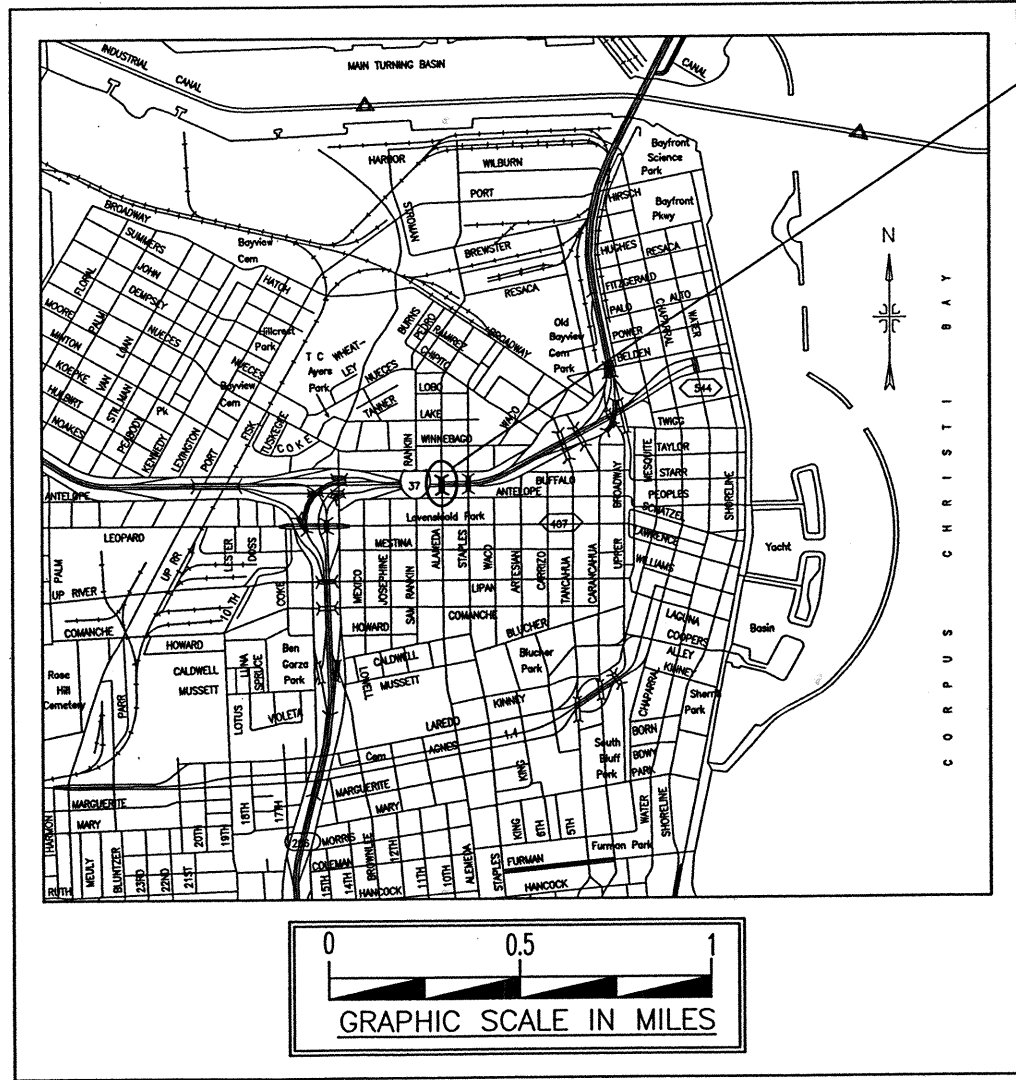


INDEX OF SHEETS
SHEET NO. DESCRIPTION
1-1A TITLE SHEET & CHANGE ORDER SUMMARY
2 EXISTING OVERALL SITE PLAN
3A-3F GENERAL NOTES
3B-3H ESTIMATE & QUANTITY
4 ALAMEDA STREET BRIDGE IMPROVEMENTS - SUMMARY OF ESTIMATED QUANTITIES
5 ALAMEDA STREET BRIDGE IMPROVEMENTS - SUMMARY OF ELECTRICAL ESTIMATED QUANTITIES
TRAFFIC CONTROL
6 ALAMEDA STREET BRIDGE - SEQUENCE OF WORK NOTES
7 PERIMETER TRAFFIC CONTROL SIGNAGE FOR ALAMEDA ST. BRIDGE
8 ALAMEDA STREET BRIDGE ACCESS ROAD (TCP) PHASE I
9 ALAMEDA STREET BRIDGE ACCESS ROAD (TCP) PHASE II
10-21 BC(1)-03, BC(2)-03, BC(3)-03, BC(4)-03, BC(5)-03, BC(6)-03, BC(7)-03, BC(8)-03, BC(9)-03, BC(10)-03, BC(11)-03, BC(12)-03
22 TCP (1-1) - 98
23 TCP (6-1) - 98A
24 TCP (6-7) - 98A - OMITTED
25 WZ (STPM) - 03
26 WZ (TD) - 03
BRIDGE DETAILS
27 ALAMEDA STREET BRIDGE IMPROVEMENTS - CONCRETE DECK PLAN
28 ALAMEDA STREET BRIDGE IMPROVEMENTS - STEEL ARCH PLAN AND ELEVATION
29 ALAMEDA STREET BRIDGE IMPROVEMENTS - STEEL ARCH ENLARGEMENT PLAN
30 ALAMEDA STREET BRIDGE IMPROVEMENTS - SECTIONS AND DETAIL
31 ALAMEDA STREET BRIDGE IMPROVEMENTS - SECTIONS AND DETAIL
32 ALAMEDA ST. BRIDGE - EXIST. TOPOGRAPHY AND DEMOLITION PLAN
33 ALAMEDA ST. BRIDGE - STAKING AND GRADING PLAN
34 MISCELLANEOUS CONCRETE DETAILS
35 MISCELLANEOUS CONCRETE DETAILS
36-38 PED - 02 (3 SHEETS)
39 MBGF - 03
ELECTRICAL DETAILS
40 ALAMEDA STREET BRIDGE IMPROVEMENTS - ELECTRICAL LIGHTING PLAN
41 ALAMEDA STREET BRIDGE IMPROVEMENTS - ELECTRICAL GROUNDING PLAN
42 ALAMEDA STREET BRIDGE IMPROVEMENTS - ELEC. PHIL. SCHED. AND SCHEM.
43 ALAMEDA STREET BRIDGE IMPROVEMENTS - ELECTRICAL NOTES AND DETAILS
44-49 ED(1)-03, ED(2)-03, ED(3)-03, ED(4)-03, ED(5)-03 & ED(8)-03
50 ELECTRICAL SERVICE DATA SHEET
LANDSCAPE/IRRIGATION DETAILS
51 ALAMEDA STREET BRIDGE - LANDSCAPE PLANS AND DETAILS
52 ALAMEDA STREET BRIDGE - IRRIGATION PLANS AND DETAILS
53 ALAMEDA STREET BRIDGE - IRRIGATION DETAIL SHEET
54 EC (1) - 93

STATE OF TEXAS
TEXAS DEPARTMENT OF TRANSPORTATION
PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

CSJ: 0074-06-199
PROJECT CC 74-6-199
ALAMEDA STREET BRIDGE
NUECES COUNTY
ROADWAY = 360 ft. = 0.068 miles BRIDGES = 0.0 ft. = 0.0 miles
TOTAL LENGTH OF PROJECT: 360 ft = 0.068 miles
LIMITS: ALAMEDA BRIDGE BETWEEN MARTIN LUTHER KING & ANTELOPE
CONSTRUCTION OF: PROVIDING PEDESTRIAN ENHANCEMENT ON ALAMEDA ST BRIDGE
CONSISTING OF: PEDESTRIAN WALKWAYS, PEDESTRIAN LIGHTING, LANDSCAPE, IRRIGATION

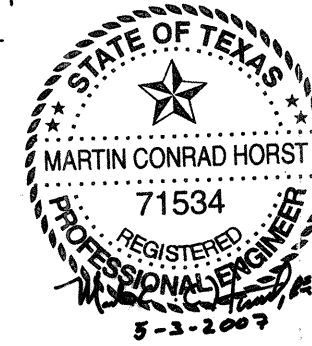


FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	CC 74-6-199		1
STATE	DIST.	COUNTY	
TEXAS	CRP	NUECES	
CONT.	SECT.	JOB	HIGHWAY NO.
0074	06	199	IH37

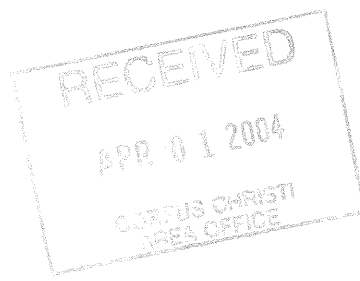
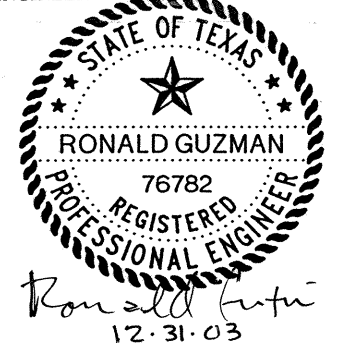
TDLR INSPECTION IS REQUIRED FOR THIS PROJECT.

FINAL PLANS:
DESIGN SPEED 30 MPH
CONTRACTOR: REESE CONTRACTING, INC.
DATE WORK BEGAN: 05/12/2004
DATE WORK COMPLETED: 02/01/2007
CONTRACT AMOUNT: \$636,267.14
FINAL CONTRACT AMOUNT: \$764,001.31
WORKING DAYS ALLOTTED: 90 + 42 (BY CO) = 132
WORKING DAYS USED: 145

FINAL PLANS STATEMENT:
THIS PROJECT WAS BUILT ACCORDING TO THE PLANS AND SPECIFICATIONS. PLANS CORRECTED AS BUILT.



PROJECT:
CC 74-6-199
CONT. 0074-06-199
BEGIN STA. 3+60
END STA. 7+20
AREA ENGINEER: *Handwritten signature* DATE: 5-3-2007



SUBMITTED FOR LETTING: 1/16/04
APPROVED FOR LETTING:
Paul M. Sales, Esq., P.E.
DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT
DIRECTOR, TRAFFIC OPERATIONS DIVISION
RECOMMENDED FOR LETTING: 01-16-04
APPROVED FOR LETTING: 2/12/04
Eric Clark, P.E.
DISTRICT ENGINEER
DIRECTOR, DESIGN DIVISION

EQUATIONS : NONE
EXCEPTIONS : NONE
RAILROAD CROSSINGS : NONE
DESIGN SPEED : 30 MPH

THE STANDARD SHEETS (*) SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THE PROJECT.
RESPONSIBLE ENGINEER: *Handwritten signature* DATE: 12-31-03

CHANGE ORDER •1:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR THE INSTALLATION AND REMOVAL OF TEMP SEDMT CONTROL FENCE AND COMPENSATION FOR DELAYING THE CONTRACT WORK START DATE. TEMP SEDMT CONTROL FENCE SHALL BE INSTALLED AND MAINTAIN IN ACCORDANCE WITH TCEQ STANDARDS. THE REGIONAL TRANSIT AUTHORITY (RTA) REQUESTED DELAYING THE START WORK DATE FROM MAY 6, 2004 TO MAY 12, 2004 TO INFORM THE CITY OF THE IMPROVEMENT TO THE ALAMEDA ST. BRIDGE.

AMOUNT: \$ 2,674.60

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •2:

DESCRIPTION:
THIS CHANGE ORDER WILL COMPENSATE THE CONTRACTOR FOR PROVIDING SAW-CUTTING THE EXISTING SIDEWALK AND PROVIDING FOR A NOTCH ALONG THE SIDEWALK. THIS CONSTRUCTION METHOD WILL REDUCE FUTURE MAINTENANCE AS THE PROPOSED CONCRETE ON THE BRIDGE DECK WILL HAVE AN IMPROVED BONDING AREA TO TIE INTO.

THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR PROVIDING ADDITIONAL CONCRETE EXPANSION JOINTING MATERIAL. RTA'S ENGINEERING CONSULTANT PROVIDED A REVISED CONCRETE BRIDGE DECK JOINTING PLAN REQUIRING ADDITIONAL EXPANSION JOINTS.

ADDITIONAL SCREED KEYS ARE TO BE COMPENSATED IN CONJUNCTION WITH THE ADDITIONAL EXPANSION JOINTS.

THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR PROVIDING A WIDER STEEL BASE PLATE ON THE CONCRETE PEDESTALS. THIS REVISED STEEL BASE PLATE , AS PROVIDED BY THE RTA'S CONSULTANT, WILL PROVIDE FOR AN IMPROVED ANCHOR BOLT COVER.

AMOUNT: \$ 12,501.68

SHEETS ADDED: N/A

DAYS ADDED: 8

CHANGE ORDER •3:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR THE INSTALLATION OF REMOVABLE BOLLARDS. THE REGIONAL TRANSPORTATION AUTHORITY (RTA) HAS REQUESTED THIS ADDITIONAL WORK.

THE REMOVABLE BOLLARDS WILL BE PLACED AT EACH END OF THE ALAMEDA STREET PEDESTRIAN BRIDGE AND WILL BE USED IN AN EMERGENCY EVENT BY LAW ENFORCEMENT, FIRE AND EMERGENCY MEDICAL PERSONNEL AND EQUIPMENT.

AMOUNT: \$ 3,362.52

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •4:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR PROVIDING 4" DIAMETER ELEVEN INCH STEEL (SCHEDULE 40) PIPE STUB EXTENSIONS AND 5" DIAMETER SCHEDULE 40 STEEL PIPE SLEEVES ON EXISTING STEEL COLUMN PIPE STUBS.

PROPOSED LIGHT FIXTURES WERE NOT ABLE TO FIT OVER ON TOP OF COLUMN PIPE STUBS DUE TO THE TRANSVERSE AND LONGITUDINAL STEEL ARCHES TIE-INS ONTO THE TOP OF THE STEEL COLUMN. THE LIGHT FIXTURE WAS UNABLE TO BE PROPERLY SEATED ON TOP OF COLUMN.

THE PROPOSED PIPE EXTENSION AND SLEEVES FOR THE ILLUMINATION LIGHT FIXTURE WILL ALLOW THE FIXTURE TO BE RAISED, WELDED IN PLACE AND METALIZED.

INCREASED ILLUMINATION ON THE PEDESTRIAN BRIDGE WILL ALSO BE REALIZED BY THE RAISING OF THE ILLUMINATION FIXTURE.

AMOUNT: \$ 10,936.96

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •5:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR PROVIDING A FULL PERIMETER WELD OF THE PEDESTRIAN FENCING WIRE MESH TO THE PEDESTRIAN HANDRAIL PANELS AS SHOWN ON THE REVISED PLAN SHEET.

THE ORIGINAL DESIGN PROPOSED A BOLTED CLAMP BAR TO HOLD THE PEDESTRIAN WIRE MESH FENCE IN PLACE TO THE HANDRAIL PANELS.

AFFIXING THE WIRE MESH FENCE BY THE WELDING METHOD TO THE HANDRAIL PANELS WILL SIGNIFICANTLY IMPROVE SAFETY AND EXTEND THE LIFE OF THE WIRE MESH FENCE PLACED OVER IH 37 MAINLANES.

THE REVISED PLAN SHEET WAS DEVELOPED BY THE REGIONAL TRANSPORTATION AUTHORITY'S ENGINEERING CONSULTANT.

WELDING OF THE PEDESTRIAN WIRE MESH FENCE TO HANDRAIL PANEL WILL BE PERFORMED AT THE FABRICATION YARD PRIOR TO JOB SITE DELIVERY. NO ON-SITE WELDING OPERATIONS OF THE PEDESTRIAN HANDRAIL ARE ANTICIPATED.

AMOUNT: \$ 9,297.75

SHEETS ADDED: N/A

DAYS ADDED: 10

CHANGE ORDER •6:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR GRANTING ADDITIONAL TIME AND BARRICADES.

ADDITIONAL BARRICADES GRANTED ARE AS FOLLOWS:

STEEL PIPE ARCH REVISIONS AND SHOP DRAWING APPROVAL: 4 MONTHS

APPROVAL OF GALVANIZED FINISH OF STEEL COLUMNS: 2 MONTHS

FABRICATION OF STEEL PIPE ARCHES (FOLLOWING APPROVAL OF GALVINIZED FINISH OF STEEL COLUMNS): 2 MONTHS

REDESIGN •1 OF PEDESTRIAN HANDRAIL AND PIPE STUB-OUTS FOR ILLUMINATION: 2 MONTHS

REDESIGN •2 OF PEDESTRIAN HANDRAIL: 2 MONTHS

AMOUNT: \$ 29,024.44

SHEETS ADDED: N/A

DAYS ADDED: 24

CHANGE ORDER •7:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR THE REVISED PEDESTRIAN FENCE DETAILS AS REQUESTED BY REGIONAL TRANSPORTATION AUTHORITY.

THE PEDESTRIAN FENCE WIRE CLOTH HAS CHANGED FROM THE 2" X 2" FLAT TOP WEAVE WITH A 0.135" DIAMETER WIRE GALVANIZED CARBON STEEL IN A DIAGONAL WEAVE PATTERN. THE REVISED WIRE CLOTH IS NOW A 2" X 2" INTERCRIMP WEAVE WITH A 0.225" DIAMETER WIRE GALVANIZED CARBON STEEL IN A DIAGONAL WEAVE PATTERN.

THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR THE REVISED PEDESTRIAN FENCE WIRE CLOTH MATERIAL COSTS.

ALL OTHER COMPONENTS OF THE PEDESTRIAN FENCE WILL REMAIN UNCHANGED. THESE COMPONENTS CONSIST OF THE TOP RAIL 4" DIAMETER STANDARD PIPE AND CAP, THE PERIMETER 1/4" X 2 1/2" FLAT BAR AND 1 1/2" DIAMETER STANDARD ADA RAILING.

AMOUNT: \$ 30,337.98

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •8:

DESCRIPTION:
CONTRACTOR REQUESTED TO USE TYPE C PAVEMENT MARKINGS IN LIEU OF TYPE A FOR CONTRACTOR CONVENIENCE. IN ADDITION, THE DISTRICT USES TYPE C MATERIAL FOR STRIPING EXIT GORES, CROSS-WALKS, WORDS AND ARROWS DUE TO THE MINIMUM FIELD PERFORMANCE CRITERIA.

AMOUNT: \$ 0.00

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •9:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR NINE (9) MONTHS OF BARRICADES DUE TO THE DELAYS INCURRED WHILE NEGOTIATING AND COMPLETING THE WORK REQUESTED BY THE RTA FOR CHANGE ORDER NO. 7.

AMOUNT: \$ 20,617.20

SHEETS ADDED: N/A

DAYS ADDED: N/A

CHANGE ORDER •10:

DESCRIPTION:
THIS CHANGE ORDER COMPENSATES THE CONTRACTOR FOR ADDITIONAL WORK REQUESTED BY THE RTA FOR THE DEDICATION CEREMONY. THIS CHANGE ORDER ALSO COMPENSATES THE CONTRACTOR FOR VARIOUS CHANGES TO THE SEQUENCE OF WORK, AND REMOVAL OF CONCRETE ENCOUNTERED UNDER THE EXISTING ACP.

AMOUNT: \$ 8,981.04

SHEETS ADDED: N/A

DAYS ADDED: N/A

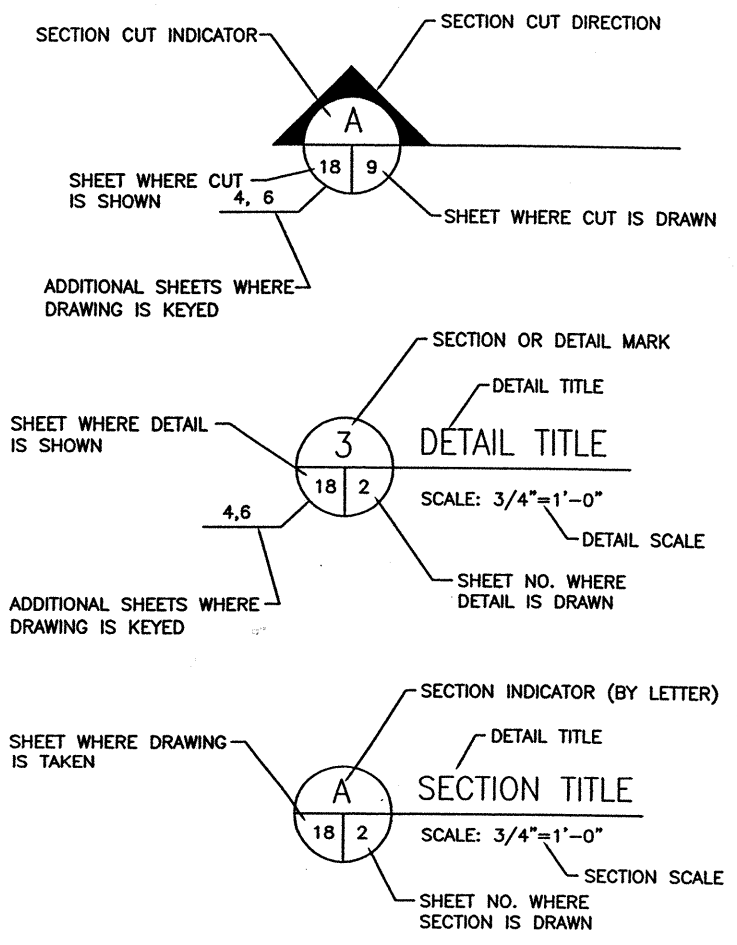
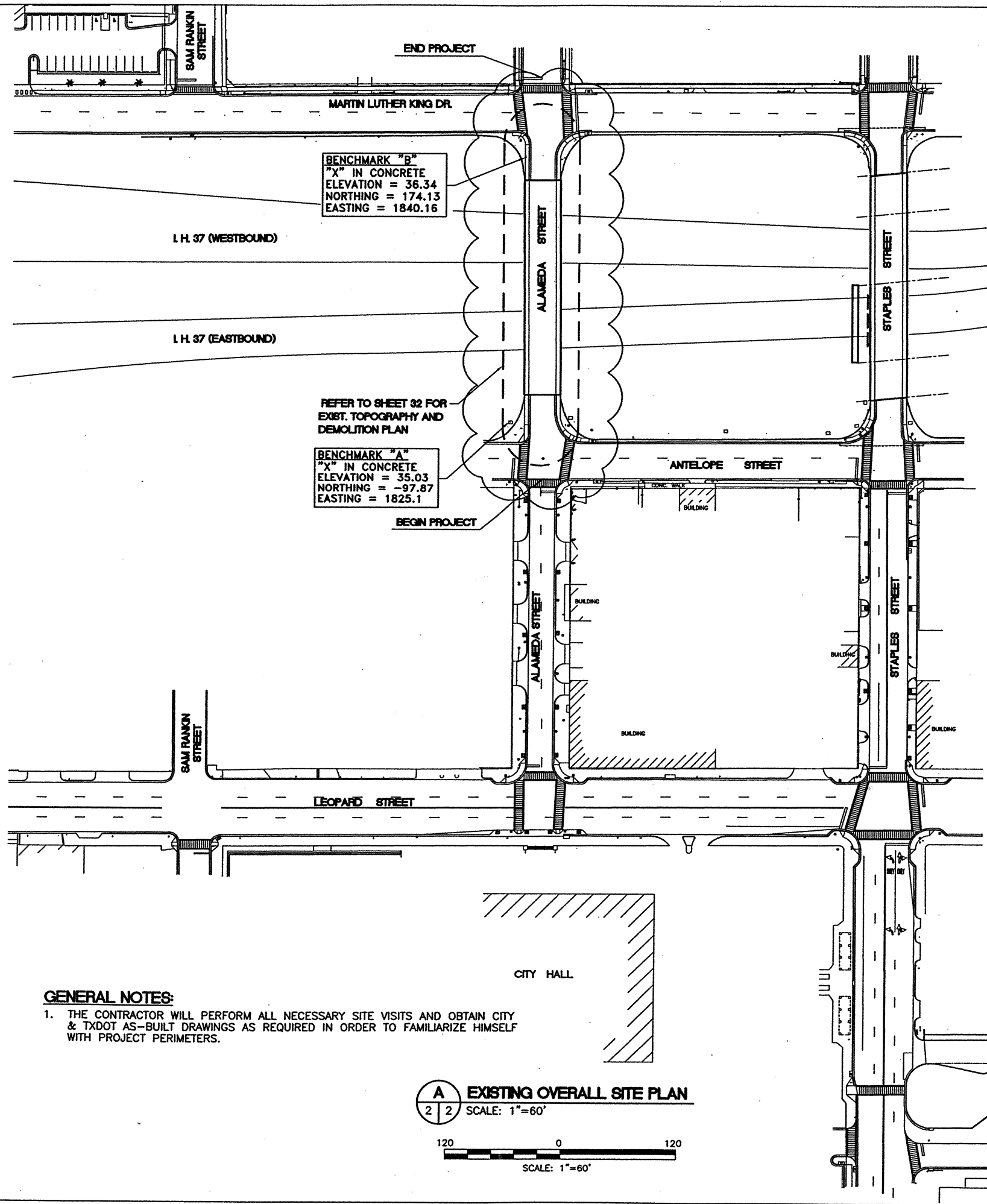
SCALE: NTS



CHANGE ORDER
SUMMARY

SHEET: 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	CC 74-6-199		1A
STATE	DIST.	COUNTY	
TEXAS	CRP	NUECES	
CONT.	SECT.	JOB	HIGHWAY NO.
0074	06	199	IH 37



B TYP. SECTION & DETAIL SYMBOL
 SCALE: N.T.S.

CALL BEFORE YOU DIG !

TEXAS ONE CALL PARTICIPANTS REQUEST 48 HOURS NOTICE BEFORE YOU DIG, DRILL , OR BLAST - STOP CALL

TEXAS ONE CALL SYSTEM
 1-800-245-4545

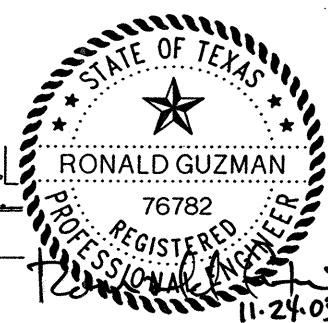
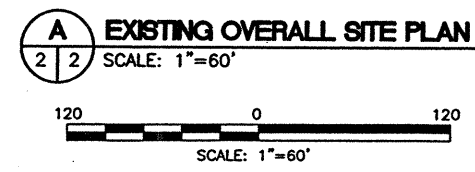
SOUTHWESTERN BELL LOCATE GROUP
 1-800-828-5127

THE LONE STAR NOTIFICATION COMPANY
 AT 1-800-669-8344

TEXAS EXCAVATION SAFETY SYSTEM
 1-800-344-8377

GENERAL NOTES:

1. THE CONTRACTOR WILL PERFORM ALL NECESSARY SITE VISITS AND OBTAIN CITY & TXDOT AS-BUILT DRAWINGS AS REQUIRED IN ORDER TO FAMILIARIZE HIMSELF WITH PROJECT PERIMETERS.



MEI **GOVIND** ENGINEERING & CONSULTANTS

TEL: 361 288 1385
 FAX: 361 288 0712
 P.O. BOX 9094
 CORPUS CHRISTI, TEXAS 78469

Texas Department of Transportation

© 2002 Texas Department of Transportation
 all rights reserved.

LIVABLE COMMUNITIES INITIATIVE PHASE II

EXISTING OVERALL SITE PLAN

SCALE: 1"=60'

FED RD DIST NO	FEDERAL PROJECT NO	SHEET NO
6	CC 74-6-199	2
STATE	STATE DIST NO	COUNTY
TEXAS	CRP	NUECES
CONT	SECT	JOB
0074	06	199
		HIGHWAY NO
		IH37

Project Number: CC 74-6-199

Control: 0074-06-199

County: Nueces

Highway: IH 37

GENERAL NOTES:

All pavement markings shall be in accordance with the latest version of the Texas MUTCD and standard sheets.

The Contractor shall provide for safe and convenient ingress and egress to abutting property, highway, public road and street crossings for all vehicles. The Contractor shall advise the Engineer in advance as to his proposed methods for accommodating traffic during construction at all locations and these methods shall be approved by the Engineer before any portion of an existing road or street is removed or disturbed.

The Contractor will not be permitted to commence work on the roadway before sunrise and shall so arrange his work that no machinery shall be on the roadway after sunset unless authorized by the Engineer.

The location of utilities, either underground or overhead, shown within the right-of-way and/or the project cross-sections are approximate and shall be verified by the Contractor before beginning construction operations. This work will not be paid for directly but shall be considered subsidiary to the various bid items. Prior to beginning any excavation work in the area of existing utilities, the Contractor shall contact the utility companies for exact locations to prevent any damage or interference with present facilities. This action however, shall in no way be interpreted as relieving the Contractor of their responsibility under the terms of the contract as set out in the plans and specifications. The Contractor shall repair any damage caused by their operations, deemed the Contractors liability by the Engineer, at their own expense and shall restore facilities to service in a timely manner.

No person or tool will be permitted within 8 ft of high voltage electrical lines (600 volts or greater) unless arrangements have been made with the power company. No equipment will be permitted within 10 ft of high voltage unless there warnings posted and an insulated guard is attached to the boom or bucket. The Contractor shall notify the Engineer if there are any conflicts with the high voltage electrical lines.

The Contractor shall procure all other necessary permits and licenses. The Contractor shall comply with ordinances and regulations of all local municipal, county, state and federal government.

In the event utility lines needing unforeseen adjustments are encountered, the Contractor shall prosecute the work in such a manner and sequence as to allow adjustments to be done by others.

The following list is the telephone numbers of utility locators for some of the utilities that may be encountered:

City of Corpus Christi (Waste Water) (361) 857-1818
City of Corpus Christi (Water) (361) 857-1881

Sheet 3A

Control: 0074-06-199

Project Number: CC 74-6-199

County: Nueces

Highway: IH 37

City of Corpus Christi (Gas) (361) 854-4396
SWBell (361) 881-2511 Utility Locators (800) 245-4545
C.P.L. (361) 985-3913

Water required for curing base materials, maintenance of roadway, and dust control will not be paid for directly, but shall be considered subsidiary to the various contract items. Water shall conform to Item 204 except for measurement and payment.

The Contractor shall be required to contact a notification center 48 hours prior to excavating, with some exceptions, such as emergencies. The telephone number is 1-800-245-4545

Materials larger than 4 inches in size within the construction limits and not incorporated into the roadway construction shall be removed by the Contractor from the right of way and disposed of in a proper manner acceptable to the Engineer. This work will not be paid for directly, but will be will be subsidiary to the various bid items.

If waste areas or material source areas result from this project, the Contractor is reminded to follow the requirements of the Texas Aggregate Quarry and Pit Safety Act.

The Contractor shall maintain the right of way free of trash, construction debris and surplus materials as shown in the plans and/or as determined/approved by the Engineer.

Mixing of materials, storing of materials, storing of equipment or repairing of equipment on bridge decks will not be permitted unless authorized by the Engineer.

Any materials removed and not reused and determined to be salvageable by the Engineer, shall be retained by the owner and shall be stored within the project limits at an approved secure location or delivered undamaged to the salvage/storage yard as directed by the Engineer. Materials that are not determined to be salvageable by the Engineer shall become the property of the Contractor for proper disposal at their expense. Signs must be defaced and disposed of in such a manner that they will not reappear in public as signs.

In preparing holes for posts and/or foundations, care shall be taken so as not to rupture existing drainage structures, electrical conduits, public utilities, etc.

Any sign panels that are to be adjusted and/or removed and replaced, shall be done in the same workday unless otherwise approved by the Engineer.

Sign types for which details are not shown in the plans shall conform with the latest version of the Texas MUTCD.

Project Number: CC 74-6-199

Control: 0074-06-199

County: Nueces

Highway: IH 37

Item 2

The bidder's attention is directed to the first paragraph of Article 2.3 of the Standard Specifications. In view of the complex nature of the work, the need for close coordination with various utilities, traffic control considerations, and other factors influencing the prosecution of the work, it is strongly recommended that prospective bidders examine the site of the work in company with the Engineer.

Item 5

The Contractor shall offset and maintain existing horizontal control throughout the project duration. The methods required to perform this work shall be determined by the Engineer.

The Contractor will be responsible for marking the placement limits for asphalt and aggregate loads. The placement limits shall be agreed upon by the Engineer. The Contractor's measuring equipment shall be in working condition and calibrated to within manufacturer's specifications.

The Contractor shall reestablish the roadway centerline and maintain stationing for the surface treatment, hot mix placement and striping operations.

The Contractor shall be responsible for notifying the Engineer immediately if any discrepancies are discovered in the horizontal or vertical control or benchmark data.

Item 6

Inspection of work accomplished in concrete product plants normally will be handled as follows: Precast pipe will be inspected by TxDOT's Material and Test division. Any precast units that are cast in precasting yards where bridge components or pipe are being cast will be inspected by TxDOT's Materials and Test Division. Any precasting yards supplying precast units to projects outside of the Corpus Christi District will be inspected by TxDOT's Material and Test Division. All other precast units will be inspected by the Area Engineer.

Item 8

The Contractor shall submit a proposed critical path method schedule of work utilizing the Arrow Diagram method or the Bar Chart method. The Contractor shall make periodic updates as necessary.

Item 9

The Contractor must submit material-on-hand payment requests at least three working days prior to the end of the month for payment on that month's estimate. All requests shall be submitted through the prime Contractor.

Project Number: CC 74-6-199

Sheet 38
Control: 0074-06-199

County: Nueces

Highway: IH 37

Item 104

Contractor shall remove those concrete bridge items designated on the plans. Contractor shall ensure that the concrete removal is done in a safe manner to both pedestrians and vehicular traffic.

Item 105

The Contractor shall saw cut the asphalt pavement to be removed to the neat lines shown in the plans or established by the Engineer.

Item 247

Flexible base material shall come from a source approved by the Engineer. If the flexible base comes from a stockpile, the stockpile shall be tested before delivery on the road. The stockpile shall be built in lifts not to exceed 2 feet and in a manner as to obtain a minimum working face of not less than 10 feet and maximum working face of not more than 20 feet. Final acceptance of flexible base material will be from tests made from windrow samples and/or the stockpile.

Testing of the liquid limit shall be in accordance with test method TEX-104-E (Machine Method).

The flexible base Ty A Gr 1 shall be placed and compacted in lifts not to exceed 6 inches.

Density requirements for the Ty A Gr 1 flex base shall be 100 %

The unit weight of the Ty A Gr 1 flex base is estimated at 136 pounds per cubic foot.

Item 300 & 302

When emulsions are used as the precoat material, the precoat aggregate shall be adequately dried to the satisfaction of the Engineer. It will be the responsibility of the Contractor/producer to provide adequate drying and curing periods before the delivery of the aggregates. The Engineer reserves the right to reject any precoat aggregate, which is improperly coated or otherwise unsatisfactory for use.

All aggregate shall be a minimum class of "B" as published in the Aggregate Quality Monitoring Program Rated Source Quality Catalogue.

Item 420

Except as otherwise noted in the plans, as soon as the forms are removed from all concrete an ordinary surface finish shall be applied to the exposed concrete surfaces.

Project Number: CC 74-6-199

Control: 0074-06-199

County: Nueces

Highway: IH 37

Item 421

For this project, the strength shall be determined by 28-day compressive testing by use of test method TEX-418-A "Compressive Strength of Cylindrical Concrete Specimens". The 7-day job control strength shall be determined in accordance with test method TEX-427-A, part III. Cylindrical concrete specimens shall be 4" in diameter by 8-inches.

The Engineer will cast and test all concrete cylinders. The Contractor shall furnish all test molds, wheelbarrow and cylinder curing tank. The test molds shall be of disposable plastic type as approved by the Engineer. The Contractor will remove the test specimens from the molds and transport them to the proper curing location at the schedule designated by the Engineer.

When a 7-day job control test value is more than 10 percent below the required job control strength or when three (3) consecutive values fall below the required job control strength, an investigation of the test procedure, the quality of the materials, and batching operations shall be performed by the Contractor and Engineer to determine the likely cause or causes of the problem. Immediate remedial action shall be taken to correct the problem including redesign of the concrete mix when warranted.

Item 500

"Materials on hand" payments will not be considered in determining percentages used to compute payment for the item "Mobilization".

Item 502

State Standard Sheet(s) Traffic Control Plan (TCP) requires that certain signs are to remain in place until the standard pavement markings are placed. The standard markings should be in place no later than 14 days after surface treatment operations are completed.

The Contractor may be required to furnish additional barricades and signs to maintain traffic. Any additional signs and barricades shall be considered subsidiary to this Item.

After completion of the project, when removing the barricades and signs the Contractor shall fill any holes left by the barricades or sign supports and restore the area in which the signs were removed to its original condition.

After the Contractor has been notified in writing by the Engineer, the time frame for the Contractor to provide properly maintained traffic control devices before they are considered to be in non-compliance with this Item, is 48 hours regardless of the days of the week involved. If the Contractor doesn't take the necessary steps approved by the Engineer to eliminate the non-compliance conditions within the 48 hours established above, payment for this Item for the month(s) in non-compliance can be withheld as covered in Section 502.4 (7).

Project Number: CC 74-6-199

Sheet 3C
Control: 0074-06-199

County: Nueces

Highway: IH 37

The Contractor is responsible for implementing and maintaining the traffic control plan and will be responsible for furnishing all traffic control devices and flaggers.. The construction methods shall be conducted to provide the least possible interference to traffic so as to permit the continuous movement of traffic in all allowable directions at all times. The Contractor shall clean up and remove from the work area all loose material resulting from contract operations at the end of each workday. When placing traffic signal loop detectors across the roadway at least one lane shall remain open at all times.

The Contractor will provide full-time off-duty uniformed certified peace officers in officially marked vehicles, as part of traffic control operations. The peace officers shall be able to show proof of Certification by the Texas Commission of Law Enforcement Officer's Standards. The Contractor will be required to provide vehicles with appropriate light bars as directed by the Engineer. Payment for the off-duty law enforcement officers and vehicles shall be done according to special provision to Item 9.

Item 504

The Contractor shall supply one Type C structure (384 sq ft min.) for this project. Furniture to be provided shall include 2 desks, 4 office chairs, 1 drafting table, 1 drafting stool, 1 bookcase, and 2 filing cabinets, all furnishings shall meet the approval of the Engineer or their designated representative.

The building shall be air conditioned, heated and ventilated as directed by the Engineer. In addition, the building shall be furnished with an approved washroom equipped with a tank flush toilet. The building shall be equipped with electricity, 2 phone lines with phone, sewer and water.

The arrangement and number of outlets for these utilities shall be as directed by the Engineer. The Contractor will pay for all the utility meter deposits and utility service bills.

The Contractor shall provide the Engineer with one strand-alone fax machine and one office copier. Each piece of office equipment furnished for the field office must be approved by the Engineer.

All monthly equipment leases and utilities shall be paid by the Contractor.

The field office shall be separate from the Contractor's office.

Item 526

If membrane curing is used for curing the concrete, only Type II curing compound conforming to the requirements of this Item will be allowed.

Project Number: CC 74-6-199

Control: 0074-06-199

County: Nueces

Highway: IH 37

Item 529

Class "C" concrete will be required for machine extruded curb. The concrete curb shall be formed to have a top radius of 2 ½ inches and the gutter radius to be 3 ½ inches. All Concrete Curb and Curb and Gutter shall be reinforced as directed by the Engineer.

Item 531

All sidewalk shall be reinforced as shown on the plans.

Item 540

The mixing of domed and sloped post in the same run will not be permitted

Item 542

Upon removal of existing metal beam guard fence, all excess railing, posts and fittings shall become the property of the Contractor, and shall be disposed of by him outside the limits of the right-of-way as approved by the Engineer.

Item 610

Any wire used in pole foundation or pole base to make connections shall be considered incidental to roadway illumination assembly. Measurement for payment shall be surface distance between locations.

The Contractor may be responsible for fixture testing costs. See Materials and Tests Division test method Tex-1110-T.

After satisfactory completion of all tests, all new lighting fixtures shall be placed in operation. Final acceptance will not be made until the fixtures have operated satisfactorily for a period of not less than 14 days. The 14 day test period will be included in the working days allowed for the project. After successful completion of the testing period, the Contractor shall thereafter be relieved of the maintenance of the lighting fixtures.

The Contractor shall be fully responsible for the lighting fixtures during the test period, shall make any adjustments or repair which may be required, and shall remedy any defects or damages which may occur at the Contractors expense.

Item 618

Conduit placed in non-traffic areas shall be placed by the open trench method at a minimum depth of 2 feet. Jacking of conduit will not be permitted. All conduit runs under pavement or

General Notes

Sheet G

Sheet 3D
Control: 0074-06-199

Project Number: CC 74-6-199

County: Nueces

Highway: IH 37

driveways shall be bored. Where boring is required, it shall be placed at a minimum depth of 2 feet.

All conduit installed above ground shall be RM conduit. All conduit installed below ground shall be PVC electrical conduit.

All new conduit terminating in ground boxes, pole foundations, or controller foundations shall be sealed with a sealant to be made of a polyurethane or equivalent material of a composition that will cure in the presence of moisture. Sealant shall be suitable for use in sealing ends of PVC pipe with electrical conductor running through the pipe. The sealant shall encapsulate and protect electrical conductors and seal ends of PVC pipe from moisture and dirt. The conduit shall be sealed a minimum of 3 inches and a maximum of 4 inches.

A Item 620

Grounding conductors that share the same conduit, junction box, ground box or structure shall be bonded together at every accessible point in accordance with the current national code.

A continuous green insulated copper wire no. 8 AWG or larger shall be installed in every conduit throughout the electrical system in accordance with item 620, the electrical detail sheets and the latest edition of the National Electrical Code.

Electrical work performed by non-certified persons, as defined in special provision to item 8, is not in accordance with the requirements of the contract and may be rejected as unsuitable for use due to poor workmanship.

The required electrical certification course is available and is scheduled periodically by teex. Alternatively, contractors may purchase an entire course for their personnel to be held at a time and location of their choice as negotiated through teex. For more information, contact:

Texas engineering extension service (teex)
Txdot electrical system course
(979) 845-6563

Item 662

When existing pavement markings are obliterated, the Contractor shall place signing and work zone pavement markers at the end of daily operations according to the standard sheets "TCP (7-1)-98" for the seal coat and/or "WZ (STPM)-97" for the hot mix overlay. The signs and markers shall remain in place until permanent striping is placed.

Short term pavement markings (tabs) shall be removed immediately prior to the placement of final pavement markings.

General Notes

Sheet H

Δ REVISED 03-03-04

Project Number: CC 74-6-199

Control: 0074-06-199

County: Nueces

Highway: IH 37

Items 662 & 666

The Contractor is to reference all of the existing pavement markings prior to the removal of any of the existing pavement markings. The temporary pavement markings are to be placed as directed by the Engineer prior to placement.

Items 666 & 668

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

The Contractor shall be responsible for referencing and staking out all edge lines, centerlines, and all channelizing lines. Permanent pavement markings shall not be applied until the Engineer or his/her representative has approved of their location. The Contractor shall be responsible for placing permanent stripping in the completed surface course.

It will be the responsibility of the Contractor to mark and or offset the locations of the standard pavement markings as directed by the Engineer. Permanent pavement markings are required within 14 days after the paving operations are completed.

Pavement markings that are placed incorrectly such as passing zones, gore areas, turn lanes, etc. shall be removed either According to Item 677 or as directed by the Engineer and remarked at the Contractor's expense.

Pavement surface preparation for markings and markers shall conform to the requirements of Item 678 except for measurement and payment.

Item 672

All raised pavement markers are to meet departmental materials specification D-94200, pavement markers (reflectorized), high volume (HV) classification. A list of prequalified suppliers is maintained by the Department's General Services Division. The Contractor shall be capable of providing documentation that they are placing high volume pavement markers on the roadway.

Bituminous adhesive shall be used to bond all pavement markers.

The bituminous adhesive shall be placed at a temperature range of 380 to 390 degrees Fahrenheit. The pavement markers shall be placed on the bituminous adhesive approximately twenty (20) seconds after the adhesive is placed on the pavement. The pavement marker shall rest solely on the adhesive and not the pavement surface. There shall be a layer of bituminous adhesive at least 1/8 inch thick between the pavement marker and the pavement surface.

General Notes

Sheet I

Project Number: CC 74-6-199

County: Nueces

Highway: IH 37

Item 677

All existing pavement markings shall be removed by the Contractor as work progresses as approved by the Engineer. All materials removed shall be come the property of the Contractor and disposed at a location approved by the Engineer.

Items 1617

A computer, printer, and Internet Service Provider shall be supplied at the Field Office site as directed by the Engineer.

Item 3146

For this project, PG Binder 76-22 (S) shall be used in theType "C" HMA .

The Contractor shall provide copies of certificates for the certified hot mix specialists to be used on this project.

If siliceous aggregates are used, a maximum flakiness index of 17 as determined by test method TEX-224-F shall apply.

Crushed gravel screening may be used with or in lieu of stone screenings.

Coarse aggregates used shall be subjected to five cycles of the magnesium sulfate soundness test in accordance with test method TEX-411-A. The loss shall not be greater than 35 percent.

If aggregates are blended, each individual aggregate shall not have a loss greater than 55 percent, and the blend shall not have a loss greater than 35 percent.

All course aggregates shall be a minimum of class B as published in the "aggregate quality monitoring program rated source quality catalogue".

HMACP areas having surface irregularities or segregation that are deemed unacceptable by the Engineer shall be removed and replaced by the Contractor in a manner approved by the Engineer. The work and materials involved will not be paid for directly but shall be considered subsidiary to Item 3146.

For all courses, the spreading and finishing machine shall be equipped with an approved automatic dual longitudinal screed control system and automatic transverse screed control system.

General Notes

Sheet J

Sheet 3E
Control: 0074-06-199

REVISED 03-03-04

Project Number: CC 74-6-199

Sheet 3F
Control: 0074-06-199

County: Nueces

Highway: IH 37

Locations of the asphaltic concrete pavement longitudinal construction joints shall be approved by the Engineer.

At the beginning and end of project, and at all exceptions, the asphaltic concrete pavement shall be transitioned from the depth shown on the typical sections to the existing grade to provide a smooth riding surface, unless otherwise directed by the Engineer. The length of the transition shall be designated by the Engineer.

Test method TEX-530-C shall be required at the start of hot mix production for every lot until the test results determine no stripping is occurring. One test will be required at random for approximately every five lots, as determined by the Engineer. If stripping is detected at anytime during production then test TEX-530-C shall be run on consecutive lots until the problem is resolved. Roadway cores shall be cut by the Contractor on lots in which the stripping is detected. TxDOT will run TEX-530-C on the cores.

The mixture proposed for use shall be evaluated for moisture susceptibility in the mixture design stage by Test Method Tex-531-C. The addition of a minimum of 1.5 percent of Type "A" hydrated lime will be required by weight of the total aggregate. The lime addition shall be in accordance with Item 301. All moisture damage testing of Item 301 shall remain in effect.

Item 5004

The cleaning of asphaltic pavement equipment shall be done in such a manner that will not leave any petroleum contaminants in the R.O.W. Any petroleum products spilled within the R.O.W. shall be cleaned up and disposed of properly. No construction waste materials will be buried within the R.O.W.

ESTIMATE SUMMARY

				PROJECT CC 74-6-199		PROJECT CC 74-6-199		PROJECT CC 74-6-199		ALT	ITEM-CODE			DESCRIPTION	UNIT	TOTAL	
				CONTROL 0074-06-199		CONTROL 0074-06-199		CONTROL 0074-06-199			ITEM NO	DESC CODE	SP NO			EST.	FINAL
				IH 37 BRIDGE		IH 37 ELEC SYSTEM AND LIGHTING		IH 37 ROADWAY									
EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL							EST.	FINAL
								63.000			104	0509		REMOV CONC (SDWLK)	SY	63.000	63.000
								291.000			104	0513		REMOV CONC (CURB & GUTTER)	LF	291.000	291.000
								6.000			104	0527		REMOV CONC (BRIDGE WINGWALL)	CY	6.000	6.000
								1032.000			105	0549		RMV STAB BS &/OR ASPH PAV (CL 2) (4-6")	SY	1032.000	1032.000
								1.000			170	0501	007	IRRIGATION SYSTEM	LS	1.000	1.000
								8.000			192	0012	022	PLANT SOIL MIXTURE	CY	8.000	8.000
								4.000			192	0498	022	FLORIDA SABAL PALM (MIN 8' TRUNK HT)	EA	4.000	4.000
								4.000			192	0508	022	LANDSCAPE MULCH	CY	4.000	4.000
								148.000			192	0528	022	NATAL PLUM (1 GAL)	EA	148.000	148.000
								4.000			192	0986	022	FLORIDA SABAL PALM (MIN 10' TRUNK HT)	EA	4.000	4.000
								4.000			192	0987	022	FLORIDA SABAL PALM (MIN 12' TRUNK HT)	EA	4.000	4.000
								372.000			351	0515		REPAIR EXIST FLEX PAV STRUCT (12")	SY	372.000	372.000
								544.000			360	0582	052	CONC PVMT (CONT REINF) (6")	SY	544.000	544.000
				60.000							416	0503	007	DRILL SHAFT (18 ")	LF	60.000	60.000
				134.500							420	0518	015	CL S CONC (SLAB)	CY	134.500	134.500
				9.000							420	0633	015	CL C CONC (PEDESTAL)	CY	9.000	9.000
								895.000			423	0508		RETAINING WALL (CAST-IN-PLACE)	SF	895.000	895.000
				2395.000							442	0503	018	STR STL (ARMOR JOINT)	LB	2395.000	3355.000
				26197.000							442	0656	018	STR STL (PIPE COLUMNS) (12" GALV)	LB	26197.000	26197.000
				25629.000							442	0657	018	STR STL (PIPE ARCHES) (5" GALV)	LB	25629.000	25629.000
				19520.000							442	0658	018	STR STL (PIPE GUARDRAILS) (4" GALV)	LB	19520.000	19520.000
				480.000							452	0501		REMOV RAIL (METAL RAIL ELEMENTS ONLY)	LF	480.000	480.000
								3.000			479	0504		ADJ MANH (WATER VALVE BOX)	EA	3.000	2.000
								1.000			479	0516		ADJUST MANHOLE (JCT BOX) (TY CO-AF)	EA	1.000	1.000
								1.000			500	0501		MOBILIZATION	LS	1.000	1.000
								6.000			502	0501	027	BARRICADES, SIGNS AND TRAF HANDLE	MO	6.000	27.670
								192.000			529	0511		CONC CURB AND GUTTER (6 ")	LF	192.000	192.000
								508.000			531	0507	018	CONCRETE SIDEWALK (4 ")	SY	508.000	508.000
								128.000			540	0529	024	MTL BEAM GD FEN (12 GA) (RADIUS RAIL)	LF	128.000	0.000
								225.000			542	0501		REMOV METAL BEAM GUARD FENCE	LF	225.000	225.000
						720.000					618	0501		CONDUIT (RM) (3/4 ")	LF	720.000	720.000
						940.000					618	0502		CONDUIT (RM) (1 ")	LF	940.000	940.000
						30.000					618	0505		CONDUIT (RM) (2 ")	LF	30.000	30.000
						10.000					618	0575		CONDUIT (RM) (2 ") (CONC ENCSE)	LF	10.000	10.000
						357.000					620	0506		ELEC CONDUCTOR (NO. 2) BARE	LF	357.000	357.000
						100.000					620	0507	A	ELEC CONDUCTOR (NO. 12) INSULATED	LF	100.000	100.000
						2420.000					620	0508		ELEC CONDUCTOR (NO. 10) INSULATED	LF	2420.000	2420.000
						3300.000					620	0509	A	ELEC CONDUCTOR (NO. 8) INSULATED	LF	3300.000	3300.000
						50.000					620	0510		ELEC CONDUCTOR (NO. 6) INSULATED	LF	50.000	50.000
						380.000					620	0518		ELEC CONDUCTOR (NO. 2/0) BARE	LF	380.000	380.000
						1.000					628	0623	A	ELEC SERV (SPL)	EA	1.000	1.000
								156.000			662	0541	008	WRK ZN PAV MRK REMOV (CL B) TY I-A	EA	156.000	224.000
								344.000			668	0507	0567	PREFAB PAV MRK TY KC(W) (12") (SLD)	LF	344.000	397.000
								320.000			668	0510	0570	PREFAB PAV MRK TY KC(W) (24") (SLD)	LF	320.000	386.000
								156.000			672	0535	012	RAIS PAV MRKR CL B (REFL) TY I-A (HV)	EA	156.000	156.000
								160.000			677	0506		ELIM EXT PAV MRK & MRKR (24")	LF	160.000	420.000
						1.000					1276	0501		PEDESTRAIN OVERPASS LIGHTING	LS	1.000	1.000
								1.000			1617	0501		DESKTOP COMPUTER	EA	1.000	0.000
								1.000			1617	0502		PRINTER	EA	1.000	0.000
								1.000			1617	0503		INTERNET SERVICE PROVIDER	EA	1.000	0.000

ESTIMATE & QUANTITY SHEET

STATE DIST. NO	COUNTY	PROJECT NO.	SHEET NO.
16	NUECES	CC 74-6-199	36

A REVISED 03-03-04

ESTIMATE SUMMARY

[illegible]


ESTIMATE & QUANTITY SHEET

STATE DIST. NO.	COUNTY	PROJECT NO.	SHEET NO.
16	NUECES	CC 74-6-199	34

ΔREVISED 03-03-04


SUMMARY OF BRIDGE QUANTITIES									
DESCRIPTION	ITEM	CONCRETE				STRUCTURAL STEEL			
		ITEM 0416	ITEM 0420	ITEM 0420	ITEM 0104	ITEM 0442	ITEM 0442	ITEM 0442	ITEM 0452
		DRILLED SHAFT (4) ● 18"Ø	CL C CONC. (PEDESTAL) (32) ● 24"Ø	CL S CONC. (SLAB)	REMOV CONC (BRIDGE WINGWALL)	STR STL (PIPE COLUMNS) (12" GALV.)	STR STL (PIPE ARCHES) (5" GALV.)	STR STL (PIPE GUARDRAILS) (4" GALV.)	REMOV RAIL (METAL RAIL ELEMENTS ONLY)
		L.F.	C.Y.	C.Y.	C.Y.	LBS.	LBS.	LBS.	L.F.
BRIDGE ● START & END		60	1.63						
BRIDGE DECK			6.52	134.5					
BRIDGE LENGTH					6	26,197	25,629	19,520	480
TOTAL		60	8.15	134.5	6	26,197	25,629	19,520	480

SUMMARY OF ESTIMATED ROADWAY QUANTITIES										
DESCRIPTION	ITEM	ITEM 0529	ITEM 0531	ITEM 0351	ITEM 0423	ITEM 0540	ITEM 0542	ITEM 5866	ITEM 5966	ITEM 0479
		CONCRETE CURB & GUTTER (6")	CONCRETE SIDEWALK (4")	REPAIR EXIST. FLEX PAV STRUCT	RETAINING WALL (CAST-IN-PLACE) (12")	MTL BEAM GD FENCE (12 GA.)	REMOV METAL BEAM GUARD FENCE	CURB RAMP (TY 1)	FIXED BOLLARDS	ADJ MANH (WATER VALVE)
		L.F.	S.Y.	S.Y.	S.F.	L.F.	L.F.	EA.	EA.	EA.
BRIDGE ● START & END		192	508	372	895	128	225	4	6	3
TOTAL		192	508	372	895	128	225	4	6	3



GOVIND

TEL: 361 288 1385
FAX: 361 288 0712
P.O. BOX 8084
CORPUS CHRISTI, TEXAS 78408



Texas Department of Transportation

©2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET
BRIDGE IMPROVEMENTS
SUMMARY OF
ESTIMATED QUANTITIES

FED RD DIST NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		4
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	H37

FILE INFO: 2\1907DW\KIA\9751-500\PHASE II\GVA\FINAL\Alameda Final\08 NEW.dwg 1=1 11/20/03 14:28 amada ATTACHED XREFS: X-TB1X

SUGGESTED SEQUENCE OF WORK

PHASE I – TRAFFIC CONTROLS
THE ALAMEDA STREET BRIDGE SHALL BE CLOSED FOR THIS ACTIVITY. CONTRACTOR SHALL MAINTAIN PERIMETER TRAFFIC CONTROL SIGNAGE THROUGHOUT THIS PHASE OF CONSTRUCTION.

PHASE I – CONSTRUCTION
REMOVAL OF EXISTING BRIDGE RAILING AND CONSTRUCTION OF NEW DECK TOPPING. INSTALLATION OF NEW BRIDGE RAILINGS, STRUCTURAL CANOPY & LIGHTING IMPROVEMENTS.

PHASE II – TRAFFIC CONTROLS
ALAMEDA STREET BRIDGE WILL BE CLOSED FOR THIS ACTIVITY. OUTSIDE LANE CLOSURE OF BOTH ENDS OF ALAMEDA STREET BRIDGE WILL BE REQUIRED ON BOTH MARTIN LUTHER KING AND ANTELOPE STREET.

PHASE II – CONSTRUCTION
CONSTRUCTION OF ALL SIDEWALKS, RAMPS, CROSSWALK IMPROVEMENTS, PLACEMENT OF STRIPING AND SIGNAGE, LANDSCAPE, IRRIGATION AND RETAINING WALLS

GENERAL NOTES - ALL PHASES

THE SUGGESTED SEQUENCE OF WORK IS GENERAL IN NATURE AND MAY NOT CAPTURE ALL WORK ASSOCIATED WITH THIS CONTRACT, AND AS SUCH WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE ALL THE WORK AS OUTLINED IN THESE PLANS AND SPECIFICATIONS.

THE CONTRACTOR MAY REQUEST TO ALTER THE TRAFFIC CONTROL PLAN AND SUGGESTED SEQUENCE OF WORK, BUT ANY REQUESTS MUST BE SUBMITTED TO THE PROJECT ENGINEER IN WRITING AND WILL BE SUBJECT TO WRITTEN APPROVAL PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY ALTERNATE TRAFFIC CONTROL PLAN PROPOSAL MUST BE SIGNED, SEALED AND DATED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.

DURING REMOVAL OF THE EXISTING RAILING, ON SPANS OVER ROADWAYS CARRYING TRAFFIC, THE CONTRACTOR SHALL EMPLOY A MOVABLE METHOD OF CAPTURING FALLING DEBRIS. THE CONTRACTOR SHALL SUBMIT THE DETAILS FOR THE METHOD OF CAPTURING FALLING DEBRIS TO THE ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF THIS ACTIVITY. THE CONTRACTOR SHALL ALSO EMPLOY THE SAME MOVABLE METHOD OF CAPTURING DEBRIS DURING THE INSTALLATION OF THE NEW RAILING. PAYMENT WILL NOT BE MADE DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO BID ITEM 441; "STEEL STRUCTURES." IF A SAFETY NET METHOD IS USED, IT SHALL COMPLY WITH OSHA'S SAFETY NET SYSTEMS REQUIREMENTS, ALONG WITH ALL OTHER PERTINENT OSHA REQUIREMENTS.

THE CONTRACTOR SHALL FIRMLY SECURE THE EXISTING RAILING IN A MANNER TO ENSURE THE SAFE REMOVAL OF THE RAILING AND ASSOCIATED APPURTENANCES.

THE CONTRACTOR SHALL TAKE CARE TO ASSURE THAT ALL TRAFFIC CONTROL DEVICES AND WORK ZONE PAVEMENT MARKINGS ARE KEPT IN A HIGHLY VISIBLE CONDITION (CLEAN, UPRIGHT, AND PROPER LOCATION).

ALL SIGNS, BARRICADES, AND PAVEMENT MARKINGS SHALL CONFORM TO STANDARD SHEETS BC(1)-03 THRU BC(12)-03, AND THE "2003 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

AT ANY TIME DURING THE IMPLEMENTATION OF THIS PROJECT, IF OTHER SIGNS, BARRICADES, ETC., ARE DEEMED NECESSARY BY THE PROJECT ENGINEER TO CONTROL AND PROVIDE SAFETY FOR THE TRAVELING PUBLIC, THE CONTRACTOR SHALL PROVIDE THE REQUESTED TRAFFIC CONTROL DEVICES. PAYMENT WILL NOT BE MADE DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO BID ITEM 502; "BARRICADES, SIGNS AND TRAFFIC HANDLING".

IF IN THE EVENT THAT DURING DAYTIME WORKING HOURS THE TRAFFIC LANES NEED TO BE LESS THAN 10.0 FEET IN WIDTH, THE CONTRACTOR SHALL PROVIDE FLAGGERS AT EACH END OF THE RESTRICTION. THESE RESTRICTIONS SHALL BE REMOVED FOR NIGHTTIME TRAFFIC.

THOSE PORTIONS OF THE PROJECT WHICH REQUIRE CONSTRUCTION UNDER TRAFFIC WILL BE MAINTAINED IN A CONDITION ACCEPTABLE TO THE PROJECT ENGINEER. THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

CONSTRUCTION IN ANY AREA THAT IS ADVERSELY AFFECTING TRAFFIC FLOW AND SAFETY MUST BE PURSUED EXPEDITIOUSLY BY THE CONTRACTOR. IF IN THE OPINION OF THE PROJECT ENGINEER, THE CONTRACTOR IS NOT EXPEDITIOUSLY PURSUING THE CONSTRUCTION IN THOSE AREAS, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO CHANGE THE WORK SCHEDULE TO EXPEDITE COMPLETION IN THOSE AREAS OF CONCERN.

THE CONTRACTOR IS RESPONSIBLE FOR CONTINUED PROPERTY ACCESS DURING ALL CONSTRUCTION PHASES. A MINIMUM OF ONE DRIVEWAY MUST REMAIN OPEN TO EACH PROPERTY.




THE CONTRACTOR IS RESPONSIBLE FOR PROPER DRAINAGE DURING ALL CONSTRUCTION PHASES OF THIS PROJECT. WATER WILL NOT BE ALLOWED TO POND ON ANY ROADWAY SURFACES AND RUNOFF FROM ADJACENT PROPERTIES SHALL NOT BE IMPEDED.

SIGNS ARE SHOWN AT APPROXIMATE LOCATIONS. ACTUAL LOCATIONS MAY VARY AS DICTATED BY FIELD CONDITIONS OR AS DIRECTED BY THE PROJECT ENGINEER.

WHEN EMERGENCY SITUATIONS ARISE, PORTABLE MESSAGE BOARDS WILL BE REQUIRED.



12.31.03

  <div>TEL: 361 288 1385 FAX: 361 288 0712 P.O. BOX 9084 CORPUS CHRISTI, TEXAS 78469</div>			
 <div>Texas Department of Transportation © 2002 Texas Department of Transportation all rights reserved.</div>			
<div>LIVABLE COMMUNITIES INITIATIVE PHASE II ALAMEDA STREET BRIDGE SEQUENCE OF WORK NOTES</div>			
FED RD DIST NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		6
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	1437

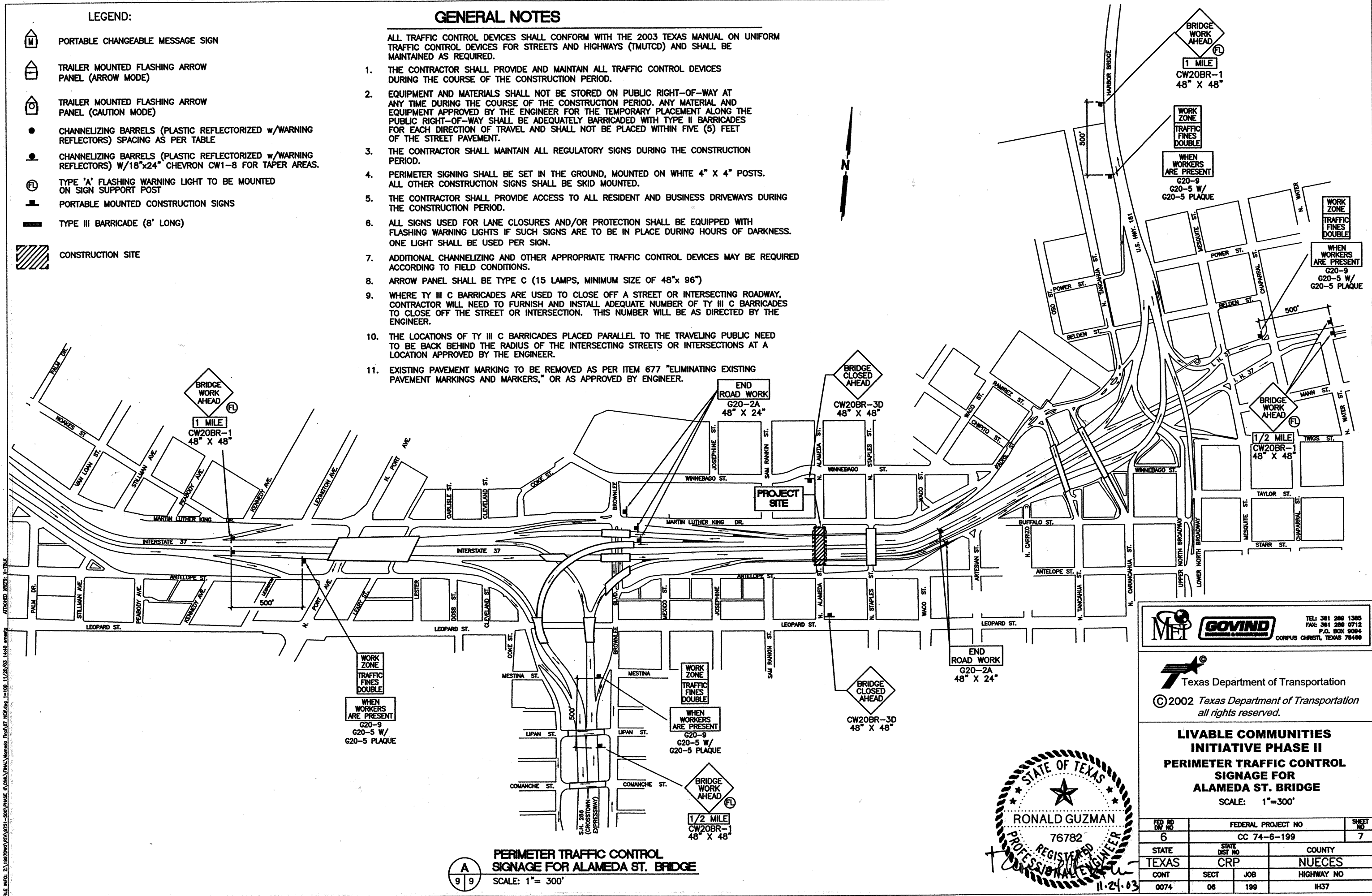
LEGEND:

- PORTABLE CHANGEABLE MESSAGE SIGN
- TRAILER MOUNTED FLASHING ARROW PANEL (ARROW MODE)
- TRAILER MOUNTED FLASHING ARROW PANEL (CAUTION MODE)
- CHANNELIZING BARRELS (PLASTIC REFLECTORIZED w/WARNING REFLECTORS) SPACING AS PER TABLE
- CHANNELIZING BARRELS (PLASTIC REFLECTORIZED w/WARNING REFLECTORS) W/18"x24" CHEVRON CW1-8 FOR TAPER AREAS.
- TYPE 'A' FLASHING WARNING LIGHT TO BE MOUNTED ON SIGN SUPPORT POST
- PORTABLE MOUNTED CONSTRUCTION SIGNS
- TYPE III BARRICADE (8' LONG)

CONSTRUCTION SITE

GENERAL NOTES

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM WITH THE 2003 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (TMUTCD) AND SHALL BE MAINTAINED AS REQUIRED.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES DURING THE COURSE OF THE CONSTRUCTION PERIOD.
- EQUIPMENT AND MATERIALS SHALL NOT BE STORED ON PUBLIC RIGHT-OF-WAY AT ANY TIME DURING THE COURSE OF THE CONSTRUCTION PERIOD. ANY MATERIAL AND EQUIPMENT APPROVED BY THE ENGINEER FOR THE TEMPORARY PLACEMENT ALONG THE PUBLIC RIGHT-OF-WAY SHALL BE ADEQUATELY BARRICADED WITH TYPE II BARRICADES FOR EACH DIRECTION OF TRAVEL AND SHALL NOT BE PLACED WITHIN FIVE (5) FEET OF THE STREET PAVEMENT.
- THE CONTRACTOR SHALL MAINTAIN ALL REGULATORY SIGNS DURING THE CONSTRUCTION PERIOD.
- PERIMETER SIGNING SHALL BE SET IN THE GROUND, MOUNTED ON WHITE 4" X 4" POSTS. ALL OTHER CONSTRUCTION SIGNS SHALL BE SKID MOUNTED.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL RESIDENT AND BUSINESS DRIVEWAYS DURING THE CONSTRUCTION PERIOD.
- ALL SIGNS USED FOR LANE CLOSURES AND/OR PROTECTION SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS IF SUCH SIGNS ARE TO BE IN PLACE DURING HOURS OF DARKNESS. ONE LIGHT SHALL BE USED PER SIGN.
- ADDITIONAL CHANNELIZING AND OTHER APPROPRIATE TRAFFIC CONTROL DEVICES MAY BE REQUIRED ACCORDING TO FIELD CONDITIONS.
- ARROW PANEL SHALL BE TYPE C (15 LAMPS, MINIMUM SIZE OF 48"x 96")
- WHERE TYPE III C BARRICADES ARE USED TO CLOSE OFF A STREET OR INTERSECTING ROADWAY, CONTRACTOR WILL NEED TO FURNISH AND INSTALL ADEQUATE NUMBER OF TYPE III C BARRICADES TO CLOSE OFF THE STREET OR INTERSECTION. THIS NUMBER WILL BE AS DIRECTED BY THE ENGINEER.
- THE LOCATIONS OF TYPE III C BARRICADES PLACED PARALLEL TO THE TRAVELING PUBLIC NEED TO BE BACK BEHIND THE RADIUS OF THE INTERSECTING STREETS OR INTERSECTIONS AT A LOCATION APPROVED BY THE ENGINEER.
- EXISTING PAVEMENT MARKING TO BE REMOVED AS PER ITEM 677 "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," OR AS APPROVED BY ENGINEER.



**PERIMETER TRAFFIC CONTROL
SIGNAGE FOR ALAMEDA ST. BRIDGE**
SCALE: 1"= 300'

A
9/9

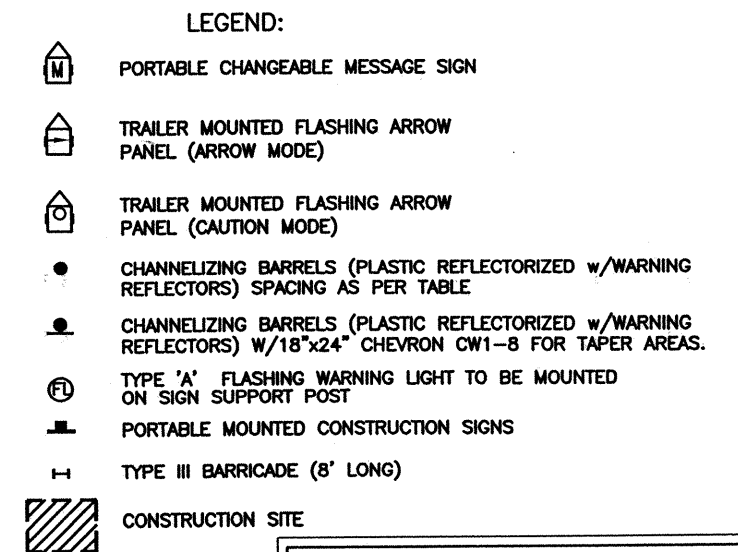
GOVIND
CORPUS CHRISTI, TEXAS 78468
TEL: 361 288 1385
FAX: 361 288 0712
P.O. BOX 9084

Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
PERIMETER TRAFFIC CONTROL
SIGNAGE FOR
ALAMEDA ST. BRIDGE**
SCALE: 1"=300'


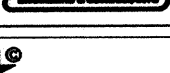
FED. RD. DIST. NO.	FEDERAL PROJECT NO.	SHEET NO.
6	CC 74-6-199	7
STATE	STATE DIST. NO.	COUNTY
TEXAS	CRP	NUECES
CONT.	SECT.	JOB
0074	08	199
CONTRACT NO.	SECTION	HIGHWAY NO.
0074	08	199


STATE OF TEXAS
★
RONALD GUZMAN
76782
REGISTERED PROFESSIONAL ENGINEER
11.24.03



ALAMEDA STREET BRIDGE
ACCESS ROADS (TCP)
PHASE I
SCALE: 1" = 100'



		TEL: 361 266 1365 FAX: 361 266 0712 P.O. BOX 9064 CORPUS CHRISTI, TEXAS 78409
---	---	--



Texas Department of Transportation

© 2002 *Texas Department of Transportation*
 all rights reserved.

