

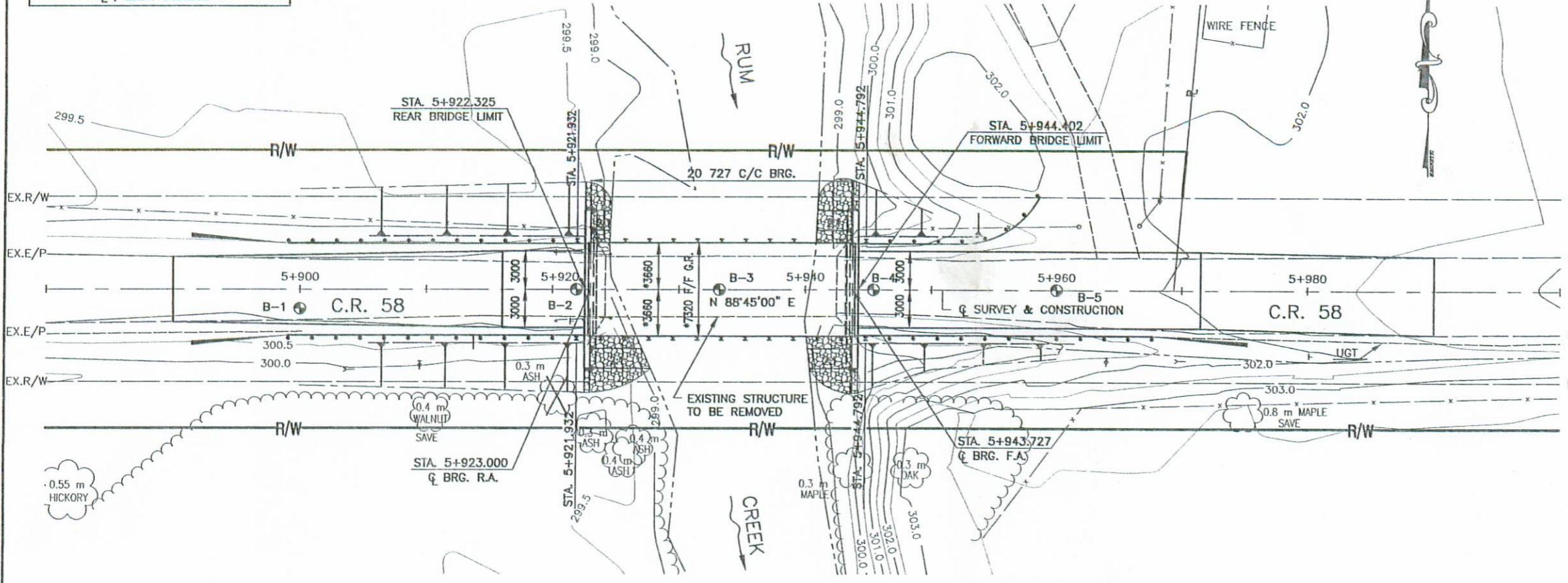
B.M. #1: IRON PIN AT STA. 5+828.141,  
3.817 m RT., ELEV. 300.654

B.M. #2: PK AT STA. 6+004.572, ON  
C, ELEV. 303.206



DESIGN AGENCY  
COLUMBUS ENGINEERING CONSULTANTS, INC.  
840 MICHIGAN AVE., COLUMBUS, OH 43215  
TEL: (614) 328-3300

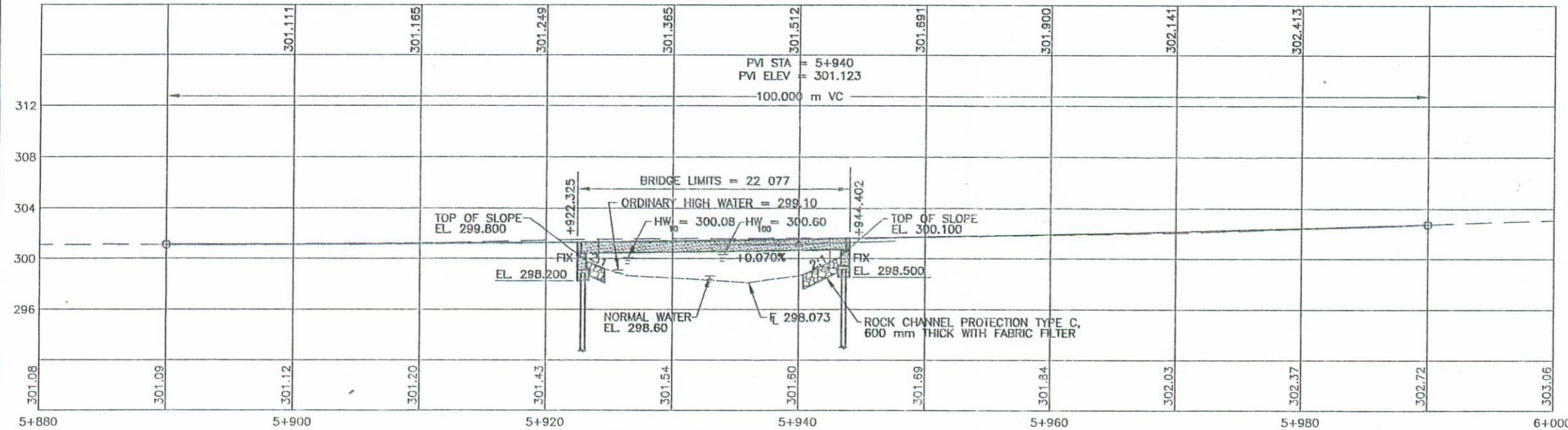
- NOTES:**
- 1- ALL DIMENSIONS GIVEN IN MILLIMETER, EXCEPT FOR STATIONS AND ELEVATIONS WHICH ARE IN METER, UNLESS OTHERWISE STATED.
  - 2- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.



VERTICAL CURVE DATA	
PVI STA.	= 5+940.000
PVI ELEV.	= 301.123
L	= 100 m
G <sub>1</sub>	= +0.070%
G <sub>2</sub>	= +3.184%

- LEGEND**
- \* PLUS FIT-UP
  - ⊙ BORING APPROXIMATE LOCATION

PLAN



PROFILE ALONG C OF SURVEY & CONSTRUCTION

TRAFFIC DATA	
CURRENT A.D.T. (1997)	= 140
DESIGN YEAR A.D.T. (2017)	= 370

HYDRAULIC DATA	
DRAINAGE AREA: 72.779 km <sup>2</sup>	
Q <sub>10</sub> = 51 m <sup>3</sup> /s	Q <sub>100</sub> = 85 m <sup>3</sup> /s
V <sub>10</sub> = 2.37 m/s	V <sub>100</sub> = 3.57 m/s
HW <sub>10</sub> = 300.08 m	HW <sub>100</sub> = 300.60 m
Q <sub>10</sub> CLEARS LOW BEAM BY 0.28 m	

PILE DATA		
LOCATION	TYPE	ESTIMATED AVERAGE PAY LENGTH
REAR ABUTMENT	300 mm CIP R.C. PILE	6 m
FORWARD ABUTMENT	300 mm CIP R.C. PILE	6 m

**EXISTING STRUCTURE**

TYPE: PRATT TRUSS WITH TIMBER DECK ON CONCRETE GRAVITY ABUTMENTS  
 SPAN: 17 475 F/F ABUTMENTS  
 ROADWAY: 4826 F/F GUARDRAILS 5486 O/O TRUSSES  
 SKEW: 0°  
 LOADING: UNKNOWN  
 DATE BUILT: 1910  
 STRUCTURE FILE NO.: 4635353  
 APPROACH SLAB: NONE  
 WEARING SURFACE: ASPHALT CONCRETE

**PROPOSED STRUCTURE**

TYPE: SINGLE SPAN PRESTRESSED BOX BEAM ON CAPPED PILE ABUTMENT  
 SPAN: 20 727 C/C BEARINGS  
 ROADWAY: 7320 F/F GUARDRAILS  
 ALIGNMENT: TANGENT  
 APPROACH SLAB: NONE  
 SKEW: NONE  
 LOADING: MS-1E AND ALTERNATE MILITARY LOADING  
 CROWN: 0.016  
 WEARING SURFACE: ASPHALT CONCRETE  
 LATITUDE: N 40°22'36" LONGITUDE: W 83°56'05"

LOGAN COUNTY  
STA. 5+922.325 TO STA. 5+944.402

SITE PLAN  
BRIDGE No. LOG-C.R. 58-59223  
OVER RUM CREEK

LOG-C.R. 58-5916/6.492

# GENERAL NOTES



**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

MS-18 AND THE ALTERNATE MILITARY LOADING.

