

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

N. BR. PINE RIVER BRIDGE & APPROACHES

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9432-01-70	-	-

INDEX OF SHEETS

Sheet No.	Title
1	Typical Sections and Details
2	Estimate of Quantities
3-3.1	Miscellaneous Quantities
2	Right of Way Plat
-	Plan and Profile
5	Standard Detail Drawings
6-6.4	Sign Plates
-	Structure Plans
8-8.5	Computer Earthwork Data
-	Cross Sections

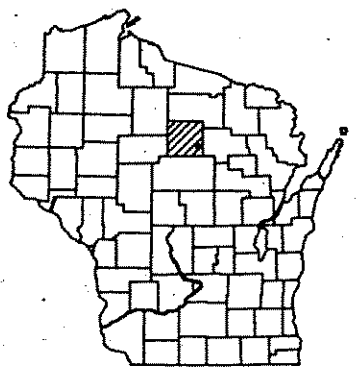
TOTAL SHEETS = 18

*Project Engineer: Donohue & Associates
Eugene Seidler, P.R.
Project Personnel: Indexed in Diary #*

C.T.H. "X"
LINCOLN COUNTY

*Contractor: Zenith Tech, Inc.
Subs: American Asphalt of Wis.
Rent-A-Flash of Wisconsin, Inc.
Time, Inc.
Hi Boom Erecting, Inc.
Merrill Gravel & Construction*

STATE PROJECT NUMBER
9432-01-70



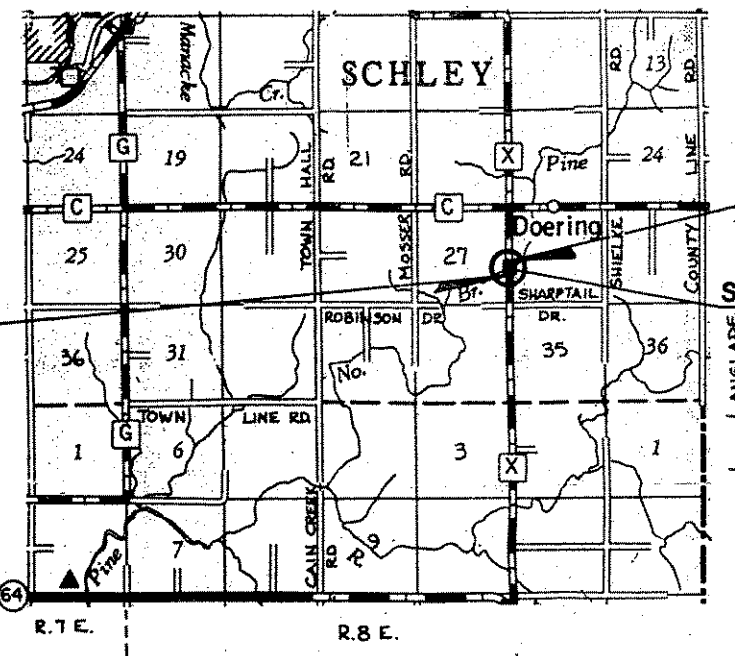
DESIGN DESIGNATION

A.D.T. (1990)	= 240
A.D.T. (2010)	= 290
D.H.V.	=
G.	=
T.	= 8%

CONVENTIONAL SIGNS

COUNTY LINE	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
NEW RIGHT OF WAY	
REFERENCE LINE	
SLOPE INTERCEPT	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE	
CULVERT IN PLACE	
CULVERT REQUIRED	
CULVERT REQUIRED (Profile)	

COMBUSTIBLE FLUIDS (UNDER PRESSURE)	
UNDERGROUND UTILITIES	
GAS	
ELECTRIC	
TELEPHONE	
SERVICE PEDESTAL	
CABLE MARKER	
POWER POLE	
TELEPHONE POLE	
RAILROADS	
MARSH	
WOODED AREA	



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.071 MI. (RURAL)

NOTE: All coordinates shown are referenced to the WISCONSIN COORDINATE SYSTEM, CENTRAL ZONE, and are scaled from the DOERING QUADRANGLE for identification purposes only.

APPROVED FOR LINCOLN COUNTY BY
10/23/89
DATE
M. J. [Signature]
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
BARRIENTOS & ASSOC., INC.
CONSULTING ENGINEERS
MADISON, WISCONSIN
10-18-89

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
Surveyor BAI District Checker FWB
Designer BAI C.O. Checker RJC
District Supervisor RJS C.O. Coordinator LAS

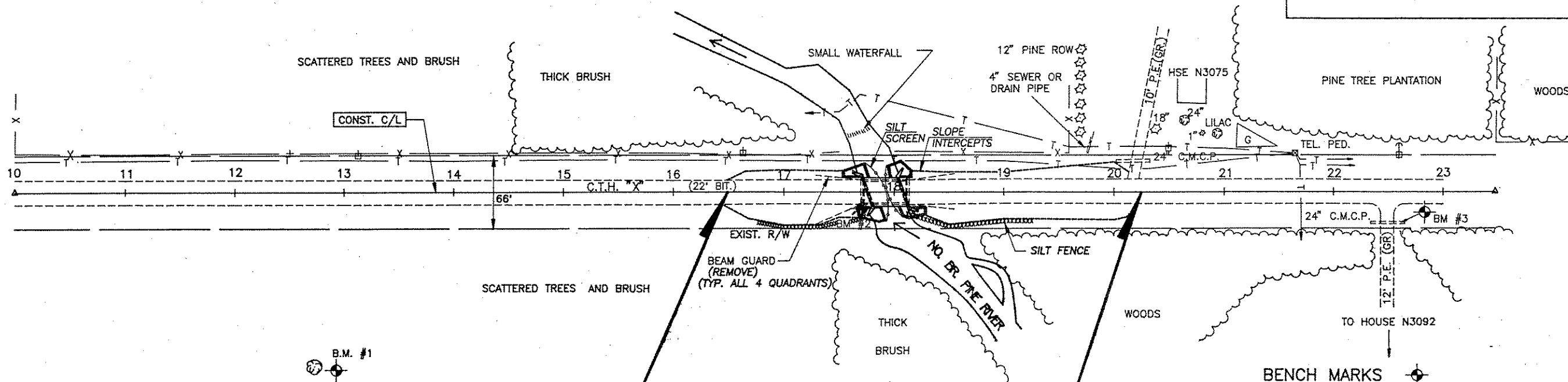
APPROVED:
DATE: *11/10/89* *James D. [Signature]*
DISTRICT DIRECTOR
APPROVED:
DATE: *12/5/89* *Robert W. [Signature]*
REGIONAL CHIEF ROAD DESIGN ENG.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5 WISCONSIN DIVISION
APPROVED:
DATE: _____
DIVISION ADMINISTRATOR