LIVABLE COMMUNITIES

INITIATIVE PHASE II

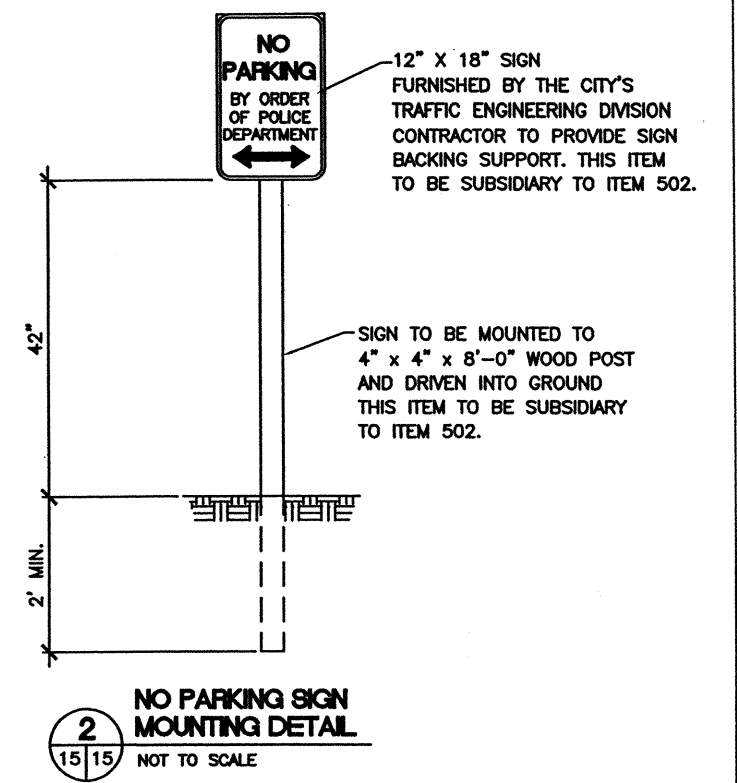
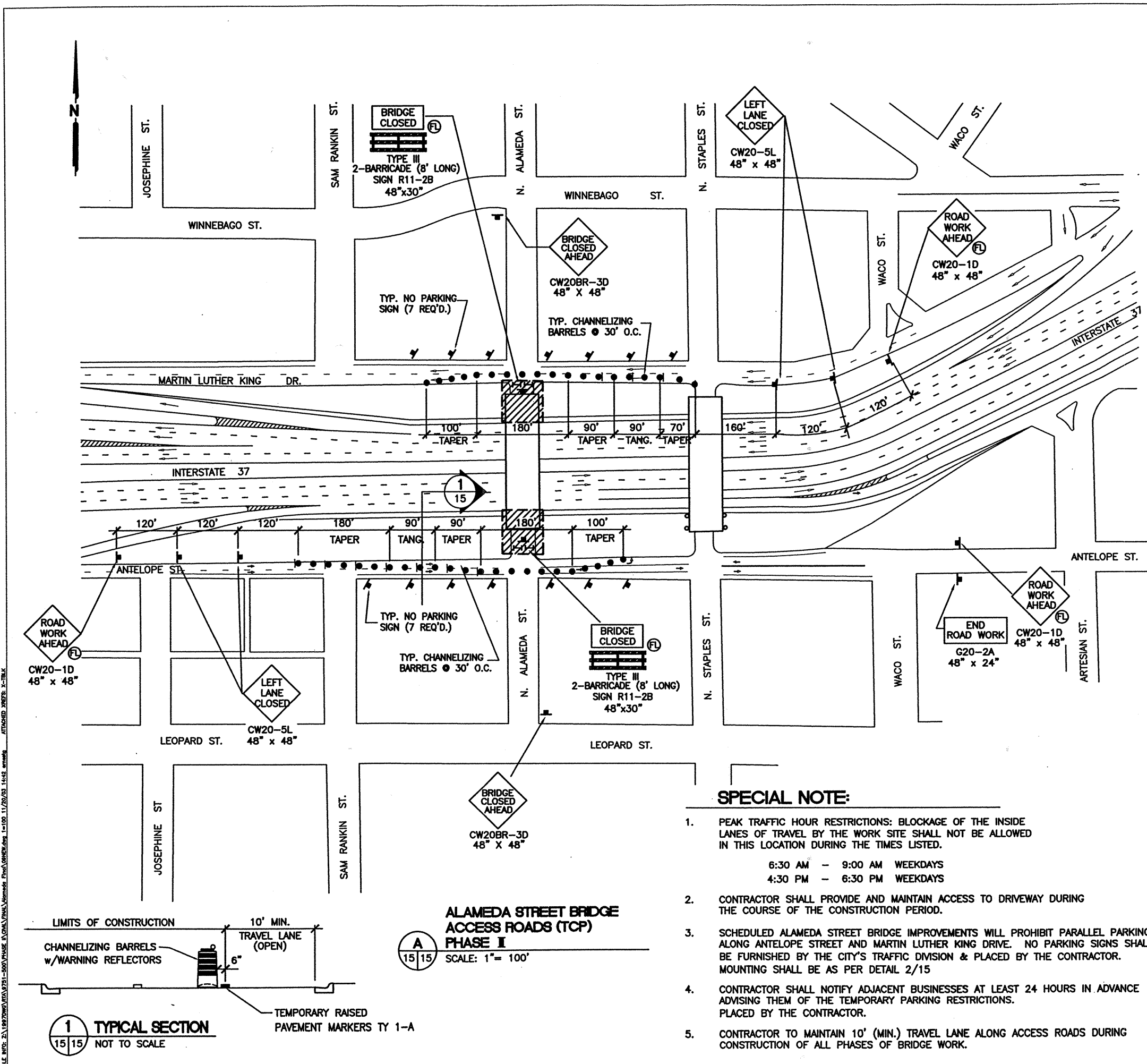
ALAMEDA STREET BRIDGE

ACCESS ROAD (TCP)

PHASE I

SCALE: 1"=100'

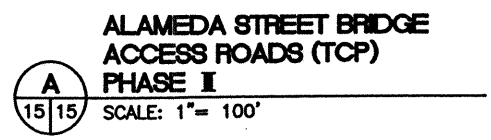
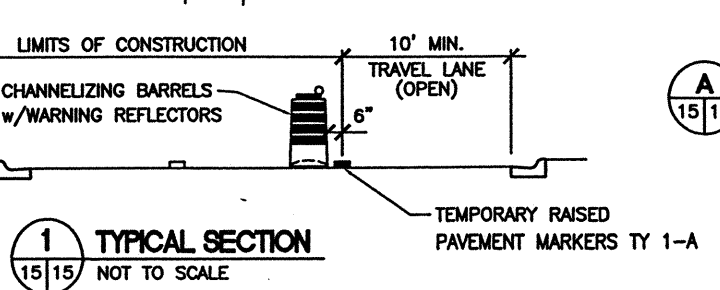
FED NO DW NO	FEDERAL PROJECT NO	SHEET NO
6	CC 74-6-199	8
STATE	STATE DIST NO	COUNTY
TEXAS	CRP	NUECES
CONT	SECT	HIGHWAY NO
0074	06	IH37



- LEGEND:**
- PORTABLE CHANGEABLE MESSAGE SIGN
 - TRAILER MOUNTED FLASHING ARROW PANEL (ARROW MODE)
 - TRAILER MOUNTED FLASHING ARROW PANEL (CAUTION MODE)
 - CHANNELIZING BARRELS (PLASTIC REFLECTORIZED w/WARNING REFLECTORS) SPACING AS PER TABLE
 - CHANNELIZING BARRELS (PLASTIC REFLECTORIZED w/WARNING REFLECTORS) W/18"x24" CHEVRON CW1-8 FOR TAPER AREAS.
 - TYPE 'A' FLASHING WARNING LIGHT TO BE MOUNTED ON SIGN SUPPORT POST
 - PORTABLE MOUNTED CONSTRUCTION SIGNS
 - TYPE III BARRICADE (8' LONG)
 - CONSTRUCTION SITE

SPECIAL NOTE:

- PEAK TRAFFIC HOUR RESTRICTIONS: BLOCKAGE OF THE INSIDE LANES OF TRAVEL BY THE WORK SITE SHALL NOT BE ALLOWED IN THIS LOCATION DURING THE TIMES LISTED.
6:30 AM - 9:00 AM WEEKDAYS
4:30 PM - 6:30 PM WEEKDAYS
- CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS TO DRIVEWAY DURING THE COURSE OF THE CONSTRUCTION PERIOD.
- SCHEDULED ALAMEDA STREET BRIDGE IMPROVEMENTS WILL PROHIBIT PARALLEL PARKING ALONG ANTELOPE STREET AND MARTIN LUTHER KING DRIVE. NO PARKING SIGNS SHALL BE FURNISHED BY THE CITY'S TRAFFIC DIVISION & PLACED BY THE CONTRACTOR. MOUNTING SHALL BE AS PER DETAIL 2/15
- CONTRACTOR SHALL NOTIFY ADJACENT BUSINESSES AT LEAST 24 HOURS IN ADVANCE ADVISING THEM OF THE TEMPORARY PARKING RESTRICTIONS. PLACED BY THE CONTRACTOR.
- CONTRACTOR TO MAINTAIN 10' (MIN.) TRAVEL LANE ALONG ACCESS ROADS DURING CONSTRUCTION OF ALL PHASES OF BRIDGE WORK.



GOVIND
CORPUS CHRISTI, TEXAS 78408
TEL: 361 288 1365
FAX: 361 288 0712
P.O. BOX 9084

Texas Department of Transportation
©2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES INITIATIVE PHASE II			
ALAMEDA STREET BRIDGE ACCESS ROAD (TCP) PHASE II			
SCALE: 1"=100'			
FED NO 6	FEDERAL PROJECT NO CC 74-6-199		SHEET NO 9
STATE TEXAS	STATE DIST NO CRP	COUNTY NUECES	
CONT 0074	SECT 08	JOB 199	HIGHWAY NO IH37



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

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

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 traffic control devices, construction pavement markings, and typical construction 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) "Policy on the Geometric Design of Highways and Streets" or the TxDOT "Roadway Design Manual".
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 will 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 will be revised to show appropriate work zone distance.
7. The Engineer may require duplicate construction 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 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 OBSERVE WARNING SIGNS STATE LAW, BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of 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.


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.

4/03 Revision

 Revised General Notes

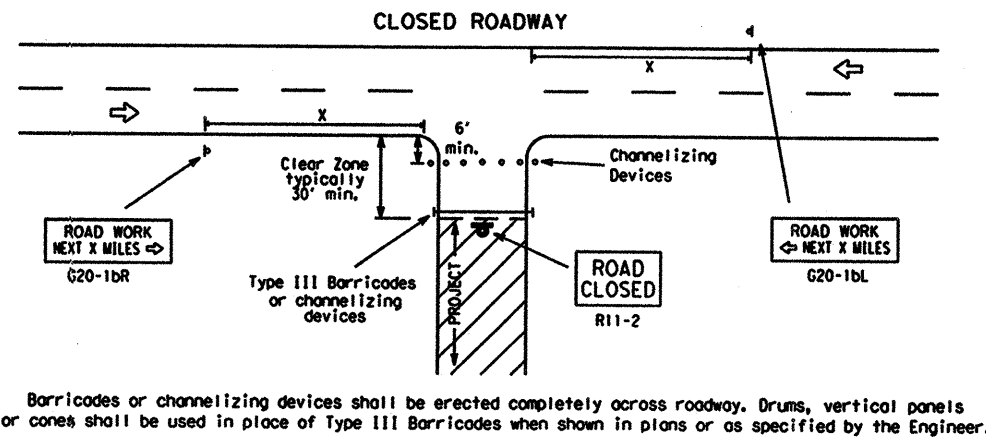
 **STANDARD PLANS**
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

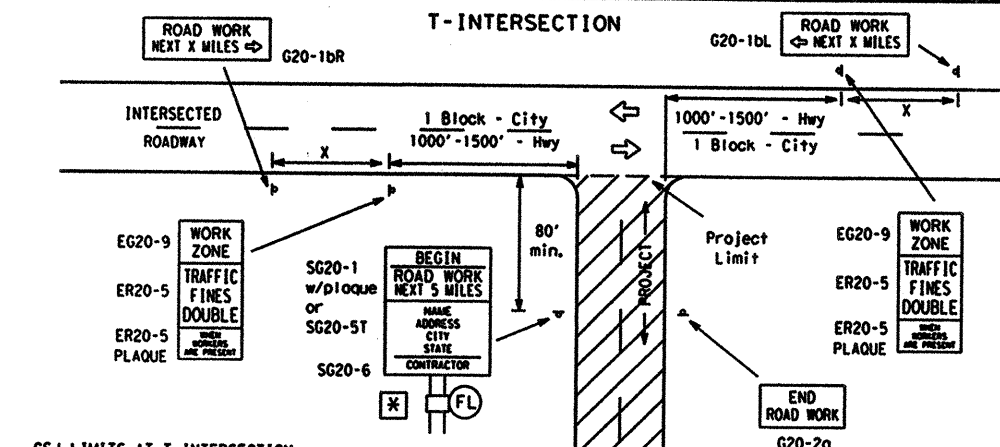
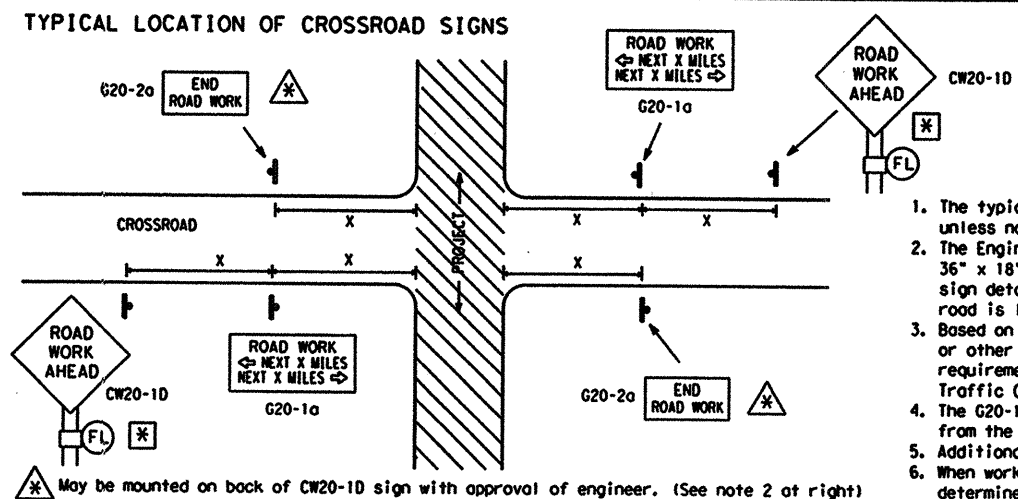
1 of 12 BC(1)-03

© TxDOT 11-4-02	DR - BAS	CR - CRB	DR - FDN	CR - CAL
REVISIONS 4-03	STATE DISTRICT 6	FEDERAL REGION CC	PROJECT NUMBER 14-6-199	SHEET 10
	COUNTY NUECES	SECTION 007406	JOB 199	HIGHWAY 1437

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



TYPICAL LOCATION OF CROSSROAD SIGNS

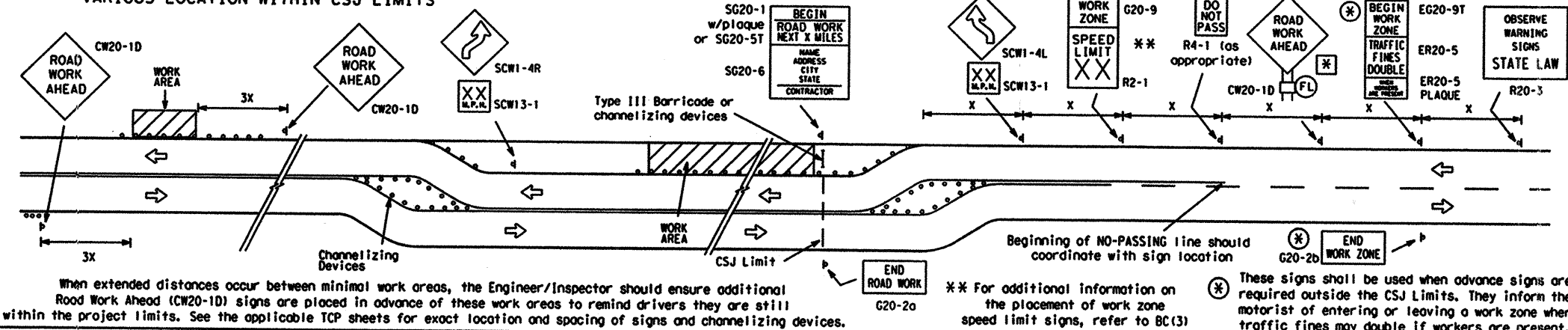


CSJ LIMITS AT T-INTERSECTION

1. A ROAD WORK NEXT X MILES (G20-1bR/L) sign should be erected on the intersected highway as shown above.
2. 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.
3. The Engineer/Inspector shall ensure that construction work zone signs are installed with adequate spacing between the signs so the legibility of existing permanent and other work zone signs is not obstructed.

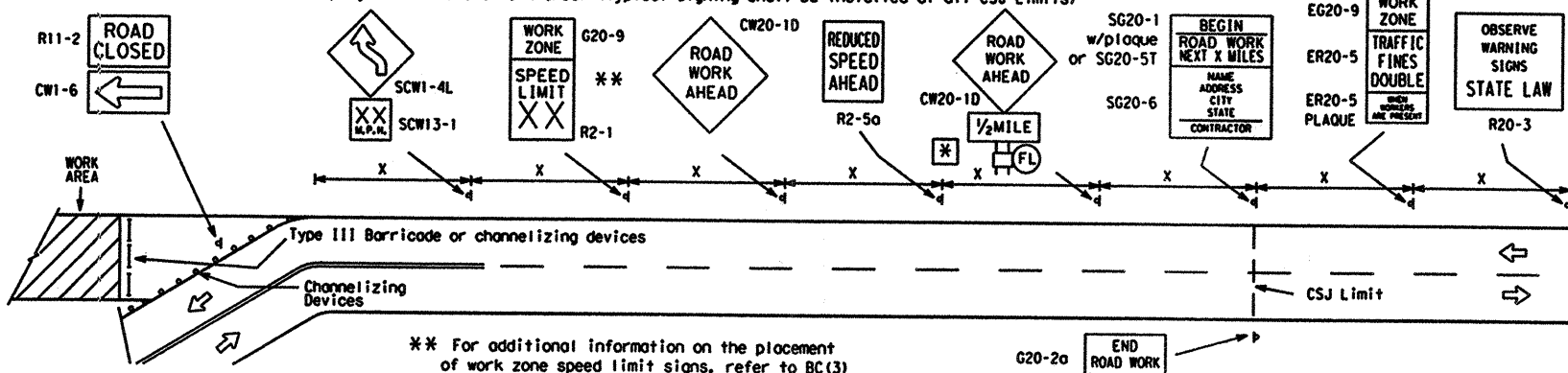
1. The typical minimum signing on a crossroad approach should be a CW20-1D ROAD WORK AHEAD sign and a G20-2a END ROAD WORK sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (MCW20-1D) sign mounted back to back with the reduced size 36" x 18" END ROAD WORK (SG20-2a) sign on low volume crossroads. 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 on major 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.

TYPICAL DETAILS FOR WORK AREAS IN VARIOUS LOCATION WITHIN CSJ LIMITS



TYPICAL SIGNING AND TRAFFIC CONTROL DEVICE DETAILS FOR WORK BEGINNING AT THE CSJ LIMITS (Less than 2000 feet between project limits and work area) (Typical signing shall be installed at all CSJ Limits)

TYPICAL DETAIL FOR PROJECT LIMIT AWAY FROM WORK AREA (Greater than 2000 feet between project limits and work area) (Typical signing shall be installed at all CSJ Limits)



- LEGEND
- Sign
 - Ⓛ Flashing Type A-Low Intensity Warning Light
 - Channelizing Devices
 - I Type III Barricade
 - ✱ 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.
 - X See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING^{1,5,6}

Posted Speed	Sign Δ Spacing "x"	Long-term Or Intermediate-term Stationary Approach Warning Signs CW20 and CW21 Series		Short-term Stationary Or Short Duration Approach Warning Signs CW21 Series		Other Warning Signs	
MPH	Feet (Apprx.)	Standard inches	Minimum ⁴ inches	Standard inches ⁷	Minimum ⁴ inches ⁷	Standard inches	
30	120	48 x 48 ↓	36 x 36	30 x 30 or 36 x 36	24 x 24 or 30 x 30	30 x 30 or 36 x 36	
35	160		↓	↓	↓	↓	
40	240		Use Standard Size ↓	48 x 48 ↓	48 x 48 ↓	Use Standard Size ↓	48 x 48 ↓
45	320						
50	400						
55	500 ²						
60	600 ²						
65	700 ²						
70	800 ²						
75	900 ²						
*	* ³	↓	↓	↓	↓	↓	

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

General Notes:

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. For use only on secondary roads or city streets where speeds are low.
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Appendix A or the "Standard Highway Sign Design" manual for complete list of available sign design sizes.
7. Where two sizes are listed, see sign size listing in "TMUTCD", Appendix A or the "Standard Highway Sign Design" manual for proper size.

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 "Functional Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
again click on "Compliant Work Zone Traffic Control Devices".
This site is printable.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION
PROJECT LIMIT
STANDARD

2 of 12 BC(2)-03

© TxDOT 11-4-02	DR - BAS	CR - GRB	DR - FDN	CR - CAL
REVISIONS	DATE	BY	CHKD	APP'D
CRP	6	CC 74-6-199		11
COUNTY	CORRAL	SECTION	JOB	REMARK
NUECES	0074	06	199	11/31

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

ACC:

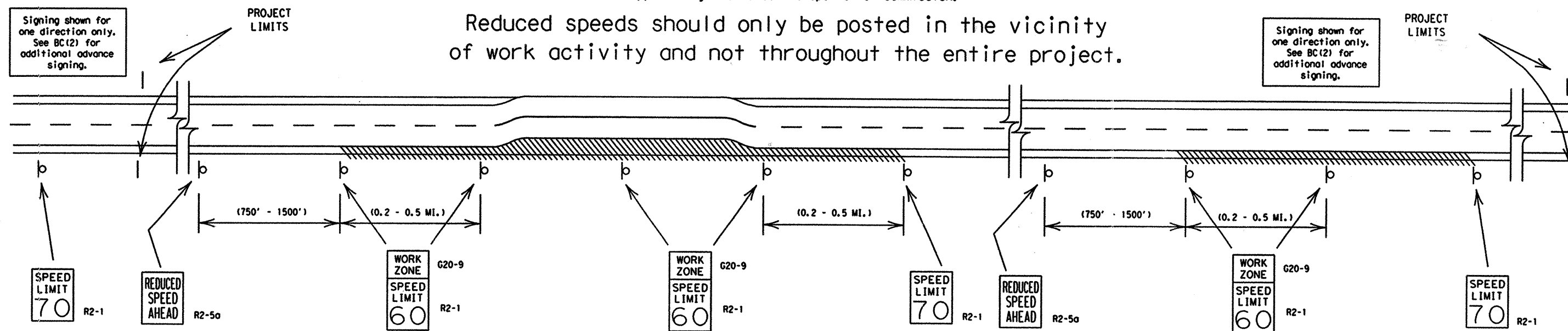
LEVELS DISPLAYED

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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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.

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



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 should be posted and visible to the motorists at all times. Work activity in the area of reduced speed zone should be greater than 12 consecutive hours per day. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

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

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

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, 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. Work activity in the area of reduced speed should be less than 12 consecutive hours. When work activity is not present, signs should be covered with an approved sign cover or removed from work area.

GENERAL NOTES:

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance. Regulatory work zone speed signs (R2-1) should be removed during periods when they are not needed to minimize interference with traffic.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of speed limit signs should be:
 - 40 mph and greater 0.2 to 2 miles
 - 35 mph and less 0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background.
- Fabrication, erection and maintenance of REDUCED SPEED AHEAD sign, WORK ZONE plaque and SPEED LIMIT signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless otherwise noted.
- Techniques that may help reduce traffic speeds.
 - (In order of effectiveness.)
 - A. Flogger stationed next to sign.
 - B. Law enforcement.
 - C. Portable changeable message sign (PCMS).
 - D. Low-power radar transmitter.
- Refer to "Work Zone Speed Limit Work Sheets 1 and 2" to determine when a construction speed zone should be required.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD

3 of 12

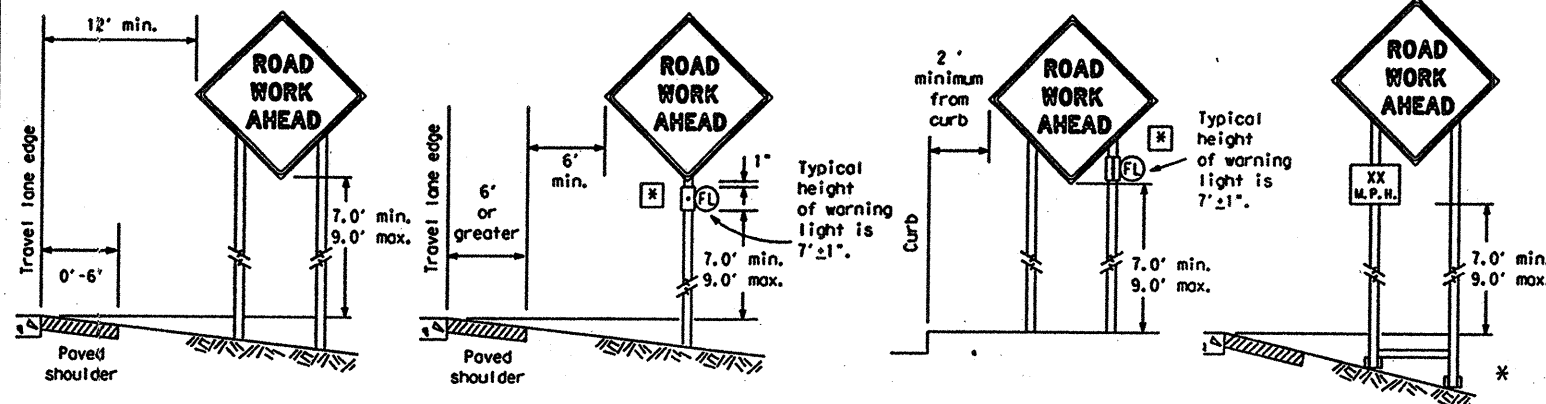
BC(3)-03

REVISIONS	DATE	BY	CHKD	APP'D	PROJECT	SHEET
1	11-4-02	JWT	GRB	FDN	CAL	
2	11-4-02	JWT	GRB	FDN	CAL	
3	11-4-02	JWT	GRB	FDN	CAL	
4	11-4-02	JWT	GRB	FDN	CAL	
5	11-4-02	JWT	GRB	FDN	CAL	
6	11-4-02	JWT	GRB	FDN	CAL	
7	11-4-02	JWT	GRB	FDN	CAL	
8	11-4-02	JWT	GRB	FDN	CAL	
9	11-4-02	JWT	GRB	FDN	CAL	
10	11-4-02	JWT	GRB	FDN	CAL	
11	11-4-02	JWT	GRB	FDN	CAL	
12	11-4-02	JWT	GRB	FDN	CAL	
13	11-4-02	JWT	GRB	FDN	CAL	
14	11-4-02	JWT	GRB	FDN	CAL	
15	11-4-02	JWT	GRB	FDN	CAL	
16	11-4-02	JWT	GRB	FDN	CAL	
17	11-4-02	JWT	GRB	FDN	CAL	
18	11-4-02	JWT	GRB	FDN	CAL	
19	11-4-02	JWT	GRB	FDN	CAL	
20	11-4-02	JWT	GRB	FDN	CAL	
21	11-4-02	JWT	GRB	FDN	CAL	
22	11-4-02	JWT	GRB	FDN	CAL	
23	11-4-02	JWT	GRB	FDN	CAL	
24	11-4-02	JWT	GRB	FDN	CAL	
25	11-4-02	JWT	GRB	FDN	CAL	
26	11-4-02	JWT	GRB	FDN	CAL	
27	11-4-02	JWT	GRB	FDN	CAL	
28	11-4-02	JWT	GRB	FDN	CAL	
29	11-4-02	JWT	GRB	FDN	CAL	
30	11-4-02	JWT	GRB	FDN	CAL	
31	11-4-02	JWT	GRB	FDN	CAL	
32	11-4-02	JWT	GRB	FDN	CAL	
33	11-4-02	JWT	GRB	FDN	CAL	
34	11-4-02	JWT	GRB	FDN	CAL	
35	11-4-02	JWT	GRB	FDN	CAL	
36	11-4-02	JWT	GRB	FDN	CAL	
37	11-4-02	JWT	GRB	FDN	CAL	
38	11-4-02	JWT	GRB	FDN	CAL	
39	11-4-02	JWT	GRB	FDN	CAL	
40	11-4-02	JWT	GRB	FDN	CAL	
41	11-4-02	JWT	GRB	FDN	CAL	
42	11-4-02	JWT	GRB	FDN	CAL	
43	11-4-02	JWT	GRB	FDN	CAL	
44	11-4-02	JWT	GRB	FDN	CAL	
45	11-4-02	JWT	GRB	FDN	CAL	
46	11-4-02	JWT	GRB	FDN	CAL	
47	11-4-02	JWT	GRB	FDN	CAL	
48	11-4-02	JWT	GRB	FDN	CAL	
49	11-4-02	JWT	GRB	FDN	CAL	
50	11-4-02	JWT	GRB	FDN	CAL	
51	11-4-02	JWT	GRB	FDN	CAL	
52	11-4-02	JWT	GRB	FDN	CAL	
53	11-4-02	JWT	GRB	FDN	CAL	
54	11-4-02	JWT	GRB	FDN	CAL	
55	11-4-02	JWT	GRB	FDN	CAL	
56	11-4-02	JWT	GRB	FDN	CAL	
57	11-4-02	JWT	GRB	FDN	CAL	
58	11-4-02	JWT	GRB	FDN	CAL	
59	11-4-02	JWT	GRB	FDN	CAL	
60	11-4-02	JWT	GRB	FDN	CAL	
61	11-4-02	JWT	GRB	FDN	CAL	
62	11-4-02	JWT	GRB	FDN	CAL	
63	11-4-02	JWT	GRB	FDN	CAL	
64	11-4-02	JWT	GRB	FDN	CAL	
65	11-4-02	JWT	GRB	FDN	CAL	
66	11-4-02	JWT	GRB	FDN	CAL	
67	11-4-02	JWT	GRB	FDN	CAL	
68	11-4-02	JWT	GRB	FDN	CAL	
69	11-4-02	JWT	GRB	FDN	CAL	
70	11-4-02	JWT	GRB	FDN	CAL	
71	11-4-02	JWT	GRB	FDN	CAL	
72	11-4-02	JWT	GRB	FDN	CAL	
73	11-4-02	JWT	GRB	FDN	CAL	
74	11-4-02	JWT	GRB	FDN	CAL	
75	11-4-02	JWT	GRB	FDN	CAL	
76	11-4-02	JWT	GRB	FDN	CAL	
77	11-4-02	JWT	GRB	FDN	CAL	
78	11-4-02	JWT	GRB	FDN	CAL	
79	11-4-02	JWT	GRB	FDN	CAL	
80	11-4-02	JWT	GRB	FDN	CAL	
81	11-4-02	JWT	GRB	FDN	CAL	
82	11-4-02	JWT	GRB	FDN	CAL	
83	11-4-02	JWT	GRB	FDN	CAL	
84	11-4-02	JWT	GRB	FDN	CAL	
85	11-4-02	JWT	GRB	FDN	CAL	
86	11-4-02	JWT	GRB	FDN	CAL	
87	11-4-02	JWT	GRB	FDN	CAL	
88	11-4-02	JWT	GRB	FDN	CAL	
89	11-4-02	JWT	GRB	FDN	CAL	
90	11-4-02	JWT	GRB	FDN	CAL	
91	11-4-02	JWT	GRB	FDN	CAL	
92	11-4-02	JWT	GRB	FDN	CAL	
93	11-4-02	JWT	GRB	FDN	CAL	
94	11-4-02	JWT	GRB	FDN	CAL	
95	11-4-02	JWT	GRB	FDN	CAL	
96	11-4-02	JWT	GRB	FDN	CAL	
97	11-4-02	JWT	GRB	FDN	CAL	
98	11-4-02	JWT	GRB	FDN	CAL	
99	11-4-02	JWT	GRB	FDN	CAL	
100	11-4-02	JWT	GRB	FDN	CAL	

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

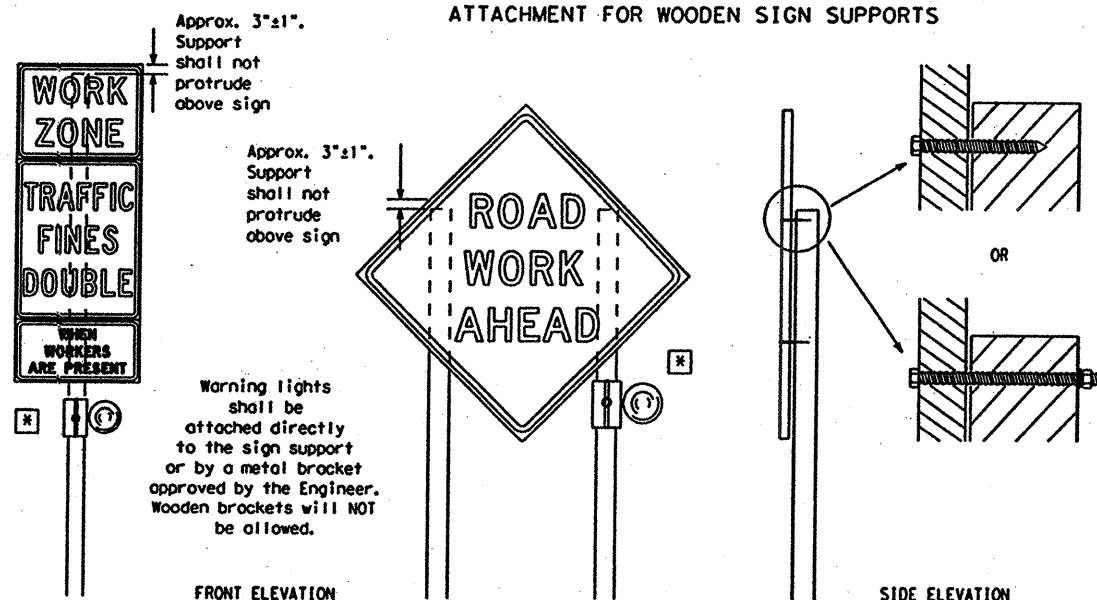
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



It is the intent of these plans to provide positive guidance to motorists throughout the project limits by the use of signs, pavement markings, delineation and/or channelizing devices. All traffic control devices shall conform with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" list (CWZTCD).

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

ATTACHMENT FOR WOODEN SIGN SUPPORTS



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

Nails 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. Supports shall not be extended or repaired by splicing or other means.

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.

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 "Functional Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
again click on "Compliant Work Zone Traffic Control Devices".
This site is printable.

Ⓣ Flashing Type A - Low Intensity Warning Light

☒ The Type A Warning lights shall not be used with Type E Sheeting (Fluorescent Prismatic) meeting the requirements of DMS-8300.

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 supports.
 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. The additional signs requested by the Engineer/Inspector shall not be subsidiary.
 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 that the Engineer can verify the correct procedures are being followed.
 8. The contractor is responsible for sign installations and replacing signs with damaged or cracked substrates and/or damaged or mottled 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".
 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 VI)
1. The types of sign supports, 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 that the sign support and substrate meets crashworthiness and length 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 from overnight to 3 days.
 - c. Short-term stationary - daytime work that occupies a location from 1 to 12 hours.
 - d. Short, duration - work that occupies a location up to 1 hour.
 - e. Mobile - work that moves intermittently or continuously. Does not stop for more than 15 minutes at a time.

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.
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.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9.0 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 that the sign substrate is allowed 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.
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 faces.

REFLECTIVE SHEETING

1. Reflectorized signs shall be constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 or DMS-8310. The DMS specifications can be accessed from the following web address:
http://manuals.dot.state.tx.us:80/dynweb/colmates/dms/#Generic_BookView
2. White sheeting, meeting the requirements of DMS-8300 Type C (High Specific Intensity), shall be used for signs with white background and channelizing devices.
3. Orange sheeting, meeting the requirements of DMS-8300 Type E (Fluorescent Prismatic), shall be used for 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

2. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
3. 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.
4. Signs installed on skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
5. When signs are covered, the material used shall be opaque, such as heavy mil black plastic.
6. Burlap shall NOT be used to cover signs.
7. Duct tape or other adhesive material shall NOT be affixed to a sign face. These materials can damage the retroreflectivity of sign sheeting.
8. Signs shall be removed upon completion of the 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 will 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 (such as those used with cones or edgeline channelizers) shall NOT be used as sign support weights.
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) -03

C) TXDOT 11-4-02		IN - BAS	CO - GRB	IN - FDN	CO - CAL
REVISIONS	STATE DISTRICT	FEDERAL DESIGN	FEDERAL AID PROJECT		SHEET
	GRP 6		CC 74 - 6 - 199		13 -
	COUNTY	CORNER	SECTION	JOB	INVENTORY
	NUECES	0074	06	199	1437

DISCLAIMER

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

Technical drawings of a diamond-shaped sign structure, showing front, side, and top views with dimensions and material specifications.

Front View:

- Maximum 21 sq. ft. of sign face Δ
- 4x4 wood post
- See BC(4) for sign height requirement
- 30"
- 40"

Side View:

- 4x4 wood post
- 24"
- 2x4 x 40"
- 2x6
- 36"

Top View:

- 2x6
- 27"
- 72"
- 4x4 block

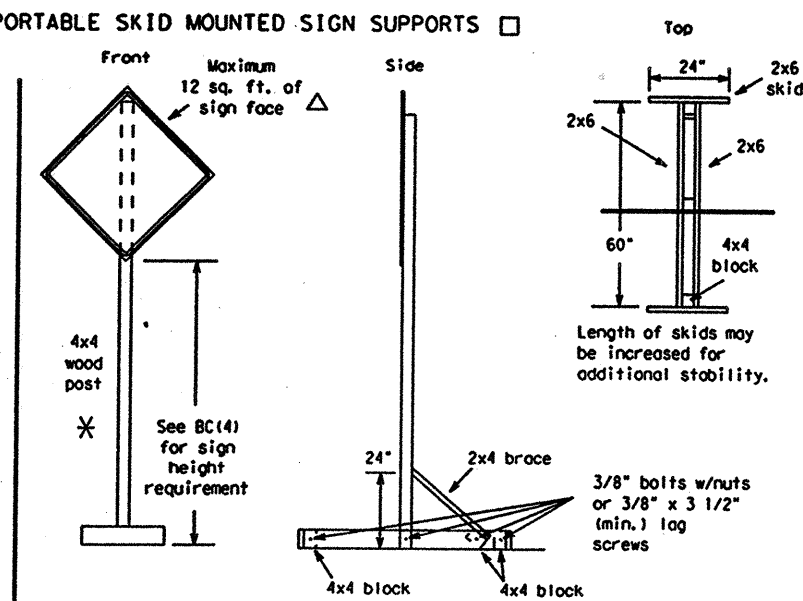
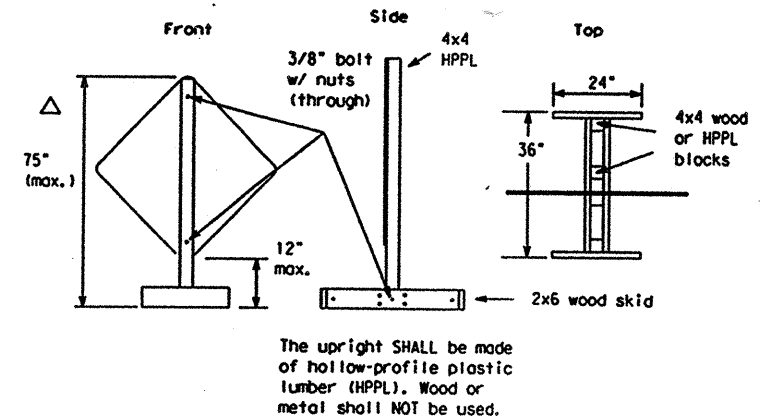


Diagram illustrating the structure and dimensions of a diamond-shaped sign:

- The sign is a diamond shape with a height of 75" (max.).
- The top edge is labeled "30°".
- The bottom edge is labeled "12" typ. 24" max."
- The left side is labeled "approved substrate" with a triangle symbol.
- The right side is labeled "75" (max.)" with a triangle symbol.
- The sign is mounted on a base with a height of 12" typ. 24" max."
- The sign is supported by a central vertical pole.



Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18 inches. When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18 inches or provide a minimum foundation depth of 30 inches. If solid rock is encountered, the socket/stub may be reduced in length as required to a min. length of 18 inches. Any material removed from the socket/stub shall be from the bottom and the clearance requirements shown above must still be adhered to. The inner surfaces of the socket/stub must remain free of debris.

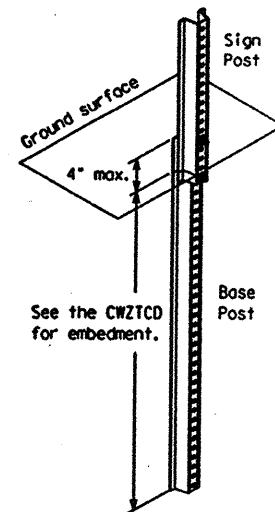
Install Wedge Anchor System per manufacturer recommendations.

Attach the sign to the sign post.

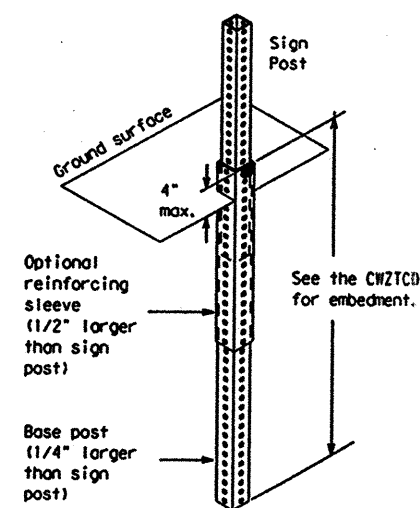
Insert the sign post into the socket and align the sign face with the roadway.

Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

WING CHANNEL
Lap-splice/base bolted anchor



PERFORATED SQUARE METAL TUBING
With Anchor



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

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

Diagram of a vertical pile with dimensions and traffic direction:

- Pile diameter: 1 1/2" Dia. (typ)
- Pile height: 18"
- Distance from ground to first pile cap: 4"
- Distance between pile caps: 6"
- Distance from ground to second pile cap: 4"
- Direction of Traffic: Indicated by an arrow pointing towards the pile.

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

When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* Sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

 **STANDARD PLANS**
Texas Department of Transportation
Traffic Operations Division

5 of 12 BC (5) -03

© TxDOT 11-4-02		DR - JNT	CR - GRB	RR - FDN	CU - CAL
REVISIONS	STATE DESIGN	FEDERAL DESIGN	FEDERAL AID PROJECT		SHEET
GRP	6	CC 74-G-199			14
COUNTY		CORRAL	SECTION	JOB	HIGHWAY
NUECES		0074	06	199	1H 37

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

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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- PCMS placed on the shoulder or within the R-O-W, but are not behind a concrete traffic barrier shall have a minimum of four plastic drums placed perpendicular to traffic, on the upstream side of the PCMS.
- Messages on PCMS should contain no more than 8 words (four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed.
- Each phase of the message should convey a single thought.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- Specify the actual days of the week; e.g., TUES THROUGH FRI or TUES-FRI in the coming week that work activity will occur.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for two seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the words "Danger" or "Caution" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated.

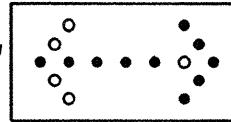
Word or Phrase	Abbreviation	Word or Phrase	Abbreviation
Access Road	ACCES RD	Miles	MI
Air Quality	AIR QLTY	Miles Per Hour	MPH
Avenue	AVE	Time Minutes	TIME MIN
Best Route	BEST RTE	Monday	MON
Boulevard	BLVD	Normal	NORM
Bridge	BRDG	North	N
Cannot	CANT	Parking	PKING
Center	CNTR	Parking Lot	PRK LOT
Construction Ahead	CONST AHEAD	Road	RD
Detour Route	DETOUR RTE	Right Lane	RGT LN
East	E	Saturday	SAT
Emergency	EMER	Service Road	SERV RD
Emergency Vehicle	EMER VEH	Shoulder	SHLDR
Entrance, Enter	ENT	Slippery	SLIP
Express Lanes	EXP LANE	South	S
Expressway	EXPWY	Speed	SPD
Distance Feet	DISTANCE FT	Street	ST
Fog Ahead	FOG AHD	Sunday	SUN
Freeway	FRWY, FWY	Telephone	PHONE
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DOWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Highway	HWY	Travelers	TRVLRS
Hours	HR	Tuesday	TUES
Information	INFO	Turnpike	NAME TRNPK
Left	LFT	Upper Level	UPPR LVL
Left Lane	LFT LN	Warning	WARN
Lane Closed	LN CLSD	Wednesday	WED
Lower Level	LOWR LVL	Weight Limit	WT LIMIT
Maintenance	MAINT	Wet Pavement	WET PVMT
Roadway designation *	IH-number, US-number, SH-number, FM-number	West	W

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

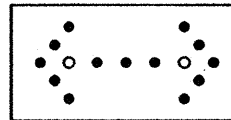
TYPICAL FLASHING ARROW PANEL

- 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.
- 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.
- 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.
- The Flashing Arrow Panel should be able to display the following symbols:

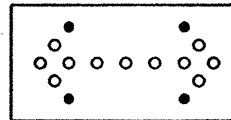
Flashing RIGHT (LEFT) ARROW



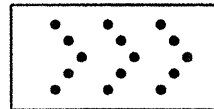
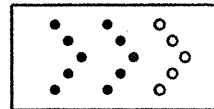
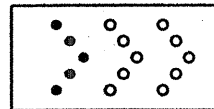
Flashing DOUBLE ARROW



Flashing CAUTION



- The "CAUTION" display consists of four corner lamps flashing simultaneously.
- The straight line caution display is NOT ALLOWED.
- 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.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.



- The Flashing Arrow Panel shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Panel SHOULD NOT BE USED to laterally shift all lanes of traffic on a multi-lane roadway at once.

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.

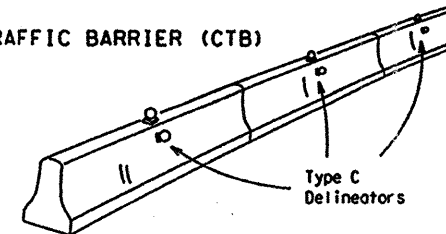
TRUCK-MOUNTED ATTENUATORS

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

TYPE C DELINEATORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

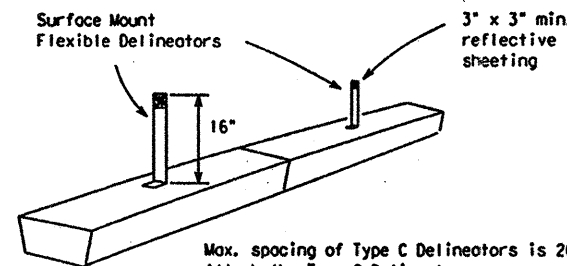
- Type C Delineators shall be prequalified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Type C Delineators can be found at the following Web site: <http://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/dms8600preq.pdf>.
- Color of delineators shall be as specified in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD). The cost of the Type C Delineators shall be considered subsidiary to Item 502.

CONCRETE TRAFFIC BARRIER (CTB)

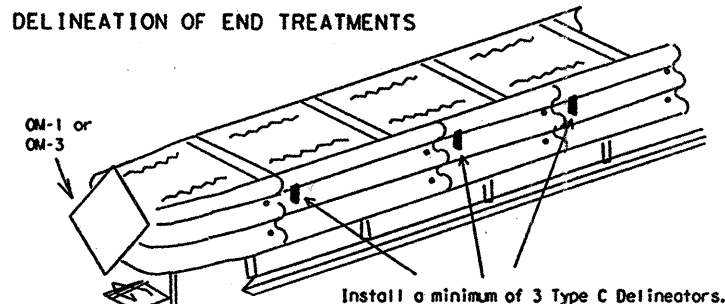


- Two (2) Type C Delineators should be mounted on each section of CTB in approximately the midsection of the CTB. The Type C Delineator on the side of the CTB shall be installed directly below the Type C Delineator mounted on top of the CTB.
- Maximum spacing of Type C Delineators is 40 feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attach Type C Delineators on CTB as per manufacturer's recommendations.
- Missing or damaged Type C Delineators shall be replaced as directed by the Engineer.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS



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

Attach the Type C Delineators as per manufacturer's recommendations.

WARNING LIGHTS

- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with signs. They are intended to warn of an approaching 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.
- Type-C Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.

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.

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 "Functional Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
again click on "Compliant Work Zone Traffic Control Devices".
This site is printable.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

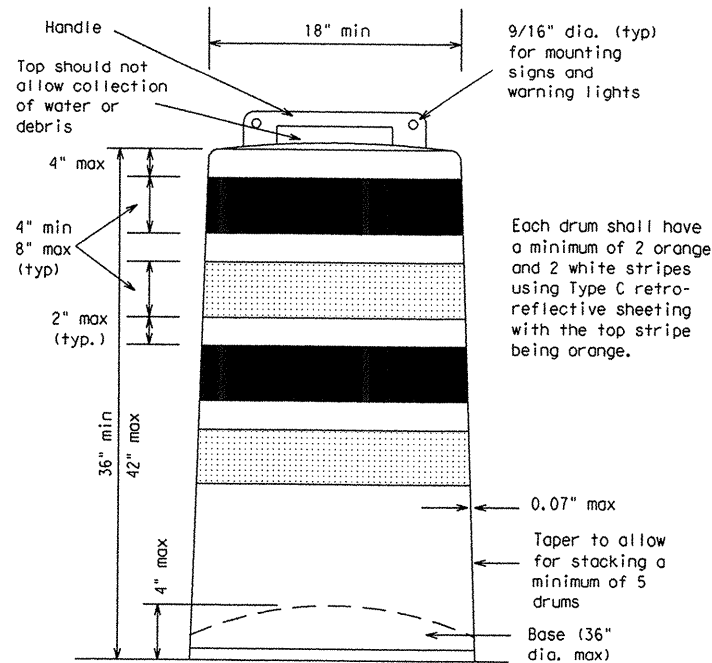
BARRICADE AND CONSTRUCTION
ARROW & MESSAGE SIGNS,
REFLECTORS & WARNING LIGHT
STANDARD

6 of 12 BC(6)-03

REVISIONS	DATE	BY	CHK	APP	DESCRIPTION	SHEET
1	01/11/01	CC	GRB	FDN	CC 74-6-199	15
2	01/11/01	CC	GRB	FDN	CC 74-6-199	15
3	01/11/01	CC	GRB	FDN	CC 74-6-199	15
4	01/11/01	CC	GRB	FDN	CC 74-6-199	15
5	01/11/01	CC	GRB	FDN	CC 74-6-199	15
6	01/11/01	CC	GRB	FDN	CC 74-6-199	15
7	01/11/01	CC	GRB	FDN	CC 74-6-199	15
8	01/11/01	CC	GRB	FDN	CC 74-6-199	15
9	01/11/01	CC	GRB	FDN	CC 74-6-199	15
10	01/11/01	CC	GRB	FDN	CC 74-6-199	15
11	01/11/01	CC	GRB	FDN	CC 74-6-199	15
12	01/11/01	CC	GRB	FDN	CC 74-6-199	15
13	01/11/01	CC	GRB	FDN	CC 74-6-199	15
14	01/11/01	CC	GRB	FDN	CC 74-6-199	15
15	01/11/01	CC	GRB	FDN	CC 74-6-199	15
16	01/11/01	CC	GRB	FDN	CC 74-6-199	15
17	01/11/01	CC	GRB	FDN	CC 74-6-199	15
18	01/11/01	CC	GRB	FDN	CC 74-6-199	15
19	01/11/01	CC	GRB	FDN	CC 74-6-199	15
20	01/11/01	CC	GRB	FDN	CC 74-6-199	15
21	01/11/01	CC	GRB	FDN	CC 74-6-199	15
22	01/11/01	CC	GRB	FDN	CC 74-6-199	15
23	01/11/01	CC	GRB	FDN	CC 74-6-199	15
24	01/11/01	CC	GRB	FDN	CC 74-6-199	15
25	01/11/01	CC	GRB	FDN	CC 74-6-199	15
26	01/11/01	CC	GRB	FDN	CC 74-6-199	15
27	01/11/01	CC	GRB	FDN	CC 74-6-199	15
28	01/11/01	CC	GRB	FDN	CC 74-6-199	15
29	01/11/01	CC	GRB	FDN	CC 74-6-199	15
30	01/11/01	CC	GRB	FDN	CC 74-6-199	15
31	01/11/01	CC	GRB	FDN	CC 74-6-199	15
32	01/11/01	CC	GRB	FDN	CC 74-6-199	15
33	01/11/01	CC	GRB	FDN	CC 74-6-199	15
34	01/11/01	CC	GRB	FDN	CC 74-6-199	15
35	01/11/01	CC	GRB	FDN	CC 74-6-199	15
36	01/11/01	CC	GRB	FDN	CC 74-6-199	15
37	01/11/01	CC	GRB	FDN	CC 74-6-199	15
38	01/11/01	CC	GRB	FDN	CC 74-6-199	15
39	01/11/01	CC	GRB	FDN	CC 74-6-199	15
40	01/11/01	CC	GRB	FDN	CC 74-6-199	15
41	01/11/01	CC	GRB	FDN	CC 74-6-199	15
42	01/11/01	CC	GRB	FDN	CC 74-6-199	15
43	01/11/01	CC	GRB	FDN	CC 74-6-199	15
44	01/11/01	CC	GRB	FDN	CC 74-6-199	15
45	01/11/01	CC	GRB	FDN	CC 74-6-199	15
46	01/11/01	CC	GRB	FDN	CC 74-6-199	15
47	01/11/01	CC	GRB	FDN	CC 74-6-199	15
48	01/11/01	CC	GRB	FDN	CC 74-6-199	15
49	01/11/01	CC	GRB	FDN	CC 74-6-199	15
50	01/11/01	CC	GRB	FDN	CC 74-6-199	15
51	01/11/01	CC	GRB	FDN	CC 74-6-199	15
52	01/11/01	CC	GRB	FDN	CC 74-6-199	15
53	01/11/01	CC	GRB	FDN	CC 74-6-199	15
54	01/11/01	CC	GRB	FDN	CC 74-6-199	15
55	01/11/01	CC	GRB	FDN	CC 74-6-199	15
56	01/11/01	CC	GRB	FDN	CC 74-6-199	15
57	01/11/01	CC	GRB	FDN	CC 74-6-199	15
58	01/11/01	CC	GRB	FDN	CC 74-6-199	15
59	01/11/01	CC	GRB	FDN	CC 74-6-199	15
60	01/11/01	CC	GRB	FDN	CC 74-6-199	15
61	01/11/01	CC	GRB	FDN	CC 74-6-199	15
62	01/11/01	CC	GRB	FDN	CC 74-6-199	15
63	01/11/01	CC	GRB	FDN	CC 74-6-199	15
64	01/11/01	CC	GRB	FDN	CC 74-6-199	15
65	01/11/01	CC	GRB	FDN	CC 74-6-199	15
66	01/11/01	CC	GRB	FDN	CC 74-6-199	15
67	01/11/01	CC	GRB	FDN	CC 74-6-199	15
68	01/11/01	CC	GRB	FDN	CC 74-6-199	15
69	01/11/01	CC	GRB	FDN	CC 74-6-199	15
70	01/11/01	CC	GRB	FDN	CC 74-6-199	15
71	01/11/01	CC	GRB	FDN	CC 74-6-199	15
72	01/11/01	CC	GRB	FDN	CC 74-6-199	15
73	01/11/01	CC	GRB	FDN	CC 74-6-199	15
74	01/11/01	CC	GRB	FDN	CC 74-6-199	15
75	01/11/01	CC	GRB	FDN	CC 74-6-199	15
76	01/11/01	CC	GRB	FDN	CC 74-6-199	15
77	01/11/01	CC	GRB	FDN	CC 74-6-199	15
78	01/11/01	CC	GRB	FDN	CC 74-6-199	15
79	01/11/01	CC	GRB	FDN	CC 74-6-199	15
80	01/11/01	CC	GRB	FDN	CC 74-6-199	15
81	01/11/01	CC	GRB	FDN	CC 74-6-199	15
82	01/11/01	CC	GRB	FDN	CC 74-6-199	15
83	01/11/01	CC	GRB	FDN	CC 74-6-199	15
84	01/11/01	CC	GRB	FDN	CC 74-6-199	15
85	01/11/01	CC	GRB	FDN	CC 74-6-199	15
86	01/11/01	CC	GRB	FDN	CC 74-6-199	15
87	01/11/01	CC	GRB	FDN	CC 74-6-199	15
88	01/11/01	CC	GRB	FDN	CC 74-6-199	15
89	01/11/01	CC	GRB	FDN	CC 74-6-199	15
90	01/11/01	CC	GRB	FDN	CC 74-6-199	15
91	01/11/01	CC	GRB	FDN	CC 74-6-199	15
92	01/11/01	CC	GRB	FDN	CC 74-6-199	15
93	01/11/01	CC	GRB	FDN	CC 74-6-199	15
94	01/11/01	CC	GRB	FDN	CC 74-6-199	15
95	01/11/01	CC	GRB	FDN	CC 74-6-199	15
96	01/11/01	CC	GRB	FDN	CC 74-6-199	15
97	01/11/01	CC	GRB	FDN	CC 74-6-199	15
98	01/11/01	CC	GRB	FDN	CC 74-6-199	15
99	01/11/01	CC	GRB	FDN	CC 74-6-199	15
100	01/11/01	CC	GRB	FDN	CC 74-6-199	15

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

ACC:
LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 31 41 51 6
17 61 92 02 21 22 32 42 52 62 72 82 93 03 13 23
33 43 53 63 73 83 94 04 14 24 34 44 54 64 74
84 95 05 15 25 35 45 55 65 75 85 96 06 16 26 36



GENERAL NOTES

- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums or other traffic control devices identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

Prequalified plastic drums shall meet the following requirements:

GENERAL DESIGN REQUIREMENTS

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

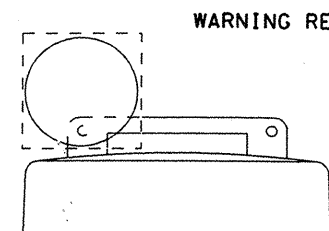
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

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

BALLAST

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

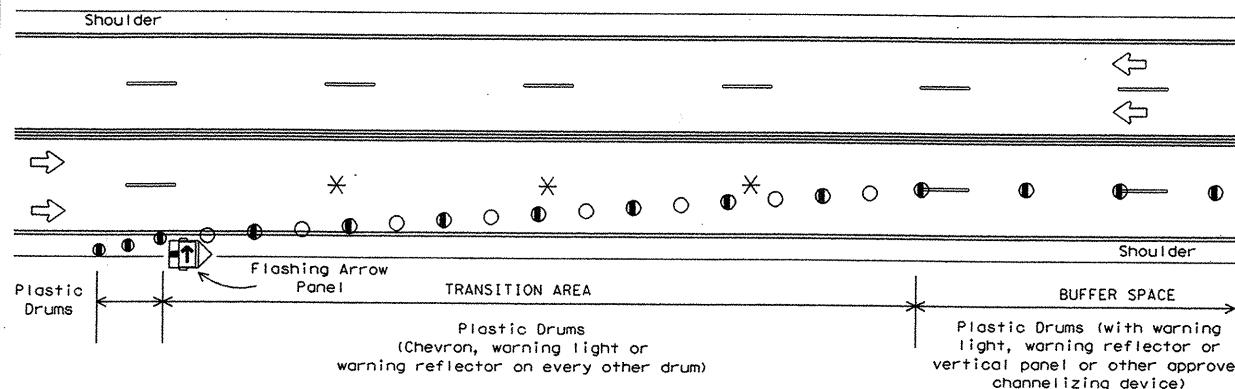


Warning reflector may be round or square. Must have a reflective surface area of at least 30 square inches

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C WARNING LIGHTS

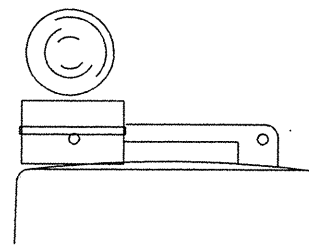
- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be manufactured using a sign substrate approved for use with plastic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

TYPICAL DETAIL OF LANE CLOSURE USING PLASTIC DRUMS AS CHANNELIZING DEVICES



Provide adequate sight distance when placing lane closures. Do not place lane closures in vertical or horizontal curves. See BC(8) for table showing the spacing of channelizing devices in the taper and tangent section.

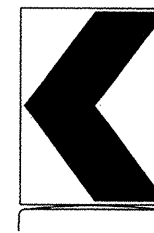
* NOTE: Lane lines shall be removed when the lane closure occupies a location for longer than 2 weeks.



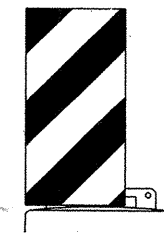
Type C Warning Light or approved substitute mounted adjacent to the travel way.

WARNING LIGHTS AND DELINEATORS MOUNTED ON PLASTIC DRUMS

- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A flashing warning lights are not intended for delineation and shall not be used in a series.
- Type C steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A and Type C warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- Type A Class 1, Type A Class 2, or Type B Reflector Units (D & OM Standard) may be attached to drums to delineate the intended vehicular path. The color of the reflector unit shall correspond to the pavement marking it is supplementing or for which it is substituting (left edgeline-yellow or right edgeline-white). The reflective unit shall be attached to the handle of the drum using the mounting hole nearest the travel lane and shall be aligned perpendicular to approaching traffic. Delineators may be used as directed by the Engineer. Delineators may not be used as a substitute for warning lights.
- Delineators may be used as directed by the Engineer. Delineators may not be used as a substitute for warning lights.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, 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

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrone 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, "Flat Surface Reflective Sheeting," unless otherwise specified in the plans.
- 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.
- 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.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.

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.

4/03 Revision

Revised
note

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PLASTIC DRUM STANDARD

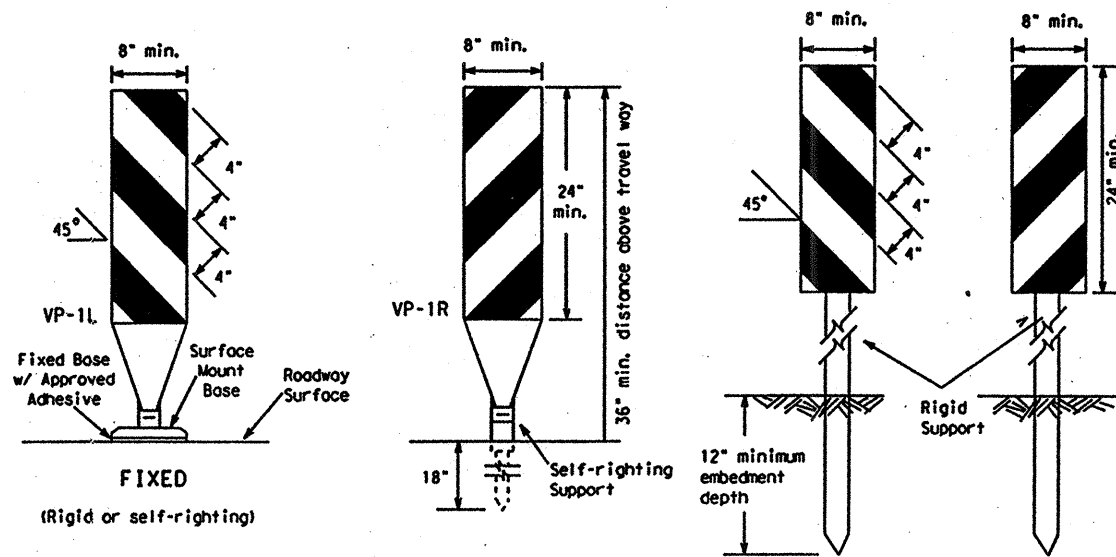
7 of 12 BC(7)-03

REVISIONS	STATE DISTRICT	FEDERAL REGION	DM - BAS	CM - CRB	DM - FDN	CM - CAL
4-03	CRP	6	CC 74-6-199	76		
		COUNTY	CONTROL	SECTION	JOB	REMARKS
		NUECES	0074-06	199	1H	371

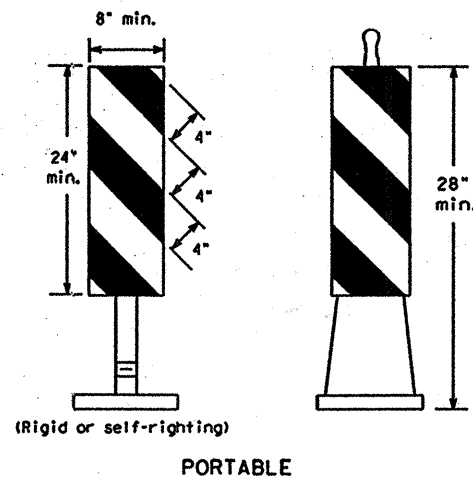
DISCLAIMER
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

CHANNELIZING DEVICES

VERTICAL PANELS

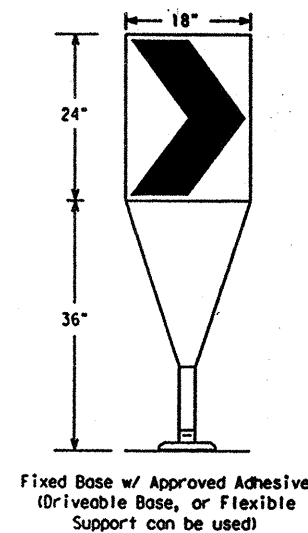


DRIVEABLE



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

CHEVRONS



- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black non-reflective 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-8320.

Posted Speed	Formula	Minimum Desirable Taper Lengths %			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	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		450'	495'	540'	45'	90' - 110'
50		500'	550'	600'	50'	100' - 125'
55	L = WS	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'

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

GENERAL NOTES:

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

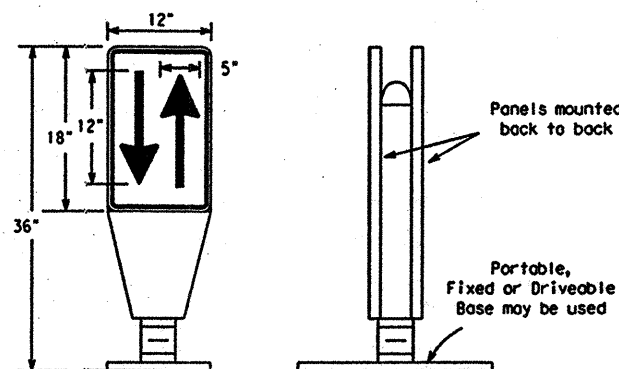
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

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

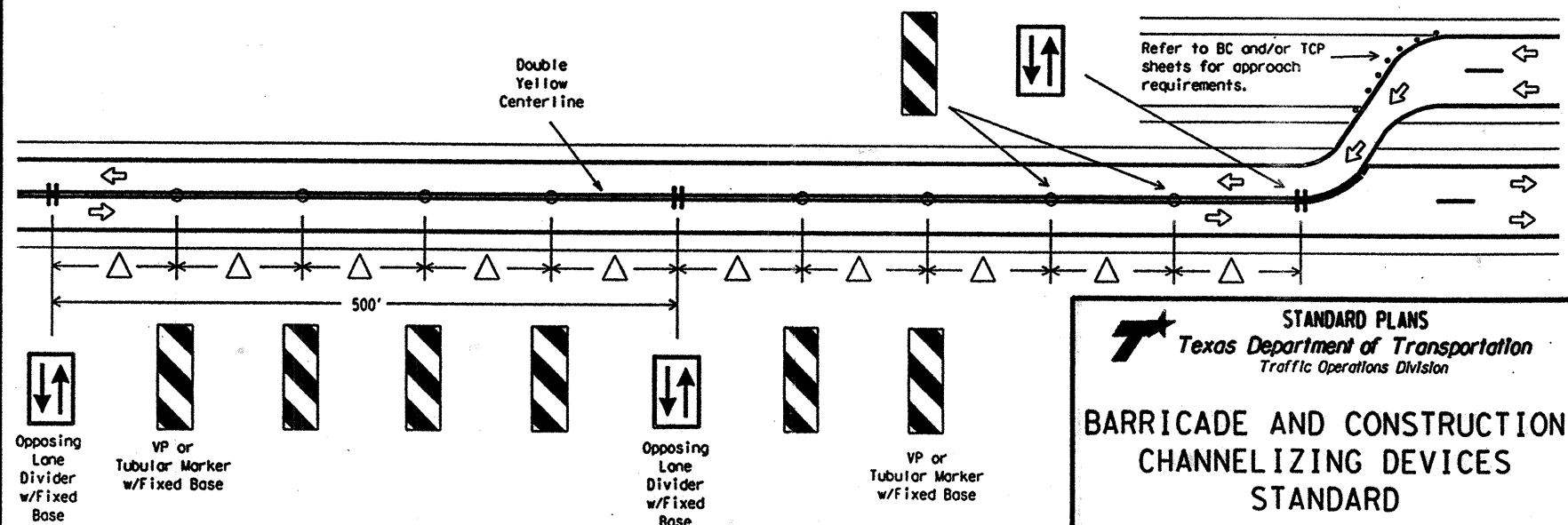
Instructions to locate the "CWZTCD" on TxDOT website are:

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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust. The OTLD is placed on a flexible self-righting support that returns to an upright position when impacted by a vehicle.
- The OTLD may be used in combination with simple tubular markers or vertical panels (vp's).
- Spacing between the OTLD shall not exceed 500 feet. Tubular markers or vp's placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type 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-8320.



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. Spacing between the OTLD shall not exceed 500 feet. When using this type of traffic control set-up, the OTLD, VP's or tubular markers shall have the fixed base with approved adhesive per the manufacturer's recommendations.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

8 of 12

BC(8)-03

REVISIONS	DATE	BY	APP'D	DESCRIPTION
1	01/11/02	CRP	6	CC 74-6-199
2	01/11/02	CRP	6	CC 74-6-199
3	01/11/02	CRP	6	CC 74-6-199
4	01/11/02	CRP	6	CC 74-6-199
5	01/11/02	CRP	6	CC 74-6-199
6	01/11/02	CRP	6	CC 74-6-199
7	01/11/02	CRP	6	CC 74-6-199
8	01/11/02	CRP	6	CC 74-6-199
9	01/11/02	CRP	6	CC 74-6-199
10	01/11/02	CRP	6	CC 74-6-199
11	01/11/02	CRP	6	CC 74-6-199
12	01/11/02	CRP	6	CC 74-6-199
13	01/11/02	CRP	6	CC 74-6-199
14	01/11/02	CRP	6	CC 74-6-199
15	01/11/02	CRP	6	CC 74-6-199
16	01/11/02	CRP	6	CC 74-6-199
17	01/11/02	CRP	6	CC 74-6-199
18	01/11/02	CRP	6	CC 74-6-199
19	01/11/02	CRP	6	CC 74-6-199
20	01/11/02	CRP	6	CC 74-6-199
21	01/11/02	CRP	6	CC 74-6-199
22	01/11/02	CRP	6	CC 74-6-199
23	01/11/02	CRP	6	CC 74-6-199
24	01/11/02	CRP	6	CC 74-6-199
25	01/11/02	CRP	6	CC 74-6-199
26	01/11/02	CRP	6	CC 74-6-199
27	01/11/02	CRP	6	CC 74-6-199
28	01/11/02	CRP	6	CC 74-6-199
29	01/11/02	CRP	6	CC 74-6-199
30	01/11/02	CRP	6	CC 74-6-199
31	01/11/02	CRP	6	CC 74-6-199
32	01/11/02	CRP	6	CC 74-6-199
33	01/11/02	CRP	6	CC 74-6-199
34	01/11/02	CRP	6	CC 74-6-199
35	01/11/02	CRP	6	CC 74-6-199
36	01/11/02	CRP	6	CC 74-6-199
37	01/11/02	CRP	6	CC 74-6-199
38	01/11/02	CRP	6	CC 74-6-199
39	01/11/02	CRP	6	CC 74-6-199
40	01/11/02	CRP	6	CC 74-6-199
41	01/11/02	CRP	6	CC 74-6-199
42	01/11/02	CRP	6	CC 74-6-199
43	01/11/02	CRP	6	CC 74-6-199
44	01/11/02	CRP	6	CC 74-6-199
45	01/11/02	CRP	6	CC 74-6-199
46	01/11/02	CRP	6	CC 74-6-199
47	01/11/02	CRP	6	CC 74-6-199
48	01/11/02	CRP	6	CC 74-6-199
49	01/11/02	CRP	6	CC 74-6-199
50	01/11/02	CRP	6	CC 74-6-199
51	01/11/02	CRP	6	CC 74-6-199
52	01/11/02	CRP	6	CC 74-6-199
53	01/11/02	CRP	6	CC 74-6-199
54	01/11/02	CRP	6	CC 74-6-199
55	01/11/02	CRP	6	CC 74-6-199
56	01/11/02	CRP	6	CC 74-6-199
57	01/11/02	CRP	6	CC 74-6-199
58	01/11/02	CRP	6	CC 74-6-199
59	01/11/02	CRP	6	CC 74-6-199
60	01/11/02	CRP	6	CC 74-6-199
61	01/11/02	CRP	6	CC 74-6-199
62	01/11/02	CRP	6	CC 74-6-199
63	01/11/02	CRP	6	CC 74-6-199
64	01/11/02	CRP	6	CC 74-6-199
65	01/11/02	CRP	6	CC 74-6-199
66	01/11/02	CRP	6	CC 74-6-199
67	01/11/02	CRP	6	CC 74-6-199
68	01/11/02	CRP	6	CC 74-6-199
69	01/11/02	CRP	6	CC 74-6-199
70	01/11/02	CRP	6	CC 74-6-199
71	01/11/02	CRP	6	CC 74-6-199
72	01/11/02	CRP	6	CC 74-6-199
73	01/11/02	CRP	6	CC 74-6-199
74	01/11/02	CRP	6	CC 74-6-199
75	01/11/02	CRP	6	CC 74-6-199
76	01/11/02	CRP	6	CC 74-6-199
77	01/11/02	CRP	6	CC 74-6-199
78	01/11/02	CRP	6	CC 74-6-199
79	01/11/02	CRP	6	CC 74-6-199
80	01/11/02	CRP	6	CC 74-6-199
81	01/11/02	CRP	6	CC 74-6-199
82	01/11/02	CRP	6	CC 74-6-199
83	01/11/02	CRP	6	CC 74-6-199
84	01/11/02	CRP	6	CC 74-6-199
85	01/11/02	CRP	6	CC 74-6-199
86	01/11/02	CRP	6	CC 74-6-199
87	01/11/02	CRP	6	CC 74-6-199
88	01/11/02	CRP	6	CC 74-6-199
89	01/11/02	CRP	6	CC 74-6-199
90	01/11/02	CRP	6	CC 74-6-199
91	01/11/02	CRP	6	CC 74-6-199
92	01/11/02	CRP	6	CC 74-6-199
93	01/11/02	CRP	6	CC 74-6-199
94	01/11/02	CRP	6	CC 74-6-199
95	01/11/02	CRP	6	CC 74-6-199
96	01/11/02	CRP	6	CC 74-6-199
97	01/11/02	CRP	6	CC 74-6-199
98	01/11/02	CRP	6	CC 74-6-199
99	01/11/02	CRP	6	CC 74-6-199
100	01/11/02	CRP	6	CC 74-6-199

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

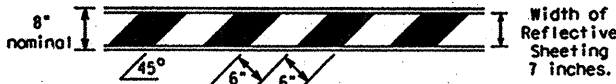
ACC:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

TYPE III BARRICADES

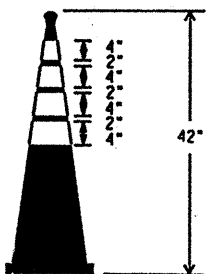
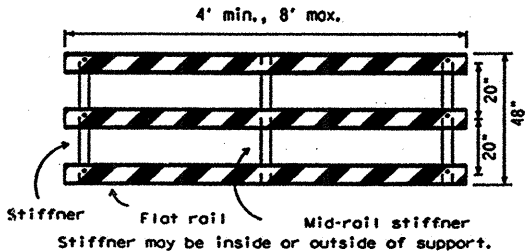
1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type III Barricades and a list of all materials used in the construction of Type III Barricades.
2. Type III Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades 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.
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. 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.

