

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

OXBO CREEK BRIDGE & APPROACHES

TOWN ROAD
LINCOLN COUNTY

STATE PROJECT NUMBER
9857-03-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9857-03-70	BRZ 3599(18)	1

INDEX OF SHEETS

Sheet No.	Title
1	
2	Typical Sections and Details
3-3.1	Estimate of Quantities
2	Miscellaneous Quantities
-	Right of Way Plat
5	Plan and Profile
6-6.4	Standard Detail Drawings
-	Sign Plates
8-8.5	Structure Plans
-	Computer Earthwork Data
9-9.1	Cross Sections

TOTAL SHEETS = 18

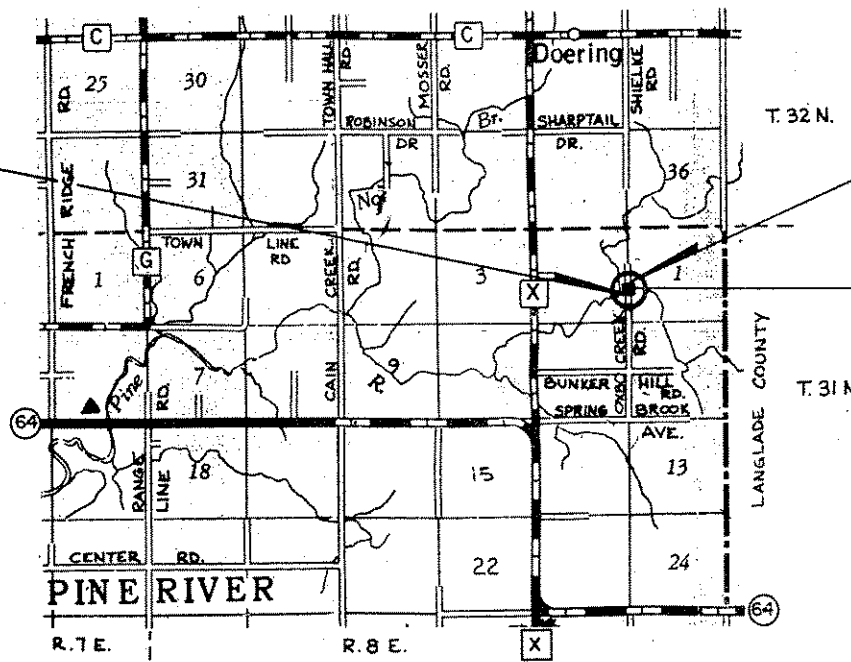
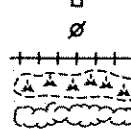


DESIGN DESIGNATION

A.D.T. (1989)	= 30
A.D.T. (2010)	= 35
D.H.V.	=
D.	= 60-40 %
T.(% A.D.T.)	= 14

CONVENTIONAL SIGNS

COUNTY LINE		COMBUSTIBLE FLUIDS (UNDER PRESSURE)	
CORPORATE LIMITS		UNDERGROUND UTILITIES	
PROPERTY LINE		GAS	
LOT LINE		ELECTRIC	
LIMITED HIGHWAY EASEMENT		TELEPHONE	
EXISTING RIGHT OF WAY		SERVICE PEDESTAL	
NEW RIGHT OF WAY		CABLE MARKER	
REFERENCE LINE		POWER POLE	
SLOPE INTERCEPT		TELEPHONE POLE	
ORIGINAL GROUND		RAILROADS	
MARSH OR ROCK PROFILE		MARSH	
CULVERT IN PLACE		WOODED AREA	
CULVERT REQUIRED			
CULVERT REQUIRED (Profile)			



BEGIN PROJECT
STA. 14 + 50
N = 498,700 (±100')
E = 2,141,400 (±100')

END PROJECT
STA. 18 + 60

STRUCTURE B-35-107

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.078 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
Michele Hed
HIGHWAY COMMISSIONER

ORIGINAL
PLANS PREPARED BY
BARRIENTOS & ASSOC., INC.
CONSULTING ENGINEERS
MADISON, WISCONSIN



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Surveyor BAI District Checker FWB
Designer BAI C.O. Checker RLC
District Supervisor RJS C.O. Coordinator LAS

APPROVED:

DATE: 11/10/89 James D. Brandler
DISTRICT DIRECTOR

APPROVED:

DATE: 12/5/89 Robert W. Berg
REGIONAL CHIEF ROAD DESIGN ENGINEER

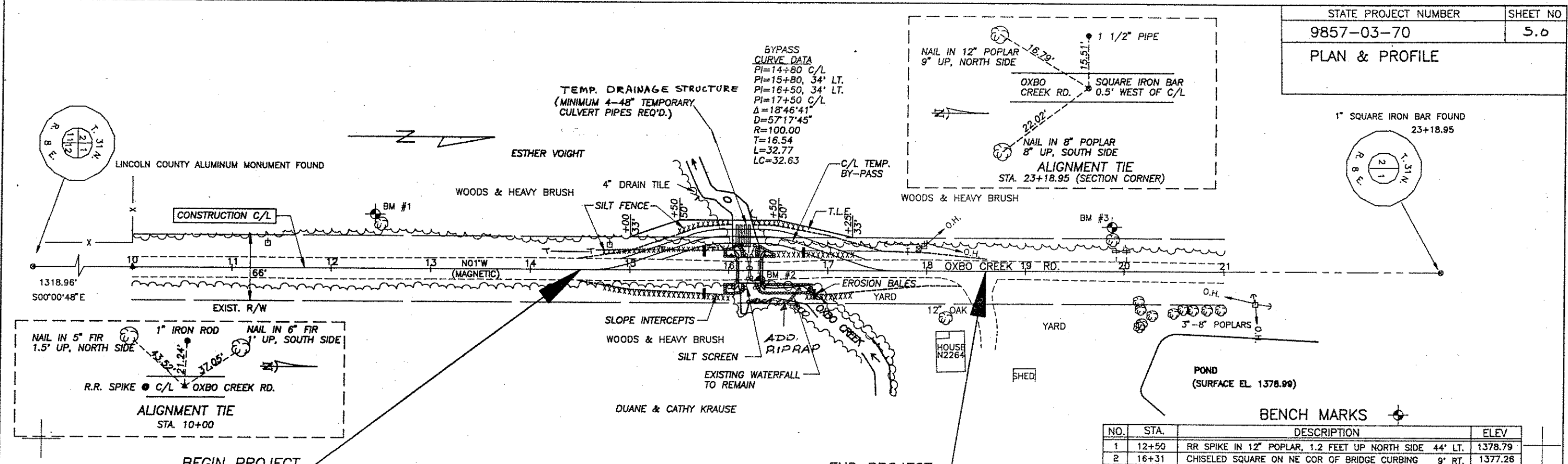
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5 WISCONSIN DIVISION

APPROVED:

