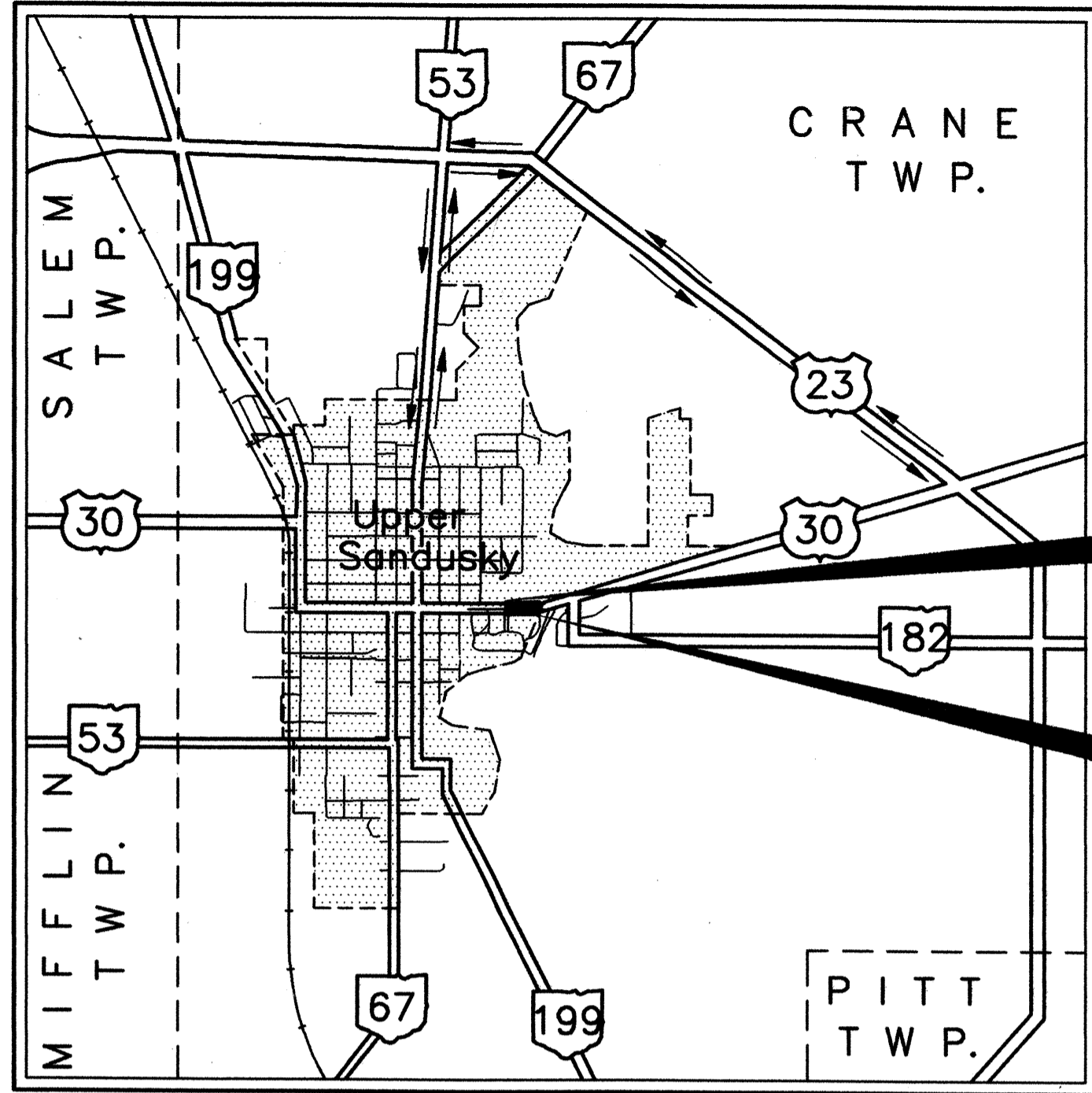


STATE OF OHIO DEPARTMENT OF TRANSPORTATION WYA-30-21.200(13.17) CITY OF UPPER SANDUSKY CRANE TOWNSHIP WYANDOT COUNTY



BEGIN PROJECT
STA. 21+200
40° 49' 38" NORTH LATITUDE
83° 16' 16" WEST LONGITUDE
END PROJECT
STA. 21+320

MICROFILMED
JAN 10 1999

PROJECT DESCRIPTION

REPLACEMENT OF A DEFICIENT STRUCTURE OVER THE SANDUSKY RIVER.

TOTAL PROJECT LENGTH = 120 m

NOTE: THIS SECTION OF ROADWAY IS NO LONGER DESIGNATED AS U.S. 30. HOWEVER, IT WILL CONTINUE TO BE REFERRED TO AS U.S. 30 IN THESE CONSTRUCTION PLANS, AS IT WAS PROGRAMMED WITH THAT DESIGNATION.

1997 SPECIFICATIONS

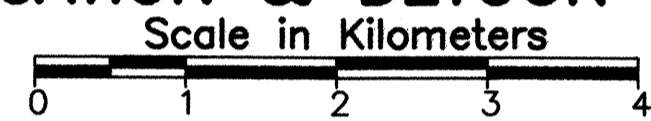
The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as indicated on sheets 1 and 2.

Approved *[Signature]*
Date 1/30/98 District Deputy Director

Approved *[Signature]*
Date 2-11-98 Director, Department of Transportation

LOCATION & DETOUR MAP



- Portion to be improved
- State & Federal Routes
- Other Roads
- County Line
- Township Line
- Detour Route

DESIGN DESIGNATION

- Current A.D.T. (1996)..... = 8500
- Design Year A.D.T. (2016)..... = 10,200
- Design Hourly Volume..... = 1020
- Directional Distribution..... = 55%
- Trucks (24 Hour B & C)..... = 14%
- Design Speed..... = 70 km/h.
- Legal Speed..... = 45 m.p.h.
- Design Functional Classification..... Urban Arterial

DESIGN EXCEPTIONS

No Design Exceptions Required

UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG
Call... 800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

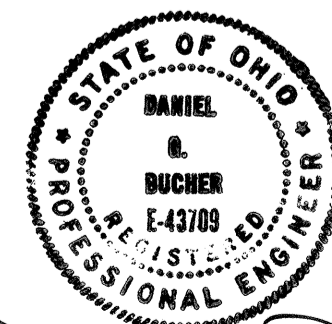
STRUCTURE PLANS REVIEWED
by
URS CONSULTANTS, INC.

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
AS-1-81M	10/25/94	GR-1.1M	11/30/94	TC-41.10M	3/31/94	U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NO. 14383 and PERMIT NO. 98-515-0001(b)
		GR-1.2M	1/3/96	MT-101.60M	4/25/94	
BP-3.1M	10/28/94			TC-41.20M	7/1/94	
BP-4.1M	10/28/94	GR-2.1M	11/30/94	MT-105.10M	4/25/94	
				TC-52.10M	7/29/94	
DBR-2-73M	8/18/95	GR-3.4M	1/3/96	PSBD-1-93M	12/19/94	
		GR-4.2M	4/21/95			CALENDAR DAYS OF CONTRACT TIME FOR OPENING TO UNRESTRICTED TRAFFIC
DM-1.1M	6/30/95					
DM-4.3M	6/30/95	LA-1.2M	9/6/95			
DM-4.4M	6/30/95					
DS-1-94M	12/15/94					



Plan Prepared By:

Kohli and Kaliher Assoc., Inc.
311 East Market Street
Lima, Ohio



[Signature]
1-30-98

FEDERAL PROJECT NO.

PID NO. 12755

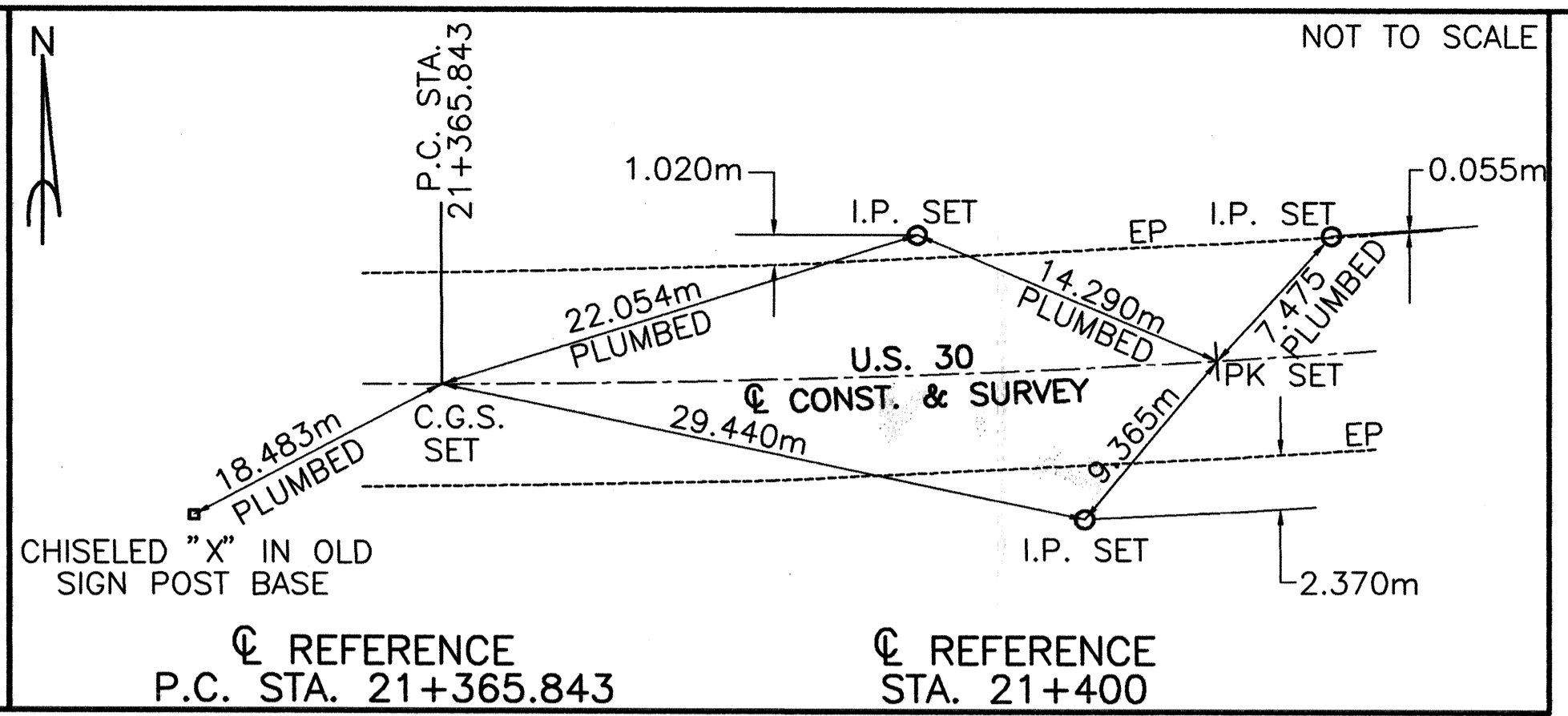
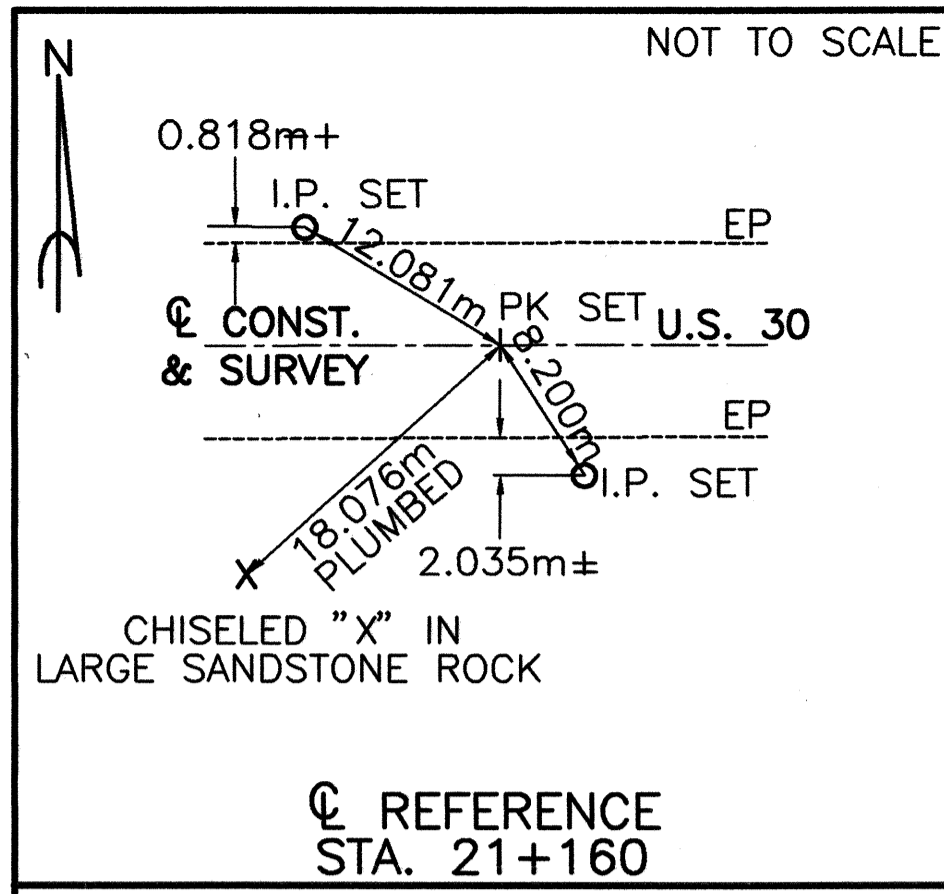
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

WYA-30-21.200

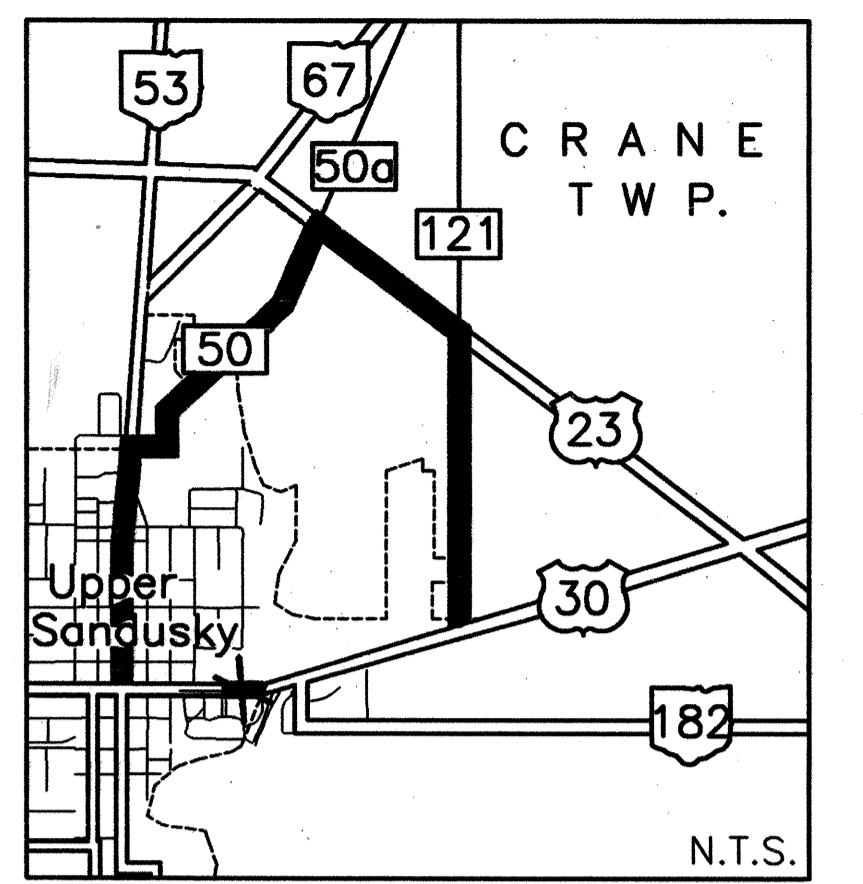
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WYA-30-21.200
980319
05-13-98
DIST. 01



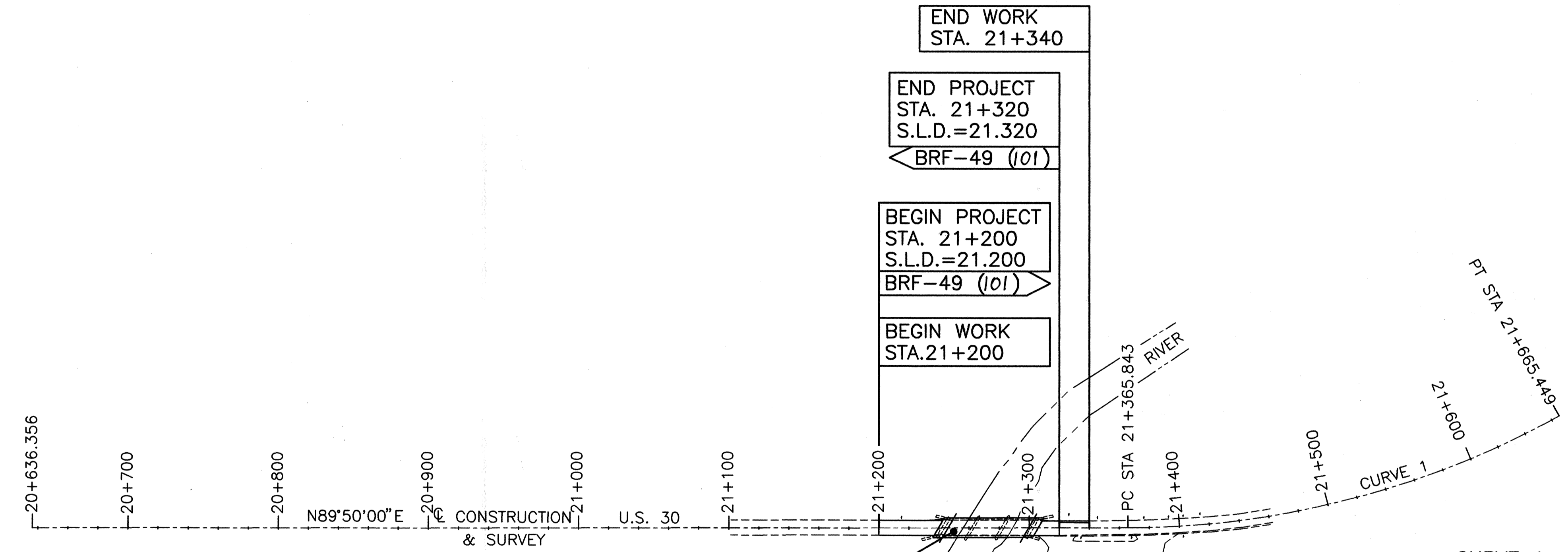
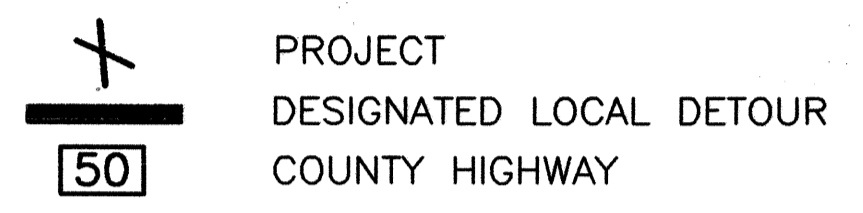
DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE". THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE ENGINEER.



THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE:

ITEM	QUANTITY	DESCRIPTION
448	50 m ³	ASPHALT CONCRETE, SURFACE COURSE, PG64-22, AS PER PLAN
407	500 LITER	TACK COAT
616	4 m ³	WATER
616	1 METRIC TON	CALCIUM CHLORIDE
617	50 m ³	COMPACTED AGGREGATE, TYPE A



STRUCTURE NO. WYA-30-21244

CURVE 1

P.I.	=	21+518.890
Δ	=	28°50'00" Lt.
R	=	595.358 m
T	=	153.047 m
L	=	299.606 m
E	=	19.357 m
P.C.	=	21+365.843
P.T.	=	21+665.449

POINT NO.	X	Y	DESCRIPTION
61	10063.0807	9430.2400	(20+636.356)
60	10064.8465	10037.2613	
66	10065.2028	10159.7235	P.C. (21+365.843)
67	10660.5581	10157.9916	CENTER OF CURVE
68	10139.8464	10446.6269	P.T. (21+665.449)

DESIGN AGENCY
CALCULATED M.A.D. CHECKED A.M.V.
KOHLI & KALHER ASSOCIATES, INC. CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

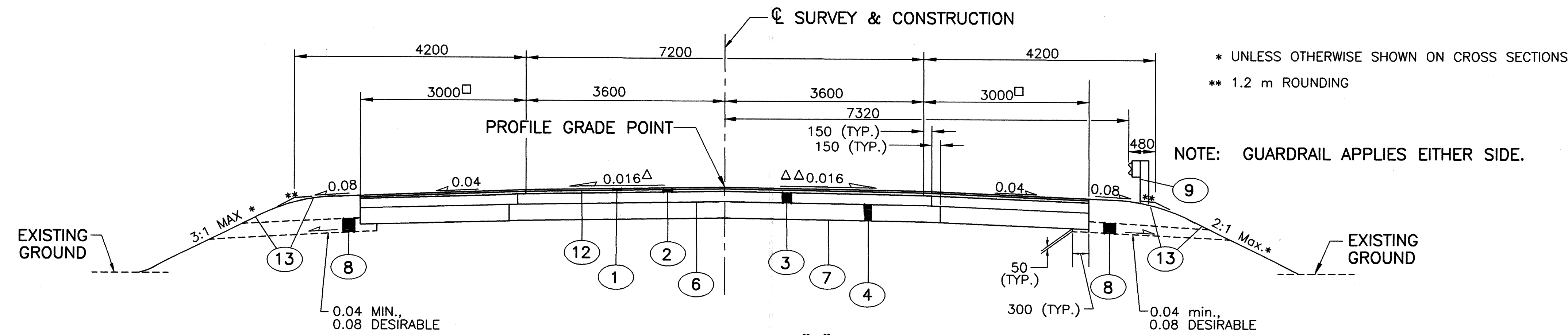
SCHEMATIC PLAN

WYA-30-21.200

2/23

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

DESIGN AGENCY
 CALCULATED
 M.A.D.
 CHECKED
 A.M.V.
 CONSULTING ENGINEERS AND SURVEYORS
 KOHLI & KALHER ASSOCIATES, INC.
 LIMA, OHIO

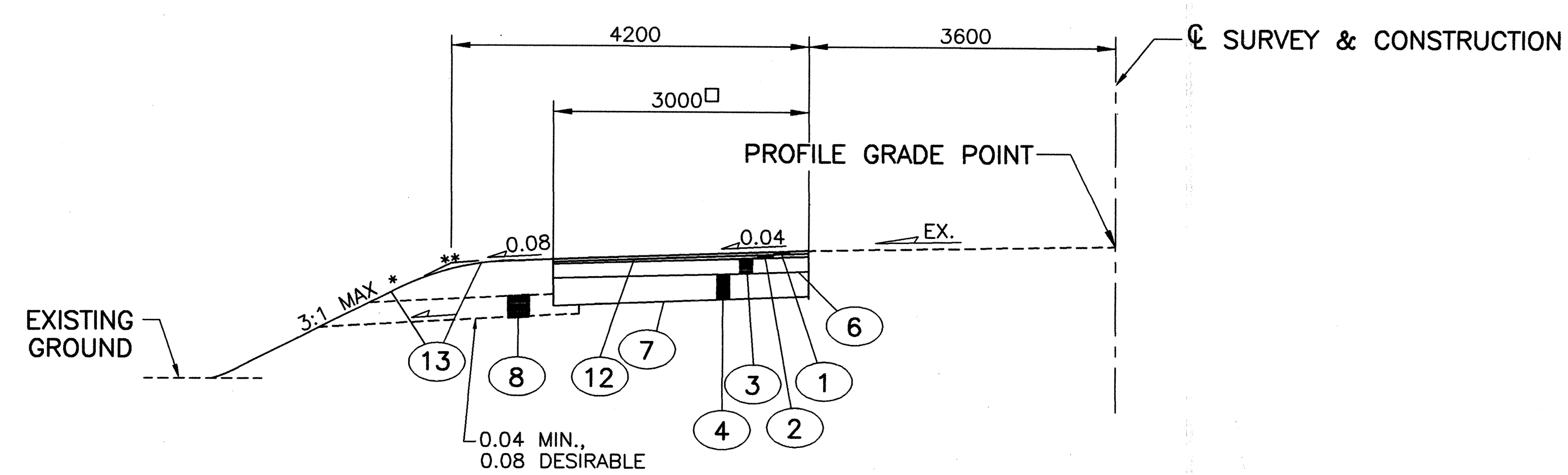


TYPICAL SECTION "A"

TYPICAL SECTION "A" APPLIES:
 FROM 21+200.000 TO 21+239.698 = 39.698 m
 FROM 21+304.742 TO 21+320.000 = 15.258 m
 TOTAL = 54.956 m

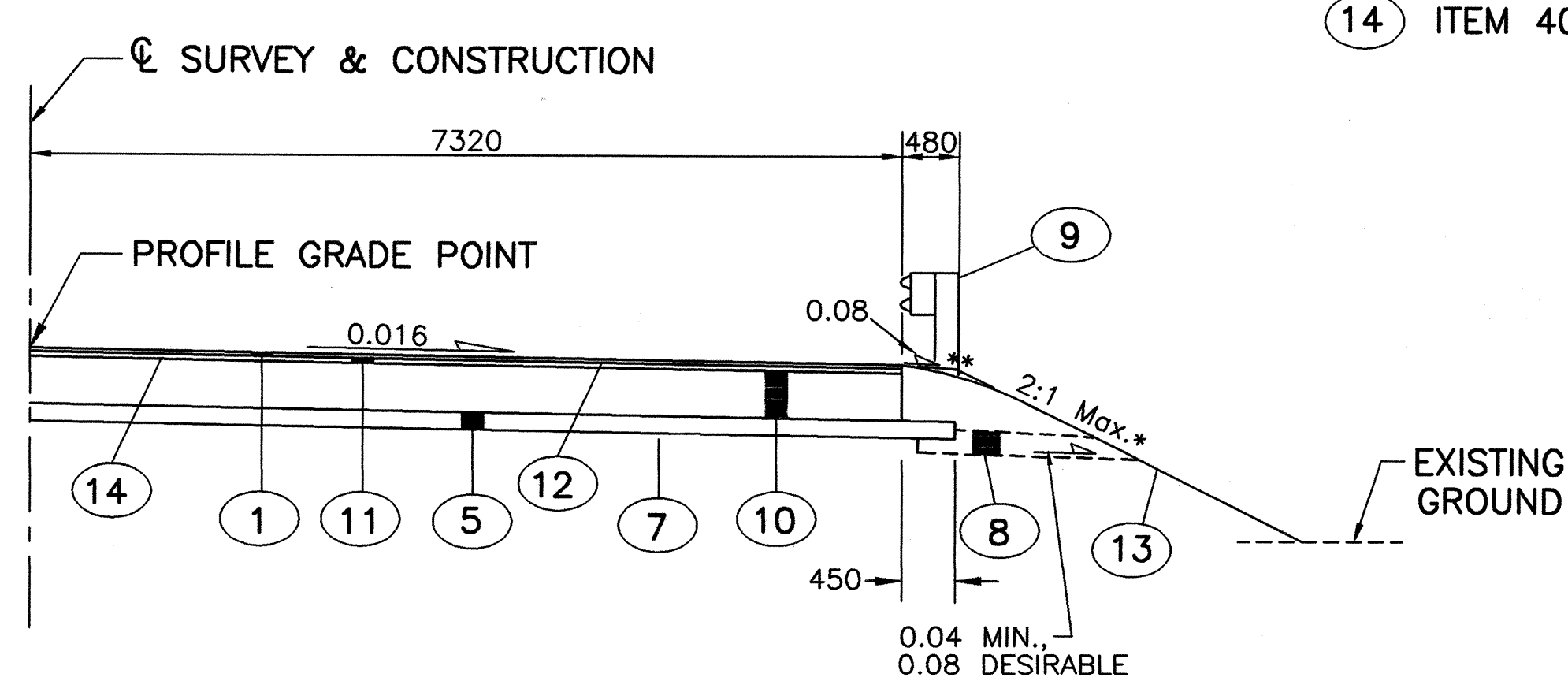
△ SLOPE TRANSITION FROM EXISTING 0.023 AT STA. 21+200 TO PROPOSED 0.016 AT STA. 21+210 AND SLOPE TRANSITION FROM PROPOSED 0.016 AT STA. 21+310 TO EXISTING 0.014 AT STA. 21+320
 △△ SLOPE TRANSITION FROM EXISTING 0.025 AT STA. 21+200 TO PROPOSED 0.016 AT STA. 21+210 AND SLOPE TRANSITION FROM PROPOSED 0.016 AT STA. 21+310 TO EXISTING 0.007 AT STA. 21+320
 □ PAVED SHOULDER WIDTHS VARY. SEE PAVEMENT CALCULATIONS, SHEET 5 FOR DIMENSIONS.