Barricades shall NOT be used as a sign support.

TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



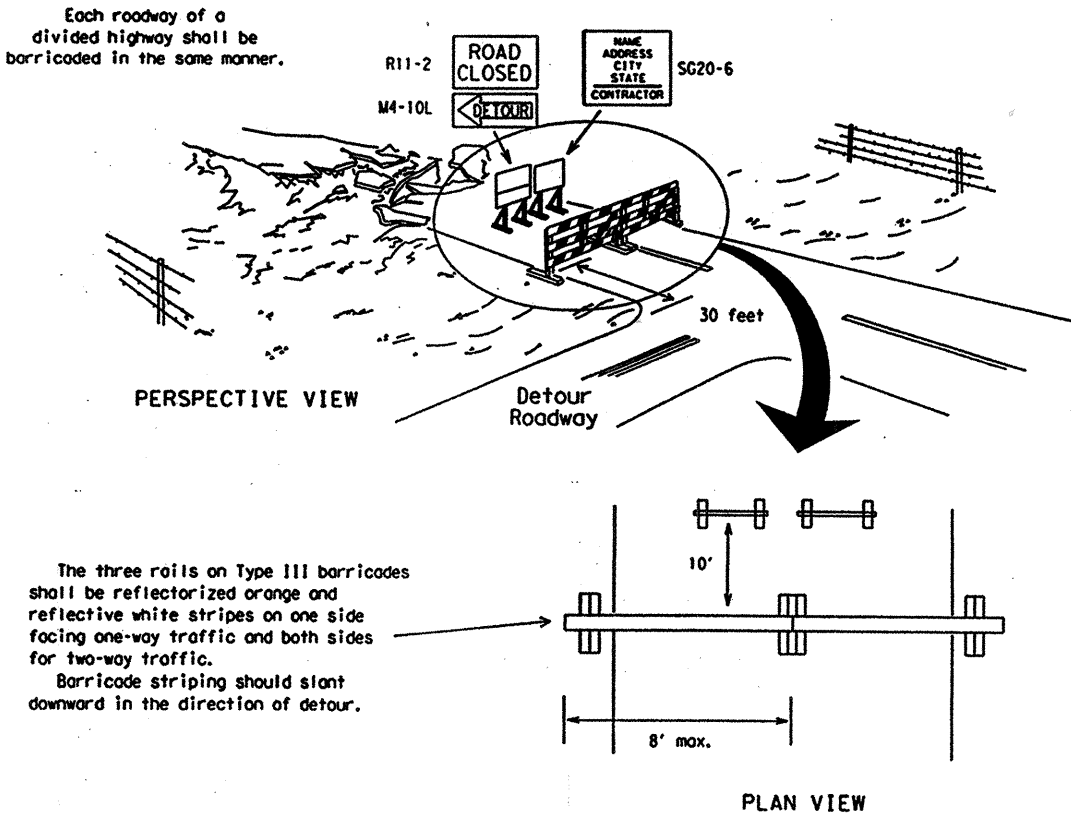
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



EDGELINE CHANNELIZER

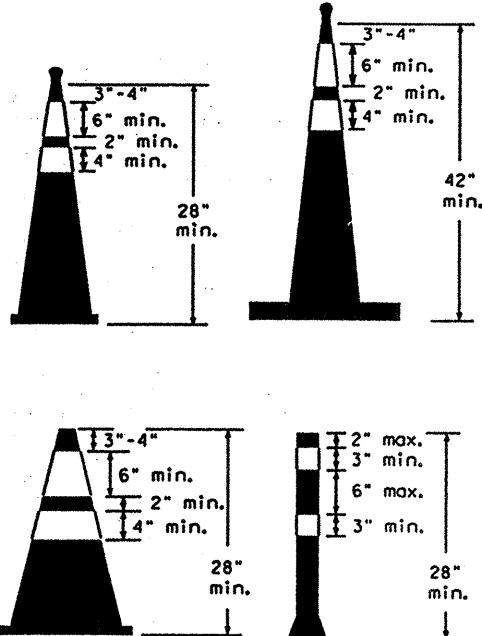
1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an 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 (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

TYPE III BARRICADE (POST AND SKID) TYPICAL APPLICATION



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.

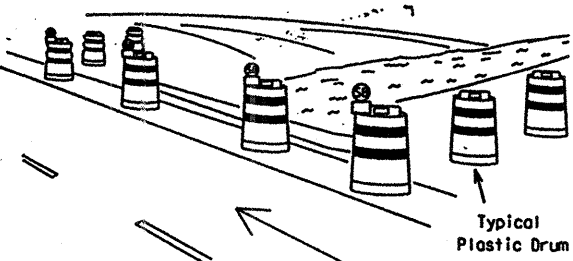
CONES



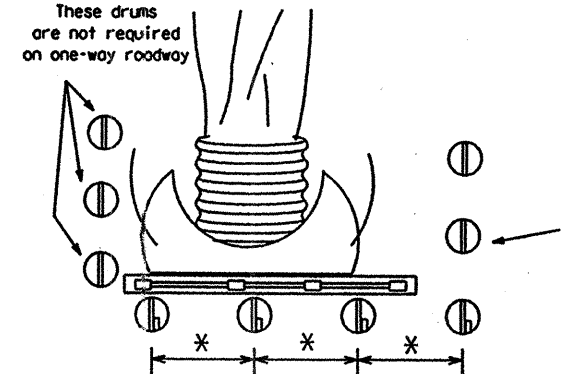
28" Cones shall have a minimum weight of 9 1/2 lbs.
42" 2-piece cones shall have a minimum weight of 30 lbs.

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 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 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 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. The reflectorized bands shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
8. 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.
9. Cones or tubular markers used on each project shall be of the same size and shape. 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.
- 10.

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



PERSPECTIVE VIEW



- Legend
- Plastic drum
 - Plastic drum with steady burn light

PLAN VIEW

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

Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums)

* Maximum spacing between drums shall be 10 feet. A minimum of two drums shall be used across the work area.

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 "Functional Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
again click on "Compliant Work Zone Traffic Control Devices".
This site is printable.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION
TYPE III BARRICADE
& CONES STANDARD

9 of 12 BC(9)-03

REVISIONS	DATE	BY	APP'D	DESCRIPTION
1	01/11/01	CC	GRB	Initial Release
2	01/11/01	CC	GRB	Initial Release
3	01/11/01	CC	GRB	Initial Release
4	01/11/01	CC	GRB	Initial Release
5	01/11/01	CC	GRB	Initial Release
6	01/11/01	CC	GRB	Initial Release
7	01/11/01	CC	GRB	Initial Release
8	01/11/01	CC	GRB	Initial Release
9	01/11/01	CC	GRB	Initial Release
10	01/11/01	CC	GRB	Initial Release
11	01/11/01	CC	GRB	Initial Release
12	01/11/01	CC	GRB	Initial Release
13	01/11/01	CC	GRB	Initial Release
14	01/11/01	CC	GRB	Initial Release
15	01/11/01	CC	GRB	Initial Release
16	01/11/01	CC	GRB	Initial Release
17	01/11/01	CC	GRB	Initial Release
18	01/11/01	CC	GRB	Initial Release
19	01/11/01	CC	GRB	Initial Release
20	01/11/01	CC	GRB	Initial Release
21	01/11/01	CC	GRB	Initial Release
22	01/11/01	CC	GRB	Initial Release
23	01/11/01	CC	GRB	Initial Release
24	01/11/01	CC	GRB	Initial Release
25	01/11/01	CC	GRB	Initial Release
26	01/11/01	CC	GRB	Initial Release
27	01/11/01	CC	GRB	Initial Release
28	01/11/01	CC	GRB	Initial Release
29	01/11/01	CC	GRB	Initial Release
30	01/11/01	CC	GRB	Initial Release
31	01/11/01	CC	GRB	Initial Release
32	01/11/01	CC	GRB	Initial Release
33	01/11/01	CC	GRB	Initial Release
34	01/11/01	CC	GRB	Initial Release
35	01/11/01	CC	GRB	Initial Release
36	01/11/01	CC	GRB	Initial Release
37	01/11/01	CC	GRB	Initial Release
38	01/11/01	CC	GRB	Initial Release
39	01/11/01	CC	GRB	Initial Release
40	01/11/01	CC	GRB	Initial Release
41	01/11/01	CC	GRB	Initial Release
42	01/11/01	CC	GRB	Initial Release
43	01/11/01	CC	GRB	Initial Release
44	01/11/01	CC	GRB	Initial Release
45	01/11/01	CC	GRB	Initial Release
46	01/11/01	CC	GRB	Initial Release
47	01/11/01	CC	GRB	Initial Release
48	01/11/01	CC	GRB	Initial Release
49	01/11/01	CC	GRB	Initial Release
50	01/11/01	CC	GRB	Initial Release
51	01/11/01	CC	GRB	Initial Release
52	01/11/01	CC	GRB	Initial Release
53	01/11/01	CC	GRB	Initial Release
54	01/11/01	CC	GRB	Initial Release
55	01/11/01	CC	GRB	Initial Release
56	01/11/01	CC	GRB	Initial Release
57	01/11/01	CC	GRB	Initial Release
58	01/11/01	CC	GRB	Initial Release
59	01/11/01	CC	GRB	Initial Release
60	01/11/01	CC	GRB	Initial Release
61	01/11/01	CC	GRB	Initial Release
62	01/11/01	CC	GRB	Initial Release
63	01/11/01	CC	GRB	Initial Release
64	01/11/01	CC	GRB	Initial Release
65	01/11/01	CC	GRB	Initial Release
66	01/11/01	CC	GRB	Initial Release
67	01/11/01	CC	GRB	Initial Release
68	01/11/01	CC	GRB	Initial Release
69	01/11/01	CC	GRB	Initial Release
70	01/11/01	CC	GRB	Initial Release
71	01/11/01	CC	GRB	Initial Release
72	01/11/01	CC	GRB	Initial Release
73	01/11/01	CC	GRB	Initial Release
74	01/11/01	CC	GRB	Initial Release
75	01/11/01	CC	GRB	Initial Release
76	01/11/01	CC	GRB	Initial Release
77	01/11/01	CC	GRB	Initial Release
78	01/11/01	CC	GRB	Initial Release
79	01/11/01	CC	GRB	Initial Release
80	01/11/01	CC	GRB	Initial Release
81	01/11/01	CC	GRB	Initial Release
82	01/11/01	CC	GRB	Initial Release
83	01/11/01	CC	GRB	Initial Release
84	01/11/01	CC	GRB	Initial Release
85	01/11/01	CC	GRB	Initial Release
86	01/11/01	CC	GRB	Initial Release
87	01/11/01	CC	GRB	Initial Release
88	01/11/01	CC	GRB	Initial Release
89	01/11/01	CC	GRB	Initial Release
90	01/11/01	CC	GRB	Initial Release
91	01/11/01	CC	GRB	Initial Release
92	01/11/01	CC	GRB	Initial Release
93	01/11/01	CC	GRB	Initial Release
94	01/11/01	CC	GRB	Initial Release
95	01/11/01	CC	GRB	Initial Release
96	01/11/01	CC	GRB	Initial Release
97	01/11/01	CC	GRB	Initial Release
98	01/11/01	CC	GRB	Initial Release
99	01/11/01	CC	GRB	Initial Release
100	01/11/01	CC	GRB	Initial Release

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

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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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 the 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(11).
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.
3. A list of prequalified reflective raised pavement markers can be found at the following web site:
<ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/dms4200req.pdf>
4. A list of prequalified non-reflective traffic buttons can be found at the following web site:
<ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/4300req.pdf>

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241. A list of prequalified products can be found at the following web site:
<ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/pavemark.pdf>
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240 or the TxDOT Purchase Specification No. 550-74-89. A list of prequalified products and a copy of the TxDOT Purchase Specifications can be found at web sites:
<ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/pavement.pdf>
<ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/tss/tss377.pdf>

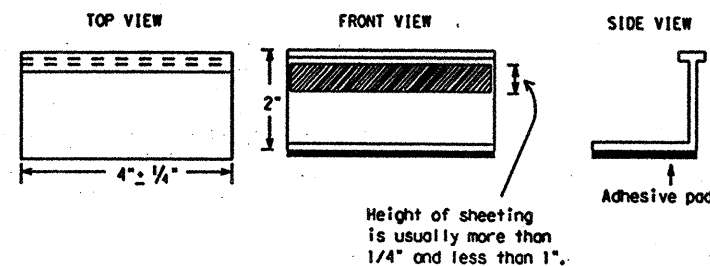
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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 150 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 shall be replaced as required by the Engineer at the expense of the Contractor.

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 discernible marking, by any method that does not materially damage the surface or texture of the pavement.
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.

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.

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

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 "Functional Organizational Chart",
Click on "Traffic Operations Box",
Click on "Compliant Work Zone Traffic Control Devices",
again click on "Compliant Work Zone Traffic Control Devices".
This site is printable.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS STANDARD

10 of 12 BC(10)-03

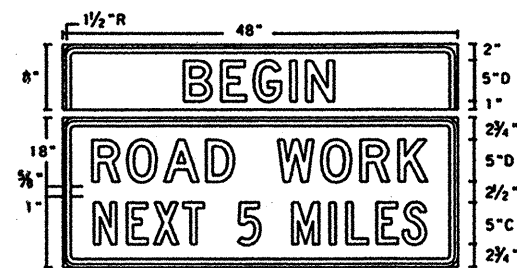
REVISIONS	DATE	BY	APP'D	REASON	PROJECT	SHEET
1-97	CRP	6			CO 74-6-199	19
2-98						
1-02						
11-02						

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

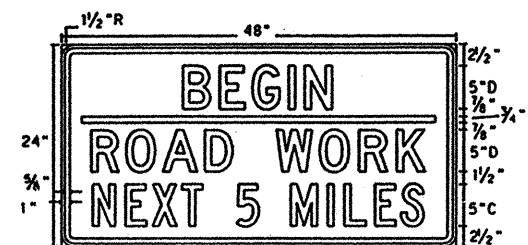
ACC:
12/3/15
17/6/2024
33/4/2024
45/5/2024
55/6/2024
65/7/2024
75/8/2024
85/9/2024
95/10/2024
105/11/2024
115/12/2024
125/1/2025
135/2/2025
145/3/2025
155/4/2025
165/5/2025
175/6/2025
185/7/2025
195/8/2025
205/9/2025
215/10/2025
225/11/2025
235/12/2025
245/1/2026
255/2/2026
265/3/2026
275/4/2026
285/5/2026
295/6/2026
305/7/2026
315/8/2026
325/9/2026
335/10/2026
345/11/2026
355/12/2026
365/1/2027
375/2/2027
385/3/2027
395/4/2027
405/5/2027
415/6/2027
425/7/2027
435/8/2027
445/9/2027
455/10/2027
465/11/2027
475/12/2027
485/1/2028
495/2/2028
505/3/2028
515/4/2028
525/5/2028
535/6/2028
545/7/2028
555/8/2028
565/9/2028
575/10/2028
585/11/2028
595/12/2028
605/1/2029
615/2/2029
625/3/2029
635/4/2029
645/5/2029
655/6/2029
665/7/2029
675/8/2029
685/9/2029
695/10/2029
705/11/2029
715/12/2029
725/1/2030
735/2/2030
745/3/2030
755/4/2030
765/5/2030
775/6/2030
785/7/2030
795/8/2030
805/9/2030
815/10/2030
825/11/2030
835/12/2030
845/1/2031
855/2/2031
865/3/2031
875/4/2031
885/5/2031
895/6/2031
905/7/2031
915/8/2031
925/9/2031
935/10/2031
945/11/2031
955/12/2031
965/1/2032
975/2/2032
985/3/2032
995/4/2032
1005/5/2032
1015/6/2032
1025/7/2032
1035/8/2032
1045/9/2032
1055/10/2032
1065/11/2032
1075/12/2032
1085/1/2033
1095/2/2033
1105/3/2033
1115/4/2033
1125/5/2033
1135/6/2033
1145/7/2033
1155/8/2033
1165/9/2033
1175/10/2033
1185/11/2033
1195/12/2033
1205/1/2034
1215/2/2034
1225/3/2034
1235/4/2034
1245/5/2034
1255/6/2034
1265/7/2034
1275/8/2034
1285/9/2034
1295/10/2034
1305/11/2034
1315/12/2034
1325/1/2035
1335/2/2035
1345/3/2035
1355/4/2035
1365/5/2035
1375/6/2035
1385/7/2035
1395/8/2035
1405/9/2035
1415/10/2035
1425/11/2035
1435/12/2035
1445/1/2036
1455/2/2036
1465/3/2036
1475/4/2036
1485/5/2036
1495/6/2036
1505/7/2036
1515/8/2036
1525/9/2036
1535/10/2036
1545/11/2036
1555/12/2036
1565/1/2037
1575/2/2037
1585/3/2037
1595/4/2037
1605/5/2037
1615/6/2037
1625/7/2037
1635/8/2037
1645/9/2037
1655/10/2037
1665/11/2037
1675/12/2037
1685/1/2038
1695/2/2038
1705/3/2038
1715/4/2038
1725/5/2038
1735/6/2038
1745/7/2038
1755/8/2038
1765/9/2038
1775/10/2038
1785/11/2038
1795/12/2038
1805/1/2039
1815/2/2039
1825/3/2039
1835/4/2039
1845/5/2039
1855/6/2039
1865/7/2039
1875/8/2039
1885/9/2039
1895/10/2039
1905/11/2039
1915/12/2039
1925/1/2040
1935/2/2040
1945/3/2040
1955/4/2040
1965/5/2040
1975/6/2040
1985/7/2040
1995/8/2040
2005/9/2040
2015/10/2040
2025/11/2040
2035/12/2040
2045/1/2041
2055/2/2041
2065/3/2041
2075/4/2041
2085/5/2041
2095/6/2041
2105/7/2041
2115/8/2041
2125/9/2041
2135/10/2041
2145/11/2041
2155/12/2041
2165/1/2042
2175/2/2042
2185/3/2042
2195/4/2042
2205/5/2042
2215/6/2042
2225/7/2042
2235/8/2042
2245/9/2042
2255/10/2042
2265/11/2042
2275/12/2042
2285/1/2043
2295/2/2043
2305/3/2043
2315/4/2043
2325/5/2043
2335/6/2043
2345/7/2043
2355/8/2043
2365/9/2043
2375/10/2043
2385/11/2043
2395/12/2043
2405/1/2044
2415/2/2044
2425/3/2044
2435/4/2044
2445/5/2044
2455/6/2044
2465/7/2044
2475/8/2044
2485/9/2044
2495/10/2044
2505/11/2044
2515/12/2044
2525/1/2045
2535/2/2045
2545/3/2045
2555/4/2045
2565/5/2045
2575/6/2045
2585/7/2045
2595/8/2045
2605/9/2045
2615/10/2045
2625/11/2045
2635/12/2045
2645/1/2046
2655/2/2046
2665/3/2046
2675/4/2046
2685/5/2046
2695/6/2046
2705/7/2046
2715/8/2046
2725/9/2046
2735/10/2046
2745/11/2046
2755/12/2046
2765/1/2047
2775/2/2047
2785/3/2047
2795/4/2047
2805/5/2047
2815/6/2047
2825/7/2047
2835/8/2047
2845/9/2047
2855/10/2047
2865/11/2047
2875/12/2047
2885/1/2048
2895/2/2048
2905/3/2048
2915/4/2048
2925/5/2048
2935/6/2048
2945/7/2048
2955/8/2048
2965/9/2048
2975/10/2048
2985/11/2048
2995/12/2048
3005/1/2049
3015/2/2049
3025/3/2049
3035/4/2049
3045/5/2049
3055/6/2049
3065/7/2049
3075/8/2049
3085/9/2049
3095/10/2049
3105/11/2049
3115/12/2049
3125/1/2050
3135/2/2050
3145/3/2050
3155/4/2050
3165/5/2050
3175/6/2050
3185/7/2050
3195/8/2050
3205/9/2050
3215/10/2050
3225/11/2050
3235/12/2050
3245/1/2051
3255/2/2051
3265/3/2051
3275/4/2051
3285/5/2051
3295/6/2051
3305/7/2051
3315/8/2051
3325/9/2051
3335/10/2051
3345/11/2051
3355/12/2051
3365/1/2052
3375/2/2052
3385/3/2052
3395/4/2052
3405/5/2052
3415/6/2052
3425/7/2052
3435/8/2052
3445/9/2052
3455/10/2052
3465/11/2052
3475/12/2052
3485/1/2053
3495/2/2053
3505/3/2053
3515/4/2053
3525/5/2053
3535/6/2053
3545/7/2053
3555/8/2053
3565/9/2053
3575/10/2053
3585/11/2053
3595/12/2053
3605/1/2054
3615/2/2054
3625/3/2054
3635/4/2054
3645/5/2054
3655/6/2054
3665/7/2054
3675/8/2054
3685/9/2054
3695/10/2054
3705/11/2054
3715/12/2054
3725/1/2055
3735/2/2055
3745/3/2055
3755/4/2055
3765/5/2055
3775/6/2055
3785/7/2055
3795/8/2055
3805/9/2055
3815/10/2055
3825/11/2055
3835/12/2055
3845/1/2056
3855/2/2056
3865/3/2056
3875/4/2056
3885/5/2056
3895/6/2056
3905/7/2056
3915/8/2056
3925/9/2056
3935/10/2056
3945/11/2056
3955/12/2056
3965/1/2057
3975/2/2057
3985/3/2057
3995/4/2057
4005/5/2057
4015/6/2057
4025/7/2057
4035/8/2057
4045/9/2057
4055/10/2057
4065/11/2057
4075/12/2057
4085/1/2058
4095/2/2058
4105/3/2058
4115/4/2058
4125/5/2058
4135/6/2058
4145/7/2058
4155/8/2058
4165/9/2058
4175/10/2058
4185/11/2058
4195/12/2058
4205/1/2059
4215/2/2059
4225/3/2059
4235/4/2059
4245/5/2059
4255/6/2059
4265/7/2059
4275/8/2059
4285/9/2059
4295/10/2059
4305/11/2059
4315/12/2059
4325/1/2060
4335/2/2060
4345/3/2060
4355/4/2060
4365/5/2060
4375/6/2060
4385/7/2060
4395/8/2060
4405/9/2060
4415/10/2060
4425/11/2060
4435/12/2060
4445/1/2061
4455/2/2061
4465/3/2061
4475/4/2061
4485/5/2061
4495/6/2061
4505/7/2061
4515/8/2061
4525/9/2061
4535/10/2061
4545/11/2061
4555/12/2061
4565/1/2062
4575/2/2062
4585/3/2062
4595/4/2062
4605/5/2062
4615/6/2062
4625/7/2062
4635/8/2062
4645/9/2062
4655/10/2062
4665/11/2062
4675/12/2062
4685/1/2063
4695/2/2063
4705/3/2063
4715/4/2063
4725/5/2063
4735/6/2063
4745/7/2063
4755/8/2063
4765/9/2063
4775/10/2063
4785/11/2063
4795/12/2063
4805/1/2064
4815/2/2064
4825/3/2064
4835/4/2064
4845/5/2064
4855/6/2064
4865/7/2064
4875/8/2064
4885/9/2064
4895/10/2064
4905/11/2064
4915/12/2064
4925/1/2065
4935/2/2065
4945/3/2065
4955/4/2065
4965/5/2065
4975/6/2065
4985/7/2065
4995/8/2065
5005/9/2065
5015/10/2065
5025/11/2065
5035/12/2065
5045/1/2066
5055/2/2066
5065/3/2066
5075/4/2066
5085/5/2066
5095/6/2066
5105/7/2066
5115/8/2066
5125/9/2066
5135/10/2066
5145/11/2066
5155/12/2066
5165/1/2067
5175/2/2067
5185/3/2067
5195/4/2067
5205/5/2067
5215/6/2067
5225/7/2067
5235/8/2067
5245/9/2067
5255/10/2067
5265/11/2067
5275/12/2067
5285/1/2068
5295/2/2068
5305/3/2068
5315/4/2068
5325/5/2068
5335/6/2068
5345/7/2068
5355/8/2068
5365/9/2068
5375/10/2068
5385/11/2068
5395/12/2068
5405/1/2069
5415/2/2069
5425/3/2069
5435/4/2069
5445/5/2069
5455/6/2069
5465/7/2069
5475/8/2069
5485/9/2069
5495/10/2069
5505/11/2069
5515/12/2069
5525/1/2070
5535/2/2070
5545/3/2070
5555/4/2070
5565/5/2070
5575/6/2070
5585/7/2070
5595/8/2070
5605/9/2070
5615/10/2070
5625/11/2070
5635/12/2070
5645/1/2071
5655/2/2071
5665/3/2071
5675/4/2071
5685/5/2071
5695/6/2071
5705/7/2071
5715/8/2071
5725/9/2071
5735/10/2071
5745/11/2071
5755/12/2071
5765/1/2072
5775/2/2072
5785/3/2072
5795/4/2072
5805/5/2072
5815/6/2072
5825/7/2072
5835/8/2072
5845/9/2072
5855/10/2072
5865/11/2072
5875/12/2072
5885/1/2073
5895/2/2073
5905/3/2073
5915/4/2073
5925/5/2073
5935/6/2073
5945/7/2073
5955/8/2073
5965/9/2073
5975/10/2073
5985/11/2073
5995/12/2073
6005/1/2074
6015/2/2074
6025/3/2074
6035/4/2074
6045/5/2074
6055/6/2074
6065/7/2074
6075/8/2074
6085/9/2074
6095/10/2074
6105/11/2074
6115/12/2074
6125/1/2075
6135/2/2075
6145/3/2075
6155/4/2075
6165/5/2075
6175/6/2075
6185/7/2075
6195/8/2075
6205/9/2075
6215/10/2075
6225/11/2075
6235/12/2075
6245/1/2076
6255/2/2076
6265/3/2076
6275/4/2076
6285/5/2076
6295/6/2076
6305/7/2076
6315/8/2076
6325/9/2076
6335/10/2076
6345/11/2076
6355/12/2076
6365/1/2077
6375/2/2077
6385/3/2077
6395/4/2077
6405/5/2077
6415/6/2077
6425/7/2077
6435/8/2077
6445/9/2077
6455/10/2077
6465/11/2077
6475/12/2077
6485/1/2078
6495/2/2078
6505/3/2078
6515/4/2078
6525/5/2078
6535/6/2078
6545/7/2078
6555/8/2078
6565/9/2078
6575/10/2078
6585/11/2078
6595/12/2078
6605/1/2079
6615/2/2079
6625/3/2079
6635/4/2079
6645/5/2079
6655/6/2079
6665/7/2079
6675/8/2079
6685/9/2079
6695/10/2079
6705/11/2079
6715/12/2079
6725/1/2080
6735/2/2080
6745/3/2080
6755/4/2080
6765/5/2080
6775/6/2080
6785/7/2080
6795/8/2080
6805/9/2080
6815/10/2080
6825/11/2080
6835/12/2080
6845/1/2081
6855/2/2081
6865/3/2081
6875/4/2081
6885/5/2081
6895/6/2081
6905/7/2081
6915/8/2081
6925/9/2081
6935/10/2081
6945/11/2081
6955/12/2081
6965/1/2082
6975/2/2082
6985/3/2082
6995/4/2082
7005/5/2082
7015/6/2082
7025/7/2082
7035/8/2082
7045/9/2082
7055/10/2082
7065/11/2082
7075/12/2082
7085/1/2083
7095/2/2083
7105/3/2083
7115/4/2083
7125/5/2083
7135/6/2083
7145/7/2083
7155/8/2083
7165/9/2083
7175/10/2083
7185/11/2083
7195/12/2083
7205/1/2084
7215/2/2084
7225/3/2084
7235/4/2084
7245/5/2084
7255/6/2084
7265/7/2084
7275/8/2084
7285/9/2084
7295/10/2084
7305/11/2084
7315/12/2084
7325/1/2085
7335/2/2085
7345/3/2085
7355/4/2085
7365/5/2085
7375/6/2085
7385/7/2085
7395/8/2085
7405/9/2085
7415/10/2085
7425/11/2085
7435/12/2085
7445/1/2086
7455/2/2086
7465/3/2086
7475/4/2086
7485/5/2086
7495/6/2086
7505/7/2086
7515/8/2086
7525/9/2086
7535/10/2086
7545/11/2086
7555/12/2086
7565/1/2087
7575/2/2087
7585/3/2087
7595/4/2087
7605/5/2087
7615/6/2087
7625/7/2087
7635/8/2087
7645/9/2087
7655/10/2087
7665/11/2087
7675/12/2087
7685/1/2088
7695/2/2088
7705/3/2088
7715/4/2088
7725/5/2088
7735/6/2088
7745/7/2088
7755/8/2088
7765/9/2088
7775/10/2088
7785/11/2088
7795/12/2088
7805/1/2089
7815/2/2089
7825/3/2089
7835/4/2089
7845/5/2089
7855/6/2089
7865/7/2089
7875/8/2089
7885/9/2089
7895/10/2089
7905/11/2089
7915/12/2089
7925/1/2090
7935/2/2090
7945/3/2090
7955/4/2090
7965/5/2090
7975/6/2090
7985/7/2090
7995/8/2090
8005/9/2090
8015/10/2090
8025/11/2090
8035/12/2090
8045/1/2091
8055/2/2091
8065/3/2091
8075/4/2091
8085/5/2091
8095/6/2091
8105/7/2091
8115/8/2091
8125/9/2091
8135/10/2091
8145/11/2091
8155/12/2091
8165/1/2092
8175/2/2092
8185/3/2092
8195/4/2092
8205/5/2092
8215/6/2092
8225/7/2092
8235/8/2092
8245/9/2092
8255/10/2092
8265/11/2092
8275/12/2092
8285/1/2093
8295/2/2093
8305/3/2093
8315/4/2093
8325/5/2093
8335/6/2093
8345/7/2093
8355/8/2093
8365/9/2093
8375/10/2093
8385/11/2093
8395/12/2093
8405/1/2094
8415/2/2094
8425/3/2094
8435/4/2094
8445/5/2094
8455/6/2094
8465/7/2094
8475/8/2094
8485/9/2094
8495/10/2094
8505/11/2094
8515/12/2094
8525/1/2095
8535/2/2095
8545/3/2095
8555/4/2095
8565/5/2095
8575/6/2095
8585/7/2095
8595/8/2095
8605/9/2095
8615/10/2095
8625/11/2095
8635/12/2095
8645/1/2096
8655/2/2096
8665/3/2096
8675/4/2096
8685/5/2096
8695/6/2096
8705/7/2096
8715/8/2096
8725/9/2096
8735/10/2096
8745/11/2096
8755/12/2096
8765/1/2097
8775/2/2097
8785/3/2097
8795/4/2097
8805/5/2097
8815/6/2097
8825/7/2097
8835/8/2097
8845/9/2097
8855/10/2097
8865/11/2097
8875/12/2097
8885/1/2098
8895/2/2098
8905/3/2098
8915/4/2098
8925/5/2098
8935/6/2098
8945/7/2098
8955/8/2098
8965/9/2098
8975/10/2098
8985/11/2098
8995/12/2098
9005/1/2099
9015/2/2099
9025/3/2099
9035/4/2099
9045/5/2099
9055/6/2099
9065/7/2099
9075/8/2099
9085/9/2099
9095/10/2099
9105/11/2099
9115/12/2099
9125/1/2100
9135/2/2100
9145/3/2100
9155/4/2100
9165/5/2100
9175/6/2100
9185/7/2100
9195/8/2100
9205/9/2100
9215/10/2100
9225/11/2100
9235/12/2100
9245/1/2101
9255/2/2101
9265/3/2101
9275/4/2101
9285/5/2101
9295/6/2101
9305/7/2101
9315/8/2101
9325/9/2101
9335/10/2101
9345/11/2101
9355/1

DISCLAIMER

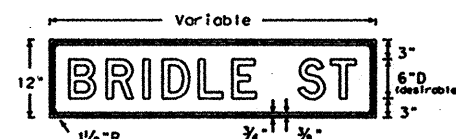
This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



SG20-1 w/plaque
48" X 26"
Letters - Black
Numbers - Black
Border - Black
Background - Orange Refl.

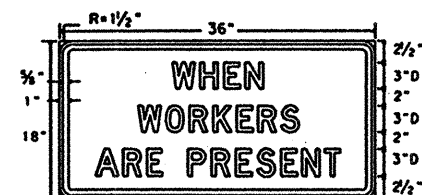


SG20-5T
48" X 24"
Letters - Black
Numbers - Black
Border - Black
Background - Orange Refl.

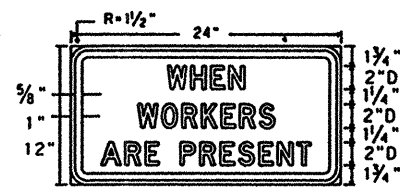


M4-9N
Variable X 12"
Letters - Black
Border - Black
Background - Orange Refl.

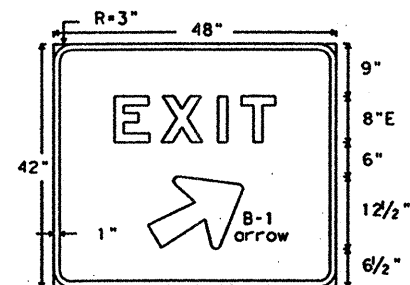
The M4-9R, L or S sign is to be used to detour local streets or roads that are not a State or Federal numbered highway; however, it should not be used in lieu of the M4-10 sign at the beginning of the detour or to detour State or Federal numbered routes. Also, when the M4-9R, L or S sign is used, a sign (M4-9N) with the name of the street being detoured may be mounted above it.



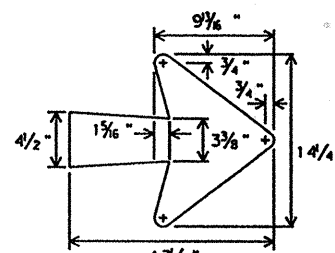
ER20-5
Plaque
36" X 18"
Letters - Black
Border - Black
Background - White Refl.



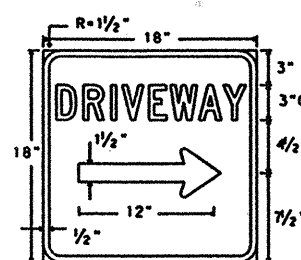
R20-5
Plaque
24" X 12"
Letters - Black
Border - Black
Background - White Refl.



E5-1a
48" X 42"
Letters - White Refl.
Arrow - White Refl.
Border - White Refl.
Background - Green Refl.

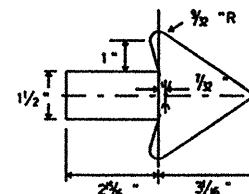


B-1 Arrow Detail



D-70a
18" X 18"

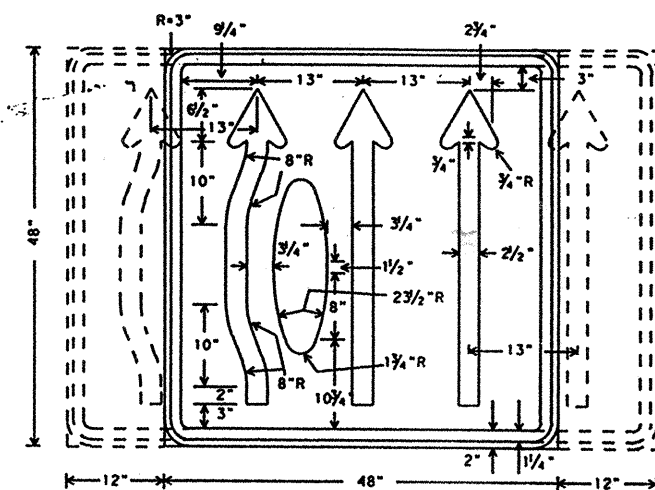
Letters - White Refl.
Symbol - White Refl.
Border - White Refl.
Background - Blue Refl.



D-70S
42" X 14"
Letters - White Refl.
Symbol - White Refl.
Border - White Refl.
Background - Blue Refl.

* Alternate first line legend for D-70S

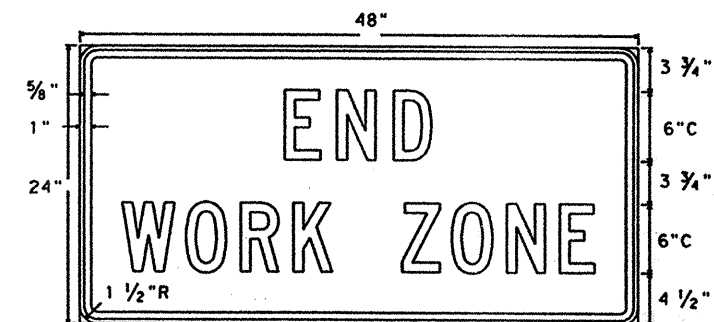
RESTAURANT D70R 4°C
BUSINESS D70B 4°C
MOTEL D70M 4°C
GAS D70G 4°C



CW24-2
Var. X 48"
A mirror image may be used to show proper lane alignment.



E5-2
48" X 48"
Letters - Black
Border - Black
Background - Orange Refl.



G20-2b
48" X 24"
Letters - Black
Border - Black
Background - Orange Refl.

DEPARTMENT MATERIAL SPECIFICATIONS		
PLYWOOD SIGN BLANKS		DMS-7100
ALUMINUM SIGN BLANKS		DMS-7110
FLAT SURFACE REFLECTIVE SHEETING		DMS-8300
VINYL NON-REFLECTIVE DECAL SHEETING		DMS-8320

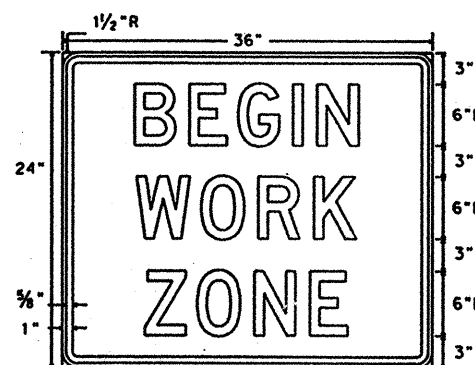
REFLECTIVE SHEETING OR OTHER MATERIAL		
COLOR	USAGE	
BLUE	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
RED	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
GREEN	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
ORANGE	BACKGROUND	TYPE E (FLUORESCENT PRISMATIC)
WHITE	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
YELLOW	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE DECAL SHEETING
WHITE	LEGEND & BORDERS	TYPE C (HIGH SPECIFIC INTENSITY)

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:

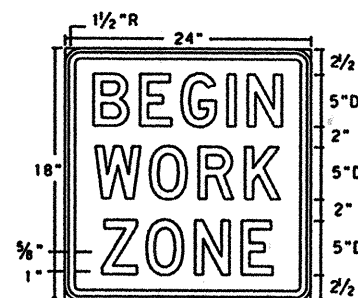
Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3120
Fax (512) 416-3299

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

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



SG20-9T
36" X 24"
Letters - Black
Border - Black
Background - Orange Refl.



G20-9T
24" X 18"
Letters - Black
Border - Black
Background - Orange Refl.

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

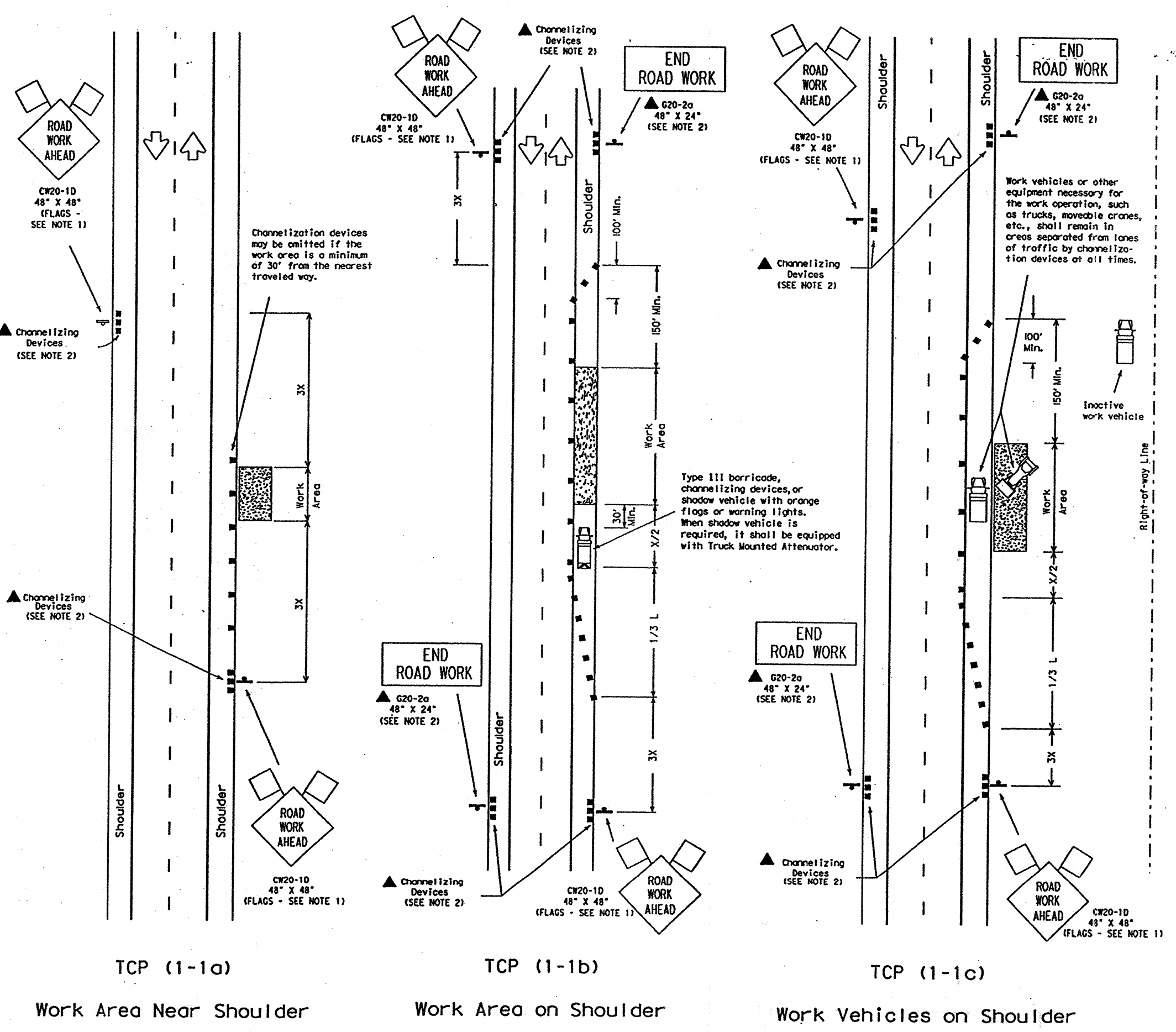
BARRICADE AND CONSTRUCTION REGULATORY & GUIDE SIGNS STANDARDS

12 of 12 BC(12)-03

© TxDOT February 1998	DR - GRB	CA - BAS	DR - FDN	CA - CAL
REVISIONS	DATE	BY	PROJECT	SHEET
10-99	CRP	6	CC 74-G-199	21
11-02				
COUNTY	SECTION	JOB	DATE	BY
NUECES	2074 06	199	11/31	109C

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

DN:	CK:	DW:	CK:
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	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100



LEGEND

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

Posted Speed	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Device		Minimum Sign Spacing Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
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		450'	495'	540'	45'	90'-110'	320'
50	$L = WS$	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:

- Unless otherwise stated in the plans, flags attached to signs are **REQUIRED**.
- All traffic control devices illustrated are **REQUIRED**, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
- On high speed facilities advance warning signs should be installed approximately 3X from the work area or from the beginning of a lane or shoulder taper. On low speed facilities the advance warning signs should be placed based on the "X" minimum distance.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.

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

The requirement for shadow vehicles will be listed in the project GENERAL NOTES, Item 502, Barricades, Signs and Traffic Handling.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

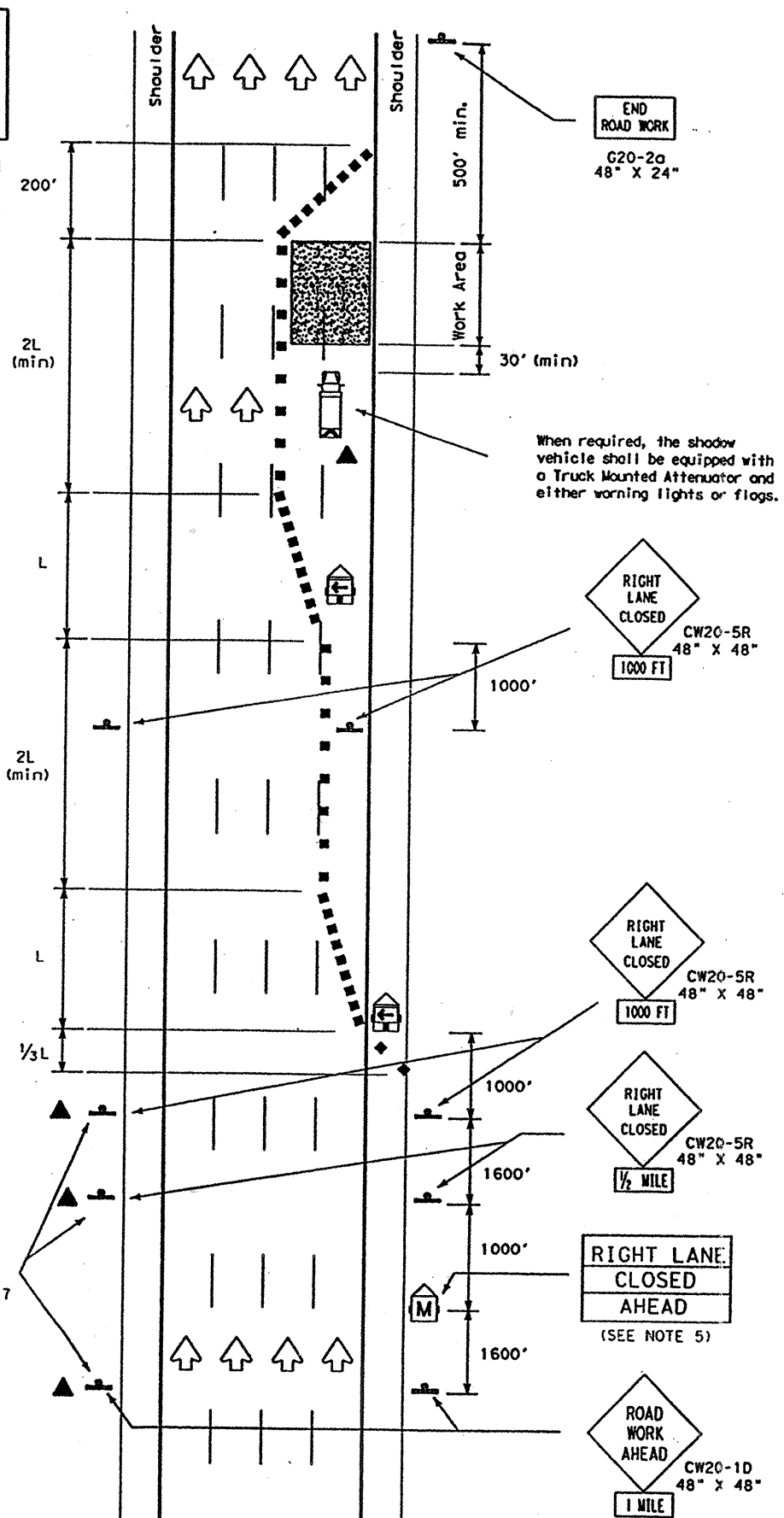
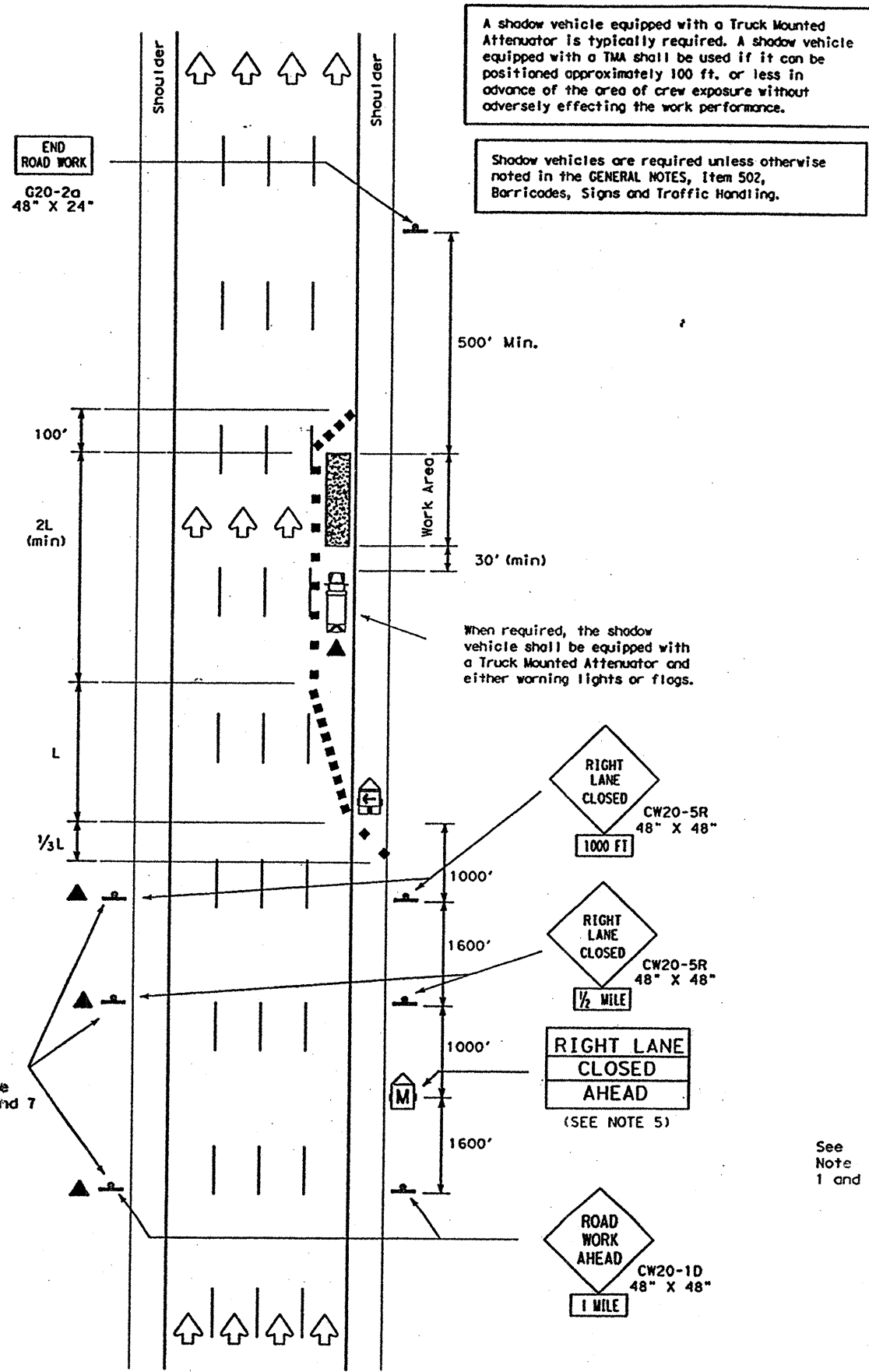
TRAFFIC CONTROL PLAN

TCP (1-1)-98

REVISED	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD
2-94	8-95	1-97	4-98	CC 74-6-199	22				
COUNTY				SECTION		JAN		HIGHWAY	
NUECES				0074 06		199		1137	

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

DN:	CK:	DW:	CK:
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	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100



LEGEND

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

Posted Speed	Formula	Minimum Desirable Taper Lengths X X			Suggested Maximum Spacing of Device	
		10' Offset	11' Offset	12' Offset	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		450'	495'	540'	45'	90'-110'
50	L=WS	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'

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

- GENERAL NOTES:
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
 - Drums are the typical channelizing device. Cones or other devices may be used if approved by the Engineer. Drums shall be used during nighttime operations.
 - All construction signs and barricades placed during any phase of work shall remain in place until removal is approved by the Engineer.
 - The Engineer may direct the Contractor to furnish additional signs and barricades as required to maintain traffic flow and motorist safety during construction.
 - Static message board or changeable message signs stating the date and duration of ramp or freeway closure shall be placed a minimum of seven (7) calendar days in advance of actual closure.
 - High level warning flags should be used on advance warning signs during daytime operations. Warning lights may be used to add emphasis to advance warning signs during nighttime operations.
 - Duplicate construction warning signs should be erected on the median side of freeways where median width will permit and traffic volume justifies the signing.
 - The number of closed lanes may be increased provided the spacings of traffic control devices, taper lengths and tangent lengths meet the requirements of the MUTCD.
 - Warning signs shown shall be appropriately altered for left lane closures.
 - The TCP details may require additional and/or relocation of route shields, guide signs, etc. to guide motorists along entire length of detour due to ramp and freeway closures.
 - See BC Standards for additional sign details.
 - When possible, changeable message signs should be located 500 feet in advance of the last available exit ramp prior to the lane closure to allow motorists an alternate route.

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@atw.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 PLAN
FREEWAY LANE CLOSURE

TCP (6-1) - 98A

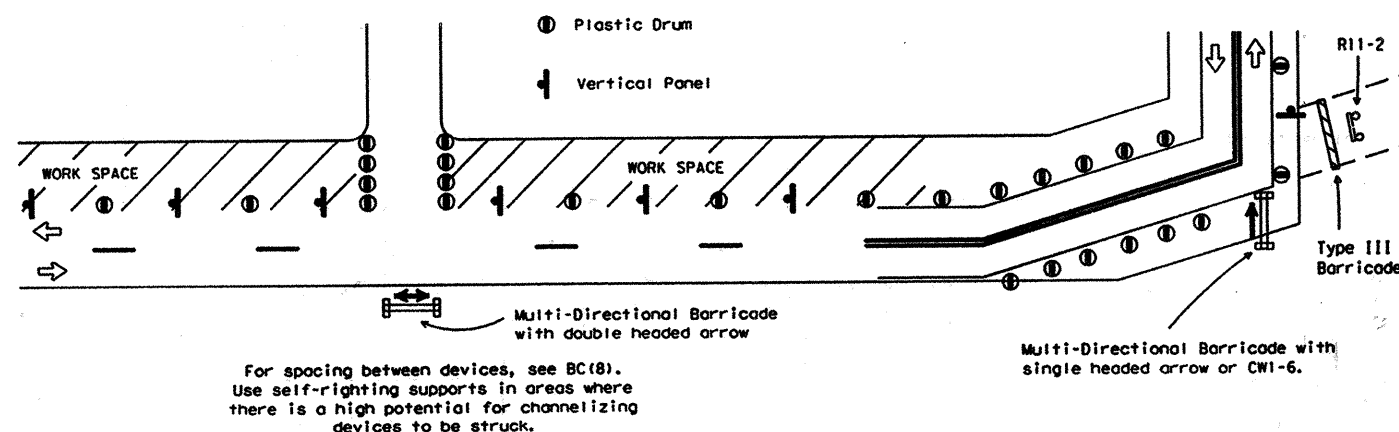
© TxDOT February 1994

REVISIONS	DATE	BY	CHK	APP	REASON
1-97	1-97	CRP	6	CC 74-6-199	
4-98					
8-98					

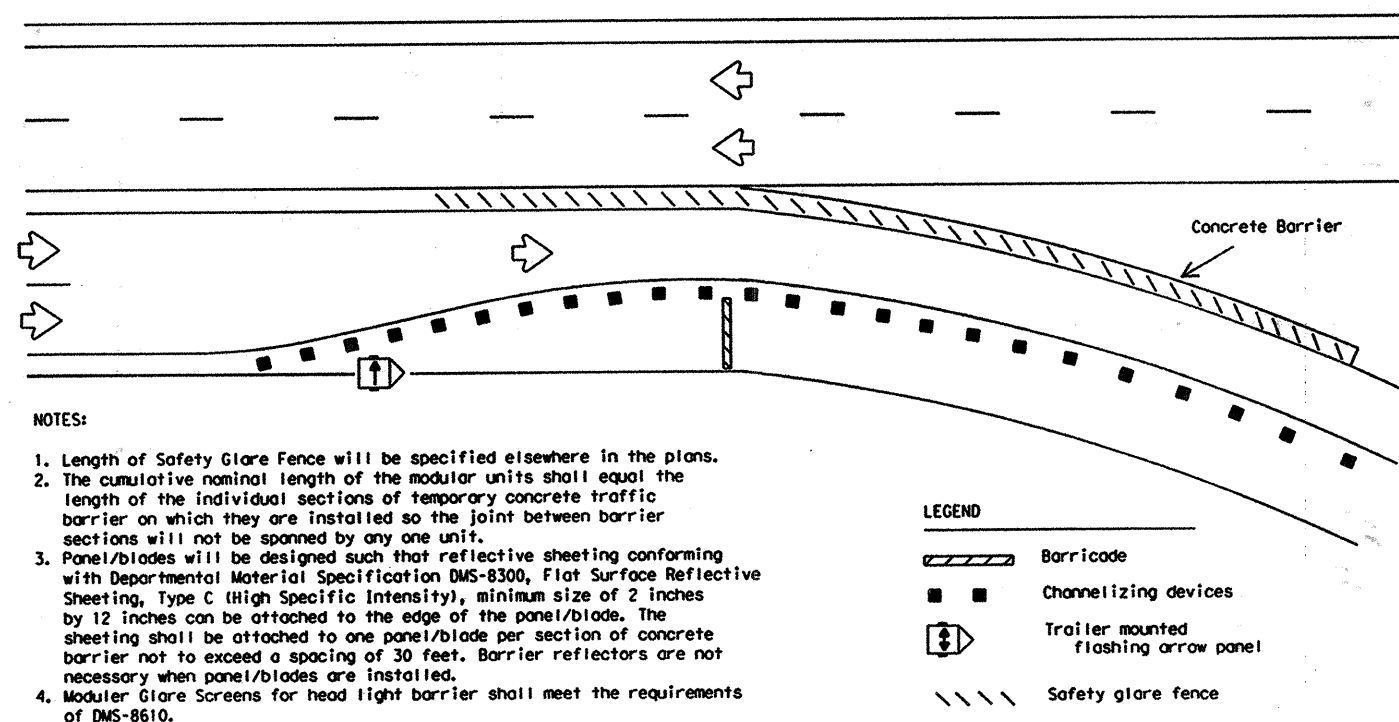
COUNTY: Nueces CONTROL: 0074 SECTION: 06 JOB: 199 HIGHWAY: IH 37

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

CHANNELIZING DEVICES FOR URBAN ROADWAY TYPE PROJECT



BARRIER DELINEATION WITH SAFETY GLARE FENCE



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

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

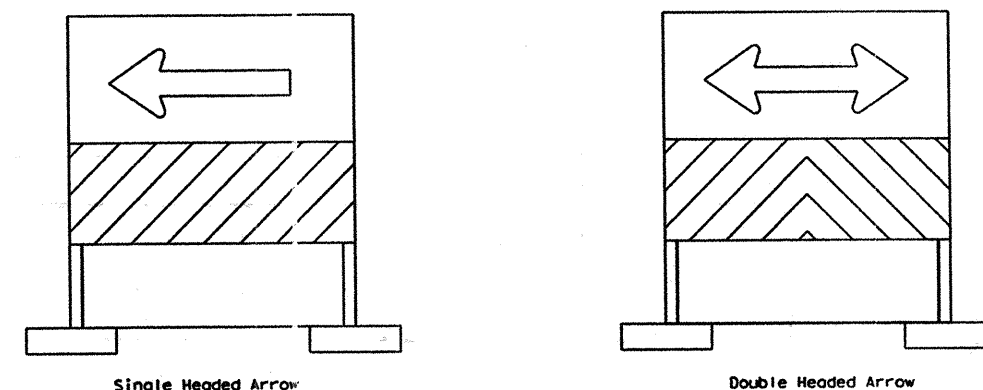
DEPARTMENTAL MATERIAL SPECIFICATIONS

FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULAR 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

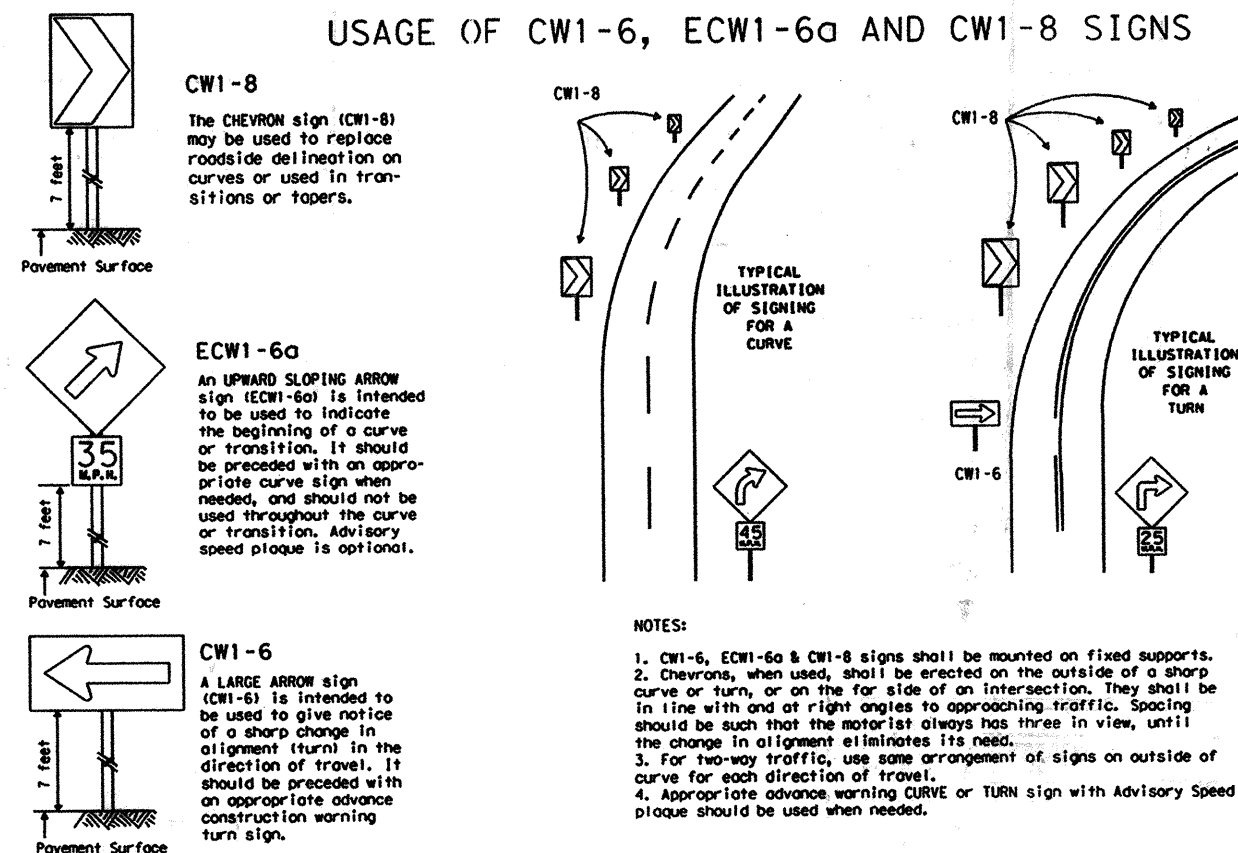
REFER TO THE BC SHEETS FOR SHEETING REQUIREMENT ON CHANNELIZING DEVICES.

MULTI-DIRECTIONAL BARRICADE



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

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



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

- Long-term stationary is work that occupies a location more than 3 days.
- 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.
- Short-term stationary is daytime work that occupies a location for more than 1 hour, but less than 12 hours.
- Short duration is work that occupies a location up to 1 hour.
- Mobile is work that moves intermittently or continuously.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN TYPICAL DETAILS

WZ(TD)-03

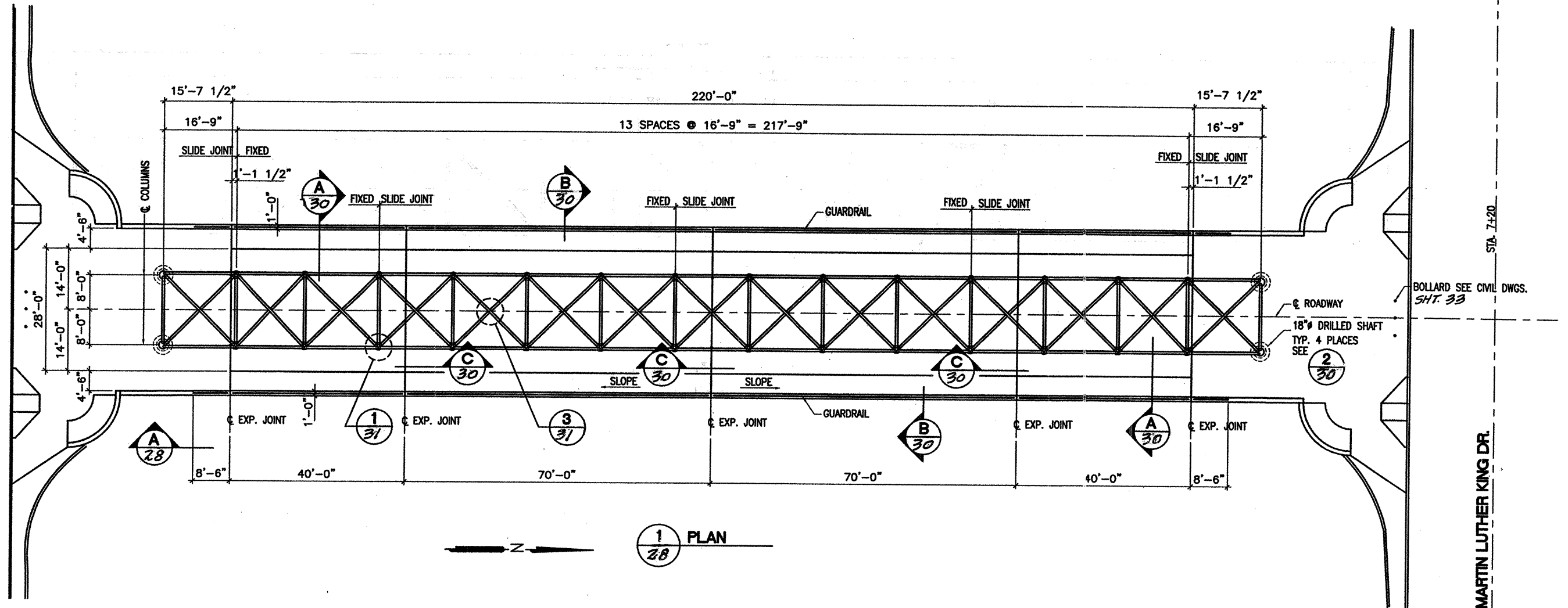
REVISIONS	DATE	BY	APP'D	REVISION	DATE	BY	APP'D
4-98	12/15/98	CRP	6	CC 74-6-199	26		
3-03	12/15/98	CRP	6	CC 74-6-199	26		
		COUNTY	CONTROL	SECTION	JOB	REVISION	
		NUECES	0074	06	199	1437	

STA. 3+60

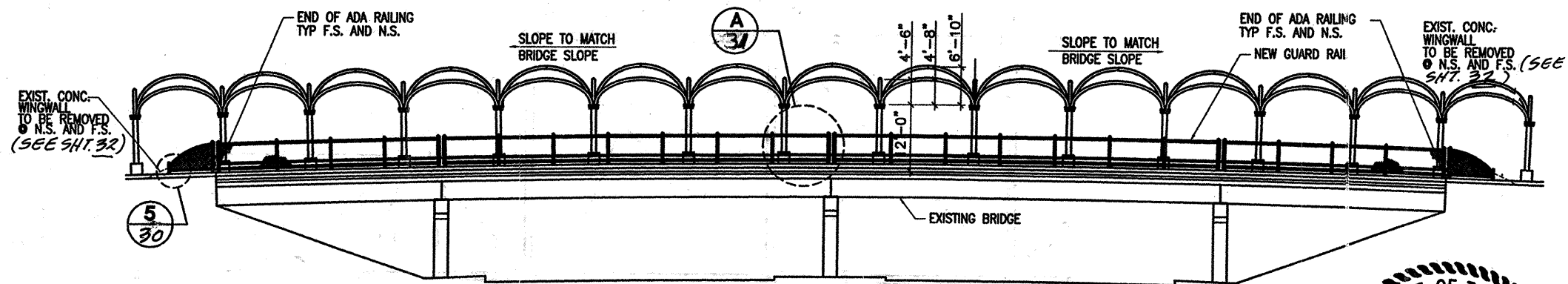
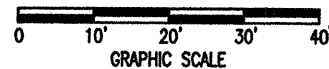
ANTELOPE ST.

STA. 7+20

MARTIN LUTHER KING DR.