DATE: _____
DIVISION ADMINISTRATOR

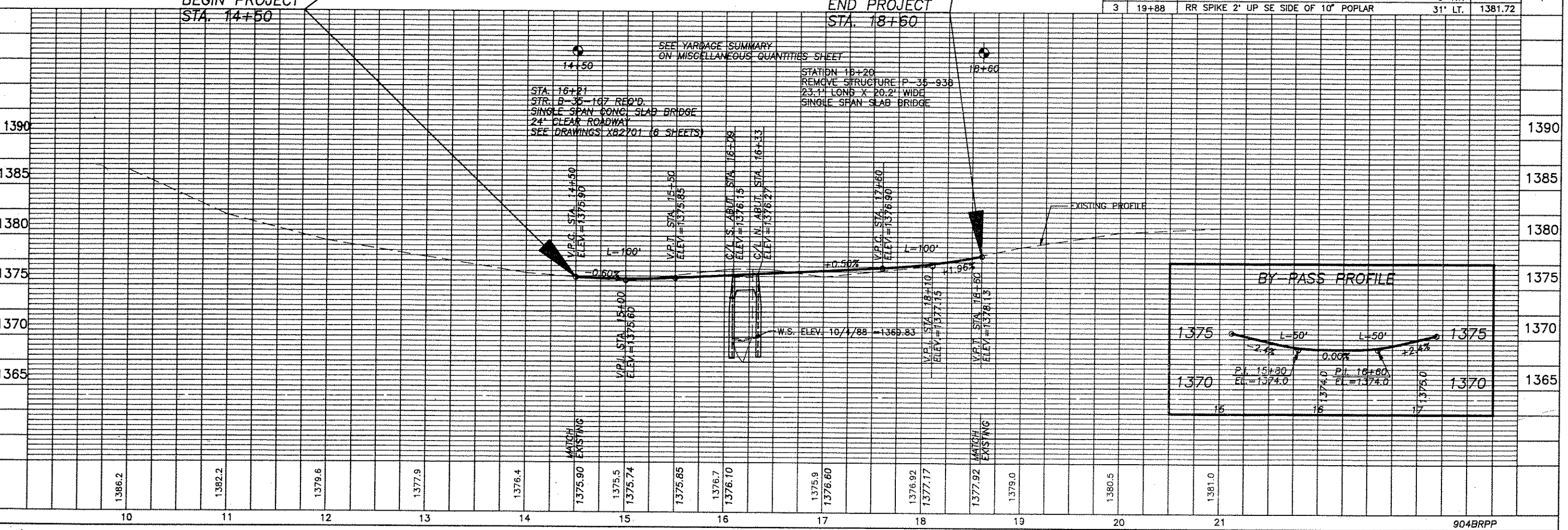
w/9832-1-70.
w/9859-5-70

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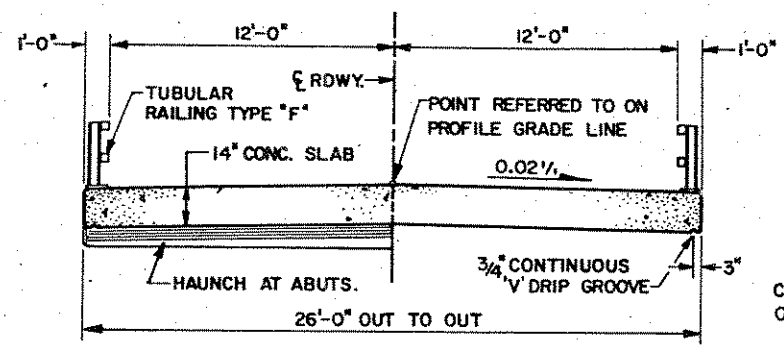


BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	12+50	RR SPIKE IN 12" POPLAR, 1.2 FEET UP NORTH SIDE	44' LT. 1378.79
2	16+31	CHISELED SQUARE ON NE COR OF BRIDGE CURBING	9' RT. 1377.26
3	19+88	RR SPIKE 2' UP SE SIDE OF 10" POPLAR	31' LT. 1381.72



* ANCHOR ASSEMBLY FOR STEEL PLATE BEAM TYPE GUARD RAIL



CROSS SECTION THRU ROADWAY

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE NOTED.
 THE SLOPES IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP TO THE EXTENT SHOWN ON THIS SHEET.
 JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M153 TYPE I, II, OR III OR M213.

THIS STRUCTURE WILL REPLACE P-35-938 WHICH IS A SINGLE SPAN CONCRETE SLAB 23.1' LONG x 20.2' WIDE.

DESIGN DATA (CONT.)

HYDRAULIC DATA:

DRAINAGE AREA	8.4 SQ. MI.
HIGHWATER ₁₀₀	EL. 1375.2
Q ₁₀₀	800 CFS.
WATERWAY AREA	92 SQ. FT.
VELOCITY	8.7 FPS.

ROADWAY OVERTOPPING

Q	N/A
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TRAFFIC DATA

A.D.T. (1989)	30
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DESIGN DATA

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 P.S.F.

RATINGS: DESIGN RATING — HS 20
 INVENTORY RATING — HS 21
 OPERATING RATING — HS 35
 MAX. STD. PERMIT VEHICLE LOAD — 180 KIPS

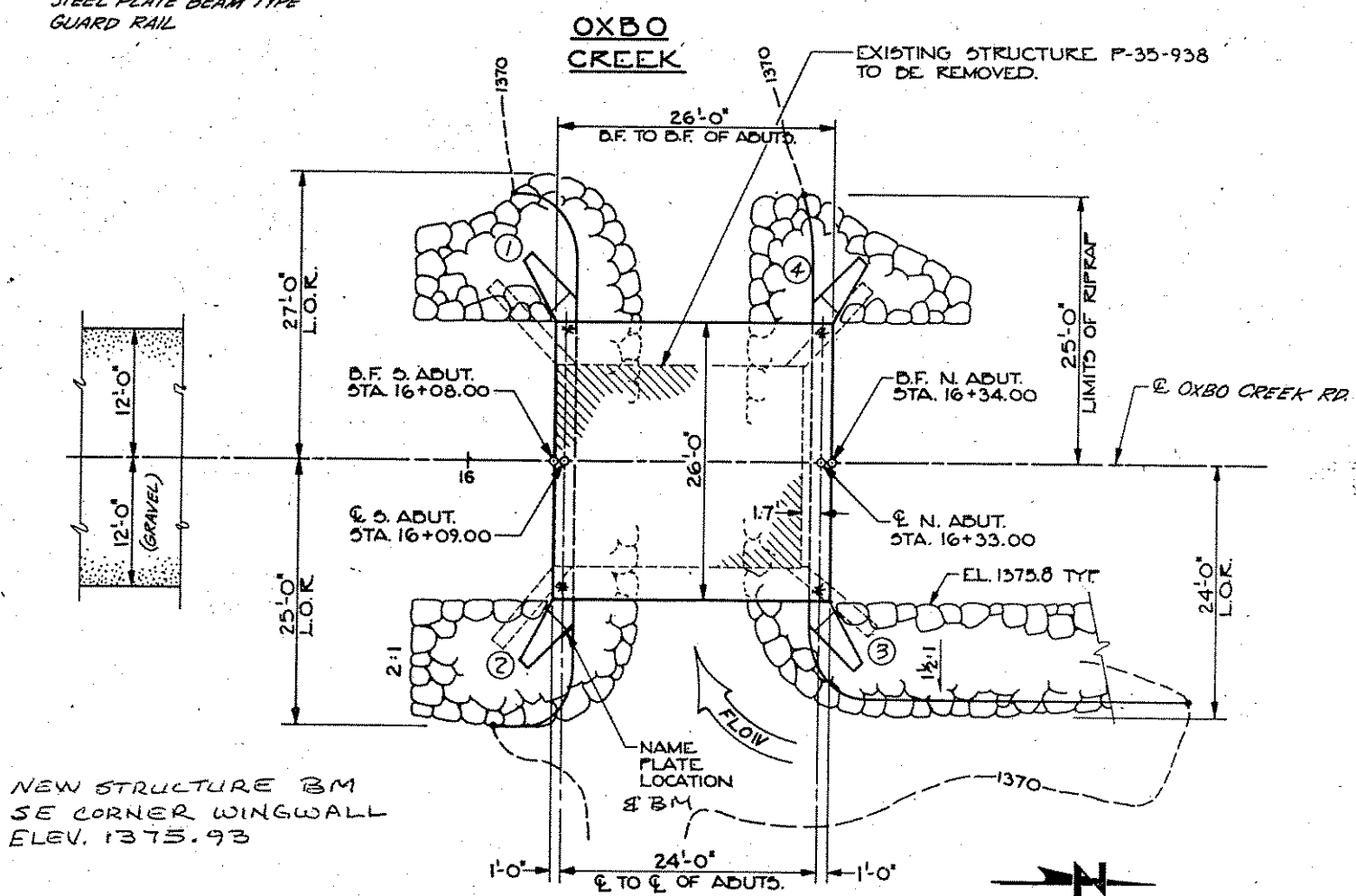
ALLOWABLE DESIGN STRESSES:

CONCRETE MASONRY — SLAB	f _c = 4,000 P.S.I.
— OTHER	f _c = 3,500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — GRADE 60	f _y = 60,000 P.S.I.

FOUNDATION DATA: ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL "H" PILES EST. 25'-0" LG. & DRIVEN TO A MIN. BEARING VALUE OF 30 TONS / PILE.