- LEGEND**
- ① ITEM 448 32 mm ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN
 - ② ITEM 448 45 mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
 - ③ ITEM 301 150 mm BITUMINOUS AGGREGATE BASE, AC-20
 - ④ ITEM 304 300 mm AGGREGATE BASE
 - ⑤ ITEM 304 150 mm AGGREGATE BASE
 - ⑥ ITEM 408 BITUMINOUS PRIME COAT, APPLIED AT 1.8 LITERS PER SQ. METER
 - ⑦ ITEM 203 SUBGRADE COMPACTION
 - ⑧ ITEM 605 AGGREGATE DRAINS
 - ⑨ ITEM 606 GUARDRAIL, TYPE 5
 - ⑩ ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=305 mm)
 - ⑪ ITEM 448 32 mm TO 49 mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
 - ⑫ ITEM 407 TACK COAT FOR INTERMEDIATE COURSE
 - ⑬ ITEM 659 SEEDING AND MULCHING (SEE GENERAL NOTE)
 - ⑭ ITEM 407 TACK COAT



HALF TYPICAL SECTION PAVED SHOULDERS

PAVED SHOULDER SECTION APPLIES:
 FROM STA. 21+320.000 TO STA. 21+340.000 = 20.000 m



HALF TYPICAL SECTION BRIDGE APPROACH SLAB

BRIDGE APPROACH SLAB SECTION APPLIES:
 FROM STA. 21+239.698 TO STA. 21+304.742 = 65.044 m
 DEDUCT FOR STRUCTURE WYA-30-21244:
 FROM STA. 21+244.298 TO STA. 21+300.142 = -55.844 m
 TOTAL = 9.200 m

TYPICAL SECTION

WYA-30-21.200

6/12/96 8:23 AM WYA30TS

DETOUR LIMITATIONS: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 120 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 1.

THE DETOUR SHALL BE ESTABLISHED, MAINTAINED AND SUBSEQUENTLY REMOVED BY OTHERS. ACCESS TO ADJACENT PROPERTIES AND FIELD DRIVES AFFECTED BY ANY OF THE CONSTRUCTION OPERATIONS SHALL BE MAINTAINED AT ALL TIMES UNLESS PERMISSION TO CLOSE THE FACILITY IS OBTAINED FROM OWNERS AND THE ENGINEER. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED BEYOND THE SPECIFIED LIMIT. TEMPORARY OR PERMANENT PAVEMENT MARKINGS MUST BE IN PLACE PRIOR TO OPENING THE ROAD TO TRAFFIC. THE CONTRACTOR SHALL NOTIFY THE STATE AT LEAST SEVEN (7) WORK DAYS PRIOR TO HIS ANTICIPATED DATE OF CLOSURE IN ORDER TO ESTABLISH THE DETOUR AND INFORM THE PUBLIC.

ROUNDING: THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES: LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AMERITECH 130 NORTH ERIE, ROOM 206 TOLEDO, OH 43624 1-419-245-7589	AMERICAN ELECTRIC POWER 2738 N. MAIN P.O. BOX 944 FINDLAY, OH 45839-0944 1-419-425-7546	COLUMBIA GAS OF OHIO 126 LEADER STREET MARION, OH 43302 1-800-548-8034
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THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

CONTINGENCY QUANTITIES: THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM: ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

REMOVAL OF TREES OR STUMPS: ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZE	NO. TREES
450 mm	1

CONSTRUCTION LIMITS: THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CORPS OF ENGINEERS PERMIT: THE ACTIVITY OF THIS PROJECT MUST COMPLY WITH THE SPECIFIC AND GENERAL CONDITIONS OF THE NATIONWIDE PERMIT PROGRAM. SPECIFIC CONDITIONS ARE 13, 14 AND 25. SPECIFIC AND GENERAL CONDITIONS ARE POSTED BY THE ENGINEER IN THE PROJECT TRAILER.

ENVIRONMENTAL COMMITMENT: THE ENVIRONMENTAL DOCUMENT WAS APPROVED 6/27/95 AND CONTAINED THE FOLLOWING CONSTRUCTION RELATED ITEMS THAT THE CONTRACTOR AND ENGINEER ARE TO ENSURE ARE CARRIED OUT. IF THEY CANNOT BE FOLLOWED THE DISTRICT PLANNING AND PROGRAM ADMINISTRATOR SHOULD BE NOTIFIED IMMEDIATELY.

- BANK STABILIZATION WILL BE LIMITED TO WITHIN 45 METERS (148 FEET) UPSTREAM AND DOWNSTREAM OF THE EXISTING STRUCTURE. BANK STABILIZATION WILL BE LIMITED TO REGRADING OF THE BANKS FROM THE TOE-OF-SLOPE (IN-STREAM) TO THE TOP OF BANK AND WILL INCLUDE PLACEMENT OF ROCK CHANNEL PROTECTION WHERE REQUIRED. THIS WILL EXCLUDE WORK SUCH AS CHANNEL WIDENING, DEEPENING OR RELOCATION. THIS STABILIZATION WILL BE KEPT TO A MINIMUM.
- IN STREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS AND COFFERDAMS. THIS TEMPORARILY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.
- THE SPECIFICATIONS SET FORTH IN THE MOST RECENT VERSION OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LOCATION AND DESIGN MANUAL AND STANDARD DRAWINGS WILL BE USED TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES: WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT ANY EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL: THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207, TEMPORARY SEEDING AND MULCHING	230 SQ. METER
207, FILTER FABRIC FENCE	124 METER
207, STRAW OR HAY BALES	50 EACH
659, COMMERCIAL FERTILIZER	12 Kg.
659, WATER	2.4 CU. METER

EROSION CONTROL: ITEM 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

FARM DRAINS: ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE CONSTRUCTION LIMITS BY ITEM 603 CONDUIT, TYPE B ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE 300 mm ABOVE THE FLOW-LINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1M, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 603	150 mm CONDUIT, TYPE F	15 METER
ITEM 603	200 mm CONDUIT, TYPE F	15 METER
ITEM 603	300 mm CONDUIT, TYPE B	15 METER

ITEM 407 TACK COAT: THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.34 LITERS PER SQUARE METER OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 448 ASPHALT CONCRETE SURFACE COURSE TYPE 1, PG-64-22, AS PER PLAN: THIS ITEM SHALL MEET ALL REQUIREMENTS OF SPECS 401, 441 AND 448 WITH THE FOLLOWING EXCEPTION:

- NO RECYCLED ASPHALT PAVEMENT SHALL BE USED IN THE SURFACE COURSE.

ALL COSTS ASSOCIATED WITH THE EQUIPMENT, LABOR AND MATERIALS NECESSARY FOR SUPPLYING AND PLACING THIS ITEM SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR ITEM 448 ASPHALT CONCRETE SURFACE COURSE TYPE 1, PG-64-22, AS PER PLAN.

CONSTRUCTION NOISE: ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 9 P.M. AND 7 A.M. IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

ITEM 659 SEEDING AND MULCHING: SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

WATERING PERMANENT SEEDED AREAS: THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR PERMANENT SEEDED AREAS PER 659.09:

659 WATER	12 CU. METER
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STREAM CHANNEL EXCAVATION: THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION, PIER OR ABUTMENT EXCAVATION, CHANNEL CLEANOUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

DUST CONTROL: THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

616, WATER	4 CUBIC METER
616, CALCIUM CHLORIDE	0.1 METRIC TON

MAINTENANCE OF TRAFFIC: THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614, "MAINTAINING TRAFFIC" AND THE FOLLOWING:

THE CONTRACTOR SHALL ALSO PROVIDE, ERECT AND MAINTAIN 1200 mm x 750 mm R-75 "ROAD CLOSED" SIGNS ON TYPE III BARRICADES WITH FLASHING BARRICADE WARNING LIGHTS AT EVERY LOCATION WHERE THE ROAD IS TO BE PHYSICALLY CLOSED TO ALL TRAFFIC AND 900 mm x 900 mm, OW-120, "ROAD CLOSED AHEAD" SIGNS 152 METERS IN ADVANCE OF THE "ROAD CLOSED" SIGNS, AS DETAILED IN STANDARD CONSTRUCTION DRAWING MT-101.60M.

THE SIGN SUPPORTS, BARRICADES AND LIGHTS FOR THE ABOVE SIGNS SHALL BE AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING LIGHTS, SIGNS, SIGN SUPPORTS AND BARRICADES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, "MAINTAINING TRAFFIC".

PAYMENT FOR ANY ADDITIONAL SIGNS AND/OR BARRICADES REQUIRED TO PROVIDE CLARITY TO THE TRAFFIC CONTROL SCHEMES SET FORTH IN THE PLANS OR THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, OR PAYMENT FOR ANY SIGNS AND/OR BARRICADES WHICH REQUIRE RELOCATION TO PROVIDE CLARITY AS DIRECTED BY THE ENGINEER, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, "MAINTAINING TRAFFIC".

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED EVENT:

UPPER SANDUSKY SESQUICENTENNIAL

ALL LANES ARE TO BE OPEN FROM:
12:00N FRIDAY, JULY 3, 1998 THROUGH 12:00N MONDAY, JULY 13, 1998.

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07.

ITEM 605. AGGREGATE DRAINS: FOR LOCATION OF AGGREGATE DRAINS SEE SHEET 5.

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

ITEM 604. ANCHOR ASSEMBLY, TYPE E: THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B" GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 15.24 m, INCLUSIVE OF TWO 7.62 m LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 606, EACH, ANCHOR ASSEMBLY, TYPE E AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

THE FOLLOWING METHOD SHALL BE USED FOR INSTALLATION OF ALL FOUNDATION TUBES REQUIRED FOR GUARDRAIL END TREATMENTS ON THIS PROJECT:

- AUGER 200mm DIAMETER HOLE AT THE LOCATION OF THE FOUNDATION TUBE TO A DEPTH OF .3 METERS LESS THAN THE LENGTH OF THE FOUNDATION TUBE.
- DRIVE FOUNDATION TUBE WITH SOIL PLATE TO GRADE. (NOTE: IF A GUARDRAIL POST IS USED IN THE DRIVING OPERATION, IT SHALL BE REMOVED AND DISCARDED)
- PERFORM ANY NECESSARY BACKFILLING OF THE HOLE IN ACCORDANCE WITH 606.03 AND INSERT THE REQUIRED GUARDRAIL POST.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE FOUNDATION TUBES AS DESCRIBED ABOVE SHALL BE CONSIDERED INCIDENTAL TO COST OF THE PERTINENT GUARDRAIL END TREATMENT.

EARTHWORK: ALL EMBANKMENTS SHALL BE CONSTRUCTED UNDER THE PROVISIONS OF 203.09, ADHERING TO THE CONTINUOUS BENCHING REQUIREMENTS.



20
10
0
5
HORIZONTAL SCALE
IN METERS

CALCULATED
A.M.V.
CHECKED
T.H.H.

DESIGN AGENCY
KOHLI & KALHER ASSOCIATES, INC.
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

WYA-30-21.200 PAVEMENT CALCULATIONS

WYA-30-21.200

23

CONST. STA.	ITEM 448 - 32 mm ASPHALT CONCRETE SURFACE COURSE, A.P.P.	ITEM 304 - 150 mm AGGREGATE BASE	ITEM 203 - SUBGRADE COMPACTION	ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, A.P.P.	ITEM 448 - 32 TO 49 mm ASPHALT CONCRETE INT. COURSE	ITEM 407 - TACK COAT
21+239.698 TO 21+244.298	$14.640 \text{ m} * 4.600 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 2.155 \text{ m}^3$	$15.540 \text{ m} * 3.578 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 8.340 \text{ m}^3$	$14.640 \text{ m} * 3.578 \text{ m} = 52.382 \text{ m}^2$	$14.640 \text{ m} * 4.600 \text{ m} = 67.344 \text{ m}^2$	$14.640 \text{ m} * 4.600 \text{ m} * \frac{32 \text{ mm} + 49 \text{ mm}}{2} \div \frac{1000 \text{ mm}}{\text{m}} = 2.727 \text{ m}^3$	$14.640 \text{ m} * 4.600 \text{ m} * \frac{34 \text{ LITERS}}{\text{m}^2} = 22.897 \text{ LITER}$
21+300.142 TO 21+304.742	$14.640 \text{ m} * 4.600 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 2.155 \text{ m}^3$	$15.540 \text{ m} * 3.578 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 8.340 \text{ m}^3$	$14.640 \text{ m} * 3.578 \text{ m} = 52.382 \text{ m}^2$	$14.640 \text{ m} * 4.600 \text{ m} = 67.344 \text{ m}^2$	$14.640 \text{ m} * 4.600 \text{ m} * \frac{32 \text{ mm} + 49 \text{ mm}}{2} \div \frac{1000 \text{ mm}}{\text{m}} = 2.727 \text{ m}^3$	$14.640 \text{ m} * 4.600 \text{ m} * \frac{34 \text{ LITERS}}{\text{m}^2} = 22.897 \text{ LITER}$
SUB TOTAL	4.310 m ³	16.680 m ³	104.764 m ²	134.688 m ²	5.454 m ³	45.794 LITER

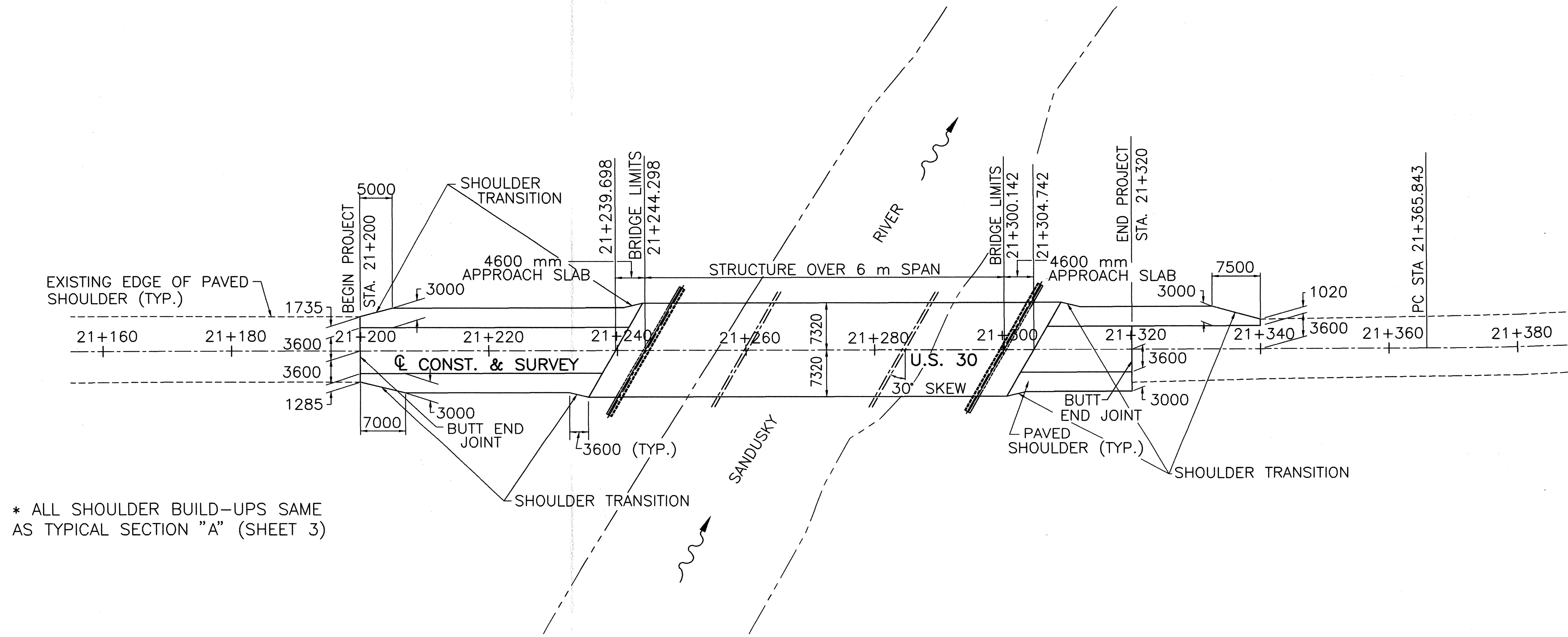
ITEM 605 - AGGREGATE DRAIN		
STATION	SIDE	LENGTH (m)
21+201	LT.	3.1
21+216	LT.	3.0
21+220	RT.	4.7
21+230	LT.	3.0
21+235	RT.	4.7
21+240	LT.	3.2
21+310.5	LT.	3.6
21+325	LT.	3.6
21+340	LT.	3.6
TOTAL		32.5

ITEM 614 - TEMP. CENTER LINE, CLASS II	
STATION	KILOMETER
21+200 TO 21+320	0.120

ITEM 659 - WATER
 $1143 \text{ m}^2 * \frac{5 \text{ m}^3}{1000 \text{ m}^2} * 2 \text{ APPLICATIONS} = 12 \text{ m}^3$

ITEM 659 - COMMERCIAL FERTILIZER
 $1143 \text{ m}^2 * \frac{0.1 \text{ kg}}{\text{m}^2} = 115 \text{ kg}$

QUANTITIES CARRIED TO SHEET 9



* ALL SHOULDER BUILD-UPS SAME AS TYPICAL SECTION "A" (SHEET 3)

SHOULDERS	CONST. STA.	ITEM 448 - 32 mm ASPHALT CONCRETE SURFACE COURSE, A.P.P.	ITEM 448 - 45 mm ASPHALT CONCRETE INTERMEDIATE COURSE	ITEM 301 - 150 mm BIT. AGGREGATE BASE	ITEM 304 - 300 mm AGGREGATE BASE	ITEM 408 - BITUMINOUS PRIME COAT	ITEM 203 - SUBGRADE COMPACTION
	21+200.000 TO 21+205.000	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.682 \text{ m}^3$	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.960 \text{ m}^3$	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.199 \text{ m}^3$	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 6.398 \text{ m}^3$	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 38.385 \text{ Liter}$	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} = 21.325 \text{ m}^2$
	21+205.000 TO 21+207.000	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.368 \text{ m}^3$	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.518 \text{ m}^3$	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 1.727 \text{ m}^3$	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.453 \text{ m}^3$	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 20.718 \text{ Liter}$	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} = 11.510 \text{ m}^2$
	21+207.000 TO 21+236.098	$6.000 \text{ m} * 29.098 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 5.587 \text{ m}^3$	$6.000 \text{ m} * 29.098 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 7.856 \text{ m}^3$	$6.000 \text{ m} * 29.098 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 26.188 \text{ m}^3$	$6.000 \text{ m} * 29.098 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 52.376 \text{ m}^3$	$6.000 \text{ m} * 29.098 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 314.258 \text{ Liter}$	$6.000 \text{ m} * 29.098 \text{ m} = 174.588 \text{ m}^2$
	21+236.098 TO 21+239.698	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.774 \text{ m}^3$	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 1.089 \text{ m}^3$	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.629 \text{ m}^3$	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 7.258 \text{ m}^3$	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 43.546 \text{ Liter}$	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} = 24.192 \text{ m}^2$
	21+304.742 TO 21+308.340	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.774 \text{ m}^3$	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 1.089 \text{ m}^3$	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.639 \text{ m}^3$	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 7.258 \text{ m}^3$	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 43.546 \text{ Liter}$	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} = 24.192 \text{ m}^2$
	21+308.340 TO 21+320.000	$6.000 \text{ m} * 11.660 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 2.239 \text{ m}^3$	$6.000 \text{ m} * 11.660 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.148 \text{ m}^3$	$6.000 \text{ m} * 11.660 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 10.494 \text{ m}^3$	$6.000 \text{ m} * 11.66 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 20.988 \text{ m}^3$	$6.000 \text{ m} * 11.66 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 125.928 \text{ Liter}$	$6.000 \text{ m} * 11.66 \text{ m} = 69.960 \text{ m}^2$
	21+320.000 TO 21+332.500	$3.000 \text{ m} * 12.50 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 1.200 \text{ m}^3$	$3.000 \text{ m} * 12.50 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 1.688 \text{ m}^3$	$3.000 \text{ m} * 12.50 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 5.625 \text{ m}^3$	$3.000 \text{ m} * 12.50 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 11.250 \text{ m}^3$	$3.000 \text{ m} * 12.50 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 67.500 \text{ Liter}$	$3.000 \text{ m} * 12.50 \text{ m} = 37.500 \text{ m}^2$
	21+332.500 TO 21+340.000	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.482 \text{ m}^3$	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 0.678 \text{ m}^3$	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 2.261 \text{ m}^3$	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 4.522 \text{ m}^3$	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 27.135 \text{ Liter}$	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} = 15.075 \text{ m}^2$
	SUB TOTAL	12.106 m ³	17.026 m ³	56.752 m ³	113.503 m ³	681.016 LITER	378.342 m ²

ROADWAY	CONST. STA.	ITEM 448 - 32 mm ASPHALT CONCRETE SURFACE COURSE, A.P.P.	ITEM 448 - 45 mm ASPHALT CONCRETE, INTERMEDIATE COURSE	ITEM 301 - 150 mm BIT. AGGREGATE BASE	ITEM 304 - 300 mm AGGREGATE BASE	ITEM 408 - BITUMINOUS PRIME COAT	ITEM 203 - SUBGRADE COMPACTION
	21+200.000 TO 21+239.698	$7.200 \text{ m} * 39.698 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 9.146 \text{ m}^3$	$7.200 \text{ m} * 39.698 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 12.862 \text{ m}^3$	$7.200 \text{ m} * 39.698 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 42.874 \text{ m}^3$	$7.200 \text{ m} * 39.698 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 85.748 \text{ m}^3$	$7.200 \text{ m} * 39.698 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 514.486 \text{ Liter}$	$7.200 \text{ m} * 39.698 \text{ m} = 285.826 \text{ m}^2$
	21+304.742 TO 21+320	$7.200 \text{ m} * 15.258 \text{ m} * 32 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 3.515 \text{ m}^3$	$7.200 \text{ m} * 15.258 \text{ m} * 45 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 4.944 \text{ m}^3$	$7.200 \text{ m} * 15.258 \text{ m} * 150 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 16.479 \text{ m}^3$	$7.200 \text{ m} * 15.298 \text{ m} * 300 \text{ mm} \div \frac{1000 \text{ mm}}{\text{m}} = 33.044 \text{ m}^3$	$7.200 \text{ m} * 15.298 \text{ m} * \frac{1.8 \text{ LITER}}{\text{m}^2} = 198.262 \text{ Liter}$	$7.200 \text{ m} * 15.298 \text{ m} = 110.146 \text{ m}^2$
	SUB TOTAL	12.661 m ³	17.806 m ³	59.353 m ³	118.792 m ³	712.748 LITER	395.972 m ²
	GRAND TOTAL	24.767 m ³	34.832 m ³	116.105 m ³	232.295 m ³	1393.764 LITER	774.314 m ²

