

STATE PROJECT NUMBER	SHEET NO.
1166-09-76	

DESIGN DATA

SIGN BRIDGE	DESIGN SIGN AREA (SQ. FT.)
S-37-58	396 (TOTAL OF 2 SIDES)
S-37-59	485
S-37-60	291

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- EXACT LOCATIONS OF SIGN BRIDGES SHALL BE LOCATED BY THE ENGINEER.
- SUBSURFACE INVESTIGATION BY STS CONSULTANTS WAS PERFORMED AT THE LOCATION OF STRUCTURE S-37-58 AS NOTED ON THE SIGN BRIDGE LAYOUT. A COMPLETE SOILS REPORT IS AVAILABLE FROM THE DEPARTMENT OF TRANSPORTATION.
- ALTERNATE DESIGNS ARE NOT ALLOWED.
- PROVIDE SIGN BRIDGE IDENTIFICATION PLAQUE FOR ALL SIGN BRIDGES.
- HANDHOLES ARE NOT REQUIRED.
- THE DESIGN DOES NOT ALLOW FUTURE CATWALKS OR LIGHTING.

TOTAL ESTIMATED QUANTITIES

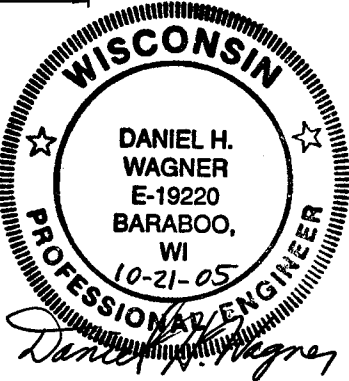
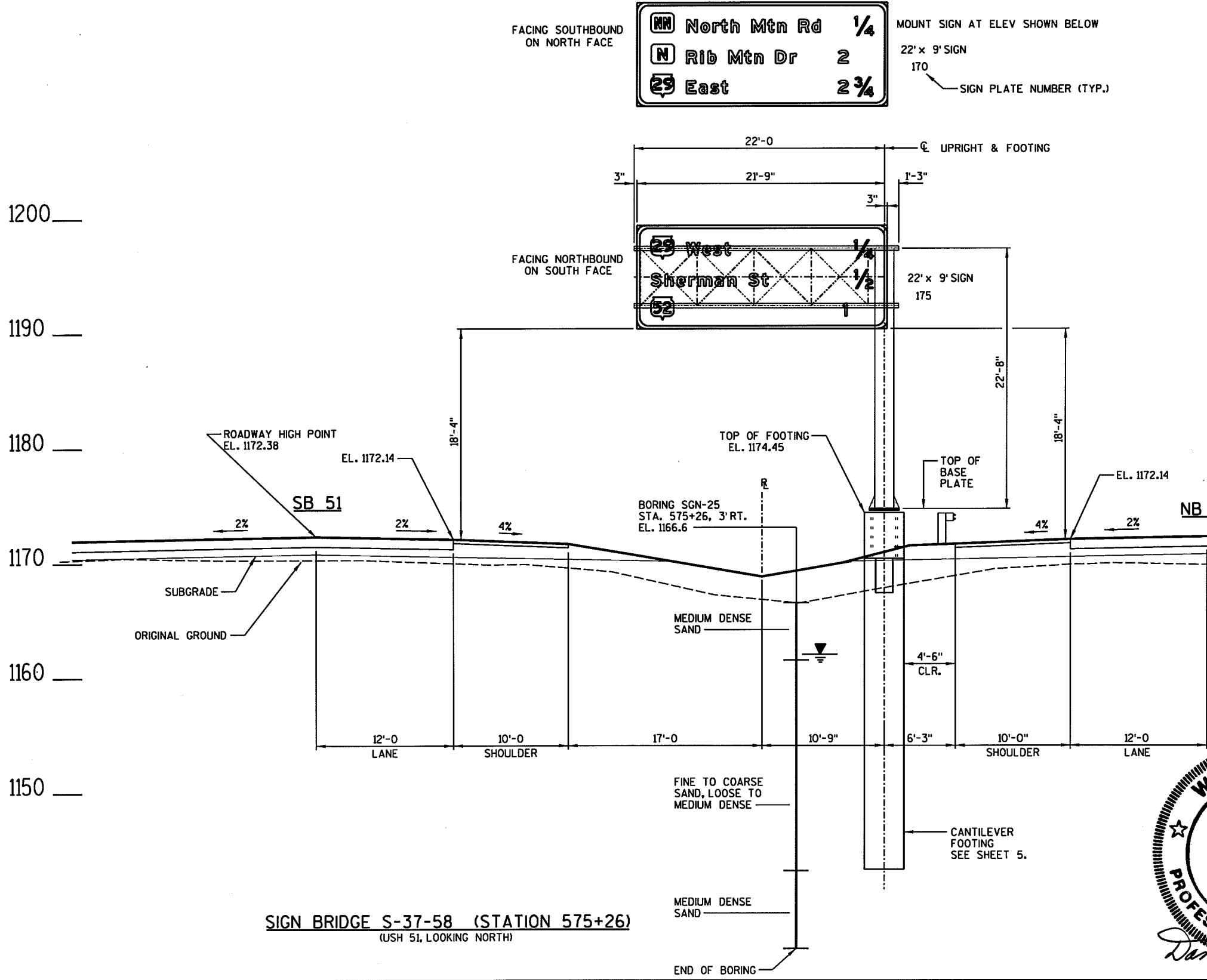
SIGN SUPPORTS CONCRETE MASONRY	32 CY
SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	2810 LB
SIGN BRIDGE (S-37-59)	1LS
SIGN BRIDGE (S-37-60)	1LS
SIGN BRIDGE CANTILEVERED (S-37-58)	1LS

