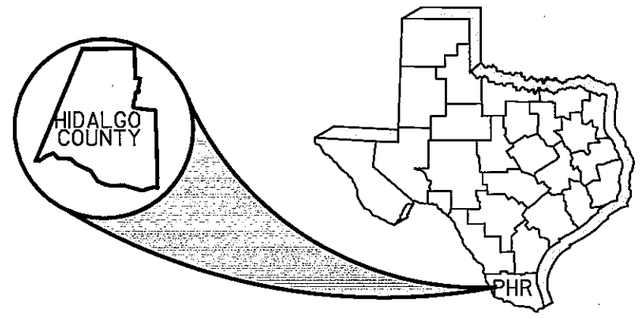
HIDALGO COUNTY PRECINCT NO. 1

CONSTRUCTION PLANS
MID-VALLEY ESTATES SUBDIVISION
BORDER ACCESS COLONIA PROJECT
ROUND III ALLOCATED
CSJ 3C-1080-461



PROJECT LIMITS:

ALMA AVE	=	832′	= 0.16 MI
CAROL AVE	=	478′	= 0.09 MI
EVELYN AVE	=	478′	= 0.09 MI
LUCILLE AVE	=	349′	= 0.07 MI

TOTAL LENGTH OF PROJECT = 2137′ = 0.41 MI
TOTAL AREA OF DISTURBED SOIL = 1.54 AC

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

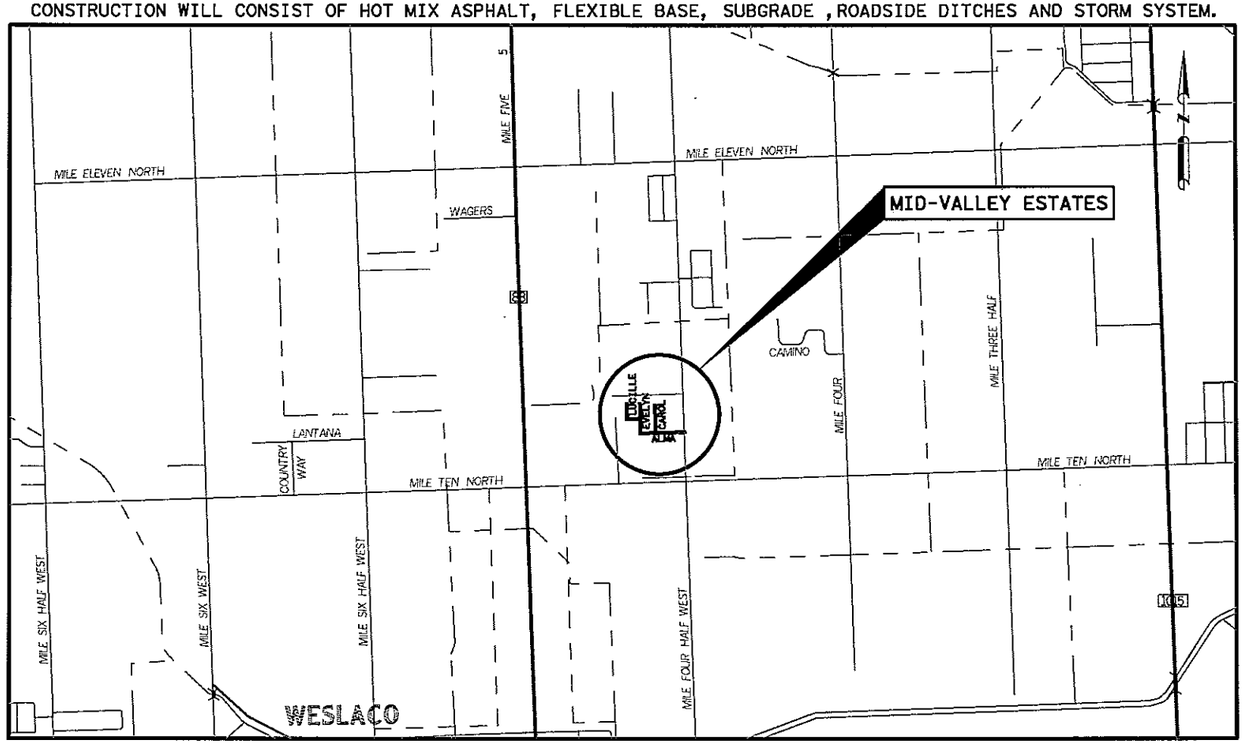
INDEX OF SHEETS

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

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

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



LOCATION MAP
N.T.S.

APPROVAL
HIDALGO COUNTY
COLONIA ACCESS PROGRAM
DATE : 10/24/2011

APPROVAL
HIDALGO COUNTY
COUNTY PRECINCT No 1
DATE :

APPROVAL
HIDALGO COUNTY PLANNER
DATE : 10/25/11
PE PLAN ADM

CONCURRENCE:
HIDALGO COUNTY DRAINAGE
DISTRICT No 1
DATE : 11/30/11
Dist. Mgr

HIDALGO COUNTY OFFICIALS

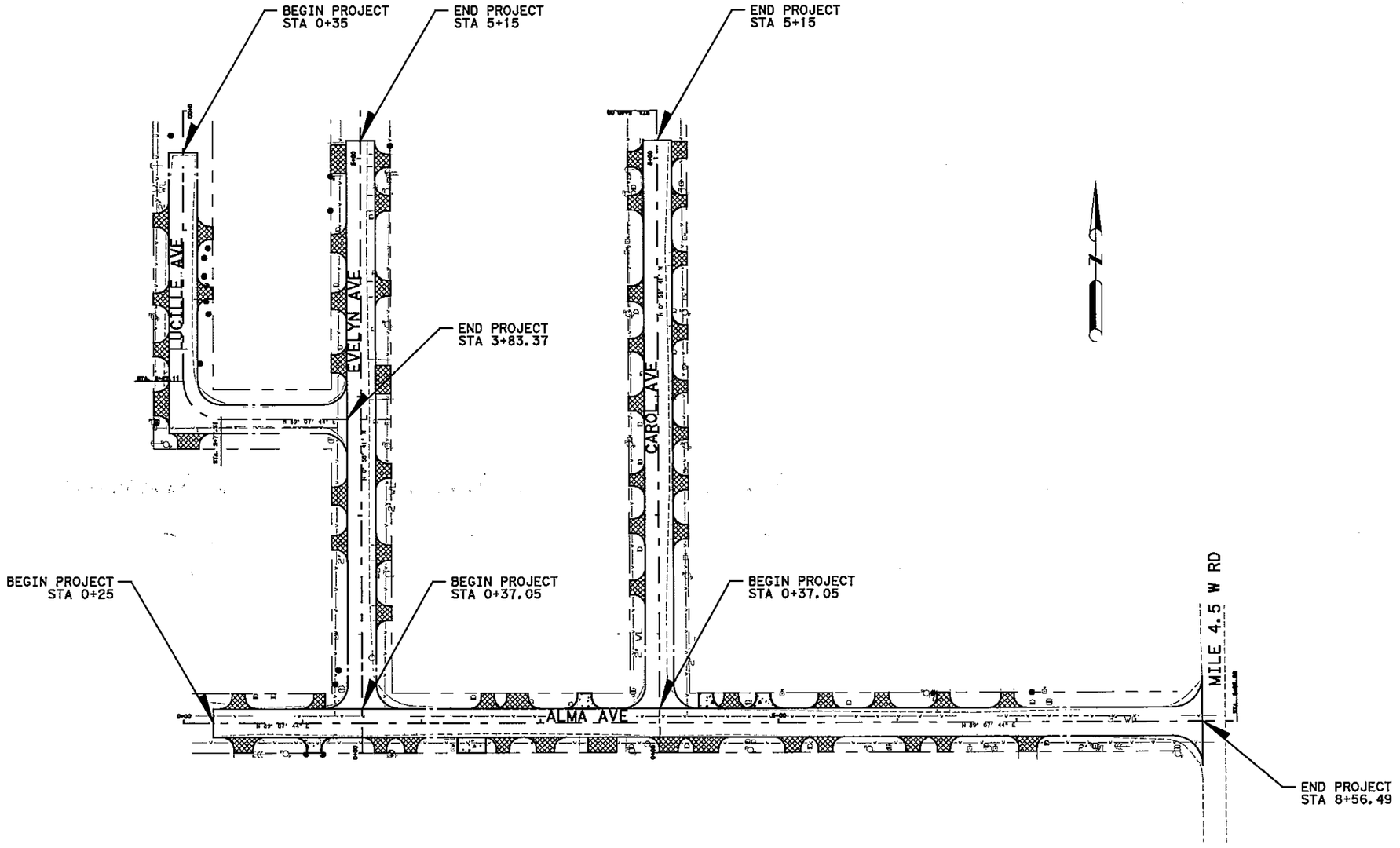
RAMON GARCIA	- COUNTY JUDGE
JOEL QUINTANILLA	- PCT 1 COMMISSIONER
HECTOR "TITO" PALACIOS	- PCT 2 COMMISSIONER
JOE M. FLORES	- PCT 3 COMMISSIONER
JOSEPH PALACIOS	- PCT 4 COMMISSIONER

THE COUNTY OF HIDALGO TEXAS

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

NO EXCEPTIONS
NO EQUATIONS
NO RAILROAD CROSSINGS

10/18/2011
6:19:57 PM
P:\2009\2009-1027-01 Hidalgo County Colonias III\Design\11 Mid-Valley Estates\CSJ\Roadway\mve-title.dgn



NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

COUNTY OF HIDALGO FIRST TEXAS

HIDALGO COUNTY

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

TEDSI
TBPE F-1640

MID VALLEY ESTATES

PROJECT LAYOUT

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			2
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ		PCT	HIGHWAY NO.
3C-1080-461		1	VAR

ROADWAY SUMMARY

ITEM	CODE	DESCRIPTION	UNIT	ALMA AVE	CAROL AVE	EVELYN AVE	LUCILLE AVE	TOTAL
0100	2002	PREPARING ROW	STA	8.32	4.78	4.78	3.49	21.37
0110	2001	EXCAVATION (ROADWAY)	CY	552	306	321	226	1405
0132	2005	EMBANKMENT (FINAL)(ORD COMP)(TY C)	CY	31	8	7	10	56
0164	2027	CELL FBR MLCH SEED(PERM)(URBAN)(CLAY)	SY	2509	1391	1385	1091	6376
⊙ 0166	2001	FERTILIZER	AC	0.52	0.29	0.29	0.23	1.33
0168	2001	VEGETATIVE WATERING	MG	126	70	70	55	321
0247	-	FL BS (CMP IN PLC)(TY E GR 4)(FNAL POS)	SY	2645	1531	1531	1178	6885
0251	2036	REWORK BS MTL (TY D)(8")(DENS CONT)	SY	2645		1531	1178	5354
0260	2006	LIME TRT(EXST MATL)(6") - SUBGRADE	SY		1652			1652
0260	2012	LIME(HYD,COM OR QK)(SLRY)OR QK(DRY) - FLEXBASE	TON	19.9	11.5	11.5	8.9	51.8
0260	2012	LIME(HYD,COM OR QK)(SLRY)OR QK(DRY) - SUBGRADE	TON		12.3			12.3
0260	2015	LIME TRT(NEW BASE)(8") - FLEXBASE	SY		1531			1531
0260	2017	LIME TRT(MIX EXST MATL&NEW BASE)(8") - REWORK	SY	2645		1531	1178	5354
0310	2001	PRIME COAT (MC-30)	GAL	529	307	307	236	1379
0340	-	D-GR HMA(METH) TY-D SAC-B PG64-22	SY	2248	1294	1294	995	5831
0500	2001	MOBILIZATION	LS					1
0502	2001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO					5
0666	2012	REFL PAV MRK TY I (W) 4" (SLD)(100MIL)	LF	1490	920	860	680	3950
0666	2048	REFL PAV MRK TY I (W) 24"(SLD)(100MIL)	LF	13	14	14	13	54
0666	2105	REFL PAV MRK TY I (Y) 4" (BRK)(100MIL)	LF	180	100	100	50	430
0666	2111	REFL PAV MRK TY I (Y) 4" (SLD)(100MIL)	LF	160	160	160	292	772

DRAINAGE SUMMARY

ITEM	CODE	DESCRIPTION	UNIT	ALMA AVE	CAROL AVE	EVELYN AVE	LUCILLE AVE	TOTAL
0402	2001	TRENCH EXCAVATION PROTECTION	LF	781		238		1019
0464	2003	RC PIPE (CL III)(18 IN)	LF		36		40	76
★ 0464	2005	RC PIPE (CL III)(24 IN)	LF	210		208		418
★ 0464	2007	RC PIPE (CL III)(30 IN)	LF	561				561
★ 0465	2003	INLET (COMPL)(TY H)	EA	2		2		4
★ 0465	2005	MANH (COMPL)(TY M)	EA	1				1
★ 0465	2013	MANH (COMPL)(TY A)	EA	2		1		3
0506	2034	TEMPORARY SEDIMENT CONTROL FENCE	LF	52	39	52	26	169
0530	2010	DRIVEWAY (CONC)	SY	124				124
0530	2011	DRIVEWAY (ACP)	SY	532	354	338	171	1395
0556	-	15" ADS CORRUGATED PIPE	LF	705	320	295	155	1475

NOTES:

⊙ FOR CONTRACTOR'S INFORMATION ONLY. ITEM WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

★ TRENCH PROTECTION REQUIRED

APPLICATION RATES:

HOT MIX ASPHALT - 1.5" = 171 LB/SY
PRIME COAT - 0.2 GAL/SY
LIME (NEW AND REWORK FLEXBASE) - 2% BY WT
LIME (SUBGRADE) - 3% BY WT
FLEXBASE WT - 3375 LB/CY (APPROX)
SUBGRADE WT - 2970 LB/CY (APPROX)

NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

SUMMARY OF QUANTITIES

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		3

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

GENERAL NOTES AND SPECIFICATION DATA

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

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

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

ITEM 5. Control of the Work

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

ITEM 8. Prosecution and Progress

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

ITEM 132. Embankment

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

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

2. Alternative select fill material

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

ITEMS 134. Backfilling Pavement Edges

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

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

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

ITEM 247. Flexible Base

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

Blended material for Flexible Base TY E GR 4

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

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

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

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

BEFORE LIME IS ADDED

Retained on Sq. Sieve	Percent Retained
2"	0
½"	20-60
No. 4	40-75
No. 40	70-90
Max. PI:	15
Max Wet Ball PI:	15
Wet Ball Mill Max Amount:	20
Min. Comp. Strength PSI	150 at 15 psi lateral pressure

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

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

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

Two (2) percent lime (by weight) will be incorporated into the Flexible Base in the field at the owner's expense in accordance with the provisions of Item 260

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

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

ITEM 260. Lime Treatment (Road Mixed)

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

The slurry method of applying lime will be required, except when the lime is to be added to naturally wet materials as directed by the Engineer.

For this project, the Engineer will direct a random number of lime trucks to be check weighed.

The percent of density as determined by Tex-121-E for the new and salvage Flexible Base shall be a minimum of 98% for all courses.

ITEM 300. Asphalt's, Oils and Emulsions

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

ITEM 310. Prime Coat (Cutback Asphaltic Material)

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

ITEM 400. Excavation and Backfill for Structures

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

ITEM 464. Reinforced Concrete Pipe

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

Do not use mortar joints.

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

ITEM 496. Removing Old Structures

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

ITEM 502. Barricades, Signs and Traffic Handling

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

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

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

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

ITEM 504. Field Office and Laboratory

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

ITEM 530. Driveways and Turnouts

Prime coat shall meet the requirements of Item 310.

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

MISC

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

The contractor shall be responsible for posting Small Construction Site Notice and any additional permits required by T.E.C.Q.

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

THE COUNTY OF HIDALGO TEXAS

HIDALGO COUNTY

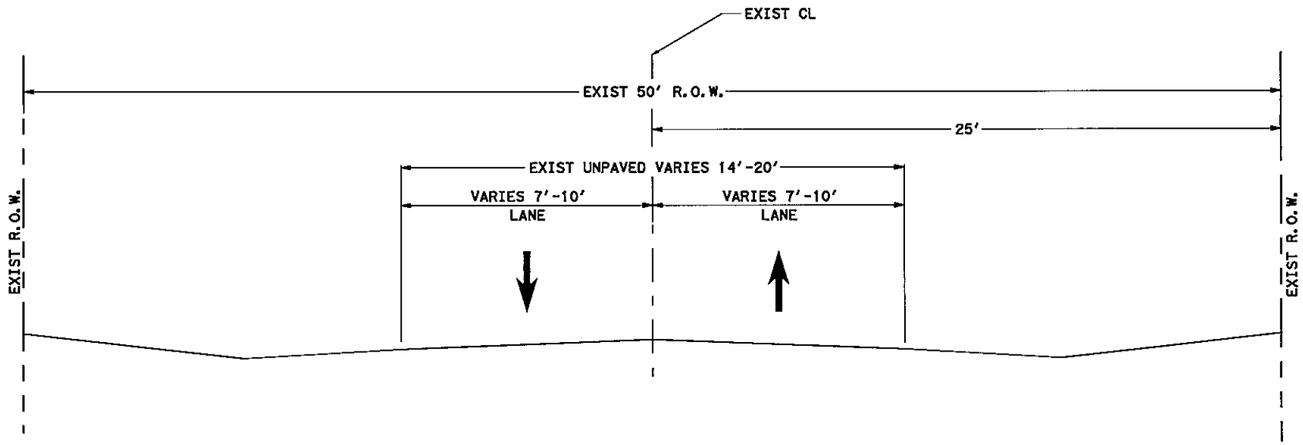
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7898
TEDSI
TBPE F-1640

MID VALLEY ESTATES

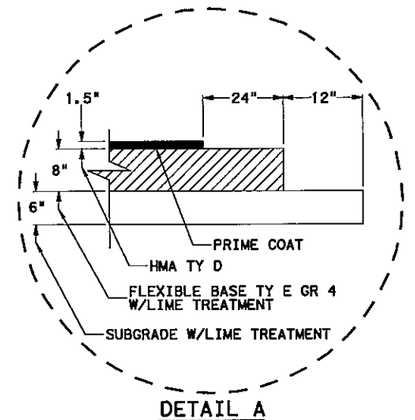
GENERAL NOTES

SHEET 1 OF 1

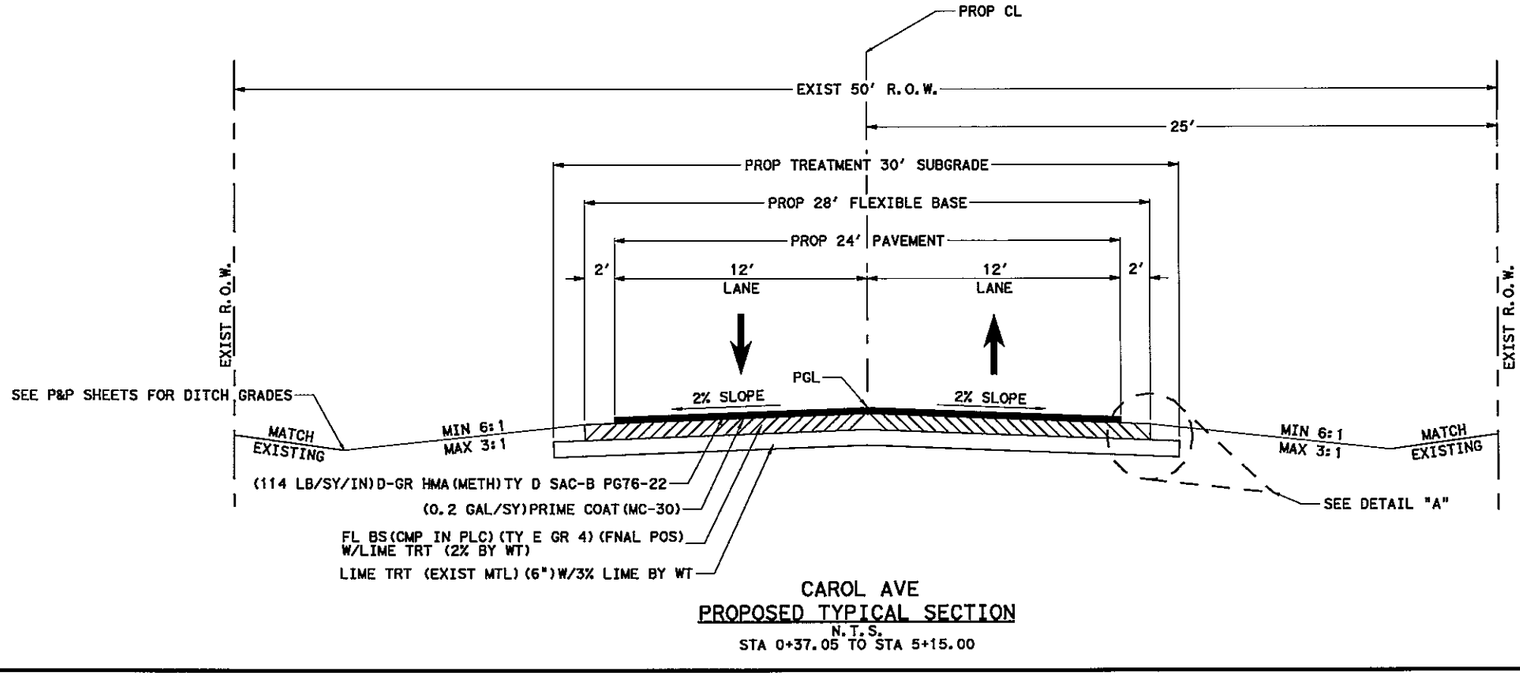
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			4
STATE	DIST.	COUNTY	
TEXAS	PHR	HIDALGO	
CSJ		PCT	HIGHWAY NO.
3C-1080-461		1	VAR



CAROL AVE
EXISTING TYPICAL SECTION
N.T.S.
STA 0+37.05 TO STA 5+15.00



DETAIL A
N.T.S.



CAROL AVE
PROPOSED TYPICAL SECTION
N.T.S.
STA 0+37.05 TO STA 5+15.00

NOTES:

PGL - PROFILE GRADE LINE

PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON THE PROPOSED ROADWAY CENTERLINE.

ALL GRADING SHALL BE WITHIN THE EXISTING RIGHT OF WAY LIMITS.

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

THE SUBGRADE SHALL BE SHAPED, BLADED, ROLLED AND PROOF ROLLED A MINIMUM DISTANCE OF 12" BEYOND THE EDGE OF THE PROPOSED BASE COURSE.

THE COMPLETE BASE SHALL BE PROOF ROLLED BEFORE THE EARTH SHOULDER IS SHAPED. FINAL COMPACTION WILL BE DONE OVER BASE AND EDGE OF SHOULDER.

PROOF ROLLING WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.

A STATION EQUAL TO 100 FT.

APPLICATION RATES AS FOLLOWS:

HOT MIX ASPHALT - 1" = 114 LB/SY
PRIME COAT - 0.2 GAL/SY
LIME (FLEXBASE) - 2% BY WT
LIME (SUBGRADE) - 3% BY WT
FLEXBASE WT - 3375 LB/CY (APPROX)
SUBGRADE WT - 2970 LB/CY (APPROX)

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

COUNTY OF HIDALGO TEXAS

HIDALGO COUNTY

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

MID VALLEY ESTATES

TYPICAL SECTIONS

N.T.S.

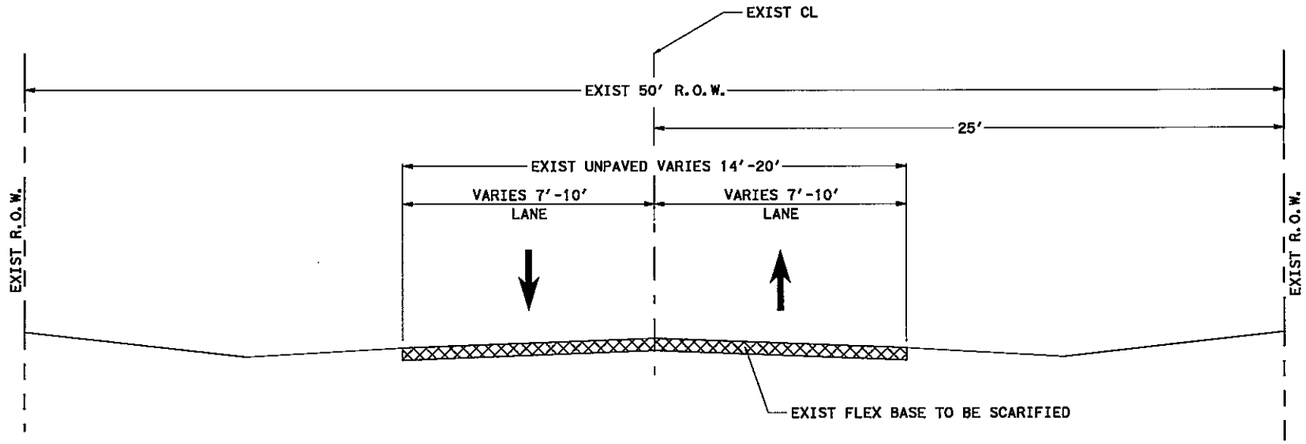
SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		5

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

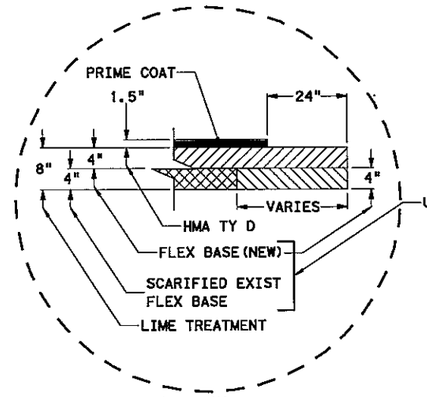
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
5:40:29 PM
p:\2009\2009-1027-01 hidalgo county colonias !!!\design\11 mid-valley estates\os]\Roadway\mve-typ.dgn

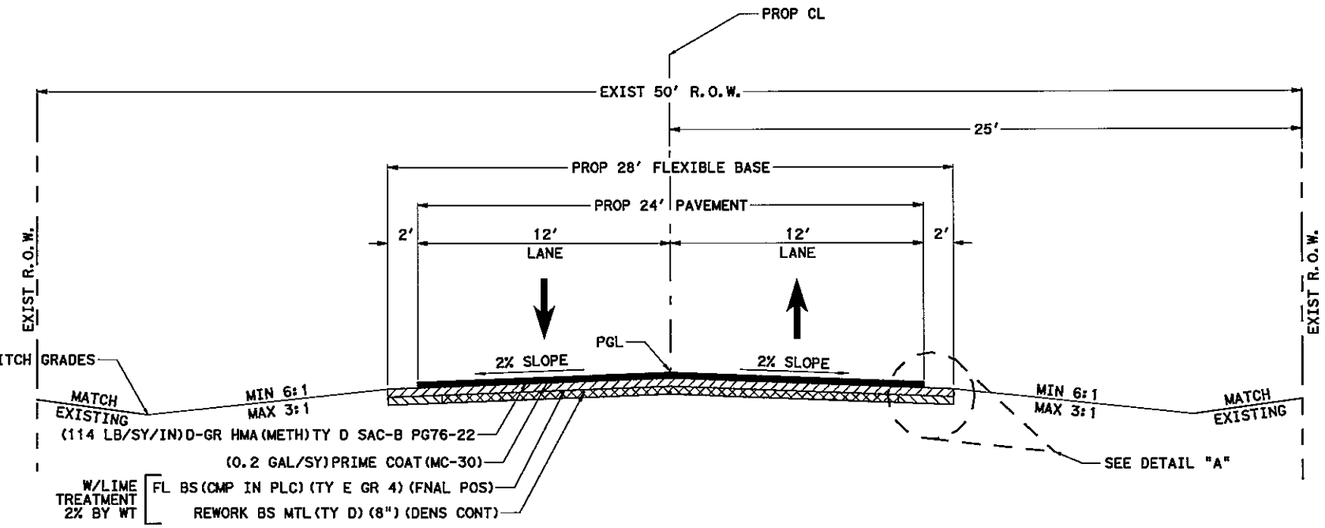


ALMA AVE - STA 0+25.00 TO STA 8+56.49
EVELYN AVE - STA 0+37.05 TO STA 5+15.00
LUCILLE AVE - STA 0+35.00 TO STA 3+83.37

EXISTING TYPICAL SECTION
N.T.S.



DETAIL A
N.T.S.



ALMA AVE - STA 0+25.00 TO STA 8+56.49
EVELYN AVE - STA 0+37.05 TO STA 5+15.00
LUCILLE AVE - STA 0+35.00 TO STA 3+83.37

PROPOSED TYPICAL SECTION
N.T.S.

NOTES:

PGL - PROFILE GRADE LINE

PERMISSIBLE CONSTRUCTION JOINTS SHALL FALL ON THE PROPOSED ROADWAY CENTERLINE.

ALL GRADING SHALL BE WITHIN THE EXISTING RIGHT OF WAY LIMITS.

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

THE SUBGRADE SHALL BE SHAPED, BLADED, ROLLED AND PROOF ROLLED A MINIMUM DISTANCE OF 12" BEYOND THE EDGE OF THE PROPOSED BASE COURSE.

THE COMPLETE BASE SHALL BE PROOF ROLLED BEFORE THE EARTH SHOULDER IS SHAPED. FINAL COMPACTION WILL BE DONE OVER BASE AND EDGE OF SHOULDER.

PROOF ROLLING WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.

A STATION EQUAL TO 100 FT.

APPLICATION RATES AS FOLLOWS:

HOT MIX ASPHALT - 1" = 114 LB/SY
PRIME COAT - 0.2 GAL/SY
LIME (FLEXBASE) - 2% BY WT
LIME (SUBGRADE) - 3% BY WT
FLEXBASE WT - 3375 LB/CY (APPROX)
SUBGRADE WT - 2970 LB/CY (APPROX)

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

TYPICAL SECTIONS

N.T.S. SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		6

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
5:40:32 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\ca]\Roadway\mve-typ.dgn

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED
PROFESSIONAL ENGINEER

10/18/2011

COUNTY OF HIDALGO THE TEXAS

HIDALGO COUNTY

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

MID VALLEY ESTATES

TRAFFIC CONTROL PLAN
GENERAL NOTES

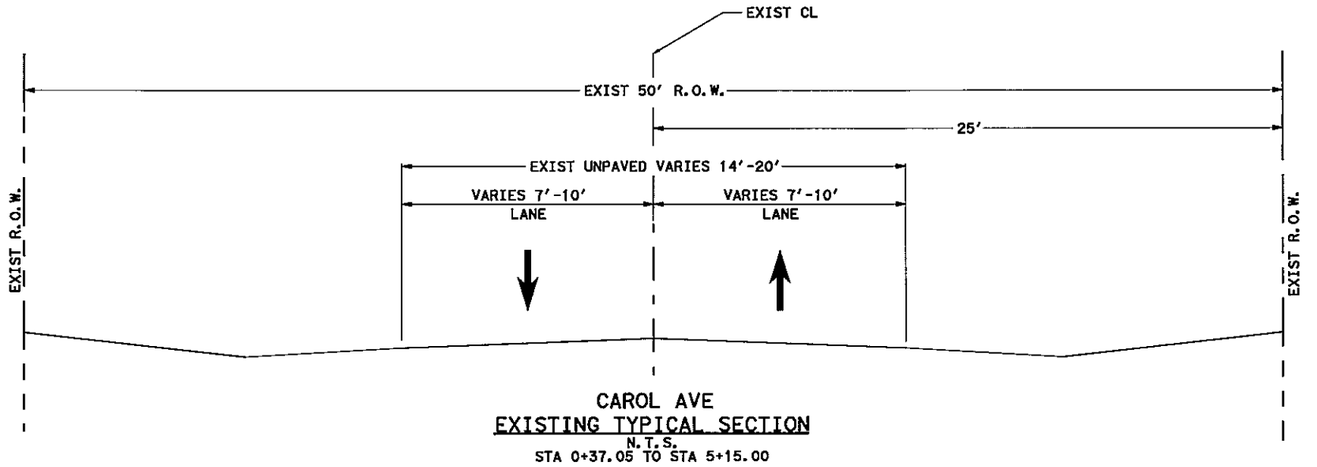
N. T. S.

SHEET 1 OF 1

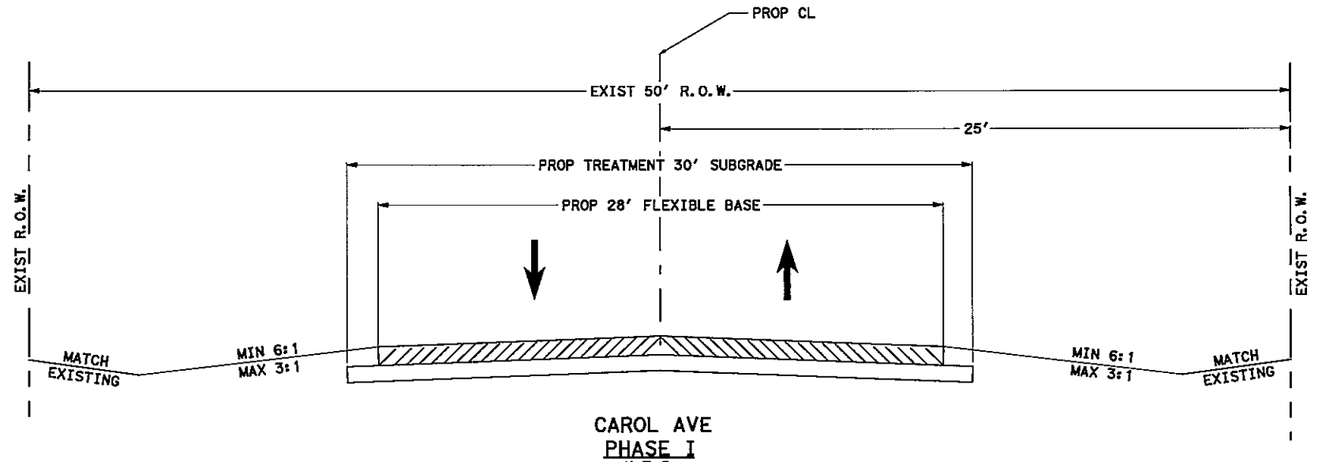
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		7

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

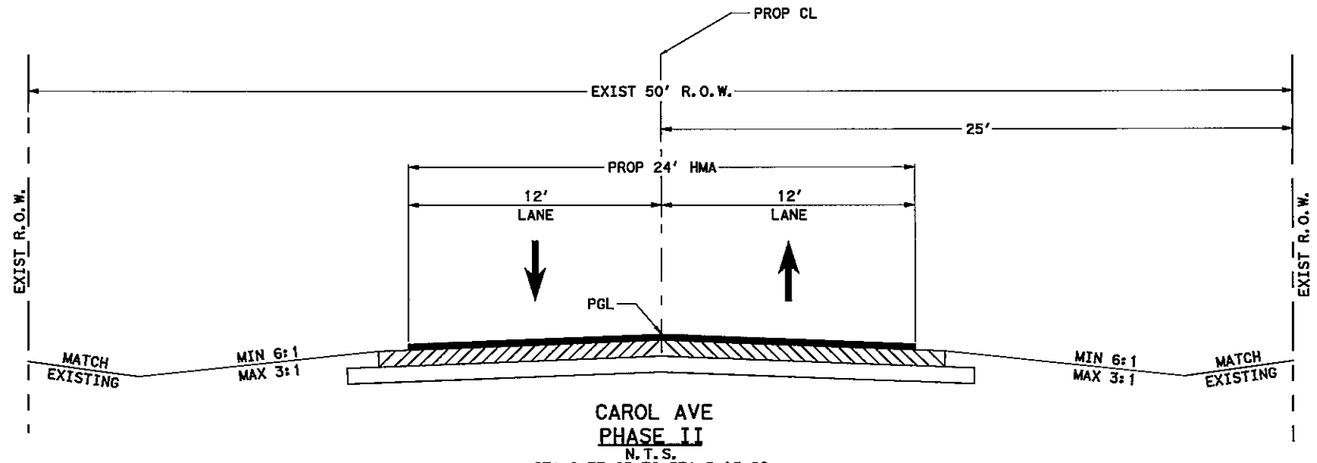
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR



CAROL AVE
EXISTING TYPICAL SECTION
N.T.S.
STA 0+37.05 TO STA 5+15.00



CAROL AVE
PHASE I
N.T.S.
STA 0+37.05 TO STA 5+15.00



CAROL AVE
PHASE II
N.T.S.
STA 0+37.05 TO STA 5+15.00

SEQUENCE OF CONSTRUCTION

PHASE I

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

PHASE II

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

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED
PROFESSIONAL ENGINEER

10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

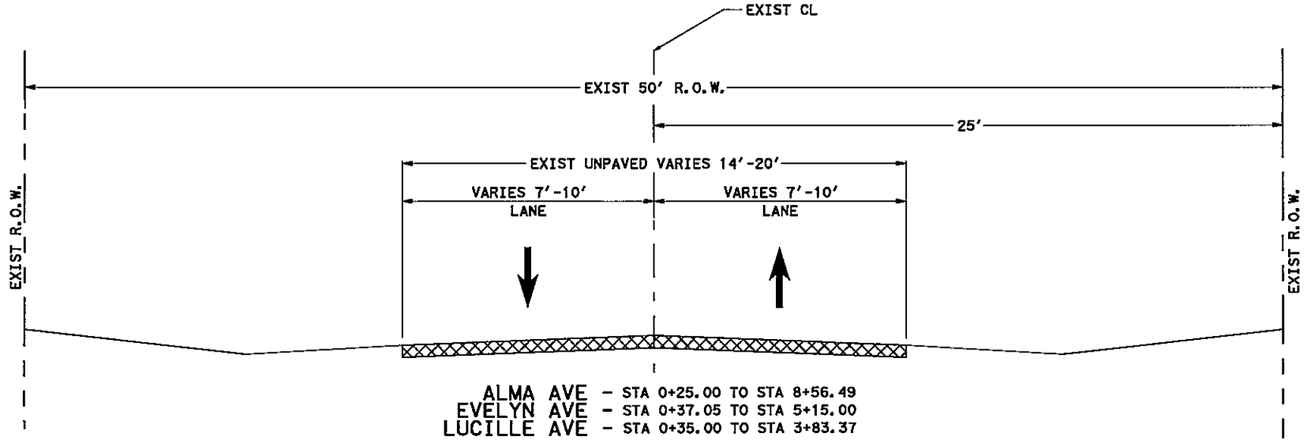
N.T.S. SHEET 1 OF 2

FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
6		8

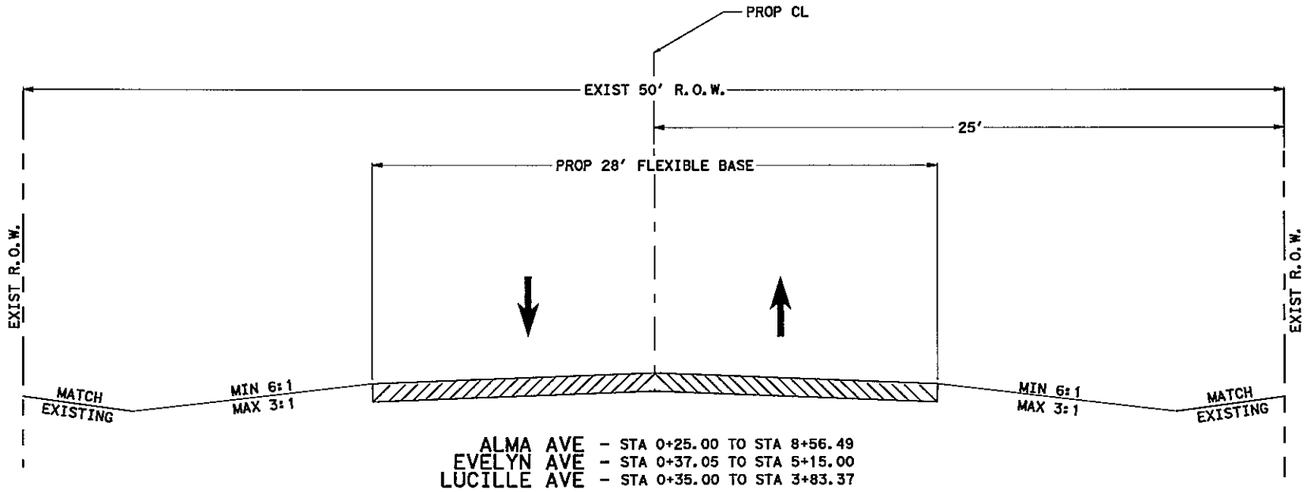
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

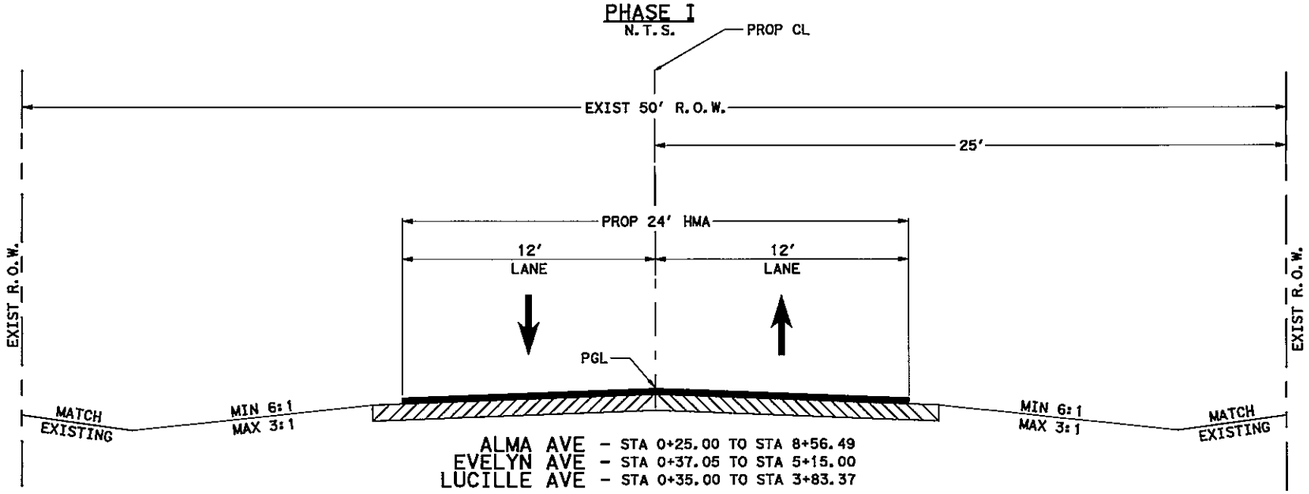
10/18/2011
5:40:45 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\sa\Roadway\mve-typ typ.dgn



EXISTING TYPICAL SECTION
N.T.S.