SHOULDERS	CONST. STA.	ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
	21+200.000 TO 21+205.000	$\frac{3.02 \text{ m} + 5.51 \text{ m}}{2} * 5.00 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 7.251 \text{ Liter}$
	21+205.000 TO 21+207.000	$\frac{5.51 \text{ m} + 6.0 \text{ m}}{2} * 2.00 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 3.913 \text{ Liter}$
	21+207.000 TO 21+236.098	$6.000 \text{ m} * 29.098 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 59.360 \text{ Liter}$
	21+236.098 TO 21+239.698	$\frac{6.0 \text{ m} + 7.44 \text{ m}}{2} * 3.600 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 8.225 \text{ Liter}$
	21+304.742 TO 21+308.340	$\frac{7.44 \text{ m} + 6.0 \text{ m}}{2} * 3.600 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 8.225 \text{ Liter}$
	21+308.340 TO 21+320.000	$6.000 \text{ m} * 11.66 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 23.786 \text{ Liter}$
	21+320.000 TO 21+332.500	$3.000 \text{ m} * 12.50 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 12.750 \text{ Liter}$
	21+332.500 TO 21+340.000	$\frac{3.0 \text{ m} + 1.02 \text{ m}}{2} * 7.50 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 5.126 \text{ Liter}$
	SUB TOTAL	128.636 LITER

GRAND TOTAL QUANTITIES CARRIED TO SHEET 9

ROADWAY	CONST. STA.	ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
	21+200.000 TO 21+239.698	$7.200 \text{ m} * 39.698 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 97.181 \text{ Liter}$
	21+304.742 TO 21+320	$7.200 \text{ m} * 15.258 \text{ m} * \frac{.34 \text{ LITER}}{\text{m}^2} = 37.352 \text{ Liter}$
	SUB TOTAL	134.533 LITER
	GRAND TOTAL	263.169 LITER

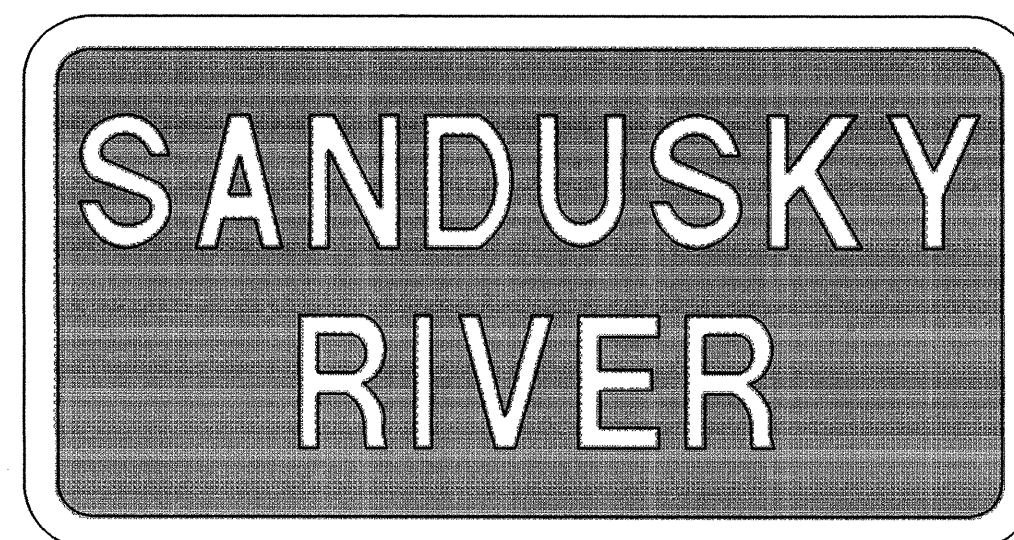
GROUND MOUNTED SIGNS														
SHEET NO.	REF. NO.	STATION	SIDE	CODE	SIZE	630		630			630			
						SIGNS		GROUND MOUNTED SIGN SUPPORTS			REMOVAL, DISPOSAL, AND ERECTION OF SIGNS			
						FLAT SHEET	EXTRU SHEET	NO. 2 POST	NO. 3 POST	NO. 4 POST	REMOVAL OF GRD. MTD. SIGN AND DISPOSAL	REMOVAL OF GRD. MTD. SIGN AND REERECTION	REMOVAL OF GRD. MTD. POST SUPPORT AND DISPOSAL	SIGN ERECTED, FLAT SHEET
						SQ. METER	SQ. METER	METER	METER	METER	EACH	EACH	EACH	SQ. METER
10	1-T	21+214.75	8.0 m LT.	W	EXISTING			4.4 / 4.4				1	2	0.5625
11	2-T	21+228.50	8.1 m RT.	N-4-30	750 mm x 400 mm	0.3		3.8			1		1	
11	3-T	21+316.00	8.1 m LT.	N-4-30	750 mm x 400 mm	0.3		3.8			1		1	
12	4-T	21+326.25	8.1 m LT.	N	EXISTING			4.1 / 4.1				1	2	
TOTALS						1		25			2	2	6	1

TOTALS ON THIS SHEET TO BE CARRIED FORWARD TO GENERAL SUMMARY

NOTE: DRAWINGS ARE NOT TO SCALE.



W



N-4



N

CALCULATED
A.M.V.

CHECKED
T.H.H.

KOHLI & KALIHAR ASSOCIATES, INC.
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

TRAFFIC CONTROL QUANTITIES

WYA-30-21.200

7/23

GENERAL SUMMARY

SHEET NUMBERS

ITEM	SHEET NUMBERS										ITEM	ITEM EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION
	4	5	6	10	11	12									
201	LUMP										201	11000	Lump		Clearing and Grubbing
202											202	24000	636	Sq Meter	Brick Base Removed
202											202	38000	34.1	Meter	Guardrail Removed
203											203	12000	432	Cu Meter	Excavation Not Including Embankment Construction
203											203	20000	570	Cu Meter	Embankment
203											203	50000	879	Sq Meter	Subgrade Compaction
606											606	13000	60.960	Meter	Guardrail, Type 5
606											606	26100	2	Each	Anchor Assembly, Type E
606											606	26500	1	Each	Anchor Assembly, Type T
606											606	26501	1	Each	Anchor Assembly, Type T, As Per Plan (See sheet 11)
606											606	35140	4	Each	Bridge Terminal Assembly, Type 4
EROSION CONTROL															
207	230										207	10000	230	Sq Meter	Temporary Seeding and Mulching
207	124										207	30000	124	Meter	Filter Fabric Fence
207	50										207	70000	50	Each	Straw or Hay Bales
601											601	32200	337	Cu Meter	Rock Channel Protection, Type C with Filter
659											659	10000	1143	Sq Meter	Seeding and Mulching
659	12										659	20000	127	Kilogram	Commercial Fertilizer
659	2.4										659	35000	14.4	Cu Meter	Water
DRAINAGE															
603	15										603	01500	15	Meter	150 mm Conduit, Type F
603	15										603	02600	15	Meter	200 mm Conduit, Type F
603											603	03700	3	Meter	250 mm Conduit, Type F
603	15										603	04400	15	Meter	300 mm Conduit, Type B
603											603	06700	3	Meter	375 mm Conduit, Type F
603											603	12700	4	Meter	675 mm Conduit, Type F
605											605	31100	33	Meter	Aggregate Drain

CALCULATED
 A.M.V.
 CHECKED
 T.H.H.
KOHLI & KALHER ASSOCIATES, INC.
 CONSULTING ENGINEERS AND SURVEYORS
 LIMA, OHIO

GENERAL SUMMARY


WYA-30-21.200

GENERAL SUMMARY

SHEET NUMBERS

ITEM	2	4	5	6	7	10	11	12										ITEM	ITEM EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION
																						PAVEMENT
301				116														301	46000	116	Cu Meter	Bituminous Aggregate Base, PG64-22
304			17	232		31												304	20000	280	Cu Meter	Aggregate Base
407			46															407	10000	46	Liter	Tack Coat
407				263														407	14000	263	Liter	Tack Coat for Intermediate Course
408				1394														408	10000	1394	Liter	Bituminous Prime Coat
448			5	35														448	46050	40	Cu Meter	Asphalt Concrete Intermediate Course, Type 2, PG64-22
448			4	25														448	47021	29	Cu Meter	Asphalt Concrete Surface Course, Type 1, PG64-22, As Per Plan*
611			135															611	10000	135	Sq Meter	Reinforced Concrete Approach Slab (T=305mm)
																						TRAFFIC CONTROL
626						1	14	2										626	00300	17	Each	Barrier Reflector, Type A2
630					25													630	02100	25	Meter	Ground Mounted Support, No. 2 Post
630					1													630	80100	1	Sq Meter	Sign, Flat Sheet
630					1													630	81100	1	Sq Meter	Sign Erected, Flat Sheet
630					2													630	84900	2	Each	Removal of Ground Mounted Sign and Disposal
630					2													630	85100	2	Each	Removal of Ground Mounted Sign and Reerection
630					6													630	86002	6	Each	Removal of Ground Mounted Post Support and Disposal
																						LANDSCAPING
661						5												661	40060	5	Each	Deciduous tree, 40mm caliper, Acer Rubrum
																						STRUCTURE OVER 6M SPAN
																						For Quantities of Bridge No. WYA-30-21244 See Sheet 16
																						MAINTENANCE OF TRAFFIC
407	500																	407	10000	500	Liter	Tack Coat
448	50																	448	47021	50	Cu Meter	Asphalt Concrete Surface Course, Type 1, PG64-22, As Per Plan*
614			0.12															614	21400	0.12	Kilometer	Temporary Centerline, Class II
616	4	4																616	10000	8	Cu Meter	Water
616	1	0.1																616	20000	1.1	M.Ton	Calcium Chloride
617	50																	617	10100	50	Cu Meter	Compacted Aggregate, Type A
614		LUMP																614	11000	Lump		Maintaining Traffic
623																		623	10000	Lump		Construction Layout Stakes
624																		624	10000	Lump		Mobilization
806																		806	16000	5	Month	Field Office, Type A
806																		806	26000	5	Month	Computer Equipment for Field Office

* See sheet 4.

CALCULATED
 A.M.V.
 CHECKED
 T.H.H.

 KOHLI & KALHER ASSOCIATES, INC.
 CONSULTING ENGINEERS AND SURVEYORS
 LIMA, OHIO

GENERAL SUMMARY

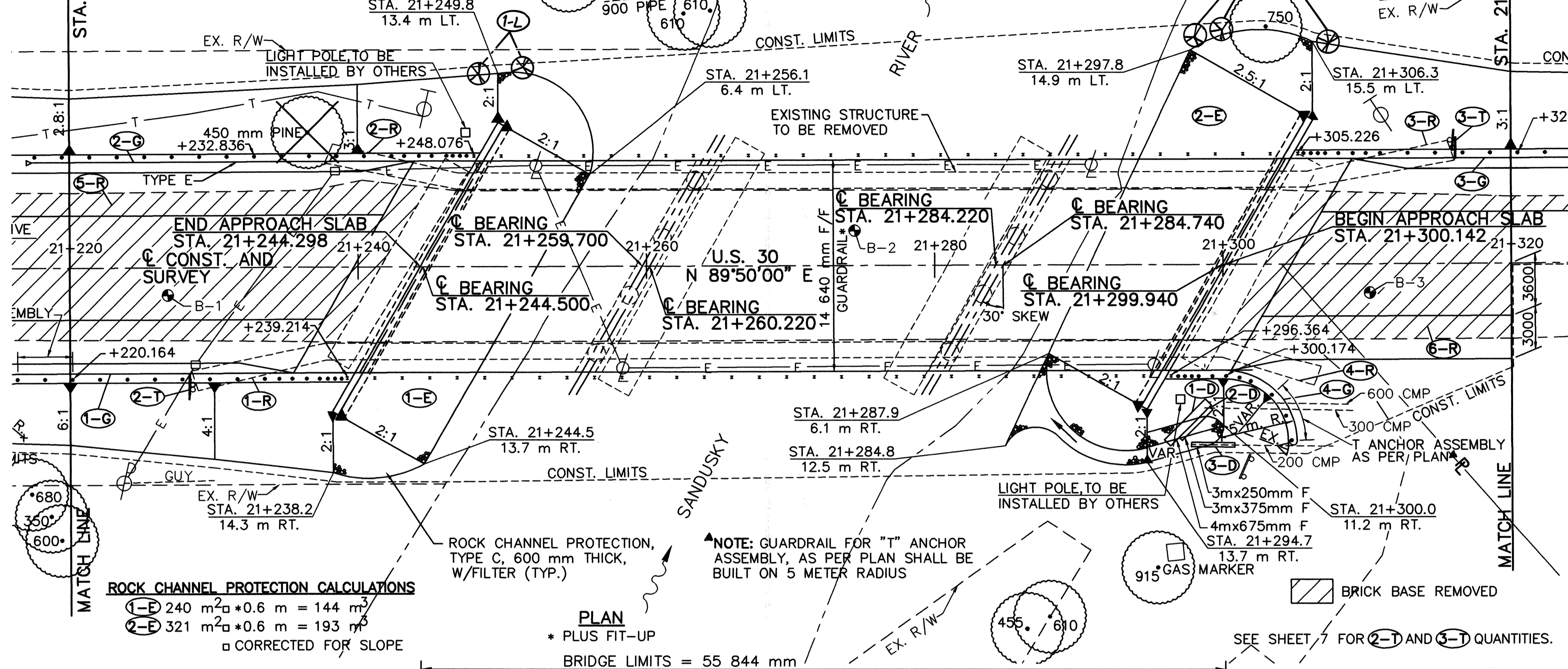
WYA-30-21.200

BENCH MARKS
 B.M. #WYA-30-1 "X" IN LARGE SANDSTONE ROCK ON EAST SIDE OF EAST ENTRANCE TO HARRISON-SMITH PARK. STA. 21+146.475, 11.992m RT. AT ELEV. 248.160.
 B.M. #WYA-30-2 SET "X" IN TOP OF OLD CONC. SIGN BASE JUST EAST OF SS EASTSIDE RESTAURANT. STA. 21+358.613, 17.4051m RT. AT ELEV. 249.915

STRUCTURE NO. WYA-30-21244

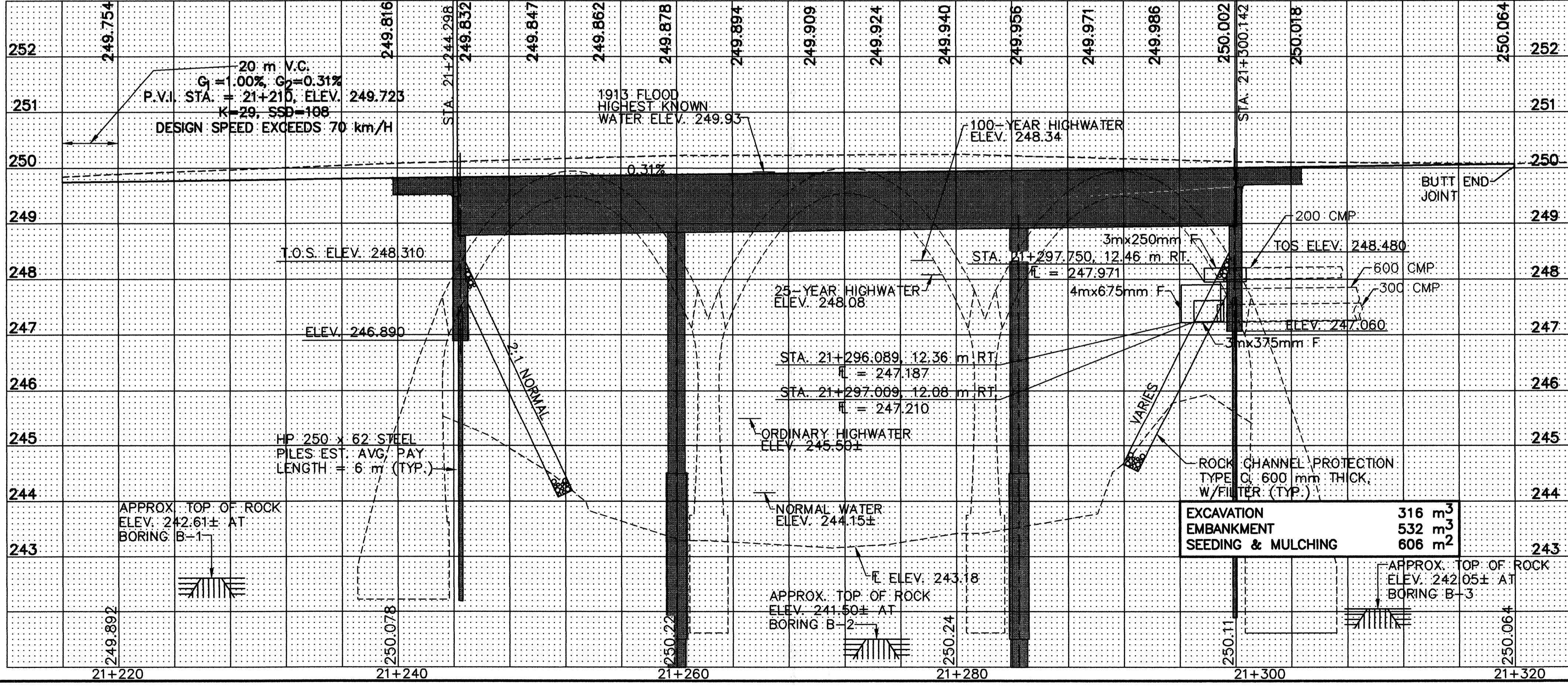
TREES TO BE REMOVED
 1 - 0.450 m SIZE

END PROJECT STA. 21+320
 S.L.D. = 21.320
 BRF 49



ROCK CHANNEL PROTECTION CALCULATIONS
 (1-E) $240 \text{ m}^2 \times 0.6 \text{ m} = 144 \text{ m}^3$
 (2-E) $321 \text{ m}^2 \times 0.6 \text{ m} = 193 \text{ m}^3$
 □ CORRECTED FOR SLOPE

PLAN
 * PLUS FIT-UP
 BRIDGE LIMITS = 55 844 mm



EXISTING STRUCTURE		PROPOSED STRUCTURE	
TYPE: THREE SPAN SPANDREL FILLED ARCH WITH REINFORCED CONCRETE SUBSTRUCTURE.		TYPE: THREE SPAN NON-COMPOSITE PRESTRESSED CONCRETE BOX BEAM SUPERSTRUCTURE WITH REINFORCED CONCRETE SUBSTRUCTURE.	
SPANS: 18 288 ± mm - 18 288 ± mm - 18 288 ± mm CLEAR SPANS		SPANS: 15 200 mm - 24 000 mm - 15 200 mm C/C BEARINGS	
ROADWAY: 10 363 ± mm F/F CURB		ROADWAY: 14 640 mm F/F GUARDRAIL	
APPROACH SLABS: NONE		APPROACH SLABS: AS-1-81M (4600 mm LONG)	
SKEW: 30° L.F.		SKEW: 30° L.F.	
WEARING SURFACE: BITUMINOUS		WEARING SURFACE: 64 mm MINIMUM ASPHALT CONCRETE	
ALIGNMENT: TANGENT		ALIGNMENT: TANGENT	
CONDITION: POOR		LOADING: MS18 AND ALTERNATE MILITARY LOADING	
YEAR BUILT: 1931		CROWN: 0.016	
STRUCTURE FILE NO. 8801355		LATITUDE: 40°49'38" N	
		LONGITUDE: 83° 16'16" W	

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES	***INCLUDED IN THE PRICE BID FOR ITEM 603 CONDUIT
1-D	21+296.089 TO 21+298.926 RT.		606 GUARDRAIL TYPE 5 STR. 5 m RT/FEET	56.684
2-D	21+297.009 TO 21+299.156 RT.		606 GUARDRAIL TYPE 5 STR. 5 m RT/FEET	56.684
3-D	21+297.750 TO 21+300.751 RT.		606 GUARDRAIL TYPE 5 STR. 5 m RT/FEET	56.684
1-E	21+238.2 TO 21+256.1 RL/MT		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
2-E	21+284.8 TO 21+306.3 RL/MT		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
1-C	21+220.000 TO 21+239.214 RT.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
2-C	21+217.596 TO 21+246.076 LL.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
3-C	21+305.226 TO 21+320.000 LL.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
4-R	21+299.815 TO 21+306.275 RT.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
5-R	21+220 TO 21+241.573 RL/MT		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
6-R	21+302.873 TO 21+320 RL/MT		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
1-L	21+249 TO 21+251 LT.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
2-L	21+288 TO 21+297 LT.		606 ANCHOR ASSEMBLY TYPE 1 EACH	1
TOTALS				56.684

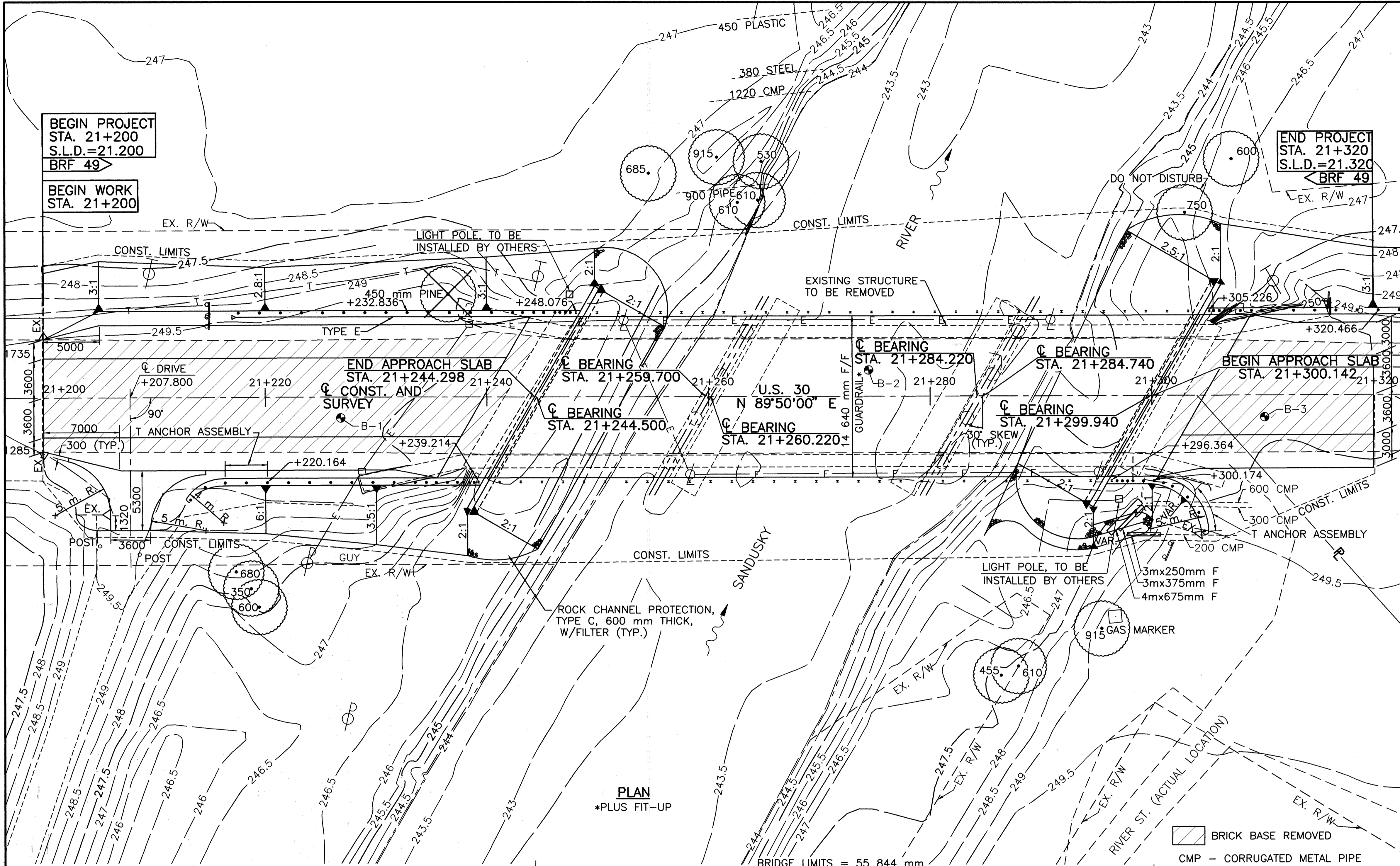
PLAN AND PROFILE
 STA. 21+220 TO STA. 21+320

WYA-30-21.200

DESIGN AGENCY: **KOHLI & KALHER ASSOCIATES, INC.**
 CONSULTING ENGINEERS AND SURVEYORS LMA, OHIO

CALCULATED: A.M.V. CHECKED: T.H.H.

SCALE: 1" = 10' HORIZONTAL SCALE 1" = 5' VERTICAL SCALE



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

metric units

NOTES

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- ALL DIMENSIONS ARE IN MILLIMETERS AND ALL STATIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SHOWN.
- FOR ϕ CONSTRUCTION REFERENCES SEE THE SCHEMATIC PLAN, SHEET 24
- AMERICAN ELECTRIC POWER COMPANY CABLES AND POLES SHALL BE REMOVED FROM THE EXISTING BRIDGE BY OTHERS. NO UTILITIES WILL BE ATTACHED TO THE PROPOSED STRUCTURE.

