

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

JEF-164-0.06 SPRINGFIELD TOWNSHIP JEFFERSON COUNTY



PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS THE REPLACEMENT OF THE BRIDGE DESIGNATED JEF-164-00078 WITH MINIMUM ROADWAY CONSTRUCTION AND IS 0.100 KM IN LENGTH.

SURFACE TRANSPORTATION PROGRAM

PID 11987

1995 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.

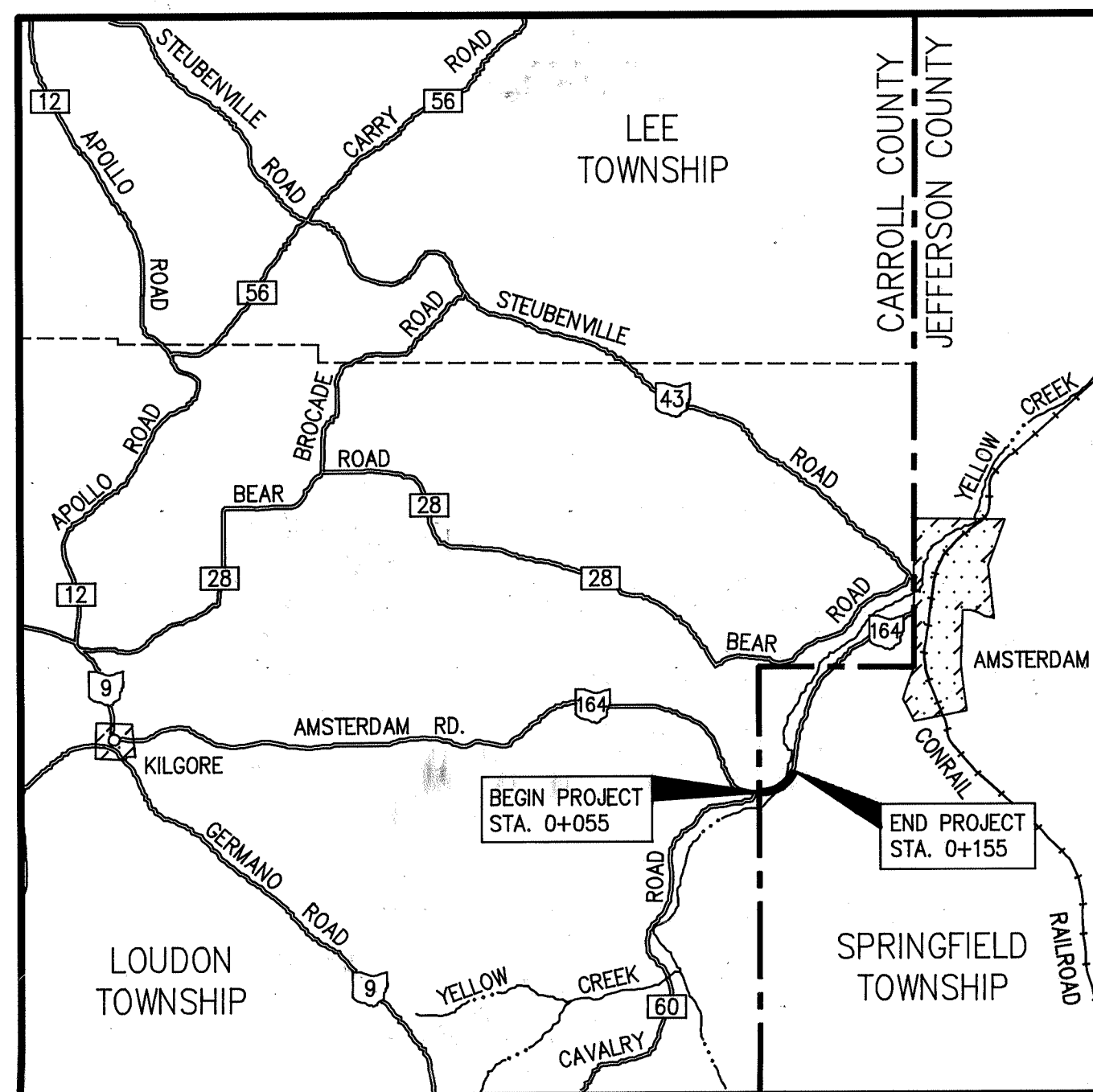
I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET NO. 4.

APPROVED John H. McClain
DATE 1-25-95 DISTRICT DEPUTY DIRECTOR

APPROVED Richard L Engel
DATE 2-2-95 ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED Christopher L. Runyan
DATE 3-14-95 DEPUTY DIRECTOR, DESIGN

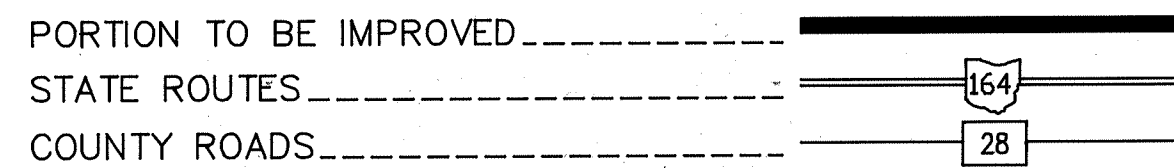
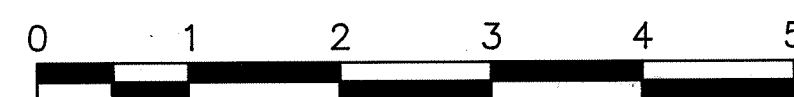
APPROVED Jerry Whay
DATE 3-14-95 DIRECTOR, DEPARTMENT OF TRANSPORTATION



LOCATION MAP

LATITUDE: N 40°27'30" LONGITUDE: W 80°56'19"

SCALE IN KILOMETERS



DESIGN DESIGNATION

CURRENT A.D.T. (1994)	=	2,210
DESIGN YEAR A.D.T. (2014)	=	3,530
D.H.V. (2014)	=	353
D	=	55%
T	=	3%
DESIGN SPEED	=	90 K.P.H.
LEGAL SPEED	=	55 M.P.H. (89 K.P.H.)
FUNCTIONAL CLASSIFICATION	=	MAJOR COLLECTOR (RURAL)

DESIGN EXCEPTIONS

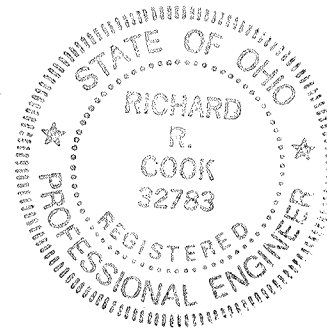
DESIGN FEATURE	APPROVAL DATE	SHEET NUMBER
HORIZONTAL ALIGNMENT	10/20/94	7 & 9
VERTICAL ALIGNMENT	10/20/94	7 & 9
STOPPING SIGHT DISTANCE	10/20/94	7 & 9

STRUCTURE PLANS REVIEWED
by
URS CONSULTANTS, INC.

UNDERGROUND UTILITIES

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLANS PREPARED BY
HAMMONTREE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
CANTON AND AKRON, OHIO



BY: Richard R. Cook REGISTERED ENGINEER NO. 32783

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STANDARD CONSTRUCTION DRAWINGS			
BP-3.1M 10-28-94	MT-101.60M 4-25-94	TC-41.20M 7-1-94	AS-1-81M 10-25-94
	MT-99.10M 1-30-95	TC-42.20M 3-31-94	CPA-5-94M 10-25-94
GR-1.1M 11-30-94	MT-105.10M 4-25-94	TC-52.10M 7-29-94	CPP-2-94M 12-19-94
GR-1.2M 1-3-96	MT-105.11M 4-25-94	TC-52.20M 7-29-94	CS-1-93M 6-30-95
GR-2.1M 11-30-94			DBR-2-73M 8-18-95
GR-3.4M 1-3-96			
GR-4.1M 11-30-94			
DM-4.3M 6-30-95			
DM-4.4M 6-30-95			

SUPPLEMENTAL SPECIFICATIONS	
802	3-23-95
820	6-14-95
942	6-14-95
944	12-7-95

FEDERAL PROJECT NO.
STP

PID NO.
11987

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

JEF-164-0.06

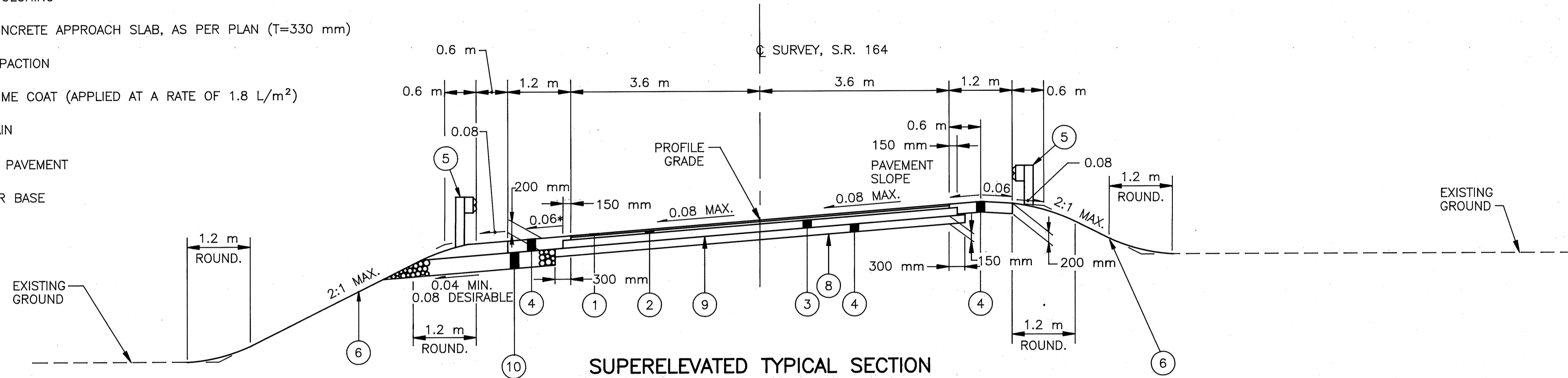
JEF-164-0.06
960441
22PGS
06-12-96
DIST.11

LEGEND

- ① ITEM 404 32 mm ASPHALT CONCRETE, AC-20, AS PER PLAN
- ② ITEM 402 45 mm ASPHALT CONCRETE, AC-20
- ③ ITEM 301 150 mm BITUMINOUS AGGREGATE BASE, AC-20
- ④ ITEM 304 AGGREGATE BASE
- ⑤ ITEM 606 GUARDRAIL, TYPE 5
- ⑥ ITEM 659 SEEDING AND MULCHING
- ⑦ ITEM 611 REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN (T=330 mm)
- ⑧ ITEM 203 SUBGRADE COMPACTION
- ⑨ ITEM 408 BITUMINOUS PRIME COAT (APPLIED AT A RATE OF 1.8 L/m²)
- ⑩ ITEM 605 AGGREGATE DRAIN
- A 340 mm EXISTING FLEXIBLE PAVEMENT
- B 175 mm EXISTING GRANULAR BASE

TYPICAL SECTIONS

TYPE 404 ON 301



SUPERELEVATED TYPICAL SECTION

* OR RATE OF SUPERELEVATION IF GREATER.

SECTION APPLIES:

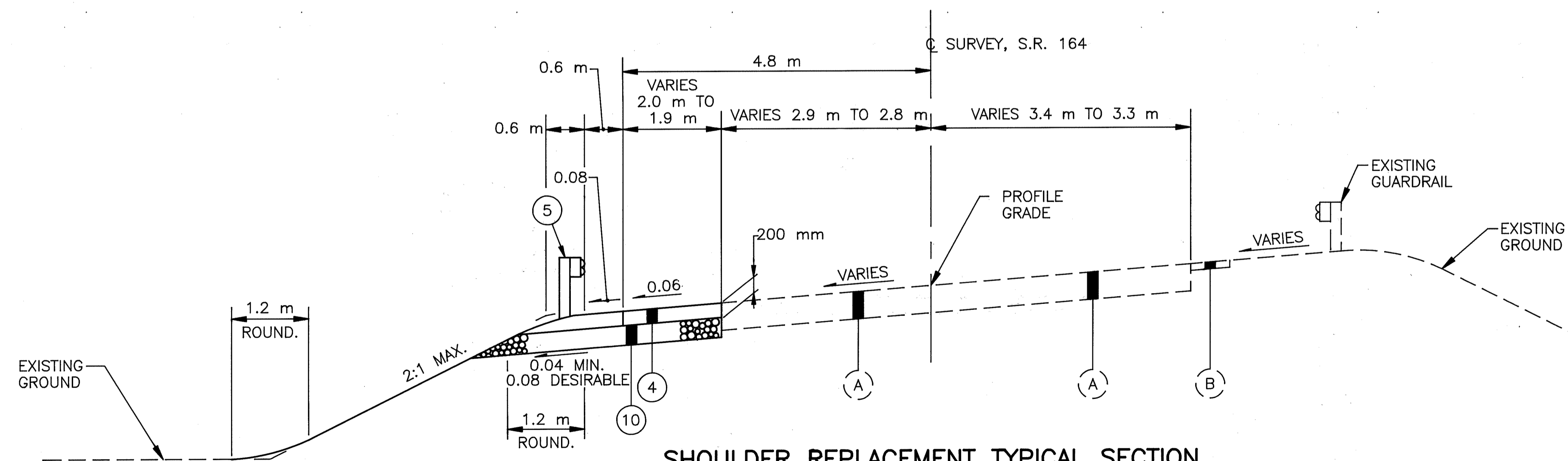
STA. 0+055.000 TO STA. 0+071.948 = 16.948 M.
 STA. 0+119.759 TO STA. 0+155.000 = 35.241 M.
 TOTAL = 52.189 M.

FOR SUPERELEVATION TABLE, SEE SHEET 6

FOR AGGREGATE DRAIN TABLE, SEE SHEET 6

BRIDGE LIMITS:

STA. 0+078.048 TO STA. 0+113.659 = 35.611 M.



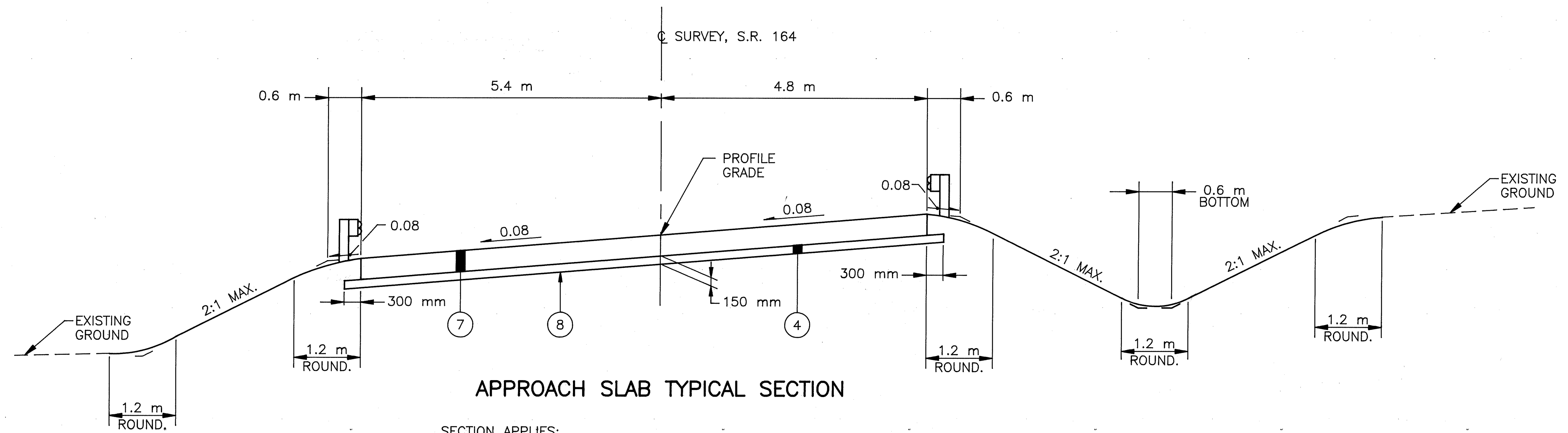
SHOULDER REPLACEMENT TYPICAL SECTION

SECTION APPLIES:

STA. 0+040.000 TO STA. 0+055.000 = 15.000 M.
 TOTAL = 15.000 M.



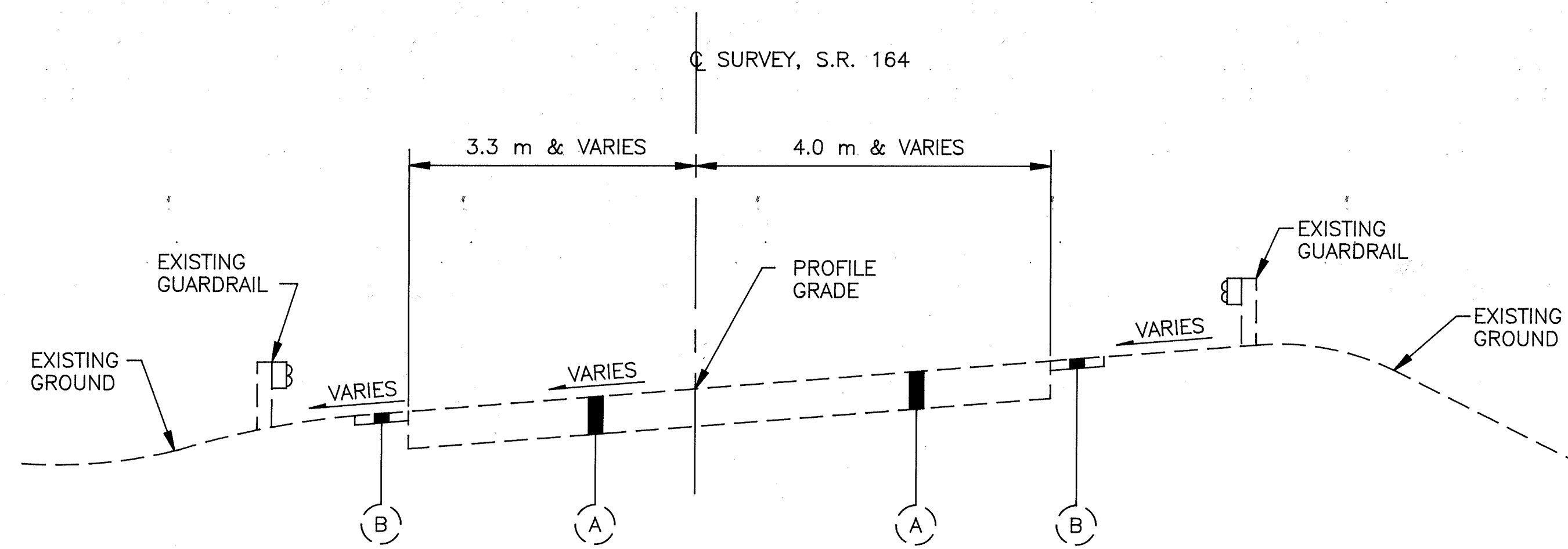
TYPICAL SECTIONS



APPROACH SLAB TYPICAL SECTION

SECTION APPLIES:
 STA. 0+071.948 TO STA. 0+078.048 = 6.100 M.
 STA. 0+113.659 TO STA. 0+119.759 = 6.100 M.
 TOTAL = 12.200 M.

FOR LEGEND, SEE SHEET NO. 2



EXISTING TYPICAL SECTION

GENERAL NOTES



CALCULATED
NGC
CHECKED
JDY

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY 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:

TELEPHONE G.T.E. NORTH
P.O. BOX 629
NEW PHILADELPHIA, OHIO 44663
CONTACT: STAN SNYDER
TELEPHONE: (216) 364-0363

ELECTRIC OHIO POWER COMPANY
215 NORTH FRONT STREET
COLUMBUS, OHIO 43215
CONTACT: STANLEY WILSON
TELEPHONE: (614) 464-7911

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THEIR 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.

U.S.G.S. BENCHMARK STAMPED 1959-966

THE CONTRACTOR WILL BE REQUIRED TO NOTIFY DISTRICT 11 OFFICE, OF O.D.O.T. FIVE (5) WORKING DAYS PRIOR TO ANY ACTIVITY THAT WOULD DISTURB THE LOCATION OR ELEVATION OF THE BENCHMARK MONUMENT.

THE DISTRICT OFFICE WILL FURNISH THE CONTRACTOR WITH A REPLACEMENT DISC MONUMENT, WHICH THE CONTRACTOR WILL PLACE IN AN ACCESSIBLE AND PREFERABLY HORIZONTAL LOCATION ON THE STRUCTURE, AS DIRECTED BY THE ENGINEER, AT THE TIME OF CONSTRUCTION. THE EXISTING DISC MONUMENT SHALL BE SALVAGED AND RETURNED TO DISTRICT 11 OFFICE.

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES.

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:

SIZES	NO. TREES	NO. STUMPS	TOTAL
450 mm	1	0	1

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 QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09:

ITEM 659 - WATER 4 CU. M.

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:

ITEM 207 - STRAW OR HAY BALES 50 EACH
ITEM 207 - FILTER FABRIC FENCE 60 METERS

PAVEMENT STRIPING

THE CONTRACTOR SHALL STRIPE THE PROPOSED PAVEMENT TO MATCH THE EXISTING LANE WIDTHS, AS DIRECTED BY THE ENGINEER.

ITEM 404. ASPHALT CONCRETE, AC-20, AS PER PLAN

MATERIALS FURNISHED FOR FINE AND COARSE AGGREGATES USED IN THIS ITEM SHALL EXCLUDE ALL STONE AND CRUSHED CARBONATE STONE.

