

MARATHON

9859-07-71

INDEX OF SHEETS

Sheet No.	Title
1	Typical Section Sheet
	Estimate of Quantities
	Miscellaneous Quantities
	Right of Way Plan
	Plan & Profile (includes Erosion Control Plan)
	Standard Detail Drawings
	Sign Plates
	Structure Plans
	Computer Earthwork Data
	Cross Sections

TOTAL SHEETS =



DESIGN DESIGNATION

A.D.T.	(1998)	=	5
A.D.T.	(2018)	=	10
D.H.V.	(2018)	=	1
D.		=	50/50
T.		=	1%
DESIGN SPEED		=	50 km/h
ESALS		=	N/A

Conventional Symbols

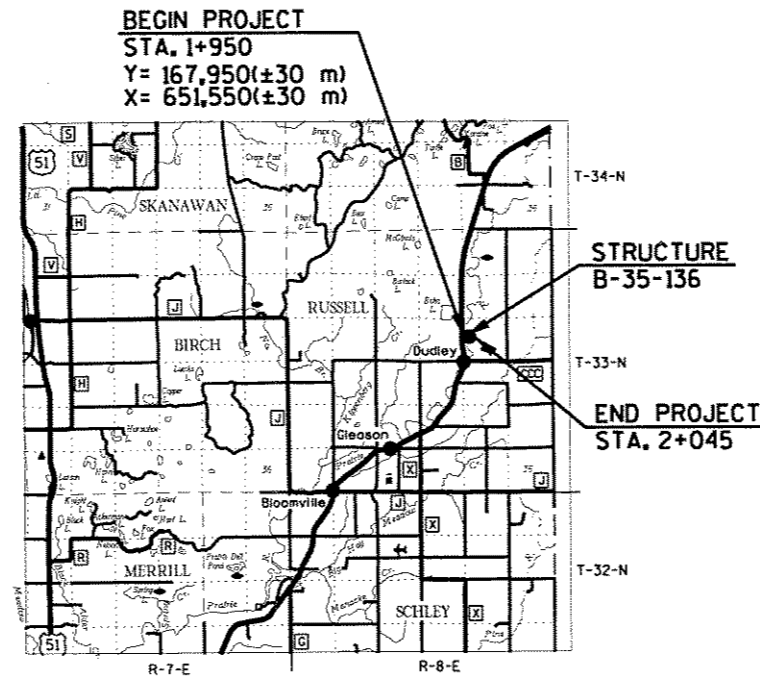
County Line	-----	Combustible Fluids	CAUTION
Town or Range Line	-----	Railroad	—X—X—
Section Line	-----	Fence	—X—X—
Corporate Limits	-----	Culvert (in Place)	—X—X—
Property Line	-----	Culvert (Required)	—X—X—
Lot Line	-----	Power Pole	—X—X—
Existing Right of Way Line	-----	Telephone Pole	—X—X—
New Right of Way Line	-----	Telephone Pedestal	—X—X—
Reference Line	-----	Right of Way Monument (Type)	—X—X—
Slope Intercept	-----	Marsh	—X—X—
Existing Roadway or Private Entrance	-----	Edge of Stream	—X—X—
Limited Easement	-----	Wooded or Shrub Area	—X—X—
Right of Way Point	-----	Grade Line Elevation	—X—X—
Silt Fence	-----	Water	—X—X—
Silt Screen	-----	Gas	—X—X—
Erosion Boles	-----	Telephone	—X—X—
Sod	-----	Electric	—X—X—
Ditch Dike	-----	Cable Television	—X—X—
Intercepting Embankment	-----	Fiber Optic	—X—X—
Riprap	-----	Sanitary Sewer	—X—X—
Erosion Mat	-----	Storm Sewer	—X—X—

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PRAIRIE RIVER BRIDGE & APPROACHES  
(BRIDGE ROAD)  
TOWN ROAD  
LINCOLN COUNTY

STATE PROJECT NUMBER  
9859-07-71



LAYOUT  
SCALE 0 1 2 3 km

TOTAL NET LENGTH OF CENTERLINE = 0.095 km (RURAL)

COORDINATES ARE SCALED FROM THE U.S.G.S. TOPOGRAPHIC MAP GLEASON, WISCONSIN QUADRANGLE, FOR IDENTIFICATION ONLY.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9859-07-71		

ACCEPTED FOR  
COUNTY OF LINCOLN

DATE \_\_\_\_\_ COMMISSIONER \_\_\_\_\_

ORIGINAL PLANS PREPARED BY:  
**MSA** PROFESSIONAL SERVICES, INC.  
TRANSPORTATION - MUNICIPAL - RECREATION  
DEVELOPMENT - ENVIRONMENTAL  
1200 South Boulevard, Baraboo, WI 53513  
608-356-2771 1-800-363-4505 Fax: 608-356-2770

Prepared by \_\_\_\_\_  
Surveyor MSA PROFESSIONAL SERVICES, INC.  
Designer MSA PROFESSIONAL SERVICES, INC.  
District Examiner \_\_\_\_\_  
District Supervisor \_\_\_\_\_  
Proj. Dev. Engineer \_\_\_\_\_  
C.O. Examiner \_\_\_\_\_

APPROVED FOR DISTRICT OFFICE

DATE: \_\_\_\_\_ (Signature) \_\_\_\_\_

POINT	X	Y
1	19 949.990	10 000.000
2	19 950.108	10 006.224
3	19 980.180	10 010.685
4	20 020.181	10 009.926
5	20 045.072	10 004.423
6	20 044.990	10 000.093
7	20 044.881	9994.365
8	20 019.800	9989.809
9	19 979.799	9990.568
10	19 949.917	9996.166

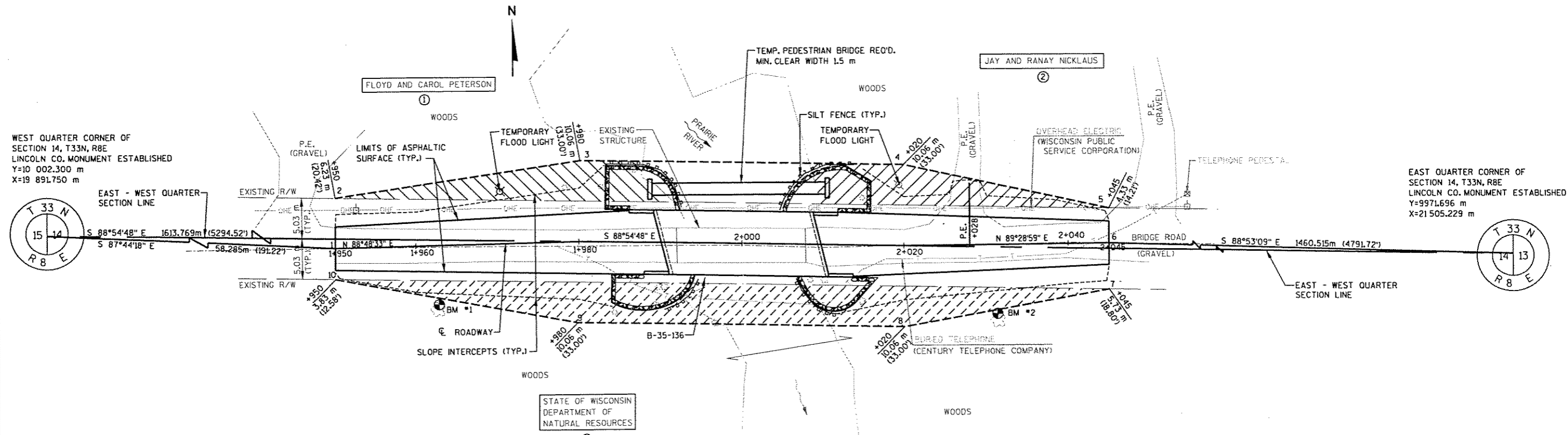
COURSE	BEARING	DISTANCE
1-2	N 01°05'12" E	6.225m (20.42')
2-3	N 81°33'43" E	30.401m (99.74')
3-4	S 88°54'48" E	40.008m (131.26')
4-5	S 77°31'58" E	25.492m (83.64')
5-6	S 01°05'12" W	4.331m (14.21')
6-7	S 01°05'12" W	5.729m (18.80')
7-8	S 79°42'20" W	25.492m (83.64')
8-9	N 88°54'48" W	40.008m (131.26')
9-10	N 79°23'23" W	30.402m (99.74')
10-1	N 01°05'12" E	3.835m (12.58')

PARCEL NUMBER	SHEET NUMBER	OWNER	INTEREST REQUIRED	TOTAL AREA
1		FLOYD AND CAROL PETERSON	P.L.E.	0.012 HECTARE (0.030 ACRE)
2		JAY AND RANAY NICKLAUS	P.L.E.	0.012 HECTARE (0.029 ACRE)
3		STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES	P.L.E.	0.034 HECTARE (0.084 ACRE)

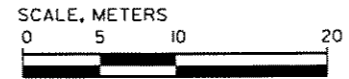
R/W PROJECT NUMBER 9859-07-21	SHEET NUMBER 4.0	TOTAL SHEETS
FEDERAL PROJECT NUMBER		
PLAT OF RIGHT OF WAY REQUIRED FOR PRAIRIE RIVER BRIDGE & APPROACHES (BRIDGE ROAD)		
TOWN ROAD		LINCOLN COUNTY
CONSTRUCTION PROJECT NUMBER 9859-07-71		

TOWN OF RUSSELL

SW - NW  
SEC. 14



NOTES:  
 COORDINATES SHOWN ON THIS PLAT ARE ORIENTED TO A LOCAL COORDINATE SYSTEM.  
 BEARINGS SHOWN ON THIS PLAT ARE ASSUMED.  
 EXISTING HIGHWAY R/W SHOWN ON THIS PLAT IS ESTABLISHED FROM EAST - WEST QUARTER SECTION LINE.



TOWN OF RUSSELL  
 NW - SW  
 SEC. 14

ACCEPTED FOR  
TOWN OF RUSSELL

DATE \_\_\_\_\_ CHAIRMAN \_\_\_\_\_

ORIGINAL PLAT PREPARED BY  
**MSA**  
 TRANSPORTATION • MUNICIPAL • REMEDIATION  
 DEVELOPMENT • ENVIRONMENTAL  
 1230 South Boulevard Baraboo, WI 53913  
 1-800-363-4505 Fax: 608-366-2770

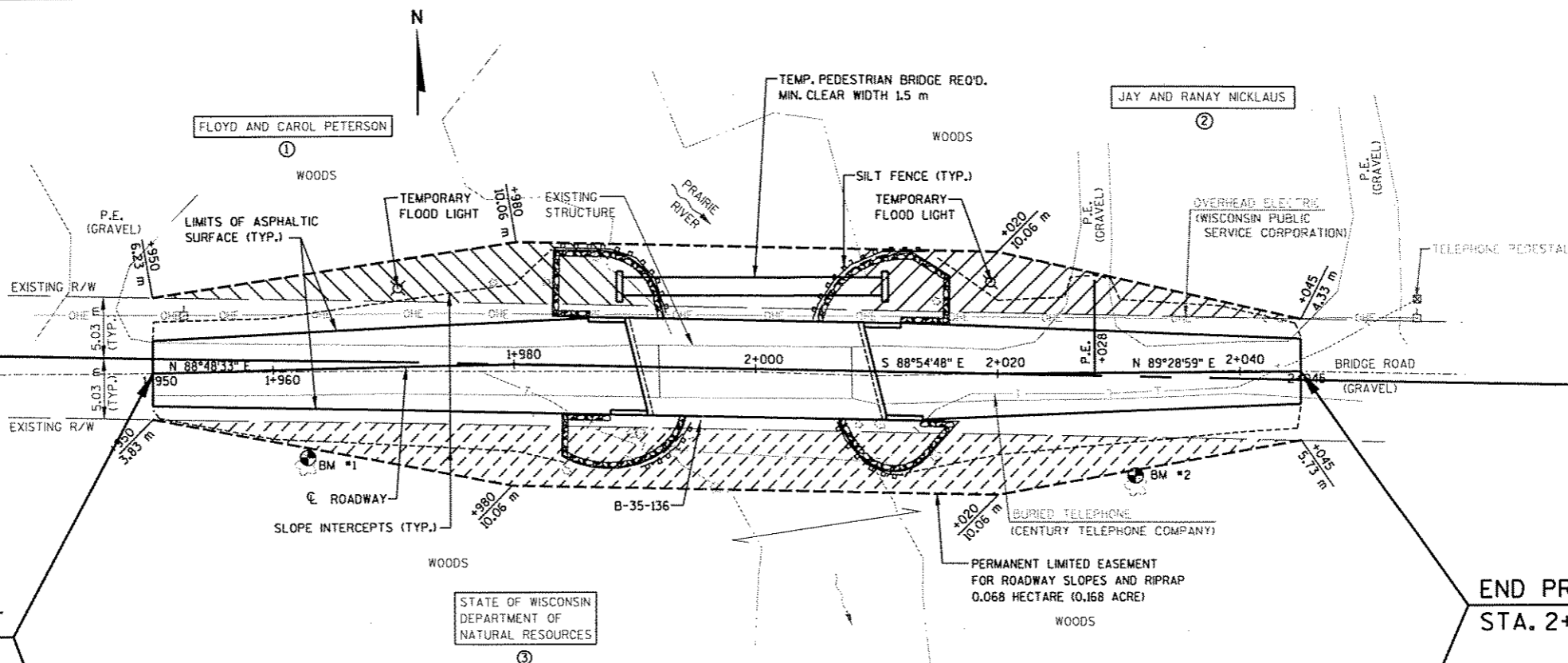
**WISCONSIN**  
 LAND SURVEYOR  
 RODNEY J. KEY  
 S-2231  
 Baraboo, WI

DATE: 9/4/97 Rodney J. Key  
 (Registered Land Surveyor)

BENCHMARKS			
NO.	STATION	DESCRIPTION	ELEVATION
1	1+962.85, 7.14 m RT.	60 d NAIL IN 750 mm $\phi$ WHITE PINE	460.150
2	2+031.28, 8.55 m RT.	60 d NAIL IN 750 mm $\phi$ WHITE PINE	459.278

