

AS BUILT PLAN

STATE OF WISCONSIN  
**DEPARTMENT OF TRANSPORTATION**

PLAN OF PROPOSED IMPROVEMENT

**BIG PINE CREEK BRIDGE AND APPROACHES**

C.T.H. "H"  
**LINCOLN COUNTY**

STATE PROJECT NUMBER  
**9427-01-70**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9427-01-70	—	—

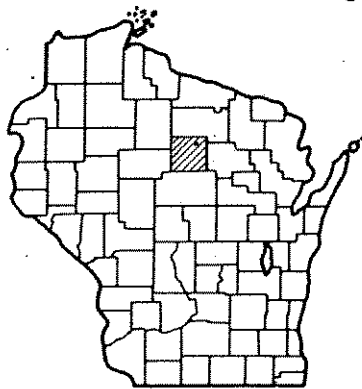
Index of Sheets

Sheet No.	Title
1	Typical Sections and Details
2	Estimate of Quantities
3-3.1	Miscellaneous Quantities
—	Right of Way Plat
5	Plan and Profile
6-6.6	Standard Detail Drawings
—	Standard Sign Plates
8.6	Structure Plans
—	Computer Earthwork Data
9-9.1	Cross Sections

TOTAL SHEETS = 21

Project Engineer: Donohue & Associates  
 Eugene Seidler, PR  
 Project Personnel: Indexed in Diary #

Contractor: Ruzic Construction Co.  
 Subs: American Asphalt of Wis.  
 Barricade Flasher Service  
 Central Sand & Gravel, Inc.  
 Red Cedar Steel Erectors, Inc.  
 Timme, Inc.  
 Traffic Signing & Marking, Inc.



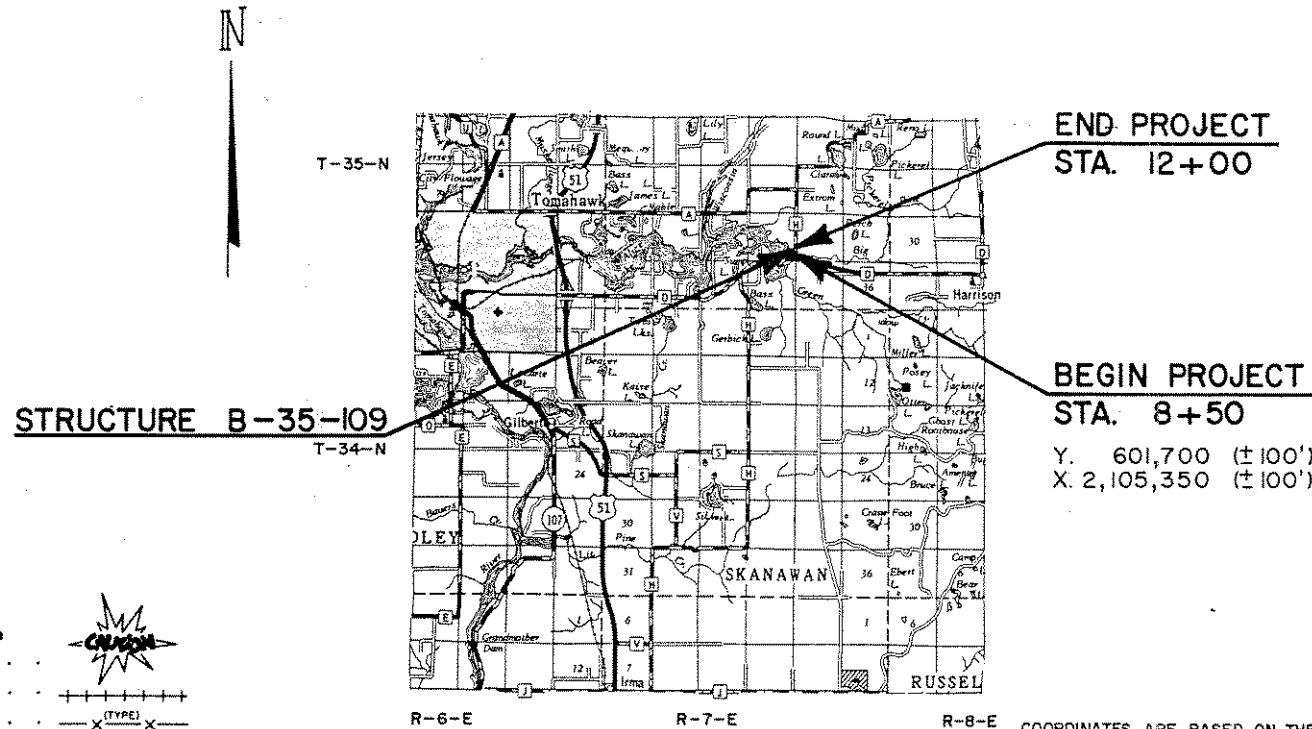
Design Designation

A.D.T. 1989	=	190
A.D.T. 2009	=	230
D.H.V. 2009	=	40
D.	=	60/40
T.	=	6 %

Conventional Signs

County Line	-----
Township or Range Line	-----
Section Line	-----
Corporate or City Limits	-----
Property line	-----
Lot Line	-----
Existing Right of Way Line	-----
New Right of Way Line	-----
Base or Survey Line	-----
Slope Intercept	-----
Existing Roadway or Private Entrance	-----

Caution Symbol (Combustible fluids under pressure)	
Railroads	-----
Fence	-----
Culverts in Place	-----
Culverts Required	-----
Power Pole	-----
Telephone or Telegraph Pole	-----
Right of Way Markers	-----
Marsh	-----
Wooded Area	-----
Grade Elevation	-----



STRUCTURE B-35-109

END PROJECT  
 STA. 12+00

BEGIN PROJECT  
 STA. 8+50

Y. 601,700 (±100')  
 X. 2,105,350 (±100')



Total Net Length of Centerline = 0.066 Mi. (Rural)

COORDINATES ARE BASED ON THE WISCONSIN COORDINATE SYSTEM, CENTRAL ZONE, AND ARE SCALED FROM THE U.S.G.S. TOPOGRAPHIC MAP, HARRISON, WISCONSIN QUADRANGLE FOR IDENTIFICATION ONLY.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO U.S.G.S. DATUM, A CHISELED SQUARE ON THE N.E. WINGWALL OF THE EXISTING BRIDGE, ELEVATION 1462.23.

APPROVED FOR  
 LINCOLN COUNTY

10/02/89 DATE Michael L. Heup COMMISSIONER

ORIGINAL PLANS  
 PREPARED BY

**NSA** MID-STATE ASSOCIATES, INC.  
 1230 S. Blvd., Baraboo, WI 53913

**WISCONSIN**  
 MARVIN S. RUHLAND  
 E 12125  
 BARABOO  
 WISCONSIN  
 PROFESSIONAL ENGINEER

Marvin S. Ruhlend  
 ENGINEER  
 9-26-89 DATE

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

Surveyor MID-STATE ASSOC. District Checker F.W.B.  
 Designer MID-STATE ASSOC. C.O. Checker DL  
 District Supervisor R.J.S. C.O. Coordinator L.A.S.

