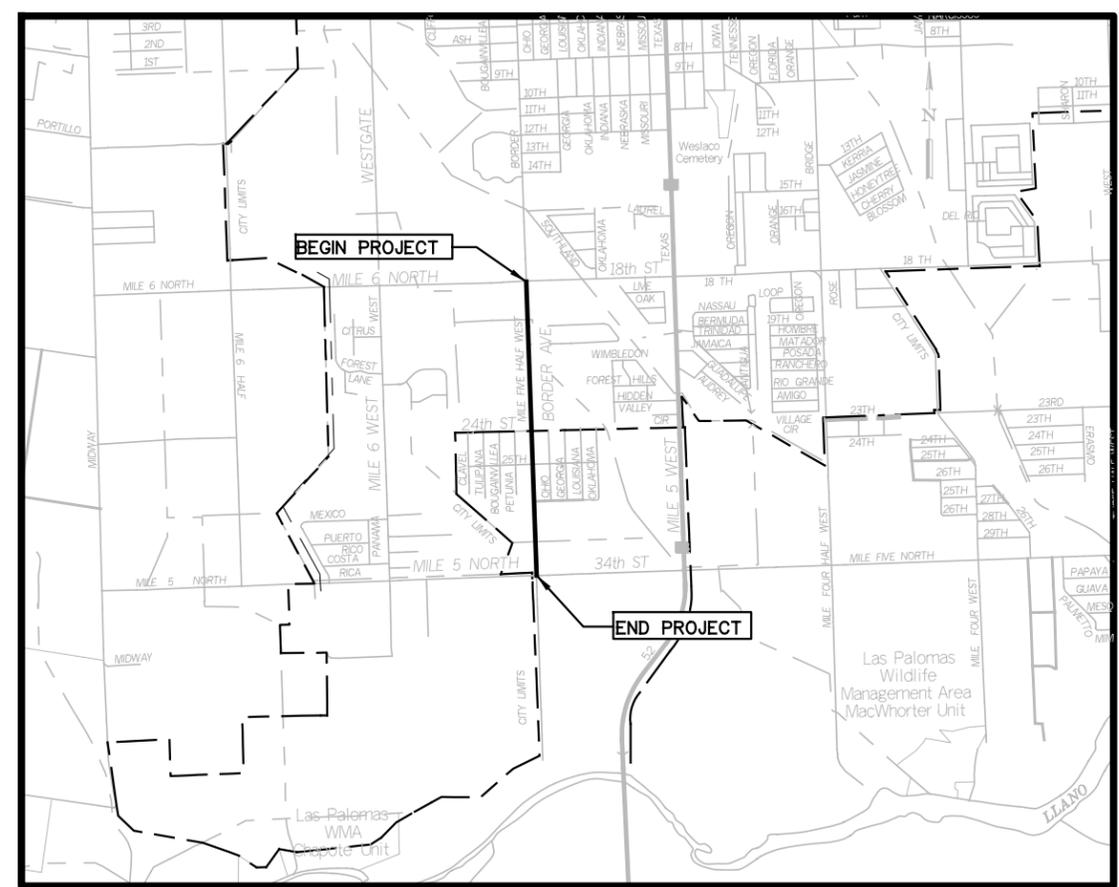


CITY OF WESLACO

RECONSTRUCTION OF BORDER AVENUE FROM 18TH STREET TO 34TH STREET



WESLACO CITY OFFICIALS

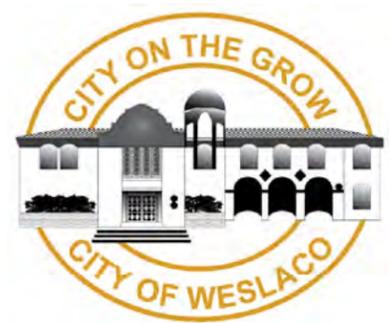
- DAVID SUAREZ _____ MAYOR
- OLGA M. NORIEGA _____ MAYOR PRO TEM
- DAVID R. FOX _____ COMMISSIONER
- GREG KERR _____ COMMISSIONER
- GERARDO "JERRY" TAFOLLA _____ COMMISSIONER
- LUPE V. RIVERA _____ COMMISSIONER
- FIDEL L. PENA _____ COMMISSIONER
- MIKE PEREZ _____ INTERIM CITY MANAGER

HIDALGO COUNTY OFFICIALS

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



HIDALGO COUNTY

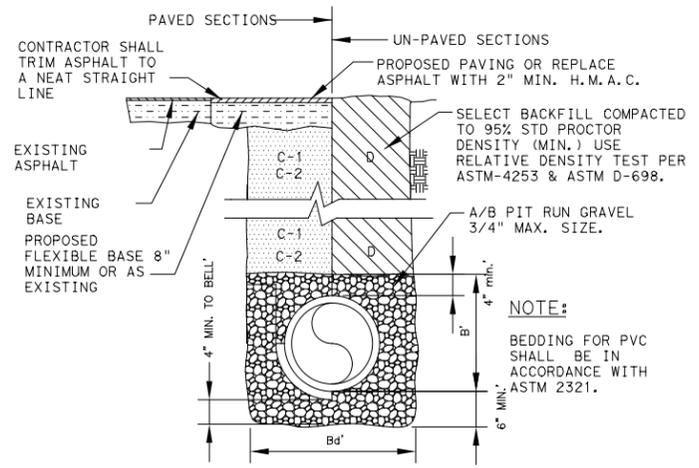


PLANS APPROVED

CONCURRENCE: CITY OF WESLACO CITY MANAGER		DATE: <input style="width: 50px;" type="text"/>
<input style="width: 100%;" type="text"/>		
NAME	TITLE	
CONCURRENCE: CITY OF WESLACO MARDOQUEO HINOJOSA, P.E. CITY ENGINEER		DATE: <input style="width: 50px;" type="text"/>
<input style="width: 100%;" type="text"/>		
NAME	TITLE	
PLANS APPROVED: CITY OF WESLACO DAVID SALINAS PUBLIC UTILITIES DIRECTOR		DATE: <input style="width: 50px;" type="text"/>
<input style="width: 100%;" type="text"/>		
NAME	TITLE	

TDLR INSPECTION REQUIRED
 TDLR NO. _____

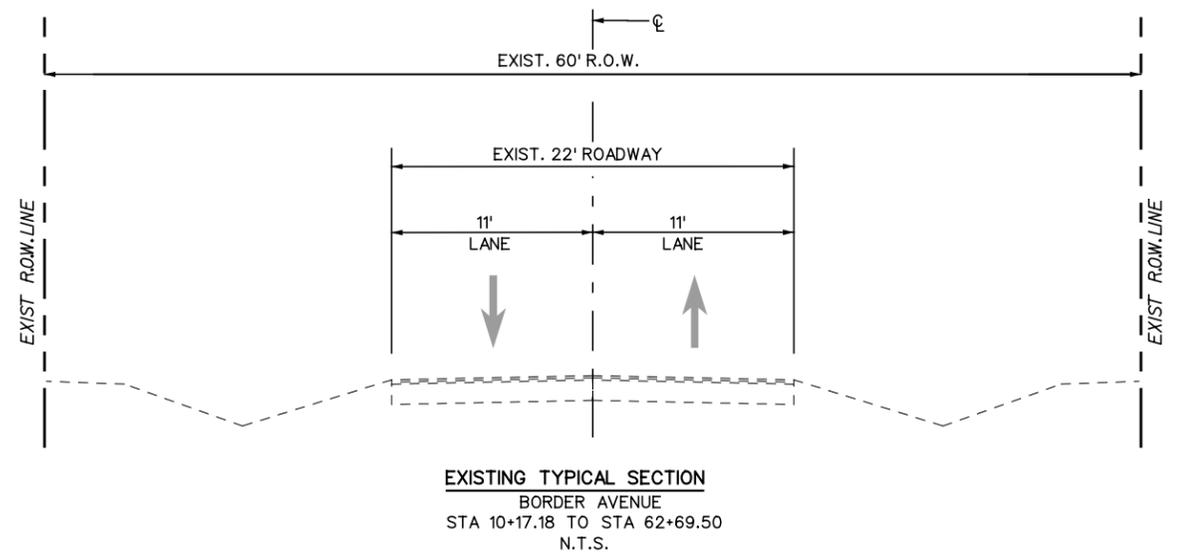




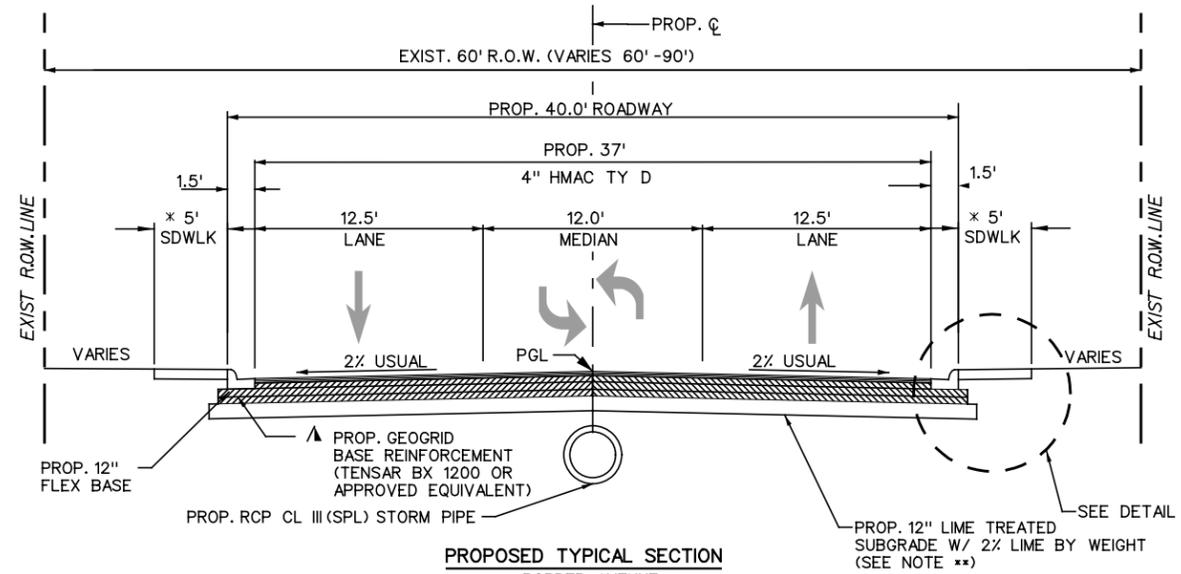
- NOTE:**
BEDDING FOR PVC SHALL BE IN ACCORDANCE WITH ASTM 2321.
- A. GRAVEL BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW-LINE OF PIPE (MIN. THICKNESS = 6") PIT RUN GRAVEL 3/4" MAX. SIZE.
 - B. GRAVEL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO 4" ABOVE THE TOP OF PIPE. PIT RUN GRAVEL 3/4" MAX. SIZE.
 - C. TRENCH WIDTHS SHALL BE PIPE BELL O.D. + 12" OR IN ACCORDANCE WITH ASTM 2321 FOR PVC PIPE, C-1. (CITY STREETS, PARKING AREA, DRIVEWAYS) SELECTED EXCAVATED BACK FILL COMPACTED TO 95% STD. PROCTOR DENSITY, 8" LIFTS, MECHANICAL COMPACTION C-2. (STATE MAINTAINED ROADWAYS) COMPACTED SAND/CEMENT STABILIZED BACK FILL WITH 7% PORTLAND CEMENT COMPACTED AS PER ASTM D-4253 AND ASTM D-698.
 - D. SELECT EARTH BACK FILL COMPACTED TO 95% STD. PROCTOR DENSITY (12" LIFTS, MECHANICAL COMPACTION) FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE. BACK FILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STD. PROCTOR DENSITY (USE RELATIVE DENSITY TEST PER ASTM D-4253 & ASTM D-698). THE THICKNESS OF EACH LOOSE LAYER SHALL NOT TO EXCEED 6". STRUCTURE BACK FILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSTITUTE.

TYPICAL STORM SEWER PIPE BEDDING & BACK FILL DETAIL
(AS PER CITY OF WESLACO STANDARD FOR MORE DETAILS SEE SHEET No.)

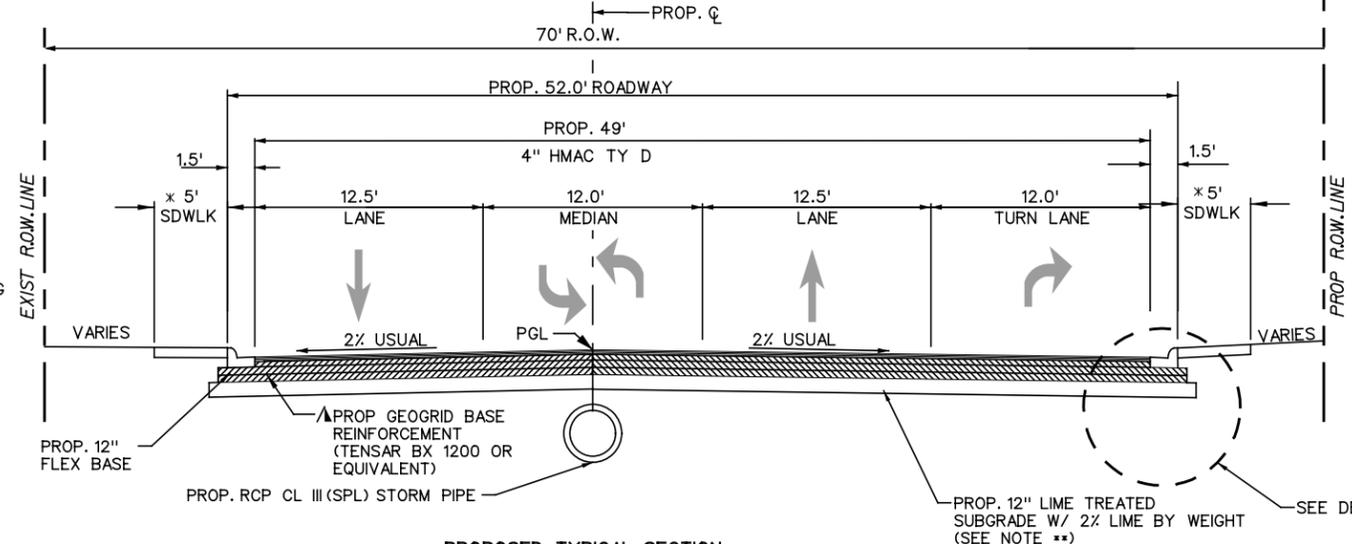
THE PIPE BEDDING & BACKFILL IS NOT A PAID ITEM SHOULD BE SUBSIDIARY OF SEVERAL ITEMS.



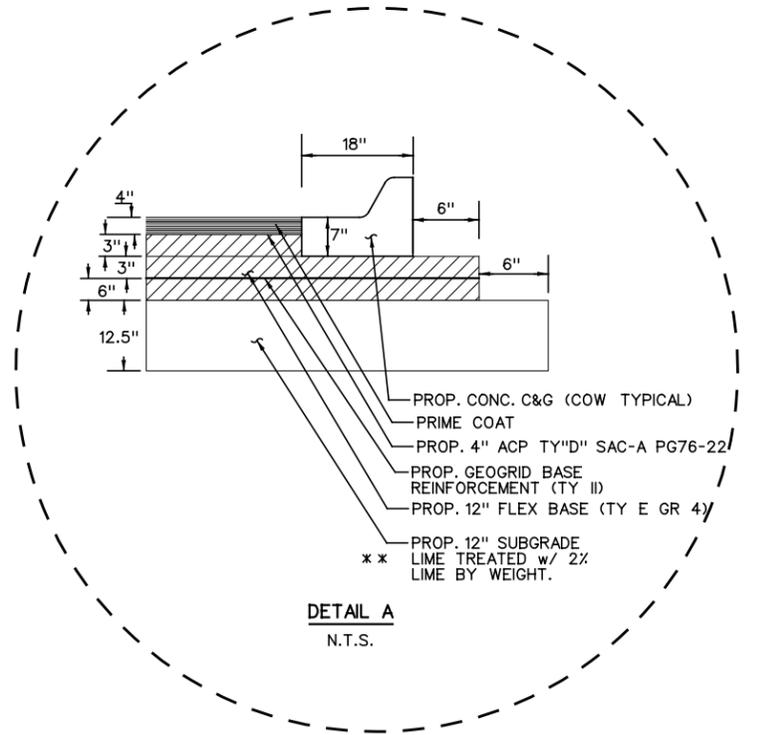
EXISTING TYPICAL SECTION
BORDER AVENUE
STA 10+17.18 TO STA 62+69.50
N.T.S.



PROPOSED TYPICAL SECTION
BORDER AVENUE
STA 10+17.18 TO STA 56+50
STA 61+22.60 TO STA 62+69.50
N.T.S.



PROPOSED TYPICAL SECTION
BORDER AVENUE
STA 56+50 TO STA 61+22.60
N.T.S.



DETAIL A
N.T.S.

- NOTE:**
- PAVEMENT STRUCTURE AS PER RABA-KISTNER CONSULTANT, INC GEOTECHNICAL ENGINEERING STUDY No AMA08-057-00 BY KATRIN MIOVSKI, P.E. No 95810 DATED MAY 2, 2008.
 - * THE SIDEWALK CONSTRUCTION SHALL BE PART OF ALTERNATE BID No 1
 - ** FROM STA 56+50 TO STA 61+22.50 DUE TO THE PRESENCE OF SULFATES BETWEEN 1,160 TO 5,000 PPM, CONSIDERED SULFATE LEVELS OF MODERATE RISK, IT IS IMPERATIVE TO FOLLOW GOOD MIX DESIGN AND GOOD CONSTRUCTION TECHNIQUES SPECIAL ATTENTION MUST BE GIVEN TO USING EXCESS WATER DURING MIXING, MELLOWING AND CURING. MIXING WATER SHOULD BE AT LEAST 3% TO 5% ABOVE OPTIMUM FOR COMPACTION. LIME SLURRY SHOULD BE USED IN LIEU OF DRY QUICKLIME OR HYDRATED LIME. (FOR DETAIL SEE TECHNICAL MEMORANDUM GUIDELINES FOR STABILIZATION OF SOILS CONTAINING SULFATES, TXDOT)
 - THE USE OF EN-1 TREATMENT FOR THE SUBGRADE IN LIEU OF LIME SHALL BE PART OF ALTERNATE BID No 2.

▲ ALTERNATE MATERIALS MUST BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR APPROVAL 10 DAYS PRIOR TO BID DATE

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
 2/23/2015
 DATE

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

BORDER AVE.

EXISTING & PROPOSED TYPICAL SECTION

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		6
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:23 AM

2004 SPECS GENERAL NOTES MASTER

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

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 8. Prosecution and Progress

Working days will be computed and charged in accordance with Article 8.3.A.5 Calendar Day.

ITEM 104. Remove Concrete

Break, remove, and salvage or dispose of existing hydraulic cement concrete. Remove existing hydraulic cement concrete from locations shown on the plans. Replace any concrete damaged by the Contractor at no expense to the Department. Unless otherwise shown on the plans, accept ownership and properly dispose of broken concrete in accordance with federal, state, and local regulations.

ITEM 110. Excavation

Excavate areas as shown on the plans or as directed. Remove materials encountered to the lines, grades, and typical sections shown on the plans and cross-sections.

ITEM 132: Embankment

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

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

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

ITEM 164. Seeding for Erosion Control

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

SS-1 Tacking Agent shall be a ratio of 2:1, two (Emulsion) to one (water) and applied at a rate of 0.05 gallons per square yard. The SS-1 Tacking Agent required for Drill Seed operations, will not be paid for directly, but will be subsidiary to Item 164 "Drill Seeding". Watering shall not be used with the Drill Seed Method.

Seed mixture

Seed mixture shall be as specified under Item 164.

ITEM 166. Fertilizer

Fertilizer rate is based on a rate of 100 Lbs. of Nitrogen per acre. The Nitrogen-phosphorous-potassium (NPK) ratio shall include a minimum of 5 percent phosphorous and 5 percent potassium. Fertilizer shall be homogenized.

ITEM 168. Vegetative Watering

Provide and distribute water to promote growth of vegetation as directed. Ensure that watering does not erode soil or plantings. Apply water in the required quantity where shown on the plans or as directed.

ITEM 247. Flexible Base

Construct a foundation course composed of flexible base. Construct each layer uniformly, free of loose or segregated areas, and with the required density and moisture content. Provide a smooth surface that conforms to the typical sections, lines, and grades shown on the plans or as directed.

ITEM 260. Lime Treatment (Road-Mixed)

Mix and compact lime, water, and subgrade or base (with or without asphaltic concrete pavement) in the roadway. Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications.

ITEM 300. Asphalts, Oils and Emulsions

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

ITEM 301. Asphalt Antistripping Agents

Lime TY A or B shall be added as an Antistripping additive between the rates of 1% minimum 2.0% maximum by weight. If the Hamburg cannot be met within these limits, Liquid Antistripping agents as approved by the Engineer may be used in conjunction with lime.

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.

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

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 402. Trench Excavation Protection

Furnish and place excavation protection for trenches deeper than 5 feet. Provide vertical or sloped cuts, benches, shields, support systems, or other systems providing the necessary protection in accordance with OSHA Standards and Interpretations, 29 CFR 1926, Subpart P, "Excavations."

ITEM 420. Concrete Structures

Use membrane curing, Type 2, for concrete curb, gutter and combined curb and gutter, concrete medians, directional islands and sidewalks.

NO.	DATE	REVISION	APP.
  ROBERTO FINA CARRAL 2/23/2015 DATE			
			
 TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1201 E. Expressway 83 Mission, Texas 78572 (956) 424-7898			
BORDER AVE. GENERAL NOTES			
SHEET 2 OF 2			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			7
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

**2004 SPECS
GENERAL NOTES MASTER (CONTINUED)**

===== :

ITEM 432. Riprap

Provide Class "A" concrete minimum for riprap aprons placed around all box culvert and pipe safety end treatments.

ITEM 460. Corrugated Metal Pipe

Furnish and install corrugated metal pipes, materials for constructing corrugated metal pipe culverts, or corrugated metal storm drain mains, laterals, stubs, and inlet leads.

ITEM 464. Reinforced Concrete Pipe

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

Do not use mortar joints.

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

ITEM 465. Manholes and Inlets

Construct manholes and inlets, complete in place or to stage detailed, including furnishing and installing frames, grates, rings and covers. Drainage junction boxes are classified as manholes.

ITEM 479. Adjusting Manholes and Inlets

Adjust or cap existing manholes or inlets. Drainage junction boxes will be classified as manholes. Perform all work in accordance with Item 465 "Manholes and Inlets," at no cost to the Department.

ITEM 500. Mobilization

Establish and remove offices, plants, and facilities. Move personnel, equipment, and supplies to and from the project or the vicinity of the project site to begin work or complete work on Contract Items.

ITEM 502. Barricades, Signs and Traffic Handling

Shadow vehicles equipped with Truck-Mounted Attenuators are required.

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.

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 506. Temporary Erosion, Sedimentation, and Environmental Controls

Due to the nature of this project, it is unlikely a significant amount of soil will be disturbed. However, if for unforeseen reasons a sediment control fence is needed; it shall be placed as directed by the Engineer

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

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

ITEM 530. Public & Private Driveways

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.

ITEM 542. Removing Metal Beam Guard Fence

Remove existing metal beam guard fence and store at locations shown on the plans or as directed.

ITEM 550. Chain Link Fence

Furnish, install, remove, repair, or replace chain link fence and gates.

ITEMS 636. Aluminum Signs

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

ITEM 644. Small Roadside Sign Supports and Assemblies

All signs shall be installed as shown in the plans and in accordance with the current edition of the "Texas Manual on Uniform Traffic Control Devices".

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

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

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

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

The Contractor shall remove the complete sign installation and separate the sign post at the concrete foundation. The Contractor shall dispose of the concrete foundation in accordance with this Bid Item. Except for concrete foundations, all removed sign panels, sign posts, and hardware shall remain the property of the City of Weslaco. All removed sign installations shall be completely disassembled. All salvageable sections of sign panels shall be delivered to the City of Weslaco. The Contractor will be required to haul the removed sign material to the maintenance yard closest to the project. No signs shall be removed without prior approval of the Engineer.

ITEM 658. Delineator and Object Marker Assemblies

Installation of object markers shall be by any method satisfactory to the Engineer.

ITEMS 662. Work Zone Pavement Markings

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

Any permanent pavement markings or non-removal work zone pavement markings lacking reflectivity in accordance with test method Tex 828-B, will not be paid for, as per TxDOT policy. The Contractor will be required to restripe at his own expense.

Prior to any striping operations, an on-site coordination meeting between the prime and Sub Contractor superintendents and the City of Weslaco inspector will be required to review striping details and requirements to ensure quality work. This does not relieve the striping contractor from required adherence to plans and Specifications.

The beads used on this project shall meet the requirements of TxDOT Departmental Materials Specification DMS-8290, Glass Traffic Beads Texas Type III.

ITEMS 666. Reflectorized Pavement Markings

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

Any permanent pavement markings or non-removal work zone pavement markings lacking reflectivity in accordance with test method Tex 828-B, will not be paid for, as per district policy. The roadway will be re-striped at no additional compensation.

Pavement surface preparation for markings and markers will not be paid for directly, but shall be considered subsidiary to Item 666. Prior to any striping operations, an on-site coordination meeting between all the parties involved will be required to review striping details and requirements to ensure quality work.

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

ITEM 672. Raised Pavement Markers

Furnish and install raised pavement markers.

NO.	DATE	REVISION	APP.
			
 ROBERTO FINA CARRAL		2/23/2015 DATE	
			
			
BORDER AVE. GENERAL NOTES			
SHEET 1 OF 2			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			8
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:24 AM

BASE BID			
SPEC NO.	DESCRIPTION	QTY	UNIT
0100-2002	PREPARING ROW	52.5	STA
0104-2009	REMOVING CONC (RIPRAP)	49.0	SY
0110-2001	EXCAVATION (ROADWAY)	18543	CY
0132-2006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	2428	CY
0164-2023	CELL FBR MLCH SEED(PERM)(RURAL)(CLAY)	15803	SY
0168-2001	VEGETATIVE WATERING	500	MG
0247-2060	FL BS (CMP IN PLC)(TY E GR 4)(FNAL POS)	8517	CY
0260-2011	LIME TRT (EXST MATL) (12")	26133	SY
0260-2016	LIME (HYD, COM, OR QK(SLURRY))	259	TON
0310-2001	PRIME COAT (MC-30)	4604	GAL
3268-2047	D-GR HMA TY-D SAC-A PG76-22	5248	TON
5261-2002	GEOGRID BASE REINFORCEMENT (TY II)	25550	SY
0400-2006	CUT & RESTORING PAV	2945	SY
0402-2001	TRENCH EXCAVATION PROTECTION	4944	LF
0420-2016	CL C CONC (COLLAR)	2	EA
0432-2001	RIPRAP (CONC)(4 IN)	85	CY
0460-2009	CMP (GAL STL 48 IN)	138	LF
0464-2089	RC PIPE (CL III)(18 IN)(SPL)	770	LF
0464-2090	RC PIPE (CL III)(24 IN)(SPL)	1273	LF
0464-2091	RC PIPE (CL III)(30 IN)(SPL)	965	LF
0464-2092	RC PIPE (CL III)(36 IN)(SPL)	1936	LF
0464-2094	RC PIPE (CL III)(48 IN)(SPL)	132	LF
0465-2103	INLET (COMPL)(TY F)	24	EA
0465-2104	INLET EXT	12	EA
0465-2006	MANH (COMPL)(JUNCT BOX)(TY M)	5	EA
0465-2013	MANH (COMPL)(TY A)	16	EA
0479-2001	ADJ MANHS	13	EA
0496-2002	REMOV STR (INLET)	1	EA
0502-2001	BARRICADES, SIGNS AND TRAFFIC HANDLING	8	MO
0529-****	CONCRETE CURB & GUTTER (18" COW STD)	10517	LF
0529-****	CONCRETE CURB & GUTTER (2' VALLEY GUTTER COW STD)	565	LF
0530-2010	DRIVEWAYS (CONC)	778	SY
0530-2011	DRIVEWAYS (ACP)	888	SY
0542-2001	REMOVING METAL BEAM GUARD FENCE	25	LF
550-****	ADJUST GATES-VEHICULAR	10	EA
0560-2011	MAILBOX INSTALL-S (TWG-POST) TY 2 FND	27	EA
0560-2013	MAILBOX INSTALL-D (TWG-POST) TY 2 FND	2	EA
0560-2024	MAILBOX INSTALL-M(TWG-POST)TY 2 FND	1	EA
0644-2001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	28	EA
0644-2025	IN SM RD SN SUP&AM TYS80(1)SA(T)	4	EA
0644-2056	RELOCATE SM RD SN SUP & AM TY 10BWG	5	EA
0644-2060	REMOVE SM RD SN SUP & AM	21	EA
0644-2077	REMOVE SM RD SN SUP & AM (SIGN ONLY)	6	EA
0666-2006	REFL PAV MRK TY I (W) 4" (DOT)(100MIL)	40	LF
0666-2036	REFL PAV MRK TY I (W) 8" (SLD)(100MIL)	481	LF
0666-2048	REFL PAV MRK TY I (W) 24" (SLD)(100MIL)	301	LF
0666-2054	REFL PAV MRK TY I (W) (ARROW) (100MIL)	32	EA
0666-2096	REFL PAV MRK TY I (W) (WORD) (100MIL)	4	EA
0666-2105	REFL PAV MRK TY I (Y) 4" (BRK)(100MIL)	2220	LF
0666-2111	REFL PAV MRK TY I (Y) 4" (SLD)(100MIL)	9337	LF
0672-2012	REFL PAV MRKR TY I-C	27	EA
0672-2015	REFL PAV MRKR TY II-A-A	256	EA
1122-2002	ROCK FILTER DAMS (INSTALL) (TY 2)	80	LF
1122-2009	ROCK FILTER DAMS (REMOVE)	80	LF
1122-2017	CONSTRUCTION EXITS (INSTALL) (TY 2)	156	SY
1122-2019	CONSTRUCTION EXITS (REMOVE)	156	SY
1122-2048	BIOGRD EROSN CONT LOGS (12" DIA)INSTALL	1632	LF
1122-2056	BIODEGRADBLE EROSION CONTROL LOGS REMOV	1632	LF
1122-2037	TEMPORARY SEDIMENT CONTROL FENCE INSTLL	3105	LF
	ADJUST WATER MAIN	1	LS

ALTERNATE BID No 1 (SIDEWALKS)			
SPEC NO.	DESCRIPTION	QTY	UNIT
0531-2003	CONC SIDEWALKS (5') (6")	11216	LF
0531-2040	CURB RAMPS (TY 5)	16	EA
0531-2041	CURB RAMPS (TY 10)	6	EA

ALTERNATE BID No 2 (EN-1 ROADBOND TREATED SUBGRADE)			
SPEC NO.	DESCRIPTION	QTY	UNIT
3000	EN-1 ROADBOND (0.01125 GAL/SY)	294	GAL
3000	EN-1 TRT (MIX EXST MATL& NEW BASE)(DC)(12")	26133	SY
0260-2011	LIME TRT (EXST MATL) (12")	-26133	SY
0260-2016	LIME (HYD, COM, OR QK(SLURRY))	-259	TON

NOTES:

TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION GOVERNS ALL WORKS TO BE DONE AND BID ITEMS.

NO.	DATE	REVISION	APP.				
							
							
BORDER AVE.							
SUMMARY TABLES OF ESTIMATED QUANTITIES							
SHEET 1 OF 2							
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.					SHEET NO.	
						9	
STATE	DIST.	COUNTY					
TEXAS		HIDALGO					
CONT.	SECT.	JOB	HIGHWAY NO.				
			BORDER AVE				

Date and Time Plotted: 2/23/2015 10:01:26 AM

ROADWAY SUMMARY																					
ITEM	100	104	110	132	247	260	260	310	3268	432	529	529	530	530	542	550	560	560	560	5261	XXXX
CODE	2002	2009	2001	2006	2060	2011	2016	2001	2047	2001	****	****	2010	2011	2001	****	2011	2013	2013	2002	XXXX
DESCRIPTION	PREP ROW	REMOVING CONC (RIPRAP)	EXCAVATION (RDWY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)	FL BS (CMP IN PLC)(TY E GR 4)(FNAL POS)	LIME TR (EXST MATL) (12")	LIME (HYD, COM, OR QK (SLURRY))	PRIME COAT(MC-30)	D-GR HMA TY-D SAC-A PG76-22	RIPRAP (CONC)(4 IN)	CONC CURB & GUTTER (18" COW STD)	CONC CURB & GUTTER(2' VALLEY GUTTER COW STD)	DRIVEWAYS (CONC)	DRIVEWAYS (ACP)	REMOVING MTL BEAM GD FEN	ADJ GATES-VEHICULAR	MAILBOX INSTALL (SINGLE)	MAILBOX INSTALL (DOUBLE)	MAILBOX INSTALL (MULT)	GEOGRID BASE REINFORCEMENT (TY II)	ADJUST WATER MAIN
UNIT	STA	SY	CY	CY	CY	SY	TON	GAL	TON	CY	LF	LF	SY	SY	LF	EA	EA	EA	EA	SY	LS
PROJECT TOTAL	52.5	49	18543	2428	8517	26133	259	4604	5248	85	10517	565	778	888	25	10	27	2	1	25550	1

DRAINAGE SUMMARY														
ITEM	400	402	460	464	464	464	464	465	465	465	465	465	479	420
CODE	2001	2001	2009	2089	2090	2091	2092	2094	2103	2104	2006	2013	2001	2016
DESCRIPTION	STRUCT EXCAV (**)	TRENCH EXCAV PROTECTION	CMP (GAL STL 48")	RC PIPE (CL III)(18 IN) (SPL)	RC PIPE (CL III)(24 IN) (SPL)	RC PIPE (CL III)(30 IN) (SPL)	RC PIPE (CL III)(36 IN) (SPL)	RC PIPE (CL III)(48 IN) (SPL)	INLET (COMPL) (TY F)	INLET EXT	MANH (COMPL)(JUNCT BOX)(TY M)	MANH (STD PRECAST)	ADJ MANHS	CL C CONC (COLLAR)
UNIT	(CY)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)
PROJECT TOTAL	7695	3859	138	770	1273	965	1936	132	24	12	5	16	13	2

(**) CONTRACTOR INFORMATION ONLY

SIGN SUMMARY					
ITEM	644	644	644	644	644
CODE	2001	2025	2056	2077	2060
DESCRIPTION	IN SM RD SN SUP&AM TY 10BWG(1) SA(P)	IN SM RD SN SUP&AM TY 10BWG(1) SA(T)	RELOCAT E SM RD SN SUP&AM TY 10BWG	RELOCAT E SM RD SN SUP&AM (SIGN ONLY)	REMOVE SM RD SN SUP&AM
UNIT	EA	EA	EA	EA	EA
BEG PROJECT TO STA 20+00	9	0	3	1	6
STA 20+00 - STA 30+00	6	0	2	3	4
STA 30+00 - STA 40+00	4	0	0	2	2
STA 40+00 - STA 50+00	2	4	0	0	6
STA 50+00 - STA 60+00	3	0	0	0	1
STA 60+00 TO END PROJECT	4	0	0	0	2
PROJECT TOTAL	28	4	5	6	21

TCP - SW3P SUMMARY													
ITEM	164	166	168	400	502	1122	1122	1122	1122	1122	1122	1122	1122
CODE	2023	2002	2001	2006	2001	2002	2009	2017	2019	2048	2056	2037	2057
DESCRIPTION	CELL FBR MLCH SEED(PERM) (RURAL) (CLAY)	FERTILIZER (**)	VEGETATIVE WATERING	CUT & RESTORING PAV.	BARRICADES, SIGNS AND TRAFFIC HANDLING	ROCK FILTER DAMS (INSTALL) (TY 2)	ROCK FILTER DAMS (REMOVE)	CONSTRUCTION EXITS (INSTALL) (TY 2)	CONSTRUCTION EXITS (REMOVE)	BIOGRD EROSN CONT LOGS (12" DIA) (INSTALL)	BIOGRD EROSN CONT LOGS (REMOVE)	TEMPORARY SEDIMENT CONTROL FENCE (INSTLL)	TEMPORARY SEDIMENT CONTROL FENCE (REMOVE)
UNIT	SY	TON	(MG)	(SY)	(MO)	(LF)	(LF)	SY	SY	(LF)	(LF)	LF	LF
PROJECT TOTAL	15803	0.2	500	2945	8	80	80	156	156	1632	1632	3105	3105

(**) CONTRACTOR INFORMATION ONLY NOT PAID ITEM
 CONSTRUCTION EXIT MIN AREA = 78 SY, LOCATIONS ARE APPROXIMATE AND MAY BE MODIFIED IN THE FIELD AS APPROVED BY ENGINEER
 FOR CONTRACTOR INFORMATION ONLY, FERTILIZER QUANTITIES (TON) ARE BASED ON A RATE OF 100 LBS OF NITROGEN PER ACRE NPK 10-5-5
 VEGETATIVE WATERING (MG) 3394 GAL * ACRE * 45 CYCLES / 1000

LOG MAX LENGTH = 30 FEET
 STD LENGTH = 10 FEET

PAVEMENT MARKINGS SUMMARY									
ITEM	666	666	666	666	666	666	666	672	672
CODE	2006	2036	2105	2111	2048	2054	2054	2012	2015
DESCRIPTION	REFL PAV MRK TY I (W) 4" (DOT)(100 MIL)	REFL PAV MRK TY I (W) 8" (SLD)(100 MIL)	REFL PAV MRK TY I (Y) 4" (BRK)(100 MIL)	REFL PAV MRK TY I (Y) 4" (SLD)(100 MIL)	PREFAB PAV MRK TY C (W) 24"(SLD)	PREFAB PAV MRK TY I (W) (ARROW)	PREFAB PAV MRK TY I (W) (WORD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
UNIT	LF	LF	LF	LF	LF	EA	EA	EA	EA
BEG PROJECT TO STA 20+00	40	80	380	1778	90	7	1	5	56
STA 20+00 - STA 30+00	0	0	380	1465	99	6	0	0	38
STA 30+00 - STA 40+00	0	0	440	1714	46	8	0	0	42
STA 40+00 - STA 50+00	0	0	480	1868	38	4	0	0	48
STA 50+00 - STA 60+00	0	253	500	2000	0	5	2	13	50
STA 60+00 TO END PROJECT	0	148	40	512	28	2	1	9	22
PROJECT TOTAL	40	481	2220	9337	301	32	4	27	256

REMOVAL SUMMARY				
ITEM	496	496	496	496
CODE	2002	2004	2006	2016
DESCRIPTION	REMOVE STR (INLET)	REMOVE STR (SET)	REMOVE STR (HEADWALL)	REMOVE STR (PIPE)
UNIT	(EA)	(EA)	(EA)	(EA)
PROJECT TOTAL	1	11	2	34

(***) FOR CONTRACTOR INFORMATION ONLY
 ALL REMOVAL ITEMS SHALL BE SUBSIDIARY OF ITEM 100-2002 PREPARATION OF R.O.W. UNLESS SPECIFIED ON PLANS.

ALTERNATE BID No 1 SUMMARY			
ITEM	531	531	531
CODE	2003	2040	2041
DESCRIPTION	CONCRETE SIDEWALK (5') (6")	CURBS RAMPS (TY 5)	CURBS RAMPS (TY 10)
UNIT	(LF)	(EA)	(EA)
PROJECT TOTAL	11216	16	6

ALTERNATE BID No 2 SUMMARY				
ITEM	3000	3000	260	260
CODE			2011	2016
DESCRIPTION	EN-1 ROADBOND (0.01125 GAL/SY)	EN-1 TRT (MIX EXST MATL & NEW BASE) (DC) (12")	LIME TR (EXST MATL) (12")	LIME (HYD, COM, OR QK (SLURRY))
UNIT	(GAL)	(SY)	SY	TON
PROJECT TOTAL	294	26133	-26133	-259
EN-1 USE TO TREAT SUBGRADE				



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

BORDER AVE.

SUMMARY TABLES OF ESTIMATED QUANTITIES

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		10
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:29 AM

GENERAL NOTES

- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SEE THAT ALL TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED AT THE JOB SITE IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND RELATED INDUSTRY STANDARDS AND REGULATIONS. THE CONTRACTOR SHALL SUBMIT FOR REVIEW A SIGN AND BARRICADE PLAN CONFORMING TO THE REQUIREMENTS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S CONSTRUCTION OBSERVER/INSPECTOR (COI) WILL ONLY BE RESPONSIBLE TO INSPECT THE TRAFFIC CONTROL DEVICES BEING DEPLOYED. IF IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE COI, THE TRAFFIC CONTROL DEVICES DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE COI SHALL HAVE THE OPTION TO STOP CONSTRUCTION OPERATIONS AT NO EXPENSE TO THE CITY UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED BY THE CONTRACTOR.
- THE ROADWAY AND DRIVEWAYS MUST REMAIN OPEN TO LOCAL TRAFFIC AT ALL TIMES, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR APPROVED BY THE ENGINEER. ANY ROAD CLOSURES WILL BE LIMITED TO WORKING HOURS. AT THE END OF THE DAY THE ROADWAY MUST BE OPENED TO LOCAL TRAFFIC. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH ADJACENT PROPERTY OWNERS TO PROVIDE ADEQUATE EGRESS AND INGRESS DURING ALL PHASES OF CONSTRUCTION.
- 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 BID ITEMS. PRIOR TO REMOVING ANY TRAFFIC SIGNS, THE CONTRACTOR SHALL CONTACT THE CITY OF WESLACO. PRIOR TO COMPLETION OF THE CONTRACT AND REMOVAL OF THE BARRICADES, THE CONTRACTOR SHALL AGAIN CONTACT THE CITY OF WESLACO, THE BARRICADES SHALL NOT BE REMOVED UNTIL ALL APPLICABLE PERMANENT TRAFFIC SIGNS AND SIGNALS ARE IN PLACE.
- EXISTING SIGNS IN CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED UNTIL PROPOSED SIGNS ARE INSTALLED. EXISTING SIGNS NOT IN CONFLICT WITH CONSTRUCTION SHALL REMAIN IN PLACE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND MAINTAIN TEMPORARY STOP SIGNS AND ALL OTHER TRAFFIC CONTROL DEVICES REQUIRED TO PROTECT THE GENERAL PUBLIC. IF THE CITY OF WESLACO HAS REMOVED PERMANENT STOP SIGNS, THE CONTRACTOR SHALL REQUEST THAT THE SIGNS BE RETURNED TO THE CONSTRUCTION SITE TO BE REINSTALLED BY THE CONTRACTOR. ALL PERMANENT SIGNS OR TRAFFIC CONTROL DEVICES MISSING OR DAMAGED UPON COMPLETION OF CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MUST CONTACT THE CITY'S COI 48 HOURS IN ADVANCE (NOT INCLUDING WEEKENDS) OF ANY MINOR STREET CLOSURE. THE COI AFTER BEING NOTIFIED WILL CONTACT THE TRAFFIC ENGINEERING OFFICE TO MAKE THE NECESSARY ARRANGEMENTS.
- AS WORK PROGRESSES, LOCATION OF TEMPORARY TRAFFIC CONTROL DEVICES WILL BE ADJUSTED AND MODIFIED, AS NECESSARY BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
- IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES, SPECIAL DIRECTIONAL DEVICES, AND/OR BUSINESS NAME SIGNS MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MUST MAINTAIN ALL STREETS WITHIN THE PROJECT LIMITS OPEN TO THROUGH TRAFFIC BY REPAIRING TRENCHES, POTHOLES, LEVELING UP WITH ASPHALT, ETC. AT NO DIRECT PAYMENT, COST TO BE INCLUDED IN OTHER ITEMS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUITABLE ACCESS ACCOMMODATIONS FOR SCHOOL CHILDREN AND PEDESTRIANS.
- THE CONTRACTOR SHALL KEEP TRAVELED PAVED SURFACES USED IN HIS HALING 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 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 EQUIPMENT OVERNIGHT IN A POSITION THAT WILL ENDANGER THE TRAVELING PUBLIC.
- THE CONTRACTOR SHALL NOT LEAVE ANY OPEN TRENCHES OR EXCAVATIONS OVERNIGHT, UNLESS PROTECTED AND/OR APPROVED BY THE ENGINEER.
- CONSTRUCTION FENCING (4' HIGH MINIMUM) SHALL BE USED AROUND ALL OPEN TRENCHES OR EXCAVATIONS OUTSIDE THE EXISTING ROADWAY, AS APPROVED BY THE ENGINEER. THIS WORK SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.
- THE CONTRACTOR SHALL PROVIDE ACCESS FOR DELIVERY OF MAIL BY THE U.S. POSTAL OFFICE.
- THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO RESIDENCES AND ALL BUSINESSES AT ALL TIMES WITHIN ALL THE PHASES OF THE WORK.

GENERAL NOTES (CONT.)

- ALL TEMPORARY TRAFFIC CONTROL DEVICES, ETC. SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT DIRECT PAYMENT, UNLESS OTHERWISE NOTED OR STATED.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL STREETS OUTSIDE OF THE PROJECT LIMITS WHICH WERE DAMAGED BY CONSTRUCTION ACTIVITIES. THE REPLACING SECTION MUST BE APPROVED BY THE CITY'S STREET ENGINEER. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. THE COST IS TO BE INCLUDED IN OTHER ITEMS.
- THE CONTRACTOR SHALL PROVIDE THE CITY AN EMERGENCY TELEPHONE NUMBER FOR EVENING, WEEKENDS, AND HOLIDAYS BY THE FIRST WORKING DAY OF THE PROJECT. THIS TELEPHONE NUMBER MUST BE A COMMERCIAL ANSWERING SERVICE. THE ANSWERING SERVICE MUST BE ABLE TO CONTACT THE CONTRACTOR AND THE CONTRACTOR MUST RESPOND TO THE CITY STAFF WITHIN TWO HOURS OF THE INITIAL CONTACT.
- ALL EXISTING UTILITIES THAT ARE IN CONFLICT WITH THE PROPOSED ROADWAY IMPROVEMENTS FOR THE 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.
- CONTRACTOR WILL BE REQUIRED TO ESTABLISH EXACT LOCATION, DEPTH, AND SIZE OF EXISTING UTILITIES. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, ELECTRICAL LINES, CABLES, ETC.
- THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THE PLANS.
- THE ENGINEER WILL PROVIDE ONE TIME STAKING OF EXISTING R.O.W. AND CONSTRUCTION STAKING FOR CONSTRUCTION OFFSET HUBS DURING CONSTRUCTION. THIS WORK WILL BE COMPLETED UPON WRITTEN NOTIFICATION BY ENGINEER PRIOR TO START CONSTRUCTION.
- CONTRACTOR TO PROVIDE EMERGENCY VEHICLE ACCESS TO LOCAL AREA 24/7.
- THE CONTRACTOR SHALL CLEAN UP AND RESTORE AREAS DISTURBED DURING CONSTRUCTION TO A CONDITION AS GOOD OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
- DE-WATERING WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS. IF IPE/BOXES AREAS CAN NOT BE DE-WATERING STABILIZING MATERIAL (LEAN CONCRETE OR CEMENT STABILIZED FILL) SHALL BE USED TO ESTABLISH WORKING PLATFORM. THE LATTER WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

**PHASING AND STAGING NOTES
STREET AND DRAINAGE CONSTRUCTION**

- ANY QUESTIONS REGARDING PHASING OR STAGING WILL BE STRICTLY HANDLED BY THE DEPARTMENT OF PUBLIC FACILITIES WHICH HAS COMPLETE AUTHORITY TO MAKE FINAL DECISIONS ON ANY CHANGES OR MODIFICATIONS. THE TEMPORARY BARRICADES AND WARNING SIGNS SHALL BE LOCATED SO AS TO AFFORD THE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO FACILITATE AN EXPEDITIOUS FLOW OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION.
- ALL STORM DRAINAGE PIPES ARE NOT CONSIDERED UTILITIES, REGARDLESS OF SIZE. THIS WORK SHALL BE PART OF PHASE 1.
- AT NO TIME CAN THE CONTRACTOR HAVE MORE THAN 400 FT. OF UNBACKFILLED TRENCH AND NO MORE THAN 800 FT. SHALL BE WITHOUT REPLACEMENT OF PAVEMENT. PAVEMENT REPLACEMENT SHALL BE AS FOLLOWS:
 - THE UTILITY TRENCH WITHIN THE PROJECT LIMITS BUT OUTSIDE OF THE STREET AND DRAINAGE CONSTRUCTION PHASE MUST BE TOPPED WITH FOUR INCHES (4") THICK OF ASPHALT TREATED BASE (ATB) OR FOUR INCHES (4") OF HOT MIXED COLD LAID ASPHALT AFTER APPROVED BACKFILL. THE COST FOR THIS WORK SHALL BE INCLUDED WITH THE UNIT PRICE OF THE APPROPRIATE ITEM.
- AT THE END OF THE DAY THE TRAFFIC CONTROL SIGNS MUST BE MOVED AND THE ROADWAY AND SIDE STREETS MUST BE OPENED UP TO TRAFFIC.

CONSTRUCTION SEQUENCING

PHASE 1 - STORM SEWER SYSTEM CONSTRUCTION

- INSTALL ADVANCED WARNING SIGNS.
- PLACE SW3P MEASURES
- BEGINNING AT THE OUTFALL, CONSTRUCT STORM SEWER SYSTEM AB. MANHOLES ARE TO BE TEMPORARILY CONSTRUCTED TO EXISTING GRADE. ONCE ROADWAY CONSTRUCTION BEGINS, MANHOLES ARE TO BE ADJUSTED TO PROPOSED GRADE. CONSTRUCT ALL INLETS WITHIN THE SYSTEM AND PLACE BARRICADES ON EACH SIDE OF THE INLET. THE TOP TO INLETS A04, B04 AND B05 ARE TO REMAIN OFF TO AID IN TEMPORARY DRAINAGE. TEMPORARY FENCING IS TO BE PLACED AROUND THESE INLETS.
- ONCE STORM SEWER AB IS COMPLETE, STORM SEWERS CD AND EF MAY BE STARTED.
- BEGINNING AT THE OUTFALL, CONSTRUCT STORM SEWER SYSTEM CD AND EF. MANHOLES ARE TO BE TEMPORARILY CONSTRUCTED TO EXISTING GRADE. ONCE ROADWAY CONSTRUCTION BEGINS, MANHOLES ARE TO BE ADJUSTED TO PROPOSED GRADE. CONSTRUCT ALL INLETS WITHIN THE SYSTEM AND PLACE BARRICADES ON EACH SIDE OF THE INLET. THE TOP TO INLET F03 IS TO REMAIN OFF TO AID IN TEMPORARY DRAINAGE. TEMPORARY FENCING IS TO BE PLACED AROUND THIS INLET.
- TRENCHES IN PAVED STREETS SHALL BE COVERED WITH A TEMPORARY ALL-WEATHER SURFACE TO ALLOW FOR VEHICULAR TRAFFIC UNTIL THE FINAL ASPHALT PAVING IS COMPLETE. THIS SURFACE SHALL BE A MINIMUM OF 4 INCHES COMPACTED AND ROLLED ASPHALTIC BLACK BASE, EITHER HOT-MIX OR COLD-MIX APPLIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THIS SURFACE UNTIL THE FINAL STREET RESTORATION IS COMPLETE. TEMPORARY STREET STRIPING MAY ALSO BE REQUIRED. THIS SURFACE MUST BE REMOVED PRIOR TO FINAL ASPHALTING. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO VARIOUS BID ITEMS.

PHASE 2 - ROADWAY CONSTRUCTION

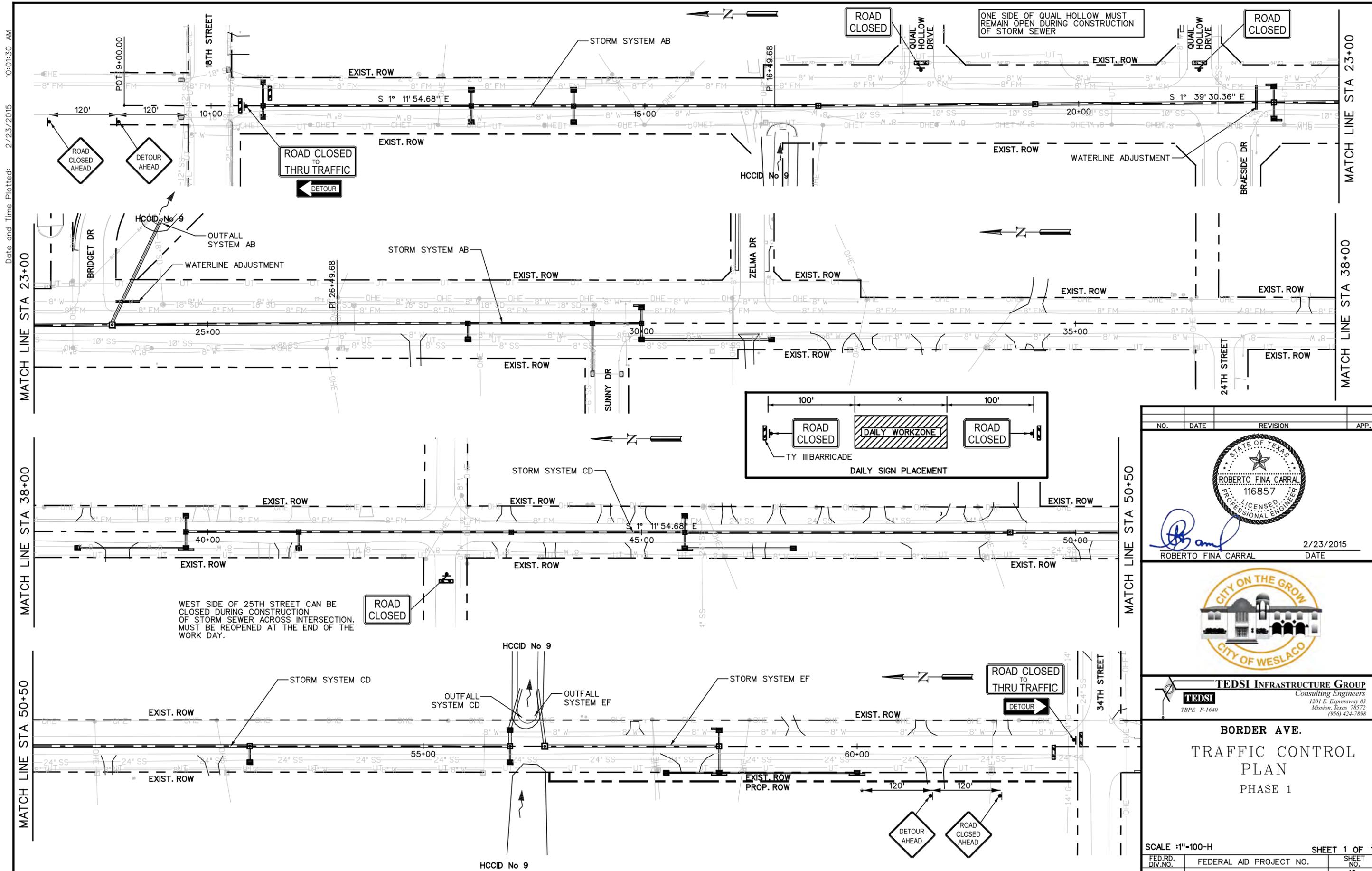
- INSTALL ADVANCED WARNING SIGNS.
- PLACE SW3P MEASURES
- TO MINIMIZE IMPACT TO LOCAL TRAFFIC THE ROADWAY WORK HAS BEEN BROKEN DOWN INTO FOUR (4) SECTIONS. CONTRACTOR MUST CONSTRUCT UP TO THE 2" LIFT OF BASE BEFORE MOVING TO THE NEXT SECTION. BEFORE THE END OF PHASE 2, ALL CONCRETE CURBS, THIRD LIFT OF BASE, MANHOLE ADJUSTMENTS, AND THE FIRST LIFT OF ASPHALT MUST BE COMPLETED. FLAT WORK FOR DRIVEWAYS MAY BE STARTED DURING THIS PHASE.

PHASE 3 - FLAT WORK, FINAL LIFT OF ASPHALT AND CLEAN-UP

- INSTALL ADVANCED WARNING SIGNS.
- PLACE SW3P MEASURES
- ALL CONCRETE FLAT WORK MUST BE COMPLETED BEFORE FINAL LIFT OF ASPHALT IS LAID. RESHAPE SIDE SLOPES AND PLACE PERMANENT SODDING. PLACE FINAL LIFT OF ASPHALT AND STRIPE THE PROJECT. SHAPE AND FINISH THE PORTIONS OF THE RIGHT OF WAY THAT MAY HAVE BEEN DISTURBED ONCE WORK IS COMPLETE AND BEFORE FINAL ACCEPTANCE TO LEAVE ENTIRE RIGHT OF WAY IN A SMOOTH, NEAT CONDITION.

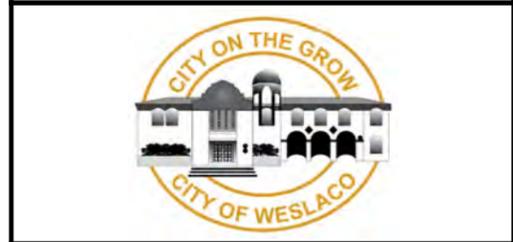
NO.	DATE	REVISION	APP.
  ROBERTO FINA CARRAL DATE 2/23/2015			
			
 TEDSI INFRASTRUCTURE GROUP <i>Consulting Engineers</i> 1201 E. Expressway 83 Mission, Texas 78572 (936) 424-7898			
BORDER AVE. TRAFFIC CONTROL PLAN GENERAL NOTES SEQUENCE OF CONSTRUCTION			
SHEET 1 OF 1			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			11
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:30 AM



NO.	DATE	REVISION	APP.


 ROBERTO FINA CARRAL
 2/23/2015
 DATE



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

BORDER AVE.

TRAFFIC CONTROL PLAN

PHASE 1

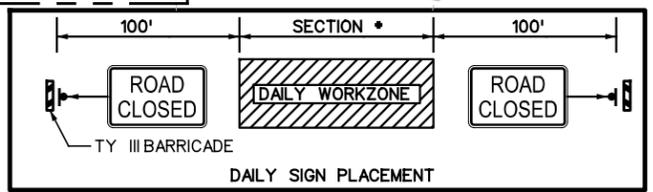
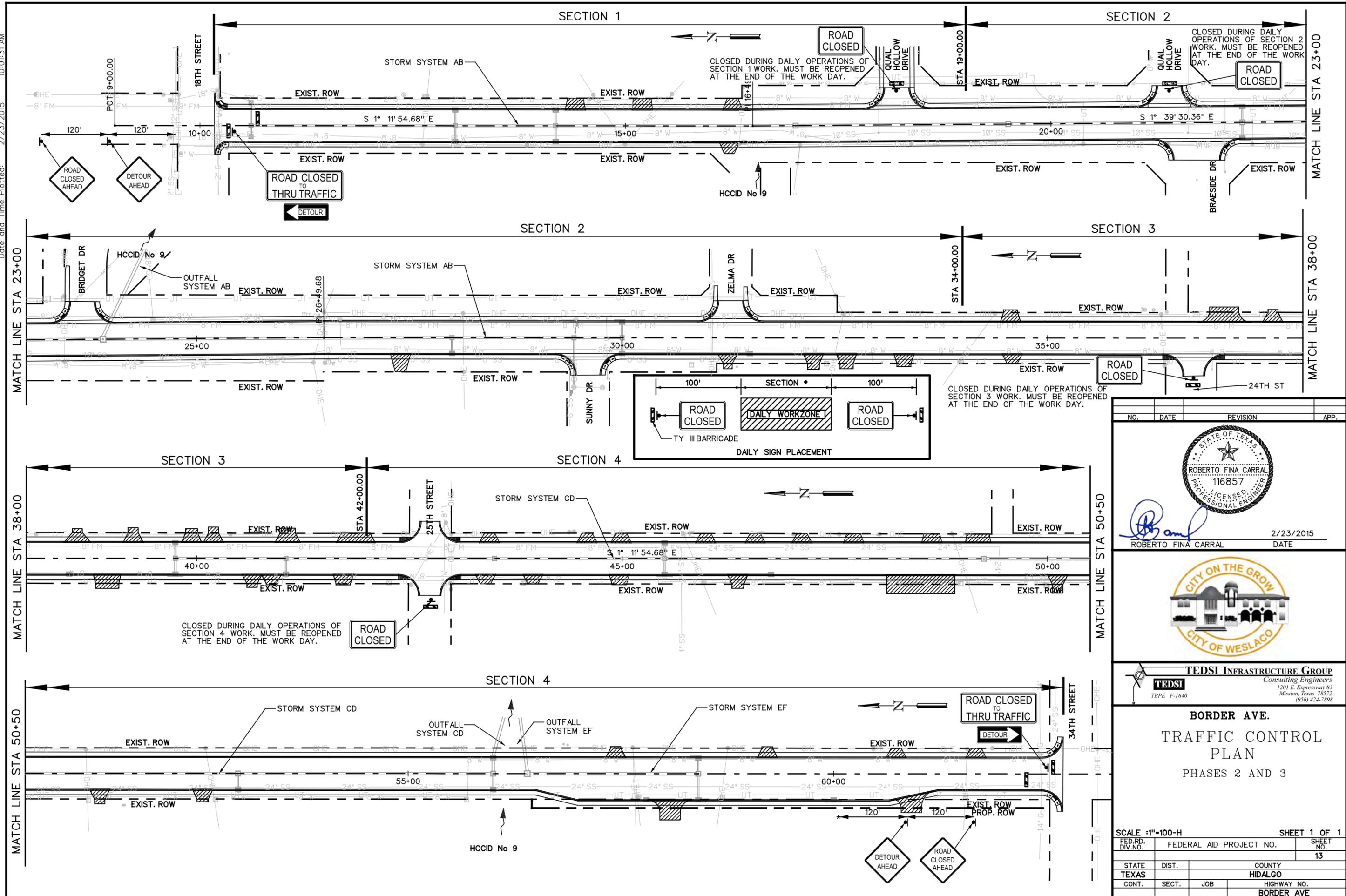
SCALE: 1"=100'-H SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		12
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

NOTES:
 ALL DAILY WORK ZONE SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO COMMENCING WORK

* CONTRACTOR TO SET DAILY WORK ZONE, WHICH HE/SHE CAN COMPLETE ON DAILY BASIS.

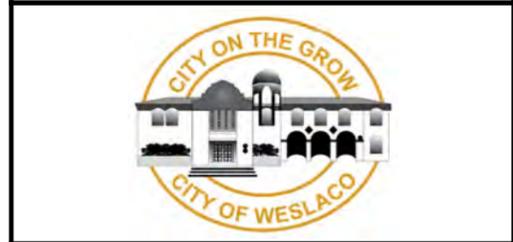
Date and Time Plotted: 2/23/2015 10:01:31 AM



NO.	DATE	REVISION	APP.



 ROBERTO FINA CARRAL 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

BORDER AVE.

TRAFFIC CONTROL PLAN

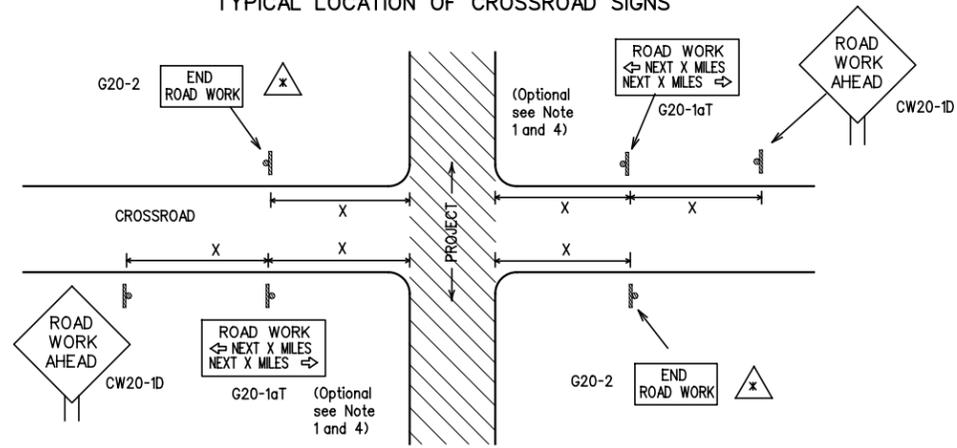
PHASES 2 AND 3

SCALE :1"=100'-H SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		13
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

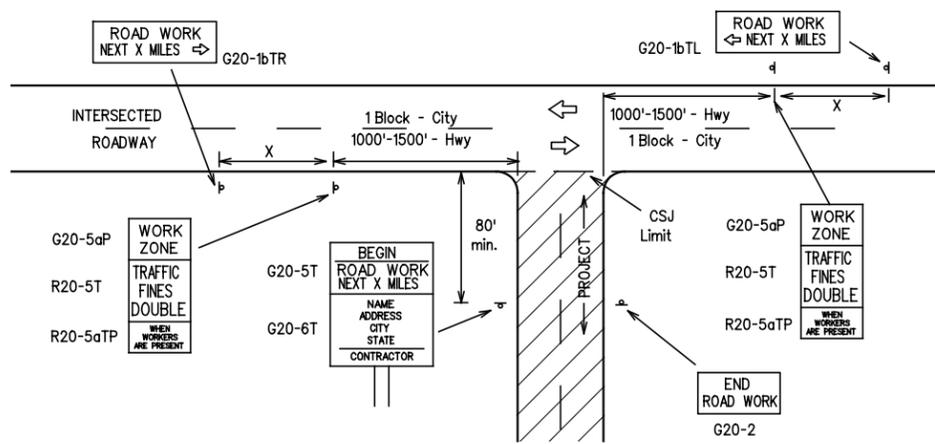
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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

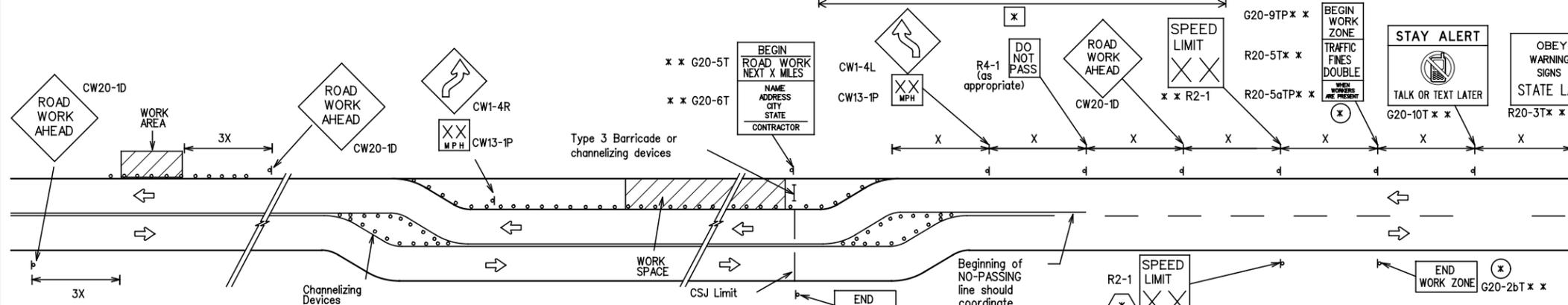
Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/ Freeway	Posted Speed MPH	Sign Spacing "X" Feet (Apprx.)
CW20 ⁴	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 ²
CW3, CW4, CW5, CW6, CW8-3,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

- * For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.
- △ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

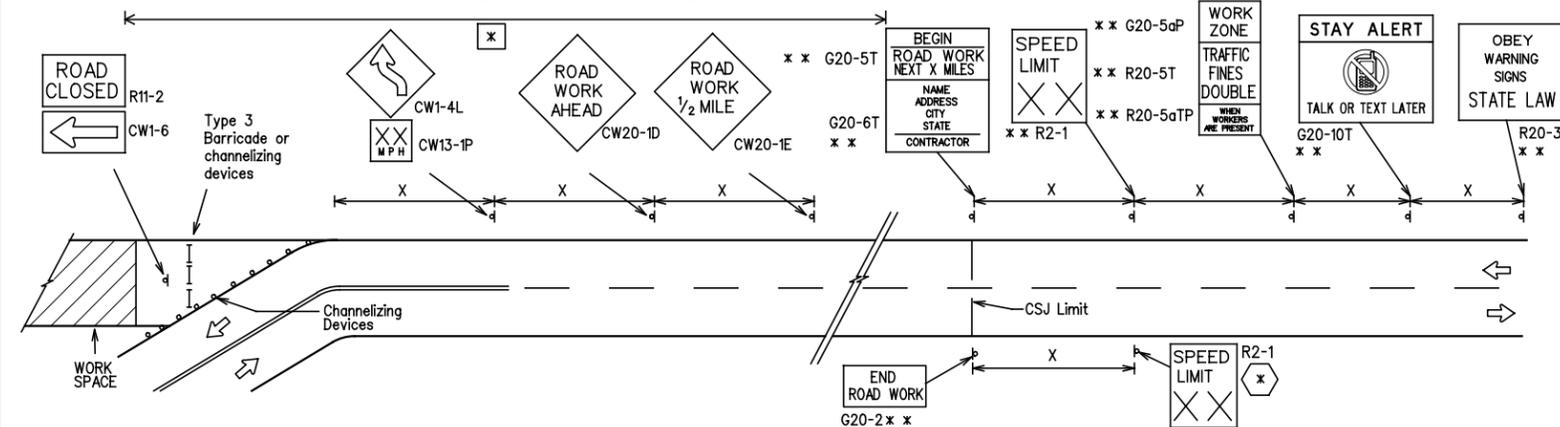
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be 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

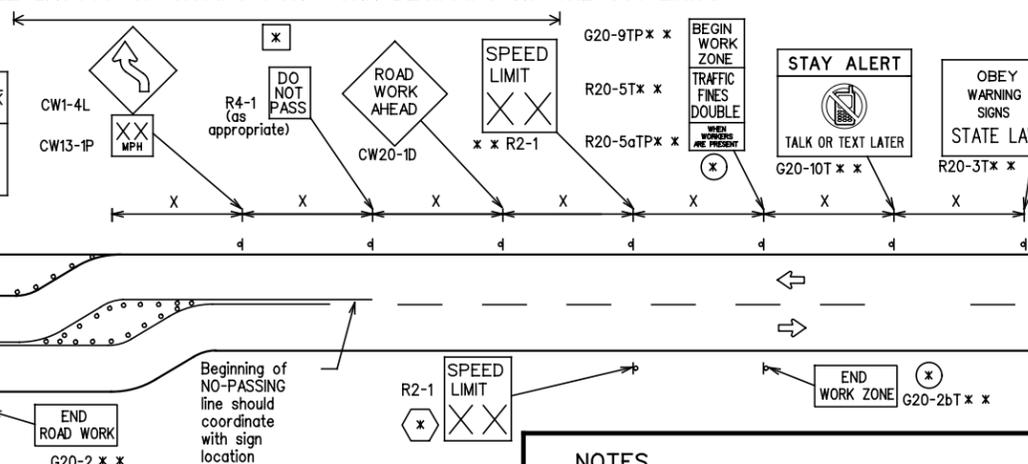


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

BC(2)-14

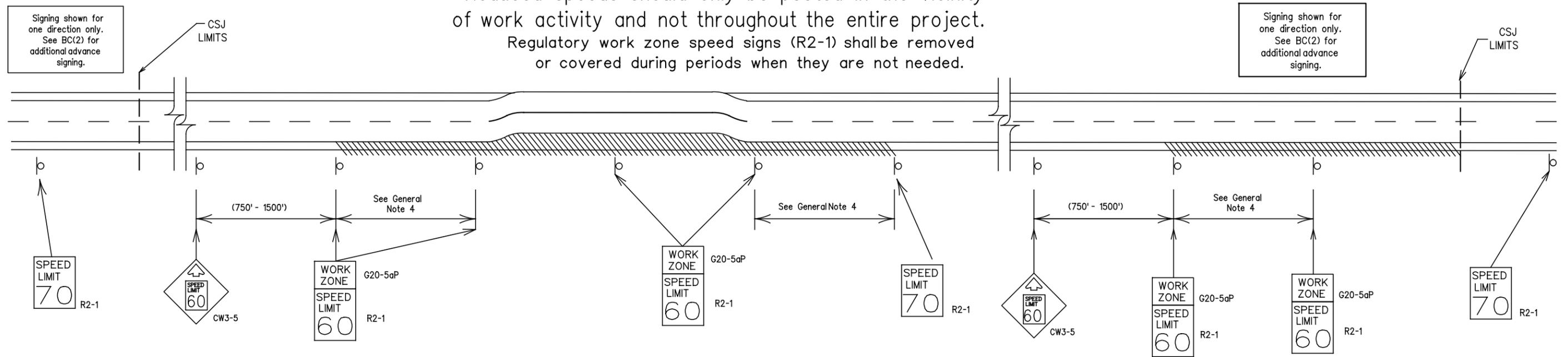
FILE: bc-14.dgn	DWF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
9-07	8-14	DIST	COUNTY	SHEET NO.
7-13				15

DATE: FILE:

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.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

SHEET 3 OF 12

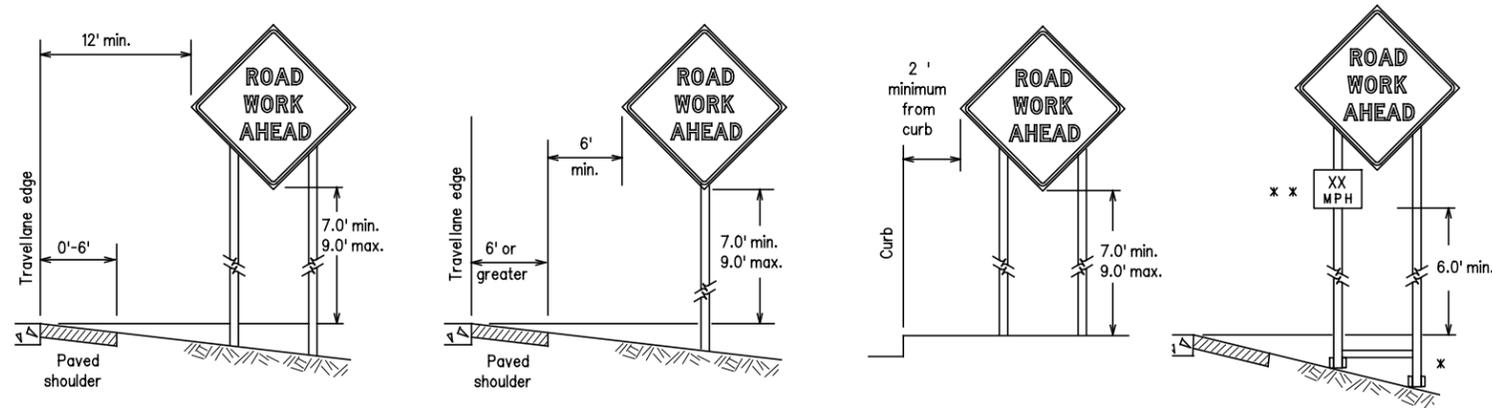


BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

FILE:	bc-14.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT:		SECT:		JOB:		HIGHWAY:	
REVISIONS									
9-07	8-14							BORDER AVE	
7-13		DIST:		COUNTY:				SHEET NO.	
								16	

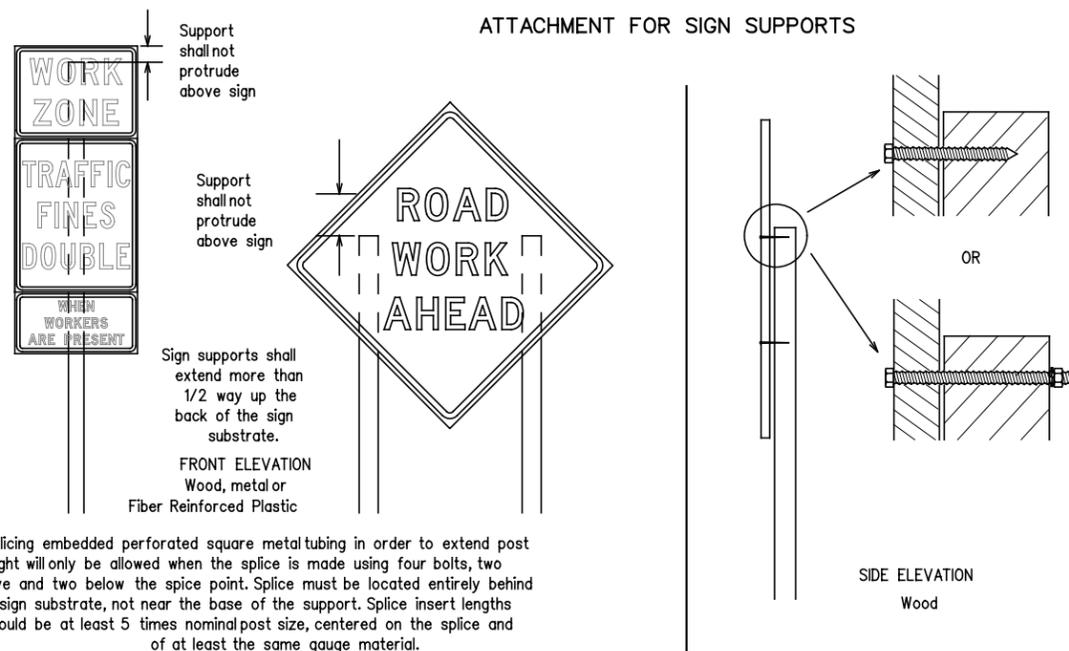
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



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

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

ATTACHMENT FOR SIGN SUPPORTS



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.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

GENERAL NOTES FOR WORK ZONE SIGNS

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B or Type B₁, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

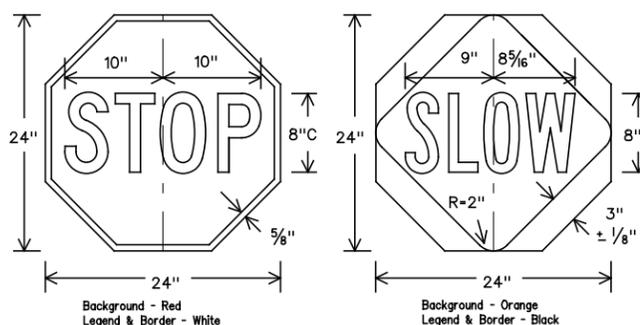
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not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

FLAGS ON SIGNS

- 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.

STOP/SLOW PADDLES

- 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.
- When used at night, the STOP/SLOW paddle shall be retroreflectORIZED.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- 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.

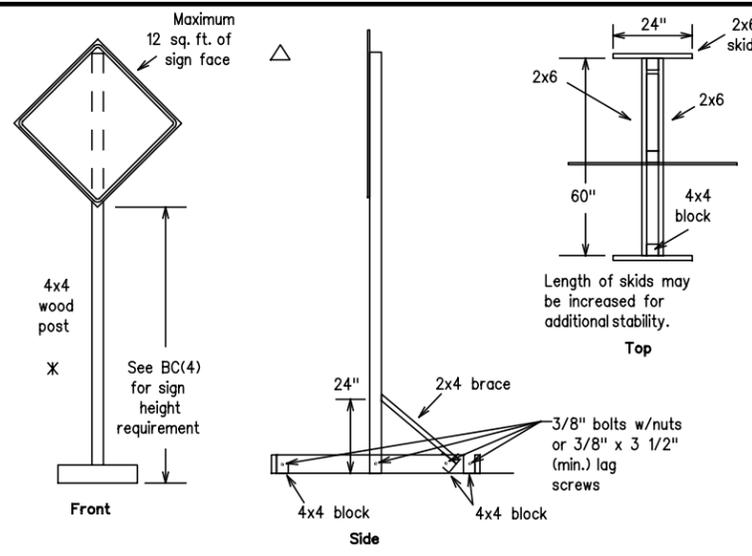
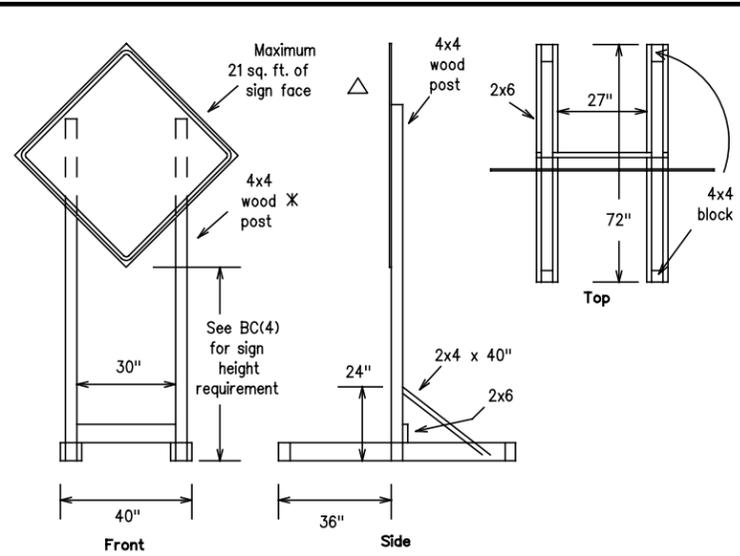


CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

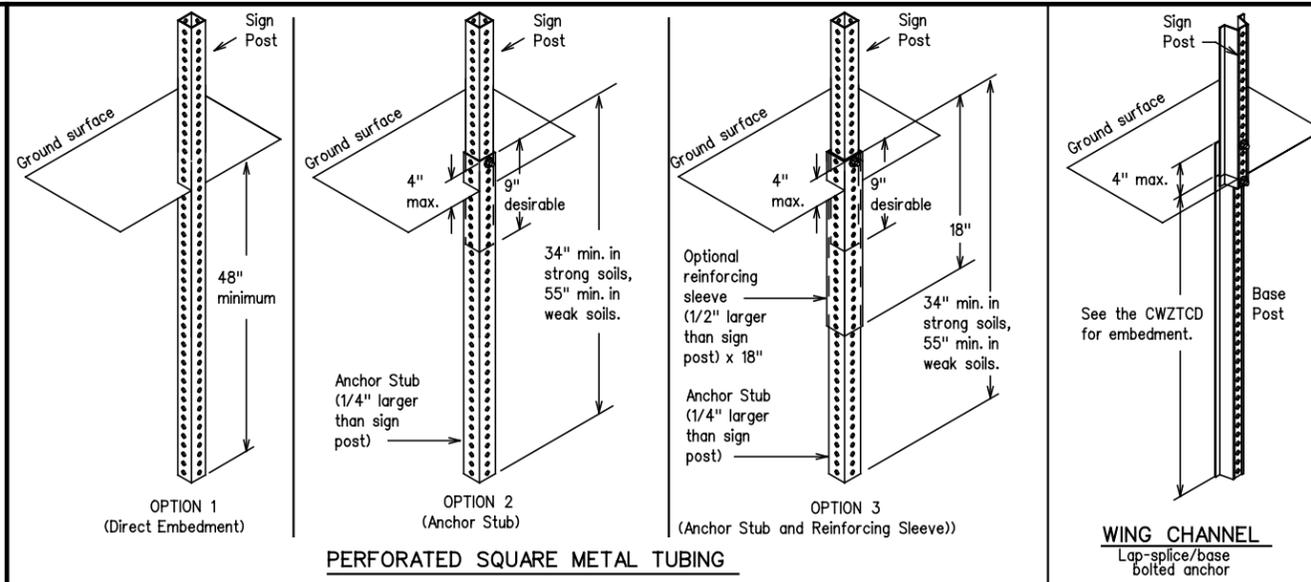
- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- 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.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC 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.
- 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.

		Traffic Operations Division Standard	
<h2>BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES</h2>			
<h3>BC(4)-14</h3>			
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT November 2002	CONT	SECT	JOB
REVISIONS			HIGHWAY
9-07	8-14	BORDER AVE	
7-13	DIST		COUNTY
			SHEET NO.
			17

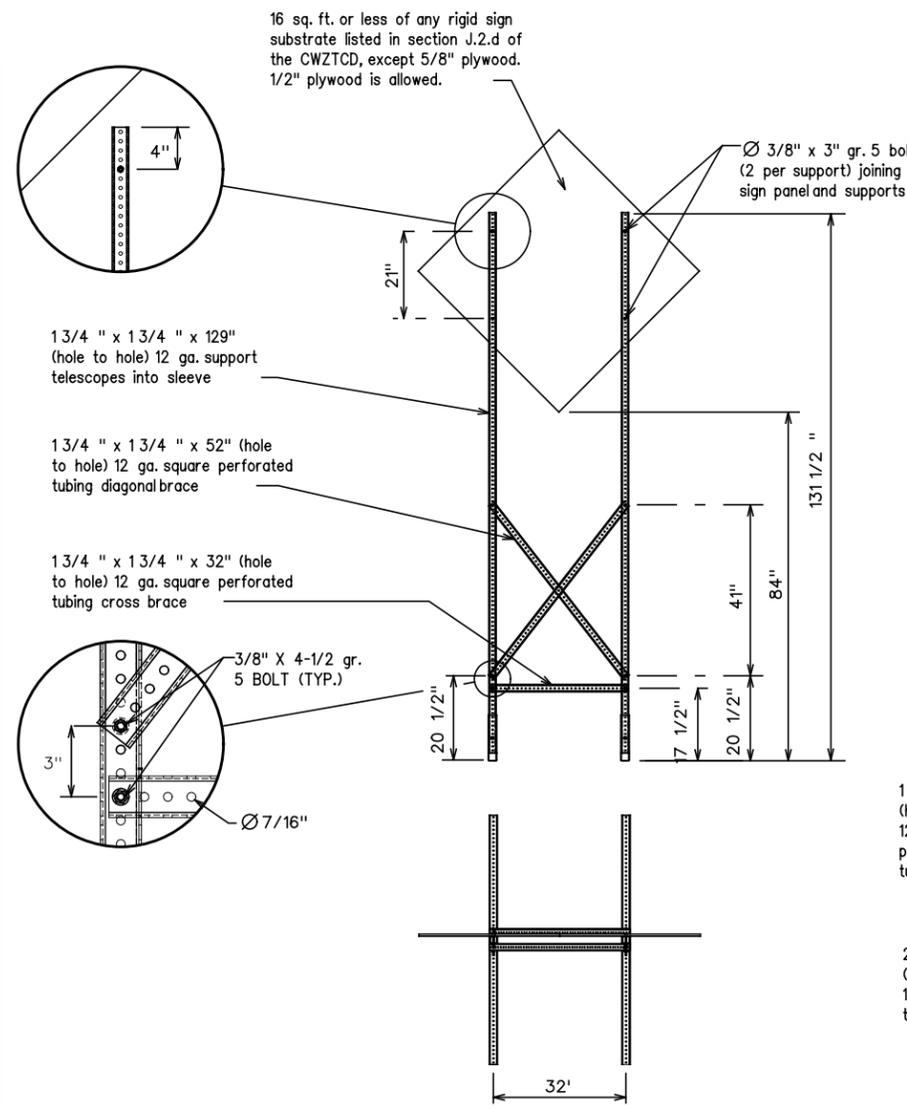
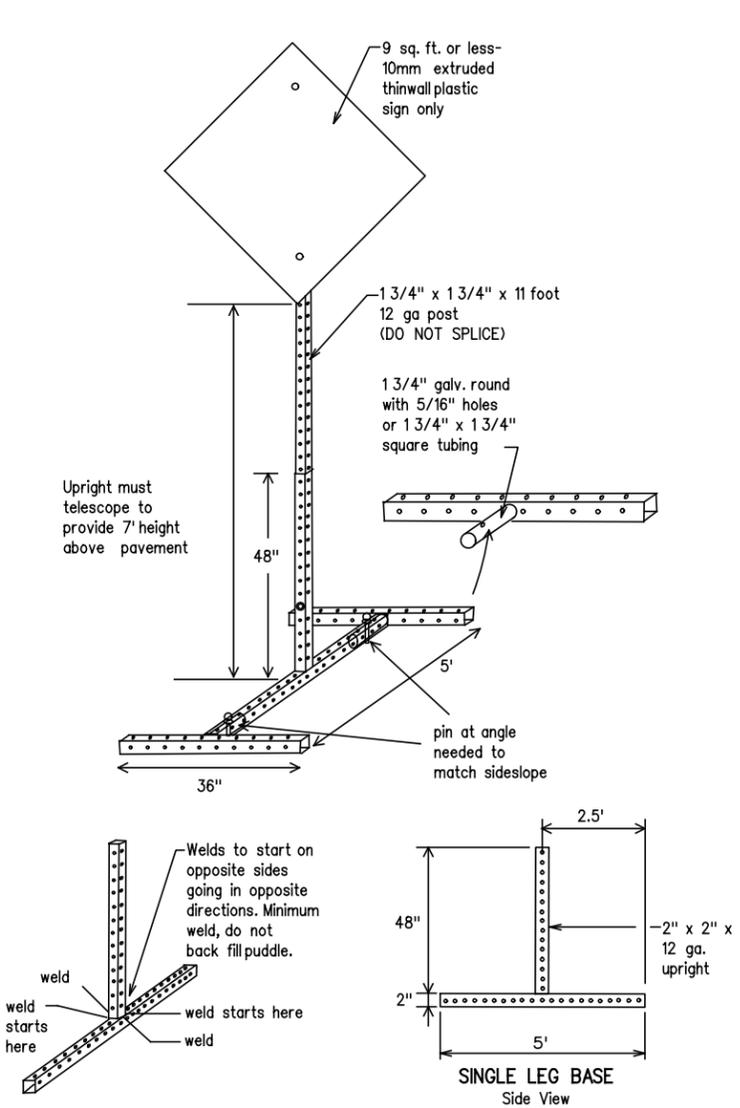
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



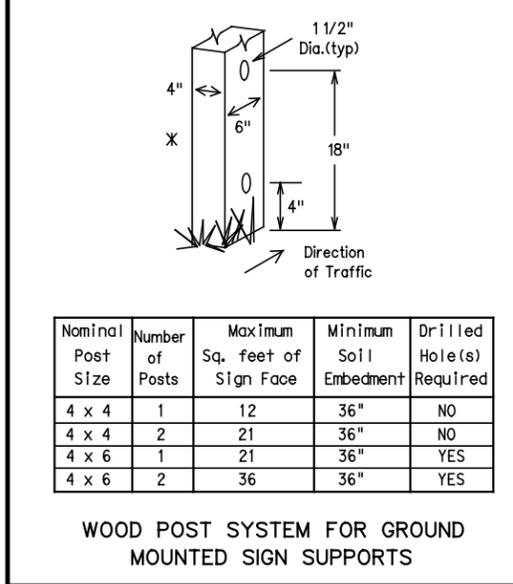
SKID MOUNTED WOOD SIGN SUPPORTS
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □



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.

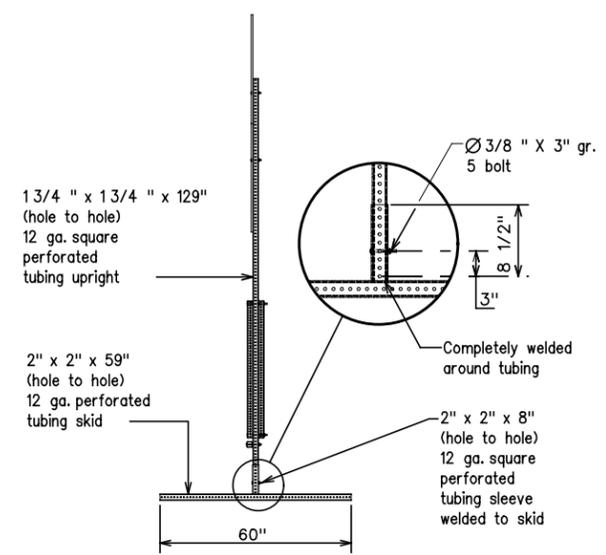


SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



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

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS



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

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

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

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

FILE: bc-14.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	18			

DATE: FILE:

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 (.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.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	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 DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLR
High-Occupancy Vehicle	HOV	Tuesday	TUES
Highway	HWY	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	Wet Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

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

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
XXXXXXXX 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

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

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 should 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.

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 symbolsigns, 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 symbolsigns 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.

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

Location List

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

Warning List

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

** Advance Notice List

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

* * See Application Guidelines Note 6.

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 MI, 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.

SHEET 6 OF 12



BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

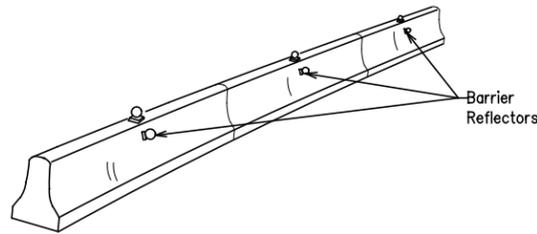
BC(6)-14

FILE: bc-14.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13				19

DATE: FILE:

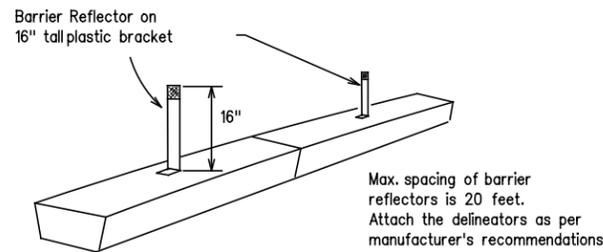
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

- 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.

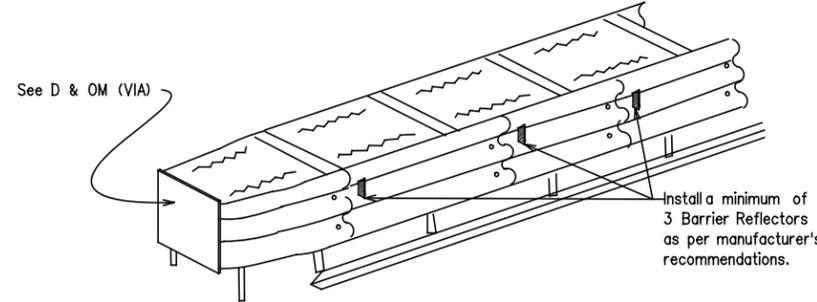


CONCRETE TRAFFIC BARRIER (CTB)

- 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

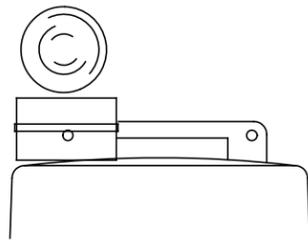
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet 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 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 light certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

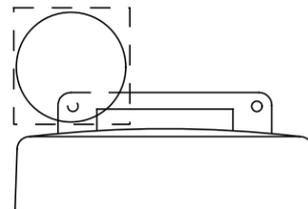
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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

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

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



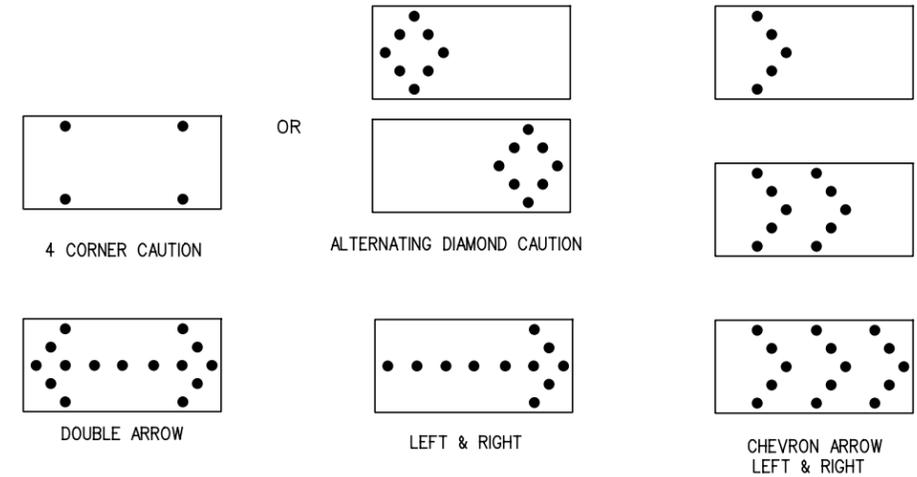
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



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

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	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07	8-14			BORDER AVE
7-13		DIST	COUNTY	SHEET NO.
				20

DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

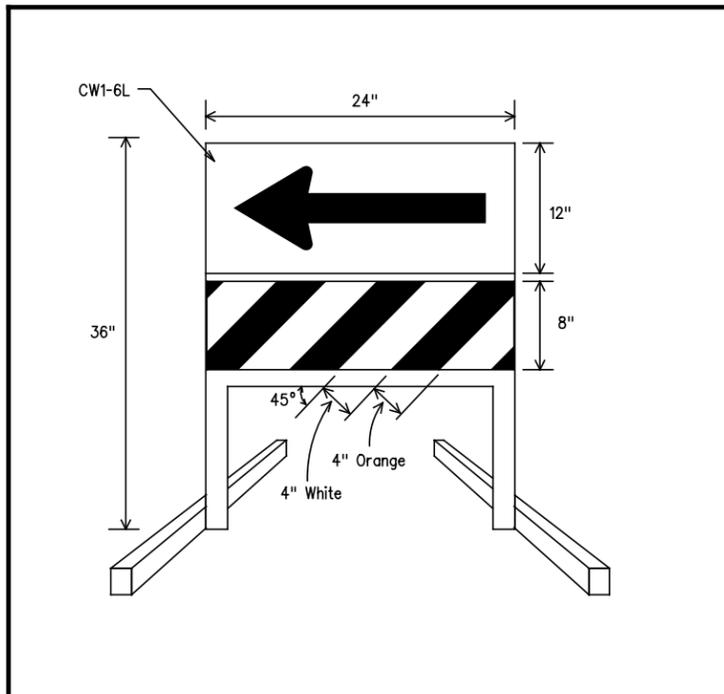
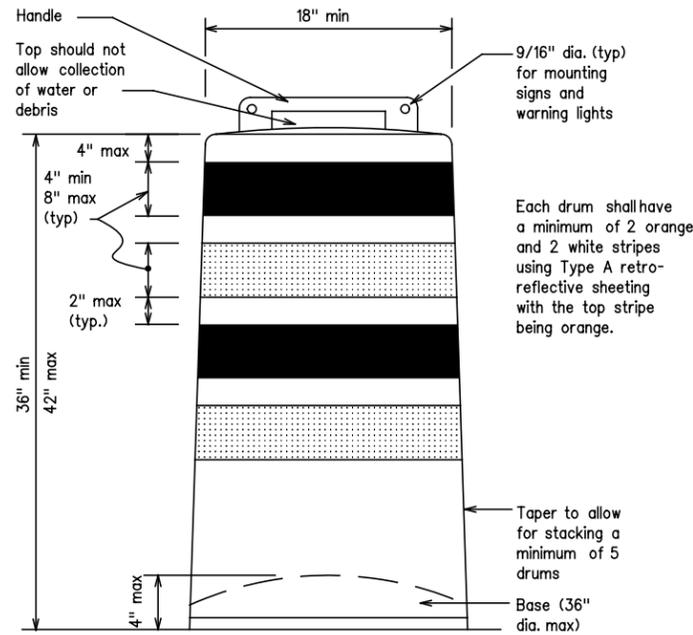
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

RETROREFLECTIVE SHEETING

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A 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.

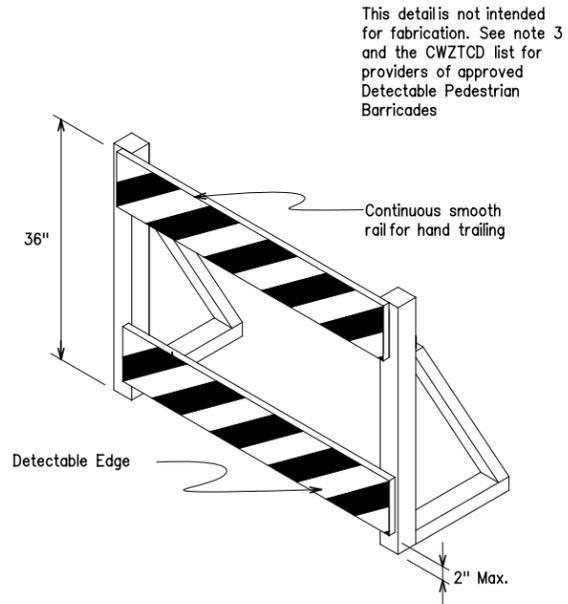
BALLAST

- 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.



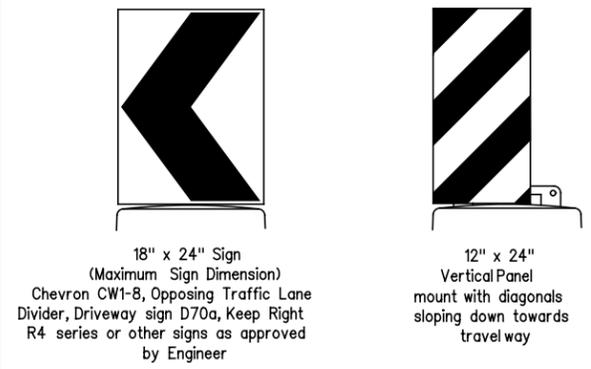
DIRECTION INDICATOR BARRICADE

- 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 (CW1-6) 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 rail suitable for hand trailing with no splinters, burrs, or sharp edges.



