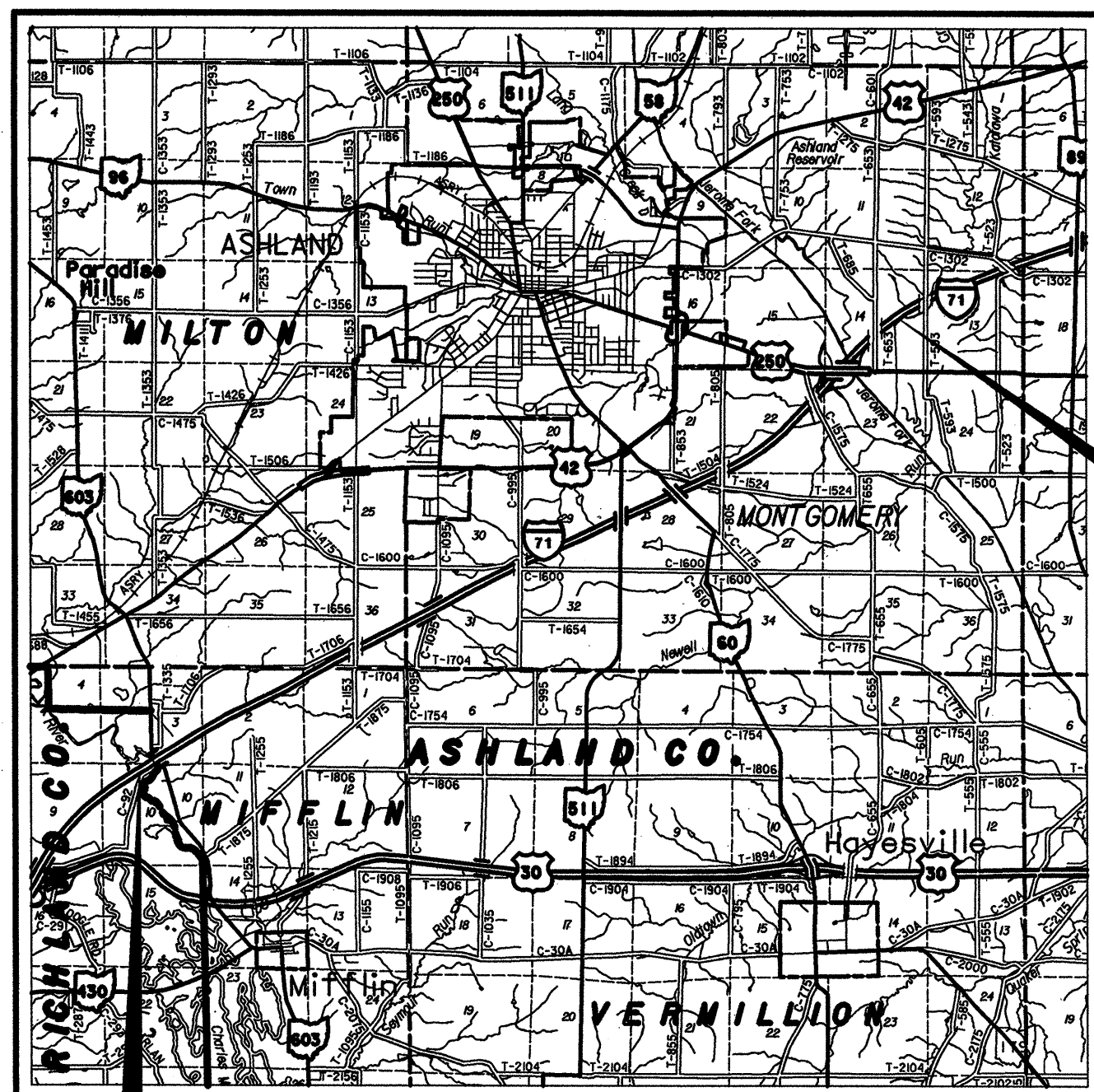


ASD-71-0.000

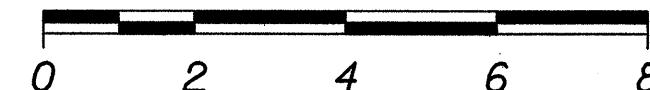
**MIFFLIN, MILTON & MONTGOMERY TOWNSHIPS
ASHLAND COUNTY**



BEGIN PROJECT LOCATION MAP
STA. 20+220.000

LATITUDE: N40°50'00" LONGITUDE: W82°18'30"

SCALE IN KILOMETERS



INTERSTATE & DIVIDED HIGHWAY
 UNDIVIDED STATE & FEDERAL ROUTES
 OTHER ROADS

CURRENT ADT (2000)	36,700
DESIGN YEAR ADT (2020)	58,330
DESIGN HOURLY VOLUME (2020)	5,333
DIRECTIONAL DISTRIBUTION	60%
TRUCKS (24 HOUR B&C)	26%
DESIGN SPEED	110 kph
LEGAL SPEED	65 MPH (105 kph)

DESIGN FUNCTIONAL CLASSIFICATION -
INTERSTATE

DESIGN EXCEPTIONS - NONE

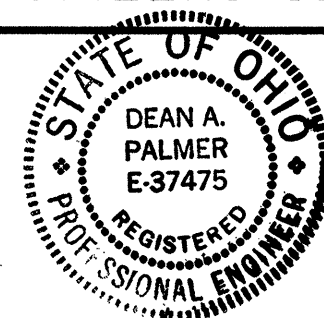
PREPARED AND RECOMMENDED BY:

RICHLAND ENGINEERING LIMITED

REL 29 NORTH PARK STREET
MANSFIELD OHIO 44902

PHONE: (419) 524-0074 FAX: (419) 524-1812

ENGINEERS SEAL:



SIGNED: Dean C. Palmer
DATE: 12-17-99

TITLE SHEET.....	1
SCHEMATIC PLANS.....	2-7
TYPICAL SECTIONS.....	8-19
GENERAL NOTES.....	20-25, 25A
MAINTENANCE OF TRAFFIC PLANS.....	26-33, 33A, 34-48, 48A, 49-93, 93A-93V, 94-105
GENERAL SUMMARY.....	106-112
SUBSUMMARIES.....	113-142
ROADWAY CALCULATIONS.....	143-150
SUPERELEVATION TABLES.....	151-153
STORM WATER POLLUTION PREVENTION PLANS.....	154-174
PLAN & PROFILE - NORTHBOUND I.R. 71....	175-227
PLAN & PROFILE - SOUTHBOUND I.R. 71....	228-279
CROSS SECTIONS - I.R. 71.....	280-429
PLAN & PROFILE - C.R. 1095.....	430
CROSS SECTIONS - C.R. 1095.....	431-434

TWO WORKING DAYS

BEFORE YOU DIG

CALL 1-800-362-2764 (TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS

MUST BE CALLED DIRECTLY

SPECIAL PROVISIONS
WATERWAY PERMIT NWP #3 & 14 DATE: 1-28-98

STANDARD CONSTRUCTION DRAWINGS

BP-1.1M	10/28/94	GR-4.1M	11/30/94	CB-3.1M	7/12/95	LA-1.1M	9/6/95	TC-22.10M	2/1/94	MT-35.10M	1/30/95	842	1/6/99
BP-2.1M	4/8/97	GR-4.2M	10/21/97	CB-3.2M	7/12/95			TC-22.20M	2/1/94	MT-35.11M	1/30/95	844	1/6/99
BP-2.2M	10/21/97	GR-4.3M	10/21/97	CB-3.4M	7/12/95	HL-10.12M	5/1/95	TC-41.20M	7/1/94	MT-95.30M	4/25/94	846	9/9/97
BP-2.5M	4/8/97	GR-4.4M	11/30/94	CB-4.2M	10/21/97	HL-10.13M	3/31/95	TC-41.50M	7/1/94	MT-98.13M	6/24/93	850	7/17/95
BP-3.1M	10/28/94	GR-5.1M	4/21/95			HL-20.21M	8/31/94	TC-42.10M	3/31/94	MT-98.14M	6/24/93	855	6/30/98
BP-5.1M	10/28/94	GR-5.3M	11/30/94	HW-1.1M	7/12/95	HL-20.22M	3/31/95	TC-42.20M	3/31/94	MT-98.15M	6/24/93	863	10/12/99
BP-9.1	4/29/99	GR-6.1M	1/3/96	HW-2.1M	7/12/95	HL-20.23M	3/31/95	TC-51.11M	9/30/94	MT-98.19M	3/1/96	870	8/10/99
		GR-6.2M	1/3/96	HW-2.2M	7/12/95	HL-30.11M	3/31/95	TC-51.12M	3/31/94	MT-99.20M	1/30/95	877	4/13/99
F-2.1M	4/8/97	RM-1.1M	4/29/99			HL-30.21M	5/1/95	TC-52.10M	7/29/94	MT-101.60M	4/25/94	899	10/21/98
F-3.1M	4/21/95	RM-3.1M	10/21/97	I-2.1M	4/14/98	HL-30.22M	3/31/95	TC-52.20M	7/29/94	MT-102.10M	1/30/95	904	5/5/98
F-3.3M	4/21/95	RM-4.2M	10/21/97	MH-1.1M	10/27/97	HL-40.10M	3/31/95	TC-61.10M	3/31/94	MT-105.10M	4/25/94	905	4/1/98
F-3.4M	4/8/97	RM-4.3M	10/21/97	MH-1.2M	9/6/95	HL-50.11M	3/31/95	TC-65.10M	11/1/95	MT-105.11M	4/25/94	906	5/5/98
GR-1.1M	10/21/97	RM-4.5M	10/21/97			HL-60.21M	3/31/95	TC-65.11M	11/1/95	AS-1-81M	10/25/94	907	10/21/98
GR-1.2M	1/3/96			DM-1.1M	10/21/97	HL-60.31M	3/31/95	TC-71.10M	9/1/93	PCB-91M	7/6/99	908	1/6/99
GR-1.3M	11/30/94	CB-1.1M	7/12/95	DM-4.1M	6/30/95			TC-72.20M	9/1/93	GSD-1-96M	1/12/99	937	5/6/97
GR-2.1M	4/14/98	CB-1.3M	7/12/95	DM-4.2M	6/30/95			TC-82.10M	1/19/99	ICD-1-82M	3/20/95	954	9/9/97
GR-3.1M	10/21/97	CB-2.1M	7/12/95	DM-4.3	4/29/99	TC-12.30M	2/1/94	TC-82.11M	1/19/99	SBR-1-99M	1/12/99	970	12/16/97
GR-3.2M	10/21/97	CB-2.2M	7/12/95	DM-4.4	4/29/99	TC-21.20M	12/10/96	TC-84.20M	11/24/93	SICD-1-96M	2/12/97		

THE PROJECT CONSISTS OF RECONSTRUCTION OF 14.455 Km OF I-71 INCLUDING ADDING A THIRD LANE IN EACH DIRECTION; NEW GUARDRAIL; NEW OR RECONSTRUCTED DRAINAGE ITEMS; LINING OF A 2134mm C.M.P.; RESURFACING OF THE RAMPS IN THE USR 250 INTERCHANGE; DEMOLITION OF THE EXISTING REST AREAS; NEW HIGH MAST LIGHTING AT THE USR 250 INTERCHANGE; AND INSTALLATION OF THE NECESSARY TRAFFIC CONTROL DEVICES. ALSO INCLUDED WILL BE THE RECONSTRUCTION OF STRUCTURE RIC-71-33185 L&R OVER BLACK FORK OF THE MOHICAN RIVER AND S.R. 603, ASD-71-05037 L&R OVER CR 1095, ASD-71-12536 L&R OVER HESS DITCH AND ASD-71-12971 L&R OVER JEROME FORK.

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF MAINLINE I.R. 71 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF THE TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

IMPROVEMENTS MADE IN THE AREA OF USR 250
INTERCHANGE WILL NOT REQUIRE THE CLOSING TO
TRAFFIC OF THESE RAMPS EXCEPT AS NOTED
ON SHEET 28

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED James D. Mawhore
DATE 12-20-99 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF
TRANSPORTATION

FEDERAL PROJECT NO. IM- . NHS

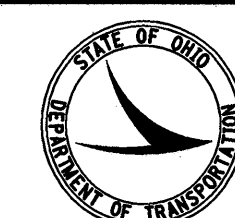
PID NO.
11365

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT

RIC / ASD-71-20.220 / 0.000

1
666



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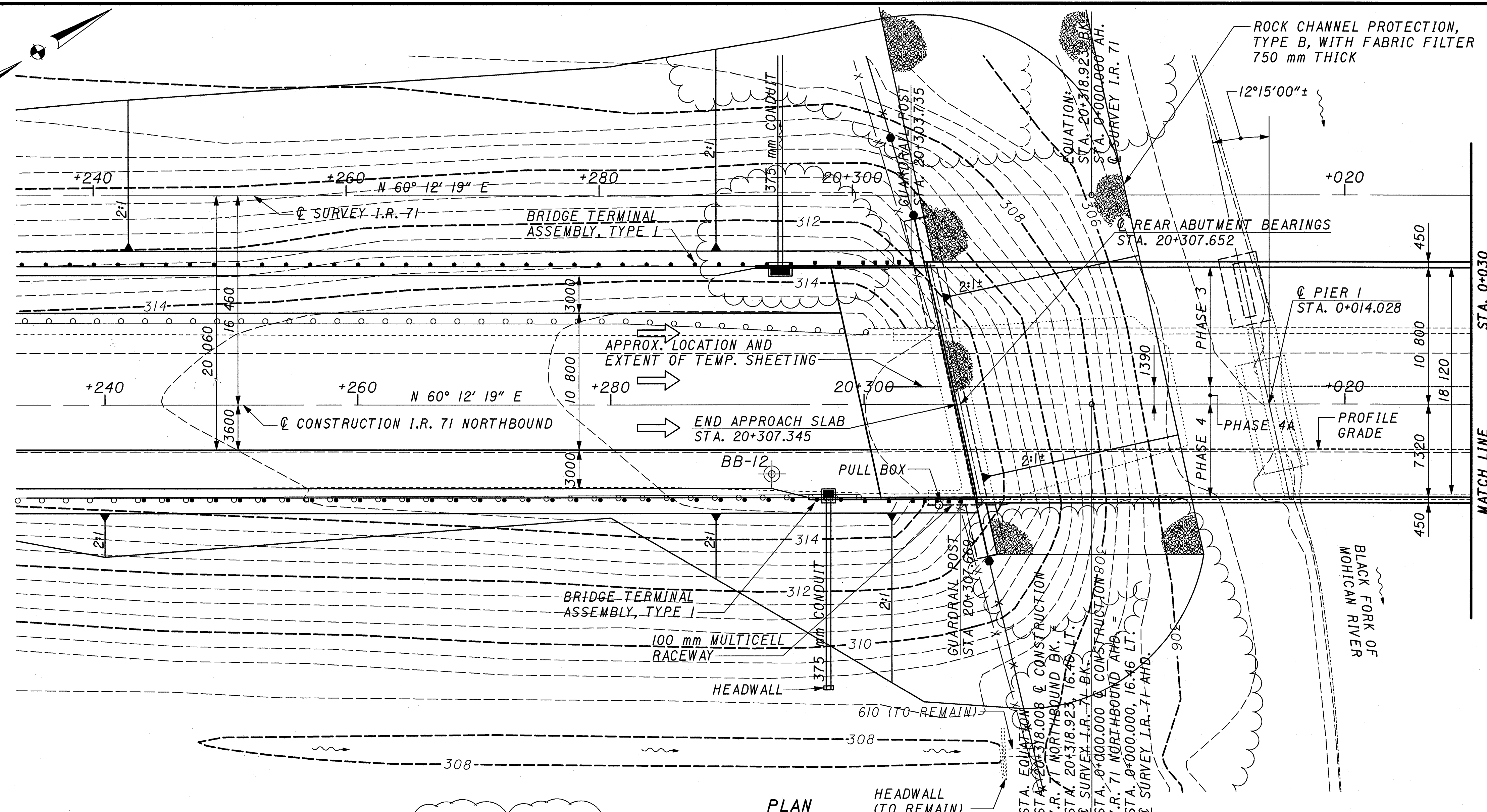
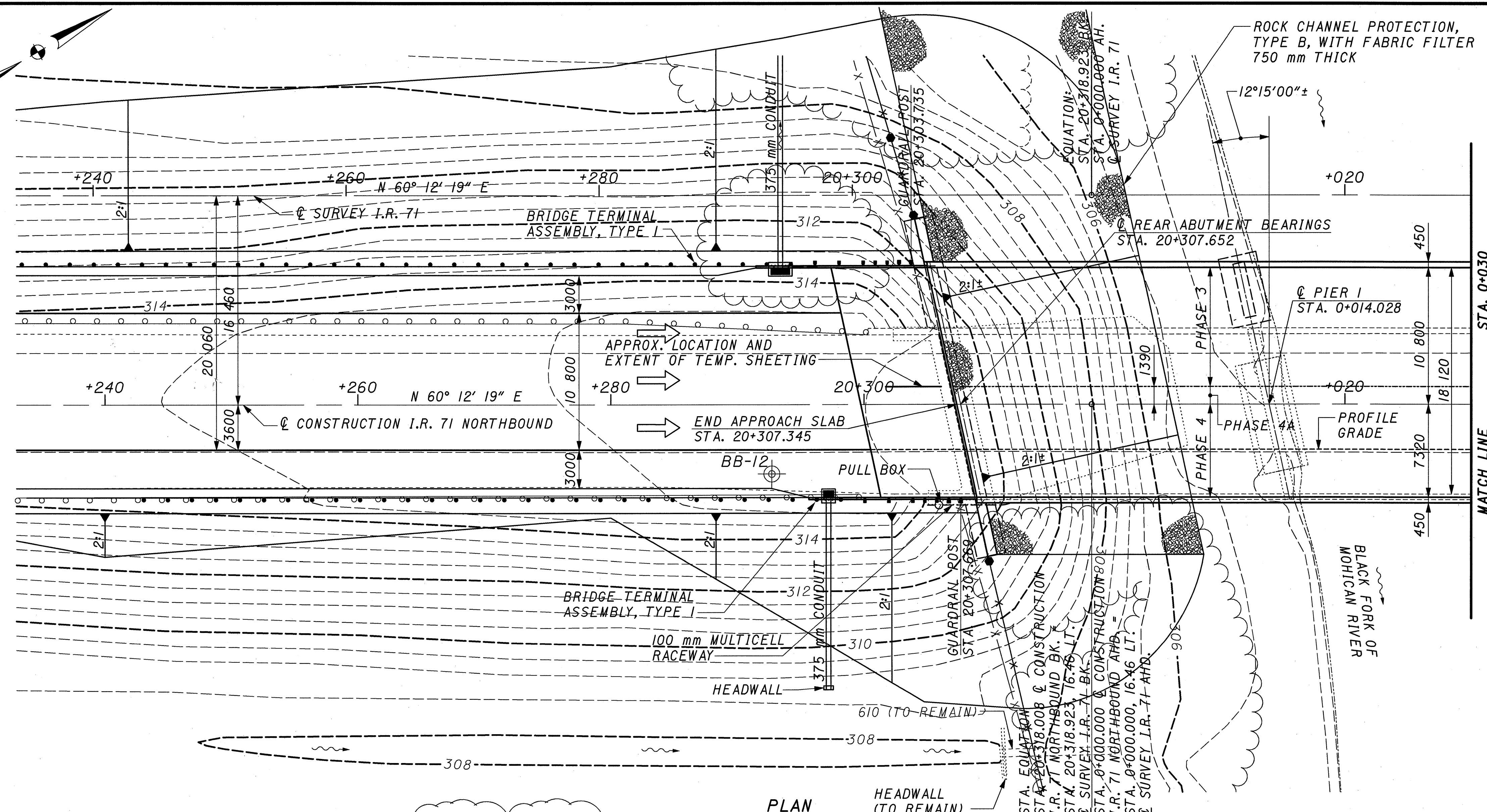
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29 NORTH PARK STREET
MANSFIELD, OHIO 44902

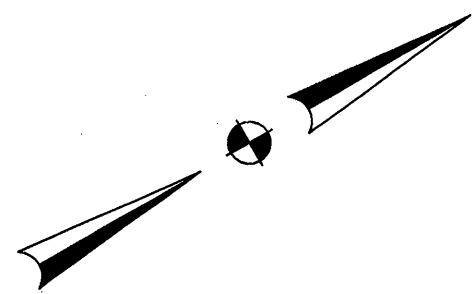
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[illegible][illegible][illegible][illegible][illegible]



metric
units

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED. STATIONS
AND ELEVATIONS ARE SHOWN IN METERS.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/19/99
REVIEWED DAP
STRUCTURE FILE NUMBER 7004869

DRAWN JLS
DESIGNED BLN
CHECKED DT

ASHLAND COUNTY
STA. 20+307.345
STA. 0+099.679

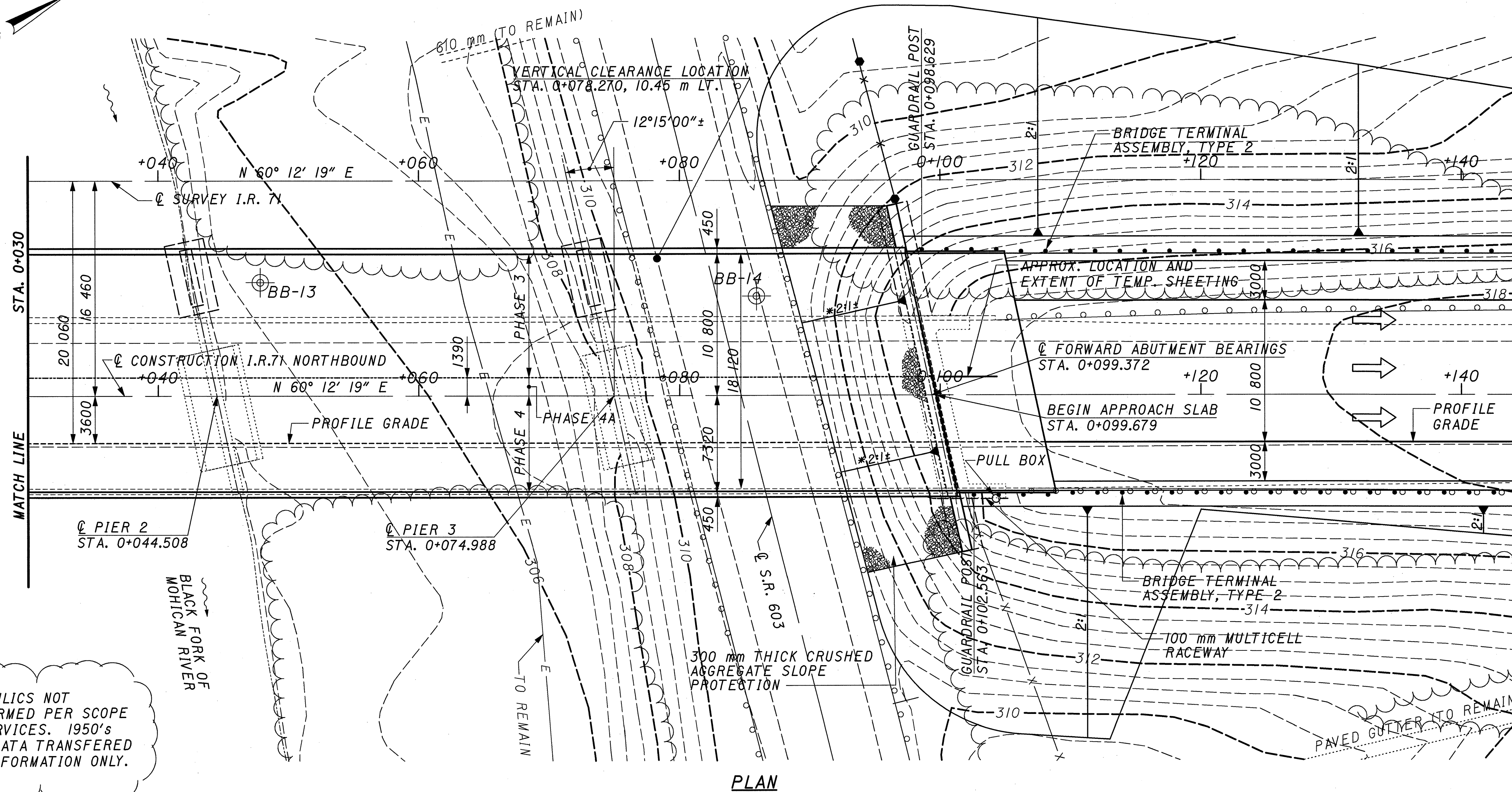
SITE PLAN - NORTHBOUND
BRIDGE NO. RIC-71-33185 (2062) RIGHT
OVER S.R. 603 AND THE BLACK FORK OF MOHICAN RIVER

RIC/ASD-71-
20.220/ 0.000

2/35

541
666

FOUNDATION INVESTIGATION LEGEND
⊕ - INDICATES BORING LOCATION



HYDRAULICS NOT
PERFORMED PER SCOPE
OF SERVICES. 1950's
PLAN DATA TRANSFERRED
FOR INFORMATION ONLY.

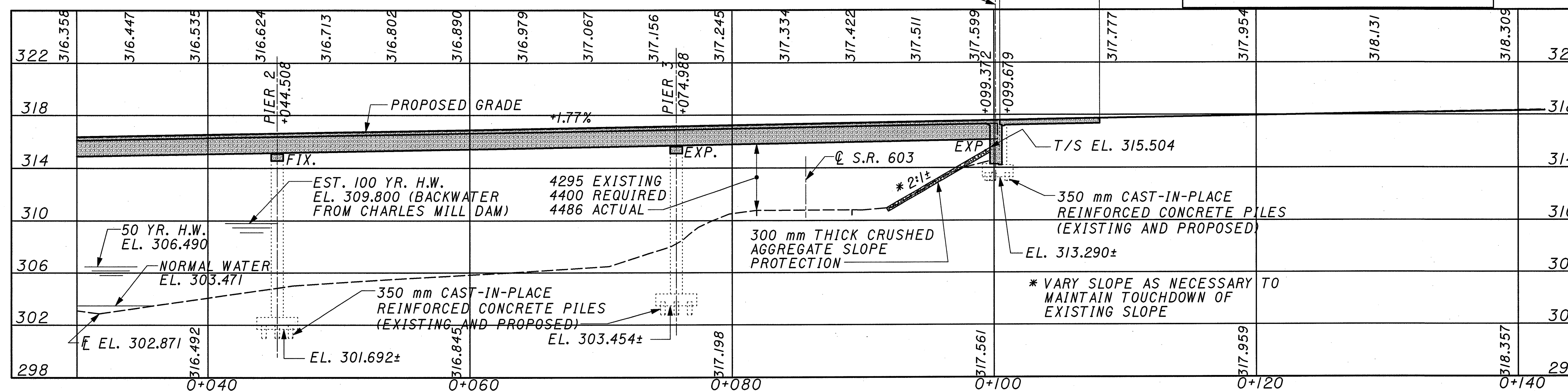
PLAN

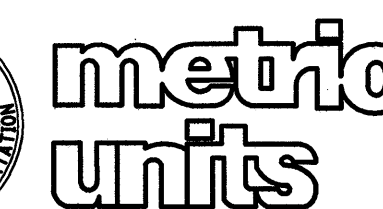
BRIDGE LIMITS = 110 342

7600

FORWARD
ABUTMENT
BEARINGS

B.M. - DISK STAMPED "ASD-71-33.34K"
IN WINGWALL OF BRIDGE AT CRIDER
ROAD AND S.R. 603
STA. 0+082.26±, 49.71± RT., EL. 310.039





RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSEFIELD, OHIO 44902

CURRENT AVG. DAILY TRAFFIC: 36,700 (2000)
CURRENT AVG. DAILY TRUCK TRAFFIC: 9,540 (2000)
DESIGN AVG. DAILY TRAFFIC: 53,330 (2020)

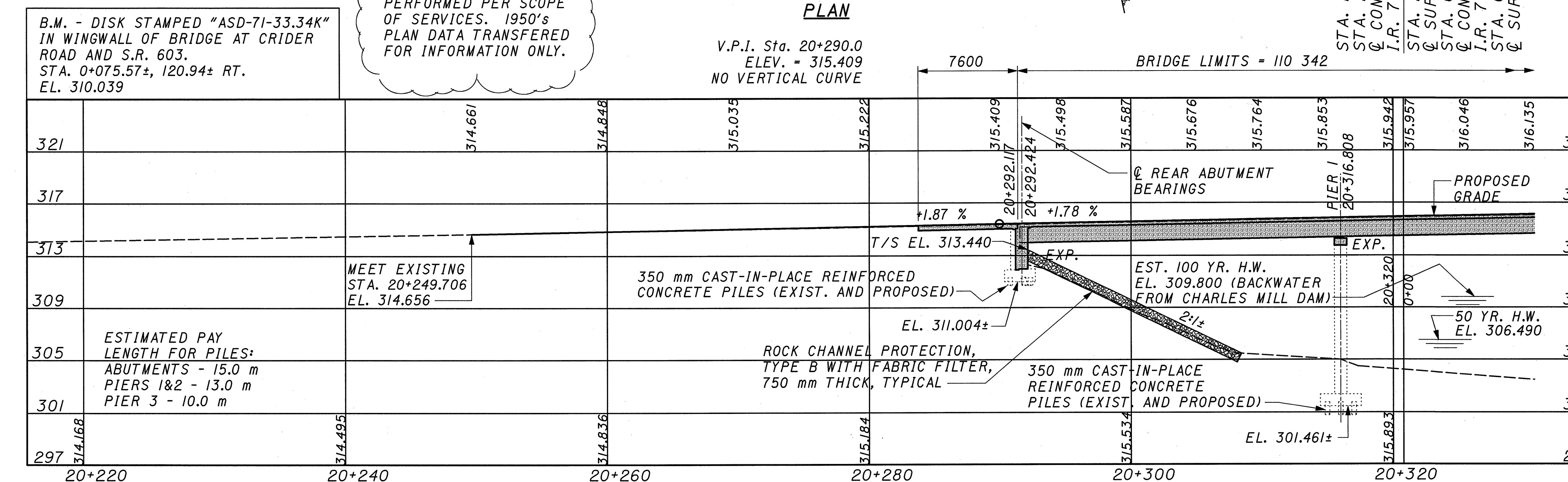
TYPE: CONTINUOUS STEEL GIRDER
STRUCTURE WITH REINFORCED
CONCRETE DECK AND SUBSTRUCTURE

SITE PLAN - SOUTHBOUND
BRIDGE NO. RIC-71-33185 (2062) LEFT

TYPE: NEW CONTINUOUS GALVANIZED
A572M STEEL GIRDERS COMPOSITE
WITH REINFORCED CONCRETE DECK
ON EXISTING AND ADDITIONAL
CONCRETE PIERS AND SEMI-
INTEGRAL CONCRETE ABUTMENTS

RIC / ASD-71-20 220 / 0 000

542
666



PROFILE ALONG OUTSIDE EDGE OF PAVEMENT



The seal of the State of Ohio Department of Transportation is a circular emblem. It features a stylized sailboat in the center, with its sail pointing towards the upper left. The words "STATE OF OHIO" are inscribed along the top inner edge of the circle, and "DEPARTMENT OF TRANSPORTATION" is inscribed along the bottom inner edge.

HYDRAULICS NOT
PERFORMED PER SCOPE
OF SERVICES. 1950's
PLAN DATA TRANSFERRED
FOR INFORMATION ONLY.

REL
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

REVIEWED	DATE
DAP	10/19/99
STRUCTURE FILE NUMBER	
7004834	

DESIGNED <i>BLN</i>	DRAWN <i>JLS</i>
CHECKED <i>DT</i>	REVISED

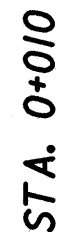
ASHLAND COUNTY
STA. 20+292.117
STA. 0+081.616

SITE PLAN - SOUTHBOUND
BRIDGE NO. RIC-71-33185 (2062) LEFT
OVER S.R. 603 AND THE BLACK FORK OF MOHICAN RIVER

**RIC / ASD - 71 -
20.220 / 0.000**

4 / 35

543
666



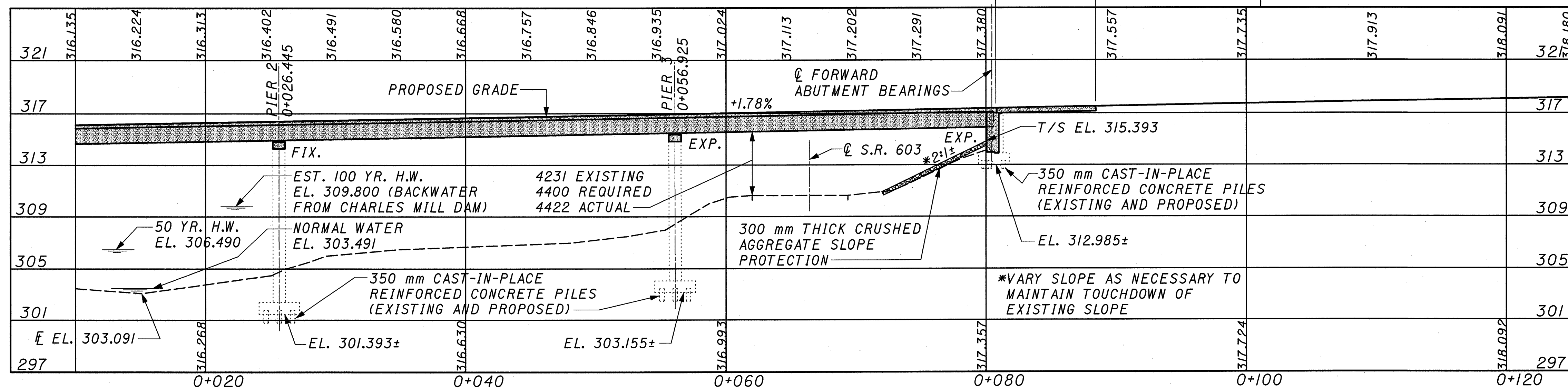
MATCH LINE

BLACK FORK OF
MOHICAN RIVER

BRIDGE LIMITS = 110 342

7600

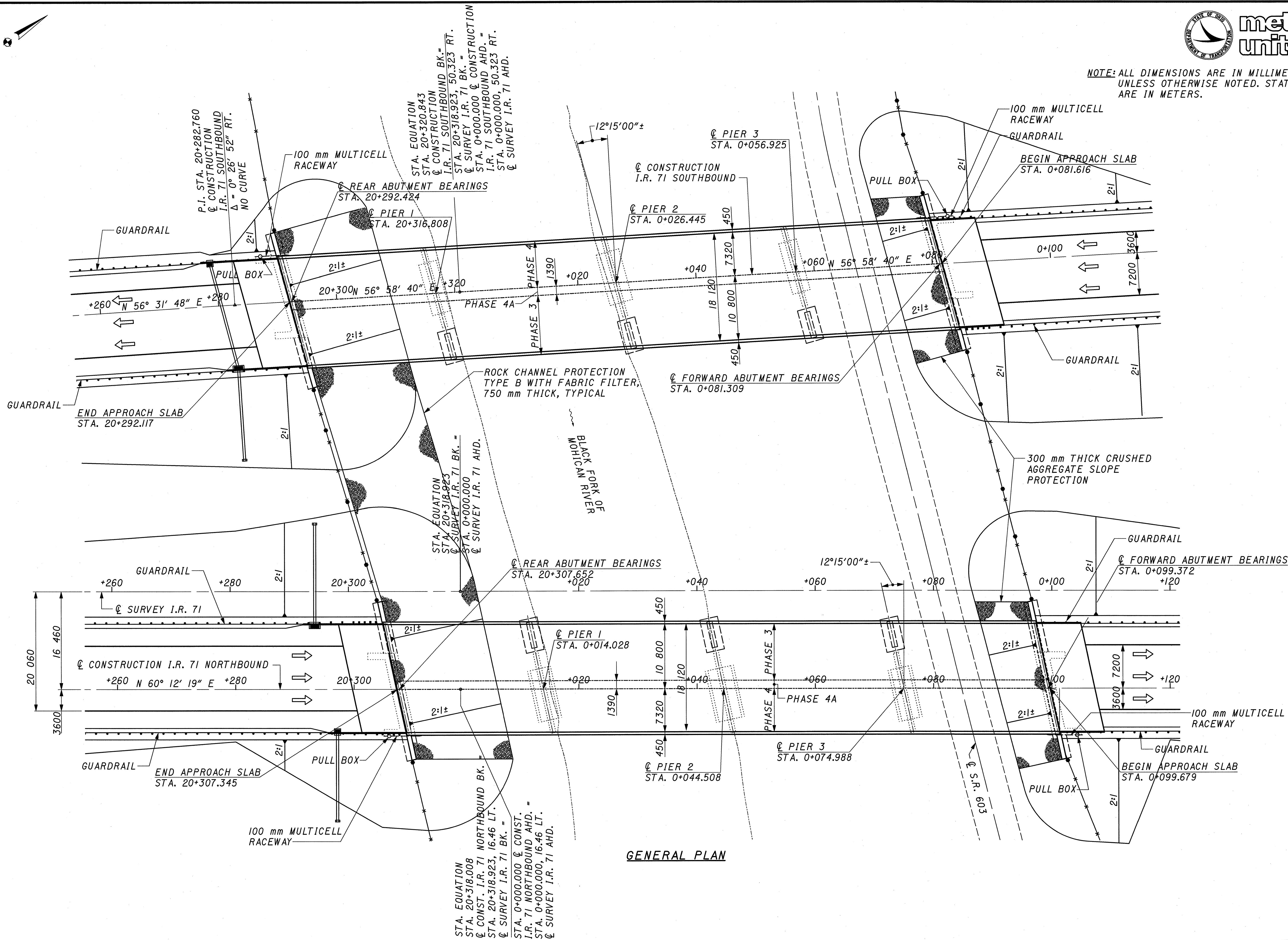
B.M. - DISK STAMPED "ASD-71-33.34K"
IN WINGWALL OF BRIDGE AT CRIDER
ROAD AND S.R. 603.
STA. 0+075.57±, 120.94± RT.
EL. 310.039



PROFILE ALONG OUTSIDE EDGE OF PAVEMENT

FOUNDATION INVESTIGATION LEGEND
 -INDICATES BORING LOCATION

11365SPJ.DGN 10/19/99 JLS



GENERAL PLAN

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. STATIONS ARE IN METERS.

1136SC13.DGN 10/28/99 JLS

REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:

AS-I-8IM DATED 10-25-94
SBR-I-99M DATED 01-12-99
SICD-I-96M DATED 12-12-97
GSD-I-96M DATED 11-21-97

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

842 DATED 01-06-99
844 DATED 01-06-99
846 DATED 09-09-97
863 DATED 09-09-97
899 DATED 10-21-98
954 DATED 09-09-97

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 LOADING

MS 18, CASE I AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESS

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)
HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 31 MPa (SUPERSTRUCTURE)
REINFORCING STEEL - ASTM A615M, A616M OR A617M - GRADE 420 MINIMUM YIELD STRENGTH 420 MPa. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M OR A615M.
STRUCTURAL STEEL - ASTM A572M (GALVANIZED) - UNIT STRESS 186.2 MPa.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL AND 65 mm CONCRETE COVER.

MONOLITHIC WEARING SURFACE

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

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATION AND MEASUREMENTS. CONSEQUENTLY THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02.

CONSTRUCTION SEQUENCE

ALSO SEE MAINTENANCE OF TRAFFIC PLAN SHEETS.
THE FOLLOWING IS THE REQUIRED SEQUENCE OF CONSTRUCTION:

PHASE 2 CONSTRUCTION

- WITH TWO LANES OF ONE WAY TRAFFIC MAINTAINED ON THE OUTSIDE LANE AND SHOULDER OF BOTH THE NORTH AND SOUTHBOUND BRIDGE DECKS, REMOVE THE EXISTING DECK, PARAPET, AND STEEL GIRDER SUPERSTRUCTURE FROM THE INSIDE PART OF BOTH BRIDGES.
- REMOVE THE EXISTING ABUTMENT BACKWALLS AND BREASTWALLS DOWN TO THE FOOTINGS.
- DRIVE ADDITIONAL PILES AND CONSTRUCT NEW PORTIONS OF THE ABUTMENTS AND PIERS ON THE INSIDE PART OF BOTH BRIDGES. CONSTRUCT THE NEW STAND ALONE PIERS FOR THE WIDENED INSIDE PART OF THE STRUCTURE.
- ERECT THE NEW STEEL GIRDERS AND CROSSFRAMES ON THE NEW ELASTOMERIC BEARINGS.
- CONSTRUCT NEW BRIDGE DECK, PARAPET AND APPROACH SLABS FOR THE INSIDE PART OF BOTH BRIDGES.
- SWITCH TRAFFIC TO THE INSIDE PART OF BOTH BRIDGES.