Approved:  
 Date 12-8-89 James D. Heurlelier District Director

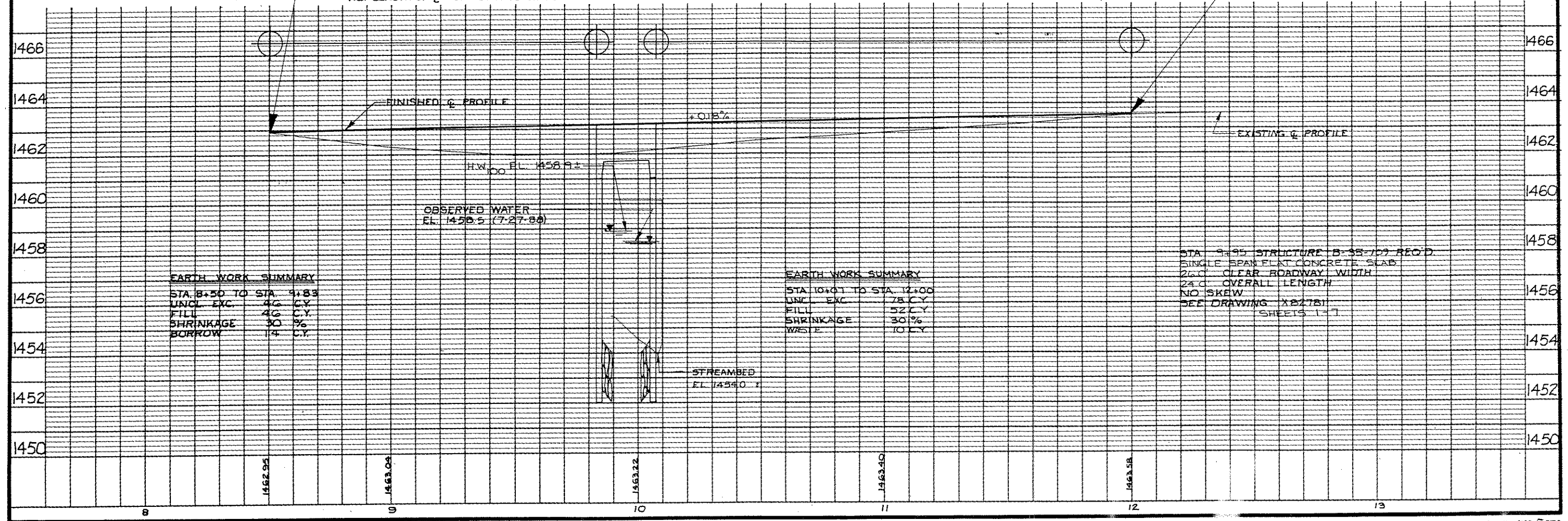
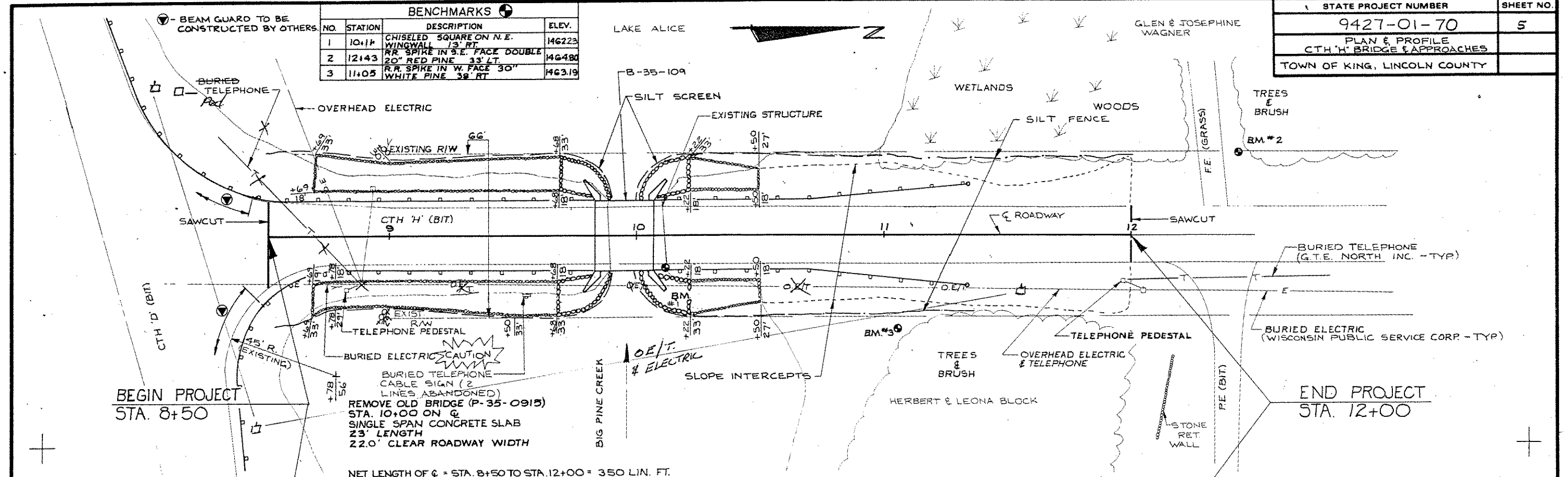
Approved:  
 Date 12/28/89 Robert W. Berg Regional Chief Road Design Engineer

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

Approved:  
 Date \_\_\_\_\_ Division Administrator

STATE PROJECT NUMBER	9427-01-70	SHEET NO.	5
PLAN & PROFILE		TOWN OF KING, LINCOLN COUNTY	

BENCHMARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	10+11	CHISELED SQUARE ON N.E. WINGWALL 13' RT.	1462.23
2	12+43	RR SPIKE IN S.E. FACE DOUBLE 20' RED PINE 33' LT.	1464.80
3	11+05	RR SPIKE IN W. FACE 30' WHITE PINE 38' RT.	1463.19



EARTH WORK SUMMARY	
STA. 8+50 TO STA. 9+83	
UNCL. EXC.	46 C.Y.
FILL	46 C.Y.
SHRINKAGE	30 %
BORROW	14 C.Y.

EARTH WORK SUMMARY	
STA. 10+01 TO STA. 12+00	
UNCL. EXC.	78 C.Y.
FILL	52 C.Y.
SHRINKAGE	30 %
WASTE	10 C.Y.

STA. 9+95 STRUCTURE B-35-109 RECD.  
 SINGLE SPAN FLAT CONCRETE SLAB  
 22.0' CLEAR ROADWAY WIDTH  
 24.0' OVERALL LENGTH  
 NO SKEW  
 SEE DRAWING 122781  
 SHEETS 1-7

BENCHMARKS				STATE PROJECT NUMBER	SHEET NO.
NO.	STA.	DESCRIPTION	ELEV.	9427-01-70	8.0
1	10+11	CHISELED SQUARE ON N.E. WINGWALL, 13' RT.	1462.23		
2	12+43	R.R. SPIKE IN S.E. FACE DBL. 20" RED PINE, 33' LT.	1464.80		
3	11+05	R.R. SPIKE IN W. FACE 30" WHITE PINE, 38' RT.	1463.19	NEW STRUCTURE 'BM' DOT MON. SE WINGWALL ELEV. 1462.93	

**DESIGN DATA**

**LIVELOAD**

DESIGN RATING : HS-20  
 INVENTORY RATING : HS-22  
 OPERATIONAL RATING : HS-37

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.  
 MAX. STD. PERMIT VEHICLE LOAD = 180 KIPS  
 ALLOWABLE DESIGN STRESSES:

CONCRETE MASONRY - SLAB  $f_c' = 4,000$  P.S.I.  
 - ALL OTHER  $f_c' = 3,500$  P.S.I.  
 HIGH STRENGTH AND COATED HIGH STRENGTH  
 BAR STEEL REINFORCEMENT, GRADE 60  $f_y = 60,000$  P.S.I.

**FOUNDATION DATA:**

ABUTMENTS SHALL BE SUPPORTED ON HP 10x42 STEEL PILING DRIVEN TO A MIN. BEARING VALUE OF 30 TONS PER PILE. ESTIMATED PILE LENGTHS 30'-0" AT BOTH ABUTMENTS.

**HYDRAULIC DATA:**

100 YEAR FREQUENCY  
 DRAINAGE AREA 31 SQ. MI.  
 $Q_{100}$  400 C.F.S.  
 VELOCITY 5.2 F.P.S.  
 WATERWAY AREA 78 SQ. FT.  
 HIGH WATER<sub>100</sub> ELEVATION 1458.9 ±  
 ROADWAY OVERFLOW DESIGN FREQUENCY N/A

**TRAFFIC DATA:**

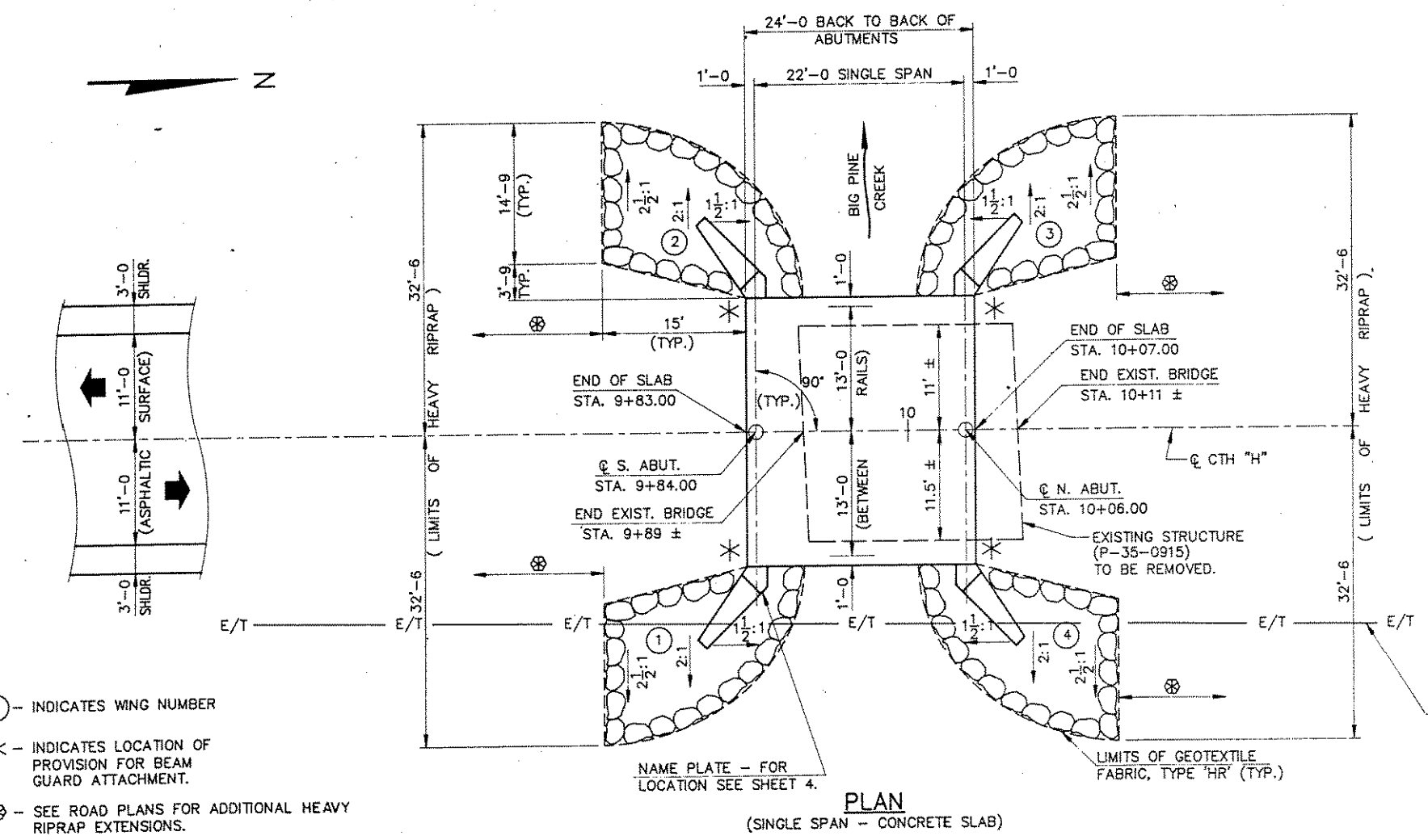
A.D.T. (1989) = 190  
 A.D.T. (2009) = 230