LINCOLN

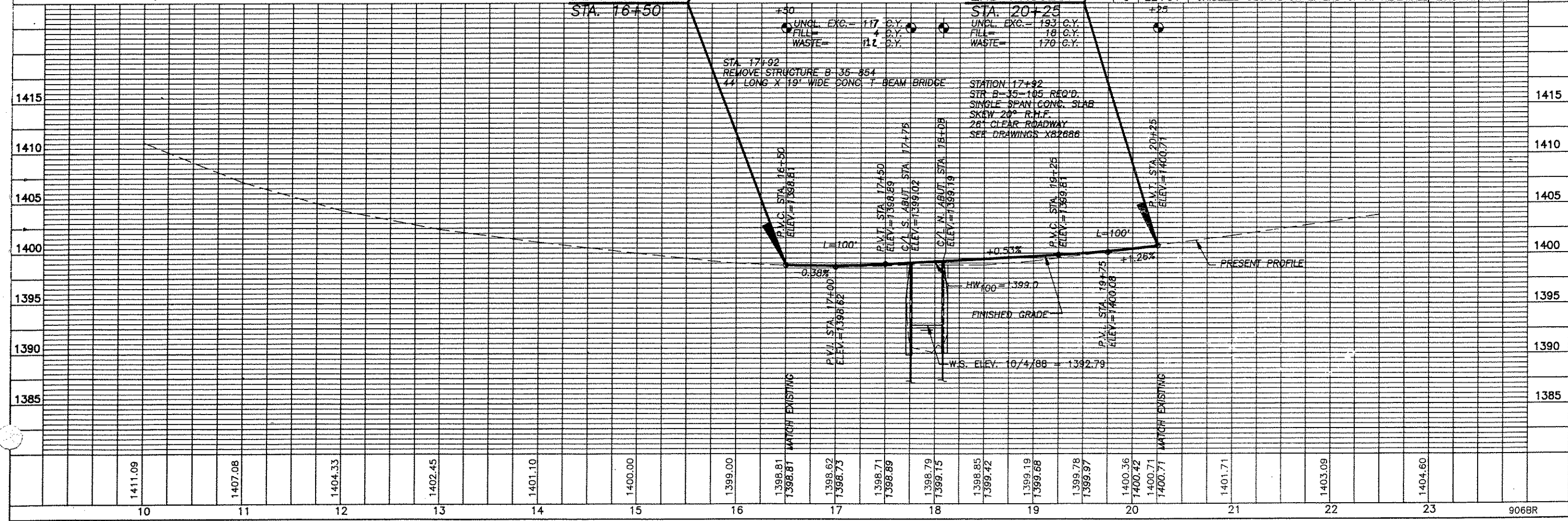
w/9857-3-70
w/9859-5-70

FEB



NET LENGTH OF C/L = STA. 16+50 TO STA. 20+25 = 375 LF.

NO.	STA.	DESCRIPTION	ELEV
1	12+74	R.R. SPIKE IN 20' ELM, 1.2' UP N. SIDE, 157' RIGHT	1402.375
2	17+70	CHISELED SQUARE ON E. CORNER OF S. ABUTMENT, 12' R.	1399.155
3	22+64	CHISELED SQUARE ON E. END OF N. HEADWALL, 29.5' R.	1402.765

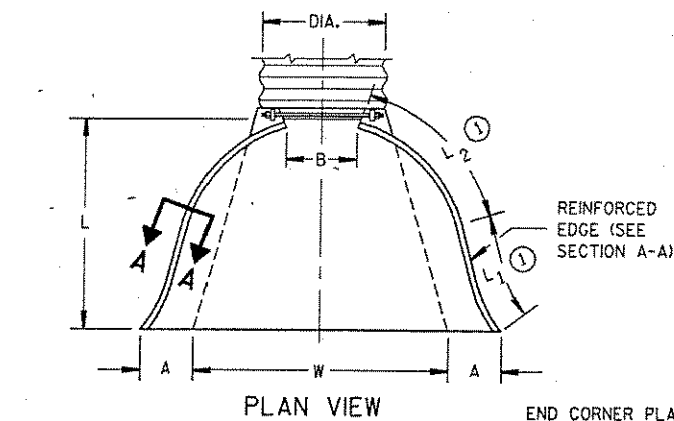


METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 (1)	L2 (1)	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.079	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.109	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/2 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/2 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

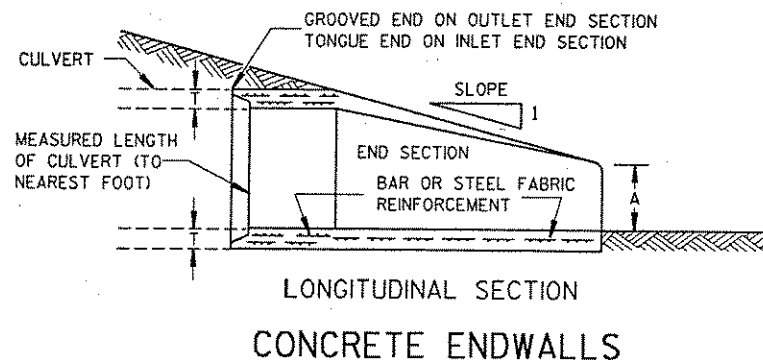
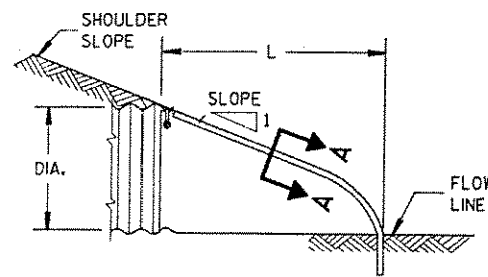
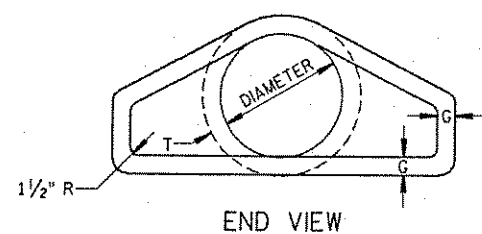
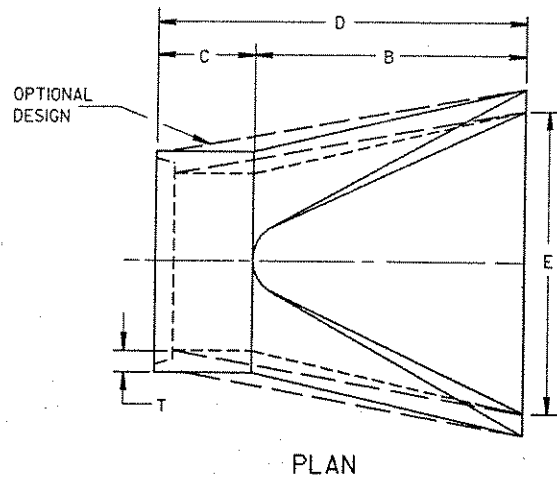
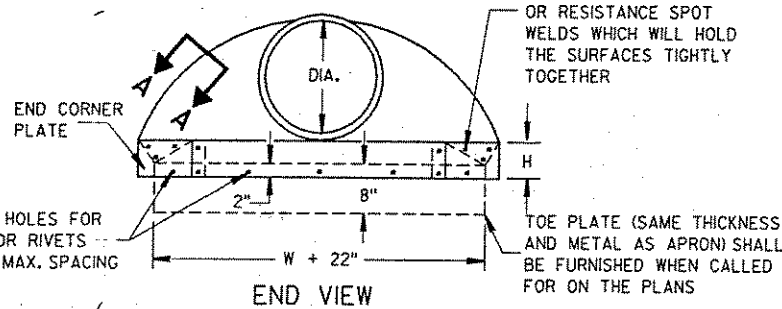
* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS									
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE	
	T	A	B	C	D	E	G		
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1	
15	2 1/4	5	27	46	73	30	2 1/4	3 to 1	
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1	
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1	
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1	
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1	
30	3 1/2	12	54	19 1/4	73 1/2	60	3 1/2	3 to 1	
36	4	15	63	34 3/4	97 1/4	72	4	3 to 1	
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1	
48	5	24	72	26	98	84	5	3 to 1	
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1	
60	6	30-35	60	39	99	96	5	2 to 1	
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	24-36	78	21	99	108	6	2 to 1	
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1	
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1	
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1	