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

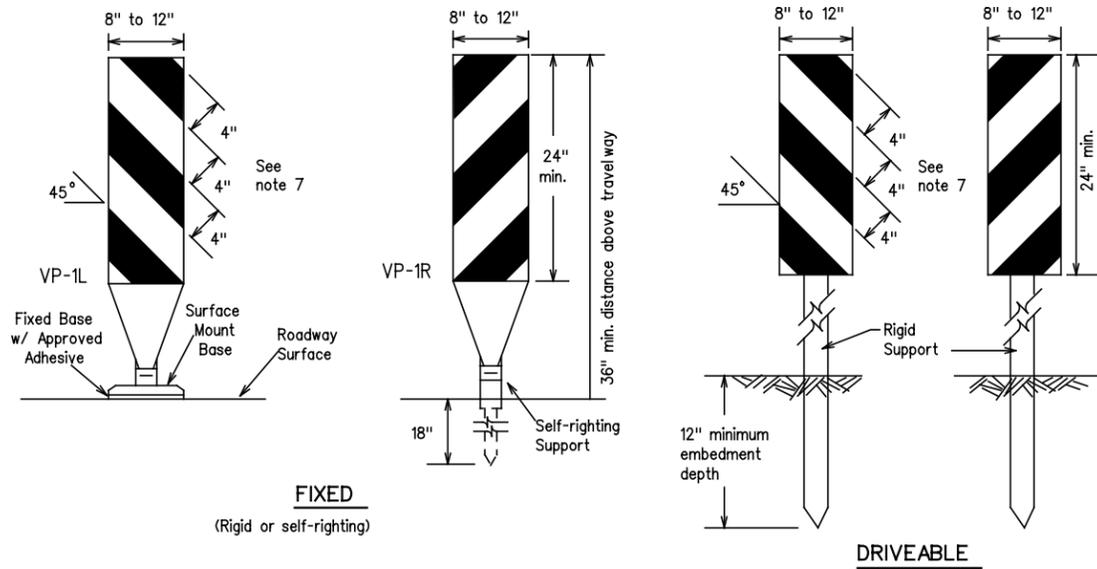
SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- 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 bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

		Traffic Operations Division Standard	
<h2>BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES</h2>			
<h3>BC(8)-14</h3>			
FILE: bc-14.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT November 2002		CONT	SECT
REVISIONS		JOB	
4-03 7-13	DIST		COUNTY
9-07 8-14	SHEET NO.		21

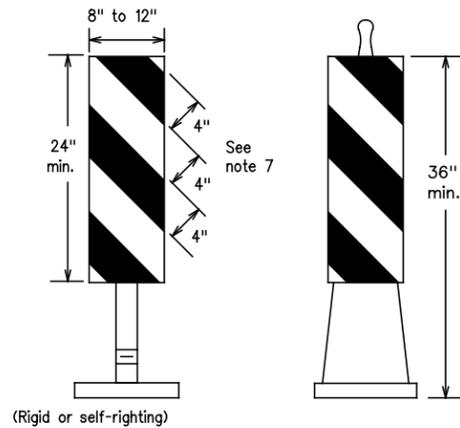
DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



FIXED
(Rigid or self-righting)

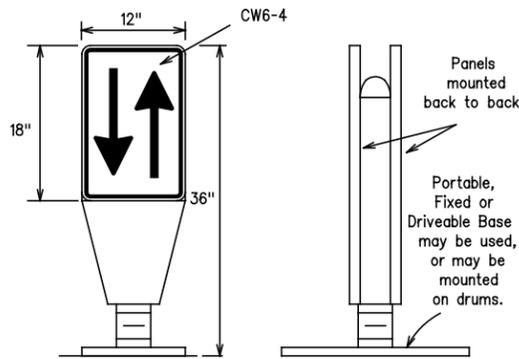
DRIVEABLE



PORTABLE

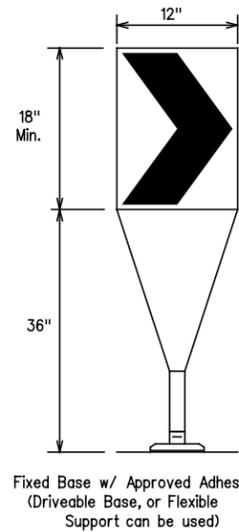
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual 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 is 36 inches or greater, a panel stripe of 6 inches shall be used.



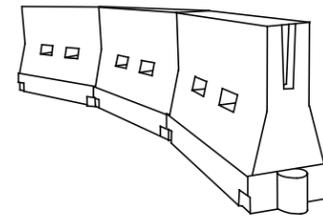
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VP's.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VP's 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.



- 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.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) 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 canes and the top of the unit shall not be less than 32 inches in height.

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

GENERAL NOTES

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths x 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 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

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	22			

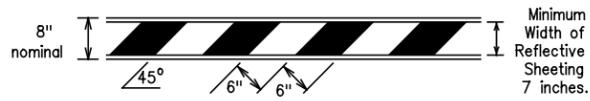
DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

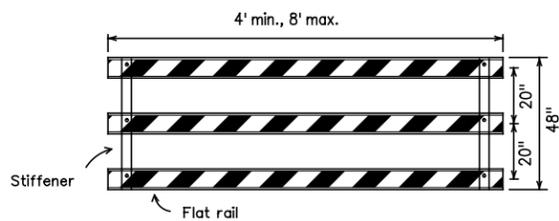
TYPE 3 BARRICADES

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. Striping for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

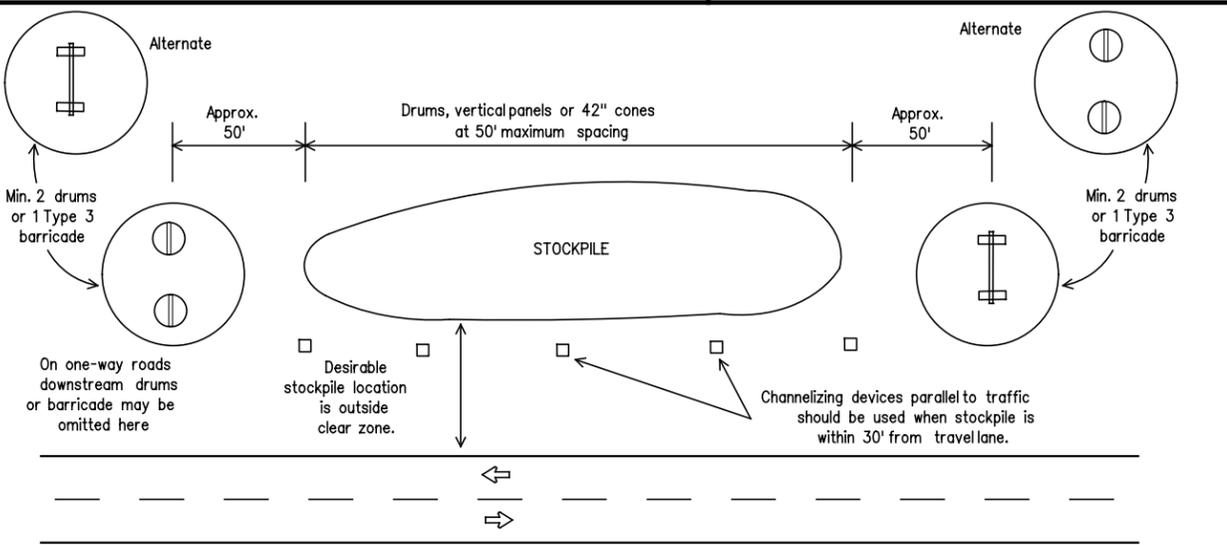


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



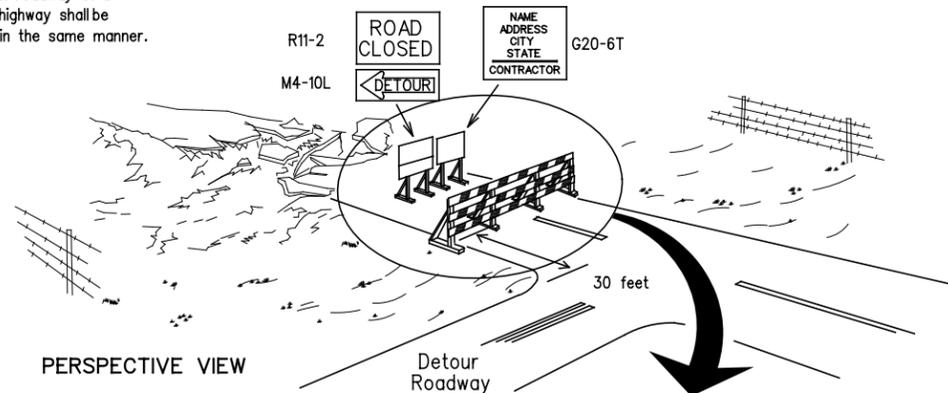
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



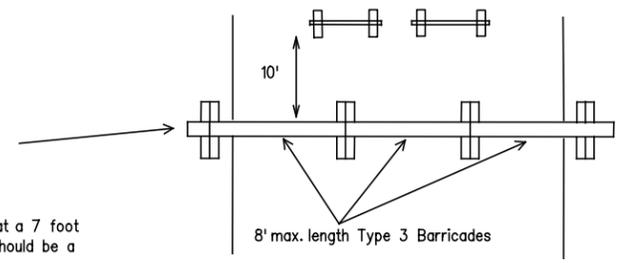
TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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



PERSPECTIVE VIEW

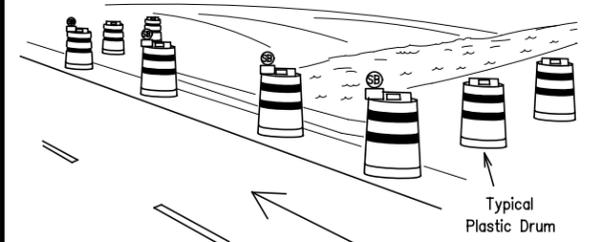
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



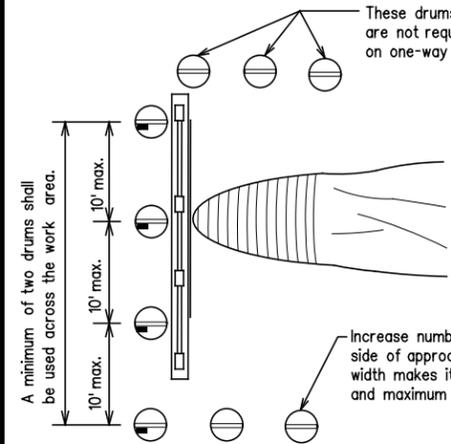
PLAN VIEW

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

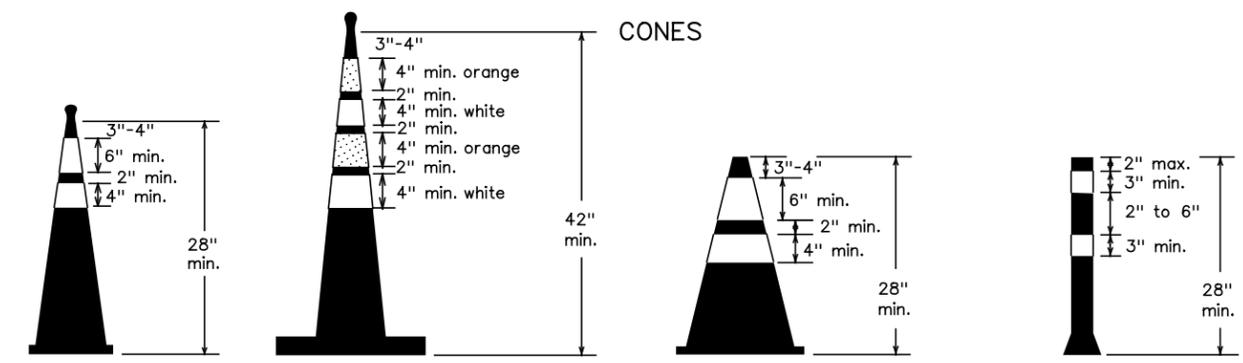


PLAN VIEW

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



Two-Piece cones

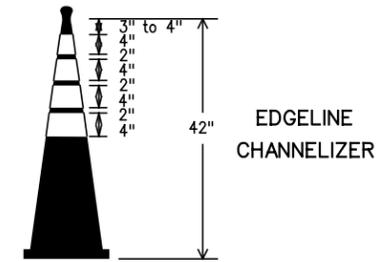
One-Piece cones

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.



EDGELINE CHANNELIZER

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

SHEET 10 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

FILE: bc-14.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13			23	

DATE: FILE:

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

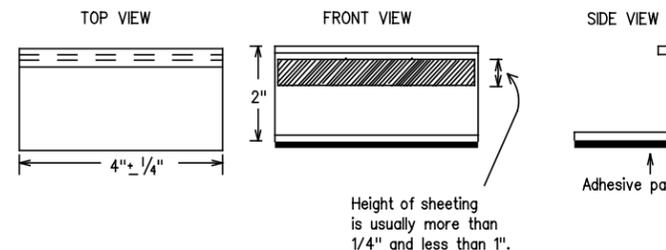
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

SHEET 11 OF 12

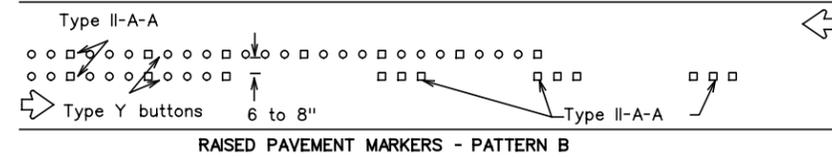
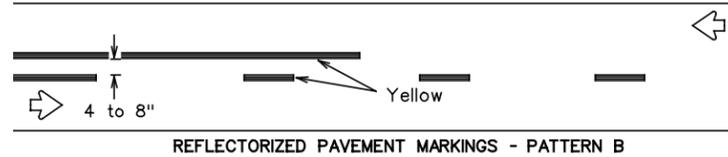
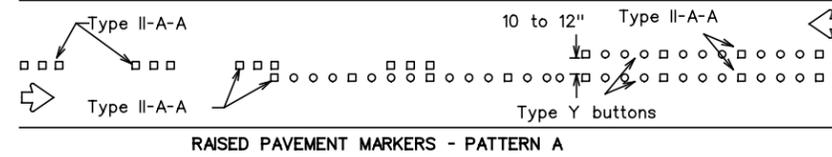
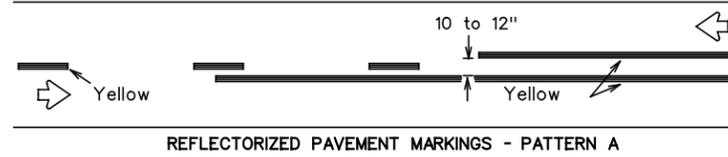


BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-14

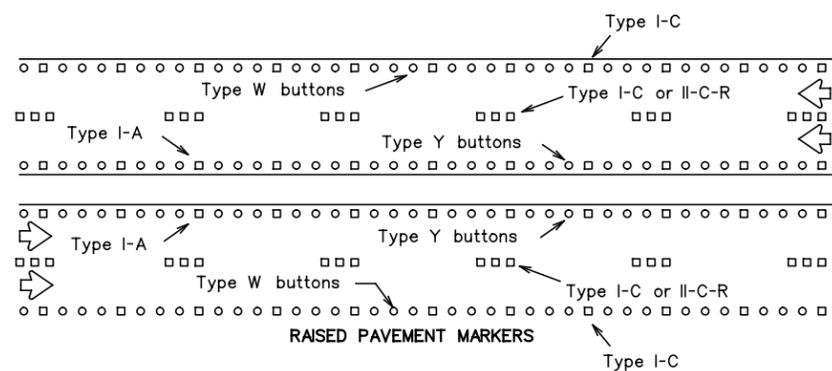
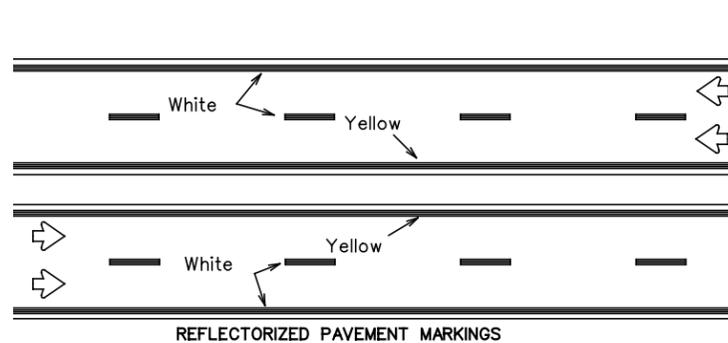
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				BORDER AVE
2-98 9-07				
1-02 7-13				
11-02 8-14				
	DIST	COUNTY	SHEET NO.	
			24	

PAVEMENT MARKING PATTERNS



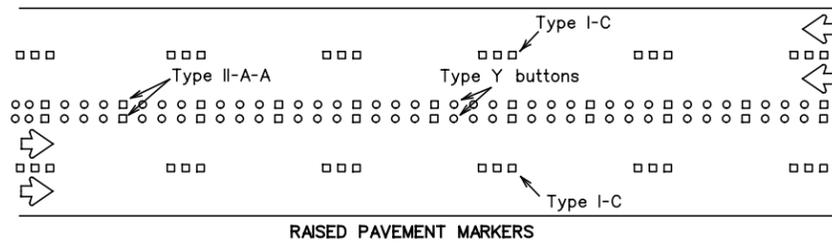
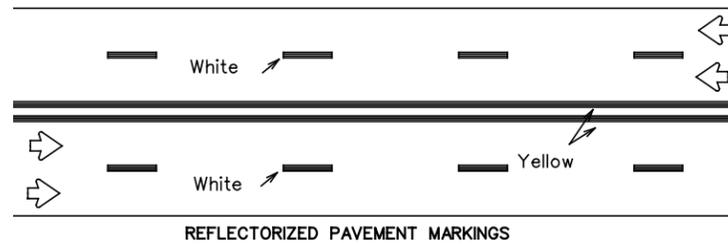
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

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



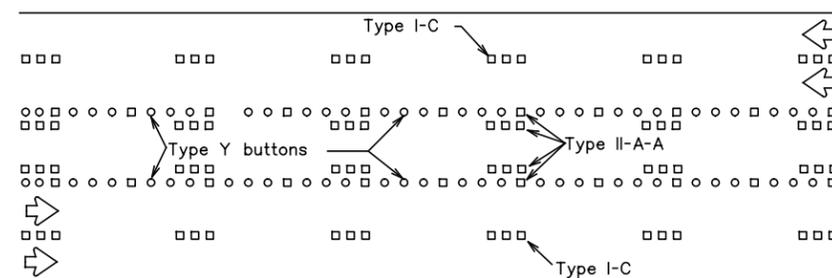
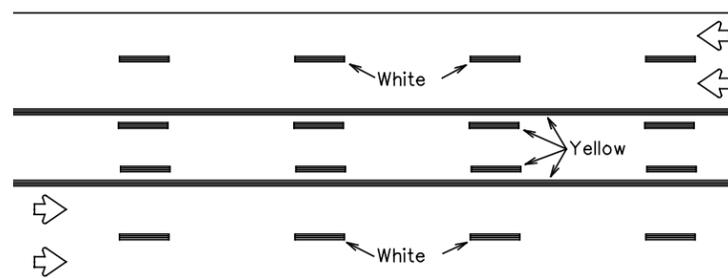
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

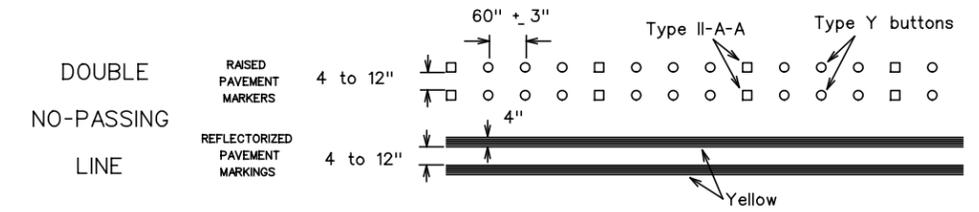
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



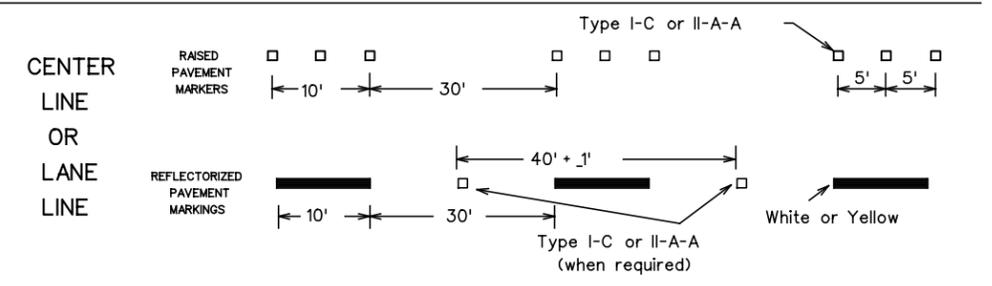
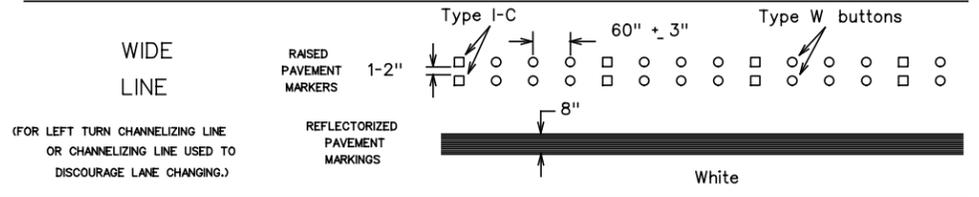
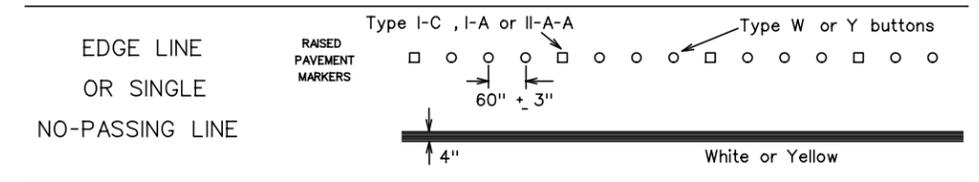
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

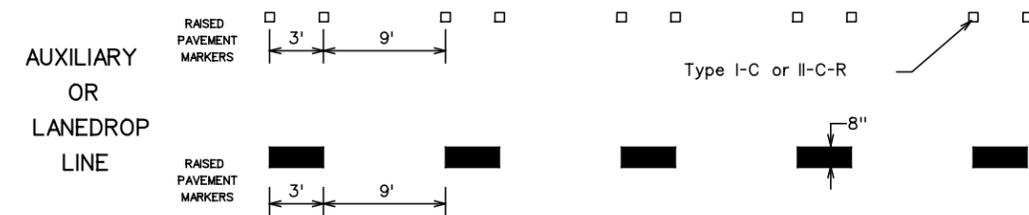
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES

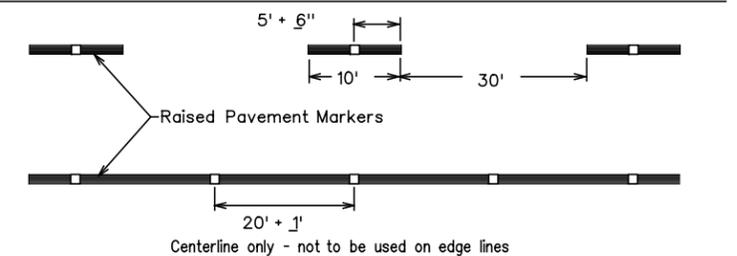


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

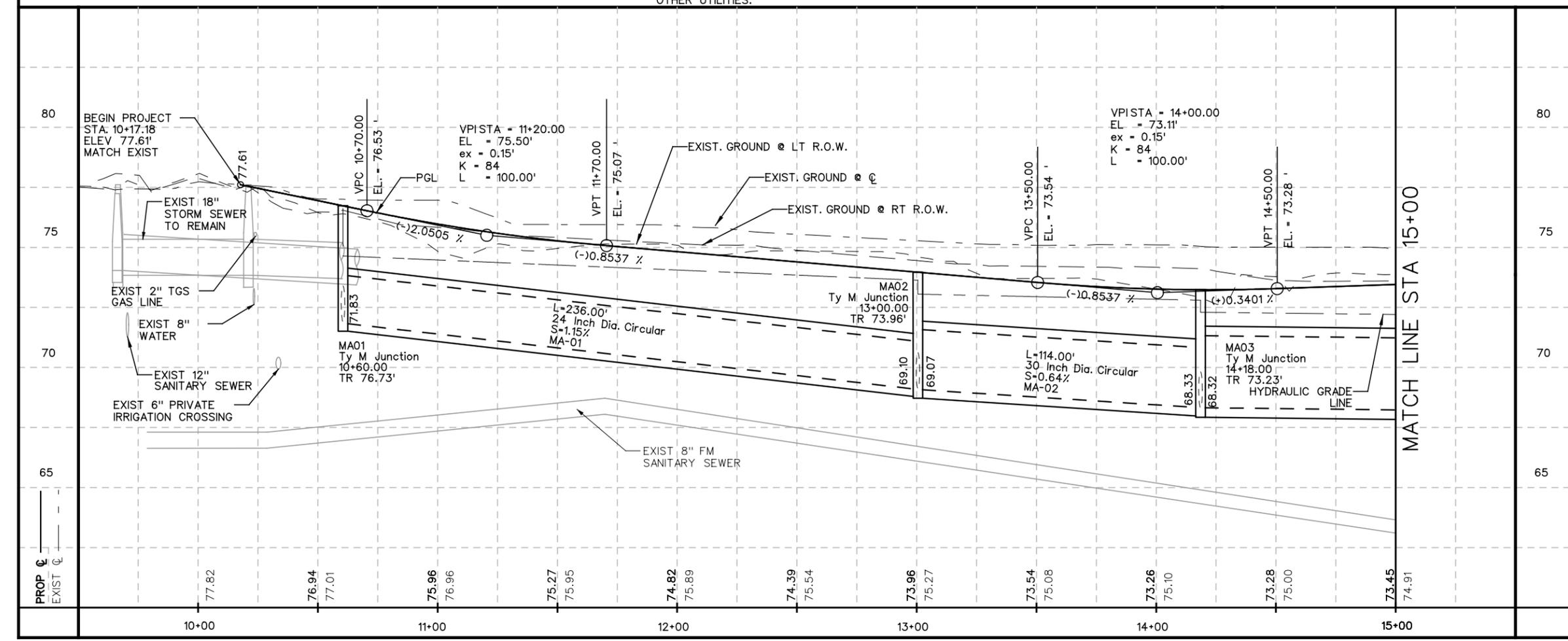
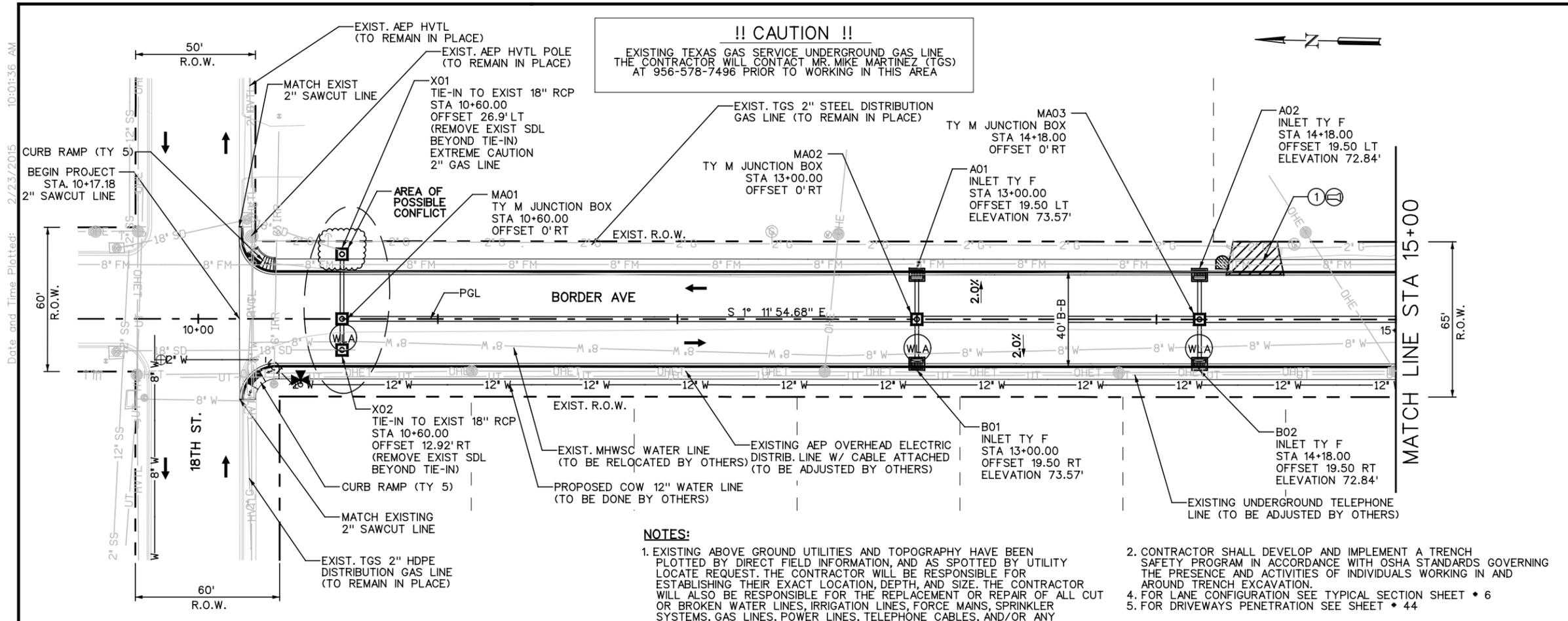
BC(12)-14

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."

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				
1-97 9-07				BORDER AVE
2-98 7-13				
11-02 8-14				
	DIST	COUNTY		SHEET NO.
				25

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

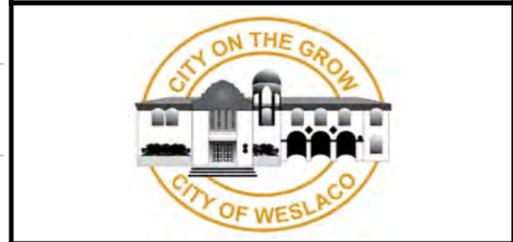
DATE: FILE:



NO.	DATE	REVISION	APP.

STATE OF TEXAS
 ROBERTO FINA CARRAL
 116857
 LICENSED PROFESSIONAL ENGINEER

Roberto Fina Carral
 ROBERTO FINA CARRAL
 2/23/2015
 DATE



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

TBPE F-1640

BORDER AVE.

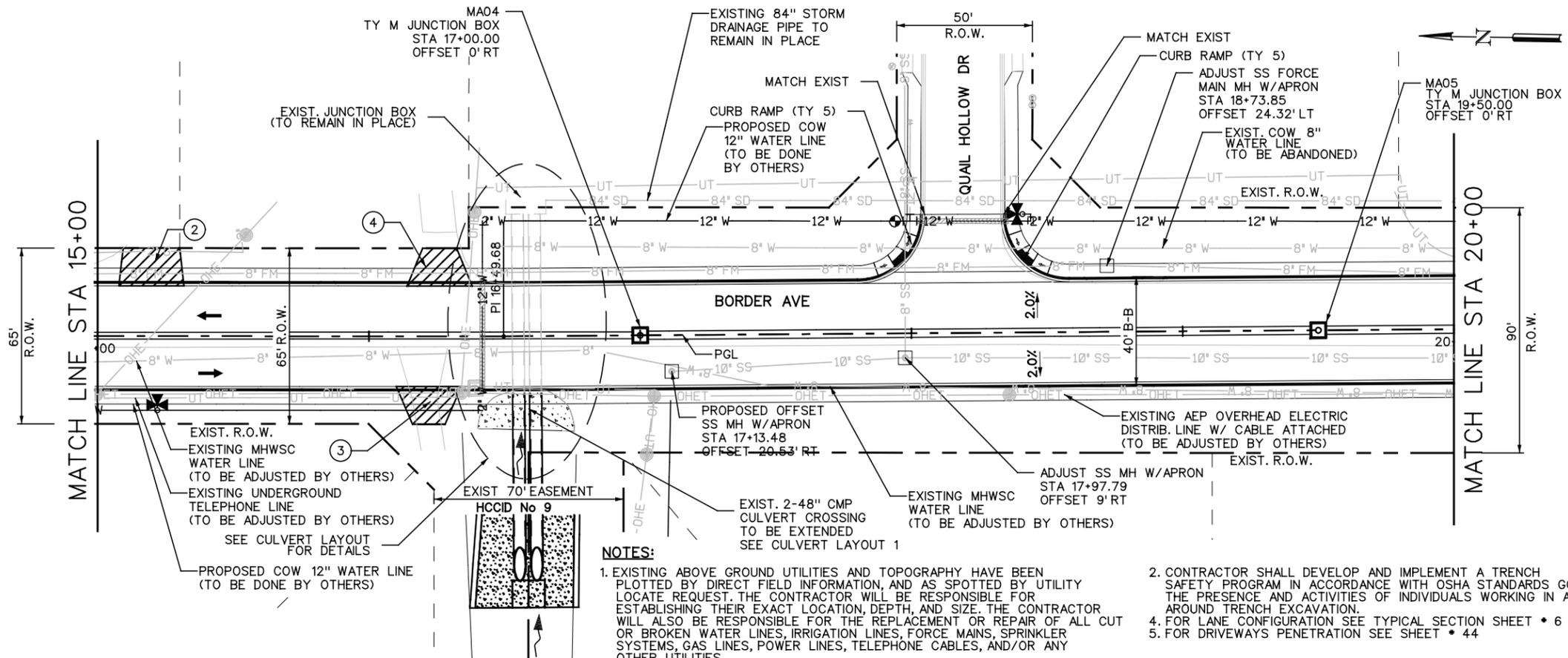
PLAN & PROFILE SHEET

SCALE: 1"=50'-H
1"=5'-V

SHEET 1 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		26
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO. BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:37 AM



LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- ▨ PROPOSED DRIVEWAY
- # # EXIST. # (DIAM INCH) WATER LINE
- # FM EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE EXIST. UNDERGROUND ELECTRIC LINE
- OHEC EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ DRIVEWAY NUMBER
- ⊗ EXISTING MAILBOX TO BE REPLACED
- ⊙ TOP OF RIM
- ⊖ REMOVE CONCRETE PIPE
- ⊖ REMOVE SAFETY END TREATMENT(S)
- ⊕ ADJUST EXISTING GATE
- WLA WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ⊕ PROPOSED CURB RAMP TYPE 5

- NOTES:**
- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44

NO.	DATE	REVISION	APP.

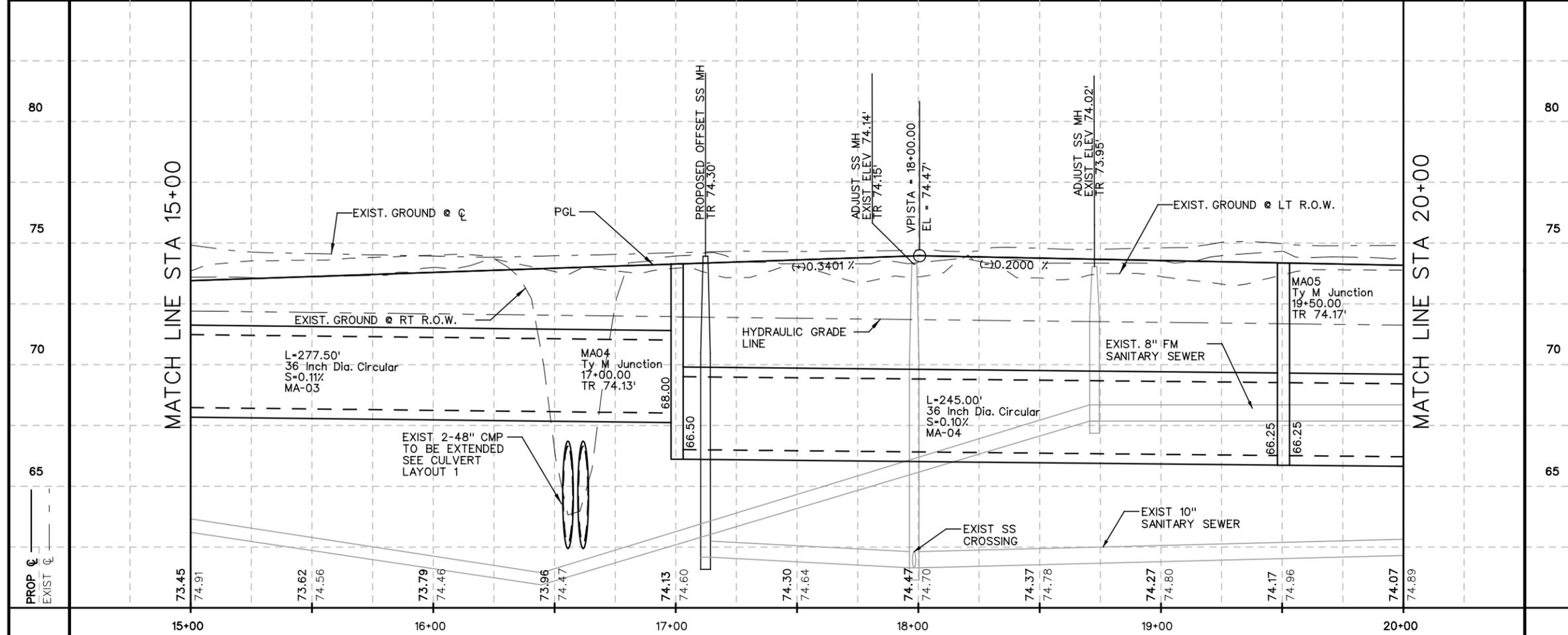


Roberto Fina Carral
 ROBERTO FINA CARRAL DATE 2/23/2015



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898

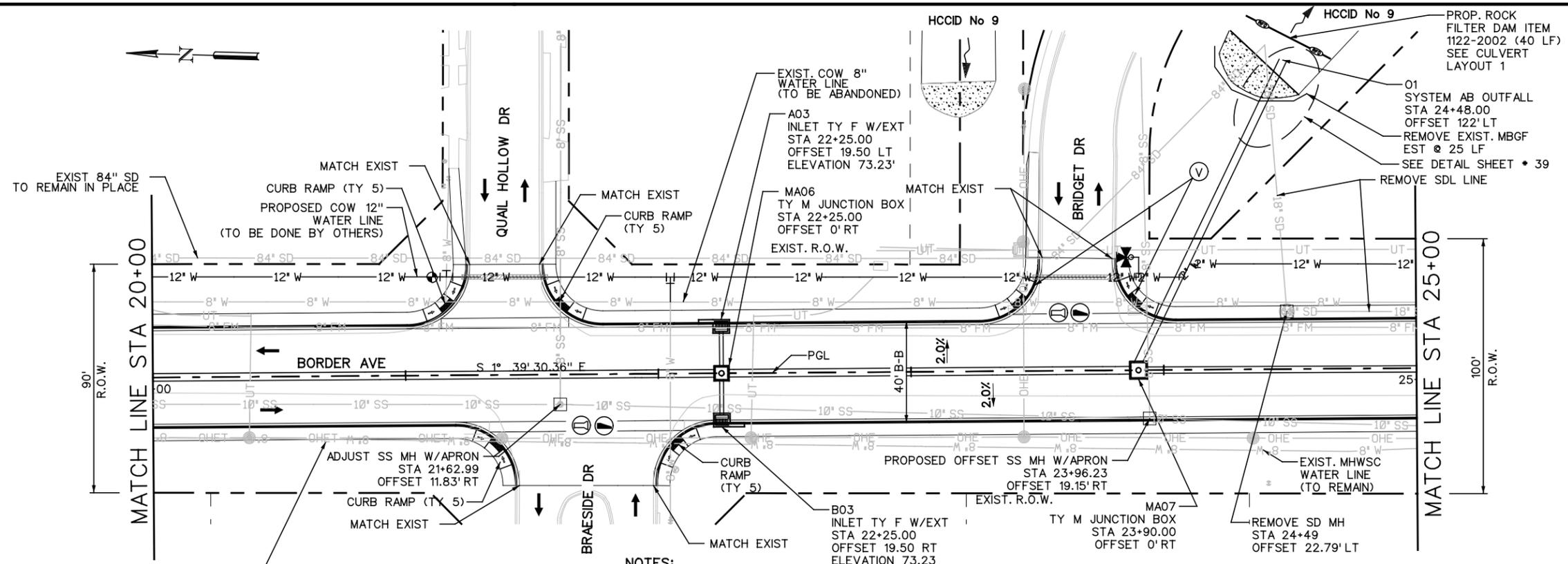
BORDER AVE.
PLAN & PROFILE SHEET



SCALE :1"=50'-H
 1"=5'-V SHEET 2 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		27
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:37 AM



LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- ▨ PROPOSED DRIVEWAY
- # # EXIST. # (DIAM INCH) WATER LINE
- # FM EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE EXIST. UNDERGROUND ELECTRIC LINE
- OHEC EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ DRIVEWAY NUMBER
- ⊗ EXISTING MAILBOX TO BE REPLACED
- ⊙ TOP OF RIM
- ⊖ REMOVE CONCRETE PIPE
- ⊖ REMOVE SAFETY END TREATMENT(S)
- ⊕ ADJUST EXISTING GATE
- ⊖ WLA WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ⊖ PROPOSED CURB RAMP TYPE 5

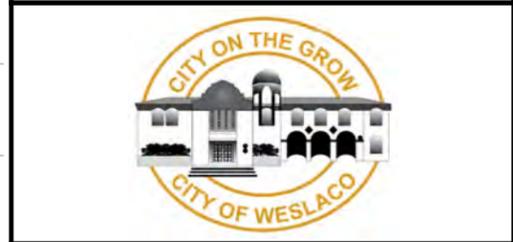
EXISTING AEP OVERHEAD ELECTRIC DISTRIB. LINE W/ CABLE ATTACHED (TO BE ADJUSTED BY OTHERS)

- NOTES:**
- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
116857
LICENSED PROFESSIONAL ENGINEER

[Signature]
ROBERTO FINA CARRAL
2/23/2015
DATE



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

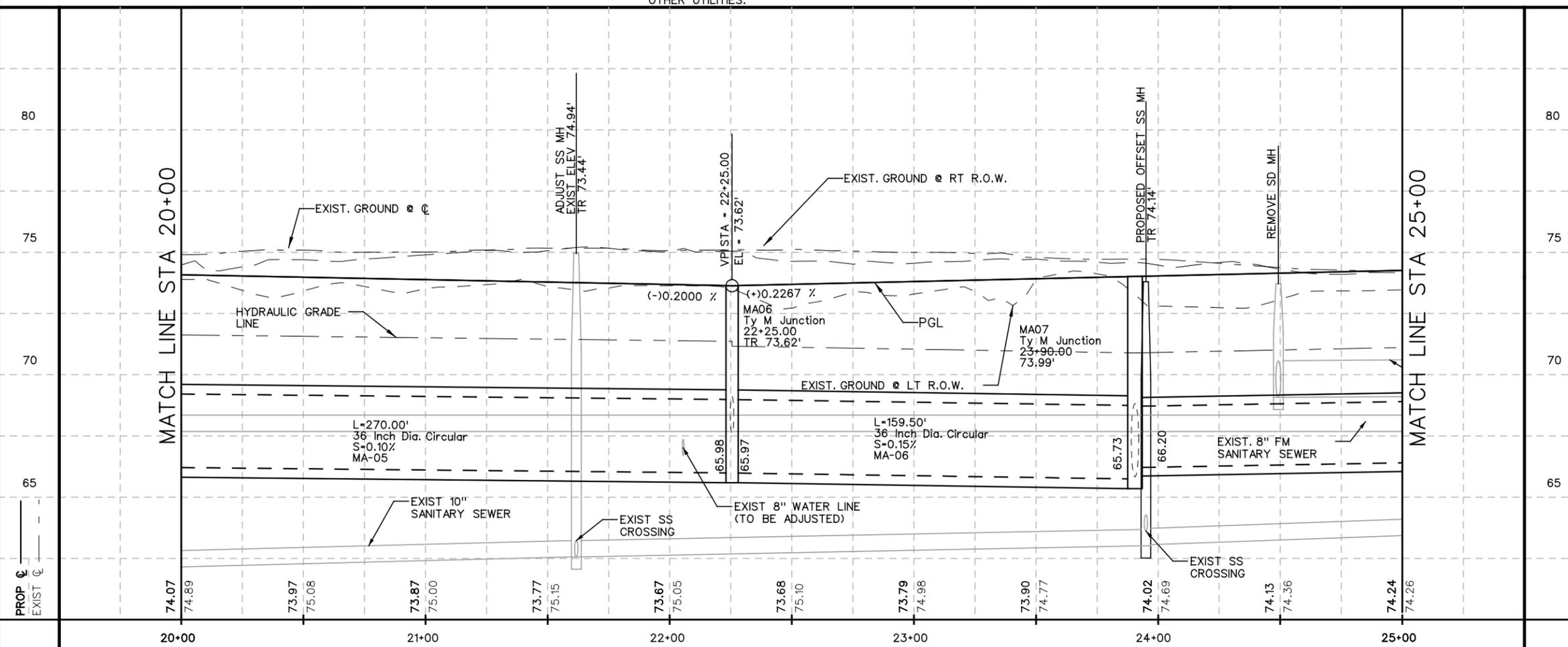
BORDER AVE.

PLAN & PROFILE SHEET

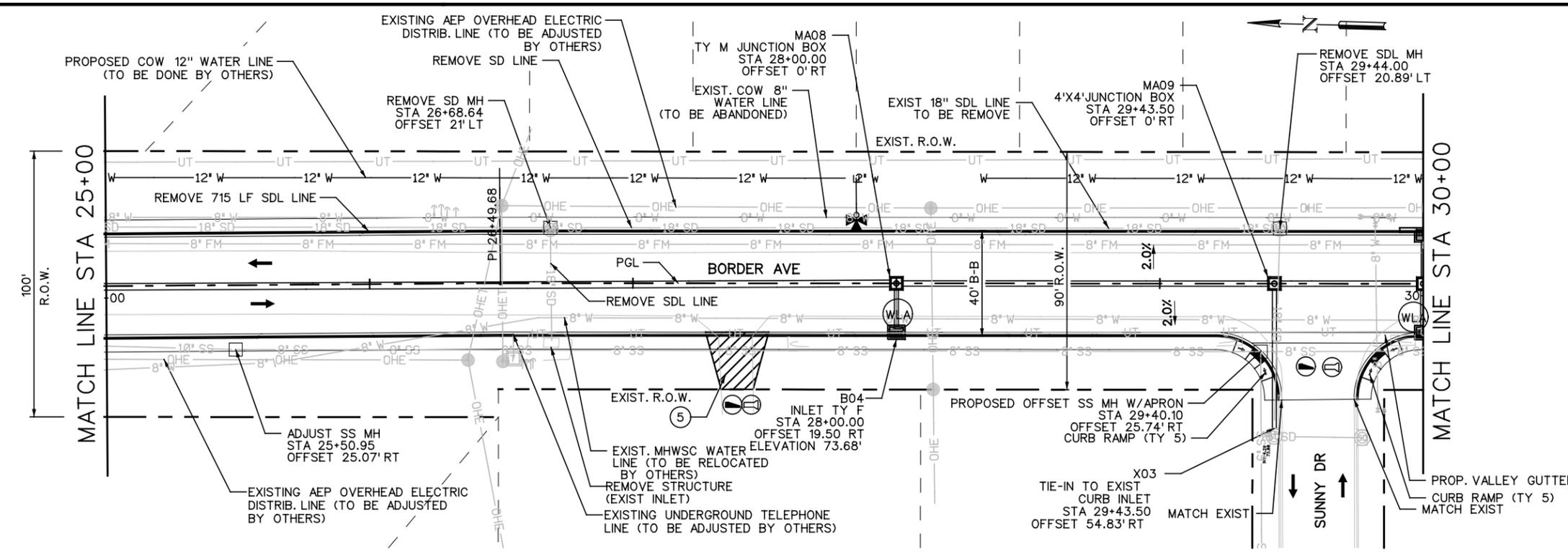
SCALE: 1"=50'-H
1"=5'-V

SHEET 3 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		28
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



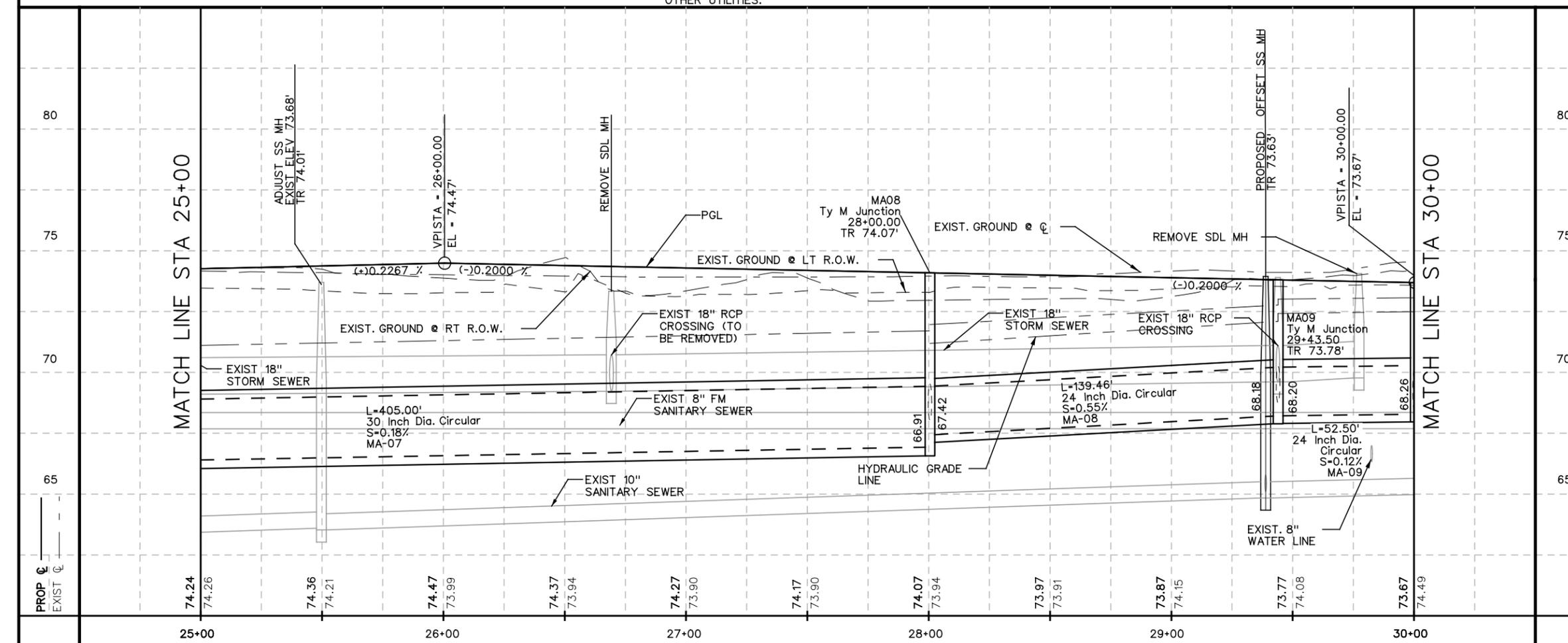
Date and Time Plotted: 2/23/2015 10:01:38 AM



LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- ▨ PROPOSED DRIVEWAY
- # W --- EXIST. # (DIAM INCH) WATER LINE
- # FM --- EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS --- EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G --- EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO --- EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT --- EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE --- EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL --- EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE --- EXIST. UNDERGROUND ELECTRIC LINE
- OHEC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ --- DRIVEWAY NUMBER
- ⊗ --- EXISTING MAILBOX TO BE REPLACED
- ⊕ --- TOP OF RIM
- ⊖ --- REMOVE CONCRETE PIPE
- ⊖ --- REMOVE SAFETY END TREATMENT(S)
- ⊕ --- ADJUST EXISTING GATE
- WLA --- WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ⊕ --- PROPOSED CURB RAMP TYPE 5

- NOTES:**
- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
DATE: 2/23/2015

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

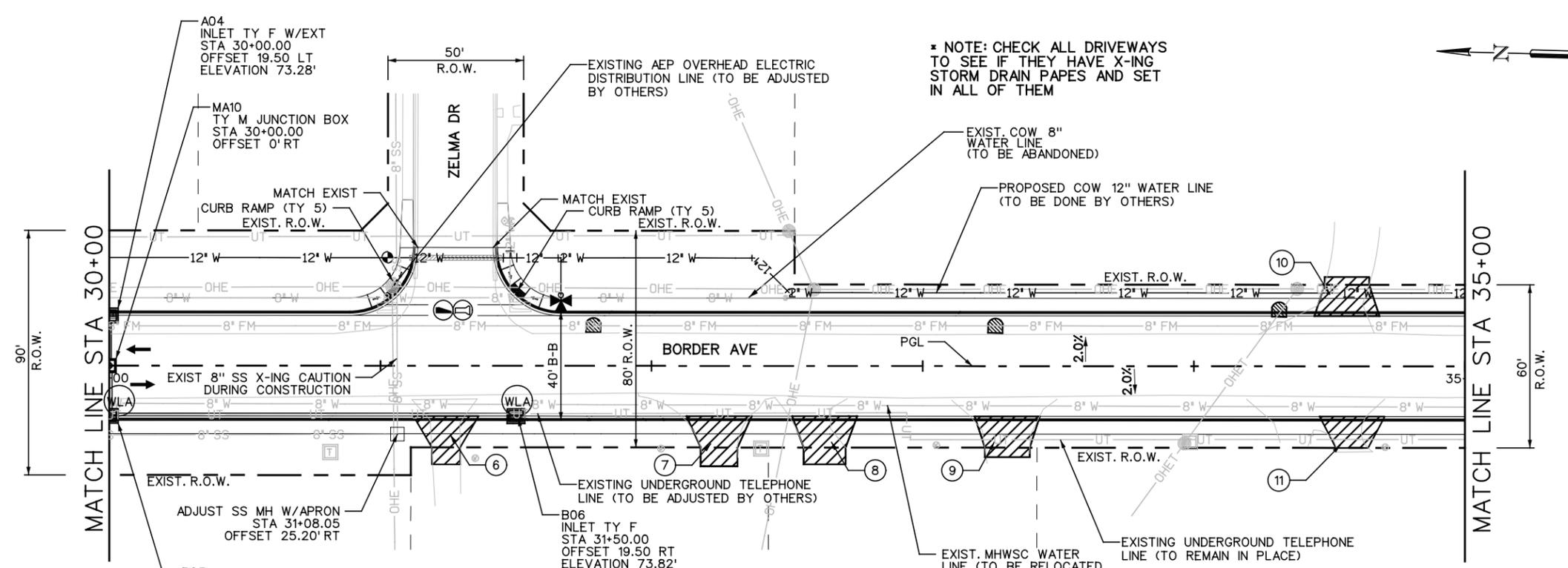
BORDER AVE.

PLAN & PROFILE SHEET

SCALE: 1"=50'-H
1"=5'-V SHEET 4 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		29
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

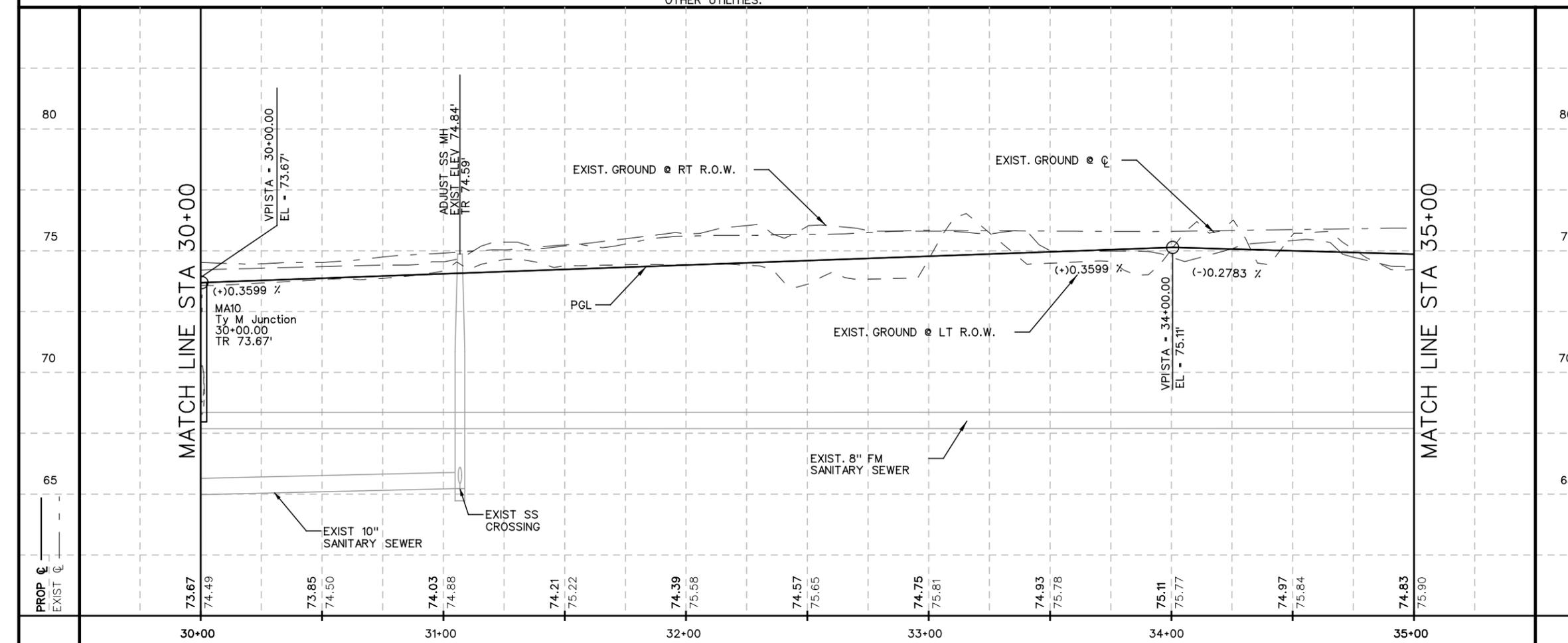
Date and Time Plotted: 2/23/2015 10:01:39 AM



LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- [Hatched Box] PROPOSED DRIVEWAY
- # W --- EXIST. # (DIAM INCH) WATER LINE
- # FM --- EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS --- EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G --- EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO --- EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT --- EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE --- EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL --- EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE --- EXIST. UNDERGROUND ELECTRIC LINE
- OHEC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- (#) --- DRIVEWAY NUMBER
- (TR) --- EXISTING MAILBOX TO BE REPLACED
- (TR) --- TOP OF RIM
- (TR) --- REMOVE CONCRETE PIPE
- (TR) --- REMOVE SAFETY END TREATMENT(S)
- (TR) --- ADJUST EXISTING GATE
- (WLA) --- WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- (V) --- PROPOSED CURB RAMP TYPE 5

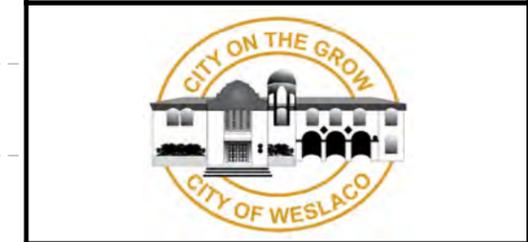
- NOTES:**
- EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION, AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

STATE OF TEXAS

 ROBERTO FINA CARRAL
 116857
 LICENSED PROFESSIONAL ENGINEER
 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898
 TBPE F-1640

BORDER AVE.

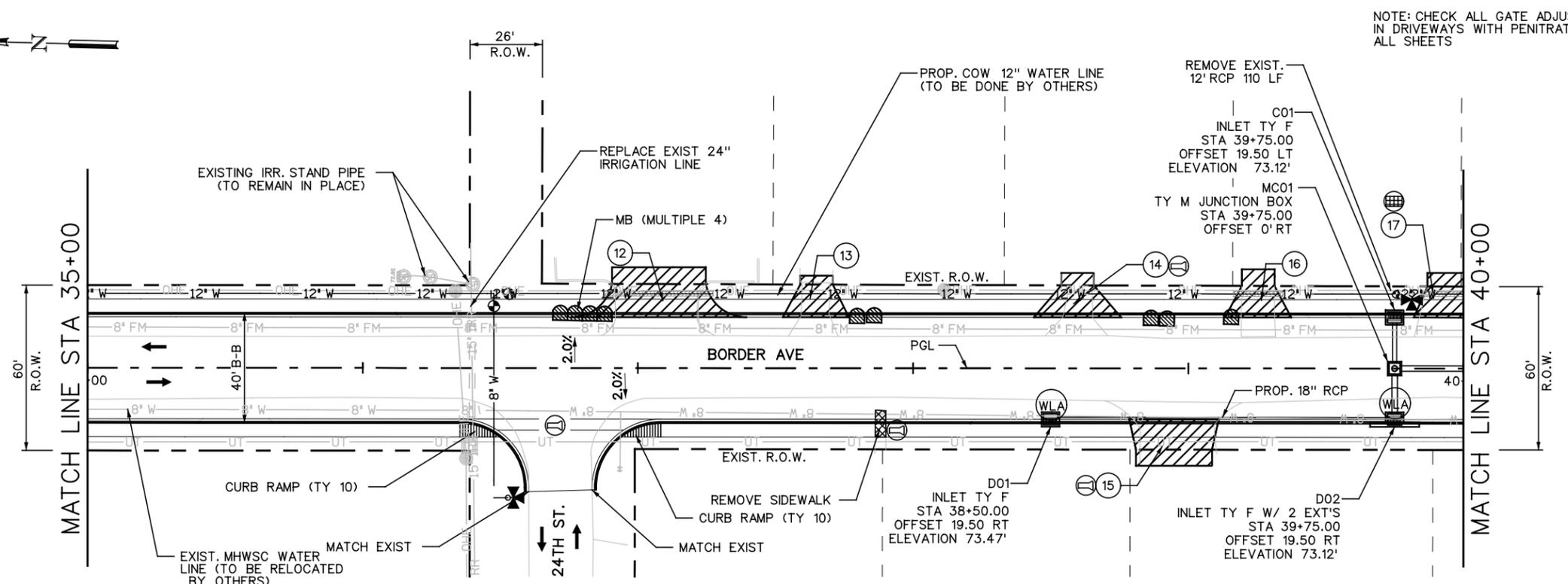
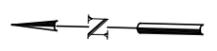
PLAN & PROFILE SHEET

SCALE :1"=50'-H
 1"=5'-V

SHEET 5 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		30
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:40 AM

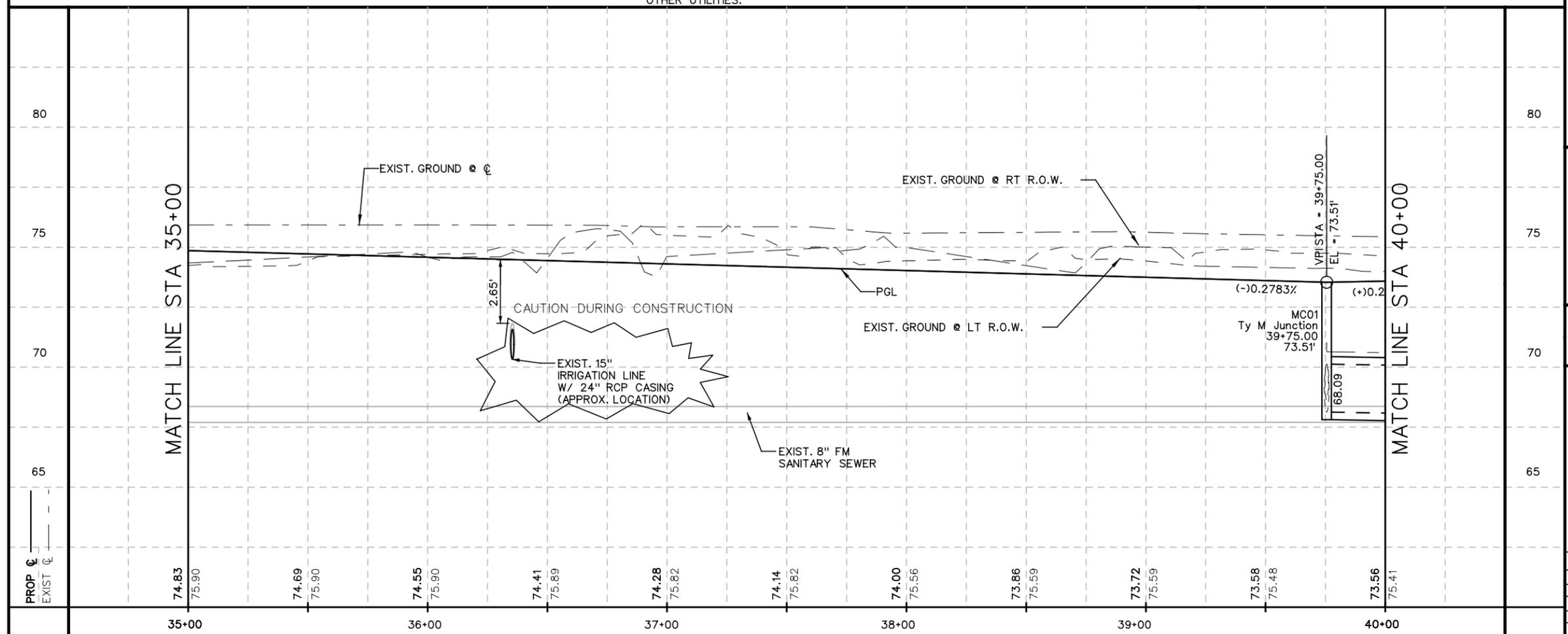


NOTE: CHECK ALL GATE ADJUSTMENT IN DRIVEWAYS WITH PENETRATION IN ALL SHEETS

LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- PROPOSED DRIVEWAY
- # W --- EXIST. # (DIAM INCH) WATER LINE
- # FM --- EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS --- EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G --- EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO --- EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT --- EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE --- EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL --- EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE --- EXIST. UNDERGROUND ELECTRIC LINE
- OHEC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ --- DRIVEWAY NUMBER
- EXISTING MAILBOX TO BE REPLACED
- ⊖ --- TOP OF RIM
- ⊖ --- REMOVE CONCRETE PIPE
- ⊖ --- REMOVE SAFETY END TREATMENT(S)
- ⊖ --- ADJUST EXISTING GATE
- WLA --- WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ∇ --- PROPOSED CURB RAMP TYPE 5

- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR 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. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 4. FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 5. FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
116857
LICENSED PROFESSIONAL ENGINEER

[Signature]
ROBERTO FINA CARRAL
DATE: 2/23/2015



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

BORDER AVE.

PLAN & PROFILE SHEET

SCALE: 1"=50'-H
1"=5'-V

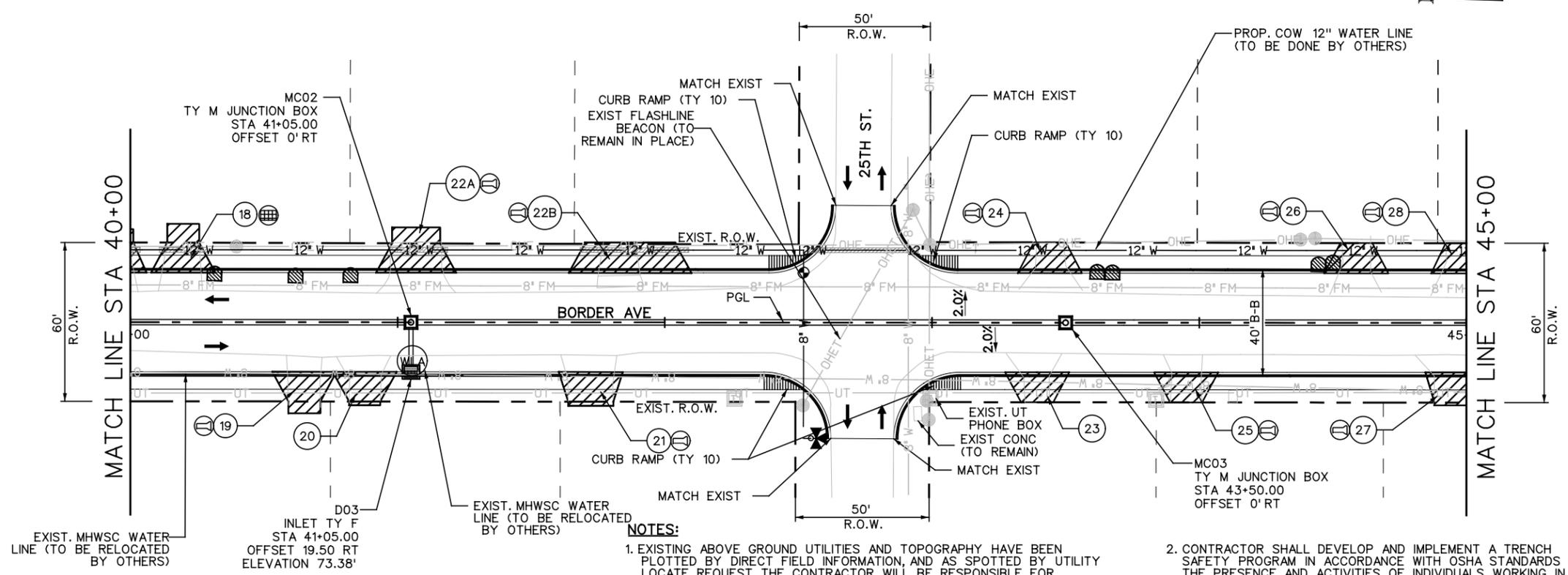
SHEET 6 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		31
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:41 AM

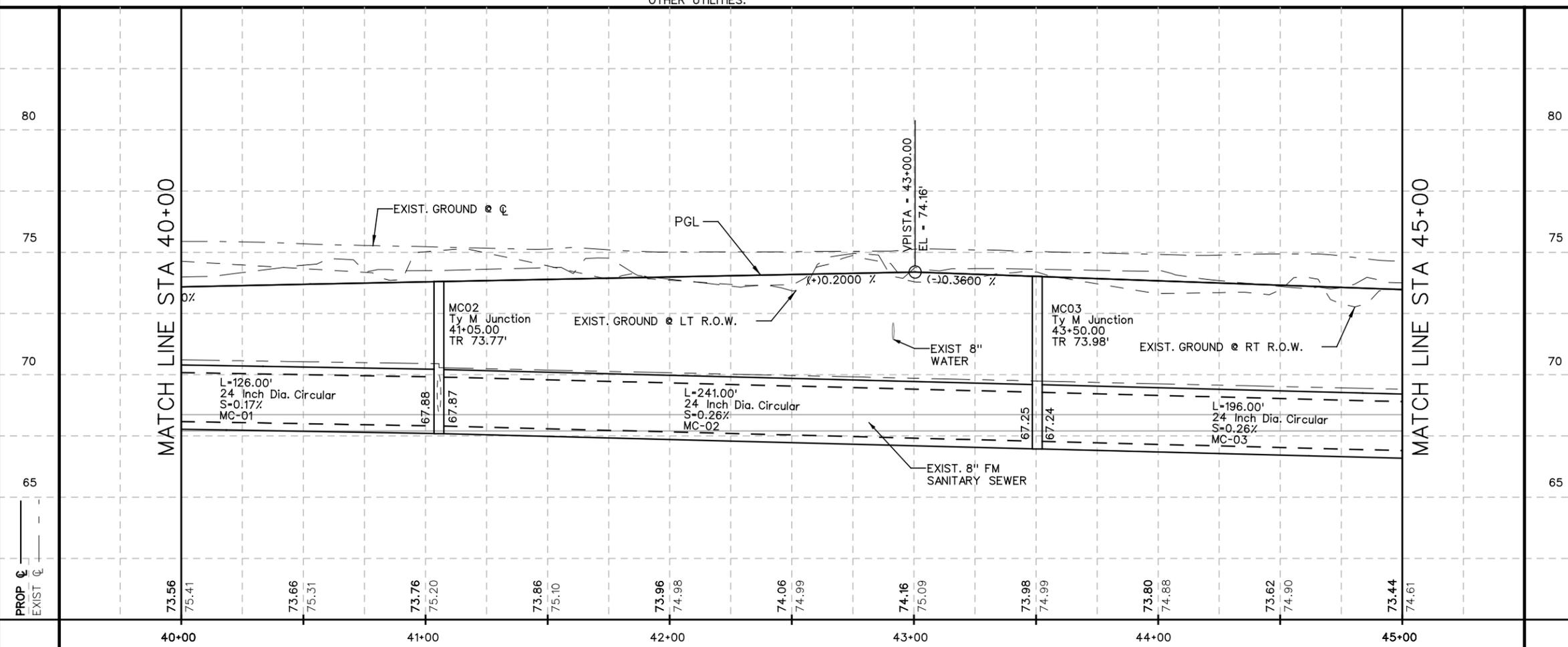
LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
-  PROPOSED DRIVEWAY
- # # EXIST. # (DIAM INCH) WATER LINE
- # FM EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE EXIST. UNDERGROUND ELECTRIC LINE
- OHEC EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ DRIVEWAY NUMBER
-  EXISTING MAILBOX TO BE REPLACED
-  TOP OF RIM
-  REMOVE CONCRETE PIPE
-  REMOVE SAFETY END TREATMENT(S)
-  ADJUST EXISTING GATE
-  WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
-  PROPOSED CURB RAMP TYPE 5



NOTES:

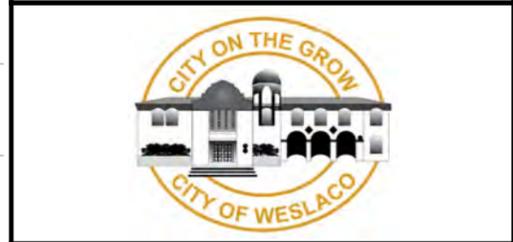
1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION, AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
4. FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
5. FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.



 ROBERTO FINA CARRAL 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898
 TBPE F-1640

BORDER AVE.

PLAN & PROFILE SHEET

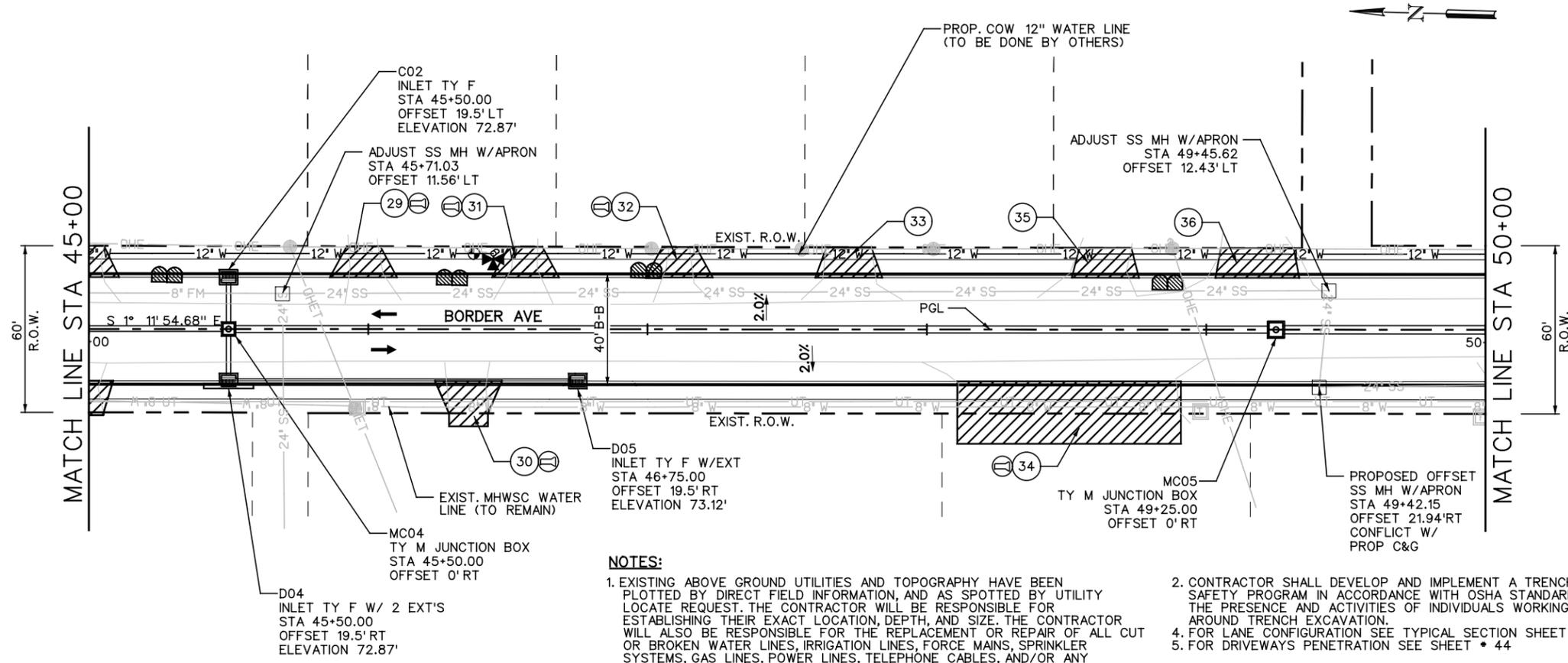
SCALE: 1"=50'-H
1"=5'-V SHEET 7 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		32
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

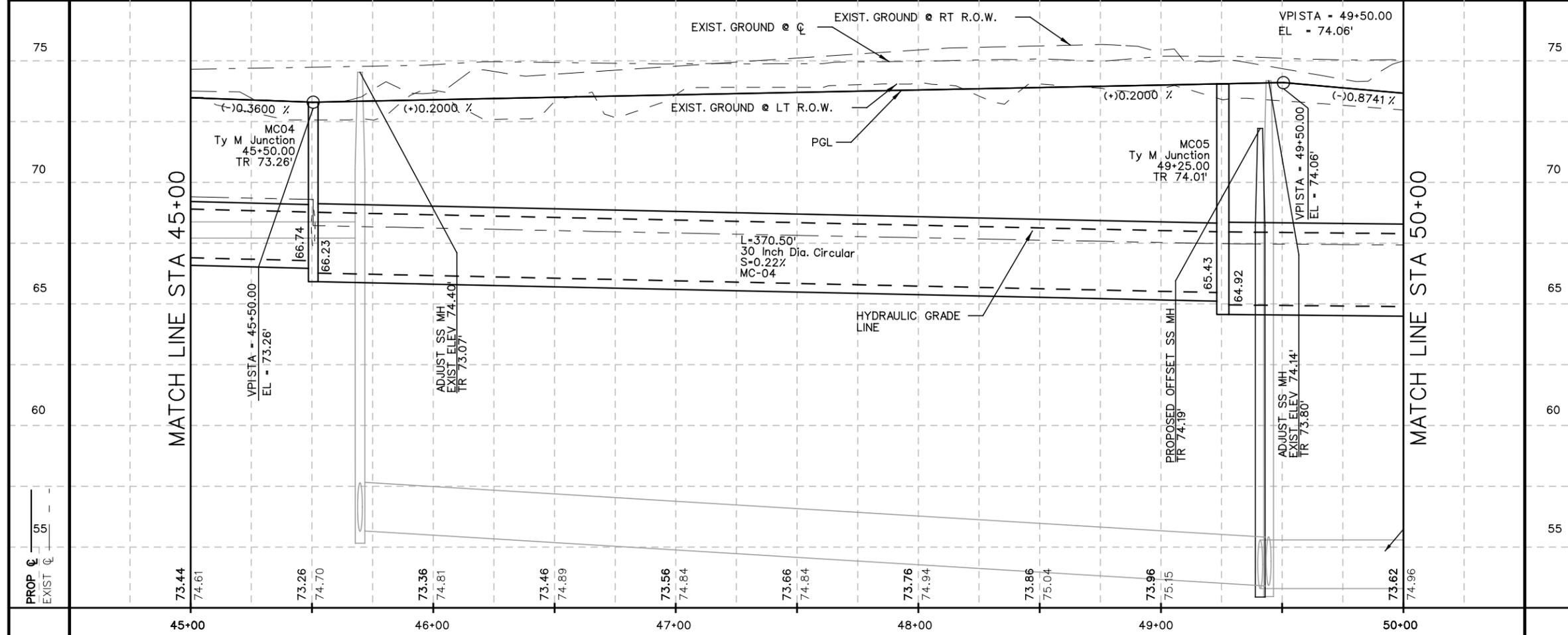
Date and Time Plotted: 2/23/2015 10:01:41 AM

LEGEND

- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- ▨ PROPOSED DRIVEWAY
- # W — EXIST. # (DIAM INCH) WATER LINE
- # FM — EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS — EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G — EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO — EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT — EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE — EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL — EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE — EXIST. UNDERGROUND ELECTRIC LINE
- OHEC — EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC — EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ DRIVEWAY NUMBER
- ⊗ EXISTING MAILBOX TO BE REPLACED
- ⊖ TOP OF RIM
- ⊘ REMOVE CONCRETE PIPE
- ⊙ REMOVE SAFETY END TREATMENT(S)
- ⊕ ADJUST EXISTING GATE
- ⊖ WLA WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ⊖ PROPOSED CURB RAMP TYPE 5



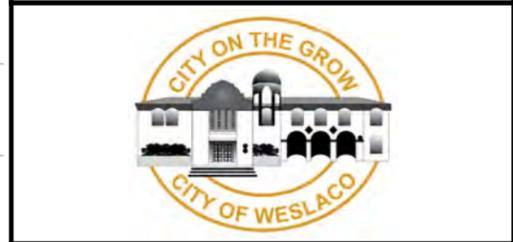
- NOTES:**
- EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION, AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

STATE OF TEXAS

 ROBERTO FINA CARRAL
 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898

BORDER AVE.

PLAN & PROFILE SHEET

SCALE: 1"=50'-H
 1"=5'-V

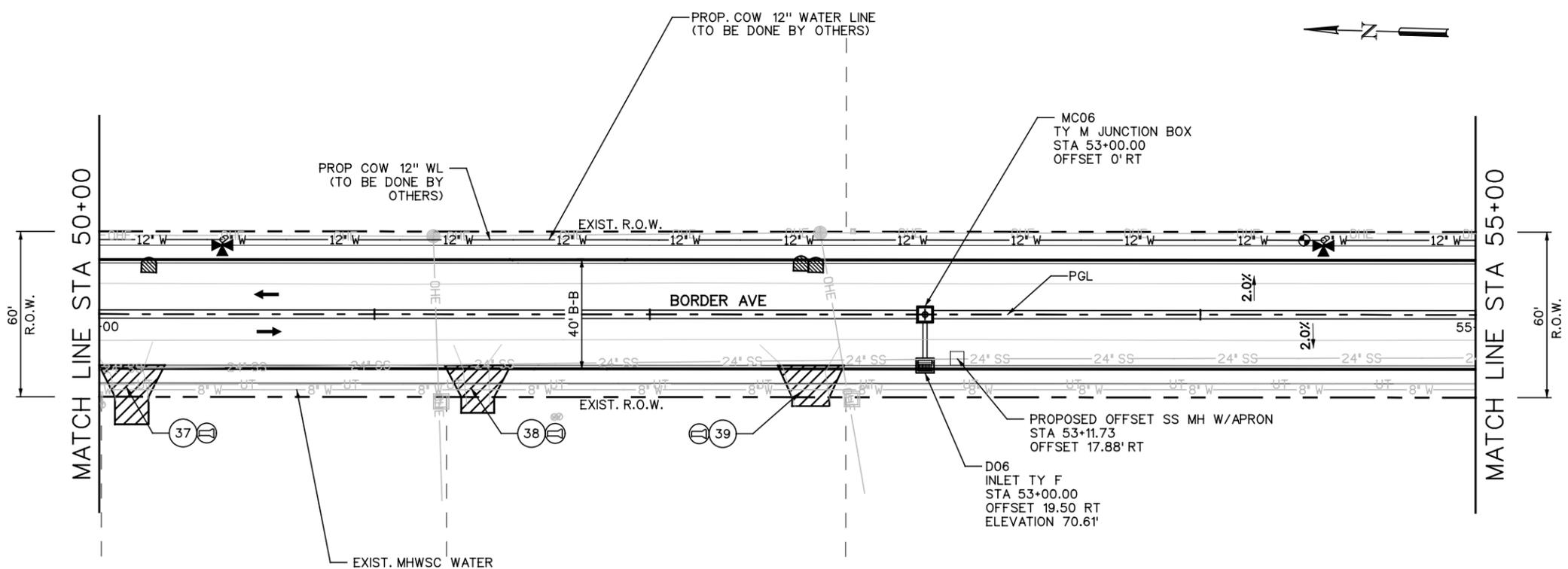
SHEET 8 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		33
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

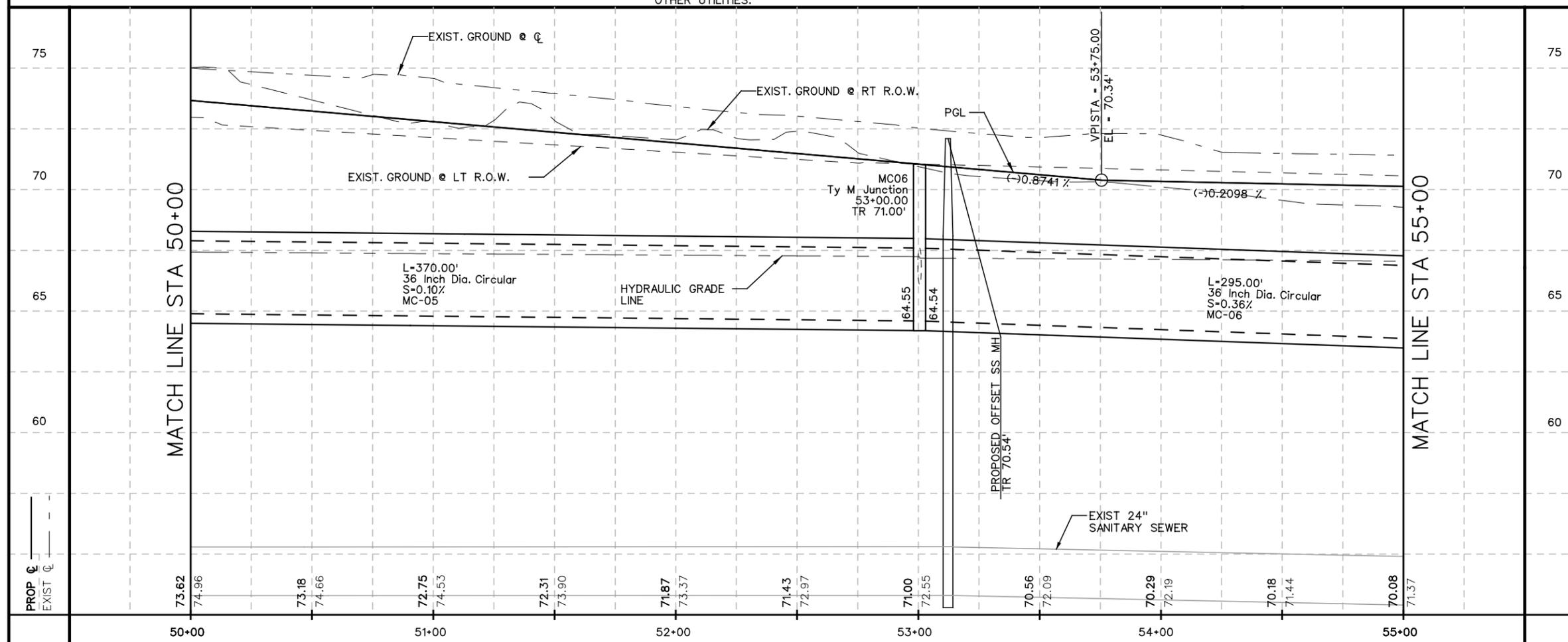
Date and Time Plotted: 2/23/2015 10:01:42 AM

LEGEND

	EXISTING R.O.W.
	PROPOSED R.O.W.
	PROPOSED DRIVEWAY
# W	EXIST. # (DIAM INCH) WATER LINE
# FM	EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
# SS	EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
# G	EXIST. # (DIAM INCH) TGS GAS PIPELINE
UFO	EXIST. UNDERGROUND FIBER OPTIC CABLE
UT	EXIST. UNDERGROUND CABLE/TELEPHONE LINE
OHE	EXIST. AEP OVERHEAD ELECTRIC LINE
HVTL	EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
UE	EXIST. UNDERGROUND ELECTRIC LINE
OHEC	EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
OHEFC	EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
⊕	DRIVEWAY NUMBER
TR	EXISTING MAILBOX TO BE REPLACED TOP OF RIM
⊖	REMOVE CONCRETE PIPE
⊖	REMOVE SAFETY END TREATMENT(S)
⊕	ADJUST EXISTING GATE
WLA	WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
∇	PROPOSED CURB RAMP TYPE 5



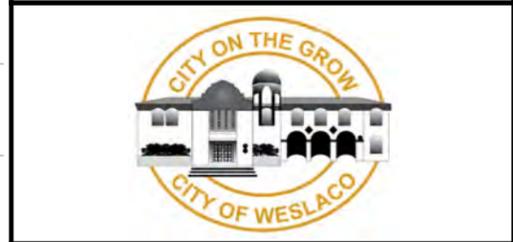
- NOTES:**
- EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION, AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
 - CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 - FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 - FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

STATE OF TEXAS

 ROBERTO FINA CARRAL
 LICENSED PROFESSIONAL ENGINEER
 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898
 TBPE F-1640

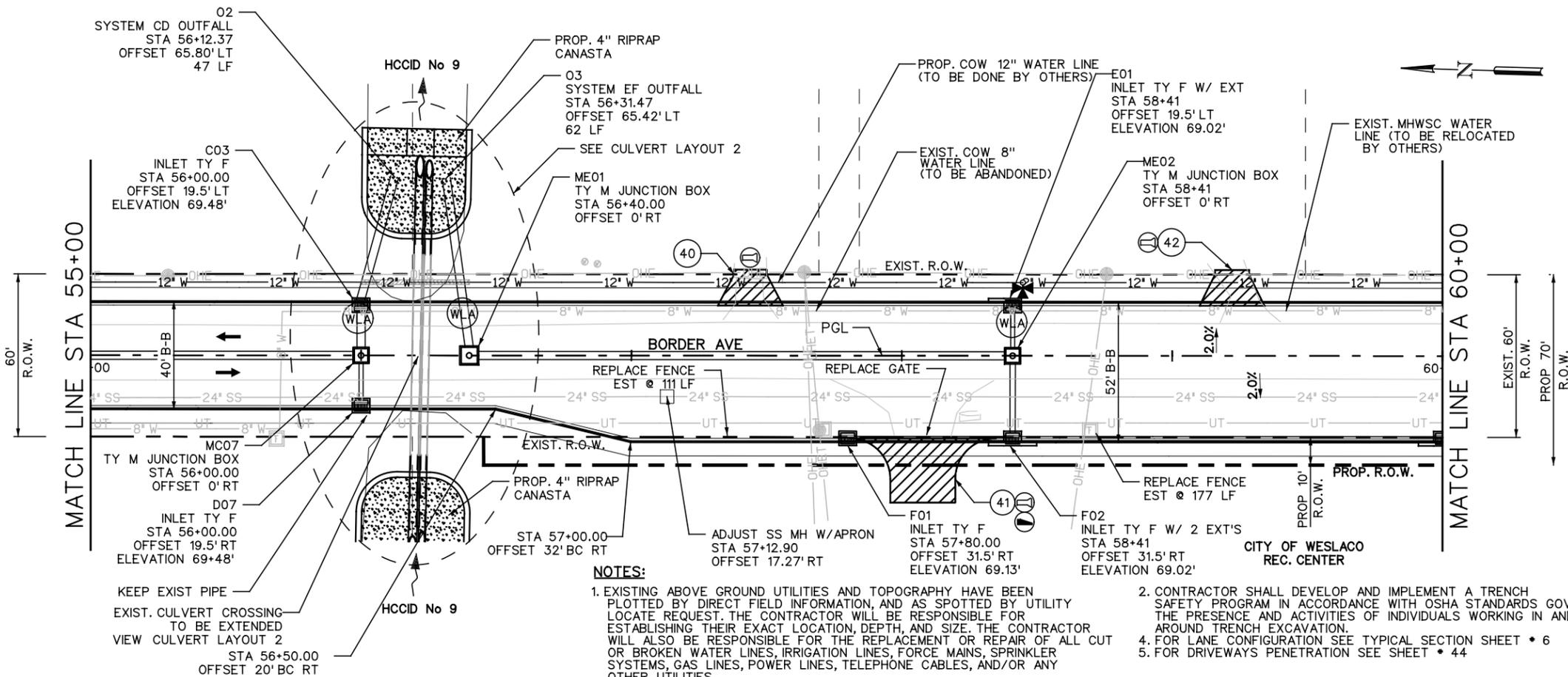
BORDER AVE.

PLAN & PROFILE SHEET

SCALE :1"=50'-H
 1"=5'-V SHEET 9 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		34
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:01:43 AM



LEGEND

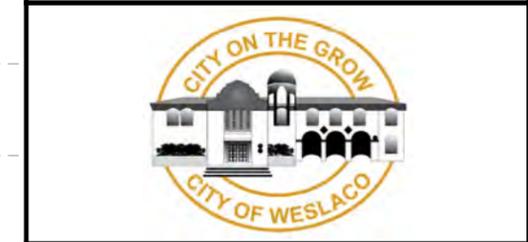
- EXISTING R.O.W.
- - - PROPOSED R.O.W.
- PROPOSED DRIVEWAY
- # W --- EXIST. # (DIAM INCH) WATER LINE
- # FM --- EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
- # SS --- EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
- # G --- EXIST. # (DIAM INCH) TGS GAS PIPELINE
- UFO --- EXIST. UNDERGROUND FIBER OPTIC CABLE
- UT --- EXIST. UNDERGROUND CABLE/TELEPHONE LINE
- OHE --- EXIST. AEP OVERHEAD ELECTRIC LINE
- HVTL --- EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
- UE --- EXIST. UNDERGROUND ELECTRIC LINE
- OHEC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
- OHEFC --- EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
- ⊕ --- DRIVEWAY NUMBER
- EXISTING MAILBOX TO BE REPLACED
- TOP OF RIM
- REMOVE CONCRETE PIPE
- REMOVE SAFETY END TREATMENT(S)
- ADJUST EXISTING GATE
- WLA --- WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
- ∇ --- PROPOSED CURB RAMP TYPE 5

NOTES:

- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
- CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
- FOR DRIVEWAYS PENETRATION SEE SHEET * 44

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
DATE: 2/23/2015



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

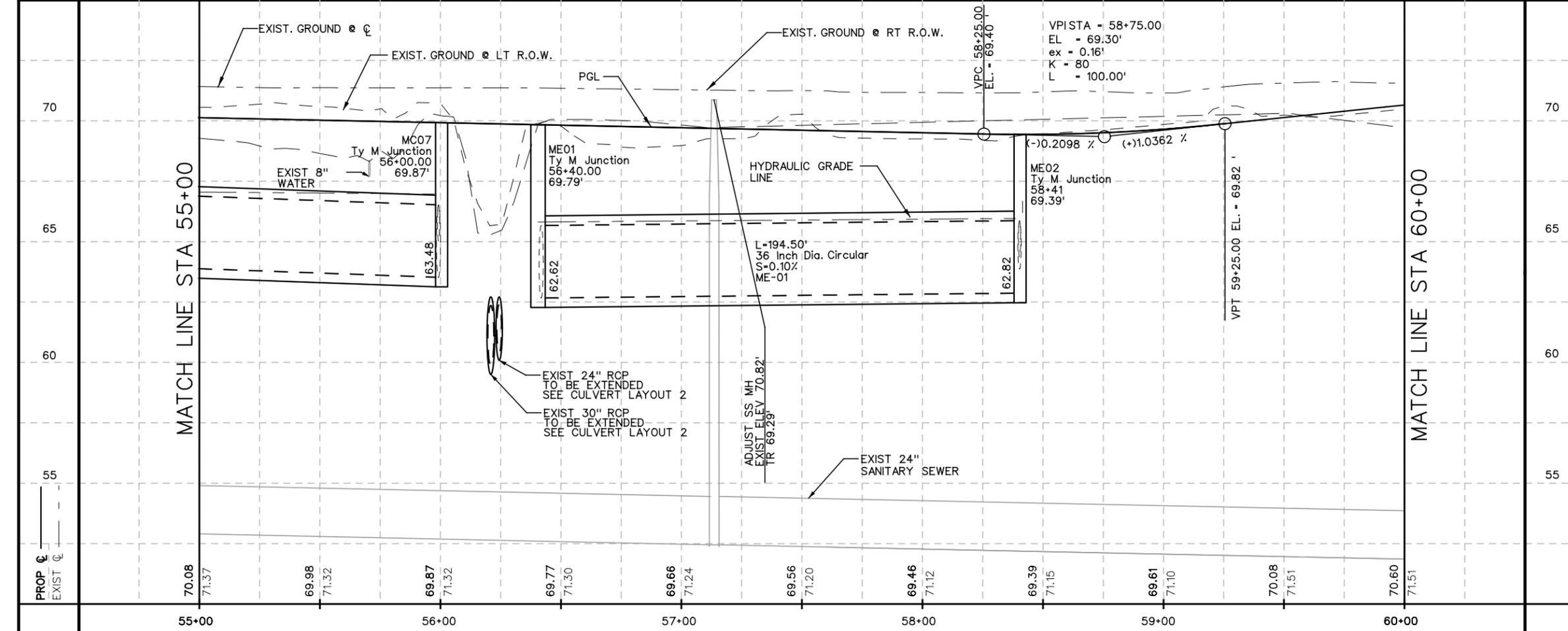
BORDER AVE.