1 PLAN
28



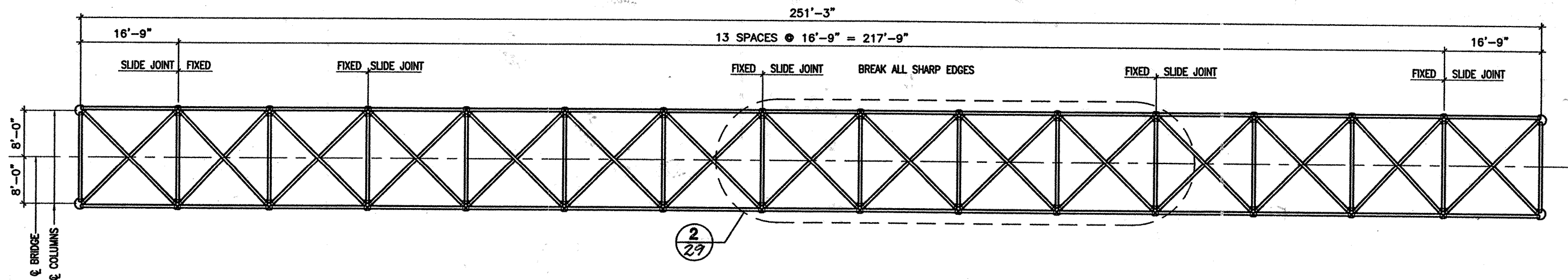
A ELEVATION
28



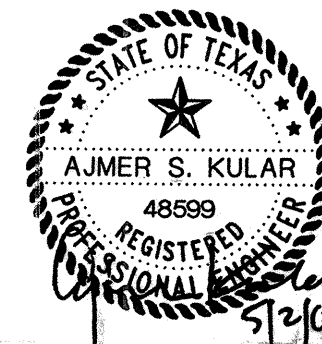
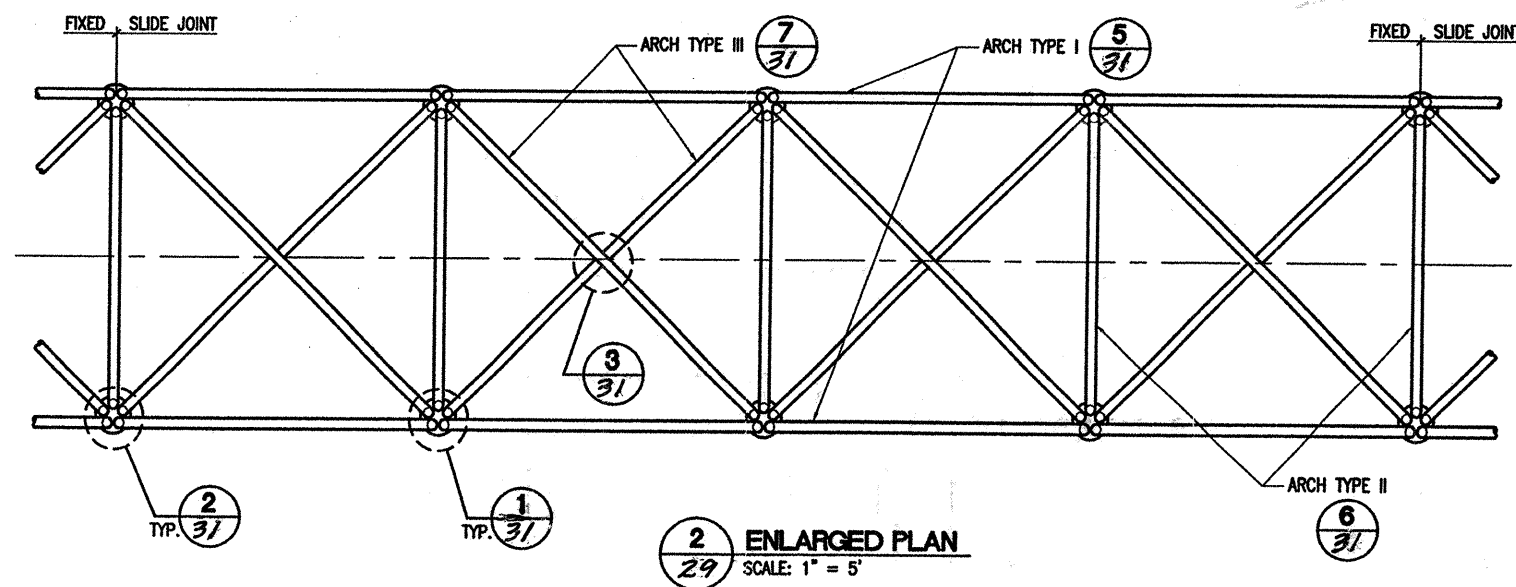
Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET
BRIDGE IMPROVEMENTS
STEEL ARCH PLAN
AND ELEVATION**

FED. RD. DIST. NO.	FEDERAL PROJECT NO.	SHEET NO.
6	CC 74-6-199	28
STATE	COUNTY	
TEXAS	NUECES	
CONT.	HIGHWAY NO.	
0074	199	1H37



1 PLAN
29 SCALE: 1" = 10'



Texas Department of Transportation

© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET
BRIDGE IMPROVEMENTS
STEEL ARCH
ENLARGED PLANS**

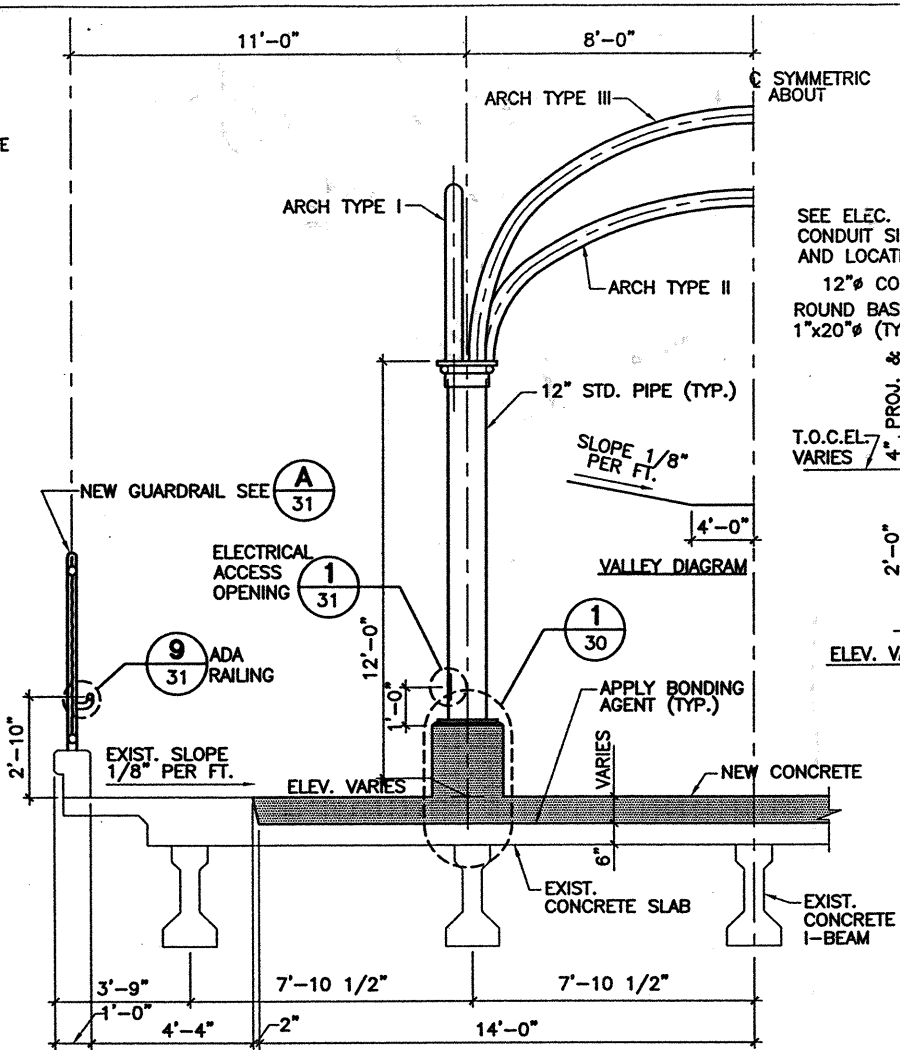
FED RD DIST NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		29
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	1H37

CONCRETE NOTES:

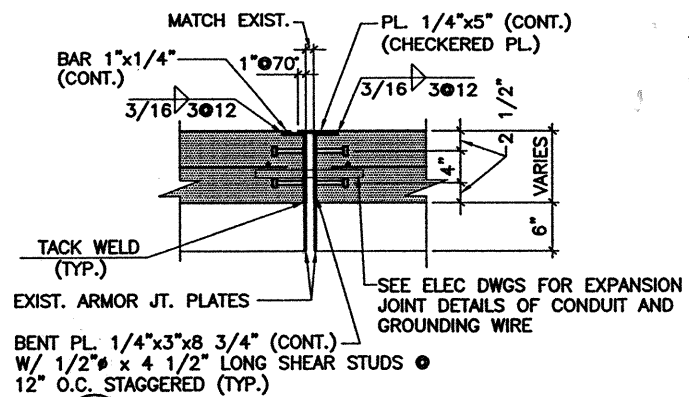
1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATIONS
2. ALL TOPPING AND PEDESTAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH 4000 PSI AT 28 DAYS TXDOT ITEM 421 CLASS "S" CONCRETE
3. REINFORCING STEEL TO HAVE 3" MINIMUM COVER WHERE CONCRETE IS CAST AGAINST EARTH. ALL OTHER REINFORCING SHALL HAVE 2" MINIMUM CONCRETE COVER, TYPICAL.
4. REINFORCING STEEL MATERIAL TO BE A615-GRADE 60 UNLESS NOTED OTHERWISE.
5. ALL REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH TXDOT ITEM 440.
6. REINFORCING STEEL BENT BARS ARE DIMENSIONED OUT TO OUT OF STEEL.
7. ALL BARS ARE TO BE SUPPORTED IN FORMS AND SLAB WITH CHAIRS AND TIED AT EVERY OTHER INTERSECTION.
8. ALL CONDUIT, GROUND WIRES, DRAINS, ETC., ARE TO BE IN PLACE BEFORE CONCRETE IS PLACED.

STRUCTURAL STEEL NOTES:

1. ALL FABRICATION AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF TXDOT ITEM 441, 442, 447 AND 448
2. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36. MINIMUM YIELD STRESS OF 36 KSI.
3. ALL STRUCTURAL PIPE SHALL CONFORM TO FY=35 KSI UNDER TXDOT ITEM 442.
4. FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
5. WELDED CONSTRUCTION SHALL CONFORM TO AWS D-1.1, "STRUCTURAL WELDING CODE" LATEST EDITION. WELDING PROCESSES AND OPERATORS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATIONS PROCEDURES".
6. ALL WELDED CONNECTIONS SHALL DEVELOP THE FULL STRENGTH OF THE MEMBER UNLESS NOTED OTHERWISE.
7. CONTRACTOR SHALL PROVIDE NECESSARY BRACING DURING STEEL ERECTION.
8. ALL STRUCTURAL STEEL INCLUDING HANDRAILS, PLATES, BOLTS AND RELATED HARDWARE SHALL BE HOT DIP GALVANIZED PER REQUIREMENTS OF TXDOT ITEM 445
9. ALL STRUCTURAL STEEL WHERE GALVANIZING HAS BEEN BURNED OFF OR OTHERWISE DAMAGED DURING TRANSPORTATION OR ERECTION SHALL BE REPAIRED BY COATING WITH "METALIZING" SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. ALL GALVANIZING SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ZINC COATING (HOT DIP) ASTM DESIGNATION A-123, A-153, A-383 AND A-386 LATEST REVISIONS. (MINIMUM 2 OZ. PER SQUARE FOOT UNLESS SPECIFIED OTHERWISE). RETHREAD NUTS AFTER GALVANIZING IN ACCORDANCE WITH TXDOT ITEM 445.
11. ALL SHOP JOINTS SHALL BE SEAL WELDED IN ADDITION TO STRENGTH WELDS SHOWN.
12. STRUCTURAL STEEL SHALL BE NEW DOMESTIC STEEL AND SHALL CONFORM TO THE A.I.S.C. "SPECIFICATION FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
13. STEEL MEMBERS SHALL NOT BE SPLICED EXCEPT WHERE SHOWN ON THE DRAWINGS.

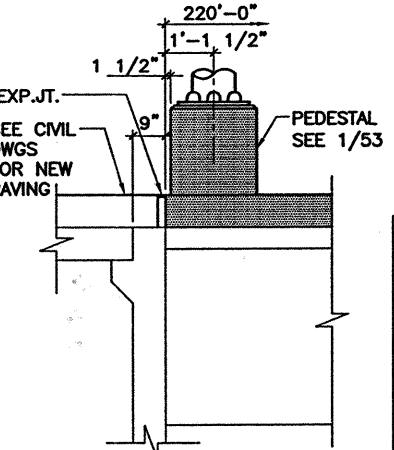


A SECTION
30 SCALE: 3/8" = 1'-0"

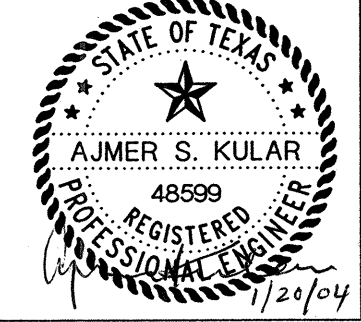


1 TYP. COLUMN BASE DETAIL
30 SCALE: 1" = 1'-0"

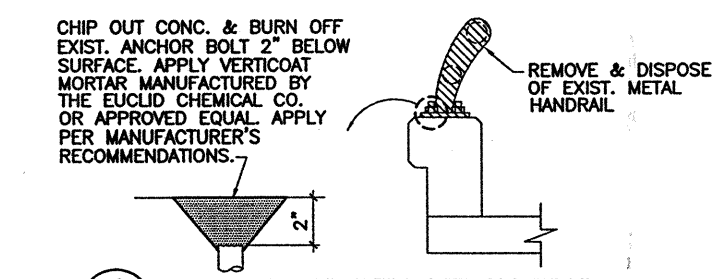
B SECTION AT HANDRAIL BASE
30 SCALE: 1 1/2" = 1'-0"



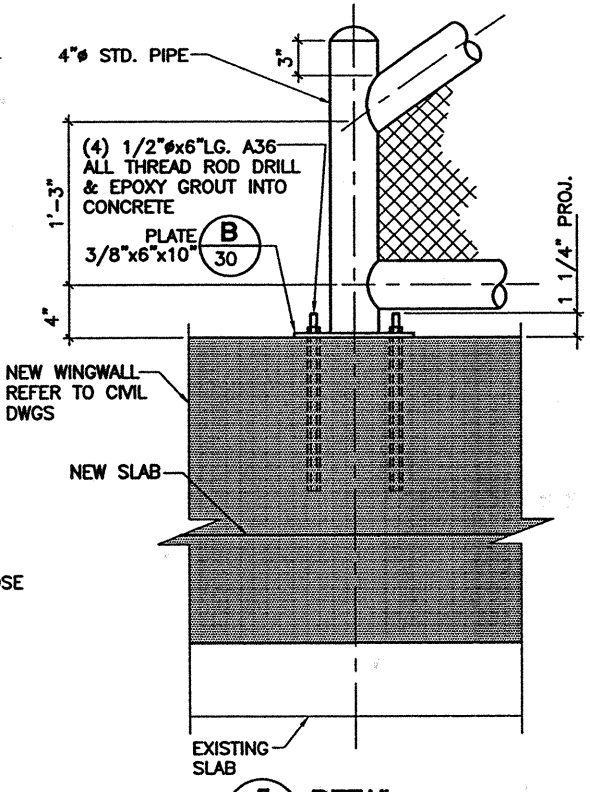
D SECTION
30 N.T.S.



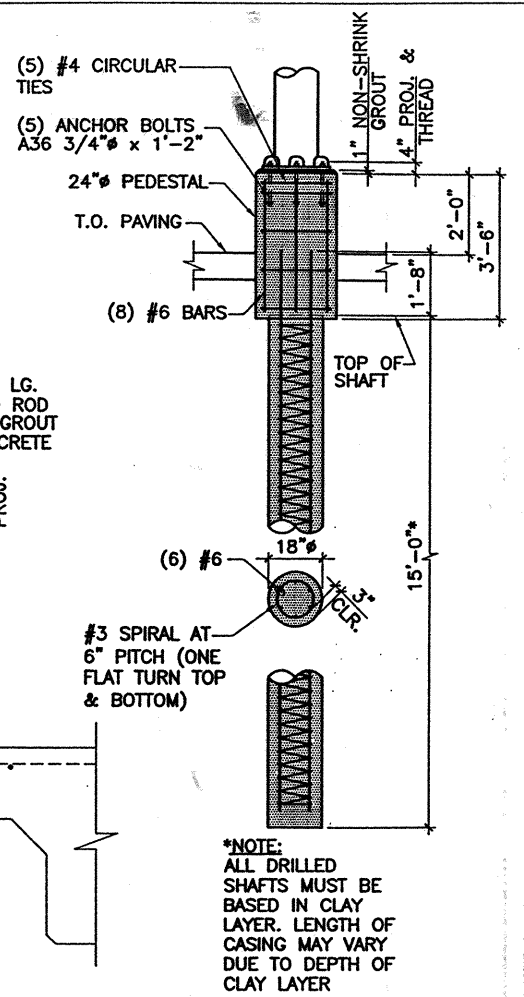
C TYP. SECTION AT EXPANSION JOINT
30 SCALE: 1" = 1'-0"



4 TYP. HANDRAIL DEMOLITION DETAIL
30 N.T.S.



5 DETAIL
30 SCALE: 1 1/2" = 1'-0"

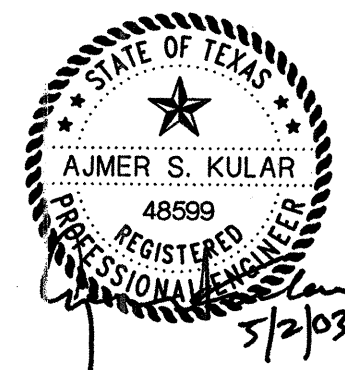
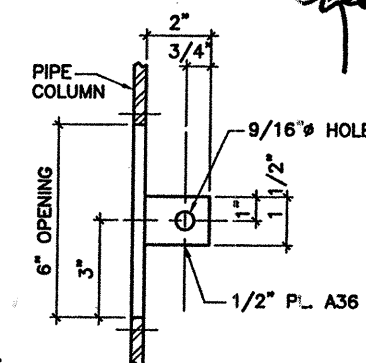
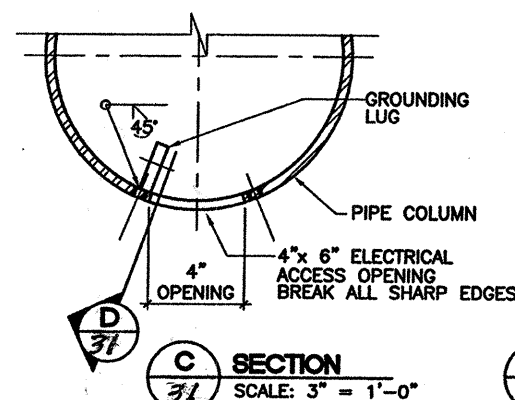
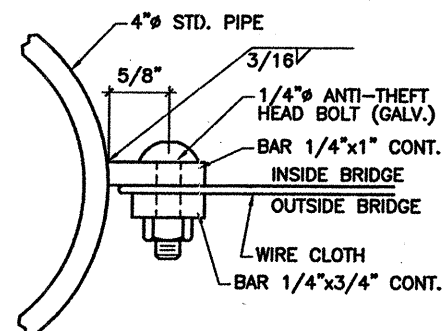
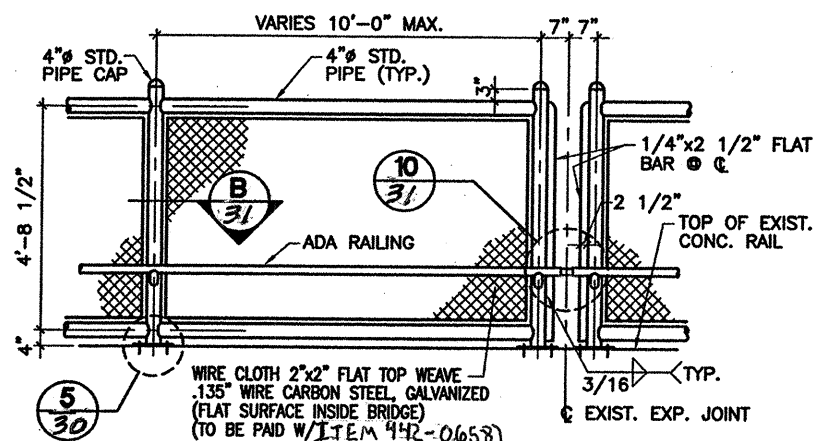
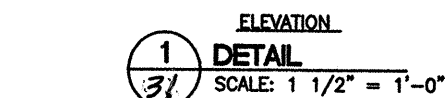
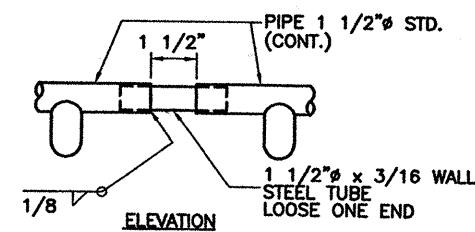
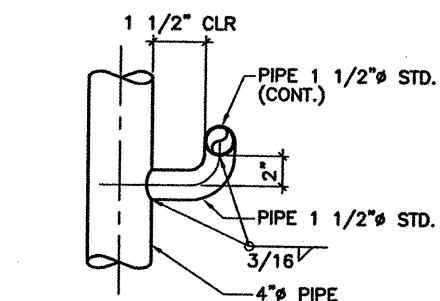
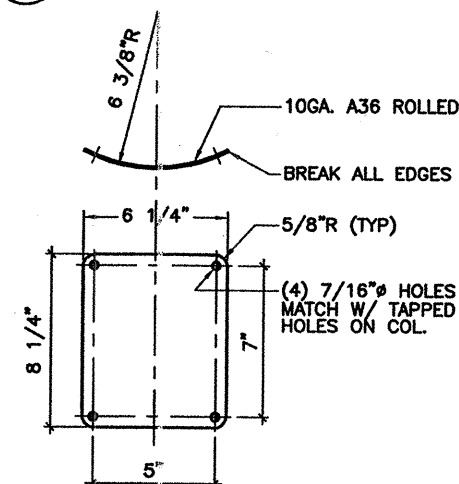
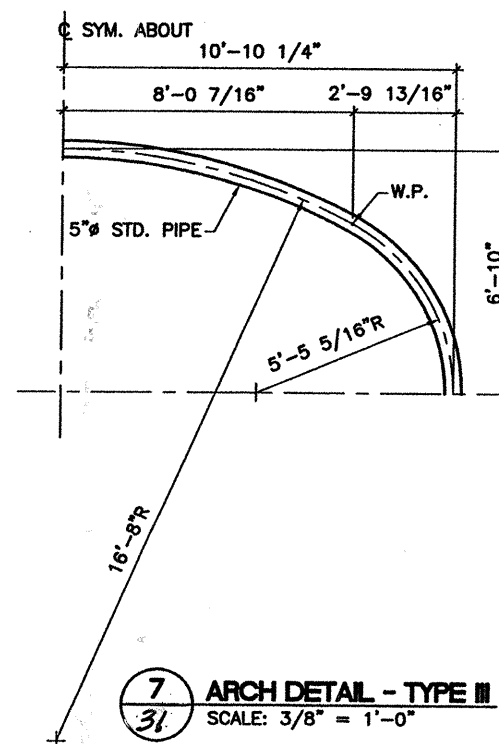
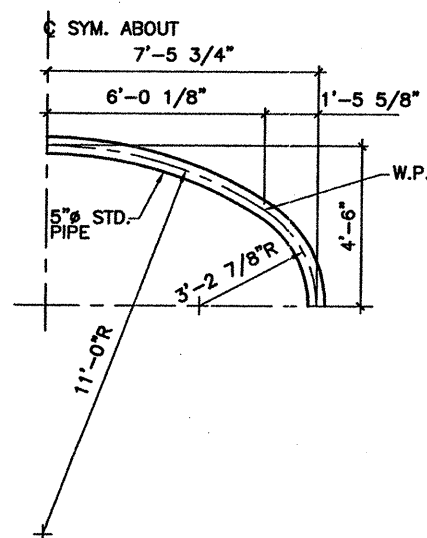
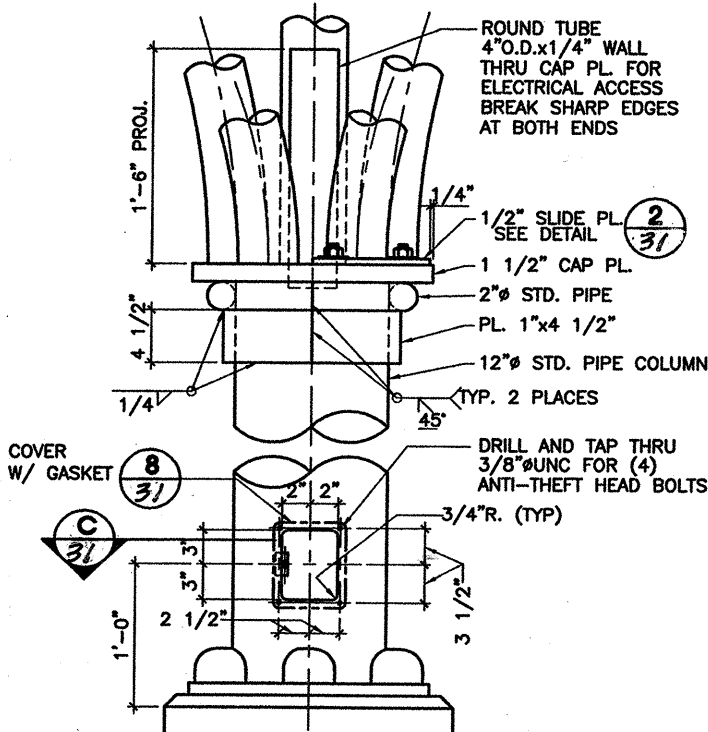
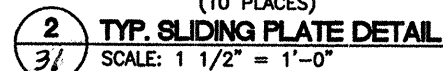
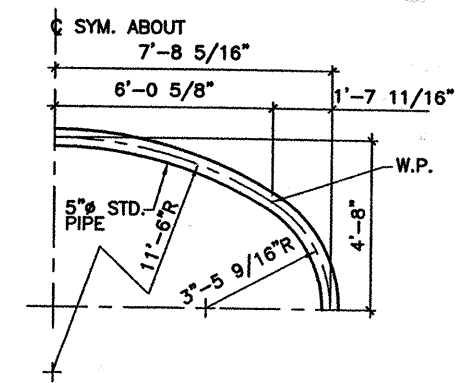
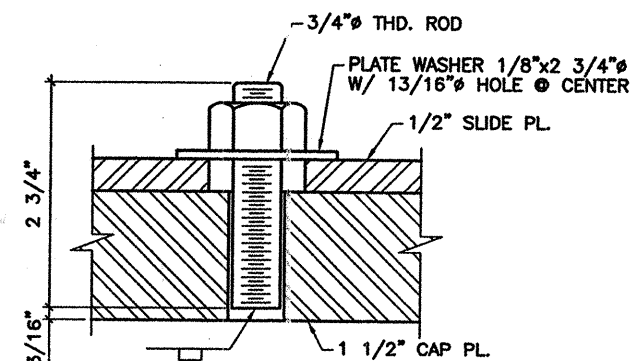
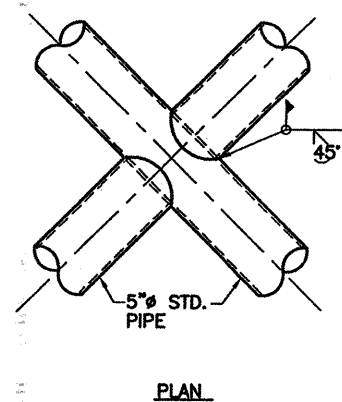
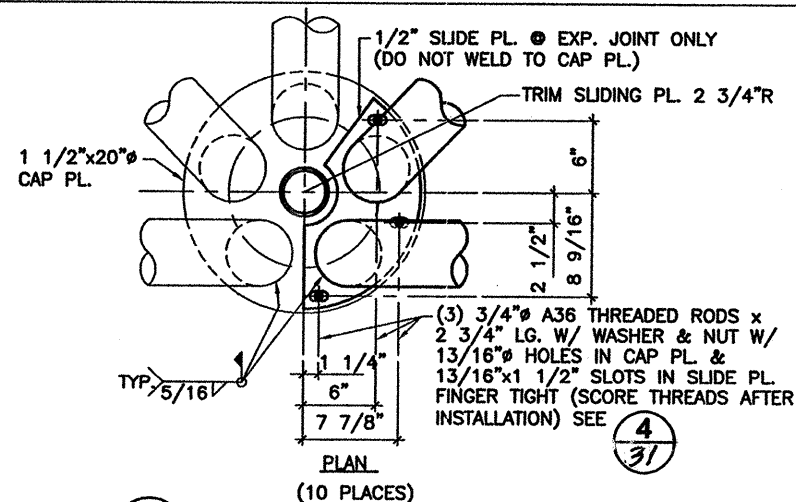
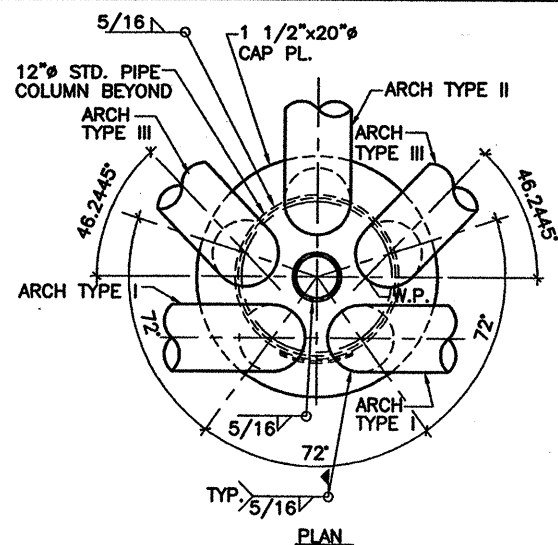


2 DETAIL
30 N.T.S.

GOVIND
CORPUS CHRISTI, TEXAS 78440
TEL: 361 288 1385
FAX: 361 288 0712
P.O. BOX 9084

Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

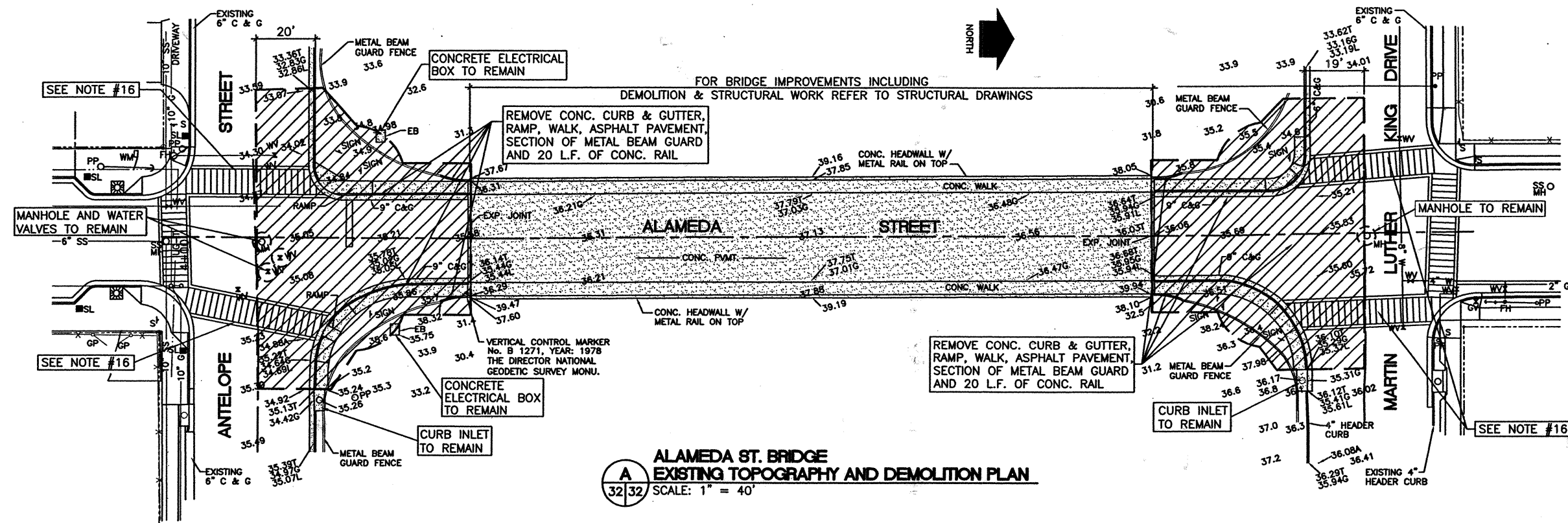
LIVABLE COMMUNITIES INITIATIVE PHASE II ALAMEDA STREET BRIDGE IMPROVEMENTS SECTIONS AND DETAILS			
FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		30
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	1H37



© 2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES INITIATIVE PHASE II ALAMEDA STREET BRIDGE IMPROVEMENTS SECTION AND DETAILS

FED RD DIST NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		31
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	08	199	1137



**A ALAMEDA ST. BRIDGE
EXISTING TOPOGRAPHY AND DEMOLITION PLAN**
SCALE: 1" = 40'

NOTE:

1. ALL TRAFFIC SIGNS WITHIN THE LIMITS OF DEMOLITION SHALL BE REMOVED & REINSTALLED SEE NOTES 13 THRU 15
2. COORDINATE ALL DEMOLITION WORK WITH IMPROVEMENTS SHOWN ON STAKING AND GRADING SHT. 67

NOTE:

CONTRACTOR SHALL SAW-CUT AND PROVIDE A CLEAN SURFACE FOR ATTACHING NEW CONSTRUCTION. WHEN LIMITS OF DEMOLITION CROSS SIDEWALKS, CURB & GUTTER AND ASPHALT PAVEMENT.

LEGEND (EXISTING)

EB	ELECTRICAL BOX
FH	FIRE HYDRANT
G	GAS LINE
GI	GRATE INLET
GM	GAS METER
GP	GUARD POST
GV	GAS VALVE
PP	POWER POLE
LP	LIGHT POLE
GW	GUY WIRE
S	SIGN
SD	STORM DRAINAGE LINE
SS	SANITARY SEWER LINE
MH	MANHOLE
TM	TELEPHONE CABLE MARKER
TB	TRANSFORMER BOX
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
W	WATER LINE
WM	WATER METER BOX
WV	WATER VALVE
51.37	SPOT GRADE ELEVATION
51.26TP	TOP OF PAVEMENT ELEVATIONS
51.27TW	TOP OF WALK ELEVATIONS
50.82T	TOP OF CURB, GUTTER AND
50.34G	LIP ELEVATIONS
50.44L	

LIMITS OF DEMOLITION OR CLEARING & GRUBBING

DEMOLITION NOTES:

1. DEMOLITION CONTRACTOR IS TO COORDINATE ALL EXCAVATION WITH OTHER RELATED WORK, SUCH AS NEW CURBS AND GUTTERS, SIDEWALKS, WHEELCHAIR RAMPS, ASPHALT PAVEMENT REPAIR, ETC., WITHIN THE LIMITS OF NEW CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EXIST. INFRASTRUCTURE ON SITE SHOWN OR NOTED TO BE REMOVED, INCLUDING ABOVE AND UNDERGROUND. REMOVE BELOW-GRADE STRUCTURE TO THREE FEET BELOW NATURAL GRADE OR TO SUCH DEPTH AS MAY BE REQUIRED TO MAINTAIN SUBSURFACE STABILITY OF THE SOIL.
3. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXIST. FACILITIES PRIOR TO CONSTRUCTION. THE LOCATION OF EXIST. UNDERGROUND UTILITIES SHOWN ARE AS PER RECORD DRAWINGS AND MUST BE FIELD VERIFIED.
4. WHERE REQUIRED, CONTRACTOR SHALL DISCONNECT, REMOVE, CAP AND TERMINATE UTILITIES PER REGULATIONS/INSTRUCTIONS OF AUTHORITIES HAVING JURISDICTION. UTILITY LINES MAY BE ABANDONED IN PLACE UNLESS REMOVAL IS DICTATED BY IMPROVEMENTS.
5. CONTRACTOR SHALL BACKFILL ALL VOIDS LEFT BY DEMOLITION AND COMPACT IN A MANNER SUITABLE TO FINAL IMPROVEMENTS.
6. ALL DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.
7. ANY DAMAGE TO EXIST. PAVEMENT, DRAINAGE, PRIVATE UTILITY OR OTHER STRUCTURES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL COMPLY WITH TXDOT'S UNIFORM BARRICADING STANDARDS AND PRACTICES. COPIES OF THIS DOCUMENT ARE AVAILABLE THROUGH TXDOT'S TRAFFIC ENGINEERING DIVISION.

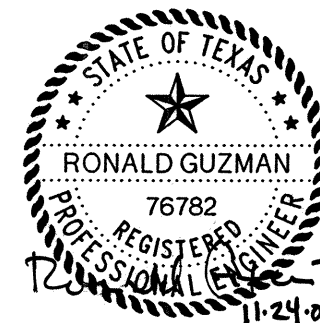
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE PEDESTRIANS AND ALL VEHICULAR TRAFFIC FROM CONSTRUCTION RELATED ACTIVITIES DURING THE COURSE OF THIS PROJECT. A FENCE SHALL BE PROVIDED WHICH COMPLETELY ENCLOSURES THE AREAS WHERE WORK IS IN PROGRESS 24 HOURS A DAY. NO CONSTRUCTION SHALL COMMENCE WITHOUT THE CITY'S APPROVED TRAFFIC CONTROL PLAN IN PLACE.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND/OR SAFETY OF THE WORK, WORKERS, SUBCONTRACTORS, MATERIALS AND/OR EQUIPMENT.
10. CONTRACTOR SHALL TAKE SPECIAL CARE IN NOT TRESPASSING ON OR DAMAGING OF PRIVATE PROPERTY.
11. ALL CUTS THROUGH EXISTING CONCRETE SHALL BE MADE VERTICALLY WITH A SAW UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
12. ALL UTILITY METERS, VALVE BOXES, FIRE HYDRANTS, TRAFFIC SIGNAL BOXES, ELECTRICAL BOXES & UNDERGROUND CONDUITS ENCOUNTERED WITHIN THE LIMITS OF NEW CONSTRUCTION WORK WILL BE ADJUSTED BY CONTRACTOR TO MATCH NEW CONCRETE FINISH GRADES. IN CASE OF ANY DAMAGE TO SUCH EQUIPMENT, CONTRACTOR SHALL REPAIR OR REPLACE AT HIS OWN EXPENSE.
13. ALL EXISTING FREE STANDING TRAFFIC SIGNS WITHIN THE CONSTRUCTION PROJECT AREA WHICH MUST BE TEMPORARILY REMOVED OR ADJUSTED MUST BE DONE SO BY THE PROJECT CONTRACTOR WITH RE-INSTALLATION BEING DONE BY USING CURRENT TXDOT STANDARDS.
14. DURING THE COURSE OF THIS PROJECT, TXDOT MAY FIND IT NECESSARY TO INSTALL SUPPLEMENTAL TRAFFIC SIGNS NOT SPECIFIED HEREIN. IN SUCH CASES, THE CITY SHALL PROVIDE THE CONTRACTOR WITH PROPER POR-LOK SIGN BASES TO BE INSTALLED WITHIN NEW CONCRETE AREA FOR COORDINATED PLACEMENT WITH NEW CONCRETE. THE CITY SHALL PROVIDE AND INSTALL ANY SUCH SIGNS IN SUCH CASES AFTER THE SIGN BASE HAS BEEN INSTALLED BY THE CONTRACTOR.
15. EXISTING TRAFFIC SIGNS THAT ARE DAMAGED DURING REMOVAL OR STORAGE SHALL BE REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
16. REMOVE EXISTING CROSSWALK MARKINGS AS PER ITEM 677 "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS" OR AS APPROVED BY THE ENGINEER.

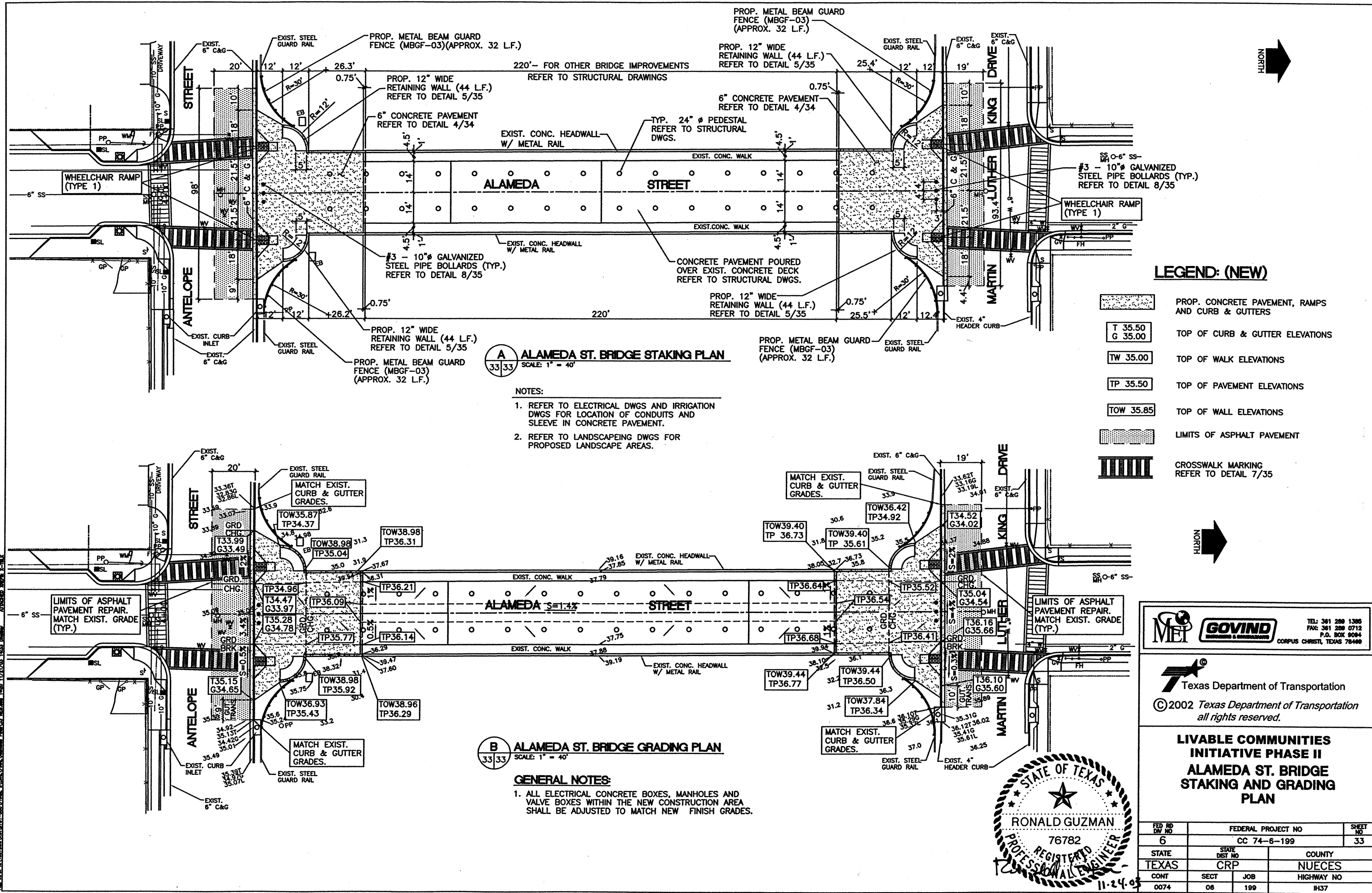


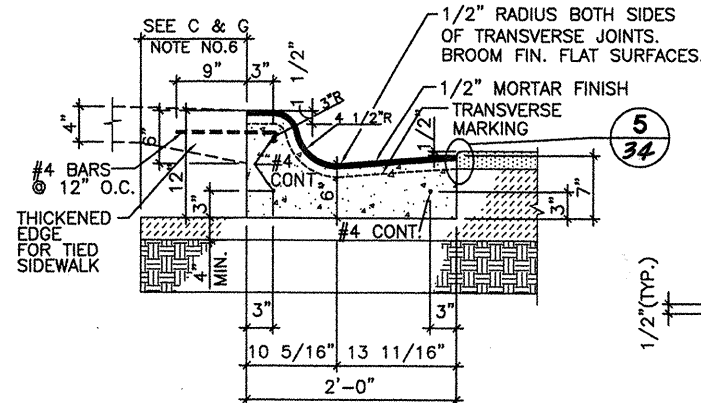
Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA ST. BRIDGE
EXISTING TOPOGRAPHY AND
DEMOLITION PLAN**

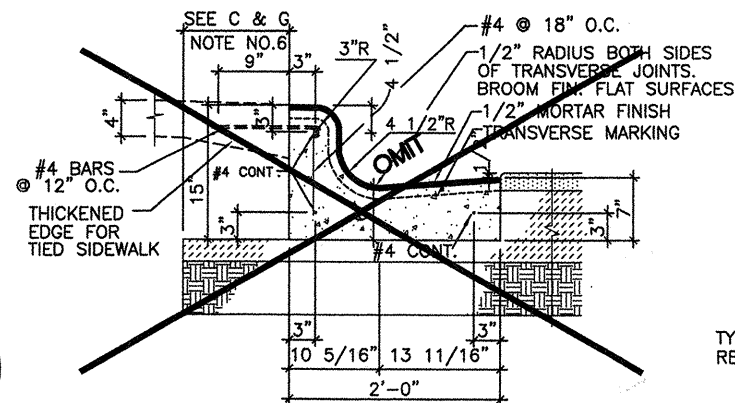


FED RD DIV NO	FEDERAL PROJECT NO	SHEET NO
6	CC 74-6-199	32
STATE	STATE DIST NO	COUNTY
TEXAS	CRP	NUECES
CONT	SECT	JOB
0074	06	199
		1H37

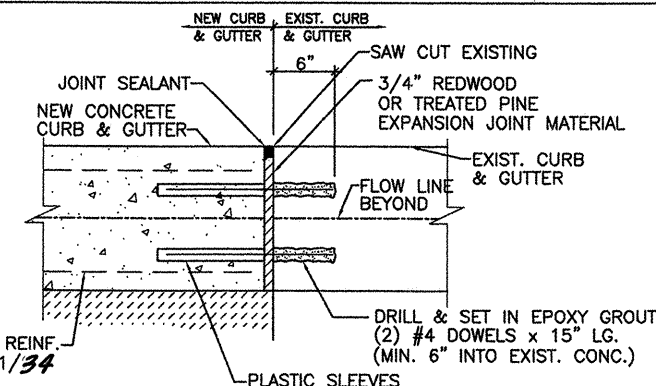




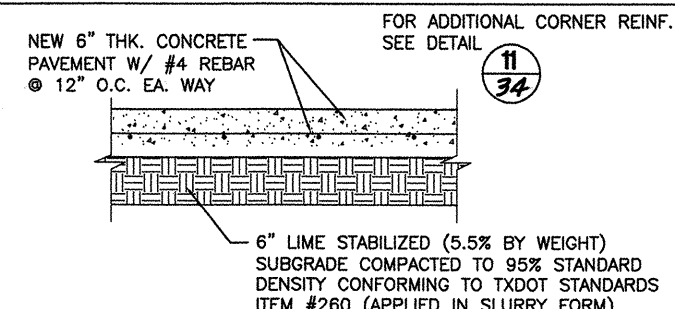
1 TYPICAL 6' CURB AND GUTTER DETAIL
33/34 SCALE: 1 1/2" = 1'-0"



2 SPECIAL 9' CURB AND GUTTER DETAIL
66/68 SCALE: 1 1/2" = 1'-0"



3 CURB AND GUTTER TIE-IN DETAIL
33/34 SCALE: 1 1/2" = 1'-0"



4 TYPICAL CONCRETE PAVEMENT SECTION
33/34 SCALE: 1" = 1'-0"

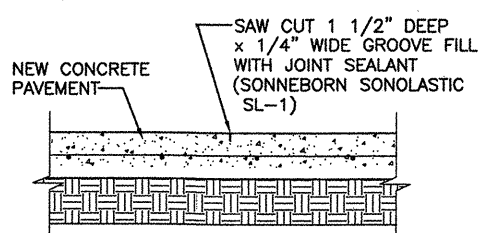
CONCRETE NOTES:

- ALL CONCRETE SHALL HAVE MINIMUM COMPRESSIVE STRENGTHS OF 3000 P.S.I. AT 28 DAYS, UNLESS NOTED OTHERWISE.
- ALL CONCRETE SHALL BE DESIGNED, MIXED, TRANSPORTED AND PLACED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF TXDOT STANDARDS ITEM #421.
- MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 1 1/2" AND FINE AGGREGATE SHALL BE CLEAN WITHOUT ANY CLAY PARTICLES.
- MINIMUM CONTENT OF CEMENT TO BE 5 SACKS PER CUBIC YARD MAXIMUM SLUMP 4".
- ALL CONCRETE SHALL BE AIR ENTRAINED, WITH A MINIMUM AIR CONTENT OF 6% IN ACCORDANCE WITH THE LATEST TXDOT STANDARDS ITEM #437. ANY OTHER ADDITIVES SHALL BE SUBJECT TO PRIOR APPROVAL BY THE ENGINEER.
- REINFORCEMENT: ASTM A 615, GRADE 60.
- LAPS AND SPLICES: MINIMUM 30 BAR DIAMETERS OF LARGER DIAMETER BAR. STAGGER ADJACENT BAR SPLICES MIN. 24".
- REINFORCEMENT SHALL BE SECURELY SUPPORTED TO PREVENT BOTH VERTICAL AND HORIZONTAL MOVEMENT DURING PLACEMENT OF CONCRETE.
- PROVIDE EXPANSION JOINTS AND CONTROL JOINTS FOR CONCRETE SLAB AS CALLED FOR IN THE PLANS.
- FINISHES FOR CONCRETE CURBS AND SIDEWALKS SHALL BE SKID RESISTANT, COARSE TEXTURE.

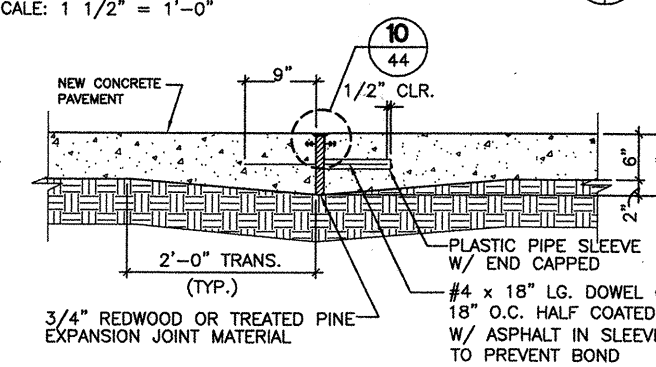
CURB AND GUTTER NOTES

- ALL CONCRETE SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. AT 28 DAYS, UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL BE ASTM A 615, GRADE 60.
- TRANSVERSE GROOVES 1/8" WIDE BY 1" DEEP SHALL BE MADE IN ALL CURB AND GUTTER AT 10' O.C. (MAX.)
- 3/4" ASPHALTIC IMPREGNATED FIBERBOARD EXPANSION JOINTS SHALL BE PROVIDED AT 39'-0" CENTERS (MAX). REINFORCEMENT SHALL CONSIST OF THE EXTENSION OF MAIN REINFORCEMENT 12" ACROSS THE JOINT, THE 12" PORTION FELT WRAPPED OR PROVIDE PLASTIC SLEEVE.
- USE #4 x 15" LG. DOWELS @ 18" O.C. TO JOIN NEW CURB AND GUTTER TO EXISTING CURB AND GUTTER. DOWEL 6" INTO EXISTING CURB AND GUTTER.
- ALL SIDEWALK WHICH ABUTS CURB SHALL BE THICKENED AND DOWELED AS SHOWN.
- SUBGRADE & BASE MATERIAL TO EXTEND 12" PAST BACK OF CURB. BACKFILL BEHIND CURB, USING SELECT FILL COMPACTED TO 90% STD. PROCTOR DENSITY.

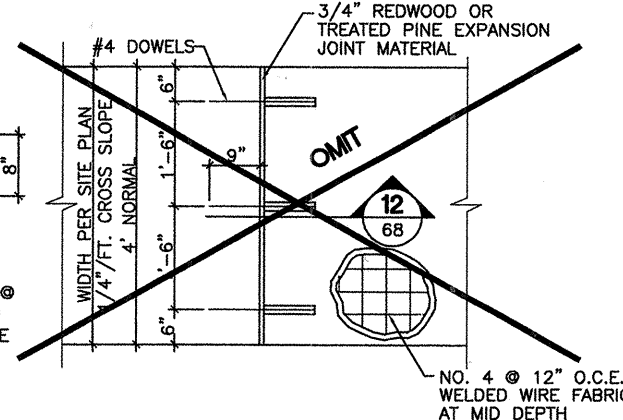
5 DETAIL
34 SCALE: N.T.S.



6 TYP. CONTROL JOINT DETAIL
33/34 SCALE: 1" = 1'-0"



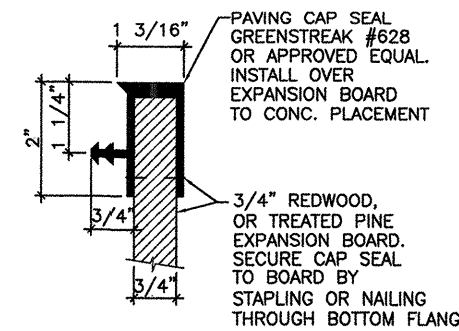
7 TYP. 6' CONCRETE PAVEMENT EXPANSION JOINT DETAIL
33/34 SCALE: 1" = 1'-0"



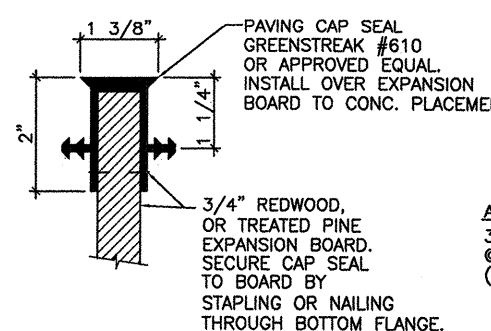
8 TYPICAL SIDEWALK DETAIL
66/68 SCALE: 3/4" = 1'-0"

SIDEWALK NOTES

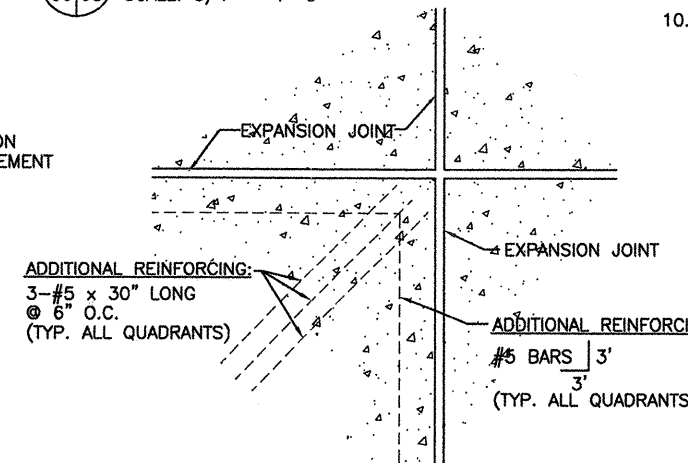
- FOR ALL SIDEWALK TIED TO CURB SEE THICKENING DETAIL, 1/34 ON THIS SHEET.
- ALL CONCRETE SHALL BE 3000 PSI, MIN. COMPRESSIVE STRENGTH @ 28 DAYS. ALL REINFORCING STEEL GRADE 60.
- CONTROL JOINTS OR PLANES OF WEAKNESS (DUMMY JOINTS) 1/2" DEEP SHALL BE TOOLED INTO SIDEWALK AT A MAXIMUM SPACING EQUAL TO THE WIDTH OF THE SIDEWALK.
- DOWEL ALL NEW SIDEWALKS TO EXIST. SIDEWALKS. SEE DETAIL 13/34 ON THIS SHEET.
- MATCH SIDEWALK FINISH WITH EXISTING.



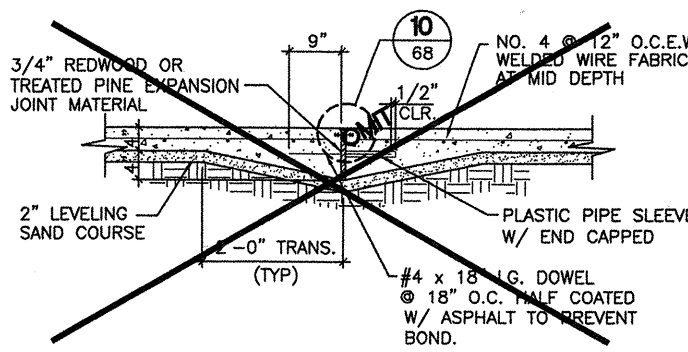
9 DETAIL - CAP SEAL - NEW TO EXISTING CONC.
34/34 NOT TO SCALE



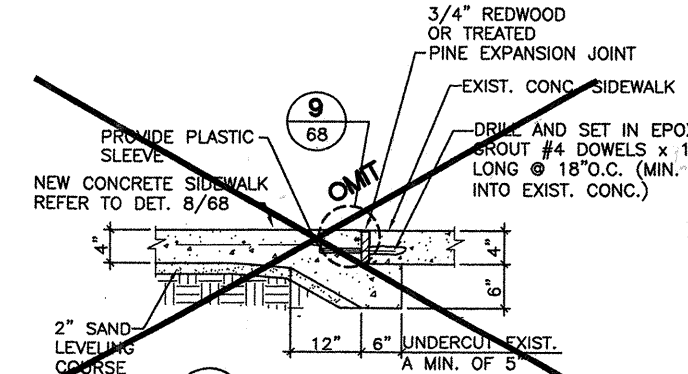
10 DETAIL - CAP SEAL - NEW CONC. TO NEW CONC.
34/34 NOT TO SCALE



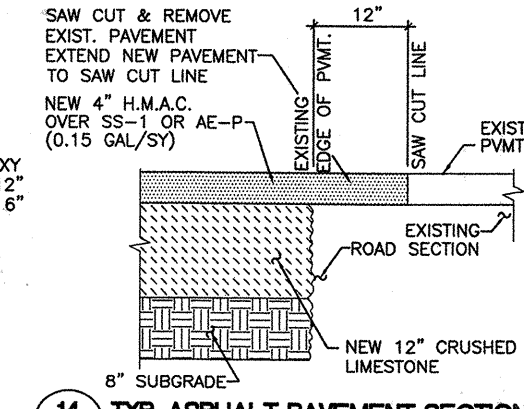
11 TYPICAL REINFORCEMENT DETAIL AT SLAB CORNERS
34/34 SCALE: 1 1/2" = 1'-0"



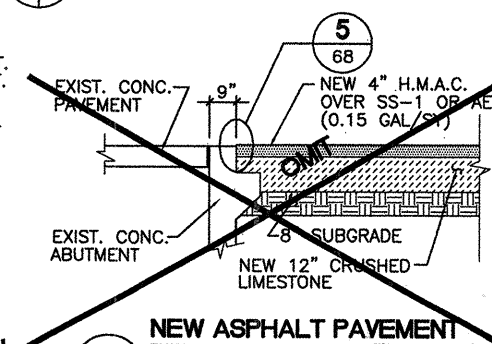
12 TYP. SIDEWALK EXPANSION JOINT DETAIL
68/68 SCALE: 3/4" = 1'-0"



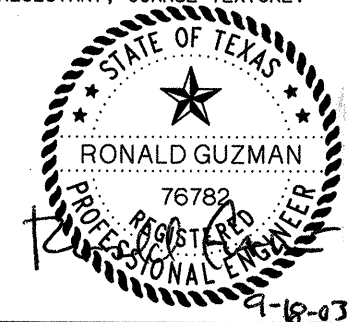
13 SIDEWALK TIE-IN DETAIL
66/68 NOT TO SCALE



14 TYP. ASPHALT PAVEMENT SECTION
33/34 SCALE: 1" = 1'-0"



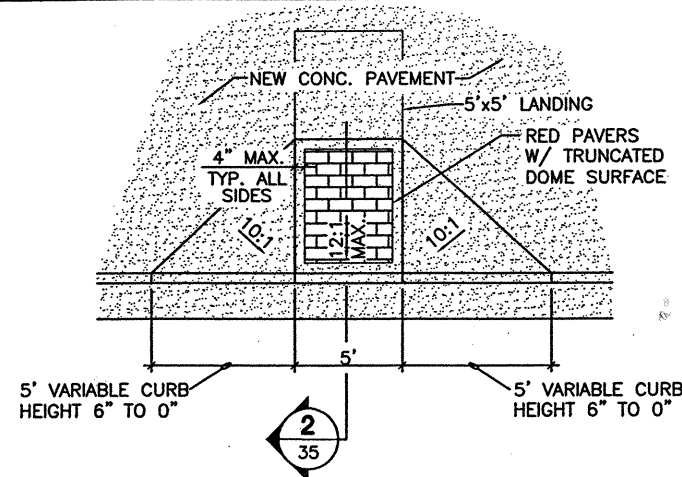
15 NEW ASPHALT PAVEMENT TIE-IN AT BRIDGE ABUTMENT
66/68 SCALE: 1/2" = 1'-0"



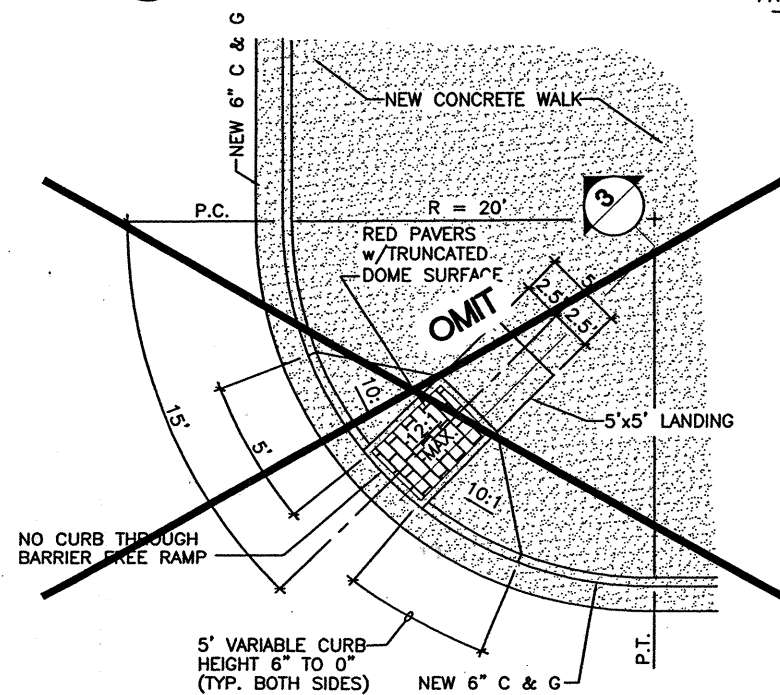
Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES INITIATIVE PHASE II MISCELLANEOUS CONCRETE DETAILS

FED. RD. DIV. NO.	FEDERAL PROJECT NO.	SHEET NO.
6	CC 74-6-199	34
STATE	STATE DIST. NO.	COUNTY
TEXAS	CRP	NUECES
CONT.	SECT.	JOB
0074	06	199
		HIGHWAY NO.
		IH37



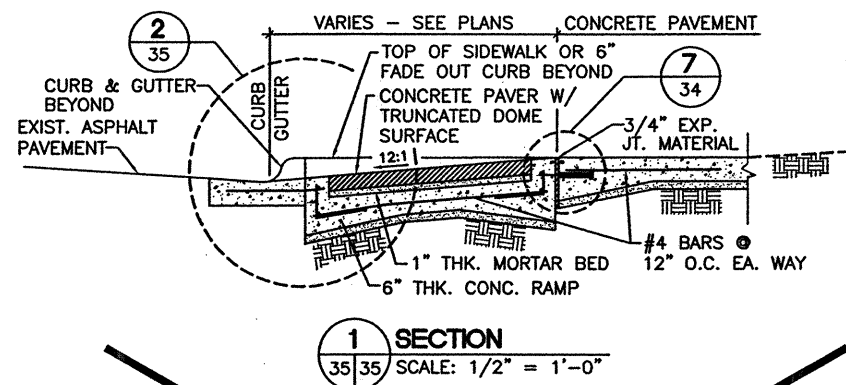
A TYP. WHEELCHAIR RAMP - TYPE 1
SCALE: 1/4" = 1'-0"



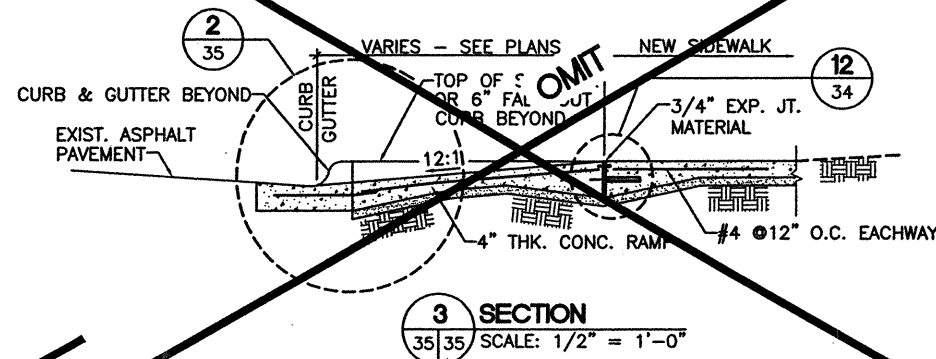
B TYP. WHEELCHAIR RAMP - TYPE 8
SCALE: 1/4" = 1'-0"

NOTES:

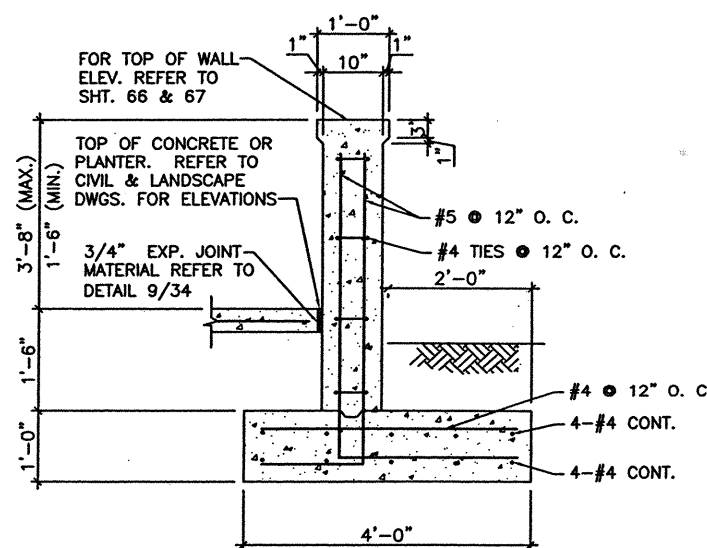
1. SLOPE SUMMARY:
RAMP: LONGITUDINAL MAX. 1" PER FOOT
CROSS SLOPE (IF APPLICABLE) 1/8" TO 1/4" PER FOOT
ADJOINING AREAS: LONGITUDINAL MAX. 1:20
CROSS SLOPE (IF APPLICABLE) 1/8" TO 1/4" PER FOOT
CURBS ARE NOT RESTRICTED, IF NOT PEDESTRIAN PATH.
2. THE DESIGNS SHOWN ARE FOR 6" CURB AND GUTTER ALONG STREETS AND INTERSECTIONS AND ARE NOT APPLICABLE FOR DRIVEWAYS.
3. LOCATION OF RAMP MAY BE SHIFTED TO MISS OBSTRUCTIONS. PROVIDE A 3' MIN. CLEAR PATHWAY FOR ACCESSIBILITY CONSIDERING ALL POSSIBLE OBSTACLES IN SIDEWALK.
4. CURB RAMP RED PAVERS W/ TRUNCATED DOME SURFACE AND TEXTURES AS PER TXDOT STANDARDS PED-02.
5. REINFORCING SHALL BE #4 BARS AT 12" O.C.E.W. AND CONCRETE SHALL BE 3000 PSI. RAMP SHALL TYPICALLY BE 4" THICK WITH EXPANSION JOINTS SHALL TYPICALLY BE USED AT MATCH-LINE WITH ADJOINING AREAS.
6. LAYBACK CURBS AND GUTTER MAY BE CONSTRUCTED MONOLITHICALLY WITH WHEELCHAIR RAMPS. #4 x 12" SMOOTH DOWELS AT 12" CENTERS SHALL BE USED IF NOT PLACED MONOLITHICALLY.



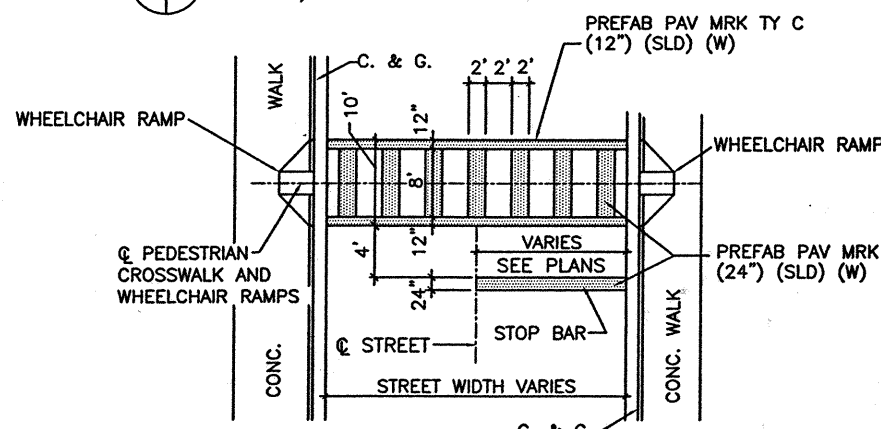
1 SECTION
SCALE: 1/2" = 1'-0"



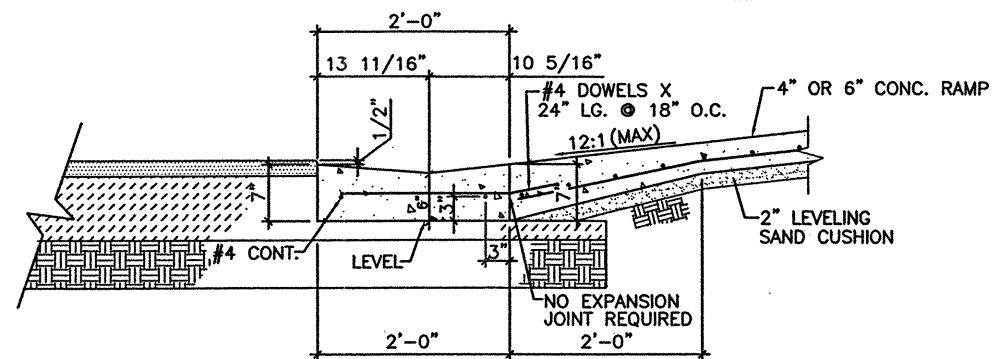
2 SECTION
SCALE: 1/2" = 1'-0"



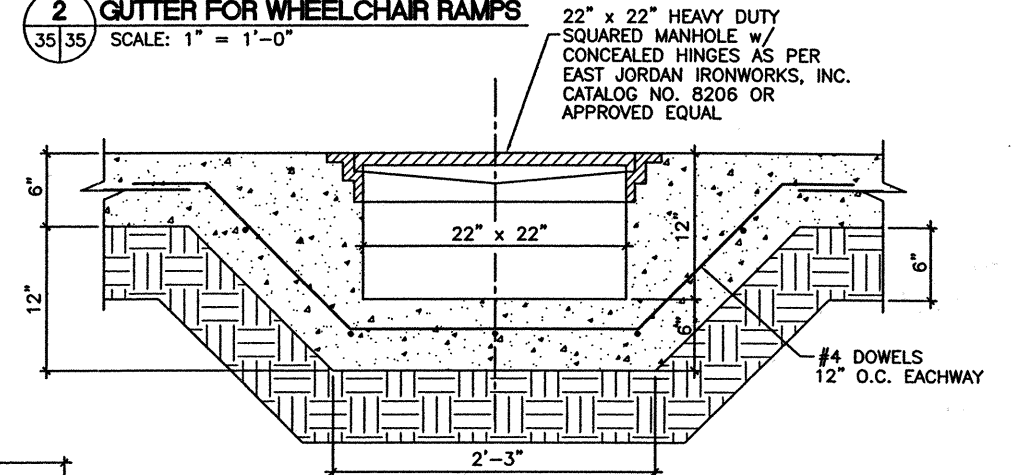
3 TYPICAL RETAINING WALL SECTION
SCALE: 1/2" = 1'-0"



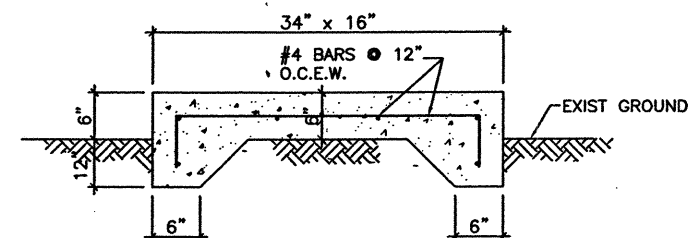
4 CROSSWALK MARKING DETAIL
SCALE: N.T.S.