PHASE 3 CONSTRUCTION

WITH TWO LANES OF ONE WAY TRAFFIC MAINTAINED ON THE INSIDE LANE AND SHOULDER OF BOTH THE NORTH AND SOUTH BOUND BRIDGE DECKS, REPEAT STEPS A THRU E WITHOUT THE WIDENING IN PHASE 2 FOR THE OUTSIDE PART OF BOTH BRIDGES.

PHASE 3A CONSTRUCTION

- WITH TWO LANES OF ONE WAY TRAFFIC MAINTAINED ON THE INSIDE LANE AND SHOULDER OF BOTH THE NORTH AND SOUTH BOUND BRIDGE DECKS, ERECT CROSS FRAMES BETWEEN THE TWO PARTS AND CONSTRUCT THE LAST PORTION OF THE DECK.
- APPLY THE HMWM RESIN TO THE CONCRETE DECK AND SEAL OTHER CONCRETE SURFACES WHERE APPLICABLE.

ITEM 202. PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

CONCRETE SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 kg FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, A HAMMER HEAVIER THAN 16 kg, BUT NOT TO EXCEED 39 kg, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. EXPOSED REINFORCING STEEL SHALL BE CLEANED BY SANDBLASTING TO GRADE SA-I TO REMOVE ALL LOOSE PARTICLES OF CONCRETE OR RUST. EXISTING REINFORCING STEEL SHALL BE CUT AND/OR MAINTAINED AS INDICATED IN THE PLANS, OR AS DIRECTED BY THE ENGINEER, TO SERVE AS DOWELS OR PRINCIPAL REINFORCEMENT IN THE REBUILT STRUCTURE. THESE BARS SHALL BE CLEANED TO REMOVE CONCRETE FRAGMENTS AND FOREIGN MATTER. CARE SHALL BE TAKEN TO PRESERVE THE BOND OF SUCH DOWELS OR PRINCIPAL REINFORCEMENT TO THE EXISTING CONCRETE. WHERE BOND BETWEEN EXISTING CONCRETE AND REINFORCING STEEL THAT IS TO BE RETAINED HAS BEEN DESTROYED, THE UNBONDED CONCRETE ADJACENT TO THE BAR SHALL BE REMOVED TO A DEPTH WHICH WILL PERMIT NEW CONCRETE TO BOND TO THE ENTIRE PERIPHERY OF THE BAR SO DEBONDED. A MINIMUM OF 38 mm CLEARANCE AROUND THE PERIMETER OF THE STEEL SHALL BE PROVIDED. DAMAGED AREAS OF REINFORCEMENT THAT IS TO REMAIN SHALL BE CUT AND STRESS TRANSFER SHALL BE ACCOMPLISHED BY EITHER A LAPPED OR MECHANICAL SPLICE AS APPROVED BY THE ENGINEER. OTHER EXISTING REINFORCEMENT WITHIN THE REMOVAL LIMITS SHALL BE REMOVED AND DISPOSED OF. ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL REQUIRED TO CUT AND CLEAN EXISTING REINFORCING STEEL SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, FOR PAYMENT. LAPPED OR MECHANICAL SPLICES REQUIRED FOR STRESS TRANSFER WHERE EXISTING REINFORCEMENT IS DAMAGED BY THE CONTRACTOR SHALL BE PROVIDED BY THE CONTRACTOR AT HIS EXPENSE.

ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

TEMPORARY SHEET PILING FOR PHASED CONSTRUCTION

TEMPORARY SHEET PILING SHALL BE PERFORMED IN ACCORDANCE WITH ITEM 504 AND DRIVEN TO SUPPORT THE ROADWAY EMBANKMENT DURING PHASE CONSTRUCTION EXCAVATIONS. SHEET PILING BEHIND THE EXISTING ABUTMENTS SHALL EXTEND APPROXIMATELY 4400 mm FROM THE BACK FACE OF THE EXISTING ABUTMENT. IT SHALL BE DRIVEN TO A MINIMUM DEPTH OF 7000 mm BELOW THE ELEVATION OF THE EXISTING ABUTMENT AND HAVE A MINIMUM SECTION MODULUS OF 3 000 000 mm³ PER METER OF WALL. PORTIONS OF SHEET PILING SHALL BE REMOVED AS NECESSARY TO PLACE PROPOSED ABUTMENT CONCRETE. ALL SHEET PILING SHALL BE REMOVED WHEN PHASE 3 BACKFILLING IS COMPLETE. THIS WORK SHALL BE INCLUDED WITH ITEM 503 - COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN FOR PAYMENT.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE)

THE ULTIMATE BEARING VALUE IS 900 kN PER PILE FOR THE 350 mm CAST-IN-PLACE REINFORCED CONCRETE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 1100 kN PER PILE FOR THE 350 mm CAST-IN-PLACE REINFORCED CONCRETE PIER PILES.

ABUTMENT PILES

52 PILES 15 METERS LONG, ESTIMATED LENGTH
52 PILES OF ORDER LENGTH 15 METERS LONG
26 SPLICES

PIER PILES

58 PILES 13 METERS LONG, ESTIMATED LENGTH
58 PILES OF ORDER LENGTH 13 METERS LONG
36 PILES 10 METERS LONG, ESTIMATED LENGTH
36 PILES OF ORDER LENGTH 10 METERS LONG
47 SPLICES

PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 5.5 mm FOR THE PIER PILES. IF A PILE WALL THICKNESS GREATER THAN 5.5 mm IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, THE MINIMUM WALL THICKNESS SHALL BE 4.5 mm.

PILE HAMMER: THE PILE HAMMER USED TO INSTALL THE 350 mm 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.

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

EPOXY-URETHANE SHALL BE THE "BUFF" COLOR MEETING FEDERAL COLOR STANDARD NO. 37722 AS PER THE DETAILS IN THE PLANS.

ITEM 518. POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN

POROUS BACKFILL SHALL BE INSTALLED AS PER THE PLAN DETAILS. THE AGGREGATE SHALL BE NO. 57 GRAVEL.

PATCHING CONCRETE STRUCTURE, AS PER PLAN

A CONTINGENCY QUANTITY OF 3 SQ. METERS IS INCLUDED PER BRIDGE TO BE USED AT THE DIRECTION OF THE ENGINEER FOR REPAIR OF THE SUBSTRUCTURE.

ITEM 842. CLASS C CONCRETE, PIER ABOVE FOOTING, AS PER PLAN

THE AGGREGATE SHALL CONSIST OF NO. 8 LIMESTONE.

ITEM 842. CLASS C CONCRETE, ABUTMENT, AS PER PLAN

THE AGGREGATE SHALL CONSIST OF NO. 8 LIMESTONE.

INSTALL A 900 mm WIDE STRIP, 2.5 mm THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 900 mm WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 32 mm x 3 mm (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25 mm OUTSIDE DIAMETER, 3 mm GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225 mm. 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 STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINT, SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150 mm 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 300 mm IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150 mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

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

GENERAL NOTES CONTINUED: SEE SHEET 7 / 35.



RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/28/99
DRAWN SJK
REVIEWED DAP
STRUCTURE FILE NUMBER 7004869 & 7004834

DESIGNED BLM
CHECKED
DT

GENERAL NOTES
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

RIC / ASD-71-
20.220 / 0.000

6 / 35

545
666

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D 751	2.5+/-2.5
BREAKING STRENGTH, GRAB WXF, N, MINIMUM	D 751	3130 x 3130
ADHESIVE 25 mm STRIP, 50 mm MINIMUM, N, MINIMUM	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS AT 100°C 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40°C, BEND AROUND 6 mm MANDREL	D 2156	NO CRACKING OF COATING

IN LIEU OF NEOPRENE SHEETING THE CONTRACTOR MAY CHOOSE TO SUPPLY TYPE 3 MEMBRANE, 711.29.

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 842, CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

ITEM 842. CLASS C CONCRETE. FOOTING. AS PER PLAN

THE AGGREGATE SHALL CONSIST OF NO. 8 LIMESTONE.

DOWEL HOLES WITH NON-SHRINK. NON-METALLIC GROUT

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR MEETING THE REQUIREMENTS OF CMS 510. PAYMENT FOR ALL OF THE ABOVE SHALL BE PER APPLICABLE 842 ITEMS.

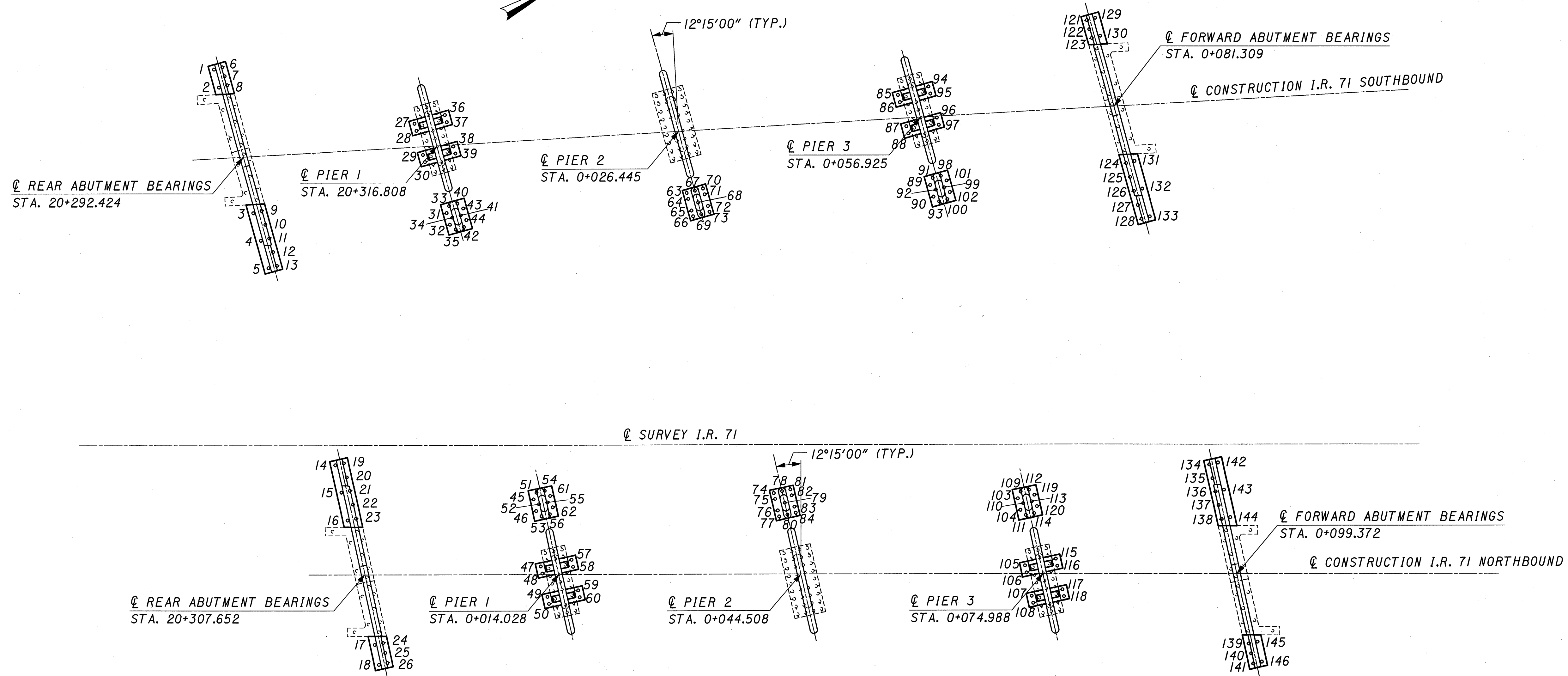
DRIP GROOVES

THE DRIP GROOVES AS DETAILED ON STANDARD CONSTRUCTION DRAWINGS SHALL NOT BE CONSTRUCTED.

ITEM 844. HIGH PERFORMANCE CONCRETE. AS PER PLAN

THE DESIGN MIX SHALL BE MIX NO. 4. COURSE AGGREGATE SHALL BE LIMESTONE. THE OPTION OF SLIPFORM CONSTRUCTION OF THE BRIDGE RAILING PER 844.031 IS NOT PERMITTED.

CURING SHALL BE PER METHOD (A) WATER CURE ONLY.



PILE NUMBERING DIAGRAM

1136SCI4.DGN 10/28/99 JLS, SJK



metric
units

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/28/99
REVIEWED DAP
DRAWN JLS
DESIGNED BLN
CHECKED DT

ESTIMATED QUANTITIES
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

RIC/ASD-71-
20.220/0.000

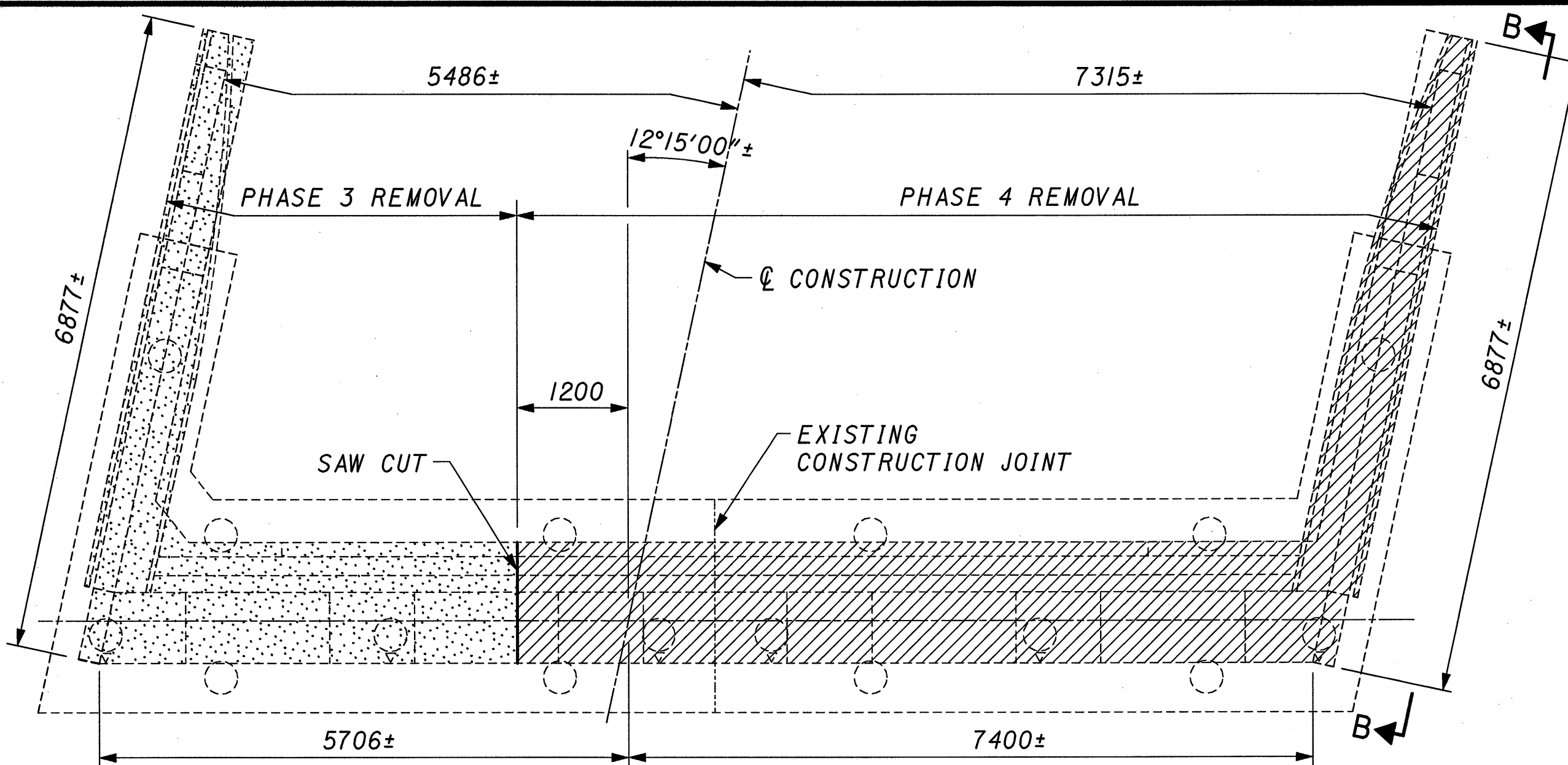
8/35

547
666

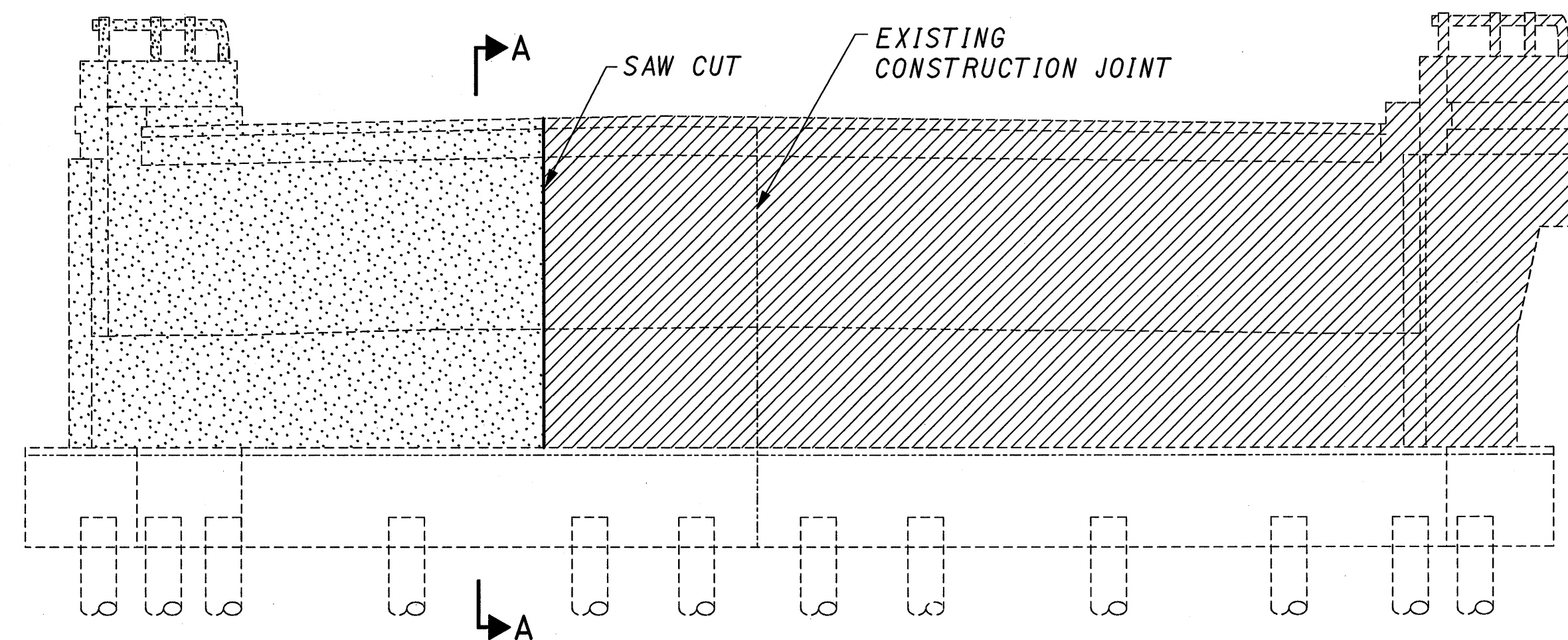
ESTIMATED QUANTITIES															CALCULATED		DT2	DATED	7/99
															CHECKED		MSL	DATED	8/99
ITEM	ITEM EXT.	TOTAL RIGHT STRUCTURE (N.B.B.)	TOTAL LEFT STRUCTURE (S.B.B.)	UNIT	DESCRIPTION	RIGHT STRUCTURE (NORTHBOUND)				LEFT STRUCTURE (SOUTHBOUND)				SEE SHEET					
						SUPER	ABUTS.	PIERS	GEN'L	SUPER	ABUTS.	PIERS	GEN'L						
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP				LUMP	6/35					
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP				LUMP	6/35					
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN		LUMP		LUMP		LUMP		LUMP	6/35					
505	11100	LUMP	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP				LUMP						
507	00600	947	947	METER	350 mm CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN		390	557			390	557							
507	00650	947	947	METER	350 mm CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		390	557			390	557							
507	50500	37	37	EACH	STEEL PILE SPLICES		13	24			13	24							
SPECIAL	51267504	402	402	SQ.METER	SEALING OF CONCRETE SURFACES (NON-EPOXY)	402				402									
SPECIAL	51267510	1019	986	SQ.METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		88	931			84	902							
516	44201	14	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (82.1 mm x 270 mm x 435 mm WITH 59 mm x 461 mm x 455 mm LOAD PLATE)	14				14				26/35					
516	44101	14	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (54.1 mm x 355 mm x 560 mm WITH 61 mm x 535 mm x 586 mm LOAD PLATE)	14				14				26/35					
516	44101	7	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (58.5 mm x 320 mm x 560 mm WITH 60 mm x 500 mm x 710 mm LOAD PLATE)	7				7				26/35					
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN		LUMP				LUMP			6/35					
518	40000	56	56	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE		56				56								
518	40010	12	12	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		12				12								
519	11101	3	3	SQ.METER	PATCHING CONCRETE STRUCTURE, AS PER PLAN				3				3	6/35					
842	42001	192	196	CU.METER	CLASS C CONCRETE, PIER ABOVE FOOTINGS, AS PER PLAN			192				196		6/35					
842	45501	91	100	CU.METER	CLASS C CONCRETE, ABUTMENT, AS PER PLAN		91				100			6/35					
842	46501	135	134	CU.METER	CLASS C CONCRETE, FOOTING, AS PER PLAN		57	78			56	78		7/35					
844	48001	573	573	CU.METER	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK), AS PER PLAN	573				573				7/35					
844	48021	80	80	CU.METER	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET), AS PER PLAN	80				80				7/35					
844	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE TRIAL MIX	LUMP				LUMP									
844	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE TESTING	LUMP				LUMP									
863	10081	LUMP	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL FOUR (4) FABRICATION, AS PER PLAN, GALVANIZED ASTM A572M	LUMP				LUMP				23/35					
863	20000	6538	6538	EACH	WELDED STUD SHEAR CONNECTOR	6538				6538									

NOTES
NOTATION:
N.B.B. - NORTHBOUND BRIDGE
S.B.B. - SOUTHBOUND BRIDGE

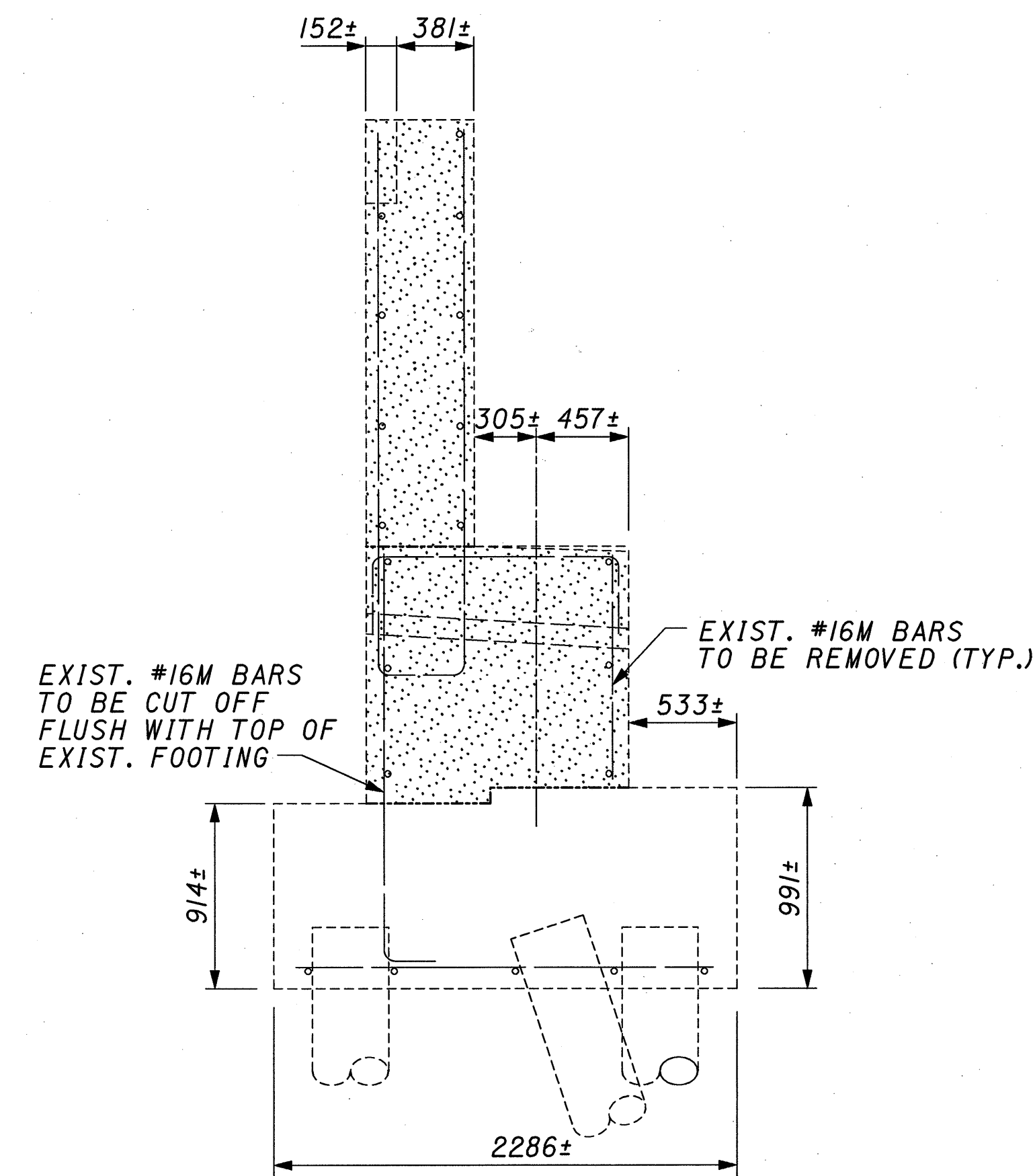
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED.



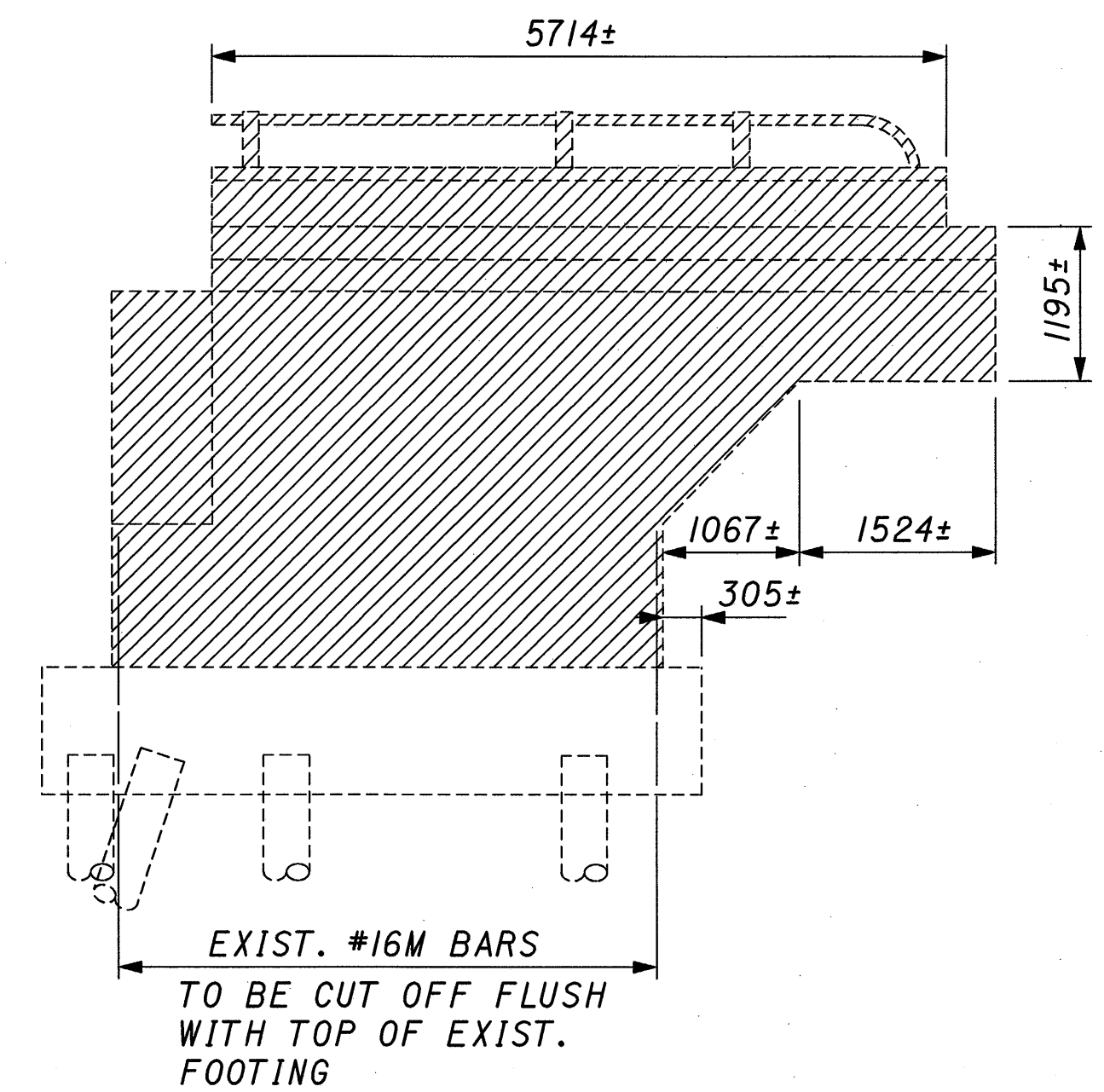
PLAN



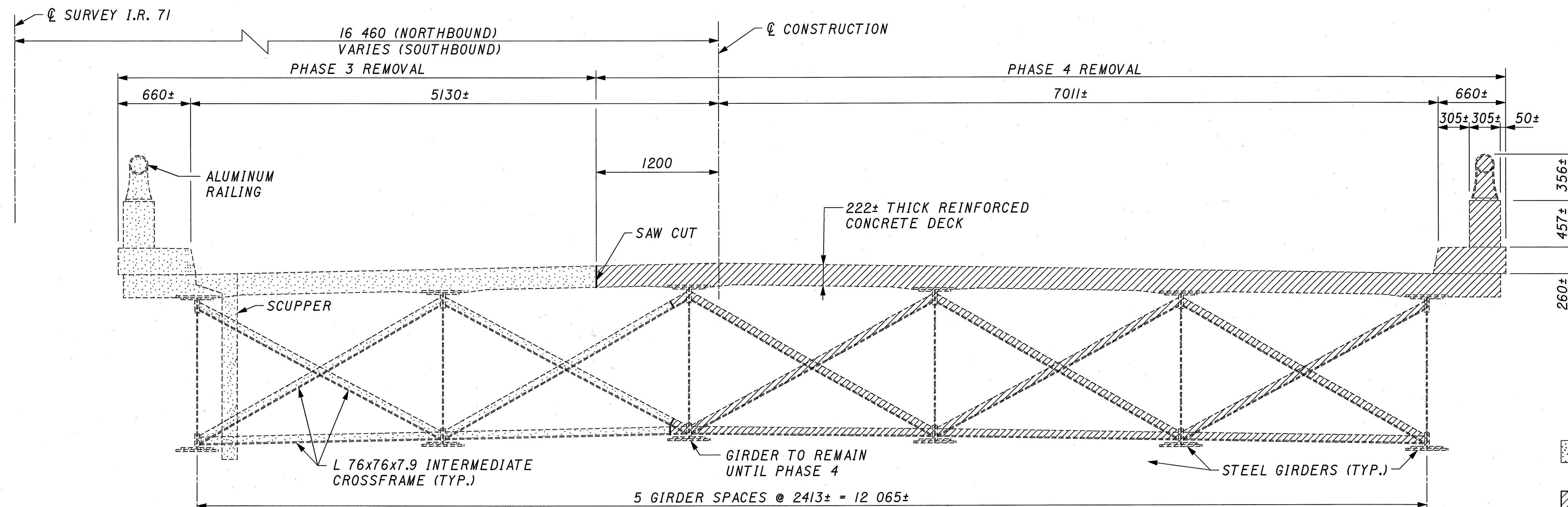
ELEVATION



SECTION A-A



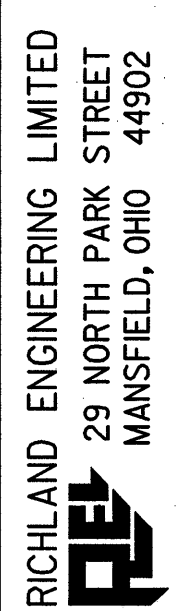
VIEW B-B



TRANSVERSE SECTION

LEGEND

- INDICATES MATERIALS TO BE REMOVED DURING PHASE 3 REMOVAL.
- INDICATES MATERIALS TO BE REMOVED DURING PHASE 4 REMOVAL.



REVIEWED	DATE
DAP	10/19/99
STRUCTURE FILE NUMBER	
7004869 & 7004834	

DESIGNED <i>BLN</i>	DRAWN <i>KH</i>
CHECKED <i>DT</i>	REVISED

REAR ABUTMENT - NORTHBOUND
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

**RIC / ASD-71-
20.220 / 0.000**

10 / 35

549
666



ADDITIONAL NOTES: SEE SHEET 14/35 .

1365SAI.DGN 10/19/99 JLS



REVIEWED	DATE
DAP	10/19/99
STRUCTURE FILE NUMBER	
7004869 & 7004834	

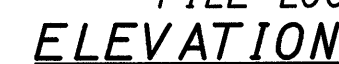
DESIGNED <i>BLN</i>	DRAWN <i>KH</i>
CHECKED <i>DT</i>	REVISED

FORWARD ABUTMENT - NORTHBOUND
BRIDGE NO. RIC-71-33185 L & R
OVER S B 603 AND THE BACKBONE OF THE MONTANA RIVER

**RIC / ASD-71-
20.220/ 0.000**

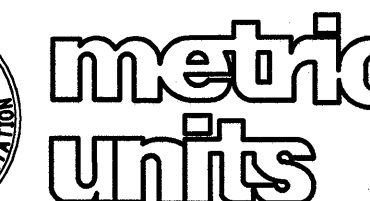
11 / 35

550
666



ADDITIONAL NOTES: SEE SHEET 14/35 .

I365A2.DGN 10/19/99 KH



REVIEWED	DATE
DAP	10/19/99
STRUCTURE FILE NUMBER	
7001860 8 7001874	

REAR ABUTMENT - SOUTHBOUND
BRIDGE NO. RIC-71-33185 L & R
OVER S. D. COZ AND THE BLACK FORK OF THE MOUNTAIN RIVER

RIC / ASD-71-20.220 / 0.000

12 / 35

551
666

NOTE: ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

1:1000

INDICATES EXISTING

INDICATES PILE BATH

PLAN

[illegible]ELEVATION

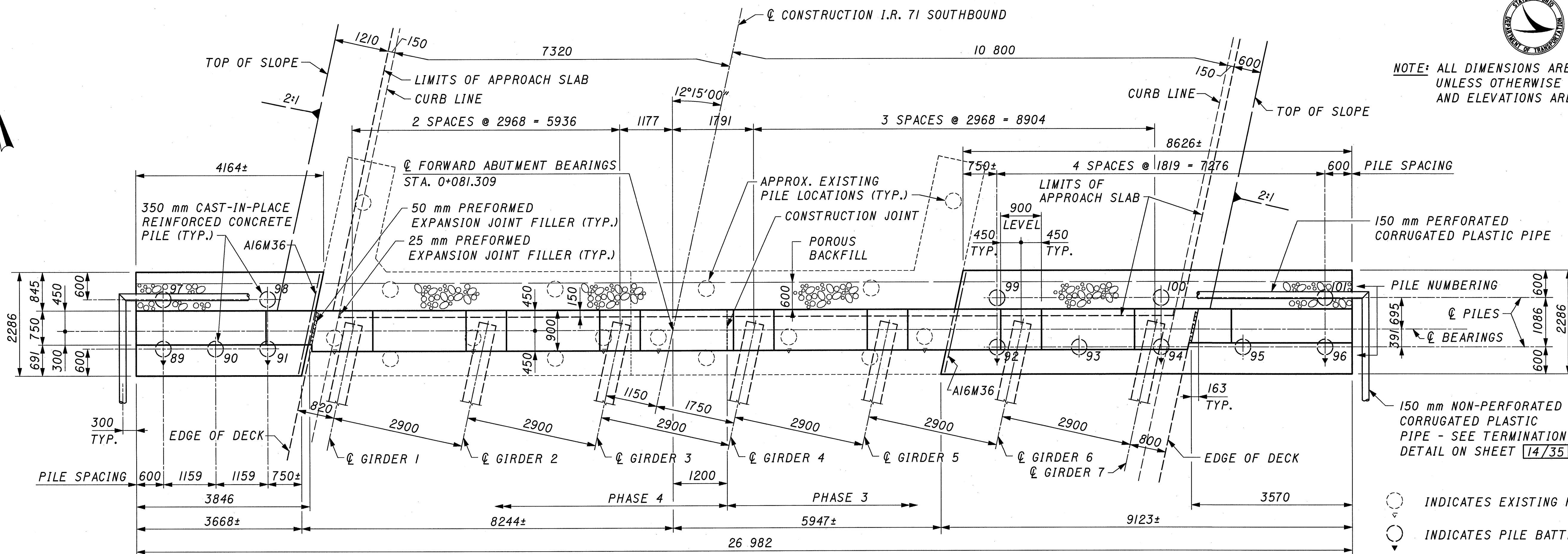
NOTES:

SECTION A-A & B-B: SEE SHEET 14/35

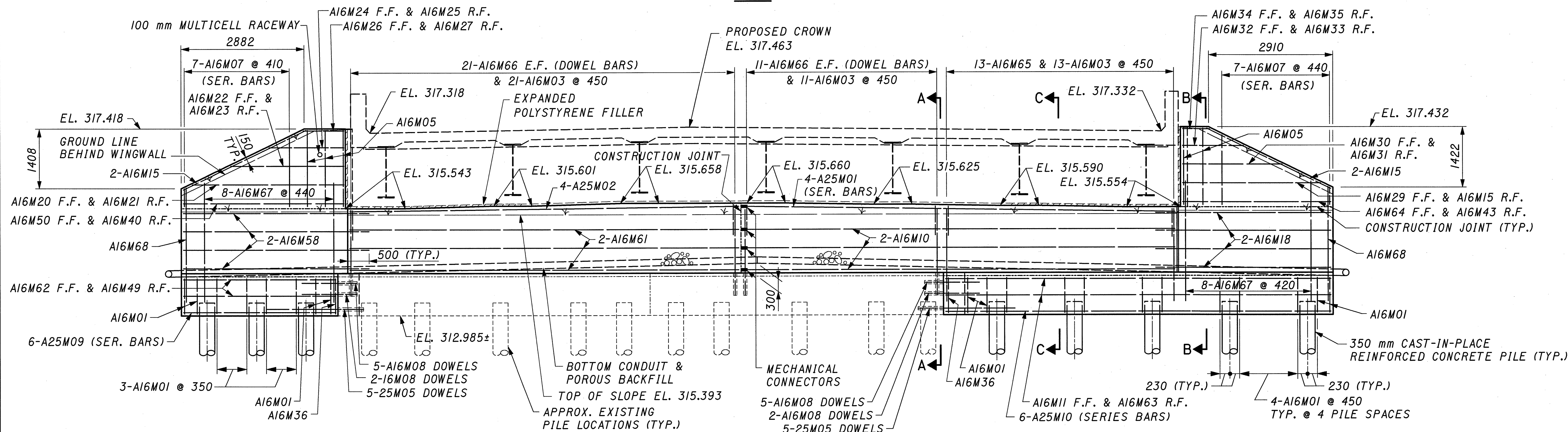
ADDITIONAL NOTES: SEE SHEET 14/35 .

