

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

ROS-772-8.94

OHIO	1/47
FHWA REGION 5	
FEDERAL PROJECT	

ROS-772-8.94

SURFACE TRANSPORTATION PROGRAM
PROJECT PID 10196

HUNTINGTON TOWNSHIP ROSS COUNTY

DESIGN DESIGNATION

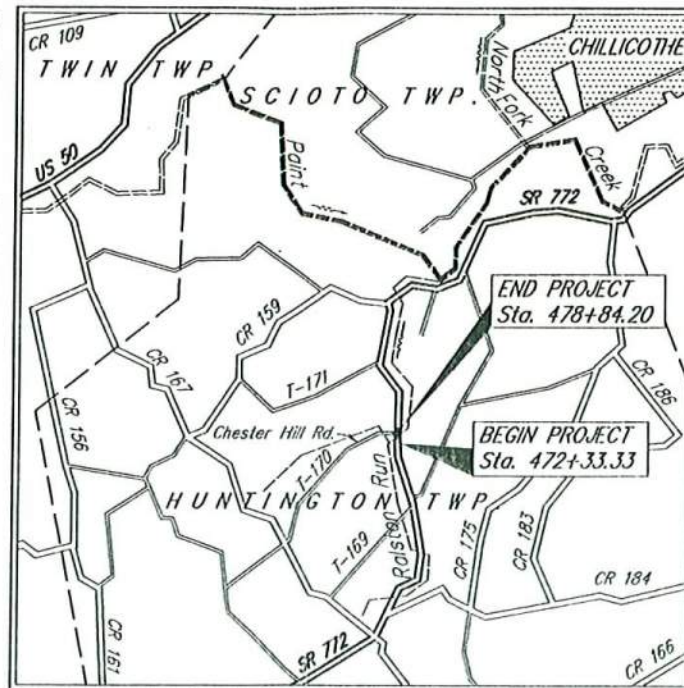
Current A.D.T. (1995) = 1870
 Design Year A.D.T. (2015) = 2440
 D.H.V. = 244
 D = 55%
 T = 3%
 Design Speed = 55 mph
 Legal Speed = 55 mph
 Functional Classification = Rural Collector
 Design Exception = Graded shdr. width, Horiz. align., Vert. align., Stopping S.D., Superelevation
 Approval Date = 3-21-94

CONVENTIONAL SIGNS

State Line	-----	Limited Access (only)	LA
County Line	-----	Right of Way (existing)	----- (proposed) ----- R/W
Township Line	-----	Limited Access & Right of Way	LA R/W
Section Line	-----	Property Line	----- (in existing fence) ----- x - x
Corporation Line	-----	Railroad	+++++ or +-----+ +-----+
Fence Line (existing)	x - x - x	Guardrail (existing)	----- (proposed) -----
Center Line	-----	Telephone, Gas & Electric Chamber	□ or ○
Trees	○, Stumps	Power	P ----- P
Utility Poles: Telephone	⊕, Power	Gas	G ----- G
Drain or Sewer Pipe (existing)	===== (proposed) =====	Water	W ----- W
Underdrain (existing)	===== (proposed) =====	Telephone	T ----- T
Catch Basin (existing)	□ (adjust to grade) □ (proposed) □	Cable	C ----- C
Manholes (existing)	○ (adjust to grade) ○ (proposed) ○		
Water Valve Chamber (existing)	○ (adjust to grade) ○ (proposed) ○		

INDEX OF SHEETS

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LATITUDE = 39°16'18" LONGITUDE = 83°05'12"
 SCALE IN MILES
 0 2 4

DISTRICT CERTIFIED
PLAN

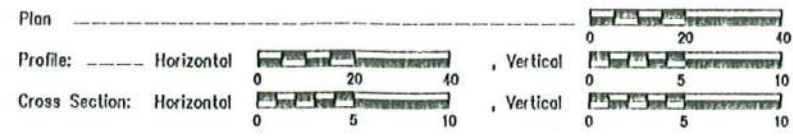
LINE DATA

Begin Project	Sta. 472+33.33
End Project	Sta. 478+84.20
LENGTH OF PROJECT	650.87 Lin. Ft. 0.123 Mile
Add for Approaches	
Sta. 478+84.20 - 479+94.00	109.80 Lin. Ft.
LENGTH OF WORK	760.67 Lin. Ft. 0.144 Mile

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

Portion to be improved -----
 State and Federal Routes -----
 Other Roads -----

SCALES



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 not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: J. A. Watkins
 Date: 7-13-94 District Deputy Director of Transportation

B & N REV. Approved: B. D. Handwerker/HEH
 Date: 7-28-94 Engineer, Bureau of Bridges and Structural Design

Approved: Christopher L. Remyan
 Date: 11-17-94 Deputy Director, Design

Approved: Jerry Way
 Date: 11-17-94 Director, Department of Transportation

STRUCTURE PLANS REVIEWED BY:
 Burgess & Niple, Limited
 Engineers and Architects

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS
BP-3.1	2-21-92	GR-1.1	5-06-91	MC-1	6-13-69	MT-97.10	4-29-88	TC-41.20	6-21-94	
BP-4.1	2-21-92	GR-1.2	10-30-92	MC-4	7-26-76	MT-99.10	11-14-86	TC-42.20	3-26-79	802 3-23-95
		GR-1.3	2-21-92	MC-7	10-15-76	MT-105.10	7-01-92	TC-52.10	4-03-79	820 6-14-95
		GR-2.1	5-06-91	MC-8	6-12-75	MT-105.11	7-01-92	TC-52.20	4-03-79	931 7-17-95
		GR-3.4	5-06-91	MC-9.2	5-06-91	AS-1-81	9-15-94	TC-65.10	7-07-95	942 6-14-95
				MC-10	5-01-76	DBR-2-73	9-15-94	TC-65.11	7-07-95	943 6-14-95
		GR-4.1	5-6-91	MC-11	8-01-78	EXJ-3-82	8-1-84	TC-65.12	7-07-95	944 12-7-95
						EXJ-4-87	11-12-93			
						DS-1-92	12-15-94			

Plans Prepared By

 HAZELET + ERDAL, INC.
 CONSULTING ENGINEERS
 CINCINNATI, OHIO

PROJECT _____
 DATE OF LETTING _____, 19____
 CONTRACT NO. _____

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
 DIVISION ADMINISTRATOR

DATE _____

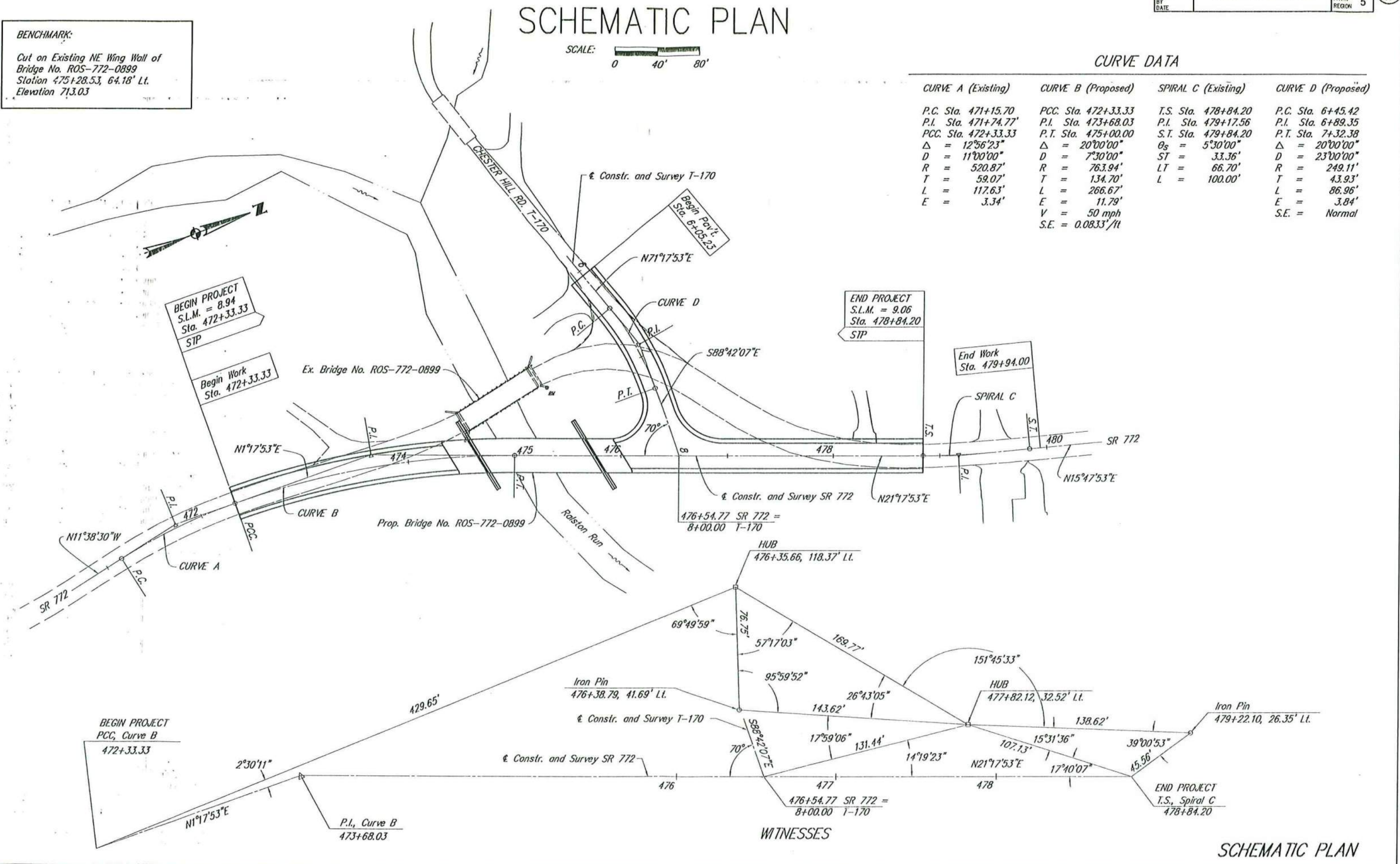
SCHEMATIC PLAN



CURVE DATA

CURVE A (Existing)	CURVE B (Proposed)	SPIRAL C (Existing)	CURVE D (Proposed)
P.C. Sta. 471+15.70	P.C. Sta. 472+33.33	T.S. Sta. 478+84.20	P.C. Sta. 6+45.42
P.I. Sta. 471+74.77'	P.I. Sta. 473+68.03	P.I. Sta. 479+17.56	P.I. Sta. 6+89.35
P.C.C. Sta. 472+33.33	P.T. Sta. 475+00.00	S.T. Sta. 479+84.20	P.T. Sta. 7+32.38
$\Delta = 12^{\circ}56'23''$	$\Delta = 20^{\circ}00'00''$	$\theta_s = 5^{\circ}30'00''$	$\Delta = 20^{\circ}00'00''$
$D = 11^{\circ}00'00''$	$D = 7^{\circ}30'00''$	$ST = 33.36'$	$D = 23^{\circ}00'00''$
$R = 520.87'$	$R = 763.94'$	$LT = 66.70'$	$R = 249.11'$
$T = 59.07'$	$T = 134.70'$	$L = 100.00'$	$T = 43.93'$
$L = 117.63'$	$L = 266.67'$		$L = 86.96'$
$E = 3.34'$	$E = 11.79'$		$E = 3.84'$
	$V = 50 \text{ mph}$		$S.E. = \text{Normal}$
	$S.E. = 0.0833'/ft$		

BENCHMARK:
Cut on Existing NE Wing Wall of
Bridge No. ROS-772-0899
Station 475+28.53, 64.18' Lt.
Elevation 713.03



GENERAL NOTES

GENERAL

ELEVATION DATUM

All elevations are based on U.S.C. & G.S. datum.

UTILITIES SHOWN IN CROSS SECTIONS

Although an attempt has been made to accurately represent utilities in cross sections, the depth shown is approximate only.

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.

UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project:

South Central Power
P.O. Box 220
Hillsboro, Ohio 45133
614-653-4422

Ross County Water Company, Inc.
663 Fairgrounds Road
Chillicothe, Ohio 45601
614-774-4117

The Chillicothe Telephone Company
P.O. Box 480
Chillicothe, Ohio 45601
614-772-8291

United Video Cablevision, Inc.
P.O. Box 648
Jackson, Ohio 45640
614-286-6446

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.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on the typical sections apply to all cross sections even though otherwise shown on these plans.

WORK LIMITS

The work limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control and temporary traffic control devices required by these plans shall be provided by the Contractor whether inside or outside these work limits.

ROADWAY

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.

MONUMENTS

Monuments shall be constructed in accordance with details shown on Standard Construction Drawing MC-1. For locations, see Right of Way plan sheets.

GUARDRAIL REPLACEMENT

No hazard shall be left unprotected except for the actual time necessary to remove, grade, and reinstall guardrail in a continuous operation. The removal of all guardrail shall at all times be as directed by the Engineer. No guardrail shall be removed until the replacement material is on the site, ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended on this project until such time that the Engineer is assured of said compliance.

TRENCH FOR WIDENING

Trench excavation for base widening shall be only on one side of the pavement at a time. The open trench shall be adequately maintained and protected with drums or barricades at all times. Placement of proposed subbase and base material shall follow as closely as possible behind the excavation operations. The length of widening trench which is open at any one time shall be held to a minimum and shall at all times be subject to approval of the Engineer.

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 cleanup, excavation for rock channel protection and removal of any temporary fill associated with construction operations.

REFERENCE MONUMENTS

Reference monuments shall be cast in place concrete as per Standard Drawing MC-1. Precast concrete monuments shall not be used.

EROSION CONTROL

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantity is to be used as directed by the Engineer, for temporary erosion and sediment control measures:

Item 207, Filter fabric fence 900 Lin. Ft.

EROSION CONTROL

Items 601 and 660 are provided in the Plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items, and turf of a stable nature will not be removed in order to place 660. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

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 Water 11 M. Gal.

ITEM SPECIAL - MAILBOX SUPPORT

This work shall consist of furnishing and erecting mailbox supports and any associated mounting hardware in accordance with plan details, and attaching an owner-supplier mailbox at locations specified in the plan, or otherwise established by the Engineer.

Wood posts shall be nominal 4"x4" square or 4-1/2" diameter round, and conform to 710.14.

Steel posts shall be nominal pipe size 2" I.D., and conform to AASHTO M 181.

Hardware (plates, screws, bolts, etc.) shall be commercial-grade galvanized steel.

Posts shall be set per the first paragraph of 606.03, and shall in no instance be encased in concrete.

Support hardware shall accommodate either a single or a double mailbox installation, and no more than two boxes may be mounted on a single post.

The mailbox shall be securely and neatly attached by the Contractor to the new support. The Contractor shall furnish all necessary attachment hardware (nuts, bolts, plates, spacers, and washers) as necessary to accommodate the complete installation.

In the absence of a new box supplied by the owner, the Contractor shall salvage the existing box and place it on the new support. Due care shall be exercised in such an operation, and the Contractor shall be responsible for repairing or replacing any box damaged by improper handling on his part, as judged and directed by the Engineer.

The Contractor shall be responsible for coordinating with the local post master regarding the timing of the movement of any mailbox to a new location.

Payment under this item shall be limited to final permanent installations. Temporary installations shall be in accordance with 107.12. However, the same material and size limitations as for permanent installations shall apply.

Mailbox supports, complete in place, will be paid for at the contract unit price per Each, for Item Special Mailbox support, (single) (double).

DRAINAGE

TREATED SEPTIC CONNECTIONS

Treated septic flow may be discharged into the highway drainage system provided the owner has acquired an official permit from the Ohio Department of Transportation.

In each case where a permit has been issued for making a treated septic connection into highway drainage conduit, an inspection well shall be provided in accordance with Standard Construction Drawing MC-8.

The following estimated quantities have been included in the General Summary for use as directed by the Engineer in making the above connections:

Item 603, 8" Conduit, Type C 30 Lin. Ft.
Item 604, Inspection well 1 Each

ITEM 605, AGGREGATE DRAINS

Aggregate drains shall be placed as follows:

Sta. 472+50 Rt. 10 LF	Sta. 477+00 Rt. 11 LF
Sta. 472+75 Rt. 11 LF	Sta. 477+25 Lt. 14 LF
Sta. 473+00 Rt. 11 LF	Sta. 477+50 Rt. 11 LF
Sta. 473+25 Rt. 11 LF	Sta. 477+75 Lt. 14 LF
Sta. 473+50 Rt. 11 LF	Sta. 478+00 Rt. 14 LF
Sta. 473+11 Rt. 11 LF	Sta. 478+55 Lt. 13 LF
Sta. 474+00 Rt. 11 LF	Sta. 6+50 Rt. 14 LF
Sta. 474+25 Rt. 11 LF	Sta. 6+75 Lt. 14 LF
Sta. 474+50 Rt. 7 LF	Sta. 7+00 Rt. 14 LF
Sta. 476+00 Rt. 7 LF	Sta. 7+75 Lt. 14 LF
Sta. 476+50 Rt. 10 LF	
Sta. 476+75 Lt. 14 LF	

Totals to Gen. Sum. = 258 LF

GENERAL NOTES

CHIC. RS
BY DATE 7-93
CHIC. RS
BY DATE 7-93

ROS-772-8.94

OHIO
FHWA
REGION 5

5
47

PAVEMENT

PART-WIDTH CONSTRUCTION

Because of the necessity of building (portions of) this project under traffic and constructing the full pavement width in stages, extreme care shall be taken to prevent the construction of a butt joint on centerline in the base courses. Longitudinal joints shall be lapped as shown on Standard Construction Drawing BP-3.1.

ITEM 407, TACK COAT

The rate of application of Item 407, Tack coat shall be subject to adjustment, as directed by the Engineer. Plan quantities indicate average application rates of 0.075 gallons of tack coat per square yard for estimating purposes only.

MAINTENANCE OF TRAFFIC

ITEM 410, TRAFFIC COMPACTED SURFACE, AS PER PLAN

All standard provisions of Item 410, Traffic compacted surface shall apply except that material shall be as indicated in Item 304.02.

Basis of Payment. Payment will be made under:

ITEM	UNIT	DESCRIPTION
410	Ton	Traffic compacted surface, as per plan

TEMPORARY WEDGES

The Contractor shall be required to place, maintain and remove temporary wedges in front of or along the edge of the overlay as approved by the Engineer for smooth and safe traffic flow during roadway construction. The wedges should have a cross slope of one inch per foot per inch of overlay thickness for longitudinal joints and one inch per 25 feet per inch of overlay thickness for transverse joints. All costs of the above are to be included in the Item 614, Maintaining Traffic.

PAYMENT

The following estimated quantities have been included in the General Summary to be used as directed by the Engineer for the maintenance of traffic.

Item 404, Bituminous concrete for maintaining traffic	8 Cu. Yd.
Item 410, Traffic compacted surface, as per plan	44 Ton
Item 616, Water	50 M. Gal.
Item 616, Calcium chloride	5 Ton

Separate payment shall be made for items listed above and for items listed on Sheet 16 Subsummary. All other work required for traffic maintenance (including providing, erecting, maintaining, and removing all lights, signs, barricades, drums, cones, and all other traffic control devices), shall be included with payment for Item 614, Maintaining traffic.

SEQUENCE OF CONSTRUCTION

- Stage I: Traffic on existing pavement.
Construct temporary pavement left of north end of SR 772 work.
- Stage II: Traffic on existing and temporary pavement.
Construct proposed bridge, part of proposed intersection, and all of proposed northbound roadway.
- Stage III: Traffic on existing (SB) and proposed (NB).
Construct remainder of southbound roadway and temporary pavement left of T-170.
- Stage IV: Traffic on proposed and temporary pavement.
Construct remainder of T-170.

TEMPORARY PAVEMENT MARKINGS

References in Standard Drawing MT-99.10 to Item 621 Paint shall be interpreted to read Item 642 Traffic Paint.

References to Item 847 Plastic Pavement Markings shall be interpreted to read Item 645 Preformed Marking Material.

References to 947.03, Type C shall be interpreted to read 740.05, Type C.

COVERING OF SIGNS

Where the plans call for a permanent sign to be covered, the Contractor shall do so in such a manner so as to avoid damaging the permanent sign when the cover is removed. The cover shall be totally opaque. The use of adhesive tape applied directly to a sign face is strictly prohibited.

ITEM 614, BARRIER REFLECTORS

These reflectors and their mountings shall conform to Proposal Note No. 142-92 and that spacing shall be as shown in the subsummary table.

PLACEMENT OF ASPHALT CONCRETE

Two-way traffic shall be maintained at all times except that one-way traffic will be permitted for minimum periods of time consistent with the requirements of the specifications for protection of completed asphalt concrete courses.

ALTERNATE METHODS

If the Contractor so elects, he may submit alternate methods for the maintenance of traffic, provided the intent of the above provisions is followed and no additional inconvenience to the traveling public results therefrom. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

OVERNIGHT TRENCH CLOSING

The base widening on this project will be completed to a depth 3 inches below the existing pavement by the end of the work day. Except for a short length of a work section (25 feet or less) at the end of the trench, no trench will be left open overnight. In case work must be suspended because of inclement weather or other reasons, the trench for the uncompleted base widening will be backfilled at the direction of the Engineer.

ITEM 615, TEMPORARY ROADS, AS PER PLAN

All standard provisions of Item 615, Temporary roads shall apply in addition to the requirements below:

Due to part width construction, the existing shoulders shall be widened to allow vehicular traffic to move around the work area.

When no longer needed, the widened shoulders shall be restored to their original condition except that bituminous material within four feet of the existing edge of pavement shall remain for use as a paved shoulder.

Method of measurement. The cost of the above work shall be included with Item 615, Temporary roads, as per plan except that Item 301, Item 304, and Item 622 will be paid for separately.