PLAN & PROFILE SHEET

SCALE: 1"=50'-H
1"=5'-V

SHEET 10 OF 11

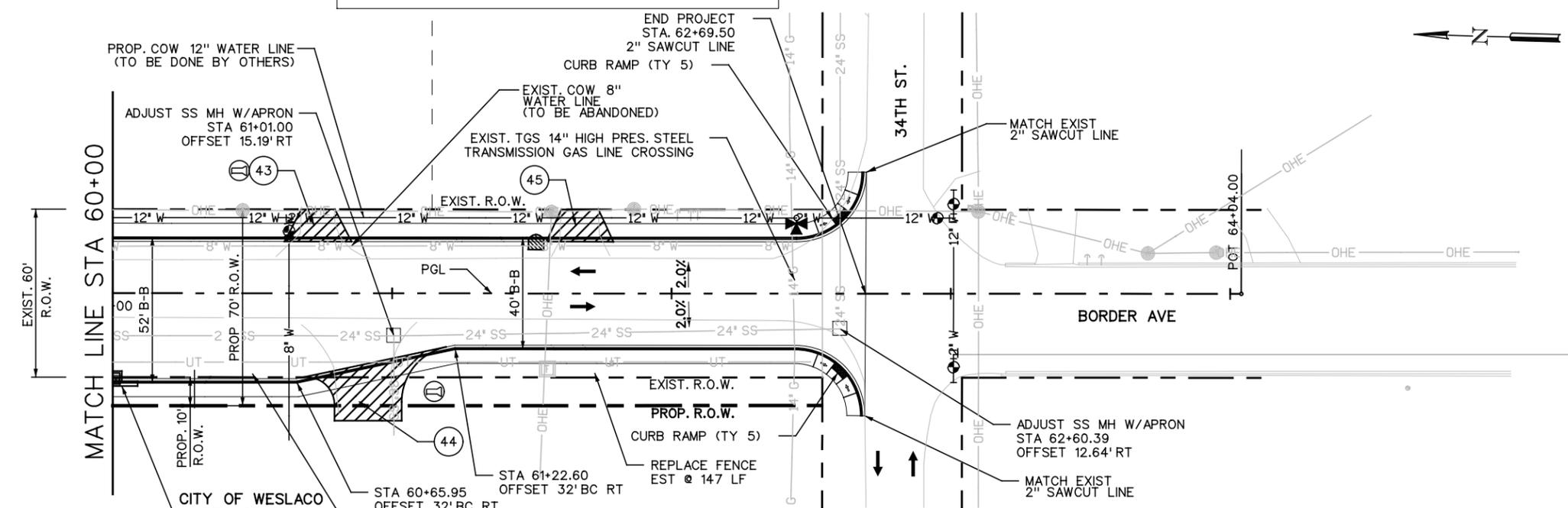
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		35
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



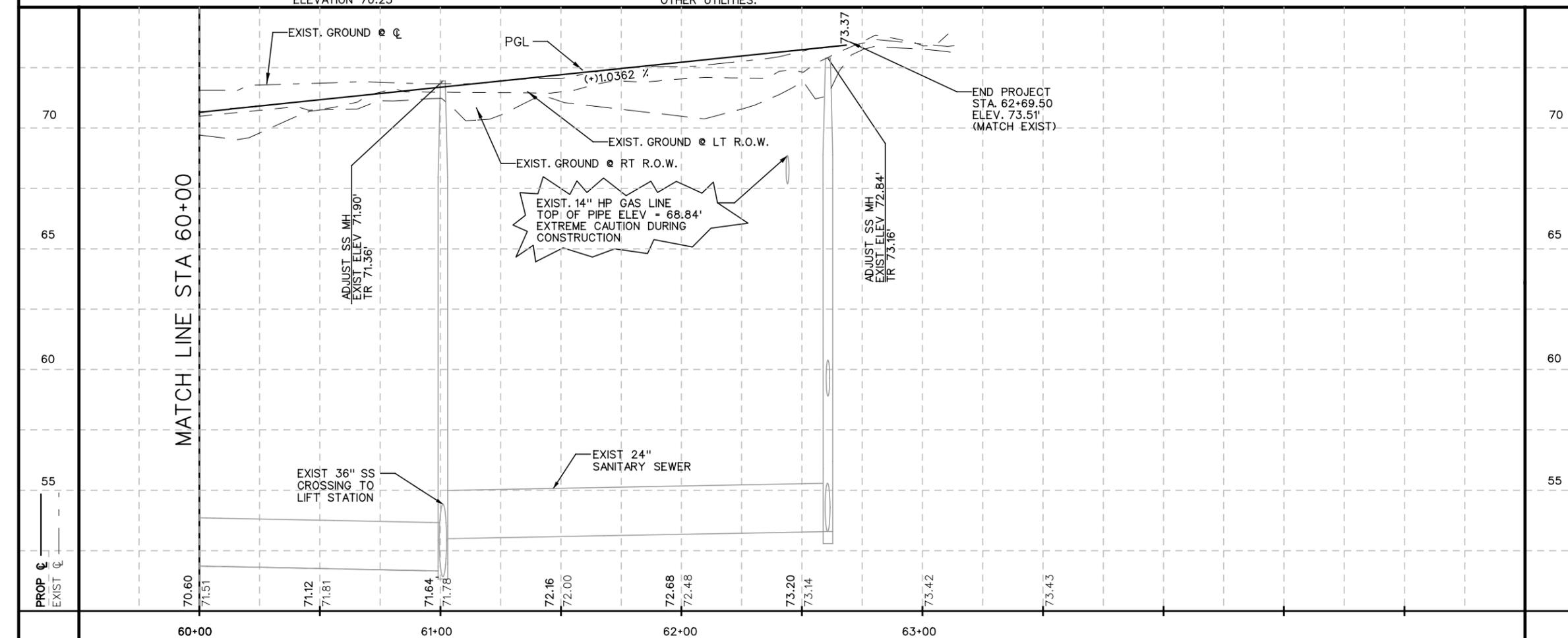
Date and Time Plotted: 2/23/2015 10:01:44 AM

!! CAUTION !!
 EXISTING TEXAS GAS SERVICE UNDERGROUND GAS LINE
 THE CONTRACTOR WILL CONTACT MR. MIKE MARTINEZ (TGS)
 AT 956-578-7496 PRIOR TO WORKING IN THIS AREA

- LEGEND**
- EXISTING R.O.W.
 - PROPOSED R.O.W.
 - PROPOSED DRIVEWAY
 - # — EXIST. # (DIAM INCH) WATER LINE
 - # FM — EXIST. # (DIAM INCH) COW FORCE MAIN SANITARY SEWER LINE
 - # SS — EXIST. # (DIAM INCH) COW SANITARY SEWER LINE
 - # G — EXIST. # (DIAM INCH) TGS GAS PIPELINE
 - UFO — EXIST. UNDERGROUND FIBER OPTIC CABLE
 - UT — EXIST. UNDERGROUND CABLE/TELEPHONE LINE
 - OHE — EXIST. AEP OVERHEAD ELECTRIC LINE
 - HVTL — EXIST. AEP HIGH VOLTAGE TRANSMISSION LINE
 - UE — EXIST. UNDERGROUND ELECTRIC LINE
 - OHEC — EXIST. AEP OVERHEAD ELECTRIC LINE WITH CABLE LINE ATTACHED
 - OHEFC — EXIST. AEP OVERHEAD ELECTRIC LINE WITH FIBER OPTIC AND CABLE LINE ATTACHED
 - # — DRIVEWAY NUMBER
 - TR — EXISTING MAILBOX TO BE REPLACED TOP OF RIM
 - REMOVE CONCRETE PIPE
 - REMOVE SAFETY END TREATMENT(S)
 - ADJUST EXISTING GATE
 - WLA — WATER LINE ADJUSTMENT (IF NECESSARY SEE DETAIL SHEET 55)
 - V — PROPOSED CURB RAMP TYPE 5

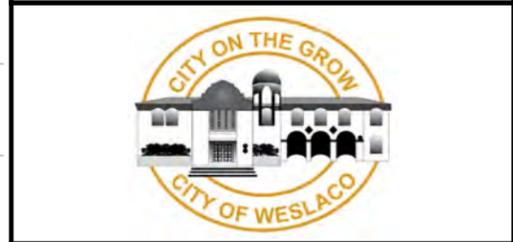


- NOTES:**
1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION, AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR 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. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
 4. FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET * 6
 5. FOR DRIVEWAYS PENETRATION SEE SHEET * 44



NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
 2/23/2015
 DATE



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

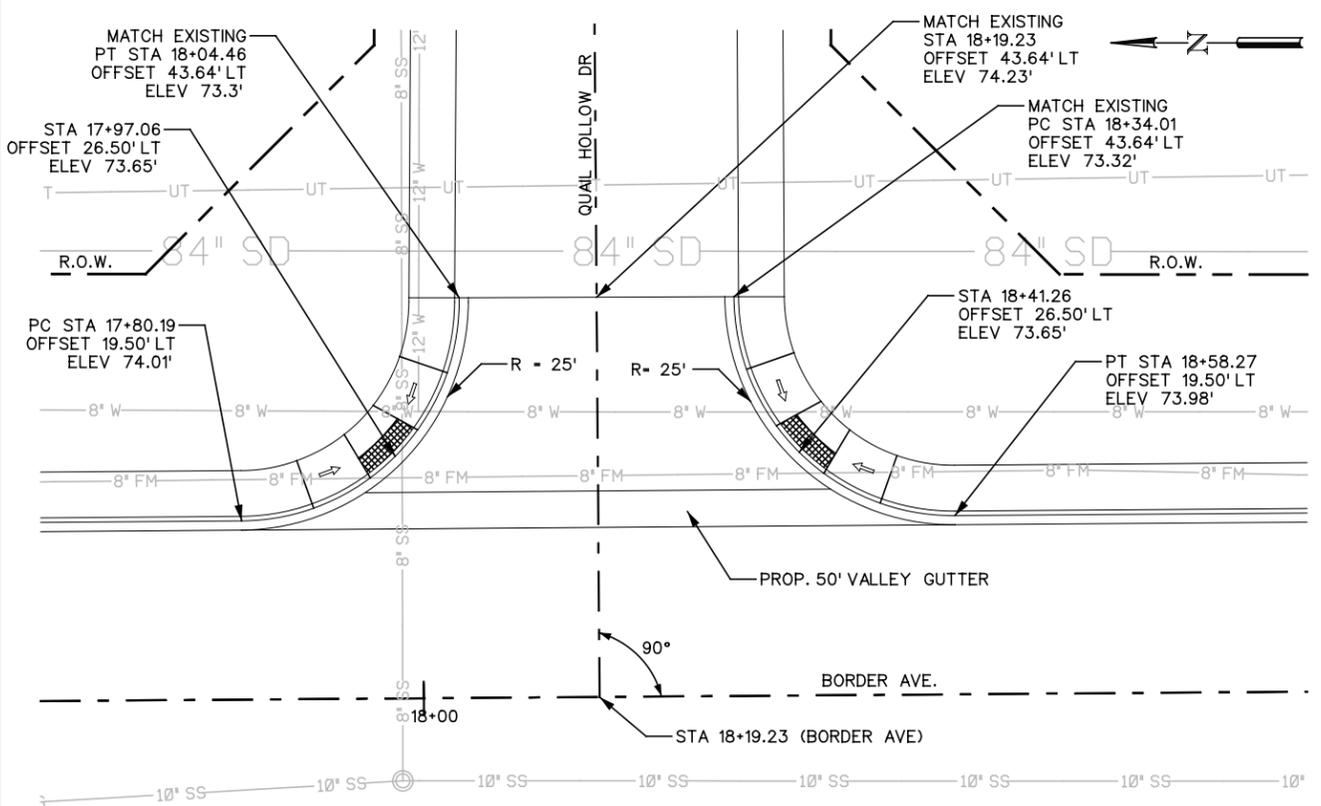
BORDER AVE.

PLAN & PROFILE SHEET

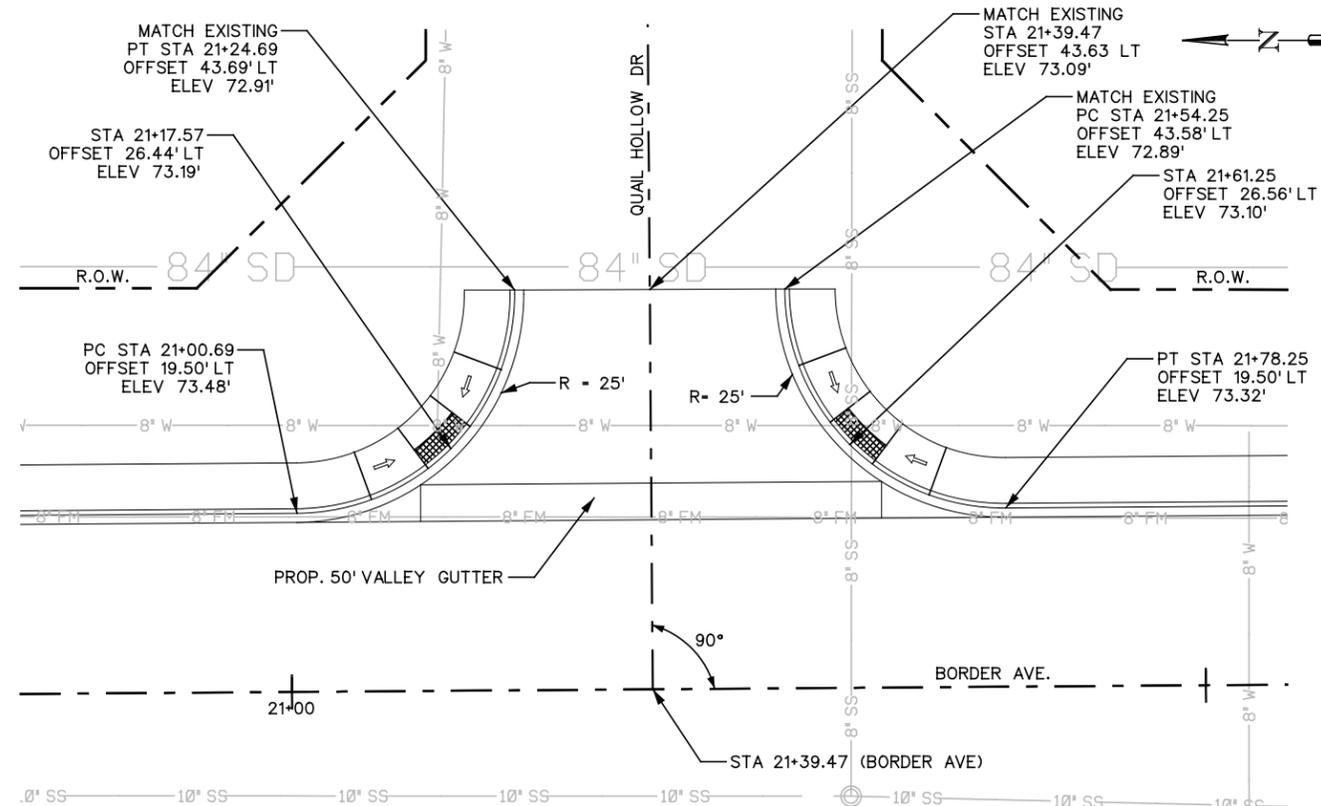
SCALE: 1"=50'-H
 1"=5'-V SHEET 11 OF 11

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		36
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

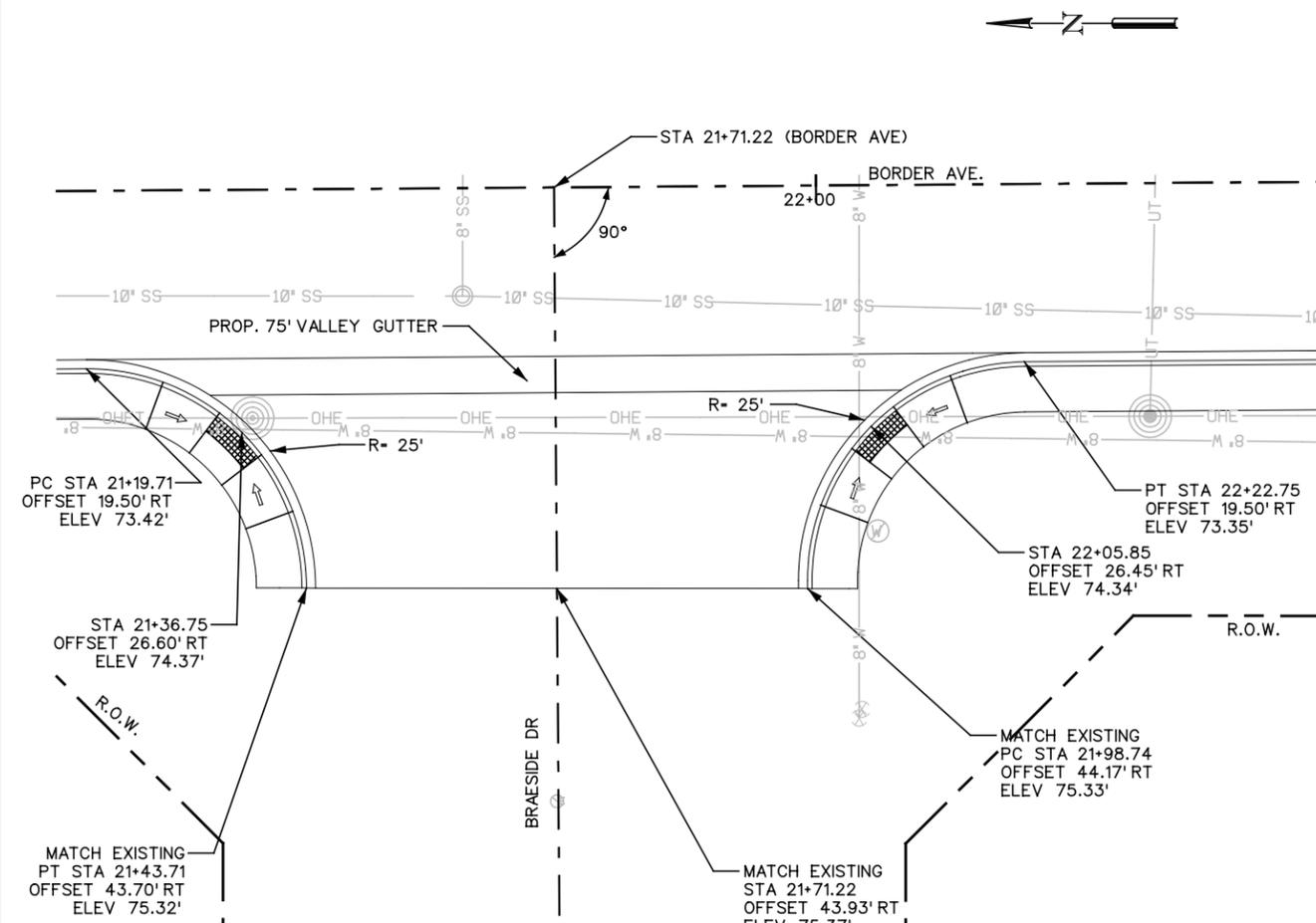
Date and Time Plotted: 2/23/2015 10:01:44 AM



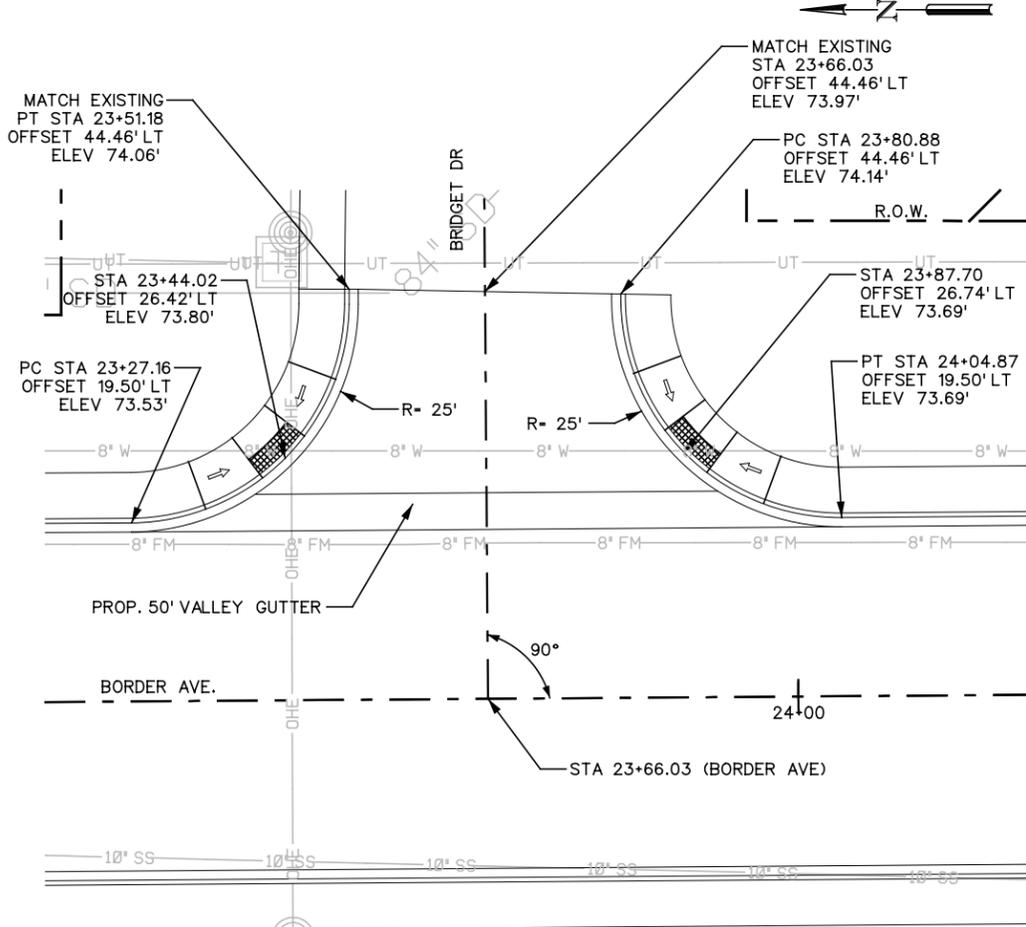
INTERSECTION LAYOUT
BORDER AVE & QUAIL HOLLOW DR NORTH



INTERSECTION LAYOUT
BORDER AVE & QUAIL HOLLOW DR SOUTH



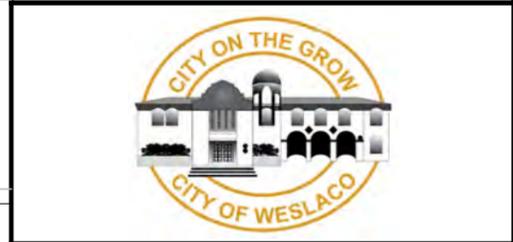
INTERSECTION LAYOUT
BORDER AVE & BRAESIDE DR



INTERSECTION LAYOUT
BORDER AVE & BRIDGET DR

NO.	DATE	REVISION	APP.

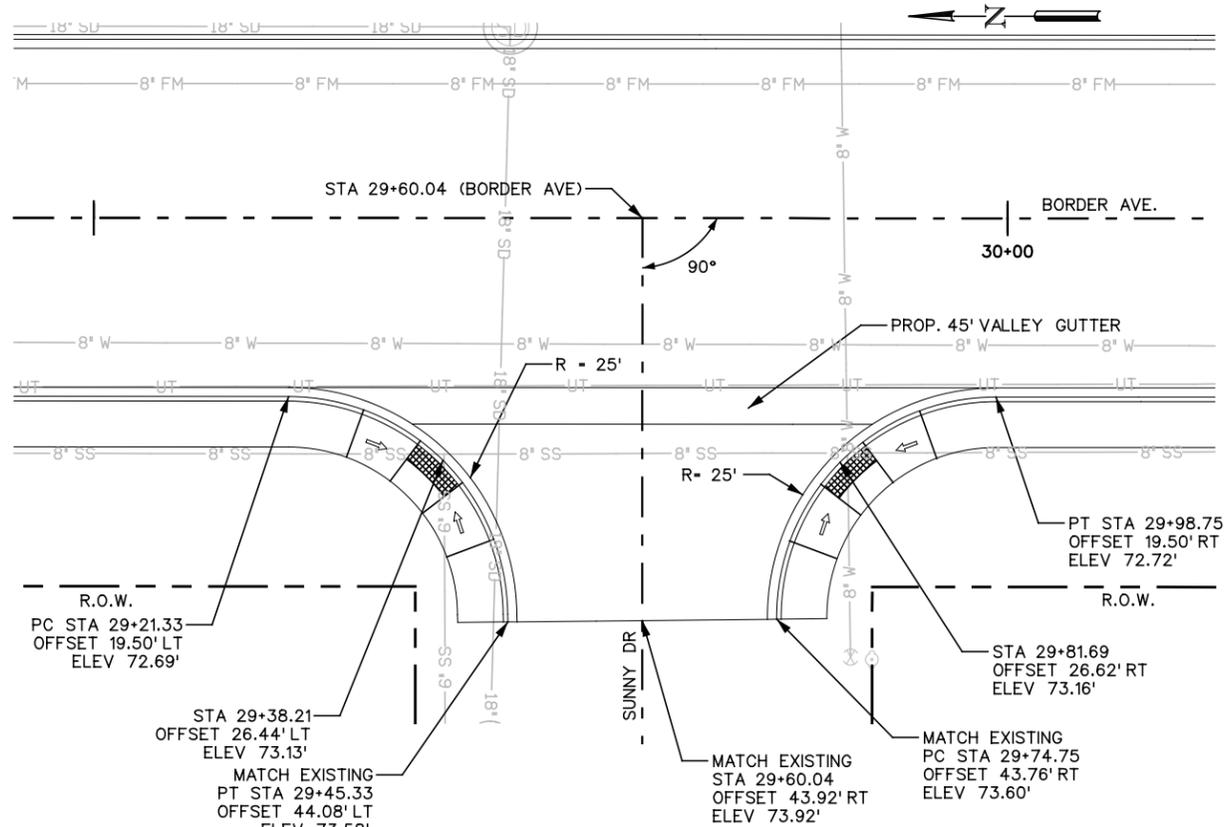
ROBERTO FINA CARRAL
2/23/2015
DATE



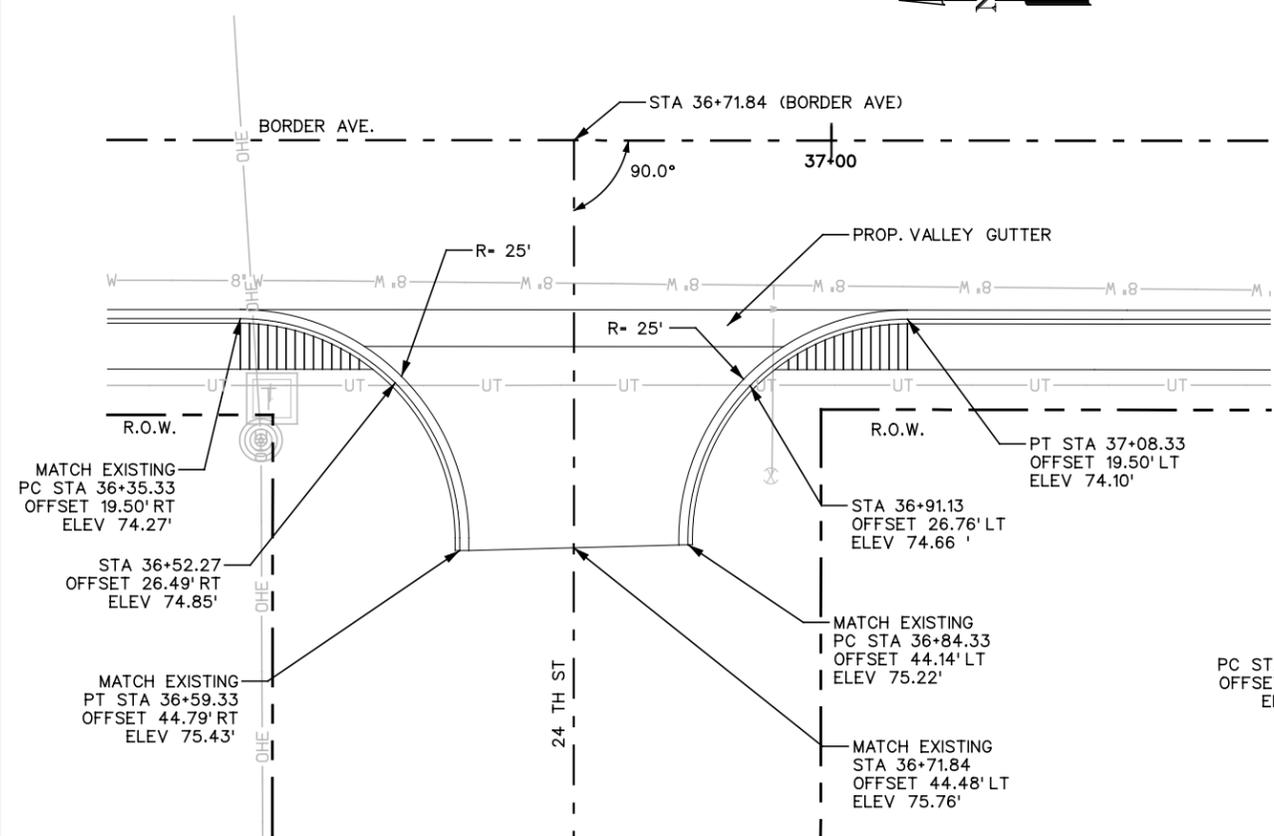
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

BORDER AVE.			
INTERSECTION LAYOUT			
SCALE: 1"=20'		SHEET 1 OF 2	
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
		37	
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

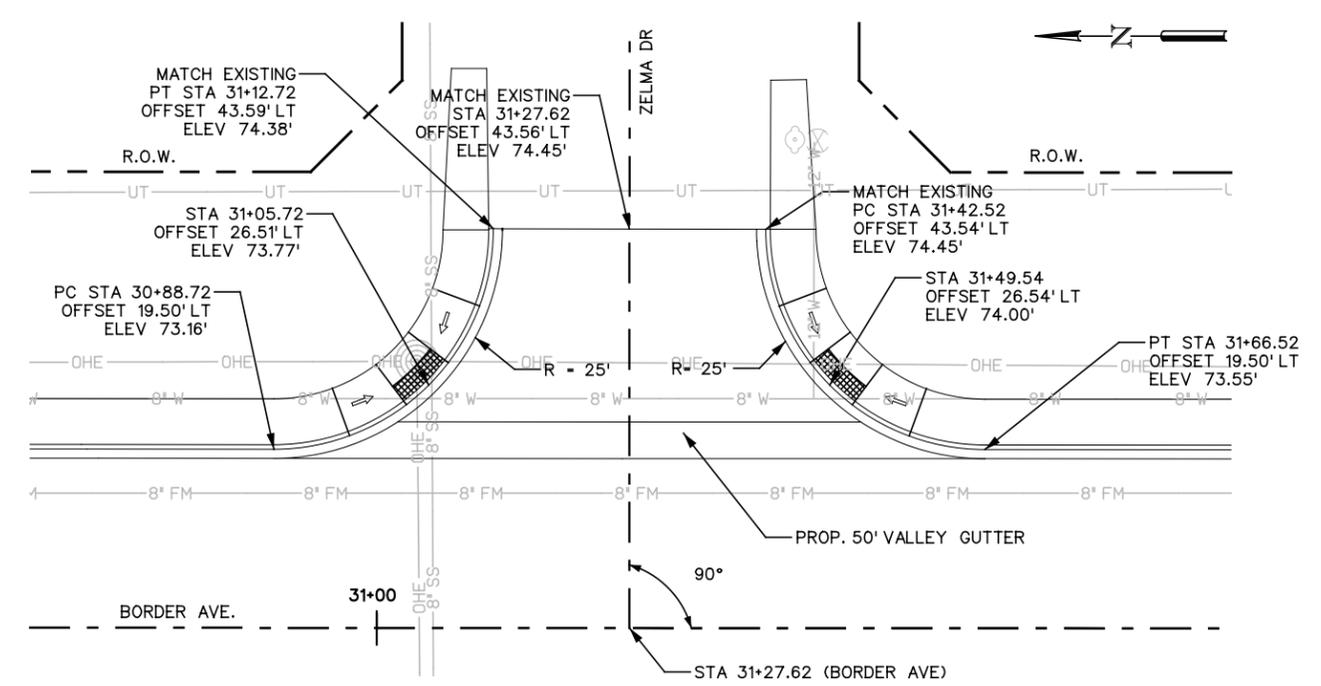
Date and Time Plotted: 2/23/2015 10:01:45 AM



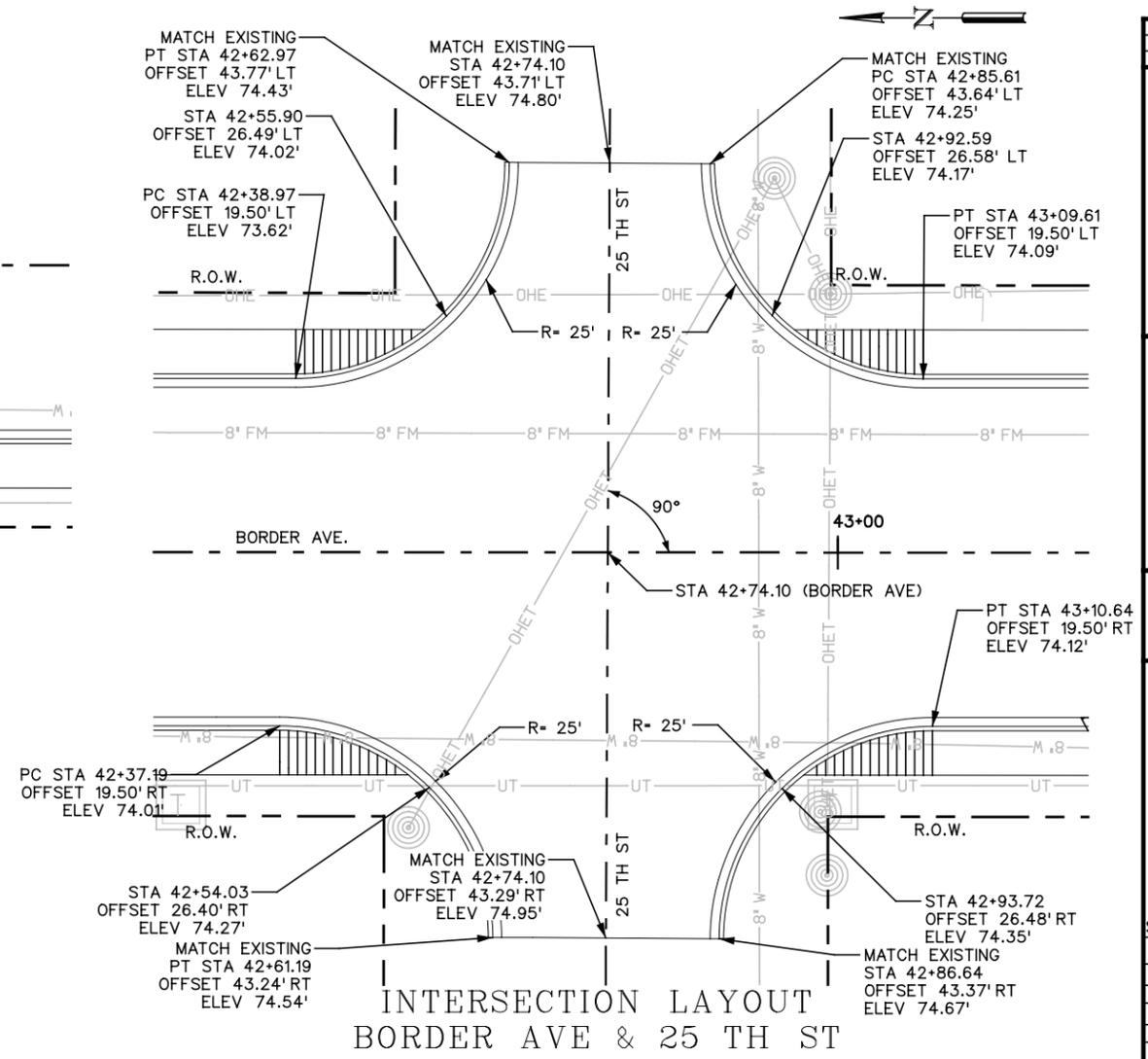
INTERSECTION LAYOUT
BORDER AVE & SUNNY DR



INTERSECTION LAYOUT
BORDER AVE & 24 TH ST



INTERSECTION LAYOUT
BORDER AVE & ZELMA DR



INTERSECTION LAYOUT
BORDER AVE & 25 TH ST

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
DATE: 2/23/2015

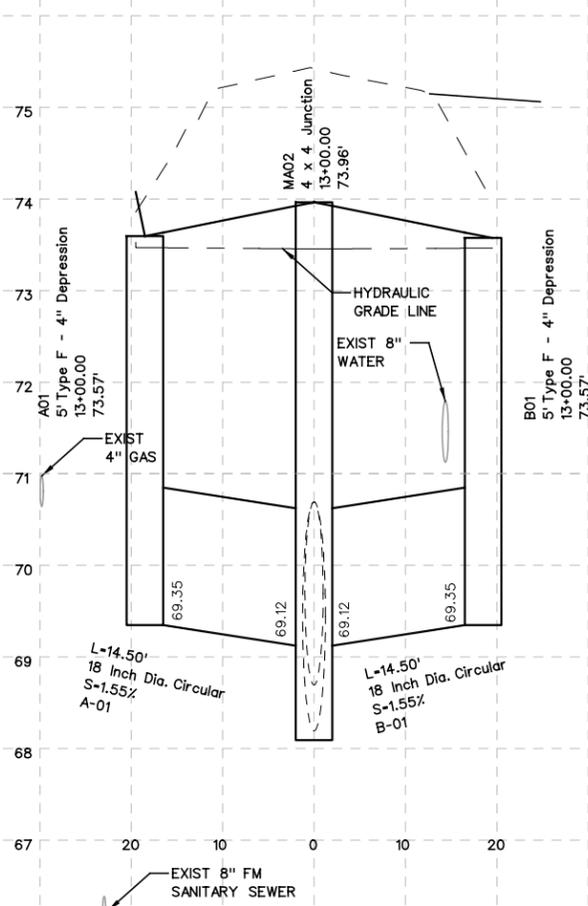
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

BORDER AVE.

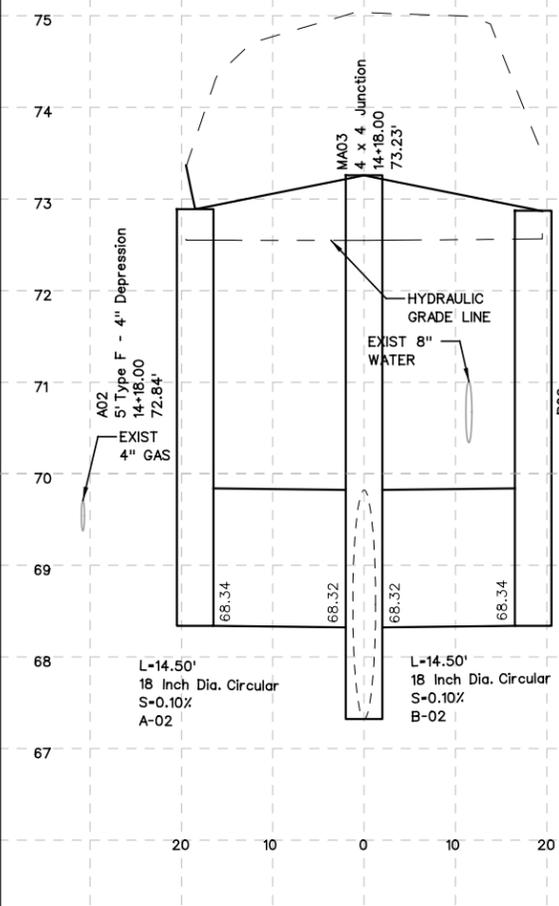
INTERSECTION LAYOUT

SCALE: 1"=20'		SHEET 2 OF 2	
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO. 38	
STATE TEXAS	DIST. HIDALGO	COUNTY	
CONT.	SECT.	JOB	HIGHWAY NO. BORDER AVE

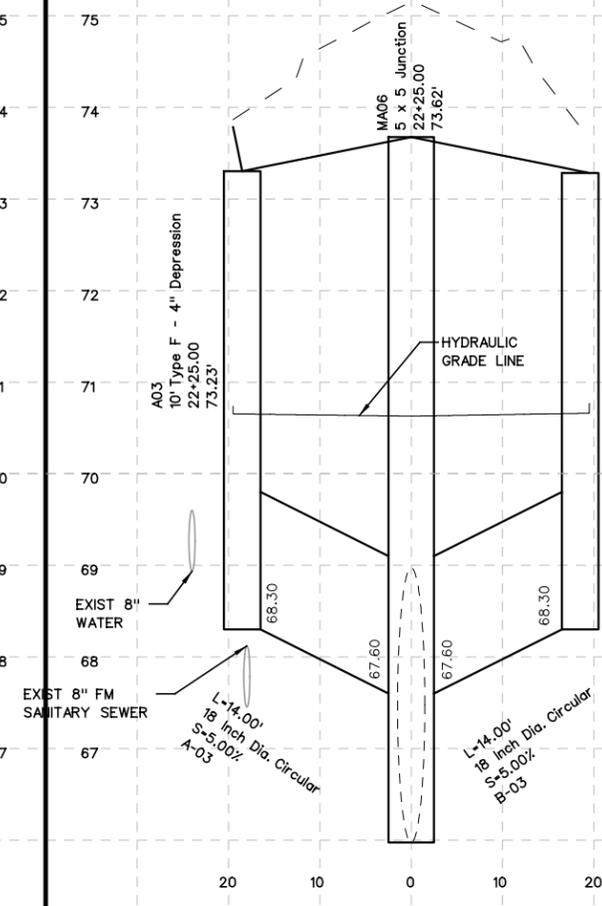
LATERAL A01 TO B01



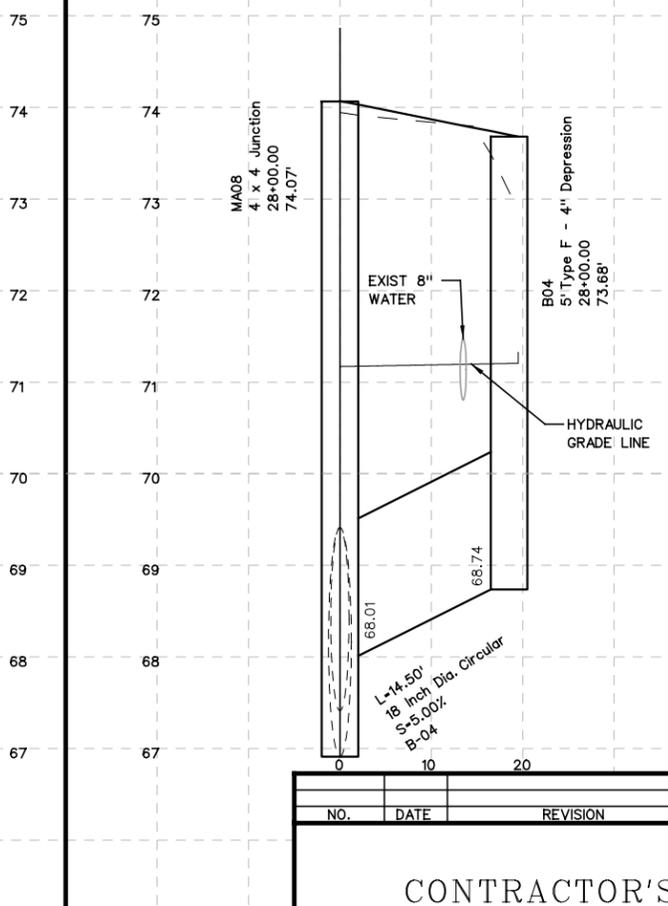
LATERAL A02 TO B02



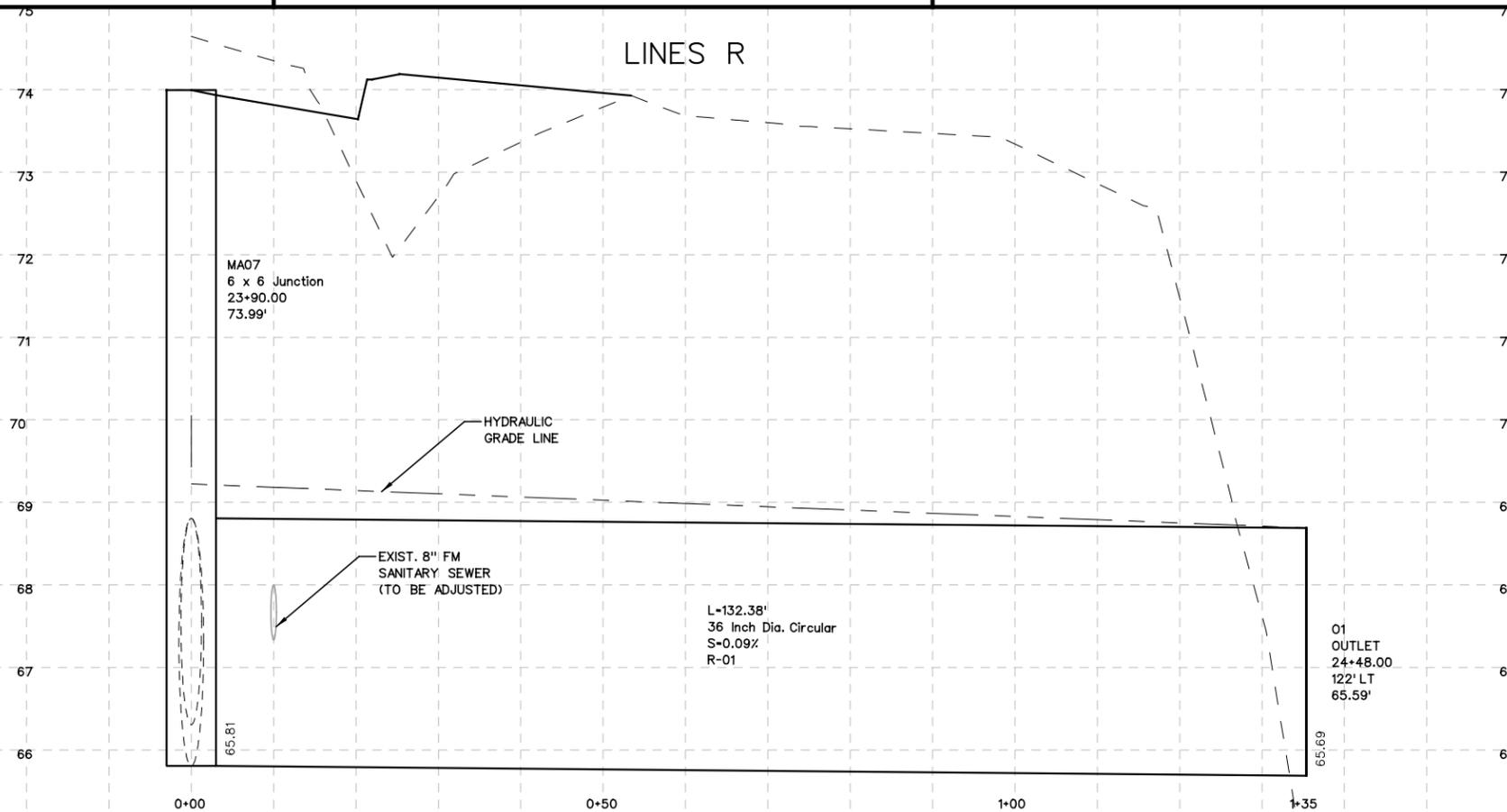
LATERAL A03 TO B03



LATERAL MA08 TO B04

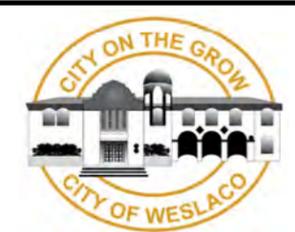


LINES R



NO.	DATE	REVISION	APP.

CONTRACTOR'S
INFORMATION
ONLY



TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

BORDER AVE.

STORM DRAIN
PROFILE SHEET

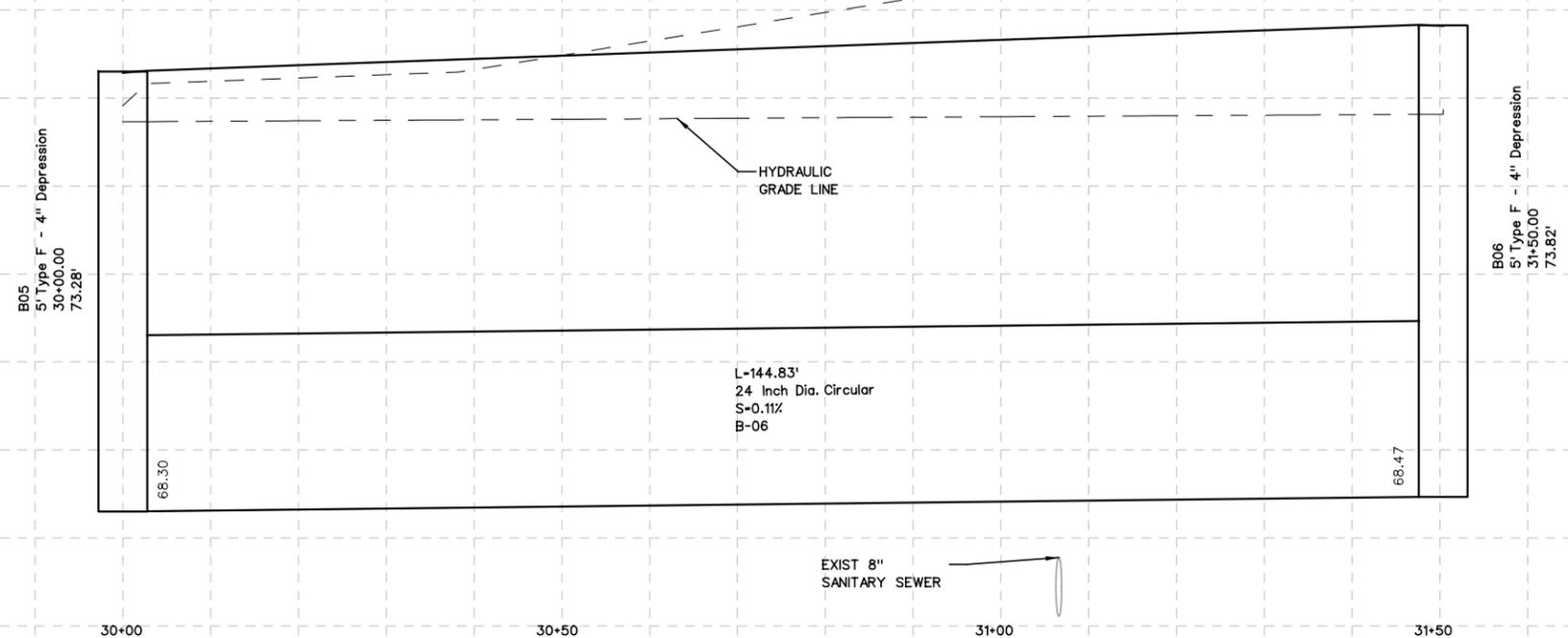
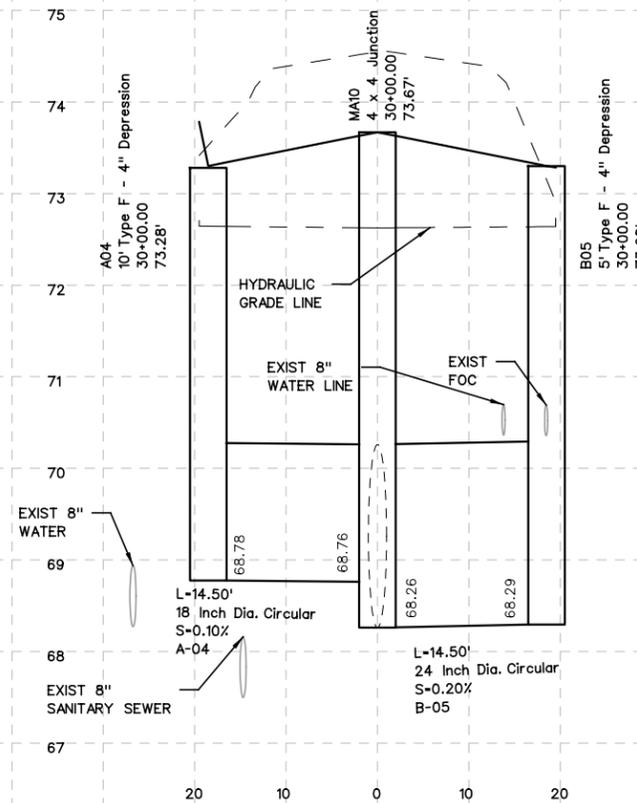
SYSTEM AB

SCALE: 1"=20'-H
1"=2'-V SHEET 1 OF 5

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		39
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.

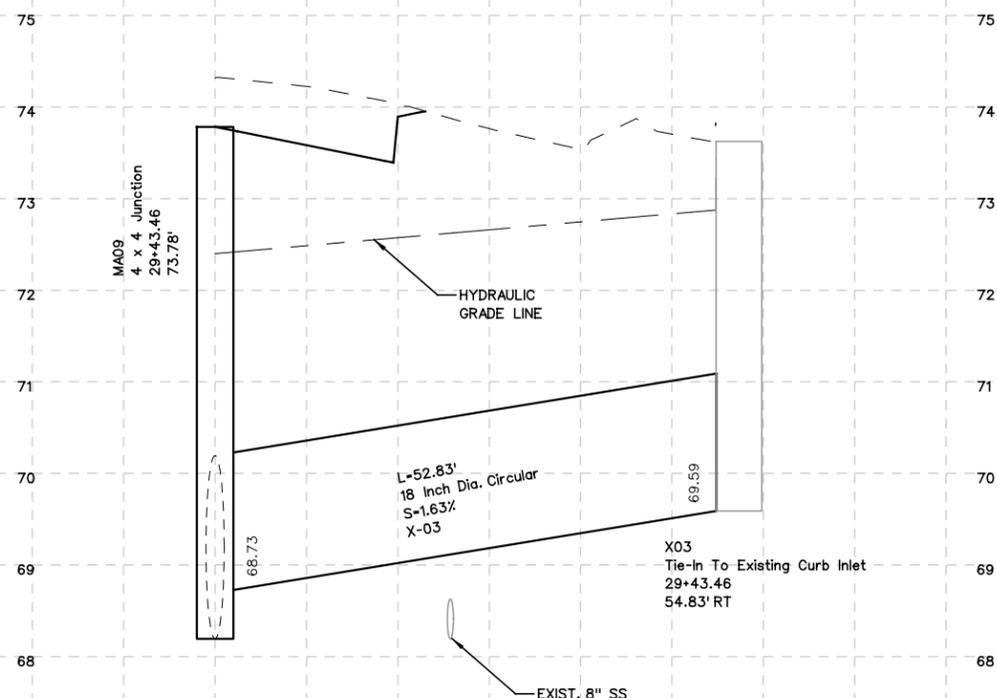
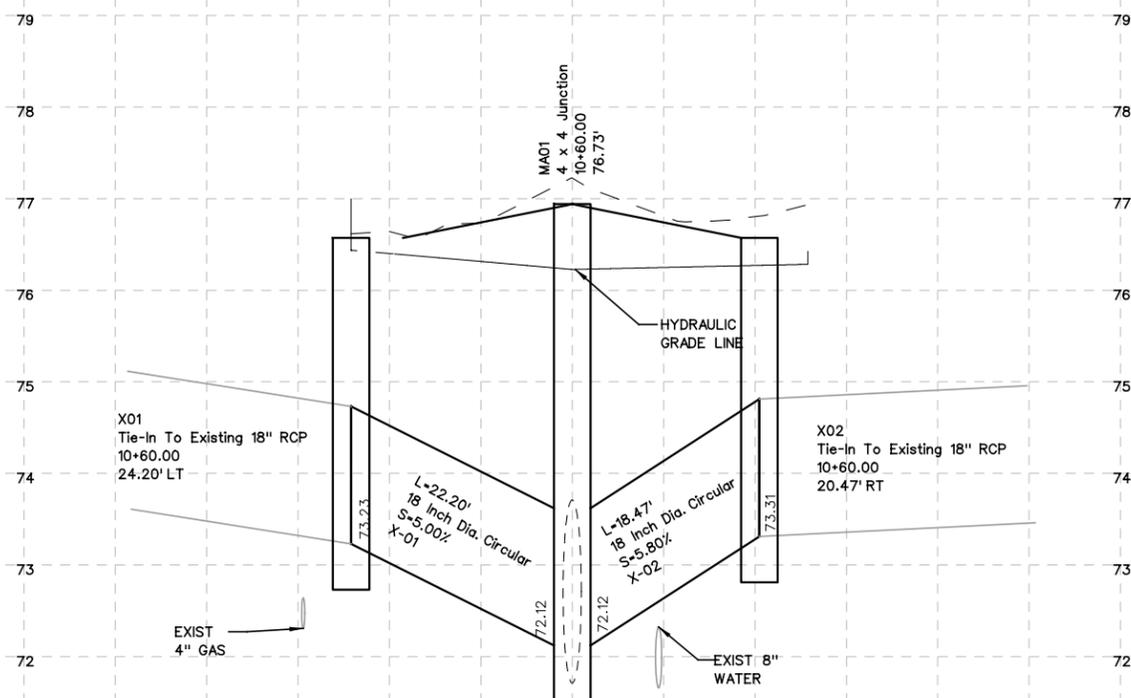
LATERAL A04 TO B05

LATERAL B05 TO B06



EXISTING TIE-INS X01 TO X02

EXISTING TIE-INS MA09 TO X03



NO.	DATE	REVISION	APP.

CONTRACTOR'S
INFORMATION
ONLY



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

BORDER AVE.

STORM DRAIN
PROFILE SHEET

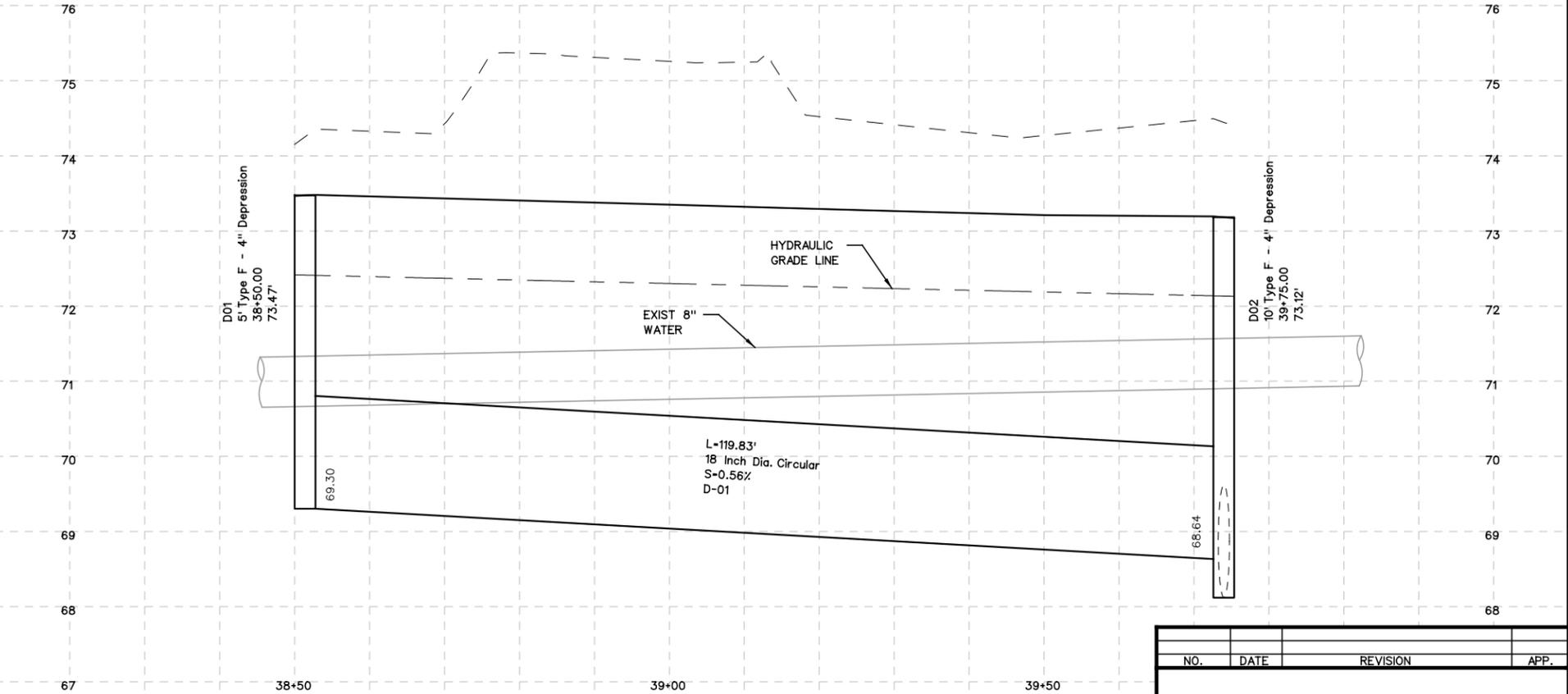
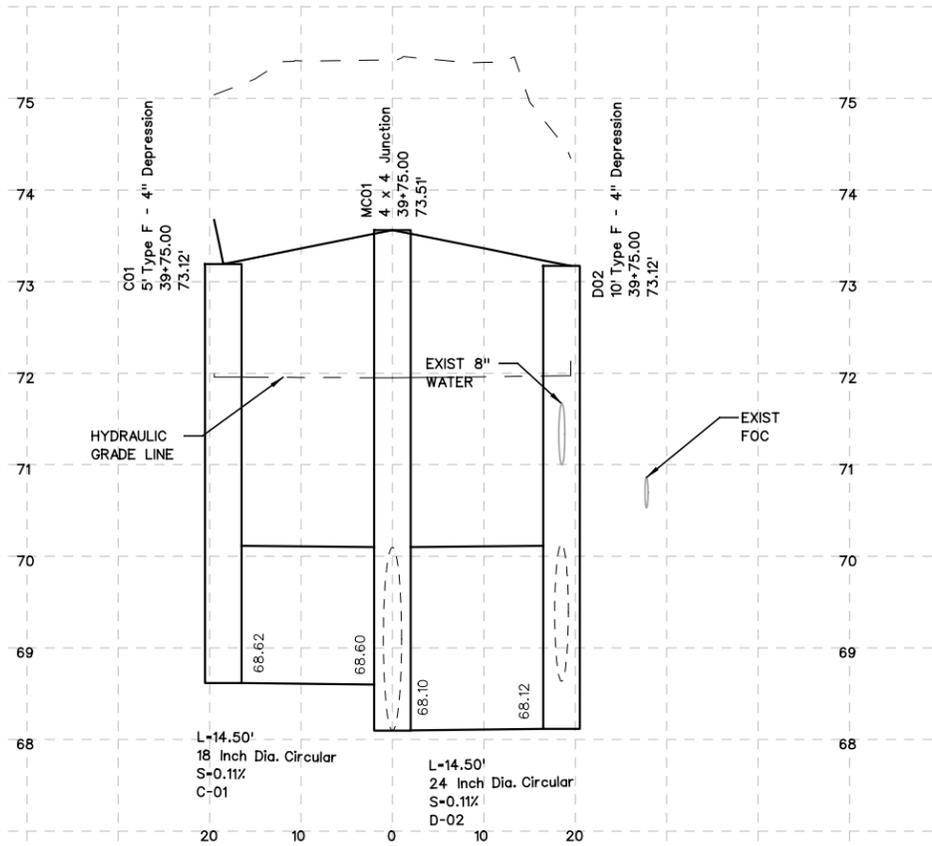
SYSTEM AB

SCALE: 1"=20'-H
1"=2'-V SHEET 2 OF 5

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		40
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.

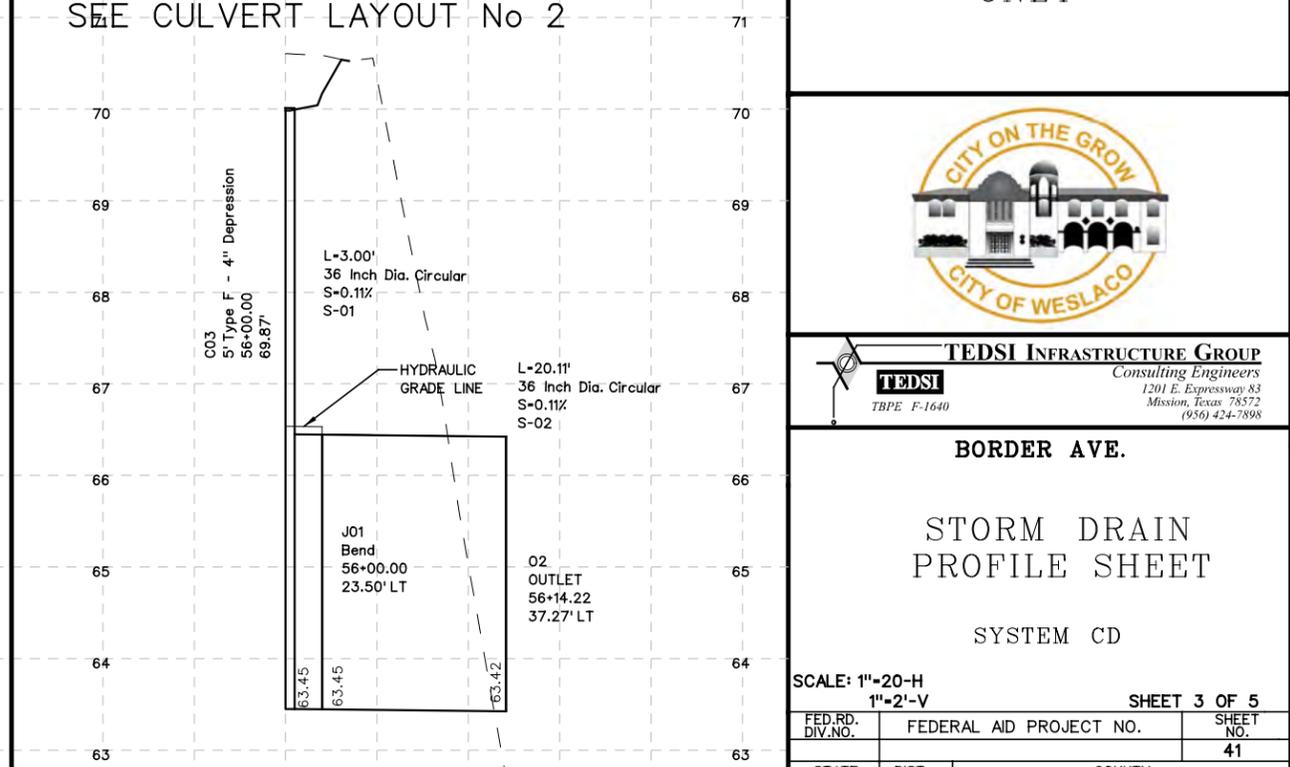
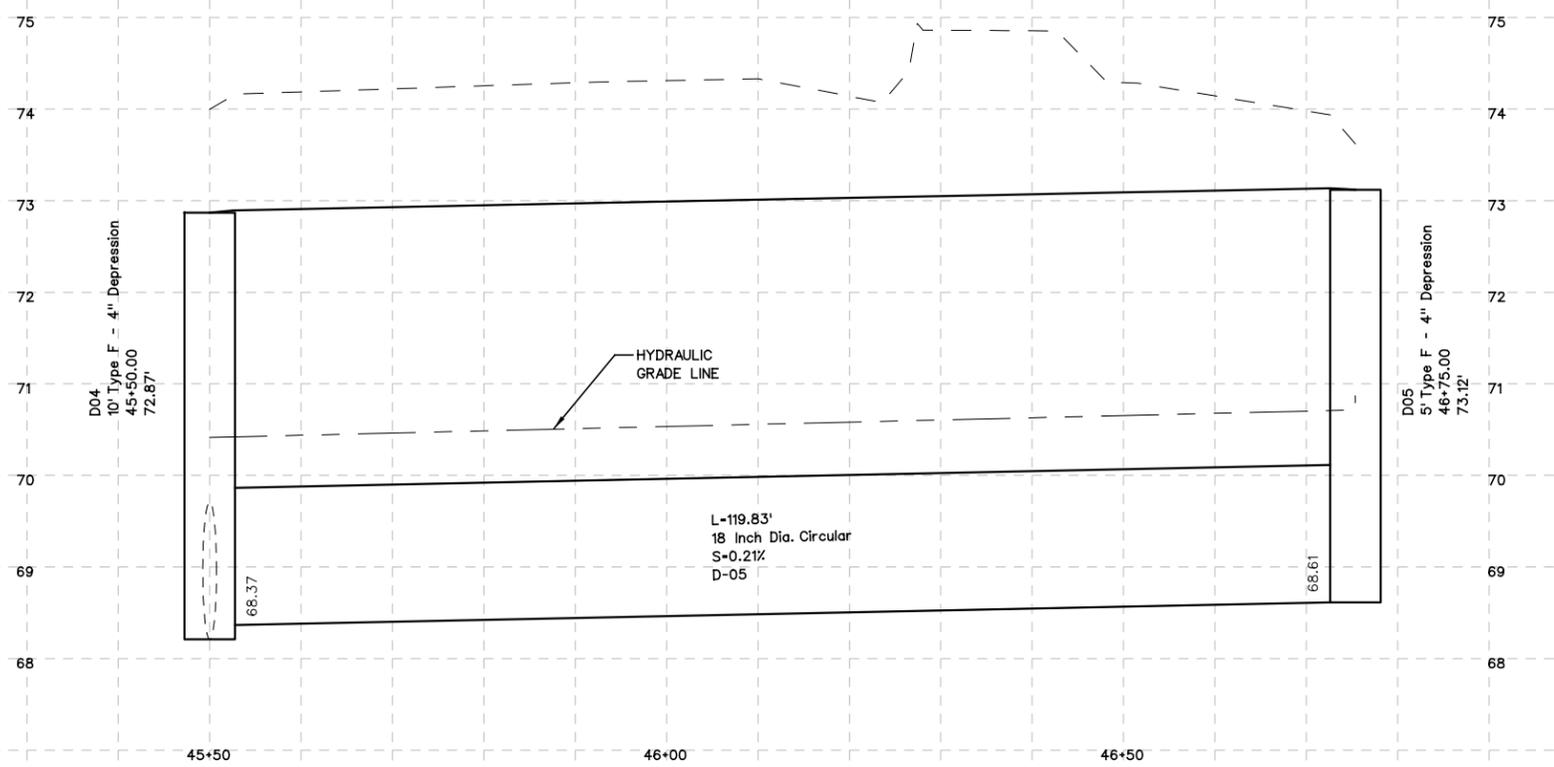
LATERAL C01 TO D02

LATERAL D01 TO D02



LATERAL D04 TO D05

LINES S SEE CULVERT LAYOUT No 2



NO.	DATE	REVISION	APP.

CONTRACTOR'S
INFORMATION
ONLY



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898

BORDER AVE.

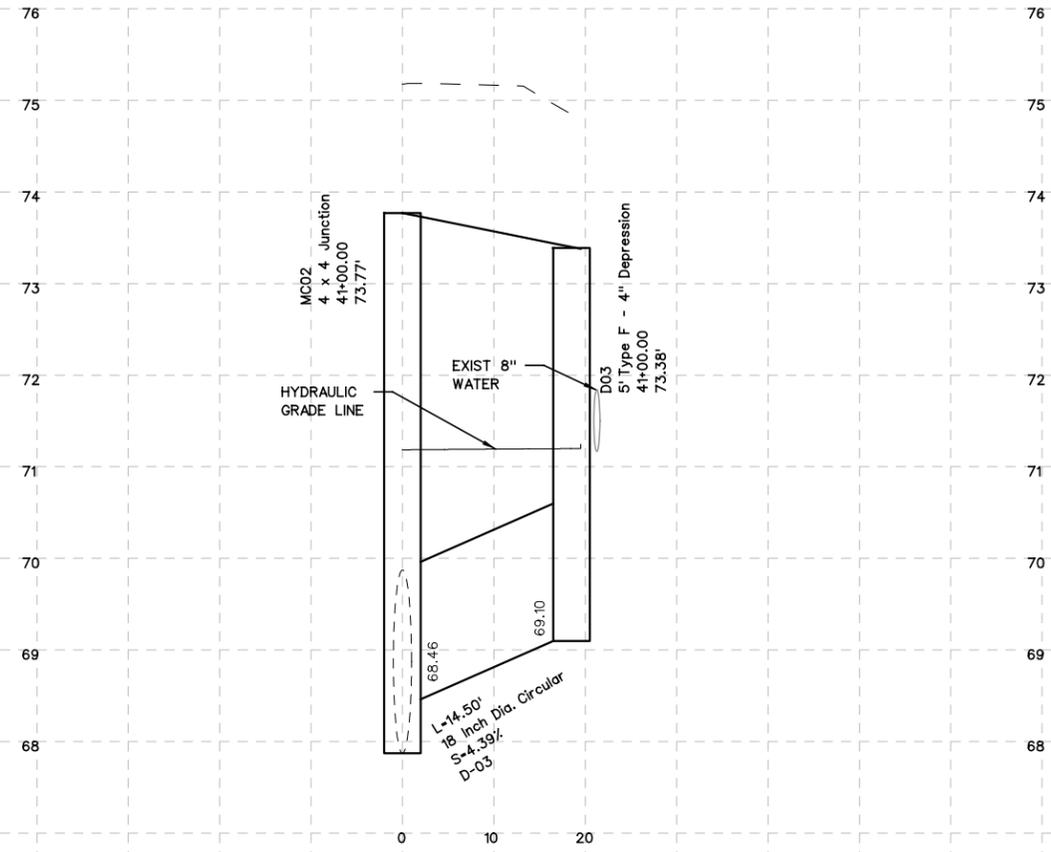
STORM DRAIN
PROFILE SHEET

SYSTEM CD

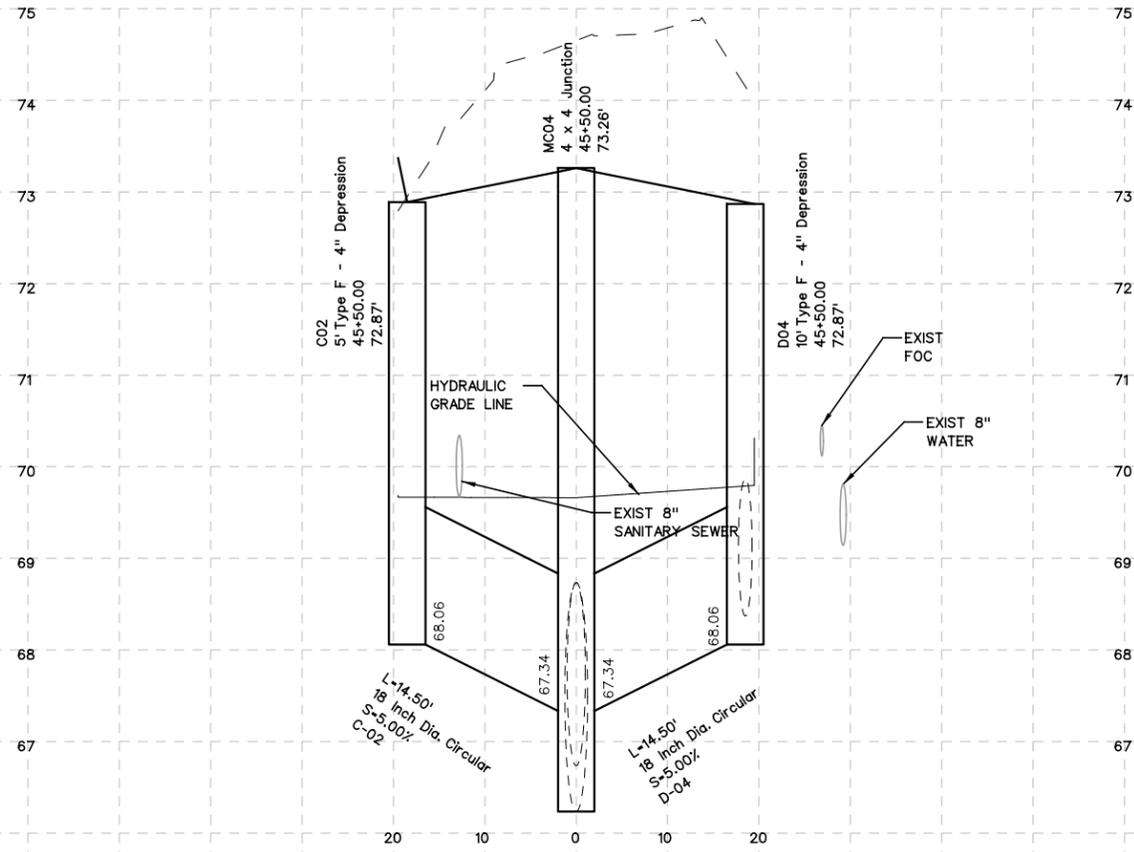
SCALE: 1"=20'-H
1"=2'-V SHEET 3 OF 5

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		41
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.

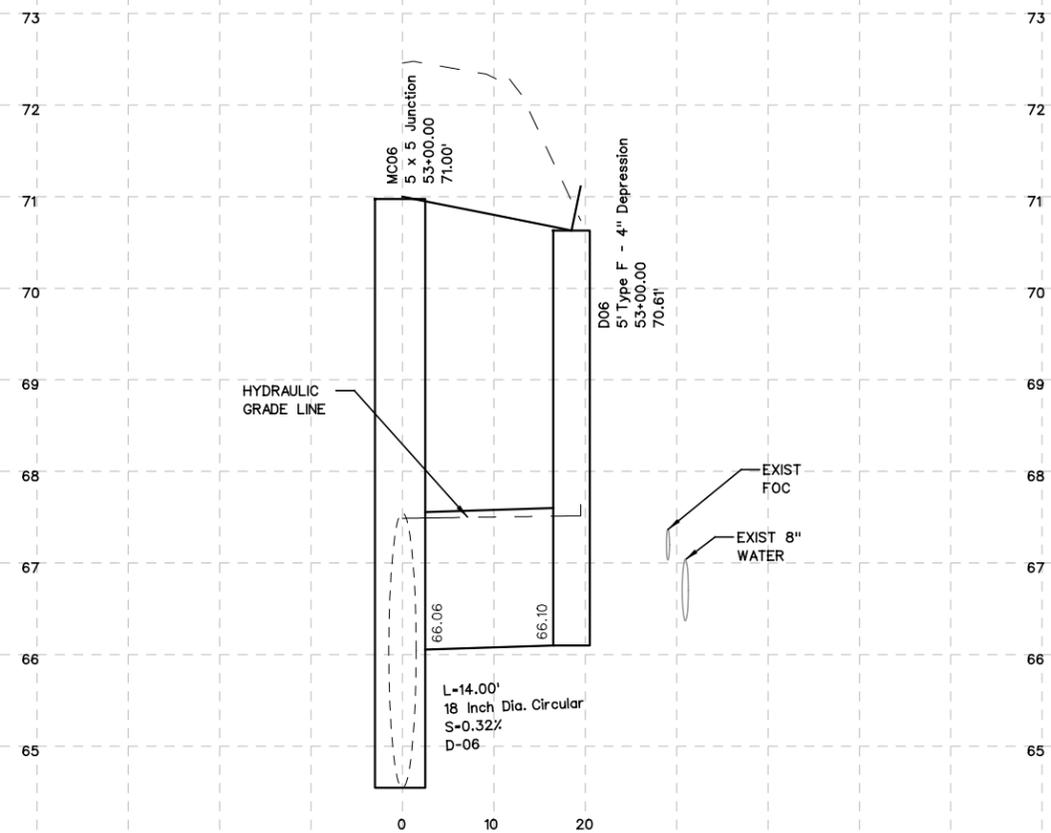
LATERAL MC02 TO D03



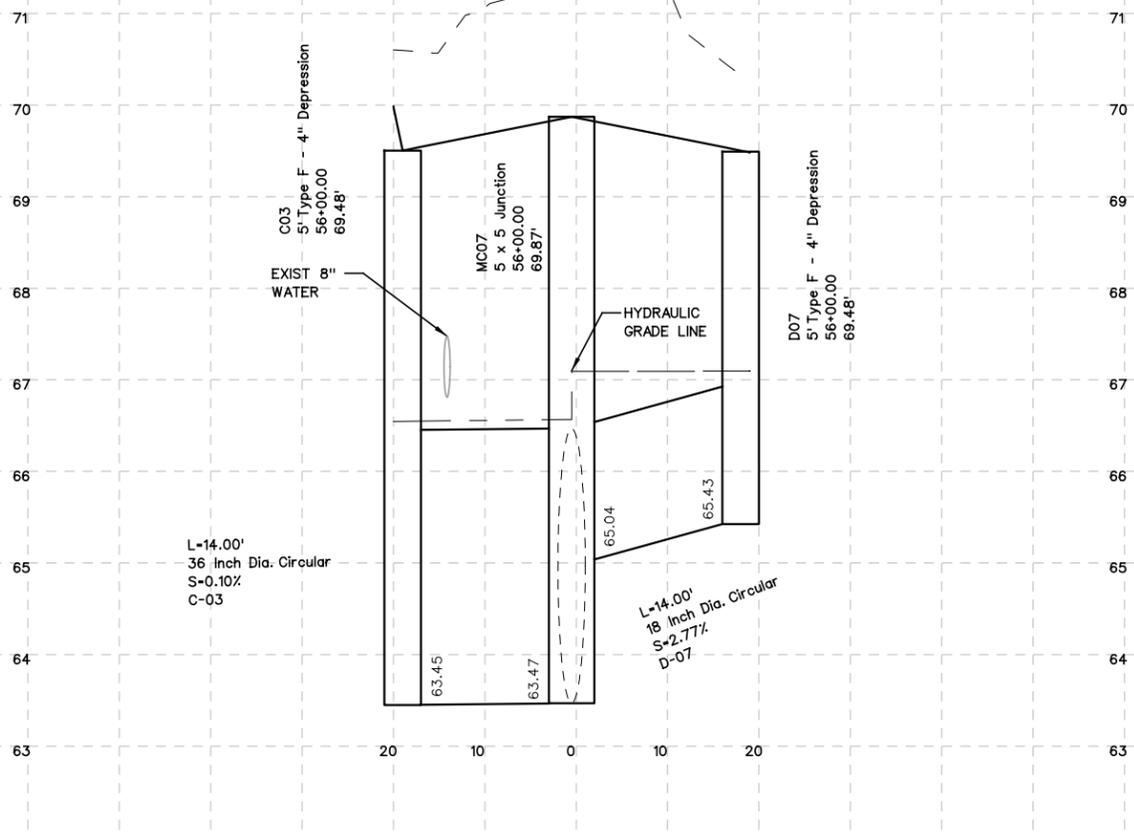
LATERAL C02 TO D04



LATERAL MC06 TO D06



LATERAL C03 TO D07



NO.	DATE	REVISION	APP.

CONTRACTOR'S
INFORMATION
ONLY



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

BORDER AVE.

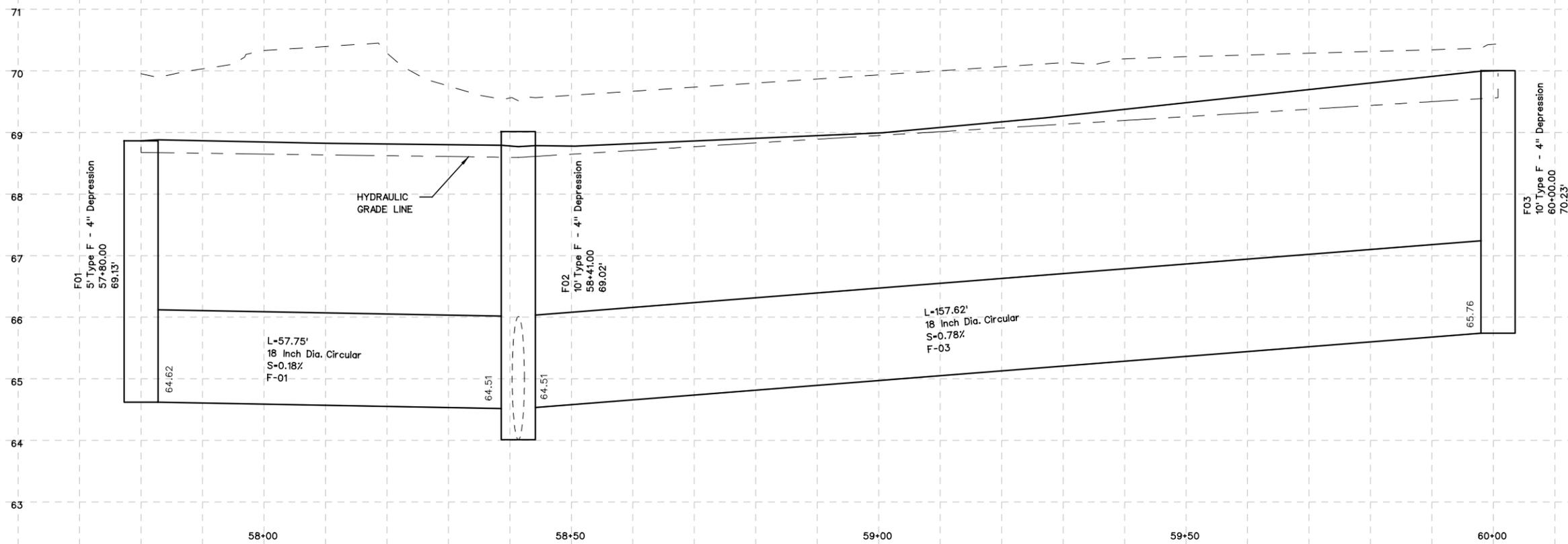
STORM DRAIN
PROFILE SHEET

SYSTEM CD

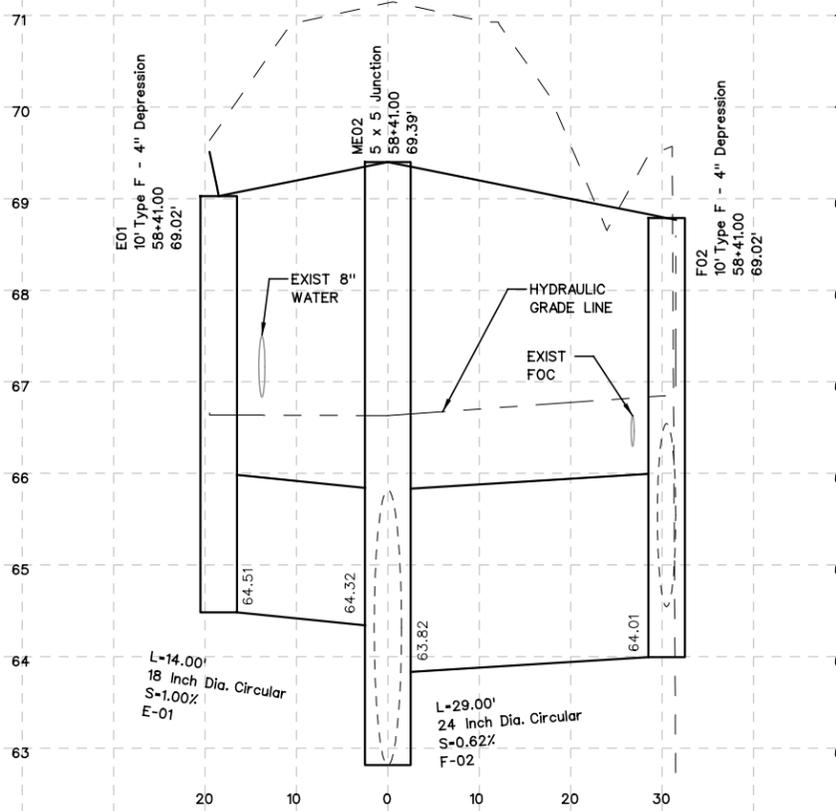
SCALE: 1"=20'-H
1"=2'-V SHEET 4 OF 5

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		42
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.

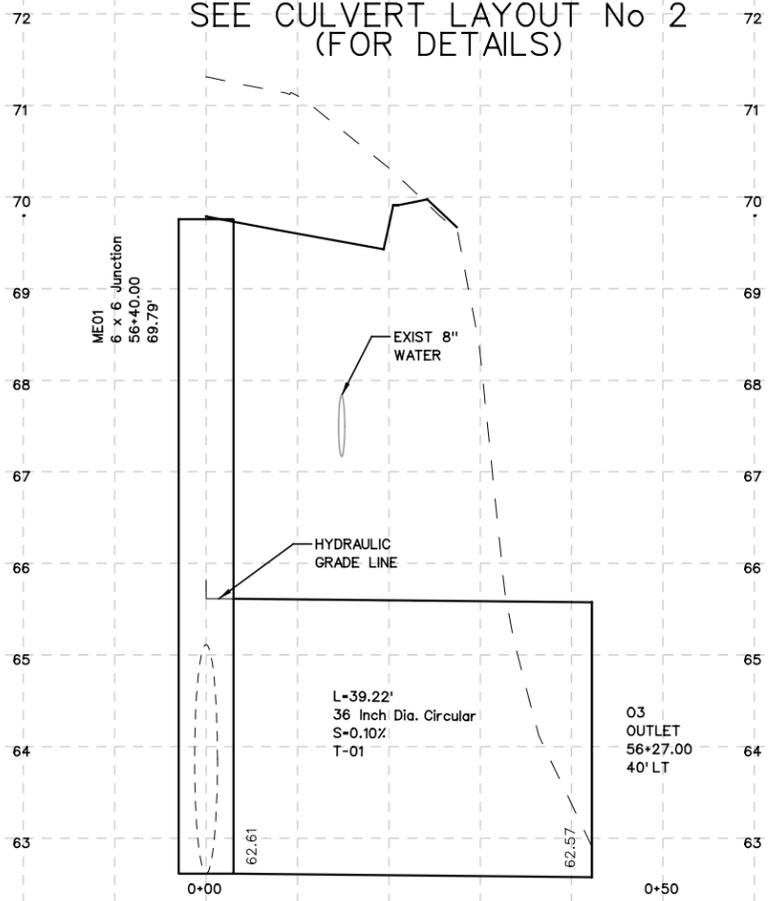
LATERAL F01 TO F03



LATERAL E01 TO F02



LINES T SEE CULVERT LAYOUT No 2 (FOR DETAILS)



NO.	DATE	REVISION	APP.

CONTRACTOR'S
INFORMATION
ONLY



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

BORDER AVE.

STORM DRAIN
PROFILE SHEET

SYSTEM AB

SCALE: 1"=20'-H
1"=2'-V SHEET 5 OF 5

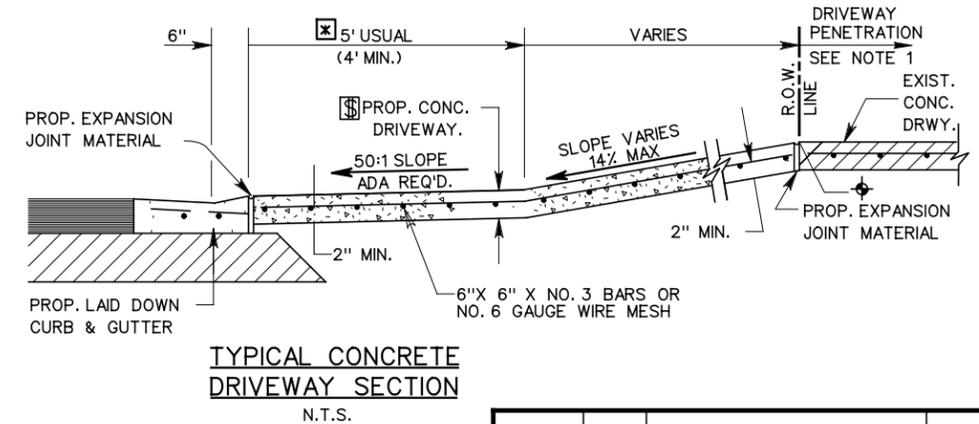
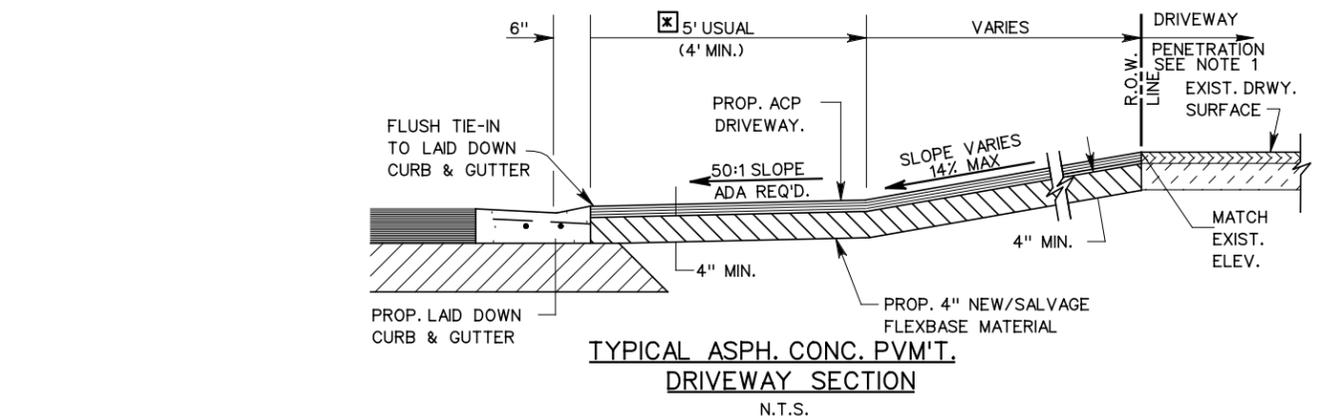
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		43
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.

Date and Time Plotted: 2/23/2015 10:01:49 AM

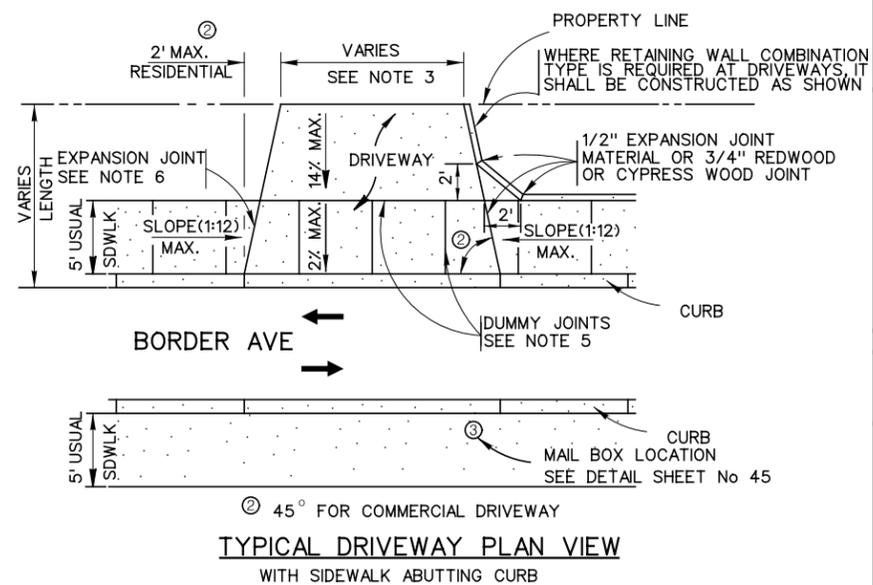
BORDER AVE DRIVEWAY SUMMARY														
SHEET NO.	DRWY #	STATION	OFFSET (LT/RT)	WIDTH AT EOP (FT)	WIDTH AT R.O.W. (FT)	RADIUS (FT)	DRIVEWAY LENGTH (FT)	DRWY PEN (BEYOND R.O.W.) (FT)	530	530	550	560	560	560
									DRWY (CONC)	DRWY (ASPH)	ADJUST GATE	MAILBOX INSTAL. (SINGLE)	MAILBOX INSTAL. (DOUBLE)	MAILBOX INSTAL. (MULT)
									(SY)	(SY)	(EA)	(EA)	(EA)	(EA)
P&P 1 OF 11	1	14+41	LEFT	24	18		12		33			1		
P&P 2 OF 11	2	15+20	LEFT	24	21		12			35				
P&P 2 OF 11	3	16+22	RIGHT	24	12		12			28				
P&P 2 OF 11	4	16+26	LEFT	24	13		12			28				
P&P 4 OF 11	5	27+40	RIGHT	24	12		20			44				
P&P 5 OF 11	6	31+24	RIGHT	24	10		10	6.3		29				
P&P 5 OF 11	7	32+25	RIGHT	24	14		10	6.9		35		1		
P&P 5 OF 11	8	32+64	RIGHT	24	15		10	6		35				
P&P 5 OF 11	9	33+31	RIGHT	24	17		10	3.5		32		1		
P&P 5 OF 11	10	34+56	LEFT	24	16		10	2.9		31		1		
P&P 5 OF 11	11	34+58	RIGHT	24	12		10			23				
P&P 6 OF 11	12	37+08	LEFT	64	34	15	10	9.6	78					1
P&P 6 OF 11	13	37+65	LEFT	24	12		10	3.2	28			2		
P&P 6 OF 11	14	38+60	LEFT	32	12		10	4.5	34	1	2			
P&P 6 OF 11	15	38+96	RIGHT	31	28		9.5	5.8		54	1			
P&P 6 OF 11	16	39+25	LEFT	24	12		10	5.6	31	1	1			
P&P 6 OF 11	17	39+94	LEFT	24	14		10	4.9	32	1				
P&P 7 OF 11	18	40+20	LEFT	24	12		10	7	32	1	1			
P&P 7 OF 11	19	40+65	RIGHT	24	12		10	4.4	28	1	1			
P&P 7 OF 11	20	40+88	RIGHT	24	12		10	1.4		24	1	1		
P&P 7 OF 11	21	41+72	RIGHT	24	17		10	1.5	28			1		
P&P 7 OF 11	22A	41+07	LEFT	24	12		9.3	5.96	41					
P&P 7 OF 11	22B	41+87	LEFT	46	34		10	0.6	50					
P&P 7 OF 11	23	43+39	RIGHT	24	12		10			23				
P&P 7 OF 11	24	43+44	LEFT	24	12		10			23		2		
P&P 7 OF 11	25	43+95	RIGHT	24	12		10		22					
P&P 7 OF 11	26	44+59	LEFT	24	12		10		23		2			
P&P 7 OF 11	27	44+97	RIGHT	24	17		10	1	28	1				
P&P 7 OF 11	28	44+99	LEFT	24	13		10		23		2			
P&P 8 OF 11	29	45+98	LEFT	24	12		10		22		1			
P&P 8 OF 11	30	46+36	RIGHT	24	14		10	4.7	32	1	1			
P&P 8 OF 11	31	46+56	LEFT	24	12		9.5		22			1		
P&P 8 OF 11	32	47+11	LEFT	24	12		9.4		22				1	
P&P 8 OF 11	33	47+72	LEFT	24	16		9.3		24					
P&P 8 OF 11	34	48+51	RIGHT	80	79		9.5	11.3		197				
P&P 8 OF 11	35	48+64	LEFT	24	19		9.1			25		1		
P&P 8 OF 11	36	49+18	LEFT	30	26		9.1			33		1		
P&P 9 OF 11	37	50+12	RIGHT	24	12		10	10		37		1		
P&P 9 OF 11	38	51+38	RIGHT	24	12		10	5.7		31				
P&P 9 OF 11	39	52+59	RIGHT	24	14		10	3.2		29		2		
P&P 10 OF 11	40	57+44	LEFT	24	12		10	1.7	25					
P&P 10 OF 11	41	58+08	RIGHT	54	24	15	13.5	13.8	74	1				
P&P 10 OF 11	42	59+22	LEFT	24	13		10	1.7	26					
P&P 11 OF 11	43	60+73	LEFT	24	12		10		23					
P&P 11 OF 11	44	60+91	RIGHT	53	24	10&20	AVRG 18		64					
P&P 11 OF 11	45	61+67	LEFT	24	13		10			24		1		
TOTAL=									778	888	10	27	2	1

NOTES

- DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
 A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 530.
 B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 530 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
- 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
- THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE.
- CONTRACTOR TO SALVAGE EXIST. MAIL BOX RETURN MATERIAL TO OWNER IF REQUESTED, ALL NEW MAIL BOXES TO BE STANDARD MAIL BOXES OR SIMILAR. THE NEW MAILBOXES SHALL BE LOCATED OPPOSITE TO THE DRIVEWAY AS THEIR ACTUAL LOCATIONS.
- DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

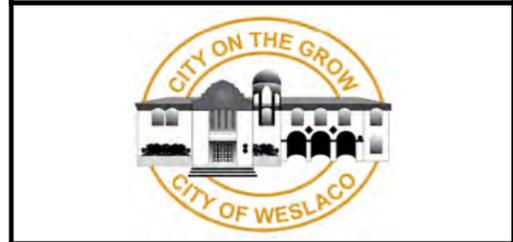


- Ⓜ 4" FOR RESIDENTIAL DRIVES
6" FOR COMMERCIAL DRIVES
W/NO. 4 REBAR @ 9" C-C
- Ⓧ PROP./FUTURE SIDEWALK CROSSING LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. SEE P&P SHEETS FOR PROP. SIDEWALK LOCATION IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.
- Ⓢ CONC. SHALL BE SAW CUT TO THE LIMITS OF REMOVAL WHERE APPLICABLE.