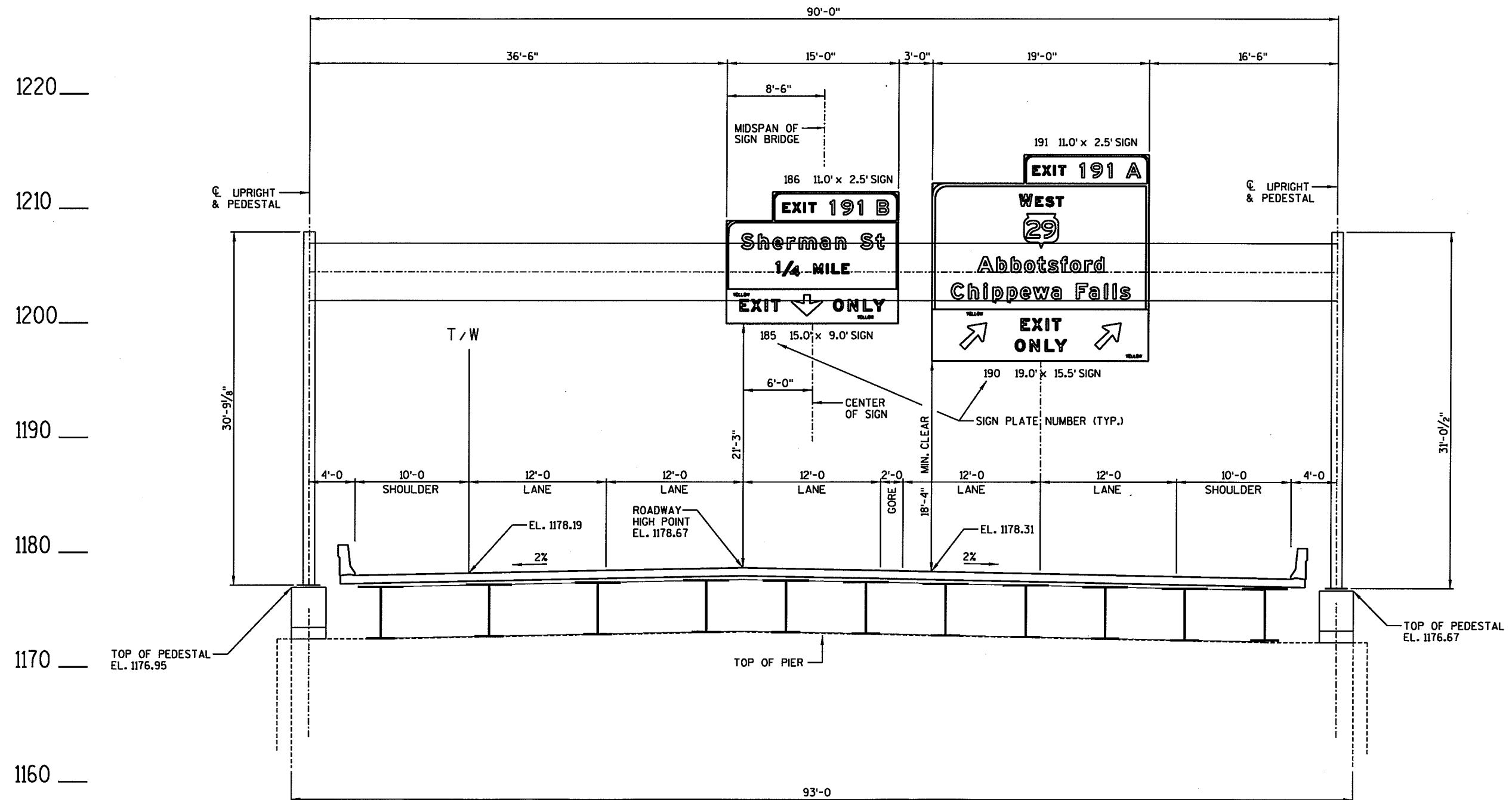
LIST OF DRAWINGS

- 1-3. SIGN BRIDGE LAYOUTS
4. F1 FOOTING DETAILS
5. CANTILEVER TRUSS FOOTING
6. 4-CHORD GALVANIZED STEEL SIGN BRIDGE
7. 4-CHORD SIGN BRIDGE DETAILS
8. GALVANIZED STEEL CANTILEVER SIGN TRUSS
9. GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS

BRIDGE OFFICE CONTACT:
FINN HUBBARD
(608) 266-8489

No.	Date	Revision	By
PLANS PREPARED BY MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1200 South Boulevard Baraboo, WI 53913 608-366-2771 1-800-962-4505 Fax: 608-366-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES S-37-58, S-37-59, S-37-60			
USH 51 SIGN BRIDGES			
County	MARATHON	Town/City/Village	RIB MOUNTAIN & MAINE
Design Spec.	AASHTO 2003	Load	N/A
Design By	BPT	Const. Spec.	WI "03"
Checked	DHW	Drawn By	RLR
Checked	DHW	Plans Checked	DHW
Approved	William C. Dierker SDR	Date	9-26-06
Chief Structural Design Engineer		SIGN BRIDGE LAYOUT	
		SHEET 1 OF 9	

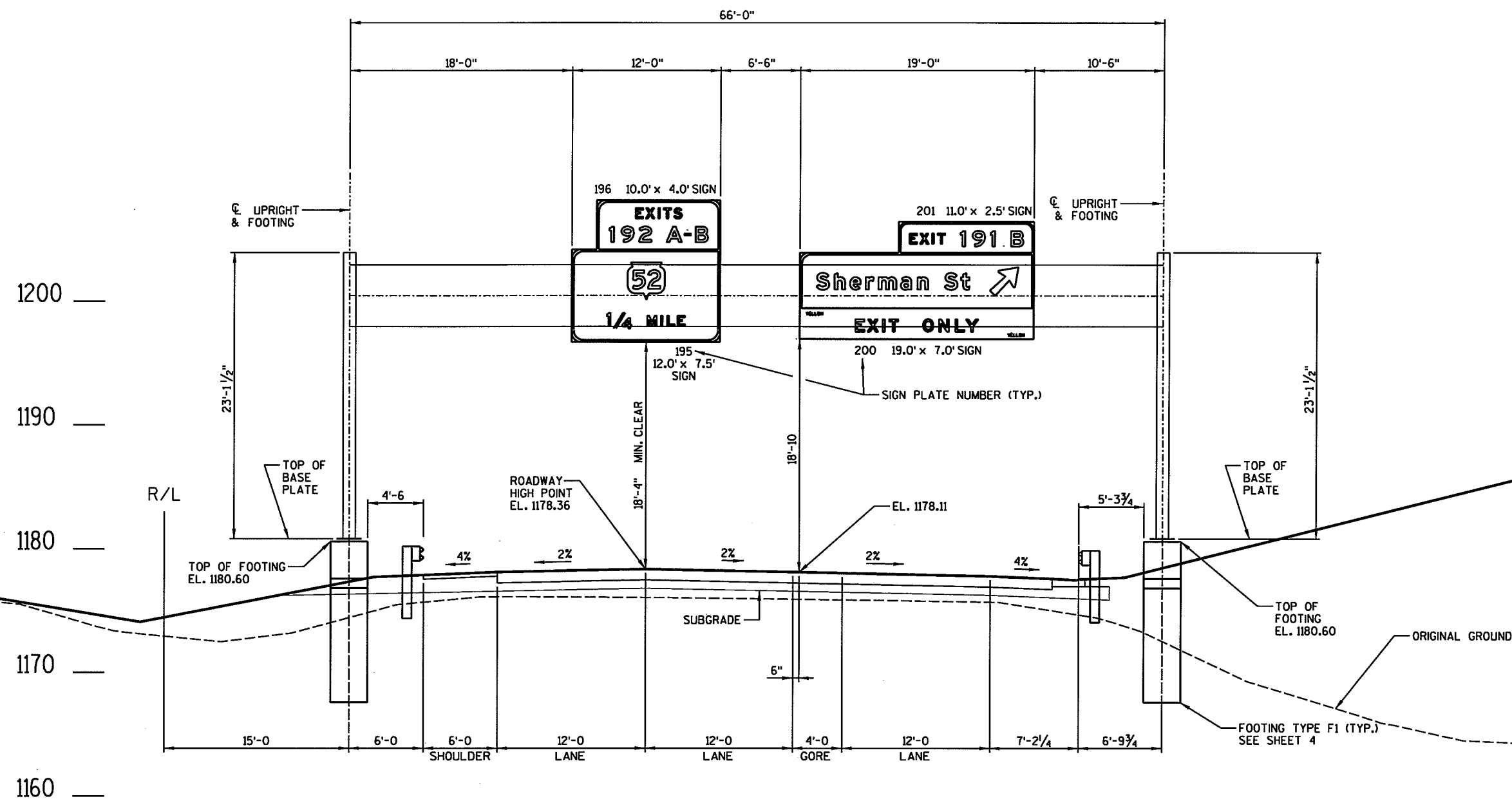




SIGN BRIDGE S-37-59 (STATION 591+81.03)
 (NORTHBOUND USH 51 AT C/L OF PIER 2, STRUCTURE B-37-344 OVER THE RIB RIVER, LOOKING NORTH)

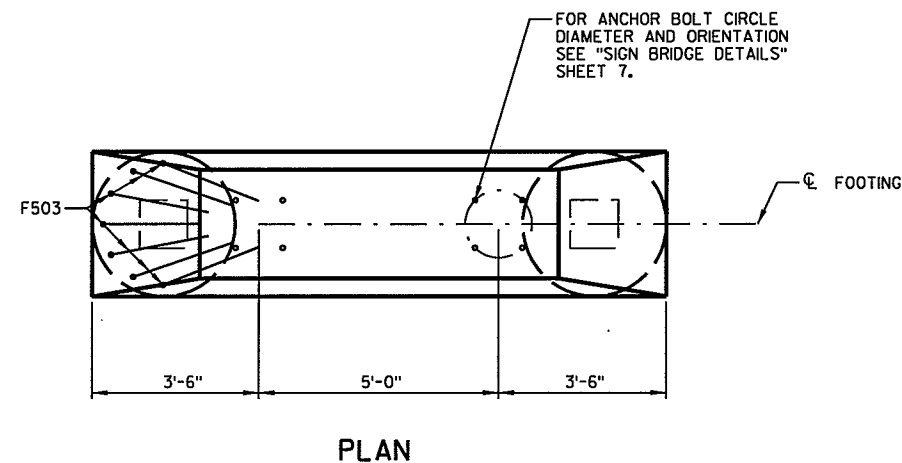
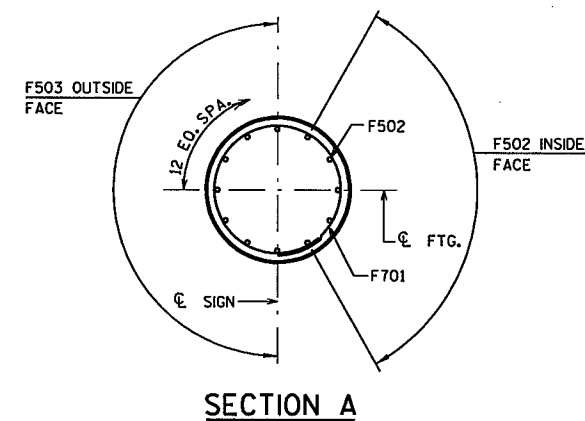
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-37-59			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked <i>DHW</i>	
SIGN BRIDGE LAYOUT			SHEET 2 OF 9

STATE PROJECT NUMBER	SHEET NO.
1166-09-76	



SIGN BRIDGE S-37-60 (STATION 604+57)
(NORTHBOUND USH 51, LOOKING NORTH)

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-37-60			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
SIGN BRIDGE LAYOUT			SHEET 3 OF 9



SUMMARY OF QUANTITIES (1 FTG.)

