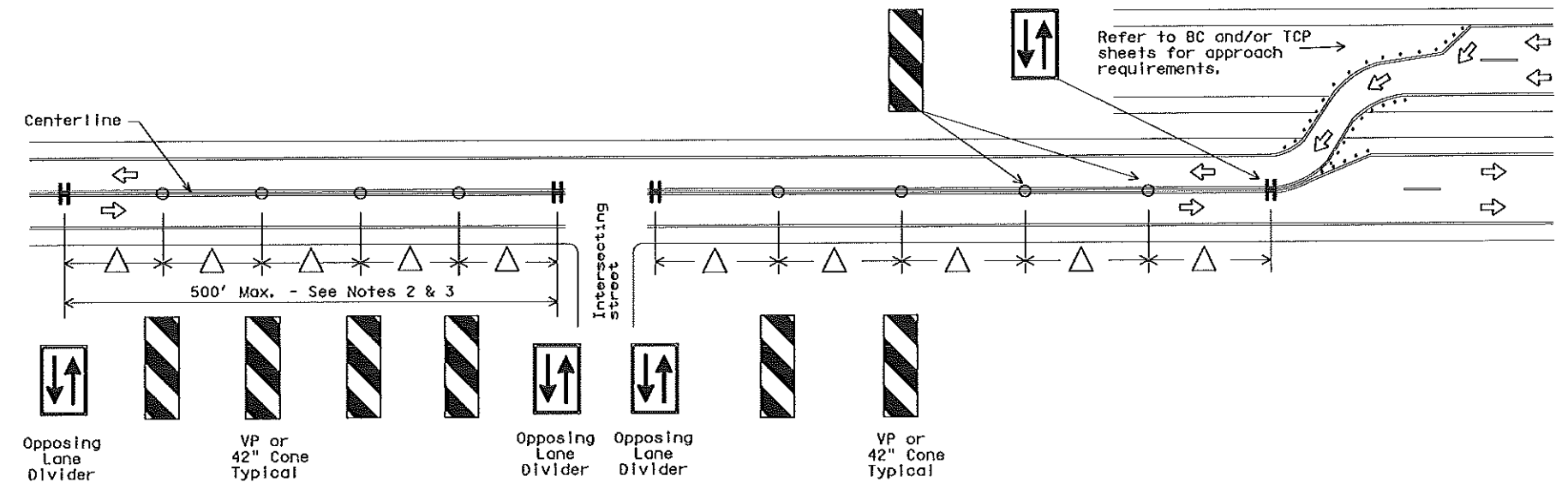
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- NOTES:**
1. Length of Safety Glare Fence will be specified elsewhere in the plans.
 2. The cumulative nominal length of the modular units shall equal the length of the individual sections of temporary concrete traffic barrier on which they are installed so the joint between barrier sections will not be spanned by any one unit.
 3. Panel/blades will be designed such that reflective sheeting conforming with Departmental Material Specification DMS-8300, Sign Face Materials, Type B or C Yellow, minimum size of 2 inches by 12 inches can be attached to the edge of the panel/blade. The sheeting shall be attached to one panel/blade per section of concrete barrier not to exceed a spacing of 30 feet. Barrier reflectors are not necessary when panel/blades are installed with reflective sheeting as described.
 4. Payment for these devices will be under statewide Special Specification "Modular Glare Screens for Headlight Barrier."
 5. This detail is only intended to show types of locations where Glare Screens would be appropriate. Required signing and other devices shall be as shown elsewhere in the plans.

BARRIER DELINEATION WITH MODULAR GLARE SCREENS



VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS (OTLD) SEPARATING TWO-WAY TRAFFIC ON NORMALLY DIVIDED HIGHWAYS

- NOTES:**
1. When two-lane, two way traffic control must be maintained on one roadway of a normally divided highway, opposing traffic shall be separated with either temporary traffic barriers, channelizing devices, or a temporary raised island throughout the length of the two way operation. The above Typical Application is intended to show the appropriate application of channelizing devices when they are used for this purpose. This is not a traffic control plan. If this detail is to be used for other types of roads or applications, those locations should be stated elsewhere in the plans.
 2. Space devices according to the Tangent Spacing shown on the Device Spacing table on BC(9) but not exceeding 100'.
 3. Every fifth device should be an OTLD except when spaced closer to accommodate an intersection. An OTLD should be the first device on each side of intersecting streets or roads.
 4. Locations where surface mount bases with adhesives or self-righting devices will be required in order to maintain them in their proper position should be noted elsewhere in the plans.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER	DMS-8610

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



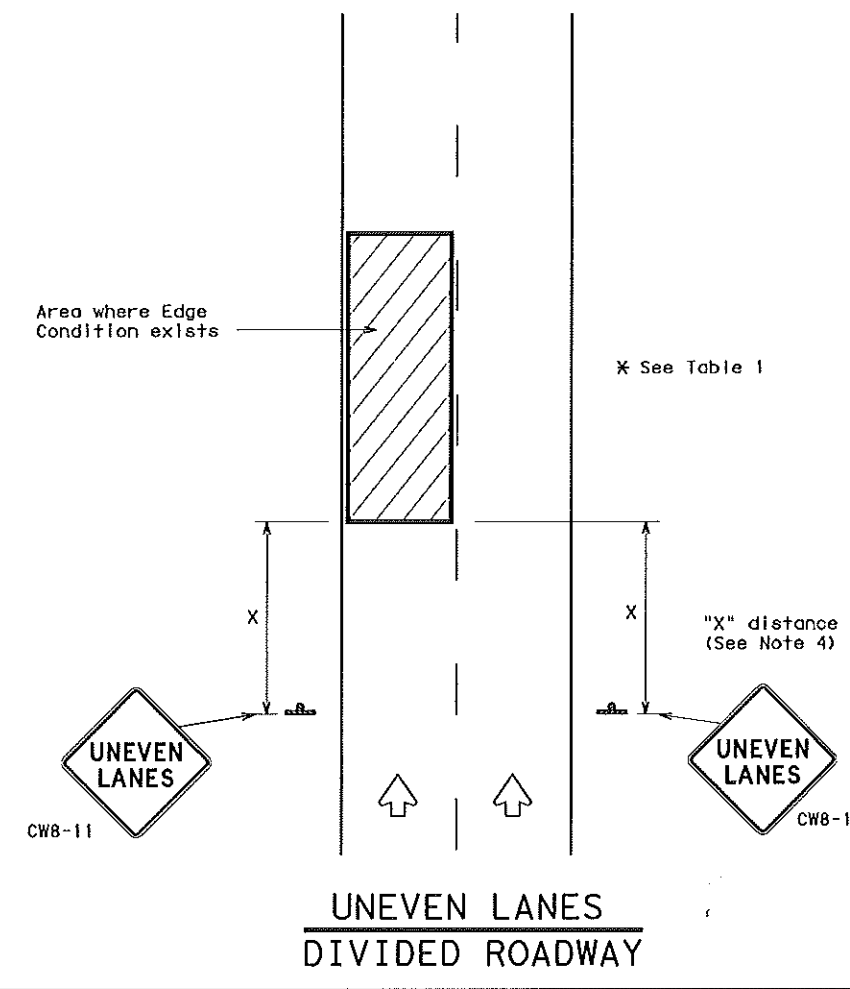
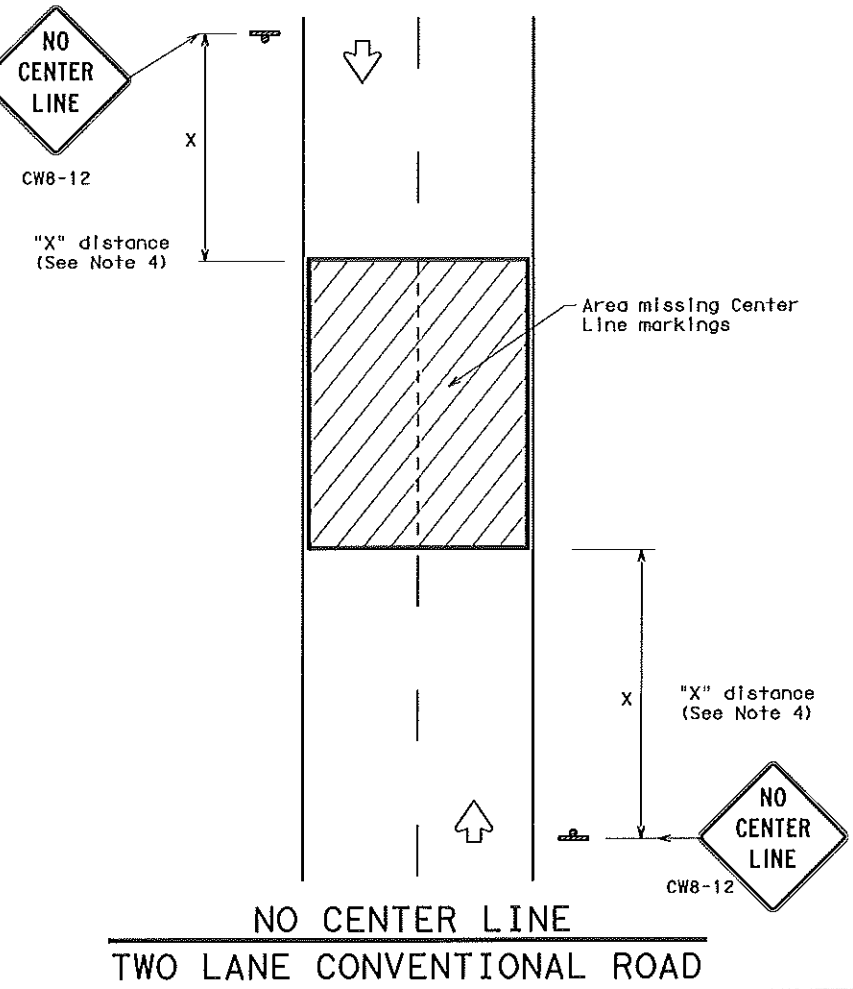
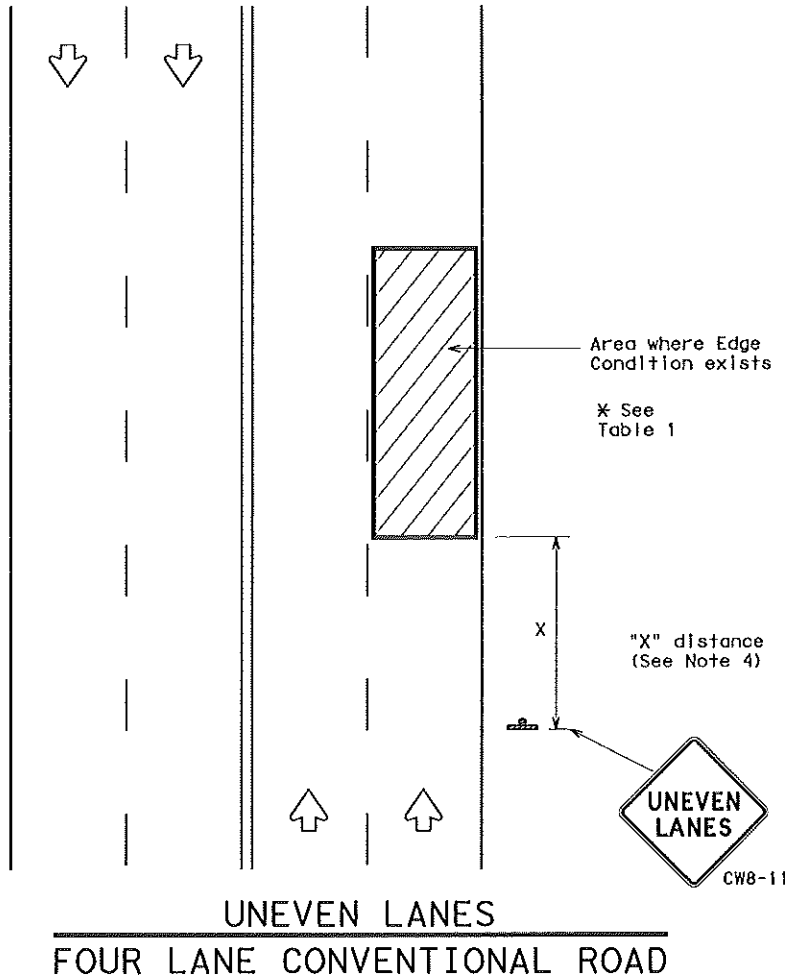
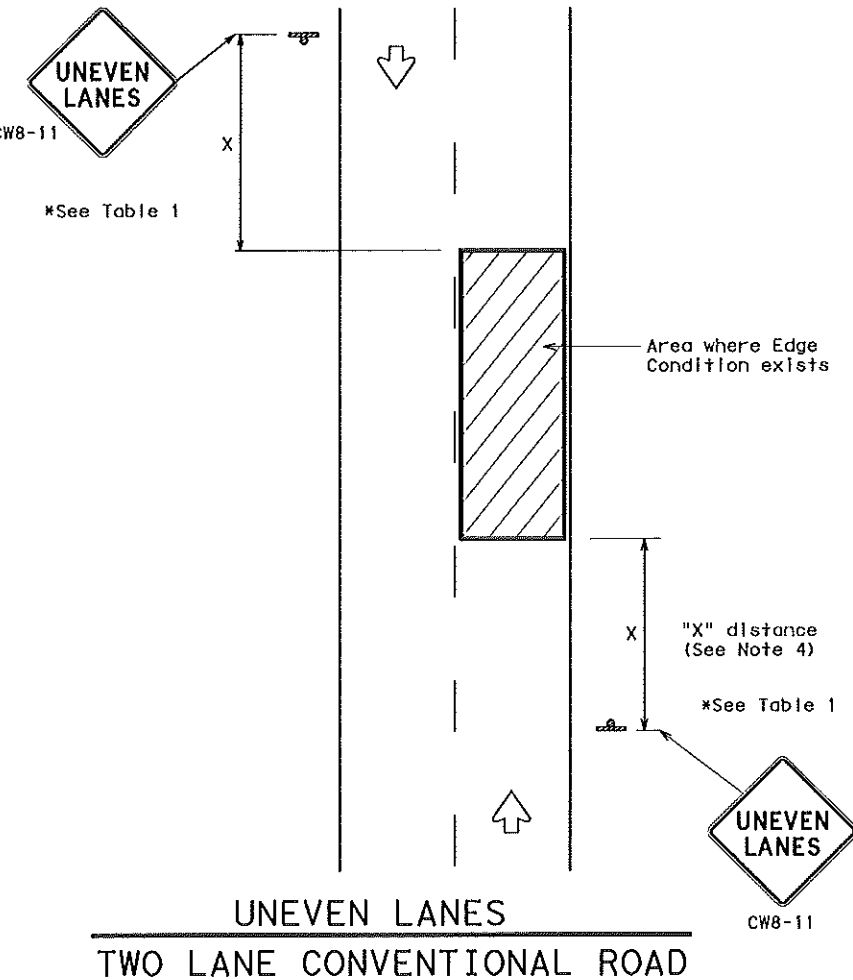
TRAFFIC CONTROL PLAN TYPICAL DETAILS