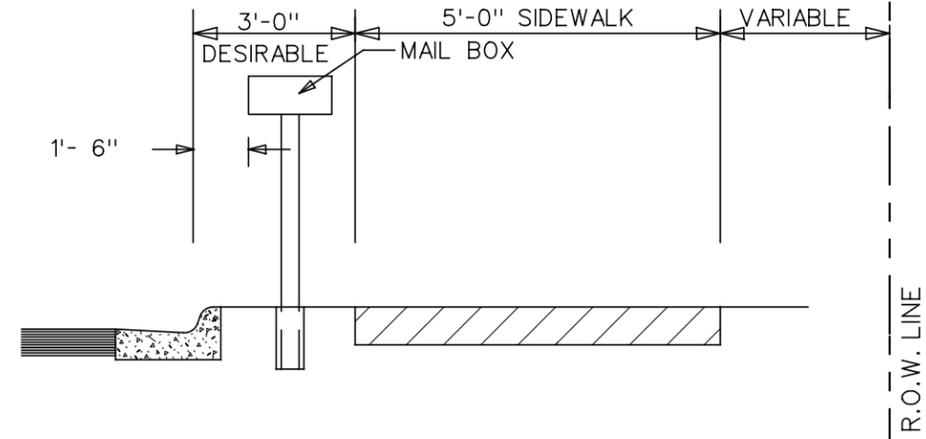
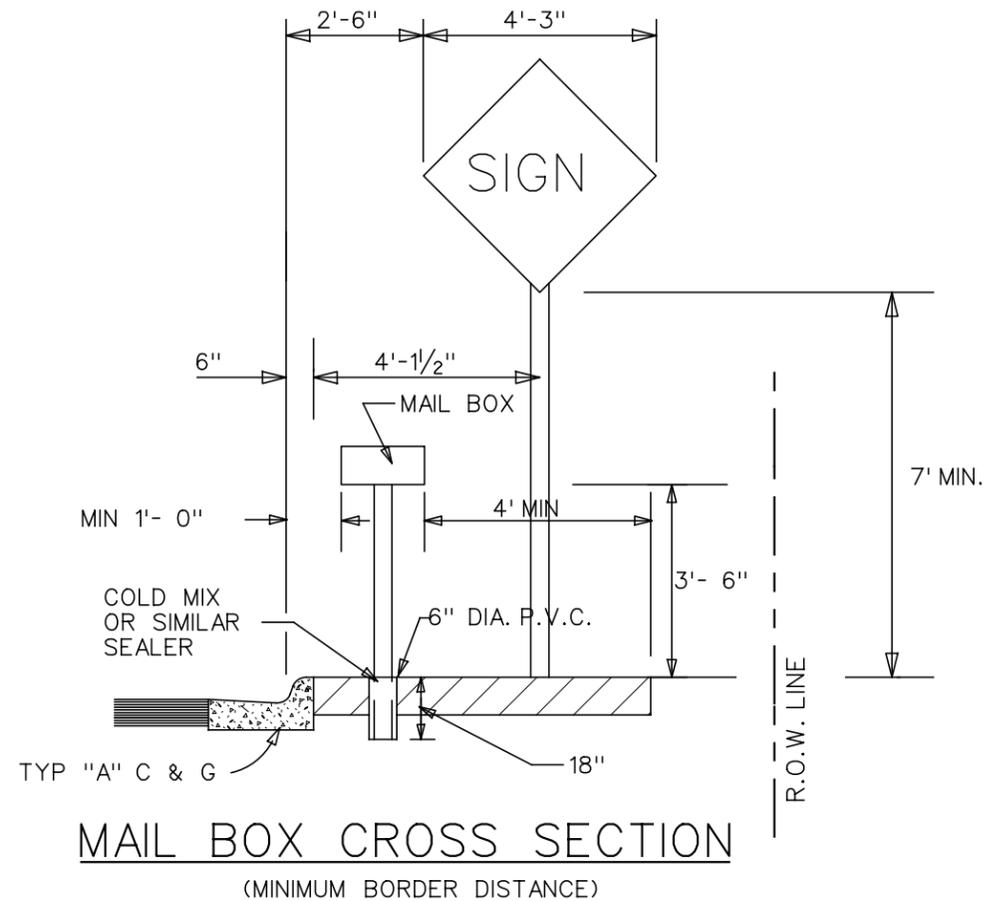
NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
 2/23/2015
 DATE

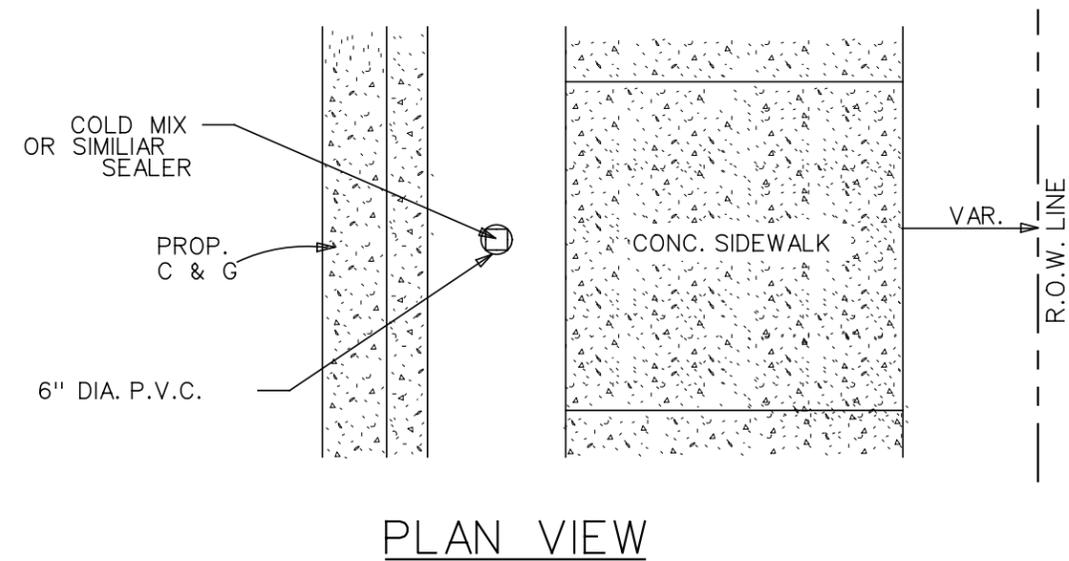
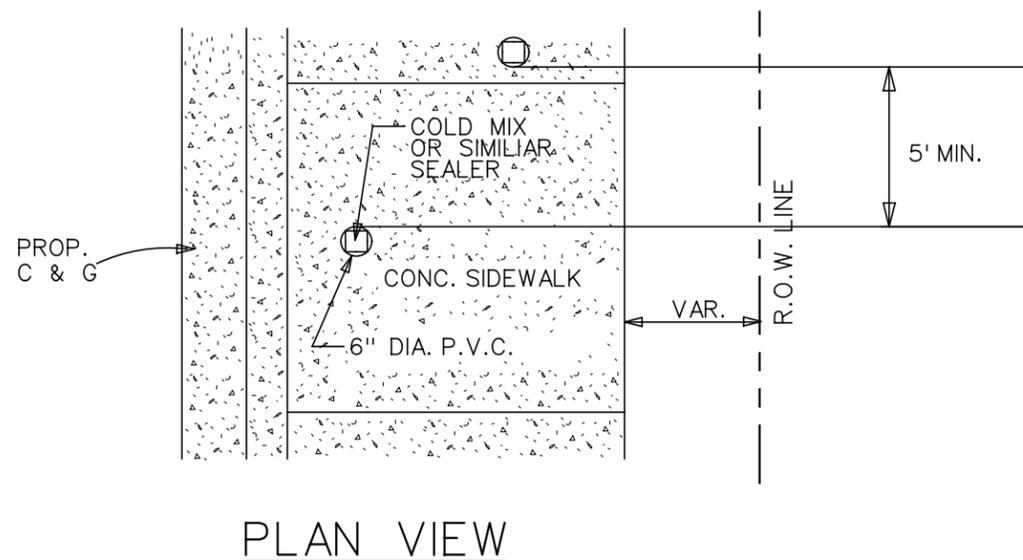


TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898

BORDER AVE.			
DRIVEWAY TABLE			
SHEET 1 OF 1			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO. 44	
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE



MAIL BOX CROSS SECTION
(DESIRABLE BORDER DISTANCE)



© TxDOT 2003

PHARR DISTRICT STANDARDS



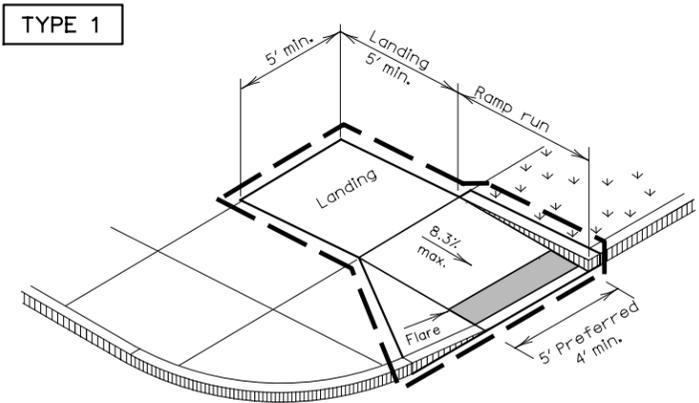
MAILBOX DETAIL

REV. 5/03

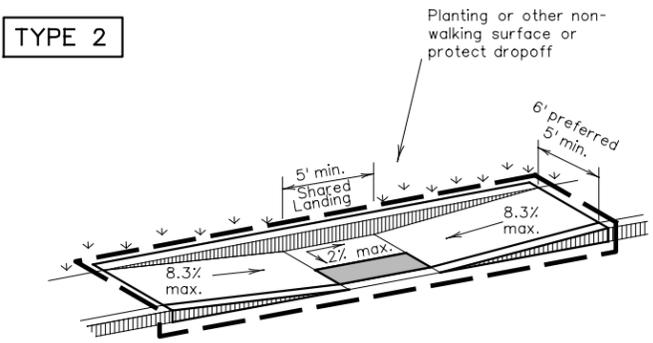
MALBOX.DGN

FED. RD. DIST. NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			45
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	21		BORDER AVE

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

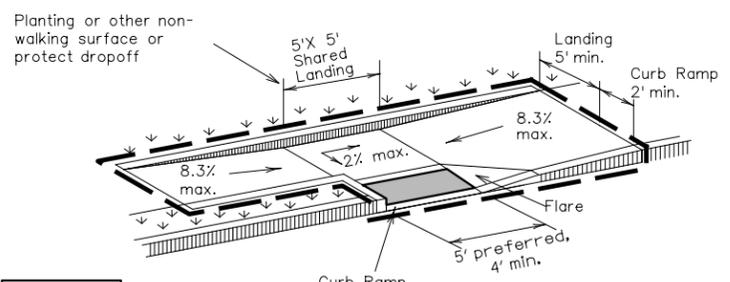


PERPENDICULAR CURB RAMP

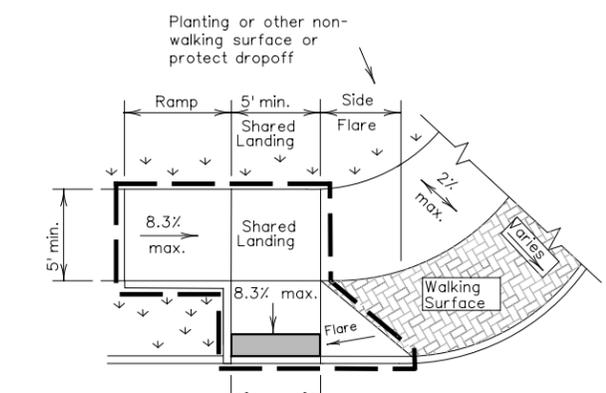


PARALLEL CURB RAMP

(Use only where water will not pond in the landing.)

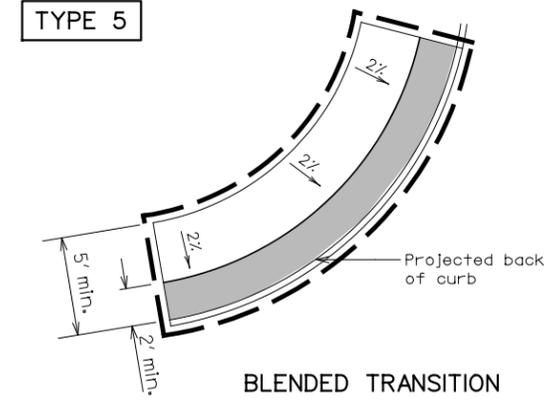


TYPE 3

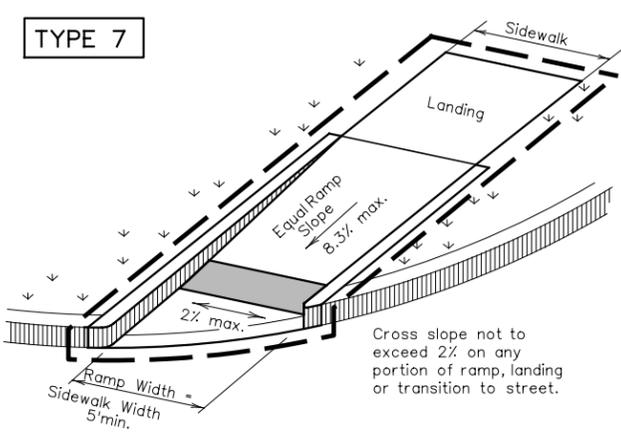


TYPE 6

COMBINATION CURB RAMPS

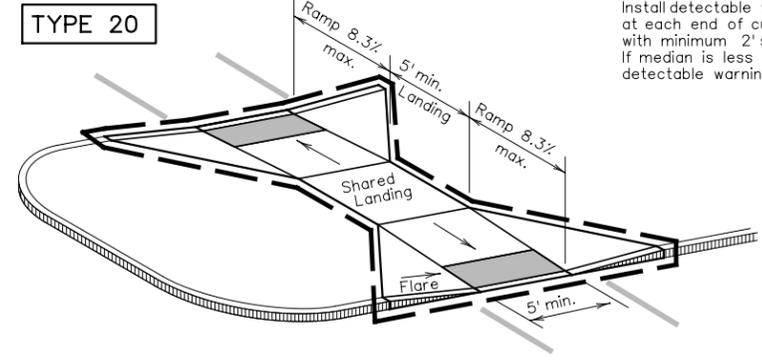


BLENDED TRANSITION



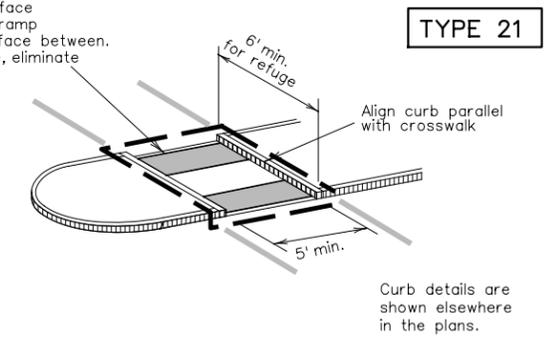
(Sidewalk set back from curb)

DIRECTIONAL RAMPS WITHIN RADIUS



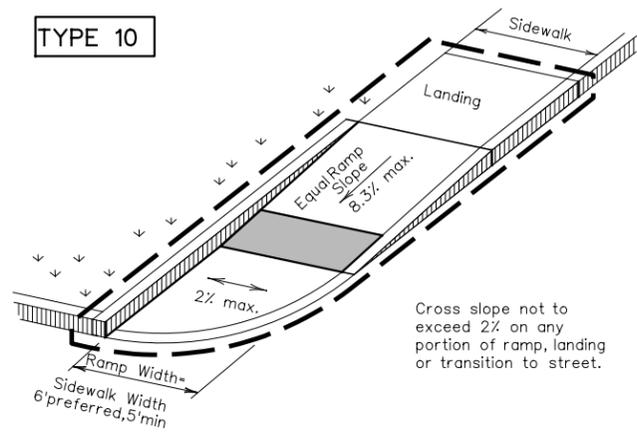
CURB RAMPS AT MEDIAN ISLANDS

Install detectable warning surface at each end of cut-through ramp with minimum 2' smooth surface between. If median is less than 6' wide, eliminate detectable warning surfaces.



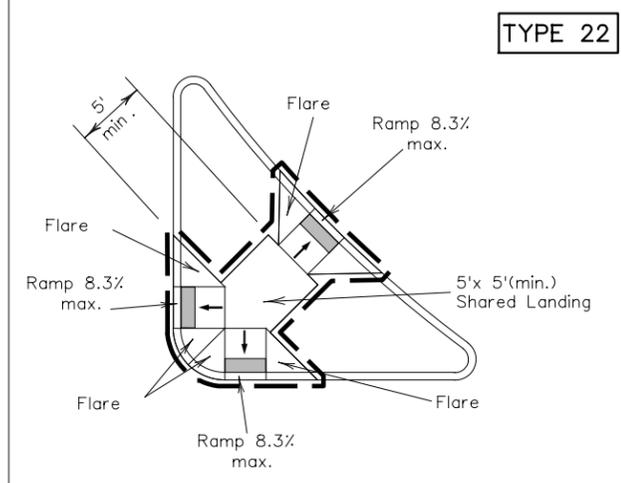
TYPE 21

Curb details are shown elsewhere in the plans.



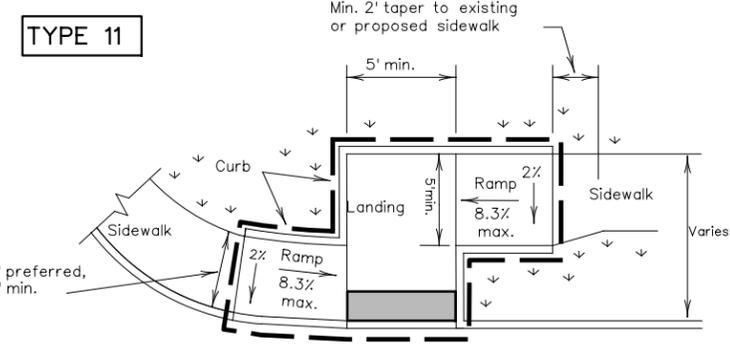
(Sidewalk adjacent to curb)

Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.



TYPE 22

COMBINATION ISLAND RAMPS



OFFSET PARALLEL CURB RAMP

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

- Ramp Limits of Payment
- Detectable Warning Surface

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
	HIDALGO		46	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

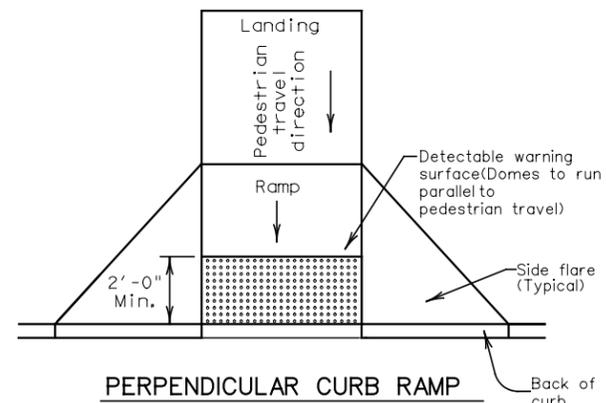
General Notes

Curb Ramps

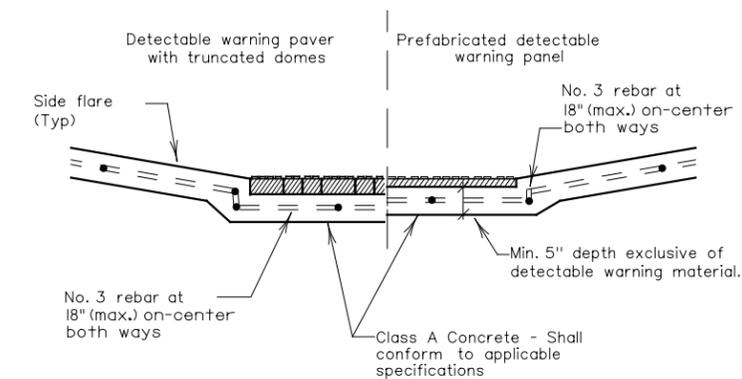
1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



PERPENDICULAR CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



SECTION: CURB RAMP AT DETECTABLE WARNING

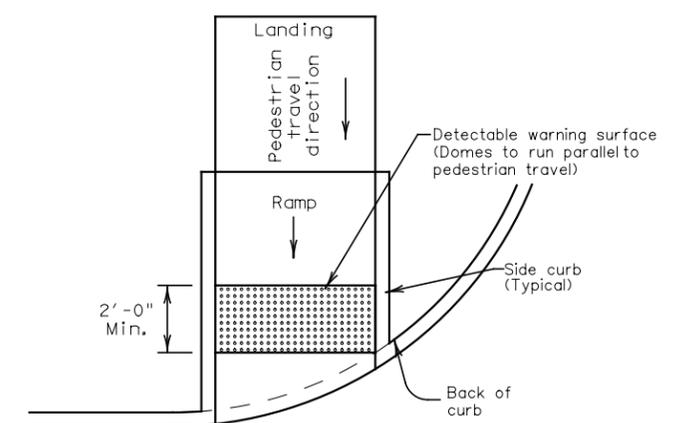
DETECTABLE WARNINGS

Detectable Warning Pavers

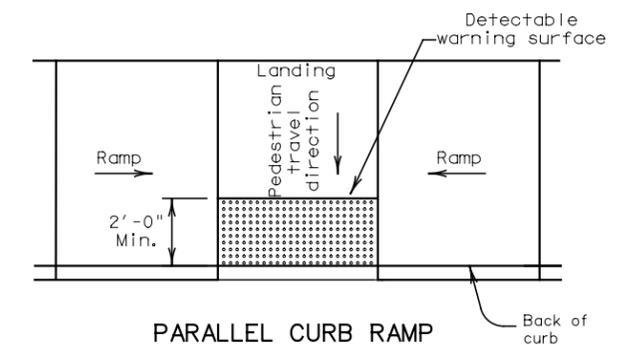
24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.



DIRECTIONAL CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



PARALLEL CURB RAMP
Typical placement of detectable warning surface on landing at street edge.

SHEET 2 OF 4

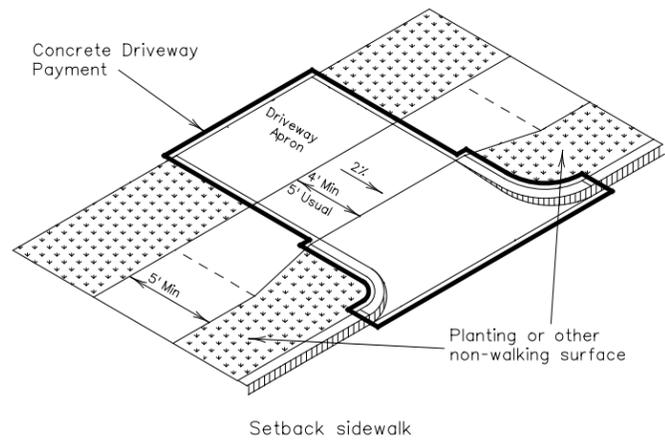


PEDESTRIAN FACILITIES CURB RAMPS

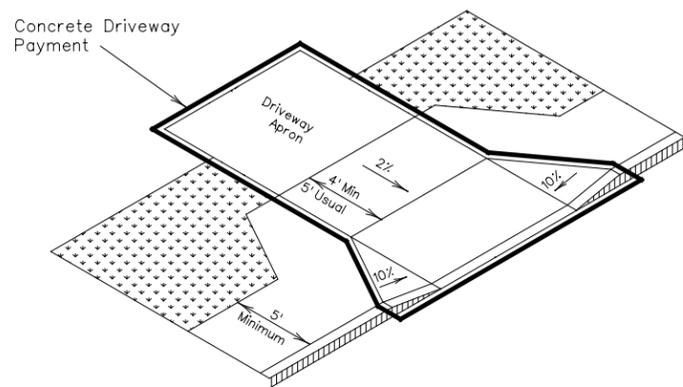
PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				BORDER AVE
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
		HIDALGO	47	

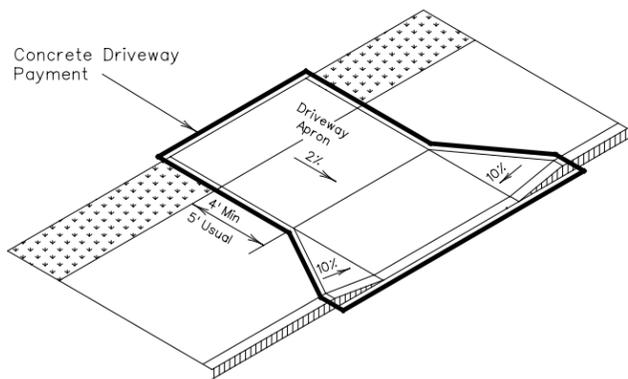
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



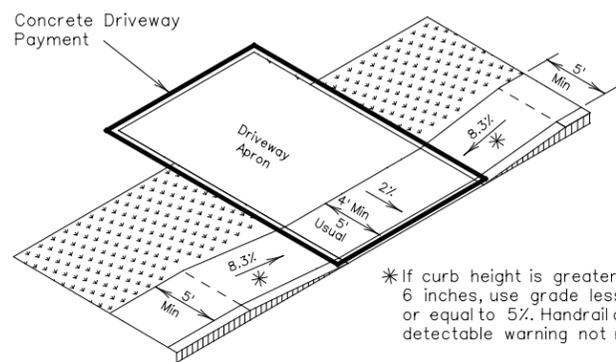
Setback sidewalk



Apron offset sidewalk



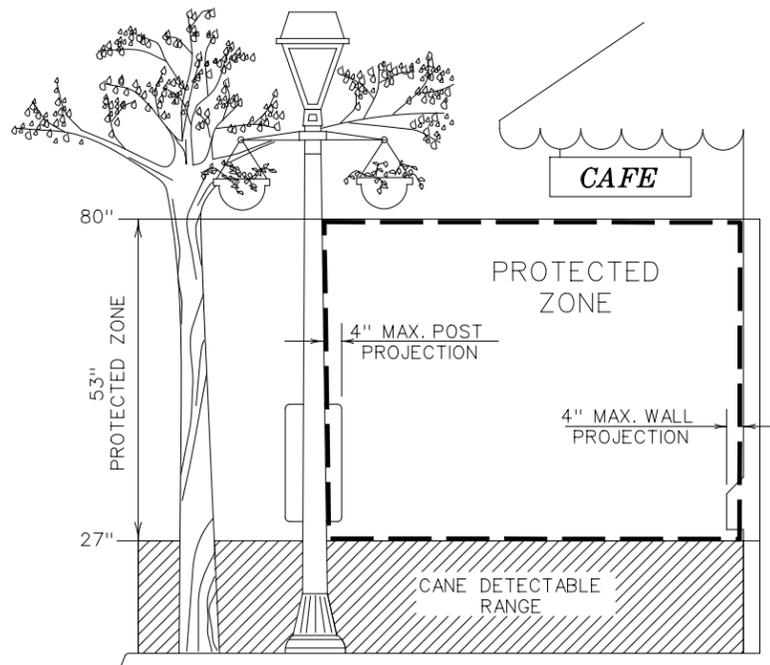
Wide sidewalk



* If curb height is greater than 6 inches, use grade less than or equal to 5%. Handrail and detectable warning not required.

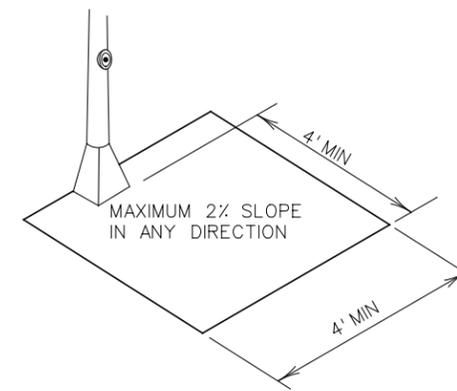
Ramp sidewalk

SIDEWALK TREATMENT AT DRIVEWAYS

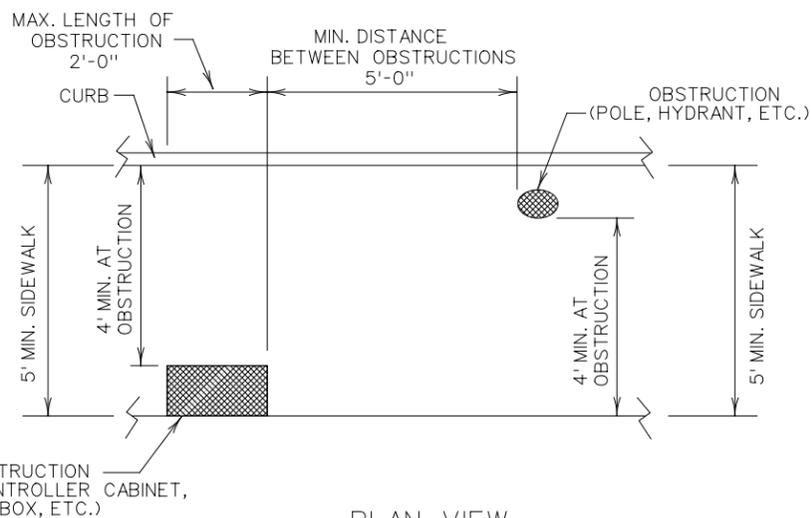


PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.

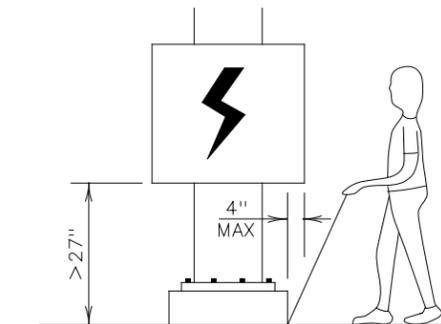


CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON

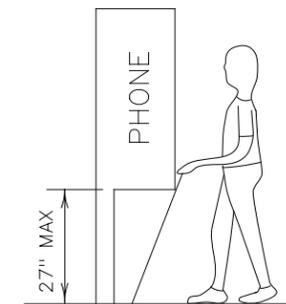


**PLAN VIEW
PLACEMENT OF STREET FIXTURES**

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.



Protruding objects of a height 27" are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE > 80"

SHEET 3 OF 4

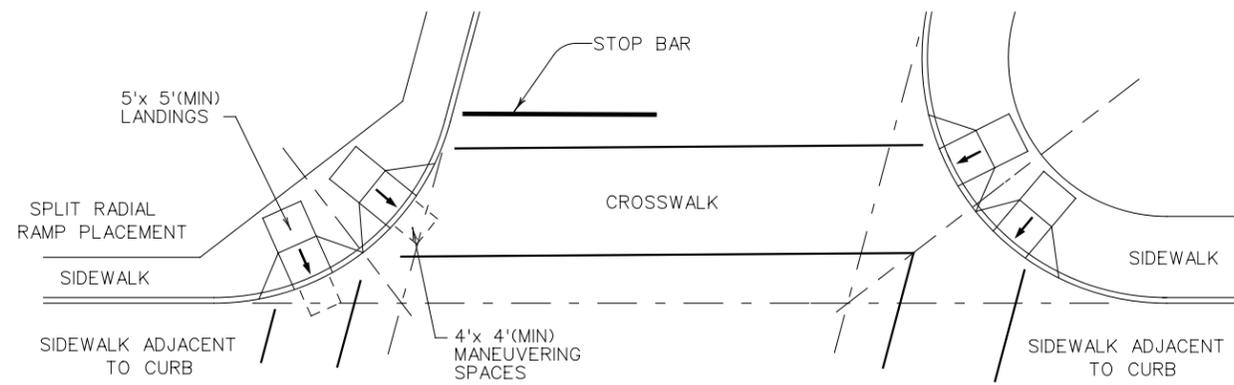


**PEDESTRIAN FACILITIES
CURB RAMPS**

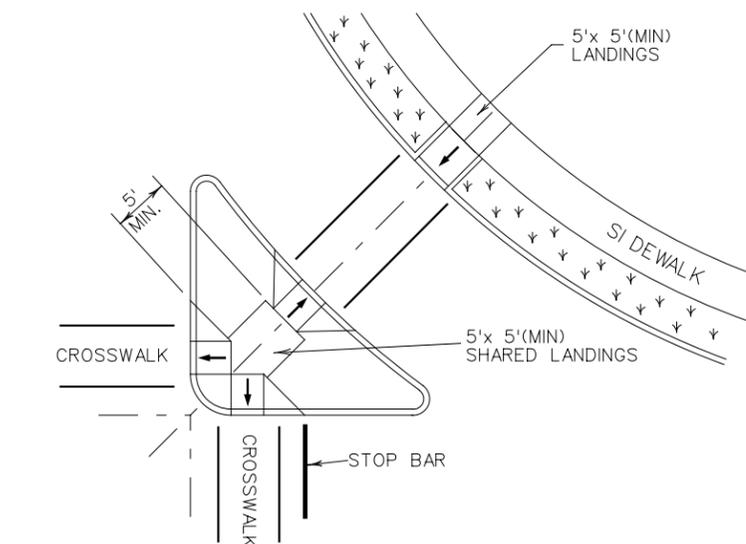
PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVE			
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
	HIDALGO		48	

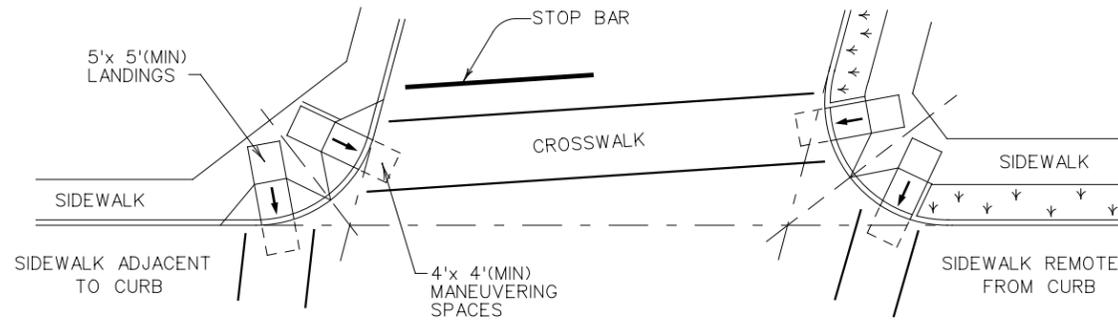
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



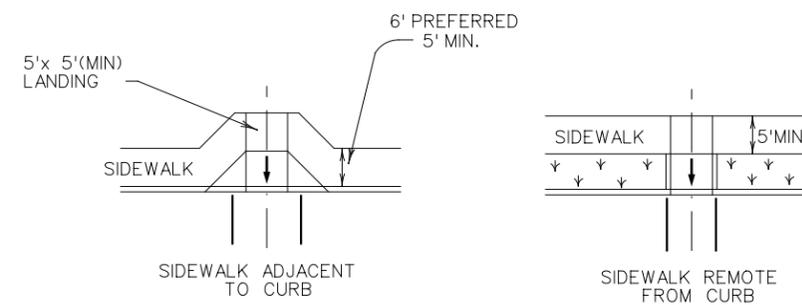
SKewed INTERSECTION WITH "LARGE" RADIUS



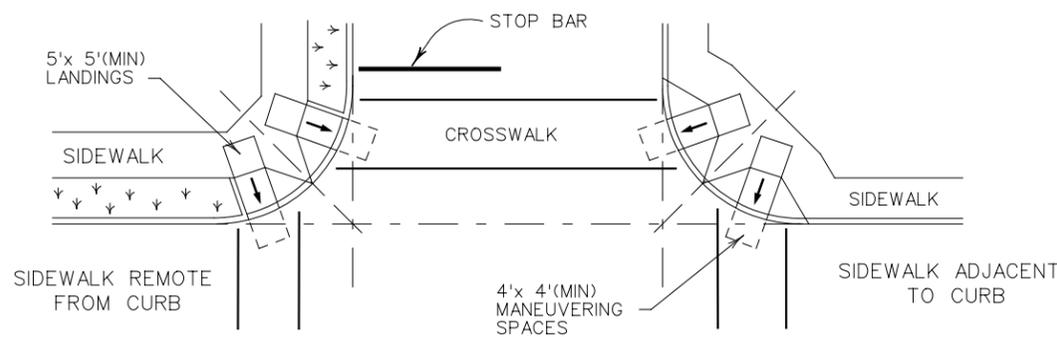
AT INTERSECTION W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

TYPICAL CROSSING LAYOUTS

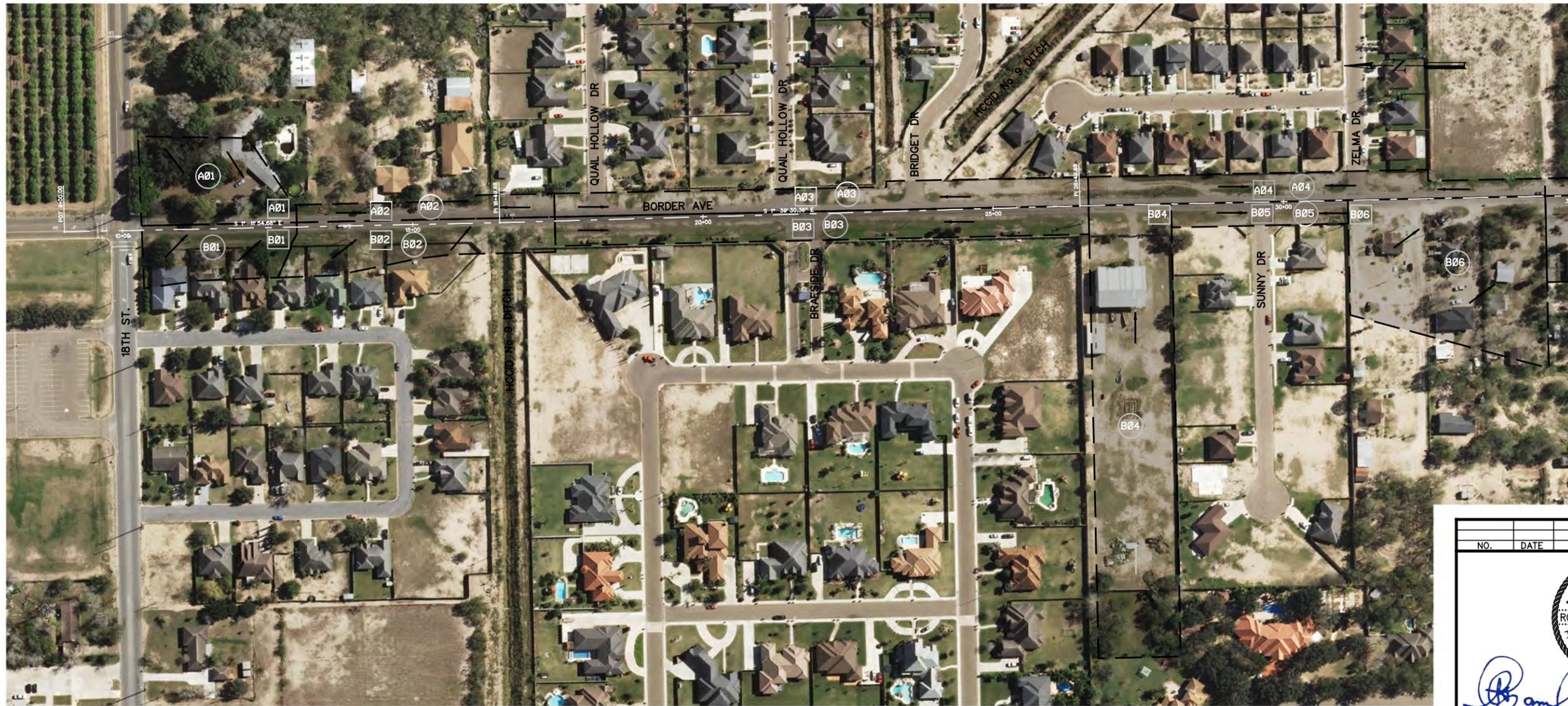
SHEET 4 OF 4



PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				BORDER AVE
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
		HIDALGO	49	



MATCH LINE STA 35+00

Drainage Area Computations

RUNOFF COMPUTATIONS									
Area - ID	Description	Time of Concentration (minutes)	Tc Used (minutes)	Discharge (cfs)	Intensity (in./hour)	Composite C Value	Composite Area (acres)	Remainder C Value	Remainder Area (acres)
A01	Drainage Area A1	12	12	2.841	7.058	0.5	0.805	0.5	0.805
A02	Drainage Area A3	10	10	1.303	7.636	0.5	0.341	0.5	0.341
A03	Drainage Area A4	10	10	3.496	7.636	0.5	0.916	0.5	0.916
A04	Drainage Area A5	10	10	3.089	7.636	0.5	0.804	0.5	0.804
B01	Drainage Area B1	10	10	2.161	7.636	0.5	0.566	0.5	0.566
B02	Drainage Area B2	10	10	2.905	7.636	0.5	0.761	0.5	0.761
B03	Drainage Area B3	10	10	3.998	7.636	0.5	1.047	0.5	1.047
B04	Drainage Area B4	45.8	45.8	4.192	3.308	0.5	2.535	0.5	2.535
B05	Drainage Area B5	10	10	1.077	7.636	0.5	0.282	0.5	0.282
B06	Drainage Area B6	21.35	21.35	5.088	5.278	0.5	1.928	0.5	1.928
X01	Exist 18th East	20	20	2.478	5.472	0.5	0.906	0.5	0.906
X02	Exist 18th West	20	20	1.756	5.472	0.5	0.642	0.5	0.642
X03	Exist Sunny Sub	45.8	45.8	8.515	3.308	0.5	5.149	0.5	5.149

- LEGEND**
- DRAINAGE AREA BOUNDARY
 - DRAINAGE FLOW
 - (X) DRAINAGE AREA ID
 - [X] CONCENTRATION POINT

NO.	DATE	REVISION	APP.



[Signature]
ROBERTO FINA CARRAL

2/23/2015
DATE



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

BORDER AVE.

DRAINAGE AREA MAP

SCALE :1"=200' SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			50
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

MATCH LINE STA 35+00



Drainage Area Computations

RUNOFF COMPUTATIONS									
Area - ID	Description	Time of Concentration (minutes)	Tc Used (minutes)	Discharge (cfs)	Intensity (in./hour)	Composite C Value	Composite Area (acres)	Remainder C Value	Remainder Area (acres)
C01	Drainage Area C01	10	10	2.232	7.636	0.5	0.585	0.5	0.585
C02	Drainage Area C02	10	10	1.709	7.636	0.5	0.448	0.5	0.448
C03	Drainage Area C03	10	10	1.709	7.636	0.5	0.448	0.5	0.448
D01	Drainage Area D01	12.3	12.3	4.734	6.979	0.5	1.357	0.5	1.357
D02	Drainage Area D02	10.5	10.5	3.18	7.482	0.5	0.85	0.5	0.85
D03	Drainage Area D03	10	10	2.596	7.636	0.5	0.68	0.5	0.68
D04	Drainage Area D05	10	10	3.57	7.636	0.5	0.935	0.5	0.935
D05	Drainage Area D04	10	10	4.869	7.636	0.5	1.275	0.5	1.275
D06	Drainage Area D06	10	10	4.216	7.636	0.5	1.104	0.5	1.104
D07	Drainage Area D07	10	10	0.924	7.636	0.95	0.127	0.95	0.127
E01	Drainage Area A9	10	10	1.759	7.636	0.5	0.461	0.5	0.461
F01	Drainage Area B14	10	10	3.62	7.636	0.5	0.948	0.5	0.948
F02	Drainage Area B15	13.86	13.86	7.478	6.601	0.5	2.266	0.5	2.266
F03	Drainage Area B16	13.86	13.86	7.745	6.601	0.5	2.346	0.5	2.346

LEGEND

- DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- (X) DRAINAGE AREA ID
- (X) CONCENTRATION POINT

NO.	DATE	REVISION	APP.



[Signature]
 ROBERTO FINA CARRAL
 DATE 2/23/2015



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1301 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898

BORDER AVE.

DRAINAGE AREA MAP

SCALE: 1"=200' SHEET 2 OF 2

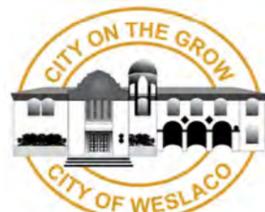
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			51
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

Date and Time Plotted: 2/23/2015 10:03:13 AM

BORDER RD. LINK COMPUTATIONS																												
Link - ID	Upstream Node	Downstream Node	Number of Barrels	Rise	Actual Length	Hydraulic Length	Slope	Invert Upstream	Invert Downstream	Discharge	Capacity	Soffit Upstream	HGL Upstream	EGL Upstream	Soffit Downstream	HGL Downstream	EGL Downstream	Manning's N Value	Actual Velocity Upstream	Actual Velocity Downstream	Uniform Velocity	Critical Velocity	Actual Depth Upstream	Actual Depth Downstream	Uniform Depth	Critical Depth	Fd/cion Slope	Critical Slope
				(ft.)	(ft.)	(ft.)	(%)	(ft.)	(ft.)	(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)		(fps)	(fps)	(fps)	(fps)	(ft.)	(ft.)	(ft.)	(ft.)		
A-01	A01	MA02	1	1.5	14.5	19.5	1.179	69.35	69.12	2.841	13.294	70.85	73.683	73.722	70.82	73.63	73.906	0.012	1.608	1.608	5.672	3.948	1.5	1.5	0.49	0.64	0.012	0.004
A-02	A02	MA03	1	1.5	14.5	19.5	0.103	68.34	68.32	1.303	3.92	69.84	72.805	72.812	69.82	72.793	72.98	0.012	0.737	0.737	1.905	3.134	1.5	1.5	0.616	0.428	0.001	0.004
A-03	A03	MA06	1	1.5	14	19.5	3.59	68.3	67.6	3.496	23.193	69.8	71.433	71.493	69.1	71.354	71.625	0.012	1.978	1.978	8.976	4.222	1.5	1.5	0.408	0.713	0.036	0.004
A-04	A04	MA10	1	1.5	14.5	19.5	0.103	68.78	68.76	3.069	3.921	70.28	73.224	73.269	70.26	73.162	73.255	0.012	1.737	1.737	2.309	4.047	1.5	1.5	1.056	0.666	0.001	0.004
B-01	B01	MA02	1	1.5	14.5	19.5	1.179	69.35	69.12	2.161	13.294	70.85	73.661	73.683	70.82	73.63	73.906	0.012	1.223	1.223	5.249	3.628	1.5	1.5	0.425	0.556	0.012	0.004
B-02	B02	MA03	1	1.5	14.5	19.5	0.103	68.34	68.32	2.905	3.92	69.84	72.848	72.889	69.82	72.793	72.98	0.012	1.644	1.644	2.29	3.978	1.5	1.5	1.012	0.648	0.001	0.004
B-03	B03	MA06	1	1.5	14	19.5	3.59	68.3	67.6	3.998	23.193	69.8	71.458	71.537	69.1	71.354	71.625	0.012	2.262	2.262	9.33	4.409	1.5	1.5	0.437	0.765	0.036	0.005
B-04	B04	MA08	1	1.5	14.5	19.5	3.744	68.74	68.01	4.192	23.685	70.24	72.062	72.148	69.51	71.947	72.199	0.012	2.372	2.372	9.595	4.483	1.5	1.5	0.443	0.784	0.037	0.005
B-05	B05	MA10	1	2	14.5	19.5	0.154	68.29	68.26	5.702	10.34	70.29	73.241	73.291	70.26	73.162	73.255	0.012	1.815	1.815	3.168	4.529	2	2	1.115	0.843	0.002	0.004
B-06	B06	B05	1	2	144.833	150.374	0.113	68.47	68.3	5.088	8.864	70.47	73.346	73.386	70.3	73.241	73.291	0.012	1.62	1.62	2.827	4.374	2	2	1.115	0.795	0.001	0.004
C-01	C01	MC01	1	1.5	14.5	19.5	0.109	68.62	68.598	2.232	4.037	70.12	71.025	71.049	70.098	70.992	71.135	0.012	1.263	1.263	2.205	3.67	1.5	1.5	0.836	0.565	0.001	0.004
C-02	C02	MC04	1	1.5	14.5	19.5	5	68.21	67.235	1.709	27.372	69.71	69.276	69.301	68.735	69.256	69.603	0.012	1.273	0.967	8.192	3.391	1.065	1.5	0.263	0.492	0.05	0.004
C-03	MC07	C03	1	3	14	19.5	0.1	63.47	63.45	21.083	24.579	66.47	66.918	67.055	66.45	66.506	66.659	0.012	2.983	2.983	3.645	6.092	3	3	2.288	1.475	0.001	0.004
D-01	D01	D02	1	1.5	121.748	125.183	0.559	69.32	68.62	4.734	9.154	70.82	71.461	71.571	70.12	71.132	71.222	0.012	2.679	2.679	4.915	4.677	1.5	1.5	0.803	0.836	0.006	0.005
D-02	D02	MC01	1	2	17.5	20.489	0.104	68.12	68.098	7.581	8.481	70.12	71.132	71.222	70.098	70.992	71.135	0.012	2.413	2.413	2.746	4.959	2	2	1.643	0.979	0.001	0.004
D-03	D03	MC02	1	1.5	14.5	19.5	4.388	69.23	68.374	2.596	25.641	70.73	70.458	70.504	68.874	70.414	70.626	0.012	1.676	1.469	8.847	3.837	1.228	1.5	0.334	0.611	0.044	0.004
D-04	D04	MC04	1	1.5	17.5	20.489	4.759	68.21	67.235	8.228	26.704	69.71	70.13	70.664	68.735	67.947	69.495	0.012	4.656	9.966	12.613	5.861	1.5	0.711	0.595	1.111	0.048	0.006
D-05	D05	D04	1	1.5	121.706	125.191	0.207	68.62	68.36	4.869	5.572	70.12	70.478	70.595	69.86	70.13	70.664	0.012	2.755	2.755	3.367	4.724	1.5	1.5	1.144	0.848	0.002	0.005
D-06	D06	MC06	1	1.5	14	19.5	0.322	66.11	66.047	4.216	6.942	67.61	67.359	67.5	67.547	67.196	67.357	0.012	2.681	2.904	3.913	4.489	1.249	1.148	0.88	0.787	0.003	0.005
D-07	D07	MC07	1	1.5	14	19.5	2.769	65.51	64.97	0.924	20.371	67.01	66.925	66.928	66.47	66.918	67.055	0.012	0.535	0.523	5.542	2.825	1.415	1.5	0.226	0.361	0.028	0.004
E-01	E01	ME02	1	1.5	14	19.5	1.002	64.513	64.318	1.759	12.254	66.013	66.639	66.653	65.818	66.618	66.736	0.012	0.996	0.996	4.671	3.42	1.5	1.5	0.399	0.499	0.01	0.004
F-01	F01	F02	1	1.5	57.748	61.183	0.182	64.625	64.513	3.62	5.228	66.125	66.363	66.428	66.013	66.236	66.75	0.012	2.049	2.049	3.002	4.265	1.5	1.5	0.968	0.727	0.002	0.005
F-02	F02	ME02	1	2	29	32.489	0.601	64.013	63.818	18.09	20.445	66.013	68.236	68.75	65.818	66.618	66.736	0.012	5.758	5.758	6.904	7.005	2	2	1.555	1.532	0.006	0.006
F-03	F03	F02	1	1.5	157.621	159	0.786	65.762	64.513	7.745	10.85	67.262	69.271	69.569	66.013	66.236	68.75	0.012	4.382	4.382	6.299	5.696	1.5	1.5	0.985	1.078	0.008	0.006
R-01	MA07	O1	1	4	132.371	135.371	0.07	65.727	65.632	42.62	44.288	69.727	70.876	71.055	69.632	69.632	69.811	0.012	3.392	3.392	3.48	6.999	4	4	3.755	1.951	0.001	0.003
S-01	C03	J01	1	3	3	4	0.108	63.45	63.446	22.289	25.581	66.45	66.506	66.659	66.446	66.501	66.655	0.012	3.153	3.153	3.853	6.206	3	3	2.288	1.519	0.001	0.004
S-02	J01	O2	1	3	22.299	22.299	0.098	63.446	63.424	22.289	24.29	66.446	66.501	66.655	66.424	66.424	66.579	0.012	3.153	3.153	3.588	6.206	3	3	2.464	1.519	0.001	0.004
T-01	ME01	O3	1	3	39.218	42.218	0.1	62.617	62.574	19.537	24.58	65.617	65.761	65.879	65.574	65.574	65.693	0.012	2.764	2.764	3.674	5.942	3	3	2.112	1.418	0.001	0.004
X-01	X01	MA01	1	1.5	22.2	24.2	4.592	73.231	72.12	10.6	26.231	74.731	77.423	77.981	73.62	76.653	77.05	0.012	5.998	5.998	13.314	6.733	1.5	1.5	0.692	1.251	0.046	0.008
X-02	X02	MA01	1	1.5	18.47	20.47	5.818	73.311	72.12	5.3	29.526	74.811	76.838	76.977	73.62	76.653	77.05	0.012	2.999	2.999	12.002	4.873	1.5	1.5	0.447	0.887	0.058	0.005
X-03	X03	MA09	1	1.5	52.83	54.83	1.568	69.59	68.73	10.6	15.331	71.09	74.027	74.586	70.23	72.992	73.519	0.012	5.998	5.998	8.848	6.733	1.5	1.5	0.963	1.251	0.016	0.008
MA-01	MA01	MA02	1	2	236	250	1.152	71.96	69.08	15.9	28.296	73.96	76.653	77.05	71.08	73.63	73.906	0.012	5.061	5.061	8.764	6.577	2	2	1.122	1.438	0.012	0.006
MA-02	MA02	MA03	1	2.5	114	118	0.644	69.08	68.32	20.727	38.361	71.58	73.63	73.906	70.82	72.793	72.98	0.012	4.223	4.223	7.492	6.5	2.5	2.5	1.375	1.547	0.006	0.004
MA-03	MA03	MA04	1	3	277.499	281.999	0.113	68.32	68	24.524	26.183	71.32	72.793	72.98	71	71.968	72.155	0.012	3.469	3.469	3.947	6.411	3	3	2.464	1.597	0.001	0.004
MA-04	MA04	MA05	1	3	245	250	0.1	66.5	66.25	24.524	24.579	69.5	71.968	72.155	69.25	71.67	71.857	0.012	3.469	3.469	3.559	6.411	3	3	2.816	1.597	0.001	0.004
MA-05	MA05	MA06	1	3	270	275	0.1	66.25	65.975	24.524	24.579	69.25	71.67	71.857	68.975	71.354	71.625	0.012	3.469	3.469	3.559	6.411	3	3	2.816	1.597	0.001	0.004
MA-06	MA06	MA07	1	3	159.5	165	0.15	65.975	65.727	29.557	30.103	68.975	71.354	71.625	68.727	70.876	71.055	0.012	4.181	4.181	4.29	6.853	3	3	2.816	1.761	0.001	0.004
MA-07	MA07	MA08	1	2.5	404.997	409.997	0.175	66.912	66.195	19.772	19.996	69.412	71.947	72.199	68.695	70.876	71.055	0.012	4.028	4.028	4.132	6.383	2.5	2.5	2.347	1.509	0.002	0.004
MA-08	MA08	MA09	1	2	139.5	143.5	0.546	68.195	67.412	18.295	19.478	70.195	72.992	73.519	69.412	71.947	72.199	0.012	5.823	5.823	6.626	7.046	2	2	1.643	1.54	0.006	0.006
MA-09	MA10	MA09	1	2	52.5	56.5	0.115	68.261	68.195	7.756	8.954	70.261	73.162	73.255	70.195	72.992	73.519	0.012	2.469	2.469	3.017	4.997	2	2	1.525	0.991	0.001	0.004
MC-01	MC01	MC02	1	2	126	130	0.173	68.098	67.874	9.547	10.953	70.098	70.992	71.135	69.874	70.414	70.626	0.012	3.039	3.039	3.713	5.365	2	2	1.525	1.105	0.002	0.004
MC-02	MC02	MC03	1	2	241	245	0.256	67.874	67.247	11.628	13.336	69.874	70.414	70.626	69.247	69.707	69.919	0.012	3.701	3.701	4.523	5.768	2	2	1.525	1.224	0.003	0.005
MC-03	MC03																											

BORDER RD. INLET HYDRAULICS

Inlet ID	Discharge	Supplied Discharge	By Pass Flow Into	By Pass Node ID	Max By Pass	By Pass Flow	Capacity	Type	Profile Type	Elevation	Computed Poned Width	Max Poned Width	Computed Poned Depth	Max Poned Depth	Length Required	Curb Length	Curb Depression	Curb Height	Curb Depression Width	Spread N	Composite Spread Slope	Inlet to Gutter Offset
	(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)			(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)			(feet)
A01	2.841	1.84	0	A02	5	0.954	1.887	Curb and Grate	On Grade	73.574	10.742	19.5	0.215	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
A02	2.257	2.46	0.954	0	0	0	13.128	Curb and Grate	Sag	72.842	12.066	19.5	0.241	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
A03	3.496	2.17	0	0	0	0	17.33	Curb and Grate	Sag	73.23	16.154	19.5	0.323	0.5	-	10.334	0.333	0.416	1.5	0.015	0.02	0
A04	3.069	2.17	0	0	0	0	17.33	Curb and Grate	Sag	73.28	14.811	19.5	0.296	0.5	-	10.334	0.333	0.416	1.5	0.015	0.02	0
B01	2.161	3.29	0	B02	5	0.648	1.513	Curb and Grate	On Grade	73.574	9.696	19.5	0.194	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
B02	3.553	5.1	0.648	0	0	0	13.128	Curb and Grate	Sag	72.842	16.329	19.5	0.327	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
B03	3.998	1.94	0	0	0	0	17.33	Curb and Grate	Sag	73.23	17.664	19.5	0.353	0.5	-	10.334	0.333	0.416	1.5	0.015	0.02	0
B04	4.192	2.71	0	B05	5	0.968	3.224	Curb and Grate	On Grade	73.68	16.308	19.5	0.326	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
B05	3.659	4.48	2.581	0	0	0	13.128	Curb and Grate	Sag	73.3	16.651	19.5	0.333	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
B06	5.088	2.71	0	B05	5	1.613	3.475	Curb and Grate	On Grade	73.82	15.707	20	0.314	1.333	-	5.167	0.333	0.416	1.5	0.015	0.02	0
C01	2.232	3.04	0	0	0	0	13.128	Curb and Grate	Sag	73.12	11.978	19.5	0.24	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
C02	1.709	3.04	0	0	0	0	13.128	Curb and Grate	Sag	72.87	10.025	19.5	0.201	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
C03	1.709	3.04	0	E01	5	0.26	1.449	Curb and Grate	On Grade	69.482	11.568	19.5	0.231	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
D01	4.734	3.04	0	D02	5	1.322	3.411	Curb and Grate	On Grade	73.468	16.044	19.5	0.321	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
D02	4.983	3.04	1.803	0	5	0	14.393	Curb	Sag	73.12	13.42	19.5	0.247	0.5	9.065	15	0.333	0.417	1.5	0.015	0.02	0
D03	2.596	3.04	0	D02	5	0.48	2.115	Curb and Grate	On Grade	73.38	13.628	19.5	0.273	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
D04	4.768	3.04	1.199	0	5	0	14.393	Curb	Sag	72.87	11.97	19.5	0.239	0.5	9.065	15	0.333	0.417	1.5	0.015	0.02	0
D05	4.869	3.04	0	D04	5	1.199	3.67	Curb and Grate	On Grade	73.12	17.248	19.5	0.345	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
D06	4.216	3.04	0	D07	5	1.651	2.565	Curb and Grate	On Grade	70.606	12.396	19.5	0.248	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
D07	2.575	3.04	1.651	F01	5	0.484	2.092	Curb and Grate	On Grade	69.482	13.488	19.5	0.27	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
E01	2.019	1.94	0.26	0	0	0	17.33	Curb and Grate	Sag	69.017	11.204	19.5	0.224	0.5	-	10.334	0.333	0.416	1.5	0.015	0.02	0
F01	4.104	1.94	0.484	F02	5	0.955	3.149	Curb and Grate	On Grade	69.128	16.06	19.5	0.321	0.5	-	5.167	0.333	0.416	1.5	0.015	0.02	0
F02	9.298	1.94	1.82	0	5	0	14.393	Curb	Sag	69.017	18.682	19.5	0.374	0.5	21.022	15	0.333	0.417	1.5	0.015	0.02	0
F03	7.745	1.94	0	F02	10	0.865	6.88	Curb	On Grade	70.226	15.08	19.5	0.302	0.5	21.303	15	0.333	0.417	1.5	0.015	0.02	0

NO.	DATE	REVISION	APP.
			
		2/23/2015 DATE	
			
TEDSI INFRASTRUCTURE GROUP Consulting Engineers 1201 E. Expressway 83 Mission, Texas 78572 (956) 424-7898			
BORDER AVE. HYDROLOGIC CALCULATIONS			
SHEET 2 OF 2			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			53
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

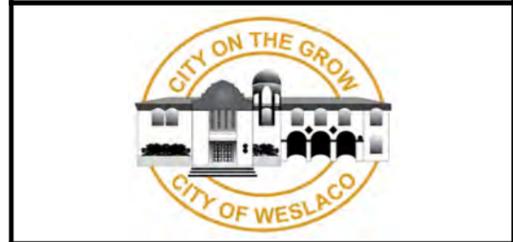
Inlets and Manholes

Node - ID								
Inlets & Manholes					ITEM 465 - Inlets (Complete)		ITEM 465 - Manholes (Complete)	
Node - ID	Type	Station	Offset	Reference Chain	TY F (ea)	INLET EXT (ea)	STANDARD PRECAST (ea)	TY M (ea)
			(feet)					
O1	Outlet	24+48.00	-122.00	P-BRD				
O2	Outlet	56+12.37	-65.80	P-BRD				
O3	Outlet	56+31.47	-65.42	P-BRD				
A01	Curb and Grate	13+00.00	-19.50	P-BRD	1			
A02	Curb and Grate	14+18.00	-19.50	P-BRD	1			
A03	Curb and Grate	22+25.00	-19.50	P-BRD	1	1		
A04	Curb and Grate	30+00.00	-19.50	P-BRD	1	1		
B01	Curb and Grate	13+00.00	19.50	P-BRD	1			
B02	Curb and Grate	14+18.00	19.50	P-BRD	1			
B03	Curb and Grate	22+25.00	19.50	P-BRD	1	1		
B04	Curb and Grate	28+00.00	19.50	P-BRD	1			
B05	Curb and Grate	30+00.00	19.50	P-BRD	1			
B06	Curb and Grate	31+50.00	19.50	P-BRD	1			
C01	Curb and Grate	39+75.00	-19.50	P-BRD	1			
C02	Curb and Grate	45+50.00	-19.50	P-BRD	1			
C03	Curb and Grate	56+00.00	-19.50	P-BRD	1			
D01	Curb and Grate	38+50.00	19.50	P-BRD	1			
D02	Curb	39+75.00	19.50	P-BRD	1	2		
D03	Curb and Grate	41+05.00	19.50	P-BRD	1			
D04	Curb	45+50.00	19.50	P-BRD	1	2		
D05	Curb and Grate	46+75.00	19.50	P-BRD	1			
D06	Curb and Grate	53+00.00	19.50	P-BRD	1			
D07	Curb and Grate	56+00.00	19.50	P-BRD	1			
E01	Curb and Grate	58+41.00	-19.50	P-BRD	1	1		
F01	Curb and Grate	57+80.00	31.50	P-BRD	1			
F02	Curb	58+41.00	31.50	P-BRD	1	2		
F03	Curb	60+00.00	31.50	P-BRD	1	2		
X01	Junction	10+60.00	-26.93	P-BRD			1	
X02	Junction	10+60.00	12.92	P-BRD				1
X03	Junction	29+43.50	54.83	P-BRD				
MA01	Junction	10+60.00	0.00	P-BRD				1
MA02	Junction	13+00.00	0.00	P-BRD				1
MA03	Junction	14+18.00	0.00	P-BRD				1
MA04	Junction	17+00.00	0.00	P-BRD				1
MA05	Junction	19+50.00	0.00	P-BRD			1	
MA06	Junction	22+25.00	0.00	P-BRD			1	
MA07	Junction	23+90.00	0.00	P-BRD			1	
MA08	Junction	28+00.00	0.00	P-BRD			1	
MA09	Junction	29+43.50	0.00	P-BRD			1	
MA10	Junction	30+00.00	0.00	P-BRD			1	
MC01	Junction	39+75.00	0.00	P-BRD			1	
MC02	Junction	41+05.00	0.00	P-BRD			1	
MC03	Junction	43+50.00	0.00	P-BRD			1	
MC04	Junction	45+50.00	0.00	P-BRD			1	
MC05	Junction	49+25.00	0.00	P-BRD			1	
MC06	Junction	53+00.00	0.00	P-BRD			1	
MC07	Junction	56+00.00	0.00	P-BRD			1	
ME01	Junction	56+40.00	0.00	P-BRD			1	
ME02	Junction	58+41.00	0.00	P-BRD			1	
					24	12	16	5

NO.	DATE	REVISION	APP.



[Signature]
ROBERTO FINA CARRAL
 DATE: 2/23/2015



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

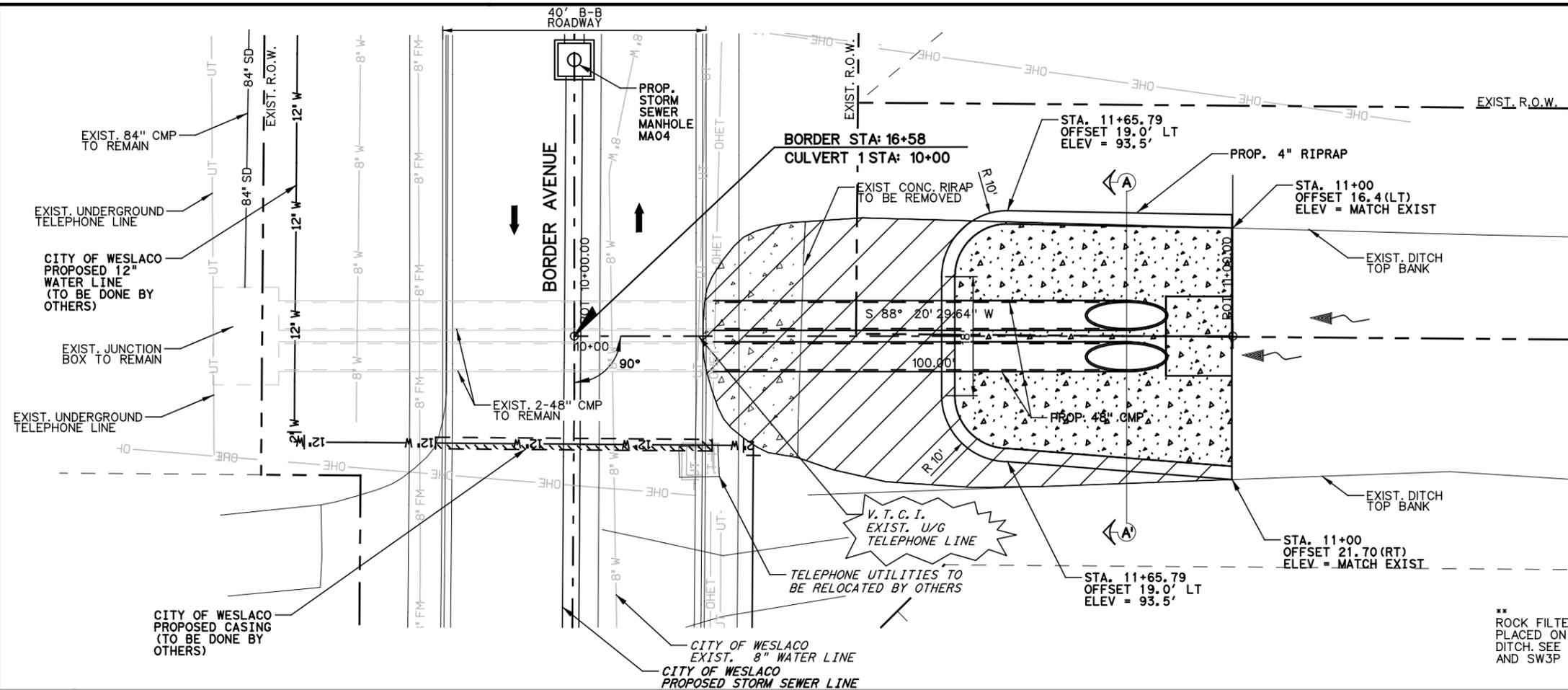
BORDER AVE.

**DRAINAGE
 STRUCTURE
 INFORMATION**

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		54
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO. BORDER AVE

Date and Time Plotted: 2/23/2015 10:03:17 AM



LEGEND:

- PROP. FILL
- CONCRETE
- TO BE REMOVED UNDER ITEM 496 INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES
- DIRECTION OF TRAFFIC
- ROCK FILTER DAM
- FOR CONTRACTORS INFORMATION ONLY, NON PAY
- FLOW DIRECTION
- EXISTING 48" CMP AREA TO BE REMOVED (10' CUT)

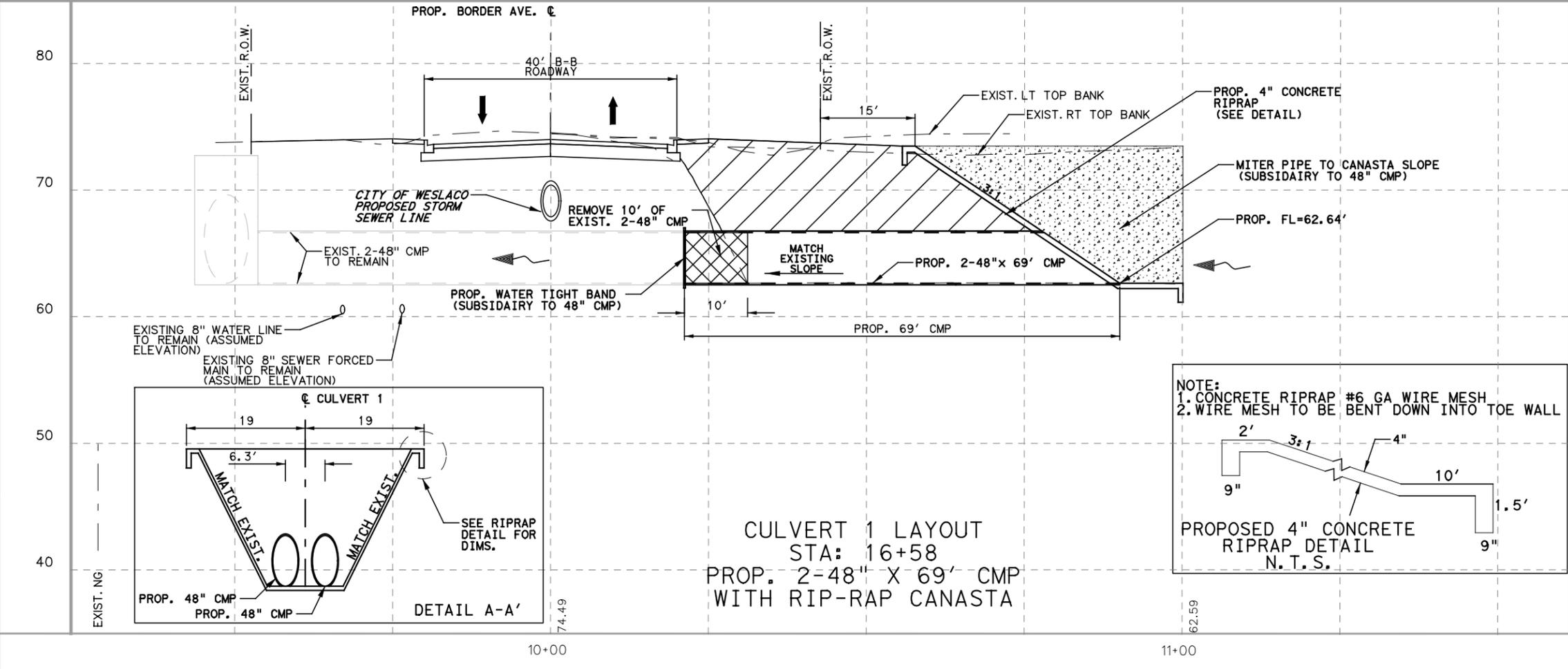
NOTES:

- 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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
- CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET *6

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
0432-2001	RIP-RAP CONC 4" CANASTA	CY	31
0464-2005	48" CMP (MATCH EXISTING)	LF	138
**0464-2007	ROCK FILTER DAM	LF	40
1122-2002	REMOVE EXISTING RIPRAP	SY	49

** ROCK FILTER DAM TO BE PLACED ON DOWNSTREAM DITCH. SEE P&P 3 (SHEET 28) AND SW3P SHEETS



NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
DATE: 2/23/2015

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7898
TBPE F-1640

BORDER AVE.

CULVERT 1 LAYOUT STA: 16+58

SCALE: 1"=20' SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		55

STATE	DIST.	COUNTY
TEXAS		HIDALGO

CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

Date and Time Plotted: 2/23/2015 10:03:18 AM

LEGEND:

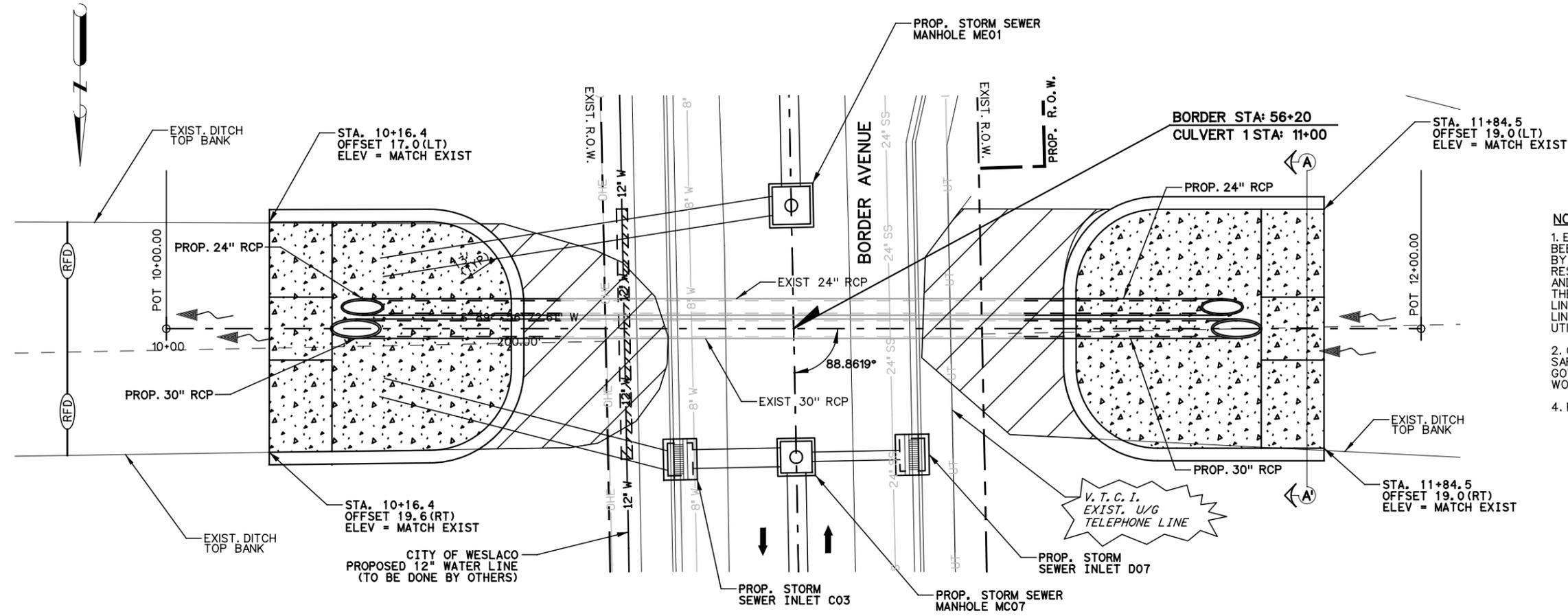
- PROP. FILL
- CONCRETE
- TO BE REMOVED UNDER ITEM 496 INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES
- DIRECTION OF TRAFFIC
- ROCK FILTER DAM
- FOR CONTRACTORS INFORMATION ONLY, NON PAY
- FLOW DIRECTION

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 ESTABLISHING THEIR EXACT LOCATION, DEPTH, AND SIZE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR 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. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
4. FOR LANE CONFIGURATION SEE TYPICAL SECTION SHEET *6

SHEET SUMMARY

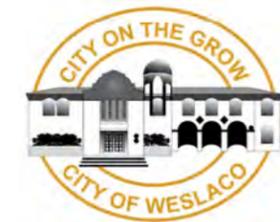
ITEM	DESCRIPTION	UNIT	QUANTITY
0432-2001	RIP-RAP CONC 4" CANASTA	CY	54
0464-2005	24" RCP	LF	76
0464-2007	30" RCP	LF	76
1122-2002	ROCK FILTER DAM	LF	40



NO.	DATE	REVISION	APP.



Roberto Fina Carral
 ROBERTO FINA CARRAL DATE 2/23/2015



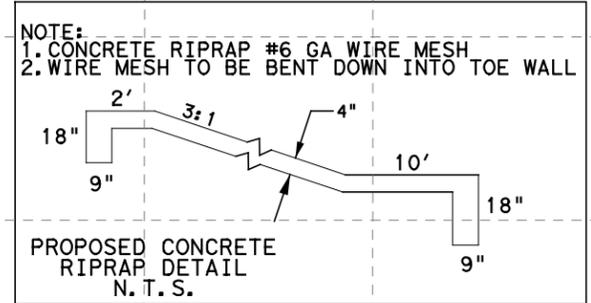
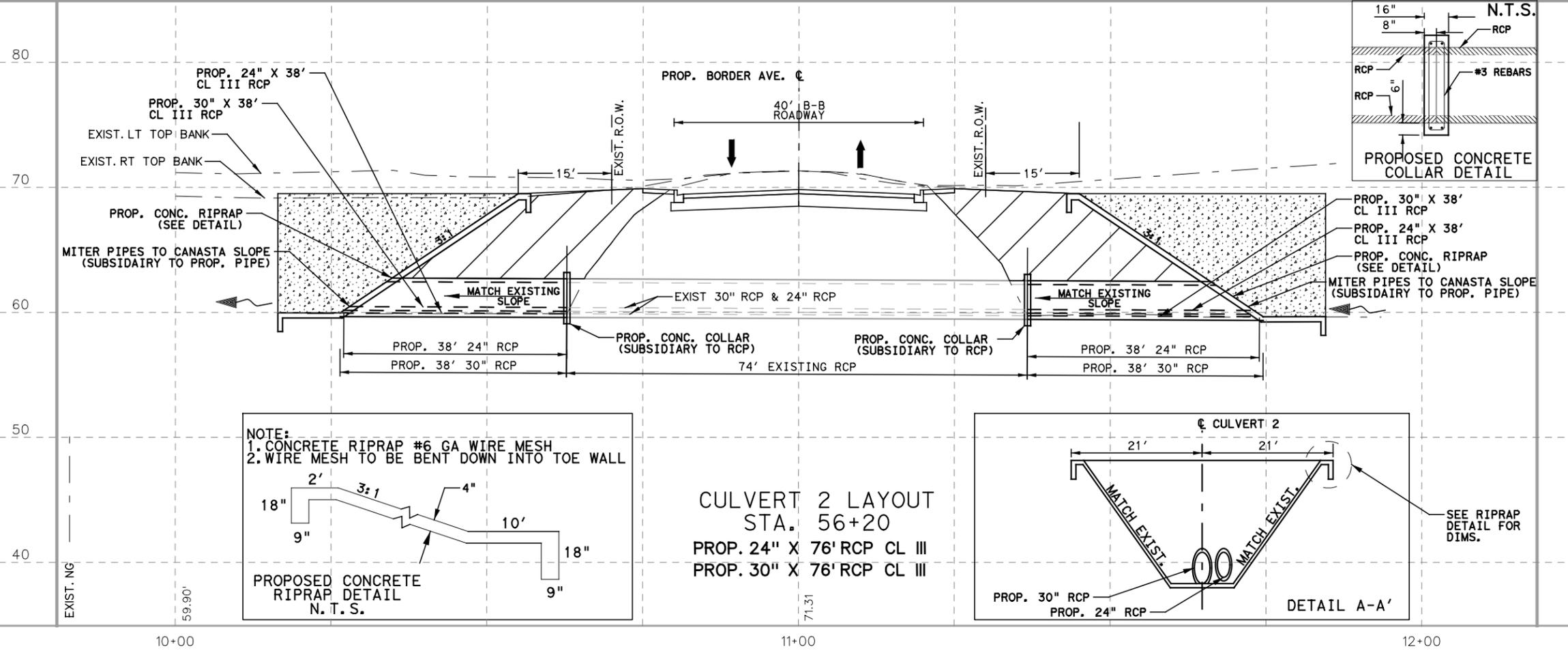
TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898

BORDER AVE.

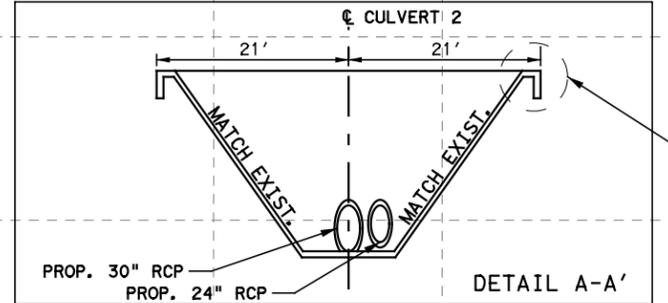
**CULVERT 2 LAYOUT
 STA 56+20**

SCALE: 1" = 20' SHEET 2 OF 2

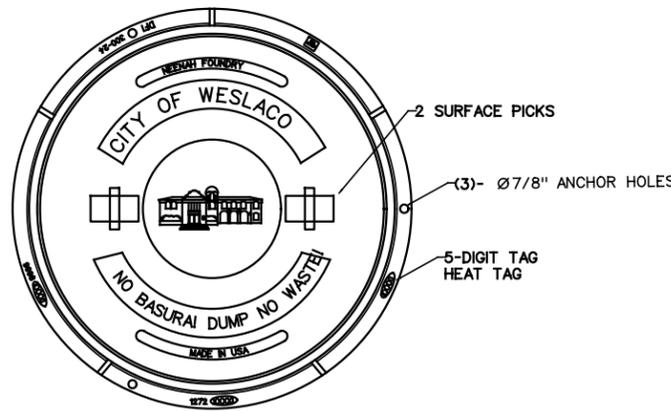
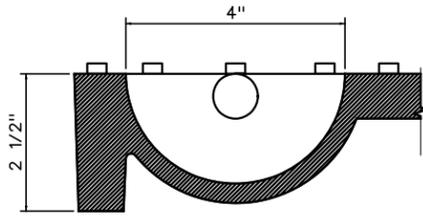
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		56
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



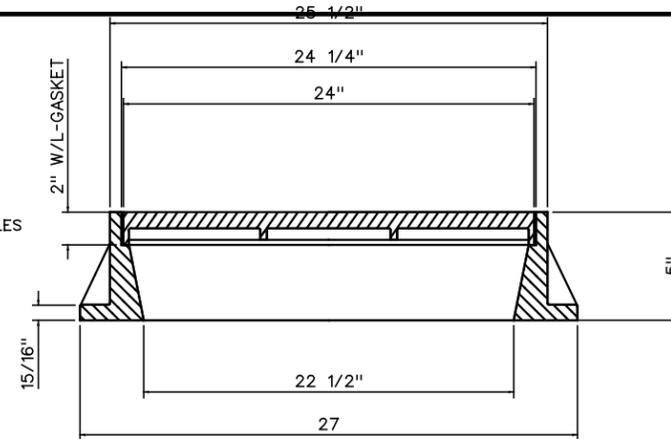
**CULVERT 2 LAYOUT
 STA. 56+20
 PROP. 24" X 76' RCP CL III
 PROP. 30" X 76' RCP CL III**



Date and Time Plotted: 2/23/2015 10:03:19 AM



CITY OF WESLACO FRAME & COVER
N.T.S.



COMPONENT NOS.: FRAME 1272-0100, COVER 1272-XXXX
MATERIAL: CAST GREY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT UNLESS SPECIFIED ON PURCHASE ORDER
FURNISHED WITH A L-GASKET IN THE FRAME
WEIGHT: FRAME 166 *, COVER 133 *

- NOTE:**
- RIM FRAME AND COVER SHALL BE NEENAH FOUNDRY OR APPROVED EQUAL
 - CITY OF WESLACO SHALL APPROVE FINAL RIM
- *MANHOLE FRAME AND COVER SHALL BE SUBSIDIARY TO MANHOLE

GENERAL NOTES

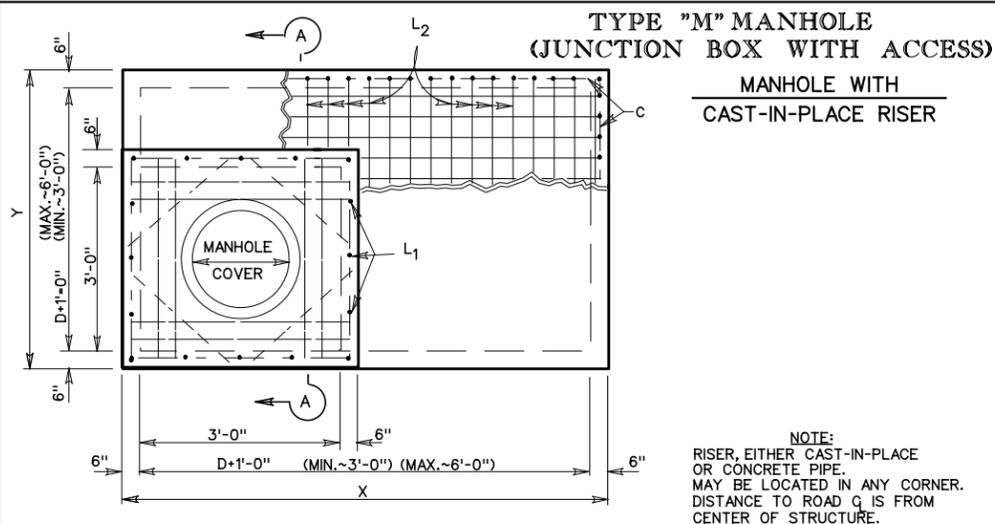
UNLESS OTHERWISE SHOWN IN THE PLANS. PAYMENT WILL BE MADE FOR EACH MANHOLE OF THE TYPE M.
EXPOSED EDGES SHALL BE CHAMFERED 3/4".
ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES. SHOP DRAWINGS WILL NOT BE REQUIRED.
ALL MANHOLES LOCATED ON PAVED SURFACES WILL BE CONSTRUCTED WITH A COVER OF THE TYPE THAT WILL ENABLE IT TO BE BOLTED TO THE RING.
THE CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH MANHOLES OF EQUIVALENT STRUCTURAL DESIGN.
IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCK-OUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
THE RISER MAY BE CONSTRUCTED OF REINFORCED CONCRETE AS SHOWN OR OF REINFORCED CONCRETE PIPE, CLASS III, IN ACCORDANCE WITH ASTM DESIGNATION C-76. IF PIPE IS USED, JOINTS SHALL CONFORM TO THE ITEM "REINFORCED CONCRETE PIPE CULVERTS". PRECAST CONCRETE LIFT OFF COVER MAY BE SUBSTITUTED FOR "RING AND COVER".
CONNECTING PIPES SHOULD WITHIN 10 DEG. OF NORMAL TO INLET GRADE IF NECESSARY. PIPE ELBOW OR CURBED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT.



PIPES MAY ENTER ALL WALLS. THE MAXIMUM LENGTH OF PIPE THAT CAN BE ACCOMMODATED IS 60". MORE THAN ONE PIPE MAY ENTER A SIDE SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACENT PIPES SHOULD BE 9" MINIMUM.

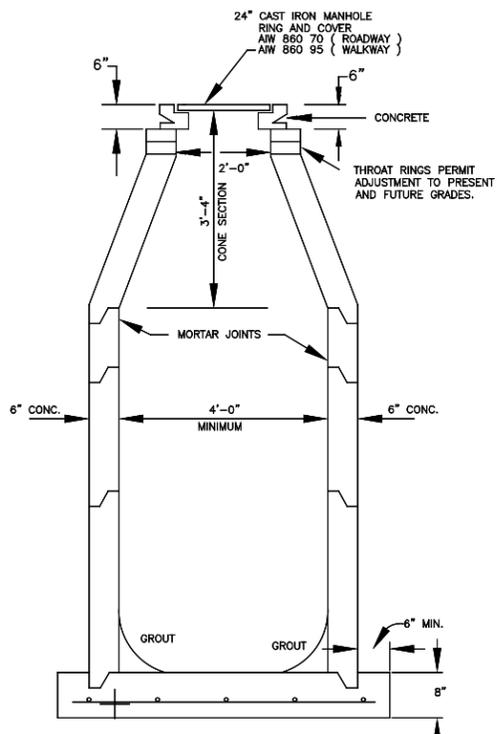
MANHOLE COVERS SHALL BE EAST JORDAN IRON WORKS CITY OF WESLACO COVER OR EQUIVALENT. ALL MANHOLE COVERS ARE SUBJECT TO FINAL APPROVAL BY THE CITY OF WESLACO OR ITS DESIGNATED REPRESENTATIVE.

- EDGE OF TY "M" MANHOLE TO MATCH PAVEMENT ELEVATION



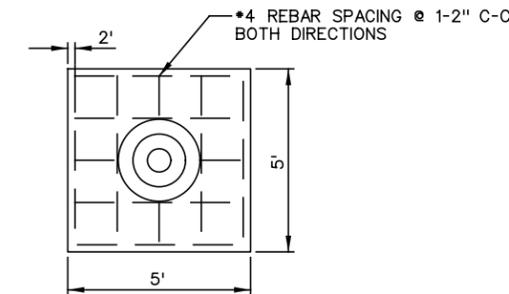
PLAN

NOTE:
RISER, EITHER CAST-IN-PLACE OR CONCRETE PIPE, MAY BE LOCATED IN ANY CORNER. DISTANCE TO ROAD G IS FROM CENTER OF STRUCTURE.



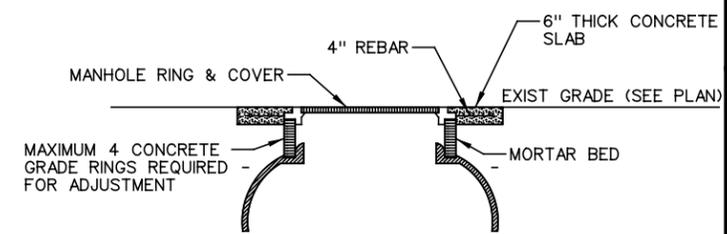
STORM SEWER STANDARD PRECAST MANHOLE

- NOTES:**
- SEGMENTAL BLOCK SECTION & PRECAST SECTION MAY BE ALTERNATED.
 - PRE-CAST SECTIONS MAY BE PLACED IN ANY ORDER
 - FOOTING TO BE POURED ON UNDISTURBED SOIL & TO BE UNIFORM IN THICKNESS.
 - 1/2" OF MORTAR TO BE PLACED ON INSIDE AND OUTSIDE OF SEGMENTAL BLOCK MANHOLE
 - TWO COATS OF INERTOL REQUIRED ON ALL SURFACES. ONE TO BE APPLIED PRIOR TO FINAL INSPECTION TO INSURE COATING OF MORTAR.
 - THROAT RINGS SHALL BE REINFORCED CONCRETE H20 RATING.
 - CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 3,000 P.S.I.



PLAN VIEW CONCRETE APRON

(SUBSIDIARY TO ITEM 479 "ADJUST MANHOLE")
ITEM TO BE SUBSIDIED TO MANHOLE AND MANHOLE ADJUSTED



SECTION A-A CONCRETE APRON

CONTRACTOR TO SAW CUT PAVEMENT TO PLACE CONCRETE AFTER FINAL LIFT OF ASPHALT IS PLACED
PLACEMENT OF TY D AROUND MANHOLE TO PROVIDE A SMOOTH TRANSITION FROM FIRST LIFT TO TOP OF MANHOLE PRIOR TO SECOND LIFT OF TY D AS APPROVED BY THE ENGINEER SUBSIDIARY TO ADJUST MANHOLE

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
DATE 2/23/2015

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898
TBPE F-1640

BORDER AVE.

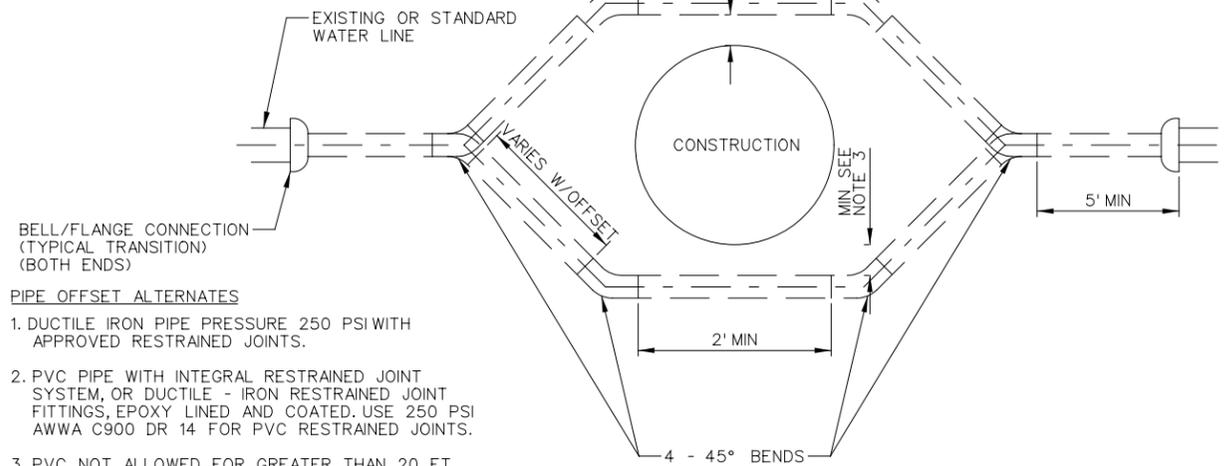
MISCELLANEOUS CONSTRUCTION DETAILS I

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		57
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

NOTE:

1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER LINE STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.
3. AS PER DESIGN GUIDELINE.

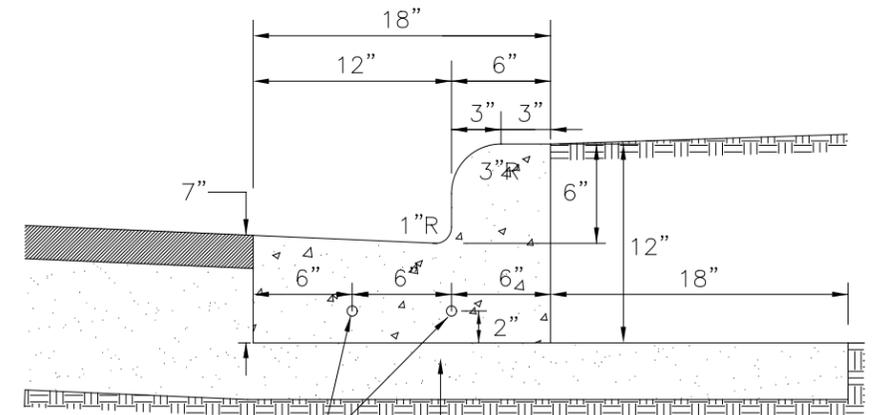


**TYPICAL STEEL WATER LINE
OFFSET BENDS**
N.T.S.

PIPE OFFSET ALTERNATES

1. DUCTILE IRON PIPE PRESSURE 250 PSI WITH APPROVED RESTRAINED JOINTS.
2. PVC PIPE WITH INTEGRAL RESTRAINED JOINT SYSTEM, OR DUCTILE - IRON RESTRAINED JOINT FITTINGS, EPOXY LINED AND COATED. USE 250 PSI AWWA C900 DR 14 FOR PVC RESTRAINED JOINTS.
3. PVC NOT ALLOWED FOR GREATER THAN 20 FT OF COVER OR FOR DIAMETER LARGER THAN 20 IN.
4. USE ONLY DUCTILE IRON AND PVC PRODUCTS LISTED ON OCE DIVISION APPROVED PRODUCTS LIST AND IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

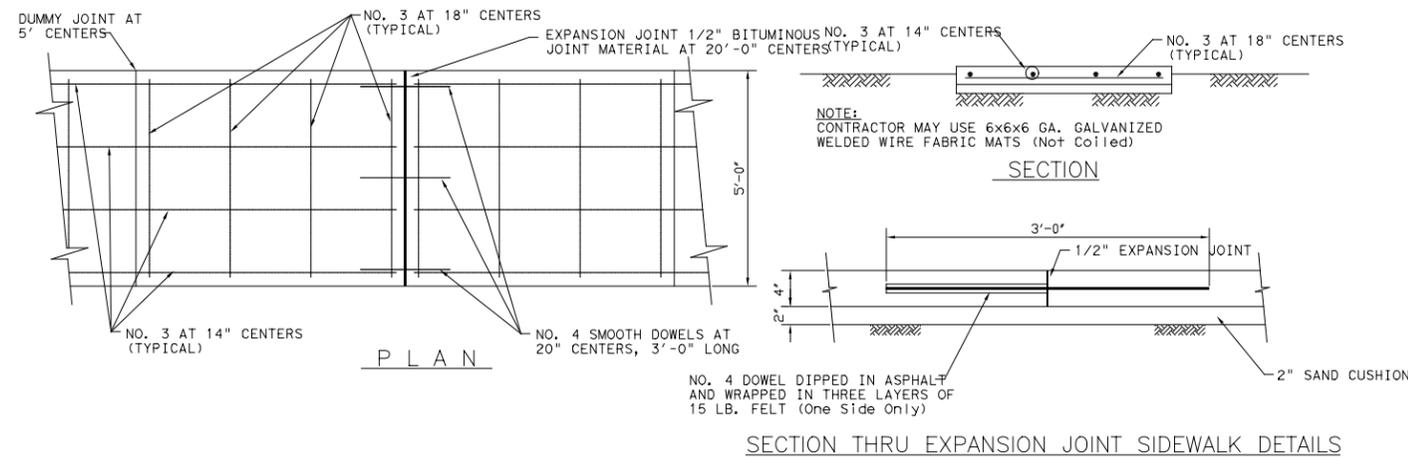
BELL/FLANGE CONNECTION (TYPICAL TRANSITION) (BOTH ENDS)



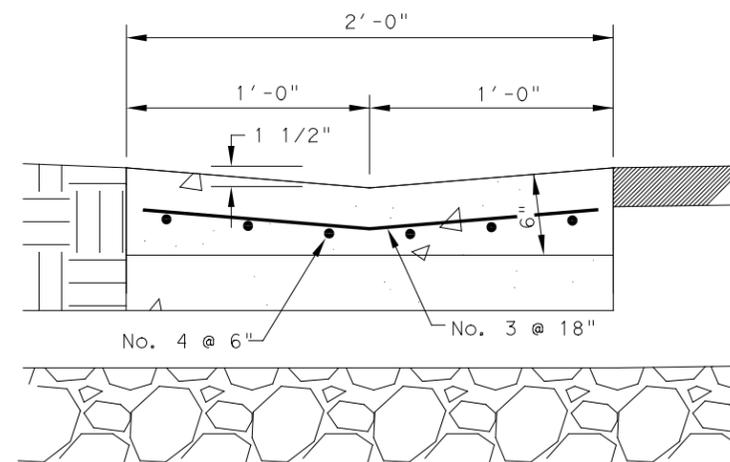
AT UTILITY TRENCH CROSSINGS PLACE 2-#4 BARS (10 LF) COMPACTED SUBGRADE TO 95% STANDARD PROCTOR AT 3% +/- OPTIMUM MOISTURE

TYPICAL SKID DETAIL

1. CURB AND GUTTER TO BE CONSTRUCTED OF 3000 PSI
2. PLACE CONTRACTION JOINT EVERY 15 LF AND PLACE EXPANSION JOINT EVERY 150 LF AND AT ALL P.C.'S AND P.T.'S.



SECTION THRU EXPANSION JOINT SIDEWALK DETAILS



2' VALLEY GUTTER

NO.	DATE	REVISION	APP.



Roberto Fina Carral
ROBERTO FINA CARRAL
2/23/2015
DATE



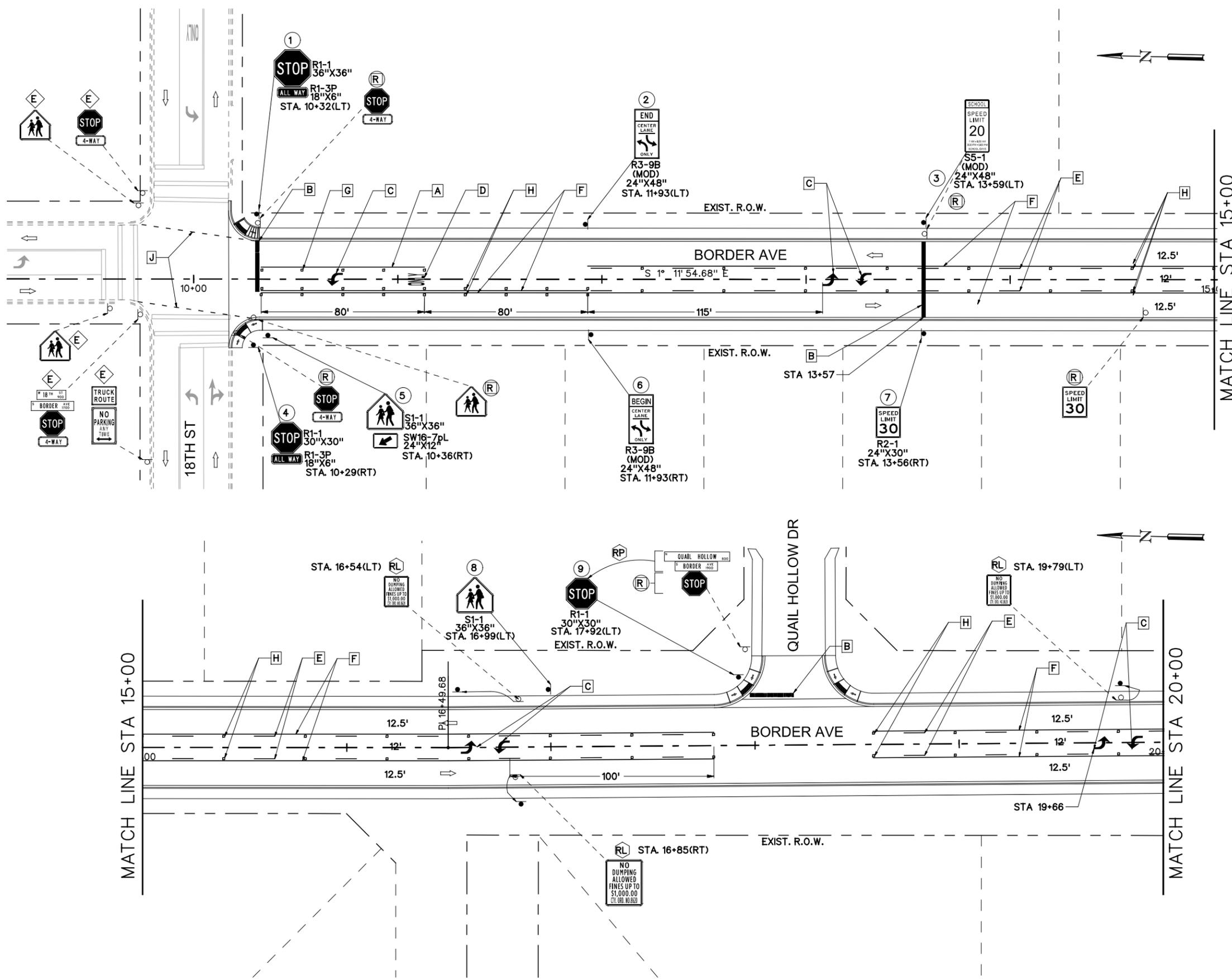
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(936) 424-7898

BORDER AVE.
MISCELLANEOUS
CONSTRUCTION DETAILS II

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		58
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:03:21 AM



PAVEMENT MARKINGS LEGEND

- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
- B PREFAB PAV MRK TY C (W)(24")(SLD)
- C PREFAB PAV MRK TY C (W)(ARROW)
- D PREFAB PAV MRK TY C (W)(WORD)
- E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
- F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
- G REFL PAV MRKR TY I-C
- H REFL PAV MRKR TY II-A-A
- J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
- ← DIRECTION OF TRAFFIC FLOW

SIGN LEGEND

- PROPOSED SMALL SIGN
- (R) EXISTING SMALL SIGN TO BE REMOVED
- (E) EXISTING SIGN TO REMAIN IN PLACE
- (RL) EXISTING SIGN TO BE RELOCATED
- (RP) EXISTING SIGN TO BE RELOCATED (PANEL ONLY)

NOTES:

PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.
 REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.
 ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

NO.	DATE	REVISION	APP.



