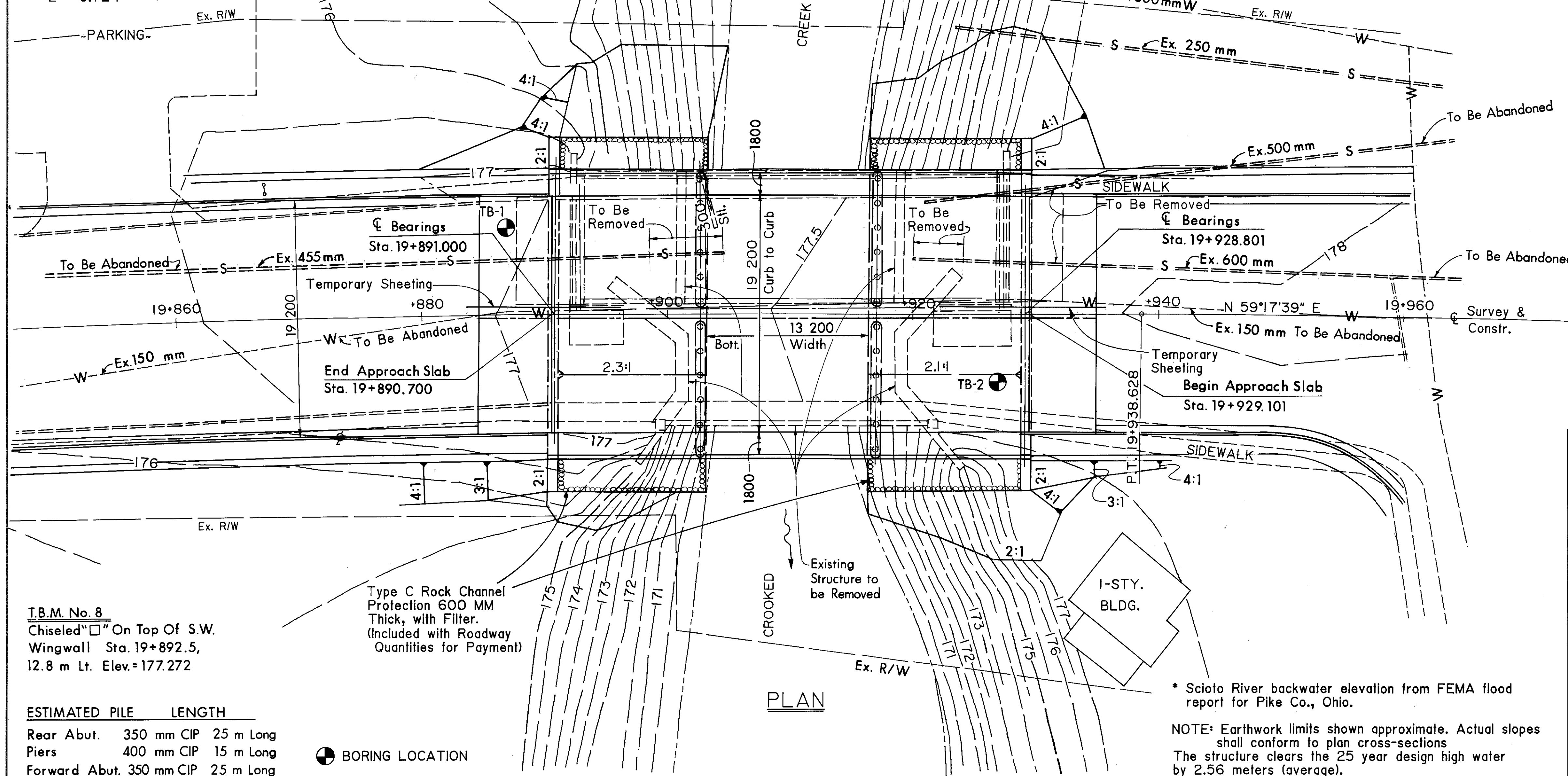
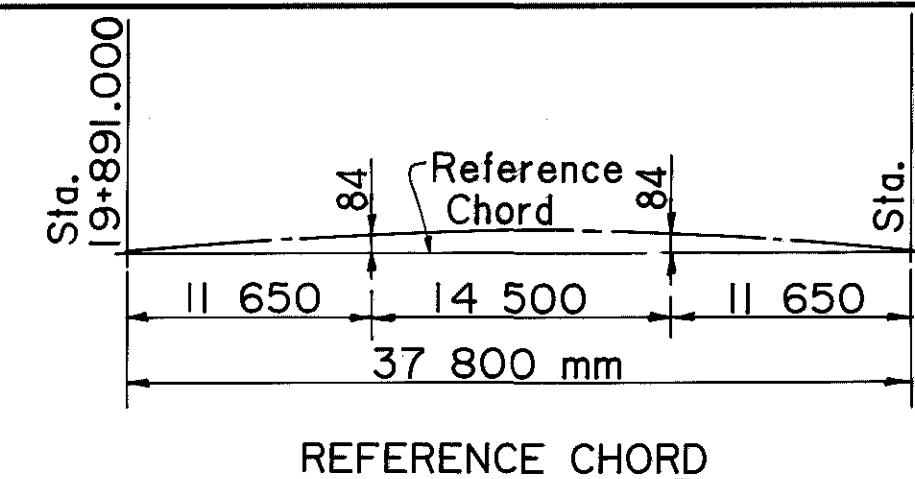


CURVE DATA
P.I. Sta. 19+783.342
 $\Delta = 9^\circ 52' 05''$ Rt.
R = 1807.729
T = 156.059
L = 311.345
E = 6.724



T.B.M. No. 8
Chiseled "X" On Top Of S.W.
Wingwall Sta. 19+892.5,
12.8 m Lt. Elev. = 177.272

ESTIMATED PILE LENGTH

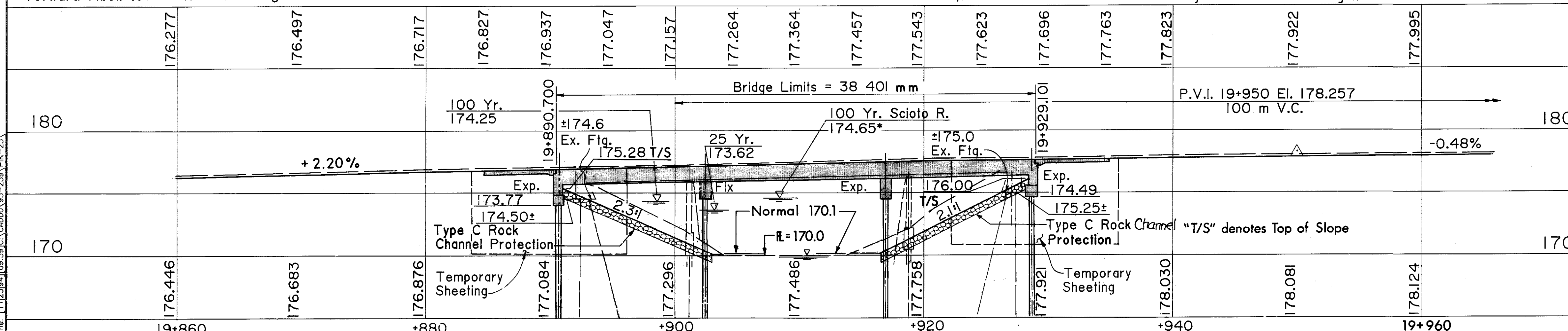
Rear Abut. 350 mm CIP 25 m Long
Piers 400 mm CIP 15 m Long
Forward Abut. 350 mm CIP 25 m Long

● BORING LOCATION

Type C Rock Channel
Protection 600 MM
Thick, with Filter.
(Included with Roadway
Quantities for Payment)

* Scioto River backwater elevation from FEMA flood
report for Pike Co., Ohio.

NOTE: Earthwork limits shown approximate. Actual slopes
shall conform to plan cross-sections.
The structure clears the 25 year design high water
by 2.56 meters (average).



PROFILE ALONG C OF SURVEY & CONSTRUCTION

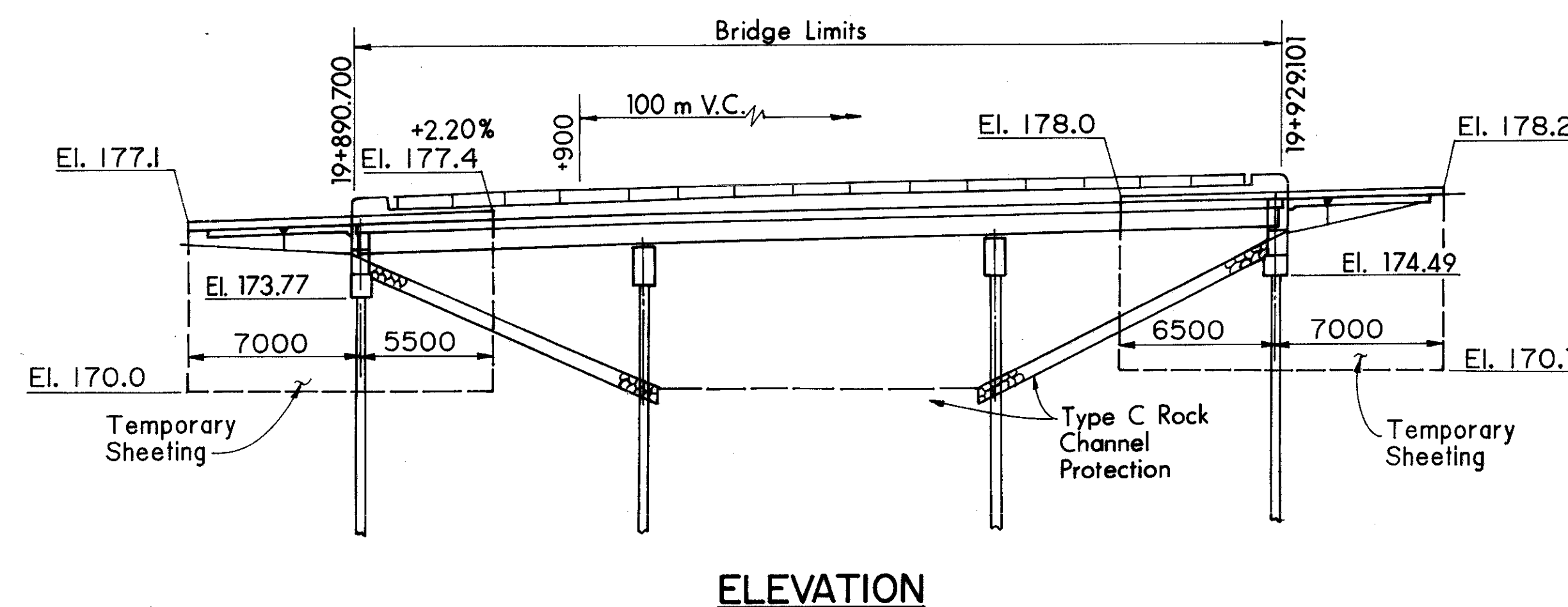
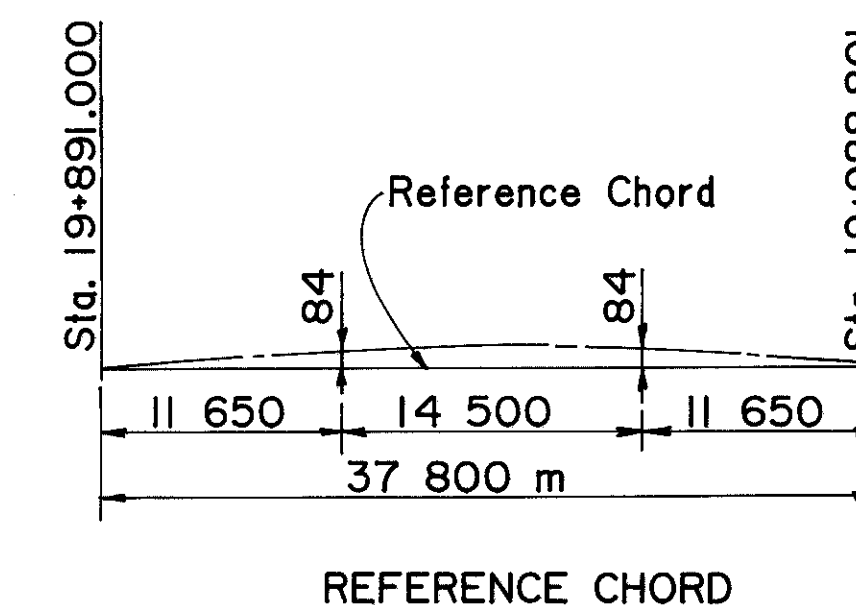
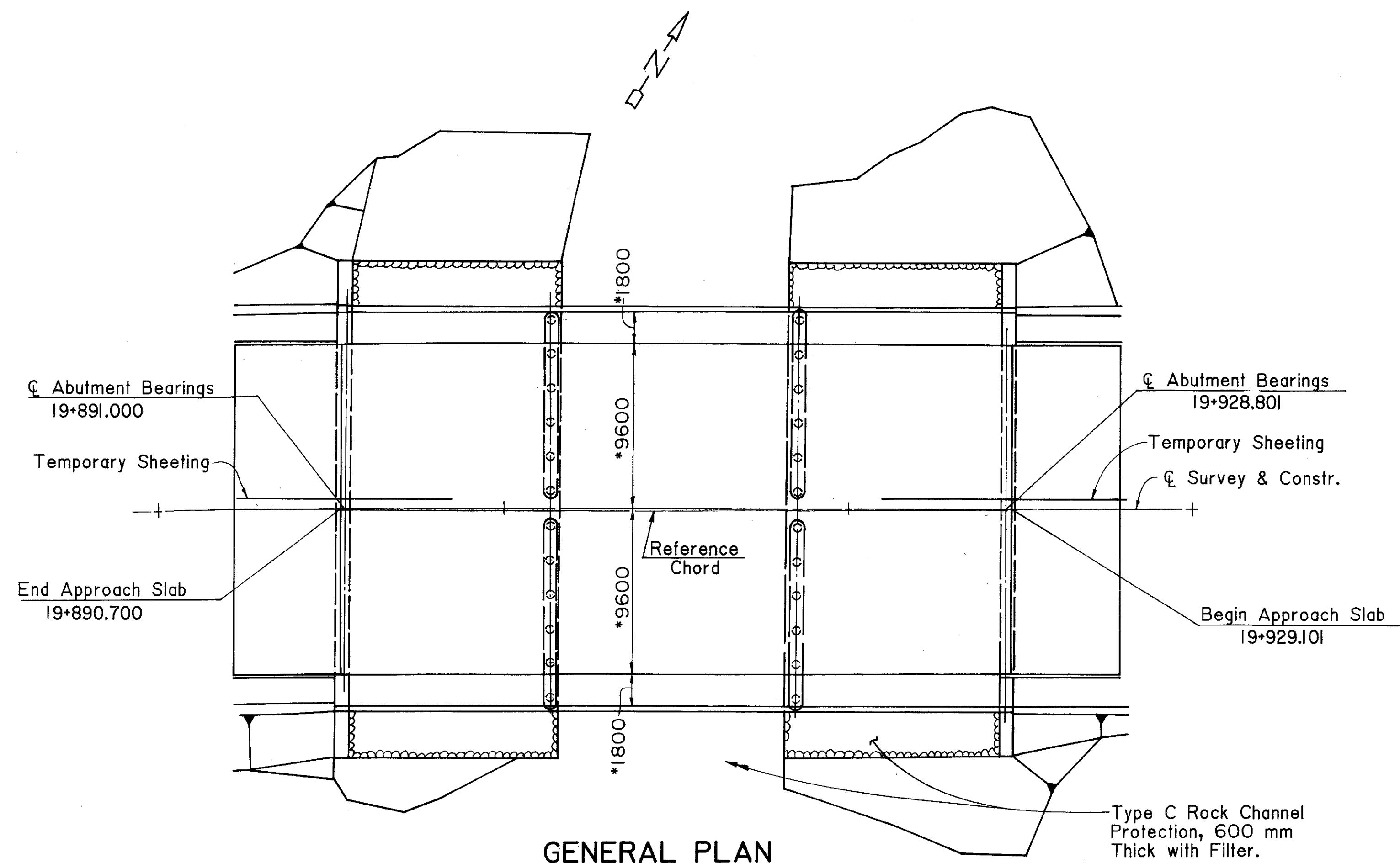
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS.
STATIONS AND ELEVATIONS ARE IN METERS.

TRAFFIC		
	1998	2018
ADT	23,220	37,150
ADTT	2,320	3,715

HYDRAULIC DATA		
Drainage Area = 107.5 km ²		
Q25 = 137.1 m ³ /s	Q100 = 186.0 m ³ /s	
HW25 = 173.62	HW100 = 174.25	
V25 = 1.98 m/s	V100 = 2.14 m/s	

EXISTING STRUCTURE	
TYPE: LEFT: 3-Span Continuous Steel Beam with Concrete Deck and Capped Pile Substructures.	RIGHT: Single-span Steel Beam with Concrete Deck and Stone Abutments.
SPANS: LEFT: 8230± - 17 678± - 8230±	RIGHT: Varies 17 830± to 23 165±
ROADWAY: 16 460± between Curbs, 1830± Sidewalk on Left, 1525± Sidewalk on Right	
SKEW: None	ALIGNMENT: Tangent
WEARING SURFACE: Asphalt	DATE BUILT: LT.: 1953, RT.: 1932
APPROACH SLAB: LT. 5470 long, RT. none	STRUCTURE FILE NO. 6600697

PROPOSED STRUCTURE	
TYPE: Continuous, Non-composite, A572 Galvanized Steel Beam w/ Reinforced Concrete Deck and Capped Pile Substructures.	
SPANS: 11 650 - 14 500 - 11 650 mm center-to-center of bearing along Ref. chord	
ROADWAY: 19 200 mm curb/curb with 1800 mm sidewalks	
SKEW: None to Reference Chord	ALIGNMENT: 1807.729 m Radius Curve to Rt.
DESIGN LOADING: MS18, Case II and the Alternate Military Loading	CROWN: 0.016
WEARING SURFACE: Monolithic Concrete	APPROACH SLAB: AS-1-BIM (6100 mm Long)
LAT. 39°07'33", LONG. 82°58'53"	



NOTES:

* MEASURED RADIALLY

ITEM 503 - COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN

IN ADDITION TO THE NORMAL REQUIREMENTS OF SECTION 503.03 OF THE CMS FOR THE CONSTRUCTION OF THE STRUCTURE, ANY TEMPORARY SHORING REQUIRED TO SUPPORT THE EXISTING EMBANKMENT DURING PHASE CONSTRUCTION OF THE STRUCTURE, AS SHOWN ON SHEETS 2/14 AND 4/14, SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 503, COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN.

MINIMUM SHEETING SIZE SHALL HAVE A MINIMUM SECTION MODULUS OF $720 \times 10^3 \text{ MM}^3$ PER METER OF WALL. SHEETING SHALL BE CUT OFF PRIOR TO PLACING THE APPROACH SLAB IN STAGE 2. SHEETING LEFT IN PLACE SHALL BE CUT OFF EITHER AT THE APPLICABLE LIMIT OF 300MM MINIMUM BELOW THE GROUND LINE OR FLUSH WITH THE LEVEL OF THE SUBGRADE.

AT THE OPTION OF THE CONTRACTOR, AND ALTERNATE METHOD OF DESIGN FOR THE TEMPORARY SHORING FOR PART-WIDTH CONSTRUCTION MAY BE USED. PLANS FOR SUCH SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05. THE CONTRACTOR SHALL SUBMIT FIVE COPIES TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING FOR REVIEW AND APPROVAL. CONSTRUCTION OF THE TEMPORARY SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE DIRECTOR.

PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 503, COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY LABOR, EQUIPMENT AND MATERIALS NEEDED TO COMPLETE THIS WORK.

REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD

DRAWINGS:

AS-1-81M	DATED	10-25-94
BR-2-82M	DATED	12-19-94
BS-1-93M	DATED	12-15-94
GSD-1-96	DATED	2-12-97
ICD-1-82M	DATED	3-20-95
HL-30.31M	DATED	5-1-95
BP-2.31M	DATED	5-26-98
DM-1.1M	DATED	10-21-97

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

844	DATED	5-5-98
863	DATED	9-9-97
911	DATED	7-10-97
954	DATED	9-9-97

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997 AND 1998 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING - MS18 CASE 11 AND THE ALTERNATE MILITARY LOADING

CONCRETE CLASS S - UNIT STRESS 10.3 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C - UNIT STRESS 9.2 MPa (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615M, A616M OR A617M, GRADE 400, UNIT STRESS 160 MPa

STRUCTURAL STEEL - ASTM A572M, UNIT STRESS 186.2 MPa

DECK PROTECTION METHOD: EPOXY COATED, REINFORCING STEEL, 65MM CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 MM THICK.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES UPON RECEIVING PERMISSION FROM THE ENGINEER.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE)

THE ULTIMATE BEARING VALUE IS 708 KN PER PILE FOR THE 350 MM ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 1012 KN PER PILE FOR THE 400 MM PIER PILES.

ABUTMENT PILES:

- 24 PILES 25 METERS LONG, ESTIMATED LENGTH
- 24 PILES OF ORDER LENGTH, 18 METERS LONG
- 24 PILES OF ORDER LENGTH, 8.5 METERS LONG
- 24 SPLICES

PIER PILES:

- 24 PILES 15 METERS LONG, ESTIMATED LENGTH
- 24 PILES OF ORDER LENGTH, 16.5 METERS LONG
- 12 SPLICES

ITEM 863 STRUCTURAL STEEL MEMBERS, LEVEL TWO (2) FABRICATION, AS PER PLAN

THE STRUCTURAL STEEL MEMBERS, BOLTED CROSS-FRAMES, AND OTHER MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02 AFTER COMPLETION OF FABRICATION, AS SHOWN ON SHEETS 11/14 AND 12/14, AND SHOP ASSEMBLY.

THE COST OF ALL LABOR, EQUIPMENT AND MATERIAL TO GALVANIZE ALL STRUCTURAL STEEL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL TWO (2) FABRICATION, AS PER PLAN.

ITEM 507 400MM CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN

THE 400MM CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 22 500 JOULES. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

ITEM 516 INTEGRAL ABUTMENT EXPANSION JOINT SEAL

THE CONTRACTOR SHALL INSTALL A 900MM WIDE STRIP, 2.5MM THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT THE LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 32 x 3MM (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25MM OUTSIDE DIAMETER, 3MM GALVANIZED WASHER, MAXIMUM FASTENER SPACING IS 225MM. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIPS BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150MM (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS, SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 150MM (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR THE VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150MM CENTER TO CENTER ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED. THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300MM IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150MM IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5MM THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003" BY I.E. DUPONT DE NEMOURS AND THE COMPANY, INC., "WINGPRENE" BY GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS	D 751	2.5 +/- .25
BREAKING STRENGTH, GRAB WXF, N MINIMUM	D 751	3130 x 3130
ADHESIVE 25MM STRIP, 50MM MINIMUM, N MINIMUM	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS T 100°C, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40°C, BEND AROUND 6MM MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR ALL LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 INTEGRAL ABUTMENT EXPANSION JOINT SEAL.

ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THE BACKFILL MATERIAL FOR ALL EXCAVATION BEHIND THE ABUTMENTS SHALL BE ITEM 613 LOW STRENGTH MORTAR BACKFILL, TYPE I (LSM BACKFILL) WITHIN THE LIMITS OF THE APPROACH SLABS AS SHOWN ON SHEET 5/14. THE CONTRACTOR ALSO MAY USE THE LSM BACKFILL TO CONSTRUCT THE SLOPES IN THE SAME AREA AS LONG AS IT IS COVERED WITH ONE FOOT OF SOIL TO MEET THE FINISHED GRADE. THE AREA FOR THE POROUS BACKFILL WITH FILTER FABRIC SHALL BE FORMED UP PRIOR TO THE PLACEMENT OF THE LSM BACKFILL, AND THE FILTER FABRIC AND POROUS BACKFILL SHALL BE PLACED AFTER THE LSM BACKFILL HAS BEEN CURED AND THE FORMS HAVE BEEN REMOVED.

THE COST OF ALL LABOR, EQUIPMENT AND MATERIAL TO PLACE THE LSM BACKFILL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN.

ITEM SPECIAL SEALING OF CONCRETE SURFACES

(EPOXY-URETHANE) THE COLOR OF THE URETHANE SHALL BE FEDERAL COLOR NUMBER 17778 (OFF-WHITE).

ESTIMATED QUANTITIES

CALCULATED BY HM, DATE 9/96		CHECKED BY JDH, DATE 10/96		DESCRIPTION	SUPER	ABUT.	PIER	GEN.	SEE SHEET NO.
ITEM	ITEM EXT.	TOTAL	UNIT						
202	11002	LUMP		STRUCTURE REMOVED, OVER 6 METER SPAN					LUMP
202	23500	4468	SQ. M.	WEARING COURSE REMOVED	4468				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN					2/14
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN					3/14
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION					LUMP
507	00600	600	METER	350 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN		600			
507	00650	636	METER	350 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		636			3/14
507	00701	360	METER	400 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN		360			
507	00750	396	METER	400 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		396			
507	50500	36	EACH	STEEL PILE SPLICES		24	12		
SPECIAL	51261510	448	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)*	348	82	18		3/14
516	14014	55	METER	INTEGRAL ABUTMENT EXPANSION SEAL		55			
516	44001	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (270 x 460 x 47 ELASTOMERIC PAD WITH 300 x 660 x 38 GALVANIZED STEEL LOAD PLATE)			8		10/14
516	44101	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (295 x 460 x 66 ELASTOMERIC PAD WITH 325 x 660 x 38 GALVANIZED STEEL LOAD PLATE)			8		10/14
517	71514	77.40	METER	RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), USING HIGH PERFORMANCE CONCRETE	77.40				
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC		LUMP			
518	40000	59	METER	150 MM PERFORATED CORRUGATED PLASTIC PIPE		59			
518	40010	14	METER	150 MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		14			
604	36600	4	EACH	PRECAST REINFORCED CONCRETE OUTLET		4			
844	48000	299	CU. M.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)		299			
844	48040	139	CU. M.	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE		87	52		
863	10041	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL TWO (2) FABRICATION, AS PER PLAN	LUMP				

* SEE PROPOSAL NOTE

GENERAL NOTES AND ESTIMATED QUANTITIES
PIK-23-1235 OVER CROOKED CREEK

PIK-23-18.580

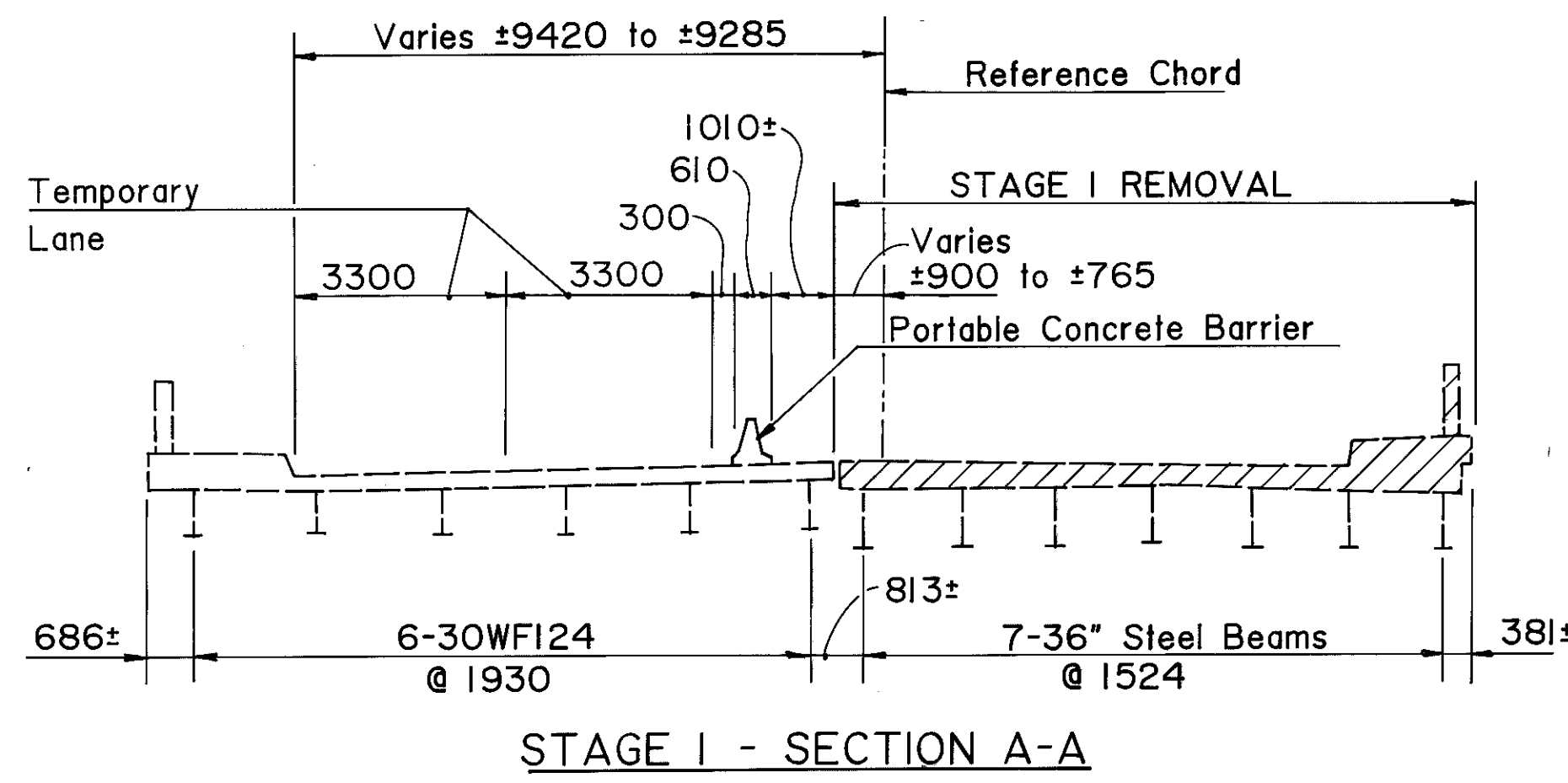
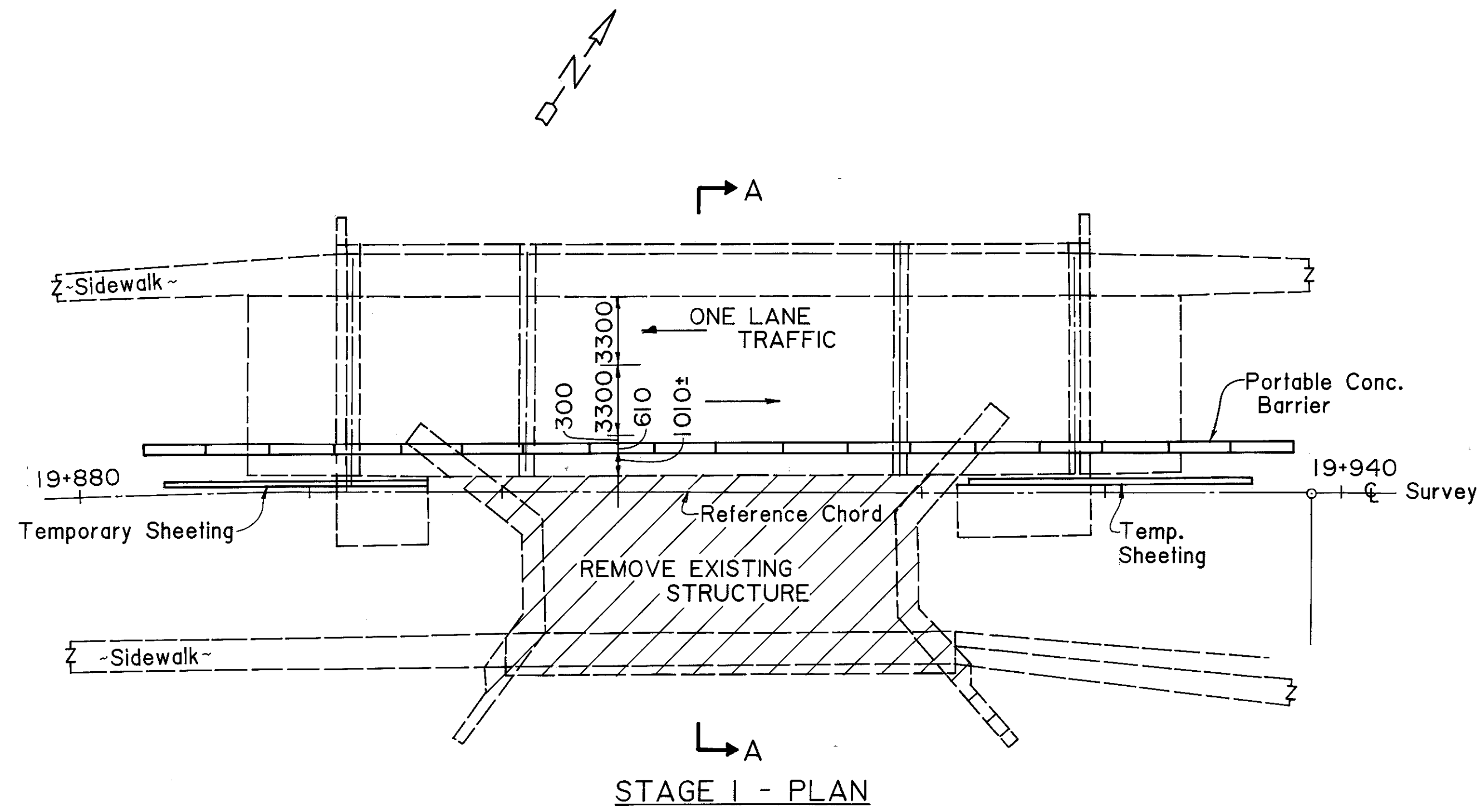
3/14
210/262