ITEM	UNIT	FTG. TYPE F1
SIGN SUPPORTS CONCRETE MASONRY	CY	9
SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	680

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL
BE EMBEDDED 3" CLEAR UNLESS
DETAILED OTHERWISE.

ALLOWABLE DESIGN STRESSES

CONCRETE MASONRY	f'c=3,500 P.S.I.
BAR STEEL REINFORCEMENT HS COATED	fy=60,000 P.S.I.
ANCHOR BOLTS A.A.S.H.T.O. M314	fy=55,000 P.S.I.

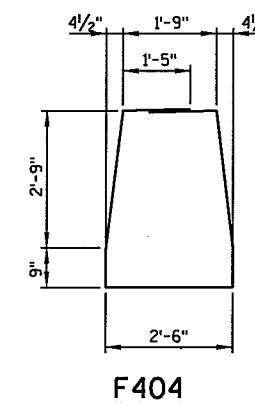
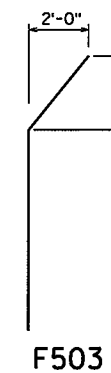
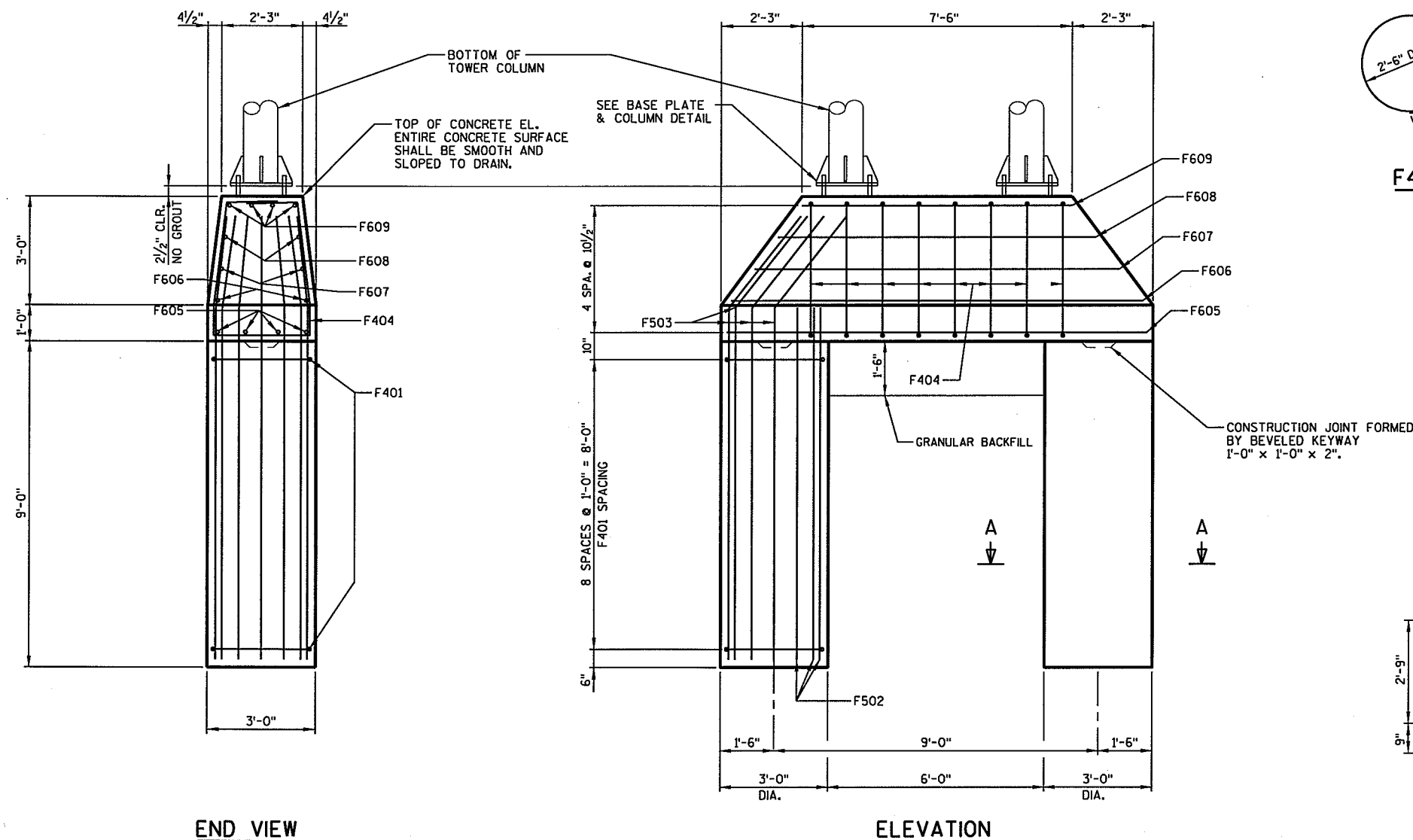
FOUNDATION DATA

MINIMUM SOIL BEARING PRESSURE = 3T/SQ. FT.

1 FOOTING BILL OF BARS (COATED) 680 LBS.

BAR MARK	NO. REQ'D	LENGTH	BENT	LOCATION
F401	18	9'-10"	X	CAISSON - HOOPS
F502	10	10'-4"		CAISSON - VERTICAL
F503	14	13'-0"	X	CAISSON - VERTICAL
F404	8	12'-0"	X	FOOTING - STIRRUP - VERT.
F605	4	11'-6"		FOOTING - BOTTOM - LONGIT.
F606	2	11'-2"		FOOTING - LONGIT.
F607	2	9'-10"		FOOTING - LONGIT.
F608	2	8'-6"		FOOTING - LONGIT.
F609	4	7'-4"		FOOTING - TOP - LONGIT.

NOTE:
THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL BARS.

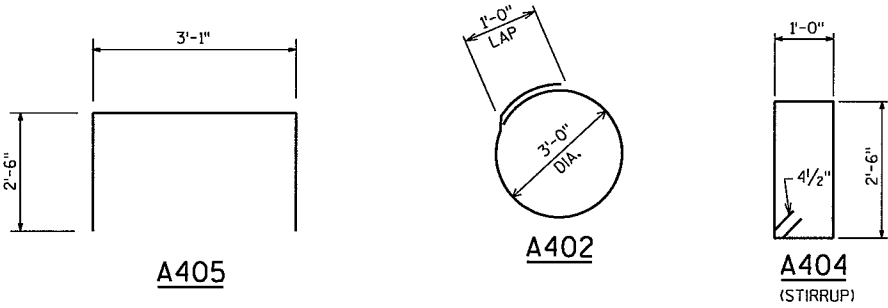


No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-37-60			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
F-1 FOOTING DETAILS			SHEET 4 OF 9

BILL OF BARS (COATED) 1450 LBS.

BAR MARK	NO. REQ'D	LENGTH	BENT	LOCATION
A701	12	30-6		FOOTING - COLUMN/TOP
A402	31	10-6	X	FOOTING - COLUMN/TOP
A703	12	15-0		FOOTING - WINGS
A404	12	7-6	X	FOOTING - WINGS
A405	10	8-0	X	FOOTING - TOP
A406	4	3-6		FOOTING - TOP - COLUMNS

NOTE:
THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL BARS.



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL
BE EMBEDDED 3" CLEAR UNLESS
DETAILED OTHERWISE.

ALLOWABLE DESIGN STRESSES

CONCRETE MASONRY $f'_c=3,500$ P.S.I.
BAR STEEL REINFORCEMENT HS COATED $f_y=60,000$ P.S.I.
ANCHOR BOLTS A.A.S.H.T.O. M314 $f_y=55,000$ P.S.I.

