

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

ERI - 6 - 12.31

HURON TOWNSHIP
ERIE COUNTY

ERI-6-12.31
OHIO
FHWA REGION 5
FEDERAL PROJECT

STP-3L14 (2)
ERIE COUNTY
ERI - 6 - 12.31
PART I
FOR PART II, SEE ERI - 6 - 14.10

STP-3L14 (2)

ALL REFERENCES TO FEDERAL NUMBER M-3L14(2)
APPEARING IN THESE PLANS SHALL BE CONSIDERED TO
READ STP-3L14(2).

DESIGN	DESIGNATION
CURRENT ADT (1993)	= 6470
DESIGN YEAR ADT (2013)	= 7760
D.H.V.	= 780
D	= 55 %
T	= 2 %
V	= 55 m. p. h.
LEGAL SPEED	= 55 m. p. h.
FUNCTIONAL CLASSIFICATION	Urban Principal Arterial

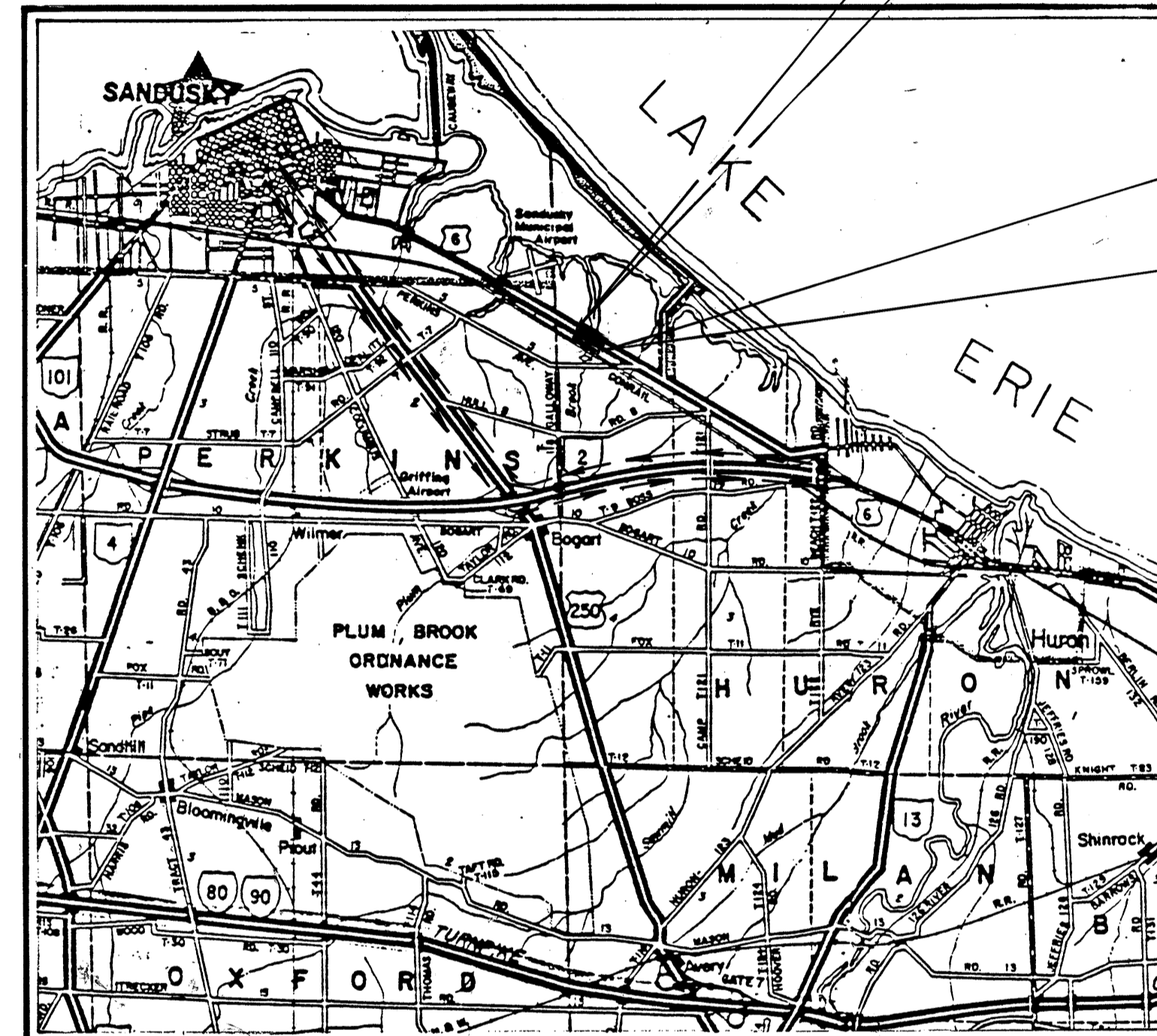
CONVENTIONAL SIGNS

County Line	-----	Limited Access (only)	-----	LA
Township Line	-----	Right of Way (only)	-----	RW
Section Line	-----	Limited Access & Right of Way	-----	LA & RW
Corporation Line	----- or -----	Existing Right of Way	-----	
Fence Line (existing)	-x-x-	Property Line (in existing fence)	-x-x-	
Center Line	-----	Railroad	----- or -----	
Trees, Stumps, (to be removed)	⊗ ⊗ ⊗	Guardrail (existing)	-----	
Utility Poles: Telephone	⊕	Guardrail (proposed)	-----	
Power	⊕			
Light	⊕			

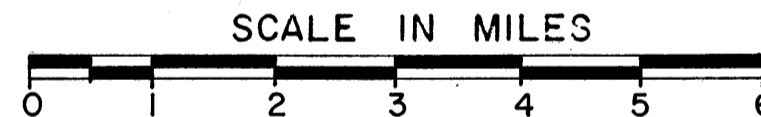
INDEX OF SHEETS

TITLE PAGE	1
TYPICAL SECTIONS	2
GENERAL NOTES	3
CALCULATIONS & GENERAL SUMMARY	5
PLAN & PROFILE	6-8
CROSS-SECTIONS	9-10
STRUCTURES, 20 SPAN AND OVER	11-18
RIGHT-OF-WAY PLAN	19-20

SHEET 4 NOT USED



LOCATION MAP



LINE DATA

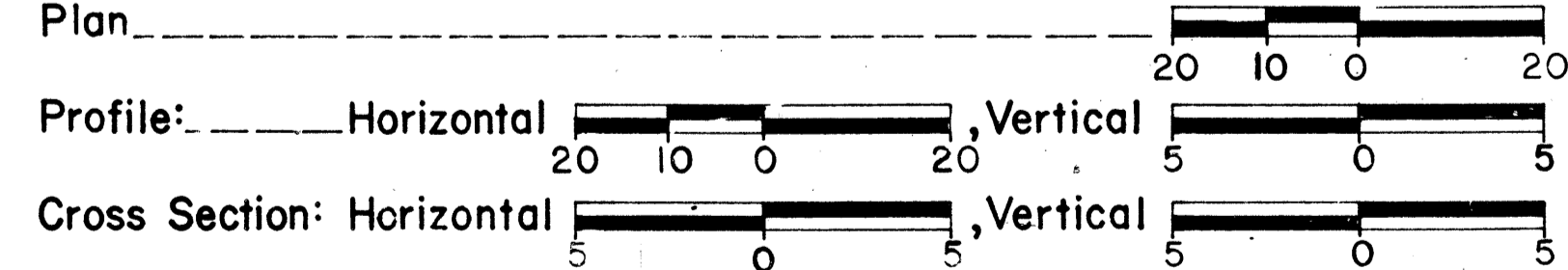
BEGIN PROJECT.....STA. 649+ 45.70
END PROJECT.....STA. 650+ 39.20
LENGTH OF PROJECT 93.50 L.F. = 0.018 MI.

BEGIN WORK.....STA. 648+25
END WORK.....STA. 654+00
LENGTH OF WORK 575 L.F. = 0.109 MI.

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call 1-800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Portion to be improved: _____
 State & Federal Routes _____
 Other Roads _____
 Detour Route _____

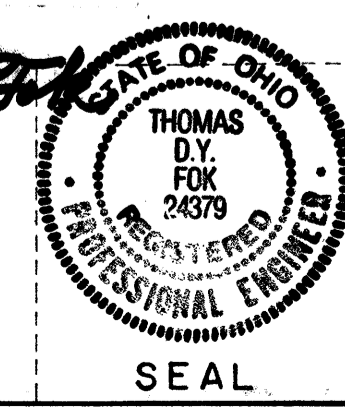
SCALES



SUPPLEMENTAL SPECIFICATIONS PART III	
802	4-13-90
849	12-24-85
949	9-26-86

STRUCTURE PLANS REVIEWED BY:
Burgess & Niple, Limited
Columbus, Ohio

Plan Prepared By: *Thomas Fok*
THOMAS FOK & ASSOCIATES -
3896 MAHONING AVENUE
YOUNGSTOWN, OHIO 44515



SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS PARTS I & II							
BP-2.2	2-21-92	MC-9A	11-85	TC-42.20	3-26-79	MT-101.60	7-1-92
BP-3.1	2-21-92	MC-9.2	5-6-91			MT-105.10	7-1-92
BP-4.1	2-21-92	MH-1	12-18-84			MT-105.11	7-1-92
GR-1.1	5-6-91	MH-3	12-18-84	AS-1-81	11/27/81		
GR-1.2	10-30-92	MH-5	6-12-75	DBR-2-73	4/10/73		
GR-1.3	2-21-92	MT-99.10	11/14/86	EXJ-3-82	8-1-84	TC-41.10	8-29-84
GR-2.1	5-6-91	MT-96.11	9-9-88	PSBD-1-81	6/20/89	TC-41.20	3-26-79
GR-3.4	5-6-91	MT-96.20	9-9-88			TC-52.10	4-3-79
GR-4.2	5-6-91	MT-96.25	9-9-88	PCB-91	4-24-92	TC-52.20	4-3-79
MC-1	6-13-69						
MC-11	8/1/78						
MC-4	7-26-76						

Approved: *Gary W. Long*
Date 11/3/89 District Deputy Director of Transportation

Approved: *B.D. DeBlammis*
Date 3/12/90 Engineer, Bureau of Bridges and Structural Design

Approved: *Chadwick Still*
Date 4/12/90 Chief Engineer, Planning and Design

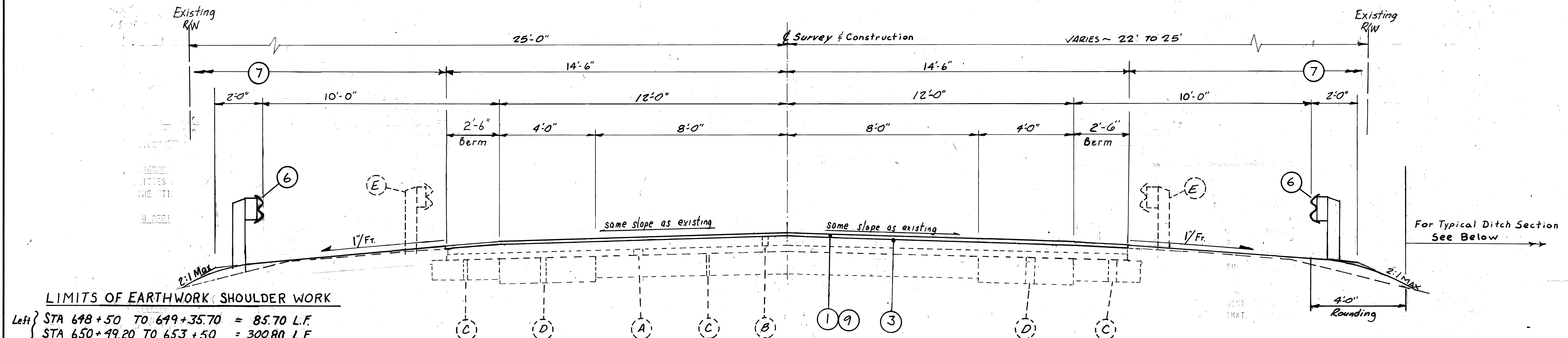
Approved: *Bernard B. Hurst*
Date 4/12/90 Director, Department of Transportation

REVISED 3-9-93

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
DIVISION ADMINISTRATOR DATE

TYPICAL SECTION TYPE 404



LIMITS OF EARTHWORK SHOULDER WORK

Left } STA 648+50 TO 649+35.70 = 85.70 L.F.
 } STA 650+49.20 TO 653+50 = 300.80 L.F.
 Left Side Total = 386.50 L.F.

Right } STA 648+50 TO 649+35.70 = 85.70 L.F.
 } STA 650+49.20 TO 654+00 = 350.80 L.F.
 Right Side Total = 436.50 L.F.

SALVAGE SECTION

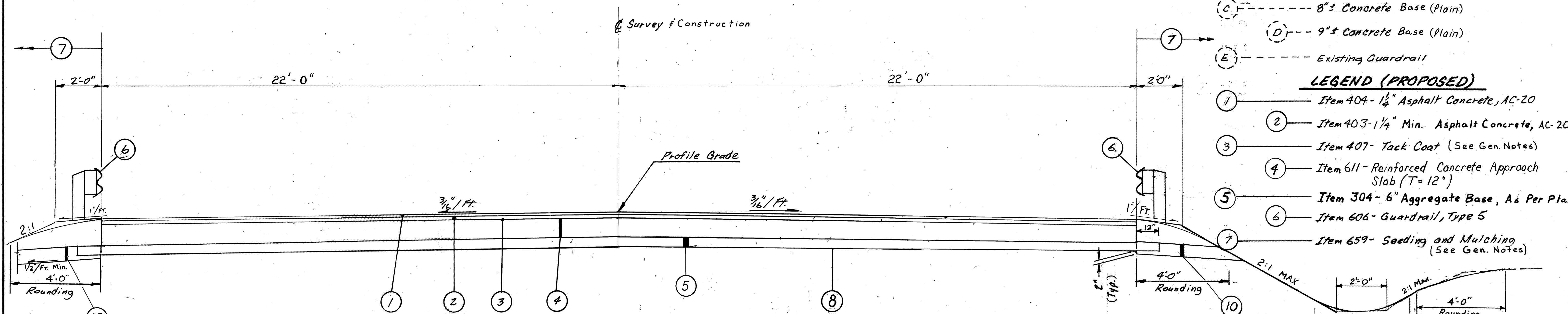
STA 649+35.70 to STA 649+45.70 = 10 L.F.
 STA 650+39.20 to STA 650+49.20 = 10 L.F.
 20 L.F.

LEGEND (EXIST.)

- (A) --- 2" Asphalt Concrete
- (B) --- 4" Asphalt Concrete
- (C) --- 8" Concrete Base (Plain)
- (D) --- 9" Concrete Base (Plain)
- (E) --- Existing Guardrail

LEGEND (PROPOSED)

- (1) --- Item 404 - 1 1/4" Asphalt Concrete, AC-20
- (2) --- Item 403 - 1/4" Min. Asphalt Concrete, AC-20
- (3) --- Item 407 - Tack Coat (See Gen. Notes)
- (4) --- Item 611 - Reinforced Concrete Approach Slab (T=12")
- (5) --- Item 304 - 6" Aggregate Base, As Per Plan
- (6) --- Item 606 - Guardrail, Type 5
- (7) --- Item 659 - Seeding and Mulching (See Gen. Notes)
- (8) --- Item 203 - Subgrade Compaction
- (9) --- Item 202 - Wearing Course Removed
- (10) --- Item 605 - Aggregate Drains



APPROACH SLAB SECTION

STA 649+45.70 to STA 649+60.70 = 15 L.F.
 STA 650+24.20 to STA 650+39.20 = 15 L.F.
 30 L.F.

FHWA REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
ERI-6-12.31

GENERAL NOTES

CLEARING AND GRUBBING: ALTHOUGH THERE ARE NO TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ROUNDING OF CORNERS SHOWN ON CROSS SECTION: THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

UNDERGROUND UTILITIES: THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

FIELD OFFICE: ONLY ONE (1) FIELD OFFICE SHALL BE PROVIDED FOR PARTS I AND II OF THIS PROJECT.

UTILITY OWNERSHIP: THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT.

OHIO EDISON 76 S. MAIN STREET AKRON, OHIO 44308 (216) 384-5244	ERIE COUNTY SANITARY ENGINEER 554 RIVER ROAD P.O. BOX 370 HURON, OHIO 44839 (419) 433-7303
---	---

GTE OPERATIONS NORTH AREA 117 NORTH SANDUSKY ST. BELLEVUE, OHIO 44811 (419) 483-8192	AT&T COMMUNICATIONS 3833 WEYMOUTH ROAD MEDINA, OHIO 44256-9237 (216) 723-9110
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CONTINGENCY QUANTITIES: THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY 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 AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

LOCATION OF GUARDRAIL: THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

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

THE ANCHOR ASSEMBLY SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURE'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. PAYMENT SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT THE 25" LONG ANCHOR ASSEMBLY, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THIS MANUFACTURER TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY. THIS ITEM SHALL ALSO INCLUDE PAYMENT OVER AND ABOVE THE COST OF STANDARD TYPE 5 GUARDRAIL FOR INSTALLING TYPE 1 BREAKWAY POSTS (AS PER STANDARD CONSTRUCTION DRAWING GR-1.3) AT THE FOLLOWING LOCATIONS: 1) AT THE POINT WHERE THE ANCHOR ASSEMBLY AND THE GUARDRAIL RUN MEET, AND 2) AT THE NEXT THREE (3) POST LOCATIONS INTO THE GUARDRAIL RUN.

ITEM 203, EMBANKMENT, USING GRANULAR MATERIAL, AS PER PLAN: MATERIAL FURNISHED FOR THIS ITEM SHALL BE AS DEFINED IN 203.02 (EXCEPT THAT AT LEAST 85 PER CENT BY WEIGHT OF THE GRAINS OR PARTICLES SHALL BE RETAINED ON A NO. 200 SIEVE). IN THE AREA BETWEEN STATIONS 649+00 AND 653+00 GRANULAR MATERIAL AS INDICATED ON THE CROSS SECTIONS MAY BE PLACED BY THE METHOD OF END DUMPING IF SURFACE WATER IS PRESENT AT THE TIME OF CONSTRUCTION. END DUMPING METHODS MAY BE USED UP TO AN ELEVATION TWO FEET ABOVE THE WATER LEVEL. ABOVE THIS ELEVATION, EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH 203.07 TO 203.12 INCLUSIVE.

WHERE END DUMPING IS PERMITTED, NORMAL CLEARING AND GRUBBING SHALL BE PERFORMED BUT THE REQUIREMENTS OF 201.04 FOR SCALPING SHALL BE WAIVED.

BENCHING OF FOUNDATION SLOPES: ALTHOUGH CROSS SECTIONS ON THIS PLAN INDICATE SPECIFIC WIDTHS AND DEPTHS OF PROPOSED BENCHING OF THE EMBANKMENT FOUNDATION IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED, AND ALL OTHER SLOPED FOUNDATION AREAS SHALL BE BENCHING AS SET FORTH IN 203.09. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED BY THE PROVISIONS OF 203.09.

TACK COAT: THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS PER 407.05. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

AGGREGATE BASE, AS PER PLAN: MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG.

SEEDING: QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE, IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK 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 THE PERMANENT SEEDED AREAS, AS PER 659.09:

659 5 M GAL.

MAINTENANCE OF LOCAL DETOUR ROUTE

A LOCAL DETOUR ROUTE, OTHER THAN THE OFFICIAL SIGNED ODOT DETOUR ROUTE, AS NOTED ON SHT. L WILL BE SELECTED BY AGREEMENT BETWEEN ODOT AND LOCAL GOVERNMENTAL AGENCIES PRIOR TO THE HIGHWAY CLOSURE.