**DESIGN STRESSES:**

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)  
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE FOR PRESTRESSED BEAMS - MIN. COMPRESSIVE STRENGTH AT 28 DAYS  $F'_c = 38.0$  MPa.  
 - MIN. COMPRESSIVE STRENGTH AT TIME OF INITIAL PRESTRESS = 27.5 MPa.  
 UNIT STRESS 15.2 MPa. COMPRESSION 3.1 MPa. TENSION

REINFORCING STEEL - ASTM A615M, A616M, OR A617M GRADE 420 MINIMUM YIELD STRENGTH 420MPa

PRESTRESSING STRAND - ASTM A416M, GRADE 270, 12.7mm  $\phi$  SEVEN-WIRE, UNCOATED, LOW RELAXATION STRAND.  
 $f'_s = 1860$  MPa  
 INITIAL STRESS = 0.75  $f'_s$

**REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:**

- DBR-2-73M DATED 8/18/95
- PSBD-1-93M REVISED 12/19/94
- DS-1-94M REVISED 12/15/94

**AND THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:**

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, 65 mm ASPHALT CONCRETE. AND SEALING OF CONCRETE SURFACES. MEMBRANE WATERPROOFING

**REMOVAL OF EXISTING STRUCTURE:**

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

**PILE DESIGN LOADS (ULTIMATE BEARING VALUE):**

THE ULTIMATE BEARING VALUE IS 600 kN PER PILE FOR THE 300 mm ABUTMENT PILES.

**ABUTMENT PILES:**

- 14 PILES 6 METERS LONG, ESTIMATED LENGTH
- 14 PILES OF ORDER LENGTH 7.5 METERS LONG
- 7 SPLICES

**UTILITY LINES**

ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER. THE CONTRACTOR AND OWNER ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

**ITEM 518, 150MM PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN:**

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 150mm DIAMETER, PLASTIC CORRUGATED TYPE SP.

**ITEM 518, 150MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:**

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 150 mm DIAMETER, PLASTIC CORRUGATED TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

**ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:**

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL SHALL BE PLACED IN 150 MM LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

## ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUP.
202	11002	LUMP	SUM	STRUCTURE REMOVED, OVER 6 METER SPAN			
448	46020	8	CU M	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-22			8
448	47020	5	CU M	ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG 64-22			5
503	21101	90	CU M	UNCLASSIFIED EXCAVATION, AS PER PLAN	90		
505	11100	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION			
507	00500	105	METER	300 mm CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	105		
507	00550	105	METER	300 mm CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	105		
507	50500	7	EACH	STEEL PILE SPLICES (300 mm CAST-IN-PLACE PILES)	7		
511	43500	44	CU M	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	44		
512	33010	157	SQ M	TYPE 3 WATERPROOFING			157
SPECIAL	51267500	41	SQ M	SEALING OF CONCRETE SURFACES *			41
SPECIAL	51267502	32	SQ M	SEALING OF CONCRETE SURFACES (EPOXY) *	32		
515	54300	6	EACH	PRESTRESSED BOX BEAM (18.90-23.17 METER) B840-1220			6
SPECIAL	51631300	15	METER	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			15
516	43101	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) 150 x 330 x 30 mm, AS PER PLAN *			24
517	72300	45.72	METER	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS) *			45.72
518	21230	LUMP	LUMP	POROUS BACKFILL WITH FILTER FABRIC			
SPECIAL	51822300	42	METER	STEEL DRIP STRIP			42
518	40001	26	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	26		
518	40011	10	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	10		
				COMPUTED BY : RT	DATE : 1-2-97		
				CHECKED BY : WA	DATE : 1-2-97		

\* SEE PROPOSAL NOTE

DESIGN AGENCY: COLUMBUS ENGINEERING CONSULTANTS, INC. 840 MICHIGAN AVENUE, COLUMBUS, OH 43215 TEL: (614) 228-3500  
 DATE: 5/9/1997  
 REVIEWED: JJ  
 DRAWN: RT  
 CHECKED: WA  
 STRUCTURE FILE NO.: 4635345  
**GENERAL NOTES + ESTIMATED QUANTITIES**  
 Bridge No. LOG C.R. 58-59223  
 OVER RUM CREEK  
 LOG-C.R. 58-5916/6.492  
 2 / 8  
 19  
 44