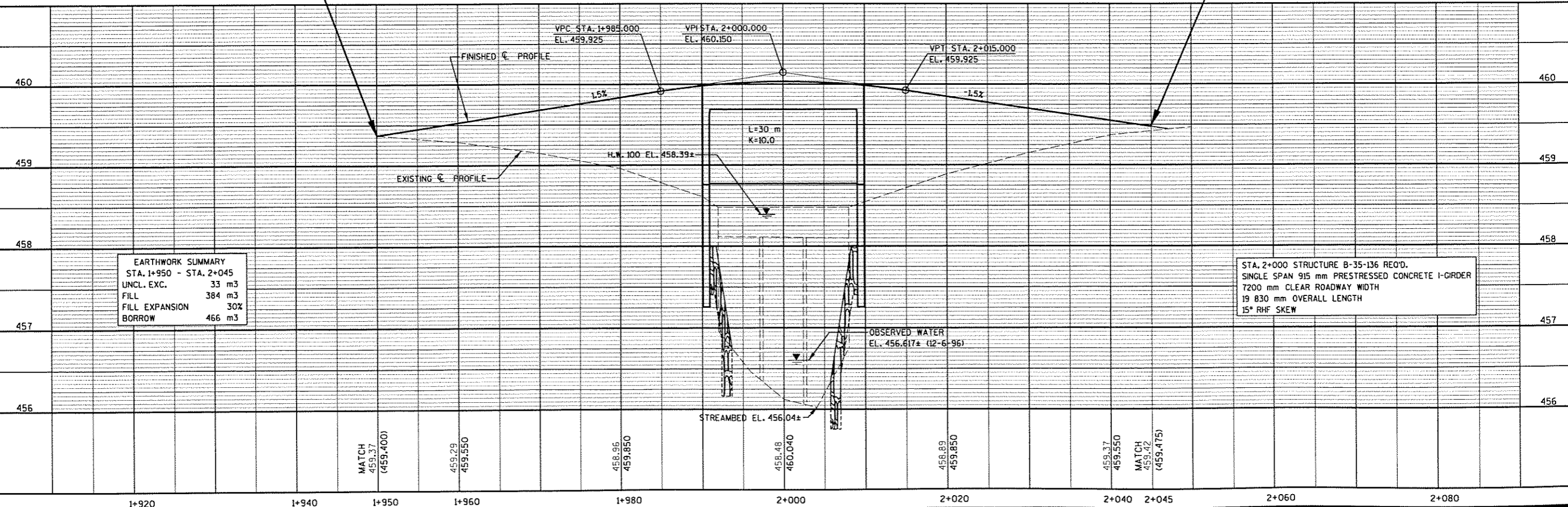
BEGIN PROJECT  
STA. 1+950

END PROJECT  
STA. 2+045



REMOVE OLD BRIDGE P-35-0067  
STA. 2+000 ON CENTERLINE  
THREE SPAN TIMBER DECK GIRDER  
4.21 m CLEAR ROADWAY WIDTH  
16.00 m OVERALL LENGTH

NOTE:  
BEARINGS ARE ASSUMED. SEE HORIZONTAL  
ALIGNMENT DETAIL ON TYPICAL SECTION,  
UTILITIES, GEN. NOTES, S.D.D., TIES, DETAILS  
& MISC. QUANTITIES SHEET FOR PROJECT  
CENTERLINE COORDINATES.



EARTHWORK SUMMARY	
STA. 1+950 - STA. 2+045	
UNCL. EXC.	33 m <sup>3</sup>
FILL	384 m <sup>3</sup>
FILL EXPANSION	30%
BORROW	466 m <sup>3</sup>

STA. 2+000 STRUCTURE B-35-136 REO'D.  
SINGLE SPAN 915 mm PRESTRESSED CONCRETE I-GIRDER  
7200 mm CLEAR ROADWAY WIDTH  
19 830 mm OVERALL LENGTH  
15° RHF SKEW

REV. DATE: 9-3-97  
 ORIGINATOR: MMR  
 EVELS ON: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63  
 FILE NAME: RCPO01001.DGN  
 PLOT SCALE: 1:500

STATE PROJECT NUMBER		SHEET NO.	
9859-07-71			
BENCHMARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	1+962.85	603 NAIL IN 750 mm $\phi$ WHITE PINE	460.150
2	2+031.28	603 NAIL IN 750 mm $\phi$ WHITE PINE	459.278

**DESIGN DATA**

**LIVE LOAD**  
 DESIGN RATING : MS-18  
 INVENTORY RATING : MS-20  
 OPERATIONAL RATING : MS-34  
 MAX. STD. PERMIT VEHICLE LOAD = 1110 KN  
 STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 1.0 KN PER SQUARE METER.

**TRAFFIC DATA:**  
 A.D.T. (1998) = 5  
 A.D.T. (2018) = 10

**ULTIMATE DESIGN STRESSES:**  
 CONCRETE MASONRY - SLAB  $f_c' = 28$  MPa  
 - ALL OTHER  $f_c' = 24$  MPa

**HIGH STRENGTH AND COATED HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 420**  $f_y = 420$  MPa  
 915 mm PRESTRESSED GIRDER CONCRETE MASONRY  $f_c' = 42$  MPa  
 13 mm DIA. STRANDS WITH ULTIMATE TENSILE STRENGTH OF 1860 MPa  
 GLULAM RAIL (DRY CONDITION) 16.5 MPa

**FOUNDATION DATA:**  
 ABUTMENTS SHALL BE SUPPORTED ON HP 250 x 62 STEEL PILING WITH PILE POINTS DRIVEN TO A MINIMUM BEARING VALUE OF 490 kN PER PILE. ESTIMATED PILE LENGTHS ARE 7 m AT BOTH ABUTMENTS.

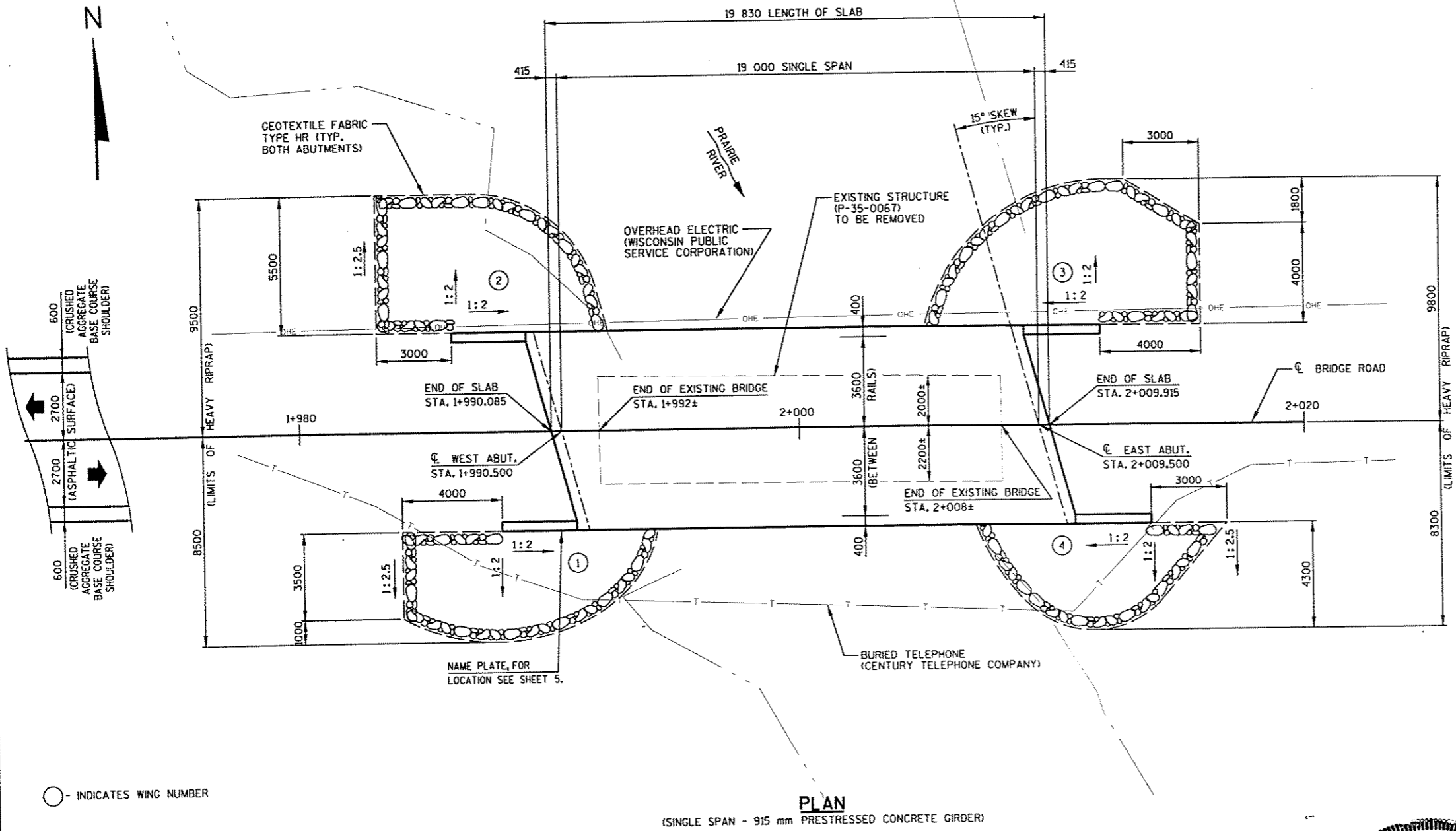
**HYDRAULIC DATA:**  
 100 YEAR FREQUENCY  
 DRAINAGE AREA 158 km<sup>2</sup>  
 $Q_{100}$  52.7 m<sup>3</sup>/s  
 VELOCITY 3.26 m/s  
 WATERWAY AREA 16.1 m<sup>2</sup>  
 HIGH WATER<sub>100</sub> ELEVATION 458.39±  
 SCOUR CRITICAL CODE 8  
 ROADWAY OVERFLOW DESIGN FREQUENCY N/A

**TEMPORARY STRUCTURE**  
 $Q_5$  26.1 m<sup>3</sup>/s  
 HIGH WATER<sub>5</sub> ELEVATION 457.72±  
 MINIMUM REQUIRED WATERWAY AREA 9.6 m<sup>2</sup>

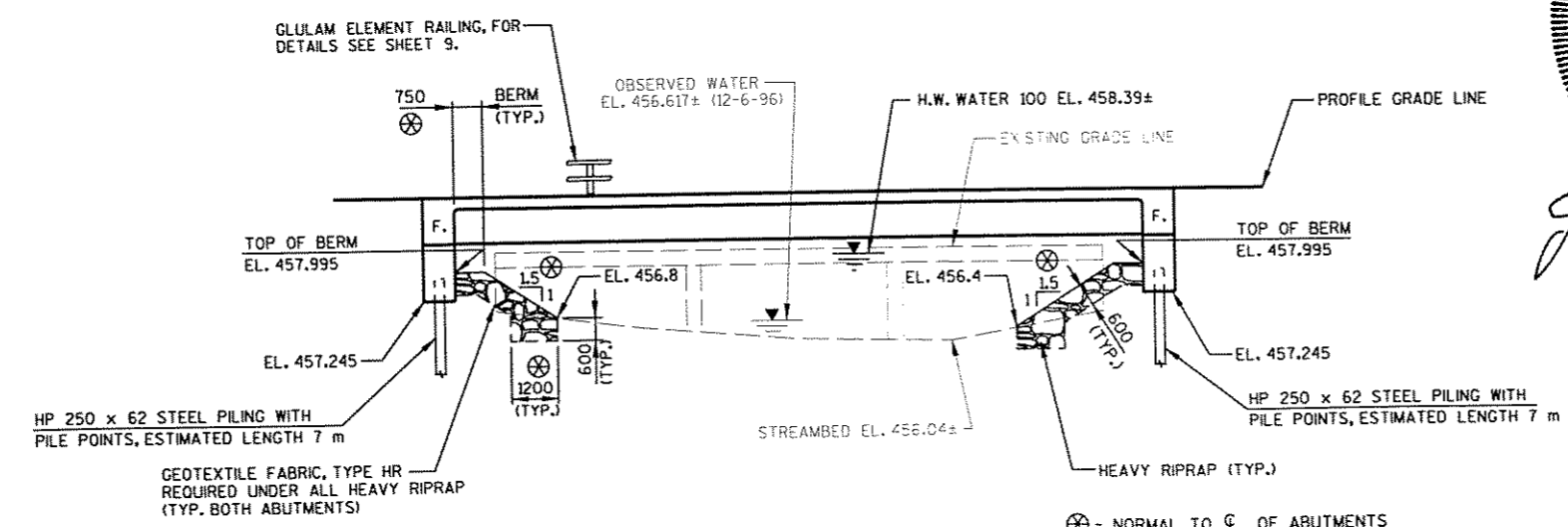
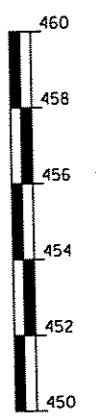
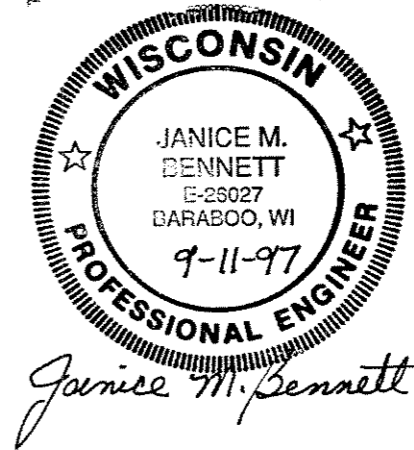
**LIST OF DRAWINGS**

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. 915 mm PRESTRESSED GIRDER DETAILS
7. SUPERSTRUCTURE
8. SUPERSTRUCTURE DETAILS
9. GLULAM ELEMENT RAILING

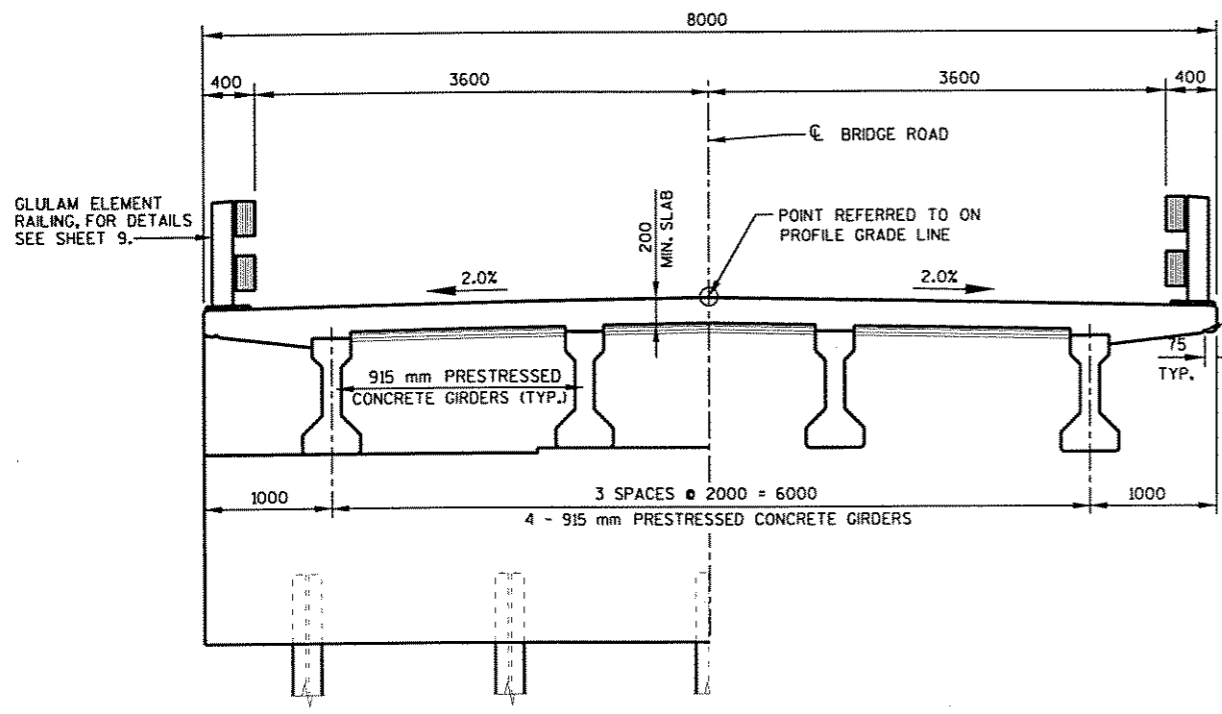
PLOT SCALE: 250  
 MSA #: 93966101  
 REV. DATE: 9-11-97  
 ORIGINATOR: RLR  
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○ - INDICATES WING NUMBER