MAINTENANCE OF TRAFFIC

THE DETOUR SHOWN ON THIS SHEET SHALL NOT BE PLACED INTO EFFECT UNTIL THE CONTRACTOR IS READY TO REMOVE THE EXISTING BRIDGE. UNTIL THE DETOUR IS PLACED INTO EFFECT, TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. THE DETOUR SHALL BE IN EFFECT FOR A PERIOD NOT TO EXCEED 90 CONSECUTIVE CALENDAR DAYS. 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 TO TRAFFIC BEYOND THE SPECIFIED LIMIT. WHILE THE DETOUR IS IN EFFECT, THE CONTRACTOR SHALL CONTINUOUSLY PROCEED WITH WORK ON THE STRUCTURE INCLUDING APPROACH SLABS AND GUARDRAIL, UNTIL THAT PORTION OF THE WORK IS COMPLETED. IF THE CONTRACTOR CANNOT PROCEED WITH CONSTRUCTION OF THE ADJOINING PAVEMENT BECAUSE OF WEATHER OR SCHEDULING LIMITATIONS, THE DETOUR SHALL BE REMOVED AND THE REMAINDER OF THE WORK SHALL BE ACCOMPLISHED UNDER TRAFFIC.

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE APPROVED TRAFFIC CONTROL DEVICES AS PER ITEM 614, MAINTAINING TRAFFIC, INCLUDING BARRICADES AND SIGNS IN ACCORDANCE WITH STANDARD DRAWING MT-1016M. DETOUR SIGNS AND SUPPORTS WILL BE ERECTED AND MAINTAINED BY THE STATE. THE CONTRACTOR SHALL PROVIDE AT LEAST 18 DAYS NOTICE TO THE DISTRICT TRAFFIC ENGINEER PRIOR TO CLOSURE.

ACCESS TO LOCAL PROPERTY OWNERS SHALL BE MAINTAINED AT ALL TIMES.

EITHER PERMANENT OR TEMPORARY CENTERLINE PAVEMENT MARKINGS MUST BE IN PLACE PRIOR TO OPENING THE ROADWAY TO TRAFFIC.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614-MAINTAINING TRAFFIC, EXCEPT THAT TEMPORARY AND PERMANENT PAVEMENT MARKINGS WILL BE PAID FOR UNDER THE APPROPRIATE 614 AND 642 ITEMS AS SHOWN ON SHEET NO. 5.

NOTICE OF CLOSURE SIGNS

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.



TEMPORARY WORK ZONE MARKINGS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWINGS:

ITEM 614 - TEMPORARY CENTER LINE, CLASS II 0.10 KM

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.

ITEM 611. REINFORCED CONCRETE APPROACH SLAB (T=330mm), AS PER PLAN

THE REINFORCED STEEL FOR THE APPROACH SLABS OF THIS STRUCTURE SHALL BE EPOXY COATED IN CONFORMANCE WITH 509.

TWO SEPARATE THICKNESSES OF CLEAR OR OPAQUE POLYETHYLENE FILM, 705.06, SHALL BE PLACED ON THE PREPARED SUBBASE AND WHERE THE APPROACH SLAB IS TO BE CONSTRUCTED. THE POLYETHYLENE FILMS SHALL COMPLETELY COVER THE FULL LENGTH AND WIDTH OF THE SUBBASE BETWEEN THE SIDEWALL FORMS FOR THE APPROACH SLAB.

MATERIALS, LABOR AND INSTALLATION SHALL BE INCLUDED FOR PAYMENT IN THIS ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=330 mm), AS PER PLAN.

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 THIS ITEM. 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.

EXCAVATION OF UNSUITABLE MATERIAL

A CONTINGENCY QUANTITY HAS BEEN PROVIDED SHOULD SOFT OR UNSUITABLE SOIL CONDITIONS BE ENCOUNTERED DURING CONSTRUCTION. UNDERCUTTING OF THE SUBBASE TO A DEPTH OF 0.6 m SHALL BE PERFORMED AND THE POOR SOIL REPLACED USING ITEM 304 - AGGREGATE BASE, AS DIRECTED BY THE ENGINEER. SHOULD SILT BE ENCOUNTERED DURING CONSTRUCTION, UNDERCUTTING OF THE SUBBASE TO A DEPTH OF 1 m SHALL BE PERFORMED AND THE SILT REPLACED USING ITEM 304 - AGGREGATE BASE, AS DIRECTED BY THE ENGINEER. SHOULD POOR SOIL CONDITIONS EXIST AND ITEM 304 - AGGREGATE BASE IS USED, THE PROPOSED AGGREGATE DRAIN LOCATIONS SHALL BE LOWERED TO DRAIN THE NEW SUBBASE. THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR USE "AS DIRECTED BY THE ENGINEER."

ITEM 203 - EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION 323 CU. M.

ITEM 304 - AGGREGATE BASE (SEE PROPOSAL NOTE) 323 CU. M.

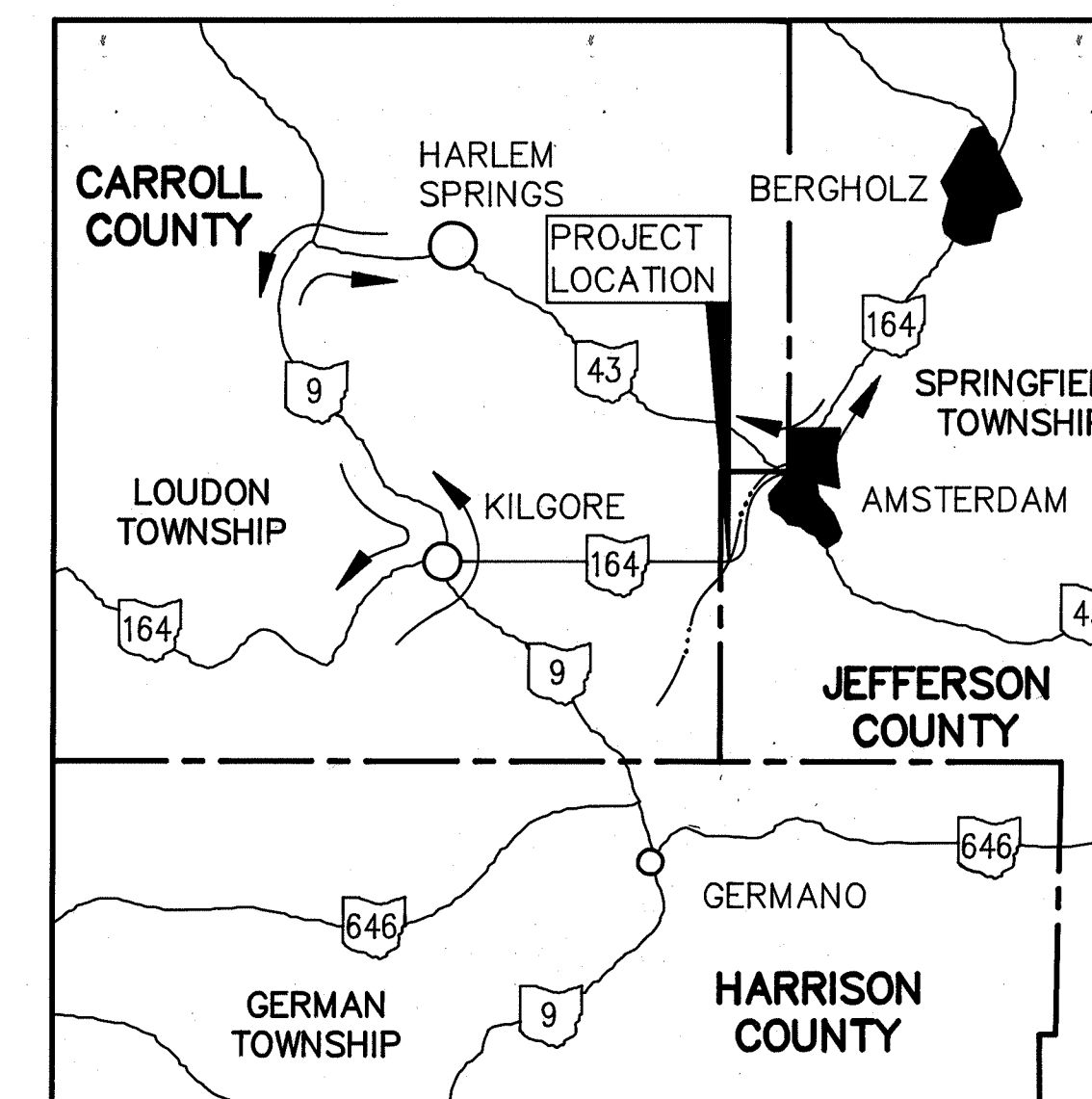
NONE OF THE ABOVE MATERIAL SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

ITEM 203. PROOF ROLLING

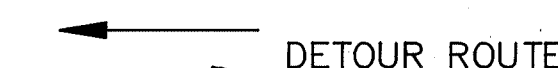
AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 203 - PROOF ROLLING 1 HOUR

DETOUR MAP



NOT TO SCALE



GENERAL NOTES AND DETOUR MAP

JEF-164-0.06

GENERAL SUMMARY



CALCULATED
J/DY
CHECKED
N/GC

ITEM	SHEET NUMBER							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	4	6	7	8	9	10						
ROADWAY												
201	LUMP							201	11000	LUMP		CLEARING AND GRUBBING
202				67				202	22900	67	SQ. M.	APPROACH SLAB REMOVED
202				116				202	32800	116	SQ. M.	CONCRETE SLOPE PROTECTION REMOVED
202				80.070		36.135		202	38000	116.205	METER	GUARDRAIL REMOVED
203	323		365		89			203	12000	77.7	CU. M.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
203			29		7			203	20001	36	CU. M.	EMBANKMENT, AS PER PLAN (SEE SHT. 16)
203	1							203	45000	1	HOUR	PROOF ROLLING
203		500						203	50000	500	SQ. M.	SUBGRADE COMPACTION
606				55.236		24.774		606	13000	80.010	METER	GUARDRAIL, TYPE 5
606				2		2		606	25000	4	EACH	ANCHOR ASSEMBLY, TYPE A
606				4				606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4
EROSION CONTROL												
207	60							207	30000	60	METER	FILTER FABRIC FENCE (SEE PROPOSAL NOTE)
207	50							207	70000	50	EACH	STRAW OR HAY BALES
601				227				601	32200	227	CU. M.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
659			306		135			659	10000	441	SQ. M.	SEEDING AND MULCHING
659		43.22						659	20000	43.22	KG	COMMERCIAL FERTILIZER
659		216.09						659	30000	216.09	KG	AGRICULTURAL LIMING
659	4							659	35000	4	CU. M.	WATER
DRAINAGE												
605		48						605	31100	48	METER	AGGREGATE DRAIN
PAVEMENT												
301		59						301	10002	59	CU. M.	BITUMINOUS AGGREGATE BASE, AC-20
304	323	112				9		304	20000	444	CU. M.	AGGREGATE BASE (SEE PROPOSAL NOTE)
402		17						402	20000	17	CU. M.	ASPHALT CONCRETE, AC-20
404		12						404	20001	12	CU. M.	ASPHALT CONCRETE, AC-20, AS PER PLAN (SEE SHEET 4)
408		705						408	10000	705	LITER	BITUMINOUS PRIME COAT
611		124						611	15001	124	SQ. M.	REINFORCED CONCRETE APPROACH SLAB (T=330mm), AS PER PLAN (SEE SHEET 4)
TRAFFIC CONTROL												
642				0.13		0.07		642	00102	0.20	KM	EDGE LINE, TYPE 2
642				0.07		0.03		642	00302	0.10	KM	CENTER LINE, TYPE 2
802				5		2		802	00100	7	EACH	BARRIER REFLECTOR, TYPE A
802				5		1		802	00300	6	EACH	BARRIER REFLECTOR, TYPE A2
MAINTENANCE OF TRAFFIC												
614	0.10							614	21400	0.10	KM	TEMPORARY CENTER LINE, CLASS II
FOR BRIDGE QUANTITIES SEE SHEET NO. 16												
COMPUTER EQUIPMENT FOR TYPE A OFFICE												
614	LUMP							SPECIAL 61925000	LUMP			COMPUTER EQUIPMENT FOR TYPE A OFFICE
614	LUMP							614	11000	LUMP		MAINTAINING TRAFFIC
619								619	15000	LUMP		FIELD OFFICE, TYPE A
623	LUMP							623	10000	LUMP		CONSTRUCTION LAYOUT STAKES
624								624	10000	LUMP		MOBILIZATION

GENERAL SUMMARY

JEF-164-0.06

CALCULATIONS

PAVEMENT AREA

STA. 0+055.000 TO STA. 0+071.948: $(16.948)(3.6+3.6) = 122.03$ SQ. M.
 STA. 0+119.759 TO STA. 0+155.000: $(35.241)(3.6+3.6) = 253.74$ SQ. M.
 TOTAL AREA = 375.77 SQ. M.

ITEM 301 BASE AREA

STA. 0+055.000 TO STA. 0+071.948:
 $(16.948)(3.6+3.6+0.15+0.15) = 127.11$ SQ. M.
 STA. 0+119.759 TO STA. 0+155.000:
 $(35.241)(3.6+3.6+0.15+0.15) = 264.31$ SQ. M.
 TOTAL AREA = 391.42 SQ. M.

ITEM 304 BASE AREA

STA. 0+055.000 TO STA. 0+071.948:
 $(16.948)(3.6+3.6+0.3+0.3) = 132.19$ SQ. M.
 STA. 0+119.759 TO STA. 0+155.000:
 $(35.241)(3.6+3.6+0.3+0.3) = 274.88$ SQ. M.
 TOTAL AREA = 407.07 SQ. M.

SHOULDER AREA

STA. 0+040.000, LT. TO STA. 0+055.000, LT.:
 $(15.000)(2.0+1.9)(1/2) = 29.25$ SQ. M.
 STA. 0+055.000 TO STA. 0+071.948:
 $(16.948)(1.2+1.2) = 40.68$ SQ. M.
 STA. 0+119.759 TO STA. 0+155.000:
 $(35.241)(1.2+1.2) = 84.58$ SQ. M.
 TOTAL AREA = 154.51 SQ. M.

ITEM 203 - SUBGRADE COMPACTION

ITEM 404 AREA: 375.77 SQ. M. = 376 SQ. M.
 APPROACH SLAB AREA: $(2)(6.1)(10.2) = 124$ SQ. M.
 TOTAL = 500 SQ. M.

ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20

ITEM 301 BASE AREA: $(391.42)(0.150) = 59$ CU. M.

ITEM 304 - AGGREGATE BASE

ITEM 304 BASE AREA: $(407.07)(0.150) = 61$ CU. M.
 SHOULDER AREA: $(154.51)(0.200) = 31$ CU. M.
 APPROACH SLAB AREA: $(2)(6.1)(10.8)(0.150) = 20$ CU. M.
 TOTAL = 112 CU. M.

ITEM 402 - ASPHALT CONCRETE, AC-20

PAVEMENT AREA: $(375.77)(0.045) = 17$ CU. M.

ITEM 404 - ASPHALT CONCRETE, AC-20, AS PER PLAN

PAVEMENT AREA: $(375.77)(0.032) = 12$ CU. M.

ITEM 408 - BITUMINOUS PRIME COAT

ITEM 301 BASE AREA: $(391.42)(1.8) = 705$ L

ITEM 611 - REINFORCED CONCRETE APPROACH SLAB

(T=330 MM), AS PER PLAN

STA. 0+071.948 TO STA. 0+078.048 $(6.1)(5.4+4.8) = 62$ SQ. M.
 STA. 0+113.659 TO STA. 0+119.759 $(6.1)(5.4+4.8) = 62$ SQ. M.
 TOTAL = 124 SQ. M.

ITEM 659 - COMMERCIAL FERTILIZER

SEEDING AREA: 441 SQ. M. $(441)(9.8 \text{ KG./100 SQ. M.}) = 43.22$ KG

ITEM 659 - AGRICULTURAL LIMING

SEEDING AREA: 441 SQ. M. $(441)(49 \text{ KG./100 SQ. M.}) = 216.09$ KG

ITEM 659 - WATER

SEEDING AREA: 441 SQ. M.
 $(2)(441)(489 \text{ L/100 SQ. M.})(1/1000)(\text{CU. M./L}) = 4$ CU. M.

AGGREGATE DRAINS

STATION	SIDE	LENGTH
0+045	LT.	3.8 m
0+050	LT.	3.8 m
0+055	LT.	3.1 m
0+060	LT.	3.0 m
0+065	LT.	3.0 m
0+070	LT.	3.0 m
0+075	LT.	3.0 m
0+120	LT.	3.1 m
0+125	LT.	3.6 m
0+130	LT.	4.1 m
0+135	LT.	4.5 m
0+140	LT.	5.0 m
0+145	LT.	3.3 m
0+150	LT.	1.7 m
TOTAL	=	48.0 m

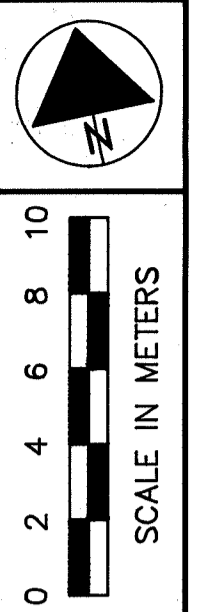
SUPERELEVATION TABLE

STATION	LEFT EDGE PAV'T ELEV.	SLOPE RATE	OFFSET LEFT	PROFILE GRADE	OFFSET RIGHT	SLOPE RATE	RIGHT EDGE PAV'T ELEV.
0+055	294.104	-0.074	3.6	294.370	3.6	+0.057	294.575
0+060	294.102	-0.074	▲	294.368	▲	+0.064	294.598
0+068.036	294.099	-0.074		294.365		+0.074	294.631
0+070	294.087	-0.077		294.364		+0.077	294.641
0+072.637	294.074	-0.080		294.362		+0.080	294.650
0+080	294.072	▲		294.360		▲	294.648
0+090	294.068			294.356			294.644
0+100	294.064			294.352			294.640
0+110	294.060			294.348			294.636
0+120	294.057			294.345			294.633
0+130	294.083			294.371			294.659
0+140	294.153	▼		294.441		▼	294.729
0+145	294.204	-0.080		294.492		+0.080	294.780
0+150	294.268	-0.078	▼	294.549	▼	+0.075	294.819
0+155	294.332	-0.076	3.6	294.606	3.6	+0.069	294.854

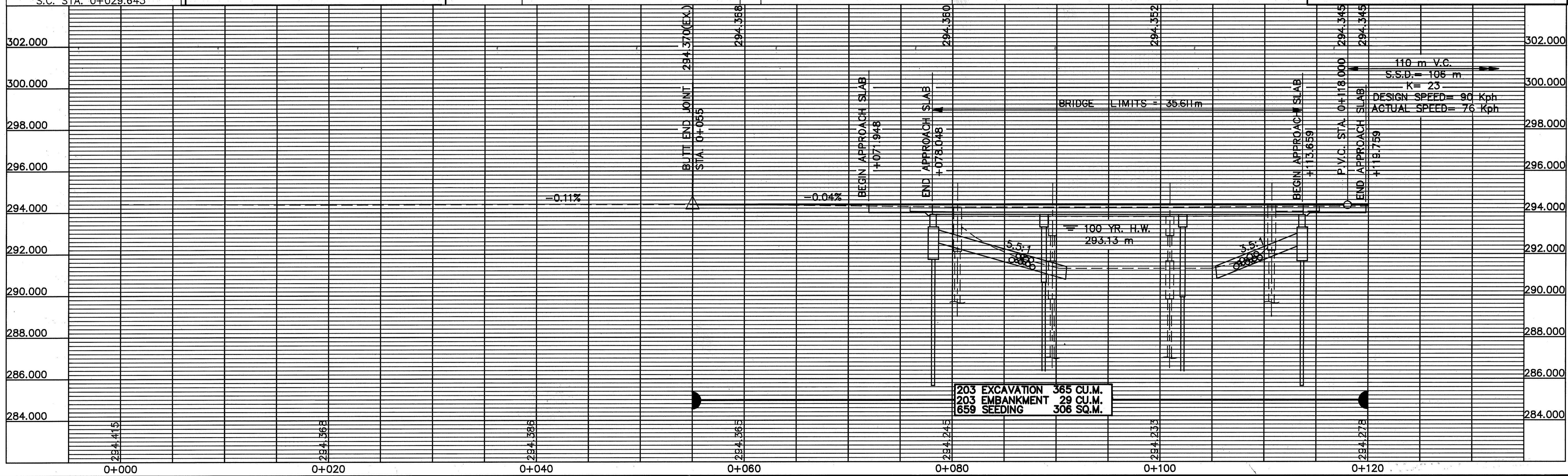
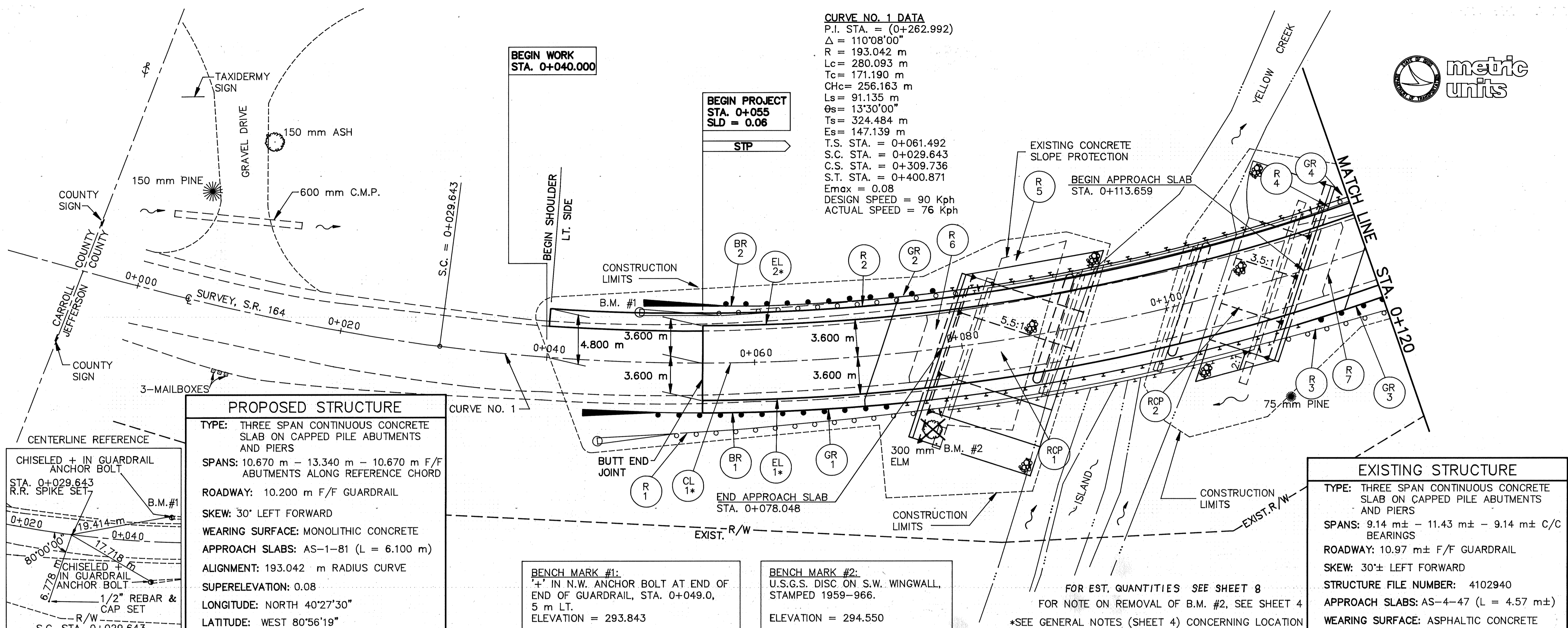
CALCULATED
 JDY
 CHECKED
 WGC