Roberto Fina Carral
 ROBERTO FINA CARRAL
 DATE 2/23/2015

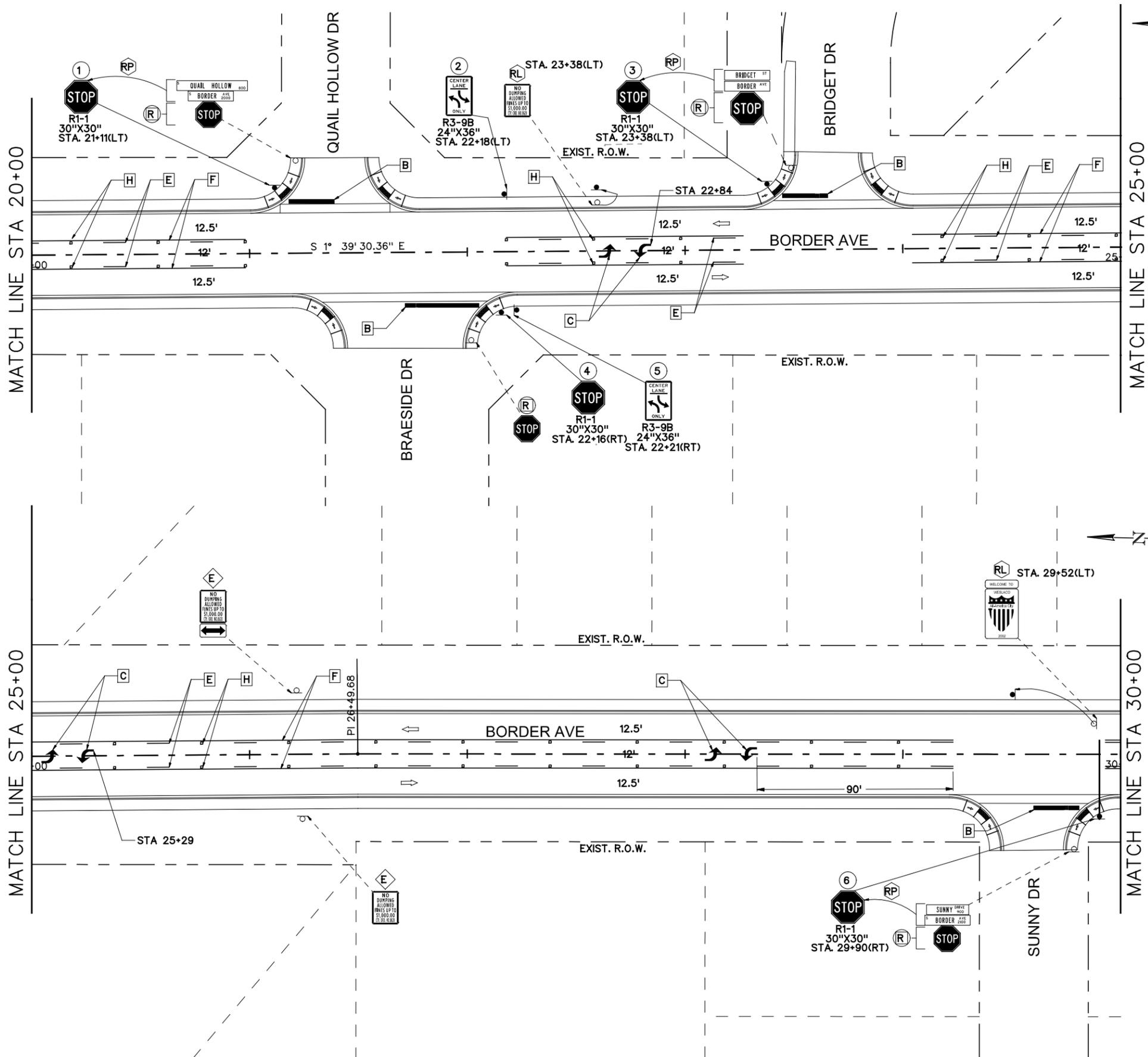


TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

BORDER AVE
SIGNING AND PAVEMENT MARKINGS LAYOUT

SCALE :1"=50' SHEET 1 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		60
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



PAVEMENT MARKINGS LEGEND

- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
- B PREFAB PAV MRK TY C (W)(24")(SLD)
- C PREFAB PAV MRK TY C (W)(ARROW)
- D PREFAB PAV MRK TY C (W)(WORD)
- E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
- F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
- G REFL PAV MRKR TY I-C
- H REFL PAV MRKR TY II-A-A
- J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
- DIRECTION OF TRAFFIC FLOW

SIGN LEGEND

- PROPOSED SMALL SIGN
- (R) EXISTING SMALL SIGN TO BE REMOVED
- (E) EXISTING SIGN TO REMAIN IN PLACE
- (RL) EXISTING SIGN TO BE RELOCATED
- (RP) EXISTING SIGN TO BE RELOCATED (PANEL ONLY)

NOTES:

PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.

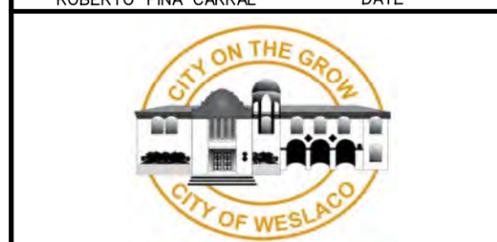
REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.

ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL
116857
LICENSED PROFESSIONAL ENGINEER

[Signature]
ROBERTO FINA CARRAL
DATE 2/23/2015



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

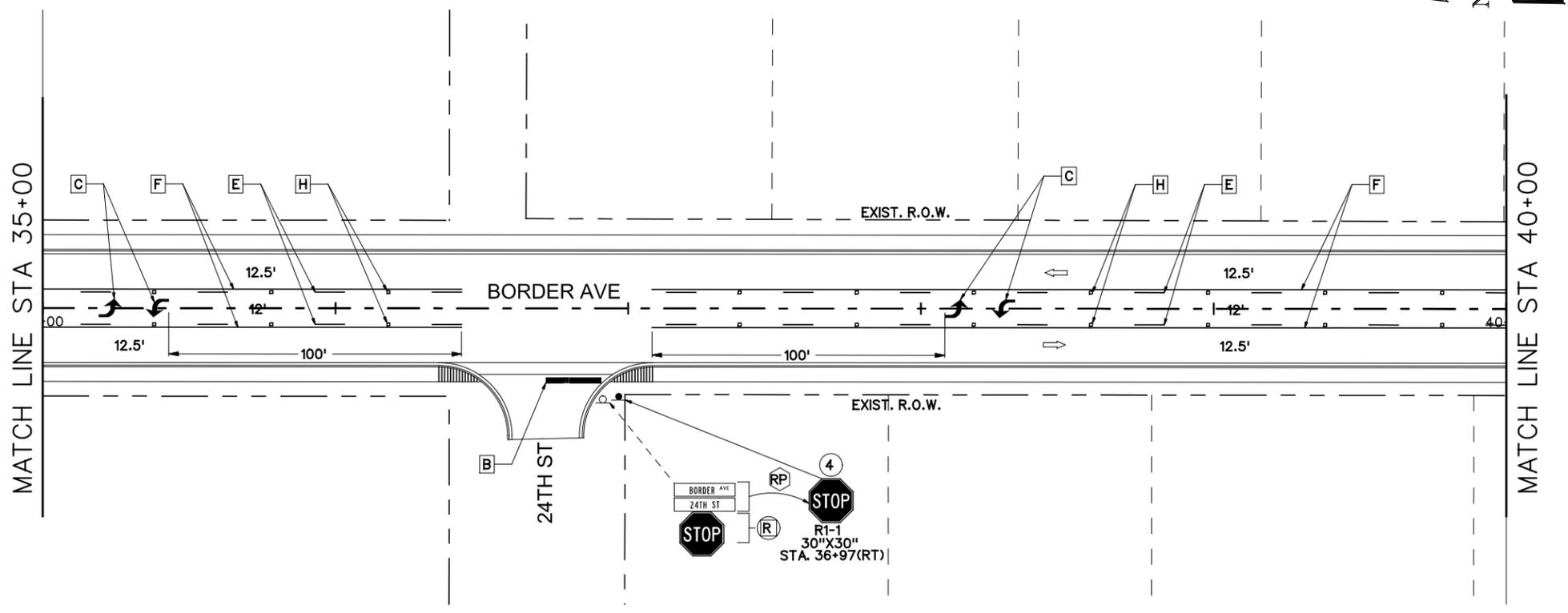
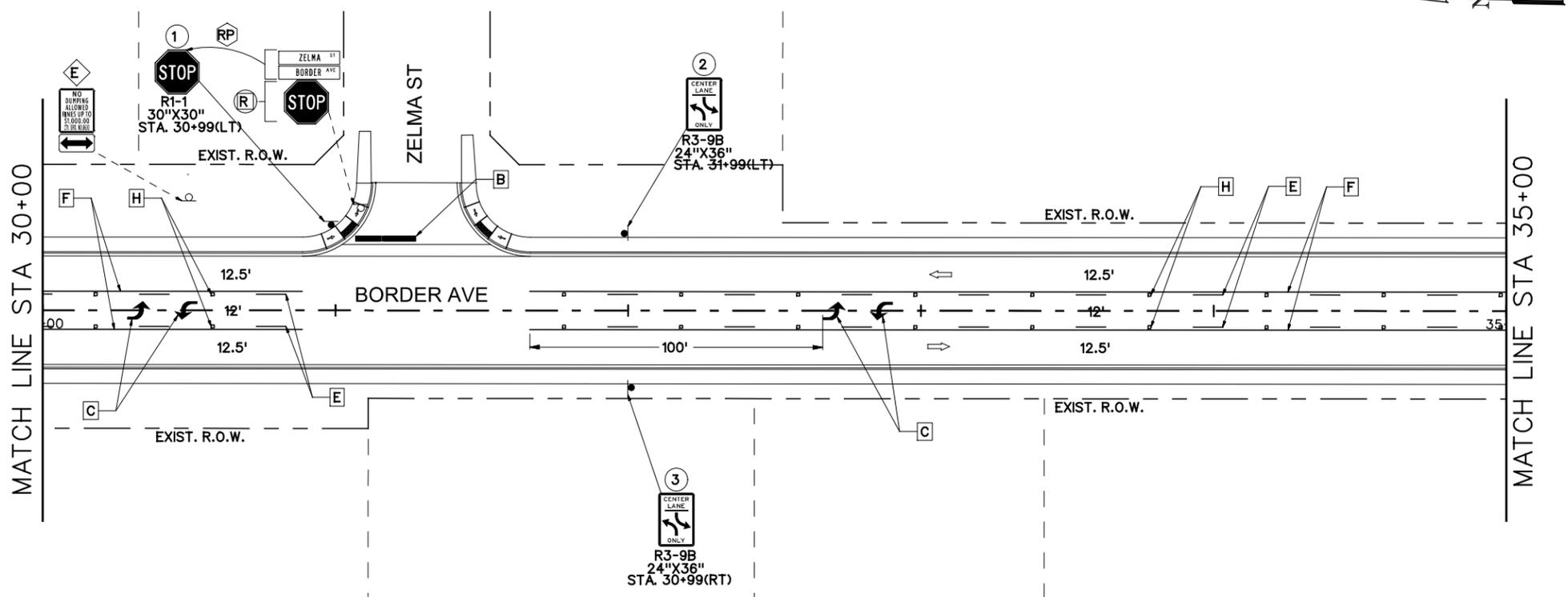
TBPE F-1640

BORDER AVE

SIGNING AND PAVEMENT MARKINGS LAYOUT

SCALE :1"=50' SHEET 2 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		61
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



PAVEMENT MARKINGS LEGEND

- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
- B PREFAB PAV MRK TY C (W)(24")(SLD)
- C PREFAB PAV MRK TY C (W)(ARROW)
- D PREFAB PAV MRK TY C (W)(WORD)
- E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
- F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
- G REFL PAV MRKR TY I-C
- H REFL PAV MRKR TY II-A-A
- J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
- ← DIRECTION OF TRAFFIC FLOW

SIGN LEGEND

- PROPOSED SMALL SIGN
- Ⓡ EXISTING SMALL SIGN TO BE REMOVED
- ⓔ EXISTING SIGN TO REMAIN IN PLACE
- ⓇⓁ EXISTING SIGN TO BE RELOCATED
- ⓇⓅ EXISTING SIGN TO BE RELOCATED (PANEL ONLY)

NOTES:

PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.

REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.

ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

NO.	DATE	REVISION	APP.



Roberto Fina Carral
 ROBERTO FINA CARRAL
 DATE 2/23/2015



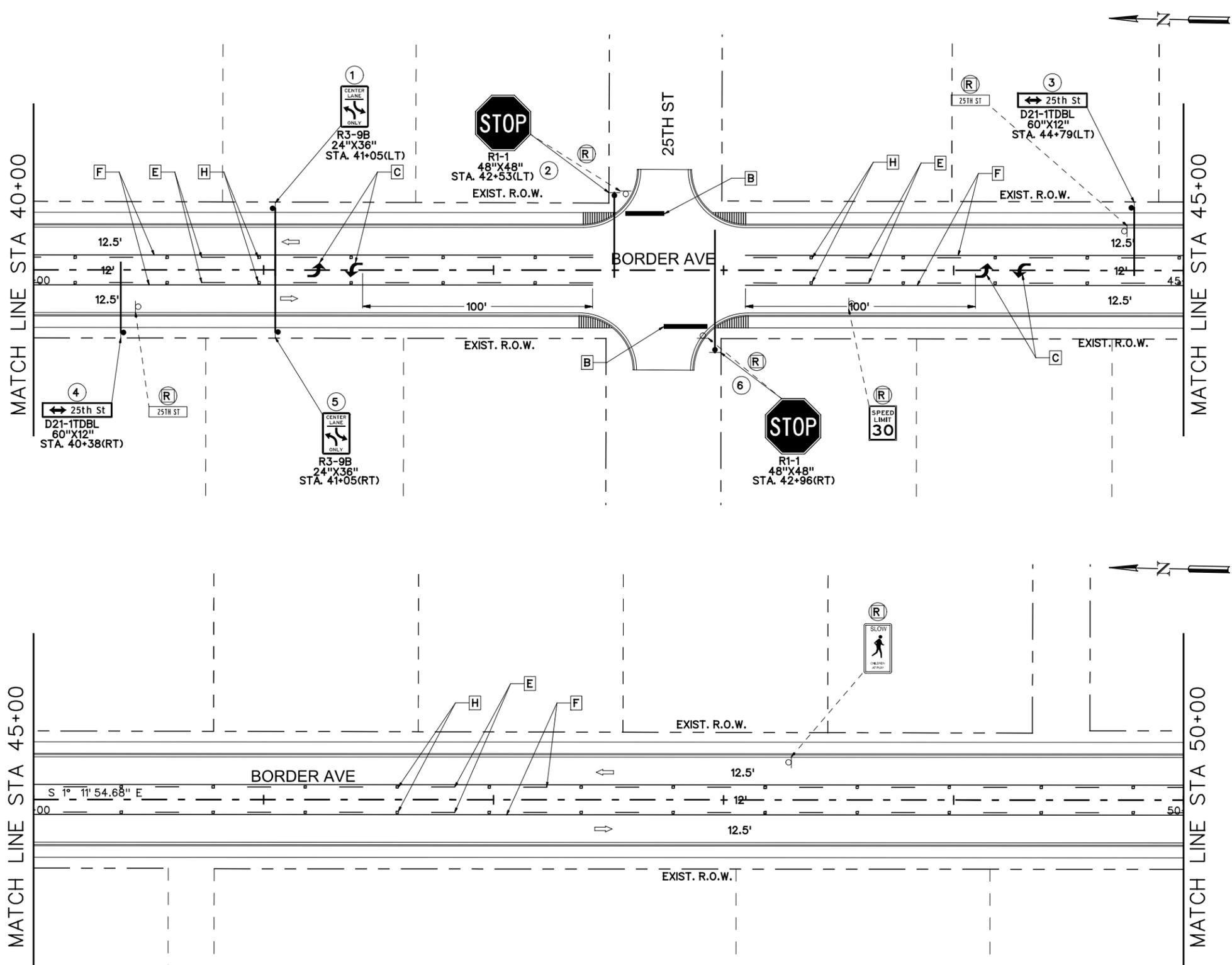
TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898

BORDER AVE

SIGNING AND PAVEMENT MARKINGS LAYOUT

SCALE :1"=50' SHEET 3 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			62
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE



PAVEMENT MARKINGS LEGEND

- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
- B PREFAB PAV MRK TY C (W)(24")(SLD)
- C PREFAB PAV MRK TY C (W)(ARROW)
- D PREFAB PAV MRK TY C (W)(WORD)
- E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
- F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
- G REFL PAV MRKR TY I-C
- H REFL PAV MRKR TY II-A-A
- J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
- ← DIRECTION OF TRAFFIC FLOW

SIGN LEGEND

- PROPOSED SMALL SIGN
- (R) EXISTING SMALL SIGN TO BE REMOVED
- (E) EXISTING SIGN TO REMAIN IN PLACE
- (RL) EXISTING SIGN TO BE RELOCATED
- (RP) EXISTING SIGN TO BE RELOCATED (PANEL ONLY)

NOTES:

PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.

REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.

ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

NO.	DATE	REVISION	APP.



[Signature]
 ROBERTO FINA CARRAL
 2/23/2015
 DATE



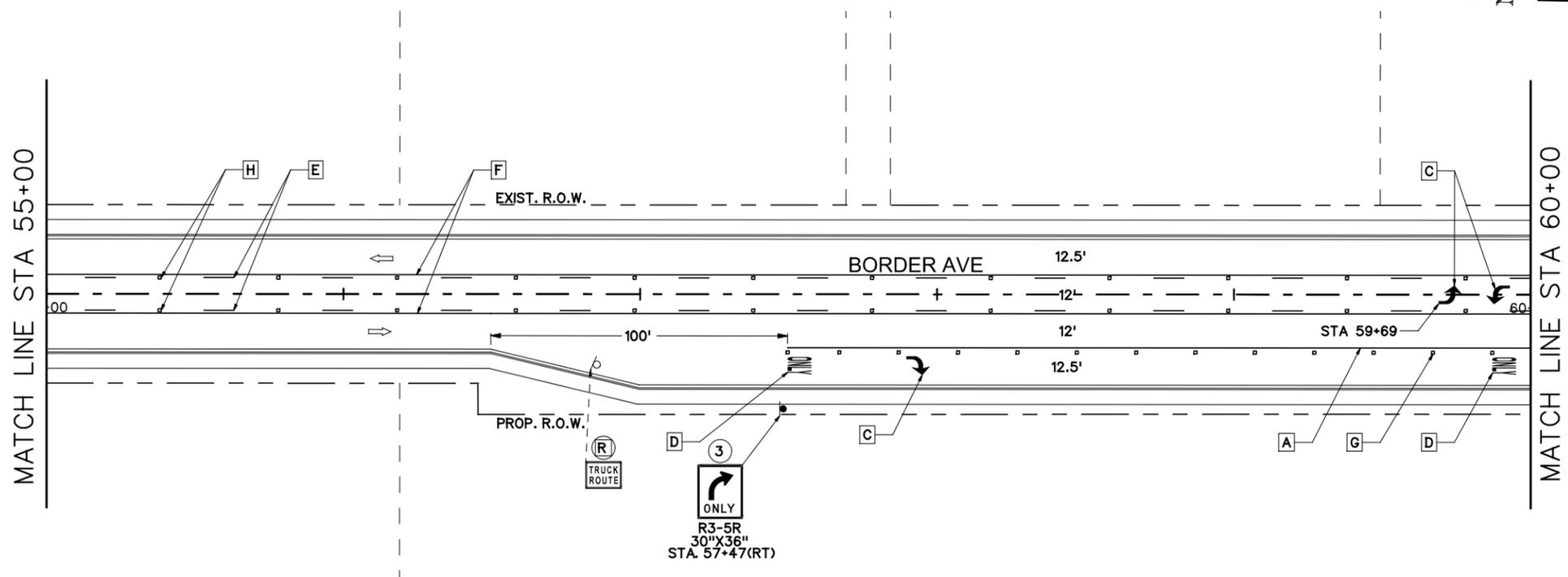
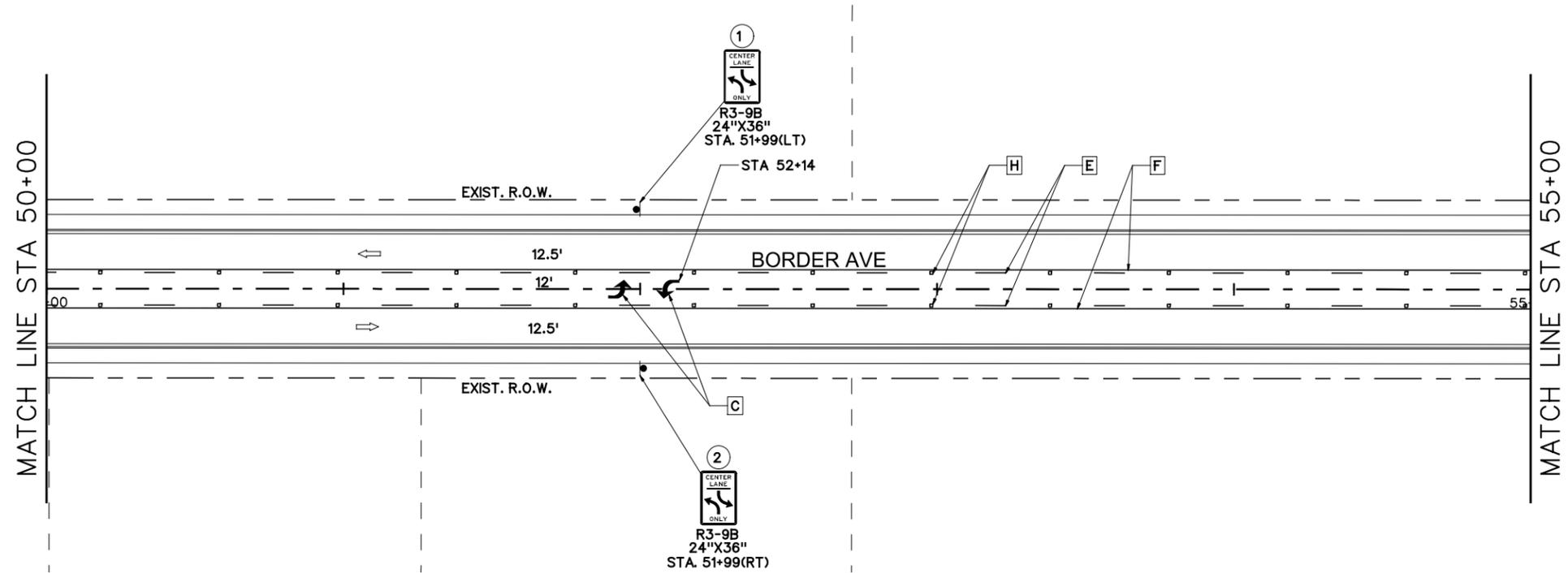
TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

BORDER AVE

SIGNING AND PAVEMENT MARKINGS LAYOUT

SCALE :1"=50' SHEET 4 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		63
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE



PAVEMENT MARKINGS LEGEND

- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
- B PREFAB PAV MRK TY C (W)(24")(SLD)
- C PREFAB PAV MRK TY C (W)(ARROW)
- D PREFAB PAV MRK TY C (W)(WORD)
- E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
- F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
- G REFL PAV MRKR TY I-C
- H REFL PAV MRKR TY II-A-A
- J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
- ↔ DIRECTION OF TRAFFIC FLOW

SIGN LEGEND

- PROPOSED SMALL SIGN
- Ⓡ EXISTING SMALL SIGN TO BE REMOVED
- ⓔ EXISTING SIGN TO REMAIN IN PLACE
- ⓇⓁ EXISTING SIGN TO BE RELOCATED
- ⓇⓅ EXISTING SIGN TO BE RELOCATED (PANEL ONLY)

NOTES:

PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.

REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.

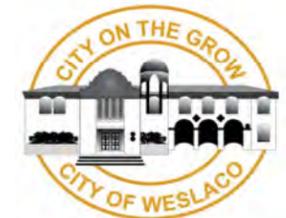
ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

NO.	DATE	REVISION	APP.



[Signature]
ROBERTO FINA CARRAL

2/23/2015
DATE



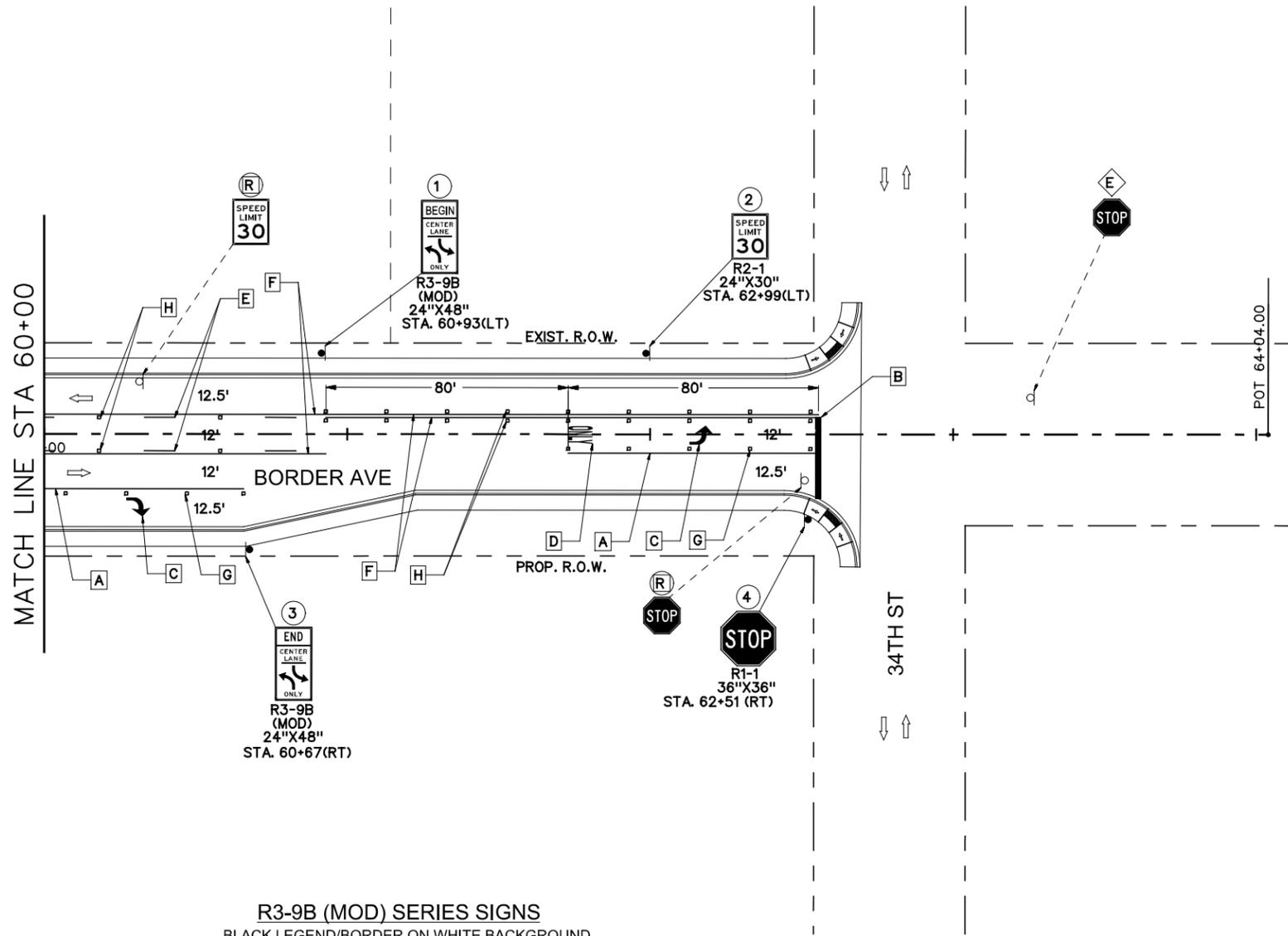
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7898
TBPE F-1640

BORDER AVE

SIGNING AND PAVEMENT MARKINGS LAYOUT

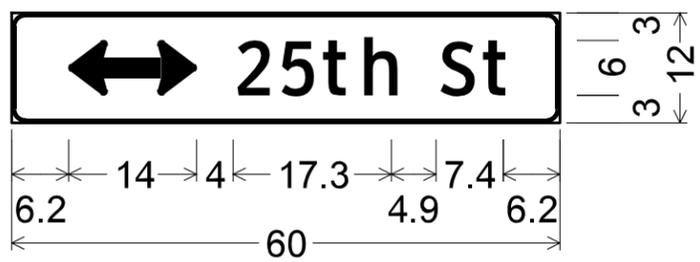
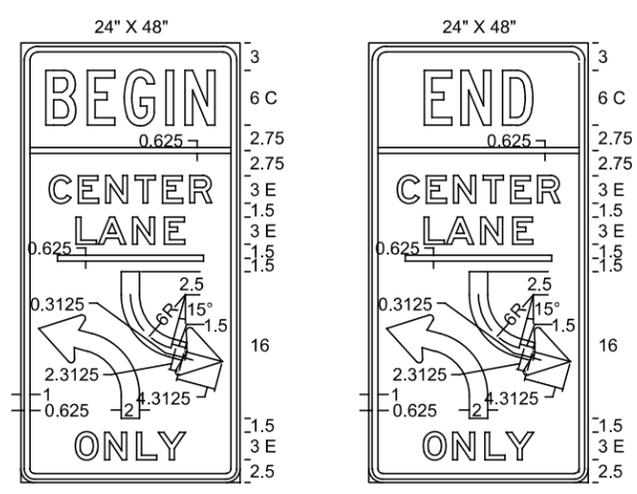
SCALE :1"=50' SHEET 5 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			64
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE



- PAVEMENT MARKINGS LEGEND**
- A REFL PAV MRK TY I (W)(08")(SLD)(100MIL)
 - B PREFAB PAV MRK TY C (W)(24")(SLD)
 - C PREFAB PAV MRK TY C (W)(ARROW)
 - D PREFAB PAV MRK TY C (W)(WORD)
 - E REFL PAV MRK TY I (Y)(04")(BRK)(100MIL)
 - F REFL PAV MRK TY I (Y)(04")(SLD)(100MIL)
 - G REFL PAV MRKR TY I-C
 - H REFL PAV MRKR TY II-A-A
 - J REFL PAV MRK TY I (W)(04")(DOT)(100MIL)
 - ← DIRECTION OF TRAFFIC FLOW
- SIGN LEGEND**
- PROPOSED SMALL SIGN
 - Ⓡ EXISTING SMALL SIGN TO BE REMOVED
 - ⓔ EXISTING SIGN TO REMAIN IN PLACE
 - ⓇⓁ EXISTING SIGN TO BE RELOCATED
 - ⓇⓅ EXISTING SIGN TO BE RELOCATED (PANEL ONLY)
- NOTES:**
- PROPOSED SMALL SIGNS SHALL BE INSTALLED USING NEW POST AND PANELS.
- REMOVAL OF EXISTING SMALL SIGNS SHALL INCLUDE POST AND PANEL. THE FOUNDATION SHALL BE REMOVED TO 2 FT BELOW FINISHED GRADE.
- ALL SIGNS TO BE REMOVED ARE TO BE DELIVERED TO THE CITY OF WESLACO PUBLIC FACILITIES BUILDING.

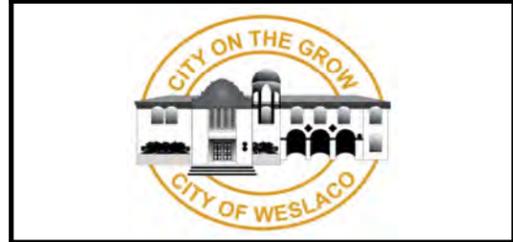
R3-9B (MOD) SERIES SIGNS
BLACK LEGEND/BORDER ON WHITE BACKGROUND
RADIUS = 1.5 in



1.5" Radius, 0.5" Border, White on Green;
Double Headed Arrow Custom - 14.0" 0°;
[25th St] ClearviewHwy-3-W;

NO.	DATE	REVISION	APP.

ROBERTO FINA CARRAL DATE: 2/23/2015



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

BORDER AVE

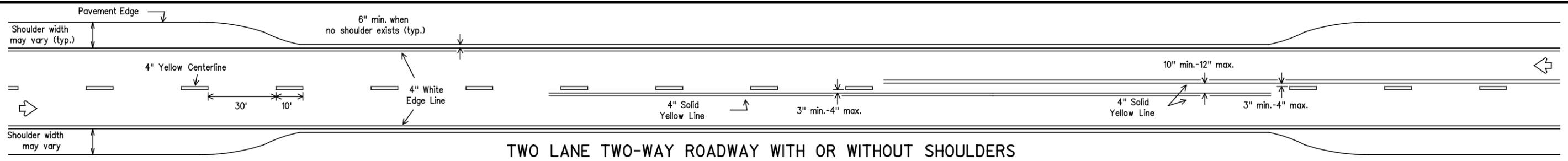
SIGNING AND PAVEMENT MARKINGS LAYOUT

SCALE :1"=50' SHEET 6 OF 6

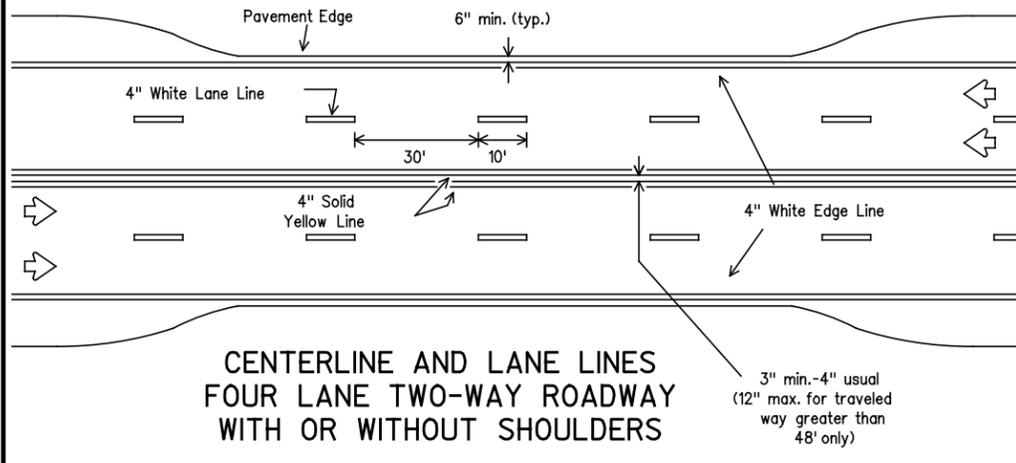
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
			65
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

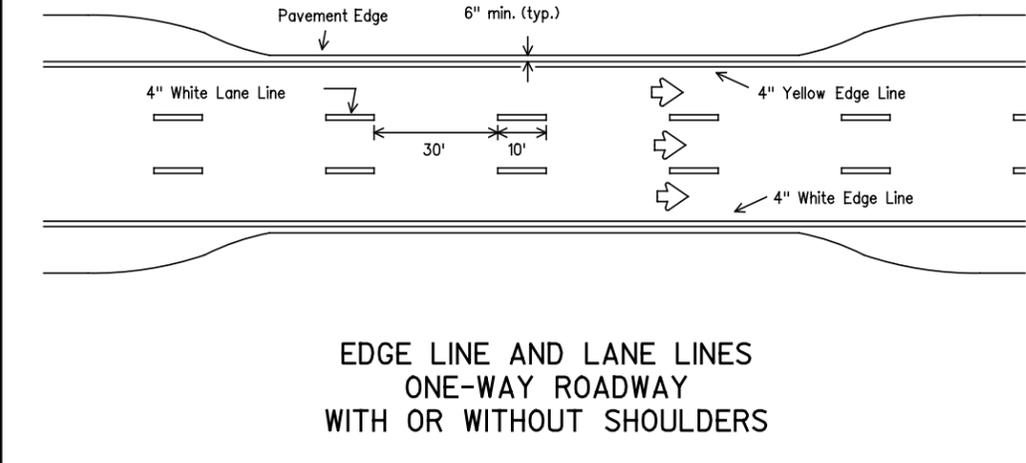
DATE: 2/23/2015 10:03:25 AM
 FILE: P:\2008\2008-0992-3 COW Border\Design\CSJ\Standards\Pavement Markers\PM1-12.dgn



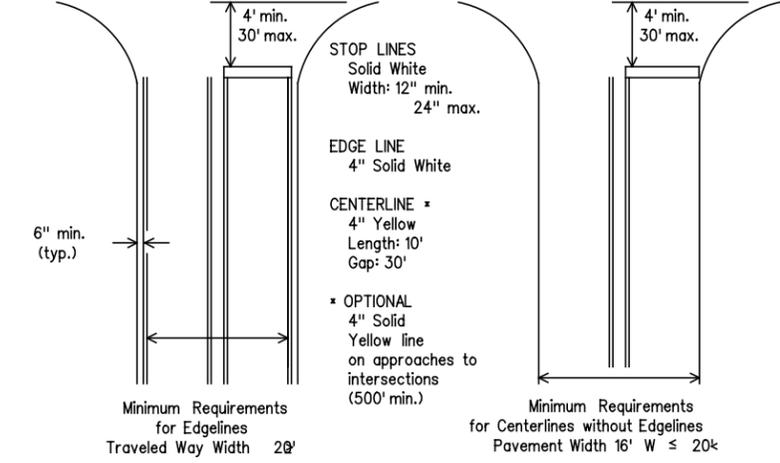
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



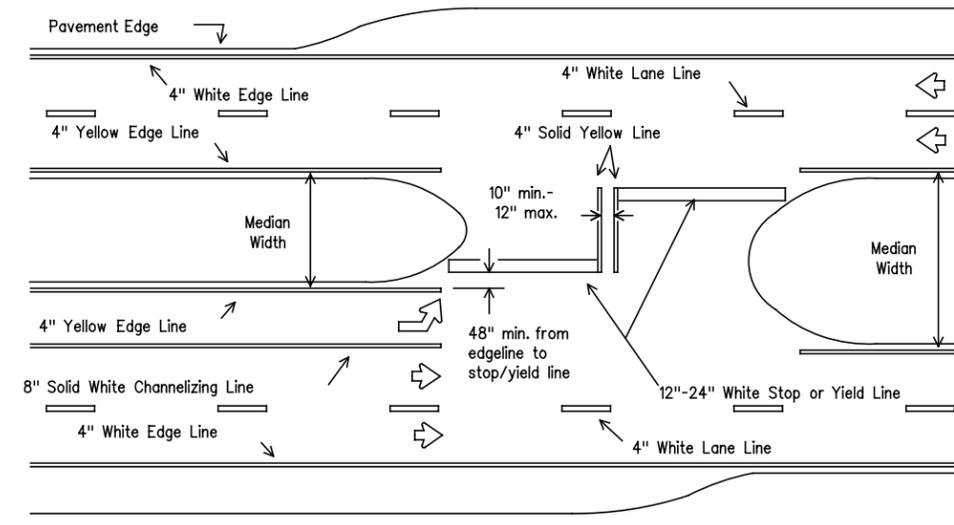
CENTERLINE AND LANE LINES
 FOUR LANE TWO-WAY ROADWAY
 WITH OR WITHOUT SHOULDERS



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

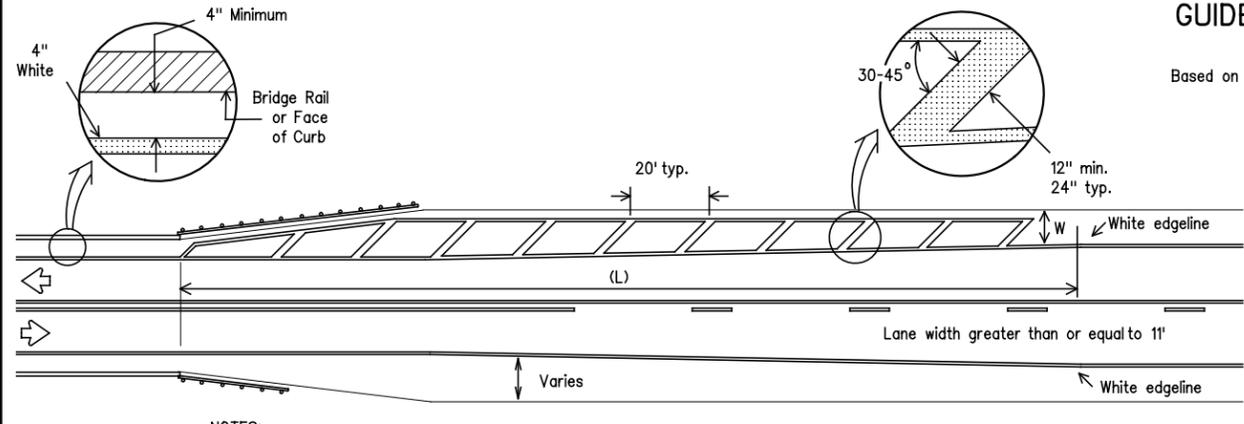


GUIDE FOR PLACEMENT OF STOP LINES,
 EDGE LINE & CENTERLINE
 Based on Traveled Way and Pavement Widths for Undivided Highways



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)

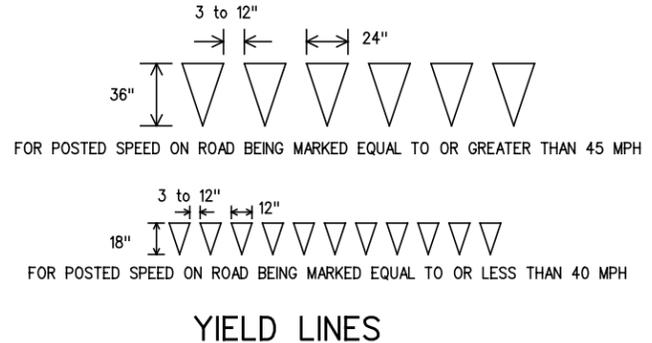
- EXAMPLES:
- An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the cross-hatching should be:
 $L = 8 \times 70 = 560$ ft.
- A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the cross-hatching should be:
 $L = 4(40)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

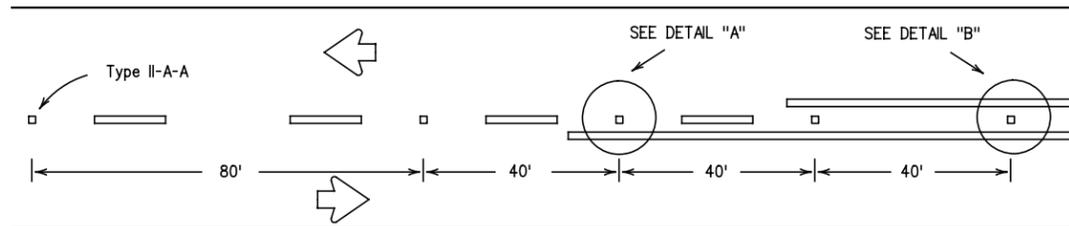
Texas Department of Transportation
 Traffic Operations Division

TYPICAL STANDARD
 PAVEMENT MARKINGS

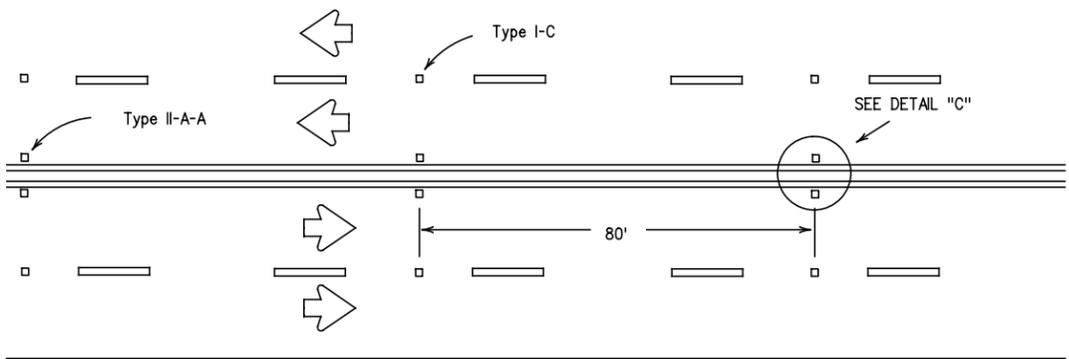
PM(1)-12

© TxDOT November 1978		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
8-95	2-12				BORDER AVENUE
5-00					
8-00					
3-03					
		DIST	COUNTY		SHEET NO.
					66

REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

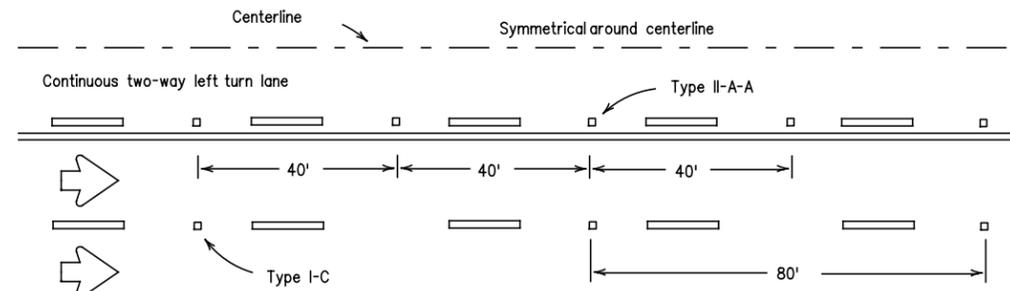


CENTERLINE FOR ALL TWO LANE ROADWAYS

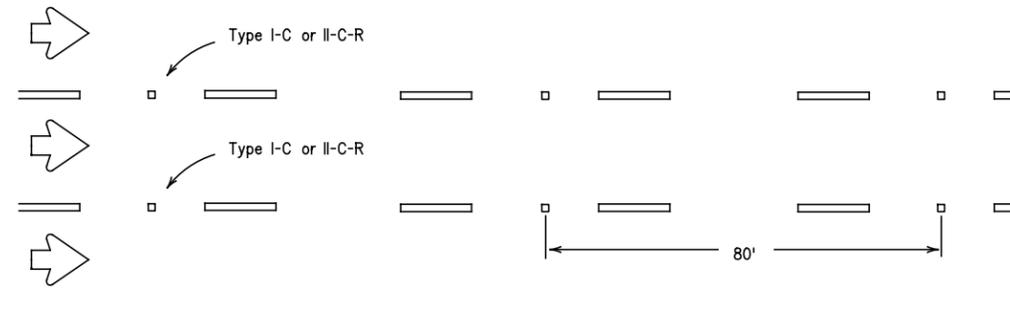


**CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS**

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.

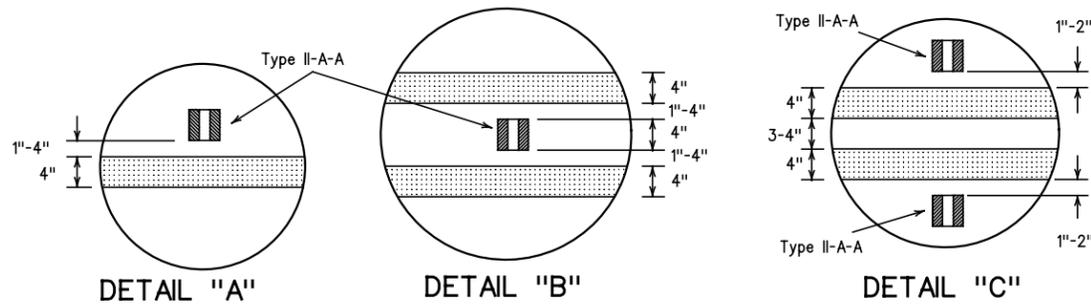


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

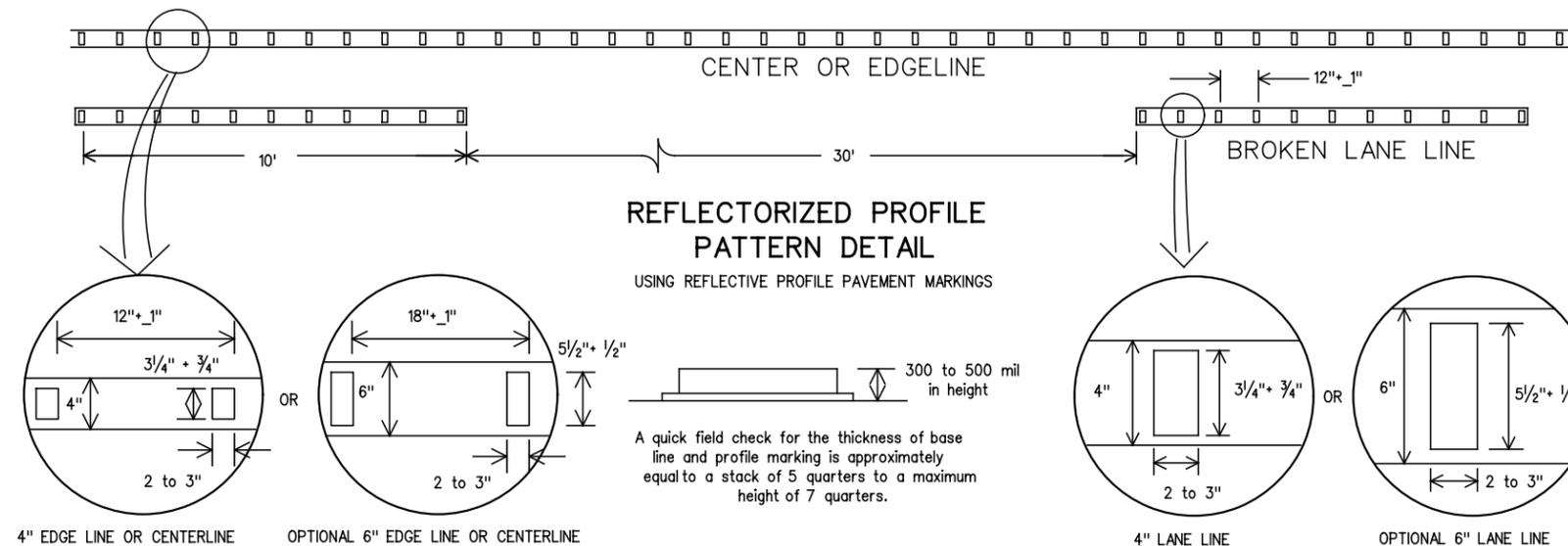
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.



DETAIL "A"

DETAIL "B"

DETAIL "C"



**REFLECTORIZED PROFILE
PATTERN DETAIL**

USING REFLECTORIZED PROFILE PAVEMENT MARKINGS

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTE:

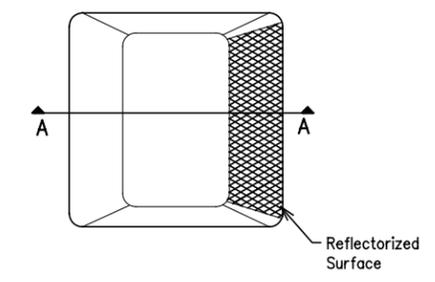
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

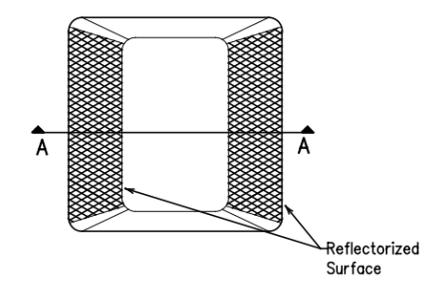
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

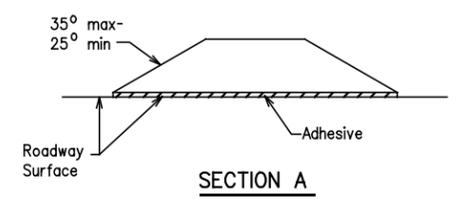
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS



**POSITION GUIDANCE USING
RAISED MARKERS
REFLECTORIZED PROFILE
MARKINGS**

PM(2)-12

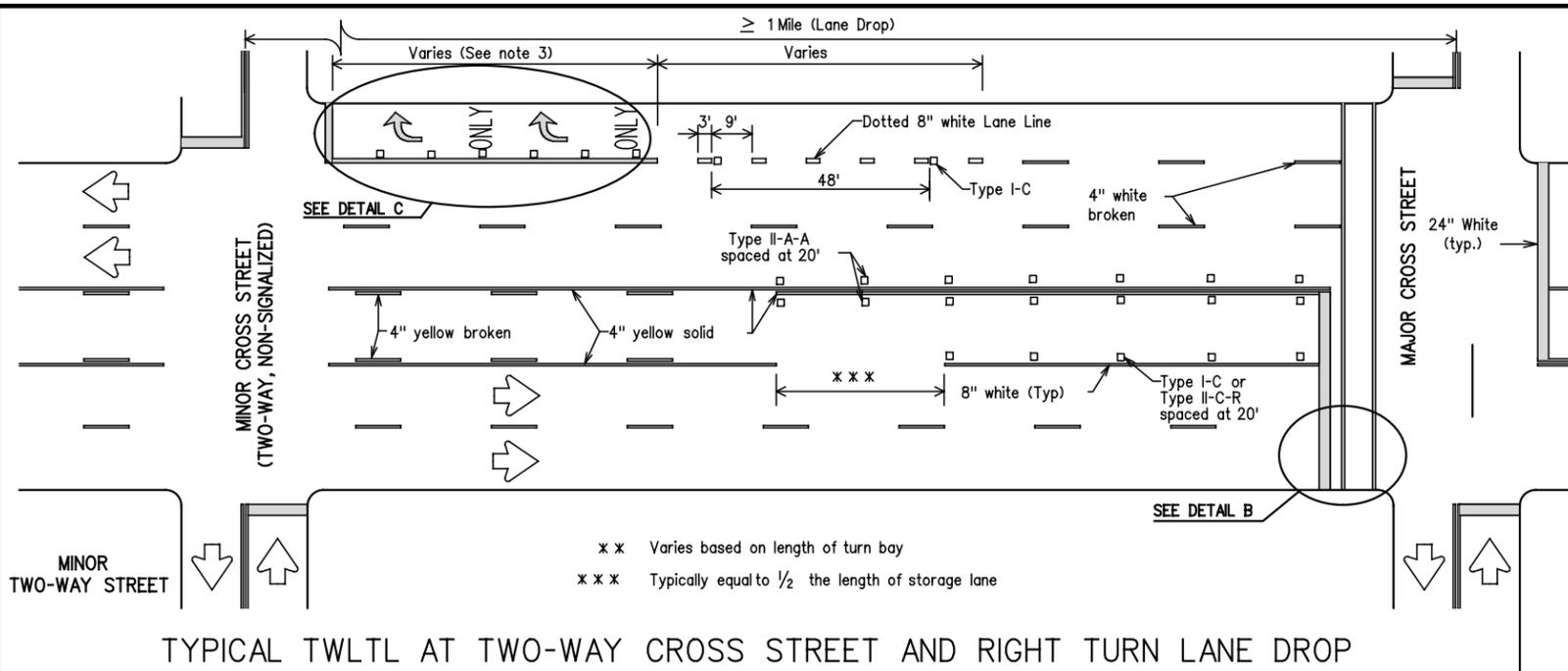
© TxDOT April 1977		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
4-92	2-10				BORDER AVENUE
5-00	2-12				
8-00		DIST	COUNTY		SHEET NO.
2-08					67

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

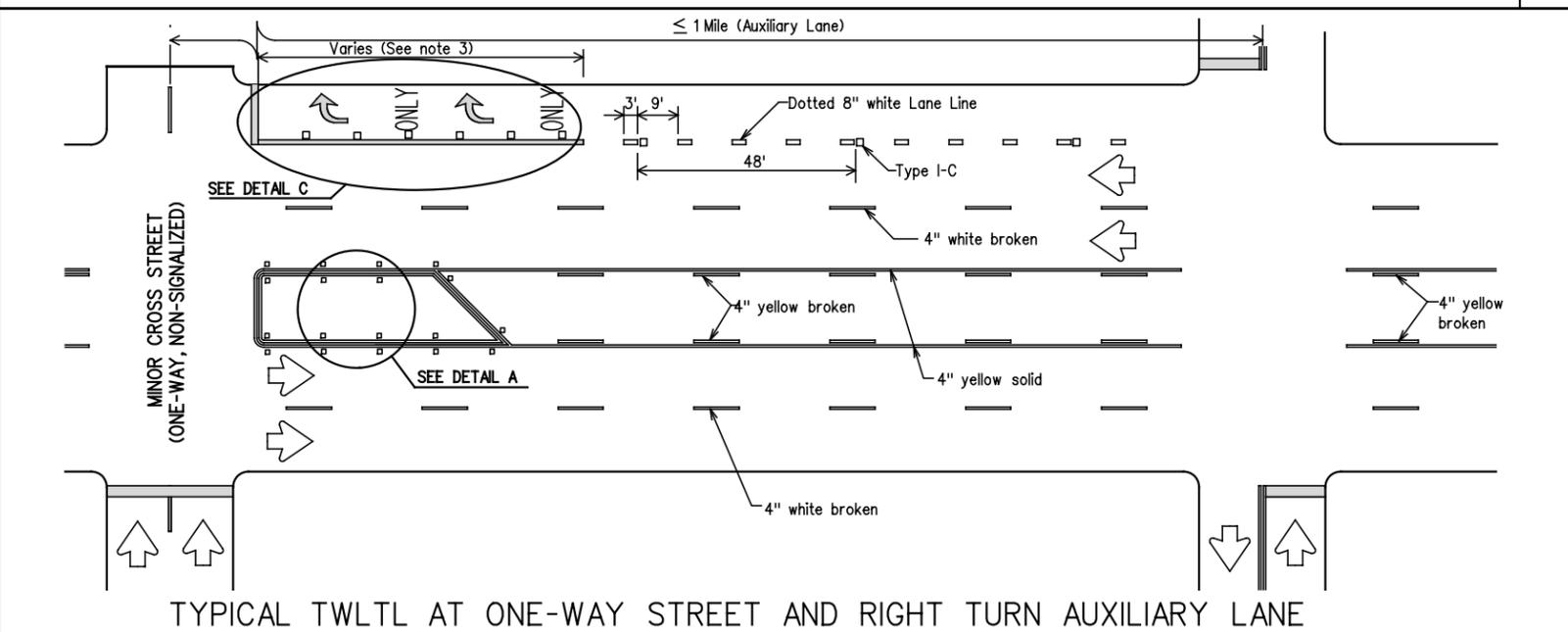
DATE: 2/23/2015 10:03:25 AM
FILE: P:\2008\2008-0992-3_COW_Border\Design\Standards\Pavement Markers\PM2-12.DGN

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

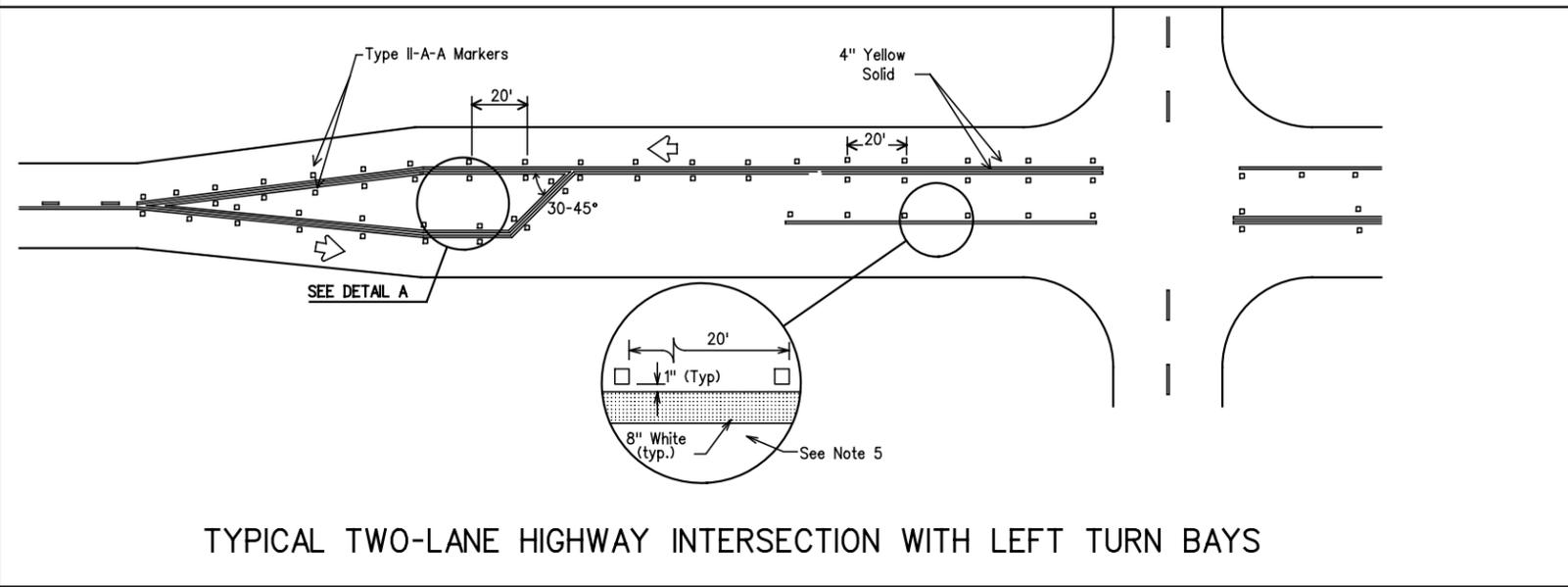
DATE: 2/23/2015 10:03:26 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Pavement Markers\PM3-12.DGN



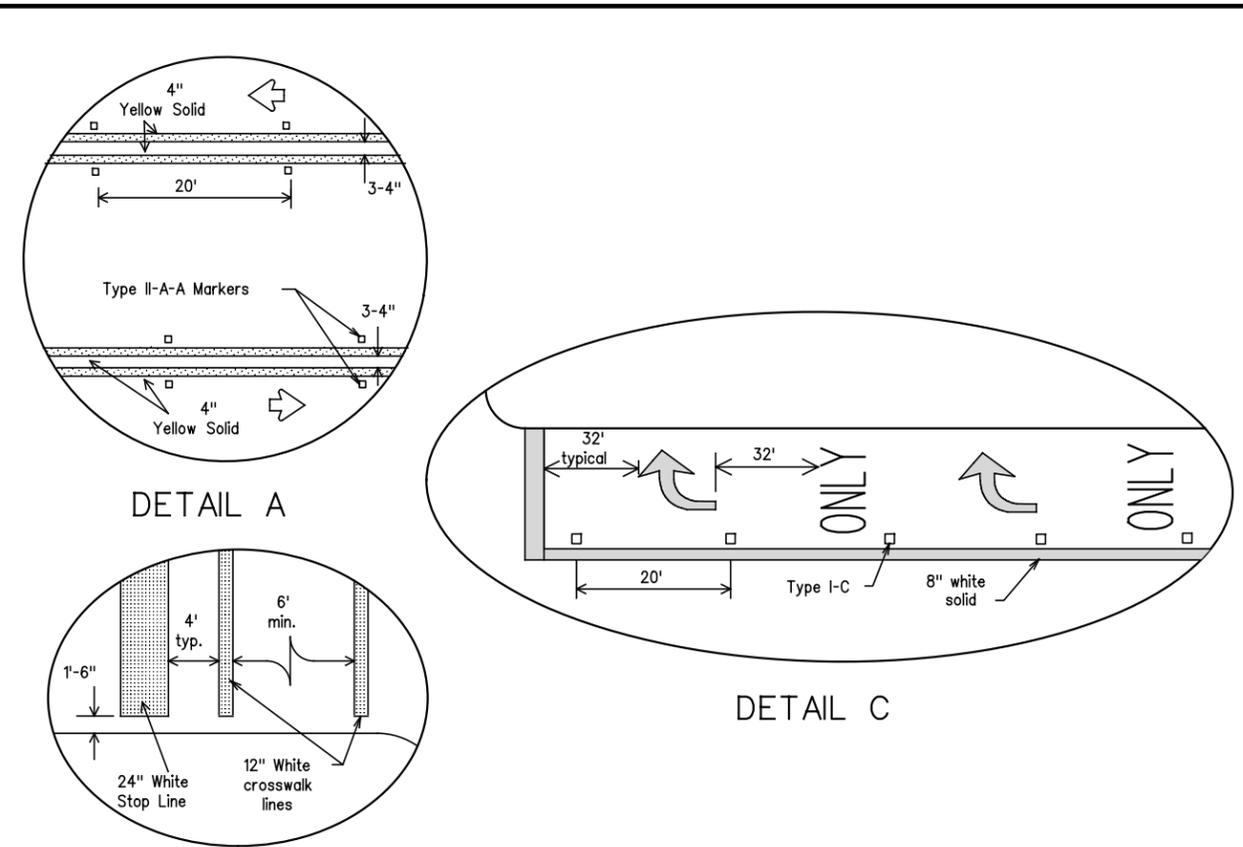
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS

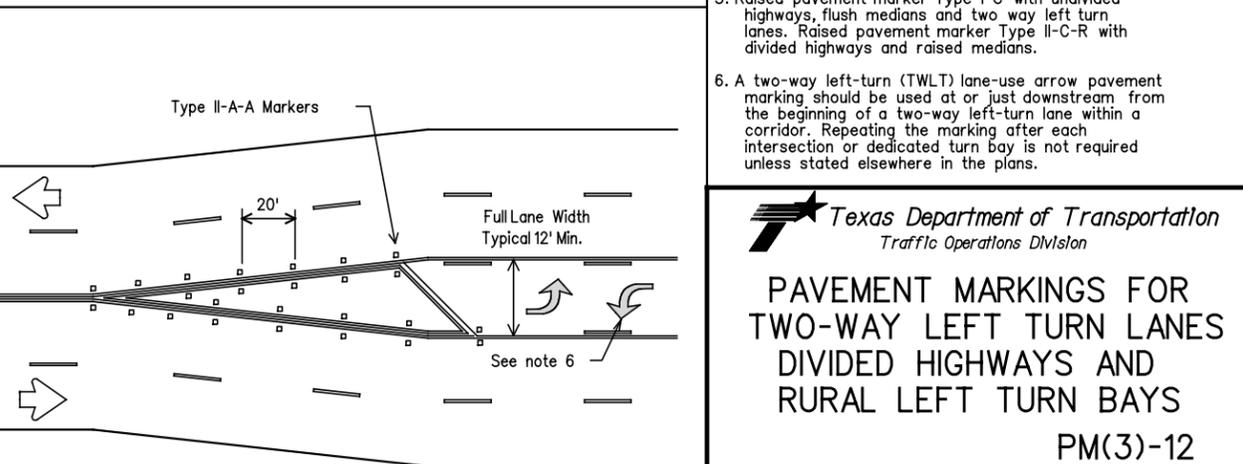


Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

DETAIL B

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

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



TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

1. Refer elsewhere in plans for additional RPM placement and details.
2. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows as shown in the Standard Highway Sign Designs for Texas.
3. When lane use word and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
4. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.
5. Raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Raised pavement marker Type II-C-R with divided highways and raised medians.
6. A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.



PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS PM(3)-12

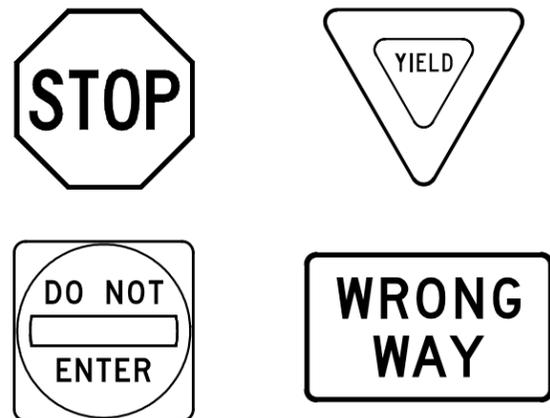
© TxDOT April 1998		DNF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-00	2-12				BORDER AVENUE
8-00					
3-03					
2-10					
		DIST	COUNTY		SHEET NO.
					68

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:26 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\Standards\Signing\TSR4-13.dgn

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

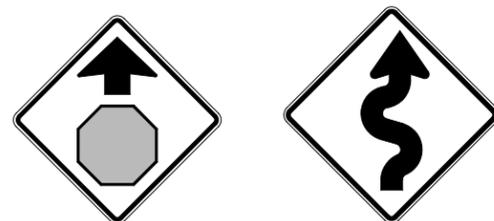
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
- White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
- Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:
<http://www.txdot.gov/>



TYPICAL SIGN REQUIREMENTS

TSR(4)-13

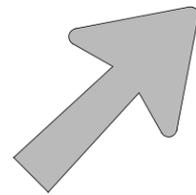
FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVENUE			
12-03 7-13	DIST	COUNTY	SHEET NO.	
9-08			69	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:27 AM
 FILE: P:\2008\2008-0992-3 COW Border\Design\Standards\Signing\TSR5-13.dgn

ARROW DETAILS

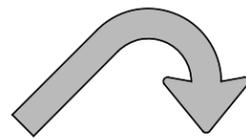
for Large Ground-Mounted and Overhead Guide Signs



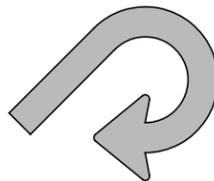
Type A



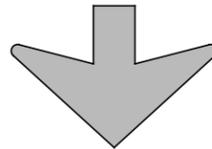
Type B



E-3



E-4



Down Arrow

TYPE	LETTER SIZE	USE
A-1	10.67" U/L and 10" Caps	Single Lane Exits
A-2	13.33" U/L and 12" Caps	
A-3	16" & 20" U/L	
B-1	10.67" U/L and 10" Caps	Multiple Lane Exits
B-2	13.33" U/L and 12" Caps	
B-3	16" & 20" U/L	

CODE	USED ON SIGN NO.
E-3	E5-1aT
E-4	E5-1bT

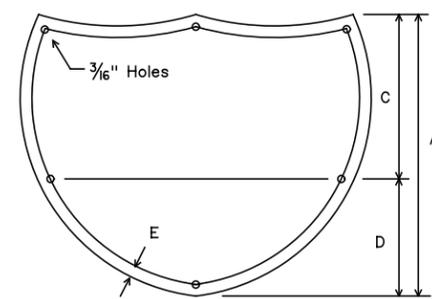
NOTE

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

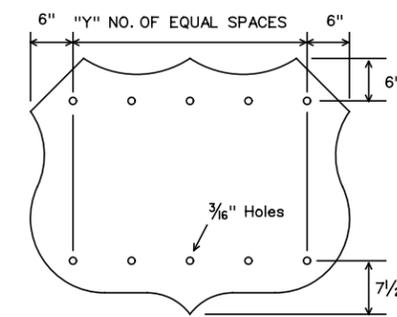
<http://www.txdot.gov/>

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)



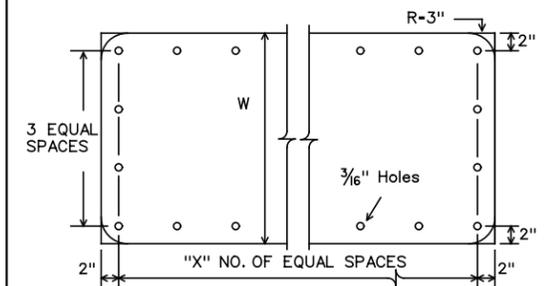
INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	1 1/2
48	28	20	1 3/4



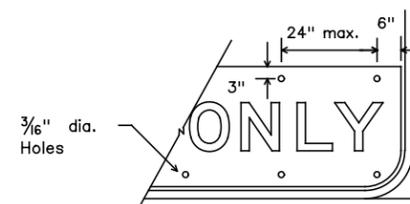
U.S. ROUTE MARKERS

Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



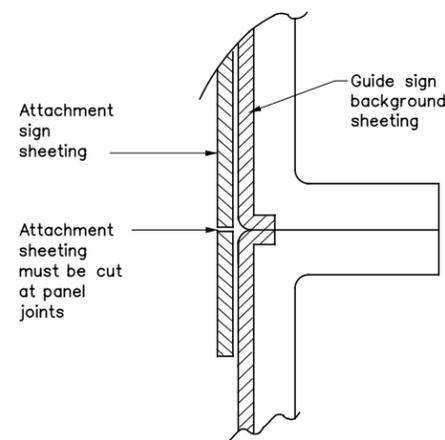
STATE ROUTE MARKERS

No. of Digits	W	X
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5



EXIT ONLY PANEL

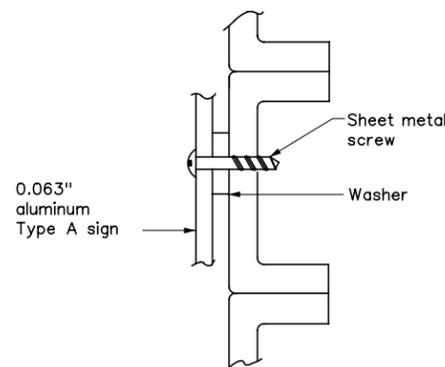
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



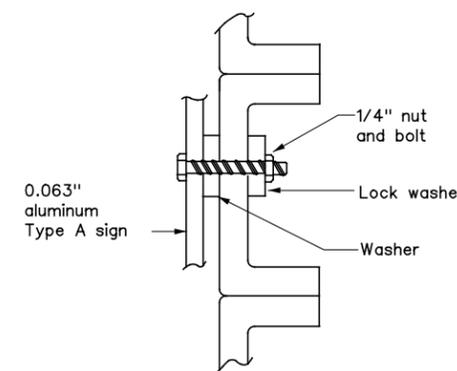
DIRECT APPLIED ATTACHMENT

NOTE:

- Sheeting for legend, symbols, and borders must be cut at panel joints.
- Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".



SCREW ATTACHMENT

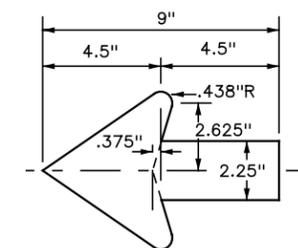


NUT/BOLT ATTACHMENT

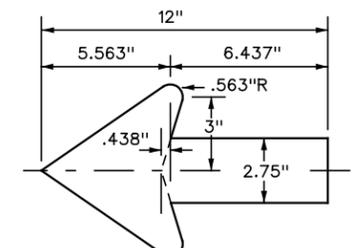
NOTE:

Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

ARROW DETAILS for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.



TYPICAL SIGN REQUIREMENTS

TSR(5)-13

FILE: tsr5-13.dgn	DNF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	BORDER AVENUE			
12-03 7-13	DIST	COUNTY	SHEET NO.	
9-08				70

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

- FRP - Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT - Thin-Walled Tubing (see SMD(TWT))
- 10BWG - 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- S80 - Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

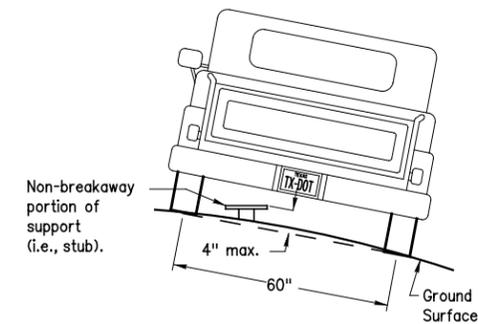
Anchor Type

- UA - Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB - Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS - Wedge Anchor Steel- (see SMD(TWT))
- WP - Wedge Anchor Plastic (see SMD(TWT))
- SA - Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB - Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

- P - Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T - Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U - Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- IF REQUIRED
- 1EXT or 2EXT - Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM - Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC - 1.12 * /ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL - Extruded Aluminum Sign Panels (see SMD(SLIP-3))

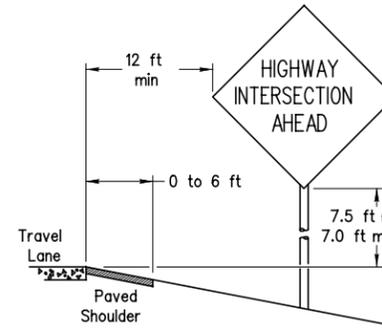
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheelpaths).

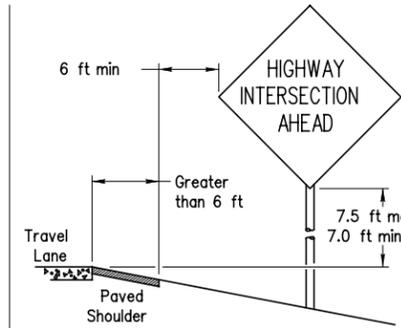
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

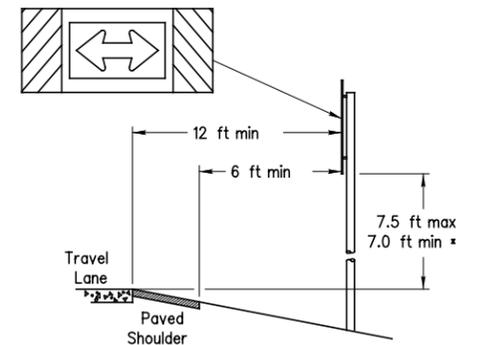
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

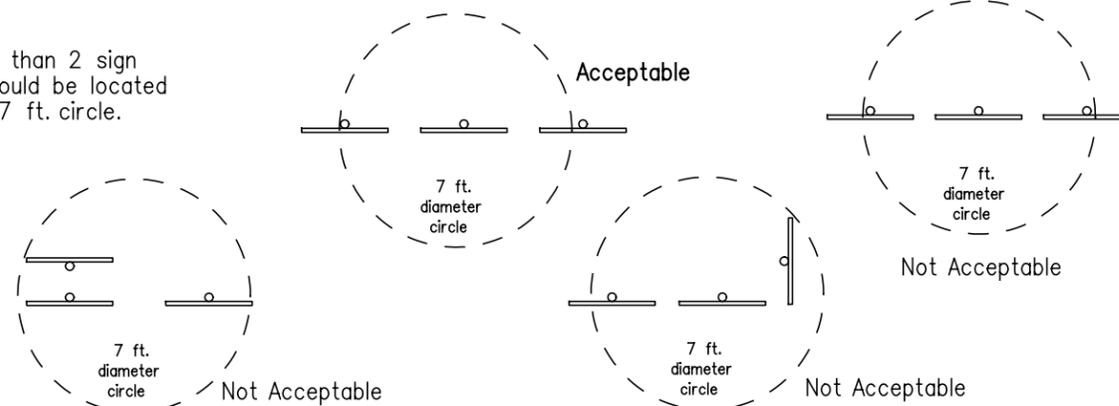
When the shoulder is greater than 6 ft. in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION

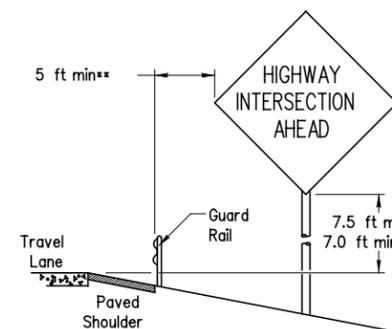


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

No more than 2 sign posts should be located within a 7 ft. circle.

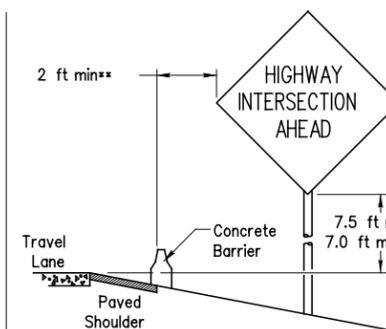


BEHIND BARRIER



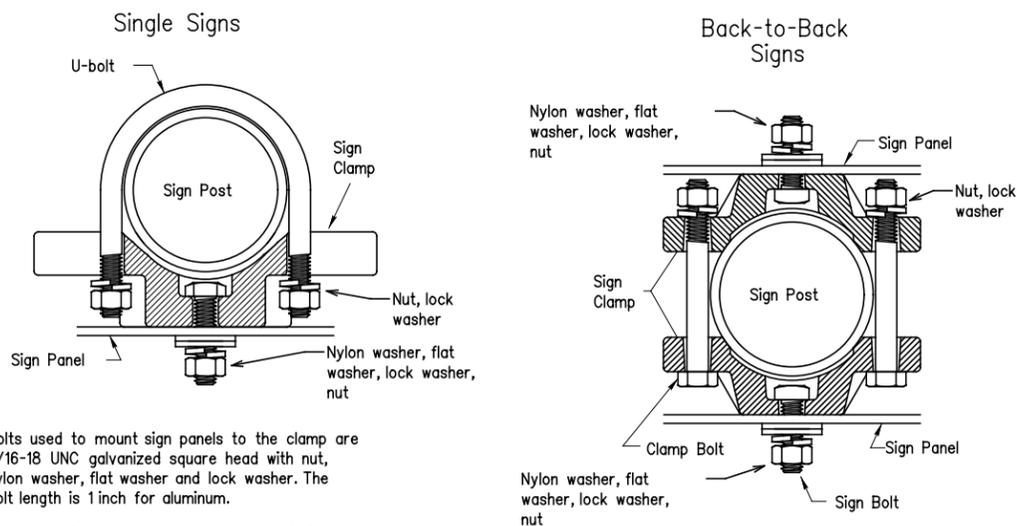
BEHIND GUARDRAIL

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.



BEHIND CONCRETE BARRIER

TYPICAL SIGN ATTACHMENT DETAIL



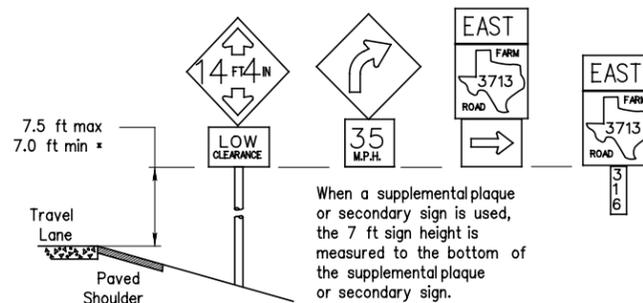
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

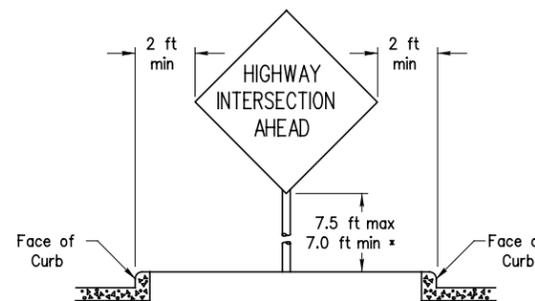
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

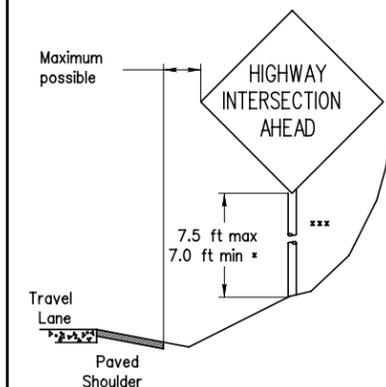


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
- (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
<http://www.txdot.gov/publications/traffic.htm>



SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

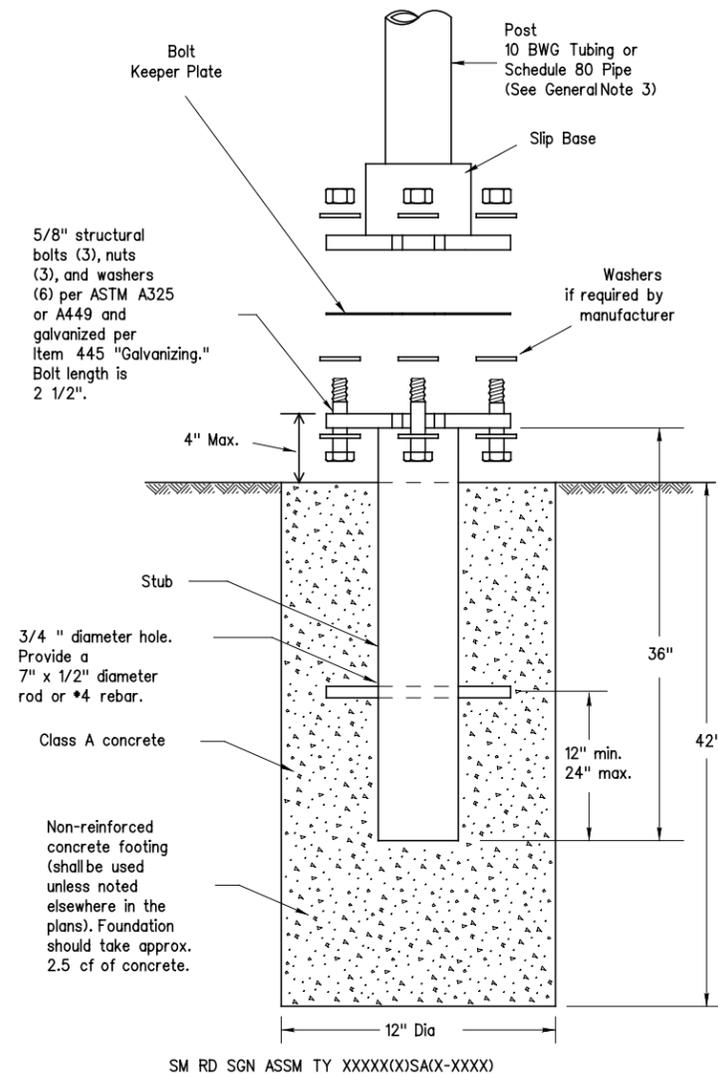
© TxDOT July 2002	DNF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
				HIGHWAY
				BORDER AVENUE
		DIST	COUNTY	SHEET NO.
				71

DATE: 2/23/2015 10:03:27 AM
FILE: P:\2008\2008-0992-3_COW Border\Design\CSU\Standards\Signing\SMDGEN.dgn

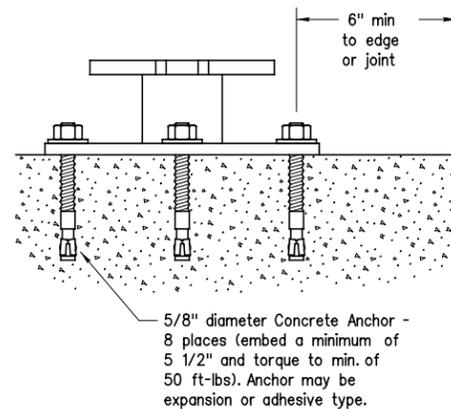
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm
The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.



CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
 - 10 BWG Tubing (2.875" outside diameter)
 - 0.134" nominal wall thickness
 - Seamless or electric-resistance welded steel tubing or pipe
 - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
 - Other steels may be used if they meet the following:
 - 55,000 PSI minimum yield strength
 - 70,000 PSI minimum tensile strength
 - 20% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
 - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
 - Galvanization per ASTM A123 or ASTM A653 G210. For pre-coated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
 - Schedule 80 Pipe (2.875" outside diameter)
 - 0.276" nominal wall thickness
 - Steel tubing per ASTM A500 Gr C
 - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
 - 46,000 PSI minimum yield strength
 - 62,000 PSI minimum tensile strength
 - 21% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
 - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
 - Galvanization per ASTM A123
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.



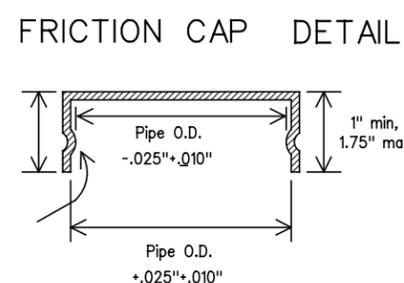
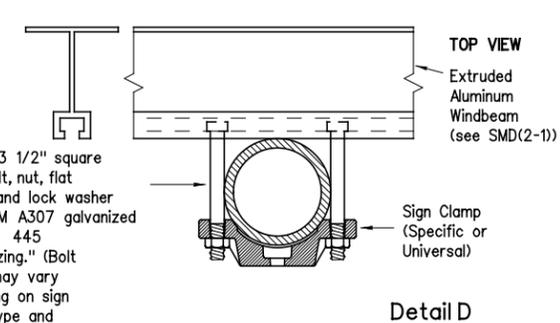
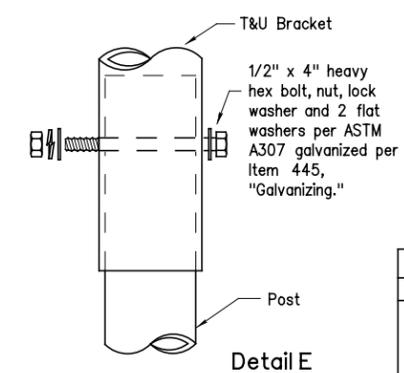
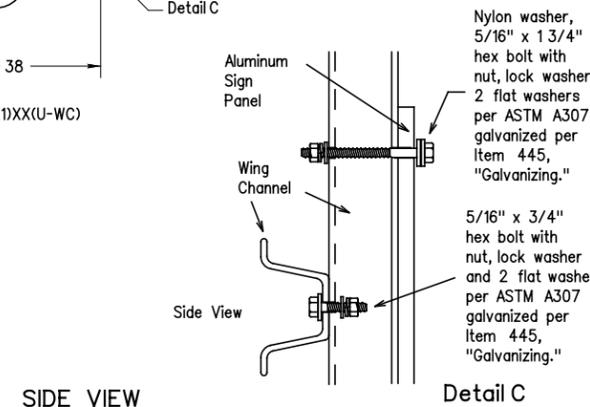
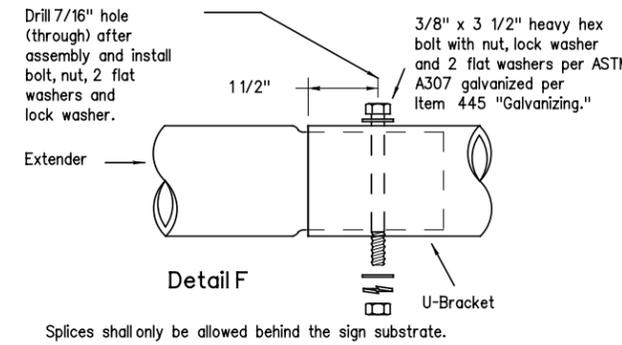
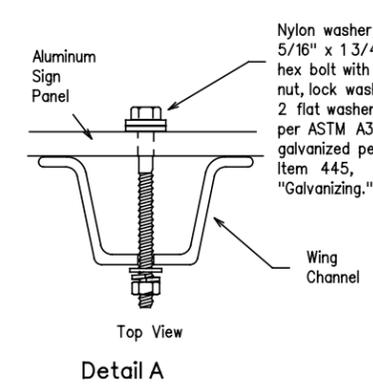
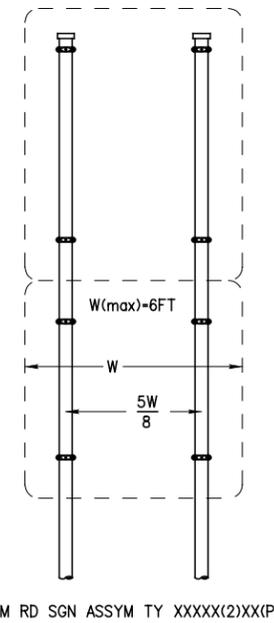
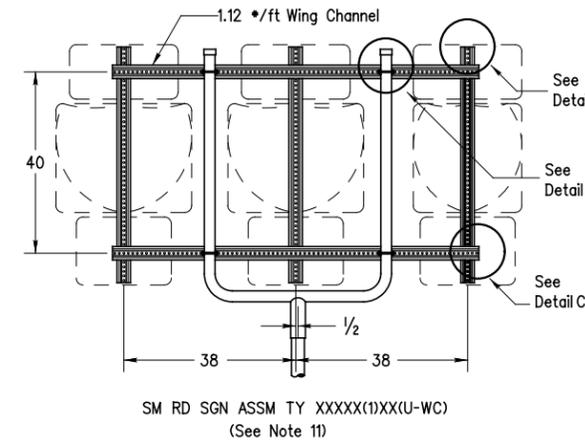
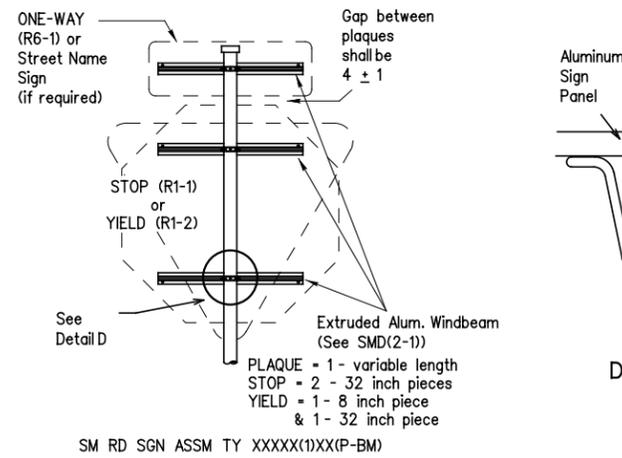
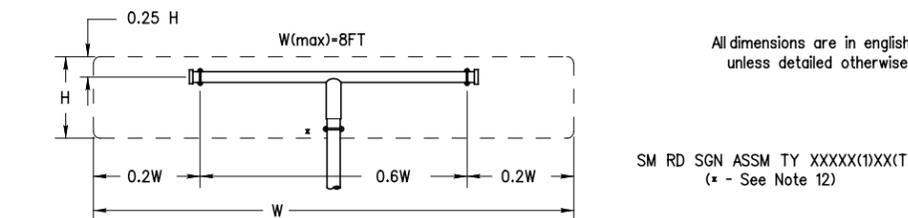
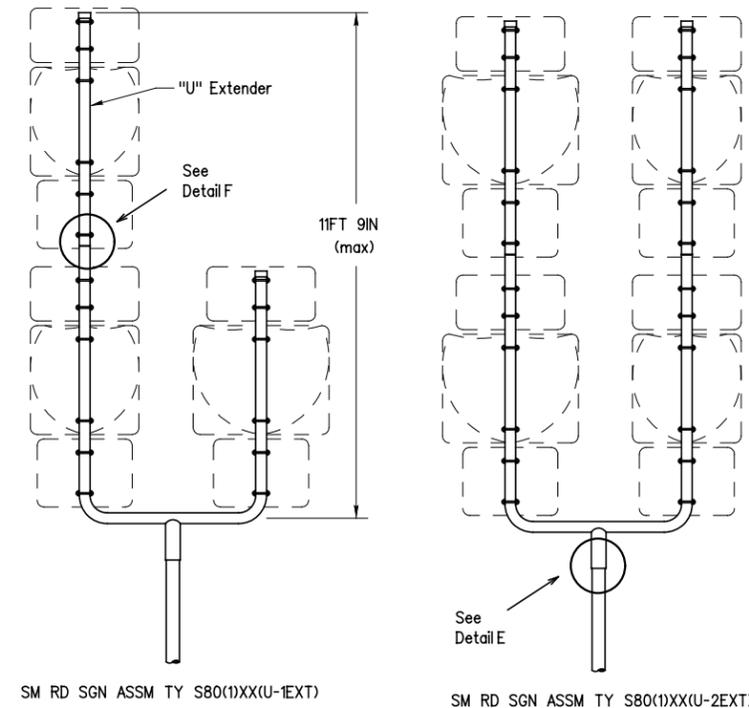
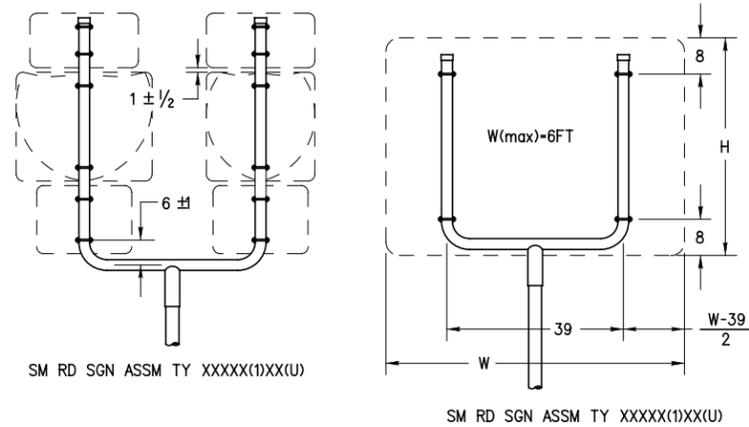
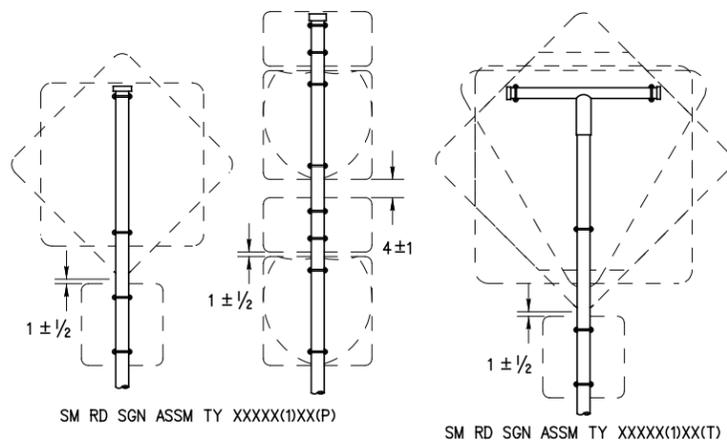
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

© TxDOT July 2002	DNF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
				HIGHWAY
				BORDER AVENUE
		DIST	COUNTY	SHEET NO.
				72

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:28 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSU_Standards\Signing\SMDS2.dgn



Friction caps may be manufactured from hot rolled or cold rolled steelsheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes. The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture. Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

SIGN SUPPORT	NO. OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
- Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.
- Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT	
SIGN DESCRIPTION	SUPPORT
48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
48x60-inch signs	TY S80(1)XX(T)
48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
48x60-inch signs	TY S80(1)XX(T)
48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
 Traffic Operations Division

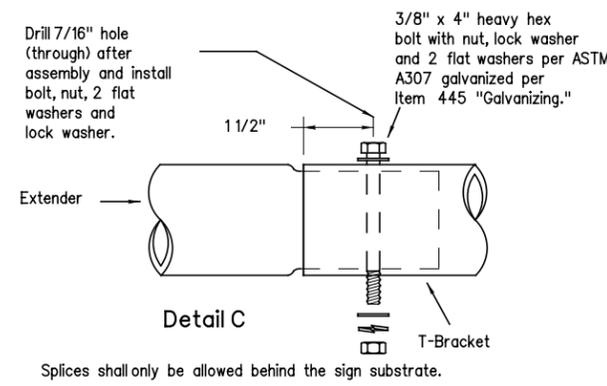
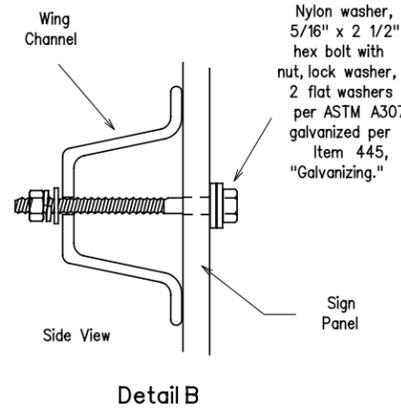
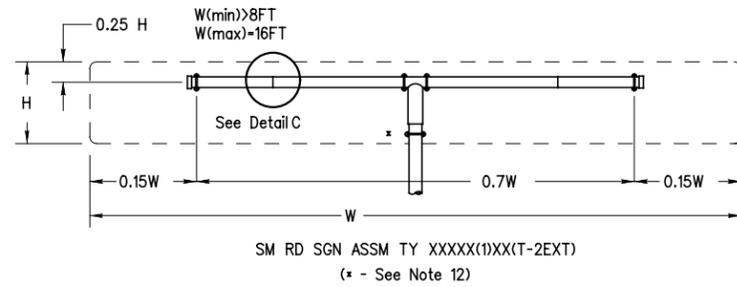
**SIGN MOUNTING DETAILS
 SMALL ROADSIDE SIGNS
 TRIANGULAR SLIPBASE SYSTEM**

SMD(SLIP-2)-08

© TxDOT July 2002	DNF: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
				HIGHWAY
				BORDER AVENUE
		DIST	COUNTY	SHEET NO.
				73

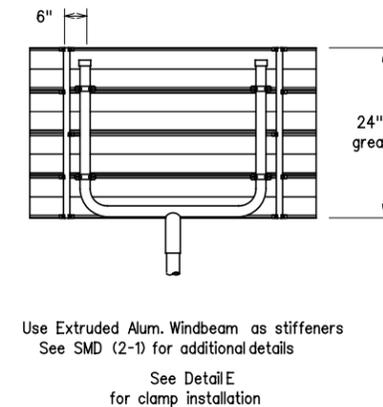
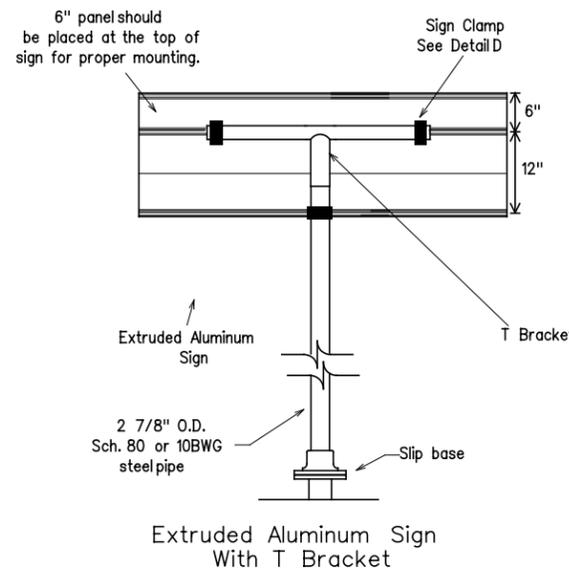
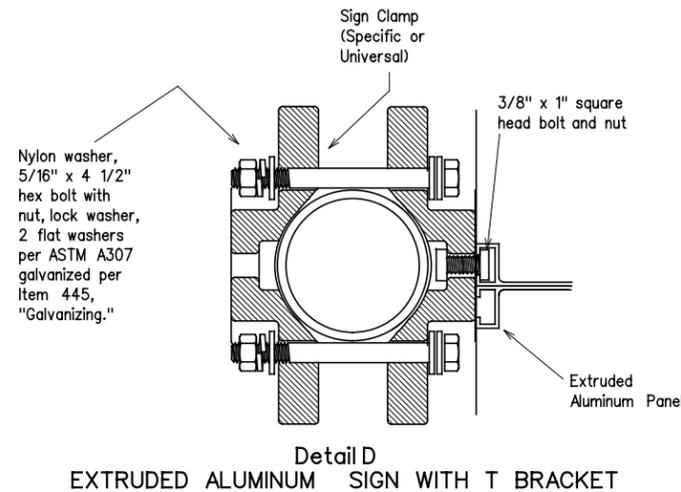
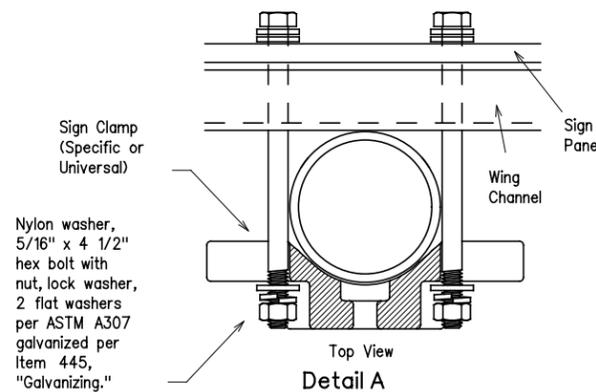
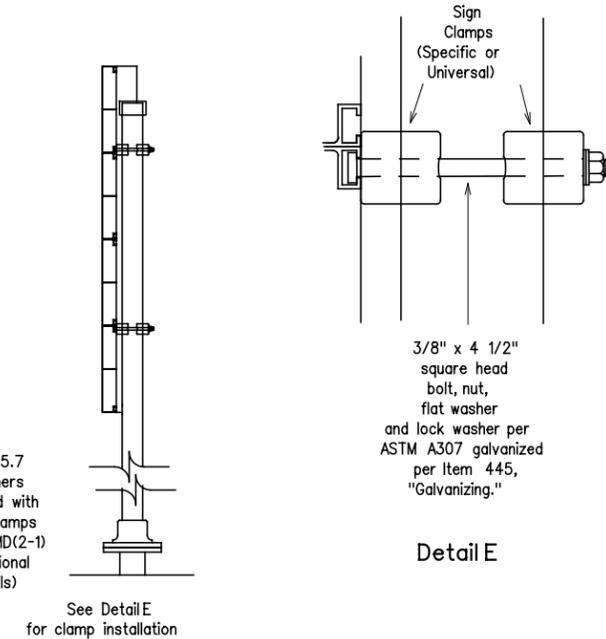
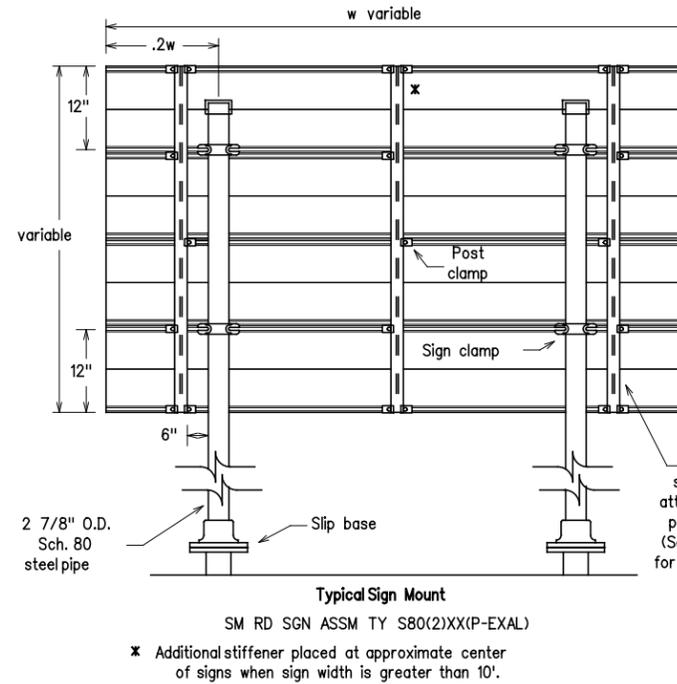
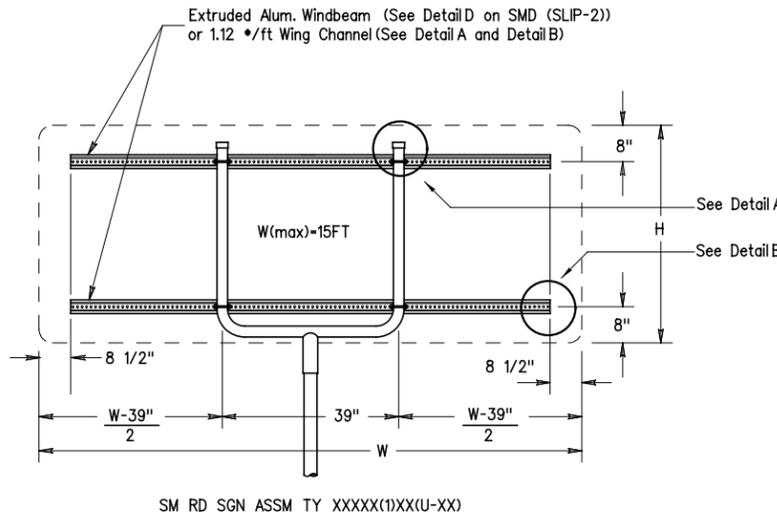
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:29 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Signing\SMD53.dgn



GENERAL NOTES:

- | SIGN SUPPORT | • OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG | 1 | 16 SF |
| 10 BWG | 2 | 32 SF |
| Sch 80 | 1 | 32 SF |
| Sch 80 | 2 | 64 SF |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
 - Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
 - Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
 - Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
 - For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
 - When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
 - Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
 - Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
 - Sign blanks shall be the sizes and shapes shown on the plans.
 - Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
 - Post open ends shall be fitted with Friction Caps.