PHASE I
N.T.S.



PHASE II
N.T.S.

SEQUENCE OF CONSTRUCTION

PHASE I

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

PHASE II

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

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
10/18/2011

THE COUNTY OF HIDALGO TEXAS
HIDALGO COUNTY

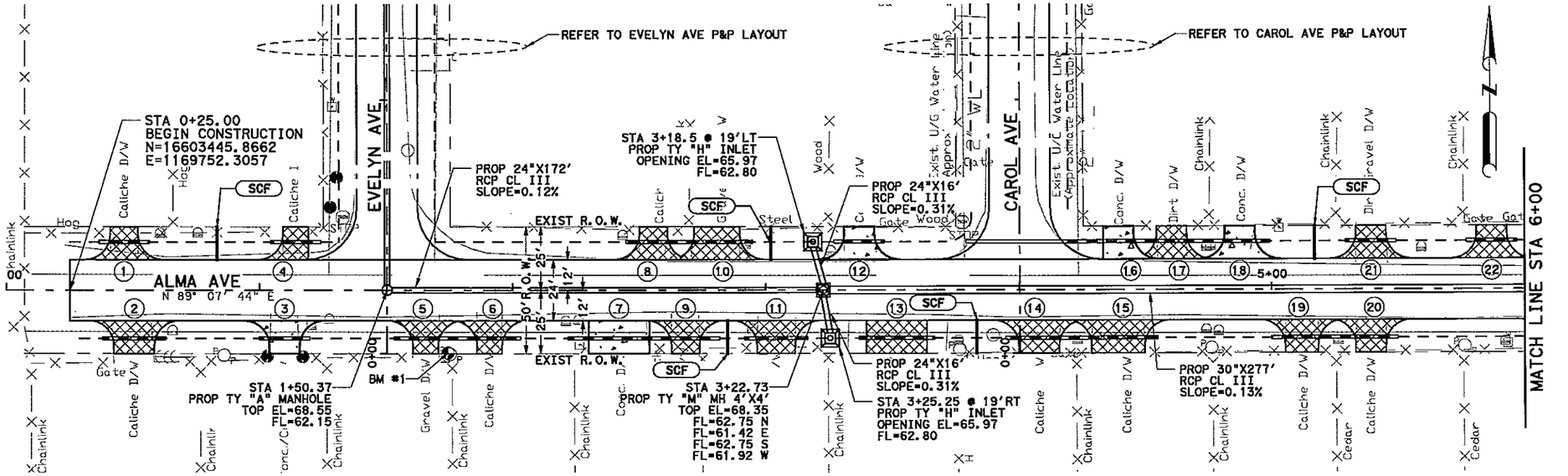
TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
1201 E. Expressway 83
Mission, Texas 78572
(956) 424-7898
TEDSI
TBPE F-1640

MID VALLEY ESTATES

TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

N.T.S. SHEET 2 OF 2

FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
6		9
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR



LEGEND

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

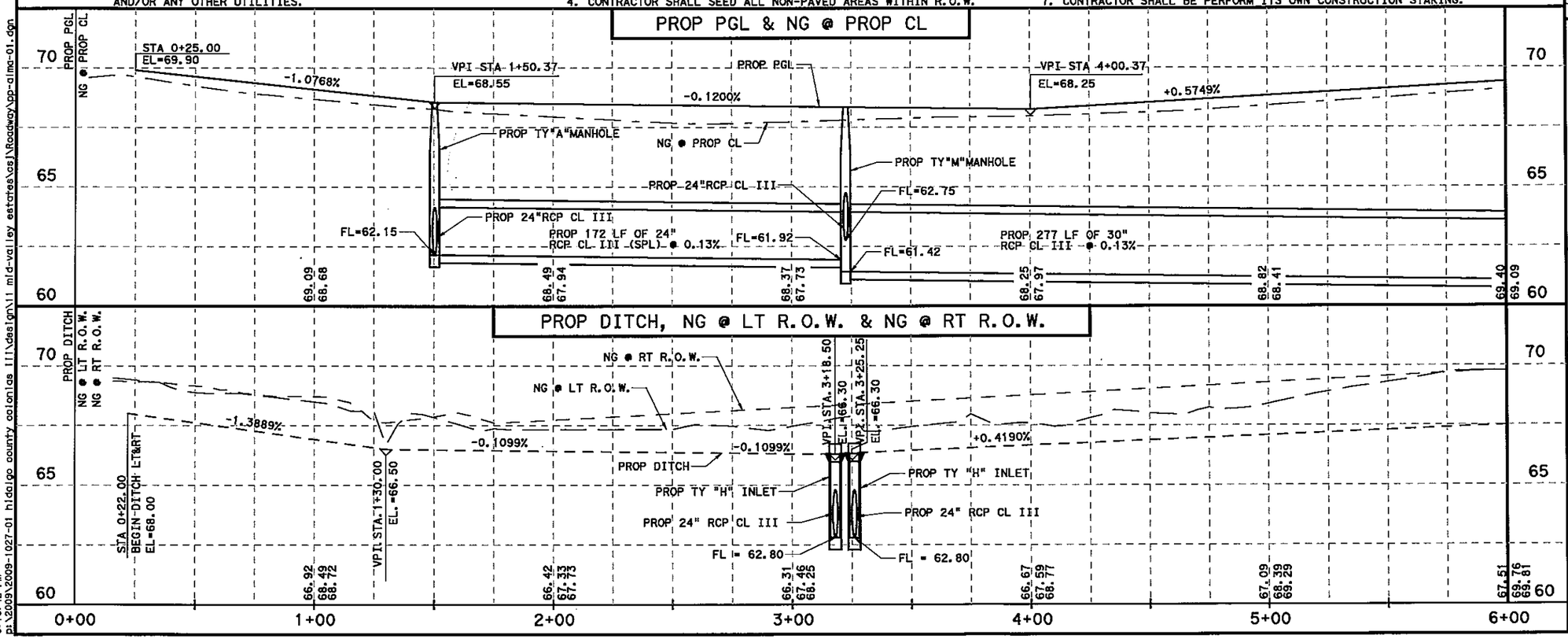
NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TREES OR OTHER OBSTRUCTIONS IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED. REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:

   RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
   COUNTY AND CITY ROADWAYS: 15"
6. STATIONS/OFFSETS MEASURED FROM CENTERLINE OF ROAD TO CENTER OF DRAINAGE STRUCTURES.
7. CONTRACTOR SHALL BE PERFORM ITS OWN CONSTRUCTION STAKING.

BM DATA:

BM #1
60D NAIL ON POWER POLE
ALMA AVE
STA 1+74.28
OFFSET = 24.8' RT
EL = 67.98'



NO.	DATE	REVISION	APP.

STATE OF TEXAS — JOSE A. SANCHEZ — 87890 — LICENSED PROFESSIONAL ENGINEER

10/18/2011

THE COUNTY OF HIDALGO — TEXAS

HIDALGO COUNTY

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

MID VALLEY ESTATES

ALMA AVE
PLAN & PROFILE

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

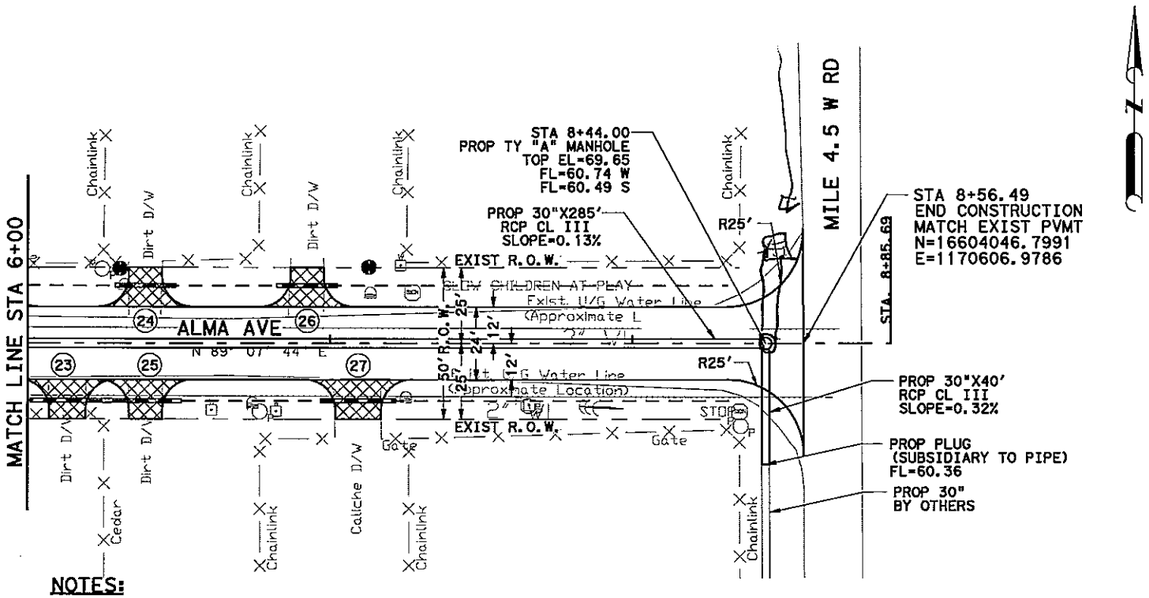
SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		10

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:16:42 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\as\Roadway\pp-alma-01.dgn



LEGEND

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

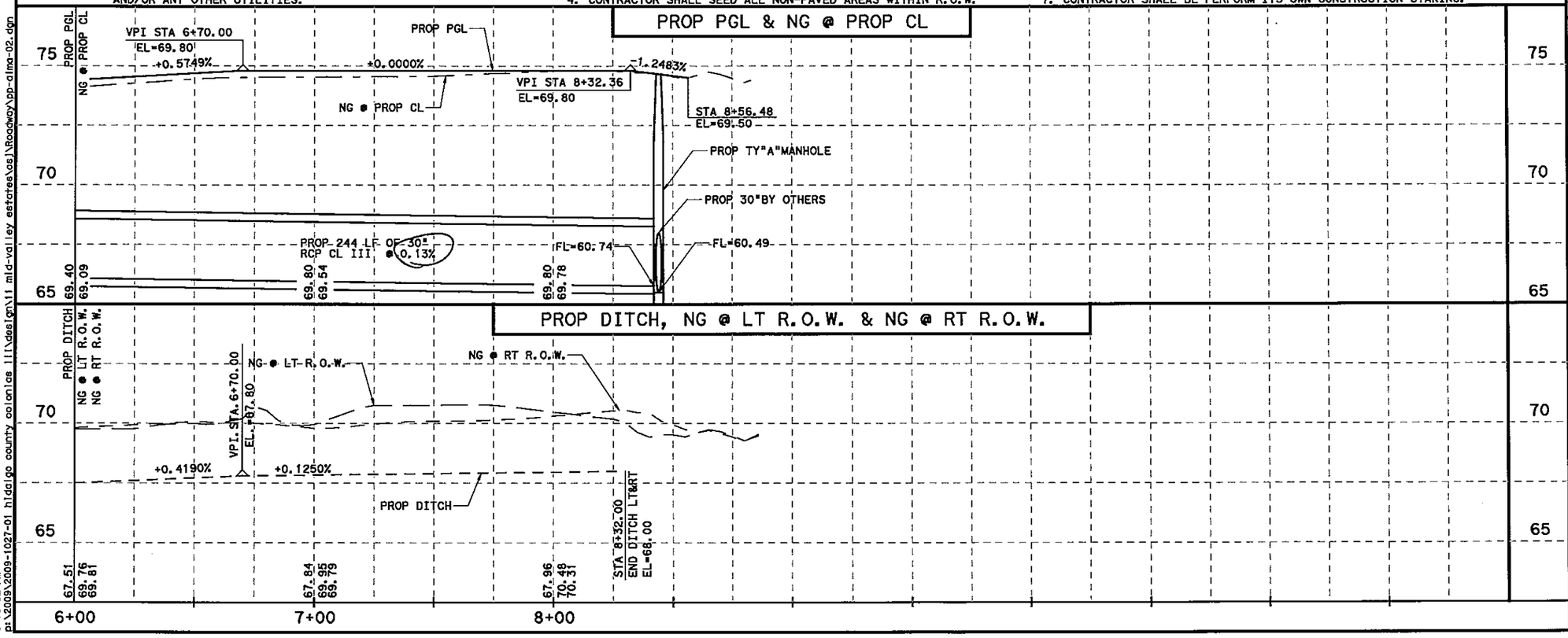
NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TREES OR OTHER OBSTRUCTIONS IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED. REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:

   RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
   COUNTY AND CITY ROADWAYS: 15"
6. STATIONS/OFFSETS MEASURED FROM CENTERLINE OF ROAD TO CENTER OF DRAINAGE STRUCTURES.
7. CONTRACTOR SHALL BE PERFORM ITS OWN CONSTRUCTION STAKING.

BM DATA:

BM #1
GOD NAIL ON POWER POLE
ALMA AVE
STA 1+74.28
OFFSET = 24.8' RT
EL = 67.98'



NO.	DATE	REVISION	APP.

JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
10/18/2011

THE COUNTY OF HIDALGO TEXAS
HIDALGO COUNTY

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

MID VALLEY ESTATES

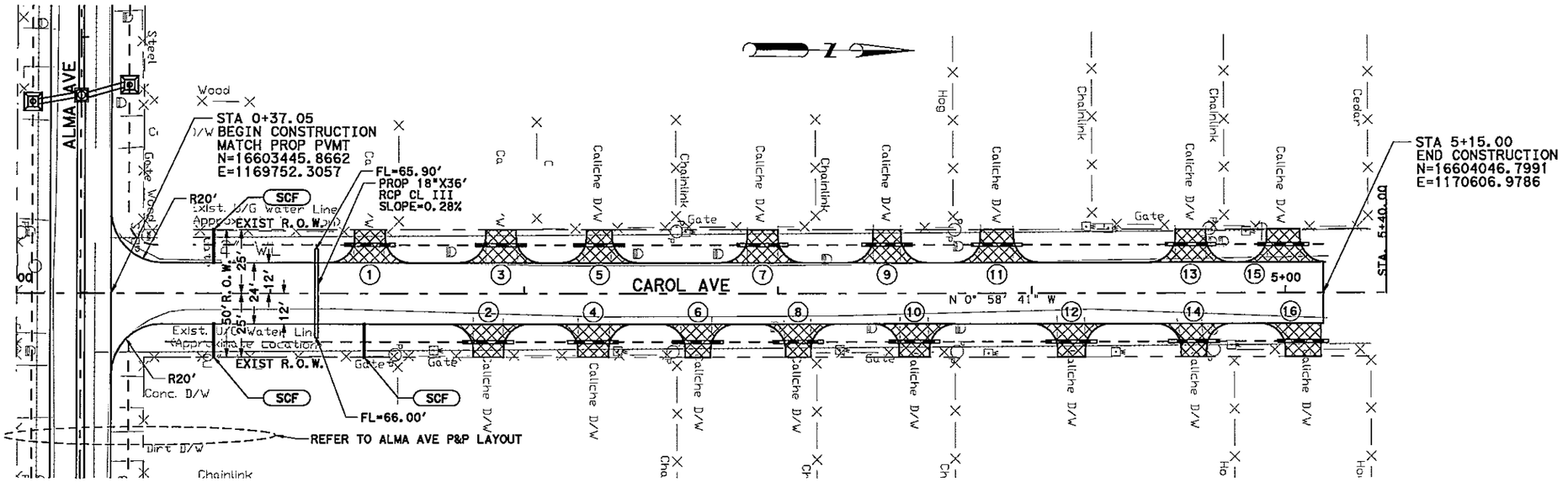
ALMA AVE
PLAN & PROFILE

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

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		11
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:16:52 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\os\Roadway\pp-alma-02.dgn



LEGEND

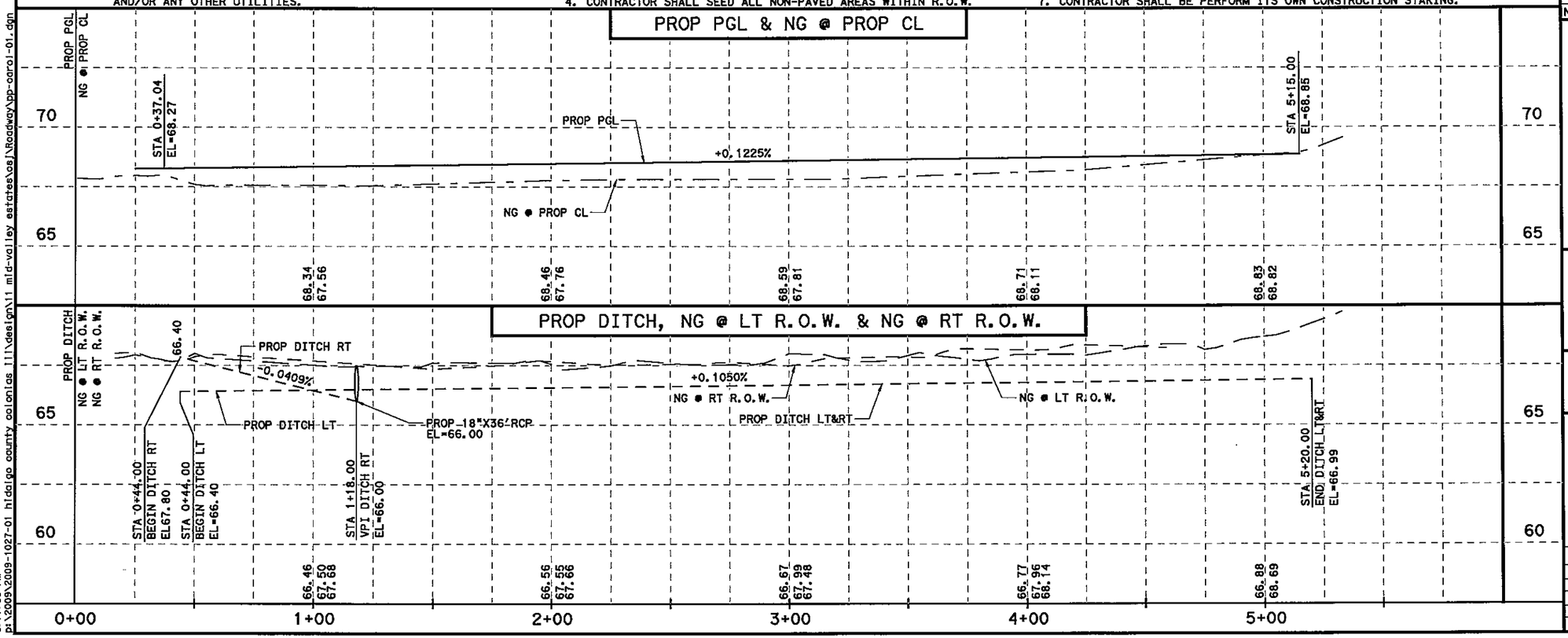
- EXIST GAS LINE
- EXIST UG PHONE LINE
- EXIST WATER LINE
- EXIST CHAINLINK FENCE
- EXIST MAILBOX
- EXIST WATER METER
- EXIST WATER VALVE
- EXIST POWER POLE
- EXIST FIRE HYDRANT
- EXIST TELEPHONE BOX
- EXIST GAS METER
- EXIST STEEL POST
- DRIVEWAY ID NUMBER
- PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)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

NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TREES OR OTHER OBSTRUCTIONS IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED. REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:
   RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
   COUNTY AND CITY ROADWAYS: 15"
6. STATIONS/OFFSETS MEASURED FROM CENTERLINE OF ROAD TO CENTER OF DRAINAGE STRUCTURES.
7. CONTRACTOR SHALL BE PERFORM ITS OWN CONSTRUCTION STAKING.

BM DATA:

BM #1
60D NAIL ON POWER POLE
ALMA AVE
STA 1+74.28
OFFSET = 24.8' RT
EL = 67.98'



NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

CAROL AVE
PLAN & PROFILE

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

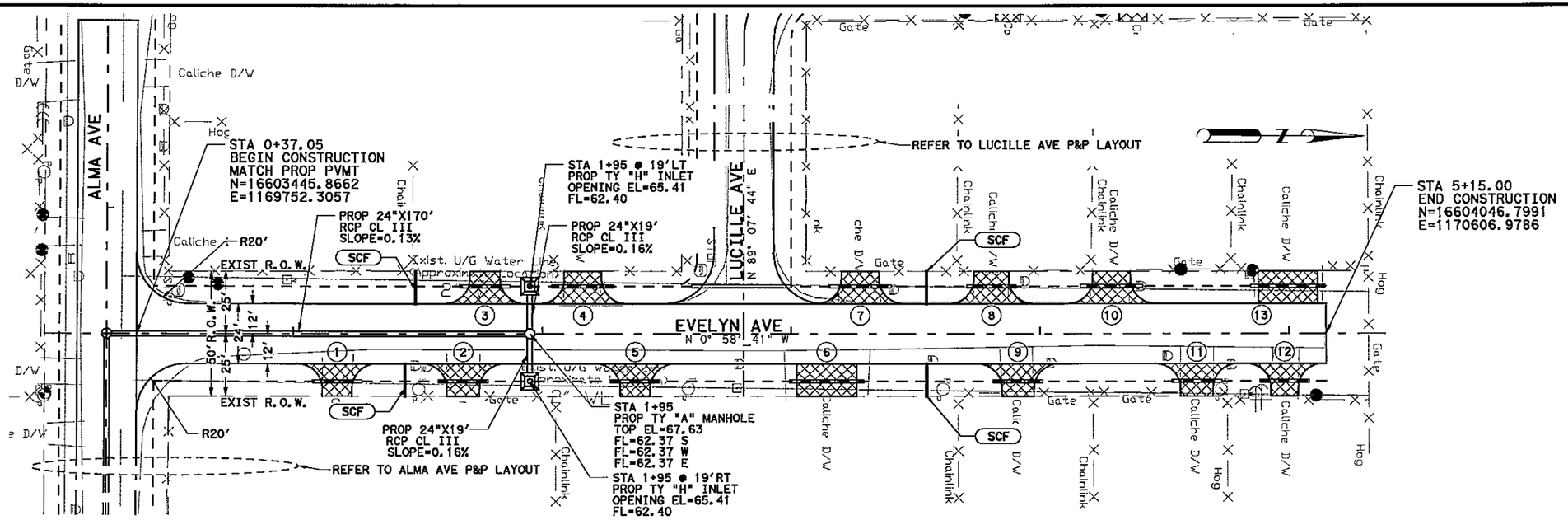
SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		12

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:17:00 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\os\Roadway\pp-carol-01.dgn



LEGEND

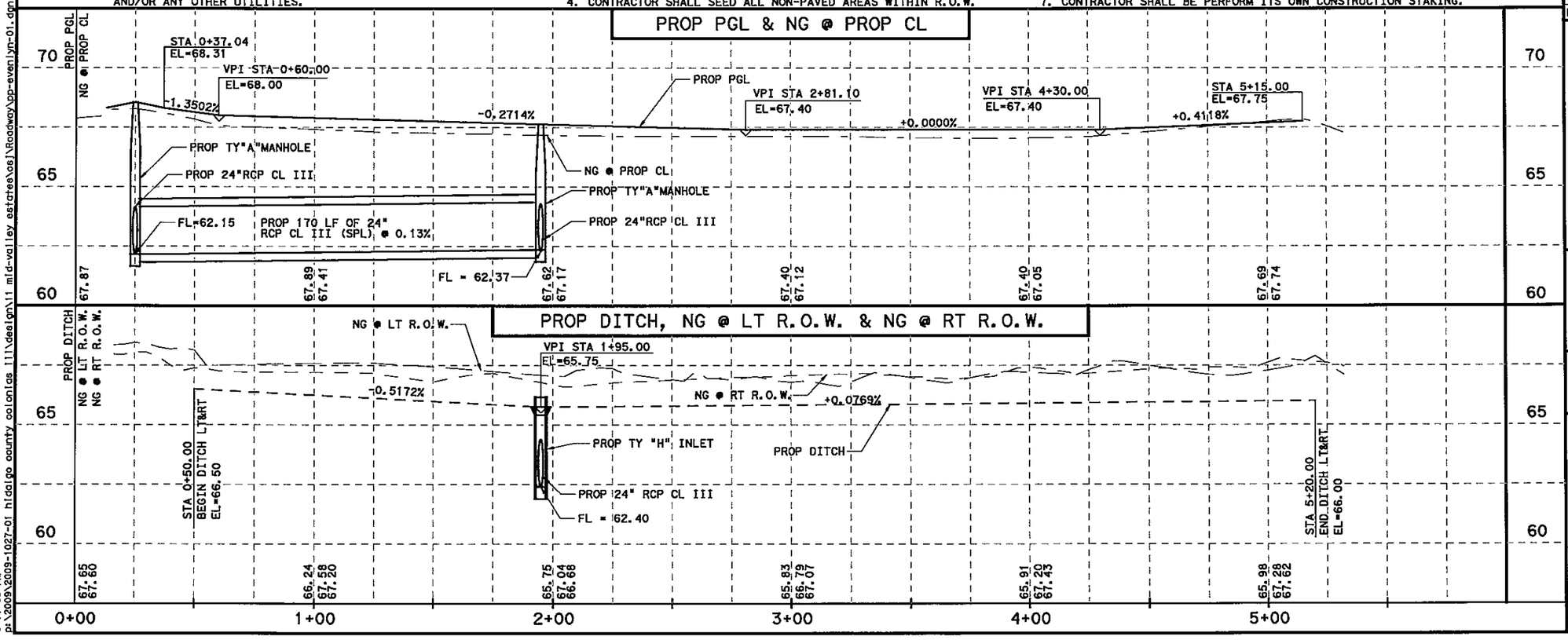
- EXIST GAS LINE
- EXIST UG PHONE LINE
- EXIST WATER LINE
- EXIST CHAINLINK FENCE
- EXIST MAILBOX
- EXIST WATER METER
- EXIST WATER VALVE
- EXIST POWER POLE
- EXIST FIRE HYDRANT
- EXIST TELEPHONE BOX
- EXIST GAS METER
- EXIST STEEL POST
- DRIVEWAY ID NUMBER
- PROP ASPHALT DRIVEWAY (SEE DRIVEWAY TABLE)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

NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TREES OR OTHER OBSTRUCTIONS IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED. REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:
   RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
   COUNTY AND CITY ROADWAYS: 15"
6. STATIONS/OFFSETS MEASURED FROM CENTERLINE OF ROAD TO CENTER OF DRAINAGE STRUCTURES.
7. CONTRACTOR SHALL BE PERFORM ITS OWN CONSTRUCTION STAKING.

BM DATA:

BM #1
60D NAIL ON POWER POLE
ALMA AVE
STA 1+74.28
OFFSET = 24.8' RT
EL = 67.98'



NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
10/18/2011

THE COUNTY OF HIDALGO TEXAS

HIDALGO COUNTY

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

MID VALLEY ESTATES

EVELYN AVE
PLAN & PROFILE

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

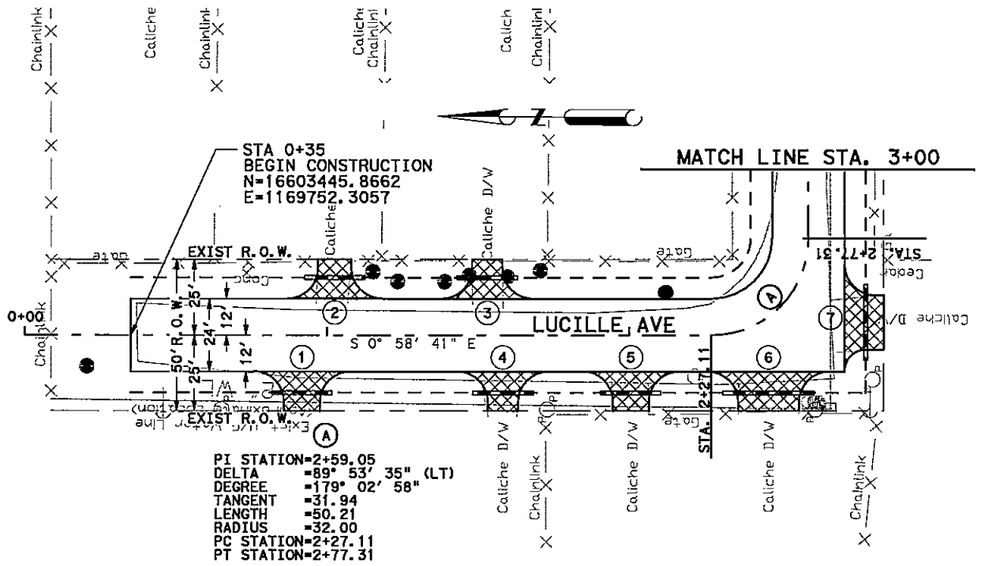
SHEET 1 OF 1

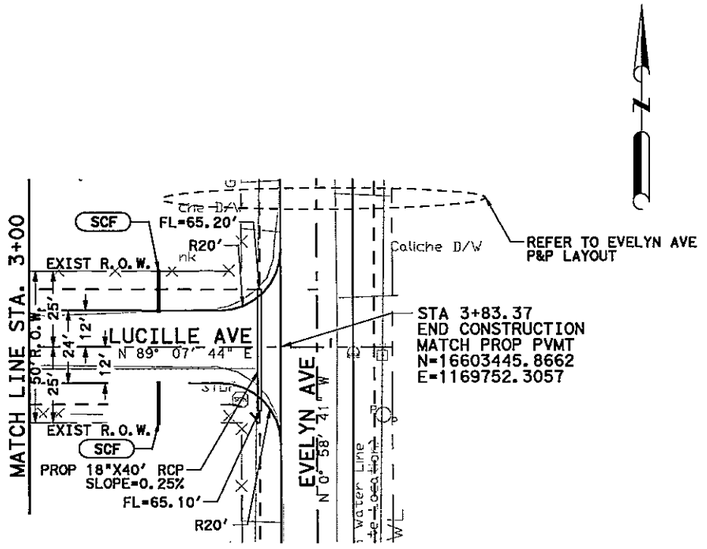
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		13

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:17:09 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\roadway\pp-evelyn-01.dgn





LEGEND

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

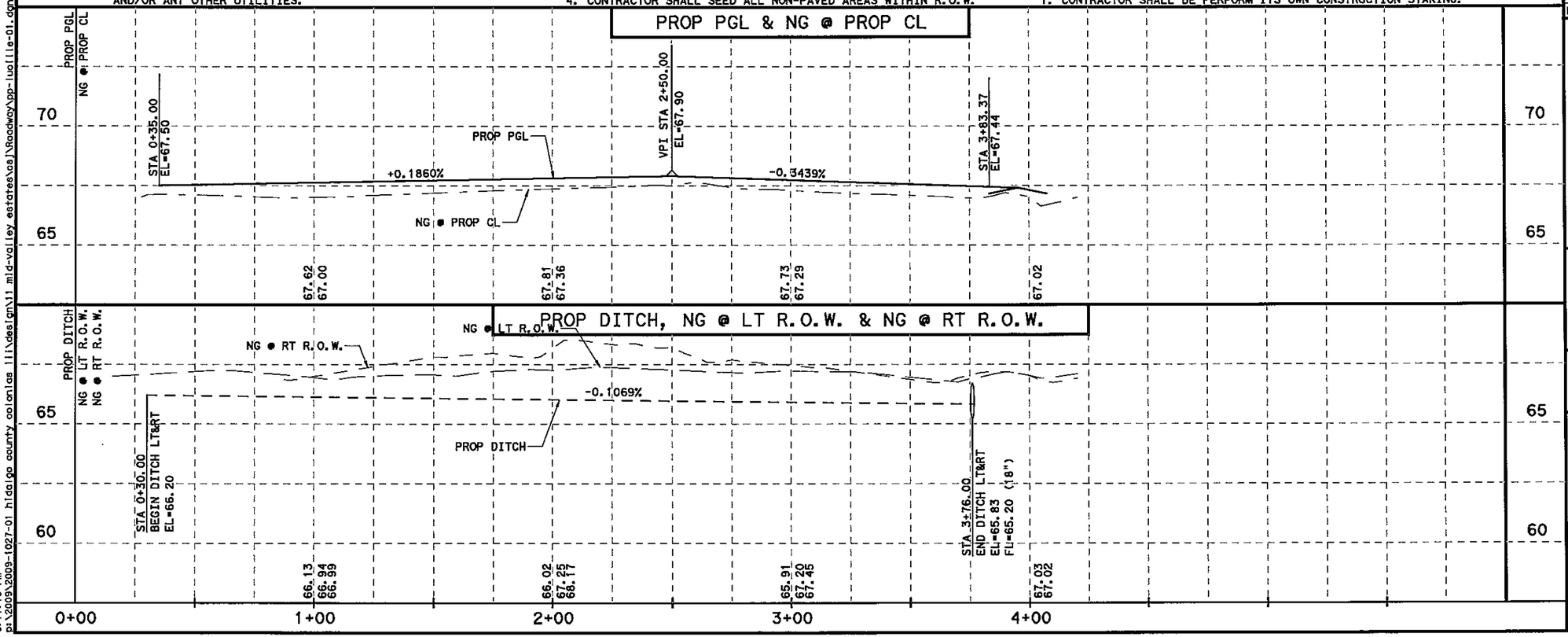
NOTES:

1. EXISTING ABOVE GROUND UTILITIES AND TOPOGRAPHY HAVE BEEN PLOTTED BY DIRECT FIELD INFORMATION AND AS SPOTTED BY UTILITY LOCATE REQUEST. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES THE ESTABLISHING OF EXACT LOCATION, DEPTH, AND SIZE OF UTILITY LINES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR REPLACEMENT OR REPAIRS OF ALL CUT OR BROKEN WATER LINES, IRRIGATION LINES, FORCE MAINS, SPRINKLER SYSTEMS, GAS LINES, POWER LINES, TELEPHONE CABLES, AND/OR ANY OTHER UTILITIES.
2. MAILBOXES AND SIGNS TO BE ADJUSTED/REPLACED/RELOCATED DURING CONSTRUCTION. ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
3. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TREES OR OTHER OBSTRUCTIONS IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED. REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
4. CONTRACTOR SHALL SEED ALL NON-PAVED AREAS WITHIN R.O.W.
5. PROPOSED SIDE DRAINS TO BE INSTALLED WITH MINIMUM COVER FROM BOTTOM OF ASPHALT AS FOLLOWS:

   RESIDENTIAL AND COMMERCIAL DRIVEWAYS: 6"
   COUNTY AND CITY ROADWAYS: 15"
6. STATIONS/OFFSETS MEASURED FROM CENTERLINE OF ROAD TO CENTER OF DRAINAGE STRUCTURES.
7. CONTRACTOR SHALL BE PERFORM ITS OWN CONSTRUCTION STAKING.

BM DATA:

BM #1
60D NAIL ON POWER POLE
ALMA AVE
STA 1+74.28
OFFSET = 24.8' RT
EL = 67.98'



NO.	DATE	REVISION	APP.

JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

LUCILLE AVE
PLAN & PROFILE

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

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		14

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:17:18 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\os\Roadway\pp-lucille-01.dgn

ALMA AVE

ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	556 ADS PIPE (15 IN)	0496-2016 REMOV STR (PIPE)	0530-2011 DRWY (ACP)	0530-2010 DRWY (CONC) 4"
					LF	LF	SY	SY
1	0+46	LT		UNPAVED	20		21	
2	0+50	RT		UNPAVED	25		28	
3	1+10	RT		CONCRETE	20			23
4	1+14	LT		UNPAVED	20		17	
5	1+66	RT		UNPAVED	25		20	
6	1+91	RT		UNPAVED	25		20	
7	2+42	RT		CONCRETE	30			35
8	2+56	LT		UNPAVED	25		21	
9	2+68	RT		UNPAVED	30		21	
10	2+81	LT		UNPAVED	25		31	
11	3+04	RT		UNPAVED	25		27	
12	3+37	LT		CONCRETE	20			23
13	3+52	RT		UNPAVED	25		35	
14	4+08	RT		UNPAVED	30		28	
15	4+39	RT		UNPAVED	30		35	
16	4+39	LT		CONCRETE	80			20
17	4+60	LT		UNPAVED	25		22	
18	4+87	LT		CONCRETE	20			23
19	5+12	RT		UNPAVED	25		24	
20	5+39	RT		UNPAVED	25		23	
21	5+39	LT		UNPAVED	20		23	
22	5+87	LT		UNPAVED	20		23	
23	6+13	RT		UNPAVED	25		23	
24	6+39	LT		UNPAVED	20		21	
25	6+39	RT		UNPAVED	25		21	
26	6+92	LT		UNPAVED	20		21	
27	7+09	RT		UNPAVED	25		27	
TOTAL					705		532	124

DRIVEWAY NOTES:

ASPHALT THICKNESS = 1.5"

CONCRETE THICKNESS = 4"

FLEXIBLE BASE THICKNESS = 8"

CAROL AVE

ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	556 ADS PIPE (15 IN)	0496-2016 REMOV STR (PIPE)	0530-2011 DRWY (ACP)	0530-2010 DRWY (CONC) 4"
					LF	LF	SY	SY
1	1+39	LT		UNPAVED	20		23	
2	1+86	RT		UNPAVED	20		23	
3	1+91	LT		UNPAVED	20		23	
4	2+27	RT		UNPAVED	20		23	
5	2+30	LT		UNPAVED	20		20	
6	2+68	RT		UNPAVED	20		20	
7	2+94	LT		UNPAVED	20		23	
8	3+08	RT		UNPAVED	20		20	
9	3+43	LT		UNPAVED	20		21	
10	3+54	RT		UNPAVED	20		23	
11	3+86	LT		UNPAVED	20		24	
12	4+16	RT		UNPAVED	20		21	
13	4+63	LT		UNPAVED	20		23	
14	4+64	RT		UNPAVED	20		20	
15	4+99	LT		UNPAVED	20		24	
16	5+07	RT		UNPAVED	20		23	
TOTAL					320		354	

DRIVEWAY NOTES:

ASPHALT THICKNESS = 1.5"

CONCRETE THICKNESS = 4"

FLEXIBLE BASE THICKNESS = 8"

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

DRIVEWAY TABLES

SHEET 1 OF 2

FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
6		15

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

EVELYN AVE								
					556	0496-2016	0530-2011	0530-2010
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	ADS PIPE (15 IN)	REMOV STR (PIPE)	DRWY (ACP)	DRWY (CONC) 4"
					LF	LF	SY	SY
1	1+18	RT		UNPAVED	20		23	
2	1+68	RT		UNPAVED	20		24	
3	1+77	LT		UNPAVED	20		23	
4	2+16	LT		UNPAVED	25		27	
5	2+37	RT		UNPAVED	20		23	
6	3+14	RT		UNPAVED	30		35	
7	3+28	LT		UNPAVED	25		27	
8	3+80	LT		UNPAVED	20		25	
9	3+91	RT		UNPAVED	20		24	
10	4+29	LT		UNPAVED	25		27	
11	4+63	RT		UNPAVED	20		24	
12	4+98	RT		UNPAVED	20		21	
13	5+00	LT		UNPAVED	30		35	
TOTAL					295		338	

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

LUCILLE AVE								
					556	0496-2016	0530-2011	0530-2010
ID	STATION	OFFSET	EXISTING STRUCTURE	EXISTING DRIVEWAY DESCRIPTION	ADS PIPE (15 IN)	REMOV STR (PIPE)	DRWY (ACP)	DRWY (CONC) 4"
					LF	LF	SY	SY
1	0+92	RT		UNPAVED	20		23	
2	1+03	LT		UNPAVED	20		21	
3	1+53	LT		UNPAVED	20		20	
4	1+58	RT		UNPAVED	20		20	
5	2+01	RT		UNPAVED	20		23	
6	2+40	RT		UNPAVED	30		34	
7	2+60	RT		UNPAVED	25		30	
TOTAL					155		171	
GRAND TOTAL					1475		1395	124

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

NO.	DATE	REVISION	APP.