CALCULATIONS AND MISCELLANEOUS TABLES

JEF-164-0.06



CURVE NO. 1 DATA
 P.I. STA. = (0+262.992)
 $\Delta = 110^{\circ}08'00''$
 R = 193.042 m
 Lc = 280.093 m
 Tc = 171.190 m
 CHc = 256.163 m
 Ls = 91.135 m
 $\theta_s = 13^{\circ}30'00''$
 Ts = 324.484 m
 Es = 147.139 m
 T.S. STA. = 0+061.492
 S.C. STA. = 0+029.643
 C.S. STA. = 0+309.736
 S.T. STA. = 0+400.871
 Emax = 0.08
 DESIGN SPEED = 90 Kph
 ACTUAL SPEED = 76 Kph



ESTIMATED QUANTITIES



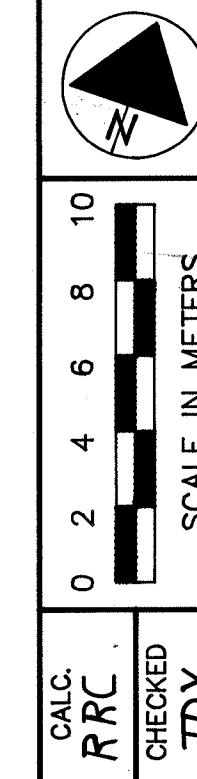
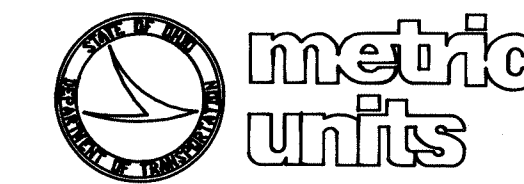
REF. NO.	STATION TO STATION	SIDE	ITEM 202			ITEM 601	ITEM 606		ITEM 642		ITEM 802									
			GUARDRAIL REMOVED METER	CONCRETE SLOPE PROTECTION REMOVED SQ. M.	APPROACH SLAB REMOVED SQ. M.	ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER CU. M.	GUARD RAIL TYPE 5 METER	ANCHOR ASSEMBLY TYPE A EACH	BRIDGE TERMINAL ASSEMBLY TYPE 4 EACH	102 MM DOUBLE, SOLID CENTER LINE TYPE 2 KM	102 MM WHITE EDGE LINE TYPE 2 KM	BARRIER REFLECTOR, TYPE A EACH	BARRIER REFLECTOR, TYPE A2 EACH							
	0+000 TO 0+120																			
GR-1	0+043.861 TO 0+074.341	RT.					22.860	1	1											
GR-2	0+049.292 TO 0+079.772	LT.					22.860	1	1											
GR-3	0+111.516 TO 0+120.000	RT.					8.484		1											
GR-4	0+118.968 TO 0+120.000	LT.					1.032		1											
CL-1	0+055.000 TO 0+120.000	CL.								0.065										
EL-1	0+055.000 TO 0+120.000	RT.									0.065									
EL-2	0+055.000 TO 0+120.000	LT.									0.065									
R-1	0+045.200 TO 0+076.400	RT.	32.385																	
R-2	0+048.700 TO 0+081.900	LT.	32.385																	
R-3	0+108.500 TO 0+120.000	RT.	11.500																	
R-4	0+116.200 TO 0+120.000	LT.	3.800																	
R-5	0+081.100 TO 0+087.500	LT.&RT.		116																
R-6	0+074.667 TO 0+082.428	LT.&RT.			32															
R-7	0+108.900 TO 0+118.592	LT.&RT.			35															
RCP-1	0+078.048 TO 0+091.300	LT.&RT.				145														
RCP-2	0+105.700 TO 0+113.659	LT.&RT.				82														
BR-1	0+043.861 TO 0+120.000	RT.										5	5							
BR-2	0+049.292 TO 0+120.000	LT.																		
TOTALS			80.070	116	67	227	55.236	2	4	0.065	0.130	5	5							

ESTIMATED QUANTITIES

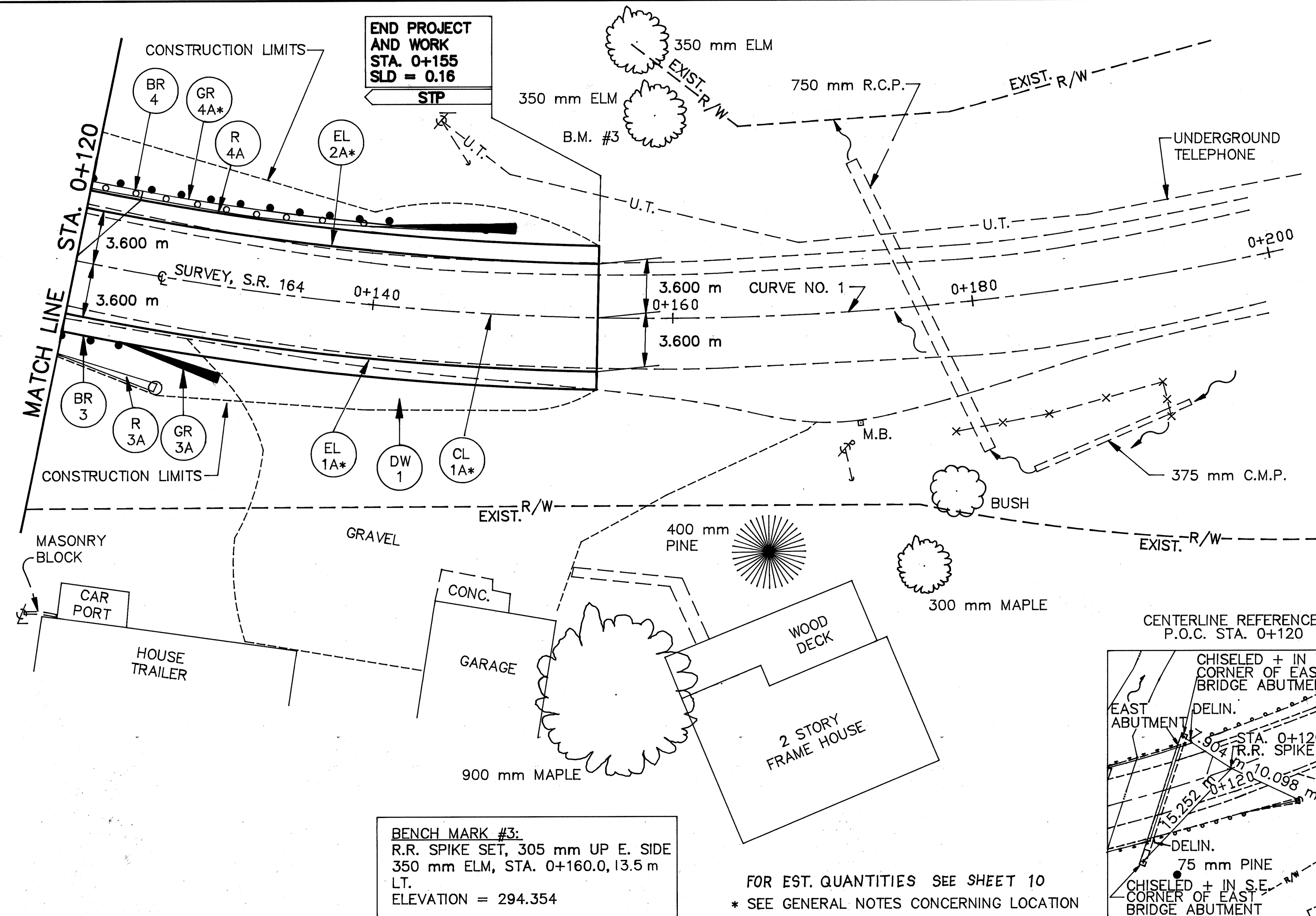
JEF - 164-0.06

8
22

CALCULATED /N/GC /CHECKED /JDY

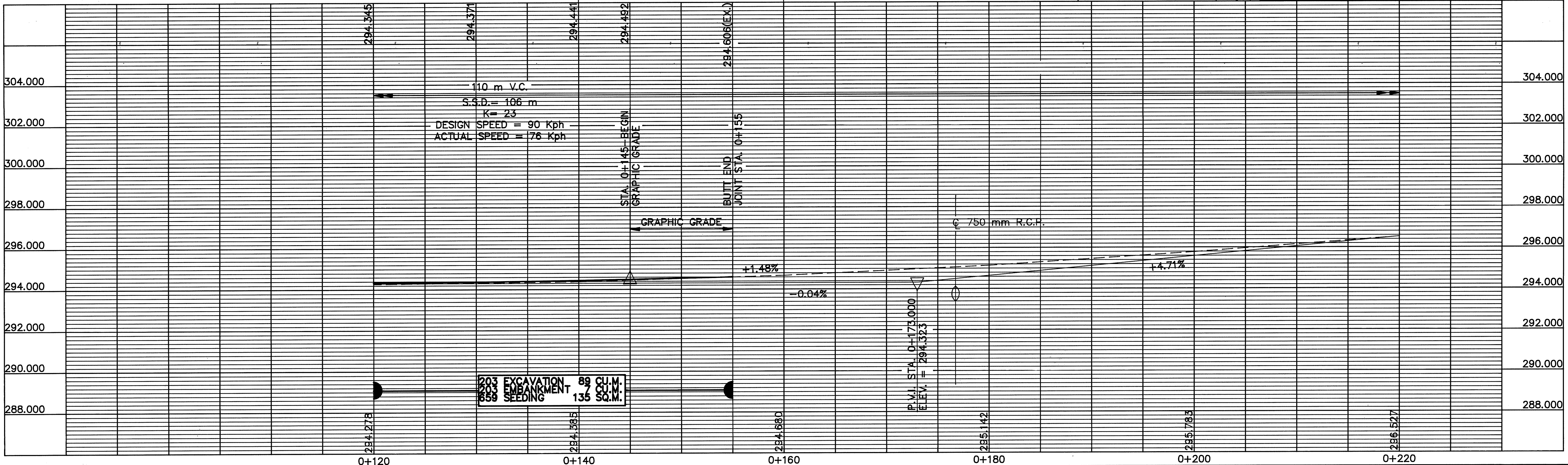


CURVE NO. 1 DATA
 P.I. STA. = (0+264.212)
 $\Delta = 83^{\circ}08'00''$
 $R = 193.042m$
 $L_c = 280.093m$
 $T_c = 171.189m$
 $CH_c = 256.162m$
 $L_s = 91.440m$
 $\theta_s = 13^{\circ}34'12''$
 $T_s = 218.423m$
 $E_s = 67.380m$
 T.S. STA. = 0+061.797
 S.C. STA. = 0+029.643
 C.S. STA. = 0+309.736
 S.T. STA. = 0+401.176
 $E_{max} = 0.08$
 DESIGN SPEED = 90 Kph
 ACTUAL SPEED = 74 Kph



BENCH MARK #3:
 R.R. SPIKE SET, 305 mm UP E. SIDE
 350 mm ELM, STA. 0+160.0, 13.5 m
 LT.
 ELEVATION = 294.354

FOR EST. QUANTITIES SEE SHEET 10
 * SEE GENERAL NOTES CONCERNING LOCATION



PLAN AND PROFILE
 STA. 0+120 TO STA. 0+200

JEF-164-0.06

ESTIMATED QUANTITIES



CALCULATED
AVGC
CHECKED
JDY

Table with columns: REF. NO., STATION TO STATION, SIDE, ITEM 202, ITEM 304, ITEM 606, ITEM 642, ITEM 802. Rows include station ranges like '0+120 TO 0+200' and specific item codes like 'GR-3A', 'CL-1A', 'R-3A', 'BR-3', 'DW-1'. A 'TOTALS' row at the bottom summarizes quantities for each item.

ESTIMATED QUANTITIES

JEF-164-0.06

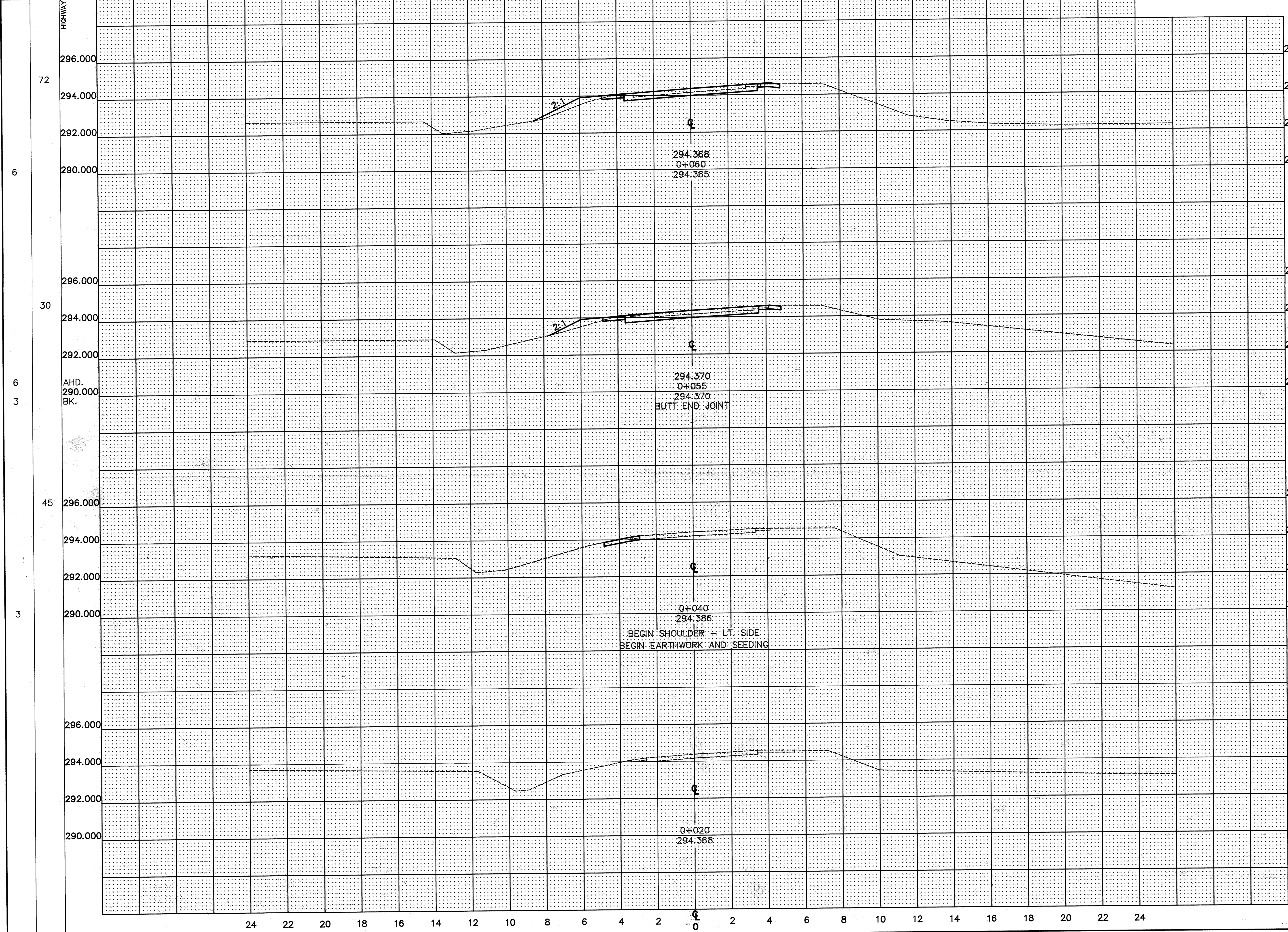
SEEDING

END WIDTH SQ.M.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED
J.D.Y.
CHECKED
M.G.C.



END WIDTH	SQ.M.	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
72				47	11
6		3.00	0.93		
30				16	4
6	AHD. 290.000 BK.	3.28	0.66		
3		0.35	0.71		
45				6	5
3		0.39	0		

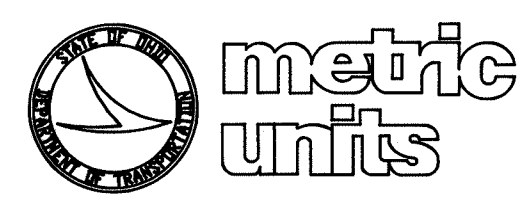
CROSS-SECTION SHEET
STA. 0+020 TO STA. 0+060 S.R. 164

JEF-164-0.06

SEEDING

END WIDTH SQ.M.

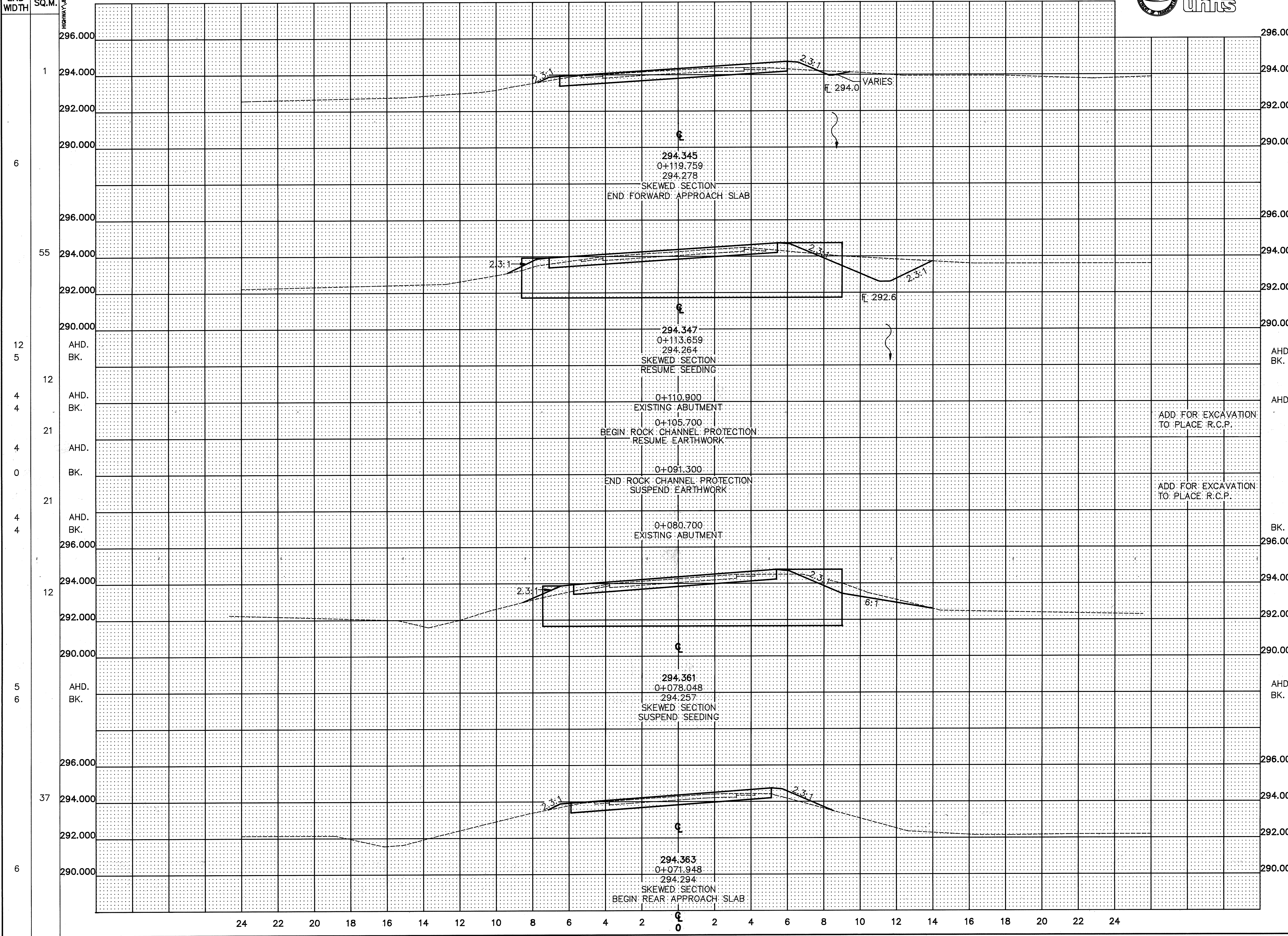
HIGHWAY JEF-164-002



END AREA		VOLUME		CALCULATED	J.D.Y.	CHECKED	N.G.C.
CUT	FILL	CUT	FILL				
		1	0				
		5.39	0.57				
		39	4				
AHD.		7.26	0.71				
BK.		17.58	0				
		52	0				
AHD.		20.28	0				
BK.							
		36	0				
		88	0				
AHD.		20.28	0				
BK.							
		52	0				
AHD.		18.80	0				
BK.		4.45	0.92				
		28	5				
		4.82	0.84				