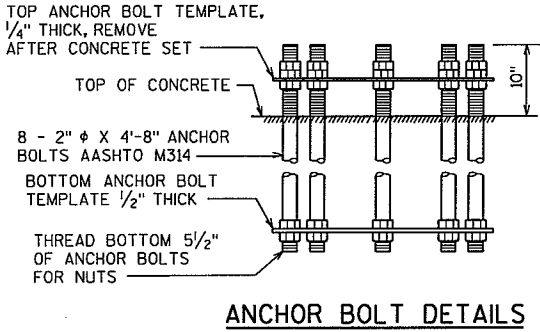
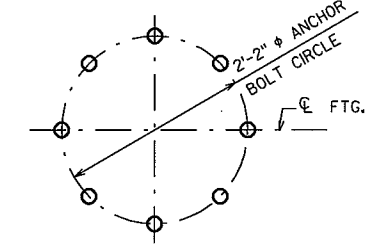
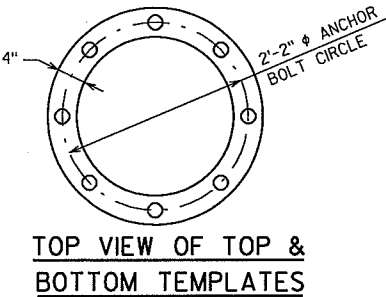
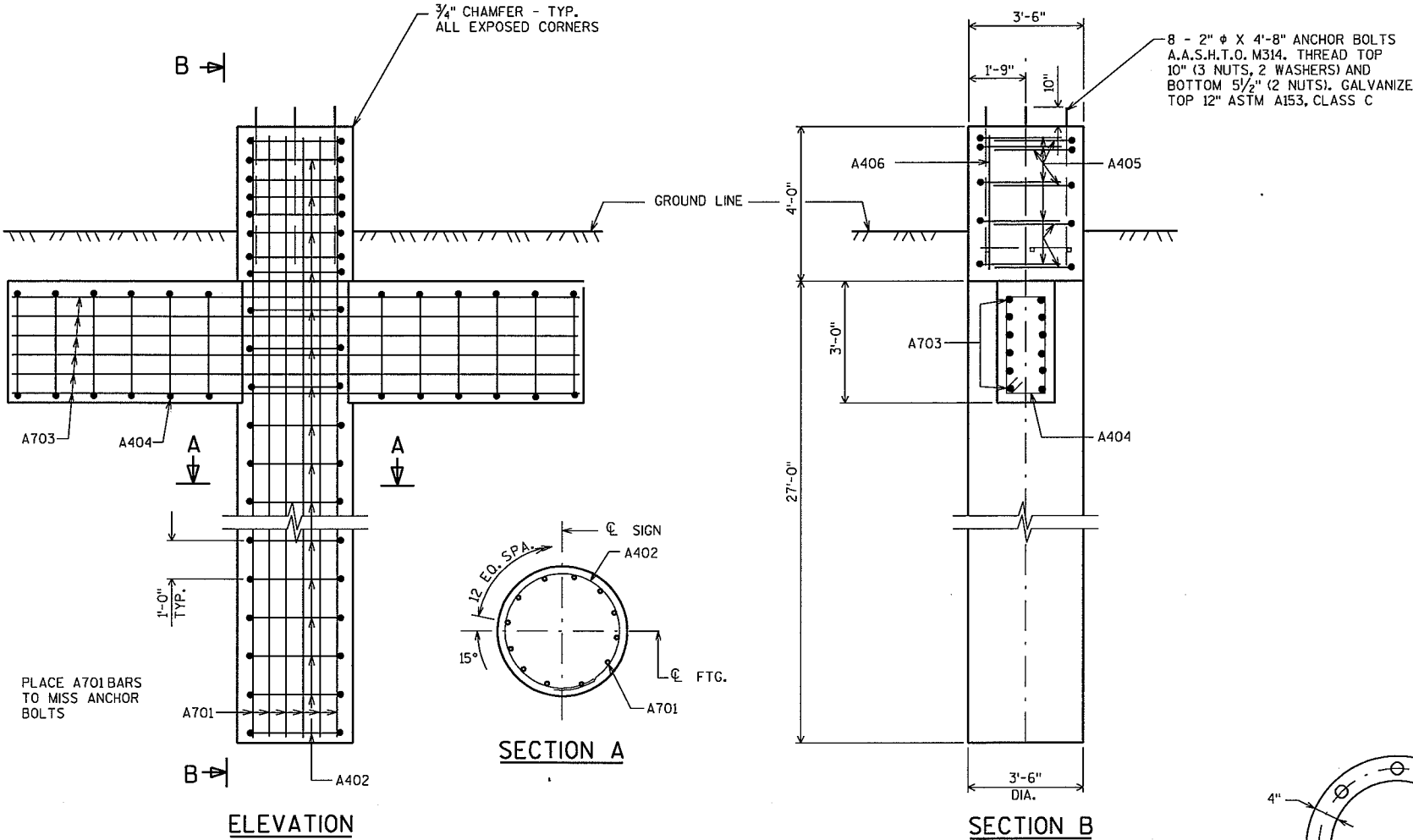
FOUNDATION DATA

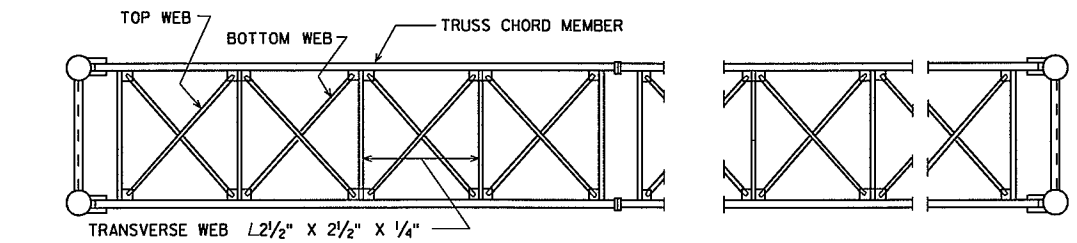
ALLOWABLE SOIL BEARING PRESSURE = 2T/SQ. FT.

TOTAL ESTIMATED QUANTITIES (1 FTG.)

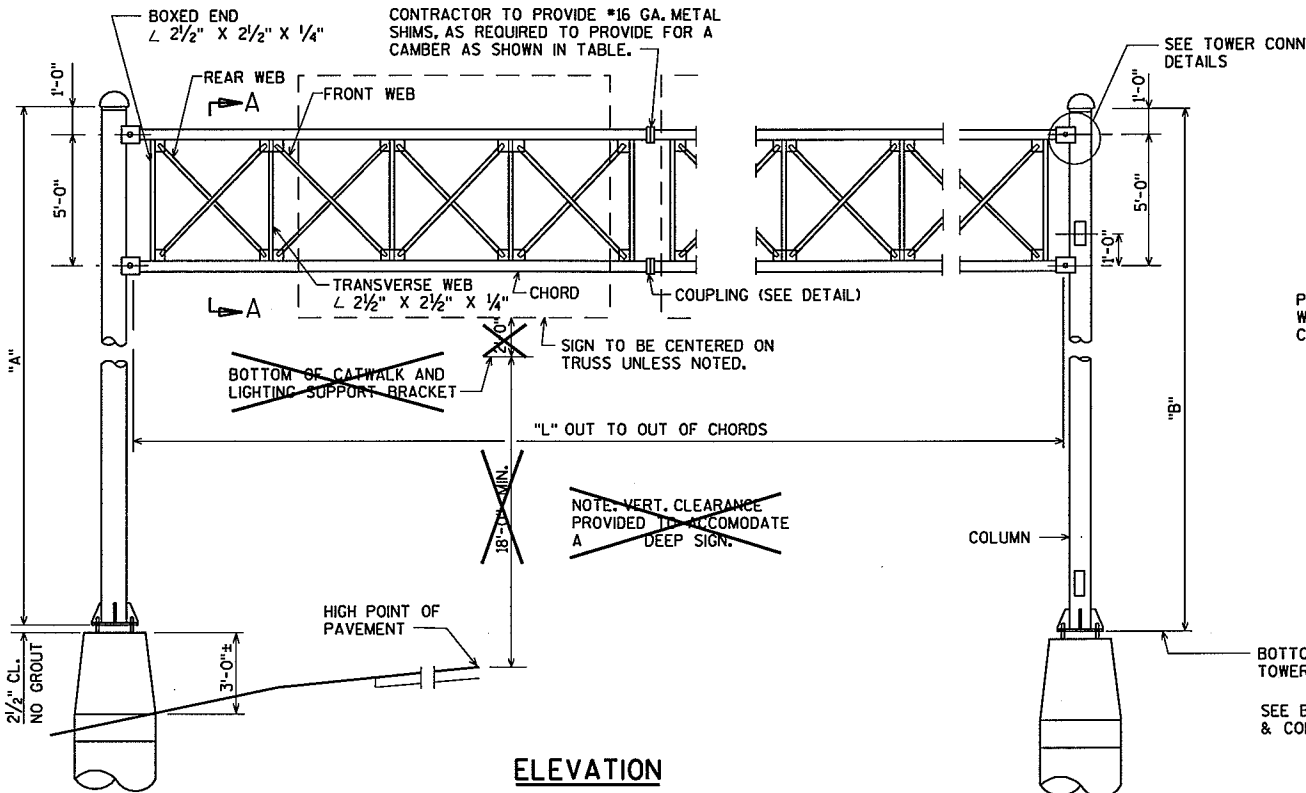
SIGN SUPPORTS CONCRETE MASONRY 14 C.Y.
SIGN SUPPORTS STEEL COATED REINFORCEMENT HS 1450 LB.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-37-58			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
CANTILEVER TRUSS FOOTING			SHEET 5 OF 9