		REQUIRED SUPPORT	
		SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)	
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)	
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)	
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)	
Warning	48x60-inch signs	TY S80(1)XX(T)	
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)	
	48x60-inch signs	TY S80(1)XX(T)	
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)	
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)	
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)	

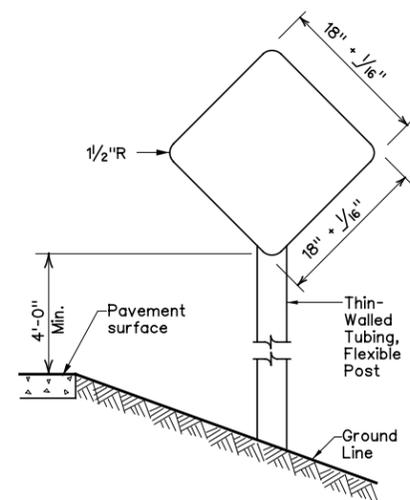


SIGN MOUNTING DETAILS
 SMALL ROADSIDE SIGNS
 TRIANGULAR SLIPBASE SYSTEM
 SMD(SLIP-3)-08

© TxDOT July 2002		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
					BORDER AVENUE
		DIST	COUNTY		SHEET NO.
					74

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:29 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSU\Standards\Signing\DOM1-10.DGN

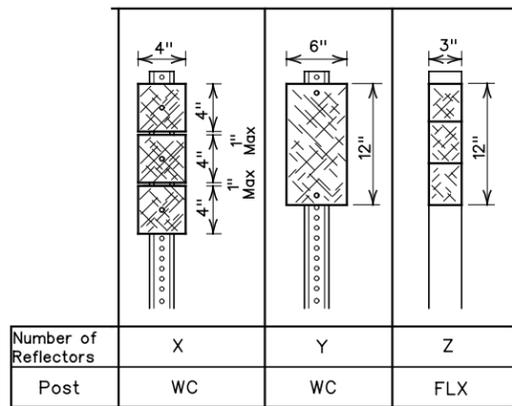


TYPE 1
 18" x 18"
 Yellow
 Type E Sheeting

TYPE 4
 18" x 18"
 Red
 Type D Sheeting

Use Sign blank 0.080" thick sheet aluminum conforming to ASTM B-209 Alloy 6061-T6. Use reflective sheeting in accordance with DMS 8300.

TYPES 1 and 4



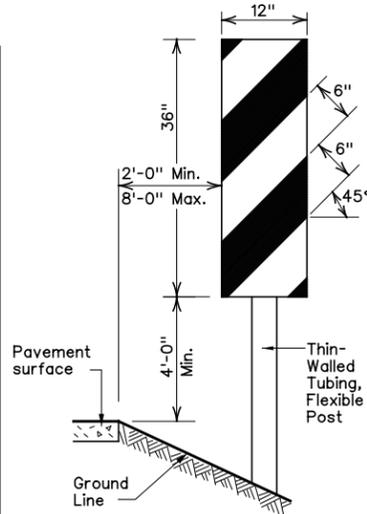
NOTES

- All type 2 object markers are yellow
- WC-wing channel post, 1.12 lbs/ft steel per ASTM A 1011 SS Gr 50, or ASTM A499
- FLX-flexible post (embedded and surface mount)

Typically used on bridge rail approach ends, some bridge abutments and at bridge rail exits on two-lane, two-way roadways

TYPE 2

OBJECT MARKERS

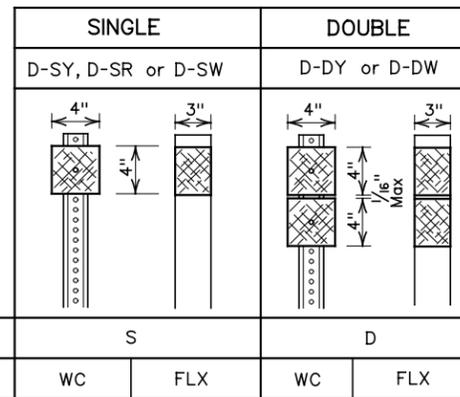


OM-3 Directions

L - Placed on Left Side
 R - Placed on Right Side
 C - Placed on Center

Use Sign blank .080" thick sheet aluminum conforming to ASTM B-209 Alloy 6061-T6. Use reflective sheeting in accordance with DMS 8300, Type E. Use at bridges with no approach rails.

TYPE 3

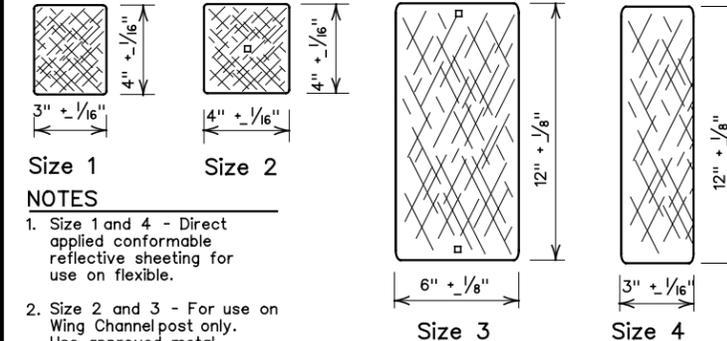


Number of Reflectors	S		D	
	WC	FLX	WC	FLX

NOTES

- Reflector Units: W-White, R-Red, Y-Yellow
- Length of post may vary to meet field conditions.
- WC-wing channel post, 1.12 lbs/ft Steel per ASTM A 1011 SS Gr 50, or ASTM A499
- FLX-flexible post (embedded and surface mount)

DELINEATORS



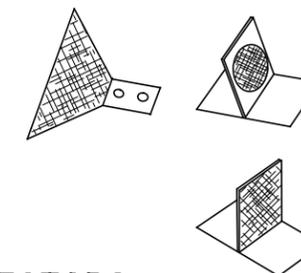
NOTES

- Size 1 and 4 - Direct applied conformable reflective sheeting for use on flexible.
- Size 2 and 3 - For use on Wing Channel post only. Use approved metal, plastic or fiberglass backplate with 17/64" square mounting holes.
- Yellow, White & Red: Conformable Reflective Sheeting as per DMS 8300.

REFLECTOR UNIT SIZES

NOTES

- A reflector unit or sheeting (per DMS 8600) attached to a bracket to facilitate the mounting of the reflector on concrete traffic barrier, railing, metal beam guard fence (MBGF) or other locations shown on the plans. A list of approved barrier reflectors can be found at: www.txdot.gov
- Yellow, White and Red: Conformable Reflective Sheeting as per DMS 8300.



BARRIER REFLECTORS

D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXX)XXX(XX)

NUMBER OF REFLECTORS
 S = Single
 D = Double

COLOR OF REFLECTORS
 W = White
 Y = Yellow
 R = Red

REFLECTOR UNIT SIZE
 1 or 2

TYPE OF POST OR DELINEATOR
 WC = Wing Channel Post
 FLX = Flexible Post
 TYC = Barrier Reflector

TYPE OF MOUNT
 GND = Embedded (drivable or set in concrete)
 CTB = Concrete Barrier Mount
 GF1 or GF2 = Guard Fence Attachment
 SRF = Surface Mount

DIRECTION
 If Required
 BI = Bi-Directional
 BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXX)XXX(XX)

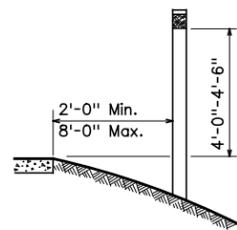
TYPE OF OBJECT MARKER
 1, 2, 3, or 4

NUMBER OF REFLECTORS OR DIRECTION
 X = 3-Size 2 reflector units (Type 2 only)
 Y = 1-Size 3 reflector unit (Type 2 only)
 Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only)
 L = Left Side (Type 3 Object Marker only)
 R = Right Side (Type 3 Object Marker only)
 C = Center (Type 3 Object Marker only)

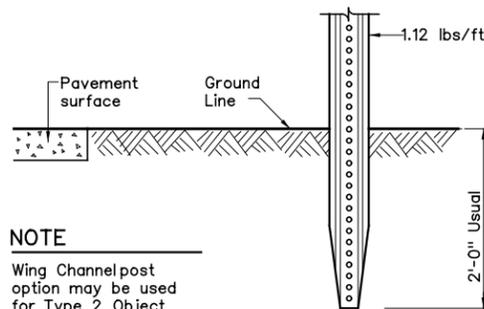
TYPE OF POST
 WC = Wing Channel Post
 FLX = Flexible Post
 TWT = Thin Walled Tubing

TYPE OF MOUNT
 GND = Embedded (drivable or set in concrete)
 SRF = Surface Mount

DIRECTION
 If Required
 BI = Bi-Directional

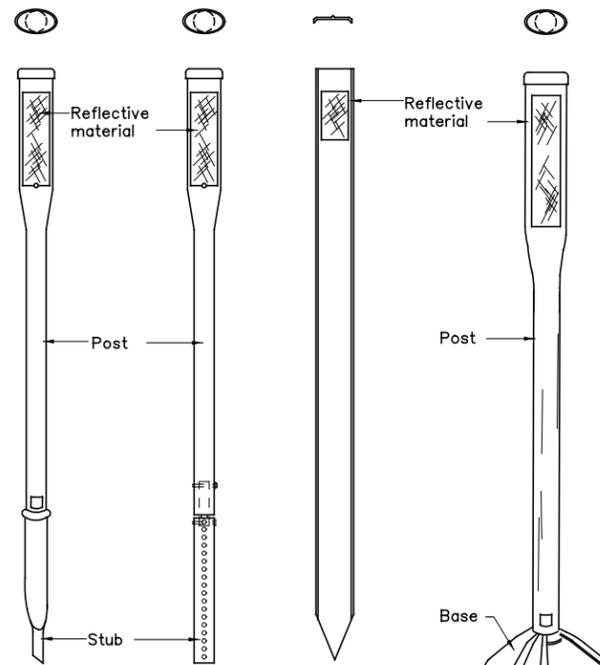


TYPICAL INSTALLATION



NOTE
 Wing Channel post option may be used for Type 2 Object Markers and delineators only.

WING CHANNEL



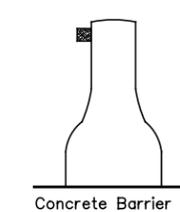
EMBEDDED

SURFACE MOUNT

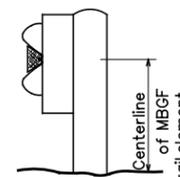
NOTES

- See Material Producer List for approved devices.
- Install to manufacturer's recommendations.

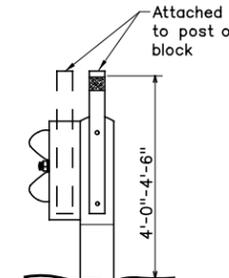
FLEXIBLE POSTS



CTB



GF1



GF2

BARRIER REFLECTORS

GENERAL NOTES

- Place delineators on a section of roadway the same distance from the edge of pavement.
- Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
- When object markers are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of 4'-0"-4'-6". If this is the case, place the object markers as close to the desired height as possible.
- Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.

DEPARTMENTAL MATERIAL SPECIFICATIONS

FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600



DELINEATOR & OBJECT MARKER INSTALLATION AND MATERIAL DESCRIPTION D & OM(1)-10

© TxDOT August 2004	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
10-09	CONT	SECT	JOB	HIGHWAY
4-10	DIST	COUNTY	BORDER AVENUE	
			SHEET NO.	
			75	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:30 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Signing\DOM2-04.DGN

Condition	Type of Road or	Condition for use			Delineator
		Required (shall be used)	Recommended (should be used)	Optional (may be used) Prohibited (cannot be used)	
Freeways or Expressways	Tangent	D-SW on right or raised pavement markers			200-530 ft
	Curve	D-SW on right			see Table
	Ramp	D-SW on one side See Note 1 *	On outside of interchange ramp curves		
Other Than Freeways or Expressways	Tangent			D-SY or D-DY 200-530 ft D-SW on right or left side	on left side of two-way roads
	Curve				see Table
Acceleration and Deceleration Lanes			D-DW or D-DY		100 ft spacing
Crossovers			D-DY on left side of through road on far side of crossover		
Wrong-way				D-SR for wrong-way traffic	
Pavement Narrowing (lane merge)				D-SW (right) or D-SY (left) adjacent to affected lane for full length of transition See Note 2 **	
Truck escape ramps	ramp		D-SR on both sides of		50 ft spacing
With guard fence, bridge rail, or concrete barrier					100 ft use min. of 3

General Notes: Unless indicated otherwise, the color of a delineator must conform to the color of the pavement edge line on the side of the road where the delineators are placed. Barrier markers can be used to replace required delineators. DS-R can be mounted on the back side of existing delineator posts.

- * 1. Delineation required on one side either SY or SW.
- ** 2. Minimum of 3.

When degree of curve or radius is known

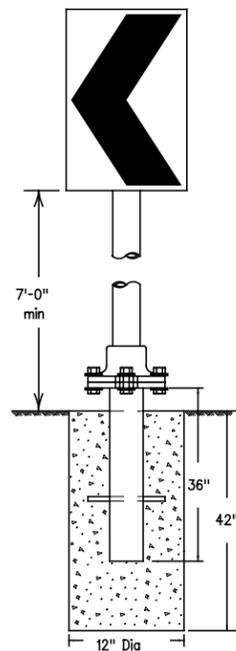
When degree of curve or radius is not known

Advisory Speed (MPH)	Spacing in Curve	Spacing in Strtawy	Chevron Spacing in Curve
	A	2xA	B
65	130	260	
60	110	220	
55	100	200	160
50	85	170	160
45	75	150	160
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

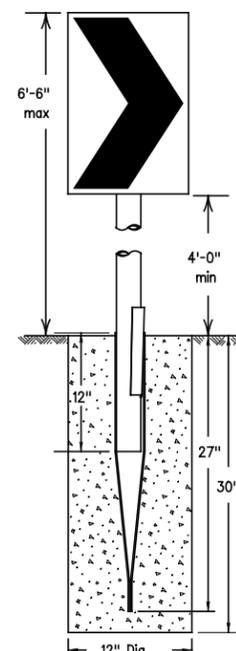
If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

Degree of Curve	Feet			
	Radius of Curve	Spacing in Curve	Spacing in Strtawy	Chevron Spacing in Curve
1	5730	225	450	
2	2865	160	320	
3	1910	130	260	
4	1433	110	220	
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

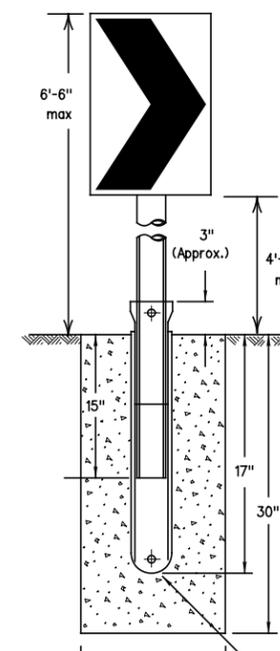
Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.



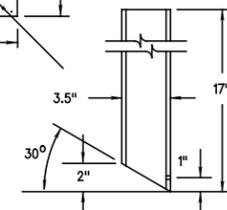
SLIPBASE SYSTEM



WEDGE ANCHOR STEEL SYSTEM

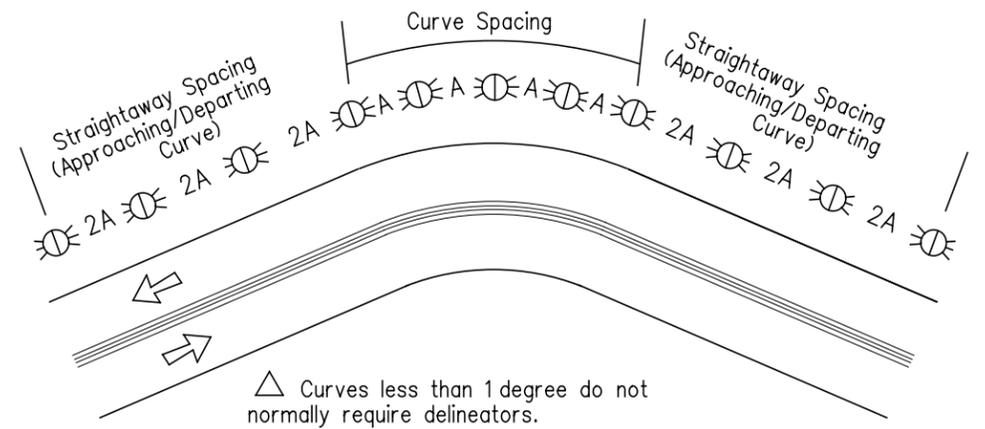


WEDGE ANCHOR PLASTIC SYSTEM



For Chevron Specifications and payment, refer to Item 644 "Small Roadside Sign Supports and Assemblies".

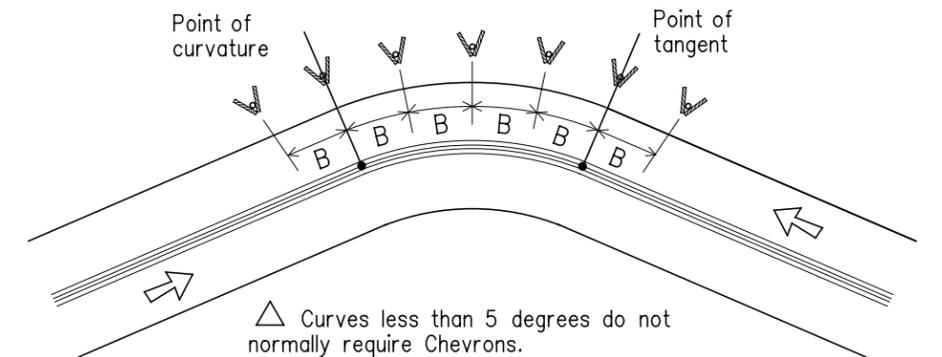
Suggested Spacing for Highway Delineators on Horizontal Curves



△ Curves less than 1 degree do not normally require delineators.

Suggested Spacing for Chevrons on Horizontal Curves

The Chevron may be used to provide additional emphasis and guidance for a change in horizontal alignment. A Chevron may be used as a supplement to delineation.



△ Curves less than 5 degrees do not normally require Chevrons.

GUIDELINES FOR USE OF WARNING DEVICES AT CURVES WITH ADVISORY SPEED LIMITS	
Amount by which Advisory Speed is less than Posted Speed	Warning Devices Needed
0 to 14 MPH	RPMS
15 to 24 MPH	RPMS and Delineators
25 MPH or greater	RPMS and Chevrons

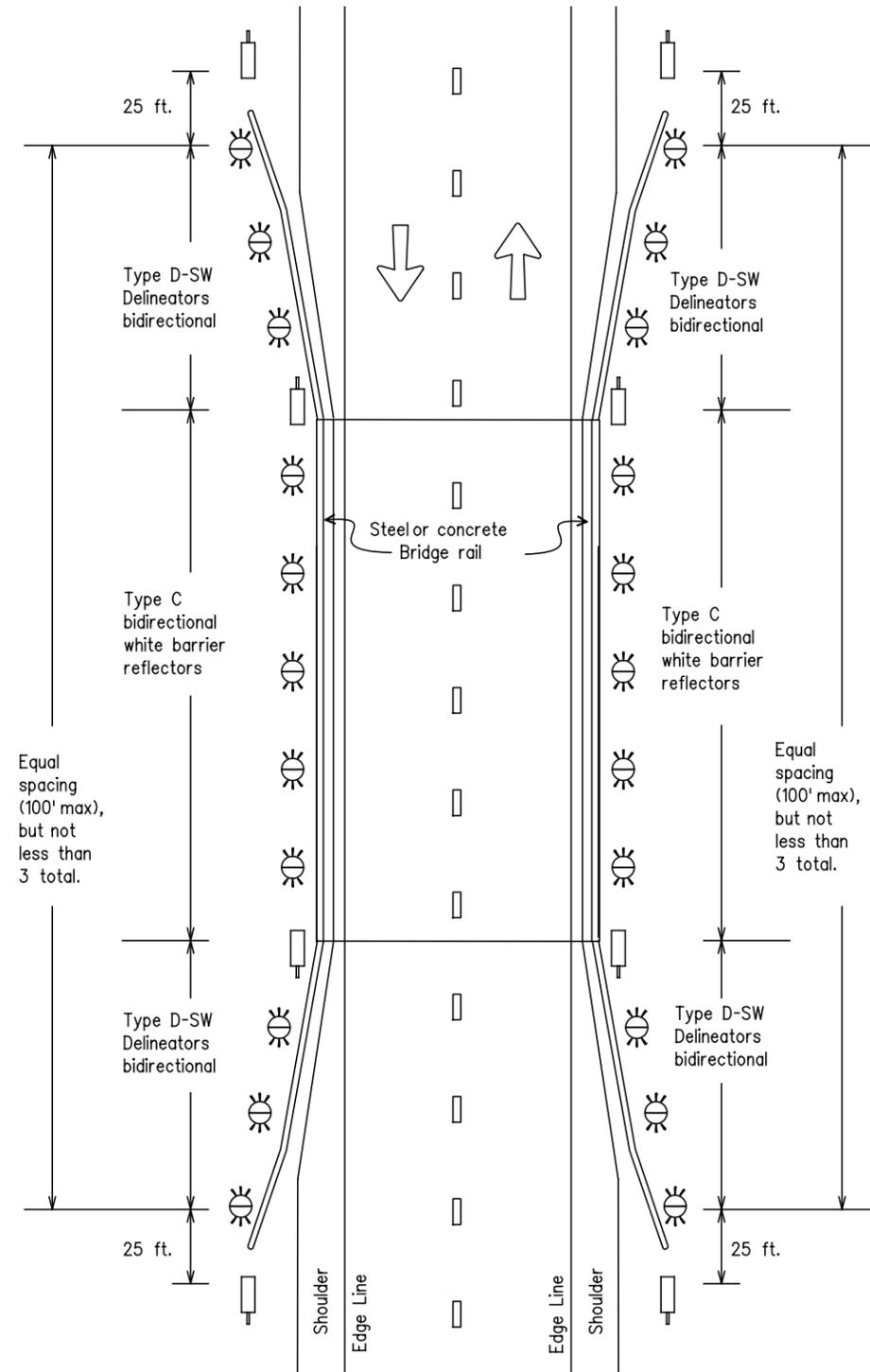
Texas Department of Transportation
Traffic Operations Division

TYPICAL DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

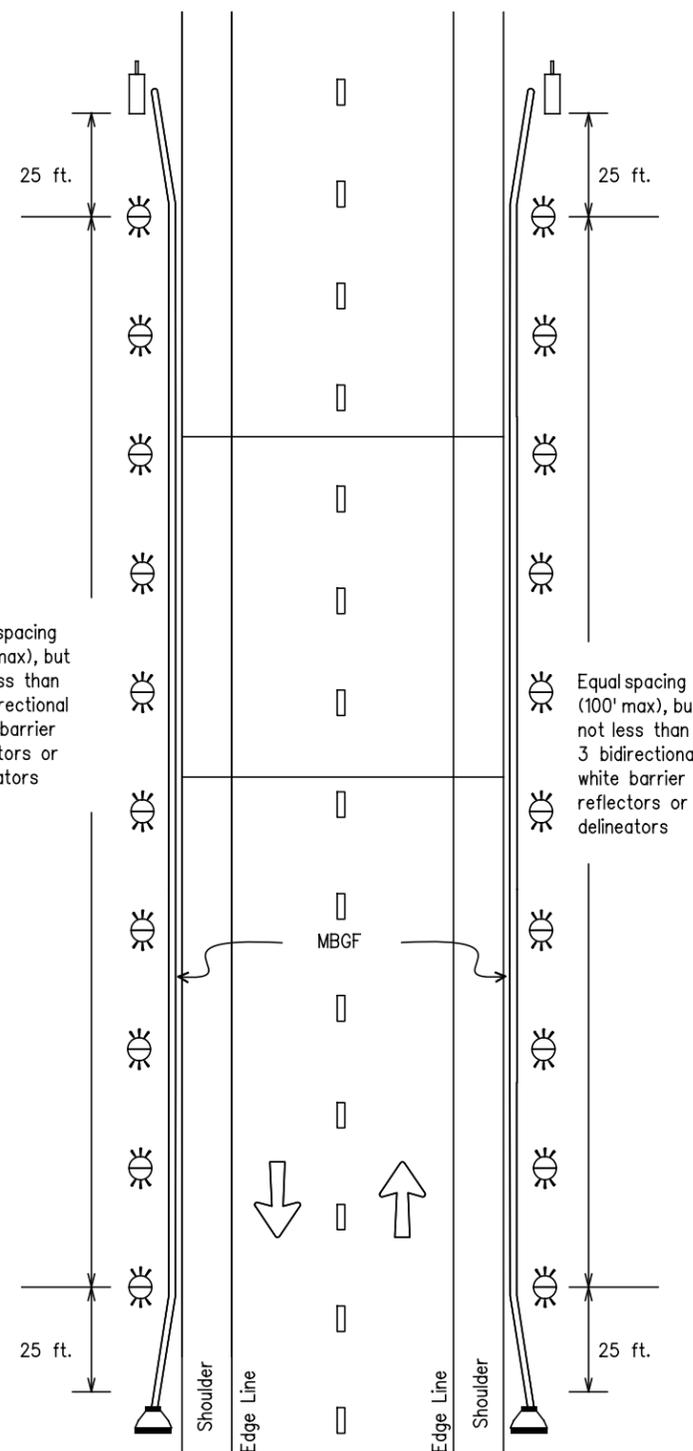
D & OM(2)-04

© TxDOT August 2004	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
				BORDER AVENUE
	DIST	COUNTY		SHEET NO.
				76

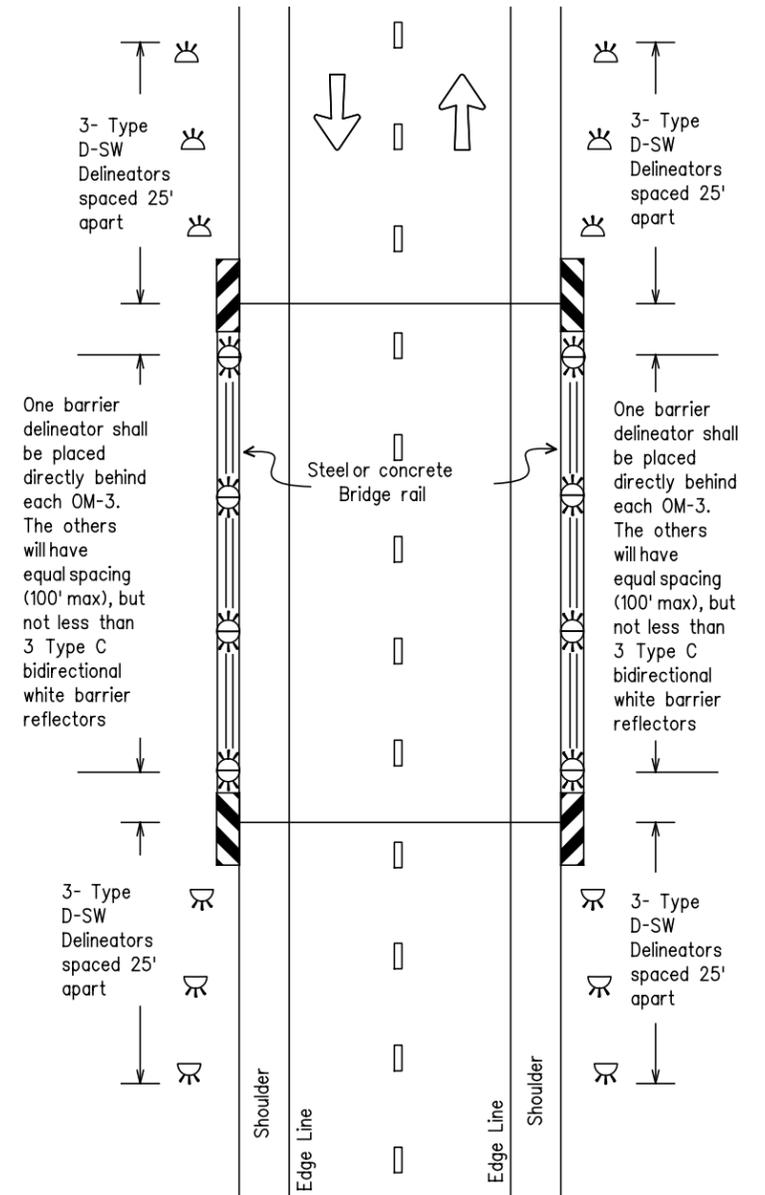
Two-way, Two lane Roadway
with Reduced Width Approach Rail



Two-way, Two lane Roadway
with Metal Beam Guard Fence (MBGF)



Two-way, Two lane Roadway
Bridge with No Approach Rail



LEGEND

- Bidirectional Delineator
- Delineator
- OM-3
- OM-2
- Terminal End

Terminal Ends include OB-3F.
There is no need to install an
OM-2 in front of terminal.

Texas Department of Transportation
Traffic Operations Division

DELINEATOR &
OBJECT MARKER
PLACEMENT DETAILS

D & OM(3)-04

© TXDOT August 2004		DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
					BORDER AVENUE
		DIST	COUNTY		SHEET NO.
				77	

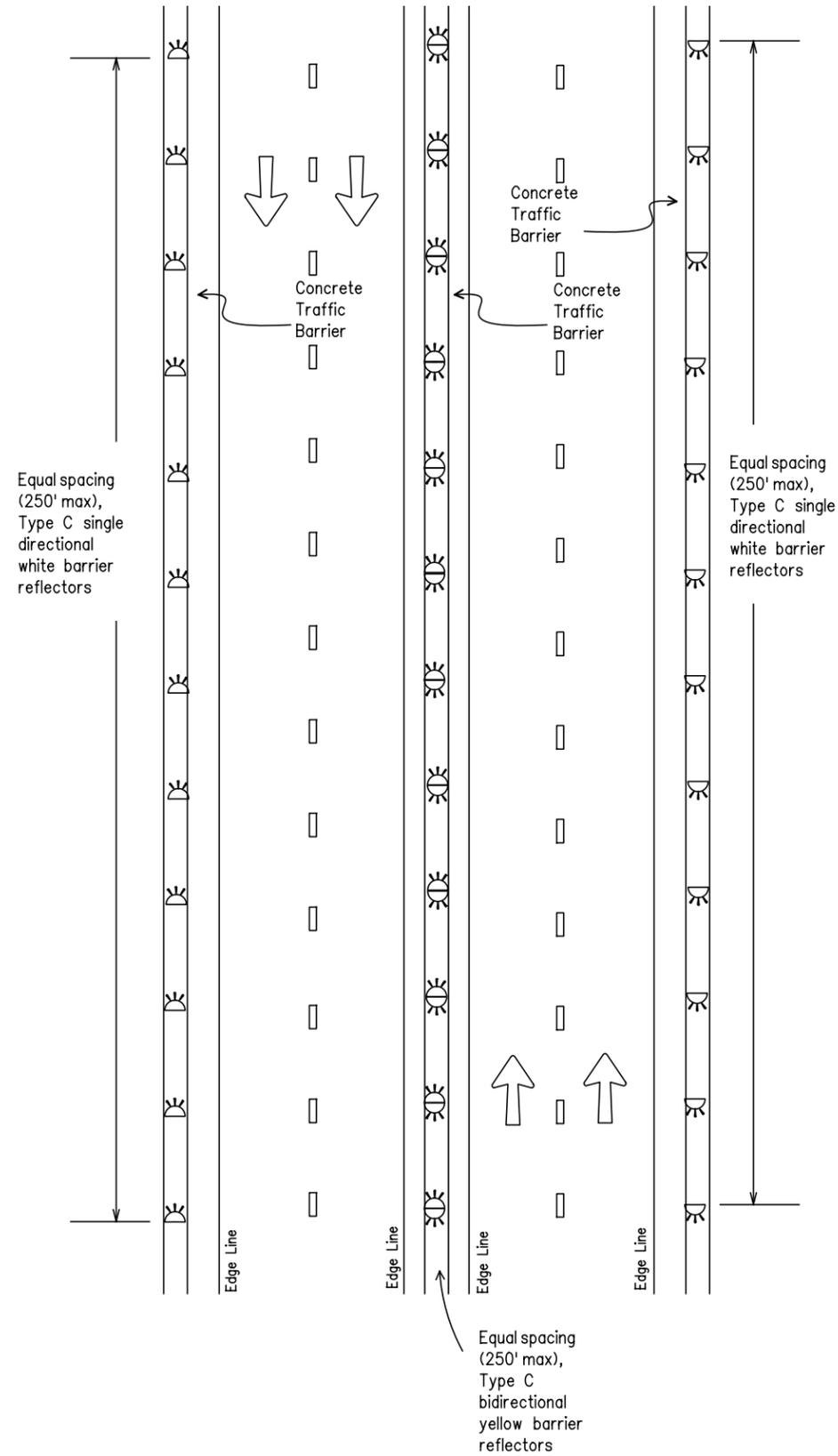
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TXDOT for any purpose whatsoever. TXDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:31 AM
FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Signing\DOM3-04.DGN

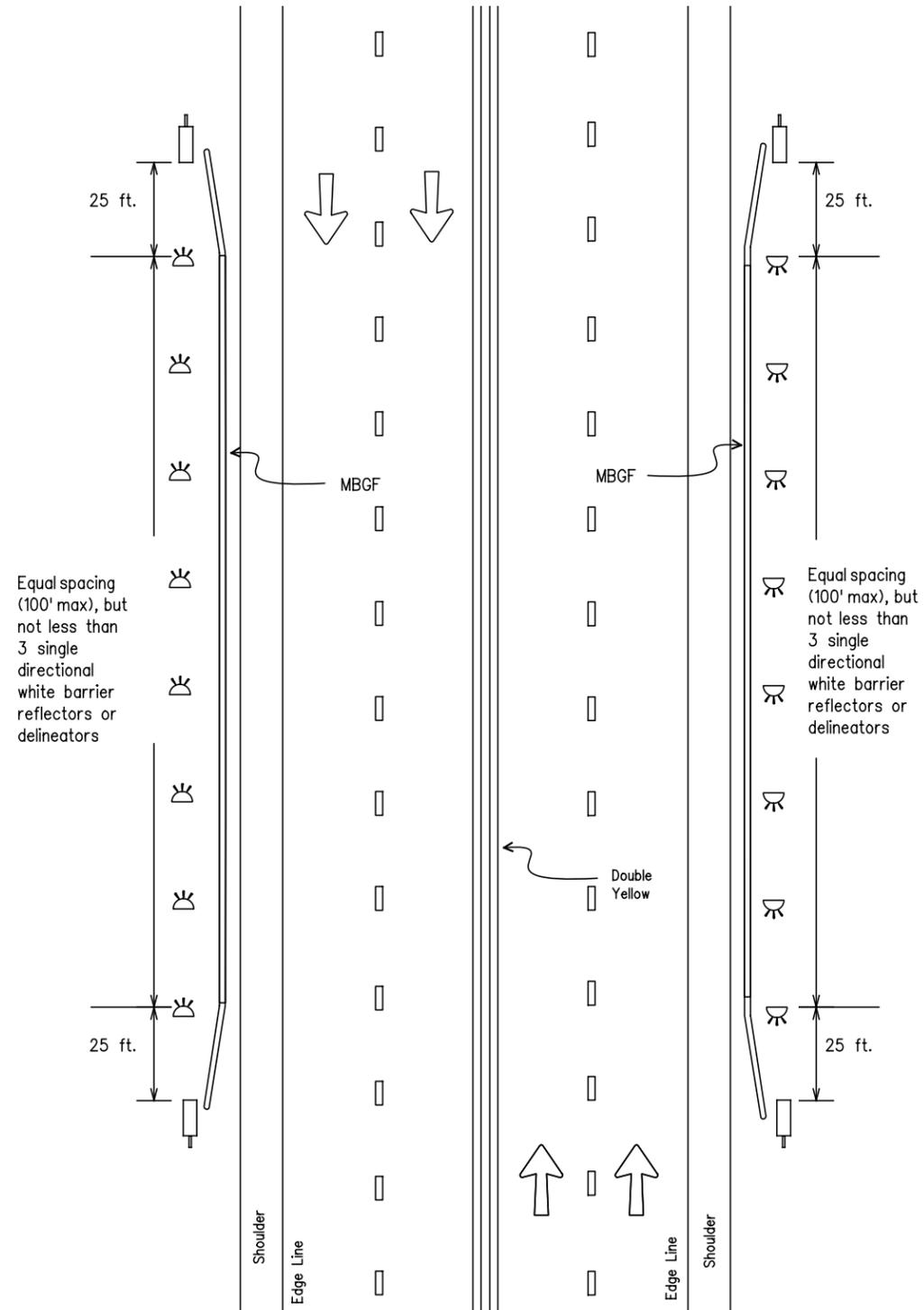
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:31 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Signing\DOM4-04.DGN

Continuous Concrete Barrier



Multi-lane Undivided, Two-way Roadway with Metal Beam Guard Fence (MBGF)



LEGEND	
	Bidirectional Delineator
	Delineator
	OM-3
	OM-2

Texas Department of Transportation
 Traffic Operations Division

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

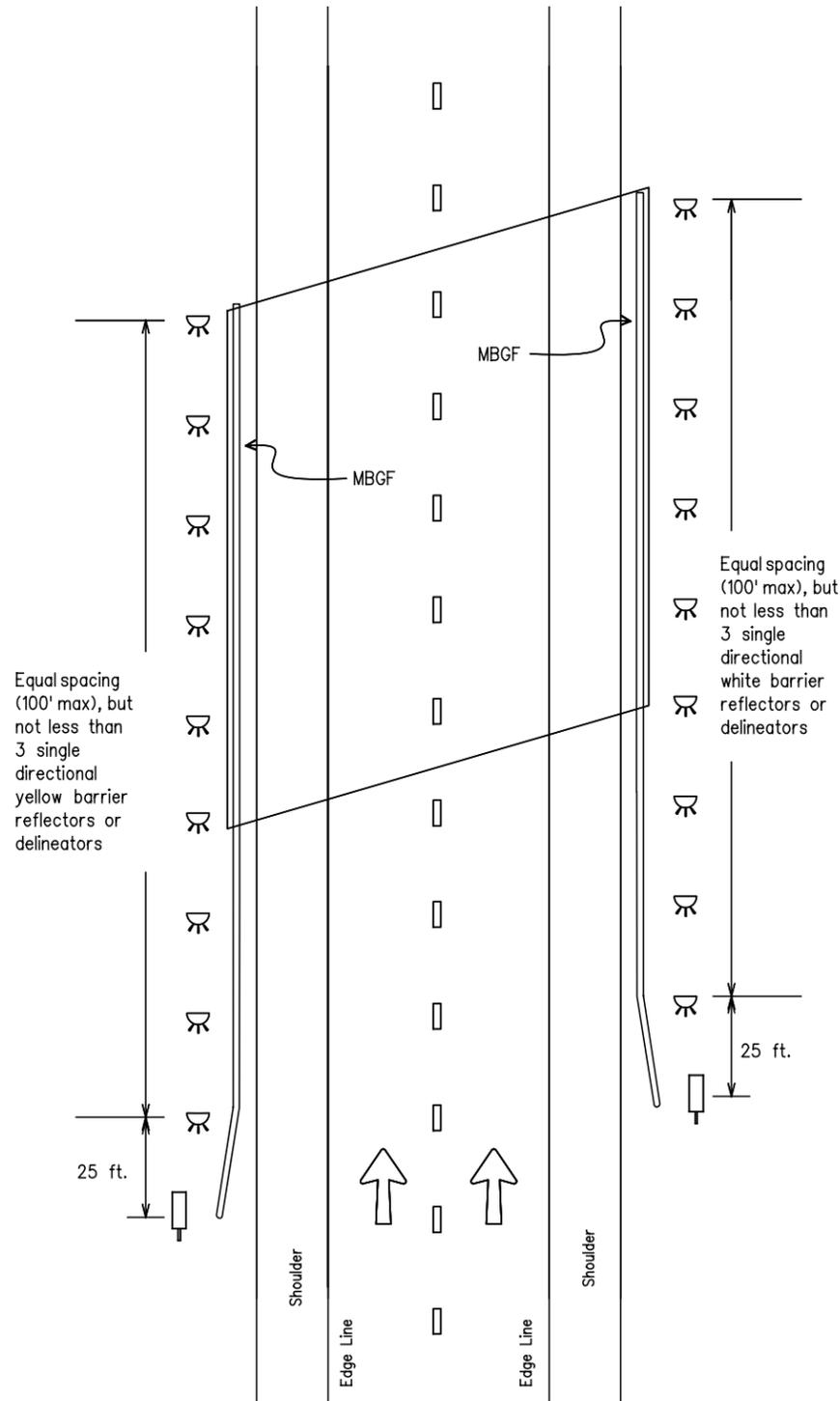
D & OM(4)-04

© TxDOT August 2004		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
					BORDER AVENUE
		DIST	COUNTY		SHEET NO.
				78	

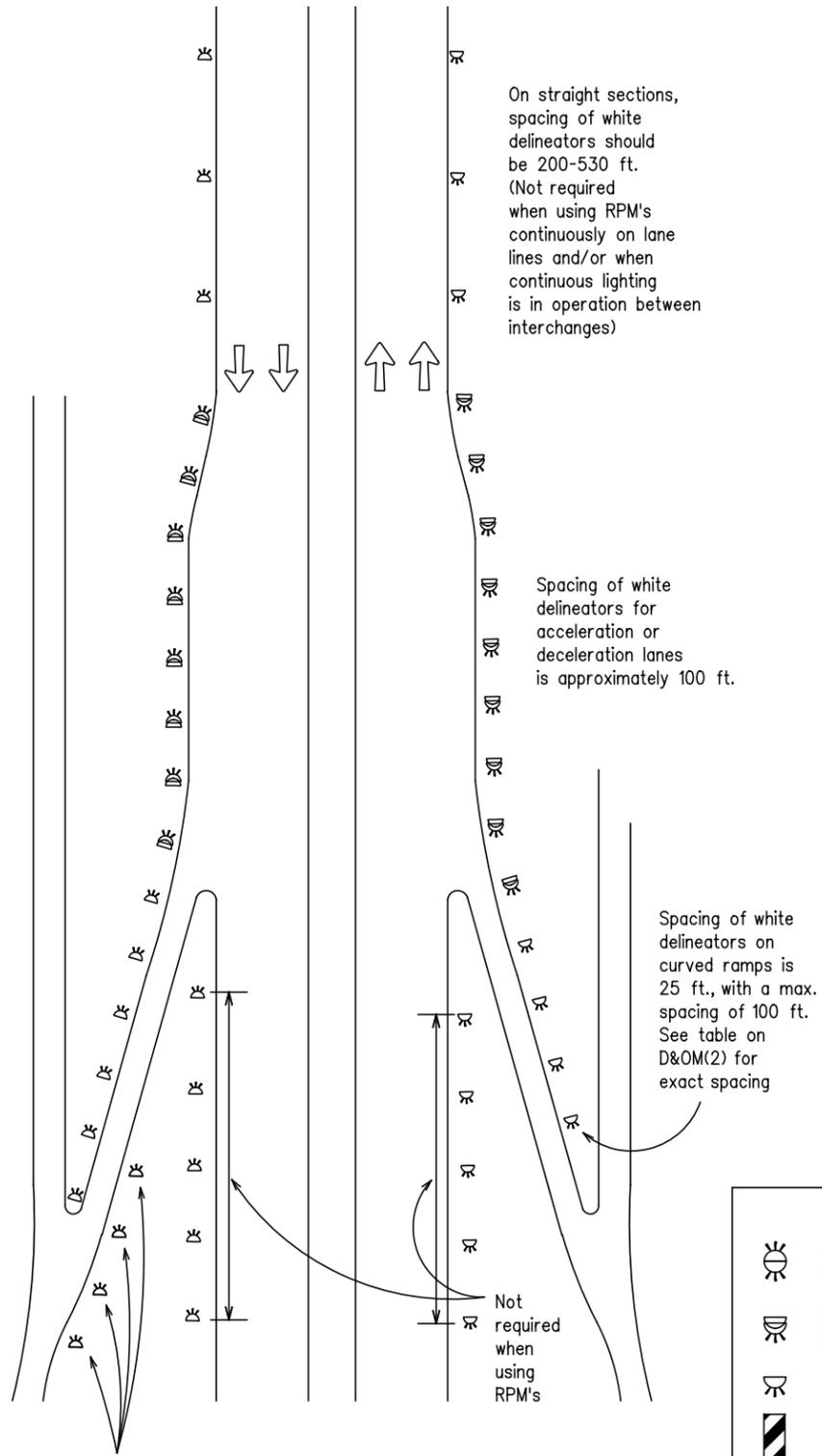
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/23/2015 10:03:31 AM
 FILE: P:\2008\2008-0992-3_COW_Border\Design\CSJ\Standards\Signing\DOM5-04.DGN

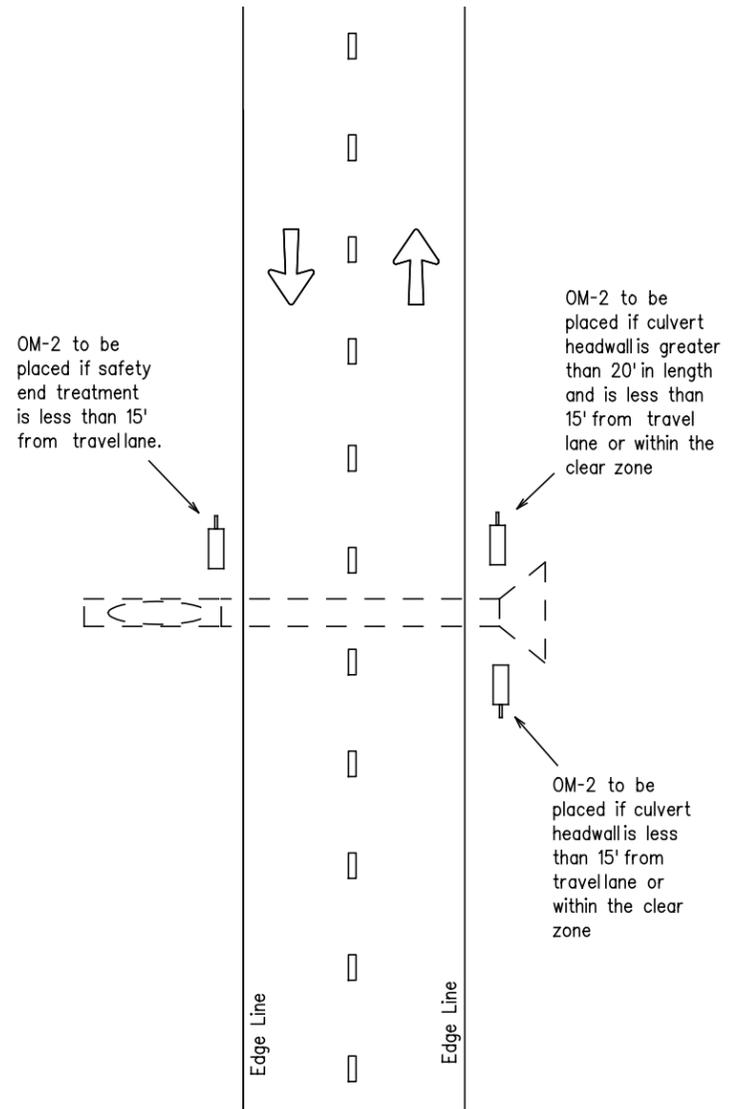
Divided Roadway with Metal Beam Guard Fence



Freeway Delineation including Ramps



For Culverts without MBGF



LEGEND	
	Bidirectional Delineator
	Double Delineator
	Delineator
	OM-3
	OM-2

Texas Department of Transportation
 Traffic Operations Division

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(5)-04

© TxDOT August 2004		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
		BORDER AVENUE			
		DIST	COUNTY		SHEET NO.
				79	

Date and Time Plotted: 2/23/2015 10:03:32 AM

SITE DESCRIPTION

PROJECT LIMITS: Border Avenue In Weslaco from 18th street to 34th street

PROJECT DESCRIPTION: Construction of an urban off-system, non-freeway facility consisting of grading, curb and gutter, storm, drainage structures, treated subgrade, flexible base and asphaltic concrete pavement, striping, and storm water pollution control devices.

MAJOR SOIL DISTURBING ACTIVITIES: Include preparing right of way, grading, excavation and embankment operations for storm, drain and treating roadway and subgrade.

TOTAL PROJECT AREA: 9.0 Acres

TOTAL AREA TO BE DISTURBED: 9.0 Acres

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.50

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: Hidalgo urban land complex, Raymondville clay loam and Raymondville-urban land comox and covered 68% with various grasses which are in good condition.

NAME OF RECEIVING WATERS: Proposed drainage to drain via underground storm sewer system to drainage ditches owned and maintained by Hidalgo and Cameron Counties Irrigation District No.9 and Hidalgo County Drainage District No 1, where it will outfall into the Drain 37 and ultimate into the IBWC floodway.

HISTORICAL STRUCTURES: None

ENDANGERED SPECIES: N/A

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed area on which construction has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume within 21 days.

STRUCTURAL PRACTICES:

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

OTHER: _____

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

The order of activities will be as follows:

1. Install controls for Ingress and egress into the project site.
2. Install silt fences as per plans and commence roadway construction for entire project. Permanently seed as soon as curb and gutter are completed and/or as directed by the engineer.
3. When all construction activity is completed and the site is stabilized and approved by the project engineer, remove all temporary erosion controls and stabilize any areas disturbed by their removal.

STORM WATER MANAGEMENT: Storm water drainage will be provided by proposed pavement, concrete curb and gutter, and storm drain system to existing ditches.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations."

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: All inspection will be performed by the City of Weslaco Inspector every week as well as after every half inch or more of rainfall (as recorded on a non-freezing rain gauge to be located at the project site). An Inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded metal dumpster to be supplied by the Contractor as required. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation and the trash will be hauled to a local dump. No construction waste will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered to be hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalt products, Chemical additives for soil stabilization or concrete curing compounds and additives. In the event of a spill which may be hazardous, the Spill Coordinator should be contacted immediately. 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:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION EXITS

OTHER: _____

REMARKS: Disposal areas, stockpiles and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, water body or stream bed. Construction staging areas and vehicle maintenance areas shall be constructed by the contractor in a manner to minimize the runoff of pollutants.

NO.	DATE	REVISION	APP.

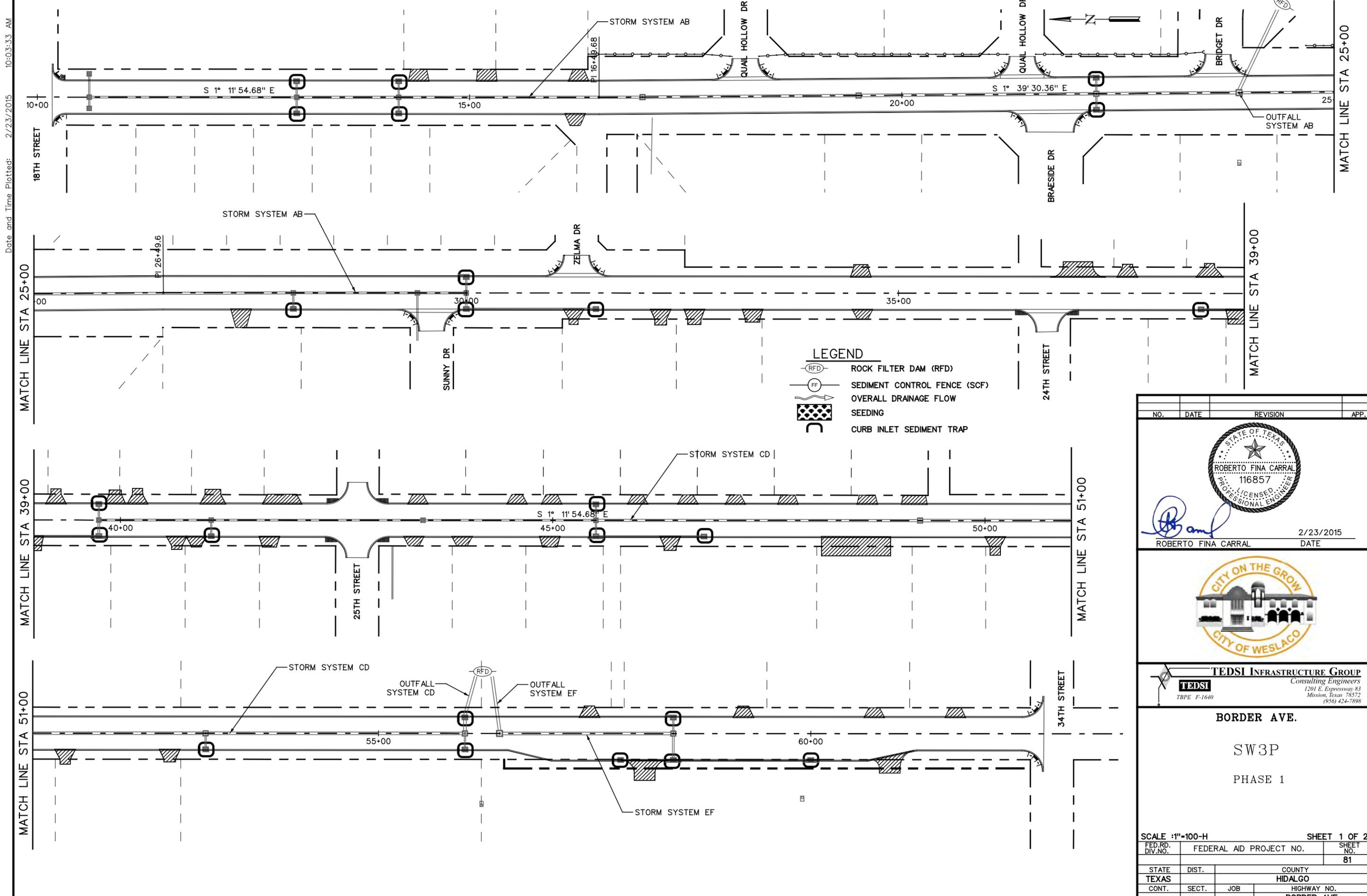


TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

BORDER AVE.

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

N.T.S.		SHEET 1 OF 1	
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO. 80	
STATE	DIST.	COUNTY	
TEXAS		HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			BORDER AVE



LEGEND

- ROCK FILTER DAM (RFD)
- SEDIMENT CONTROL FENCE (SCF)
- OVERALL DRAINAGE FLOW
- SEEDING
- CURB INLET SEDIMENT TRAP

NO.	DATE	REVISION	APP.

Roberto Fina Carral
 ROBERTO FINA CARRAL
 DATE 2/23/2015

TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (936) 424-7898

BORDER AVE.

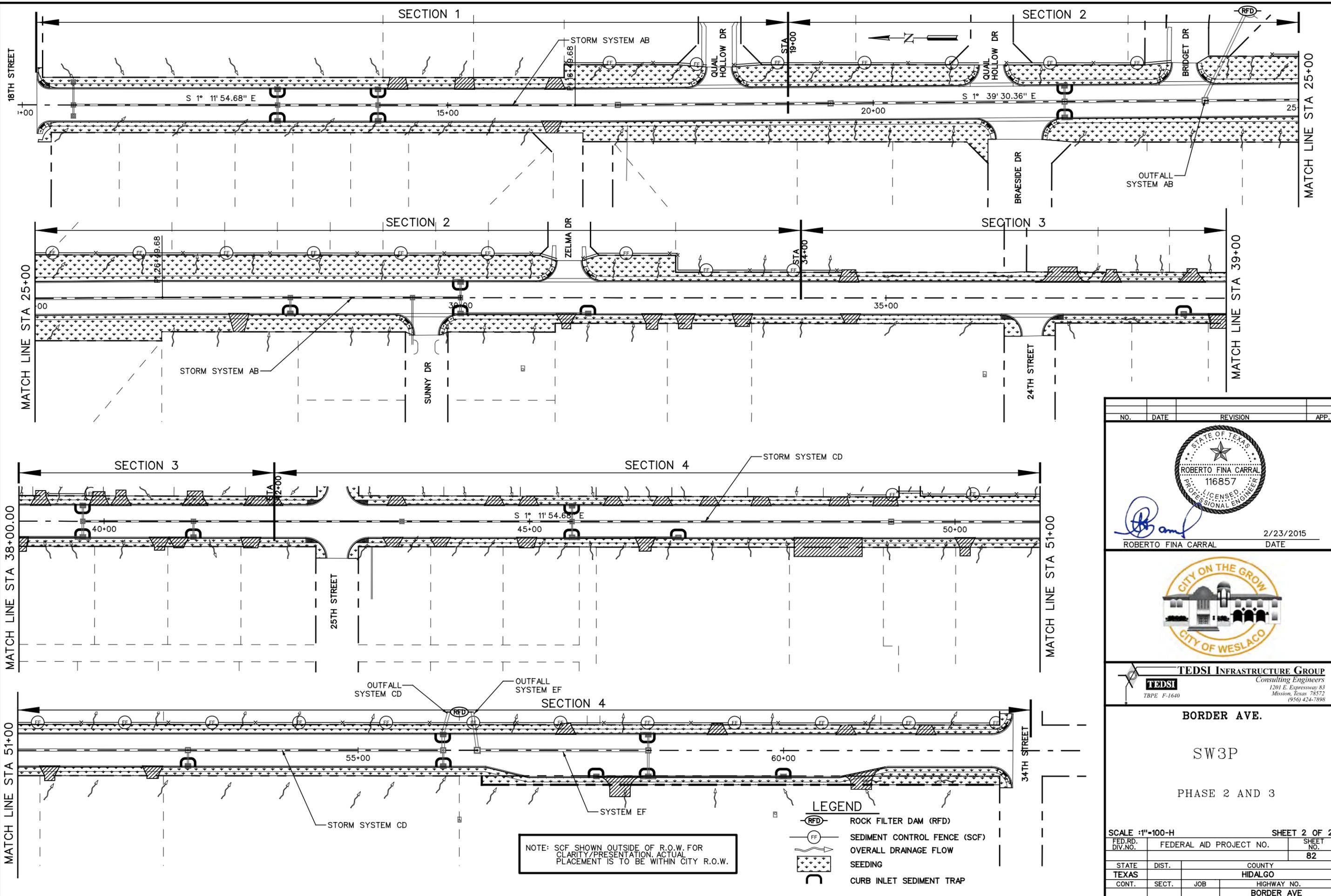
SW3P

PHASE 1

SCALE :1"=100'-H SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		81
STATE	DIST.	COUNTY
TEXAS		HIDALGO
CONT.	SECT.	JOB
		HIGHWAY NO.
		BORDER AVE

Date and Time Plotted: 2/23/2015 10:03:34 AM

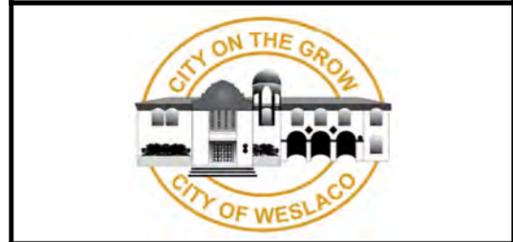


NOTE: SCF SHOWN OUTSIDE OF R.O.W. FOR CLARITY/PRESENTATION. ACTUAL PLACEMENT IS TO BE WITHIN CITY R.O.W.

- LEGEND**
- ROCK FILTER DAM (RFD)
 - SEDIMENT CONTROL FENCE (SCF)
 - OVERALL DRAINAGE FLOW
 - SEEDING
 - CURB INLET SEDIMENT TRAP

NO.	DATE	REVISION	APP.

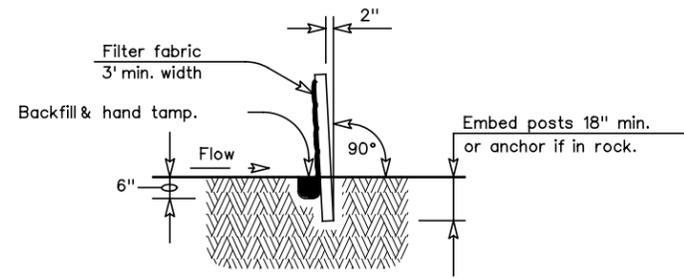
Roberto Fina Carral
 ROBERTO FINA CARRAL
 2/23/2015
 DATE



TEDSI INFRASTRUCTURE GROUP
 Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

BORDER AVE.		SW3P		PHASE 2 AND 3	
SCALE :1"=100'-H		SHEET 2 OF 2		FED. RD. DIV. NO.	
STATE		DIST.		COUNTY	
TEXAS				HIDALGO	
CONT.		SECT.		JOB	
				HIGHWAY NO.	
				BORDER AVE	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



SECTION A-A

GENERAL NOTES

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

PLAN SHEET LEGEND

Sediment Control Fence

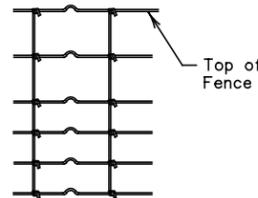


SEDIMENT CONTROL FENCE USAGE GUIDELINES

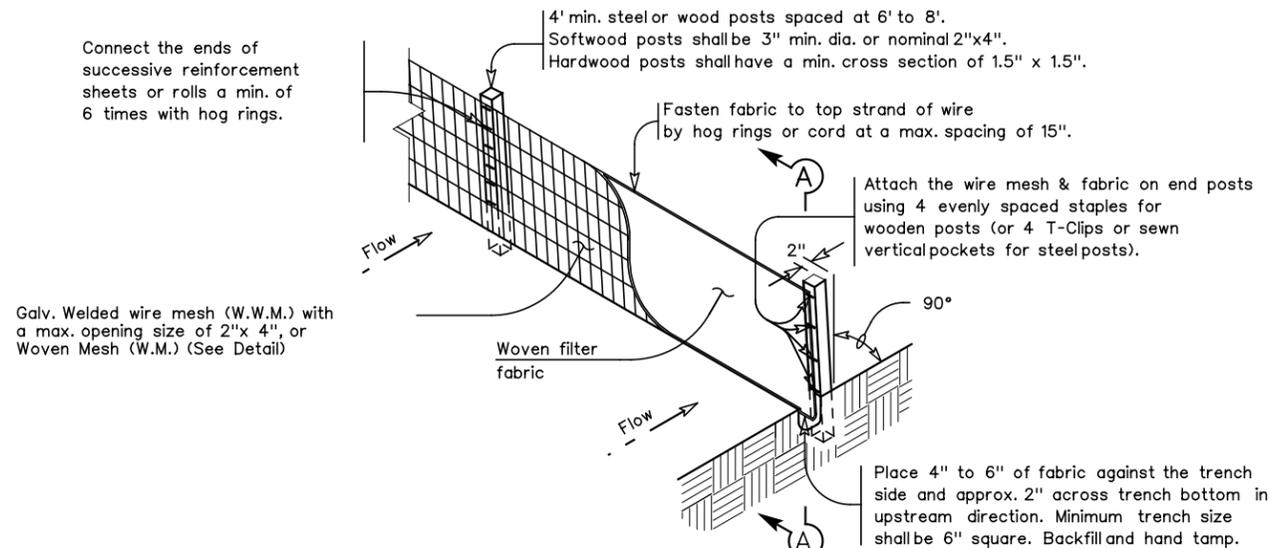
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

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

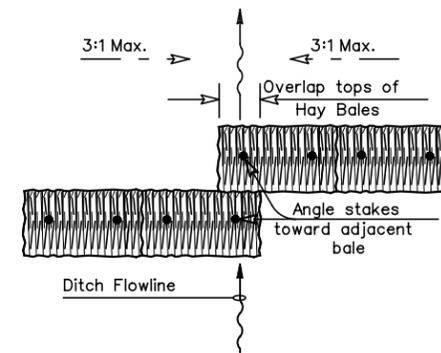
Galv. Hinge joint knot woven mesh (12.5 Ga. Min.) requires a minimum of five horizontal wires spaced at a max. 12 inches apart and all vertical wires spaced at a max. 12 inches apart.



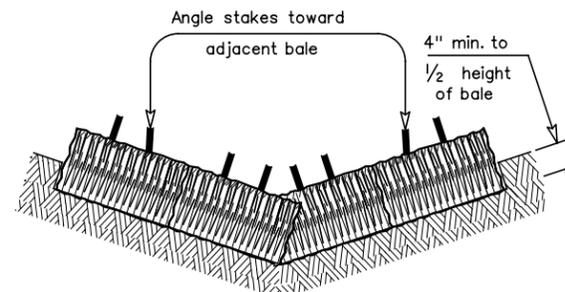
Hinge Joint Knot Woven Mesh (Option)



TEMPORARY SEDIMENT CONTROL FENCE



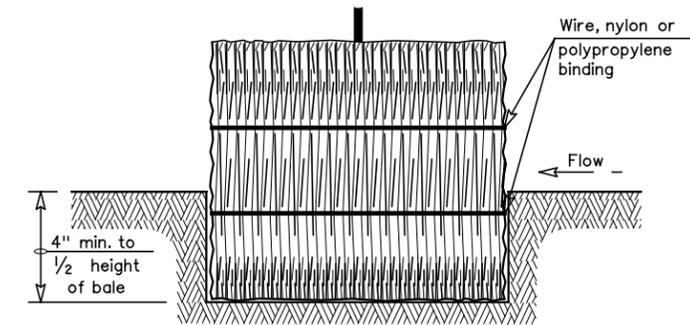
PLAN VIEW



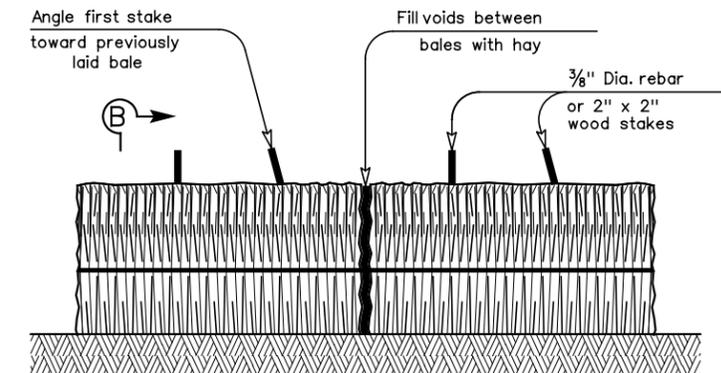
PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay



SECTION B-B



BALED HAY FOR EROSION CONTROL



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:

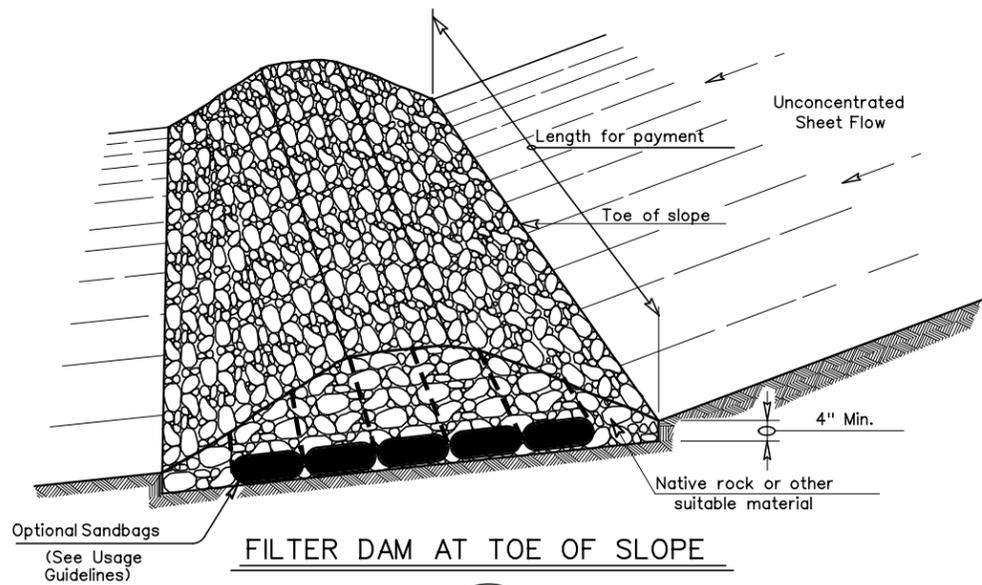
- The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
- The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

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

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES			
FENCE & BALED HAY			
EC(1)-09			
FILE: ec109.dgn	DW: TxDOT	CK: AM	DW: TV
© TxDOT June 1993	CONT	SECT	JOB
REVISIONS		HIGHWAY	
DIST	COUNTY	SHEET NO.	
		83	

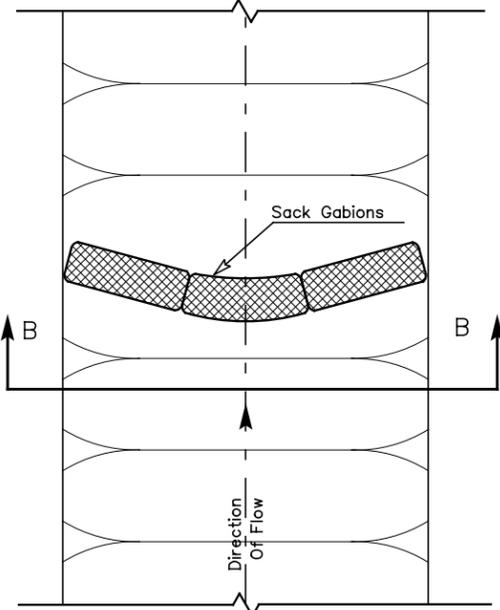
DISCLAIMER : The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	

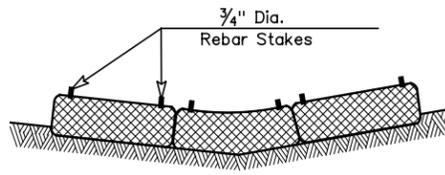


FILTER DAM AT TOE OF SLOPE

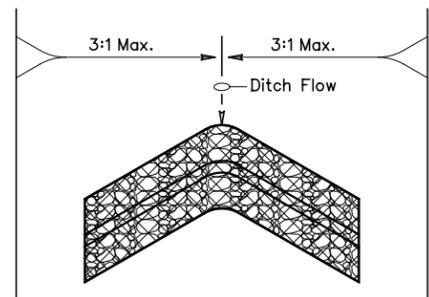
(RFD1)
TYPE 1



PLAN VIEW



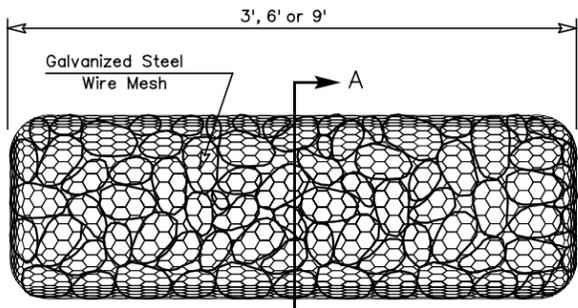
SECTION B-B



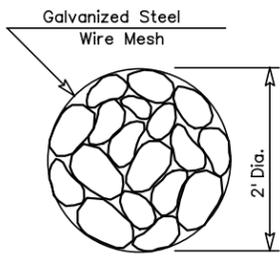
"V" SHAPE
(Plan View)

PLANS SHEET LEGEND

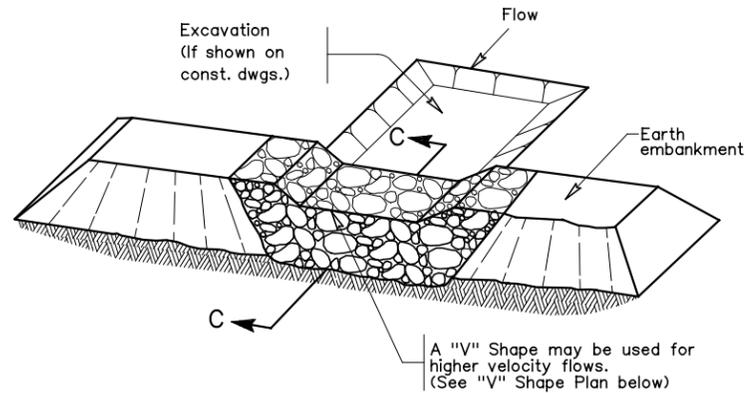
- Type 1 Rock Filter Dam (RFD1)
- Type 2 Rock Filter Dam (RFD2)
- Type 3 Rock Filter Dam (RFD3)



TYPE 4 (SACK GABIONS)

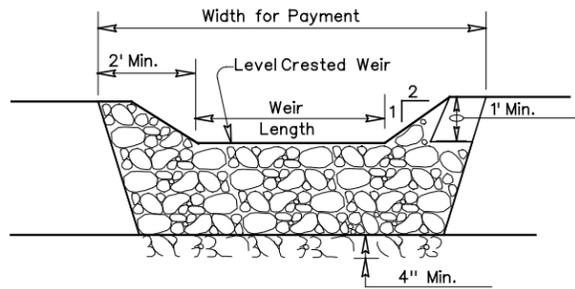


SECTION A-A

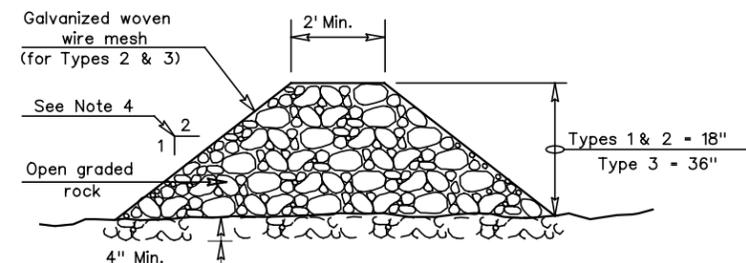


FILTER DAM AT SEDIMENT TRAP

(RFD1) OR (RFD2)
TYPE 1 OR TYPE 2



PROFILE



SECTION C-C

ROCK FILTER DAM USAGE GUIDELINES

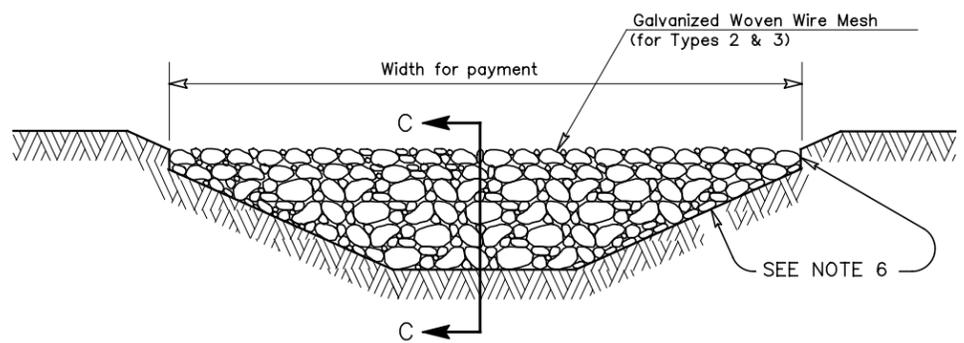
Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approx. 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions): Type 4 May be used in ditches and smaller channels to form an erosion control dam.



FILTER DAM AT CHANNEL SECTIONS

(RFD1) OR (RFD2) OR (RFD3)
TYPE 1 OR TYPE 2

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. In stream use the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes.
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation
Design Division (Roadway)

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

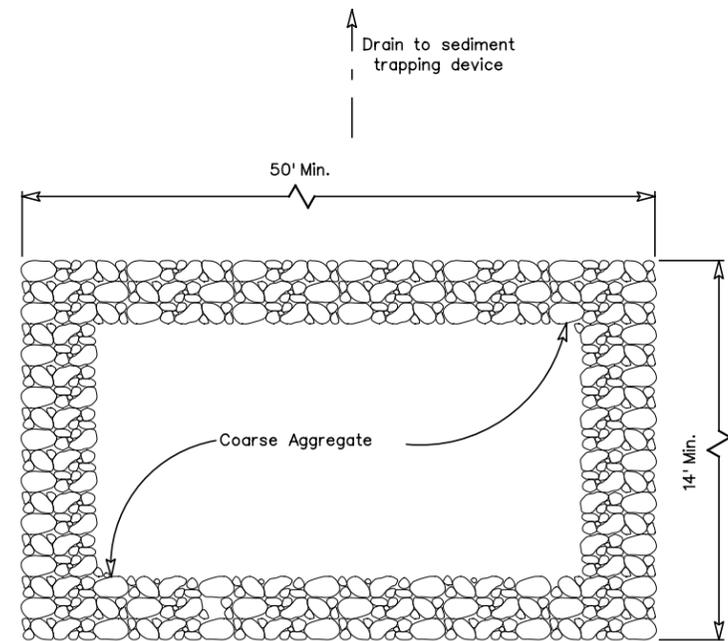
ROCK FILTER DAMS

EC(2)-93

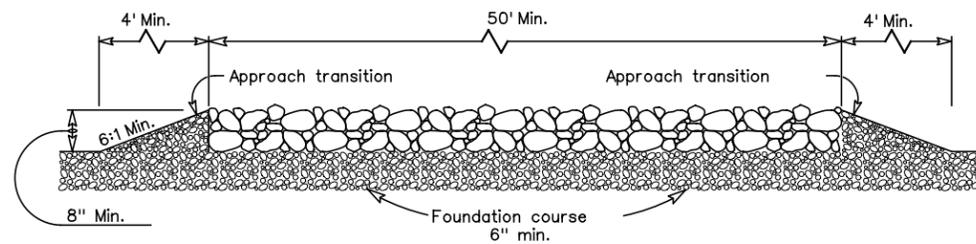
FILE: EC293.DGN	DN: HEJ	CK: HEJ	DW: BGD	CK:
© TxDOT JUNE 1993	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	PHR			84
	COUNTY	CONTROL	SECT	JOB
	HIDALGO			HIGHWAY BORDER AVE.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

2/23/2015 10:03:36 AM P:\2008\2008-0992-3 COW Border\Design\CS\Standards\SW3P.ec393.dgn



PLAN

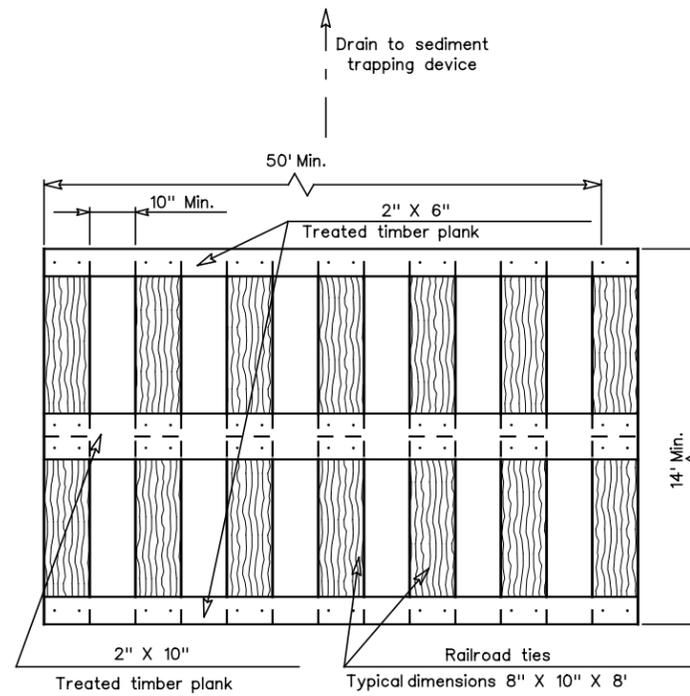


PROFILE

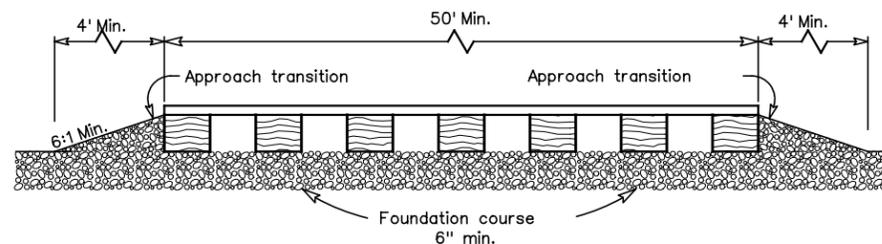
CONSTRUCTION EXIT (TYPE 1)

GENERAL NOTES

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



PLAN

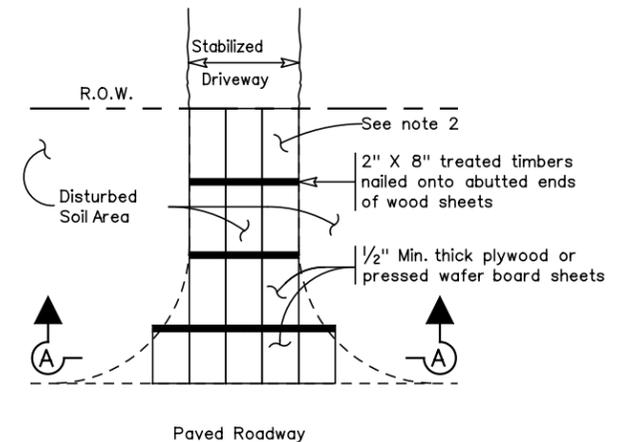


PROFILE

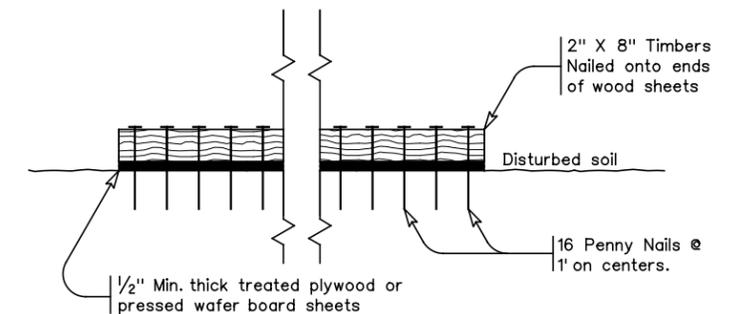
CONSTRUCTION EXIT (TYPE 2)

GENERAL NOTES

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



PLAN



SECTION A-A

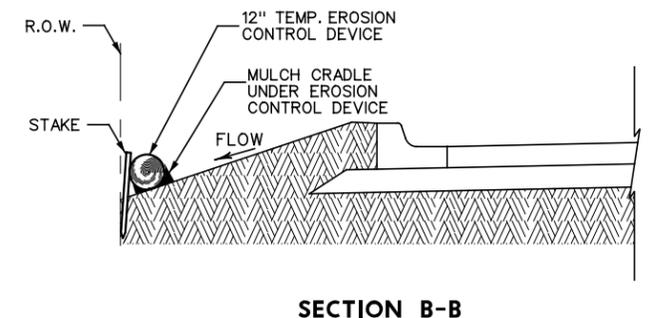
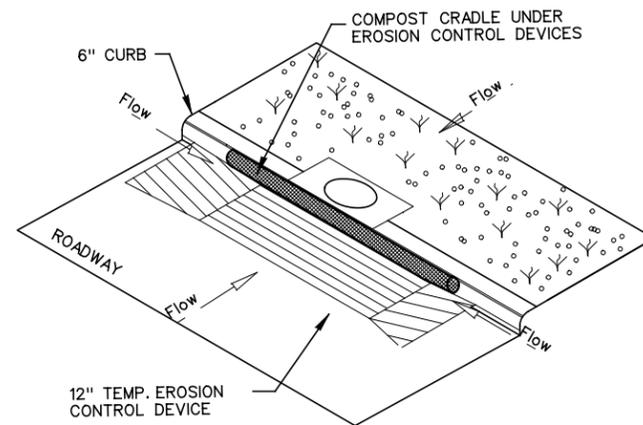
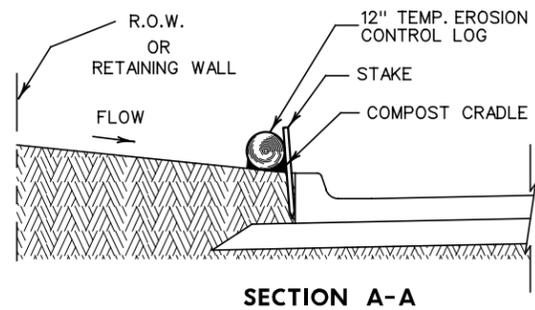
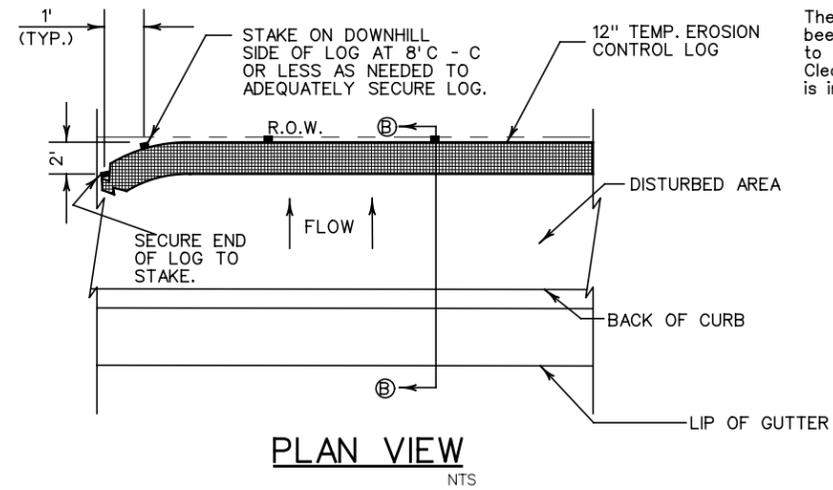
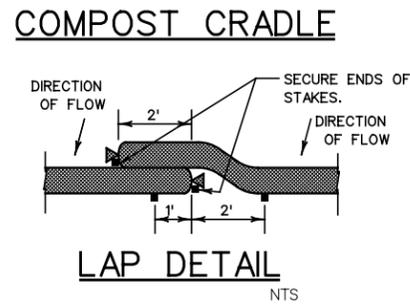
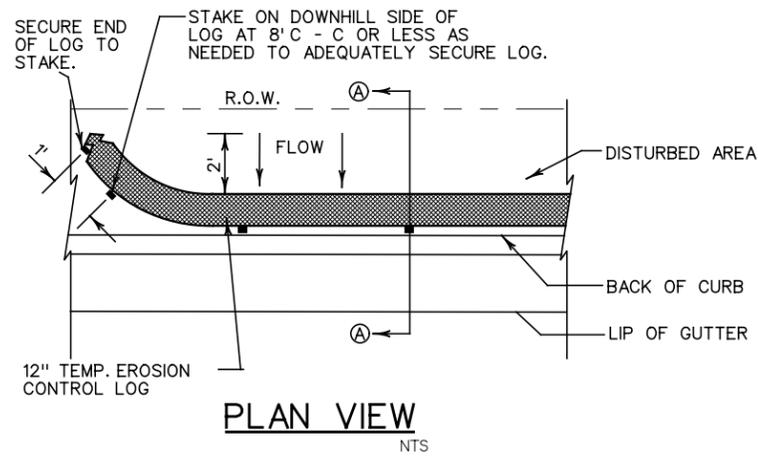
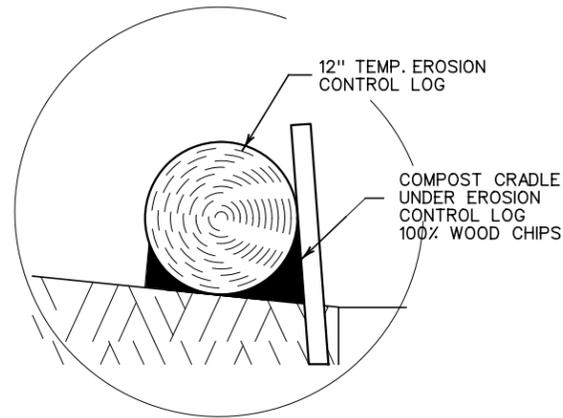
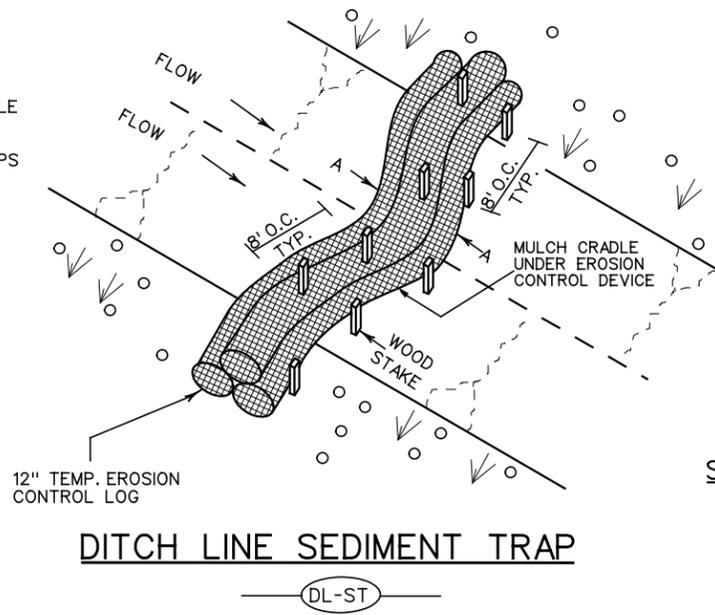
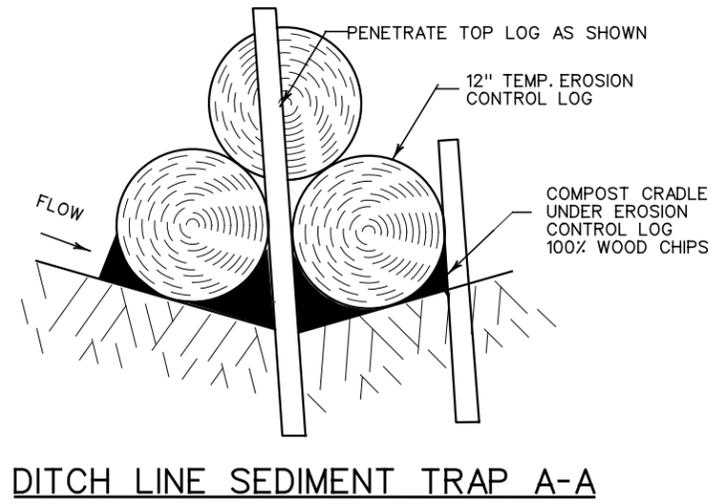
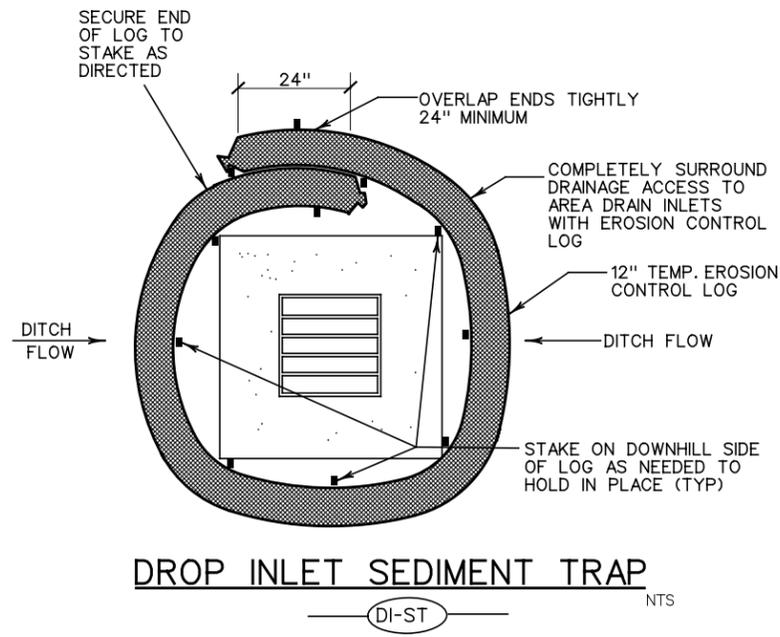
CONSTRUCTION EXIT (TYPE 3)

GENERAL NOTES

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES			
CONSTRUCTION EXITS			
EC(3)-93			
FILE: ec393.dgn	DN: TxDOT	CK: HEJ	DW: BD
© TxDOT June 1993	CONT	SECT	JOB
REVISIONS		HIGHWAY	
DIST	COUNTY		SHEET NO.
			85

DISCLAIMER : The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



PLANS SHEET LEGEND

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP

SEDIMENT BASIN & TRAP USAGE GUIDELINES

A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

Traps: the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

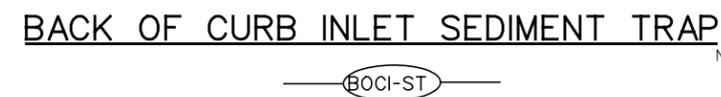
1. Immediately preceding drain inlets
2. Just before the drainage enters a water course
3. Just before the drainage leaves the right of way
4. Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by 1/2 or the sediment has accumulated to a depth of 1', whichever is less. Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

GENERAL NOTES

1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
4. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
5. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.