11365SA3.DGN 10/19/99 JLS

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



INDICATES EXISTING PILE BATTER
INDICATES PILE BATTER 1:4

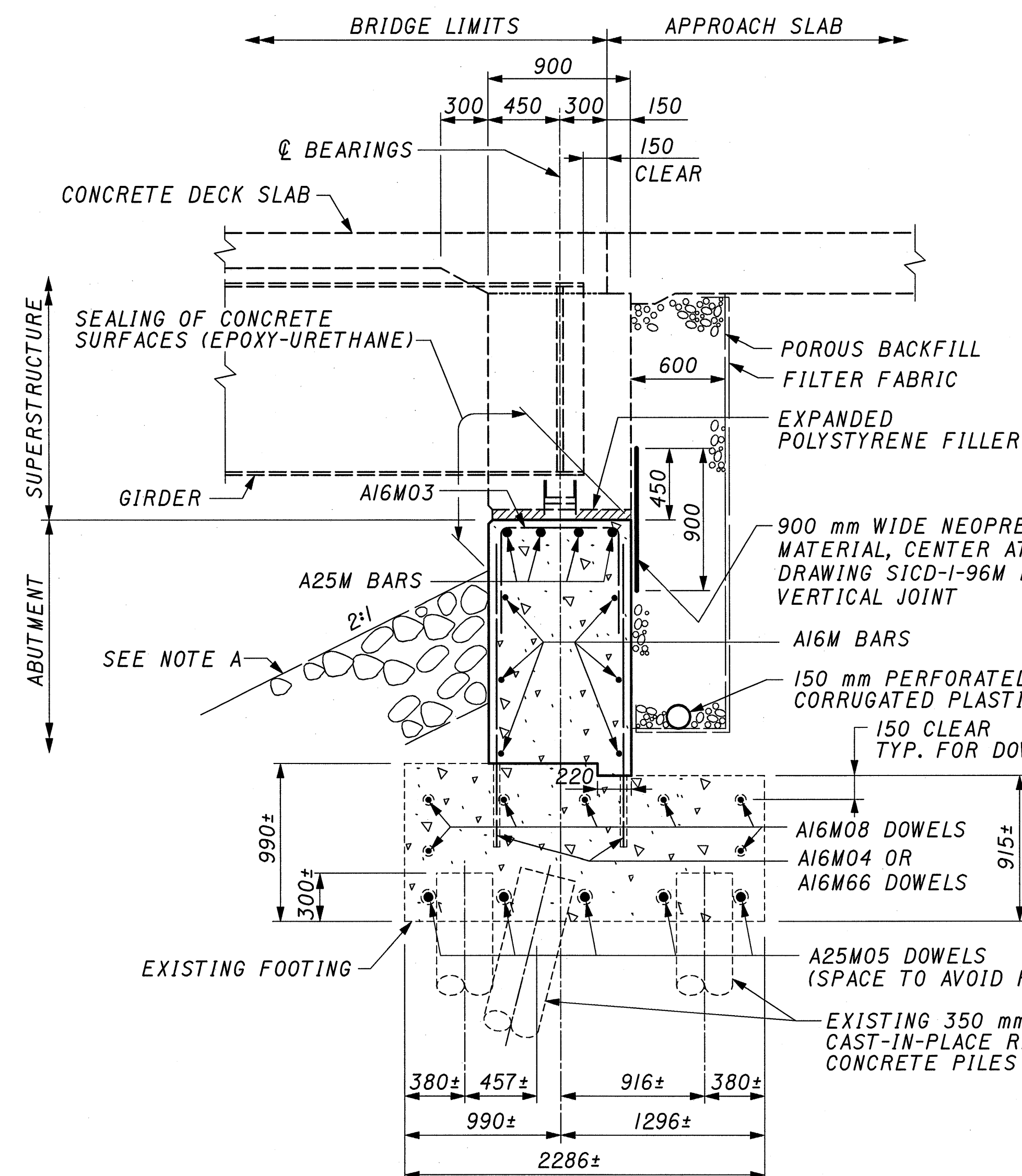


NOTES:

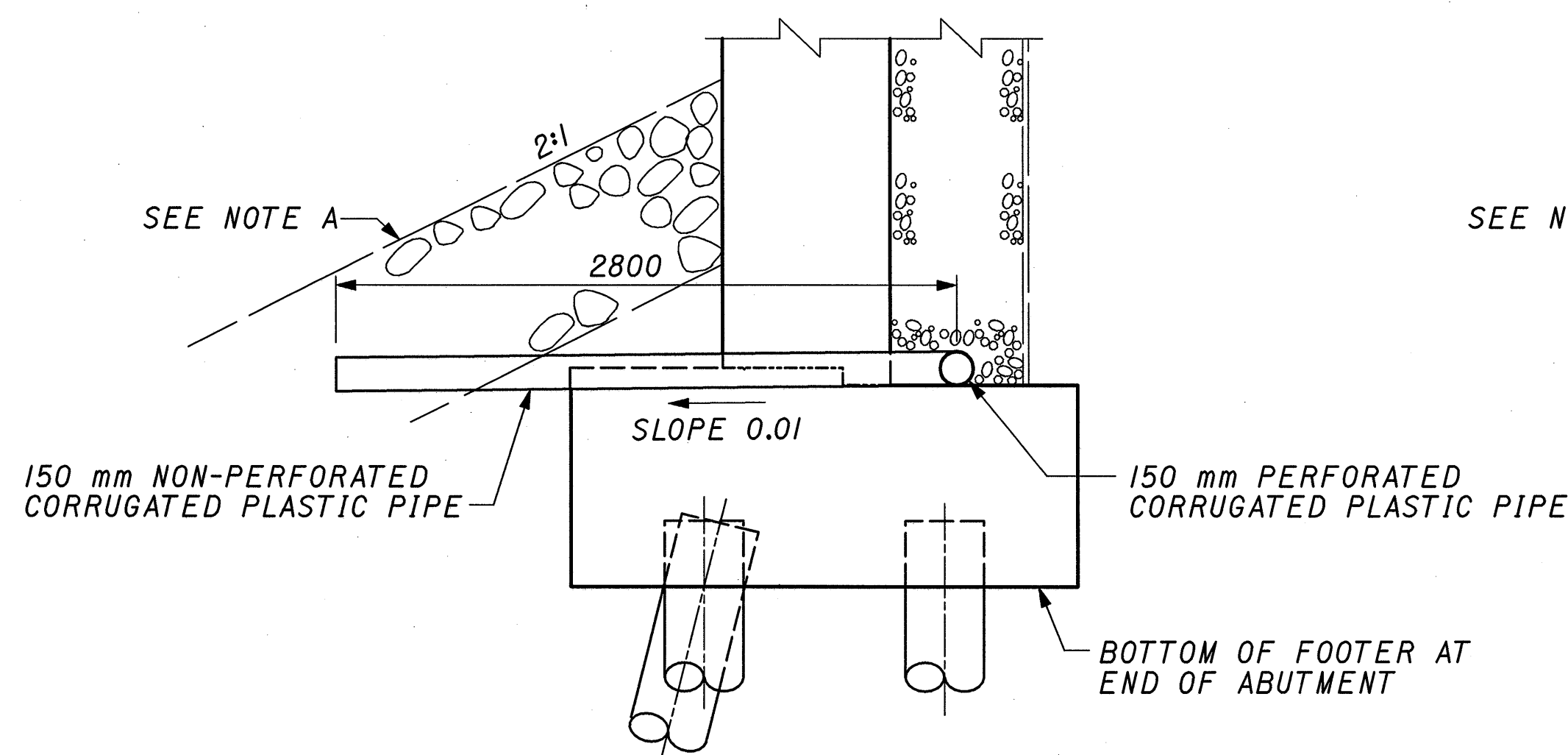
SECTION A-A, B-B & C-C: SEE SHEET 14/35.
ADDITIONAL NOTES: SEE SHEET 14/35.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

NOTE A: ROCK CHANNEL PROTECTION, TYPE B, 750 mm THICK WITH FABRIC FILTER FOR REAR ABUTMENT; 300 mm THICK CRUSHED AGGREGATE SLOPE PROTECTION FOR FORWARD ABUTMENT.

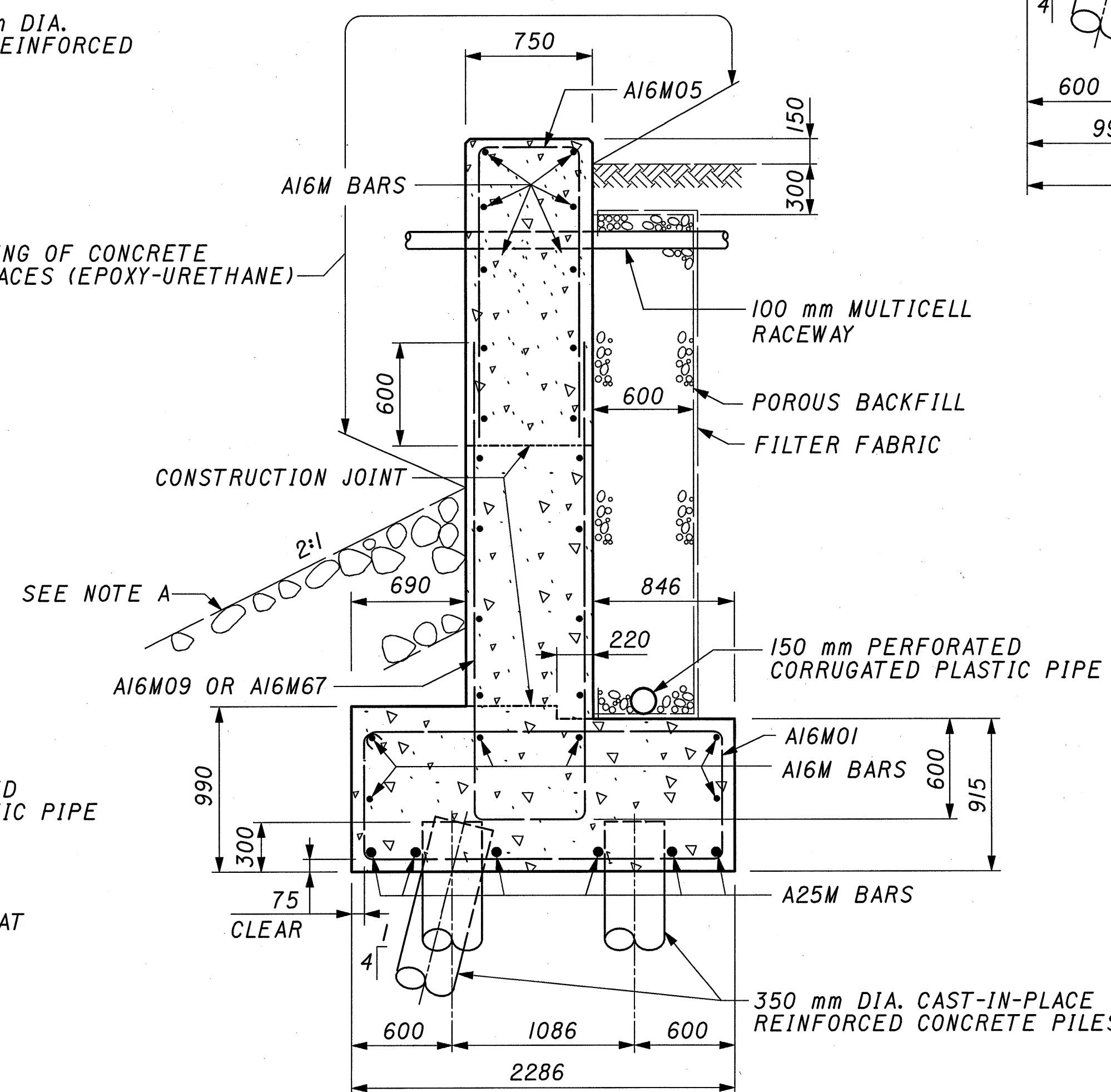


SECTION A-A

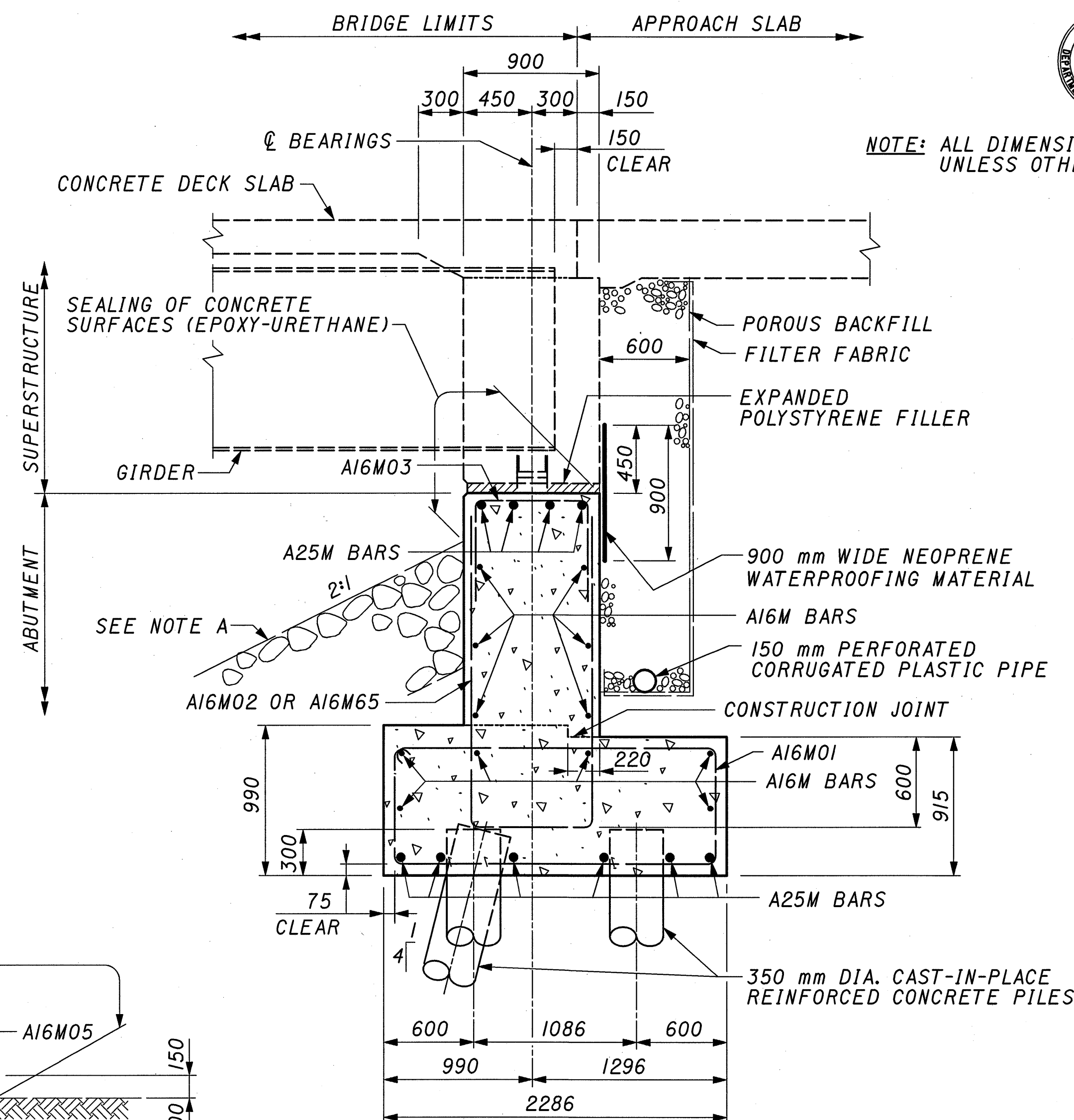


TERMINATION OF 150 mm
NON-PERFORATED CONDUIT

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



SECTION B-B



SECTION C-C

NOTES

MATERIALS SHOWN ARE NEW UNLESS OTHERWISE NOTED.

NOTATION: F.F. - FRONT FACE
R.F. - REAR FACE
E.F. - EACH FACE.

REINFORCING STEEL SPLICE LENGTHS SHALL BE 840 mm FOR #16M HORIZONTAL BARS, 600 mm FOR #16M VERTICAL BARS AND 1670 mm FOR #25M HORIZONTAL BARS.

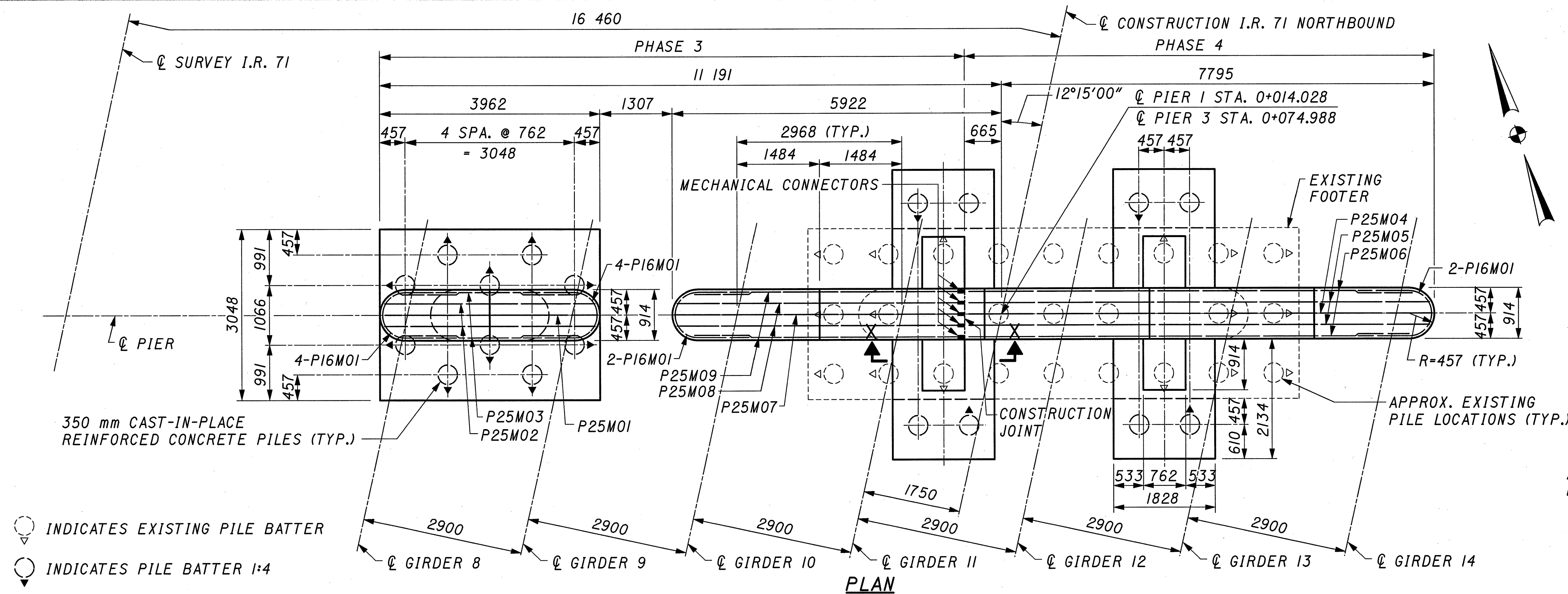
SECTIONS A-A, B-B & C-C: FOR LOCATIONS SEE ABUTMENT PLAN AND ELEVATION DRAWINGS.

MECHANICAL CONNECTOR DETAIL: SEE SHEET 21/35.

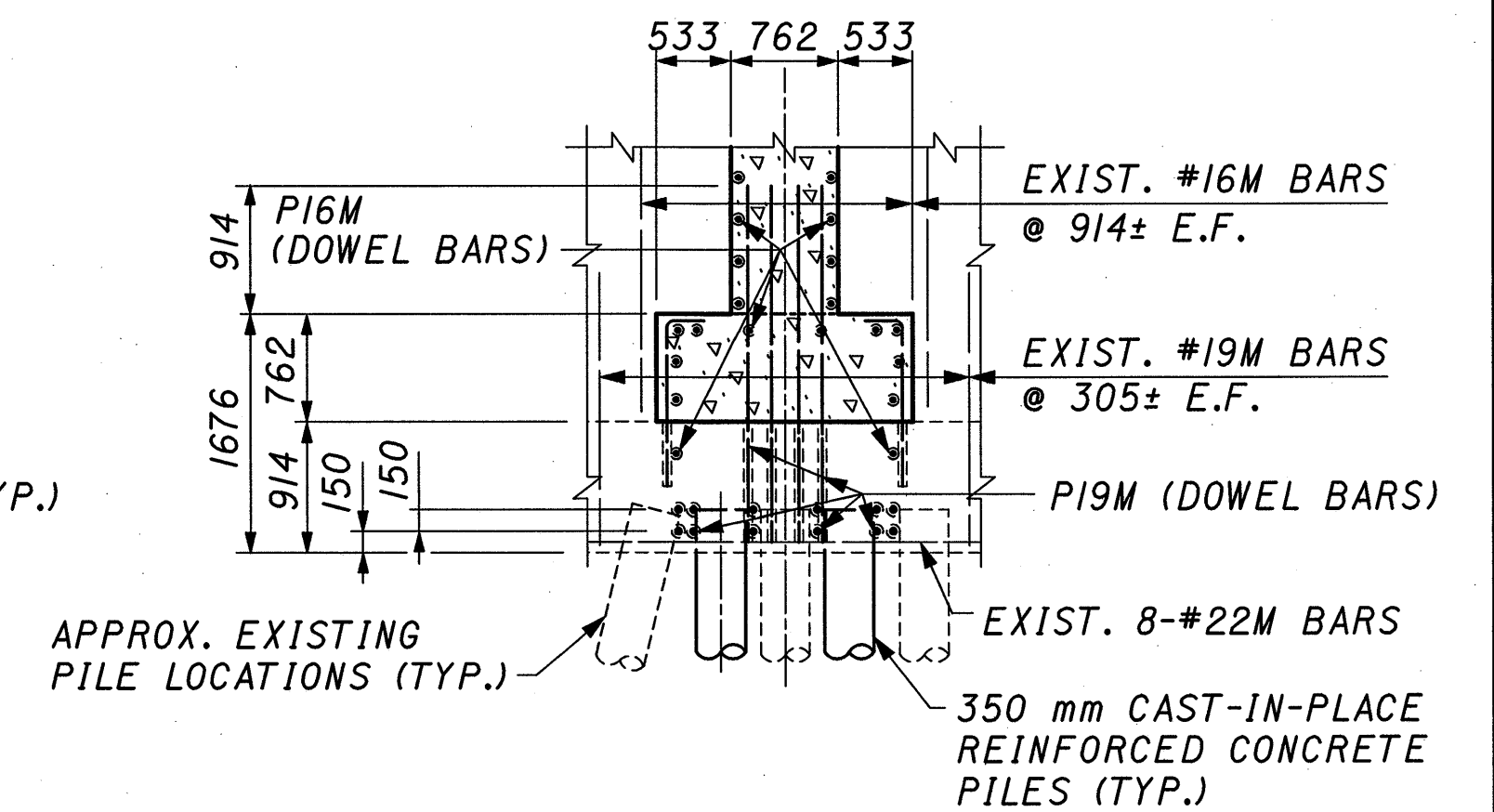
DOWEL HOLE DEPTHS SHALL BE 450 mm FOR #16M BARS AND 600 mm FOR #25M BARS.

100 mm MULTICELL RACEWAY: FOR DETAILS SEE SHEET 538 AND 539 OF 666.

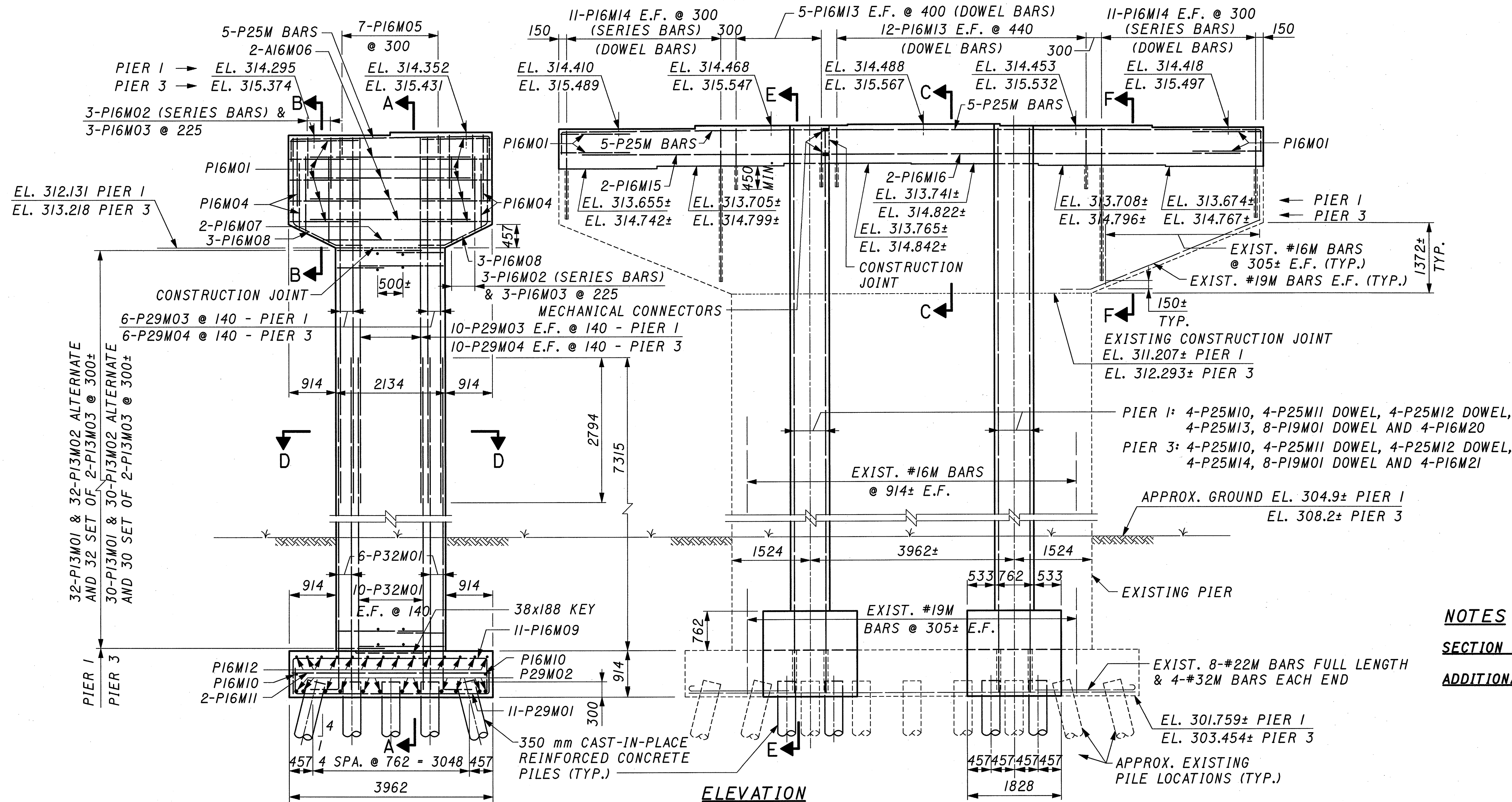
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. STATIONS AND ELEVATIONS ARE IN METERS.



- INDICATES EXISTING PILE BATTER
- INDICATES PILE BATTER 1:4



SECTION X-X



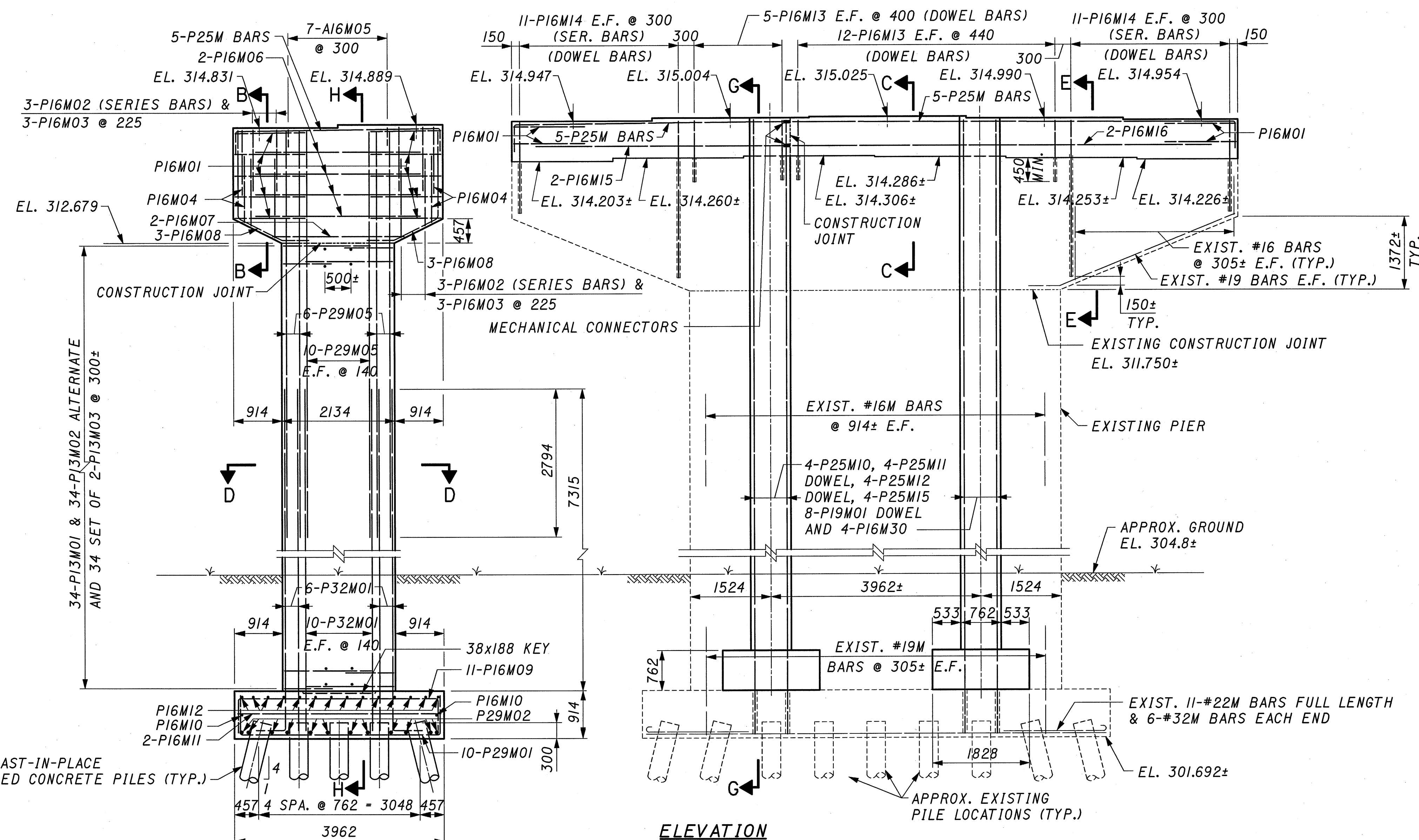
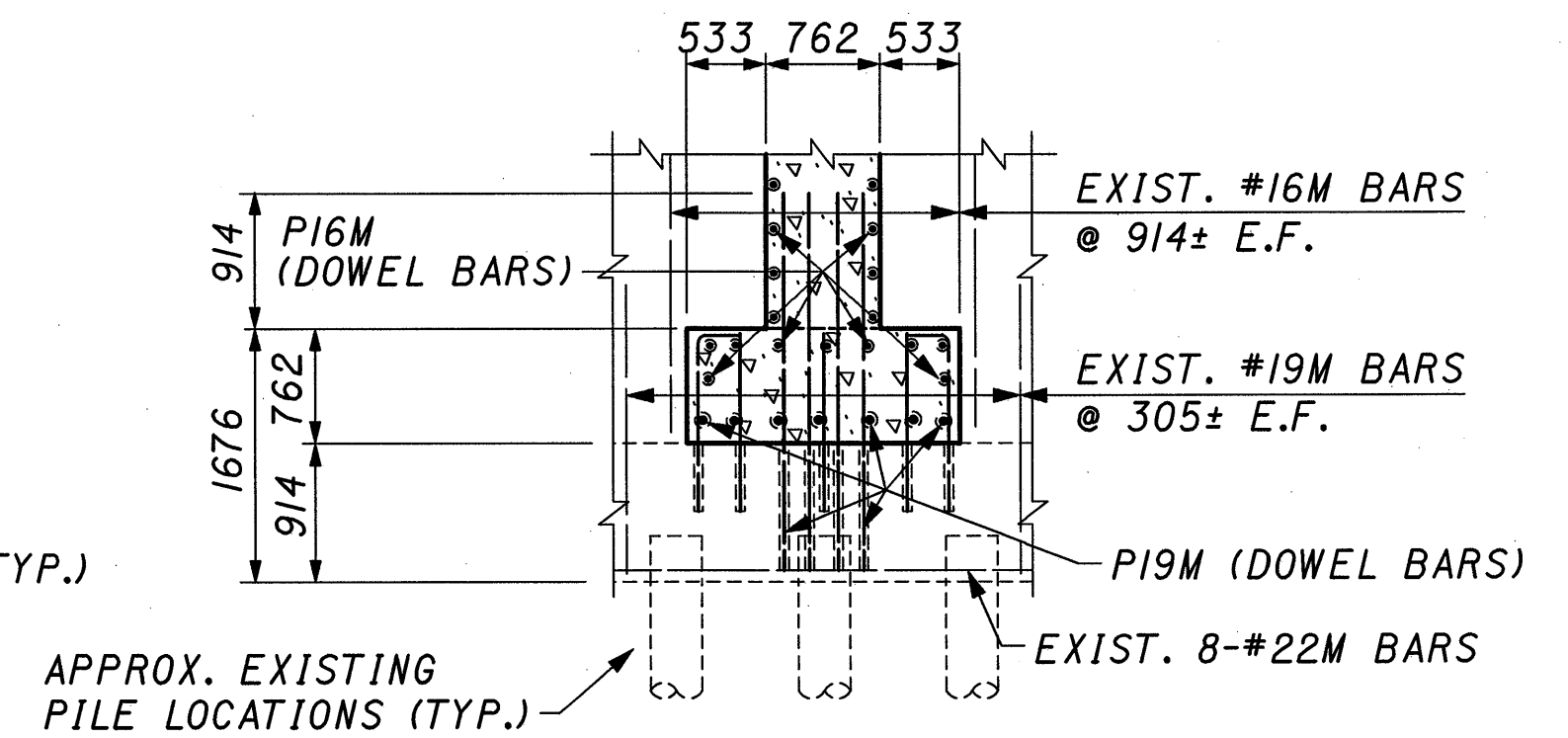
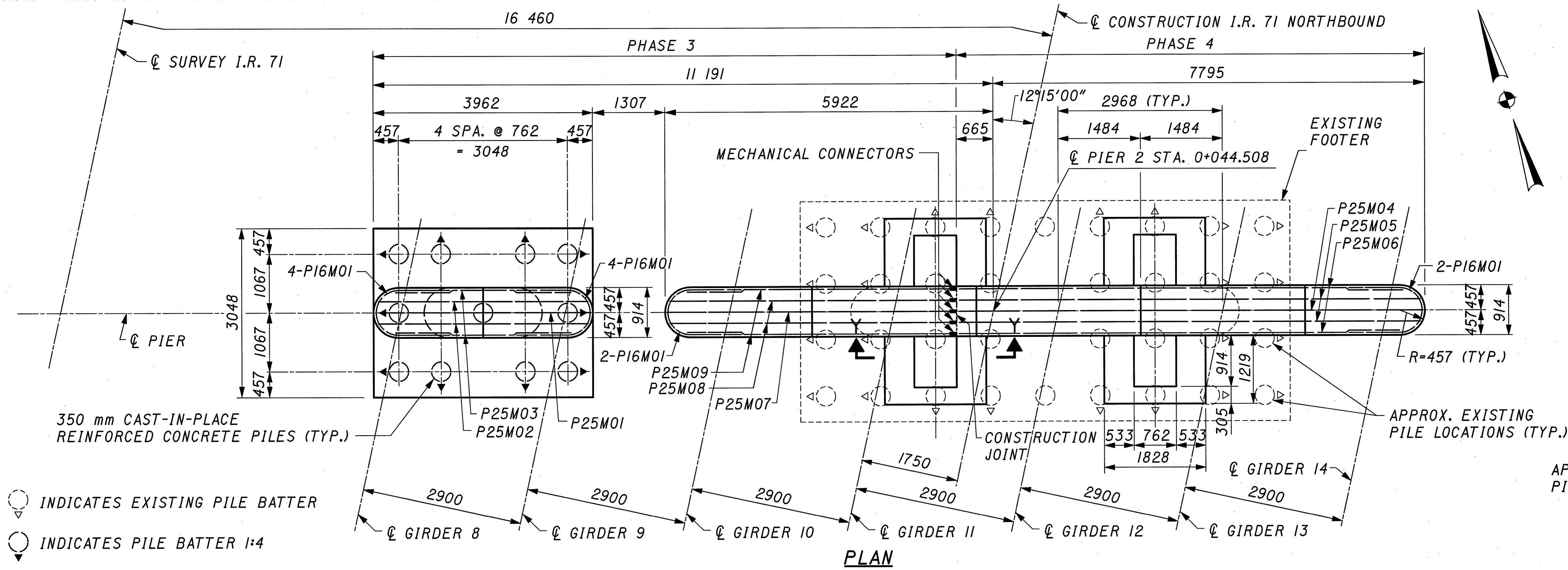
ELEVATION

NOTES

SECTION A-A, B-B, C-C, D-D, E-E & F-F: SEE SHEET 19/35.

ADDITIONAL NOTES: SEE SHEET 19/35.

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

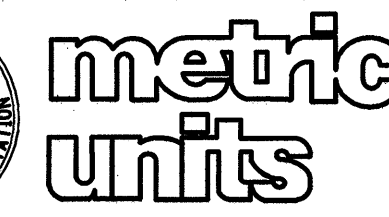


NOTES

SECTION B-B, C-C, D-D, E-E & F-F: SEE SHEET 19/35.

SECTION G-G & H-H: SEE SHEET 20/35.

ADDITIONAL NOTES: SEE SHEET 20/35.



RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED <i>BLN</i>	DRAWN <i>KH</i>
CHECKED <i>DT</i>	REVISED

1 & 3 PLAN & ELEVATION
BRIDGE NO. RIC-71-33185 L & R

17 / 35

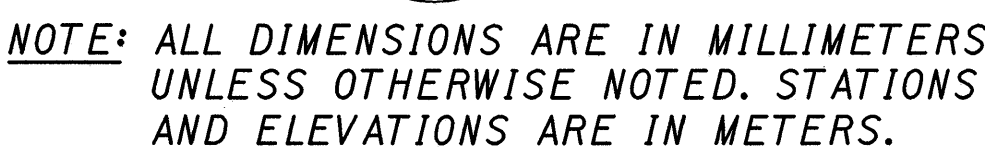
$$\frac{556}{666}$$


SECTION A-A, B-B, C-C, D-D, E-E & F-F: SEE SHEET 19/35.

SECTION X-X: SEE SHEET 15/35.

ADDITIONAL NOTES: SEE SHEET 19/35.