CLYDE E. WILLIAMS & ASSOCIATES, INC.
130 E. WILSON BRIDGE ROAD
WORTHINGTON, OHIO 43085

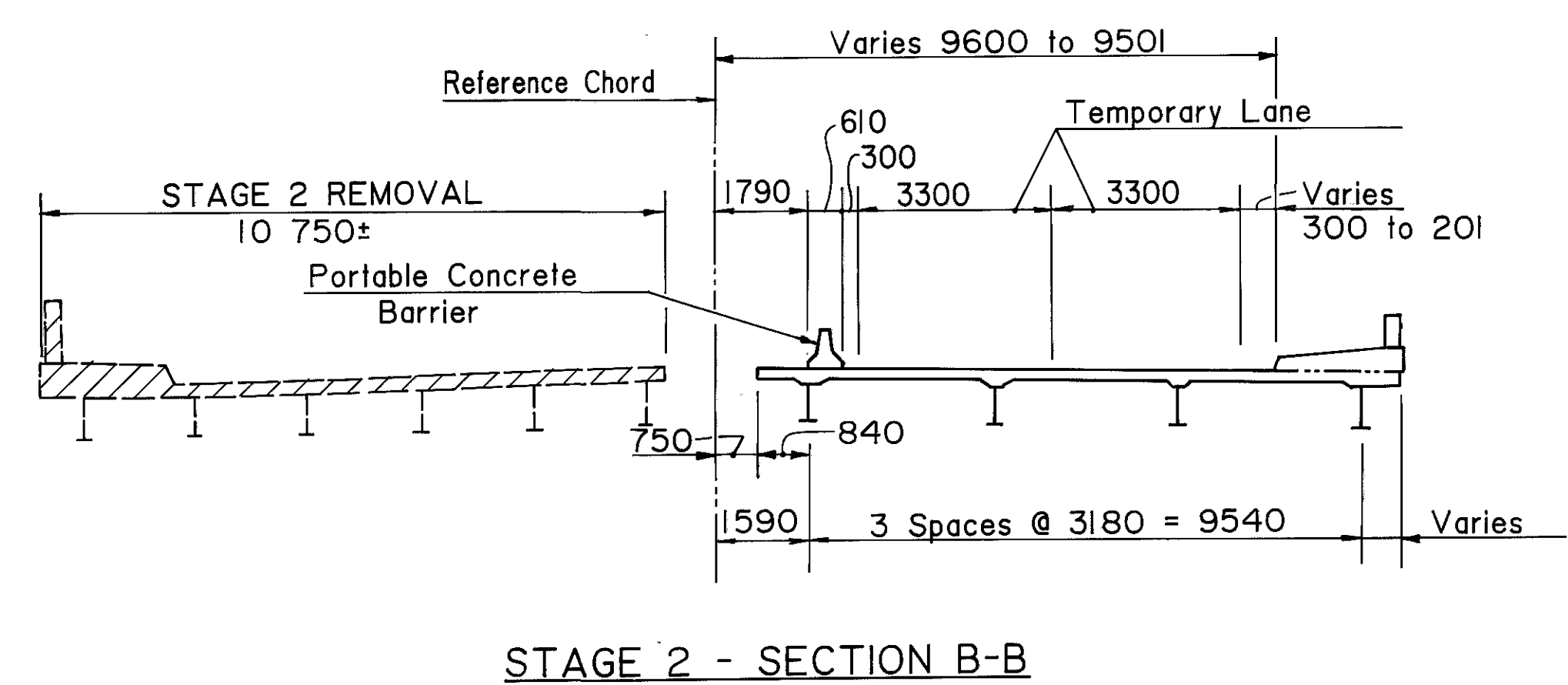
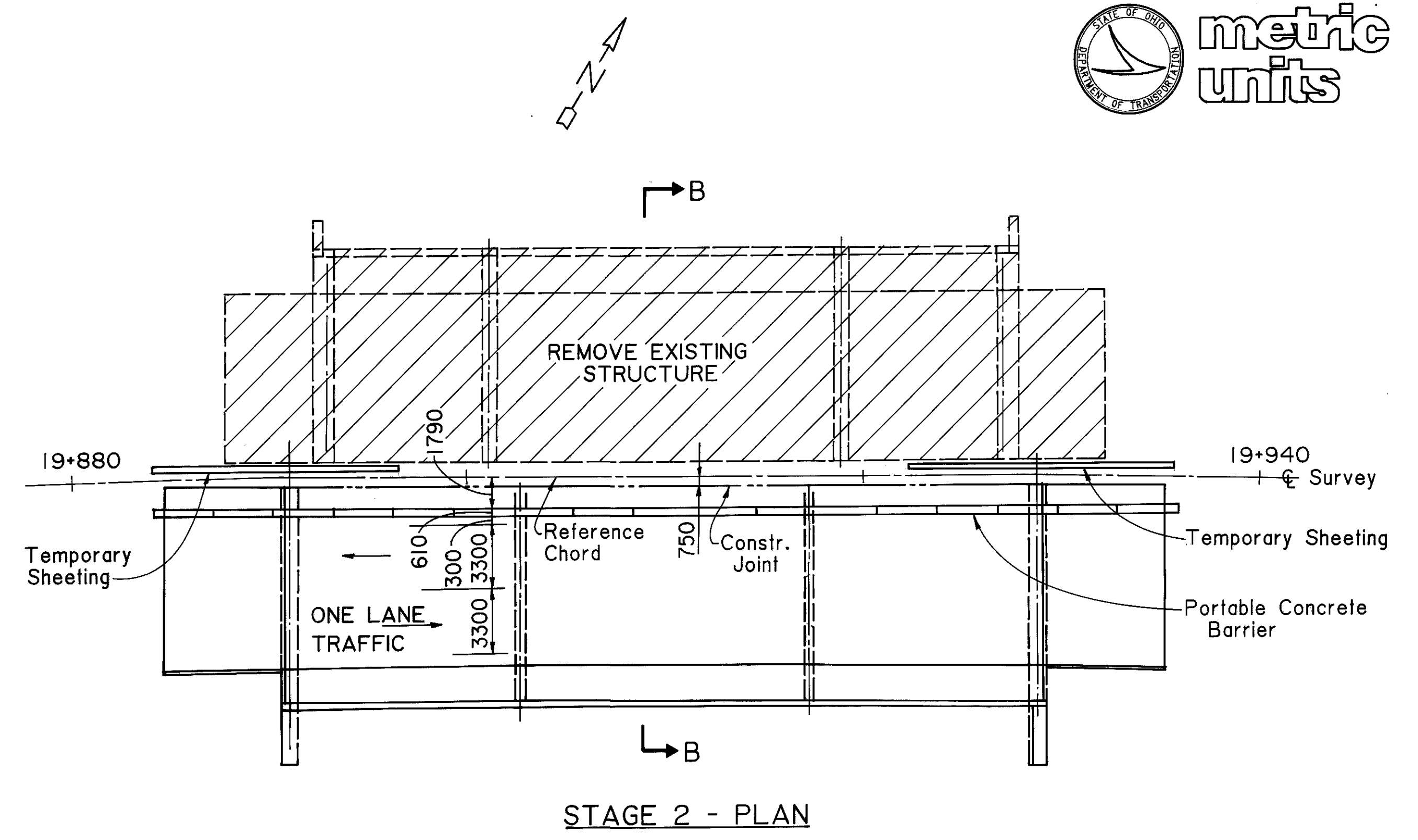
DATE
4/15/98
REVIEWED
ZR
STRUCTURE FILE NUMBER
6600760

DRAWN
DDW
REVISED

DESIGNED
HM
CHECKED
JDH

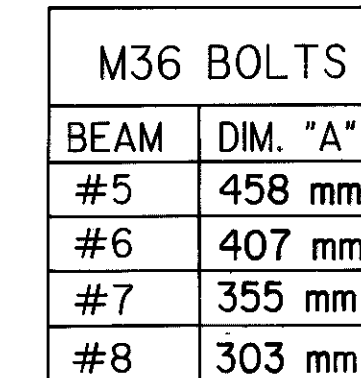


- STAGE 1**
1. TRANSFER TRAFFIC TO WEST SIDE OF STRUCTURE WITH ONE LANE TEMPORARY TRAFFIC IN EACH DIRECTION.
 2. PLACE TEMPORARY SHEETING AT EXISTING ABUTMENTS.
 3. REMOVE EXISTING STRUCTURE ON RIGHT SIDE OF EXISTING STRUCTURE.
 4. CONSTRUCT RIGHT SIDE OF PROPOSED STRUCTURE.

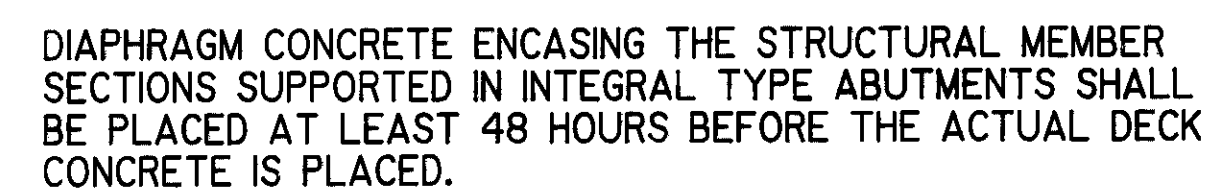


- STAGE 2**
1. TRANSFER TRAFFIC TO NEW STRUCTURE WITH ONE LANE TEMPORARY TRAFFIC IN EACH DIRECTION.
 2. REMOVE EXISTING WEST PORTION OF OLD STRUCTURE.
 3. CONSTRUCT LEFT SIDE OF PROPOSED STRUCTURE.

- STAGE 3 (CLOSURE SECTION)**
- REFER TO TRANSVERSE SECTION ON SHEET 12 OF 14.
1. INSTALL CROSS-FRAMING AT CLOSURE SECTION.
 2. POUR CLOSURE DECK SECTION.
 3. REMOVE BARRIER AND TRANSFER TRAFFIC TO NORMAL NORTH AND SOUTH BOUND TRAFFIC.

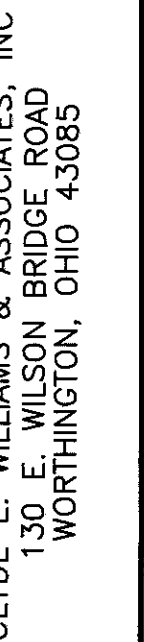


PLAN



POROUS BACKFILL, 600 mm THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.





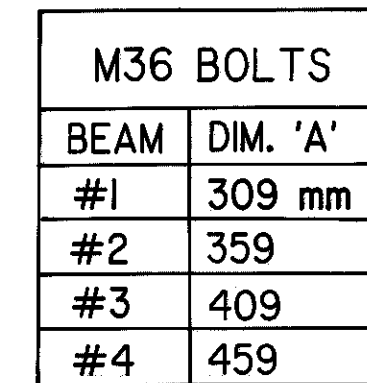
ZR 4-15-96
STRUCTURE FILE NUMBER
6600760

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CHECKED AAH	REVISED

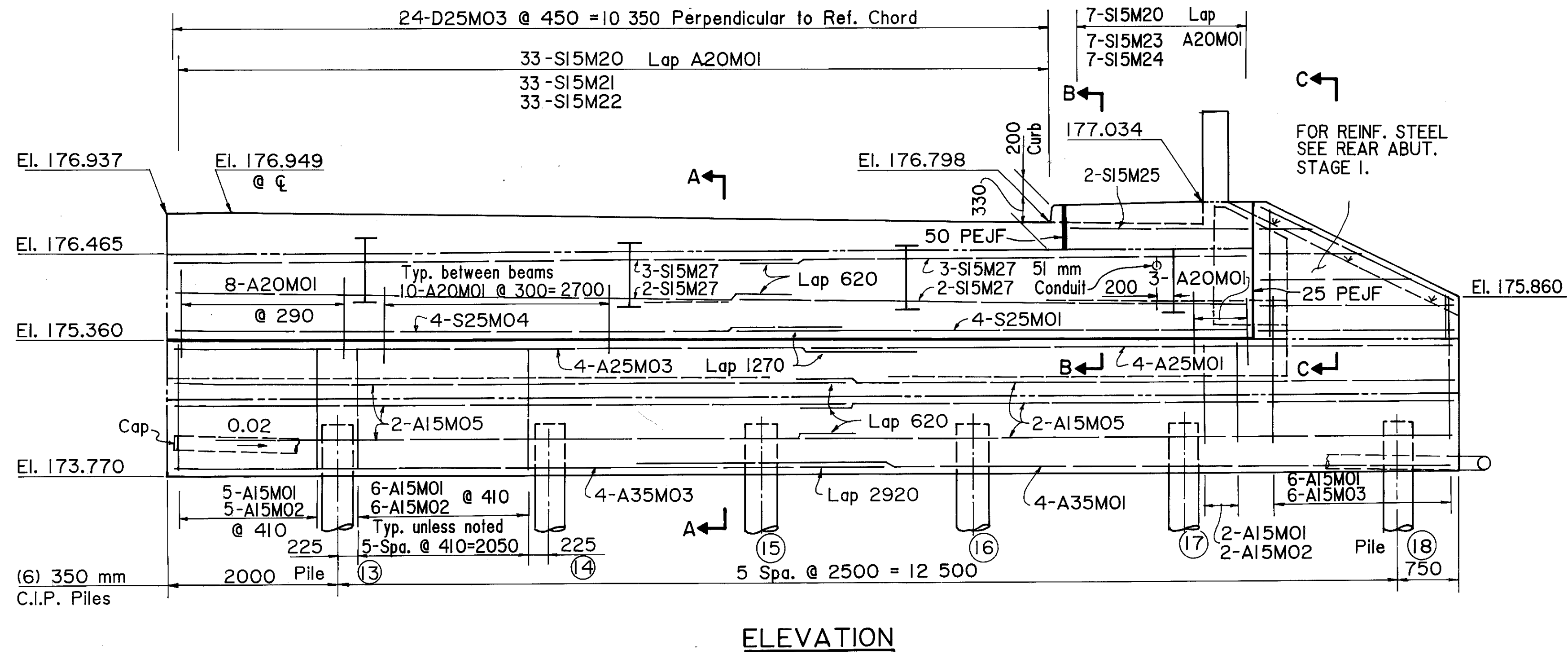
BRIDGE NO. PIK-23-1235
OVER CROOKED CREEK

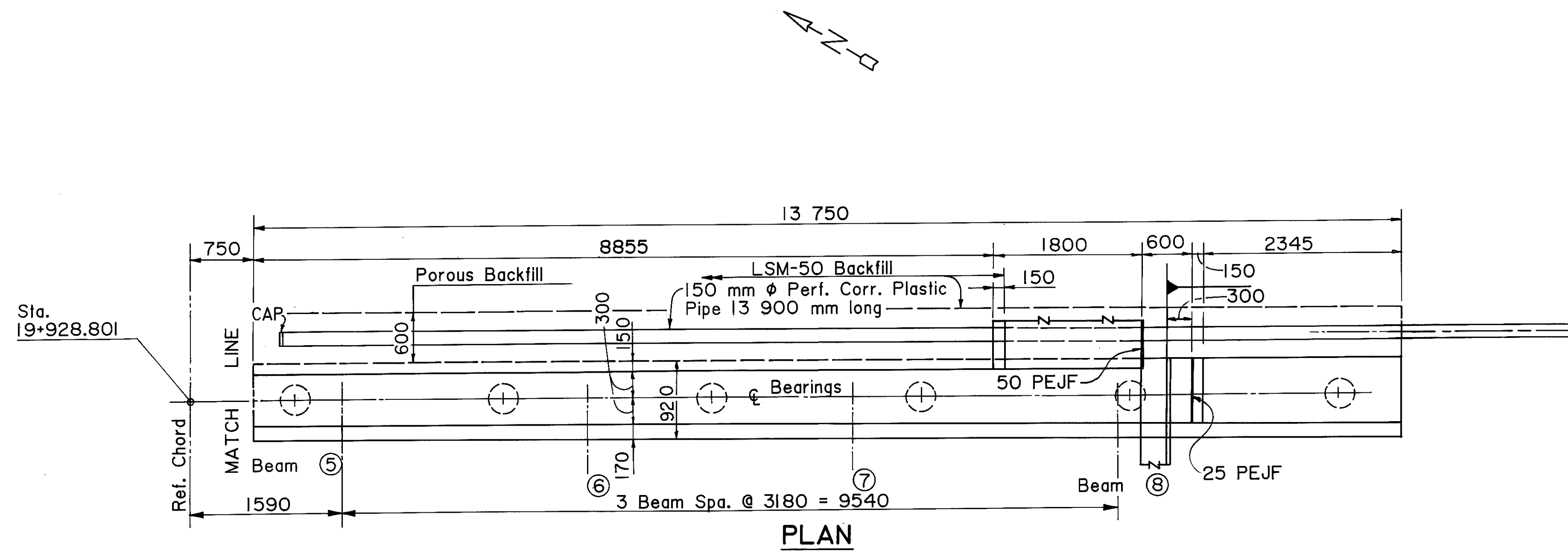
PIK-23-18.580

/ 14

$$\begin{array}{r} 213 \\ \hline 262 \end{array}$$


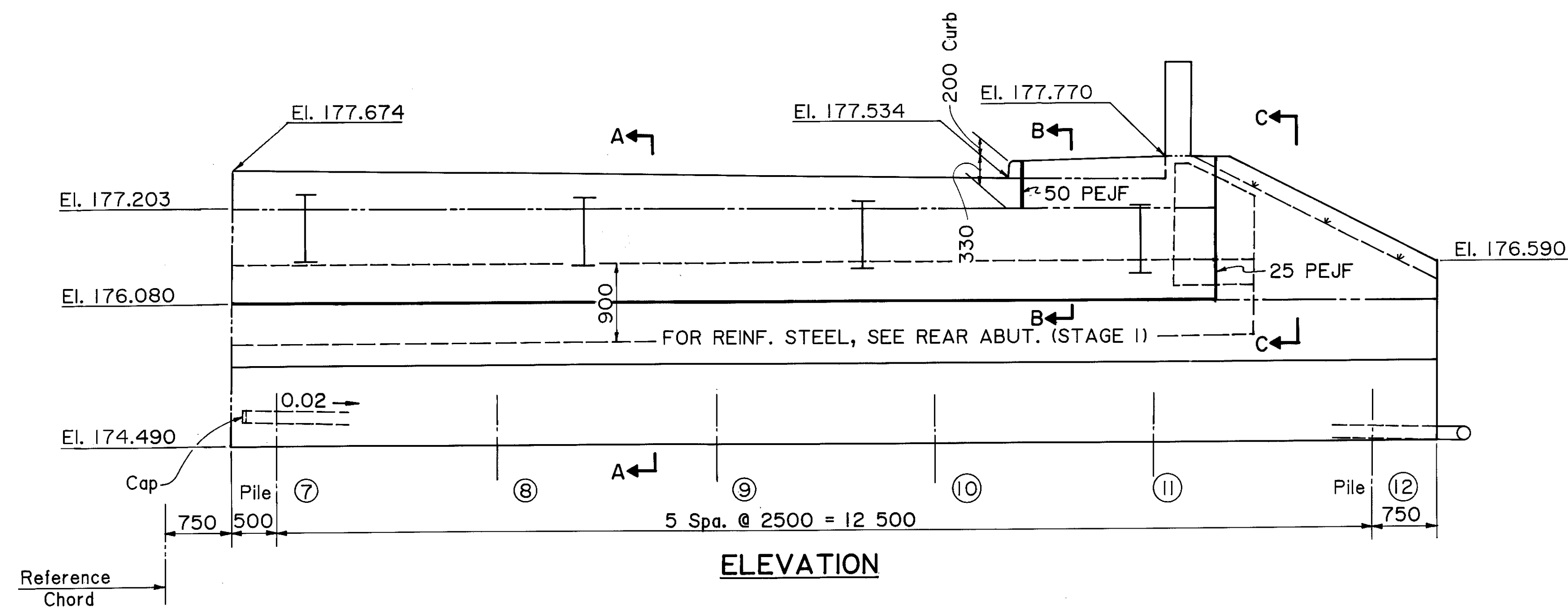
SEE REAR ABUTMENT STAGE I
FOR SETIONS.

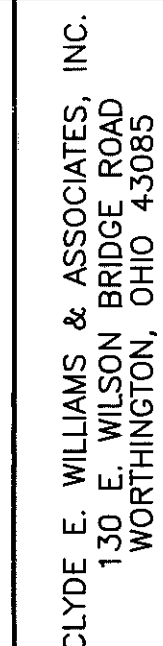




M36 BOLTS	
BEAM	DIM. "A"
# 5	459
# 6	409
# 7	359
# 8	308

SEE REAR ABUTMENT STAGE I
FOR SECTIONS.



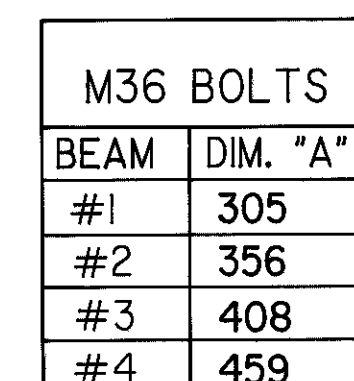


DESIGNED	DRAWN	REVIEWED	DATE
HEM	LEO	ZR	4-15-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
AAH		6600760	

FORWARD ABUTMENT (STAGE 2 DETAILS)
BRIDGE NO. PIK-23-1235
OVER CROOKED CREEK

PIK-23-18.580

8 / 14

$$\frac{215}{262}$$


SEE REAR ABUTMENT STAGE I
FOR SECTIONS



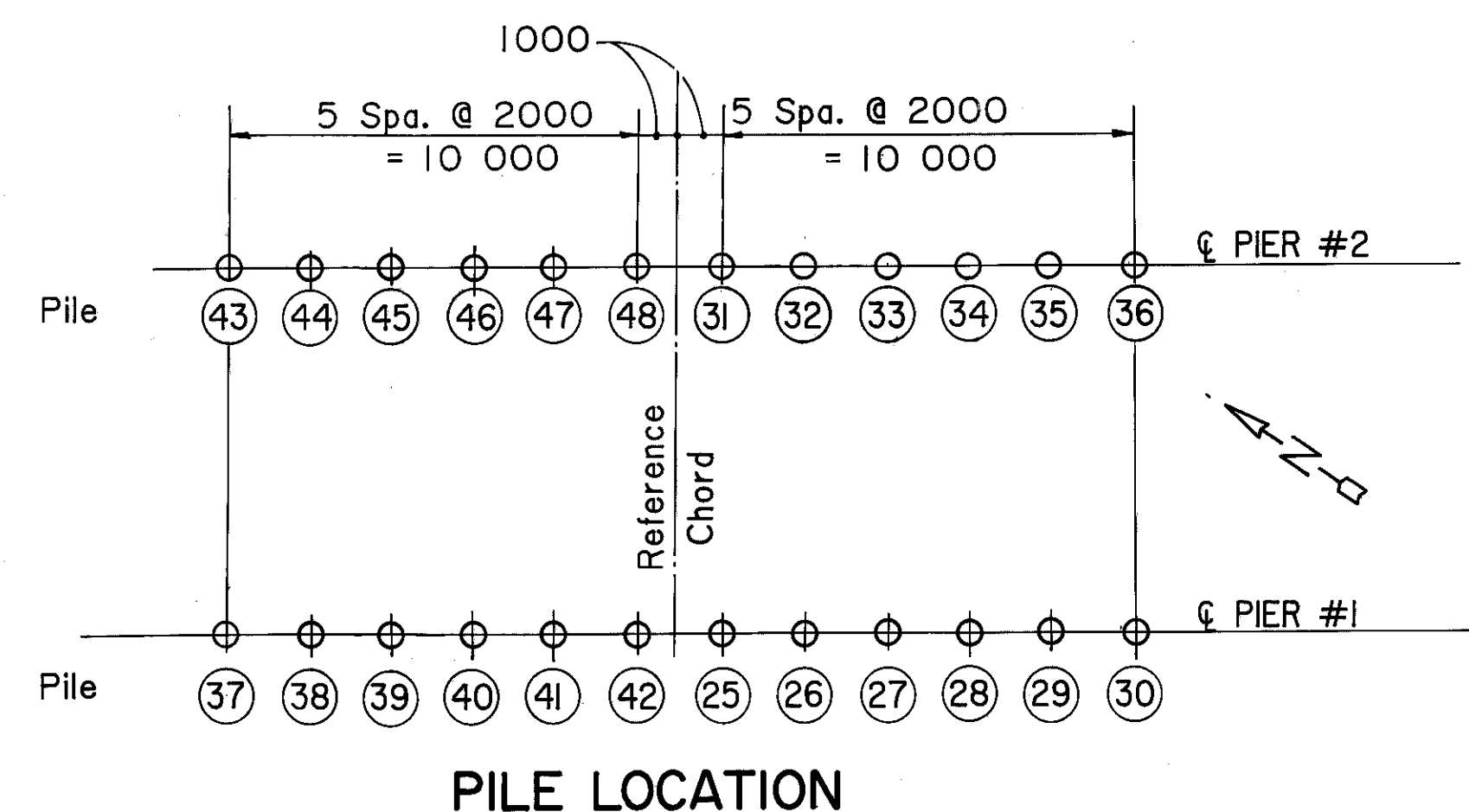
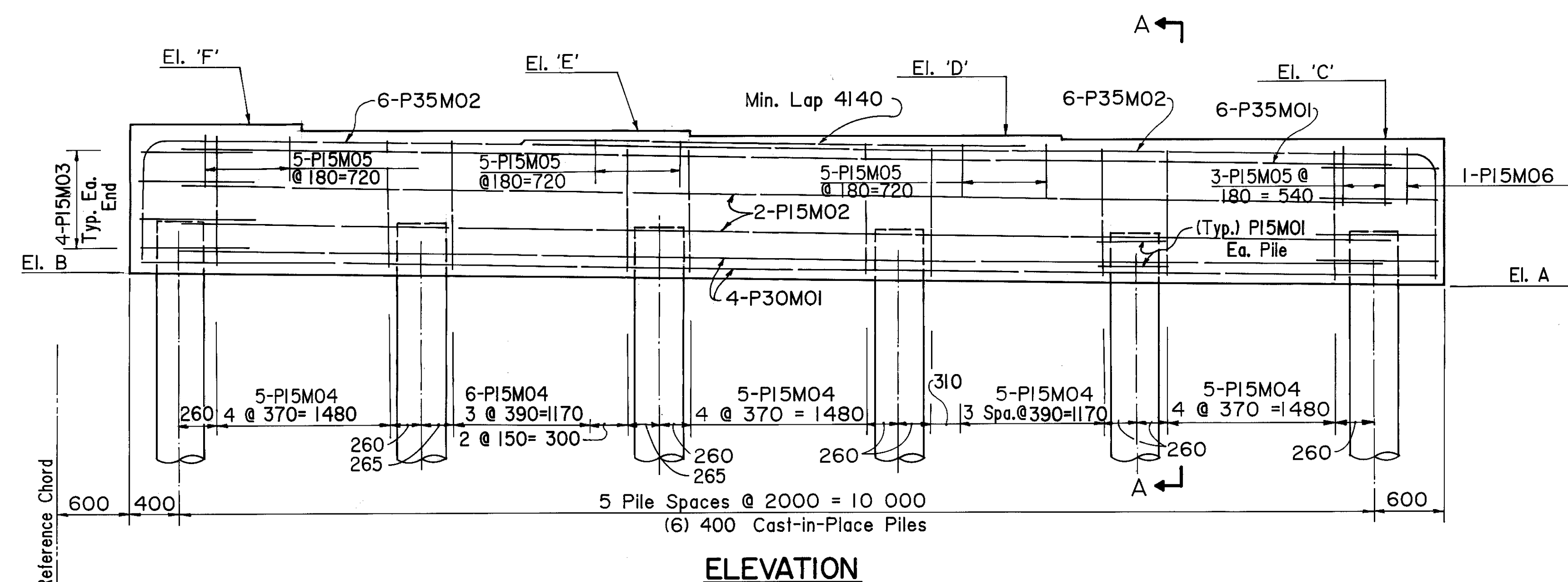
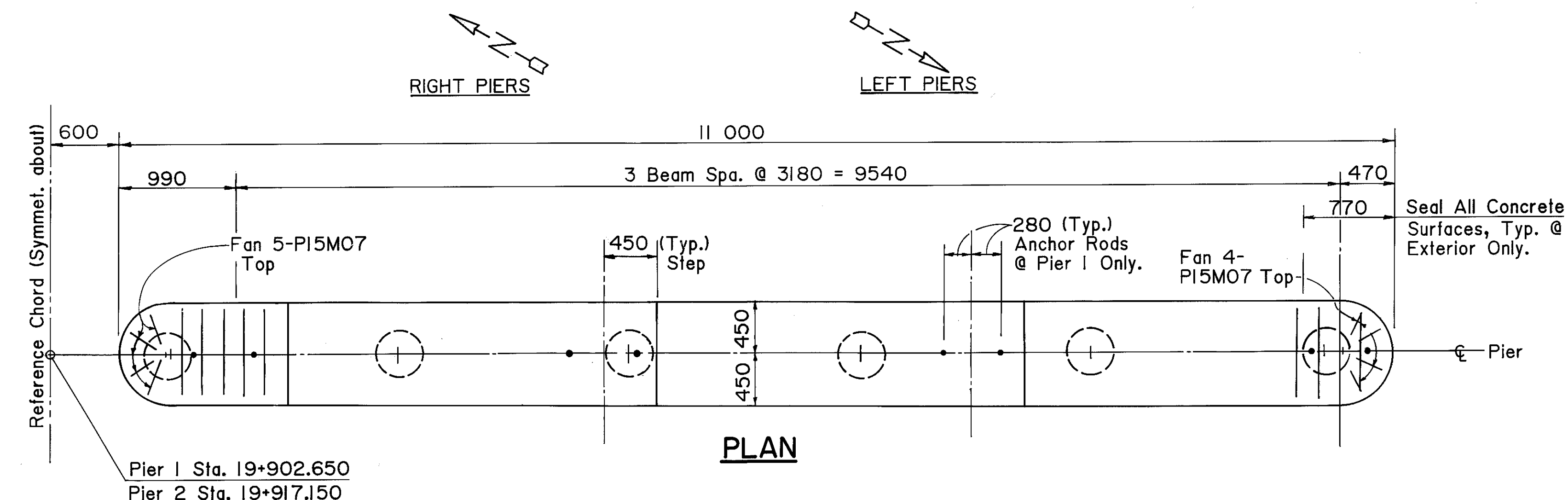
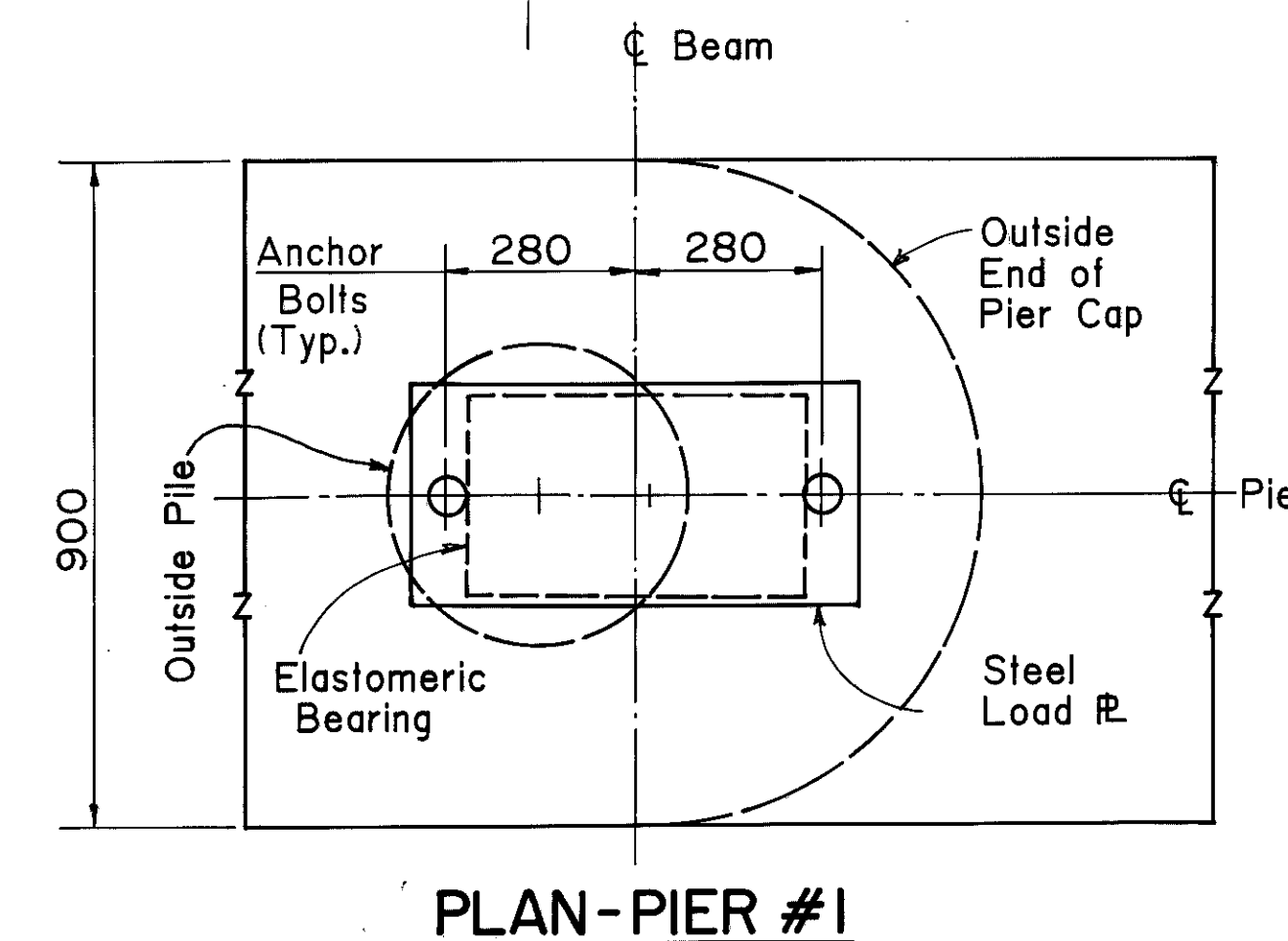
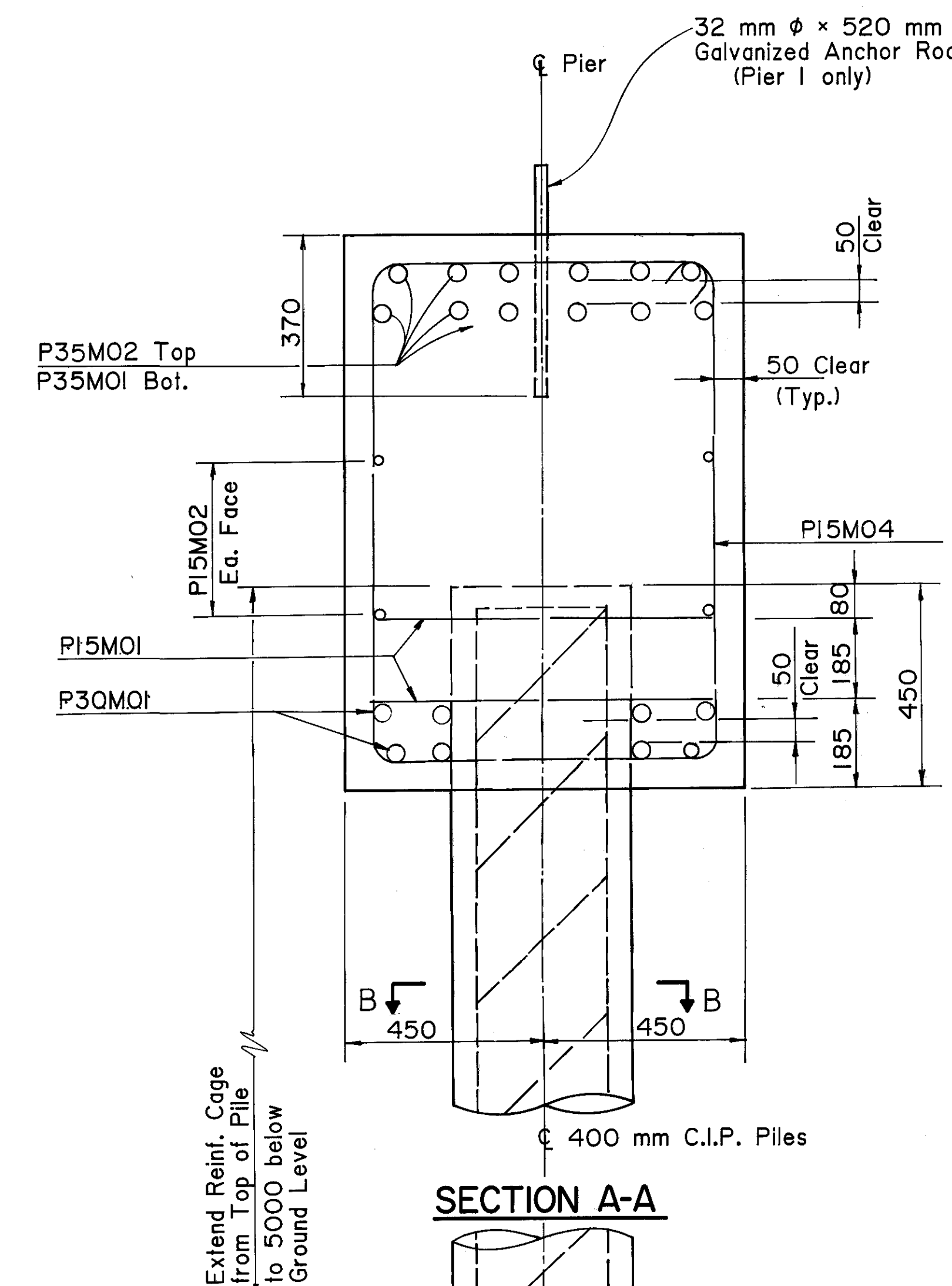
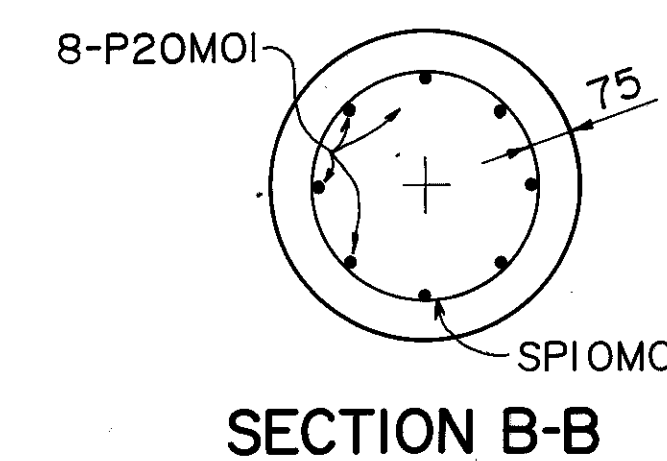


