

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 1

1. CONTRACTOR: Smith Contracting
2. Change Order Work Limits: Sta. 1099+71.31 to Sta. 1133+50.00
3. Type of Change(on federal-aid non-exempt projects): Minor (Major/Minor)
4. Reasons: 3F (3 Max. - In order of importance - Primary first)

Project: 24IFB19

Roadway: E Wilco Hwy

CSJ Number: N/A

5. Describe the work being revised:

3F. Additional work desired by the County. This Change Order compensates the Contractor for the installation of additional signs to the project to increase the safety along the roadway as well as addressing the roadway name change. This Change Order also adds a pedestrian handrail to increase the safety along a section of the shared use path, and adds a line item for law enforcement presence during nighttime lane closure operations at the intersection of CR 138 and SH 130.

6. Work to be performed in accordance with Items: See Attached
7. New or revised plan sheet(s) are attached and numbered: 14A,135A,135B,153A,153B,153C,153D,153E
8. New Special Provisions/Specifications to the contract are attached: ☐ Yes ☒ No
9. New Special Provisions to Item N/A No. N/A, Special Specification Item N/A are attached.
- Each signatory hereby warrants that each has the authority to execute this Change Order (CO).

<p><i>The contractor must sign the Change Order and, by doing so, agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit; or loss of compensation as a result of this change.</i></p> <p>THE CONTRACTOR Date <u>4/25/2024</u></p> <p>By <u>Chris Lopez</u></p> <p>Typed/Printed Name <u>Christopher R. Lopez</u></p> <p>Typed/Printed Title <u>Project Manger</u></p>	<p>The following information must be provided</p> <p>Time Ext. #: <u>0</u> Days added on this CO: <u>0</u></p> <p>Amount added by this change order: <u>\$29,920.92</u></p>
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RECOMMENDED FOR EXECUTION:

[Signature] 4/25/24
Project Manager Date

N/A
Design Engineer Date

Christen Eschberger 5/1/2024
Program Manager Date

Design Engineer's Seal:

County Commissioner Precinct 1 Date
☐ APPROVED ☐ REQUEST APPROVAL

County Commissioner Precinct 2 Date
☐ APPROVED ☐ REQUEST APPROVAL

Valerie Covey May 8, 2024

County Commissioner Precinct 3 Date
☐ APPROVED ☐ REQUEST APPROVAL

County Commissioner Precinct 4 Date
☐ APPROVED ☐ REQUEST APPROVAL

County Judge Date
☐ APPROVED

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 1

Project # 24IFB19

TABLE A: Force Account Work and Materials Placed into Stock

	LABOR	HOURLY RATE			HOURLY RATE

TABLE B: Contract Items:

				ORIGINAL + PREVIOUSLY REVISED		ADD or (DEDUCT)	NEW		
ITEM	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	ITEM COST	QUANTITY	QUANTITY	ITEM COST	OVERRUN/ UNDERRUN
644-6061	IN SM RD SN SUP&AM TYTWT(1)WS(T)	EA	\$720.00	12.00	\$8,640.00	2.00	14.00	\$10,080.00	\$1,440.00
450-6052	RAIL (HANDRAIL)(TY F)	LS	\$11,804.71	0.00	\$0.00	1.00	1.00	\$11,804.71	\$11,804.71
644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	\$1,270.38	0.00	\$0.00	2.00	2.00	\$2,540.76	\$2,540.76
644-6033	IN SM RD SN SUP&AM TYS80(1)SA(U)	EA	\$2,073.67	0.00	\$0.00	2.00	2.00	\$4,147.34	\$4,147.34
690-6029	INSTALL OF SIGNAL RELATED SIGNS	EA	\$2,524.155	0.00	\$0.00	2.00	2.00	\$5,048.31	\$5,048.31
999-WC02	REMOVE & REPLACE EXISTING SIGN	SF	\$59.42	0.00	\$0.00	6.30	6.30	\$374.35	\$374.35
999-WC03	LAW ENFORCEMENT - TRAFFIC CONTROL	LS	\$4,565.45	0.00	\$0.00	1.00	1.00	\$4,565.45	\$4,565.45
TOTALS					\$8,640.00			\$38,560.92	\$29,920.92

CHANGE ORDER REASON(S) CODE CHART

1. Design Error or Omission	1A. Incorrect PS&E 1B. Other
2. Differing Site Conditions (unforeseeable)	2A. Dispute resolution (expense caused by conditions and/or resulting delay) 2B. Unavailable material 2C. New development (conditions changing after PS&E completed) 2D. Environmental remediation 2E. Miscellaneous difference in site conditions (unforeseeable)(Item 9) 2F. Site conditions altered by an act of nature 2G. Unadjusted utility (unforeseeable) 2H. Unacquired Right-of-Way (unforeseeable) 2I. Additional safety needs (unforeseeable) 2J. Other
3. County Convenience	3A. Dispute resolution (not resulting from error in plans or differing site conditions) 3B. Public relations improvement 3C. Implementation of a Value Engineering finding 3D. Achievement of an early project completion 3E. Reduction of future maintenance 3F. Additional work desired by the County 3G. Compliance requirements of new laws and/or policies 3H. Cost savings opportunity discovered during construction 3I. Implementation of improved technology or better process 3J. Price adjustment on finished work (price reduced in exchange for acceptance) 3K. Addition of stock account or material supplied by state provision 3L. Revising safety work/measures desired by the County 3M. Other
4. Third Party Accommodation	4A. Failure of a third party to meet commitment 4B. Third party requested work 4C. Compliance requirements of new laws and/or policies (impacting third party) 4D. Other
5. Contractor Convenience	5A. Contractor exercises option to change the traffic control plan 5B. Contractor requested change in the sequence and/or method of work 5C. Payment for Partnering workshop 5D. Additional safety work/measures desired by the contractor 5E. Other
6. Untimely ROW/Utilities	6A. Right-of-Way not clear (third party responsibility for ROW) 6B. Right-of-Way not clear (County responsibility for ROW) 6C. Utilities not clear 6D. Other

Williamson County Road Bond Program

CR 138 Right Turn Lane at SH 130 Williamson County Project No. 24IFB19

Change Order No. 1

Reason for Change

This Change Order adds additional signs to the project to increase the safety along the roadway and updates the roadway street name signs from CR 138 to East WilCo Hwy. This Change Order also adds a pedestrian handrail to increase the safety along a section of the shared use path where the slope is too steep, due to the limited ROW.

Lastly, the Change Order adds a line item for law enforcement presence during nighttime lane closure operations at CR 138 and SH 130. Due to the amount of traffic and the location of the project, it was determined that this would be the safest most effective way to perform the final paving operation.

Following is a summary of new items required for this Change Order.

ITEM	DESCRIPTION	QTY	UNIT
450-6052	RAIL (HANDRAIL)(TY F)	1.0	LS
644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	2.0	EA
644-6033	IN SM RD SN SUP&AM TYS80(1)SA(U)	2.0	EA
690-6029	INSTALL OF SIGNAL RELATED SIGNS	2.0	EA
999-WC02	REMOVE & REPLACE EXISTING SIGN	6.30	SF
999-WC03	LAW ENFORCEMENT - TRAFFIC CONTROL	1.0	LS

This Change Order results in a net increase of \$29,920.92 to the Contract amount, for an adjusted Contract total of \$1,778,859.67. The original Contract amount was \$1,748,938.75. As a result of this and all Change Orders to-date, \$29,920.92 has been added to the Contract, resulting in an 1.71% net increase in the Contract cost. No additional days will be added to or deducted from the Contract as a result of this Change Order.

HNTB Corporation

Oscar Salazar-Bueno, P.E.



Item 450-6052

PROJECT: CR 138 Right Turn Lane at SH 130
 DATE: 4/18/2024
 DESCRIPTION:

This proposal is for the addition of 42LF of TxDOT Ty F Pedestrian Railing. Expected lead time for fabrication of railing is 16 weeks from the time of approved shop drawings.
Proposed cost for installation of new ped-rail is \$11,804.71.

LABOR	RATE	HOURS WORKED							TOTAL	RATE * TOTAL HOURS
		1	2	3	4	5	6	7		
Project Manager	\$ 75.00								0.0	\$ -
Superintendent	\$ 55.00								0.0	\$ -
Foreman/Layout Coordinator	\$ 50.00	10							10.0	\$ 500.00
Operator 1	\$ 30.00	10							10.0	\$ 300.00
Operator 2	\$ 28.00								0.0	\$ -
Operator 3	\$ 26.00								0.0	\$ -
Pipe Layer/Concrete Finisher	\$ 26.00	10	10						20.0	\$ 520.00
Laborer 1	\$ 24.00								0.0	\$ -
Laborer 2	\$ 24.00								0.0	\$ -
Laborer 3	\$ 24.00								0.0	\$ -
Driver 1	\$ 27.00								0.0	\$ -
Driver 2	\$ 27.00								0.0	\$ -
Foreman/Layout Coordinator OT	\$ 75.00								0.0	\$ -
Operator 1 OT	\$ 45.00								0.0	\$ -
Operator 2 OT	\$ 42.00								0.0	\$ -
Operator 3 OT	\$ 39.00								0.0	\$ -
Pipe Layer/Concrete Finisher OT	\$ 39.00								0.0	\$ -
Laborer 1 OT	\$ 36.00								0.0	\$ -
Laborer 2 OT	\$ 36.00								0.0	\$ -
Laborer 3 OT	\$ 36.00								0.0	\$ -
Driver 1 OT	\$ 40.50								0.0	\$ -
Driver 2 OT	\$ 40.50								0.0	\$ -
LABOR SUBTOTAL \$										1,320.00

PER DIEM	Unit Cost								QTY	COST
SCCI Per Diem	\$ -	-	-	-	-	-	-	-	0.0	\$ -
PER DIEM SUBTOTAL \$										-

MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
Lauren	\$ 141.00	CY	Concrete Class A	2.0	\$ 282.00
TX Corrugators	\$ 153.60	FT	RAIL (HANDRAIL)(TY F)	42.0	\$ 6,451.20
RSS	\$ 80.00	LS	Rebar (#3 & #4)	1.0	\$ 80.00
				0.0	\$ -
MATERIAL SUBTOTAL \$					6,813.20

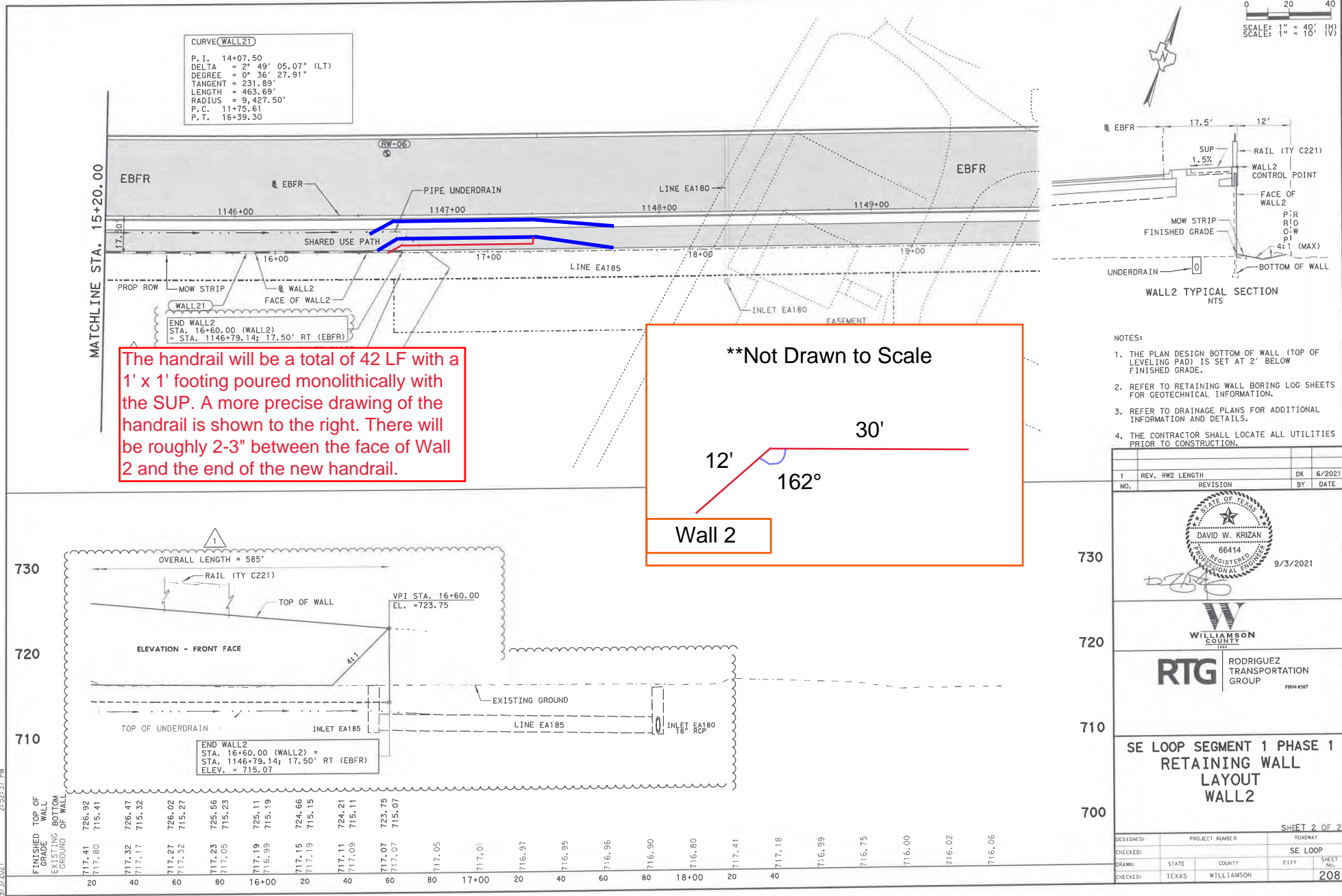
SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
					\$ -
SUBCONTRACTOR SUBTOTAL \$					-

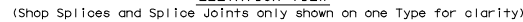
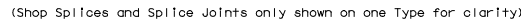
UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
Smith	\$ 500.00	EA	Remobilization Fee	1.0	\$ 500.00
Smith	\$ 333.33	WD	Traffic Control	1.0	\$ 333.33
					\$ -
UNIT RATE SUBTOTAL \$					833.33

EQUIPMENT	RATE	HOURS WORKED							TOTAL	RATE TIMES
		1	2	3	4	5	6	7		
Skid Steer	\$ 46.34	10.0							10.0	\$ 463.40
Generator	\$ 20.00	10.0							10.0	\$ 200.00
Handtools	\$ 7.50	10.0							10.0	\$ 75.00
									0.0	\$ -
									0.0	\$ -
EQUIPMENT SUBTOTAL \$										738.40

Additional Time Requested (Working Days)	0
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LABOR SUBTOTAL	\$	1,320.00
LABOR BURDEN	55%	\$ 726.00
LABOR PROFIT & OVERHEAD	15%	\$ 198.00
PER DIEM	\$	-
MATERIAL SUBTOTAL	\$	6,813.20
MATERIALS PROFIT AND OVERHEAD	15%	\$ 1,021.98
SUB CONTRACTOR SUBTOTAL	\$	-
GC PROFIT AND OVERHEAD ON SUBS	5%	\$ -
UNIT RATE	\$	833.33
EQUIPMENT	\$	738.40
EQUIPMENT MARKUP	5%	\$ 36.92
SUBTOTAL	\$	11,687.83
BONDING COST	1%	\$ 116.88
TOTAL	\$	11,804.71
	\$	281.86 /LF



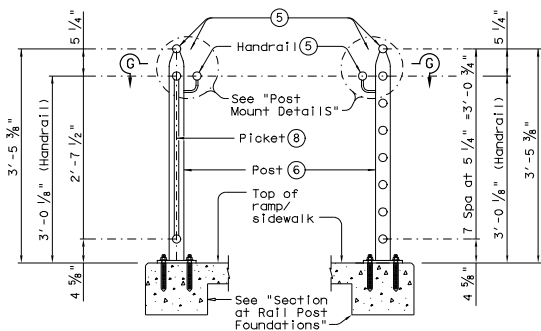
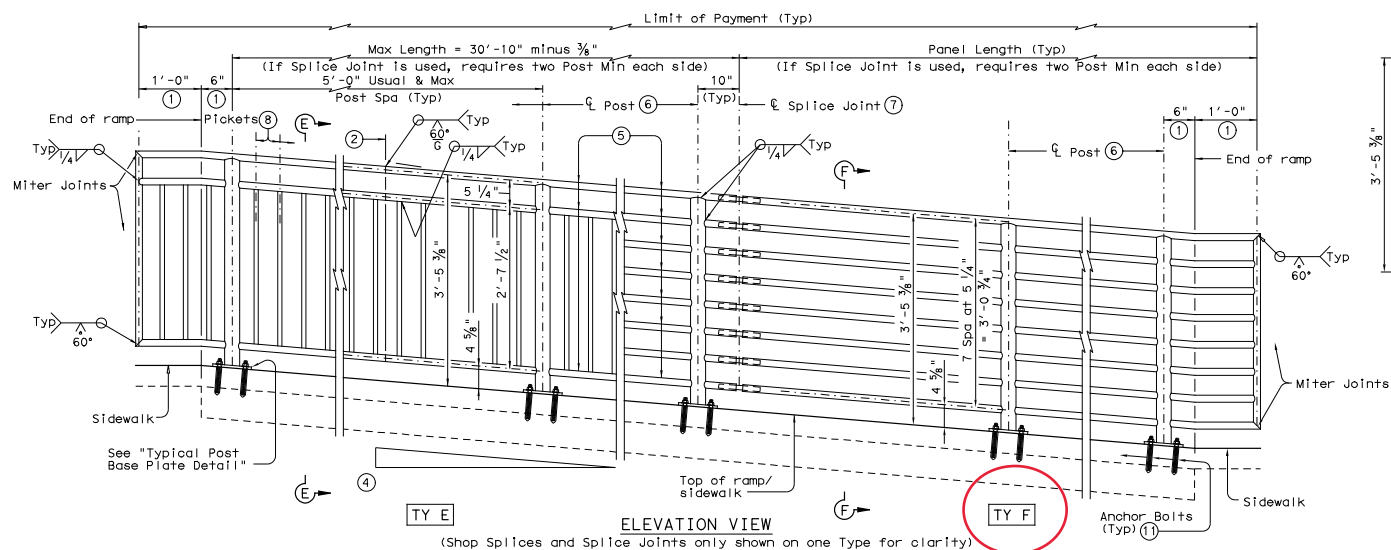


- ⑥ 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- ⑦ See "Handrail Fabrication Details" for Splice Joints.
- ⑧ $\frac{1}{4}$ " Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- ⑨ When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.
- ⑩ Not to be used on bridges.
- ⑪ See "General Notes" for anchor bolt information.