WZ (TD) -13

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© TxDOT	February 1998	CONT	3C	SECT	080	JOB	220	HIGHWAY	VAR
4-98		DIST	PHR	COUNTY	HIDALGO	SHEET NO.	53		

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

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

GENERAL NOTES

1. If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
2. UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
3. NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
7. Short term markings shall not be used to simulate edge lines.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

Edge Condition	Edge Height (D)	* Warning Devices
①	Less than or equal to: 1/4" (maximum-planing) 1/2" (typical-overlay)	Sign: CW8-11
②	Less than or equal to 3"	Sign: CW8-11
③	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

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

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"

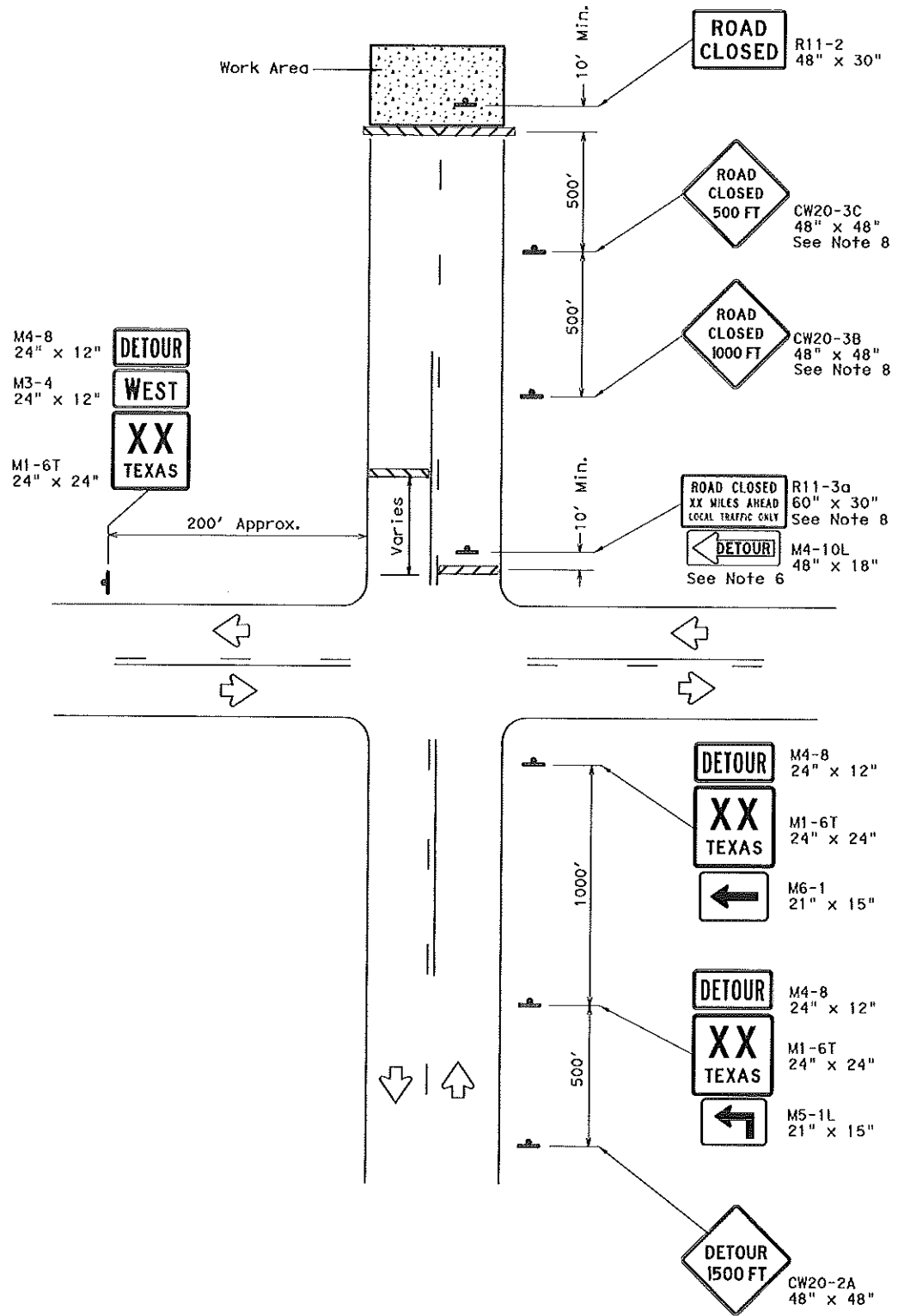
Texas Department of Transportation
 Traffic Operations Division Standard