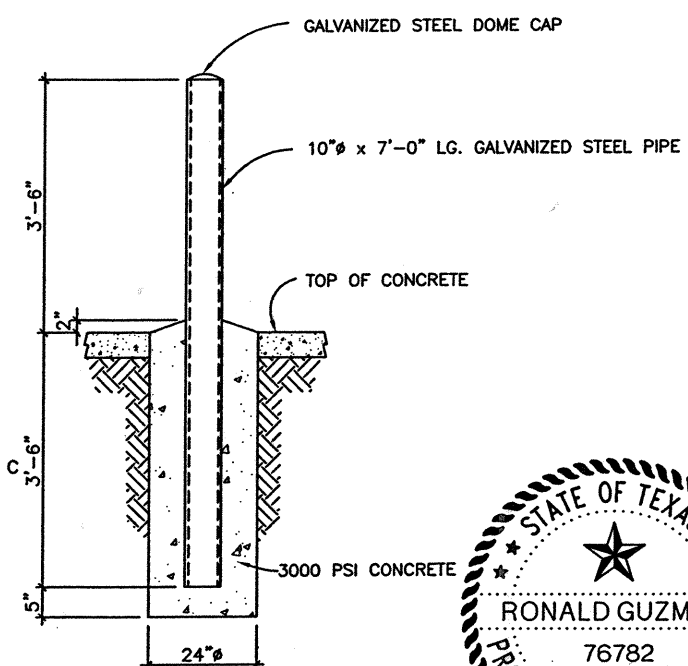
5 NEW. LAYBACK CURB AND GUTTER FOR WHEELCHAIR RAMPS
SCALE: 1" = 1'-0"



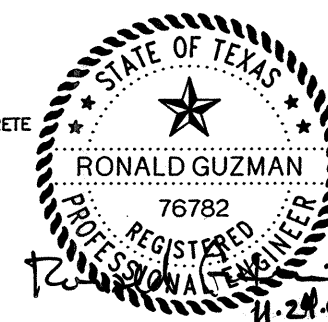
6 JUNCTION BOX DETAIL
SCALE: 1/2" = 1'-0"



7 ELECTRICAL ENCLOSURE CONCRETE PAD
SCALE: 1" = 1'-0"



8 PIPE BOLLARD DETAIL
SCALE: N.T.S.



GOVIND
ENGINEERING & CONSULTANTS
TEL: 361 286 1386
FAX: 361 286 0712
P.O. BOX 9084
CORPUS CHRISTI, TEXAS 78408

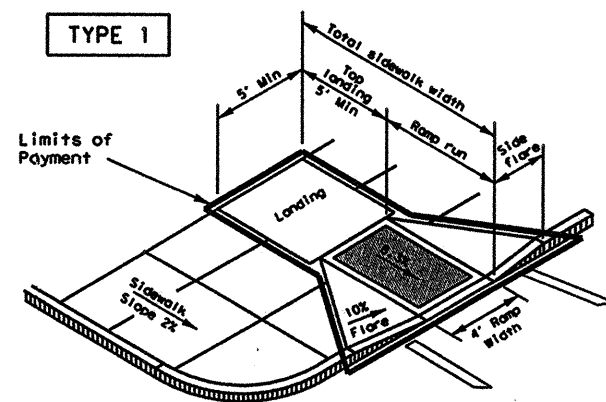
Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES INITIATIVE PHASE II
MISCELLANEOUS CONCRETE DETAILS
SCALE: AS SHOWN

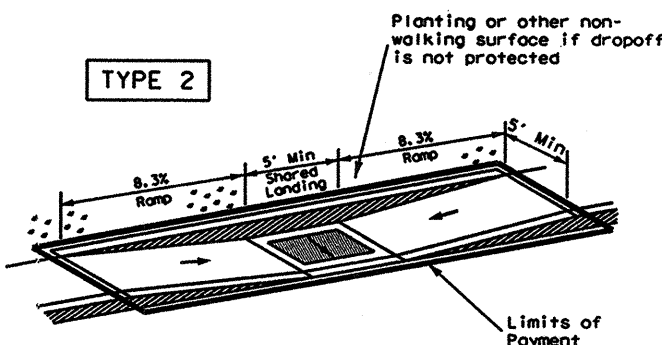
FED RD DIST NO	FEDERAL PROJECT NO	SHEET NO
6	CC 74-6-199	35
STATE	STATE DIST NO	COUNTY
TEXAS	CRP	NUECES
CONT	SECT	JOB
0074	06	199
		HIGHWAY NO
		IH37

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

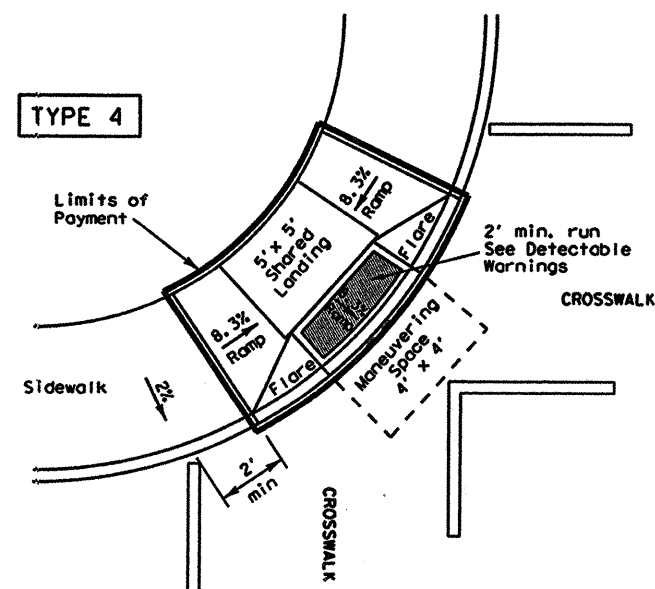
LEVELS DISPLAYED
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



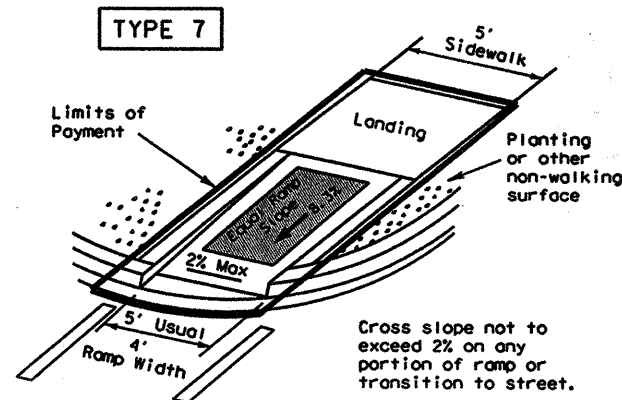
PERPENDICULAR CURB RAMP



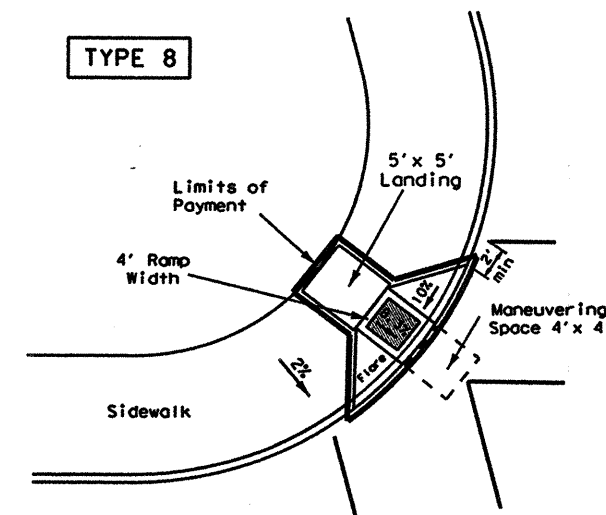
PARALLEL CURB RAMP



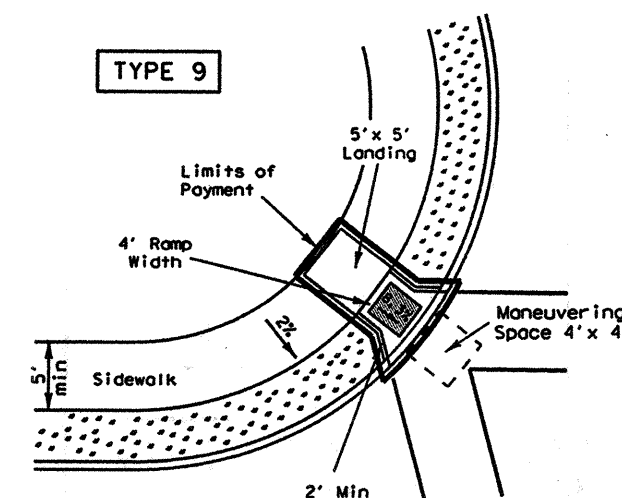
DIAGONAL COMBINATION CURB RAMP
Perpendicular to the Tangent of the Curb
Radius and Contained in Crosswalk



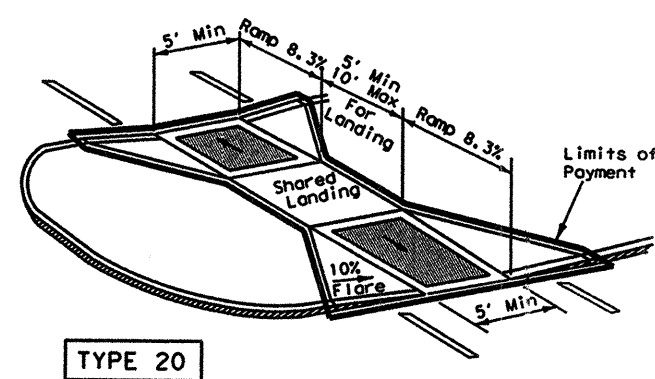
DIRECTIONAL RAMP WITHIN RADIUS



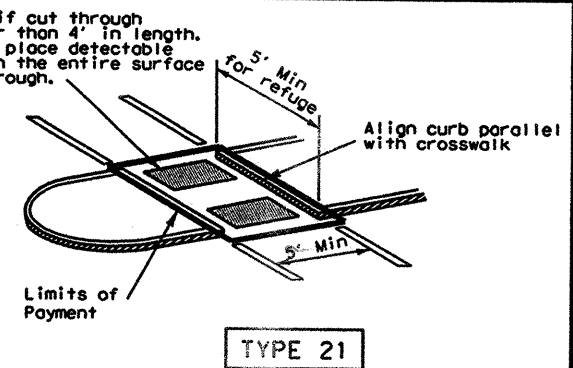
DIAGONAL CURB RAMP (FLARED SIDES)



DIAGONAL CURB RAMP (RETURNED CURB)

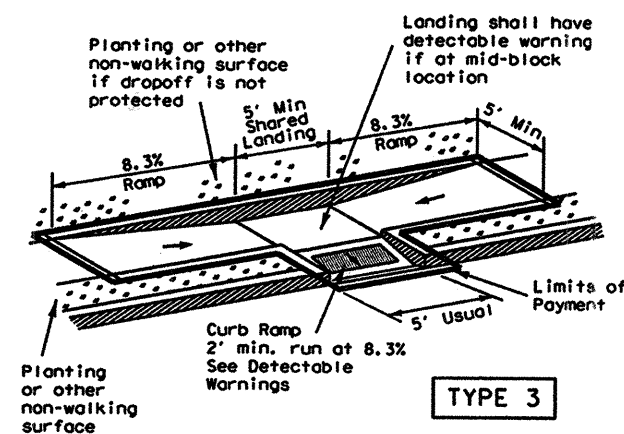


TYPE 20

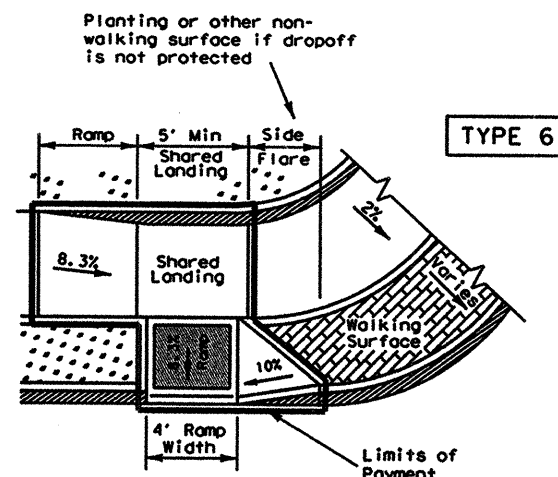


TYPE 21

CURB RAMPS AT MEDIAN ISLANDS

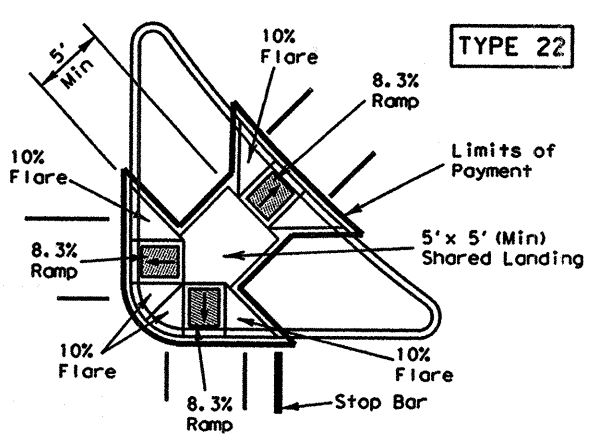


TYPE 3



TYPE 6

COMBINATION CURB RAMPS



TYPE 22

COMBINATION ISLAND RAMPS

General Notes

All slopes are maximum allowable. The least possible slope that will still drain properly should be used. Ramp length or grade of approach sidewalks may be adjusted as directed by the Engineer.

The minimum sidewalk width is 5'. Where a 5' sidewalk can not be provided due to site constraints, a minimum 3' sidewalk with 5' x 5' passing areas at intervals not to exceed 200 ft is required.

Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.

Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.

Maximum allowable cross slope on sidewalk and ramp surfaces is 2%.

Curb ramps with returned curbs may be used only where pedestrians would not normally walk across the ramp. Otherwise, flared sides shall be provided.

All concrete surfaces shall receive a light broom finish unless noted otherwise in the plans.

Ramp textures must consist of truncated domed surfaces. Textures are required to be detectable underfoot. Surfaces that would allow water to accumulate are prohibited.

Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) prepared and administered by the Texas Department of Licensing and Regulation (TDLR).

Raised medians separate opposing directions of traffic and provide a refuge area for pedestrians unable to cross the entire roadway in the allotted signal phase. To serve as a refuge area, the median should be a minimum of 5' wide. Medians should be designed to provide accessible passage over or through them.

Small channelization islands, which can not provide a minimum 5' x 5' landing at the top of ramps, shall be cut through level with the surface of the street.

Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, ramps shall be aligned with theoretical crosswalks, or as directed by the Engineer.

Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Handrails are not required on curb ramps. Curb ramps shall be provided wherever an accessible route crosses (penetrates) a curb.

Shaded areas indicate locations of detectable warnings. (Color / light reflective value and texture contrast)

Curb ramps and landings shall be constructed and paid for in accordance with Item, "Curb ramp and Landing". Street curb transitions and curb bevels will be paid for in accordance with Item, "Concrete Curb, Gutter and Combined Curb and Gutter".

Texas Department of Transportation
Design Division (Roadway)

PEDESTRIAN FACILITIES CURB RAMPS

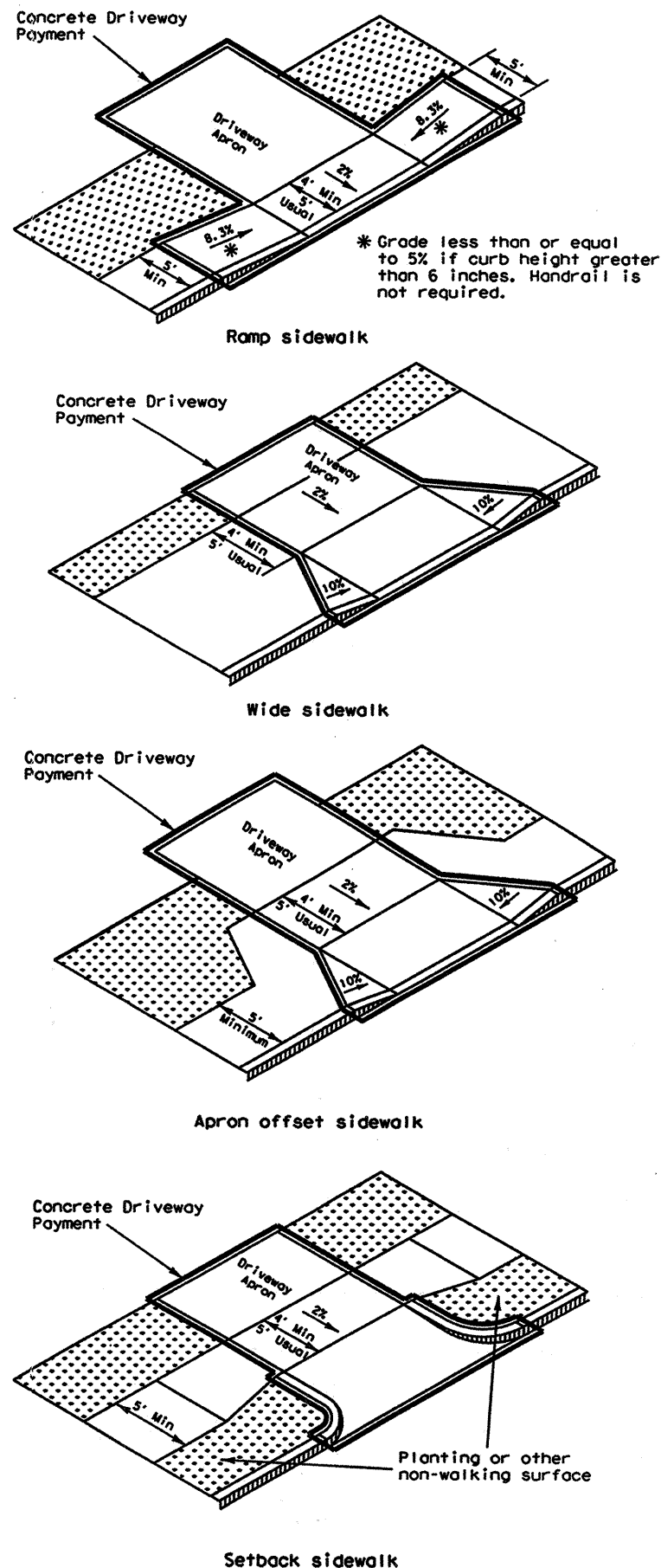
PED-02

SHEET 1 OF 3

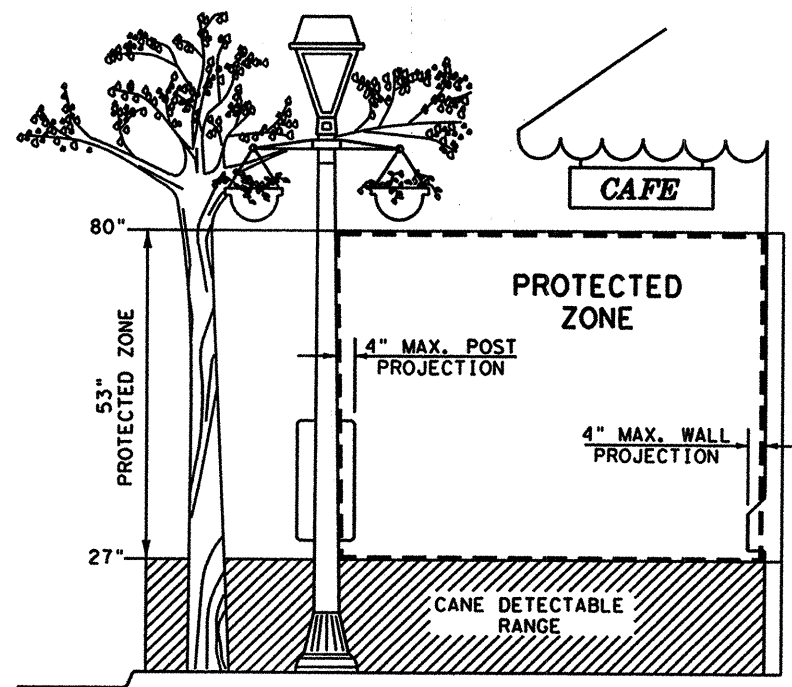
FILE#	ped02.dgn	DWG MAM	CHK MAM	DRG BGD	CHK
DATE	March 2002	DIST	FED REG	FEDERAL AID PROJECT	SHEET
REVISIONS	CRP	6	CC 74-6-199	36	
COUNTY	NUECES	CONTROL	SECT	JOB	HIGHWAY

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

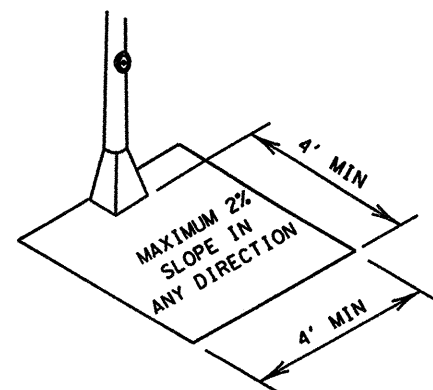
LEVELS DISPLAYED
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



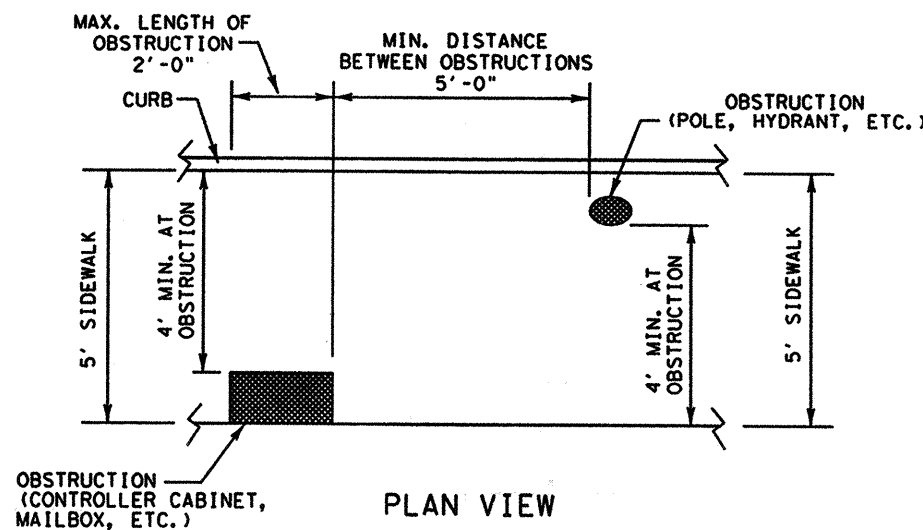
SIDEWALK TREATMENT AT DRIVEWAYS



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



CLEAR GROUND SPACE AT PEDESTRIAN PUSH BUTTON



PLAN VIEW
PLACEMENT OF STREET FIXTURES
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

General Notes

All slopes are maximum allowable. The least possible slope that will still drain properly should be used.

Traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items shall be placed so not to obstruct the accessible route.

Usual sidewalk cross slope equals 1.5%. The maximum allowable sidewalk cross slope equals 2%.

Street grades and cross slopes shall be as shown elsewhere in the plans.

Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Changes in level greater than 1/4 inch are not permitted.

Any part of the accessible route with a slope greater than 1:20 (5%) shall be considered a ramp. If a ramp has a rise greater than 6 inches or a horizontal projection greater than 72 inches, then it shall have handrails on both sides, with the following exceptions:

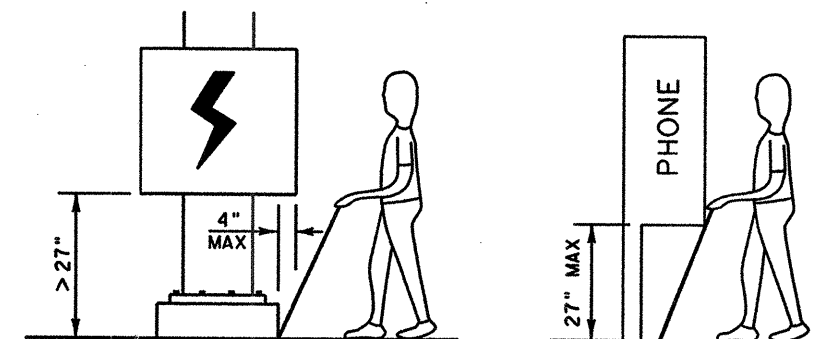
At ramp sidewalks shown at far left.

Handrails are not required on curb ramps. Curb ramps shall be provided wherever an accessible route crosses (penetrates) a curb.

The least possible grade should be used to maximize accessibility. Where structurally impractical to achieve TAS compliance, the running slope of sidewalks and crosswalks, within the public right of way, may follow the grade of the parallel roadway without invoking Texas Accessibility Standards (TAS) variances for landings or handrails. Where a continuous grade greater than 5% must be provided, handrails may be desirable on one or both sides of the sidewalk to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions.

Parabolic crowns may require adjustment in crosswalk areas to limit the crosswalk grade to 5%.

Driveways and turnouts shall be constructed and paid for in accordance with Item, "Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".



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

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

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation
Design Division (Roadway)

PEDESTRIAN FACILITIES SIDEWALKS

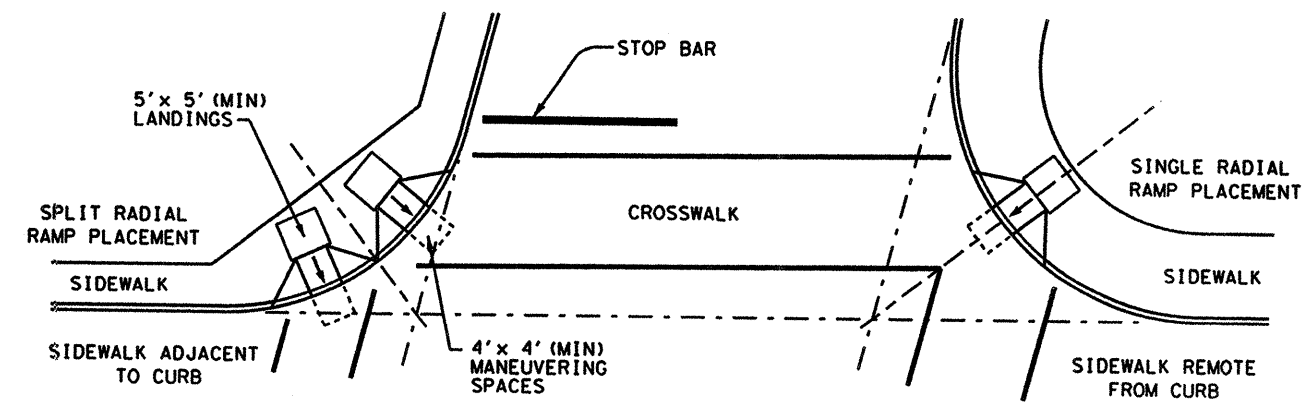
PED-02

SHEET 2 OF 3

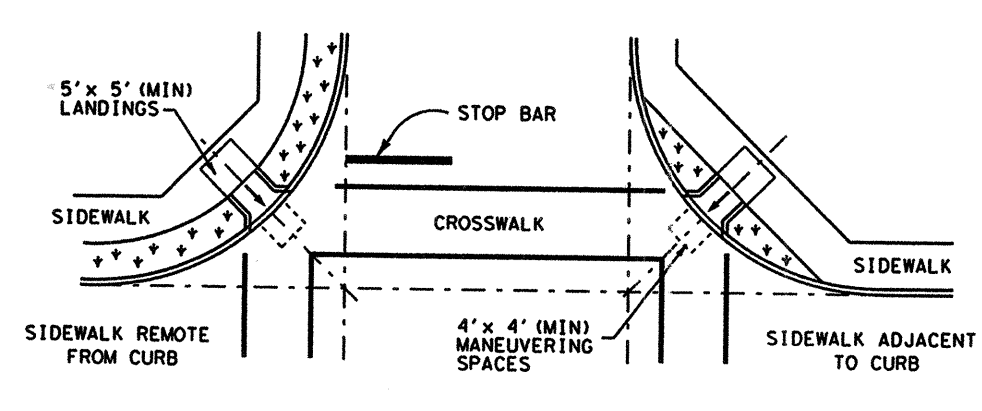
FILE: pe002.dgn	DW: MAM	CK: MAM	DW: BGD	CK:
© TxDOT March 2002	DIST: 6	FED: 6	FEDERAL AID PROJECT: 37	SHEET: 37
REVISIONS	CRP	6	CC74-6-199	37
	COUNTY	CONTROL	SECT	JOB
	NUECES	0074	06	199/14/37

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

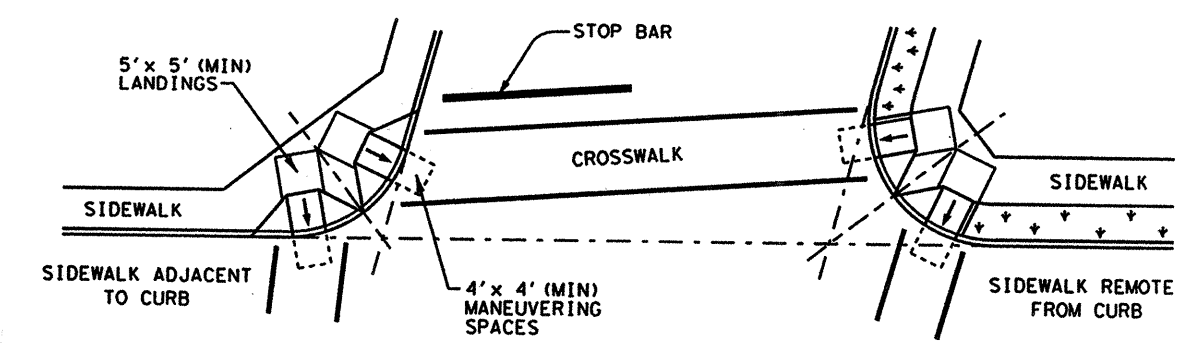
LEVELS DISPLAYED
1



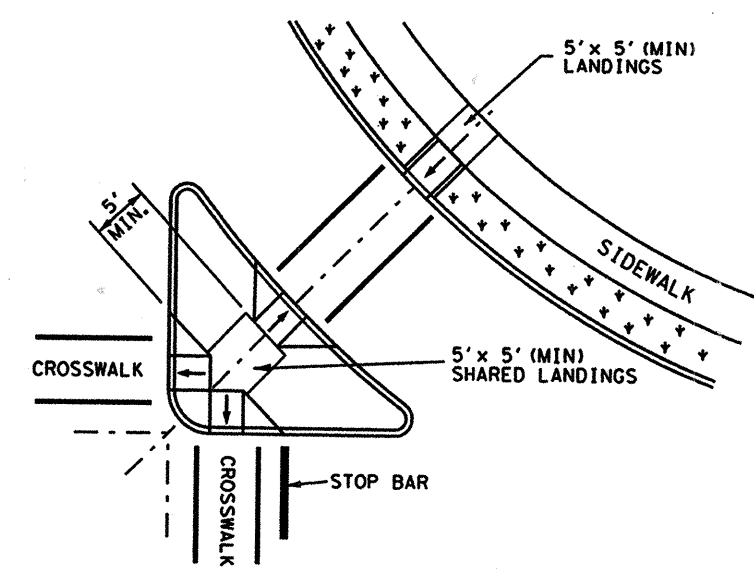
SKewed INTERSECTION WITH "LARGE" RADIUS



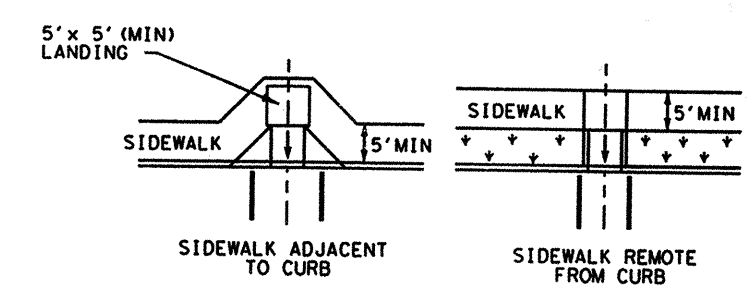
NORMAL INTERSECTION WITH "LARGE" RADIUS



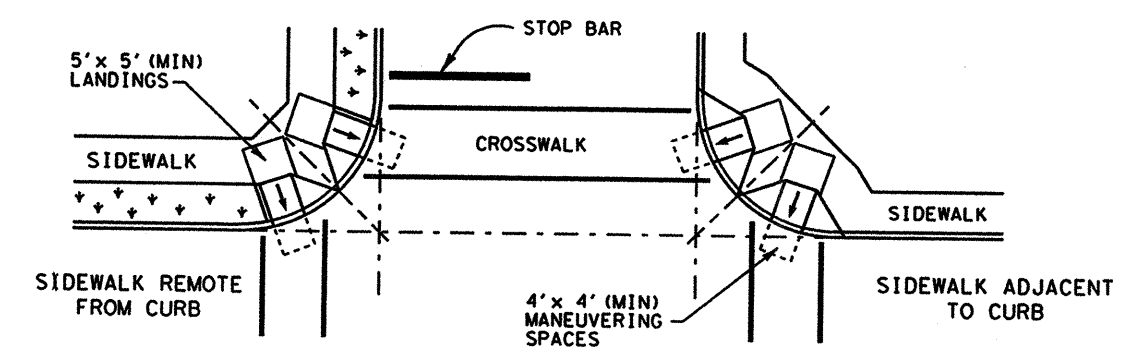
SKewed INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND

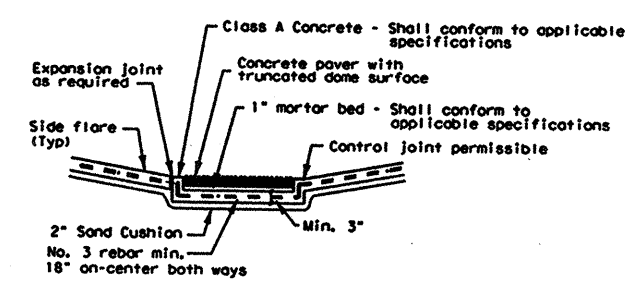


MID-BLOCK PLACEMENT
PERPENDICULAR RAMPs

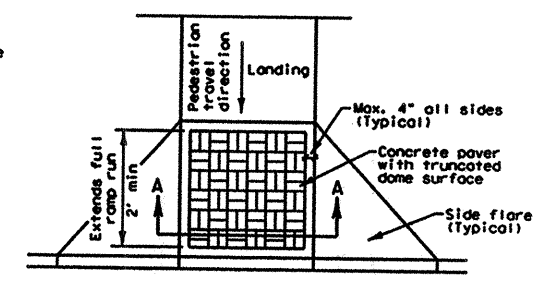


NORMAL INTERSECTION WITH "SMALL" RADIUS

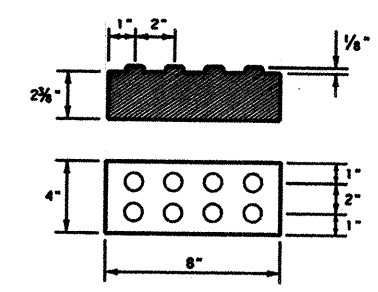
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 3 FOR DETAILS AND DIMENSIONS



Section A-A



TYPE A
Truncated Dome Pattern Curb Ramp
DETECTABLE WARNINGS



Concrete paver with
truncated dome surface

General Notes

Concrete paver units shall meet all requirements of ASTM C-936, C-33, and shall be laid in a two by two unit basket weave pattern, unless shown otherwise in the plans.

Domes shall be aligned in the direction of pedestrian travel.

Concrete paver units shall have a truncated dome top surface for detectable warning to pedestrians.

Concrete paver unit color for the ramp shall be a contrasting color that provides a light reflective value that significantly contrasts with the adjacent surfaces. The color of the concrete paver units shall be shown elsewhere in the plans. (Adjacent surfaces include side flares).

Concrete paver units shall be saw cut only and any cut unit shall not be less than 25 percent of a full unit.

Texas Department of Transportation
Design Division (Roadway)

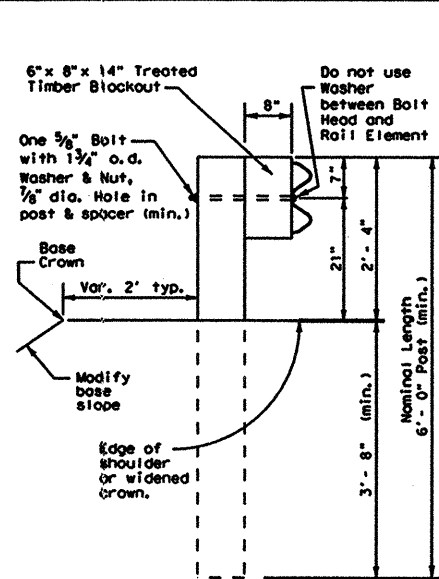
PEDESTRIAN FACILITIES
INTERSECTION LAYOUTS
AND
DETECTABLE WARNINGS
PED-02

SHEET 3 OF 3

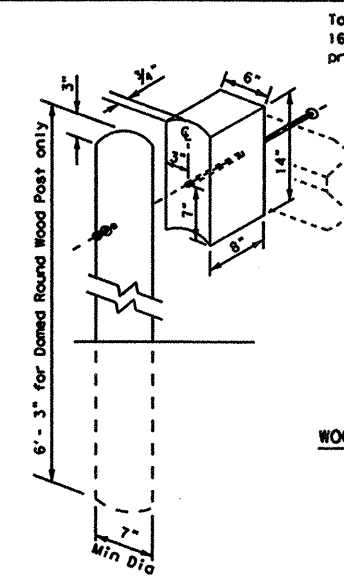
FILE: ped02.dgn	DR: MAM	CR: MAM	DR: BGD	CR:
© TxDOT March 2002	DIST: 6	FED REG: CC 74-6-199	FEDERAL AID PROJECT: 38	SHEET: 38
REVISIONS:	CRP: 6	CC 74-6-199	38	
COUNTY:	CONTROL:	SECT:	JOB:	HIGHWAY:
NOICES 0074061991H37				

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

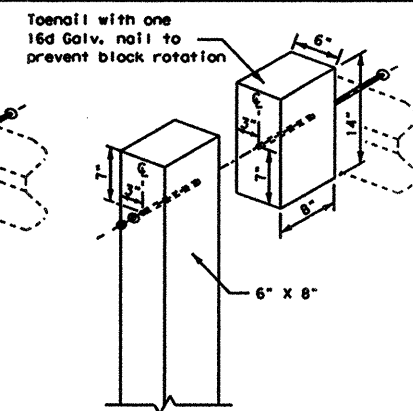
LEVELS DISPLAYED
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



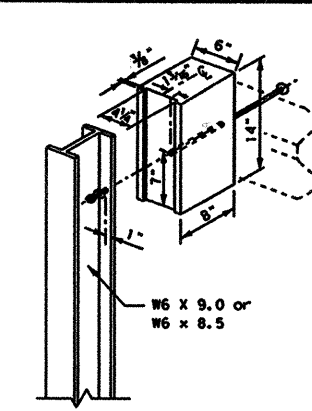
TYPICAL POST



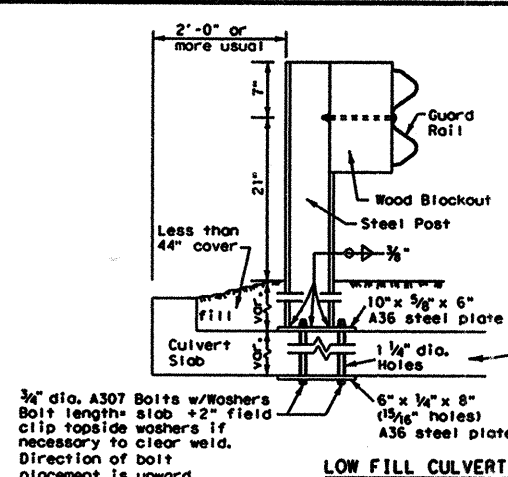
WOOD BLOCKOUT TO ROUND WOOD POST DETAIL



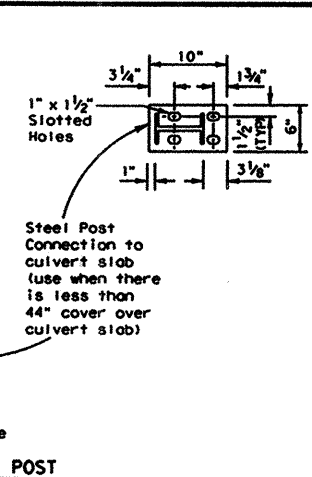
WOOD BLOCKOUT TO RECTANGULAR WOOD POST DETAIL



WOOD BLOCKOUT TO STEEL POST DETAIL

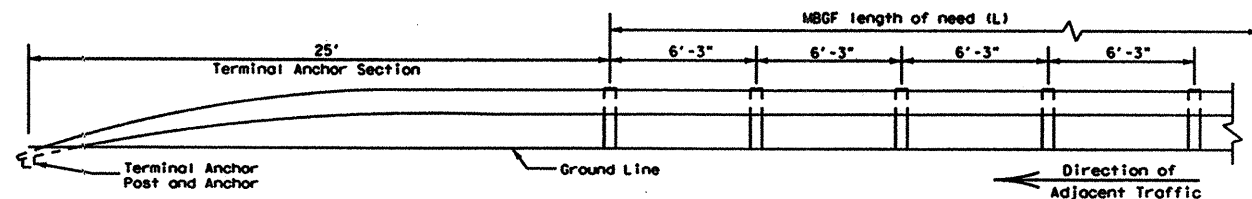


LOW FILL CULVERT POST MOUNTING OPTION



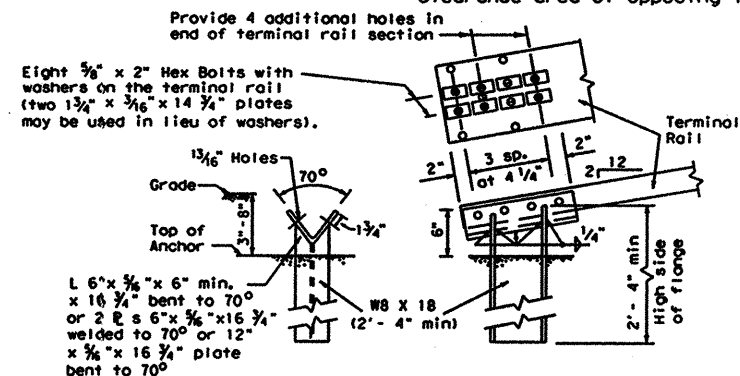
GENERAL NOTES

1. The exact position of guard fence shall be as shown elsewhere on the plans or as directed by the Engineer. Guard fence shall be transitioned to a smooth connection with other guard fence or structure railing as shown elsewhere on plans.
2. Rail element shall meet all requirements of AASHTO M-180 except as modified on the plans. The terminal connectors shall be of the same material, but shall not be less than 10 gauge. Contractor shall verify that the locations of bolt holes match those in the Terminal Connector prior to ordering of materials.
3. Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be blocked out so that the face of curb is located directly below or behind the face of the blockout. Rail placed over curbs shall be installed so that the post bolt is located approximately 21-inches above the gutter pan or roadway surface.
4. Unless otherwise shown in the plans, MBGF shall be placed with the face of rail directly above the shoulder edge (or curbside) except for upstream end treatments.
5. At the option of the Contractor, the rail elements for the guard fence may be furnished in either 12 1/2 or 25 foot nominal lengths with post bolt slots for connection to posts.
6. The terminal anchor post shall be set in Class "A" concrete in (unless otherwise shown on plans) in accordance with item, "Portland Cement Concrete". Concrete shall be subsidiary to the bid item requiring construction of the terminal rail section and anchorage system.
7. An anchor other than to a terminal anchor post shall consist of a connection similar to the rail splice or similar to the terminal connector.
8. Galvanized washers used with the eight 3/8" splice bolts and nuts that are provided for terminal connectors and/or terminal anchor posts shall be 1 3/4" x 3 1/8", or 1" I.D. and 2" O.D. x 0.134" (ANSI B27.2) narrow Type A plain washers.
9. Special fabrication will be required at installations having a curvature of less than 150' radius.
10. Button head post bolts (A307) shall be of sufficient length to extend through the full thickness of the nut and no more than 1/4" beyond it. Button head splice bolts (A307) are 3/8" x 1 1/4" with a 3/8" double recessed nut. Fittings (bolts, nuts, and washers) shall be in accordance with item, Metal for Structures". Fittings shall be subsidiary.
11. Crown will be widened to accommodate guard fence.
12. If guardrail is placed on a side slope away from the pavement edge, then the slope rate between the edge of the pavement and the face of the barrier will be 1V:10H or flatter.
13. Posts shall not be set full depth in concrete.
14. Where solid rock is encountered or where shown on the plans, the diameter of the holes shall be approximately 12 inches, the backfilling shall be with a cohesionless material, and embedment depth shall be 1'-6" or more as directed by the Engineer.
15. Unless otherwise directed by the Engineer, a composite material post and/or blockout from the Department approved list of suppliers may be substituted for a post and/or blockout of similar dimensions. The list of approved suppliers of posts and blockouts will be maintained by the Construction Division, TxDOT.

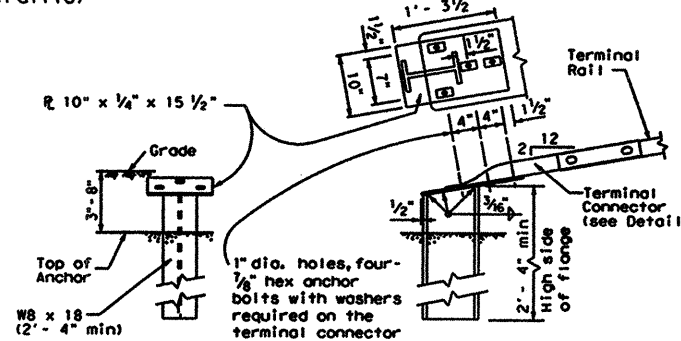


ELEVATION FOR TERMINAL ANCHOR SECTION

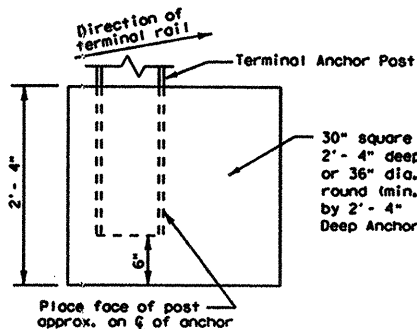
(Terminal anchor sections are only for downstream guardrail end anchorage usage outside the horizontal clearance area of opposing traffic)



TERMINAL ANCHOR POST OPTIONS

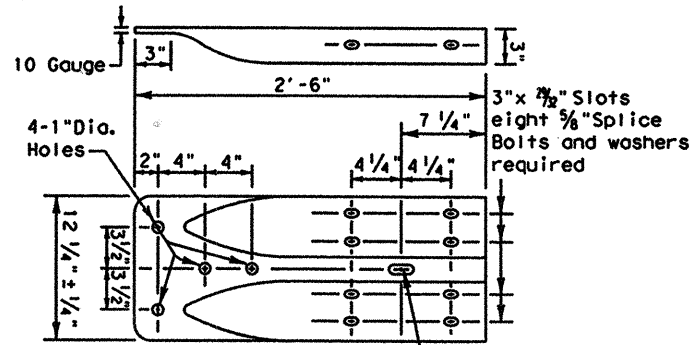
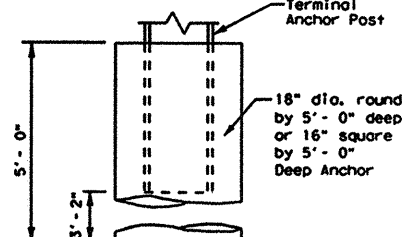


Note: This optional post requires the use of the 10 ga. terminal connector with four 3/8" hex bolts for attachment to the anchor post.

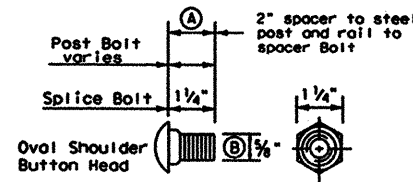


TERMINAL CONCRETE ANCHOR OPTIONS

Note: Either post may be used with either anchor. No construction joint is allowed in the concrete anchor. Terminal rail may be bolted to post and in twist position prior to placing concrete anchor. If concrete anchor is precast, the area should be compacted as directed by the Engineer, when placed in the field.



TERMINAL CONNECTOR



CONNECTOR DETAIL

- A 1 1/4" spacer to steel post hex bolt. 2" rail to spacer button head bolt.
- 3/8" hex bolts required for terminal connector.

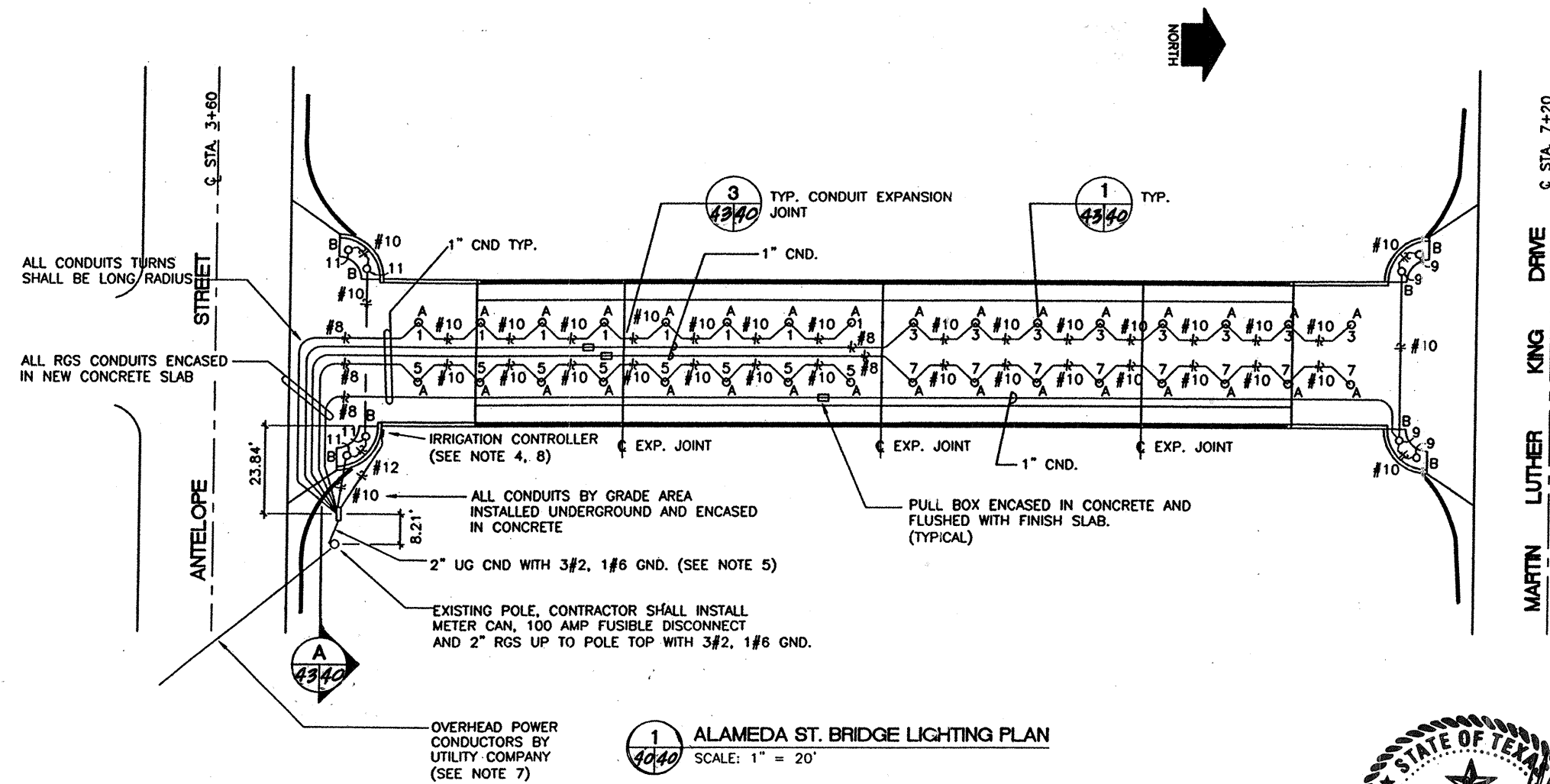
Texas Department of Transportation
Design Division (Roadway)

METAL BEAM GUARD FENCE

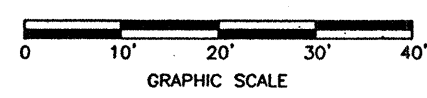
MBGF-03

FILE: mbgf03.dgn	DWG MAM	CHK MAM	DWG RAR	CHK MAM	HEG:
© TxDOT JULY 1994	DIST	FED REG	FEDERAL AID PROJECT	•	SHEET
REVISIONS	CRP	6	CC 7A-6-199	39	
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	NUECES	007A	06	199	1437

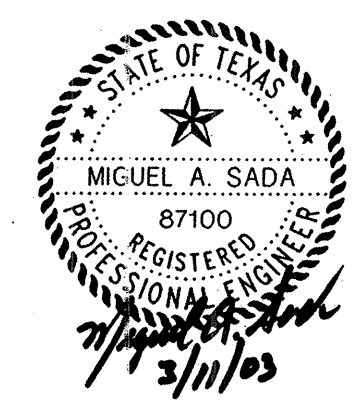
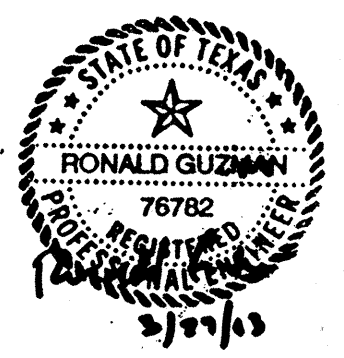
R = Radius
D = Diameter



1 ALAMEDA ST. BRIDGE LIGHTING PLAN
 SCALE: 1" = 20'



- NOTES:**
1. SEE SHEET 42 FOR LIGHT FIXTURE SCHEDULE
 2. SEE SHEET 43 FOR ELECTRICAL GENERAL NOTES
 3. ALL GROUNDING CONDUCTORS SHALL BE MINIMUM #8 UNLESS OTHERWISE NOTED
 4. CONTROLLER BOX IRRITROL MODEL TC-6EX-B OR EQUAL PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR, SUBSIDING TO ITEM 127C.
 5. COORDINATE 2" CONDUIT STUB UP WITH EQUIPMENT AND OTHERS CONDUITS INSIDE ELECTRICAL ENCLOSURE
 6. ALL CONDUITS 3/4" RGS UNLESS OTHERWISE NOTED
 7. CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES
 8. IRRIGATION CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT AND WIRING FOR IRRIGATION CONTROL



MEI GOVIND
 TEL: 361 289 1385
 FAX: 361 289 0712
 P.O. BOX 9094
 CORPUS CHRISTI, TEXAS 78409

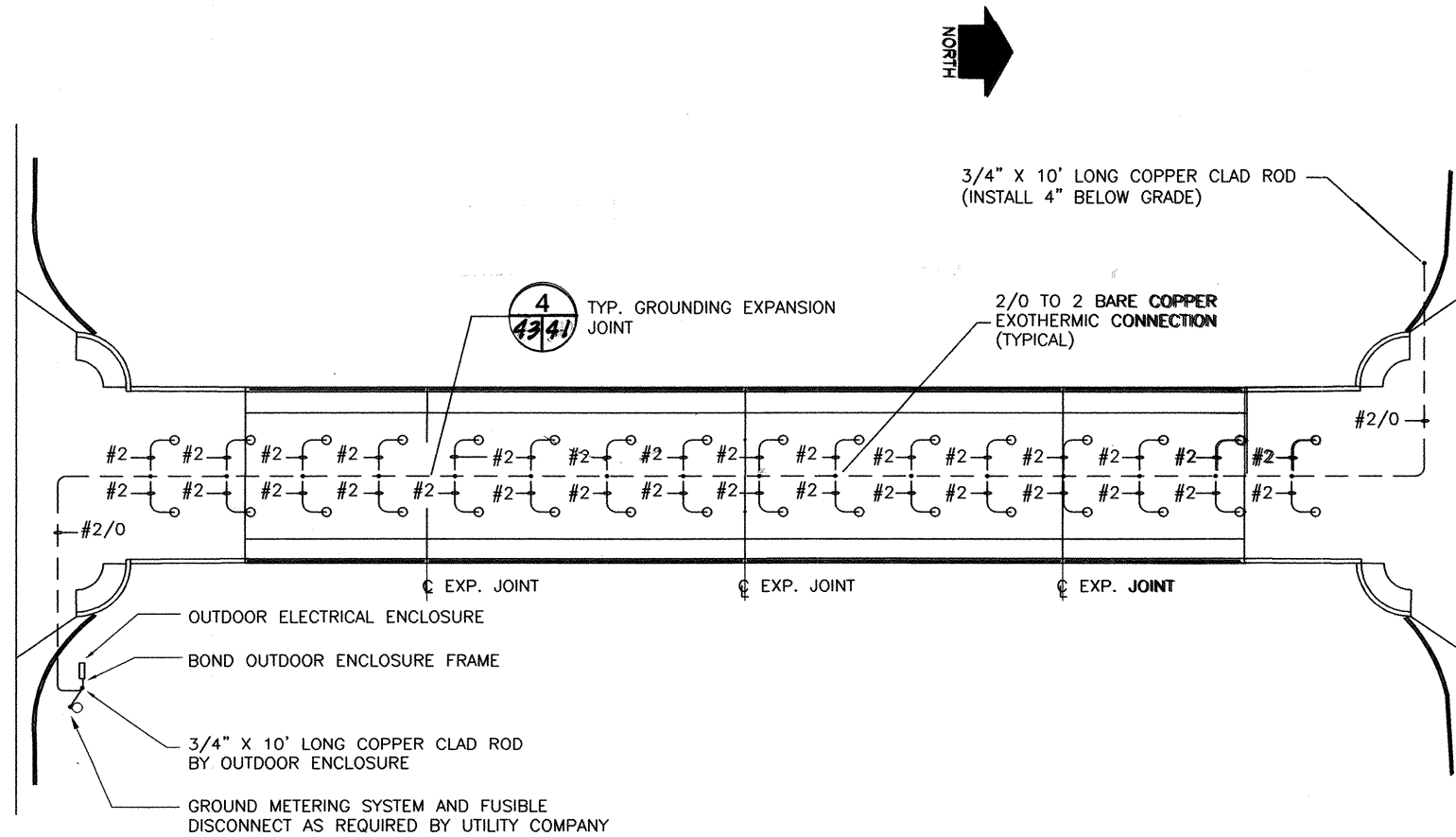
Texas Department of Transportation
 ©2002 Texas Department of Transportation
 all rights reserved.

**LIVABLE COMMUNITIES
 INITIATIVE PHASE II
 ALAMEDA STREET BRIDGE
 IMPROVEMENTS ELECTRICAL
 LIGHTING PLAN**
 SCALE: AS SHOWN

FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		40
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	IH37

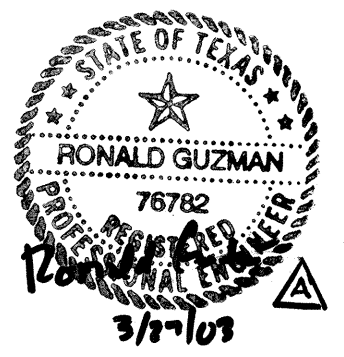
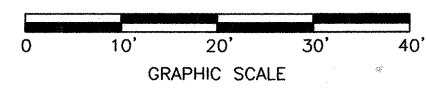
REVISED 03-03-04

STREET C STA. 3+60
ANTELOPE



MARTIN LUTHER KING DRIVE C STA. 7+20

1 ALAMEDA ST. BRIDGE GROUNDING PLAN
41/41 SCALE: 1" = 20'



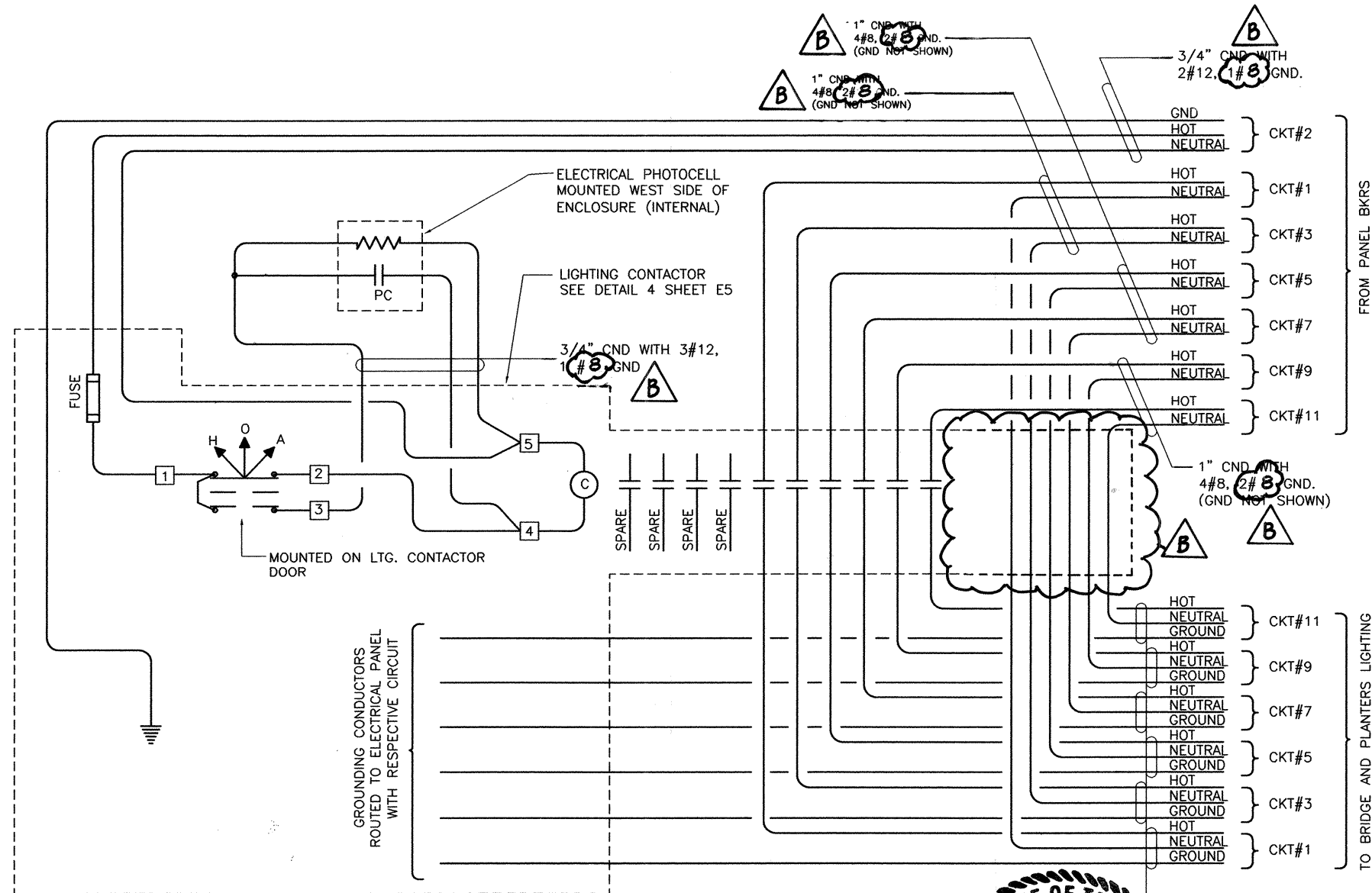
MEI **GOVIND** CONSULTING & CONSTRUCTION
CORPUS CHRISTI, TEXAS 78469
TEL: 361 289 1385
FAX: 361 289 0712
P.O. BOX 9094

Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET BRIDGE
IMPROVEMENTS ELECTRICAL
GROUNDING PLAN**
SCALE: AS SHOWN

FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		41
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	IH37

REVISED 03-03-04

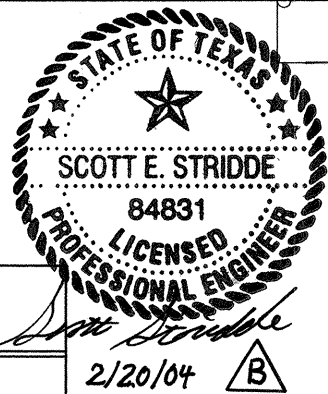


LIGHTING CONTACTOR WIRING SCHEMATIC
N.T.S.

LIGHT FIXTURE SCHEDULE						
SYM	TYPE	LAMP	VOLTS	MANUFACTURER	CATALOG NUMBER	REMARKS
(A)	METAL HALIDE	100W	120	ARCHITECTURAL AREA LIGHTING OR APPROVED EQUAL	SLVTLDL-100MH	FIXTURE COLOR SHALL BE GALVANIZED COLOR
(B)	METAL HALIDE	100W	120	BRONZELITE OR APPROVED EQUAL	DB1100H120DFSWNBG W/DB1000CMF CASING	INSTALLED FLUSH WITH GRADE AND ENCASED IN CONCRETE AS MANUFACTURER RECOMMENDATIONS

NOTES:

- ABOVE LIGHT FIXTURES ARE PROVIDED WITHOUT LAMP. ELECTRICAL CONTRACTOR SHALL PROVIDE LAMP AS RECOMMENDED BY MANUFACTURER
- COORDINATE WITH LANDSCAPE ARCHITECT FINAL LOCATION OF TYPE "B" FIXTURE BEFORE CONDUIT INSTALLATION.
- FURNISH FIXTURE TYPE "A" WITH SLIP FITTER AND ASSOCIATED HARDWARE AS REQUIRED FOR MOUNTING ON 4" O.D. 1 1/4" WALL PIPE

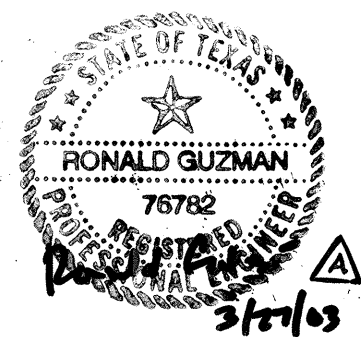


ELECTRICAL LEGEND

- INDICATES GROUNDING CONDUCTOR
- INDICATES PHASE CONDUCTOR
- INDICATES NEUTRAL CONDUCTOR
- INDICATES CONDUIT SIZE IF OTHER THAN 3/4"
- INDICATES WIRE SIZE
- LIGHT FIXTURE TYPE AS INDICATED
- OUTDOOR NEMA 3R SS ENCLOSURE
- POWER POLE (EXISTING)
- NUMBER BY LTG FIXTURE INDICATES CIRCUIT NUMBER

PANEL SCHEDULE

CKT No.	DESCRIPTION	BREAKERS		VA		BREAKERS		DESCRIPTION	CKT No.
		POLE	AMP	PHASE A	PHASE B	POLE	AMP		
1	LIGHTING CIRCUIT BRIDGE	1	20	400 800		1	20	SPRINKLER SYSTEM CONTROLLER	2
3	LIGHTING CIRCUIT BRIDGE	1	20		200 800	1	20	LIGHTING CONTACTOR	4
5	LIGHTING CIRCUIT BRIDGE	1	20	180 800		1	20	GFI RECEPTACLE INSIDE ENCLOSURE	6
7	LIGHTING CIRCUIT BRIDGE	1	20		800	1	20	SPARE	8
9	LTG PLANTERS NORTH SIDE	1	20	400		1	20	SPARE	10
11	LTG PLANTERS SOUTH SIDE	1	20		400	1	20	SPARE	12
13	SPACE							SPACE	14
14	SPACE							SPACE	16
TOTAL				2580	2200				
TOTAL CONNECTED LOAD		4.7	KVA		19.9	DEMAND LINE AMPS			
ESTIMATED DEMAND LOAD		4.5	KVA FEEDER		120/240	VOLTAGE			
120/240 VOLT, 100 AMP MAIN 22K AIC CIRCUIT BREAKER WITH 16 POLES.									



Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET
BRIDGE IMPROVEMENTS
ELECT. PNL SCHED. AND SCHEM.**

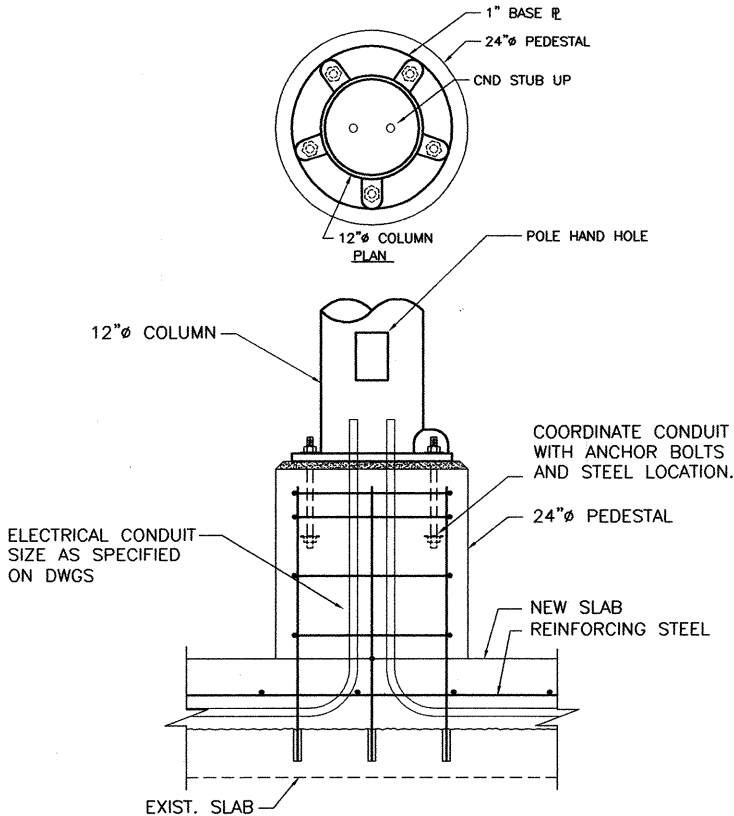
FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		42
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	IH37

REVISED 03-03-04

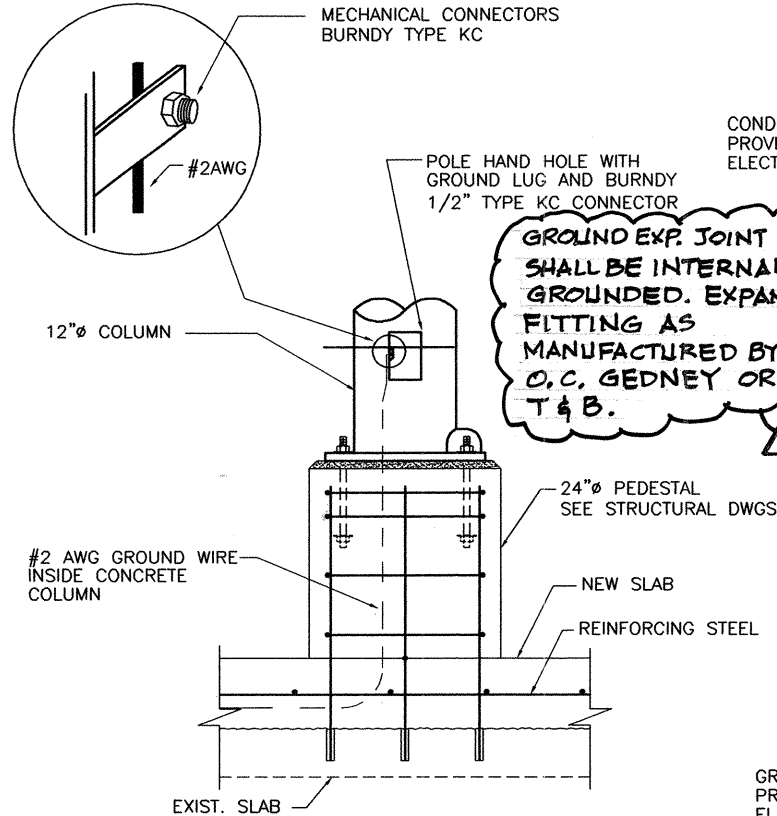
ELECTRICAL GENERAL NOTES:

1. VERIFY ALL DIMENSIONS AT JOB SITE.
2. ESTABLISH, WITH ARCHITECT'S APPROVAL, FINAL LOCATION OF ALL EQUIPMENT, DEVICES, ETC.
3. ALL NEW WORK SHALL CONFORM TO NATIONAL ELECTRICAL CODE, CITY CODES AND ALL OTHER AUTHORITIES HAVING JURISDICTION. OBTAIN PERMITS AND PAY ALL FEES. PERFORM MODIFICATIONS TO MEET CODE AND CITY ORDINANCE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER ARCHITECT OR ENGINEER.
3. VERIFY AT JOB SITE THE EXACT LOCATIONS OF EXISTING STRUCTURAL MEMBERS TO LOCATE EQUIPMENT, CONDUIT, PANELS AND DEVICES. IF DEVIATIONS FROM THE DRAWINGS ARE NECESSARY TO MEET STRUCTURAL CONDITIONS, MAKE DEVIATIONS WITHOUT ADDITIONAL COST TO ARCHITECT OR ENGINEER.
4. RESOLVE ANY CODE VIOLATION OR PLAN CONFLICTS IN CONTRACT DOCUMENTS WITH ENGINEER PRIOR TO SUBMISSION OF BIDS. AFTER AWARD OF CONTRACT, MAKE ANY CORRECTION OR ADDITION NECESSARY AT NO ADDITIONAL COST TO OWNER, ARCHITECT, OR ENGINEER.
5. COORDINATE ALL WORK WITH CIVIL, ARCHITECTURAL AND PLUMBING PLANS.
6. COORDINATE WITH OTHERS TRADES SO THAT ELECTRICAL WORK IS INSTALLED WHEN SPACE IS ACCESSIBLE. CUTTING AND PATCHING CAUSED BY FAILURE TO COORDINATE WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER, ARCHITECT, OR ENGINEER.
7. VERIFY AT JOB SITE ALL GENERAL WORK TO BE DONE AS SPECIFIED, AS NOTED, OR AS REQUIRED FOR INSTALLATION OF ELECTRICAL SYSTEMS PRIOR TO SUBMISSION OF BIDS.
8. THE ELECTRICAL CONTRACTOR AND HIS EMPLOYEES SHALL PERFORM THEIR WORK IN A SAFE MANNER AND MAINTAIN ADEQUATE PROTECTION OF THEIR WORK, THE OWNERS PROPERTY, AND ALL PERSONS ON THE SITE FROM INJURY, DAMAGE, OR LOSS.
9. GROUND ENTIRE ELECTRICAL SYSTEM IN STRICT ACCORDANCE TO THE NATIONAL ELECTRICAL CODE.
10. ALL ELECTRICAL CONDUCTORS SHALL BE COPPER. WIRE #8 AND LARGER SHALL BE STRANDED AND HAVE MINIMUM TYPE XHHW INSULATION OR EQUAL, UNLESS OTHERWISE NOTED.
11. CONDUIT OUTDOOR SHALL BE RIGID GALVANIZED STEEL WITH THREADED FITTINGS. CONDUIT UNDERGROUND SHALL BE RGS CONDUIT ENCASED IN CONCRETE. ALL STUB UPS AND STUB OUTS SHALL BE PVC COATED RGS CONDUIT AS SHOWN ON DETAILS.
12. INSTALLATIONS NOT COMPLYING WITH STANDARD WORKMANSHIP PRACTICES SHALL BE MADE TO COMPLY, AT NO EXTRA COST.
13. ALL CONDUITS REQUIRED UNDERGROUND AND ABOVE GROUND TO BE USED BY OTHER TRADES SHALL BE COORDINATED WITH SUCH TRADES TO PROVIDED AN ADEQUATE CONDUIT SYSTEM REQUIRED. KNOW EXACT REQUIREMENTS BEFORE INSTALLATION.
14. COORDINATE CONDUIT ROUTING AND STUB UPS WITH CONCRETE COLUMNS, ELECTRICAL OUTDOOR ENCLOSURE AND ELECTRICAL EQUIPMENT TO MINIMIZE CONDUIT OFFSETTING AND CROSSING.
15. ALL ELECTRICAL EQUIPMENT INSIDE OUTDOOR ENCLOSURE SHALL BE PROVIDED WITH A NAMEPLATE LEGEND OF 1 1/2" x 3 1/2" LONG MADE OF THREE-PLY PHENOLIC MATERIAL ENGRAVED AND ATTACHED TO SURFACES USING GOODYEAR PLIOBOND ADHESIVE. LEGEND SHALL READ AS INDICATED ON DRAWINGS.