TABLE OF ELEVATIONS				
	Pier #1 Right	Pier #2 Right	Pier #1 Left	Pier #2 Left
A	174.535	174.798	174.540	174.798
B	174.711	174.974	174.715	174.976
C	175.796	176.059	175.801	176.060
D	175.847	176.110	175.851	176.111
E	175.898	176.161	175.902	176.163
F	175.949	176.211	175.952	176.214



BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.

ELASTOMERIC BEARINGS

PIER NO.1 - FIXED BEARINGS

INT. ELASTOMERIC LAYERS 4 @ 7.0 mm = 28 MM
EXT. ELASTOMERIC LAYERS 2 @ 5.0 = 10
STEEL LAMINATES 5 @ 1.90 = 9.45

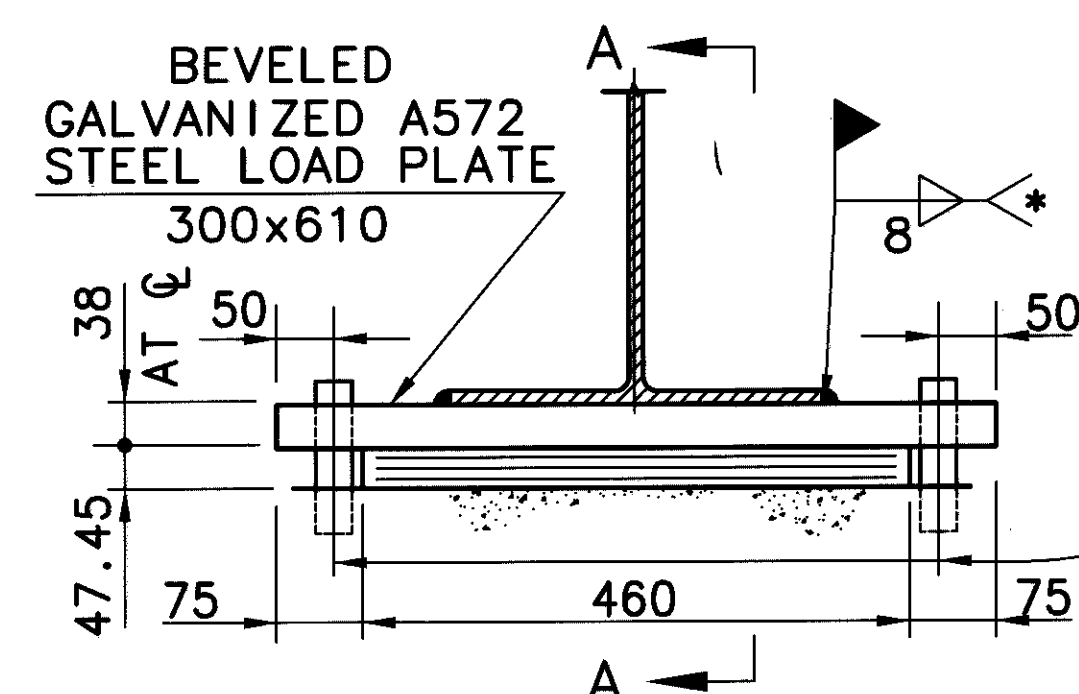
TOTAL = 47.45MM

AT PIER:

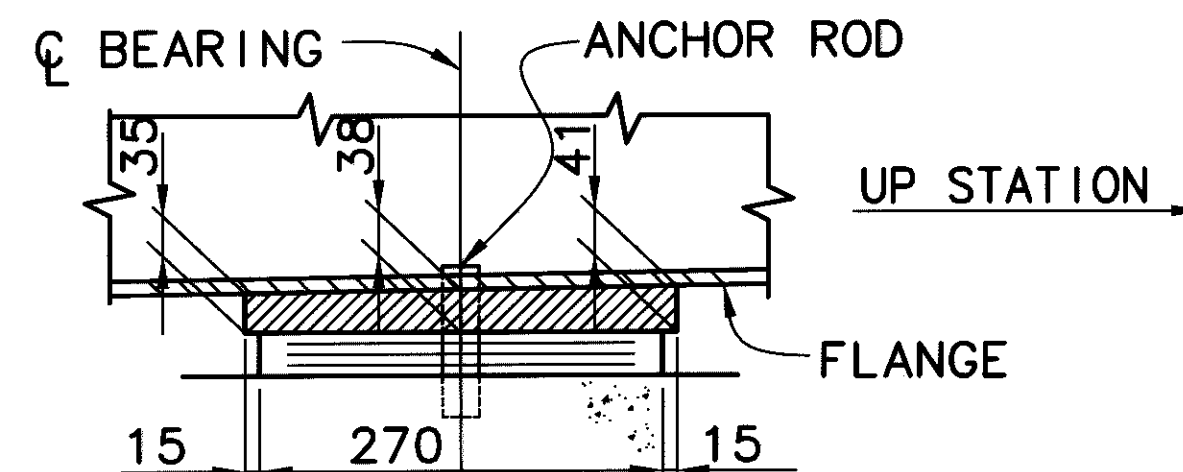
DL= 471 kn
LL= 336 kn
807 kn

PIER NO.2 - EXPANSION BEARINGS

INT. ELASTOMERIC LAYERS 5 @ 8.5MM = 42.5MM
EXT. ELASTOMERIC LAYERS 2 @ 6.0 = 12.0
STEEL LAMINATES 6 @ 1.89 = 11.34
TOTAL = 65.84MM



Ø 45 MM Ø HOLE IN STEEL LOAD PLATE FOR 32 MM Ø X 480 MM ANCHOR ROD, GALVANIZED ACCORDING TO 711.02. INSTALL ANCHOR ROD PER 510. INCLUDE DOWEL HOLES AND ANCHOR RODS WITH ITEM 516 FOR PAYMENT.



SECTION A-A

PIER NO.1 - FIXED

ELASTOMERIC BEARINGS SHALL COMPLY WITH 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50-DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS.

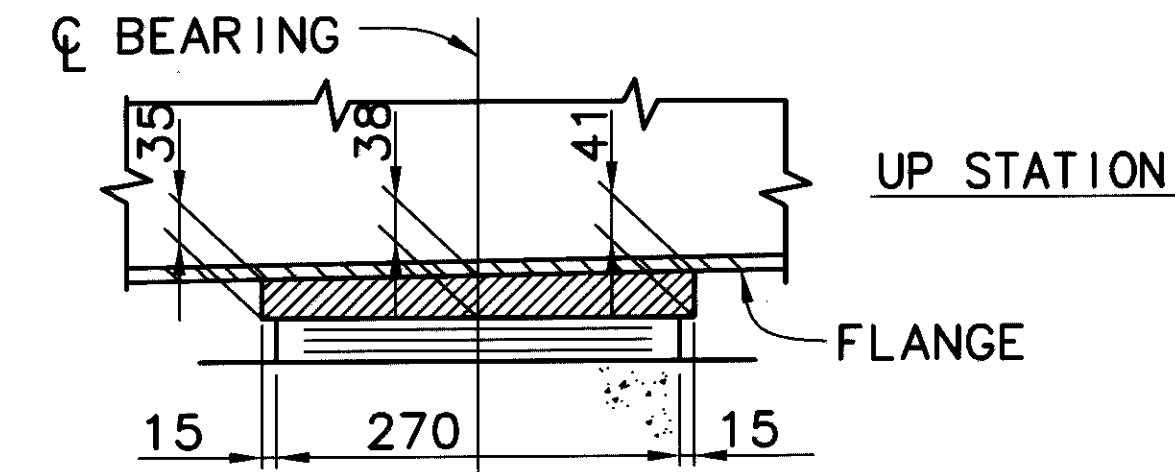
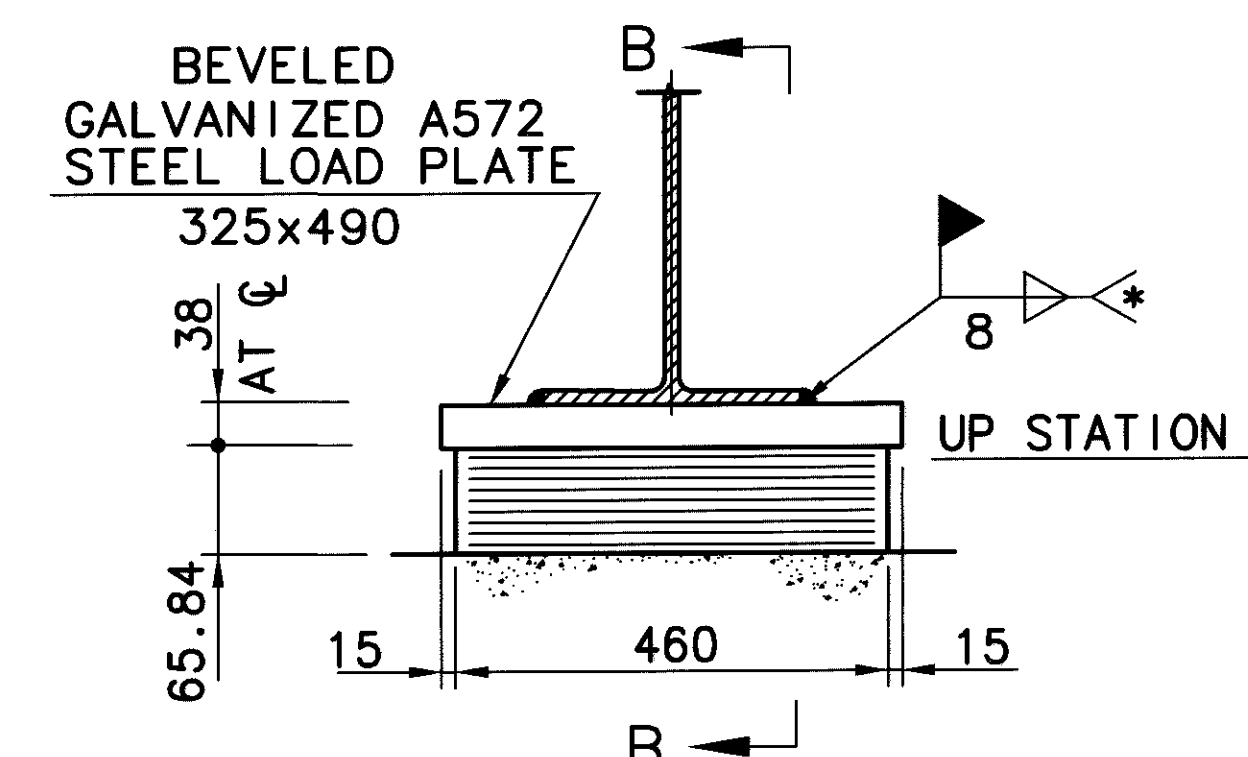
LOAD PLATE. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

STEEL DESIGNATION. THE STEEL LOAD PLATE SHALL BE A572 GALVANIZED STEEL. PLATE SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02 AND COST SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE BEARINGS.

* WELDING: SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

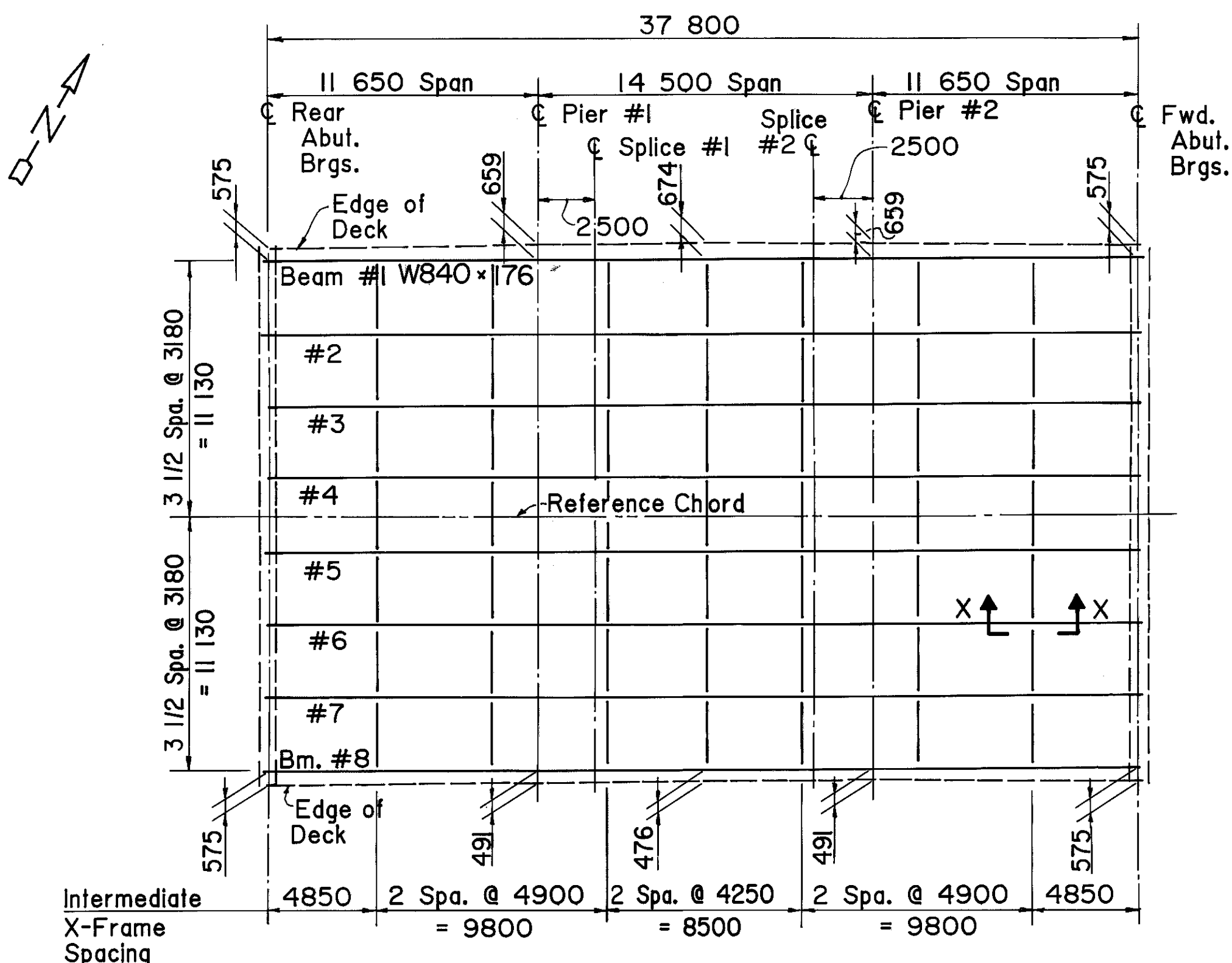
BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (+/-) 5° C, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARING TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (+/-) 5° C.

BASIS OF PAYMENT. THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN. (SEE ESTIMATED QUANTITIES)

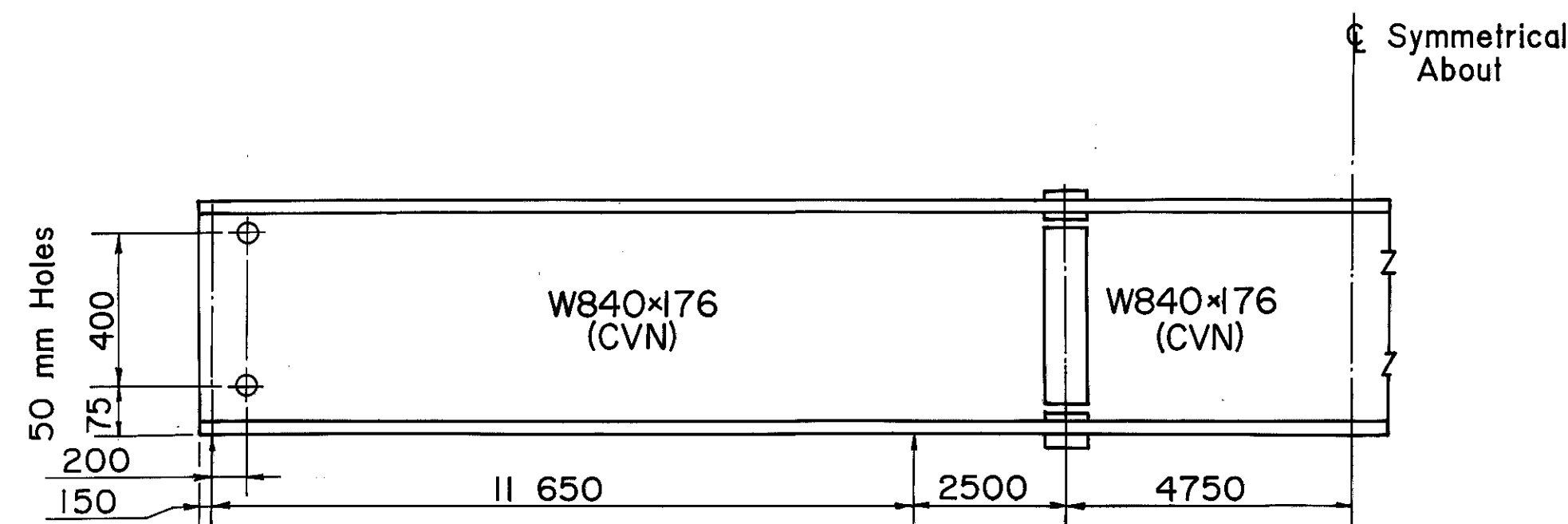


SECTION B-B

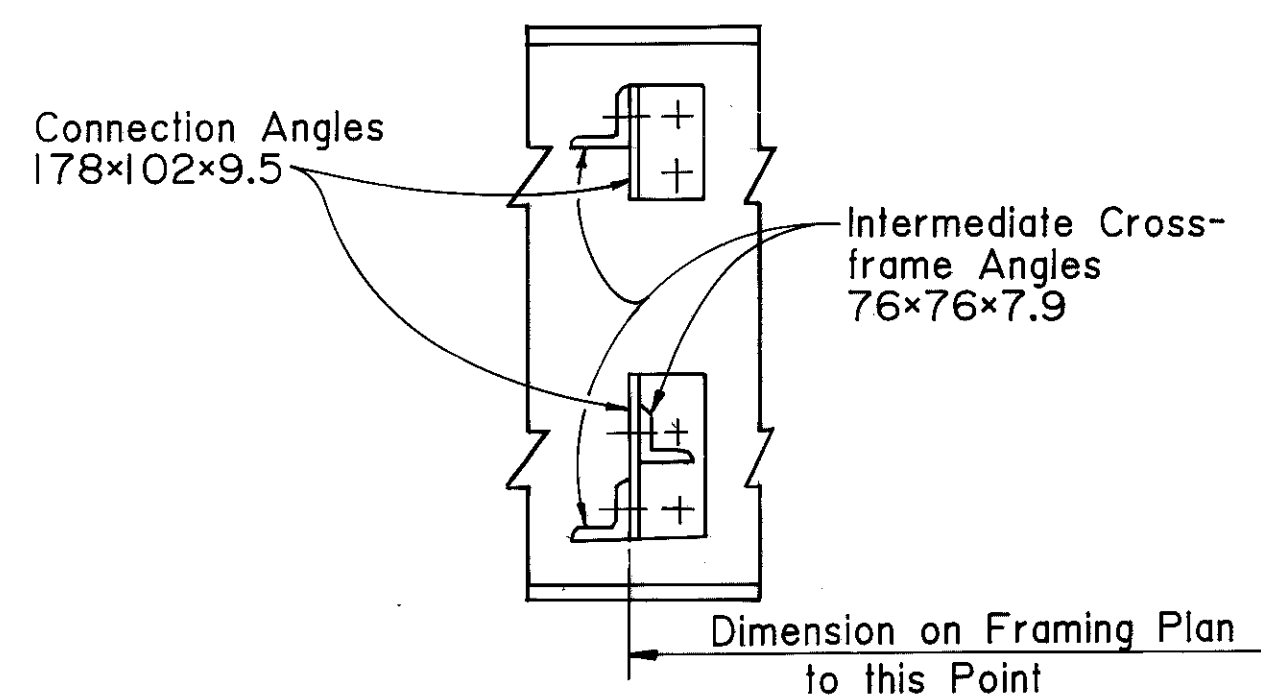
PIER NO.2 - EXP.



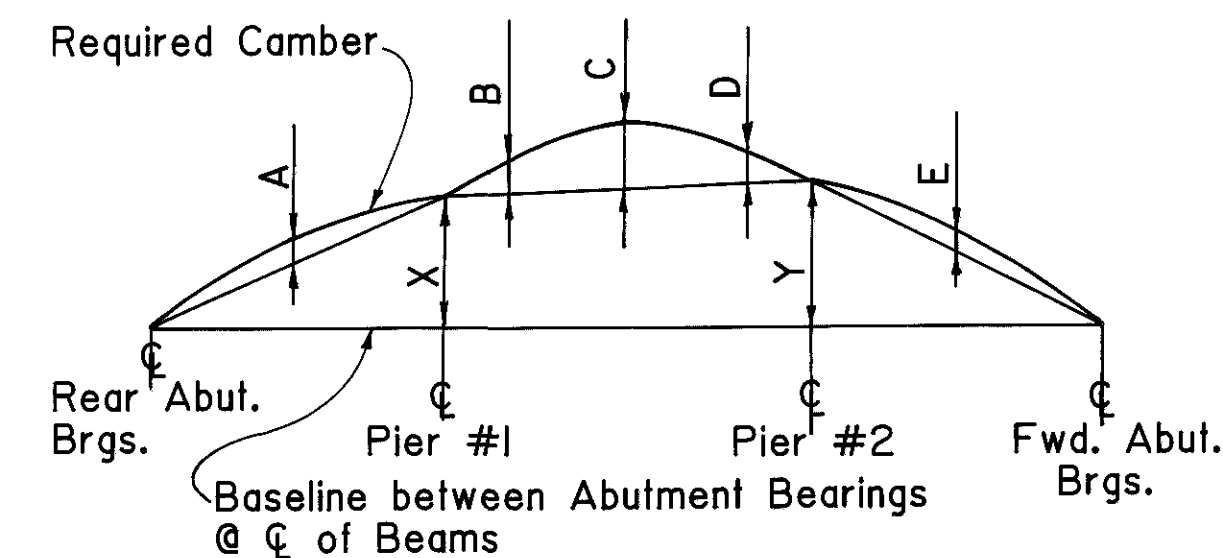
FRAMING PLAN



BEAM ELEVATION



SECTION X-X



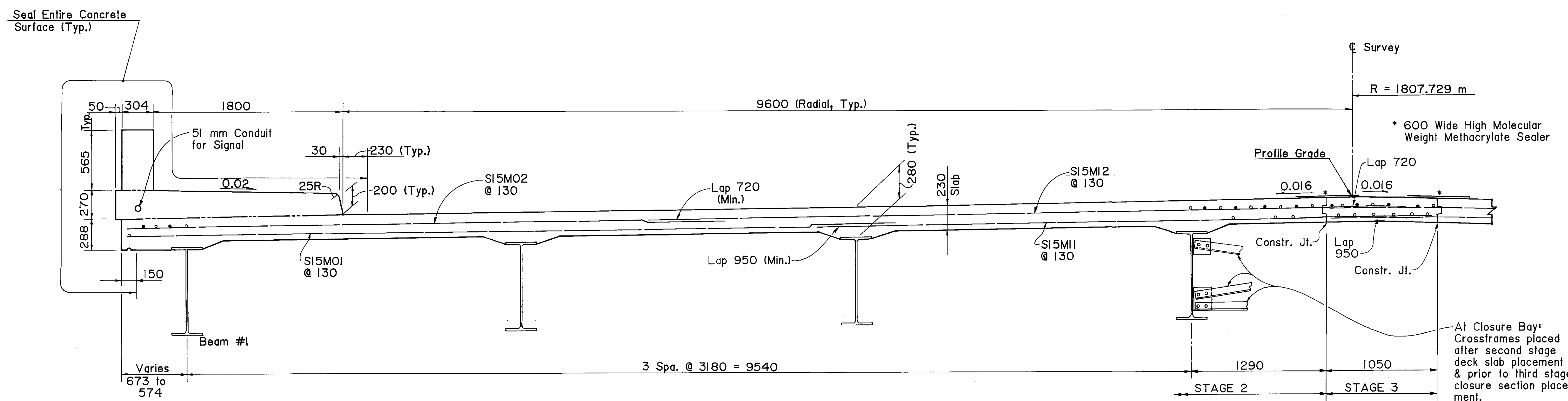
CAMBER DIAGRAM

	X	Y
Beams #1 thru #4	35 mm	39 mm
Beams #5 thru #8	32 mm	36 mm

DEFLECTION AND CAMBER					
	SPAN #1	SPAN #2		SPAN #3	
	1/2 PT. A	Splice B	1/2 PT. C	Splice D	1/2 PT. E
Deflection Due to Weight of Steel	0	0	1 mm	0	0
Deflection Due to Wt. of Conc. Deck	3	1	4	1	3
Deflection Due to Remaining Dead Load	2	1	3	1	2
Correction for Horiz. & Vertical Curves	0	4	7	4	5
Required Shop Camber	5	6	14	6	10

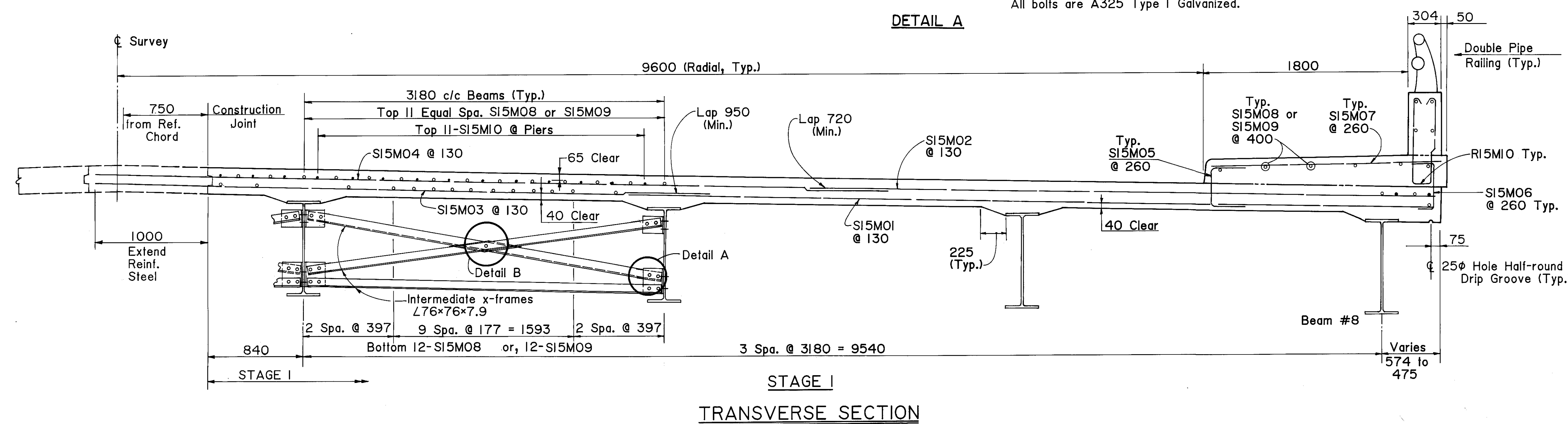
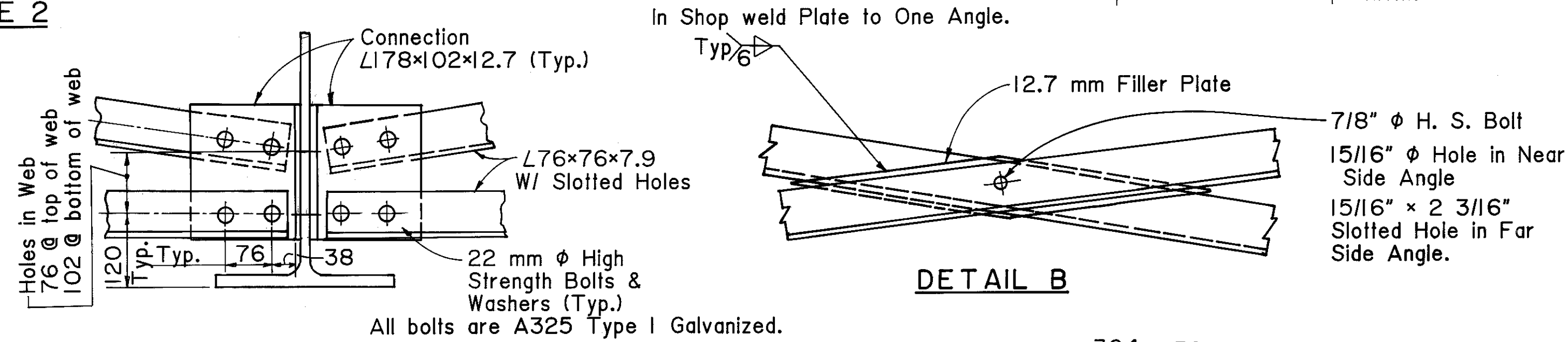
NOTES:

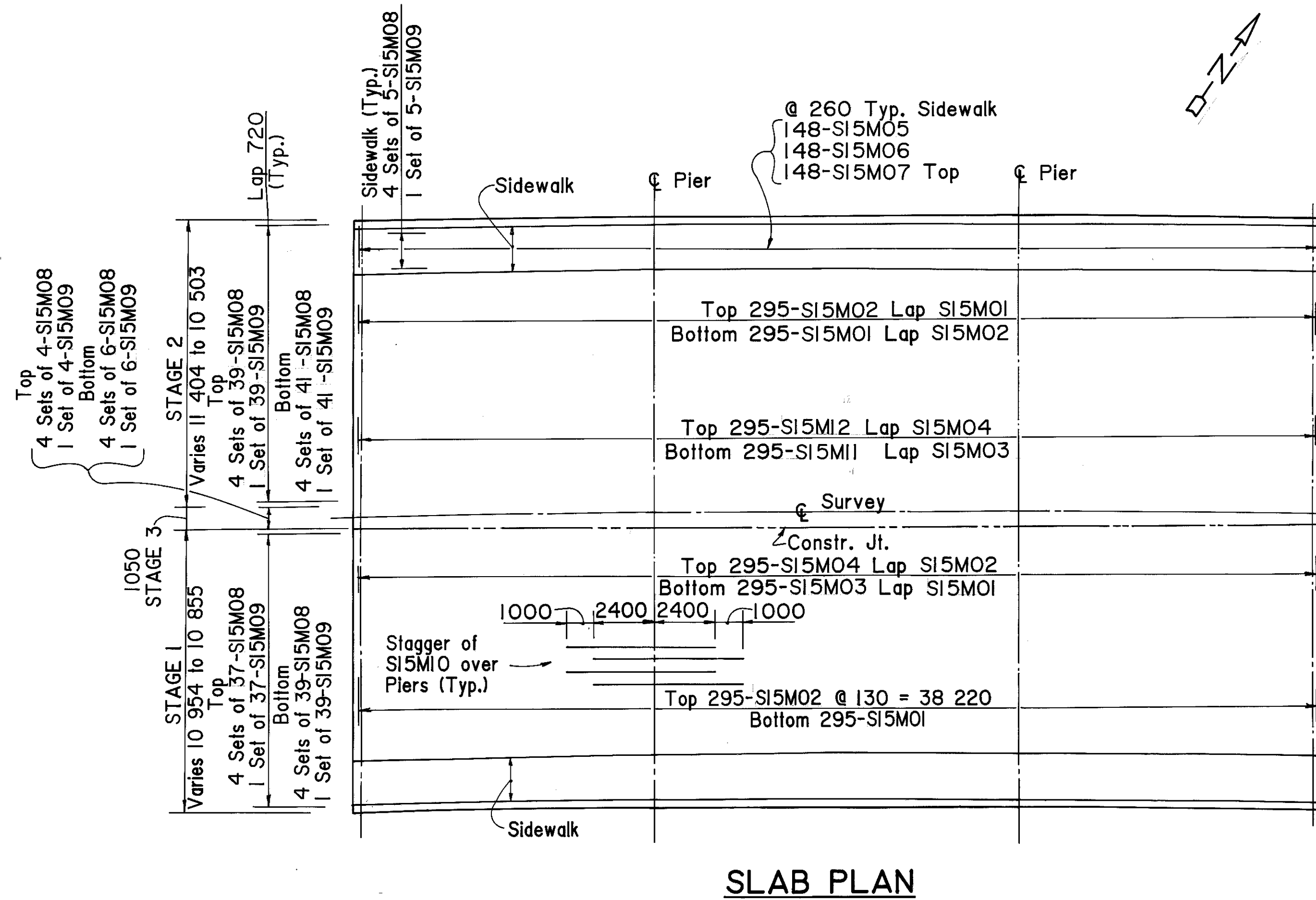
- All structural steel shall be ASTM A572 & Galvanized.
- Where a shape or plate is designated (CVN), the material shall meet specified minimum notch toughness requirements as specified in 711.01 of the specifications. All field splice material shall be (CVN).
- All field splice shall be made with 1" diameter high strength bolts conforming to ASTM A325. The bolts shall be placed with their heads on the outside face of the exterior beam, on the bottom of the bottom flange plates and top of the top flange plates.
- Beams, Crossframes and accessories shall be galvanized in conformance with the requirement of 711.02.
- Bolt holes shall be full size prior to galvanizing. High strength bolts shall meet the requirement of ASTM-A325. Bolted contact surfaces shall be lightly scored by wire brush or abrasive blasting after galvanizing and prior to assembly. Neither treatment shall be severe enough to produce any break or discontinuity in the zinc surface. All damaged galvanizing shall be repaired in accordance with ASTM-A780.
- No welded attachment of supports for concrete deck finishing machine will be allowed. Finishing hardware that will remain in the deck shall be galvanized.
- For splice detail, see Std. Dwg. BS-1-93M sheet no. 3 of 3, Beam W840x176.



DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the theoretical design dimension including the design haunch thickness of 50 mm. The quantity of deck concrete to be paid for shall be based on this dimension, minus the design haunch thickness, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

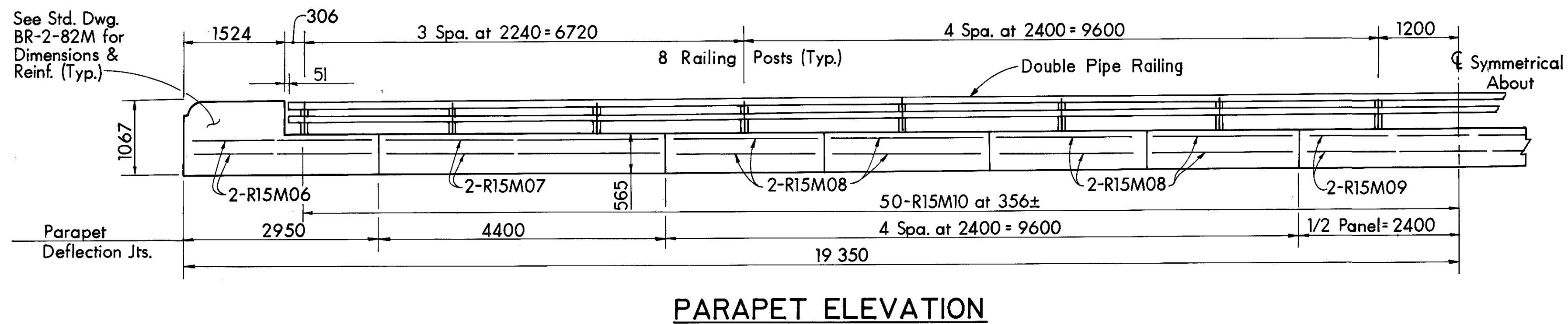
A haunch width of 225 mm shall be used for computing quantity of concrete. However, the haunch width may vary between 150 mm and 300 mm.





SCREED ELEVATIONS									
	Rear Abutment	Mid-Span	Pier No. 1	Splice No. 1	Mid-Span	Splice No. 2	Pier No. 2	Mid-Span	Forward Abutment
Lt. Gutter	176.808	176.938	177.062	177.115	177.212	177.298	177.341	177.440	177.524
℄ Survey	176.959	177.090	177.214	177.268	177.366	177.452	177.495	177.595	177.680
Rt. Gutter	176.803	176.935	177.060	177.114	177.212	177.298	177.342	177.442	177.527
Beam #1	176.784	176.915	177.039	177.092	177.189	177.274	177.317	177.416	177.500
Beam #2	176.834	176.965	177.089	177.143	177.240	177.326	177.368	177.467	177.551
Beam #3	177.884	177.016	177.140	177.193	177.291	177.377	177.420	177.519	177.603
Beam #4	176.934	177.066	177.190	177.244	177.342	177.428	177.471	177.570	177.654
Beam #5	176.933	177.064	177.187	177.241	177.339	177.425	177.468	177.569	177.654
Beam #6	176.882	177.013	177.136	177.190	177.288	177.374	177.418	177.519	177.604
Beam #7	176.830	176.961	177.085	177.140	177.237	177.323	177.367	177.468	177.554
Beam #8	176.778	176.910	177.034	177.088	177.186	177.273	177.316	177.417	177.503

Screed elevations shown are for the deck slab surface prior to concrete placement. Allowance has been made for anticipated calculated dead load deflections.



RAILING							
MARK	NO.	LENGTH MM	TYPE	A MM	B MM	C MM	INCREMENT
R15M01	16	991	5	165	457		
R15M02	8	2007	9				
R15M03	8	2718	10				
R15M04	16	2515	7	1067	203		
R15M05	8	1422	ST				
R15M06	16	2850	ST				
R15M07	16	4300	ST				
R15M08	64	2300	ST				
R15M09	8	4700	ST				
R15M10	198	1880	7	747	203		

NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
2. ALL DIMENSIONS ARE OUT TO OUT UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS, EXCEPT WHERE NOTED.
4. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER, FOR EXAMPLE, A15M01 IS A 15 BAR.
5. STANDARD BENDS ARE TO BE PROVIDED, EXCEPT WHERE NOTED.

6. MECHANICAL CONNECTORS:

*OR ** AFTER BAR LENGTH INDICATES A BAR WITH A MECHANICAL CONNECTOR.

BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA
BAR LENGTH AND/OR END PREPARATION MAY BE NECESSARY
DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY MAY BE REPLACED BY MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BAR EXTRUSIONS SHALL CONFORM WITH ITEM 509 AND SHALL BE INCLUDED IN THE BID PRICE FOR THE APPROPRIATE CONCRETE ITEM.

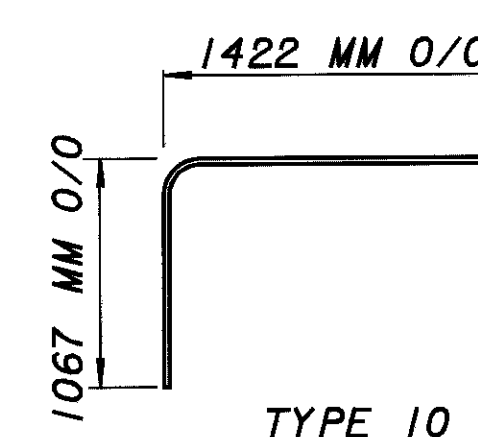
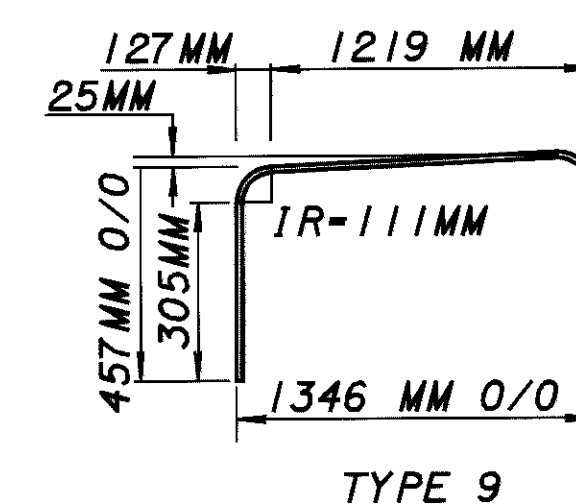
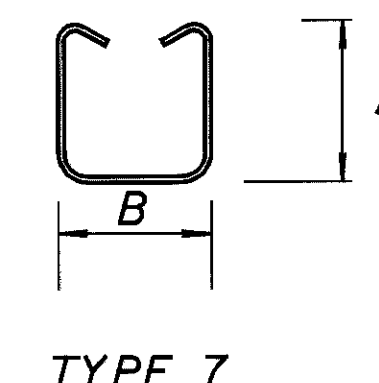
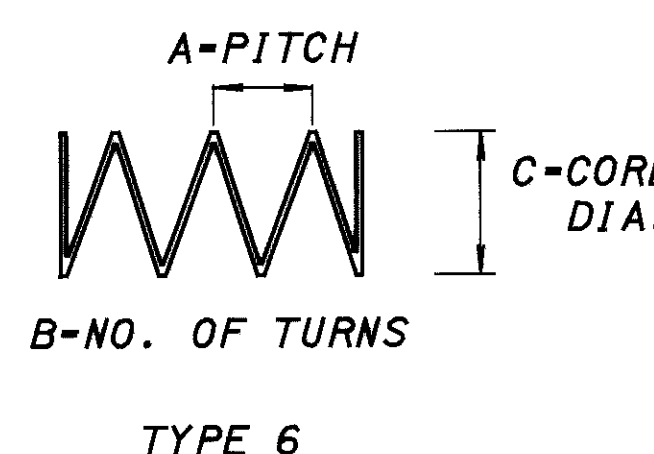
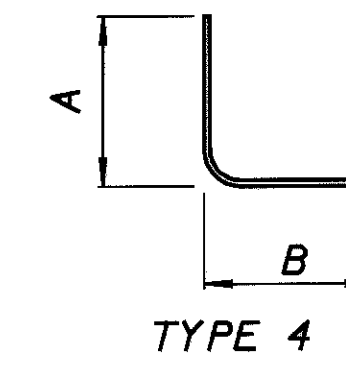
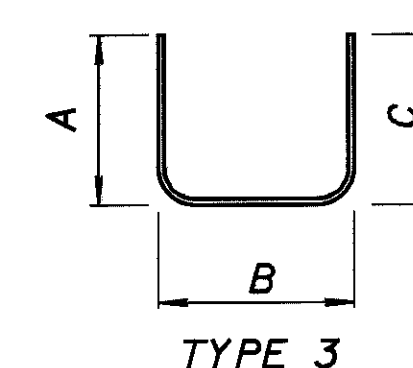
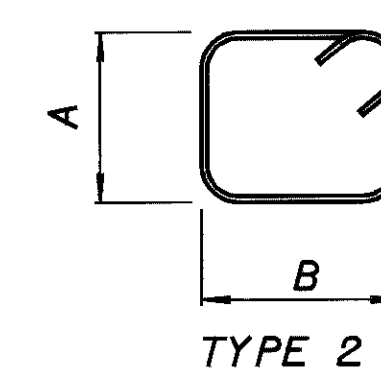
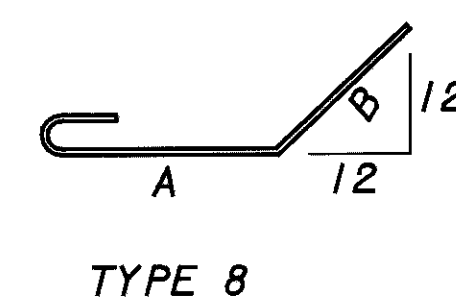
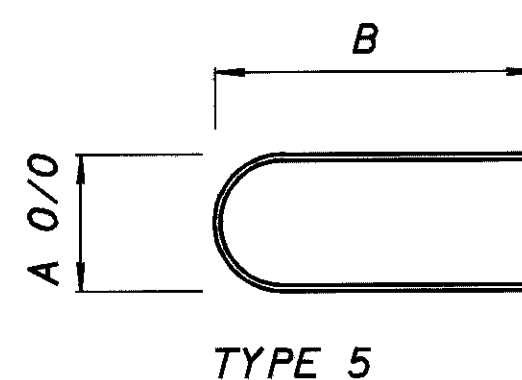
7. SPIRAL REINFORCING BARS:

THE LENGTH SHOWN IN THE STEEL LIST FOR SPIRAL BARS IS THE LENGTH OF THE SPIRAL ALONG THE AXIS OF THE SPIRAL. ONE AND ONE-HALF CLOSED-COIL TURNS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNELS, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 1.19 KILOGRAM PER METER OF SPACER, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COILS. LENGTH OF CAGE PLACED BELOW FINISHED GRADE SHALL BE INCREASED FROM THE 5000MM MINIMUM SPECIFIED AS NEEDED TO ADJUST THE TOP OF THE CAGE TO PROVIDE THE REQUIRED 450MM EMBEDMENT OF PILE INTO THE PIER CAP.

SPACERS:

CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR BOTTOM AND AT INTERVALS NOT EXCEEDING 3050MM) TO ENSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE PILE. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM OF 75MM CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE PILE.

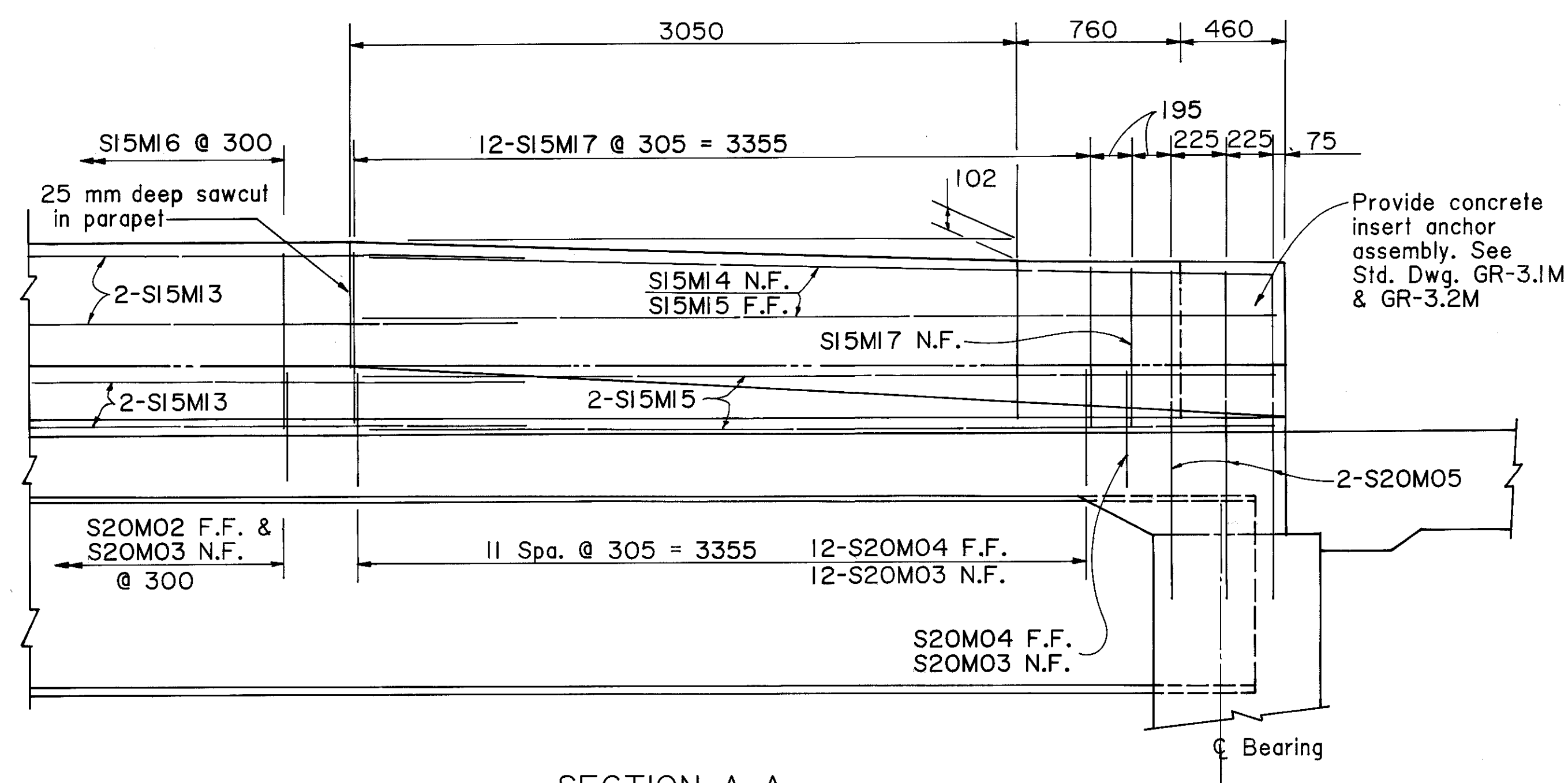
8. REINFORCING STEEL IS INCLUDED WITH THE APPROPRIATE CONCRETE ITEM FOR PAYMENT.

[illegible]

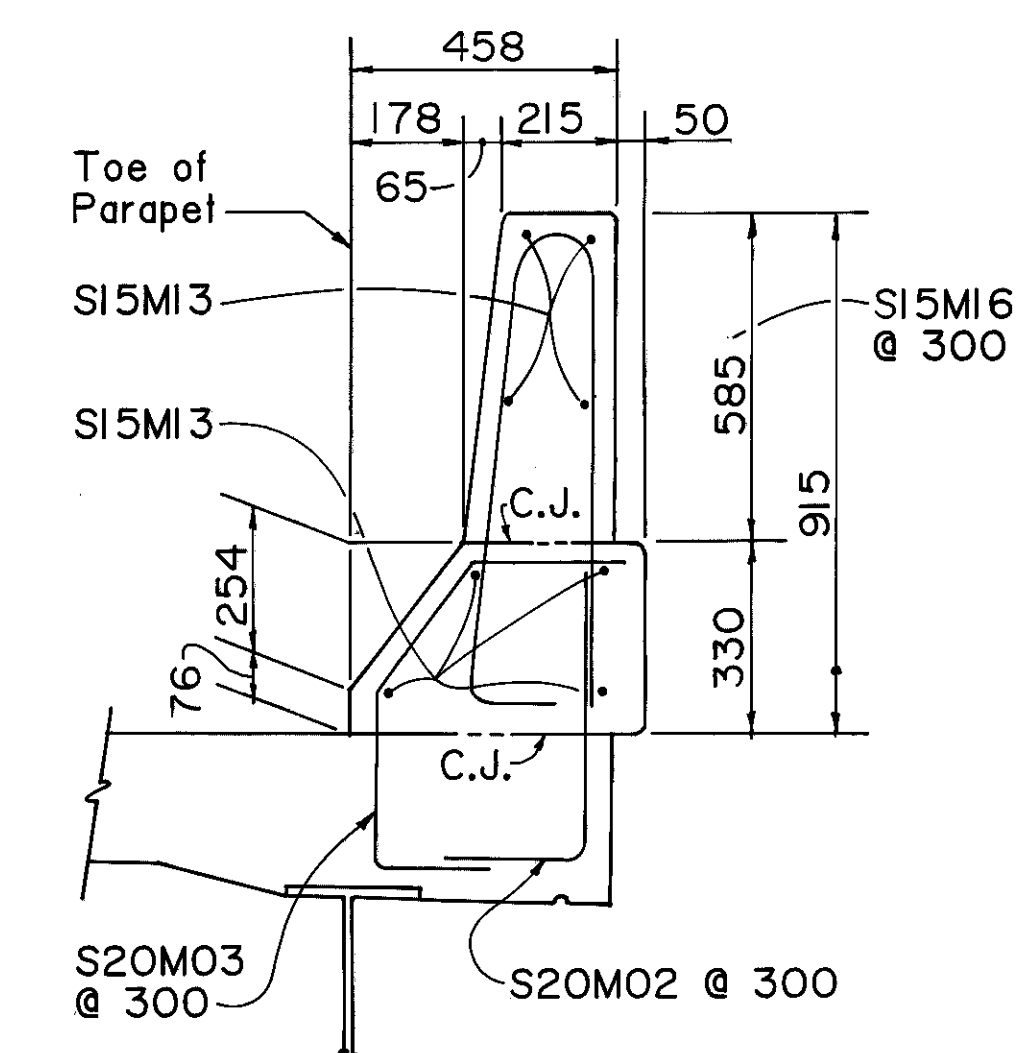
Plan view of a bridge showing dimensions and components. The diagram includes labels for '4270 Transition', '3050', '760', '460', '1265', 'B', 'C', 'D', 'E', 'F', 'Face of Guardrail', 'Bridge Deck', 'Approach Slab', 'Abutment Face', 'Bridge Roadway width', 'Toe of Parapet & C Beam', 'Abutment', and '750'. It also shows a cross-section of the bridge deck with a 4% slope and a 255mm height.

25 mm SAWCUT
(TYP.)

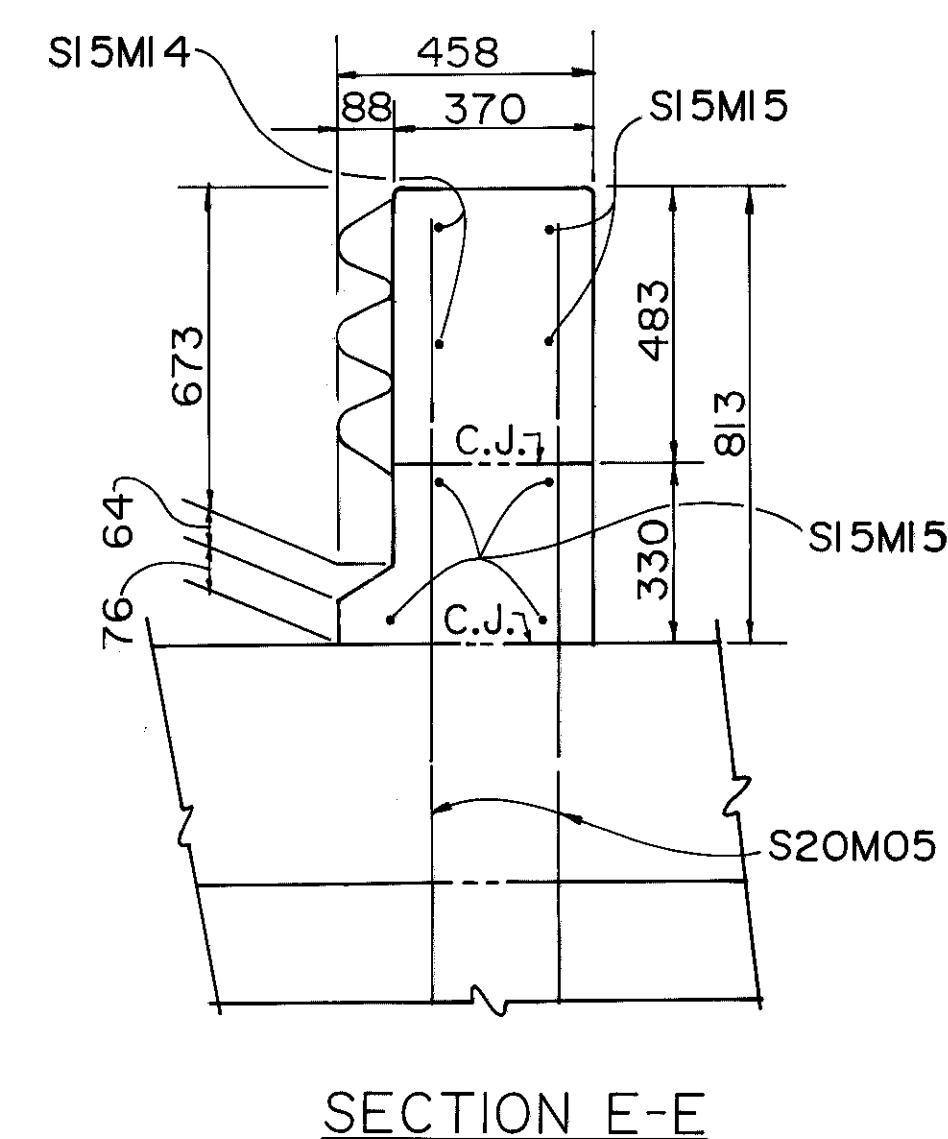
DETAIL G



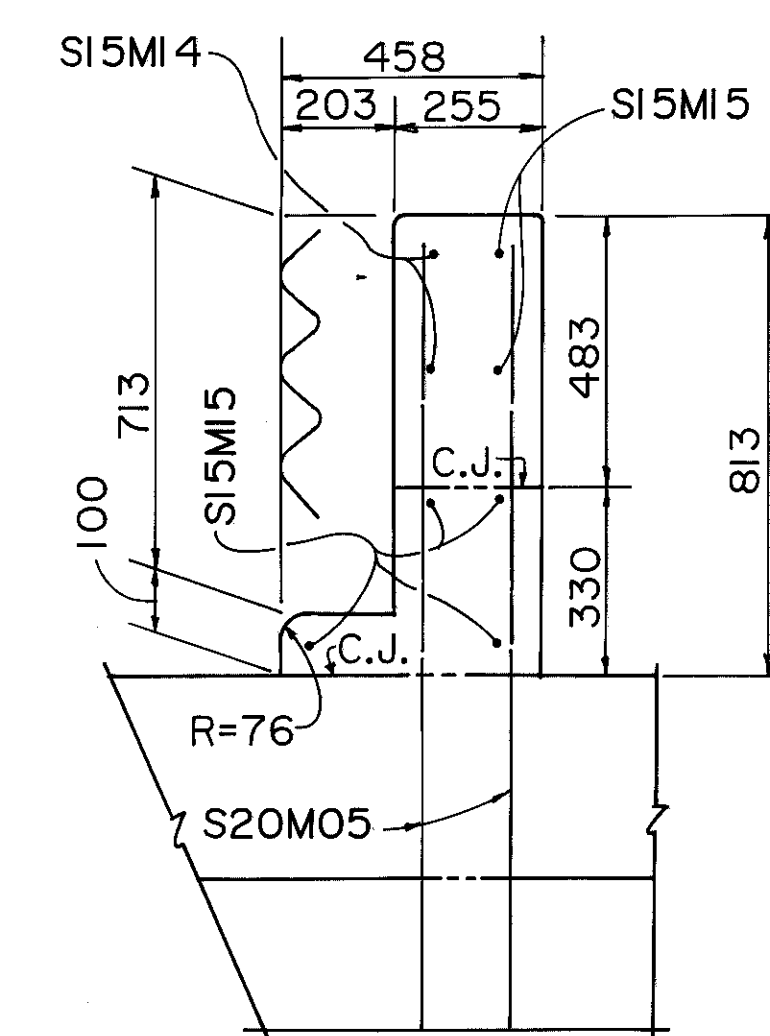
SECTION A-A



SECTIONS B-B & C-C



SECTION E-E

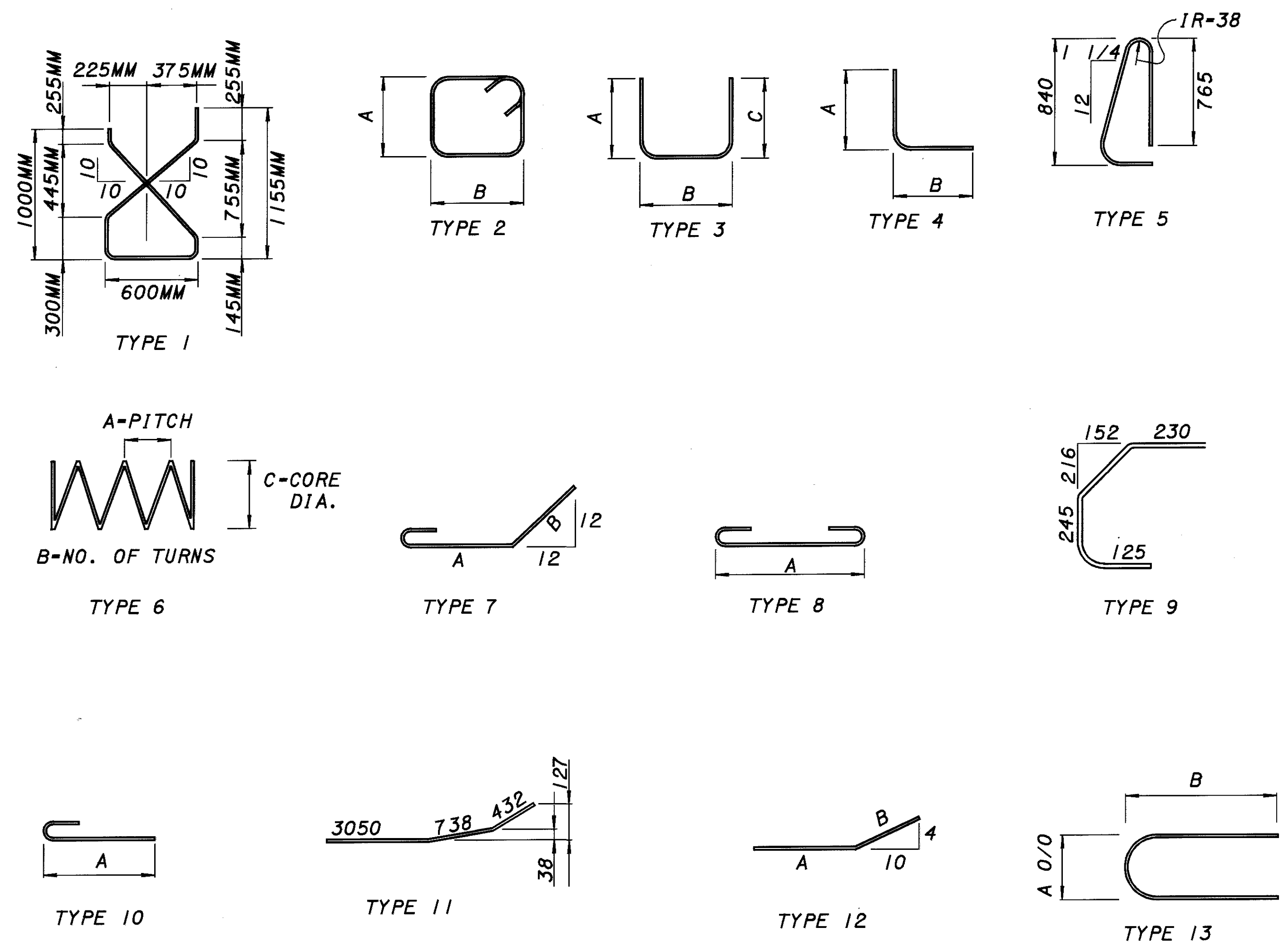


SECTION F-F

N.F. = Near Face
F.F. = Far Face

PIERS						
MARK	NO.	LENGTH MM	TYPE	A MM	B MM	C MM
P35M01	8	10 225*	ST			
P35M02	8	6475	4	5330	1245	
P35M03	8	11 575*	ST			
P35M04	40	10 375	ST			
P35M05	80	4940	4	4360	680	
P35M06	140	3050	8	2130		
P35M07	40	10 675	ST			
P35M08	8	9100*	ST			
P35M09	8	6700	4	5555	1245	
P35M10	8	10 675*	ST			
P30M01	8	9725*	ST			
P30M02	8	4700	ST			
P30M03	8	11 575*	ST			
P30M04	40	9000	ST			
P30M05	80	3950	4	3360	680	
P30M06	40	9300	ST			
P30M07	8	8600*	ST			
P30M08	8	4925	ST			
P30M09	8	10 675*	ST			
P20M01	38	4640	2	1275	920	
P15M01	12	11 575*	ST			
P15M02	156	4550	2	1275	920	
P15M03	82	1740	3	450	920	450
P15M04	24	3065	13	890	1290	
P15M05	12	10 675*	ST			
P15M06	24	1570	4	1260	350	
P15M07	4	1620	3	450	800	450
SP15M01	5	9000	6	115	83	765
SP15M02	5	9300	6	115	85	765