SIGNING FOR UNEVEN LANES

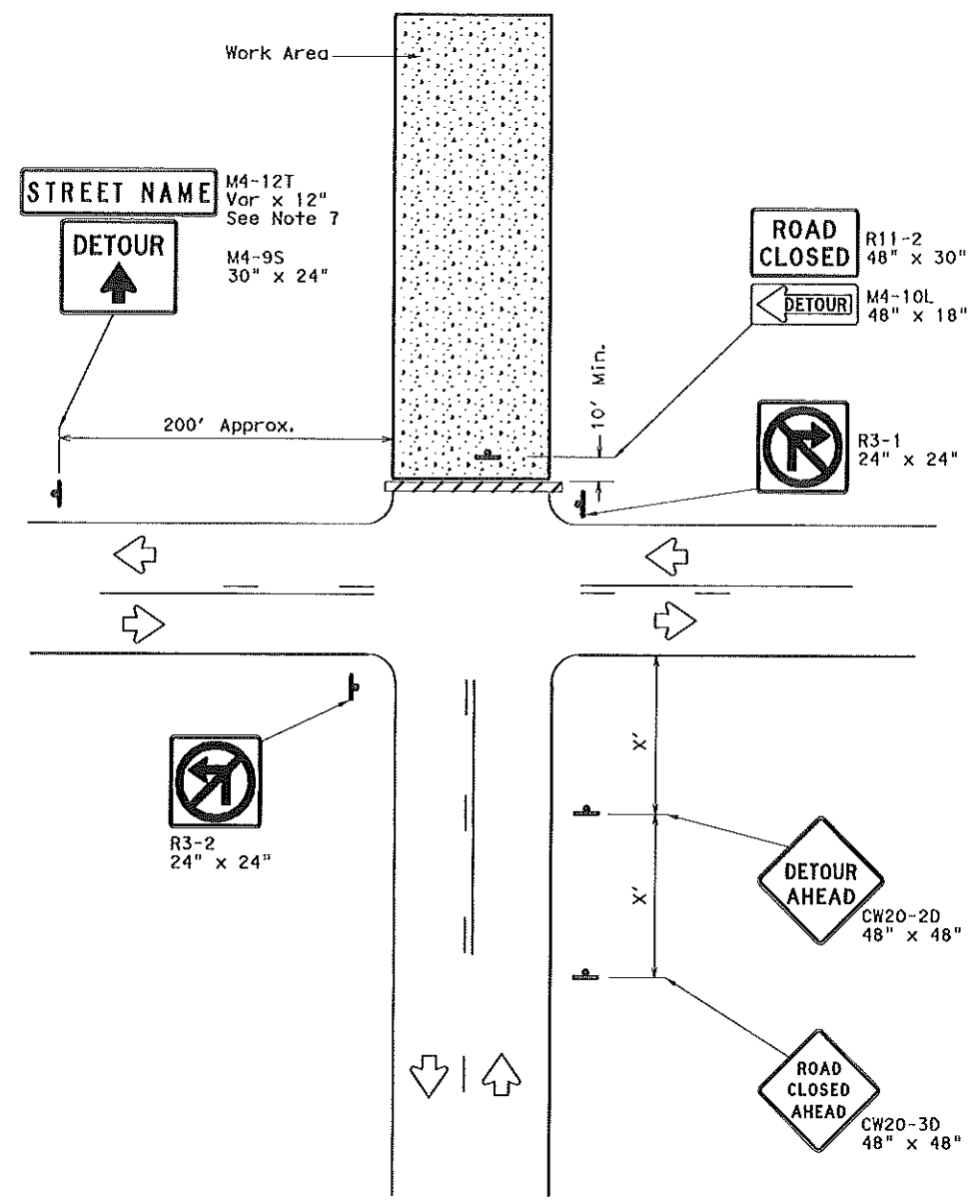
WZ (UL) - 13

FILE: wzul-13.dgn	DN: TxDOT	CR: TxDOT	CR: TxDOT	CR: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	3C	080	220	VAR
8-95 2-98 7-13	DIST	COUNTY	SHEET NO.	
1-97 3-03	PHR	HIDALGO	54	

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ROAD CLOSURE BEYOND THE INTERSECTION
 Signing for a Numbered Route with an Off-Site Detour



ROAD CLOSURE AT THE INTERSECTION
 Signing for an Un-numbered Route with an Off-Site Detour

LEGEND	
	Type 3 Barricade
	Sign

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

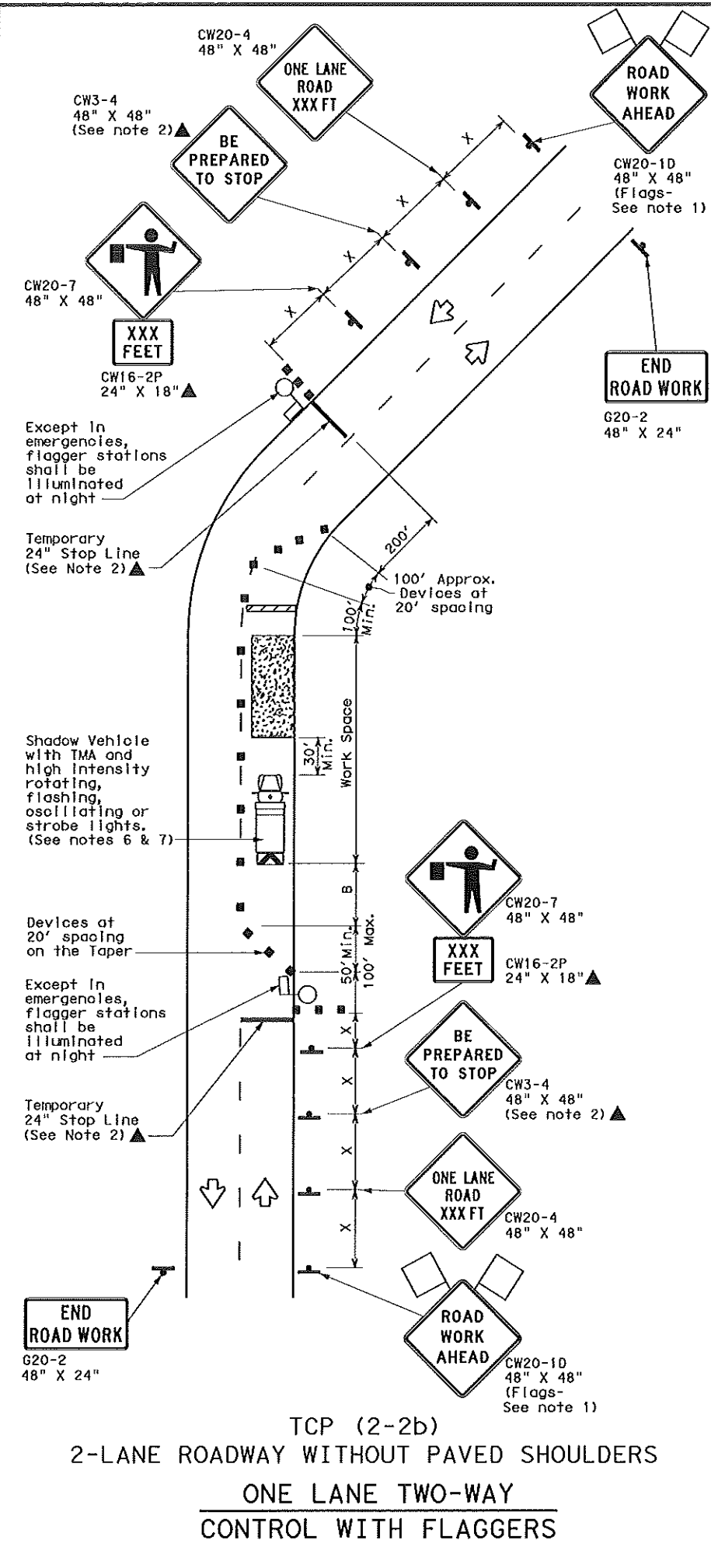
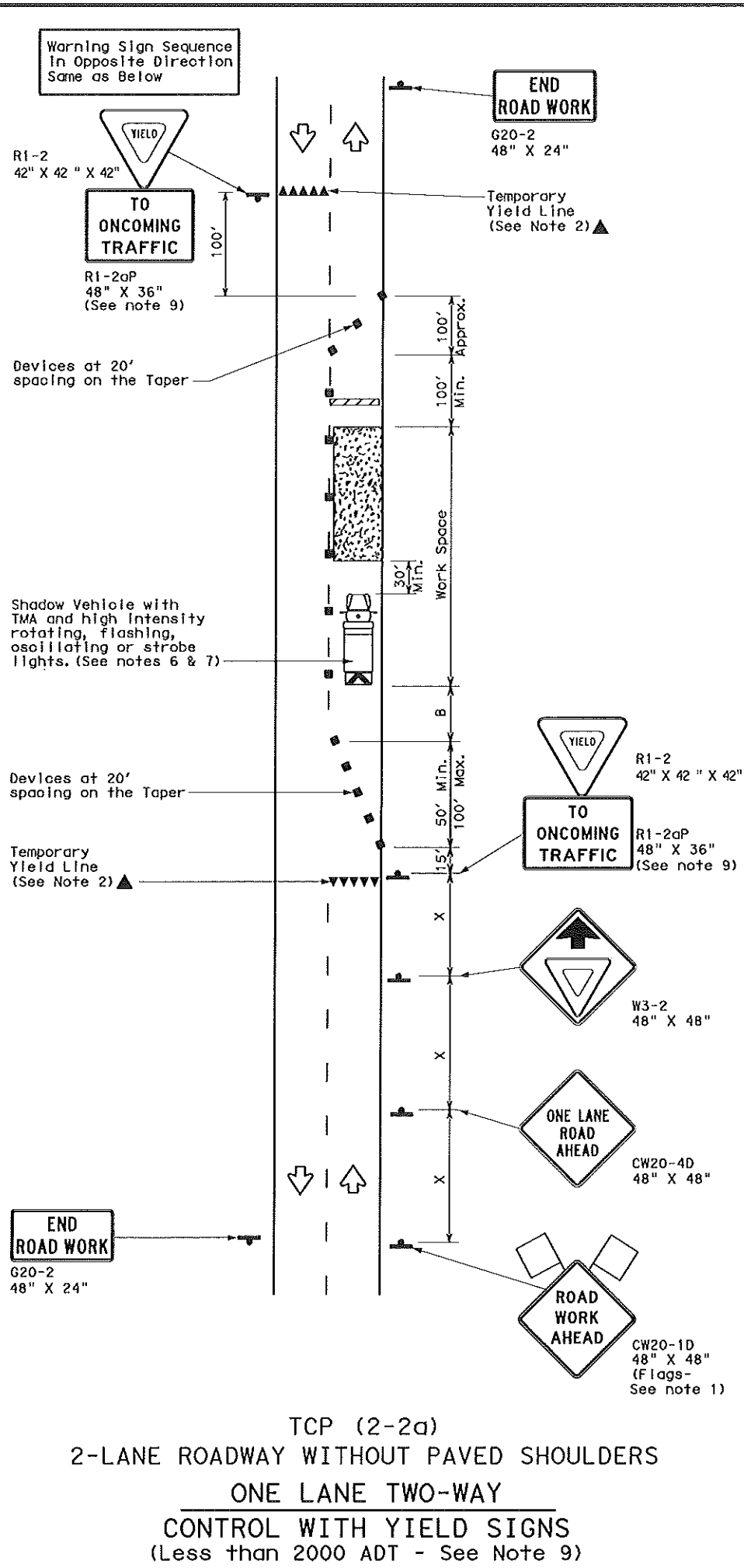
* Conventional Roads Only

GENERAL NOTES

- 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.
- 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.
- 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.
- The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
- 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			
FILE: wzrod-13.dgn	DN: TxDOT	CR: TxDOT	EN: TxDOT
© TxDOT August 1995	CONT: 3C	SECT: 080	JOB: 220
REVISIONS	DIST: 1-97 4-98 7-13		VAR: 2-98 3-03
PHR	COUNTY: HIDALGO		SHEET NO.: 55