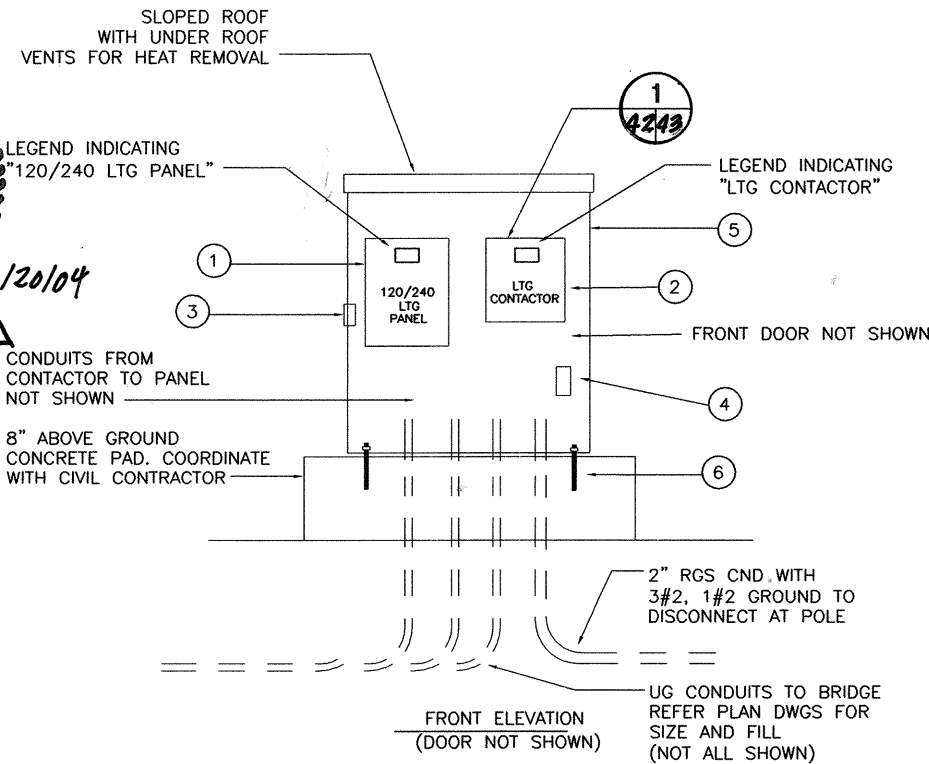
ITEM	QTY	DESCRIPTION
1	1	120/240 VOLT SINGLE PHASE ELECTRICAL PANEL, 100 AMP MAIN CIRCUIT BREAKER 22,000 AIC. PROVIDED WITH 12-1P20A BREAKERS AND 4-1P SPACES. PANEL RATED NEMA 3R. CUTLER HAMMER CAT. No. CH16B100 OR APPROVED EQUAL.
2	1	LIGHTING CONTACTOR, ELECTRICALLY HELD, 20 AMP, NEMA 3R ENCLOSURE, 120/60 HZ COI, 10 POLES, IN NEMA 3R ENCLOSURE CUTLER HAMMER CAT. No. ECL03B2AAA WITH HOA #C400T12 OR APPROVED EQUAL.
3	1	ELECTRICAL PHOTOCELL INTERNALLY INSTALLED ON WEST SIDE OF ENCLOSURE EXTERIOR WALL.
4	1	120 VOLT 20 AMP DUPLEX GFI RECEPTACLE WITH WEATHERPROOF COVER. INSTALLED ON ENCLOSURE'S INTERNAL BACK PLATE AS CONVENIENCE OUTLET
5	1	36" WIDE BY 48" TALL BY 12" DEEP 316 STAINLESS STEEL ENCLOSURE. PROVIDED WITH GASKETED DOOR, ALUMINUM BACK PANEL, VANDAL PROOF LOCKABLE DOOR AND VENTILATED ROOF. ENCLOSURE SHALL BE RATED NEMA 3R AND PROVIDED WITH AIR LOUVERS WITH INSECT SCREENS. PHOTOCELL INTERNALLY INSTALLED WITH EXTERIOR (WEST SIDE) GLASS WINDOW U.L. LISTED AND SHOP BUILT
6	4	1/2" DIAM. X 4" LONG ANCHOR BOLTS.



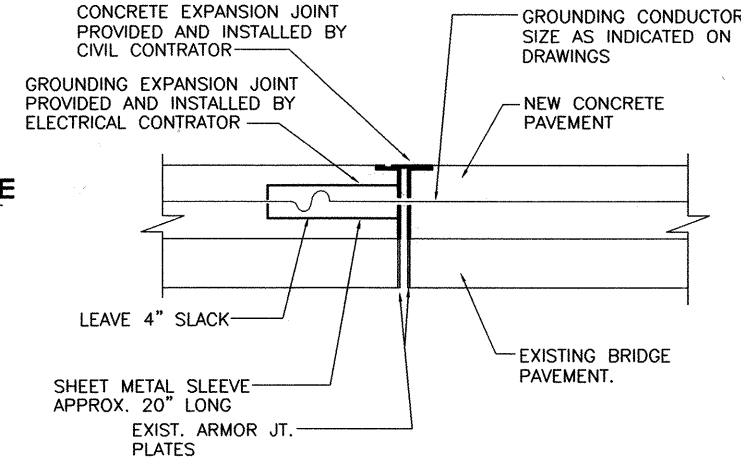
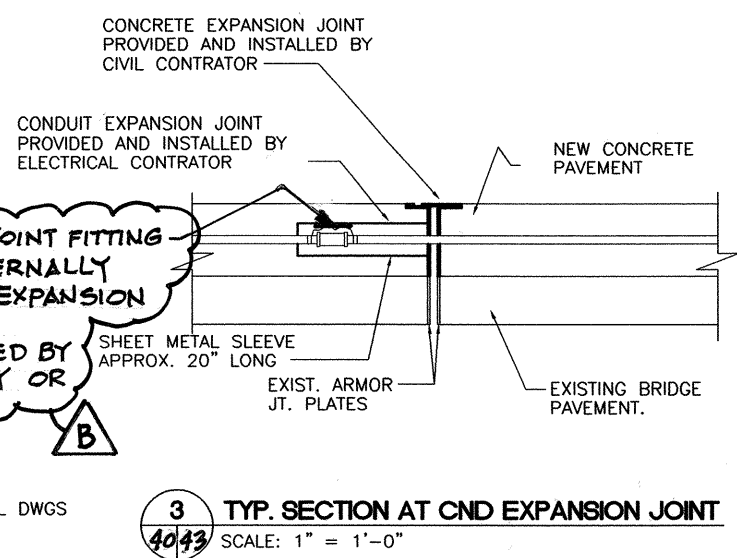
1 TYP. CONDUIT STUB UP AT COLUMN BASE
SCALE: 1" = 1'-0"



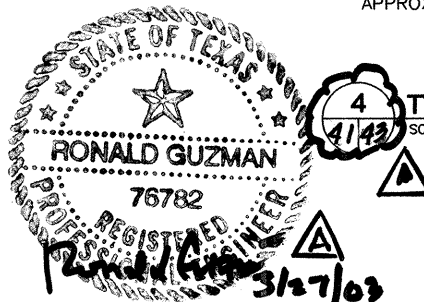
2 TYP. GROUND STUB UP INSIDE COLUMN BASE
SCALE: 1" = 1'-0"



3 ELECTRICAL ENCLOSURE FRONT ELEVATION
(LOOKING NORTH)



4 TYP. SECTION AT GROUNDING EXPANSION JOINT
SCALE: 1" = 1'-0"



Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

LIVABLE COMMUNITIES
INITIATIVE PHASE II
ALAMEDA STREET
BRIDGE IMPROVEMENTS
ELECTRICAL NOTES AND DETAILS

FED RD DIV NO	FEDERAL PROJECT NO	SHEET NO
6	CC 74-6-199	43
STATE	STATE DIST NO	COUNTY
TEXAS	CRP	NUECES
CONT	SECT	JOB
0074	06	199
		HIGHWAY NO
		IH37

REVISN 03-03-04

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

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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

I. GENERAL REQUIREMENTS FOR ALL ELECTRICAL WORK

The location of all conductors, conduits, junction boxes, ground boxes, and electrical services is diagrammatic only and may be shifted by the Engineer to accommodate local conditions.

Materials shall be new and unused. Materials and installation shall comply with the applicable provisions of the National Electrical Code (NEC), National Electrical Manufacturers Association (NEMA) standards, and shall be Underwriters Laboratories (UL) Listed unless otherwise shown on the plans or specifications or approved by the Engineer in writing. Faulty fabrication or poor workmanship in any material, equipment, or installation shall be justification for rejection. When reference is made to UL, it can be considered to mean a Nationally Recognized Independent Testing Lab (NRTL). Comparable standards of Canadian Standard Association, Electrical Testing Laboratories or Factory Mutual can be equal to the referenced UL standard. Where reference is made to NEMA listed devices, IEC listed devices shall not be considered to be an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing.

With the exception of high strength bolts, miscellaneous nuts, bolts and hardware may be stainless steel when plans specify galvanized, provided that bolts are 1/2 inch or less in diameter. The Contractor shall provide the following electrical test instruments as required by the Engineer to confirm compliance with the contract and the NEC. Those test instruments are voltmeter, amp probe, megger (1000 volt DC) and torque wrenches. All meters shall have been properly calibrated within one year. Calibration certification shall be provided to the Engineer upon request. Calibration certification tag shall also be applied to the meter. The Contractor shall operate meters during inspection as requested by the Engineer. Grounding shall be as shown on the plans and in accordance with the NEC. Metallic conduit, light poles, luminaires on bridge structures, and all metal enclosures shall be bonded to the system-grounding conductor. The ground rod in each ground box or junction box at the bridge ends, and in each ground box installed for underpass lighting will also be bonded to the system grounding conductor. The grounding conductor shall be bare or, if insulated, shall be green. Ground rods, connectors, and bonding jumpers will not be paid for separately, but will be subsidiary to the various bid items.

SUBMITTALS:

The contractor shall submit for approval six (6) copies of catalog cut sheets for each of the following three (3) categories.

Category 1. Electrical services including photocell.

Category 2. Breakaway disconnects, heat shrink tubing, heat shrink filler tape, GelCaps and ground boxes which will include loading capacity certification.

Category 3. Highmast assembly kits, when applicable. See Item 614 "Highmast Illumination Assemblies". Submittals shall be legible and shall be marked to indicate which product on a cut sheet is to be supplied. Where manufacturers provide warranties and guarantees as a customary trade practice, the Contractor shall furnish to the State such warranties and guarantees. Any deviation from plans or specifications, including deviations due to plan error should be prominently displayed on the submittal. Any changes not prominently noted in submittal and incorporated into the work without proper authorization will constitute grounds for rejection of that portion of the work.

II. CONDUIT

A. MATERIALS

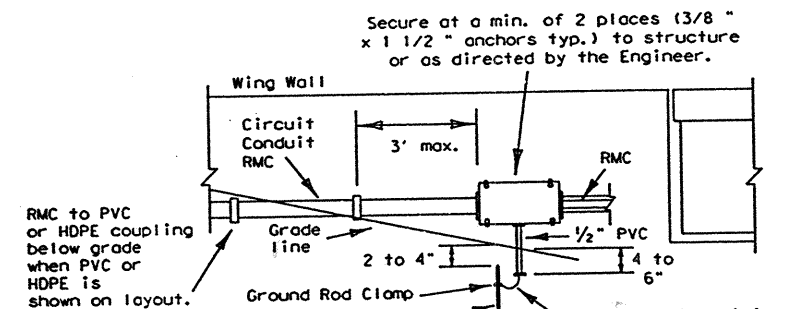
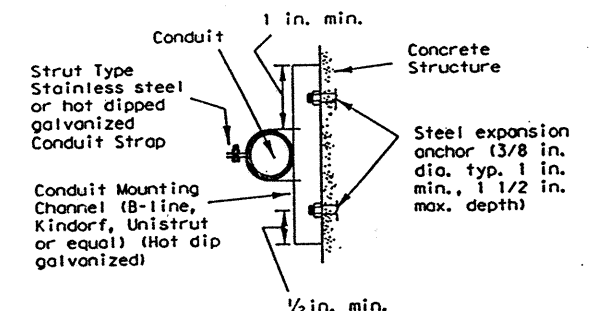
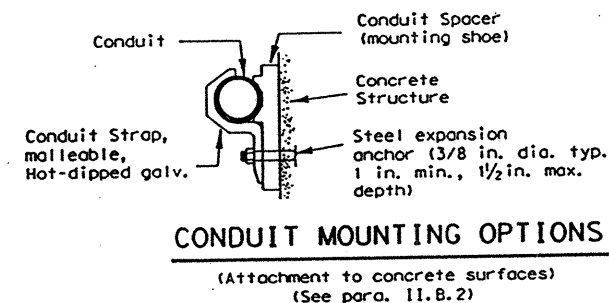
- Conduit and fittings shall be UL Listed for the intended use shown on plan sheets.
- Conduit shall be the type shown by descriptive code or shown elsewhere on the plans. Substitution of the various types of conduits will not be permitted. All flexible conduit in rigid metallic conduit (RMC) systems shall be Liquidtight Flexible Metal (LDFMC) conduit. All flexible conduit in PVC systems shall be Liquidtight Flexible Non-metallic conduit (LFNC).
- All exposed conduits shall be RMC, unless otherwise specifically shown on the plans. All metal conduit shall be properly grounded.
- Couplings, connectors, conduit bodies, grounding bushings, and offset nipples for RMC shall be electro-zinc plated steel or hot dipped galvanized malleable iron, threaded or threadless compression type, rain-tight and shall be UL listed for the intended use.
- Expansion joints for metal conduit shall be provided with an internal or external bonding jumper and shall be UL listed.
- Unless otherwise shown on the plans, junction box minimum sizes shall be in accordance with the following table which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes are present, the conductors shall be counted as if all are of the larger size. Situations not applicable to the table shall be sized in accordance with NEC 370-28.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

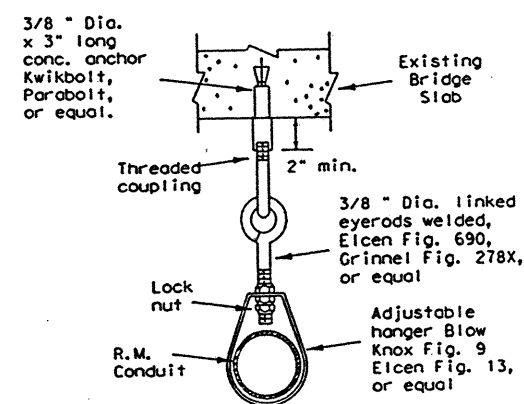
- RMC system junction boxes equal to or smaller, in any dimension, than 12 x 12 x 6 (HxWxD), surface mounted and containing conductors #8 or larger, shall be hot dipped galvanized cast iron with minimum wall thickness of 3/16 inch, shall have external mounting lugs, and shall be UL listed Crouse-Hinds Type WAB, OZ/Gedney Type YS or approved equal. Unless otherwise shown elsewhere on the plans, RMC system junction boxes larger than the aforementioned boxes but equal to or smaller, in any dimension, than 18 x 18 x 6 (HxWxD) shall be 14-ga. stainless steel; RMC system junction boxes larger than 18 x 18 x 6 (HxWxD) shall be 12-ga. stainless steel. All metal junction boxes shall be equipped with a threaded hole or lug for grounding. Stainless steel boxes 12 x 12 x 6 and larger need not be UL listed but shall meet the other requirements of the NEC and shall have ribs, stiffeners, or thicker metal and shall have external mounting feet. Junction boxes with an internal volume of more than 100 cu. in. may be supported by connection of two or more rigid metal conduits, where specifically shown on the plans or where approved by the Engineer.
- Junction boxes containing only #10 or #12 AWG conductors shall be Crouse Hinds Type GRFX, Appleton Type JBOX, two-gang FD, or similar approved cast iron box. Boxes shall be sized according to NEC Table 370-16(a).
- IMC and EMT conduit shall not be used unless specifically required by the plan layout sheets. Junction boxes in EMT conduit systems shall be made from galvanized sheeting and shall be UL listed and approved for outdoor use, unless otherwise noted on the plans. Sheet metal junction boxes shall be sized in accordance with the NEC. Junction boxes for IMC conduit systems shall meet the requirements of boxes used with RMC systems.
- Junction boxes in PVC conduit systems shall be PVC, intended for outdoor use, unless otherwise noted on the plans.
- Elbows in PVC conduit systems one inch and larger shall be rigid metal, with the exception of traffic signal systems which may have PVC elbows instead of rigid. If any part of the rigid metal elbow is buried less than 18 inches underground the elbow and rigid metal extension shall be grounded. Grounding shall be accomplished by means of a grounding bushing installed on the extension. Unless specifically shown on the plans, rigid metal elbows containing, or entering ground boxes containing only communications conductors, loop detectors, or other low voltage power limited circuits need not be grounded unless a ground wire is present in the conduit or ground box. The rigid metal elbows located in concrete foundations may be extended with PVC conduit and need not be grounded provided that the end of the elbow nearest the end of the conduit run exiting the foundation is at least 2 inches below the concrete. RMC elbows will not be eliminated. RMC elbows will not be paid for directly, but will be subsidiary to various bid items.
- High-Density Polyethylene (HDPE) conduit shall meet the requirements of Item 622, Duct Cable, except that the HDPE conduit, when bid under Item 618, Conduit, shall not contain factory installed conductors. Fittings for HDPE conduit shall be UL listed as an electrical conduit connector or shall be thermally fused using an electrically heated wound wire resistance welding method. HDPE conduit may be substituted for bored schedule 40 or schedule 80 PVC conduit. When such substitution is made, bored HDPE shall be schedule 40 of the size PVC being replaced. The HDPE conduit shall transition to PVC (or RMC elbow when required) at the bore pit. Size and schedule shall be as shown on the plans. Substituted conduit may not be extended to ground boxes or foundations; RMC elbows shall be installed at ground boxes and foundations. RMC elbows will not be eliminated.
- All conduit support hardware including straps, nuts, bolts, screws, retaining anchors and washers shall be hot dipped galvanized or stainless steel. Strut type conduit straps shall be stainless steel or hot dipped galvanized. Strut type straps need not be made of malleable type material. Stamped-cadmium plated straps will not be allowed. Straps having only one mounting hole shall not be allowed for use on conduits 2 inches and larger with the exception of electrical service poles where stainless steel standoff straps will be allowed. Two piece conduit straps designed to be used with a mounting shoe shall be installed only with the correctly sized shoe.

B. CONSTRUCTION METHODS

- Conduit in structures shall have expansion fittings at structure expansion joints. All straight runs of RMC conduit exposed on structures such as bridges shall have expansion joints installed at maximum intervals of 150 feet. Expansion joints shall be installed so they allow for movement of the conduit. Installation of the joint in such a manner that will not allow for movement shall be repaired at no expense to the state. The method of determining the final setting length of the expansion joint shall be provided to the Engineer upon request.
- Conduit supports shall be spaced at maximum intervals of 5 feet. Conduit spacers shall be used with metal conduit placed on surfaces of concrete structures (See conduit mounting options).
- Conduit supports shall not be attached directly to prestressed concrete beams except as shown specifically in the plans and approved by the Engineer.
- Unless otherwise shown on the plans, conduit placed beneath existing roadways, driveways, or sidewalks, or after the base or surfacing operation has begun, shall be accomplished by jacking or boring. The Contractor shall back fill and compact the bore pits to the bottom of the conduit prior to installing connecting conduit or duct cable to prevent bending of the connection.
- Conduit installed in the subgrade of new roadways shall be backfilled with excavated material, unless otherwise noted on the plans. Conduit installed in the sub-base of new roadways shall be backfilled with cement-stabilized base.
- Open ends of all conduit and raceways shall be fitted with temporary caps or plugs to prevent entry of dirt, debris and rodents during construction. The temporary cap may be constructed of duct tape, but in all cases shall be tightly fixed to the conduit and shall be durable. The contractor shall clean out the conduit and prove it clear in accordance with Standard Specifications Item 618.3 prior to installing any conductors.
- Conduit entry into the top of enclosures such as safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes shall be made weatherproof using conduit sealing hubs, or threaded bosses.
- A bonding jumper shall be installed from each grounding bushing to the nearest grounding rod, grounding lug, and/or equipment grounding conductor. All jumpers shall be the same size as equipment grounding conductor. Conduit used as casing under roadways for duct cable need not be grounded if duct extends full length through the casing. At electrical services, grounding electrode conductor shall be a solid Copper #6 AWG.
- Metal junction boxes shall be bonded to the grounding conductor in accordance with the NEC.
- Conduits entering ground boxes shall be placed so that the conduit ends shall be not less than 3 inches nor more than 6 inches from bottom of box (See ground box detail on sheet ED131).
- Conduit ends shall be sealed with heat shrink boots with waterproof sealant, urethane foam, or by other methods approved by the Engineer. Sealing shall be done after completion of any required pull tests. Duct tape shall not be used as a permanent conduit sealant. Silicone caulking shall not be used as a sealant.
- All strut mounting material and hardware shall be hot-dip galvanized or shall be stainless steel. The cut ends of strut and non-galvanized rigid metal conduit threads shall be coated with a zinc rich paint (90% or more zinc content). Zinc rich paint may only be used to touch up galvanized material as allowed under item 445.6 galvanizing. The painting of non-galvanized material with a zinc rich paint shall not be considered as an approved alternative for galvanized materials.
- All PVC conduit terminations shall be fitted with bushings or bell ends. All metal conduit terminations shall be fitted with a grounding type bushing.



TYPICAL CONDUIT ENTRY TO BRIDGE STRUCTURE DETAIL



CONDUIT HANGER DETAIL

(Attachment to horizontal surfaces)
Hangers need not be UL listed for electrical use
ie: plumber pipe hangers are acceptable

5/03 Revision

Revised notes.

- NOTES
- Ground rod clamp to be UL listed for direct burial.
 - For conduit placed in structure, use flush-mounted box.
 - Bond junction box and metal conduits to equipment grounding conductor and grounding electrode conductor using listed connector.
 - Seal all conduits entering the junction box from underground.
 - Install bell end or bushing on 1/2" PVC conduit both ends.
 - Ground rod to be driven within 8 inches of 1/2 inch PVC conduit end.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- CONDUIT

ED(1)-03

REVISIONS	DATE	BY	CHKD	APP'D	REVISION
4-98	12-00	6			CC 74-6-199
3-03					
5-03					

71A

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

LEVELS DISPLAYED	DATE:	DN:
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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	1/1/93	CK:
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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	1/1/93	CK:
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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	1/1/93	CK:

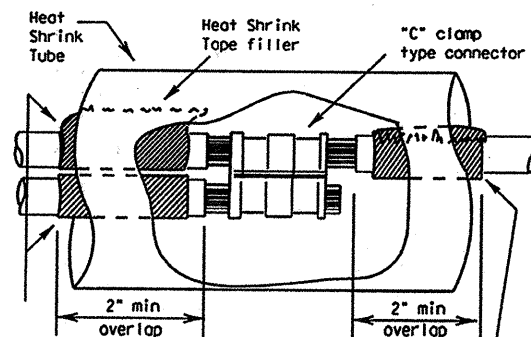
I. ELECTRICAL CONDUCTORS

A. MATERIALS

- Insulated conductors shall be NEC Type XHHW. Insulated conductors shall be color coded in accordance with the NEC, articles 200, 250, and 310; i.e. Insulation of grounded conductors (neutrals) shall be white. Grounding conductors (ground wires) shall be bare or insulation shall be green. Insulation of ungrounded conductors (hots) shall be any color except green, white, or gray. Identification of conductors #6 American Wire Gauge (AWG) and smaller shall be by continuous jacket color. Color coding of electrical conductors #4 AWG and larger shall be either by continuous color jacket or by colored tape. Colored tape marker shall consist of a half-lap of tape covering a 6-inch length of conductor.
- Where two or more circuits are present in one conduit or enclosure, the conductors of each circuit shall be identified by a permanent non-metallic tag at each accessible location. The tag shall be fastened to the conductors by two plastic straps. Each tag shall indicate circuit number, letter, or other identification shown in the plans.
- Grounding electrode conductor #6 AWG for bonding to ground rod at electrical service, shall be solid. Connection of conductor to ground rod shall be made using UL listed connectors designed for such purposes.
- Heat Shrink Tape filler shall be used to seal the ends of heat shrink tubing around two or more conductors that are insulated with heat shrink tubing. Tape material shall have a minimum dielectric strength of 225 volts per mil and shall be cross-linked butyl rubber. Tape shall be supplied in rolls and shall have a backing (release paper) to prevent the tape from sticking to itself.
- Heat shrink tubing shall be heavy wall, UL listed for 600 volts or greater and shall have factory applied internal sealant.
- GelCaps shall be UL listed for 600-volt applications. GelCap shall have see-through elastomer molded cover. Cover shall be filled with high dielectric insulating gel silicone sealant to provide watertight seal. Cover shall be held in place by snap-lock, molded clamp made of UV stable polypropylene.
- Splicing materials, insulating materials, breakaway disconnects, GelCaps and fuse holders will not be paid for directly but shall be subsidiary to various bid items.

B. CONSTRUCTION METHODS

- After conductors have been installed in conduit, a pull test shall be made on conductors. When any length of conductor cannot be freely pulled, the Contractor shall make any needed alterations or repairs at no expense to the State.
- The Contractor shall perform insulation resistance tests in accordance with Item 620, "Electrical Conductors." The Contractor shall coordinate with the Engineer to witness the tests.
- A sufficient length of conductor for making up connections shall be left in ground boxes (2 feet minimum, 3 feet maximum, to point of splice, 3 feet minimum, 4 feet maximum, when conductor is pulled through with no splice), enclosures, weatherheads and pole bases (1 foot minimum, 1.5 feet maximum).
- Splices shall be made only in junction boxes, ground boxes, pole bases, or electrical enclosures and shall be made with listed compression or screw type pressure connectors, terminal blocks, bolted lugs, or split bolt connectors. Splices shall be insulated with heavy wall heat shrink tubing or GelCaps and shall be made so as to provide a watertight splice. Heat shrink sleeve shall overlap conductor insulation a minimum of 2 inches on both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, the Contractor shall increase the diameter of the conductors insulation using heat shrink filler tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Tape shall be visible after completion of all splices. Where filler tape is used but not visible, the Engineer shall approve each individual splice by conducting a physical inspection of each splice. When it appears the tubing has been burned, or overheated the tubing shall be considered to be defective and shall be replaced.
- GelCaps when used in place of heat shrink method of splicing, shall be sized and installed according to manufacturer's specifications. (Roychem GelCap and GelCap SL or equal.)
- Wire nuts may be used for #8 AWG or smaller conductors in above-ground junction boxes, but not in pole bases or ground boxes. Wire nuts shall be positioned upright to prevent the accumulation of water. Wire nuts used at these locations shall have factory applied waterproof sealant.
- Conductors in illumination poles shall be supported by a J-hook in the top of the pole.
- All conductors bid under Item 620 "Electrical Conductors" shall have breakaway electrical disconnects installed anytime conductors pass through a break-away support device.
- For terminating the conductors, insulation-jacketing material shall be removed in such a manner as to not nick any of the individual strands of the conductor. When individual conductor strands are removed, the conductor shall be considered to be damaged.
- When a conductor or cable has been damaged, or fails to pass an insulation resistance test, the conductor shall be replaced.
- Duct tape, black electrical tape, or wire nuts shall not be used in the repair of a damaged conductor.
- For terminations, no more than one wire may be installed under a single pressure connector, unless the device is listed for more than one wire.
- Conductors connected to break-away in line fuse holders must be installed in accordance with the specific manufacturer's installation instructions. Where threaded connections are made, they shall be properly torqued. Where crimp type connections are made, crimps shall be made using properly sized crimping pliers. Proper conductor terminations are critical to the safe operation of break-away devices.
- Waterproofing boots shall be properly trimmed to fit snugly around the conductor so as to provide a water proof connection. No more than one wire may enter a single opening in any one boot. Water proofing boots must provide the correct number of openings. Where only one wire is to be connected to a boot, the boot may not be a two wire type.



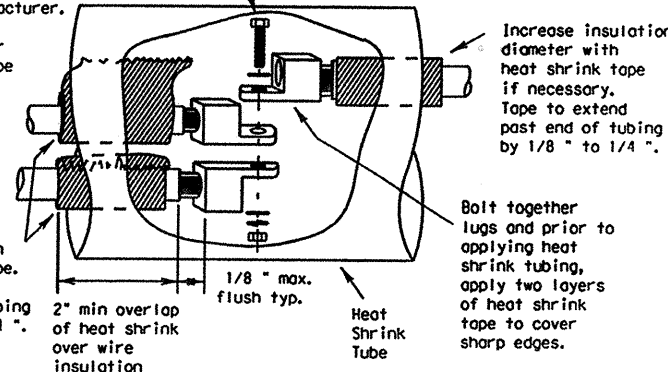
Seal between conductors with heat shrink tape. Tape to extend past end of tubing by 1/8" to 1/4".

Increase insulation diameter with heat shrink tape if necessary. Tape to extend past end of tubing by 1/8" to 1/4".

SPLICE OPTION 1

C-CLAMP

Stainless steel or brass machine screw, nut, 2 flat washers, lock washer or self locking nut. Machine screw to be a min. of 10-24, 3/16 or the same size as the mounting hole provided by the manufacturer. Secure wrench tight. Movement of lugs after final assembly shall be considered to be a defective connection.

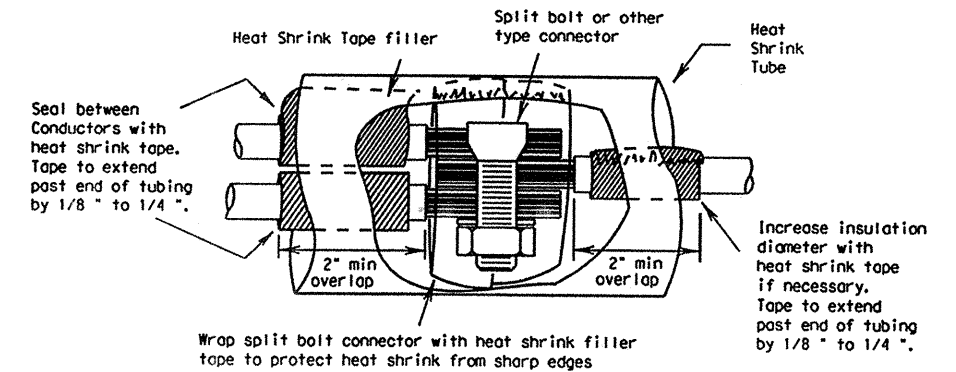


SPLICE OPTION 2

BOLTED WIRE LUGS

SPLICE OPTION 3

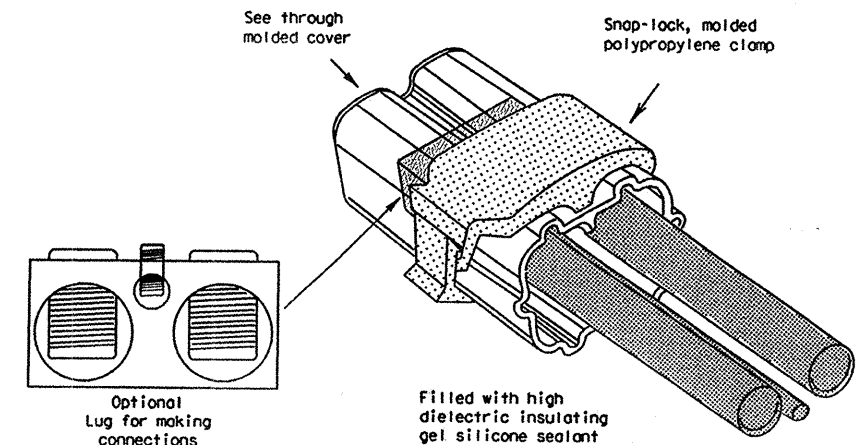
SPLIT BOLT



SPLICE OPTION 4

GELCAP

GelCap shall be sized and installed according to manufacturer's specifications.



- All conduits that contain circuit wiring of 50 volts or more shall contain an equipment grounding conductor (EGC). Conduit for traffic signals shall have an EGC, with a minimum size of #8 AWG stranded. Unless otherwise shown on the plans, the EGC for all other conduits shall be the same AWG size as the largest current carrying conductor contained in that conduit. The EGC shall be paid for item 620-Electrical Conductors.

C. TEMPORARY WIRING

- Temporary conductors and electrical equipment to provide power for utilization equipment, shall be installed in accordance with the NEC article 305. All temporary wiring materials and methods shall comply with the standard sheets. All power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade, supplied from a utility power source, shall be provided with a ground fault circuit interrupter.
- Residual current protective devices (GFCI) may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
- Where wire nuts are approved for temporary wiring, they shall be of the self-sealing type.
- All conductor splices must be contained within a listed enclosure, ground box or the splices will be more than ten feet above grade vertically and more than five feet horizontally from any metal structure. Where temporary conductors are installed in any area that is likely to be subjected to vehicle traffic, or mobile construction equipment, the vertical clearance to ground shall be at least 18 feet when measured at the lowest point. Where power conductors are to be supported by a span wire, the span wire shall be properly grounded.
- Existing conduit containing service conductors uncovered during the construction process shall be repaired in a timely manner in accordance with the NEC. Existing non-metallic conduit exposed during construction shall not be left exposed above grade, or with less than eighteen inches of cover, without protective methods approved by the Engineer.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- CONDUCTORS

ED(2)-03

REVISIONS	DATE	BY	CHKD	APP'D	REASON	SHEET
10-93	10-93	CRP	6	CC74-6-199	45	
4-98	4-98					
12-00	12-00					
3-03	3-03					

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

DN:	CK:	DW:	CK:
12	3	1	5
13	4	2	6
14	5	3	7
15	6	4	8
16	7	5	9
17	8	6	10
18	9	7	11
19	10	8	12
20	11	9	13
21	12	10	14
22	13	11	15
23	14	12	16
24	15	13	17
25	16	14	18
26	17	15	19
27	18	16	20
28	19	17	21
29	20	18	22
30	21	19	23
31	22	20	24
32	23	21	25
33	24	22	26
34	25	23	27
35	26	24	28
36	27	25	29
37	28	26	30
38	29	27	31
39	30	28	32
40	31	29	33
41	32	30	34
42	33	31	35
43	34	32	36
44	35	33	37
45	36	34	38
46	37	35	39
47	38	36	40
48	39	37	41
49	40	38	42
50	41	39	43
51	42	40	44
52	43	41	45
53	44	42	46
54	45	43	47
55	46	44	48
56	47	45	49
57	48	46	50
58	49	47	51
59	50	48	52
60	51	49	53
61	52	50	54
62	53	51	55
63	54	52	56
64	55	53	57
65	56	54	58
66	57	55	59
67	58	56	60
68	59	57	61
69	60	58	62
70	61	59	63
71	62	60	64
72	63	61	65
73	64	62	66
74	65	63	67
75	66	64	68
76	67	65	69
77	68	66	70
78	69	67	71
79	70	68	72
80	71	69	73
81	72	70	74
82	73	71	75
83	74	72	76
84	75	73	77
85	76	74	78
86	77	75	79
87	78	76	80
88	79	77	81
89	80	78	82
90	81	79	83
91	82	80	84
92	83	81	85
93	84	82	86
94	85	83	87
95	86	84	88
96	87	85	89
97	88	86	90
98	89	87	91
99	90	88	92
100	91	89	93

II. GROUND RODS

A. MATERIALS

- All ground rods installed at electrical services, including supplemental lightning protection ground rods specified by the plans in other locations such as pole bases, shall be copper clad and UL listed. Rods shall be a minimum diameter of 5/8 inch. The length shall be a minimum of 8 feet. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets.
- Ground rod clamps shall be listed to be in direct contact with the soil. Where concrete encasement is required, the clamp shall be listed for concrete encasement.

B. CONSTRUCTION METHODS

- Ground rods installed in locations such as pole bases, to provide supplemental lightning protection need not be totally in contact with the soil. Where called for in the plans, rods may be encased in soil or concrete or any combination of soil and concrete. When concrete encased, the connection of the conductor to the rod shall be readily accessible for inspection or repairs. When driven into the soil the upper end shall be between 2 to 4 inches below finished grade. Ground rods shall not be placed in the same drilled hole as a timber pole.
- Ground rods shall be installed such that the end imprinted with the rod's part number is installed as being the upper end.
- Non-conductive coatings such as concrete splatter shall be removed from the rod at the clamp location.
- Routing of lightning protection ground rod wires shall be run as short and straight as possible. Where bends are required they shall have a minimum radius of four inches.
- Unless specifically called for by the plans, conduits used for ground rod wires shall be non-metallic. Where metal conduits are specified, a grounding bushing and properly sized bonding jumper shall be provided and properly installed on each end.
- Where rocky soil or a solid rock bottom is encountered when driving a ground rod and the horizontal trench placement method is the only viable solution, written authorization from the Engineer must be obtained.

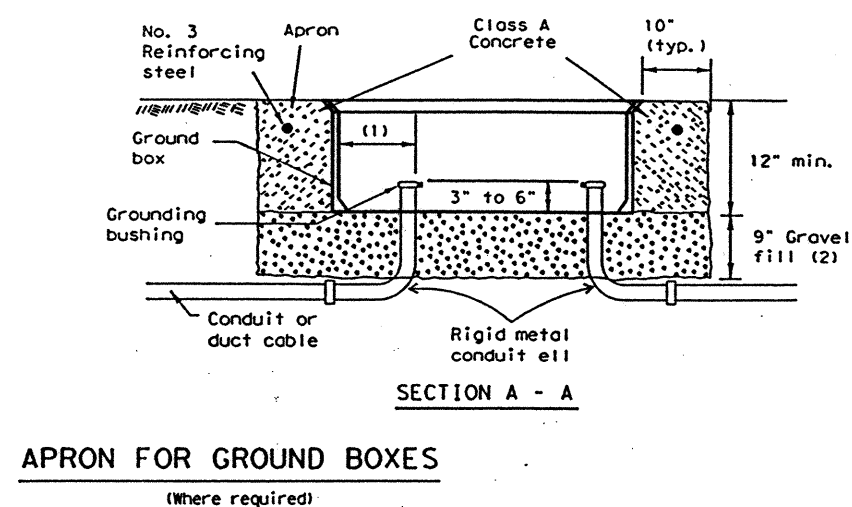
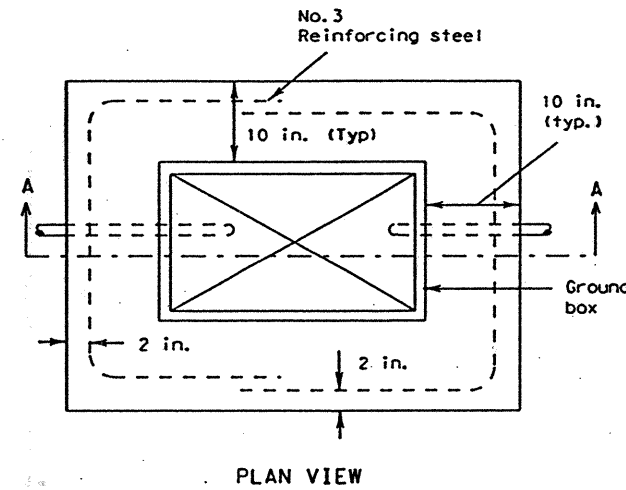
III. GROUND BOX

A. MATERIALS

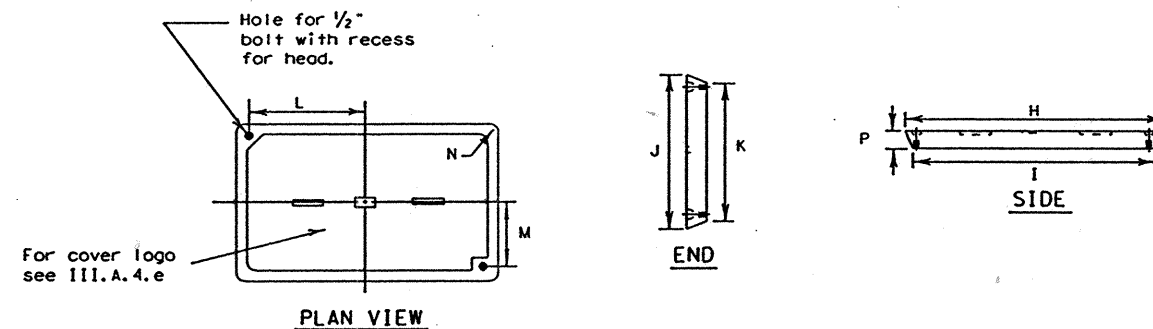
- Ground boxes 16x30x24 inches (WxLxD) or smaller shall be polymer concrete of the type required by the descriptive code shown elsewhere. Larger ground boxes shall be as shown elsewhere in the plans.
- All ground boxes and covers shall be permanently marked either by impress or by permanent ink, with manufacturer's model number and manufacturer's name or logo.
- Covers shall be bolted down, and bolt holes in the box shall be arranged to drain dirt.
- Ground box Types A, B, C, D & E shall meet the following requirements:
 - Ground boxes and covers be manufactured from polymer concrete reinforced with continuous strands of woven or stitched borosilicate fiberglass cloth. The polymer concrete shall be made from catalyzed polyester resin, sand and aggregate, and shall have a minimum compressive strength of 11,000 psi. Polymer concrete containing chopped fiberglass or fiber-glass reinforced plastic is not acceptable.
 - Minimum inside dimensions shall be as follows (width x length x depth):
 - Type A shall be 11.5 inches x 21 inches x 10 inches, (122311)
 - Type B shall be 11.5 inches x 21 inches x 20 inches, (122322)
 - Type C shall be 15.25 inches x 28.25 inches x 10 inches, (162911)
 - Type D shall be 15.25 inches x 28.25 inches x 20 inches, (162922)
 - Type E shall be 11.5 inches x 21 inches x 16 inches, (122317)
 - Bottom edge of box or extension shall be footed with a minimum 1 1/4 inch flange.
 - Ground boxes shall withstand 600 lbs. per sq. ft. applied over the entire sidewall with less than 1/4 inch deflection per foot length of box. Ground boxes and covers shall withstand a test loading of 20,000 lbs. over a 10 inch by 10 inch area centered on the cover with less than 1/2 inch deflection. Ground boxes and covers shall meet Western Underground Standards 3.6. Manufacturer shall supply certification by an independent laboratory or sealed by a Texas-Licensed Professional Engineer.
 - Covers shall be 2 inch (nominal) thick polymer concrete. All hardware shall be stainless steel. Cover shall be secured with two 1/2 inch stainless steel bolts. Bolts shall be self-retaining and shall withstand a minimum of 70 ft-lbs. torque and shall have a minimum 750 lbs. straight pull out strength. Nuts shall be floating and shall provide a minimum of 1/2 inch movement from the center of the nut. Covers shall be skid resistant, minimum 0.5 coefficient of friction. Covers shall be interchangeable between manufacturers and shall conform to the dimensions shown herein. Unless otherwise approved by the Engineer, cover shall be legibly imprinted with the following words in minimum 1 inch letters:
 - Ground Boxes containing wiring for traffic signals shall be labeled, Danger High Voltage Traffic Signal.
 - Ground boxes containing wiring for illumination systems shall be labeled, Danger High Voltage Illumination.
 - Ground boxes containing wiring for traffic management systems shall be labeled, Danger High Voltage Traffic Management.
 - Ground boxes containing wiring for sign illumination systems shall be labeled, Danger High Voltage Sign Illumination.
 - Ground boxes containing wiring for traffic signals that also contain illumination, powered by the signal electrical service, shall be labeled, Danger High Voltage Traffic Signal.

B. CONSTRUCTION METHODS

- Ground boxes shall be set on a 9 inch (minimum) bed of aggregate from 3/4 " up to 2" in size. Aggregate shall be in place prior to setting box and conduits shall be capped. Any gravel or dirt in conduit shall be removed.
- When required by item descriptive code, construction of an apron encasing a ground box including concrete and reinforcing steel shall not be paid for directly but shall be subsidiary to the ground box. Reinforcing steel may be field bent. Concrete for aprons shall be considered miscellaneous concrete for testing purposes. Aprons shall be cast in place.
- Conduit holes may be cut in the walls of type B & D boxes at least 18 inches beneath the cover.
- If, within the limits of this project, the Contractor must utilize an existing ground box equipped with a metal cover, the Contractor shall bond the cover to the grounding conductor with a 3 foot long flexible stranded jumper the same size as the grounding conductor. Connection of bonding jumper to metal ground cover shall not be paid for directly but shall be subsidiary to various bid items. The boxes must be clearly shown on the plans with plan notes fully describing the work required.
- If there are other ground boxes with metal covers within the project limits but not involved in the contract, the Engineer may direct the Contractor to ground the covers, designating and identifying the specific boxes in writing. This work will be paid for separately.
- Termination to metal ground box covers shall be made using a tank ground type lug.



- Final position of end of conduit shall not exceed one-half the distance to the side of box opposite the conduit entry.
- Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.
- Install bushing on the upper end of all ells.
- Where a ground rod is present in the ground box, connect it to any and all equipment grounding conductors using a listed connector.
- Maintain sufficient space between all conduits so as to allow for proper installation of bushings.
- All conduits shall be installed in a neat and workmanlike manner.
- All conduits installed in the ground box shall be sealed after completion of conductor installation and any required pull tests. Silicone shall not be used as sealant.



GROUND BOX COVER

GROUND BOX COVER DIMENSIONS								
BOX	DIMENSIONS (INCHES)							
SIZE	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 3/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- GROUND BOXES.

ED(3)-03

©TxDOT January 1992	REVISED	BY	DATE	BY	DATE	BY	DATE	BY	DATE
4-98	12-00	3-03	5-03	6	CC 74-6-199	46	Nueces	0074	06 199
1437									

5/03 Revision

Revised notes.

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

LEVELS DISPLAYED
DATE: 1/12/13
ACC: 1/12/13
FILE: 1/12/13

ELECTRICAL SERVICES NOTES

All work, materials, services, and incidentals, whether or not specifically shown on the plans, which may be necessary for a complete and proper electrical service installation as specified in the plans to obtain electrical power shall be paid for, performed, furnished and installed by the Contractor. The Contractor shall contact the Utility for metering and shall comply with all Utility requirements.

Primary line extensions, connection charges, meter charges, and other charges by the Utility company to provide power to the location shown, when required, shall be paid for under force account work. The costs associated with these charges shall be approved by the Engineer prior to engaging the Utility company to do the work. The Contractor shall consult with the appropriate Utility to determine costs and requirements, and shall coordinate the Utility's work as approved by the Engineer. The Contractor shall be reimbursed only the amount billed by the Utility. No additional amount for supervision of the Utility's work will be paid.

Materials shall be new and unused, materials and installation shall comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards and shall be Underwriters Laboratories (UL) Listed. Electrical Service conduits, conductors, disconnects, contactors, circuit breaker panel sizes, and branch circuit breakers, shall be as shown in the Electrical Service Data elsewhere in the plans. Faulty fabrication or poor workmanship in any material, equipment, or installation shall be justification for rejection.

The Contractor shall submit for approval no less than six (6) copies of catalog cut sheets on electrical service materials. Submittals shall be legible and shall be marked to indicate which product on a cut-sheet is to be supplied. Where manufacturers provide warranties and guarantees as a customary trade practice, Contractor shall furnish to the State such warranties or guarantees.

The Contractor shall provide locks keyed with Master #2195 for all lockable electrical enclosures. Keys and locks become property of the State. Unless otherwise approved by the Engineer, enclosures shall not be energized until locks are provided and all bolts are installed.

Circuit directories, where provided, shall be filled out. All breakers and components in shop built panels and enclosures shall be labeled with dual-colored plastic labels. Letters shall be a minimum 3/8" in height.

Enclosures with external disconnects that de-energize all equipment inside the enclosure, need not have dead front trim, except that incoming line terminations shall be protected from incidental contact.

When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used. All wiring and components shall be rated for 75 degrees C. Minimum size for service entrance conductors shall be #6 XHHW.

I. Safety Switch. A safety switch, placed ahead of the meter, shall only be used when specified by the Utility and when shown on the Electrical Service Data. The switch shall be UL Listed, heavy duty type, 600 volt, unfused, with a UL type 3R enclosure and equipped with a solid neutral (s/n) assembly. The switch shall be padlockable in the "on" position.

II. Service Type. Electrical service types A, C, D, and T shall be as schematically detailed on ED(4) or ED(5). Other service types shall be as detailed elsewhere on the plans.

III. Branch Circuit Breakers. Circuit breakers shall be thermal magnetic and have a minimum interrupting capacity of 10,000 amps and a voltage rating compatible with their use. Circuit breakers shall be sized as shown in the electrical service data. Circuit breakers in panelboards and load centers shall be full size and designed exclusively for the panelboard or load center in use. Tandem and half-width breakers shall not be used. All circuit breakers shall be permanently and clearly marked identifying the circuit or device supplied. Circuit breakers shall be UL Listed to UL489.

IV. Circuit Breaker Panelboard. Panelboards shall be UL Listed. Panelboards shall have copper buses, a minimum of 6 one-pole spaces or as required in the electrical service data, and when required will be rated for service equipment. Enclosure shall meet UL type 3R classification. Panelboards shall have a threaded hub conduit entry for conduit entering the top of the enclosure. Circuit breakers shall be bolt-in type only.

V. Circuit Breaker Load Center. Load centers shall be UL Listed. Load centers for type T services may have copper or aluminum buses, all other load centers will be copper bus only. Load center will have a minimum of 4 one-pole spaces, and shall be rated for service equipment. Enclosure shall meet UL type 3R classification. Load centers shall have a threaded hub conduit entry for conduit entering the top of the enclosure. Circuit breakers shall be plug-in type only. Load centers for type T services shall accommodate a maximum of 6 one-pole breakers.

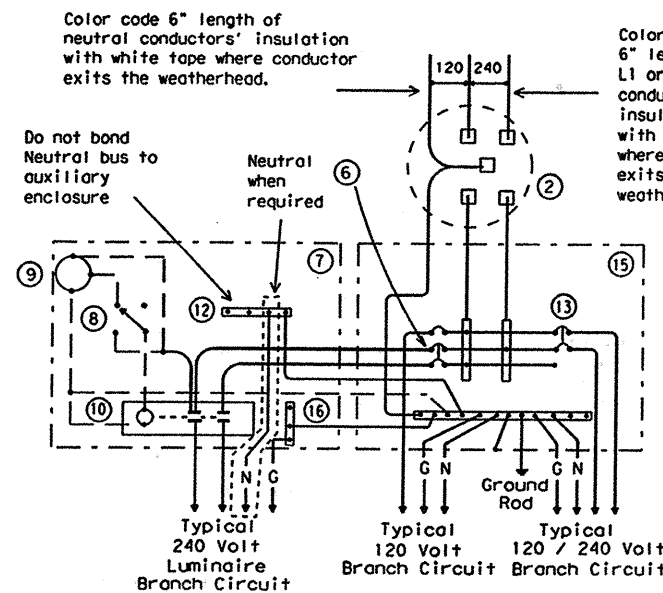
VI. Separate or Auxiliary Enclosure. Separate enclosures for HOA, photocell and lighting contactors for types D & T Services shall be a UL Listed assembly with outer door. Interior shall have dead front trim. HOA switch operator shall extend through the dead front trim. Photocell shall be mounted inside the enclosure as described in paragraph XIII when required by descriptive code. Separate enclosures shall meet the construction requirements of paragraph VIII. E, except that separate enclosure shall not have external operating handle, need not have a data pocket and door may latch at only one point. All equipment may be located in one enclosure instead of two, when approved by the Engineer.

VII. Where a Type D or T service is provided, laminated "as built" drawings are required as shown on ED(5) VIII E₂ shall be delivered before completion of the work, to the Engineer in lieu of placement within these smaller enclosures. Conduit may not enter the back wall of a service enclosure penetrating the equipment mounting panel. Provide grounding bushings on all metal conduits, terminate bonding jumper to grounding bus. Grounding bushing is not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss such as a meter base.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

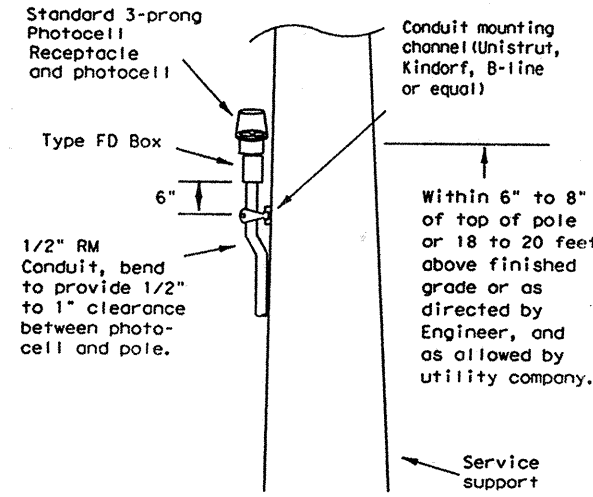
ELEC SERV TY X (XXX/XXX) XXX (XX) XX (X) XX (X)	Example: ELEC SERV TY A(240/480)100(NS)SS(E)GC(O)
Schematic Type	
Service Voltage (V / V)	
Disconnect Amp Rating (000 indicates main lug only)	
SS= Safety switch ahead of meter NS= No switch ahead of meter and/or no meter required	
Enclosure Type GS= Galvanized steel (see ED(5)VIII,D) SS= Stainless steel AL= Aluminum	
Photocell Mounting Location T= Top of pole E= Inside service/separate enclosure L= Luminaire mounted N= None	
Service Support Type GC= Granite concrete OC= Other concrete TP= Timber pole SP= Steel pole SF= Steel frame OT= Pole by others or paid for separately EX= Existing pole TS= Switch gear to be placed on traffic signal pole RT= Rectangular structural tubing PS= Pedestal Service (see ED(5)VIII,G)	
O= Overhead service U= Underground service	

Example: ELEC SERV TY A(240/480)100(NS)SS(E)GC(O)



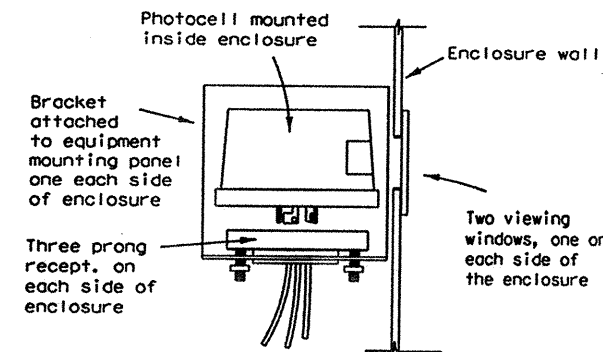
SCHEMATIC TYPE T
120/240 VOLTS - THREE WIRE

Install photocell and lighting contactor when shown on Electrical Service Data.



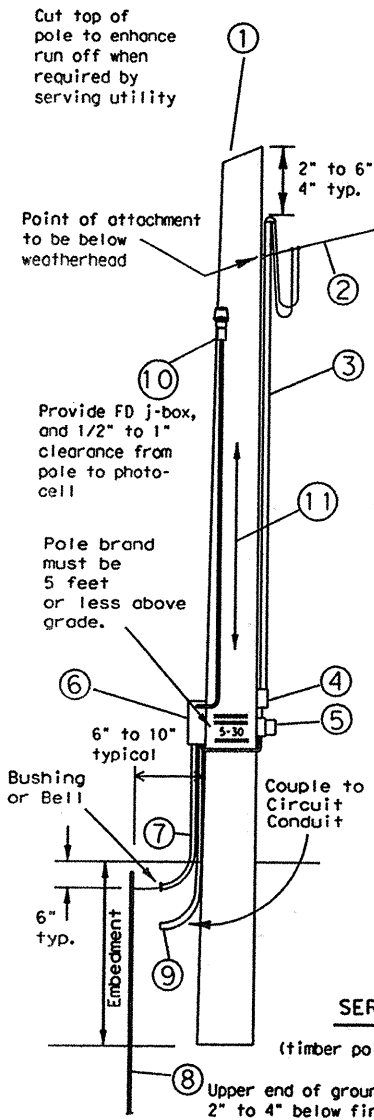
TOP MOUNTED PHOTOCELL

Conduit support spacing 3 feet from enclosure; 5 feet max.



ENCLOSURE MOUNTED PHOTOCELL

For photocell specifications see ED(5), XIII.



- 1 - Class 5 pole, height as required
- 2 - Service drop from utility company (attached below weatherhead)
- 3 - Service conduit and service entrance conductors (RMC) (See Electrical Service Data)
- 4 - Safety switch (when required)
- 5 - Meter (when required)
- 6 - Service enclosure
- 7 - No. 6 bare grounding electrode conductor in 1/2" PVC to ground rod - extend 1/2" PVC 6" underground.
- 8 - 5/8" x 8" Copper clad ground rod - drive ground rod completely underground unless otherwise approved by the Engineer.
- 9 - RM conduit - same size as branch circuit conduit.
- 10 - Photocell and conduit - if top mounted.
- 11 - When required by the serving utility provide bare #6 awg copper conductor. Run wire from pole top to butt wrap or copper butt plate. Protect conductor to a height of 8 ft above finish grade.

LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- (If applicable)
- Liquidtight flexible metal conduit, may be used when meter and service enclosure are mounted 90 to 180 degrees to each other. Size shall be same as service entrance conduit.
 - LFMC shall not exceed 3 ft. and shall be securely supported within one ft. of each end. No strap required for LFMC shorter than 12".
 - Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting.
 - A neutral conductor must be installed within the LFMC.
 - Bend in liquidtight flexible metal conduit shall not exceed 180 degrees.
 - A pull test is required on all installed conductors, at least six inches of free conductor movement shall be demonstrated to the satisfaction of the Engineer.

SERVICE SUPPORT TYPE TP (O)

(timber pole, overhead service, typical arrangement)

TIMBER POLE NOTES

1. Conduit and electrical conductors attached to the electrical service pole and underground within 12 inches of service pole shall not be paid for directly but shall be subsidiary to the service pole.
2. Pole top mounted photocell, install on north side of pole or in service enclosure as required. See Electrical Service Data.
3. Attach meter and service equipment with stainless steel or galvanized channel (Unistrut, Kindorf, or equal). Gain pole as required to provide flat surfaces for each strut. Point ends of galvanized channel with zinc rich paint. Gain depth 5/8" max. Gain height 1 7/8" max. Strut to be 1" max. deep, and 1 5/8" wide max. Secure each strut section to timber pole with two galvanized or SS lag bolts, 1/4" diameter min. by 1 1/2" length min. Place flat cut galvanized or SS washer on each lag bolt. Gain pole in a neat and workmanlike manner.
4. Embedment depth shall be as required in Item 627 Treated Timber Poles.
5. Poles trimmed for excess length shall be trimmed from the top end only.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- SERVICE SCHEMATICS AND SUPPORT-TYPE TP (OVERHEAD)

ED(4)-03

REVISIONS	DATE	BY	CHK	APP	DESCRIPTION
12-00	12/12/00	GRP	6	CC74-Q-199	47
3-03	3/03	GRP	6	CC74-Q-199	47
COUNTY: NUECES SECTION: 0079 JOB: 06 199 IN 37					

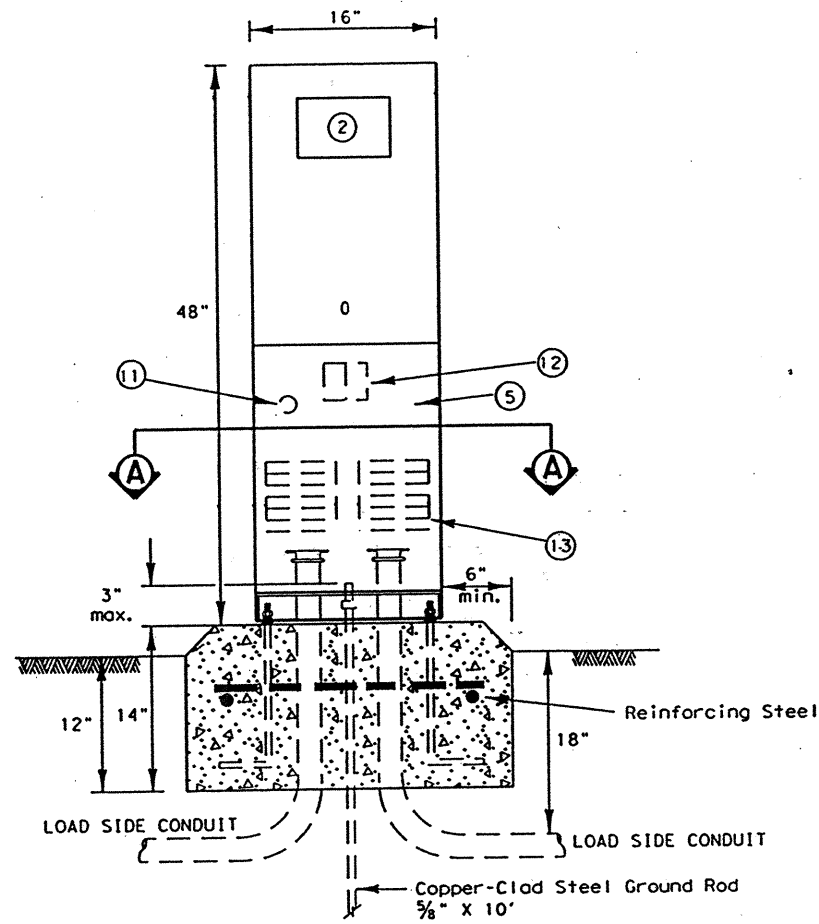
DISCLAIMER

• 31

71E

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

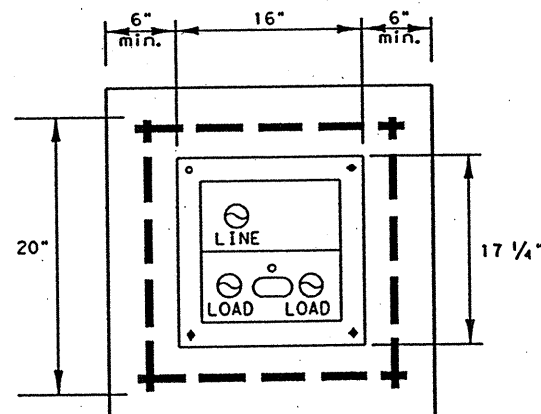
DN:	CK:	CK:	CK:
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100



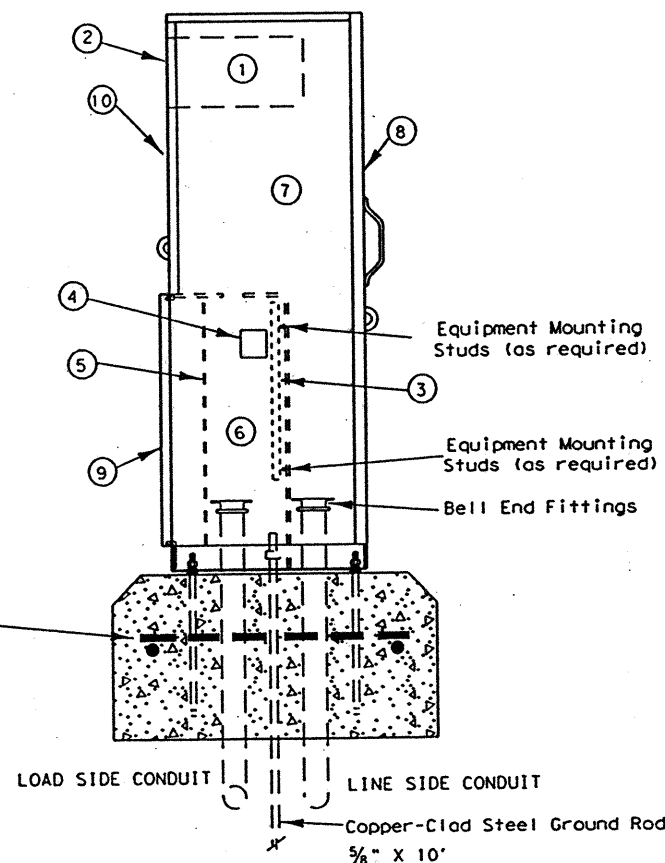
Note: Ells in foundation are rigid metal, size called for on the plans. Extension conduits from these ellis may be PVC, provided ends of rigid metal conduits are more than 2 in. below top of concrete foundation. Where extension conduits are metal, grounding bushing must be installed and a bonding jumper properly terminated.

FRONT VIEW

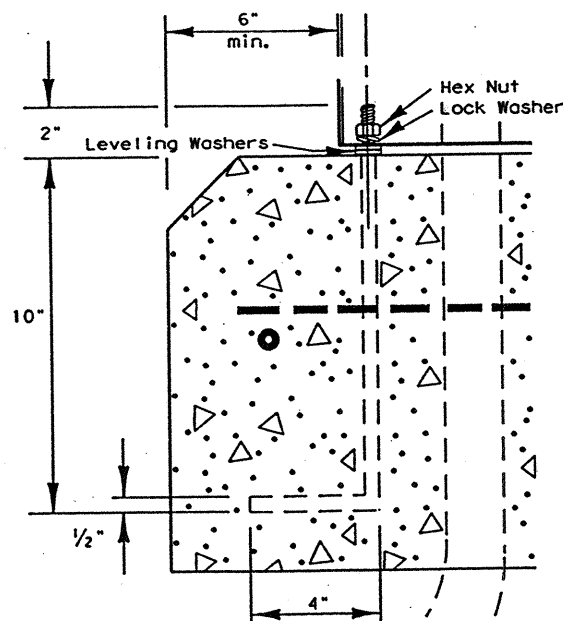
Ty C shown, Ty A similar except that Ty A shall have individual circuit breakers mounted on a equipment mounting panel. CB Handles shall protrude through hinged deadfront trim.



SECTION A-A



SIDE VIEW



ANCHOR BOLT
DETAIL

GENERAL NOTES

1. The pedestal service shall be UL type 3R, and shall be constructed of a minimum of 12 gauge stainless steel or aluminum as required by descriptive code. Stainless steel shall not be painted. For aluminum, the finish shall be an electrostatic applied polyurethane baked on powder, light green in color, or color as shown elsewhere and as approved by the Engineer. The front of the interior dead front trim shall be permanently labeled, "Danger High Voltage" with OSHA style label. The exterior of the pedestal service door shall be permanently labeled with a placard as to its use (i.e. Roadway Lighting, Traffic Signals, etc.). Placard shall be neat and professional in appearance. Lettering shall be 1" minimum height.
2. Utility Access Door shall have stainless steel piano hinge and provisions for padlocking.
3. Pedestal door shall have stainless steel piano hinge and stainless steel latch with provisions for padlocking.
4. Meter Access shall be hinged and capable of padlocking.
5. All mounting hardware and installation details of services shall be in accordance with utility company specifications. The Contractor is responsible for contacting the local utility company and obtaining their approval of pedestal details prior to making submittal to the Department and prior to constructing the electrical pedestal service. Any changes required by the utility company shall be noted on the submittals.
6. Meter Socket shall be a minimum of 100 amp rating and shall comply with the local utility requirements.
7. Photoelectric Control shall meet the requirements as shown on ED(5). Shield to control stray light is allowable. The Contractor shall be responsible for proper operation of the photo-electric control. The Contractor shall move and/or adjust or shield the photocell from stray or ambient nighttime light or shall make any other adjustments required for proper operation. The photocell shall face North when practicable. Unless otherwise shown on the plans, the photocell shall turn on the illumination system at 1.0 +/- 0.5 foot-candle and turn off the illumination system at two footcandles higher than turn on.
8. The Control Station (H-O-A Switch) shall be as shown on ED(5) except that H-O-A Switch operating handle shall protrude through hinged deadfront trim and NEMA 1 enclosure will not be required.
9. Concrete for pedestal service foundation shall be class A or C and shall be in accordance with Item 420, "CONCRETE STRUCTURES", except that concrete will not be paid for directly but shall be considered subsidiary to Item 628, "ELECTRICAL SERVICES".
10. Reinforcing steel shall be #4 rebar in accordance with Item 440, "REINFORCING STEEL".
11. Anchor bolts shall be A36MS5 in accordance with Item 449, "ANCHOR BOLTS". Anchor bolts shall be 1/2 inch x 12 inches x 4 inches (dia. x length x hook length).
12. All conduit and conductors attached to the pedestal service and within 12 inches of the pedestal service will not be paid for directly, but shall be subsidiary to the pedestal service. All service conduit and conductors from the utility company transformer to a point 12 inches from the pedestal service shall be paid for separately. Service conduit shall be the size and type as shown in the Electrical Service Data.
13. Dimensions may vary to accommodate required equipment, utility company requirements, or manufacturer's standard equipment dimensions. The Contractor shall submit to the Engineer for approval, six (6) copies of brochures and/or drawings of the pedestal service to be supplied, including actual dimensions, and a paint color sample.
14. A separate enclosure as shown on ED(4) or ED(5) for photocell shall not be used for pedestal services. Photocell shall be installed as shown here.
15. The pedestal door shall have a mechanically attached data pocket on the inside. Pocket shall be either metal or thermoplastic and shall measure at least 12 inches by 12 inches. The Contractor shall prepare and submit a schematic drawing unique to an individual service. The approved drawing shall be laminated and placed in the document pocket of the service at the time of shipment to the job site. All applicable wiring diagrams and plan sheet layouts for all equipment and branch breaker circuits supplied by that service shall also be laminated and placed in the document pocket prior to shipping.
16. Ground rod clamp to be UL listed for direct burial. All non-conductive coating to be removed from ground rod at clamp location. Ground rod wire to be #6 AWG solid copper. Metal conduit ellis to have grounding bushing and bonding jumpers correctly installed.
17. All conduits entering enclosures from underground must be sealed. Silicone shall not be allowed.
18. All conductors shall be megged and pull tested. Traffic signal cable not to be megged after connection, as electronics will be damaged.
19. Top of concrete foundation to be finished in a neat and workman like manner. If leveling washers are used, no more than 1/4 in. height shall be used at any one corner. Maximum dip or rise in foundation is not to exceed 1/4 in per foot. When properly installed, top of service enclosure shall read level front to back and side to side within 1/4 in. Rocking or movement of the service enclosure shall be repaired by the contractor at no cost to the state.
20. Liquidtight flexible metal conduit shall not be allowed on PS type services.

LEGEND

1. METER SOCKET, (when required)
2. METER SOCKET WINDOW, (when required)
3. EQUIPMENT MOUNTING PANEL
4. PHOTO ELECTRIC CONTROL WINDOW, (when required)
5. HINGED DEADFRONT TRIM
6. LOAD SIDE CONDUIT AREA
7. LINE SIDE CONDUIT AREA
8. UTILITY ACCESS DOOR, with handle
9. PEDESTAL DOOR
10. HINGED METER ACCESS
11. CONTROL STATION (H-O-A Switch)
12. MAIN DISCONNECT
13. BRANCH CIRCUIT BREAKERS

5/03 Revision
Revised notes.

STANDARD PLANS	
TEXAS DEPARTMENT OF TRANSPORTATION	
Traffic Operations Division	
ELECTRICAL DETAILS	
ELECTRICAL SERVICE SUPPORT	
PEDESTAL SERVICE TYPE PS	
ED(8)-03	
© TxDOT April 1998	
REVISIONS	DATE
12-00	3-03
3-03	5-03
5-03	
PROJECT	SECTION
6	CC 74-6-199
COUNTY	SECTION
Nueces	0074 06 199
SHEET	49
71H	

[illegible]

SEAL APPLIES TO
REVISION **A** ONLY.

REVISED 03-03-04



GOVIND
ENGINEERS & CONSULTANTS

TEL: 361 288 1385
FAX: 361 288 0712
P.O. BOX 9084
CORPUS CHRISTI, TEXAS 78409



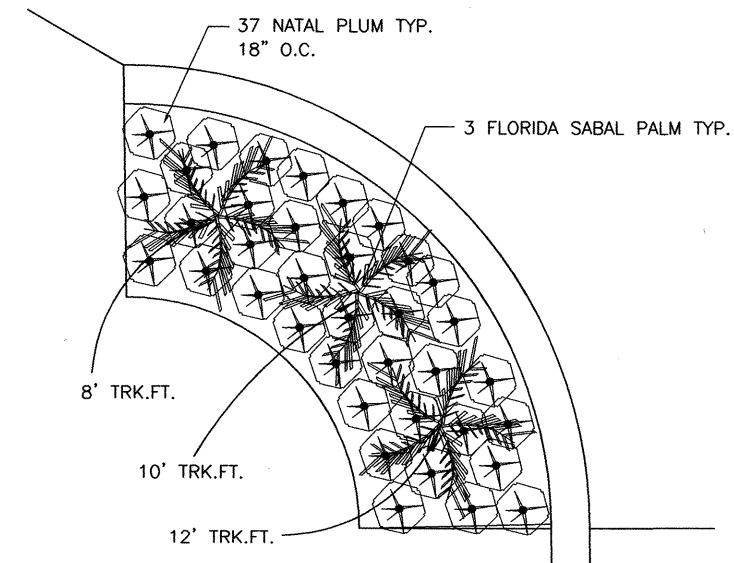
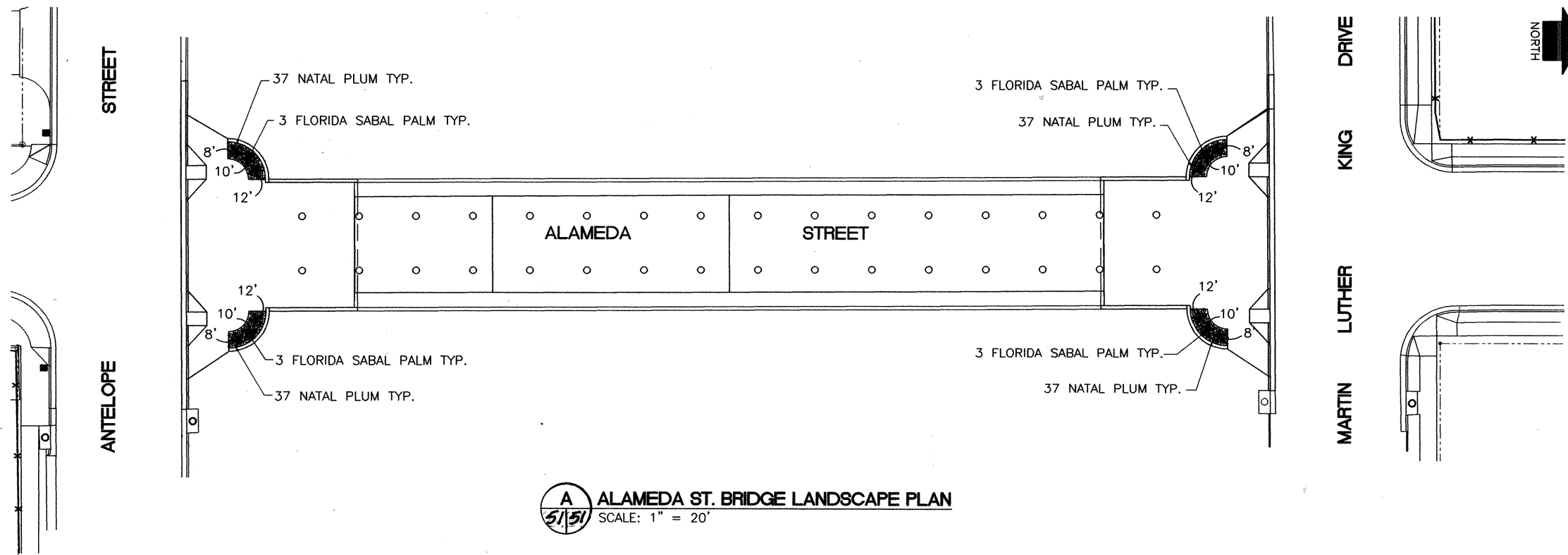
Texas Department of Transportation

© 2002 Texas Department of Transportation
all rights reserved.