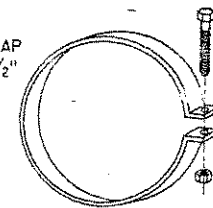
* MINIMUM
** MAXIMUM



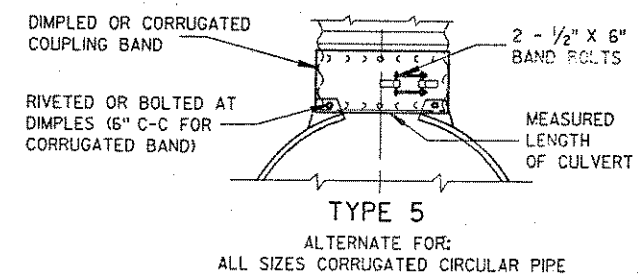
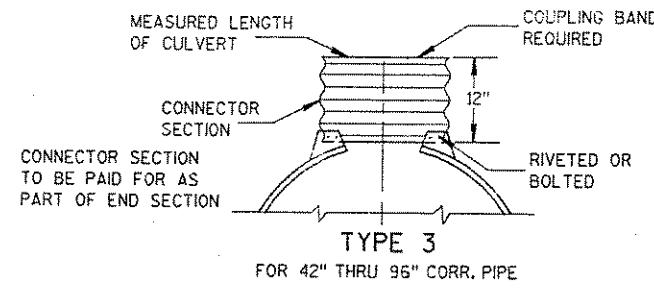
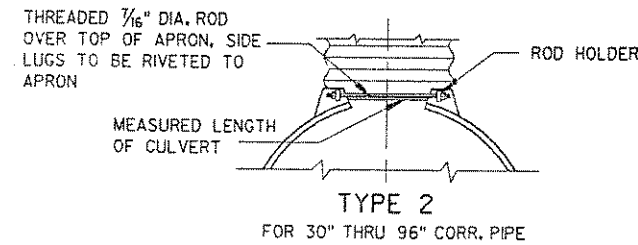
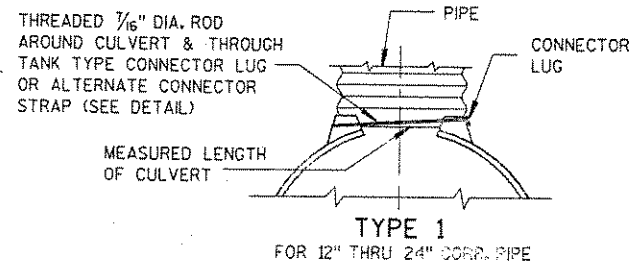
REINFORCED EDGE (SEE SECTION A-A)



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



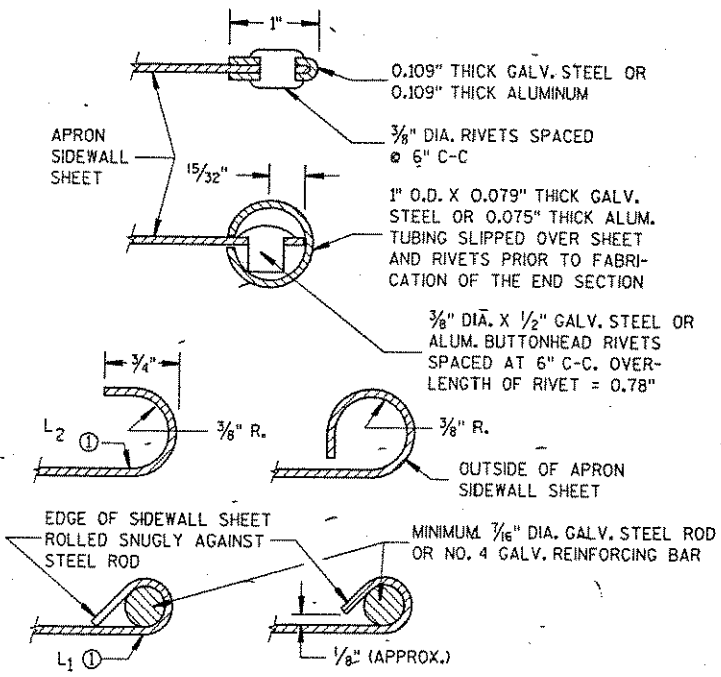
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/17/87 DATE	 STATE DESIGN ENGINEER FOR HWYS
FHWA	

ABBREVIATIONS		
F — Fine	M — Medium	C — Coarse
Ws — Weathered	So — Sound	
MATERIAL SYMBOLS		
Topsoil	Silt	Sandstone
Sand	Peat	Limestone
Gravel	Clay	Igneous Rock

LEGEND OF PROBING

Probing No. Sta. Elevation

95/6=95 Blows for 6" Penetration
 Probing taken with a 350# wt. Falling 18" on a 2" O. D. Point.

7 Average Blows Per Foot Refusal 95/6

LEGEND OF BORING

Boring No. Sta. Elev.

Unconfined Strength $\frac{7.7}{7}$

Blows Per Ft. Using 140# Wt. Falling 30"

Wash Sample

Shelby Tube — S. T.

Ground Water Elevation

No Ground Water Observed Above This Elevation

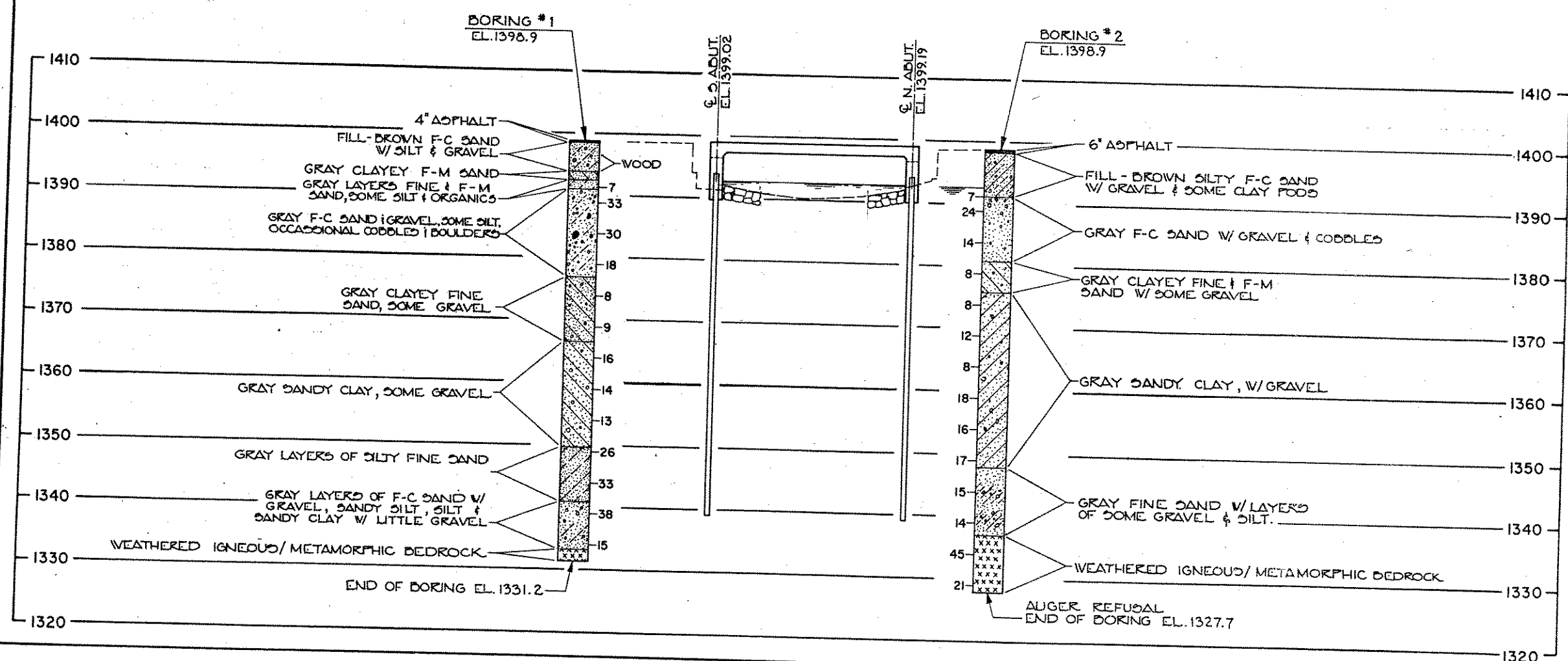
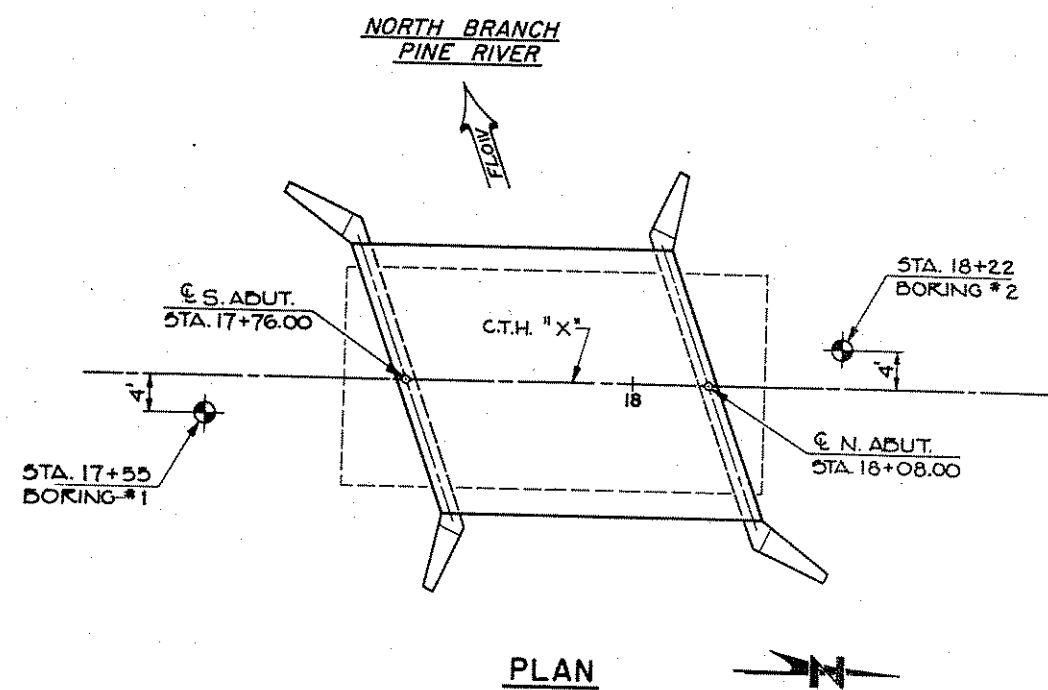
Sandy Gravel
 F.
 Boulders or Cobbles
 Sand
 Silty Clay
 So
 Limestone