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LEGEND

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

Posted Speed * X	Formula L = WS ² / 60	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30		150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
 - Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
 - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
 Traffic Operations Division

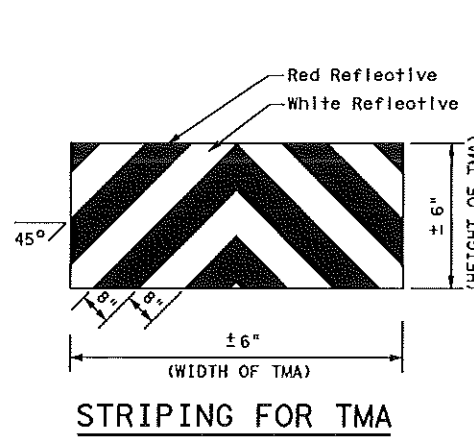
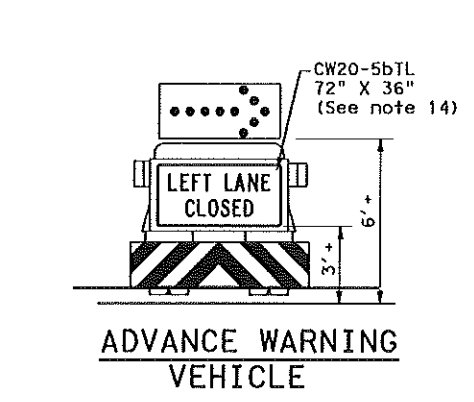
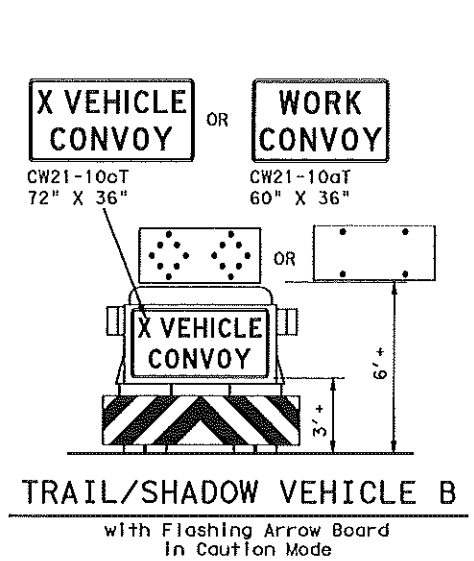
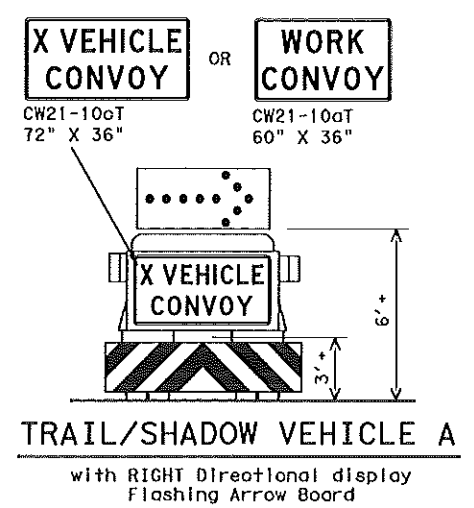
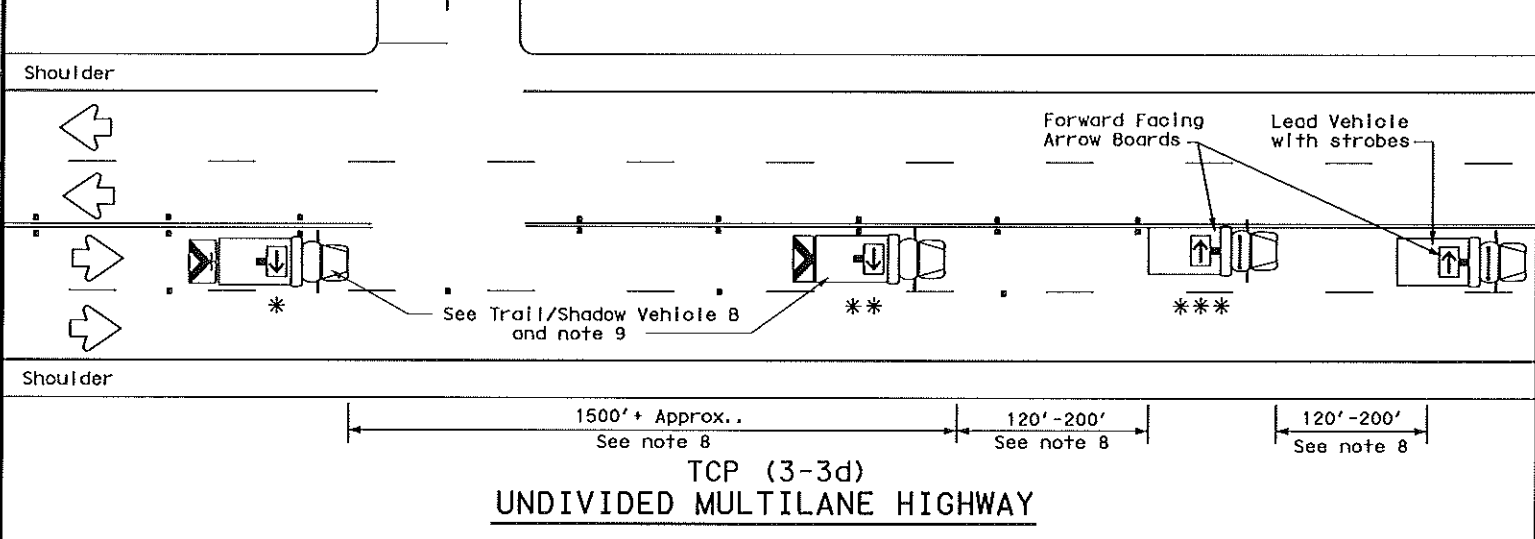
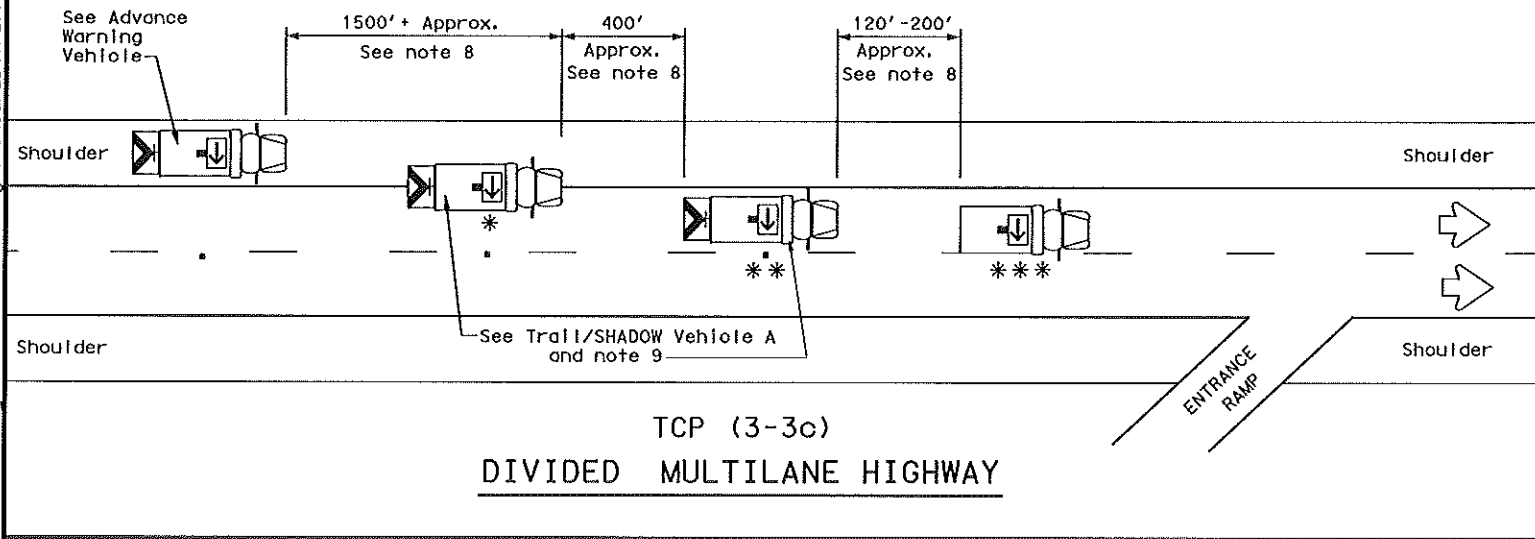
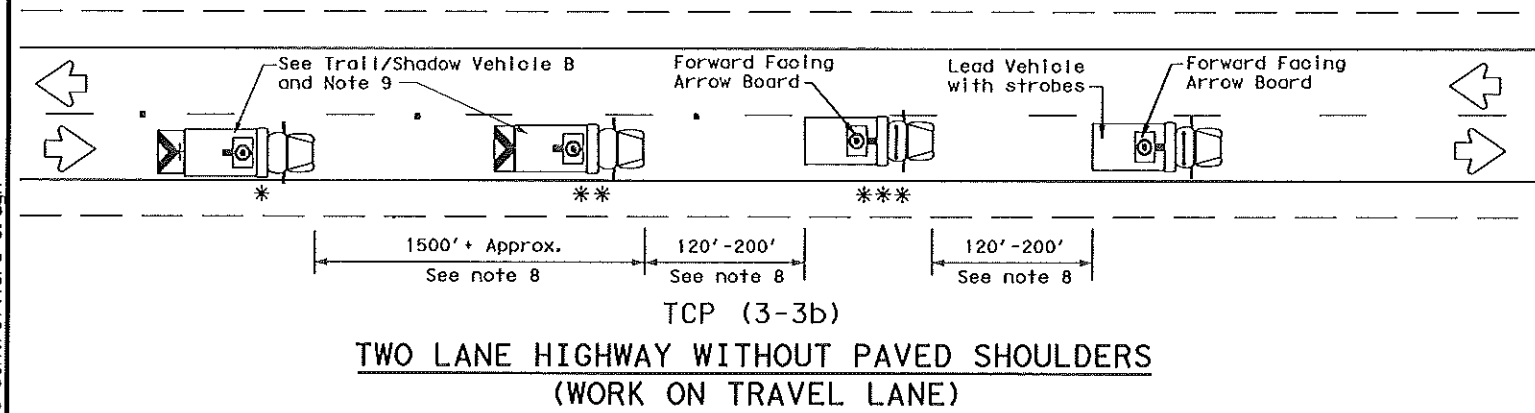
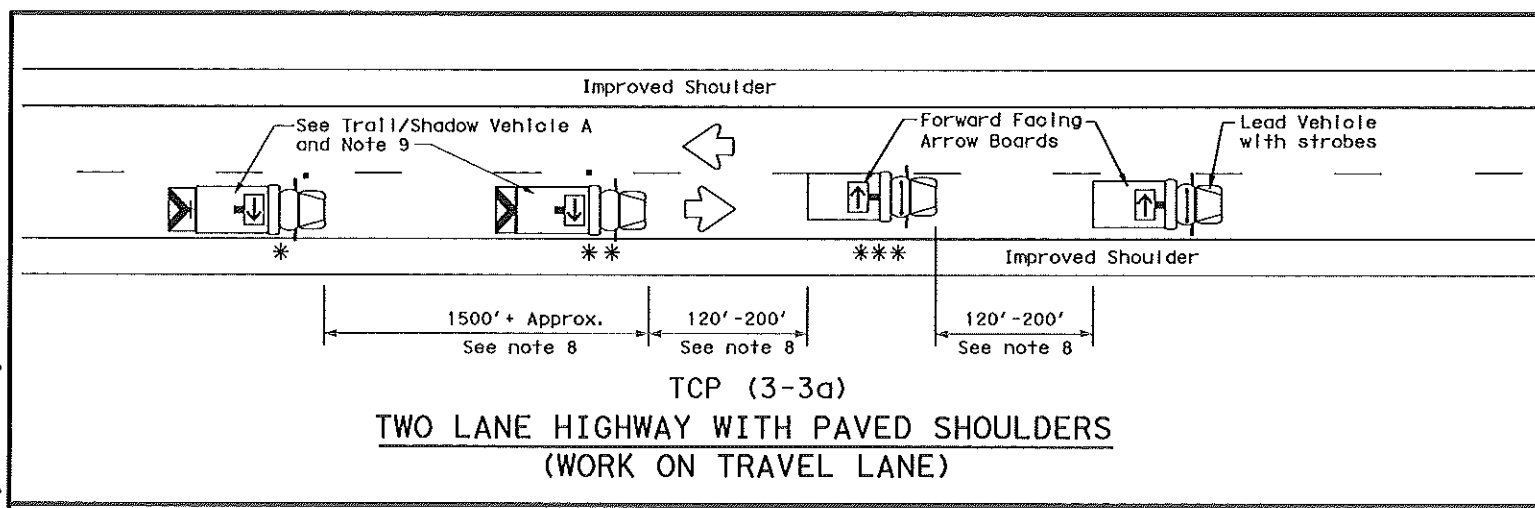
TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP (2-2) - 12