**LIVABLE COMMUNITIES
INITIATIVE PHASE II**

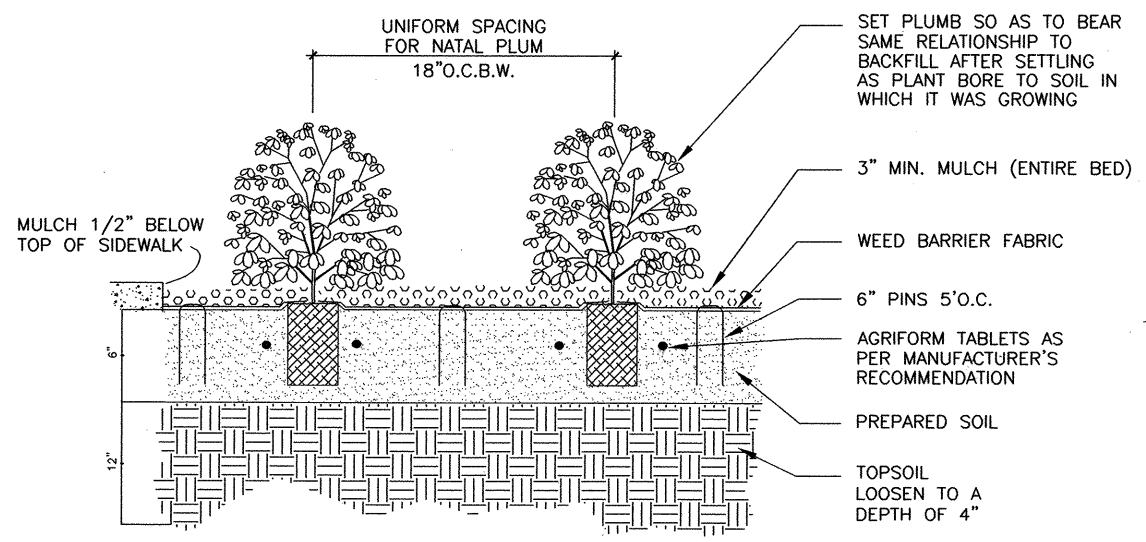
ELECTRICAL SERVICE DATA SHEET

FED RD DIST NO	FEDERAL PROJECT NO			SHEET NO
6	CC 74-6-199			50
STATE	STATE DIST NO		COUNTY	
TEXAS	CRP		NUECES	
CONT	SECT	JOB	HIGHWAY NO	
0074	06	199	IH37	

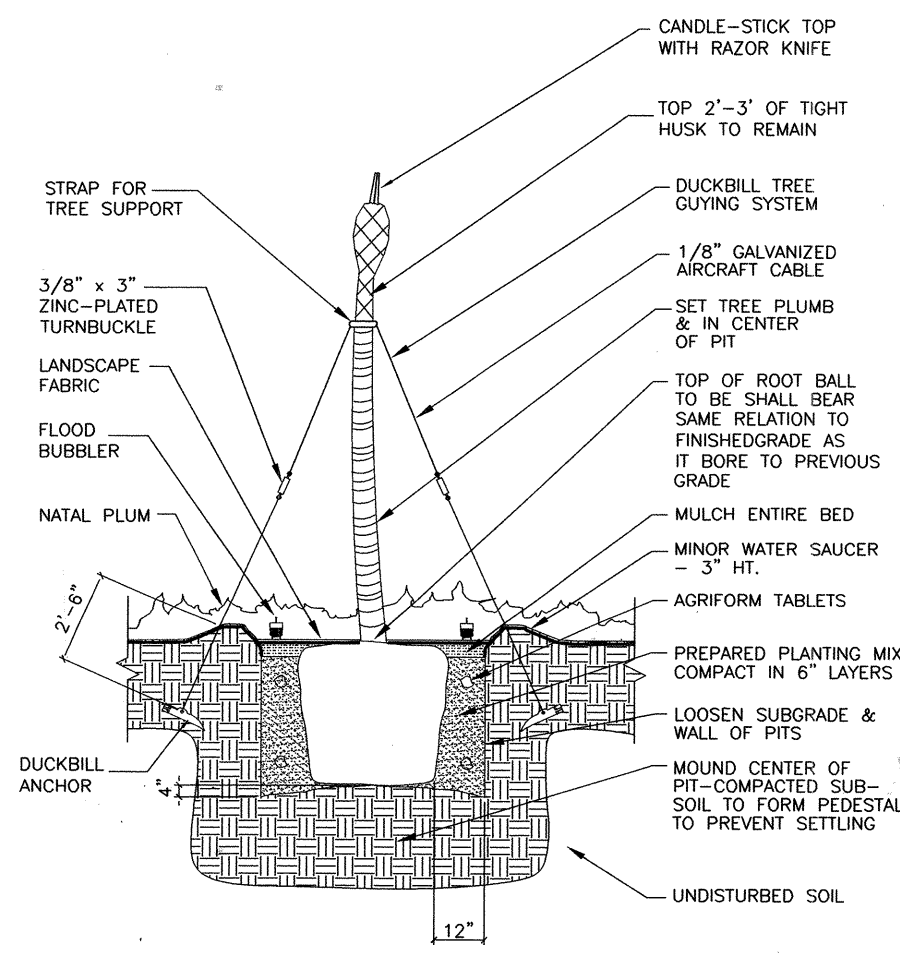


TYPICAL PLANTING PLAN
SCALE: N.T.S.

A ALAMEDA ST. BRIDGE LANDSCAPE PLAN
SCALE: 1" = 20'



1 PLANTING DETAIL FOR SHRUBS IN PREPARED BED
N.T.S.



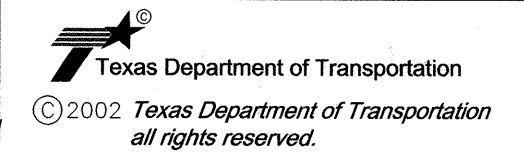
2 PLANTING AND STAKING DETAIL FOR MEXICAN FAN PALMS
N.T.S.

LANDSCAPE NOTES:

1. INSTALLER SHALL EXAMINE THE SITE & FAMILIARIZE HIMSELF W/ ALL CONDITIONS PERTINENT TO THIS WORK.
2. INSTALLER SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR W/ ALL UNDERGROUND UTILITIES, PIPES, AND LINE RUNS.
3. INSTALLER SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH IRRIGATION AND SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL LANDSCAPE OPERATIONS.
4. ALL TREES & SHRUBS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR.
5. TOP DRESS ALL PLANTING BEDS WITH A MINIMUM OF 3" OF CYPRESS MULCH. INSTALL A DEWITT 'PRO 5' LANDSCAPE FABRIC IN ALL PLANTING BEDS.
6. ALL PLANTING BEDS SHALL BE PREPARED BY CONDITIONING EXISTING SOIL OR BACKFILLED WITH SPECIFIED MIXTURE.
7. BACKFILL MATERIALS FOR ALL PALMS SHALL BE IN THE FOLLOWING PROPORTIONS : 1/3 COMPOST, 1/3 SHARP SAND, & 1/3 COMPOSTED TOP SOIL (PRE-MIX PRIOR TO BACKFILLING) PLACE AGRIFORM TABLETS IN BACKFILL MIX.
8. FINISH GRADE FOR ALL BEDS TO BE 1/2" BELOW TOP OF CONCRETE WALK.
9. GUYING AND STAKING BY DUCKBILL MODEL 68 DTS WITH PALM STRAPS.

PLANT LIST

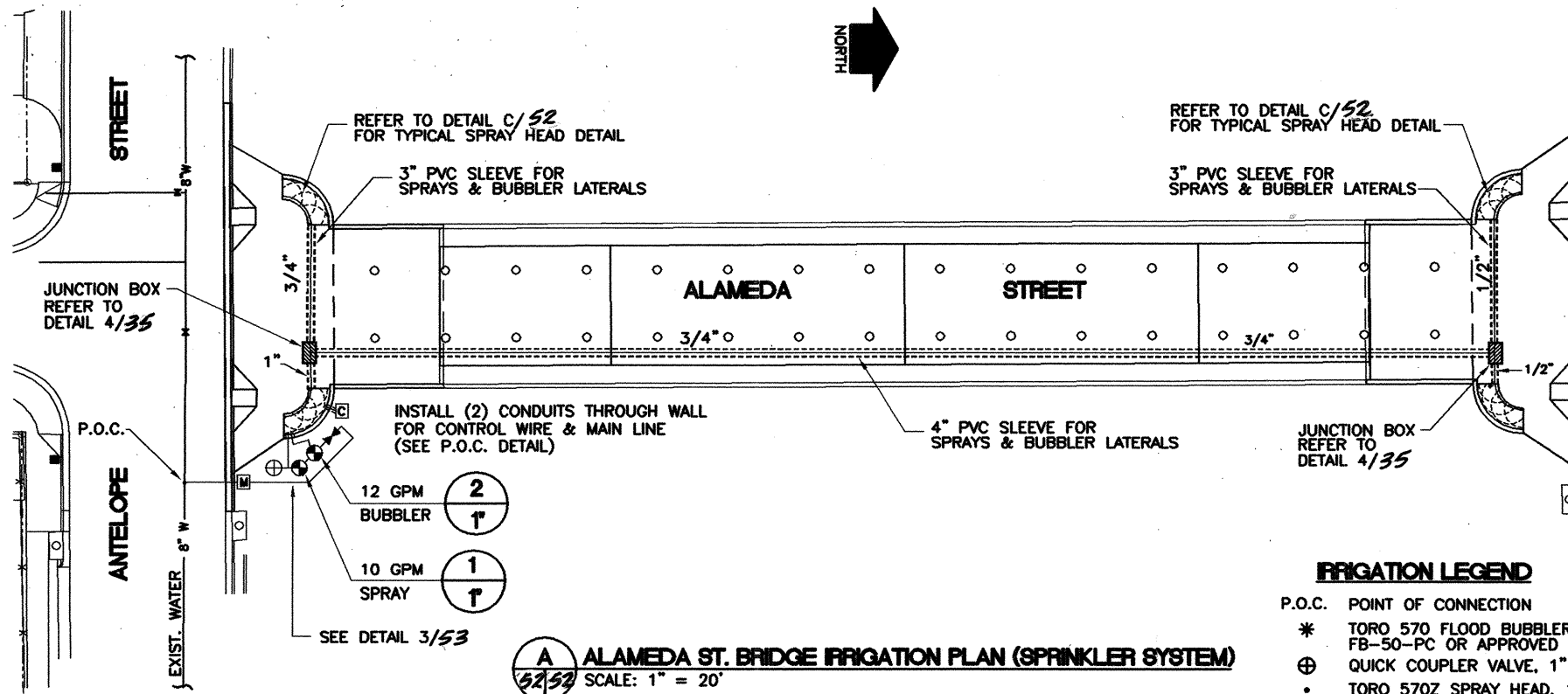
QUANTITY	COMMON NAME BOTANICAL NAME	SIZE	HEIGHT	SPREAD	COMMENTS
TREES / SHRUBS					
12	Florida Sabal Palm Sabal palmetto	B&B 12" DIA. TRK.	(4)8', (4)10' (4)12' TRK.HT		STRAIGHT TRUNK, BOOTED, FRESHLY DUG GRADE "A"
148	Natal plum Carissa Grandiflora	1 Gal.	8"-12"	8'-10'	CONTAINER GROWN FULL 18" O.C. (BOXWOOD BEAUTY)



LIVABLE COMMUNITIES INITIATIVE PHASE II
ALAMEDA ST. BRIDGE LANDSCAPE PLAN AND DETAILS
SCALE: AS SHOWN



FED RD DIV NO 6	FEDERAL PROJECT NO CC 74-6-199	SHEET NO 51
STATE TEXAS	STATE DIST NO CRP	COUNTY NUECES
CONT 0074	SECT 06	JOB 199
		HIGHWAY NO IH37



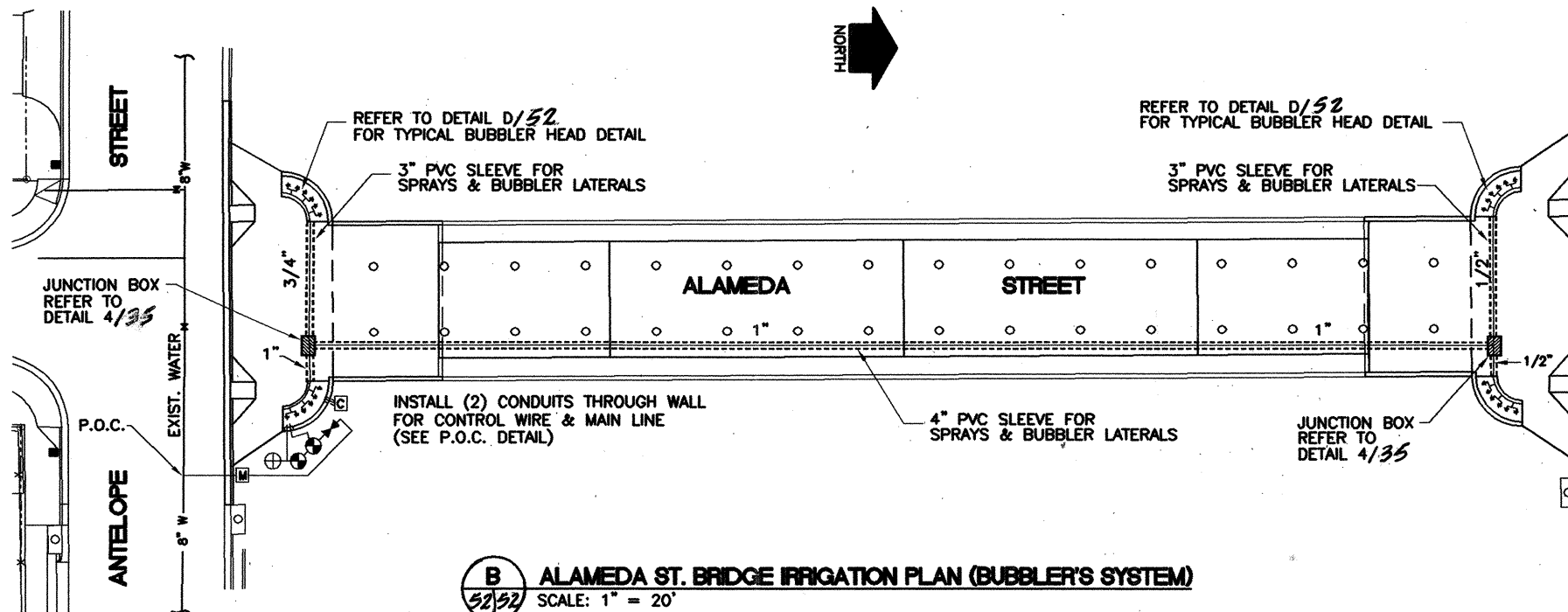
A ALAMEDA ST. BRIDGE IRRIGATION PLAN (SPRINKLER SYSTEM)
SCALE: 1" = 20'

NOTE:

1. IRRIGATION PVC SLEEVES SHALL BE EMBEDDED IN THE NEW CONCRETE PAVEMENT.

IRRIGATION LEGEND

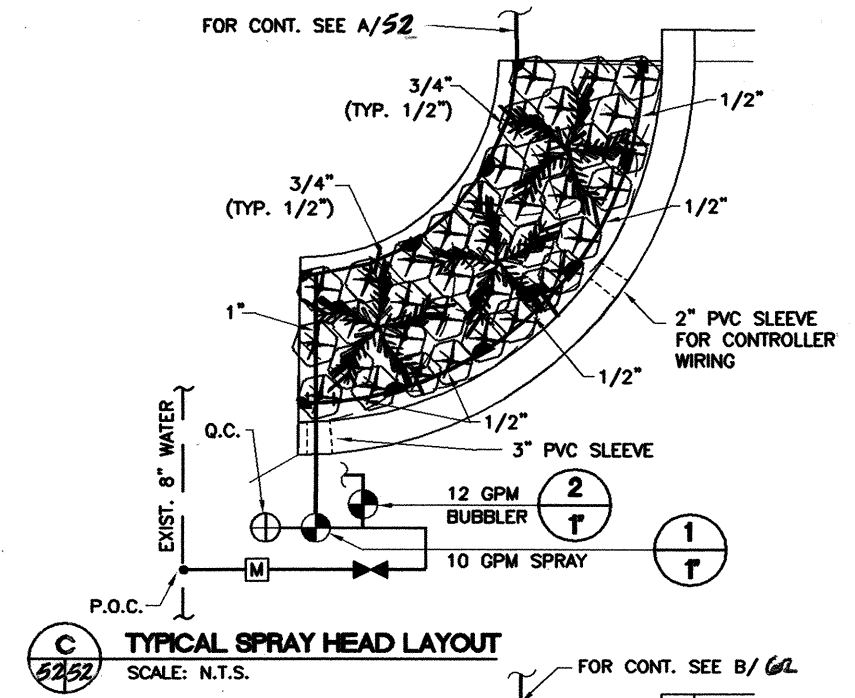
- P.O.C. POINT OF CONNECTION
- * TORO 570 FLOOD BUBBLER FB-50-PC OR APPROVED EQUAL
 - ⊕ QUICK COUPLER VALVE, 1"
 - TORO 570Z SPRAY HEAD, 12P, 5' NOZZLE OR APPROVED EQUAL
 - ⊕ RAINBIRD ELECTRIC VALVE PEB, 1" OR APPROVED EQUAL
 - IRRIGATION SLEEVE 3" PVC SCH. 40
 - P.V.C. CLASS 200
 - ⊕ IRRITROL IRRIGATION CONTROLLER TC-6EX-B OR APPROVED EQUAL
 - ⊕ IRRIGATION METER 3/4"
 - ⊕ PRESSURE VACUUM BREAKER FEBCO MODEL 765 3/4" OR APPROVED EQUAL
 - ⊕ JUNCTION BOX (REFER TO CIVIL DWGS, DETAIL 4/35)



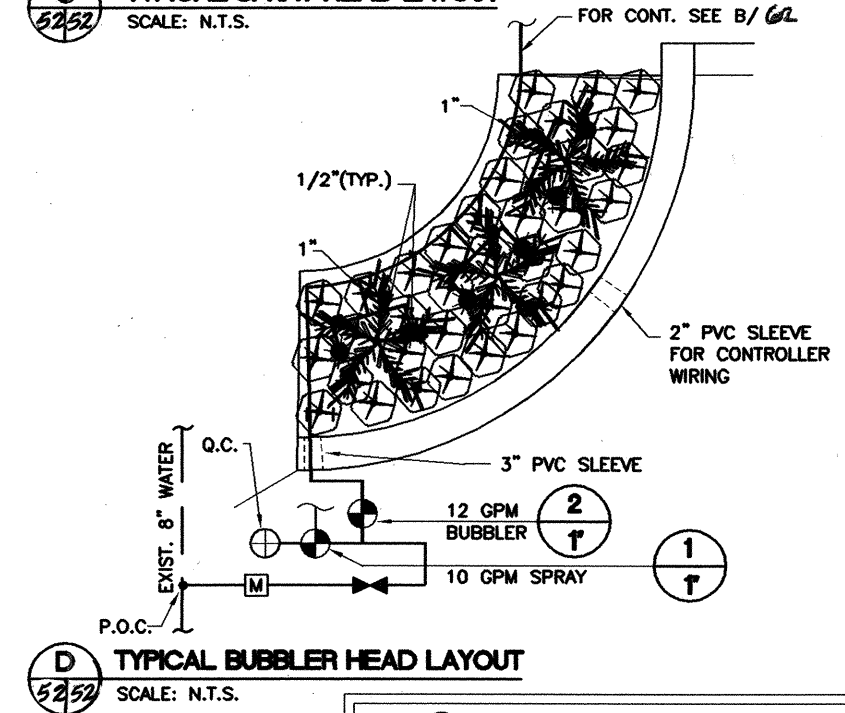
B ALAMEDA ST. BRIDGE IRRIGATION PLAN (BUBBLER'S SYSTEM)
SCALE: 1" = 20'

NOTE:

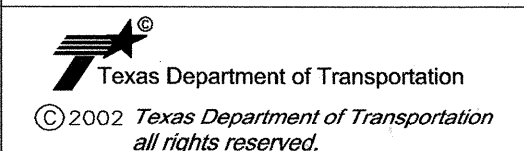
1. IRRIGATION PVC SLEEVES SHALL BE EMBEDDED IN THE NEW CONCRETE PAVEMENT.



C TYPICAL SPRAY HEAD LAYOUT
SCALE: N.T.S.



D TYPICAL BUBBLER HEAD LAYOUT
SCALE: N.T.S.



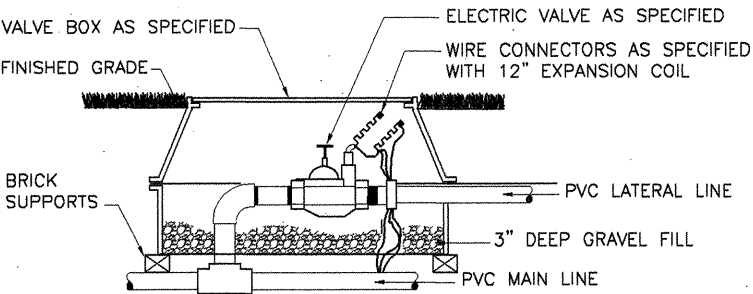
**LIVABLE COMMUNITIES
INITIATIVE PHASE II**

**ALAMEDA ST. BRIDGE
IRRIGATION PLAN
AND DETAILS**

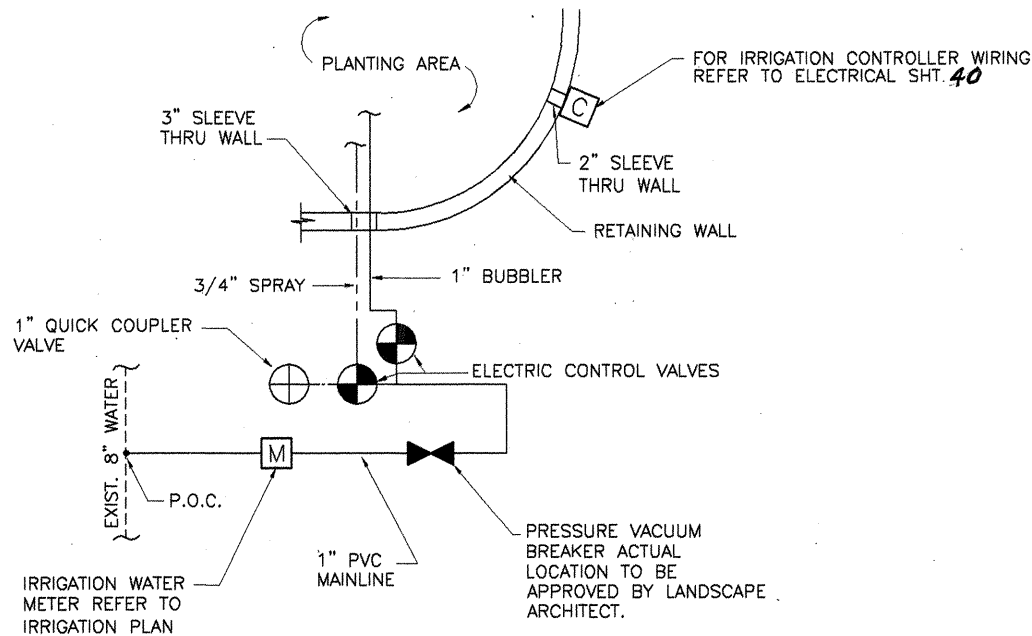
SCALE: AS SHOWN

FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		52
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	IH37

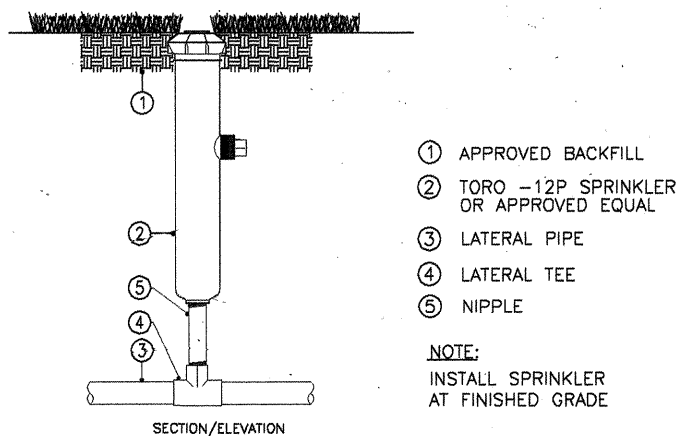




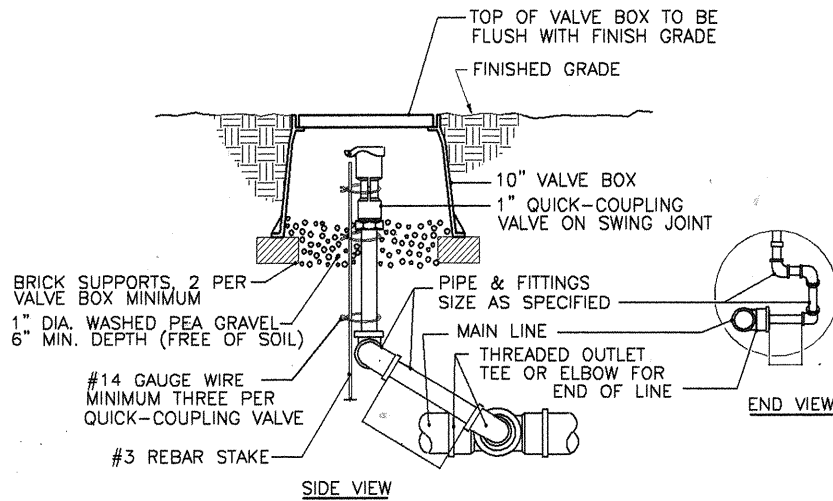
1 TYPICAL ELECTRIC VALVE
5353 N.T.S.



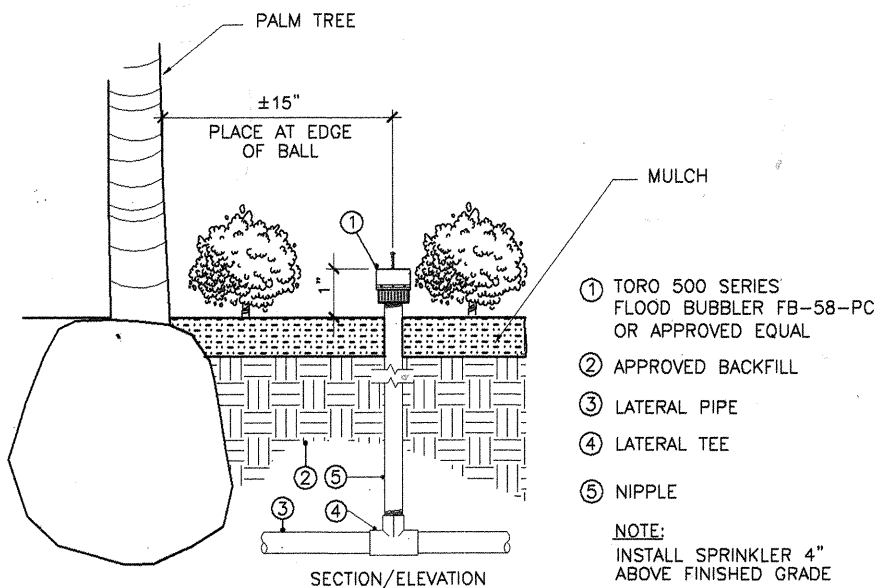
2 TYP. P.O.C. - IRRIGATION SCHEMATIC FOR WATER SOURCE
5353 N.T.S.



4 TORO 570Z SERIES 12" POP-UP SPRINKLER
5353 N.T.S.



3 QUICK COUPLING VALVE
5353 N.T.S.



5 TORO 500 SERIES BUBBLER
5353 N.T.S.

IRRIGATION NOTES:

1. INSTALLER SHALL CONFORM TO ALL CODES & ORDINANCES REVELANT TO WORK UNDER THIS CONTRACT.
2. INSTALLER SHALL BE RESPONSIBLE FOR ALL LABOR & MATERIALS NECESSARY TO FULLY EXECUTE & GUARANTEE THE WORK ENTAILED IN THESE CONTRACT DOCUMENTS.
3. THE AUTOMATIC CONTROL CLOCK IS SCHEMATICALLY INDICATED ON THE PLANS, FINAL LOCATION WILL BE DETERMINED BY THE LANDSCAPE ARCHITECT. MOUNT CONTROLLER ON BACKSIDE OF WALL.
4. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR ALL ELECTRIC CONNECTIONS FROM CONTROL VALVES TO THE CONTROL CLOCK. CONTRACTOR SHALL COORDINATE POWER WITH GENERAL CONTRACTOR. SEE ELECTRICAL DRAWINGS.
5. INSTALLER SHALL FREEZE PROTECT PRESSURE VALVE BREAKER.
6. CONTRACTOR IS RESPONSIBLE FOR CITY TAP AND METER FEES. ALL NECESSARY CONNECTIONS & FITTINGS "DOWNSTREAM" OF METER SHALL BE SUPPLIED & INSTALLED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYMENT OF APPLICABLE PERMITS OR FEES.
7. IRRIGATION SYSTEM LAYOUT IS DIAGRAMMATIC. EXACT LOCATION OF PIPING, SLEEVES, VALVES, & OTHER COMPONENTS SHALL BE ESTABLISHED BY CONTRACTOR IN THE FIELD AT THE TIME OF INSTALLATION AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE.
8. ALL VALVES SHALL BE PLACED IN VALVE BOXES W/ MIN. OF 3" OF GRAVEL FOR DRAINAGE. VALVE BOXES SHALL BE A LOCKABLE TYPE BOX OR SECURED WITH A SCREW OR A BOLT.
9. ACCURATE AS-BUILT SHOWING AS A MIN., VALVE LOCATION, WIRE RUNS, AND SLEEVE LOCATIONS, WILL BE REQUIRED ALONG W/ALL PRODUCT INFORMATION & OPERATION'S MANUALS AT PROJECT CLOSE OUT.
10. INSTALL FLOOD BUBBLERS 1" HIGHER THAN TOP OF MULCH.
11. ALL SLEEVES/CONDUIT IN PLANTING BEDS SHALL BE 4" BELOW THE FINISHED GRADE.
12. CONTRACTORS SHALL ADJUST THE ARC AND RADIUS OF EACH HEAD TO MINIMIZE "OVERTHROW" AND "DRYSPOTS".
13. CONTRACTORS SHALL INSTALL ADDITIONAL HEADS TO COVER "DRYSPOTS" AS NECESSARY. THE LAYOUTS OF THESE HEADS SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
14. THE ENTIRE SYSTEM SHALL BE UNCONDITIONALLY GUARANTEED BY THE CONTRACTOR AGAINST ALL DEFECTIVE WORKMANSHIP AND MATERIALS FOR A ONE YEAR PERIOD FOLLOWING THE DATE OF ACCEPTANCE.
15. CONTROL WIRE FOR REMOTE CONTROL VALVES SHALL BE 14 GAUGE MINIMUM. ALL EXPOSED WIRES TO BE PLACED IN CONDUITS.
16. UPON COMPLETION OF THE IRRIGATION SYSTEM'S LATERAL SECTION AND PRIOR TO PLACEMENT OF NEW CONCRETE PAVEMENT AND AFTER SUFFICIENT TIME HAS BEEN ALLOWED FOR SOLVENT WELD JOINTS TO CURE, THE ENTIRE SYSTEM SHALL BE HYDROSTATICALLY TESTED BY CAPPING OFF ALL SPRINKLER HEADS, THE LATERAL LINE SHALL BE TESTED. PRIOR TO CAPPING, ALL AIR AND DIRT SHALL BE FLUSHED FROM THE SYSTEM AND THE PIPE PARTIALLY BACKFILLED BY CENTER LOADING, LEAVING ALL JOINTS, RISER, AND CONNECTIONS EXPOSED FOR VISUAL INSPECTION. ALL LATERAL IRRIGATION PIPING MUST BE PRESSURE TESTED FOR ONE (1) HOUR AT 60 PSI. IF AFTER ON HOUR NO VISIBLE LEAKAGE HAS OCCURED AND THE 60 PSI PRESSURE HAS BEEN RETAINED, THE HEADS SHALL BE INSTALLED AND THE BACKFILL OPERATION COMPLETED. ANY LEAKS RESULTING FROM THE HYDROSTATIC TEST SHALL BE REPAIRED AND THE SYSTEM RE-TESTED UNTIL THE SYTEM PASSES THE TEST.



Texas Department of Transportation
© 2002 Texas Department of Transportation
all rights reserved.

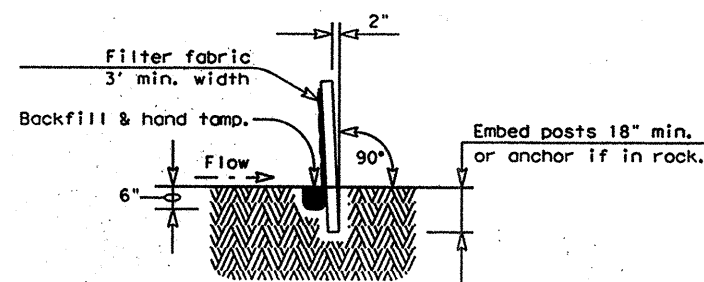
LIVABLE COMMUNITIES INITIATIVE PHASE II
ALAMEDA ST. BRIDGE IRRIGATION DETAIL SHEET

FED RD DIV NO	FEDERAL PROJECT NO		SHEET NO
6	CC 74-6-199		53
STATE	STATE DIST NO	COUNTY	
TEXAS	CRP	NUECES	
CONT	SECT	JOB	HIGHWAY NO
0074	06	199	IH37



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

LEVELS DISPLAYED
1 314151617181910111213141516
17181920212223242526272829303132
33343536373839404142434445464748
495051525354555657585960616263



SECTION A-A

SEDIMENT CONTROL FENCE USAGE GUIDELINES

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

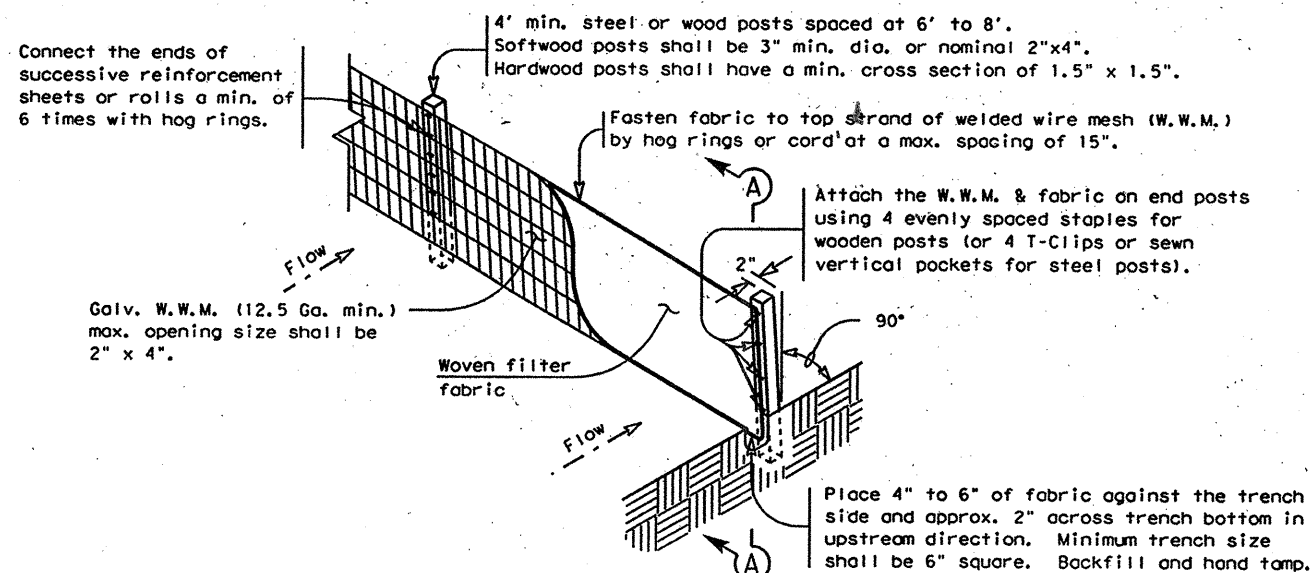
Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

PLAN SHEET LEGEND

Sediment Control Fence — SCF —

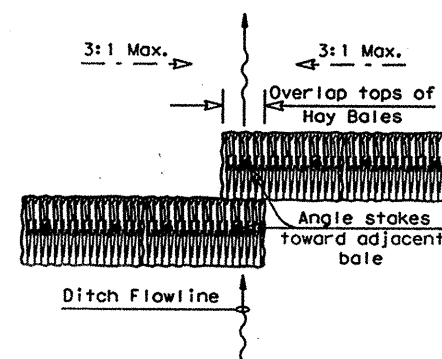
GENERAL NOTES

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

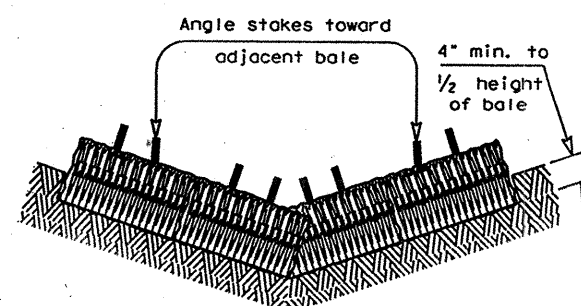


TEMPORARY SEDIMENT CONTROL FENCE

SCF



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay — BH —

BALED HAY USAGE GUIDELINES

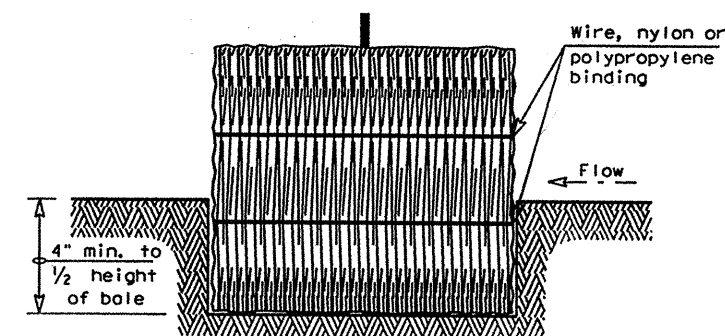
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT² 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 1/2 acre.

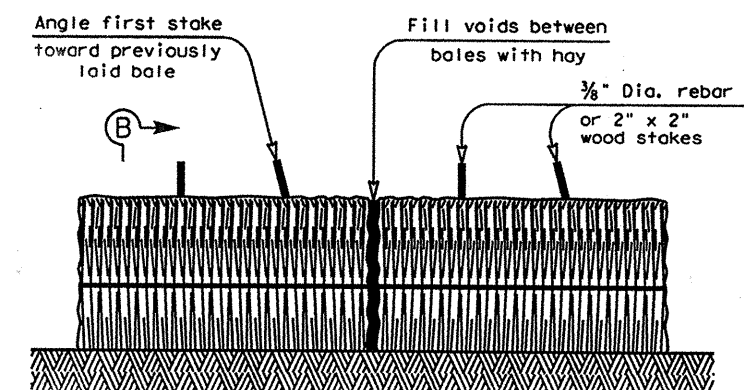
For Baled Hay installations in small ditches, the additional following considerations apply:

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

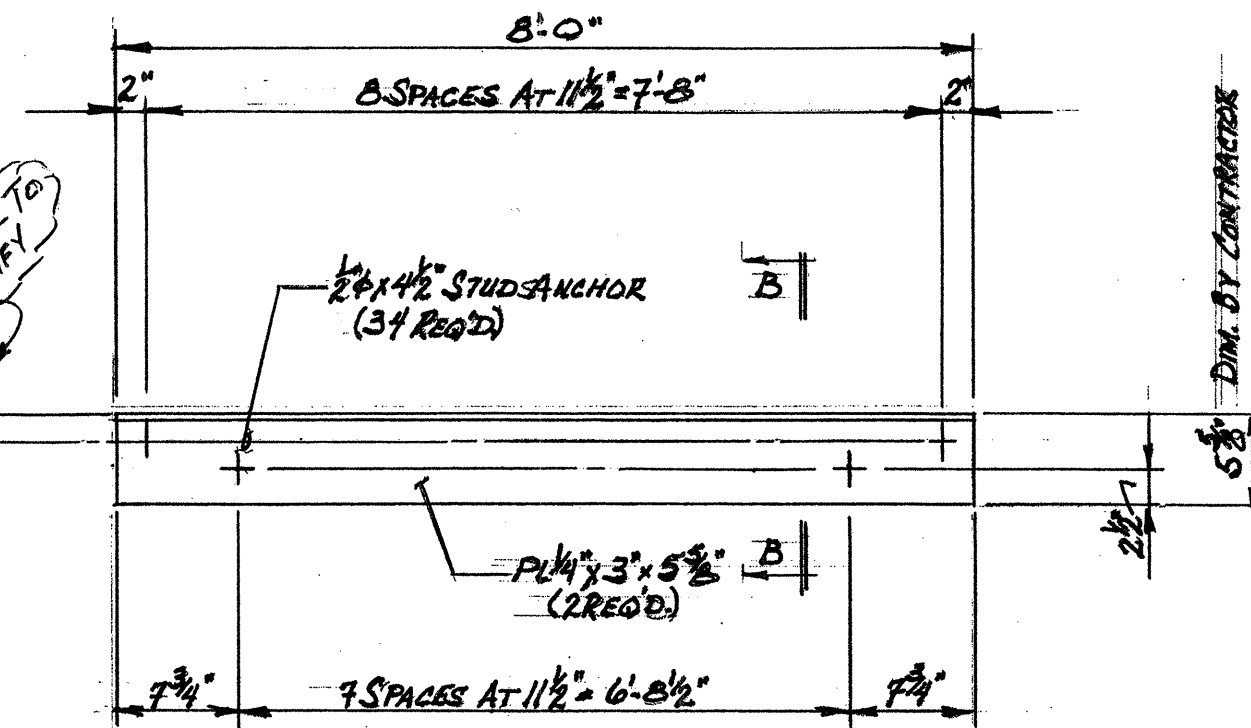
1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible 1/2 the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

Texas Department of Transportation
Design Division (Roadway)

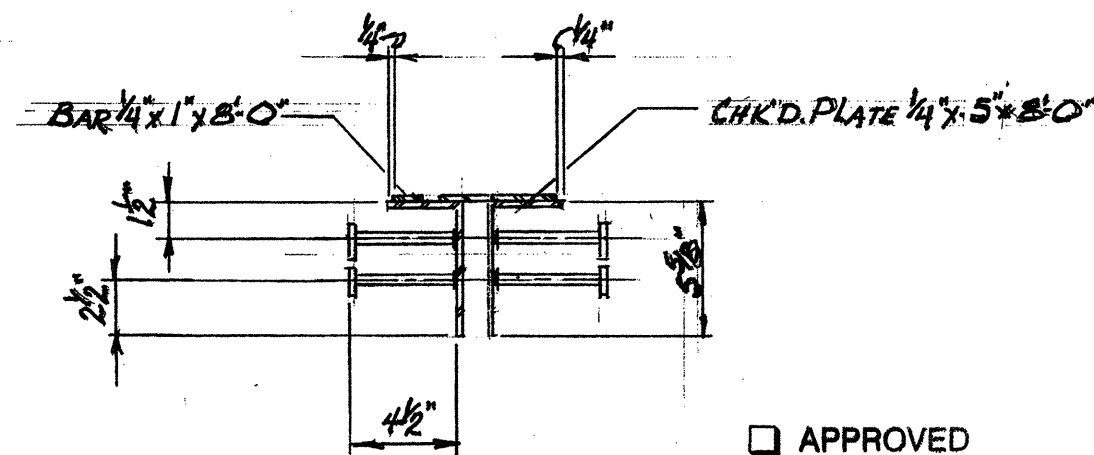
**TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
FENCED & BALED HAY**

EC(1)-93

FILE#	EC193.DGN	DW1 HEJ	CK1 HEJ	DW1 BGD	CK1
© TxDOT	JUNE 1993	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS	CRP	CC74-6-199	54		
	COUNTY	CONTROL SECT	JOB	HIGHWAY	
	NUECES	0074	06	199	1197



ARMOR JOINT DETAIL (CENTER SECTION)
(5 REQ'D.) ✓



SECTION B-B

	DIM "C" EAST SIDE	DIM "C" WESTSIDE
ABUTMENT 1	8 ⁵ / ₈ "	8 ⁵ / ₈ "
BENT 2	8 ¹¹ / ₁₆ "	8 ¹ / ₂ "
BENT 3	8 ³ / ₈ "	8 ⁷ / ₈ "
BENT 4	8 ¹¹ / ₁₆ "	8"
ABUTMENT 5	8 ⁴ / ₁₆ "	8 ¹ / ₂ "

☐ APPROVED
☒ APPROVED AS NOTED

REVIEW IS ONLY FOR CONFORMANCE WITH THE DESIGN
CONCEPT OF THE PROJECT. CONTRACTOR IS RESPONSIBLE
FOR DIMENSIONS, QUANTITIES AND PERFORMANCE IN
ACCORDANCE WITH CONTRACT DOCUMENTS.
DATE: 7/7/04 BY: PK
MAVERICK ENGINEERING, INC.

NOTE:

- 1) STRUCTURAL STEEL TO CONFORM TO A.S.T.M. A-36
- 2) STUD ANCHORS TO BE A.S.T.M. A-108
- 3) STUD ANCHORS TO BE ELECTRIC ARC END WELDED TO PLATE WITH COMPLETE FUSION.

HOT DIP GALVANIZATION AFTER FABRICATION



Concrete Accessories, Inc.

Concrete Contractors Supplies

2621 HICKORY ST. DALLAS, TEXAS 75226

PHONE (214) 421-2131

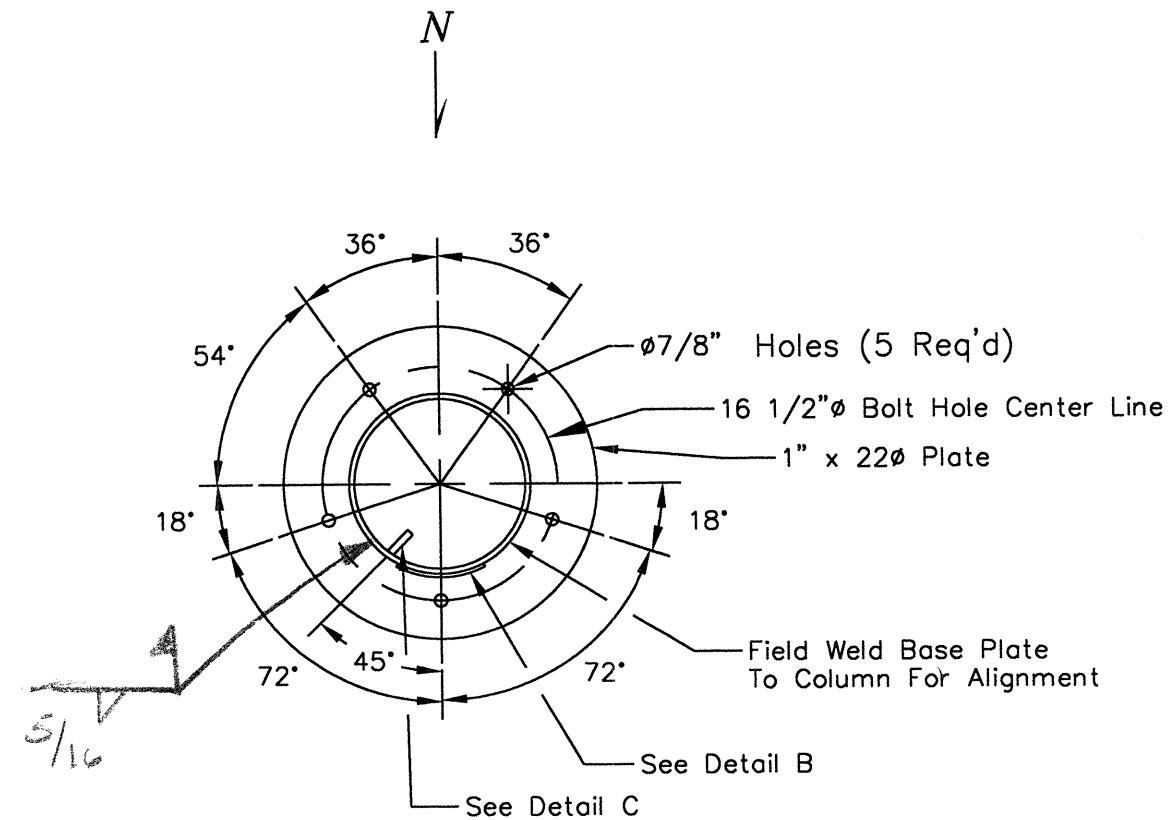
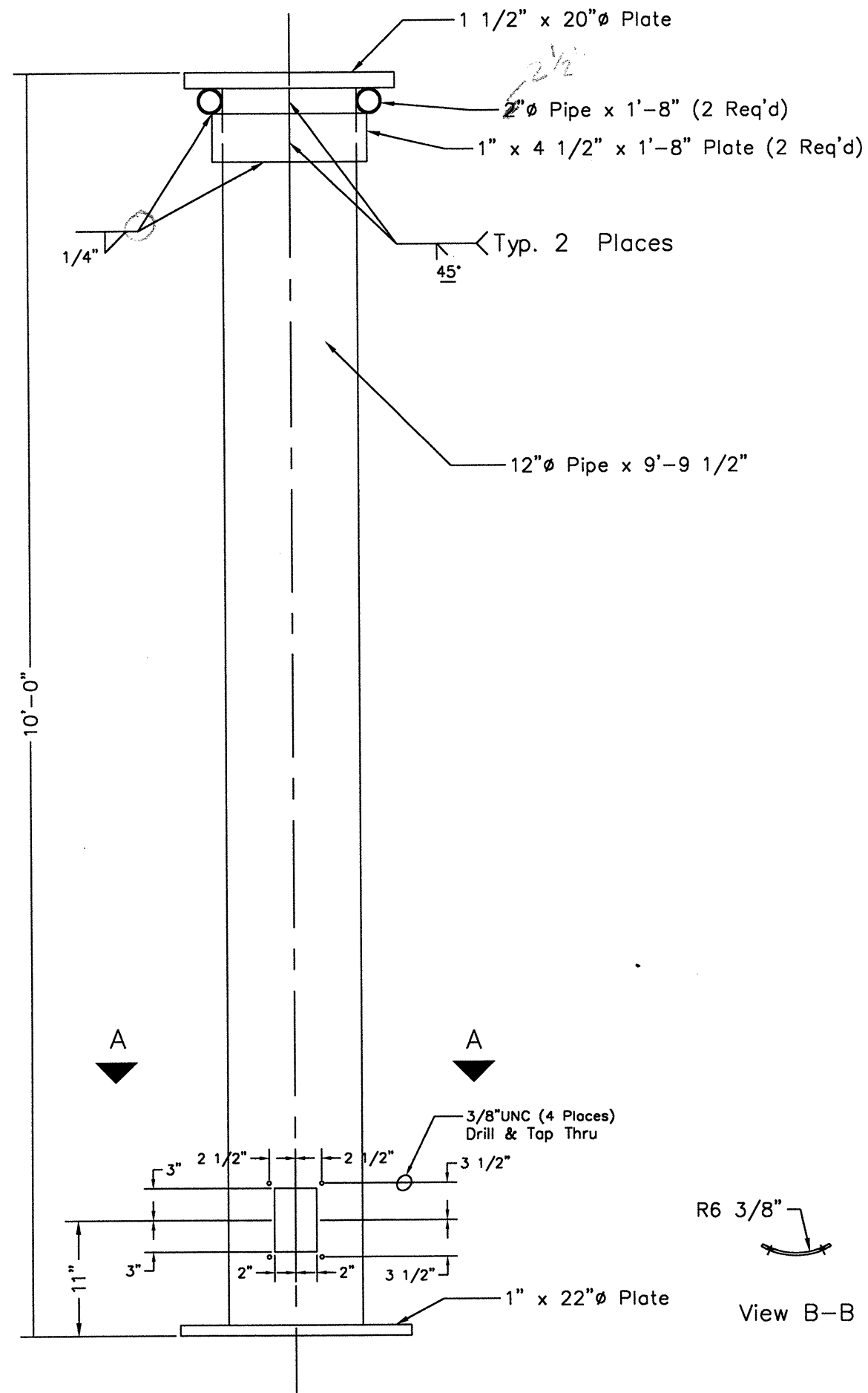
TITLE: ARMOR JOINT

COUNTY: NUECES

PROJECT: CC 74-6-199/0074-06-199

CONTRACTOR: REESE CONTRACTING, INC.

DATE: 6/17/04 SHEET: ONE



View A-A

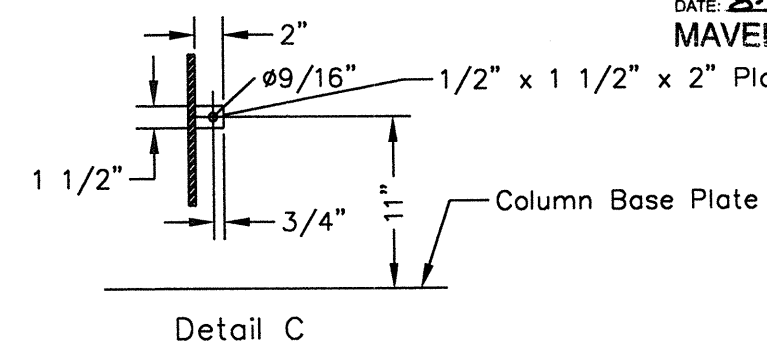
☐ APPROVED

☒ APPROVED AS NOTED

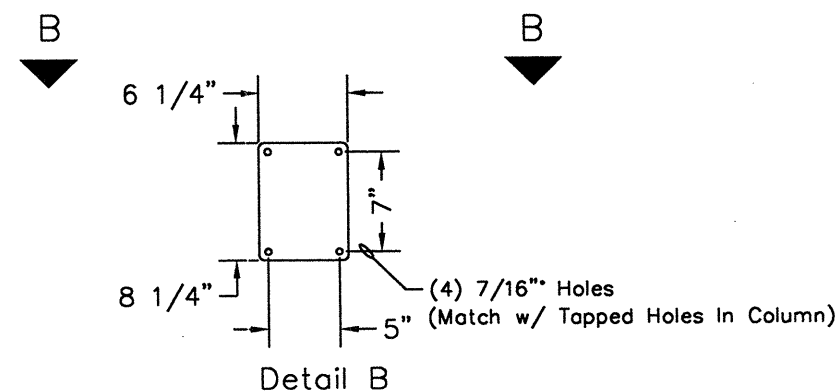
REVIEW IS ONLY FOR CONFORMANCE WITH THE DESIGN
CONCEPT OF THE PROJECT. CONTRACTOR IS RESPONSIBLE
FOR DIMENSIONS, QUANTITIES AND PERFORMANCE IN
ACCORDANCE WITH CONTRACT DOCUMENTS.

DATE: 8-18-04 BY: J.E.

MAVERICK ENGINEERING, INC.



Detail C



Detail B

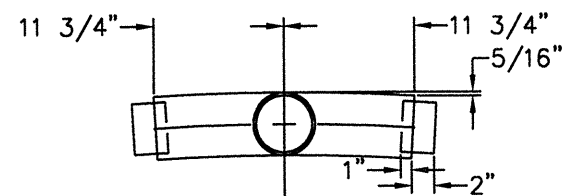
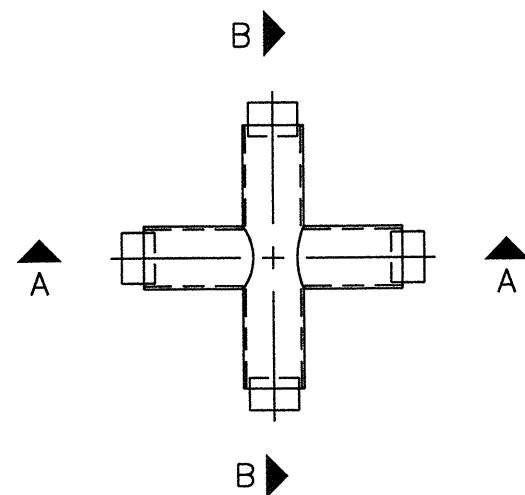
R6 3/8"

View B-B

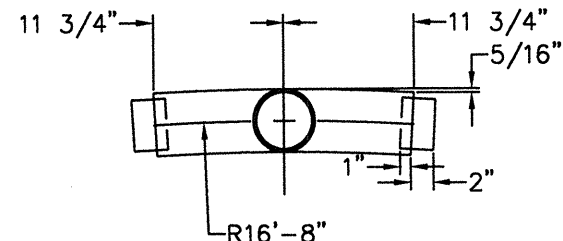
HOT DIP GALVANIZED
AFTER FABRICATION

Concrete Accessories, Inc
Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

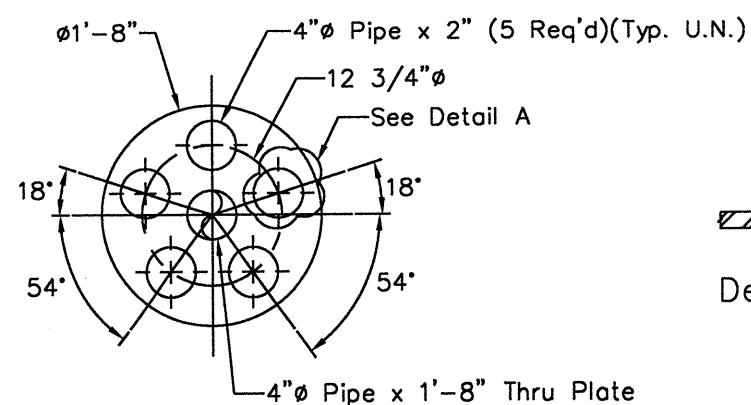
Title: Bridge Pipe Arches
County: Nueces
Project: IH-37
Contractor: Reese Contracting, Inc
Date: August 11, 2004



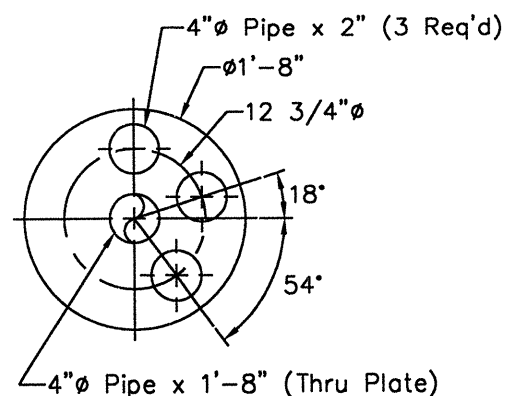
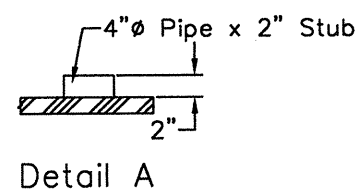
View A-A



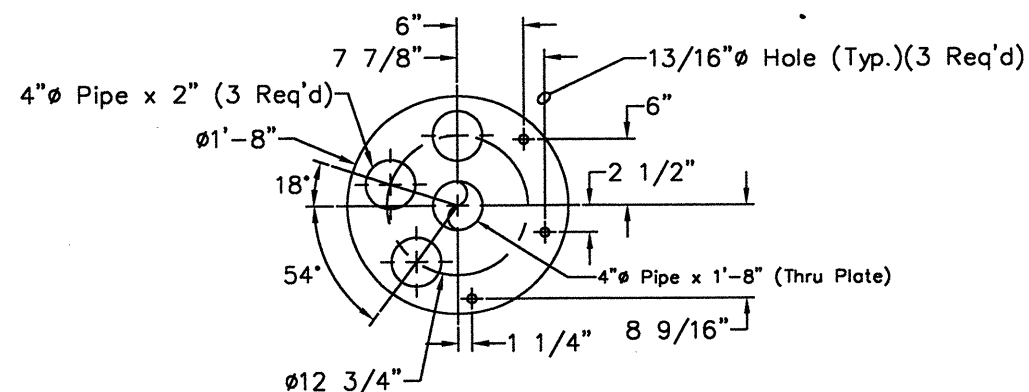
View B-B



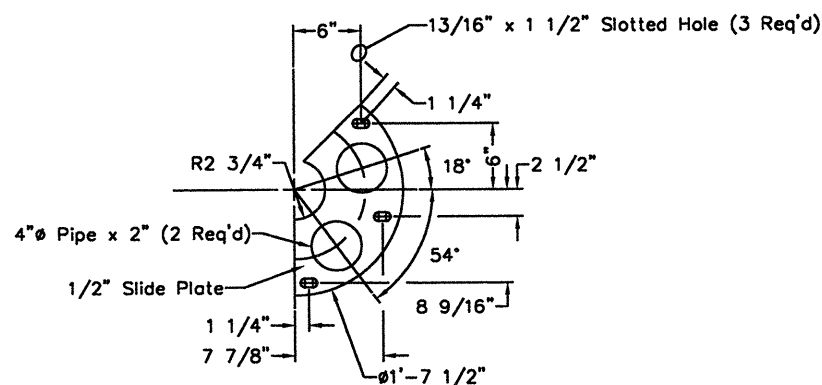
Cap Plate Detail
(18 Required)
Mk ICPI



Cap Detail (2 Required) As Shown
Cap Detail (2 Required) Opposite Hand
Mk ICP2R
Mk ICP2L



Cap Plate Detail (5 Required) As Shown Mk 2CPIR
Cap Plate Detail (5 Required) Opposite Hand Mk 2CPIL



Slide Plate Detail
(10 Required)

Concrete Accessories, Inc

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Bridge Pipe Arches

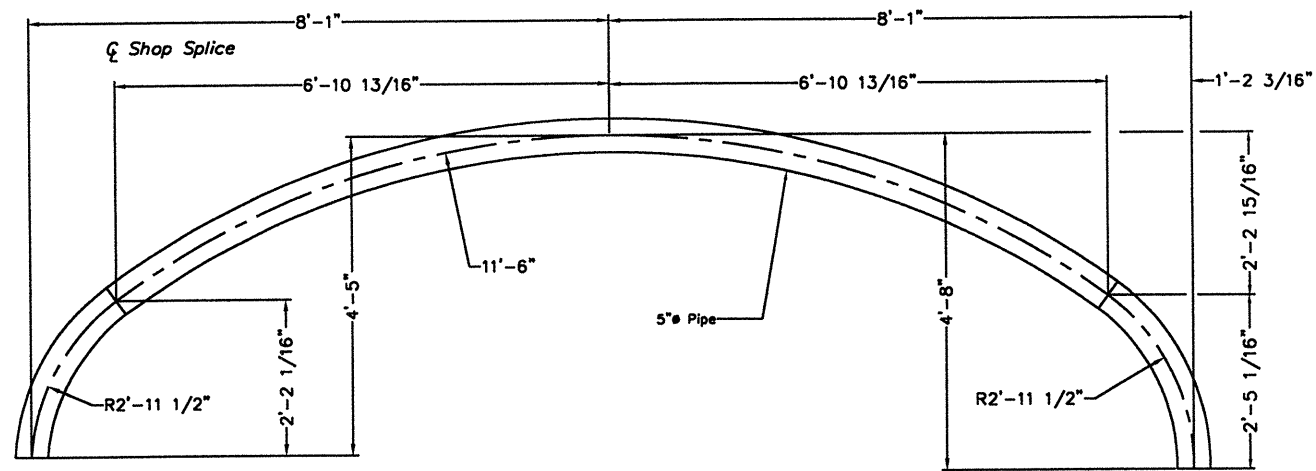
County: Nueces

Project: IH-37

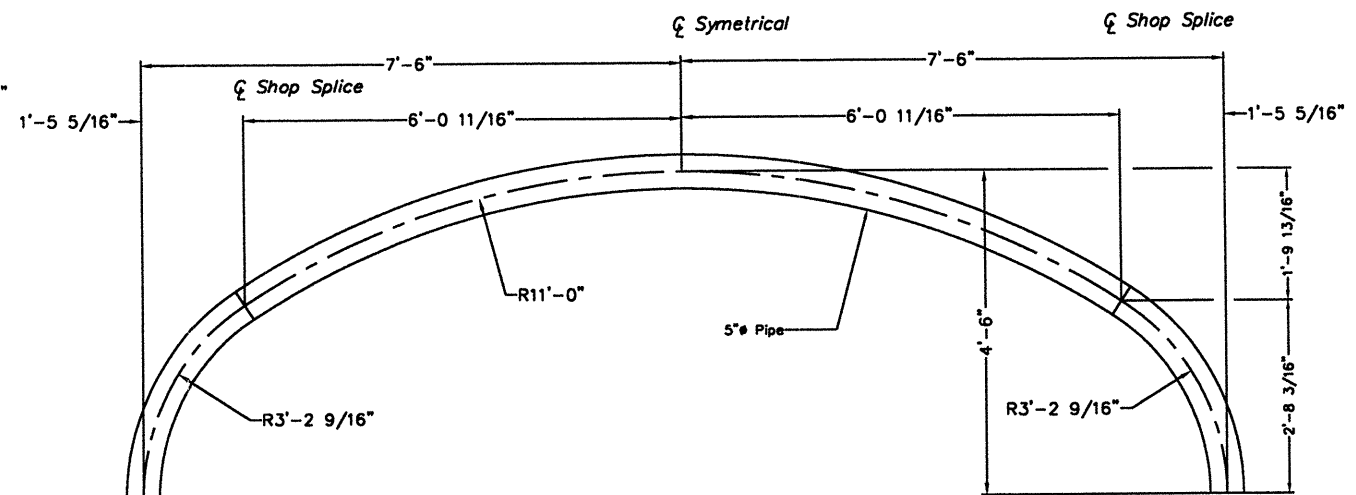
Contractor: Reese Contracting, Inc

Date: August 11, 2004

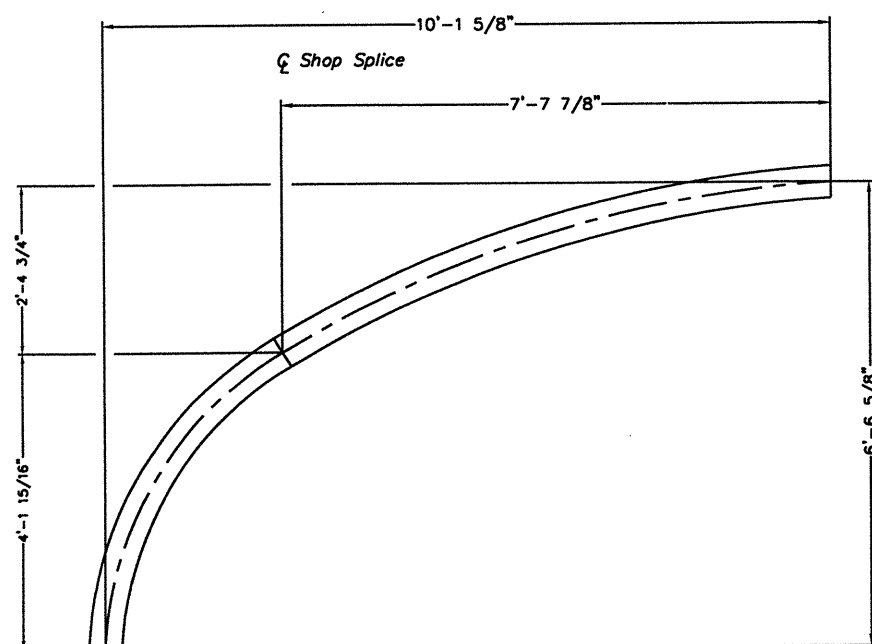
Sheet: Two



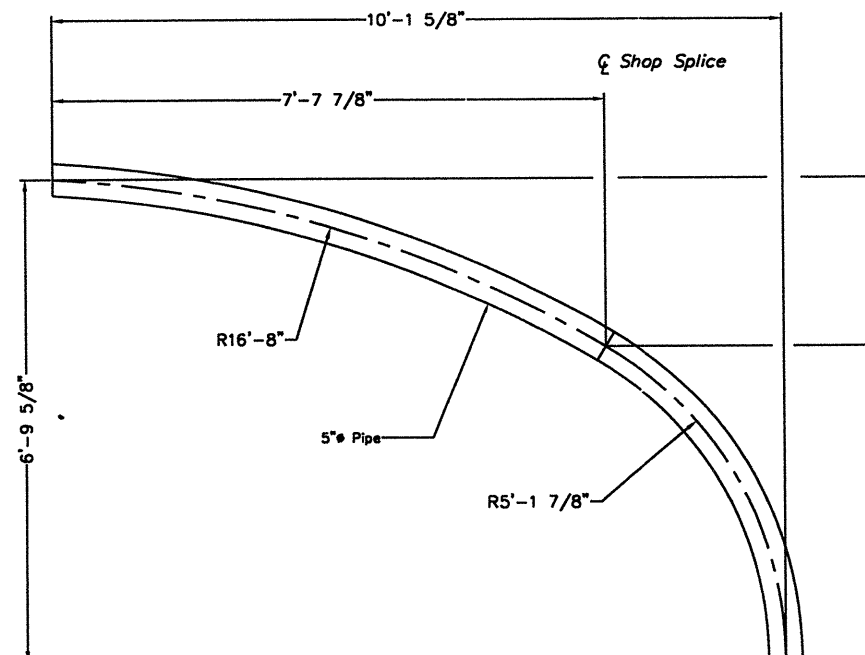
Arch Type I
(30 Required)
(Mk 3A-I)



Arch Type II
(16 Required)
(Mk 4A-II)



Arch Type III
(30 required)
Mk 5A-III



Allow for 2"
PIPE STUB ON
CAP IR

Concrete Accessories, Inc

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Bridge Pipe Arches

County: Nueces

Project: IH-37

Contractor: Reese Contracting, Inc

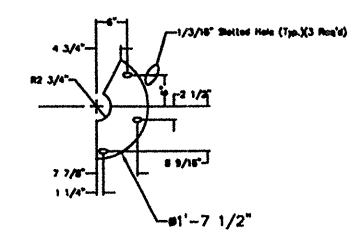
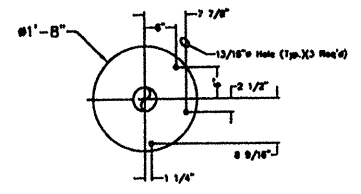
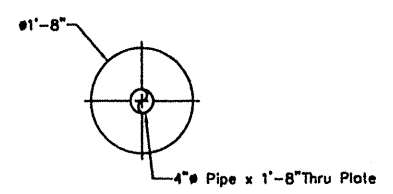
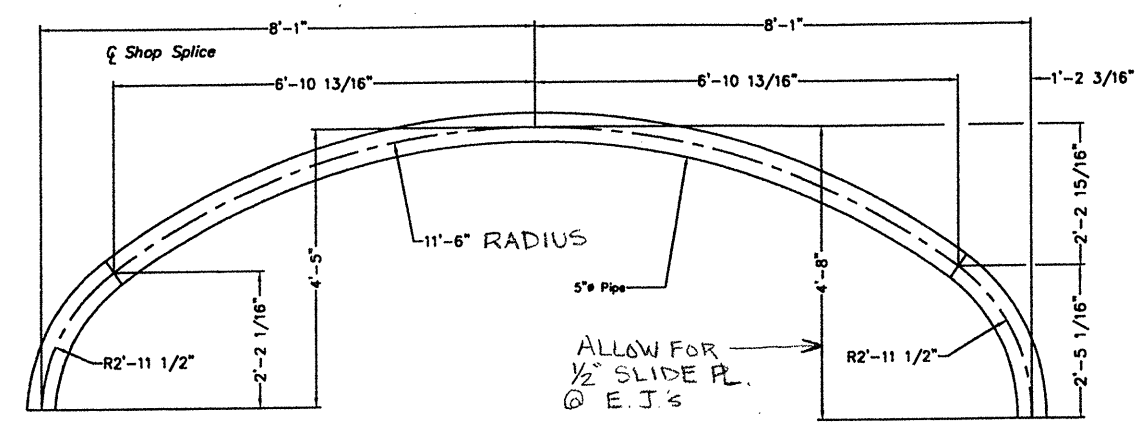
Date: August 11, 2004

Sheet: Three

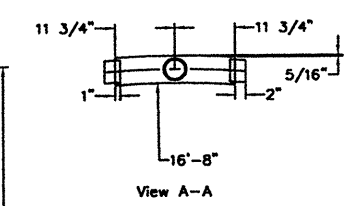
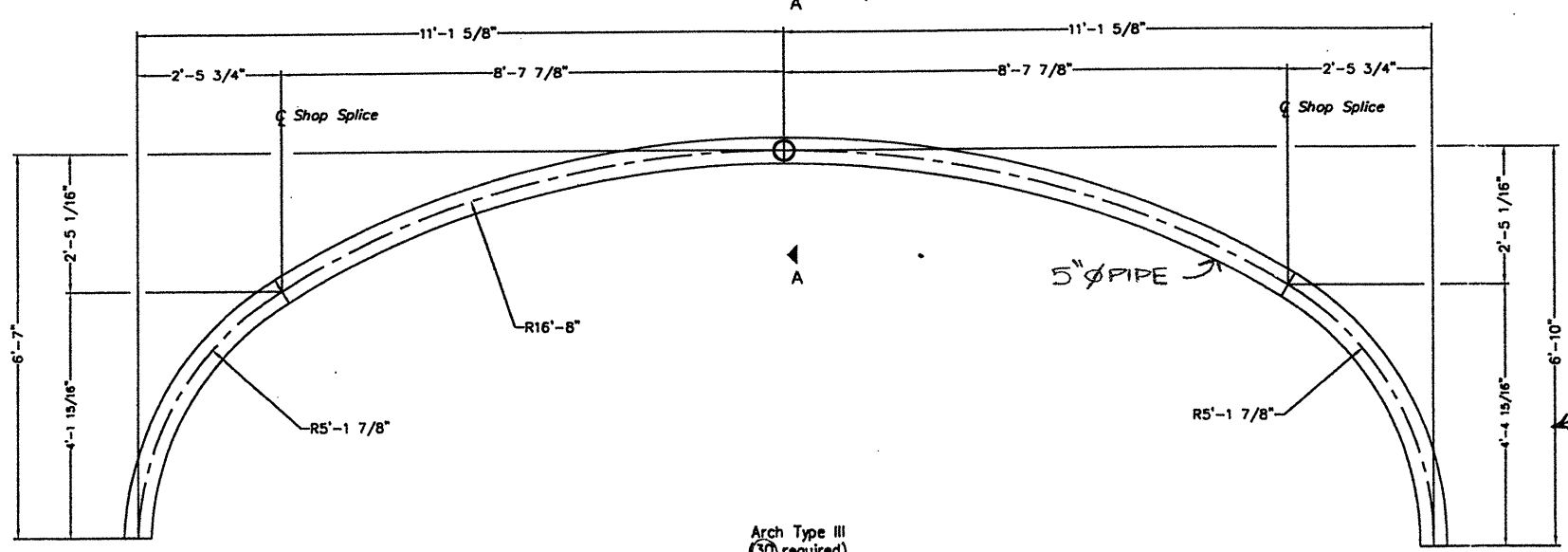
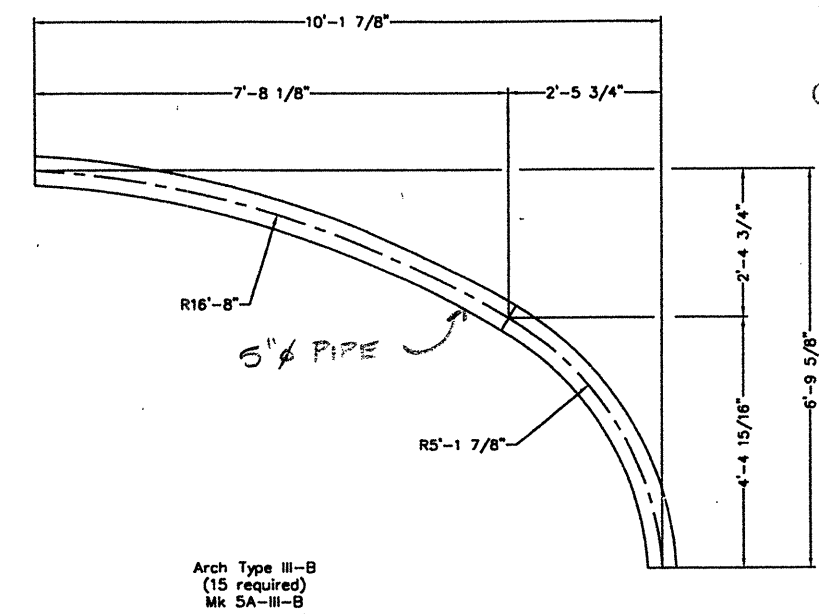
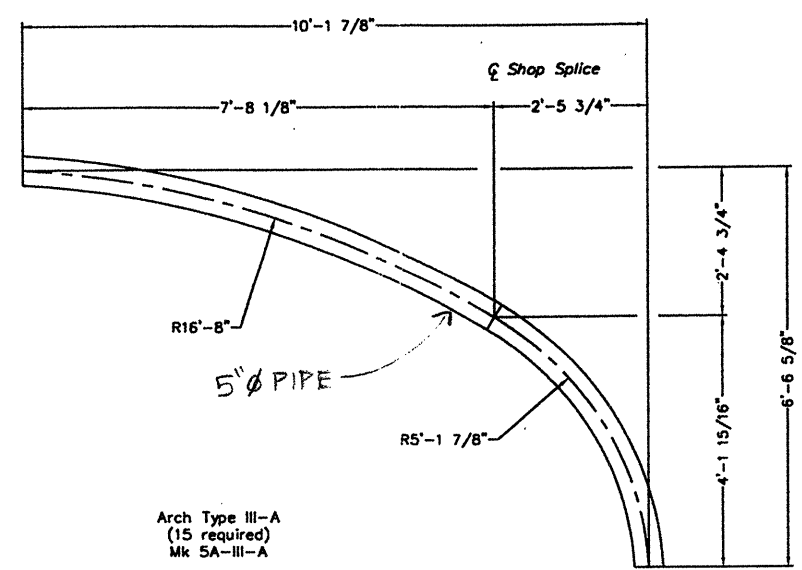
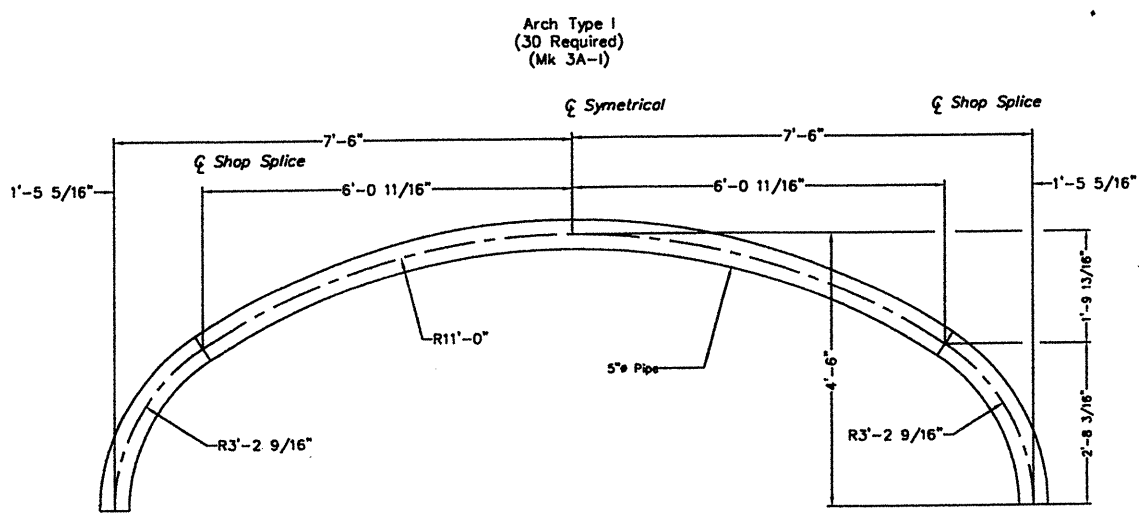
PROVIDE ERECTION PLAN
SHOWING:
FIELD WELDS
ERECTION MARKS WITH
ORIENTATIONS
SHOP DWG OF COLUMNS
WITH ERECTION MARKS

RECEIVED

SEP 12 2005
CORPUS CHRISTI
AREA OFFICE



Cap Plate Detail (5 Req'd) As Shown Mk 2CPIP
A.) 4 Req'd North Side Of Column with Access Plate On West Side Of Column.
B.) 1 Req'd South Side Of Column with Access Plate On West Side Of Column.
Cap Plate Detail (5 Req'd) Opposite Hand Mk 2CPIL
A.) 4 Req'd North Side Of Column with Access Plate On East Side Of Column.
B.) 1 Req'd South Side Of Column with Access Plate On East Side Of Column.