11365SB3.DGN 10/19/99 JLS



REVIEWED	DATE
DAP	10/19/99
STRUCTURE FILE NUMBER	

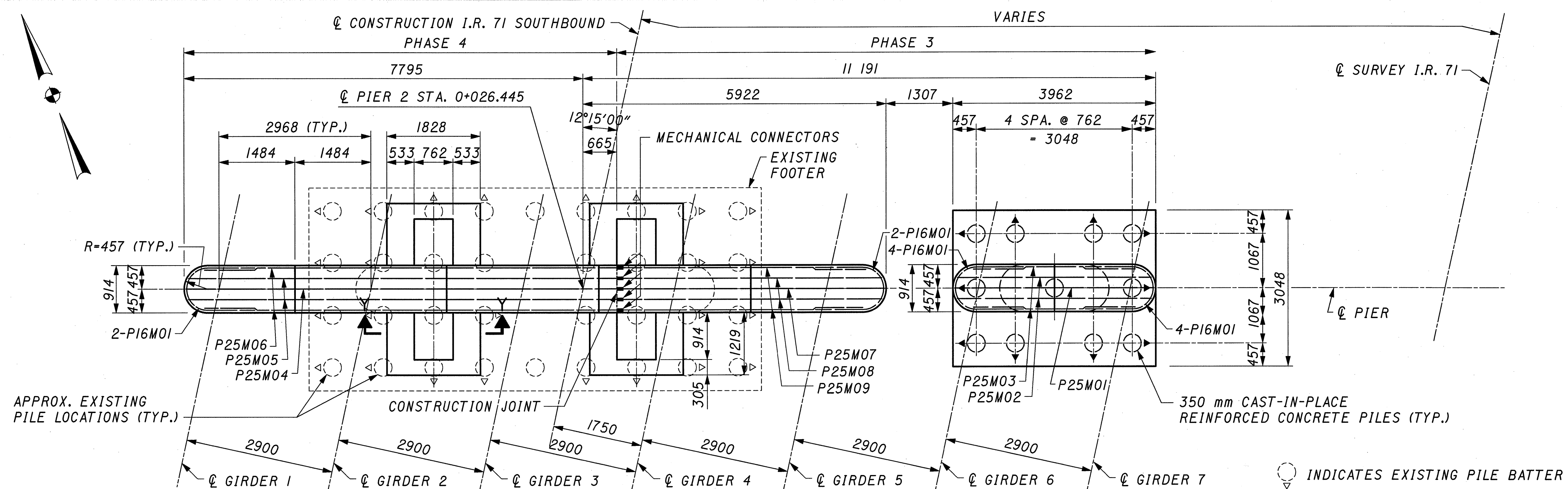
DRAWN <i>KH</i>	DESIGNED <i>BLN</i>
REVISED	CHECKED <i>DT</i>

2 PLAN & ELEVATION SOUTHBOUND
BRIDGE NO. RIC-71-33185 L & R

RIC / ASD-71-20 220 / 0 000

18 / 35

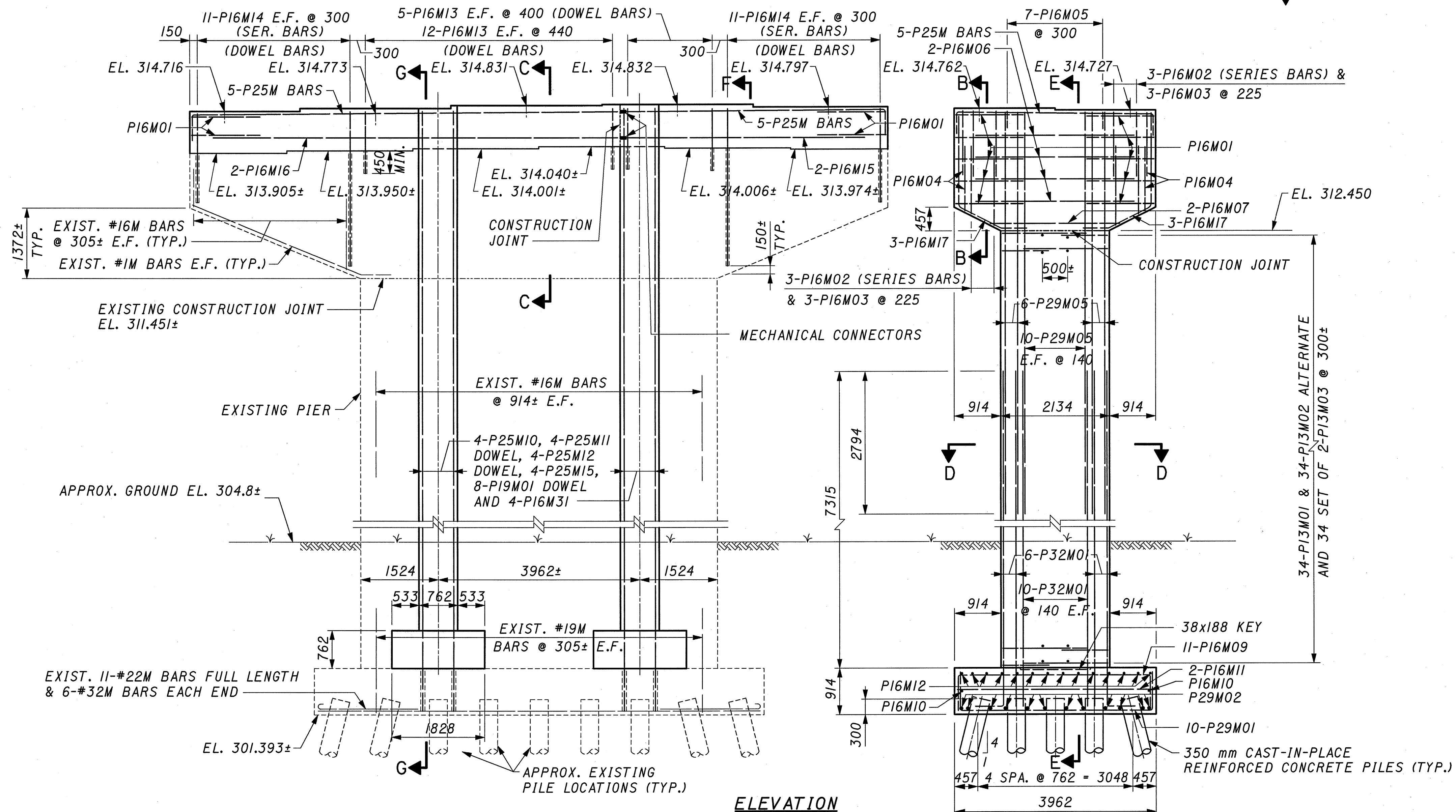
557
666



○ INDICATES EXISTING PILE BATTER

○ INDICATES PILE BATTER 1:4

PLAN



NOTES

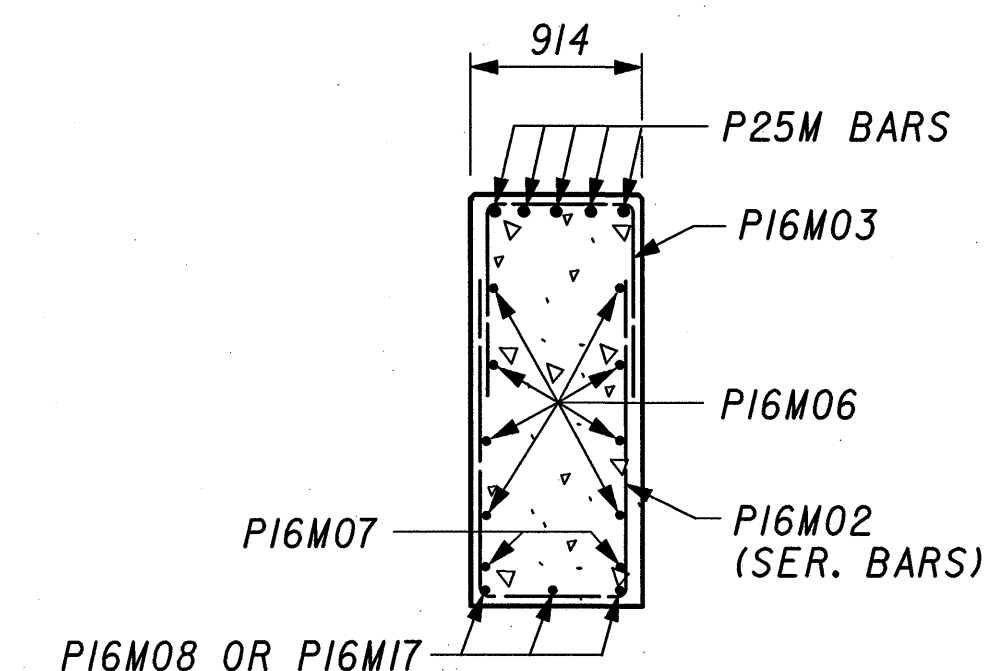
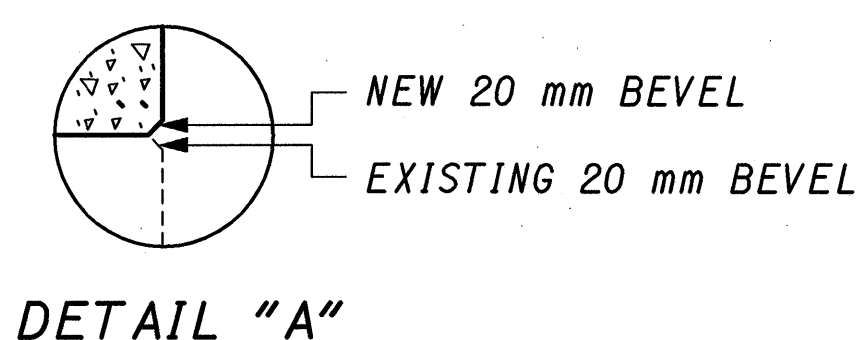
SECTION B-B, C-C & D-D: SEE SHEET 19/35.

SECTION G-G & H-H: SEE SHEET 20/35.

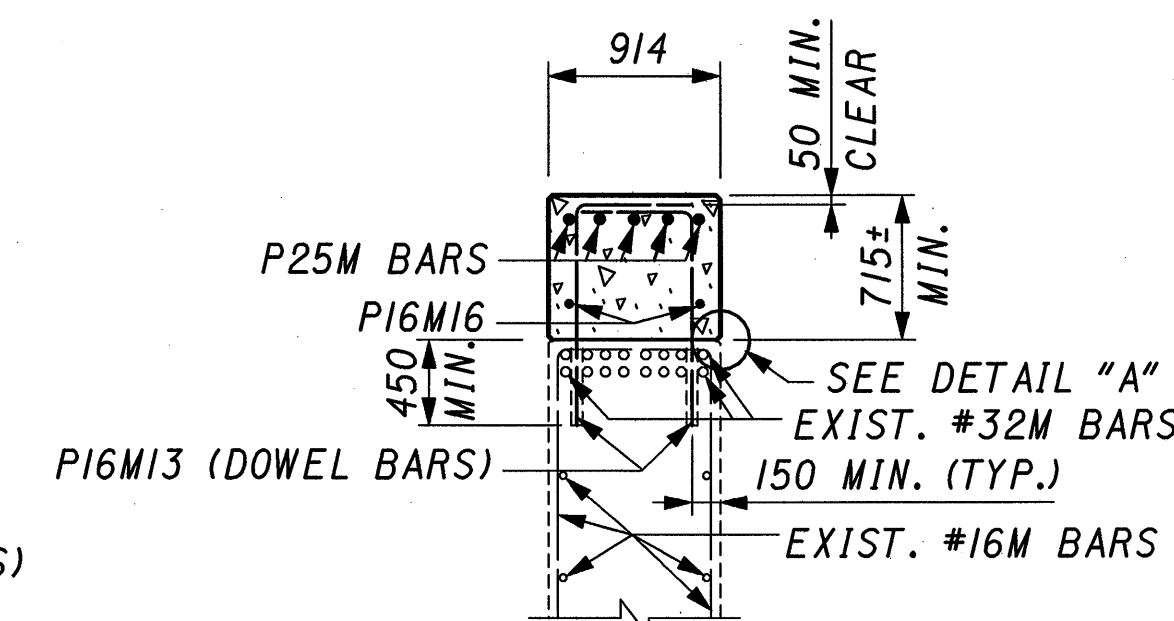
SECTION Y-Y: SEE SHEET 16/35.

ADDITIONAL NOTES: SEE SHEET 20/35.

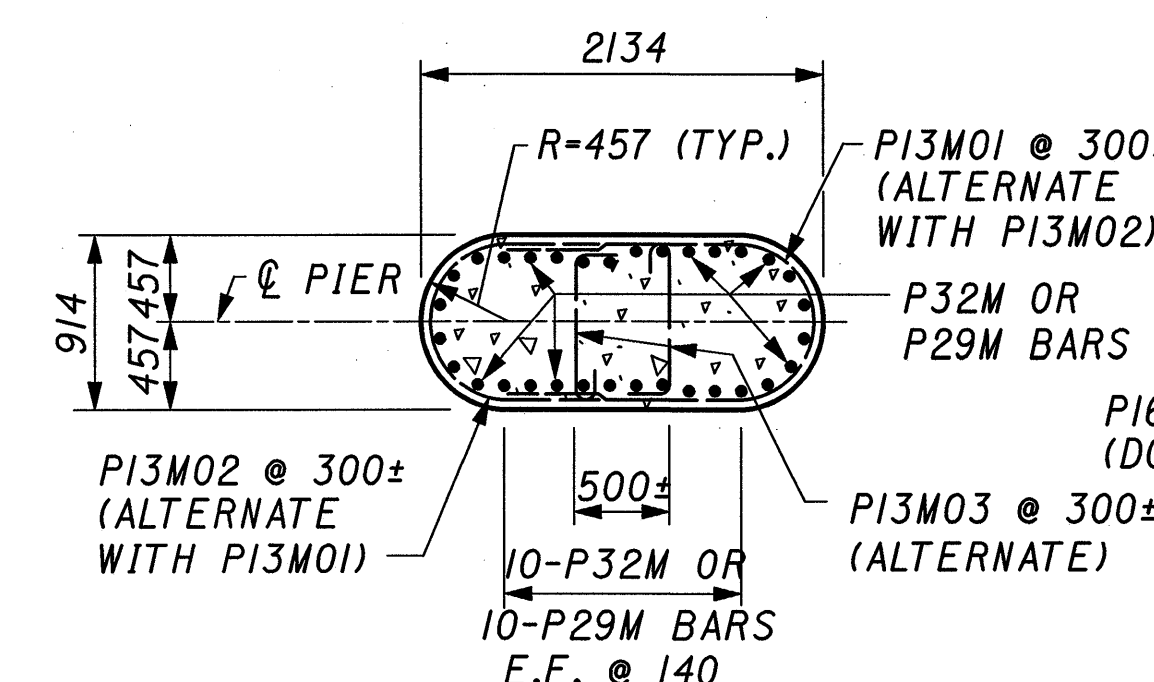
11365SB4.DGN 10/19/99 JLS



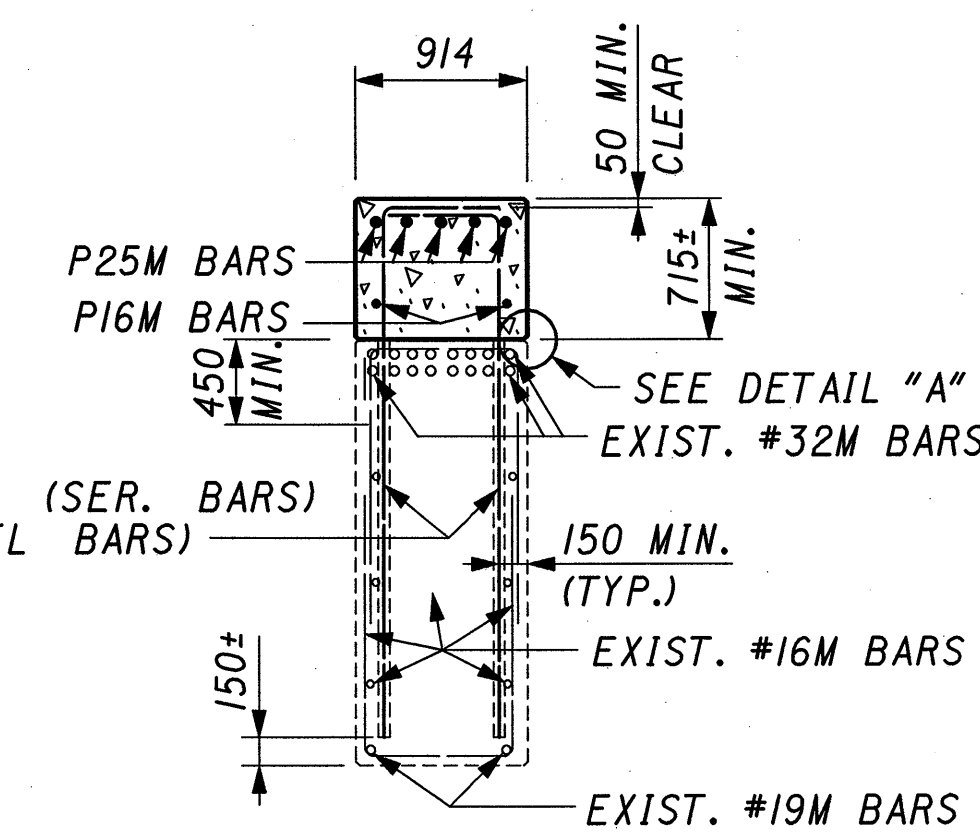
SECTION B-B



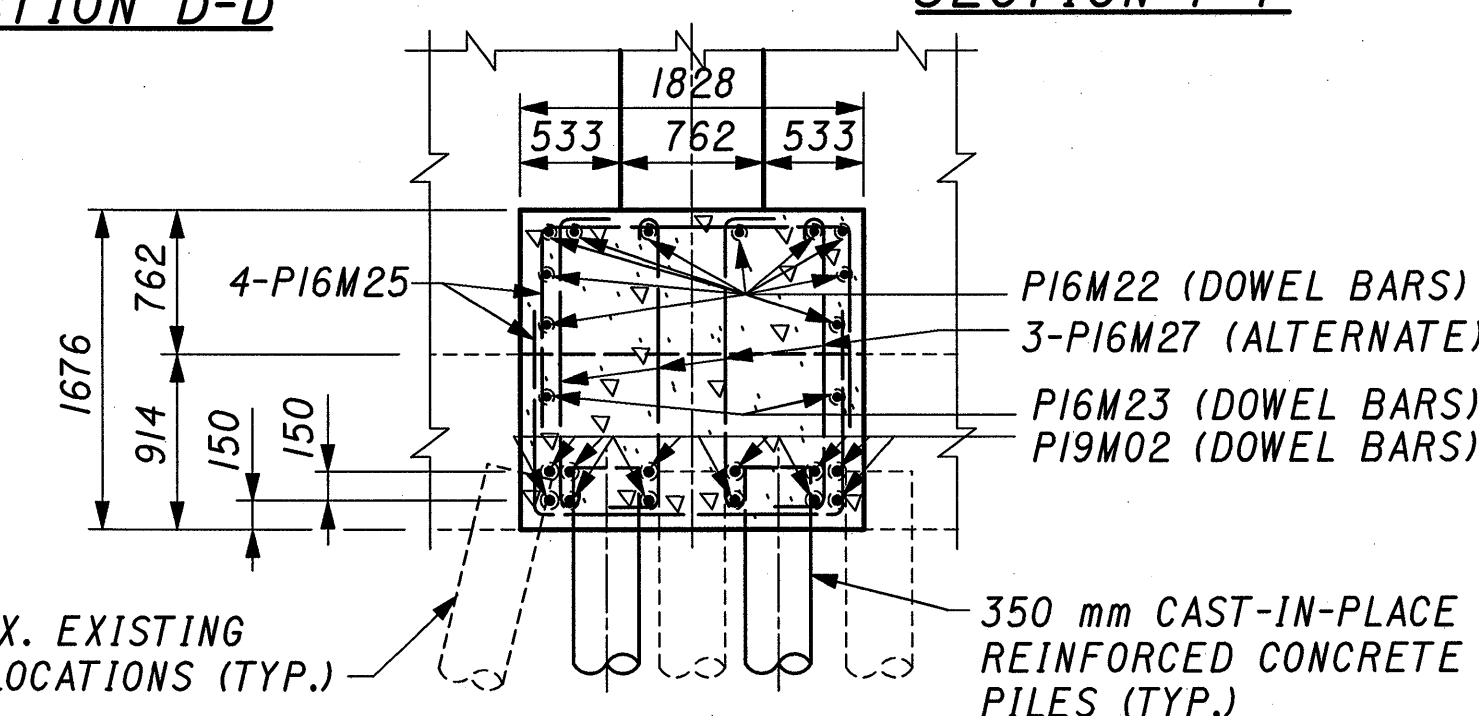
SECTION C-C



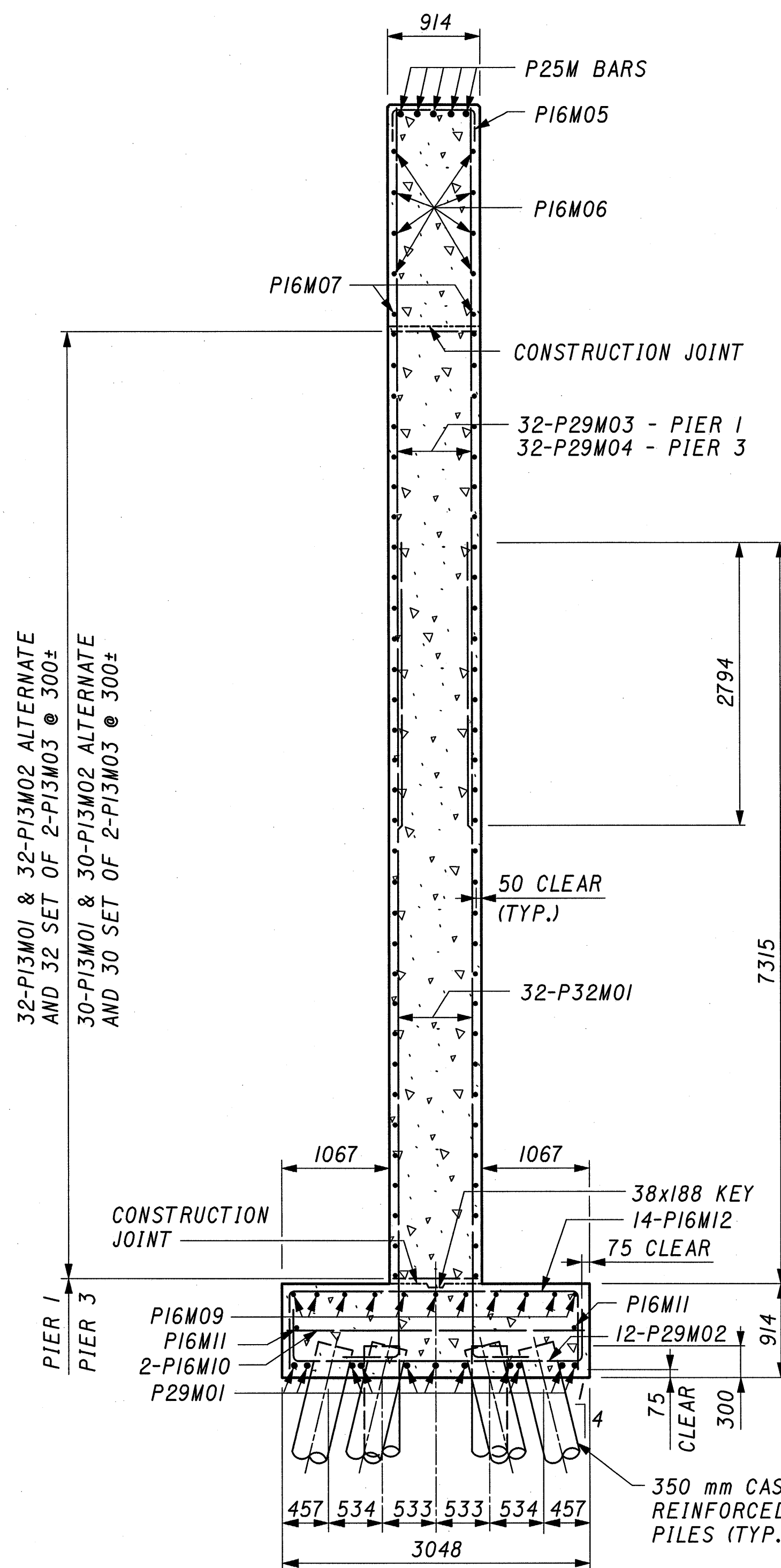
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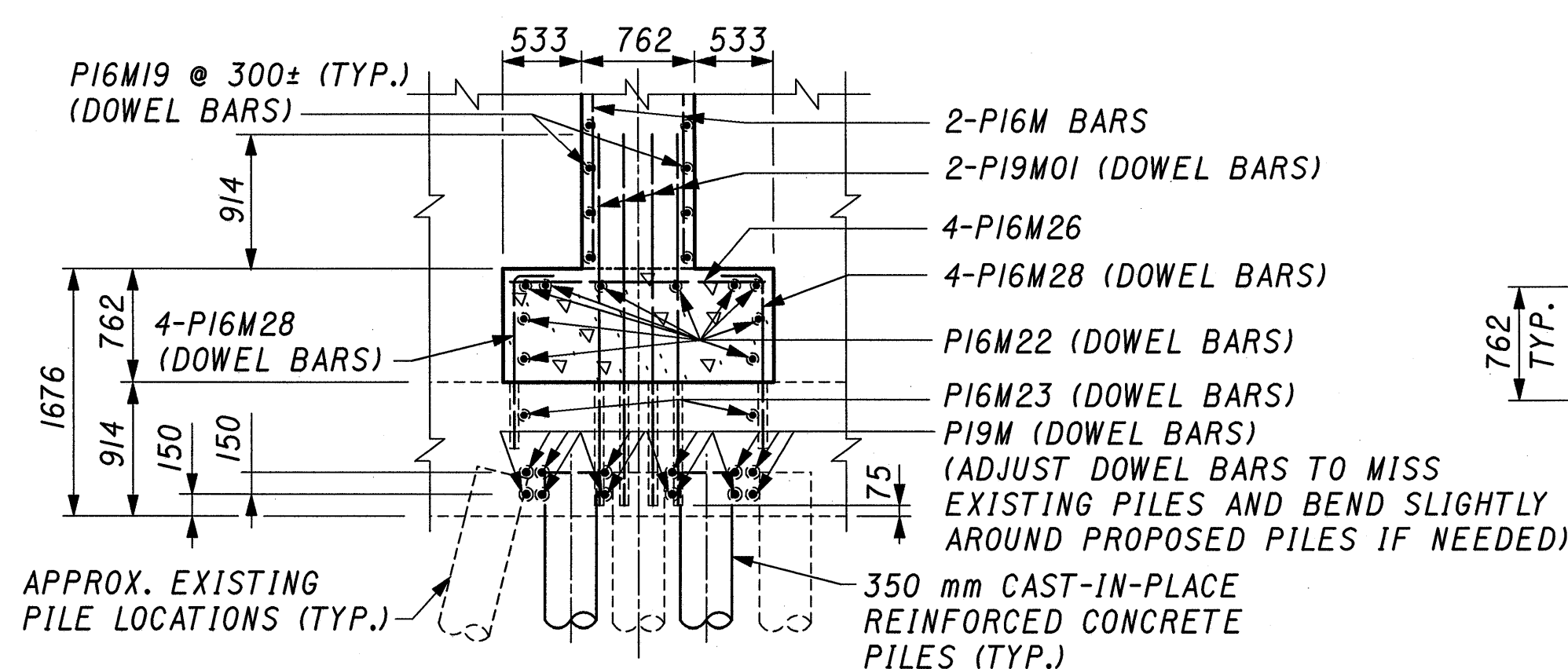
SECTION F-F



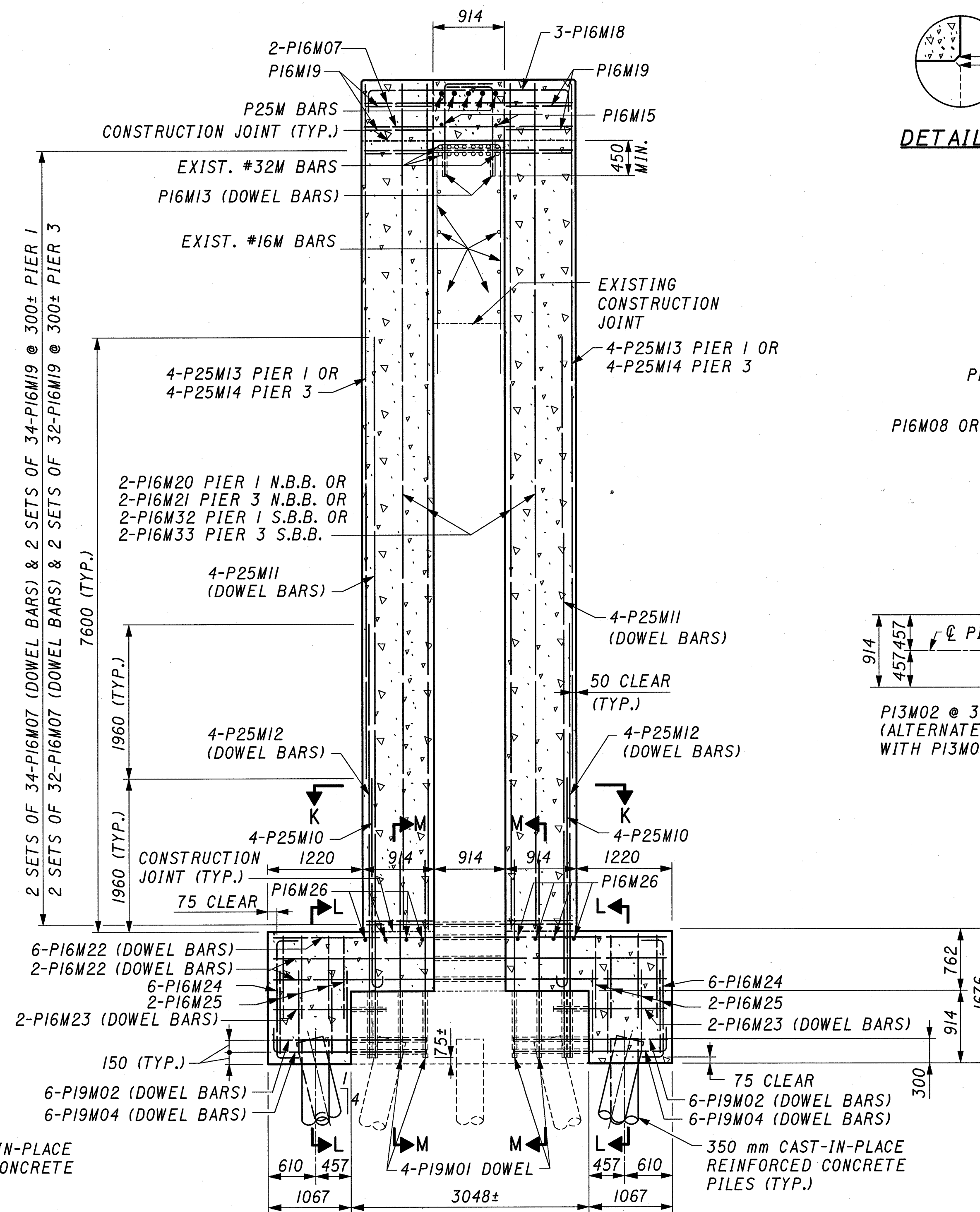
SECTION L-L



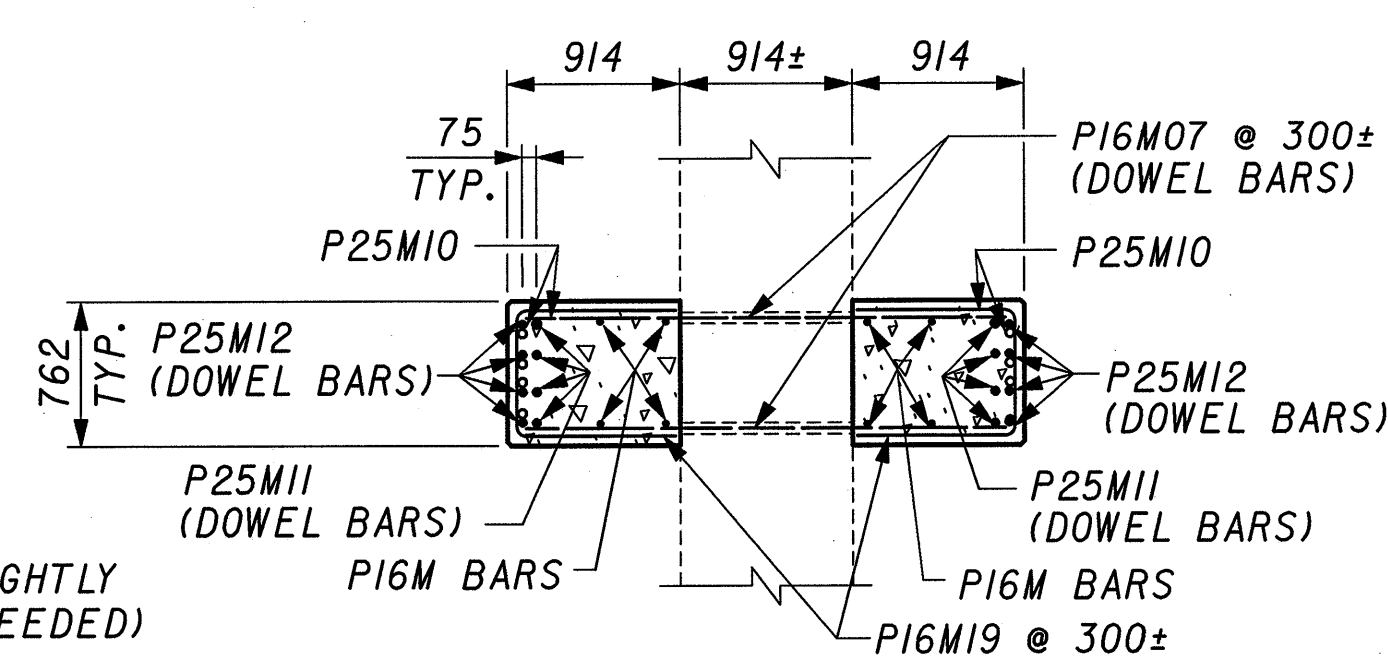
SECTION A-A



SECTION M-M



SECTION E-E



SECTION K-K

NOTES

MATERIAL SHOWN ARE NEW UNLESS OTHERWISE NOTED.

NOTATION: N.B.B. - NORTHBOUND BRIDGE
S.B.B. - SOUTHBOUND BRIDGE
E.F. - EACH FACE

REINFORCING STEEL SPLICE LENGTHS SHALL BE 485 mm FOR #13M BARS, 840 mm FOR #16M HORIZONTAL BARS AND 600 mm FOR #16M VERTICAL BARS.

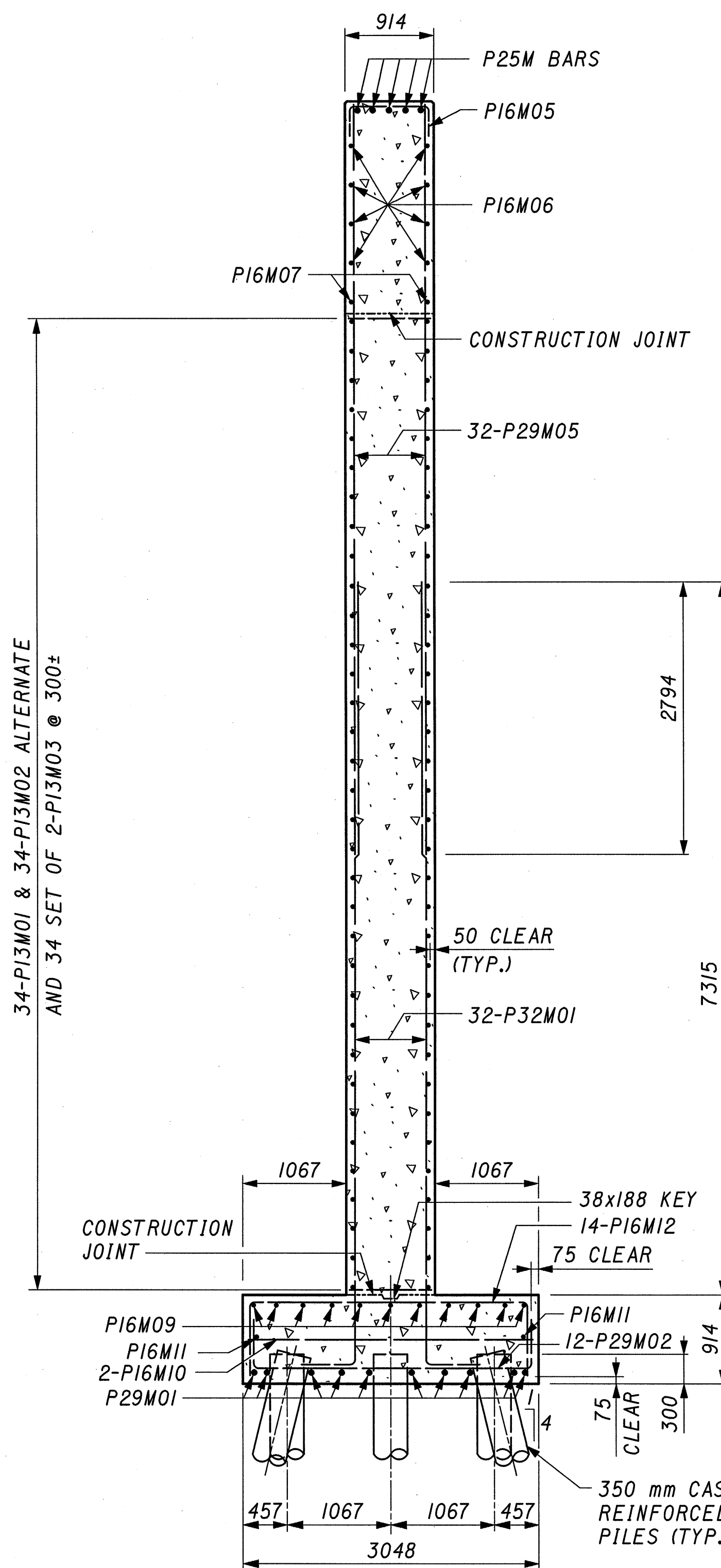
SECTION A-A, B-B, C-C, D-D, E-E & F-F: FOR LOCATIONS SEE PIER
PLAN AND ELEVATION DRAWING.

DOWEL DEPTH SHALL BE 450 mm FOR #16M HORIZONTAL AND VERTICAL BARS AND 965 mm FOR #19M HORIZONTAL BARS.