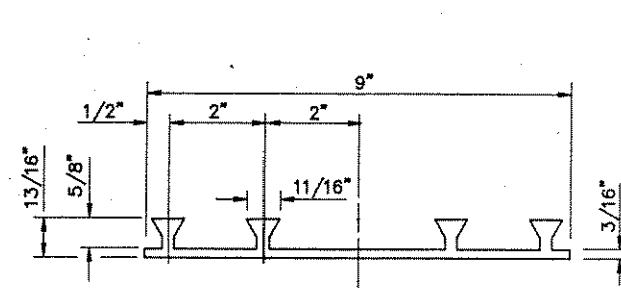
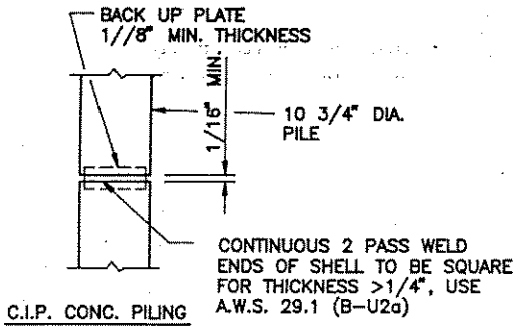
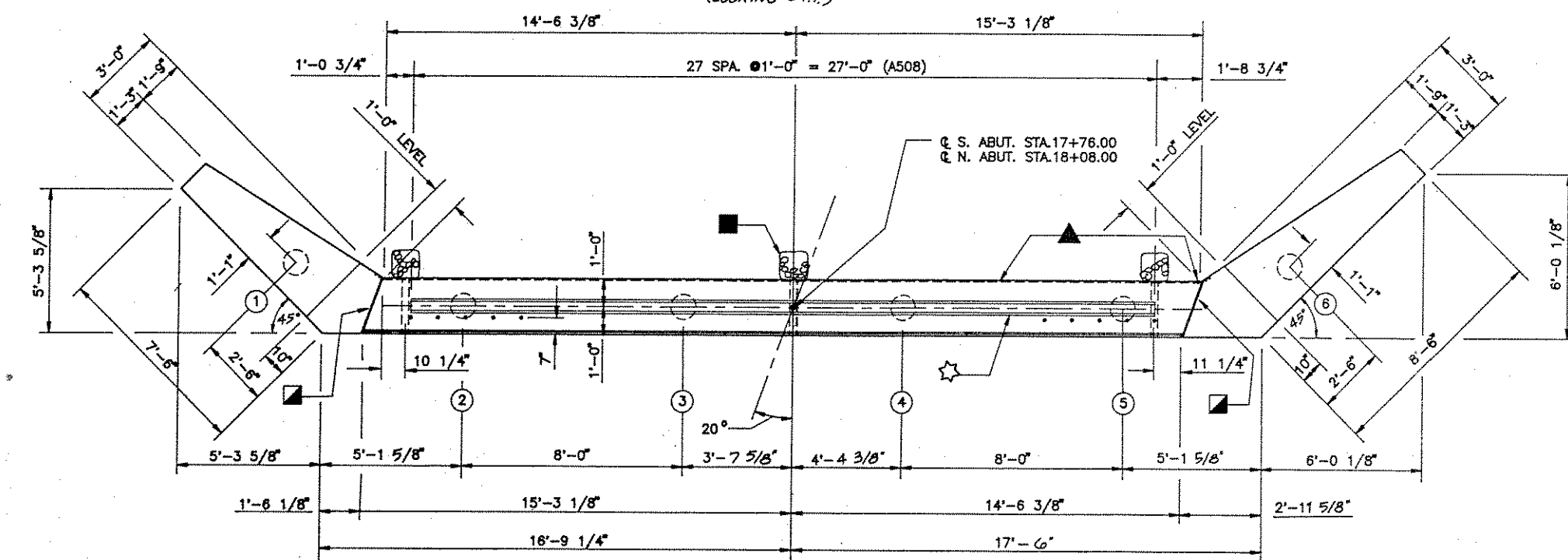
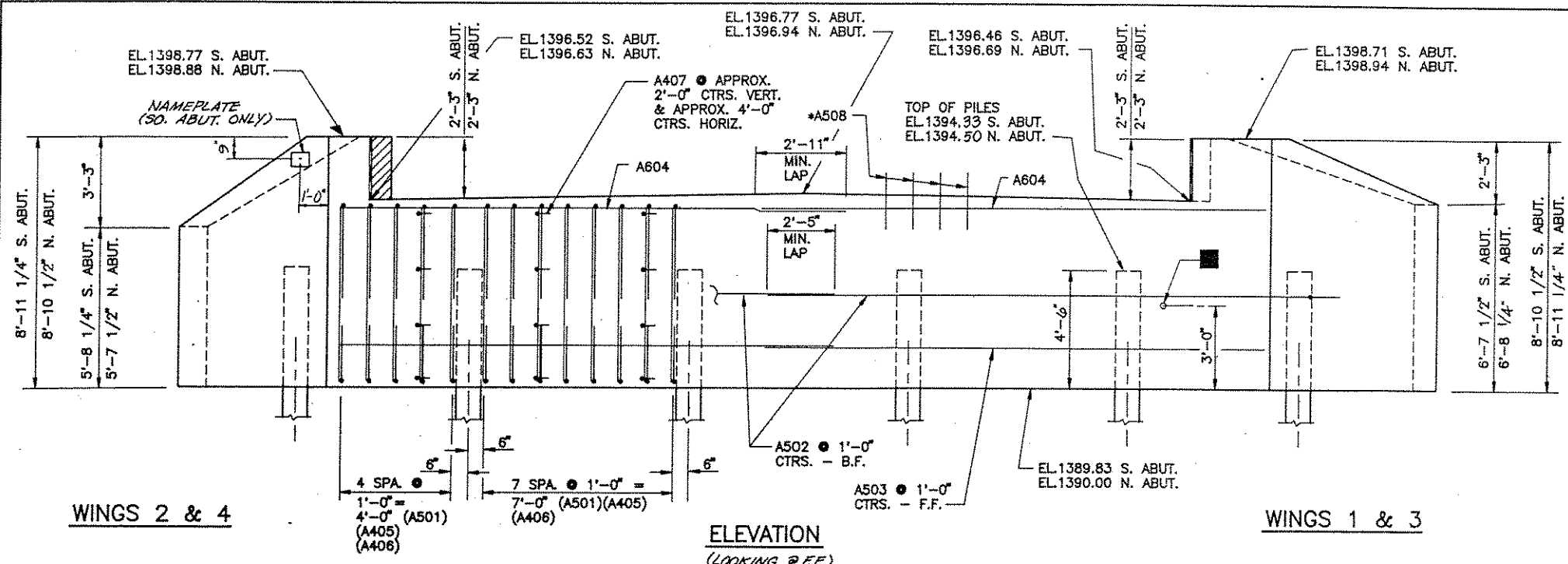
Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O. D. x 1.4" I. D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