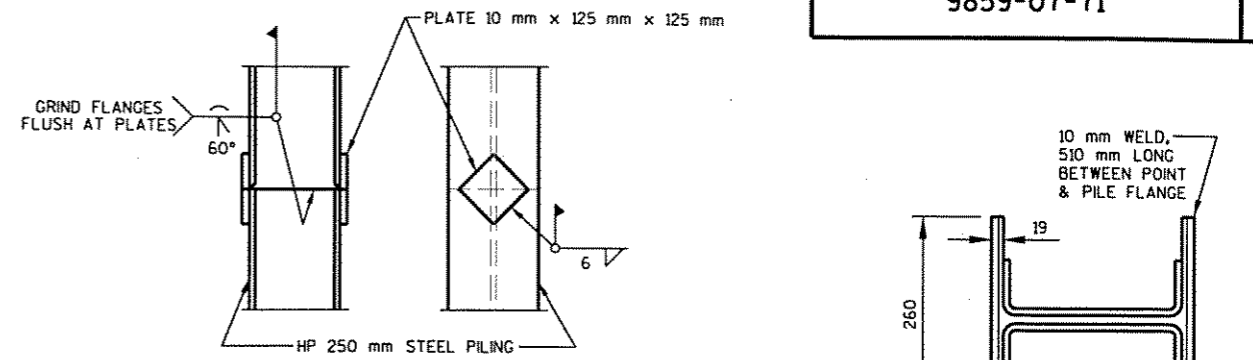


No.	Date	Revision	By
<p>TRANSPORTATION • MUNICIPAL • REMEDIATION            DEVELOPMENT • ENVIRONMENTAL            1230 South Boulevard Baraboo, WI 53513            608-366-2771 1-800-363-4506 Fax: 608-366-2770</p>			
STATE OF WISCONSIN			
DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-136			
BRIDGE ROAD OVER PRAIRIE RIVER			
County	LINCOLN	Town/City/Village	RUSSELL
Design Spec.	AASHTO 1996	Load	MS-18
Designed By	JMB	Drawn By	RLR
Checked	ORK	Phone Checked	JMB
Approved Chief Structural Design Engineer			Date
GENERAL PLAN			SHEET 1 OF 9



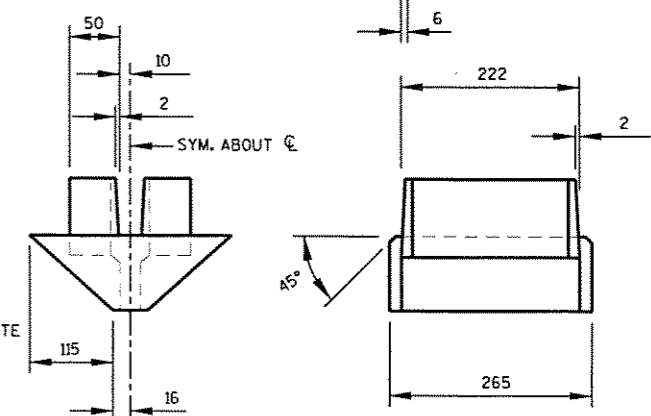
**AT ABUTMENT** **IN SPAN**

**CROSS SECTION THRU BRIDGE**  
(LOOKING EAST)



**PILE SPICE DETAILS**

- POINT NOTES**
1. MATERIAL - CAST STEEL (ASTM A-27-84-65-35)
  2. ALL FILLETS = 10 mm
  3. ALL WELDS BETWEEN PILE & POINT TO BE IN ACCORDANCE WITH AWS SPEC'S. WELD FLANGES TO FITTING ON OUTSIDE FACES.
  4. CONTRACTOR MAY USE AN ALTERNATE DESIGN UPON APPROVAL OF THE ENGINEER.



**PILE POINT DETAIL**

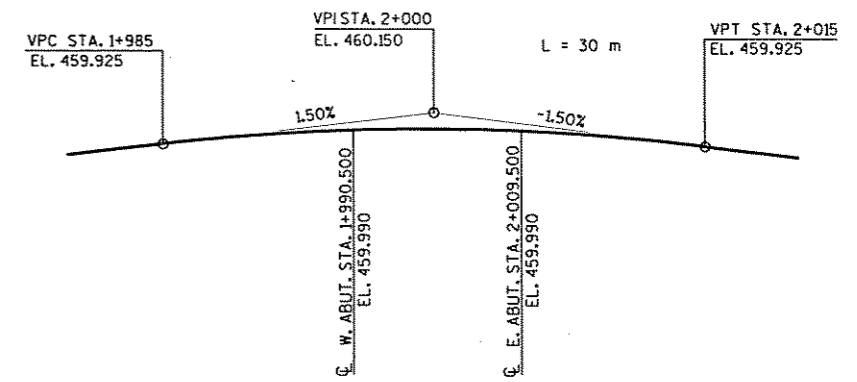
**TOTAL ESTIMATED QUANTITIES**

BID ITEMS	UNIT	WEST ABUT.	EAST ABUT.	SUPER	TOTAL
REMOVING OLD BRIDGE, STATION 2+000, ON C	LS	-	-	-	1
EXCAVATION FOR STRUCTURES, BRIDGES B-35-136	LS	-	-	-	1
STRUCTURE BACKFILL	m3	100	100	-	200
CONCRETE MASONRY, BRIDGES	m3	22.5	22.5	47.0	92
PROTECTIVE SURFACE TREATMENT	m2	-	-	165	165
PRESTRESSED GIRDER, I TYPE, 915 mm	m	-	-	77.2	77.2
HIGH-STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	kg	935	935	1940	3810
COATED HIGH-STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	kg	210	210	2900	3320
NON-LAMINATED ELASTOMERIC BEARING PADS	EACH	-	-	8	8
STEEL PILING DELIVERED & DRIVEN, HP 250 mm x 62 kg/m	m	35	35	-	70
PILE POINTS	EACH	5	5	-	10
RUBBERIZED MEMBRANE WATERPROOFING	m2	5	5	-	10
HEAVY RIPRAP	m3	75	80	-	155
GEOTEXTILE FABRIC, TYPE HR	m2	140	145	-	285
ARCHITECTURAL SURFACE TREATMENT, ITEM 90002	m2	10.9	10.9	-	21.8
GLULAM ELEMENT RAILING, ITEM 90004	LS	-	-	-	1
PAINTING, EPOXY SYSTEM, ITEM 90004	LS	-	-	-	1
NON-BID ITEMS					
FILLER	SIZE	-	-	-	13 & 19

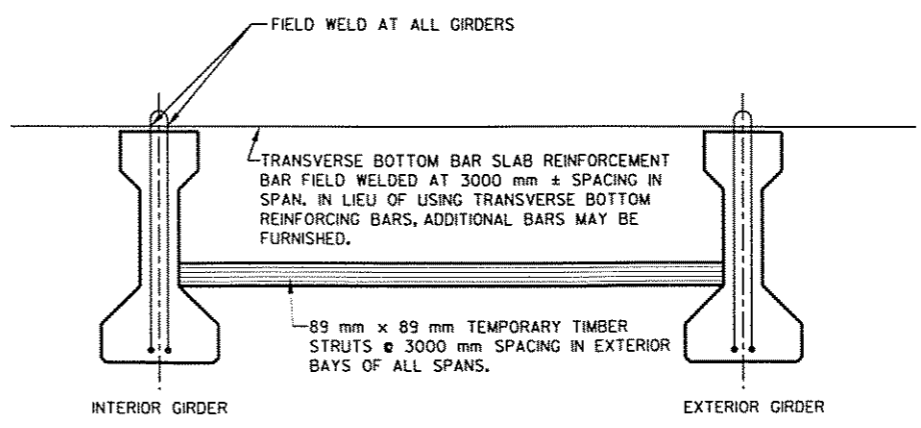
\* - OIL FIELD PIPE IS NOT AN OPTION ON THIS PROJECT.

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
 ALL MEASUREMENTS ARE IN MILLIMETERS EXCEPT AS SHOWN.  
 ALL ELEVATIONS AND STATIONS ARE IN METERS.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 50 mm CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
 THE FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.  
 NON-LAMINATED ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.  
 THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AS SHOWN ON SHEET 1 OR AS DIRECTED BY THE ENGINEER.  
 THE PROPOSED SUBGRADE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS.  
 AT THE ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL. THE STRUCTURE BACKFILL ESTIMATED QUANTITIES ASSUMED A 1:1.5 EXCAVATION SLOPE.  
 THIS STRUCTURE WILL REPLACE EXISTING STRUCTURE P-35-0067, A THREE SPAN TIMBER DECK GIRDER ON TIMBER ABUTMENTS AND TIMBER PILE BENT PIERS.  
 ALTERNATE STEEL INTERMEDIATE DIAPHRAGMS WILL NOT BE PERMITTED ON THIS STRUCTURE.  
 THE MINIMUM CONCRETE HAUNCH OVER THE PRESTRESSED GIRDERS SHALL BE 30 mm AND THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH DEPTH OF 60 mm WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.



**PROFILE GRADE LINE - BRIDGE ROAD**



**CROSS SECTION THRU RDWY.**  
(EXT. GIRDER BRACING FOR SLAB OVERHANG)

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-35-136</b>			
Const. Spec.	WI '96"	Drawn By RLR	Plans Checked JMB
<b>CROSS-SECTION &amp; QUANTITIES</b>			SHEET 2 OF 9

ORIGINAL: PLR  
 LEVELS ON 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63  
 MSA #: 933966102  
 REV. DATE: 9-11-97  
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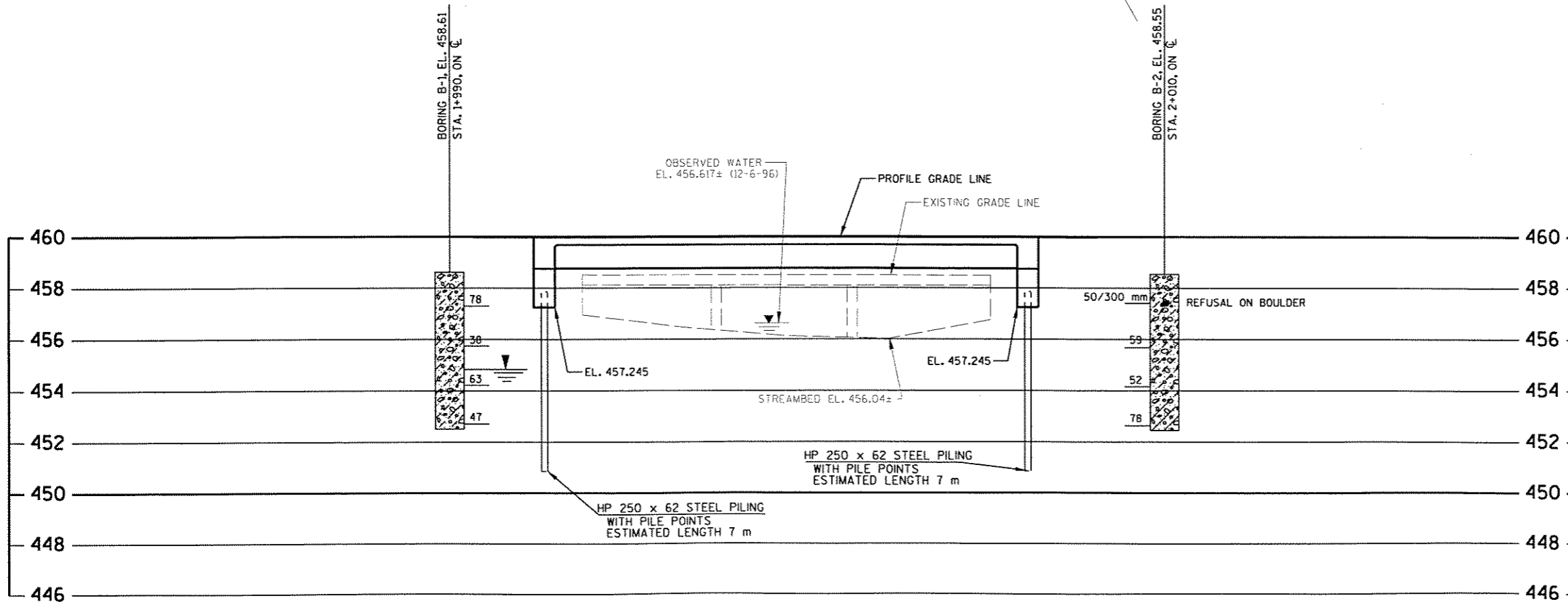
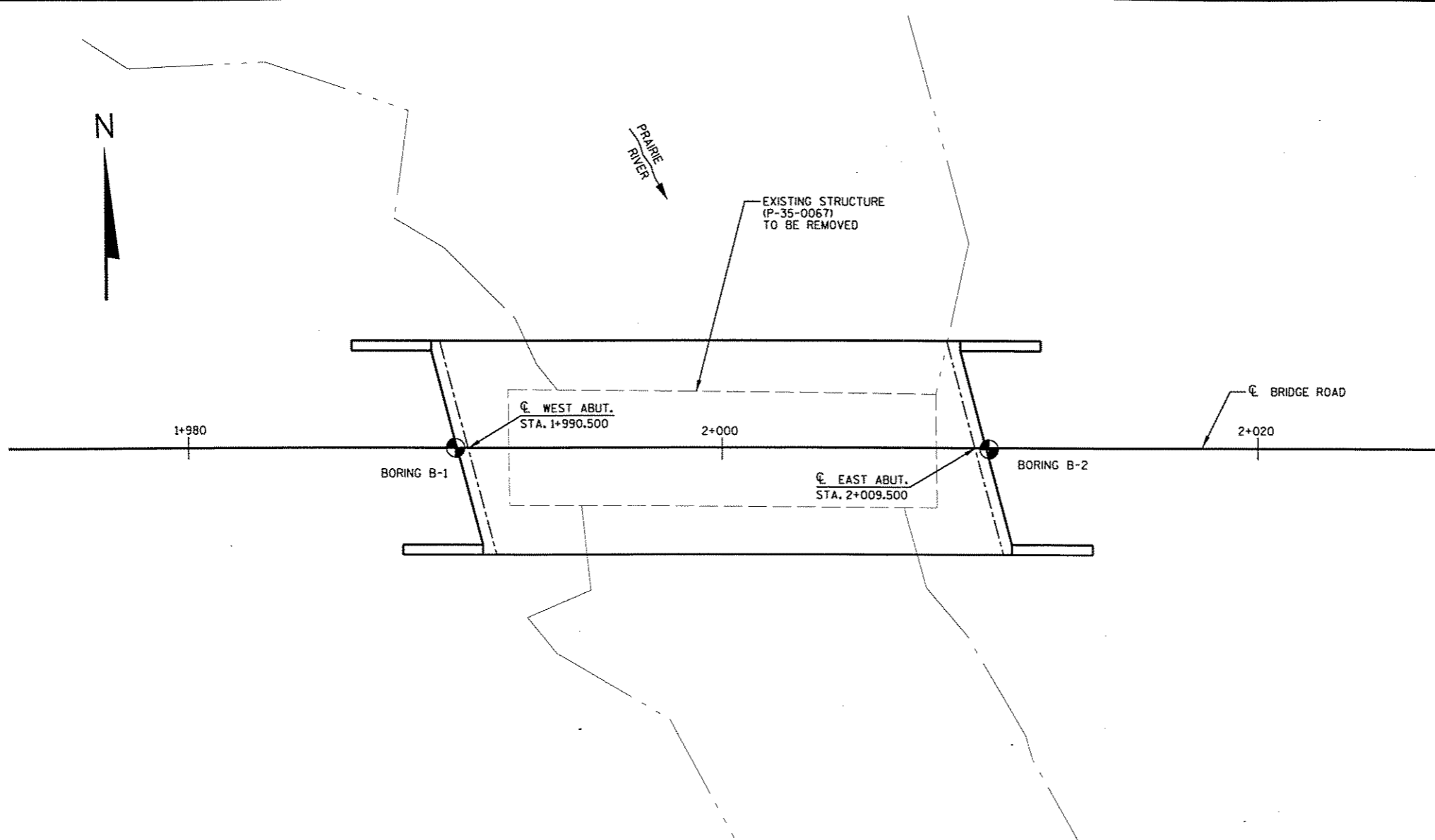
PLOT SCALE: 1:200