CROSS-SECTION SHEET
STA. 0+071.948 TO STA. 0+119.759 S.R. 164

JEF-164-0.06



SEEDING

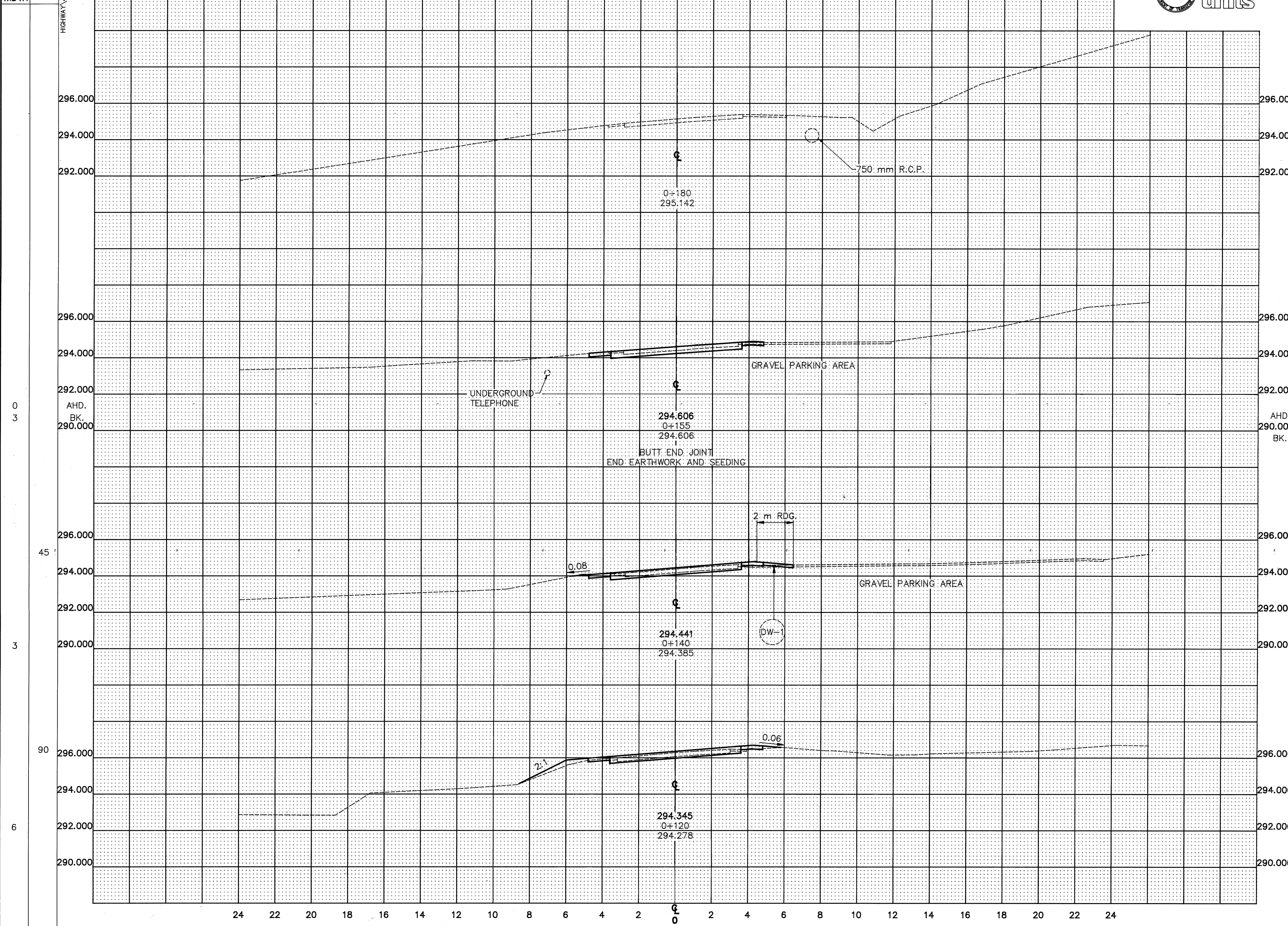
END WIDTH SQ.M.

HIGHWAY JEF 164 XXX3



END AREA VOLUME
CUT FILL CUT FILL

CALCULATED
J.D.Y.
CHECKED
M.G.C.



END AREA	VOLUME
CUT	FILL
0	0
2.11	0
2.90	0
51	7
2.20	0.66

CROSS-SECTION SHEET
STA. 0+120 TO STA. 0+180 S.R. 164

JEF-164-0.06

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22



EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

CURVE DATA
 P.I. STA. = 0+262.992 $\theta_s = 13'30''00''$
 $\Delta = 110'08''00''$ $T_s = 324.484$
 $R = 193.042$ $E_s = 147.139$
 $L_c = 280.093$ T.S. STA. = 0+061.492
 $T_c = 171.190$ S.C. STA. = 0+029.643
 $Chc = 256.163$ C.S. STA. = 0+309.736
 $L_s = 91.135$ S.T. STA. = 0+400.871

DESIGN AGENCY
HAMMONTREE & ASSOCIATES, LTD.
 ENGINEERS, PLANNERS, SURVEYORS
 CANTON, ORLANDO, PITTSBURGH, AKRON

DATE
 12-1-94
 DRAWN
 KAB
 REVIEWED
 KAB
 STRUCTURE FILE NUMBER
 4102959

DESIGNED
 MEF
 CHECKED
 KJO

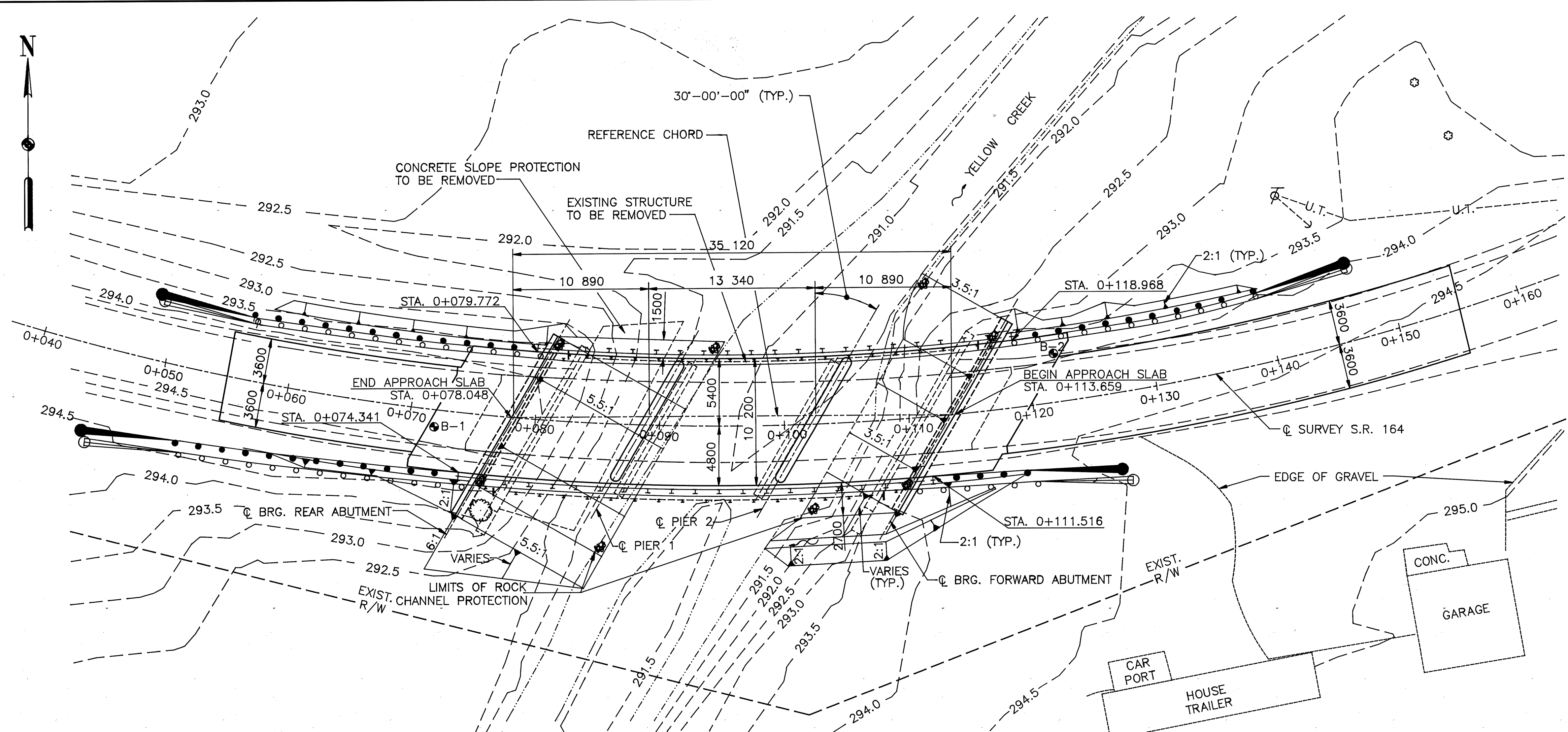
JEFFERSON COUNTY
 STA. 0+078.048
 STA. 0+113.659

SITE PLAN
 BRIDGE NO. JEF-164-00078
 OVER YELLOW CREEK

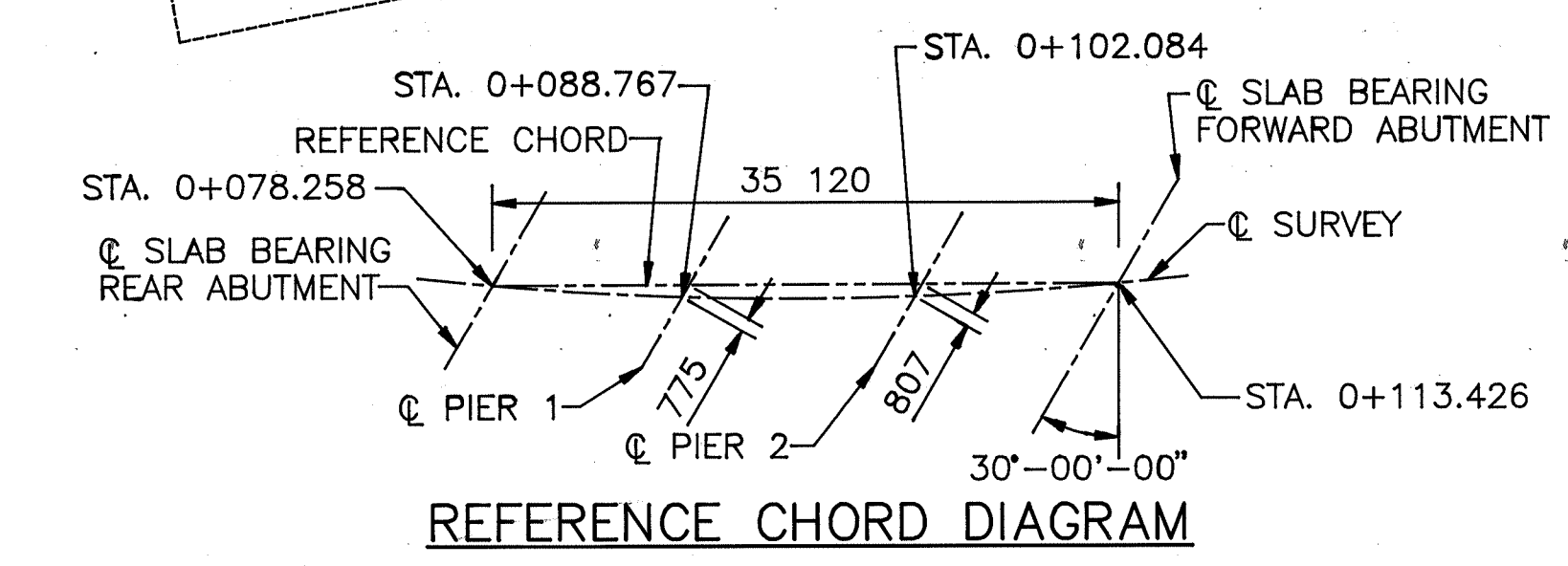
JEF-164-0.06

1 / 9

14 / 22



PLAN

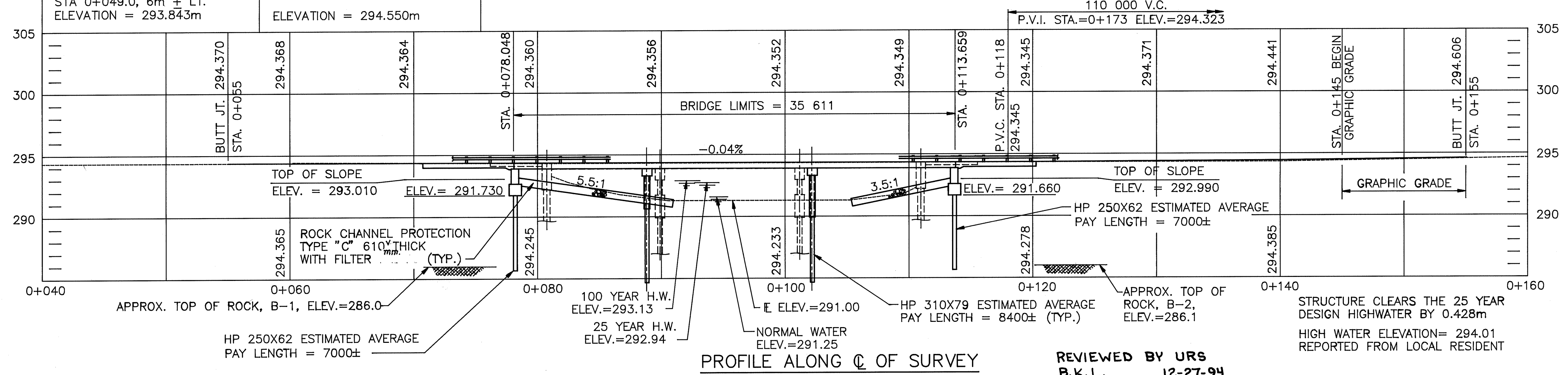


REFERENCE CHORD DIAGRAM

● - INDICATES BORING LOCATION

BENCHMARK #1:
 '+' IN N.W. ANCHOR BOLT AT
 END OF GUARDRAIL,
 STA 0+049.0, 6m ± LT.
 ELEVATION = 293.843m

BENCHMARK #2:
 U.S.G.S. DISC ON S.W. WINGWALL
 STAMPED 1959-966
 ELEVATION = 294.550m



PROFILE ALONG Q OF SURVEY

REVIEWED BY URS
 B.K.L. 12-27-94

HYDRAULIC DATA

DRAINAGE AREA = 29.50 km ²	
DISCHARGE = 37 m ³ /s	25 YEAR
DISCHARGE = 48 m ³ /s	100 YEAR
VELOCITY = 0.96 m/s	
VELOCITY = 1.03 m/s	
HIGH WATER = 292.94 m	
HIGH WATER = 293.13 m	

DESIGN INFORMATION

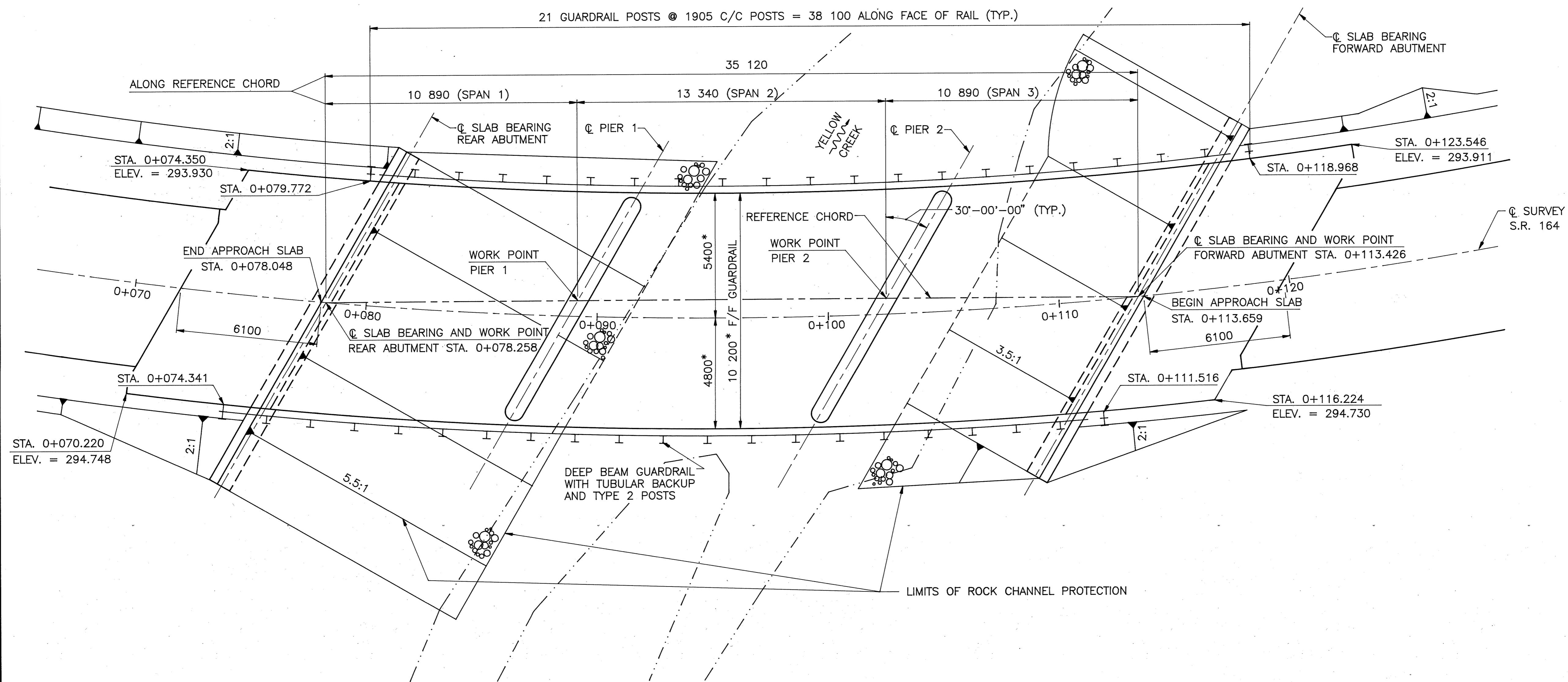
1994 ADT = 2140
2014 ADT = 3420
DESIGN SPEED = 90 km/h

EXISTING STRUCTURE

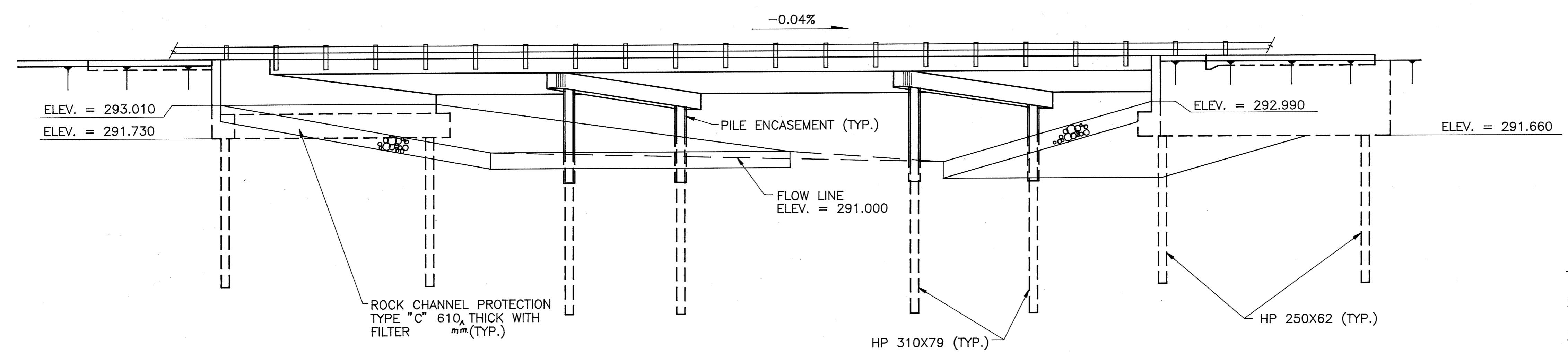
TYPE: THREE SPAN CONTINUOUS CONCRETE SLAB ON CAPPED PILE ABUTMENTS AND PIERS
SPANS: 9140± - 11 430± - 9140± C/C BEARINGS
ROADWAY: 10 970± F/F GUARDRAIL
SKEW: 30± LEFT FORWARD
LOADING: S-15-46
DATE BUILT: 1950
STRUCTURE FILE NUMBER: 4102940
APPROACH SLABS: AS-4-47 (L=4570±)
WEARING SURFACE: ASPHALTIC CONCRETE

PROPOSED STRUCTURE

TYPE: THREE SPAN CONTINUOUS CONCRETE SLAB ON CAPPED PILE ABUTMENTS AND PIERS
SPANS: 10 890 - 13 340 - 10 890 C/C BEARINGS ALONG REFERENCE CHORD
ROADWAY: 10 200 F/F GUARDRAIL
DESIGN LOADING: MS18 AND THE ALTERNATE MILITARY LOADING
SKEW: 30'-00'-00" LEFT FORWARD
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-81M (L=6100)
ALIGNMENT: 193 042 RADIUS CURVE
SUPERELEVATION: 0.08
LONGITUDE: NORTH 40°27'30"
LATITUDE: WEST 80°56'19"

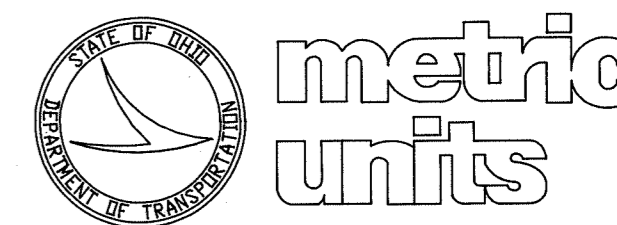


GENERAL PLAN



ELEVATION

- NOTES:**
- 1) ALL PILING NOT SHOWN FOR CLARITY.
 - 2) FOR ADDITIONAL APPROACH SLAB DETAILS SEE STANDARD DRAWING AS-1-81M.
 - 3) * INDICATES RADIAL DIMENSION.
 - 4) AREA OF REAR APPROACH SLAB = 62.2 SQ METER, AREA OF FORWARD APPROACH SLAB = 62.3 SQ METER.