**LIST OF DRAWINGS - (X82781)**

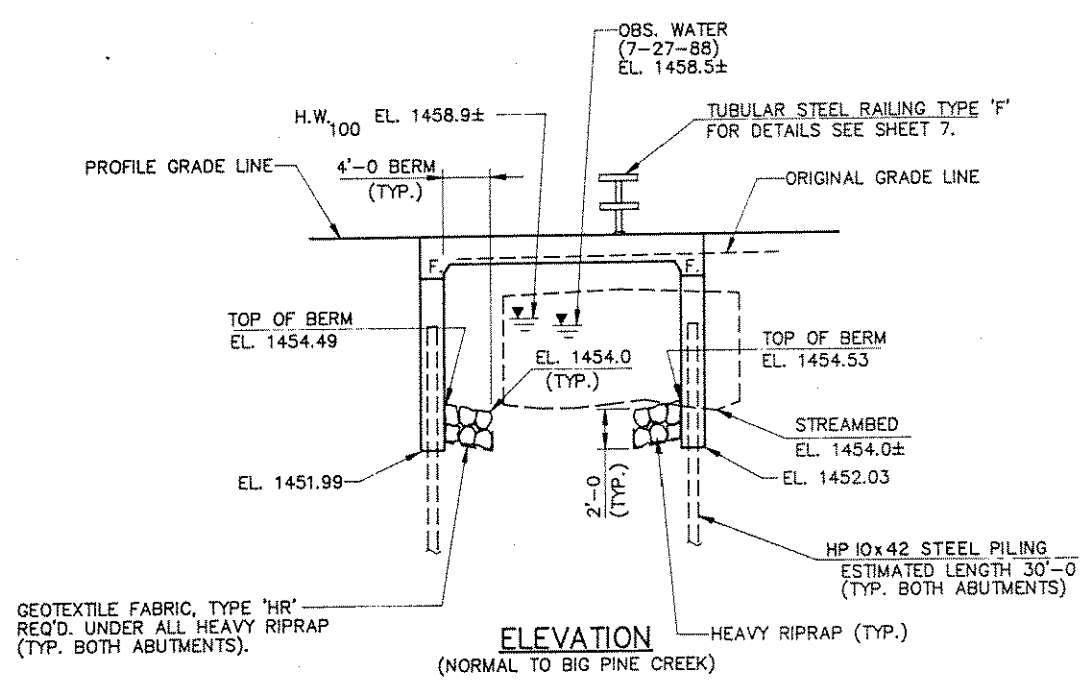
1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. TUBULAR STEEL RAILING, TYPE 'F'



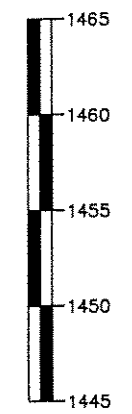
*Marvin S. Ruhland*



**PLAN**  
(SINGLE SPAN - CONCRETE SLAB)



**ELEVATION**  
(NORMAL TO BIG PINE CREEK)

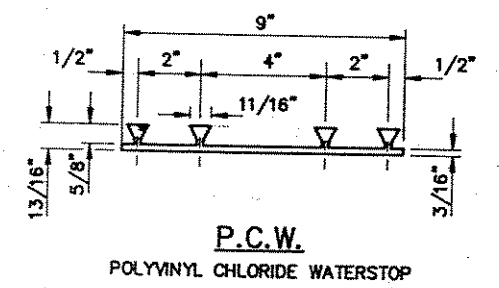
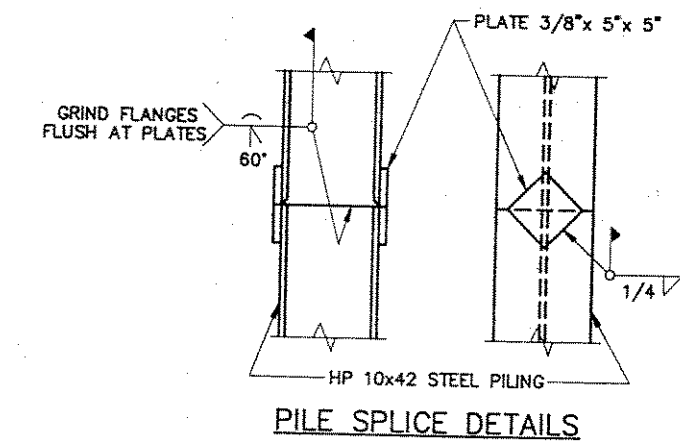
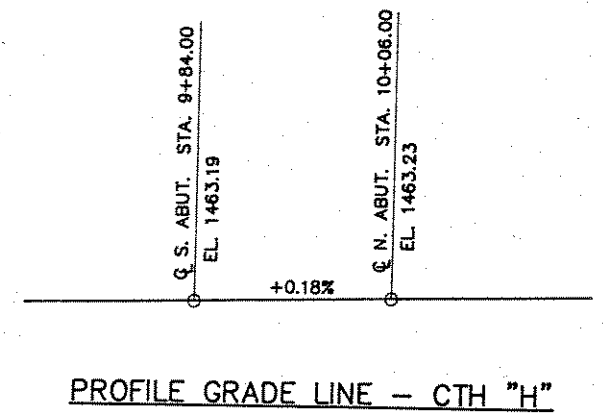
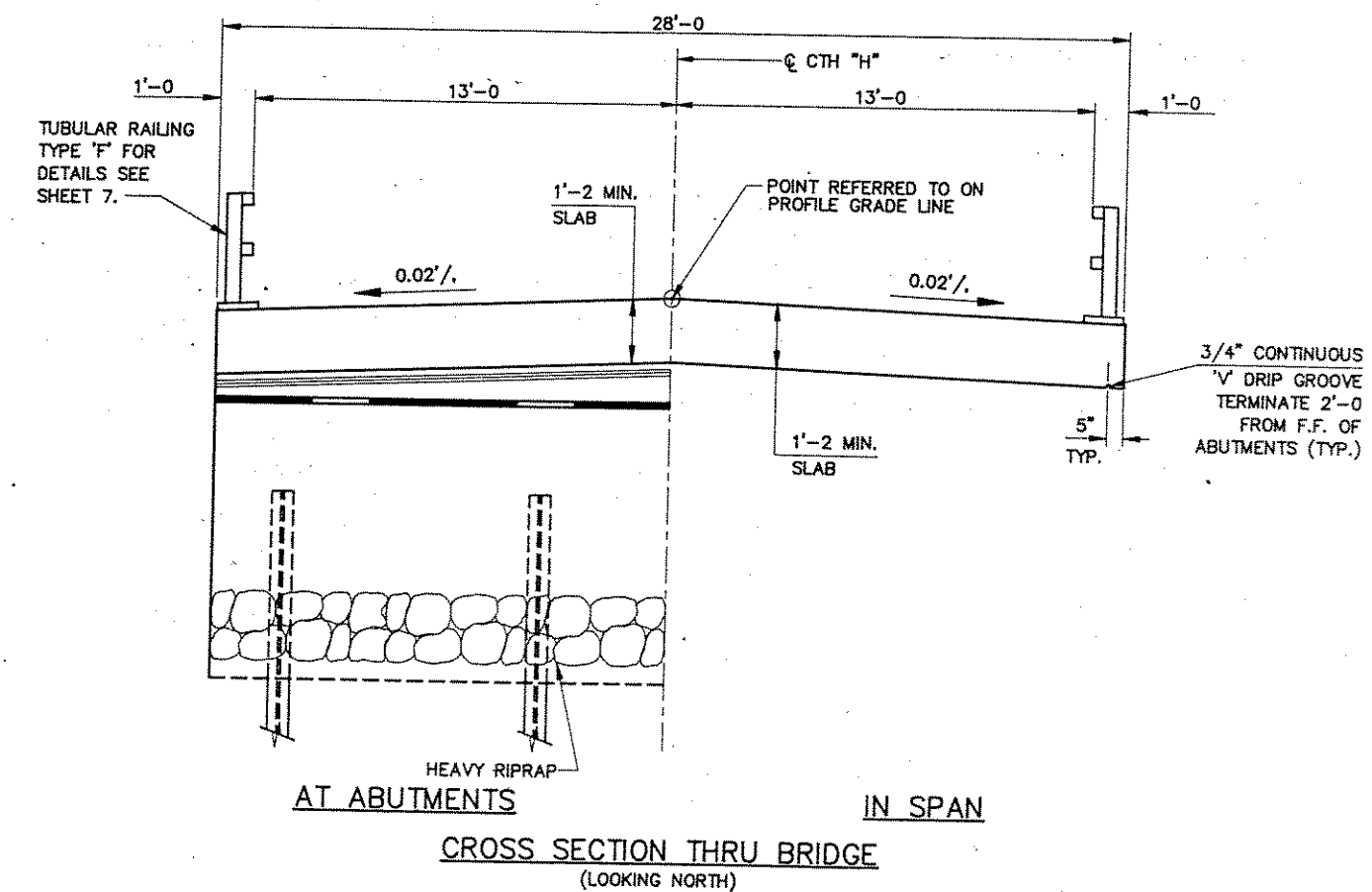