© TxDOT December 1985		REVISED	DATE	BY	REVISION
8-95	2-12	3C	080	220	HIGHWAY
1-97					
4-98					
3-03					

SHEET NO. 57

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LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
** *	Work Vehicle	→	RIGHT Directional
←	Heavy Work Vehicle	←	LEFT Directional
↔	Truck Mounted Attenuator (TMA)	↔	Double Arrow
↻	Traffic Flow	⊠	CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

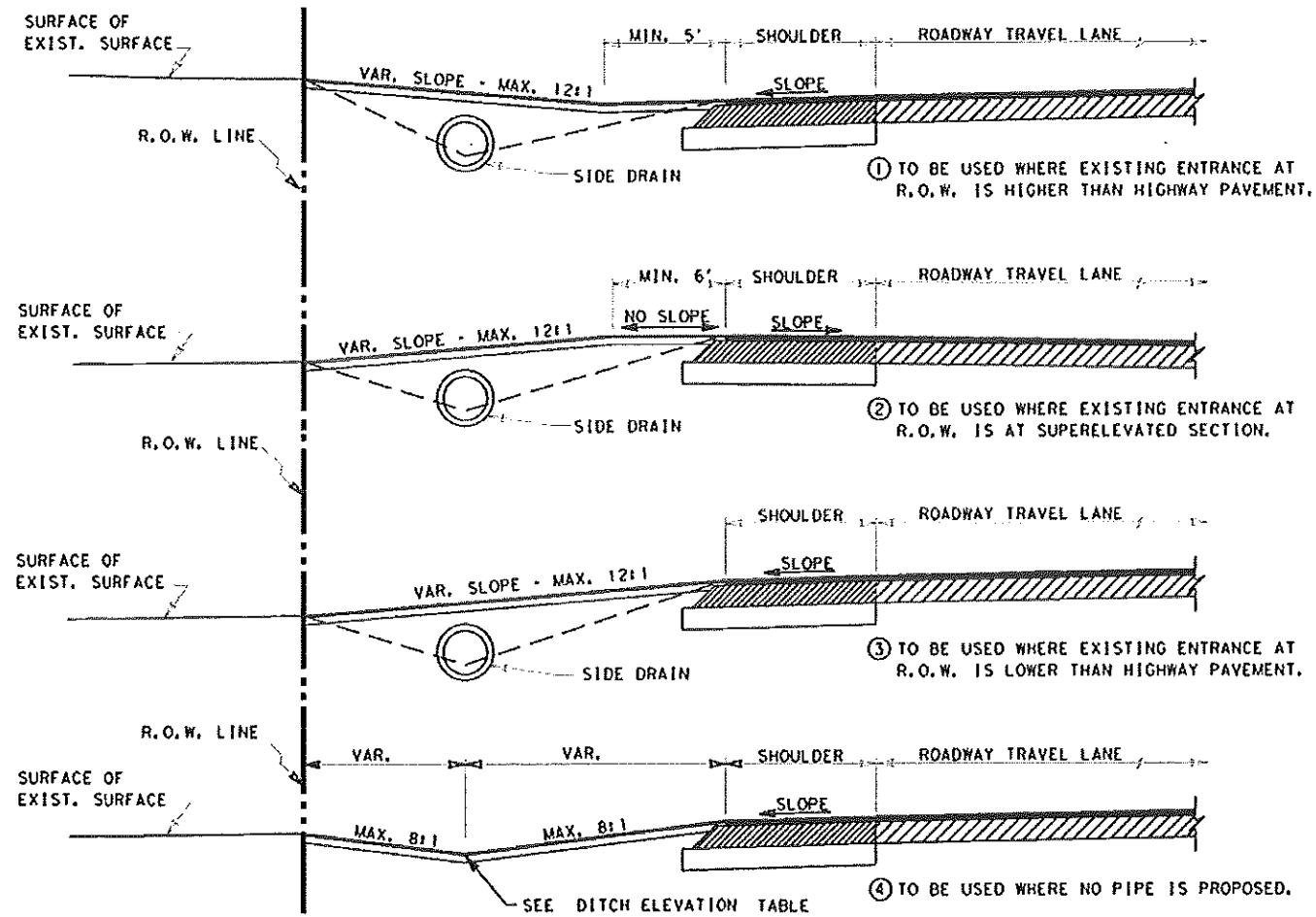
GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DNS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barriade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5d) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

Texas Department of Transportation
 Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
RAISED PAVEMENT
MARKER INSTALLATION/
REMOVAL
TCP (3-3) - 14

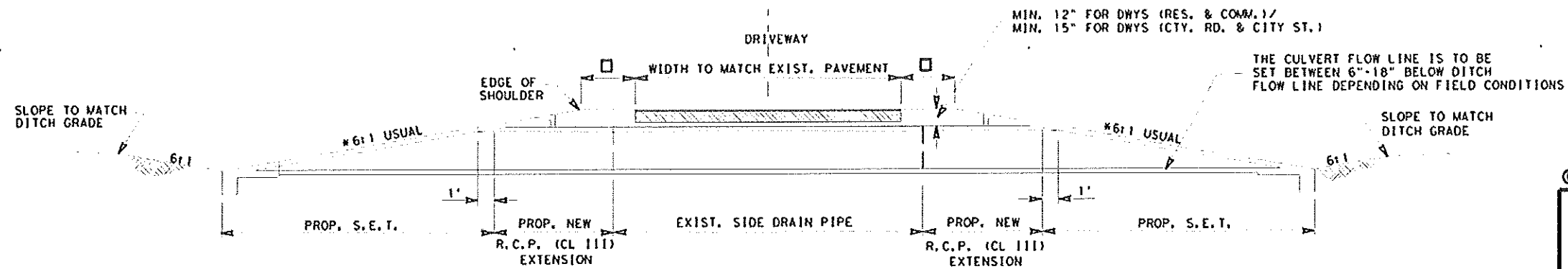
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© TxDOT September 1987	CONT	SECT	JOS	HIGHWAY
REVISIONS	3C	080	220	VAR
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	PHR	HIDALGO	58	
1-97 7-14				



NOTES:

- ALL ENTRANCES CONSTRUCTED ON THIS PROJECT ARE SUBJECT TO CONCURRENCE WITH EXISTING GOVERNING REGULATIONS AS SET OUT BY THE STATE HIGHWAY COMMISSION.
- 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 SLOPE WILL BE CONSTRUCTED.
- ALL FLEXIBLE BASE USED FOR PRIVATE DRIVES & COMMERCIAL DRIVES WILL NOT REQUIRE LIME TREATMENT.
- EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER.
- PROP. WIDTH OF DRIVEWAYS TO MATCH EXISTING WIDTH AT R.O.W. LINE.
- 114 #/SY ACP (COMPACTED) IS EQUAL TO 1 IN. DEPTH
171 #/SY ACP (COMPACTED) IS EQUAL TO 1 1/2 IN. DEPTH.
- SIDE DRAINS TO BE INSTALLED WHERE ROADWAY DITCH DRAINAGE IS NECESSARY, AS INDICATED ON PLANS AND/OR AS DIRECTED BY THE ENGINEER.
- SIDE DRAINS TO BE INSTALLED WITH A MINIMUM OF 12" COVER BY PROPOSED RESIDENTIAL & COMMERCIAL MATERIAL OR 15" COVER OF PROPOSED COUNTY RD. & CITY STREET ROADWAY MATERIAL.
- AVERAGE DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS ARE FOR ESTIMATING PURPOSES ONLY.
- THE RATE OF PRIME SHALL BE 0.10 GAL/SY FOR PRIVATE AND/OR COMMERCIAL DRIVEWAYS AND 0.20 GAL/SY FOR PUBLIC DRIVEWAYS.