LEVELS DISPLAYED:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63



PHARR DISTRICT STANDARD



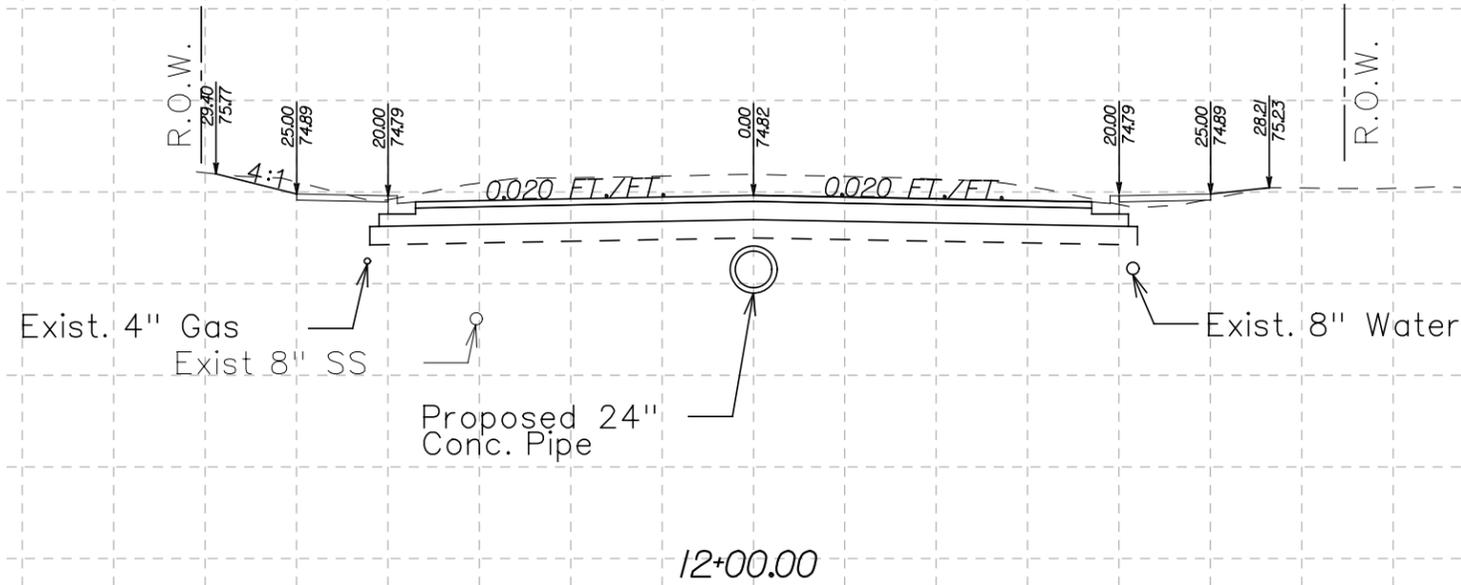
TEMPORARY EROSION CONTROL LOGS TECL-06 (PHR)

FED. RD. DIV. NO. 6	PROJECT NO.		HIGHWAY NO.
STATE TEXAS	DISTRICT PHARR	COUNTY	SHEET NO. 86
CONTROL	SECTION	JOB	

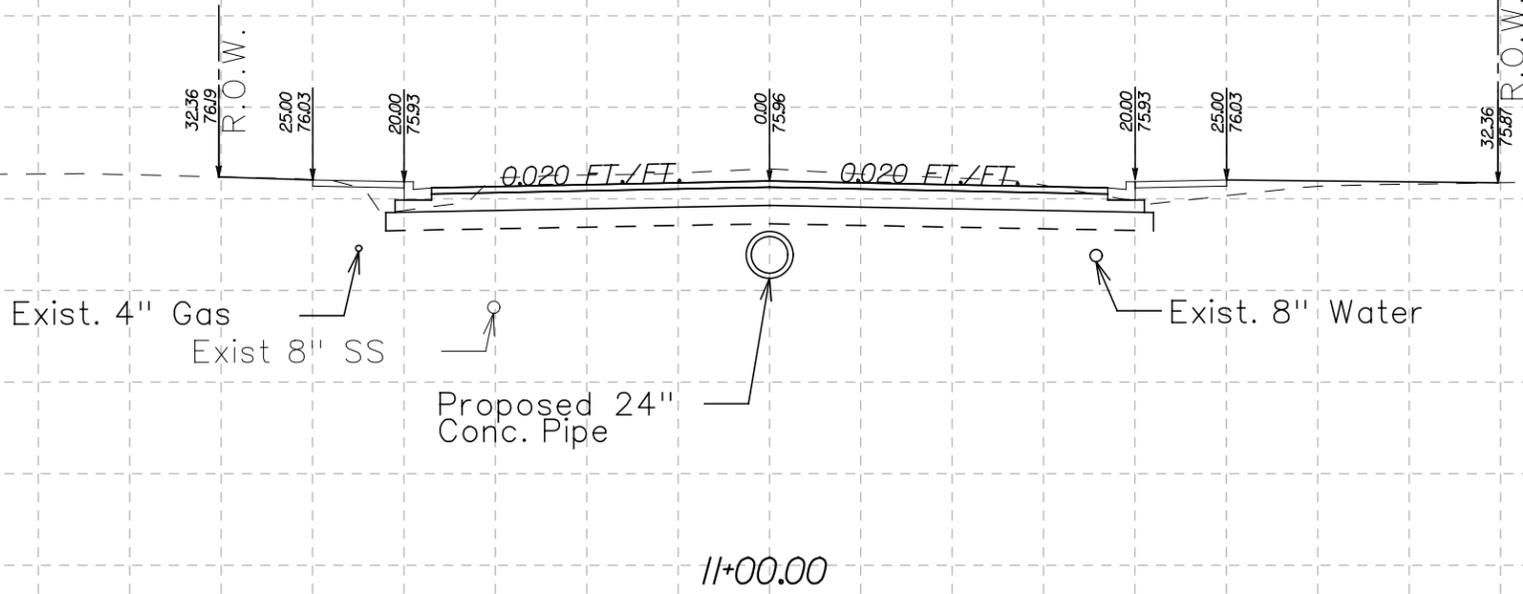
10:03:39 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

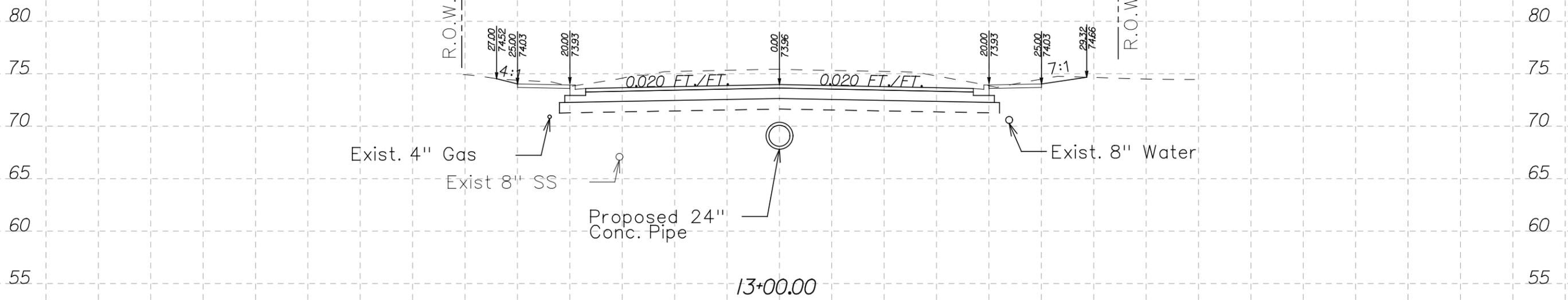
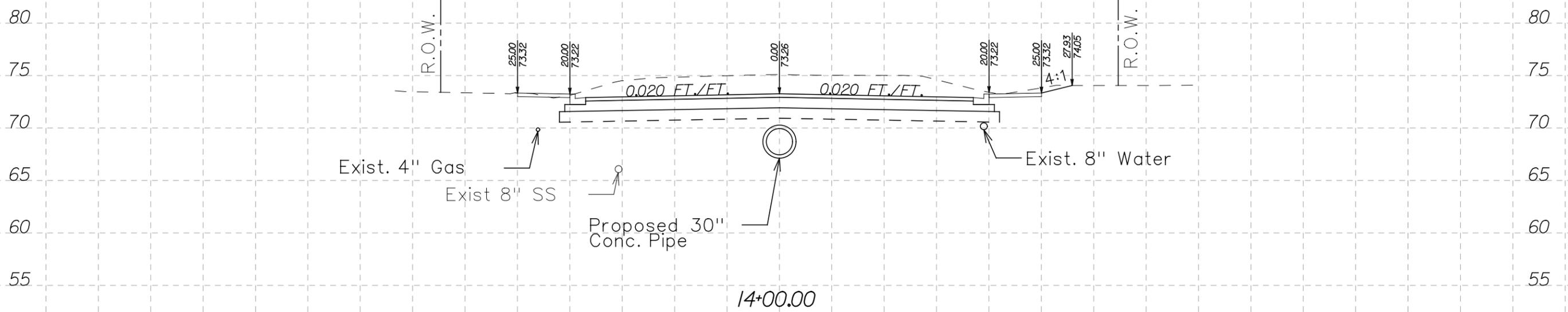


FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		87
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:39 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



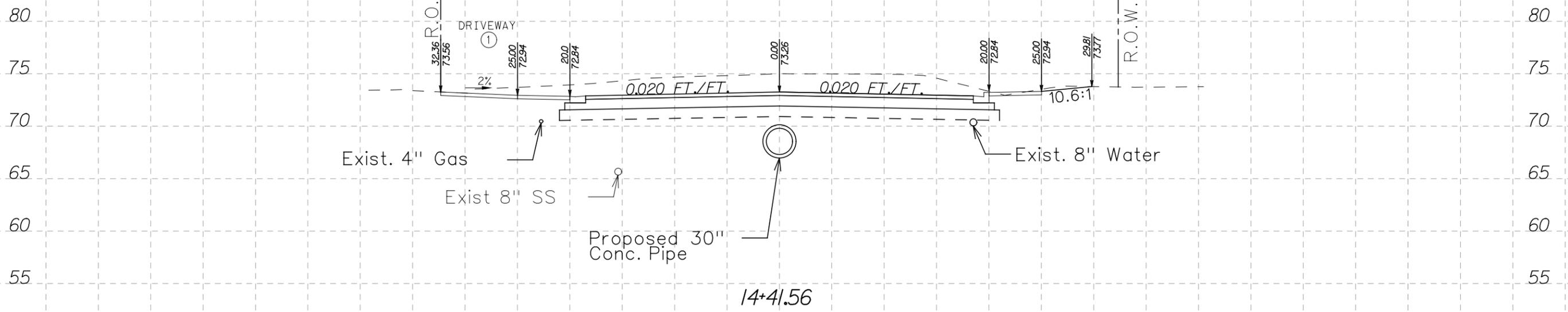
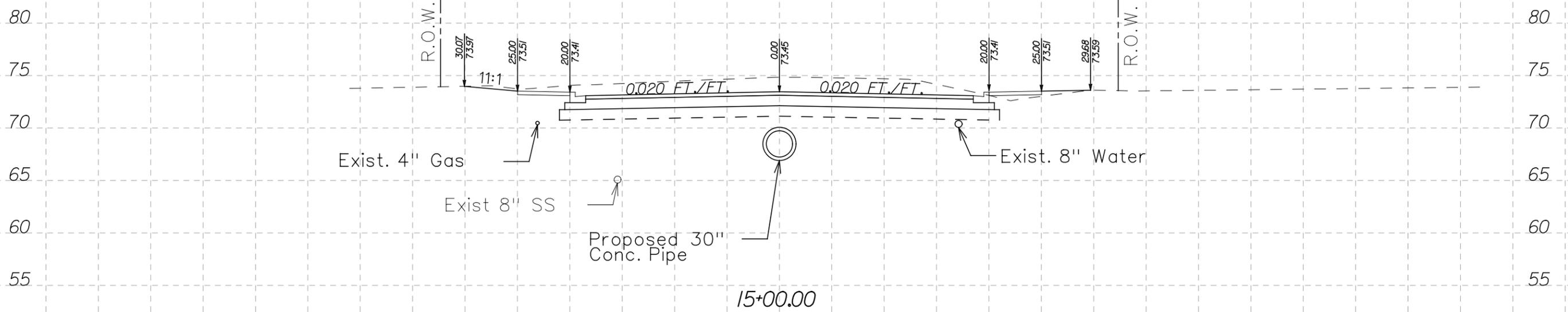
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		88
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:39 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



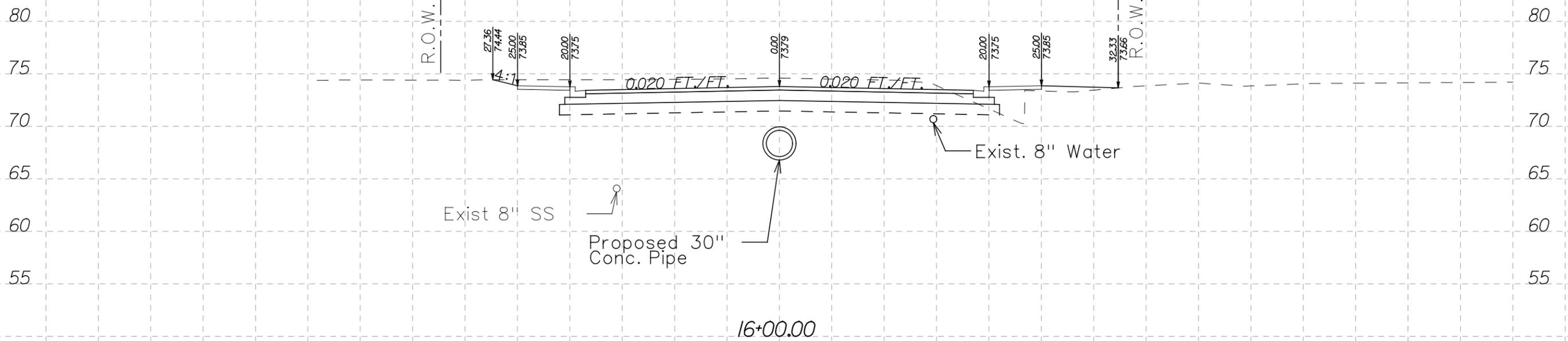
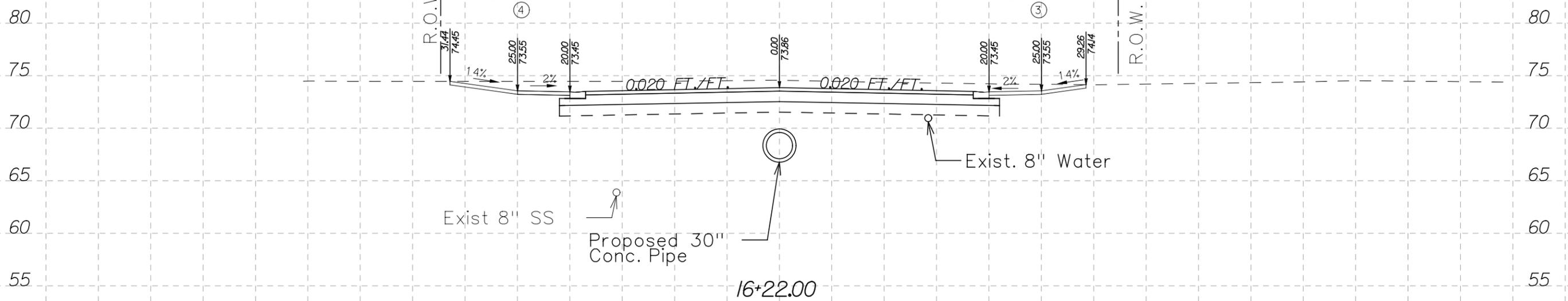
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		89
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:39 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

TEDSI INFRASTRUCTURE GROUP
TEDSI Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

PROPOSED CROSS SECTIONS



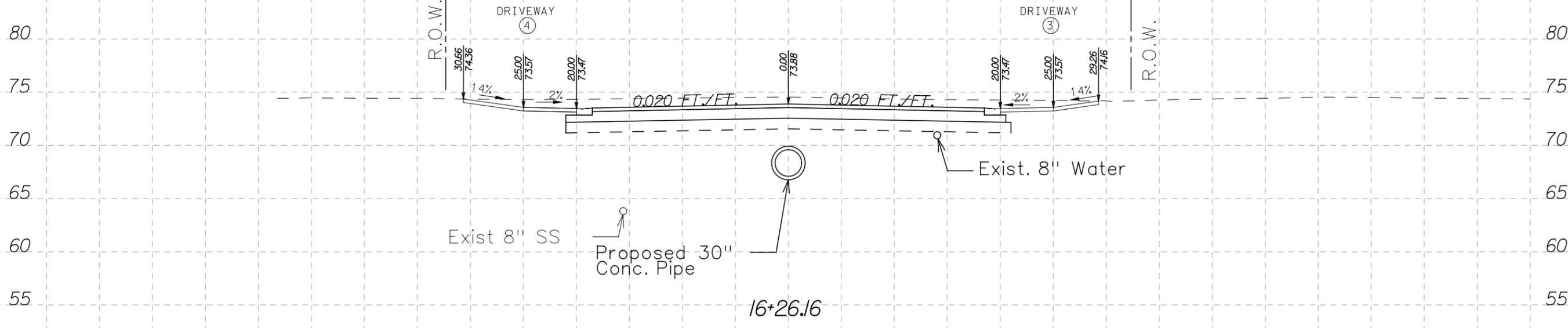
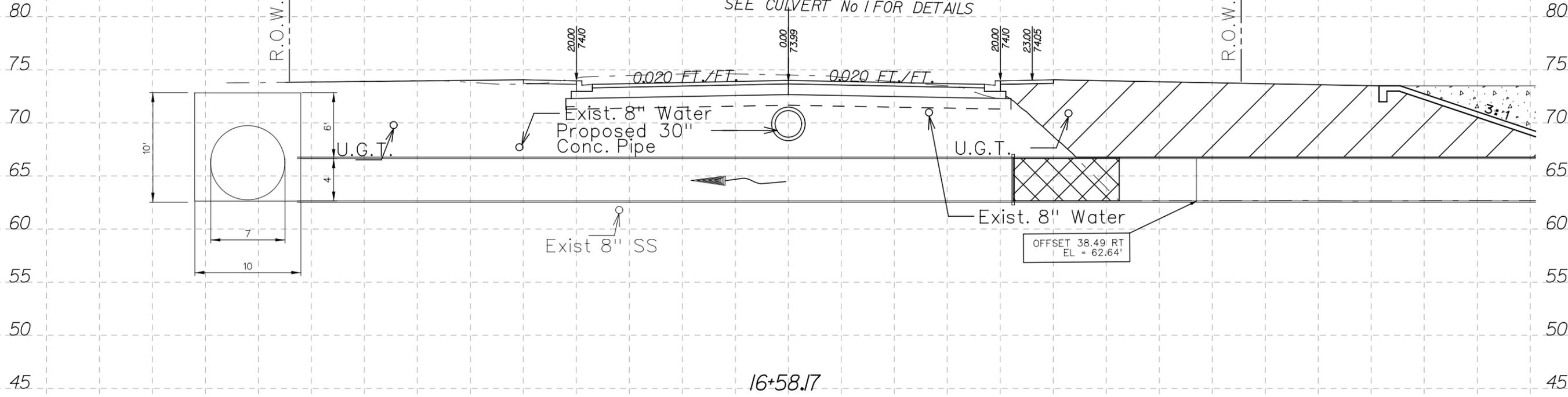
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		90
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

10:03:40 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



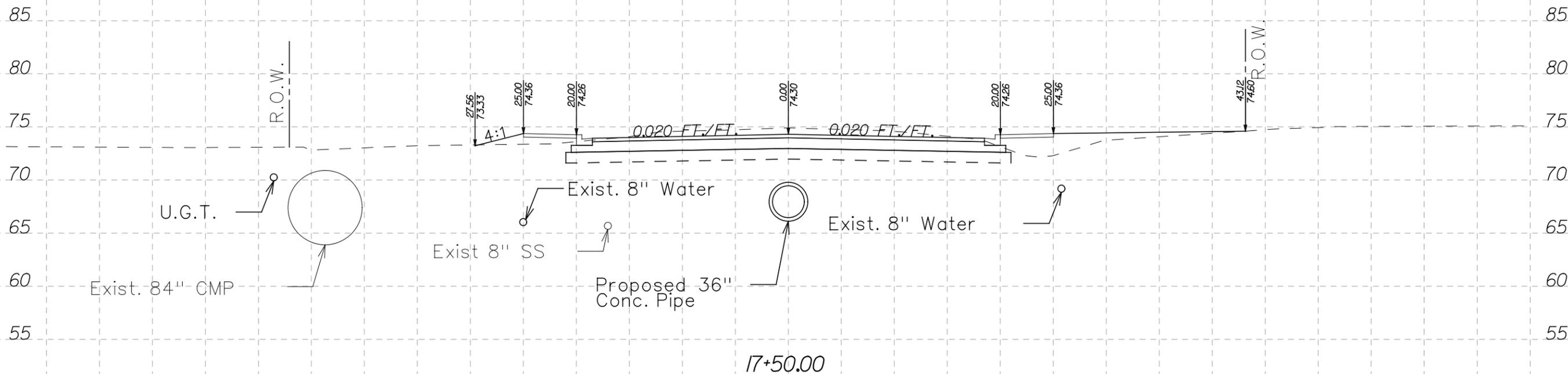
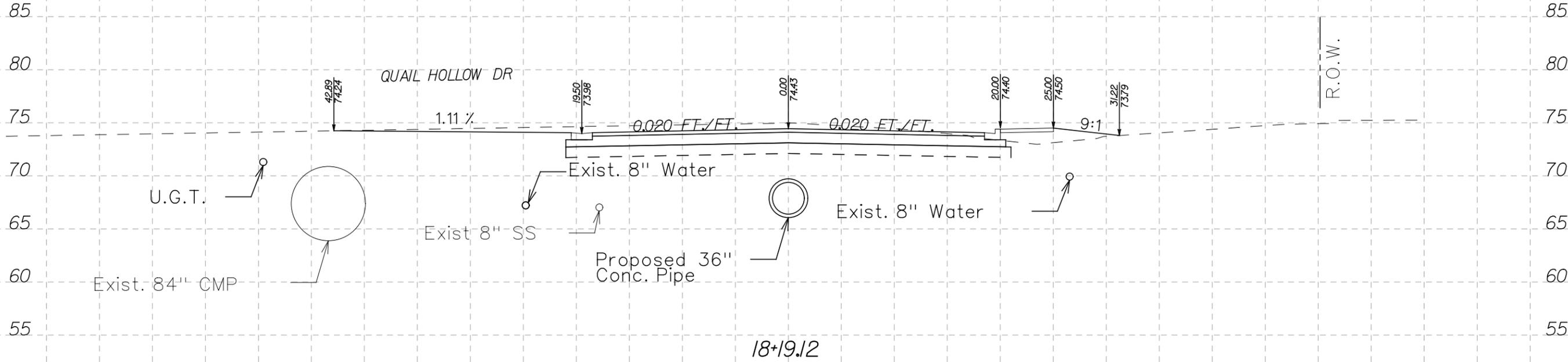
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		91
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

10:03:40 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

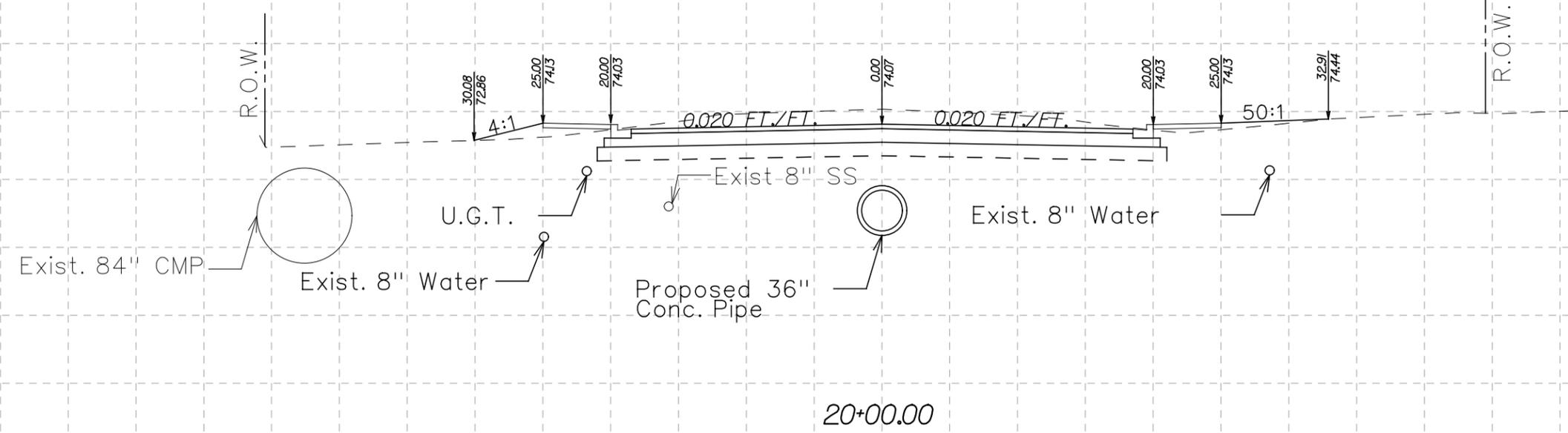
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		92
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

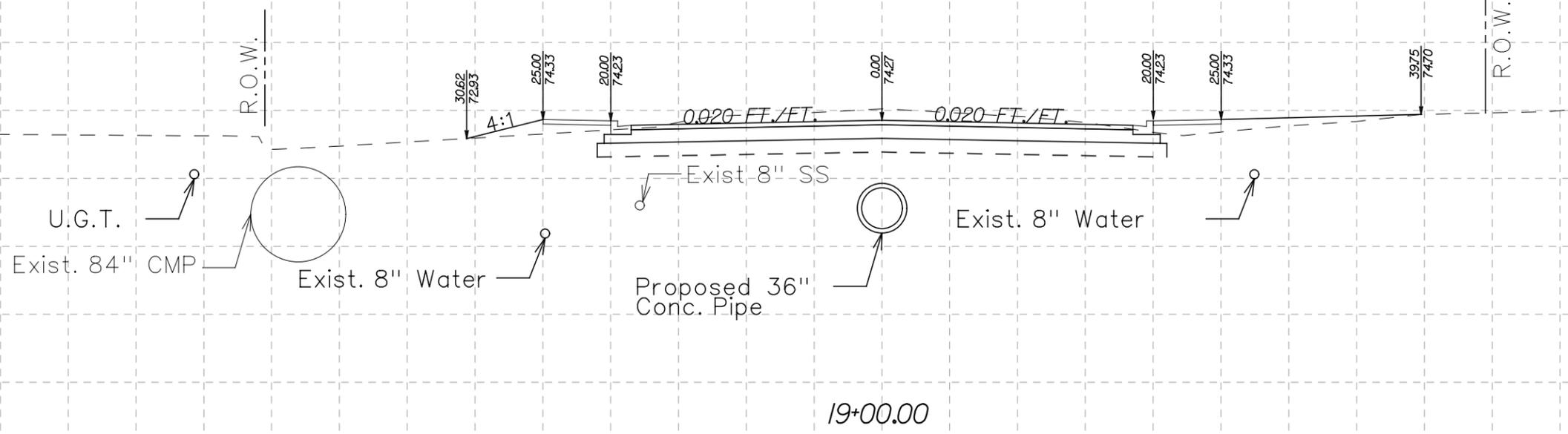
10:03:40 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		93
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:40 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

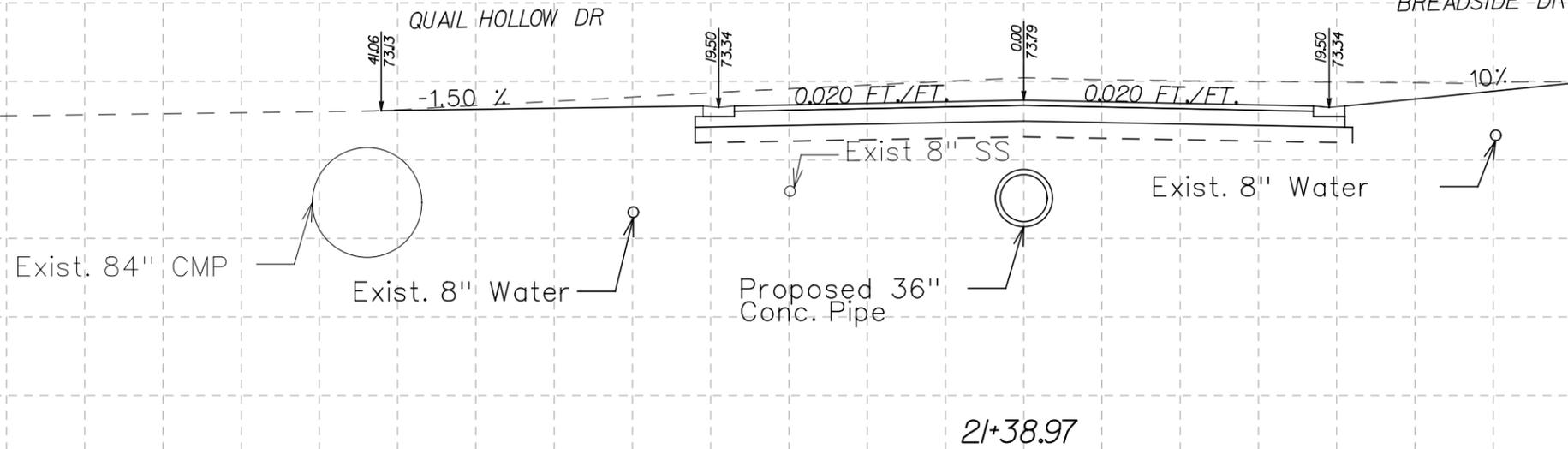
75 75

70 70

65 65

60 60

55 55



85 85

80 80

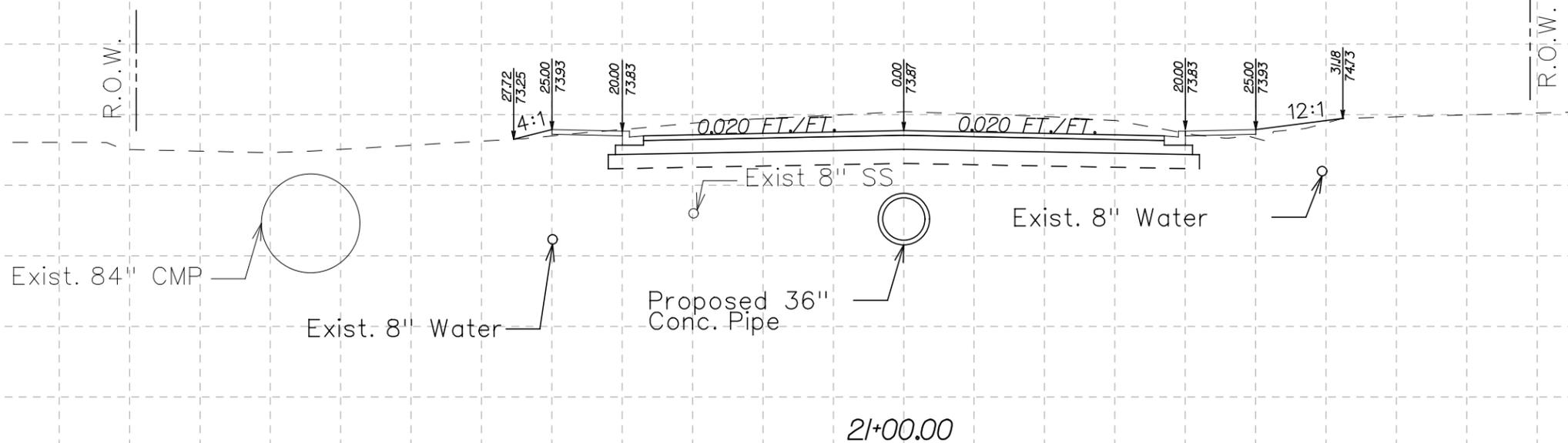
75 75

70 70

65 65

60 60

55 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

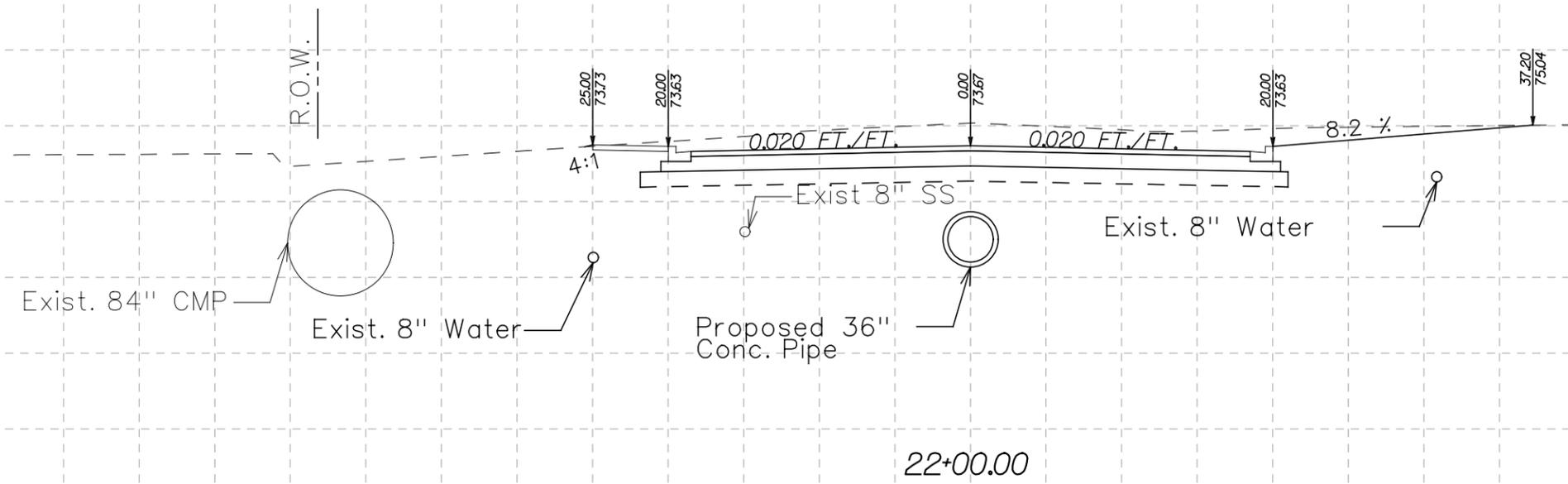
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		94
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

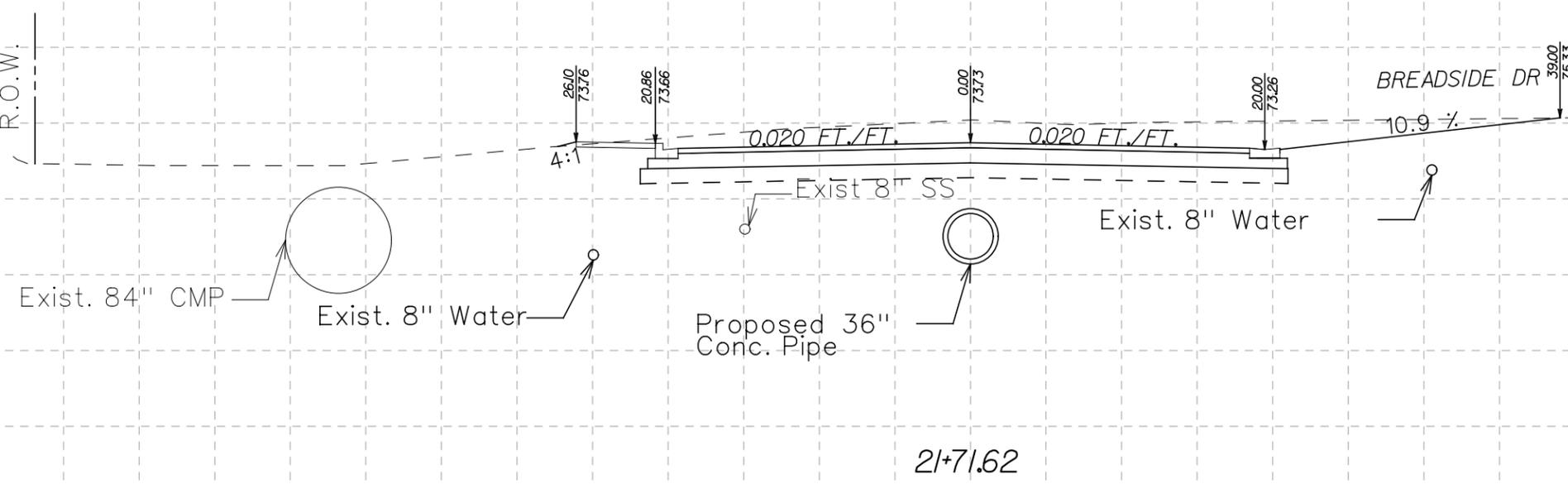
10:03:41 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:41 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55

BRIDGET DRIVE

2.0 % 0.020 FT./FT. 0.020 FT./FT. 15%

U.G.T. Exist. 8" Water Proposed 36" Conc. Pipe Exist. 8" SS Exist. 8" Water

Exist. 84" CMP

23+65.74

85 80 75 70 65 60 55

R.O.W.

4:1 0.020 FT./FT. 0.020 FT./FT. 12.8%

U.G.T. U.G.T. Exist. 8" Water Proposed 36" Conc. Pipe Exist. 8" SS Exist. 8" Water

Exist. 84" CMP

23+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn



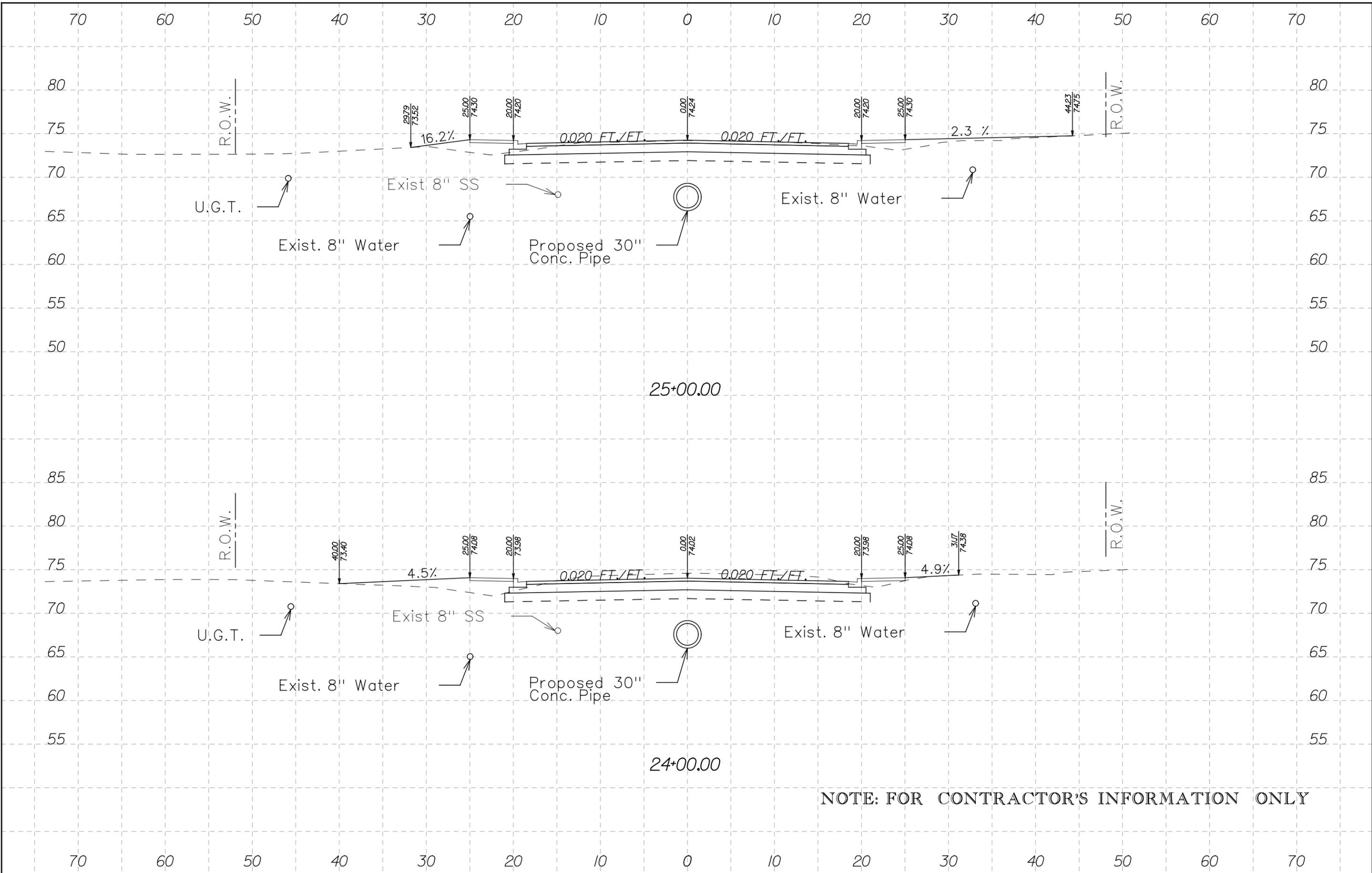
PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		96
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:41 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

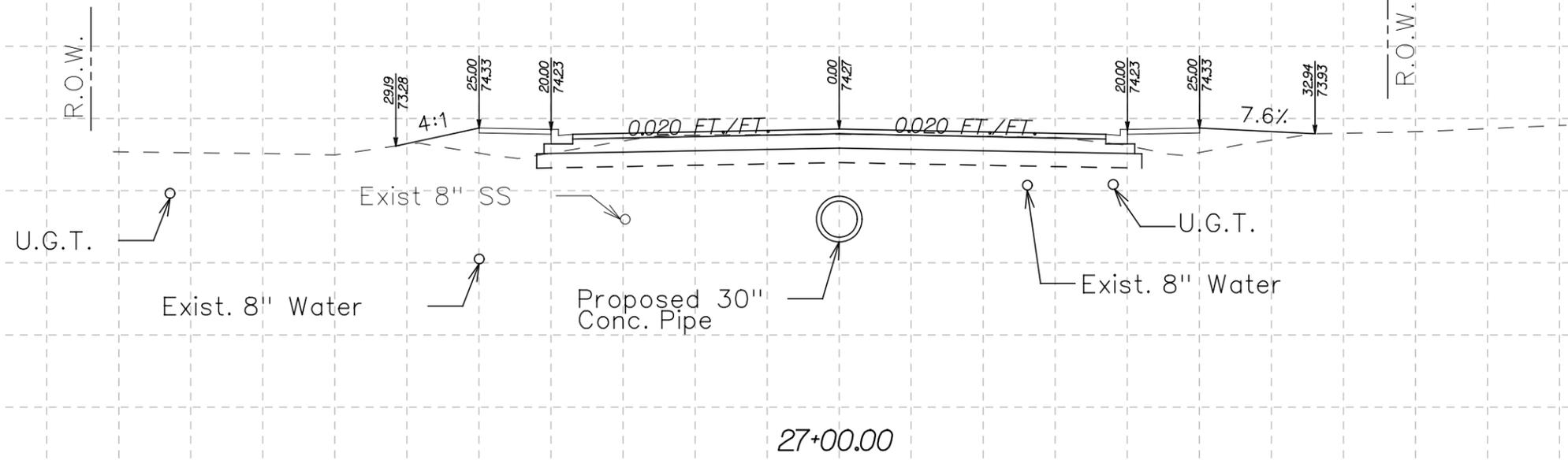
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		97
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:41 AM
2/23/2015

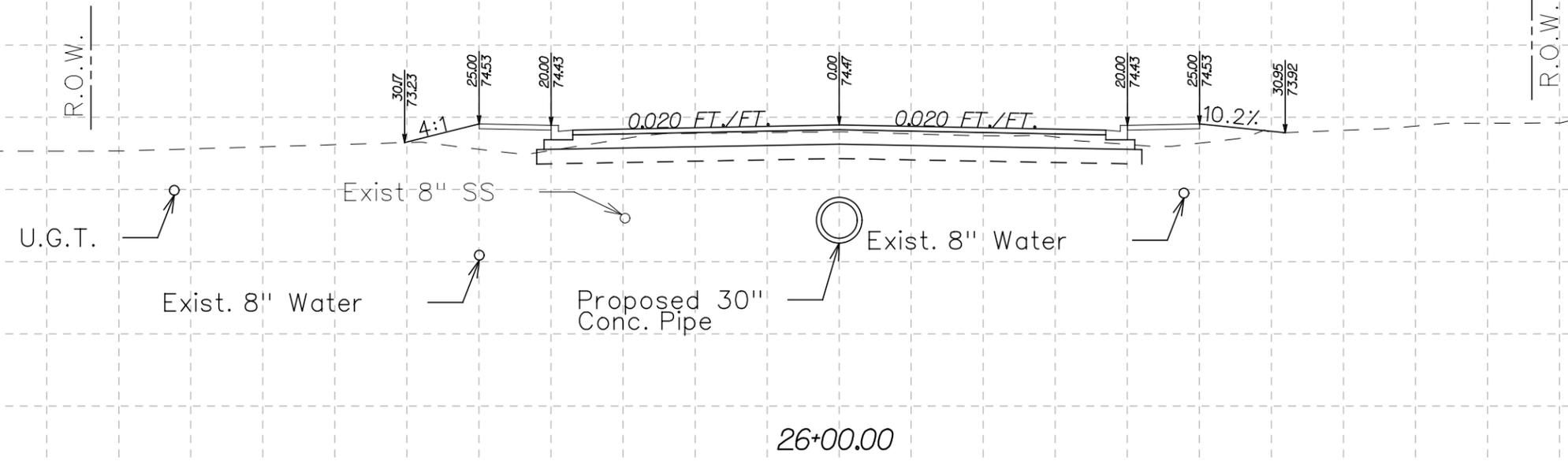
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



27+00.00

85 80 75 70 65 60 55



26+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



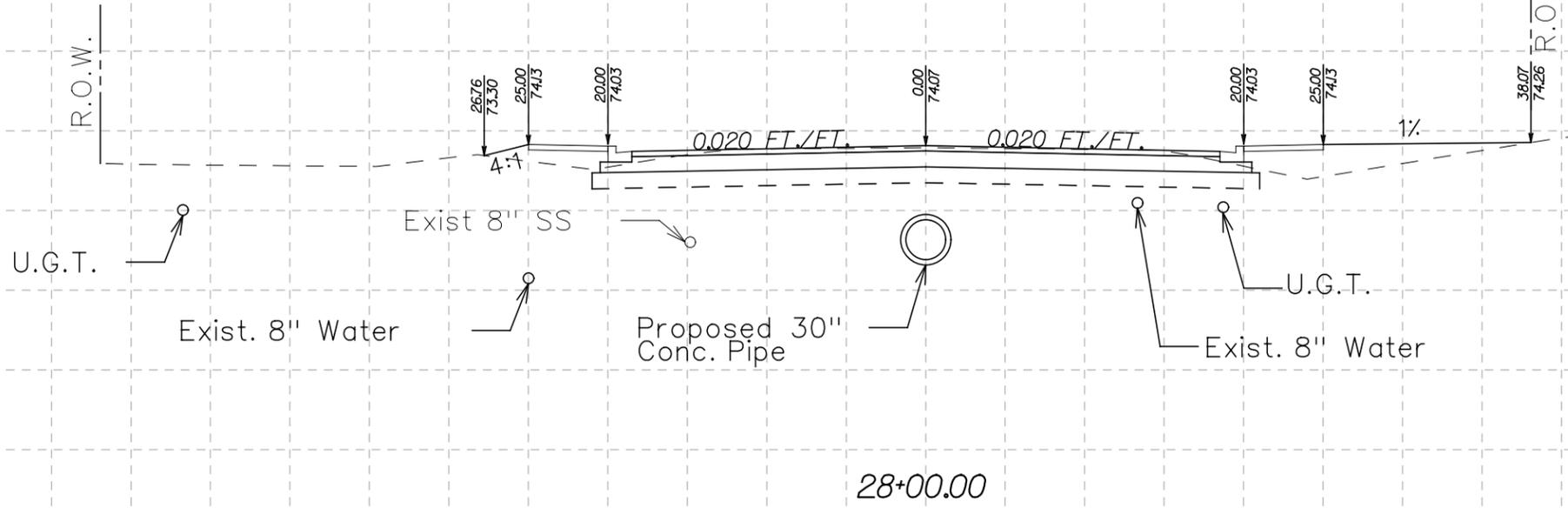
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		98
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

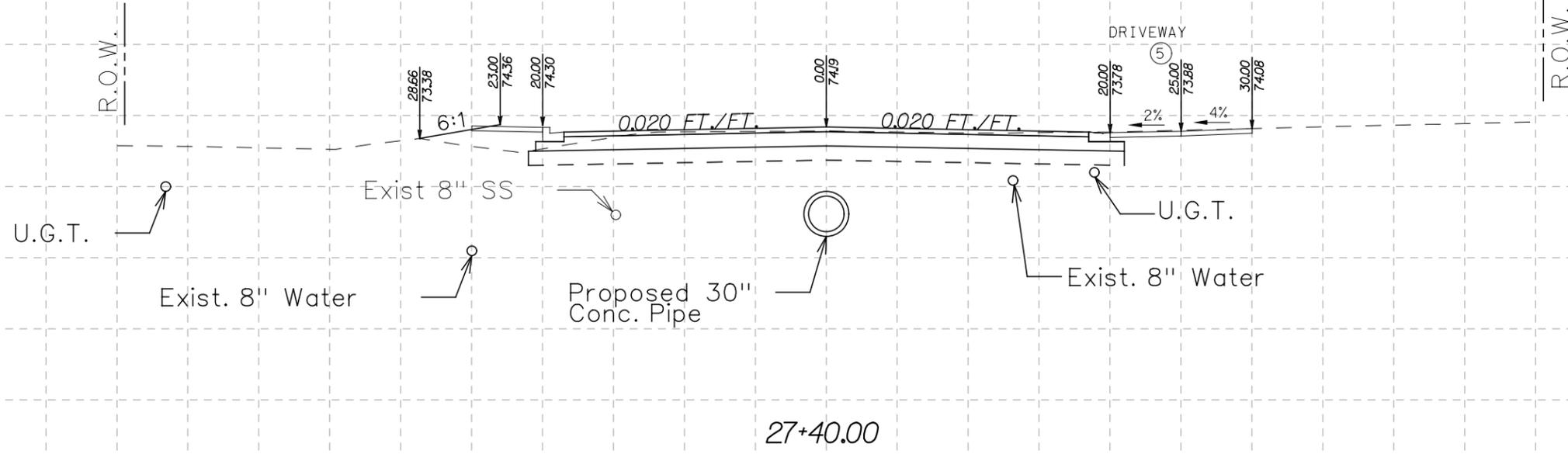
10:03:41 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

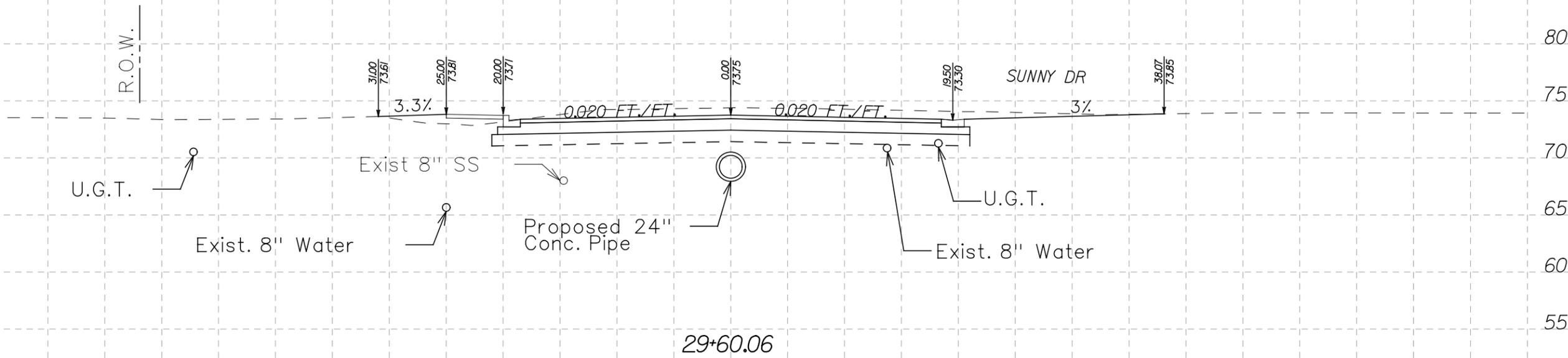
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		99
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

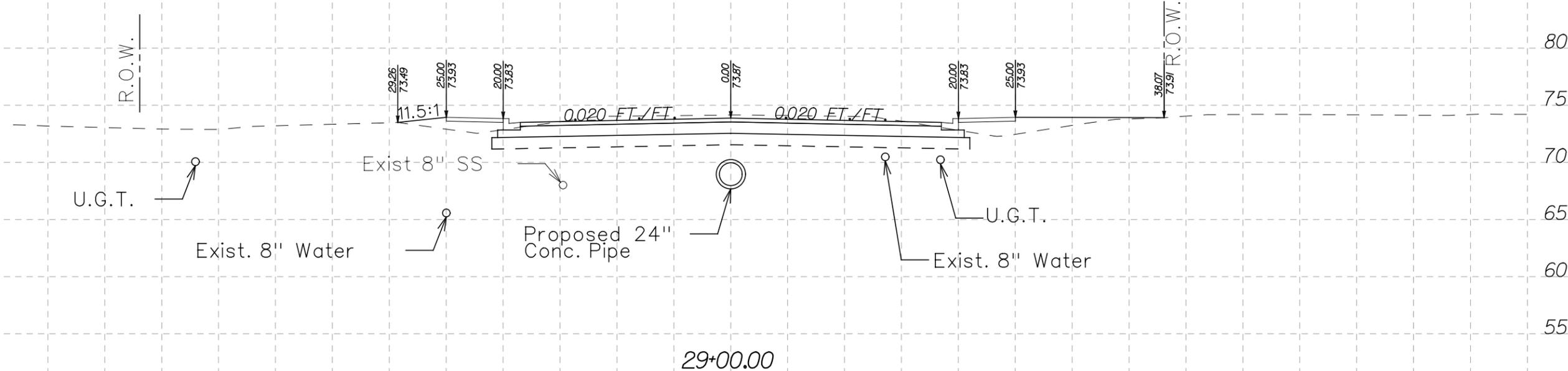
10:03:42 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



85 80 75 70 65 60 55

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS

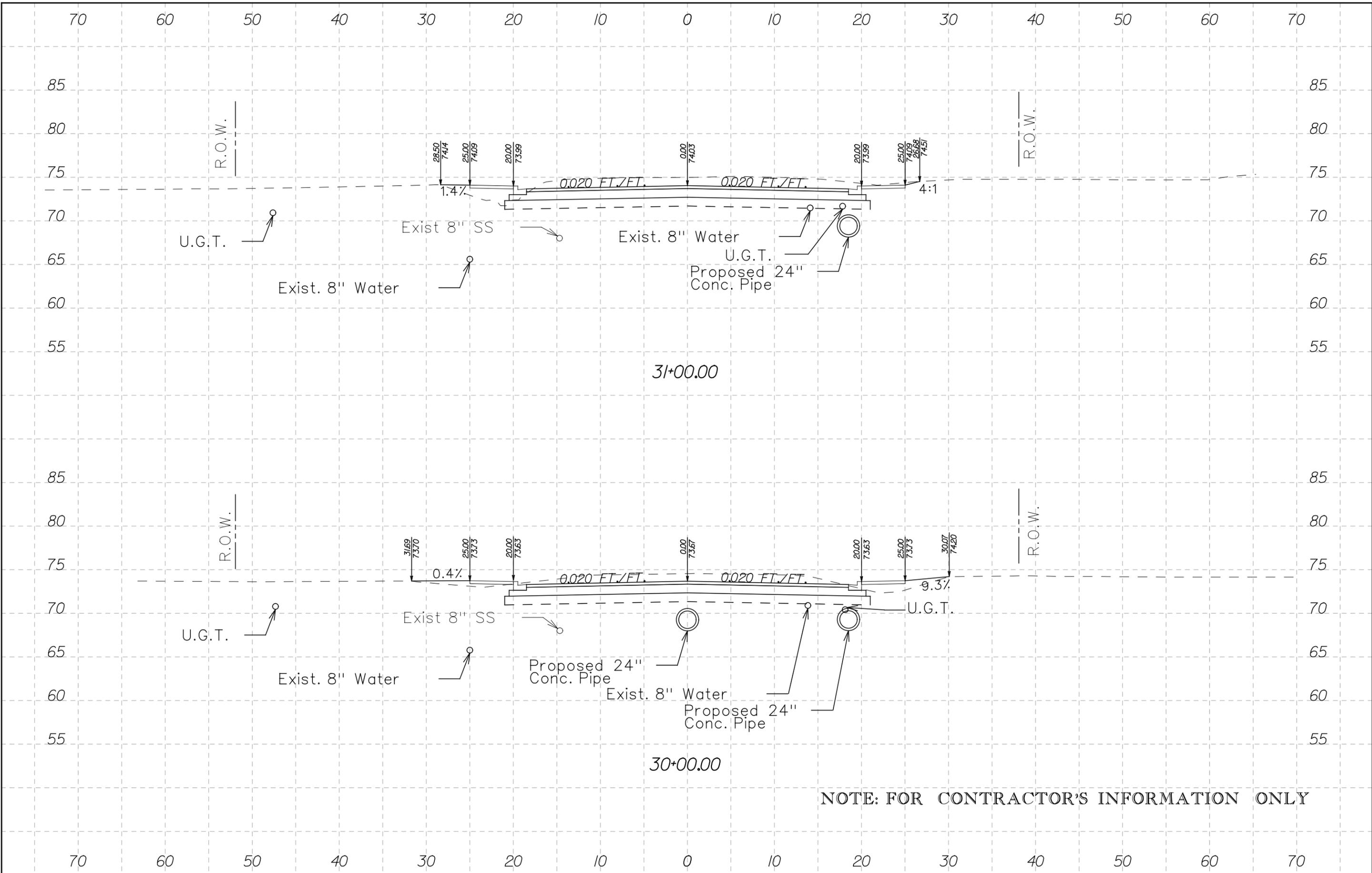


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		100
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:42 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

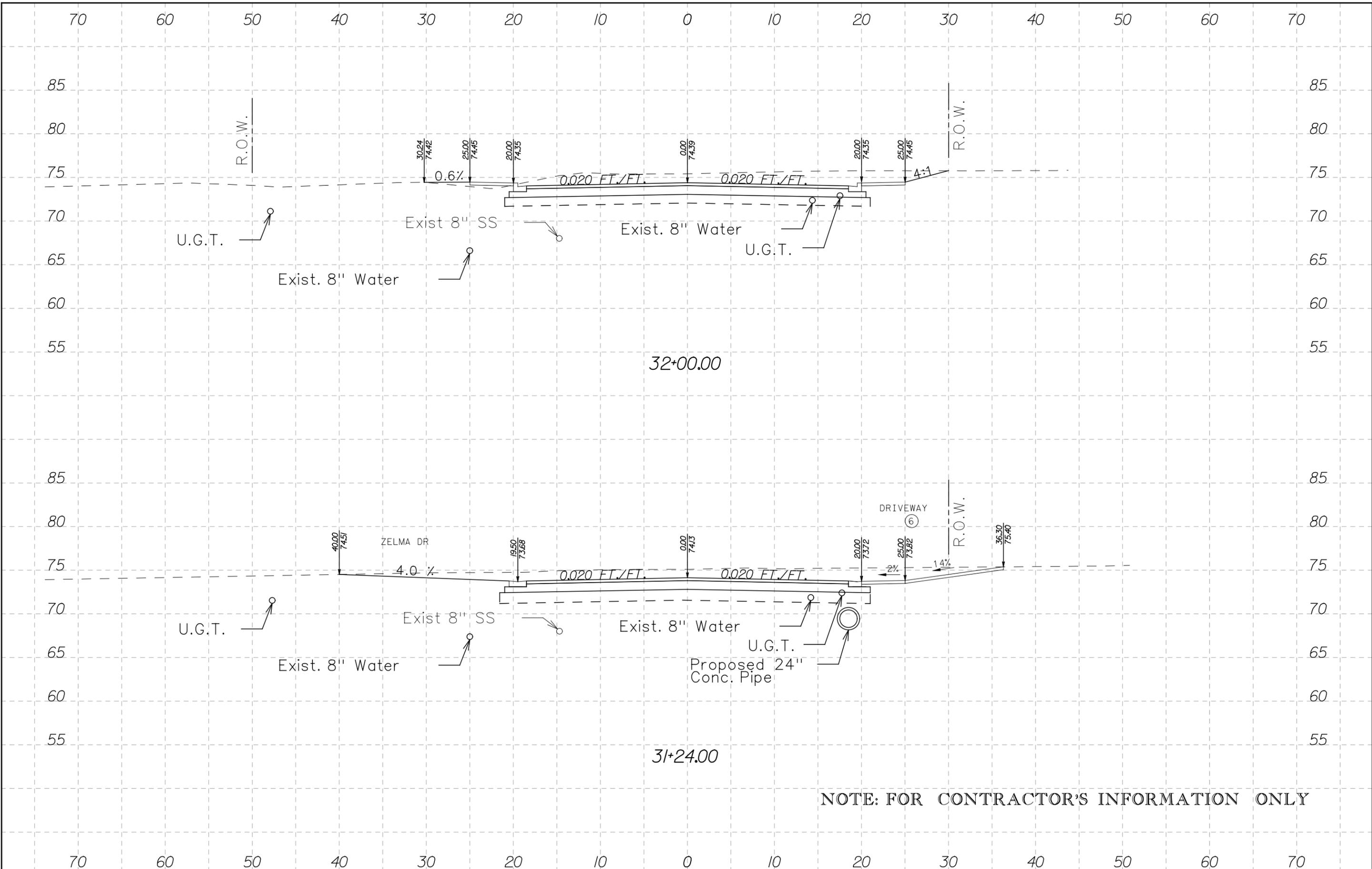
PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		101
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:42 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		102
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

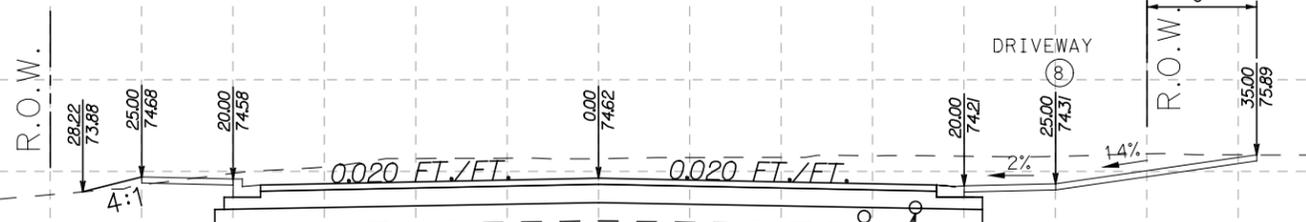
10:03:42 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

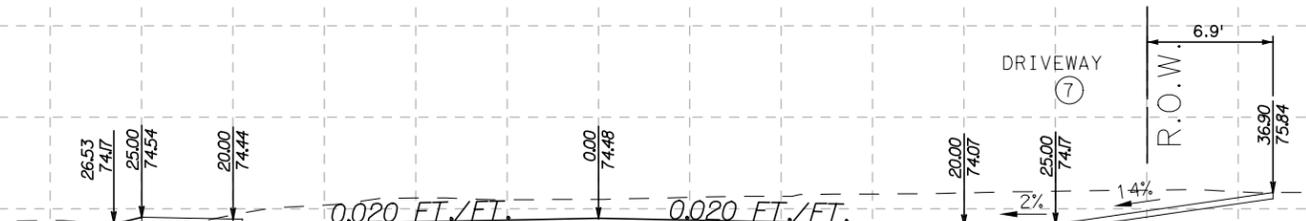
85 80 75 70 65 60 55

85 80 75 70 65 60 55

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



32+64.00



32+25.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY



F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

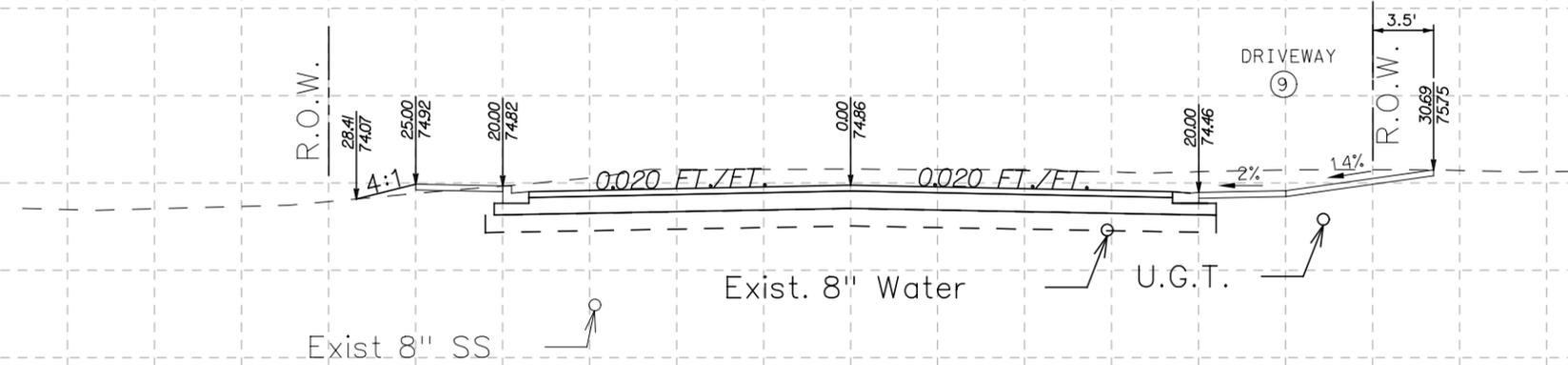
10:03:52 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

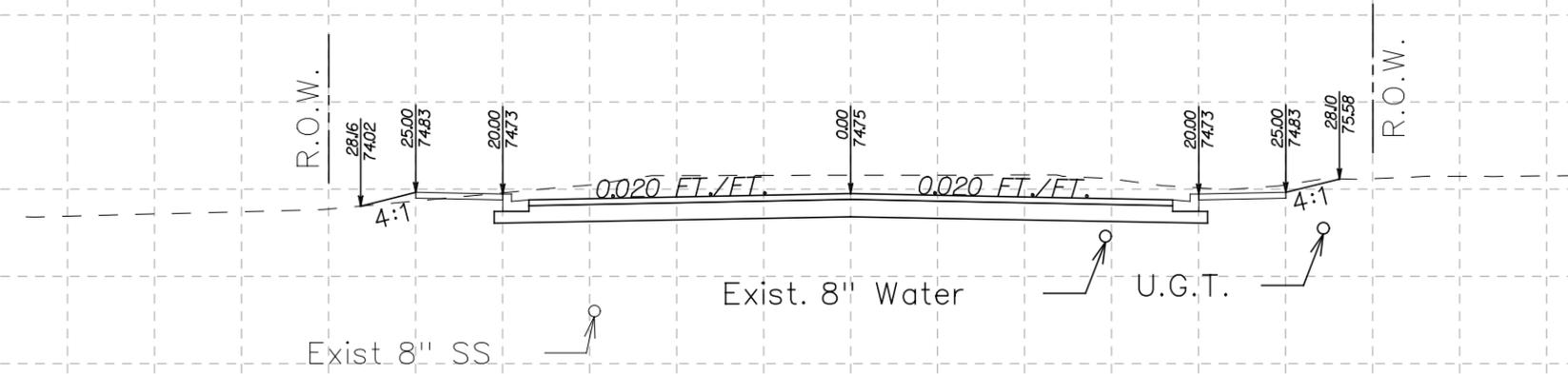
90 85 80 75 70 65 60 55

85 80 75 70 65 60 55

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



33+31.16



33+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

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

PROPOSED CROSS SECTIONS

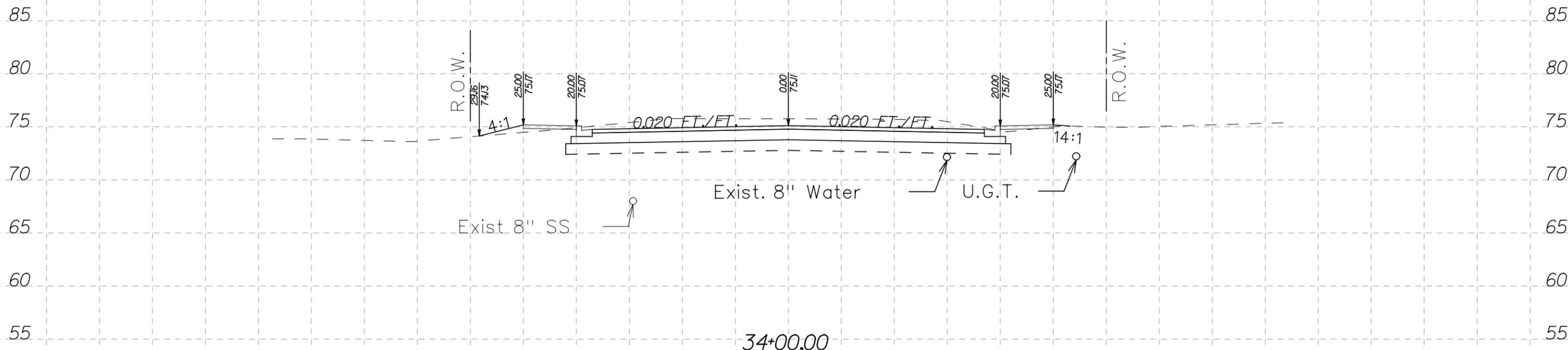
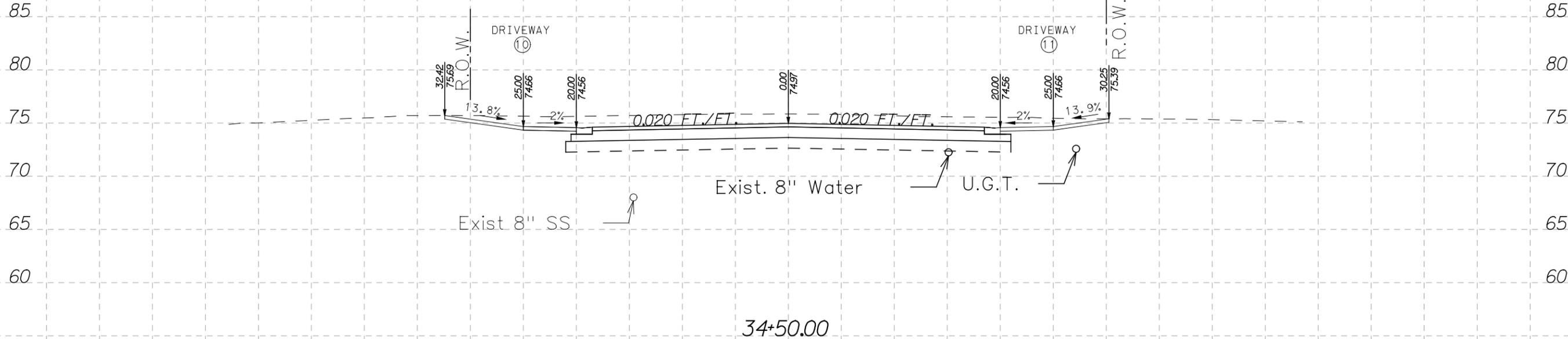


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		104
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:53 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS

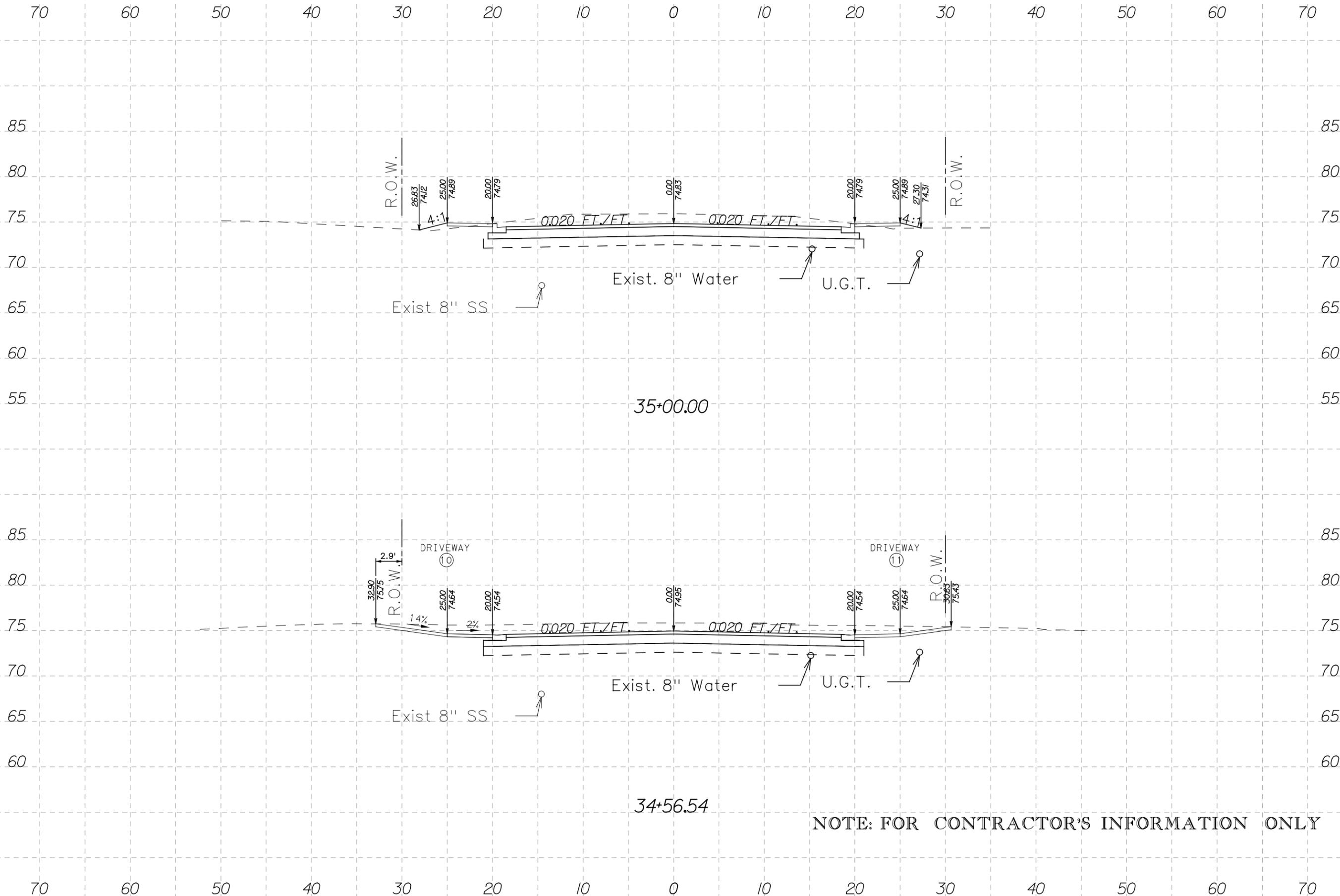


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		105
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:53 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

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

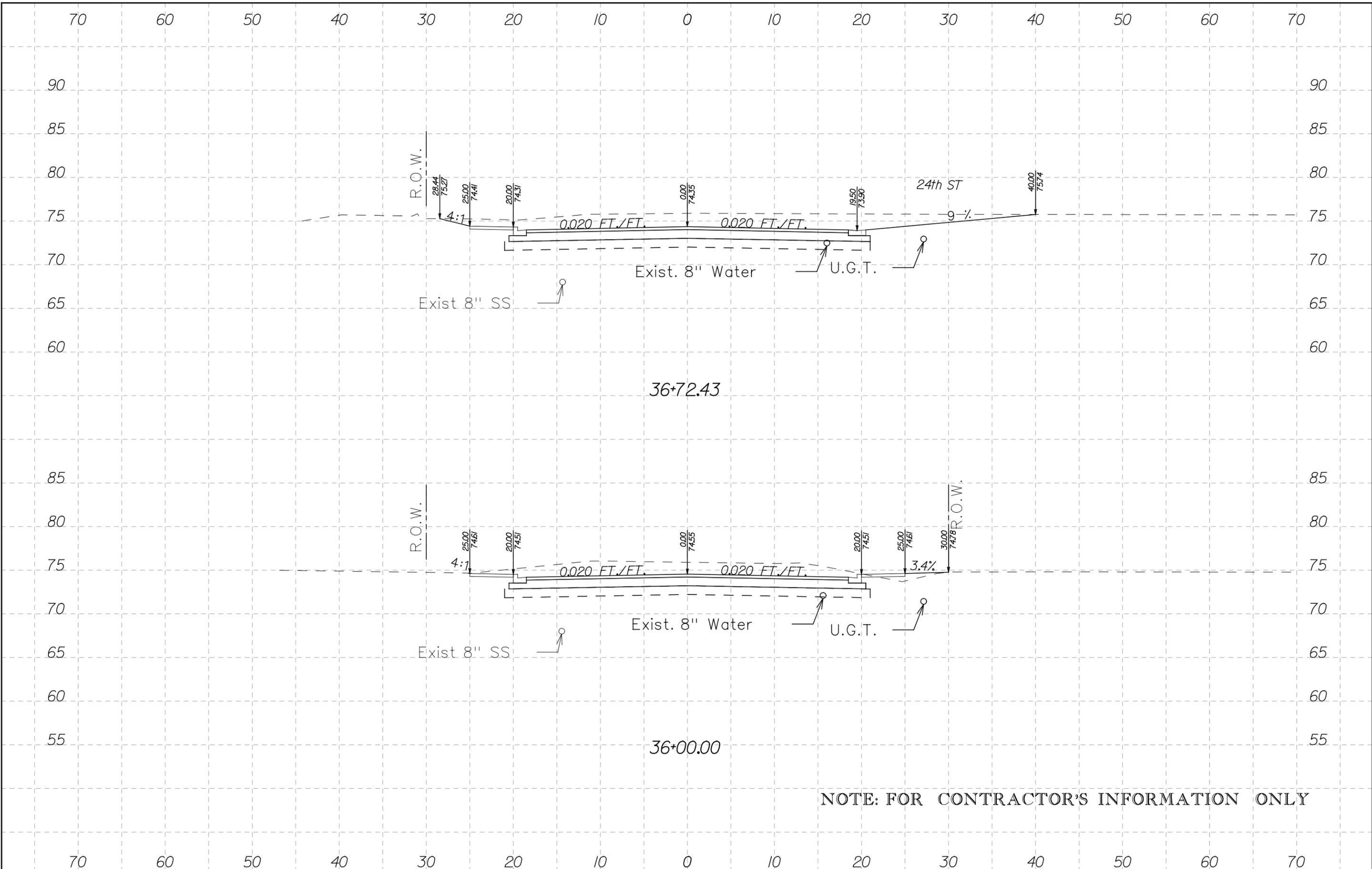
PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		106
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:53 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

PROPOSED CROSS SECTIONS



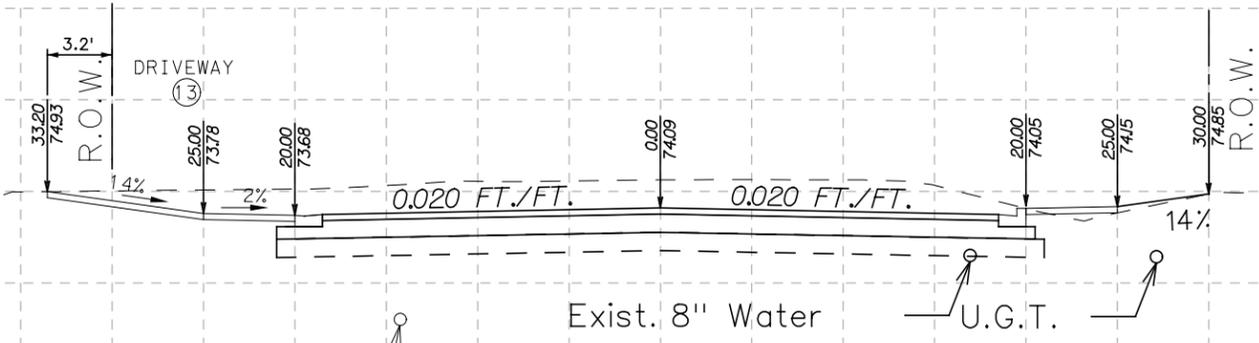
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		107
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:53 AM
2/23/2015

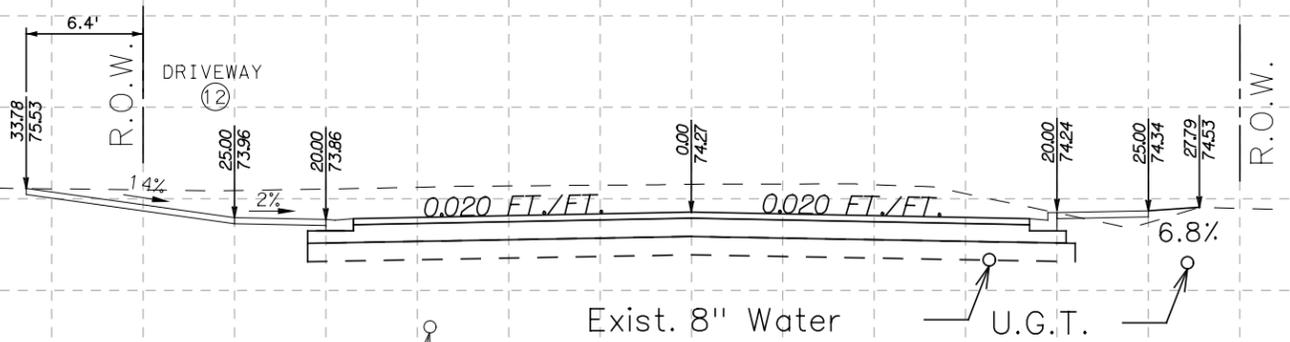
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



37+64.66

85 80 75 70 65 60 55



37+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

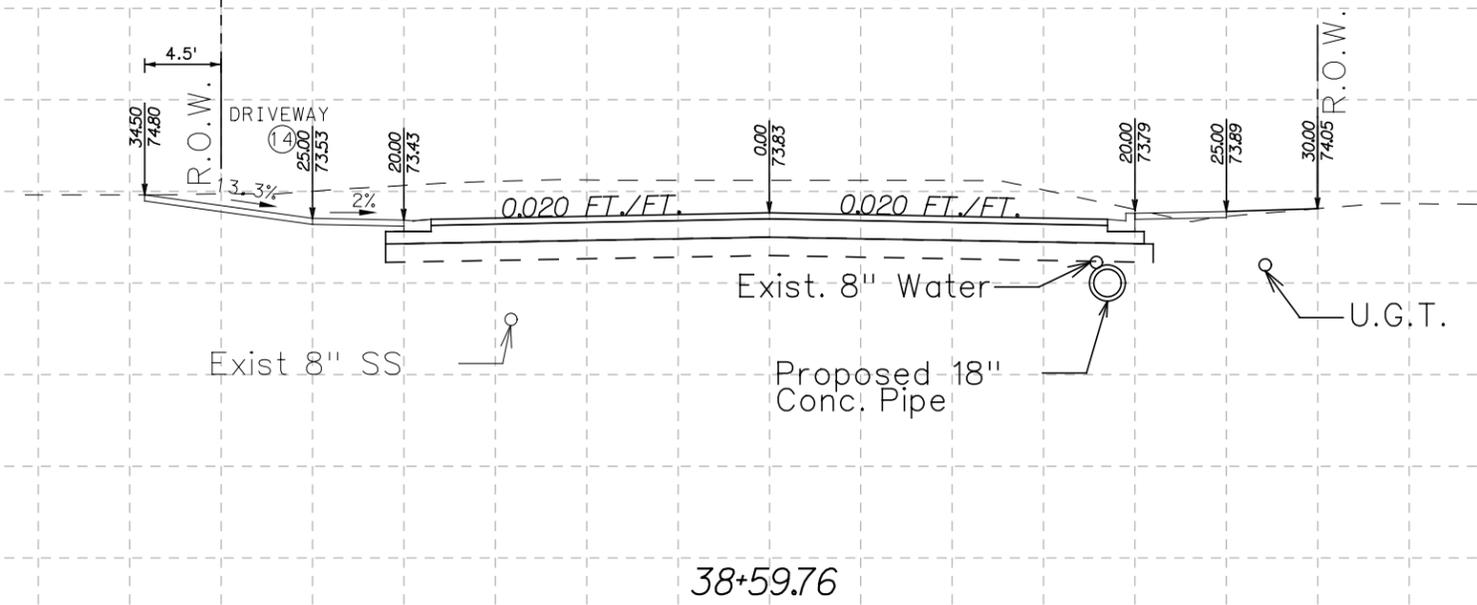


FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		108
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

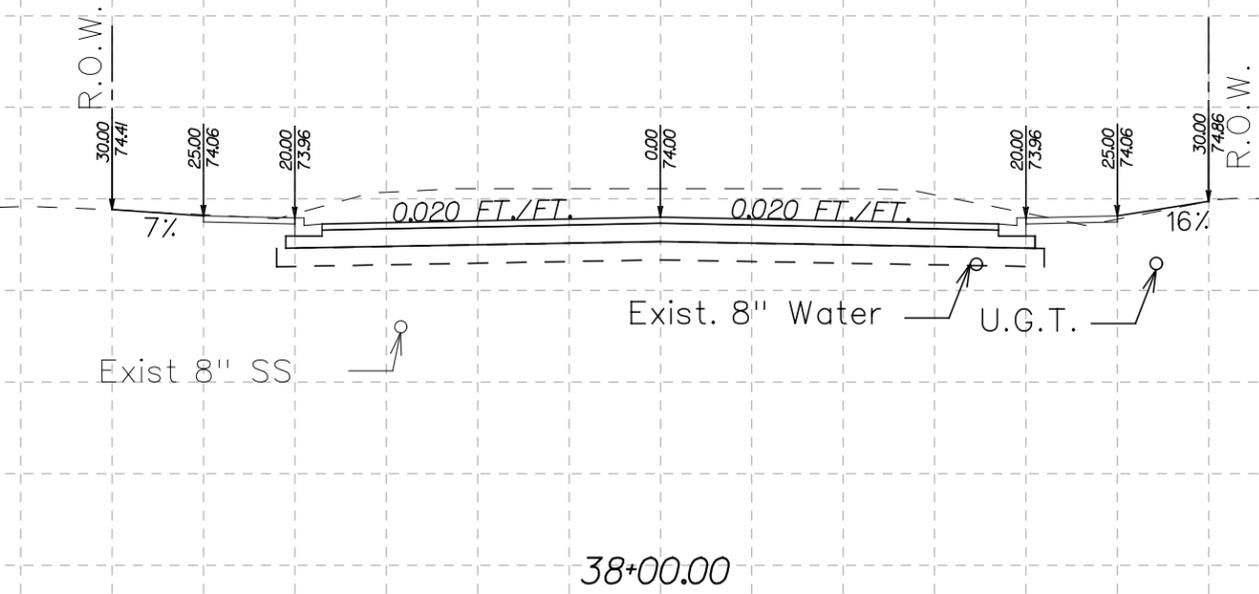
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



38+59.76

85 80 75 70 65 60 55



38+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

10:03:54 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

75 75

70 70

65 65

60 60

55 55

39+25.40

85 85

80 80

75 75

70 70

65 65

60 60

55 55

39+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn



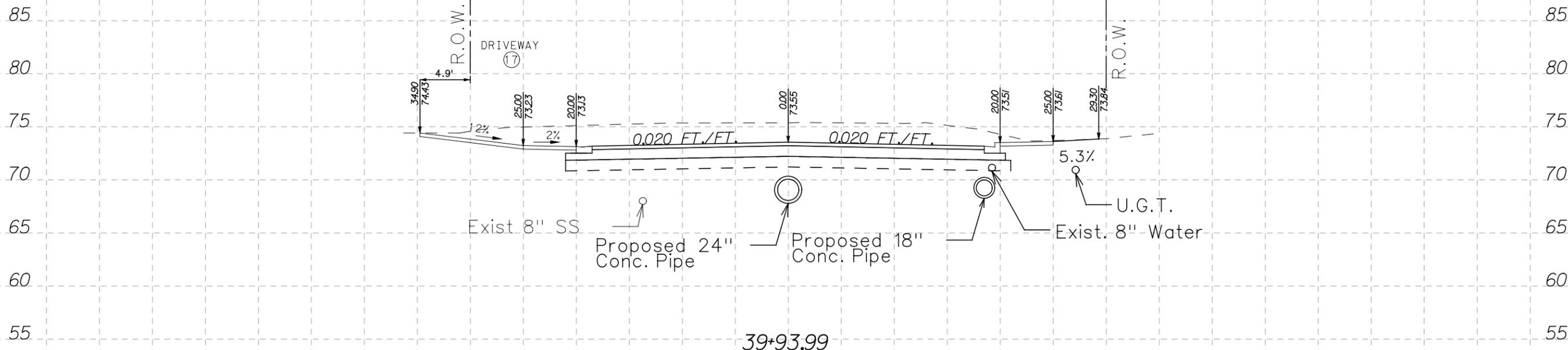
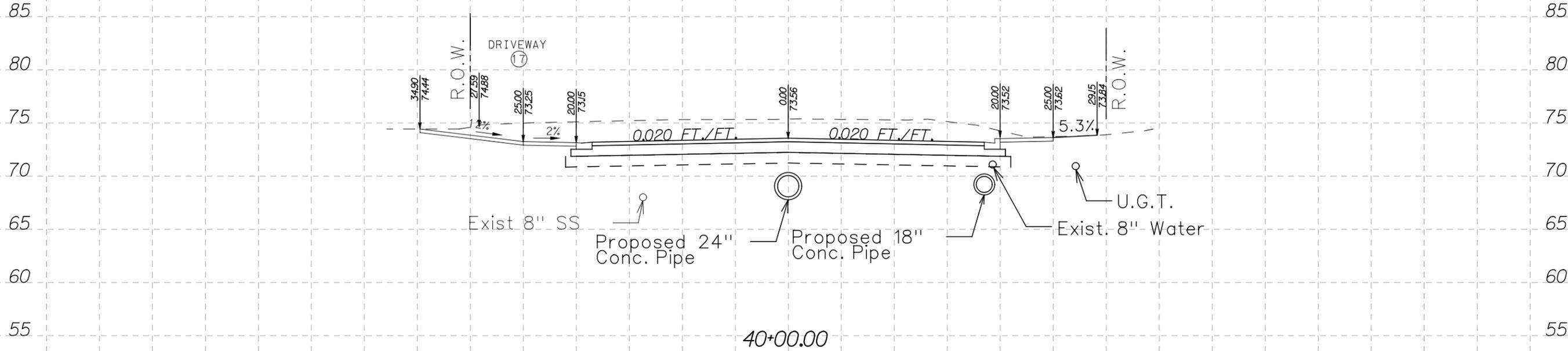
PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		110
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS

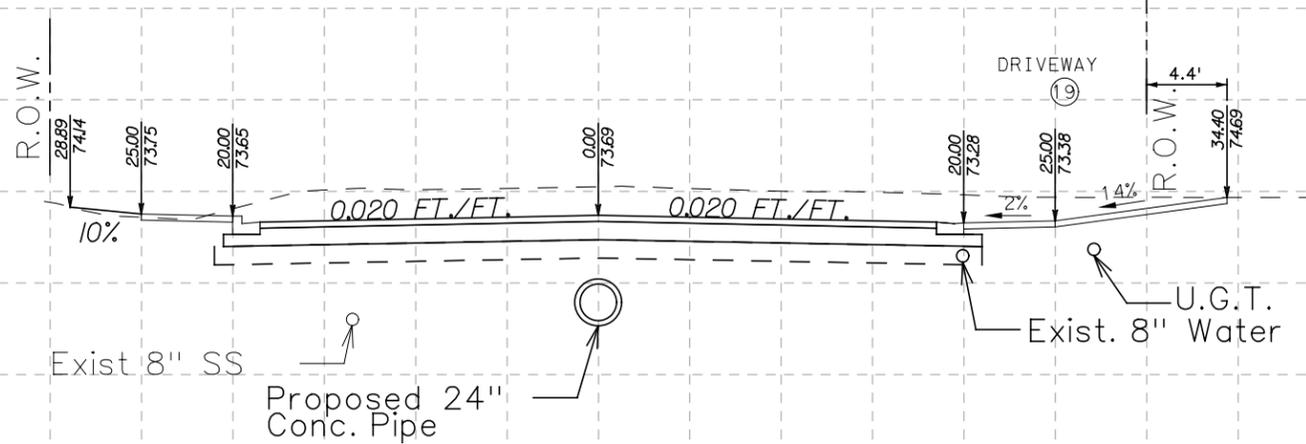


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		111
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

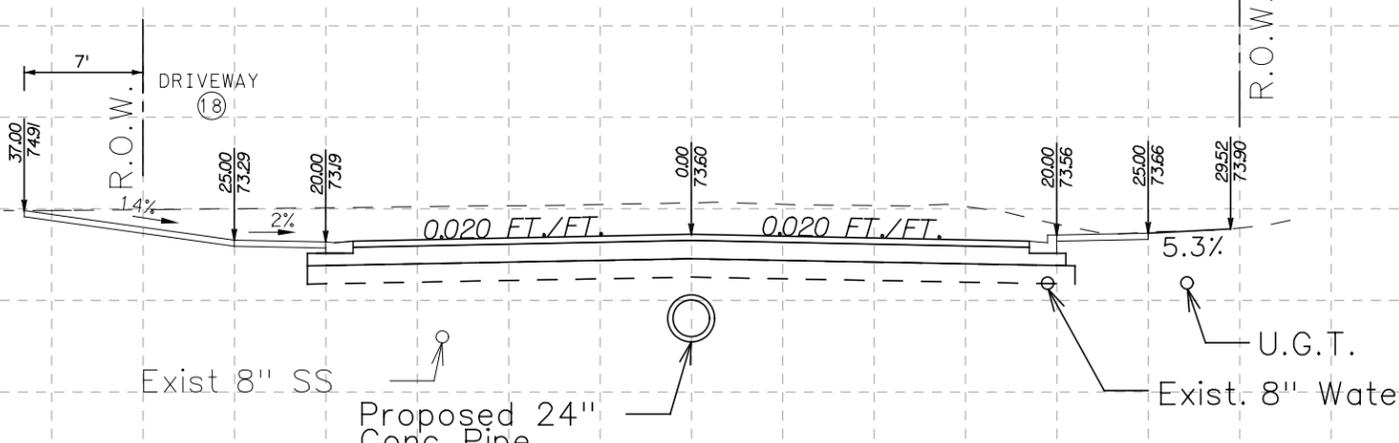
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



40+65.05

85 80 75 70 65 60 55



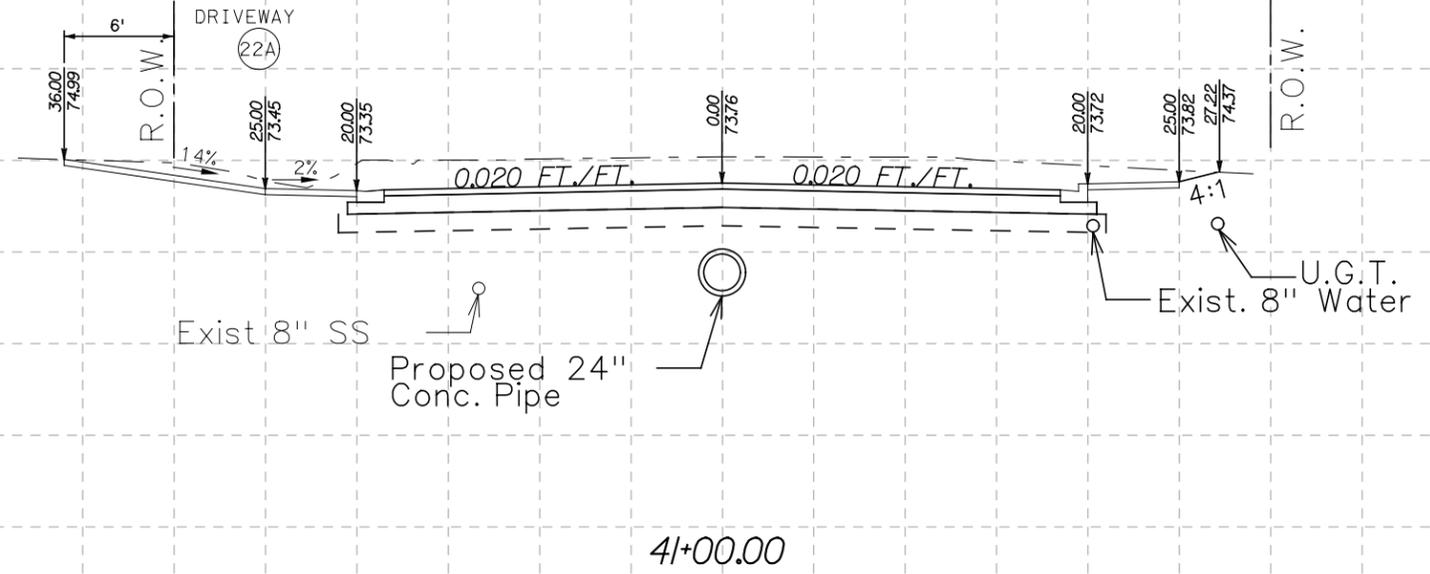
40+19.77

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

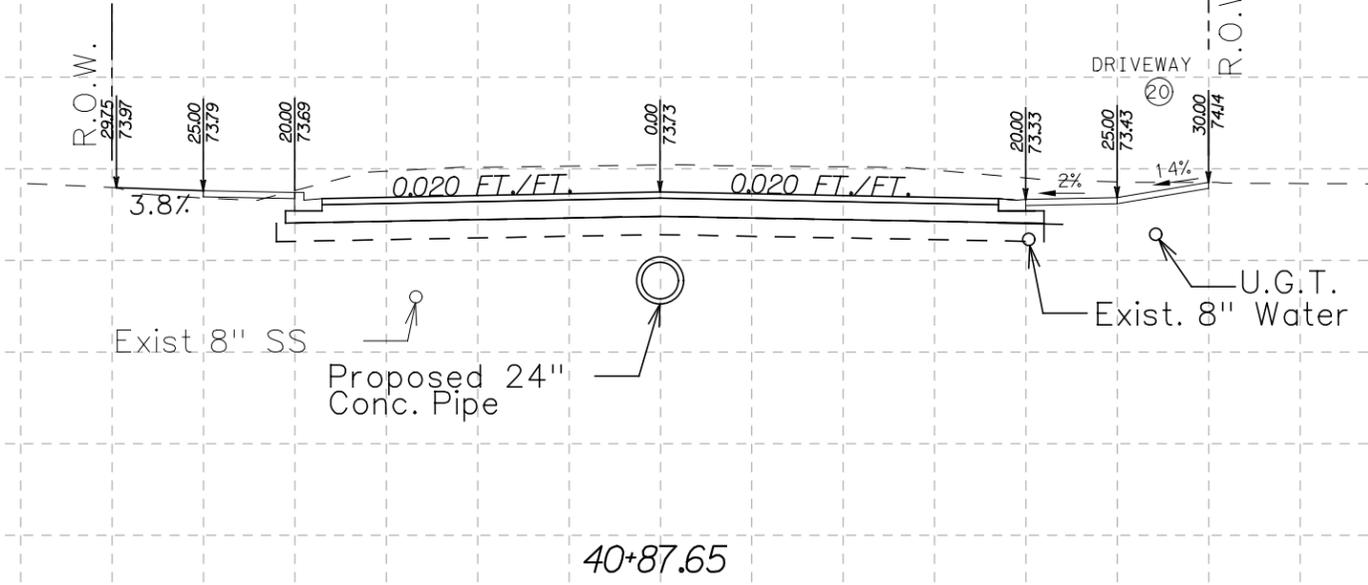
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



85 80 75 70 65 60 55

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



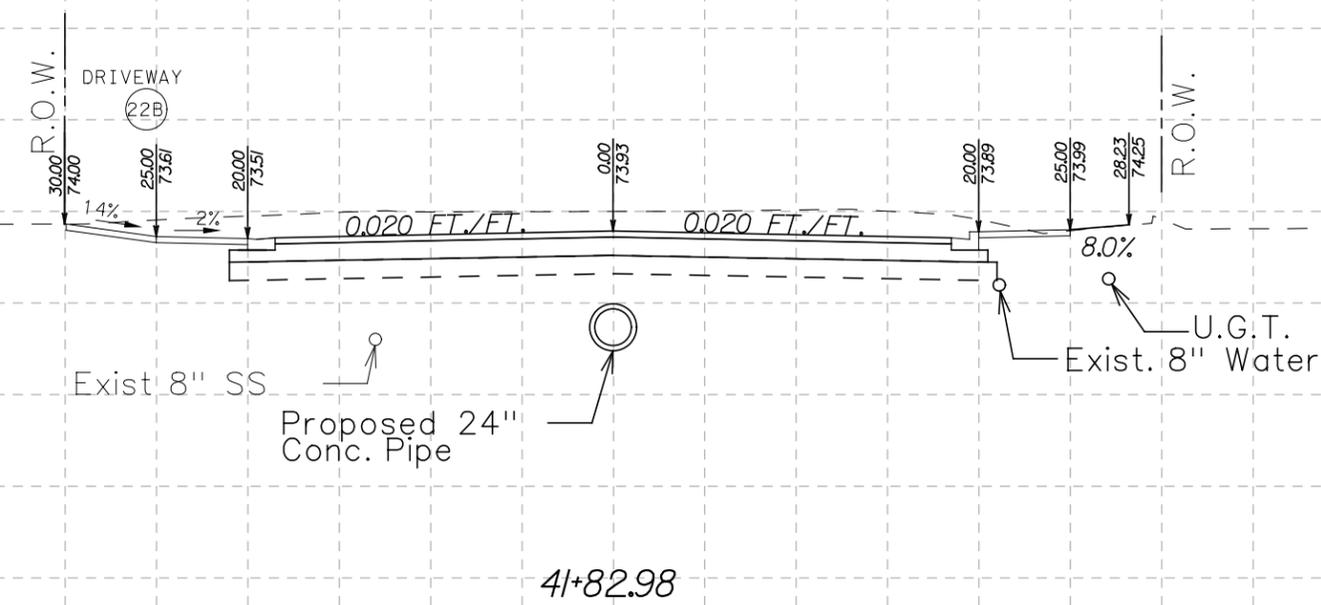
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		113
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:55 AM
2/23/2015

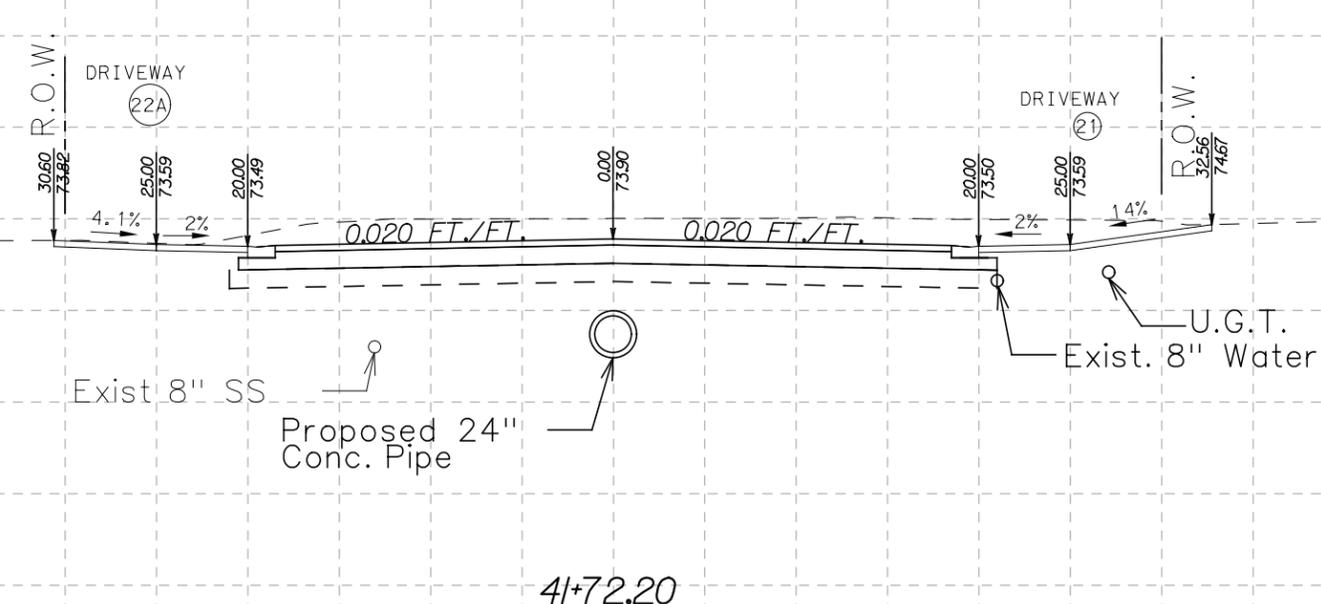
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



41+82.98

85 80 75 70 65 60 55



41+72.20

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS

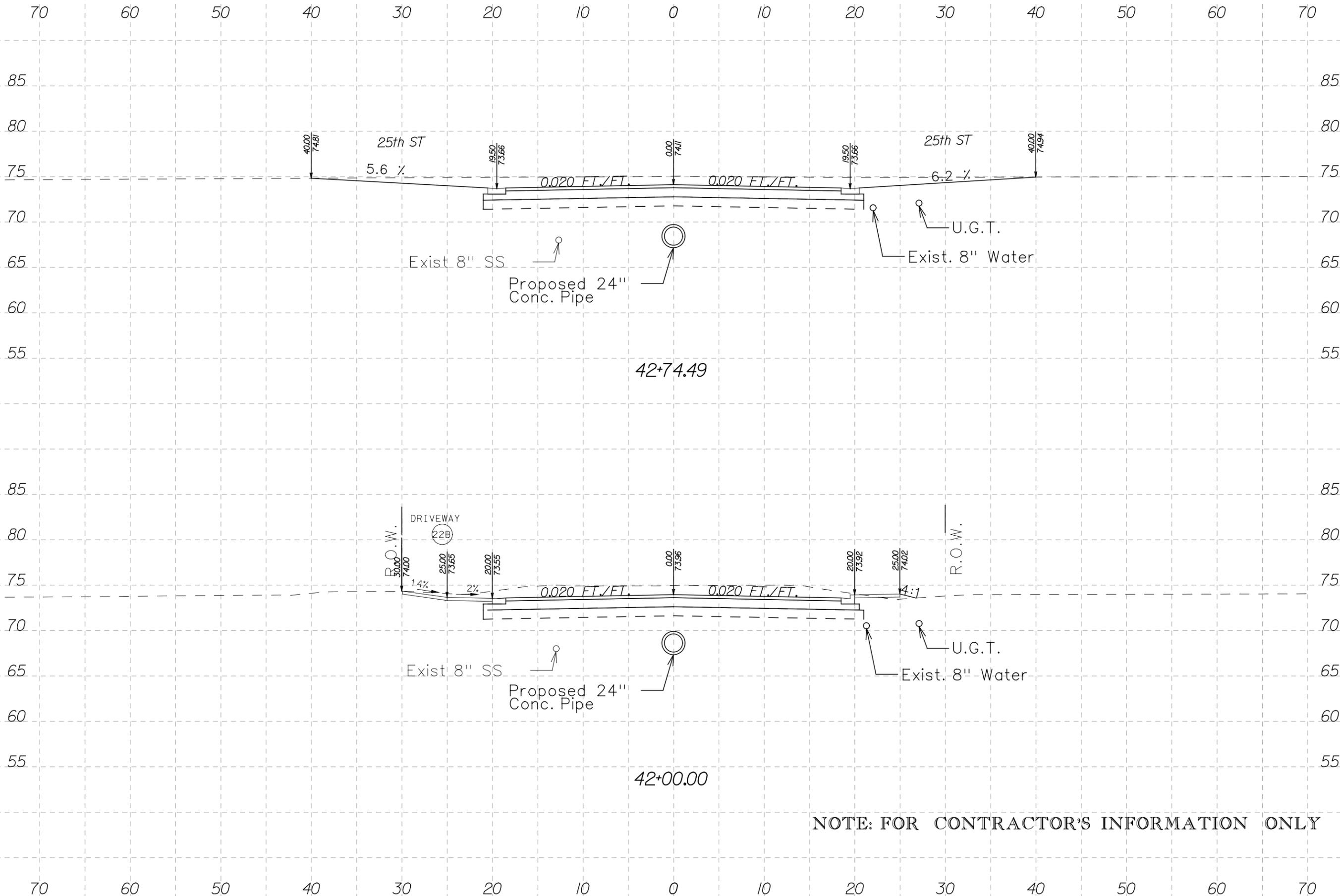


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		114
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:55 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		115
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:55 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

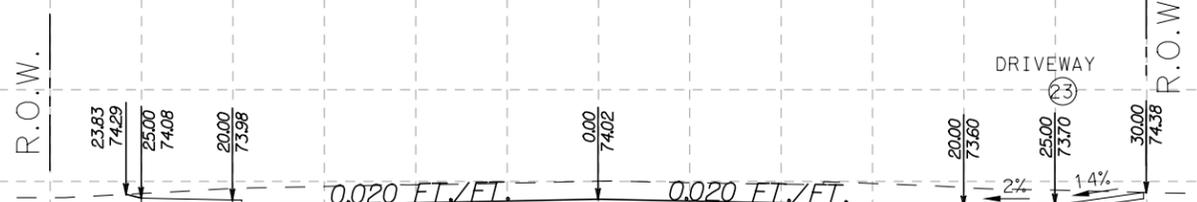
75 75

70 70

65 65

60 60

55 55



43+39.29

85 85

80 80

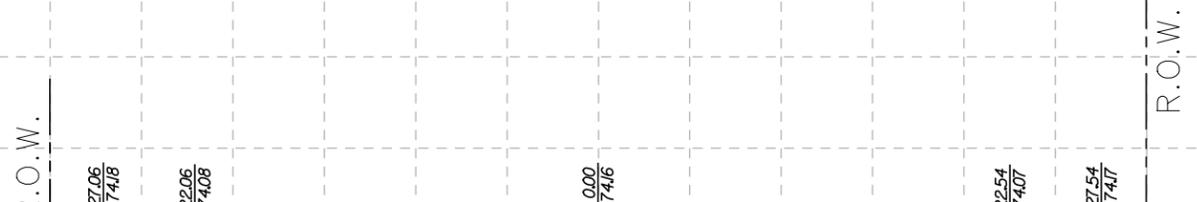
75 75

70 70

65 65

60 60

55 55



43+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		116
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

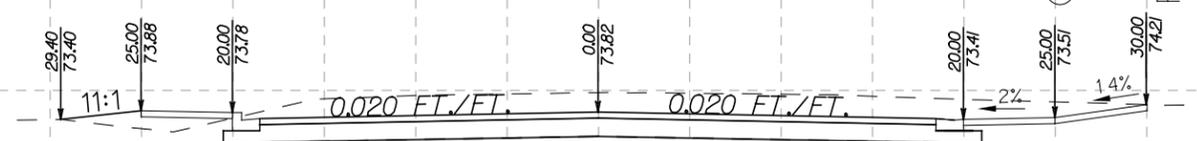
F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:55 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55

R.O.W. DRIVWAY (25) R.O.W.