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 QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER FOR THE TEMPORARY MAINTENANCE OF THE LOCAL DETOUR PAVEMENT(S):

404 BITUMINOUS CONCRETE FOR 30 CU. YD.
MAINTAINING TRAFFIC

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 100 EACH

614 MAINTAINING TRAFFIC:

DETOUR LIMITATION AND INTERIM COMPLETION DATE: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 75 CONSECUTIVE CALENDAR DAYS, THROUGH TAFFIC WILL BE DETOURED AS SHOWN ON SHEET NO. 1. THE DETOUR SHALL NOT BE PLACED INTO EFFECT UNTIL AFTER LABOR DAY, 1993. THE CONTRACTOR SHALL NOTIFY THE DISTRICT TRAFFIC ENGINEER IN WRITING A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF THE DATE THE DETOUR IS NEEDED. THE STATE OF OHIO WILL INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE THE DETOUR SIGNING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE GATES AND BARRICADES AT THE APPROXIMATE WORK LIMITS OF THE PROJECT.

THE 75 CONSECUTIVE CALENDAR DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 75 CONSECUTIVE CALENDAR DAYS THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES, AS PER SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

TEMPORARY PAVEMENT MARKINGS: THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

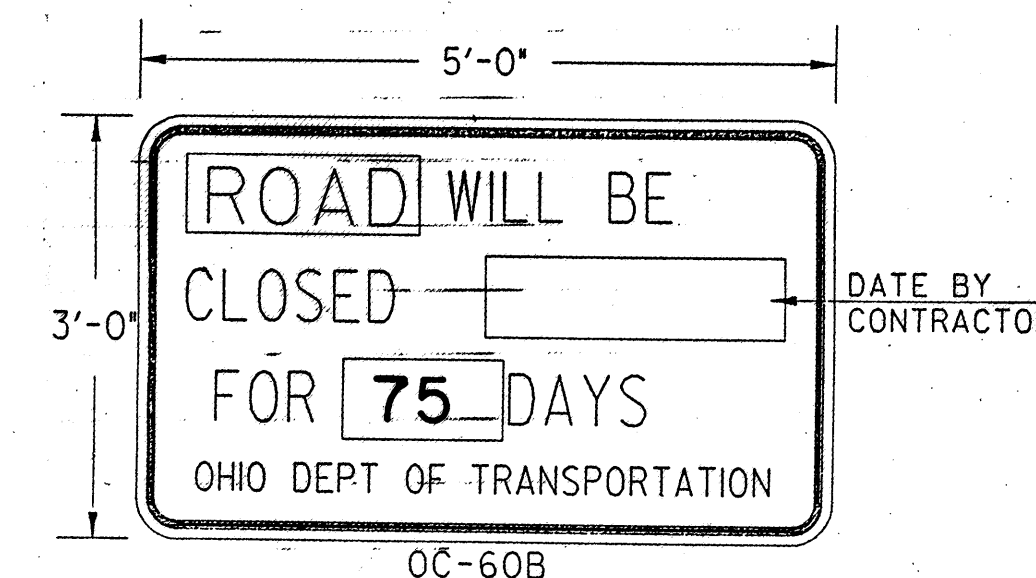
614 - TEMPORARY CENTERLINE, CLASS II .02 MI. SEE MT-99.10 FOR REQUIREMENTS.

THIS ITEM MAY BE NON-PERFORMED IF THE 642 PAVEMENT MARKINGS ARE IN PLACE PRIOR TO OPENING THE ROAD TO TRAFFIC.

NOTICE OF CLOSURE SIGNS

THESE SIGNS 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 LOCATED IN THE FIELD SO AS NOT TO INTERFERE WITH ANY PERANENT SIGNS. ON THIS PROJECT THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDE FURNISHING, ERECTED, MAINTAINING AND REMOVING THE SIGNS INCLUDING SUPPORTS.



COMPUTED BY: JC DATE: 8/89
 CHECKED BY: WJ DATE: 9/89

REGION	STATE	PROJECT
5	OHIO	



ERIE COUNTY
 ERI-6-1231

CALCULATIONS AND GENERAL SUMMARY

CALCULATIONS

AREAS

A_A - FEATHER SECTION PAVEMENT AREAS
 STA 649+35.70 TO STA 649+45.70 = 10 L.F.
 STA 650+39.20 TO STA 650+49.20 = 10 L.F.
 20' x 24' = 480 S.F.

A_B - APPROACH SLAB AREAS
 STA 649+45.70 TO STA 649+60.70 = 15 L.F.
 STA 650+24.20 TO STA 650+39.20 = 15 L.F.
 30' x 44' = 1320 S.F.
 30 L.F.

A_E - FEATHER SECTION SHOULDER AREAS
 STA 649+35.70 TO STA 649+45.70 = 10 L.F.
 STA 650+39.20 TO STA 650+49.20 = 10 L.F.
 20 L.F.
 (L/R) x 2 = 40 L.F.
 40' x 2.5' = 100 S.F.

Item 202 - Pavement Removed

STA 649+45.70 TO STA 649+83.20 = 37.5 L.F.
 STA 650+01.70 TO STA 650+39.20 = 37.5 L.F.
 75' x 30' x 1/9 = 250 S.Y. use: 250 S.Y.

Item 202 - Wearing Course Removed

$[A_A + A_E] \times 1/9$
 = $[480 + 100] \times 1/9$
 = 64.44 S.Y. use: 64 S.Y.

Item 203 - Subgrade Compaction

$A_B \times 1/9$
 = $1320 \times 1/9$
 = 146.67 S.Y. use: 147 S.Y.

Item 304 - 6" Aggregate Base, As Per Plan

$[A_B + (30' \times 2')] \times 6/12 \times 1/27$
 = $1380 \times 6/12 \times 1/27$
 = 25.56 C.Y. Use 26 C.Y.

Item 403 - 1 1/4" Asphalt Concrete, AC-20

$A_B \times \frac{1 1/4 + 2 1/2}{2} \times 1/12 \times 1/27$
 = $1320 \times 1 3/8 \times 1/12 \times 1/27$
 = 7.67 C.Y. use: 8 C.Y.

Item 404 - 1 1/4" Asphalt Concrete, AC-20

$(A_E + A_A + A_B) \times (1 1/4" \times 1/12) \times 1/27$
 = $(100 + 480 + 1320) \times (1 1/4" \times 1/12) \times 1/27$
 = 7.3 C.Y. use: 8 C.Y.

Item 407 - Tack Coat

$[A_A + A_B + A_E] \times 1/9 \times 0.10$
 = $[480 + 1320 + 100] \times 1/9 \times 0.10$
 = 21.11 Gal. use: 21 Gal.

Item 611 - Reinforced Concrete Approach Slab, T=12"

$A_B \times 1/9$
 = $1320 \times 1/9$
 = 146.67 S.Y. use: 147 S.Y.

Item 659 - Commercial Fertilizer

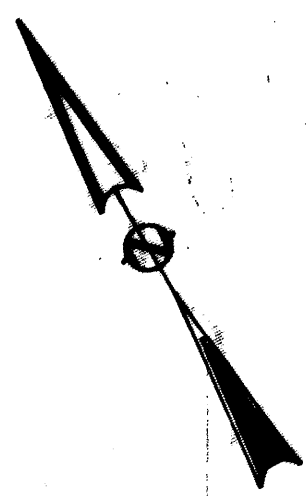
$2952 \times 9/1000 \times 20/2000 = 0.27 \text{ Ton}$ use: 0.27 Ton

TOTAL FROM SHEET NO.					M-3L14 (2) FUNDS				DESCRIPTION
3	5	6	7	8	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	
									ROADWAY
									CLEARING AND GRUBBING
					LUMP	201	11000	LUMP	PAVEMENT REMOVED
						250	23000	250	S.Y.
						64	23500	64	S.Y.
									WEARING COURSE REMOVED
						404	38000	775	L.F.
						109	21001	197	C.Y.
						371			GUARD RAIL REMOVED
						88			EMBANKMENT, USING GRANULAR MATERIAL, AS PER PLAN
						470	12000	612	C.Y.
						142			EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
						262	20000	769	C.Y.
						507			EMBANKMENT
						147	50000	147	S.Y.
									SUBGRADE COMPACTION
						24	31100	24	L.F.
									AGGREGATE DRAINS
						308.84	13000	550	L.F.
						2	26100	4	EA.
						2			GUARDRAIL, TYPE 5
						4	35140	4	EA.
									ANCHOR ASSEMBLY, TYPE E
									BRIDGE TERMINAL ASSEMBLY, TYPE 4
									MONUMENT ASSEMBLY, AS PER PLAN See Sheet 8
									EROSION CONTROL
						659	35000	5	M.GAL.
									WATER
						120	32300	120	C.Y.
									ROCK CHANNEL PROTECTION, TYPE D, WITH FILTER
						100	70000	100	EA.
									STRAW OR HAY BALES
						1243	10000	2952	S.Y.
						1709			SEEDING AND MULCHING
						0.27	20000	0.27	TON
									COMMERCIAL FERTILIZER
									PAVEMENT
						8	20000	8	CY
						8			ASPHALT CONCRETE, AC-20
						21	10000	21	GAL.
									ASPHALT CONCRETE, AC-20
						26	20001	26	C.Y.
						147	10000	147	S.Y.
									TACK COAT
									AGGREGATE BASE, AS PER PLAN
									REINFORCED CONCRETE APPROACH SLAB (T=12")
									MAINTENANCE OF TRAFFIC
						0.02	21400	0.02	MI.
									TEMPORARY CENTERLINE, CLASS II
						30	35000	30	CU. YD.
									BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
									TRAFFIC CONTROL
						0.02	00302	0.02	MI.
									CENTER LINE, TYPE 2
						0.04	00102	0.04	MI.
									EDGE LINE, TYPE 2
						6	00100	11	EA.
									BARRIER REFLECTOR, TYPE A
									STRUCTURE 20' SPAN AND OVER
									SEE SHEET 13 FOR QUANTITIES
						619	15000	LUMP	FIELD OFFICE, TYPE A
						623	10000	LUMP	CONSTRUCTION LAYOUT STAKES
						624	10000	LUMP	MOBILIZATION
						LUMP	11000	LUMP	MAINTAINING TRAFFIC

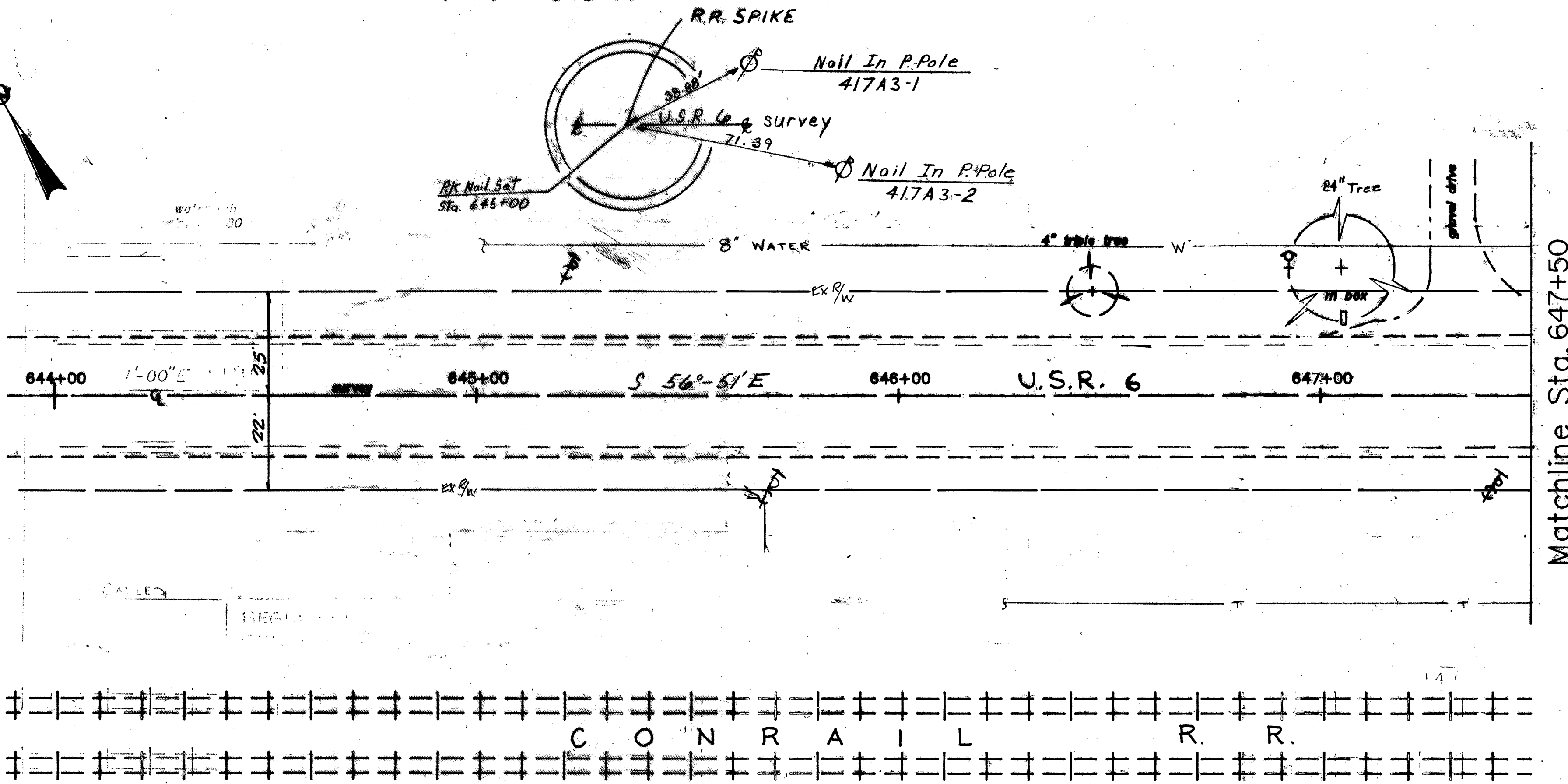
Calculated	BY	DATE	REGION	STATE	PROJECT
Checked	WS	8/89	5	OHIO	

ERIE COUNTY
ERI-6-12.31

6
20



REFERENCE TIE
P.O.T. STA. 645+00



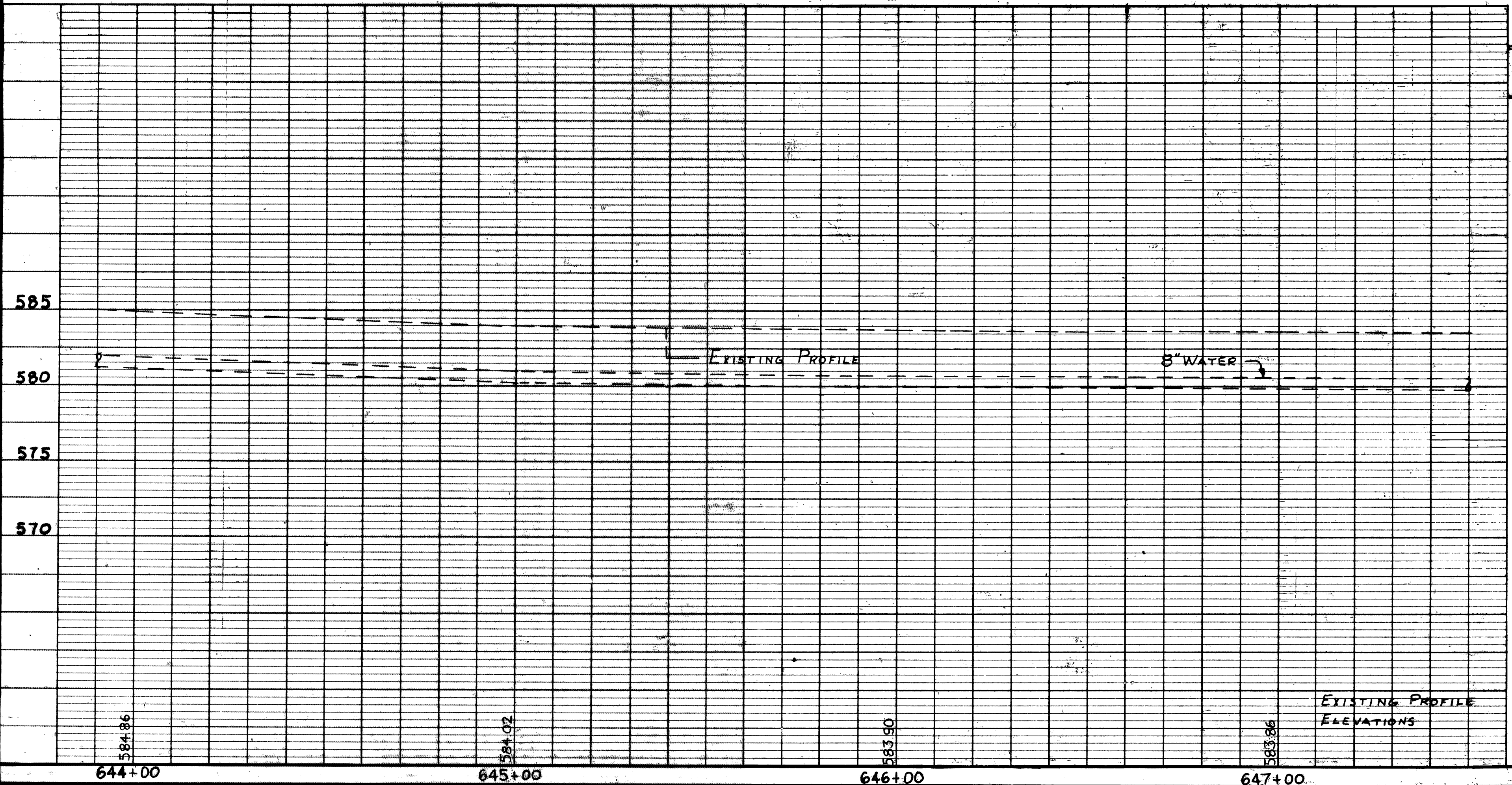
Matchline Sta. 647+50

C O N T R A I L R R

Ref. No.	Station To Station	Side												

PROFILE SURVEYED BY
 NOTE BOOK NO.
 GRADES CHECKED
 STRUCTURE NOTATIONS CHECKED

FOR INFORMATION ONLY



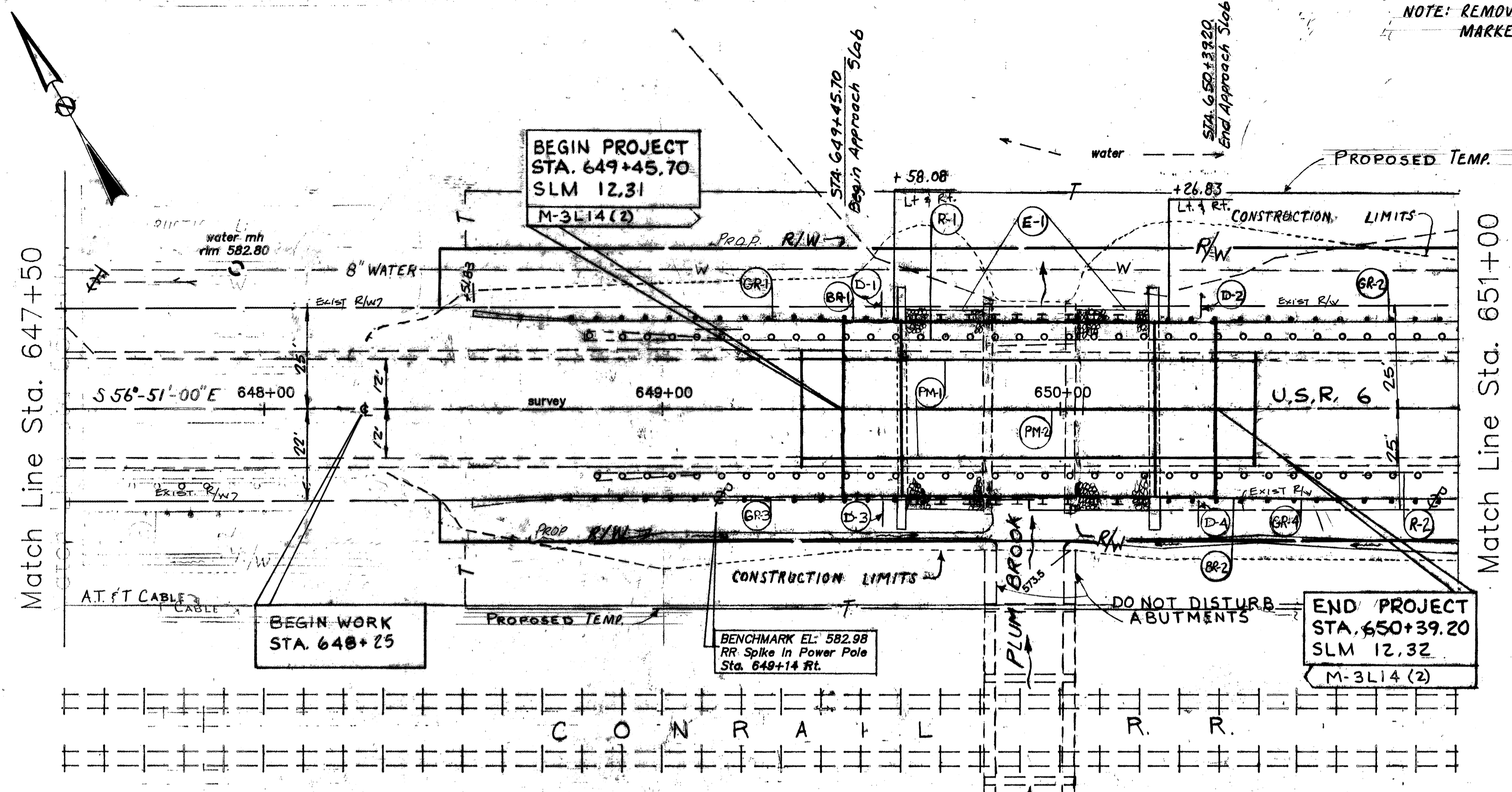
NOTE: REMOVE EXISTING BRIDGE END MARKERS UNDER ITEM 203