Basis of Payment. Payment will be made under:

ITEM	UNIT	DESCRIPTION
615	Lump Sum	Temporary roads, as per plan

GENERAL SUMMARY

SHEET NUMBER												PARTICIPATION				DESCRIPTION				
4	16	17	19	21	28	R/W	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION									
Lump											ROADWAY									
	102						201	11000	Lump		Clearing and Grubbing									
	53						202	23500	102	SqYd	Wearing course removed									
	337.5						202	35100	53	LinFt	Pipe removed, 24" and under									
							202	38000	337.5	LinFt	Guardrail removed									
					36		202	54100	36	Each	Raised pavement marker removed for storage									
			697	2057			203	12000	2754	CuYd	Excavation not including embankment construction									
			431	2072			203	20000	2503	CuYd	Embankment									
		1713					203	50000	1713	SqYd	Subgrade compaction									
						6	604	40500	6	Each	Reference monument (See Sheet 4)									
	337.5						606	13000	337.5	LinFt	Guardrail, Type 5									
	4						606	25000	4	Each	Anchor assembly, Type A									
	4						606	35140	4	Each	Bridge terminal assembly, Type 4									
	3						Special	69050100	3	Each	Mailbox support system, single (Sh. 4)									
											EROSION CONTROL									
900							207	30000	900	LinFt	Filter fabric fence (See Proposal Note)									
	445						601	34000	445	CuYd	Rock channel protection, Type A without filter									
			1193	3748			659	10000	4941	SqYd	Seeding and mulching									
		0.44					659	20000	0.44	Ton	Commercial fertilizer									
11							659	35000	11	MGal	Water									
	66						660	20000	66	SqYd	Reinforced sodding									
	350						670	40000	350	SqYd	Ditch erosion protection									
											DRAINAGE									
30							603	02000	30	LinFt	8" Conduit, Type C (See Proposal Note)									
	88						603	04900	88	LinFt	12" Conduit, Type D									
1							604	37000	1	Each	Inspection Well									
258							605	31100	258	LinFt	Aggregate drain									
											PAVEMENT									
	45	285					301	10002	330	CuYd	Bituminous aggregate base, AC-20 (See Proposal Note)									
	18	388					304	20000	406	CuYd	Aggregate base (See Proposal Note)									
		87					402	20000	87	CuYd	Asphalt concrete, AC-20 (See Proposal Note)									
		62					404	20000	62	CuYd	Asphalt concrete, AC-20 (See Proposal Note)									
	12						404	25000	12	CuYd	ASPHALT CONCRETE, AC-20 (DRIVEWAYS) (See Proposal Note)									
		27					407	10000	27	Gallon	Tack coat									
		685					408	10000	685	Gallon	Bituminous prime coat									
		4					409	12000	4	CuYd	Seal coat cover aggregate, No. 8									
		139					409	20000	139	Gallon	Seal coat bituminous material									
	178						611	25000	178	SqYd	Reinforced concrete approach slab (T= 15")									

SUBSUMMARY

ROADWAY

MAINTENANCE OF TRAFFIC

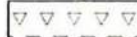

REFERENCE NO.	Stations are relative to Project & unless otherwise noted		SIDE	SHEET NO.	ROADWAY																	
	STATION	STATION			Wearing course removed	Pipe removed, 24" and under	Guardrail removed	4" Bituminous aggregate base, AC-20	8" Aggregate base	1" Asphalt concrete, AC-20 (DRIVEWAYS)	Rock channel protection, Type A without filter	12" Conduit, Type D	Guardrail, Type 5	Anchor assembly, Type A	Bridge terminal assembly, Type 4	Reinforced concrete approach slab (T=15')	Reinforced sodding	Ditch erosion protection	Mailbox support system, single	Barrier reflector, Type A (W)		
ITEM					202	202	202	301	304	404	601	603	606	606	606	611	660	670	Spec	802		
UNIT					Sq Yd	Lin Ft	Lin Ft	Cu Yd	Cu Yd	Cu Yd	Cu Yd	Lin Ft	Lin Ft	Each	Each	Sq Yd	Sq Yd	Sq Yd	Each	Each		
D1	478+08	478+50	Lt	20		23																
D2	477+00	477+45	Lt	20								42										
E1	472+33	474+89	Rt	18														350				
E2	474+48	475+07	L-R	18							231											
E3	475+32	476+00	L-R	20							214											
G1	473+56	474+52	Lt	18			100															
G2	473+66	474+54	Lt	18									75	1	1							3
G3	476+65	474+67	Rt	18									87.5	1	1							3
G4	475+13	475+62	Lt	20			150															
G5	475+72	7+06(T-170)	L-R	20									87.5	1	1							3
G6	475+92	476+94	Rt	20									87.5	1	1							3
G7	473+80	474+46	Lt	18			87.5															
P1	472+33	472+75	L&R	18	102																	
P2	473+30	M.B. App.	Rt	18				2		1									1			
P3	473+66.90	Driveway	Lt	18				13		3												
P4	474+38.90	474+63.90	L&R	18												89						
P5	475+76.17	476+01.17	L&R	20												89						
P6	478+15	M.B. App.	Rt	20				2		1									1			
P7	478+35	Driveway	Lt	20				9		2												
P8	6+17(T-170)	Driveway	Rt	20				8		2												
P9	477+35.76	Driveway	Lt	20		30		9	18	2												
P10	477+15	M.B. App.	Rt	20				2		1									1			
E4	474+68	474+75	Rt	18												12						
E5	474+49	474+54	Lt	18												27						
E6	475+86	475+91	Rt	20												19						
E7	475+66	475+71	Lt	20												8						
TOTAL TO GENERAL SUMMARY					102	53	337.5	45	18	12	445	88	337.5	4	4	178	66	350	3	12		

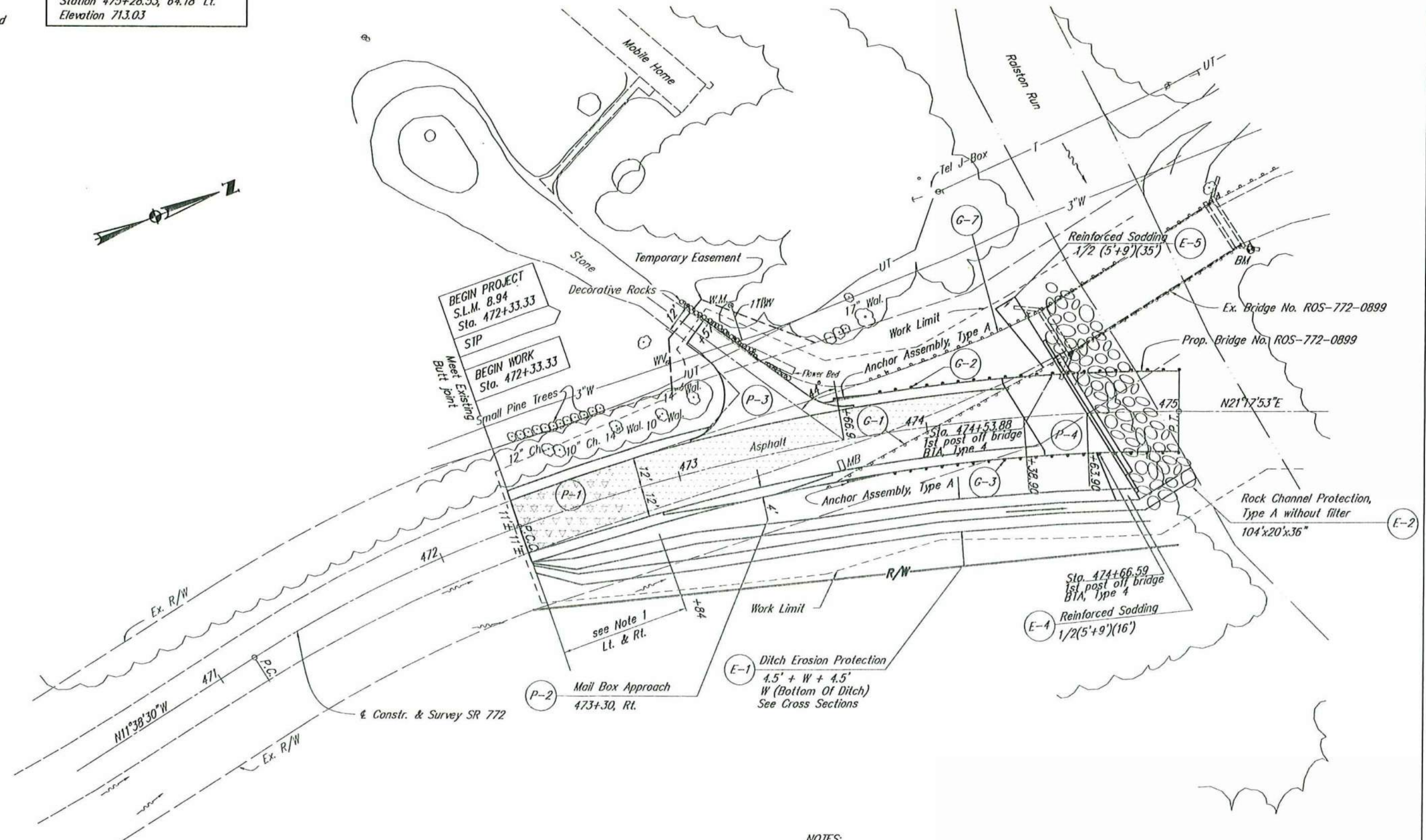
REFERENCE NO.	Stations are relative to Project & unless otherwise noted		SIDE	SHEET	MAINTENANCE OF TRAFFIC																		
	STATION	STATION			Barrier reflector, Type B (W)	Object marker	Temporary center line (SD), Class I	Temporary center line (SD), Class I, 740.05, Type C	Temporary center line (SD), Class II	Temporary edge line (W), Class I	Temporary edge line (W), Class I, 740.05, Type C	Temporary edge line (Y), Class I, 740.05, Type C	Temporary stop line, Class I, 740.05, Type C	Temporary pavement, Class A	Portable concrete barrier, 32"								
ITEM					614	614	614	614	614	614	614	614	614	614	614	615	622						
UNIT					Each	Each	Lin Ft	Lin Ft	Lin Ft	Lin Ft	Lin Ft	Lin Ft	Lin Ft	Lin Ft	Sq Yd	Lin Ft							
Stage I																							
477+00	478+84	Lt	7																				
477+05	478+84	Lt	7					183															
477+14	479+79	Lt	7																				
478+84	480+09	Rt	7													178							
478+84	479+94	L-ε	7																				
7+22(T-170)	477+00	Lt	7																				
Total Stage I							183	110															
Stage II																							
472+33	478+84	Rt	8-9																				
472+33	474+64	ε	8													651							
474+64	476+39	ε	8-9													231							
477+04	479+94	ε	9													290							
5+00(T-170)	6+91(T-170)	Lt	9														1414						
7+33(T-170)	7+77(T-170)	L&R	9																				
7+33(T-170)	477+04	Lt	9																				
Total Stage II								219								792	521	20	1414				
Stage III																							
472+33	5+00(T-170)	L-R	10-11																				
472+33	474+64	ε	10													676							
473+75	474+55	Lt	10													231							
7+67(T-170)	479+79	Lt	11													328							
477+04	479+94	ε	11													290							
5+00(T-170)	7+33(T-170)	Lt	11																				
7+67(T-170)	7+73(T-170)	L-R	11																				
Total Stage III									3	4	165	70			235	1004	521	30	80				
Stage IV																							
472+33	6+05(T-170)	L-R	12-13																				
7+64(T-170)	7+74(T-170)	Rt	13																				
Total Stage IV																							
In Lieu of Final Markings																							
														930		1698							
Total Stage IV																							
TOTAL TO GENERAL SUMMARY					3	4	348	399	930						2121	2478	1042	80	1655		80		
						<i>Mile</i>	<i>0.06</i>	<i>0.08</i>	<i>0.18</i>					<i>0.40</i>	<i>0.67</i>								

7265U 21 MAR 1994

BENCHMARK:
 Cut on Existing NE Wing Wall of
 Bridge No. ROS-772-0899
 Station 475+28.53, 64.18' Lt.
 Elevation 713.03

LEGEND

-  Wearing Course Removed
-  Resurfacing

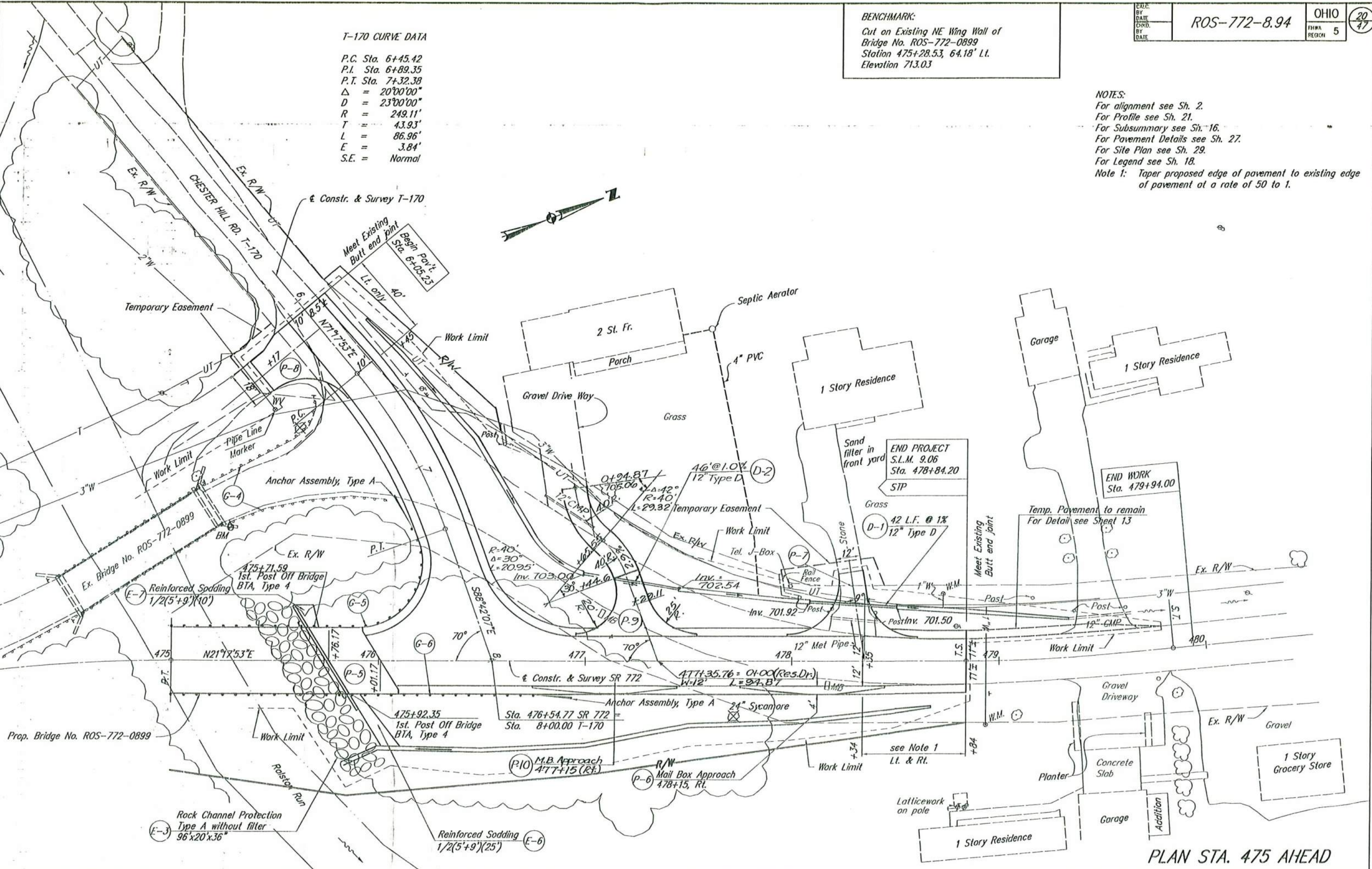


NOTES:
 For alignment see Sh. 2.
 For Profile see Sh. 19.
 For Subsummary see Sh. 16.
 For Pavement Details see Sh. 27.
 For Site Plan see Sh. 29.
 Note 1: Taper proposed edge of pavement to existing edge of pavement at a rate of 50 to 1.

BENCHMARK:
 Cut on Existing NE Wing Wall of
 Bridge No. ROS-772-0899
 Station 475+28.53, 64.18' Lt.
 Elevation 713.03

T-170 CURVE DATA
 P.C. Sta. 6+45.42
 P.I. Sta. 6+89.35
 P.T. Sta. 7+32.38
 $\Delta = 20^{\circ}00'00''$
 $D = 23^{\circ}00'00''$
 $R = 249.11'$
 $T = 43.93'$
 $L = 86.96'$
 $E = 3.84'$
 S.E. = Normal

NOTES:
 For alignment see Sh. 2.
 For Profile see Sh. 21.
 For Subsummary see Sh. 16.
 For Pavement Details see Sh. 27.
 For Site Plan see Sh. 29.
 For Legend see Sh. 18.
 Note 1: Taper proposed edge of pavement to existing edge of pavement at a rate of 50 to 1.



PLAN STA. 475 AHEAD

BENCHMARK

Cut on Existing NE Wingwall of Bridge NO. Ros-772-0899
 Station 475+28.53, 64.18' Lt.
 Elevation 713.03

EXISTING UTILITIES

The Chillicothe Telephone Company: Overhead and Underground telephone cables
 South Central Power: Overhead power lines
 United Video Cable:
 Ross County Water Company: 3" Water Main on west side

CURVE DATA

Prop. Curve B
 Const. & S.R. 772
 P.C.C. Sta. 472+33.33
 P.T. Sta. 475+00.00
 $\Delta = 20^{\circ}00'00''$
 $D = 7^{\circ}30'00''$
 $R = 763.94'$
 $L = 266.67'$

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

29
47

ROSS COUNTY
 ROS-772-8.94

NOTES:

EARTHWORK limits are approximate. Actual slopes shall conform to plan cross-sections.

Rock Channel Protection, Type A is included with Roadway Plans for payment.

Proposed Boring Location

DRAINAGE

25 Year Storm Elevation = 701.25
 Discharge = 2087 cfs
 Max. Velocity = 6.77 ft./sec.

100 Year Storm Elevation = 702.52
 Discharge = 2928 cfs
 Max. Velocity = 7.40 ft./sec.

Low Water Elevation: 696.70 ft
 Drainage Area: 8.89 sq. miles

Waterway Opening = 742 s.f. (existing)
 Waterway Opening = 739 s.f. (proposed)

EXISTING STRUCTURE

STRUCTURE FILE NO: 7105436
 TYPE: Simple Span, Steel beam bridge with plank deck on floor diaphragms supported on stone and concrete abutments
 SPANS: 79'-1 1/4" (c/c bearings)
 ROADWAY: 19'-11" face to face of wheel guards.
 SKEW: 0"
 CONDITION: Fair
 APPROACH SLABS: None
 ALIGNMENT: Tangent (between reverse curves)
 DATE OF CONSTRUCTION: 1960