metric units

DESIGN AGENCY: COLUMBUS ENGINEERING CONSULTANTS, INC. 840 MERRITT AVENUE, COLUMBUS, OH 43215 TEL: (614) 221-3900

DATE: 5/9/1997

REVIEWED: JJ

DRAWN: RT

DESIGNED: RT

CHECKED: WA

STRUCTURE FILE NO.: 4635345

ABUTMENT DETAILS

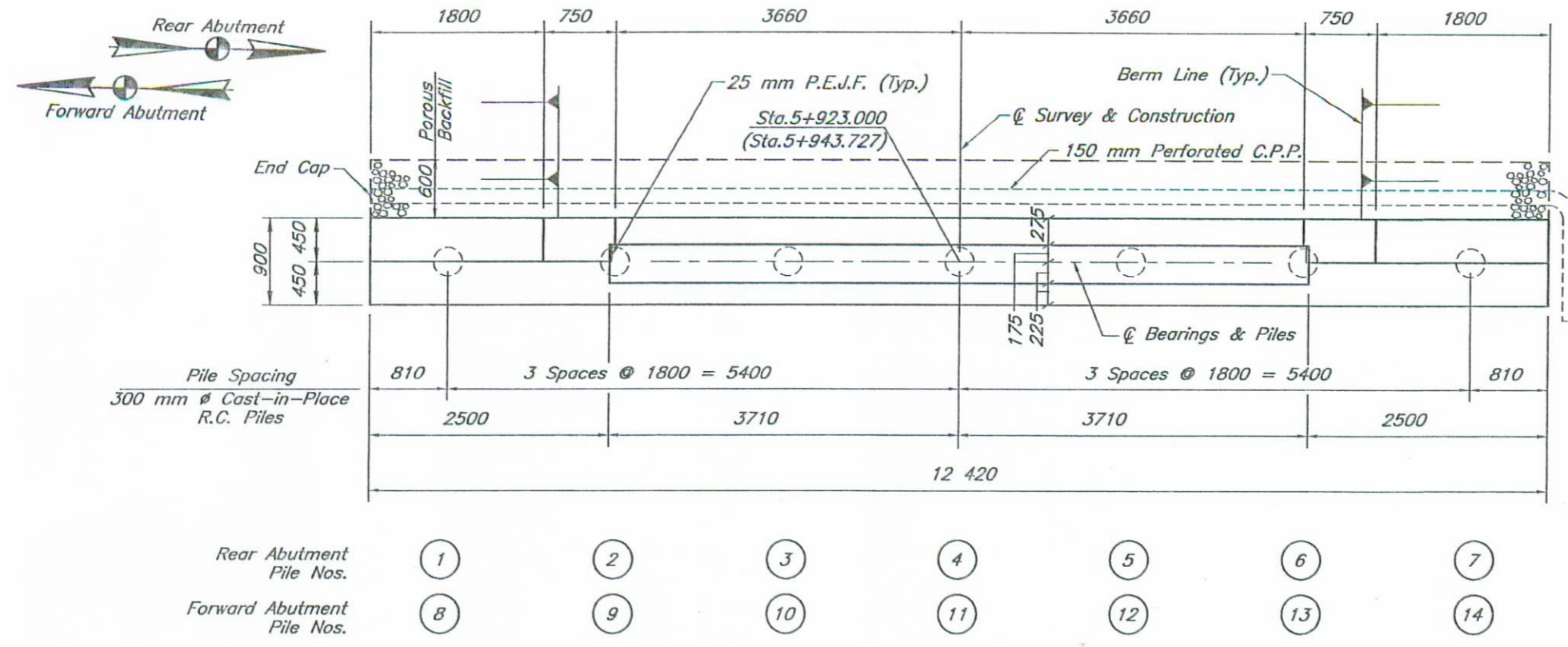
Bridge No. LOG-C.R. 58-59223

Over Rum Creek

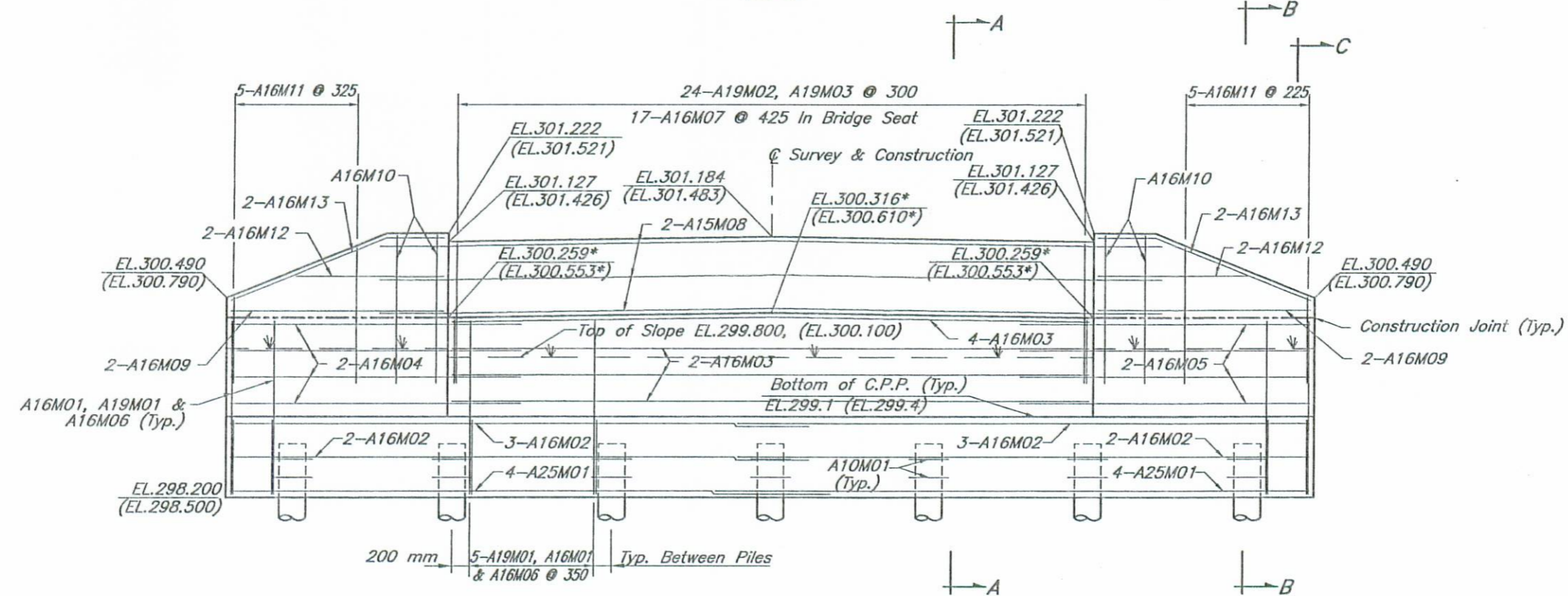
LOG-C.R. 58-5916/6492

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PLAN



ELEVATION

Lap No. 16M bars 840 mm  
 Lap No. 19M bars 1020 mm  
 Lap No. 25M bars 1350 mm

ABBREVIATIONS

F.F. = Front Face  
 B.F. = Back Face  
 E.F. = Each Face  
 C.P.P. = Corrugated Plastic Pipe

\* Elevations are given @  $\phi$  Bearings

Elevations & Station in ( ) are for Forward Abutment only.

For notes and Sections A-A & B-B see sheet 4/8

All Dimensions are in Millimeter.

Stations and Elevations are in Meter.