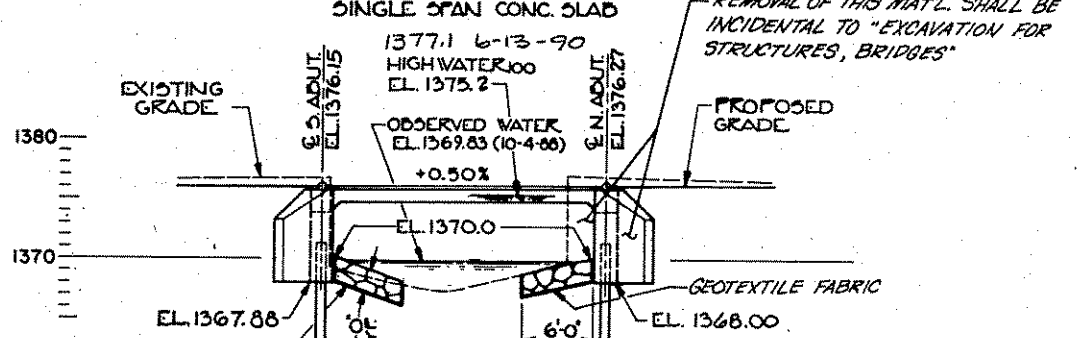
TOTAL ESTIMATED QUANTITIES

BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER	TOTAL
REMOVING OLD STRUCTURE STA. 16+21	L.S.	-	-	-	1
EXCAVATION FOR STRUCTURES, BRIDGES	L.S.	-	-	-	1
CONCRETE MASONRY, BRIDGES	C.Y.	20.0	20.0	32.0	72.0
HIGH STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LBS.	1,570	1,570	4,370	7,510
COATED HIGH STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LBS.	-	-	1,275	1,275
HEAVY RIPRAP	C.Y.	45	70	-	115
PROTECTIVE SURFACE TREATMENT	GAL.	-	-	3.0	3.0
GEOTEXTILE FABRIC, TYPE HR	S.Y.	67	101	-	168
STEEL PILING, DELIVERED & DRIVEN, HP 10 x 42	L.F.	150	150	-	300
TUBULAR RAILING TYPE "F" B-35-107	L.S.	-	-	-	1
NON-BID ITEMS					
FILLER	SIZE	-	-	-	1/2" & 3/4"
POLYVINYL CHLORIDE WATERSTOP	L.F.	30	30	-	60



NEW STRUCTURE BM SE CORNER WINGWALL ELEV. 1375.93

PLAN



ELEVATION

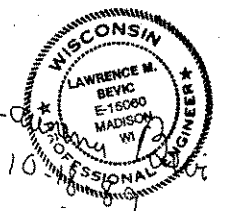
LIST OF DRAWINGS

1. GENERAL PLAN
2. SUBSURFACE EXPLORATION
3. ABUTMENTS
4. WINGS
5. SUPERSTRUCTURE
6. TUBULAR RAILING TYPE "F"

BENCH MARK LOCATION

NO.	STA.	LOCATION	ELEV.
1	12+50	R.R. SPIKE IN 12" POPLAR - N. SIDE 44' L	1378.79
2	16+31	CHISELED "D" N.E. CORNER BRIDGE 9' R	1377.26
3	19+80	R.R. SPIKE IN 10" POPLAR - S.E. SIDE 31' L	1381.72

DOT MON. SE WINGWALL - NEW STRUC. 1375.93



PLANS PREPARED BY:
 BARRIENTOS & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 3822 MINERAL PT. RD. - MADISON, WI. 53705
 PH. 608-238-6781

BRIDGE OFFICE CONTACT:
 (608) 266-8486, DAVE BABLER

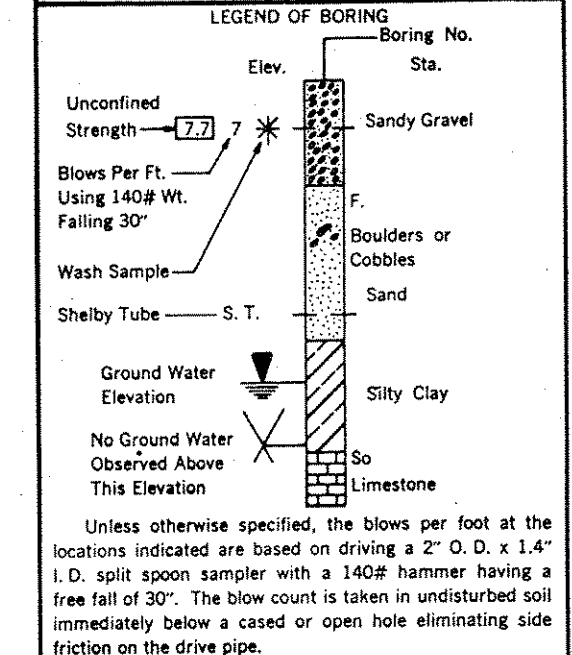
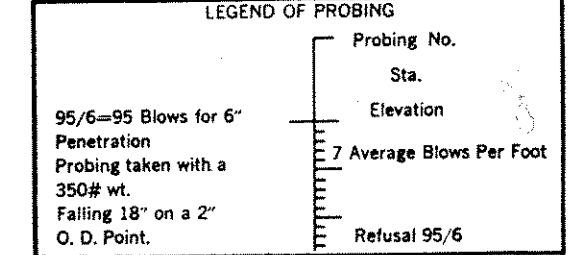
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-107 OXBO CREEK BRIDGE			
County LINCOLN	Town PINE RIVER	Design Spec. A.A.S.H.T.O. '88	Load HS 20
Designed By L.M.B.	Design Checked J.T.T.	Drawn By D.R.L.	Const. Spec. WIS. '89
Approved <i>[Signature]</i> State Bridge Engineer		Checked L.M.B.	
Date 11-6-87		SHEET 1 of 6	
GENERAL PLAN		X 82701	

ABBREVIATIONS

F — Fine	M — Medium	C — Coarse
Ws — Weathered	So — Sound	

MATERIAL SYMBOLS

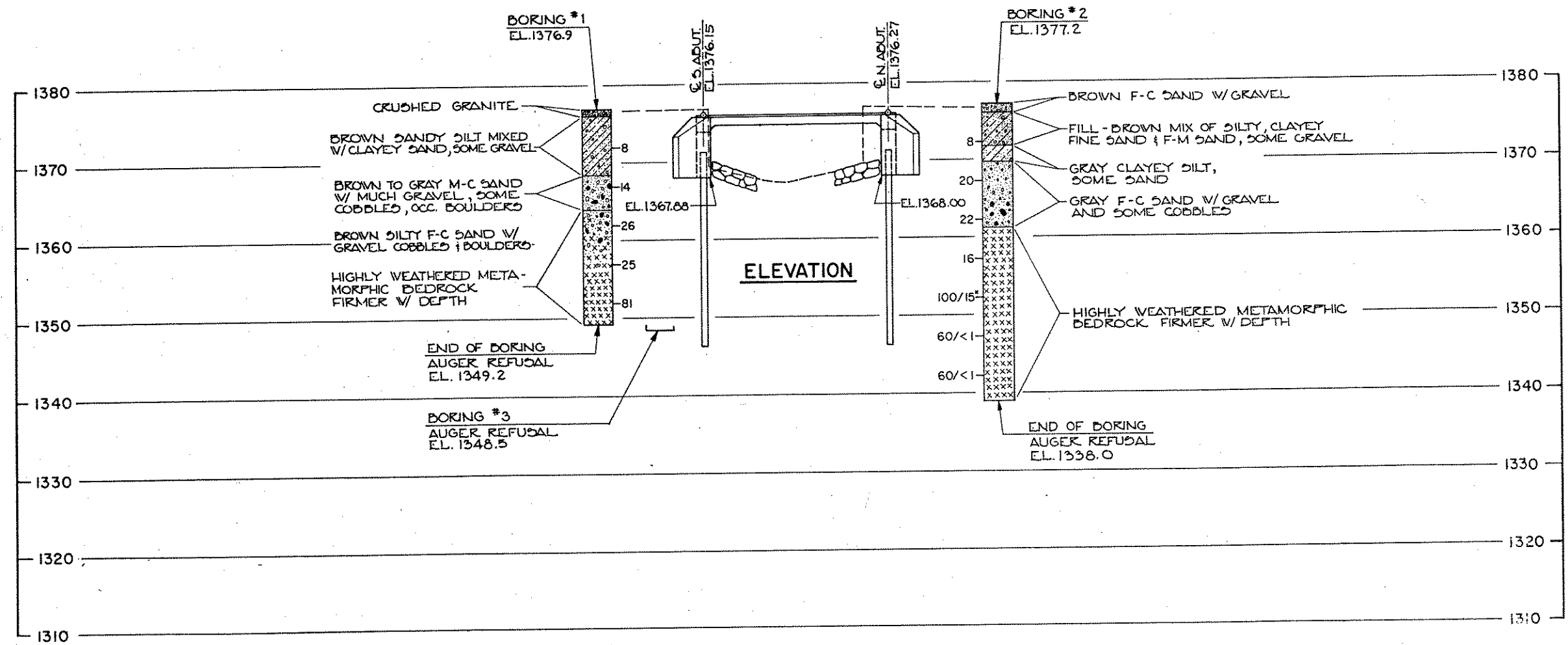
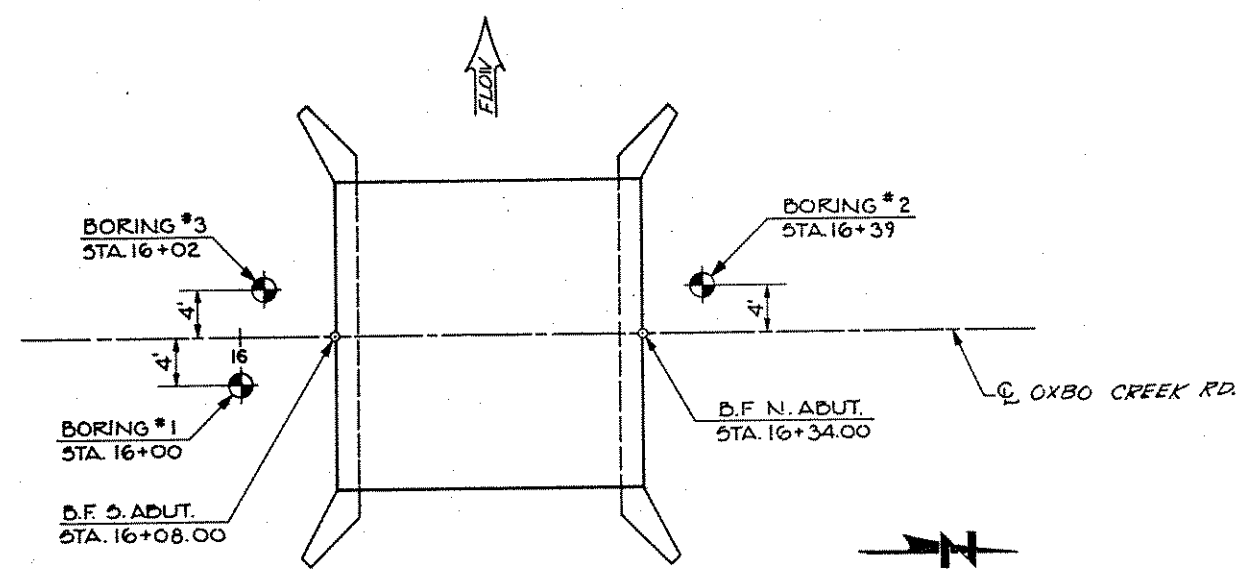
Topsoil	Silt	Sandstone
Sand	Peat	Limestone
Gravel	Clay	Igneous Rock