Calculated	BY WS	DATE 8/09
Checked	JC	8/09

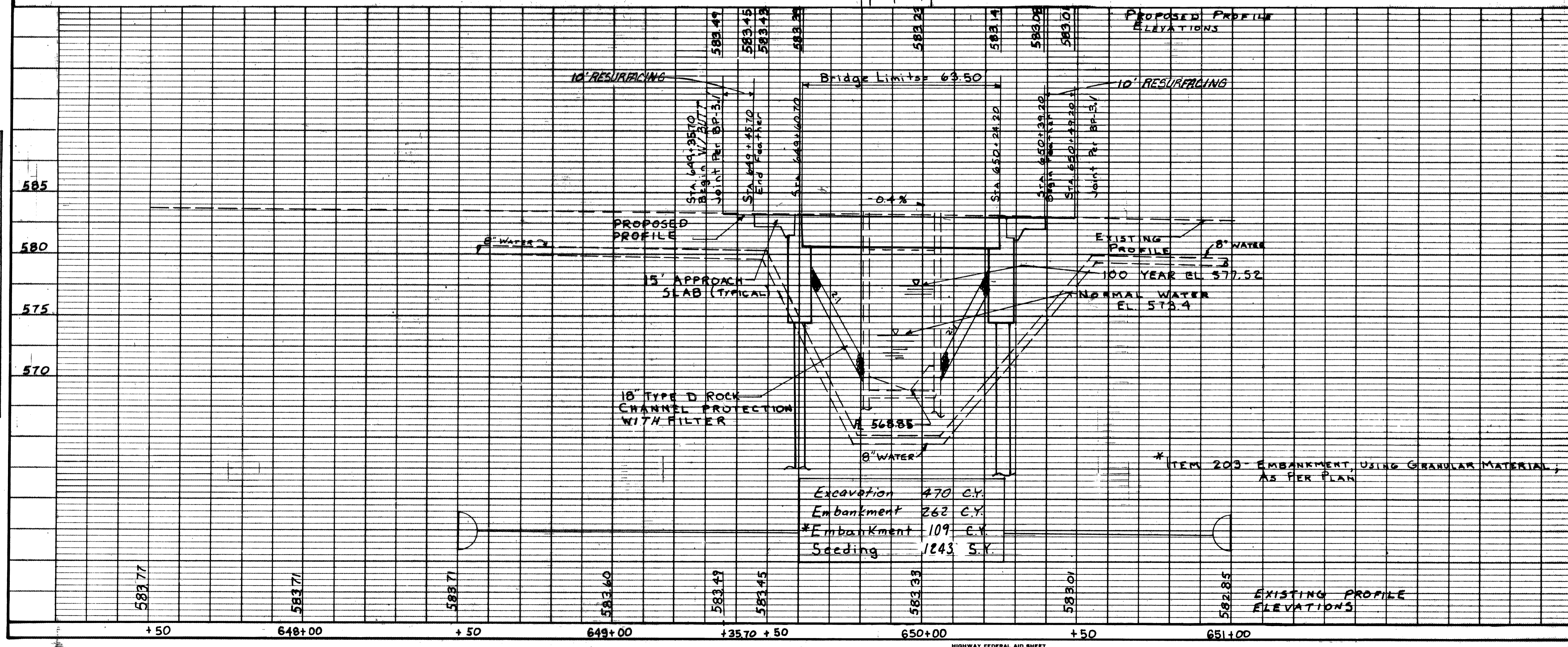
REGION	STATE	PROJECT
5	OHIO	

7
20

ERICOUNTY
ERI-6-12.31



Ref. No.	Station To Station	Side	GUARDRAIL REMOVED	L.F.	BARRIER FOR TYPE 5	BACK CHAL. PROT. TYPE D W/ FIBER	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	BRIDGE TERMINAL ASSEMBLY TYPE E	AGGREGATE DRAINS	EDGE LINES (WHITE)	CENTER LINES (WHITE)	BROKEN SINGLE
R-1	648+79 to 651+00	Left	202										
R-2	648+79 to 651+00	Right	202										
D-1	649+55	Left								6			
D-2	650+35	Left								6			
D-3	649+55	Right								6			
D-4	650+35	Right								6			
E-1	649+60.70 to 650+24.20	LR			120								
GR-1	648+51.83 to 649+58.08	Left				81.25							
GR-2	650+26.83 to 651+00	Left				73.17							
GR-3	648+51.83 to 649+58.08	Right				81.25							
GR-4	650+26.83 to 651+00	Right				73.17							
PM-1	649+35.70 to 650+49.20	LR									0.04		
PM-2	649+35.70 to 650+49.20	C										0.02	
BR-1	648+51.83 to 651+00	Left			3								
BR-2	648+51.83 to 651+00	Right			3								
TOTAL				404		6	120	308.84	2	4	24	0.04	0.02



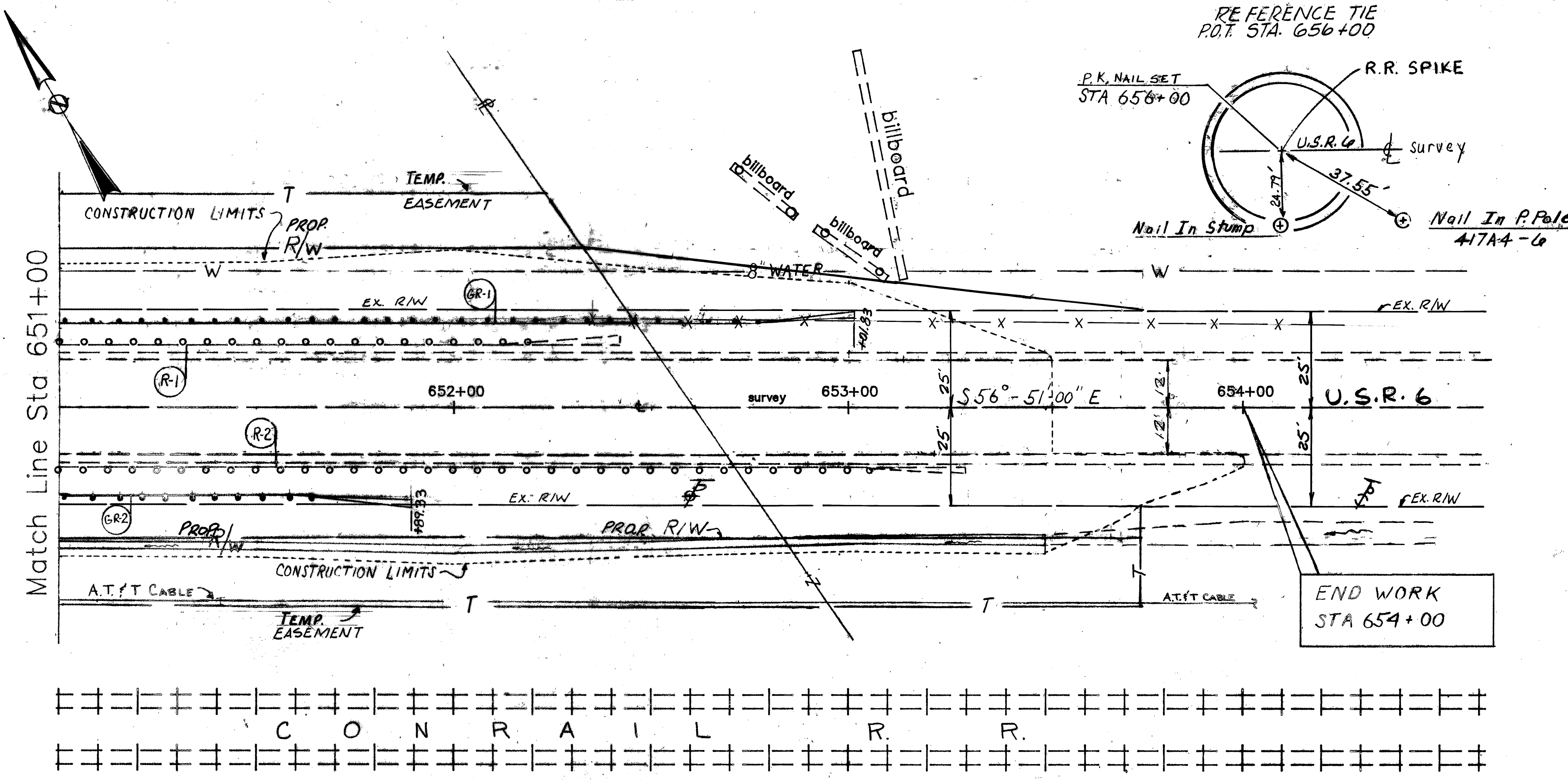
DATE BUILT: 1926	CONDITION: POOR
EXISTING STRUCTURE	
TYPE : SINGLE SPAN CONCRETE BEAM BRIDGE	
SPANS : 19'-0" 1/4 Abutment	
ROADWAY : 29' ± 1/4 Guardrail	
SKEW : NONE	
ALIGNMENT : TANGENT	
PROPOSED STRUCTURE	
TYPE : SINGLE SPAN PRESTRESSED CONC. BOX BEAMS ON CAPPED PILE ABUT.	
SPANS : 60'-0" 3/8 BEARINGS	
ROADWAY : 44'-0" 1/4 GUARDRAIL	
SKEW : NONE	
ALIGNMENT : TANGENT	
DESIGN LOADING : HS 20-44 AND ALTERNATE MILITARY LOADING	
APPROACH SLAB : AS-1 @ (15'-0")	
SUPERELEVATION : NONE	
WEARING SURFACE : 2 1/2" MIN ASPHALT CONC.	
AVG. DAILY TRAFFIC : 6470 (1989) 7760 (2009)	
Revised 3-9-93	

Plan and Profile Sta. 647+50 to 651+00

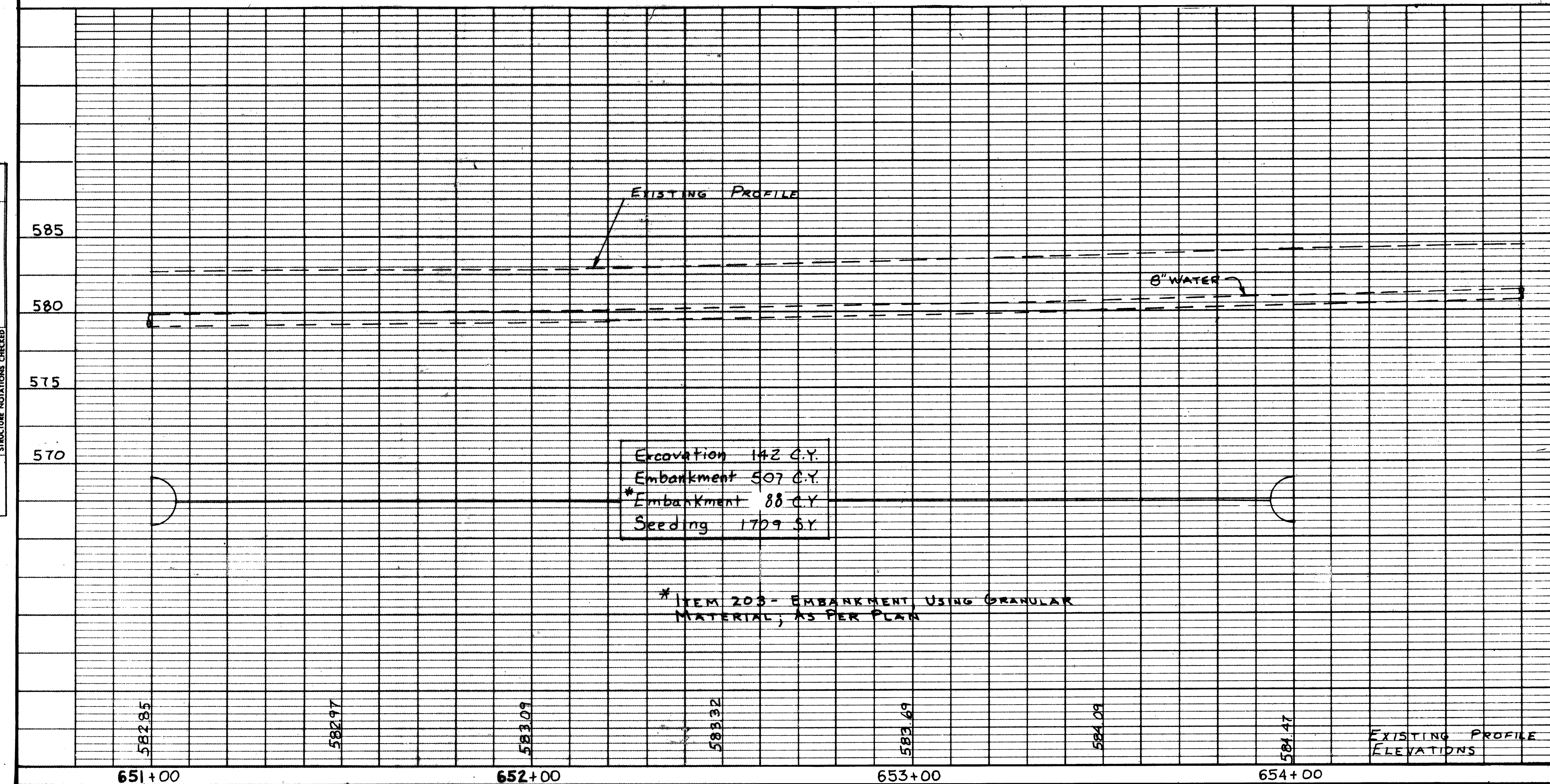
Calculated	By	DATE	REGION	STATE	PROJECT
Checked	WS	8/84	5	OHIO	

ERICOUNTY
ERI-6-12.31

Ref. No.	Station To Station	Side	GUARDRAIL REMOVED	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE 2	BARRIER REFLECTOR TYPE A
R-1	651+00 to 652+42	Left	142			
R-2	651+00 to 653+29	Right	229			
GR-1	651+00 to 653+01.83	Left		176.83	1	
GR-2	651+00 to 651+89.33	Right		64.33	1	
BR-1	651+00 to 653+01.83	Left				3
BR-2	651+00 to 651+89.33	Right				2
PM-1	651+00 to 653+50	L&R				
PM-2	651+00 to 653+50					
TOTAL			371	241.16	2	5

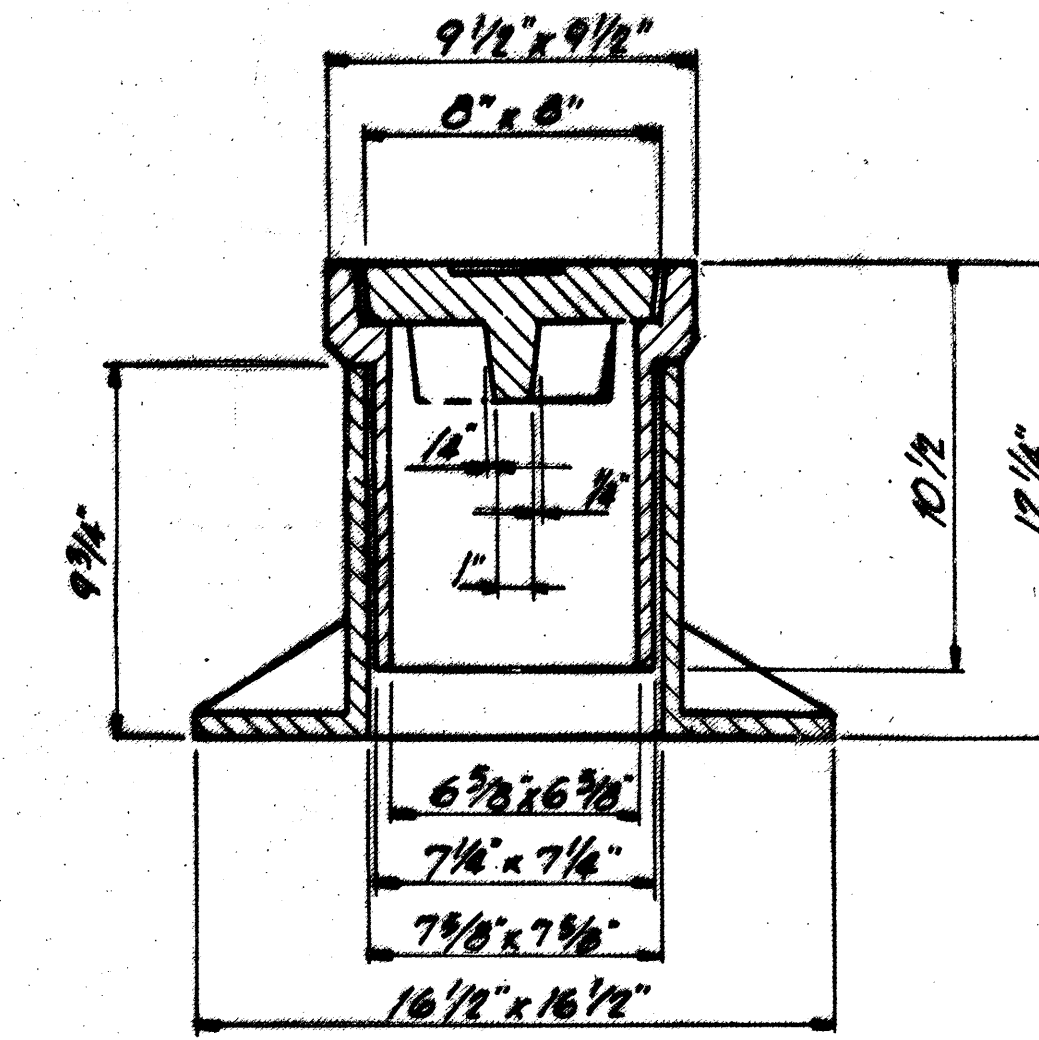


C O N T R A I L R R



Excavation 142 C.Y.
Embankment 507 C.Y.
*Embankment 88 C.Y.
Seeding 1729 S.Y.