PIPE STUB NOT @
90° SHOW ANGLE

ALLOW FOR
1/2" SLIDE PL.
@ E.J.'s

☐ APPROVED
☒ APPROVED AS NOTED
☒ RE-SUBMIT

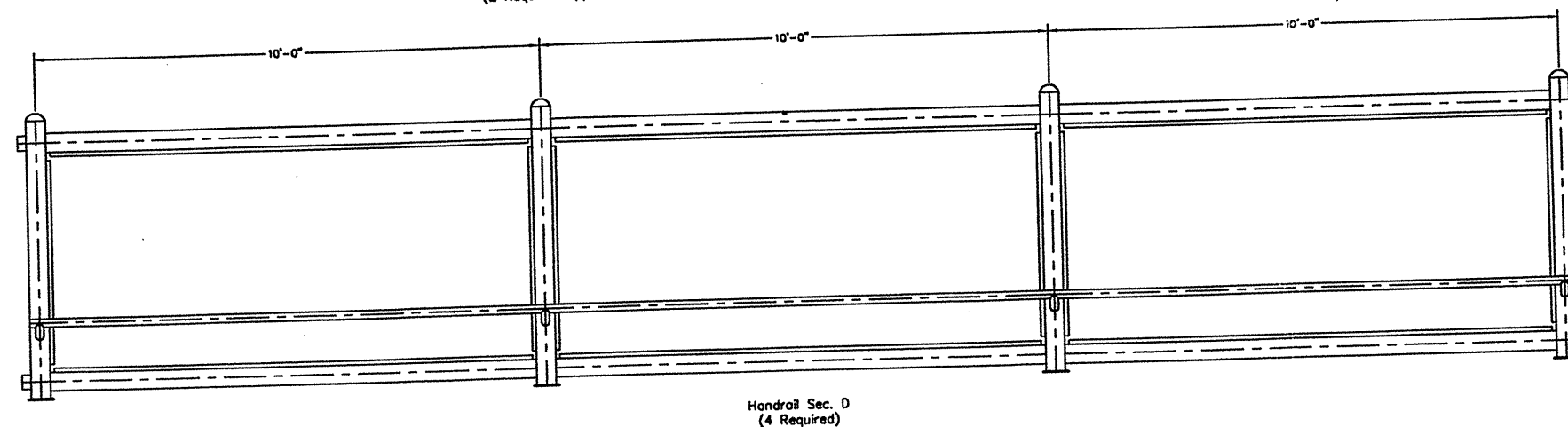
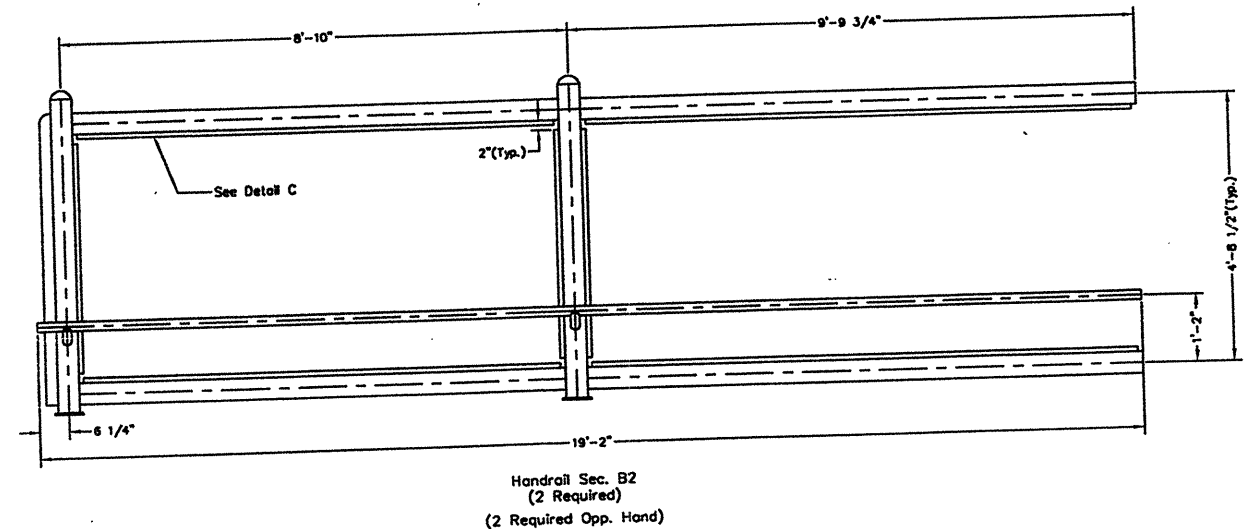
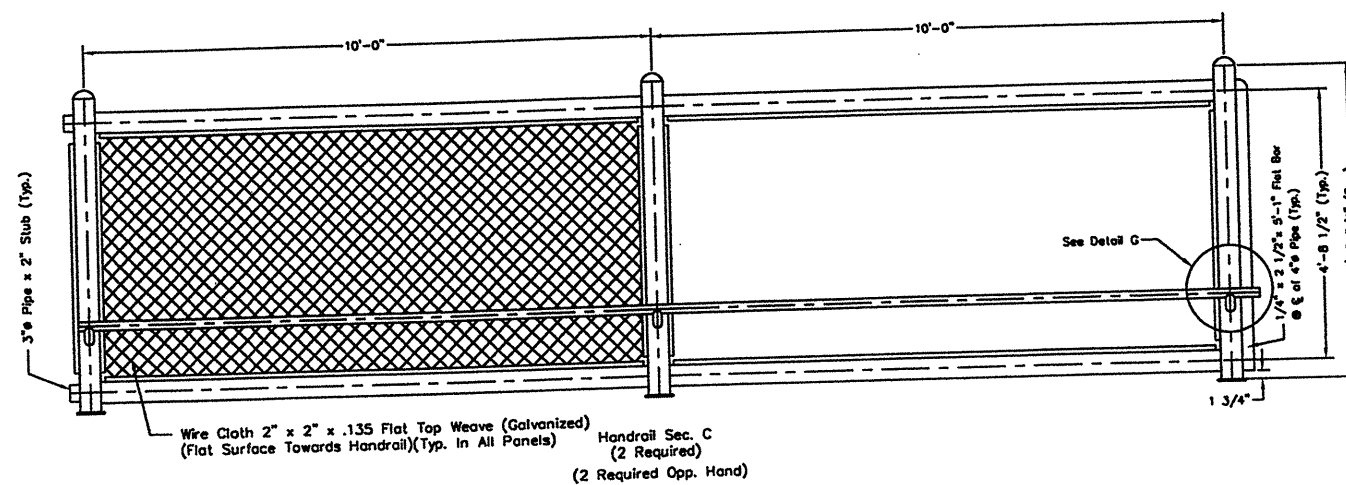
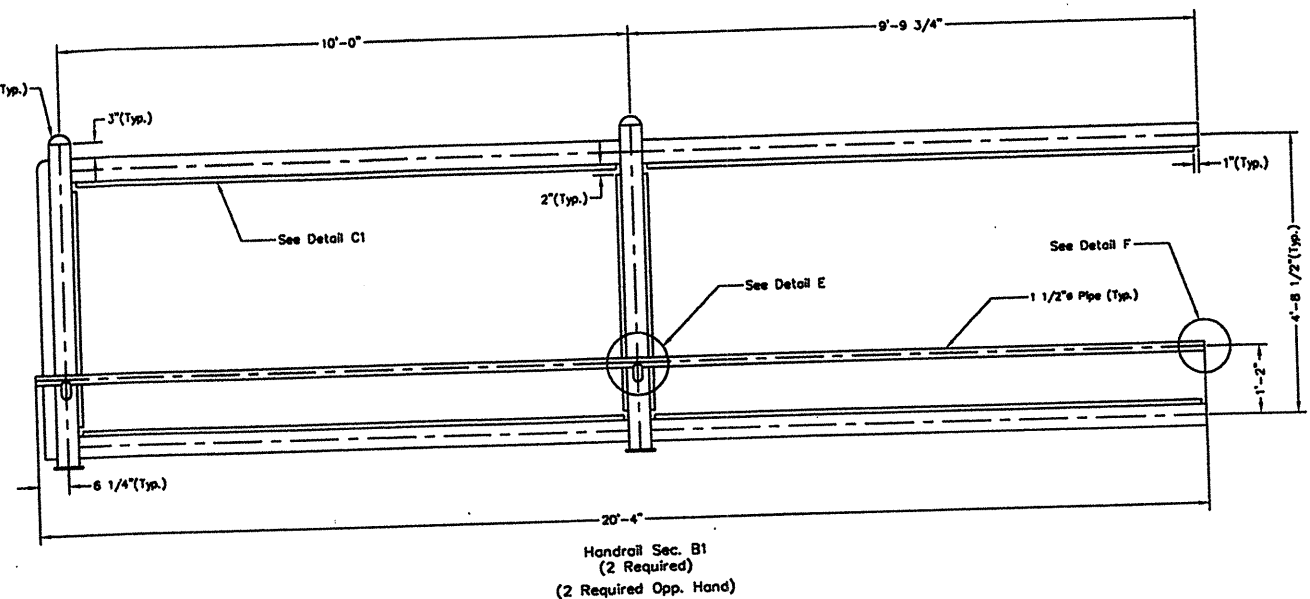
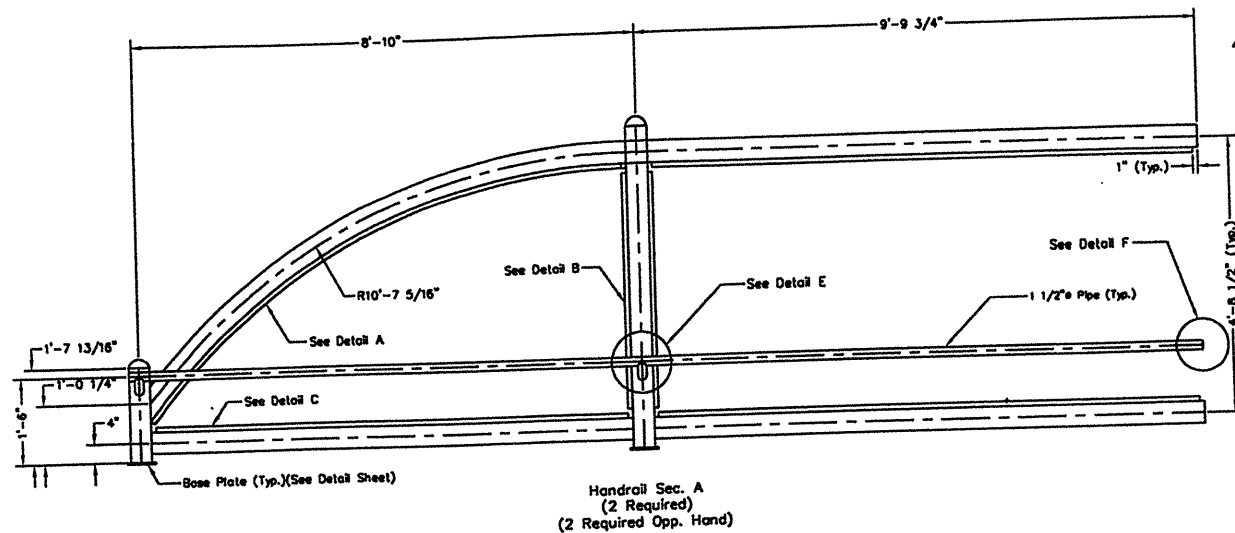
REVIEW IS ONLY FOR CONFORMANCE WITH THE DESIGN
CONCEPT OF THE PROJECT. CONTRACTOR IS RESPONSIBLE
FOR DIMENSIONS, QUANTITIES AND PERFORMANCE IN
ACCORDANCE WITH CONTRACT DOCUMENTS.
DATE: 11-17-04 BY: [Signature]
MAVERICK ENGINEERING, INC.

SHOW ALL SHOP WELDS

WELDING - E70XX ELECTRODES

Concrete Accessories, Inc
Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Pipe Arches
County: Nueces
Project: CC74-6-199 Control: 0074-06-199
Contractor: Reese Contracting Inc.
Date: November 2, 2004 Sheet: One



Concrete Accessories, Inc.

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Hand Rail

County: Nueces

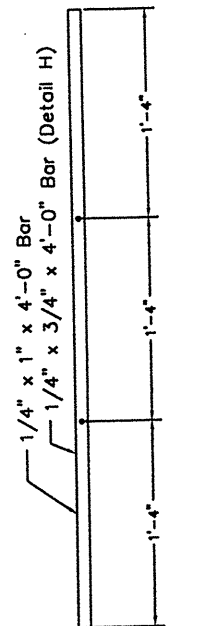
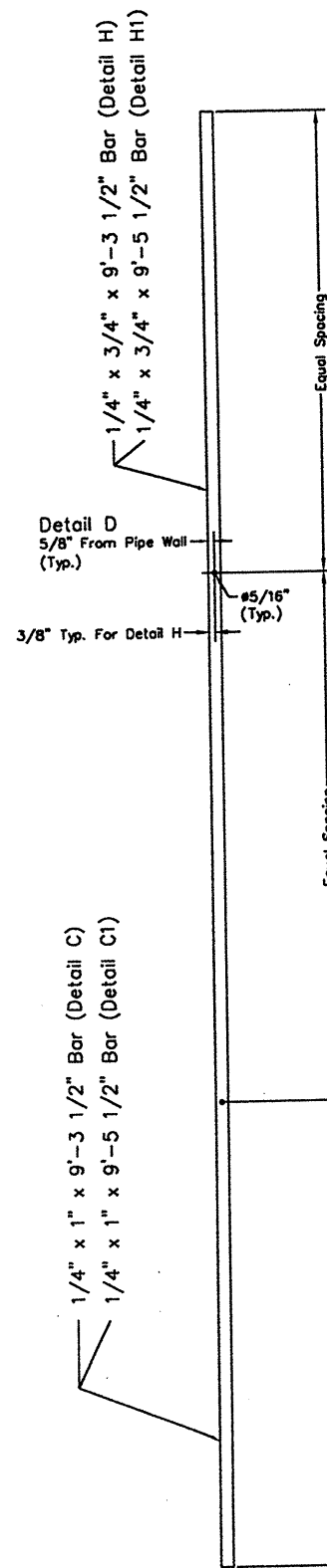
Project: CC74-6-199

Contractor: Reese Contracting Inc.

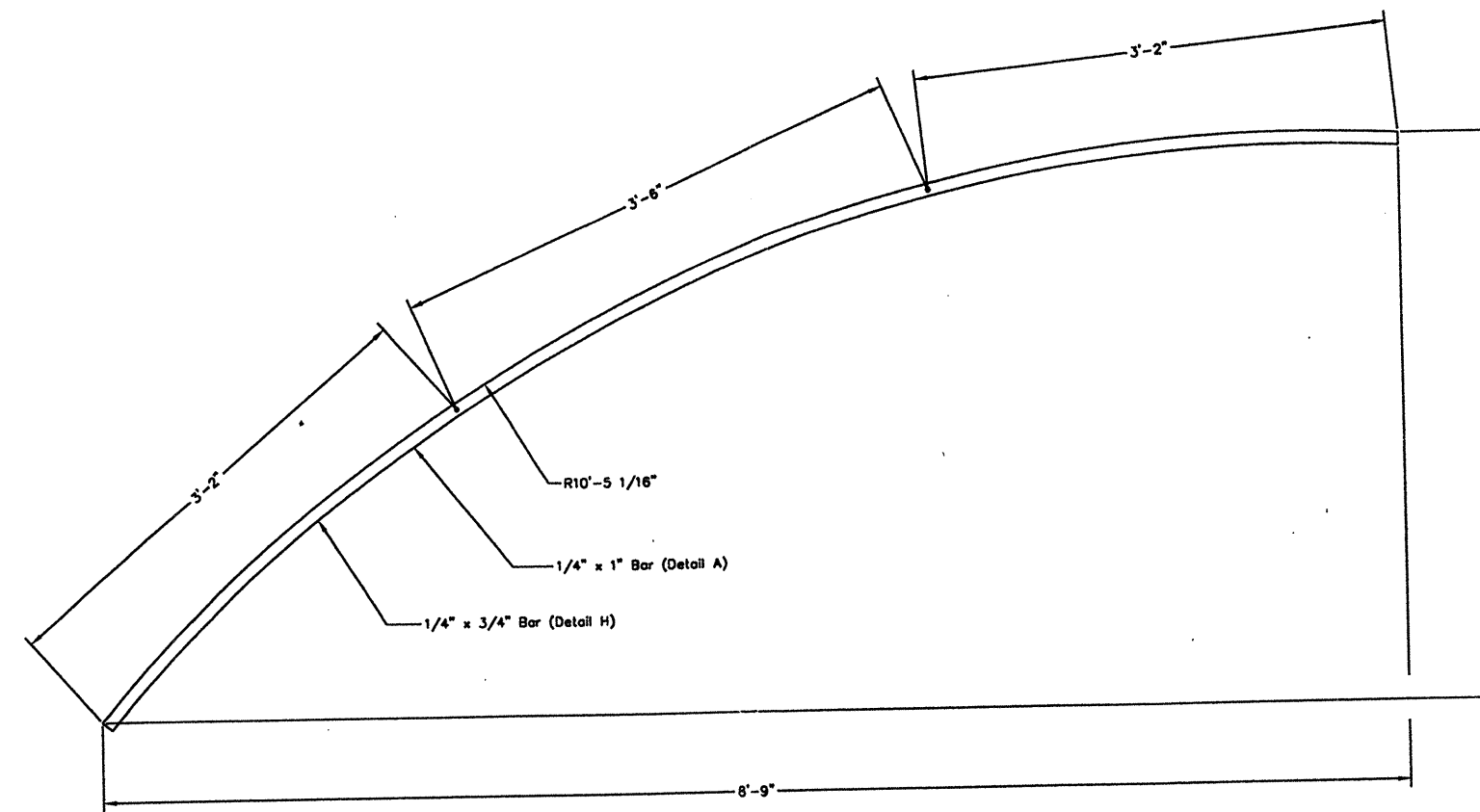
Date: November 2, 2004

Control: 0074-06-199

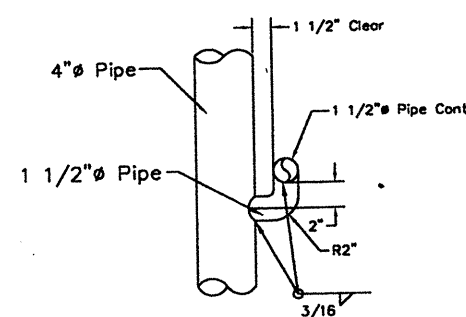
Sheet: Three



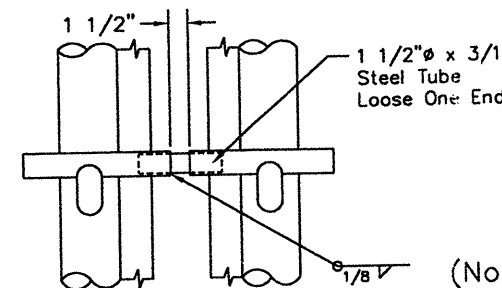
Detail B & H
(76 Required)



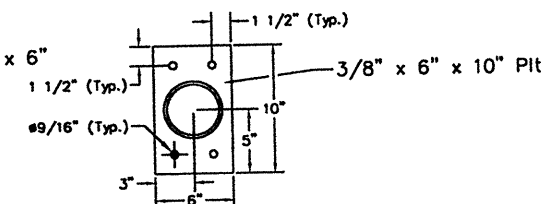
Detail A
(4 Required)



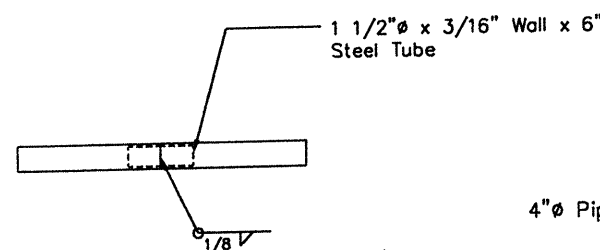
Detail E



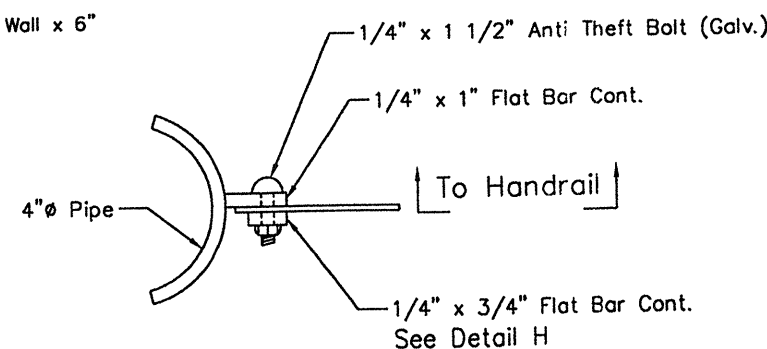
Detail G
(10 Required)



Base Plate Detail
(Note: Base Plates To Be Welded To Post.)
(52 Required)



Detail F
(24 Required)



Detail C & H
(Detail C & H 12 Required)
(Detail C1 & H1 72 Required)
Holes On Bar C & H To Align

Notes:

- 1.) All steel shall conform to ASTM A-36.
- 2.) All pipe shall be SCH-40.
- 3.) Hot dip galvanized handrail & hardware after fabrication.

Concrete Accessories, Inc.

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Hand Rail Detail

County: Nueces

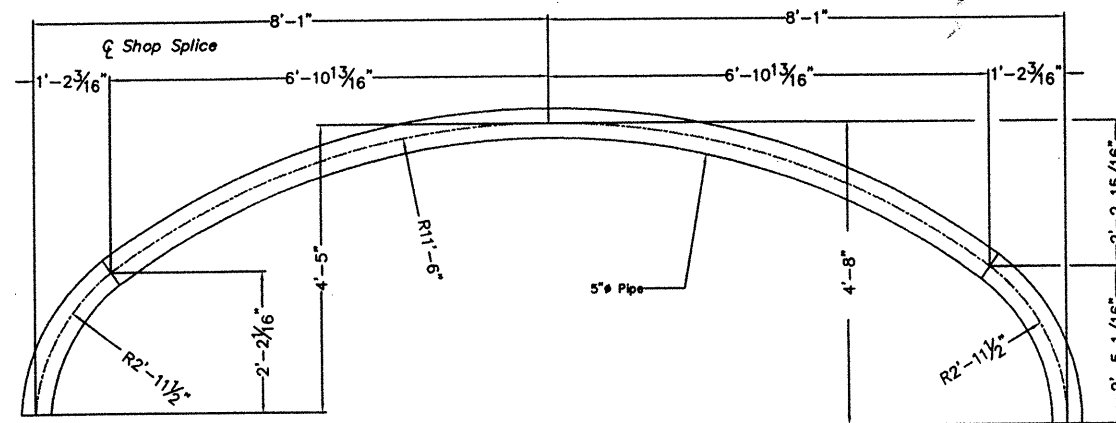
Project: CC74-6-199

Contractor: Reese Contracting Inc.

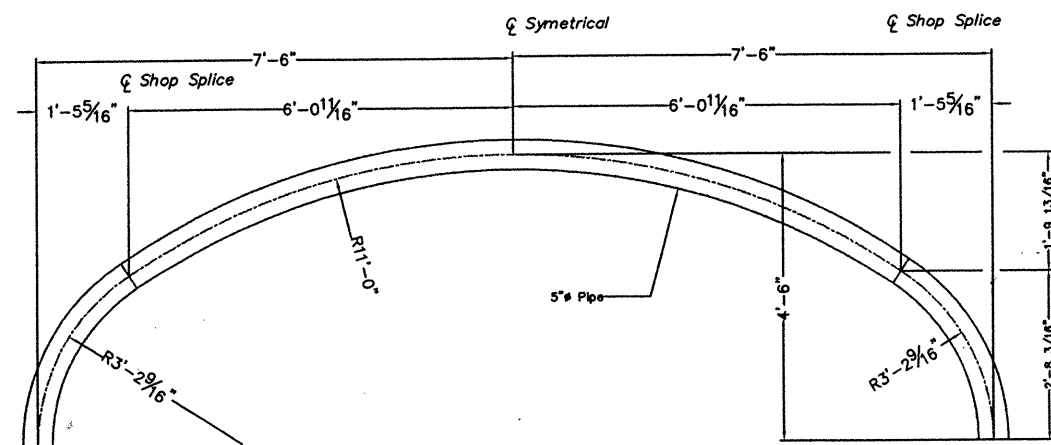
Date: November 2, 2004

Control: 0074-06-199

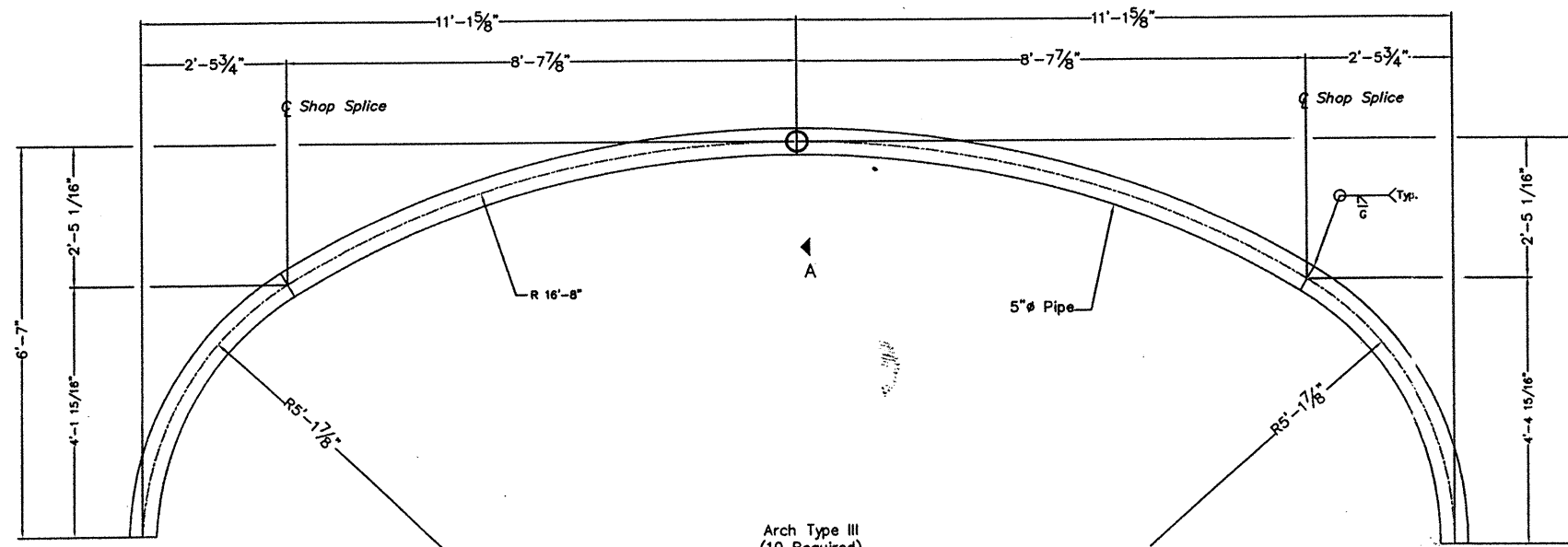
Sheet: Four



Arch Type I
(20 Required)
(Mk 3A-I)



Arch Type II
(16 Required)
(Mk 4A-II)



Arch Type III
(10 Required)
(Mk 5A-III)

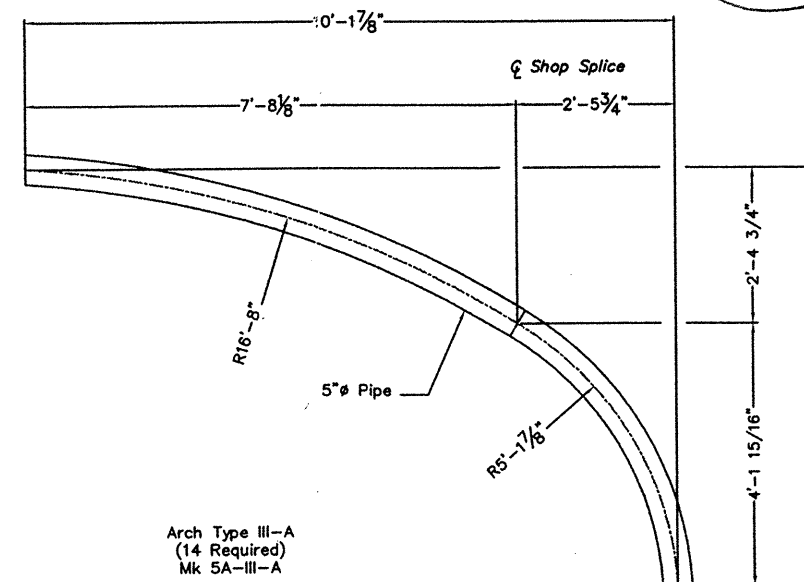
APPROVED _____
 APPROVED EXCEPT AS NOTED _____
 DISAPPROVED CORRECT & RESUBMIT _____
 Arche

DATE: 3/15/05
 NAME: [Signature]

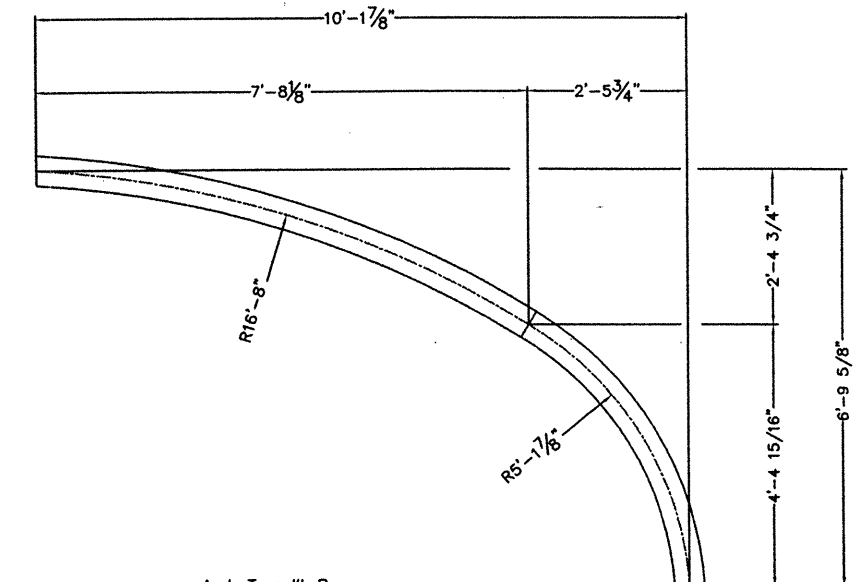
Typical Field Weld At
Arche Mid Span.

- ☐ APPROVED
☒ APPROVED AS NOTED

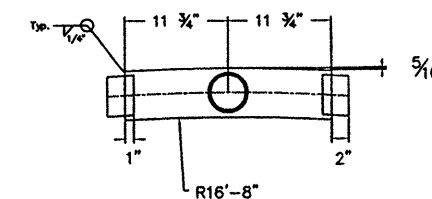
REVIEW IS ONLY FOR CONFORMANCE WITH THE DESIGN
 CONCEPT OF THE PROJECT. CONTRACTOR IS RESPONSIBLE
 FOR DIMENSIONS, QUANTITIES AND PERFORMANCE IN
 ACCORDANCE WITH CONTRACT DOCUMENTS.
 DATE: 3/11/05 BY: MRH
 MAVERICK ENGINEERING, INC.



Arch Type III-A
(14 Required)
(Mk 5A-III-A)



Arch Type III-B
(11 Required)
(Mk 5A-III-B)

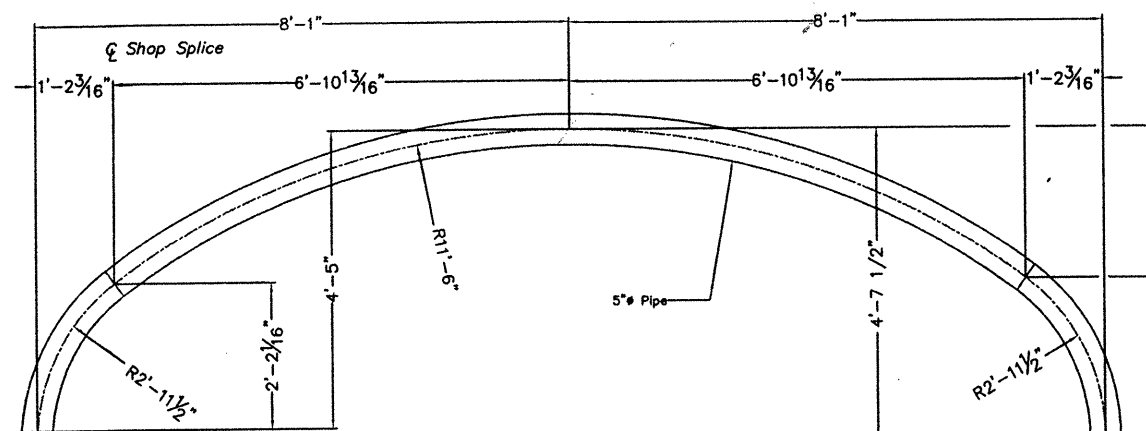


View A-A

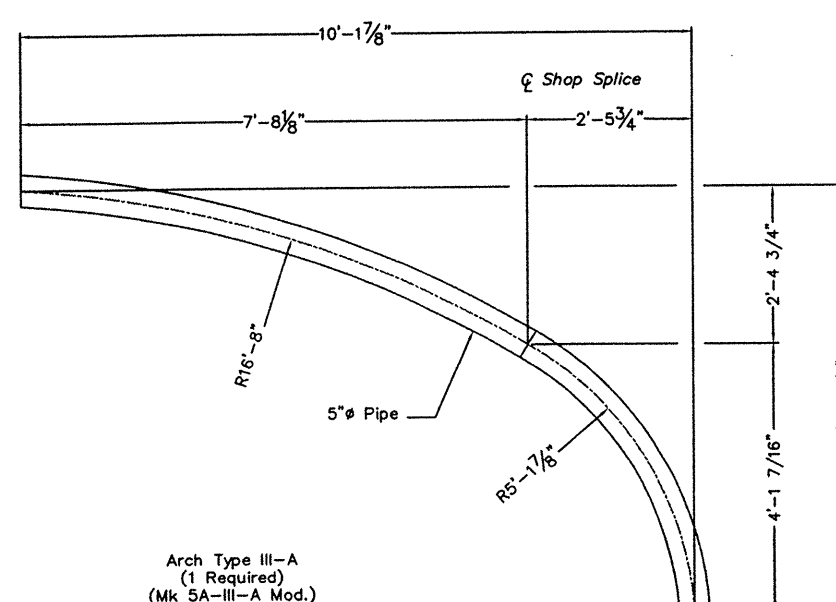
HOT DIP GALVANIZE
 AFTER FABRICATION

Concrete Accessories, Inc
 Concrete Contractors Supplies
 3130 Commonwealth Dallas, Texas 75247
 Phone 214.630.4277 800.262.0779
 email: conacc@sbcglobal.net

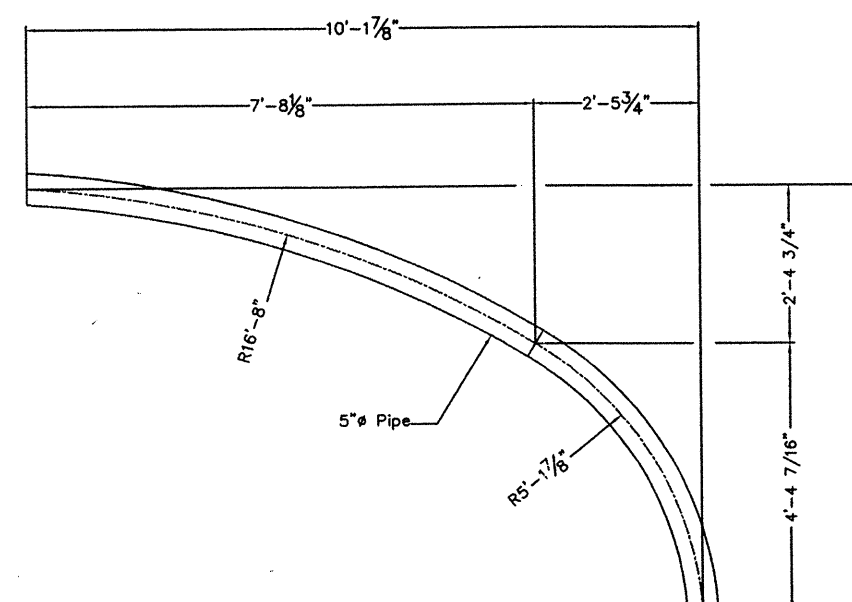
Title: Pipe Arches
 County: Nueces
 Project: CC74-6-199 Control: 0074-06-199
 Contractor: Reese Contracting Co.
 Date: February 18, 2005 Sheet: One



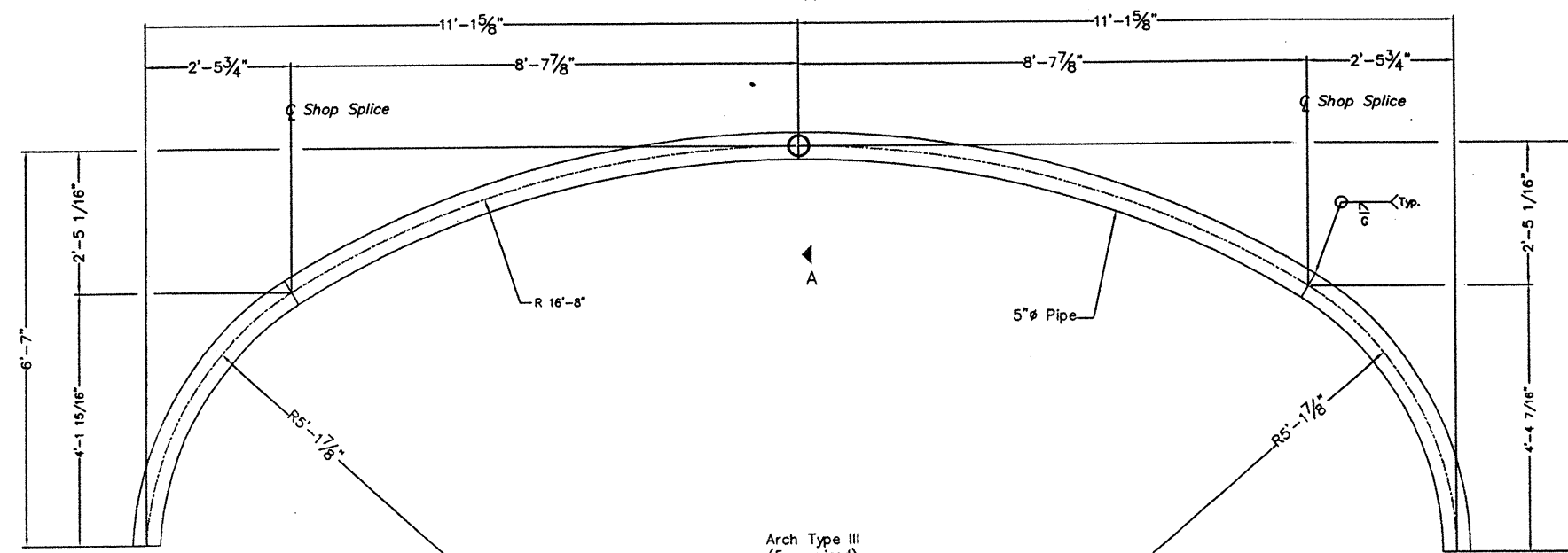
Arch Type I
(10 Required)
(Mk 3A-IMod)



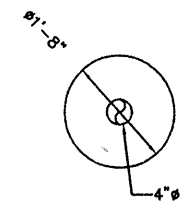
Arch Type III-A
(1 Required)
(Mk 5A-III-A Mod.)



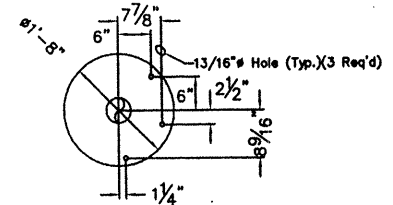
Arch Type III-B
(4 Required)
(Mk 5A-III-B Mod.)



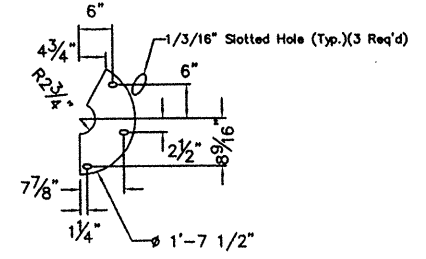
Arch Type III
(5 required)
(Mk 5A-III Mod.)



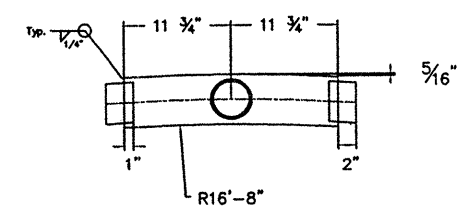
4" Pipe x 1'-8" Thru Plate



Cap Plate Detail (5 Req'd) As Shown Mk 2CPIP
A.) 4 Req'd North Side Of Column with Access Plate On West Side Of Column.
B.) 1 Req'd South Side Of Column with Access Plate On West Side Of Column.
Cap Plate Detail (5 Req'd) Opposite Hand Mk2CPIL
A.) 4 Req'd North Side Of Column with Access Plate On East Side Of Column.
B.) 1 Req'd South Side Of Column with Access Plate On East Side Of Column.



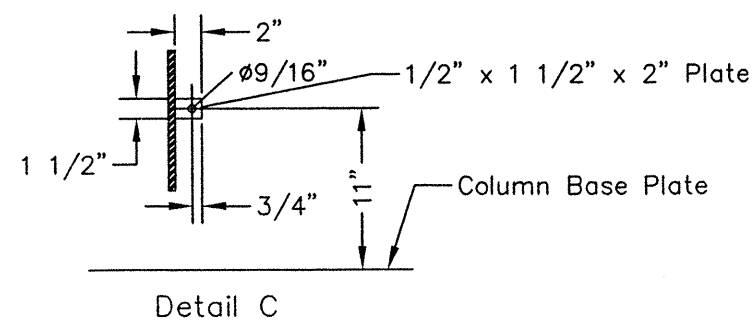
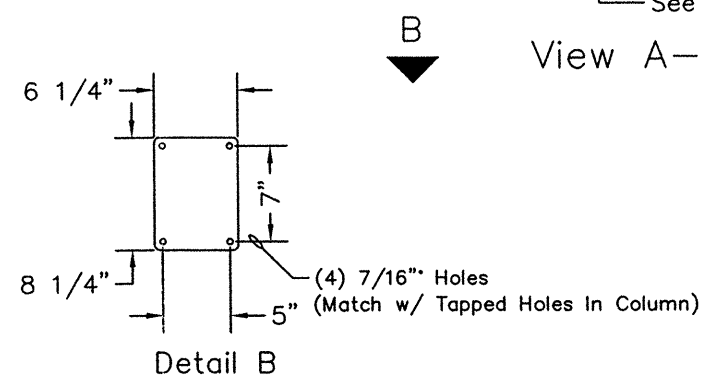
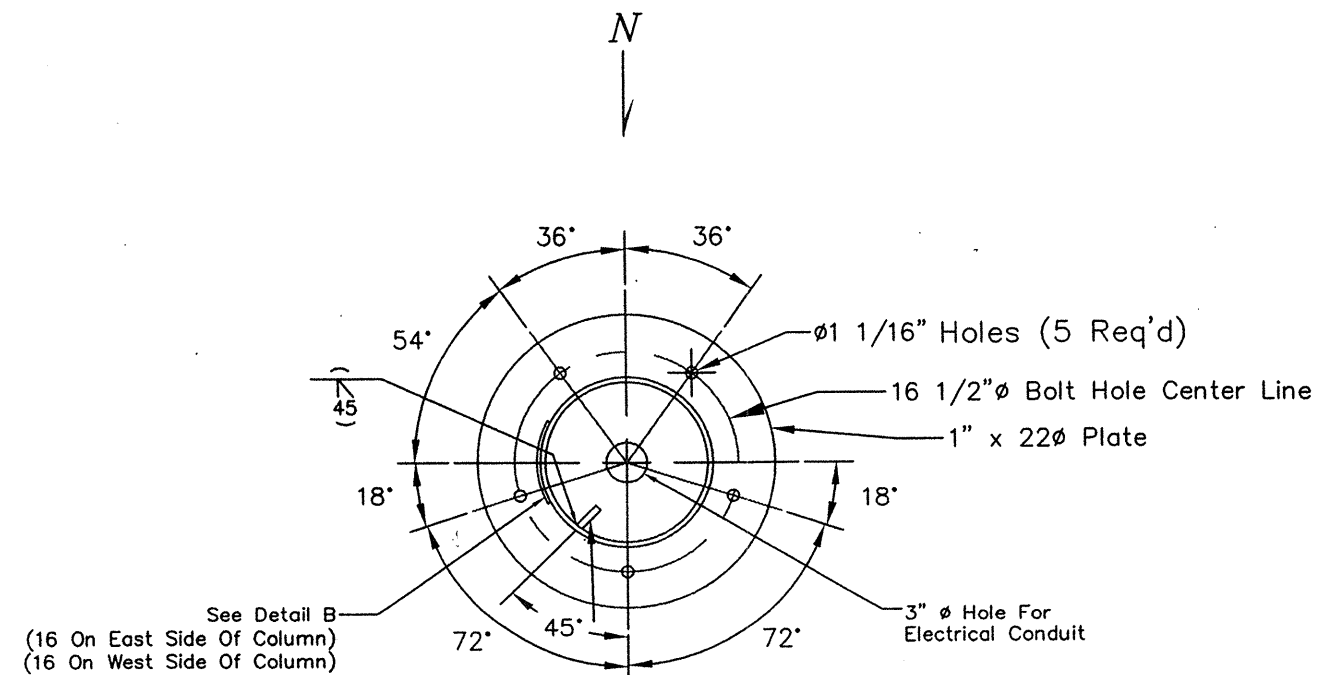
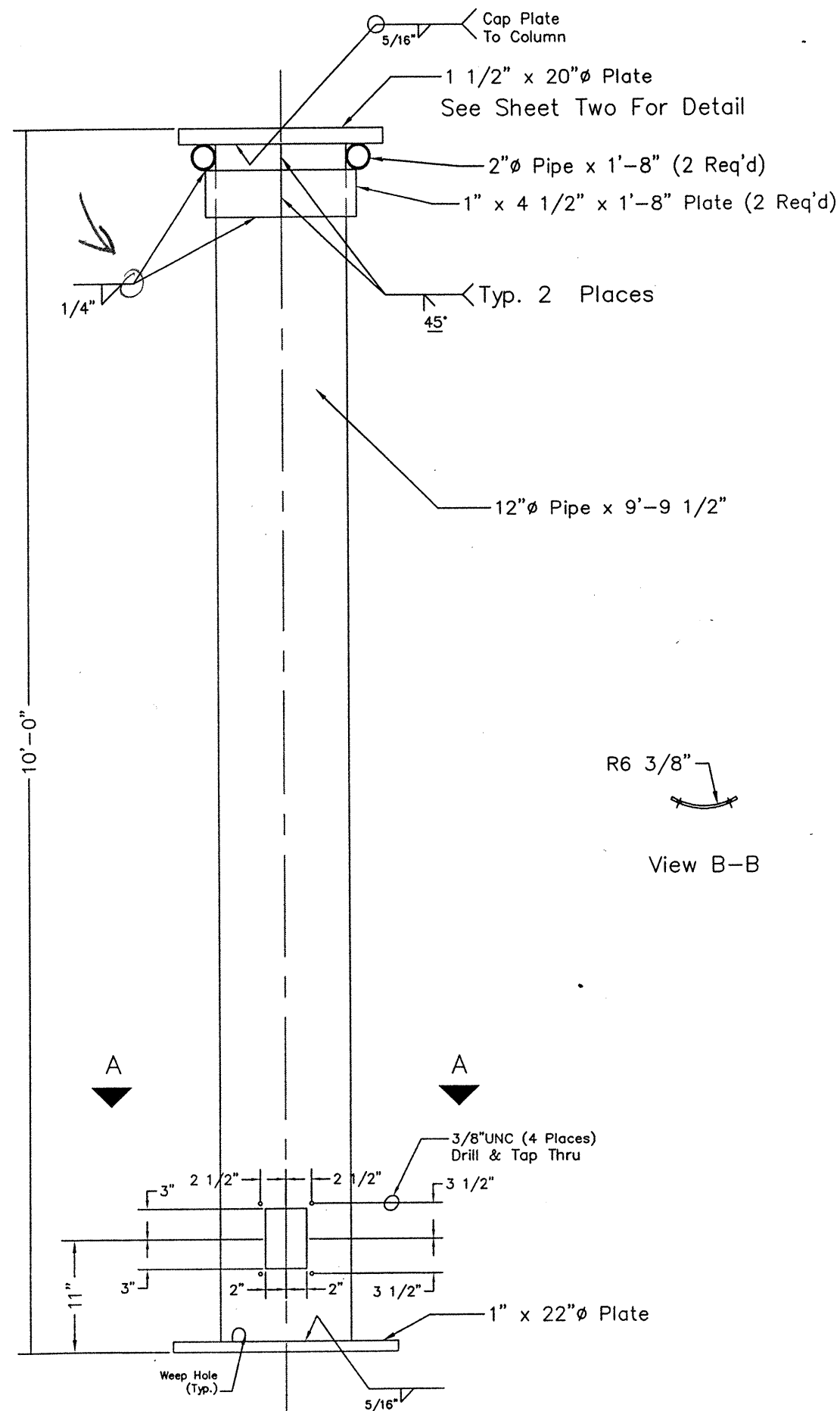
Welding - E70XX Electrodes



View A-A

Concrete Accessories, Inc
Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Pipe Arches
County: Nueces
Project: CC74-6-199
Contractor: Reese Contracting Co.
Date: February 18, 2005
Control: 0074-06-199
Sheet: Two



Concrete Accessories, Inc

Concrete Contractors Supplies
 3130 Commonwealth Dallas, Texas 75247
 Phone 214.630.4277 800.262.0779
 email: conacc@sbcglobal.net

Title: Pipe Arches

County: Nueces

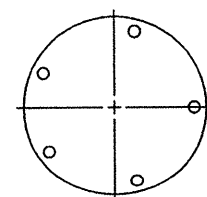
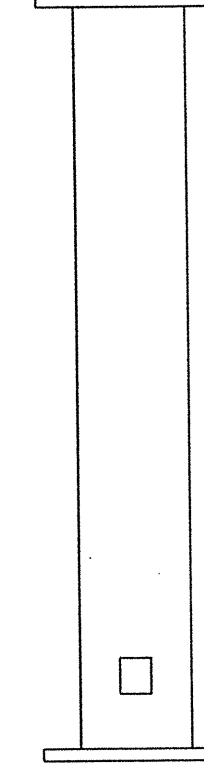
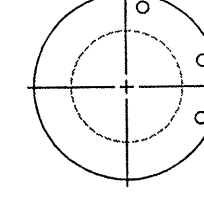
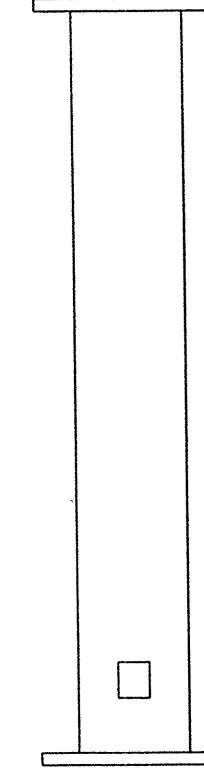
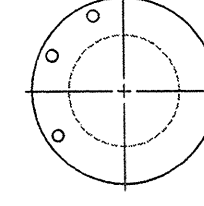
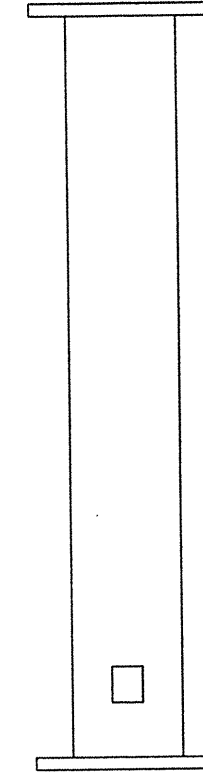
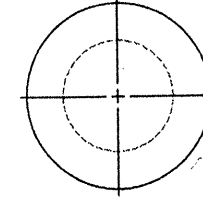
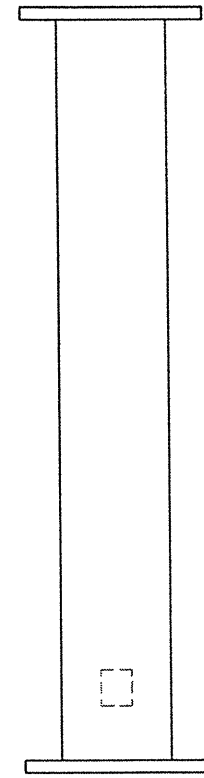
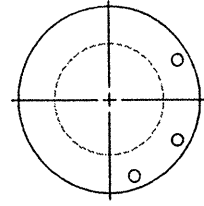
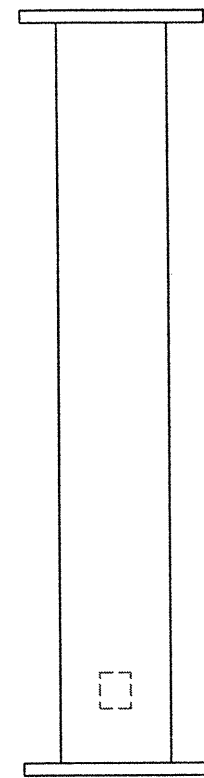
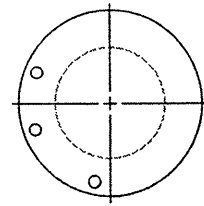
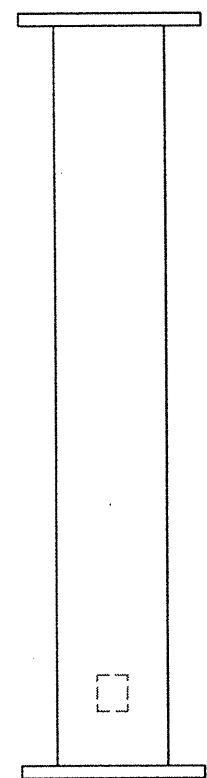
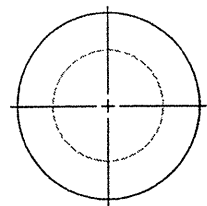
Project: CC74-6-199

Contractor: Reese Contracting Co.

Date: February 18, 2005

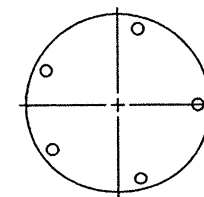
Control: 0074-06-199

Sheet: Three

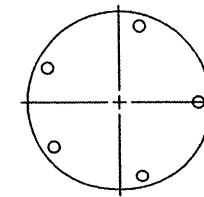


Column 1B, 3B, 5B
6B, 7B, 9B, 10B, 11B,
13B, 14B, 16B

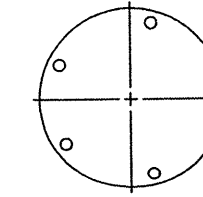
Looking West



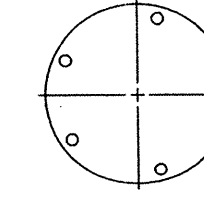
Column 2B



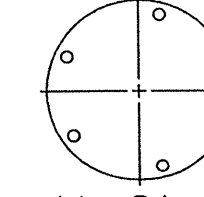
Column 4A, 8A,
12A, 15B



Column 1A, 3A, 5A,
6A, 7A, 9A, 10A, 11A
13A, 14A, 16A



Column 2A



Column 4A, 8A, 12A, 15A

Concrete Accessories, Inc

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Pipe Arches

County: Nueces

Project: CC74-6-199

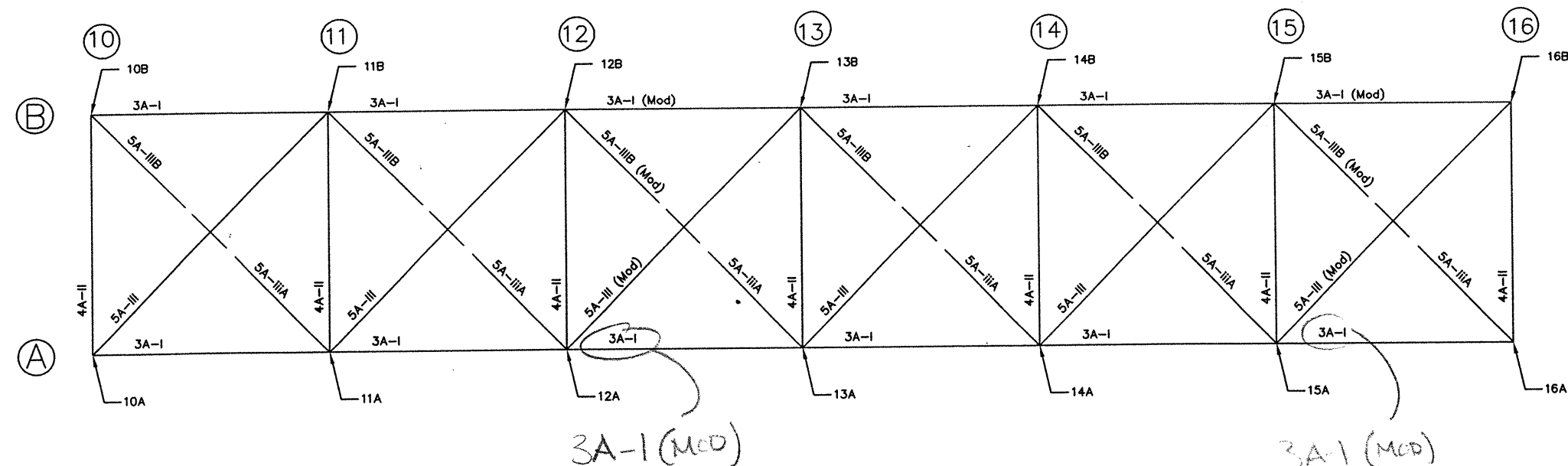
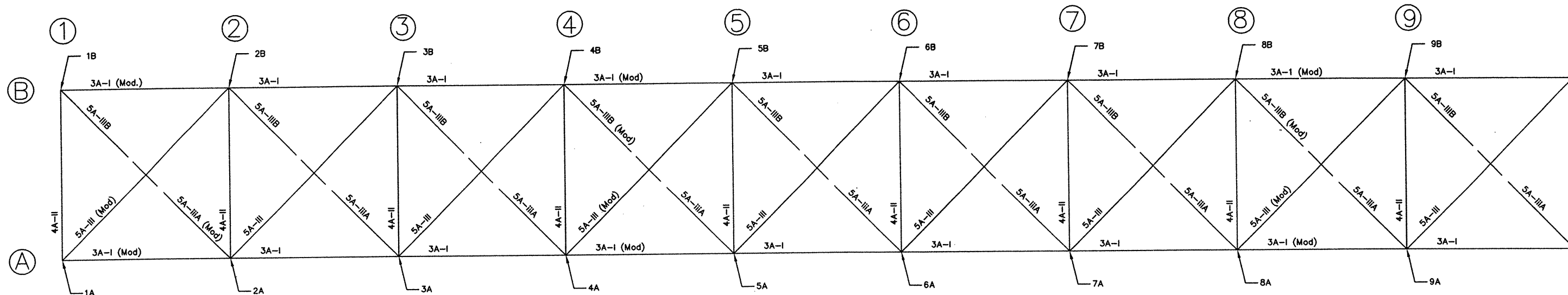
Contractor: Reese Contracting Co.

Date: February 18, 2005

Control: 0074-06-199

Sheet: E-1

N



Concrete Accessories, Inc

Concrete Contractors Supplies
3130 Commonwealth Dallas, Texas 75247
Phone 214.630.4277 800.262.0779
email: conacc@sbcglobal.net

Title: Pipe Arches

County: Nueces

Project: CC74-6-199

Contractor: Reese Contracting Co.

Date: February 18, 2005

Control: 0074-06-199

Sheet: E-2



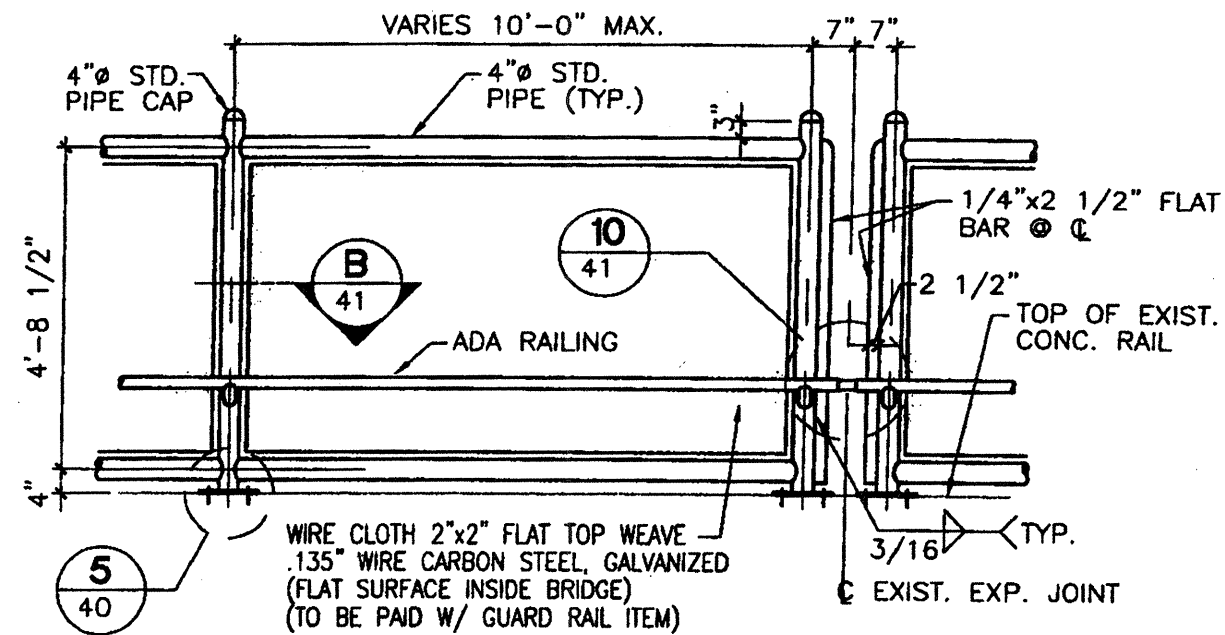
Client: RTA

Job: ALAMEDA ST. BRIDGE IMPROVEMENTS

Job No: 051-502

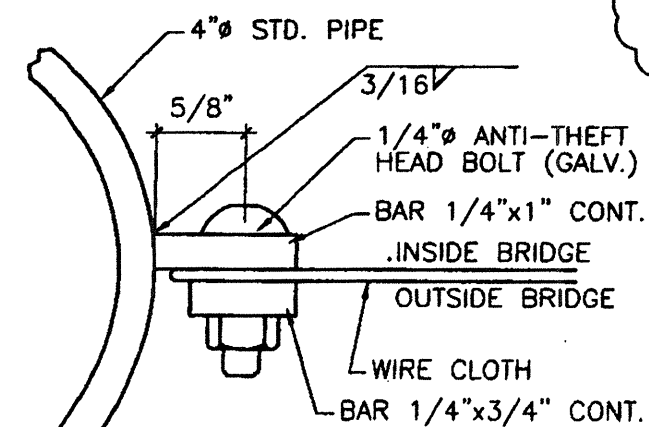
Drawn By: JS Date: 7-05 Sheet No. SK2 OF 2

Ref. LIVABLE COMMUNITIES INITIATIVE PHASE II ALAMEDA STREET
 BRIDGE IMPROVEMENTS SECTION AND DETAILS
 FED. PROJ. NO. CC 74-6-199 SHEET NO. 41

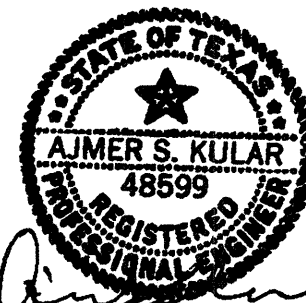


A TYP. GUARDRAIL ELEVATION
 41 SCALE: 1/2" = 1'-0"

NOTE:
 TACK WELD WIRE FABRIC TO 1/4"x1"
 BAR PRIOR TO GALVANIZING.



B SECTION
 41 FULL SCALE



K:\1987\DWG\19751-500\PHASE II\ALAMEDA BRIDGE\GUARDRAIL STRUCT. 2005\ENGINEERING CLARIFICATION2.dwg, 7/11/2005 11:53:31 AM