BENCH MARKS

B.M. #WYA-30-1 "X" IN LARGE SANDSTONE ROCK ON EAST SIDE OF EAST ENTRANCE TO HARRIS-SMITH PARK, STA. 21+146.475, 11.992 m RT. AT ELEV. 248.160.

B.M. #WYA-30-2 SET "X" IN TOP OF OLD CONC. SIGN BASE JUST EAST OF SS EASTSIDE RESTAURANT, STA. 21+358.613, 17.405 m RT. AT ELEV. 249.915.

BORING	STA.	OFFSET	ELEV.
B-1	21+226.80	1.88 m RT.	249.93
B-2	21+274.45	2.41 m LT.	243.48
B-3	21+310.18	1.97 m RT.	250.04

DESIGN DESIGNATION

1996 ADT = 8500
2016 ADT = 10,200
2016 ADTT = 1428

HYDRAULIC DATA

DRAINAGE AREA = 756 km²
Q₂₅ = 265.0 m³/sec. V₂₅ = 1.7 m/sec. ELEV. 248.08
Q₁₀₀ = 322.8 m³/sec. V₁₀₀ = 1.9 m/sec. ELEV. 248.34

STRUCTURE CLEARS 25-YEAR DESIGN HIGHWATER BY 0.69 m ±.

EXISTING STRUCTURE

TYPE: THREE SPAN SPANDREL FILLED ARCH WITH REINFORCED CONCRETE SUBSTRUCTURE.

SPANS: 18 288 ± mm - 18 288 ± mm - 18 288 ± mm CLEAR SPANS

ROADWAY: 10 363 ± mm F/F CURB

APPROACH SLABS: NONE

SKEW: 30° L.F.

WEARING SURFACE: BITUMINOUS

ALIGNMENT: TANGENT

CONDITION: POOR

YEAR BUILT: 1931

STRUCTURE FILE N° 8801355

PROPOSED STRUCTURE

TYPE: THREE SPAN NON-COMPOSITE PRESTRESSED CONCRETE BOX BEAM SUPERSTRUCTURE WITH REINFORCED CONCRETE SUBSTRUCTURE.

SPANS: 15 200 mm - 24 000 mm - 15 200 mm C/C BEARING

ROADWAY: 14 640 mm F/F GUARDRAIL

APPROACH SLABS: AS-1-81M (4600 mm LONG)

SKEW: 30° L.F.

WEARING SURFACE: 64 mm MINIMUM ASPHALT CONCRETE

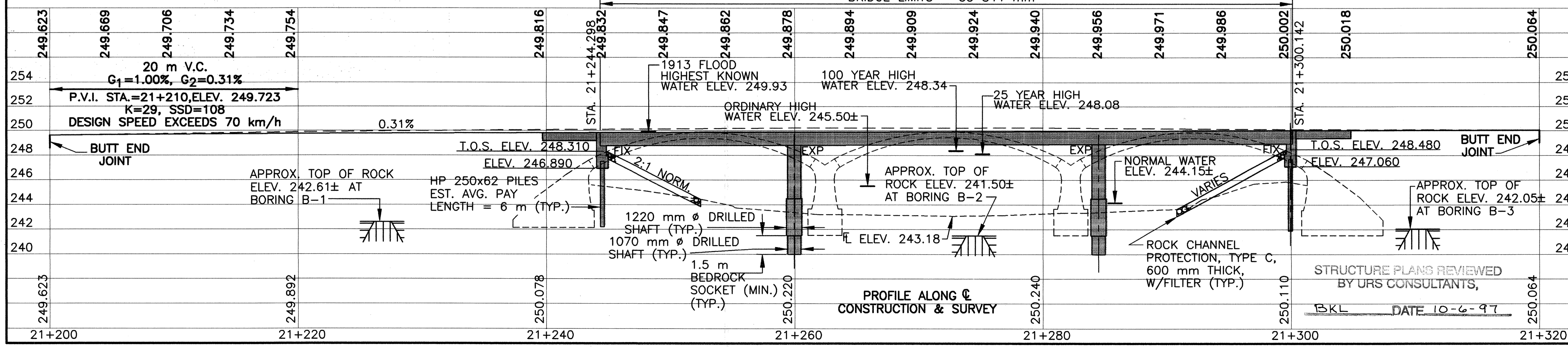
ALIGNMENT: TANGENT

LOADING: MS18 AND ALTERNATE MILITARY LOADING

CROWN: 0.016

LATITUDE: 40°49'38" N

LONGITUDE: 83°16'16" W



DESIGN AGENCY
KOHL & KALJHER ASSOCIATES, INC.
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

DATE 7-30-96

REVIEWED J.R.H.

DESIGNED M.A.D.

DRAWN C.A.T.

CHECKED D.G.B.

STRUCTURE FILE NUMBER 8801363

WYANDOT COUNTY
Sta. 21+244.298
Sta. 21+300.142

SITE PLAN
BRIDGE NO. WYA-30-21244
OVER THE SANDUSKY RIVER

1/9

15/23

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81M DATED 10-25-94
 DBR-2-73M DATED 8-18-95
 DS-1-94M DATED 12-15-94
 PSBD-1-93M DATED 12-19-94

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 INTERIM SPECIFICATIONS AND TO THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS 18 AND ALTERNATE MILITARY LOADING
 CONCRETE CLASS C: COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)
 CONCRETE CLASS S: COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)
 REINFORCING STEEL: ASTM A615M, A616M, A617M - GRADE 400, MINIMUM YIELD STRENGTH: 400 MPa
 SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M OR A615M.
 CONCRETE FOR PRESTRESSED CONCRETE BEAMS:
 COMPRESSIVE STRENGTH - 38 MPa
 UNIT STRESS - 15.2 MPa COMPRESSION; 3.1 MPa TENSION
 PRESTRESSING STRAND: ASTM A416M - F'S = 1860 MPa
 INITIAL STRESS: 0.75 F'S (LOW RELAXATION STRANDS)
 MILD REINFORCING STEEL FOR PRESTRESSED BEAMS - GRADE 400, MINIMUM YIELD STRENGTH 400 MPa

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

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

EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE AFTER WHICH EXCAVATION MAY BE MADE FOR THE ABUTMENT CAPS AND PILES DRIVEN.

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

DECK PROTECTION METHOD: TYPE 3 WATERPROOFING, ASPHALT CONCRETE OVERLAY, STEEL DRIP STRIP, EPOXY COATED REINFORCING STEEL, AND SEALING OF CONCRETE SURFACES.

PILES TO BEDROCK: PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL MILLIMETERS WITH A MINIMUM RESISTANCE OF 20 BLOWS PER 25 mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE ULTIMATE BEARING VALUE IS 944 kN PER PILE FOR THE ABUTMENT PILES.

ABUTMENT PILES (HP 250 X 62)

20 PILES 6 METERS LONG, ESTIMATED LENGTH
 20 PILES OF ORDER LENGTH 6 METERS LONG
 10 SPLICES

ITEM 507. STEEL POINTS, AS PER PLAN: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD., CLIFTON, NEW JERSEY 07014; DOUGHERTY FOUNDATION PRODUCTS, INC. P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ACCESSORIES, INC., 3467 GRIBBLE ROAD, MATTHEWS, NORTH CAROLINA 28105 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27 65/35-CLASS 2-HEAT TREATED OR AASHTO M103 65/35-HEAT TREATED. A NOTARIZED COPY OF THE MILL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER.

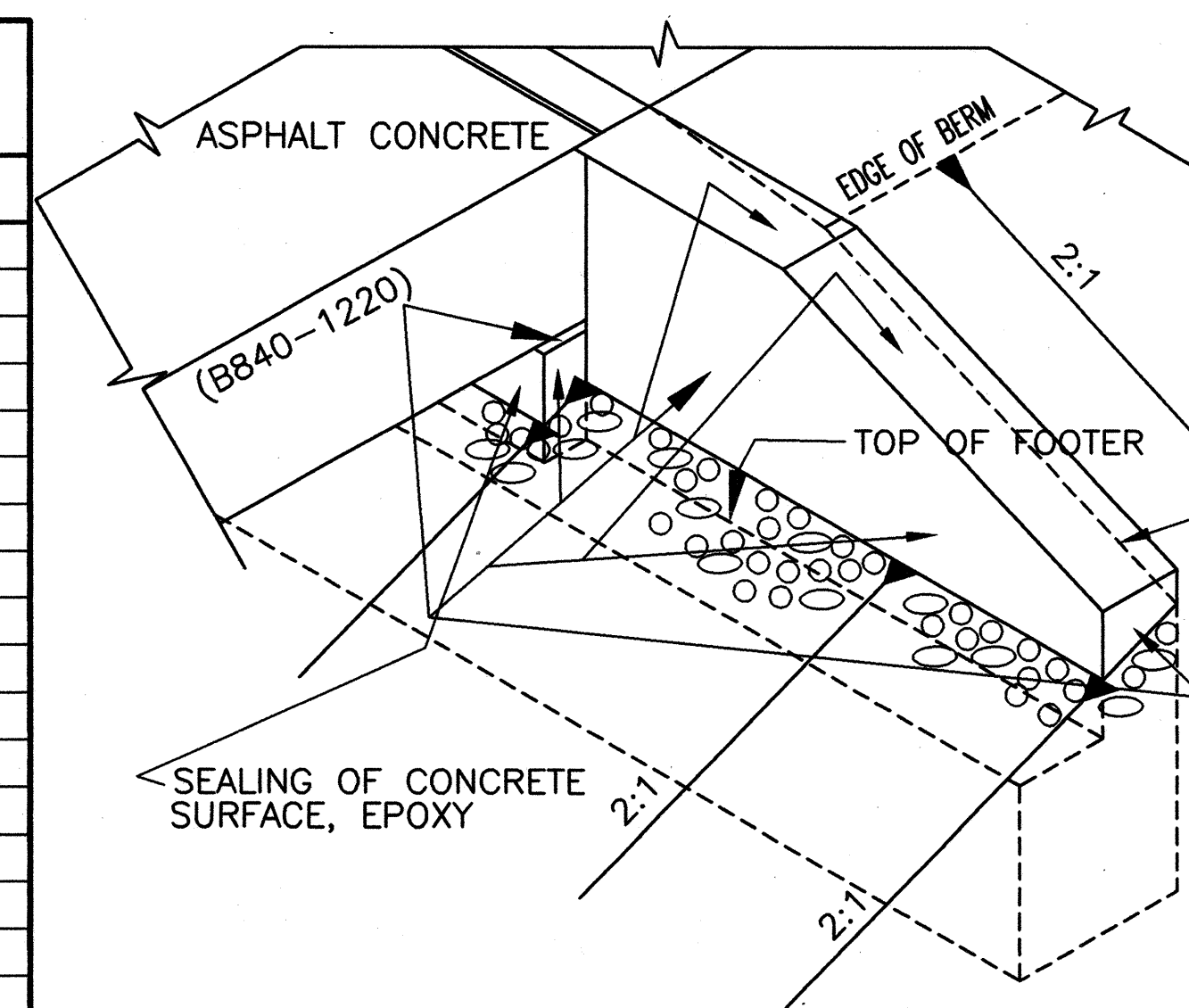
REMOVAL OVER WATER: REASONABLE CARE SHALL BE USED BY THE CONTRACTOR TO PREVENT REMOVED MATERIALS FROM FALLING INTO THE WATER. ANY DROPPED MATERIALS SHALL BE IMMEDIATELY RECOVERED AND DISPOSED OF AWAY FROM THE SITE EXCEPT FOR APPROVED MASONRY MATERIAL WHICH MAY BE USED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER ITEM 202 "STRUCTURE REMOVED, OVER 6 METER SPAN." REFER TO 104.06 OF THE O.D.O.T. C.M.S. FOR ADDITIONAL REQUIREMENTS.

BEARING PAD SHIMS: 3 mm THICK PREFORMED BEARING PAD SHIMS, PLAN AREA 152 mm BY 254 mm SHALL BE PLACED UNDER THE ELASTOMERIC BEARING PADS WHERE REQUIRED FOR PROPER BEARING. THE AMOUNT SUPPLIED IS SUFFICIENT FOR 2 SHIMS PER BEAM. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - 3 mm PERFORMED BEARING PAD. ANY UNUSED SHIMS SHALL BECOME THE PROPERTY OF THE STATE.

ESTIMATED QUANTITIES

QUANTITIES CALCULATED BY **M.A.D.** DATE **5-23-97**
 QUANTITIES CHECKED BY **I.H.H.** DATE **6-12-97**

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S	PIERS	GEN'L
202	11002	LUMP		STRUCTURE REMOVED, OVER 6 METER SPAN				LUMP
448	46020	37	CU METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22	37			
448	47011	27	CU METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22, AS PER PLAN (SEE SHEET 4/23)	27			
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP
503	21300	LUMP		UNCLASSIFIED EXCAVATION		LUMP		
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP
507	00100	120	METER	STEEL PILES HP 250 x 62, FURNISHED		120		
507	00150	120	METER	STEEL PILES HP 250 x 62, DRIVEN		120		
507	50500	10	EACH	STEEL PILE SPLICES		10		
507	93301	20	EACH	STEEL POINT (OR SHOE), AS PER PLAN, (SEE SHEET 2/9).		20		
511	34000	9	CU METER	CLASS S CONCRETE, SUPERSTRUCTURE	9			
511	41000	72	CU METER	CLASS C CONCRETE, PIER ABOVE FOOTINGS			72	
511	43500	81	CU METER	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING		81		
512	55910	LUMP		TYPE 3 WATERPROOFING	LUMP			
SPECIAL	51267502	187	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	111	52	24	
515	54100	24	EACH	PRESTRESSED CONCRETE BOX BEAM (15.24-18.90 METER LENGTH) (BB40-1220)	24			
515	54500	12	EACH	PRESTRESSED CONCRETE BOX BEAM (23.17-26.83 METER LENGTH) (BB40-1220)	12			
516	13600	29	SQ METER	25 mm PREFORMED EXPANSION JOINT FILLER		29		
516	31011	35	METER	50 mm DEEP JOINT SEALER, AS PER PLAN (SEE SHEET 9/9)	35			
SPECIAL	51631200	35	METER	SAWING AND SEALING BITUMINOUS CONCRETE JOINTS	35			
516	41200	2.8	SQ METER	3 mm PREFORMED BEARING PAD, 711.21				2.8
516	43100	144	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) 38 mm x 152 mm x 254 mm		48	96	
517	72300	114.30	METER	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS) (SEE PROPOSAL NOTE)	114.30			
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC		LUMP		
SPECIAL	51822300	129	METER	STEEL DRIP STRIP	129			
518	40000	46	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE		46		
518	40010	14	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		14		
524	94804	12	METER	DRILLED SHAFTS, 1070 mm DIAMETER, INTO BEDROCK			12	
524	94902	24	METER	DRILLED SHAFTS, 1220 mm DIAMETER, ABOVE BEDROCK			24	

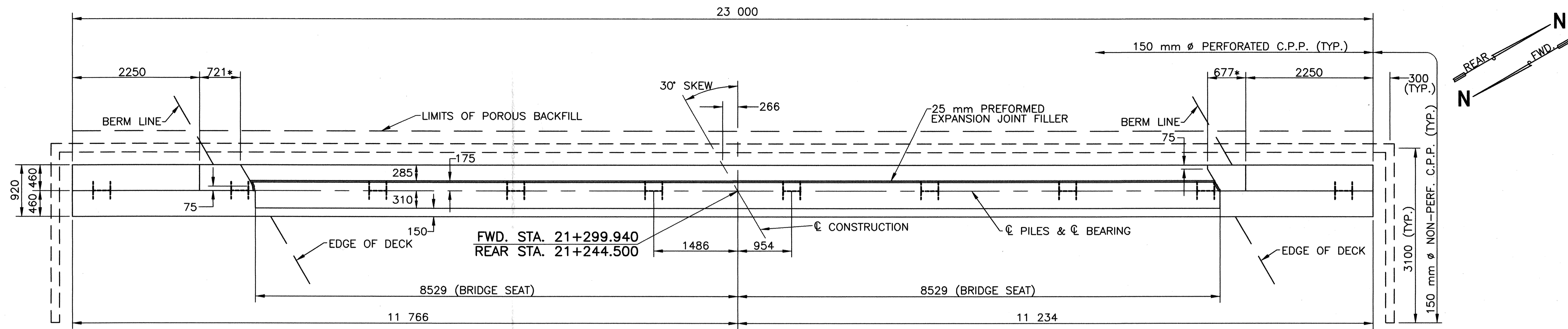


CONCRETE PROTECTION DETAIL
 TYPICAL FOR ALL CORNERS

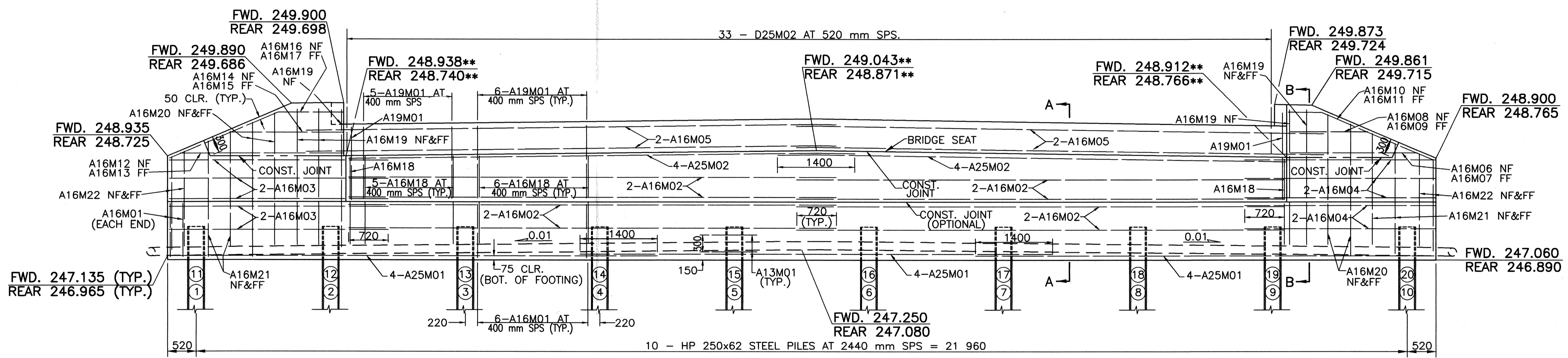
ITEM 524. DRILLED SHAFTS, 1070 mm DIAMETER INTO BEDROCK:

DESIGN PARAMETERS: THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 167 METRIC TONS AT THE PIERS, WHICH IS ASSUMED TO BE RESISTED BY SHAFT END BEARING PRESSURE. THE ALLOWABLE END BEARING PRESSURE IS 1920 kPa.

DESIGN AGENCY: **K&K KOHLI & KAUIER ASSOCIATES, INC.** LIMA, OHIO
 CONSULTING ENGINEERS AND SURVEYORS
 DATE: **6-20-97**
 REVIEWED: **D.G.B.**
 DRAWN: **C.A.T.**
 CHECKED: **T.H.H.**
 STRUCTURE FILE NUMBER: **8801363**
 GENERAL NOTES/ESTIMATED QUANTITIES
 BRIDGE NO. **WYA-30-21244**
 OVER THE SANDUSKY RIVER
WYA-30-21.200
 2/9
 16/23



PLAN



ELEVATION

NOTES:

ABBREVIATIONS
 N.F. - NEAR FACE
 F.F. - FAR FACE
 SPS - SPACES
 C.P.P. - CORRUGATED PLASTIC PIPE

BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF THE ANCHOR BAR HOLES.

ABUTMENT CONCRETE: ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.

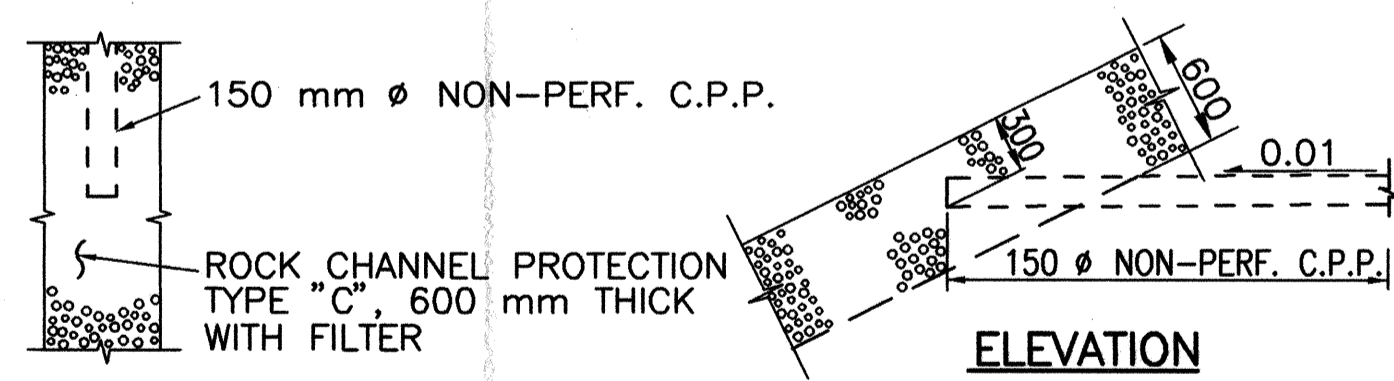
*THESE DIMENSIONS MAY VARY. WINGWALLS ARE TO BE CAST AGAINST THE PREFORMED EXPANSION JOINT MATERIAL WHICH IS SNUG AGAINST THE BOX BEAMS.

**ELEVATIONS AT ϕ BEARINGS. REAR ABUTMENT SEAT IS SLOPED. (SEE DETAIL "A")

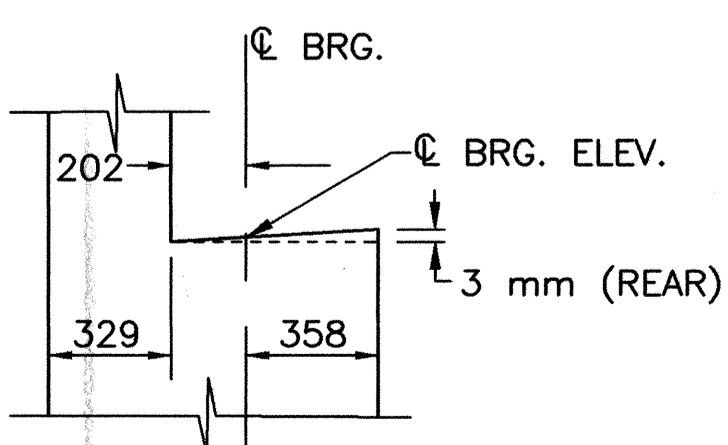
PILE NO. ① THRU PILE NO. ⑩ = FWD. ABUTMENT
 PILE NO. ⑪ THRU PILE NO. ⑳ = REAR ABUTMENT

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

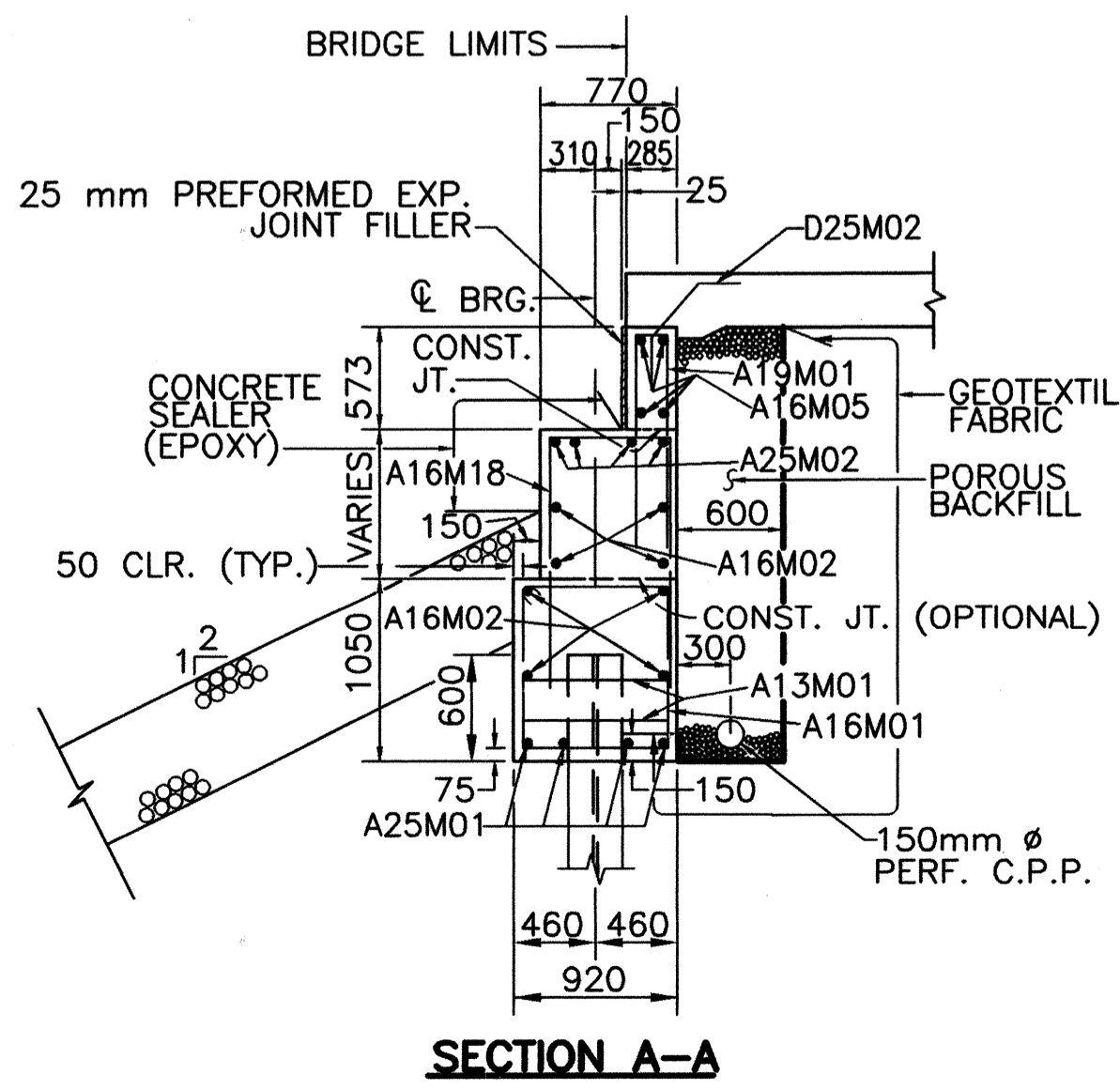
POROUS BACKFILL WITH FILTER FABRIC: 600 mm THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.