* ITEM 203 - EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN



Monument Assembly
As Per Plan

NOTE:
All details not shown hereon shall be as per Standard Construction Drawing MC-1 (Revised 6-13-69). The placing of the monuments shall be under the direction of a Registered Surveyor and shall be set as shown by the Highway Contractor at the time of construction. Any alterations, with prior approval of the Erie County Engineer, shall be noted and the Erie County Engineer shall be notified of the new locations.

The following quantity has been included in the General Summary for this item:

ITEM 604 2 EA. MONUMENT ASSEMBLY, AS PER PLAN

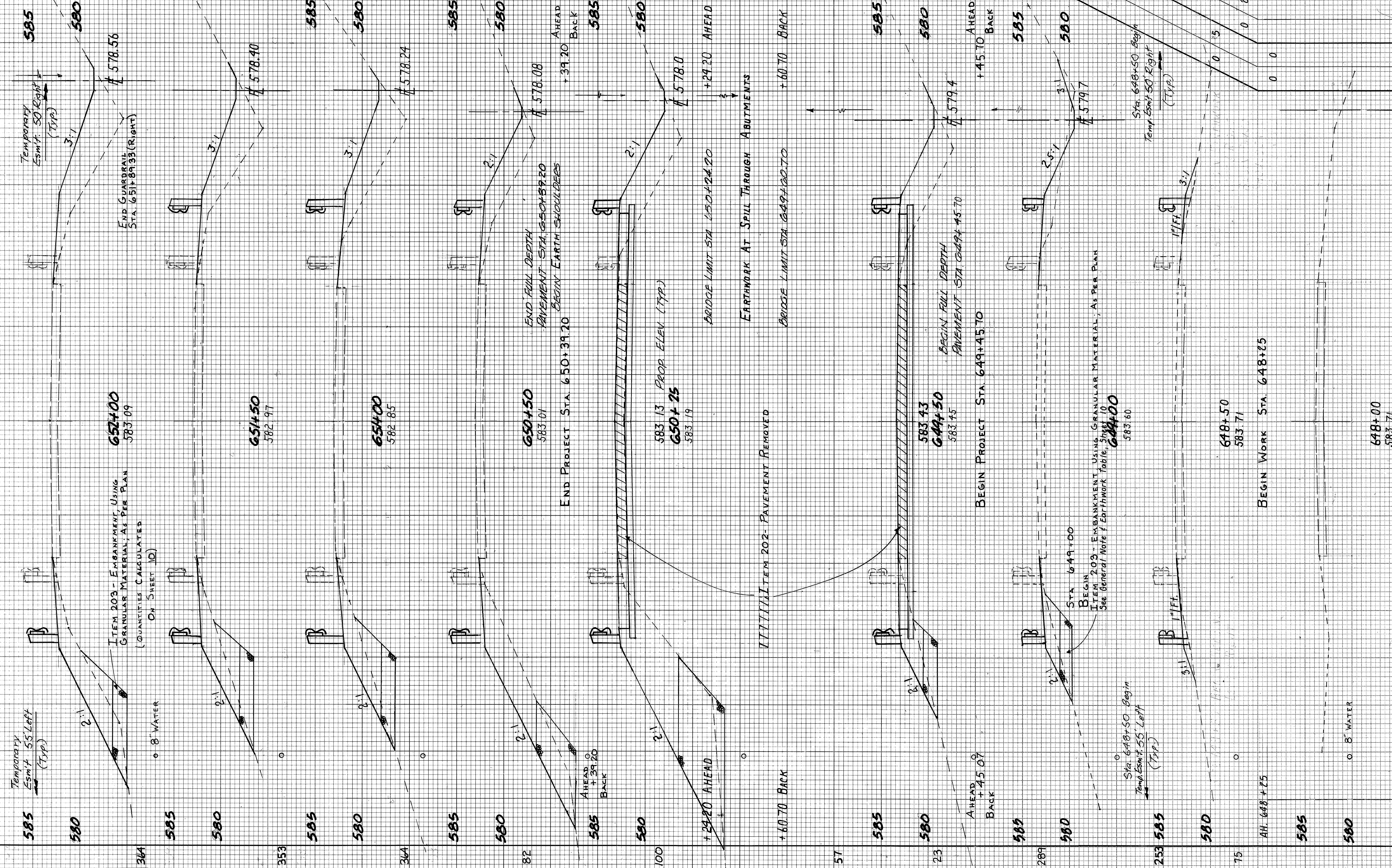
For locations, see Right-Of-Way Plan sheet NO. 20 / 20.

DATE	
BY	
SUPVISED	
NOTED	
GRADE CHECKED	
S. A. I. NOTED	
STRUCTURE LOCATIONS CHECKED	
NOTE BOOK No.	

FINAL SURVEY PLOTTED TEMPLATE NO. AREAS CHECKED

ORIGINAL SURVEY PLOTTED TEMPLATE NO. AREAS CHECKED

SEEDLING	END 50 WIDTH YDS	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	END AREA CUT FILL CUT FILL	VOLUME
350		585	580	585	580	585	580	585	580	585	580	585	580	585	580	585	580	585	23 120	
67																			14 79	
364																			33 133	
64																			21 65	
353																			39 120	
63																			21 64	
364																			29 117	
68																			10 62	
82																			4 25	
68																			10 62	
60																			41 78	
100																			23 43	
60																			41 78	
48																			35 30	
57																			4 12	
48																			35 30	
23																			6 5	
48																			35 30	
57																			14 23	
289																			14 23	
57																			13 26	
34																			0 0	
80																			0 0	
24																			24 39	



Calc. By: JS Date: 8/29
 Chkd. By: WS Date: 8/29

REGION	STATE	PROJECT
5	OHIO	

ERIC COUNTY
 ERI-6-1231

9
 20

FINAL SURVEY
 NO. _____
 SURVEYED BY _____
 DATE _____
 PLOTTED BY _____
 CHECKED BY _____
 AREAS CHECKED _____

ORIGINAL SURVEY
 NO. _____
 SURVEYED BY _____
 DATE _____
 PLOTTED BY _____
 CHECKED BY _____
 AREAS CHECKED _____



QUANTITY BOX FOR ITEM 203- EMBANKMENT,
 USING GRANULAR MATERIAL, AS PER PLAN

Station	End Area	Volume
649+00	11	19
649+45.7 (Back)	11	
649+45.7 (Ahead)	11	6
649+60.7 BRIDGE LIMITS	11	
650+24.2	63	25
650+39.2 (Back)	63	
650+39.2 (Ahead)	28	11
650+50	28	38
651+00	13	25
651+50	14	25
652+00	13	20
652+50	9	18
653+00	10	
		*197CY

*TOTALS FOR EARTHWORK AND SEEDING CARRIED FORWARD TO SHEETS 17B.

* TOTAL SEEDING 2352

* TOTALS EARTHWORK 612 799

SEEDING END 50 WIDTH YDS

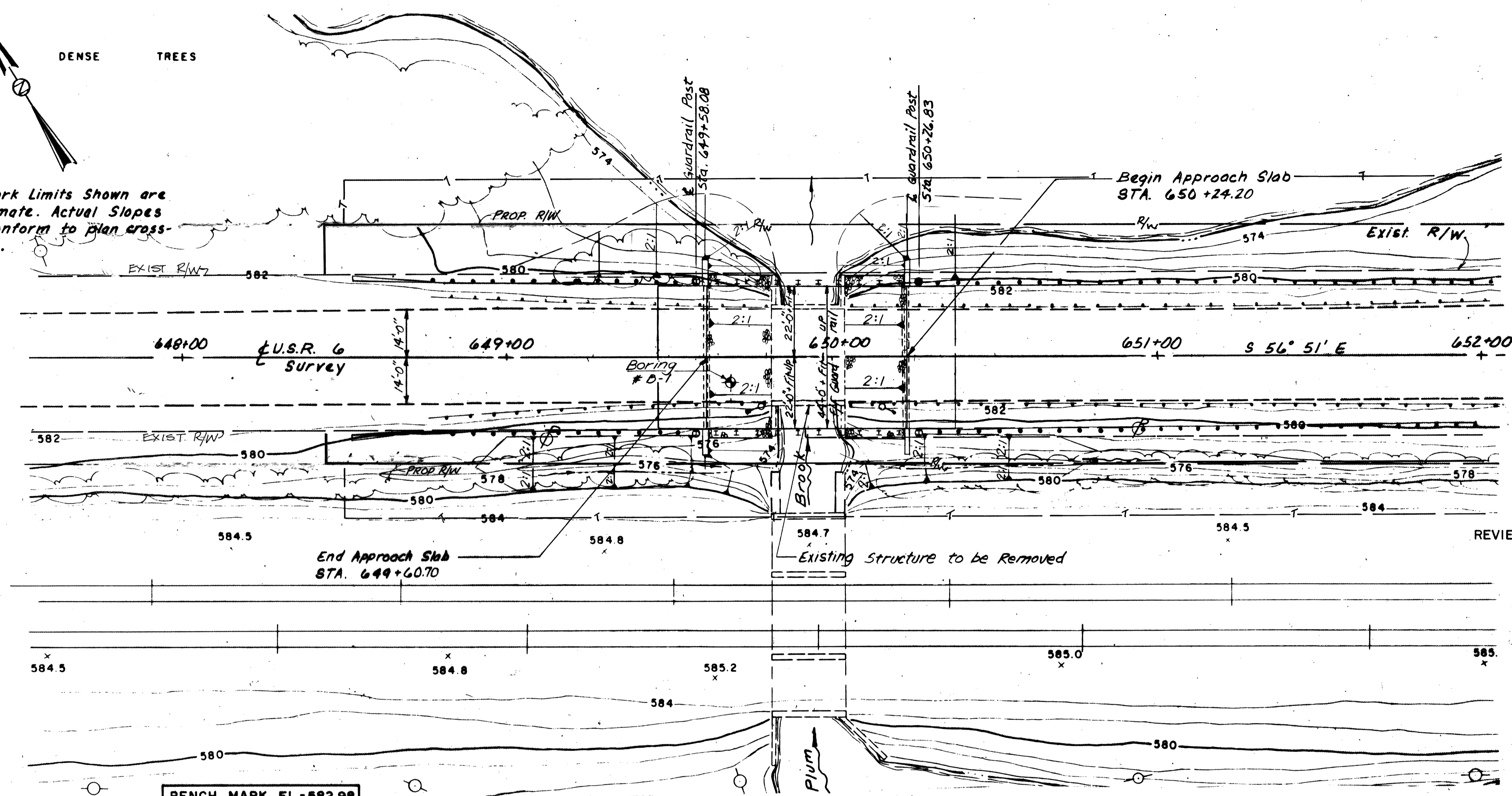
REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
 ERI-6-1231

10
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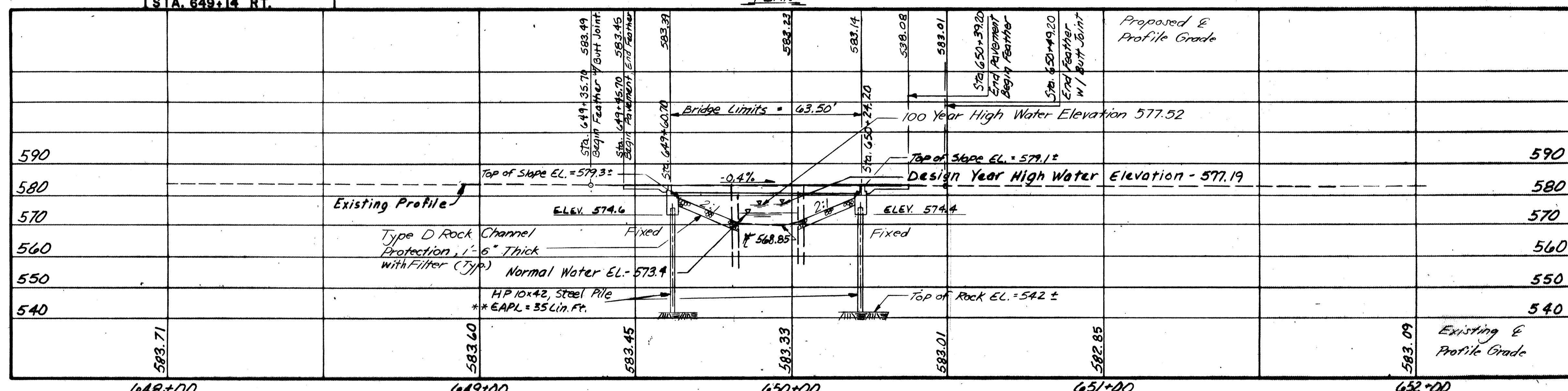
ERIE COUNTY
ERI - 6 - 12.31

NOTE:
Earthwork Limits Shown are approximate. Actual Slopes shall conform to plan cross-sections.



REVIEWED BY BURGESS & NIPLE, LTD.
T.D.T. 9-18-89

BENCH MARK EL.-582.98
R.R. Spike in power pole
STA. 649+14 RT.



PROFILE ON Q SURVEY

** Estimated Average Pay Length

* Reference: Flood Insurance Study, for the Unincorporated Areas of Erie County, Ohio by: Federal Insurance Administration. 7/80

HYDRAULIC DATA			
INTERVAL (YEAR)	ELEV (FT.)	Q (C.F.S.)	V (FT./SEC.)
25	577.19	1023	3.64
100	577.52	1383	4.65

DRAINAGE AREA = 7.0 SQ. MI.
FLOOD ELEV = 577.0 (LAKE ERIE HIGH WATER MARK FOR 100 YR. FLOOD)*

EXISTING STRUCTURE
SINGLE SPAN
TYPE: CONCRETE BEAM BRIDGE
SPAN: 19'-0" ¹/₂ Abutments
ROADWAY: 28'-6" ¹/₂ GUARDRAIL
SKEW: NONE
ALIGNMENT: TANGENT
STRUCTURE FILE No. 2201682

PROPOSED STRUCTURE
TYPE: SINGLE SPAN PRESTRESSED CONC. BOX BEAMS ON CAPPED PILE ABUT'S.
SPAN: 60'-0" ¹/₂ BEARINGS
ROADWAY: 44'-0" ¹/₂ GUARDRAIL
SKEW: NONE
DESIGN LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING
APPROACH SLAB: AS-1-81 (15'-0" Long)
ALIGNMENT: TANGENT
CROWN: 3/16" / FT.
WEARING SURFACE: 2 1/2" Min Asphalt Conc
AVG. DAILY TRAFFIC: 6470 (1989)
7760 (2009)

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CONSULTING ENGINEER, SURVEYOR & PLANNER
3888 MANCHESTER AVE. YOUNGSTOWN, OHIO

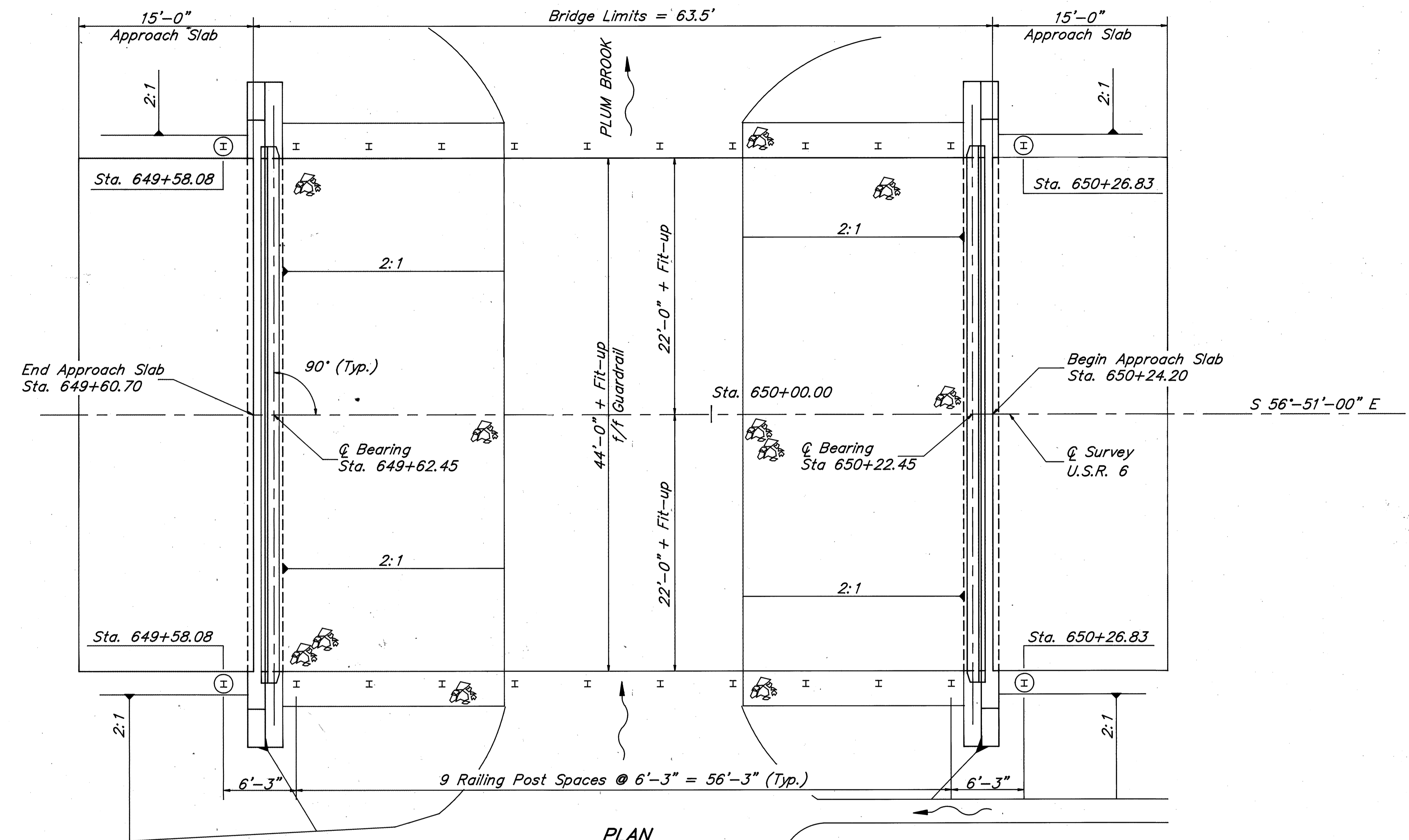
SITE PLAN
BRIDGE NO. ERI - 6 - 1231
OVER PLUM BROOK
ERIE COUNTY STA. 649+60.70
STA. 650+24.20

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
J.F.	W.S.	D.K.	D.K.	A.L.	J.F.
8/88	11/88	1-89	1-89	2-89	2-89