SUPERSTRUCTURE							
MARK	NO.	LENGTH MM	TYPE	A MM	B MM	C MM	D MM
S25M01	102	1570	7	859	430		
S25M02	8	10 450*	ST				
S25M03	8	6000*	ST				
S25M04	8	8825	ST				
S20M01	148	9000	ST				
S20M02	336	680	4	450	280		
S20M03	388	795	9				
S20M04	52	1170	4	940	280		
S20M05	24	1500	ST				
S15M01	154	2270	3	875	600	875	
S15M02	154	1285	4	875	450		
S15M03	154	2590	3	1310	450	910	
S15M04	10	10 450*	ST				
S15M05	10	5700*	ST				
S15M06	10	8530	ST				
S15M07	910	11 350	ST				
S15M08	455	5805	ST				
S15M09	455	7575	ST				
S15M10	455	7890	ST				
S15M11	455	6580	ST				
S15M12	1032	10 435	ST				
S15M13	80	10 980	ST				
S15M14	8	4220	11				
S15M15	24	4220	ST				
S15M16	336	1825	5				
S15M17	52	920	10				



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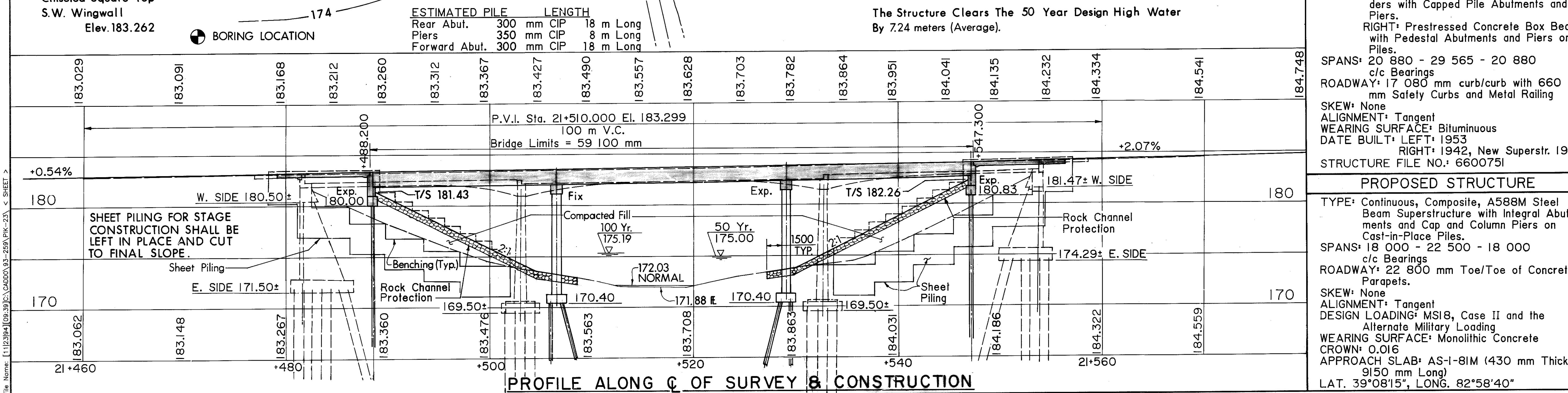
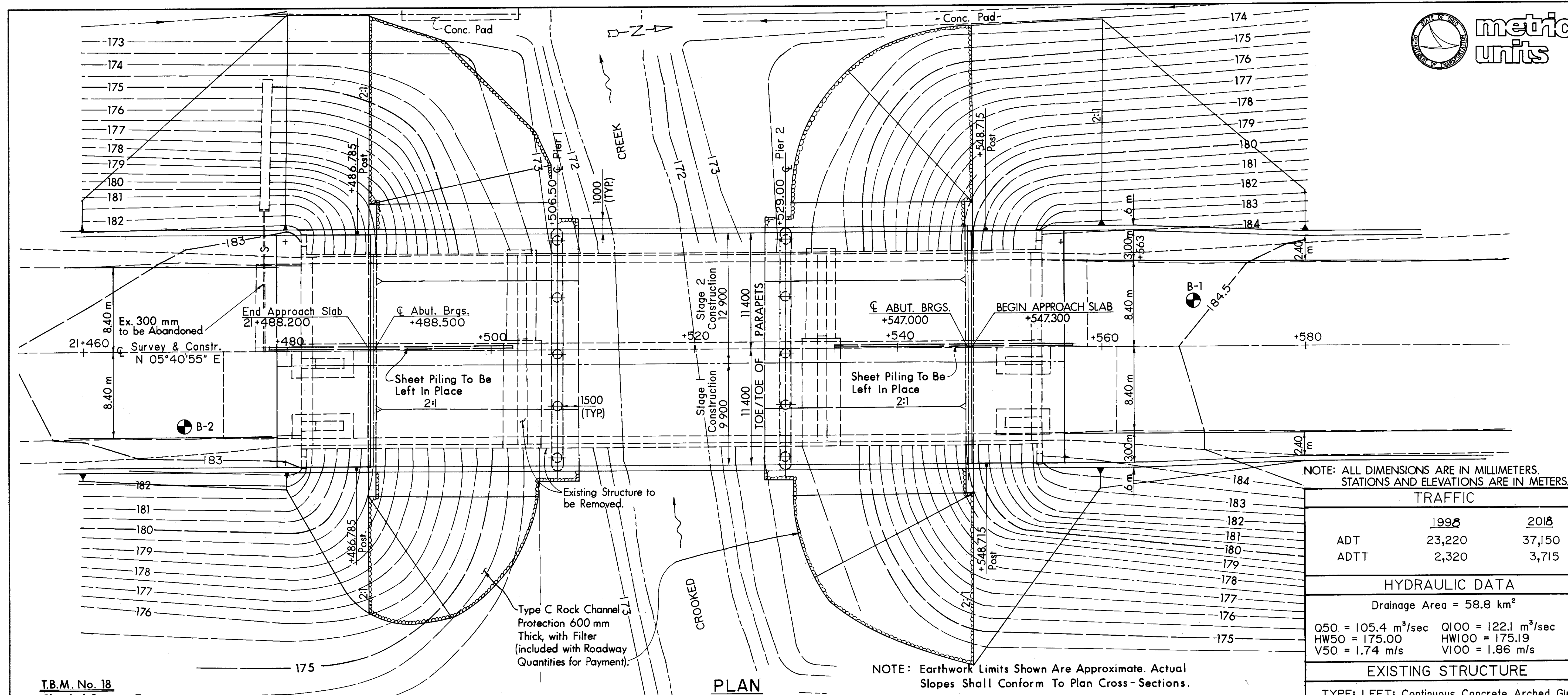
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8. REINFORCING STEEL IS INCLUDED WITH THE APPROPRIATE CONCRETE ITEM FOR PAYMENT.

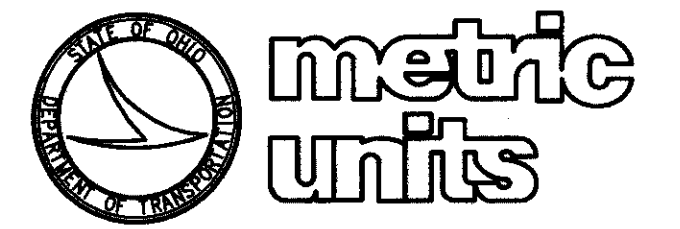
ABUTMENTS

MARK	NO.	LENGTH MM	TYPE	A MM	B MM	C MM	INCREMENT
A35M01	8	10 000	ST				
A35M02	8	5870*	ST				
A35M03	8	8800**	ST				
A35M04	8	10 075	ST				
A25M01	8	8175	ST				
A25M02	8	6000*	ST				
A25M03	8	6975**	ST				
A25M04	8	10 200	ST				
A20M01	154	3100	1				
A15M01	148	3240	2	770	770		
A15M02	124	2740	3	1110	600	1110	
A15M03	24	3970	3	1725	600	1725	
A15M04	12	7850	ST				
A15M05	4 SERIES	3180 TO	3	1330 TO	600	1330 TO	** 376
	OF 6	1300**		390		390	
A15M06	12	5720*	ST				
A15M07	24	2215	ST				
A15M08	8	1300	ST				
A15M09	8	2225	12	225	2000		
A15M10	12	6675*	ST				
A15M11	12	9900	ST				
A10M01	90	2620	2	740	515		



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CLYDE E. WILLIAMS & ASSOCIATES, INC.
130 E. WILSON BRIDGE ROAD
WORTHINGTON, OHIO 43085

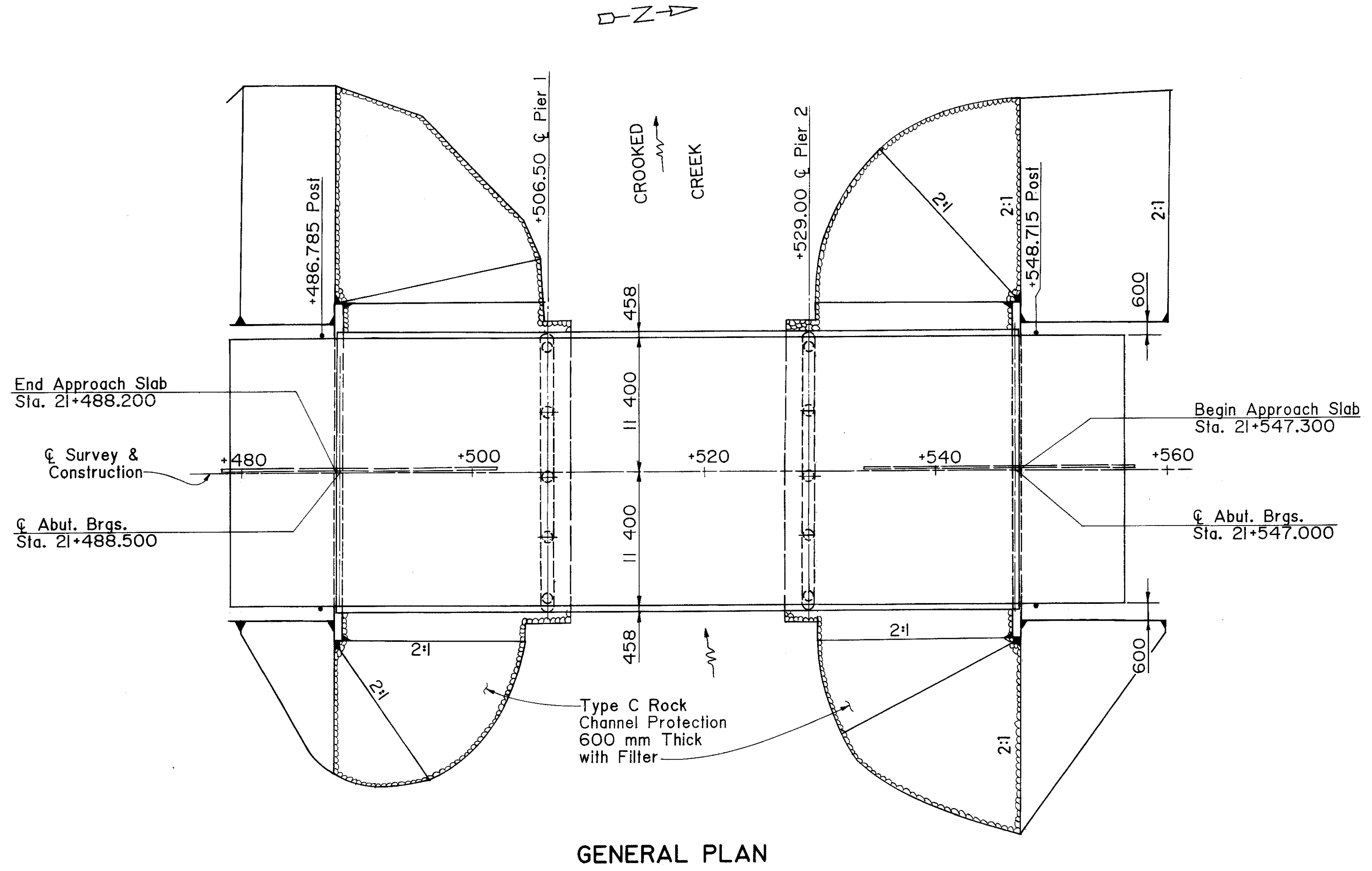
DESIGNED	DRAWN	REVIEWED	DATE
ZR	LEO	HM	5-14-96
CHECKED	FILE NUMBER		
AAH	6600778		

GENERAL PLAN & ELEVATION
BRIDGE NO. PIK-23-1335
OVER CROOKED CREEK

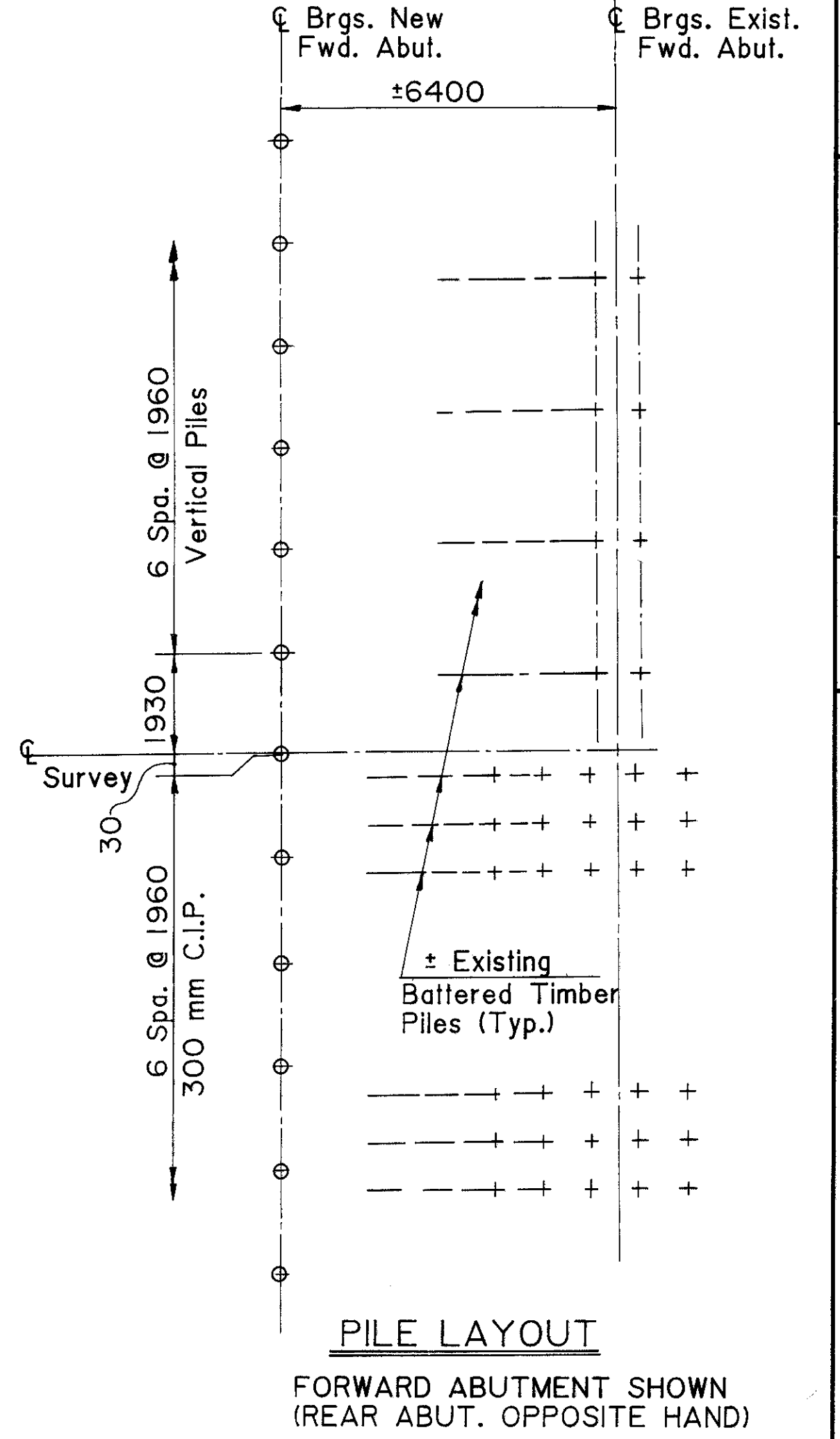
PIK-23-18.580

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262

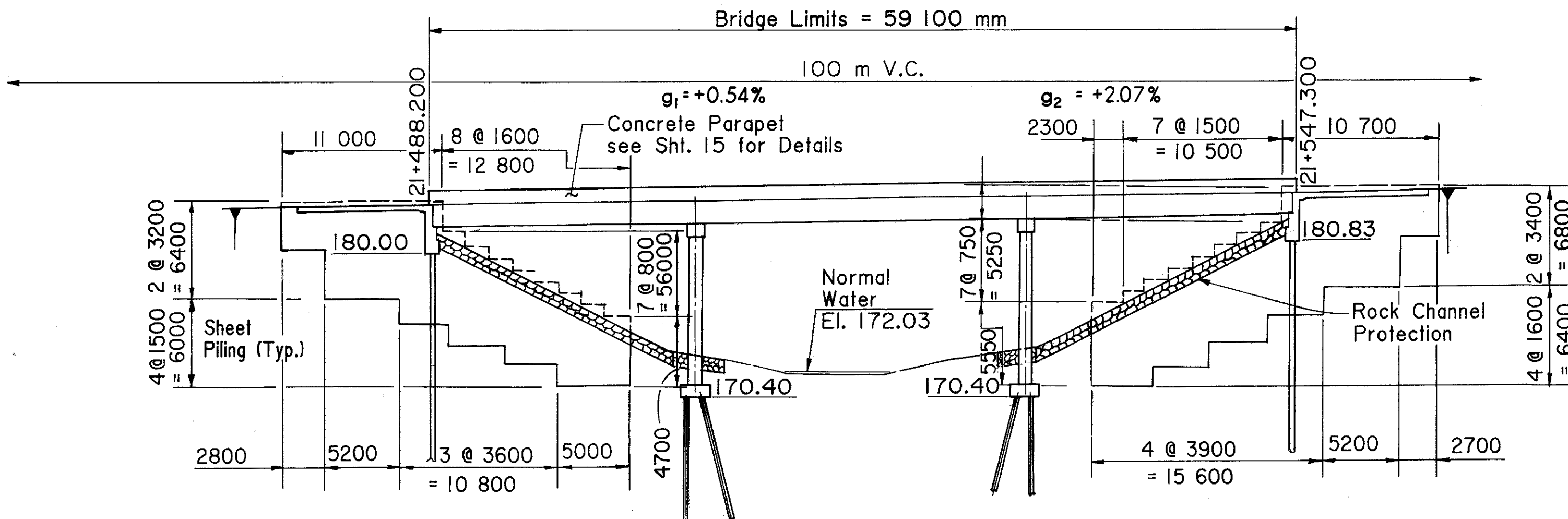


GENERAL PLAN



PILE LAYOUT

FORWARD ABUTMENT SHOWN
(REAR ABUT. OPPOSITE HAND)



ELEVATION

NOTES:

- ITEM 503 - COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN
- IN ADDITION TO THE NORMAL REQUIREMENTS OF SECTION 503.03 OF THE CMS FOR THE CONSTRUCTION OF THE STRUCTURE, ANY TEMPORARY SHORING REQUIRED TO SUPPORT THE EXISTING EMBANKMENT DURING PHASE CONSTRUCTION OF THE STRUCTURE, AS SHOWN ON SHEETS 2/16 AND 4/16, SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 503, COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN.
- MINIMUM SHEETING SIZE SHALL HAVE A MINIMUM SECTION MODULUS OF $1720 \times 10^3 \text{ mm}^4$ PER METER OF WALL. SHEETING SHALL BE CUT OFF PRIOR TO PLACING THE APPROACH SLAB IN STAGE 2. SHEETING LEFT IN PLACE SHALL BE CUT OFF EITHER AT THE APPLICABLE LIMIT OF 300MM MINIMUM BELOW THE GROUND LINE OR FLUSH WITH THE LEVEL OF THE SUBGRADE.
- AT THE OPTION OF THE CONTRACTOR, AN ALTERNATE METHOD OF DESIGN FOR THE TEMPORARY SHORING FOR PART-WIDTH CONSTRUCTION MAY BE USED. PLANS FOR SUCH SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05. THE CONTRACTOR SHALL SUBMIT FIVE COPIES TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING FOR REVIEW AND APPROVAL. CONSTRUCTION OF THE TEMPORARY SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE DIRECTOR.
- PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.
- PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 503, COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY LABOR, EQUIPMENT AND MATERIALS NEEDED TO COMPLETE THIS WORK.

REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD

DRAWINGS:

AS-1-81M	DATED	10-25-94
BR-1M	DATED	12-15-94
BS-1-93M	DATED	12-15-94
6SD-1-96	DATED	2-12-97
ICD-1-82M	DATED	3-20-95
BP-2.31M	DATED	5-26-98
DM-1.1M	DATED	10-21-97

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

816	DATED	4-21-97
844	DATED	5-5-98
863	DATED	9-9-97
910	DATED	7-28-97
911	DATED	7-10-97
954	DATED	9-9-97

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997 AND 1998 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING - MS18 CASE 11 AND THE ALTERNATE MILITARY LOADING

CONCRETE CLASS S - UNIT STRESS 10.3 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C - UNIT STRESS 9.2 MPa (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615M, A616M OR A617M, GRADE 400, UNIT STRESS 160 MPa

STRUCTURAL STEEL - ASTM A588M, UNIT STRESS 186.2 MPa

DECK PROTECTION METHOD: EPOXY COATED, REINFORCING STEEL, 65MM CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 MM THICK.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES UPON RECEIVING PERMISSION FROM THE ENGINEER.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE)

THE ULTIMATE BEARING VALUE IS 836 KN PER PILE FOR THE 300 MM ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 1068 KN PER PILE FOR THE 350 MM PIER PILES.

ABUTMENT PILES:

30 PILES 18 METERS LONG, ESTIMATED LENGTH
32 PILES OF ORDER LENGTH, 18 METERS LONG
15 SPLICES

PIER PILES:

40 PILES 8 METERS LONG, ESTIMATED LENGTH
40 PILES OF ORDER LENGTH, 9.5 METERS LONG
20 SPLICES

CONCRETE PARAPETS

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25MM DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT A MINIMUM OF 2000MM AND A MAXIMUM OF 3000MM CENTERS. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6MM. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E TO A MINIMUM DEPTH OF 25MM.

ITEM 516 INTEGRAL ABUTMENT EXPANSION JOINT SEAL

THE CONTRACTOR SHALL INSTALL A 900MM WIDE STRIP, 2.5MM THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT THE LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 32 x 3MM (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25MM OUTSIDE DIAMETER, 3MM GALVANIZED WASHER, MAXIMUM FASTENER SPACING IS 225MM. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIPS BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150MM (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS, SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 150MM (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR THE VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150MM CENTER TO CENTER ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED. THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300MM IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150MM IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5MM THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003" BY I.E. DUPONT DE NEMOURS AND THE COMPANY, INC., "WINGPRENE" BY GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS	D 751	2.5 +/- .25
BREAKING STRENGTH, GRAB WXF, N MINIMUM	D 751	3130 x 3130
ADHESIVE 25MM STRIP, 50MM MINIMUM, N MINIMUM	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS T 100°C, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40°C, BEND AROUND 6MM MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR ALL LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 INTEGRAL ABUTMENT EXPANSION JOINT SEAL.

ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THE BACKFILL MATERIAL FOR ALL EXCAVATION BEHIND THE ABUTMENTS SHALL BE ITEM 613 LOW STRENGTH MORTAR BACKFILL, TYPE 1 (LSM BACKFILL) WITHIN THE LIMITS OF THE APPROACH SLABS AS SHOWN ON SHEET 5/16. THE CONTRACTOR ALSO MAY USE THE LSM BACKFILL TO CONSTRUCT THE SLOPES IN THE SAME AREA AS LONG AS IT IS COVERED WITH ONE FOOT OF SOIL TO MEET THE FINISHED GRADE. THE AREA FOR THE POROUS BACKFILL WITH FILTER FABRIC SHALL BE FORMED UP PRIOR TO THE PLACEMENT OF THE LSM BACKFILL, AND THE FILTER FABRIC AND POROUS BACKFILL SHALL BE PLACED AFTER THE LSM BACKFILL HAS BEEN CURED AND THE FORMS HAVE BEEN REMOVED.

THE COST OF ALL LABOR, EQUIPMENT AND MATERIAL TO PLACE THE LSM BACKFILL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN.

ITEM SPECIAL SEALING OF CONCRETE SURFACES

(EPOXY-URETHANE) THE COLOR OF THE URETHANE SHALL BE FEDERAL COLOR NUMBER 17778 (OFF-WHITE).

CALCULATED BY ZR, DATE 1/96		CHECKED BY HM, DATE 10/96		DESCRIPTION	SUPER	ABUT.	PIER	GEN.	SEE SHEET NO.
ITEM	ITEM TOTAL UNIT EXT.	ITEM	ITEM TOTAL UNIT EXT.						
202	11002 LUMP			STRUCTURE REMOVED, OVER 6 METER SPAN				LUMP	
202	23500 4468			WEARING COURSE REMOVED	4468			LUMP	2/16
503	11101 LUMP			COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP	3/16
503	21301 LUMP			UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	
505	11100 LUMP			PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00500 540			300 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN		540			
507	00550 576			300 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		576			
507	00600 320			350 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN			320		
507	00650 380			350 MM CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED			380		
507	50500 35			STEEL PILE SPLICES		15	20		
SPECIAL 516	1267510 434			SO. YD. SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)/*					3/16
516	14014 50			INTEGRAL ABUTMENT EXPANSION SEAL	330	87	17		
516	44101 9			ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (270 x 485 x 50 ELASTOMERIC PAD WITH 300 x 640 BEVELED STEEL LOAD PLATE)		50		9	11/16
516	44201 9			ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (305 x 470 x 76 ELASTOMERIC PAD WITH 340 x 500 BEVELED STEEL LOAD PLATE)				9	11/16
518	12200 8			SCUPPER, INCLUDING SUPPORTS	8				
518	21230 LUMP			POROUS BACKFILL WITH FILTER FABRIC				LUMP	
518	40000 59			150 MM PERFORATED CORRUGATED PLASTIC PIPE		59			
518	40010 13			150 MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		13			
604	36600 4			PRECAST REINFORCED CONCRETE OUTLET		4			
844	48000 374			CU. M. HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)		374			
844	48020 35			CU. M. HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE (PARAPET)		35			
844	48040 268			CU. M. HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE			85	183	
863	10040 LUMP			STRUCTURAL STEEL MEMBERS, LEVEL TWO (2) FABRICATION	LUMP				
863	20000 4617			EACH WELDED STUD SHEAR CONNECTOR	4617				

* SEE PROPOSAL NOTE

GENERAL NOTES AND ESTIMATED QUANTITIES
PIK-23-1335 OVER CROOKED CREEK

PIK-23-18.580

3/16

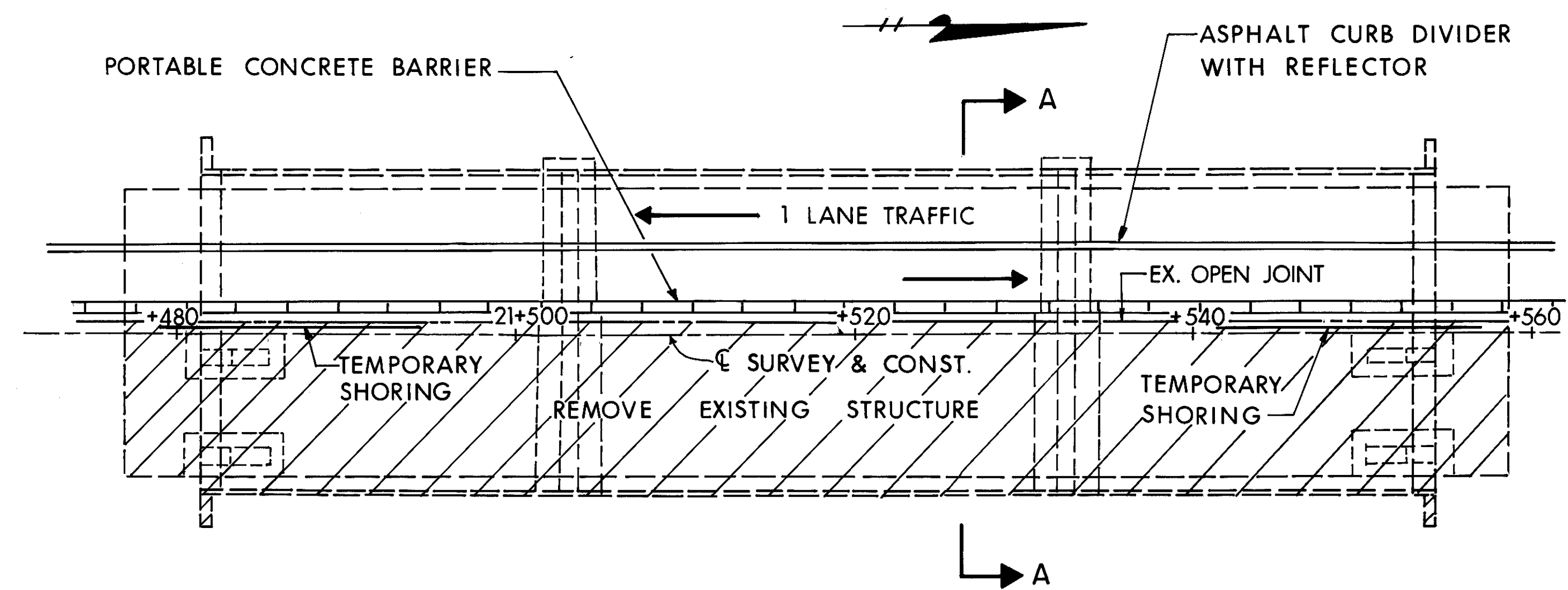
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CLYDE E. WILLIAMS & ASSOCIATES, INC.
130 E. WILSON BRIDGE ROAD
WORTHINGTON, OHIO 43085