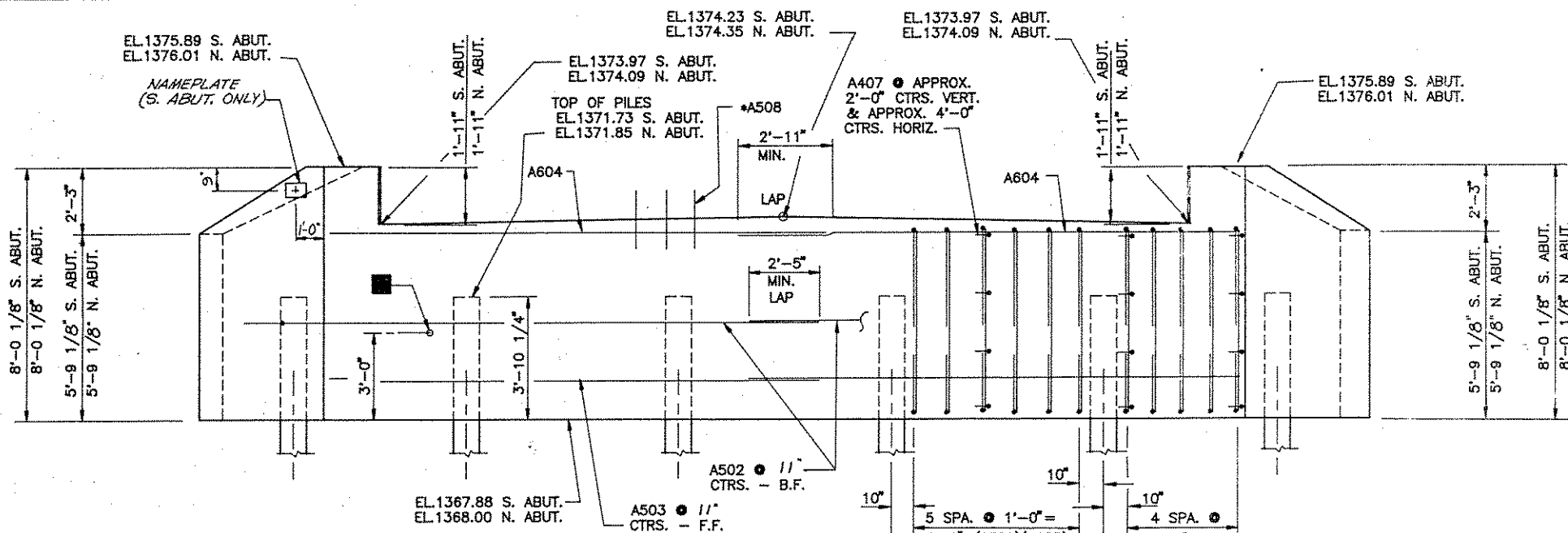
Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O. D. x 1.4" I. D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the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



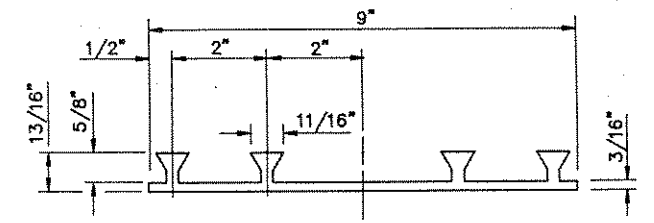
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-107			
Const. Spec.	WIS. '89	Drawn By	Plans Checked
		S.R.L.	L.M.D.
SUBSURFACE EXPLORATION			SHEET 2 OF 6
			X 82701



WINGS 2 & 4

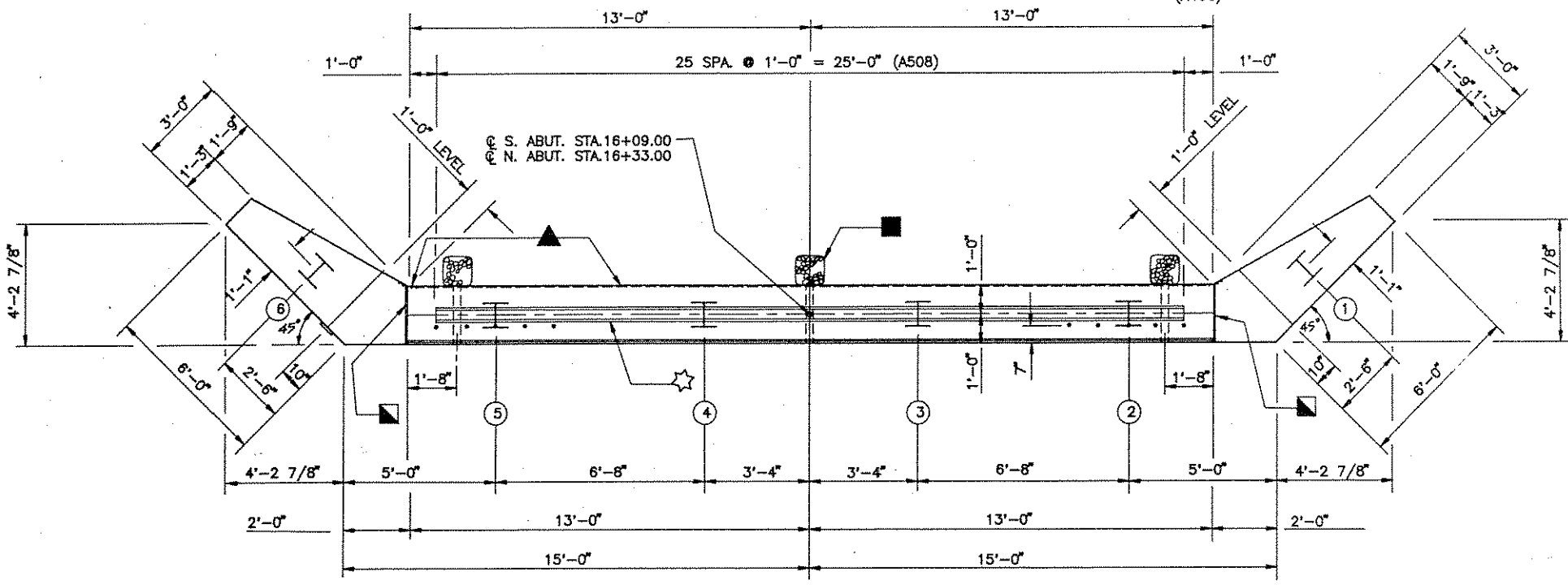
ELEVATION
LOOKING @ F.F.