ADT (2,013)
 Cars: 2,370
 Trucks: 70

PROPOSED STRUCTURE

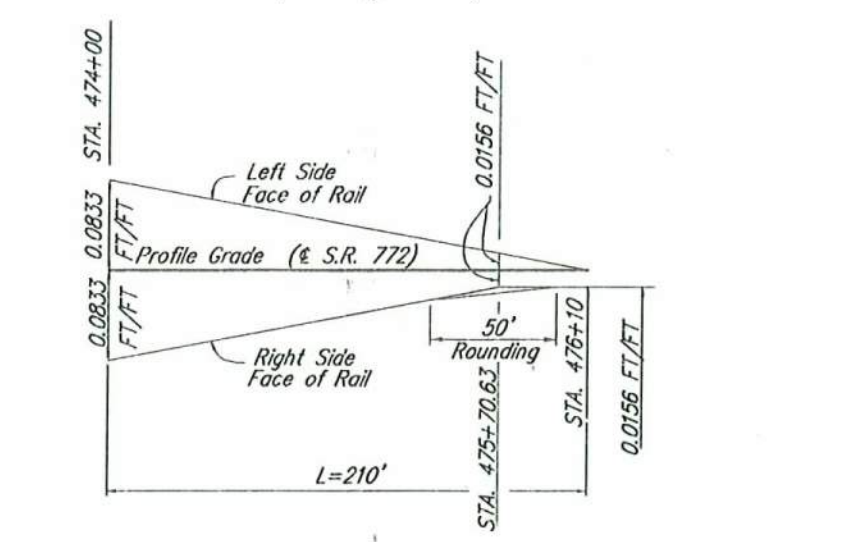
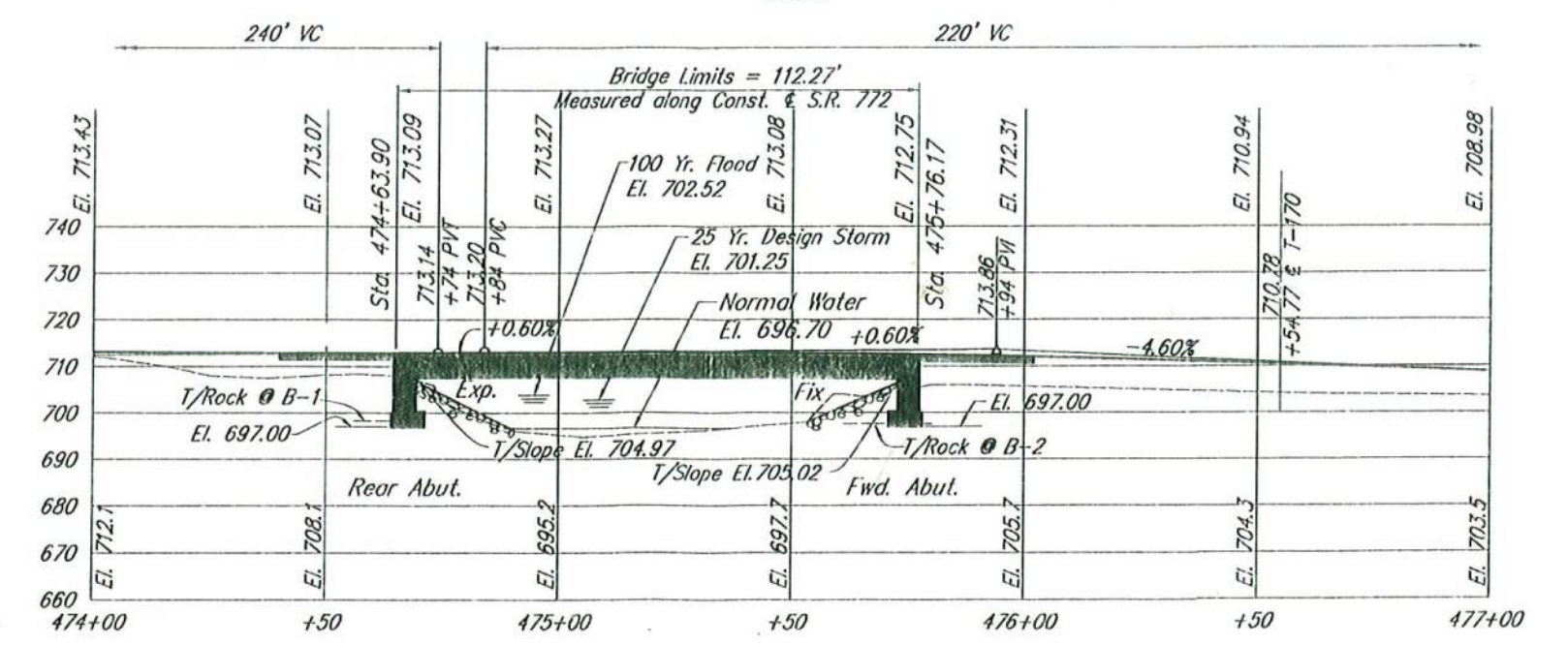
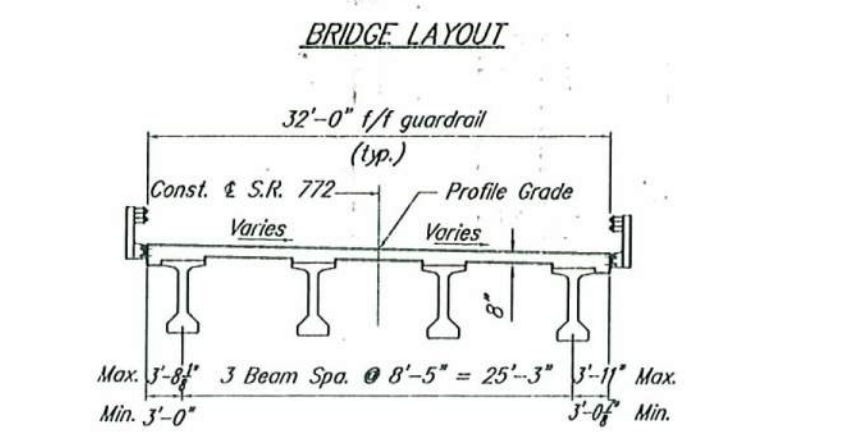
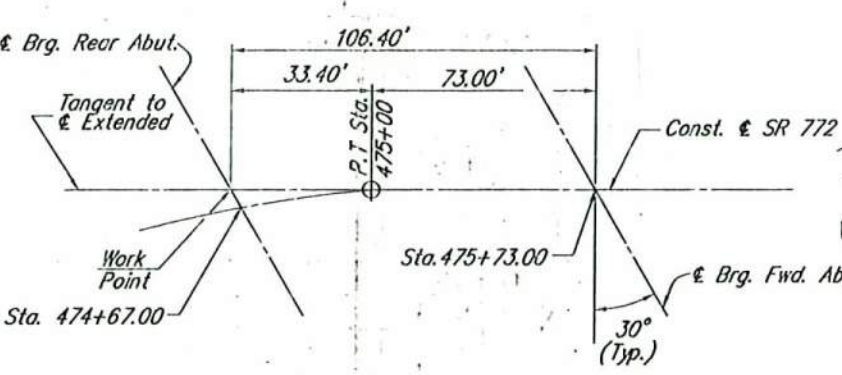
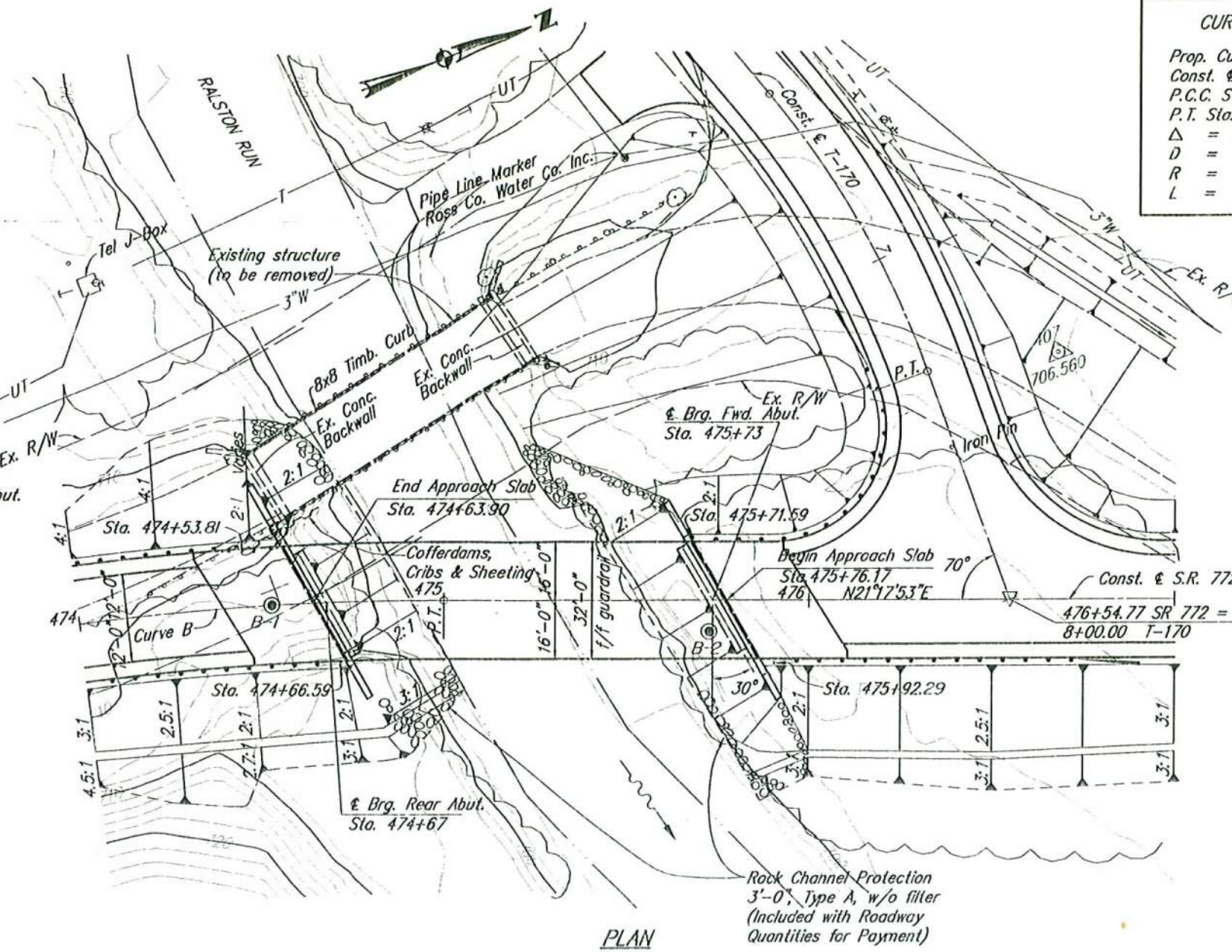
TYPE: Simple span, precast concrete I-beam bridge with reinforced concrete deck and abutments.
 SPAN: 106'-0" (c/c bearings) Along Constr. & S.R. 772
 ROADWAY: 32'-0" face to face of guard rail
 LIVE LOADING: HS 20-44, and the Alternate Military Loading
 WEARING SURFACE: Monolithic Concrete
 APPROACH SLABS: AS-1-81 (25' long)
 ALIGNMENT: 7' 30' Curve and Tangent
 SUPERELEVATION: Varies, See Diagram
 SKEW: 30' R.F.

REVIEWED BY BURGESS & NIPLE, LTD.
 VDP 6/30/94

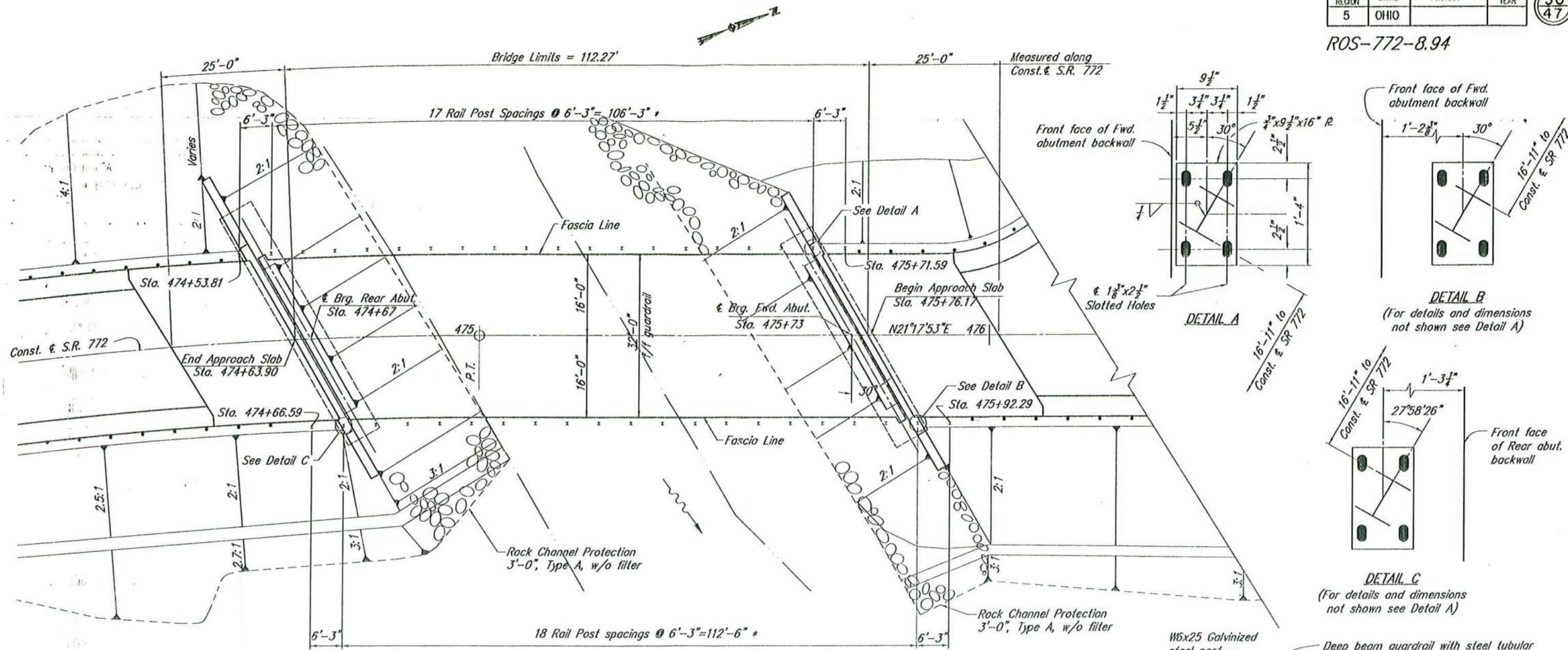
HAZELET + ERDAL, INC.
 CONSULTING ENGINEERS
 CINCINNATI, OHIO

SITE PLAN
 BRIDGE NO. ROS-772-0899
 OVER RALSTON RUN
 ROSS COUNTY STA. 474+63.90 TO
 STA. 475+76.17
 Structure File Number 7105444

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED
J.M.	CSS	JSB	DJS	HLL

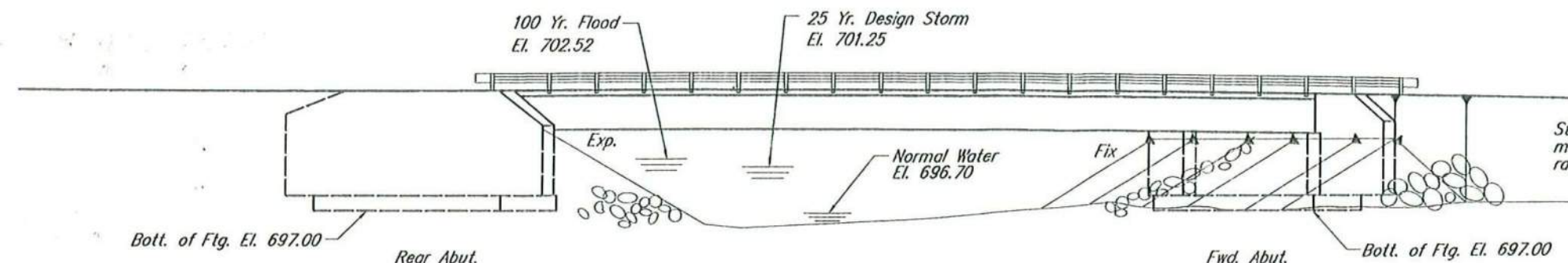


ROS-772-8.94

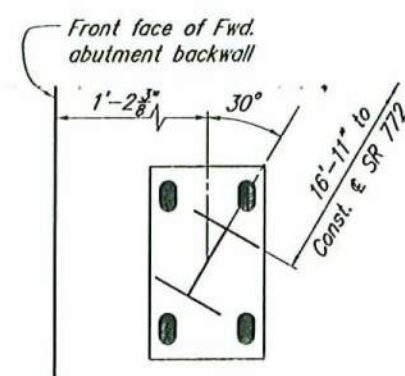
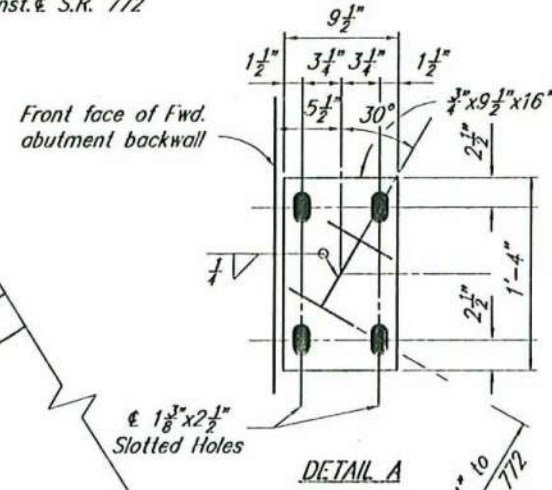


* Spacing along Fascia line

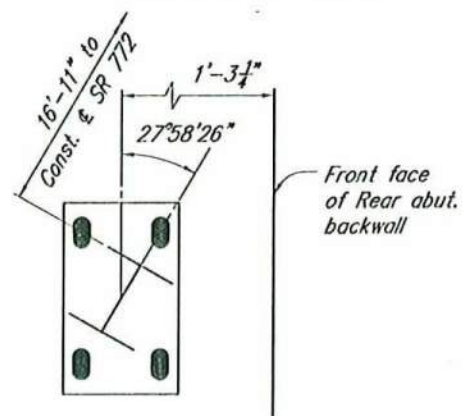
GENERAL PLAN



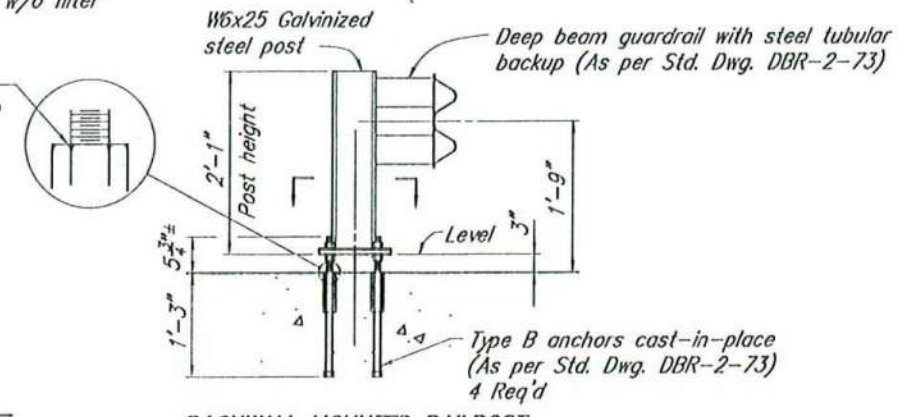
ELEVATION
(Along Const. & S.R. 772)



DETAIL B
(For details and dimensions not shown see Detail A)



DETAIL C
(For details and dimensions not shown see Detail A)



Steel plates, anchors, nuts & washers shall be galvanized as per 711.02. Cost of the backwall mounted posts, base plates, connections and anchorage shall be included with Item 517, railing for payment

HAZELET + ERDAI, INC. CONSULTING ENGINEERS CINCINNATI, OHIO				2/14
GENERAL PLAN AND ELEVATION				
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN Structure File Number 7105444				
DESIGNED	DRAWN	TRACKED	CHECKED	REVIEWED
JSB	VAH		HE	JH 6/1/94

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		31 47

ROS-772-8.94

1004.9-1

REFERENCE shall be made to Standard Drawings:

- AS-1-81 dated 9-15-94
- DBR-2-73 dated 9-15-94
- EXJ-3-82 revised 8-1-84
- EXJ-4-87 revised 11-12-93
- DS-1-92 dated 12-15-94

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1992, Interim specifications 1993, and the ODOT Bridge Design Manual.

DESIGN LOADING - HS20-44 and the Alternate Military Loading.

DESIGN STRESS: LOAD FACTOR DESIGN

Concrete Class S - compressive strength 4500 p.s.i. (superstructure)
Concrete Class C - compressive strength 4000 p.s.i. (substructure)

Prestressed beams - $f'c$ @ 28 days = 6500 psi
 $f'ci$ @ release = 5000 psi

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

Prestressing strand - ASTM A416 $f's$ = 270,000 p.s.i.
Initial stress = 0.75 $f's$

DECK PROTECTION METHOD: Epoxy coated reinforcing steel, top and bottom mats, 2 1/2" concrete cover, sealing of concrete surfaces epoxy, steel drip strip.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed in accordance with Item 202 of the construction and material specifications. Suitable waste masonry may be placed as Bank Protection as directed by the Engineer.

FOUNDATION BEARING PRESSURE: Abutment footings, as designed, produce a maximum bearing pressure of 3 tons per sq. ft.

FOOTINGS shall extend a minimum of 3 inches into bedrock or to the elevation shown, whichever is lower.

UTILITY LINES: All expense involved in relocating (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 SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):
An epoxy-urethane concrete sealer shall be placed on the surfaces shown on sheets 5/14, 6/14 and 11/14. See the proposal note for surface preparation requirements, application rates, material requirements, and application procedures.
The color of the urethane shall be federal color No. 17778 (Off-White).

ELASTOMERIC BEARING: Elastomeric bearings shall be durometer hardness grade 60 and shall conform the requirements of 711.23 of the CMS. Testing shall be included in the unit bid for bearings, each.

ITEM 518, 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN:
All plan references to 6" perforated, helical corrugated steel pipe shall be replaced by this item. Corrugated pipe used in abutment drainage shall be 6" diameter plastic corrugated as per supplemental specification 944, AASHTO M294, Type SP.

ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN: All plan references to 6" non-perforated, helical corrugated steel pipe shall be replaced by this item. Corrugated pipe used in abutment drainage shall be 6" diameter plastic corrugated as per supplemental specification 944, AASHTO M294, Type S. This shall include all elbows, tees, and end caps required to complete the abutment drainage system.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN: Temporary shoring shall be used to accomplish the proposed construction in stages. The design of the temporary shoring shall be the responsibility of the Contractor, be designed by a registered professional engineer, and conform with 501.05. For approval, five copies of the drawings shall be submitted to the Director and concurrently, one copy to the Bureau of Bridges and Structural Design. Construction of the shoring shall not begin until after written approval has been received from the Director. Portions of the temporary shoring composed of steel or concrete may be left in place at the discretion of the Engineer. Portions composed of other materials shall be removed prior to completion of the work.

INTERMEDIATE DIAPHRAGMS shall be cast prior to the end diaphragms. Deck concrete shall not be placed until all diaphragms have been placed and cured for at least 48 hours.