TYPICAL ENTRANCE PROFILE FOR DRIVEWAYS W/OUT C&G



- - 1' MIN. ON DRIVEWAYS (RES. & COMM.)
2' MIN. ON DRIVEWAYS (COUNTY RD. & CITY ST.)
- * - 6:1 SLOPE USUAL
UNLESS OTHERWISE NOTED ON PLANS

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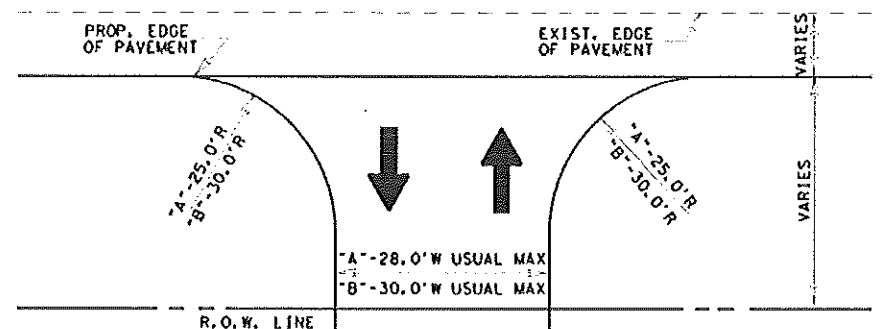
TEXAS DEPARTMENT OF TRANSPORTATION

DRIVEWAY PROFILE DETAILS

REV. 01/14 DRIVEWAY1.DGN

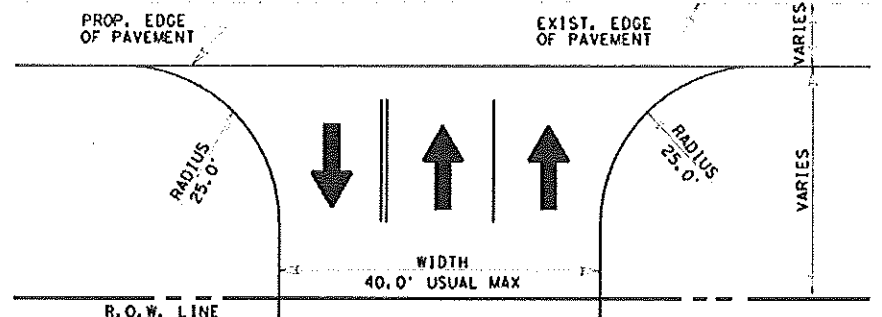
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TEXAS	21	CTYS	6CS	6SS	6JS	6HWS

DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS



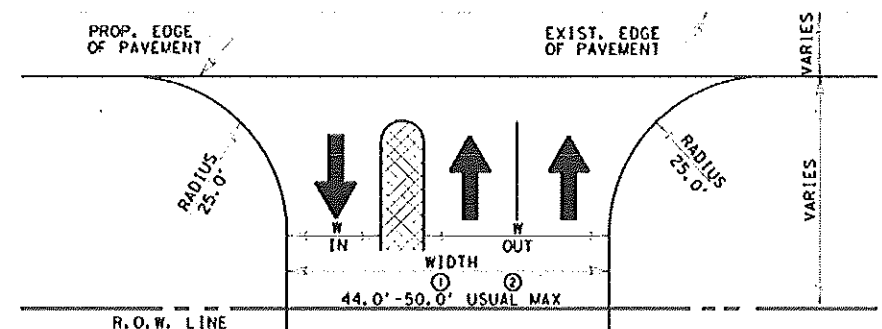
"A" - ONE ENTRY LANE AND ONE EXIT LANE, FEWER THAN 4 LARGE VEHICLES PER HOUR
 "B" - ONE ENTRY LANE AND ONE EXIT LANE, 4 OR MORE SINGLE UNIT VEHICLES PER HOUR

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

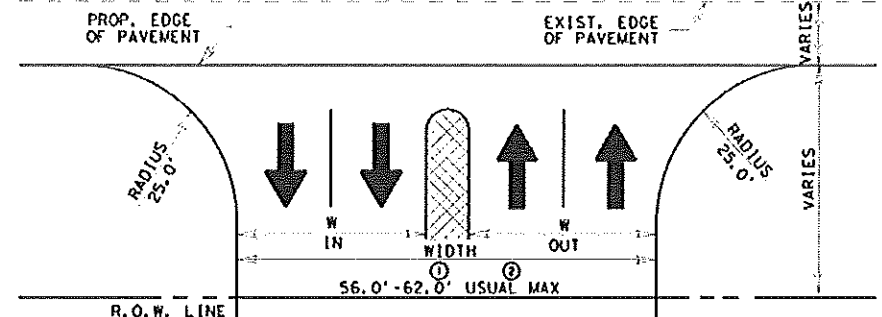


ONE ENTRY LANE AND TWO EXIT LANES (WITHOUT DIVIDERS)

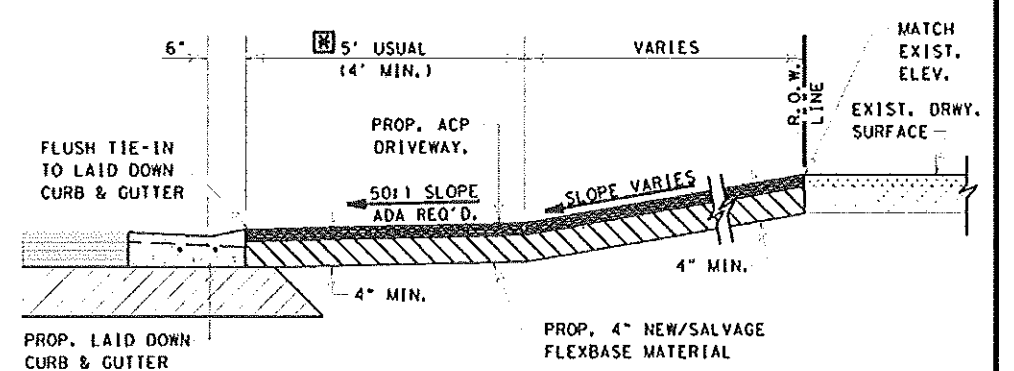
DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS



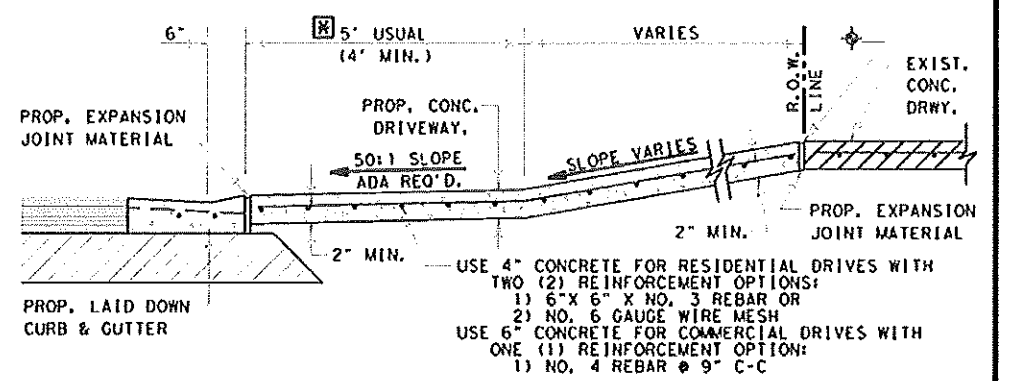
① - 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 ② - 10.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 ONE ENTRY LANE AND TWO EXIT LANES (WITH A DIVIDER)



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



TYPICAL ASPH. CONC. PVM'T, DRIVEWAY SECTION
 N. T. S.



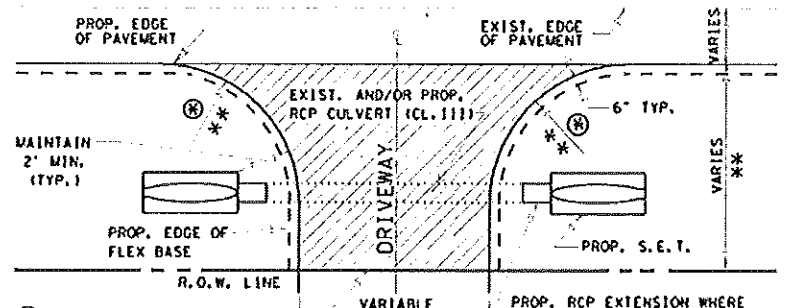
TYPICAL CONCRETE DRIVEWAY SECTION
 N. T. S.

USE 4" CONCRETE FOR RESIDENTIAL DRIVES WITH TWO (2) REINFORCEMENT OPTIONS:
 1) 6" X 6" X NO. 3 REBAR OR
 2) NO. 6 GAUGE WIRE MESH
 USE 6" CONCRETE FOR COMMERCIAL DRIVES WITH ONE (1) REINFORCEMENT OPTION:
 1) NO. 4 REBAR @ 9" C-C

CONC. SHALL BE SAW CUT TO THE LIMITS OF REMOVAL WHERE APPLICABLE.

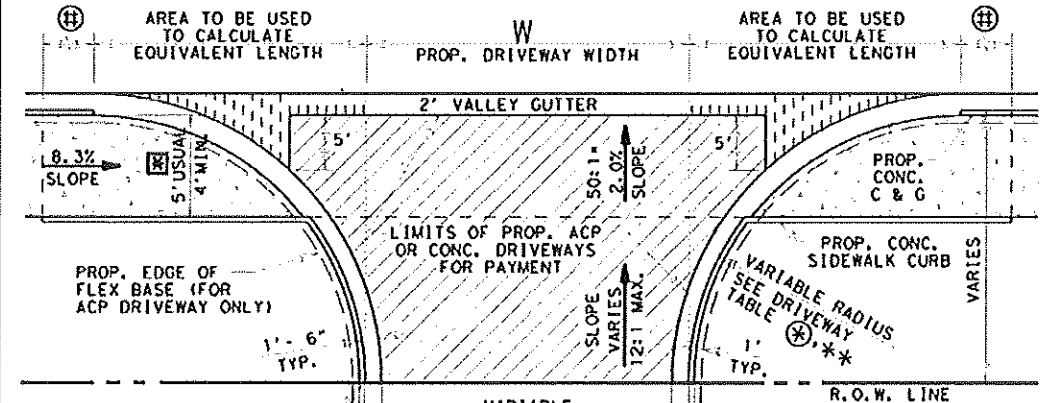
PROP. / FUTURE SIDEWALK CROSSING LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. SEE P&P SHEETS FOR PROP. SIDEWALK LOCATION IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

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.