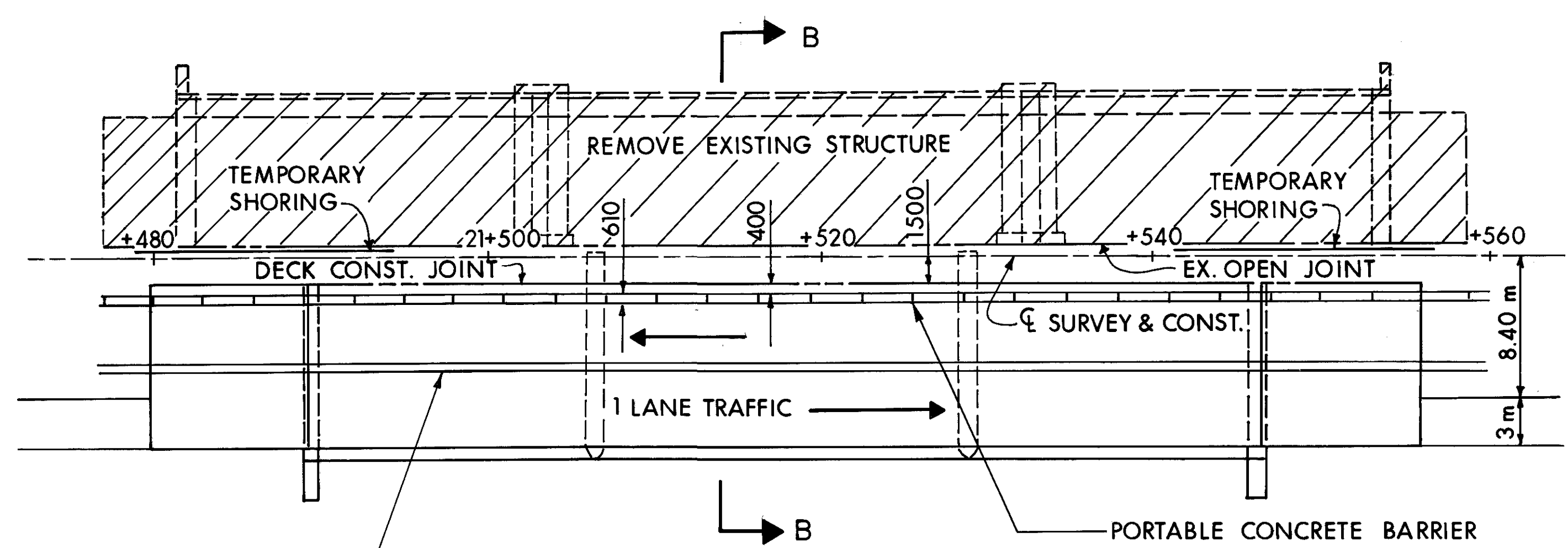
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HM 10/28/96
STRUCTURE FILE NUMBER
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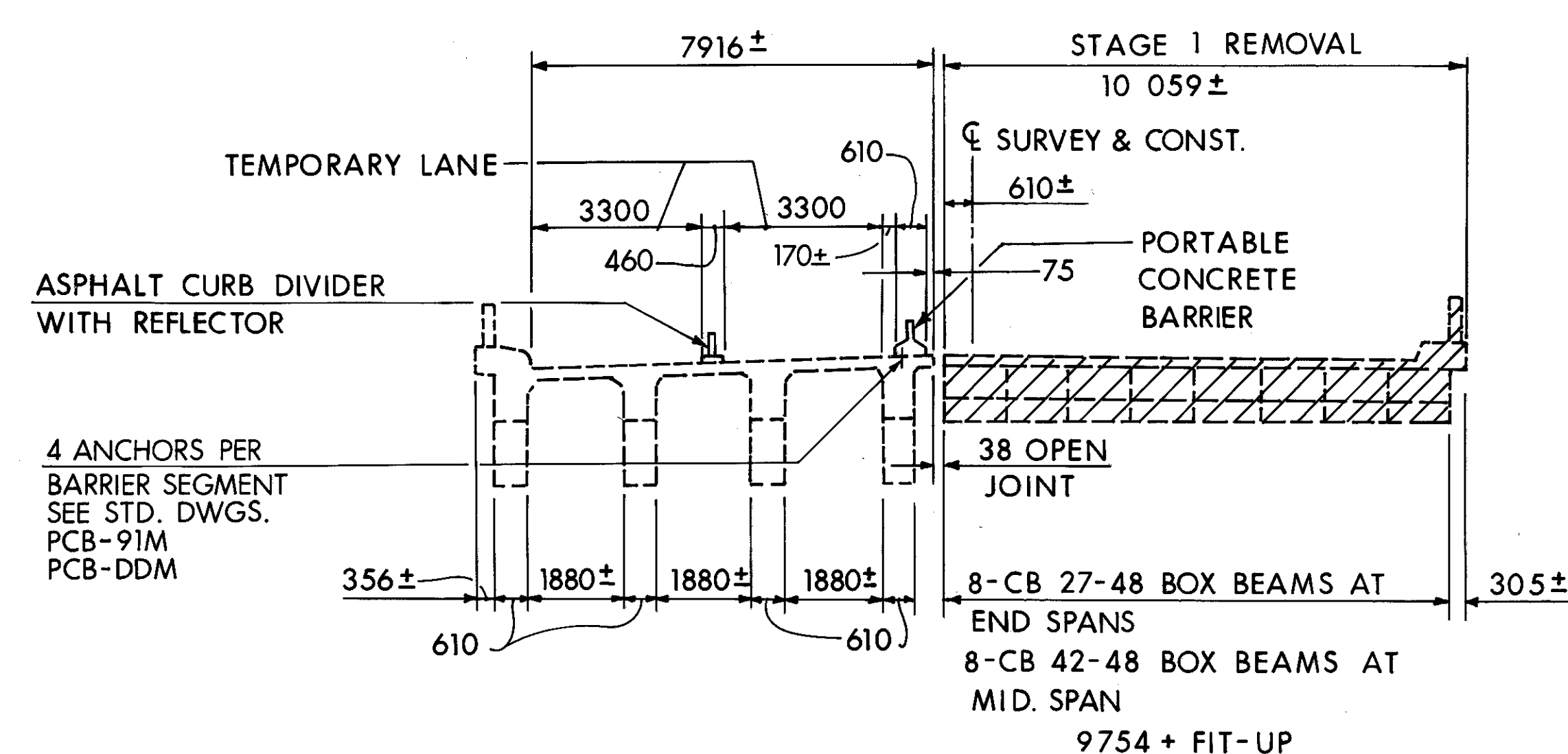
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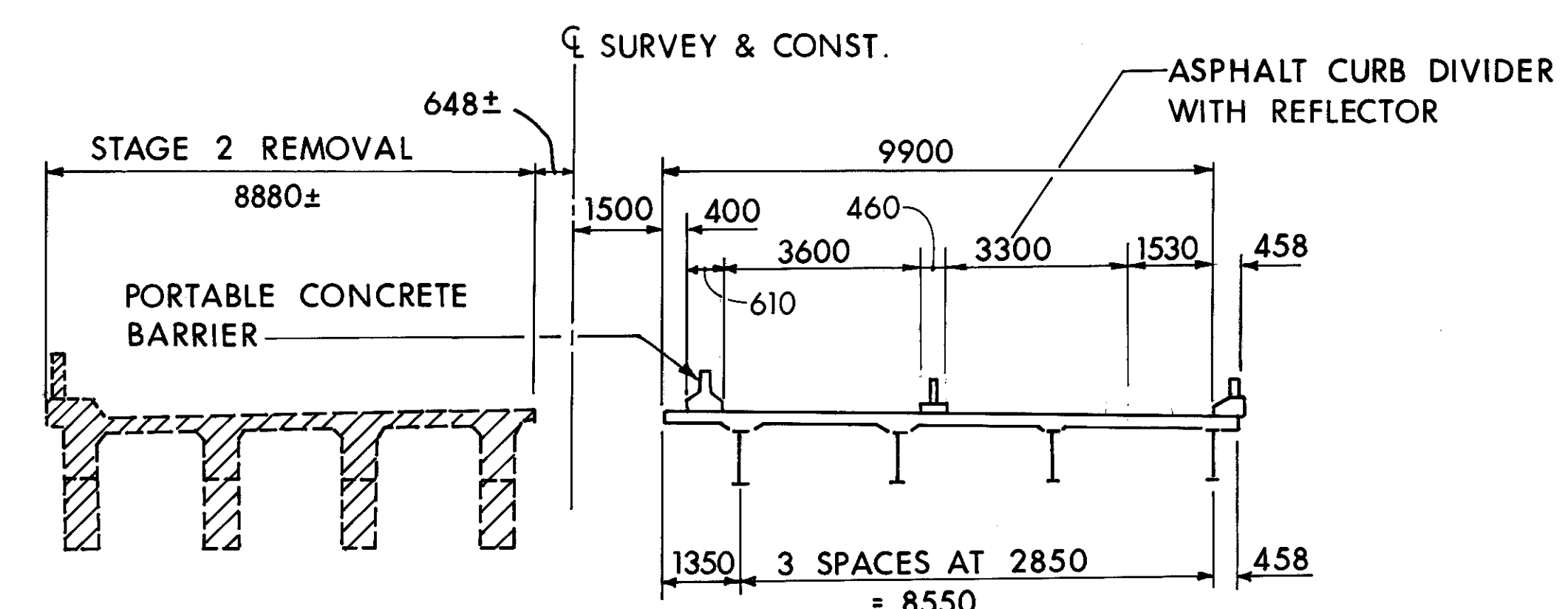
STAGE 1 - PLAN



STAGE 2 - PLAN



STAGE 1 - SECTION A-A



STAGE 2 - SECTION B-B

STAGE 1

1. ADD ASPHALT CURB DIVIDER WITH REFLECTOR AND PORTABLE CONCRETE BARRIER TO WEST SIDE OF EXISTING STRUCTURE.
2. TRANSFER TRAFFIC TO WEST SIDE OF STRUCTURE WITH ONE LANE TEMPORARY TRAFFIC IN EACH DIRECTION.
3. INSTALL TEMPORARY SHORING AT EXISTING ABUTMENTS.
4. REMOVE EXISTING STRUCTURE ON RIGHT SIDE OF EXISTING STRUCTURE UP TO THE EXISTING OPEN JOINT.
5. CONSTRUCT RIGHT SIDE OF PROPOSED STRUCTURE.

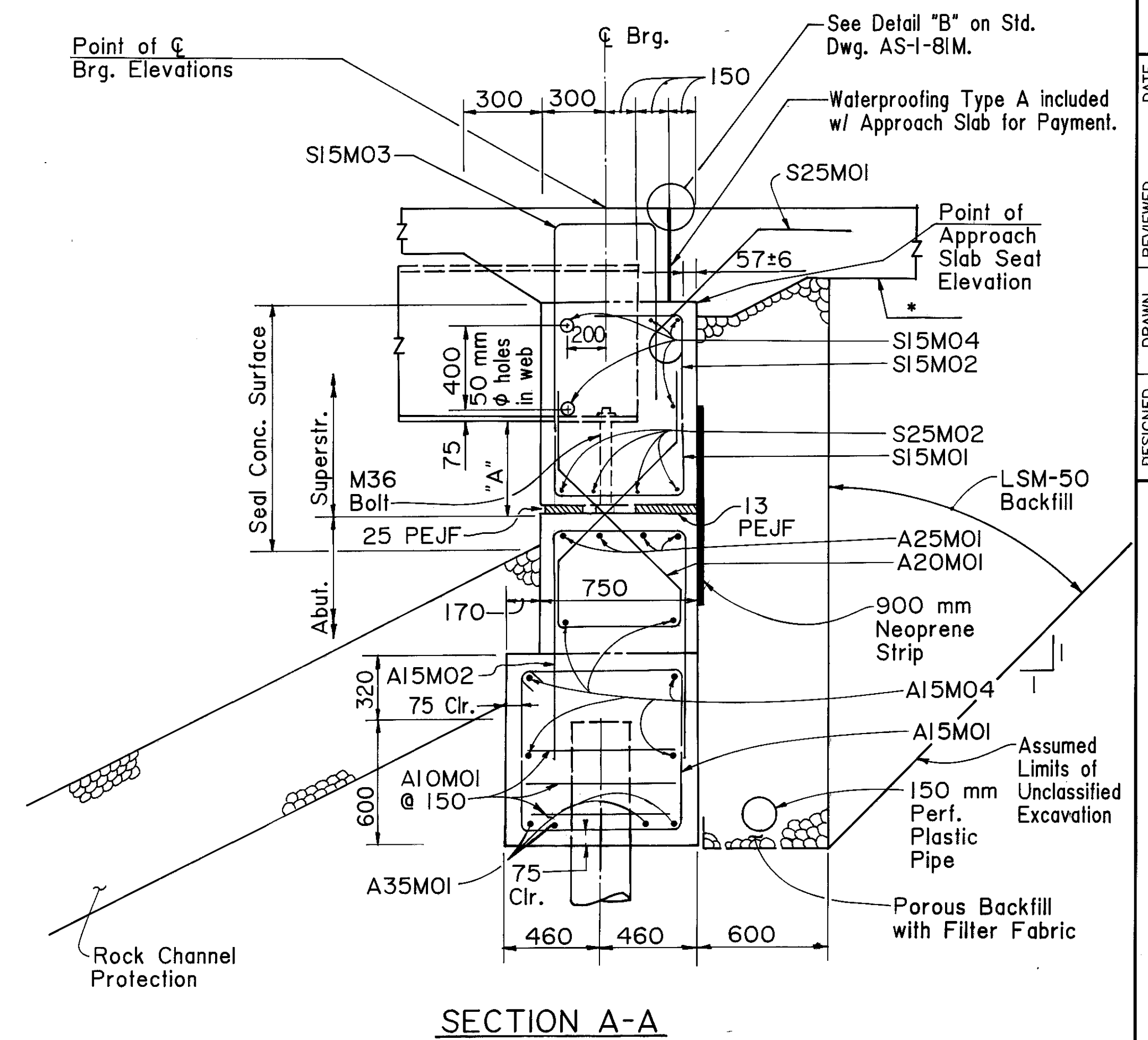
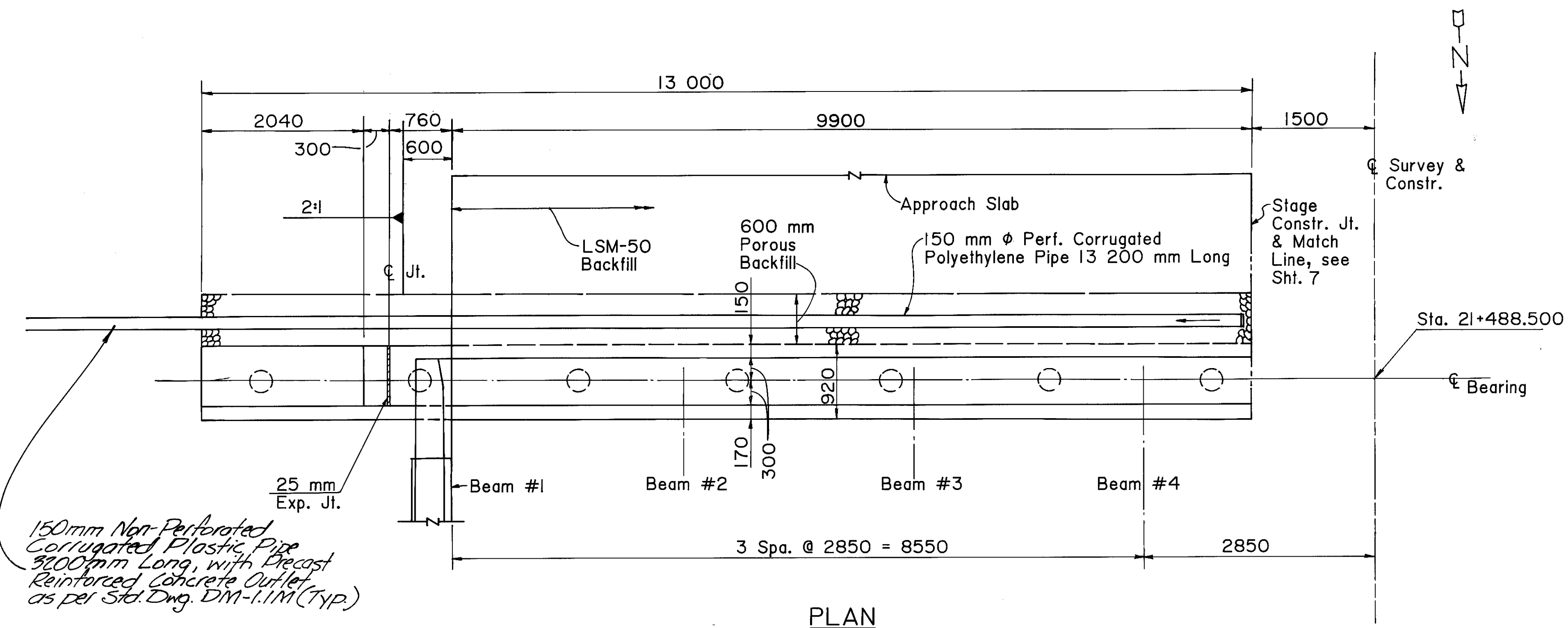
STAGE 2

1. ADD ASPHALT CURB DIVIDER WITH REFLECTOR AND PORTABLE CONCRETE BARRIER TO STRUCTURE JUST CONSTRUCTED.
2. TRANSFER TRAFFIC TO NEW STRUCTURE WITH ONE LANE TEMPORARY TRAFFIC IN EACH DIRECTION.
3. REMOVE ASPHALT CURB DIVIDER AND PORTABLE CONCRETE BARRIER FROM EXISTING WEST PORTION OF OLD STRUCTURE.
4. REMOVE EXISTING WEST PORTION OF OLD STRUCTURE.
5. CONSTRUCT LEFT SIDE OF PROPOSED STRUCTURE.

STAGE 3

- REFER TO TRANSVERSE SECTION ON SHEET 12.
1. INSTALL CROSS-FRAMING AT CLOSURE SECTION.
 2. POUR CLOSURE DECK SECTION.
 3. REMOVE ASPHALT CURB DIVIDER WITH REFLECTOR AND PORTABLE CONCRETE BARRIER AND TRANSFER TRAFFIC TO NORMAL NORTH AND SOUTH BOUND TRAFFIC OPERATION.

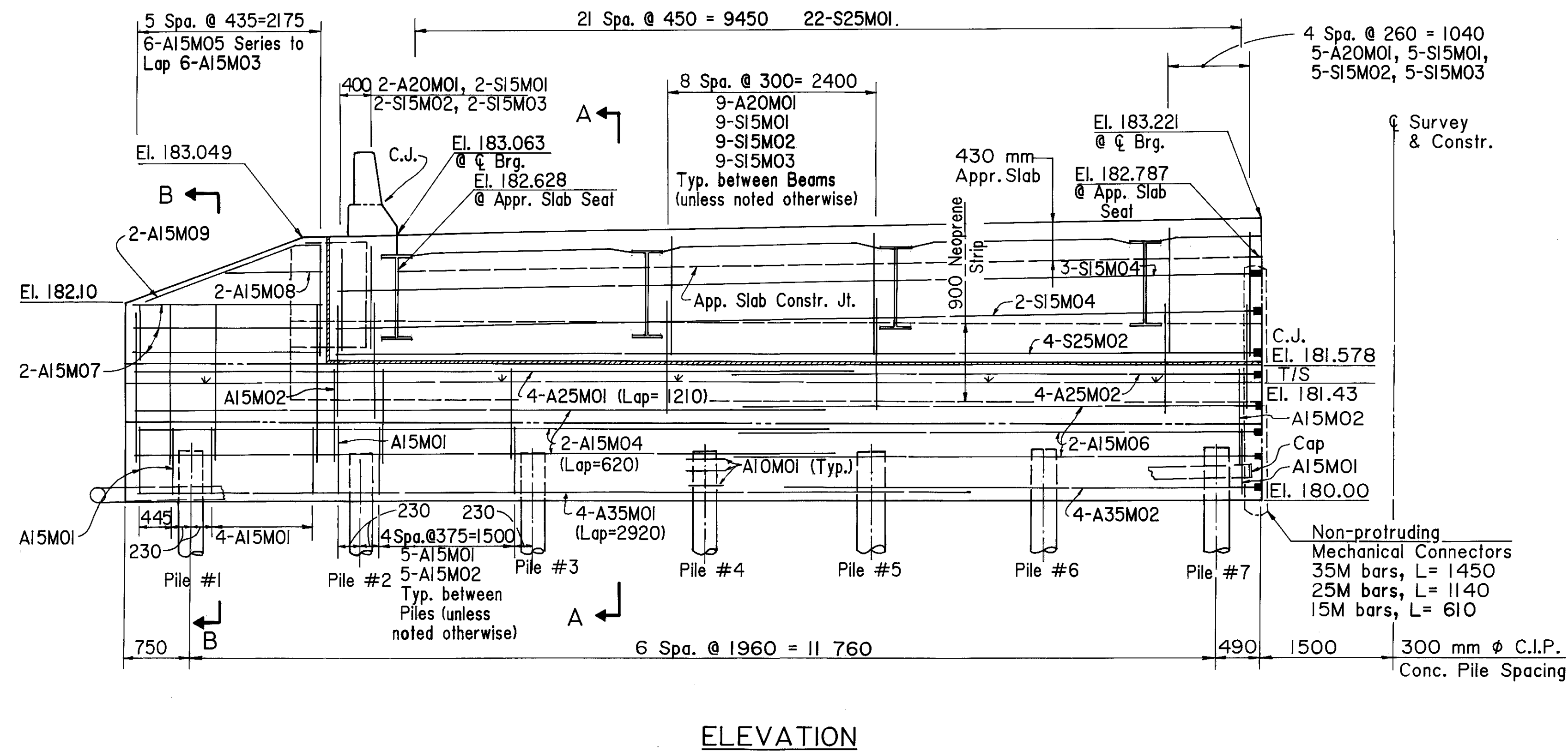
* Prior to placement of approach slab concrete, two sheets of clear or opaque polyethylene film as per CMS 705.06 shall be installed between the subbase and approach slab. Included with approach slab for payment.

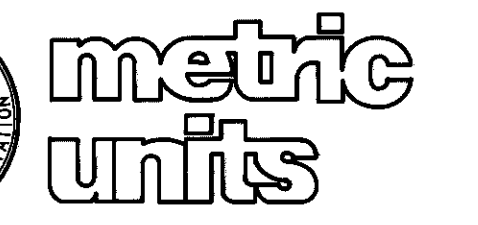


NOTES:

- SEE SHEET 7/16 FOR SECTION B-B.
- DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER SUPPORTED IN INTEGRAL-TYPE ABUTMENTS SHALL BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED.
- POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.

M36 BOLT	
Beam	Dim. "A" (mm)
#1 & #9	300
#2 & #8	345
#3 & #7	391
#4 & #6	436
#5	482



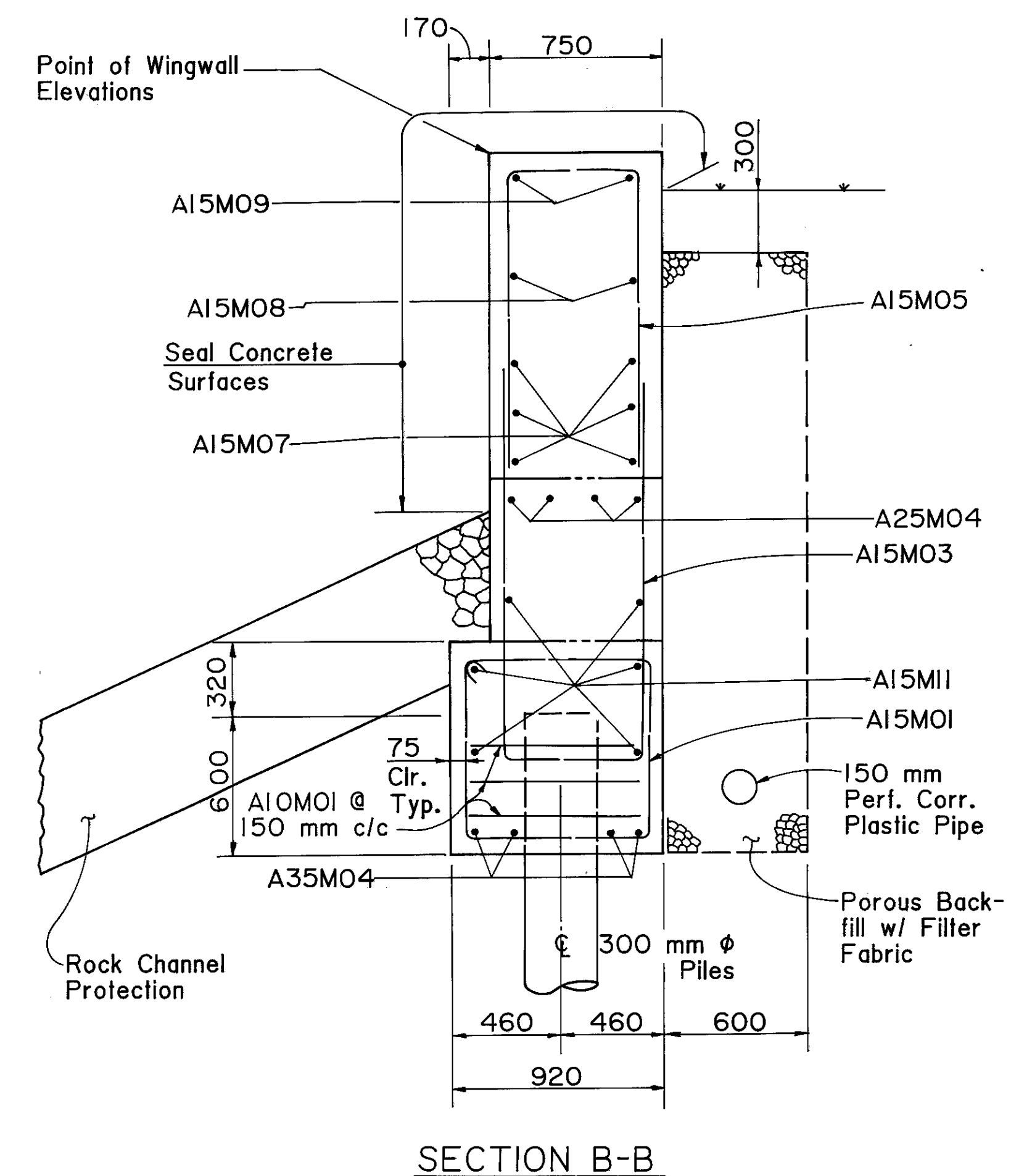
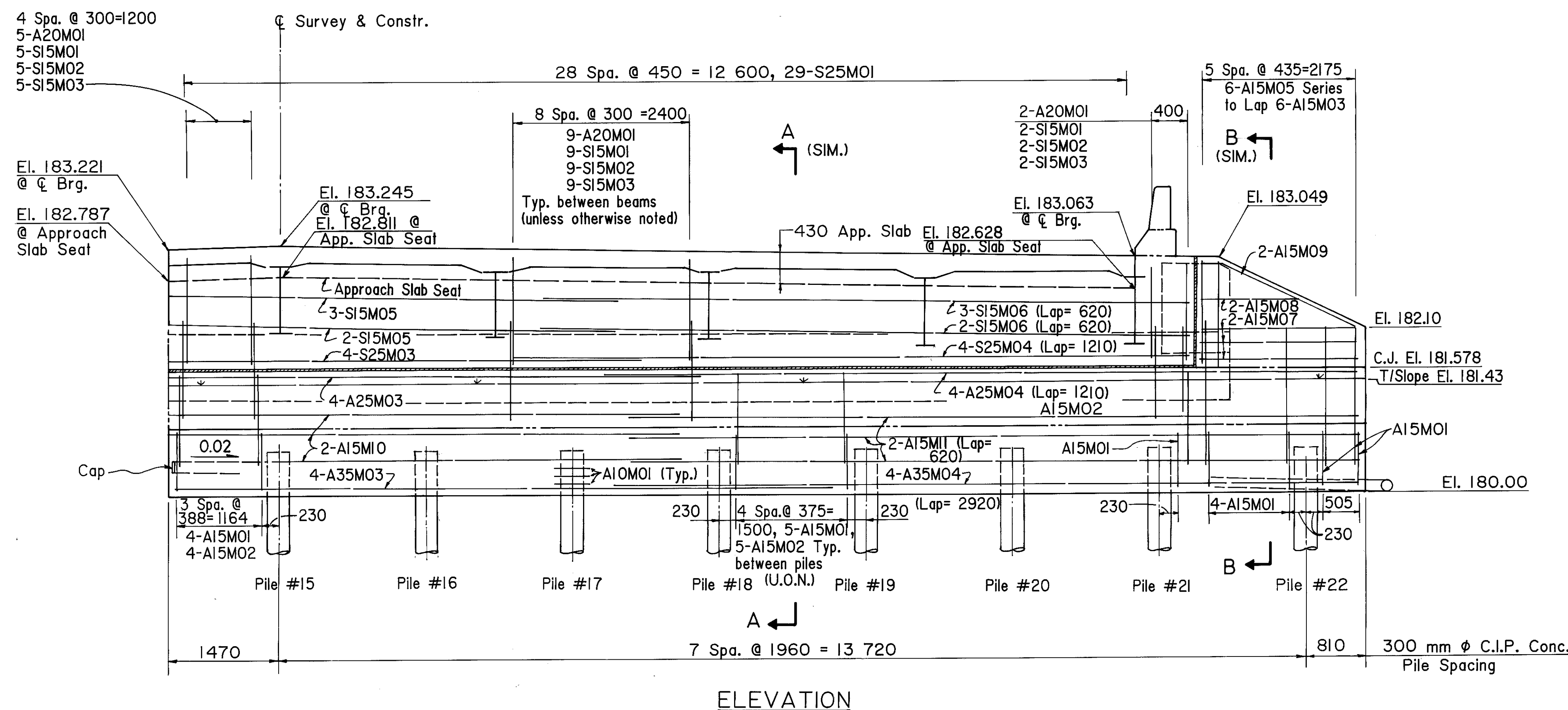
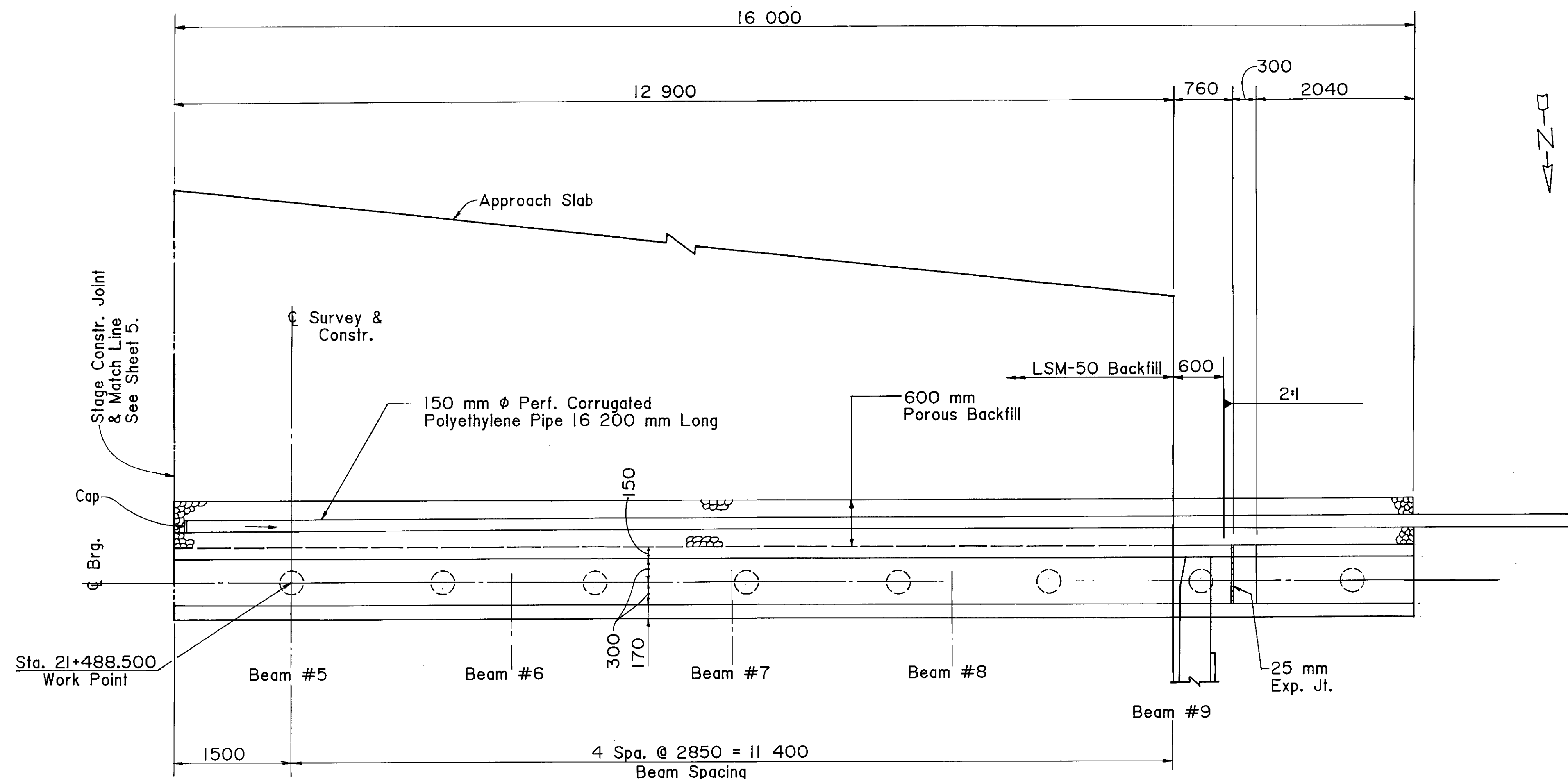