HAZELEY + ERDAL, INC. CONSULTING ENGINEERS CORPORATE OFFICE						3/14
GENERAL NOTES						
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN Structure File Number 7108444						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JSB			MSL	JHO	6/1/94	



ROS-772+8.94

ESTIMATED QUANTITIES					Calculated by JSB Checked by DJS				
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE	REAR ABUT.	FORWARD ABUT.	GENERAL	AS BUILT
202	11002	Lump		Structures removed, over 20 foot span				Lump	
503	11101	Lump		Cofferdams, cribs and sheeting, as per plan				Lump	
503	21100	349	Cu. yd.	Unclassified excavation					
503	31100	24	Cu. yd.	Rock and/or shale excavation		195	153		
						17	7		
509	15824	34137	pound	Epoxy coated reinforcing steel, grade 60	20354	6258	7025		
Special	51148000	110	Cu. yd.	High performance concrete, superstructure (deck) (Mix 4) (See Sht. 11/14) *	110				
Special	51148040	220	Cu. yd.	High performance concrete, substructure (See Proposal Note)					
Special	51149000	Lump		High performance concrete, trial mix (See Proposal Note)		115	103		
Special	51149010	Lump		High performance concrete, testing (See Proposal Note)					Lump
Special	51149500	22	Cu. yd.	High performance concrete, misc.: diaphragms (Mix 4) (See Sht. 3/14) *	22				Lump
Special	51287510	444	Sq. yd.	Sealing of concrete surfaces (epoxy - urethane) (white) (see Proposal Note)	298	77	69		
515	50000	4	Each	Prestressed concrete I-beam, Modified Type IV, 108-3 1/4" (see Proposal Note)	4				
516	11211	74	Lin. Ft.	Structural expansion joint including elastomeric strip seal, as per plan (See Sht. 10/14) *	74				
518	43100	8	Each	Elastomeric bearing with internal laminates only (neoprene) 1 3/4" x 12" x 24" (See proposal note)	8	4	4		
517	72300	24375	Lin. ft.	Rolling (Deep beam rail with steel tubular backup and Type 2 steel posts and anchor bolts) (see Proposal Note)	24375				
518	21200	90	Cu. yd.	Porous backfill with filter fabric					
Special	51822300	107	Lin. ft.	Steel drip strip	107	47	43		
518	40001	115	Lin. ft.	6" Perforated corrugated plastic pipe, as per plan (see Sht. 3/14)		60	55		
518	40011	42	Lin. ft.	6" Non-perforated corrugated plastic pipe, including specials, as per plan (See Sht. 3/14)		22	20		

*(See Proposal Note)

705123 04 MAY 1994

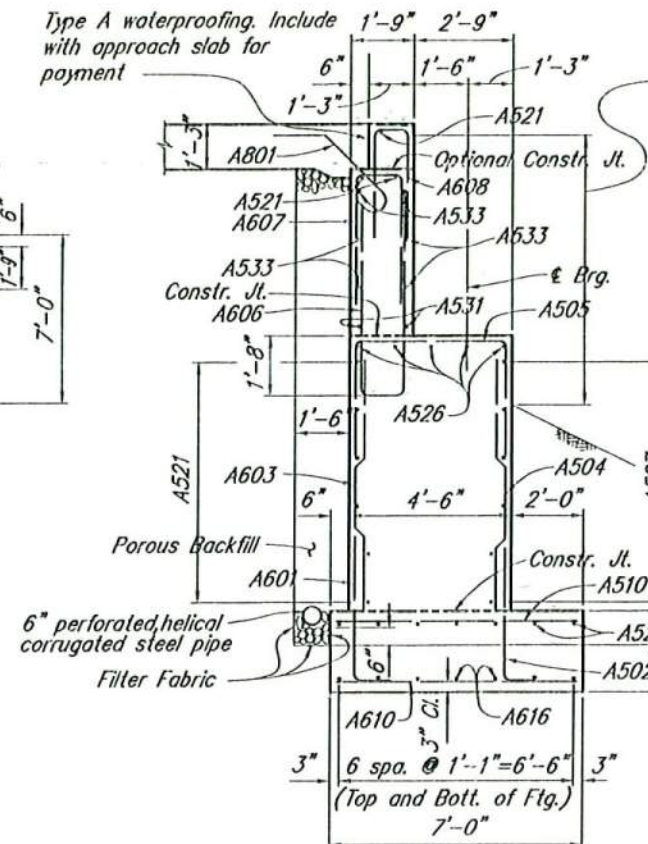
4 / 14					
ESTIMATED QUANTITIES					
BRIDGE NO. ROS-772-0899					
OVER RALSTON RUN					
Structure File Number 702411					
DESIGNED	DRAWN	CHECKED	APPROVED	DATE	REVISION
JSB			DJS	JNO 6/1/94	

ROS-772-8.94

Limits for sealing of concrete surfaces with epoxy - urethane, white sealer

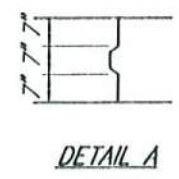
NOTES:
 A801 bars are to be placed parallel to Const. & S.R. 772.
 F.F. denotes Front Face.
 B.F. denotes Back Face.
 E.F. denotes Each Face.
 Porous Backfill, 1.5' thick, shall extend up to the plane of the subgrade and laterally to the ends of the wingwalls.
 Concrete shall be Class C.
 For A801 bar and Outlet details, see sh. 6/14
 Min. lap #6 bar 2'-4"
 Min. lap #5 bar 1'-10"

Type A waterproofing. Include with approach slab for payment



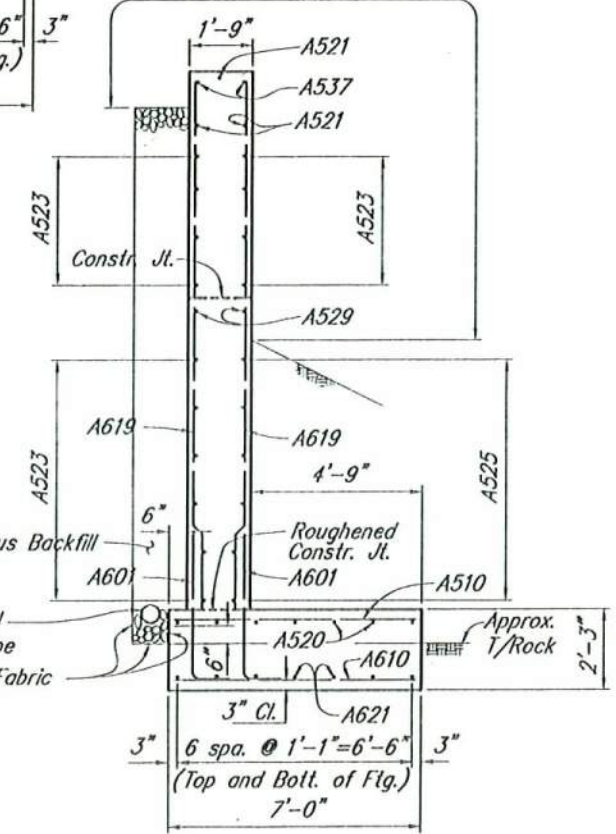
SECTION A-A

See sheets 6/42 thru 13/42 for stage construction.

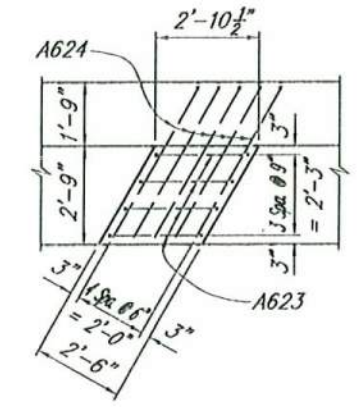


DETAIL A

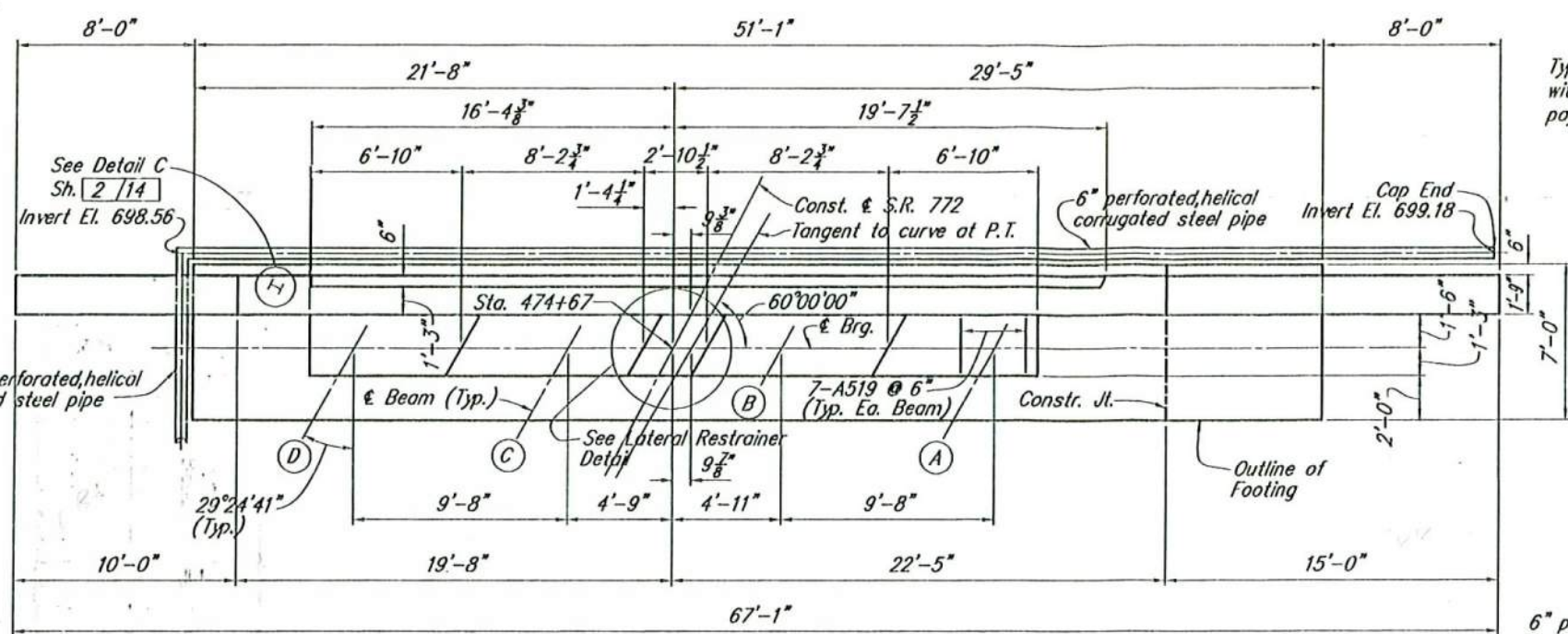
713.10
 - 697.00
 = 16.10
 - 2.3
 = 14.97
 1.30
 13.67



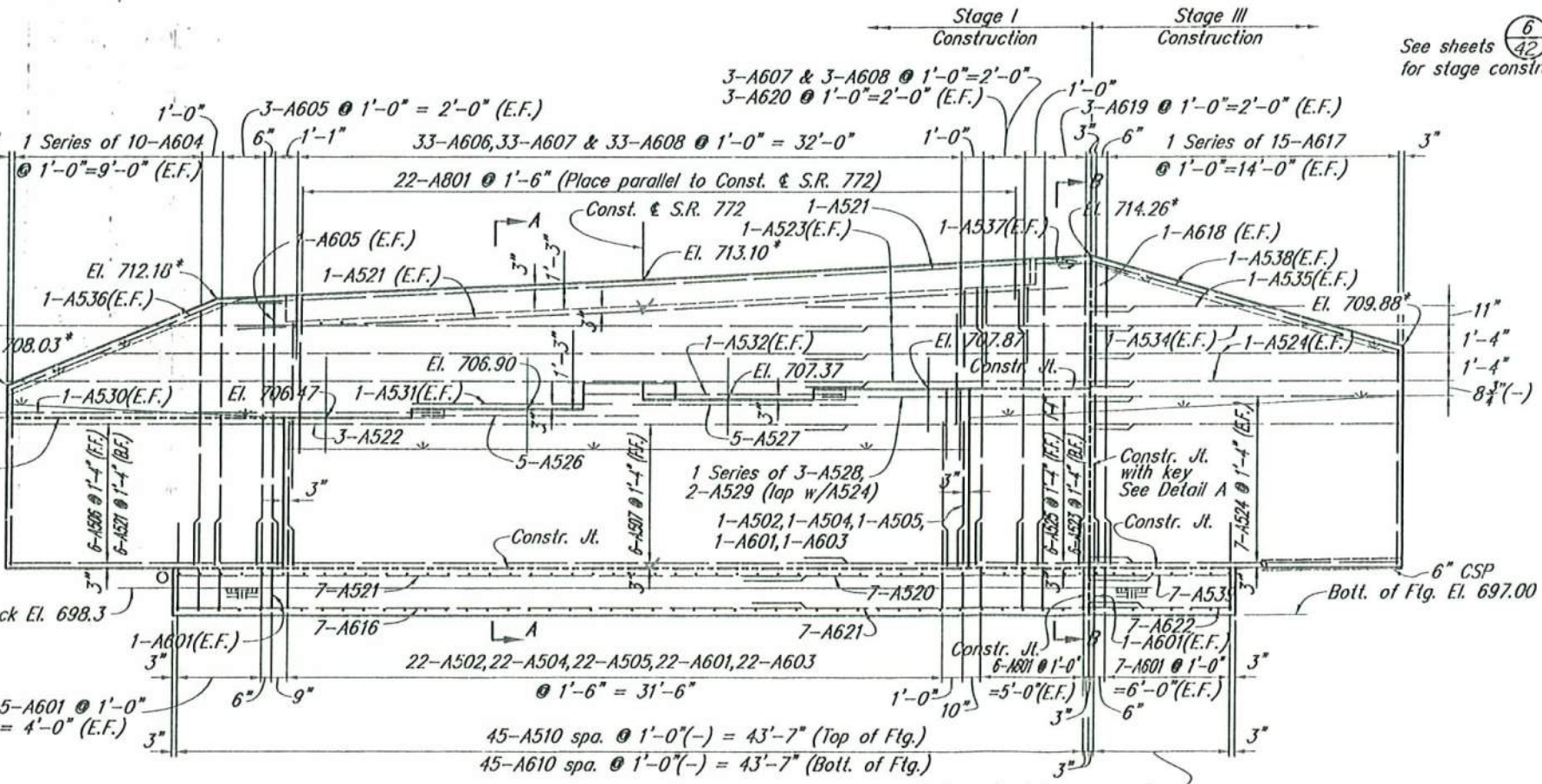
SECTION B-B



LATERAL RESTRAINER DETAIL



PLAN



ELEVATION

* Elevation at front face of backwall

HAZELET + ERDAI, INC.
 CONSULTING ENGINEERS
 CINCINNATI, OHIO

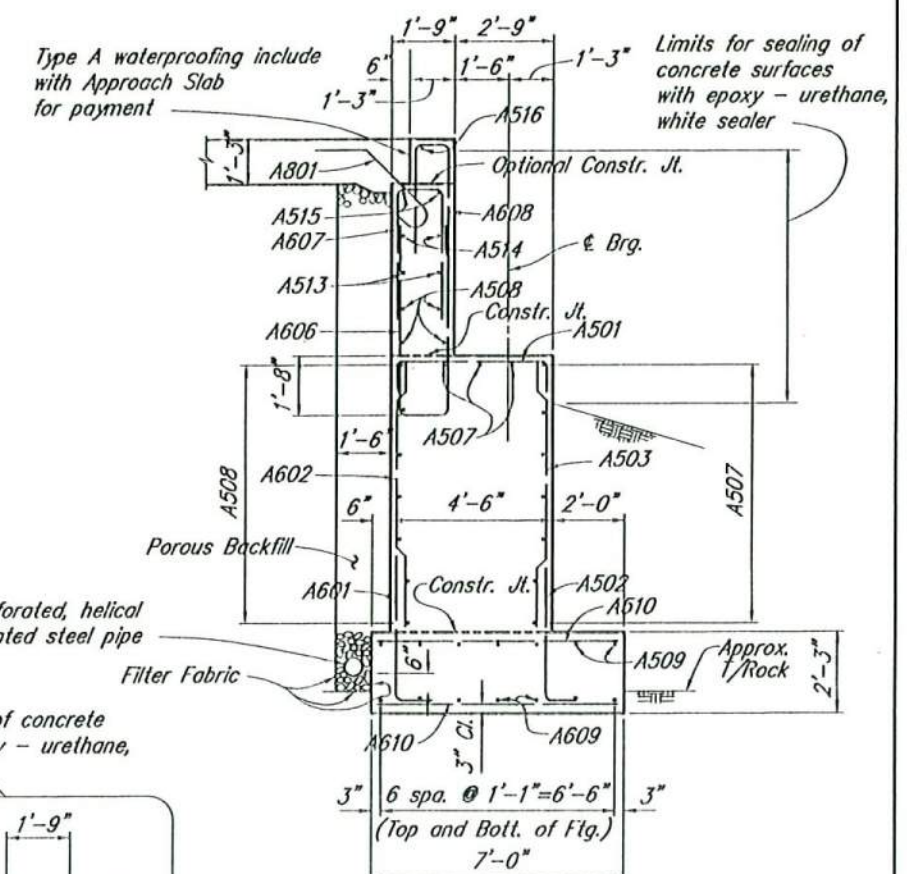
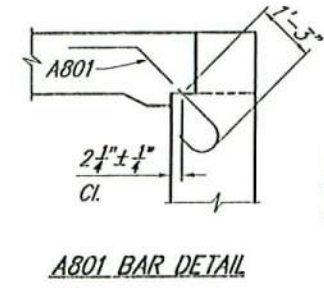
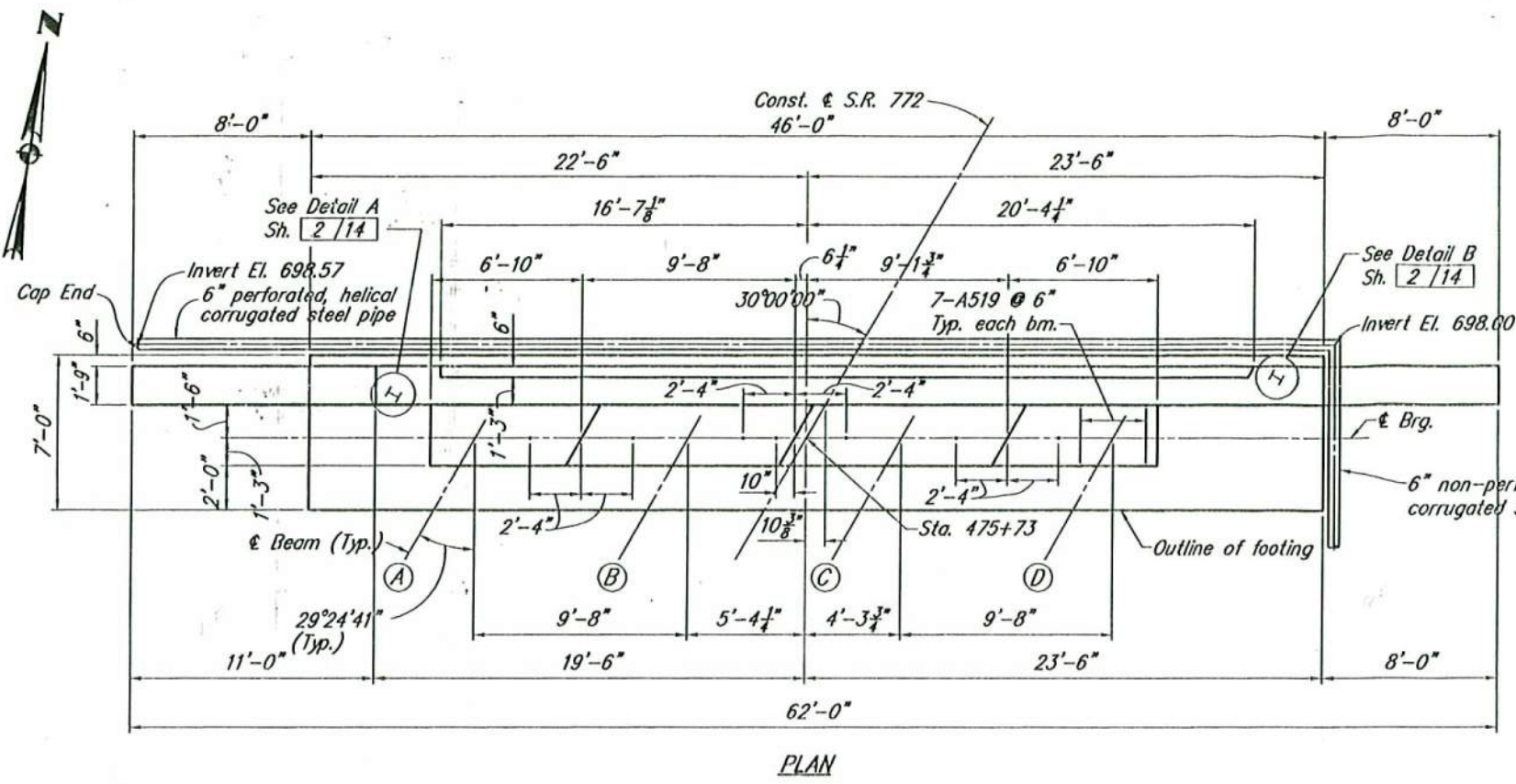
REAR ABUTMENT

BRIDGE NO. ROS-772-0899
 OVER RALSTON RUN
 Structure File Number 7105444

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MSL	MSL		HE	JHo	6/1/94	

7261RA1 22 NOV 1993

ROS-772-8.94



Limits for sealing of concrete surfaces with epoxy - urethane, white sealer

NOTES:

A801 bars are to be placed parallel to Const. & S.R. 772.

F.F. denotes Front Face.

B.F. denotes Back Face.

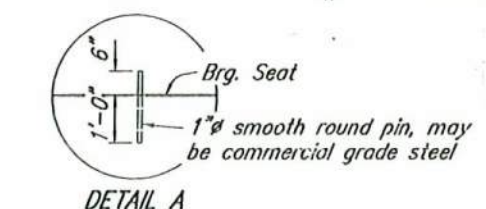
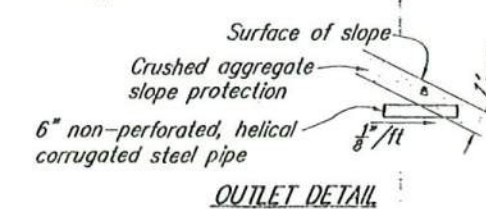
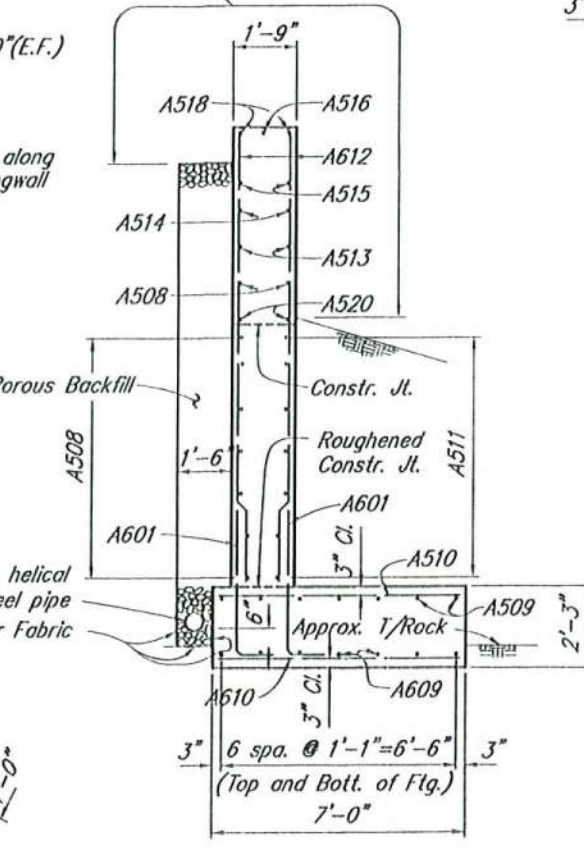
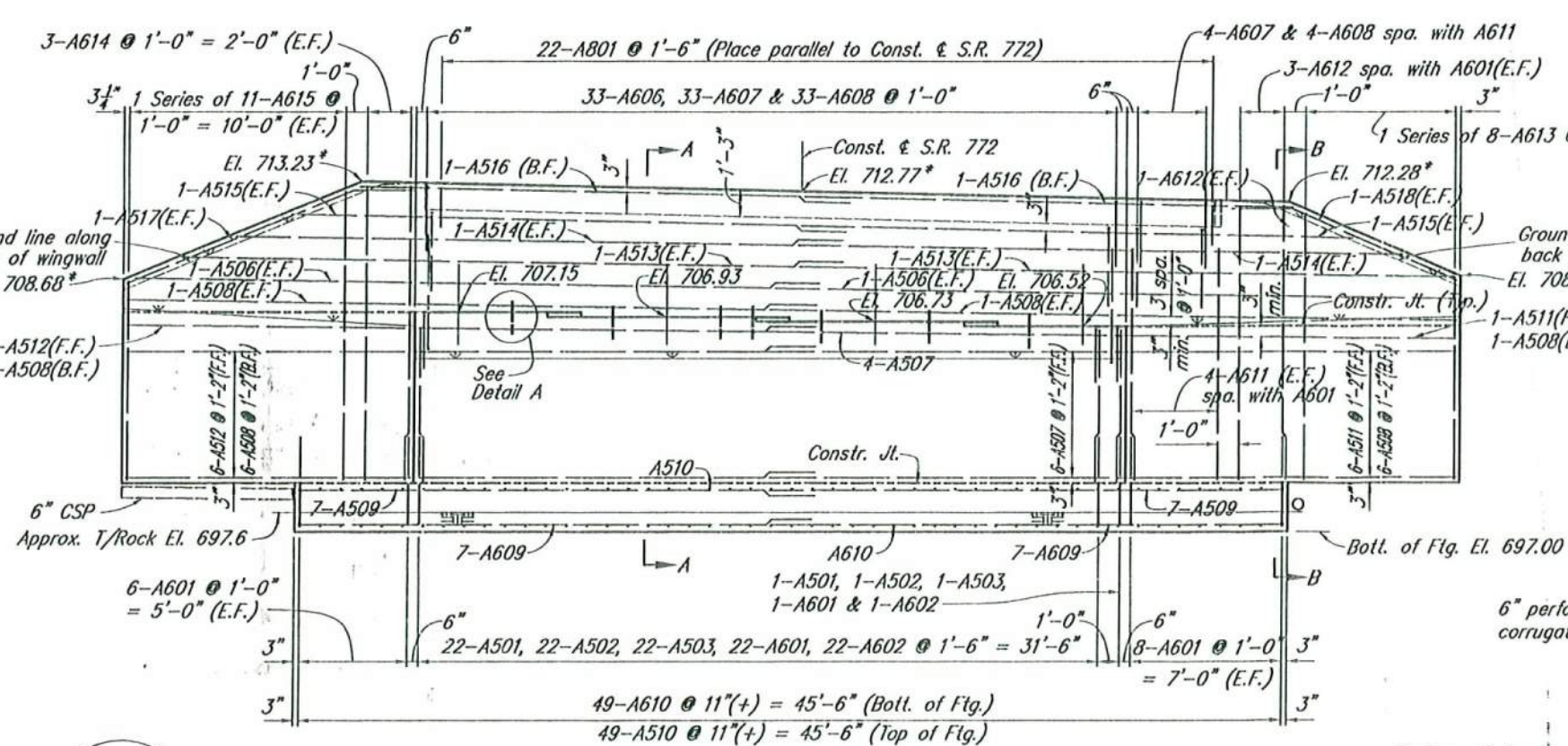
E.F. denotes Each Face.