**metric  
units**

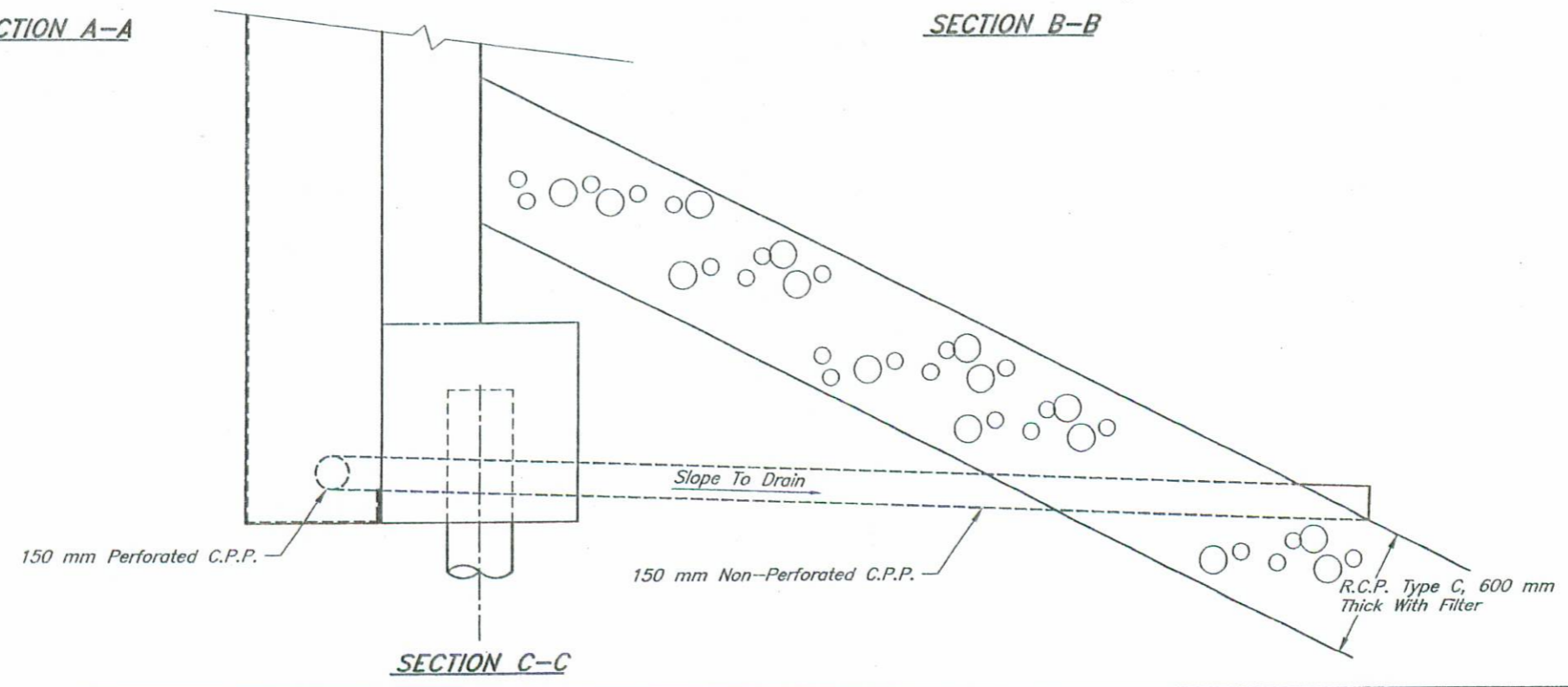
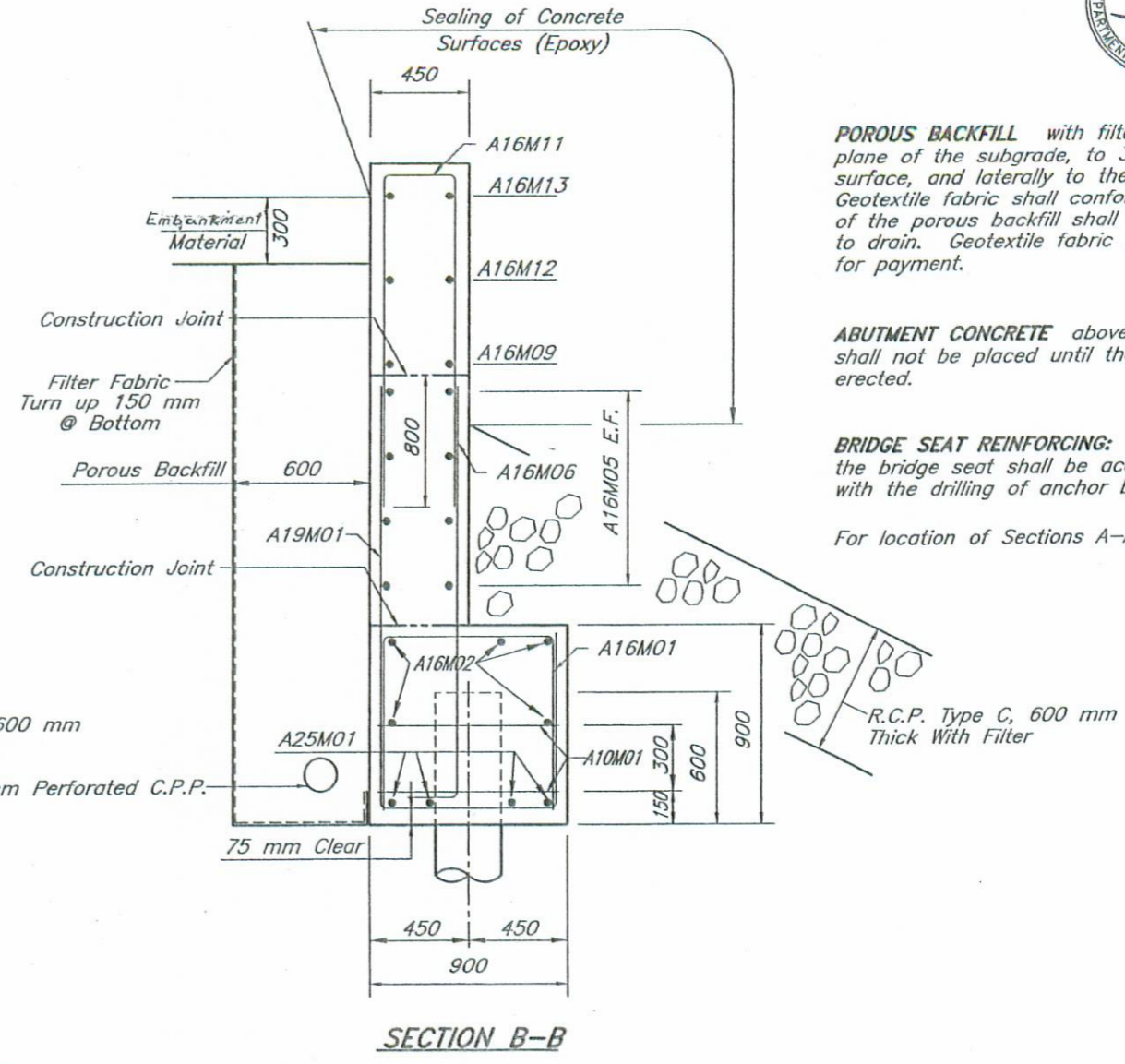
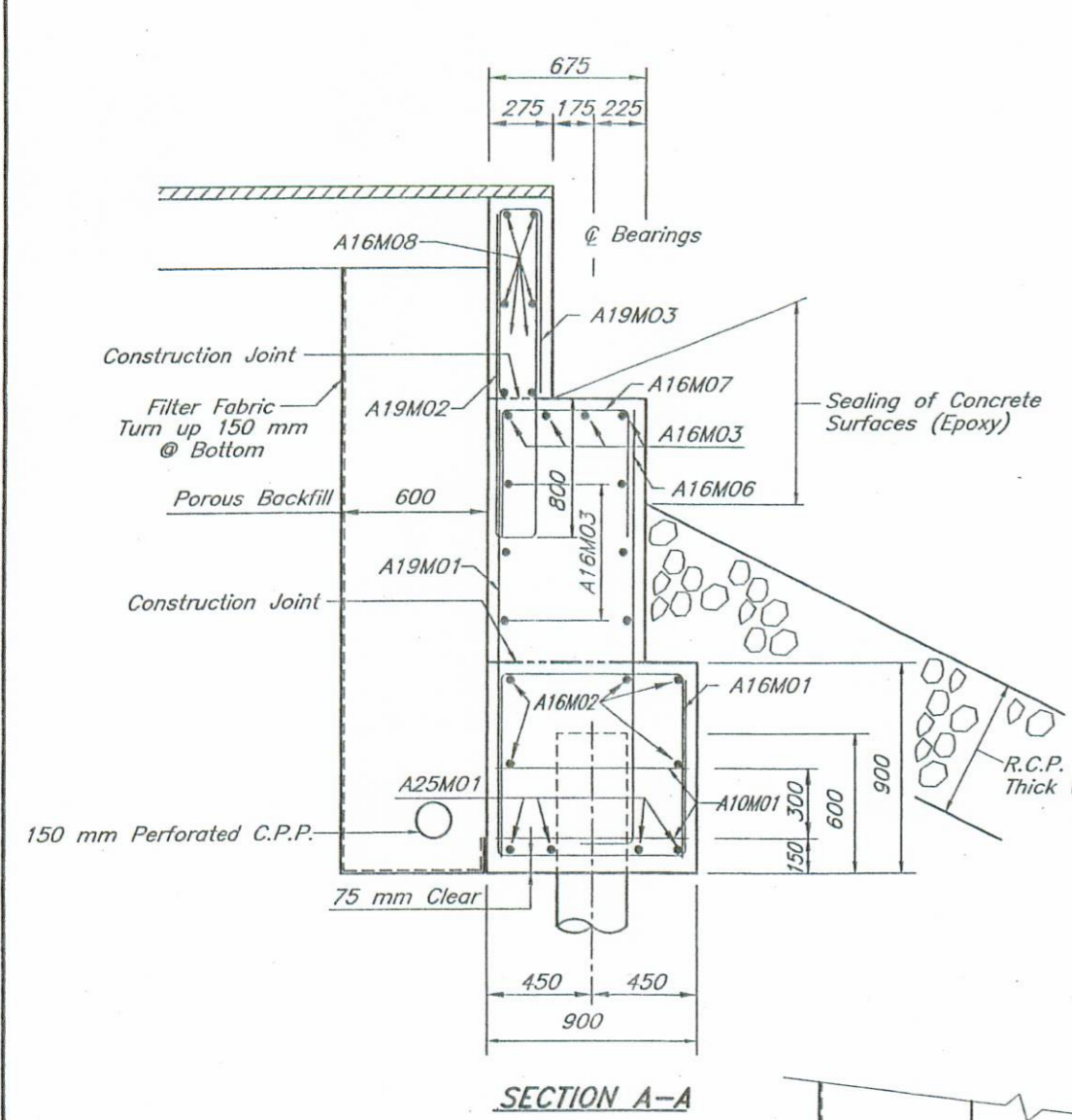
DESIGN AGENCY  
COLUMBUS ENGINEERING  
CONSULTANTS, INC.  
640 MICHIGAN AVENUE, COLUMBUS, OH 43215  
TEL: (614) 228-3900

DATE 5/9/1997  
REVIEWED RT JU  
DRAWN RT  
CHECKED WA  
STRUCTURE FILE NO. 4635345

ABUTMENT DETAILS  
Bridge No. LOG-C.R. 58-59223  
Over Rum Creek

LOG-C.R. 58-5916/6.492

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**POROUS BACKFILL** with filter fabric shall extend upward to the plane of the subgrade, to 300 mm below the embankment surface, and laterally to the ends of the wingwalls. Geotextile fabric shall conform with 712.09, Type A. The bottom of the porous backfill shall be sloped (0.0104 min.) laterally to drain. Geotextile fabric is included with porous backfill for payment.