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

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

LF OF VALLEY GUTTER = W * X1 * X2
 WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS

Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 2')	Equivalent LF Length
5'	1	
8'	2	
10'	4	
12'	6	
15'	9	
18'	12	
20'	15	
22'	18	
25'	24	
28'	30	
30'	34	

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

DRIVEWAY TYPES

TY PB-1
 EXIST. PRIVATE OR COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE FLEX. BASE, PRIMED AND SURFACED WITH 114#/SY ACP.

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

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

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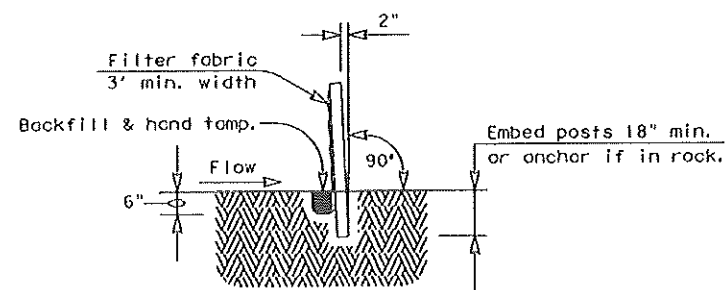
TEXAS DEPARTMENT OF TRANSPORTATION
DRIVEWAY DETAILS
PRIVATE
(RESIDENTIAL-COMMERCIAL)

REV. 01/15 DRIVEWAY2.DGN

PROJECT NO.	FILE NO.	SHEET NO.
6	61	61
STATE	CDIST.	JOB
TEXAS	21	SCTYS
CURB.	EXCL.	JOB
\$C\$	\$S\$	\$J\$
		\$HW\$

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LEVELS DISPLAYED	
1	



SECTION A-A

GENERAL NOTES

- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

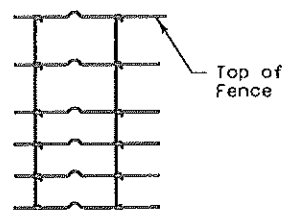
Sediment Control Fence — (SCF) —

SEDIMENT CONTROL FENCE USAGE GUIDELINES

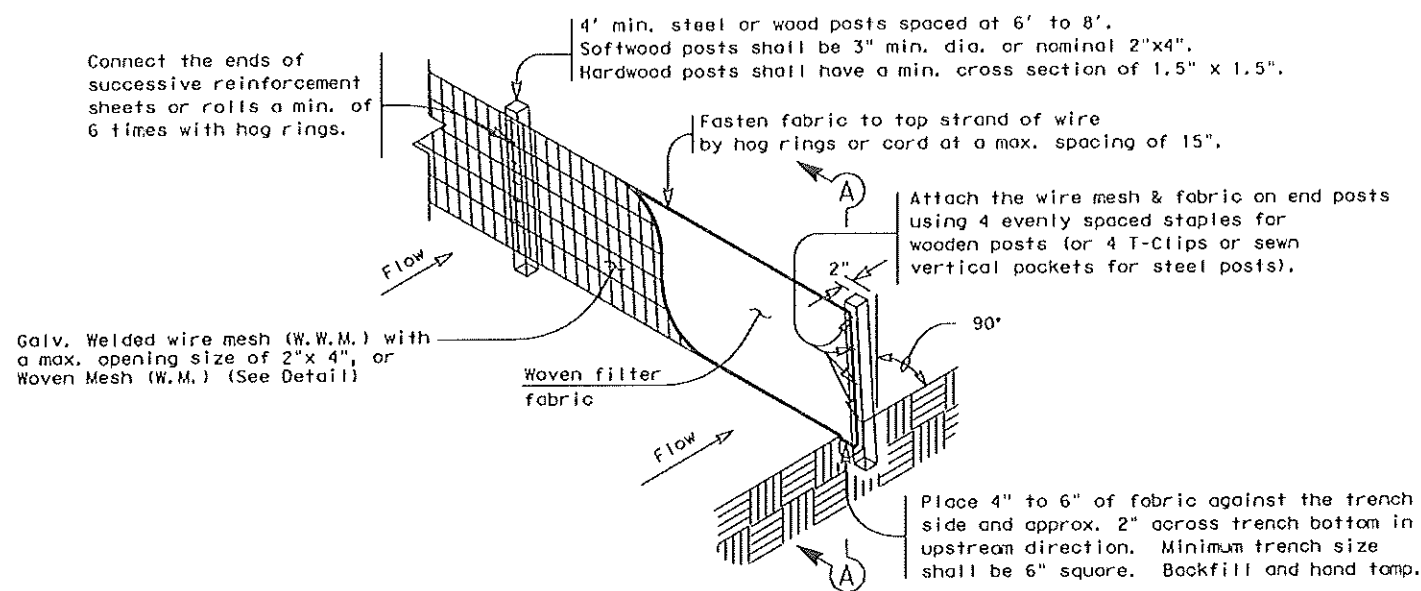
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

Galv. Hinge joint knot woven mesh (12.5 Ga. Min.) requires a minimum of five horizontal wires spaced at a max. 12 inches apart and all vertical wires spaced at a max. 12 inches apart.

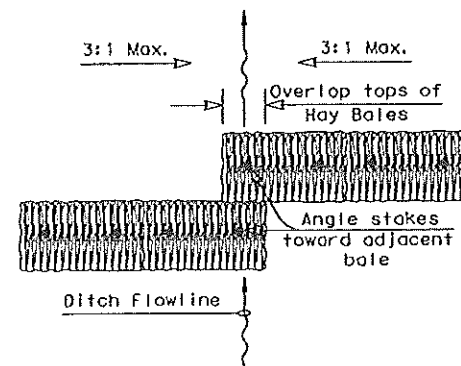


Hinge Joint Knot Woven Mesh (Option)

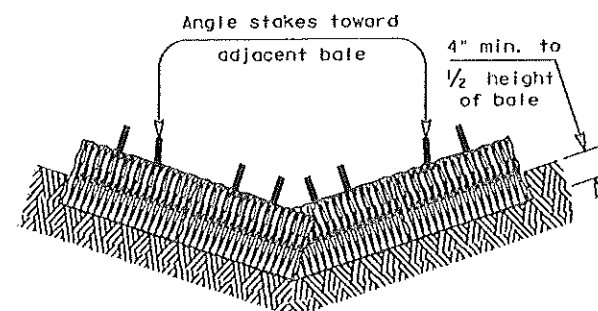


TEMPORARY SEDIMENT CONTROL FENCE

— (SCF) —



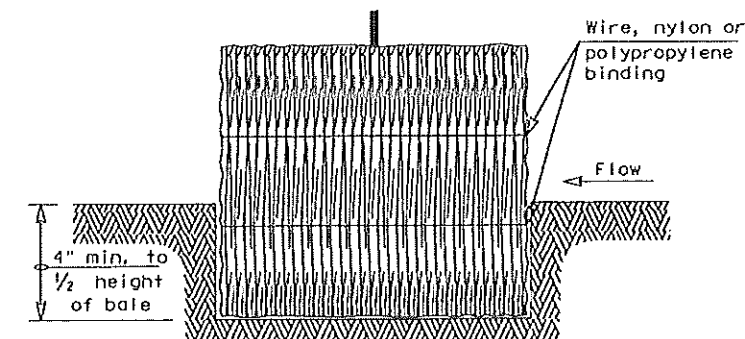
PLAN VIEW



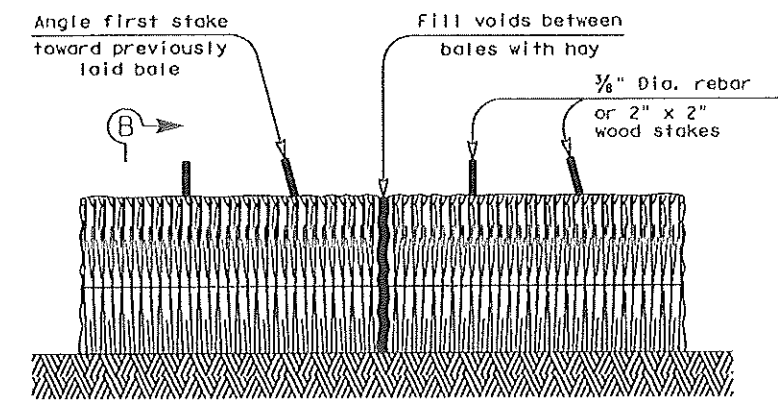
PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay — (BH) —



SECTION B-B



BALED HAY FOR EROSION CONTROL

— (BH) —

GENERAL NOTES

- Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
- Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
- Hay bales shall be embedded in the soil a minimum of 4" and where possible 1/2 the height of the bale.
- Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
- Hay bales shall be securely anchored in place with 3/8" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

BALED HAY USAGE GUIDELINES

A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT² of cross sectional area. Baled hay may be used at the following locations:

- Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
- Where the installation will be required for less than 3 months.
- Where the contributing drainage area is less than 1/2 acre.

For Baled Hay installations in small ditches, the additional following considerations apply:

- The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
- The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.