Porous Backfill, 1.5' thick, shall extend up to the plane of the subgrade and laterally to the ends of the wingwalls.

Concrete shall be Class C.

Min. lap #6 bar 2'-4".

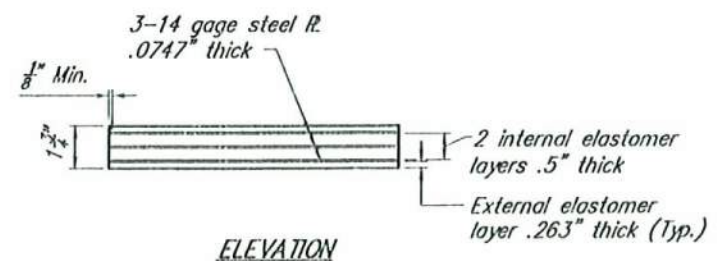
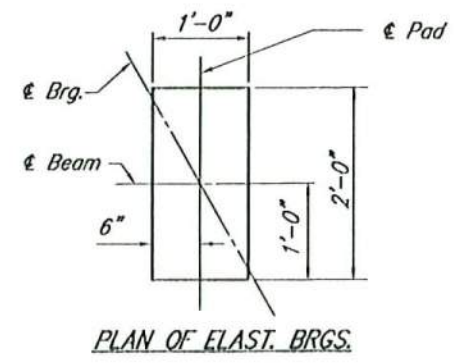
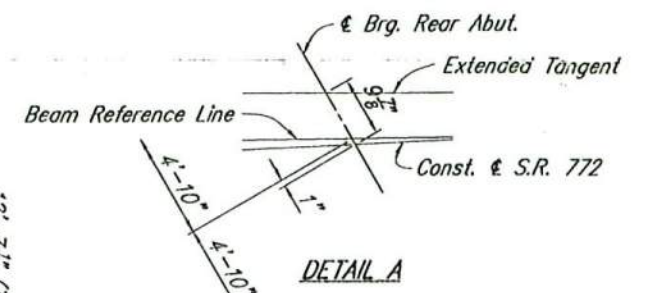
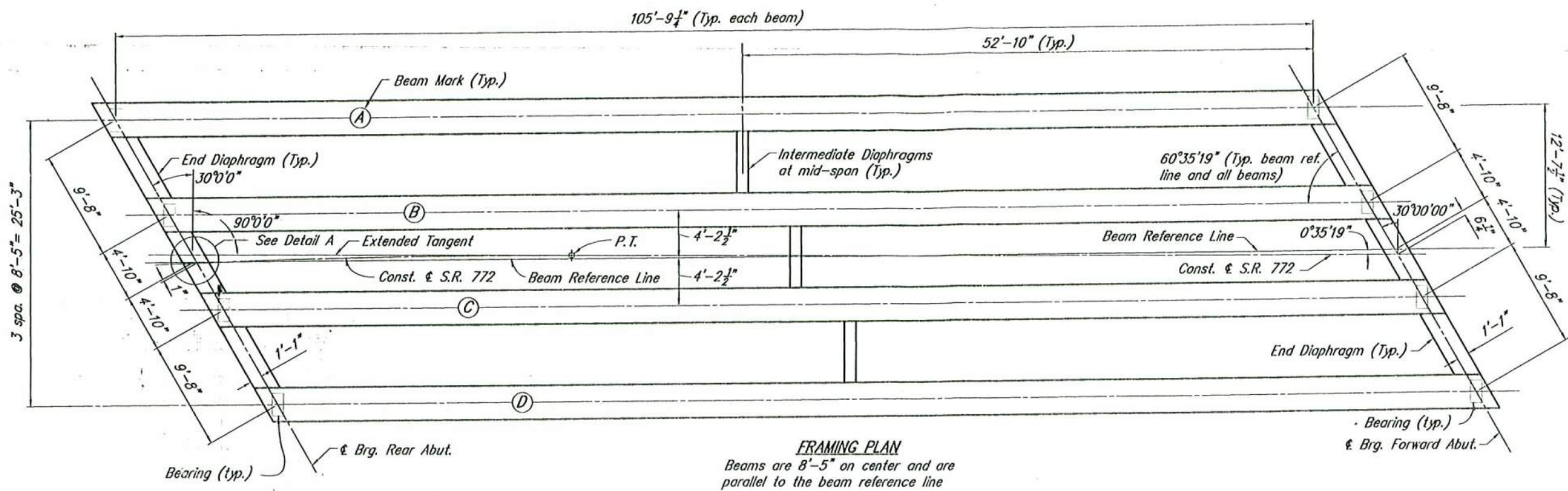
Min. lap #5 bar 1'-10".



* Elevations are at front face of Abut. backwall.

HAZELET + ERDAL, INC. CONSULTING ENGINEERS				6/14
FORWARD ABUTMENT				
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN				
Structure File Number 7105444				
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
SGM	MSL	JSB	JH0	6/1/94

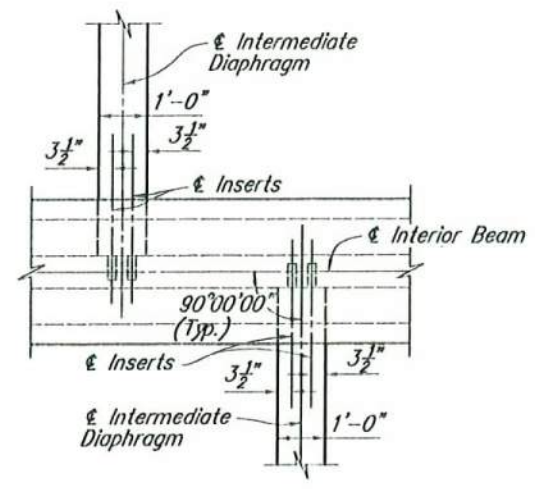
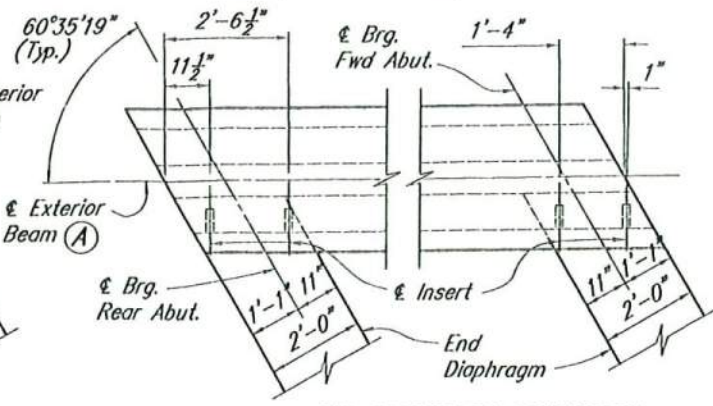
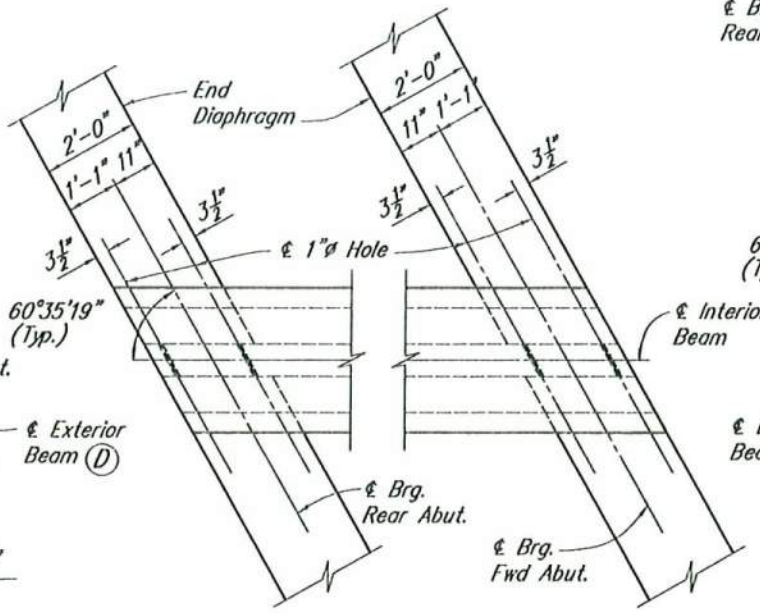
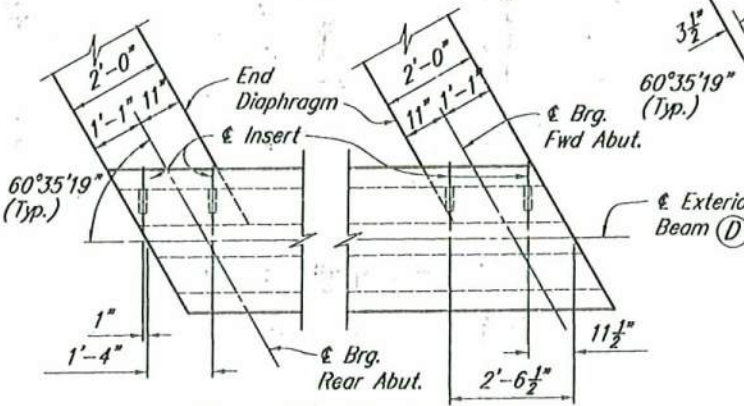
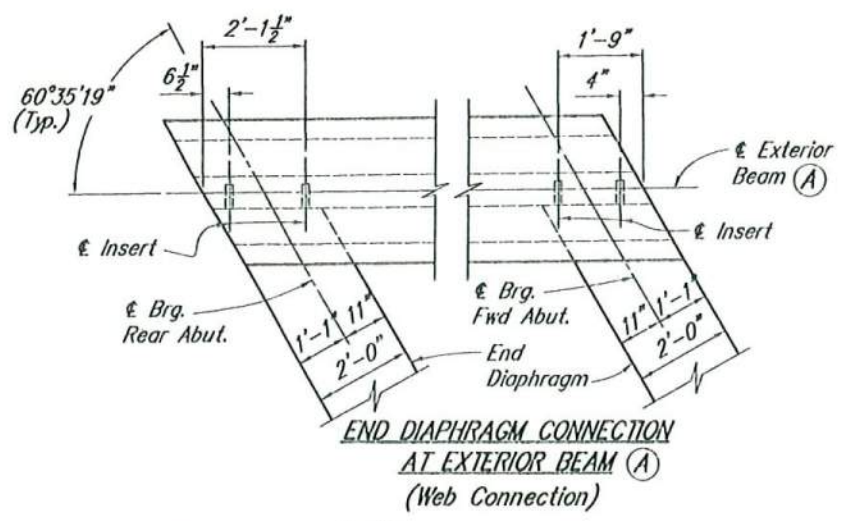
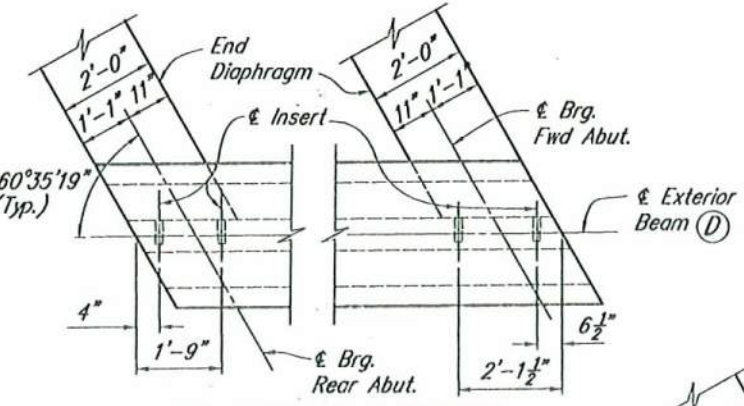
ROS-772-8.94



LAMINATED ELASTOMERIC BEARING

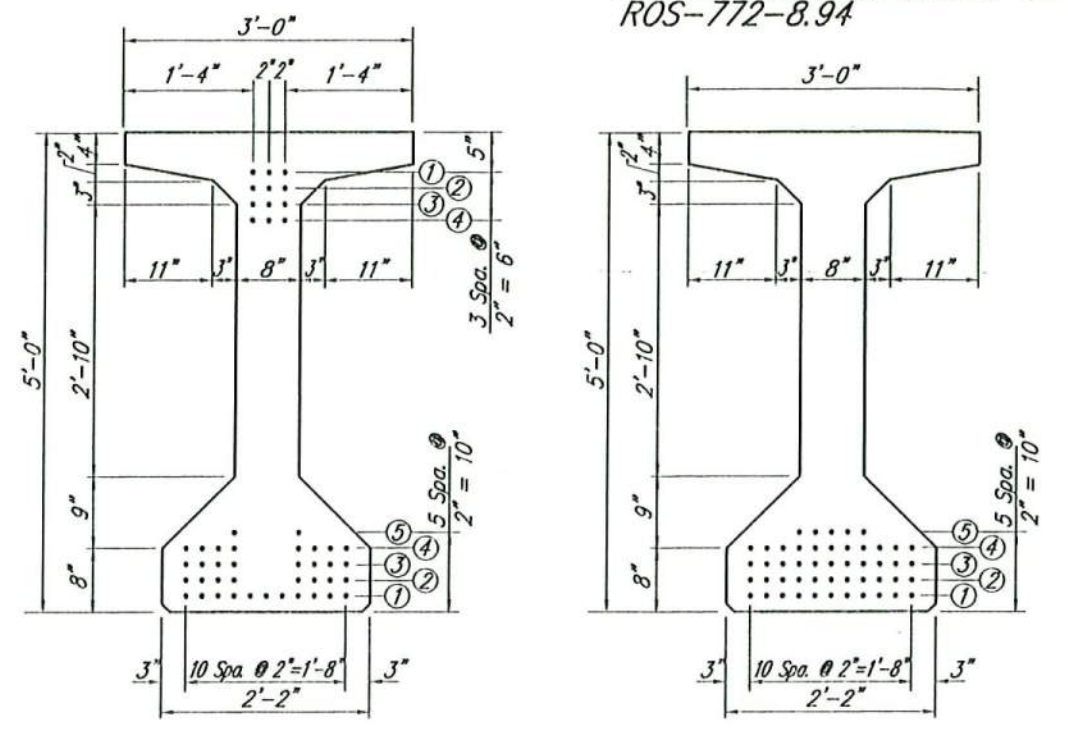
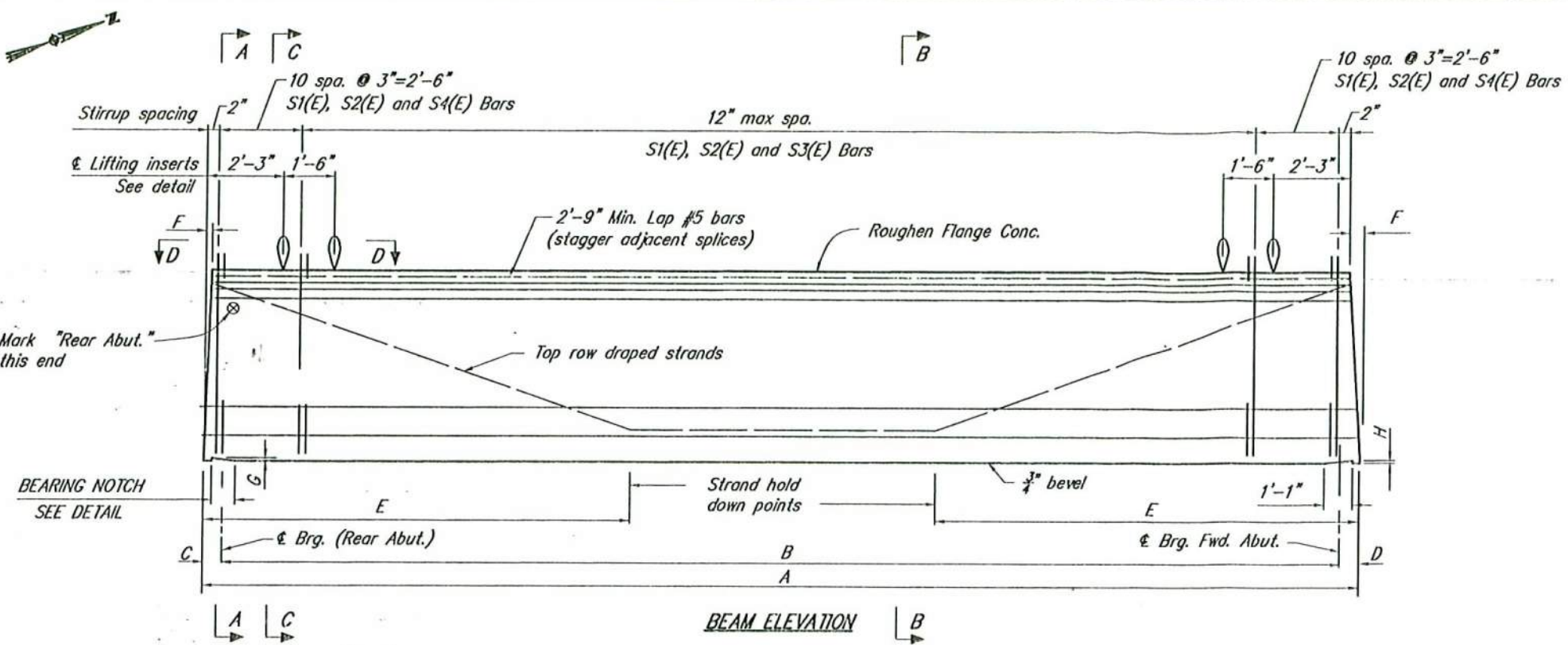
Dead load reaction = 124.7 kips
Live load reaction = 51.7 kips
Max. design load = 176.4 kips

NOTES
Elastomer shall be 50 durometer hardness.
For Diaphragm details see sheet 9/14



HAZELET + ERDAL, INC. CONSULTING ENGINEERS CINCINNATI, OHIO		7/14
SUPERSTRUCTURE FRAMING PLAN		
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN Structure File Number 7105444		
DESIGNED	DRAWN	TRACED
JSB	HE	MSL
CHECKED	REVIEWED	DATE
	JH0	6/1/94
REVISED		

ROS-772-8.94

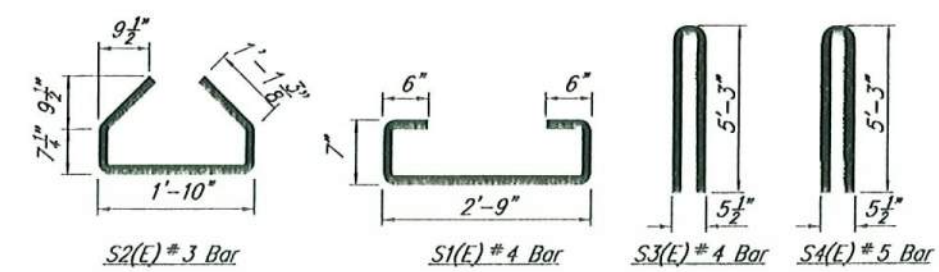
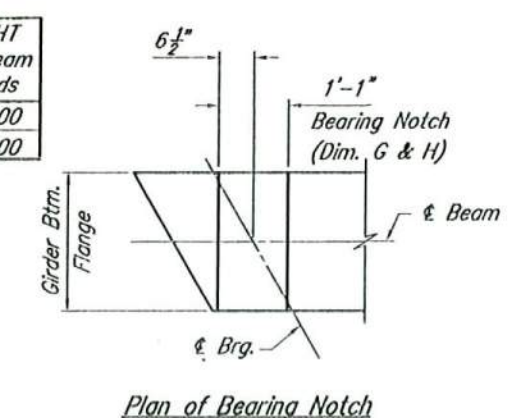
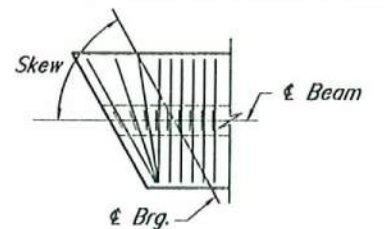


BEAM DIMENSIONS (at \emptyset Beam)