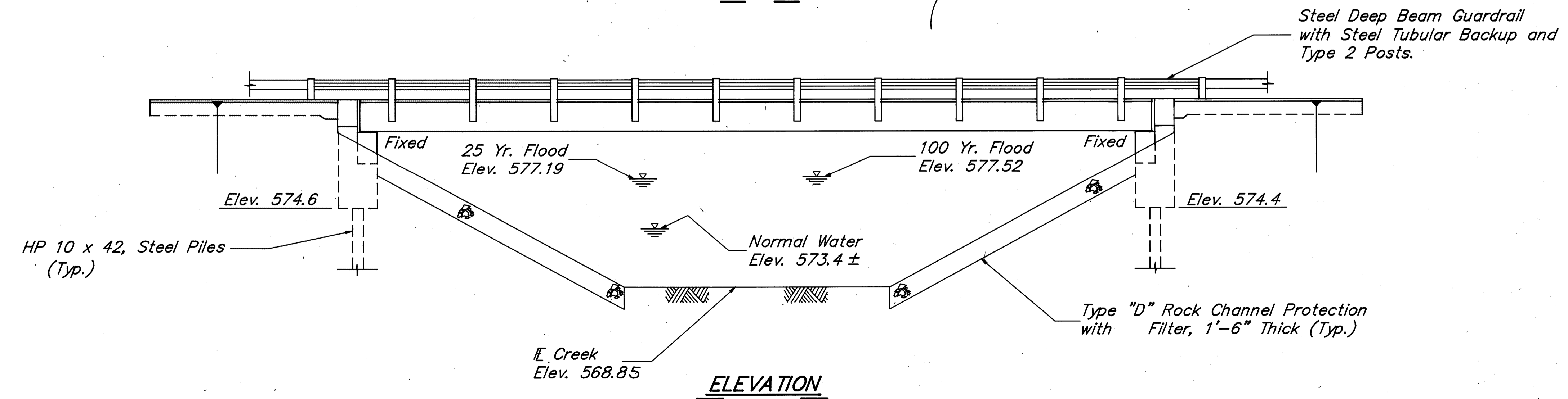
REGION	STATE	PROJECT
5	OHIO	

12
20

ERIE COUNTY
ERI-6-12.31



PLAN



ELEVATION

218

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CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

GENERAL PLAN
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

ERIE COUNTY OHIO

DESIGNED A.V. 7/89	DRAWN J.C.M. 7/89	TRAGED	CHECKED P.D.U. 7/89	REVIEWED J.S. 7/89	REVISED
--------------------------	-------------------------	--------	---------------------------	--------------------------	---------

REGION	STATE	PROJECT	
5	OHIO		

13
20

ERIE COUNTY
ERI-6-12.31

GENERAL NOTES

CALC. BY <i>E.D.V.</i>		ESTIMATED QUANTITIES				CHK'D BY <i>A.L.</i>	
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	GEN'L
202	11000	Lump	Sum	Structures Removed			Lump
403	20000	16	Cu.Yd.	Asphalt Concrete, AC-20	16		
404	20000	11	Cu.Yd.	Asphalt Concrete, AC-20	11		
503	2300	Lump	Sum	Unclassified Excavation		Lump	
505	11100	Lump	Sum	Pile Driving Equipment Mobilization			Lump
507	111000	560	Lin.Ft.	HP 10 x 42 Steel Piles		560	
509	11500	5960	Lbs.	Reinforcing Steel, Grade 60		5960	
509	15800	2383	Lbs.	Epoxy Coated Reinforcing Steel, Grade 60	165	2218	
511	43500	87	Cu.Yd.	Class C Concrete, Abutments, as per plan		87	
511	34003	4	Cu.Yd.	Class S Concrete, Superstructure, High Early Strength, as per plan	4		
512	55800	291	Sq.Yd.	Type D Waterproofing	291		
515	55700	11	Each	Prestressed Concrete Bridge Members (B27-48) (See Proposal Note)	11		
516	10500	88	Lin.Ft.	Structural Expansion Joint, Including Elastomeric Compression Seal			88
516	41500	44	Each	1"x12"x9" Elastomeric Bearing Pads, (60 Durometer)			44
517	72300	137.5	Lin.Ft.	Railing (Deep Beam Rail With Steel Tubular Backup, Type 2 Steel Posts & Bolts) (See Proposal Note)	137.5		
518	21101	34	Cu.Yd.	Porous Backfill, as per Plan			34
518	41100	118	Lin.Ft.	6" Perforated Helical Corrugated Steel Pipe, 707.01			118
518	41200	40	Lin.Ft.	6" Non-Perforated Helical Corrugated Steel Pipe, Including Special, 707.01			40
Special	51822300	85	Sq.Ft.	Steel Drip Strip	85		
Special	51267500	37	Sq.Yd.	Sealing of Concrete Surfaces (See Proposal Note)	37		
Special	51267502	27	Sq.Yd.	Sealing of Concrete Surfaces (Epoxy) (See Proposal Note)	27		

DESIGN SPECIFICATION This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983 including the 1984 through 1989 interim Specifications, and the Ohio "Supplement" to these specifications.

REFERENCE shall be made to standard Drawing(s):

AS-1-81 Dated 11/27/81
DBR-2-73 Dated 4/10/73
PSBD-1-81 Revisions Dated 6/20/89

And to Supplemental Specifications:

⁸⁴⁹
~~848~~
DESIGN LOADING: Dated 12/24/85
Dated 9/26/86

Design Loading - HS20-44 and the alternate military loading

DESIGN STRESSES:
Concrete Class C - Compressive Strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, or A617
60 minimum yield strength
60,000 p.s.i.

Prestressed strand - ASTM A416, $f_s' = 270,000$ p.s.i.
Initial Stress = $0.70 f_s'$

Prestressed Beam - ASTM A615, A616, A617 minimum
Reinforcing Steel yield strength 40,000 p.s.i.

Concrete for - Unit Stress 2,200 p.s.i. compression,
Prestressed Beams 444 p.s.i. tension.

DECK PROTECTION METHOD Type "D" waterproofing, asphalt concrete overlay, sealing of concrete surfaces, and steel drip strip.

EMBANKMENT CONSTRUCTION: The embankments shall be constructed to the level of the subgrade. Excavation may then be made for the abutments and piles driven.

UTILITY LINES All expenses involved in relocating the affected utility lines shall be borne by the owners. The contractor and owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES:

A concrete sealer shall be applied to the following concrete surfaces and as shown on the plans. The exposed vertical surface and the first 6 inches of the bottom horizontal surface of the fascia box beams, see sheet 5/8. For sealer limits on abutments, see sheet 4/8. See proposal note for surface preparation requirements, application rates, material requirements and application procedures.

BACKFILL STRUCTURE: No backfill shall be placed behind the abutments until the superstructure has been placed.

Backfill shall be placed in layers not exceeding 6" in compacted thickness. Backfill shall be brought up uniformly so as to keep equal pressure on opposite sides of the structure at all times.

REMOVAL OF EXISTING STRUCTURES:

When no longer needed to maintain traffic the existing structure shall be removed. Suitable waste masonry may be placed as bank protection as directed by the Engineer.

TRAFFIC MAINTENANCE:

Traffic maintenance can be found on project plan sheet 4/20.

PILES:

The design load for the abutment piles is 42 tons per pile.

ABUTMENT PILING:

Abutment piling bending stress may approach, reach or exceed yield stress.

PILES:

Piles shall be driven to refusal on bedrock. Refusal shall be considered as attained by penetrating bedrock with a minimum resistance of 20 blows per inch, or refusal shall be considered as attained after the pile has contacted hard bedrock and the pile has then received at least 20 blows.

COARSE AGGREGATE for Class C₁ Concrete shall be limestone or slag. ^{And Class S}

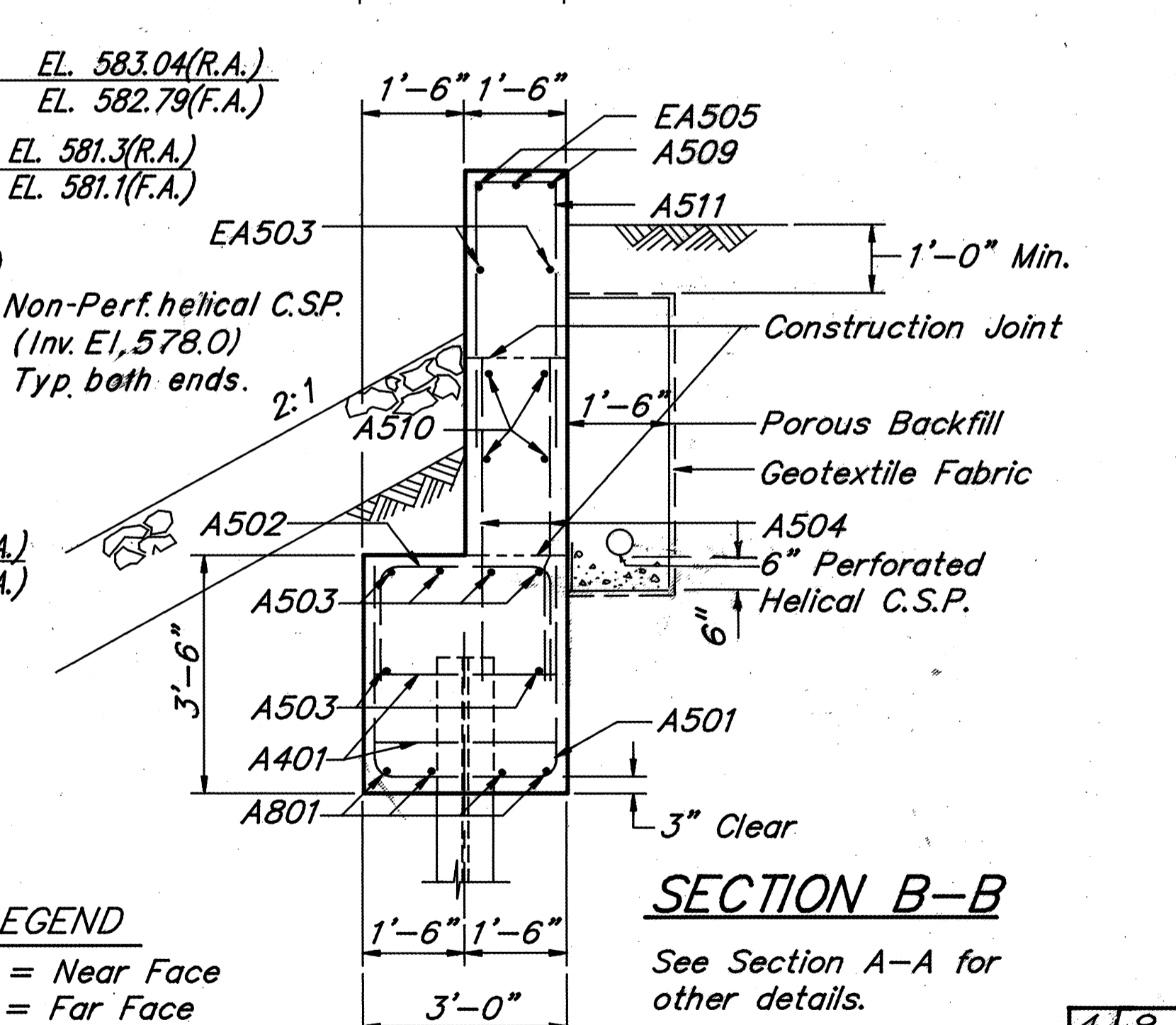
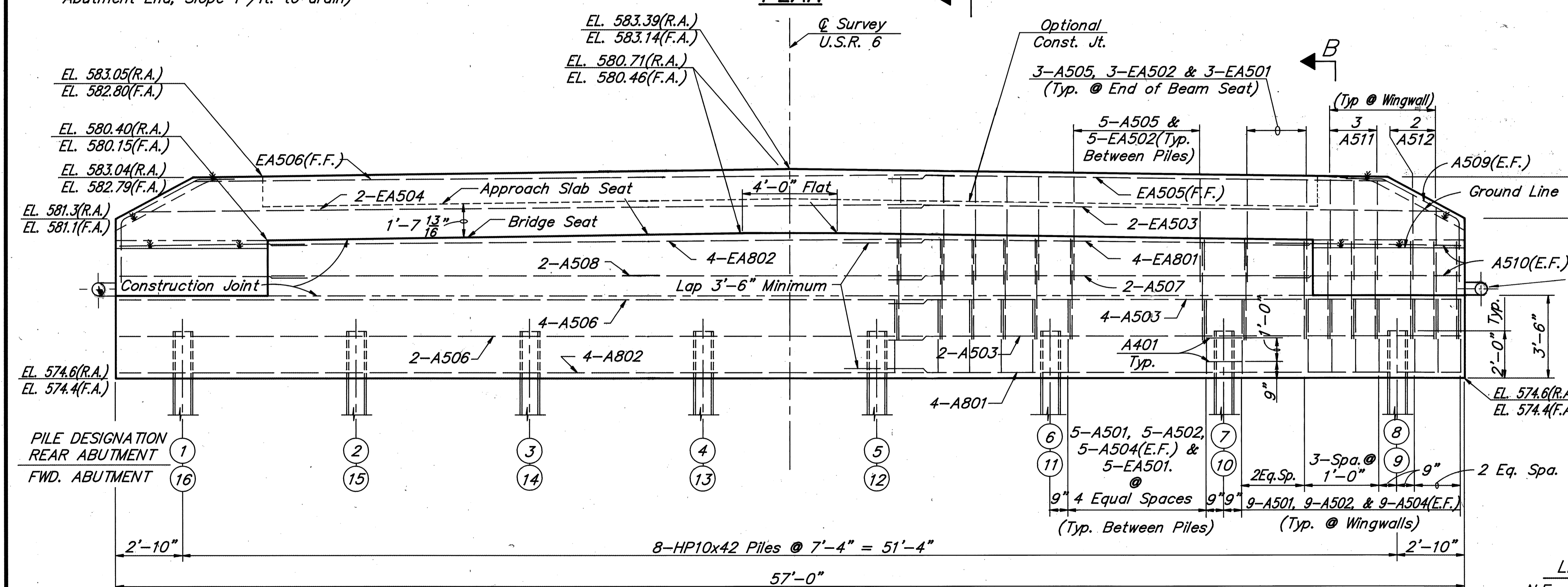
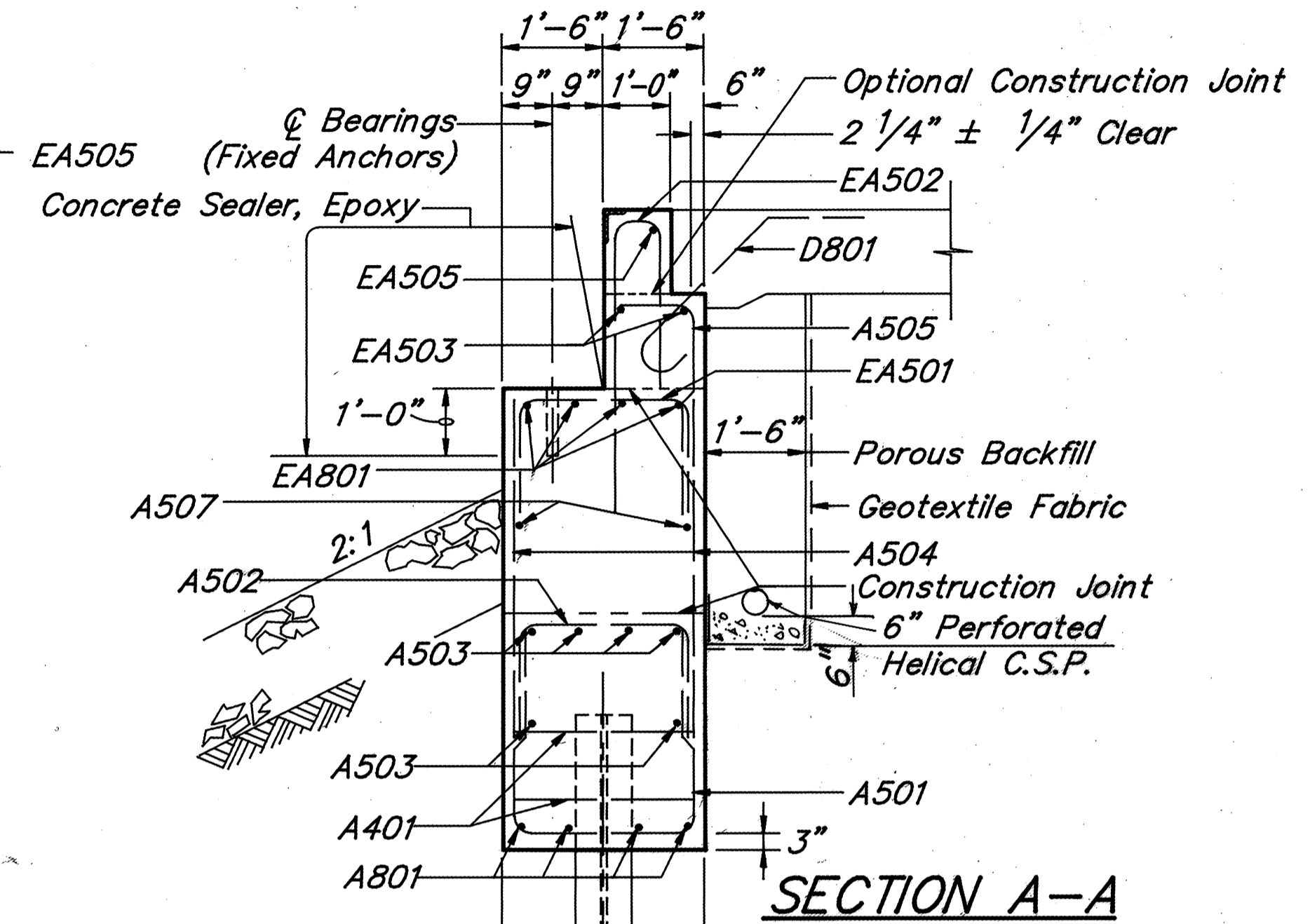
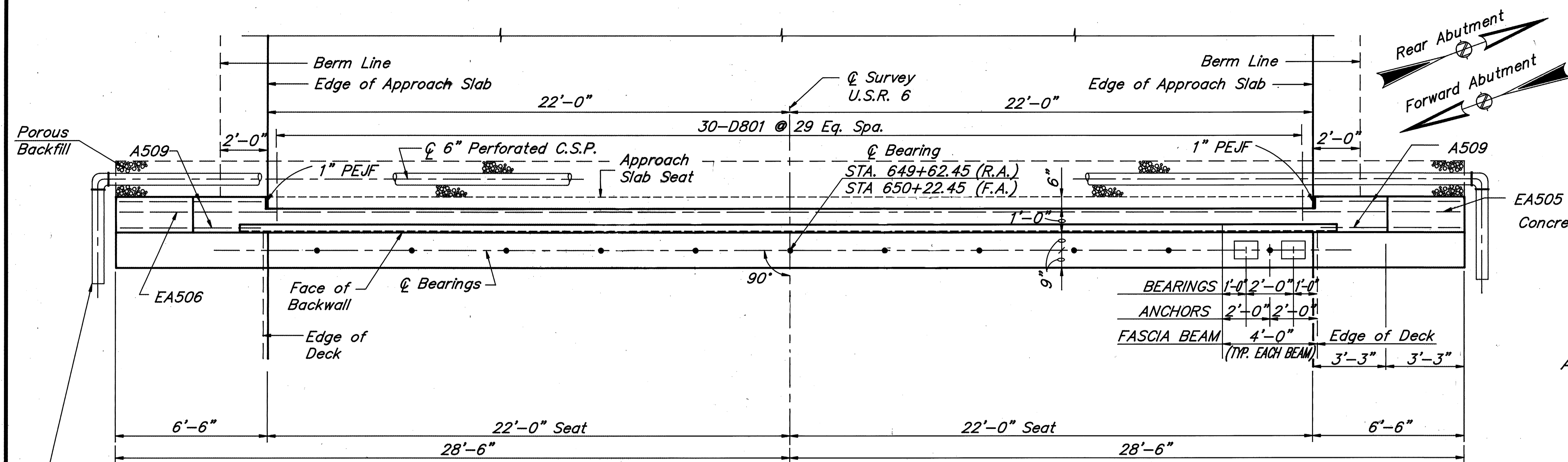
REVISED 3-9-93 3/8

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CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

ERIE COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
<i>A.L.</i>	<i>K.R.M.</i>		<i>E.D.V.</i>	<i>J.F.</i>	
7/89	7/89		7/89	7/89	



LEGEND

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
R.A. = Rear Abutment
F.A. = Forward Abutment
PEJF = Performed Expansion Joint Filler
C.S.P. = Corrugated Steel Pipe

POROUS BACKFILL 1'-6" thick, shall extend to the plane of the subgrade, to 1'-0" below proposed ground surface and laterally to the ends of the wingwalls. Geotextile fabric conforming to 712.09, Type A, shall be placed between the porous backfill and the soil backfill. Geotextile fabric shall be included with Item 518, Porous Backfill, for payment.