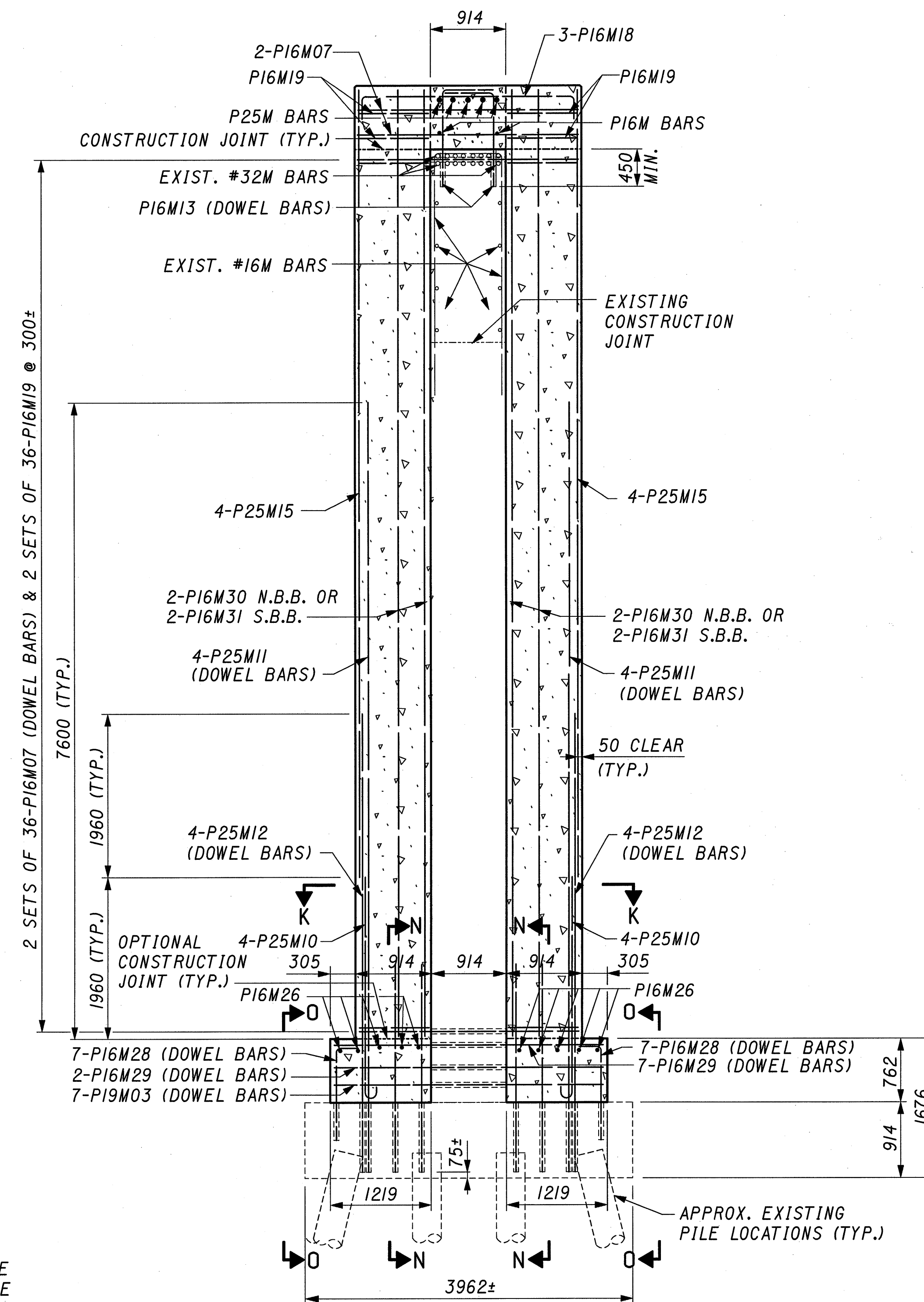
MECHANICAL CONNECTOR DETAIL: SEE SHEET 21 / 35 .

ADDITIONAL NOTES: SEE SHEET 20 / 35 .

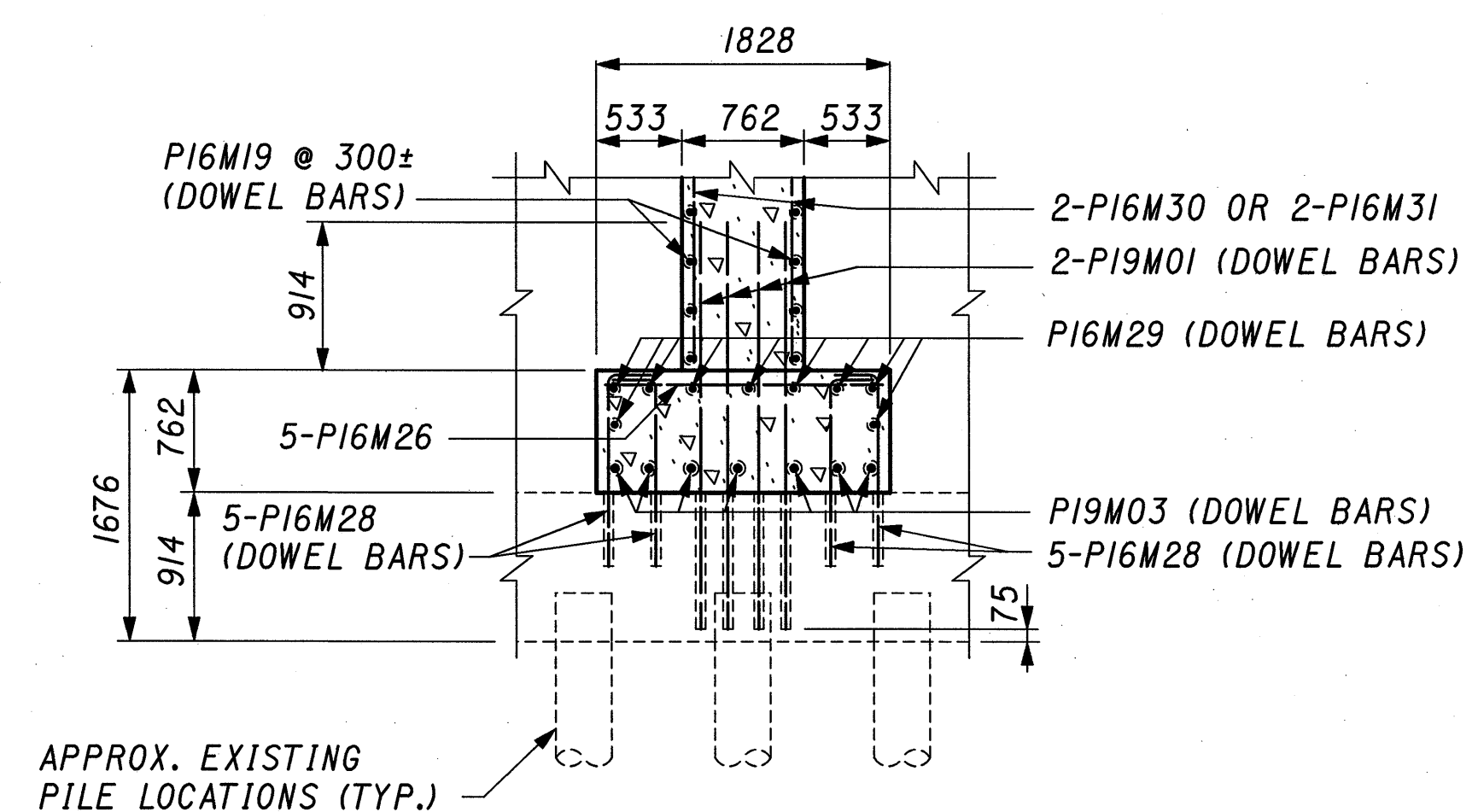
34-P13M01 & 34-P13M02 ALTERNATE
AND 34 SET OF 2-P13M03 @ 300±



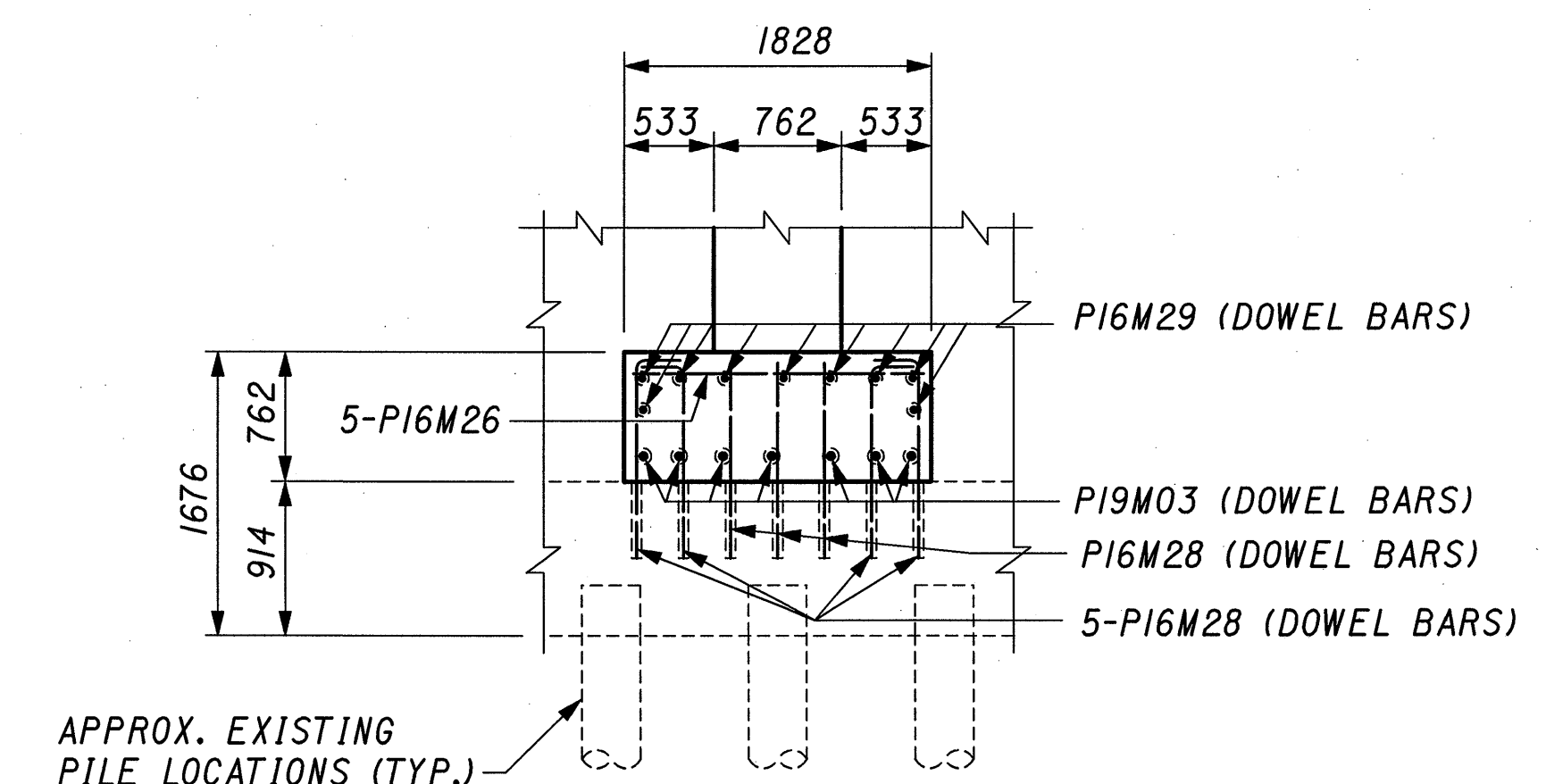
SECTION H-H



SECTION G-G



SECTION N-N



VIEW 0-0

NOTES

SEALING OF CONCRETE SURFACES: ALL EXISTING AND PROPOSED
PIER SURFACES ABOVE THE GROUND LINE SHALL BE SEALED WITH
AN EPOXY URETHANE SEALER.

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 OR THE PRE-SETTING OF BEARING ANCHORS.

ADDITIONAL NOTES: SEE SHEET 19 / 35 .

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

1/365SCI.DGN 10/28/99 JLS

CL SURVEY I.R. 71

16 460 (NORTHBOUND)
VARIES (SOUTHBOUND)

CL CONSTRUCTION I.R. 71



RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/28/99
REVIEWED DAP
STRUCTURE FILE NUMBER 7004869 & 7004834

DRAWN SJK
CHECKED DT

TRANSVERSE SECTION
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

RIC/ASD-71-
20.220/0.000

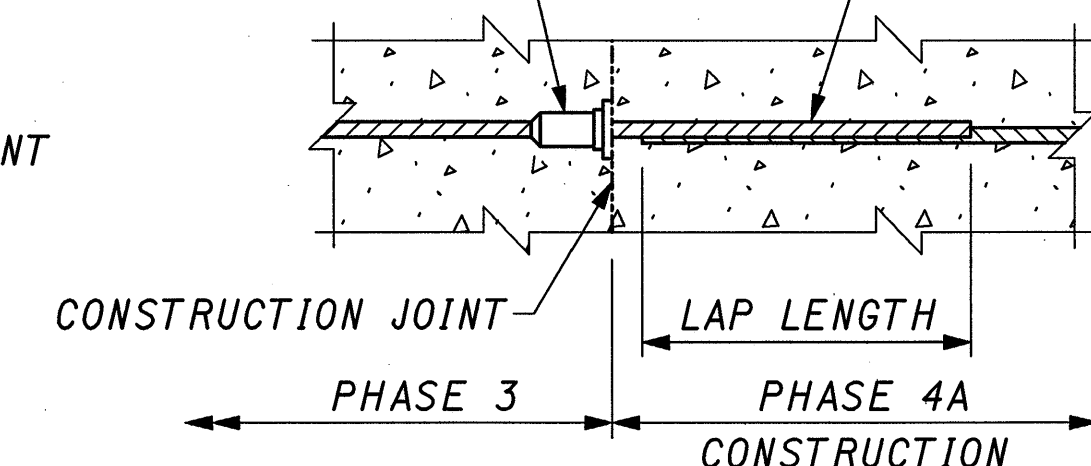
21/35

560
666

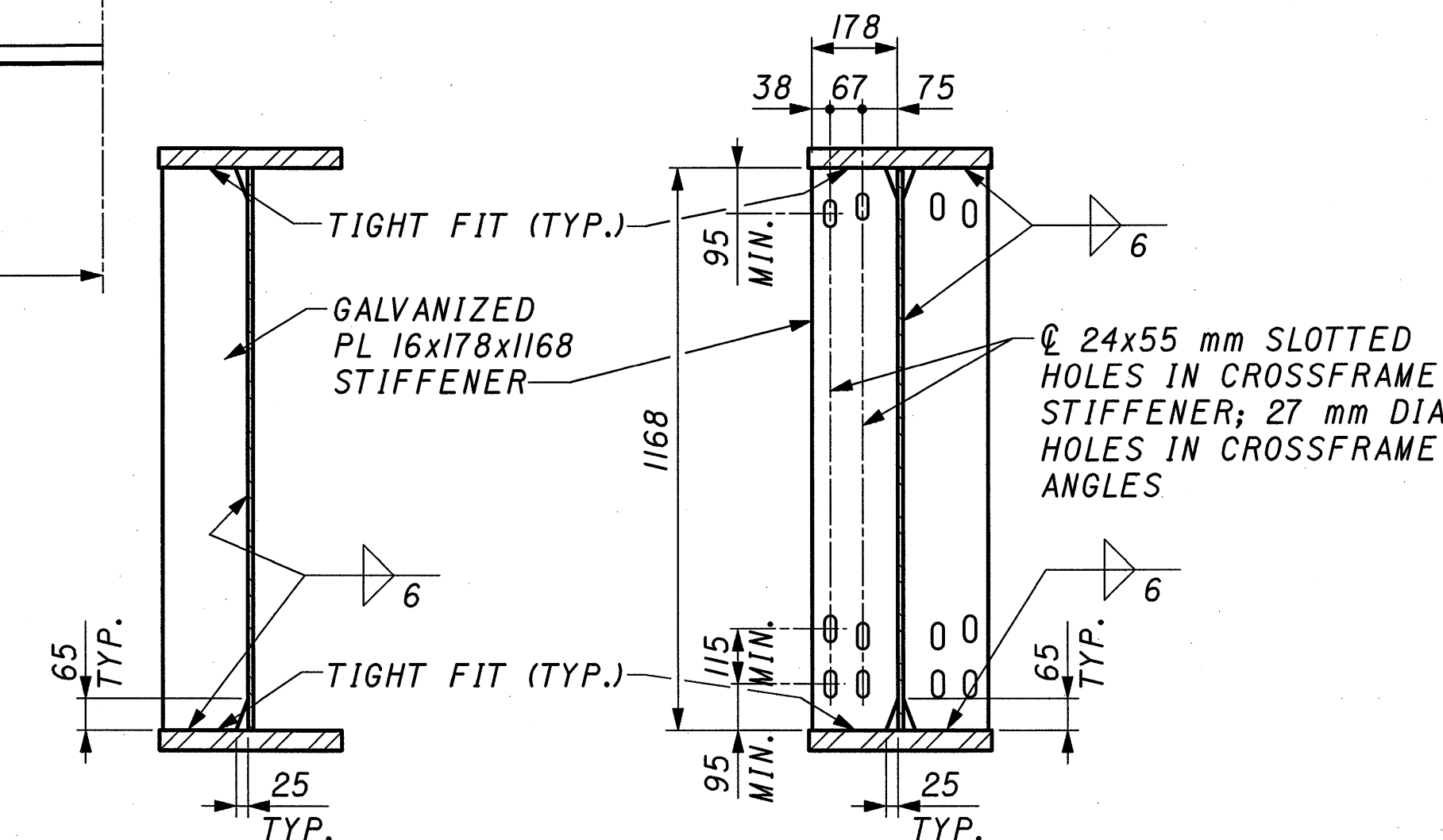
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED.

THREADED DOWEL BAR
CONNECTOR (ATTACHED DURING
PHASE 4 CONSTRUCTION) INCLUDED
WITH MECHANICAL CONNECTOR.

NON-PROTRUDING
MECHANICAL CONNECTOR
WITH ATTACHED
DOWEL BAR.



MECHANICAL CONNECTOR DETAIL



STIFFENER DETAIL

STIFFENER DETAIL
AT CROSSFRAMES

NOTES

DECK SLAB DEPTH: THE DISTANCE SHOWN FROM THE TOP OF THE DECK SLAB TO THE BOTTOM OF THE TOP FLANGE IS THE THEORETICAL DESIGN DIMENSION INCLUDING THE DESIGN HAUNCH THICKNESS OF 94 mm. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, MINUS THE DESIGN HAUNCH THICKNESS, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.

HAUNCH WIDTH: A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING THE QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.

REINFORCING STEEL SPLICE LENGTHS SHALL BE 745 mm FOR #16M BARS

NO WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE WILL BE ALLOWED. SHEAR STUDS SHALL BE INSTALLED BEFORE THE BEAM IS GALVANIZED. FINISHING HARDWARE THAT WILL REMAIN IN THE DECK SHALL BE GALVANIZED.

CONCRETE PARAPET: SEE STANDARD DRAWING SBR-I-99M.

GENERAL STEEL DETAILS: SEE STANDARD DRAWING GSD-I-96M.

100 mm MULTICELL RACEWAY: FOR DETAILS SEE SHEETS 538 AND 539 OF 666.

CL CONSTRUCTION I.R. 71

PHASE 4A

PHASE 4

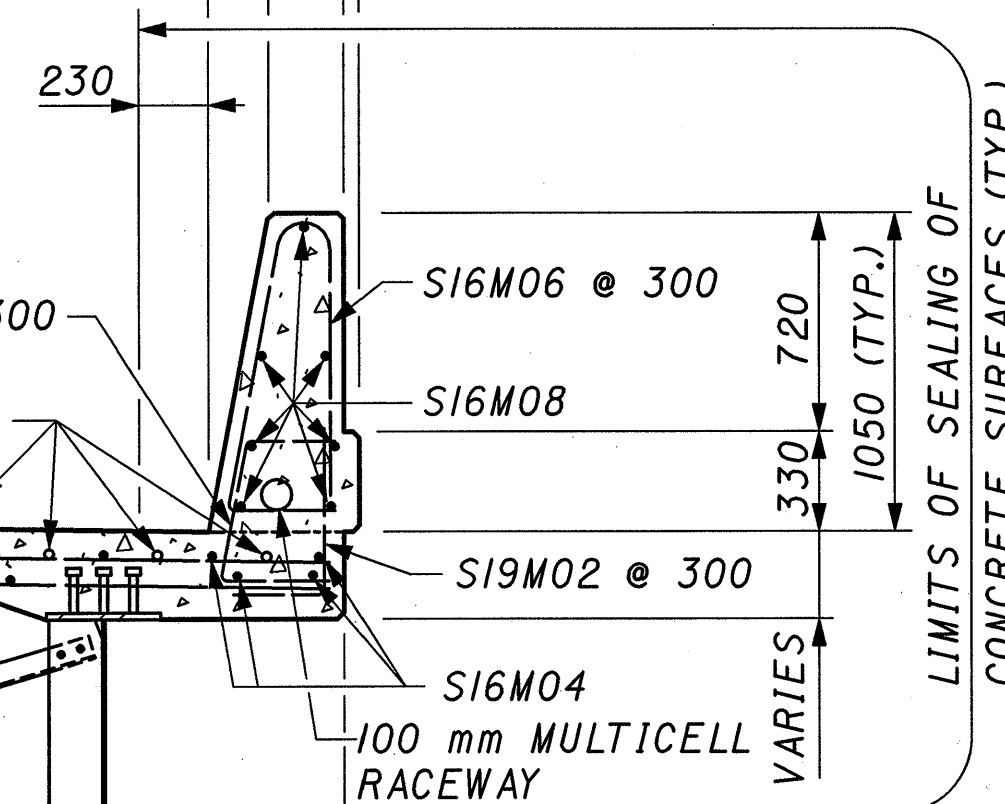
CONSTRUCTION
SEQUENCE

19 020 o/o PARAPET

3600
LANE

3720
OUTSIDE SHOULDER

300 300 LIMITS OF TREATING CONCRETE
BRIDGE DECK WITH HMWM RESIN
FULL LENGTH OF BRIDGE



PROFILE GRADE

SI9M01 @ 300
SI6M05 OVER PIER (TYP.)

SI6M06 @ 300
SI6M08

SI9M02 @ 300
SI6M04

100 mm MULTICELL
RACEWAY

GALVANIZED
11x1168 WEB PLATE (TYP.)

GALVANIZED 381 FLANGE PLATE (TYP.)
(THICKNESS VARIES)

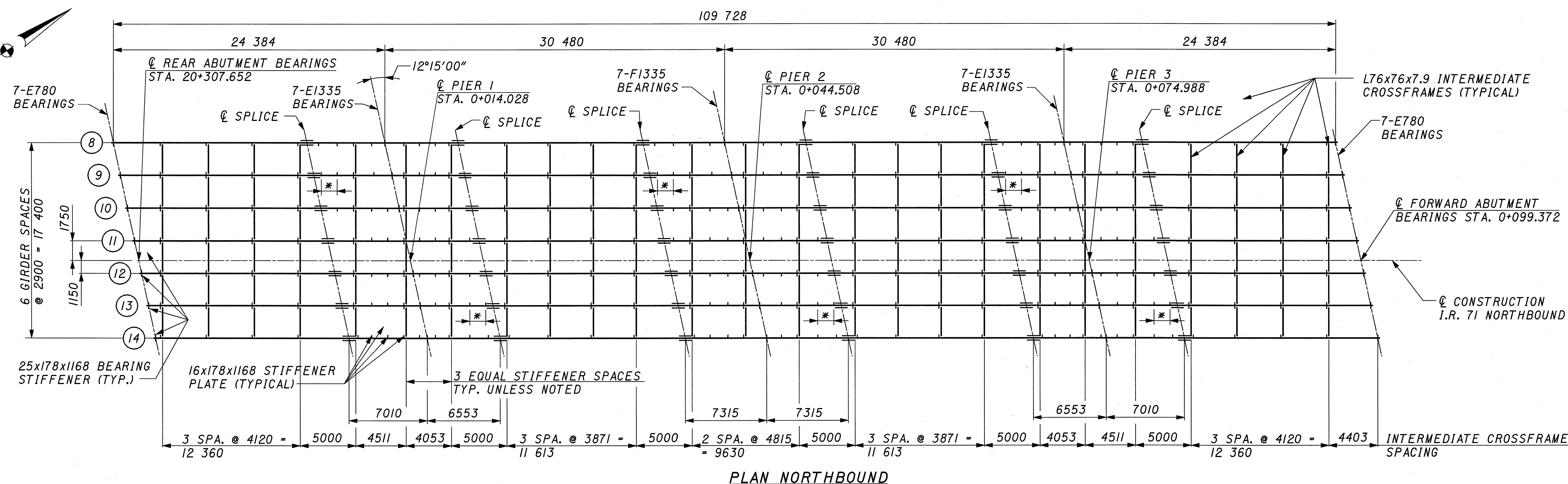
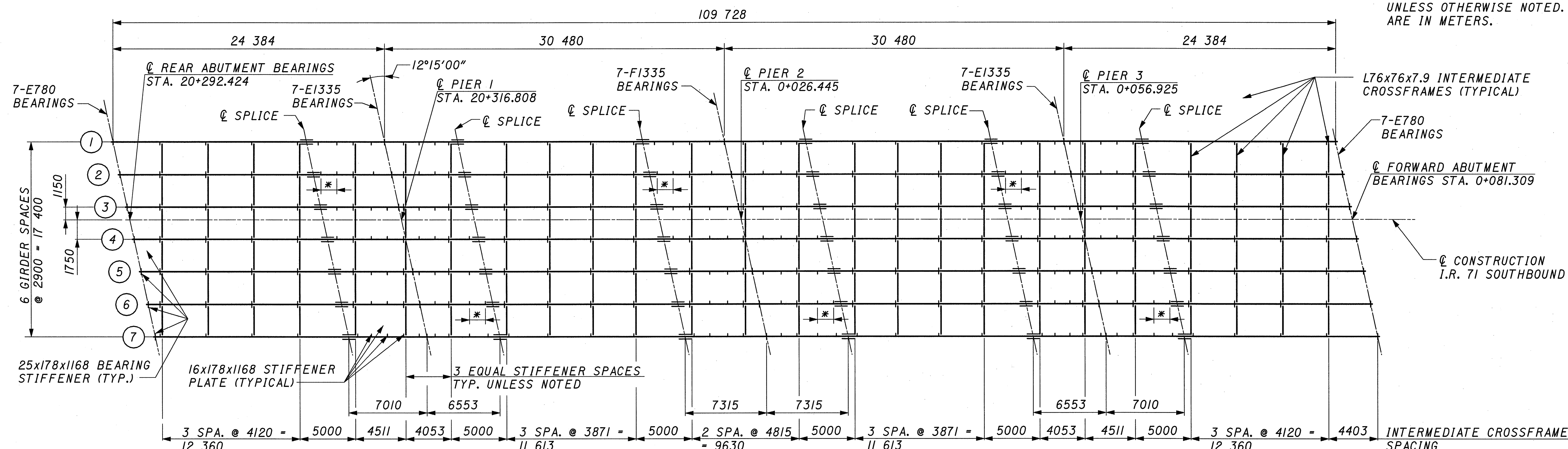
HAUNCH WIDTH
(SEE NOTE)

2 GIRDER SPACES @ 2900 = 5800

12 3 NORTHBOUND
1 2 SOUTHBOUND

TRANSVERSE SECTION
NORTHBOUND BRIDGE (SHOWN)
SOUTHBOUND BRIDGE (OPPOSITE HAND)

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED. STATIONS
ARE IN METERS.

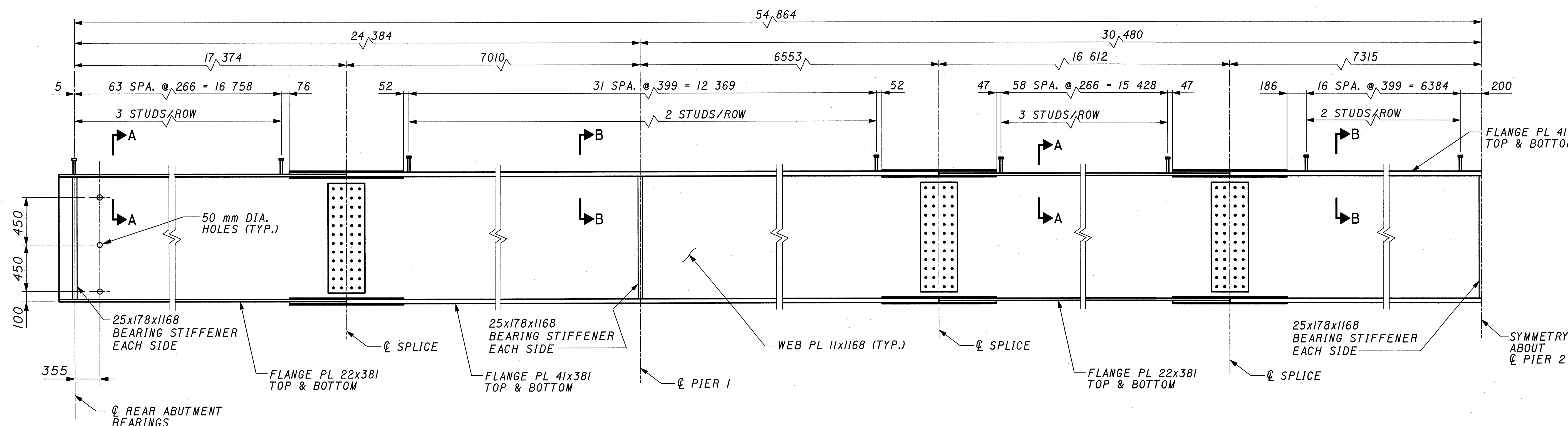


NOTES

STIFFENER DETAIL: SEE SHEET 21/35.

BEARING STIFFENER DETAIL: SEE SHEET 26/35.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED



GIRDER ELEVATION

NOTES

GALVANIZED STEEL

GALVANIZED STEEL SHALL BE GALVANIZED AFTER FABRICATION, INCLUDING INSTALLATION OF SHEAR STUDS, PER 711.02. THE CONTRACTOR SHALL BE VERY CAREFUL IN HANDLING THE GALVANIZED STEEL TO MINIMIZE SCRATCHES AND ABRASIONS OF THE FINISH. WIRE ROPE SLINGS AND METAL HOOKS SHALL BE PADDED WITH WOOD, OR REINFORCED FABRIC WEBBING SHALL BE USED FOR MATERIAL HANDLING. SCRATCHES AND ABRASIONS OF THE GALVANIZED FINISH SHALL BE TOUCHED UP IN THE FIELD BY "COLD APPLIED GALVANIZING" AS DIRECTED BY THE ENGINEER. CONNECTION BOLTS FOR GALVANIZED STEEL MEMBERS SHALL BE MECHANICALLY GALVANIZED.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL SHALL BE ASTM A572M AND GALVANIZED PER 711.02.
- 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).

3. THE FIELD SPLICES SHALL BE WITH 25 mm DIAMETER HIGH STRENGTH BOLTS CONFORMING TO ASTM A325M. THE BOLTS SHALL BE PLACED WITH THEIR HEADS ON THE OUTSIDE FACE OF THE EXTERIOR GIRDER, ON THE BOTTOM OF THE BOTTOM FLANGE PLATES AND TOP OF THE TOP FLANGE PLATES.

4. GIRDERS, CROSSFRAMES AND ACCESSORIES SHALL BE GALVANIZED IN CONFORMANCE WITH THE REQUIREMENT OF 711.02.

5. BOLT HOLES SHALL BE FULL SIZE PRIOR TO GALVANIZING. HIGH STRENGTH BOLTS SHALL MEET THE REQUIREMENT OF ASTM A325M. BOLTED CONTACT SURFACES SHALL BE LIGHTLY SCORED BY WIRE BRUSH OR ABRASIVE BLASTING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. POWER WIRE BRUSHING IS NOT PERMITTED. 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.

6. AREAS OF FIELD CONNECTIONS SHALL HAVE A UNIFORM COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPlice PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

7. BEAMS AND GIRDERS SHALL BE PREPARED BY CONFORMANCE WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE NO. SIX (6) COMMERCIAL BLAST CLEANING. ALL MATERIAL SHALL BE FREE OF PAINT MARKS EXCEPT THAT SECONDARY ANGLES, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED.

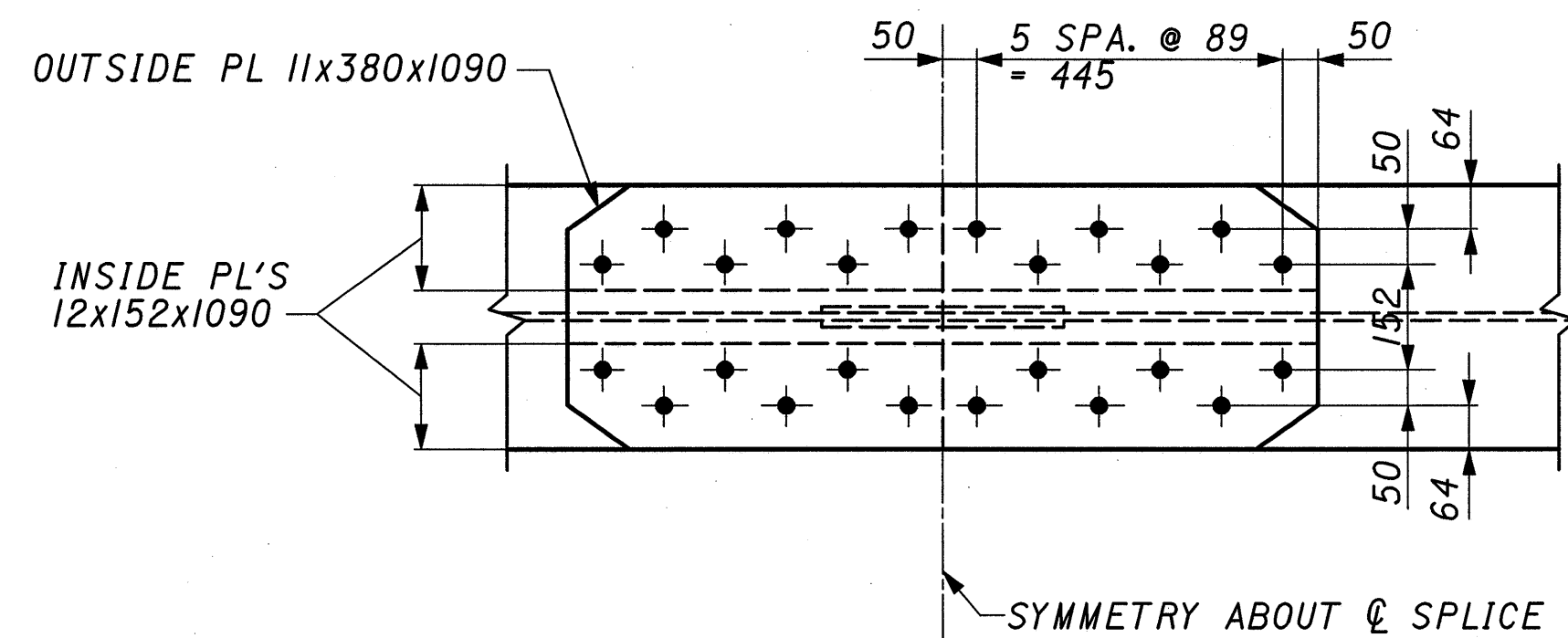
8. EDGES OF MATERIAL SHALL BE FREE OF INJURIOUS IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. PRIOR TO GALVANIZING, IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6. IMPERFECTIONS THAT ARE GREATER IN DEPTH THAN THE LIMITS ALLOWED BY GRINDING SPECIFIED BY ASTM A6 SHALL BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER SHALL BE AT THE DISCRETION OF THE DIRECTOR.

9. AFTER GALVANIZING, MATERIAL SHALL BE PLACED IN SHOP ASSEMBLY PER 863.26 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST FABRICATORS ORIGINAL RECORDED LAYDOWN DIMENSION. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZER'S FACILITY BY THE FABRICATOR'S PERSONNEL IF APPROVED BY THE DIRECTOR.

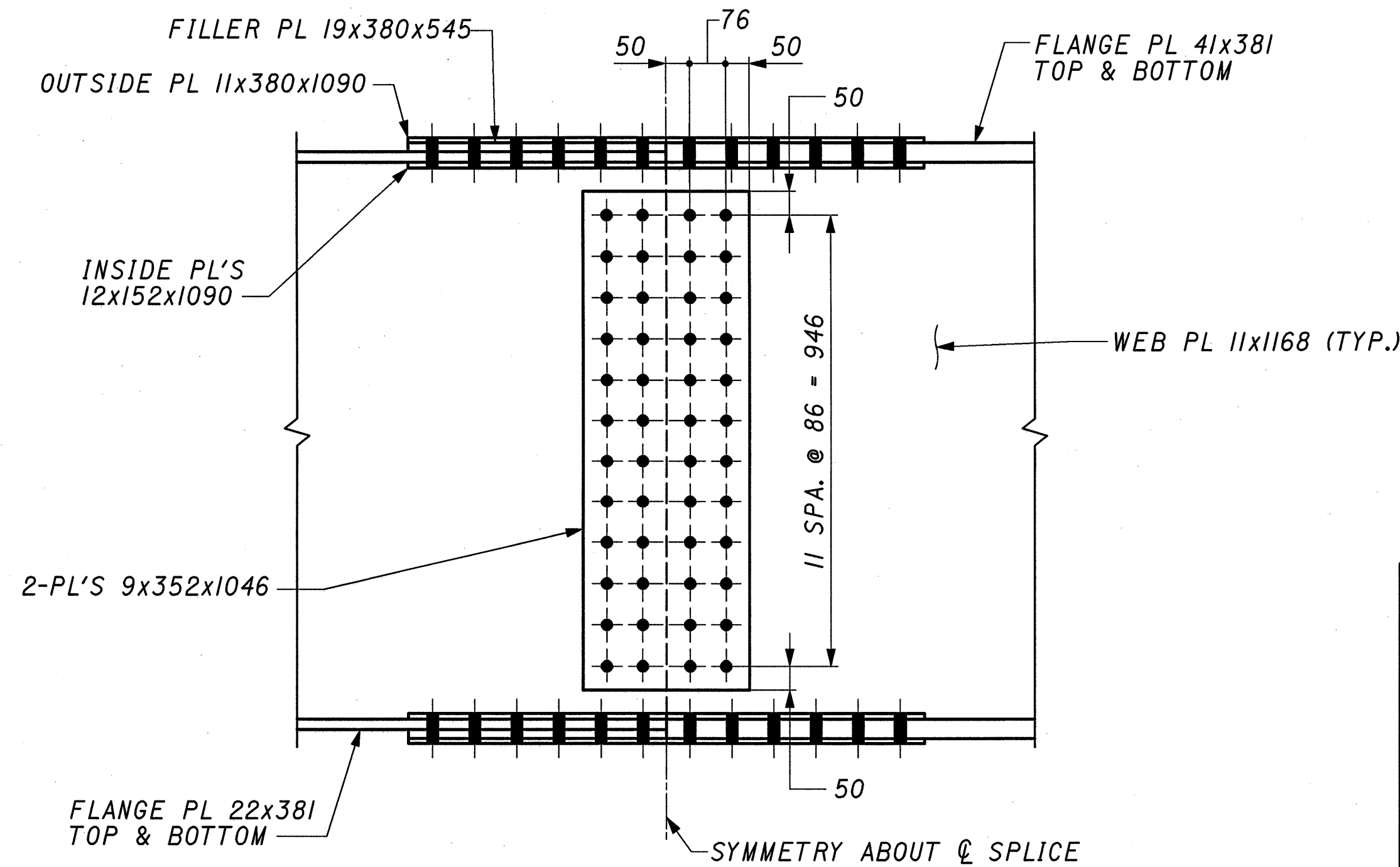
SECTIONS A-A & B-B: SEE SHEET [24/35].

GIRDER SPlice DETAILS: SEE SHEET [24/35].