DESIGN AGENCY
HAMMONTREE & ASSOCIATES, LTD.
 ENGINEERS, PLANNERS, SURVEYORS
 CANTON ORLANDO PITTSBURGH ARIZONA

GENERAL NOTES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS
 REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

- AS-1-81M DATED 10-25-94
- CPA-5-94M DATED 10-25-94
- CPP-2-94M DATED 12-19-94
- CS-1-93M DATED 6-30-95
- DBR-2-73M DATED 8-18-95

AND TO SUPPLEMENTAL SPECIFICATIONS:

- 942 DATED 6-14-95
- 944 DATED 12-7-95

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

DESIGN SPECIFICATIONS
 THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR
 HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF
 STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992,
 INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT
 BRIDGE DESIGN MANUAL.

DESIGN LOADING
 DESIGN LOADING - MS18 AND THE ALTERNATE MILITARY
 LOADING.

DESIGN STRESSES
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 31 MPa
 CONCRETE CLASS C - COMPRESSIVE STRENGTH 28 MPa

REINFORCING STEEL - ASTM A615M, A616M, A617M, GRADE 60,
 MINIMUM YIELD STRENGTH 400 MPa

DECK PROTECTION METHOD - EPOXY COATED REINFORCING STEEL
 TOP AND BOTTOM MAT
 - SEALING OF CONCRETE SURFACES
 - 65mm COVER

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

REMOVAL OF EXISTING STRUCTURE:
 WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE STRUCTURE
 SHALL BE REMOVED. ABUTMENTS SHALL BE REMOVED TO ELEV.
 291.500. PIERS SHALL BE REMOVED TO ELEV. 290.500.

PILE DRIVING CONSTRAINTS:
 THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF
 THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE
 ABUTMENTS, AND PIER AND ABUTMENT PILES DRIVEN.

ITEM 203 EMBANKMENT, AS PER PLAN:
 ALL FILL MATERIAL FOR CONSTRUCTION OF APPROACH EMBANKMENT
 AND FOR FILLING THE EXCAVATION VOID CREATED BY REMOVAL
 OF THE EXISTING ABUTMENTS SHALL BE 203 GRANULAR MATERIAL
 PLACED IN LIFTS NOT TO EXCEED A THICKNESS OF 150mm.

ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN:
 UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503
 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS
 SHALL BE 203 GRANULAR MATERIAL PLACED IN LIFTS NOT TO
 EXCEED A THICKNESS OF 150mm.

ITEM SPECIAL SEALING OF CONCRETE SURFACES:
 A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE
 SURFACES SHOWN ON SHEETS [4/9] [5/9] [6/9] & [7/9].
 SEE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS,
 APPLICATION RATES, MATERIAL REQUIREMENTS, AND
 APPLICATION PROCEDURES.

REINFORCING BAR SPLICES:
 REINFORCING BAR SLICE LENGTHS SHALL CONFORM TO THE
 MINIMUM LENGTHS SPECIFIED BY 509.08 OF THE C.M.S.
 UNLESS OTHERWISE NOTED IN THE PLANS.

PILES DRIVEN 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 25mm OR REFUSAL SHALL BE CONSIDERED
 AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK
 AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

PILE DESIGN LOADS:
 THE DESIGN LOAD IS 209 KN PER PILE FOR THE ABUTMENT PILES
 AND 497 KN PER PILE FOR THE PIER PILES.

ITEM SPECIAL-PILE ENCASEMENT:
 ALL PILES FOR THE CAPPED PILE PIERS SHALL BE ENCASED IN
 CLASS S CONCRETE (499.03) AND SHALL BE IN ACCORDANCE
 WITH 511, EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN.
 THE REQUIRED SLUMP IS 150 MILLIMETERS, PLUS OR MINUS 12
 MILLIMETERS. THE MAXIMUM WATER TO CEMENT RATIO SHALL
 BE 0.50. IF CONCRETE IS PLACED UNDER WATER, THE
 REQUIREMENTS OF ADDING 10 PERCENT MORE CEMENT TO
 THE CONCRETE SHALL BE WAIVED. THE CONCRETE SHALL BE
 PLACED WITHIN A FORM THAT CONSISTS OF POLYETHYLENE PIPE
 (707.16 OR SS 944), OR PVC PIPE (SS 942). THE
 ENCASEMENT SHALL EXTEND FROM 900 MILLIMETERS BELOW THE
 FINISHED GROUND SURFACE UP TO THE CONCRETE PIER CAP AND
 SHALL BE POSITIONED SO THAT AT LEAST 76 MILLIMETERS OF
 CONCRETE COVER IS PROVIDED AROUND THE EXTERIOR OF THE
 PILE.

THE LENGTH OF PILE ENCASEMENT SHALL BE MEASURED IN
 METERS ALONG THE LENGTH OF THE PILE. THIS ITEM INCLUDES
 ALL WORK AND MATERIALS NECESSARY TO FURNISH THE REQUIRED
 ENCASEMENT. PAYMENT WILL BE MADE AT THE CONTRACT UNIT
 PRICE PER METER OF PILE ENCASEMENT APPROVED IN PLACE.

IN LIEU OF ENCASING THE PILE IN CONCRETE, AT THE OPTION OF
 THE CONTRACTOR, THE PILE MAY BE GALVANIZED AS PER 711.02.
 THE GALVANIZING SHALL BE CONTINUOUS FROM A MINIMUM OF
 900 MILLIMETERS BELOW THE FINISH GROUND SURFACE UP TO THE
 CONCRETE PIER CAP. THE GALVANIZED COATING THICKNESS SHALL
 BE A MINIMUM OF 10 MICRONS. ALL GOUGES, SCRAPES, SCRATCHES
 OR OTHER SURFACE IMPERFECTIONS CAUSED BY THE HANDLING OR
 THE DRIVING OF THE PILE SHALL BE REPAIRED TO THE
 SATISFACTION OF THE ENGINEER. PAYMENT FOR THE GALVANIZING
 WILL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM SPECIAL,
 PILE ENCASEMENT. PAYMENT WILL ONLY BE MADE FOR THE
 GALVANIZED LENGTH OF PILE AS REQUIRED BY THE PLAN AND/OR
 APPROVED BY THE ENGINEER. ALL GALVANIZING PROVIDED BEYOND
 THE PROJECT REQUIREMENTS IS AT THE CONTRACTOR'S EXPENSE.

UTILITY LINES:
 ALL EXPENSE INVOLVED IN RELOCATING OR INSTALLING 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.

ITEM 511 CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN
 CONCRETE SHALL BE CURED BY METHOD (A), WATER CURING.

**ITEM 518, 150MM PERFORATED CORRUGATED PLASTIC PIPE, AS
 PER PLAN:**
 CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 150
 MILLIMETER DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL
 SPECIFICATION 944, AASHTO M294, TYPE SP.

**ITEM 518, 150MM NON-PERFORATED CORRUGATED PLASTIC
 PIPE, INCLUDING SPECIALS, AS PER PLAN:**
 CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 150
 MILLIMETER DIAMETER, PLASTIC CORRUGATED AS PER
 SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S.
 THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS
 REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

ESTIMATED QUANTITIES

CALC. CJP DATE:8/5/94CHK'D KJO DATE:8/15/94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GEN.		
202	11002	LUMP		STRUCTURE REMOVED, OVER 6 METER SPAN				LUMP		
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING (SEE PROPOSAL NOTE)				LUMP		
503	21101	146	CU METER	UNCLASSIFIED EXCAVATION, AS PER PLAN				145.9		
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		
507	11100	126	METER	STEEL PILES HP 250X62	126					
507	13300	101	METER	STEEL PILES HP 310X79		101				
SPECIAL	50771200	36.7	METER	PILE ENCASEMENT		36.7				
509	15830	31 310	KILOGRAM	EPOXY COATED REINFORCING STEEL, GRADE 400	3550	1640	26 120			
511	32201	204	CU METER	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN				203.5		
511*	33404	204	CU METER	CLASS S CONCRETE, SUPERSTRUCTURE (USING SHRINKAGE COMPENSATING CEMENT) (SEE PROPOSAL NOTE)				203.5		
511*	33410	LUMP		CLASS S CONCRETE, USING SHRINKAGE COMPENSATING CEMENT, FOR PRE-PLACEMENT TESTING (SEE PROPOSAL NOTE)				LUMP		
511	42500	11	CU METER	CLASS C CONCRETE, PIER CAP		11				
511	43500	56	CU METER	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	55.9					
SPECIAL	51267500	72	SQ METER	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)		2	70			
SPECIAL	51267502	62	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	62					
517	72300	76.2	METER	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS) (SEE PROPOSAL NOTE)					76.2	
518	21200	30	CU METER	POROUS BACKFILL WITH FILTER FABRIC	29.4					
518	40001	34.7	METER	150MM PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	34.7					
518	40011	7.2	METER	150MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	7.2					

* ALTERNATE BID ITEM: THESE TWO ITEMS SHALL CONSTITUTE ONE ALTERNATE BID
 TO CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN.

DATE 12-1-94
 REVIEWED KAB
 STRUCTURE FILE NUMBER 4102959

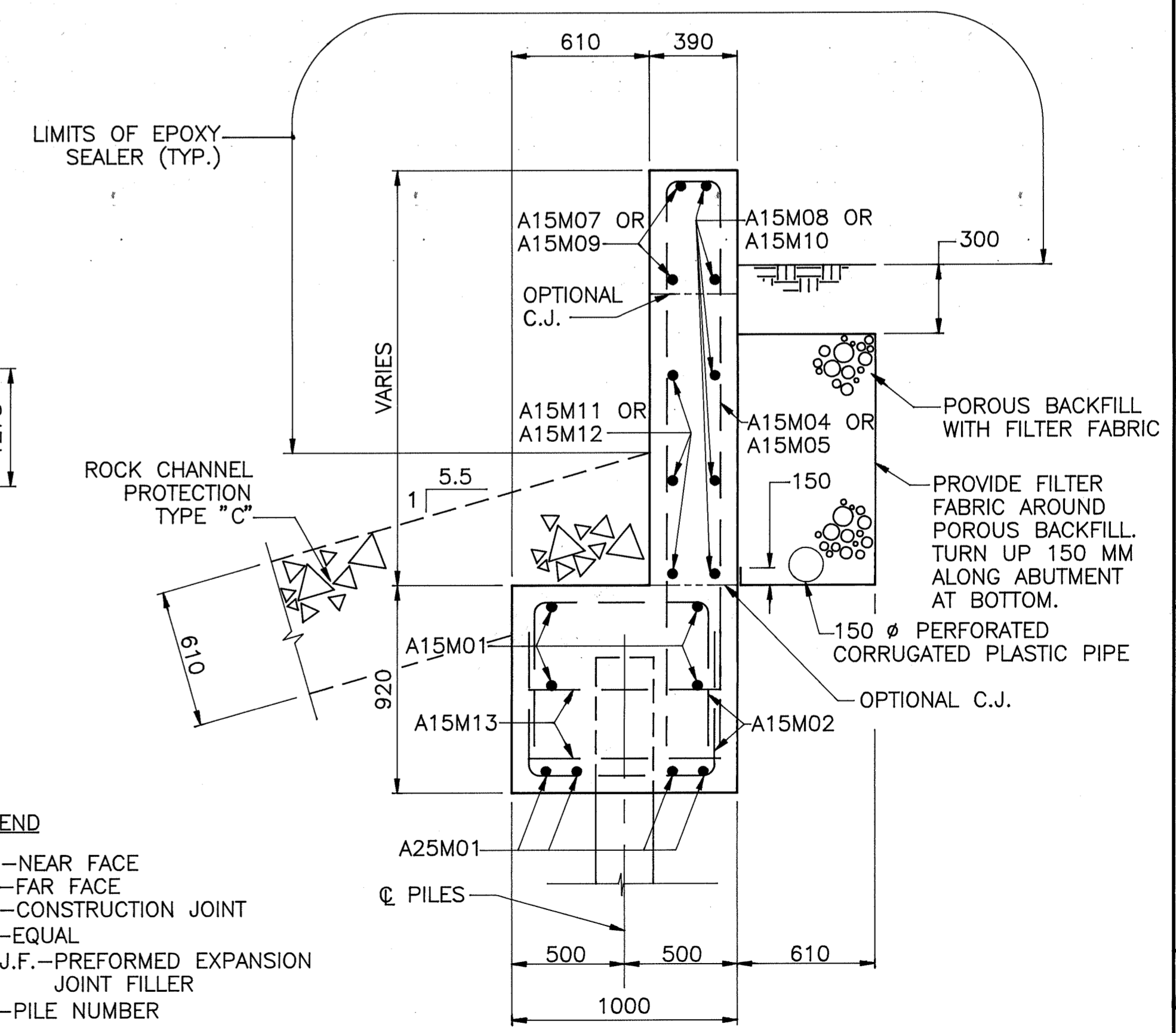
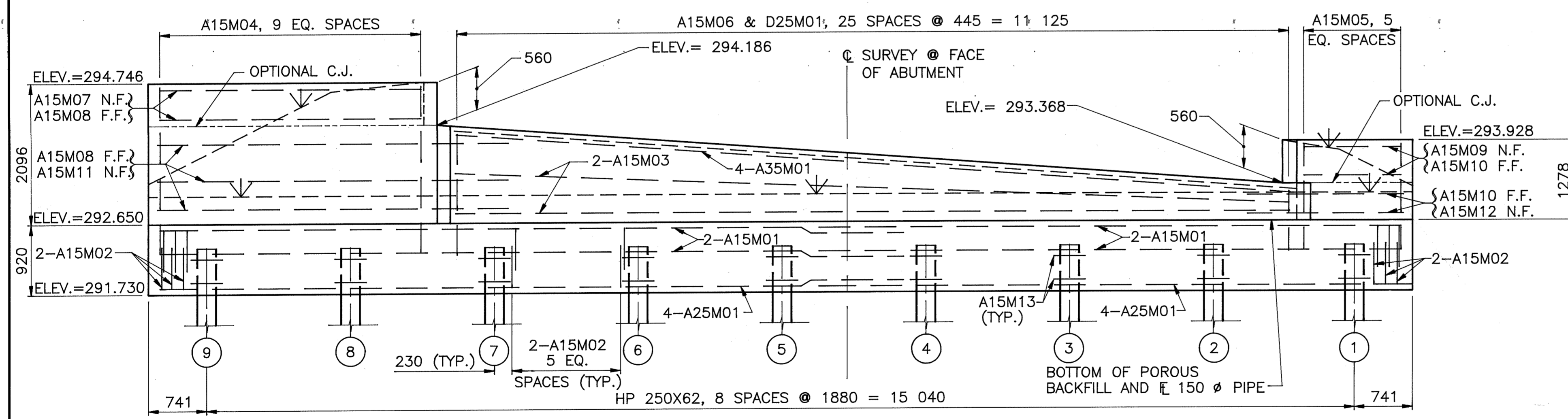
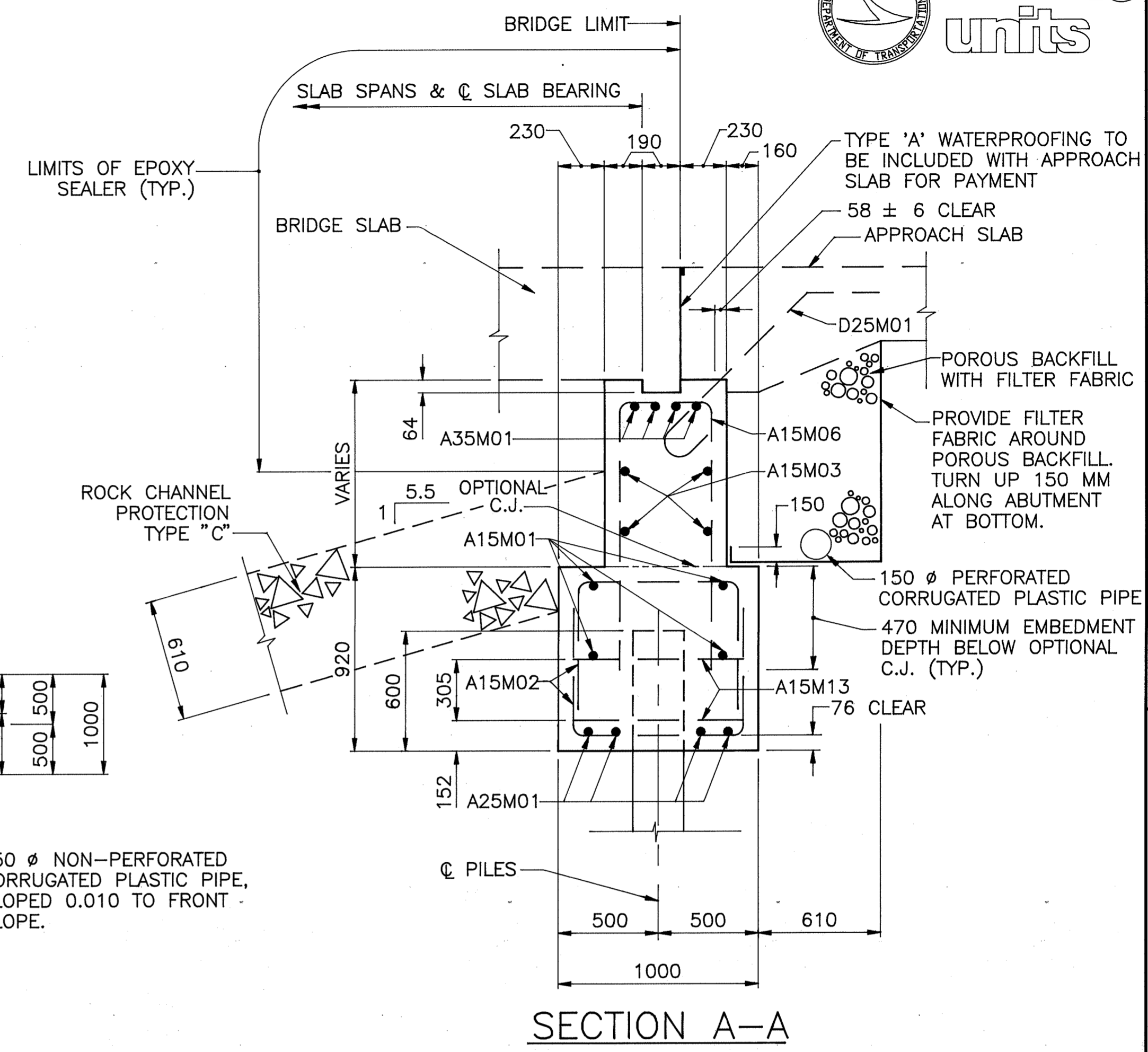
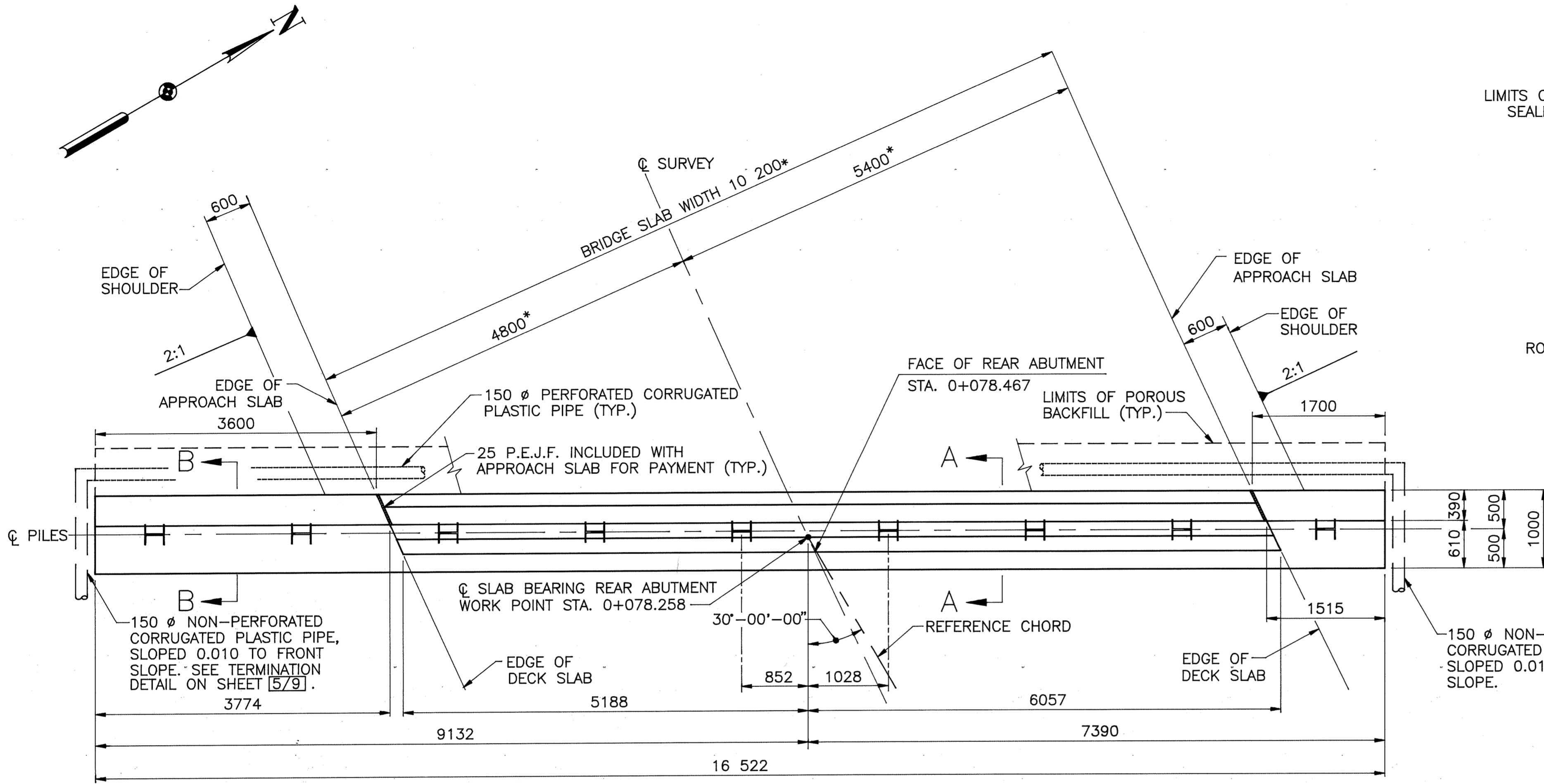
DRAWN MEF
 CHECKED KJO