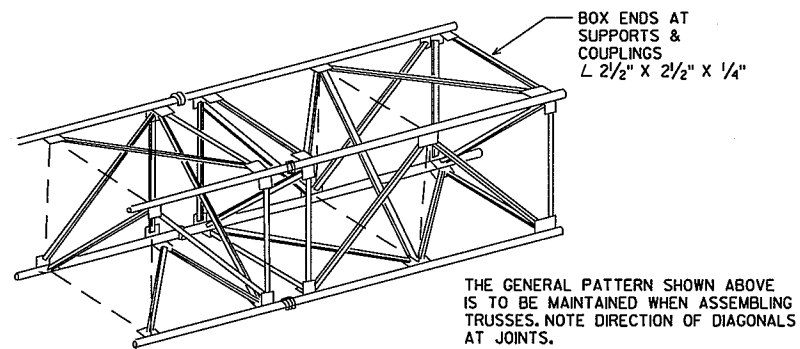




PLAN



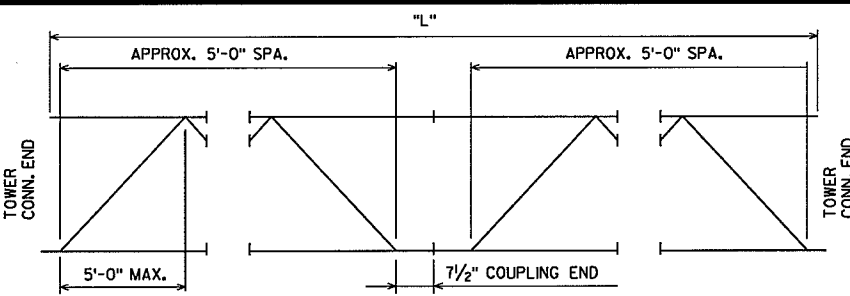
ELEVATION



TYPICAL TRUSS SECTION

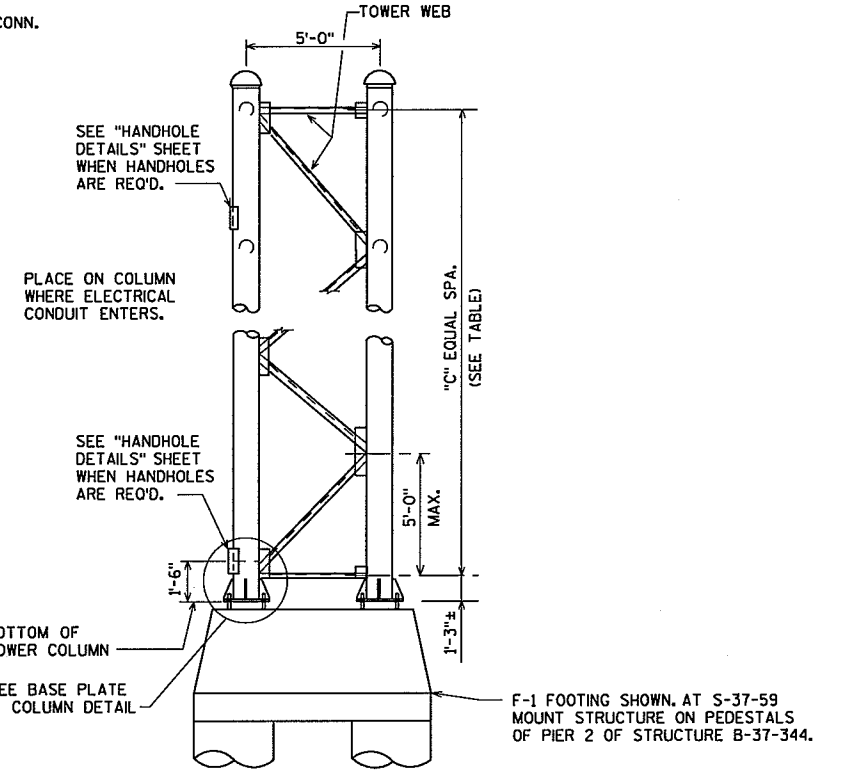
TABLE

STRUCTURE	A	B	C	CHORDS O.D. X THK.	TOP & BOTTOM WEB	FRONT & REAR WEB	COUPLING PLATE "DI" & "T"	BOLT CIRCLE DIA. "D2"	NO. OF BOLTS IN COUPLING	CAMBER	COLUMN O.D. X THK.	TOWER WEBS	"L"
S-37-59	30'-9 1/8"	31'-0 1/2"	6	3.50" X 0.216"	L 3" X 3" X 3/16"	L 3" X 3" X 3/16"	9" X 1"	6"	4	1 5/8"	14.00" X 0.500"	L 3" X 3" X 1/4"	88'-7"
S-37-60	23'-1 1/2"	23'-1 1/2"	5	3.50" X 0.216"	L 3" X 3" X 3/16"	L 3" X 3" X 3/16"	9" X 1"	6"	4	7/8"	10.75" X 0.250"	L 3" X 3" X 1/4"	64'-10 1/4"

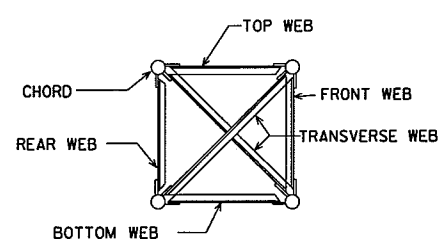


TRUSS ARRANGEMENT

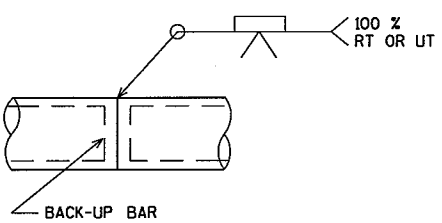
FABRICATOR MAY MAKE TRUSSES ANY LENGTH KEEPING A SECTION A MINIMUM OF 20'-0" & A MULTIPLE OF 5'-0". CHORD FIELD SPLICES SHALL BE MADE WITH COUPLINGS. CHORD SHOP SPLICE SHALL BE THE WELDED SPLICE SHOWN ABOVE.



END VIEW



SECTION A



CHORD SPLICE

NOTES

DRAWINGS SHALL NOT BE SCALED.
STEEL COLUMN PIPE SHALL BE A.P.I. SPEC. 5L GRADE X42 Fy = 42,000 P.S.I.
ALL STEEL PIPE MEMBERS OF TRUSS SHALL BE A.P.I. SPEC. 5L GRADE X42 Fy = 42,000 P.S.I.
PLATES, BARS, STRUCTURAL ANGLES SHALL BE A.S.T.M. A709 GRADE 36 Fy = 36,000 P.S.I.
ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.
ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" A325 BOLTS, GALVANIZED A.S.T.M. A153, CLASS C.
WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF UNIT CAN BE GALVANIZED IN ONE PIECE.
STEEL ANCHOR BOLTS SHALL BE A.A.S.H.T.O. M314-90 GRADE 55. Fy = 55,000 P.S.I.
SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION.
BLANKS SHALL BE 1/4" THE LENGTH OF THE BRIDGE, 2'-0" DEEPER THAN C TO C OF CHORDS & SHALL BE CENTERED ON THE BRIDGE. SIGNS SHALL BE AS DESIGNATED IN PLANS.
THE UPPER 12" OF ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE A.A.S.H.T.O. SPECIFICATION AS STATED IN SECTION 641 OF THE WIS. D.O.T. STANDARD SPECIFICATIONS.
WELD TEST AS PER AWS D11.