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

BACKWALL CONCRETE above the bridge seat construction joint shall not be placed until after the beams are set, deck concrete placed and expansion joint adjusted as specified.

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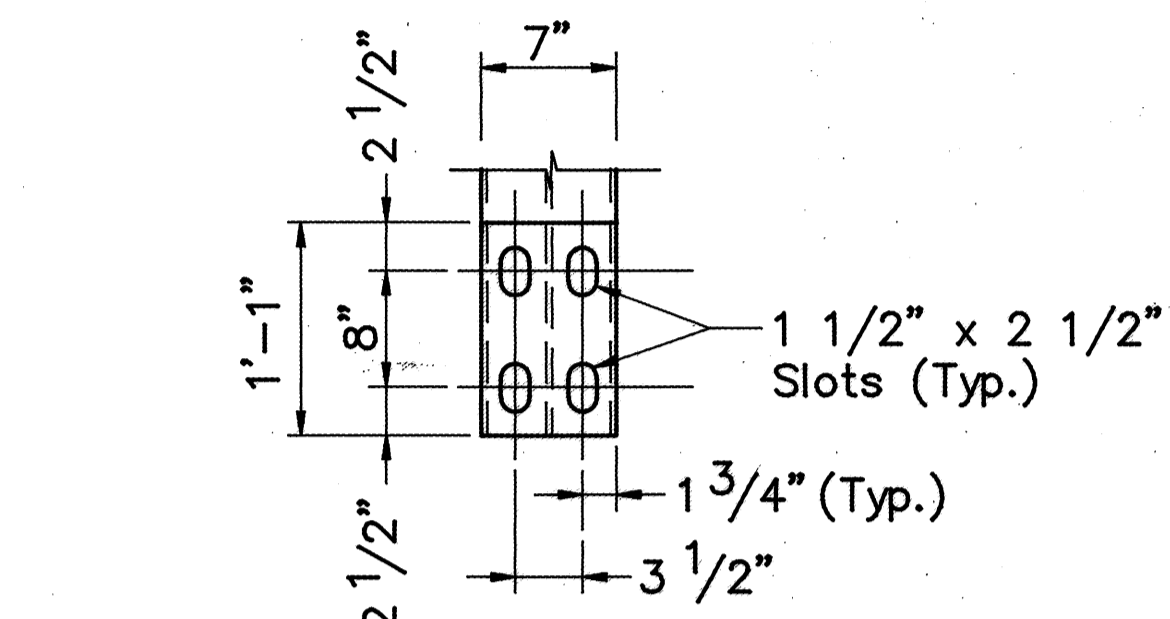
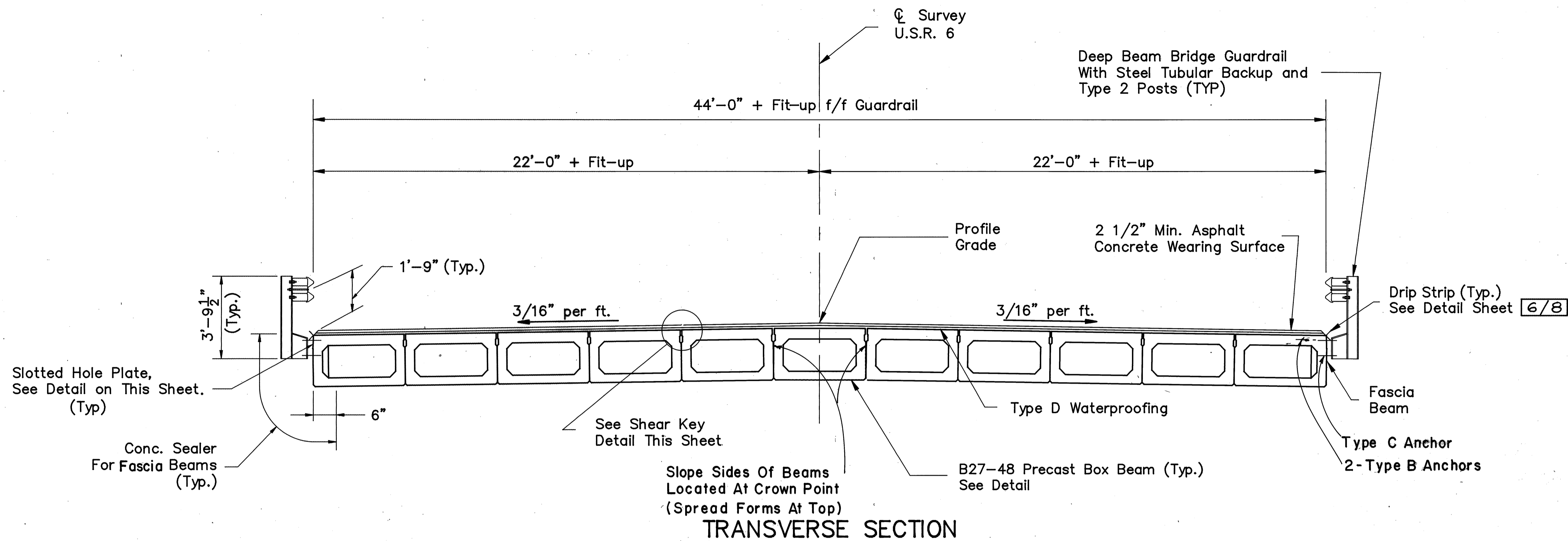
ABUTMENT DETAILS
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISD
D. D. G.	D. D. G.		D. D. G.	J. S.	
7/89	7/89		7/89	7/89	

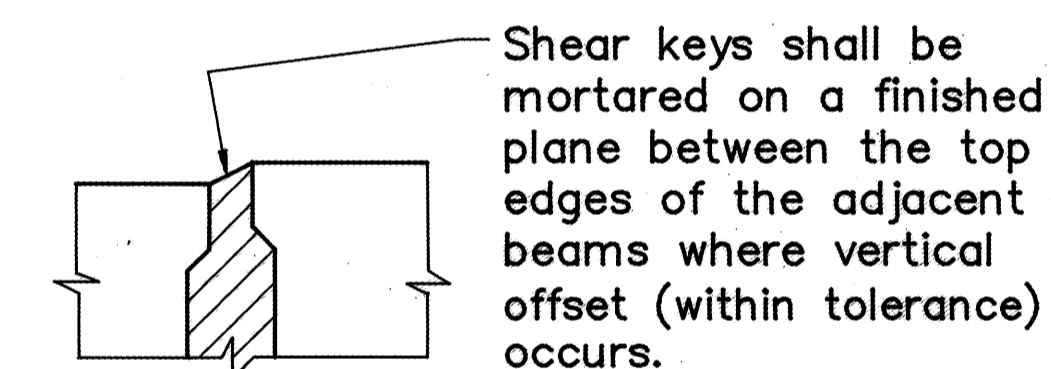
REGION	STATE	PROJECT
5	OHIO	

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ERIE COUNTY
ERI-6-12.31



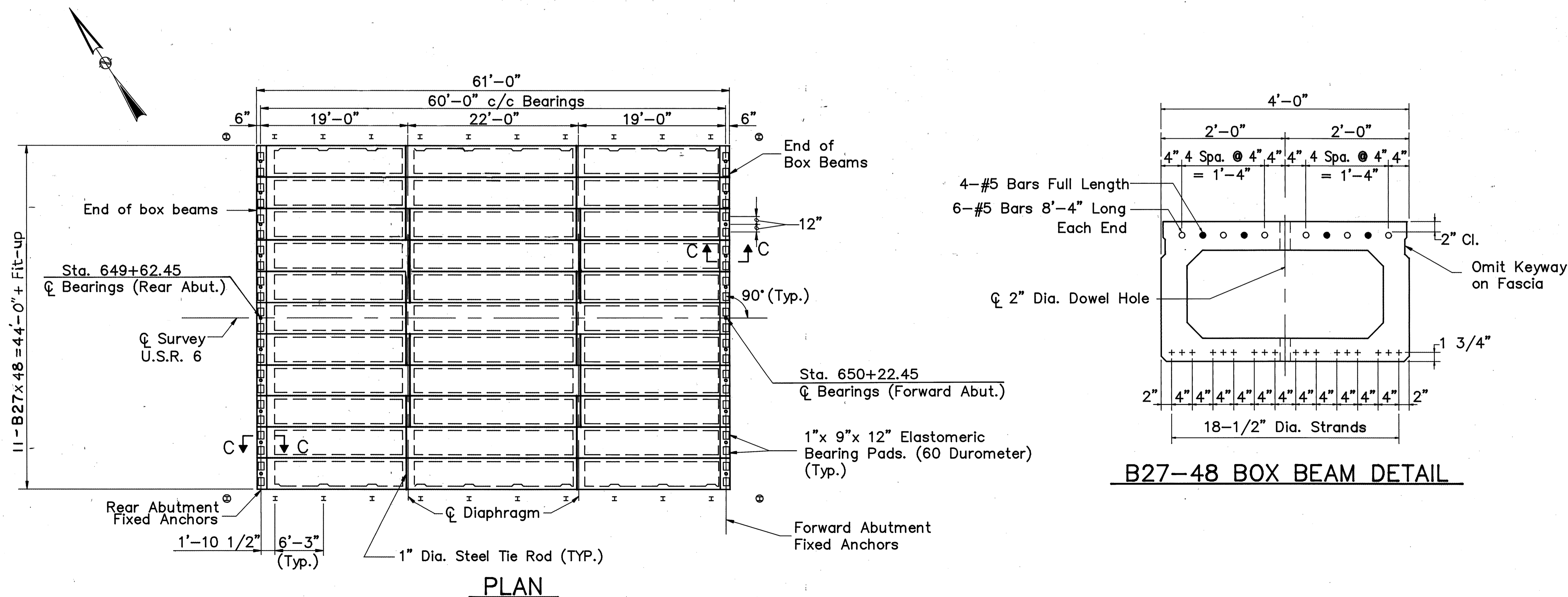
**SLOTTED HOLE DETAIL FOR
PLATE ON RAIL POST**



SHEAR KEY DETAIL

NOTES:
For additional superstructure notes and details,
see sheet 6/8 and 7/8.

For cross section C-C, see
Superstructure Detail Sheet 7/8.



B27-48 BOX BEAM DETAIL

5/8

THOMAS FOK & ASSOCIATES, LTD.
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

ERIE COUNTY						OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
F. D. V.	K. R. M.		A. L.	J. F.		F. D. V.	K. R. M.		A. L.	J. F.	
7/89	7/89		7/89	7/89		7/89	7/89		7/89	7/89	

REGION	STATE	PROJECT	
5	OHIO		

16
20

ERI-6-12.31
ERIE COUNTY

NON-SHRINKING MORTAR: Mortar or grout for keyways between prestressed concrete box beams, for tie rod recesses and for anchor dowel holes shall be a non-shrinking non-metallic mortar having a minimum compressive strength at 28 days of 5000 p.s.i. according to the Corps of Engineers specification CRD-C621-83 when prepared to a moderate fluidity (124-145% flow table flow). The mortar or grout shall also meet all other requirements of specification CRD-C621-83. The mortar shall be prepared, placed and cured in accordance with the manufacturer's recommendations, against surfaces as specified below.

PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR:

The keyway surfaces shall be given a medium sandblast at the plant within four days before the beams leave the plant. Before mortaring, the keyways shall be thoroughly clean of all dirt, dust and other foreign matter. The keyway surfaces shall be wetted, but no free water shall be allowed to remain in the keyways.

ELASTOMERIC BEARING PADS shall be 60 Durometer Hardness.

FABRICATOR is allowed to change the width of beams on bridge, if there is some advantage in doing so. However, the bridge width must remain the same, bearings will be redesigned by a professional engineer and there will be no additional cost to the State. The revised plans must be submitted for approval by the Director.

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. The keyway on exterior side of the fascia beams shall be omitted.

The following details from PSBD-1-81 apply to this project:

- Sheet 1 of 4: Beam lifting inserts, wall thickening at guardrail anchors, details and reinforcement of beam ends.
- Sheet 2 of 4: Typical plans of diaphragms and transverse tie rods, normal crown treatment at centerline of roadway, beam dimensional tolerances, and end details of transverse tie rod anchorage.
- Sheet 3 of 4: 48" wide non-composite beams. (B27-48)

The following notes from PSBD-1-81 apply to this project:

- Sheet 1 of 4: Transverse tie rods, galvanizing, anchor dowels, end of beams, and as required to supplement applicable details.
- Sheet 2 of 4: As required to supplement applicable details.
- Sheet 3 of 4: As required to supplement applicable details.

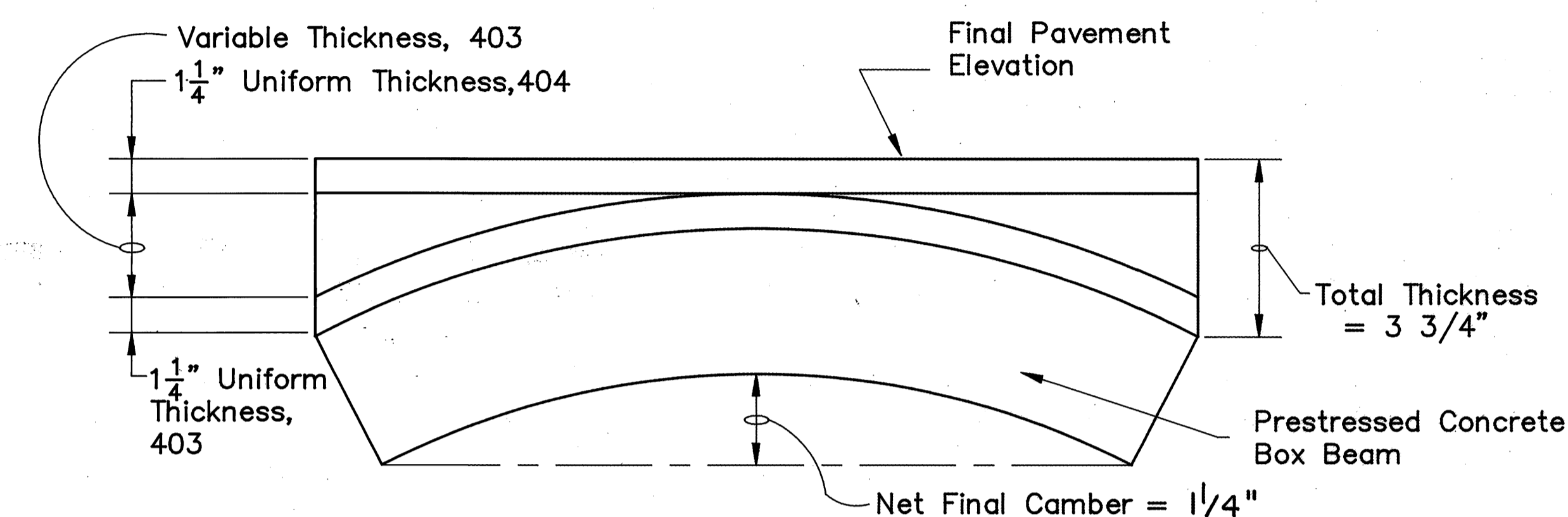
PRESTRESSED CONCRETE BOX BEAM: Beam manufacturer will take extra care in storing beams prior to shipment to site. They shall be stored in the position which shall correspond with their erected position.

The fabricator's shop drawings shall show complete details of the beam reinforcement.

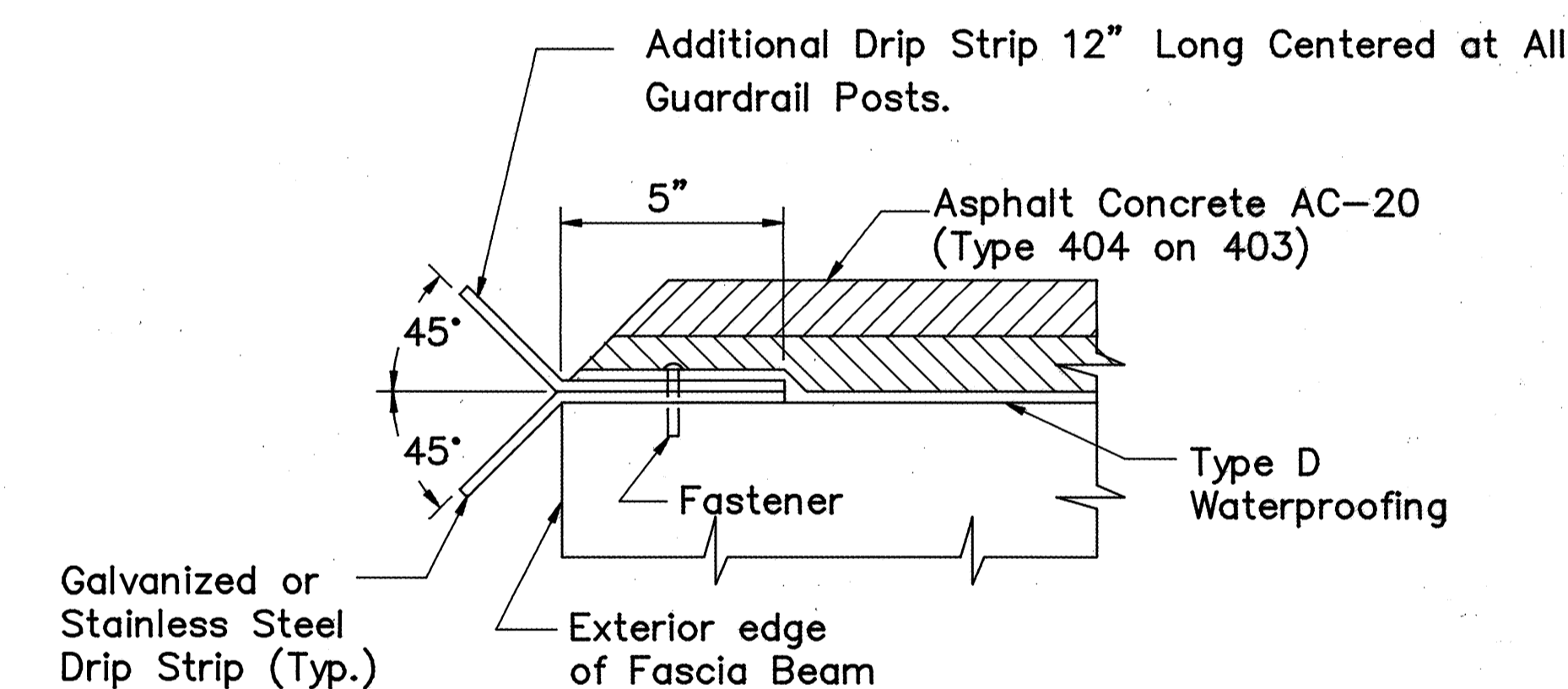
CAMBER: Calculated camber at time of paving, including allowance for camber growth due to creep, is 1 1/2". Calculated deflection due to weight of surface course and railing is 1/4". Net final camber of beam is 1 1/4". This is 1 1/4" in excess of the amount required to place the top of the beam parallel to the profile grade. This excess amount shall be compensated for by thickening the 403 leveling course from 1 1/4" at the center of spans to 2 1/2" at ends of spans.

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and 1 1/4" thickness of 404. The 403 shall be placed in two operations. The first course shall be of 1 1/4" uniform thickness. The second course shall be feathered to place the surface parallel to and 1 1/4" below final pavement surface elevation.