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
10/18/2011

HIDALGO COUNTY

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

MID VALLEY ESTATES

DRIVEWAY TABLES

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		16
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
5:41:40 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\cad\Roadway\mve-drwy.dgn

FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.2	0	0	1.00	0
	EXIST					
	Excavation	16.9	0	0	1.00	
	Fill	0.0	0	0	1.00	0
1+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.3	0	0	1.00	0
	EXIST					
	Excavation	18.1	32	32	1.00	
	Fill	0.0	0	0	1.00	32
1+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	31
	EXIST					
	Excavation	14.3	30	30	1.00	
	Fill	0.0	0	0	1.00	61
2+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	3.1	3	3	1.00	58
	EXIST					
	Excavation	11.1	24	24	1.00	
	Fill	0.0	0	0	1.00	82
2+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	6.5	9	9	1.00	73
	EXIST					
	Excavation	11.8	21	21	1.00	
	Fill	0.0	0	0	1.00	94
3+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	4.5	10	10	1.00	84
	EXIST					
	Excavation	11.0	21	21	1.00	
	Fill	0.0	0	0	1.00	105
3+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.1	5	5	1.00	100
	EXIST					
	Excavation	10.9	20	20	1.00	
	Fill	0.0	0	0	1.00	120
4+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.1	1	1	1.00	119
	EXIST					
	Excavation	15.1	24	24	1.00	
	Fill	0.0	0	0	1.00	143
4+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.5	1	1	1.00	142
	EXIST					
	Excavation	15.7	28	28	1.00	
	Fill	0.0	0	0	1.00	170
5+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.2	1	1	1.00	169
	EXIST					
	Excavation	16.0	29	29	1.00	
	Fill	0.0	0	0	1.00	198
5+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.1	0	0	1.00	198
	EXIST					
	Excavation	23.3	36	36	1.00	
	Fill	0.0	0	0	1.00	234
6+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	234
	EXIST					
	Excavation	27.6	47	47	1.00	
	Fill	0.0	0	0	1.00	281
6+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	281
	EXIST					
	Excavation	30.2	54	54	1.00	
	Fill	0.0	0	0	1.00	335
7+00.00	EXIST					
	Excavation	28.3	54	54	1.00	
	Fill	0.0	0	0	1.00	389
7+50.00	EXIST					
	Excavation	37.1	61	61	1.00	
	Fill	0.0	0	0	1.00	450
8+00.00	EXIST					
	Excavation	39.9	71	71	1.00	
	Fill	0.0	0	0	1.00	521

GRAND SUMMARY TOTALS

Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
PROP				
	Excavation	0	0	1.00
	Fill	31	31	1.00
EXIST				
	Excavation	552	552	1.00
	Fill	0	0	1.00

NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

ALMA AVE
EARTHWORK

SHEET 1 OF 4

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		17
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:55:48 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\II mid-valley estates\cs\roadway\mve-ew.dgn

FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+55.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.2	0	0	1.00	0
	EXIST					
	Excavation	20.1	0	0	1.00	
	Fill	0.0	0	0	1.00	0
0+75.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.3	0	0	1.00	0
	EXIST					
	Excavation	19.3	15	15	1.00	
	Fill	0.0	0	0	1.00	15
1+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	0	0	1.00	15
	EXIST					
	Excavation	14.2	15	15	1.00	
	Fill	0.0	0	0	1.00	30
1+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	29
	EXIST					
	Excavation	13.6	26	26	1.00	
	Fill	0.0	0	0	1.00	55
2+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	54
	EXIST					
	Excavation	14.4	26	26	1.00	
	Fill	0.0	0	0	1.00	80
2+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.4	2	2	1.00	78
	EXIST					
	Excavation	9.5	22	22	1.00	
	Fill	0.0	0	0	1.00	100
3+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.8	2	2	1.00	98
	EXIST					
	Excavation	12.7	21	21	1.00	
	Fill	0.0	0	0	1.00	119
3+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	118
	EXIST					
	Excavation	15.9	27	27	1.00	
	Fill	0.0	0	0	1.00	145
4+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.4	1	1	1.00	144
	EXIST					
	Excavation	20.4	34	34	1.00	
	Fill	0.0	0	0	1.00	178
4+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.1	0	0	1.00	178
	EXIST					
	Excavation	27.1	44	44	1.00	
	Fill	0.0	0	0	1.00	222
5+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.1	0	0	1.00	222
	EXIST					
	Excavation	38.8	61	61	1.00	
	Fill	0.0	0	0	1.00	283
5+10.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	283
	EXIST					
	Excavation	43.7	15	15	1.00	
	Fill	0.0	0	0	1.00	298

GRAND SUMMARY TOTALS

Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
PROP				
	Excavation	0	0	1.00
	Fill	8	8	1.00
EXIST				
	Excavation	306	306	1.00
	Fill	0	0	1.00

NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

CAROL AVE
EARTHWORK

SHEET 2 OF 4

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		18

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:55:52 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\cad\roadway\mve-ew.dgn

FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+55.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.5	0	0	1.00	0
	EXIST					
	Excavation	12.5	0	0	1.00	
	Fill	0.0	0	0	1.00	0
0+65.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.3	0	0	1.00	0
	EXIST					
	Excavation	15.7	5	5	1.00	
	Fill	0.0	0	0	1.00	5
1+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.1	1	1	1.00	4
	EXIST					
	Excavation	16.6	21	21	1.00	
	Fill	0.0	0	0	1.00	25
1+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.4	2	2	1.00	23
	EXIST					
	Excavation	15.5	30	30	1.00	
	Fill	0.0	0	0	1.00	53
2+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	2	2	1.00	51
	EXIST					
	Excavation	15.0	28	28	1.00	
	Fill	0.0	0	0	1.00	79
2+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	78
	EXIST					
	Excavation	16.3	29	29	1.00	
	Fill	0.0	0	0	1.00	107
3+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	1	1	1.00	106
	EXIST					
	Excavation	13.4	28	28	1.00	
	Fill	0.0	0	0	1.00	134
3+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	134
	EXIST					
	Excavation	18.7	30	30	1.00	
	Fill	0.0	0	0	1.00	164
4+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	164
	EXIST					
	Excavation	23.0	39	39	1.00	
	Fill	0.0	0	0	1.00	203
4+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	203
	EXIST					
	Excavation	23.3	43	43	1.00	
	Fill	0.0	0	0	1.00	246
5+00.00	EXIST					
	Excavation	34.6	54	54	1.00	
	Fill	0.0	0	0	1.00	300
5+10.00	EXIST					
	Excavation	41.7	14	14	1.00	
	Fill	0.0	0	0	1.00	314

GRAND SUMMARY TOTALS Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
PROP				
	Excavation	0	0	1.00
	Fill	7	7	1.00
EXIST				
	Excavation	321	321	1.00
	Fill	0	0	1.00

NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

EVELYN AVE
EARTHWORK

SHEET 3 OF 4

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		19

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
6:55:56 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\cad\roadway\mve-ew.dgn

FOR CONTRACTOR'S INFORMATION ONLY

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate
0+36.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	0
	EXIST					
	Excavation	16.0	0	0	1.00	
	Fill	0.0	0	0	1.00	0
0+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	0
	EXIST					
	Excavation	15.4	8	8	1.00	
	Fill	0.0	0	0	1.00	8
1+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	3.4	3	3	1.00	5
	EXIST					
	Excavation	7.3	21	21	1.00	
	Fill	0.0	0	0	1.00	26
1+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	1.1	4	4	1.00	22
	EXIST					
	Excavation	16.5	22	22	1.00	
	Fill	0.0	0	0	1.00	44
2+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.4	1	1	1.00	43
	EXIST					
	Excavation	21.3	35	35	1.00	
	Fill	0.0	0	0	1.00	78
2+30.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.2	0	0	1.00	78
	EXIST					
	Excavation	22.7	24	24	1.00	
	Fill	0.0	0	0	1.00	102
2+52.21	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.9	0	0	1.00	102
	EXIST					
	Excavation	54.9	32	32	1.00	
	Fill	0.0	0	0	1.00	134
2+80.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.5	1	1	1.00	133
	EXIST					
	Excavation	18.3	38	38	1.00	
	Fill	0.0	0	0	1.00	171
3+00.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.0	0	0	1.00	171
	EXIST					
	Excavation	19.1	14	14	1.00	
	Fill	0.0	0	0	1.00	185
3+50.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.6	1	1	1.00	184
	EXIST					
	Excavation	11.4	28	28	1.00	
	Fill	0.0	0	0	1.00	212
3+60.00	PROP					
	Excavation	0.0	0	0	1.00	
	Fill	0.7	0	0	1.00	212
	EXIST					
	Excavation	9.6	4	4	1.00	
	Fill	0.0	0	0	1.00	216

GRAND SUMMARY TOTALS

Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
PROP				
	Excavation	0	0	1.00
	Fill	10	10	1.00
EXIST				
	Excavation	226	226	1.00
	Fill	0	0	1.00

NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

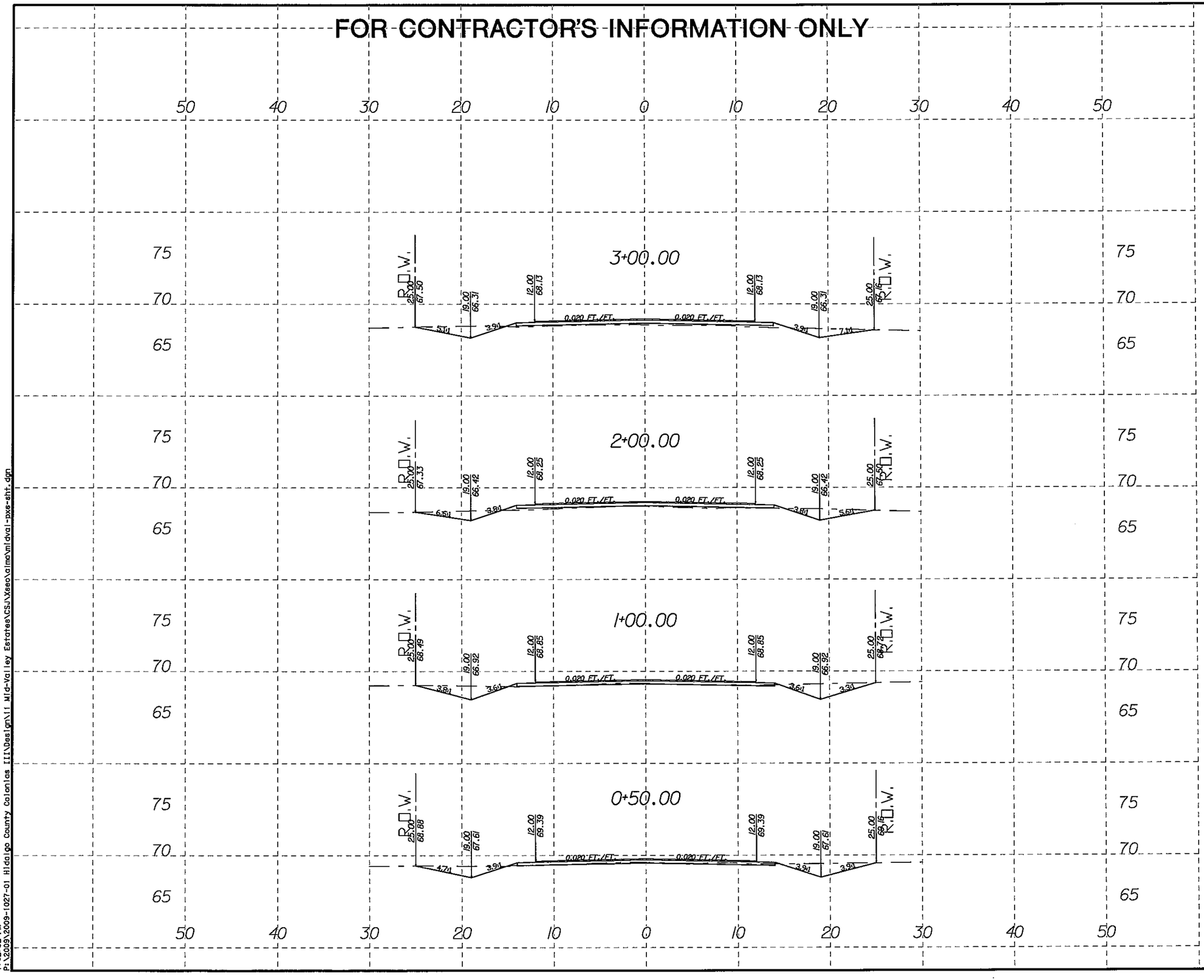
MID VALLEY ESTATES

LUCILLE AVE
EARTHWORK

SHEET 4 OF 4

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		20
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

ALMA AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 1 OF 3

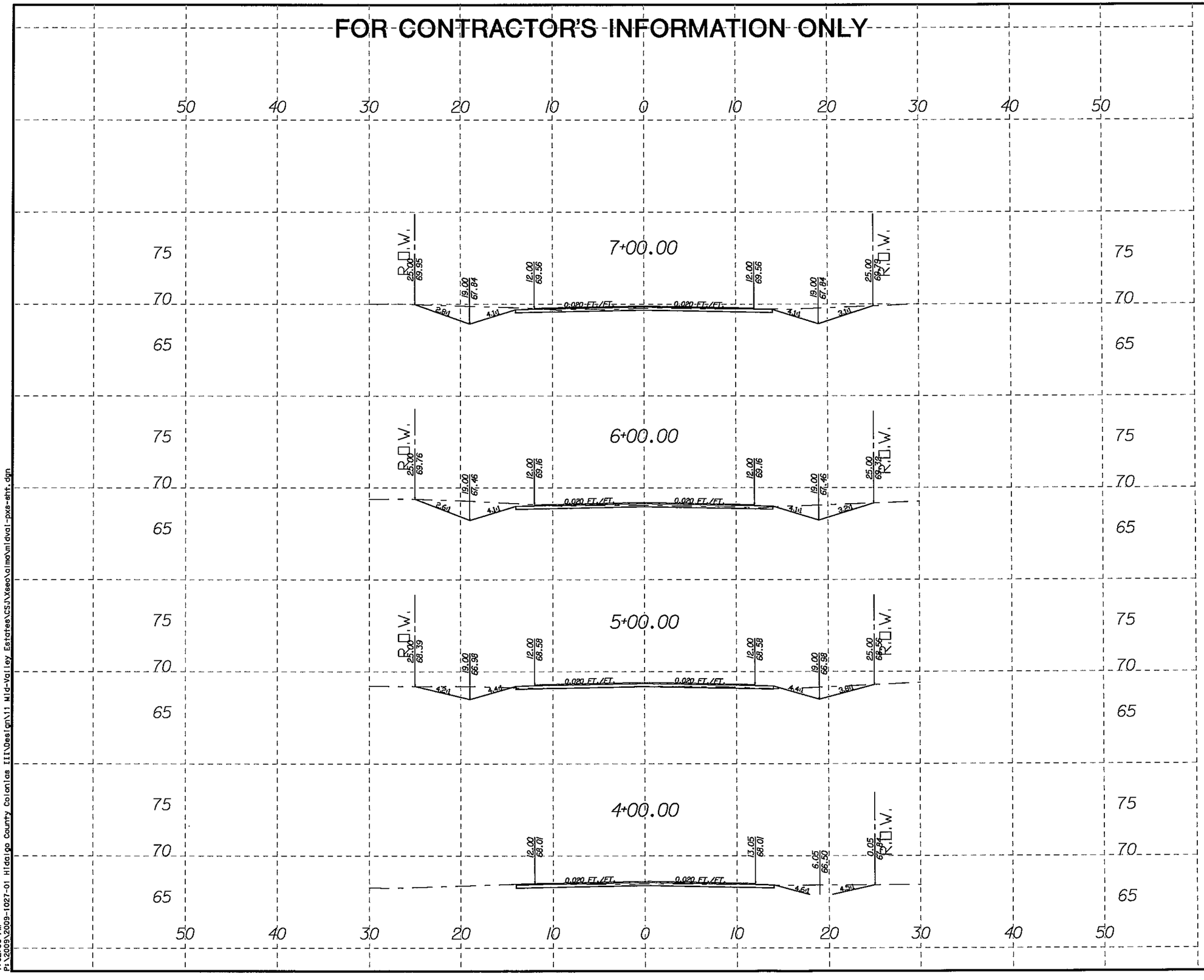
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		21

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:32 PM
P:\2009\2009-1027-01 Hidalgo County Colonias III\Design\11 Mid-Valley Estates\CSJ\Xsec\alma\mldval-pxs-sht.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

ALMA AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 2 OF 3

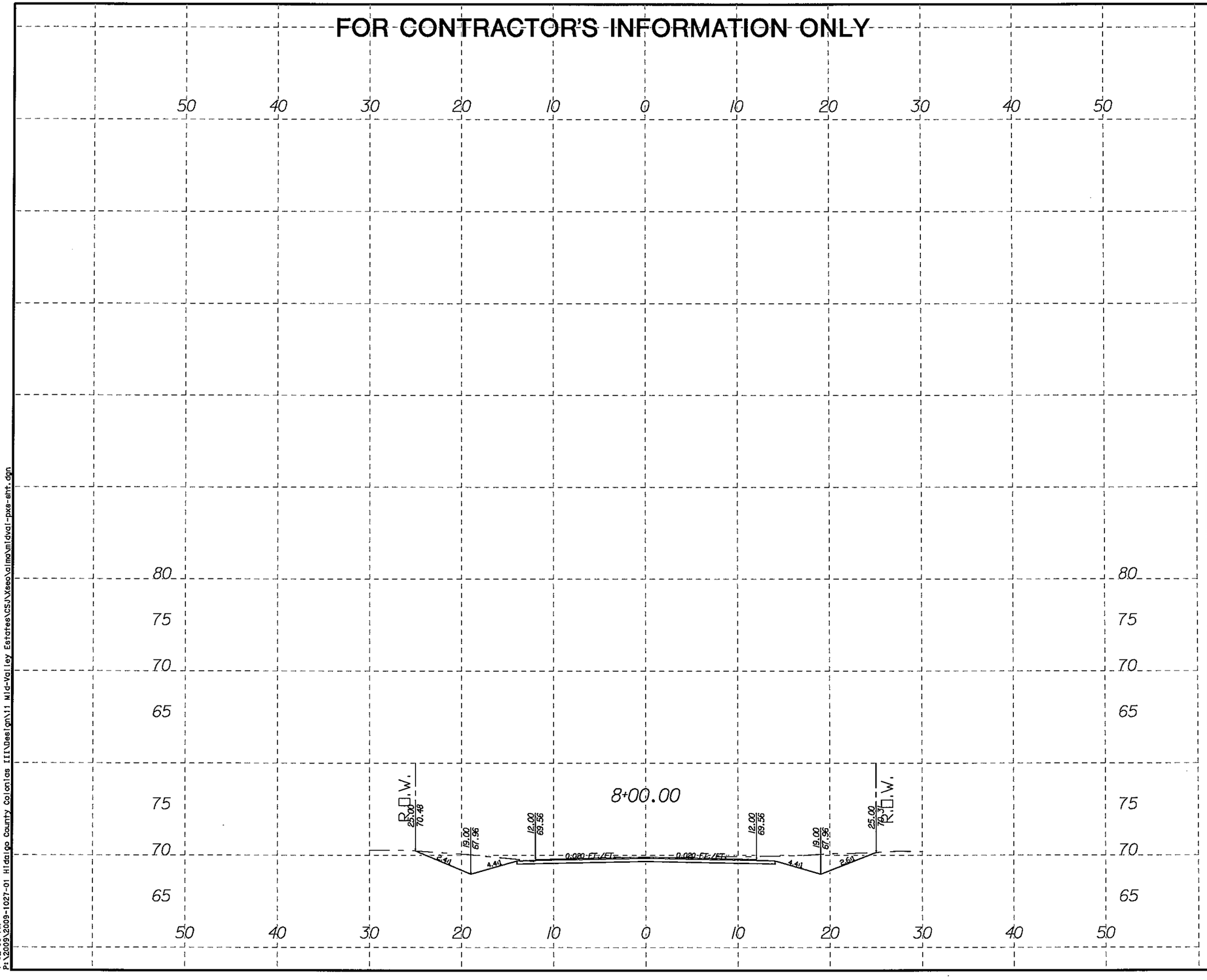
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		22

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:36 PM
P:\2009\2009-1027-01 Hidalgo County Colonias II\Design\11 Mid-Valley Estates\CSJ\Xsec\alma\mildval-pxs-eht.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

ALMA AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 3 OF 3

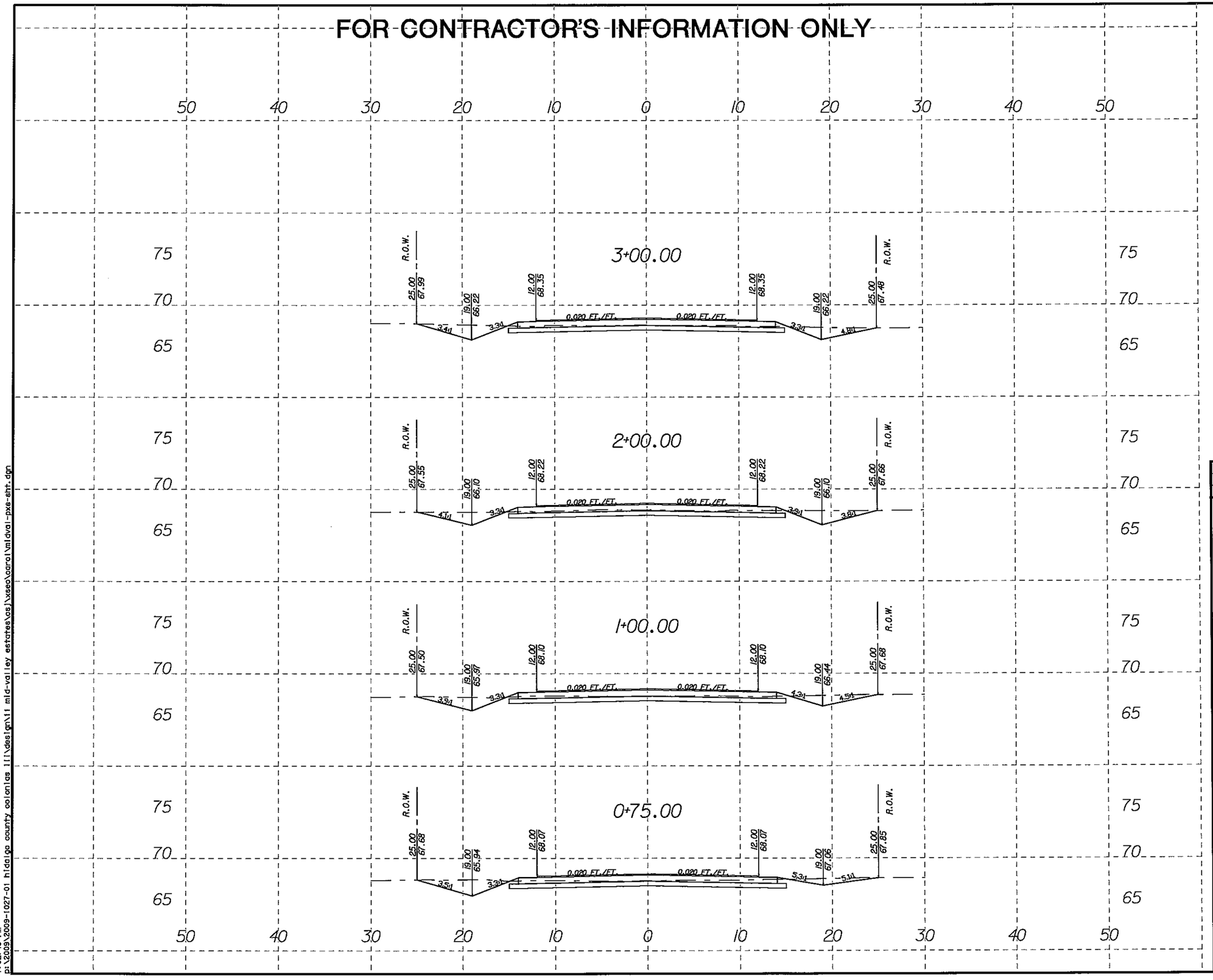
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		23

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:39 PM
P:\2009\2009-1027-01 Hidalgo County Colonias III\Design\11 Mid-Valley Estates\CSJ\Xsec\alma\mldval-pxs-ent.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

CAROL AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 1 OF 2

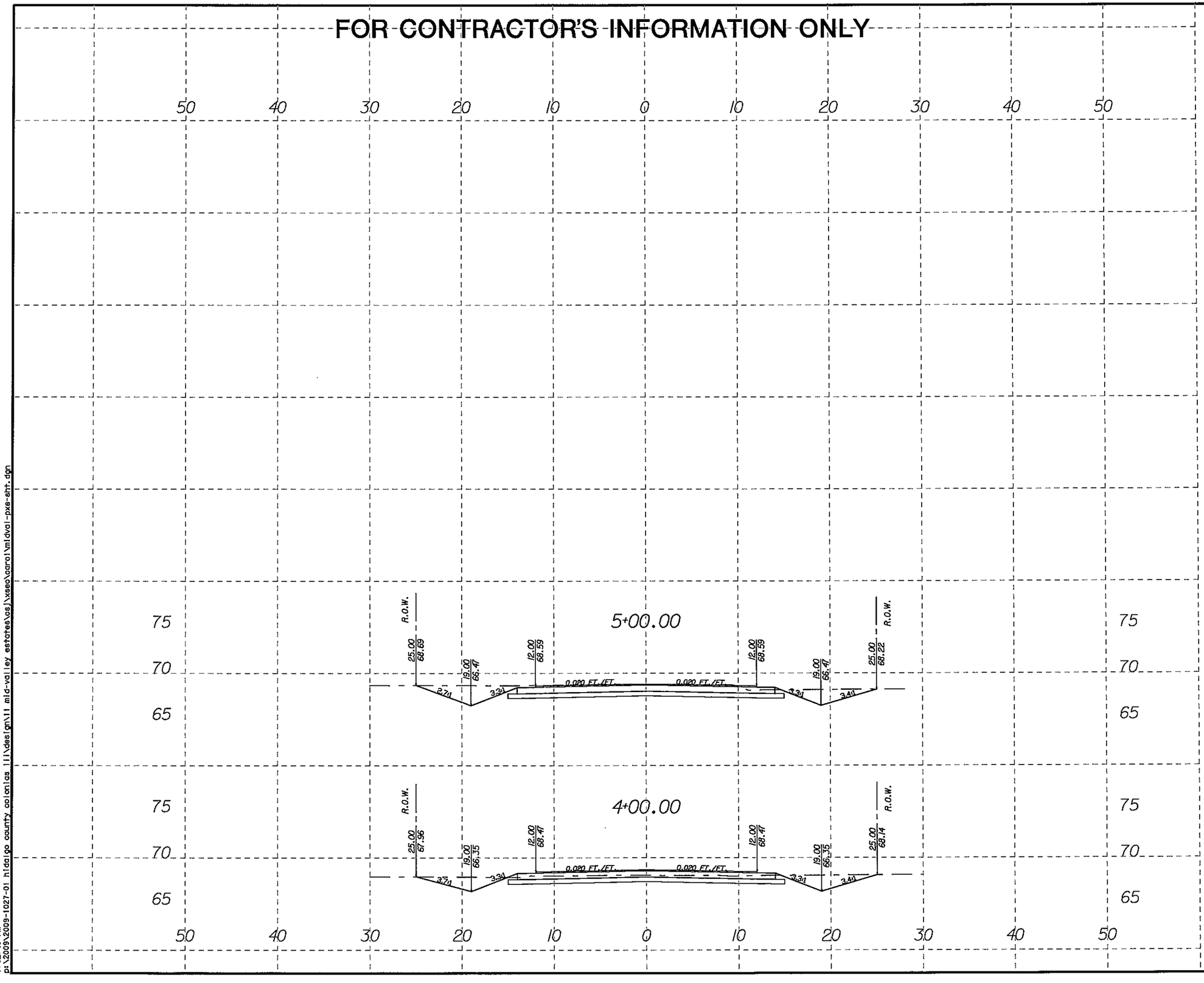
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		24

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:45 PM
p:\2009\2009-1027-01 hidalgo county colonias 1\\design\11 mid-valley estates\os]\xsec\carol\maval-pxs-sht.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

CAROL AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 2 OF 2

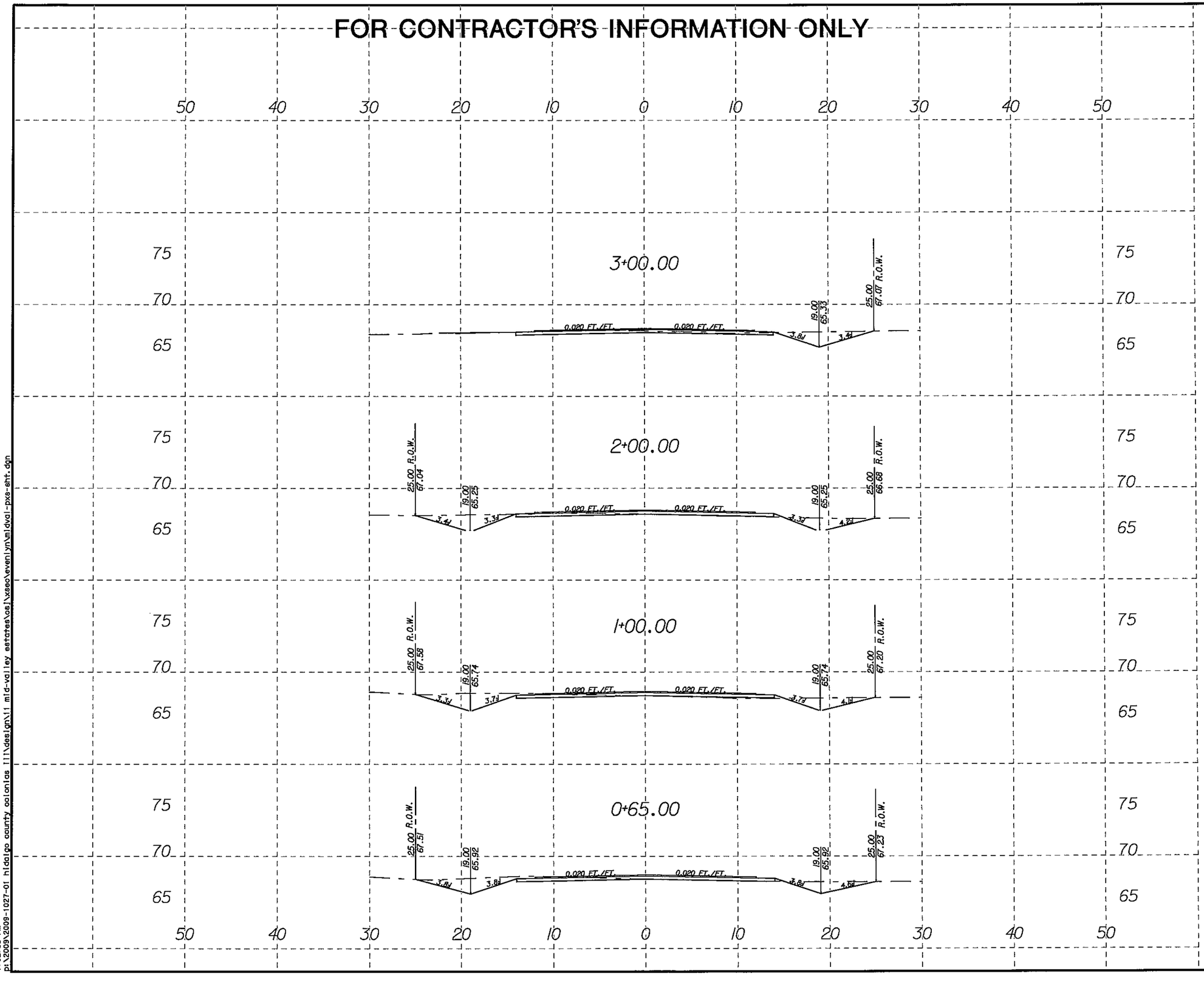
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		25

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:48 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\os\xsec\carol\mldval-pxe-sht.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

EVELYN AVE
ROADWAY CROSS-SECTIONS

N.T.S.

SHEET 1 OF 2

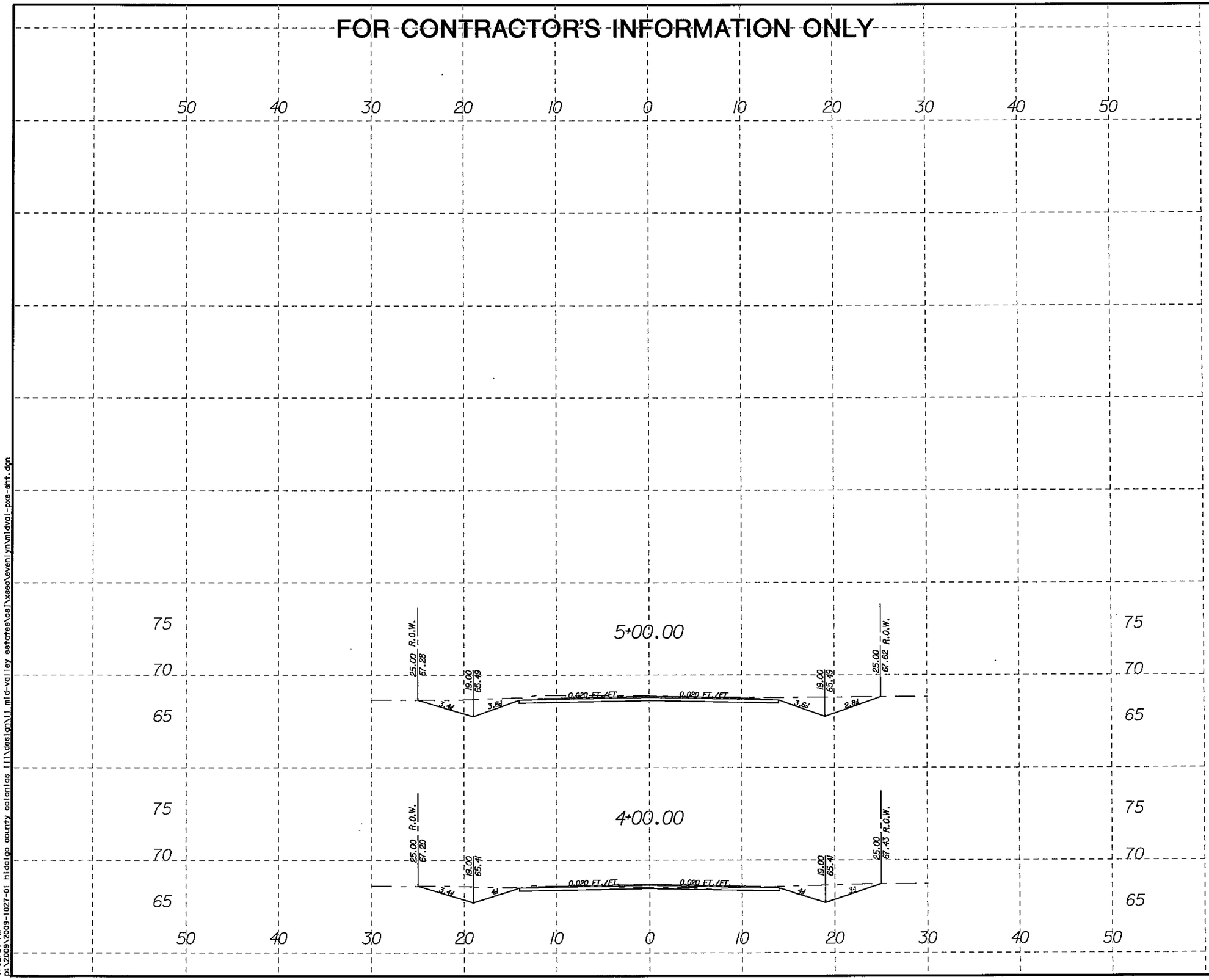
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		26

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:53 PM
p:\2009\2009-1027-01 hidalgo county colonias 11\design\11 mid-valley estates\cad\xsec\evenlynmldval-pxs-eht.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

EVELYN AVE
ROADWAY CROSS-SECTIONS

N.T.S.

SHEET 2 OF 2

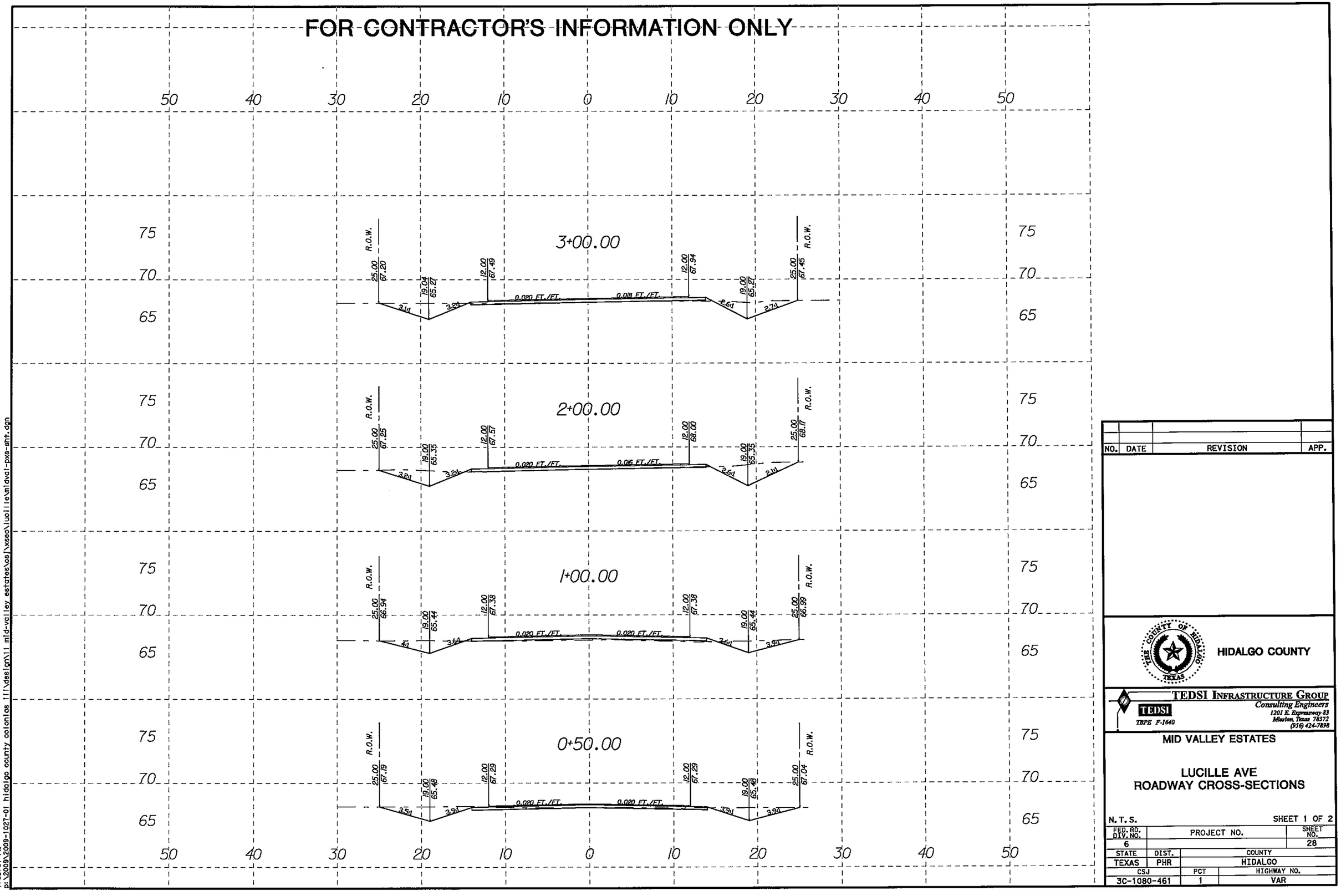
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		27

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:02:57 PM
p:\2009\2009-1027-01 hidalgo county colonias 111\design\11 mid-valley estates\cse1\xsec\evenlyn\mldvgl-pxs-ant.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

LUCILLE AVE
ROADWAY CROSS-SECTIONS

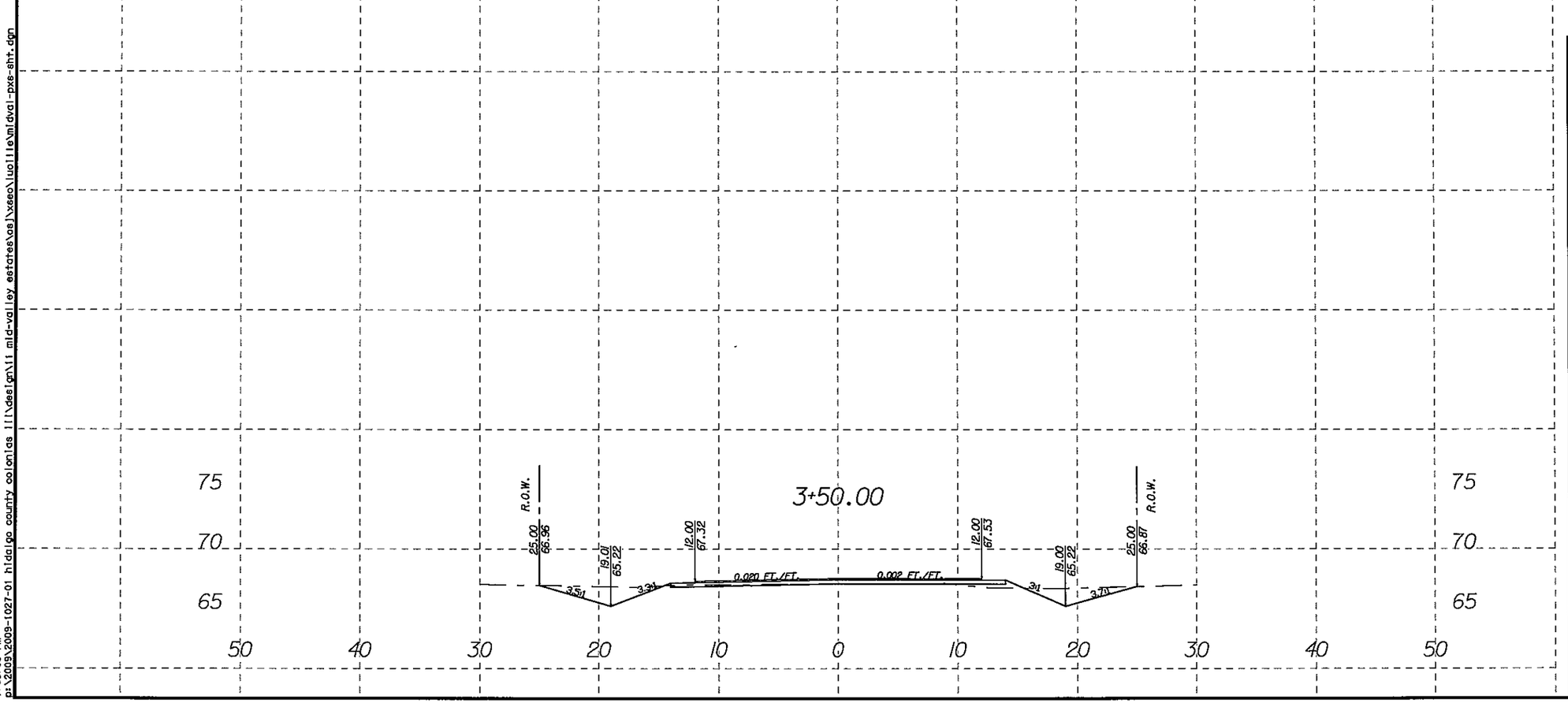
N. T. S.