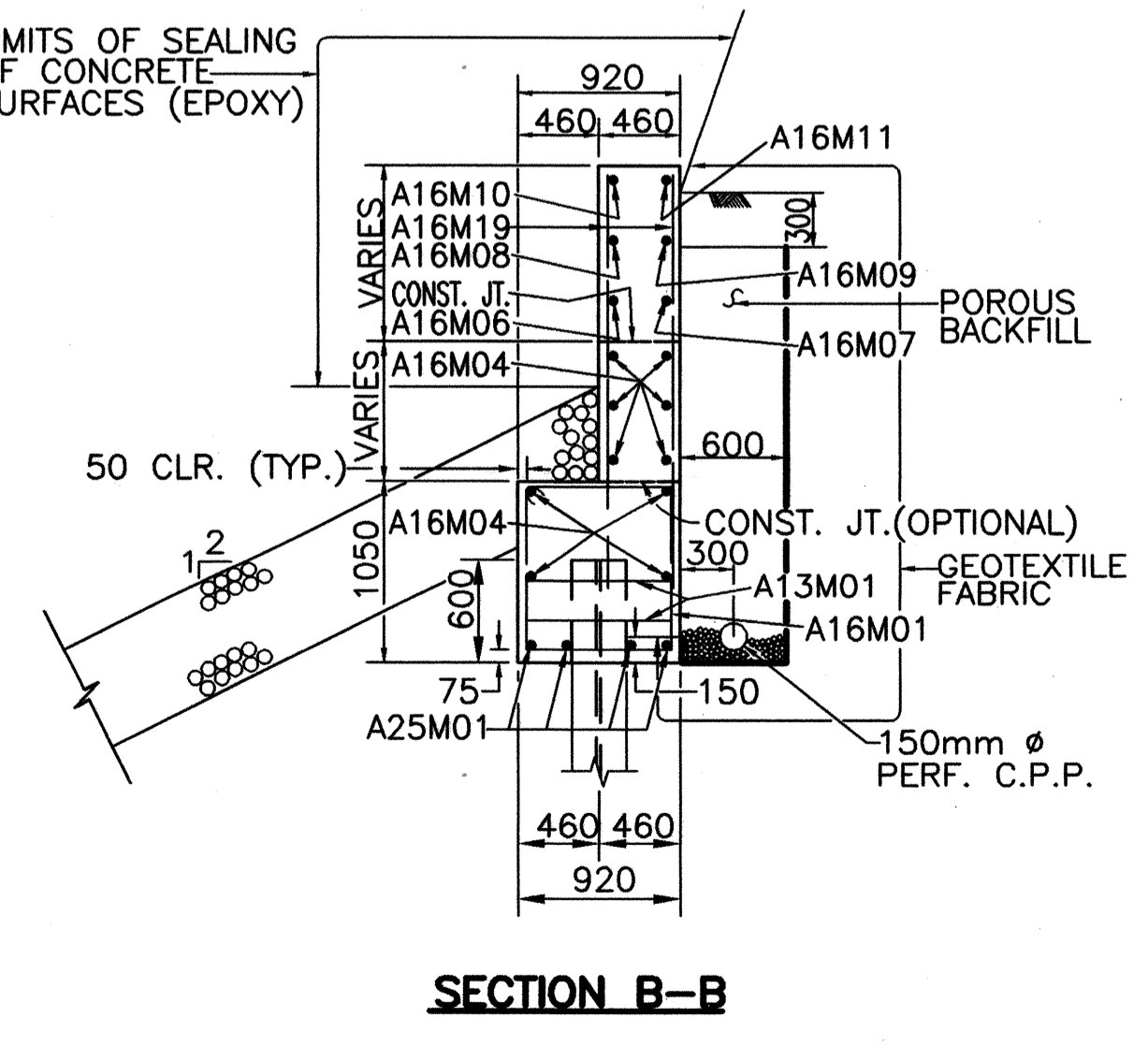
TERMINATION OF C.P.P. AT FRONT SLOPE



DETAIL "A" - REAR ONLY
 SECTION IS PARALLEL TO ϕ CONSTRUCTION

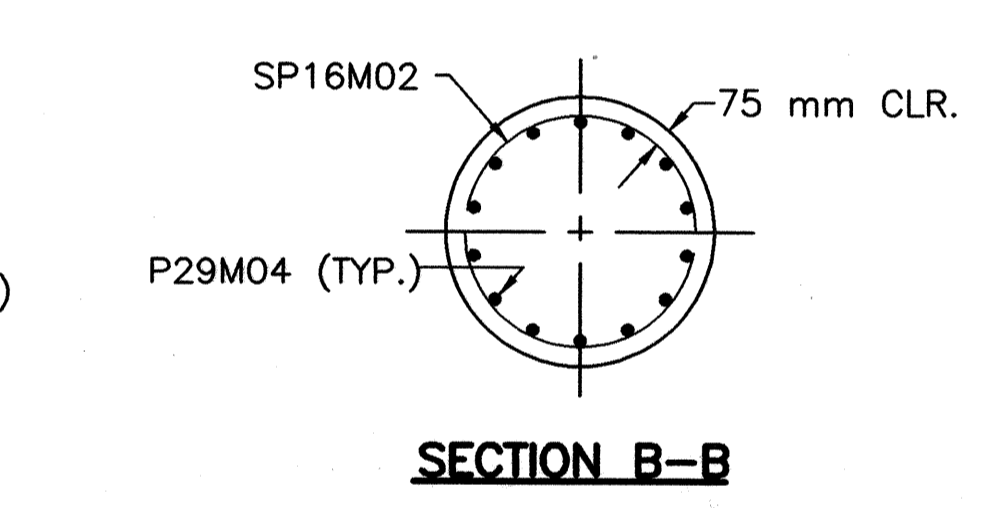
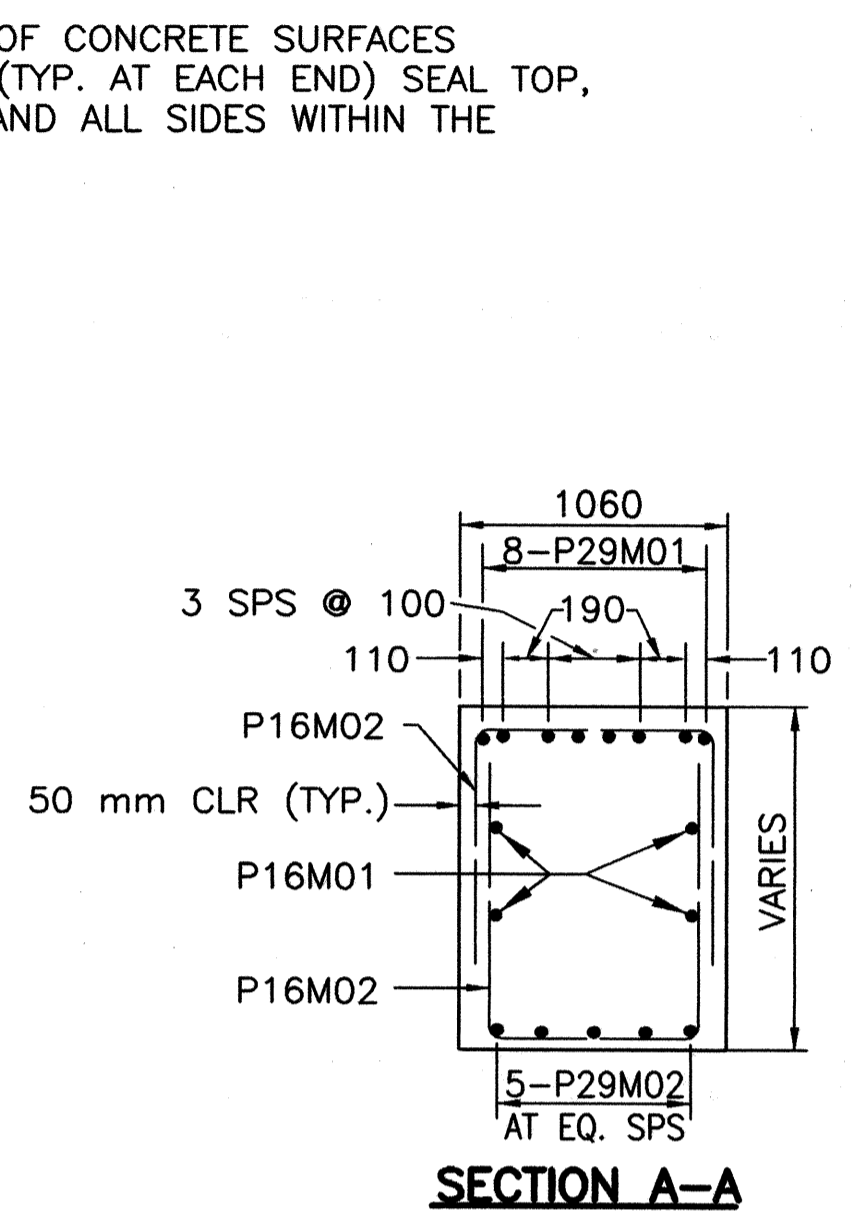
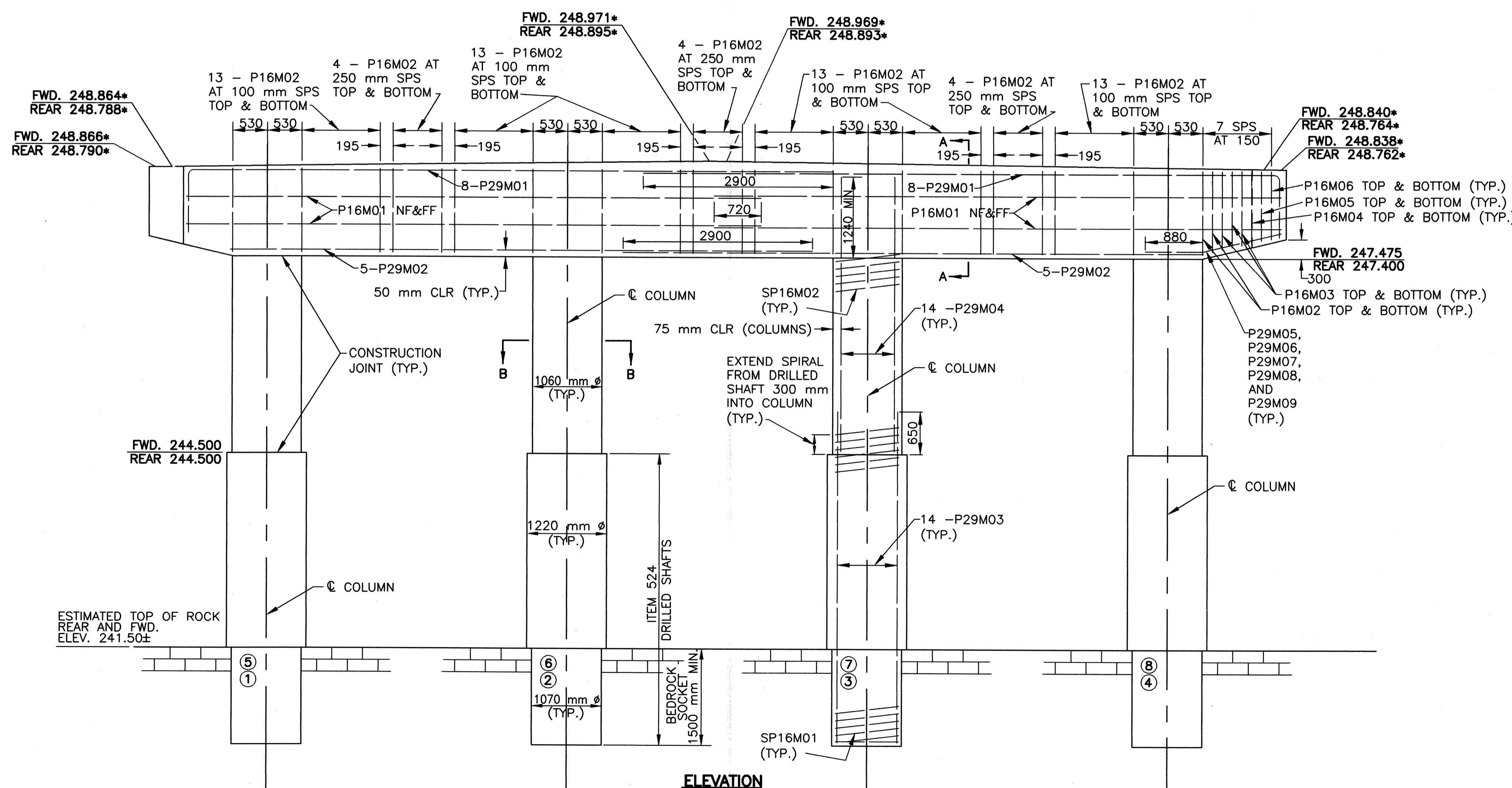
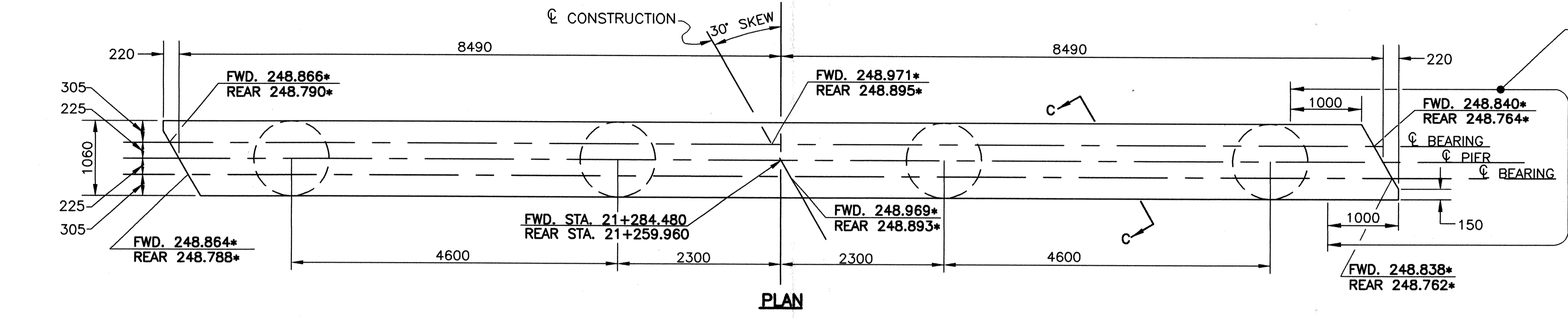
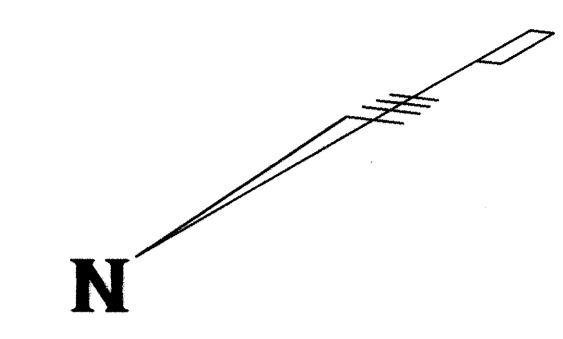


SECTION A-A



SECTION B-B

DESIGN AGENCY: **KOHLI & KAUFER ASSOCIATES, INC.** CONSULTING ENGINEERS AND SURVEYORS LMA, OHIO
 DATE: **6-20-97**
 REVIEWED: **D.G.B.**
 DRAWN: **C.A.T.**
 CHECKED: **T.H.H.**
 M.A.D.
 STRUCTURE FILE NUMBER: **8801363**
 BRIDGE NO. **WYA-30-21244** OVER THE SANDUSKY RIVER
WYA-30-21.200
 3 / 9
 17 / 23



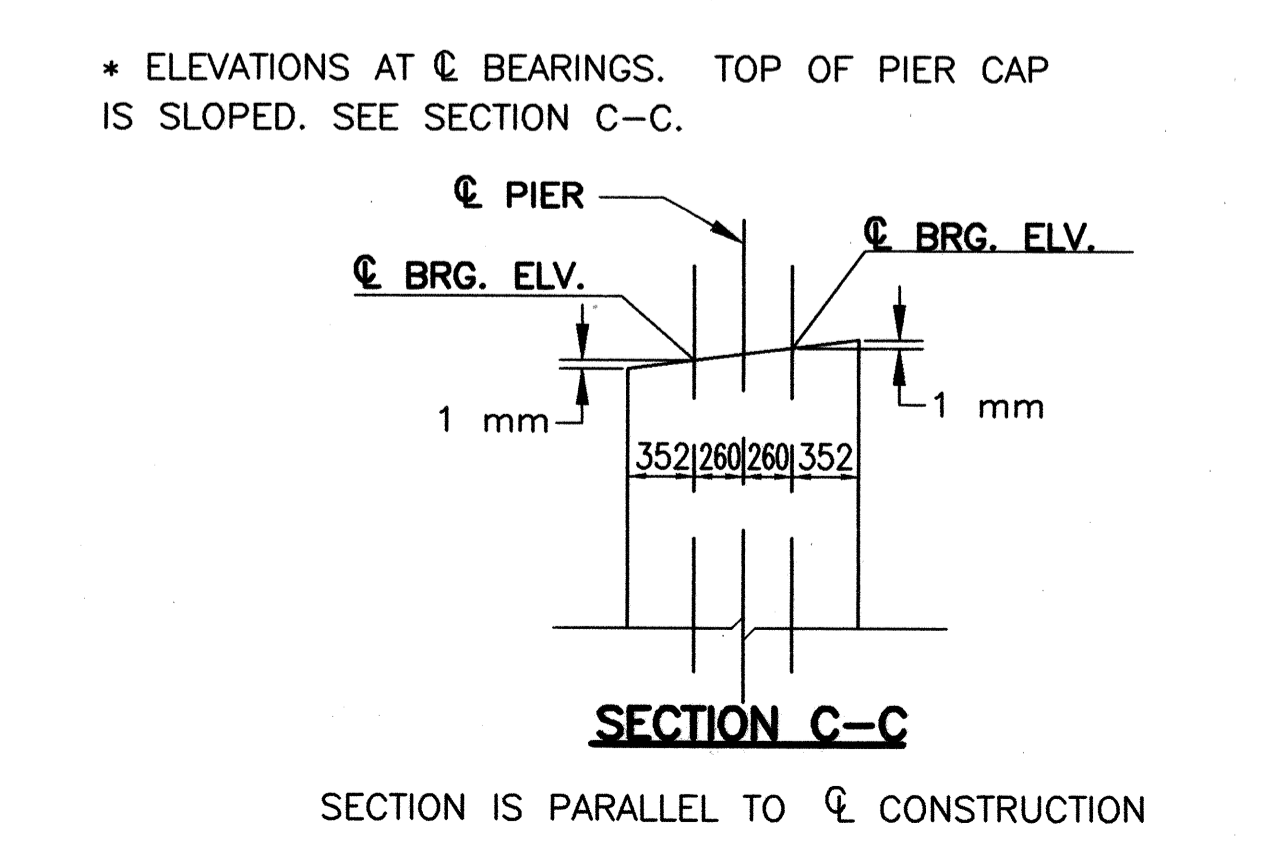
NOTES:

BRIDGE SEAT REINFORCING
 REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF THE ANCHOR BAR HOLES.

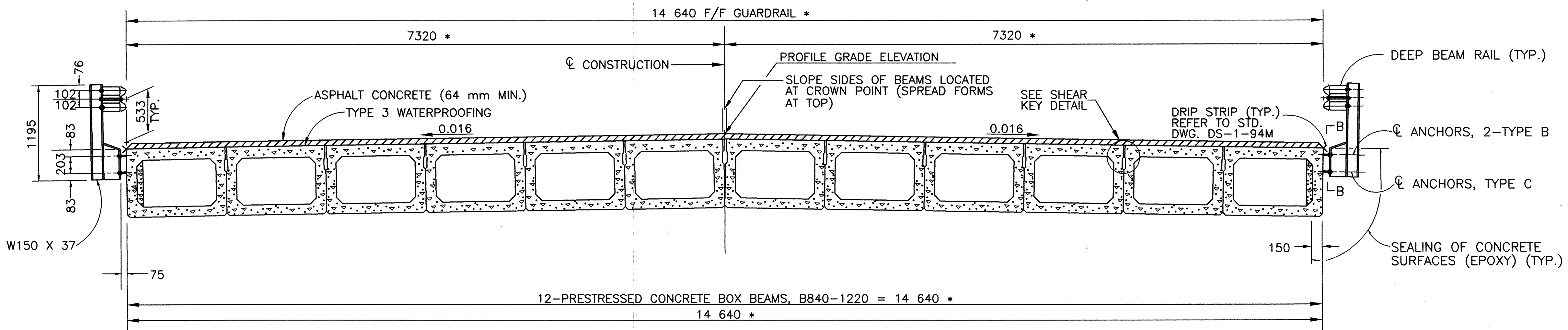
REINFORCING STEEL ABBREVIATIONS
 N.F. - NEAR FACE
 F.F. - FAR FACE
 SPS. - SPACES

DRILLED SHAFT NO. 5 THRU NO. 8 = FWD. PIER
 DRILLED SHAFT NO. 1 THRU NO. 4 = REAR PIER

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



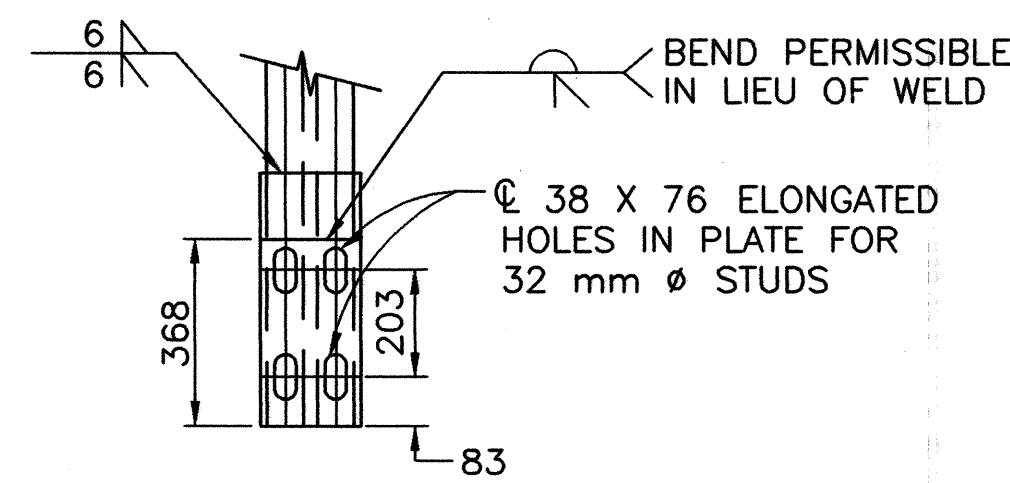
* ELEVATIONS AT CL BEARINGS. TOP OF PIER CAP IS SLOPED. SEE SECTION C-C.



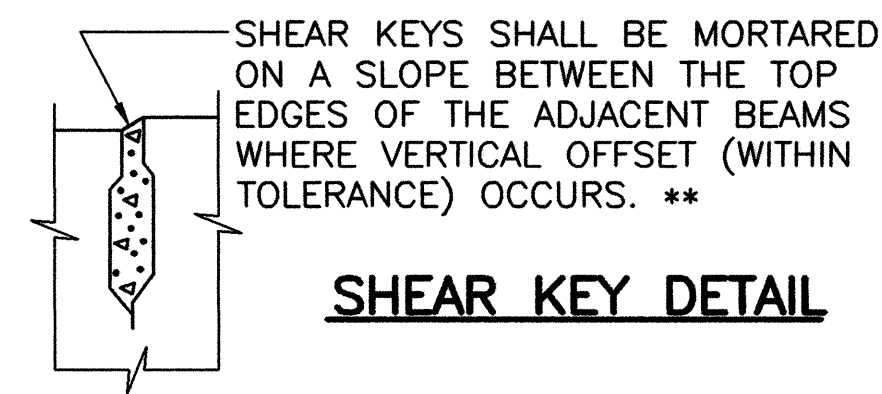
TRANSVERSE CROSS SECTION

* PLUS FIT-UP

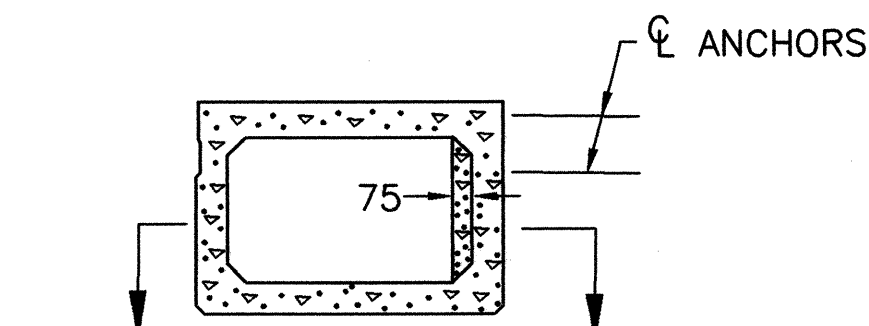
- NOTES: 1. SLOTS SHALL BE PROVIDED IN ALL GUARDRAIL POSTS, SO THAT VERTICAL ADJUSTMENTS MAY BE MADE AFTER PLACEMENT TO PROVIDE A STRAIGHT-SMOOTH GUARDRAIL LINE ACROSS THE STRUCTURE. SEE SECTION B-B THIS SHEET.
2. THE KEYWAY ON THE FASCIA OF THE EXTERIOR BEAMS SHALL BE OMITTED.
3. SEE STD. DWG. DBR-2-73M TYPE 2 POST FOR ADDITIONAL RAILING DETAILS.
4. METRIC DIMENSIONS: ALL DIMENSIONS ARE IN MILLIMETERS AND STATIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.