**ABUTMENT CONCRETE** above the bridge seat construction joint shall not be placed until the prestressed box beams have been erected.

**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.

For location of Sections A-A & B-B, see sheet **3/8**

All Dimensions are in Millimeter



metric units

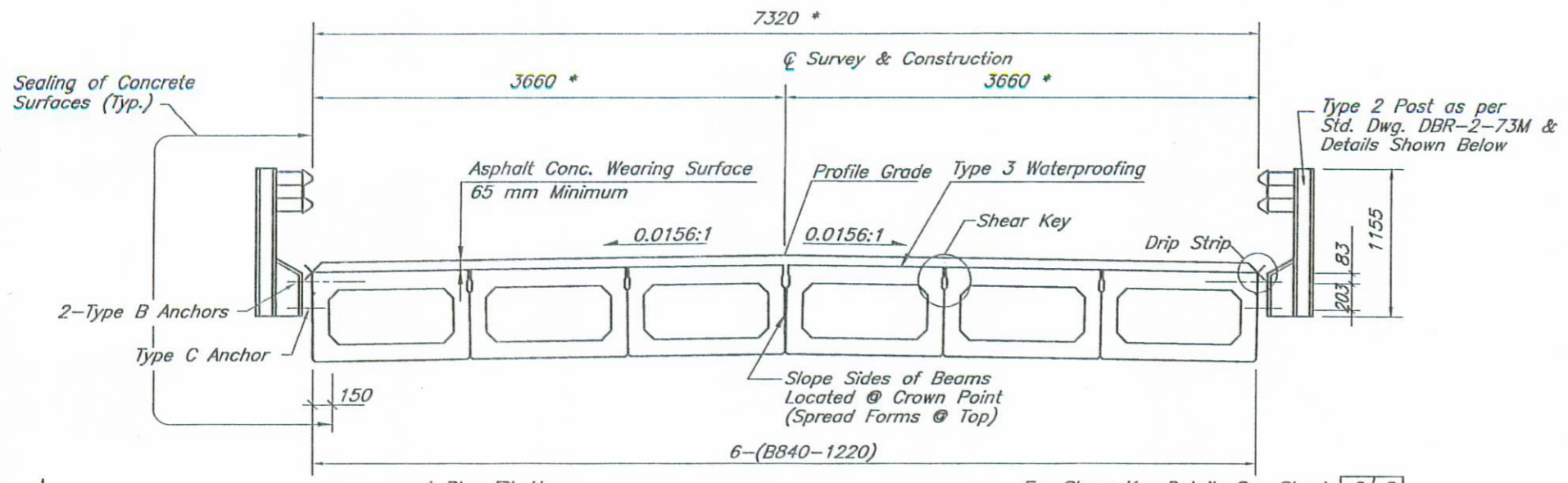
DESIGN AGENCY  
COLUMBUS ENGINEERING  
CONSULTANTS, INC.  
840 INDIAN AVENUE, COLUMBUS, OH 43215  
TEL: (614) 922-3000

DATE 5/9/1997  
REVIEWED JJ  
DRAWN RT  
DESIGNED RT  
CHECKED WA

STRUCTURE FILE NO. 4635345  
SUPERSTRUCTURE DETAILS  
Bridge No. LOG-C.R. 58-59223  
Over Rum Creek