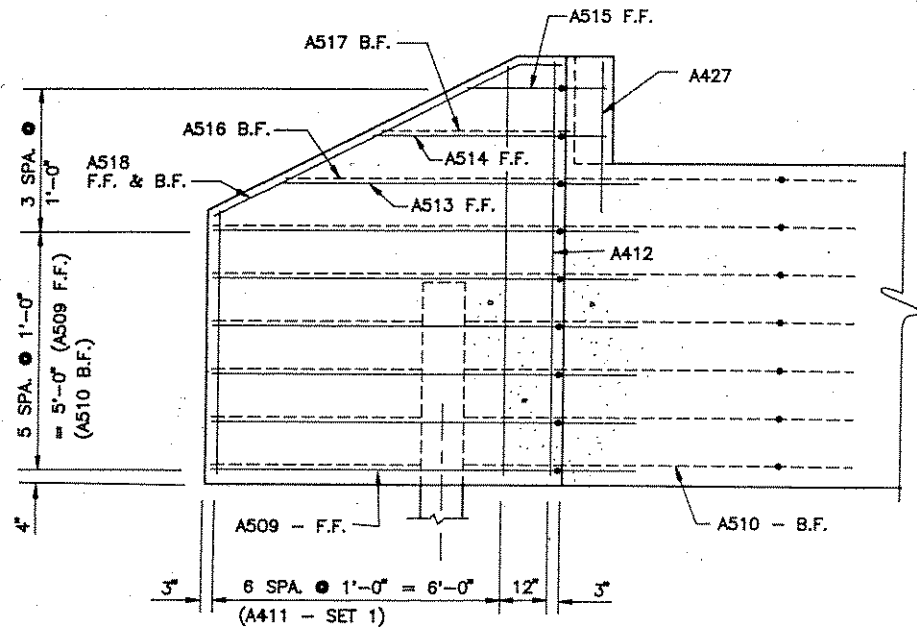
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-105			
Const. Spec. WL '81	Drawn By J.R.L.	Plans Checked L.M.D.	
SUBSURFACE EXPLORATION		SHEET 2 OF 6	
		X 82686	



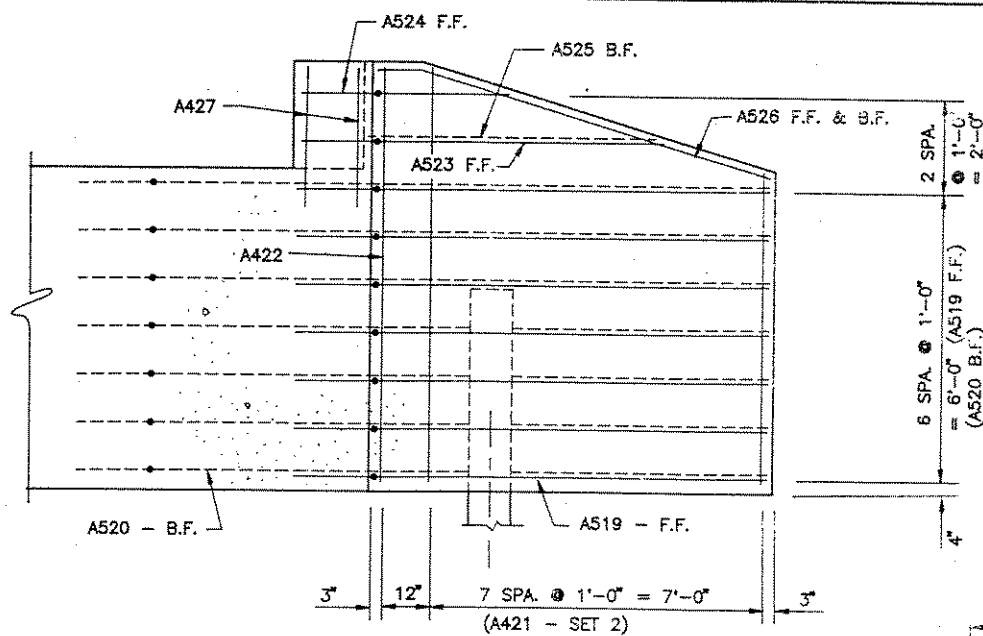


- 2" DIA. WEEP HOLE LOCATIONS SHOWN. USE GEOTEXTILE FABRIC. TYPE OF W/SELECT GRANULAR MATL. @ E. HOLE (ON B.F. 12"x12"x12" MIN.) COST TO BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES."
- POLYVINYL CHLORIDE WATERSTOP TO EXTEND FULL WIDTH OF ABUT. SEAT & VERT. FROM SEAT TO TOP OF WINGS. P.C.W. SHALL BE BUTT-SPLICED AT ALL INTERSECTIONS BY USING A HEATED SPLICING IRON. HOLD FLUSH TO CONC.
- CONST. JOINT KEYWAY FORMED WITH A SURFACED, BEVELED 2' x 6'.
- SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONC.)

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-105			
Const. Spec.	WIS. '89	Drawn By	T.R.L.
		Plans Checked	S.R.L.
ABUTMENTS			SHEET 3 of 6 X82686

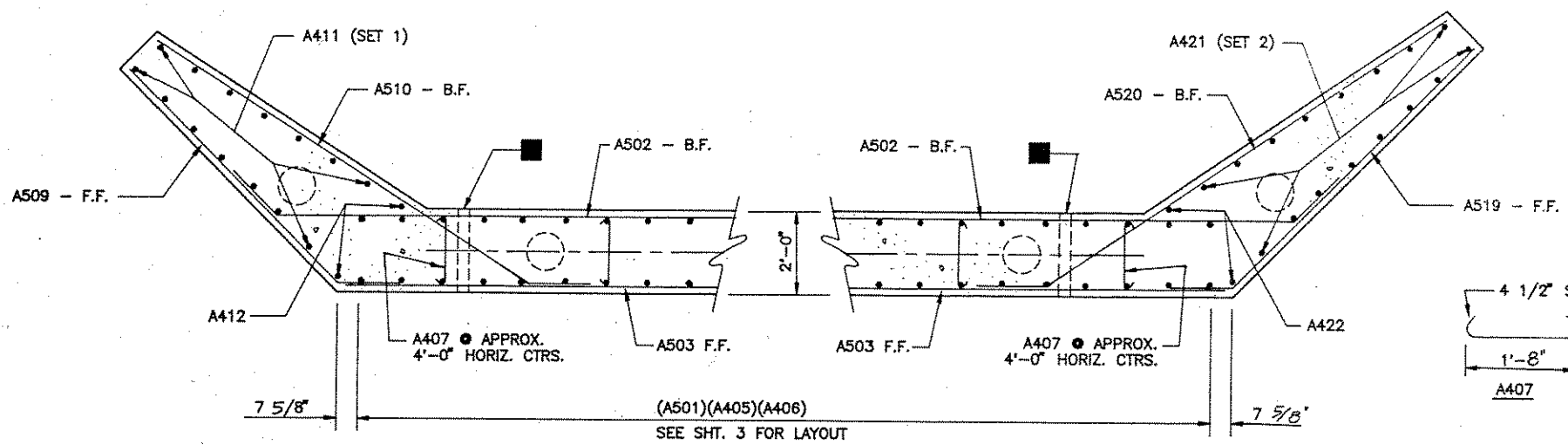


WINGS 2 & 4



WINGS 1 & 3

ELEVATION

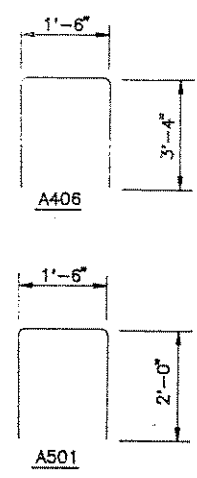


PLAN SECTION
SHOWING BAR STEEL BELOW SEAT

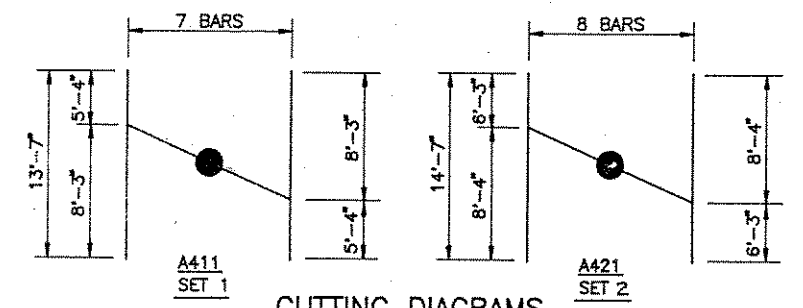
2" DIA. WEEP HOLE LOCATIONS SHOWN. USE GEOTEXTILE FABRIC, TYPE DF W/SELECT GRANULAR MAT'L. @ Ea. HOLE (ON B.F. 12"x12"x12" MIN.) COST TO BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES."