SHEET 1 OF 3

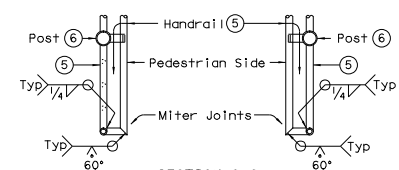
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DATE: 2/23/2011
FILE: #FILES

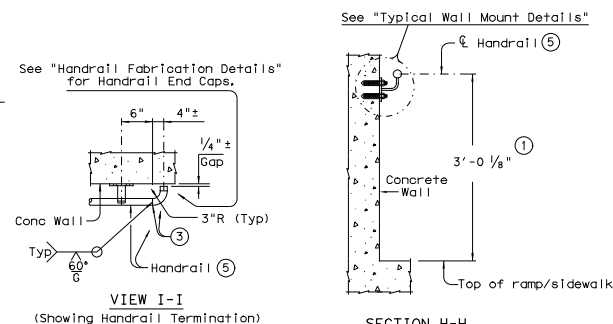
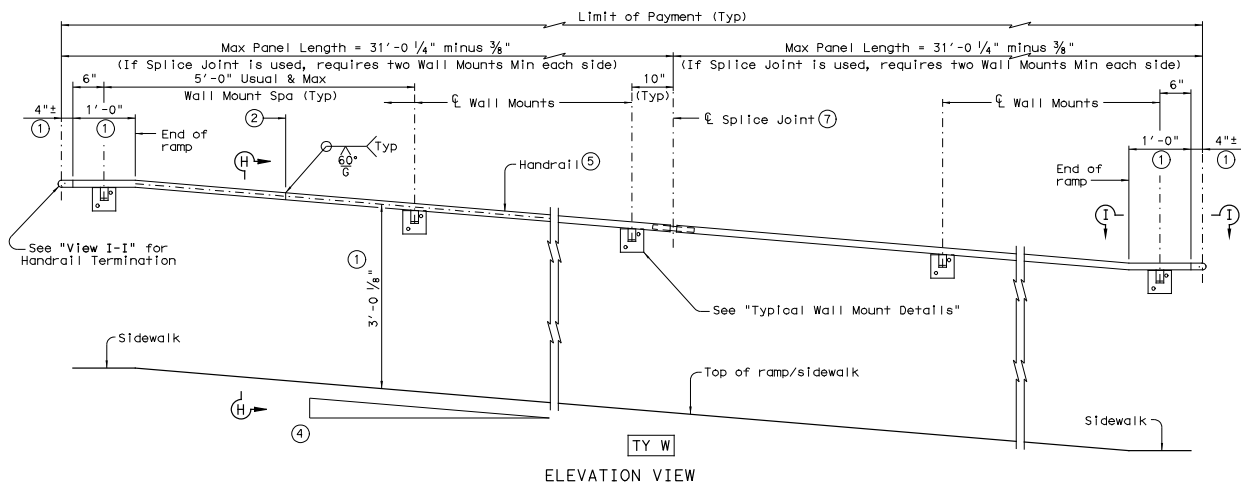


SECTION E-E
(Showing Handrail TY E)

SECTION F-F
(Showing Handrail TY F)



SECTION G-G
(Showing Handrail Termination)



SECTION H-H
(Showing Handrail TY W)

SHEET 2 OF 3

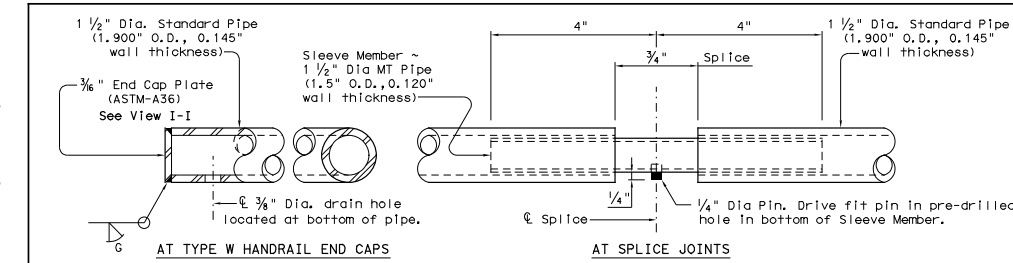


PEDESTRIAN HANDRAIL DETAILS PRD-13

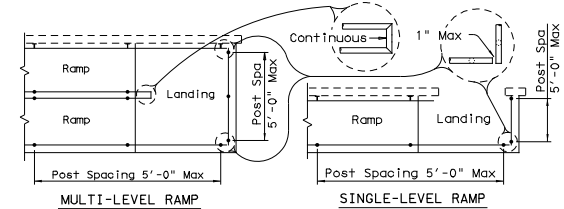
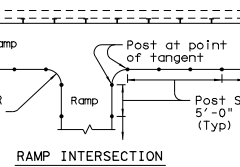
FILE: prd13.dgn	DN: TXDOT	CK: AM	DN: JTR	CK: CGL
© TXDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				SE LOOP
REVISED MAY, 2013 (V1)	DIST	COUNTY		SHEET NO.
		WILLIAMSON		184

- 1 Parallel to ground.
- 2 One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- 3 Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- 4 See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
- 5 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- 6 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- 7 See "Handrail Fabrication Details" for Splice Joints.
- 8 1/8" Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- 11 See "General Notes" for anchor bolt information.

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HANDRAIL FABRICATION DETAILS



PLAN SHOWING RAIL AT RAMP CONDITIONS

GENERAL NOTES

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.
Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36, Mechanical Tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated #4 = 1'-5" Epoxy coated #4 = 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be 3/8 inch diameter. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. 3/8 inch diameter threaded rod embedment depth for wall mounts is 3 1/2 inches and embedment depth for post base plate is 5 inches.

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxy and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be 3/8 inch diameter ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8 inches for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 feet. Shop drawings are required when rail is fabricated to the curve.

For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

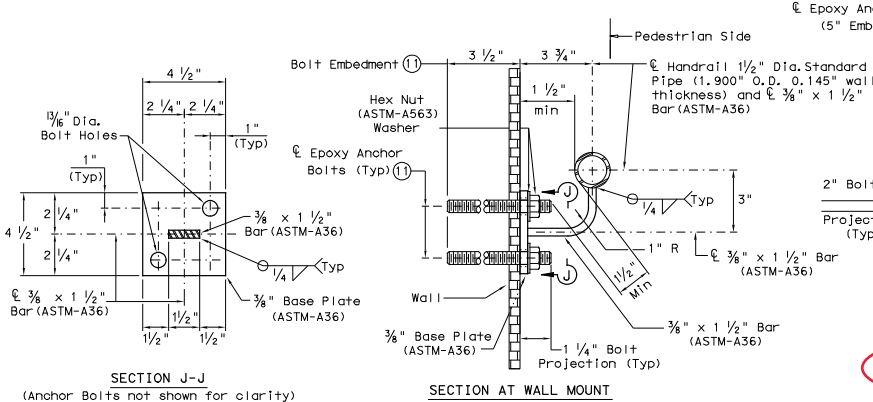
Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

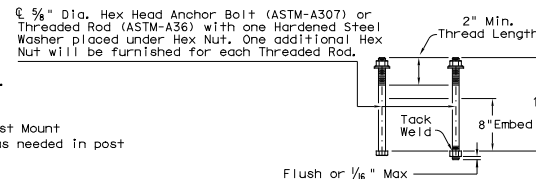
Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

All exposed edges will be rounded or chamfered to approximately 1/8 inch by grinding.

SHEET 3 OF 3

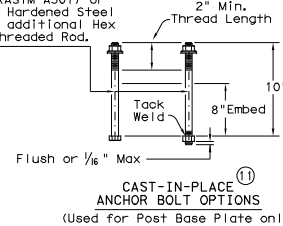


TYPICAL WALL MOUNT DETAILS

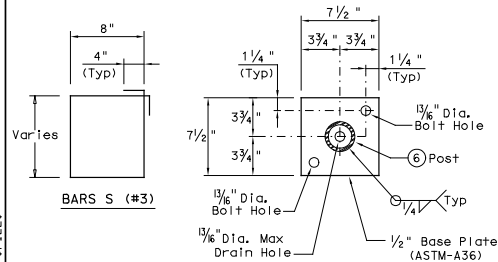


SECTION AT RAIL POST FOUNDATIONS

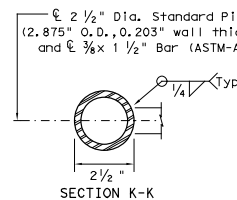
- ⑤ 1 1/2" Dia. Standard Pipe (1,900" O.D., 0.145" wall thickness). Parallel to ramp/sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- ⑥ 2 1/2" Dia. Standard Pipe (2,875" O.D., 0.203" wall thickness). Plumb all posts. See "Post Mount Detail" for crimping and trimming post to fit the diameter of top rail. Provide holes as needed in post for galvanizing drainage and venting.
- ⑦ See "General Notes" for anchor bolt information.
- ⑧ Bars S(#3) spaced at 12" Max (Spaced 3" from outside edge of overall length of Ramp/Sidewalk).
- ⑨ Provide 1 1/2" end cover to Bars D(#4) from outside edge of overall length of Ramp/Sidewalk.



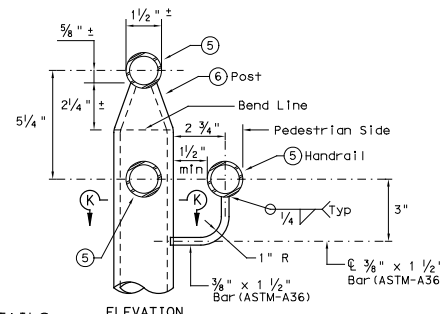
CAST-IN-PLACE ANCHOR BOLT OPTIONS
(Used for Post Base Plate only)




TYPICAL POST BASE PLATE DETAIL



POST MOUNT DETAILS



ELEVATION

 Texas Department of Transportation				Design Division Standard			
PEDESTRIAN HANDRAIL							
DETAILS							
PRD-13							
FILE: prd13.dgn		DWG: TxDOT		CHK: AM		DWG: JTR	
① TxDOT December 2006		CONT SECT		JOB		HIGHWAY	
REVISIONS						SE LOOP	
REVISED MAY, 2013 (VP)		DIST		COUNTY		SHEET NO.	
				WILLIAMSON		185	

DATE: 2/23/2021
FILE: #FILES

Submitted To:	M A Smith Contracting Co, Inc.	Project Name:	TX_Williamson_na_na
Address:	15308 GINGER ST, Austin, TX 78728-0000	Project No:	CR 138 Right Turn Lane
Phone No:	(512) 990-7640	Control No:	CR 138 Right Turn Lane
Letting Date:	04/08/2024	Location:	CR 138 Right Turn Lane
Phone No:		Working Days:	0
		Engineer:	

We are pleased to offer the following proposal for your consideration:

Item No	Item Description	Qty	Unit	Unit Price (\$)	Total Price (\$)
0450 2077	RAIL (HANDRAIL)(TY F)	42.00	LF	153.60	6,451.20
Total Bid Price:					6,451.20

Notes:

Price is based on shipping in complete quantities to the jobsite with unloading, storage and erection by others. Less than complete quantities, may incur additional freight charges. This quote is for the the complete package as quoted, any deletion of a bid line item on this quote, may result in additional charges for the remaining material.

Price does not include any radius rail.

Prices good for material delivered on or by 9/30/2024. After which are subject to escalation.

Lead Time: 16 weeks

Terms & Conditions:

This proposal is subject to Structural & Steel Products terms and conditions. Please request a copy by calling (817)332-7417

Payment Terms are Net 30 Days, no retainage, subject to credit approval

Prices are firm 30 days from the quote date and shipment within 60 days of order acceptance, after which prices subject to escalation.

Proposal Acceptance:

The above prices, specifications and conditions are satisfactory and are hereby accepted.

Buyer: _____

Estimated By: Pedro Murillo

Signature: _____

Revised By: N/A

Date of Acceptance: _____

Prime Contractor: _____

CONCRETE QUOTATION



page 1 of 2

QUOTED: 3/5/2024
REV#:
QUOTE EXPIRATION: 4/4/2024
SALES REP: Renee Drosche - Cell: (512) 809-2554

Lauren Concrete
2001 Picadilly Dr, Round Rock, TX 78664
Office & Dispatch: 512-389-2113
www.laurenconcrete.com

COMPANY INFORMATION

COMPANY NAME: SMITH CONTRACTING CO., INC.	ATTENTION: Chris Lopez
	PHONE:
	EMAIL: chrislopez@sccitx.com

PROJECT INFORMATION

PROJECT NAME: CR 138 Right Turn Lane at SH 130, Job# 2401
ADDRESS: CR 138 at SH 130, Williamson County, Texas

[illegible]

ESCALATIONS AND EXPIRATION

Project Expiration: 9/30/2024

All Mixes Bid With IL Cement.

Additional Costs and Terms:

page 2 of 2

•Lauren Concrete reserves the right to revise quote if not signed and returned within 30 days and/or if project start date is more than 90 days out. Availability of raw materials is expected to be limited. When shortages occur, straight cement concrete designs may be substituted at a minimum charge of \$4.00 per yard. Dolomite Limestone will be substituted at a minimum charge of \$3.00/yd3.

•Pours outside of normal operating hours may be subject to a plant opening fee and are subject to availability. TXDOT hour restrictions strictly observed.

•Fuel Surcharge: A fuel surcharge of \$10.00 per load will be charged when area diesel prices are \$3.25 - \$3.49. A surcharge of \$16.00 per load will be charged while diesel prices are \$3.50 - \$3.74. An additional \$6.00 per load will be charged for every \$0.25 per gallon increase over \$3.75 per gallon diesel. A complete schedule of fuel surcharges by diesel price is available upon request. The diesel price (On-highway Ultra Low Sulfur Diesel) as posted by the U.S. Energy Information Administration for the Gulf Coast area (PADD3) shall be used as the benchmark. <https://www.eia.gov/petroleum/gasdiesel/>

•Non-Chloride Accelerator Admixture, Level 1 - \$5.00 per yard, Level 2 - \$10.00 c.y., Level 3 - \$15.00 c.y.

•The slumps listed for each individual mix design are the acceptable ranges warranted by Lauren Concrete. The contractor must request a slump for each order that is within the published Lauren Concrete range (per design) as well as respecting conformance to this job's specification(s) and this project's structural notes.

•Concrete Cooling – Pricing on Request.

•Minimum load size 3 cy. Minimum Load Charge: 3 - 5.99 yards = \$275.00

•Rejected loads will be assessed individually to determine charges to customer. Lauren Concrete has the right to invoice and collect on all rejected loads that have not been independently tested using ASTM methods.

•Maximum Allowable Truck Time - 60 minutes from arrival time until finish pour out time allowed. \$3.00 per min. charge will apply beyond the allowed time.

•Pricing listed is specific to the project and mix designs indicated above. Additional Concrete Mix Designs will be quoted separately as needed.

•Quality Control – Engineered Stamped Mix Design, \$100.00/Mix; Additional Testing Required/ Specifications, quoted separately as needed, i.e., (shrinkage test, 1 day, 2 day break reporting etc.).

•Environmental Fee: \$10.00 per truck

•As of October 1, 2020 - payments on credit accounts are subject to a 3% convenience fee when the payment is made by credit card.

•When requested, a 9 sack grout mix (40XE7IP3X1) will be added to the project as a pump prime for \$250 per cubic yard.

•Effective January 1, 2023 – Arrival at jobsite combined with an electronic ticket will serve as proof of delivery. Loads not accepted must be electronically rejected.

SIGNATURE

X

Chris Lopez

DATE:

APPROVED*By Christopher R. Lopez at 12:10 pm, Mar 07, 2024*



PROJECT: CR 138 Right Turn Lane at SH 130
DATE: 4/18/2024
DESCRIPTION:

This proposal is for the addition of requested signs on the attached sheets. **Proposed line items costs are listed below.**

LABOR	HOURS WORKED										TOTAL	RATE * TOTAL HOURS
	RATE	1	2	3	4	5	6	7				
Project Manager	\$ 75.00									0.0	\$ -	
Superintendent	\$ 55.00									0.0	\$ -	
Foreman/Layout Coordinator	\$ 50.00									0.0	\$ -	
Operator 1	\$ 30.00									0.0	\$ -	
Operator 2	\$ 28.00									0.0	\$ -	
Operator 3	\$ 26.00									0.0	\$ -	
Pipe Layer/Concrete Finisher	\$ 26.00									0.0	\$ -	
Laborer 1	\$ 24.00									0.0	\$ -	
Laborer 2	\$ 24.00									0.0	\$ -	
Laborer 3	\$ 24.00									0.0	\$ -	
Driver 1	\$ 27.00									0.0	\$ -	
Driver 2	\$ 27.00									0.0	\$ -	
Foreman/Layout Coordinator OT	\$ 75.00									0.0	\$ -	
Operator 1 OT	\$ 45.00									0.0	\$ -	
Operator 2 OT	\$ 42.00									0.0	\$ -	
Operator 3 OT	\$ 39.00									0.0	\$ -	
Pipe Layer/Concrete Finisher OT	\$ 39.00									0.0	\$ -	
Laborer 1 OT	\$ 36.00									0.0	\$ -	
Laborer 2 OT	\$ 36.00									0.0	\$ -	
Laborer 3 OT	\$ 36.00									0.0	\$ -	
Driver 1 OT	\$ 40.50									0.0	\$ -	
Driver 2 OT	\$ 40.50									0.0	\$ -	
LABOR SUBTOTAL \$											-	
PER DIEM	Unit Cost									QTY	COST	
	SCCI Per Diem	\$ -	-	-	-	-	-	-	-	0.0	\$ -	
PER DIEM SUBTOTAL \$											-	
MATERIALS	UNIT COST	UNIT	DESCRIPTION							QTY	COST	
										0.0	\$ -	
											0.0	\$ -
MATERIAL SUBTOTAL \$											-	
SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION							QTY	COST	
										0.0	\$ -	
SUBCONTRACTOR SUBTOTAL \$											-	
UNIT RATE	UNIT COST	UNIT	DESCRIPTION							QTY	COST	
	ESSI	\$ 59.42	SF	Remove and Replace Existing Sign (Sign Only)(Aluminum Sign Type A)							6.3	\$ 374.35
	ESSI	\$ 1,270.38	EA	IN SM RD SN SUP&AM TY10BWG(1)SA(P) ("Stop" Sign)							2.0	\$ 2,540.76
	ESSI-Line Item #52 (644-6061)	\$ 720.00	EA	IN SM RD SN SUP&AM TYTWT(1)WS(T) ("Stop Ahead" Sign)							2.0	\$ 1,440.00
	ESSI	\$ 2,073.67	EA	IN SM RD SN SUP&AM S80(1)SA(U)							2.0	\$ 4,147.34
											\$ -	
UNIT RATE SUBTOTAL \$											8,502.45	
EQUIPMENT	HOURS WORKED										RATE TIMES	
	RATE	1	2	3	4	5	6	7	TOTAL	TOTAL HRS.		
									0.0	\$ -		
									0.0	\$ -		
											0.0	\$ -
EQUIPMENT SUBTOTAL \$											-	
Additional Time Requested (Working Days) 0												
LABOR SUBTOTAL											\$ -	
LABOR BURDEN											55% \$ -	
LABOR PROFIT & OVERHEAD											15% \$ -	
PER DIEM											\$ -	
MATERIAL SUBTOTAL											\$ -	
MATERIALS PROFIT AND OVERHEAD											15% \$ -	
SUB CONTRACTOR SUBTOTAL											\$ -	
GC PROFIT AND OVERHEAD ON SUBS											5% \$ -	
UNIT RATE											\$ 8,502.45	
EQUIPMENT											\$ -	
EQUIPMENT MARKUP											5% \$ -	
SUBTOTAL											\$ 8,502.45	
BONDING COST											0% \$ -	
TOTAL											\$ 8,502.45	

This sheet is the total for all additional signs listed above. The individual break downs of each item are attached after this sheet.

LABOR SUBTOTAL

LABOR BURDEN

LABOR PROFIT & OVERHEAD

PER DIEM

MATERIAL SUBTOTAL

MATERIALS PROFIT AND OVERHEAD

SUB CONTRACTOR SUBTOTAL

GC PROFIT AND OVERHEAD ON SUBS

UNIT RATE

EQUIPMENT

EQUIPMENT MARKUP

SUBTOTAL

BONDING COST

TOTAL

This sheet is the total for all additional signs listed above. The individual break downs of each item are attached after this sheet.

Item 999-WC01

PROJECT: CR 138 Right Turn Lane at SH 130
DATE: 4/18/2024
DESCRIPTION:

This proposal is for the removal & replacement of a Lane Ends Merge Right, sign only. Proposed cost is \$59.42/SF.