- - INDICATES WING NUMBER
- \* - INDICATES LOCATION OF PROVISION FOR BEAM GUARD ATTACHMENT.
- ⊗ - SEE ROAD PLANS FOR ADDITIONAL HEAVY RIPRAP EXTENSIONS.

OVERHEAD POWER™  
 (WISCONSIN PUBLIC SERVICE CORPORATION)  
 OVERHEAD TELEPHONE  
 (G.T.E. NORTH INC.)

BRIDGE OFFICE CONTACT: DAVE BABLER 608-266-8486

No.	Date	Revision	By
PLANS PREPARED BY			
<b>MSA</b> MID-STATE ASSOCIATES, INC. 1230 S. BLVD., BARABOO, WI. 53913			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-109			
CTH "H" OVER BIG PINE CREEK			
County	LINCOLN	Town/City/Village	KING
Design Spec.	AASHTO 1988	Load	HS-20
Const. Spec.	WI "89"	Drawn By	RLR
Checked By	PAC	Checked	PAC
Approved	<i>Stanley W. Woods</i> State Bridge Engineer		Date 12-20-89
GENERAL PLAN			SHEET 1 OF 7
X82781			



TOTAL ESTIMATED QUANTITIES

BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
REMOVING OLD BRIDGE, STATION 10+00	L.S.				1
EXCAVATION FOR STRUCTURES, BRIDGES B-35-109	L.S.				1
CONCRETE MASONRY, BRIDGES	C.Y.	34.5	34.5	33.0	102
PROTECTIVE SURFACE TREATMENT	GAL.			3	3
HIGH-STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LB.	2810	2810	3870	9490
COATED HIGH-STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LB.			1020	1020
* STEEL PILING DELIVERED & DRIVEN, HP 10 INCH, 42 POUND	L.F.	180	180		360
TUBULAR RAILING, TYPE "F", STRUCTURE B-35-109	L.S.				1
HEAVY RIPRAP	C.Y.	55	55		110
GEOTEXTILE FABRIC, TYPE "HR"	S.Y.	110	110		220
NON-BID ITEMS					
FILLER	SIZE				1/2" & 3/4"
POLYVINYL CHLORIDE WATERSTOP	L.F.	32	32		64

\* - OIL FIELD PIPE IS AN OPTION, 7" MINIMUM.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
 THE FIRST DIGIT OF A THREE DIGIT BAR MARK SIGNIFIES THE BAR SIZE.  
 FILLER SHALL CONFORM TO AASHTO DESIGNATIONS M153, TYPE I, II, OR III, OR AASHTO DESIGNATION M213.  
 THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.  
 THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS.  
 SLAB FALSEWORK SHALL BE SUPPORTED ON PILES, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.  
 THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, P-35-0915, A 23 FT. LONG SINGLE SPAN CONCRETE FLAT SLAB BRIDGE.  
 BACKFILL 2'-0" ABOVE THE BOTTOM OF ABUTMENT ELEVATIONS SHALL NOT BE PLACED UNTIL THE SUPERSTRUCTURE IS IN PLACE.  
 PLACEMENT OF ABUTMENT CONCRETE UNDERWATER WILL BE PERMITTED.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-109			
Const. Spec.	W "89"	Drawn By	RLR
Plans Checked	PAC		
CROSS SECTION & QUANTITIES			SHEET 2 OF 7
			X8278I

ABBREVIATIONS  
 F - Fine M - Medium C - Coarse  
 Ws - Weathered So - Sound

MATERIAL SYMBOLS


LEGEND OF PROBING

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

Refusal 95/6

LEGEND OF BORING

Unconfined Strength → 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

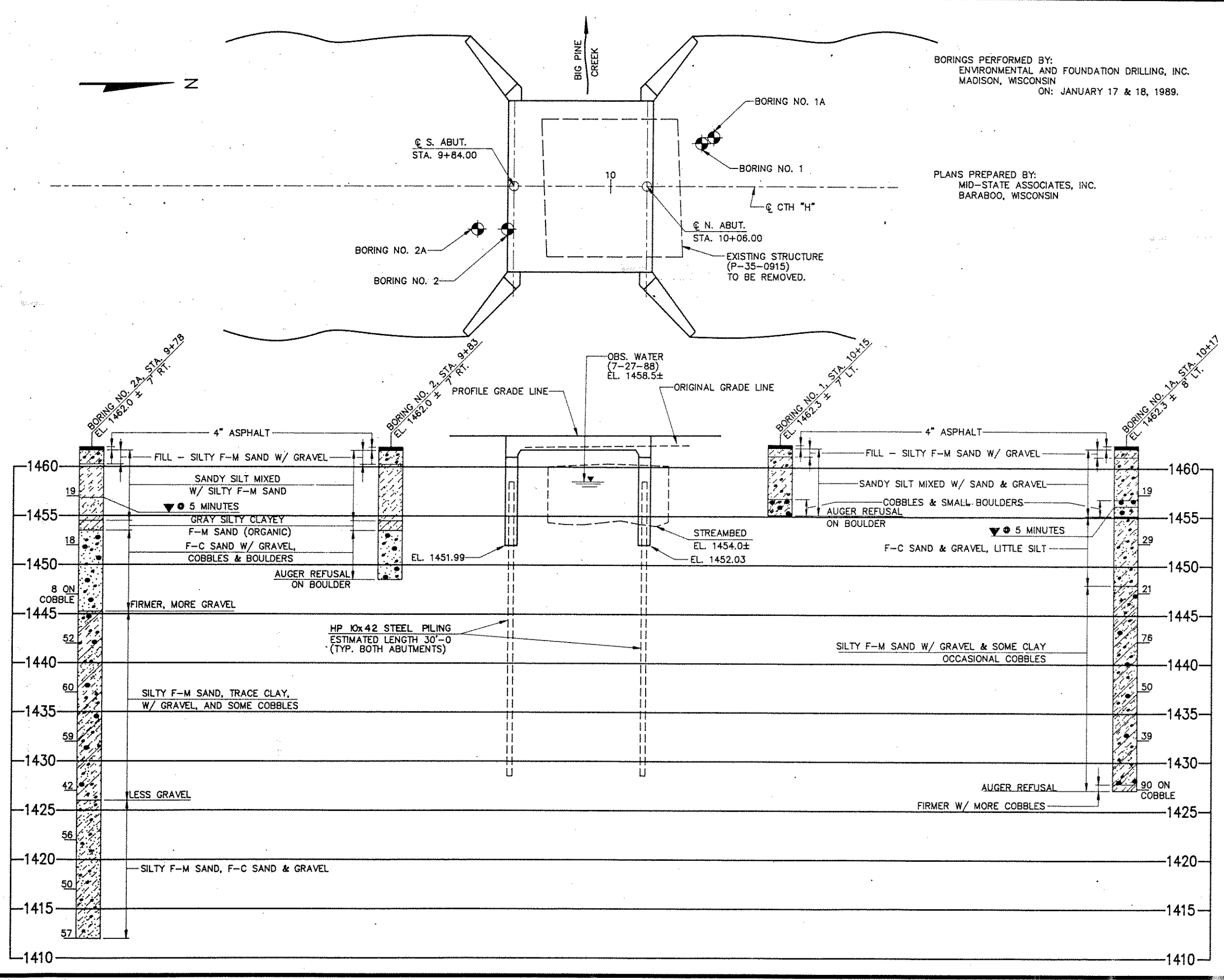
To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because 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