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

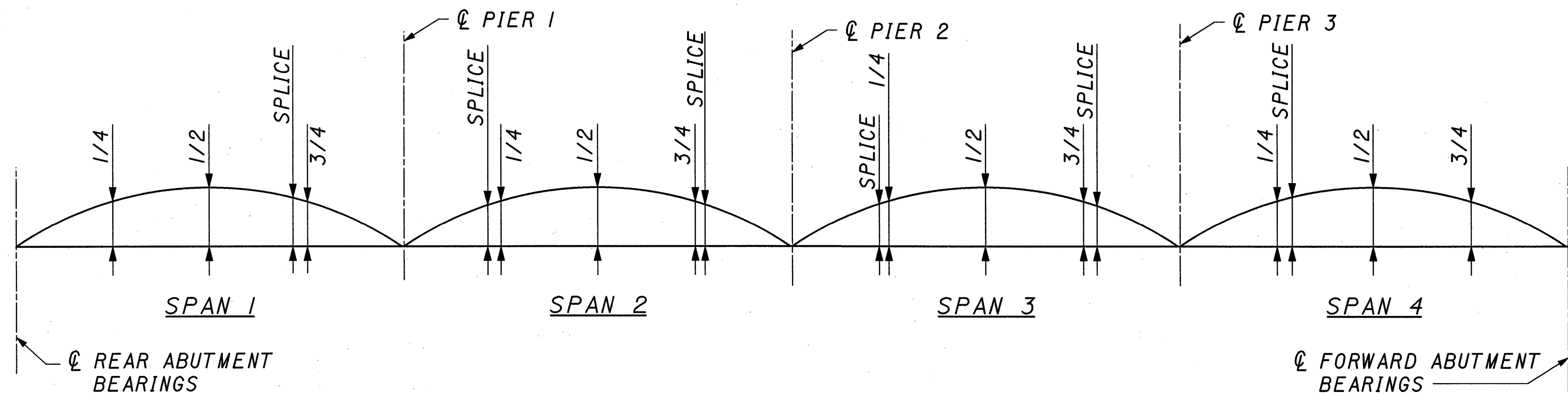


TOP VIEW



ELEVATION VIEW

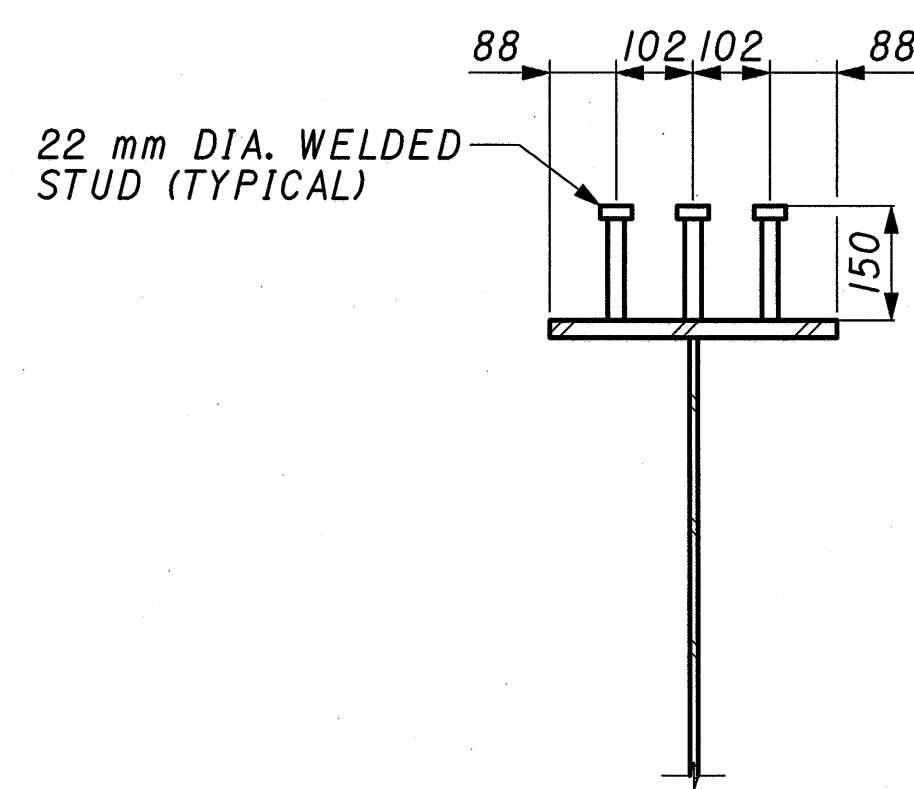
GIRDER SPLICE DETAILS



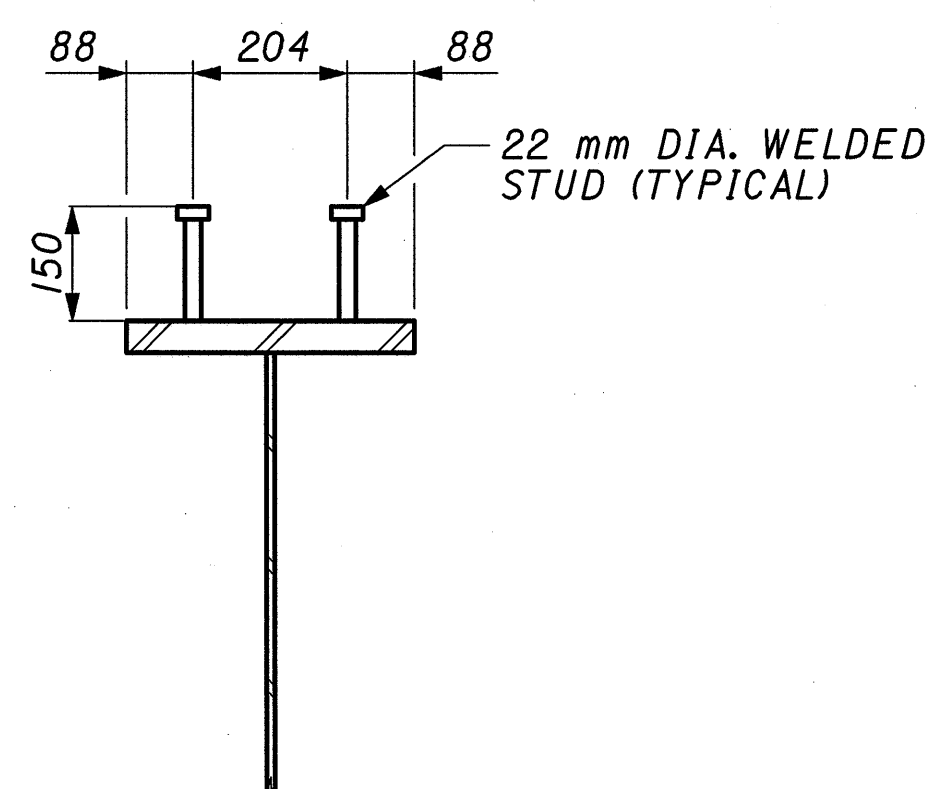
CAMBER DIAGRAM

DEFLECTION AND CAMBER TABLE

DEFLECTION AND CAMBER TABLE																		
	SPAN 1				SPAN 2					SPAN3					SPAN4			
	1/4	1/2	SPLICE	3/4	SPLICE	1/4	1/2	3/4	SPLICE	SPLICE	1/4	1/2	3/4	SPLICE	1/4	SPLICE	1/2	3/4
DEFLECTION DUE TO WEIGHT OF STEEL	3	3	2	2	2	2	3	2	2	2	2	3	2	2	2	2	3	3
DEFLECTION DUE TO REMAINING DEAD LOAD	16	19	10	8	8	10	20	11	10	10	11	20	10	8	8	10	19	16
REQUIRED SHOP CAMBER	19	22	12	10	10	12	23	13	12	12	13	23	12	10	10	12	22	19



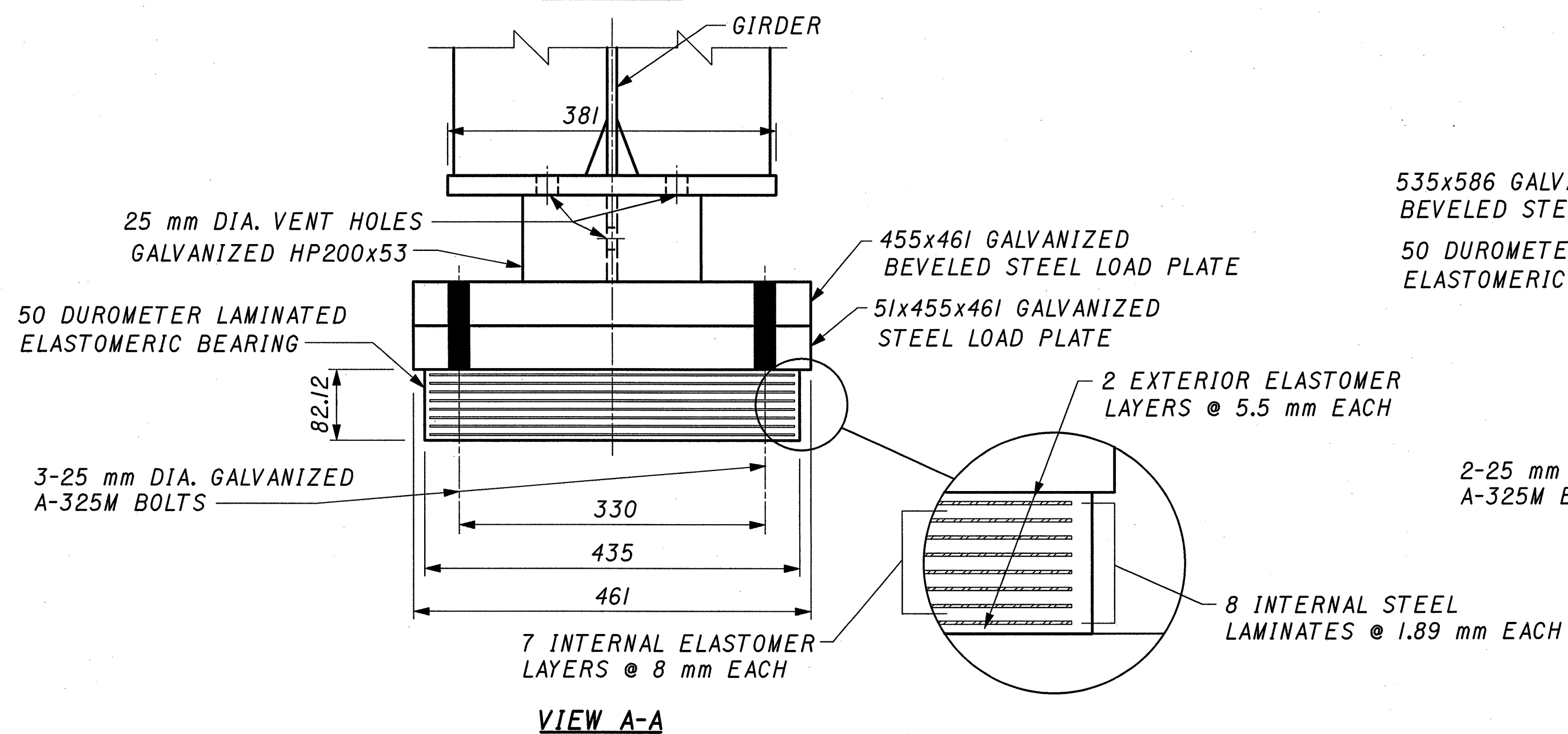
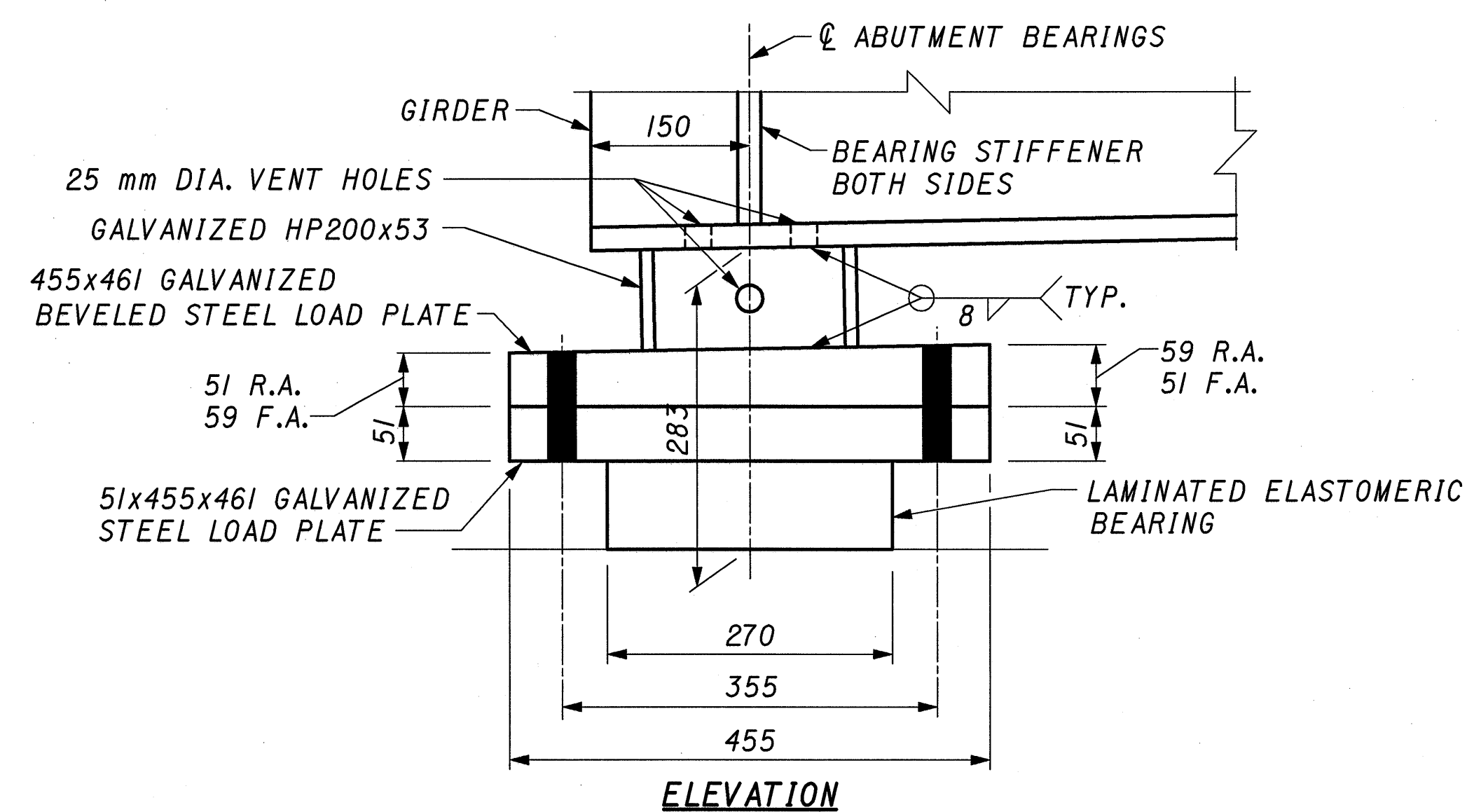
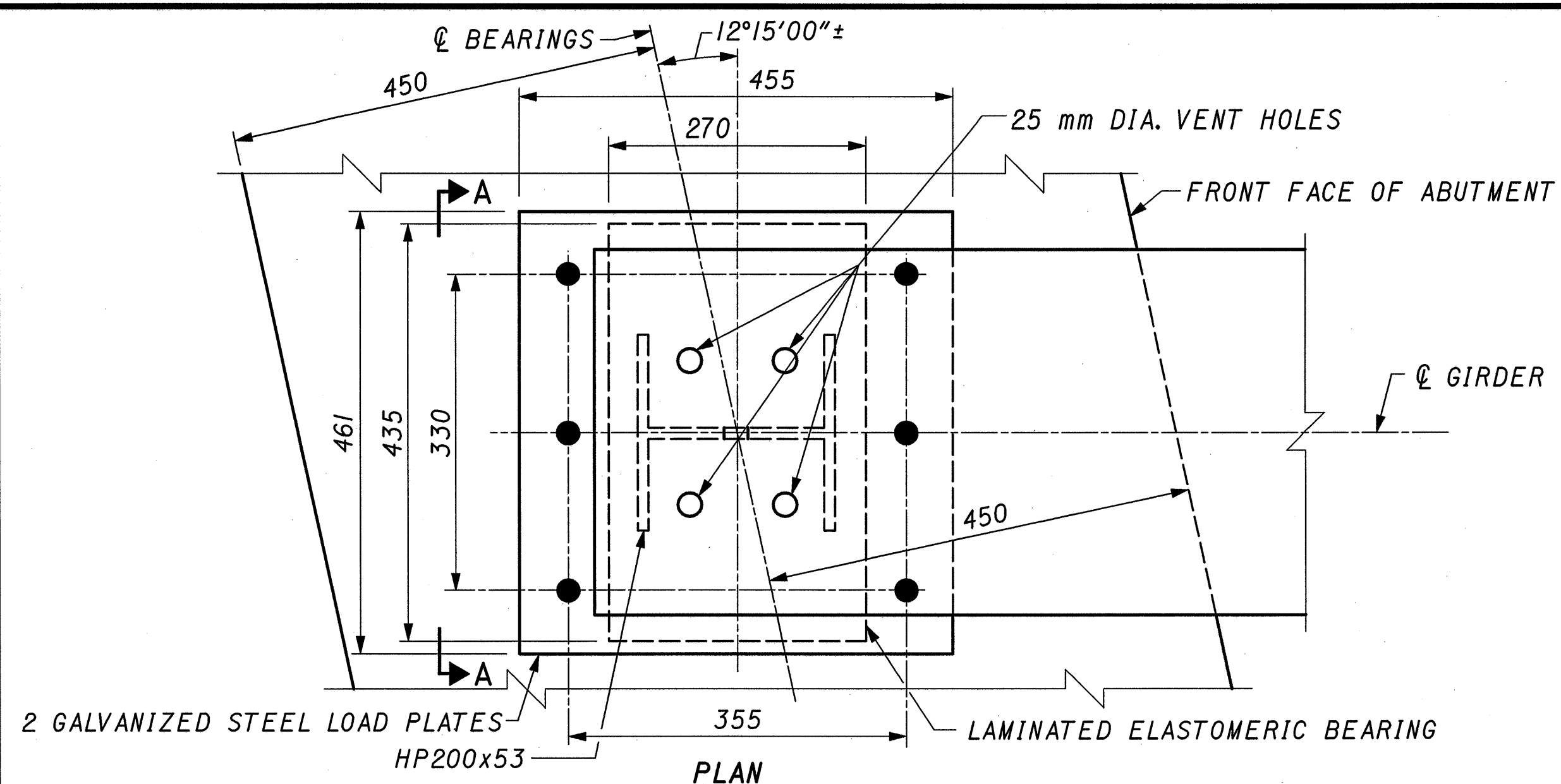
SECTION A-A



SECTION B-B

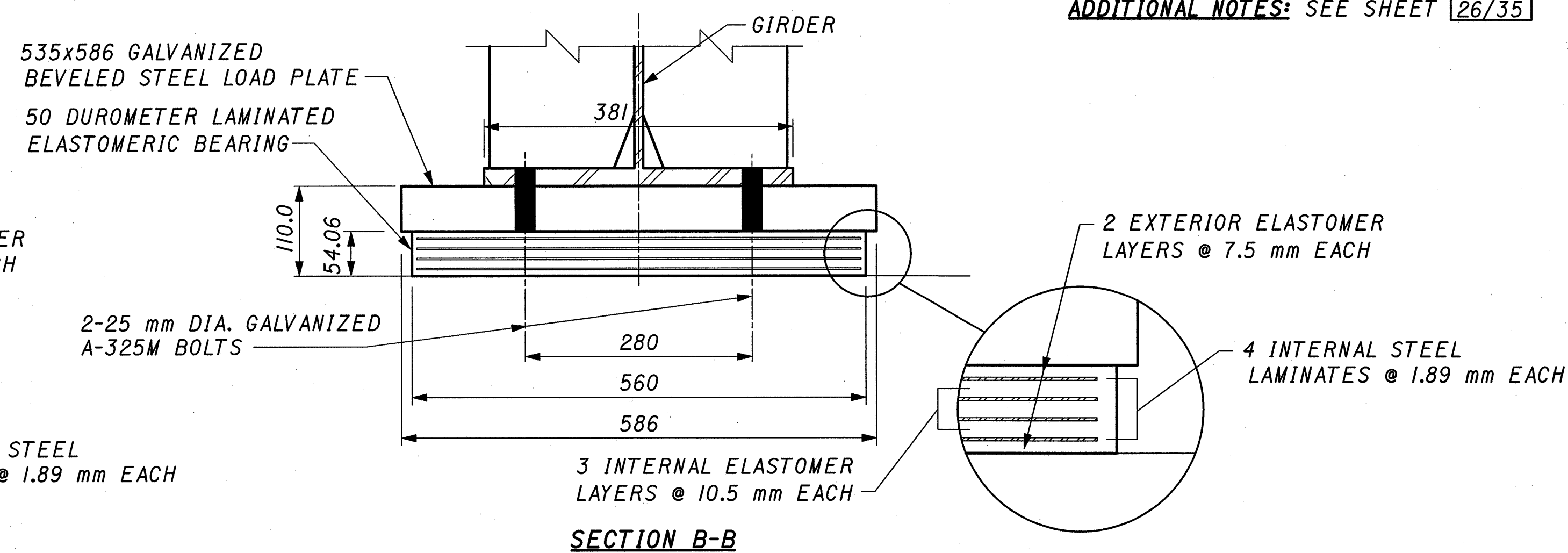
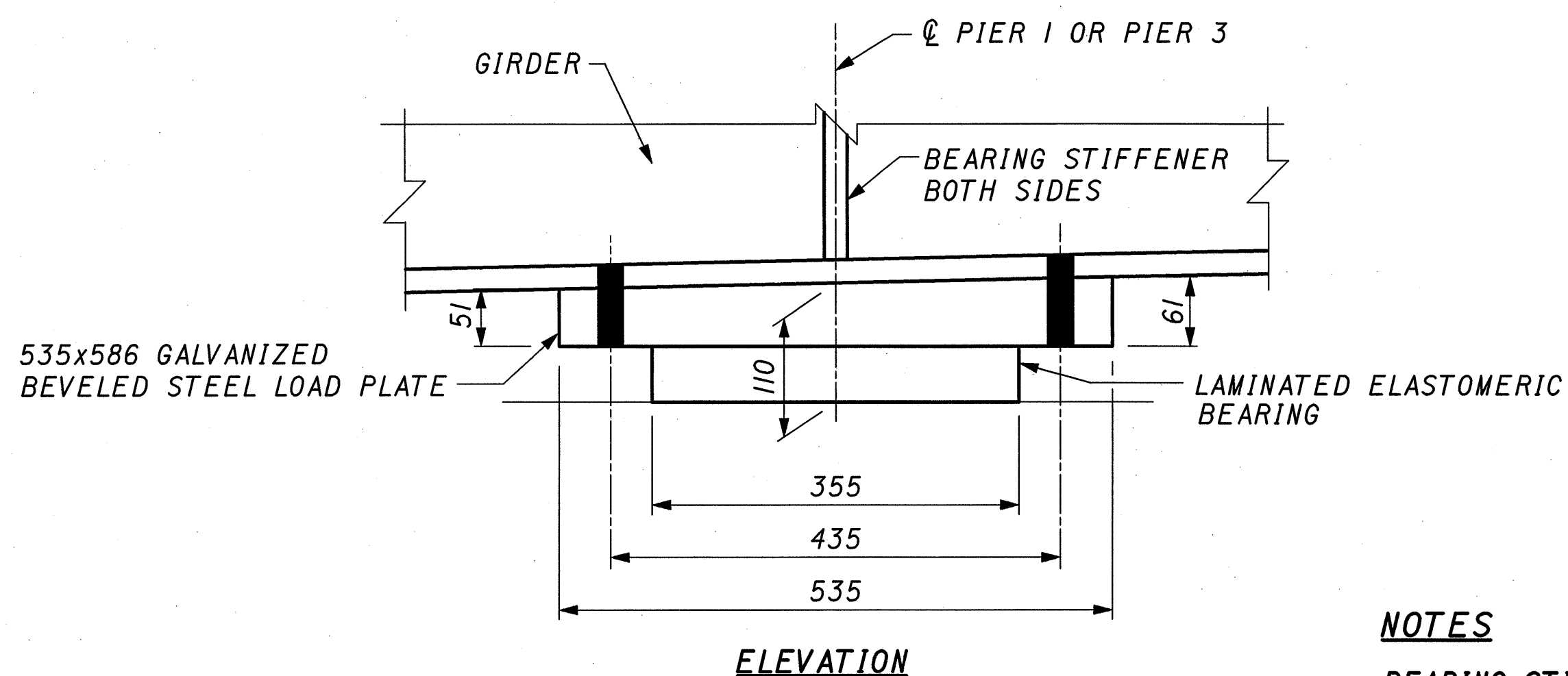
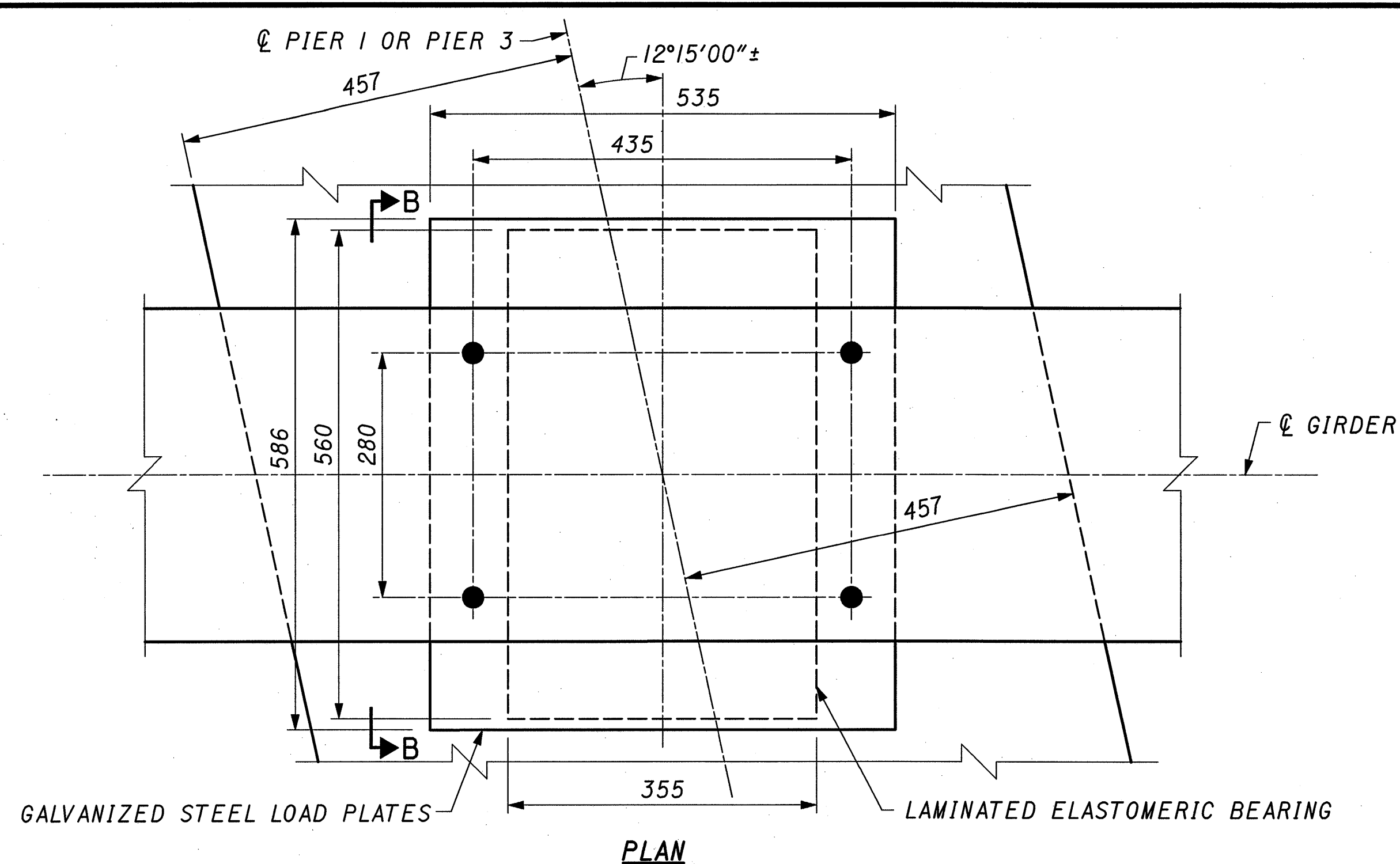
NOTES:

ALL BOLTS SHALL BE 25 mm DIAMETER
GALVANIZED A325M.



LAMINATED ELASTOMERIC BEARING E-780 (82.12x270x435) (ABUTMENTS)

DEAD LOAD REACTION = 494 kN
LIVE LOAD REACTION = 220 kN
TOTAL = 714 kN



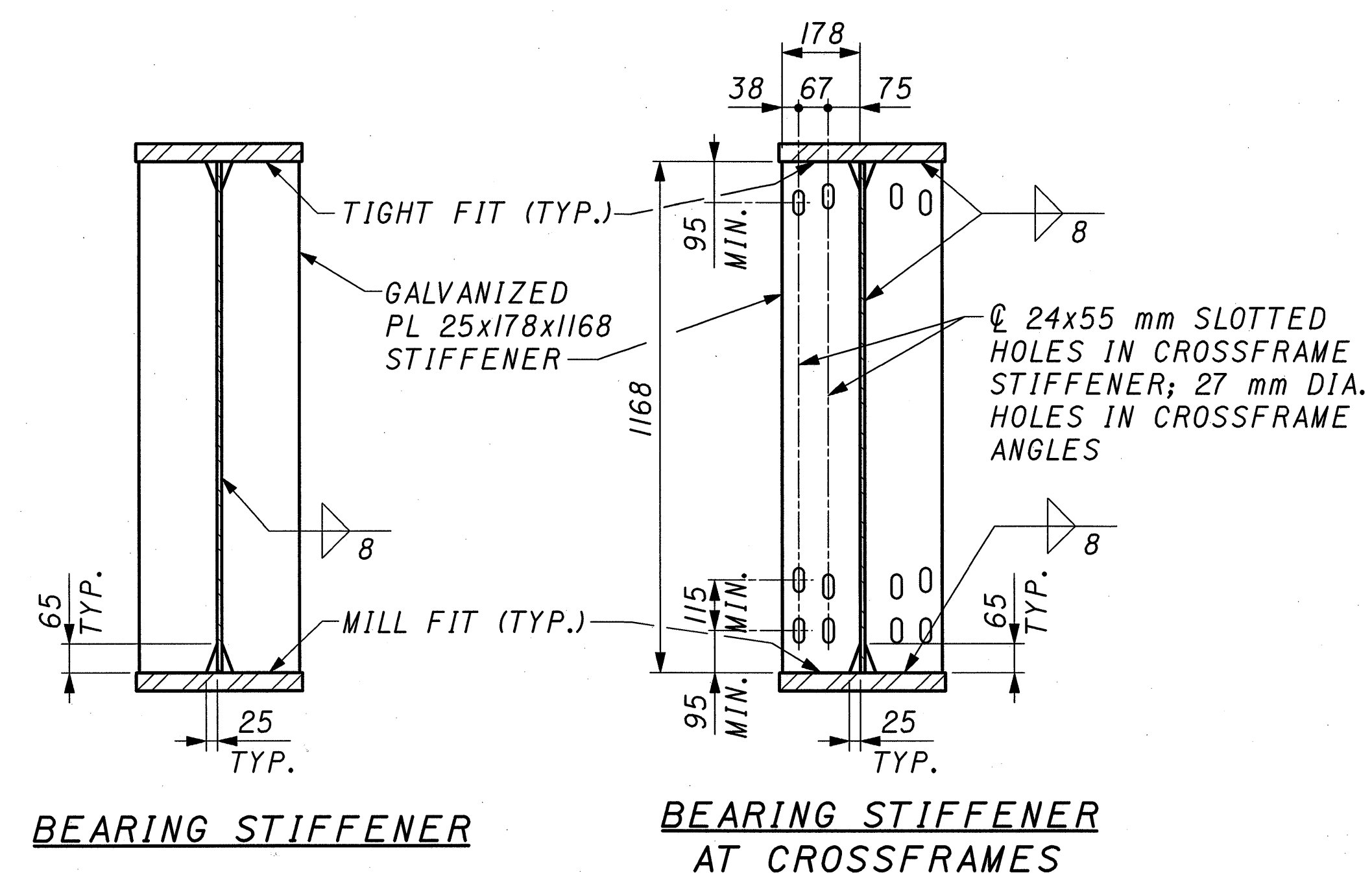
LAMINATED ELASTOMERIC BEARING E-1335 (54.06x355x560) (PIER 1 & PIER 3)

DEAD LOAD REACTION = 960 kN
LIVE LOAD REACTION = 363 kN
TOTAL = 1323 kN

NOTES

BEARING STIFFENER DETAIL: SEE SHEET 26/35

ADDITIONAL NOTES: SEE SHEET 26/35



ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION 11, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATION 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 UNIT PRICE BID FOR THE BEARINGS, EACH.

BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 2 mm AT ABUTMENTS TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.

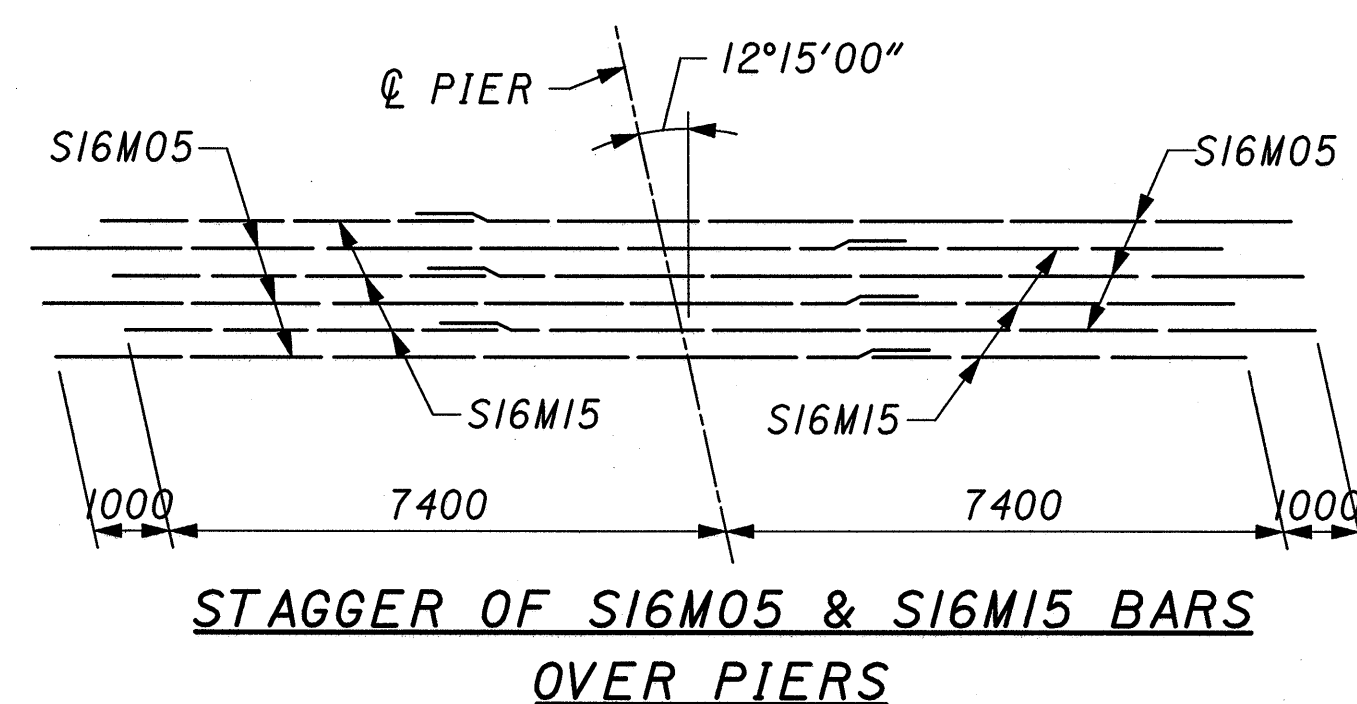
LAMINATED ELASTOMERIC BEARING F-1335 (58.5x320x560) (PIER 2)

DEAD LOAD REACTION = 947 kN
LIVE LOAD REACTION = 372 kN
TOTAL = 1319 kN



NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED.

BRIDGE LIMITS = 110 342



SLAB PLAN
NORTHBOUND BRIDGE SHOWN
SOUTHBOUND BRIDGE OPPOSITE HAND

ADDITIONAL NOTES: SEE SHEET 31 / 35.



RICHLAND ENGINEERING LIMITED
 29 NORTH PARK STREET
 MANSFIELD, OHIO 44902

REVIEWED	DATE
DAP	10/28/99
STRUCTURE FILE NUMBER	
7004869 & 7004834	

DESIGNED <i>BLN</i>	DRAWN <i>KH</i>
CHECKED <i>DT</i>	REVISED

SLAB PLAN - 1
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

**RIC / ASD-71-
20.220 / 0.000**

27 / 35

566
666

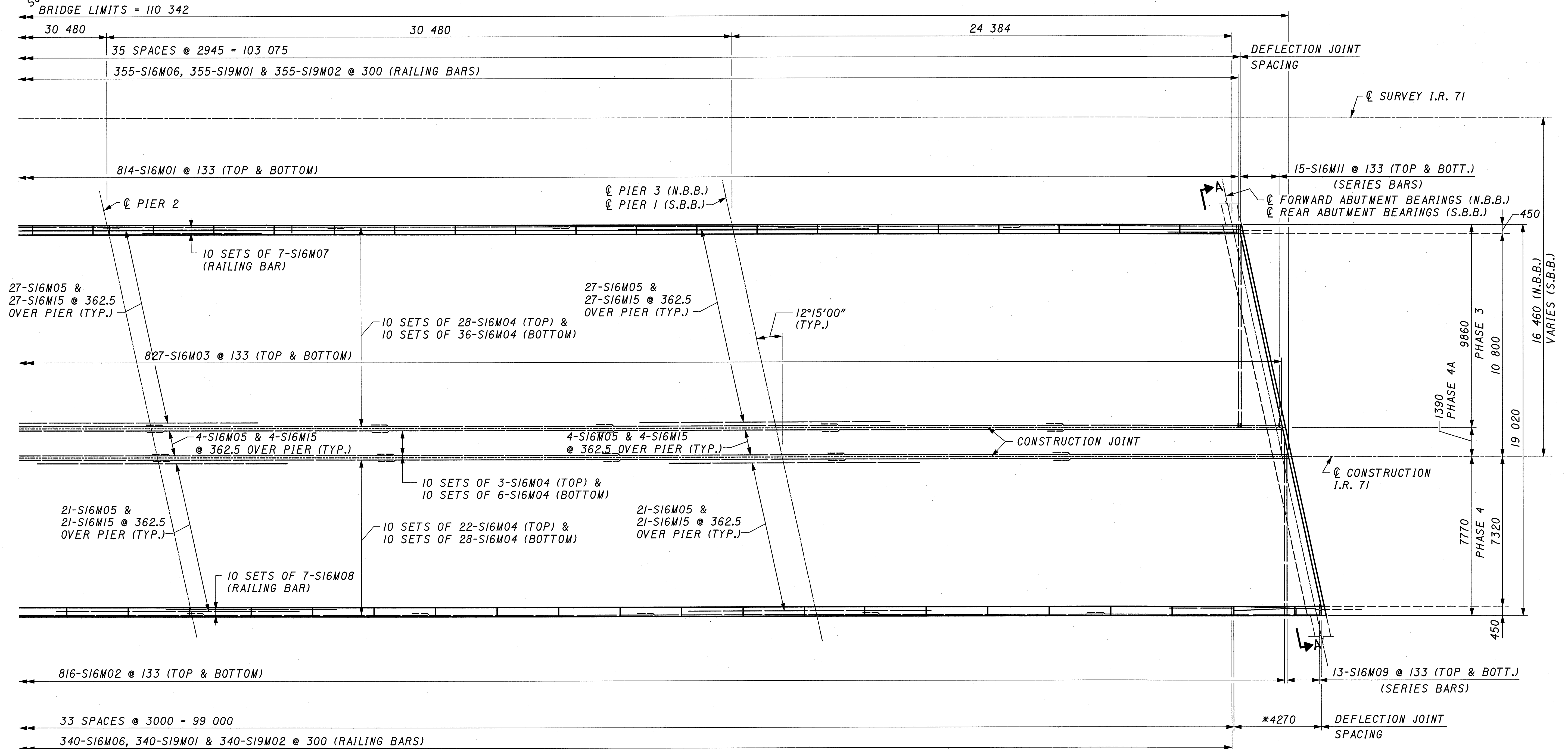
1365SC2.DGN 10/28/99 JLS

NORTHBOUND BRIDGE
SOUTHBOUND BRIDGE

* FOR DEFLECTOR PARAPET DETAILS AND
REINFORCING SEE SHEET 32/35.



NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED.



SLAB PLAN
NORTHBOUND BRIDGE SHOWN
SOUTHBOUND BRIDGE OPPOSITE HAND

NOTES

SECTIONS A-A: SEE SHEET 31/35.