GENERAL NOTES AND ESTIMATED QUANTITIES
 BRIDGE NO. JEF-164-00078
 OVER YELLOW CREEK

JEF-164-0.06

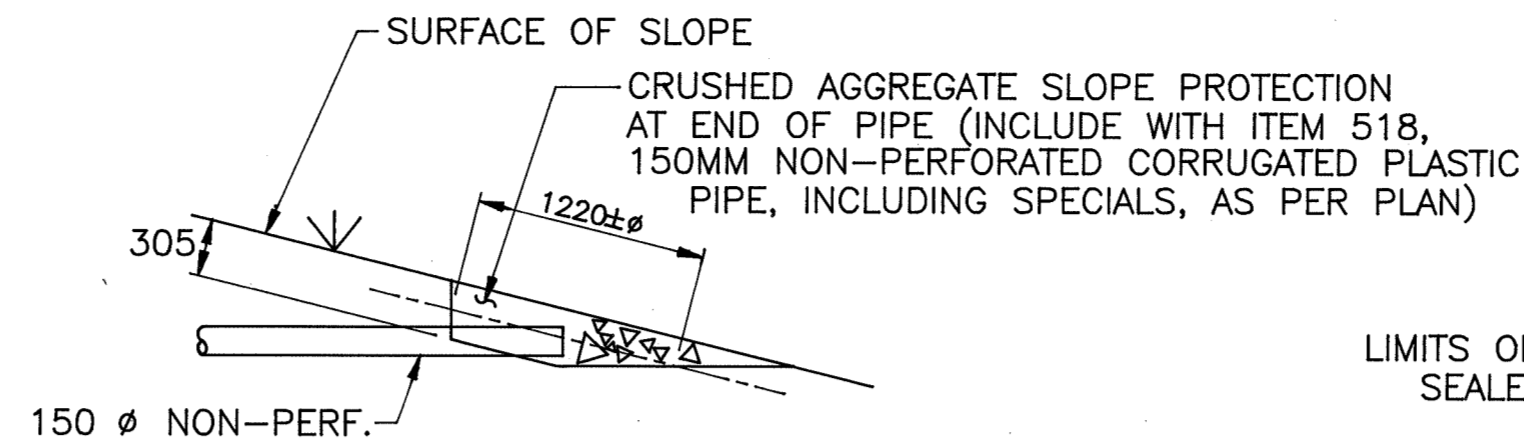
3 / 9

16
 22

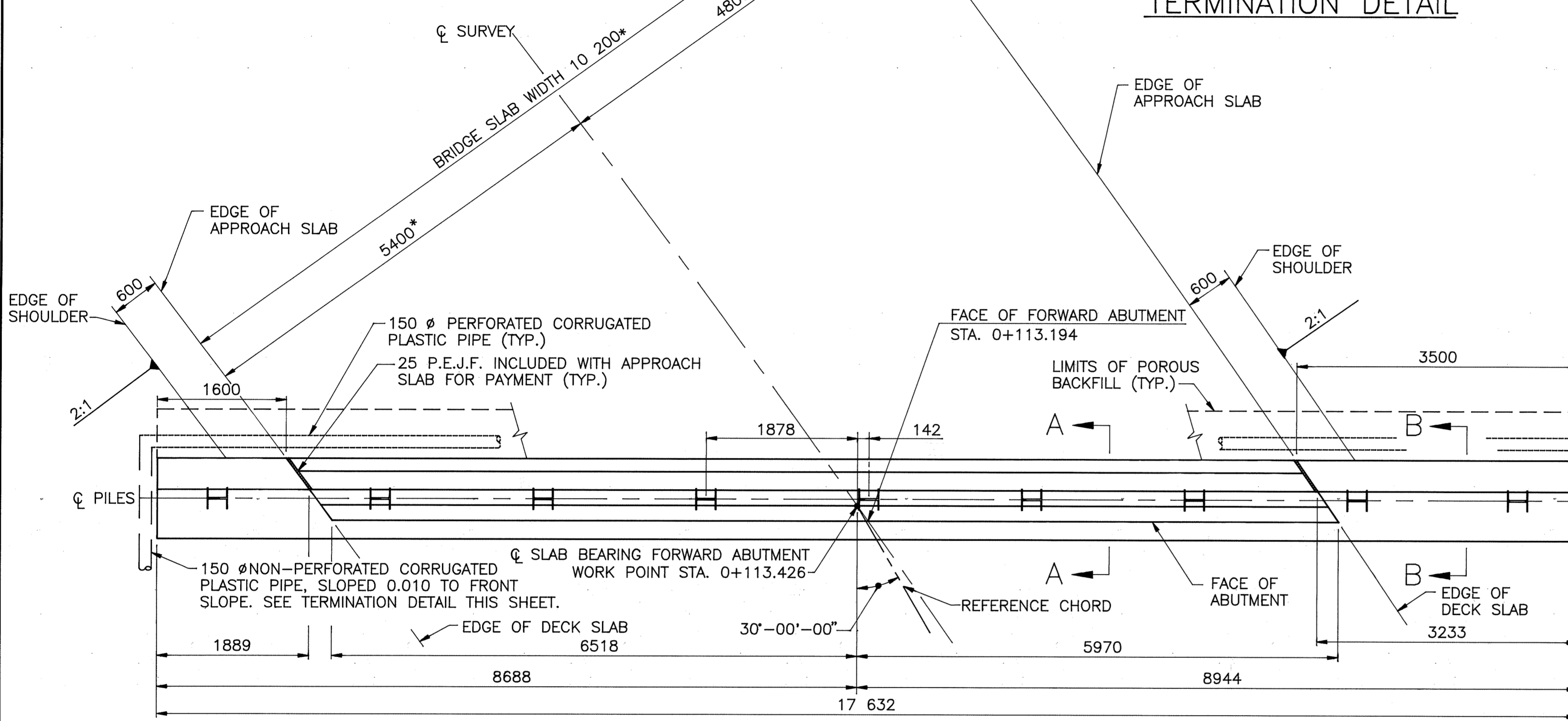


- NOTES:**
- 1) MINIMUM LAP LENGTHS SHALL BE 725 FOR NUMBER 15M BARS AND 1400 FOR NUMBER 25M BARS.
 - 2) FOR ADDITIONAL DETAILS SEE STANDARD DRAWING CPA-5-94M.
 - 3) POROUS BACKFILL WITH FILTER FABRIC, 610 THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300mm BELOW THE EMBANKMENT SURFACE AND LATERALLY TO THE EDGE OF THE WINGWALL. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE FABRIC IS INCLUDED WITH POROUS BACKFILL FOR PAYMENT.
 - 4) * INDICATES RADIAL DIMENSION.
 - 5) SEE SHEET [67] [9] FOR PILE TABLE.

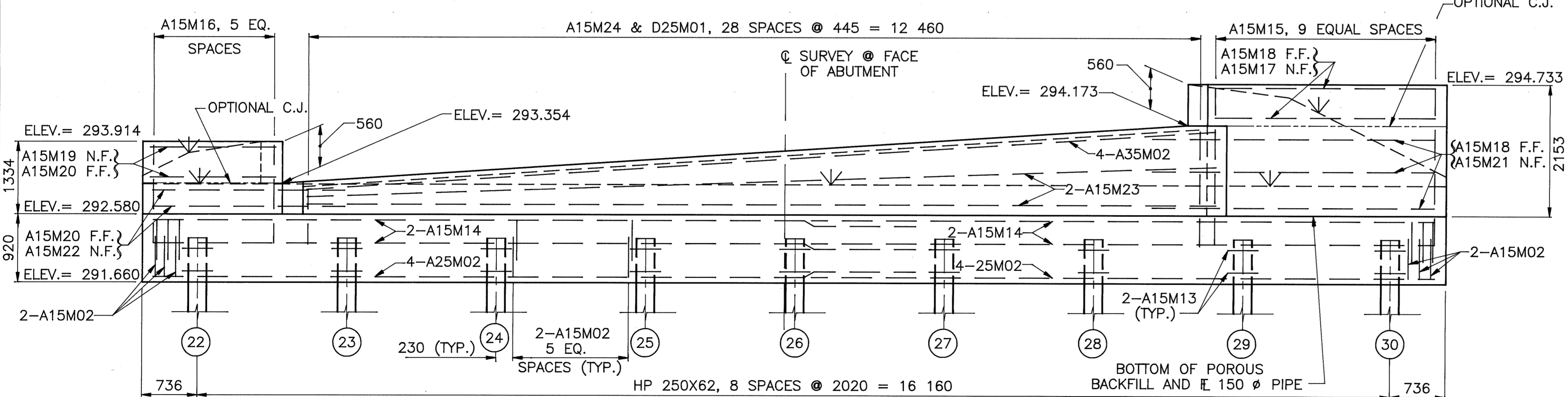
- LEGEND**
- N.F.—NEAR FACE
 - F.F.—FAR FACE
 - C.J.—CONSTRUCTION JOINT
 - EQ.—EQUAL
 - P.E.J.F.—PREFORMED EXPANSION JOINT FILLER
 - Ⓟ—PILE NUMBER



TERMINATION DETAIL



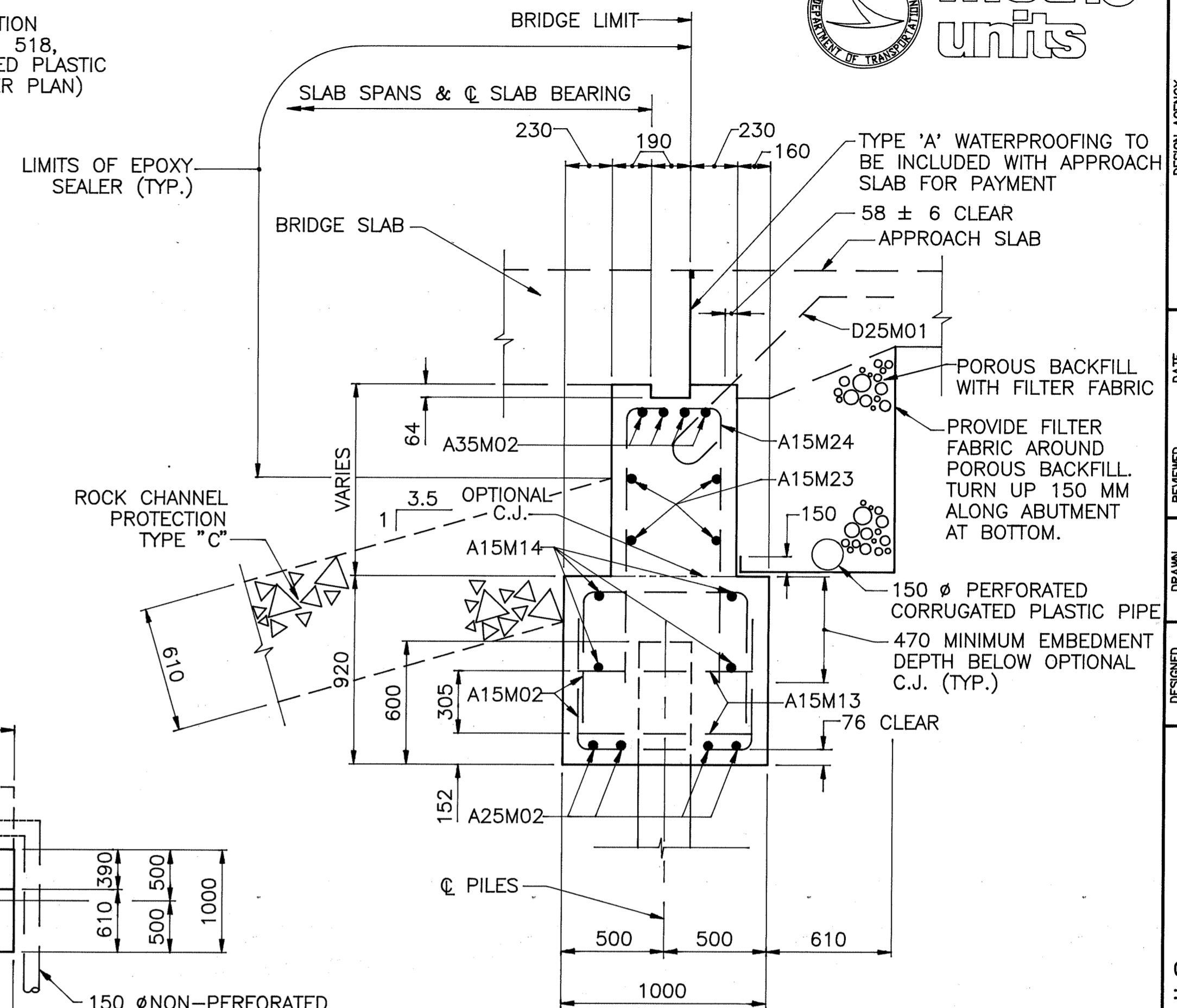
PLAN



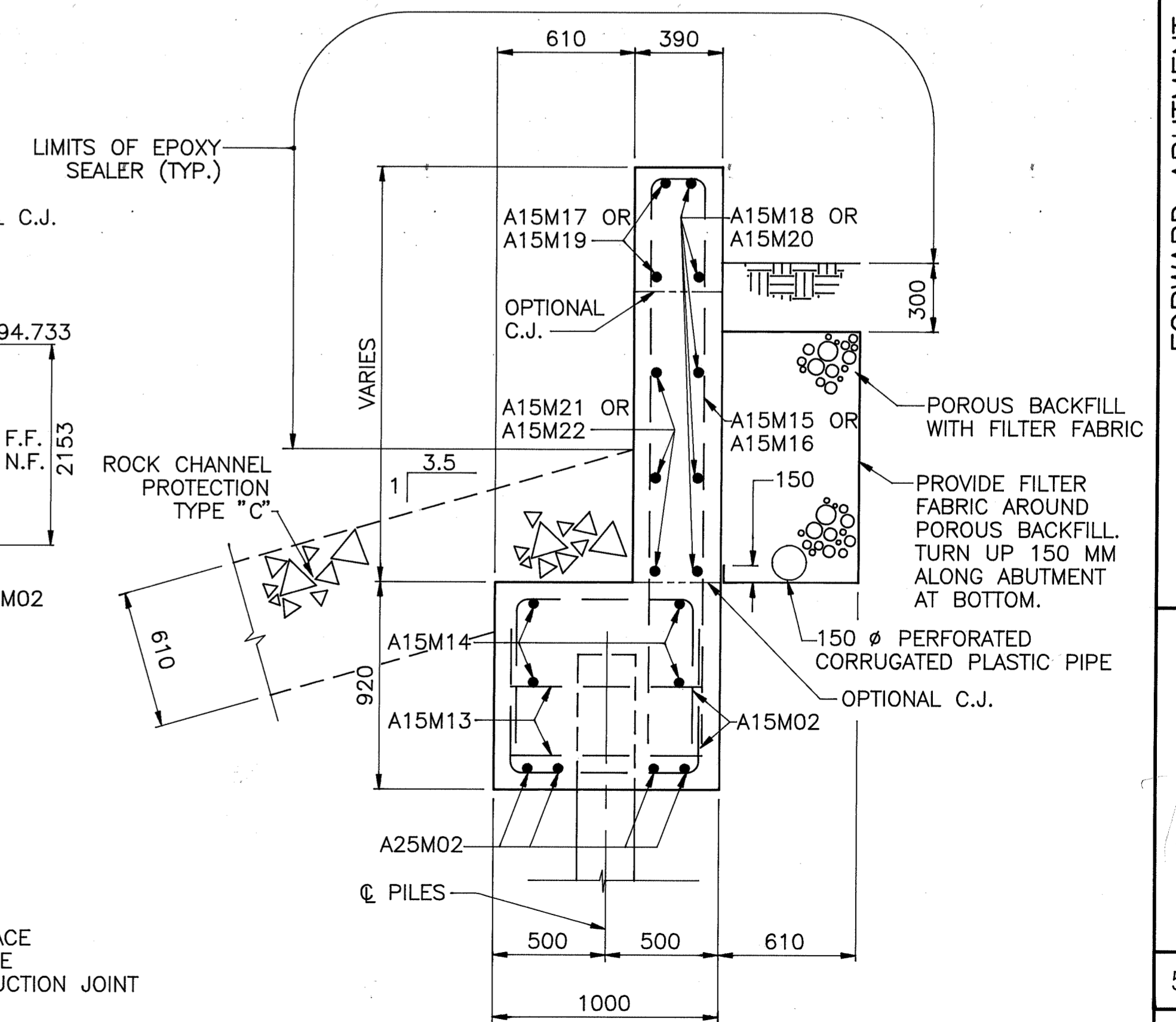
ELEVATION

- NOTES:**
- 1) SEE SHEET [6/9] FOR PILE TABLE.
 - 2) FOR ADDITIONAL NOTES SEE SHEET [4/9].
 - 3) * INDICATES RADIAL DIMENSION.