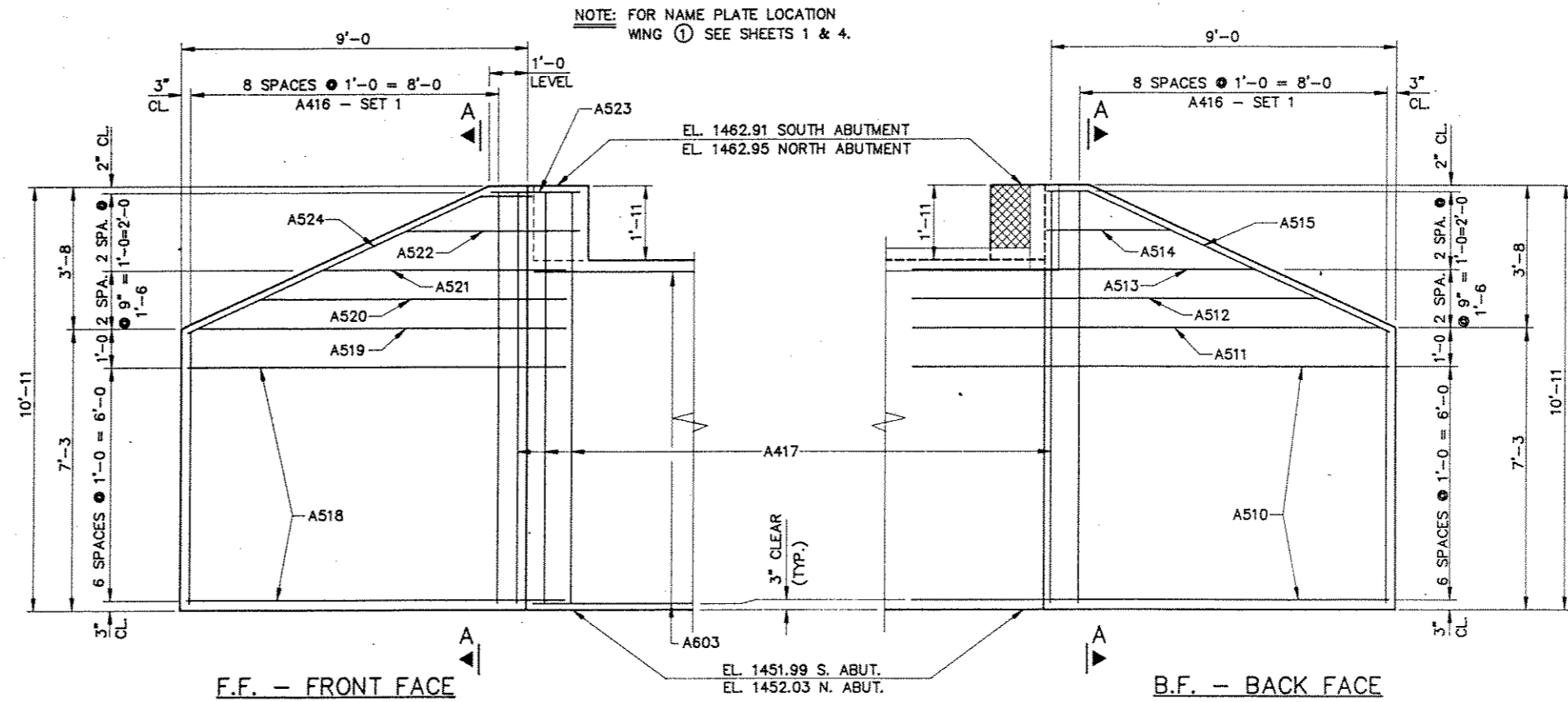
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

STRUCTURE B-35-109  
 Const. Spec. Wt "89" Drawn By RLR Plans Checked PAC

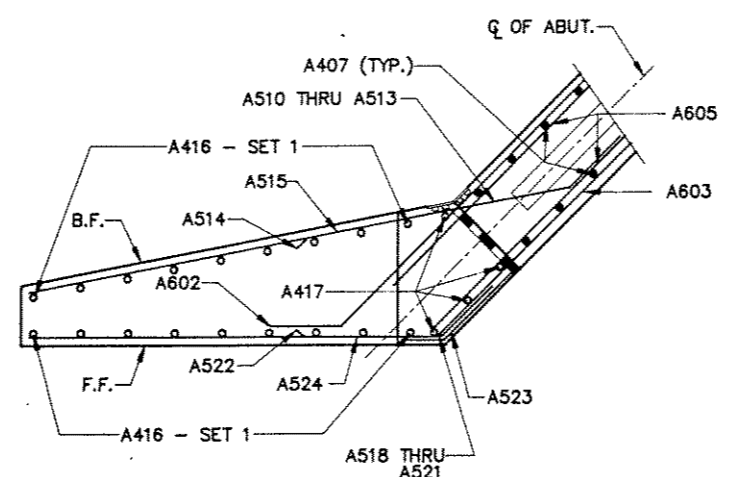
SUBSURFACE EXPLORATION SHEET 3 OF 7  
 X82781



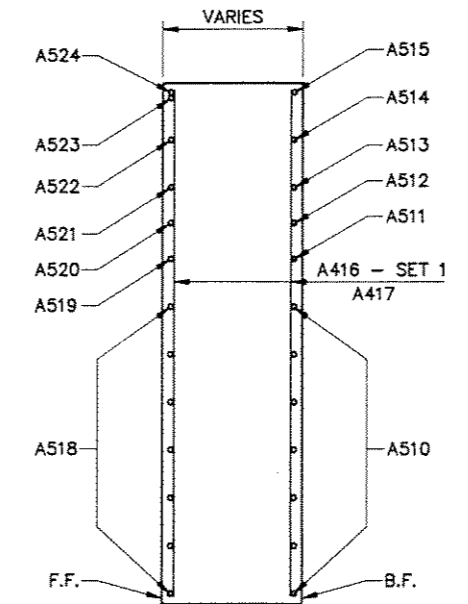




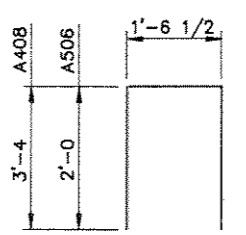
ELEVATION



PLAN

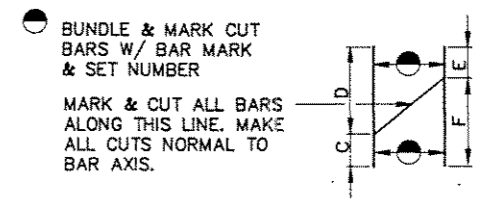
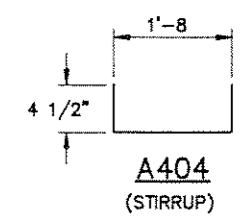