[illegible]

LABOR SUBTOTAL \$ 25.00

[illegible]

PER DIEM SUBTOTAL	\$	-
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MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
				0.0	\$ -
				0.0	\$ -

MATERIAL SUBTOTAL	\$	-
-------------------	----	---

SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
ESSI	\$ 50.00	SF	Remove and Replace Existing Sign (Sign Only)(Aluminum Sign Type A)	6.3	\$ 312.50
				0.0	\$ -

SUBCONTRACTOR SUBTOTAL	\$	312.50
------------------------	----	--------

UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
					\$ -
					\$ -
					\$ -

		\$	-
UNIT RATE SUBTOTAL		\$	-

[illegible]

EQUIPMENT SUBTOTAL	\$	-
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Additional Time Requested (Working Days)	0
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LABOR SUBTOTAL		\$	25.00
LABOR BURDEN	55%	\$	13.75
LABOR PROFIT & OVERHEAD	15%	\$	3.75

PER DIEM	\$	-
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MATERIAL SUBTOTAL	\$	-
MATERIALS PROFIT AND OVERHEAD	15% \$	-

SUB CONTRACTOR SUBTOTAL	\$	312.50
GC PROFIT AND OVERHEAD ON SUBS	5% \$	15.63

UNIT RATE \$ -

EQUIPMENT	\$	-
EQUIPMENT MARKUP	5% \$	-

SUBTOTAL	\$	370.63
-----------------	-----------	---------------

BONDING COST	1% \$	3.71
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TOTAL	\$	374.33
	\$	59.42

Item 644-6001

PROJECT: CR 138 Right Turn Lane at SH 130
DATE: 4/5/2024

DESCRIPTION:

This proposal is for the addition of 2ea. Stop Signs. Proposed cost for additional Stop Signs is \$872.69/EA.

[illegible]

LABOR SUBTOTAL \$ 25.00

[illegible]

PER DIEM SUBTOTAL	\$	-
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MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
				0.0	\$ -
				0.0	\$ -

MATERIAL SUBTOTAL	\$	-
-------------------	----	---

SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
ESSI	\$ 802.67	EA	IN SM RD SN SUP&AM TY10BWG(1)SA(P) ("Stop" Sign)	2.0	\$ 1,605.34
ESSI	\$ 187.50	EA	Signs for Street Name Blades with Applicable Hardware (Caps, Crosses)-Derby Day (38"x8") & East Wilco Hwy (48"x8")-Little Lake (40"x8") & East Wilco Hwy (48"x8")	4.0	\$ 750.00
				0.0	\$ -

SUBCONTRACTOR SUBTOTAL		\$	2,355.34
------------------------	--	----	----------

UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
					\$ -
					\$ -

UNIT RATE SUBTOTAL	\$	-
--------------------	----	---

[illegible]

EQUIPMENT SUBTOTAL	\$	-
--------------------	----	---

Additional Time Requested (Working Days)	0
--	---

LABOR SUBTOTAL		\$	25.00
LABOR BURDEN	55%	\$	13.75
LABOR PROFIT & OVERHEAD	15%	\$	3.75
PER DIEM		\$	-
MATERIAL SUBTOTAL		\$	-
MATERIALS PROFIT AND OVERHEAD	15%	\$	-
SUB CONTRACTOR SUBTOTAL		\$	2,355.34
GC PROFIT AND OVERHEAD ON SUBS	5%	\$	117.77
UNIT RATE		\$	-
EQUIPMENT		\$	-
EQUIPMENT MARKUP	5%	\$	-
SUBTOTAL		\$	2,515.61
BONDING COST	1%	\$	25.16
TOTAL		\$	2,540.76
		\$	1,270.38



Item 644-6033

PROJECT: CR 138 Right Turn Lane at SH 130
 DATE: 4/5/2024

DESCRIPTION:

This proposal is for the addition of 2ea. guide signs to be installed on the frontage road of SH130. **Proposed cost for installation of each guide sign is \$2,073.67/EA.**

LABOR	RATE	HOURS WORKED							TOTAL	RATE * TOTAL HOURS
		1	2	3	4	5	6	7		
Project Manager	\$ 75.00								0.0	\$ -
Superintendent	\$ 55.00								0.0	\$ -
Foreman/Layout Coordinator	\$ 50.00	0.5							0.5	\$ 25.00
Operator 1	\$ 30.00								0.0	\$ -
Operator 2	\$ 28.00								0.0	\$ -
Operator 3	\$ 26.00								0.0	\$ -
Pipe Layer/Concrete Finisher	\$ 26.00								0.0	\$ -
Laborer 1	\$ 24.00								0.0	\$ -
Laborer 2	\$ 24.00								0.0	\$ -
Laborer 3	\$ 24.00								0.0	\$ -
Driver 1	\$ 27.00								0.0	\$ -
Driver 2	\$ 27.00								0.0	\$ -
Foreman/Layout Coordinator OT	\$ 75.00								0.0	\$ -
Operator 1 OT	\$ 45.00								0.0	\$ -
Operator 2 OT	\$ 42.00								0.0	\$ -
Operator 3 OT	\$ 39.00								0.0	\$ -
Pipe Layer/Concrete Finisher OT	\$ 39.00								0.0	\$ -
Laborer 1 OT	\$ 36.00								0.0	\$ -
Laborer 2 OT	\$ 36.00								0.0	\$ -
Laborer 3 OT	\$ 36.00								0.0	\$ -
Driver 1 OT	\$ 40.50								0.0	\$ -
Driver 2 OT	\$ 40.50								0.0	\$ -
LABOR SUBTOTAL \$										25.00

PER DIEM	Unit Cost									QTY	COST
			1	2	3	4	5	6	7		
SCCI Per Diem	\$	-	-	-	-	-	-	-	-	0.0	\$ -
PER DIEM SUBTOTAL \$										-	

MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
				0.0	\$ -
				0.0	\$ -
MATERIAL SUBTOTAL					\$ -

SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
ESSI	\$ 1,935.13	EA	IN SM RD SN SUP&AM S80(1)SA(U)	2.0	\$ 3,870.26
				0.0	\$ -
SUBCONTRACTOR SUBTOTAL					\$ 3,870.26

UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
					\$ -
					\$ -
UNIT RATE SUBTOTAL					\$ -

EQUIPMENT	RATE	HOURS WORKED							TOTAL	RATE TIMES	
		1	2	3	4	5	6	7		TOTAL HRS.	
									0.0	\$ -	
									0.0	\$ -	
									0.0	\$ -	
									0.0	\$ -	
									0.0	\$ -	
EQUIPMENT SUBTOTAL \$										-	

Additional Time Requested (Working Days)	0
--	---

LABOR SUBTOTAL	\$	25.00
LABOR BURDEN	55% \$	13.75
LABOR PROFIT & OVERHEAD	15% \$	3.75
PER DIEM	\$	-
MATERIAL SUBTOTAL	\$	-
MATERIALS PROFIT AND OVERHEAD	15% \$	-
SUB CONTRACTOR SUBTOTAL	\$	3,870.26
GC PROFIT AND OVERHEAD ON SUBS	5% \$	193.51
UNIT RATE	\$	-
EQUIPMENT	\$	-
EQUIPMENT MARKUP	5% \$	-
SUBTOTAL	\$	4,106.27
BONDING COST	1% \$	41.06
TOTAL	\$	4,147.34
	\$	2,073.67



ESSI
ENVIRONMENTAL SAFETY SERVICES INC.

Environmental Safety Services, Inc.
P.O. Box 54
Buda, Texas, 78610
Phone: 512-989-2259
Fax: 512-372-9375

**** CERTIFIED DBE / MBE / HUB / HABE / SBE CONTRACTOR ****

COA/TXDOT MBE/DBE #: VS0000012711, SCTRCA SBE/MBE/HABE #: 215049005, Texas HUB #: 1260203041800

Bid Date: April 2, 2024
Project: CR 138 Right Turn Lane
For: Williamson County

Proposal #: C.O. #: 0324-2226

Environmental Safety Services proposes to provide all the materials, labor, equipment and supervision necessary to perform the following work at the above referenced project per plans and specifications.

ITEM #	DESCRIPTION	UNIT	QUANTITIES	BID PRICE	EXT. PRICE
1	Remove and Replace Existing Sign (Sign Only)(Aluminum Sign Type A)	SF	6.25	\$50.00	\$312.50
2	IN SM RD SN SUP&AM TY10BWG(1)SA(P) ("Stop" Sign)	EA	2.00	\$802.67	\$1,605.34
3	IN SM RD SN SUP&AM S80(1)SA(U)	EA	2.00	\$1,935.13	\$3,870.26
				TOTAL	\$5,788.10

Notes:

All permits, lane closures and traffic control are excluded.
All layout is excluded.
General Contractor to provide access and staging area for ESSI materials & equipment.
If any material tests are required they shall be done by the GC or others.
All maintenance is excluded.
Sign prices are based on a minimum of ten installs/removes per move-in, or a \$350.00 mobilization charge will apply. No temporary signs/mounts, covering or turning of signs, solar or electrical is included.
All shoring and mass excavation are excluded.
All dewatering is excluded.
Pricing is good for thirty (30) days.
*****All bid prices are negotiable.*****

Respectfully submitted by Carson Ikels, Estimator

Accepted by: _____

Date: _____



ESSI
ENVIRONMENTAL SAFETY SERVICES INC.

Environmental Safety Services, Inc.
P.O. Box 54
Buda, Texas, 78610
Phone: 512-989-2259
Fax: 512-372-9375

**** CERTIFIED DBE / MBE / HUB / HABE / SBE CONTRACTOR ****

COA/TXDOT MBE/DBE #: VS0000012711, SCTRCA SBE/MBE/HABE #: 215049005, Texas HUB #: 1260203041800

Bid Date: April 18, 2024
Project: CR 138 Right Turn Lane at SH-130
For: Williamson County

Proposal #: CO 0424-2226

Environmental Safety Services proposes to provide all the materials, labor, equipment and supervision necessary to perform the following work at the above referenced project per plans and specifications.

ITEM #	DESCRIPTION	UNIT	QUANTITIES	BID PRICE	EXT. PRICE
1	Signs for Street Name Blades with Applicable Hardware (Caps, Crosses)	EA	4.00	\$187.50	\$750.00
	<i>Derby Day (38"x8") & East Wilco Hwy (48"x8")</i>				
	<i>Little Lake (40"x8") & East Wilco Hwy (48"x8")</i>				
				TOTAL	\$750.00

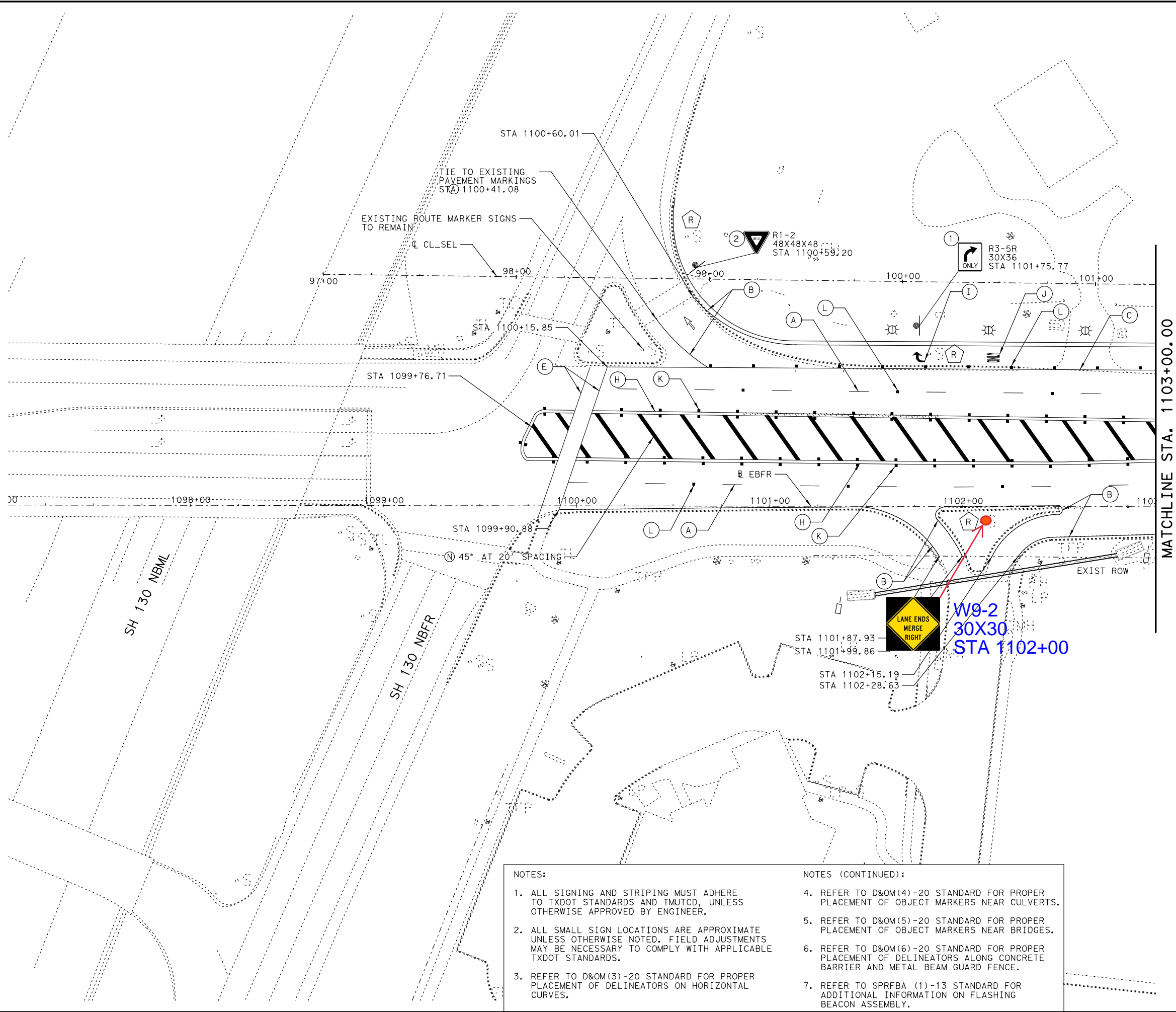
Notes:

All permits, lane closures and traffic control are excluded.
All layout is excluded.
General Contractor to provide access and staging area for ESSI materials & equipment.
If any material tests are required they shall be done by the GC or others.
All maintenance is excluded.
Sign prices are based on same move-in with additional CO signs, or a \$350.00 mobilization charge will apply. No temporary signs/mounts, covering or turning of signs, solar or electrical is included.
Overhead signs will be provided by ESSI for installation by others.
Sign relocation pricing reflects new stubs only. If new posts or signs are needed, additional charges will apply.
Aluminum signs type A price reflects ESSI providing the signs for installation by others.
All shoring and mass excavation are excluded.
All dewatering is excluded.
Pricing is good for thirty (30) days.
*****All bid prices are negotiable.*****

Respectfully submitted by Carson Ikels, Estimator

Accepted by: _____

Date: _____




LEGEND OF ESTIMATED QUANTITIES


(A)	RE PM W/RET REQ TY I (W) (4") (BRK) (100 MIL)
(B)	RE PM W/RET REQ TY I (W) (4") (SLD) (100 MIL)
(C)	REFL PAV MRK TY I (W) (8") (SLD) (100 MIL)
(D)	REFL PAV MRK TY I (W) (12") (LNDP) (100 MIL)
(E)	REFL PAV MRK TY I (W) (12") (SLD) (100 MIL)
(F)	REFL PAV MRK TY I (W) (24") (SLD) (100 MIL)
(G)	RE PM W/RET REQ TY I (Y) (4") (BRK) (100 MIL)
(H)	RE PM W/RET REQ TY I (Y) (4") (SLD) (100 MIL)
(I)	REFL PAV MRK TY I (W) (ARROW) (100 MIL)
(J)	REFL PAV MRK TY I (W) (WORD) (100 MIL)
(K)	REFL PAV MRKR TY II-A-A
(L)	REFL PAV MRKR TY I-C
(M)	REFL PAV MRK TY I (W) (8") (BRK) (100 MIL)
(N)	REFL PAV MRK TY I (Y) (12") (SLD) (100 MIL)
(O)	REFL PAV MRK TY I (Y) (MED NOSE) (100 MIL)
(P)	INSTR DEL ASSM (D-SW) SZ1 (FLX) GND (BI)
(Q)	INSTR DEL ASSM (D-SW) SZ (BRF) CTB
(R)	INSTR DEL ASSM (D-SW) SZ (BRF) CTB (BI)
(S)	INSTR DEL ASSM (D-SW) SZ (BRF) GF1 (BI)
(T)	INSTR OM ASSM (OM-2Y) (WC) GND
(U)	TRAFFIC DIRECTION ARROWS
(V)	REMOVE EXISTING SIGN

NO.	REVISION	BY	DATE
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WILLIAMSON COUNTY
1848



RODRIGUEZ
TRANSPORTATION
GROUP
FIRM #587

SE LOOP SEGMENT 1 PHASE 1
PAVEMENT MARKING
& DELINEATION PLAN

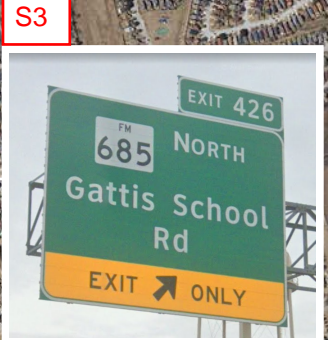
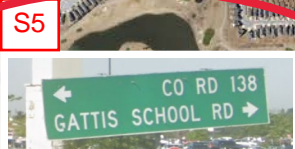
DESIGNED:	PROJECT NUMBER	ROADWAY
CHECKED:		SE LOOP
DRAWN:	STATE	COUNTY
CHECKED:	TEXAS	WILLIAMSON
		SHEET No. 378

NOTES:

- ALL SIGNING AND STRIPING MUST ADHERE TO TXDOT STANDARDS AND TMUTCD, UNLESS OTHERWISE APPROVED BY ENGINEER.
- ALL SMALL SIGN LOCATIONS ARE APPROXIMATE UNLESS OTHERWISE NOTED. FIELD ADJUSTMENTS MAY BE NECESSARY TO COMPLY WITH APPLICABLE TXDOT STANDARDS.
- REFER TO D&OM(3)-20 STANDARD FOR PROPER PLACEMENT OF DELINEATORS ON HORIZONTAL CURVES.

NOTES (CONTINUED):

- REFER TO D&OM(4)-20 STANDARD FOR PROPER PLACEMENT OF OBJECT MARKERS NEAR CULVERTS.
- REFER TO D&OM(5)-20 STANDARD FOR PROPER PLACEMENT OF OBJECT MARKERS NEAR BRIDGES.
- REFER TO D&OM(6)-20 STANDARD FOR PROPER PLACEMENT OF DELINEATORS ALONG CONCRETE BARRIER AND METAL BEAM GUARD FENCE.
- REFER TO SPRFBA (1)-13 STANDARD FOR ADDITIONAL INFORMATION ON FLASHING BEACON ASSEMBLY.



Professional Engineer Seal for Robertson Jon P. Belarmino, License Number 100351, dated 04/01/2024.

NO.	REVISIONS	BY	DATE

NTS

HNTB

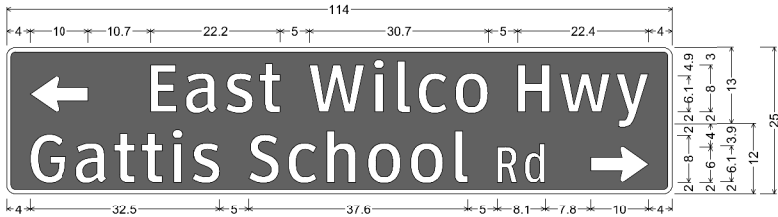
SE LOOP
SEGMENT 1 PHASE 1
SH 130 SIGN UPDATES

SEE ATTACHED
SHEETS FOR
PROPOSED SIGN
DETAILS.