MSA #: 93966103

REV. DATE: 9-11-97

9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 62, 63

ORIGINATOR: RLR  
LEVELS ON: 1, 2, 3, 4, 5, 6



STATE PROJECT NUMBER

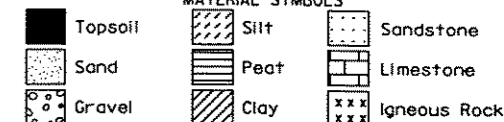
9859-07-71

SHEET NO.

ABBREVIATIONS

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

MATERIAL SYMBOLS



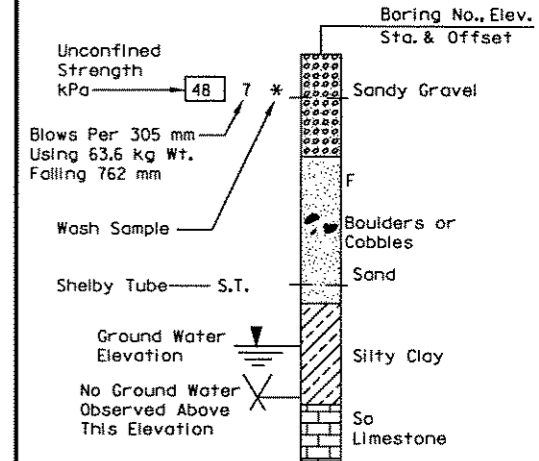
LEGEND OF PROBING

ap - Pocket penetrometer (kPa)

95/152-95 Blows for 152 mm Penetration Probing taken with a 159.1Kg wt. Falling 457 mm on a 51mm O.D. Point.

Probing No. Sta. Elevation 7 Average Blows Per 305 mm Refusal 95/152 mm

LEGEND OF BORING



Unless otherwise specified, the blows per 305 mm at the locations indicated are based on driving a 51mm O.D. x 35 mm I.D. split spoon sampler with a 63.6 kg hammer having a free fall of 762 mm. The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

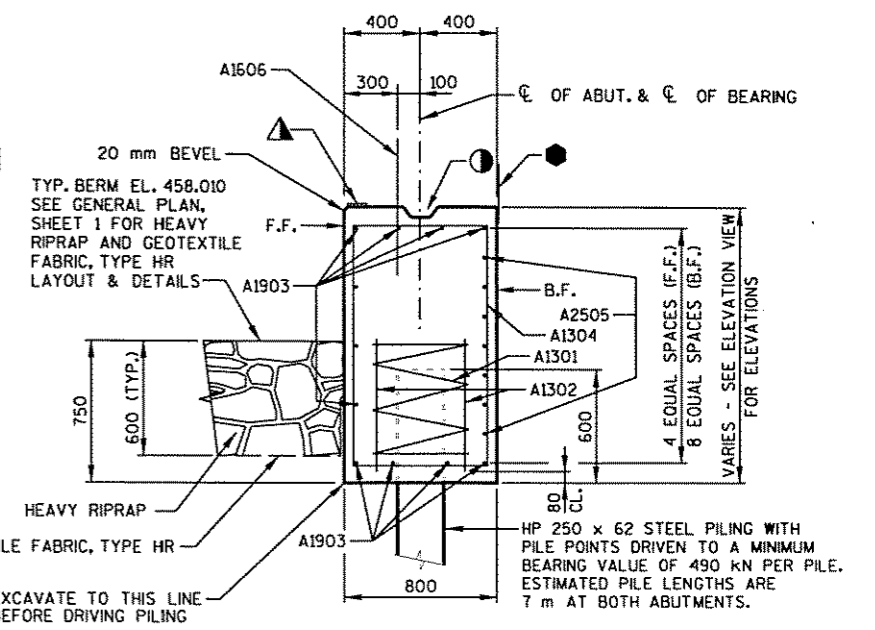
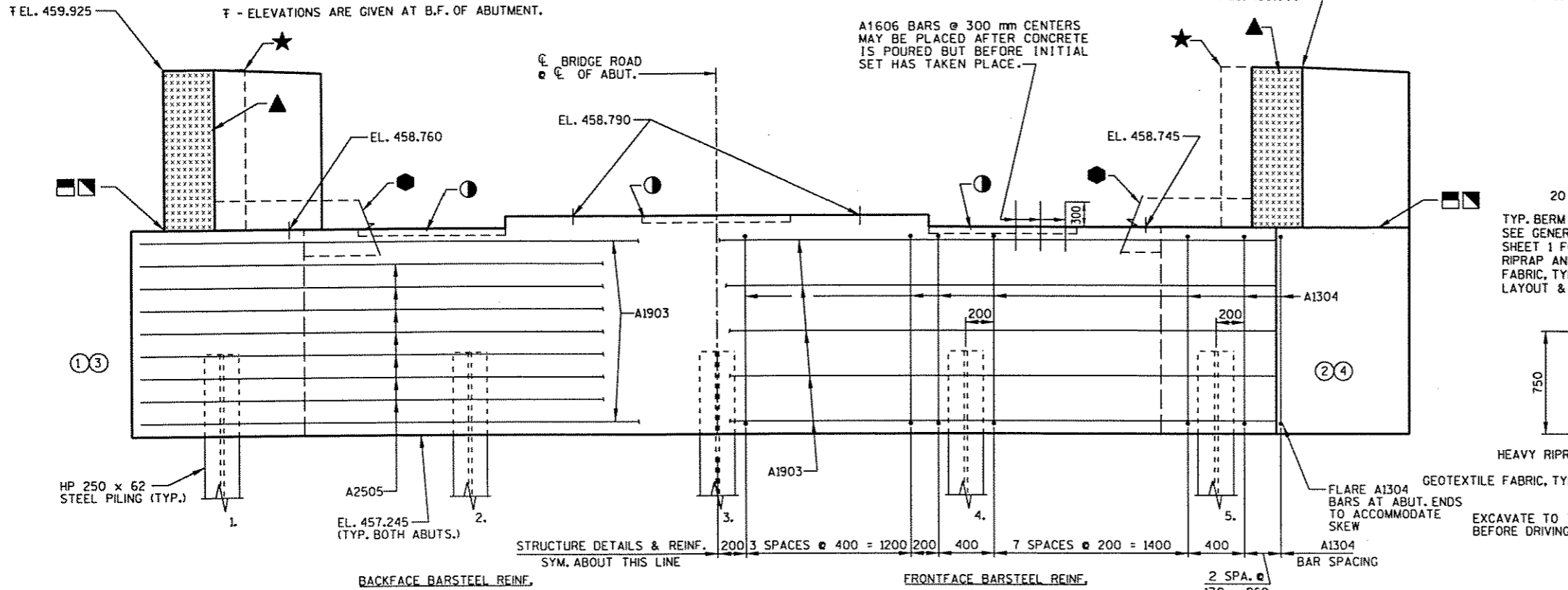
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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 DEPT. OF TRANSPORTATION 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.

BORINGS AND SUBSURFACE REPORT BY:  
GCME, INC.  
DE PERE, WISCONSIN  
BORINGS TAKEN ON 3-19-97

PLANS PREPARED BY:  
MSA PROFESSIONAL SERVICES, INC.  
BARABOO, WISCONSIN

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-136			
Const. Spec.	WI '96"	Drawn By RLR	Plans Checked JMB
SUBSURFACE EXPLORATION			SHEET 3 OF 9

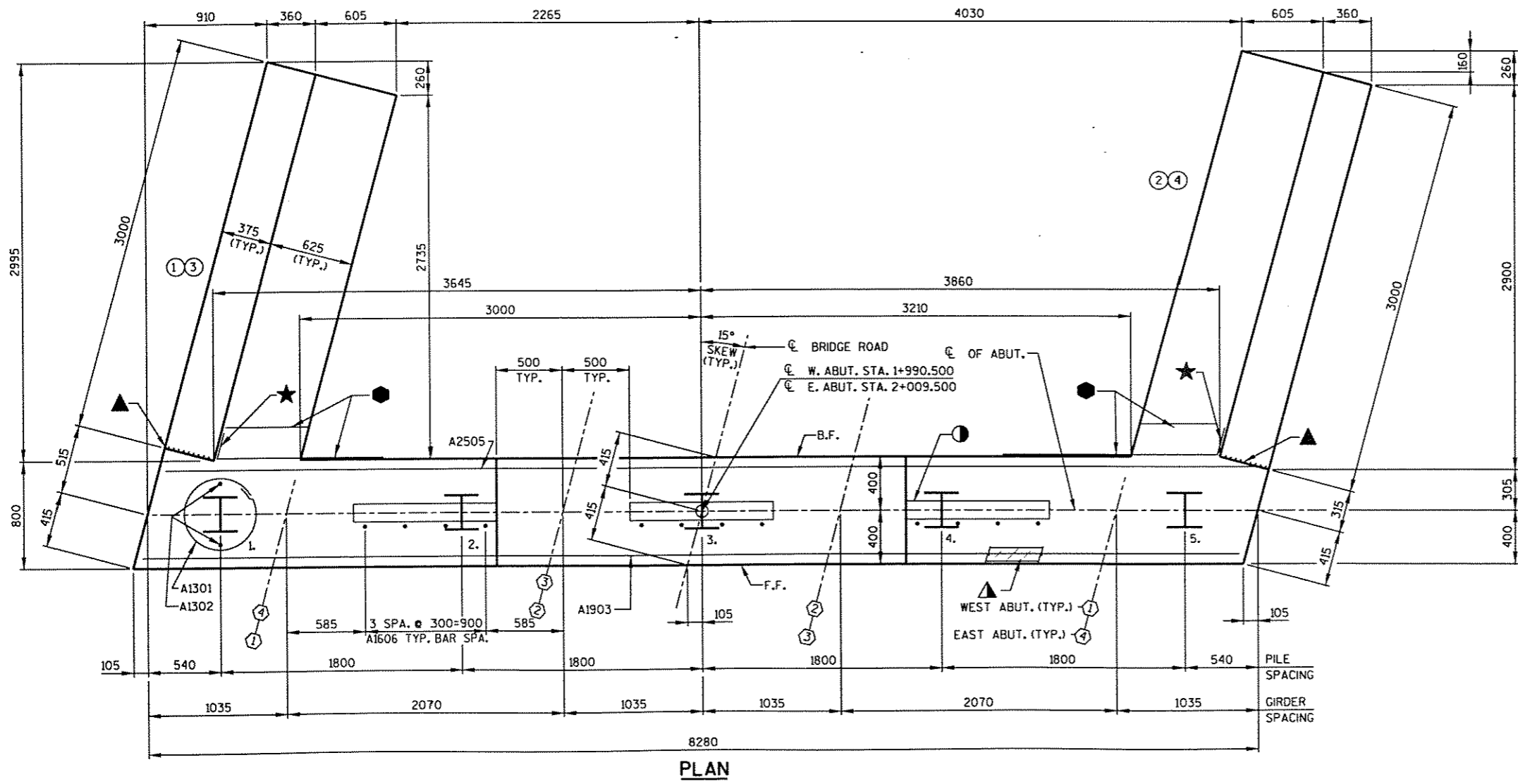


TYPICAL SECTION THRU ABUTMENT

ELEVATION  
(WEST ABUTMENT LOOKING WEST)  
(EAST ABUTMENT LOOKING EAST)