Texas Department of Transportation
Design Division (Roadway)

TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES

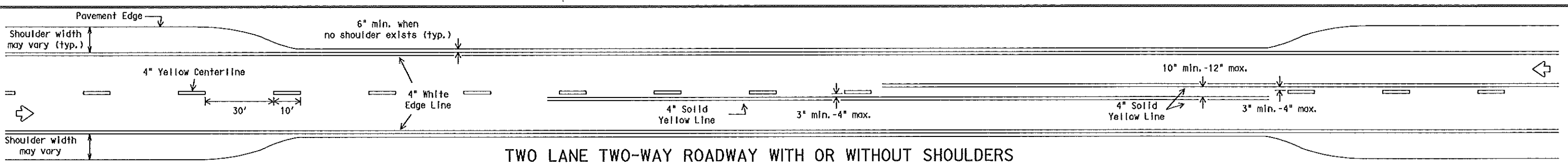
FENCE & BALED HAY

EC(1)-09

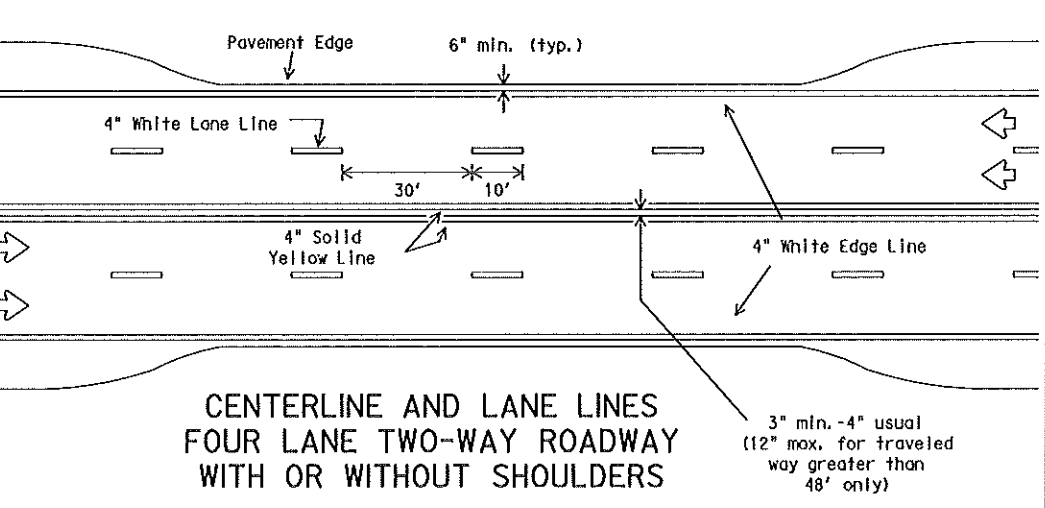
FILE#	ec109.dgn	CR# HEJ	CK# HEJ	OW# BDD / TV	CR#
© TxDOT	JUNE 1993	DISTRICT		FEDERAL AID PROJECT	
REVISIONS		PHR			62
Language added to the end of the standard sheet note for all fence to allow for the use of the new binding.					
COUNTY		CONTROL	SECT	JOB	HIGHWAY
HIDALGO		3C	1080	220	VAR

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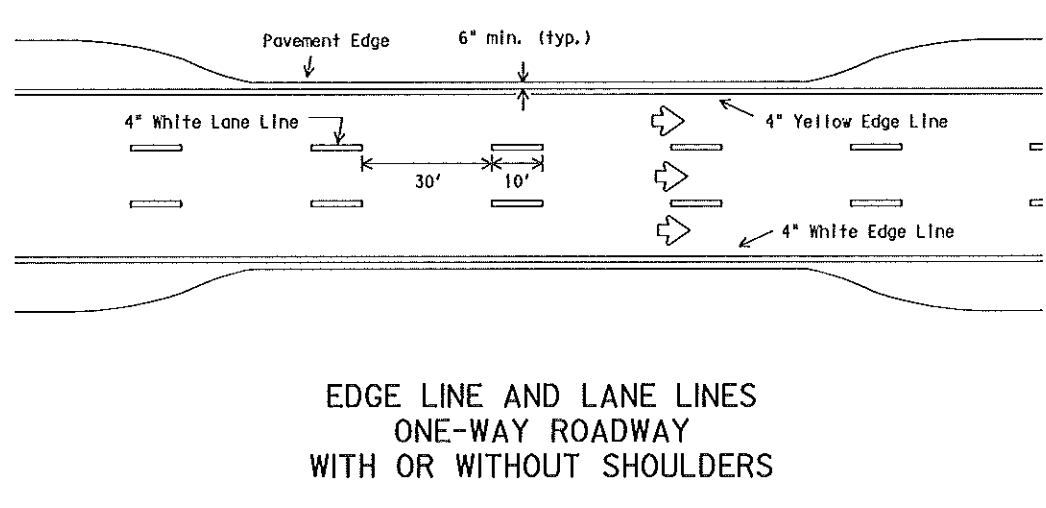
DATE: 10/2/2014 7:02:15 PM
 FILE: P:\2009\2009-1027-01 Hidalgo county colonias iii\design\15 delita west\cs\Standards\Pavement Markers\PM1-12.dgn



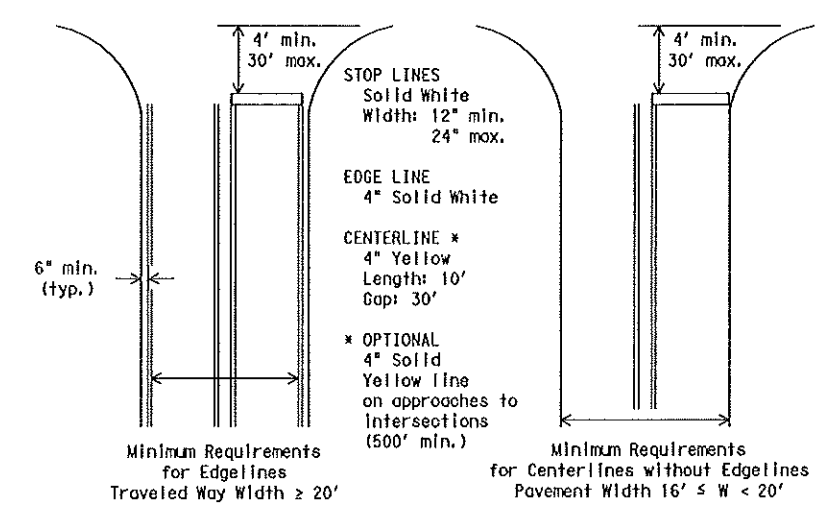
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



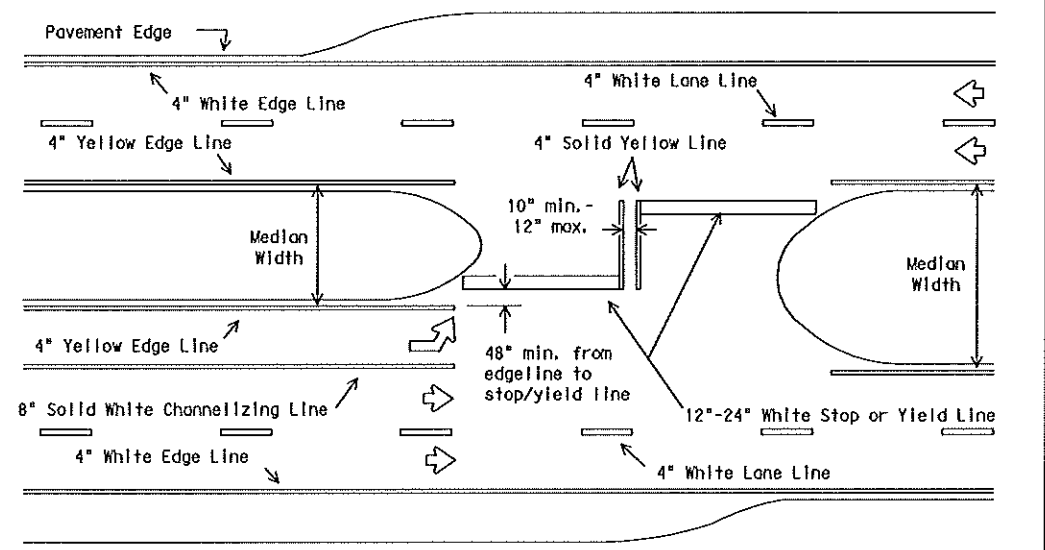
CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

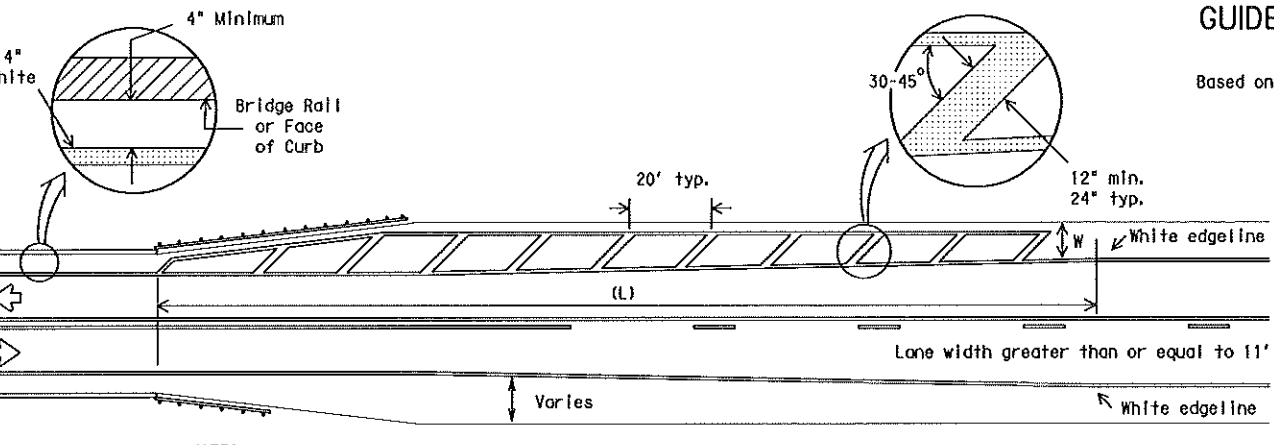


GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths for Undivided Highways



FOUR LANE DIVIDED ROADWAY INTERSECTIONS

All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



ROADWAYS WITH REDUCED SHOULDER
WIDTHS ACROSS BRIDGE OR CULVERT

- NOTES:
- No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
 - For crosshatching length (L) see Table 1.
 - The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
 - The crosshatching is not required if delineators or barrier reflectors are used along the structure.
 - For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.
 L=Length of Crosshatching (FT.) W=Width of Offset (FT.)
 S=Posted Speed (MPH)

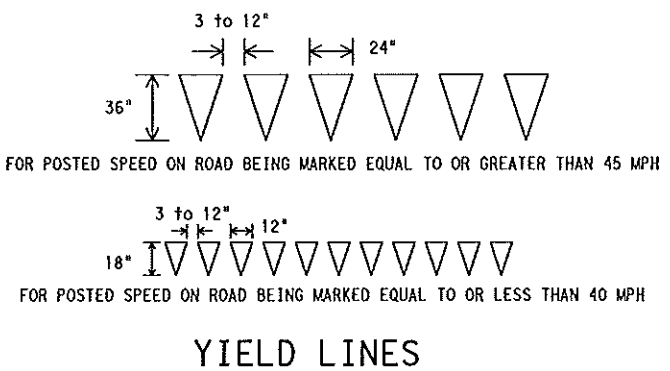
EXAMPLES:
 An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:
 $L = 8 \times 70 = 560$ ft.
 A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:
 $L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES

- Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
- The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



YIELD LINES

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD
PAVEMENT MARKINGS

PM(1)-12

© TxDOT November 1978	DN: TxDOT	CK: TxDOT	OW: TxDOT	CR: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
8-95 2-12	3C	080	220	VAR
5-00	DIST	COUNTY		SHEET NO.
8-00	PHR	HIDALGO		63
3-03				