BILL OF BARS (BOTH ABUTS.)

MARK	NO.	LENGTH	BENT	CUT	LOCATION
A501	68	5'-3"	X		BODY - VERT. - STIRRUP @ BTM.
A502	28	21'-4"	X		BODY - HORIZ. - B.F.
A503	28	18'-4"			BODY - HORIZ. - F.F.
A604	8	18'-7"			BODY - HORIZ. - TOP
A405	136	8'-2"			BODY - VERT. B.F. & F.F.
A406	68	8'-0"	X		BODY - VERT. - STIRRUPS @ TOP
A407	64	2'-5"	X		BODY - HORIZ. TIES
A508	56	2'-0"			BODY - VERT. - DOWELS @ TOP
A509	12	8'-8"	X		WINGS 2 & 4 - HORIZ. - F.F.
A510	12	12'-3"	X		WINGS 2 & 4 - HORIZ. - B.F.
A411	14	13'-7"		X	WINGS 2 & 4 - VERT. - F.F. & B.F.
A412	4	8'-5"			WINGS 2 & 4 - VERT. - F.F. & B.F.
A513	2	7'-2"	X		WINGS 2 & 4 - HORIZ. - F.F.
A514	2	4'-11"	X		WINGS 2 & 4 - HORIZ. - F.F.
A515	2	2'-11"	X		WINGS 2 & 4 - HORIZ. - F.F.
A516	2	10'-9"	X		WINGS 2 & 4 - HORIZ. - B.F.
A517	2	4'-0"			WINGS 2 & 4 - HORIZ. - B.F.
A518	4	7'-11"	X		WINGS 2 & 4 - TOP - F.F. & B.F.
A519	14	9'-8"	X		WINGS 1 & 3 - HORIZ. - F.F.
A520	14	13'-1"	X		WINGS 1 & 3 - HORIZ. - B.F.
A421	16	14'-7"		X	WINGS 1 & 3 - VERT. - F.F. & B.F.
A422	4	8'-5"			WINGS 1 & 3 - VERT. - F.F. & B.F.
A523	2	8'-0"	X		WINGS 1 & 3 - HORIZ. - F.F.
A524	2	5'-4"	X		WINGS 1 & 3 - HORIZ. - F.F.
A525	2	6'-0"			WINGS 1 & 3 - HORIZ. - B.F.
A526	4	8'-5"	X		WINGS 1 & 3 - TOP - F.F. & B.F.
A427	6	3'-3"			ALL WINGS - VERT. CORNERS



BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

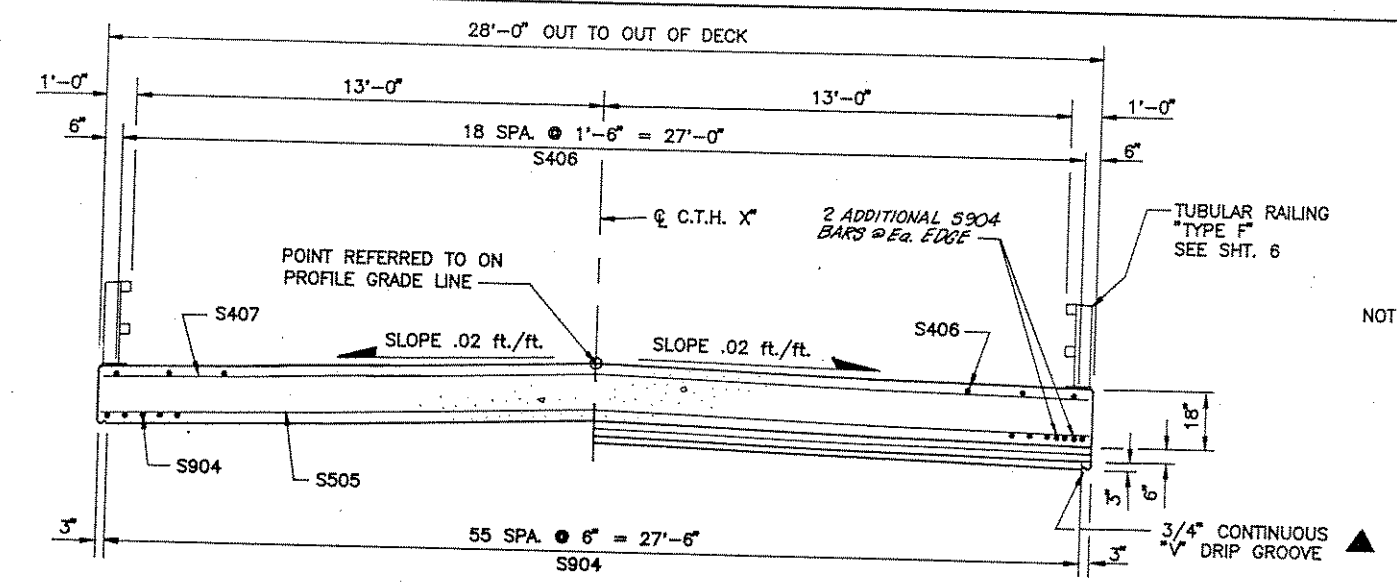


CUTTING DIAGRAMS

CUT ALL BARS ALONG THIS LINE. MAKE ALL CUTS NORMAL TO BAR AXIS. BUNDLE AND MARK CUT BARS WITH BAR AND SET NUMBER.