LEGEND

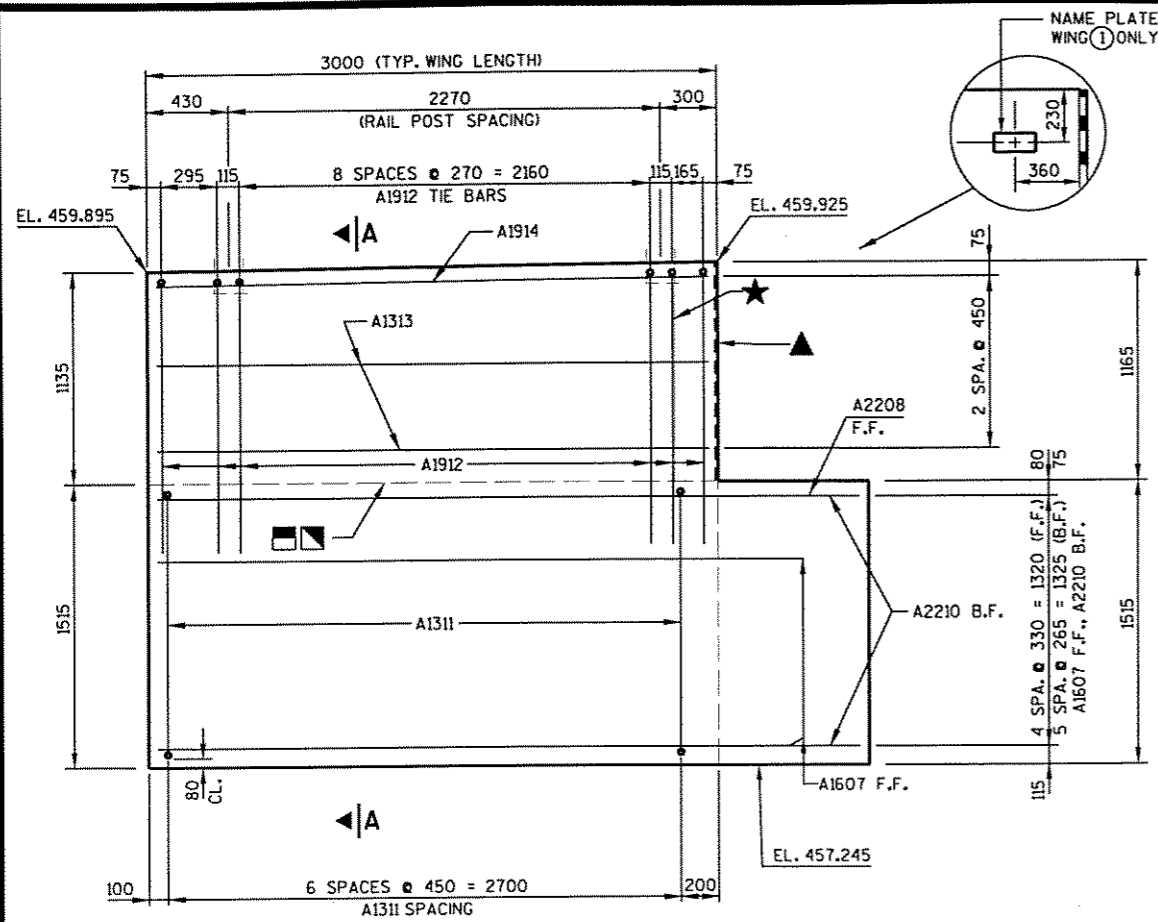
- - DENOTES GIRDER NUMBER.
- - DENOTES WING NUMBER.
- - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 38 mm x 140 mm.
- ▲ - 100 mm x 19 mm FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN OUTSIDE EDGES OF SLAB.
- ▲ - 13 mm FILLER, EXTEND AS SHOWN, SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, (25 mm DEEP & HOLD 3 mm BELOW SURFACE OF CONCRETE).
- - 20 mm "V" GROOVE ON FRONT FACE OF WING WALL AT CONSTRUCTION JOINT.
- - KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 38 mm x 140 mm. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE.
- ★ - VERTICAL 457 mm WIDE RUBBERIZED MEMBRANE WATERPROOFING, EXTEND FROM BRIDGE SEAT TO TOP OF WINGS.
- - HORIZONTAL 457 mm WIDE RUBBERIZED MEMBRANE WATERPROOFING, EXTEND BETWEEN WING TOPS. PLACE BOTTOM HALF HORIZONTAL AT HAUNCHED AREA OF WINGS.
- SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- F.F. - FRONT FACE
- B.F. - BACK FACE
- CL. - CLEAR



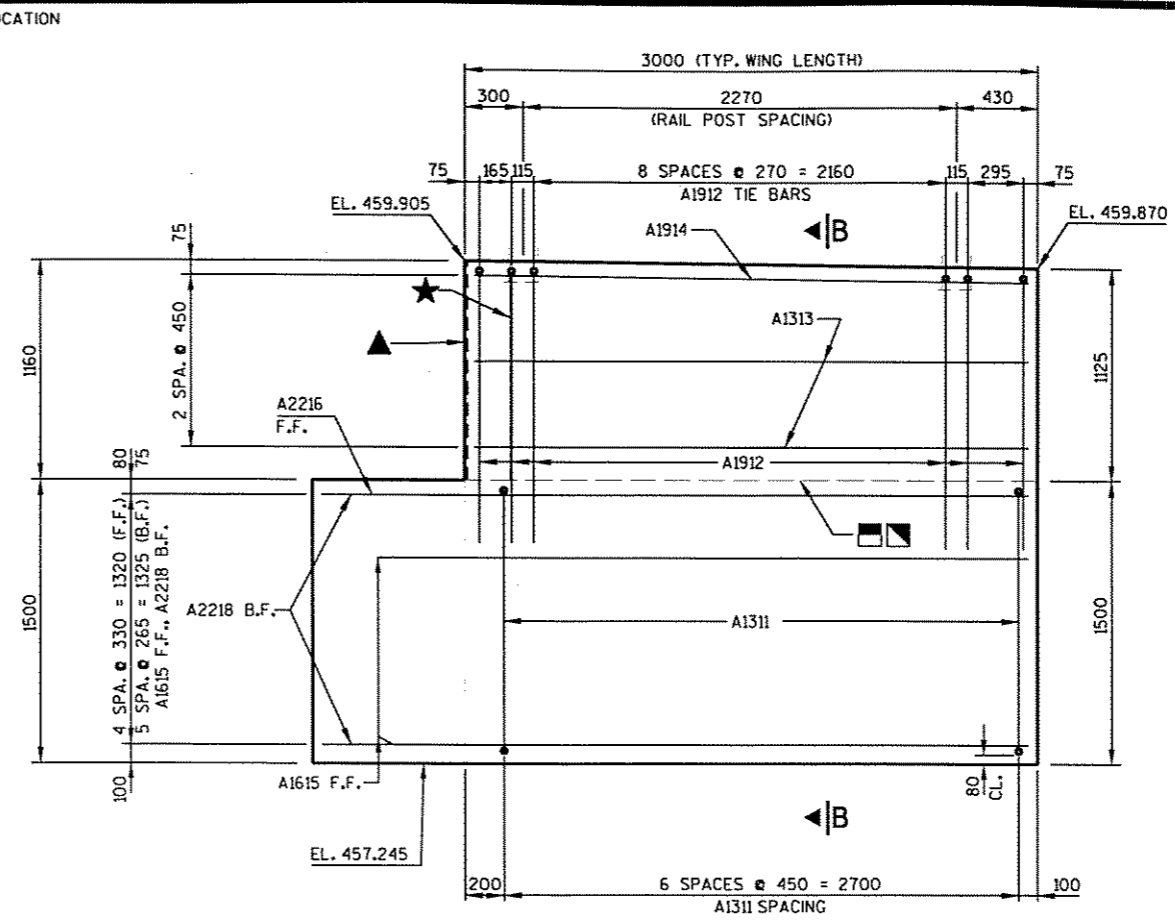
No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-136			
Const. Spec.	Wi "96"	Drawn By RLR	Plans Checked JMB
ABUTMENTS			SHEET 4 OF 9

ORIGINATOR: RLR  
 LEVELS ON - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63  
 MSA #: 93966104  
 PLOT SCALE:  
 REV. DATE: 9-11-97

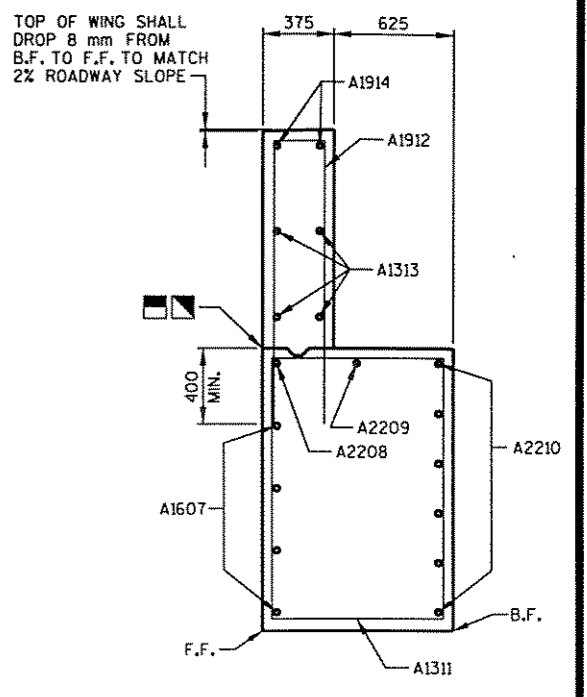
MSA #: 93966105  
 REV. DATE: 9-11-97  
 ORIGINAL: RLR  
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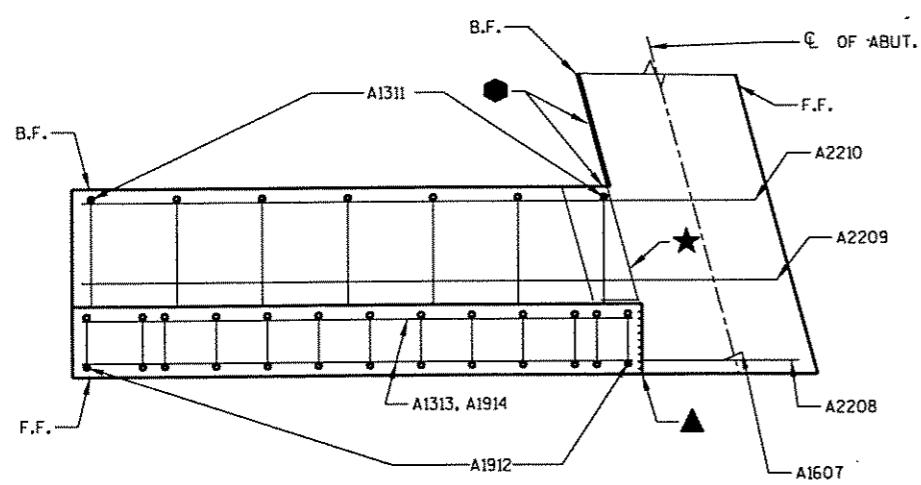
**ELEVATION - WINGS 1 & 3**  
(LOOKING AT F.F. OF WINGS)  
DIMENSIONS AND ELEVATIONS ARE GIVEN AT F.F. OF WING



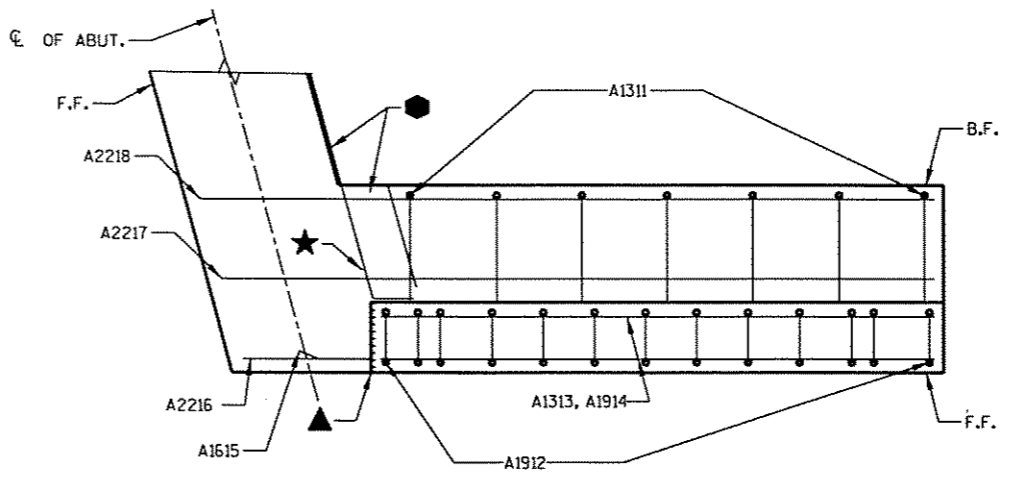
**ELEVATION - WINGS 2 & 4**  
(LOOKING AT F.F. OF WINGS)  
DIMENSIONS AND ELEVATIONS ARE GIVEN AT F.F. OF WING



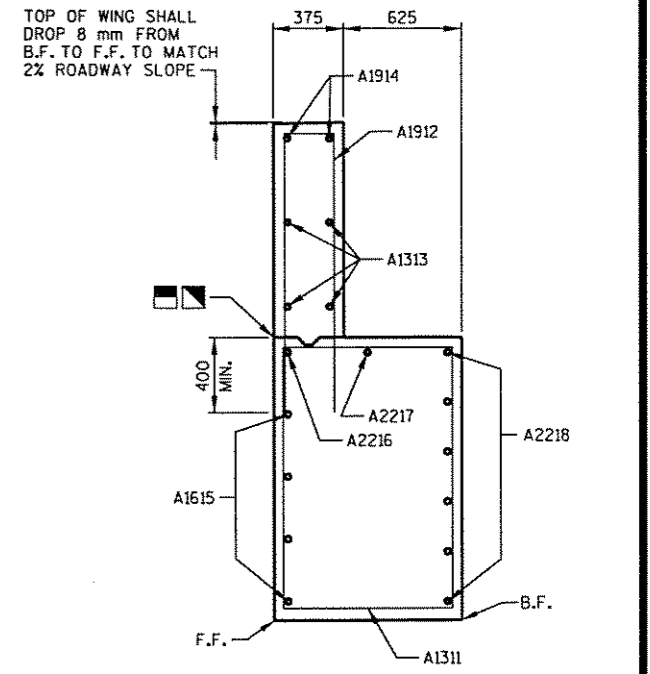
**SECTION A-A THRU WINGS 1 & 3**



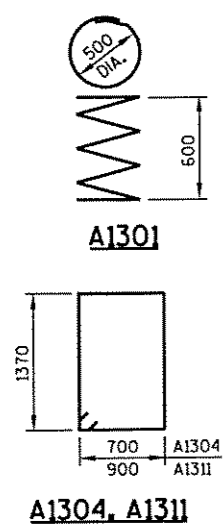
**PLAN - WINGS 1 & 3**



**PLAN - WINGS 2 & 4**



**SECTION B-B THRU WINGS 2 & 4**



DIMENSIONS IN BENDING DETAILS  
 ARE OUT TO OUT OF BAR.  
 BAR MARKS ARE FOR WEST  
 ABUTMENT AS SHOWN.  
 LABEL AND BUNDLE EAST  
 ABUTMENT BARS WITH B MARK,  
 B1301 THRU B2218.  
 ⊗ EPOXY COAT THESE BARS.