WINGS 1 & 3



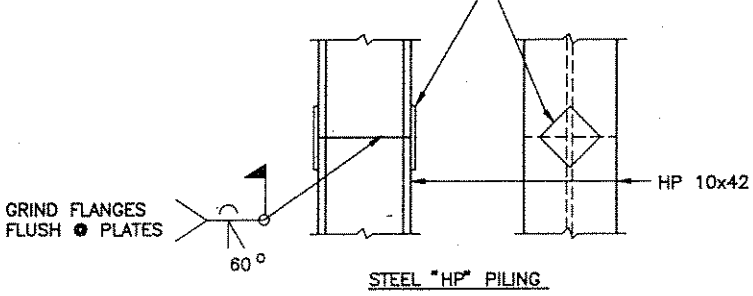
POLYVINYL CHLORIDE WATERSTOP

*A508 DOWEL BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.

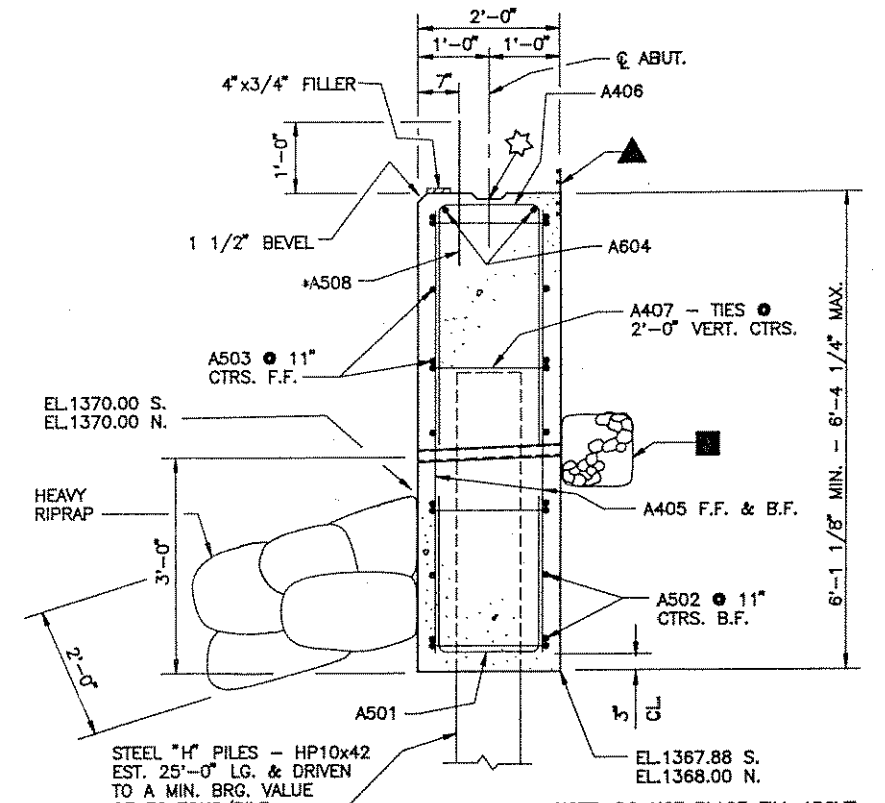


PLAN

3/8" x 5" x 5" PLATE



PILE SPLICE DETAILS

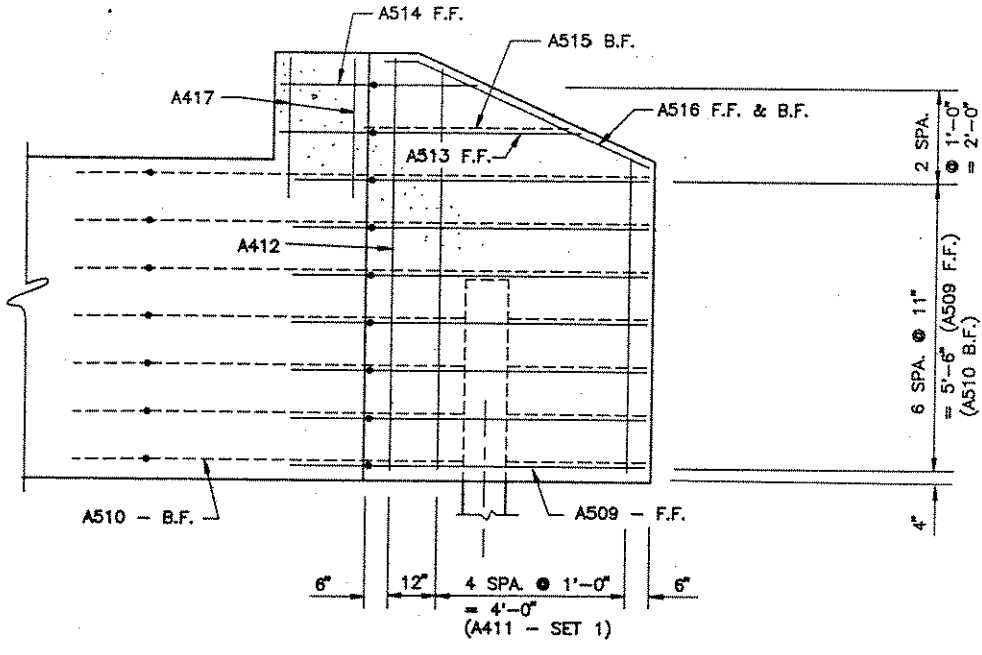


SECTION THRU ABUTMENT BODY

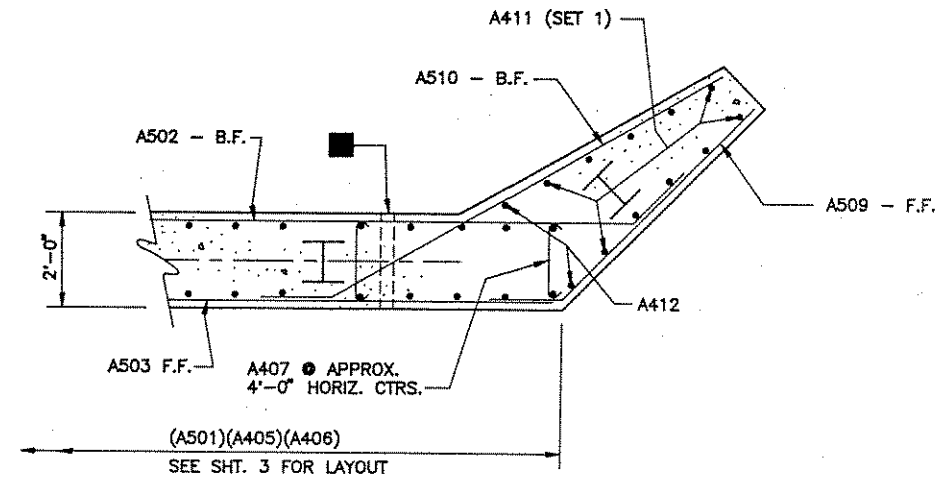
- 2" DIA. WEEP HOLE @ LOCATIONS SHOWN. USE FILTER CLOTH W/ SELECT GRANULAR MATERIAL @ EA. HOLE (ON B.F. 12"x12"x12" MIN.) COST TO BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES."
- POLYVINYL CHLORIDE WATERSTOP TO EXTEND FULL WIDTH OF ABUT. SEAT & VERT. FROM SEAT TO TOP OF WINGS. P.C.W. SHALL BE BUTT-SPLICED 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-35-107			
Const. Spec.	WIS. 89	Drawn By	T.R.L.
Plans Checked			L.M.B.
ABUTMENTS			SHEET 3 OF 6 X 82701

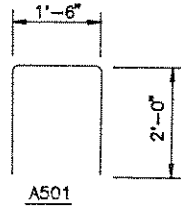
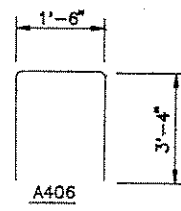
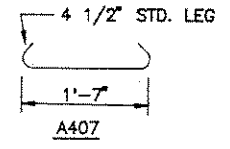


ELEVATION OF WINGS



TYP. PLAN SECTION
SHOWING BAR STEEL BELOW SEAT

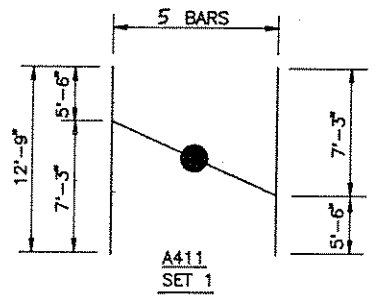
2" DIA. WEEP HOLE ● LOCATIONS SHOWN. USE FILTER CLOTH W/SELECT GRANULAR MATERIAL ● EA. HOLE (ON B.F. 12"x12"x12" MIN.) COST TO BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES."



BILL OF BARS 3,140[#] (2 ABUTS.)