DESIGNED:	PROJECT NUMBER	ROADWAY
CHECKED:	IFB 13346	SE LOOP (E WILCO HWY)
DRAWN:	STATE	COUNTY CITY SHEET NUMBER
CHECKED:	TEXAS WILLIAMSON	

PROPOSED S4

REMOVE AND REPLACE EXISTING SIGN



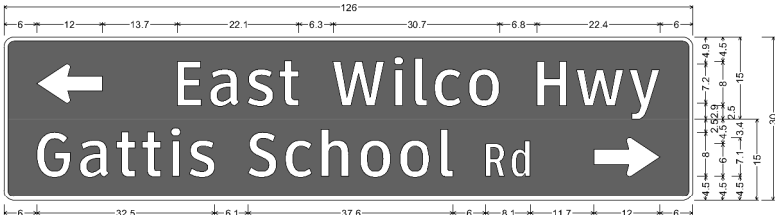
D1-2 6in LT-RT;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 10.0" X 6.1" 180°; "East", ClearviewHwy-3-W; "Wilco", ClearviewHwy-3-W;
"Hwy", ClearviewHwy-3-W;

1.5" Radius, 0.8" Border, White on Green;
"Gattis", ClearviewHwy-3-W; "School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;
Standard Arrow Custom 10.0" X 6.1" 0°;

PROPOSED S5

REMOVE AND REPLACE EXISTING
SIGN. NEW SIGN LOCATION - SEE
SUMMARY OF SMALL SIGNS.



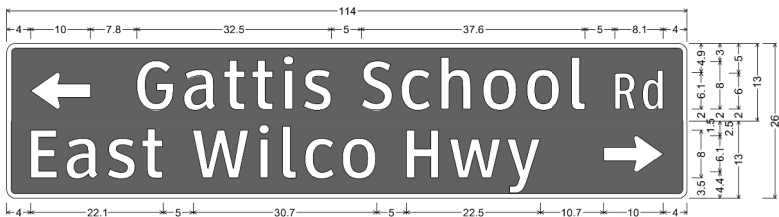
D1-2 8in LT-RT;

1.9" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 12.0" X 7.1" 180°; "East Wilco Hwy", ClearviewHwy-3-W;

1.9" Radius, 0.8" Border, White on Green;
"Gattis School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W; Standard Arrow Cu.

PROPOSED S6

REMOVE AND REPLACE EXISTING SIGN



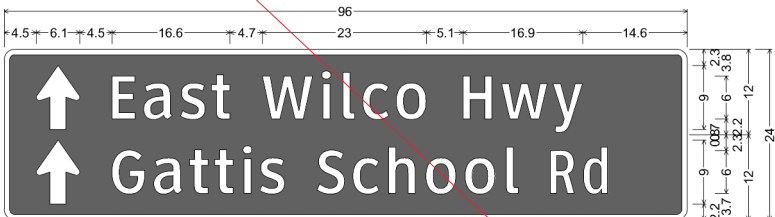
D3-1G(5) 8in (2 Lines);

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 10.0" X 6.1" 180°; "Gattis", ClearviewHwy-3-W; "School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;

1.5" Radius, 0.8" Border, White on Green;
"East", ClearviewHwy-3-W; "Wilco", ClearviewHwy-3-W; "Hwy", ClearviewHwy-3-W; Standard Arrow Custom 10.0" X 6.1" 0°;

PROPOSED S7

REMOVE AND REPLACE EXISTING
SIGN. NEW SIGN LOCATION - SEE
SUMMARY OF SMALL SIGNS.



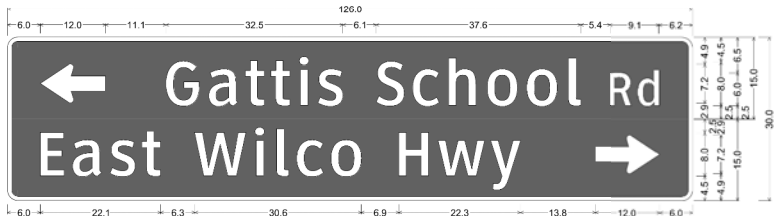
D1-2 6in UP-UP;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.0" X 6.1" 90°; "East Wilco Hwy", ClearviewHwy-3-W;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.0" X 6.1" 90°; "Gattis School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;

PROPOSED S11

REMOVE AND REPLACE EXISTING
SIGN.



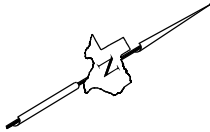
D1-2 8in LT-RT;

1.9" Radius, 0.8" Border, White on Green;
Standard Arrow 12.0" X 7.1" 180°; "Gattis School Rd", ClearviewHwy-3-W;

1.9" Radius, 0.8" Border, White on Green;
"East Wilco Hwy", ClearviewHwy-3-W; Standard Arrow 12.0" X 7.1" 0°;

NOTES:

- TXDOT TO VERIFY ADEQUACY OF EXISTING MAST ARMS TO SUPPORT PROPOSED SIGNS S4 AND S6.
- ALL SIGN DIMENSIONS SHOWN ARE IN INCHES.



NO.	REVISIONS	BY	DATE

NTS

HNTB

HNTB Corporation
14000 North Loop East
Houston, Texas 77040
Professional Engineer
License No. 100351

SE LOOP
SEGMENT 1 PHASE 1

SH 130
SMALL SIGN DETAILS

DESIGNED:				PROJECT NUMBER				ROADWAY			
CHECKED:				FB 13346				SE LOOP (E WILCO HWY)			
DRAWN:				STATE				COUNTY			
CHECKED:				TEXAS				WILLIAMSON			

DATE: _____
FILE: _____

[illegible]

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

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

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

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD (GEN).



**Traffic
Operations
Division
Standard**

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS					
4-16		DIST	COUNTY		SHEET NO.
8-16					



EXCAVATING * PAVING * CONCRETE * UTILITIES

Item 999-WC02

PROJECT: CR 138 Right Turn Lane at SH 130
DATE: 4/8/2024
DESCRIPTION:

This proposal is for the addition of requested Police Officer Presence for three shifts of night work. **Proposed costs for additional police presence is \$4,565.45/LS.**

LABOR	RATE	HOURS WORKED							TOTAL	RATE * TOTAL HOURS
		1	2	3	4	5	6	7		
Project Manager	\$ 75.00								0.0	\$ -
Superintendent	\$ 55.00								0.0	\$ -
Foreman/Layout Coordinator	\$ 50.00								0.0	\$ -
Operator 1	\$ 30.00								0.0	\$ -
Operator 2	\$ 28.00								0.0	\$ -
Operator 3	\$ 26.00								0.0	\$ -
Pipe Layer/Concrete Finisher	\$ 26.00								0.0	\$ -
Laborer 1	\$ 24.00								0.0	\$ -
Laborer 2	\$ 24.00								0.0	\$ -
Laborer 3	\$ 24.00								0.0	\$ -
Driver 1	\$ 27.00								0.0	\$ -
Driver 2	\$ 27.00								0.0	\$ -
Foreman/Layout Coordinator OT	\$ 75.00								0.0	\$ -
Operator 1 OT	\$ 45.00								0.0	\$ -
Operator 2 OT	\$ 42.00								0.0	\$ -
Operator 3 OT	\$ 39.00								0.0	\$ -
Pipe Layer/Concrete Finisher OT	\$ 39.00								0.0	\$ -
Laborer 1 OT	\$ 36.00								0.0	\$ -
Laborer 2 OT	\$ 36.00								0.0	\$ -
Laborer 3 OT	\$ 36.00								0.0	\$ -
Driver 1 OT	\$ 40.50								0.0	\$ -
Driver 2 OT	\$ 40.50								0.0	\$ -
LABOR SUBTOTAL \$										-

PER DIEM	Unit Cost								QTY	COST
SCCI Per Diem	\$ -	-	-	-	-	-	-	-	0.0	\$ -
PER DIEM SUBTOTAL \$										-

MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
				0.0	\$ -
				0.0	\$ -
MATERIAL SUBTOTAL \$					-

SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
Texas Highway Cops, LLC.	\$ 70.00	HR	Two officers for a closure - Gattis School Rd. And Toll Rd. 130	61.5	\$ 4,305.00
				0.0	\$ -
SUBCONTRACTOR SUBTOTAL \$					4,305.00

UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
					\$ -
					\$ -
UNIT RATE SUBTOTAL \$					-

EQUIPMENT	HOURS WORKED							RATE TIMES	
	RATE	1	2	3	4	5	6	TOTAL	TOTAL HRS.
								0.0	\$ -
								0.0	\$ -
								0.0	\$ -
EQUIPMENT SUBTOTAL \$									-

Additional Time Requested (Working Days)	0
--	---

LABOR SUBTOTAL	\$	-
LABOR BURDEN	55% \$	-
LABOR PROFIT & OVERHEAD	15% \$	-
PER DIEM	\$	-
MATERIAL SUBTOTAL	\$	-
MATERIALS PROFIT AND OVERHEAD	15% \$	-
SUB CONTRACTOR SUBTOTAL	\$	4,305.00
GC PROFIT AND OVERHEAD ON SUBS	5% \$	215.25
UNIT RATE	\$	-
EQUIPMENT	\$	-
EQUIPMENT MARKUP	5% \$	-
SUBTOTAL	\$	4,520.25
BONDING COST	1% \$	45.20
TOTAL	\$	4,565.45
	\$	4,565.45 /LS

INVOICE

Item 999-WC02



Bill To

Smith Contracting Inc.
Austin, Tx
(512) 350-1806
(512) 990-7640

Texas Highway Cops LLC.

PO Box #264
Devine, TX 78016
Phone: (210) 518-9707
Email: oreyes@texashighwaycops.com
Web: www.texashighwaycops.com

Payment terms Due upon receipt
Invoice # Invoice #5168
Date 04/07/2024

Description	Rate	Quantity	Total
(Smith Contracting)Police Officers Total Hours Worked	\$70.00	61.5	\$4,305.00
04/02/24 Two officers for a closure - Gattis School Rd. And Toll Rd. 130 (20 Hrs)			
04/03/24 Two officers for a closure - Gattis School Rd. And Toll Rd. (21 Hrs)			
04/04/24 Two officers for a closure - Gattis School Rd. And Toll Rd. (20.5 Hrs)			

Subtotal	\$4,305.00
Total	\$4,305.00

Smith Contracting Inc.



Item 690-6029

PROJECT: CR 138 Right Turn Lane at SH 130

DATE: 4/9/2024

DESCRIPTION:

This proposal is for the addition of two signs to be installed on existing mast arms at the intersection of SH130 & East Wilco Hwy. Proposed costs for installation of mast arm signs is \$2,524.16/EA.

LABOR	RATE	HOURS WORKED							TOTAL	RATE * TOTAL HOURS
		1	2	3	4	5	6	7		
Project Manager	\$ 75.00								0.0	\$ -
Superintendent	\$ 55.00								0.0	\$ -
Foreman/Layout Coordinator	\$ 50.00	3							3.0	\$ 150.00
Operator 1	\$ 30.00								0.0	\$ -
Operator 2	\$ 28.00								0.0	\$ -
Operator 3	\$ 26.00								0.0	\$ -
Pipe Layer/Concrete Finisher	\$ 26.00								0.0	\$ -
Laborer 1	\$ 24.00								0.0	\$ -
Laborer 2	\$ 24.00								0.0	\$ -
Laborer 3	\$ 24.00								0.0	\$ -
Driver 1	\$ 27.00								0.0	\$ -
Driver 2	\$ 27.00								0.0	\$ -
Foreman/Layout Coordinator OT	\$ 75.00								0.0	\$ -
Operator 1 OT	\$ 45.00								0.0	\$ -
Operator 2 OT	\$ 42.00								0.0	\$ -
Operator 3 OT	\$ 39.00								0.0	\$ -
Pipe Layer/Concrete Finisher OT	\$ 39.00								0.0	\$ -
Laborer 1 OT	\$ 36.00								0.0	\$ -
Laborer 2 OT	\$ 36.00								0.0	\$ -
Laborer 3 OT	\$ 36.00								0.0	\$ -
Driver 1 OT	\$ 40.50								0.0	\$ -
Driver 2 OT	\$ 40.50								0.0	\$ -
LABOR SUBTOTAL \$										150.00

PER DIEM	Unit Cost									QTY	COST
			1	2	3	4	5	6	7		
SCCI Per Diem	\$	-	-	-	-	-	-	-	-	0.0	\$ -
PER DIEM SUBTOTAL \$											-

MATERIALS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
				0.0	\$ -
				0.0	\$ -
	MATERIAL SUBTOTAL				\$ -

SUBCONTRACTORS	UNIT COST	UNIT	DESCRIPTION	QTY	COST
G-Carter	\$ 2,100.00	EA	MUNICIPAL SIGNS ON MASTARMS	2.0	\$ 4,200.00
				0.0	
				0.0	
				0.0	
				0.0	\$ -
SUBCONTRACTOR SUBTOTAL				\$	4,200.00

UNIT RATE	UNIT COST	UNIT	DESCRIPTION	QTY	COST
SMITH	\$ 333.33	WD	Traffic Control	1.0	\$ 333.33
					\$ -
UNIT RATE SUBTOTAL					\$ 333.33

EQUIPMENT	RATE	HOURS WORKED							TOTAL	RATE TIMES	
		1	2	3	4	5	6	7		TOTAL HRS.	
									0.0	\$	-
									0.0	\$	-
									0.0	\$	-
EQUIPMENT SUBTOTAL \$											-

Additional Time Requested (Working Days)	0
--	---

LABOR SUBTOTAL	\$	150.00
LABOR BURDEN	55% \$	82.50
LABOR PROFIT & OVERHEAD	15% \$	22.50
PER DIEM	\$	-
MATERIAL SUBTOTAL	\$	-
MATERIALS PROFIT AND OVERHEAD	15% \$	-
SUB CONTRACTOR SUBTOTAL	\$	4,200.00
GC PROFIT AND OVERHEAD ON SUBS	5% \$	210.00
UNIT RATE	\$	333.33
EQUIPMENT	\$	-
EQUIPMENT MARKUP	5% \$	-
SUBTOTAL	\$	4,998.33
BONDING COST	1% \$	49.98
TOTAL	\$	5,048.31
	\$	2,524.16 /EA

805 N. BELL BLVD.
CEDAR PARK, TEXAS 78613



(512) 258-10
FAX (512) 258-10

April 8, 2024

Project Name: INSTALL MASTARM SIGNS
Job Location: GATTIS SCHOOL ROAD
Owner: WILLIAMSON COUNTY

We at G Carter Construction Co., Inc. are pleased to quote the bid items below on the referenced project:

<u>Bid Item</u>	<u>Tech Spec.</u>	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
1	S4 & S6	MUNICIPAL SIGNS ON MASTARMS	2.0	EA	\$ 2,100.00	\$ 4,200.00
TOTAL						\$ 4,200.00

These prices do not include any Bond, Traffic Control or Engineering. If Bond is required, the General Contractor will add 3 1/2% to the bid. These prices are contingent on being awarded all items bid.

G Carter Construction Company Inc is a State Certified WBE, DBE, SBE & HUB.

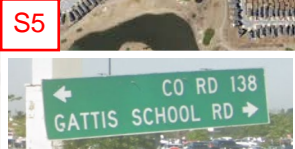
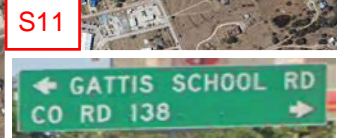
If this bid is accepted, it becomes a part of the contract. This quote is good for 30 days from date of this letter.

If additional information is needed, please contact me at (512) 258-1025.

Sincerely,

Pete Smith

Pete Smith
Vice President / Estimator



SEE ATTACHED SHEETS FOR PROPOSED SIGN DETAILS.

NO.	REVISIONS	BY	DATE

NTS

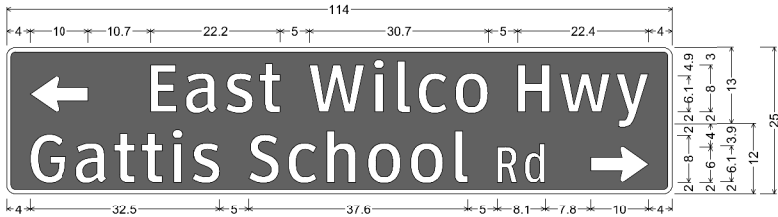
HNTB Corporation
One Wilco Corporate
Firm Registration Number 420

SE LOOP
SEGMENT 1 PHASE 1
SH 130 SIGN UPDATES

DESIGNED:	PROJECT NUMBER	ROADWAY
CHECKED:	FB 13346	SE LOOP (E WILCO HWY)
DRAWN:	STATE	COUNTY
CHECKED:	TEXAS	WILLIAMSON

PROPOSED S4

REMOVE AND REPLACE EXISTING SIGN



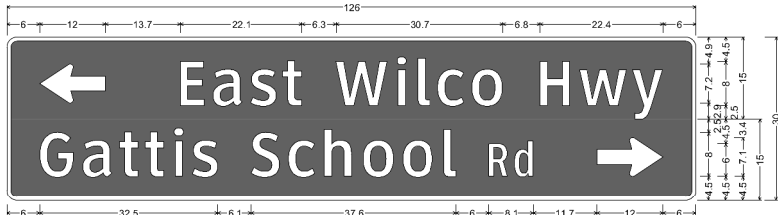
D1-2 6in LT-RT;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 10.0" X 6.1" 180°; "East", ClearviewHwy-3-W; "Wilco", ClearviewHwy-3-W;
"Hwy", ClearviewHwy-3-W;

1.5" Radius, 0.8" Border, White on Green;
"Gattis", ClearviewHwy-3-W; "School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;
Standard Arrow Custom 10.0" X 6.1" 0°;

PROPOSED S5

REMOVE AND REPLACE EXISTING
SIGN. NEW SIGN LOCATION - SEE
SUMMARY OF SMALL SIGNS.



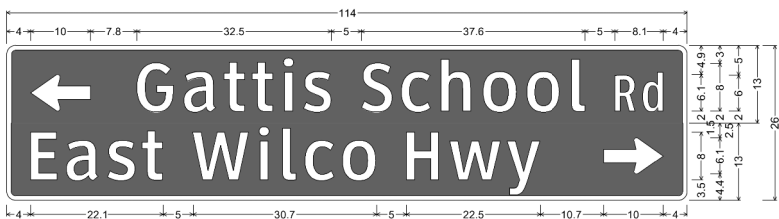
D1-2 8in LT-RT;

1.9" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 12.0" X 7.1" 180°; "East Wilco Hwy", ClearviewHwy-3-W;

1.9" Radius, 0.8" Border, White on Green;
"Gattis School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W; Standard Arrow Cl.

PROPOSED S6

REMOVE AND REPLACE EXISTING SIGN



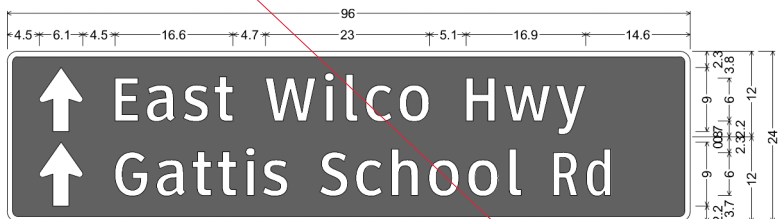
D3-1G(5) 8in (2 Lines);

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 10.0" X 6.1" 180°; "Gattis", ClearviewHwy-3-W; "School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;

1.5" Radius, 0.8" Border, White on Green;
"East", ClearviewHwy-3-W; "Wilco", ClearviewHwy-3-W; "Hwy", ClearviewHwy-3-W; Standard Arrow Custom 10.0" X 6.1" 0°;

PROPOSED S7

REMOVE AND REPLACE EXISTING
SIGN. NEW SIGN LOCATION - SEE
SUMMARY OF SMALL SIGNS.