**BILL OF BARS (ABUTMENT) 935 kg (UNCOATED)  
210 kg (COATED)**

MARK	NO. REOD	LENGTH	BENT	LOCATION
A1301	5	8600	X	AT BODY PILES-1 PER PILE 5 SPIRAL WRAPS
A1302	10	700		" " " -2 " " - VERT.
A1903	11	8150		BODY - F.F., TOP & BOTTOM - HORIZ.
A1304	32	4350	X	" - STIRRUPS - VERT.
A2505	7	8150		" - B.F. - HORIZ.
A1606	12	600		" - TOP DOWELS - VERT.
A1607	4	3450		WINGS 1 & 3 - BASE - F.F. - HORIZ.
A2208	1	3750		" " " " " " "
A2209	1	3650		" " " " " - TOP "
A2210	6	3550		" " " " " - B.F. "
A1311	14	4750	X	" - BASE - STIRRUPS - VERT.
⊗ A1912	26	3200	X	" - TOP - TIES "
A1313	8	2900		" - F.F. & B.F. - HORIZ.
⊗ A1914	4	2900		" " " " " " "
A1615	4	3300		WINGS 2 & 4 - BASE - F.F. "
A2216	1	3600		" " " " " " "
A2217	1	3750		" " " " " - TOP "
A2218	6	3850		" " " " " - B.F. "

SEE SHEET 4 FOR LEGEND OF

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-35-136</b>			
Const. Spec.	WI "96"	Drawn By RLR	Plans Checked JMB
<b>ABUTMENT DETAILS</b>			SHEET 5 OF 9



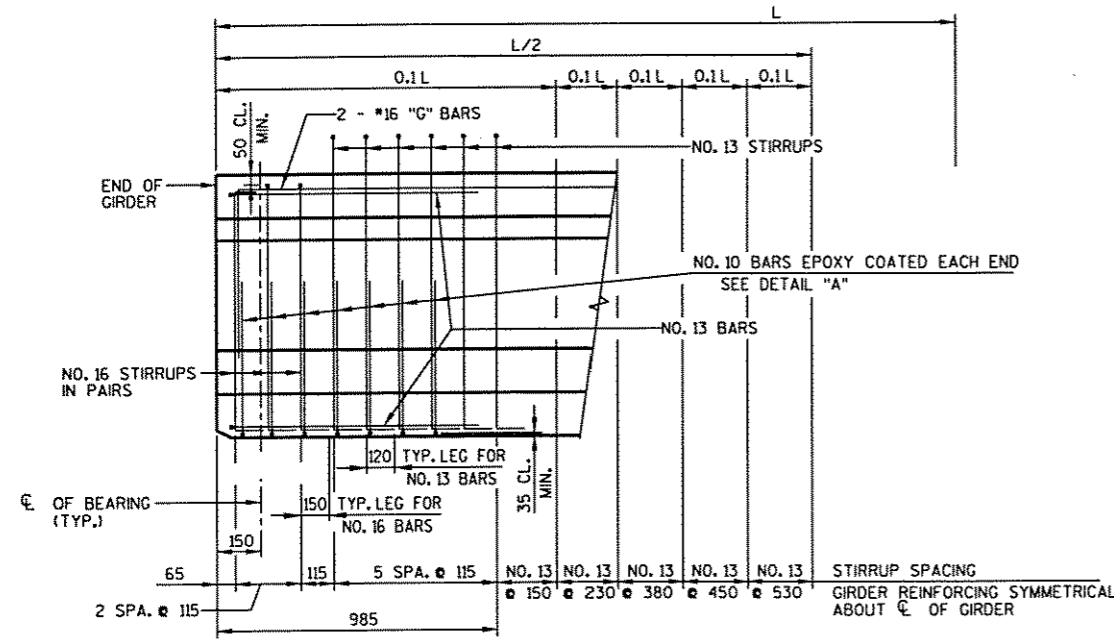
PLOT SCALE:

MSA #: 93966106

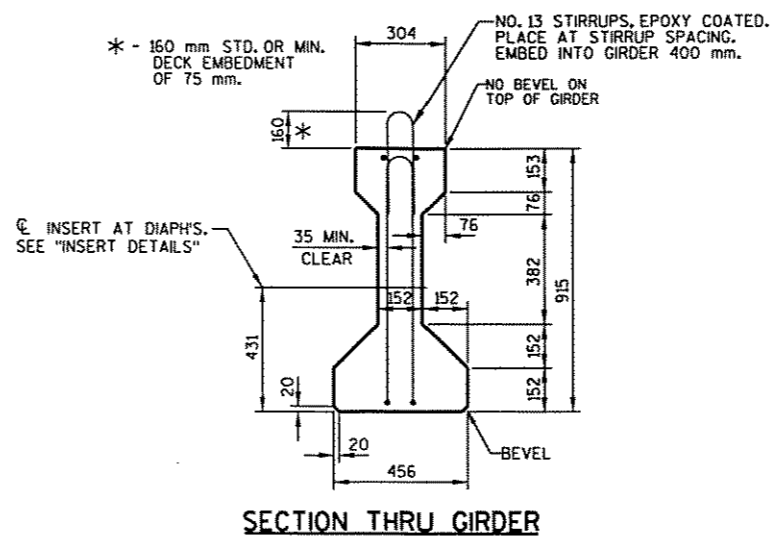
REV. DATE: 9-11-97

ORIGINATOR: RLR

LEVELS ON: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63



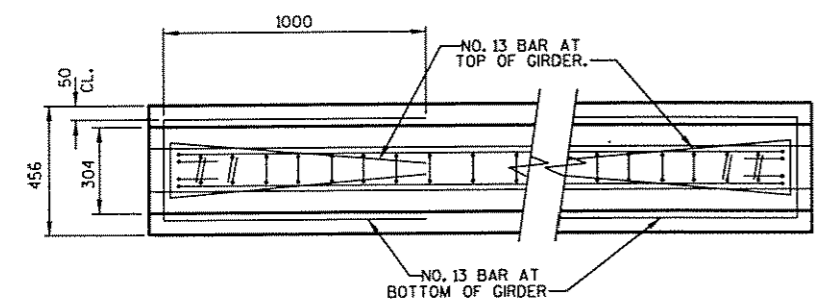
915 mm GIRDER - SIDE VIEW



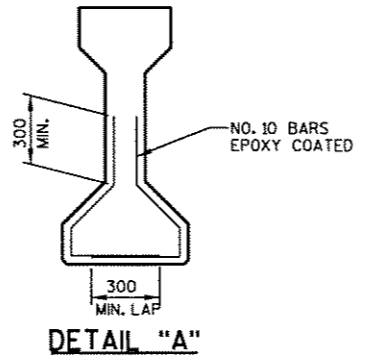
SECTION THRU GIRDER

**NOTES**

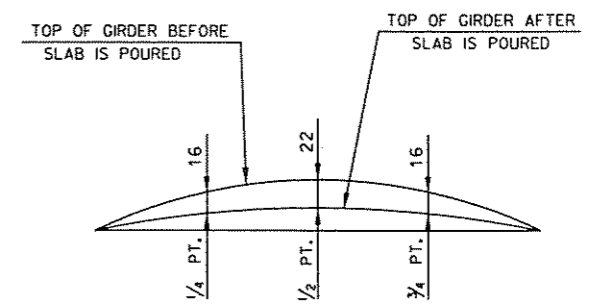
- ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.
- PRESTRESSING STRANDS SHALL BE 13 mm  $\phi$  - 7 WIRE STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.
- THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.
- TOP OF GIRDERS TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 50 mm OF GIRDER WHICH SHALL BE TROWEL FINISHED.
- "G" BARS MAY BE SPLICED AT THE 1/2 POINT OF GIRDER. LAP LENGTH 950 mm FOR NO. 16 BARS. BEND DOWN 256 mm AT ENDS.
- SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:
  - USE ASTM A706M, GRADE 420 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
  - USE ASTM A615M, GRADE 300 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.
- AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.
- WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.



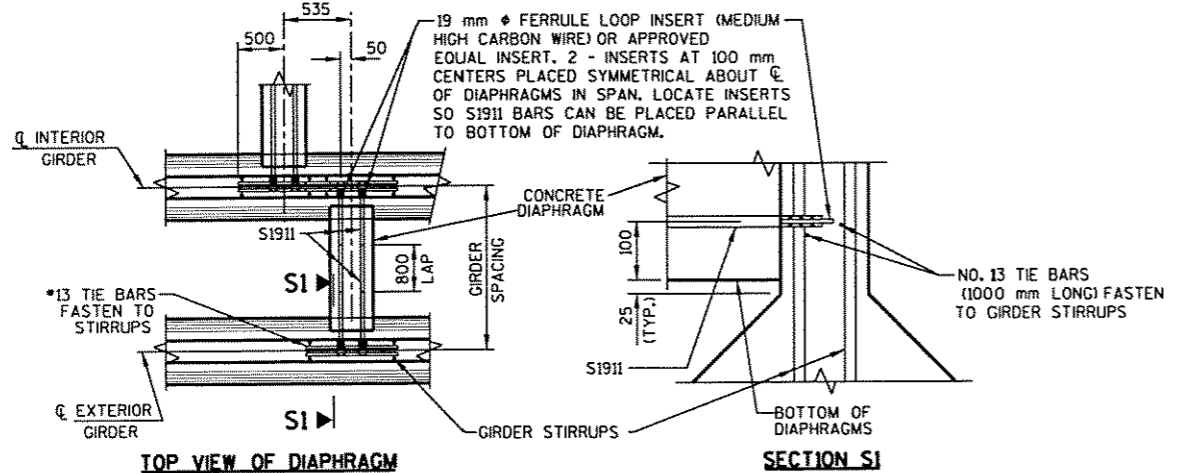
TOP VIEW OF GIRDER



DETAIL "A"



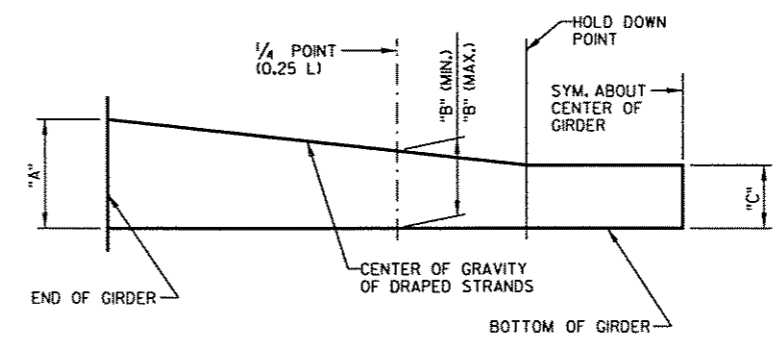
DEAD LOAD DEFLECTION DIAGRAM



TOP VIEW OF DIAPHRAGM

SECTION S1

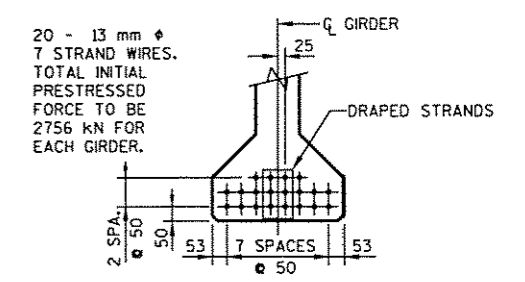
INSERT DETAILS AT DIAPHRAGMS (FOR DIAPHRAGM LOCATION SEE SUPERSTRUCTURE PLAN - SHEET 7)



DRAPED STRAND PROFILE

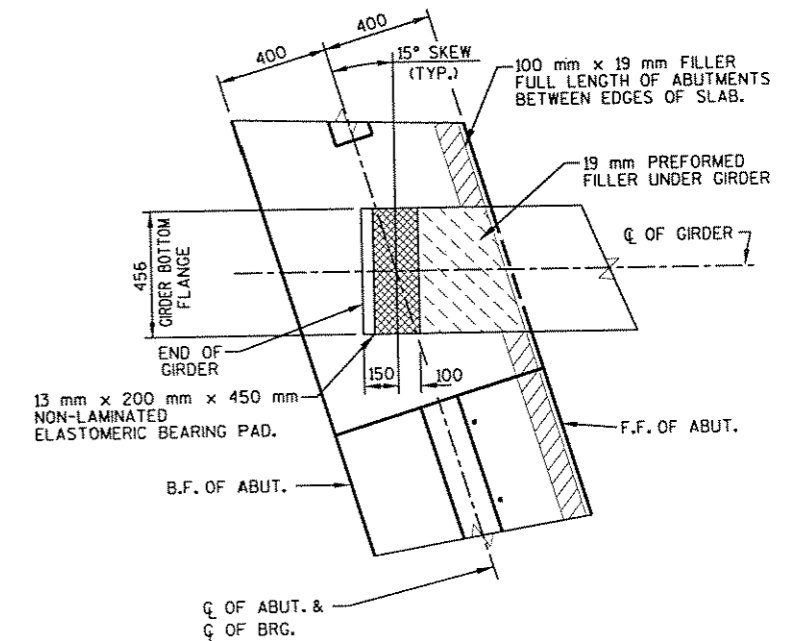
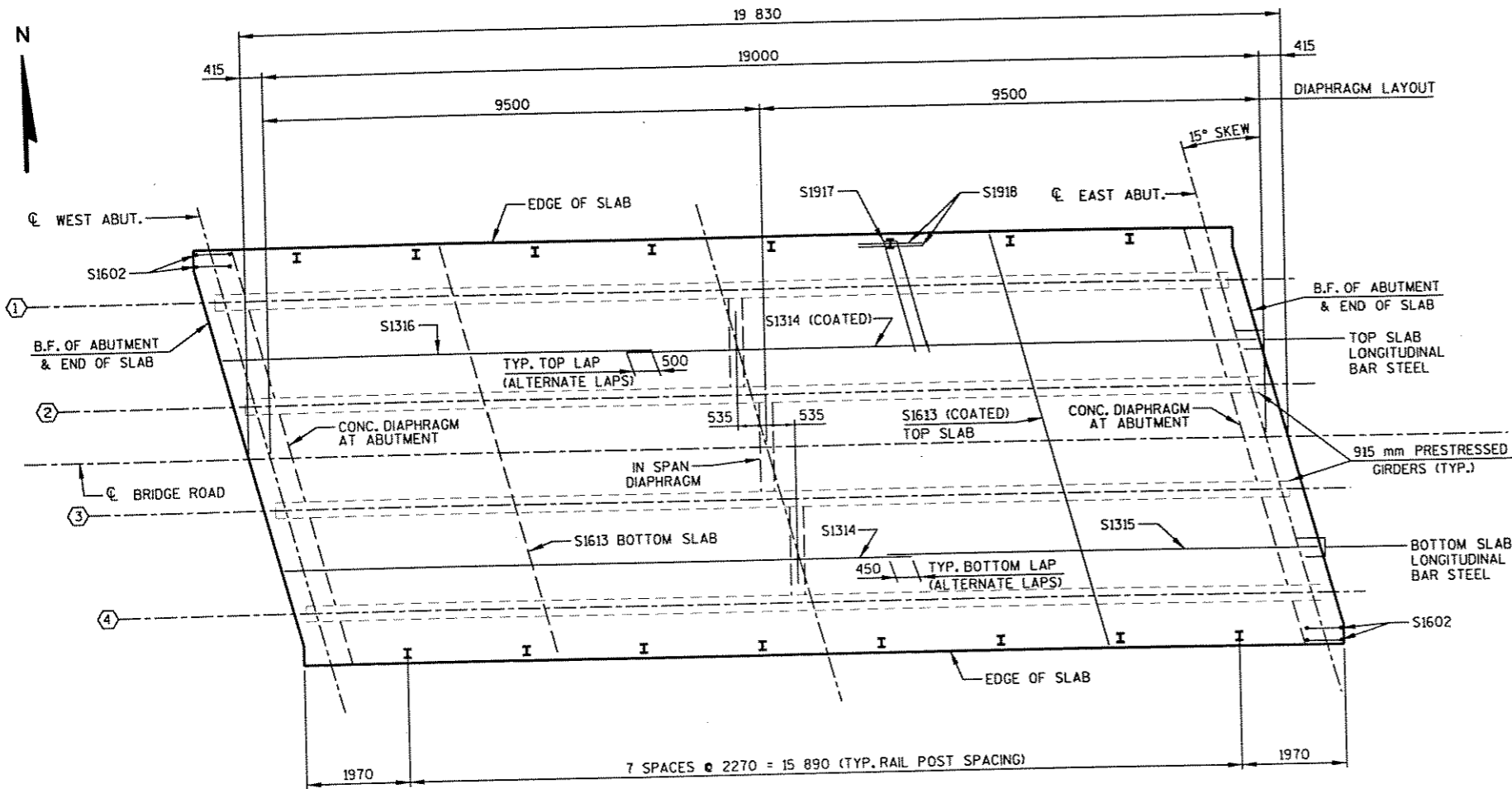
GIRDER DATA		LOW RELAXATION
GIRDER LENGTH "L" REQUIRED		19 300
f'ci (MPa) *	DRAPED PATTERN	34,9
	SPREAD PATTERN	
DRAPED STRANDS	DIMENSION "A"	550
	DIMENSION "B" (MINIMUM)	212
	DIMENSION "B" (MAXIMUM)	287
	DIMENSION "C"	100

\* MINIMUM CYLINDER STRENGTH OF CONCRETE AT TIME OF TRANSFER OF PRESTRESS FORCE.