TRANSVERSE SECTION: SEE SHEET 21/35.

ADDITIONAL NOTES: SEE SHEET 31/35.

11365SC2.DGN 10/28/99 JLS

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/28/99
REVIEWED DAP
STRUCTURE FILE NUMBER 7004869 & 7004834

DRAWN KH
DESIGNED BLW
CHECKED DT

SLAB PLAN - 2
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

**RIC/ASD-71-
20.220/0.000**

28/35

567
666

NOTE: ELEVATIONS ARE IN METERS.

SCREED ELEVATION TABLE - SPAN 1						
SPAN POINT	R.A. BRGS.	1/4	1/2	SPLICE - (.713)	3/4	PIER 1 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	315.486	315.611	315.721	315.804	315.818	315.918
GIRDER 8	315.493	315.618	315.728	315.811	315.825	315.925
GIRDER 9	315.551	315.676	315.786	315.869	315.883	315.982
GIRDER 10	315.608	315.733	315.843	315.926	315.940	316.040
GIRDER 11	315.666	315.791	315.901	315.984	315.998	316.098
C.J.	315.673	315.798	315.908	315.991	316.005	316.105
P.C.	315.701	315.826	315.935	316.018	316.032	316.132
GIRDER 12	315.687	315.812	315.922	316.004	316.018	316.118
GIRDER 13	315.651	315.776	315.886	315.969	315.983	316.083
GIRDER 14	315.616	315.741	315.851	315.934	315.948	316.048
CURB LINE	315.612	315.737	315.847	315.929	315.943	316.043

SCREED ELEVATION TABLE - SPAN 3						
SPAN POINT	SPLICE - (.240)	1/4	1/2	3/4	SPLICE - (.785)	PIER 2 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	316.597	316.603	316.747	316.872	316.889	316.997
GIRDER 8	316.604	316.610	316.754	316.879	316.896	317.004
GIRDER 9	316.661	316.668	316.812	316.937	316.953	317.061
GIRDER 10	316.719	316.725	316.869	316.994	317.011	317.119
GIRDER 11	316.777	316.783	316.927	317.052	317.069	317.177
C.J.	316.784	316.790	316.934	317.059	317.076	317.184
P.C.	316.811	316.818	316.962	317.086	317.103	317.211
GIRDER 12	316.797	316.804	316.948	317.072	317.089	317.197
GIRDER 13	316.762	316.768	316.912	317.037	317.054	317.162
GIRDER 14	316.727	316.733	316.877	317.002	317.019	317.127
CURB LINE	318.722	316.729	316.873	316.997	317.014	317.122

SCREED ELEVATION TABLE - SPAN 2						
SPAN POINT	SPLICE - (.215)	1/4	1/2	3/4	SPLICE - (.760)	PIER 2 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	316.042	316.063	316.208	316.334	316.338	316.457
GIRDER 8	316.049	316.070	316.215	316.341	316.345	316.464
GIRDER 9	316.106	316.127	316.272	316.398	316.402	316.522
GIRDER 10	316.164	316.185	316.330	316.456	316.460	316.580
GIRDER 11	316.222	316.242	316.387	316.513	316.518	316.637
C.J.	316.229	316.250	316.394	316.520	316.525	316.644
P.C.	316.256	316.277	316.422	316.548	316.552	316.672
GIRDER 12	316.242	316.263	316.408	316.534	316.538	299.658
GIRDER 13	316.207	316.228	316.373	316.499	316.503	316.623
GIRDER 14	316.172	316.193	316.338	316.463	316.468	316.587
CURB LINE	316.167	316.188	316.333	316.459	316.483	316.583

SCREED ELEVATION TABLE - SPAN 4					
SPAN POINT	1/4	SPLICE - (.288)	1/2	3/4	F.A. BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	317.113	317.131	317.232	317.338	317.429
GIRDER 8	317.120	317.138	317.239	317.345	317.436
GIRDER 9	317.177	317.196	317.296	317.402	317.493
GIRDER 10	317.235	317.253	317.354	316.460	317.551
GIRDER 11	317.292	317.311	317.411	316.517	317.608
C.J.	317.300	317.318	317.419	316.524	317.615
P.C.	317.327	317.345	317.446	316.552	317.643
GIRDER 12	317.313	317.331	316.432	317.538	317.629
GIRDER 13	317.278	317.296	317.397	317.503	317.594
GIRDER 14	317.243	317.261	317.362	317.467	317.558
CURB LINE	317.238	317.256	317.357	317.463	317.554

NOTES

SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

NOTATION: R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
P.C. = PROPOSED CROWN
C.J. = CONSTRUCTION JOINT

1136SC11.DGN 10/19/99 JLS

NOTE: ELEVATIONS ARE IN METERS.

SCREED ELEVATION TABLE - SPAN 1						
SPAN POINT	R.A. BRGS.	1/4	1/2	SPLICE - (.713)	3/4	PIER 1 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	315.365	315.490	315.601	315.684	315.698	315.799
GIRDER 1	315.372	315.498	315.608	315.692	315.706	315.806
GIRDER 2	315.430	315.555	315.666	315.749	315.763	315.864
GIRDER 3	315.487	315.613	315.723	315.807	315.821	315.921
P.C.	315.510	315.636	315.746	315.830	315.844	315.944
C.J.	315.493	315.619	315.729	315.813	315.827	315.927
GIRDER 4	315.489	315.614	315.725	315.808	315.822	315.923
GIRDER 5	315.454	315.579	315.690	315.773	315.787	315.888
GIRDER 6	315.419	315.544	315.655	315.738	315.752	315.853
GIRDER 7	315.383	315.509	315.619	315.703	315.717	315.817
CURB LINE	315.379	315.505	315.615	315.699	315.713	315.813

SCREED ELEVATION TABLE - SPAN 3						
SPAN POINT	SPLICE - (.240)	1/4	1/2	3/4	SPLICE - (.785)	PIER 3 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	316.482	316.488	316.663	316.758	316.775	316.884
GIRDER 1	316.489	316.495	316.640	316.766	316.783	316.891
GIRDER 2	316.546	316.553	316.698	316.823	316.840	316.949
GIRDER 3	316.604	316.611	316.755	316.881	316.898	317.006
P.C.	316.627	316.633	316.778	316.904	316.921	317.029
C.J.	316.610	316.616	316.761	316.887	316.904	317.012
GIRDER 4	316.606	316.612	316.757	316.882	316.899	317.008
GIRDER 5	316.571	316.577	316.722	316.847	316.864	316.973
GIRDER 6	316.535	316.542	316.686	316.812	316.829	316.938
GIRDER 7	316.500	316.507	316.651	316.777	316.794	316.902
CURB LINE	318.496	316.502	316.647	316.773	316.790	316.898

SCREED ELEVATION TABLE - SPAN 2						
SPAN POINT	SPLICE - (.215)	1/4	1/2	3/4	SPLICE - (.760)	PIER 2 BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	315.923	315.944	316.090	316.217	316.221	316.341
GIRDER 1	315.931	315.952	316.097	316.224	316.228	316.349
GIRDER 2	315.988	316.009	316.155	316.282	316.286	316.406
GIRDER 3	316.046	316.067	316.213	316.339	316.344	316.464
P.C.	316.069	316.090	316.235	316.362	316.367	316.487
C.J.	316.052	316.073	316.219	316.345	316.350	316.470
GIRDER 4	316.048	316.069	316.214	316.341	316.345	316.465
GIRDER 5	316.012	316.033	316.179	316.306	316.310	316.430
GIRDER 6	315.977	315.998	316.144	316.270	316.275	316.395
GIRDER 7	315.942	315.963	316.109	316.235	316.240	316.360
CURB LINE	315.938	315.959	316.104	316.231	316.235	316.356

SCREED ELEVATION TABLE - SPAN 4					
SPAN POINT	1/4	SPLICE - (.288)	1/2	3/4	F.A. BRGS.
	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CURB LINE	317.000	317.019	317.120	317.226	317.318
GIRDER 1	317.008	317.026	317.127	317.234	317.325
GIRDER 2	317.065	317.084	317.185	317.291	317.383
GIRDER 3	317.123	317.141	317.242	317.349	317.440
P.C.	317.146	317.164	317.265	317.372	317.463
C.J.	317.129	317.147	317.248	317.355	317.446
GIRDER 4	317.125	317.143	317.244	317.351	317.442
GIRDER 5	317.089	317.108	317.209	317.315	317.407
GIRDER 6	317.054	317.072	317.174	317.280	317.372
GIRDER 7	317.019	317.037	317.138	317.245	317.336
CURB LINE	317.015	317.033	317.134	317.241	317.332

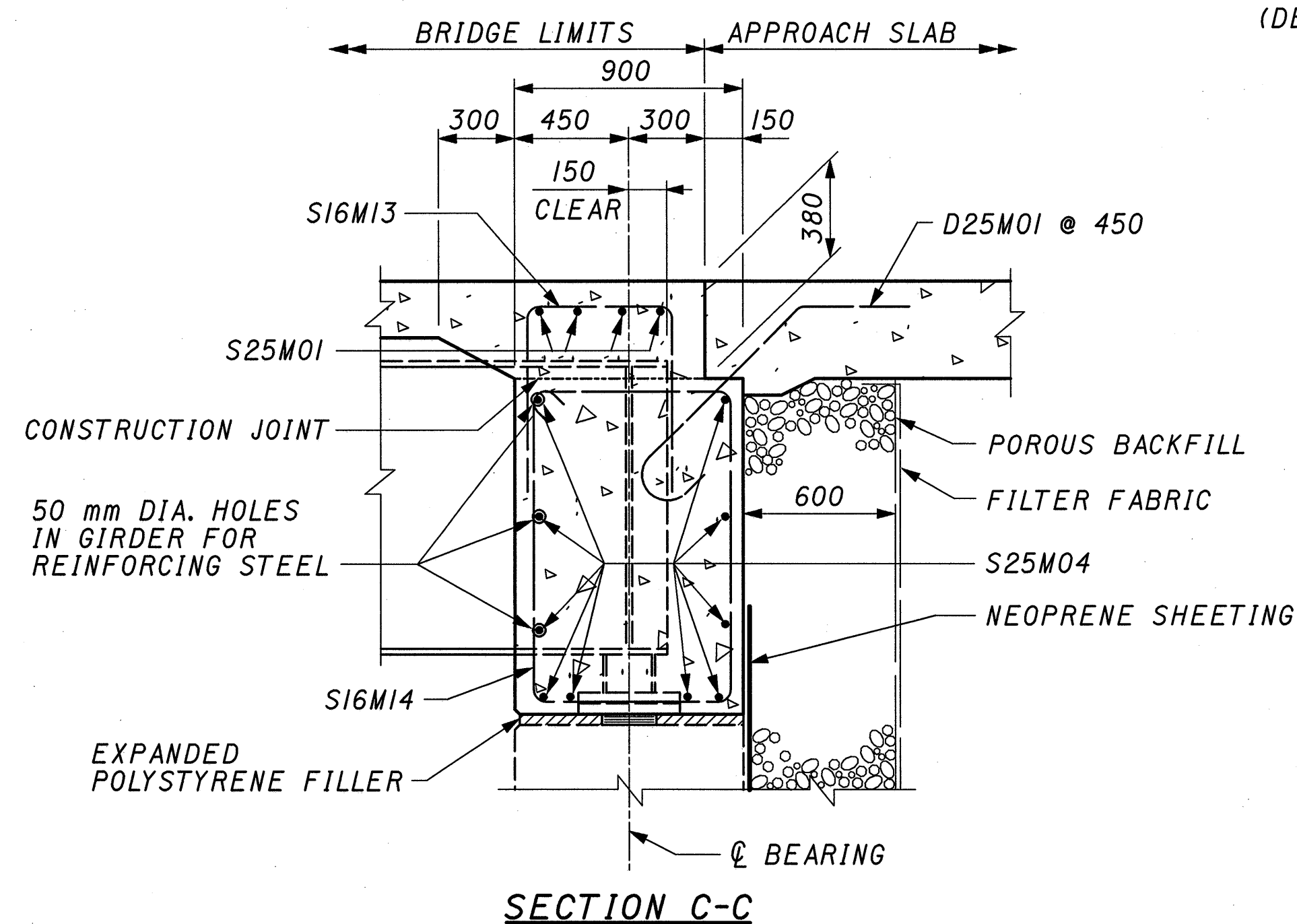
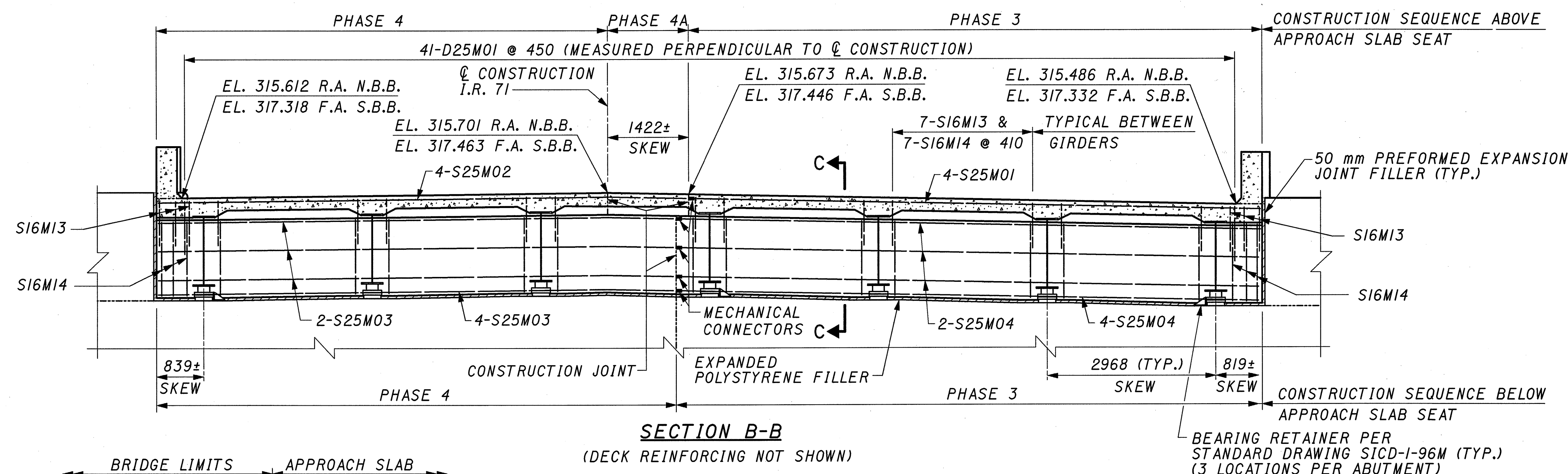
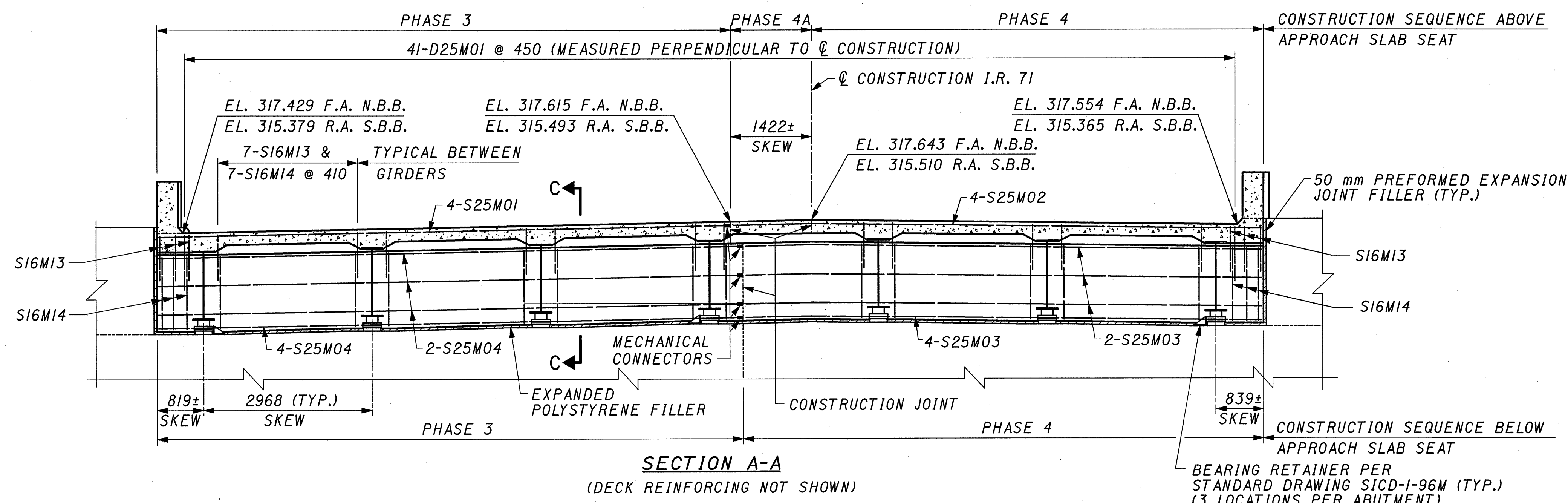
NOTES

SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

NOTATION: R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
P.C. = PROPOSED CROWN
C.J. = CONSTRUCTION JOINT

1136SCH.DGN 10/19/99 JLS

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED. ELEVATIONS
ARE IN METERS.



NOTES

NOTATION:

F.A. - FORWARD ABUTMENT
R.A. - REAR ABUTMENT
N.B.B. - NORTHBOUND BRIDGE
S.B.B. - SOUTHBOUND BRIDGE

SECTIONS A-A & B-B: FOR LOCATION SEE SHEET 27/35 & 28/35.

MECHANICAL CONNECTOR DETAIL: SEE SHEET 21/35.

DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER SECTIONS SUPPORTED IN SEMI-INTEGRAL AND INTEGRAL TYPE ABUTMENTS SHALL BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE
10/19/99
REVIEWED
DAP
STRUCTURE FILE NUMBER
7004869 & 7004834

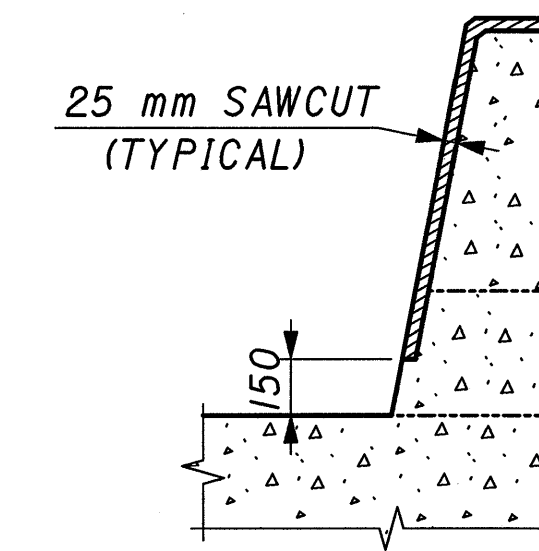
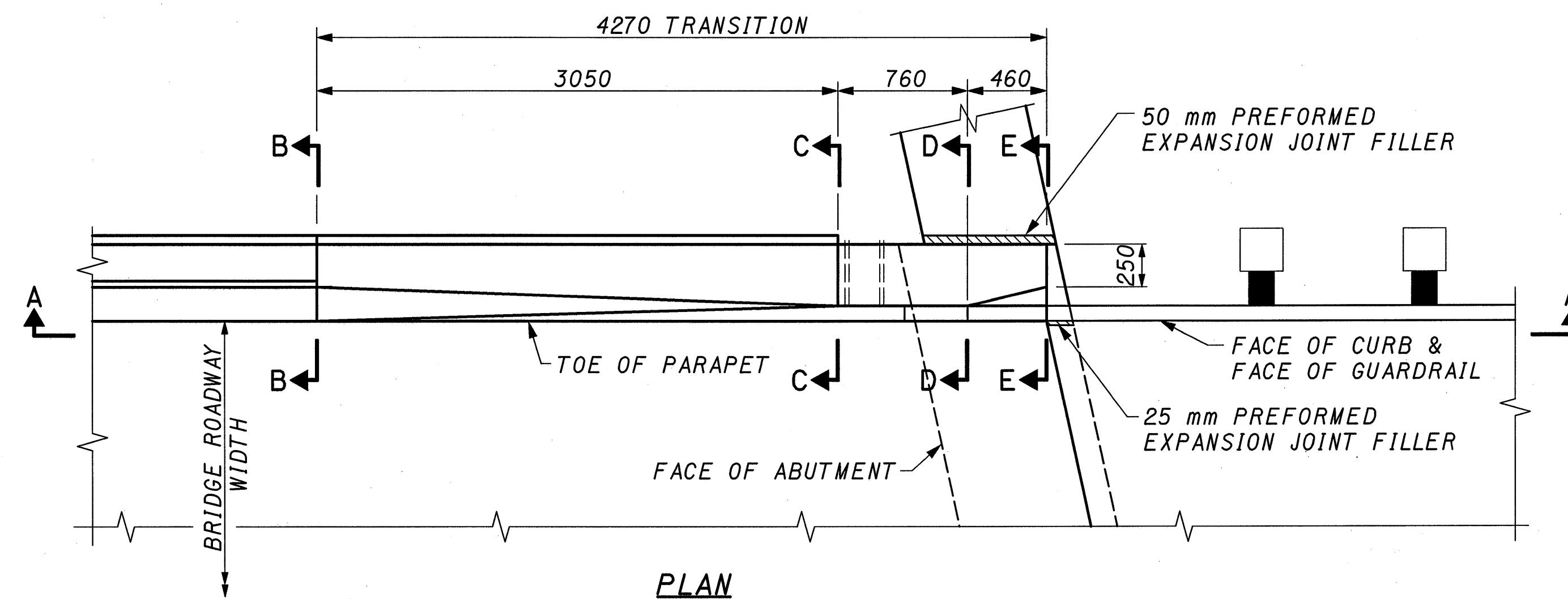
DRAWN
KH
CHECKED
DT

DEFLECTOR PARAPET DETAILS
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

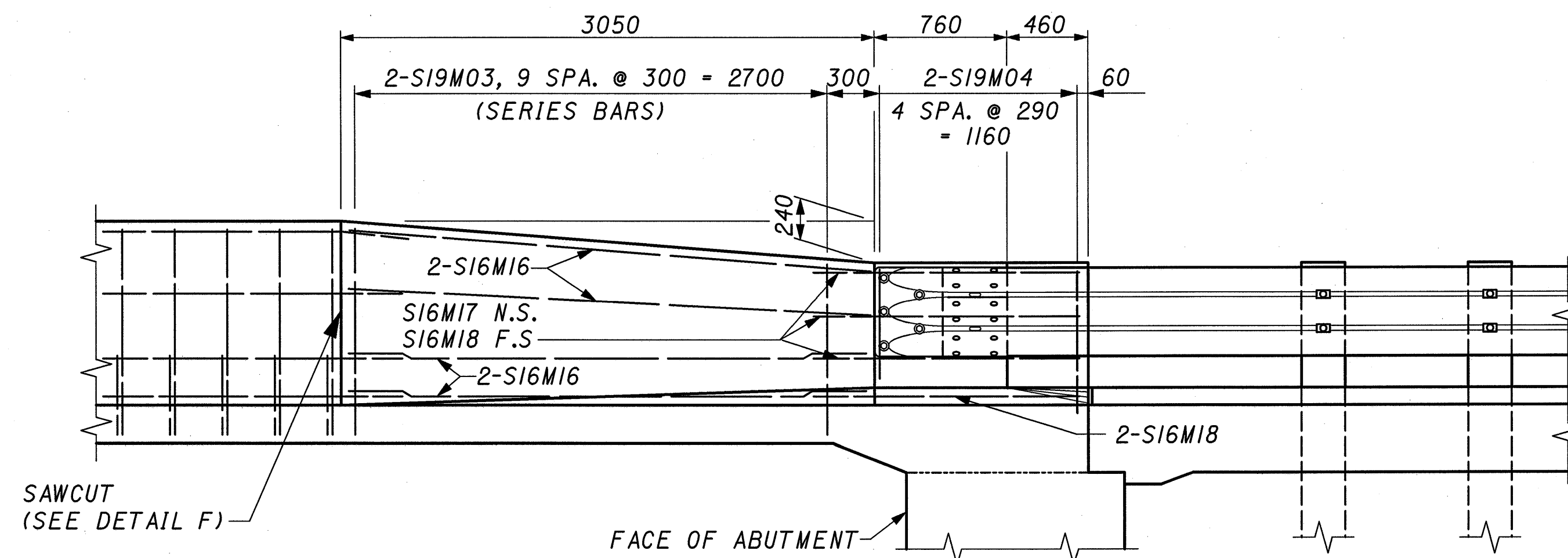
RIC/ASD-71-
20.220/0.000

32/35

571
666



DETAIL F



SECTION A-A

NOTES

CONTROL JOINTS FOR CONCRETE PARAPETS: THE JOINTS SHALL BE CONSTRUCTED BY SAWING 25 mm DEEP ALONG THE PERIMETER OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm.

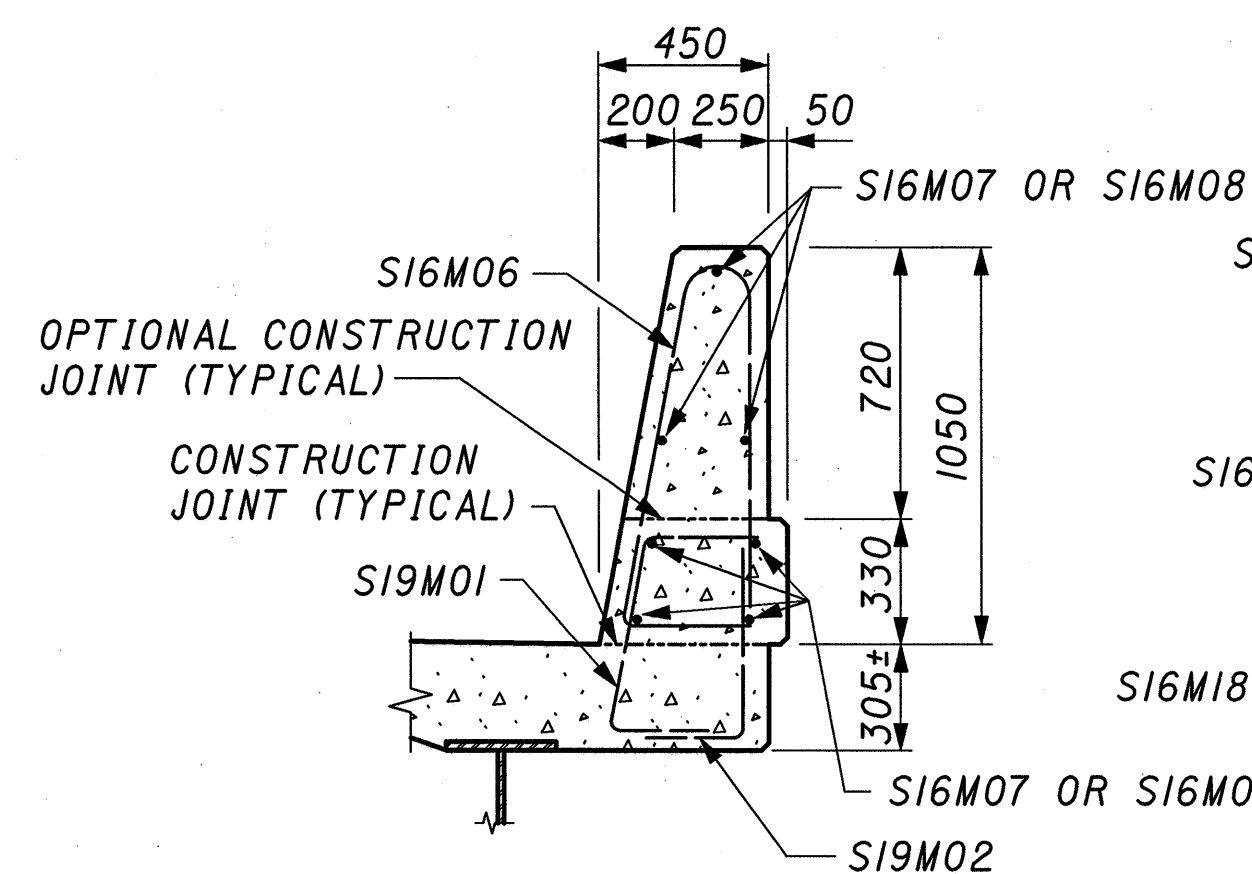
THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A CAULKING MATERIAL TO A MINIMUM DEPTH OF 25 mm CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM 12 mm OF THE OUTSIDE FACE OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

QUANTITIES OF CONCRETE, REINFORCING STEEL, DEFLECTION JOINT SAWCUT AND CAULKING MATERIAL FOR THE PARAPET ARE INCLUDED WITH ITEM 844 - HIGH PERFORMANCE SUPERSTRUCTURE (PARAPET), AS PER PLAN FOR PAYMENT.

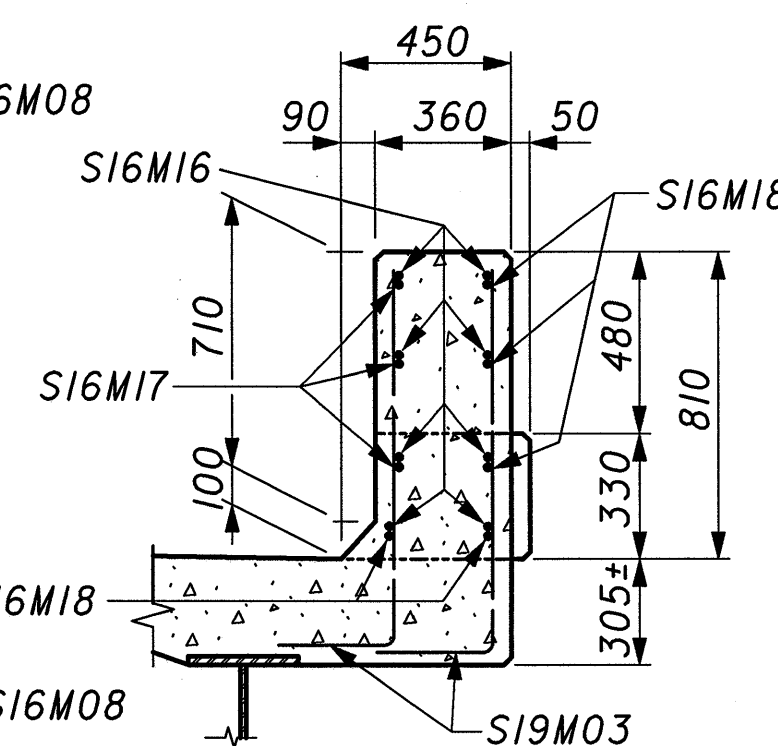
FOR BRIDGE TERMINAL ASSEMBLY SEE STANDARD CONSTRUCTION DRAWINGS GR-3.1M AND GR-3.2M.

NOTATION: N.S. - NEAR SIDE; F.S. - FAR SIDE.

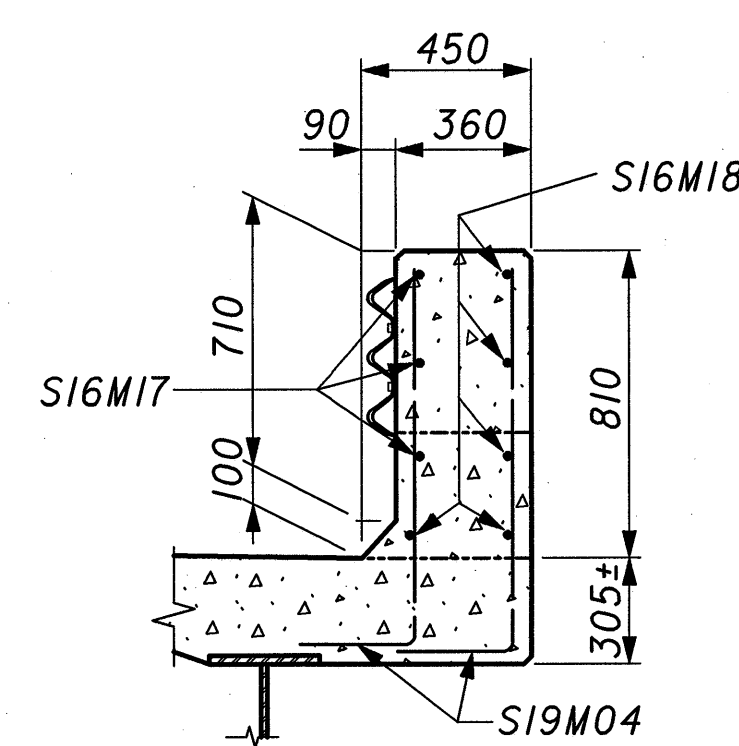
ADDITIONAL RAILING DETAILS: SEE STANDARD DRAWING SBR-I-99M



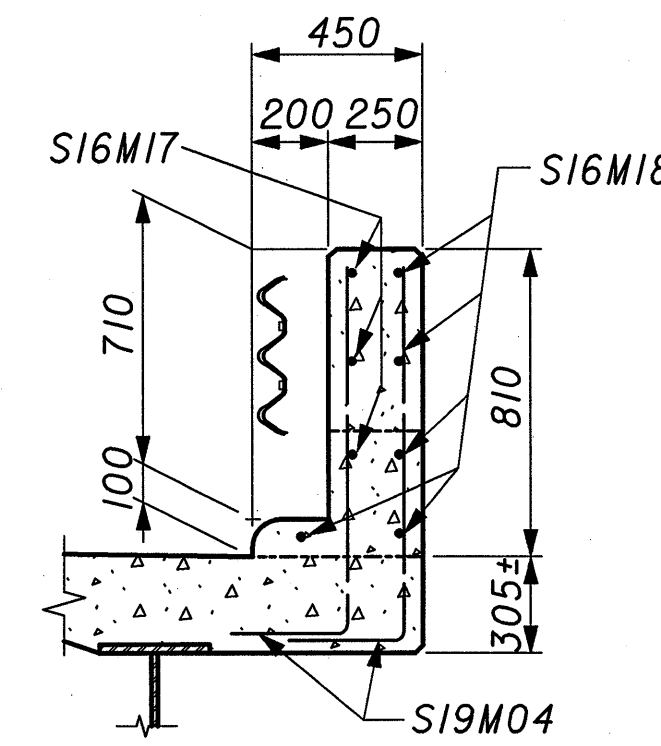
SECTION B-B



SECTION C-C

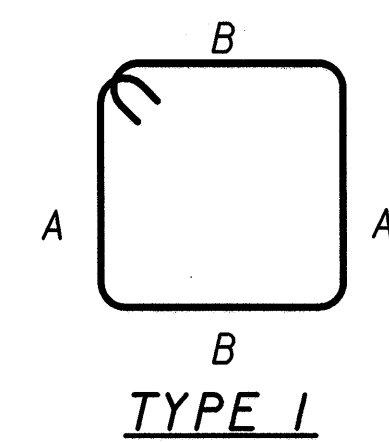


SECTION D-D

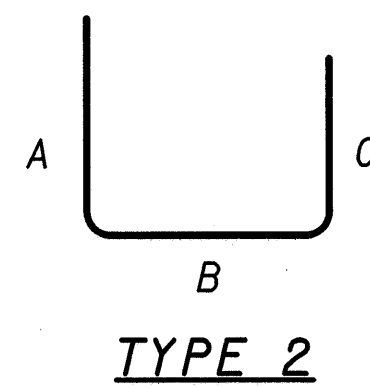


SECTION E-E

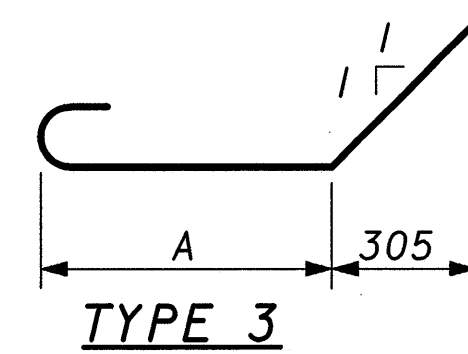
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



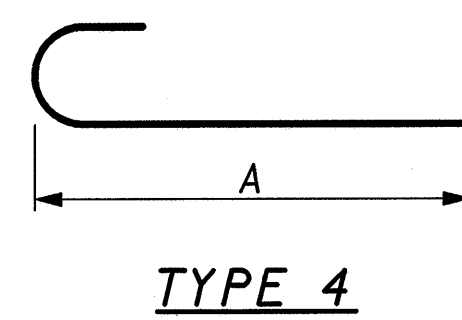
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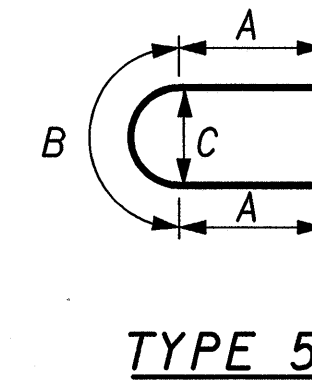
TYPE 2



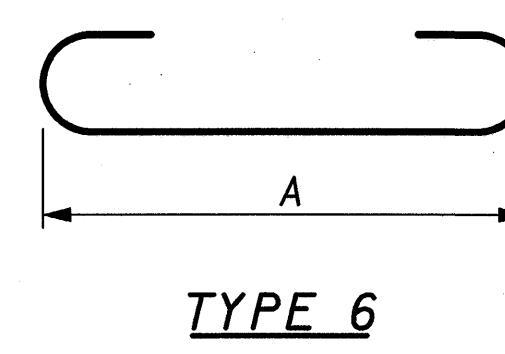
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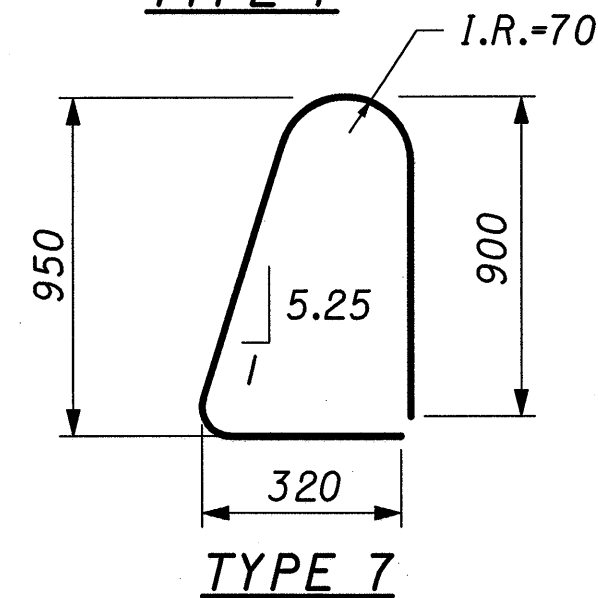
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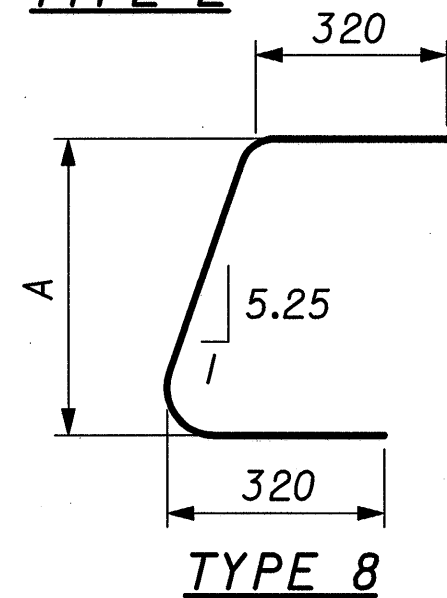
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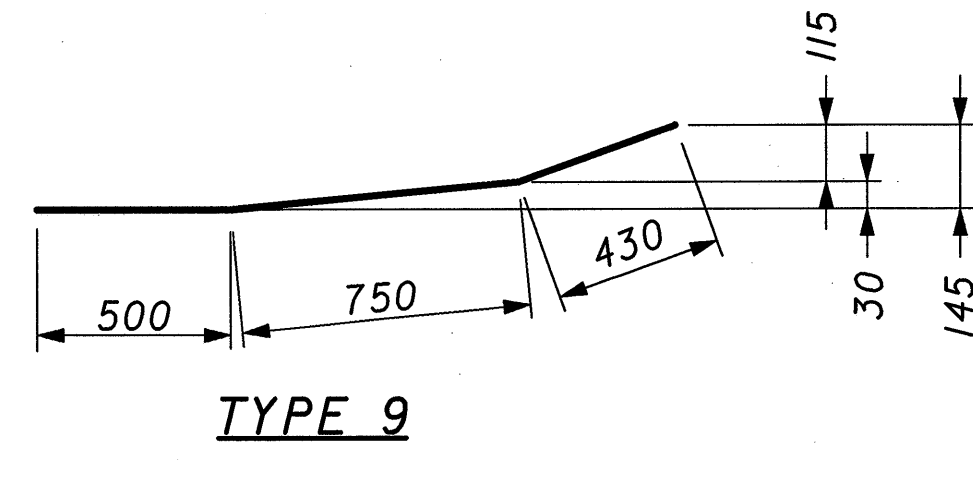
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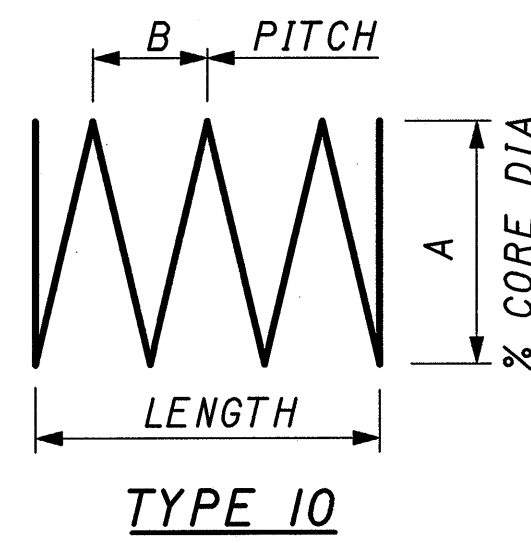
TYPE 7