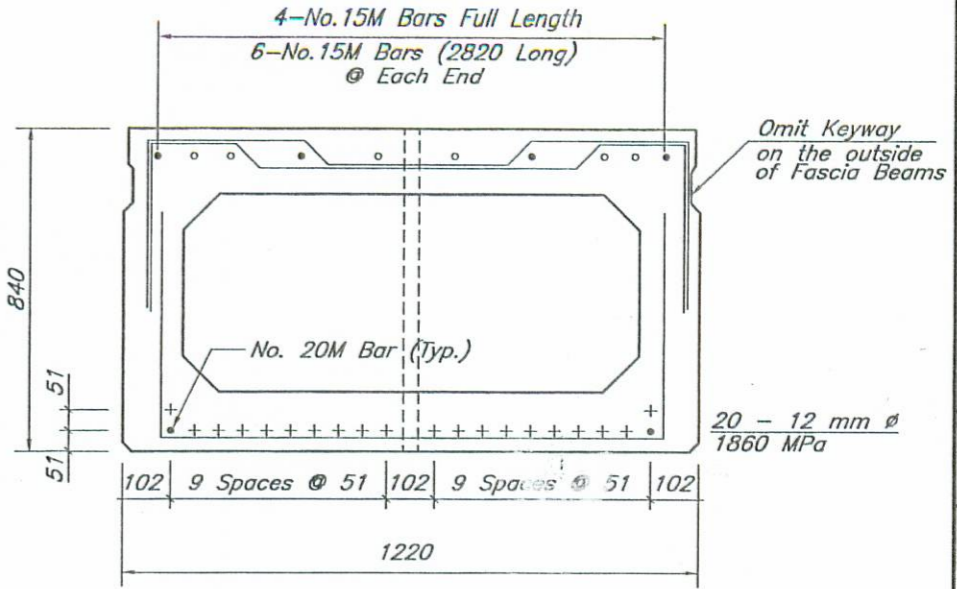
LOG-C.R. 58-5916/6.492

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22  
44

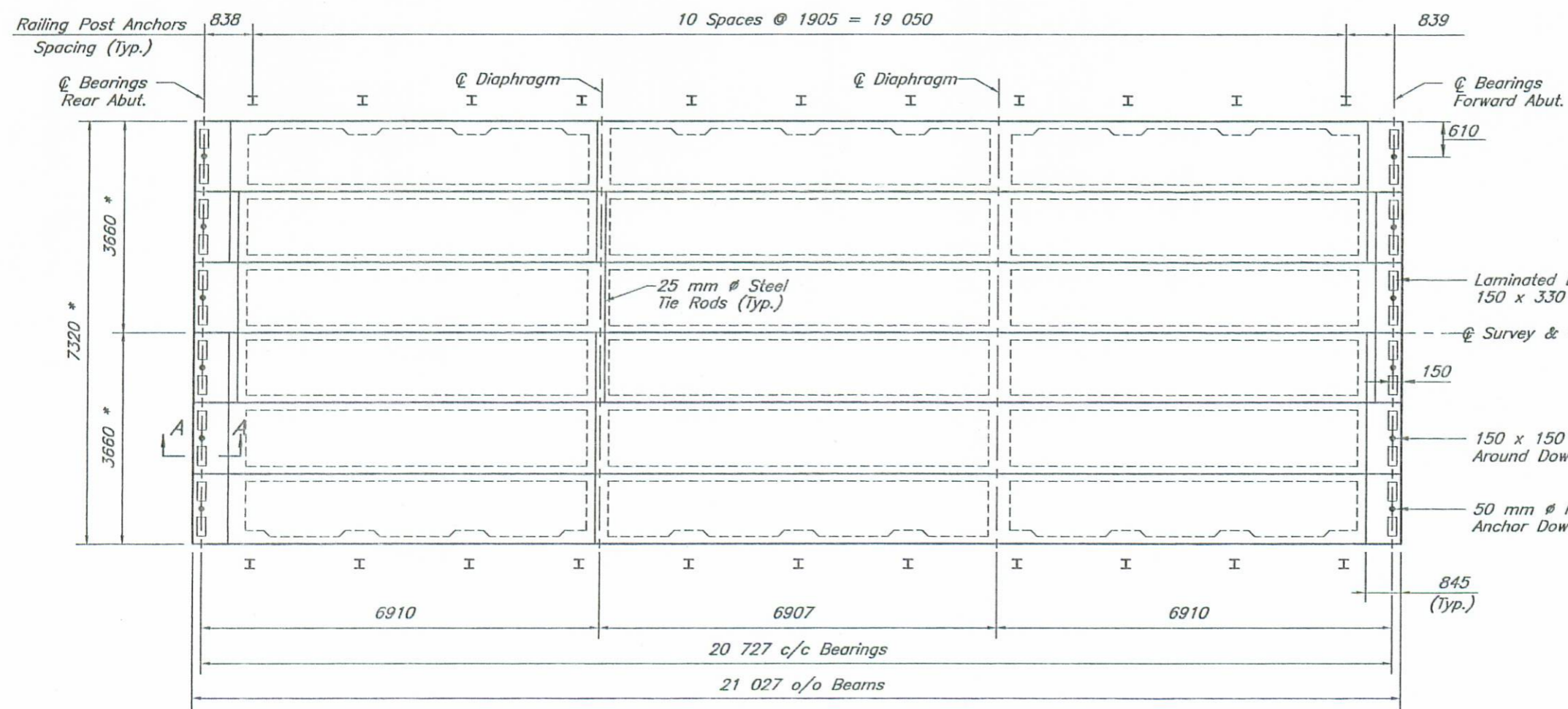


TRANSVERSE SECTION

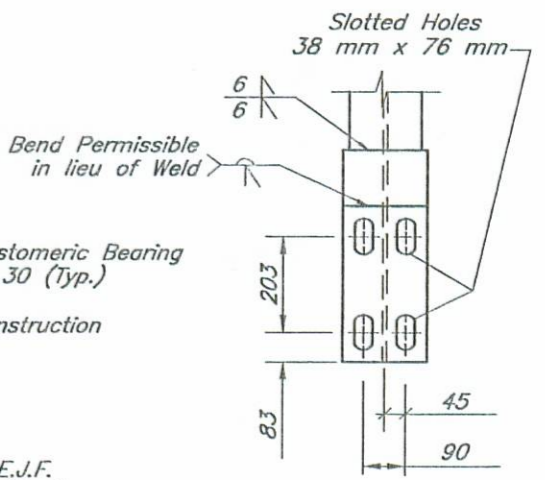
For Shear Key Details See Sheet 6/8  
For Drip Strip Details See Std. Dwg. DS-1-94 M  
For Sections A-A See Sheet 7/8



B840-1220  
No Debonding Required.



BEAM LAYOUT



GUARDRAIL POST DETAIL

All Dimensions are in Millimeter



**metric**  
**units**

DESIGN AGENCY  
COLUMBUS ENGINEERING  
CONSULTANTS, INC.  
840 MICRON AVENUE, COLUMBUS, OH 43215  
TEL: (614) 228-3500

DATE  
5/9/1997  
REVIEWED  
JJ  
STRUCTURE FILE NO.  
4635345

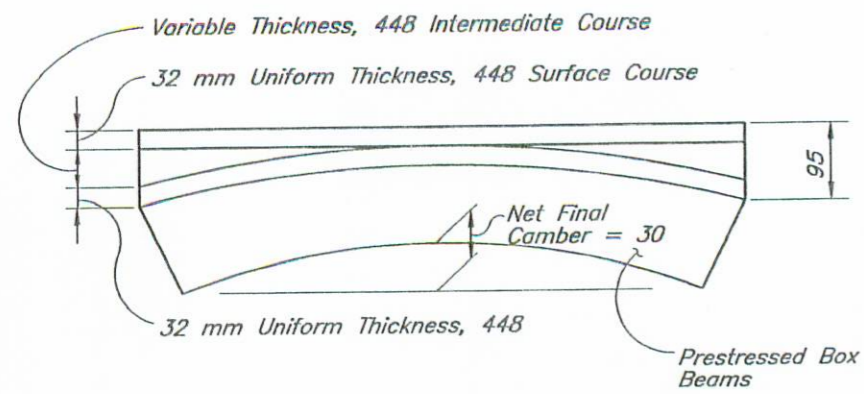
DRAWN  
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REVISED

SUPERSTRUCTURE DETAILS  
Bridge No. LOG-C.R. 58-59223  
Over Rum Creek

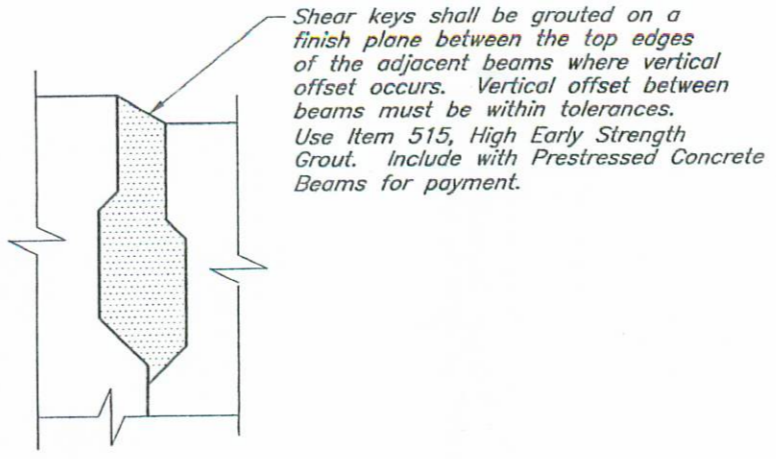
LOG-C.R. 58-5916/6.492

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44



ASPHALT THICKNESS DIAGRAM



SHEAR KEY DETAIL

Shear keys shall be grouted on a finish plane between the top edges of the adjacent beams where vertical offset occurs. Vertical offset between beams must be within tolerances. Use Item 515, High Early Strength Grout. Include with Prestressed Concrete Beams for payment.

**NOTES:**

Calculated camber at the time of paving including allowance for camber growth due to creep is 35 mm.

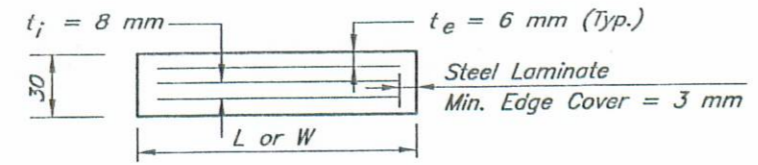
Calculated deflection due to weight of surface course and railing is 7 mm. Correction of vertical curve is 2 mm.

Net final camber is 30 mm. This is 30 mm in excess of the amount required to place the top of beam parallel to profile grade. This excess amount shall be compensated for by thickening the 448 and leveling course from 32 mm at center of span to 62 mm at ends of span.

Asphalt Concrete surface course shall consist of a variable thickness of 448 and 32 mm thickness of 448. The 448 shall be placed in two operations. The first course shall be of 32 mm uniform thickness. The second course shall be feathered to place the surface parallel to and 32 mm below final pavement surface elevations.