DESIGN DATA

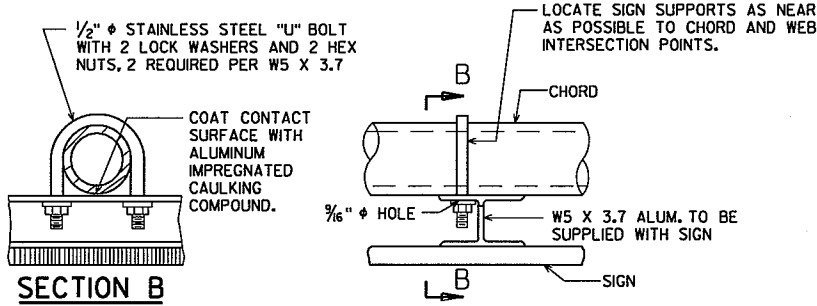
DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CATWALK, LIGHTS AND RAILINGS.
LIVE LOAD - NONE.
ICE LOAD - 3 P.S.F. TO 1 FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 M.P.H. (3-SECOND GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3

GROUP LOADS

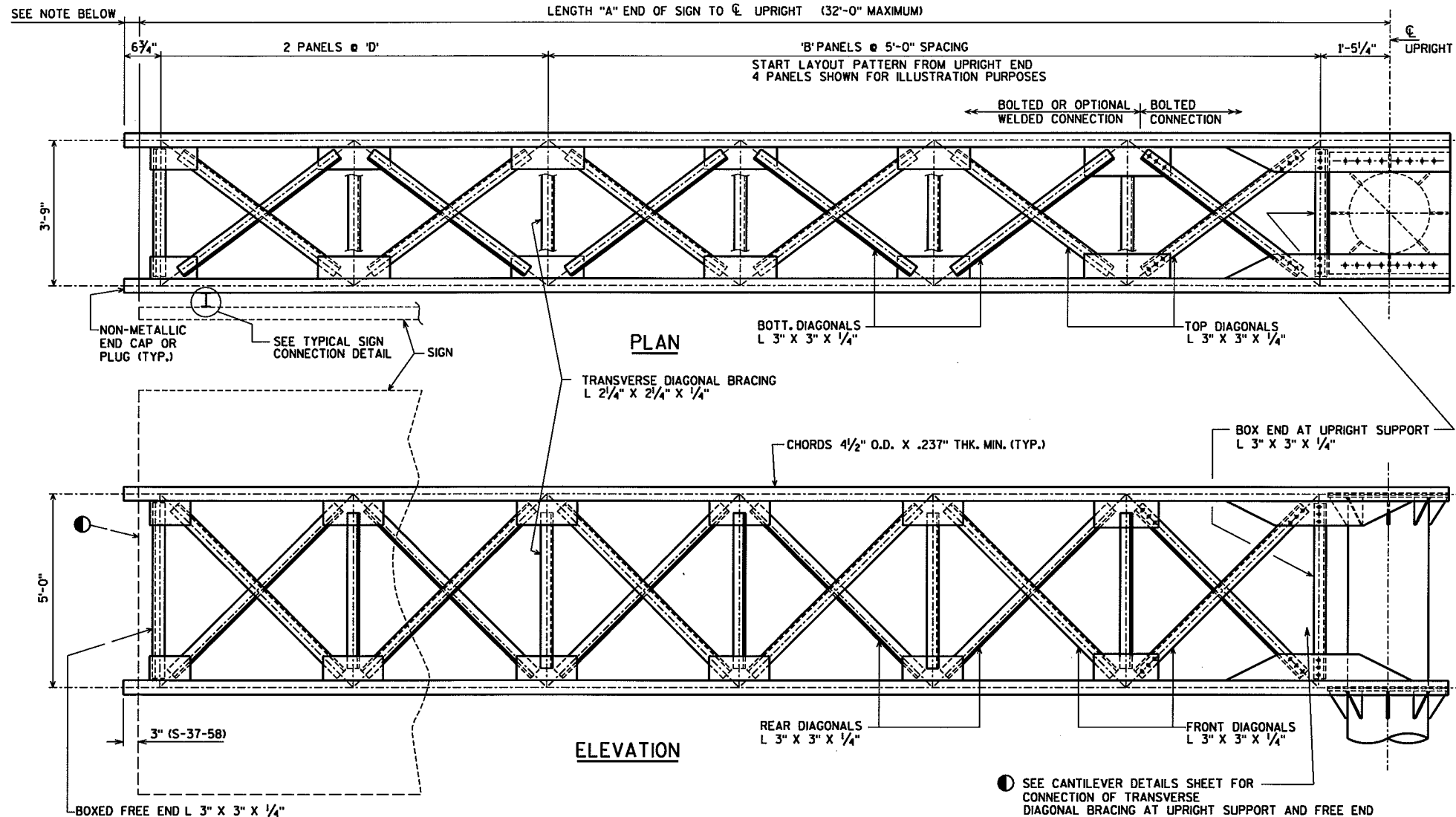
	% OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD + WIND	133
3. DEAD + ICE + 1/2 (WIND*)	133

*MIN. VALUE OF 25 PSF FOR GR. 3



TYPICAL SIGN CONNECTION

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURES S-37-59, 60			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
4-CHORD GALVANIZED STEEL SIGN BRIDGE			SHEET 6 OF 9



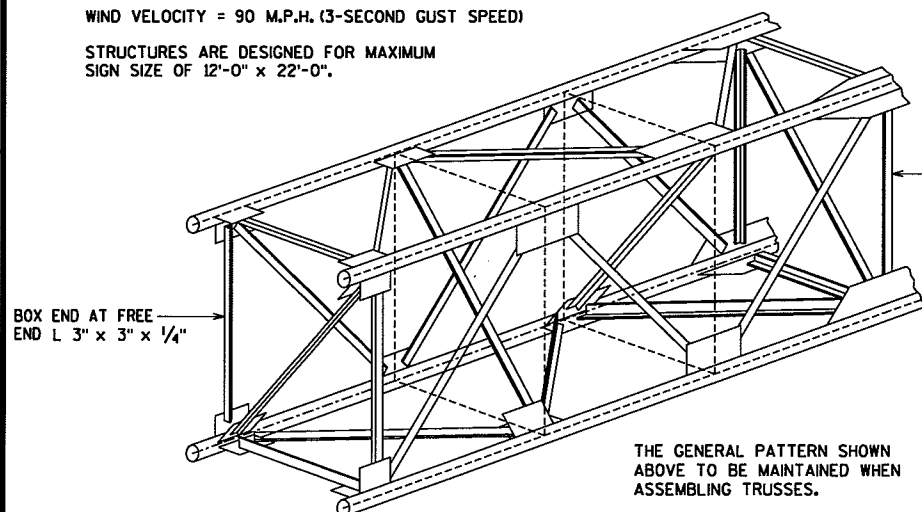
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

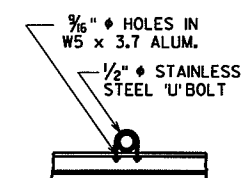
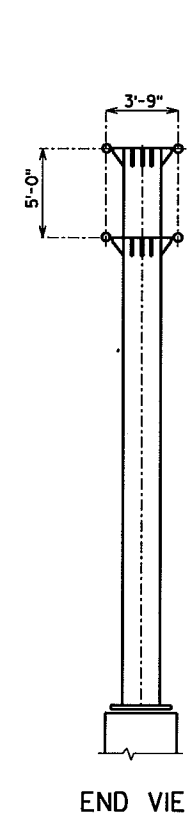
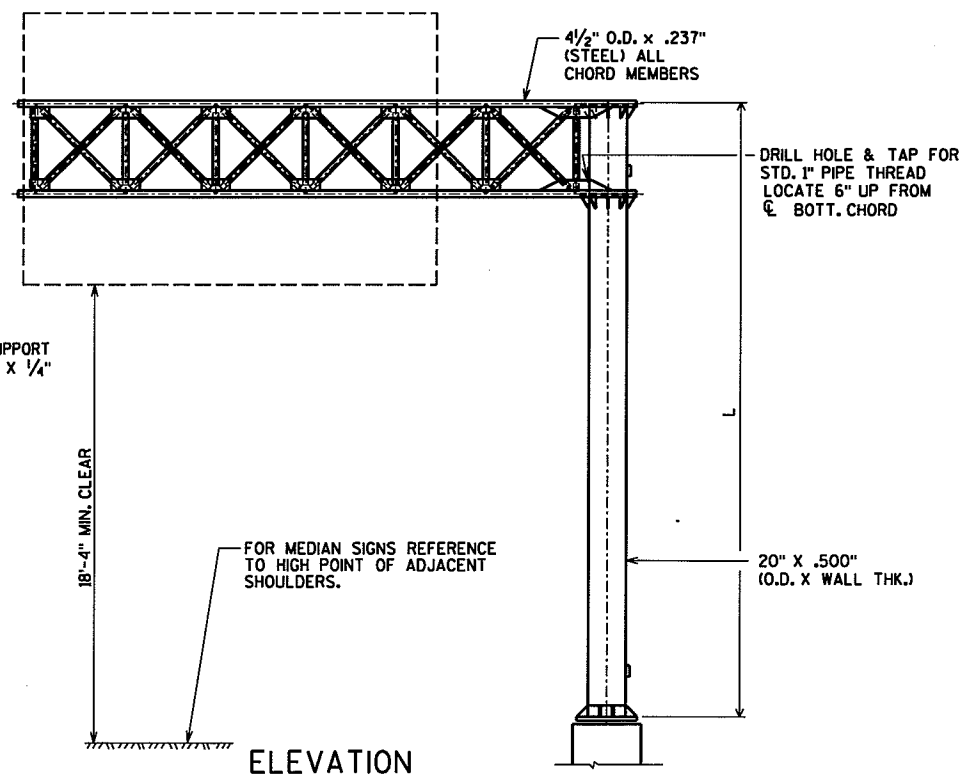
DESIGNED ACCORDING TO A.A.S.H.T.O. "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS"