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		28
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:03:01 PM
p:\2009\2009-1027-01 hidalgo county colonias !!!\design\11 mid-valley estates\os\xsec\lucille\mldvdl-pxs-ent.dgn

FOR CONTRACTOR'S INFORMATION ONLY



NO.	DATE	REVISION	APP.

HIDALGO COUNTY

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

MID VALLEY ESTATES

LUCILLE AVE
ROADWAY CROSS-SECTIONS

N. T. S.

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		29

STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO

CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
7:03:05 PM
p:\2009\2009-1027-01 hidalgo county colonias III\design\11 mid-valley estates\os\xsec\lucille\mvdvgl-pxs-sht.dgn

SITE DESCRIPTION

PROJECT LIMITS:
Mid-Valley Estates Subdivision: Alma Ave-832', Carol Ave-478', Evelyn Ave-478', Lucille Ave-349'

PROJECT SITE MAPS:

**Project Location Map: Title Sheet (Sheet 1)*
**Approx. Slopes Anticipated After Major Gradings and Areas of Soil Distrubance: Typ Sects (Sheets 5-6)*
**Major Controls and Locations of Stabilization Practices: SW3P Site Map Sheets (Sheets 10-14)*
**Project Specific Locations: To be specified by Project Field Office and located in the Project SW3P File*

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

MAJOR SOIL DISTURBING ACTIVITIES:
Roadway reconstruction

TOTAL PROJECT AREA: *1.54 Acres*

TOTAL AREA TO BE DISTURBED: *1.54 Acres (100%)*

WEIGHTED RUNOFF COEFFICIENT:
Before Construction: 0.30
After Construction: 0.59

EXISTING CONDITION OF SOIL & VEGETATIVE
Existing asphalt roadway (42%), Short grass between edge of pavement and ROW (58%)

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

ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORICAL PROPERTY:

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

EROSION AND SEDIMENT CONTROLS

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

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

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

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

STORM WATER MANAGEMENT:

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

STORM WATER MANAGEMENT ACTIVITIES:

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

NON-STORM WATER MANAGEMENT DISCHARGES:

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

OTHER REQUIREMENTS & PRACTICES

OTHER EROSION AND SEDIMENT CONTROLS:

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

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

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

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

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

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

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

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

STATE OF TEXAS
JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER

10/18/2011

Texas Department of Transportation

TxDOT STORM WATER POLLUTION PREVENTION PLAN (SW3P)

REV. 4/04 SW3P.DG

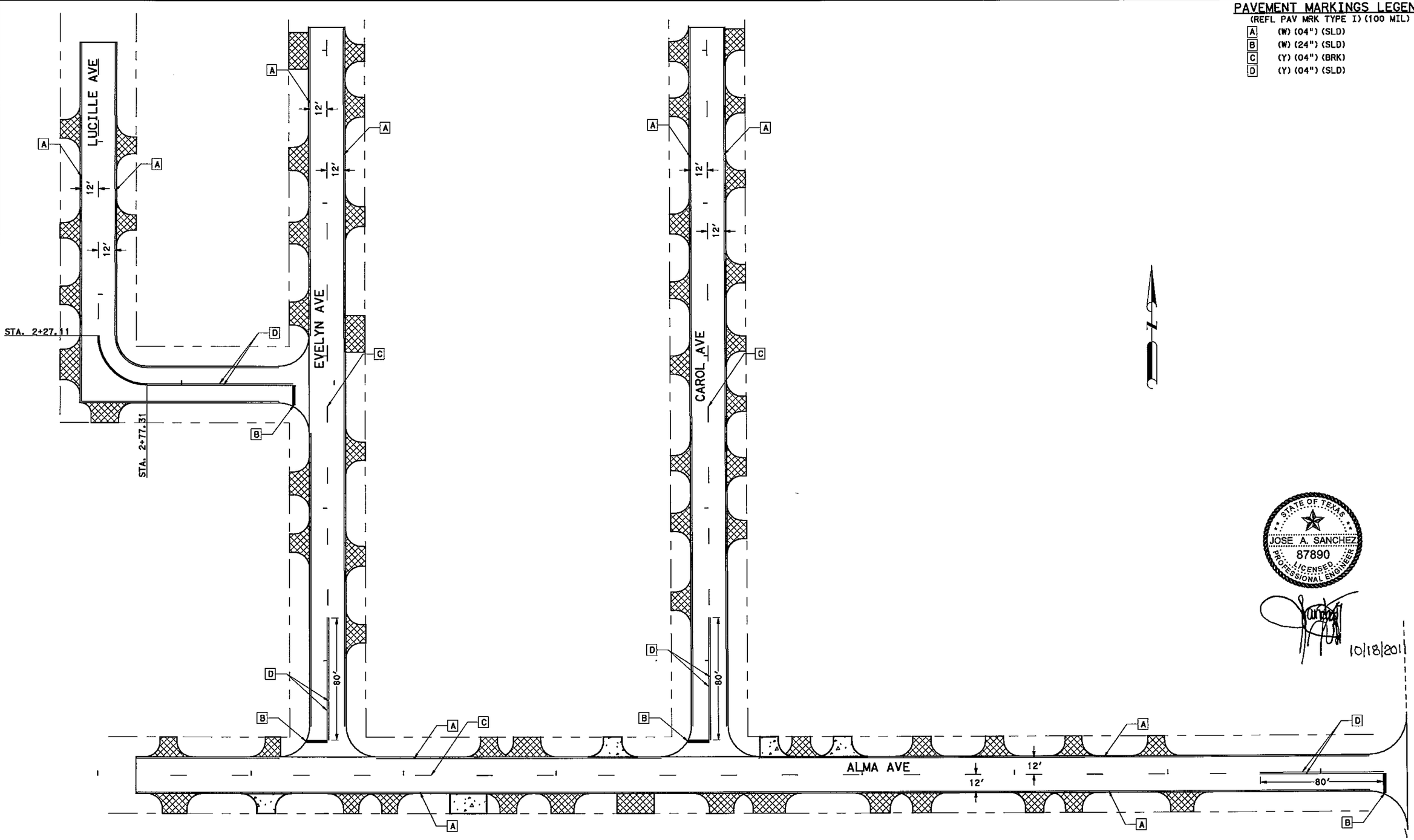
FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		30

STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
3C	1080	461	VAR

PAVEMENT MARKINGS LEGEND

(REFL PAV MRK TYPE I) (100 MIL)

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



JOSE A. SANCHEZ
87890
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

10/18/2011

SCALE 1" = 60'

MID-VALLEY ESTATES SUBDIVISION
PAVEMENT MARKINGS LAYOUT

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
6		31
STATE	DIST.	COUNTY
TEXAS	PHR	HIDALGO
CSJ	PCT	HIGHWAY NO.
3C-1080-461	1	VAR

10/18/2011
5:48:40 PM
P:\2009\2009-1027-01 Hidalgo County Colonias III\Design\11 Mid-Valley Estates\CSJ\Roadway\mve-spm.dgn

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	

ACC:

Barricade and Construction (BC) Standard Sheets General Notes:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets", the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

Worker Safety Apparel Notes:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

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

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3134

WEB ADDRESSES FOR REFERENCED DOCUMENTS

Compliant Work Zone Traffic Control Devices List (CWZTCD)
http://www.txdot.gov/publications/traffic.htm

Texas Manual on Uniform Traffic Control Devices (TMUTCD)
http://www.txdot.gov/publications/traffic.htm

Standard Highway Sign Designs for Texas (SHSD)
http://www.txdot.gov/publications/traffic.htm

Traffic Engineering Standard Sheets
http://www.txdot.gov/business/disclaim.htm

Material Producer List
http://www.txdot.gov/business/producer_list.htm

Departmental Material Specifications (DMS)
http://www.txdot.gov/services/construction/material_specifications/

Roadway Design Manual
http://www.txdot.gov/services/general_services/manuals.htm

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

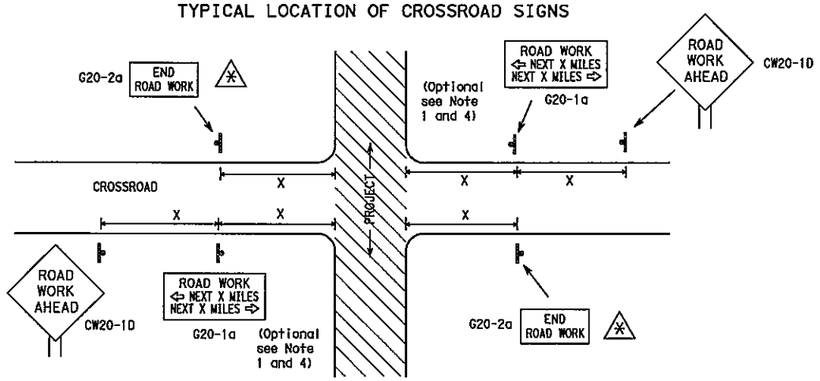
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

1 of 12 BC(1)-07

©TxDOT 11-4-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT

REVISIONS	STATE DISTRICT	FEDERAL REGION	PROJECT NUMBER	SHEET
4-03	PHR	6		32
9-07	COUNTY		CONTROL SECTION JOB	HIGHWAY
	HIDALGO		3C 1080 461	VAR

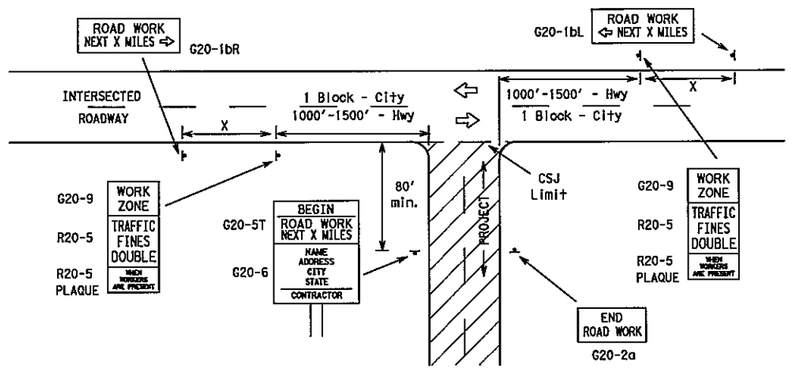
TYPICAL LOCATION OF CROSSROAD SIGNS



⚹ May be mounted on back of CW20-1D sign with approval of engineer. (See note 2 below)

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the G20-6 "Contractor Name" sign behind the Type III Barricades for the road closure (see BC(10) also). The G20-1bL and G20-1bR signs shall be replaced by the detour signing called for in the plans.

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

SIZE

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

SPACING

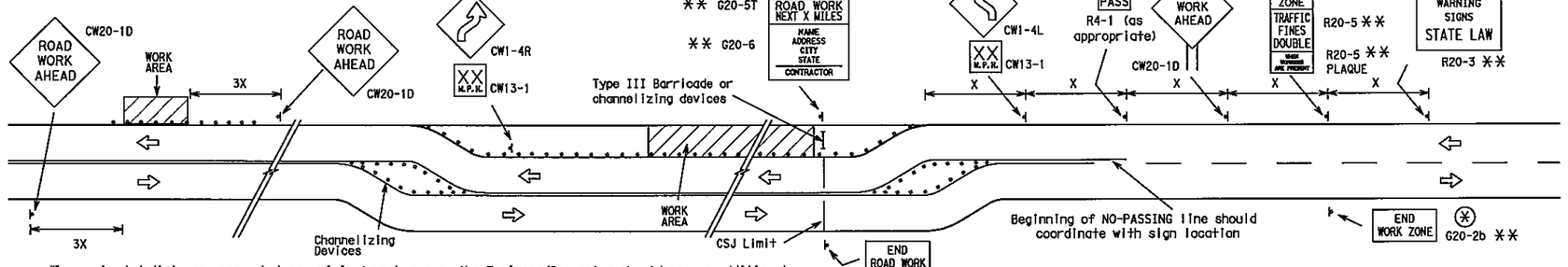
Posted Speed	Sign Spacing "X" △
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500 [2]
60	600 [2]
65	700 [2]
70	800 [2]
75	900 [2]
80	1000 [2]
⚹	⚹ [3]

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

General Notes:

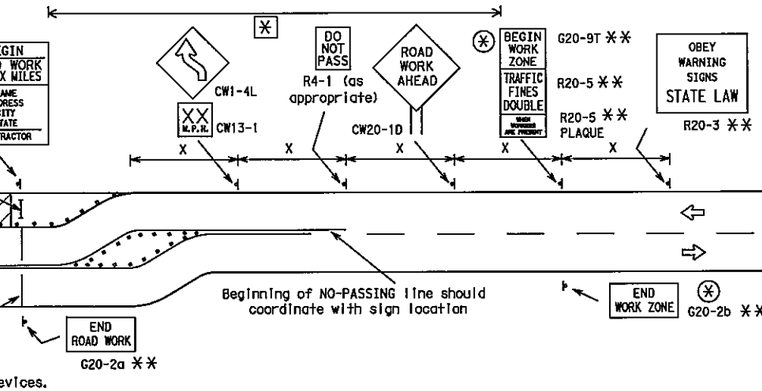
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have ½ mile or more advance warning.
4. 36" x 36" ROAD WORK AHEAD (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

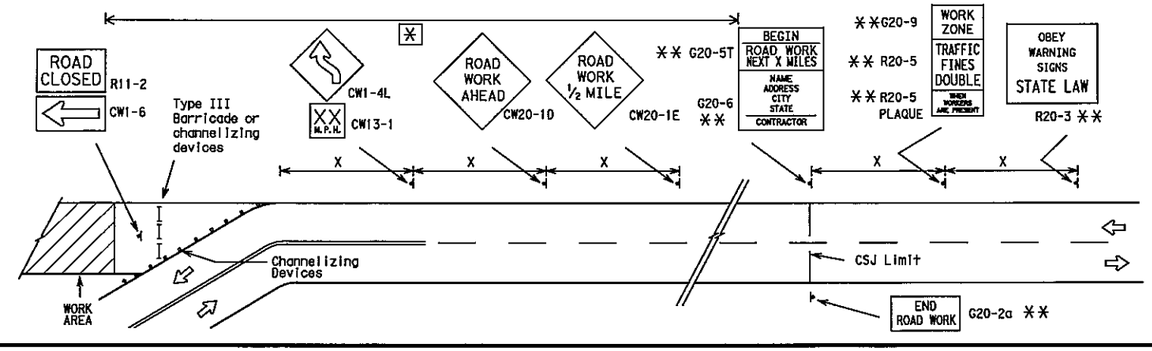


When extended distances occur between minimal work areas, the Engineer/Inspector should ensure additional Road Work Ahead (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and 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 G20-9T and G20-2b shall be used when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a work zone where traffic fines may double if workers are present.

** Required CSJ Limit signing. See Note 10 on BC(1).

⚹ Area for placement of "ROAD WORK AHEAD" sign and other signs or devices as called for on the Traffic Control Plan.

LEGEND

- Sign
- Channelizing Devices
- Type III Barricade
- X See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

R20-3
Legend/Border - Black
Background - White

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION PROJECT LIMIT STANDARD

2 of 12 BC(2)-07

© TxDOT 11-4-02	CK: TxDOT	CK: TxDOT	CK: TxDOT	CK: TxDOT
REVISIONS 9-07	STATE DISTRICT: PHR	FEDERAL REGION: 6	FEDERAL AID PROJECT	SHEET: 33
COUNTY: HIDALGO	CONTROL: 3C	SECTION: 1080	JOB: 461	HIGHWAY: VAR

ACC:

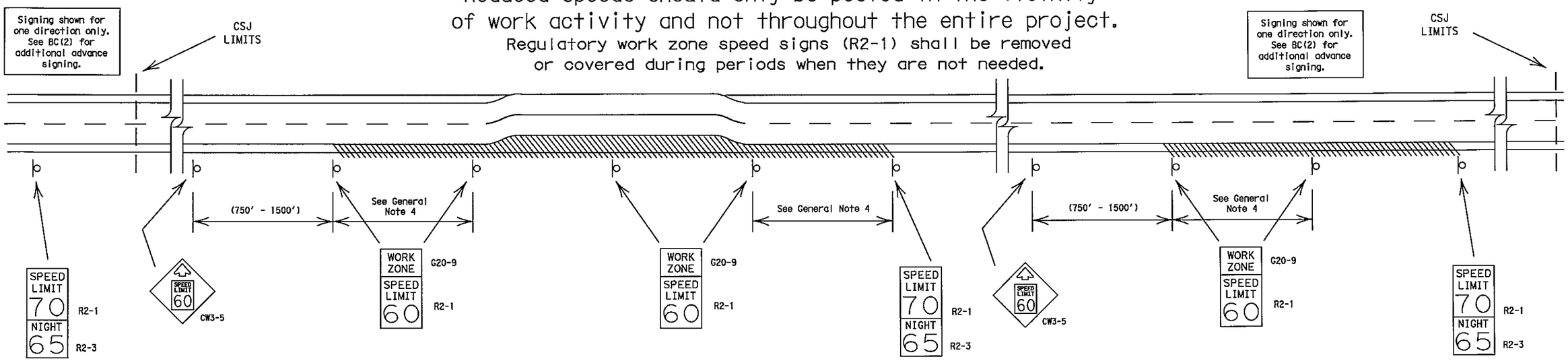
LEVELS DISPLAYED																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59	60	61	62	63			

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

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

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 15 feet of pavement edge or actually on the pavement.

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

GENERAL NOTES:

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, errection and maintenance of the CW3-5 sign, G20-9 plaque and the R2-1 and R2-3 signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless otherwise noted.
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD

3 of 12 BC(3)-07

©TxDOT 11-4-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
9-07	PHR	6		34

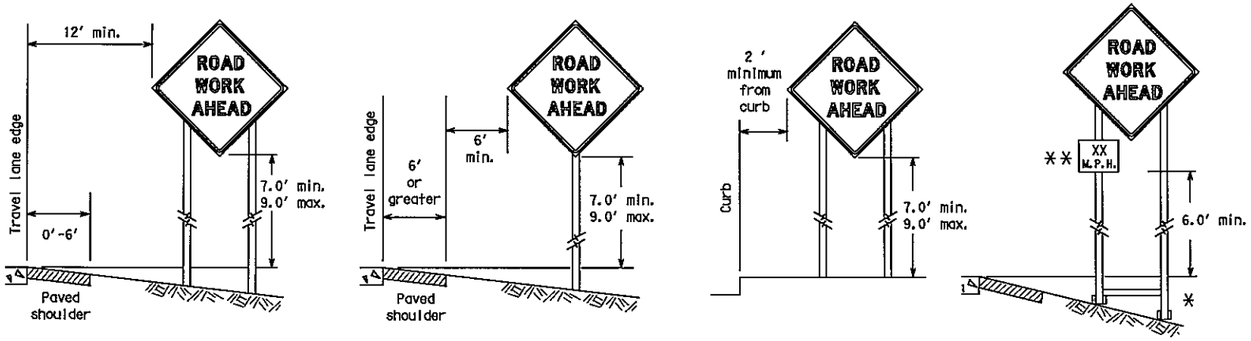
COUNTY	CONTROL	SECTION	JOB	HIGHWAY
HIDALGO	3C	1080	461	VAR

LEVELS DISPLAYED	ACC:
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	

LEVELS DISPLAYED

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ACC:	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	

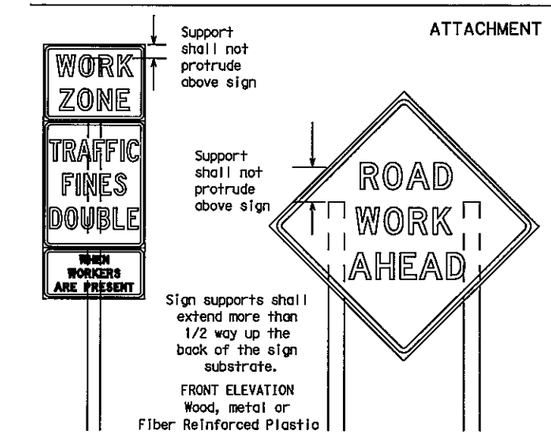
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



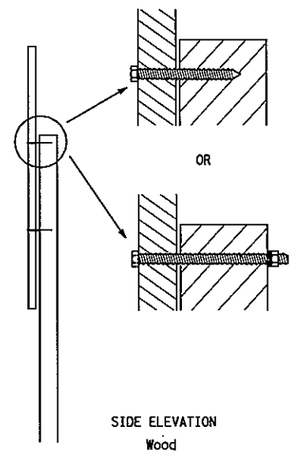
⁎ When placing skid supports on unlevel ground, the leg past lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



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



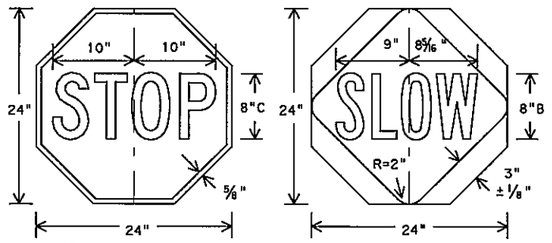
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails will NOT be allowed.

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

STOP/SLOW PADDLES

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



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
6. 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.
7. 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.
8. 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.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
10. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

1. The Engineer may allow the use of smaller size construction warning signs on secondary roads or city streets where speeds are low if the sign size is listed as an option on the "Typical Construction Warning Sign Size and Spacing" chart shown on BC(2).
2. The Contractor shall furnish the sign sizes shown in plans, the BC Sheets, the TCP sheets or as directed by the Engineer.

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact.
6. Rubber (such as tire inner tubes) shall NOT be used for sandbags.
7. 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.
8. 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.
9. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES STANDARD

4 of 12 BC(4)-07

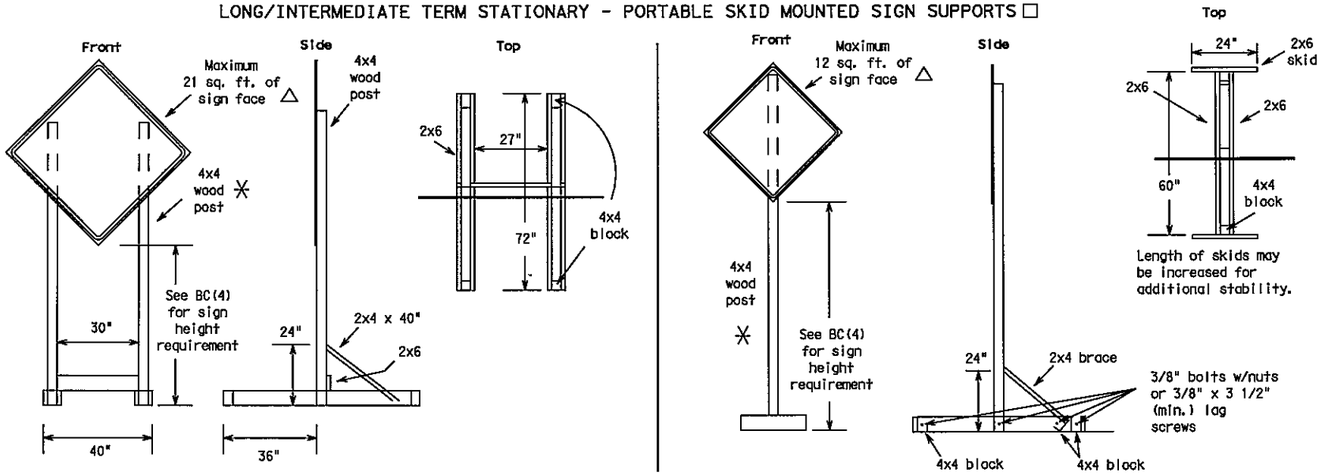
© TxDOT 11-4-02			DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS 9-07	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
	PHR	6				35
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

LEVELS DISPLAYED

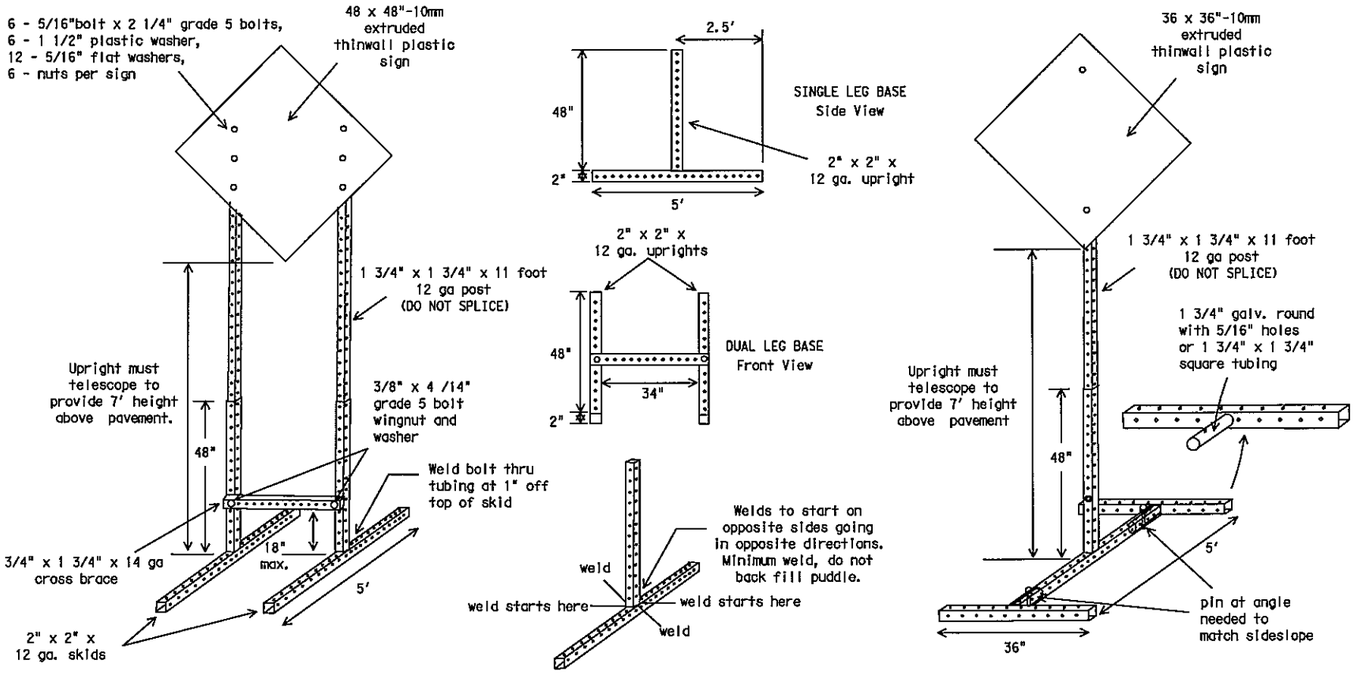
																ACC:
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63		

SKID MOUNTED WOOD SIGN SUPPORTS

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

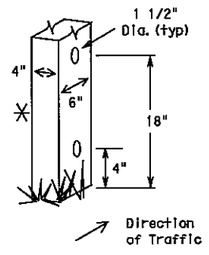


SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



WEDGE ANCHORS

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



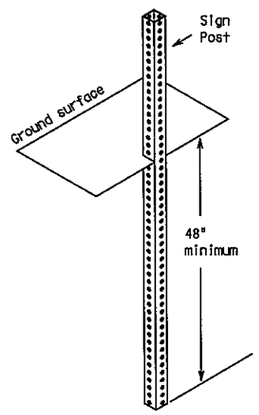
WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS

Nominal Post Size	No. 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

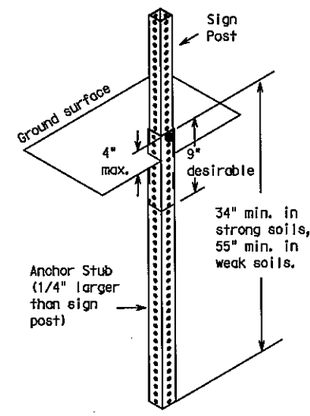
GROUND MOUNTED SIGN SUPPORTS

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.

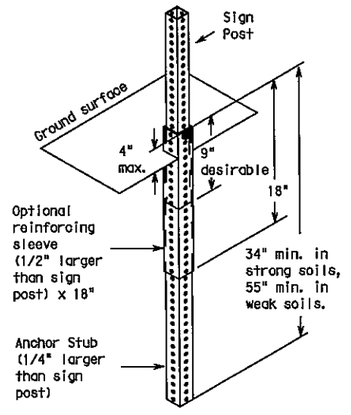
PERFORATED SQUARE METAL TUBING



OPTION 1
(Direct Embedment)



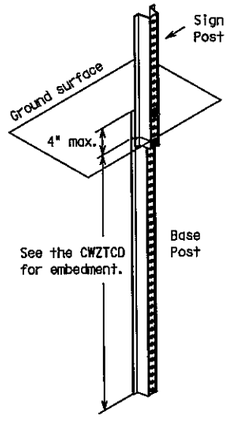
OPTION 2
(Anchor Stub)



OPTION 3
(Anchor Stub and Reinforcing Sleeve)

WING CHANNEL

Lap-splice/base bolted anchor



GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. More details of approved Long/Intermediate and Short Term supports can be found on the CWZTCD list. See BC(1) for website location.
3. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
4. 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.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT STANDARD

5 of 12 — BC(5)-07

DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
9-07	PHR	6		36

COUNTY	CONTROL	SECTION	JOB	HIGHWAY
HIDALGO	3C	1080	461	VAR

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 720 feet. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

Word or Phrase	Abb.	Word or Phrase	Abb.
Access Road	ACCS RD	Major	MAJ
Air Quality	AIR QLTY	Miles	MI
Alternate	ALT	Miles Per Hour	MPH
Avenue	AVE	Minor	MNR
Best Route	BEST RTE	Monday	MON
Boulevard	BLVD	Normal	NORM
Bridge	BRDG	North	N
Cannot	CANT	Northbound	(route) N
Center	CNTR	Parking	PKING
Construction Ahead	CONST AHEAD	Parking Lot	PRK LOT
Detour Route	DETOUR RTE	Road	RD
Do Not	DONT	Right Lane	RGT LN
East	E	Saturday	SAT
Eastbound	(route) E	Service Road	SERV RD
Emergency	EMER	Shoulder	SHLDR
Emergency Vehicle	EMER VEH	Slippery	SLIP
Entrance, Enter	ENT	South	S
Express Lanes	EXP LANE	Southbound	(route) S
Expressway	EXPWY	Speed	SPD
XXXX Feet	XXXX FT	Street	ST
Fog Ahead	FOG AHD	Sunday	SUN
Freeway	FRWY, FWY	Telephone	PHONE
Freeway Blocked	FWY BLKD	Temporary	TEMP
Friday	FRI	Thursday	THURS
Hazardous Driving	HAZ DRIVING	To Downtown	TO DWNTN
Hazardous Material	HAZMAT	Traffic	TRAF
High-Occupancy Vehicle	HOV	Travelers	TRVLRS
Highway	HWY	Tuesday	TUES
Hours	HR	Time Minutes	TIME MIN
Information	INFO	Upper Level	UPPR LVL
It Is	ITS	Vehicle	VEH
Junction	JCT	Warning	WARN
Left	LFT	Wednesday	WED
Left Lane	LFT LN	Weight Limit	WT LIMIT
Lane Closed	LN CLSD	West	W
Lower Level	LOWR LVL	Westbound	(route) W
Maintenance	MAINT	Wet Pavement	WET PVMT
		Will Not	WONT

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

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.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

Application Guidelines

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

Wording Alternatives

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

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS.

FULL MATRIX PCMS SIGNS

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

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION
PORTABLE CHANGEABLE
MESSAGE SIGN (PCMS)
STANDARD

6 of 12
BC(6)-07

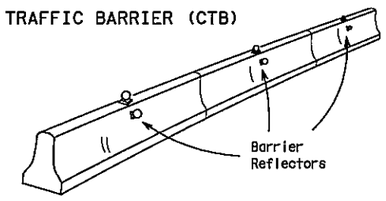
©TxDOT 11-4-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
9-07	PHR	6				37
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

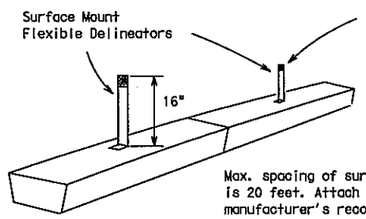
1. Barrier Reflectors shall be prequalified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors (Type C Delineators) can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 502.

CONCRETE TRAFFIC BARRIER (CTB)



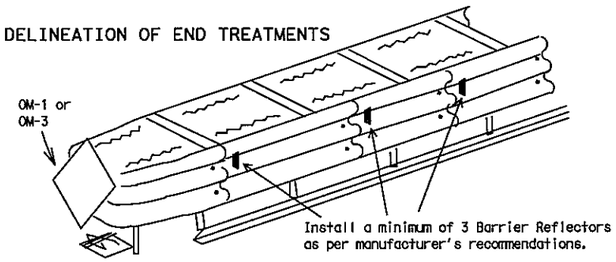
3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector.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

LOW PROFILE CONCRETE BARRIER (LPCB)



Max. spacing of surface mount flexible delineators is 20 feet. Attach the delineators as per manufacturer's recommendations.

DELINEATION OF END TREATMENTS



	APPROACHING TRAFFIC	
	BOTH SIDES	ONE SIDE
DELINEATION	OM-1	OM-3 or Vertical Panel

END TREATMENTS FOR CTB'S USED IN WORK ZONES

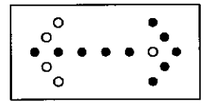
End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

TYPICAL FLASHING ARROW PANEL

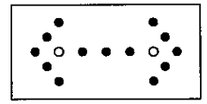
Arrow Panels may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

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

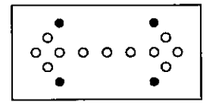
Flashing RIGHT (LEFT) ARROW



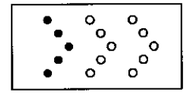
Flashing DOUBLE ARROW



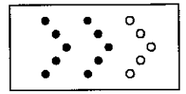
Flashing CAUTION

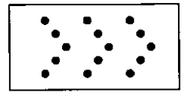


5. The "CAUTION" display consists of four corner lamps flashing simultaneously.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Panel shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.



Sequential Chevron





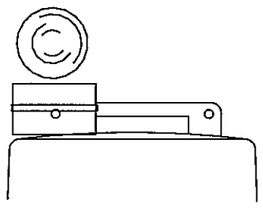
REQUIREMENTS

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

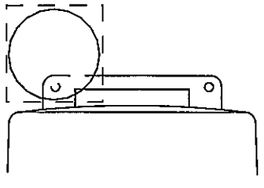
ATTENTION: Flashing Arrow Panels shall be equipped with automatic dimming devices.

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

11. The Flashing Arrow Panel shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Panel SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Panel provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted arrow panels should be 7 feet from roadway to bottom of panel.



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

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

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

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

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the dates shown in the CWZTCD to ensure that the TMA meets the age requirements and the crashworthiness criteria established by the Federal Highway Administration (FHWA) for TMAs.
4. Refer to the CWZTCD for a list of approved TMAs.
5. TMAs are required on freeways unless otherwise noted in the plans.
6. A TMA should be used anytime that it can be positioned approximately 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
7. 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.

LEVELS DISPLAYED ACC:

	1	2	3	4	5	6	7	8	9	10	11	12	31	4	5	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		

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

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

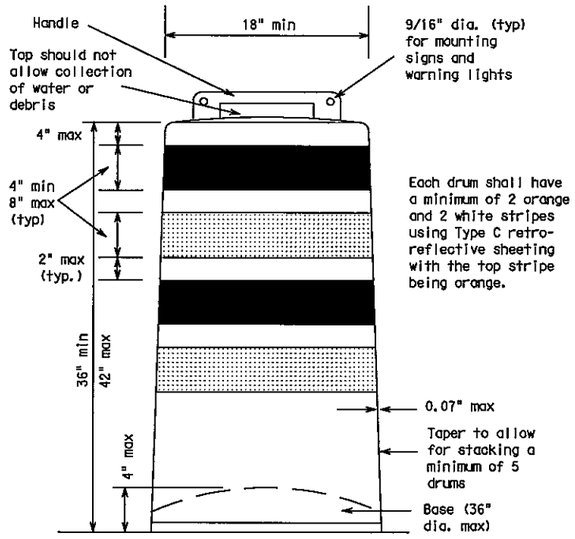
7 of 12 BC(7)-07

©TxDOT 11-4-02			DN-TxDOT	CK-TxDOT	DW-TxDOT	CK-TxDOT
REVISIONS 9-07	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
	PHR	6				38
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

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	

ACC:*



GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Prequalified plastic drums shall meet the following requirements:

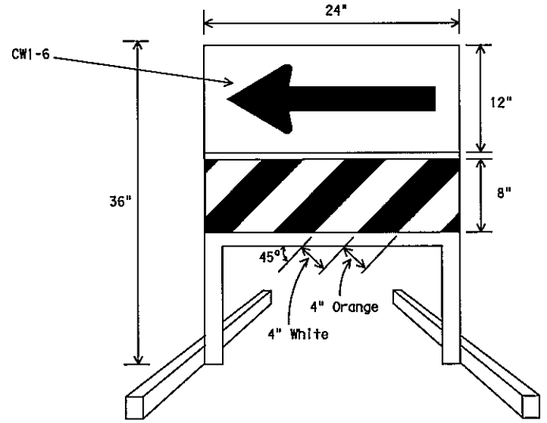
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a minimum unballasted weight of 7.7 lbs. and maximum unballasted weight of 11 lbs. The wall of the drum body shall be a minimum of 0.07 inch in thickness. Weight of any drum supplied shall not vary more than 0.5 lb. from that of the prequalified sample.
10. Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Flat Surface Reflective Sheeting." High Specific Intensity (Type C) retroreflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

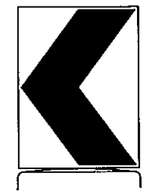
BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. 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.
4. 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.
5. Ballast shall not be placed on top of drums.
6. Adhesives may be used to secure base of drums to pavement.

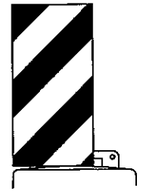


DIRECTION INDICATOR BARRICADE

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



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



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

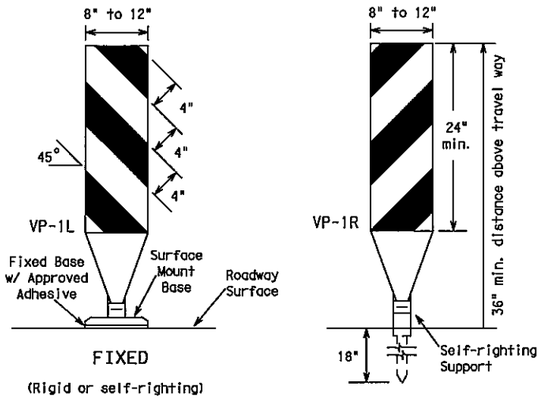
8 of 12 BC(8)-07

©TxDOT 11-4-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT

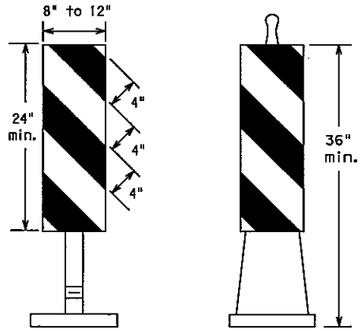
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
4-03	PHR	6		39
9-07	COUNTY	CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO	3C	1080	461	VAR

CHANNELIZING DEVICES

VERTICAL PANELS (VPs)

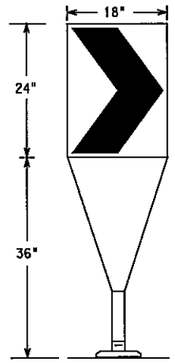


1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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



PORTABLE

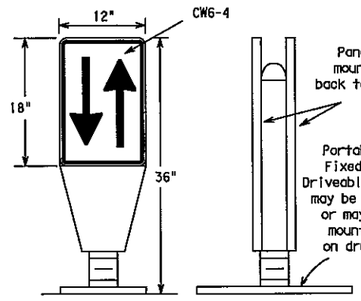
CHEVRONS



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

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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



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

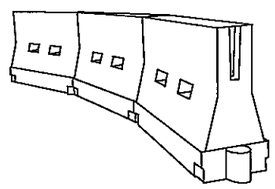
GENERAL NOTES:

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh approximately 35 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.
8. Examples on this sheet are commonly used channelizing devices in work zones. For other devices, refer to the CWZTCD.