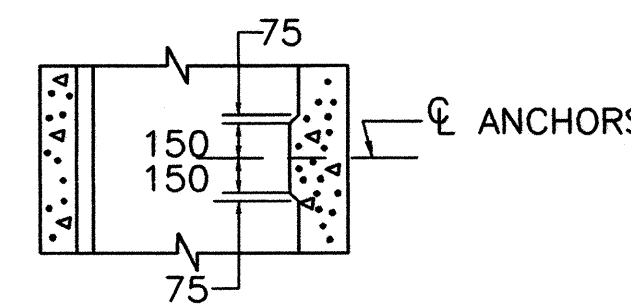
SECTION B-B



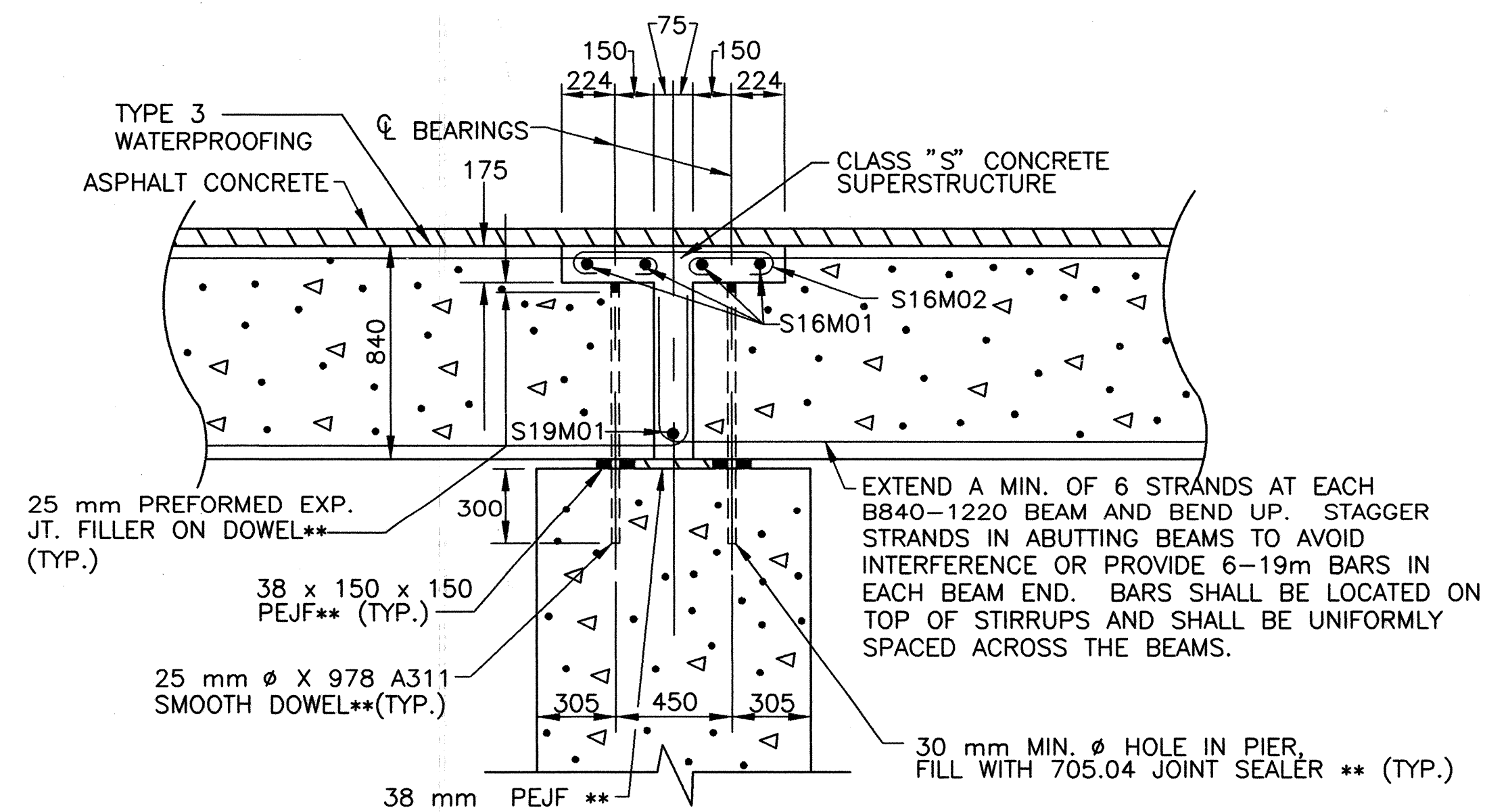
SHEAR KEY DETAIL



SECTION SHOWING WALL THICKENING AT GUARDRAIL ANCHORS

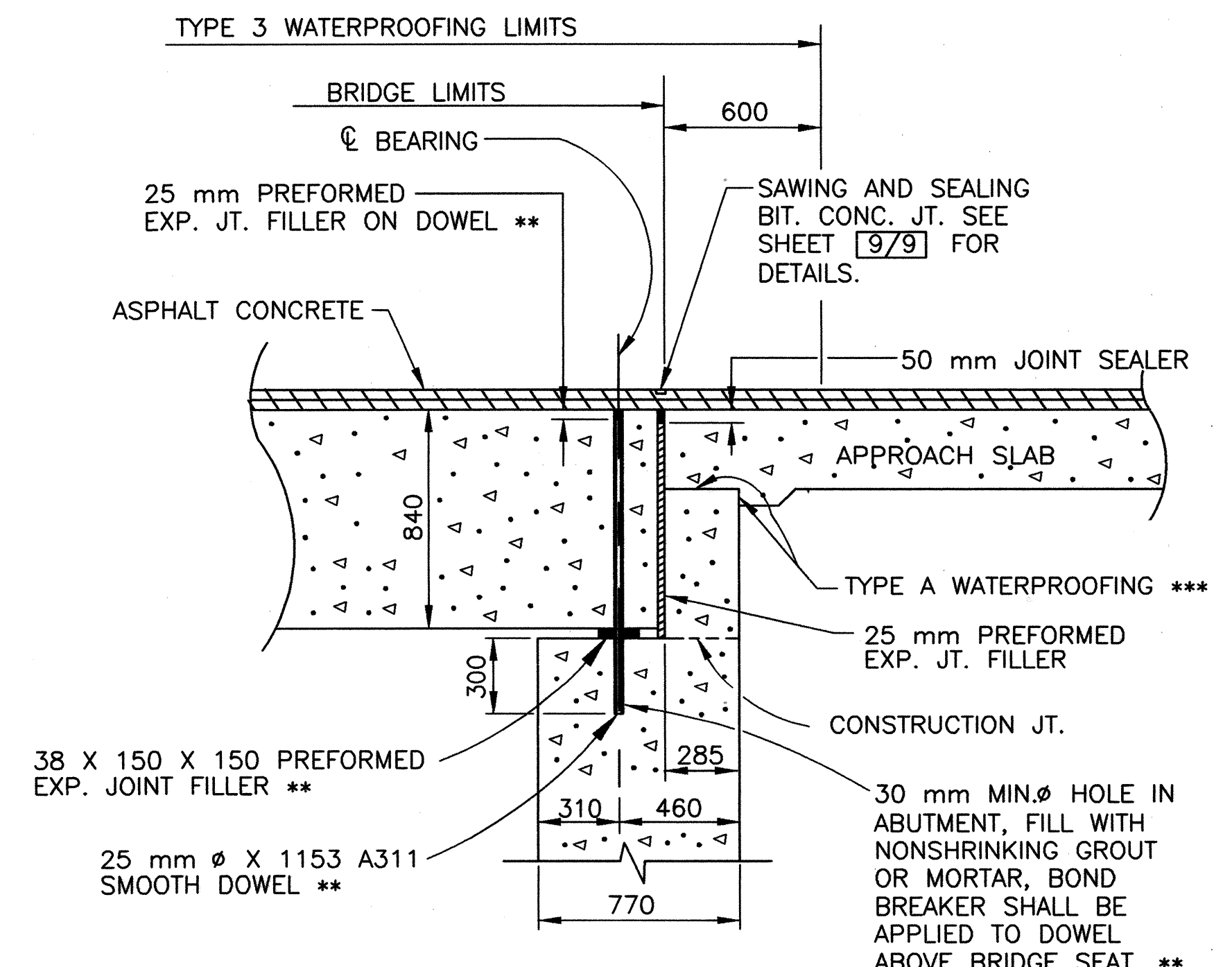


SECTION A-A



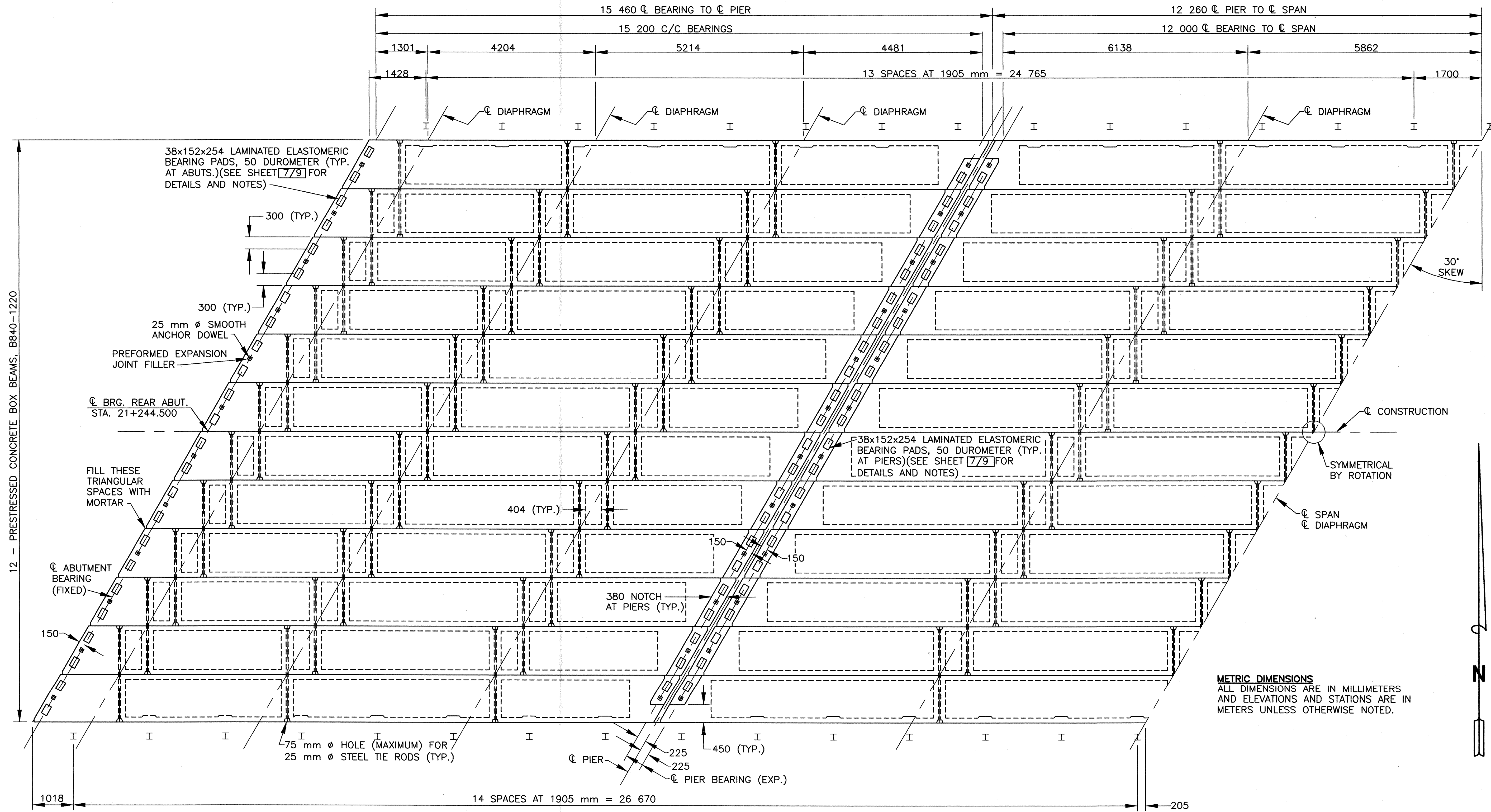
BEARING AT PIER

** - INCLUDED WITH ITEM 515 FOR PAYMENT.



BEARING AT ABUTMENT

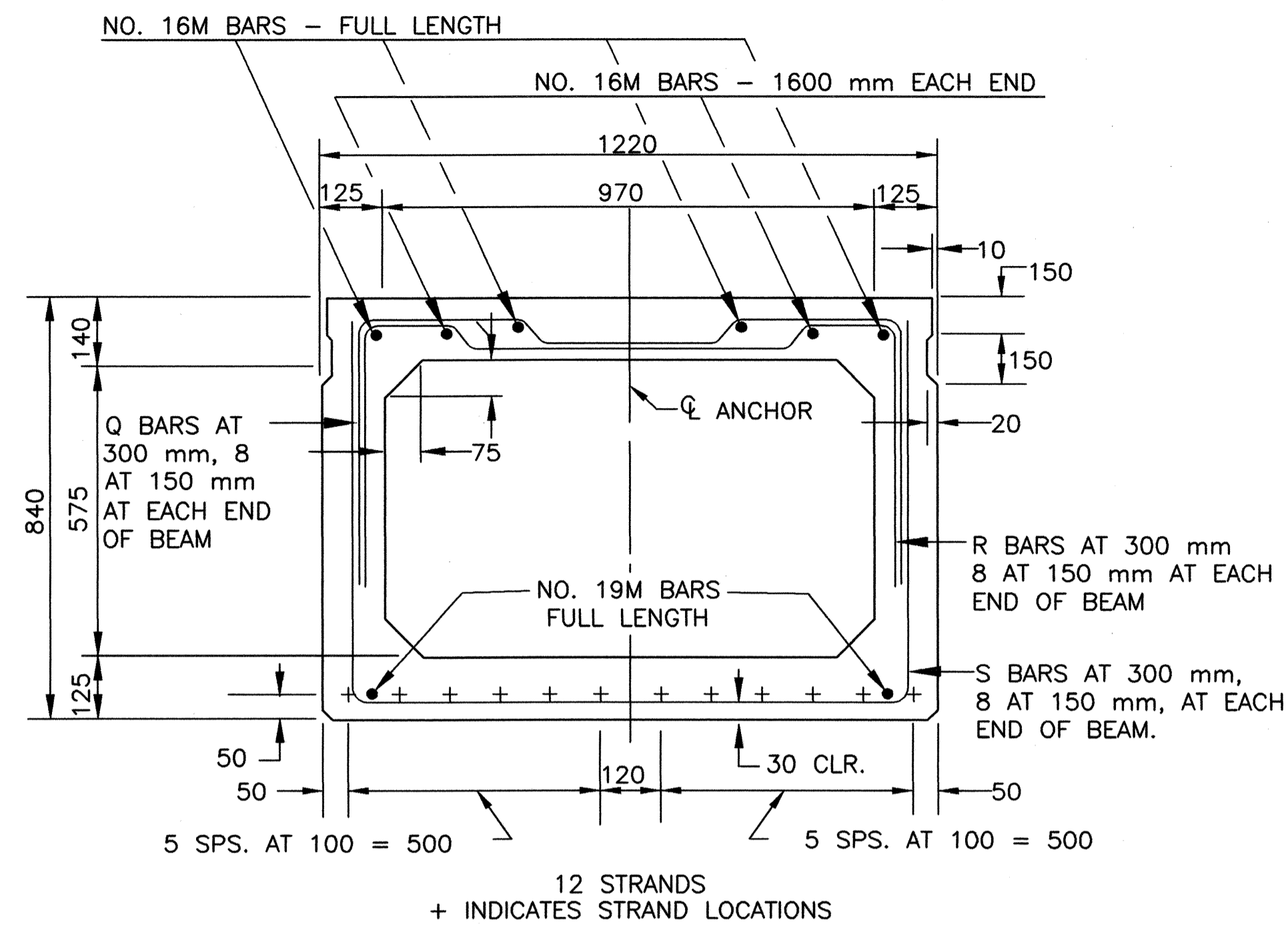
** - INCLUDED WITH ITEM 515 FOR PAYMENT
 *** - INCLUDED WITH ITEM 611 FOR PAYMENT.



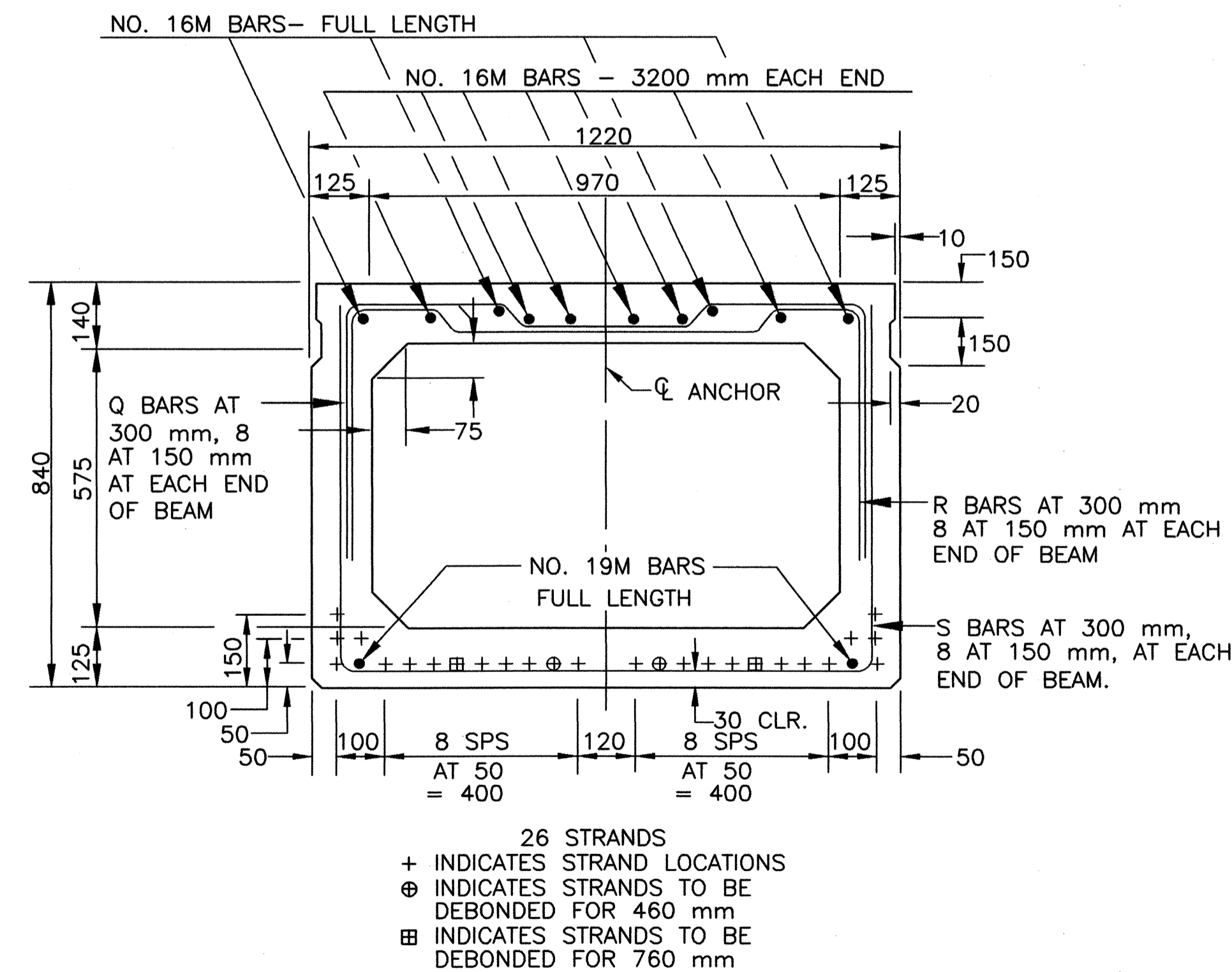
HALF PLAN

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

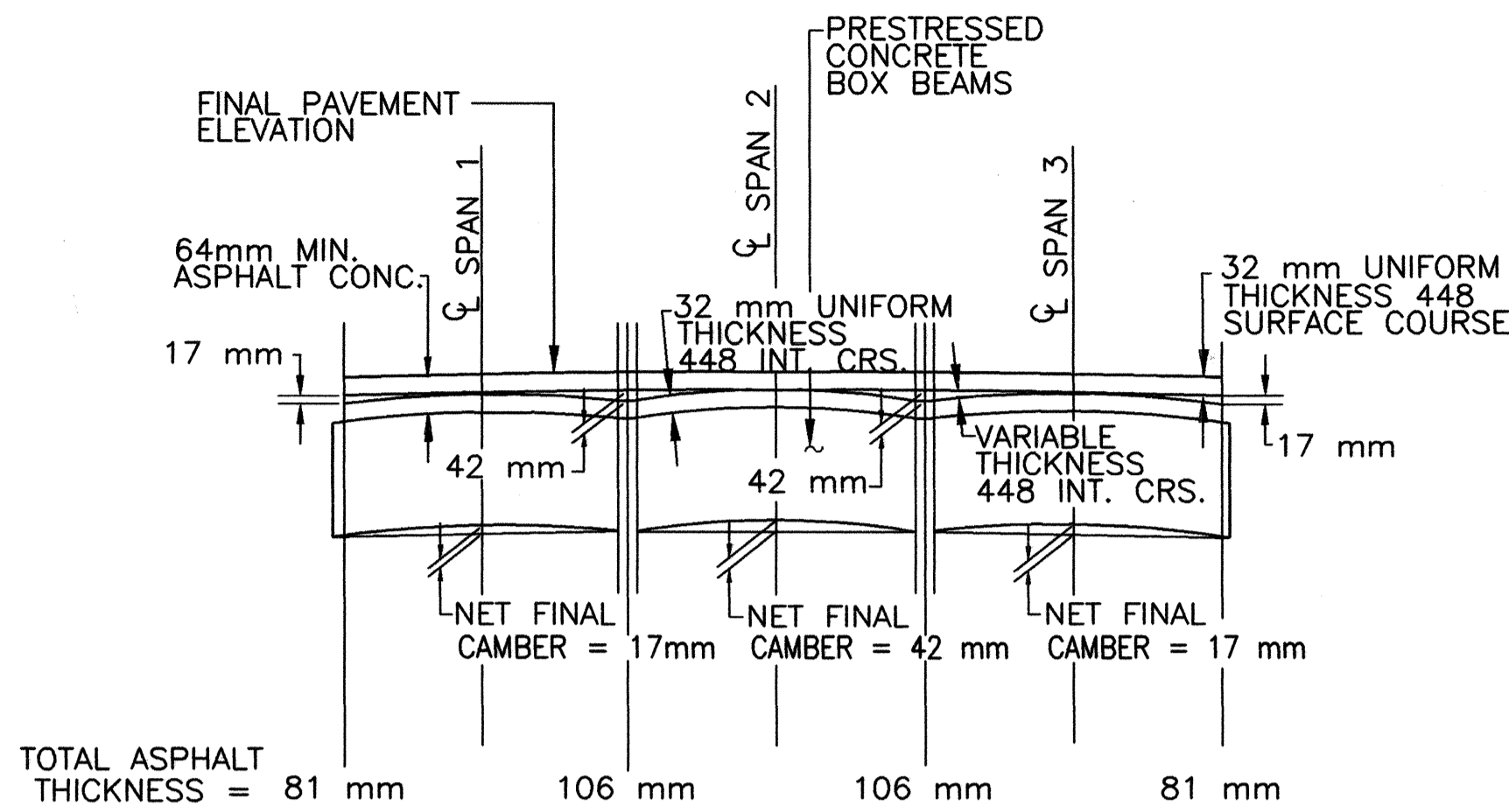
DESIGNED M.A.D.	DRAWN C.A.T.	REVIEWED D.G.B.	DATE 6-20-97	DESIGN AGENCY KOHLI & KALIHAR ASSOCIATES, INC. CONSULTING ENGINEERS AND SURVEYORS LMA, OHIO
CHECKED T.H.H.	REVISOR	STRUCTURE FILE NUMBER 8801363		
SUPERSTRUCTURE DETAILS				
BRIDGE NO. WYA-30-21244 OVER THE SANDUSKY RIVER				
WYA-30-21.200				



STRAND PATTERN DETAILS - B840-1220
SPANS 1 & 3



STRAND PATTERN DETAILS - B840-1220
SPAN 2



ASPHALT THICKNESS DIAGRAM

ASPHALT THICKNESS SPAN 1 AND SPAN 3

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 18 mm.

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 1 mm.