HM	5-14-96
STRUCTURE FILE NUMBER	
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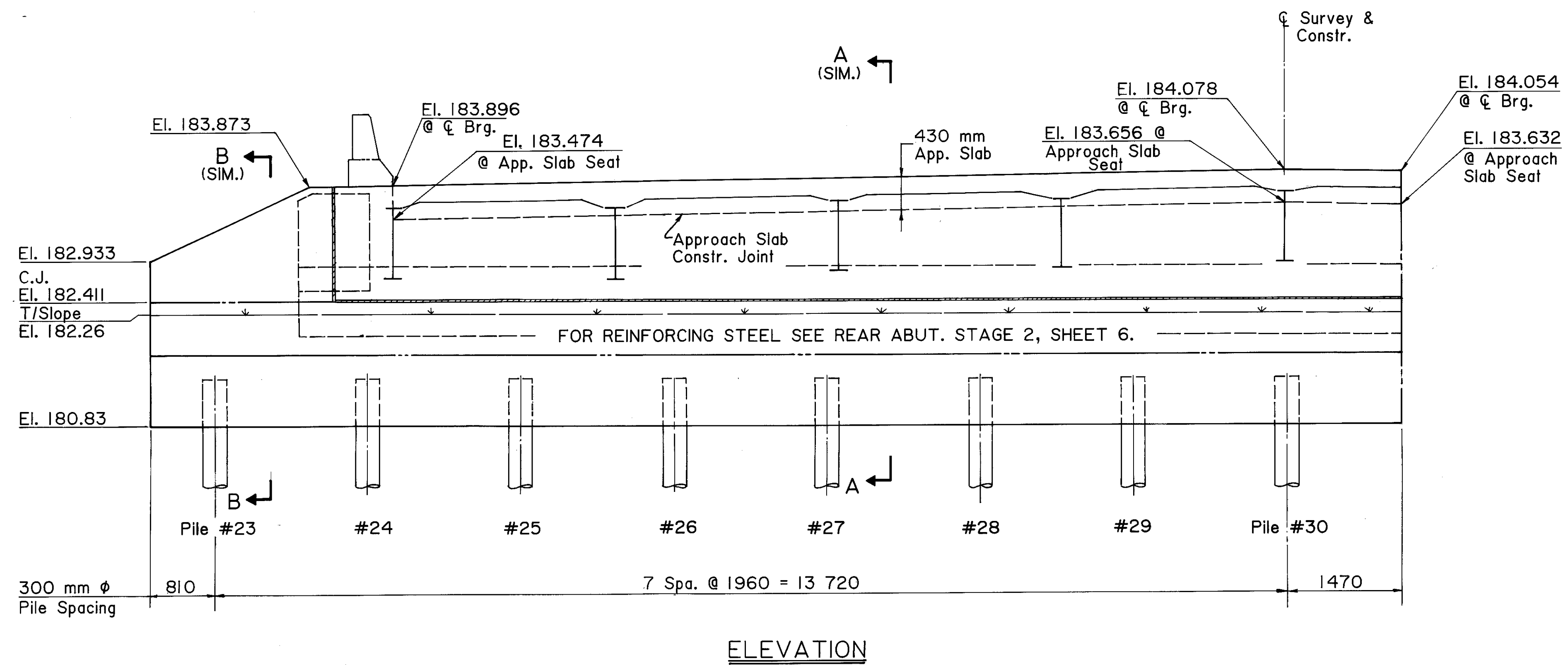
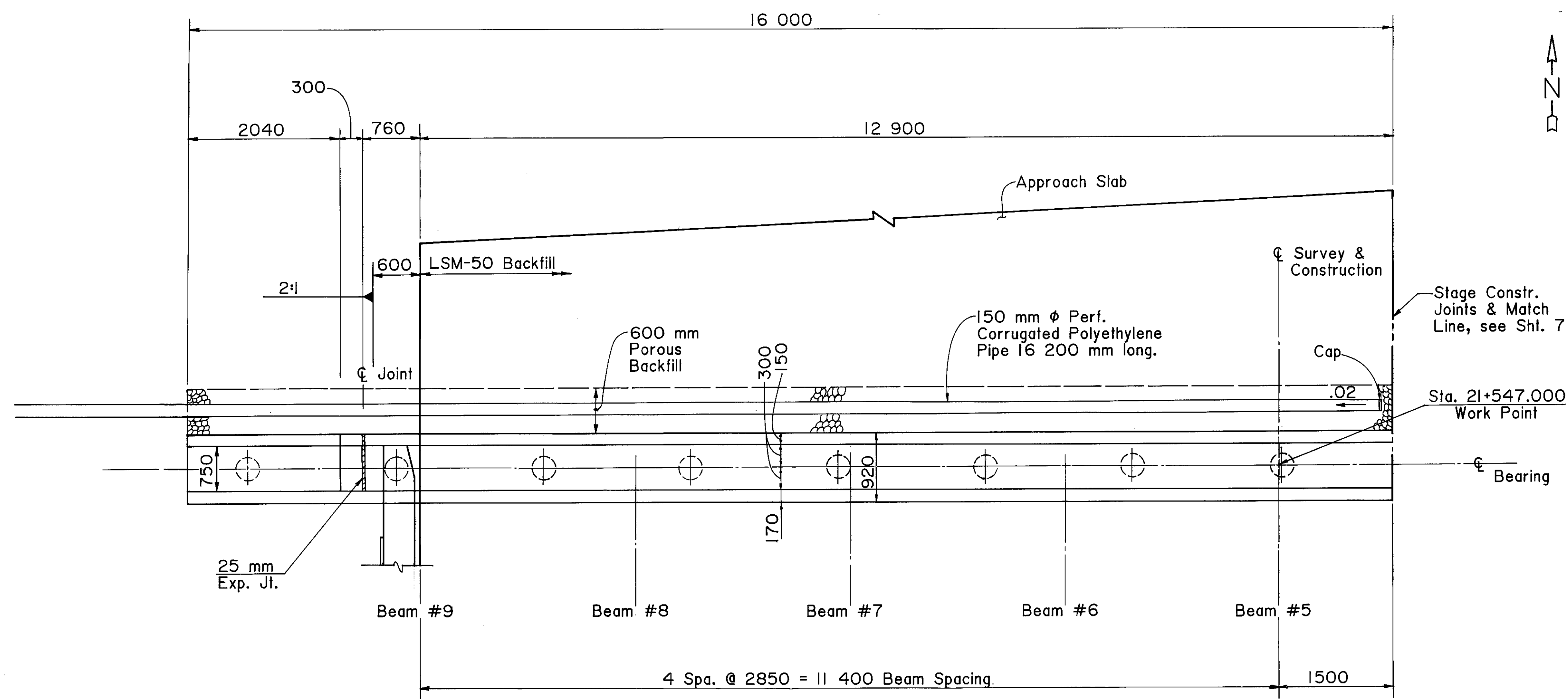
PIK-23-18.580

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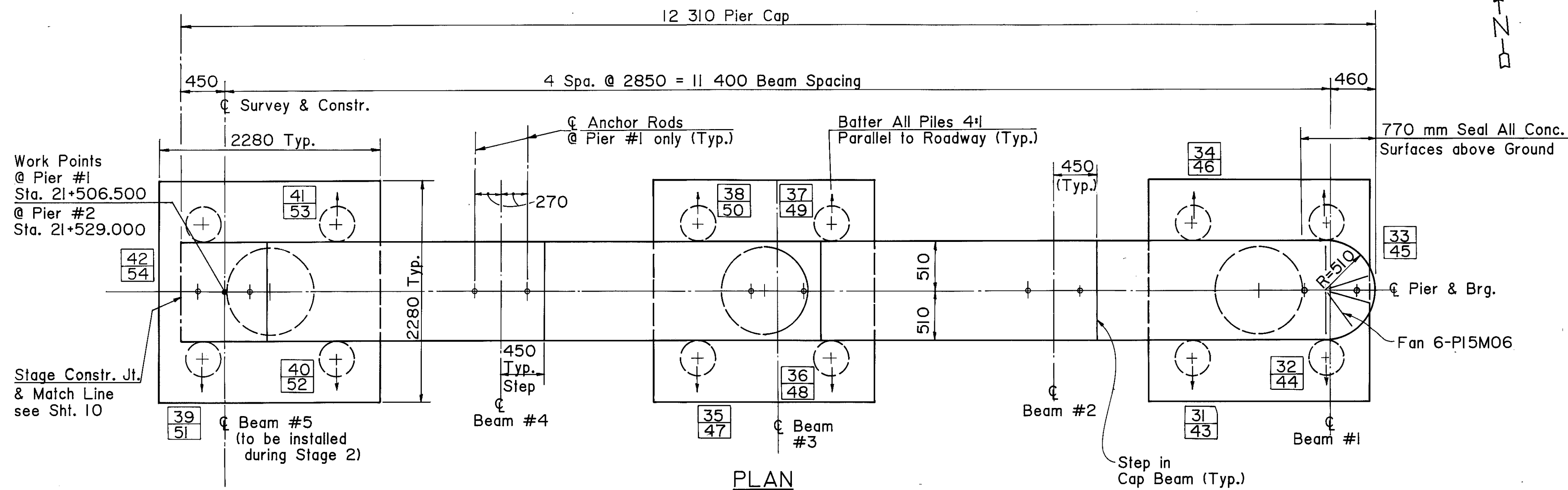

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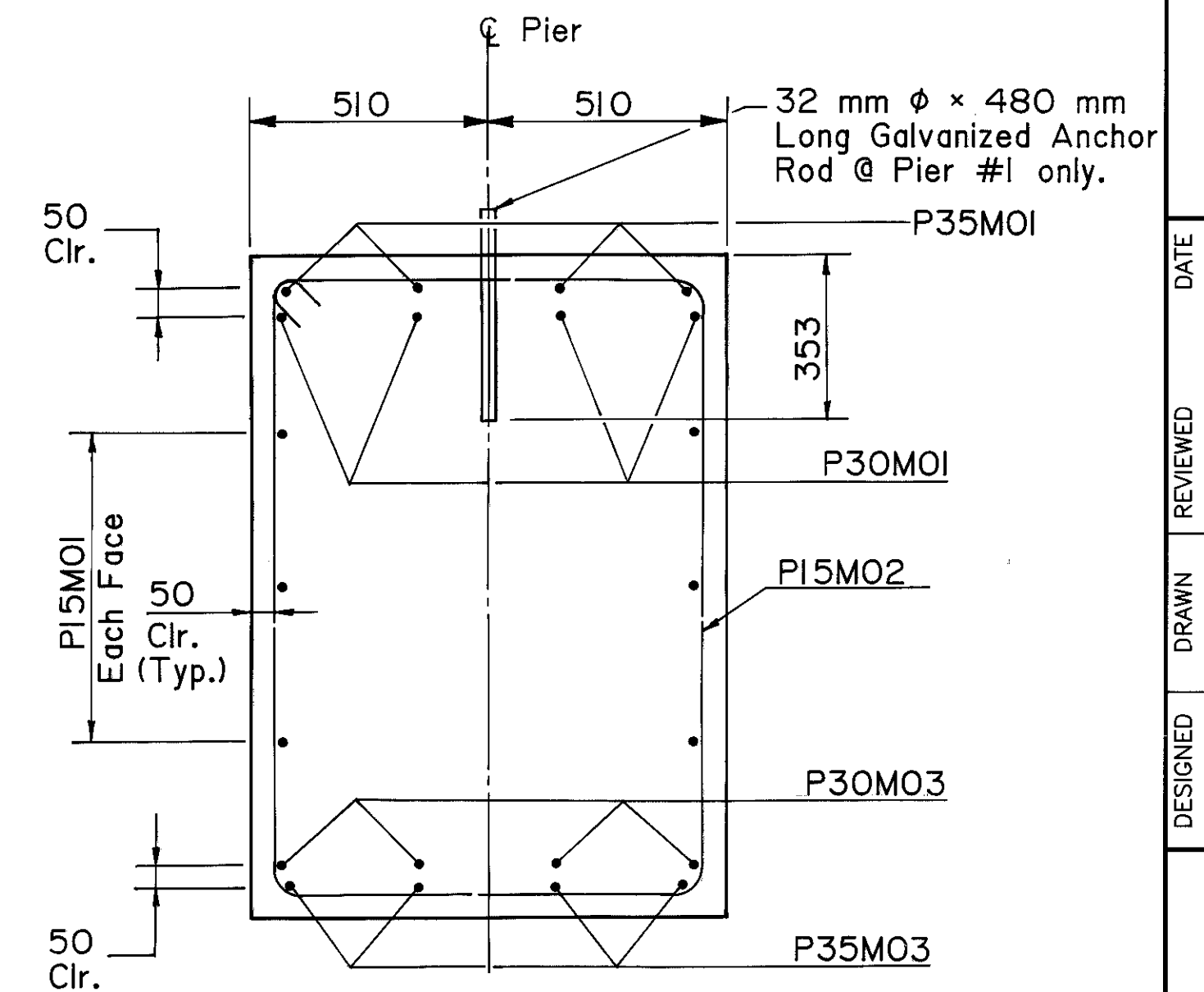
FOR SECTION A-A SEE SHT. 5



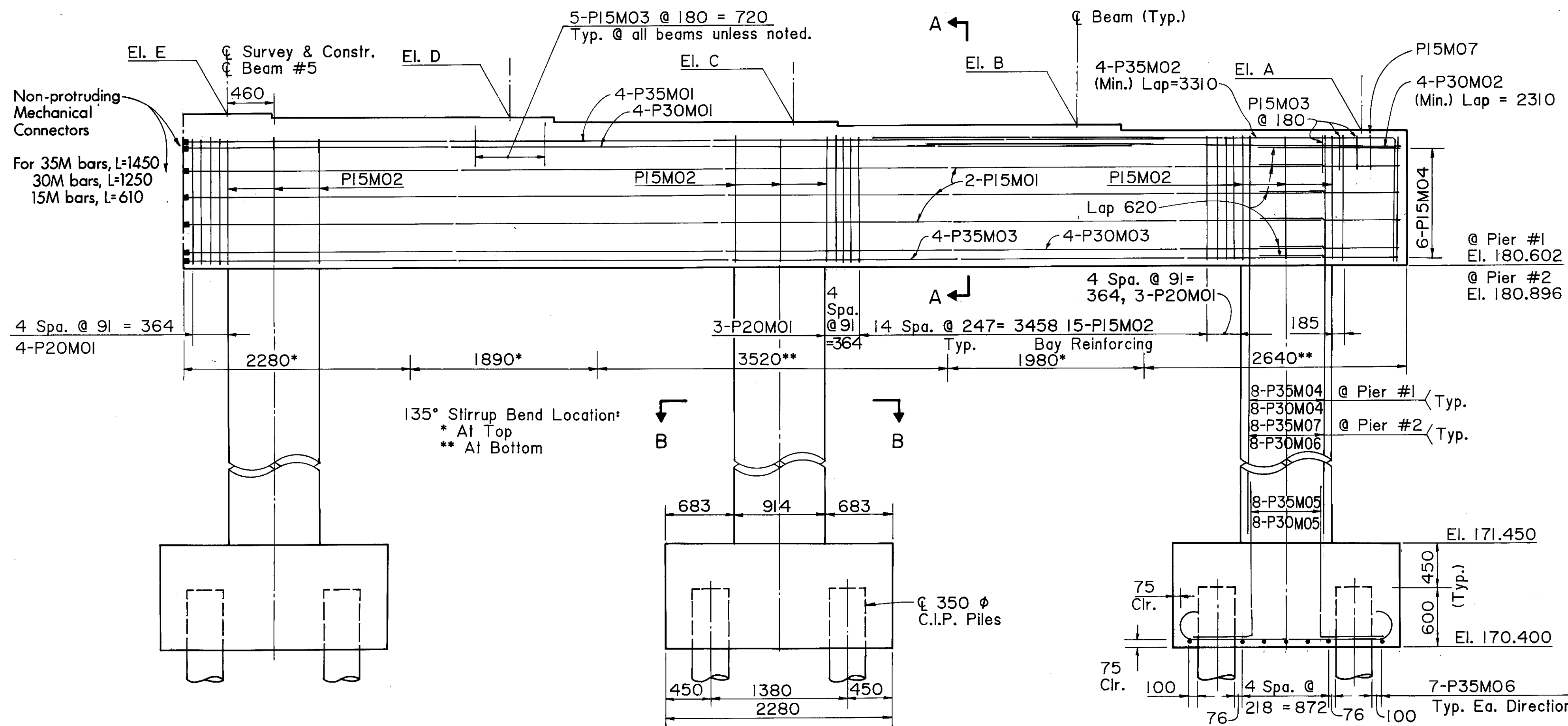
FOR SECTIONS SEE SHEETS 5 AND 7.



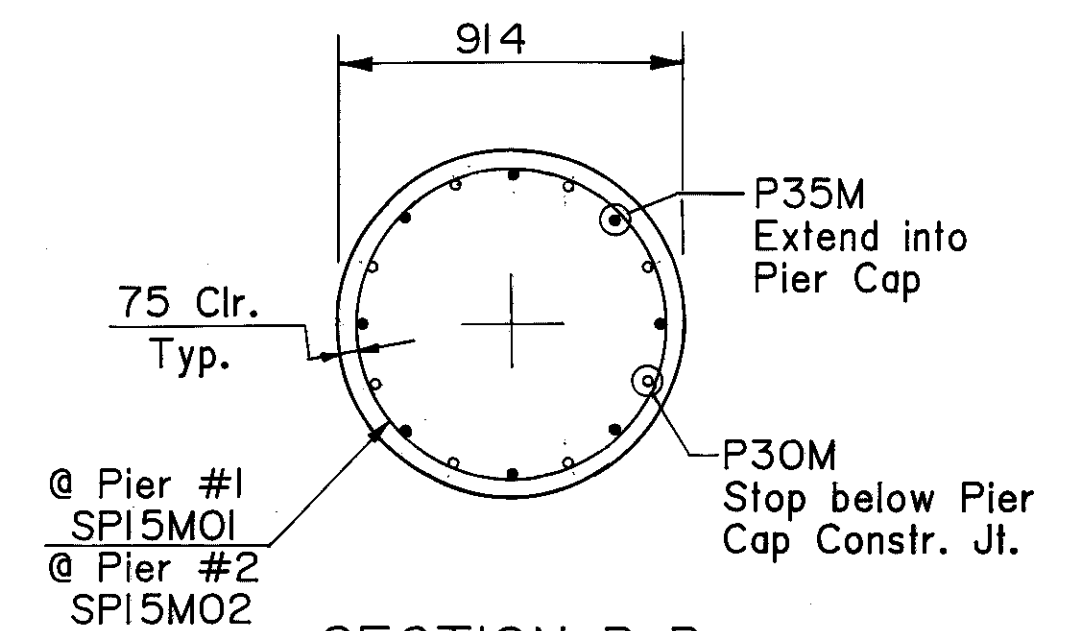
PLAN



SECTION A-A



ELEVATION



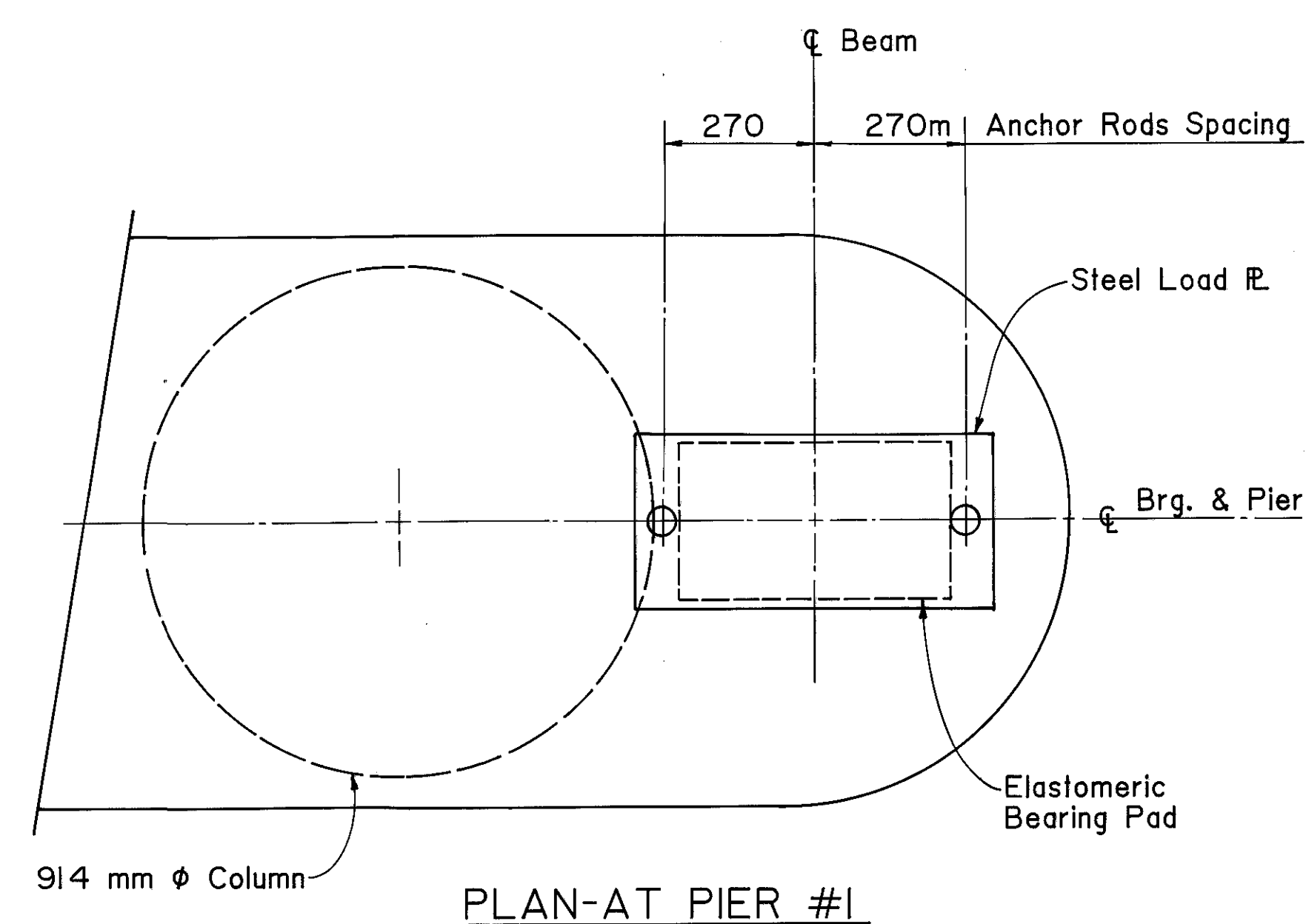
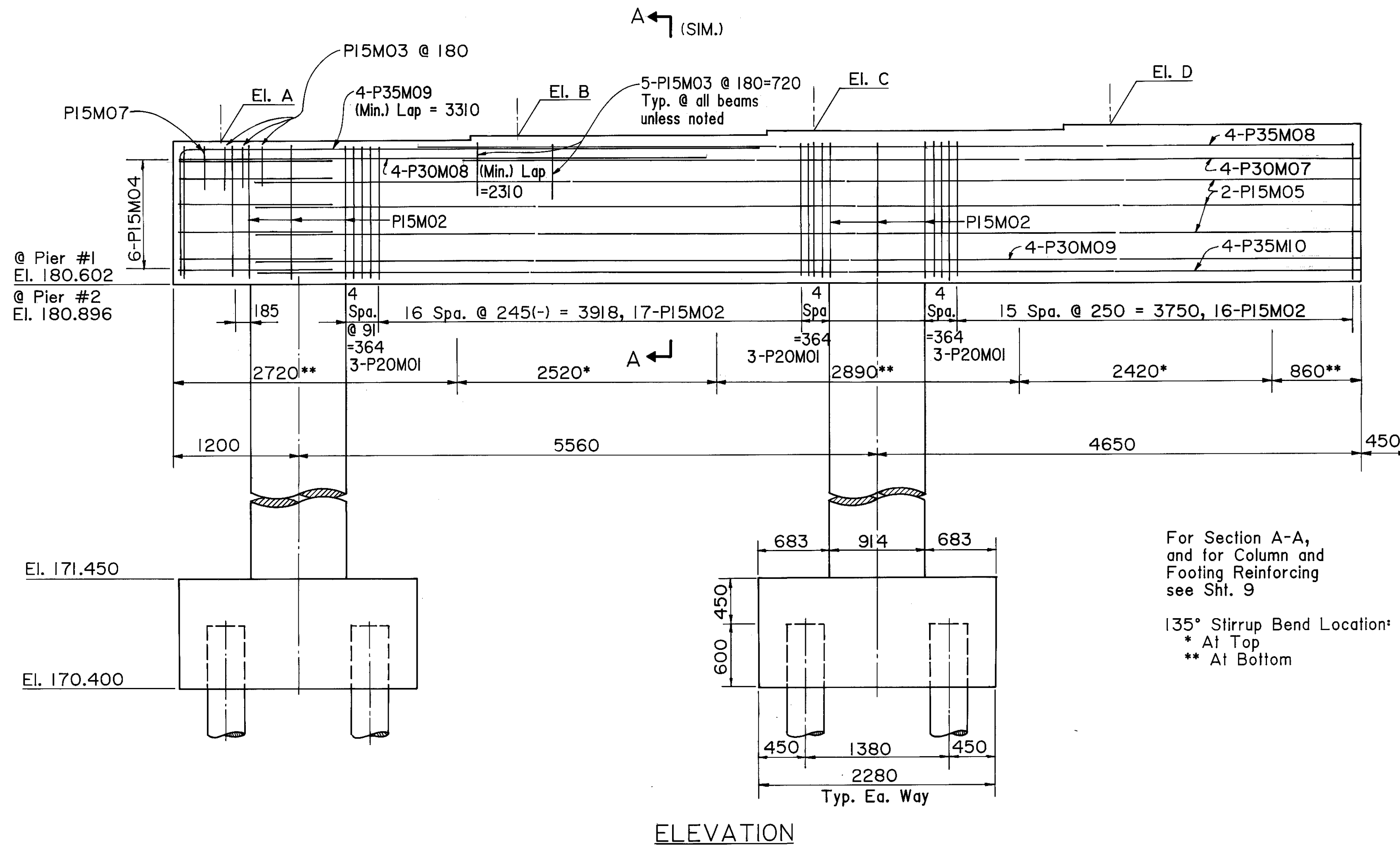
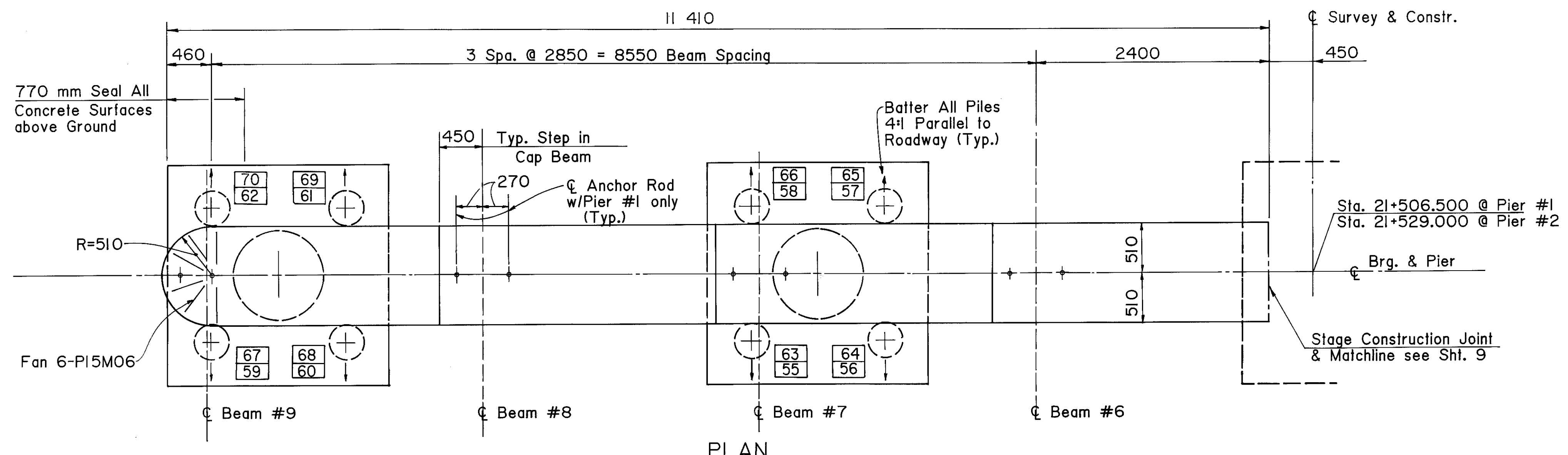
SECTION B-B

ELEVATIONS		
	PIER #1	PIER #2
A	181.977	182.271
B	182.022	182.317
C	182.068	182.362
D	182.113	182.408
E	182.159	182.454

LEGEND

AA	Pile No. @ Pier #1
BB	Pile No. @ Pier #2

Ea. = Each



Bridge Seat Reinforcing: Reinforcing Steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor rod holes.