WIND VELOCITY = 90 M.P.H. (3-SECOND GUST SPEED)

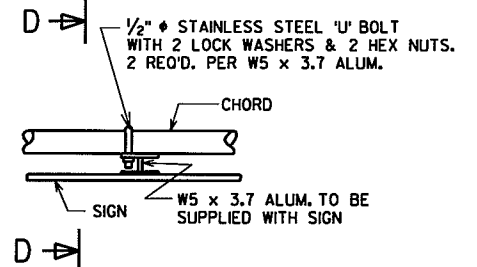
STRUCTURES ARE DESIGNED FOR MAXIMUM SIGN SIZE OF 12'-0" X 22'-0".



TYPICAL TRUSS SECTION



SECTION D-D

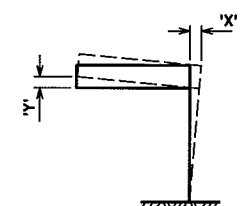


TYPICAL SIGN CONNECTION

ALLOWABLE DESIGN STRESSES

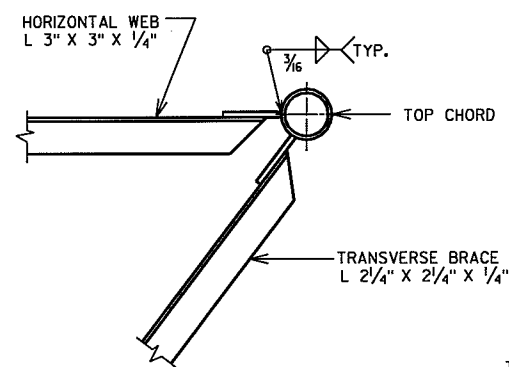
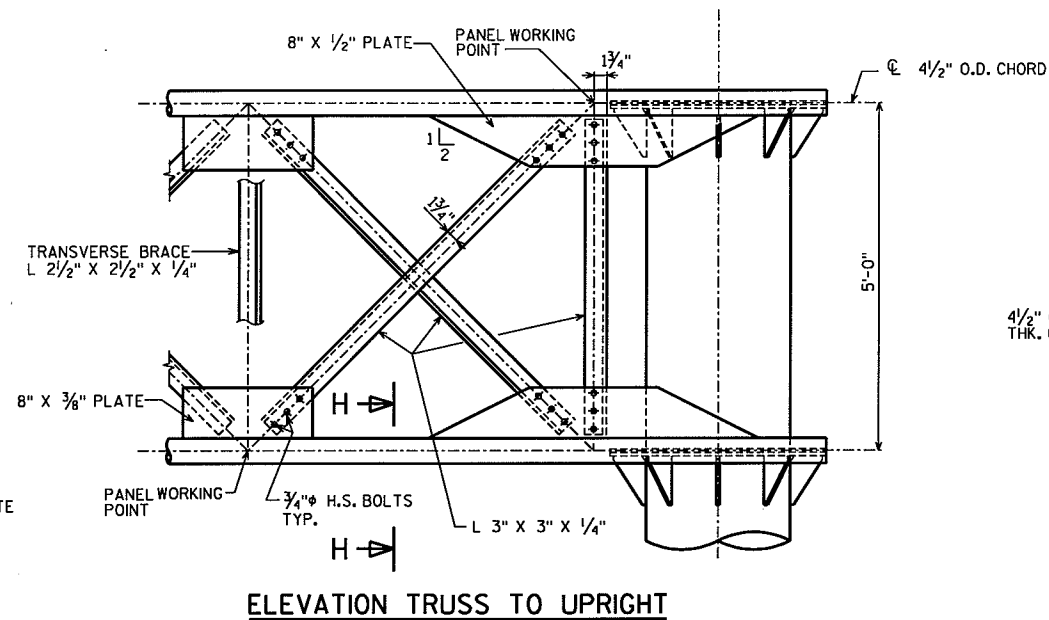
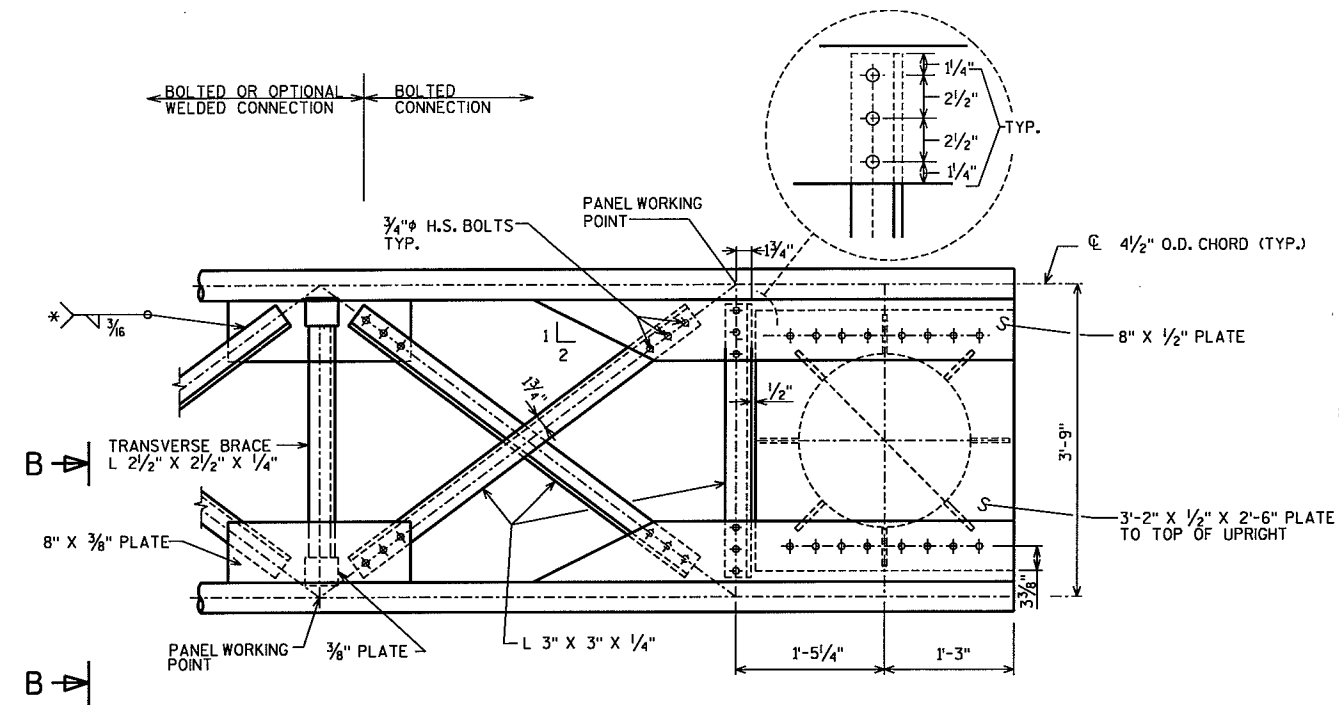
CHORDS & COLUMN (INCLD. HANDHOLE) — API-5L-X42 — $f_y=42,000$ P.S.I.
STRUCTURAL ANGLES — A.S.T.M. A709 GRADE 36 — $f_y=36,000$ P.S.I.
PLATES & BARS — A.S.T.M. A709 GRADE 36 — $f_y=36,000$ P.S.I.
ANCHOR BOLTS — A.A.S.H.T.O. M314 — $f_y=55,000$ P.S.I.
HIGH STRENGTH BOLTS — A325 — $f_y=92,000$ P.S.I.
STRUCTURAL MEMBERS GALVANIZED A123
HARDWARE GALVANIZED — A153 CLASS C