Beam Mark	No. Req'd.	Marked End (Rear Abut.)					Other End (Fwd. Abut.)				WEIGHT Ea. Beam Pounds				
		A	B	C	D	E	Skew	F	G	H		Skew	F	G	H
A thru C	3	108'-3 1/4"	105'-9 1/4"	1'-3"	1'-3"	46'-1 1/8"	60° 35' 19"	1/2"	1/8"	—	60° 35' 19"	1"	—	1/8"	97,000
D	1	108'-3 1/4"	105'-9 1/4"	1'-3"	1'-3"	46'-1 1/8"	60° 35' 19"	1/2"	1/8"	—	60° 35' 19"	1/2"	1/8"	97,000	

NUMBER OF 1/2" \emptyset - 7 WIRE STRANDS IN INDICATED ROW

Beam Mark	Midspan (Section B-B)					End of Beam (Section A-A)					Total Number	Initial Prestress Force/Strand (lbs.)					
	Bottom Rows					Bottom Rows											
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)		
A thru D	11	11	11	11	5	11	8	8	8	2	3	3	3	3	3	49	30,983



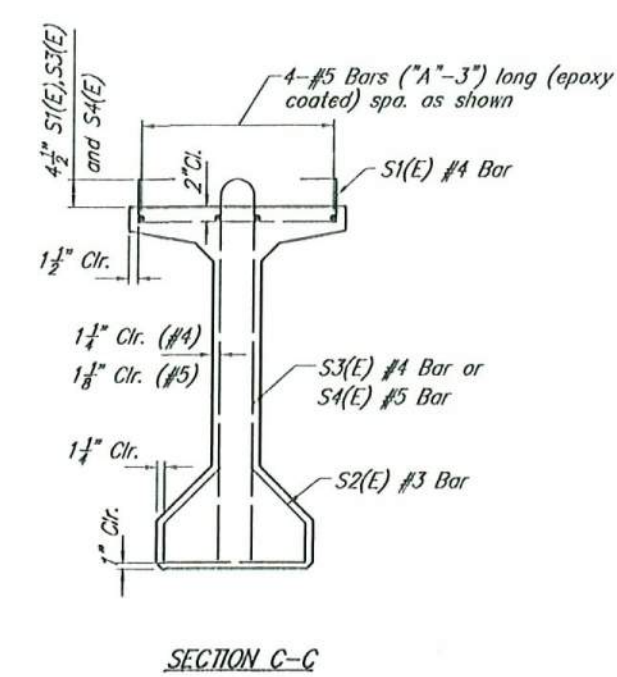
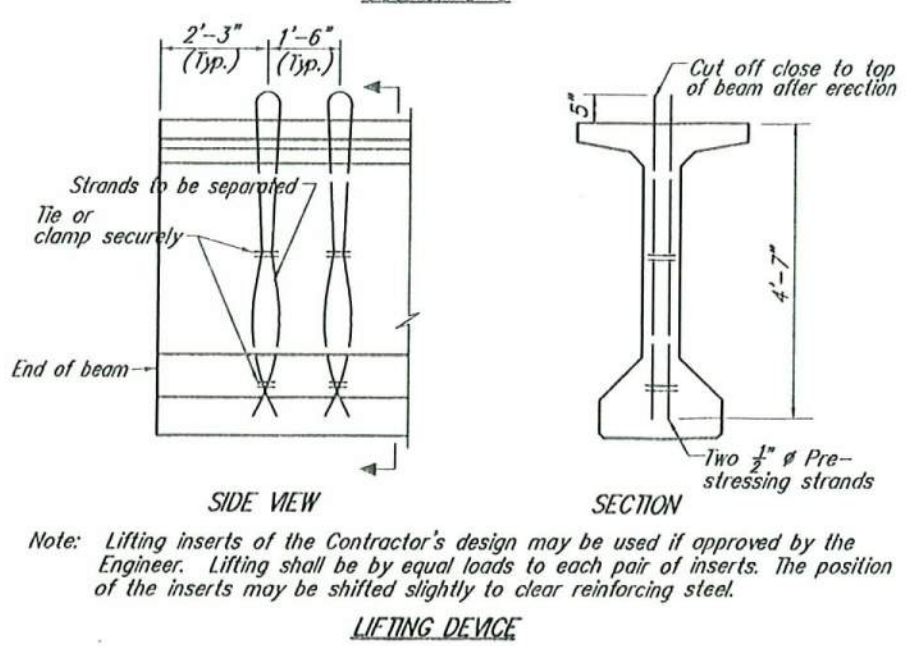
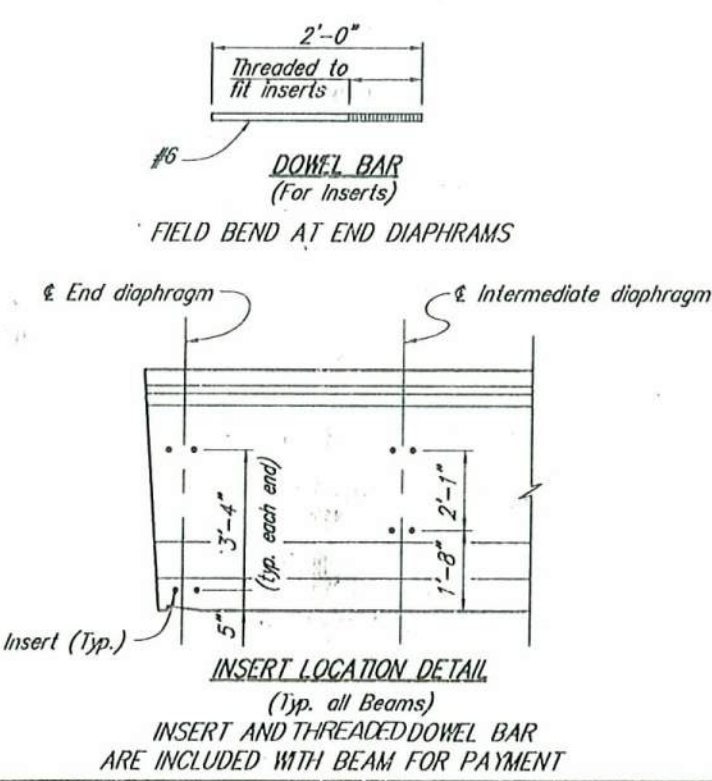
NOTES

Prestressing steel shall be 1/2" \emptyset uncoated seven-wire low relaxation strands, ASTM A 416, grade 270 with an area of 0.153 square inches.

Concrete shall have a minimum compressive strength of 6,500 psi in 28 days.

Concrete must attain a minimum compressive strength of 5,000 psi before the prestressing strands are released.

Inserts for exterior beams shall have an ultimate capacity of 20,000 lb. They shall be Dayton Superior D-50 DBR #6 with a #6 threaded rebar to give a total length of 7". Interior beams may have inserts used instead of 1" \emptyset holes shown. Two inserts can be used to replace the 1" \emptyset holes, stagger inserts in the girder web. Alternate inserts may be used with the engineers approval. Bars threaded to insert can be supplied by Dayton Superior or another source. They shall have 1/4"-10 NC threads.

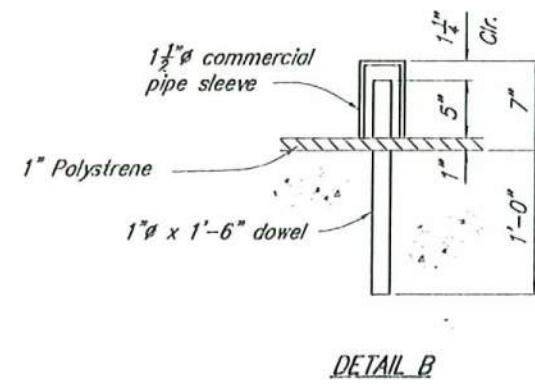
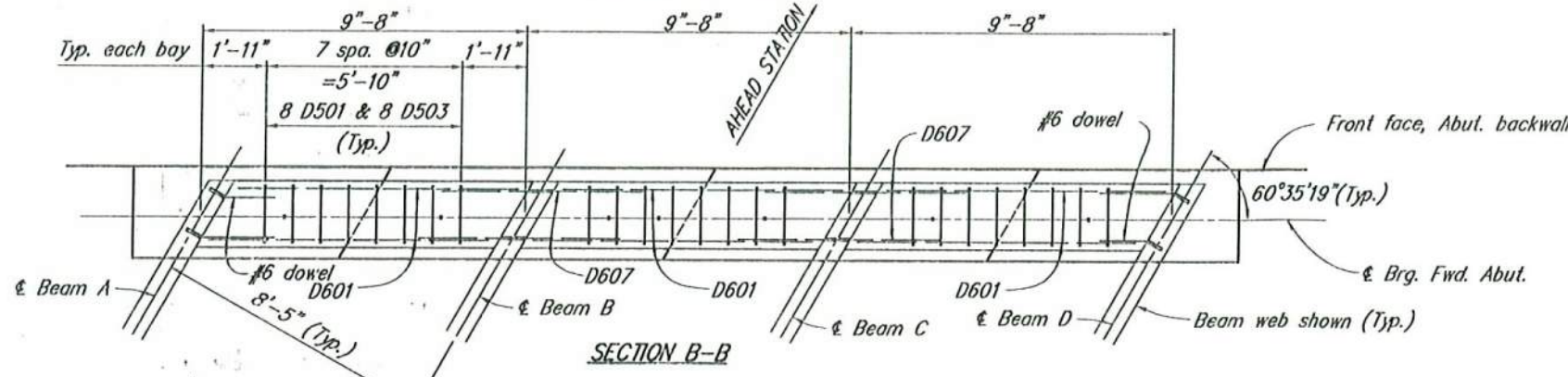
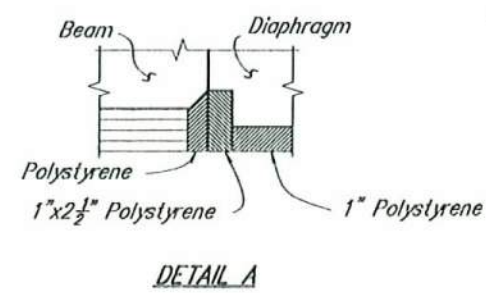
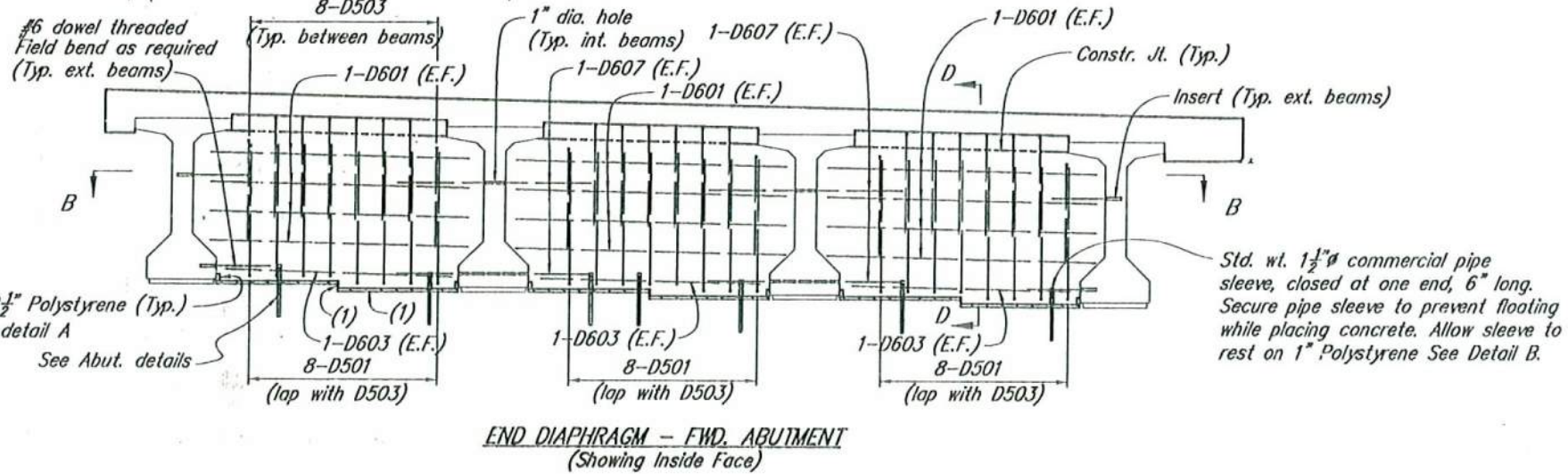
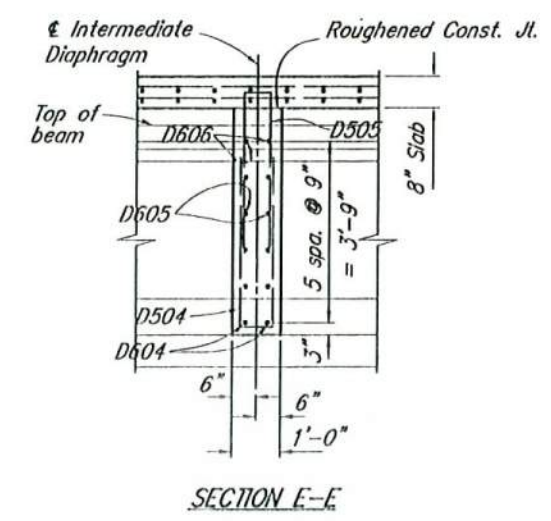
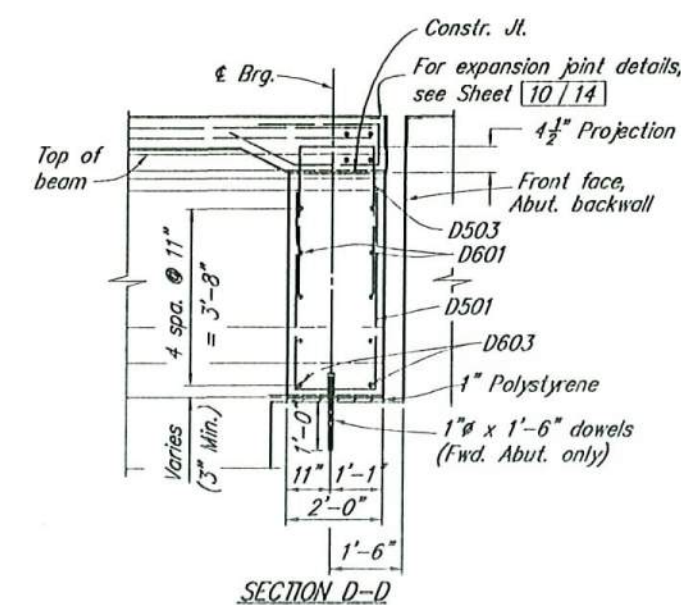
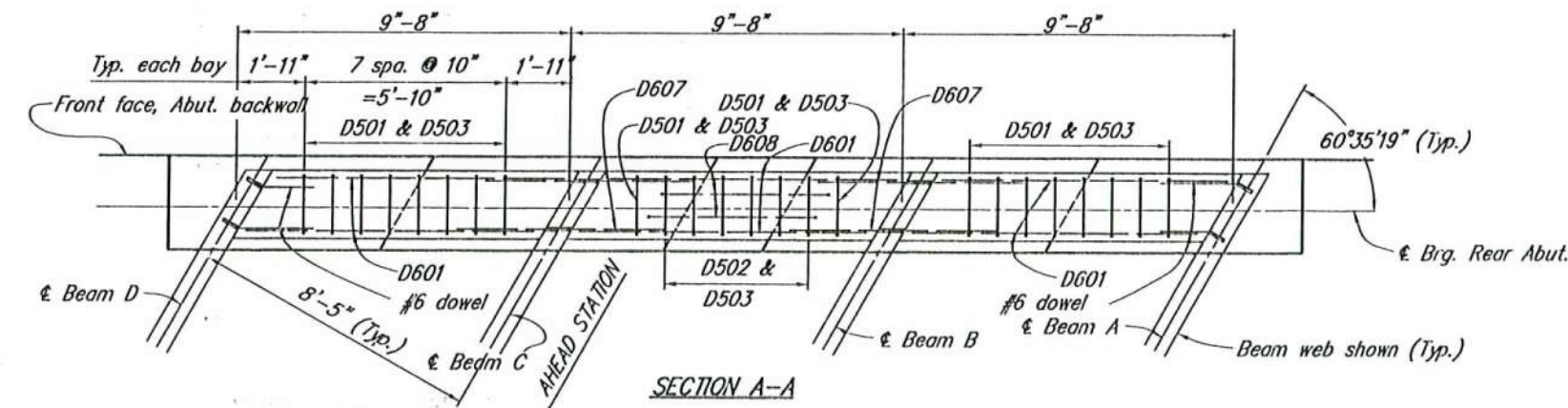
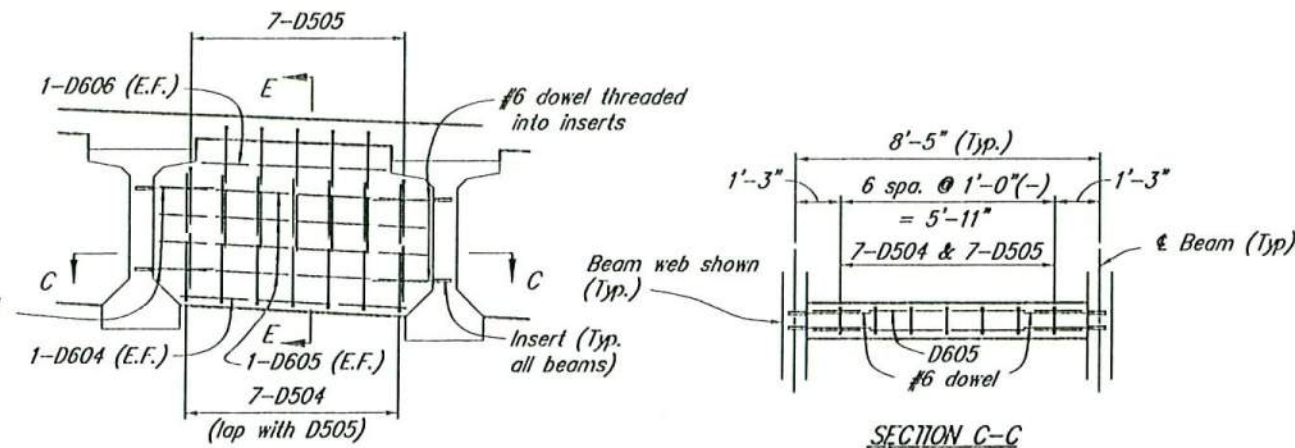
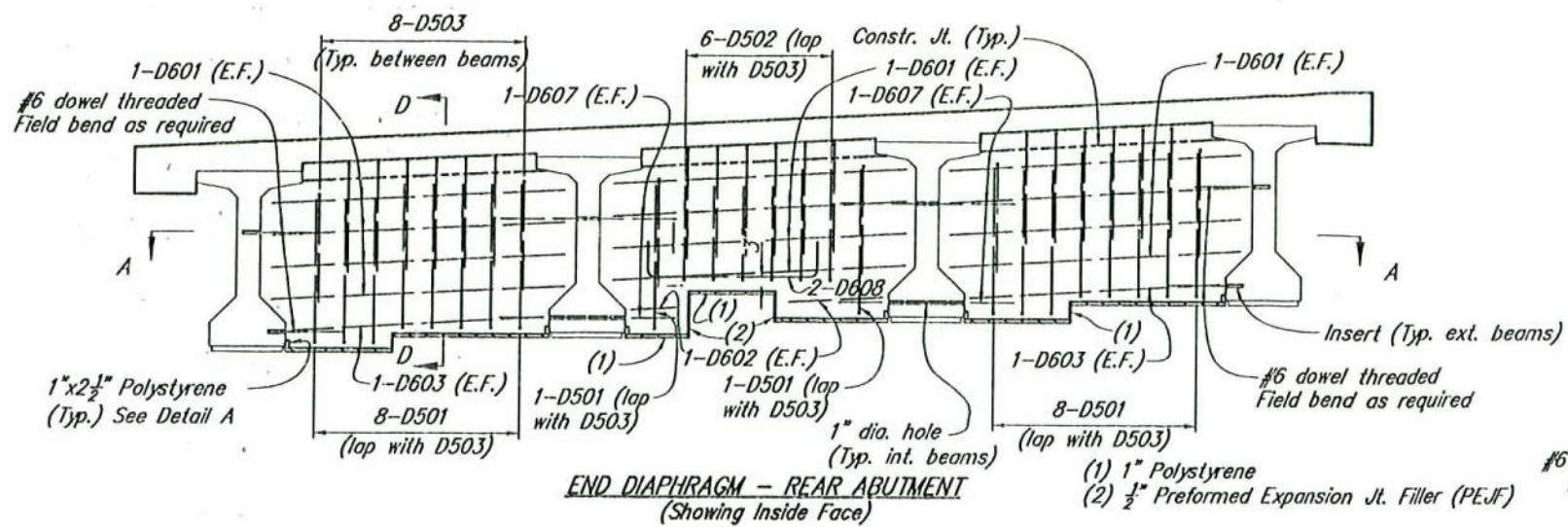


HAZLET + ERDAL, INC.				8/14	
CONSULTING ENGINEERS					
CINCINNATI, OHIO					
PRESTRESSED CONCRETE					
I-BEAM DETAILS					
BRIDGE NO. ROS-772-0899					
OVER RALSTON RUN					
Structure File Number 7105444					
DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JSB	JSB		MSL	JH 6/1/94	