SECTION A-A THRU WINGS



A506, A408

MARK	A	B
A602 THRU A521	1'-6	45°
A510 THRU A513	1'-6	34°
A515	1'-1	24°
A522	2'-0	45°
A523	1'-0	45°
A524	1'-0	25°



CUTTING DIAGRAM

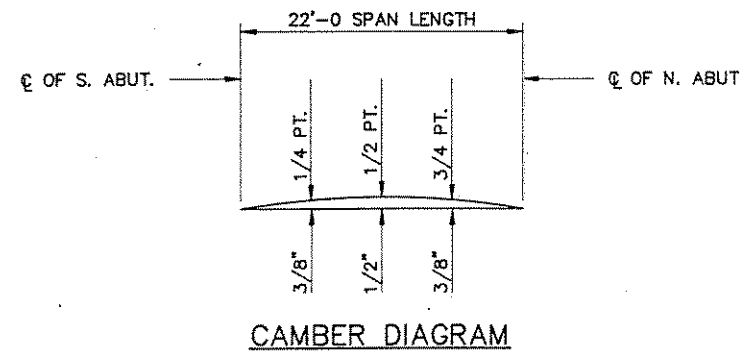
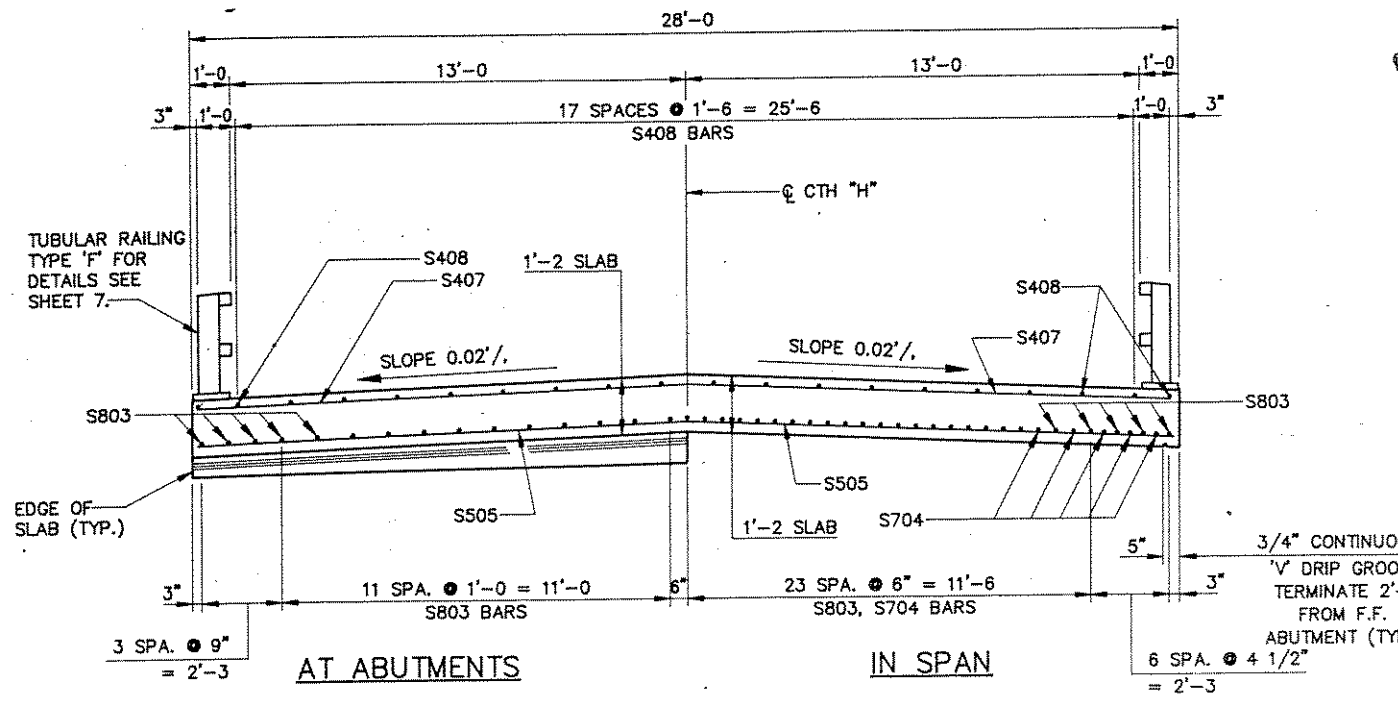
MARK	C	D	E	F	NO. OF BARS/SET	SETS REQ'D
A416 SET 1	7'-0	10'-7	7'-0	10'-7	9	8

BILL OF BARS (2 ABUTMENTS) 5620 LBS.

MARK	NO. REQ'D	LENGTH	BENT	CUT. DIAGR.	LOCATION
A601	20	10-11			BODY -- B.F. -- HORIZ. CENTER
A602	40	16-8	X		& WING -- -- --
A603	20	32-4			-- F.F. -- --
A404	96	2-3	X		-- TIES -- --
A605	4	32-4			-- TOP -- --
A506	56	5-4	X		-- BOTTOM -- VERT.
A407	112	8-8			-- F.F. & B.F. -- --
A408	56	8-1	X		-- TIES TOP -- --
A509	56	2-0			-- DOWELS -- --
A510	28	13-6	X		WINGS -- ALL -- B.F. -- HORIZ.
A511	4	13-3	X		-- -- --
A512	4	11-7	X		-- -- --
A513	4	9-11	X		-- -- --
A514	4	3-4			-- -- --
A515	4	9-10	X		-- TOP -- --
A416	36	17-7		X	-- F.F. & -- VERT.
A417	16	10-7			-- -- --
A518	28	10-3	X		-- HORIZ. -- --
A519	4	10-0	X		-- -- --
A520	4	8-4	X		-- -- --
A521	4	6-9	X		-- -- --
A522	4	5-1	X		-- -- --
A523	4	3-0	X		-- TOP -- --
A524	4	9-7	X		-- -- --

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE		B-35-109	
Const. Spec.	WI "89"	Drawn By	RLR
		Plans Checked	PAC
ABUTMENT DETAILS			SHEET 5 OF 7
			X82781



CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION AND FUTURE PLASTIC FLOW. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. DEADLOAD DEFLECTION ONLY APPROXIMATELY 1/4 OF CAMBER VALUES SHOWN.

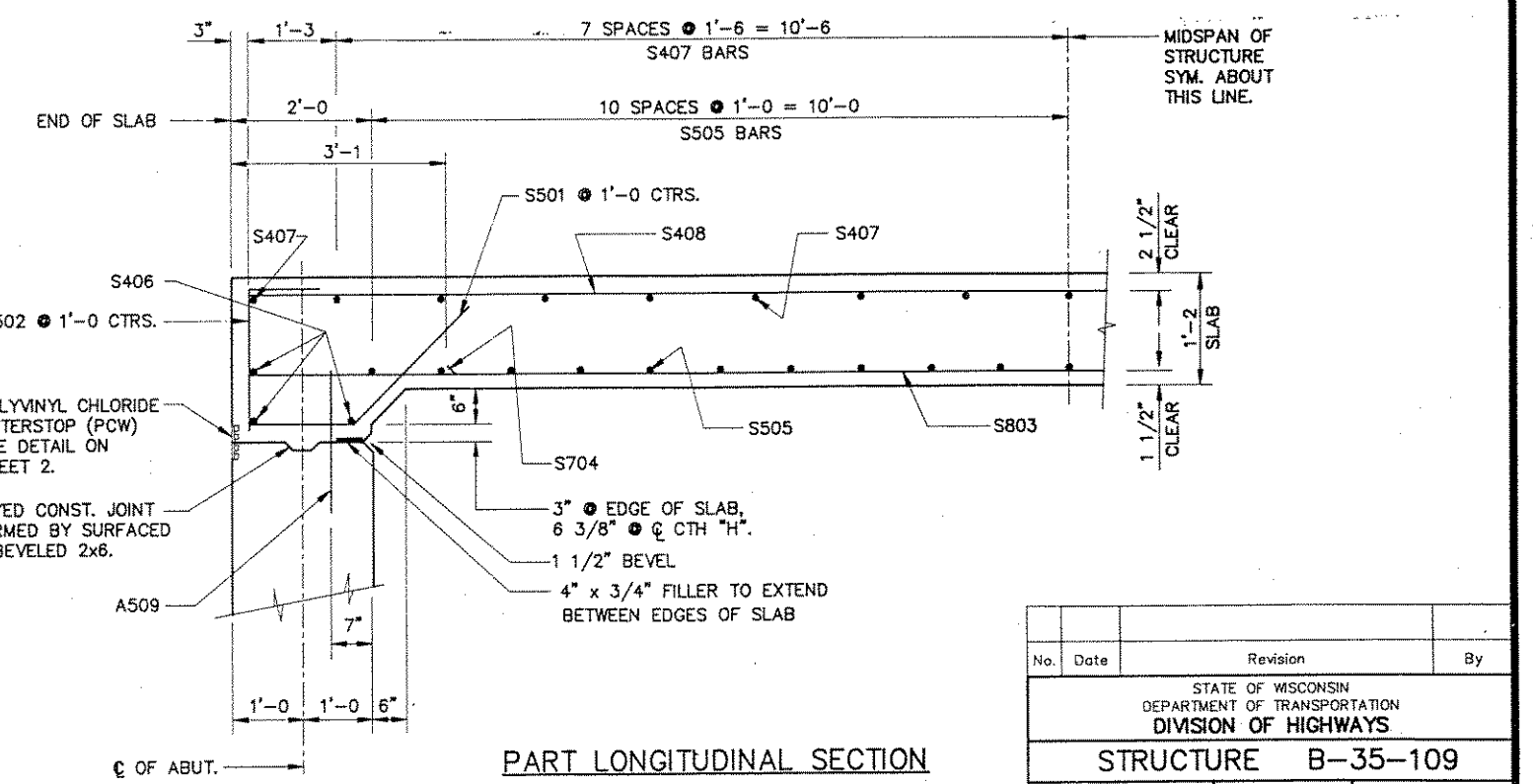
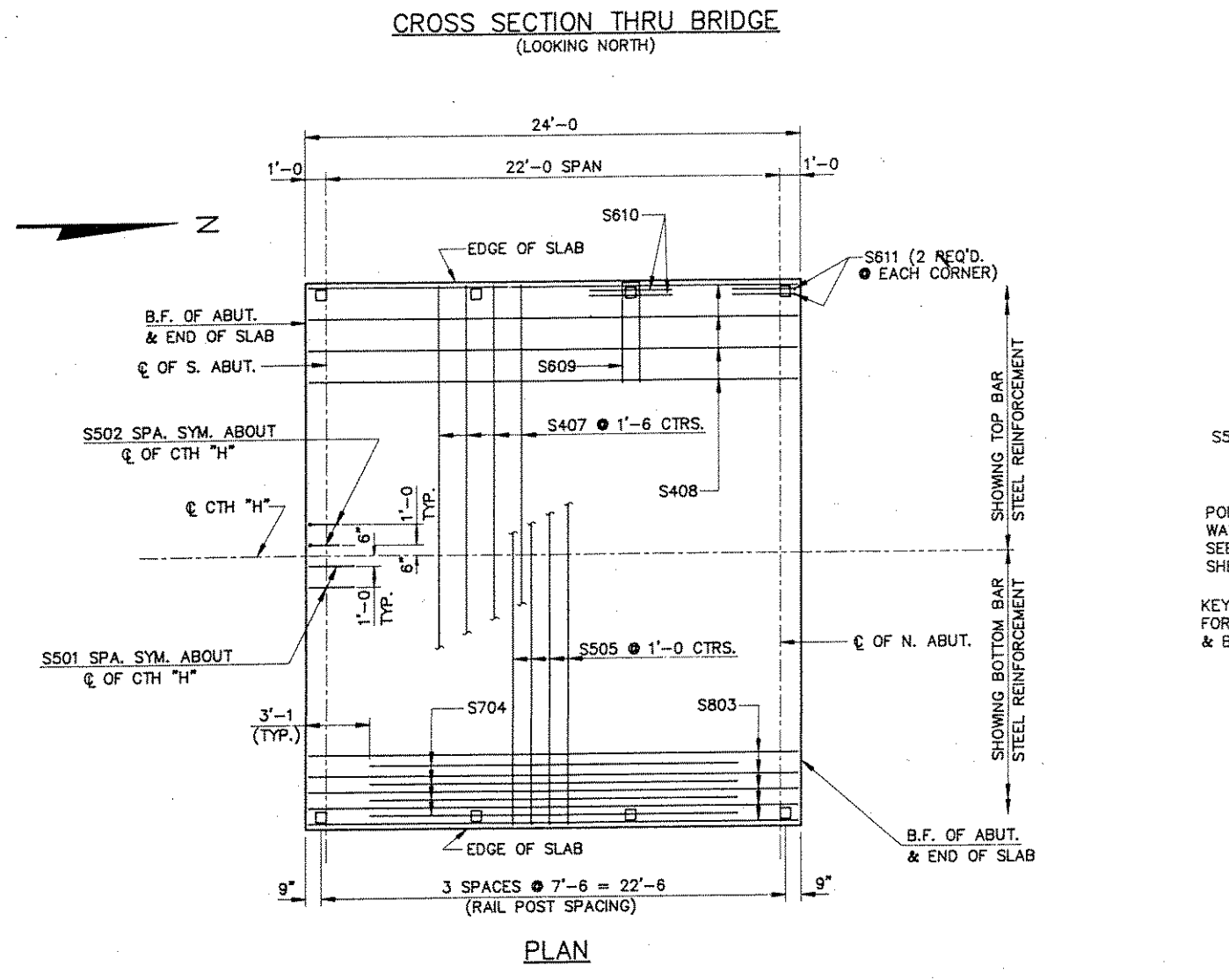
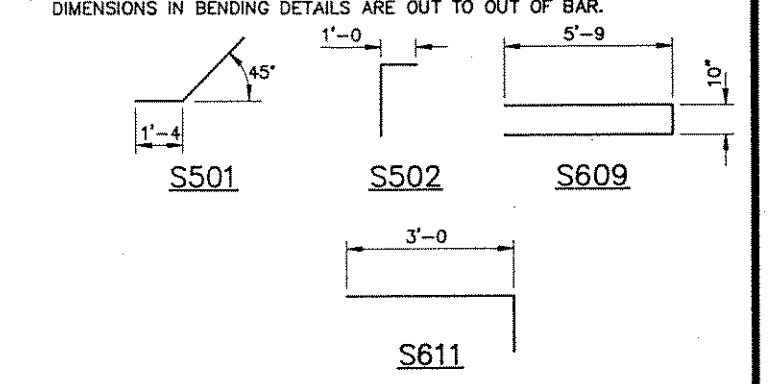
**GENERAL NOTES**