NET FINAL CAMBER OF BEAMS IS 17 mm. THIS IS 17 mm IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO THE PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 448 INTERMEDIATE COURSE FROM 32 mm (MIN.) AT CENTER OF SPANS TO 49 mm AT THE ABUTMENT ENDS, AND 74 mm AT THE PIER ENDS.

ASPHALT THICKNESS SPAN 2

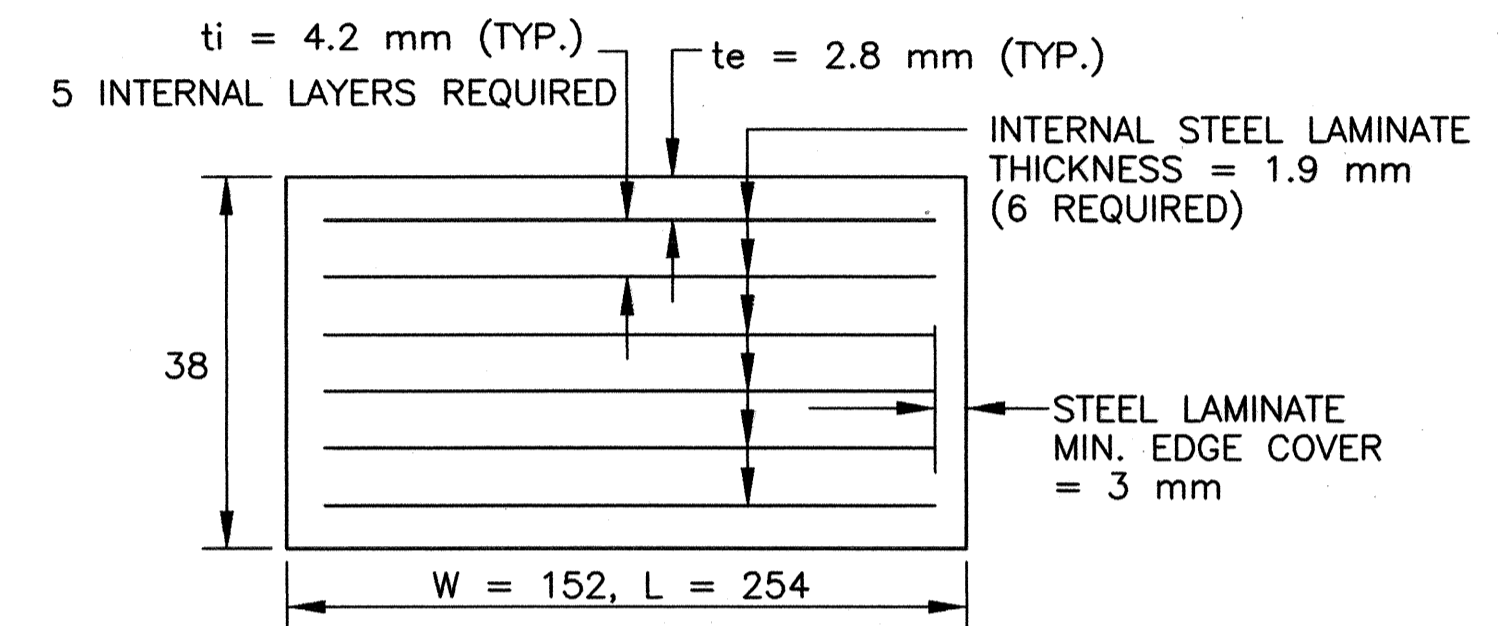
CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 50 mm.

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 8 mm.

NET FINAL CAMBER OF BEAMS IS 42 mm. THIS IS 42 mm IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO THE PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 448 INTERMEDIATE COURSE FROM 32 mm AT CENTER OF SPANS TO 74 mm AT ENDS OF SPANS.

NOTES:

- FASCIA BEAMS: TO AVOID INTERFERENCE WITH THE ANCHORS FOR THE BRIDGE RAILING POSTS, THE LONGITUDINAL REINFORCING BARS NEAR THE FASCIA SHALL BE SHIFTED AS NECESSARY. FABRICATOR'S SHOP DRAWINGS SHALL SHOW COMPLETE DETAILS OF THE BEAM REINFORCEMENT.
- FOR ADDITIONAL DETAILS SEE SHEET [579] AND [679] AND STANDARD DRAWING PSBD-1-93M.
- MINIMUM CONCRETE STRENGTH AT 28 DAYS F'C = 38.0 MPa. MINIMUM CONCRETE STRENGTH AT TIME OF INITIAL PRESTRESS F'ci = 27.5 MPa.
- PRESTRESSING STRANDS; 12.7 mm DIAMETER, GRADE 270, SEVEN-WIRE UNCOATED LOW-RELAXATION STRAND, AS = 99 SQUARE mm ASTM A416.
- INITIAL STRESS 0.75 F'S = 1400 MPa. STRESS AT RELEASE 0.69 F'S = 1280 MPa.



LAMINATED ELASTOMERIC FIXED BEARINGS

50 DUROMETER
REAR & FORWARD ABUTMENTS
DEAD LOAD REACTION = 72.8 kN
LIVE LOAD REACTION = 130.3 kN
MAXIMUM DESIGN LOAD = 203.1 kN

LAMINATED ELASTOMERIC EXPANSION BEARINGS

50 DUROMETER
REAR & FORWARD PIERS
DEAD LOAD REACTION = 115.0 kN
LIVE LOAD REACTION = 141.5 kN
MAXIMUM DESIGN LOAD = 256.5 kN

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, EACH.

METRIC DIMENSIONS:

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

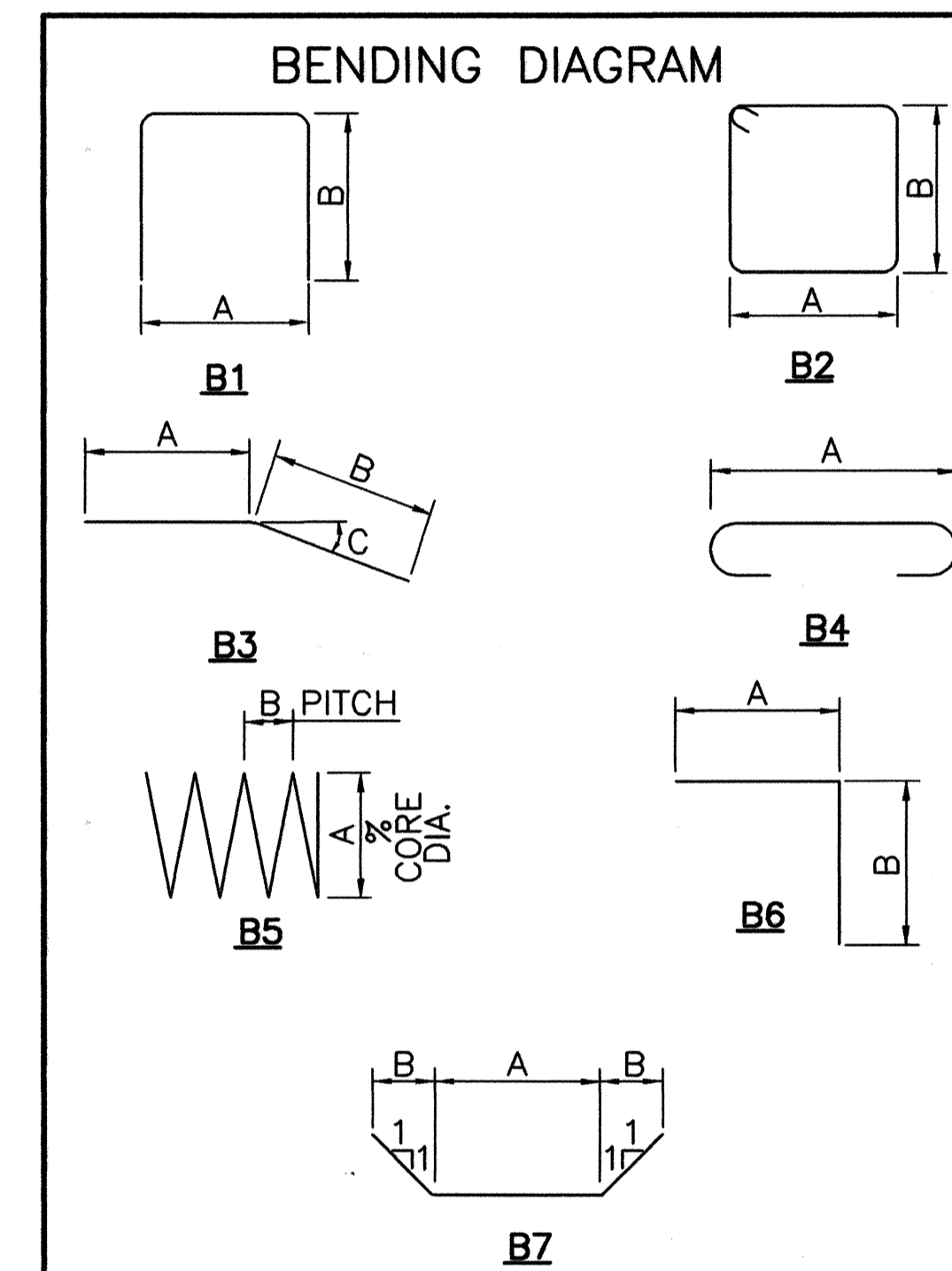
REINFORCING STEEL LIST

EPOXY COATED						
REAR AND FORWARD ABUTMENTS						
MARK	NO.	LENGTH	SHP.	A	B	C
A13M01	40	3390	B2	820	820	
A16M01	116	3650	B2	820	925	
A16M02	32	8840	S			
A16M03	20	3960	S			
A16M04	20	3430	S			
A16M05	16	9600	S			
A16M06	2	2300	S			
A16M07	2	2500	S			
A16M08	2	1400	S			
A16M09	2	1600	S			
A16M10	2	2800	B3	600	2200	22'
A16M11	2	3000	B3	800	2200	22'
A16M12	2	2800	S			
A16M13	2	2600	S			
A16M14	2	2000	S			
A16M15	2	1800	S			
A16M16	2	3300	B3	1100	2200	22'
A16M17	2	3100	B3	900	2200	22'
A16M18	86	3990	B1	670	1700	
A16M19	16	2500	S			
A16M20	16	2350	S			
A16M21	16	2000	S			
A16M22	16	1650	S			
A19M01	86	2685	B1	185	1250	
A25M01	24	8570	S			
A25M02	16	9180	S			
D25M02	66	1435	B7	570	305	

EPOXY COATED						
REAR AND FORWARD PIERS						
MARK	NO.	LENGTH	SHP.	A	B	C
P16M01	16	8800	S			
P16M02	376	3220	B1	960	1170	
P16M03	24	2780	B1	960	950	
P16M04	8	2580	B1	860	900	
P16M05	8	2220	B1	600	850	
P16M06	8	1860	B1	340	800	
P29M01	24	10 760	B6	9890	960	
P29M02	20	8880	S			
P29M03	112	5150	S			
P29M04	112	4210	S			
P29M05	4	1580	B3	880	700	13'
P29M06	4	1720	B3	880	840	13'
P29M07	4	1860	B3	880	980	13'
P29M08	4	1990	B3	880	1110	13'
P29M09	4	2130	B5	880	1250	13'

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	SHP.	CORE	PITCH	TURNS	SPACERS
SP16M01	8	4800	B5	910	115	45	4
SP16M02	8	2980	B5	910	115	29	4

EPOXY COATED						
SUPERSTRUCTURE						
MARK	NO.	LENGTH	SHP.	A	B	C
S16M01	16	8320	S			
S16M02	132	1240	B4	830		
S19M01	4	8920	S			



NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. AN "S" IN THE "SHP" COLUMN INDICATES STRAIGHT BARS.
4. REFER TO CMS SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

REINFORCING BAR SPLICE

REINFORCING BAR SPLICE LENGTHS SHALL CONFORM TO THE MINIMUM LENGTHS SPECIFIED BY 509.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

REINFORCING STEEL SAMPLES

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

SPIRAL REINFORCING BARS: THE "LENGTH" SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE LENGTH OF THE SPIRAL ALONG THE AXIS OF THE SPIRAL. ONE AND ONE-HALF CLOSED-COIL TURNS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 1.20 KILOGRAMS PER METER OF SPACER, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COILS. THE NUMBER OF KILOGRAMS OF THESE SPACERS, BASED ON 4.76 KILOGRAMS PER LINEAR METER, WILL BE INCIDENTAL TO THE COST OF ITEM 511, CLASS C CONCRETE, PIER ABOVE FOOTING.

DESIGN AGENCY
K&K
 KOHLI & KAHLER ASSOCIATES, INC.
 CONSULTING ENGINEERS AND SURVEYORS
 LIMA, OHIO

DATE
 6-20-97

REVIEWED
 D.C.B.

STRUCTURE FILE NUMBER
 8801363

DESIGNED
 M.A.D.

DRAWN
 C.A.T.

CHECKED
 T.H.H.

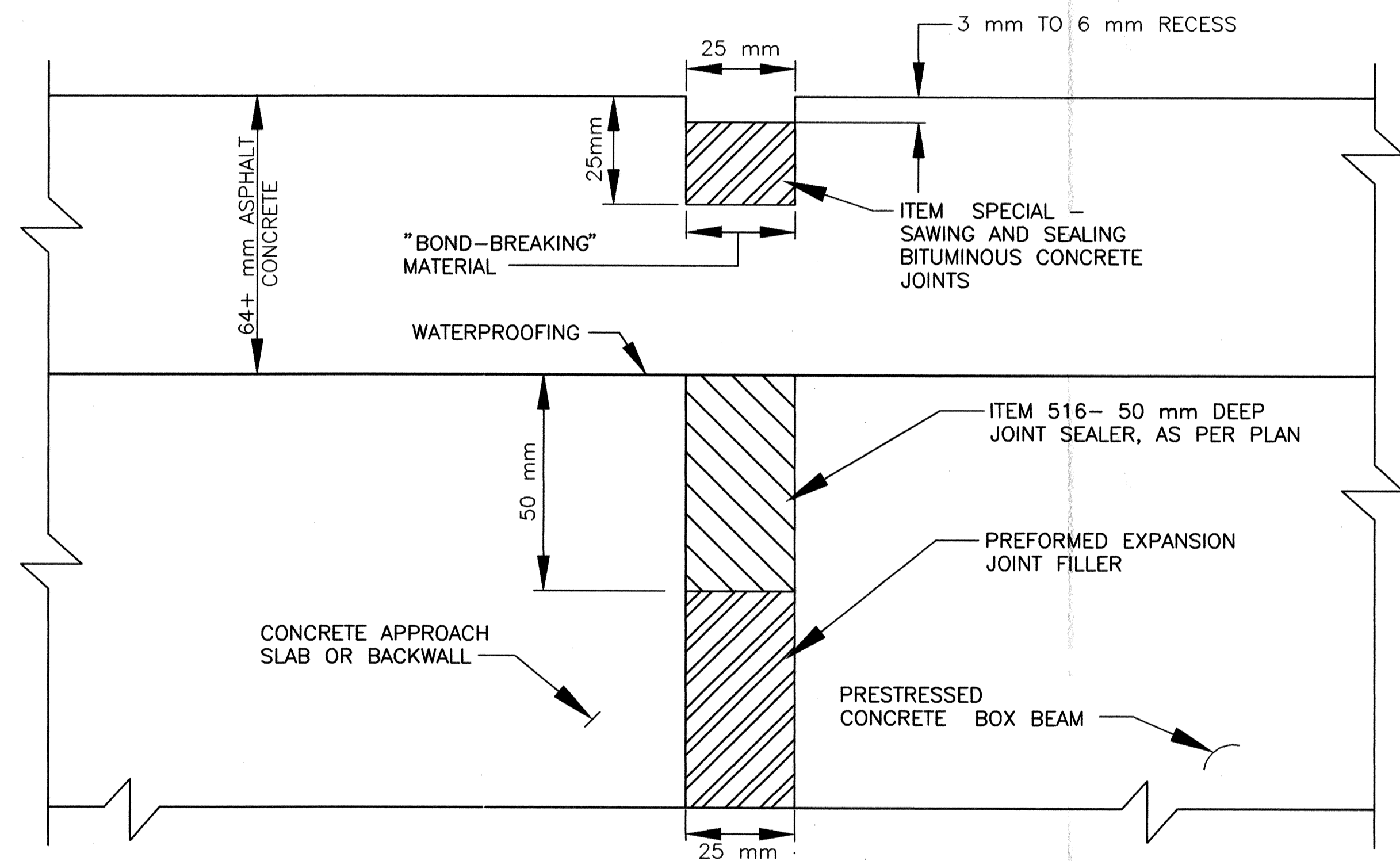
REVISIONS

REINFORCING STEEL LIST
 BRIDGE NO. WYA-30-21244
 OVER THE SANDUSKY RIVER

WYA-30-21.200

8/9

22
 23



SEALING OF JOINTS AT ABUTMENTS

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) DESCRIPTION:

THIS WORK SHALL CONSIST OF CUTTING AND SEALING TRANSVERSE JOINTS IN THE NEW BITUMINOUS CONCRETE OVERLAY OF BOX BEAM BRIDGES. BITUMINOUS CONCRETE JOINTS SHALL BE CONSTRUCTED DIRECTLY OVER, AND IN LINE WITH, THE EXISTING UNDERLYING TRANSVERSE ABUTMENT JOINT OF THE BOX BEAMS.

2) MATERIALS:

THE JOINT SEALANT SHALL MEET THE REQUIREMENTS OF ITEM 705.04, JOINT SEALANTS, HOT-POURED, FOR CONCRETE AND ASPHALT PAVEMENTS. ACCEPTABLE ALTERNATE MATERIALS ARE: A SILICONE SEALANT MEETING FEDERAL SPECIFICATIONS TT-S-001543A CLASS A (ONE-PART SILICONE SEALANTS) AND TT-S-00230C CLASS A (ONE-COMPONENT SEALANTS), SUCH AS THOSE MANUFACTURED BY GENERAL ELECTRIC, SILICONE PRODUCTS DIVISION, 4015 EXECUTIVE PARK DRIVE, CINCINNATI, OHIO 45242 (513-243-1953); OR DOW CORNING, 400 TECHNE CENTER, SUITE 103, MILFORD, OHIO 45150 (513-831-3586); OR SOF-SEAL, A COLD-APPLIED, LOW-MODULUS, TWO-COMPONENT POLY-MERIC COMPOUND HORIZONTAL SEALANT AS MANUFACTURED BY W.R. MEADOWS, INC., P.O. BOX 543, ELGIN, ILLINOIS 60121 (800-342-5976).

3) CONSTRUCTION DETAILS:

A) GENERAL: THE CONTRACTOR SHALL CONDUCT HIS OPERATION SO THAT THE CUTTING, CLEANING AND SEALING OF TRANSVERSE JOINTS IS A CONTINUOUS OPERATION THAT WILL BE PERFORMED AS SOON AS PRACTICAL AFTER THE PAVING, BUT NO LATER THAN FOUR (4) DAYS AFTER PLACEMENT OF THE ASPHALT CONCRETE SURFACE COURSE. TRAFFIC SHALL NOT BE ALLOWED TO KNEAD TOGETHER OR DAMAGE JOINT CUT PRIOR TO SEALING.

B) CUTTING OF TRANSVERSE JOINTS: THE CONTRACTOR SHALL SAW OR ROUT TRANSVERSE JOINTS TO THE DIMENSIONS SHOWN IN THE DETAILS ON THIS SHEET. THE CUT JOINTS SHALL LIE DIRECTLY ABOVE EACH BOX BEAM ABUTMENT JOINT.

THE BLADE OR BLADES SHALL BE OF SUCH SIZE THAT THE FULL WIDTH AND DEPTH OF THE CUT CAN BE MADE WITH ONE PASS. DRY OR WET CUTTING WILL BE ALLOWED. JOINTS SHALL EXTEND THE FULL WIDTH OF THE BRIDGE.

C) CLEANING JOINTS: DRY SAWED JOINTS SHALL BE THOROUGHLY CLEANED WITH A SUFFICIENT AMOUNT OF COMPRESSED AIR TO REMOVE ANY DIRT, DUST, OR DELETERIOUS MATTER. WET SAWED JOINTS SHALL BE WASHED OF ALL CUTTINGS BY FLUSHING WITH A JET OF WATER AND WITH OTHER TOOLS AS NECESSARY. AFTER FLUSHING, THE JOINT SHALL BE BLOWN OUT WITH COMPRESSED AIR. WHEN THE SURFACES ARE THOROUGHLY CLEAN AND DRY, AND JUST PRIOR TO PLACING THE JOINT SEALER, COMPRESSED AIR HAVING A PRESSURE OF AT LEAST 0.621 MPa SHALL BE USED TO BLOW OUT THE JOINT AND REMOVE ALL TRACES OF DUST.

IN THE EVENT FRESHLY CUT JOINTS BECOME CONTAMINATED BEFORE THEY ARE SEALED, THEY SHALL BE RECLEANED OF ALL FOREIGN MATERIAL BY HIGH PRESSURE WATER JET.

D) SEALING JOINTS: THE JOINT SHALL BE THOROUGHLY DRY WHEN THE SEALANT IS PLACED. AFTER CLEANING AND DRYING, A BOND-BREAKER MATERIAL SHALL BE APPLIED TO THE BOTTOM OF THE GROOVE.

HOT-POURED JOINT SEALANT MATERIAL SHALL BE HEATED IN A KETTLE OR MELTER CONSTRUCTED AS A DOUBLE BOILER, WITH THE SPACE BETWEEN THE INNER AND OUTER SHELLS FILLED WITH OIL OR OTHER HEAT TRANSFER MEDIUM. POSITIVE TEMPERATURE CONTROL AND MECHANICAL AGITATION SHALL BE PROVIDED. HEATING MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. JOINT SEALER MATERIAL SHALL NEVER BE KEPT HEATED AT THE POURING TEMPERATURE FOR MORE THAN (4) HOURS AND SHALL NEVER BE REHEATED. SEALER LEFT IN THE APPLICATOR AT THE END OF A DAY'S WORK SHALL NOT BE USED.

HOT-POURED SEALANT SHALL BE APPLIED IMMEDIATELY THROUGH A NOZZLE, WHICH MUST PROJECT INTO THE SAWED JOINT, FILLING FROM THE BOTTOM UP. THE SEALANT SHALL COMPLETELY FILL THE JOINT IN SUCH A MANNER THAT, AFTER COOLING, THE LEVEL OF THE SEALANT WILL NOT BE HIGHER THAN 3 mm BELOW THE PAVEMENT SURFACE. ANY DEPRESSION IN THE COOLED SEAL GREATER THAN 5 mm SHALL BE BROUGHT UP TO THE SPECIFIED LIMIT BY FURTHER ADDITION OF HOT-POURED SEALANT. CARE SHALL BE TAKEN IN THE SEALING OF THE JOINTS SO THAT THE FINAL APPEARANCE WILL PRESENT A NEAT FINE LINE.

THE COLD APPLIED SEALANT MATERIALS (POLYURETHANE, SILICONE, AND POLYMERIC COMPOUNDS) SHALL BE INSTALLED AS PER MANUFACTURERS' RECOMMENDATIONS, EXCEPT AS MODIFIED BY THIS DRAWING. THE SEALANT SHALL BE INSTALLED WHEN THE AMBIENT TEMPERATURE IS 5 DEGREES C OR HIGHER. TRAFFIC SHALL NOT BE ALLOWED ON THE JOINT FOR ONE HOUR AFTER APPLICATION OF THE SEALANT.

4) METHOD OF MEASUREMENT:

THE QUANTITY TO BE PAID FOR UNDER THIS ITEM WILL BE THE NUMBER OF LINEAR METERS OF JOINTS SAWED AND SEALED AS PER THE ABOVE REQUIREMENTS.

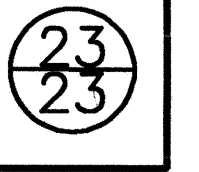
5) BASIS OF PAYMENT:

THE UNIT PRICE PER LINEAR METER FOR ITEM SPECIAL - "SAWING AND SEALING BITUMINOUS CONCRETE JOINTS" SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK, INCLUDING THE FURNISHING AND PLACING OF THE JOINT SEALER MATERIAL.

ITEM 516 - 50 mm DEEP JOINT SEALER, AS PER PLAN

THIS ITEM SHALL MEET THE MATERIAL (SECTION 2) AND SEALING (SECTION 3D) SPECIFICATIONS OF ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS.

DESIGNED JEB/JAM	DRAWN WUJ/LMW	REVIEWED WUJ/LMW	DATE	DESIGN AGENCY
			STRUCTURE FILE NUMBER	KOHLI & KALHER ASSOCIATES, INC. CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
CHECKED WIF/JAM	REVISOR	8801363		
ABUTMENT JOINTS IN BITUMINOUS CONCRETE BOX BEAM BRIDGES				
BRIDGE NO. WYA-30-21244 OVER THE SANDUSKY RIVER				
WYA-30-21.200				
9	9			



GEOLOGY OF THE SITE

GENERALIZED GEOLOGICAL REFERENCES REPORT THAT THE BRIDGE SITE WAS COVERED BY BOTH THE ILLINOIAN AND WISCONSIN GLACIERS. THE UNDERLYING BEDROCK AT THE SITE IS REPORTED TO BE THE MONROE DOLOMITE FORMATION. GLACIAL DEPOSITS IN THE AREA ARE GENERALLY LESS THAN 7.62 METERS THICK.