Posted Speed	Formula	Minimum Desirable Taper Lengths ✻✻ 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'-75'
35		205'	225'	245'	35'	70'-90'
40		265'	295'	320'	40'	80'-100'
45	L=WS	450'	495'	540'	45'	90'-110'
50		500'	550'	600'	50'	100'-125'
55		550'	605'	660'	55'	110'-140'
60		600'	660'	720'	60'	120'-150'
65		650'	715'	780'	65'	130'-165'
70		700'	770'	840'	70'	140'-175'
75		750'	825'	900'	75'	150'-185'
80		800'	880'	960'	80'	160'-195'

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

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



LONGITUDINAL CHANNELIZING DEVICES

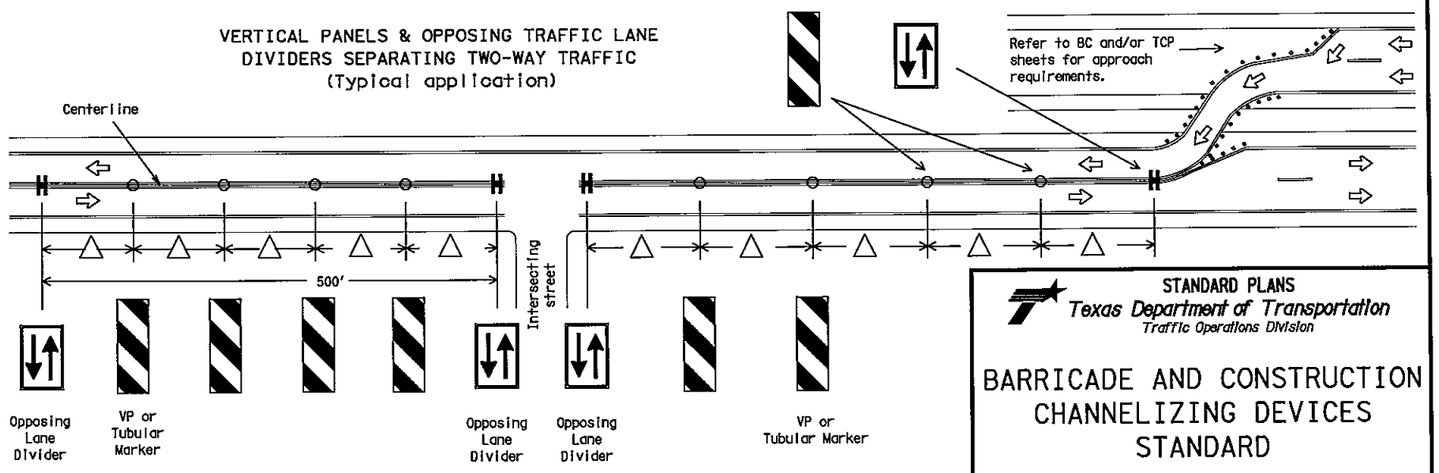
1. Longitudinal channelizing devices are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. **They are not designed to contain or redirect a vehicle on impact.**
2. Longitudinal channelizing devices may be used instead of a line of cones or drums.
3. Longitudinal channelizing devices shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Longitudinal channelizing devices should not be used to provide positive protection for obstacles, pedestrians or workers.
5. Longitudinal channelizing devices shall be retroreflective, or supplemented with retroreflective delineation as required for temporary barriers on BC(7)-07.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to 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 be not less than 32 inches in height.

VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS SEPARATING TWO-WAY TRAFFIC (Typical application)



△ Spacing between the VP's or tubular markers shall not exceed 100 feet. On roadways with speeds less than 45 MPH, spacing between the tubular markers or VP's shall be as shown on the channelizing spacing table shown on this page. If the table shows spacing greater than 100 feet based on the roadway speed, then use a maximum of 100 feet spacing between the tubular markers or VP's. Every fifth channelizing device shall be an OTLD, except when the OLTD must be spaced closer to accomodate an intersection. Spacing between the OTLD shall not exceed 500 feet.

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 31 45 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 33 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

ACC:

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

9 of 12 BC(9)-07

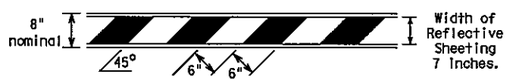
© TxDOT 11-4-02	CK: - TxDOT	CK: - TxDOT	DW: - TxDOT	CK: - TxDOT
REVISIONS 9-07	STATE DISTRICT: PHR	FEDERAL REGION: 6	FEDERAL AID PROJECT	SHEET: 40
COUNTY: HIDALGO	CONTROL: 3C	SECTION: 1080	JOB: 461	HIGHWAY: VAR

TYPE III BARRICADES

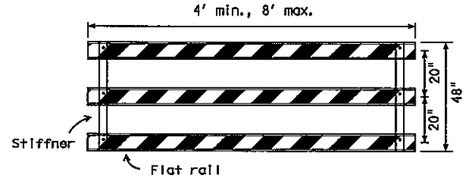
1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type III Barricades and a list of all materials used in the construction of Type III Barricades.
2. Type III Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades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

Barricades shall NOT be used as a sign support.

TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



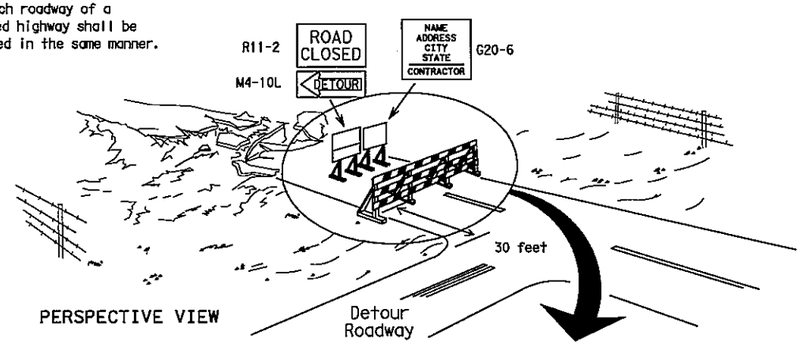
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



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

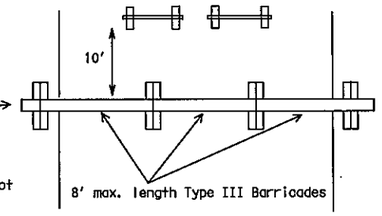
TYPE III BARRICADE (POST AND SKID) TYPICAL APPLICATION

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



PERSPECTIVE VIEW

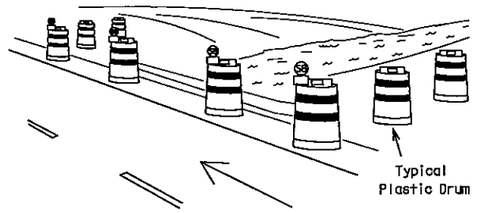
The three rails on Type III barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

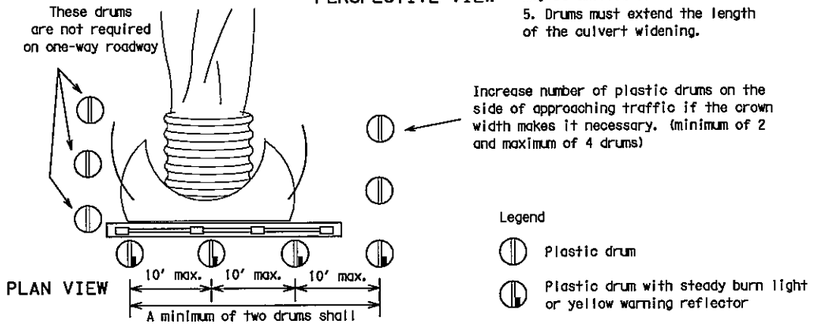
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type III Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



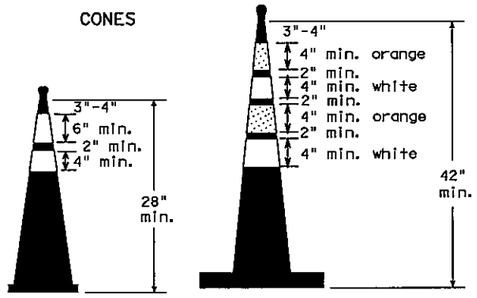
PERSPECTIVE VIEW

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

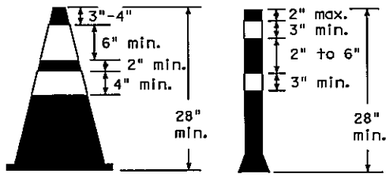


PLAN VIEW

CONES



Two-Piece cones

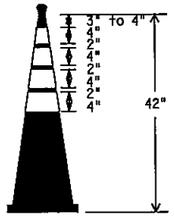


One-Piece cones Tubular Marker

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.

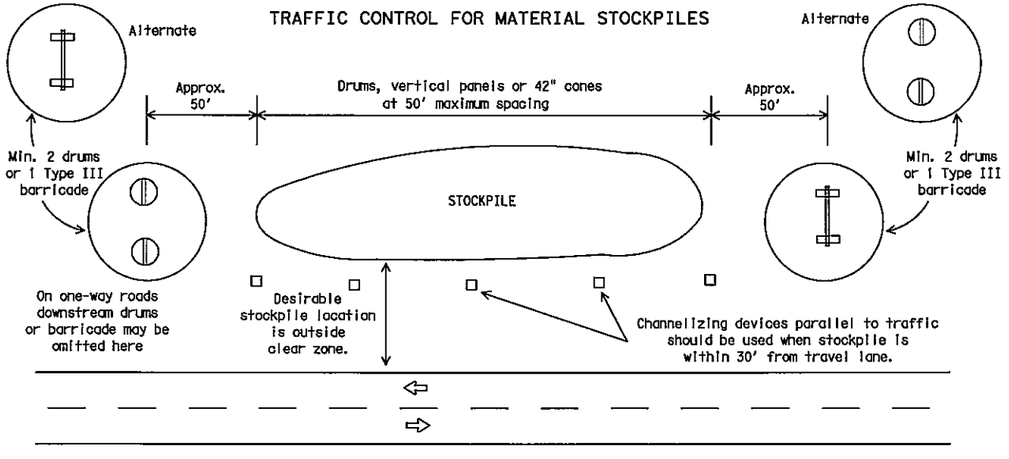
1. Traffic cones and tubular markers shall be a minimum of 28 inches in height when used either on freeways or at nighttime.
2. Cones or tubular markers shall be predominantly orange, fluorescent red-orange, or fluorescent yellow-orange. They should be kept clean and bright for maximum visibility.
3. Cones used only for daytime operations do not require the reflectorized bands.
4. Cones and tubular markers used for nighttime operations shall be reflectorized. Reflectorized material shall have a smooth, sealed outer surface that displays the same approximate color during the day and night. The reflectorized bands shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
5. When used at night, appropriate personnel shall ensure that cones and tubular markers remain in their proper location and in an upright position.
6. Reflectorization of 28"cones shall consist of a minimum 6 inch band placed at least 3 inches but not more than 4 inches from the top, supplemented by a minimum 4 inch band spaced a minimum of 2 inches below the 6 inch band.
7. Reflectorization of 42" cones shall be provided by alternating 4 to 6" orange and white stripes with orange on top.
8. Reflectorization of tubular markers shall be a minimum of two 3 inch bands placed a maximum of 2 inches from the top with a maximum of 6 inches between bands.
9. One-piece cones or tubular markers are generally suitable for temporary usage (up to 8 hours) with other channelization devices such as vertical panels, drums or two-piece cones for long term usage. Care should be taken to ensure they remain in their proper location and in an upright position.
10. Cones or tubular markers used on each project shall be of the same size and shape.
11. The handle may be designed as a hook or other shape, fabricated from non-rigid materials similar to the cone material, and may extend up to a maximum of 8 inches above the top of cone. Length of the handle shall not be considered with regard to the overall height of the cone.



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 C encapsulated bead (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

TRAFFIC CONTROL FOR MATERIAL STOCKPILES



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

ACC:

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

10 of 12 BC(10)-07

©TxDOT 11-4-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS 9-07	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
	PHR	6		41
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs

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

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

Raised Pavement Markers used as Guidemarks

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

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

DEPARTMENTAL MATERIAL SPECIFICATIONS

PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PREFABRICATED PAVEMENT MARKINGS-PERMANENT	DMS-8240
PREFABRICATED PAVEMENT MARKINGS-REMOVABLE	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).

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS STANDARD

11 of 12

BC(11)-07

©TxDOT February 1998	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT		
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
2-98 1-02	PHR	6				42
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
11-02 9-07	HIDALGO		3C	1080	461	VAR

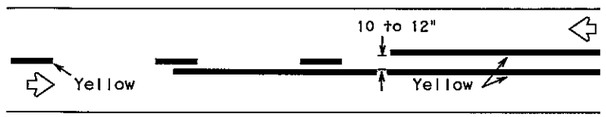
LEVELS DISPLAYED

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	

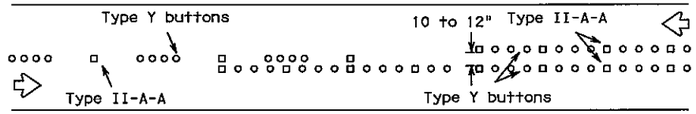
ACC:"

PAVEMENT MARKING PATTERNS

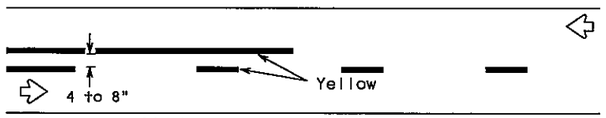
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



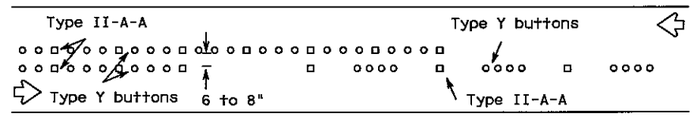
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



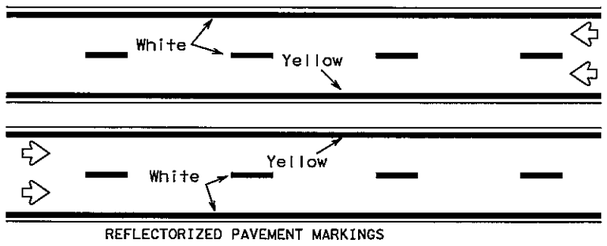
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



RAISED PAVEMENT MARKERS - PATTERN B

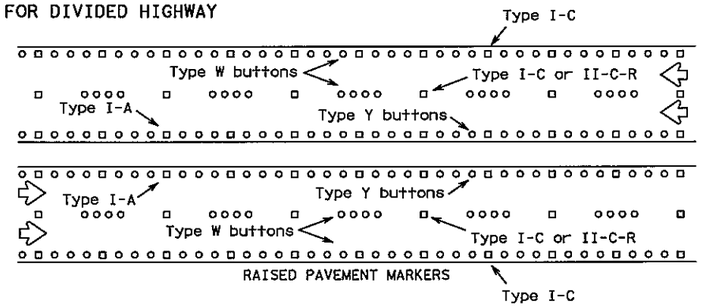
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



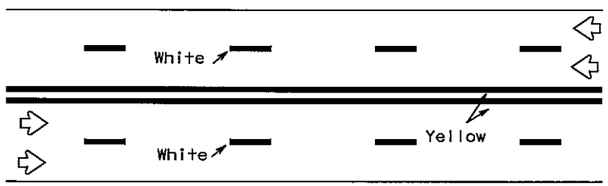
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



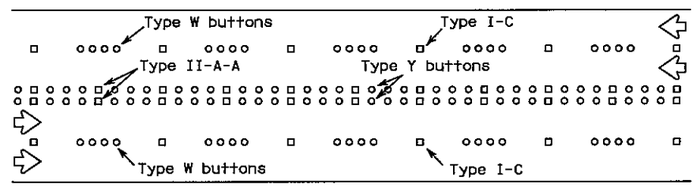
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



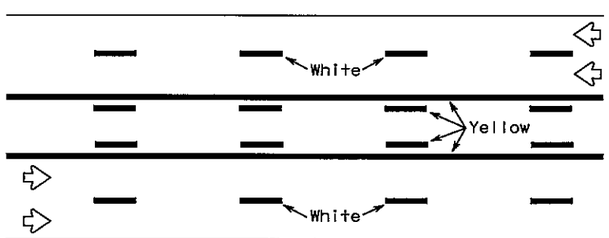
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



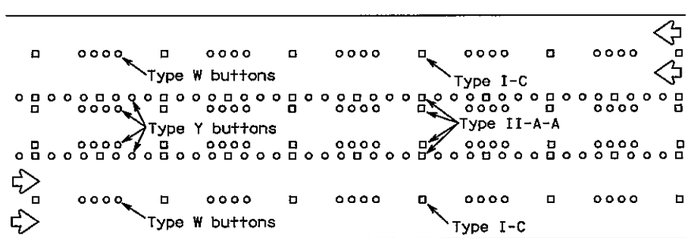
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE



REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.

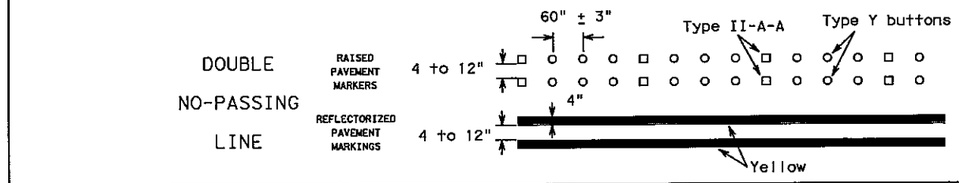


RAISED PAVEMENT MARKERS

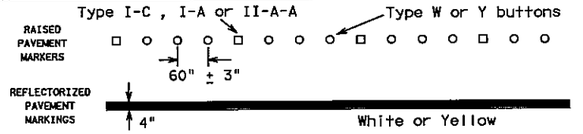
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

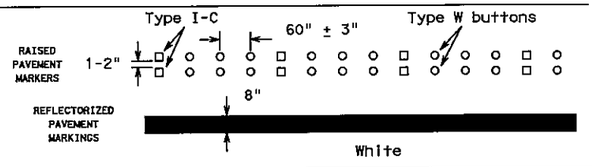


EDGE LINE OR SINGLE NO-PASSING LINE



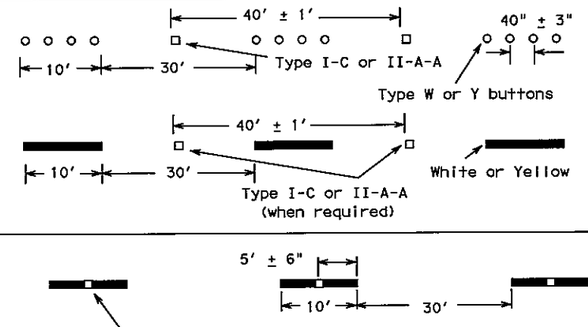
WIDE LINE

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



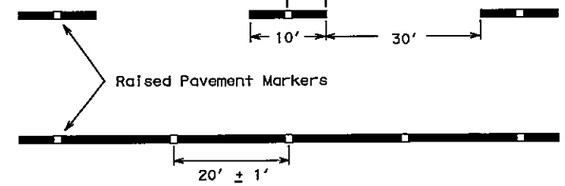
BROKEN LINE

(FOR CENTER LINE OR LANE LINE.)



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS STANDARD

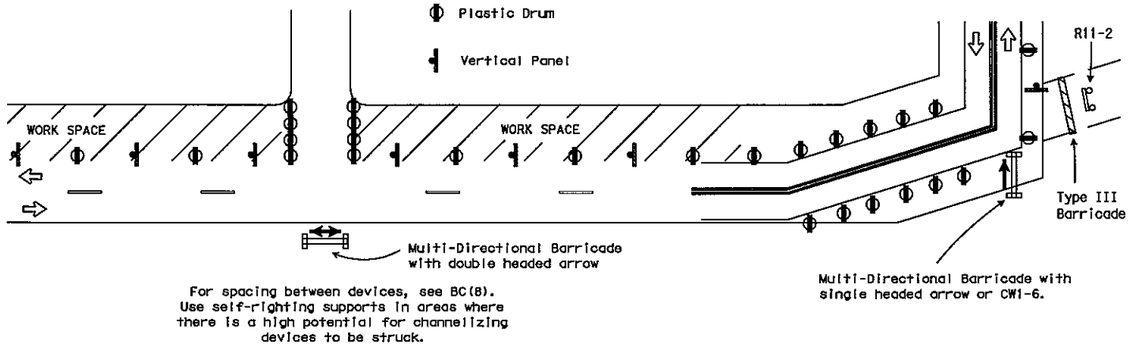
12 of 12 BC(12)-07

DN - TxDOT	CK - TxDOT	DW - TxDOT	CK - TxDOT

REVISIONS	STATE DISTRICT	FEDERAL PROJECT	FEDERAL AID PROJECT	SHEET
1-97	PHR	6		43
2-98				
11-02	COUNTY		CONTROL / SECTION / JOB	HIGHWAY
9-07	HIDALGO		3C 1080 461	VAR

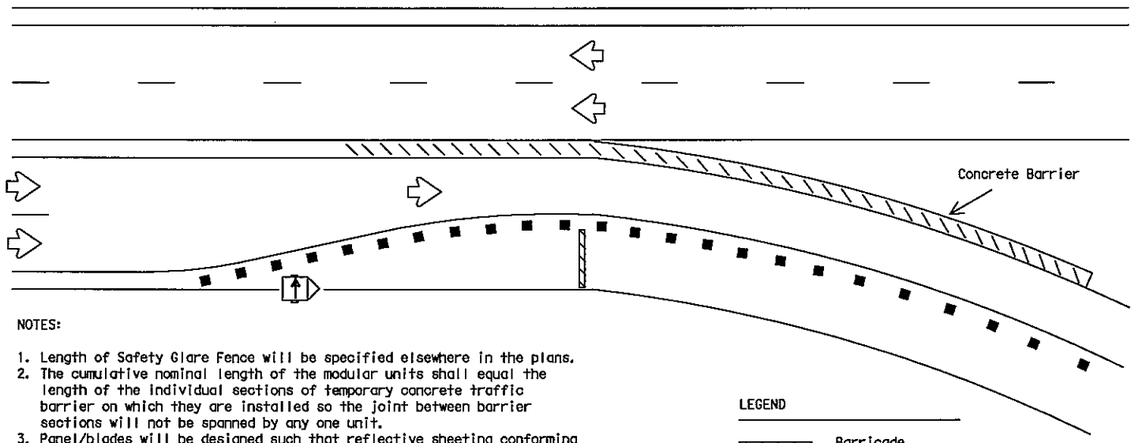
ACC:
LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

CHANNELIZING DEVICES FOR URBAN ROADWAY TYPE PROJECT



For spacing between devices, see BC(8).
Use self-righting supports in areas where there is a high potential for channelizing devices to be struck.

BARRIER DELINEATION WITH SAFETY GLARE FENCE



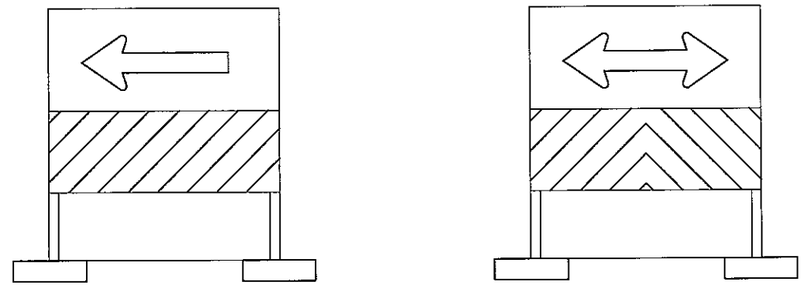
NOTES:

1. Length of Safety Glare Fence will be specified elsewhere in the plans.
2. The cumulative nominal length of the modular units shall equal the length of the individual sections of temporary concrete traffic barrier on which they are installed so the joint between barrier sections will not be spanned by any one unit.
3. Panel/blades will be designed such that reflective sheeting conforming with Departmental Material Specification DMS-8300, Flat Surface Reflective Sheeting, Type C (High Specific Intensity), minimum size of 2 inches by 12 inches can be attached to the edge of the panel/blade. The sheeting shall be attached to one panel/blade per section of concrete barrier not to exceed a spacing of 30 feet. Barrier reflectors are not necessary when panel/blades are installed.
4. Moduler Glare Screens for head light barrier shall meet the requirements of DMS-8610.

LEGEND

- Barricade
- Channelizing devices
- Trailer mounted flashing arrow panel
- Safety glare fence

MULTI-DIRECTIONAL BARRICADE

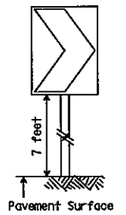


Single Headed Arrow

Double Headed Arrow

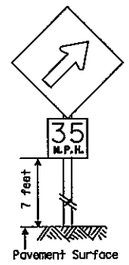
1. Multi-directional barricade shall not be used for lane closures.
2. May be used for sharp changes in alignment, or across roadway from stem of "T" intersection.
3. Typically used for Intermediate Term Stationary, Short Term Stationary or Short Duration work zone operations.
4. See the CWZTCD List for approved designs.

USAGE OF CW1-6, ECW1-6a AND CW1-8 SIGNS



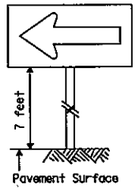
CW1-8

The CHEVRON sign (CW1-8) may be used to replace roadside delineation on curves or used in transitions or tapers.



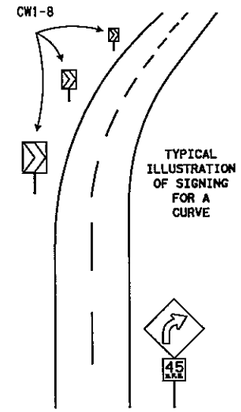
ECW1-6a

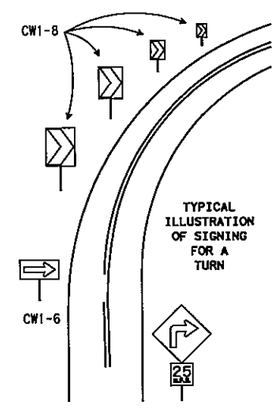
An UPWARD SLOPING ARROW sign (ECW1-6a) is intended to be used to indicate the beginning of a curve or transition. It should be preceded with an appropriate curve sign when needed, and should not be used throughout the curve or transition. Advisory speed plaque is optional.



CW1-6

A LARGE ARROW sign (CW1-6) is intended to be used to give notice of a sharp change in alignment (turn) in the direction of travel. It should be preceded with an appropriate advance construction warning turn sign.





NOTES:

1. CW1-6, ECW1-6a & CW1-8 signs shall be mounted on fixed supports.
2. 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.
3. For two-way traffic, use same arrangement of signs on outside of curve for each direction of travel.
4. Appropriate advance warning CURVE or TURN sign with Advisory Speed plaque should be used when needed.

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3120
Fax (512) 416-3299

Instructions to locate the "CWZTCD" on TxDOT website are:

Start at website - www.dot.state.tx.us
Click on "About TxDOT",
Click on "Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
Click on "View PDF".
This site is printable.

PREQUALIFICATION PROCEDURES ARE OBTAINED FROM:

CONSTRUCTION DIVISION-MATERIALS AND TESTS SECTION
TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)
125 EAST 11th STREET
AUSTIN, TX 78701-2483

DEPARTMENTAL MATERIAL SPECIFICATIONS

FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULER GLARE SCREENS	DMS-8610

COLOR	USAGE	SIGN SHEETING
ORANGE	BACKGROUND	TYPE E (FLUORESCENT PRISMATIC)
WHITE	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE SHEETING

REFER TO THE BC SHEETS FOR SHEETING REQUIREMENT ON CHANNELIZING DEVICES.

The five categories of work duration and their time at a location shall be:

A. Long-term stationary is work that occupies a location more than 3 days.

B. Intermediate-term stationary is work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.

C. Short-term stationary is daytime work that occupies a location for more than 1 hour, but less than 12 hours.

D. Short duration is work that occupies a location up to 1 hour.

E. Mobile is work that moves intermittently or continuously.

LEVELS DISPLAYED ACC:

1	2	3	4	5	6	7	8	9	10	11	20	31	41	51	56	
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		

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN
TYPICAL DETAILS

WZ(TD)-03

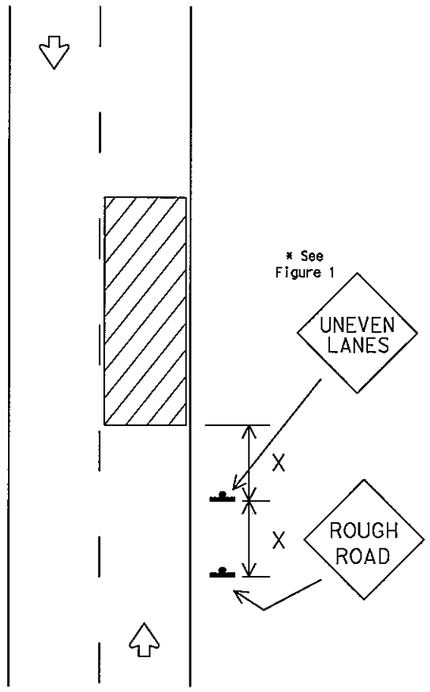
DN-LR	CK-DTN	DW-DN	CK-GB	MSG NO.1

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT				SHEET
4-98	PHR	6					44
3-03	COUNTY		CONTROL	SECTION	JOB		HIGHWAY
	HIDALGO		3C	1080	461		VAR

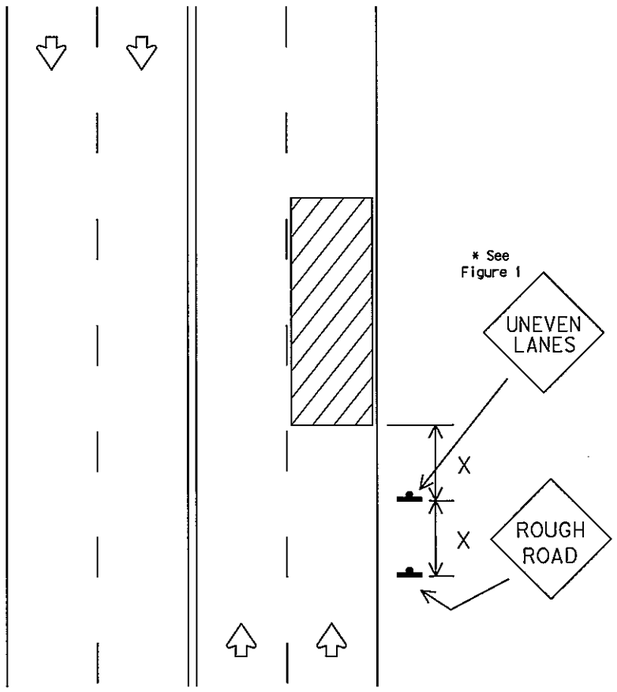
LEVELS DISPLAYED

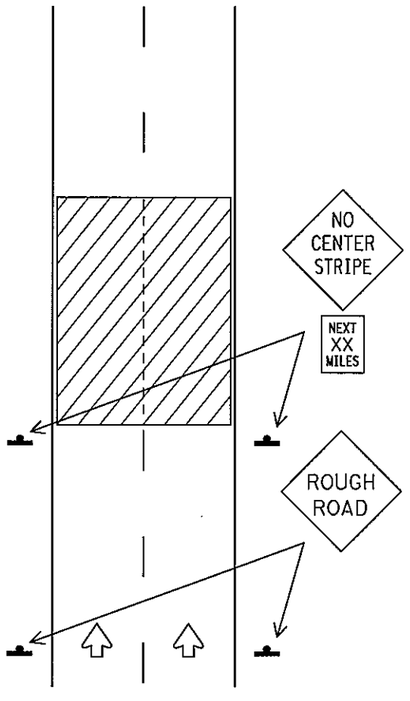
	1	2	3	4	5	6	7	8	9	10	11	12	31	41	51	61
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63		

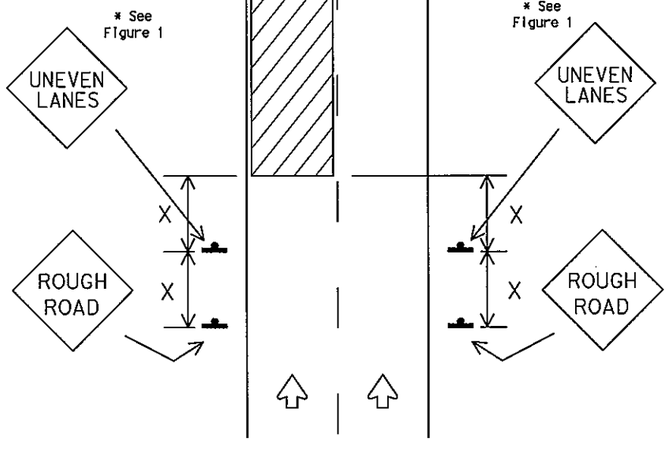
ACC:*



Signing shown for one direction.







"X" distance - See Note 4 on this page.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN HARDWARE	DMS-7120
PREFABRICATED PAVEMENT MARKINGS-PERMANENT	DMS-8240
PREFABRICATED PAVEMENT MARKINGS-REMOVABLE	DMS-8241
FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
VINYL NON-REFLECTIVE DECAL SHEETING	DMS-8320

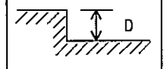
COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE E (FLUORESCENT PRISMATIC)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE DECAL SHEETING

GENERAL NOTES:

1. If spalling or holes occur, ROUGH ROAD signs should be placed in advance of the condition and may be repeated throughout the project.
2. UNEVEN LANES sign (CW8-11) should be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES sign (CW21-16) or Advisory Speed sign (CW13-1).
3. NO CENTER STRIPE signs (CW8-12) should be installed if centerlines or lane lines are obscured or obliterated. The signs should remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. When operations are completed and final surface treatment will not be applied as part of this project, advance signs shall be left in place and become the property of the State. These signs shall be installed on approved permanent sign supports as per TxDOT standards. Additional signs may be required as directed by the Engineer. Minimum mounting height of signs is 7 feet. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to the Item "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Pavement markings shall be replaced as operations proceed.
7. Short term markings shall not be used to simulate edge lines.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

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

FIGURE 1

Edge Condition	Edge Height (D)	Warning Devices
	less than or equal to 1" greater than 1" to: 1¼" (maximum-planing) 1½" (typical-overlay)	Signs: ECW8-8 Signs: CW8-11, ECW8-8
Distance "D" may be a maximum of 1¼" for planing operations and 2" for overlay operations if uneven lanes are open to traffic after work operations cease.		

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

SIGNING FOR UNEVEN LANES

WZ(UL)-03

DN-MT	CO-	DN-DN	CK-MT	MCG NO.:

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT				SHEET
8-95	PHR	6					45
1-97	COUNTY		CONTROL	SECTION	JOB		HIGHWAY
2-98	HIDALGO		3C	1080	461		VAR
3-03							

TYPICAL DEAD END BARRICADE INSTALLATION

Barricade striping is red and white sloping toward the center of the roadway. (See Note 1)

✻ W14-1P DEAD END plaque may be used as an alternate.

Devices shown for one direction of travel

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3120
Fax (512) 416-3299

Instructions to locate the "CWZTCD" on TxDOT website are:

Start at website - www.dot.state.tx.us
Click on "About TxDOT",
Click on "Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
Click on "View PDF".
This site is printable.

SW14-1T
36" X 36"

Letters - Black
Border - Black
Background - Yellow Refl.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN HARDWARE	DMS-7120
WINGED CHANNEL POSTS	DMS-7130
FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
VINYL NON-REFLECTIVE DECAL SHEETING	DMS-8320
DELINEATORS AND OBJECT MARKERS	DMS-8600

COLOR	USAGE	SHEETING MATERIAL
RED	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
WHITE	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
YELLOW	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE SHEETING

GENERAL NOTES:

1. Barricade striping shall be red and white reflective sheeting for all permanent road closures. Orange and white reflective sheeting may be substituted for locations where duration of road closure is expected to be 18 months or less, or when approved by the Engineer. Red and orange reflective sheeting shall not be combined on barricades or locations.
2. Barricades shall be designed and constructed to Compliant Work Zone Traffic Control Device List (CWZTCD) standards in a first-class workmanship manner of clean sound material. Components made of lumber shall be painted with a minimum of two coats of white paint to ensure thorough coverage and a uniform white color. Barricade striping material shall meet the color and retroreflective requirements of Departmental Material Specification DMS-8300, Type C.
3. Post type breakaway supports shall be used as barricade supports. Barricades may be fabricated with "skid" supports if approved by the Engineer. Skid supports should be anchored using sand bags to prevent movement. For construction details of post (fixed Type III barricades) see CWZTCD list Part D.2.f. The dead end road barricades may also be anchored to the pavement using the bolt down median anchor manufactered by Universal Anchor System shown on SMD(FRP). The barricades shall be built using FRP posts and approved rails as shown on the CWZTCD List.
4. Barricades shall not be placed parallel to traffic unless a minimum adequate clear zone of 30 feet from edge of travel lane is provided.
5. A minimum of one 8-foot wide barricade and three OM-4R object markers shall be required for all locations. Barricades shall extend across all travel lanes and shoulders if shoulders are present. Barricades may be extended to the ROW as directed by Engineer.
6. Stockpiled materials shall not be placed on traffic side of barricades.
7. OM-4 object markers shall be mounted to the middle rail using two 1/2" through bolts with flat washers and lock washers.
8. OM-4 object markers shall be constructed of 0.063 aluminum and shall meet the color and reflective requirements of DMS-8300 Type C and DMS-8600.
9. Plastic drums shall meet the requirements as listed on the CWZTCD list or the BC Standards. Plastic drums may be anchored with adhesive to prevent movement.
10. All signs and chevrons shall be installed with hardware and support at the minimum mounting height in accordance with the SMD and BC Standards. Signs shall be mounted at a 7 foot minimum height. Signs shall not be attached to barricades.
11. Motorists should be able to see at least three chevron signs as they approach the curve and as they drive through the curve from either direction.
12. Delineation devices such as the chevron or large arrow signs shall only be placed on the outside portion of a curve.

GENERAL NOTE FOR SIGNS:

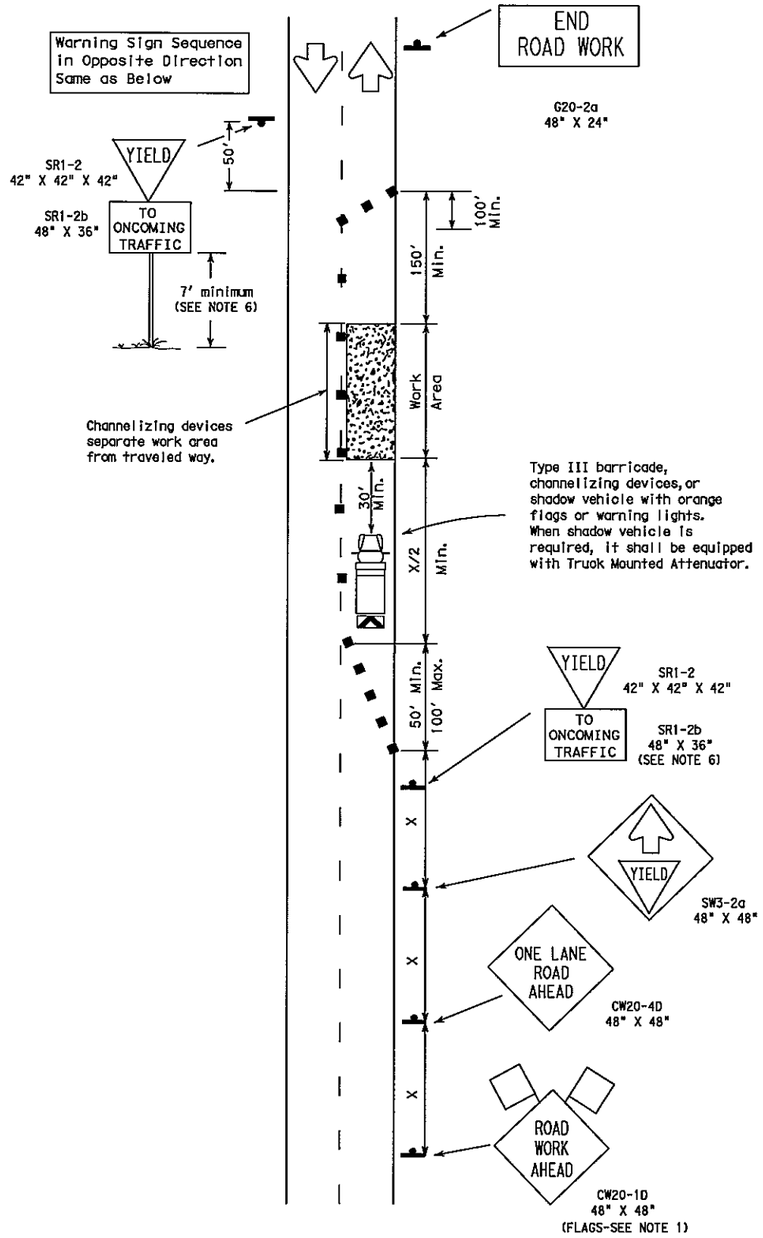
1. The alphabets and lateral spacing between letters and numerals shall conform with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" (TMUTCD), latest edition, and any approved changes thereto.
2. Lateral spacing of text shall provide a balanced appearance.
3. All materials shall conform to Departmental Material Specifications.
4. Legend shall be black and applied by screening process, cut-out vinyl non-reflective sheeting or combination thereof.
5. Sign blanks shall be any material that meets the DMS requirements for permenant sign substrates.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

WORK ZONE
DEAD END
ROADWAY DETAILS

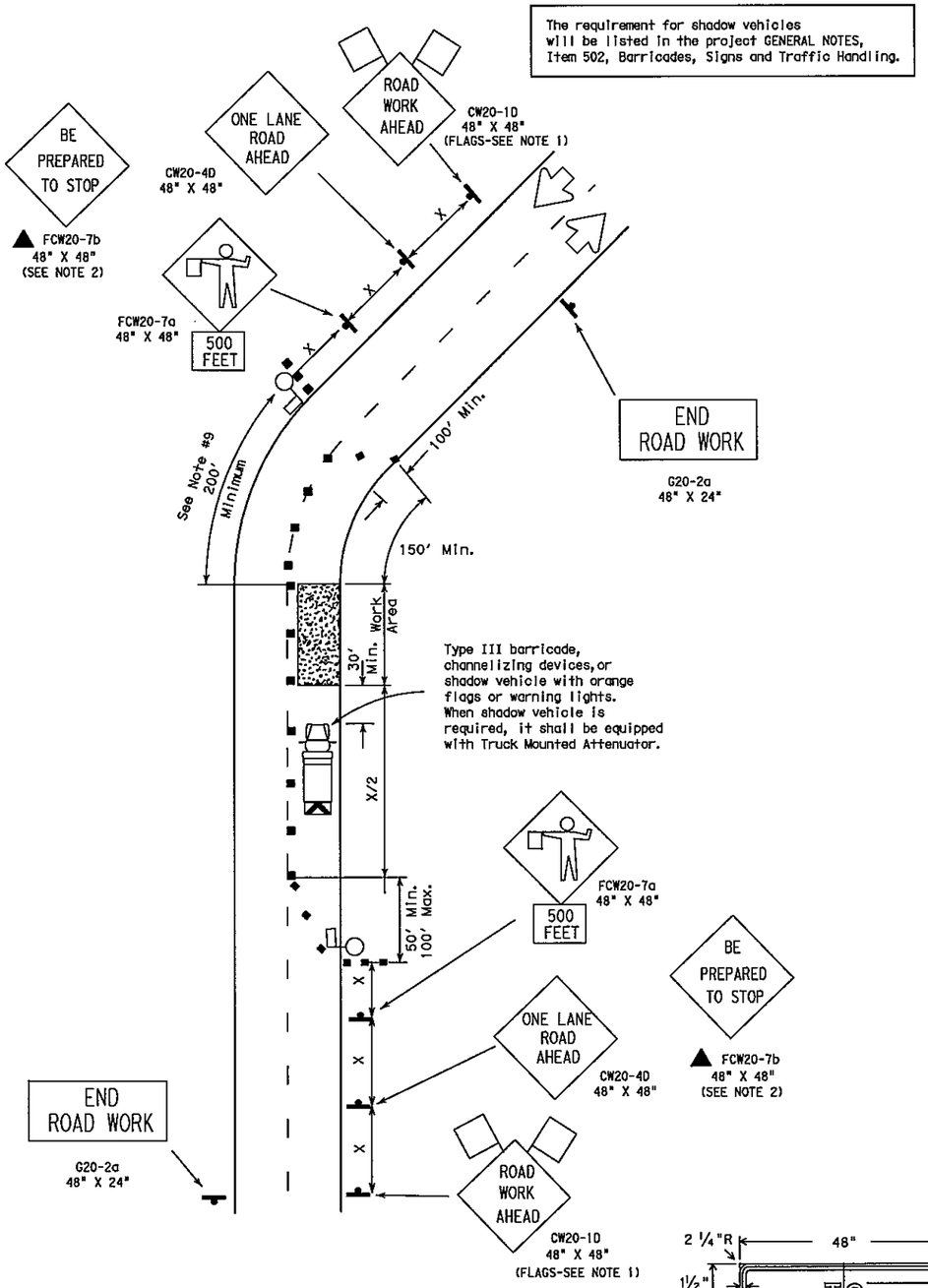
WZ(DERD)-03

©TxDOT August 1995			DN: LR/MT	CK: GRB	DW: FDN	CK: CAL
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
1-97 2-98	PHR	6				46
4-98 3-03	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR



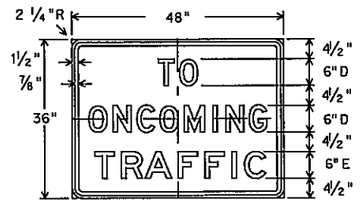
TCP (1-2a)

One Lane Closed
Adequate Field of View



TCP (1-2b)

One Lane Closed
Inadequate Field of View



SR1-2b
48" x 36"

Letters - Black
Background - White
Reflective

LEGEND

Type III Barricade ■ ■ Channelizing Devices Flag
Heavy Work Vehicle Truck Mounted Attenuator
Trailer Mounted Flashing Arrow Panel (M) Portable Changeable Message Sign
Flagger Sign Post

Posted Speed*	Formula	Minimum Desirable Taper Lengths** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Device On a Taper	On a Tangent	Minimum Sign Spacing X Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'-75'	120'
35		205'	225'	245'	35'	70'-90'	160'
40		265'	295'	320'	40'	80'-100'	240'
45	L=WS	450'	495'	540'	45'	90'-110'	320'
50		500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60		600'	660'	720'	60'	120'-150'	*600'
65		650'	715'	780'	65'	130'-165'	*700'
70		700'	770'	840'	70'	140'-175'	*800'

* Conventional Roads Only

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

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

GENERAL NOTES:

1. Flags attached to signs are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
3. The BE PREPARED TO STOP sign may be installed after the ONE LANE ROAD AHEAD sign, but proper sign spacing shall be maintained.
4. ROAD WORK AHEAD sign may be repeated if the visibility of the work zone is less than 1500'.