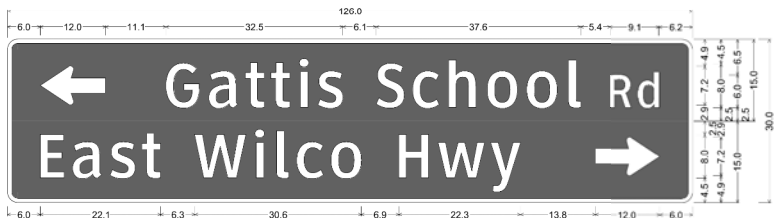
D1-2 6in UP-UP;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.0" X 6.1" 90°; "East Wilco Hwy", ClearviewHwy-3-W;

1.5" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.0" X 6.1" 90°; "Gattis School", ClearviewHwy-3-W; "Rd", ClearviewHwy-2-W;

PROPOSED S11

REMOVE AND REPLACE EXISTING
SIGN.



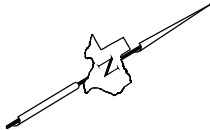
D1-2 8in LT-RT;

1.9" Radius, 0.8" Border, White on Green;
Standard Arrow 12.0" X 7.1" 180°; "Gattis School Rd", ClearviewHwy-3-W;

1.9" Radius, 0.8" Border, White on Green;
"East Wilco Hwy", ClearviewHwy-3-W; Standard Arrow 12.0" X 7.1" 0°;

NOTES:

- TXDOT TO VERIFY ADEQUACY
OF EXISTING MAST ARMS TO
SUPPORT PROPOSED SIGNS S4
AND S6.
- ALL SIGN DIMENSIONS SHOWN
ARE IN INCHES.



NO.	REVISIONS	BY	DATE

NTS

HNTB

HNTB Corporation
10000 North Loop West
Houston, Texas 77057
Professional Engineer
License Number 100351

SE LOOP
SEGMENT 1 PHASE 1

SH 130
SMALL SIGN DETAILS

DESIGNED:				PROJECT NUMBER				ROADWAY			
CHECKED:				FB 13346				SE LOOP (E WILCO HWY)			
DRAWN:				STATE				COUNTY			
CHECKED:				TEXAS				WILLIAMSON			

DATE: _____
FILE: _____

[illegible]

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

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

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

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD (GEN).



**Traffic
Operations
Division
Standard**

SUMMARY OF SMALL SIGNS

SOSS

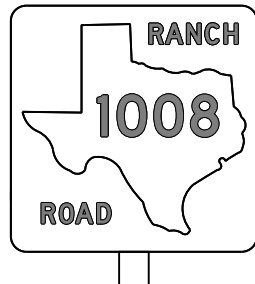
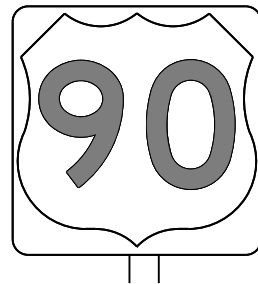
FILE:	sums16.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS					
4-16		DIST	COUNTY		SHEET NO.
8-16					

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DATE:
FILE:

REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

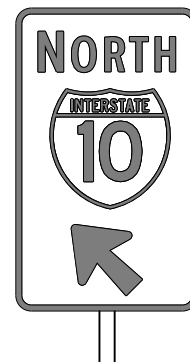
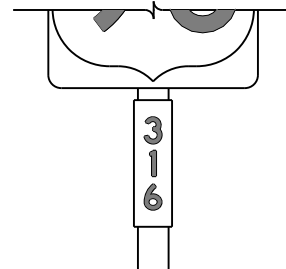
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING



TYPICAL EXAMPLES

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W
- Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.
- Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

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

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

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

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(3) - 13

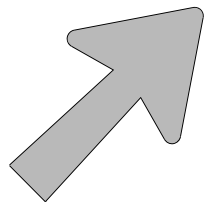
FILE:	tsr3-13.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
©TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY				
REVISIONS									
12-03	7-13	DIST	COUNTY				SHEET NO.		
9-08									

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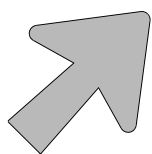
DATE:
FILE:

ARROW DETAILS

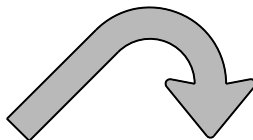
for Large Ground-Mounted and Overhead Guide Signs



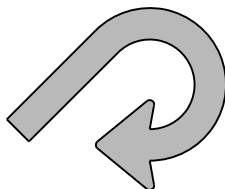
Type A



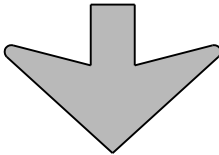
Type B



E-3



E-4



Down Arrow

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

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

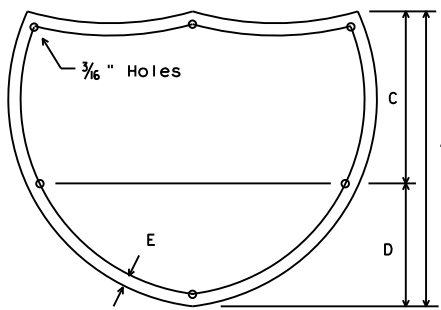
NOTE

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

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

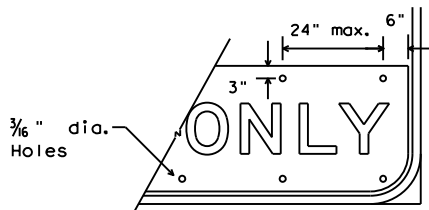
<http://www.txdot.gov/>

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

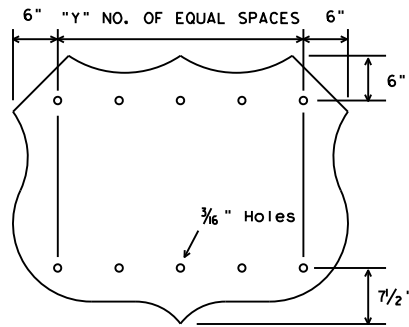


INTERSTATE ROUTE MARKERS

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

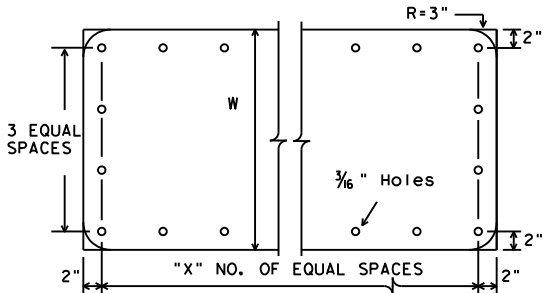


EXIT ONLY PANEL



U.S. ROUTE MARKERS

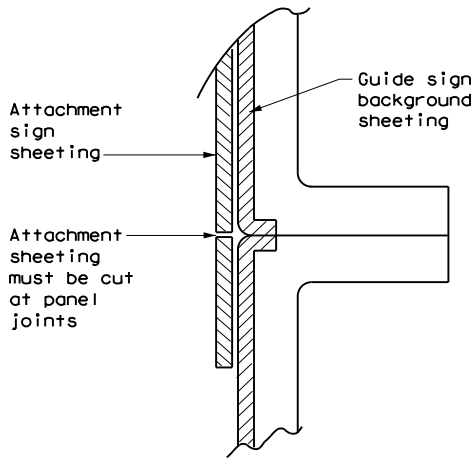
Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



STATE ROUTE MARKERS

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

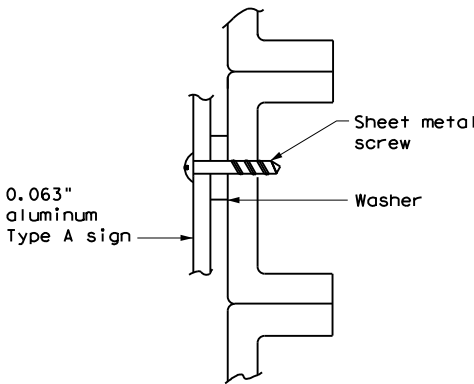
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



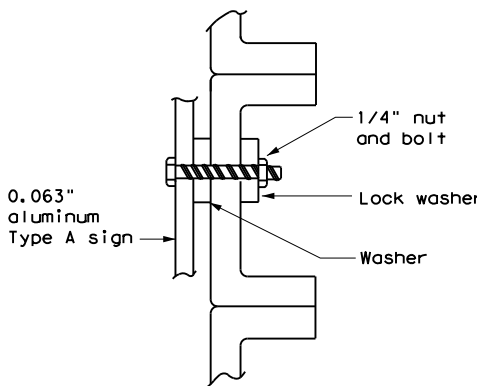
DIRECT APPLIED ATTACHMENT

NOTE:

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



SCREW ATTACHMENT

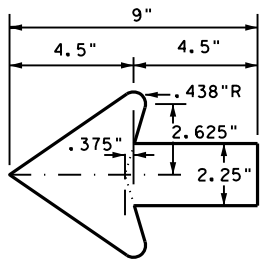


NUT/BOLT ATTACHMENT

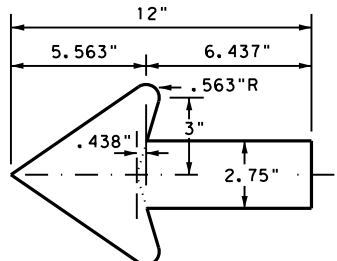
NOTE:

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

ARROW DETAILS for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.



Texas Department of Transportation



Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(5) - 13

FILE: tsr5-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
12-03 7-13	DIST		COUNTY	SHEET NO.
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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

Post Type

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

Number of Posts (1 or 2)

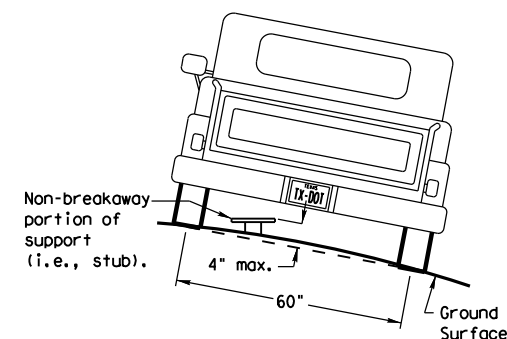
Anchor Type

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

Sign Mounting Designation

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

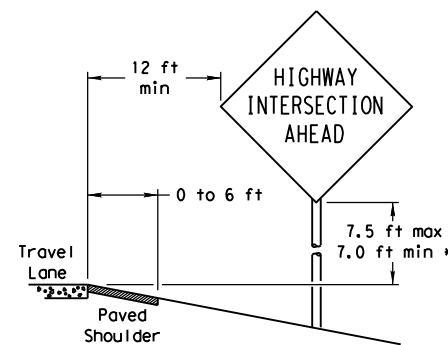
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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

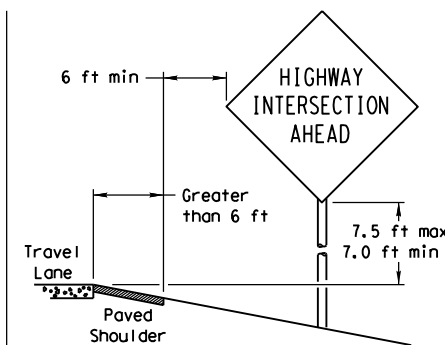
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

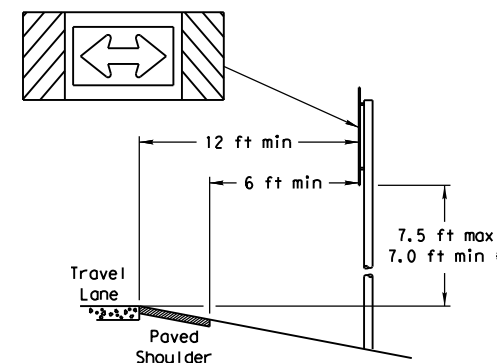
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

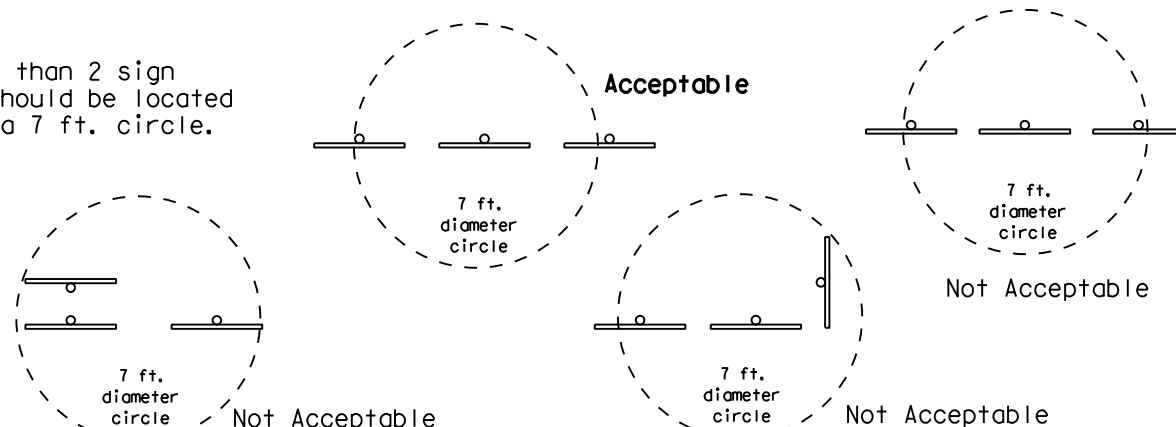
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION



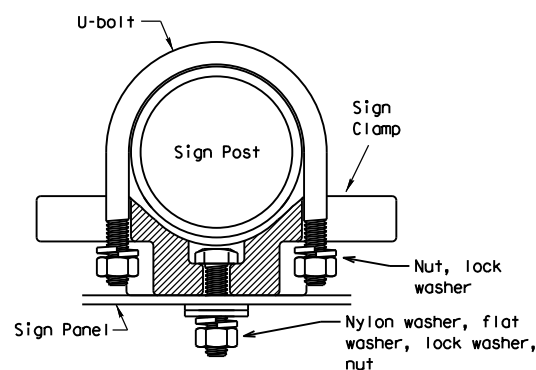
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

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



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

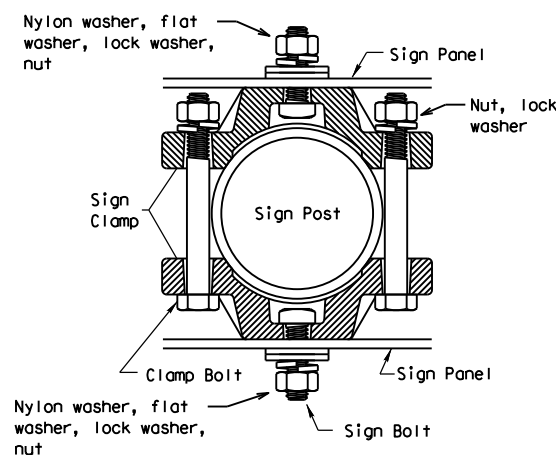


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

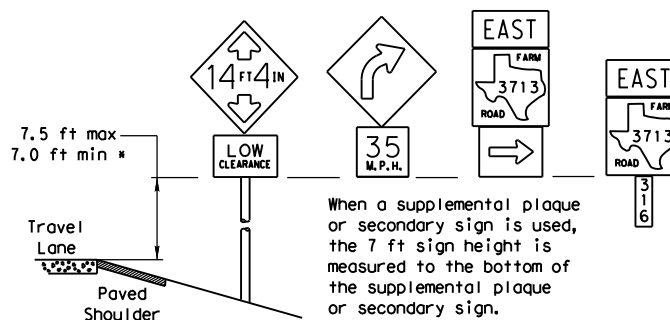
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



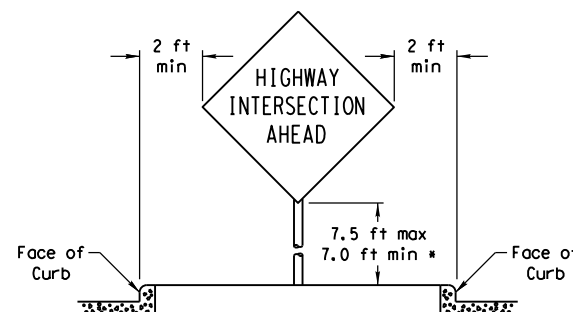
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

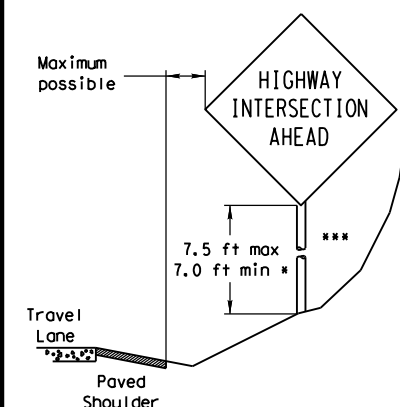


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



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



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

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

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



SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

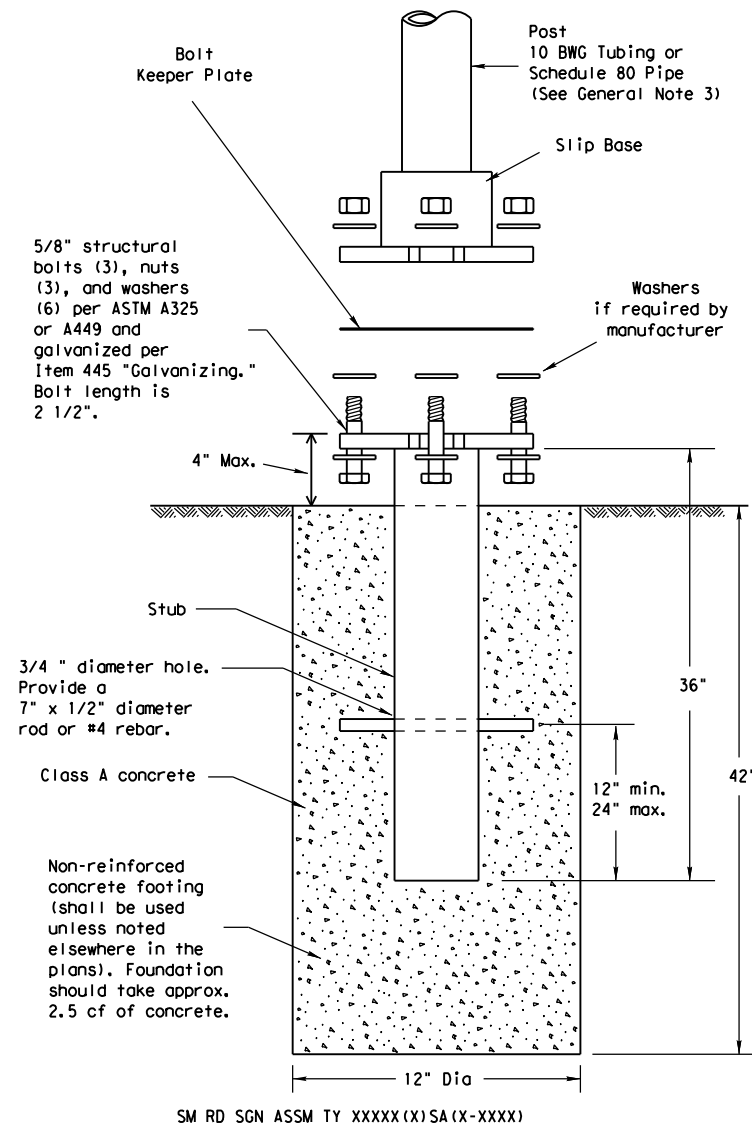
SMD (GEN) -08

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TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



NOTE

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

GENERAL NOTES:

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

ASSEMBLY PROCEDURE

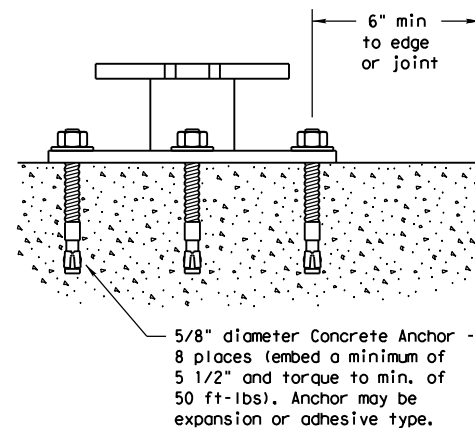
Foundation

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

Support

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

CONCRETE ANCHOR



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

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



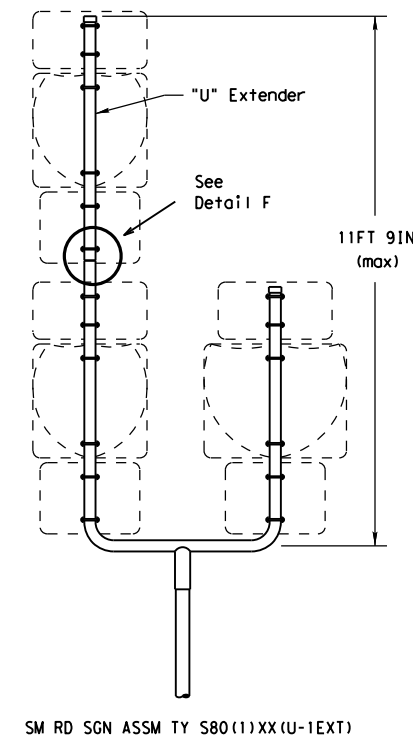
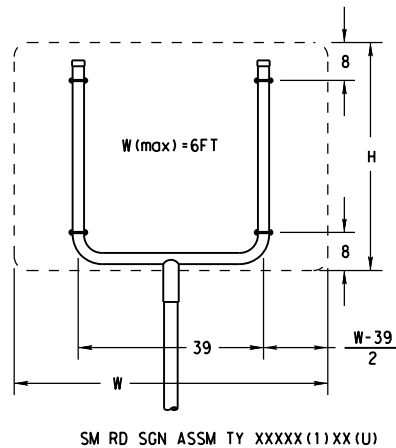
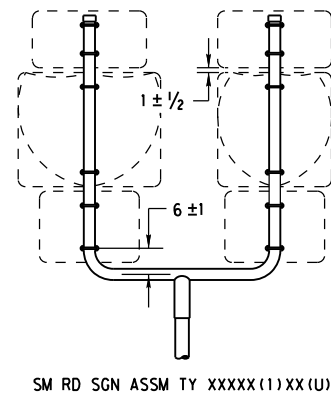
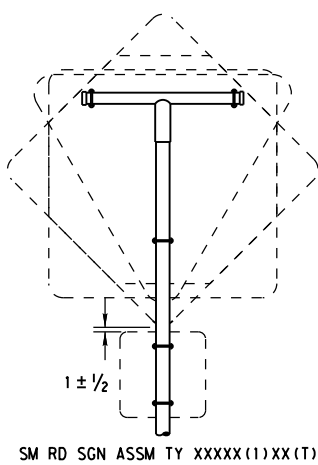
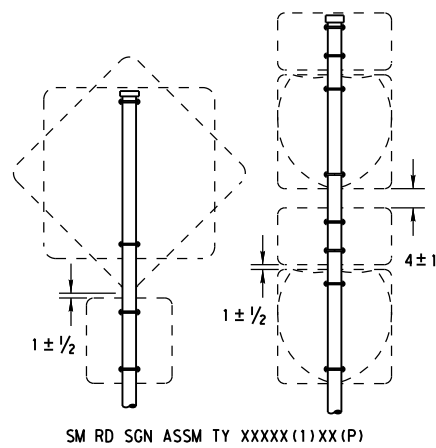
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

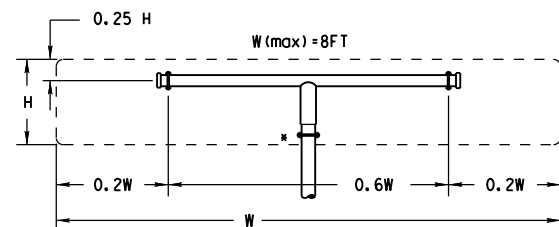
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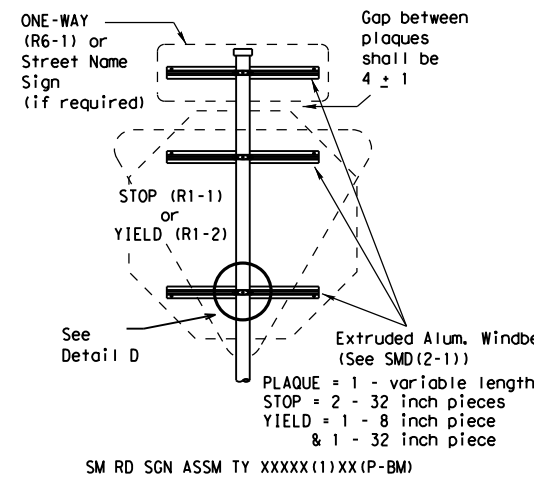


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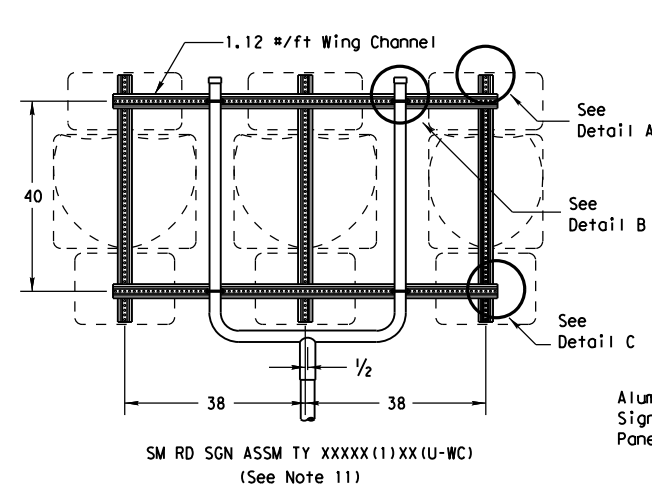


SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

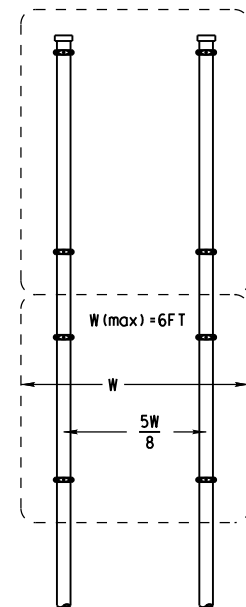
All dimensions are in english
unless detailed otherwise.



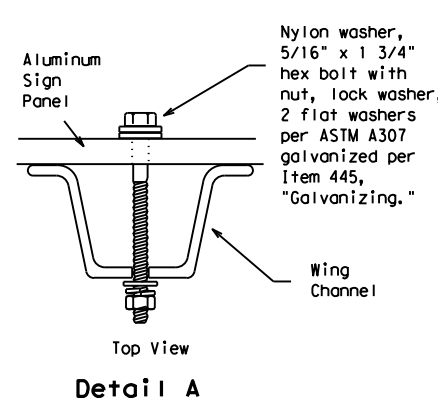
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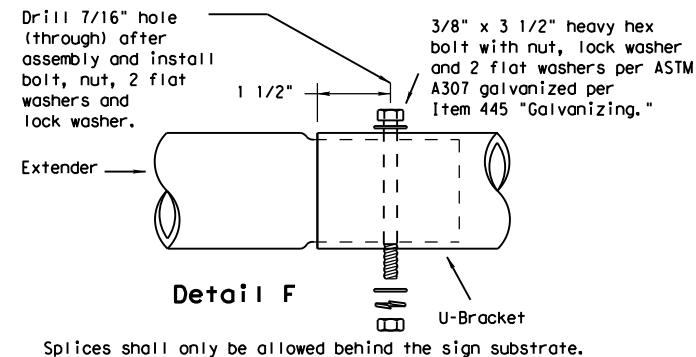
SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



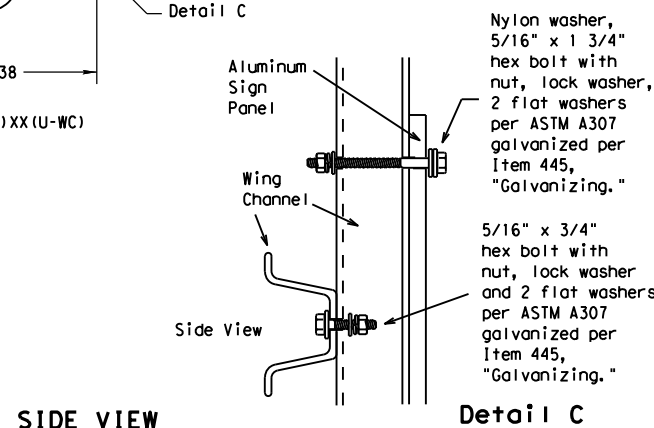
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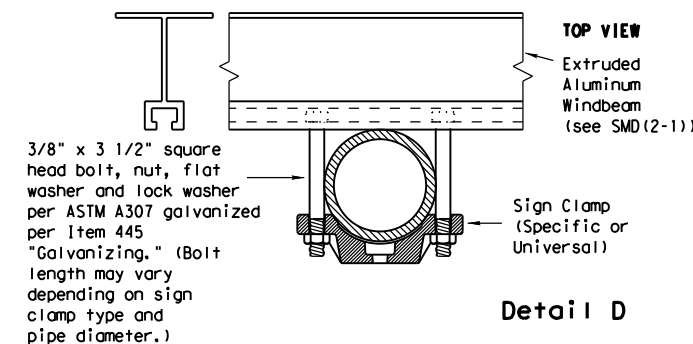
Detail A



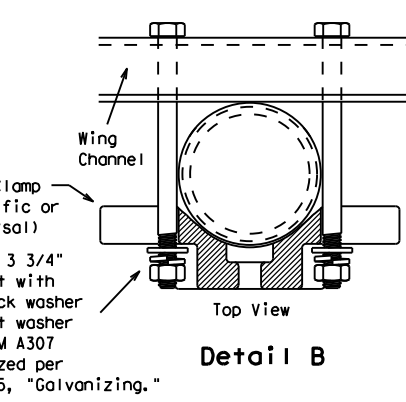
Detail F



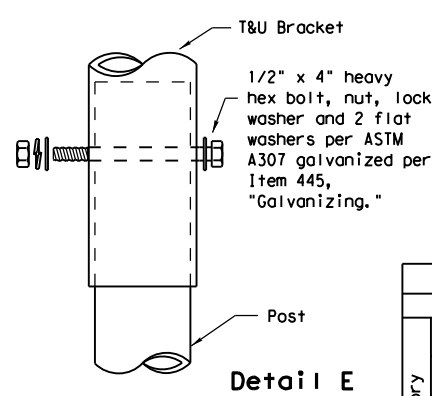
Detail C



Detail D



Detail B



Detail E

GENERAL NOTES:

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

REQUIRED SUPPORT

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

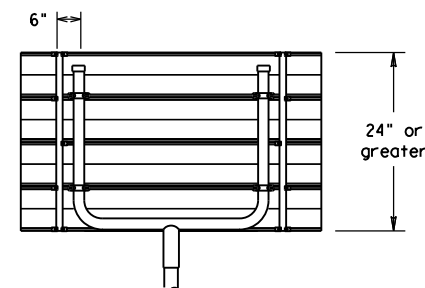
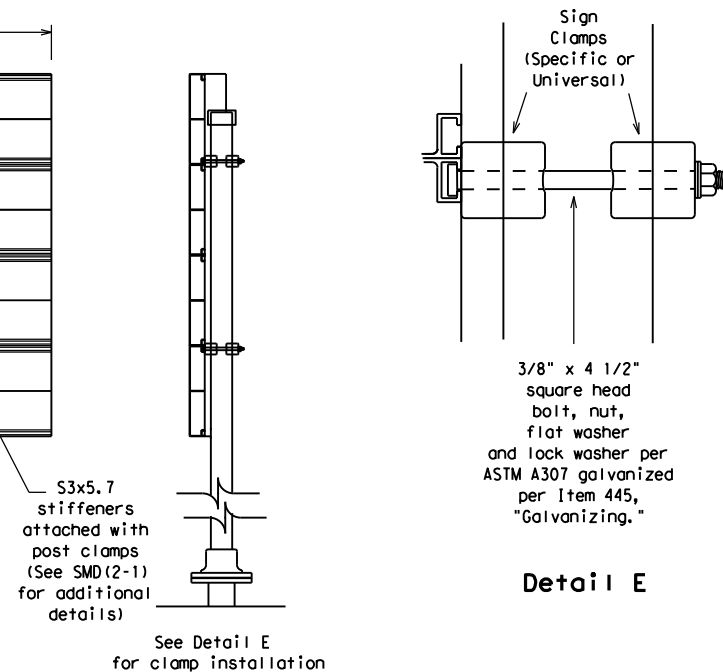
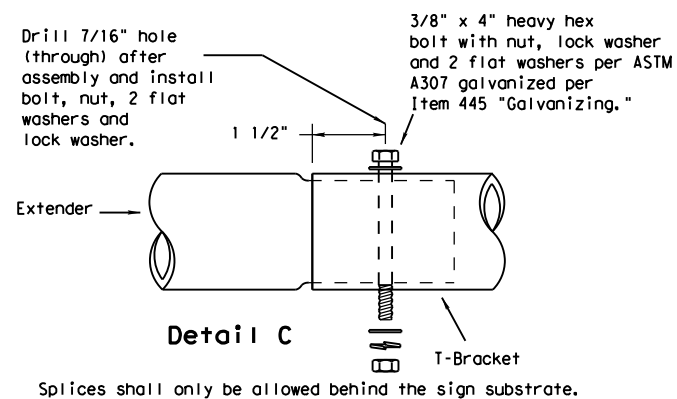
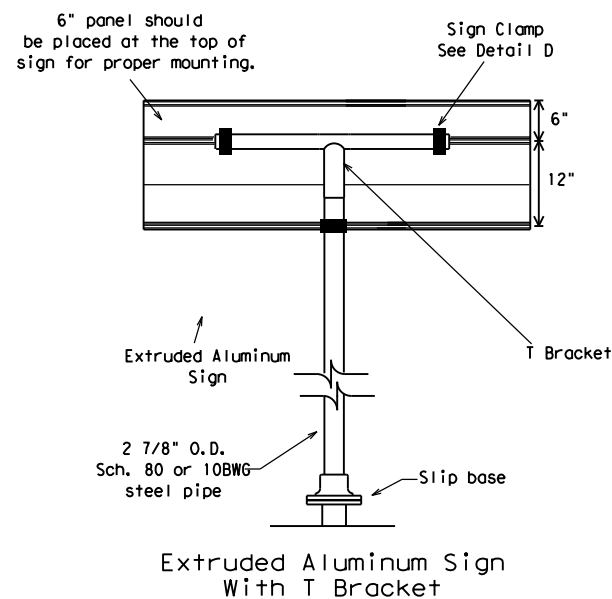
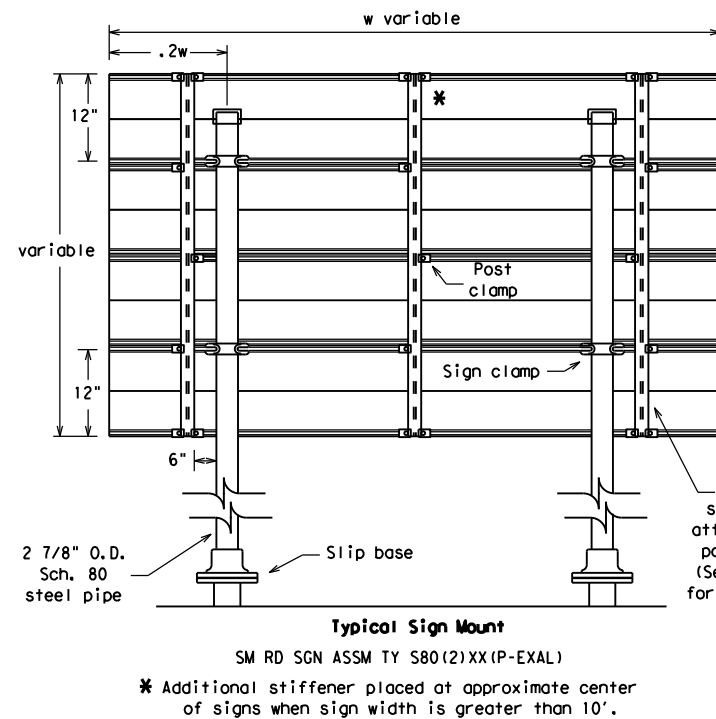
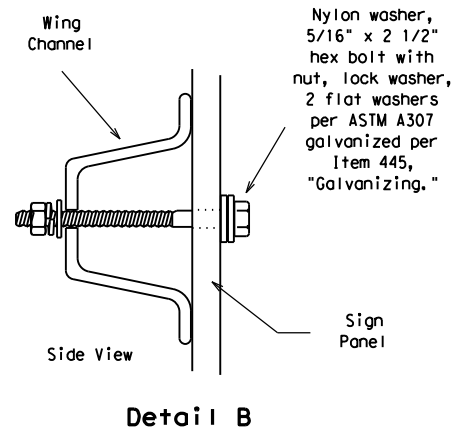
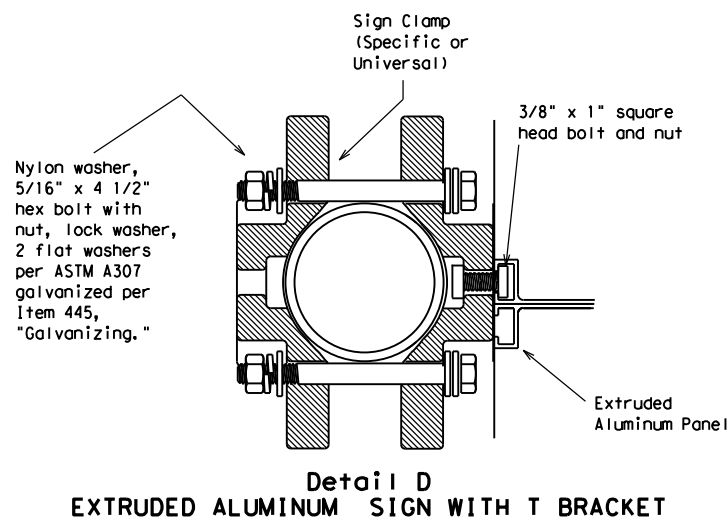
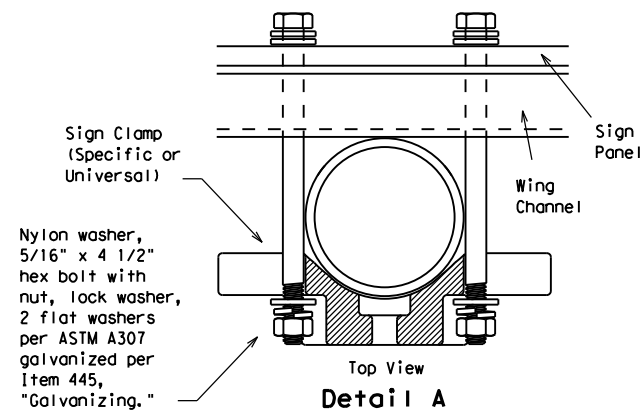
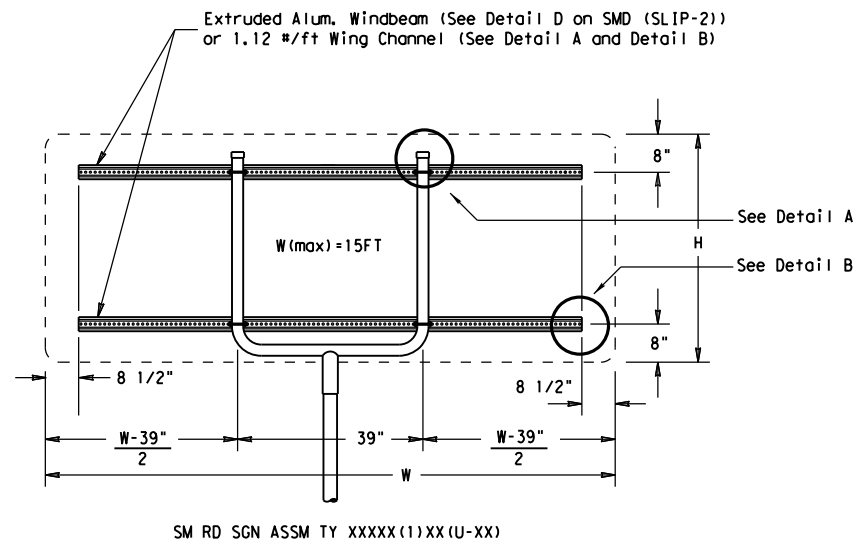
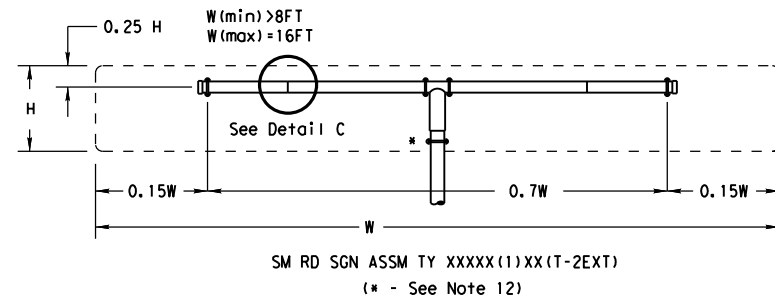


SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD(SLIP-2)-08

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Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details
See Detail E for clamp installation

GENERAL NOTES:

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

REQUIRED SUPPORT

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

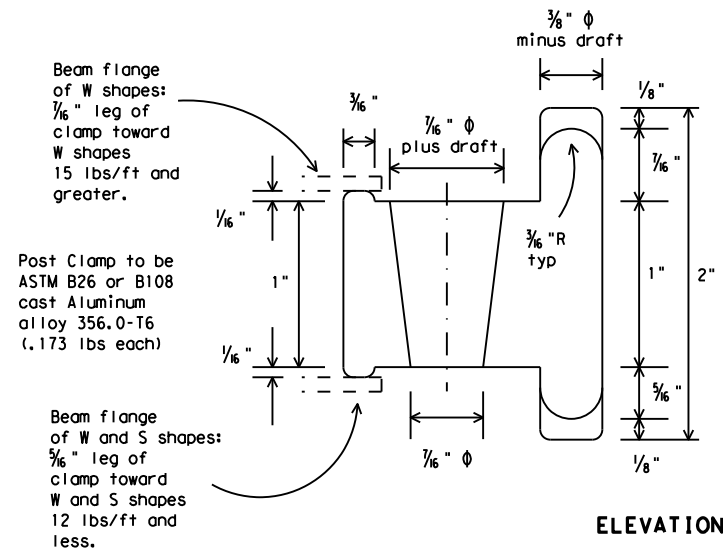
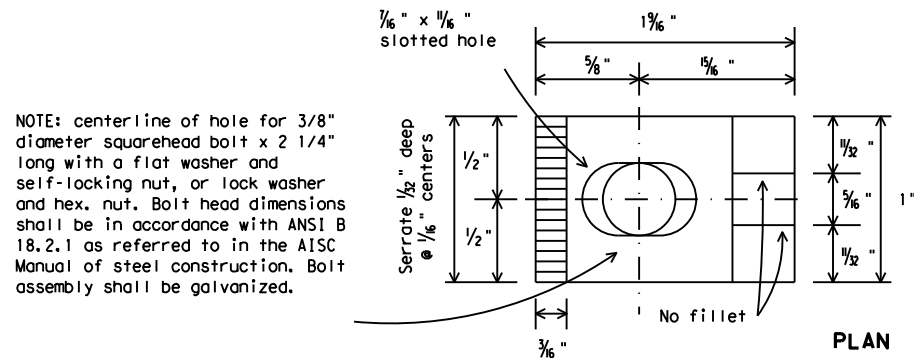
Texas Department of Transportation
Traffic Operations Division

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

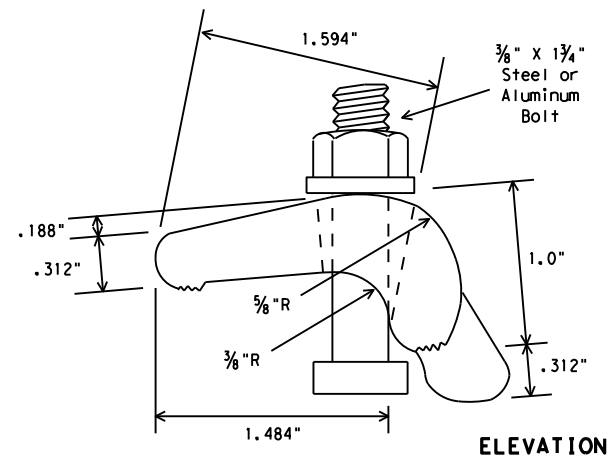
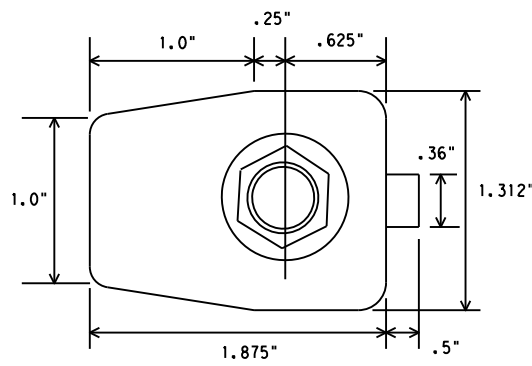
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				HIGHWAY
				COUNTY
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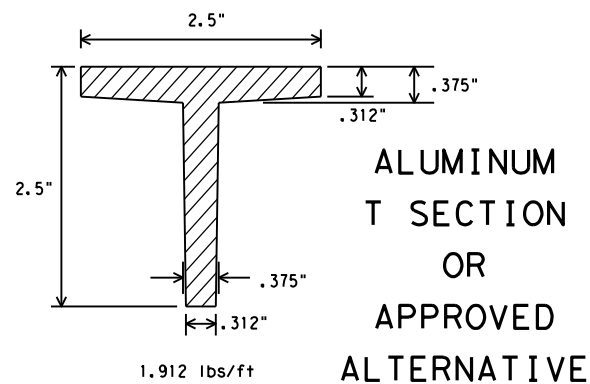
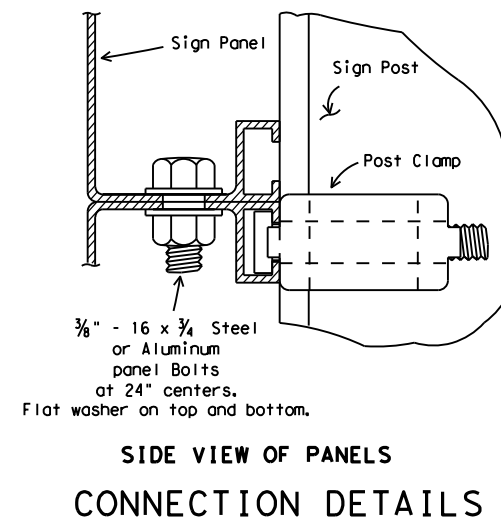
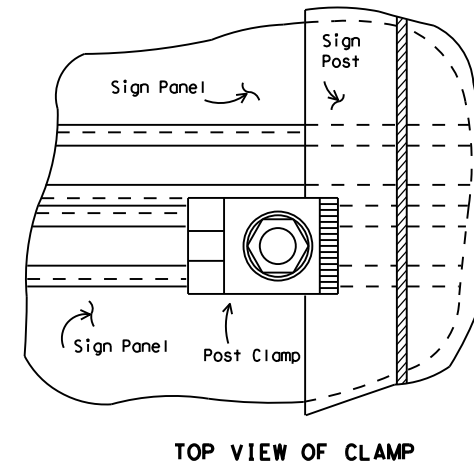
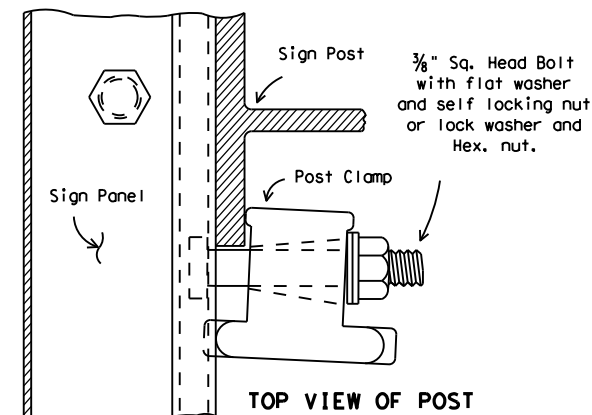
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POST CLAMP DETAIL

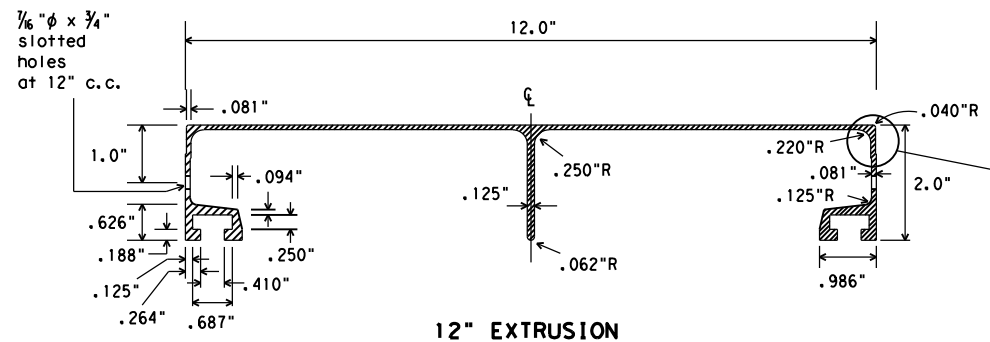
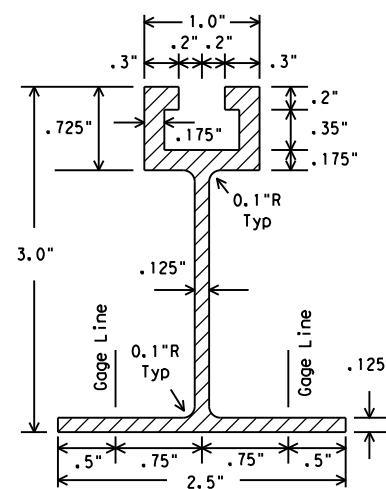


ALTERNATE POST CLAMP DETAIL

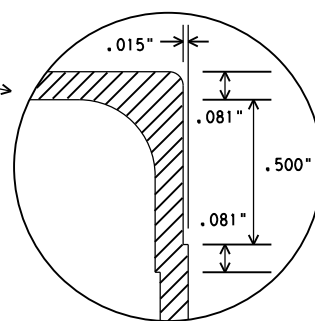


WINDBEAM CROSS SECTION

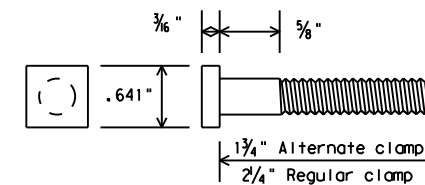
Windbeam to be extruded aluminum (1.175 lbs/ft) or approved alternative



ALUMINUM SIGN PANEL EXTRUSION DETAILS



6" EXTRUSION



DEPARTMENTAL MATERIAL SPECIFICATIONS

SIGN HARDWARE

DMS-7120

GENERAL NOTES:

- Design conforms with AASHTO Specifications for the design and construction of structural supports for highway signs.
- Materials and fabrication shall conform to the requirements of the Department material specifications.
- Structural steel shall be "low-alloy steel" for non-bridge structures per Item 442, "Metal For Structures."
- For fiberglass substrate connection details, see manufacturer's recommendations.

Texas Department of Transportation
Traffic Operations Division

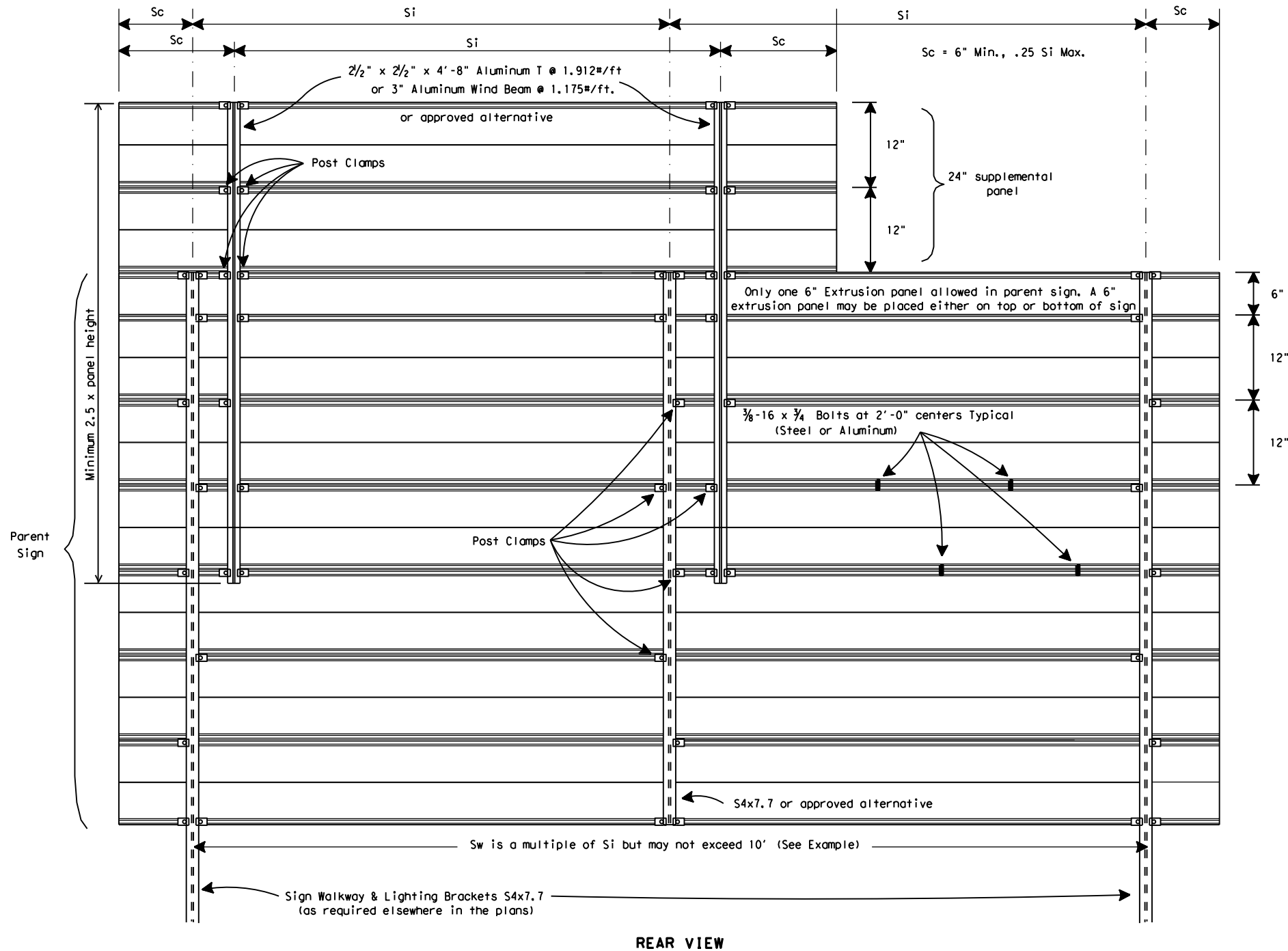
SIGN MOUNTING DETAILS- EXTRUDED ALUMINUM SIGN PANELS & HARDWARE

SMD(2-1)-08

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		DIST		COUNTY
				SHEET NO.

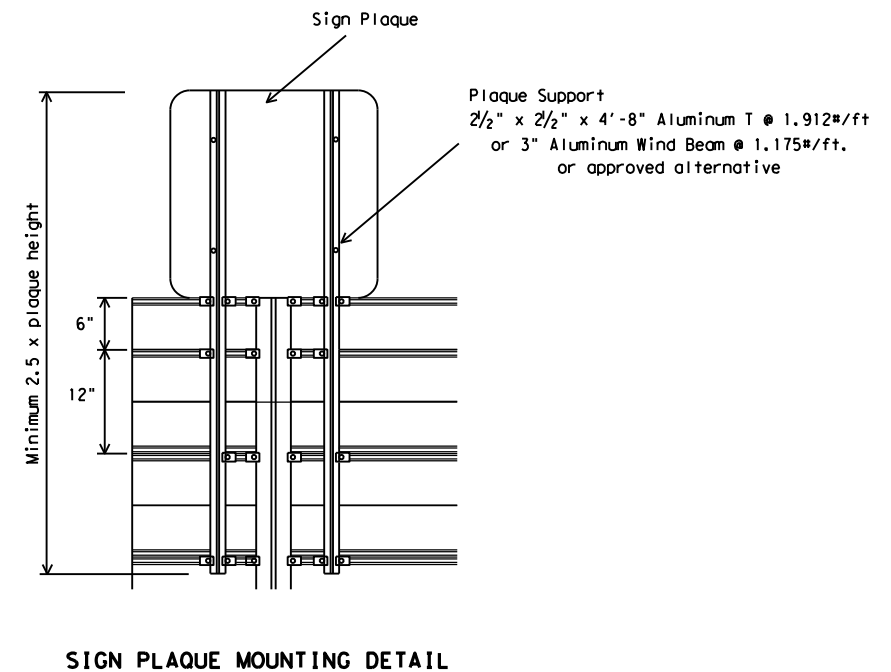
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EXAMPLES (FOR DETERMINING S_i and S_w)							
NO.	ZONE	"d"	EXIT PANEL	WALKWAY	S_i	S_w	COMMENT
1	1	15.0	YES	YES	4.5	9.0	$S_w = 2 \times (S_i)$
2	2	14.0	YES	NO	7.5	7.5	$S_w = S_i$
3	1	15.0	NO	NO	8.5	8.5	$S_w = S_i$
4	3	14.0	NO	YES	10.0	10.0	$S_w = S_i$

Values shown for S_i are maximum values. S_i may be varied for different sign lengths and Truss mounting conditions. S_w should not exceed two times S_i (Max.) or 10 feet.



MAXIMUM SIGN SUPPORT SPACING "S _i " (FEET)																
"d" Deepest Sign in Group (Ft.)	EXTRUDED ALUMINUM SIGN PANELS															
	WITH EXIT NUMBER PANELS								WITHOUT EXIT NUMBER PANELS							
	WITH WALKWAYS				WITHOUT WALKWAYS				WITH WALKWAYS				WITHOUT WALKWAYS			
	WIND ZONE				WIND ZONE				WIND ZONE				WIND ZONE			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
15	4.5	7	8	10	5	7	8	10	7	8	9	10	8.5	10	10	10
14	6	7.5	9.5	10	6	7.5	9.5	10	8	9	10	10	10	10	10	10
13	7.5	9	10	10	7.5	9	10	10	9	10	10	10	10	10	10	10
12	8.5	10	10	10	8.5	10	10	10	10	10	10	10	10	10	10	10
11 or less	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

For fiberglass sign installations, see manufacturer's recommendations.