LAMINATED ELASTOMERIC BEARINGS									
LOCATION	DIMENSIONS (mm)					N	REACTIONS		MAX. DESIGN LOAD
	L	W	t <sub>i</sub>	t <sub>e</sub>	T		DL	LL	
All Beams	150	330	8	6	30	3	80 kN	67 kN	147 kN

t<sub>i</sub> = Thickness of Internal Layer  
t<sub>e</sub> = Thickness of External Layer  
T = Total Thickness of Elastomeric Bearing  
N = No. of Steel Laminates  
Internal Steel Laminate Thickness = 1.89 mm



LAMINATED ELASTOMERIC BEARING  
50 DUROMETER

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.

# GENERAL NOTES AND DETAILS FOR POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM



DESIGN AGENCY  
COLUMBIUS ENGINEERING CONSULTANTS, INC.  
840 MICHIGAN AVE., COLUMBIUS, OH 43215

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DRAWN  
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CHECKED  
WA

POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM  
Bridge No. LOG-C.R. 58-59223  
OVER RUM CREEK

LOG-C.R. 58-5916/6.492

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44

## ITEM SPECIAL - POLYMER-MODIFIED ASPHALT EXPANSION JOINT SYSTEM

THIS ITEM WILL BE USED TO SEAL THE EXPANSION/CONTRACTION JOINTS AS PER THESE DETAILS AND THE MANUFACTURER'S REQUIREMENTS USING A POLYMER-MODIFIED ASPHALT SYSTEM. THE PRIME CONTRACTOR WILL OBTAIN THE SERVICES OF ONE OF THE FOLLOWING APPROVED APPLICATORS WHO WILL FURNISH AND INSTALL THE NEW BRIDGE EXPANSION JOINT SYSTEM AFTER ALL PAVING ON THE AFFECTED BRIDGE(S) HAS BEEN COMPLETED.

- |   |  |   |
|---|--|---|
| D.S. BROWN COMPANY<br>P.O. BOX 158<br>300 E. CHERRY ST.<br>N. BALTIMORE, OH 45872-0158<br>TEL: 1-800-258-0162   | LINEAR DYNAMICS, INC.<br>RD #2 BOX 311<br>MUNCY, PA 17756<br>TEL: (717) 546-6041 | INFRASTRUCTURE SYSTEMS, INC.<br>830 E. HIGGINS ROAD<br>CHICAGO, IL 60173-4792<br>SUITE 111 M<br>TEL: 1-800-448-3636 |
| HARRIS SPECIALTY CHEMICAL, INC.<br>10245 CENTURION PARKWAY, N.<br>JACKSONVILLE, FL 32256<br>TEL: (904)-996-6000 |  |   |

### MATERIALS:

#### BRIDGING PLATE:

MILD STEEL 3 mm OR 6 mm THICK PLATE, 200 mm WIDE OR 18 GAUGE (APPROX. 1.3 mm) ALUMINUM, 204 mm WIDE.

#### BINDER:

TYPE:	POLYMER MODIFIED ASPHALT
SOFTENING POINT:	180 DEGREES F. MIN.
FLOW:	3 MM. MAX. AT 140 DEGREES F.
PENETRATION:	9 MM. MAX. AT 77 DEGREES F. 1 MM. MIN AT 0 DEGREES F. ASTM D 3407
DUCTILITY:	40 CM. MIN. ASTM D 113
RESILIENCE:	60% MIN. AT 77 DEGREES F.
TENSILE ADHESION:	700% MIN.
SPECIFIC GRAVITY:	1.10 ± 0.05
POURING TEMP:	350 - 390 DEGREES F.

#### AGGREGATE:

TYPE: CRUSHED, DOUBLE WASHED, AND DRIED GRANITE OR BASALT

#### GRADATION

THE GRADATION OF THE AGGREGATE VARIES BY MANUFACTURER AND WILL BE AS PER THE MANUFACTURER'S RECOMMENDATIONS FOR THE SYSTEM BEING USED ON THIS PROJECT.

#### BACKER ROD:

THE BACKER ROD SHALL BE A CLOSED CELL FOAM EXPANSION JOINT FILLER CAPABLE OF WITHSTANDING THE PLACEMENT TEMPERATURE OF THE POLYMER MODIFIED ASPHALT.

### INSTALLATION PROCEDURES:

#### SAWING AND SURFACE PREPARATION:

AFTER ALL PAVING OPERATIONS ARE COMPLETE, THE OVERLAY IS TO BE TRANSVERSELY SAW CUT FULL DEPTH NO LESS THAN 51 mm DEEP (508 mm CENTERED OVER JOINT OPENING, UNLESS OTHERWISE NOTED). REMOVE ALL MATERIAL, INCLUDING WATER-PROOFING MATERIAL, BETWEEN SAW CUTS. THOROUGHLY CLEAN AND DRY EXPOSED CONCRETE, STEEL, AND CUT SURFACES USING COMPRESSED AIR AND A HOT COMPRESSED AIR (HCA) LANCE. THE LANCE MUST PRODUCE A FLAME RETARDED AIR STREAM TEMPERATURE OF 1649 DEGREES F. AT A VELOCITY OF 914 METER PER SECOND WITH 103.4 kPa GAUGE CHAMBER PRESSURE. IF THERE IS AN INTERRUPTION DUE TO WEATHER OR OTHER CAUSES, THE OPERATION WILL BE REPEATED WITH THE HCA LANCE IMMEDIATELY BEFORE THE BINDER COAT OPERATION. ALSO, 150 mm OF THE ROAD SURFACE ON EITHER SIDE OF THE JOINT WILL BE DRIED SO THAT A SUITABLE SURFACE FOR BITUMEN ADHESION IS OBTAINED.

### SEALING OF EXPANSION JOINT: (PRE-STRESSED BOX OR CONCRETE SLAB)

THE EXPANSION JOINT GAP IS TO BE SEALED AND A BRIDGING PLATE CENTERED ALONG IT. A VERY NARROW GAP WILL BE SEALED BY POURING HOT BINDER INTO THE GAP. GAPS OF 3 mm OR MORE WILL FIRST BE FILLED WITH AN APPROPRIATELY SIZED BACKER ROD. THE BACKER ROD WILL BE INSTALLED SO THAT IT IS BETWEEN 3 mm AND 30 mm BELOW THE TOP OF THE EXISTING GAP. THE GAP WILL THEN BE FILLED WITH BINDER.

### BOND BREAKER:

SPREAD BINDER OVER SURFACE AREA WHERE THE METAL BRIDGING PLATE WILL BE PLACED. CENTER THE BRIDGING PLATE OVER THE EXISTING JOINT AND BED INTO THE HOT BINDER. BUTT JOINT THE BRIDGING PLATES TO ACCOMMODATE THE ENTIRE JOINT LENGTH. SPIKE HOLES WILL BE DRILLED AT 300 mm INTERVALS ALONG THE LONGITUDINAL CENTERLINE OF THE PLATES. SECURE BRIDGING PLATE WITH NAILS OR SPIKES. SEAL BUTT JOINTS WITH HOT BINDER AND ALLOW BINDER TO SETUP BEFORE NEXT OPERATION. WHEN ALUMINUM BRIDGING PLATES ARE USED, ONLY THE BINDER IS REQUIRED TO SECURE THE INDIVIDUAL PLATES.

### BINDER COAT:

SEAL ALL PREPARED, EXPOSED SURFACES OF THE JOINT WITH BINDER. POUR THE HOT BINDER OVER THE FLOOR AREA OF THE JOINT AND SPREAD TO COAT ALL EXPOSED SURFACES. THE BINDER WILL BE A MINIMUM OF 1 mm THICK ON THE BOTTOM OF THE JOINT CAVITY, WITH POOLS OF GREATER THICKNESS WHERE SURFACE IRREGULARITIES EXIST. THE BINDER APPLICATION TEMPERATURE WILL BE BETWEEN 177 AND 199 DEGREES C. THE BINDER WILL NOT BE ALLOWED TO BE HEATED ABOVE 210 DEGREES C. NOR ALLOWED TO EXCEED 199 DEGREES C. FOR MORE THAN 1 HOUR. A DOUBLE JACKETED OIL MELTER WILL BE USED TO HEAT THE BINDER. THE MELTER WILL BE EQUIPPED WITH A CONTINUOUS AGITATION SYSTEM, TEMPERATURE CONTROLS, AND A CALIBRATED THERMOMETER. ALSO A SYSTEM FOR ACCURATELY MEASURING THE WEIGHTS OF THE BINDER AND THE AGGREGATE WILL BE REQUIRED.