TCP(1-2a)

5. YIELD sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work zones should be no longer than one half city block. In rural areas on roadways with less than 4000 ADT, work areas should be no longer than 400'.
6. YIELD TO ONCOMING TRAFFIC sign shall be placed on a support at a 7' minimum mounting height.

TCP(1-2b)

7. Flaggers should use two-way radios or other methods of communication to control traffic.
8. Length of work area should be based on the ability of flaggers to communicate.
9. Distance along curve of work area should be adequate length for motorists to identify and react to flagger signals.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARDS@mailgw.dot.state.tx.us

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP(1-2)-98

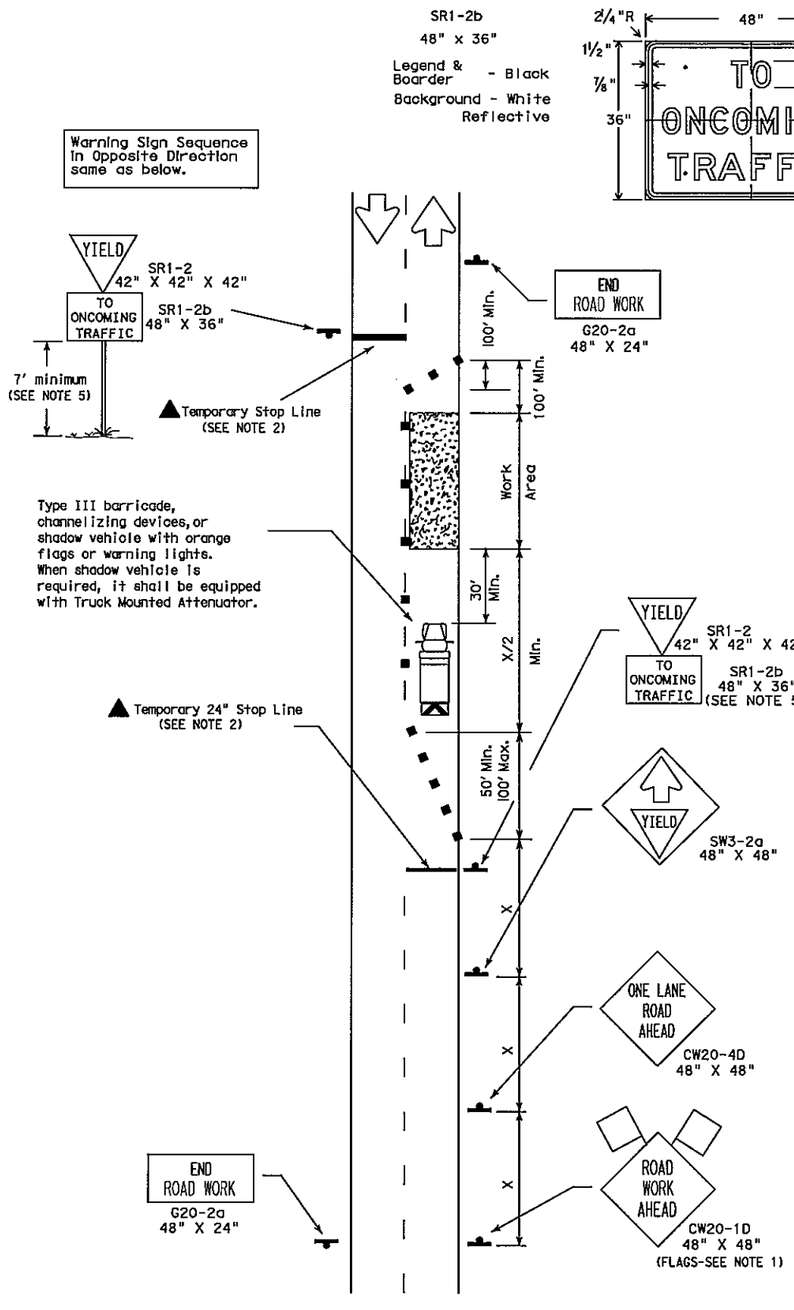
DN-LR	CK-MT	DW-DN	CK-MT	MSG NO.

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
4-90	PHR	6		47
2-94	COUNTY	CONTROL	SECTION	JOB	HIGHWAY
1-97	HIDALGO	3C	1080	461	VAR
4-98					

DN:
CK:
DW:
CK:

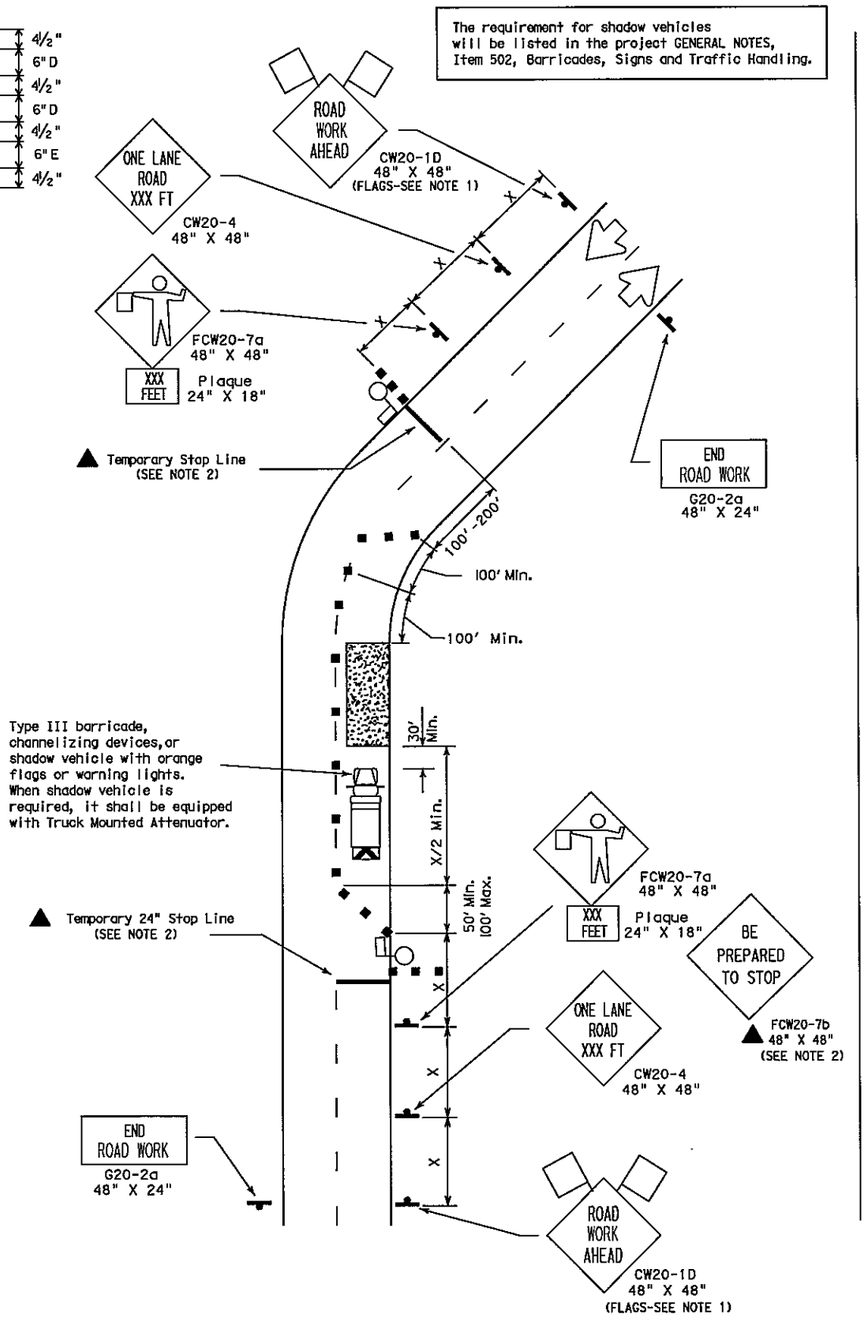
DATE:
ACC:
FILE:

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



TCP (2-2a)

2-Lane Roadway Without Paved Shoulders
One Lane Closed
Adequate Field of View



TCP (2-2b)

2-Lane Roadway Without Paved Shoulders
One Lane Closed
Inadequate Field of View

LEGEND

Type III Barricade ■ ■ Channelizing Devices Flag
Heavy Work Vehicle Truck Mounted Attenuator
Trailer Mounted Flashing Arrow Panel (M) Portable Changeable Message Sign
Flagger Sign Post

Posted Speed ✳	Formula	Minimum Desirable Taper Lengths ✳✳ 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Device On a Taper	On a Tangent	Minimum Sign Spacing X Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'-75'	120'
35		205'	225'	245'	35'	70'-90'	160'
40		265'	295'	320'	40'	80'-100'	240'
45	L=WS	450'	495'	540'	45'	90'-110'	320'
50		500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60		600'	660'	720'	60'	120'-150'	✳600'
65		650'	715'	780'	65'	130'-165'	✳700'
70		700'	770'	840'	70'	140'-175'	✳800'

✳ Conventional Roads Only

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

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

GENERAL NOTES:

1. Flags attached to signs are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
3. The BE PREPARED TO STOP sign may be installed after the ONE LANE ROAD XXX FT sign, but proper sign spacing shall be maintained.
4. YIELD sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work zones should be no longer than one half city block. In rural areas on roadways with less than 4000 ADT and work areas should be no longer than 400'.
5. YIELD TO ONCOMING TRAFFIC sign shall be placed on a support at a 7' minimum mounting height.
6. Flaggers should use two-way radios or other methods of communication to control traffic.
7. Length of work area should be based on the ability of flaggers to communicate.
8. For intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 10 feet is recommended. The 10 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN

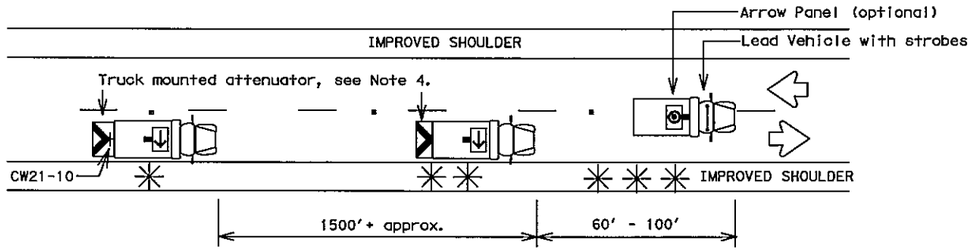
TCP(2-2)-03

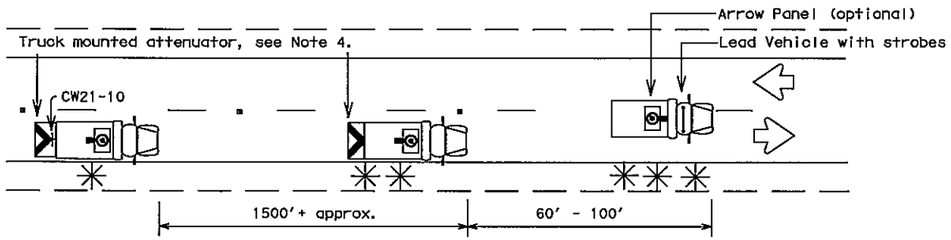
DN-LR	CK-MT	DW-DN	CK-MT	MTG NO.:

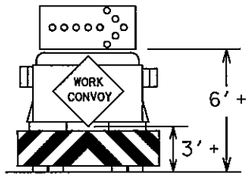
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
8-95	PHR	6		48
1-97				
4-98	COUNTY		CONTROL SECTION JOB	HIGHWAY
3-03	HIDALGO		3C 1080 461	VAR

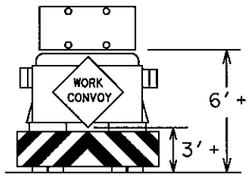
DN: CK: DW: CK:
DATE: ACC: FILE:

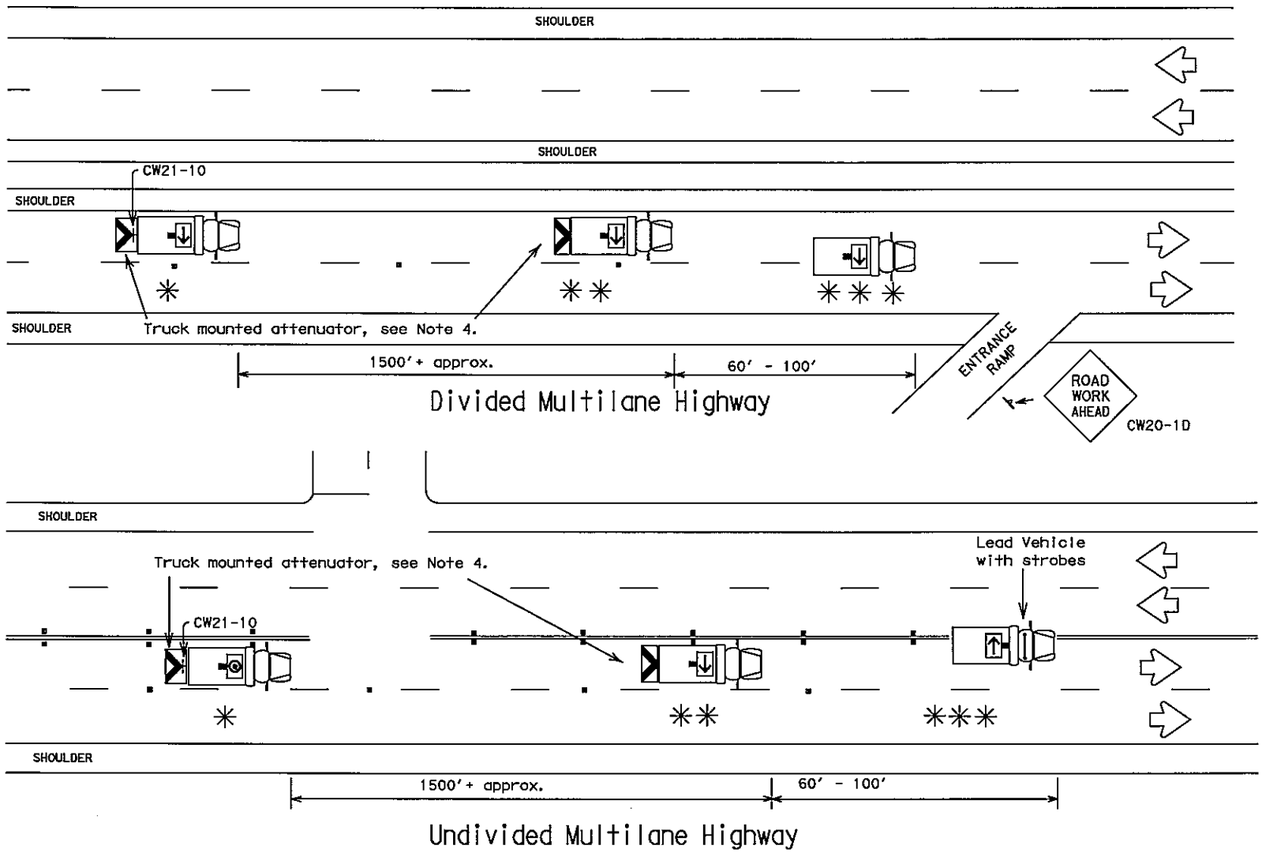
LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

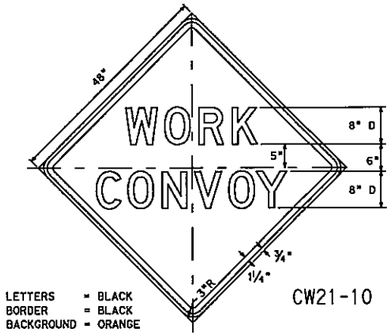


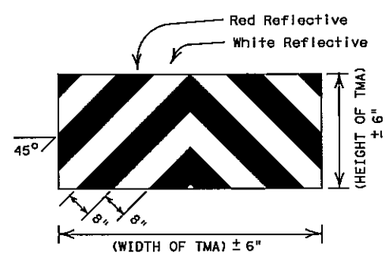












DN:
CK:
DW:
CK:

LEVELS DISPLAYED

DATE:
ACC:
FILE:

Two Lane Highway With Paved Shoulders (work on travel lane)

TYPICAL TRAIL VEHICLE
RIGHT Directional display
Flashing Arrow Panel

CW21-10

Legend:

- * TRAIL VEHICLE
- * * SHADOW VEHICLE
- * * * WORK VEHICLE
- ▶ Truck mounted attenuator
- ▭ HEAVY WORK VEHICLE

Arrow Panel Displays

- ➡ RIGHT Directional
- ⬅ LEFT Directional
- ⇔ RIGHT or LEFT Directional
- ◉ CAUTION mode

Two Lane Highway Without Paved Shoulders (work on travel lane)

TYPICAL TRAIL VEHICLE
with (four corner flash)
CAUTION display
Flashing Arrow Panel

GENERAL NOTES:

1. TRAIL, SHADOW, LEAD, and work vehicles shall be equipped with arrow panels as illustrated. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
3. The use of yellow rotating beacons or strobe lights on vehicles are required unless otherwise stated elsewhere in the plans.
4. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and the TRAIL VEHICLE are required.
5. Optional striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION D-9-8300, TYPE C.
6. Flashing Arrow Panels shall be Type B or Type C as per BC Standards. The panel operation shall be controlled from inside the vehicle.
7. Each vehicle shall have two-way radio communication capability.
8. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
9. Vehicle spacing between TRAIL VEHICLE and SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARD@mailgw.dot.state.tx.us

Divided Multilane Highway

Shadow and trail vehicle shall be equipped with Truck Mounted Attenuator.

Undivided Multilane Highway

OPTIONAL STRIPING FOR TMA

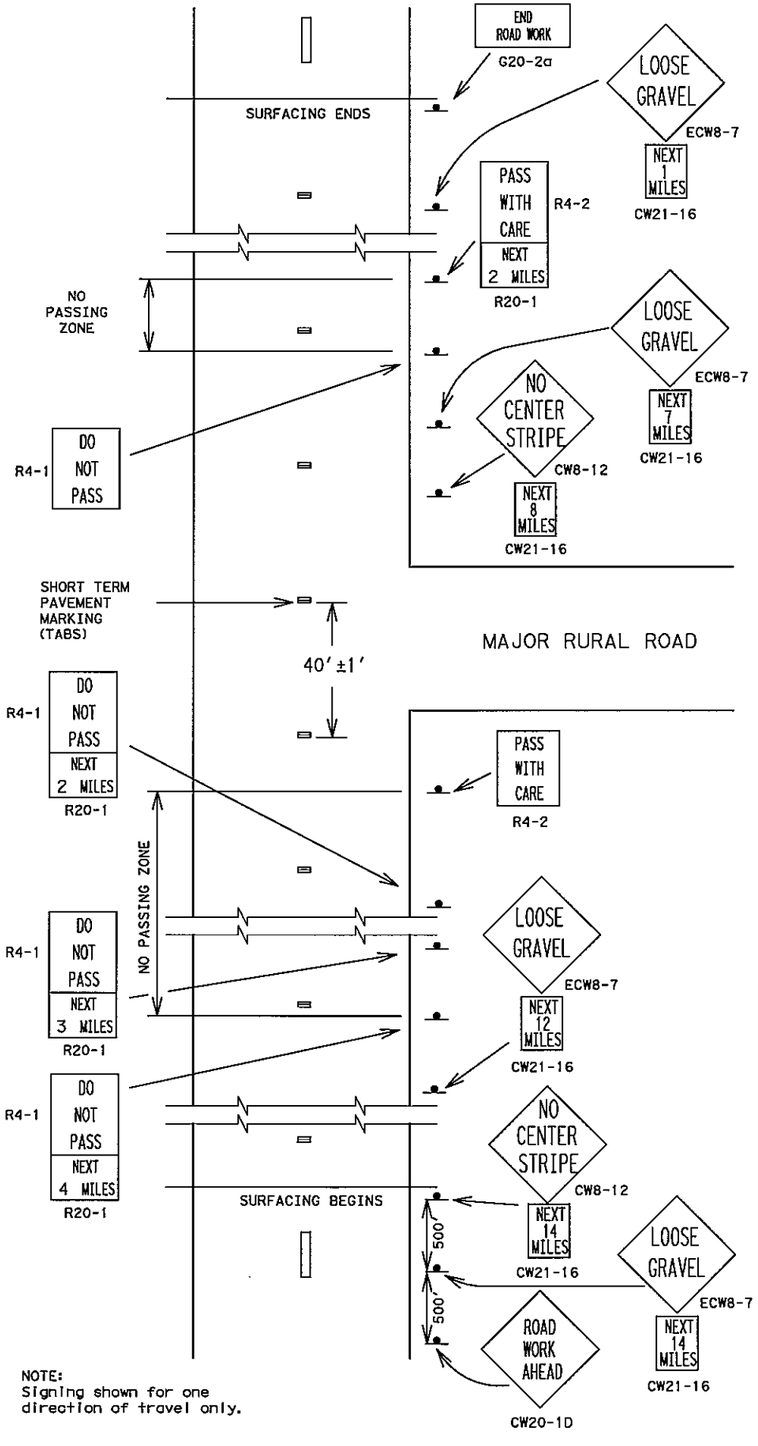
STRIPING FOR TMA WILL BE
REQUIRED ON ALL PROJECTS AWARDED
AFTER JANUARY 1, 2000

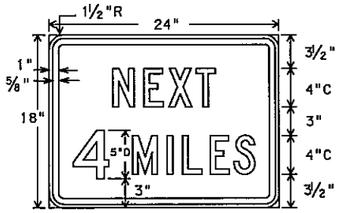
STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION

TCP(3-3)-98

©TxDOT September 1987	DN: - LR	CK: -	DW: - DN	CK: - DM	NEG NO.:
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
2-94 8-95 1-97 4-98	PHR	6			49
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

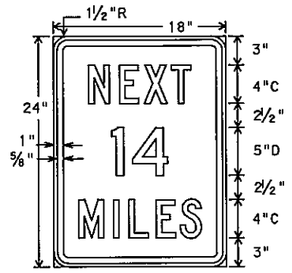




R20-1
24"x18"

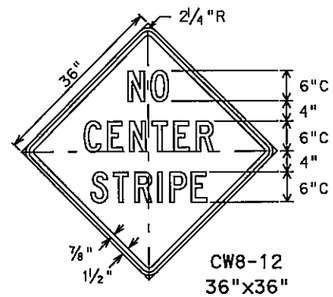
Legend - Black
Border - Black
Background - White Refl.

FOR USE WITH REGULATORY SIGNS ONLY



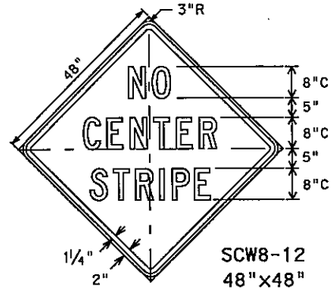
CW21-16
18"x24"

Legend - Black
Border - Black
Background - Orange Refl.



CW8-12
36"x36"

Legend - Black
Border - Black
Background - Orange Refl.



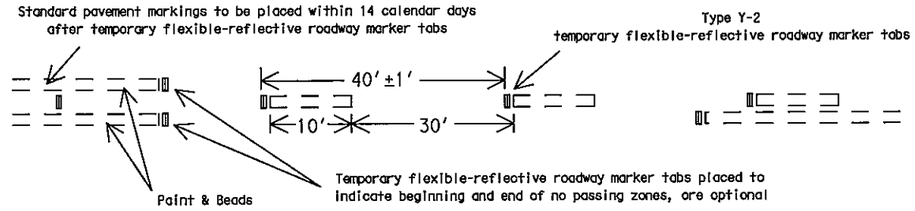
SCW8-12
48"x48"

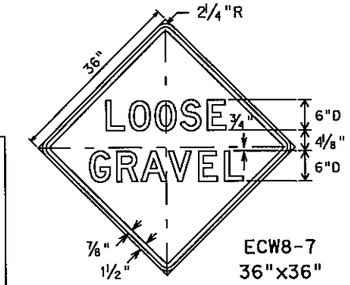
Legend - Black
Border - Black
Background - Orange Refl.

FOR USE WITH CONSTRUCTION WARNING SIGNS ONLY

TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS

for surfacing projects only





ECW8-7
36"x36"

Legend - Black
Border - Black
Background - Orange Refl.

GENERAL NOTES

The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where the surfacing operation has covered or obliterated existing pavement markings. These traffic control devices are to be used to supplement those required by BC Standards.

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

Prior to the beginning of construction, all currently striped no-passing zones should be signed with the DO NOT PASS sign (R4-1) and PASS WITH CARE sign (R4-2) placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.

At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined and signed as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES sign (R20-1) may be used at the beginning of such zones. The DO NOT PASS and NEXT XX MILES signs should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of a no-passing zone may be signed with a PASS WITH CARE and NEXT XX MILES sign.

Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshields and lights. The DO NOT PASS and NEXT XX MILES sign should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, care must be taken to place DO NOT PASS and PASS WITH CARE signs in order to sign the beginning and end of the no-passing zones in the area where the surfacing operation has stopped for the day.

R4-1 and R4-2 signs should be mounted on fixed supports as detailed on BC Standards. These signs are to remain in place until standard pavement markings are placed.

"NO CENTER STRIPE" SIGN (CW21-15)

At the time construction activity obliterates the existing centerline (low volume roads may not have an existing centerline), a NO CENTER STRIPE sign (CW8-12) should be erected at each end of the work area and just beyond major rural intersections and other location deemed necessary by the Engineer. Where possible, the signs erected at each end of the work area should be located in such a manner that drivers can read the sign and immediately see the change to no centerline. The NO CENTER STRIPE sign should be supplemented with the NEXT XX MILES sign (CW21-16) mounted below it.

The NO CENTER STRIPE sign should be erected as detailed on BC Standards. These signs are to remain in place until standard pavement markings are placed.

"LOOSE GRAVEL" SIGN (ECW8-7)

When construction begins, a LOOSE GRAVEL sign (ECW8-7) should be erected at each end of the work area and repeated at intervals of approximately two (2) miles in rural areas and closer in urban areas. The LOOSE GRAVEL sign should be supplemented with the NEXT XX MILES sign (CW21-16) mounted below it.

The LOOSE GRAVEL sign should be erected as detailed on BC Standards. They should remain in place until the loose gravel condition no longer exists.

PAVEMENT MARKINGS

Short term pavement markings for surfacing projects shall use Temporary Flexible-reflective Roadway Marker Tabs. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept the cover over the reflective strip shall be removed. Tabs shall NOT be used to simulate edge lines.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARD@mailgw.dot.state.tx.us

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

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL DETAILS for SURFACING OPERATIONS

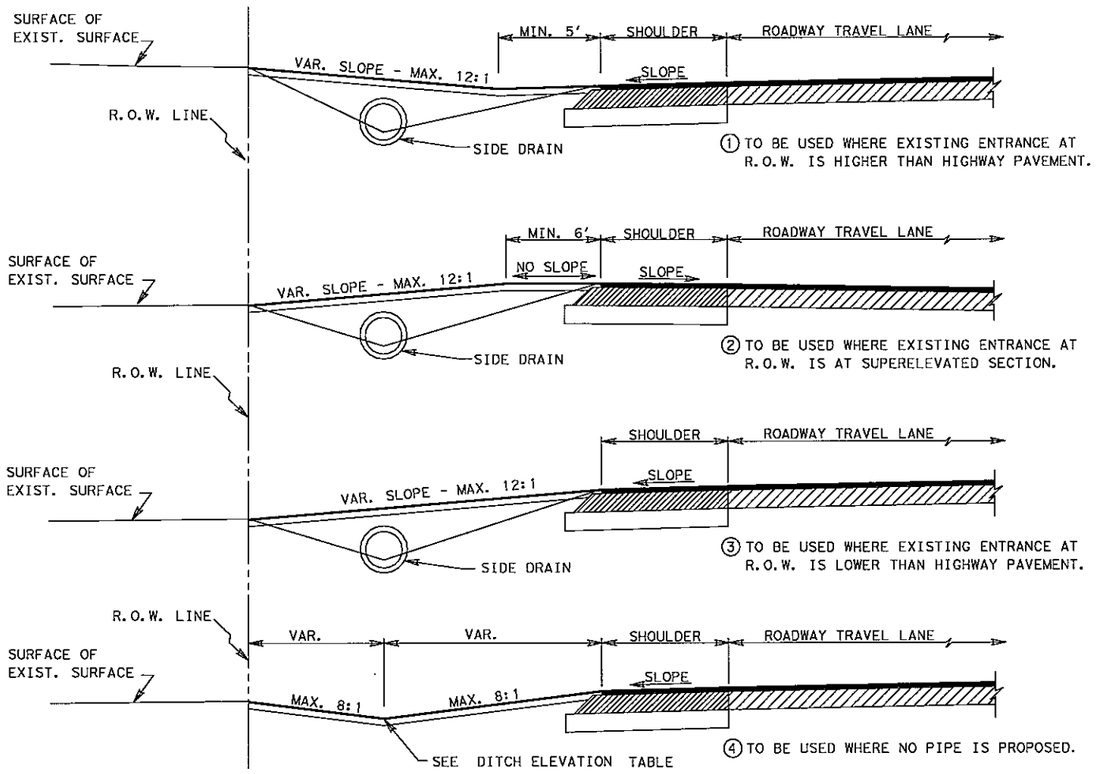
TCP(7-1)-98

DN: LR	CK: MT	DW: DN	CK:	MSG NO.:

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT				SHEET
4-92	PHR	6					50
1-97	COUNTY		CONTROL	SECTION	JOB		HIGHWAY
4-98	HIDALGO		3C	1080	461		VAR

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

DATE:
ACC:
FILE:



NOTES:

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

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

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

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

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

114 #/SY ACP (COMPACTED) IS EQUAL TO 1 IN. DEPTH
171 #/SY ACP (COMPACTED) IS EQUAL TO 1½ IN. DEPTH.

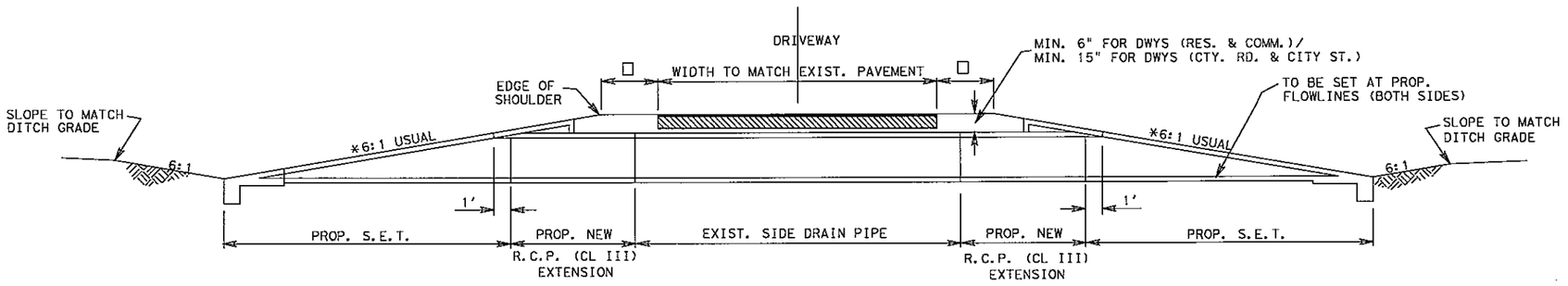
SIDE DRAINS TO BE INSTALLED WHERE ROADWAY DITCH DRAINAGE IS NECESSARY, AS INDICATED ON PLANS AND/OR AS DIRECTED BY THE ENGINEER.

SIDE DRAINS TO BE INSTALLED WITH A MINIMUM OF 6" COVER BY PROPOSED RESIDENTIAL & COMMERCIAL MATERIAL OR 15" COVER OF PROPOSED COUNTY RD. & CITY STREET ROADWAY MATERIAL.

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

THE RATE OF PRIME SHALL BE 0.10 GAL/SY FOR PRIVATE AND/OR COMMERCIAL DRIVEWAYS AND 0.20 GAL/SY FOR PUBLIC DRIVEWAYS.

TYPICAL ENTRANCE PROFILE FOR DRIVEWAYS W/OUT C&G



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

* - 6:1 SLOPE USUAL
UNLESS OTHERWISE NOTED ON PLANS

PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

DRIVEWAY PROFILE DETAILS

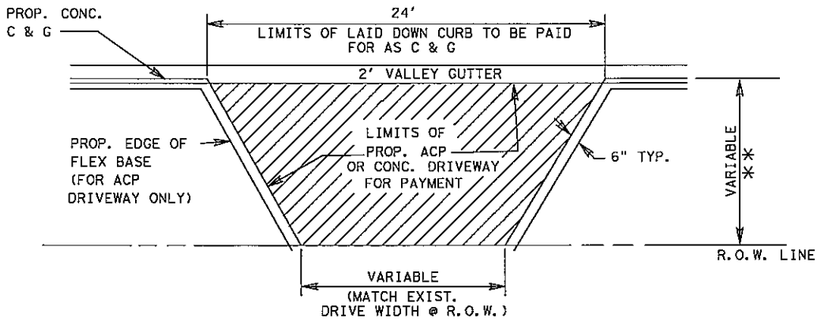
REV. 4/05

DRIVEWAY1.DGN

FED. RD. DIV. NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			51

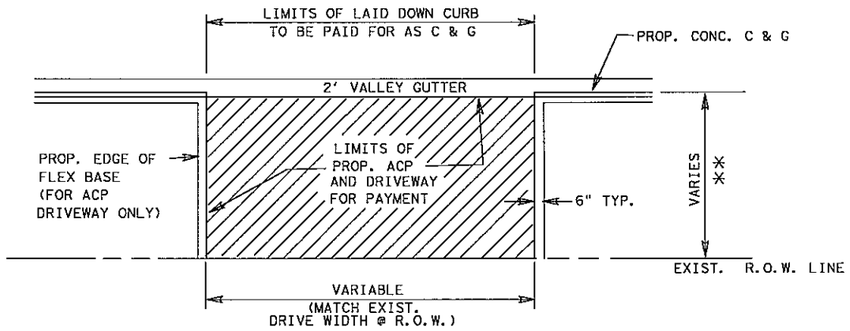
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	21	HIDALGO	3C	1080	461	VAR

PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER



PLAN OF PRIVATE AND COMMERCIAL DRIVES
(W/DRIVEWAY WIDTH LESS THAN 24')

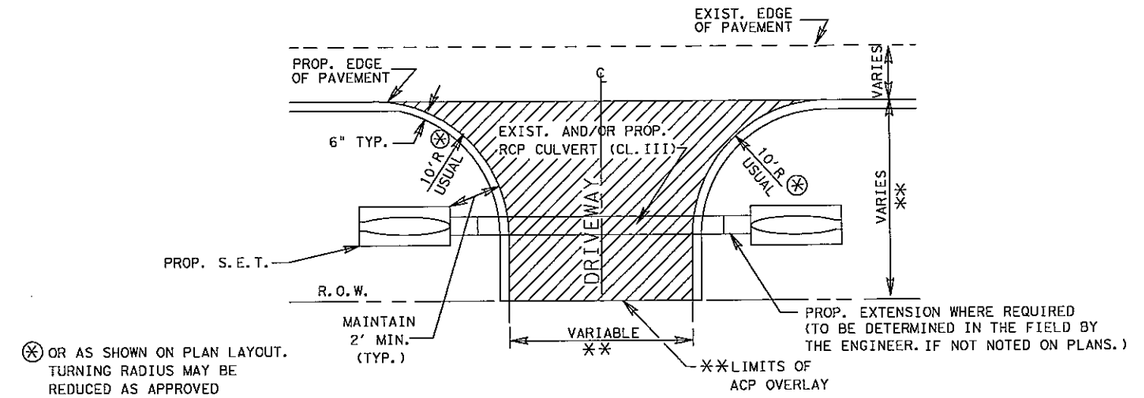
** SEE P&P SHEETS



PLAN OF PRIVATE AND COMMERCIAL DRIVES
(W/DRIVEWAY WIDTH EQUAL TO OR GREATER THAN 24' @ R.O.W. LINE)

N.T.S.

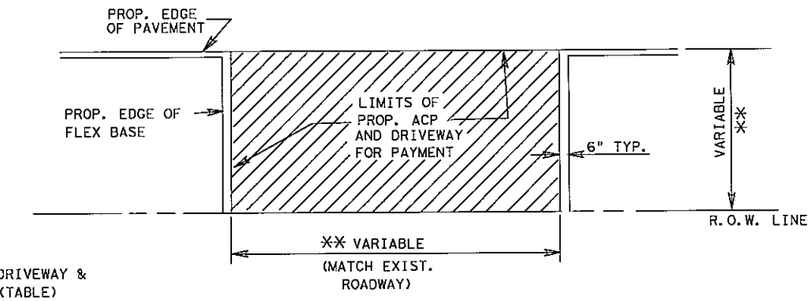
PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER



⊛ OR AS SHOWN ON PLAN LAYOUT. TURNING RADIUS MAY BE REDUCED AS APPROVED BY THE ENGINEER.

PLAN OF PRIVATE AND COMMERCIAL DRIVES

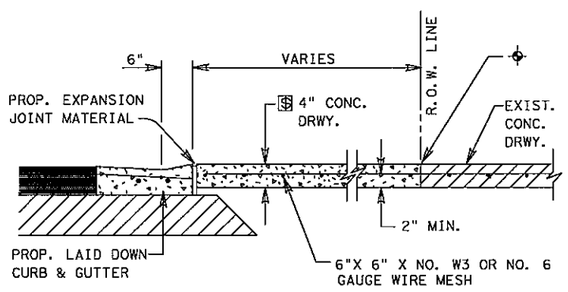
*W/DRIVEWAY WIDTH LESS THAN 24')



** FOR DETAILS SEE DRIVEWAY & TURNOUT DETAILS (TABLE)

PLAN OF PRIVATE AND COMMERCIAL DRIVES
(W/DRIVEWAY WIDTH EQUAL TO OR GREATER THAN 24' @ R.O.W. LINE)

N.T.S.