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).  
 ALTERNATE TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

**BILL OF BARS**

COATED 1020 LBS.  
 UNCOATED 3870 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
COATED	UN-COATED			
S501	56	3-6	X	DIAPHRAGM @ ABUTS. -- LONGIT.
S502	56	2-7	X	" " " " " " -- VERT.
S803	30	23-8		SLAB BOTTOM -- LONGIT.
S704	29	17-10		" " " " " " -- LONGIT.
S505	21	27-8		" " " " " " -- TRANS.
S406	6	27-8		" " " " " " @ ABUT. -- "
S407	17	27-8		" " " " " " TOP -- "
S408	20	23-8		" " " " " " -- LONGIT.
S609	8	12-0	X	" " RAIL POST, ONE PER POST
S610	8	4-0		" " " " " " TWO -- "
S611	8	4-0	X	" " CORNER POSTS AS NOTED



No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-35-109			
Const. Spec.	WI "89"	Drawn By	Plans Checked
		RLR	PAC
SUPERSTRUCTURE			SHEET 6 OF 7
			X8278I



**LEGEND**

- ① W 6 X 25 WITH 1 1/4" DIA. HOLES ON EACH SIDE OF POST FLANGE FOR STUD (6). CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1" X 9 1/2" X 10" WITH 1 1/16" X 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS (3). WELD TO (1) AS SHOWN.
- ③ A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION ANCHOR BOLT 7/8" DIA. X 1'-3" LONG AT BRIDGE END POSTS AND 10" LONG AT ALL OTHER POST LOCATIONS. (MIN. YIELD OF 92 K.S.I. AND ELONGATION OF 14%) WITH A 325 NUT AND WASHER 4 REQ'D PER POST. THREAD 3" AND PLACE NORMAL TO PLATE (2).
- ④ BAR 3/4" SQ. X 8" LONG. WELD TO ANCHOR BOLTS (3).
- ⑤ TS 4 X 4 X .25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A36. ATTACH TO (1) WITH STUDS (6).
- ⑥ 5/8" DIA. X 1 1/2" LG. SHOP WELDED STUDS, WITH HEX. NUT AND 2 WASHERS. 4 PER POST REQ'D. (2 REQ'D. AT EACH LOCATION).
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE SLIDING FIT WITH A MINIMUM OUT TO OUT DIMENSION OF 3 1/2" X 3 1/2".
- ⑧ TS 3 X 3 X .25 X 1'-10" LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF (5). PROVIDE 3/8" DIA. X 1 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ PLATE 3/4" X 1'-0" X 1'-6" WELD TO END RAIL POST AS SHOWN IN DETAIL. REQUIRED AT BEAM GUARD ATTACHMENTS ONLY.
- ⑩ 1" DIA. HOLES IN PLATE (9) FOR 7/8" DIA. A 325 BOLTS W/ HEX NUTS AND WASHERS.

**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 (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 (3) SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE (2) WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER SEAL BOTTOM EDGES OF PLATE (2) TO DECK.

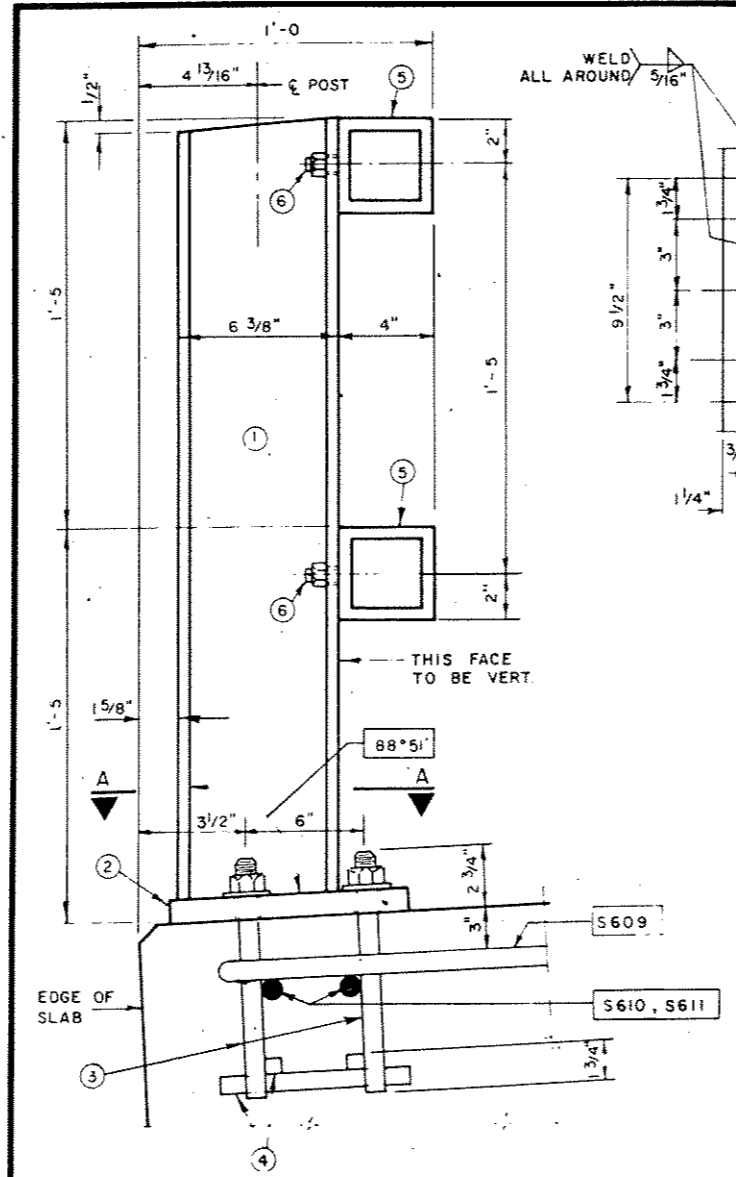
ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M DESIGNATION A36 UNLESS NOTED OTHERWISE.