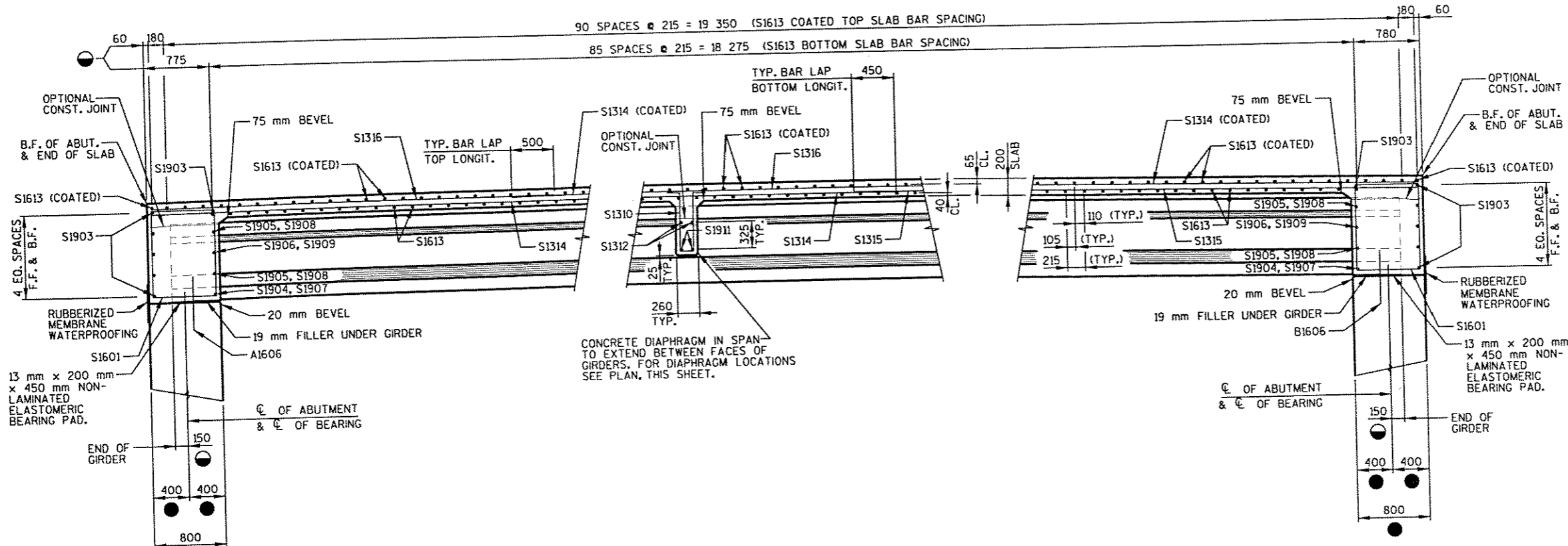
SECTION THRU GIRDER AT CL SPAN

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-35-136</b>			
Const. Spec.	WI "96"	Drawn By RLR	Plans Checked JMB
<b>915 mm PRESTRESSED GIRDER DETAILS</b>			SHEET 6 OF 9



ABUTMENT BEARING PAD DETAIL

PLAN



PART LONGITUDINAL SECTION

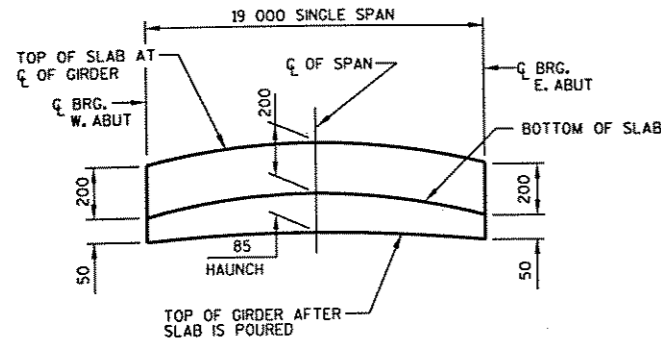
GENERAL NOTES

- SEE CROSS SECTION THRU BRIDGE, IN SPAN, SHEET 8 FOR TYPICAL LONGITUDINAL BAR SPACING.
- TRANSVERSE BARS SHALL BE PLACED ON THE SKEW.
- - INDICATES GIRDER NUMBER
- - DIMENSIONS ARE GIVEN PARALLEL TO THE CL. OF BRIDGE ROAD.
- - DIMENSIONS ARE GIVEN NORMAL TO THE CL. OF SUBSTRUCTURES.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-136			
Const. Spec.	WI "96"	Drawn By RLR	Plans Checked JMB
SUPERSTRUCTURE			SHEET 7 OF 9

ORIGINAL: RLR  
 LEVELS ON 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63  
 MSA #: 93966107  
 REV. DATE: 9-3-97  
 PLOT SCALE:

COATED 2900 kg  
UNCOATED 1940 kg



**HAUNCH HEIGHTS FOR GIRDER STIRRUP PROJECTION**

NOTE: HAUNCH HEIGHTS ARE BASED ON THE TIME DEPENDENT VARIABLE "PRESTRESSED CAMBER" ASSUMING NORMAL CONSTRUCTION SCHEDULING.

**TOP OF DECK ELEVATIONS AT C OF GIRDERS**

LOCATION	GIRDER 1 ELEVATION	GIRDER 2 ELEVATION	GIRDER 3 ELEVATION	GIRDER 4 ELEVATION
C WEST ABUTMENT	459.925	459.970	459.975	459.940
1/4 POINT	459.960	460.005	460.010	459.970
1/2 POINT	459.975	460.020	460.020	459.975
3/4 POINT	459.970	460.010	460.005	459.960
C EAST ABUTMENT	459.940	459.975	459.970	459.925

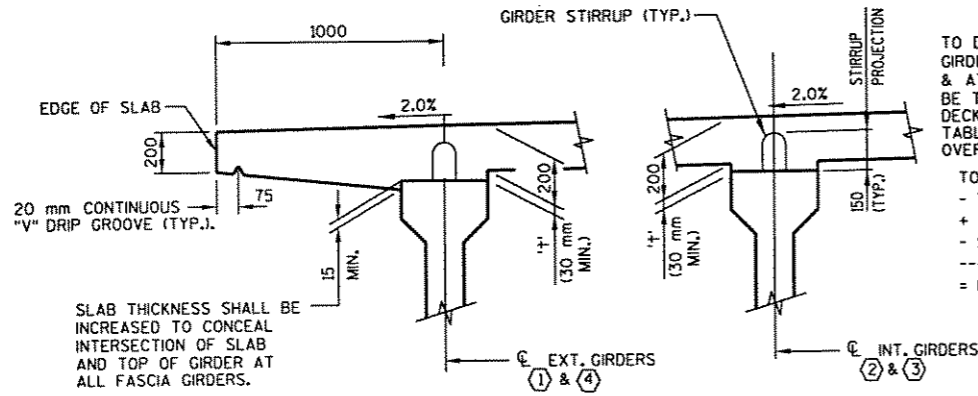
**BILL OF BARS**

MARK	NO. REQUIRED		LENGTH	BENT	LOCATION
	COATED	UNCOATED			
S1601	54	-	3600	X	DIAPHRAGM @ ABUTS. - STIRRUP - VERTICAL
S1602	4	-	3450	X	DIAPHRAGM @ ABUTS. - STIRRUP @ WINGS 2 & 4 - VERTICAL
S1903	12	-	8150		DIAPHRAGM @ ABUTS. - BACK FACE & TOP - HORIZONTAL
S1904	4	-	700		DIAPHRAGM @ ABUTS. - FRONT FACE - END BAYS - HORIZONTAL
S1905	8	-	750		DIAPHRAGM @ ABUTS. - FRONT FACE - END BAYS - HORIZONTAL
S1906	4	-	850		DIAPHRAGM @ ABUTS. - FRONT FACE - END BAYS - HORIZONTAL
S1907	6	-	1500		DIAPHRAGM @ ABUTS. - FRONT FACE - INTERIOR BAYS - HORIZONTAL
S1908	12	-	1650		DIAPHRAGM @ ABUTS. - FRONT FACE - INTERIOR BAYS - HORIZONTAL
S1909	6	-	1800		DIAPHRAGM @ ABUTS. - FRONT FACE - INTERIOR BAYS - HORIZONTAL
S1310	18	-	1800	X	DIAPHRAGM IN SPAN - STIRRUP - VERTICAL
XX S1911	-	12	1400		DIAPHRAGM IN SPAN - HORIZONTAL
S1312	-	6	1650		DIAPHRAGM IN SPAN - HORIZONTAL
S1613	77	86	8150		SLAB - TOP & BOTTOM - TRANSVERSE
S1314	41	40	12 000		SLAB - TOP & BOTTOM - LONGITUDINAL
S1315	-	40	8150		SLAB - BOTTOM - LONGITUDINAL
S1316	41	-	8200		SLAB - TOP - LONGITUDINAL
S1917	16	-	3700	X	SLAB @ RAIL POST, 1 PER POST - TRANSVERSE
S1918	32	-	1250		SLAB @ RAIL POST, 2 PER POST - LONGITUDINAL
S1619	16	-	7550		SLAB - TOP - @ RAIL POSTS AS NOTED BELOW - TRANSVERSE

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

XX - S1911 DEFORMED BAR, THREAD ONE END 75 mm.

△ - PLACE TWO S1619 BARS IN LIEU OF TWO S1613 COATED BARS AT RAIL POSTS TO AVOID CONFLICT WITH S1917 BARS.

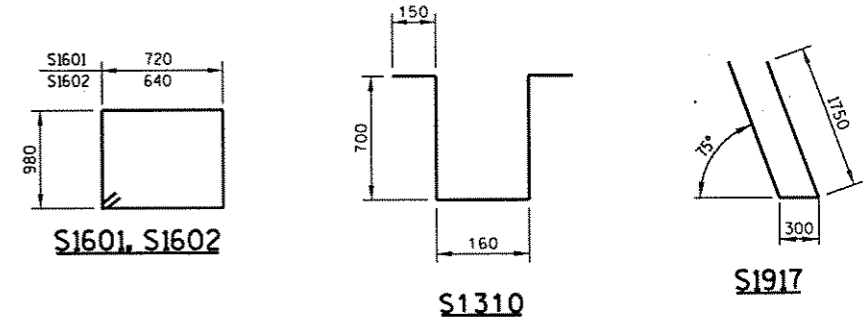


TO DETERMINE '+', ELEV. OF TOP OF GIRDERS AT C OF SUBSTRUCTURE UNITS & AT 1/4 POINTS OF EACH SPAN SHALL BE TAKEN. TO DETERMINE THE TOP OF DECK ELEVATION FOR POINT REFERRED USE TABLE ABOVE AND ADJUST FOR CROSS SLOPE OVER GIRDER. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEADLOAD DEFLECTION (SEE SHEET 6)
- SLAB THICKNESS
- 
- = HAUNCH HEIGHT '+'

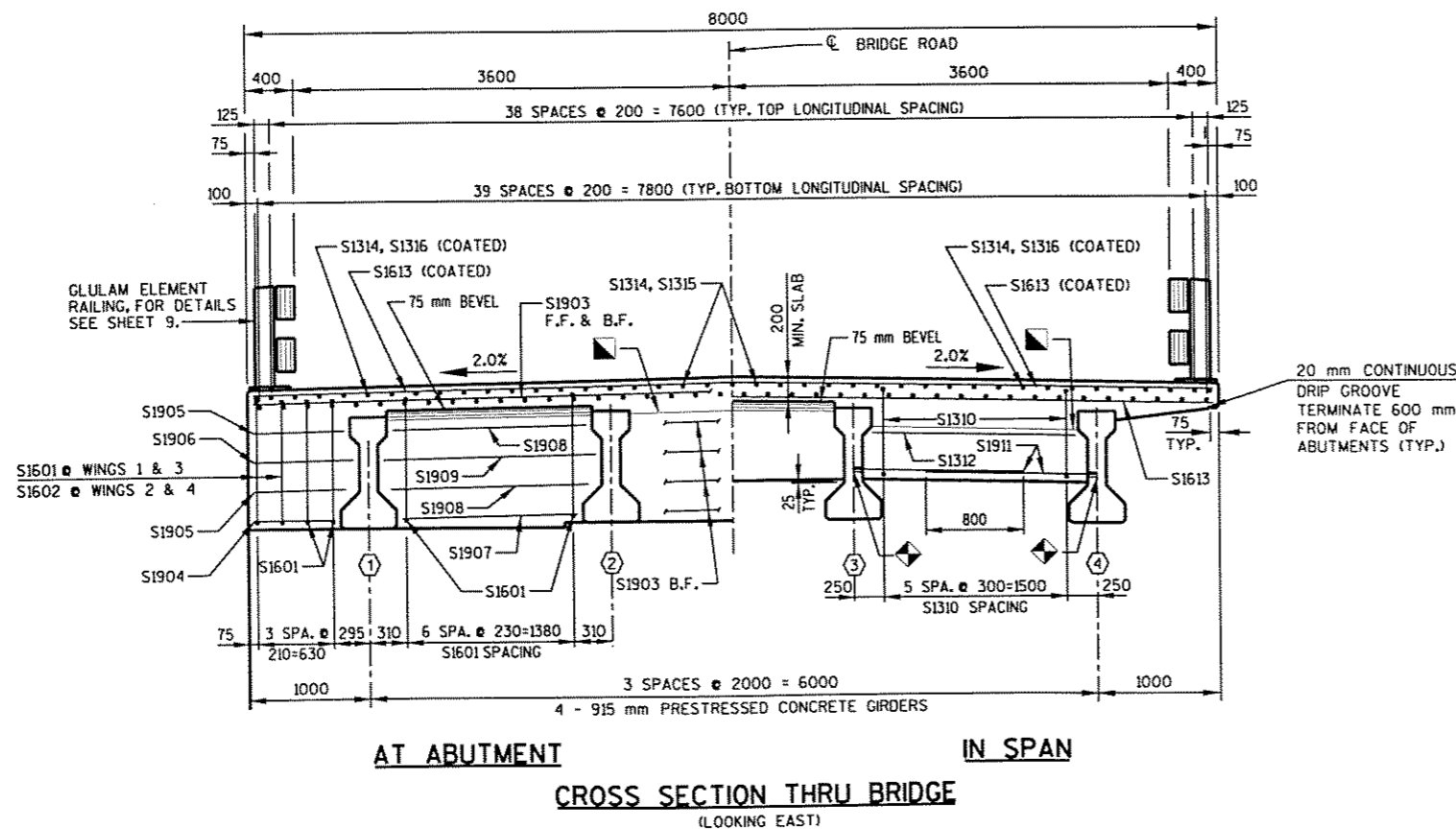
**SLAB HAUNCH DETAIL**

IF 30 mm MINIMUM HAUNCH HEIGHT '+' CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. MAXIMUM HAUNCH HEIGHT EQUALS "STIRRUP PROJECTION" MINUS 75 mm.