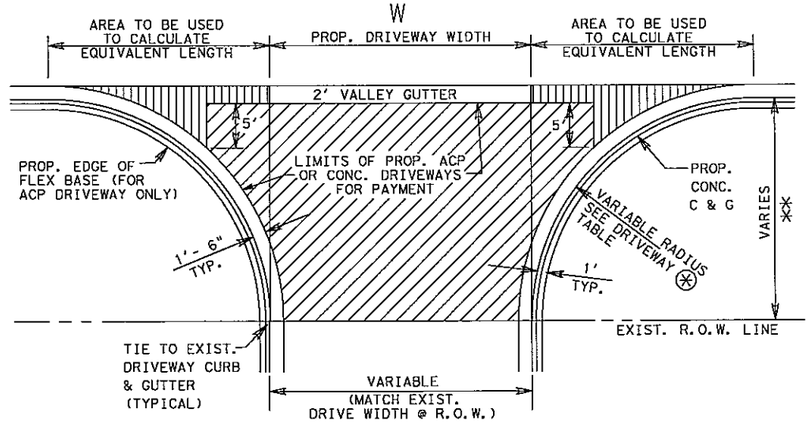
TYPICAL CONCRETE DRIVEWAY SECTION

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

⊠ 6" FOR COMMERCIAL DRIVES

N.T.S.

PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER



PLAN OF PRIVATE AND COMMERCIAL DRIVES

SEE P&P SHEETS FOR LOCATIONS OF DRIVES

N.T.S.

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

LF OF VALLEY GUTTER= W + X1 + X2	
WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS	
Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 2') Equivalent LF Length
5'	1
8'	2
10'	4
12'	6
15'	9
18'	12
20'	15
22'	18
25'	24
28'	30
30'	34

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

DRIVEWAY TYPES

TY PRB-1
EXIST. PAVED CALICHE AND /OR GRAVEL DRIVEWAYS TO BE SCARIFED AND RECONSTRUCTED WITH 3" NEW AND/OR SALVAGE FLEX. BASE TO MATCH THE PROPOSED WIDENED SECTION. THEN PRIMED AND SURFACED WITH 114#/SY ACP (TY "D")

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

TY P1
EXIST. PAVED DRIVEWAYS TO BE PAVED WITH 114#/SY ACP TY "D".

 PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

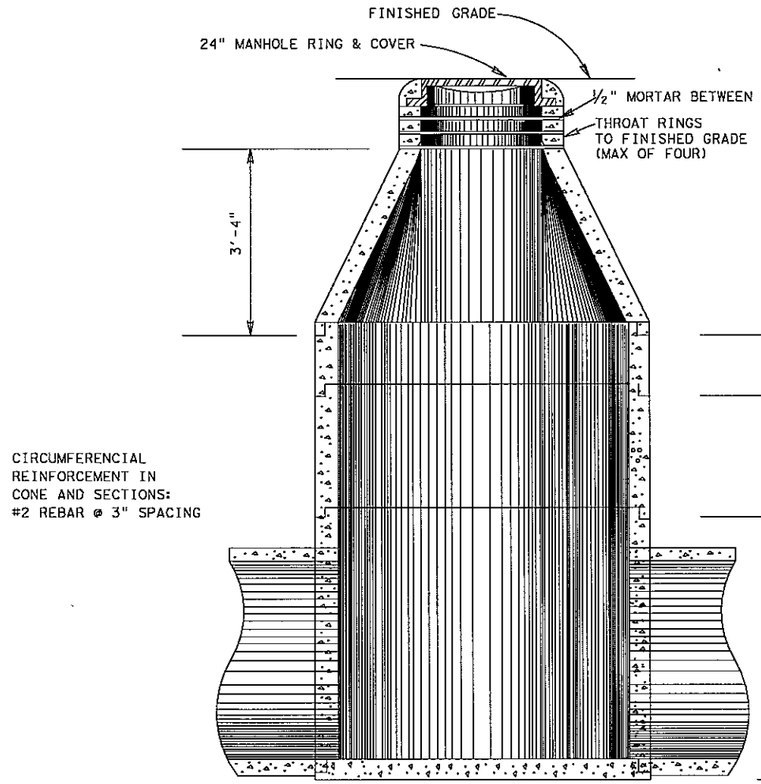
DRIVEWAY DETAILS PRIVATE (RESIDENTIAL-COMMERCIAL)

REV. 4/05 DRIVEWAY2.DGN

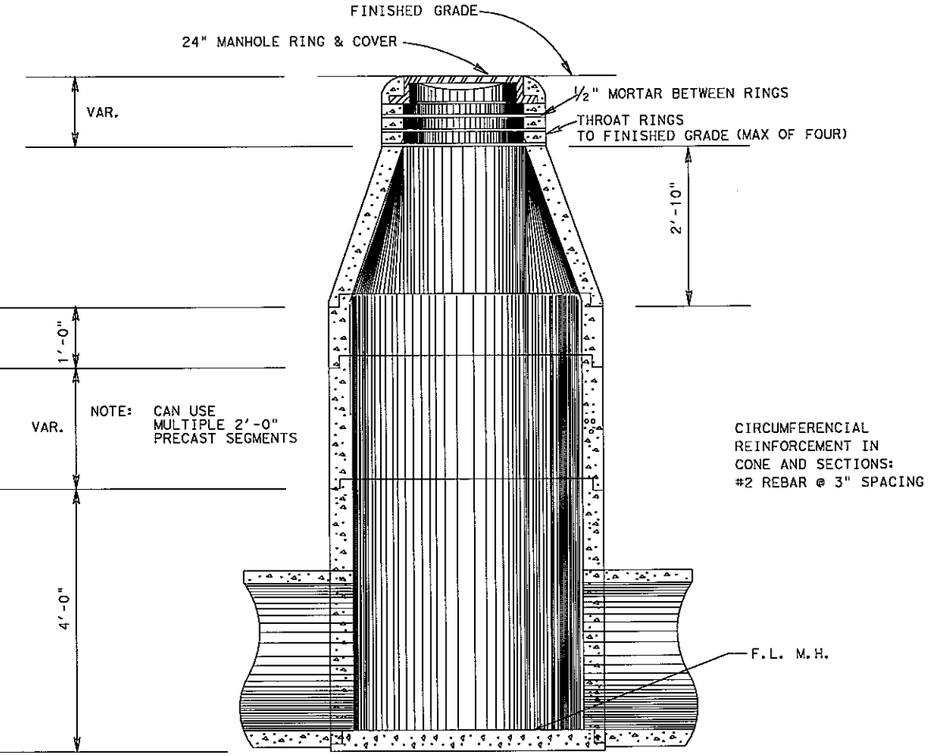
FED.RD. DIV.NO.	PROJECT NO.	FILE NO.	SHEET NO.
6			52

STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	21	HIDALGO	30	1080	461	VAR

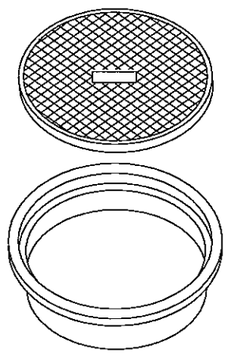
AD-76-0

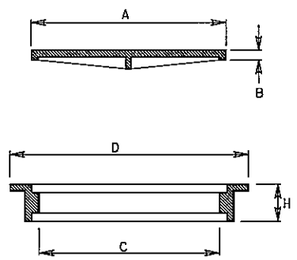


TY "A1"



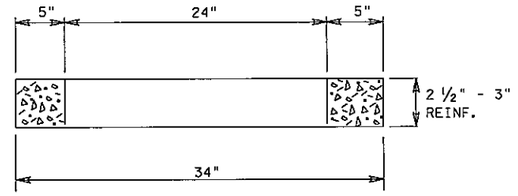
TY "A"

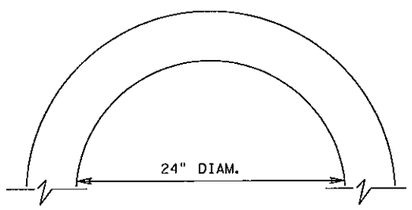




LID			RING		
"A"	"B"	WEIGHT	"C"	"D"	"H"
2'-2"	1"	174 lbs. (min)	2'-0"	2'-7½"	5"

RING & COVER DETAILS
(FOR MANHOLE TY "A" AND "A1")
(SUBSIDIARY)





REINF. CONC. THROAT RING

GENERAL NOTES:

FOR MANHOLES LOCATED WITHIN PAVED PORTIONS OF THE ROADWAY, THE COVER SHALL BE OF A TYPE THAT CAN BE BOLTED TO THE RING.

RINGS AND COVERS OF SLIGHTLY DIFFERENT DIMENSIONS BUT APPROXIMATELY THE SAME WEIGHT MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

CONCRETE STRENGTH: 4,000 P.S.I. MIN.

THE CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH MANHOLES OF EQUIVALENT STRUCTURAL DESIGN.

ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED ENGINEER WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES.

PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

TYPE "A" & TYPE "A1" MANHOLE (COMPLETE)

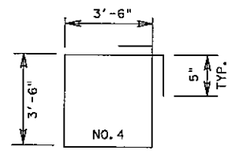
REV. 4/02

MANHOLE1.DGN

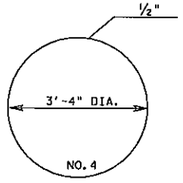
FED.RD. DIV.NO.	PROJECT NO.	FILE NO.	SHEET NO.
6			53

STATE	STATE DIST.NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	21	HIDALGO	3C	1080	461	VAR

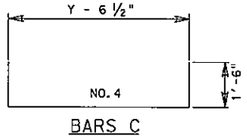
N.T.S.



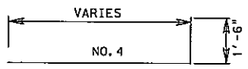
BARS O



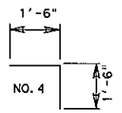
CONCENTRIC BAR



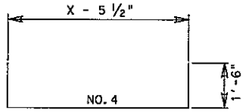
BARS C



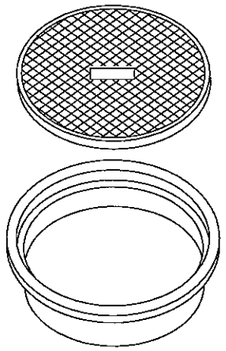
BARS L_1

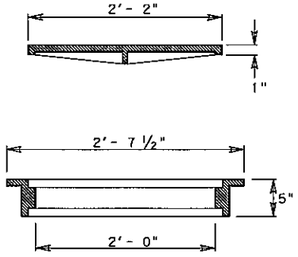


BARS L_2



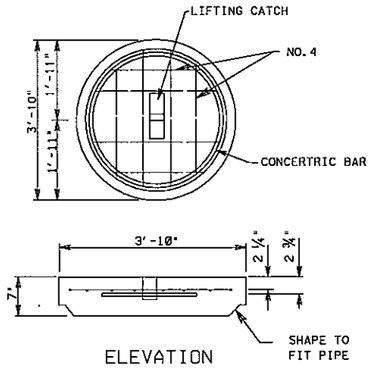
BARS B



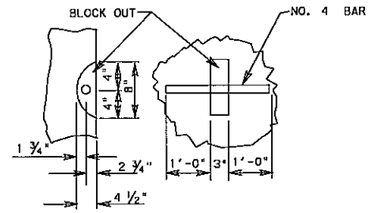


WEIGHT=174 LBS. (MIN.)

RING & COVER DETAILS (STEEL)
(SUBSIDIARY)

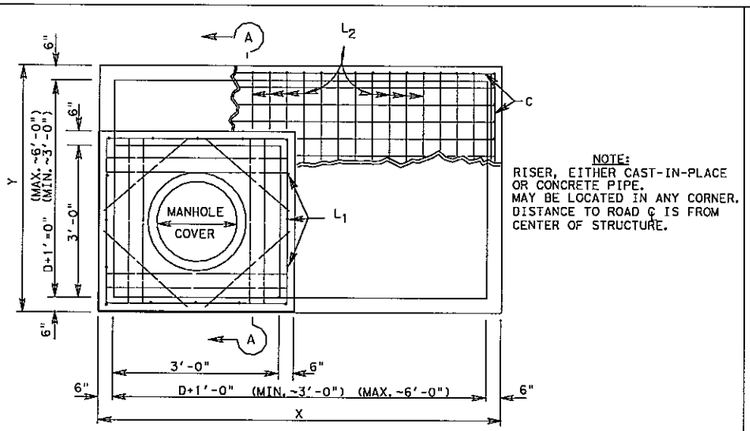


ELEVATION



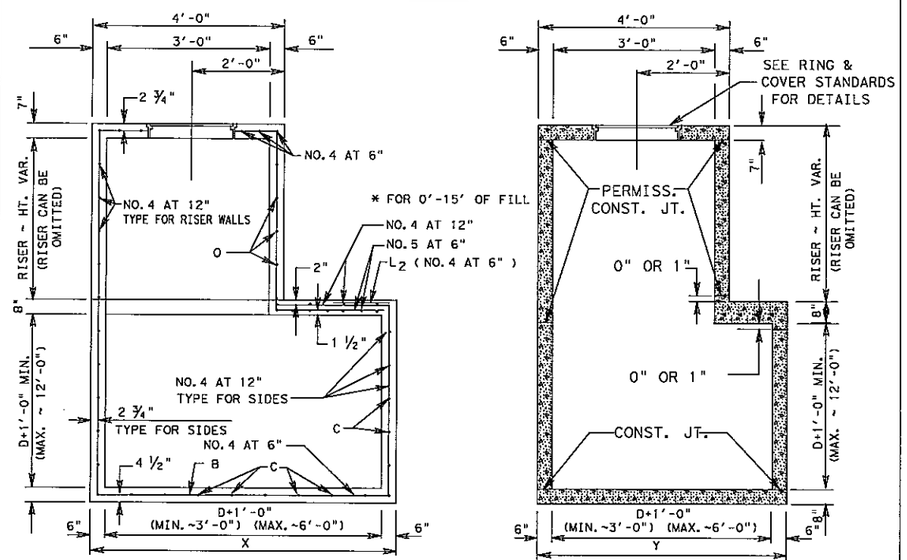
LIFTING CATCH

CONCRETE PIPE RISER COVER
OPTIONAL PRECAST CONCRETE LIFT-OFF COVER
(SUBSIDIARY)



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

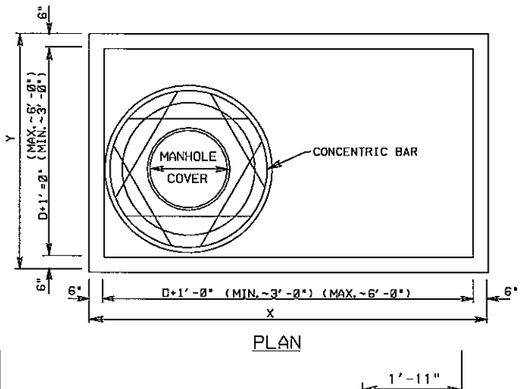
PLAN



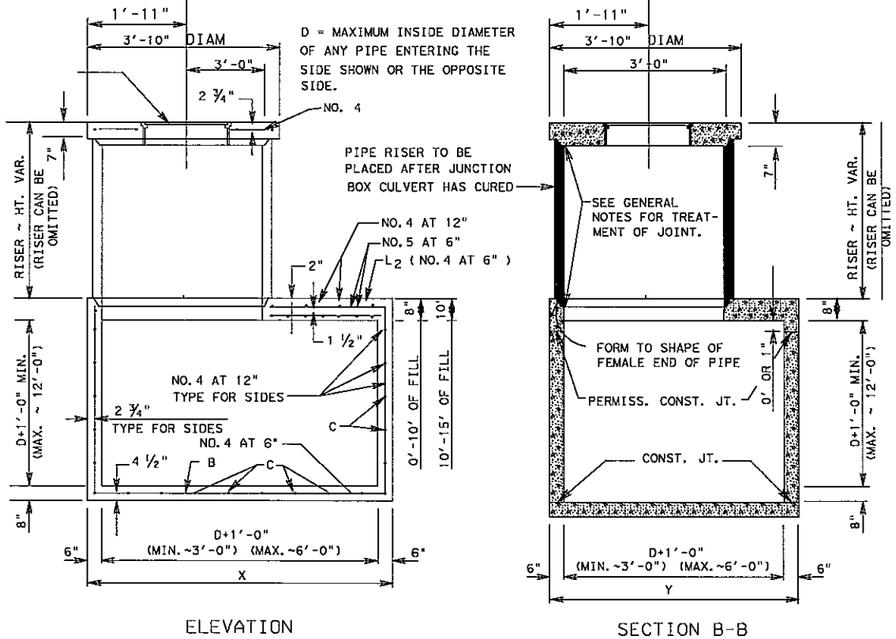
ELEVATION

SECTION A-A

MANHOLE WITH CAST-IN-PLACE RISER



PLAN



ELEVATION

SECTION B-B

OPTIONAL MANHOLE WITH PIPE RISER

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.

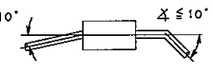
ALL MANHOLES LOCATED ON PAVED SURFACES WILL BE CONSTRUCTED WITH A COVER OF THE TYPE THAT WILL ENABLE IT TO BE BOLTED TO THE RING.

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 GRATE IF NECESSARY. PIPE ELBOW OR CURBED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT.



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

PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

TYPE "M" MANHOLE (JUNCTION BOX WITH ACCESS)

REV. 10/04

MANHOLE2.DGN

FED. RD. DIV. NO.	PROJECT NO.	FILE NO.	SHEET NO.
6			54

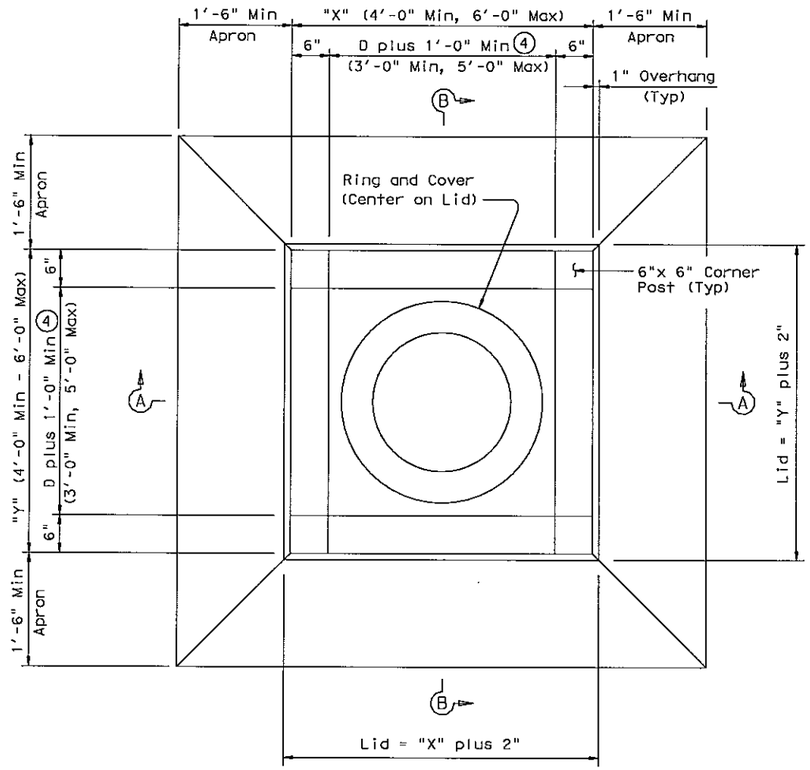
STATE	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	21	HIDALGO	3C	1080	461	VAR

N. T. S.

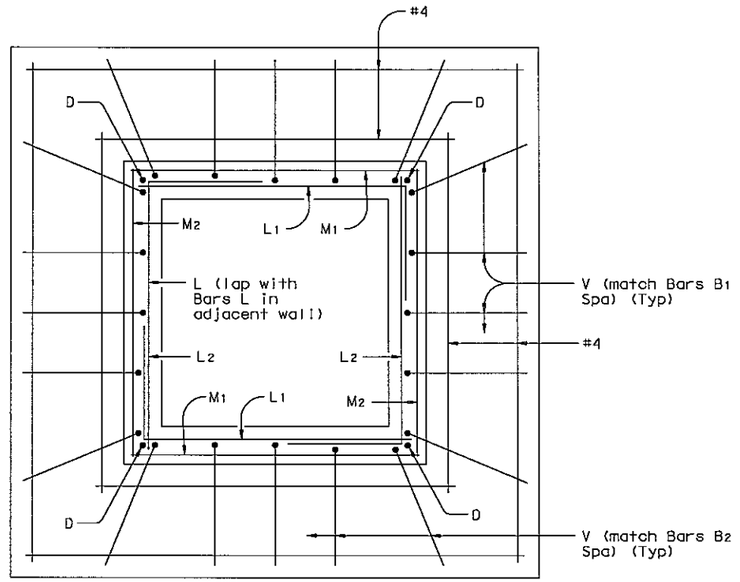
AD-76-0

LEVELS DISPLAYED

PATH:



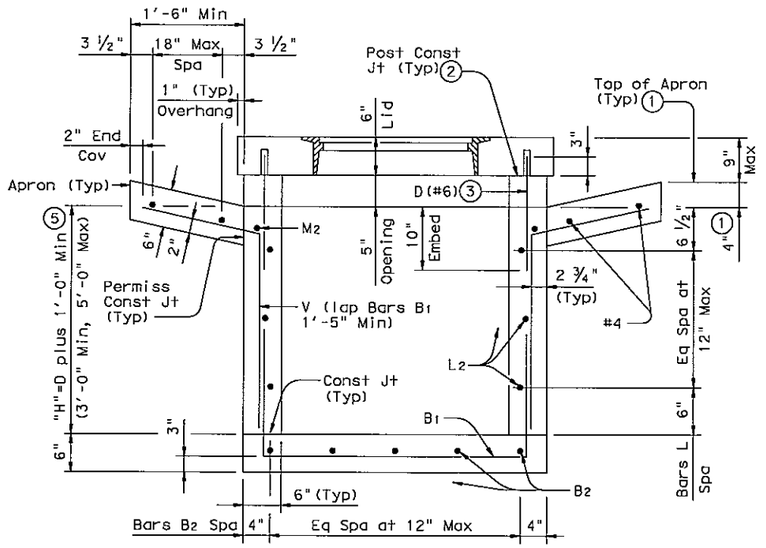
PLAN



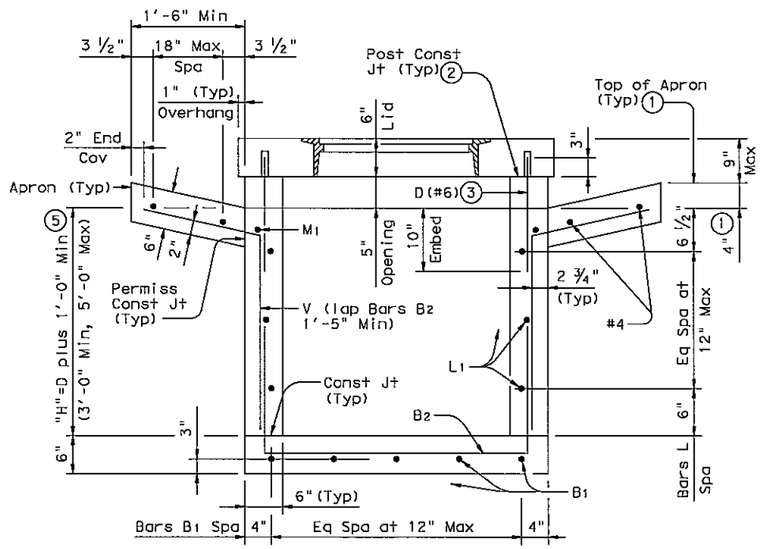
TYPICAL APRON PLAN

(Lid not shown for clarity. Showing reinforcing in walls and in apron.)

1. May be changed as directed by the Engineer.
2. Place layer of grout between lid and corner posts to provide stable seating of lid.
3. Center Dowels D in corner posts. (Typ)
4. D equals the maximum inside diameter of any pipe entering the wall shown or the opposite wall.
5. D equals the maximum inside diameter of any pipe entering the inlet.



SECTION A-A



SECTION B-B

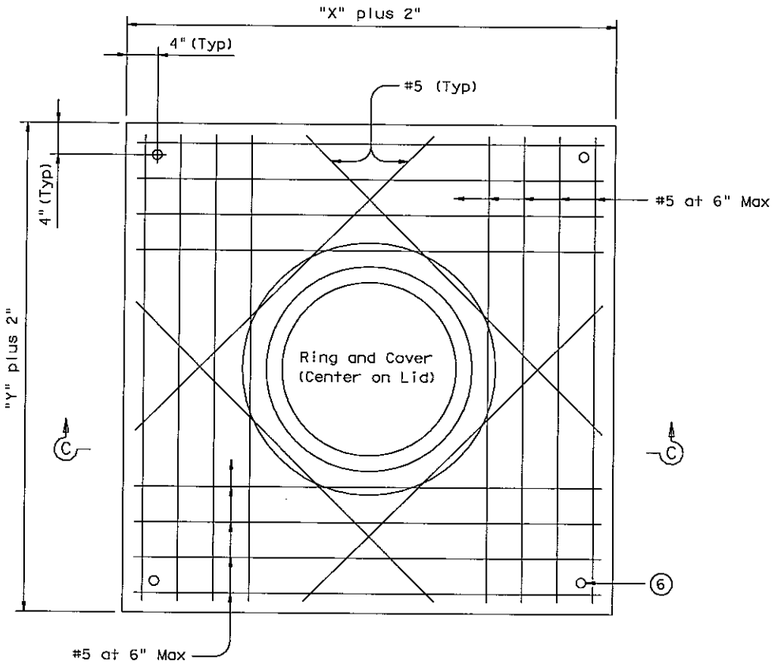
SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

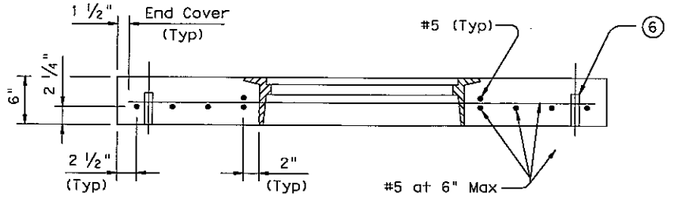
HORIZONTAL INLET TYPE H WITH LID (MAX 48" DIA PIPES)

IL-H-L

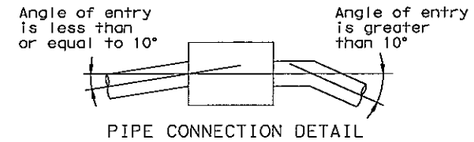
FILE: ilhste02.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT			
© TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT					SHEET
REVISIONS							55
HIDALGO	COUNTY		CONTROL	SECT	JOB	HIGHWAY	
	3C	1080	46			VAR	



TYPICAL PRECAST LID PLAN



SECTION C-C



PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

GENERAL NOTES:

When approved, precast inlets with equivalent structural capacity may be furnished. Sealed engineering calculations and drawings shall be submitted for approval prior to construction.

Shop drawings will not be required.

Apron will be cast-in-place.

Lid will be precast.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

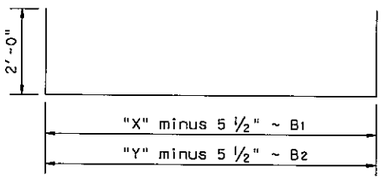
Structural Steel for grates shall conform to the requirements of ASTM Designation A-36 or AISI Designation M1010-M1020.

All reinforcing steel shall be Grade 60 unless otherwise noted.

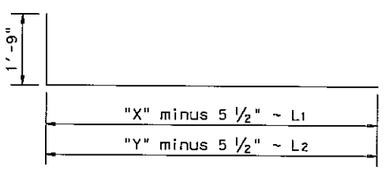
All concrete shall be Class "A" (f'c = 3,000 psi).

All steel components except reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

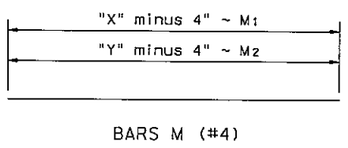
Inlet is to used in ditches and medians away from the roadway.



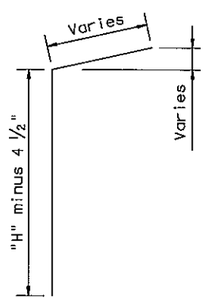
BARS B (#4)



BARS L (#4)

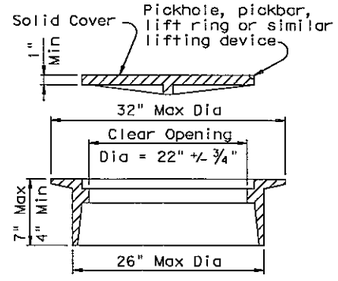


BARS M (#4)



BARS V (#4)

⑥ Form holes in lid for Dowels D using 1" Dia x 4" PVC Pipe (SCH 40) (Typ)



RING AND COVER DETAILS

Approximate Weight = 245 lb

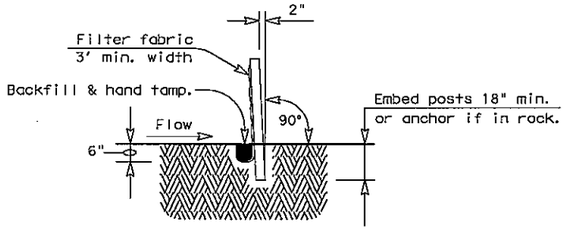
Texas Department of Transportation
Bridge Division

HORIZONTAL INLET TYPE H WITH LID (MAX 48" DIA PIPES)

IL-H-L

FILE: ilhste02.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT			
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT					SHEET
REVISIONS							56
	COUNTY			CONTROL	SECT	JOB	HIGHWAY
HIDALGO	3C	1080		46			VAR

LEVELS DISPLAYED
PATH:



SECTION A-A

GENERAL NOTES

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

PLAN SHEET LEGEND

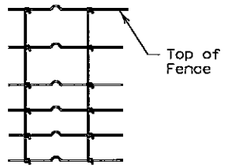
Sediment Control Fence —— SCF ——

SEDIMENT CONTROL FENCE USAGE GUIDELINES

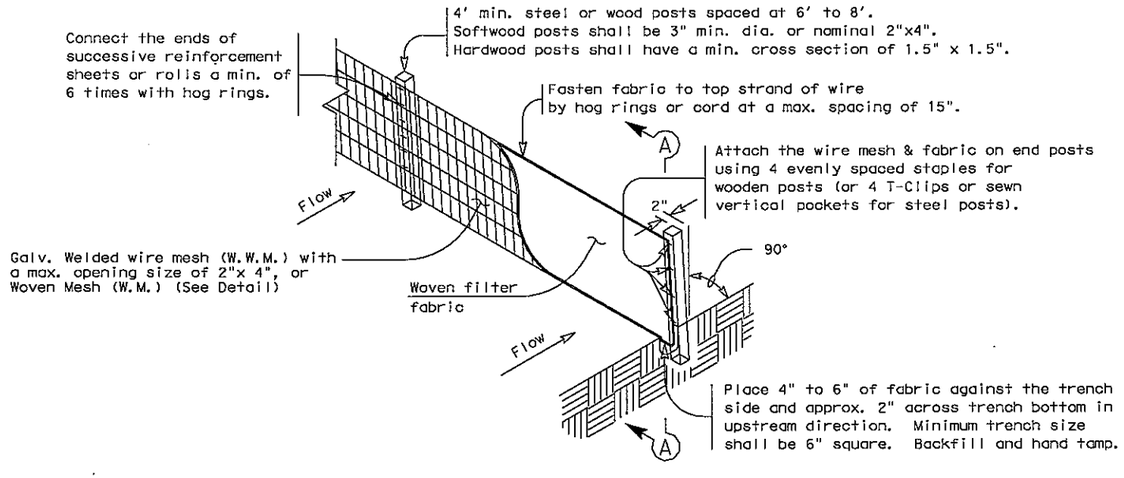
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

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

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

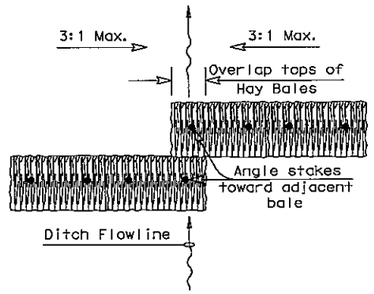


Hinge Joint Knot Woven Mesh (Option)

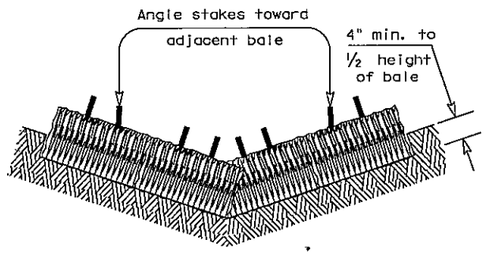


TEMPORARY SEDIMENT CONTROL FENCE

SCF



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay —— BH ——

BALED HAY USAGE GUIDELINES

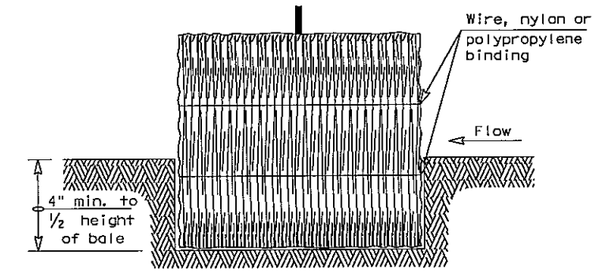
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT^2 of cross sectional area. Baled hay may be used at the following locations:

1. 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'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than ½ acre.

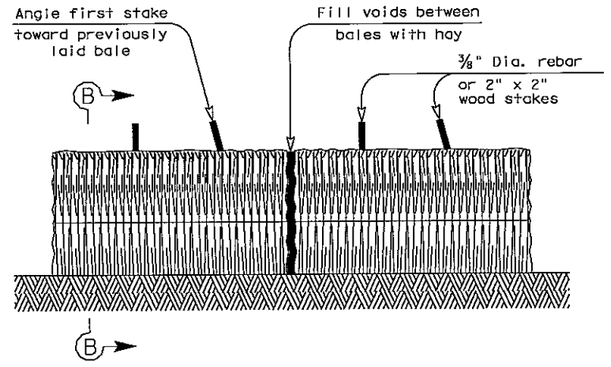
For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. 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.



SECTION B-B



BALED HAY FOR EROSION CONTROL

BH

GENERAL NOTES

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible ½ the height of the bale.
4. 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.
5. Hay bales shall be securely anchored in place with ⅜" 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.
6. 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

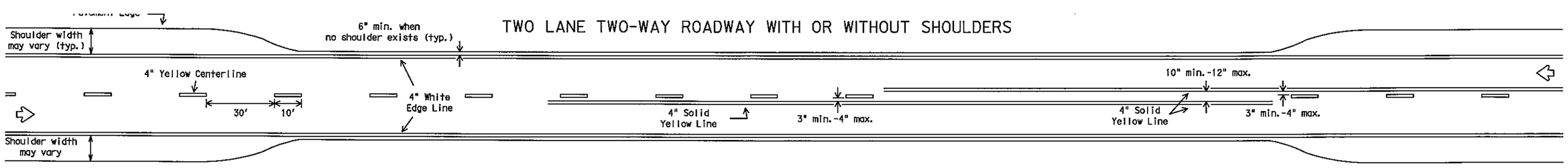
FENCE & BALED HAY

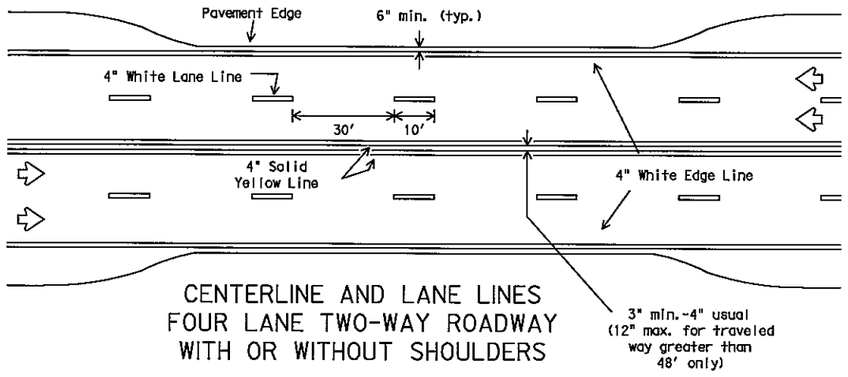
EC(1)-09

FILE: ec109.dgn	DN: HEJ	CK: HEJ	DW: BGD / TV	CK:	
©TxDOT JUNE 1993	DISTRICT	FEDERAL AID PROJECT			SHEET
REVISIONS	PHR				57
Language added to the end of the standard sheet note for silt fence to allow for the use of the new backing.	COUNTY		CONTROL	SECT	JOB	HIGHWAY
	HIDALGO		3C	1080	461	VAR

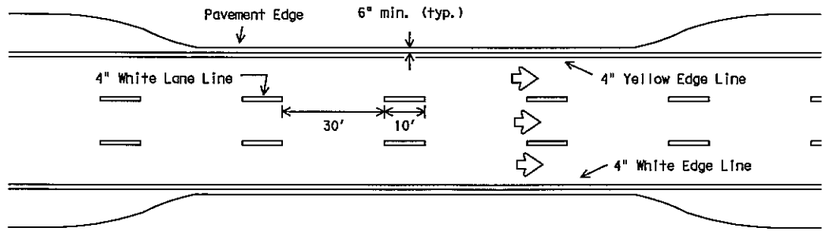
LEVELS DISPLAYED

TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

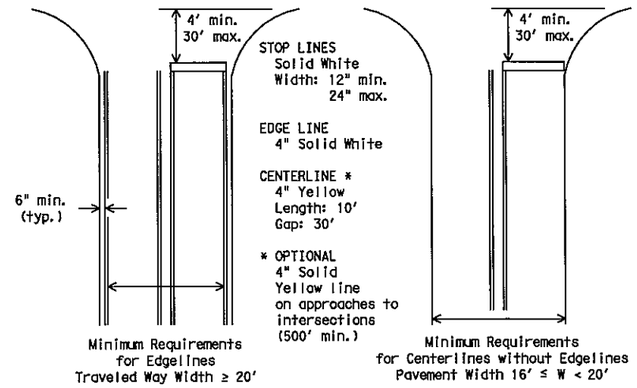




CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



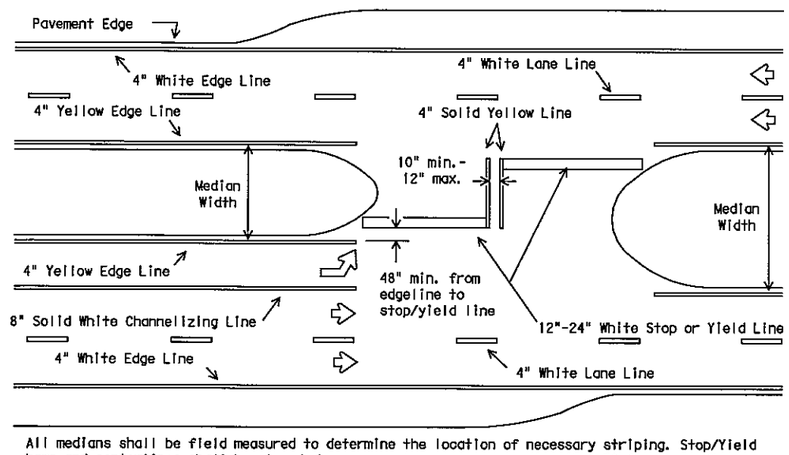
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

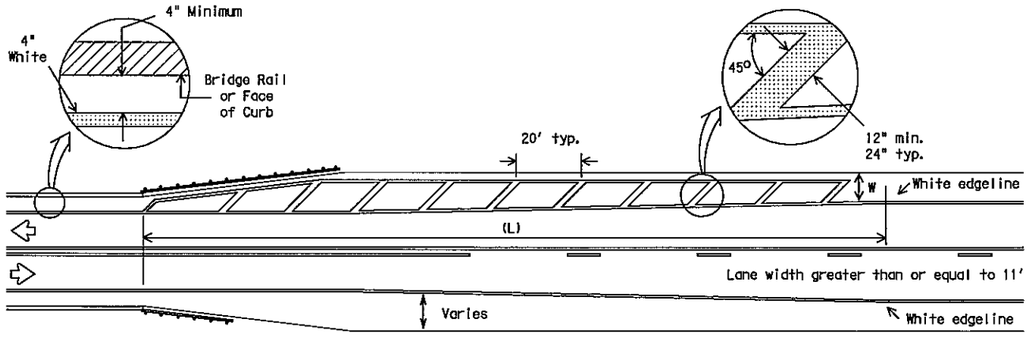
Based on Traveled Way and Pavement Widths for Undivided Highways

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:

1. No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
2. For crosshatching length (L) see Table 1.
3. The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
4. The crosshatching should be required if the shoulder width in advance of the bridge is 4 foot or wider and any reduction in shoulder width across the bridge occurs.
5. For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
30, 35, 40	$L = \frac{WS^2}{60}$
45, 50, 55, 60, 65, 70	L=WS

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.

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

EXAMPLES:

An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:

$L = 8 \times 70 = 560$ ft.