EXPLORATION

THE EXPLORATION CONSISTED OF PROCURING THREE (3) BORINGS AT THE BRIDGE SITE BETWEEN AUGUST 28 AND SEPTEMBER 21, 1995. THE BORINGS WERE DRILLED BY MEANS OF A TRUCK-MOUNTED ROTARY-TYPE DRILL RIG USING HOLLOWSTEM AUGERS.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS


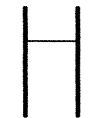

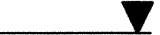

1. SOILS
BELOW THE PAVEMENT LAYERS, BORINGS B-1 AND B-3 ENCOUNTERED A FILL LAYER. IN BORING B-1, THE FILL CONSISTED OF A VERY STIFF TO HARD SILT AND CLAY AND EXTENDED TO A DEPTH OF 1.83 METERS. IN BORING B-3, THE FILL CONSISTED PRIMARILY OF LOOSE TO MEDIUM DENSE CRUSHED LIMESTONE FRAGMENTS AND EXTENDED TO A DEPTH OF 5.18 METERS. BELOW THE FILL, BORINGS B-1 AND B-3 ENCOUNTERED LAYERS OF VERY LOOSE TO DENSE GRANULAR SOILS AND MEDIUM STIFF TO VERY STIFF COHESIVE SOILS TO THE TOP OF BEDROCK.

BORING B-2 WAS DRILLED THROUGH THE BRIDGE DECK INTO THE STREAMBED. BELOW THE STREAMBED, BORING B-2 ENCOUNTERED LAYERS OF LOOSE TO MEDIUM DENSE GRAVEL WITH SAND AND VERY DENSE COARSE AND FINE SAND TO THE TOP OF BEDROCK.

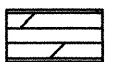
2. BEDROCK
BEDROCK WAS ENCOUNTERED IN ALL THREE BORINGS. A 1.34-METER SECTION OF BEDROCK WAS CORED IN BORING B-1. A 3.05-METER SECTION OF ROCK WAS CORED IN EACH OF BORINGS B-2 AND B-3. THE BEDROCK WAS A HARD, GRAY DOLOMITE THAT WAS GENERALLY SLIGHTLY BROKEN.

3. GROUNDWATER
GROUNDWATER SEEPAGE WAS FIRST ENCOUNTERED IN BORINGS B-1 AND B-3 AT DEPTHS OF 4.88 AND 4.27 METERS, RESPECTIVELY. THE WATER LEVELS AT THE COMPLETION OF DRILLING IN BORINGS B-1 AND B-3 WERE AT DEPTHS OF 5.27 AND 5.24 METERS, RESPECTIVELY, BELOW THE GROUND SURFACE. IT SHOULD BE NOTED, HOWEVER, THAT WATER USED FOR CORING THE BEDROCK WAS INCLUDED IN THESE FINAL MEASUREMENTS. CONSEQUENTLY, THESE FINAL WATER LEVEL MEASUREMENTS MAY NOT REFLECT THE ACTUAL GROUNDWATER CONDITIONS. BORING B-2 WAS DRILLED INTO THE STREAMBED; THEREFORE, NO WATER LEVEL MEASUREMENTS WERE MADE IN THIS BORING.

LEGEND

-  DRIVE SAMPLE AND/OR CORE BORING LOCATION - PLAN VIEW
-  DRIVE SAMPLE AND/OR CORE BORING LOCATION - PROFILE VIEW
HORIZONTAL BAR INDICATES DEPTH AT WHICH SAMPLE WAS TAKEN
-  FREE WATER OR WATER SEEPAGE
-  WATER LEVEL AT COMPLETION OF BORING (INCLUDES DRILLING WATER)
-  TOP OF ROCK (INCLUDES TOP OF SEVERELY WEATHERED ROCK IF ENCOUNTERED)
- X/Y/Z FIGURES BESIDE THE BORING LOG IN PROFILE INDICATE THE NUMBER OF BLOWS FOR "STANDARD PENETRATION" TEST.
X = NUMBER OF BLOWS FOR FIRST 152 MILLIMETERS
Y = NUMBER OF BLOWS FOR SECOND 152 MILLIMETERS
Z = NUMBER OF BLOWS FOR THIRD 152 MILLIMETERS
- 50 (n) INDICATES NUMBER OF BLOWS (50) TO DRIVE A SPLIT-BARREL SAMPLER A DEPTH OF (n) MILLIMETERS OTHER THAN THE NORMAL 152 MILLIMETER INCREMENT.

SYMBOL OF ROCK TYPES

 DOLOMITE

GENERAL INFORMATION

DRIVE SAMPLE/PRESS SAMPLE/CORE BORINGS

DRIVE SAMPLE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED ROTARY-TYPE DRILLING MACHINE, EMPLOYING A 50 mm O.D., 35 mm I.D. SPLIT SPOON SAMPLING DEVICE, AT 0.76 AND/OR 1.5 METER DEPTH INTERVALS. DRIVEN BY MEANS OF A 64 kg DROP-HAMMER WITH A FREE FALL OF 762 mm. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLING DEVICE THE LAST 305 mm OF THE 457 mm SAMPLING INTERVAL IS CONSIDERED THE STANDARD PENETRATION VALUE.

DRIVE/PRESS SAMPLE BORINGS ARE MADE BY MEANS OF A MECHANICALLY POWERED ROTARY-TYPE DRILLING MACHINE, EMPLOYING A 50 mm O.D., 35 mm I.D. SPLIT SPOON SAMPLING DEVICE, AND 76 mm O.D. THIN WALL PRESS SAMPLING DEVICE. THE PRESS SAMPLER IS ADVANCED BY CONTINUOUS UNIFORM PRESSURE, APPLIED BY THE DRILLING MACHINE.

CORE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED ROTARY TYPE DRILLING MACHINE, EMPLOYING A NXM CORE BARREL WITH INDUSTRIAL DIAMOND CUTTING HEAD.

THE BORING LOG SHEETS DISPLAY A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, TYPE OF SAMPLE, THE STANDARD PENETRATION TEST READINGS IN THE THREE 152 mm INCREMENTS, FIELD NUMBER ASSIGNED TO SAMPLE, SAMPLE DESCRIPTION - BASED ON LABORATORY TESTS UTILIZING THE CASAGRANDE A C CLASSIFICATION SYSTEM AND GRADATION, PLASTICITY AND MOISTURE CONTENT DETERMINATIONS. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED ON UNDISTURBED SAMPLES, WILL APPEAR GRAPHICALLY ON SEPARATE ENCLOSURES. ROCK SAMPLES ARE DISPLAYED ON THE LOG SHEETS INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, AMOUNT OF RECOVERY AND A VISUAL CLASSIFICATION BASED ON TYPE, COLOR, DEGREE OF HARDNESS, GRAIN SIZE, DETERIORATION, BEDDING, ACID REACTION AND OTHER QUALIFYING FACTORS.

AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLER CAN NOT BE UTILIZED, A WASH SAMPLE IS PROCURED AND VISUALLY CLASSIFIED, IN ORDER TO DETERMINE THE GENERAL CHARACTERISTICS OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

PARTICLE SIZE DEFINITIONS

305 mm	75 mm	2.0mm	0.42mm	0.074mm	0.005mm	
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
			No. 10 sieve	No. 40 sieve	No. 200 sieve	

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF MATERIALS MANAGEMENT AT 1600 WEST BROAD STREET, THE OFFICE OF ROADWAY ENGINEERING OR THE OFFICE OF STRUCTURAL ENGINEERING AT 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

NOTE: INFORMATION SHOWN BY THIS SUBSURFACE INVESTIGATION WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLAN GOVERNING CONSTRUCTION OF THIS PROJECT.

MASON-deVERTEUIL
GEOTECHNICAL SERVICES
6121 HUNTLEY RD.
COLUMBUS, OH 43229

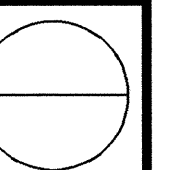
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DATE REVIEWED
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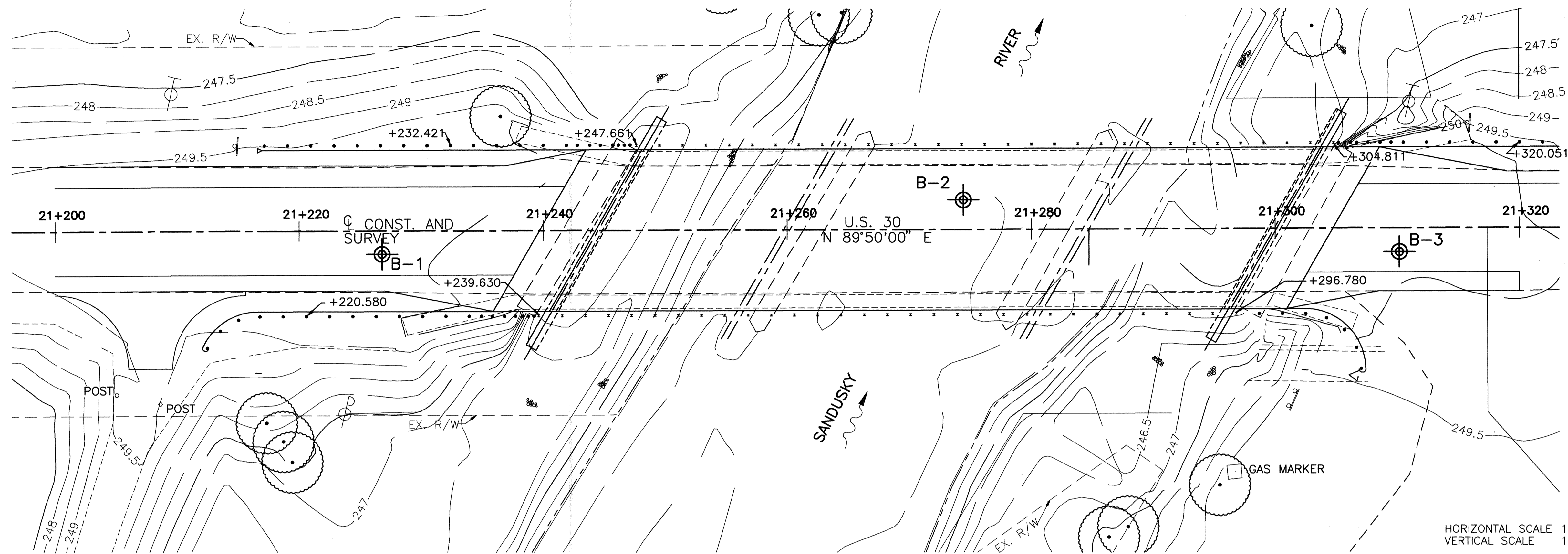
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BRIDGE NO. WYA-30-21244
OVER SANDUSKY RIVER

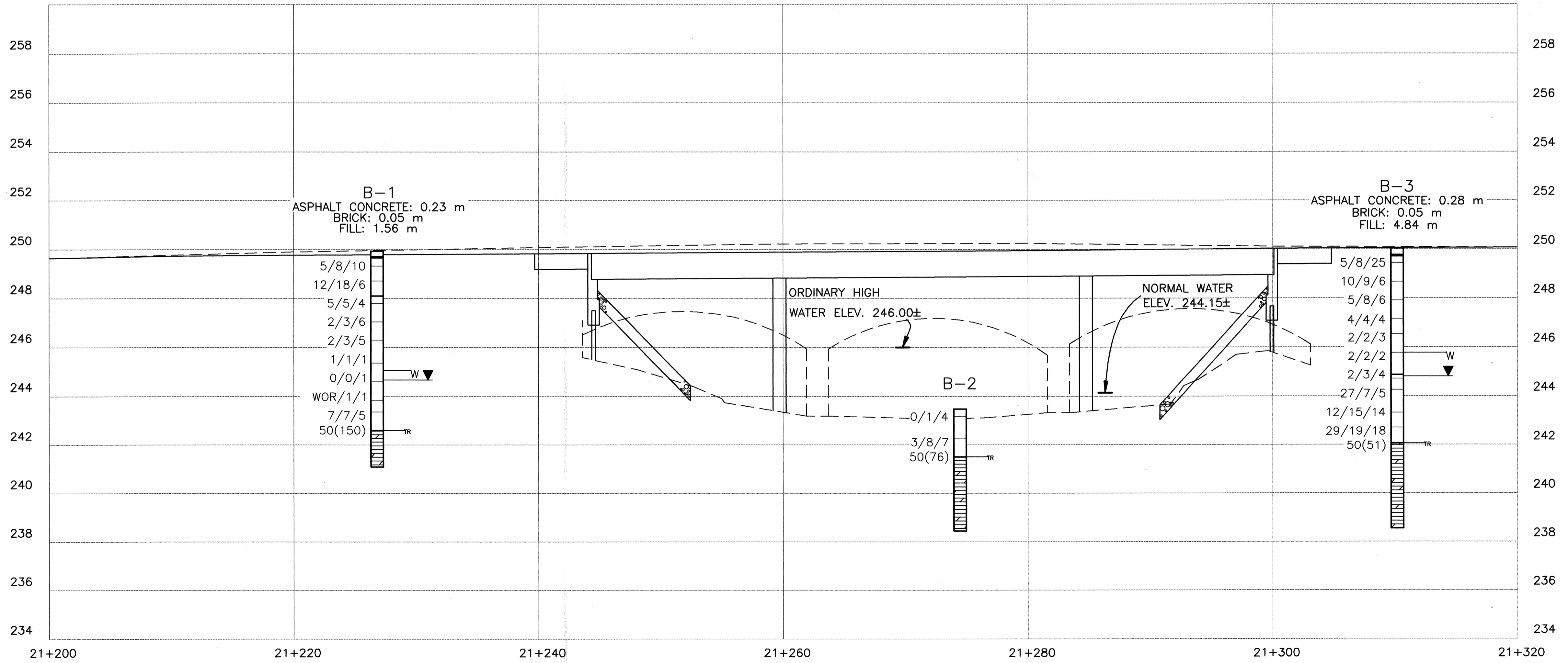
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HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

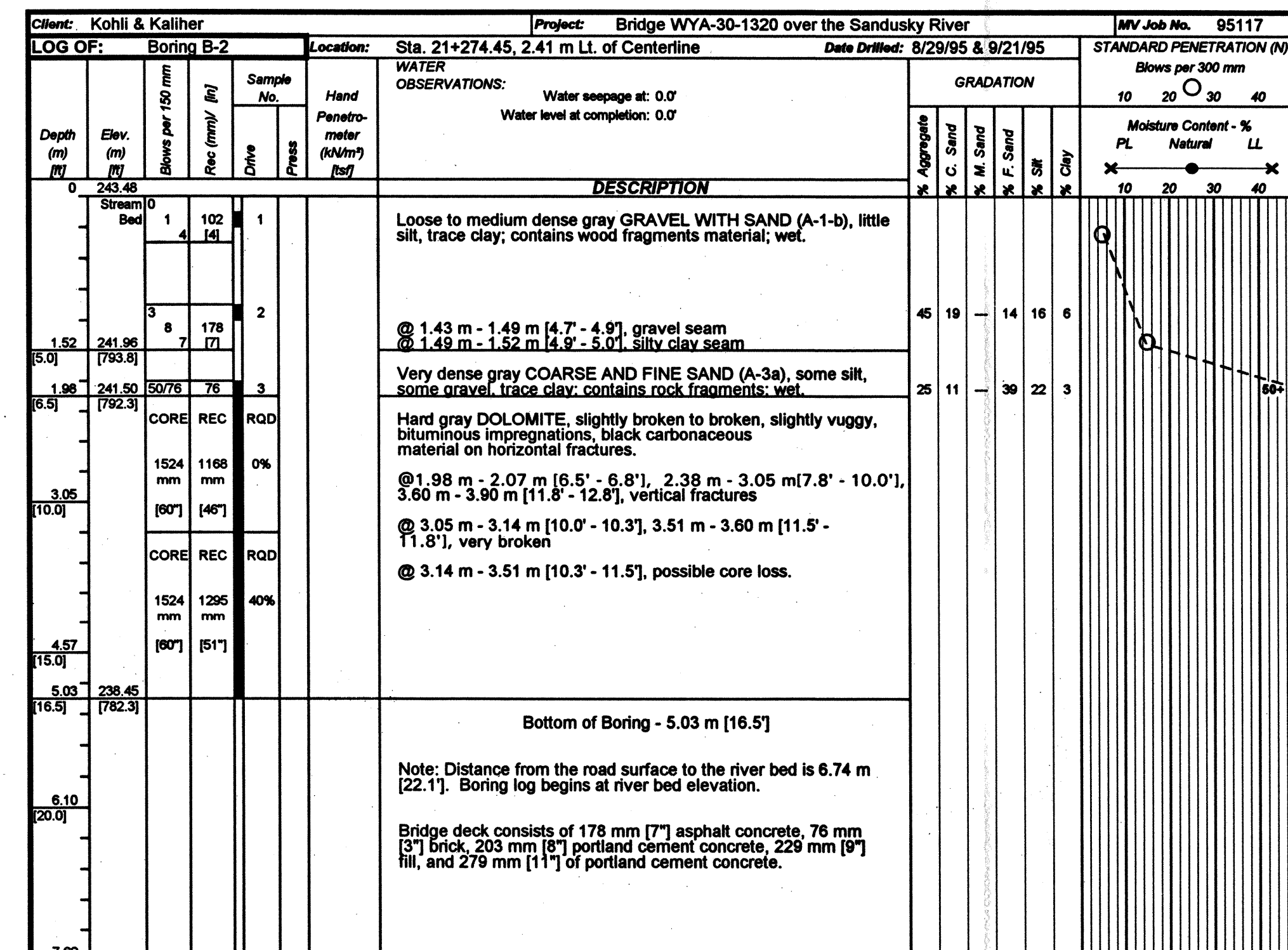
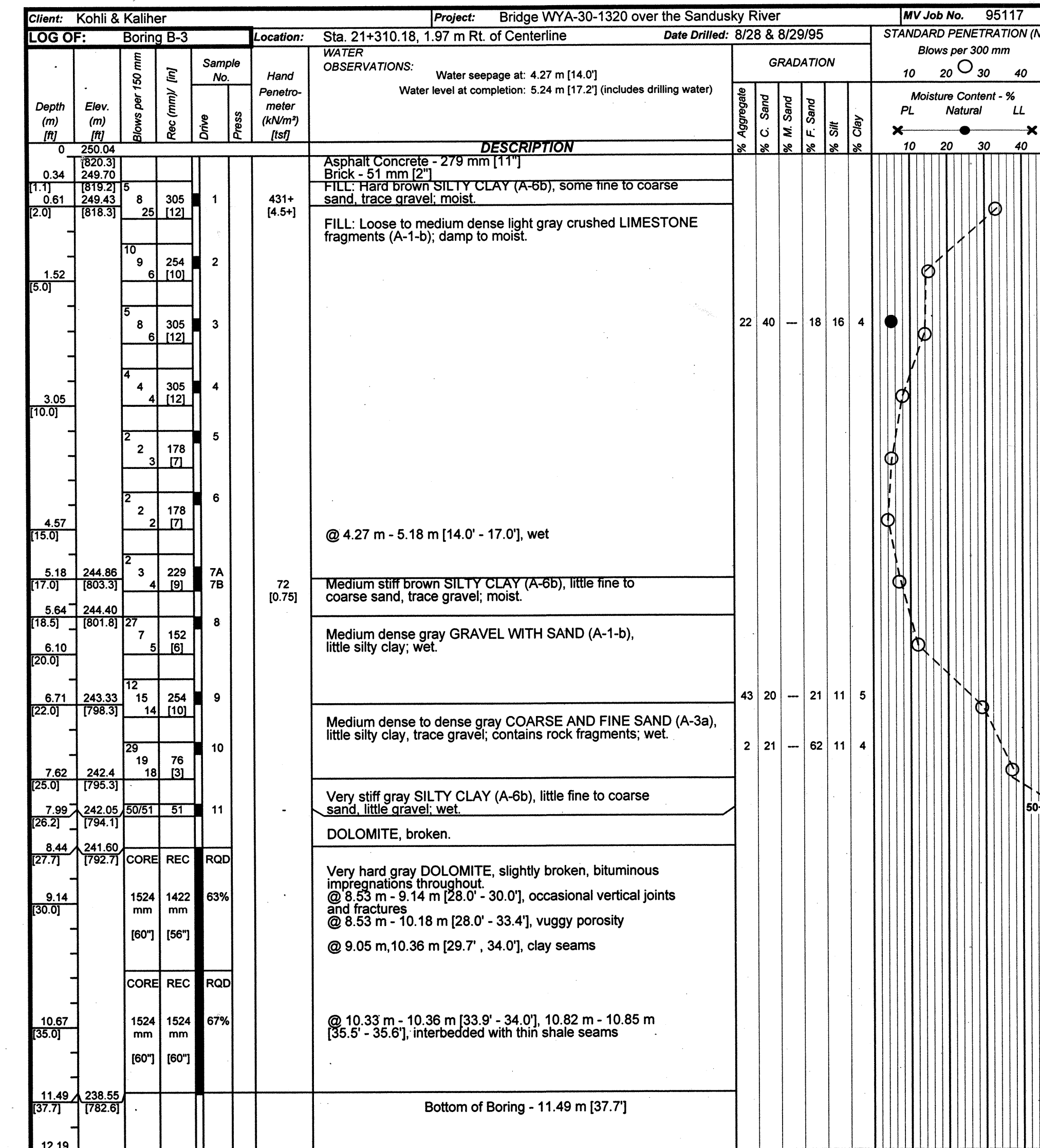
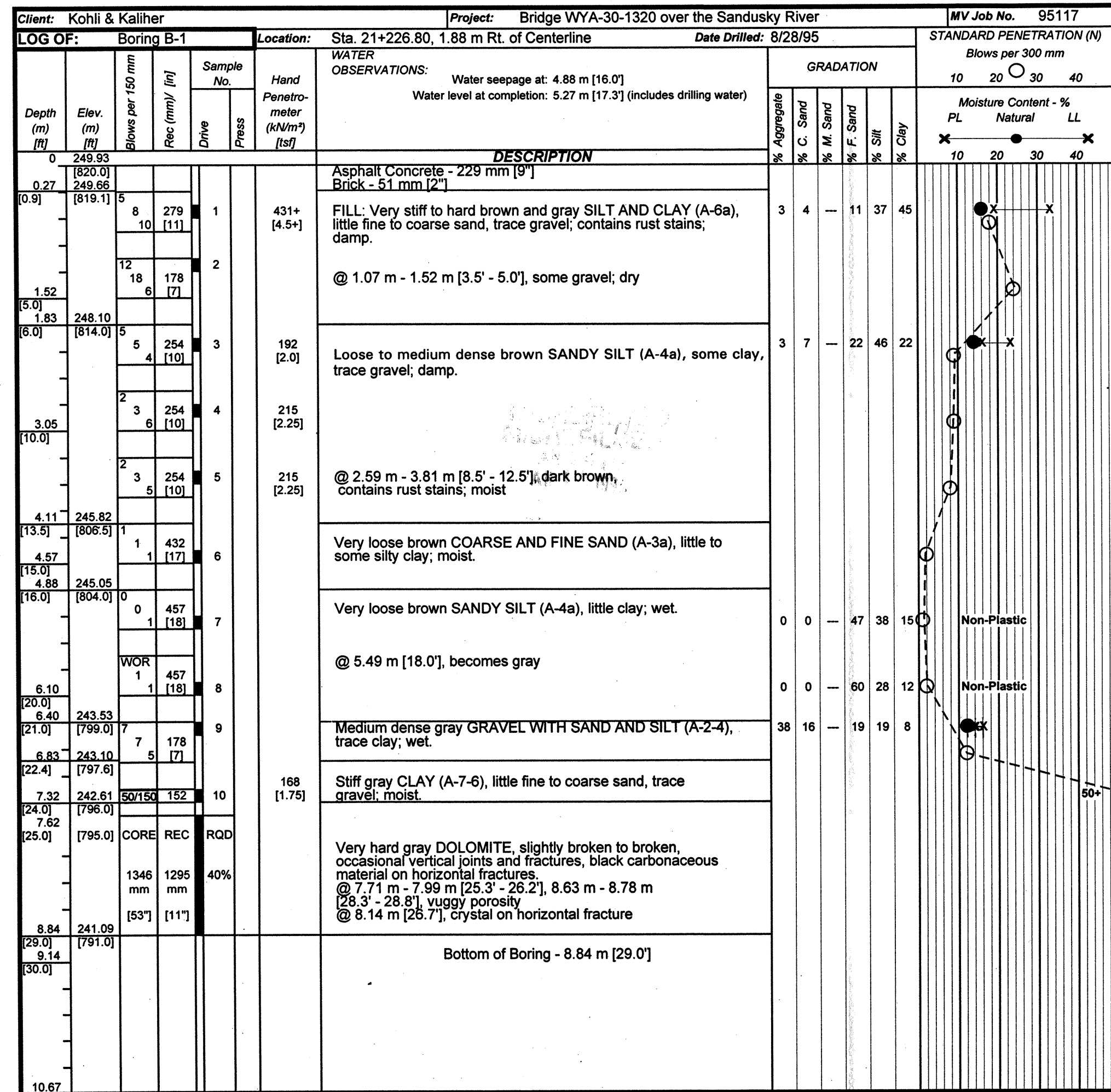


STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-30-21244
OVER SANDUSKY RIVER

WYA - 30 - 21.200

PLAN AND PROFILE	STRUCTURE FILE NO. 8801355	DATE 4/17/96
DRAWN DMC	CHECKED DAA	REVIEWED AEN

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D ₅₀ VALUES		
TEST BORING B-1	TEST BORING B-2	TEST BORING B-3
SAMPLE NO. 1 = 0.008 mm	SAMPLE NO. 2 = 1.288 mm	SAMPLE NO. 3 = 0.749 mm
SAMPLE NO. 3 = 0.029 mm	SAMPLE NO. 3 = 0.219 mm	SAMPLE NO. 9 = 1.202 mm
SAMPLE NO. 7 = 0.067 mm		SAMPLE NO. 10 = 0.207 mm
SAMPLE NO. 8 = 0.095 mm		
SAMPLE NO. 9 = 0.610 mm		