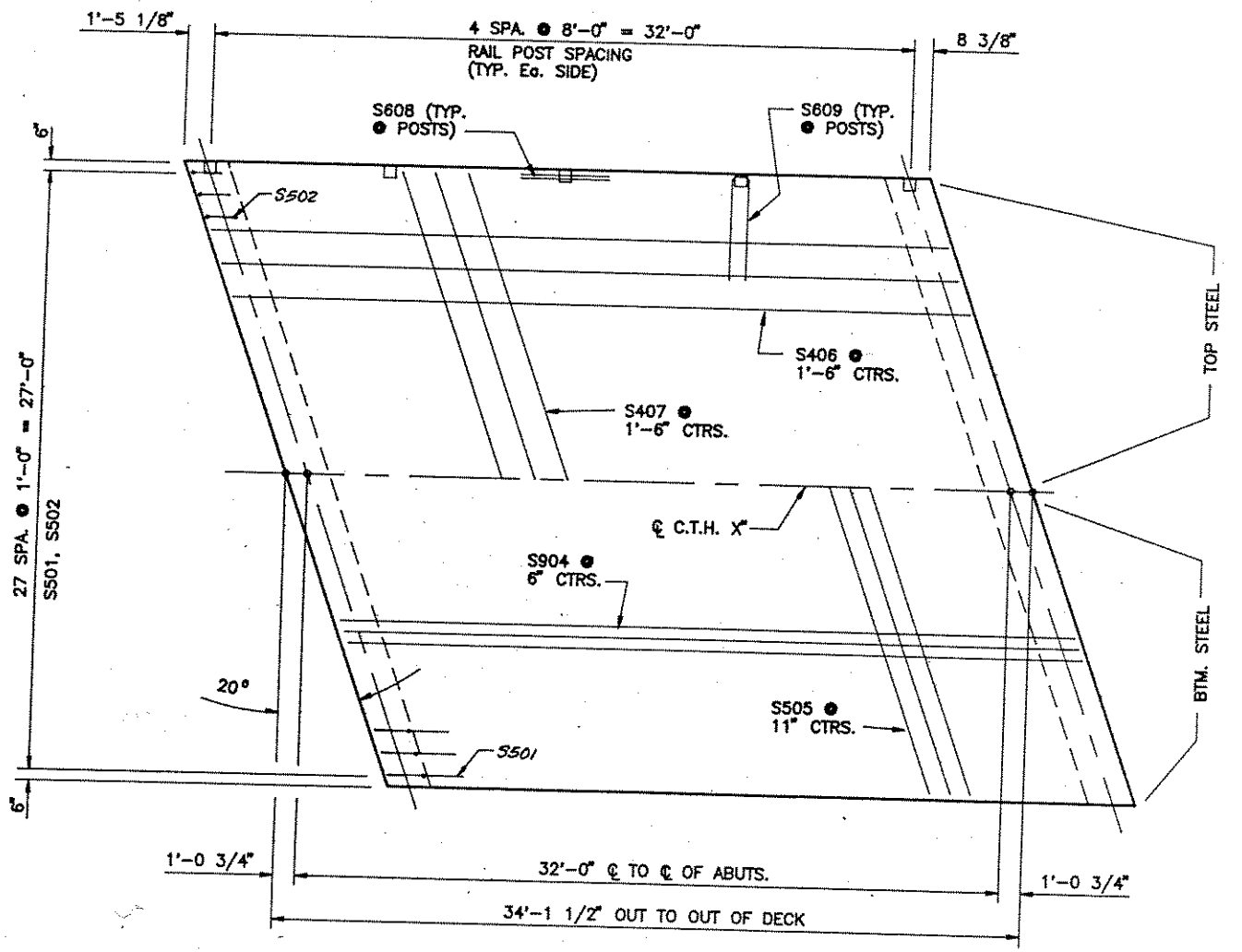
MARK	"A"	"B"
A502	1'-6"	1'-1"
A509	1'-6"	1'-1"
A510	1'-6"	10"
A513	1'-6"	1'-1"
A514	1'-4"	11"
A515	1'-4"	11"
A518	8"	4"
A519	1'-6"	1'-1"
A520	1'-6"	11"
A523	2'-8"	1'-10"
A524	2'-8"	1'-10"
A526	8"	4"
A516	1'-6"	10"

No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-105			
Const. Spec.	WIS. '89	Drawn By	T.R.L.
		Plans Checked	S.R.L.
WINGS			SHEET 4 OF 6 X82686

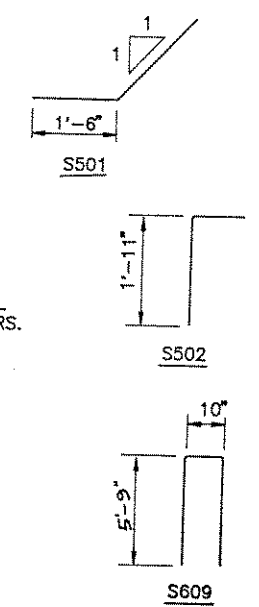


CROSS SECTION THRU ROADWAY

NOTE: ALTERNATE TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CTRS. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CTRS.



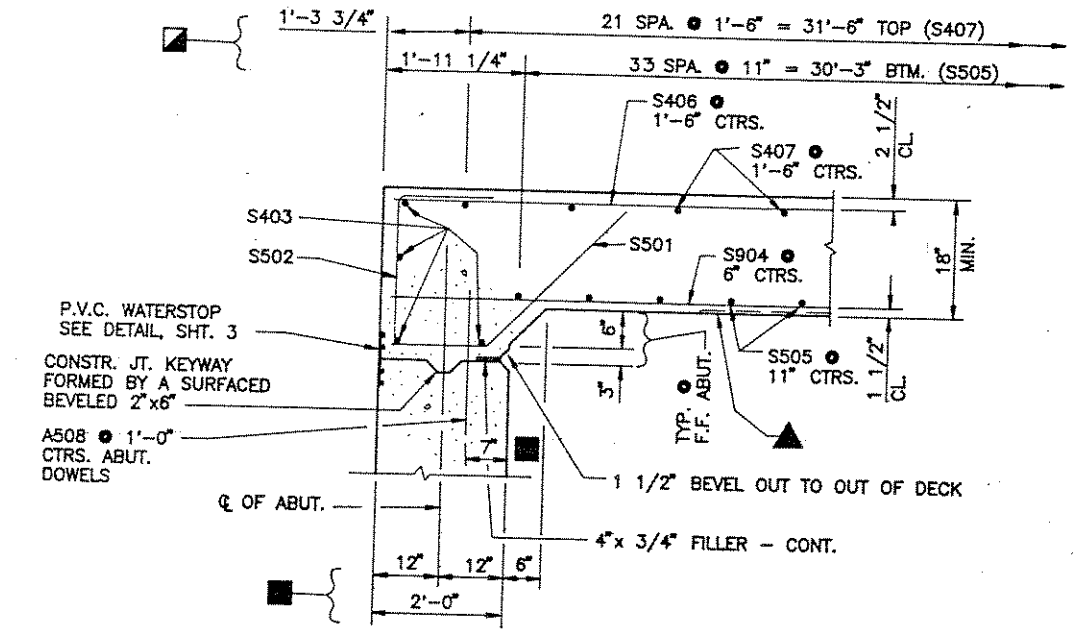
PLAN



BILL OF BARS

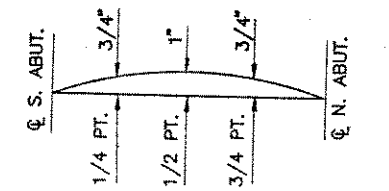
MARK	NO.	LENGTH	COAT	BENT	LOCATION
S501	56	3'-6"	X	X	HAUNCH @ ABUT. - VERT. STIRRUP
S502	56	3'-0"	X	X	HAUNCH @ ABUT. - VERT. STIRRUP
S403	8	29'-5"	X		HAUNCH @ ABUT. - HORIZ.
S904	60	33'-9"			SLAB - LONGIT. - BTM.
S505	34	29'-5"			SLAB - TRANSV. - BTM.
S406	19	33'-9"	X		SLAB - LONGIT. - TOP
S407	22	29'-5"	X		SLAB - TRANSV. - TOP
S608	20	4'-0"	X		SLAB @ RAIL POSTS - 2 Ea. POSTS
S609	10	12'-0"	X	X	SLAB @ RAIL POSTS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE. DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.