STRUCTURE	"A"	"L"	"B"	"D"	"X"	"Y"
S-37-58	21'-9"	22'-8"	2	5'-0"	1/4"	3/4"



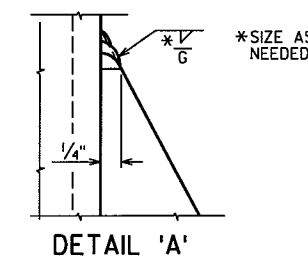
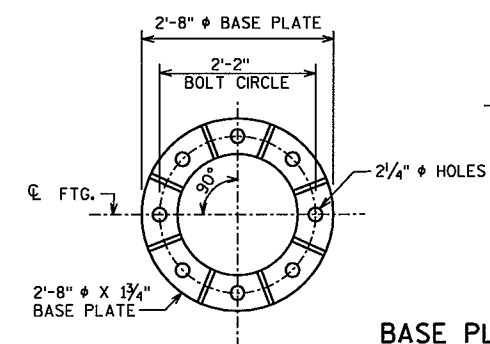
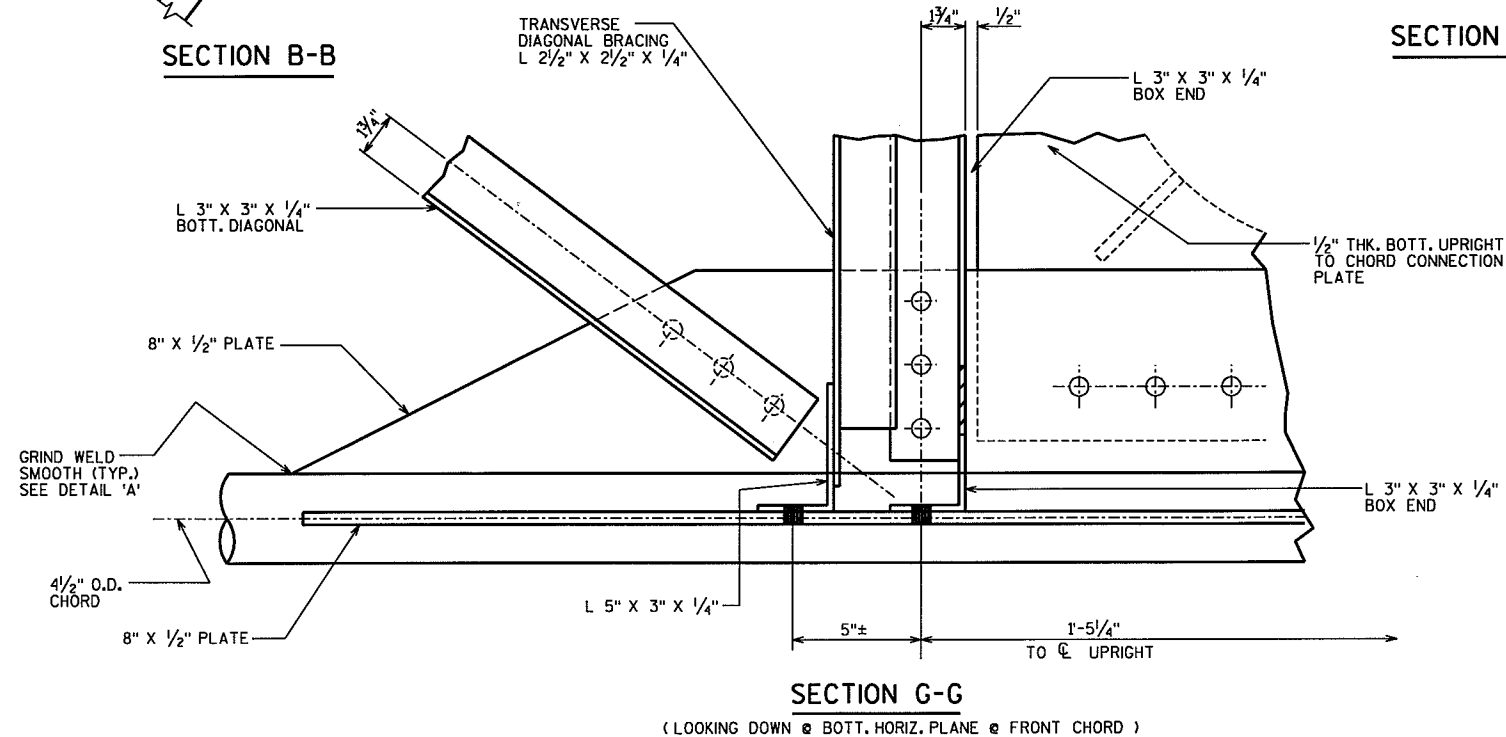
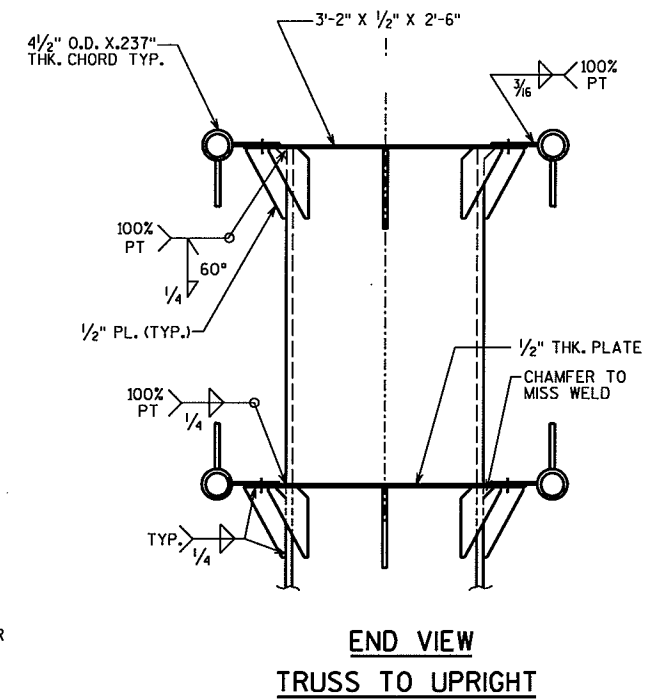
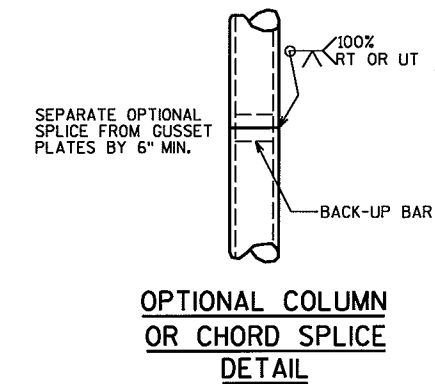
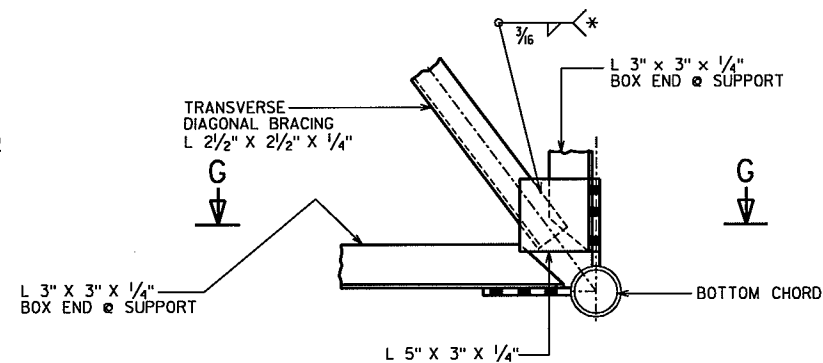
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-37-58			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
GALVANIZED STEEL CANTILEVER SIGN TRUSS			SHEET 8 OF 9

1166-09-76



* ANGLE
L 2 1/2" X 2 1/2" X 1/4"
L 3" X 3" X 1/4"

WELD LENGTH (MIN.)
7"
8"



No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURE S-37-58			
Const. Spec. WI "03"	Drawn By RLR	Plans Checked DHW	
GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS			SHEET 9 OF 9