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

37
47

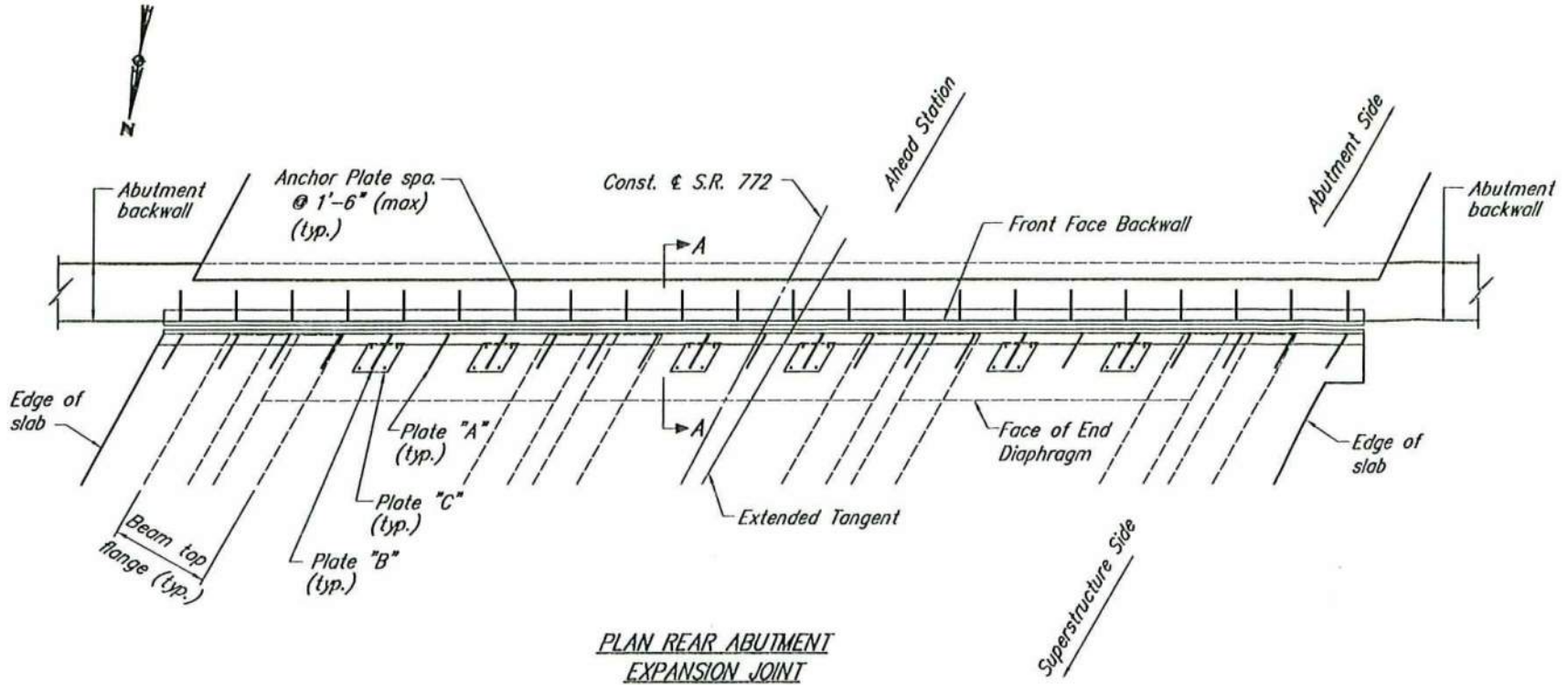
ROS-772-8.94



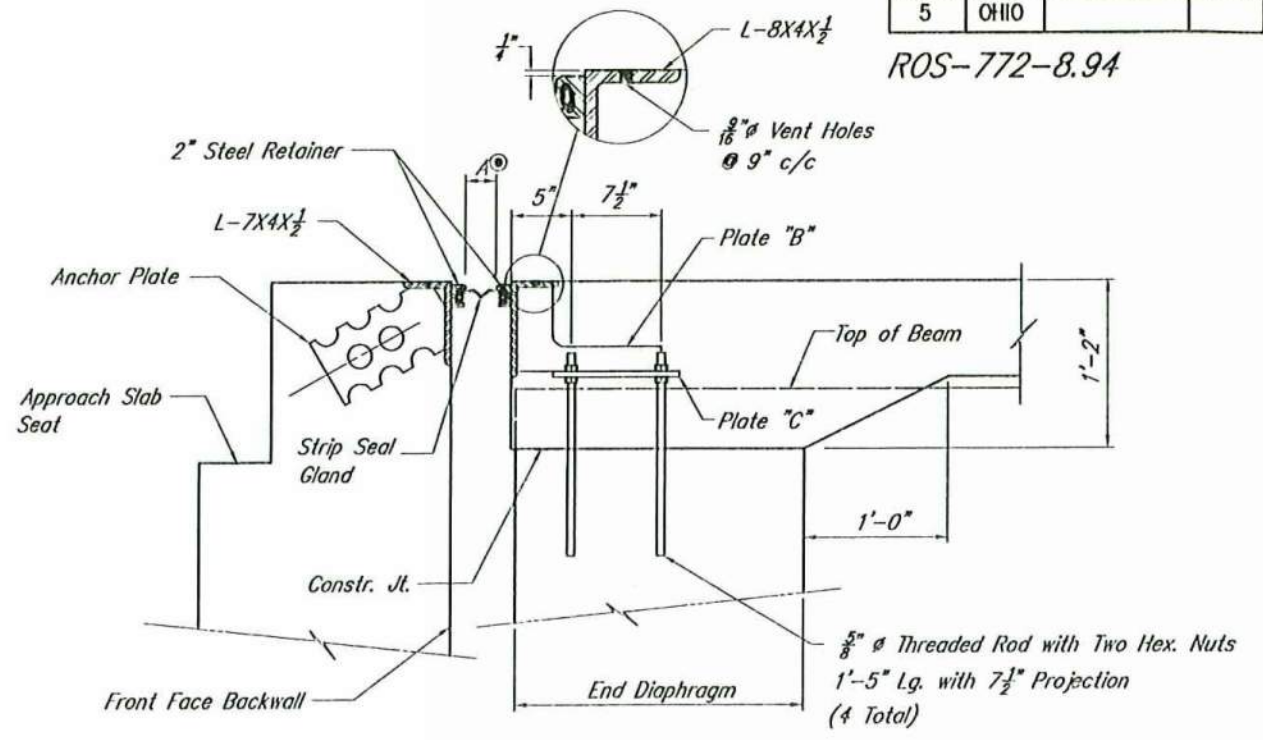
NOTES:
1) For location of inserts and 1" holes in beams, see Sheets 7/14 and 8/14.
2) PEJF & Polystyrene is to be incidental to diaphragm concrete.

HAZELET + ERDAI, INC. CONSULTING ENGINEERS CINCINNATI, OHIO					9/14
SUPERSTRUCTURE DETAILS DIAPHRAGMS					
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN Structure File Number 7105444					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
MSL	MSL		JSB	Jlt	6/1/94

ROS-772-8.94



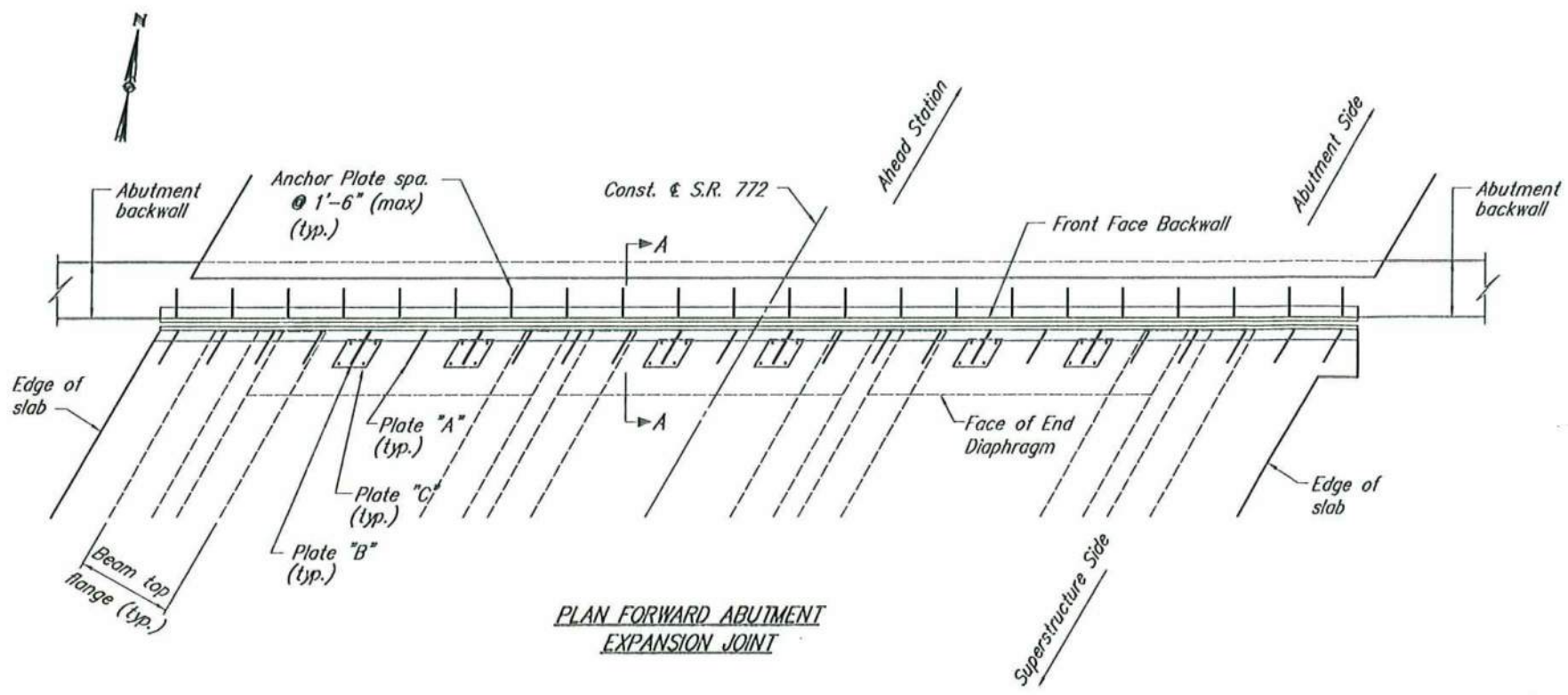
PLAN REAR ABUTMENT EXPANSION JOINT



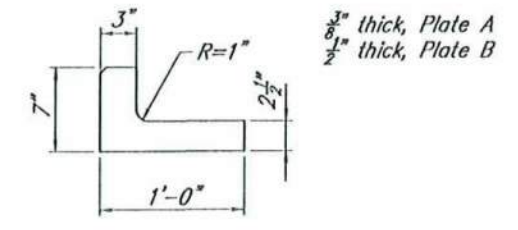
SECTION A-A

TABLE FOR DIM. "A"

TEMP.	REAR ABUT.	FWD. ABUT.
30°	1 7/8"	1 5/8"
40°	1 3/4"	1 5/8"
50°	1 3/4"	1 5/8"
60°	1 5/8"	1 5/8"
70°	1 5/8"	1 5/8"
80°	1 1/2"	1 5/8"
90°	1 1/2"	1 5/8"



PLAN FORWARD ABUTMENT EXPANSION JOINT



ARMOR ANCHOR PLATES A & B

NOTES

For Details, Dimensions and Notes not shown see Std. Dwg. EXJ-4-87

Use Table on This Sheet to Set Joint Openings (Dim. "A") for the Measured Temperature at the Time of Concrete Placement.

Plate "C" is Detailed on Std. Dwg. EXJ-3-82, sheet 3 of 4.

Field Weld Plate "B" to Plate "C" After All Final Adjustments Are Made As Shown on Std. Dwg. EXJ-3-82, sheet 1 of 4.

Location	Seal Movement Rating	Manufacturer & Designation*		
		The D.S. Brown Company	Structural Accessories, Inc.	Watson-Bowman & ACME Corp.
Rear Abut. & Fwd. Abut.	3"	300L	—	SE-300

* Or an approved alternate

HAZLET + ERDAL, INC. CONSULTING ENGINEERS CENTRAL ODD 10/14

EXPANSION JOINTS

BRIDGE NO. ROS-772-0899 OVER RALSTON RUN

Structure File Number 1105444

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JSB	JSB		MSL	JH	6/1/94	

ROS-772-8.94

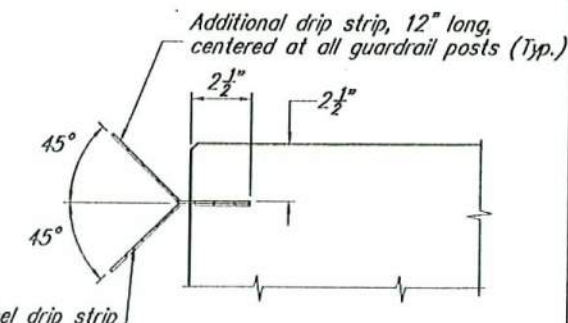
SLAB "T" DIMENSIONS	
€ Brg. Rear Abutment	10"
Mid-span Span*	12 1/4"
€ Brg. Forward Abutment	10"

Dim. "T" for Girders A-D is based on the following values Measured at Midspan:

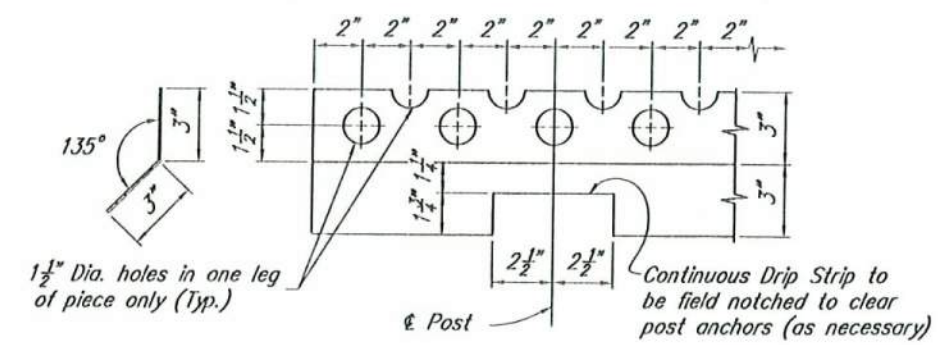
- 1) Girder Camber Prior to Deck Placement = 3 3/8"
- 2) Deflection Due to Deck Placement = 1 7/8"
- 3) Correction for Cross Slope Transition and Vertical Curve = 3 1/4"

T = 3 3/4" - 3 3/8" + 1 7/8" = 2 1/4" + 10" = 12 1/4" (At Mid-span)

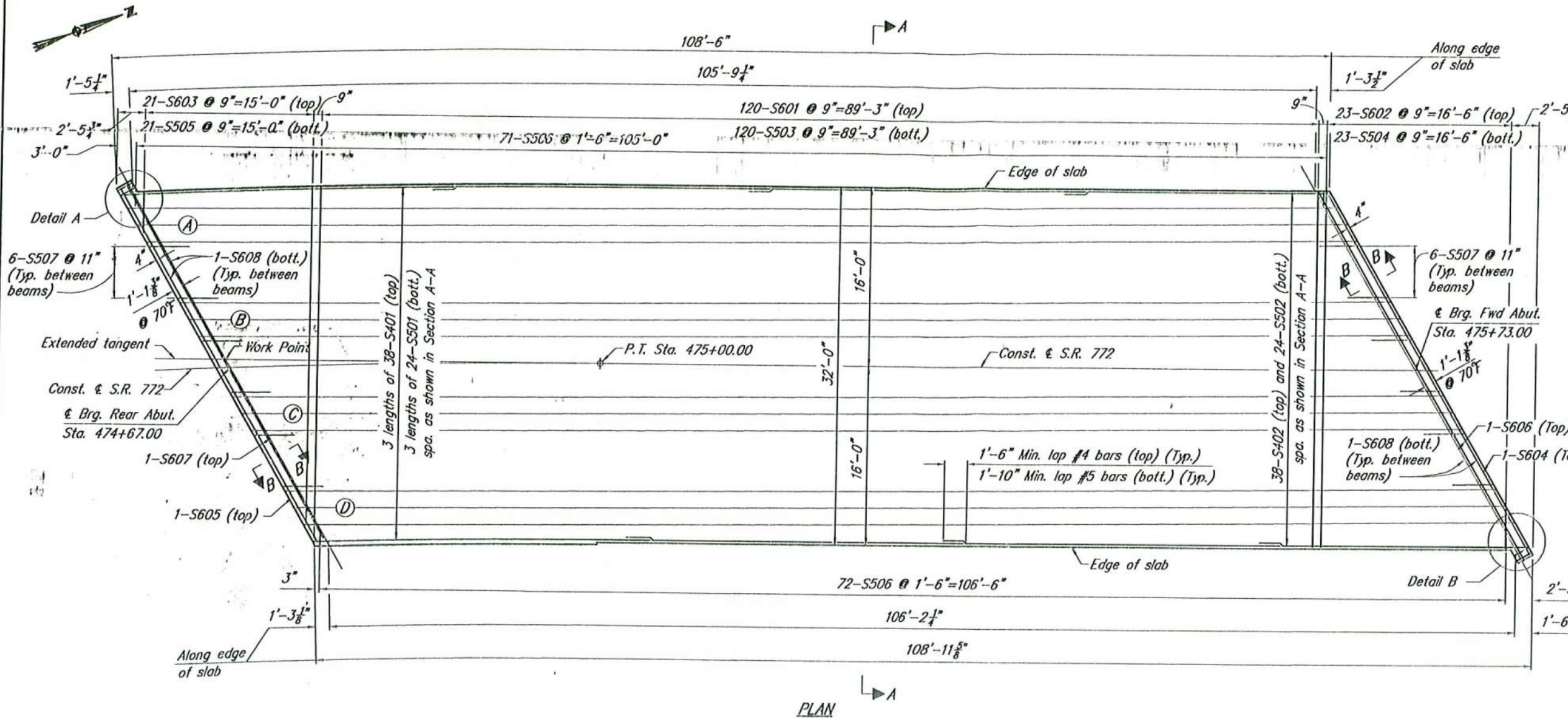
*NOTE:
This is the nominal dimension. The pay quantity of that portion of the deck concrete over the beams shall be based on the average of this dimension and the depth at beam bearings even though deviation from this average may occur because the top of the beam may not have the camber anticipated in the design; i.e. the mid-span value given as 1) above. The camber of beams shall be measured in the field before the deck is placed. The actual depth at mid-span shall be the nominal dimension plus or minus the difference between actual and anticipated camber.



TYPICAL SECTION OF DRIP STRIP

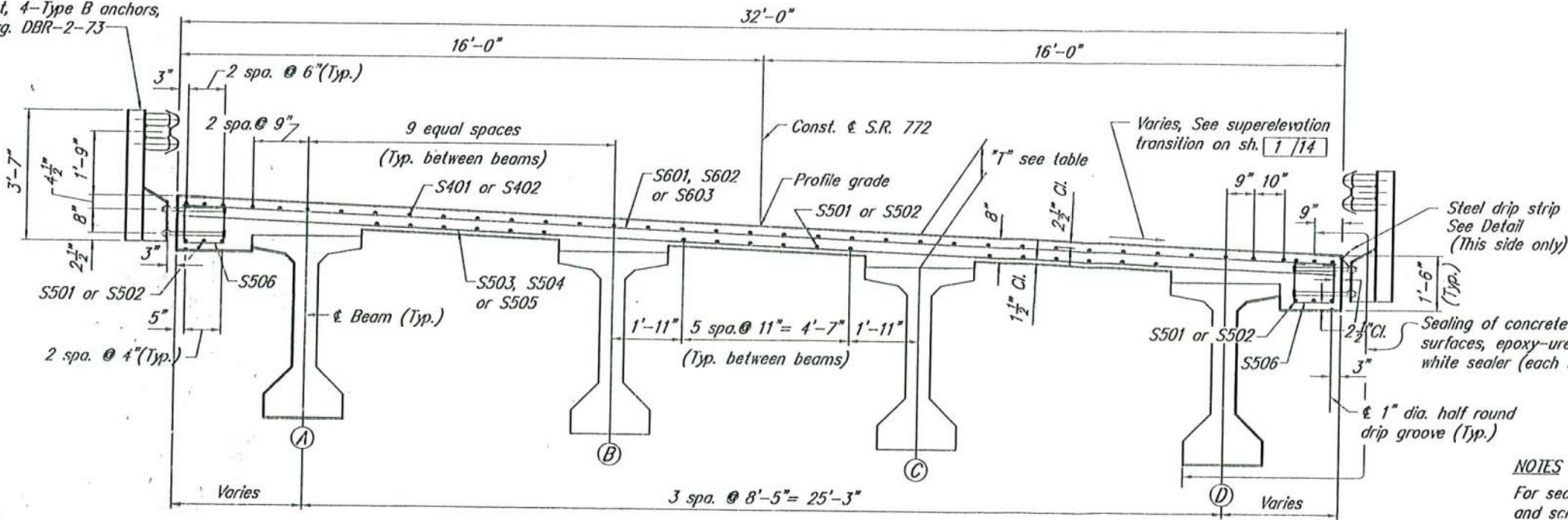


STAINLESS STEEL DRIP STRIP DETAIL



PLAN

Deep beam bridge guard rail, Type 2 post, 4-Type B anchors, see Std Dwg. DBR-2-73