FOR BEAM SEAT ELEVATIONS, SEE SHT. 9

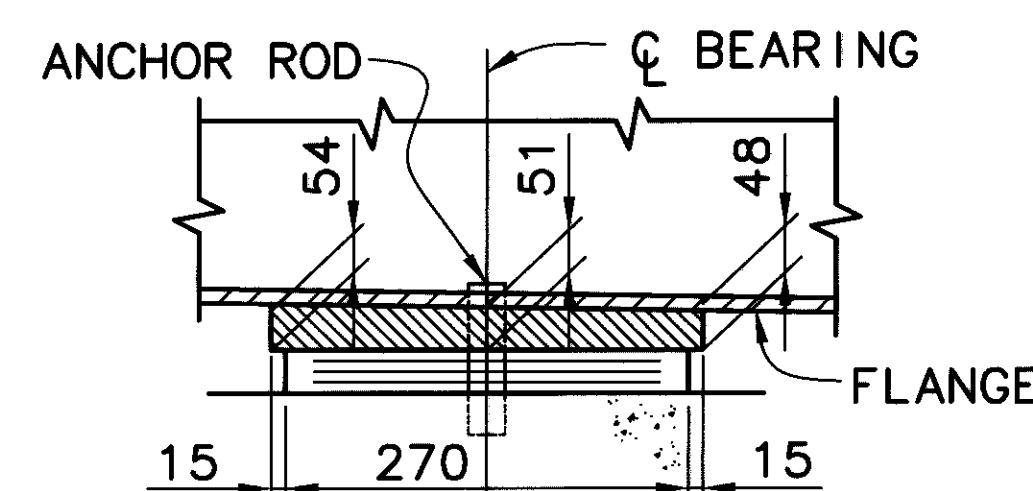
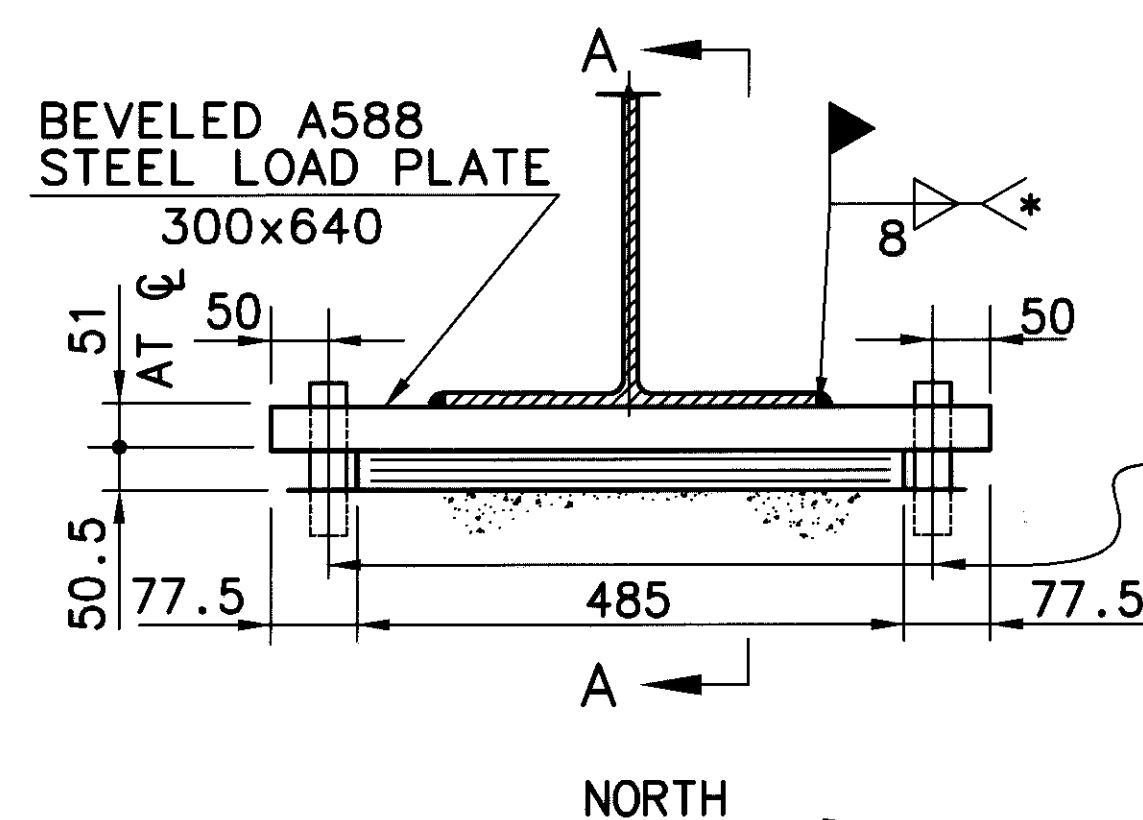
LEGEND

AA	Pile No. @ Pier #1
BB	Pile No. @ Pier #2

PIER NO.1 - FIXED BEARINGS

INT. ELASTOMERIC LAYERS 4 @ 7.5 mm = 30 MM
EXT. ELASTOMERIC LAYERS 2 @ 5.5 = 11
STEEL LAMINATES 5 @ 1.90 = 9.45

TOTAL = 50.5MM



SECTION A-A

PIER NO.1 - FIXED

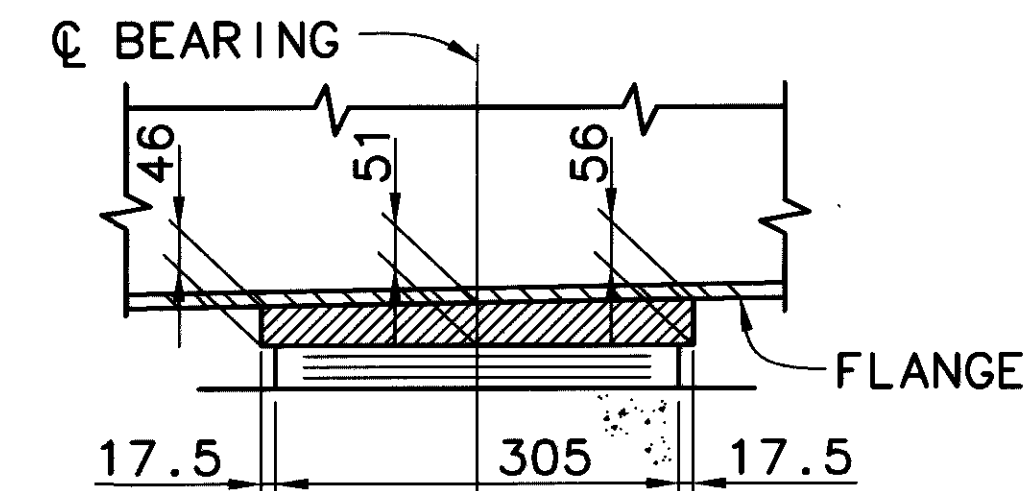
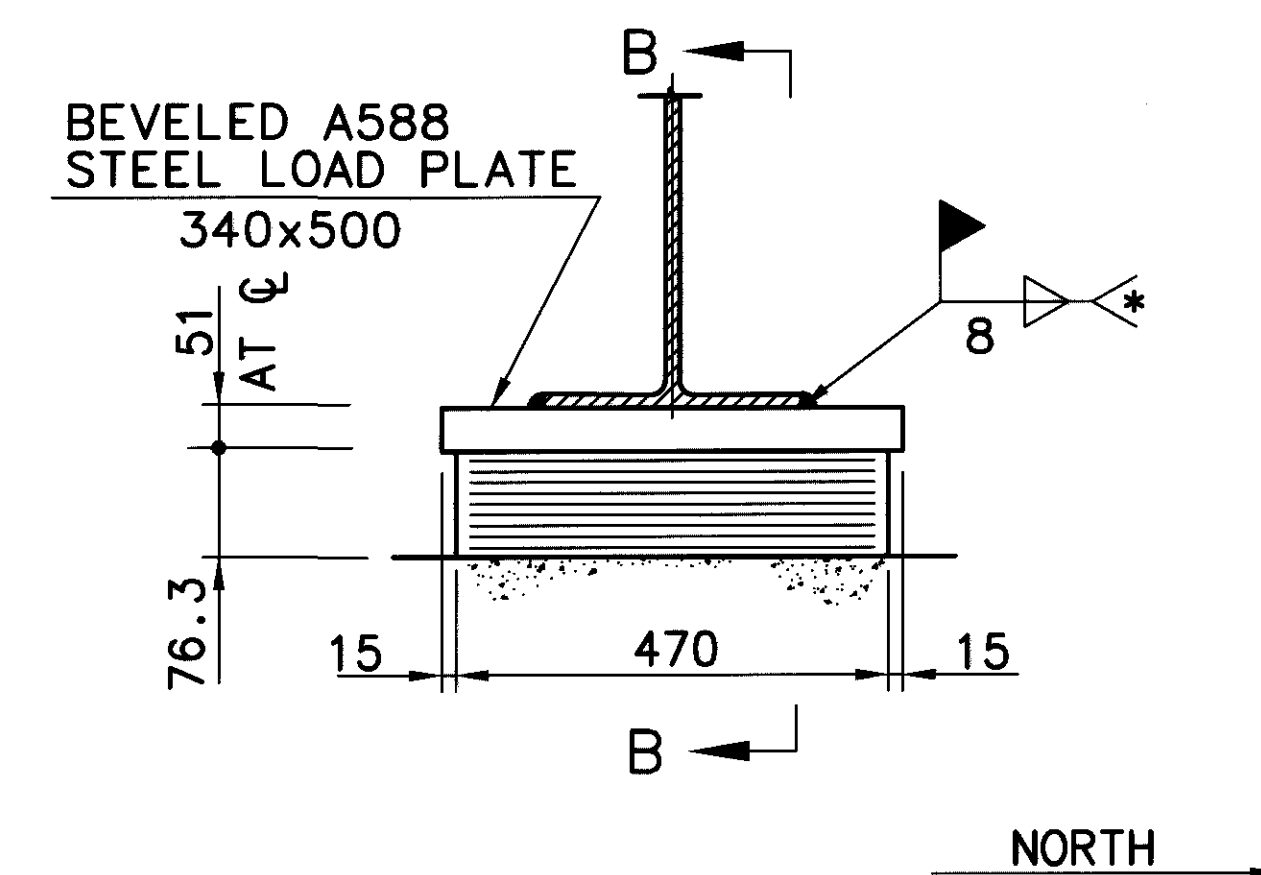
AT PIER:

DL= 618 kn
LL= 349 kn
967 kn

PIER NO.2 - EXPANSION BEARINGS

INT. ELASTOMERIC LAYERS 6 @ 8.5MM = 51.0MM
EXT. ELASTOMERIC LAYERS 2 @ 6.0 = 12.0
STEEL LAMINATES 7 @ 1.9 = 13.3

TOTAL = 76.3MM



SECTION B-B

PIER NO.2 - EXP.

ELASTOMERIC BEARINGS SHALL COMPLY WITH 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50-DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS.

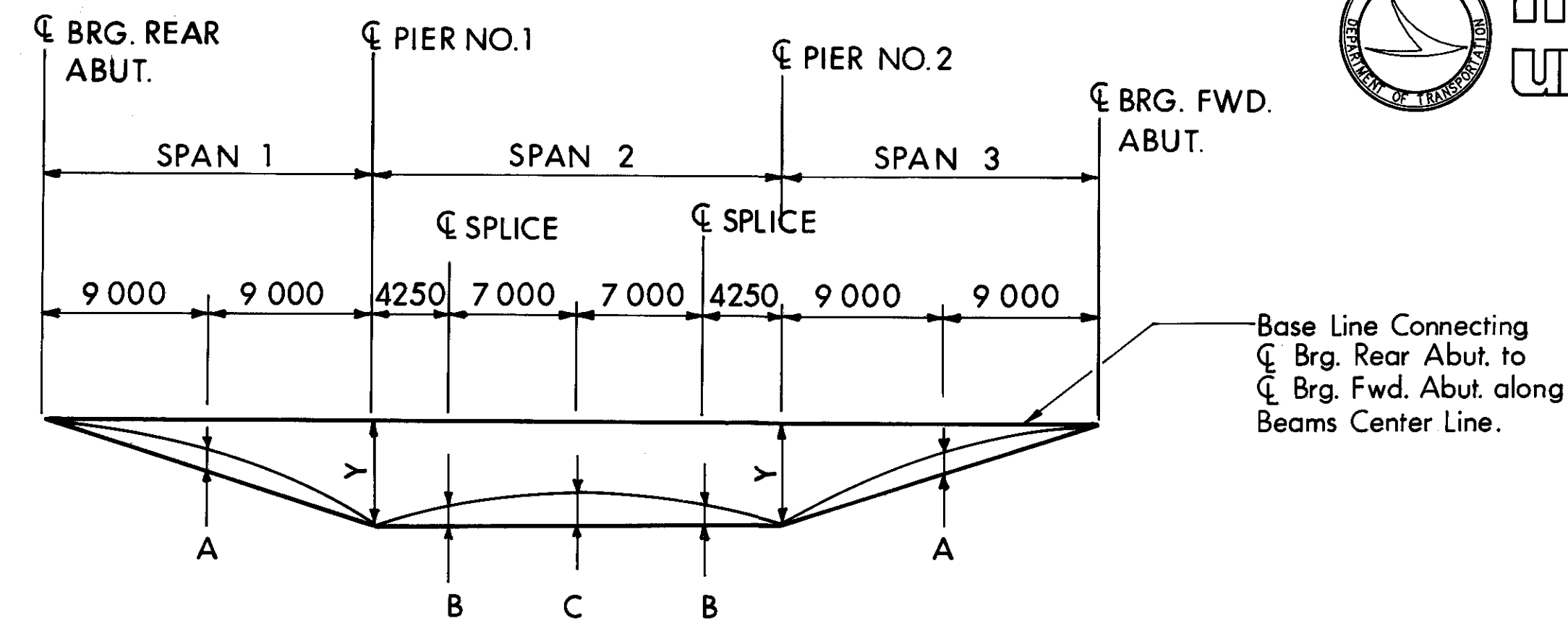
LOAD PLATE. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

STEEL DESIGNATION. THE STEEL LOAD PLATE SHALL BE A588 STEEL.

* **WELDING:** SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (+/-) 5° C, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARING TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (+/-) 5° C.

BASIS OF PAYMENT. THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE. (NEOPRENE), AS PER PLAN (SEE ESTIMATED QUANTITIES)



CAMBER DIAGRAM

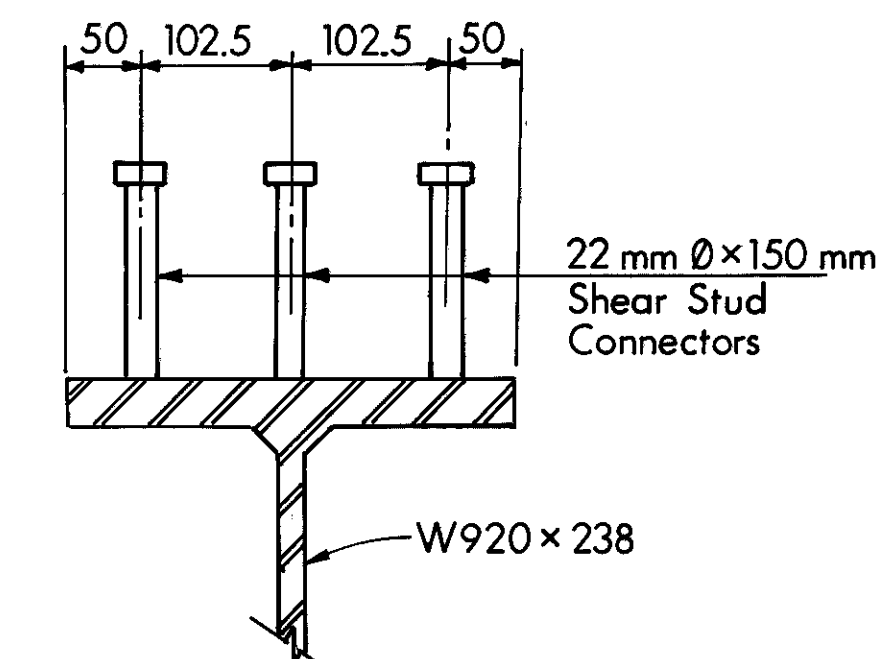
VERTICAL OFFSET DIMENSIONS AT PIERS FROM BASE LINE	
	Y
BEAM NO.1 THRU BEAM NO.9	56 mm

BEAM #1 THRU #9	DEFLECTION & CAMBER (mm)				
	SPAN 1 1/2 Point A	SPAN 2 Splice B	SPAN 2 1/2 Point C	SPAN 2 Splice B	SPAN 3 1/2 Point A
Deflection Due to Weight of Steel	2	1	2	1	2
Deflection Due to Wt. of Concrete Deck	10	5	14	5	10
Deflection Due to Re-maining Dead Load	1	0	1	0	1
Correction for Vertical Curve	-6	-6	-10	-6	-6
Required Shop Camber	7	0	7	0	7

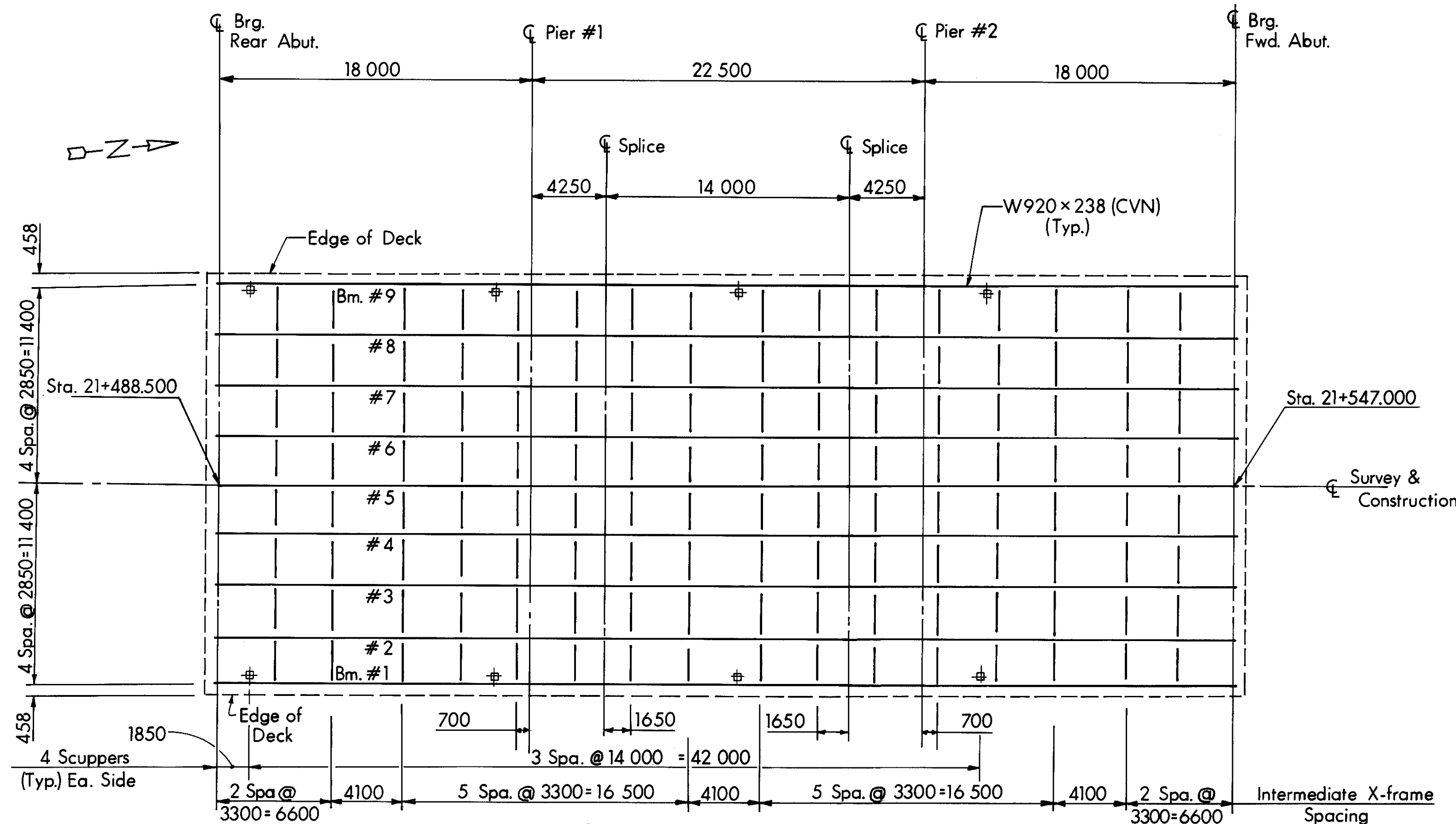
NOTE: NEGATIVE SIGN (-) INDICATES DOWNWARD CAMBER.

NOTES:

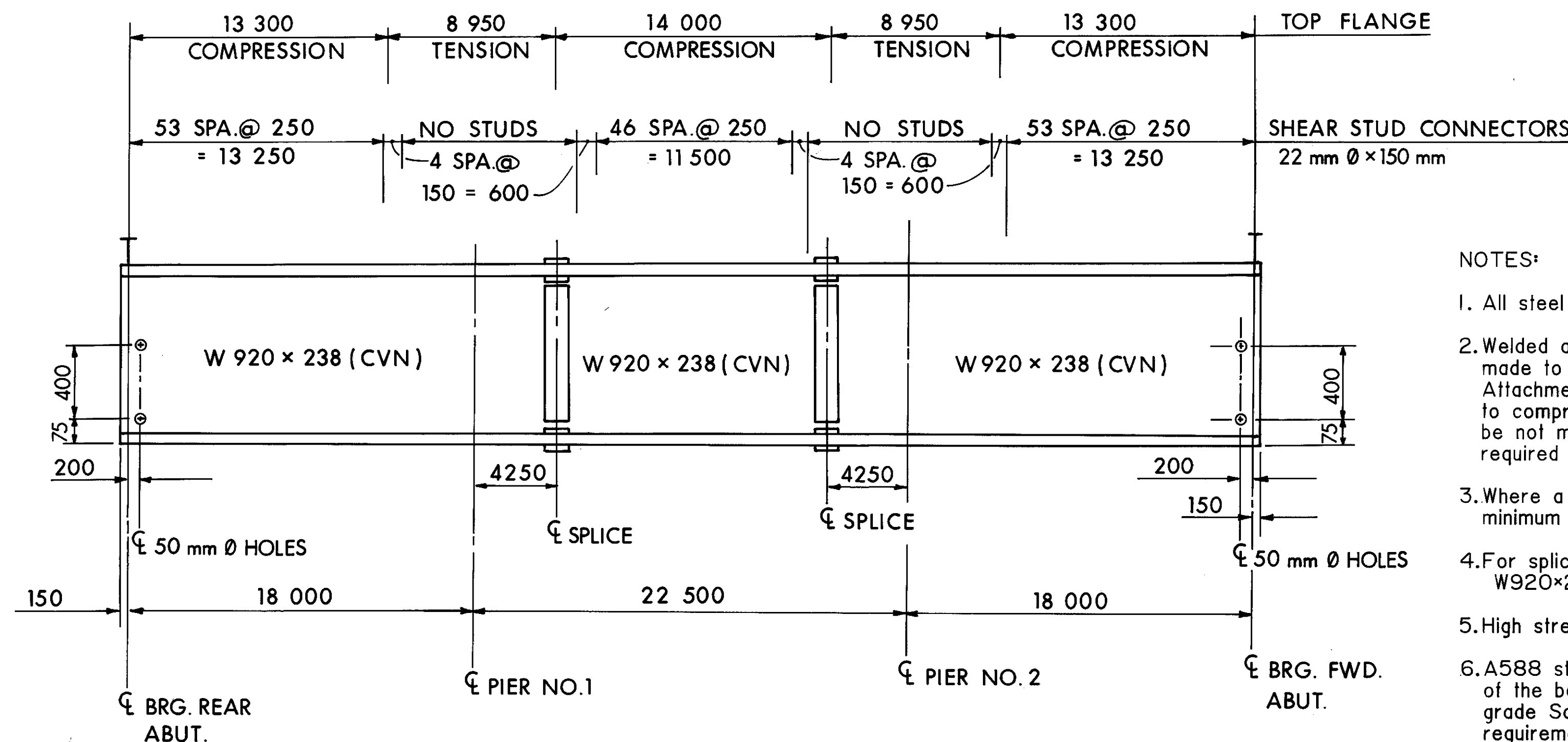
- All steel to be ASTM A588.
- Welded attachment of supports for concrete deck finishing machine may be made to the areas of the fascia stringer flanges designated "Compression". Attachments shall not be made to the areas designated "Tension". Fillet welds to compression flanges shall not be closer than 25 mm from edge of flange, be not more than 50 mm long, and be not smaller than the minimum size required by AASHTO.
- Where a shape or plate is designated (CVN), the material shall meet specified minimum notch toughness requirements as specified in 711.01 of CMS.
- For splice details, see Standard Drawing BS-I-93M, Sheet 3 of 3 for beam W920x238.
- High strength bolts shall be 27 mm diameter A-325M unless otherwise noted.
- A588 steel is to be left unpainted. The outside surfaces and bottom surfaces of the bottom flanges of fascia beams shall be abrasively blast cleaned to grade Sa2 in the fabrication shop. See CMS 513.221 for final field cleaning requirements. Payment shall be included in Item 513.



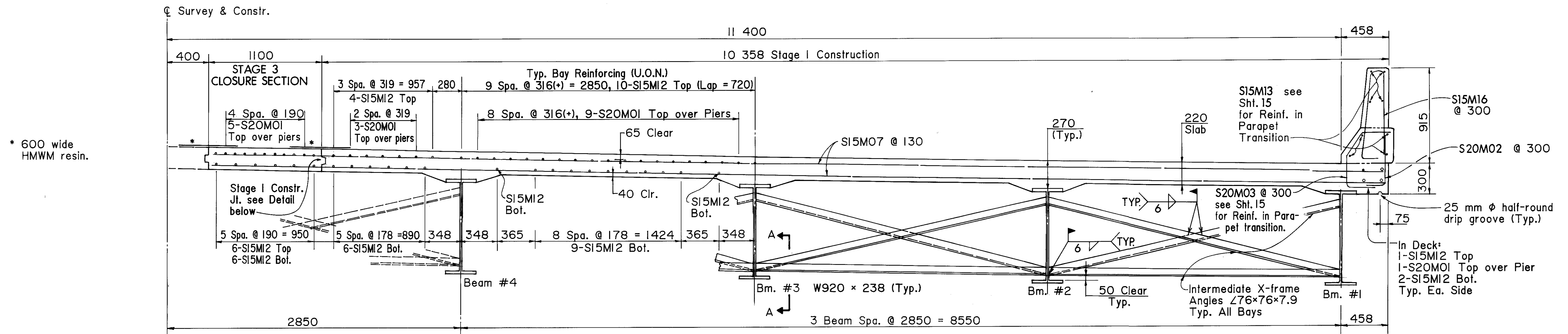
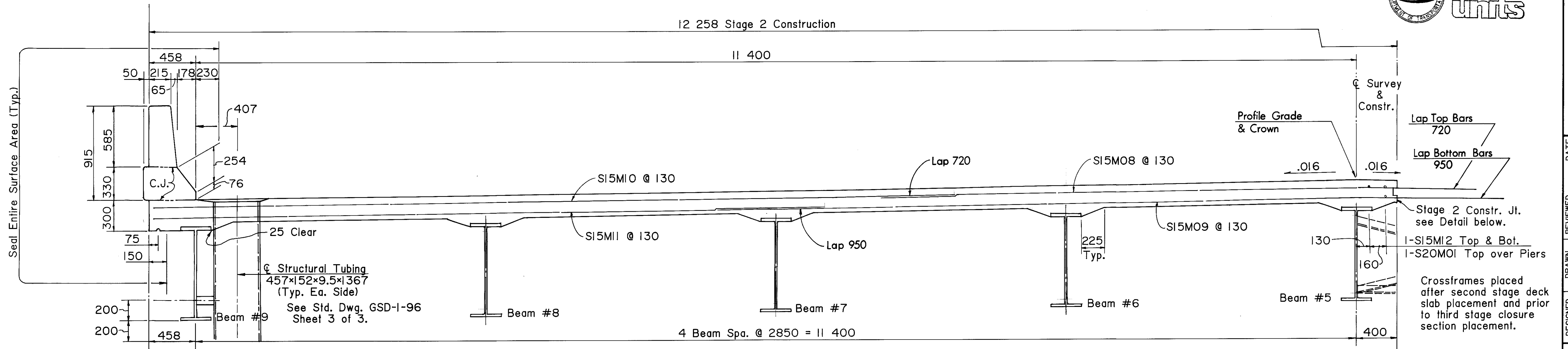
SHEAR CONNECTOR DETAIL



FRAMING PLAN

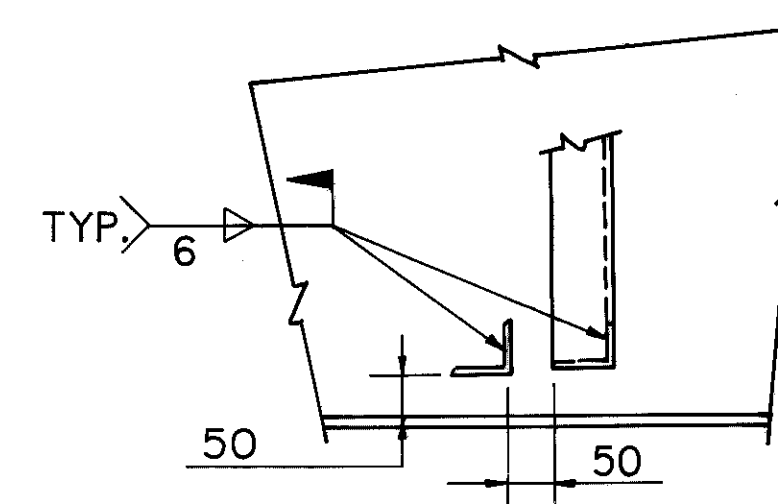


TYPICAL BEAM ELEVATION

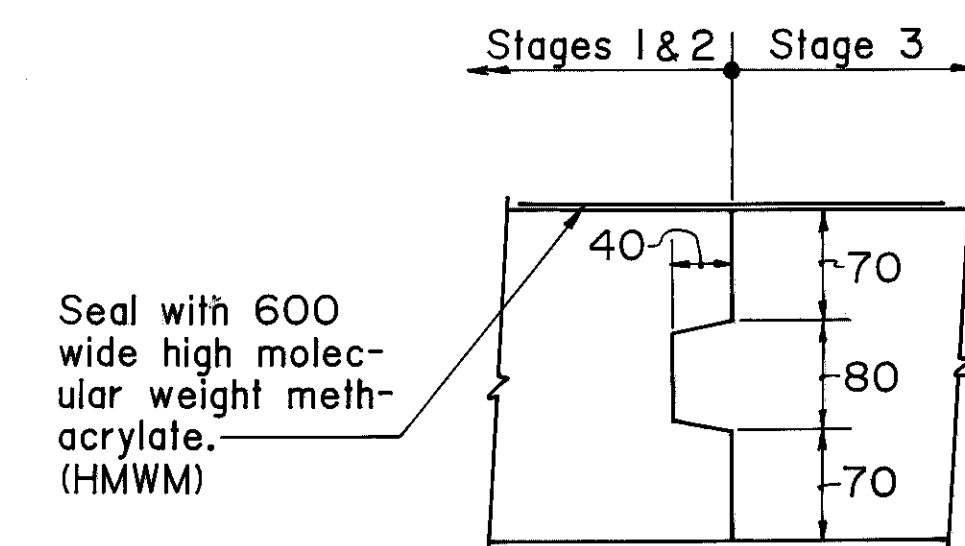


TRANSVERSE SECTION

DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the theoretical design dimension including the design haunch thickness of 50 mm. The quantity of deck concrete to be paid for shall be based on this dimension minus the design haunch thickness, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finish grade. A haunch width of 225 mm shall be used for computing quantity of concrete. However, the haunch width may vary between 150 mm and 300 mm.

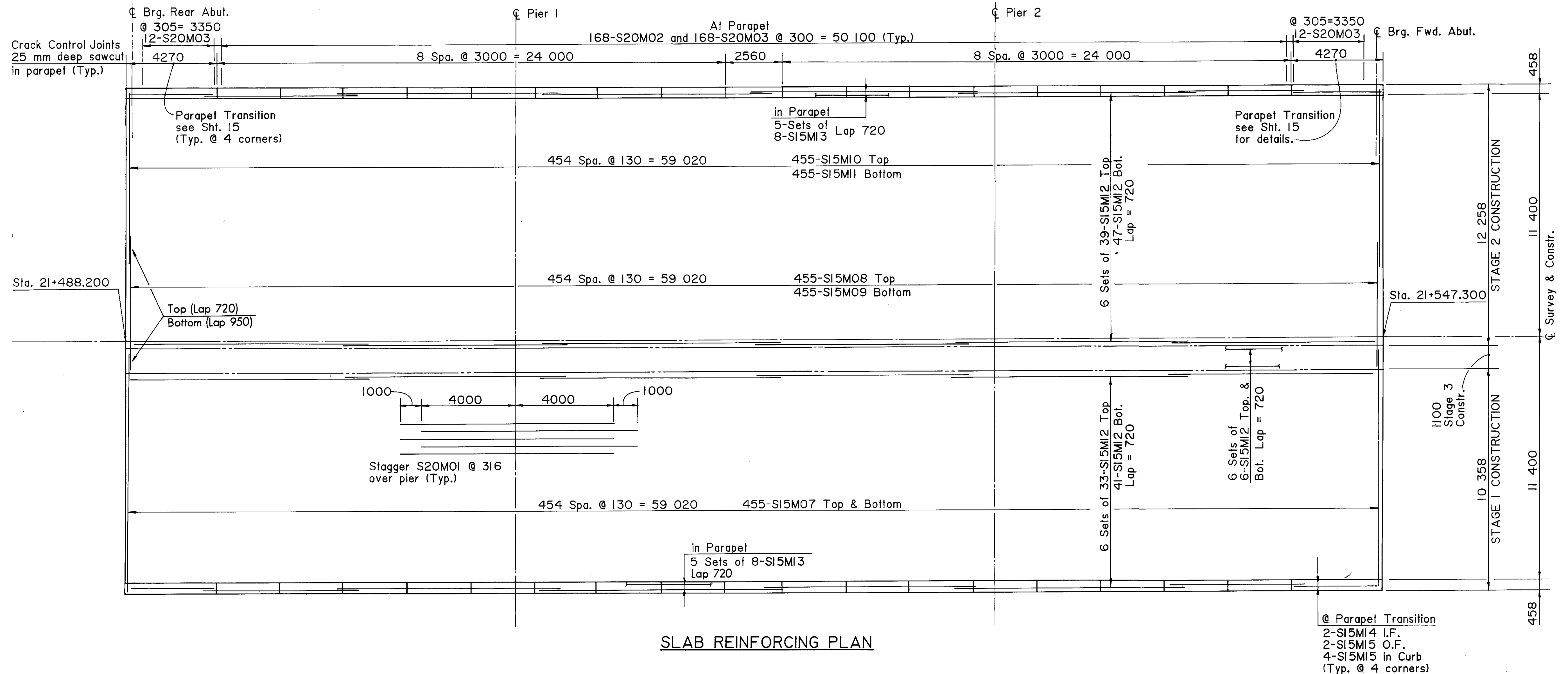


SECTION A-A

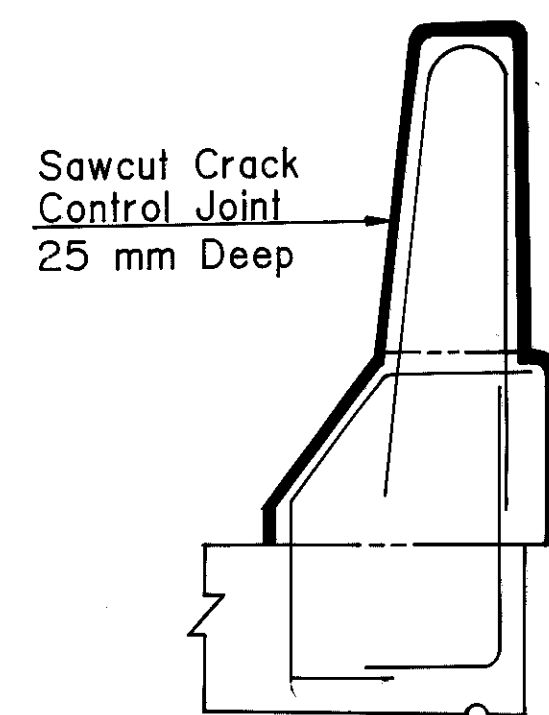


SLAB CONSTRUCTION JOINT

Construction joint shall conform to requirements of Section 511 of CMS.



SLAB REINFORCING PLAN



SCREED ELEVATIONS (METER)

LOCATION	SPAN 1			SPAN 2				SPAN 3	
	REAR ABUT.	MID- SPAN	PIER 1	SPLICE 1	MID- SPAN	SPLICE 2	PIER 2	MID- SPAN	FWD. ABUT.
BEAMS 1 & 9 & TOE OF PARAPET	183.063	183.167	183.263	183.323	183.428	183.522	183.583	183.744	183.895
BEAMS 2 & 8	183.108	183.213	183.309	183.369	183.474	183.568	183.629	183.789	183.941
BEAMS 3 & 7	183.154	183.258	183.354	183.414	183.519	183.614	183.675	183.835	183.987
BEAMS 4 & 6	183.199	183.304	183.400	183.460	183.565	183.659	183.720	183.881	184.032
BEAM 5 & CROWN	183.245	183.350	183.446	183.506	183.610	183.705	183.766	183.926	184.078

Scree elevations shown are for the deck slab surface prior to concrete placement. Allowance has been made for anticipated calculated dead load deflections.