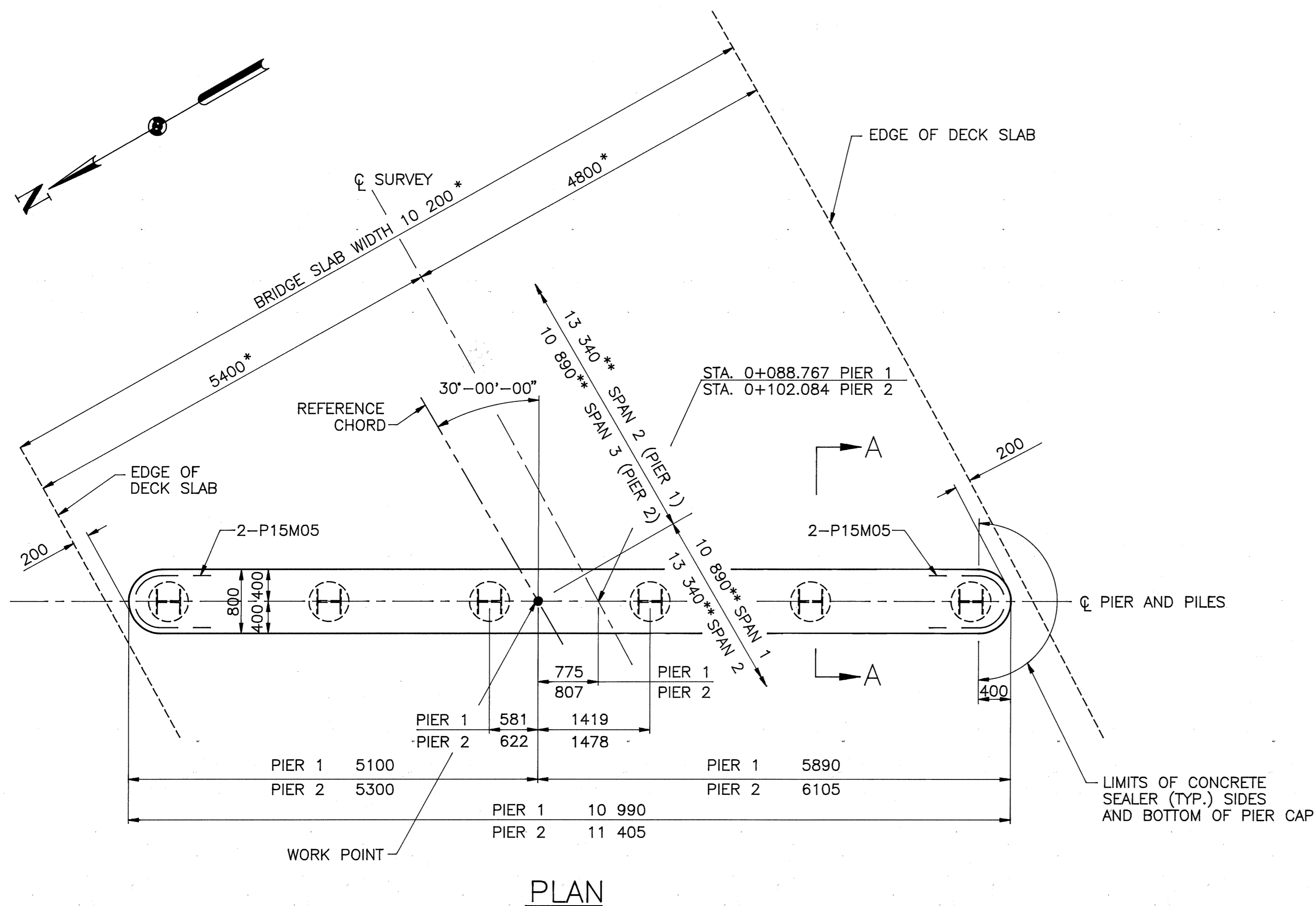
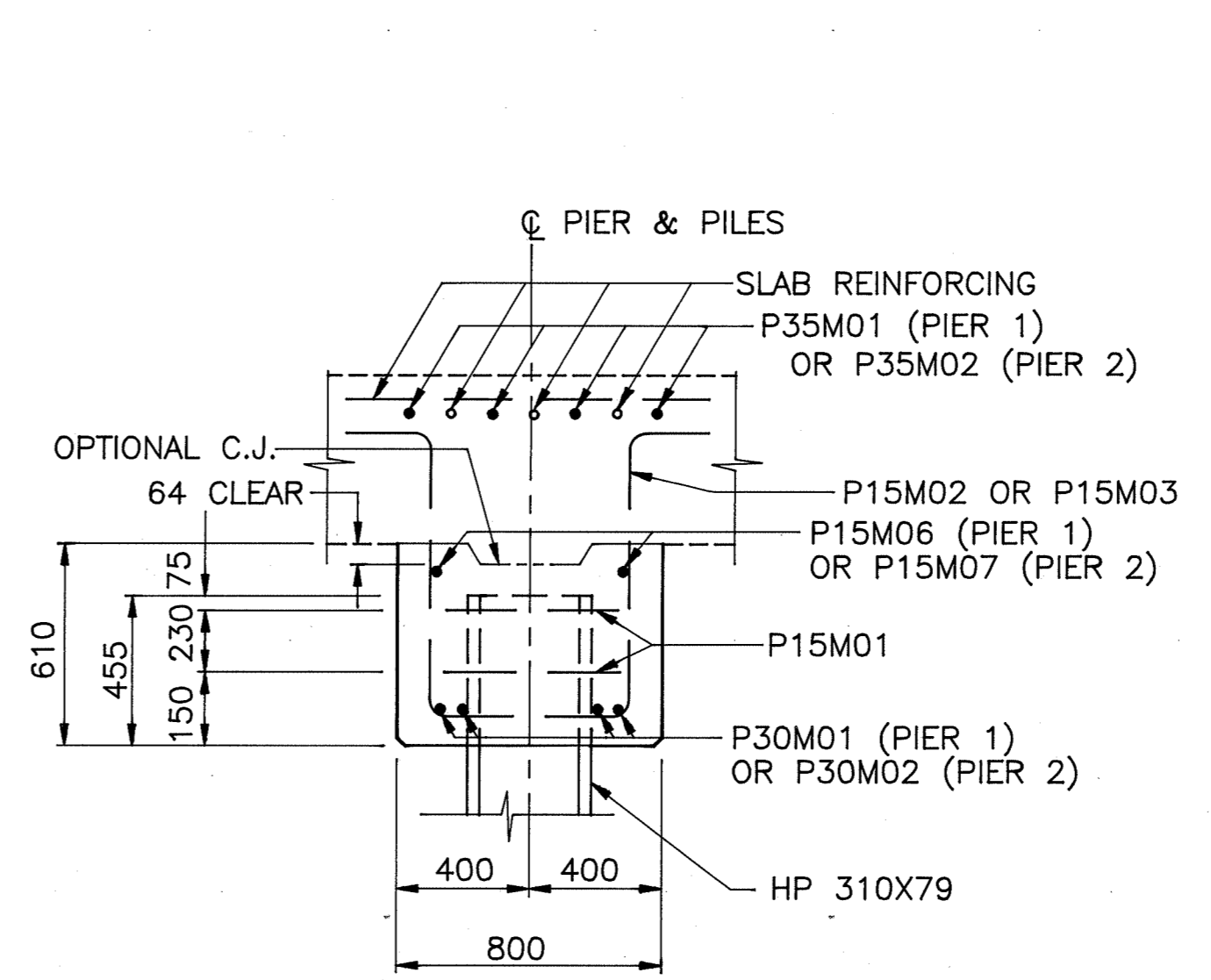
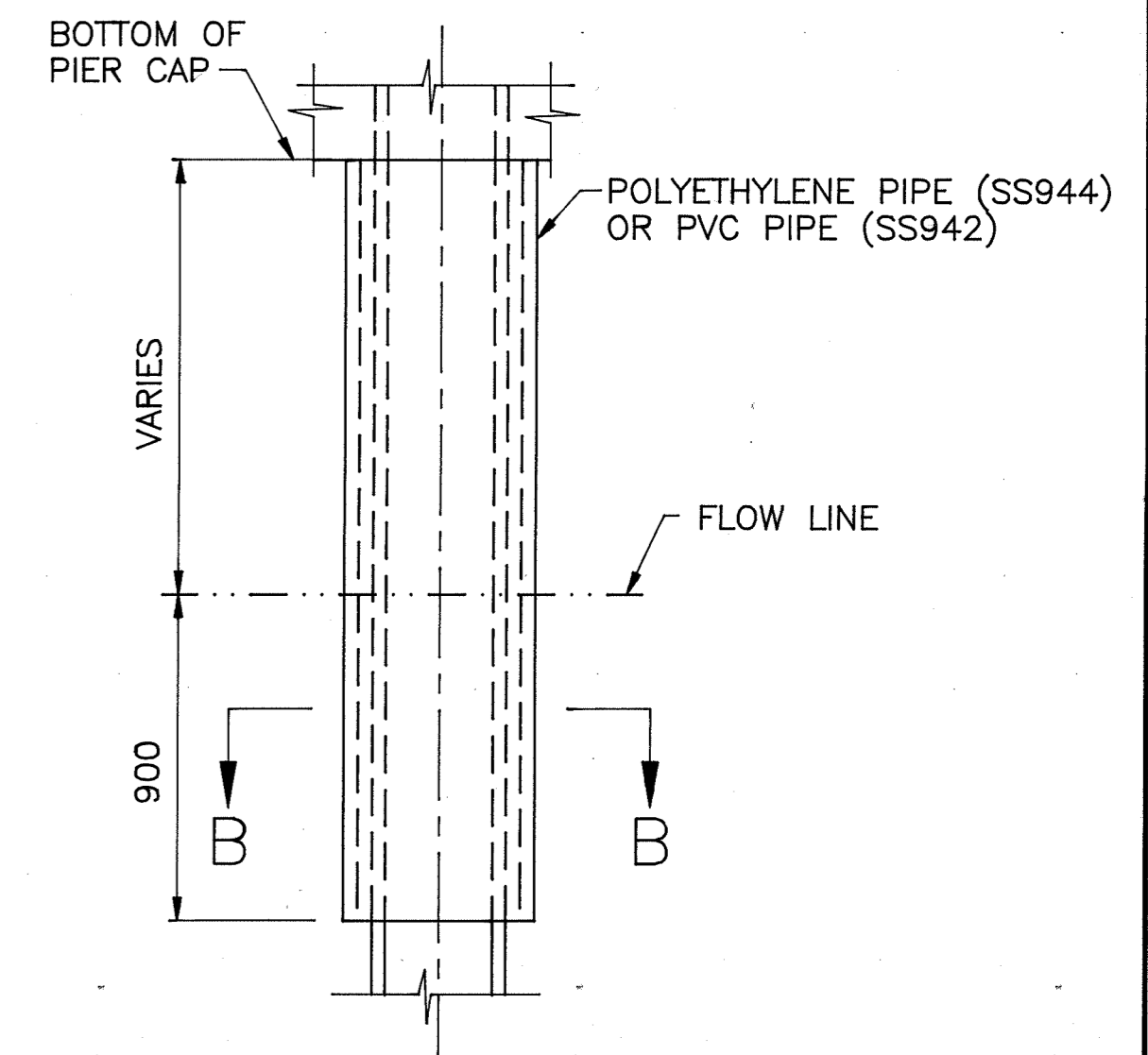
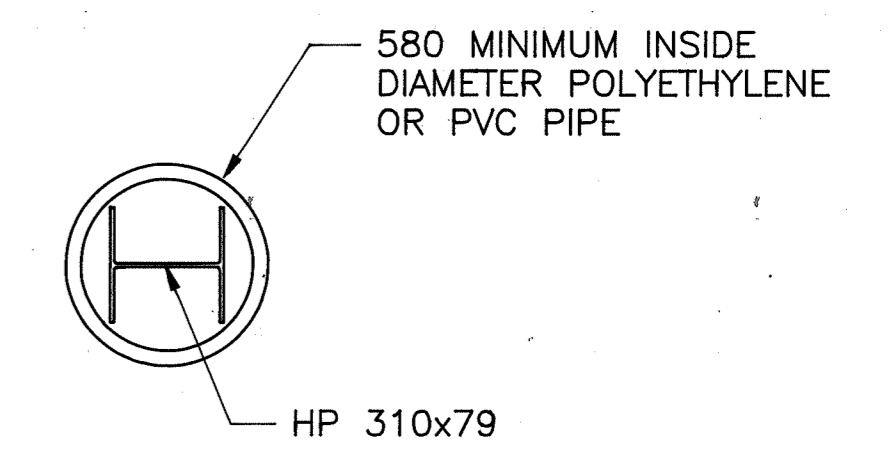
- LEGEND**
- N.F.—NEAR FACE
 - F.F.—FAR FACE
 - C.J.—CONSTRUCTION JOINT
 - EQ.—EQUAL
 - P.E.J.F.—PREFORMED EXPANSION JOINT FILLER
 - (22) —PILE NUMBER



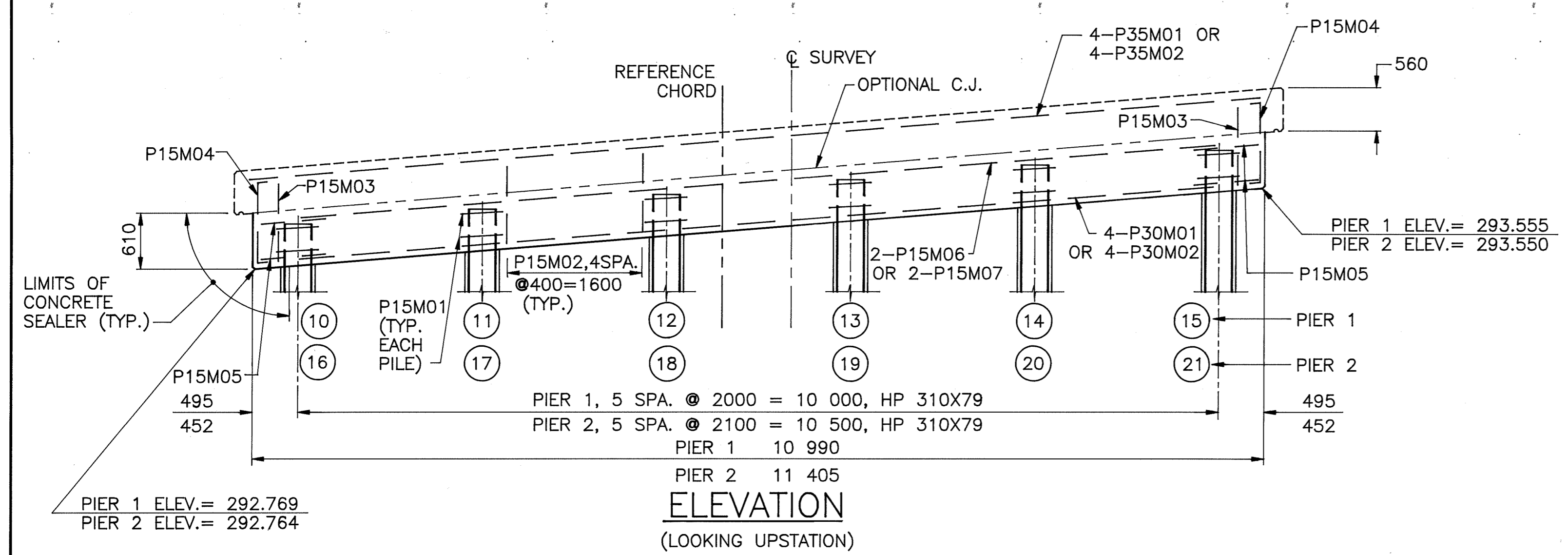
SECTION A-A



SECTION B-B


PLAN

SECTION A-A

PILE ENCASEMENT

SECTION B-B
PILE TABLE

SUBSTRUCTURE UNIT	PILE NO.	PILE TYPE	CUT OFF ELEVATION	ESTIMATED LENGTH
REAR ABUT.	1 TRU 9	HP 250X62	292.330	7000
PIER 1	10	HP 310X79	293.259	8000
PIER 1	11	HP 310X79	293.402	8000
PIER 1	12	HP 310X79	293.545	8500
PIER 1	13	HP 310X79	293.689	8500
PIER 1	14	HP 310X79	293.832	8500
PIER 1	15	HP 310X79	293.975	9000
PIER 2	16	HP 310X79	293.255	8000
PIER 2	17	HP 310X79	293.395	8000
PIER 2	18	HP 310X79	293.540	8500
PIER 2	19	HP 310X79	293.684	8500
PIER 2	20	HP 310X79	293.829	8500
PIER 2	21	HP 310X79	293.974	9000
FORWARD ABUT.	22 TRU 30	HP 250X62	292.260	7000



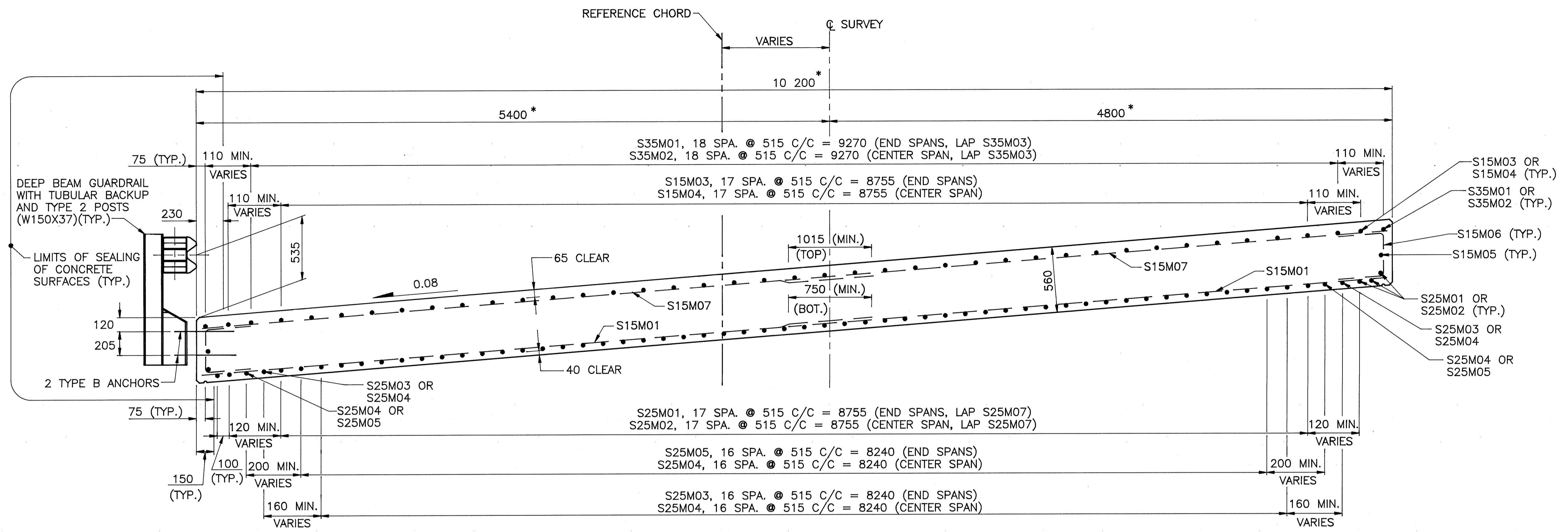
- NOTES:**
- FOR ADDITIONAL DETAILS SEE STANDARD DRAWING CPP-2-94M.
 - * INDICATES RADIAL DIMENSIONS.
 - ** MEASURED ALONG REFERENCE CHORD.

LEGEND

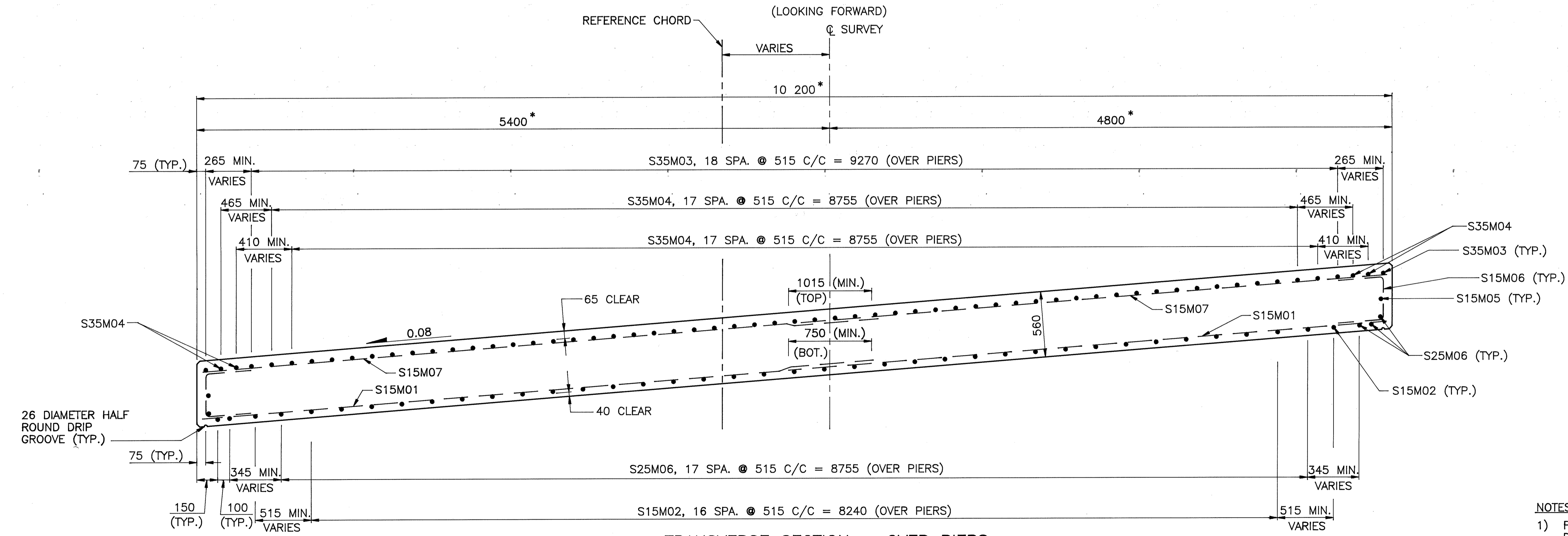
C.J. - CONSTRUCTION JOINT

(10) - PILE NUMBER

SPA. - SPACES



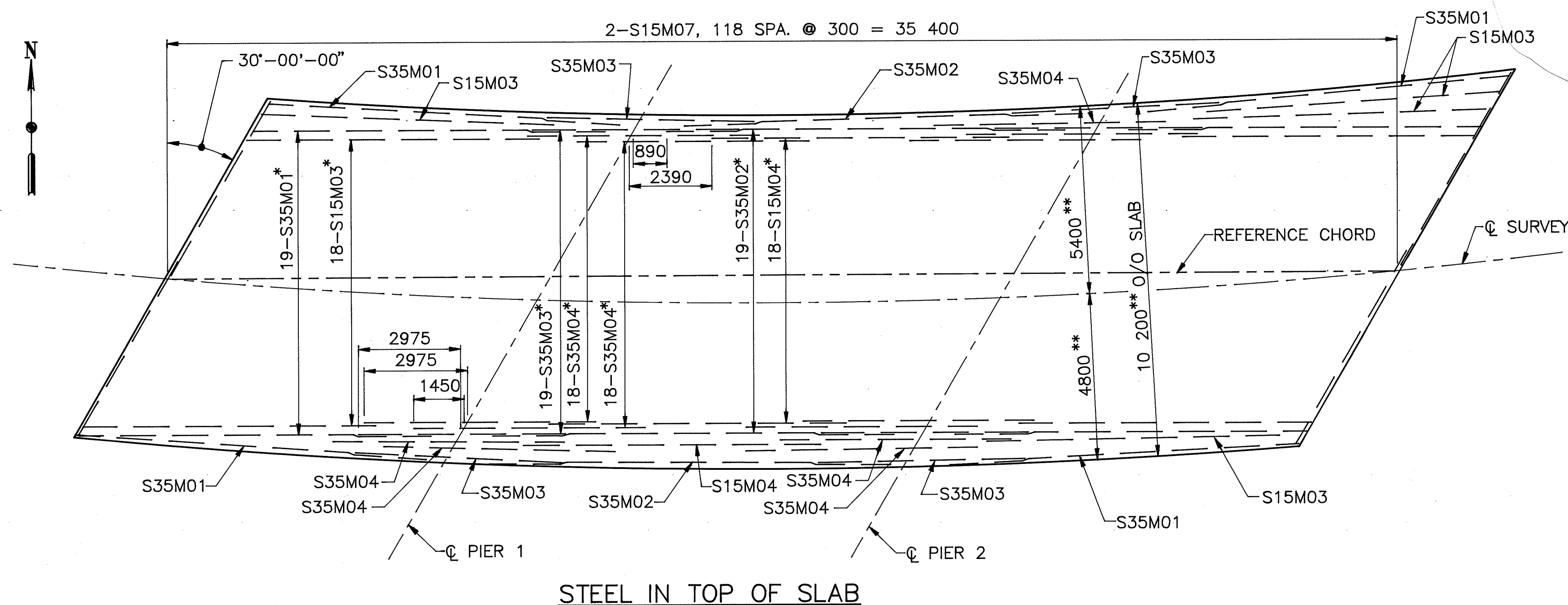
TRANSVERSE SECTION - CENTER & END SPANS



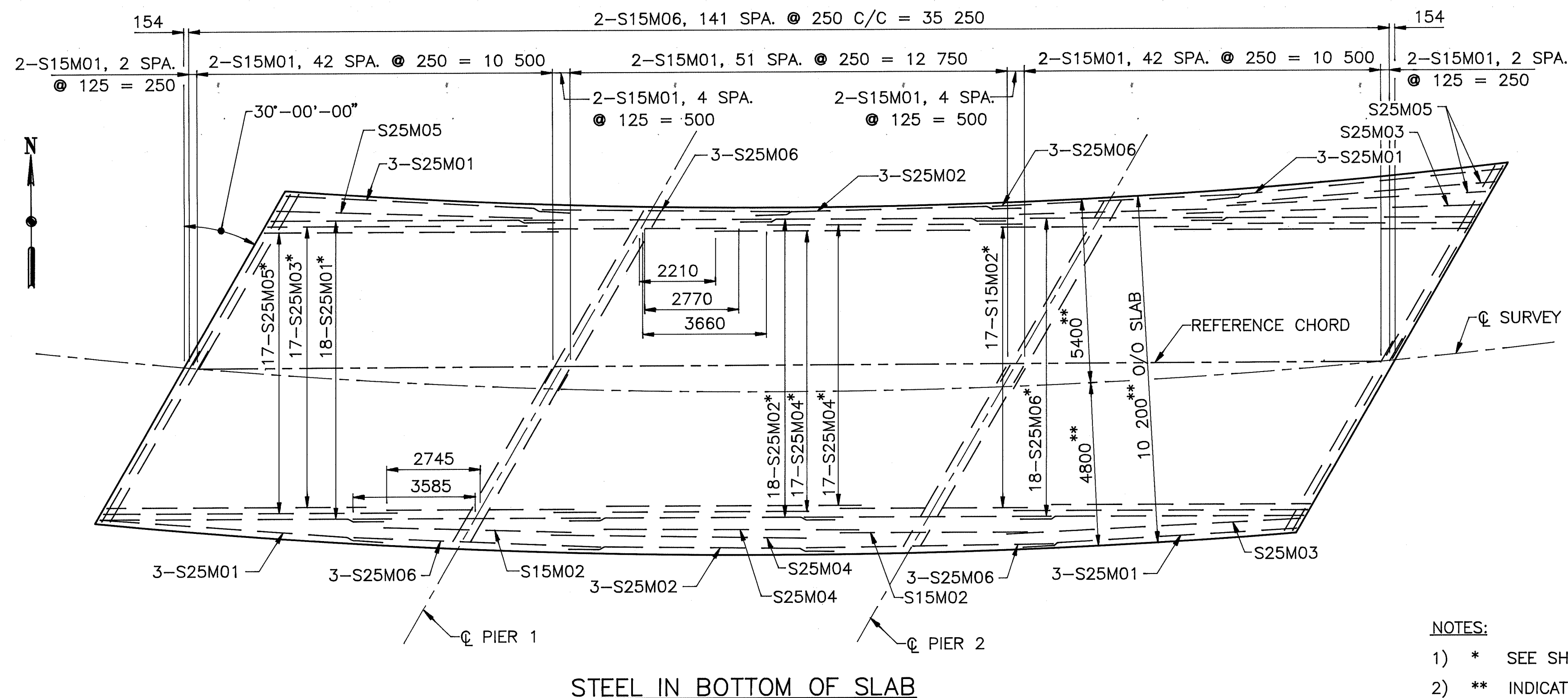
TRANSVERSE SECTION - OVER PIERS
 (LOOKING FORWARD)

- NOTES:
- 1) FOR ADDITIONAL DETAILS SEE STANDARD DRAWING CS-1-93M.
 - 2) SEE SHEET [8/9] FOR SLAB PLAN AND SUPERSTRUCTURE DETAIL.
 - 3) * INDICATES RADIAL DIMENSION.