DRIP STRIP : Prior to applying type D waterproofing, a bent drip strip shall be fastened at 1'-6" c/c maximum with 1 1/4" x 5/32" x 1/4" flat head drive pins and washers (length x shank dia. x head dia.) or no.10 galvanized screws and expansion anchors, subject to the approval of the engineer. The strips shall be placed the full length of deck, ending at the face of the wingwall. Where splices are required a 3" (min.) lap shall be used with a fastener through the lap. Steel for galvanized strips shall be 8" x 0.105" and shall meet the requirements of ASTM A568. Galvanizing shall be in accordance with item 711.02. Stainless steel shall be 20 gauge ASTM A167, type 304, mill finish. Payment shall be at the contract price bid for item special, sq.ft., steel drip strip, which shall include all materials, labor, tools and incidentals necessary to complete the item.



ASPHALT THICKNESS DIAGRAM
TYPICAL AT EACH SPAN



TYPICAL DRIP STRIP DETAIL

6/8

THOMAS FOK & ASSOCIATES, LTD.
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

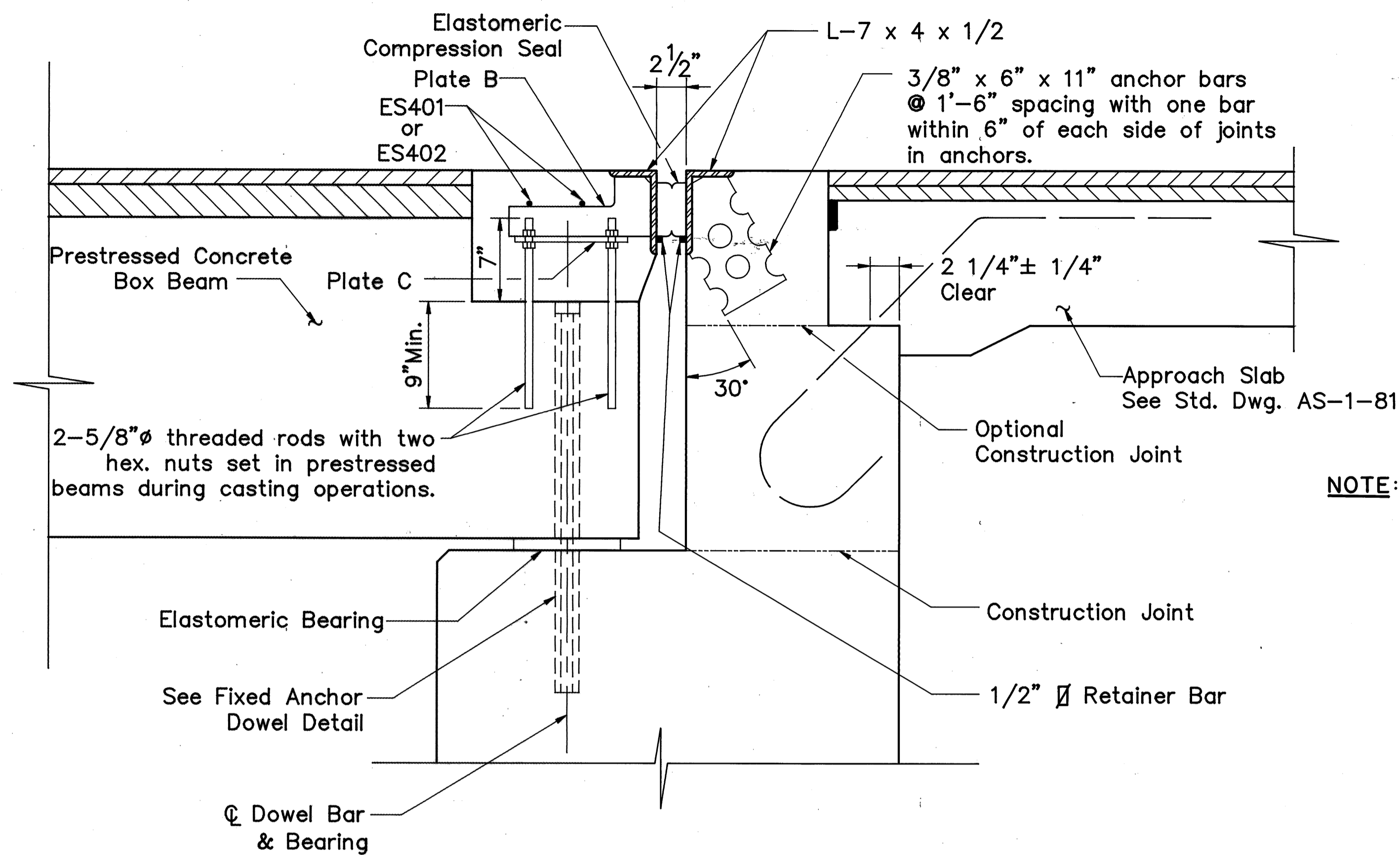
ERIE COUNTY OHIO

DESIGNED F.D.V. 7/89	DRAWN A.L. 7/89	TRACED	CHECKED A.L. 7/89	REVIEWED J.F. 7/89	REVISED
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REGION	STATE	PROJECT
5	OHIO	

17
20

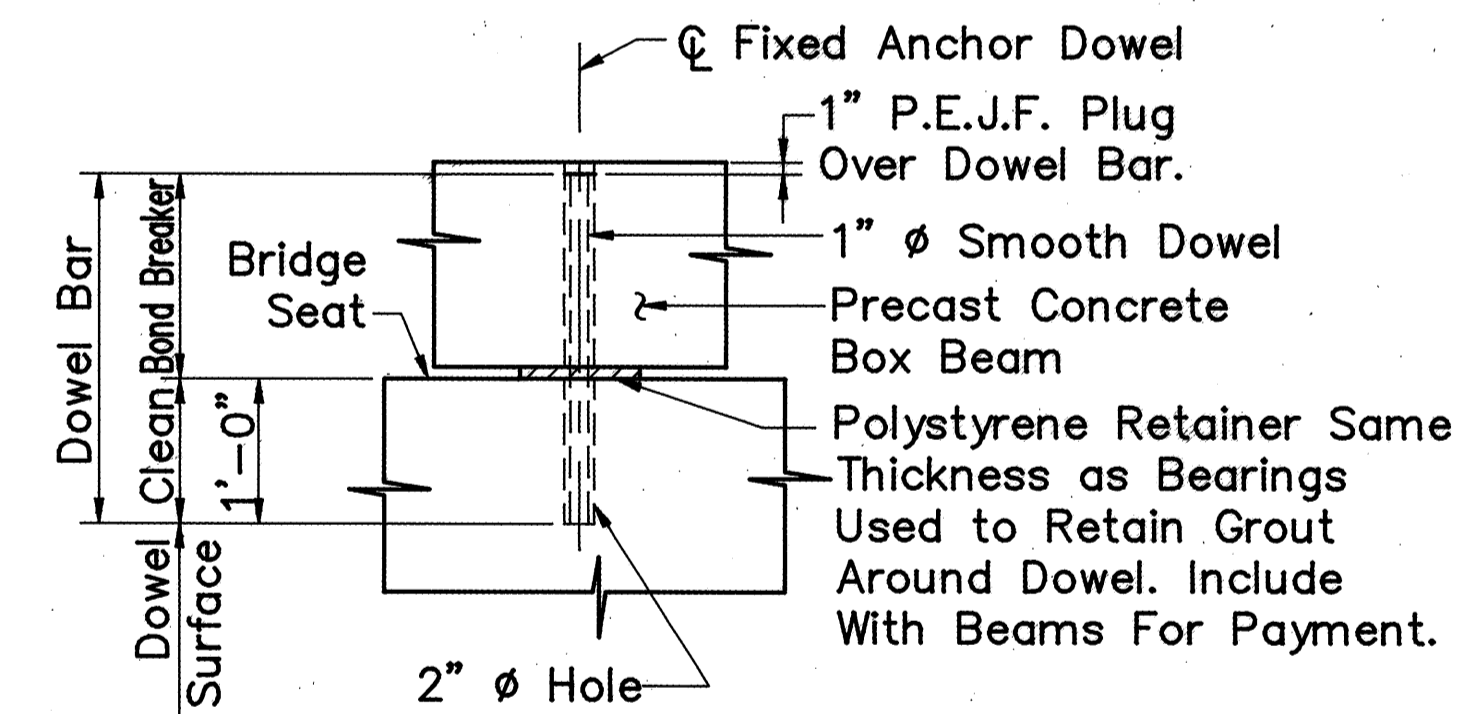
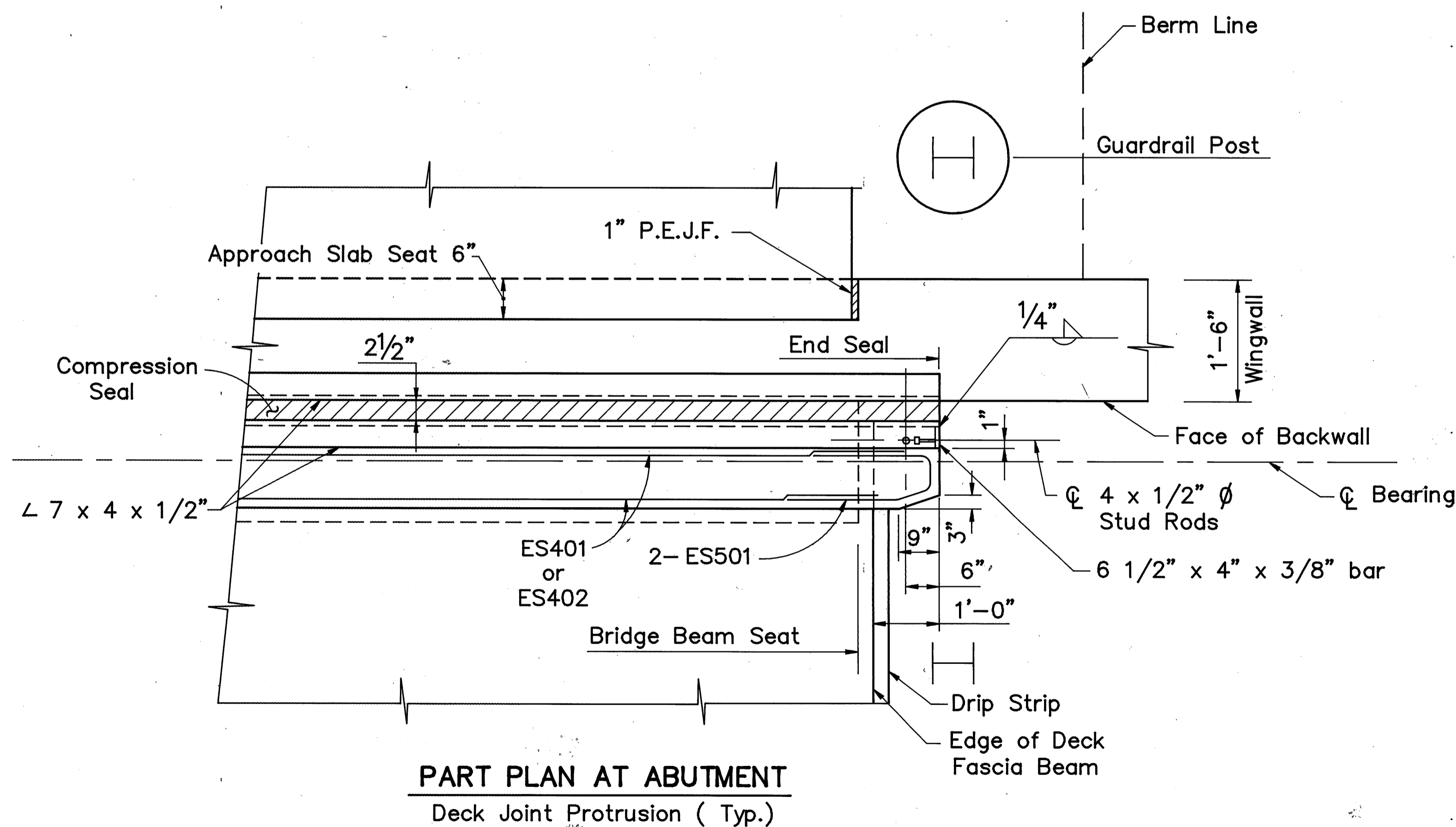
ERIE COUNTY
ERI-6-12.31



NOTE: Type A Waterproofing between backwall and approach slab will be included for payment with approach slab.

FOR DETAILS OF	SEE STD. DWG. EXJ-3-82
Construction Procedure	Sheet 1 of 4
Joint Armor Adjustment Detail	Sheet 1 of 4
Compression Seal Detail	Sheet 2 of 4
Joint Plan - Superstructure Side	Sheet 3 of 4
Part Elevation for Full Width Structures	Sheet 3 of 4
Armor Anchor Plates	Sheet 3 of 4
Plate C Plan	Sheet 3 of 4
General Notes	Sheet 3 of 4

Minimum reinforcing bar splice lap length for #4 bar is 1'-4".
For dimensions not shown, see Std. Dwg. EXJ-3-82.



PROCEDURE: Place Polystyrene Grout Retainer. Drill and clean dowel holes. Then place non-shrinking grout, dowel, and 1" minimum P.E.J.F. plug.

7/8

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SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

ERIE COUNTY OHIO

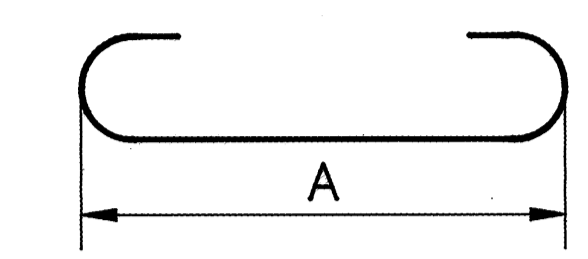
DESIGNED F.D.V.	DRAWN A.L.	TRACED	CHECKED A.L.	REVIEWED J.F.	REVISED
7/89	7/89		7/89	7/89	

REGION	STATE	PROJECT	
5	OHIO		

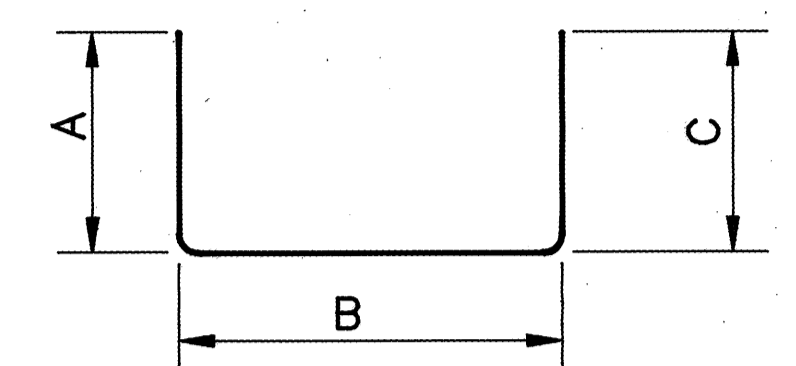
18
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ERIE COUNTY
ERI-6-12.31

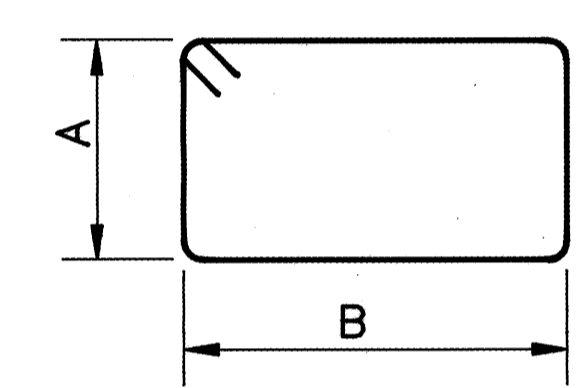
REINFORCING STEEL											
MARK	LENGTH	TYPE	A	B	C	D	INCR.	ABUTMENTS NO.	PIERS NO.	SUPERSTR. NO.	WEIGHT LBS.
ABUTMENTS											
A401	8'-8"	9	1'-9"	2'-4"				32			185
A501	8'-5"	2	3'-0"	2'-8"	3'-0"			86			755
A502	5'-11"	2	1'-9"	2'-8"	1'-9"			86			531
A503	24'-2"	ST.						12			303
A504	4'-4"	ST.						172			777
A505	5'-4 1/2"	2	4'-4"	1'-2"	0			62			348
A506	34'-2"	ST.						12			428
A507	17'-8"	ST.						4			74
A508	27'-8"	ST.						4			115
A509	9'-0"	18	2'-9"	3'-6"	2'-9"	6 3/8"		8			75
A510	8'-2"	ST.						16			136
A511	9'-3"	2	4'-4"	1'-2"	4'-4"			12			120
A512	8'-3"	2	3'-8"	1'-2"	3'-8"			8			69
A801	26'-0"	ST.						8			555
A802	34'-2"	ST.						8			730
D801	4'-7"	12	2'-3"					62			759
TOTAL											5960
EPOXY COATED REINFORCING STEEL											
SUPERSTRUCTURE											
ES401	18'-6"	ST.								4	49
ES402	28'-3"	ST.								4	76
ES501	4'-10"	19	2'-0"	6"	5 1/2"	2'-0"				8	40
Sub Total											165
ABUTMENT											
EA501	6'-5"	2	2'-0"	2'-8"	2'-0"			62			415
EA502	6'-11"	2	4'-1"	8"	2'-5"			62			447
EA503	23'-8"	ST.						4			99
EA504	33'-6"	ST.						4			140
EA505	21'-0"	ST.						2			44
EA506	31'-0"	ST.						2			65
EA801	19'-6"	ST.						8			417
EA802	27'-8"	ST.						8			591
Sub Total											2218
TOTAL											2383



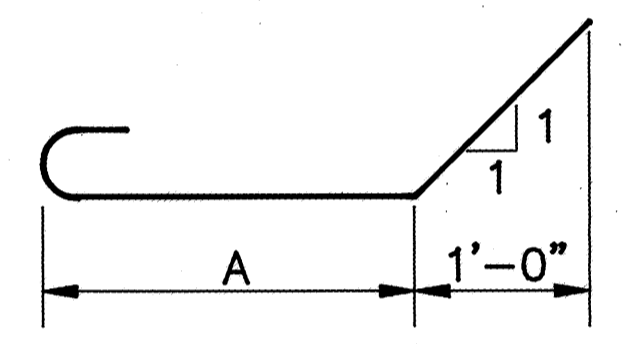
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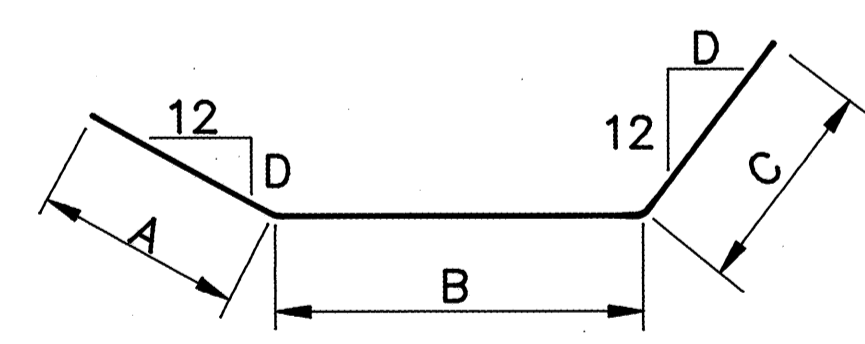
TYPE 2



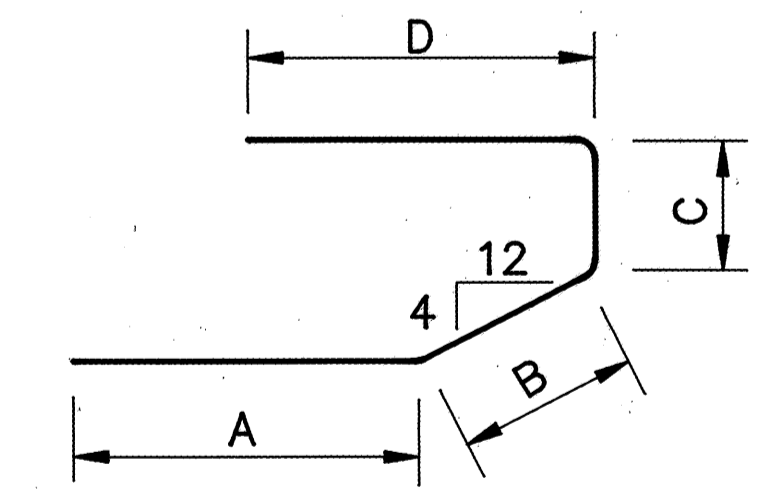
TYPE 9



TYPE 12



TYPE 18



TYPE 19

NOTES :

BAR SIZE : The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is No. 5 size bar and P1101 is a No. 11 size bar.