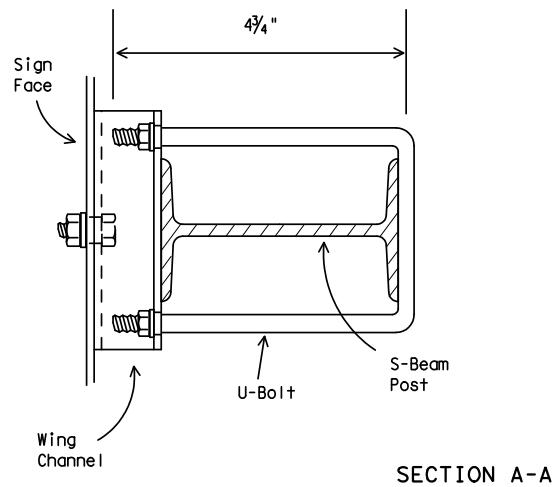
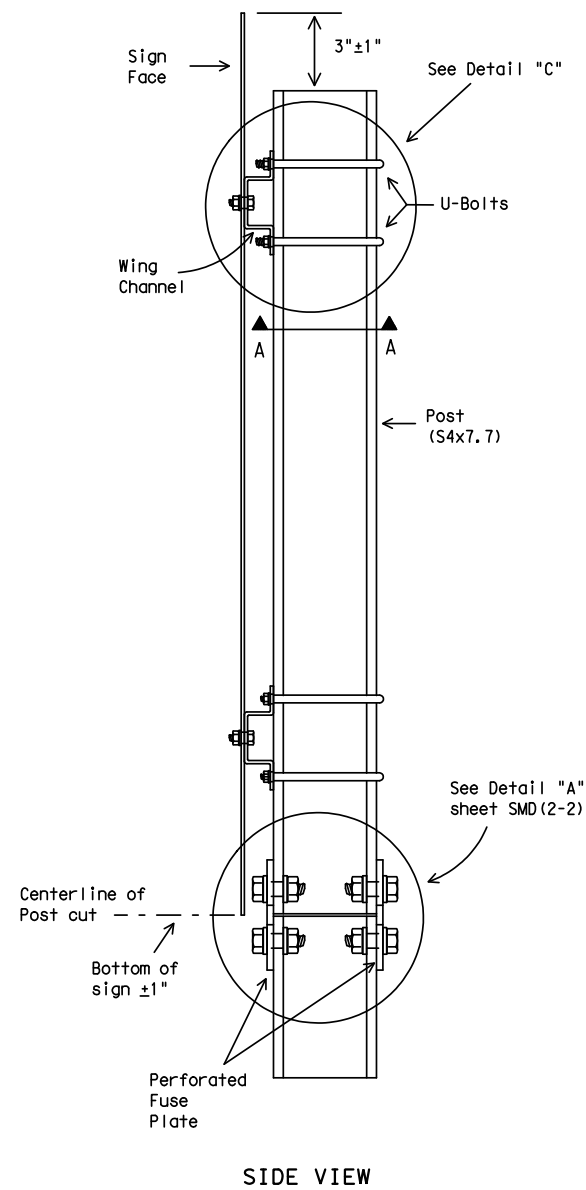
SIGN MOUNTING DETAILS- OVERHEAD SIGNS EXTRUDED ALUMINUM SMD(2-4)-08

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		DIST		COUNTY				SHEET NO.	

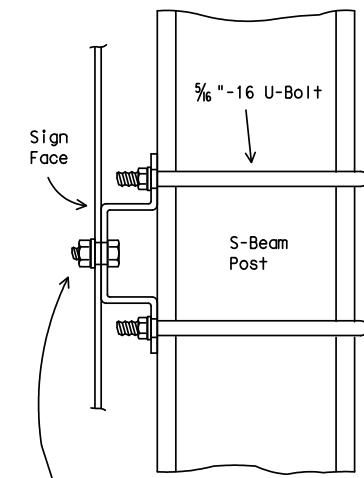
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WING CHANNEL CLAMP DETAIL FOR TYPE G MOUNT

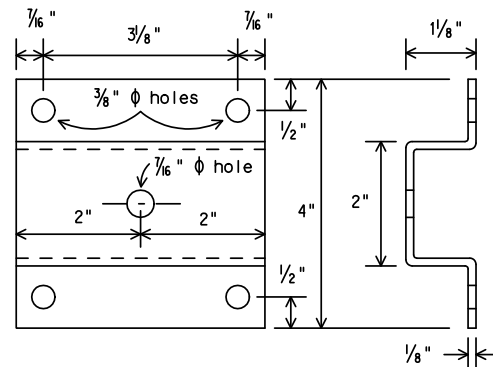


SECTION A-A



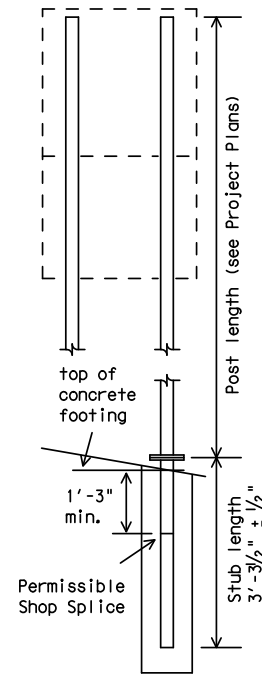
Galvanized steel or aluminum self-locking hex. head nut. 3/8" - 16 x 3/4" hex. head bolt for sheet metal. 3/8" - 16 x 1 1/4" hex. head bolt for plywood. 3/8" galvanized medium washer.

DETAIL "C"



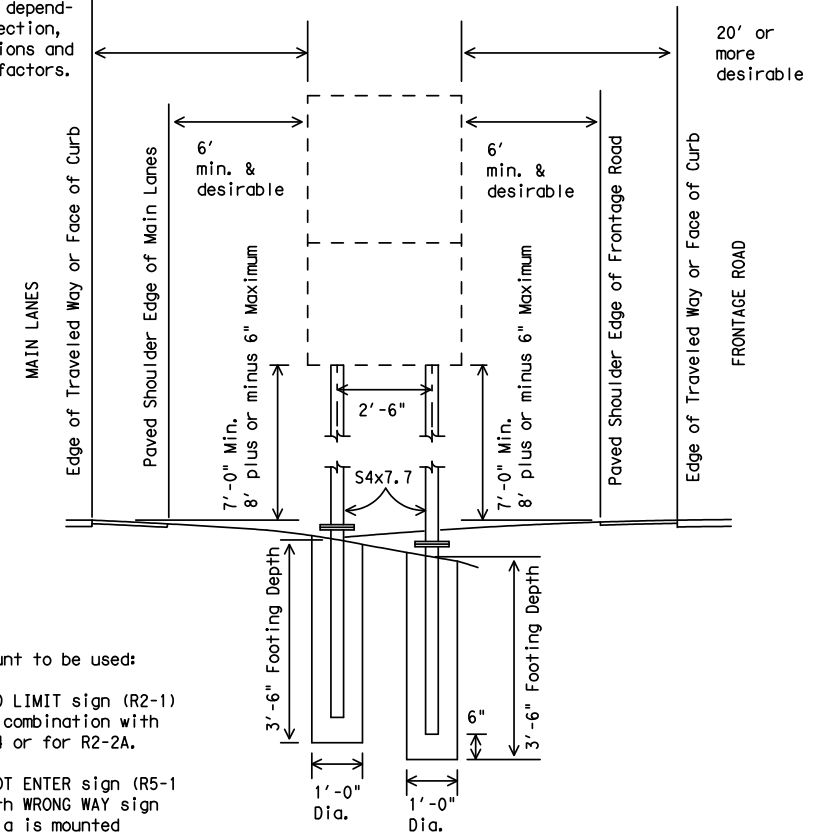
WING CHANNEL

Wing channel, 4" width x 1/8" depth x 1/8" thickness, shall be aluminum (ASTM B221 6061-T6 or B308 6061-T6), galvanized steel (ASTM A36) or stainless steel (ASTM A167 type 304, No. 2B finish).



The weight of one S4x7.7 post is equal to 112.2 lbs. plus 7.7 lbs./ft x (post length in feet minus 10 ft). The weight of 112.2 lbs. includes 10 feet of post length, post foundation stub, related connection plates, friction fuse plate, and all high strength bolts, nuts and washers.

30' or more desirable. May be reduced depending on cross section, viewing conditions and other related factors.



This type mount to be used:

- (1) For SPEED LIMIT sign (R2-1) when used in combination with R2-2 and R2-4 or for R2-2A.
- (2) For DO NOT ENTER sign (R5-1) when used with WRONG WAY sign (R5-1a). R5-1a is mounted above R5-1.

DEPARTMENTAL MATERIAL SPECIFICATIONS SIGN HARDWARE

DMS-7120

GENERAL NOTES:

- Design conforms with AASHTO Specifications for the design and construction of structural supports for highway signs.
- Materials and fabrication shall conform to the requirements of the Department material specifications.
- Structural steel shall be "Low-Alloy Steel" for non-bridge structures per Item 442, "Metal For Structures."
- Parts shall be saw cut either before galvanizing and the galvanized cut cleaned of zinc build-up, or saw cut after galvanizing and the cut surface repaired per Item 445, "Galvanizing." (Cut surface will not be treated until plate is installed and all bolts fully tightened.)



SIGN MOUNTING DETAILS, TYPE G SUPPORT

SMD (TY G) -08

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ZONE 3 WITH AND WITHOUT ICE 80 MPH WIND

TOWER HEIGHT (ft)	10' SPAN											15' SPAN											20' SPAN											25' SPAN											TOWER HEIGHT (ft)	
	TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS			TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS			TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS			TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS								
	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.	BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.	BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.	BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.	BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)		
14'	16	0.250	0.105	1 1/4	6	20 1/2"	24 x 1 1/4	0.2	3.59	16.19	49.87	16	0.250	0.235	1 3/8	8	20 3/4"	24 1/2 x 1 3/8	0.5	5.40	37.56	76.63	20	0.250	0.213	1 1/4	8	24 1/2"	28 x 1 1/4	0.7	7.43	69.08	107.16	20	0.281	0.308	1 1/2	8	25"	29 x 1 1/2	1.3	9.14	107.68	135.49	14'	
15'			0.120						3.61		53.42			0.270					0.6	5.41		81.91			0.244	1 1/4		24 1/2"	28 x 1 1/4	0.7	7.43		113.96			0.281	0.354				1.4	9.17		144.13	15'	
16'			0.137						3.62		57.00			0.308					0.6	5.43		87.23			0.278	1 3/8		24 3/4"	28 1/2 x 1 3/8	0.8	7.45		121.17			0.281	0.403				1.4	9.19		152.86	16'	
17'			0.154						3.64		60.59			0.347					0.7	5.45		92.57			0.314						0.8	7.47		128.42			0.281	0.455	1 1/2	25"	29 x 1 1/2	1.5	9.21		161.65	17'
18'			0.173						3.66		64.21			0.389				24 1/2 x 1 3/8	0.7	5.46		97.94			0.352					0.9	7.49		135.72			0.312	0.460	1 3/4	25 3/8"	29 3/4 x 1 5/8	1.5	9.23		170.51	18'	
19'			0.193		6				3.67		67.85			0.434				24 1/2 x 1 1/2	0.7	5.48		103.33			0.392	1 3/8		24 3/4"	28 1/2 x 1 3/8	0.9	7.51		143.06			0.312	0.513				1.5	9.25		179.43	19'	
20'			0.214		8				3.69		71.51			0.481					0.8	5.50		108.75			0.435	1 1/2		25"	29 x 1 1/2	1.0	7.53		150.43			0.312	0.568				1.6	9.27		188.39	20'	
21'			0.235						3.71		75.18		0.250	0.530						5.51		114.19			0.479					1.0	7.55		157.84			0.312	0.627				1.6	9.29		197.41	21'	
22'			0.258					0.2	3.73		78.88		0.281	0.521	1 3/8	20 3/4"	24 1/2 x 1 1/2		5.53		119.66			0.526					1.1	7.57		165.28			0.344	0.628				1.6	9.31		206.47	22'		
23'			0.282					0.3	3.74		82.59		0.281	0.569	1 1/2	21"	25 x 1 5/8		5.55		125.14		0.250	0.575			29 x 1 1/2			7.60		172.75			0.344	0.686				1.7	9.34		215.57	23'		
24'			0.308						3.76		86.33		0.281	0.620					5.56		130.65		0.281	0.560			29 x 1 5/8			7.62		180.26			0.344	0.747					9.36		224.71	24'		
25'			0.334				24 x 1 1/4		3.78		90.08		0.312	0.610					5.58		136.18		0.281	0.607	1 1/2	25"	29 x 1 5/8			7.64		187.79			0.375	0.748					9.38		233.89	25'		
26'			0.361				24 x 1 3/8		3.79		93.85		0.312	0.660			25 x 1 5/8		5.60		141.73		0.281	0.657	1 3/4	25 3/8"	29 3/4 x 1 5/8			7.66		195.35		0.375	0.809	1 3/4	25 3/8"	29 3/4 x 1 7/8	1.7	9.40		243.10	26'			
27'			0.389						3.81		97.64		0.312	0.711			25 x 1 3/4		5.62		147.30		0.310	0.640			29 3/4 x 1 3/4			7.68		202.94		0.375	0.872	2	25 3/4"	30 1/2 x 2	1.8	9.42		252.34	27'			
28'			0.419						3.83		101.44		0.344	0.699					5.63		152.89		0.310	0.688						7.70		210.55		0.406	0.870					9.44		261.62	28'			
29'			0.449						3.84		105.26		0.344	0.750					5.65		158.50		0.310	0.738						7.72		218.20		0.406	0.933					9.46		270.93	29'			
30'			0.481						3.86		109.11		0.344	0.802	1 1/2	21"	25 x 1 3/4		5.67		164.12		0.340	0.721			29 3/4 x 1 3/4			7.74		225.86		0.406	0.999					9.48		280.27	30'			
31'			0.513				24 x 1 3/8		3.88		112.96		0.375	0.791	1 3/4	21 1/2"	26 x 1 7/8		5.68		169.77		0.340	0.770			29 3/4 x 1 7/8			7.77		233.56		0.441	0.992					9.50		289.64	31'			
32'	16	0.250	0.547	1 1/4	8	20 1/2"	24 x 1 1/2	0.3	3.89	16.19	116.84	16	0.375	0.843	1 3/4	8	21 1/2"	26 x 1 7/8	0.8	5.70	37.56	175.43	20	0.340	0.821	1 3/4	8	25 3/8"	29 3/4 x 1 7/8	1.1	7.79	69.08	241.27	20	0.441	1.057	2	8	25 3/4"	30 1/2 x 2 1/4	1.8	9.53	107.68	299.04	32'	

ZONE 3 WITH AND WITHOUT ICE 80 MPH WIND

TOWER HEIGHT (ft)	30' SPAN											35' SPAN											40' SPAN											TOWER HEIGHT (ft)	
	TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS				TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS				TOWER PIPE			ANCHOR BOLTS		BASE PLATE	TRUSS	DESIGN LOADS					
	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.	BOLT CIR DIA		SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)	NO.		BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)	SHEAR V (Kips)	TORSION T (K-ft)	MOMENT M (K-ft)	O.D. (in)	WALL THICK (in)	DEFL ΔH (in)	SIZE DIA (in)		NO.	BOLT CIR DIA	SIZE (in)	DEFL ΔV (in)		SHEAR V (Kips)
14'	24	0.250	0.289	1 1/2	8	29"	33 x 1 1/2	1.6	11.00	155.44	167.11	30	0.250	0.210	1 3/4	8	35 3/8"	39 3/4 x 1 1/2	1.5	12.87	211.58	202.48	30	0.280	0.260	1 3/4	8	35 3/8"	39 3/8 x 1 1/2	2.1	14.65	276.72	242.20	14'	
15'		0.250	0.331	1 1/2		29"	33 x 1 1/2	1.6	11.03		177.27			0.241						1.6	12.90		213.97			0.298	1 3/4		35 3/8"	39 7/8 x 1 1/2	2.2	14.68		254.69	15'
16'		0.281	0.338	1 3/4		29 3/8"	33 3/4 x 1 1/2	1.6	11.05		187.54			0.275						1.6	12.93		225.63			0.339	1 3/4		35 3/8"	39 1/8 x 1 1/2	2.3	14.71		267.44	16'
17'			0.381				33 3/4 x 1 1/2	1.7	11.08		197.93		0.250	0.310						1.7	12.97		237.46			0.383	2		35 3/4"	40 1/2 x 1 1/2	2.4	14.75		280.40	17'
18'			0.428				33 3/4 x 1 1/2	1.8	11.10		208.40		0.281	0.310						1.7	13.00		249.43			0.429				40 1/2 x 1 5/8	2.5	14.78		293.56	18'
19'		0.281	0.477				33 3/4 x 1 5/8		11.13		218.97			0.346					1.7	13.03		261.52		0.280	0.478						2.6	14.81		306.90	19'
20'		0.312	0.477				33 3/4 x 1 5/8		11.15		229.60			0.383					1.8	13.06		273.72		0.312	0.478						2.6	14.84		320.39	20'
21'			0.526				33 3/4 x 1 5/8	1.8	11.18		240.31			0.422					1.8	13.09		286.04			0.527					40 1/2 x 1 5/8	2.6	14.87		334.02	21'
22'			0.577				33 3/4 x 1 3/4	1.9	11.20		251.08			0.463					1.9	13.12		298.44			0.578					40 1/2 x 1 3/4	2.7	14.90		347.79	22'
23'			0.631				33 3/4 x 1 3/4	2.0	11.23		261.91			0.507	1 3/4	35 3/8"	39 3/4 x 1 1/2	2.0	13.16		310.94			0.632							2.8	14.94		361.67	23'
24'		0.312	0.687	1 3/4		29 3/8"	33 3/4 x 1 3/4		11.25		272.80			0.552	2	35 3/4"	40 1/2 x 1 5/8	2.0	13.19		323.51			0.688							2.9	14.97		375.66	24'
25'		0.344	0.679	2		29 3/4"	34 1/2 x 1 3/4		11.28		283.74			0.598					2.1	13.22		336.16		0.312	0.747					40 1/2 x 1 3/4	3.0	15.00		389.75	25'
26'			0.735				34 1/2 x 2	2.0	11.30		294.73			0.647			40 1/2 x 1 5/8	2.2	13.25		348.89		0.340	0.736					40 1/2 x 2	3.0	15.03		403.94	26'	
27'			0.792					2.1	11.33		305.77			0.698			40 1/2 x 1 3/4	2.2	13.28		361.68			0.794	2		35 3/4"	40 1/2 x 2	3.0	15.06		418.22	27'		
28'			0.852					2.2	11.36		316.85		0.281	0.751				2.3	13.31		374.53			0.854	2 1/4		36"	41 x 2	3.1	15.09		432.57	28'		
29'		0.344	0.914						11.38		327.97		0.310	0.726				2.2	13.35		387.45			0.916							3.2	15.13		447.01	29'
30'		0.375	0.901						11.41		339.13			0.777				2.2	13.38		400.42		0.340	0.980							15.16		461.52	30'	
31'		0.375	0.962					2.2	11.43		350.34			0.830				2.3	13.41		413.45		0.375	0.963							15.19		476.10	31'	
32'	24	0.375	1.023	2	8	29 3/4"	34 1/2 x 2	2.3	11.44	155.44	361.13	30	0.310	0.884	2	8	35 3/4"	40 1/2 x 1 3/4	2.4	13.44	211.58	426.53	30	0.375	1.026	2 1/4	8	36"	41 x 2	3.2	15.22	276.72	490.75	32'	