### BUILD-UP OF JOINT LAYERS:

#### AGGREGATE PREPARATION:

HEAT THE AGGREGATE TO A TEMPERATURE OF 135 TO 163 DEGREES C., WITH A SUITABLE ROTATING DRUM WITH ATTACHED HEAT SOURCE OR A HOT COMPRESSED AIR LANCE, TO REMOVE DUST AND MOISTURE.

#### AGGREGATE PROPORTION AND LAYER THICKNESS:

MIX THE AGGREGATE WITH THE BINDER SUCH THAT THE MINIMUM AGGREGATE CONTENT BY WEIGHT WILL BE 68%. THE HEATED AGGREGATE AND BINDER WILL BE COMBINED IN LAYERS, NOT LESS THAN 13 mm NOR EXCEEDING 63 mm. THE THICKNESS OF EACH LAYER CAN BE VARRIED, WITHIN THESE LIMITS, TO ACHIEVE THE REQUIRED JOINT THICKNESS ( MINIMUM 51 mm). THE OBJECTIVE IS TO COAT EACH STONE AND FILL THE VOIDS WHILE AVOIDING AN EXCESS OF BINDER. THIS WILL ACHIEVE THE MAXIMUM CONTENT OF STONE CONSISTENT WITH ALL STONES BEING COATED WITH BINDER. RAKE THE MIXTURE TO MIX AND LEVEL.

THE TOP LAYER THICKNESS WILL VARY BETWEEN 13 mm AND 25 mm. IN PREPARING THE TOP LAYER, THE RATIO OF AGGREGATE TO BINDER WILL BE APPROXIMATELY 6:1 BY WEIGHT. OVERFILL THE TOP LAYER AND COMPACT TO THE LEVEL OF THE ADJACENT SURFACES USING A ROLLER OR VIBRATORY PLATE COMPACTOR. IMMEDIATELY AFTER COMPLETION OF THE COMPACTION, POUR SUFFICIENT BINDER OVER THE JOINT TO FILL THE SURFACE VOIDS AND COAT THE SURFACE STONE. DUST THE FINISHED JOINT WITH A FINE, DRY AGGREGATE TO PREVENT TACKINESS.

### MAINTENANCE OF TRAFFIC:

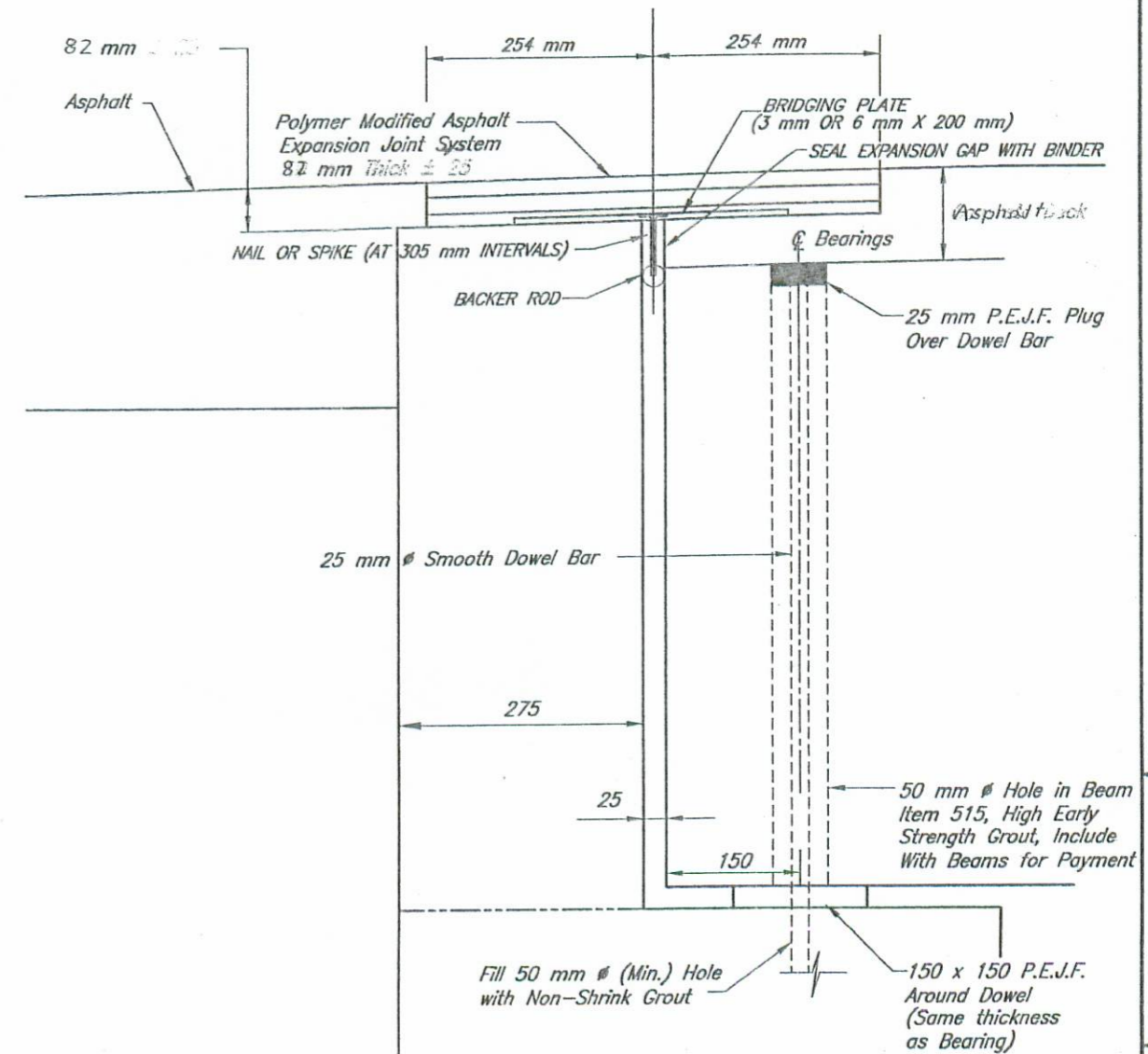
IF NECESSARY TO FACILITATE TRAFFIC MAINTENANCE, THE JOINT WILL BE INSTALLED IN TWO (2) HALF-WIDTH PHASES. DURING PHASE 1 APPROXIMATELY HALF OF THE TOTAL JOINT WILL BE INSTALLED. DURING PHASE 2, A MINIMUM OF 51 mm OF PHASE 1 JOINT WILL BE REMOVED, AT OR NEAR THE CENTERLINE, WITH THE REMAINDER OF THE JOINT INSTALLED. IN ALL CASES, OPERATIONS WILL BE SCHEDULED SO THAT ALL LANES CAN BE OPEN TO TRAFFIC DURING ALL NON-WORKING HOURS.

### TESTING:

CERTIFICATION WILL BE SUPPLIED FOR EACH PROJECT SHOWING BINDER COMPLIANCE WITH REQUIRED PROPERTIES. A ONE LITER SAMPLE OF BINDER WILL BE RETRIEVED FROM EACH BRIDGE FOR FURTHER TESTING BY THE O.D.O.T. TESTING LABORATORY.

### PAYMENT:

PAYMENT FOR ALL THE ABOVE WILL BE AT THE UNIT PRICE BID PER LINEAR METER OF SEALED JOINT IN PLACE FOR ITEM SPECIAL 516 31300, POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM ( 82 MM THICK). THIS WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.



**JOINT DETAIL AT ABUTMENT  
SECTION A-A**