**LEGEND**

- - INDICATES GIRDER NUMBER
- ◻ - OPTIONAL CONSTRUCTION JOINT (TYP. ALL BAYS).
- ◊ - DIAPHRAGM INSERTS TO BE CAST IN GIRDERS. FOR DETAILS SEE SHEET 6.



AT ABUTMENT

IN SPAN

**CROSS SECTION THRU BRIDGE**  
(LOOKING EAST)

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-35-136</b>			
Const. Spec.	WI "96"	Drawn By	RLR
		Plans Checked	JMB
SUPERSTRUCTURE DETAILS			SHEET 8 OF 9

PLOT SCALE:

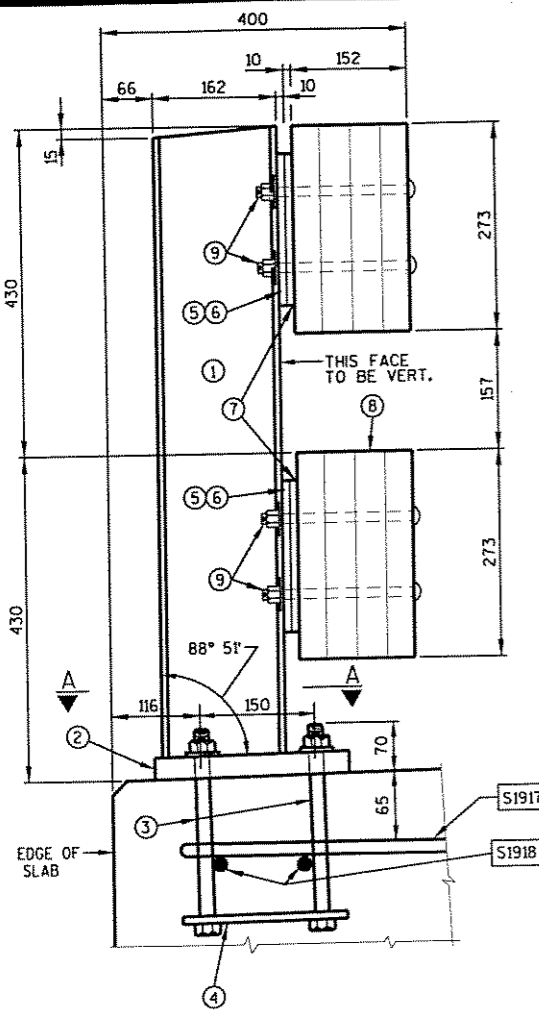
MSA #: 93966108

REV. DATE: 9-3-97

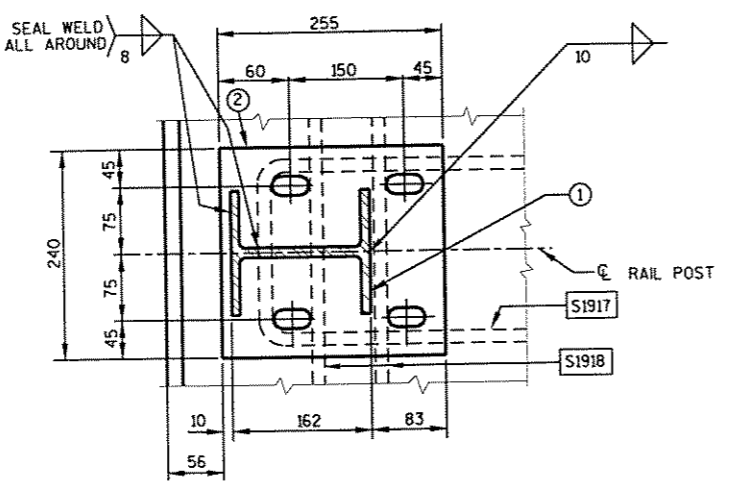
ORIGINATOR: RLR

LEVELS: 01 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

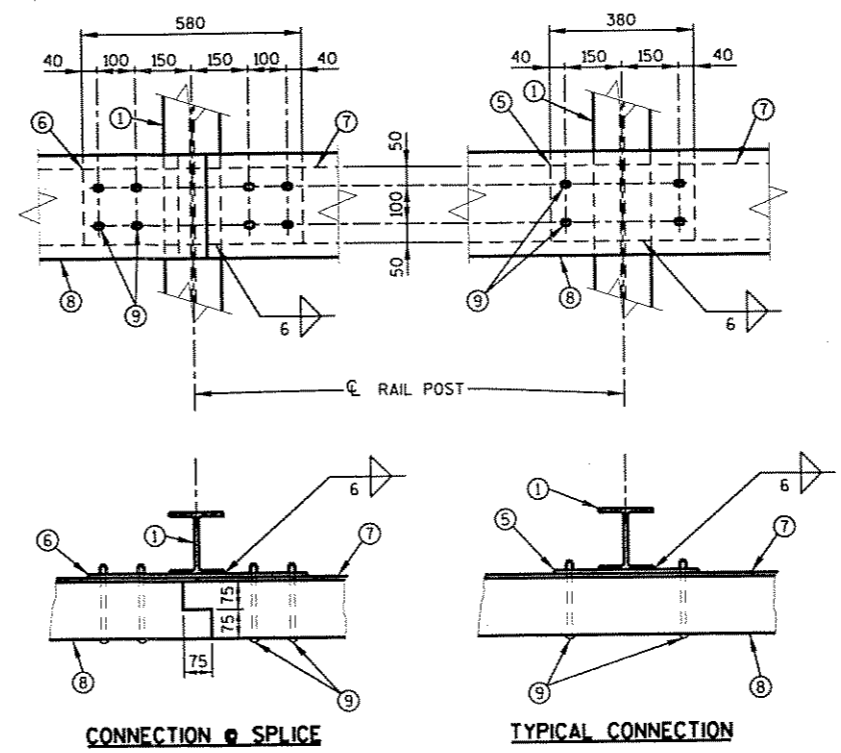
ORIGINATOR: RLR  
 LEVELS: DW - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.  
 REV. DATE: 9-3-87  
 MSA #: 93969109  
 PLOT SCALE:



**SECTION B THRU RAILING**



**SECTION A**



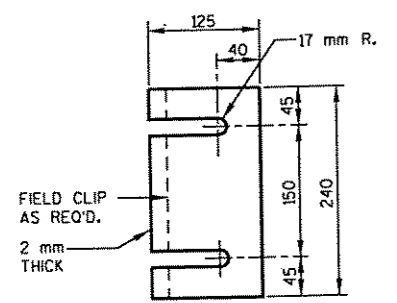
**RAIL TO POST CONNECTION DETAILS**

**LEGEND**

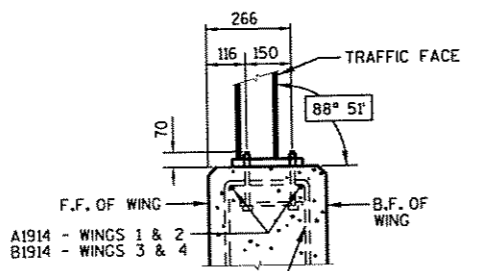
- ① W150x37, CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POST NORMAL TO GRADE LINE.
- ② PLATE 25 mm x 240 mm x 255 mm WITH 27 mm x 40 mm SLOTTED HOLES FOR ANCHOR BOLTS (3). WELD TO (1) AS SHOWN.
- ③ A325M- M22 x 200 mm LONG HEX BOLT (ZINC COATED) WITH A325M NUT AND WASHER, 4 REQUIRED PER POST. THREAD 75 mm AND PLACE NORMAL TO PLATE (2). CHAMFER TOP OF BOLTS BEFORE THREADING. UOE 360 mm LONG AT POSTS ON WINGS.
- ④ 6 mm x 200 mm x 200 mm FLAT BAR, WITH 25 mm DIA. HOLES FOR ANCHOR BOLTS (3).
- ⑤ PLATE 10 mm x 380 mm x 200 mm WITH 4 - 18 mm x 25 mm SLOTTED HOLES FOR BOLTS (3). WELD TO (1) AS SHOWN.
- ⑥ PLATE 10 mm x 580 mm x 200 mm WITH 8 - 18 mm x 25 mm SLOTTED HOLES FOR BOLTS (3). WELD TO (1) AS SHOWN.
- ⑦ PLATE 10 mm x 200 mm WITH 18 mm HOLES FOR BOLTS (3) AND 15 mm HOLES FOR LAG BOLTS (10). BOLT TO PLATES (5) AND (6) AS SHOWN.
- ⑧ 152 mm x 273 mm GLULAM RAIL WITH 18 mm HOLES FOR BOLTS (3). CONNECT TO PLATE (7) WITH BOLTS (3) AND (10).
- ⑨ 15 mm DIA. x 200 mm LONG CARRIAGE BOLTS WITH HEX. NUT AND 50 mm WASHERS.
- ⑩ 12 mm DIA. x 100 mm LONG LAG BOLT.

**GENERAL NOTES**

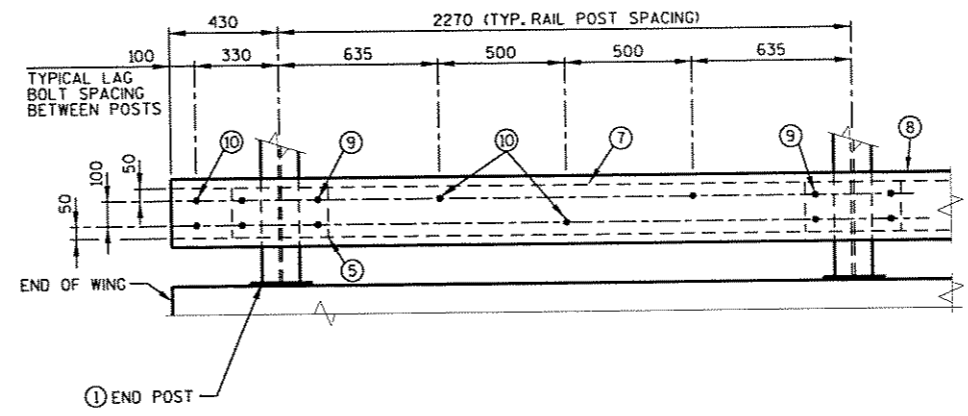
BID ITEM SHALL BE "GLULAM ELEMENT RAILING", WHICH INCLUDES ALL ITEMS SHOWN.  
 RAILING SHALL BE FABRICATED WITH 3 SPLICES EACH SIDE OF BRIDGE. PANEL LENGTHS SHALL NOT EXCEED 6700 mm.  
 POSTS BASE PLATES, (2) SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.  
 ALL STEEL MATERIAL, EXCEPT LOWER 200 mm OF ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED TO MATCH COLOR OF GLULAM RAIL. SEE SPECIAL PROVISIONS.  
 FILL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. SEAL BOTTOM EDGES OF PLATE (2) TO DECK.  
 ALL MATERIALS (EXCEPT GLULAM RAIL) USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709M GRADE 250 UNLESS NOTED OTHERWISE.  
 STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.  
 PRIOR TO PAINTING, ALL STEEL RAILING POSTS AND STEEL PLATES SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.  
 ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF POST BASE AT EDGE OF SLAB OR WING.



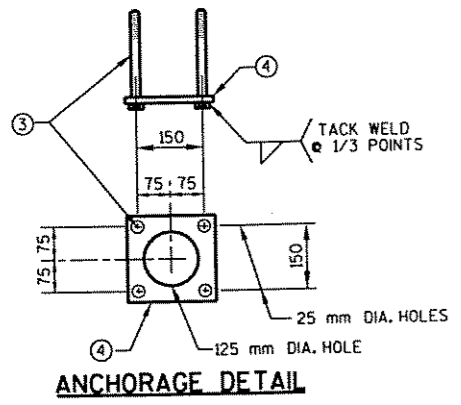
**POST SHIM DETAIL**  
(4 PER POST)



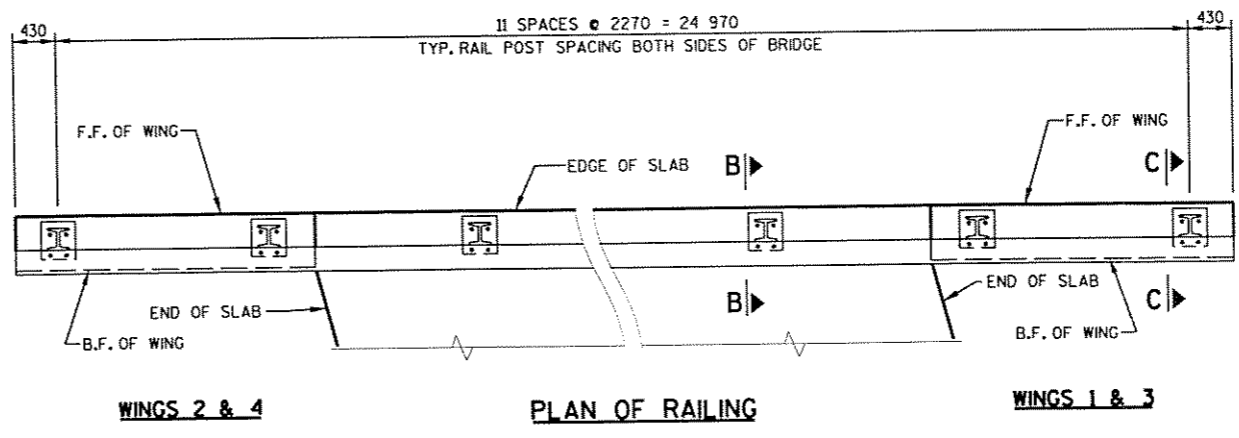
**SECTION C THRU WINGS**



**PART ELEVATION OF RAILING**



**ANCHORAGE DETAIL**



**PLAN OF RAILING**

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-136			
Const. Spec.	WI "96"	Drawn By	RLR
		Plans Checked	JMB
GLULAM ELEMENT RAILING			SHEET 9 OF 9