MARK	NO.	LENGTH	BENT	CUT	LOCATION
A501	56	5'-3"	X		BODY - VERT. - STIRRUP ● BTM.
A502	28	19'-7"	X		BODY - HORIZ. - B.F.
A503	28	16'-3"			BODY - HORIZ. - F.F.
A604	8	16'-6"			BODY - HORIZ. - TOP
A405	56	5'-8"			BODY - VERT. B.F. & F.F.
A406	56	8'-0"	X		BODY - VERT. - STIRRUPS ● TOP
A407	64	2'-4"	X		BODY - HORIZ. TIES
A508	52	2'-0"			BODY - VERT. - DOWELS ● TOP
A509	28	7'-3"	X		WINGS - HORIZ. - F.F.
A510	28	10'-10"	X		WINGS - HORIZ. - B.F.
A411	20	12'-9"		X	WINGS - VERT. - F.F. & B.F.
A412	8	7'-7"			WINGS - VERT. - F.F. & B.F.
A513	4	5'-6"	X		WINGS - HORIZ. - F.F.
A514	4	5'-1"	X		WINGS - HORIZ. - F.F.
A515	4	4'-5"			WINGS - HORIZ. - B.F.
A516	8	5'-9"	X		WINGS - HORIZ. - F.F. & B.F.
A417	8	2'-9"			WINGS - VERT. - CORNERS

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

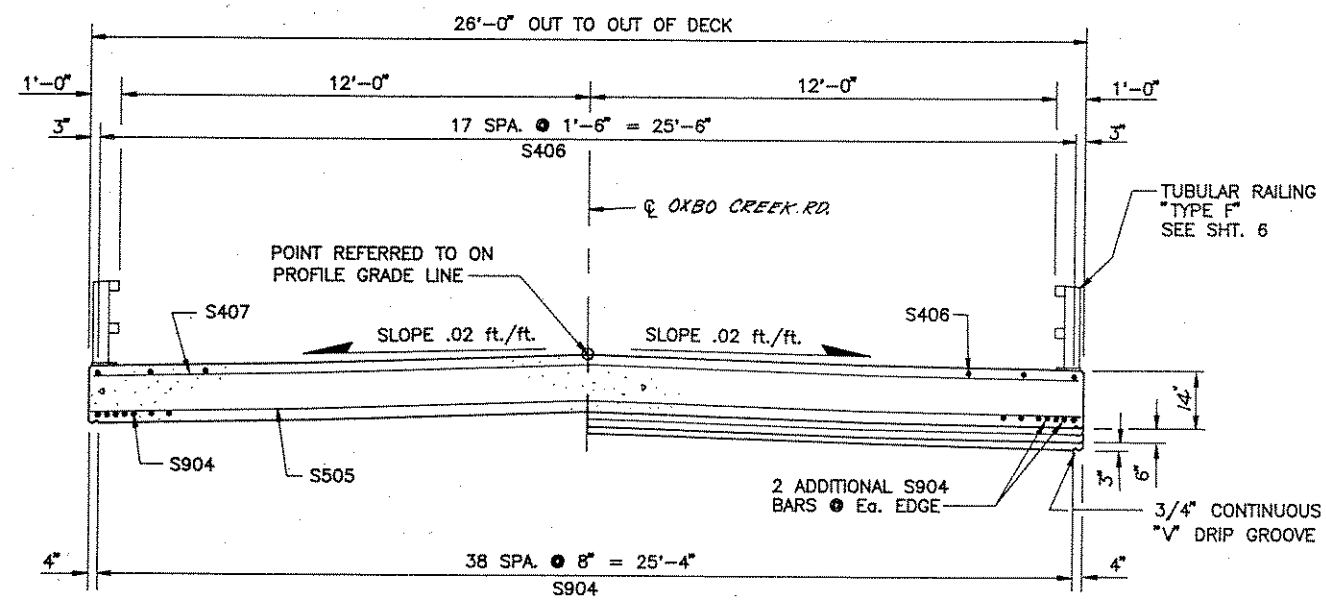


CUTTING DIAGRAMS

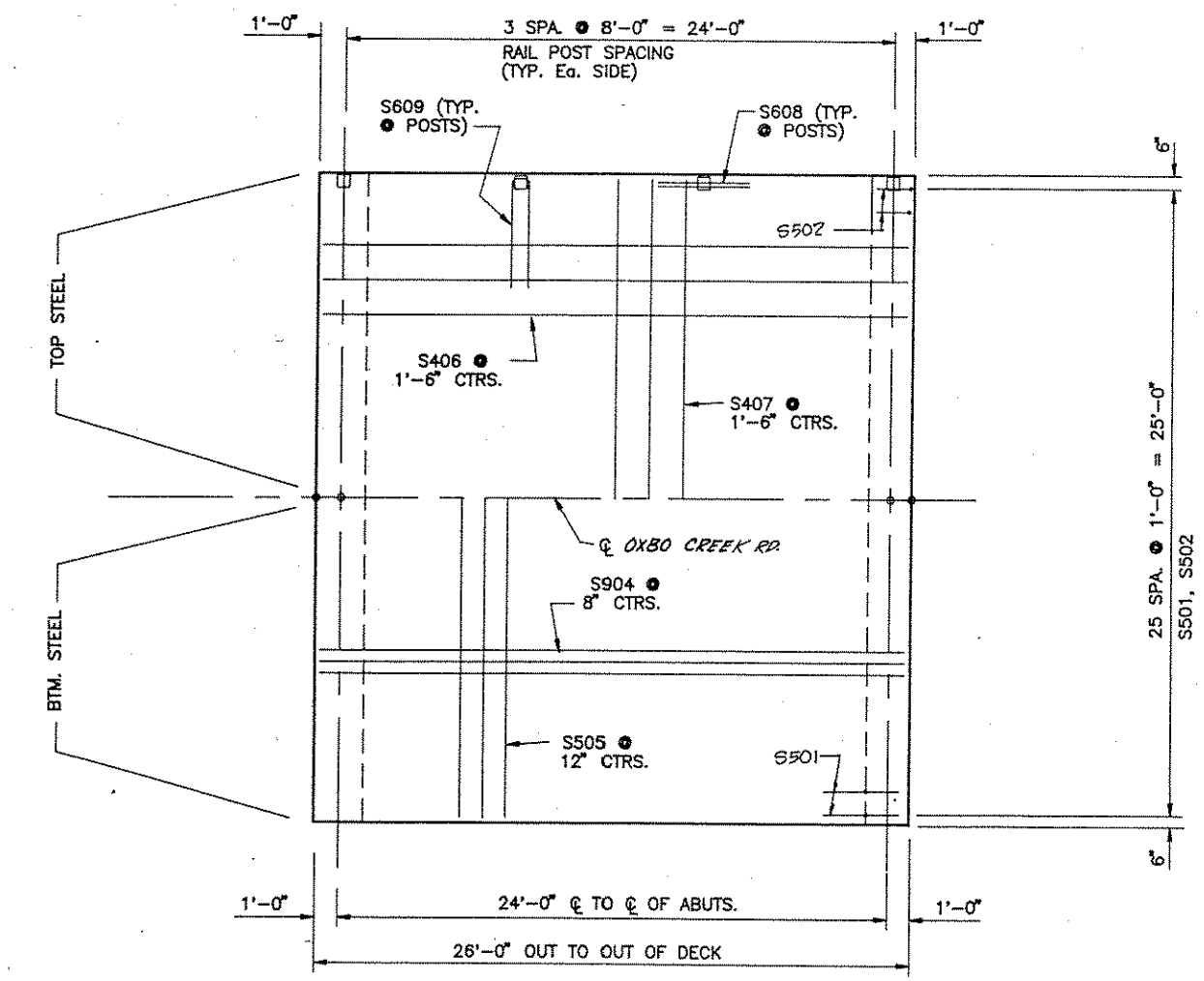
● CUT ALL BARS ALONG THIS LINE. MAKE ALL CUTS NORMAL TO BAR AXIS. BUNDLE AND MARK CUT BARS WITH BAR AND SET NUMBER.