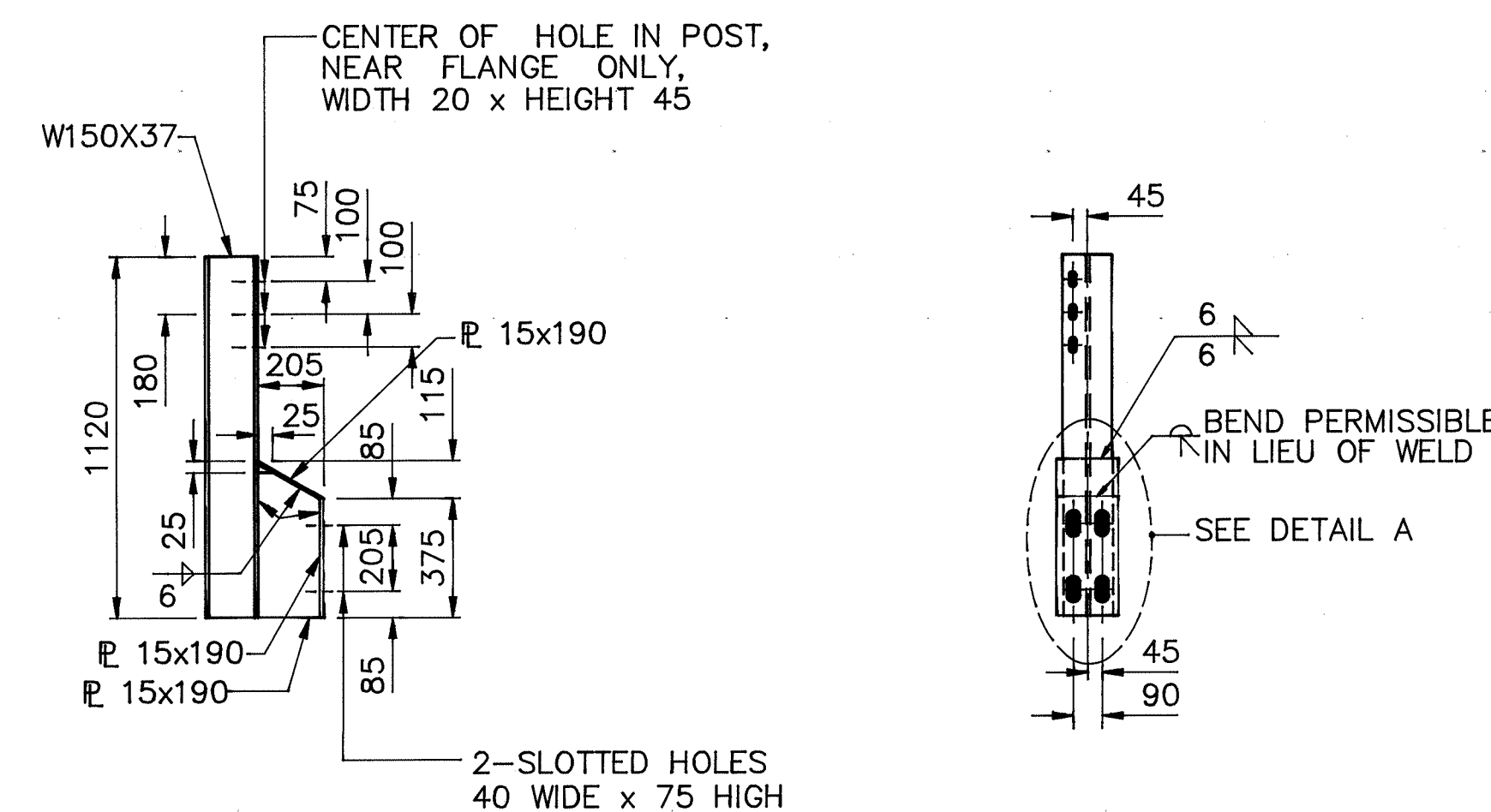
LEGEND
 SPA. - SPACES



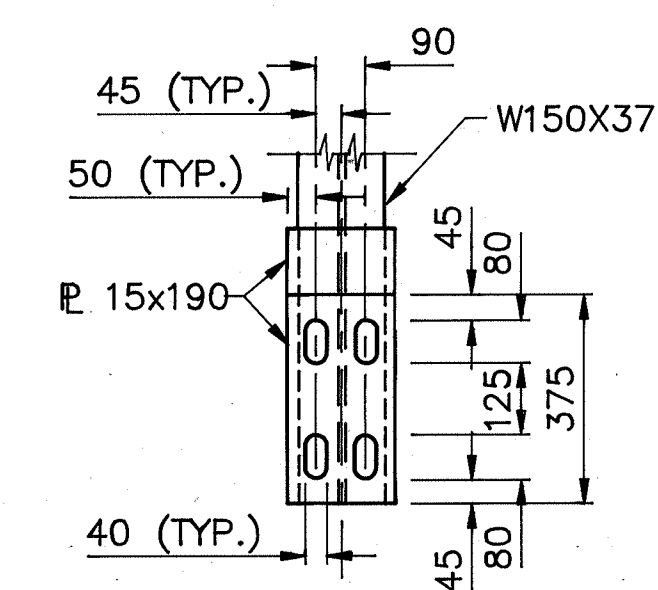
STEEL IN TOP OF SLAB



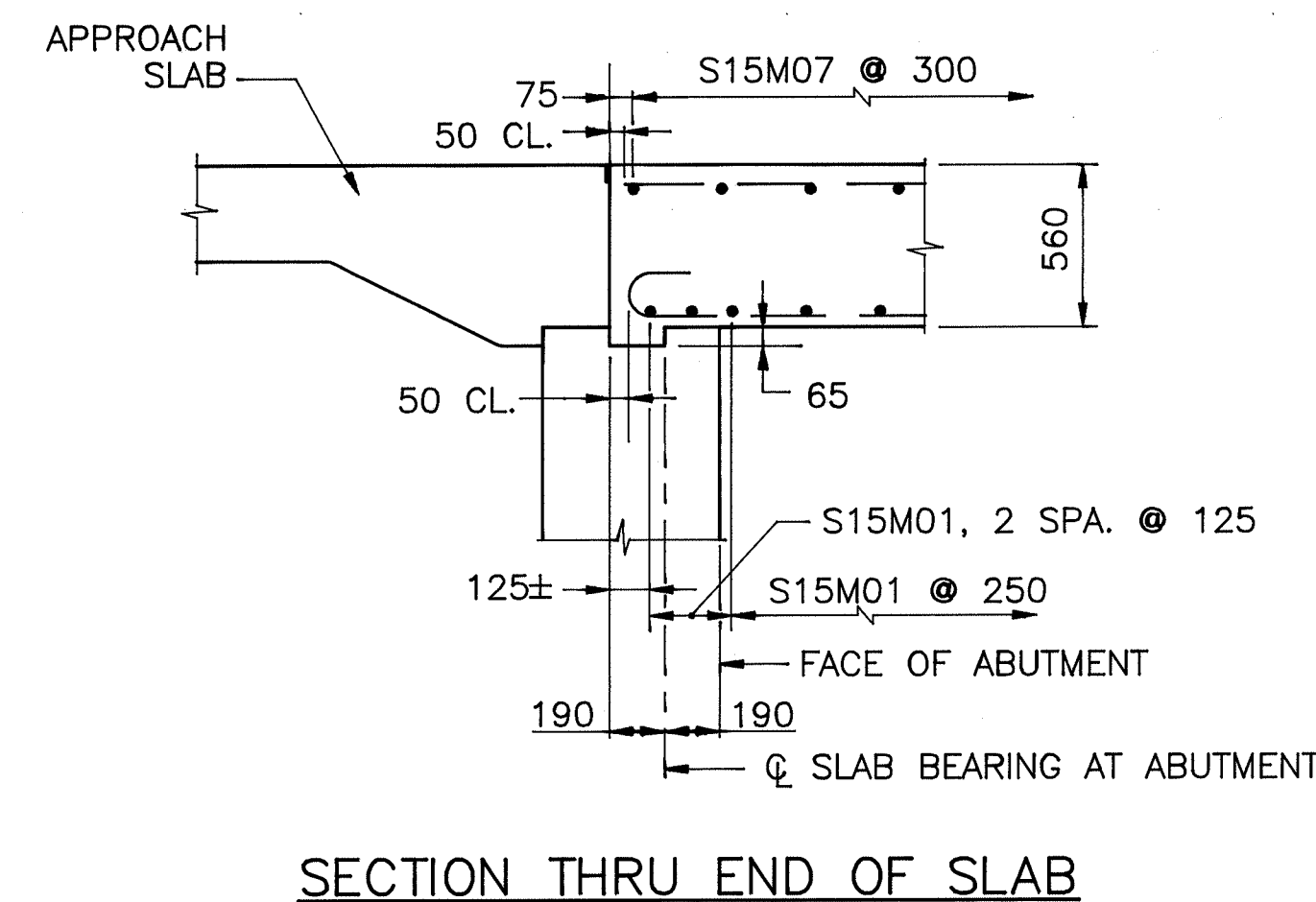
STEEL IN BOTTOM OF SLAB



TYPE 2 POST DETAIL



DETAIL A



SECTION THRU END OF SLAB

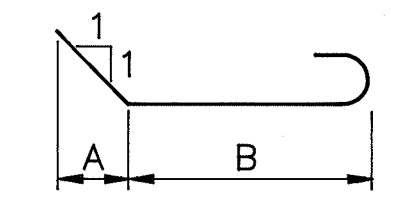
NOTES:

- 1) * SEE SHEET [7/9] FOR BAR SPACING AND TRANSVERSE SECTION.
- 2) ** INDICATES RADIAL DIMENSION.
- 3) MINIMUM LAP LENGTHS SHALL BE 725 FOR NUMBER 15 BARS AND 1400 FOR NUMBER 25 BARS AND 1925 FOR NUMBER 30 BARS.

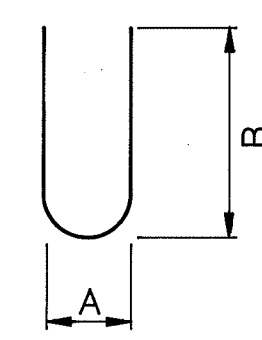
LEGEND

- CL.-CLEAR
 SPA.-SPACES

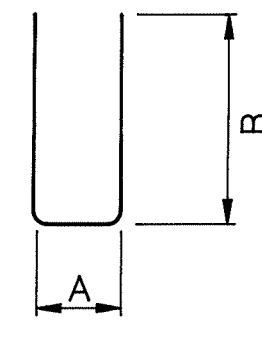
BENDING DIAGRAMS



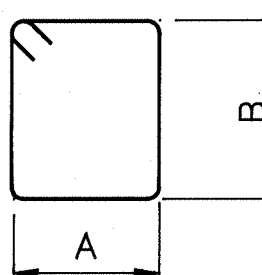
TYPE 1



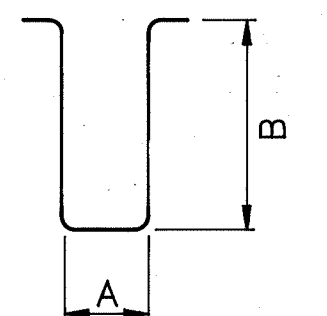
TYPE 2



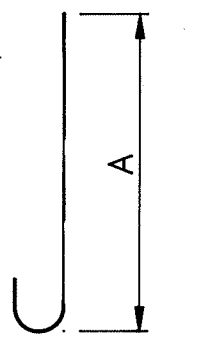
TYPE 3



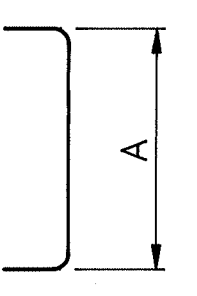
TYPE 4



TYPE 5



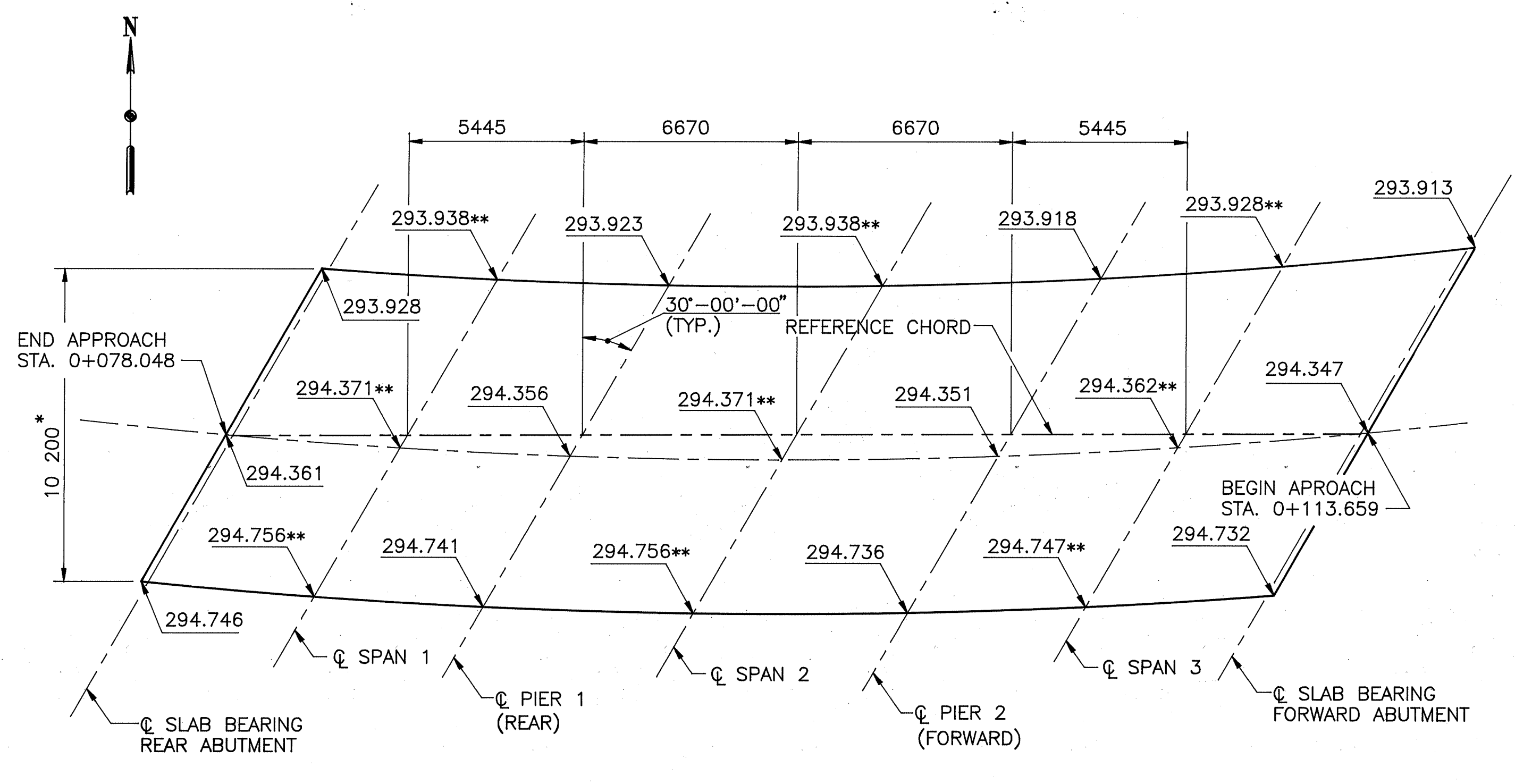
TYPE 6



TYPE 7

REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	REAR	FWD	TOTAL				A	B	C	D	INCR.	
ABUTMENTS												
A15M01	8		8	8575	108	ST.						
A15M02	108	108	216	2090	710	3	900	635				
A15M03	4		4	11 145	70	ST.						
A15M04	10		10	5230	83	3	290	2510				
A15M05	6		6	3590	34	3	290	1690				
A15M06	26		26	2670 TO 4170	140	3	510	1120 TO 1870				30
A15M07	2		2	3650	12	ST.						
A15M08	5		5	3525	28	ST.						
A15M09	2		2	1440	5	ST.						
A15M10	4		4	1575	10	ST.						
A15M11	3		3	4125	20	ST.						
A15M12	2		2	1915	7	ST.						
A15M13	18		18	2800	159	4	535	810				
A15M14	8		8	9130	115	ST.						
A15M15	10		10	5270	83	3	290	2530				
A15M16	6		6	3630	35	3	290	1710				
A15M17	2		2	3150	10	ST.						
A15M18	5		5	3375	27	ST.						
A15M19	2		2	1765	6	ST.						
A15M20	4		4	1525	10	ST.						
A15M21	3		3	3635	18	ST.						
A15M22	2		2	2240	8	ST.						
A15M23	4		4	12 350	78	ST.						
A15M24	29		29	2670 TO 4350	160	3	510	1120 TO 1960				30
A25M01	8		8	8910	280	ST.						
A25M02	8		8	9465	298	ST.						
A35M01	4		4	11 145	350	ST.						
A35M02	4		4	12 350	388	ST.						
D25M01	26	29	55	1375	297	1	305	1045				
					TOTAL	3550						
PIERS												
P15M01	12	12	24	2520	95	4	650	530				
P15M02	25	25	50	2985	235	5	700	990				
P15M03	2	2	4	2935	19	5	650	990				
P15M04	2	2	4	1295	9	7	990					
P15M05	4	4	8	2190	28	2	650	585				
P15M06	2	2	4	10 265	33	ST.						
P15M07	2	2	4	10 680	34	ST.						
P30M01	4		4	10 265	226	ST.						
P30M02	4		4	10 680	235	ST.						
P35M01	4		4	11 290	355	ST.						
P35M02	4		4	11 670	367	ST.						
					TOTAL	1640						
SUPERSTRUCTURE												
S15M01			296	6570	3054	ST.						
S15M02			38	5490	328	ST.						
S15M03			40	8710	547	ST.						
S15M04			20	8560	269	ST.						
S15M05			8	9520	120	ST.						
S15M06			284	1090	486	3	410	380				
S15M07			238	6715	2510	ST.						
S25M01			48	8430	1589	ST.						
S25M02			24	7800	735	ST.						
S25M03			38	9060	1352	ST.						
S25M04			38	7470	1115	ST.						
S25M05			38	7900	1179	6	7540					
S25M06			48	7240	1364	ST.						
S35M01			42	10 260	3383	ST.						
S35M02			21	11 790	1944	ST.						
S35M03			42	5945	1961	ST.						
S35M04			80	6655	4180	ST.						
					TOTAL	26 120						



SCREED ELEVATIONS

- NOTES:
- ** 1) SCREED ELEVATIONS
 THE SCREED ELEVATIONS SHOWN ARE FOR THE SURFACE OF THE DECK PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR THE ANTICIPATED DEAD LOAD DEFLECTION OF THE CONCRETE DECK. ADDITIONALLY, ELEVATIONS MARKED WITH ** SHALL BE ADJUSTED UPWARDS TO COMPENSATE FOR THE ANTICIPATED DEFLECTION OF THE FALSEWORK DUE TO THE WEIGHT OF THE CONCRETE DECK.
 - * 2) * INDICATES RADIAL DIMENSION.
 - 3) ALL REINFORCING TO BE EPOXY COATED.
 - 4) PIER 1 IS THE REAR PIER AND PIER 2 IS THE FORWARD PIER.