PARTIAL LONGITUDINAL SECTION

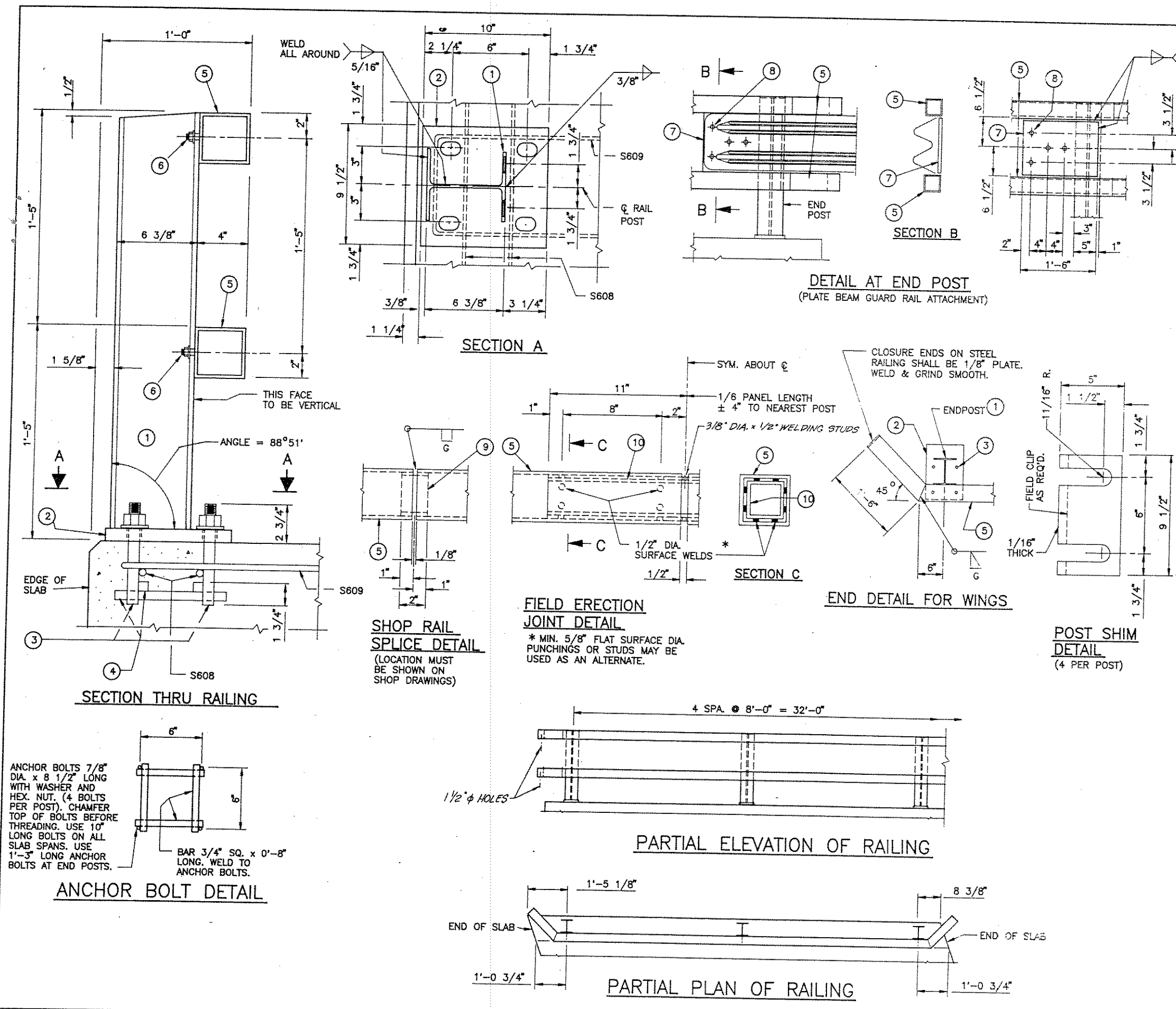
- DIMENSION IS GIVEN NORMAL TO ABUTMENT.
- ▣ DIMENSION IS GIVEN NORMAL TO CL OF ROADWAY.
- ▲ 3/4" CONTINUOUS V Drip GROOVE TERMINATE 2'-0" FROM Ea. ABUTMENT



CAMBER DIAGRAM

PROVIDE CAMBER AS SHOWN ABOVE TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE PLASTIC FLOW THIS DOES NOT INCLUDE AN ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/4 OF CAMBER VALUES SHOWN.

No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-105			
Const. Spec.	WIS. '89	Drawn By	T.L.
Plans Checked	S.R.L.		
SUPERSTRUCTURE			SHEET 5 OF 6 X 82686



- LEGEND**
- W5x25 WITH 1 1/4" DIA. HOLES ON EACH SIDE OF POST FLANGE FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POST NORMAL TO GRADE LINE.
 - PLATE 1"x9 1/2"x0'-10", WITH 1 1/16"x1 1/2" SLOTTED HOLES FOR ANCHOR BARS NO.3. WELD TO NO. 1 AS SHOWN.
 - A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION ANCHOR BAR 7/8" DIA. x 1'-3" LONG AT END POSTS AND 10" LONG AT ALL OTHER POST LOCATIONS FOR CONCRETE SLAB STRUCTURES AND 8 1/2" LONG AT ALL OTHER POST LOCATIONS FOR PRESTRESSED GIRDER STRUCTURES. (MIN. YIELD OF 92 K.S.I. AND ELONGATION OF 14%) WITH A325 NUT AND WASHER. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.
 - BAR 3/4" SQ. x 0'-8" LONG. WELD TO ANCHOR BAR NO. 3
 - TS 4x4x.25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A36. ATTACH TO NO. 1 WITH STUDS NO. 6.
 - 1 5/8" DIA. x 1 1/2" LONG SHOP WELDED STUDS, WITH HEX. NUT AND 2" WASHERS. 4 PER POSTS REQ'D. (2 REQ'D. AT EACH LOCATION.)
 - PLATE 3/4"x1'-0"x1'-6". WELD TO END RAIL POST AS SHOWN IN DETAIL. REQUIRED AT BEAM GUARD ATTACHMENTS ONLY.
 - 1" DIA. HOLES IN PLATE NO.7 FOR 7/8" DIA. A325 BOLTS W/HEX NUTS AND WASHERS.
 - SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 13/32".
 - TS 3x3x.25x1'-10" LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO.5 PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "TUBULAR RAILING TYPE 'F', WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS. POSTS BASE PLATES, NO.2, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

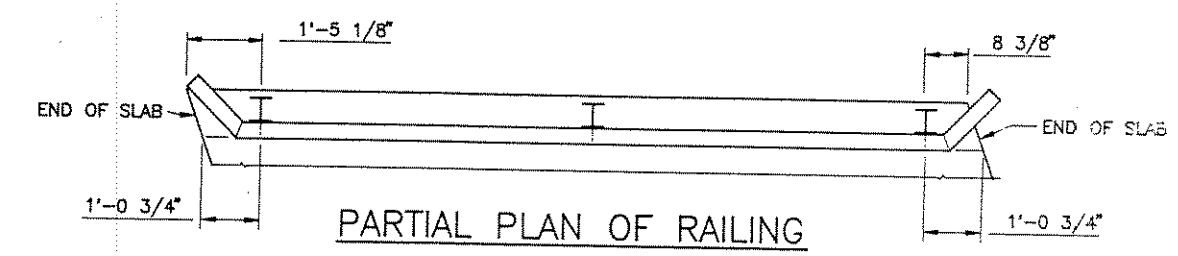
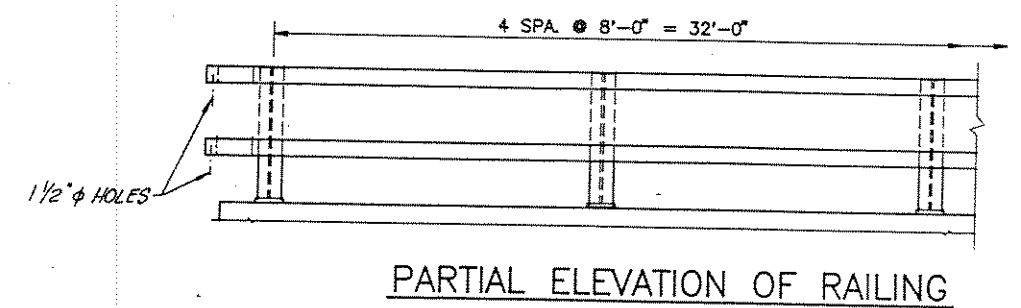
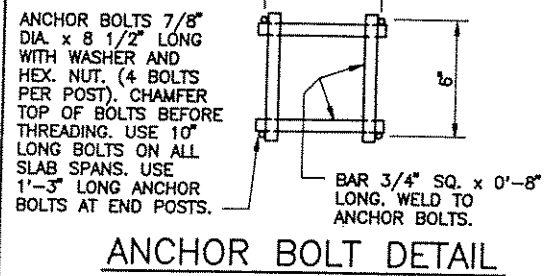
ALL MEMBERS INCLUDING UPPER 4" OF NO.3 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POSTS SHIMS AND PLATE NO.2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING SHALL BE GIVEN A NO.6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS. BLAST CLEANING IS NOT REQUIRED FOR COLD FORMED TUBING (5). EXCEPT TO REMOVE WELDING SLAG AND IMPERVIOUS SUBSTANCES. WELD WITH E70 ELECTRODES.



No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-105			
Const. Spec.	WIS. '89	Drawn By	Plans Checked
		T.L.	S.R.L.
TUBULAR RAILING TYPE "F"			SHEET 6 OF 6
X 82686			