MARK	"A"	"B"
A502	1'-6"	1'-1"
A509	1'-6"	1'-1"
A510	1'-6"	11"
A513	1'-9"	1'-3"
A514	1'-9"	1'-3"
A516	8"	4"

No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-107			
Const. Spec.	WIS. '89	Drawn By	T.R.L.
		Plans Checked	L.M.B.
WINGS			SHEET 4 OF 6 X 82701

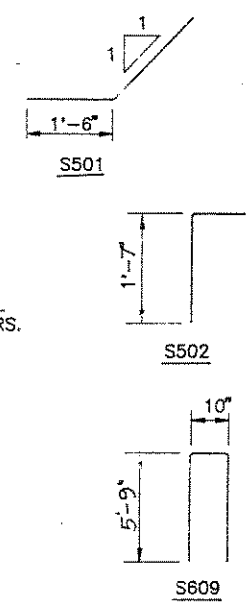


CROSS SECTION THRU ROADWAY



PLAN

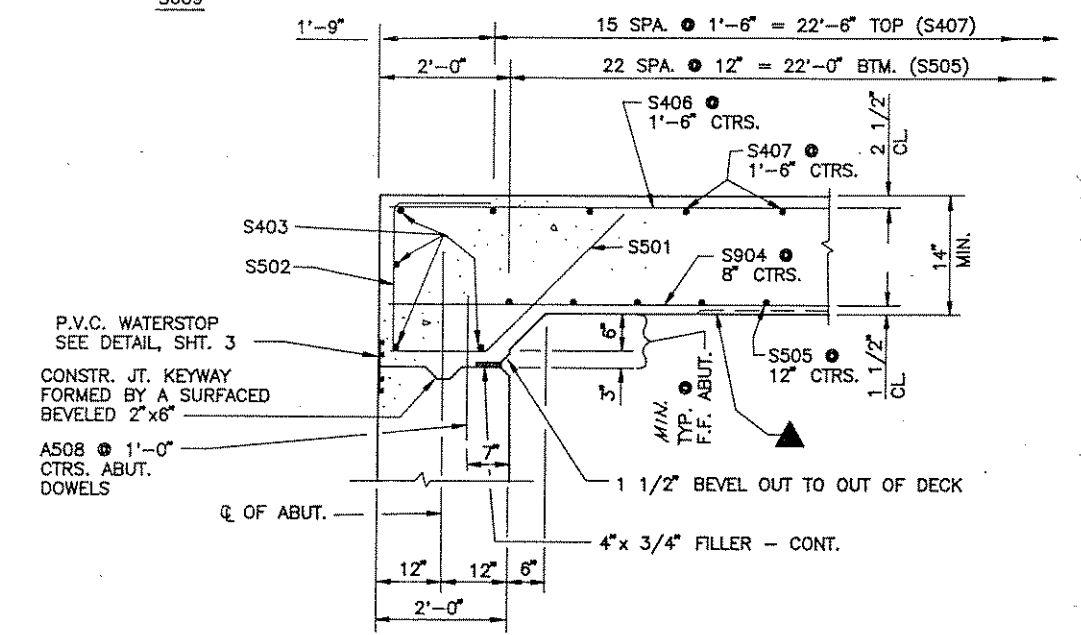
NOTE: ALTERNATE TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CTRS. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CTRS.



BILL OF BARS 4,370 (UNCOATED) 1,275 (COATED)

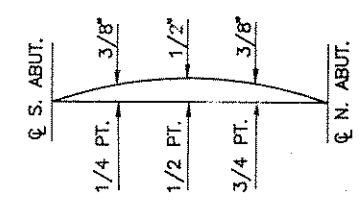
MARK	NO.	LENGTH	COAT	BENT	LOCATION
S501	52	3'-6"	X	X	HAUNCH @ ABUT. - VERT. STIRRUP
S502	52	2'-9"	X	X	HAUNCH @ ABUT. - VERT. STIRRUP
S403	8	25'-8"	X		HAUNCH @ ABUT. HORIZ.
S904	43	25'-8"			SLAB - LONGIT. - BTM.
S505	23	25'-8"			SLAB - TRANSV. - BTM.
S406	18	25'-8"	X		SLAB - LONGIT. - TOP
S407	16	25'-8"	X		SLAB - TRANSV. - TOP
S608	16	4'-0"	X		SLAB @ RAIL POSTS - 2 Ea. POSTS
S609	8	12'-0"	X	X	SLAB @ RAIL POSTS

THE FIRST DIGIT, OR THE FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.



PARTIAL LONGITUDINAL SECTION

▲ 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.

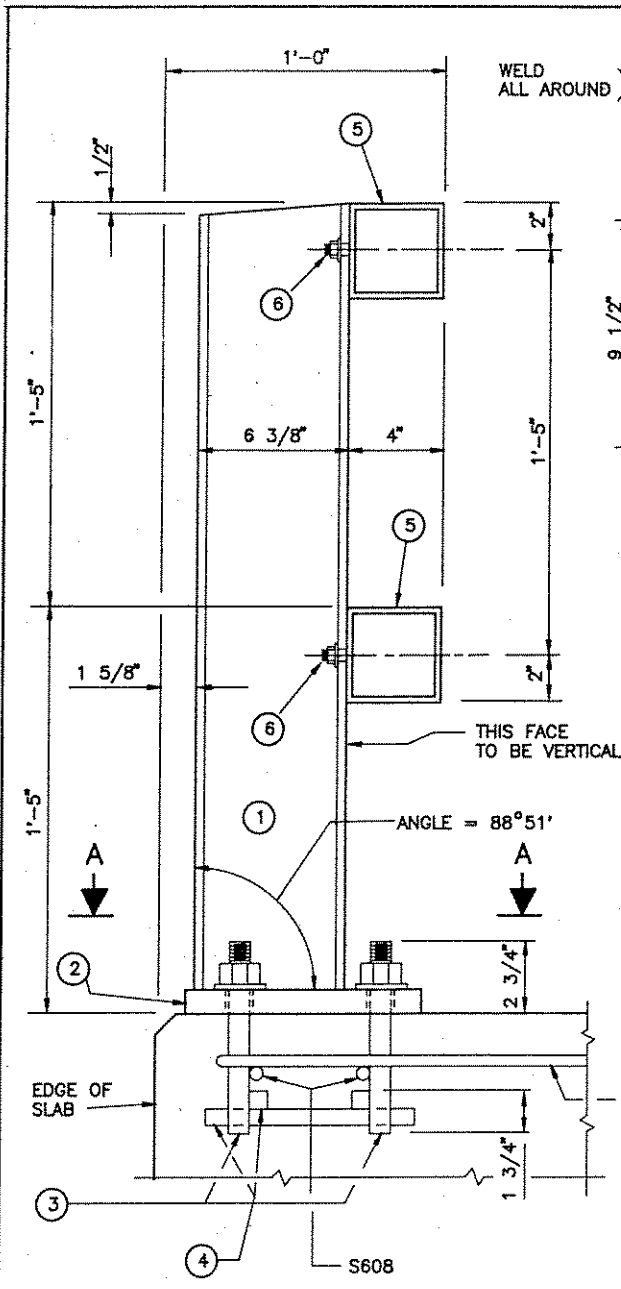
No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-107			
Const. Spec.	WIS '89	Drawn By	T.L.
		Plans Checked	L.M.B.
SUPERSTRUCTURE			SHEET 5 OF 6 X 82701

LEGEND

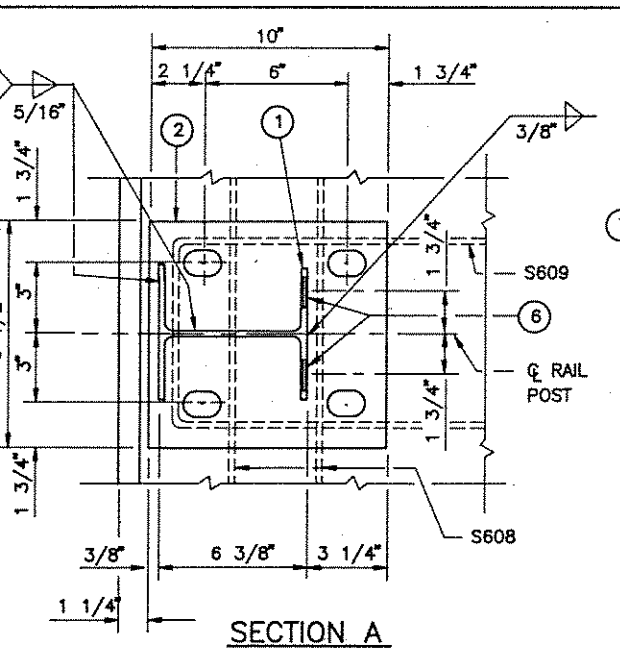
- ① W6x25 WITH 1 1/4" DIA. HOLES ON EACH SIDE OF POST FLANGE. FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POST NORMAL TO GRADE LINE.
- ② PLATE 1"x9 1/2"x0'-10". WITH 1 1/16"x1 1/2" SLOTTED HOLES FOR ANCHOR BARS NO.3. WELD TO NO. 1 AS SHOWN.
- ③ A449 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.
- ④ BAR 3/4" SQ.x0'-8" LONG. WELD TO ANCHOR BAR NO. 3
- ⑤ TS 4x4x.25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A36. ATTACH TO WITH STUDS NO. 6.
- 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.)
- ⑦ PLATE 3/4"x1'-0"x1'-6". WELD TO END RAIL POST AS SHOWN IN DETAIL REQUIRED AT BEAM GUARD ATTACHMENTS ONLY.
- ⑧ 1" DIA. HOLES IN PLATE NO.7 FOR 7/8" DIA. A325 BOLTS W/HEX NUTS AND WASHERS.
- ⑨ SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 13/32".
- ⑩ 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. x1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