A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:

$L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES:

Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

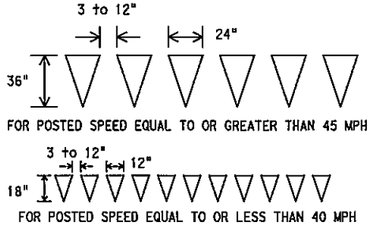
The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

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

SPECIFICATION REFERENCE TABLE

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130

YIELD LINES



STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

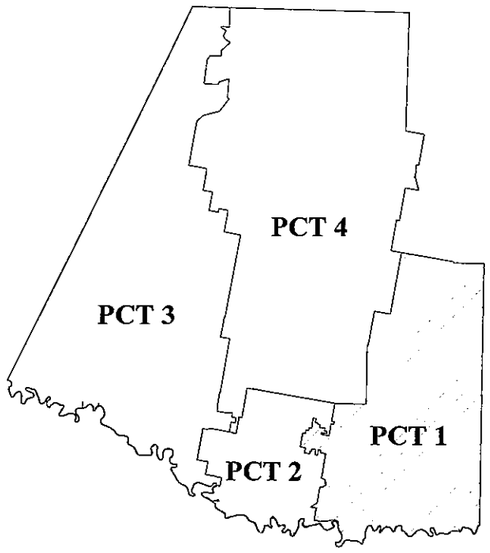
TYPICAL STANDARD PAVEMENT MARKINGS

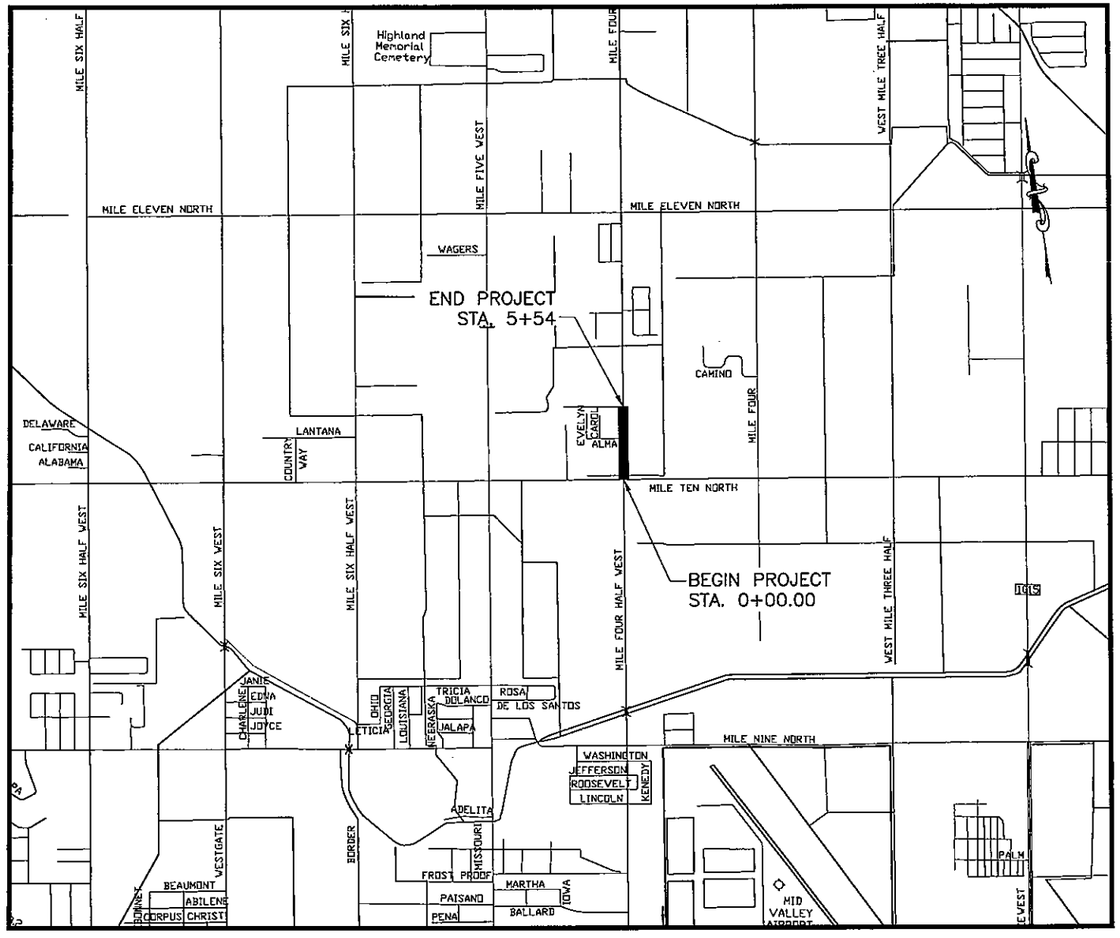
PM(1)-03

© TxDOT November 1978	DN-BAS	CK-GRB	DW-FDN	CK-CAL	MSG NO.
REVISIONS 8-95, 5-00, 8-00, 3-03	STATE DISTRICT: PHR	FEDERAL REGION: 6	FEDERAL AID PROJECT		SHEET: 58
COUNTY: HIDALGO	CONTROL: 3C	SECTION: 1080	JOB: 461	HIGHWAY: VAR	

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

PRECINCT 1 PROJECT





LOCATION MAP - SCALE: 1"=3000'

THE COUNTY OF HIDALGO TEXAS

HIDALGO COUNTY
PLANNING DEPARTMENT

1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ✯ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

MID-VALLEY ESTATES OFFSITE DRAINAGE IMPROVEMENTS PROJECT

RAMON GARCIA	*COUNTY JUDGE*
COMMISSIONER JOEL QUINTANILLA	*PRECINCT No. 1*
COMMISSIONER HECTOR " TITO " PALACIOS	*PRECINCT No. 2*
COMMISSIONER JOE M. FLORES	*PRECINCT No. 3*
COMMISSIONER JOSEPH PALACIOS	*PRECINCT No. 4*

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED PROFESSIONAL ENGINEER

10/05/11

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN-P.E. No. 86374

Drawing: K:\PCT 1\Mid-Valley-Estates Subd\MID VALLEY --COVER SHEET PCT 1.dwg) Plotted by: cynthia.perez
Layout Tab: COVER SHEET Date: 10/05/2011 Time: 10:12:28 AM

GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE HIDALGO COUNTY PRECINCT No. 1, AND HCID No. 9.

2. THE CONTRACTOR SHALL REMOVE ALL FENCES LOCATED WITHIN THE EASEMENTS, INTERFERING WITH CONSTRUCTION OPERATION AND PROVIDE TEMPORARY FENCING DURING CONSTRUCTION. REMOVED FENCES SHALL BE REPLACED WITH A NEW FENCE OR UNDAMAGED ORIGINAL FENCING. REMOVAL AND REPLACEMENT OF EXISTING AND TEMPORARY FENCES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

3. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT MR. RICHARD GARCIA WITH NORTH ALAMO WATER SUPPLY CORP. (N.A.W.S.C.) 48 HOURS PRIOR TO COMMENCEMENT OF WORK @ (956) 383-1618 TO COORDINATE AND MEET ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFICATIONS.

4. CONTRACTOR SHALL BE RESPONSIBLE TO CALL DIG TESS 48 HOURS PRIOR TO COMMENCEMENT OF WORK FOR UTILITY SPOTTING @ (1-800-DIG-TESS).

5. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT HIDALGO COUNTY IRRIGATION DISTRICT No. 9 (H.C.I.D. No. 9) 48 HOURS PRIOR TO COMMENCEMENT OF WORK @ (956) 565-2411 TO COORDINATE AND MEET ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFICATIONS.

6. LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST INFORMATION AVAILABLE. NEITHER THE OWNER OR ENGINEER, WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE ENGINEER'S ATTENTION IMMEDIATELY.

7. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TMUTCD LATEST EDITION, AND AS APPROVED BY THE ENGINEER AND TXDOT

8. ALL MATERIALS AND DEBRIS, EXCEPT CALICHE BASE, RESULTING FROM DEMOLITION IN PREPARATION FOR THE PROPOSED IMPROVEMENTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THESE MATERIALS AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED.

9. CONTRACTOR SHALL AT ALL TIME PROVIDE ACCESS TO EXISTING RESIDENCES.

10. ANY DAMAGES TO FENCES, WALKS, MAIL BOXES, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. MAIL BOXES SHALL BE RELOCATED BEHIND CURB AND GUTTER. SAID RELOCATION OF MAILBOXES, SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM AND SHALL BE REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

11. NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE COVERED. AS A MINIMUM, WITH STEEL PLATING WHEN IN PAVED AND UNPAVED AREAS SUBJECT TO VEHICULAR LOADING; ¾ PLYWOOD, WOOD PLANKING WITH O.S.H.A. ORANGE PLASTIC EXPANDED MESH BARRIER AROUND PERIMETER IN UNPAVED AREAS NOT SUBJECT TO VEHICULAR LOADING, OR AS APPROVED BY THE ENGINEER.

12. THE PREPARATION OF THESE PLANS REFLECTS INFORMATION, PROVIDED BY OTHERS, ON THE APPROXIMATE LOCATION AND EXISTENCE OF EXISTING UTILITY AND ADJACENT PHYSICAL FEATURES. HOWEVER, THEY DO NOT IMPLY OR AFFIRM THAT ALL UTILITIES OR PHYSICAL FEATURES ARE SHOWN. GENERALLY, UTILITY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS OF THE OWNER IMMEDIATELY UPON ENCOUNTERING UNFORESEEN CONFLICTS.

13. THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UTILITIES ARE SHOWN, CONTRACTOR SHALL DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD PRIOR TO COMMENCING WORK. CONTRACTOR TO BE FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE EXISTING UTILITIES.

14. PUBLIC AND PRIVATE UTILITY LINES AND CUSTOMER SERVICE LINES MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, MAINTAIN AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED.

15. CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY TO RELOCATE OR DIVERT ANY UTILITY IN CONFLICT WITH PROPOSED CONSTRUCTION SO AS NOT TO DISRUPT SERVICE OF IT. CONTRACTOR SHALL RESTORE, RELOCATED, OR DIVERTED UTILITY TO ITS ORIGINAL CONDITION AND LOCATION WHEN APPLICABLE UPON COMPLETION OF CONSTRUCTION.

16. CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES FOR VERIFICATION OF LOCATION OF EXISTING FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.

17. CONTRACTOR TO MAINTAIN ALL EQUIPMENT AND TRANSPORTATION OF SAID EQUIPMENT WITHIN THE EXISTING RIGHT-OF-WAYS OF THE CITY, COUNTY, OR STATE.

18. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE ENGINEER, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.

19. WHERE NEW WATER LINES AND SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 317 (DESIGN OF SEWAGE SYSTEMS) OR 30 TAC 290 (WATER HYGIENE).

20. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESS IN WORKING ORDER AT ALL TIMES, EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR CONNECTIONS TO BE REINSTALLED. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO SAID SERVICES.

21. CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AREA BETWEEN EDGE OF PAVEMENT AND RIGHT OF WAY TO HAVE POSITIVE FLOW TO PROPOSED INLETS.

22. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING THE INSTALLATION OF THE STRUCTURES, DRAINAGE, IRRIGATION AND ROAD IMPROVEMENTS. DEWATERING OF THE TRENCH MAY BE REQUIRED DURING THE INSTALLATION OF THE DRAINAGE AND IRRIGATION FACILITIES/STRUCTURES. SAID DEWATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

23. THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD AS OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED.

24. THE CONTRACTOR SHALL REMOVE FROM THE PROJECT AREA ALL SURPLUS MATERIAL. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM UNLESS STATED OTHERWISE. SURPLUS MATERIALS FROM EXCAVATION INCLUDING DIRT, ENTRANCE CULVERTS, TRASH, ETC., SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO HIDALGO COUNTY PRECINCT NO 1. THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND THE HIDALGO COUNTY PRECINCT NO 1. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND CONTRACTOR SHALL REMOVE THE MATERIAL AT OWN COST.

25. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF THE TRENCH EXCAVATION PROTECTION PLAN. CONTRACTOR SHALL SUBMIT CONSTRUCTION DETAILS AND DESIGN CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS BEFORE CONSTRUCTING THE SHORING AND/OR UTILIZING A TRENCH PROTECTION SYSTEM (BOX). THE ENGINEER RESERVES THE RIGHT TO REJECT DESIGNS NOT MEETING THE REQUIREMENTS OF SECTION ITEM 402 AND 403.

HIDALGO COUNTY
PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

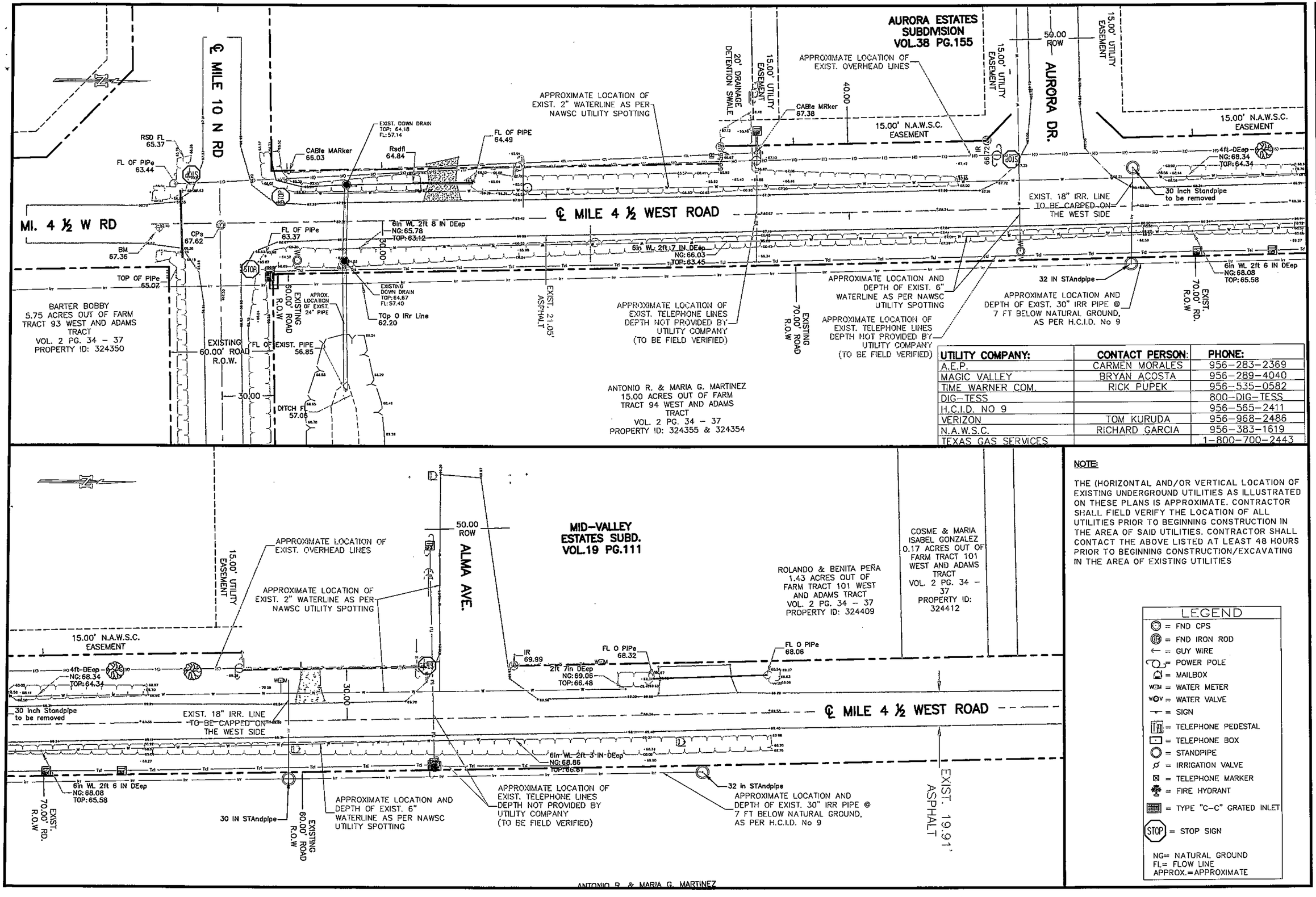
PRECINCT 1
DRAINAGE PROJECT

MID VALLEY ESTATES
GENERAL NOTES

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date

SCALE:
DRAWN BY: CYNTHIA PEREZ
CHECKED BY: RAUL E. SESIN
COPY BY: EDGAR ISIDRO
SHEET: 1 OF 5



UTILITY COMPANY:	CONTACT PERSON:	PHONE:
A.E.P.	CARMEN MORALES	956-283-2369
MAGIC VALLEY	BRYAN ACOSTA	956-289-4040
TIME WARNER COM.	RICK PUPEK	956-535-0582
DIG-TESS		800-DIG-TESS
H.C.I.D. NO 9		956-565-2411
VERIZON	TOM KURUDA	956-968-2486
N.A.W.S.C.	RICHARD GARCIA	956-383-1619
TEXAS GAS SERVICES		1-800-700-2443

NOTE:

THE (HORIZONTAL AND/OR VERTICAL LOCATION OF EXISTING UNDERGROUND UTILITIES AS ILLUSTRATED ON THESE PLANS IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF SAID UTILITIES. CONTRACTOR SHALL CONTACT THE ABOVE LISTED AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION/EXCAVATING IN THE AREA OF EXISTING UTILITIES

LEGEND

- = FND CPS
- = FND IRON ROD
- = GUY WIRE
- = POWER POLE
- = MAILBOX
- WM = WATER METER
- WV = WATER VALVE
- = SIGN
- TR = TELEPHONE PEDESTAL
- = TELEPHONE BOX
- = STANDPIPE
- = IRRIGATION VALVE
- = TELEPHONE MARKER
- = FIRE HYDRANT
- = TYPE "C-C" GRATED INLET
- STOP = STOP SIGN

NG= NATURAL GROUND
FL= FLOW LINE
APPROX.=APPROXIMATE

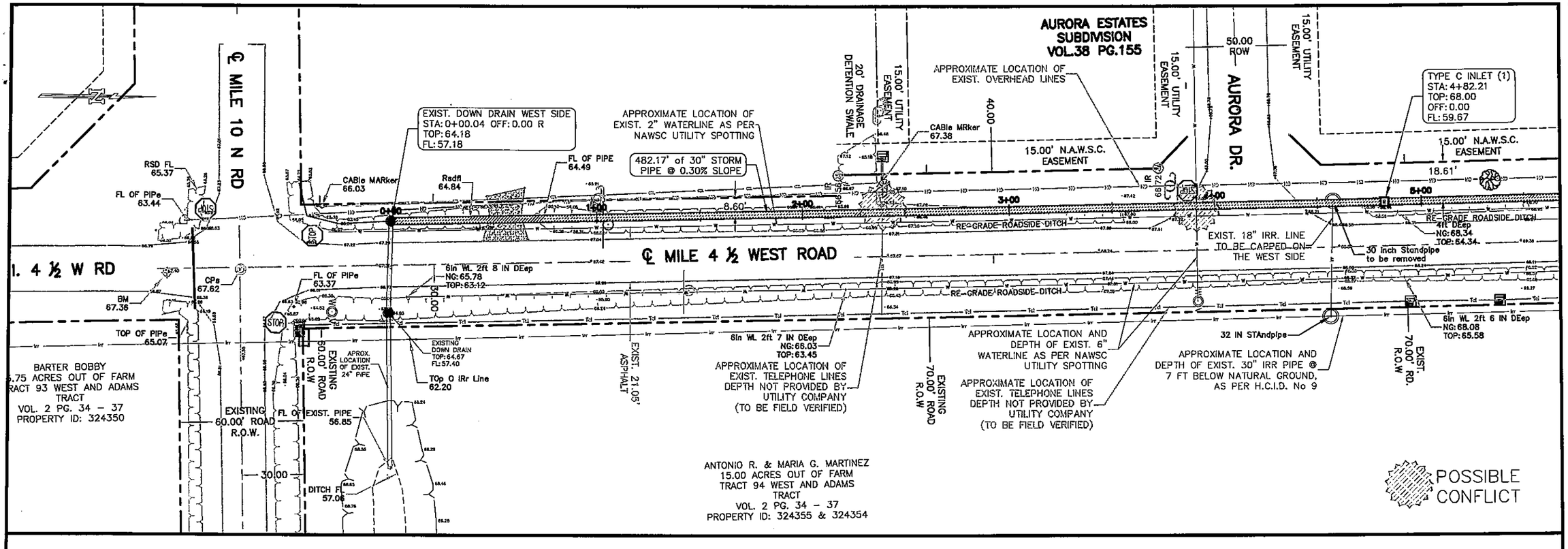
HIDALGO COUNTY PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

PRECINCT 1
DRAINAGE PROJECT

MID VALLEY ESTATES
TOPOGRAPHY

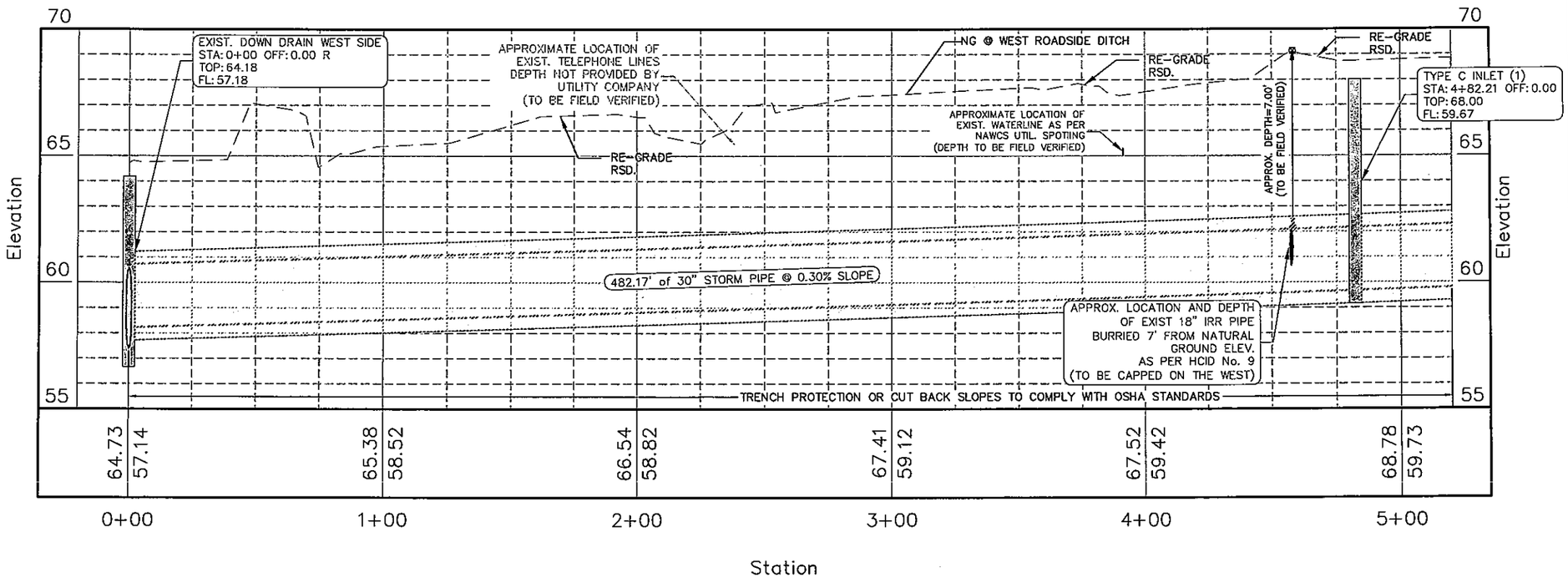
STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED PROFESSIONAL ENGINEER
This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date
10/11/11
RAUL E. SESIN P.E. No. 86374

SCALE: 1"=50'
DRAWN BY: CYNTHIA PEREZ
CHECKED BY: RAUL E. SESIN
TOPY BY: EDGAR ISIDRO
SHEET: 2 OF 5



NOTE:

THE (HORIZONTAL AND/OR VERTICAL LOCATION OF EXISTING UNDERGROUND UTILITIES AS ILLUSTRATED ON THESE PLANS IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF SAID UTILITIES. CONTRACTOR SHALL CONTACT UTILITY PROVIDERS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION/EXCAVATING IN THE AREA OF EXISTING UTILITIES



HIDALGO COUNTY PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

PRECINCT 1
DRAINAGE PROJECT

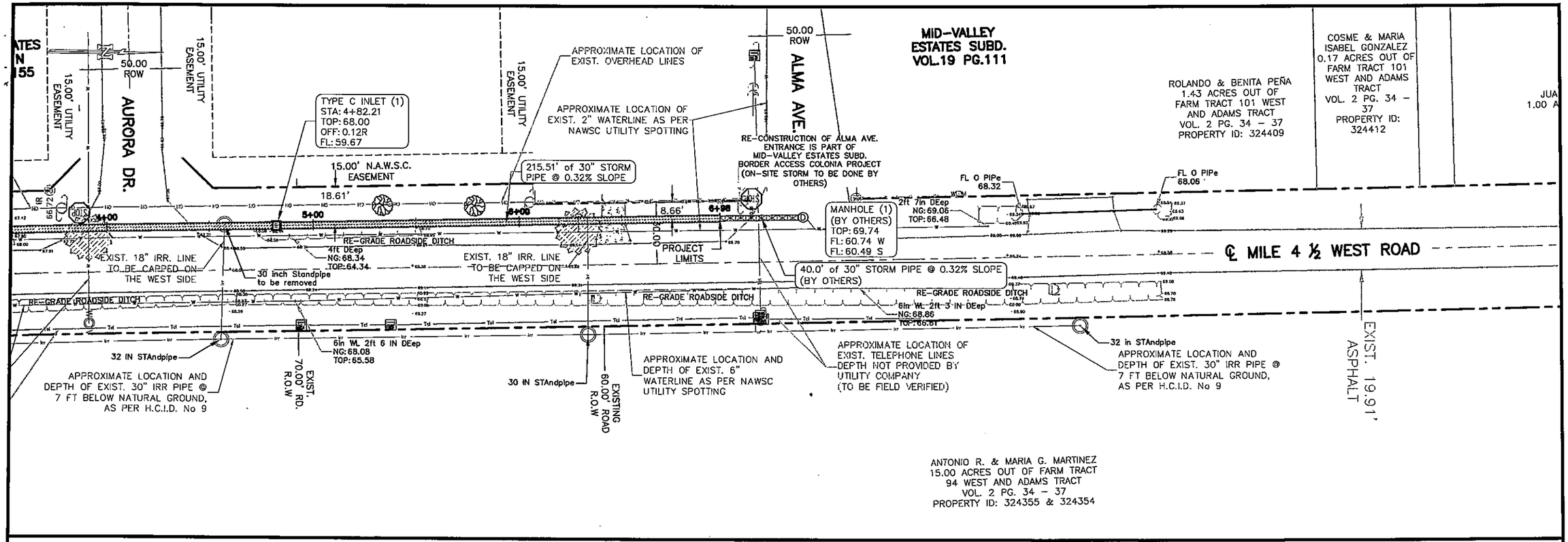
MID VALLEY ESTATES STORM SEWER

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED PROFESSIONAL ENGINEER

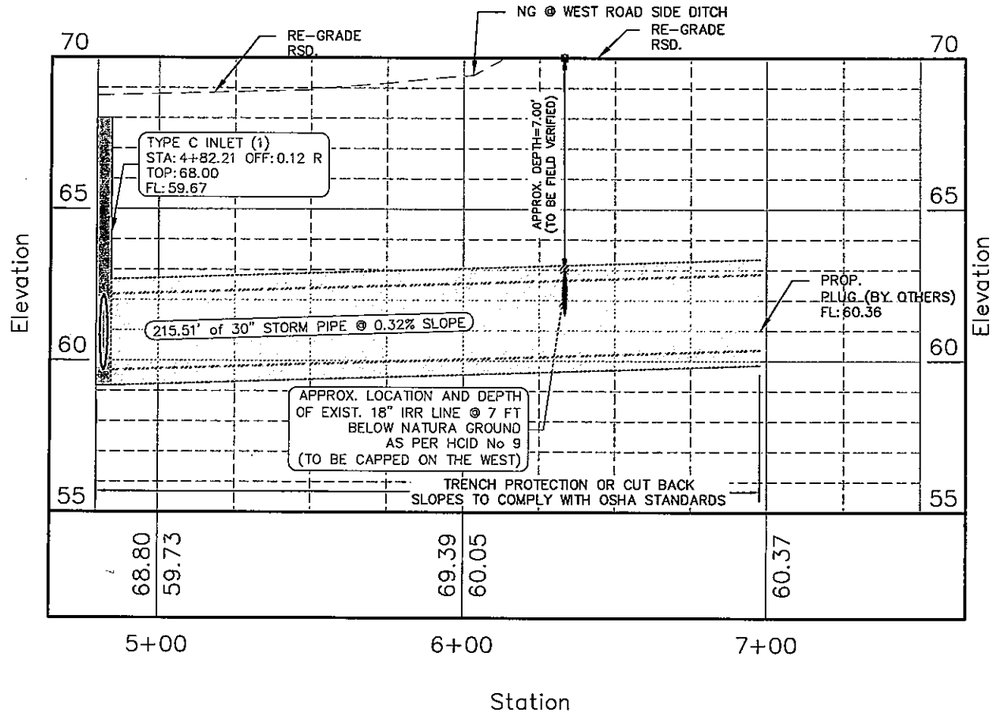
This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date

RAUL E. SESIN P.E. No. 86374

SCALE: (V) 1"=5' (H)1"=50'
DRAWN BY: CYNTHIA PEREZ
CHECKED BY: RAUL E. SESIN
COPY BY: EDGAR ISIDRO
SHEET: 3 OF 5



POSSIBLE CONFLICT



NOTE:

THE (HORIZONTAL AND/OR VERTICAL LOCATION OF EXISTING UNDERGROUND UTILITIES AS ILLUSTRATED ON THESE PLANS IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF SAID UTILITIES. CONTRACTOR SHALL CONTACT UTILITY PROVIDERS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION/EXCAVATING IN THE AREA OF EXISTING UTILITIES

REVISED 11/03/11

HIDALGO COUNTY
PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

PRECINCT 1
DRAINAGE PROJECT

MID VALLEY ESTATES
STORM SEWER

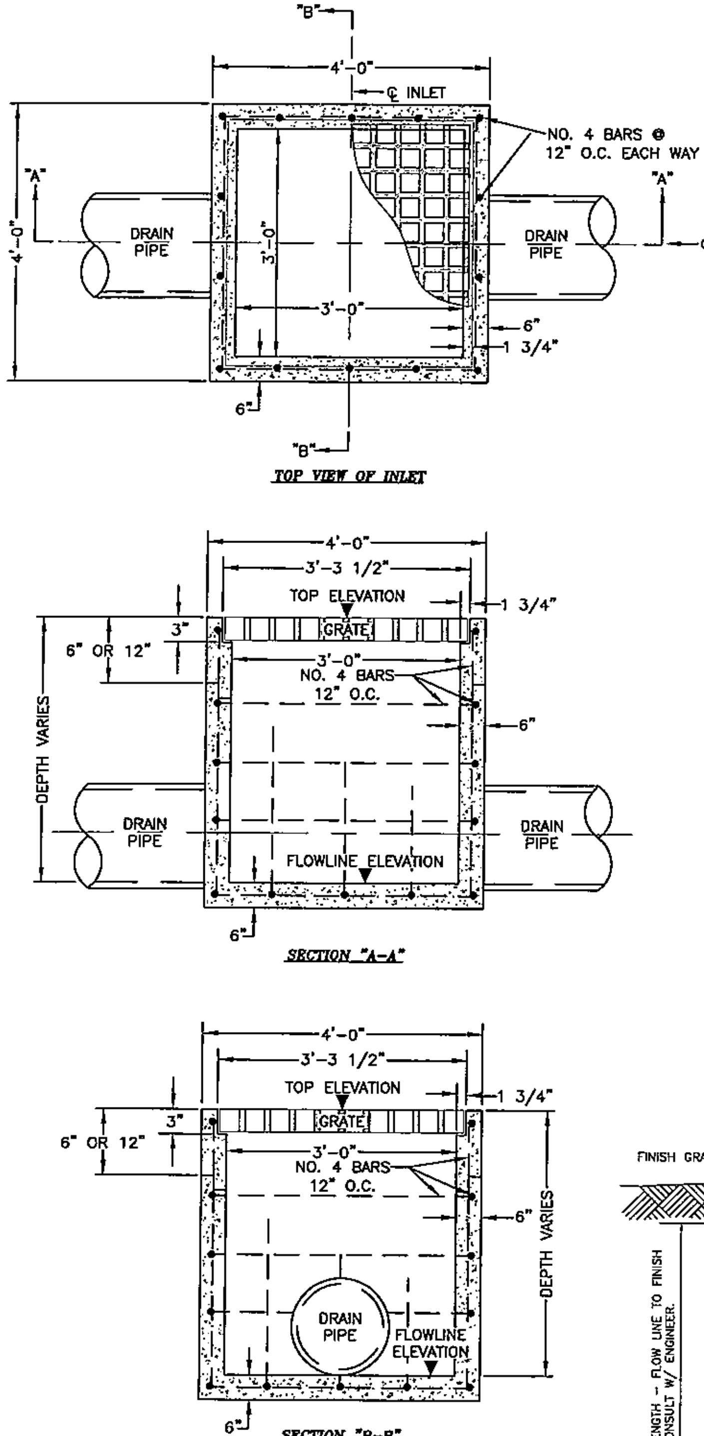
STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER
11/04/11

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the date shown designated date

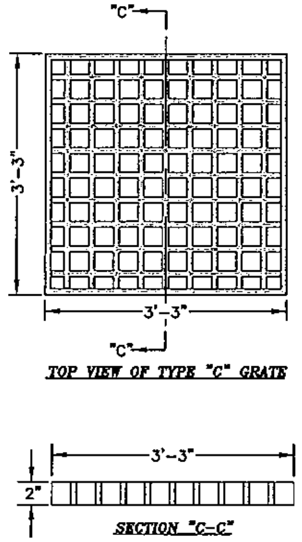
RAUL E. SESIN- P.E. No. 86374

SCALE: (V) 1"=5' (H)1"=50'
DRAWN BY: CYNTHIA PEREZ
CHECKED BY: RAUL E. SESIN
COPY BY: EDGAR ISIDRO
SHEET: 4 OF 5

Drawing: H:\PCT 1\Mid-Valley Estates Sub\mid valley topo n storm.dwg) Plotted by: cynthia.perez

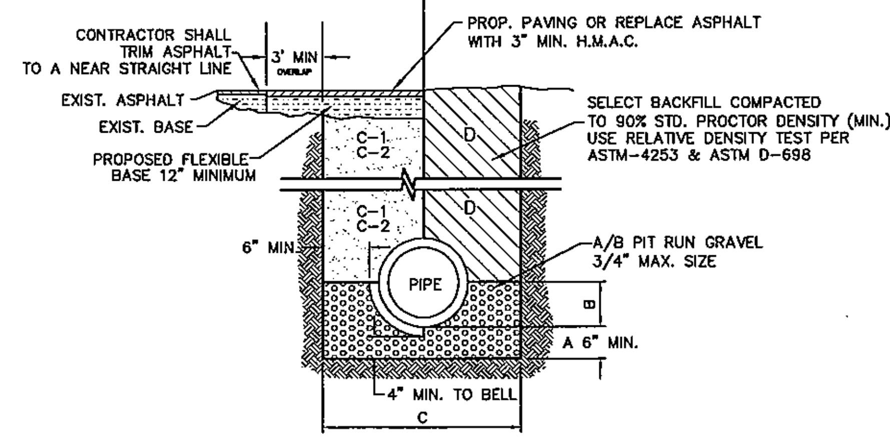


TYPE "C" GRATE INLET



REINFORCING STEEL DETAILS

NOTE:
1. ALL STEEL TO BE No. 4 BARS ON 12" SPACING IN BOTH DIRECTIONS EXCEPT IN TOP SLAB OR MANHOLE.
2. ALL GRATE INLET COVERS SHALL BE PEDESTRIAN SAFE COVERS. OPENINGS SHALL BE NO GREATER THAN 3/8" WIDE.
3. INLET SHALL BE PLACED ON 6-INCH SAND BEDDING. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY



A. GRAVEL BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW OF PIPE (MIN. THICKNESS = 6") - PIT RUN GRAVEL 3/4" MAX. SIZE.

B. GRAVEL PLACED AFTER PIPE IS LAID, FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. PIT RUN GRAVEL 3/4" MAX. SIZE

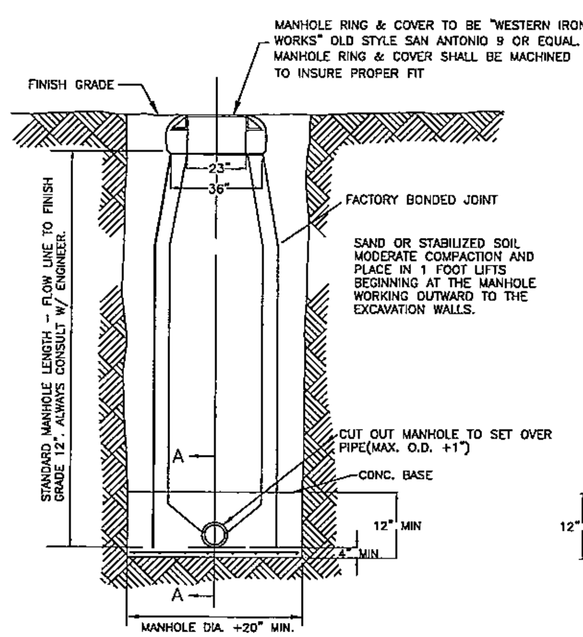
C. TRENCH WIDTHS SHALL BE BELL O.D. + 12".

C-1 (COUNTY ROADS, CITY AND COUNTY STREETS, ROAD PARKING AREA, DRIVEWAYS) SELECT EXCAVATED BACK FILL COMPACTED TO 95% SPD, 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.

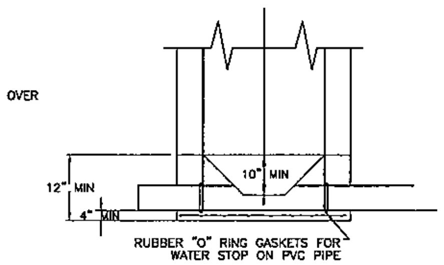
D. SELECTED EARTH BACKFILL COMPACTED TO 90% STANDARD PROCTOR DENSITY (12" LIFT, MECHANICAL COMPACTION). FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE. BACKFILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STANDARD PROCTOR DENSITY (USE RELATIVE DENSITY TEST PER ASTM D-4253 & ASTM D-698). THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 6". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSITUTE.

STORM TRENCH BEDDING AND BACKFILL DETAILS

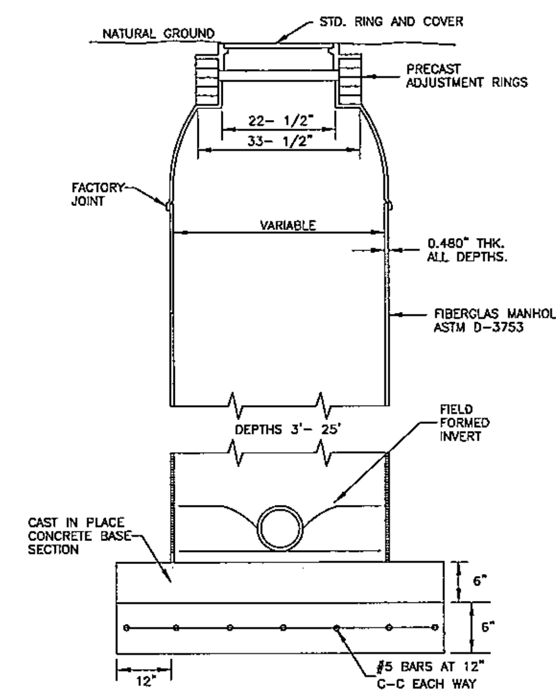


GENERAL NOTES

1. BEFORE ATTEMPTING TO INSTALL ANY MANHOLE BE SURE EXCAVATION HAS BEEN SHORED OR SLOPED PROPERLY.
2. CONCRETE BASE TO BE POURED IN PLACE IN TRENCH.
3. MANHOLE CUT-OUT TO BE MADE AT TIME OF INSTALLATION.
4. MANHOLE TO BE INSTALLED BY INSERTING INTO WET CONCRETE BASE.
5. FUTURE CONNECTIONS. IF A SEALANT BETWEEN PIPE & MANHOLE IS NEEDED USE STAUFFER CHEMICAL SWS940RTV SILICONE SEALANT OR EQUAL.
6. USE 4'-0" INSIDE DIAMETER (ID) PRECAST SECTION FOR SEWERS WHOSE NOMINAL SIZE IS 24" OR SMALLER.
7. USE 5'-0" ID SECTION FOR SEWER SIZES 30"-36"
8. USE 6'-0" ID SECTIONS FOR SEWERS LARGER THEN 30".
9. MANHOLE SHALL BE PLACED ON 6-INCH SAND BEDDING.
10. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY
11. 6' DIAMETER BY 12" CONCRETE COLLAR REQUIRED WHEN INSIDE PAVEMENT

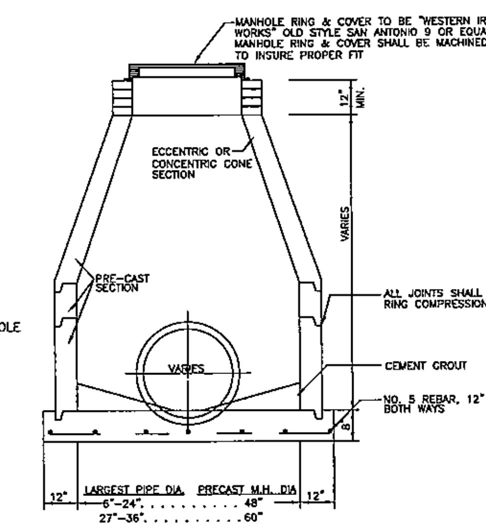


CAST-IN-PLACE
4' DIA. CONCRETE STORM SEWER MANHOLE



NOTE: (FOR FIBERGLASS & POLYETHLENE MANHOLES) FILL SHALL BE SAND OR SOIL W/ MODERATE COMPACTION & PLACED IN ONE FOOTLIFTS BEGINNING AT MANHOLE WORKING OUTWARD TO THE EXCAVATION WALLS

TYPICAL FIBERGLASS MANHOLE



LARGEST PIPE DIA.	PRECAST M.H. DIA
6"-24"	48"
27"-36"	60"
LARGER THAN 36"	AS SPECIFIED

NOTE:
1. MANHOLE SHALL BE PLACED ON 6-INCH SAND BEDDING.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY
3. 6' DIAMETER BY 12" CONCRETE COLLAR REQUIRED WHEN INSIDE PAVEMENT

STANDARD STORM SEWER
PRE-CAST CONCRETE MANHOLE

HIDALGO COUNTY PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG, TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

PRECINCT 1
DRAINAGE PROJECT

MID VALLEY ESTATES
TYPICAL DETAILS

STATE OF TEXAS — RAUL E. SESIN — 86374 — LICENSED PROFESSIONAL ENGINEER

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date

SCALE:	N.T.S
DRAWN BY:	CYNTHIA PEREZ
CHECKED BY:	RAUL E. SESIN
TOPY BY:	EDGAR ISIDRO
SHEET:	5 OF 5