Bars with the prefix E denote epoxy coated bars.
ST. = Straight

8 / 8

THOMAS FOK & ASSOCIATES, LTD.
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

REINFORCING STEEL LIST
BRIDGE NO. ERI-6-1231
OVER PLUM BROOK

ERIE COUNTY OHIO

DESIGNED D.L.C.	DRAWN D.L.C.	TRACED	CHECKED J.D.V.	REVIEWED J.F.	REVISED
7/89	7/89		7/89	7/89	

PROPERTY MAP

ERIE COUNTY
HURON TOWNSHIP

SEC - 4 T-6 R-22
OUTLOT NO. 33,32

FHWA REGION	STATE	PROJECT	
5	OHIO	M 3L14 (2)	

ERIE COUNTY
ERI-6-12.31

19
20

1
2

RIGHT OF WAY PLAN

UTILITY OWNERS		
UTILITY	ADDRESS	TELE. NO.
ELECTRIC	OHIO EDISON 76 SOUTH MAIN AKRON, OHIO 44308	(216) 384-4631
TELEPHONE	GENERAL TELEPHONE 117 NORTH SANDUSKY ST. BELLVUE, OHIO 44811	(419) 483-8158
SANITARY & WATER	ERIE SANITARY SEWER AND WATER DISTRICT 554 RIVER ROAD P.O. BOX 370 44839	(419) 433-7303
GAS	COLUMBIA GAS OF OHIO 2110 CALDWELL STREET SANDUSKY, OHIO 44870	(419) 625-4557
TELEPHONE	AT & T COMPANY ROUTE #1 2869 NO. 3501 STREET RD NORWAY ILL. 61360	1-800-328-6039

UTILITY NOTE:

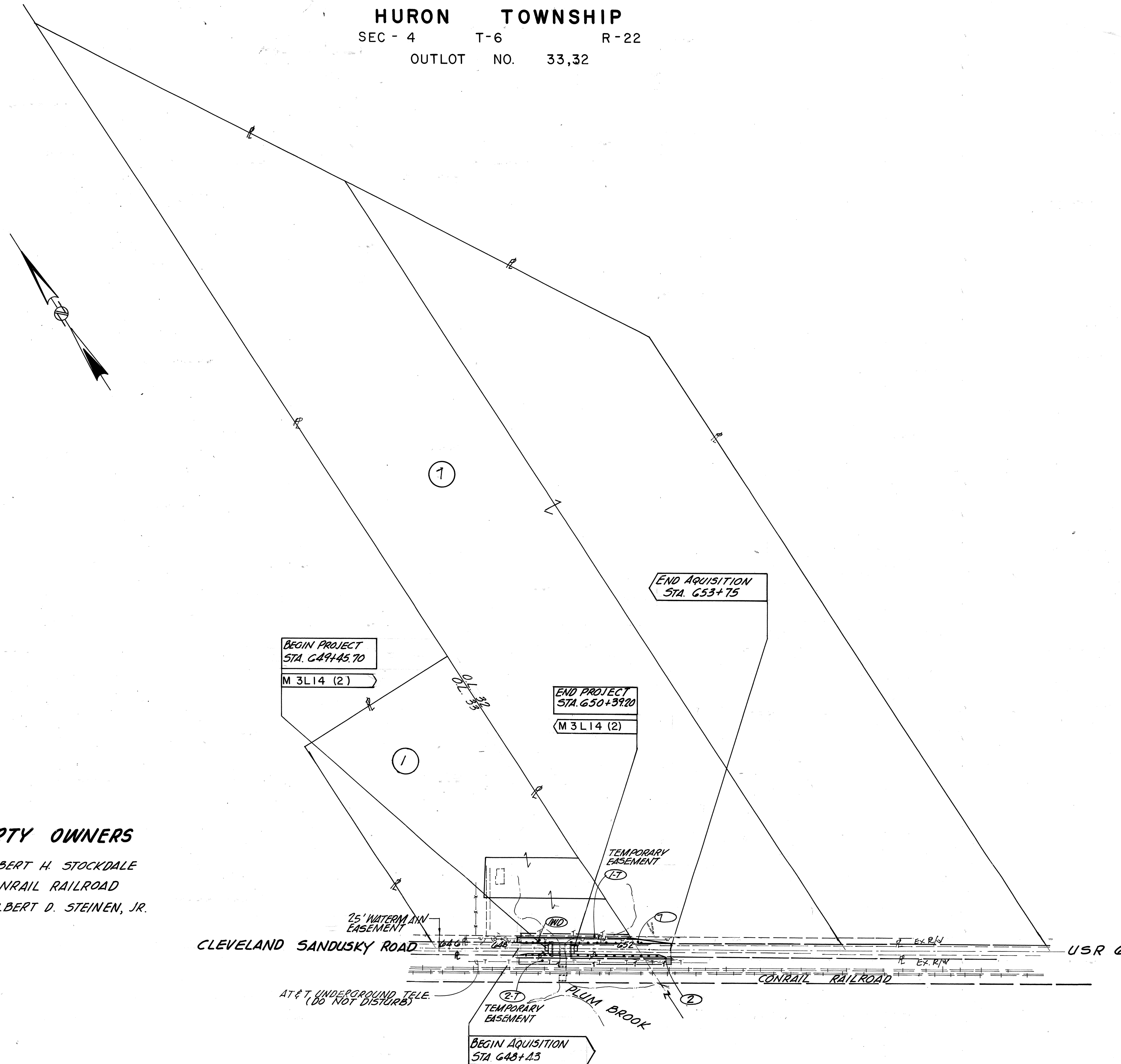
THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

TYPE FUNDS : STATE

200 100 0 200
SCALE IN FEET

REV. DATE	DESCRIPTION
5-23-90	REPLACED 7WD WITH 7
11-5-90	Added Steinen Property Parcel #7
COMPLETED:	10-6-89

PROPERTY MAP



PROPERTY OWNERS

- ① ROBERT H. STOCKDALE
- ② CONRAIL RAILROAD
- ⑦ GILBERT D. STEINEN, JR.

SUMMARY OF ADDITIONAL RIGHT-OF-WAY (JOB NO. 03330 AND PROJECT IDENTIFICATION NO. 3951)

PARCEL	OWNER	SHT. NO.	OWNERS RECORD		PERM. PARCEL NO.	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC. TURE	NET LEFT	RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED	
			BOOK	PAGE												BOOK	PAGE
1-WD	ROBERT H. STOCKDALE	2	469	322	41-00087	524462 SF.	0	5939 SF.	0	5939 SF.		518523 SF.		STATE		516	882
1-T	" " "		415	548				5682 SF.		5682 SF.					TEMPORARY EASEMENT FOR CONSTRUCTION FOR SHOULDER SLOPES		
2-	CONRAIL RAILROAD	2	128	25		UNKNOWN		4703 SF.	0	4703 SF.			UNKNOWN			012	424
2-T	" " "							8925 SF.	-	8925 SF.					TEMPORARY EASEMENT FOR CONSTRUCTION FOR SHOULDER SLOPES		
7	GILBERT D. STIENEN, JR	2	508	990	41-00146	4290660 SF.	0	982 SF.	0	982 SF.	NO	4289678 SF.		STATE		O.R. 565	793

FHWA REGION	STATE	PROJECT	
5	OHIO	M 3L14 (2)	

ERIE COUNTY
ERI-6-12.31

RIGHT OF WAY PLAN

TOTAL NUMBERS OF
 3 OWNERSHIPS
 0 TOTAL TAKES
 0 OWNERSHIPS WITH STRUCTURES INVOLVED
 0 OWNERSHIPS WITH "P" ITEMS

NOTE: PARCEL NUMBERS 3 THRU 6 APPEAR ON ERI-6-14.10

ERIE COUNTY
HURON TOWNSHIP
SEC. 4 T-6 R-22
OUTLOT NO 33, 32

- LEGEND**
- EXISTING IRON PIN
 - PROPOSED MONUMENT ASSEMBLY AS PER PLAN

NOTE:
FOR REFERENCE TO EXISTING R/W, SEE ERIE CO. DEED RECORDS VOL 101, PG 355 AND VOL 101, PG. 358

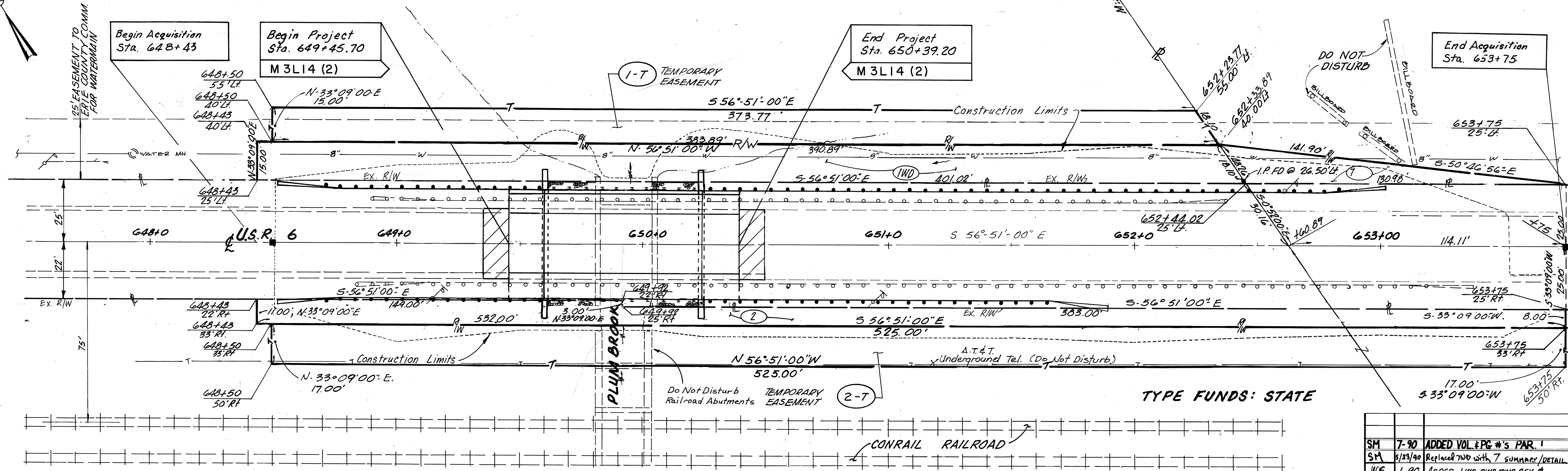
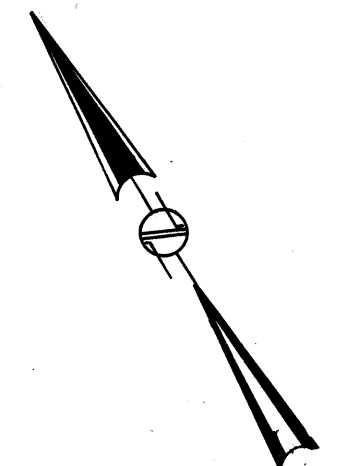
FOR MONUMENT DETAIL, AS PER PLAN, SEE SHEET B/19.

MONUMENTS WILL BE SET ON THE CENTERLINE SURVEY DURING CONSTRUCTION AT THE FOLLOWING LOCATIONS.

- P.O.T. STA. 648+50 ■
- P.O.T. STA. 653+75 ■

1 ROBERT H. STOCKDALE

7 GILBERT D. STEINEN JR.



TYPE FUNDS: STATE

REV.	DATE	DESCRIPTION
SM	7-90	ADDED VOL. & PG. #'S PAR. 1
SM	5/23/90	Replaced TWB with 7 summary/DETAIL
W.S.	1-90	ADDED 1WD, 2WD, 7WD, REV. #2

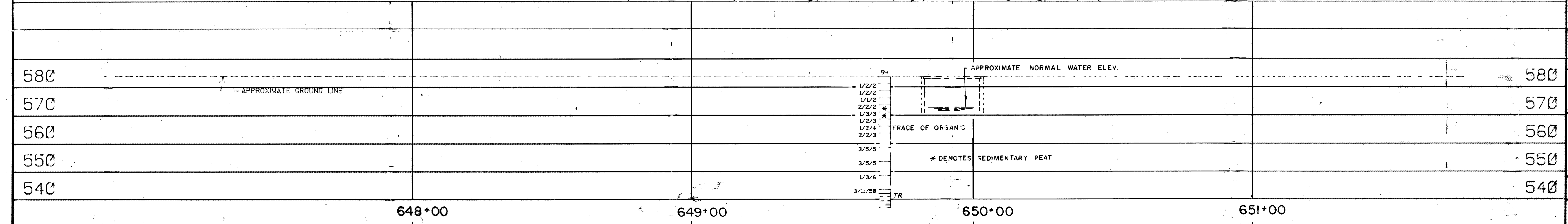
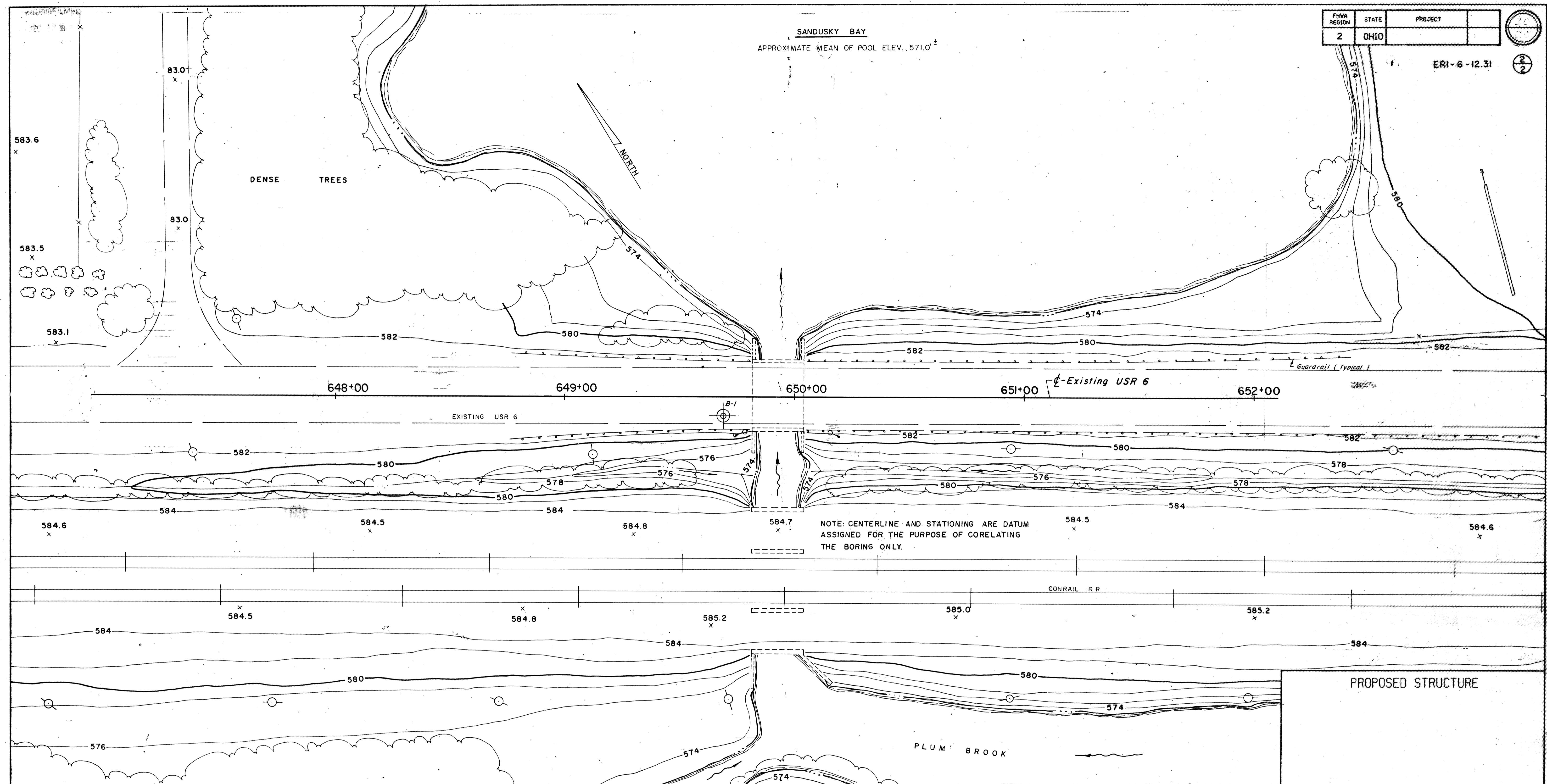
COMPLETED: 10-6-89

SCALE IN FEET
0 10 20

SANDUSKY BAY
APPROXIMATE MEAN OF POOL ELEV., 571.0[±]

FHWA REGION	STATE	PROJECT
2	OHIO	

ERI-6-12.31



PROPOSED STRUCTURE

Revised 11/14/88




OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223





STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. ERI-6-1233
OVER PLUM BROOK
SEC. ERI-6-12.31








PLAN AND PROFILE - COMPUTER GENERATED

PLOTTED BY M.R.S.	CHECKED BY A.F.	REVIEWED BY R.C.R.	DATE 7/8/87
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








LEGEND








-  Auger Boring Location - Plan View.
-  Press and / or Drive Sample and / or Core Boring Location - Plan View.
-  Drive Rod Penetration Resistance Sounding Location - Plan View.

-  Capped Pile
-  Footing
-  Footing on Pile
-  TR Top of Rock

-  Coal
-  Weathered Mudstone or Claystone
-  Mudstone or Claystone
-  Weathered Shale
-  Shale
-  Weathered Siltstone
-  Siltstone

SYMBOLS OF ROCK TYPES

-  Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
-  Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
X = Number of Blows for First 6 inches.
Y = Number of Blows for Second 6 inches.
Z = Number of Blows for Third 6 inches.
-  Drive Rod Penetration Resistance Sounding Log - Profile
-  Casing
-  Resistance "R" < 10,000 lbs.
-  Resistance "R" > 10,000 lbs.
-  Z Indicates Final Measurement of Penetration, in Inches.
-  W Indicates Free Water Elevation.
-  Indicates Static Water Elevation.

-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone
-  Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

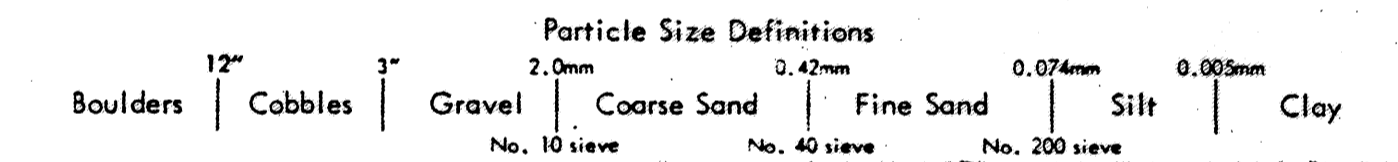
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140-pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.



NOTE - 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 BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

Revised 11/14/88

NOTE: Information shown by this subsurface investigation was obtained solely for the 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 plans governing construction of the project.

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. ERI-6-1233
OVER PLUM BROOK
SEC. ERI-6-12.31

CHECKED BY A. F.	REVIEWED BY R. D. R.	DATE 7/87 87
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