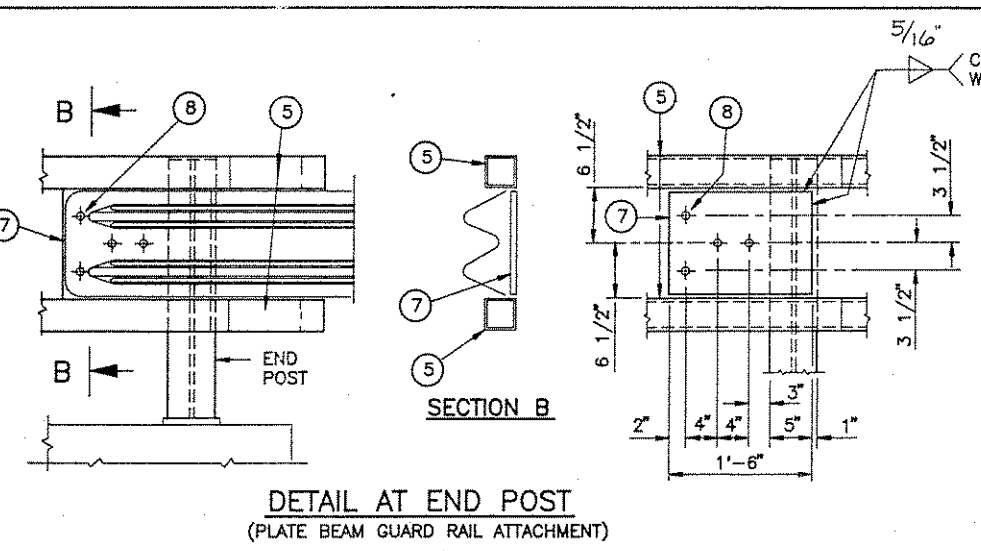
BID ITEM SHALL BE "TUBULAR RAILING TYPE 'F'. WHICH INCLUDES ALL ITEMS SHOWN.
 RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.
 POSTS BASE PLATES, NO.2, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE 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.



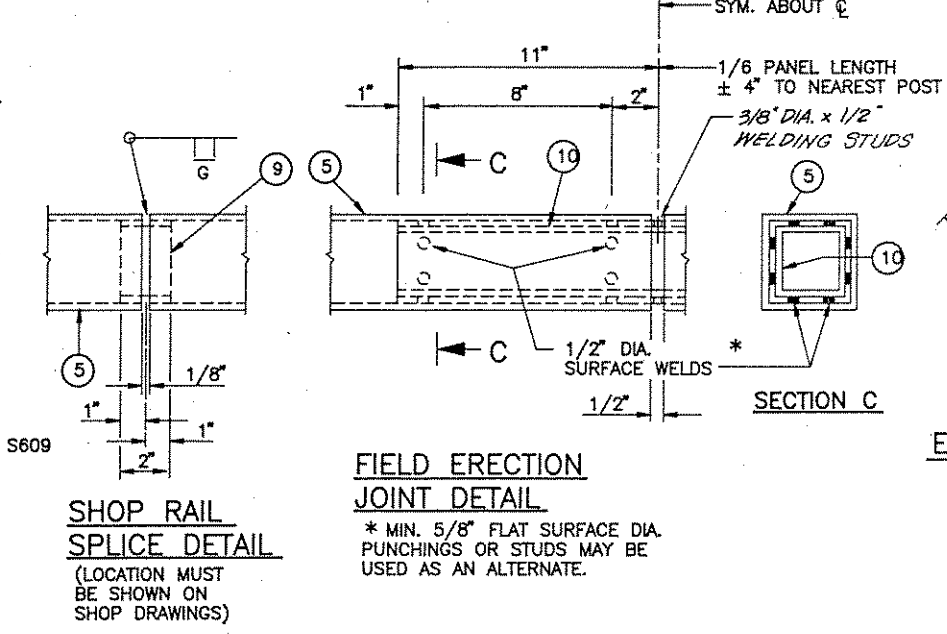
SECTION THRU RAILING



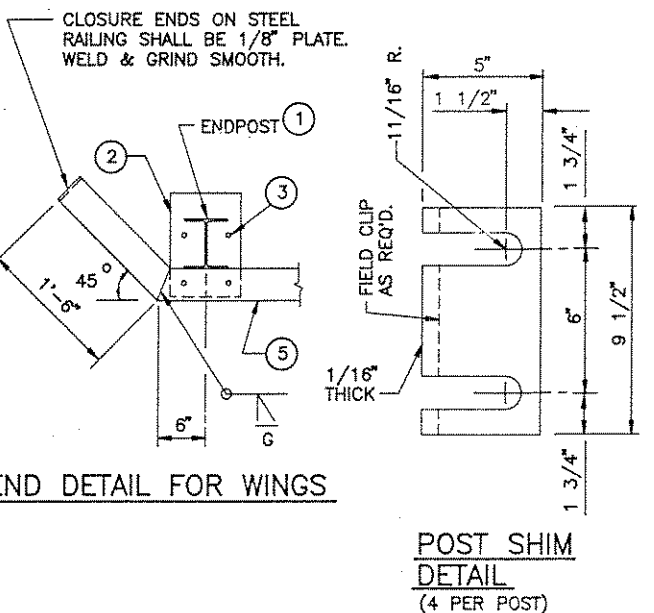
SECTION A



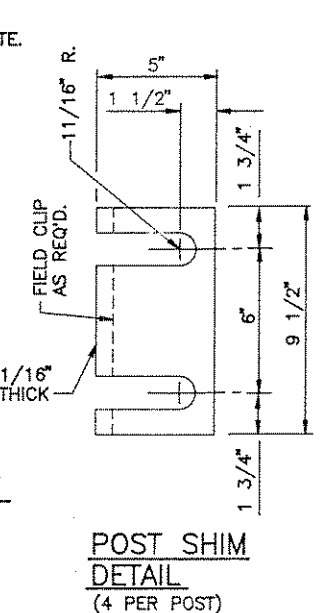
**DETAIL AT END POST
(PLATE BEAM GUARD RAIL ATTACHMENT)**



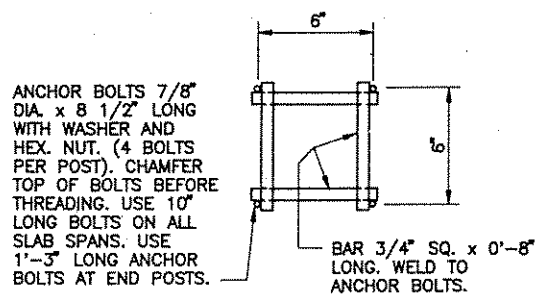
**FIELD ERECTION
JOINT DETAIL**



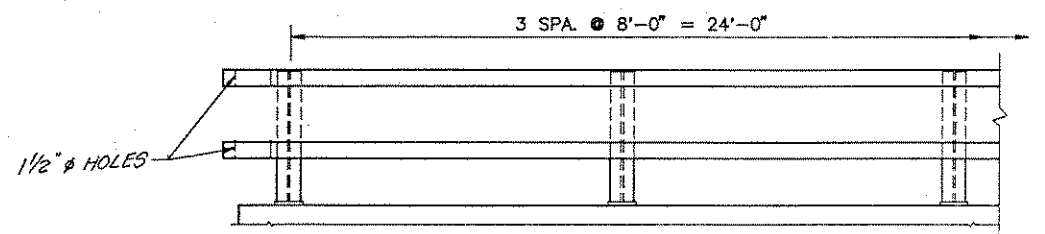
END DETAIL FOR WINGS



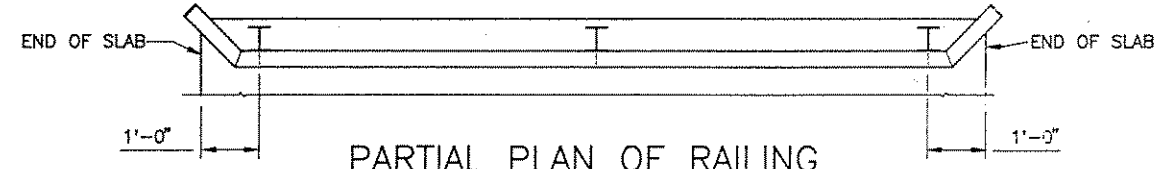
**POST SHIM
DETAIL
(4 PER POST)**



ANCHOR BOLT DETAIL



PARTIAL ELEVATION OF RAILING



PARTIAL PLAN OF RAILING

No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-107			
Const. Spec.	WIS. '89	Drawn By	T.L.
			Plans Checked
TUBULAR RAILING TYPE "F"			SHEET 6 OF 6
			X82701