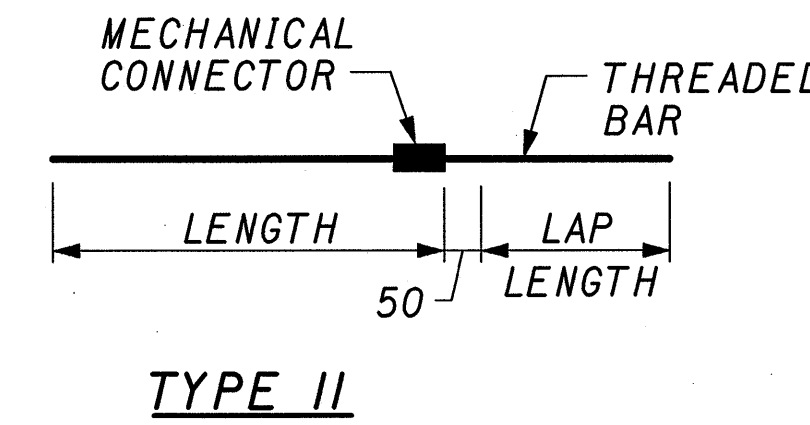
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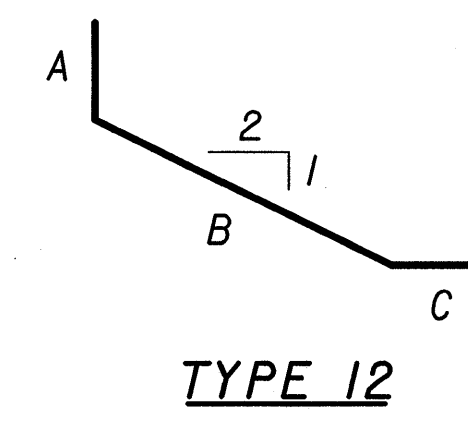
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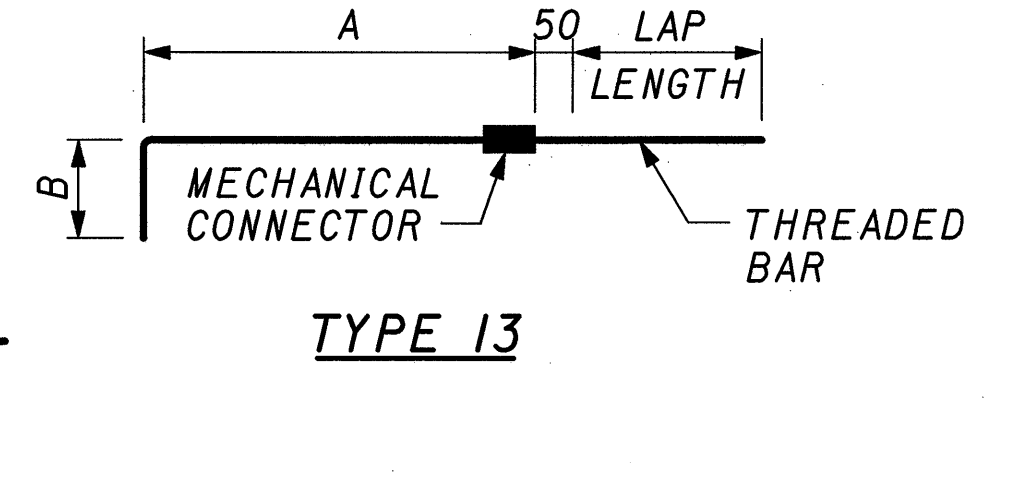
TYPE 10



TYPE 11



TYPE 12



TYPE 13

ABUTMENTS												CALCULATED <i>KH</i> DATE <i>7/99</i> CHECKED <i>KAK</i> DATE <i>7/99</i>
MARK	N.B.B.		S.B.B.		TOTAL	LENGTH	TYPE	A	B	C	INC.	* MASS Kg
	REAR	FWD.	REAR	FWD.								
A16M01	30	30	30	30	120	6010	1	790	2135			1119
A16M02	13	12			25	4920	2	2100	800	2100		191
A16M03	45	45	45	45	180	2120	2	700	800	700		592
A16M04	64	67			131	1950	STR.					396
A16M05	5	6	5	5	21	4170	2	1800	650	1800		136
A16M06	SER.OF 7	SER.OF 7			SER.OF 7	1070	2	250	650	250	225	53
A16M07	SER.OF 7	SER.OF 7	SER.OF 7	SER.OF 7	SER.OF 7	1270	2	350	650	350	217	166
A16M08	14	14	14	14	56	1290	STR.					112
A16M09	17	16			33	5970	2	2700	650	2700		306
A16M10	6		6	6	18	10 150	11					284
A16M11	2		6	2	10	9000	STR.					140
A16M12	8				8	4700	STR.					58
A16M13	8		2		10	4100	STR.					64
A16M14	2	2			4	3400	STR.					21
A16M15	3	2	4	5	14	3100	STR.					67
A16M16	2	2	1		5	3825	STR.					30
A16M17	2	2			4	4320	STR.					27
A16M18	1			8	9	4000	STR.					56
A16M19	1				1	4150	STR.					6
A16M20	1		1		2	3500	STR.					11
A16M21	1		1		2	3650	STR.					11
A16M22	1		1		2	2600	STR.					8
A16M23	1	1	1	1	4	2750	STR.					17
A16M24	1		1	1	2	1700	STR.					5
A16M25	1		1	1	3	1850	STR.					9
A16M26	1		1	1	2	900	STR.					3
A16M27	1		1	1	2	1050	STR.					3
A16M28	2				2	8500	STR.					26
A16M29	1			1	2	3250	STR.					10
A16M30	1		1	1	2	2350	STR.					7
A16M31	1	1	1	1	3	2200	STR.					10
A16M32	1		1	1	2	1450	STR.					5
A16M33	1	1	1	1	4	1300	STR.					8
A16M34	1		1	1	2	600	STR.					2
A16M35	1	1	1	1	4	450	STR.					3
A16M36	2	2	2	2	8	6120	1	790	2190			76
A16M37	2	2			4	5570	2	2500	650	2500		35
A16M38		6			6	9000	STR.					84
A16M39		6			6	10 250	11					95
A16M40		8	8	1	17	3900	STR.					103
A16M41		2	2		4	8425	STR.					52
A16M42		2	2		4	3150	STR.					20
A16M43	1	1	1	1	4	3300	STR.					20
A16M44		1	1		2	3000	STR.					9
A16M45		2	1		3	2050	STR.					10
A16M46		2	2		4	1150	STR.					7
A16M47		1			1	350	STR.					1
A16M48		1			1	4200	STR.					7

ABUTMENTS - (CONT.)												CALCULATED <i>KH</i> DATE <i>7/99</i> CHECKED <i>KAK</i> DATE <i>7/99</i>
MARK	N.B.B.		S.B.B.		TOTAL	LENGTH	TYPE	A	B	C	INC.	* MASS Kg
	REAR	FWD.	REAR	FWD.								
A16M49		1		2	3	4050	STR.					19
A16M50		1	1	1	3	3750	STR.					17
A16M51		1	3		4	3600	STR.					22
A16M52		1	1		2	2900	STR.					9
A16M53		8			8	4800	STR.					60
A16M54		1	1		2	1000	STR.					3
A16M55		2	2		4	8900	STR.					55
A16M56			1		1	2200	STR.					3
A16M57			1		1	300	STR.					1
A16M58			8	8	16	4600	STR.					114
A16M59			1		1	3950	STR.					6
A16M60			1		1	2000	STR.					3
A16M61	6			6	12	9125	STR.					170
A16M62				2	2	3550	STR.					11
A16M63				2	2	8525	STR.					26
A16M64	1			1	2	3450	STR.					11
A16M65			12	13	25	5120	2	2200	800	2200		199
A16M66			66	64	130	2050	STR.					414
A16M67			16	16	32	6170	2	2800	650	2800		306
A16M68			2	2	4	5870	2	2650	650	2650		36
A25M01	SER.OF 4			SER.OF 4	SER.OF 4	10 100	11				60	324
A25M02	4			4	8	9100	STR.					289
A25M03	SER.OF 6	SER.OF 6			SER.OF 6	3825	STR.				100	194
A25M04	SER.OF 6				SER.OF 6	8500	STR.				100	209
A25M05	10	10	10	10	40	2270	STR.					361
A25M06		SER.OF 4	SER.OF 4		SER.OF 4	8950	STR.				60	287
A25M07		4	4		8	10 160	11					323
A25M08		SER.OF 6	SER.OF 6		SER.OF 6	8425	STR.				100	414
A25M09			SER.OF 6	SER.OF 6	SER.OF 6	3575	STR.				100	182
A25M10			SER.OF 6	SER.OF 6	SER.OF 6	8525	STR.				100	209
TOTAL												8758

NOTES:

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST LETTER IDENTIFIES BAR LOCATION, THE NEXT TWO DIGITS AND LETTER INDICATE THE METRIC BAR SIZE DESIGNATION, THE REMAINING DIGITS STATE THE SEQUENCE NUMBER.

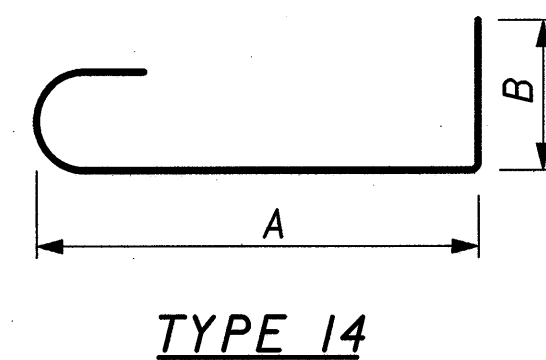
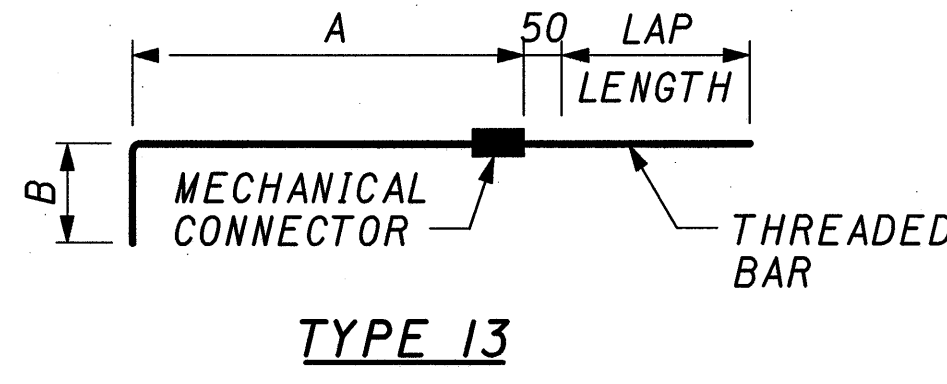
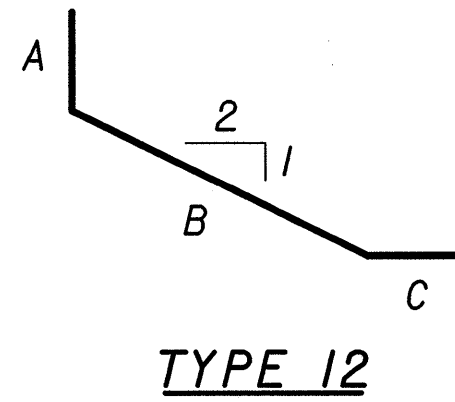
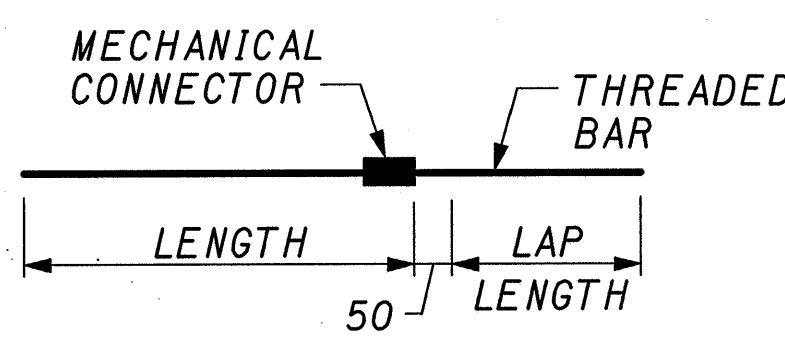
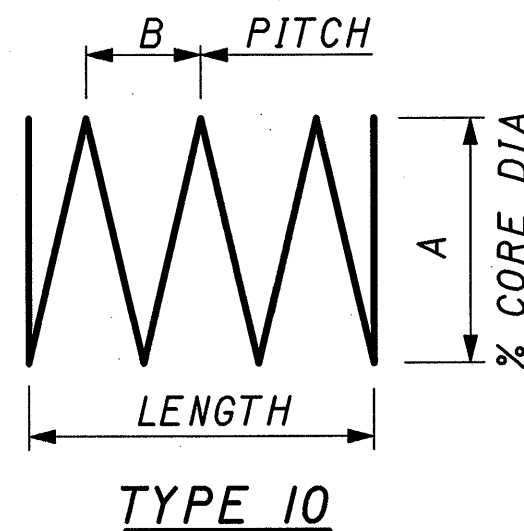
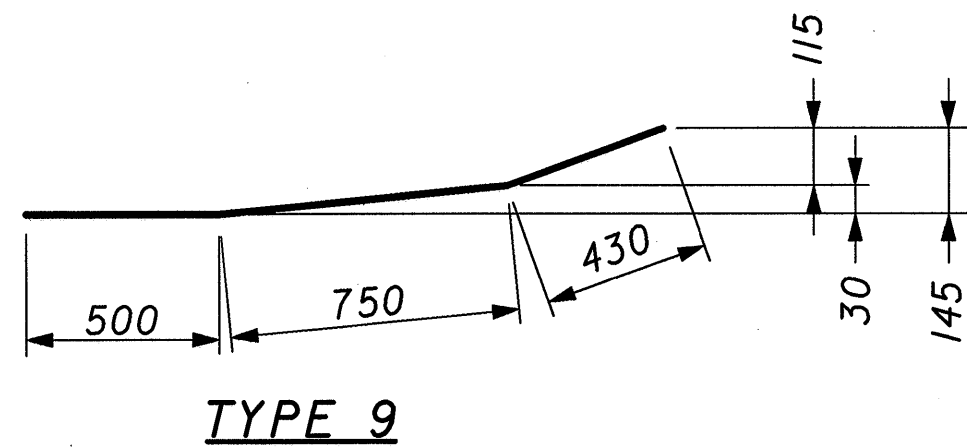
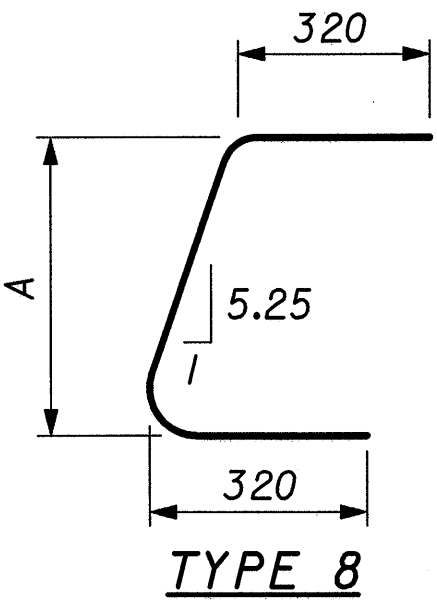
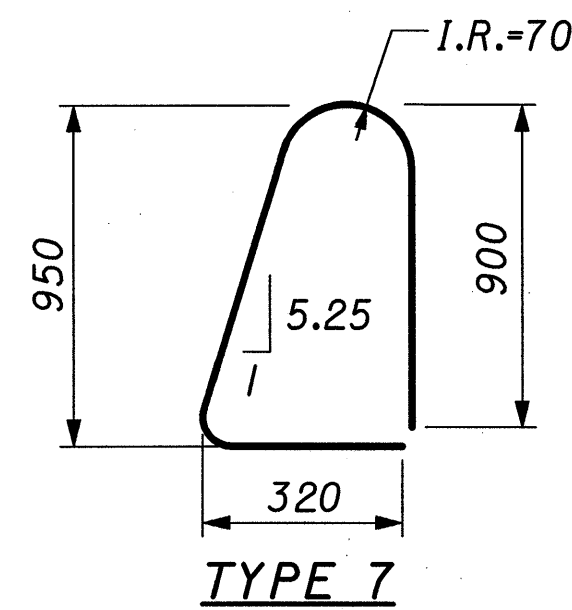
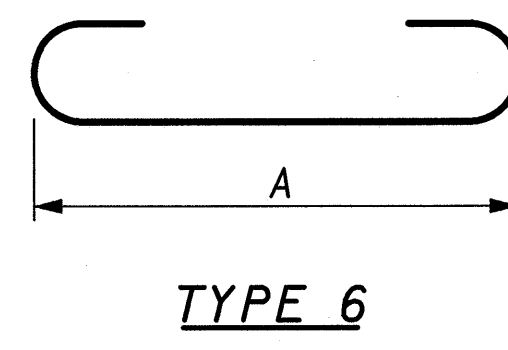
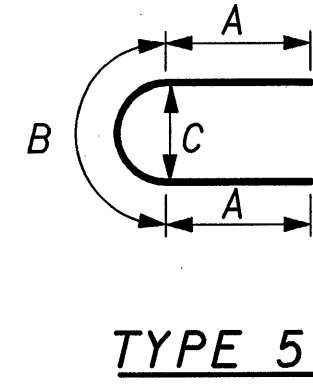
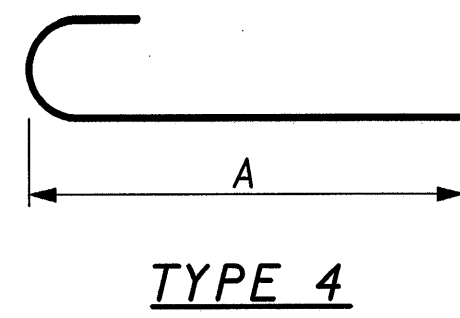
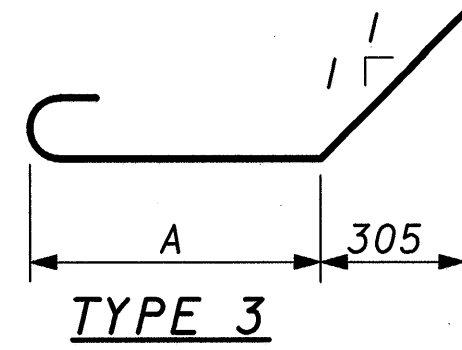
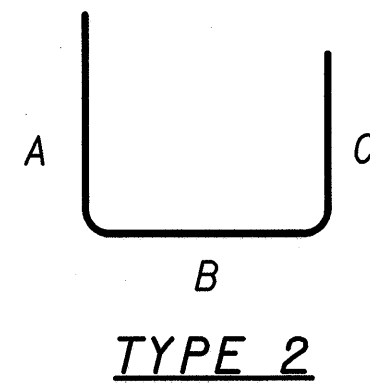
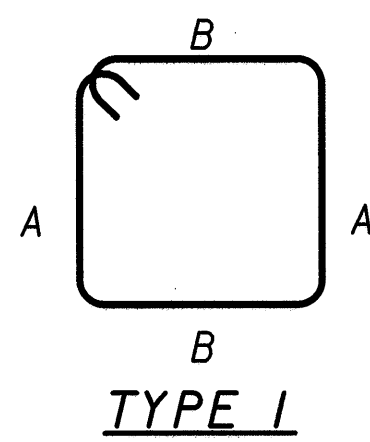
EXAMPLE: A16M01
A = LOCATION OF THE BAR IN STRUCTURE (ABUTMENT)
16M = METRIC BAR SIZE DESIGNATION
01 = SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL TO BE EPOXY COATED.

NOTATION: N.B.B. - NORTHBOUND BRIDGE
S.B.B. - SOUTHBOUND BRIDGE

* MASS Kg: FOR INFORMATION PURPOSES ONLY



NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



RICHLAND ENGINEERING LIMITED
23 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 10/19/99
REVIEWED DAP
STRUCTURE FILE NUMBER 7004869 & 7004834

DRAWN KH
REVISOR

DESIGNED BLW
CHECKED DT

REINFORCING STEEL LIST - 2
BRIDGE NO. RIC-71-33185 L & R
OVER S.R. 603 AND THE BLACK FORK OF THE MOHICAN RIVER

RIC/ASD-71-
20.220/0.000

34/35

573
666

PIERS															CALCULATED KH DATE 6/99		CHECKED MSL DATE 8/99	
MARK	N.B.B.			S.B.B.			TOTAL	LENGTH	TYPE	A	B	C	INC.	MASS Kg				
	PIER 1	PIER 2	PIER 3	PIER 1	PIER 2	PIER 3												
PI3M01	32	34	30	32	34	30	192	3675	5	1220	1235	788		701				
PI3M02	32	34	30	32	34	30	192	2205	5	485	1235	788		421				
PI3M03	64	68	60	64	68	60	384	1150	14	815	220			439				
PI6M01	14	14	14	14	14	14	84	3068	5	920	1228	782		400				
PI6M02	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	70	2	70	815	70	125	217				
PI6M03	6	6	6	6	6	6	36	2735	2	1000	815	1000		153				
PI6M04	4	4	4	4	4	4	24	3070	2	1250	650	1250		114				
PI6M05	7	7	7	7	7	7	42	1285	2	275	815	275		84				
PI6M06	8	8	8	8	8	8	48	3100	STR.					231				
PI6M07	146	154	138	146	154	138	876	2600	STR.					3535				
PI6M08	6	6	6	6	6	6	36	3175	12	500	1025	1650		89				
PI6M09	11	11	11	11	11	11	66	5360	2	790	3860	790		549				
PI6M10	2	2	2	2	2	2	12	2950	STR.					55				
PI6M11	2	2	2	2	2	2	12	3860	STR.					72				
PI6M12	14	14	14	14	14	14	84	4450	2	790	2950	790		580				
PI6M13	34	34	34	34	34	34	204	1760	2	1200	600	0		557				
PI6M14	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	SER.OF	70	2	70	600	0	130	1192				
PI6M15	2	2	2	2	2	2	12	4900	11					91				
PI6M16	2	2	2	2	2	2	12	8050	STR.					150				
PI6M17				6	6	6	18	3325	12	500	1025	1800		93				
PI6M18	6	6	6	6	6	6	36	3110	2	275	2640	275		174				
PI6M19	144	152	136	144	152	136	864	2300	2	860	660	860		3084				
PI6M20	16						16	10 930	STR.					271				
PI6M21			16				16	10 320	STR.					256				
PI6M22	20		20			20	80	5080	STR.					631				
PI6M23	8		8			8	32	1600	STR.					79				
PI6M24	24		24			24	96	2020	2	275	1550	275		301				
PI6M25	32		32			32	128	3745	2	1075	1675	1075		163				
PI6M26	16	20	16		20	16	104	1675	STR.					270				
PI6M27	48		48			48	192	1965	14	1550	275			586				
PI6M28	32	92	32	32	92	32	312	1395	2	275	1160	0		675				
PI6M29		18			18		36	1595	STR.					182				
PI6M30		16					16	12 320	STR.					306				
PI6M31					16		16	12 430	STR.					309				
PI6M32					16		16	10 050	STR.					250				
PI6M33						16	16	10 450	STR.					259				

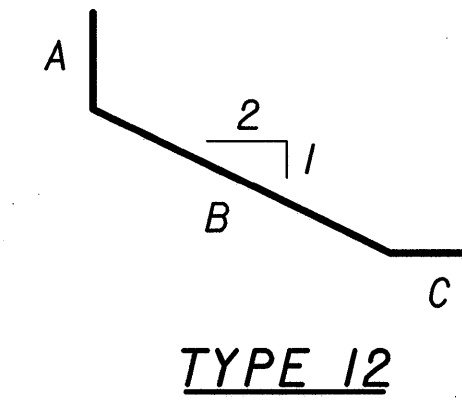
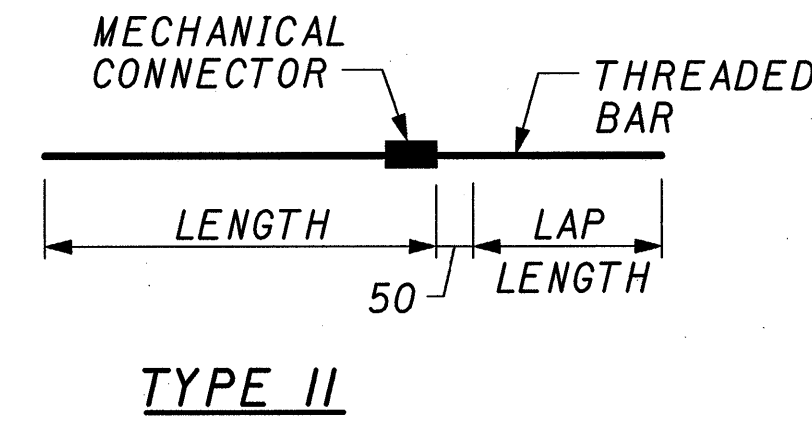
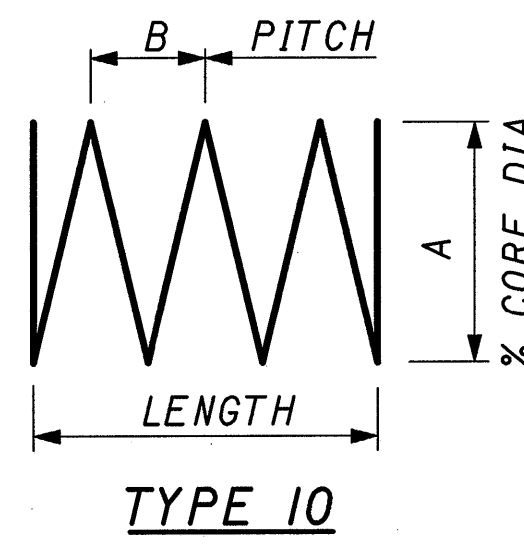
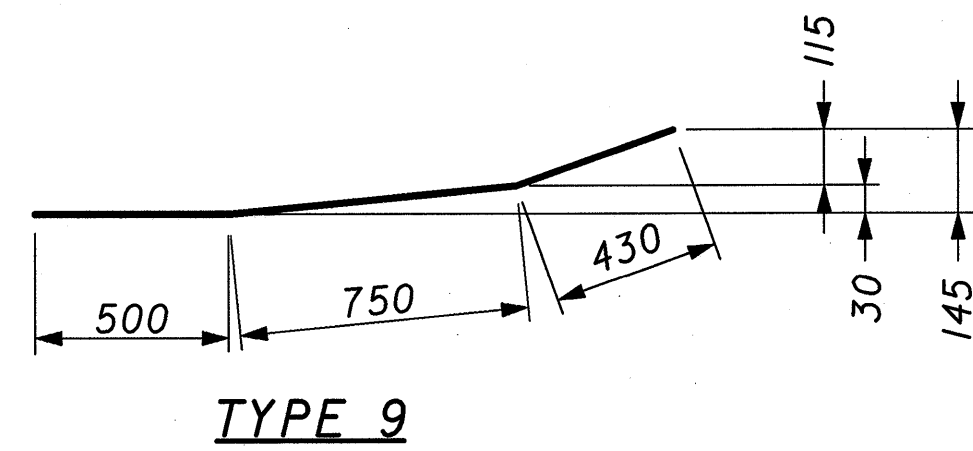
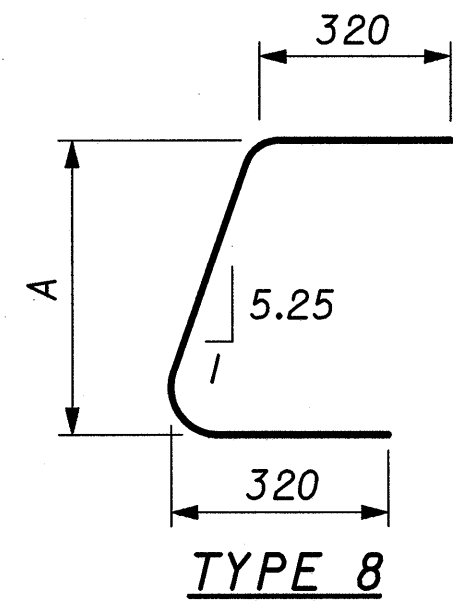
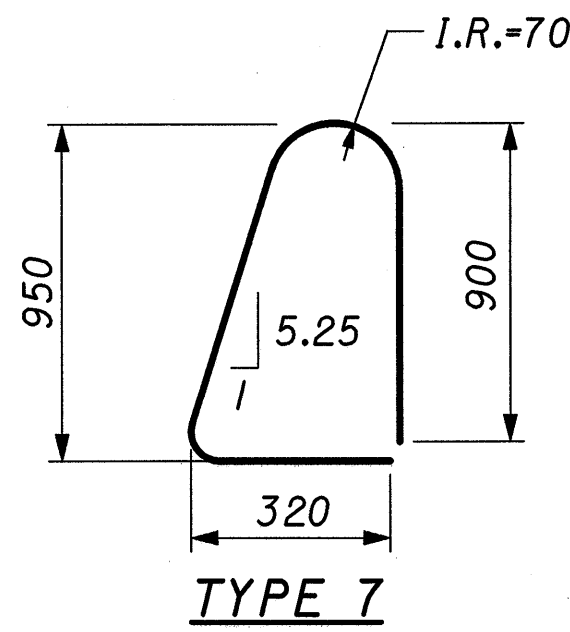
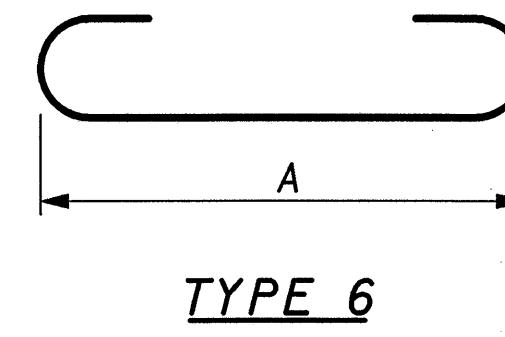
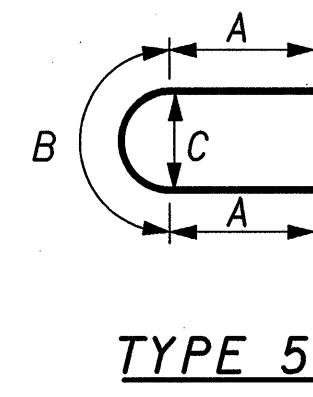
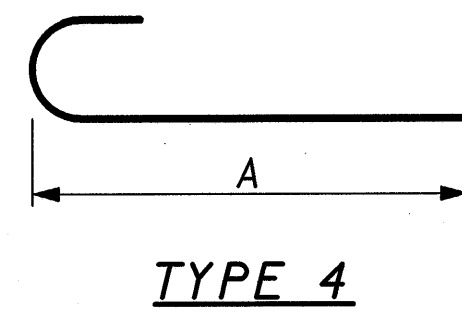
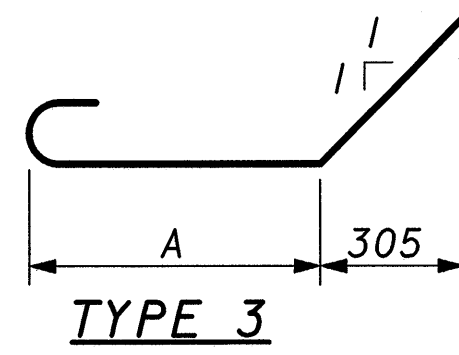
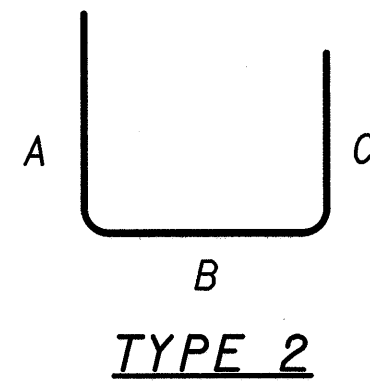
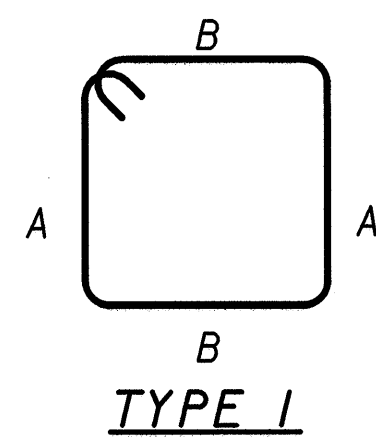
PIERS															CALCULATED KH DATE 7/99		CHECKED MSL DATE 8/99	
MARK	N.B.B.			S.B.B.			TOTAL	LENGTH	TYPE	A	B	C	INC.	MASS Kg				
	PIER 1	PIER 2	PIER 3	PIER 1	PIER 2	PIER 3												
PI9M01	32	32	32	32	32	32	192	2515	STR.					1079				
PI9M02	24		24	24		48	96	1960	STR.					421				
PI9M03		14			14		28	3250	STR.					203				
PI9M04	24		24	24		24	96	2210	2	300	1960	0		474				
P25M01	1	1	1	1	1	1	6	4570	2	420	3850	420		109				
P25M02	2	2	2	2	2	2	12	4470	2	420	3750	420		213				
P25M03	2	2	2	2	2	2	12	3820	2	420	3100	420		182				
P25M04	1	1	1	1	1	1	6	8710	2	420	8350	0		208				
P25M05	2	2	2	2	2	2	12	8660	2	420	8300	0		413				
P25M06	2	2	2	2	2	2	12	8410	2	420	8050	0		401				
P25M07	1	1	1	1	1	1	6	5560	13	5200	420			133				
P25M08	2	2	2	2	2	2	12	5510	13	5150	420			263				
P25M09	2	2	2	2	2	2	12	5260	13	4900	420			251				
P25M10	16	16	16	16	16	16	96	2955	14	2675	0			1127				
P25M11	16	16	16	16	16	16	96	9200	STR.					3509				
P25M12	16	16	16	16	16	16	96	5500	STR.					2098				
P25M13	16			16			32	9025	STR.					1147				
P25M14			16			16	32	8535	STR.					1085				
P25M15		16			16		32	9740	STR.					1238				
P29M01	11	10	11	11	10	11	64	4860	2	500	3860	500		1574				
P29M02	12	12	12	12	12	12	72	3770	2	500	2950	500		1373				
P29M03	32			32			64	7100	STR.					2299				
P29M04			32			32	64	6500	STR.					2105				
P29M05		32			32		64	7700	STR.					2494				
P32M01	32	32	32	32	32	32	192	8600	2	550	8150	0		10 574				

NOTES:

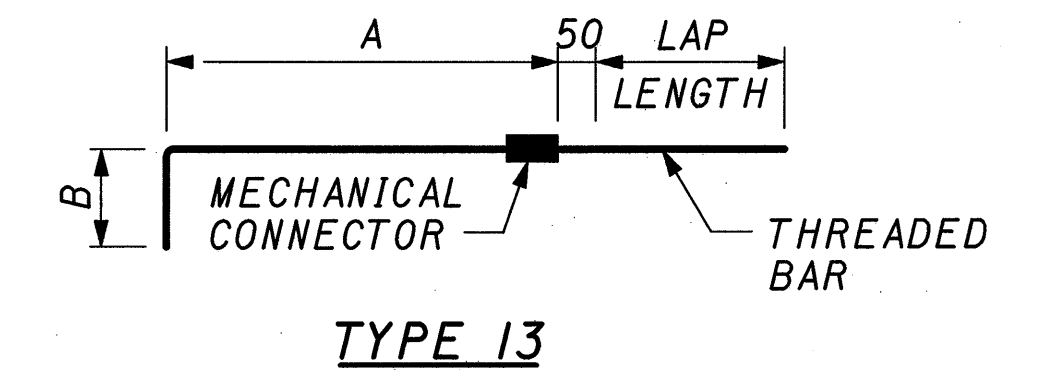
ADDITIONAL NOTES: SEE SHEET 33/35

TOTAL 52 492

11365SC8.DGN 10/19/99 KH



NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



SUPERSTRUCTURE

CALCULATED *KH* DATE *6/99*
CHECKED *KAK* DATE *7/99*

MARK	BRIDGE		TOTAL	LENGTH	TYPE	A	B	C	INC.	* MASS Kg
	N.B.B.	S.B.B.								
S16M01	1628	1628	3256	9810	II					49 573
S16M02	1632	1632	3264	8465	STR.					42 881
S16M03	1654	1654	3308	1290	STR.					6623
S16M04	1230	1230	2460	11 725	STR.					44 765
S16M05	156	156	312	11 600	STR.					5617
S16M06	695	695	1390	2205	7					4757
S16M07	70	70	140	11 340	STR.					2464
S16M08	70	70	140	10 990	STR.					2388
S16M09	4 SER.OF 13	4 SER.OF 13	8 TO 8515	1171	STR.				612	782
S16M10	2 SER.OF 15	2 SER.OF 15	4 TO 9200	632	STR.				612	458
S16M11	2 SER.OF 15	2 SER.OF 15	4 TO 9025	457	II				612	441
S16M12	2	2	4	1000	STR.					6
S16M13	96	96	192	2000	2	765	550	765		596
S16M14	96	96	192	4140	1	1190	800			1234
S16M15	156	156	312	4950	STR.					2397
S16M16	24	24	48	3050	STR.					227
S16M17	9	9	18	1675	9					47
S16M18	15	15	30	1675	STR.					78
S19M01	695	695	1390	1075	8	535				3340
S19M02	695	695	1390	805	2	535	320	0		2501
S19M03	6 SER.OF 10	6 SER.OF 10	12 TO 1525	1285	2	1015	320	0	27	377
S19M04	30	30	60	1285	2	1015	320	0		172
S25M01	8	8	16	10 000	II					636
S25M02	8	8	16	9250	STR.					588
S25M03	20	20	40	9050	STR.					1438
S25M04	20	20	40	10 200	II					1621
D25M01	82	82	164	1520	3	810				990
TOTAL										176 997

NOTES:

ADDITIONAL NOTES: SEE SHEET 33/35