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

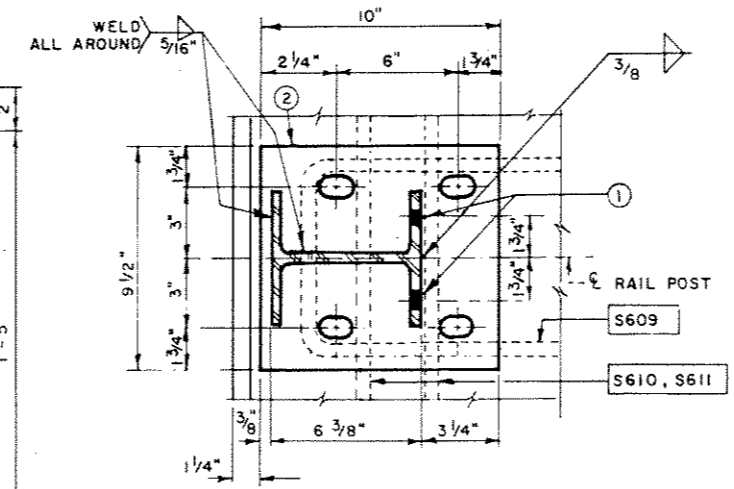
PRIOR TO GALVANIZING, ALL STEEL RAILING SHALL BE GIVEN A NO 6 COMMERCIAL BLAST CLEANING BY S S P C SPECIFICATIONS. BLAST CLEANING IS NOT REQUIRED FOR COLD FORMED TUBING (5), EXCEPT TO REMOVE WELDING SLAG AND IMPERVIOUS SUBSTANCES.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF POST BASE.

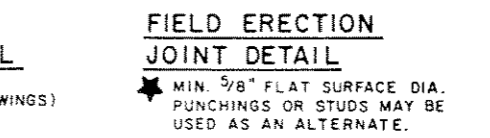
WELD WITH E70 ELECTRODES.



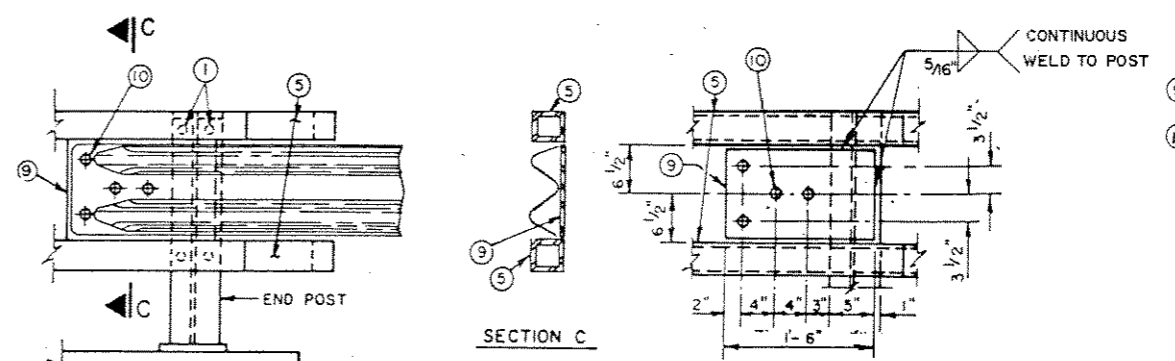
**SECTION A**



**SHOP RAIL SPLICE DETAIL**  
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

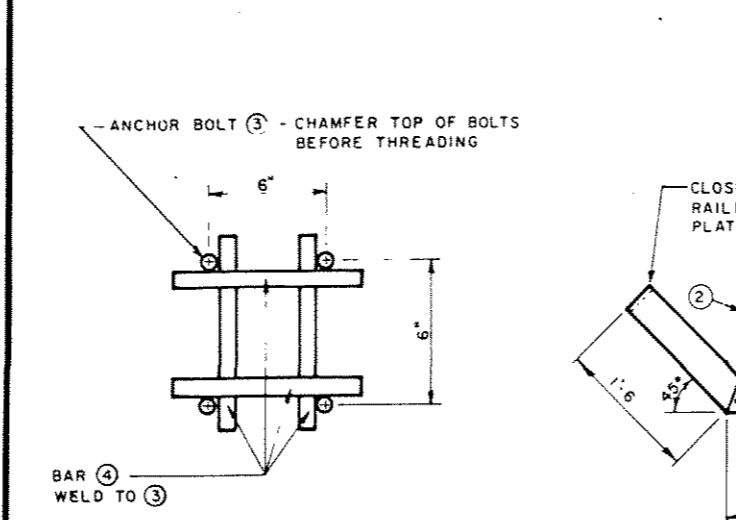


**FIELD ERECTION JOINT DETAIL**  
★ MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

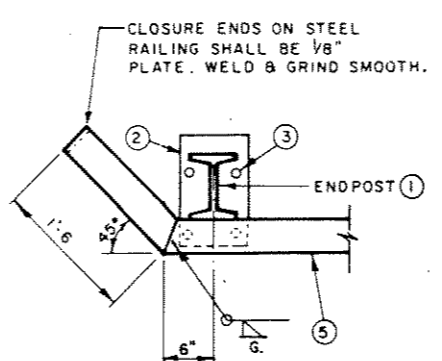


**DETAIL AT END POSTS**

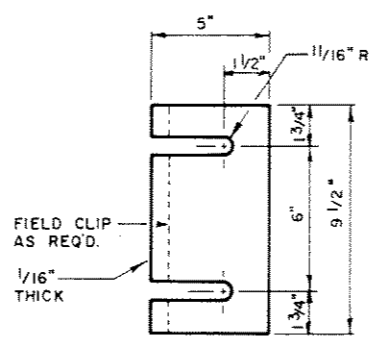
**SECTION D THRU RAILING**



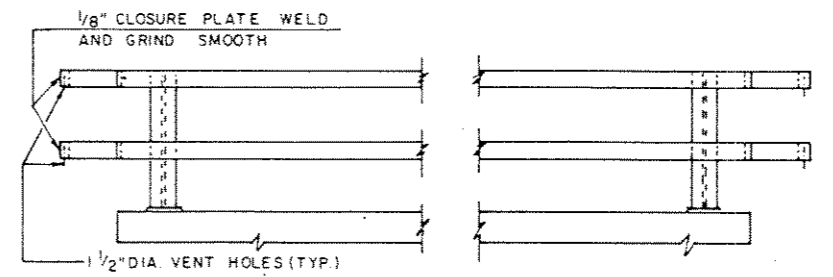
**ANCHOR BOLT DETAIL**



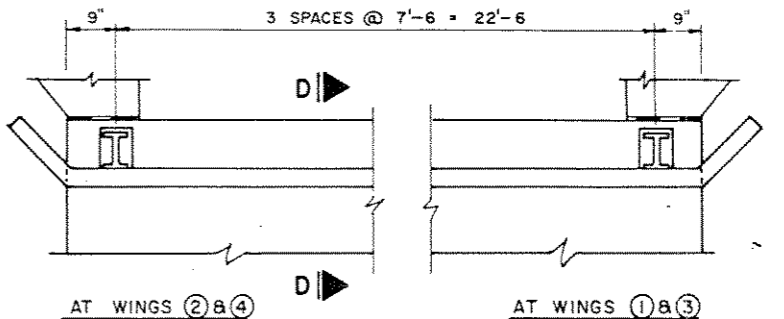
**RAIL END DETAIL**



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



**PART ELEVATION OF RAILING**



**PART PLAN OF RAILING**

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
<b>STRUCTURE B-35-109</b>			
Const. Spec.	WI "89"	Drawn By	RLR
		Plans Checked	PAC
<b>TUBULAR STEEL RAILING TYPE 'F'</b>			SHEET 7 OF 7
			X82781