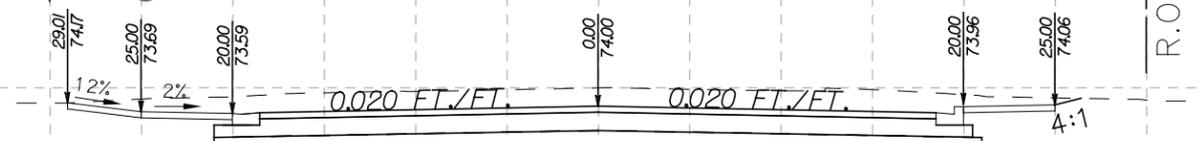


Exist 8" SS Proposed 24" Conc. Pipe U.G.T. Exist. 8" Water

43+95.05

85 80 75 70 65 60 55

R.O.W. DRIVWAY (24) R.O.W.



Exist 8" SS Proposed 24" Conc. Pipe U.G.T. Exist. 8" Water

43+44.08

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

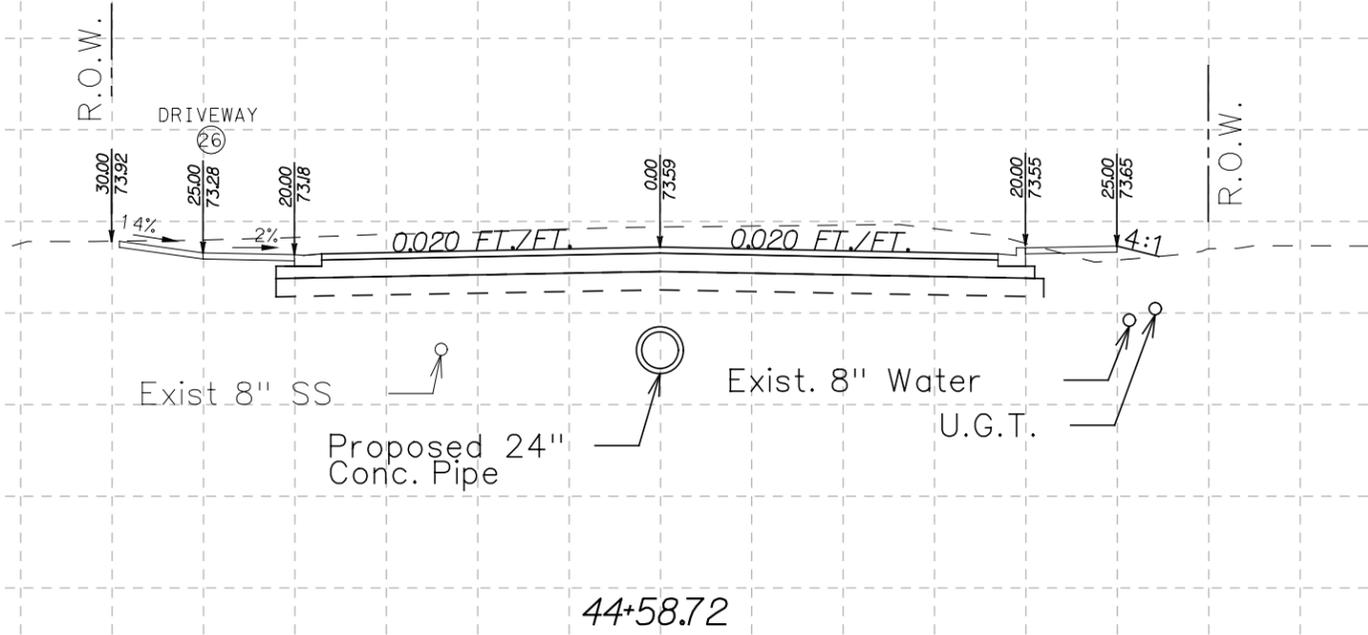
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		117
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

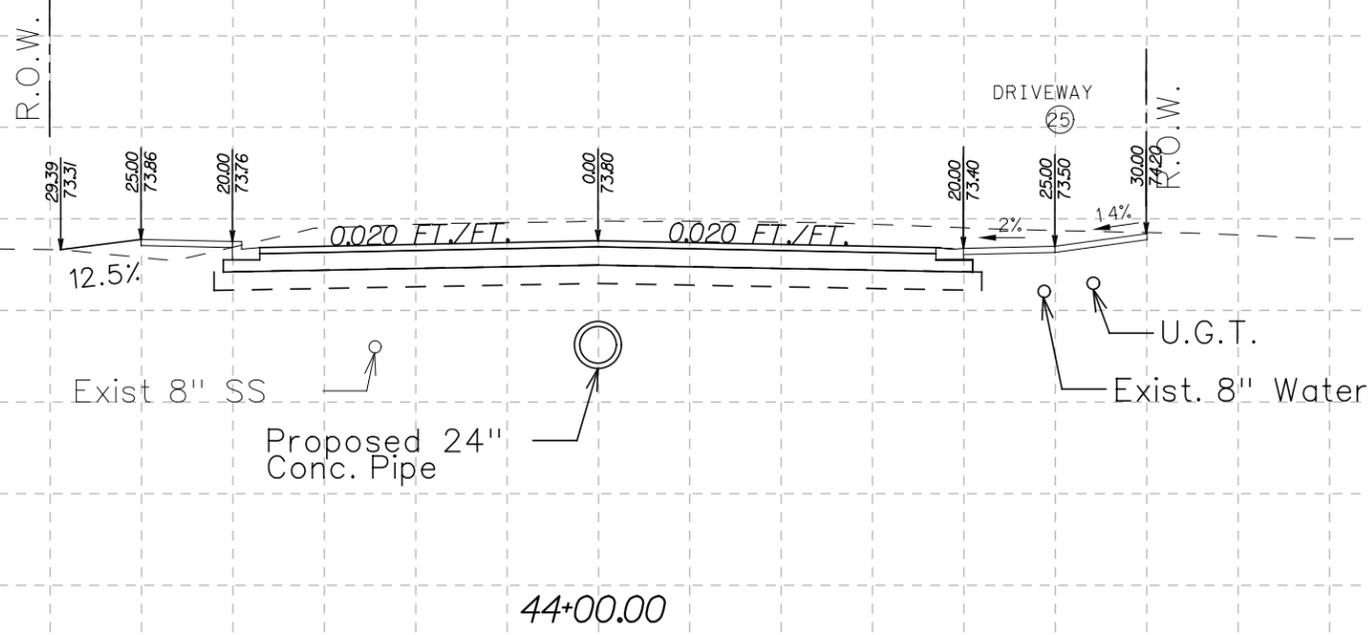
10:03:56 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



85 80 75 70 65 60 55

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		118
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:56 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

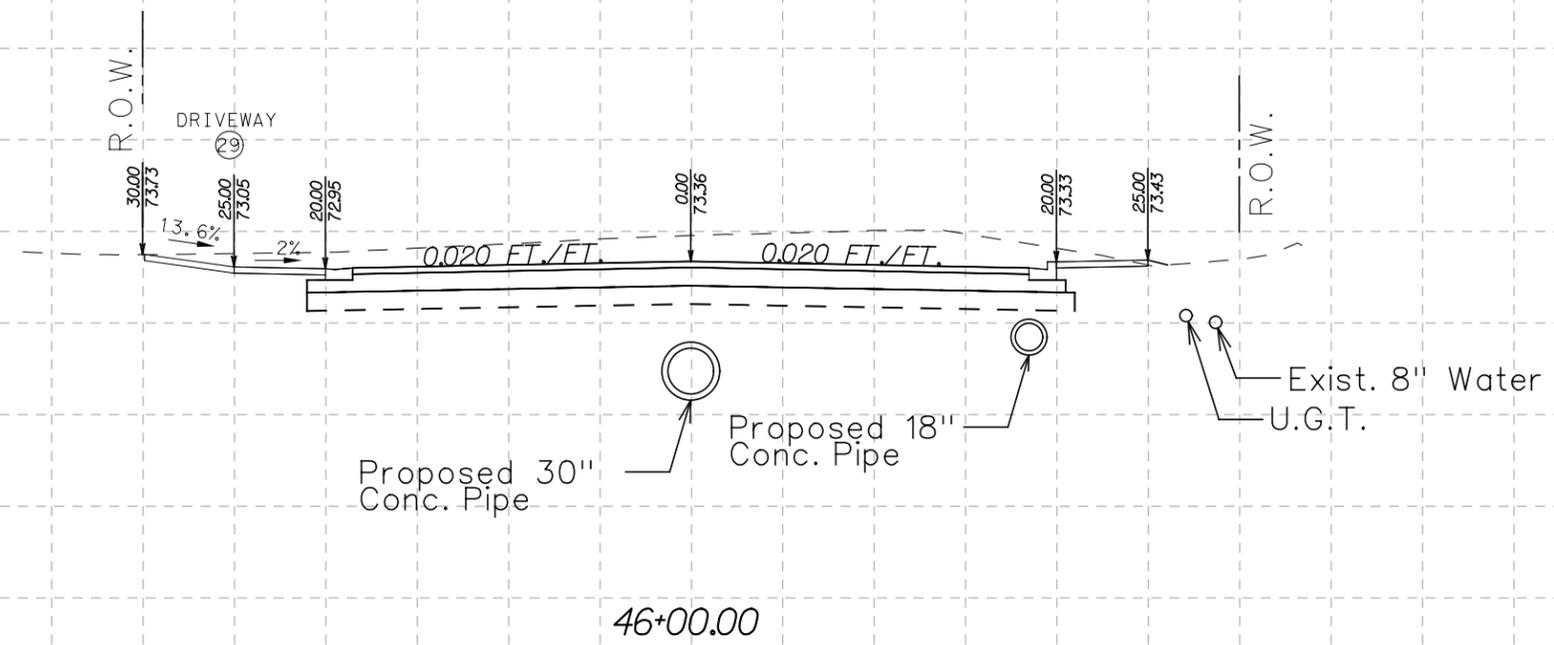
75 75

70 70

65 65

60 60

55 55



46+00.00

85 85

80 80

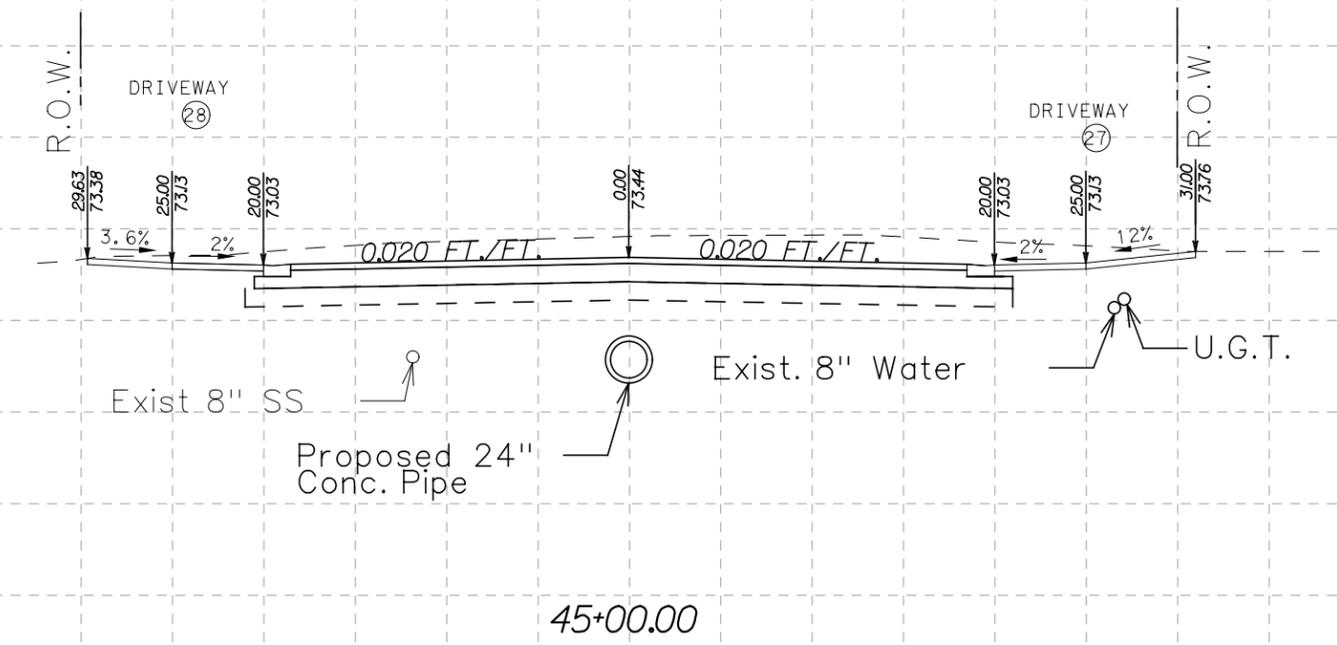
75 75

70 70

65 65

60 60

55 55



45+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		119
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

10:03:56 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

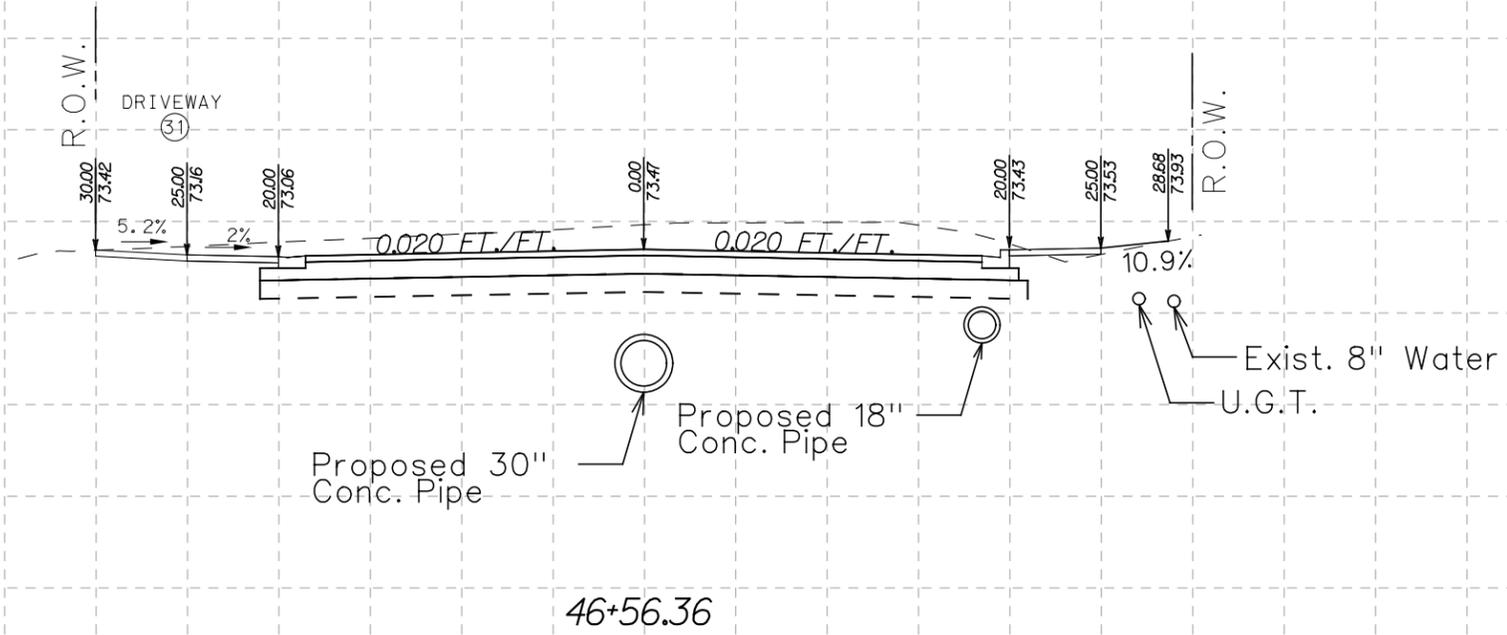
75 75

70 70

65 65

60 60

55 55



46+56.36

85 85

80 80

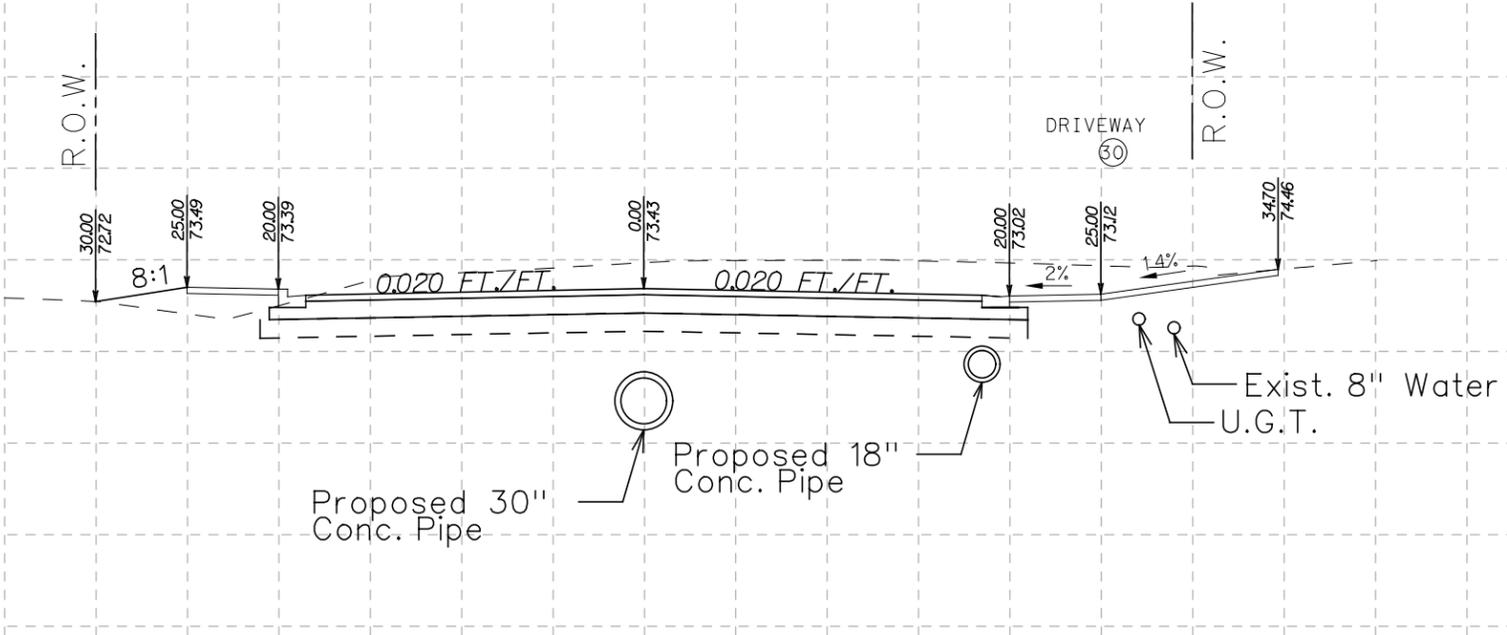
75 75

70 70

65 65

60 60

55 55



46+35.75

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

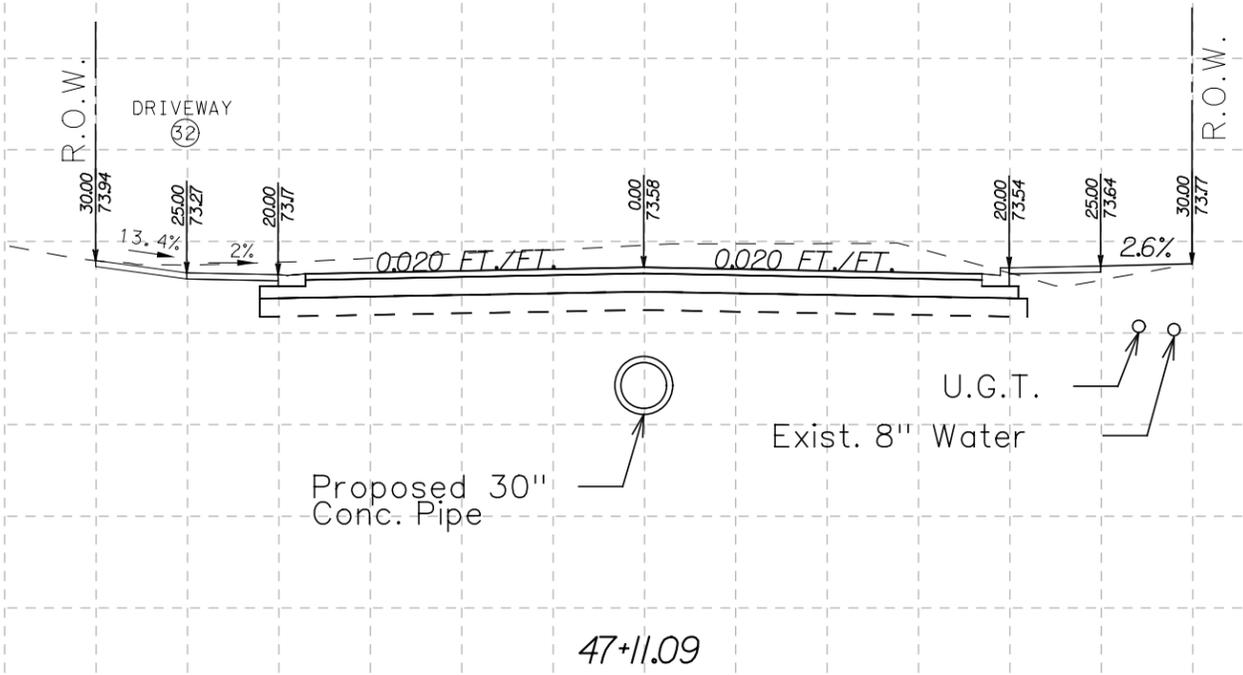
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		120
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

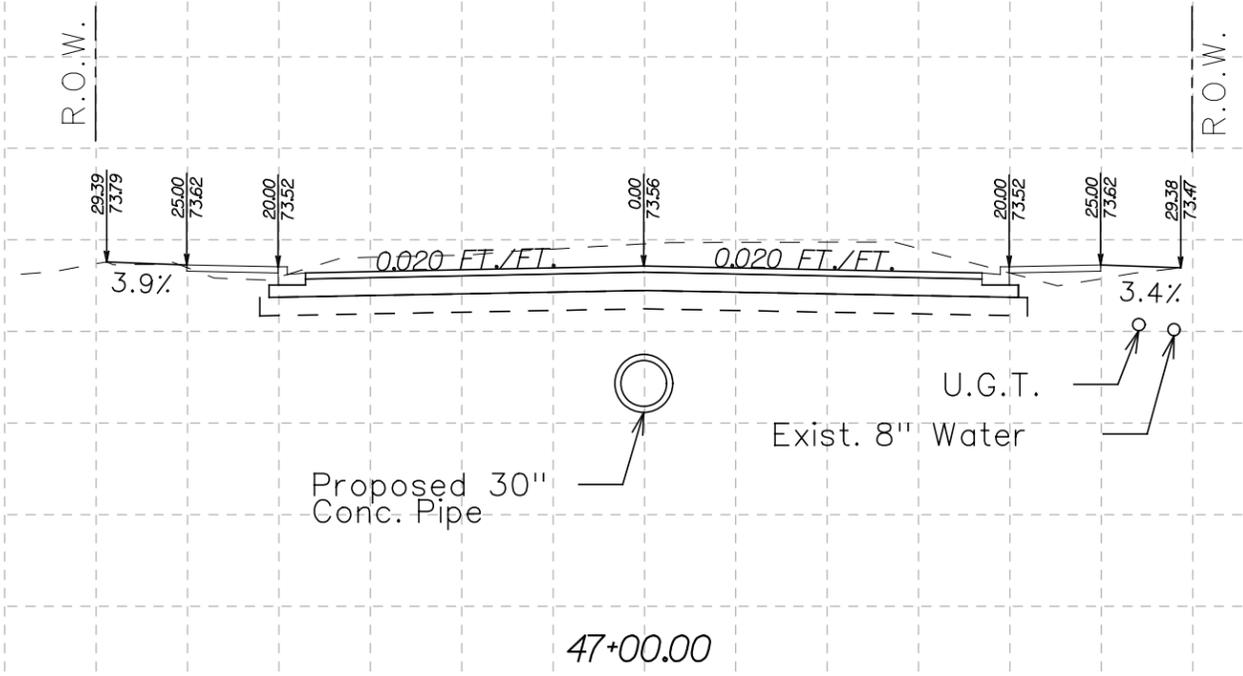
10:03:56 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

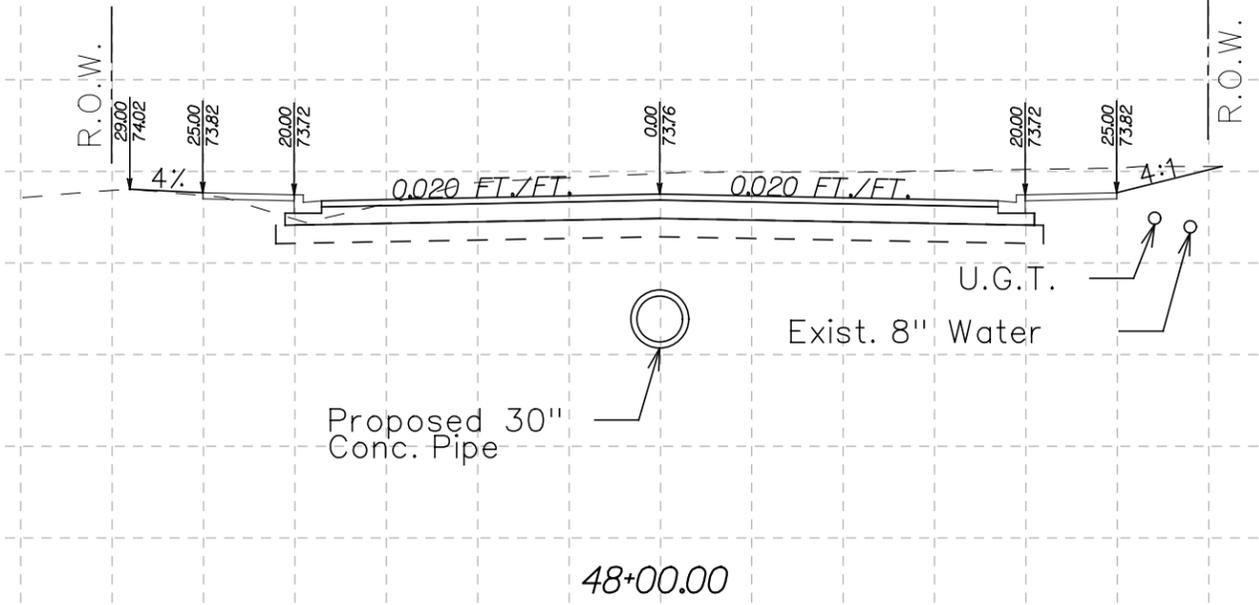
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		121
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:56 AM
2/23/2015

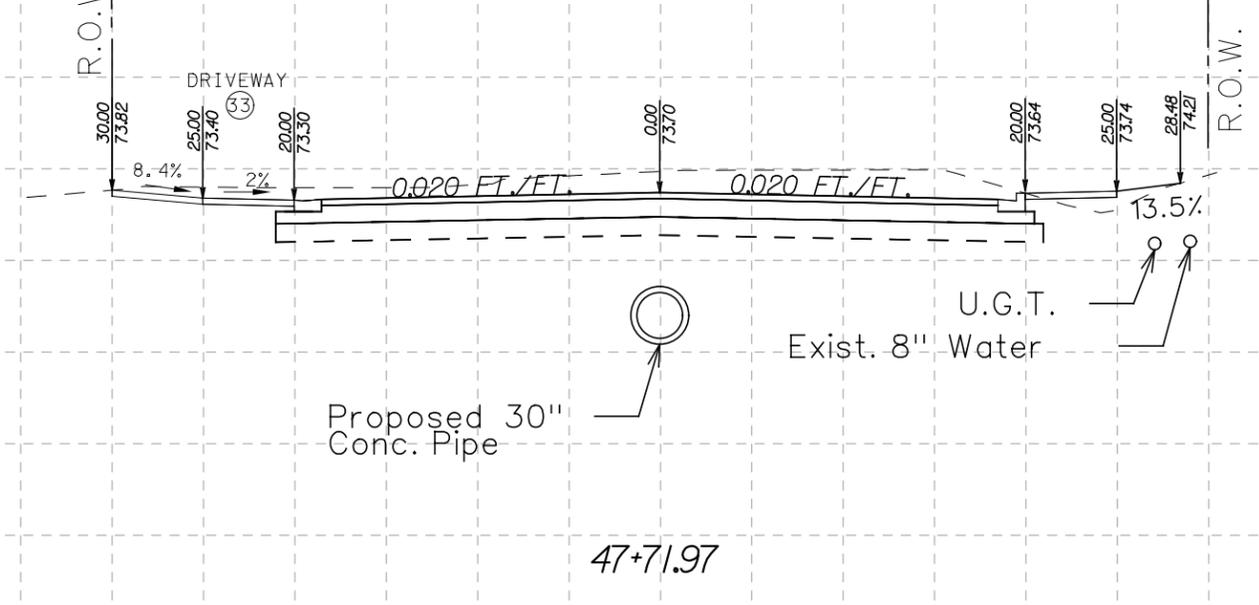
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



48+00.00

85 80 75 70 65 60 55



47+71.97

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:57 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

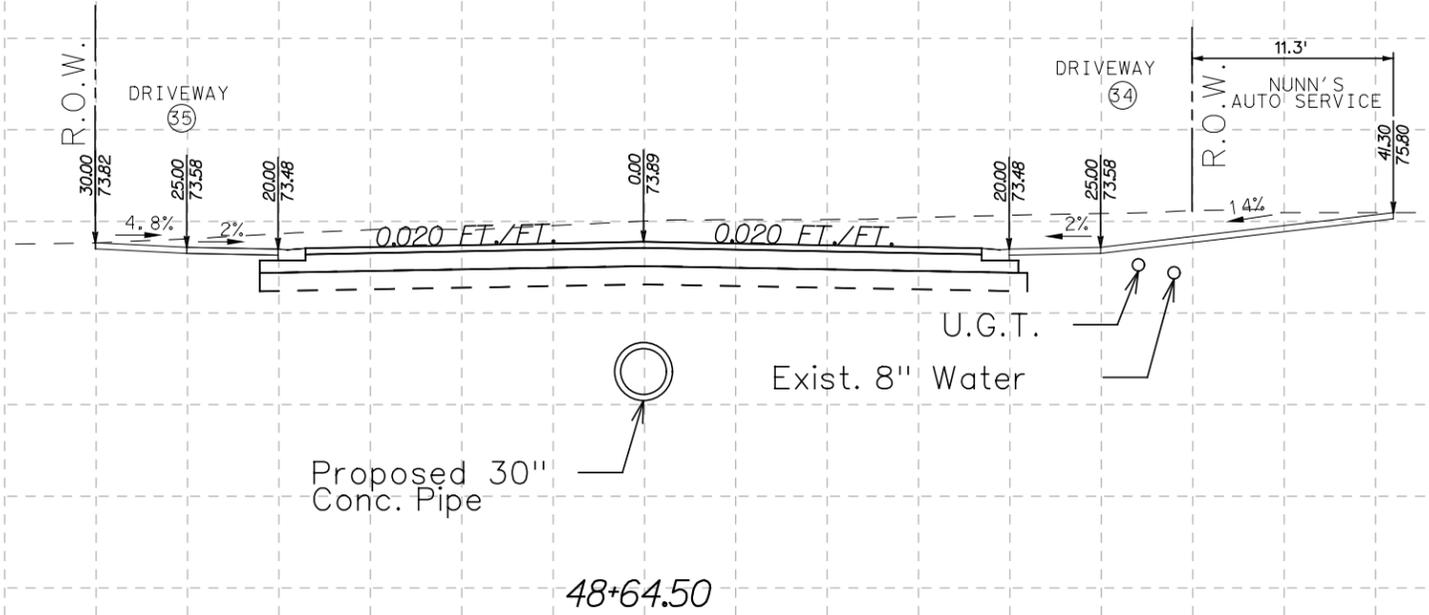
75 75

70 70

65 65

60 60

55 55



48+64.50

85 85

80 80

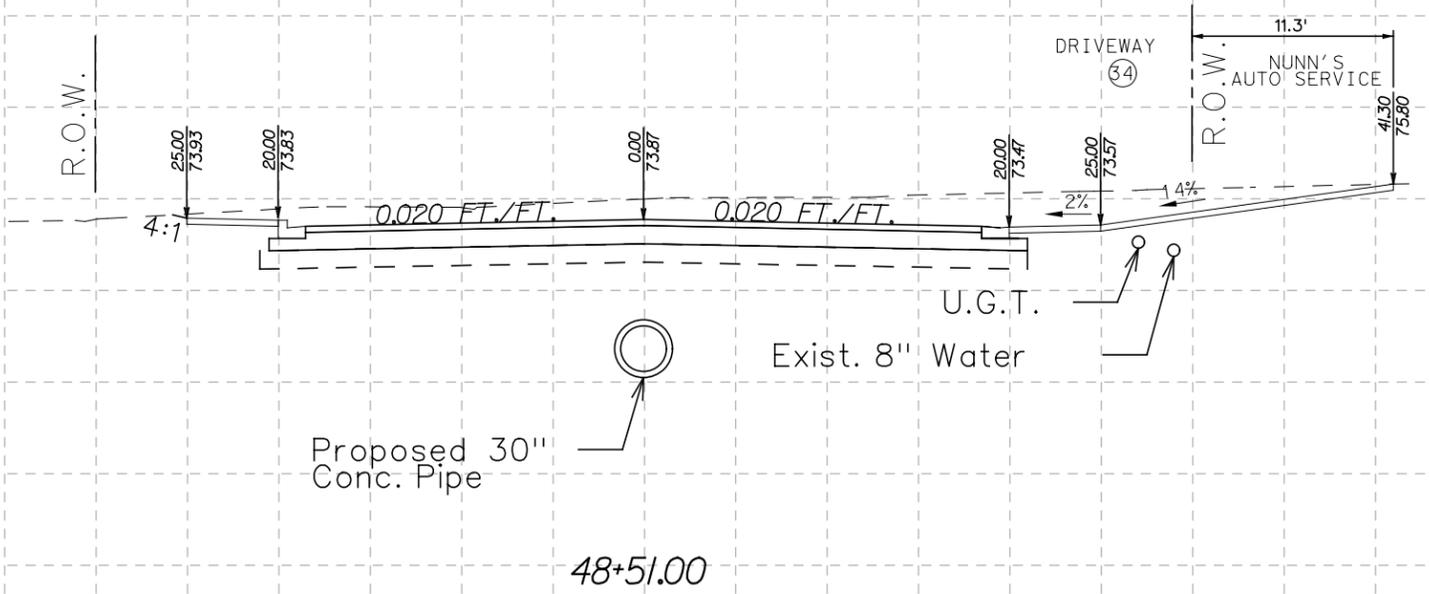
75 75

70 70

65 65

60 60

55 55



48+51.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		123
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:57 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

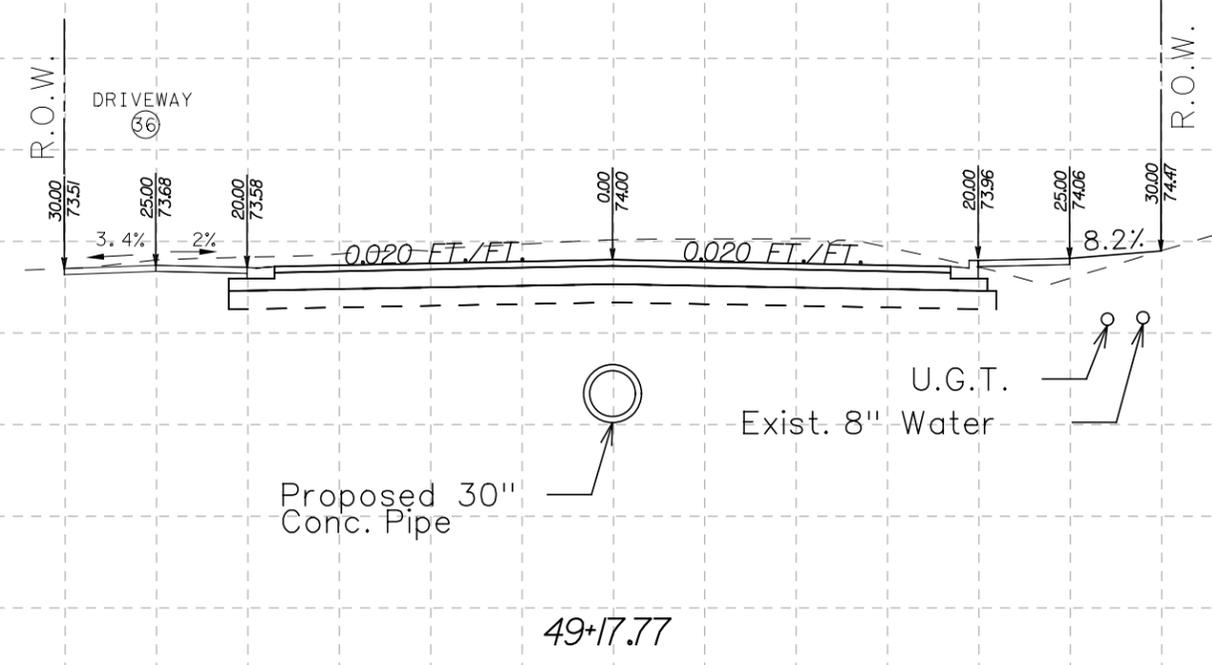
75 75

70 70

65 65

60 60

55 55



85 85

80 80

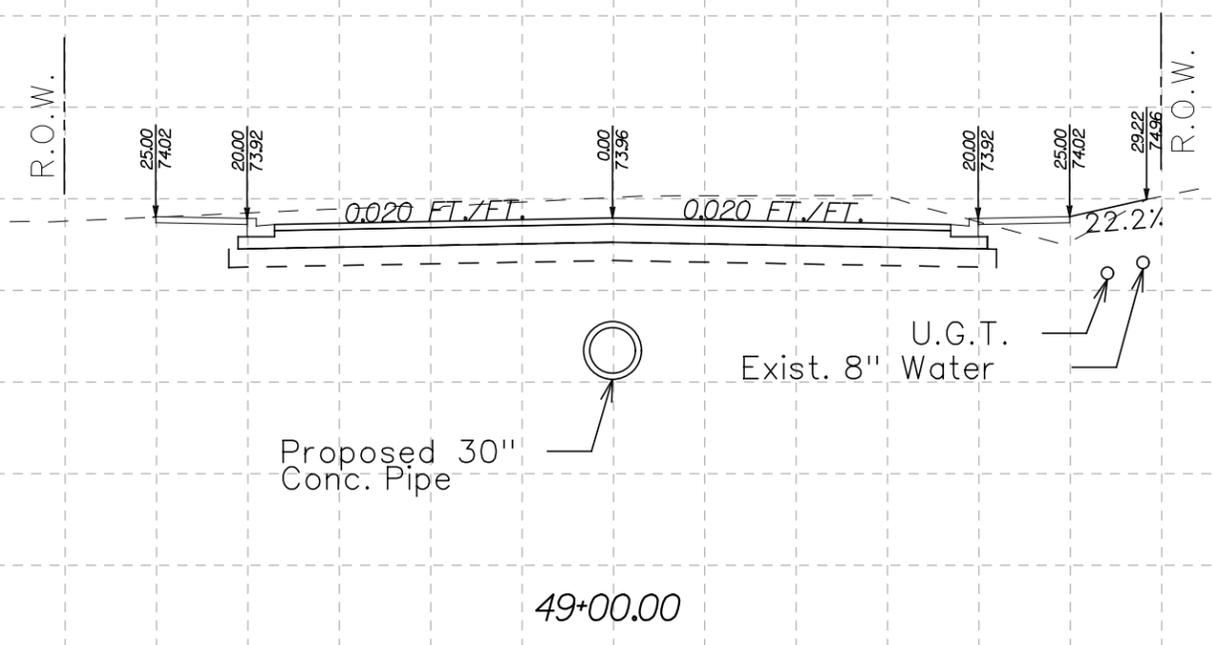
75 75

70 70

65 65

60 60

55 55



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

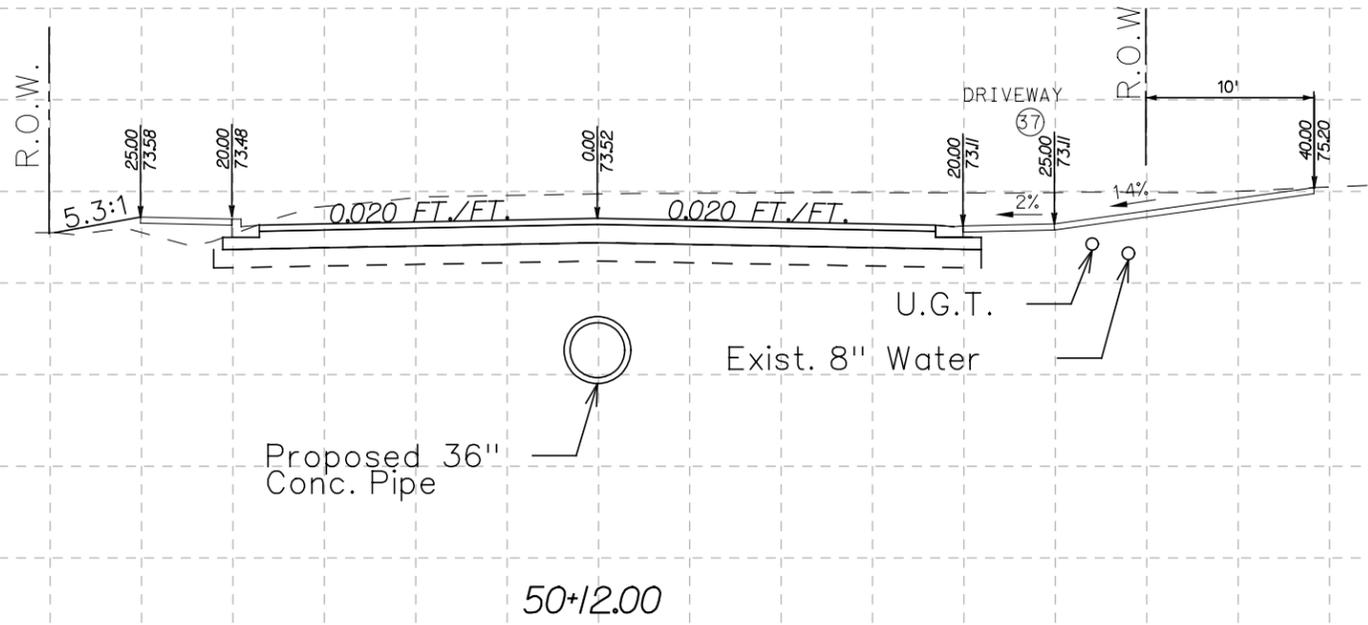
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		124
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

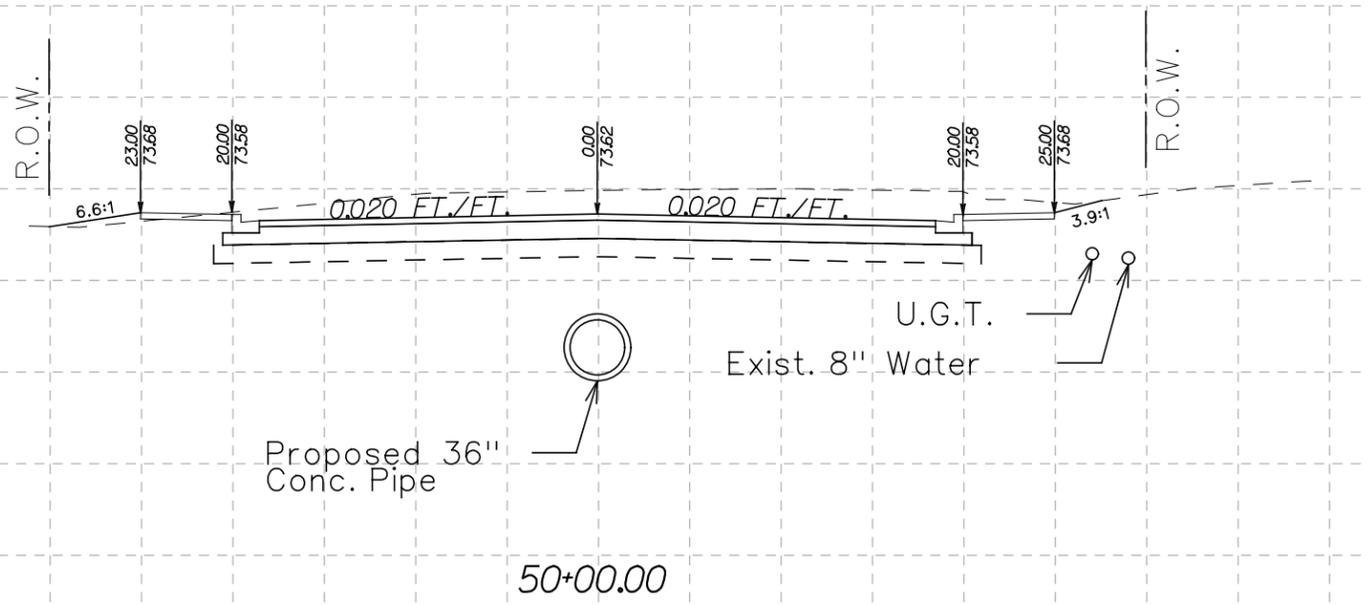
10:03:57 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



85 80 75 70 65 60 55



85 80 75 70 65 60 55

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

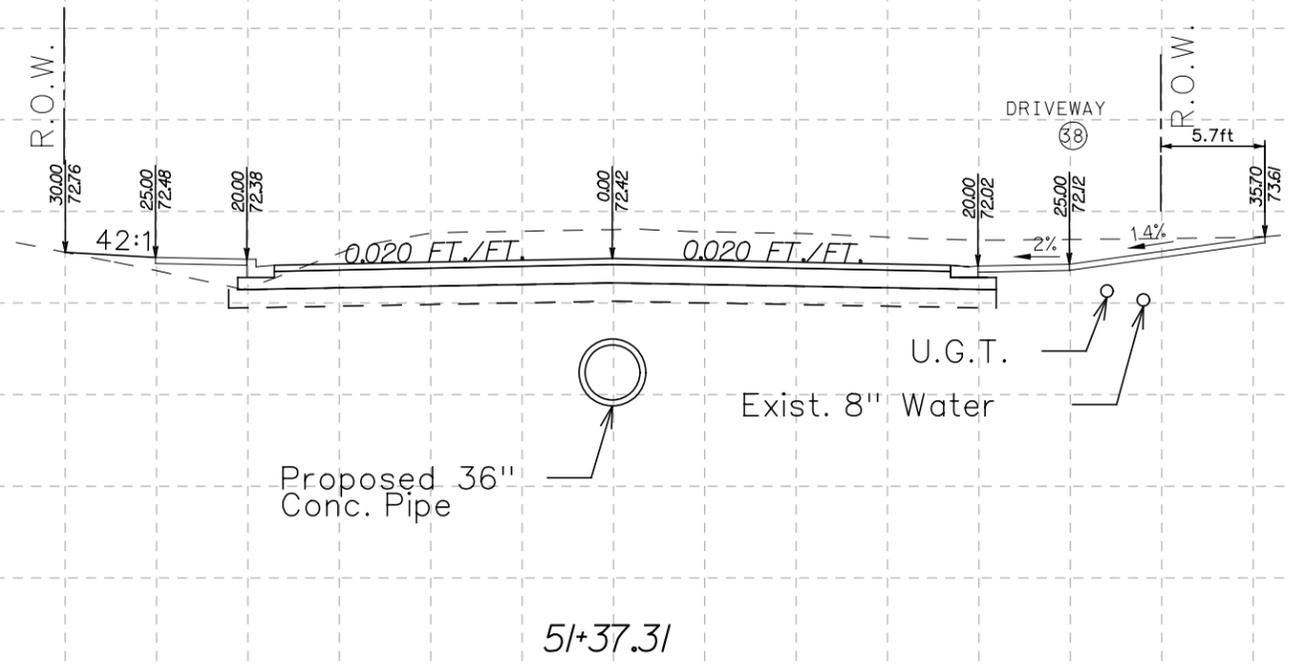
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		125
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

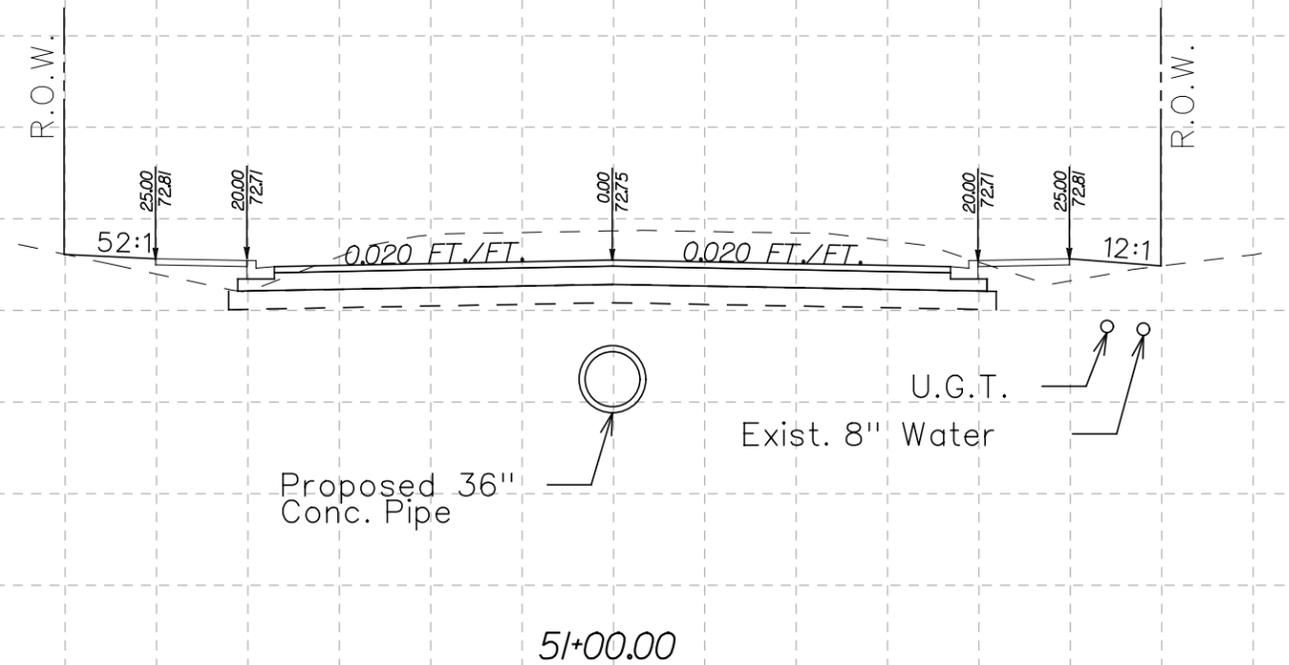
10:03:57 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



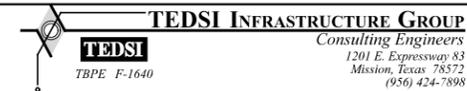
85 80 75 70 65 60 55



85 80 75 70 65 60 55

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		126
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:58 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

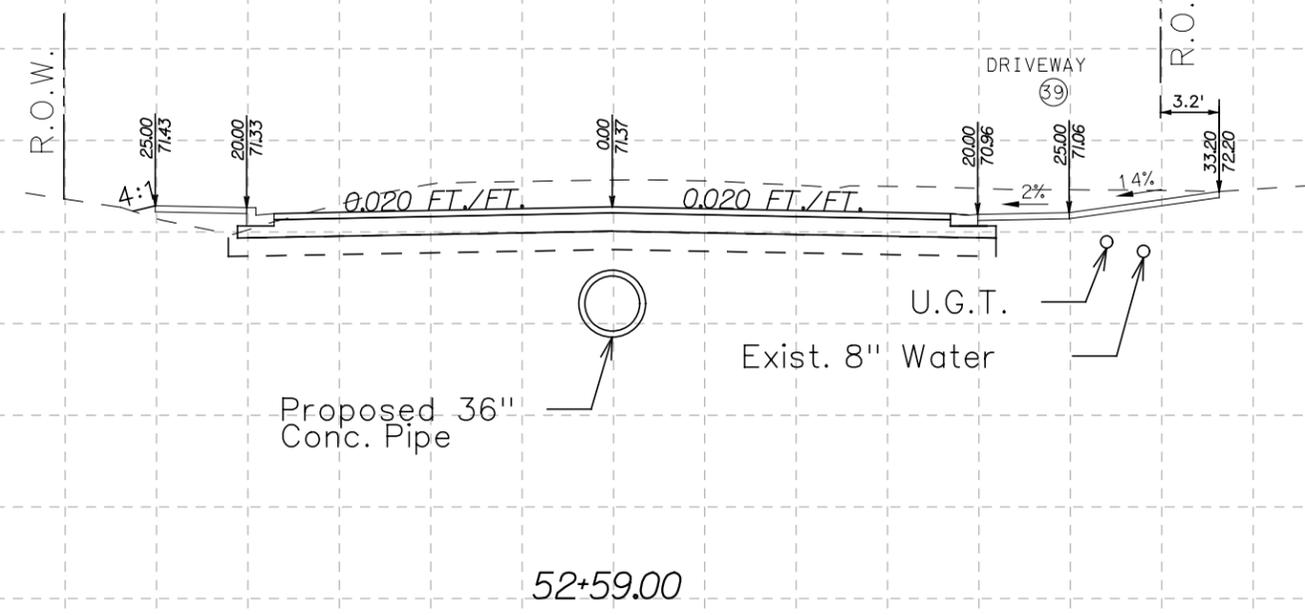
75 75

70 70

65 65

60 60

55 55



52+59.00

85 85

80 80

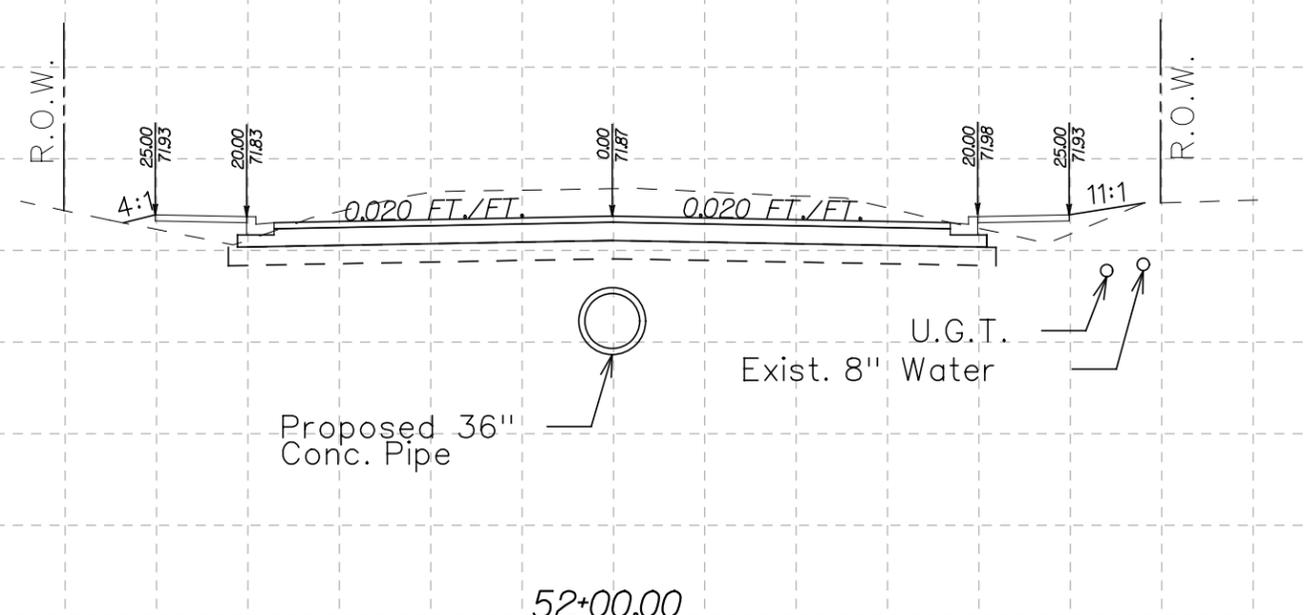
75 75

70 70

65 65

60 60

55 55



52+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



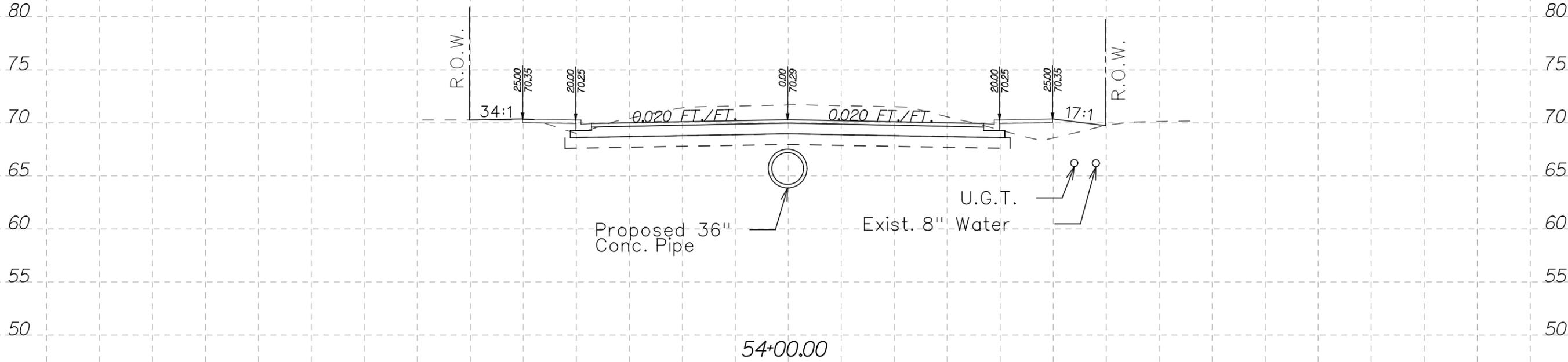
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		127
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

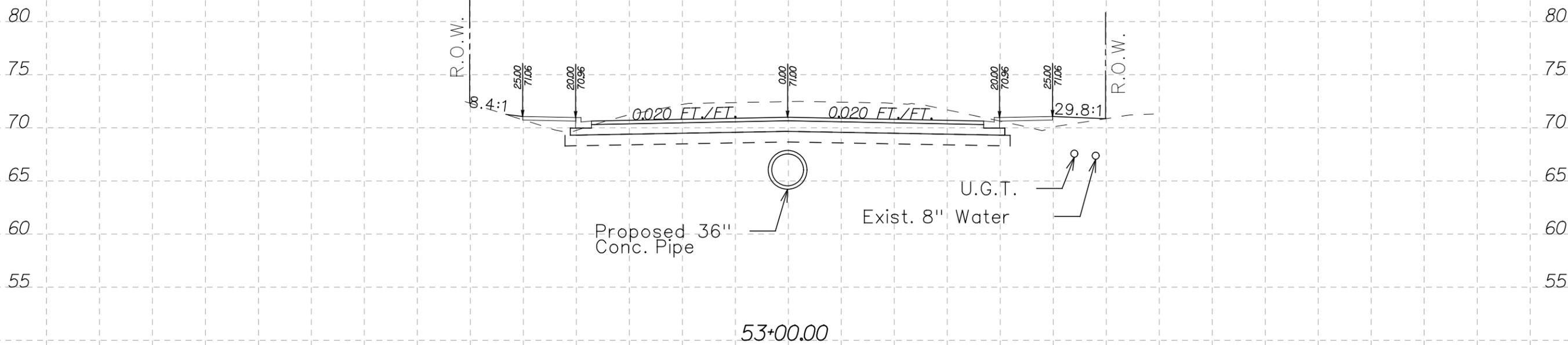
F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:58 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



54+00.00



53+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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

PROPOSED CROSS SECTIONS



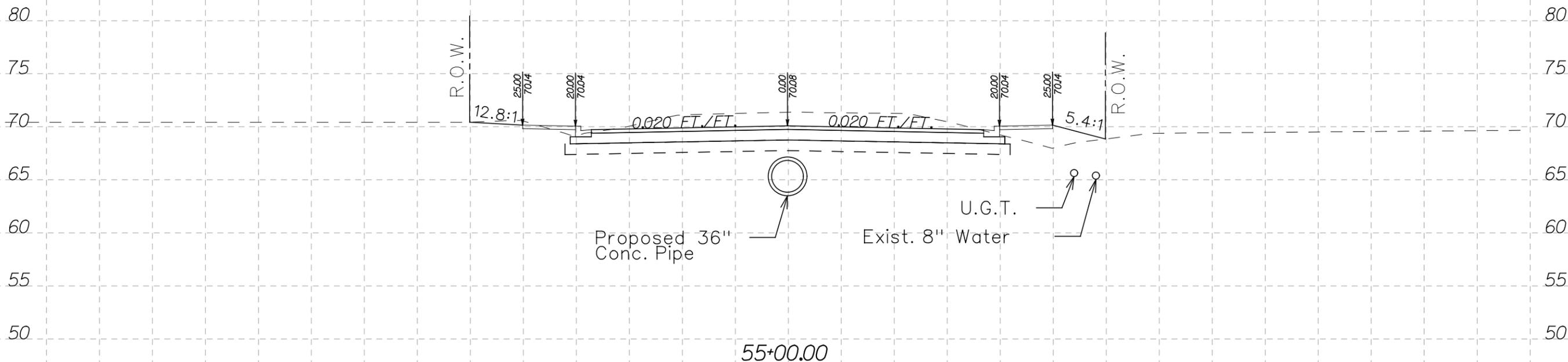
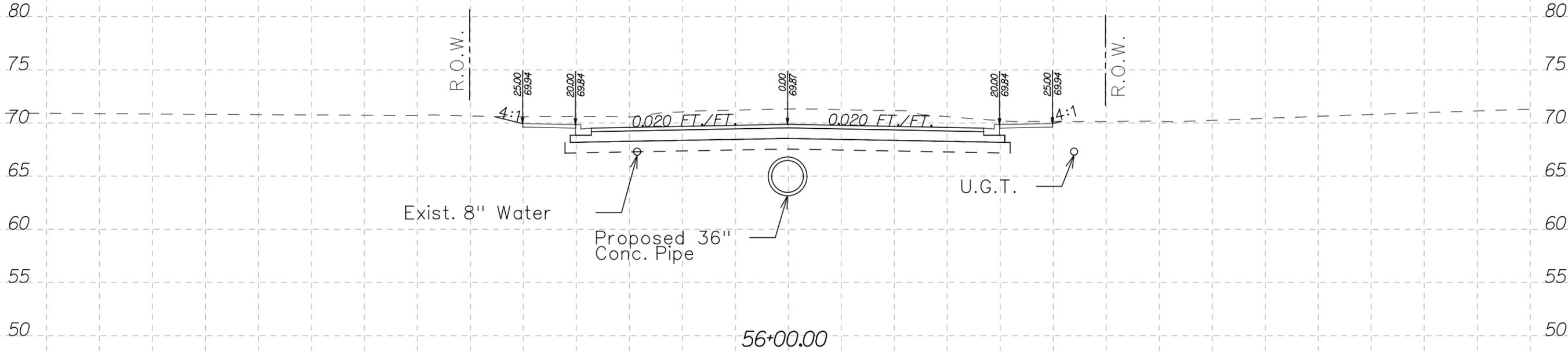
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		128
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

10:03:58 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

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

PROPOSED CROSS SECTIONS

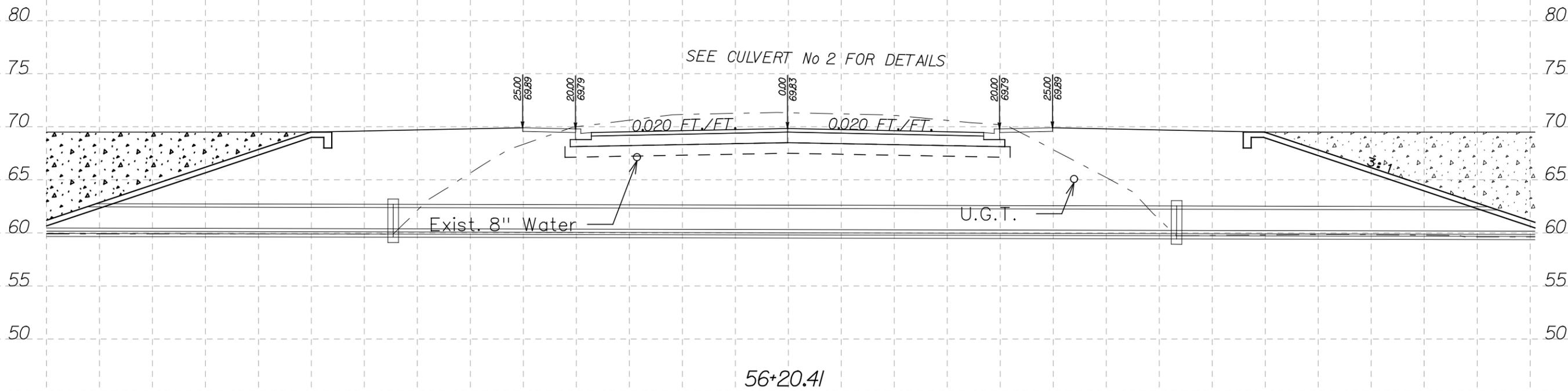
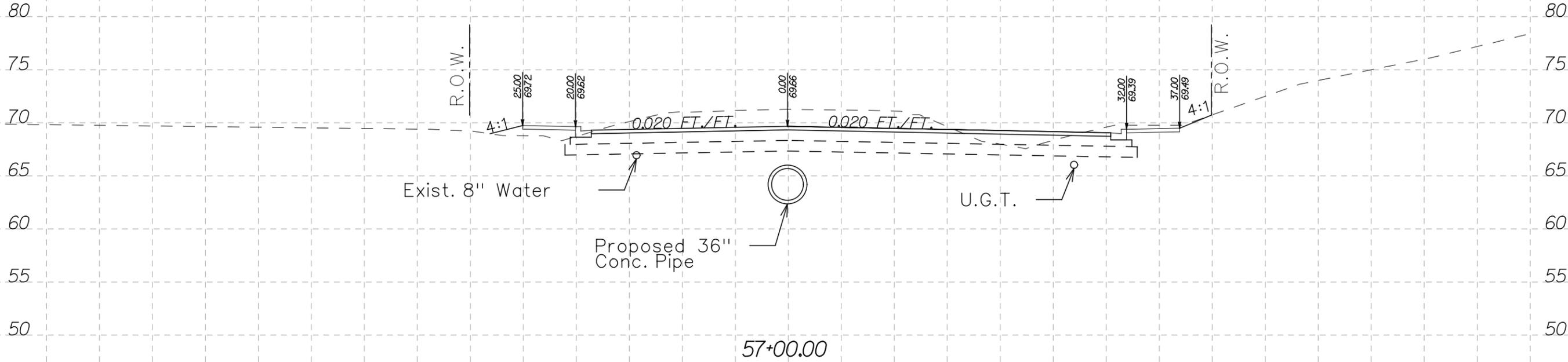


H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		129
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:58 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

TEDSI INFRASTRUCTURE GROUP
TEDSI Consulting Engineers
 1201 E. Expressway 83
 Mission, Texas 78572
 (956) 424-7898
 TBPE F-1640

PROPOSED CROSS SECTIONS



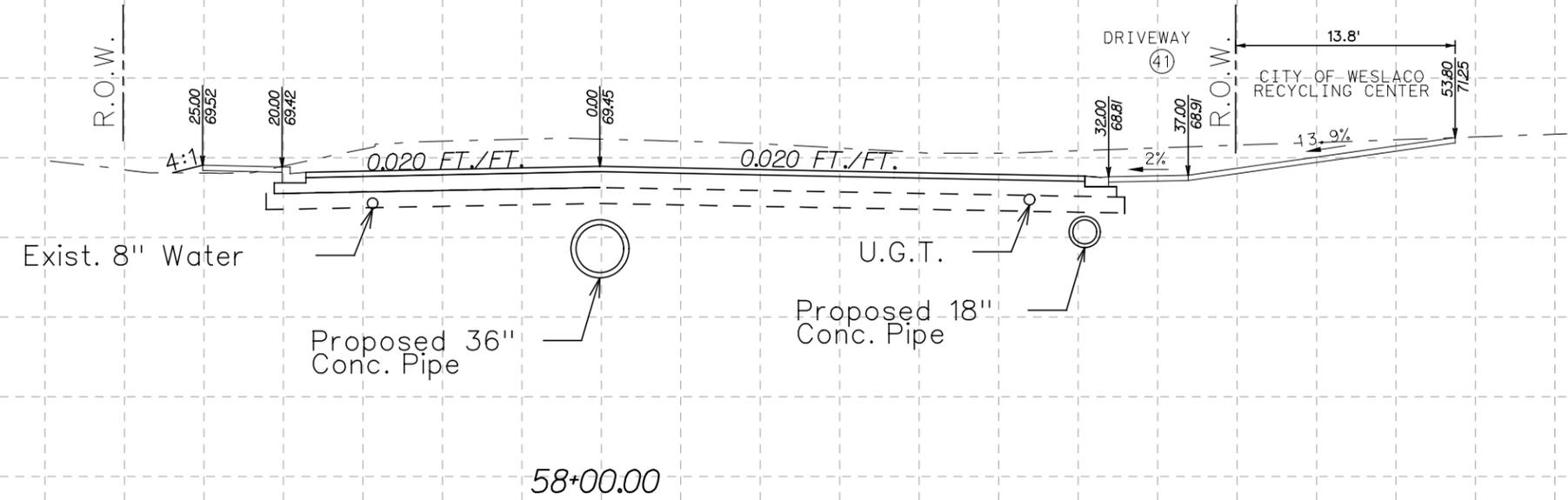
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		130
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:58 AM
2/23/2015

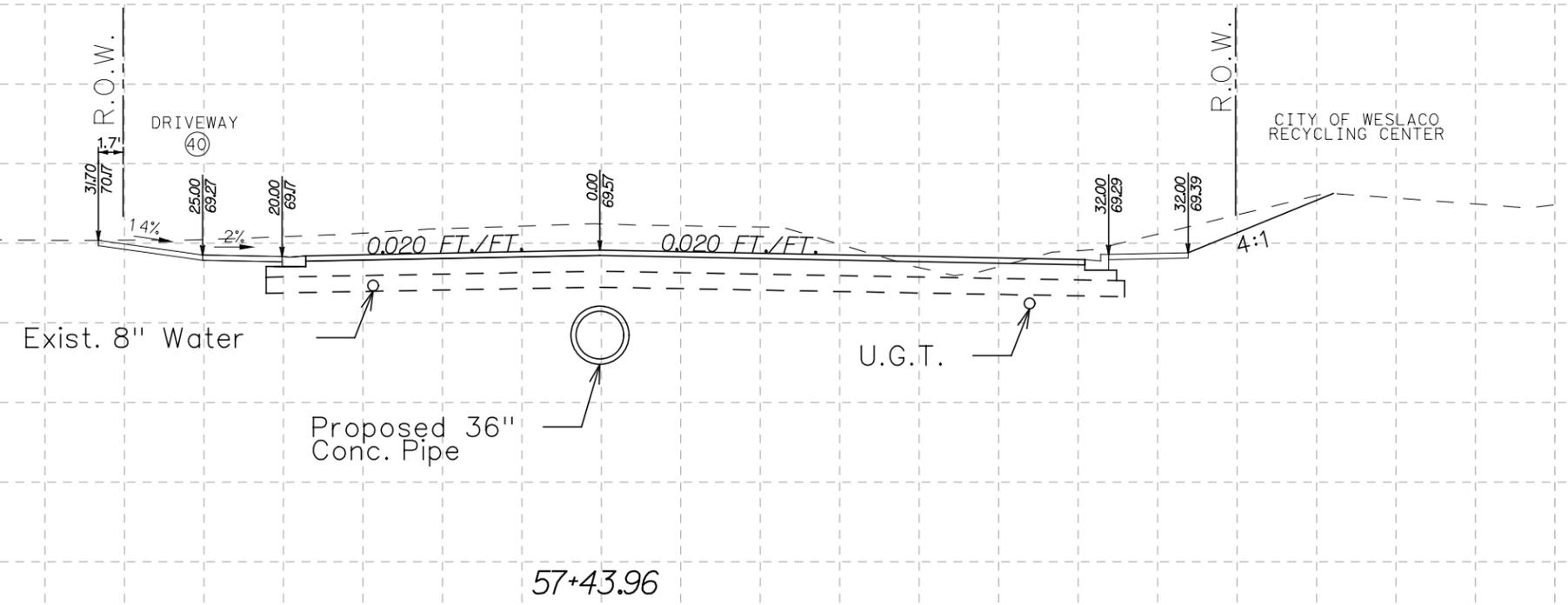
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

80 75 70 65 60 55 50



58+00.00

80 75 70 65 60 55 50



57+43.96

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

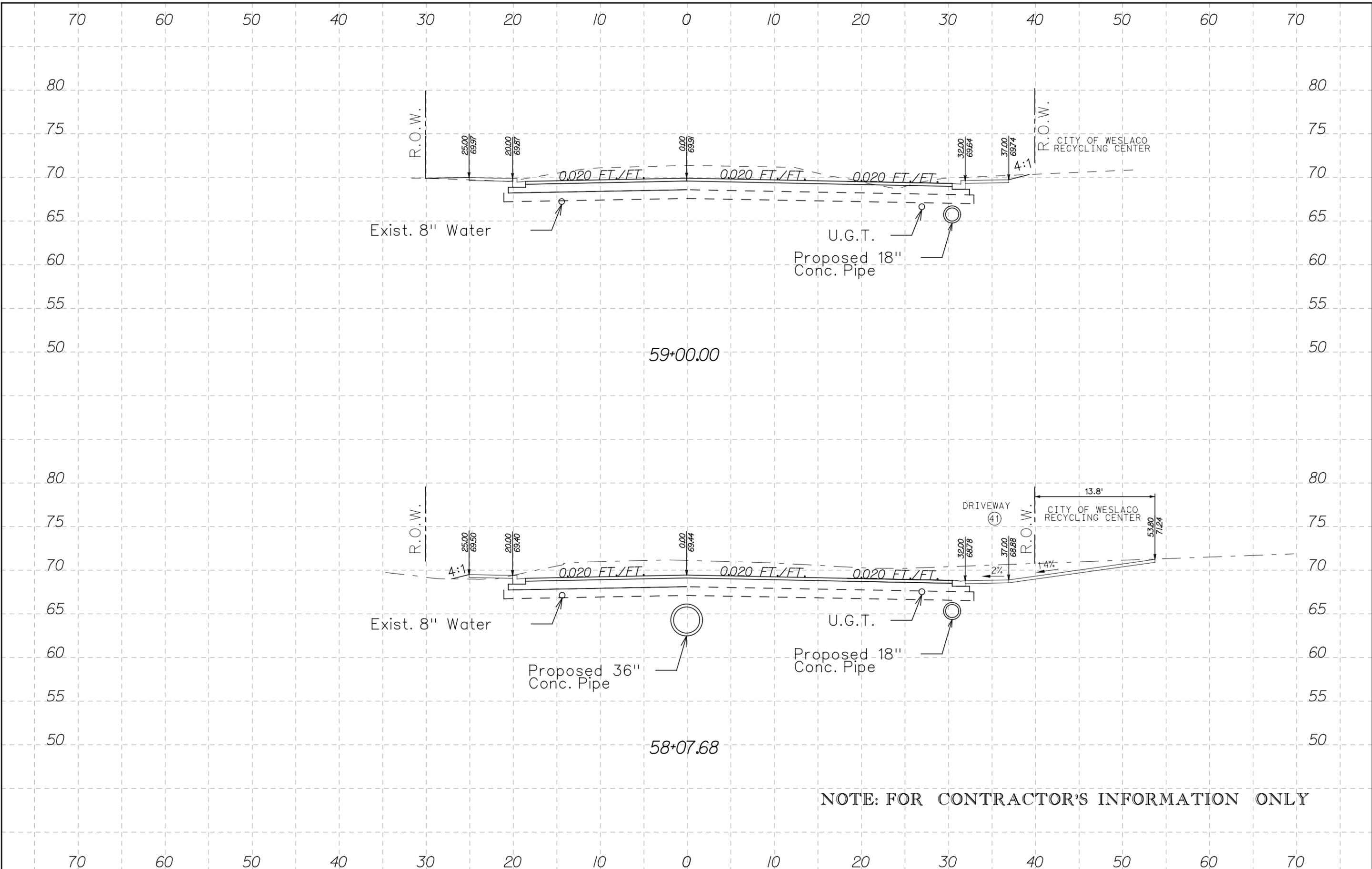
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		131
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:59 AM
2/23/2015



NOTE: FOR CONTRACTOR'S INFORMATION ONLY

F:\2008\2008-0992-3 COW Border\Design\CSU\Xsec\brd-prxs.dgn

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

PROPOSED CROSS SECTIONS



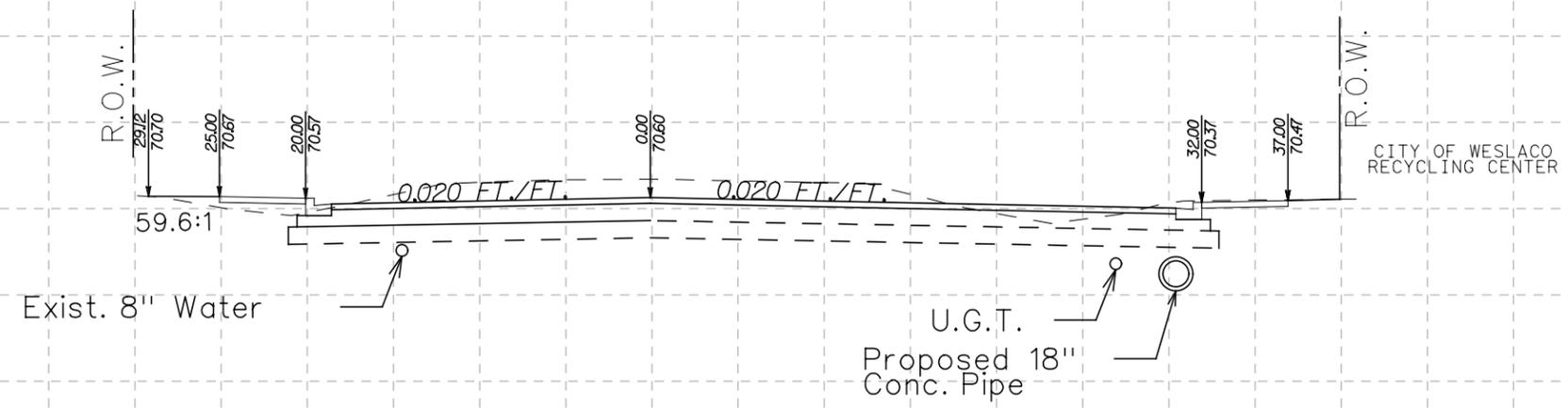
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		132
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

10:03:59 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

80 75 70 65 60 55 50



60+00.00

80 75 70 65 60 55 50



59+22.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



H: 1"=10'
V: 1"=10'

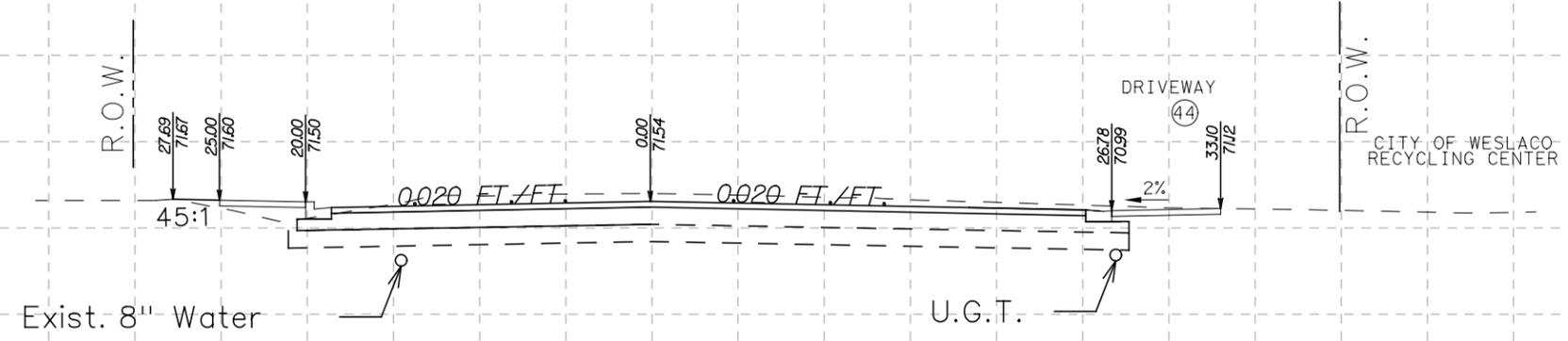
FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		133
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:59 AM
2/23/2015

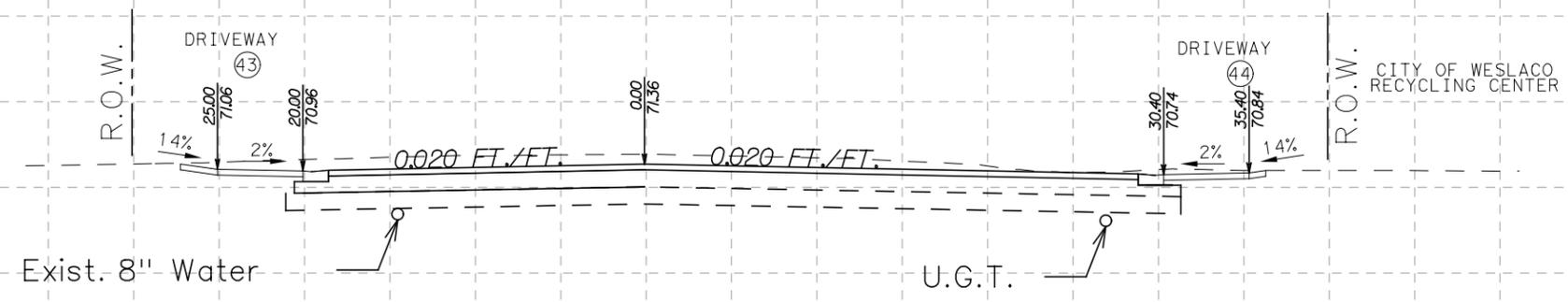
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 80 75 70 65 60 55



60+90.48

85 80 75 70 65 60 55



60+73.31

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		134
DIST.	COUNTY	CONT.	SECT. JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:03:59 AM
2/23/2015

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

85 85

80 80

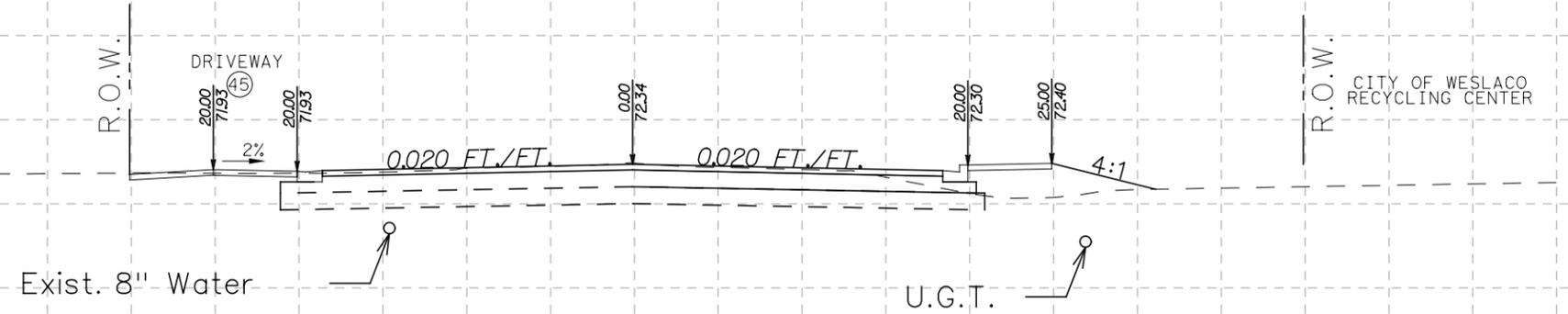
75 75

70 70

65 65

60 60

55 55



61+67.29

85 85

80 80

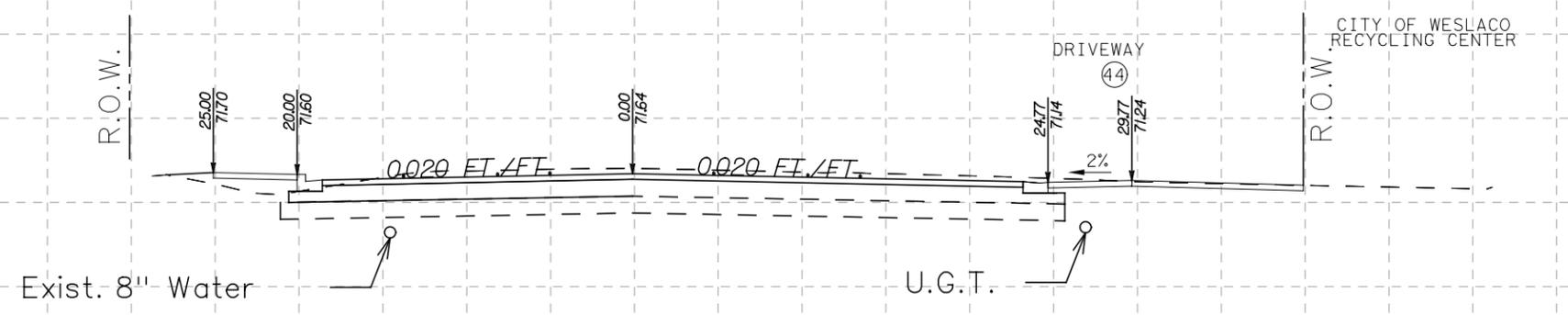
75 75

70 70

65 65

60 60

55 55



61+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED CROSS SECTIONS



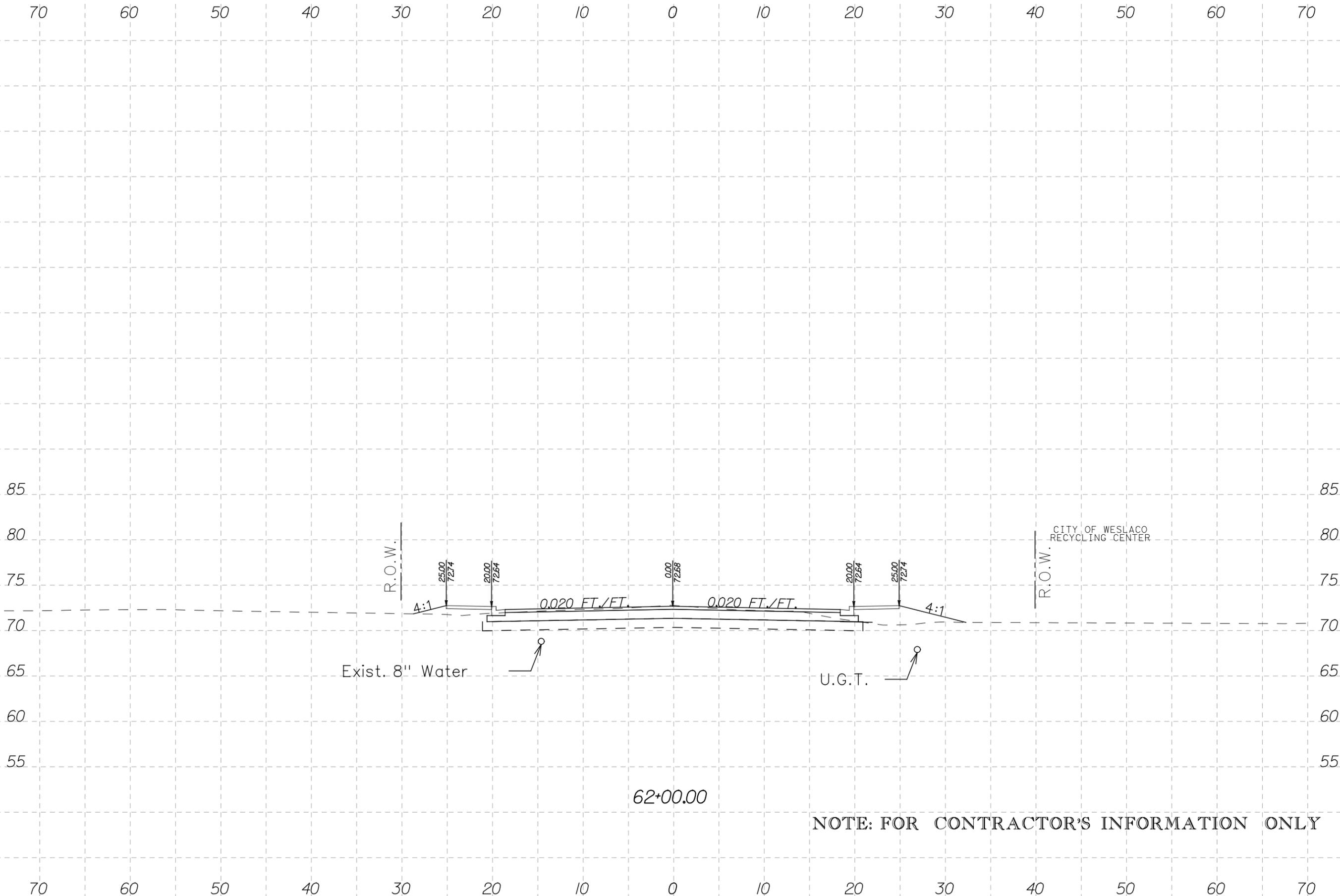
H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		135
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

F:\2008\2008-0992-3 COW Border\Design\CSJ\Xsec\brd-prxs.dgn

10:04:00 AM
2/23/2015



62+00.00

NOTE: FOR CONTRACTOR'S INFORMATION ONLY



H: 1"=10'
V: 1"=10'

FED. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS		136
DIST.	COUNTY	CONT. SECT.	JOB HWY. NO.
PHR	HIDALGO		BORDER AVENUE