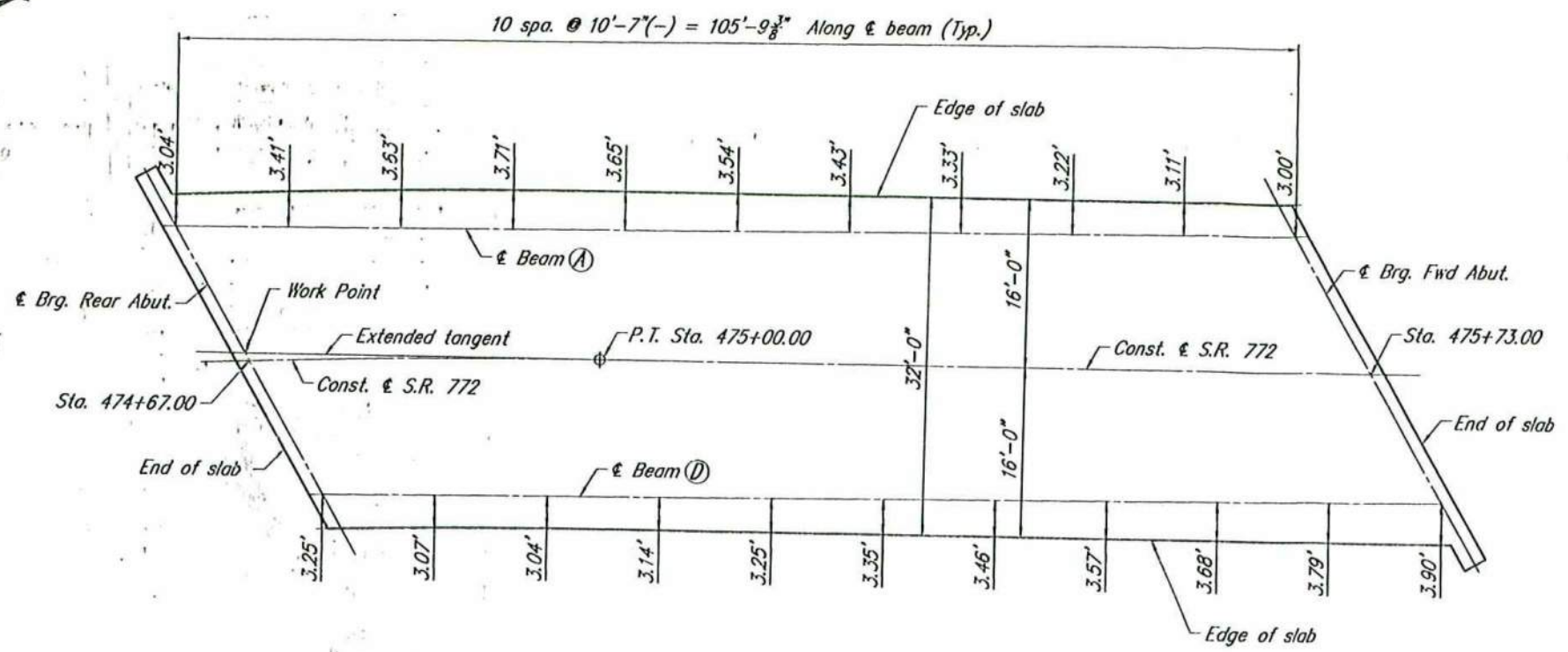


SECTION A-A

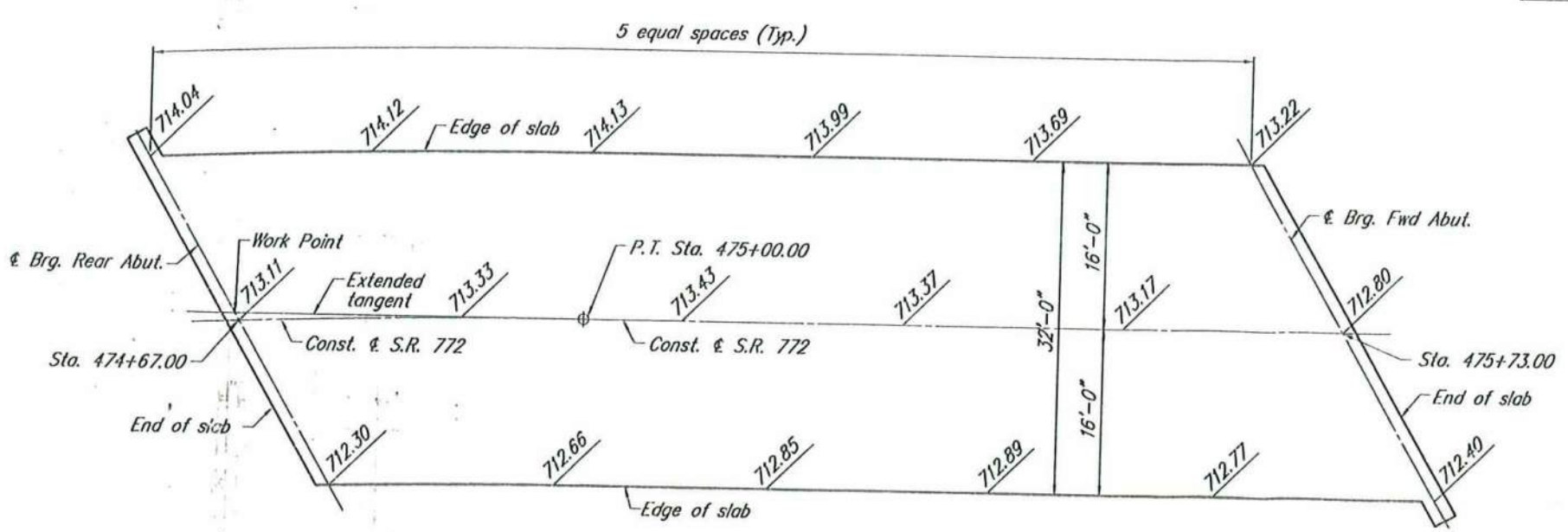
NOTES
For section B-B, details A and B, slab layout and screed elevations see sh. 12/14
For railing post spacing see sh. 2/14

HAZLET + ERDAL, INC. CONSULTING ENGINEERS CONVENT ROAD						11/14
SUPERSTRUCTURE						
BRIDGE NO. ROS-772-0899 OVER RALSTON RUN						
Structure File Number 1105444						
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JSB	JSB		MSL	JHD	6/1/94	

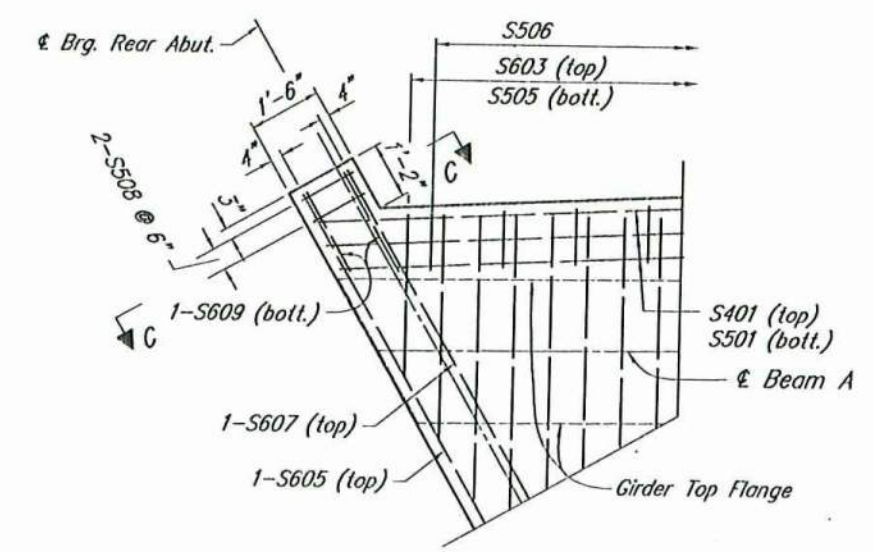
ROS-772-8.94



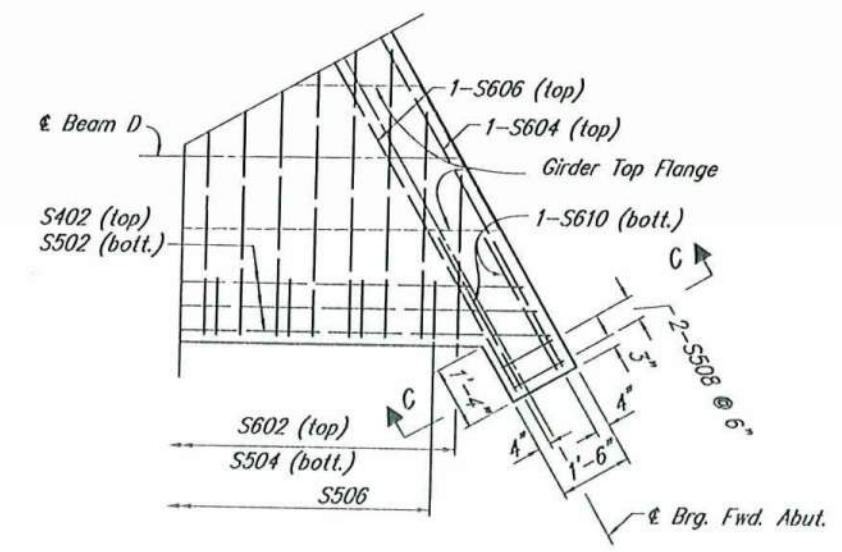
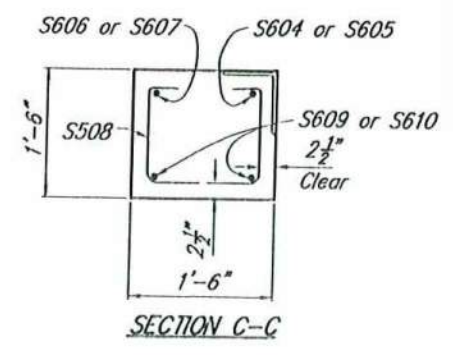
SLAB LAYOUT PLAN



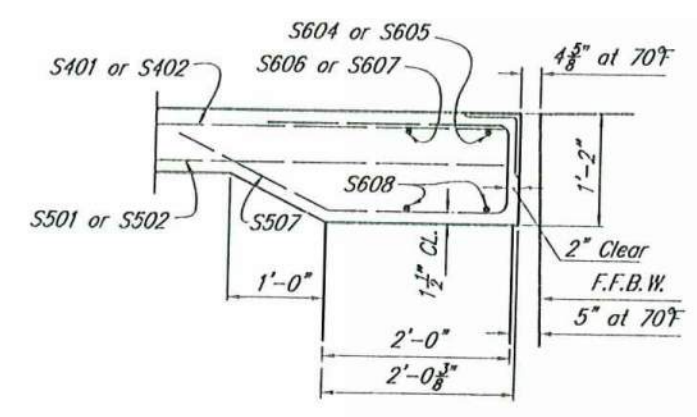
SCREED ELEVATIONS



DETAIL A
(All reinforcing not shown for clarity)



DETAIL B
(All reinforcing not shown for clarity)



NOTES

Screed elevations given at top of concrete slab before concrete placement and have been adjusted for estimated deflection due to weight of concrete slab.

HAZLET + ERDAI, INC. CONSULTING ENGINEERS CONCRETE DIV.					12/14
SLAB LAYOUT PLAN SCREED ELEVATIONS BRIDGE NO. ROS-772-0899 OVER RALSTON RUN Structure File Number 7105444					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JSB	JSB		MSL	JHO	6/1/94

CENTERLINE SURVEY PLAT

CENTERLINE REFERENCE MONUMENTS ARE TO BE SET DURING CONSTRUCTION AT THE FOLLOWING LOCATIONS AT A TOLERANCE OF ±0.02 FT.

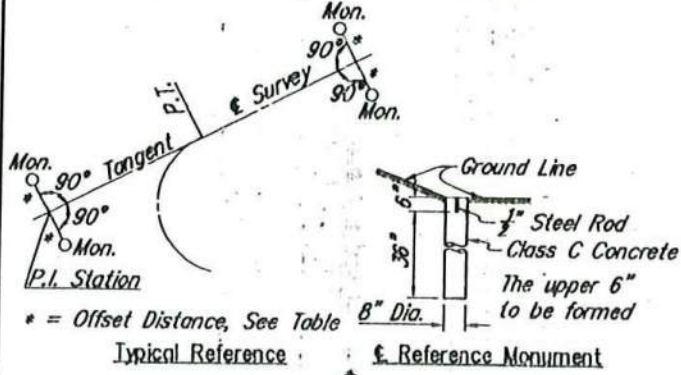
S.R. 772	
STATION	OFFSET
472+33.33	20.00' LT.
472+33.33	30.00' RT.
473+68.36	21.64' LT.
473+60.96	19.71' RT.
478+84.20	17' LT.
478+84.20	17' RT.
TOTALS:	6

ROS-772-8.94

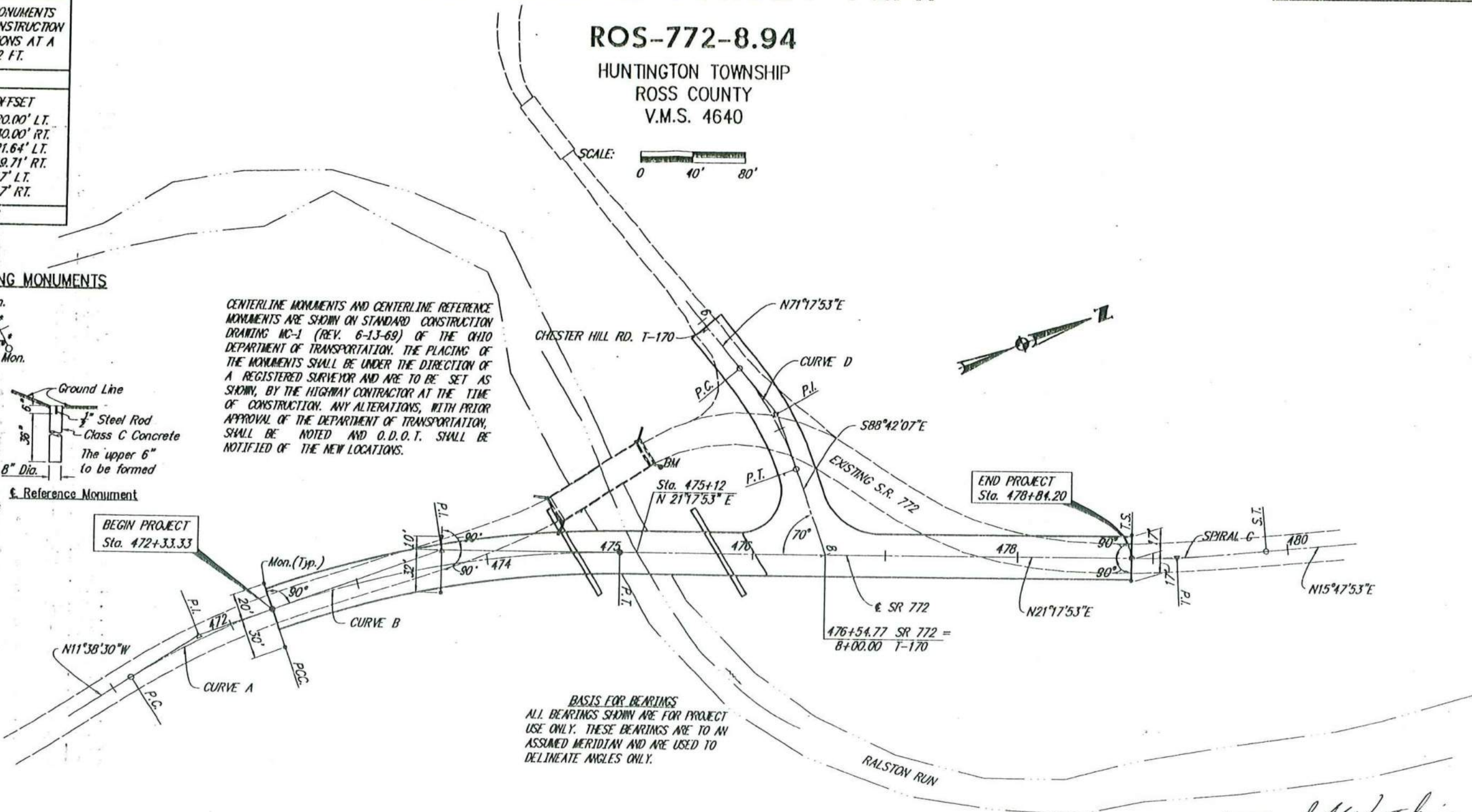
HUNTINGTON TOWNSHIP
 ROSS COUNTY
 V.M.S. 4640



DETAIL FOR SETTING MONUMENTS



CENTERLINE MONUMENTS AND CENTERLINE REFERENCE MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1 (REV. 6-13-69) OF THE OHIO DEPARTMENT OF TRANSPORTATION. THE PLACING OF THE MONUMENTS SHALL BE UNDER THE DIRECTION OF A REGISTERED SURVEYOR AND ARE TO BE SET AS SHOWN, BY THE HIGHWAY CONTRACTOR AT THE TIME OF CONSTRUCTION. ANY ALTERATIONS, WITH PRIOR APPROVAL OF THE DEPARTMENT OF TRANSPORTATION, SHALL BE NOTED AND O.D.O.T. SHALL BE NOTIFIED OF THE NEW LOCATIONS.



BEGIN PROJECT
 Sta. 472+33.33

END PROJECT
 Sta. 478+84.20

BASIS FOR BEARINGS
 ALL BEARINGS SHOWN ARE FOR PROJECT USE ONLY. THESE BEARINGS ARE TO AN ASSUMED MERIDIAN AND ARE USED TO DELINEATE ANGLES ONLY.

CURVE DATA

CURVE A (Existing)	CURVE B (Proposed)	SPIRAL C (Existing)	CURVE D (Proposed)
P.C. Sta. 471+15.70	P.C. Sta. 472+33.33	T.S. Sta. 478+84.20	P.C. Sta. 6+45.42
P.I. Sta. 471+74.77'	P.I. Sta. 473+68.03	P.I. Sta. 479+17.56	P.I. Sta. 6+89.35
P.C.C. Sta. 472+33.33	P.T. Sta. 475+00.00	S.T. Sta. 479+84.20	P.T. Sta. 7+32.38
$\Delta = 12^{\circ}56'23''$	$\Delta = 20^{\circ}00'00''$	$\theta_s = 5^{\circ}30'00''$	$\Delta = 20^{\circ}00'00''$
$D = 11^{\circ}00'00''$	$D = 7^{\circ}30'00''$	ST = 33.36'	$D = 23^{\circ}00'00''$
R = 520.87'	R = 763.94'	LT = 66.70'	R = 249.11'
T = 59.07'	T = 134.70'	L = 100.00'	L = 43.93'
L = 117.63'	L = 266.67'		L = 86.96'
E = 3.34'	E = 11.79'		E = 3.84'
	V = 50 mph		S.E. = Normal
	S.E. = 0.0833'/ft		

Approved: *J. Watkins* Date: 5/24/94
 District 9 Deputy Director
 Ohio Department of Transportation

RECEIVED _____, 19____
 RECEIVED _____, 19____
 BOOK _____ PAGE _____
 COUNTY RECORDER _____



I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION IN 1992 BY HAZLET & ERDAL, INC.

Jack L. Kuehn DATE 5-12-94
 REGISTERED SURVEYOR NO. 4837

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE MODERATELY ROLLING GLACIATED PORTION OF THE ALLEGHENY PLATEAU REGION, ADJACENT TO THE RALSTON RUN EAST VALLEY WALL AND ON THE FLOODPLAIN OF AND OVER RALSTON RUN, IN AN AREA WHERE SHALLOW VALLEY FILL, ALLUVIAL DEPOSITS AND GLACIAL-DERIVED MATERIAL OVERLIE SHALE BEDROCK OF DEVONIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE BORING AND ONE DRIVE SAMPLE-CORE BORING MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON MARCH 11 AND 12, 1993.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE TEST BORINGS DISCLOSED THAT INTERVALS OF LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC GRAVEL, CLAY AND SILT MODIFIED WITH SAND, STONE FRAGMENTS, ROOTS AND VARYING AMOUNTS OF EACH OTHER THAT INCREASE IN DENSITY WITH INCREASE IN DEPTH OVERLIE GENTLY SLOPING BEDROCK SURFACE. TEST BORING B-1 (MADE IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 9.5 FOOT DEPTH, ELEVATION 698.3 FEET AND CONTINUED TO ADVANCE TO A TOTAL DEPTH OF 20.0 FEET, ELEVATION 687.8 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 10.5 FEET BELOW BEDROCK SURFACE. TEST BORING B-2 (MADE IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 7.5 FOOT DEPTH, ELEVATION 695.9 FEET AND CONTINUED TO ADVANCE TO A TOTAL DEPTH OF 10.1 FEET, ELEVATION 693.3 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 2.6 FEET BELOW BEDROCK SURFACE.

NO FREE WATER OBSERVATIONS WERE MADE IN EITHER OF THE TEST BORINGS PERFORMED EITHER DURING, OR AT THE CONCLUSION OF DRILLING OPERATIONS. HOWEVER, NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT WAS ENCOUNTERED IN BORING B-2 AT 5.0 FOOT DEPTH, ELEVATION 698.4 FEET.

IF IT IS THE INTENTION TO FOUND THE ABUTMENTS ON BEDROCK, IT IS CONSIDERED ADVISABLE THAT THE OPEN EXCAVATIONS BE INSPECTED IN THE FIELD IN ORDER TO INSURE THAT THE EXCAVATIONS HAVE BEEN EXTENDED TO ROCK THROUGHOUT THE ENTIRE FOUNDING AREA. IT IS FURTHER SUGGESTED THAT THE AREA OF THE FOOTING CONTACT NOT BE SUBJECTED TO PROLONGED ATMOSPHERIC EXPOSURE, AND THAT THE EXCAVATIONS BE WELL DRAINED AT ALL TIMES.

FIELD RECONNAISSANCE OF THE SITE INDICATES THAT SHALE BEDROCK IS EXPOSED ON THE CREEK BED AND IN THE CREEK BANKS, AS CAN BE SEEN IN THE PLAN VIEW.

LEGEND

- Auger Boring Location - Plan View
- Press and/or Drive Sample and/or Core Boring Location - Plan View
- Top Of Rock
- Indicates Free Water Elevation
- Indicates Static Water Elevation

- 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

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone
- Mudstone
- Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Fire Clay or Underclay
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

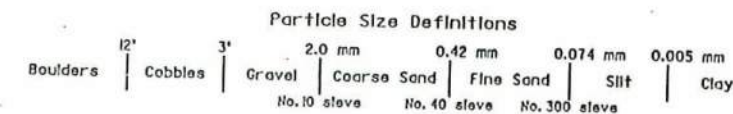
DRIVE SAMPLE BORINGS - DRIVE-PRESS SAMPLE BORINGS

Drive sample borings are made by means of a rotary-type drill rig, employing a 2' 0.0., 1-3/8" I.D. sampler, at 2-1/2 and/or 5-foot depth intervals, driven by means of a 140 pound 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' 0.0., 1-3/8" I.D. drive sampler, and 3' 0.0. 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 a sampler cannot be driven, a wash sample is produced for visual classification. In order to determine the general character of the material, these samples are not considered sufficiently representative to warrant laboratory testing.



LOG OF BORING

Date Started 3/11/93 Sampler Type SS Dia. 1 3/8"
 Date Completed 3/11/93
 Boring No. B-1 Station & Offset 474+58, CL (REAR ABUT.)

Water Elev. -
 Surface Elev. 707.8'

Elev.	Depth	Std. Pen.	Per. Log	Description	Sample No.	Physical Characteristics										SHIL Class	
						Mo.	C.S.	F.S.	Silt	Clay	LL	PL	W.C.	Grain			
707.8	0																
705.3	2																
702.8	4	3/5/4		BROWN SANDY SILT AND CLAY W/ GRAVEL & ST. FRGTS.	1										19		YISUMI
700.3	6	9/9/10		BROWN SILTY SANDY GRAVEL WITH ROOTS	2	71	10	5	8	6	NP	NP	15				A-1-A
697.8	8	50(0.5')		BROWN SILTY SANDY GRAVEL	3	52	8	17	16	7	NP	NP	14				A-1-B
697.8	10			TOP OF ROCK													
697.8	12																
697.8	14		5.0														
697.8	16			SHALE, BLACK, CARBORACEOUS, BROKEN AND JOINTED IN UPPER PORTION. NO CORE LOSS.													
697.8	18		5.0														
697.8	20																
697.8	22																
697.8	24																
697.8	26																

LOG OF BORING

Date Started 3/12/93 Sampler Type SS Dia. 1 3/8"
 Date Completed 3/12/93
 Boring No. B-2 Station & Offset 475+75, 10' RT. (FRONT ABUT.)

Water Elev. -
 Surface Elev. 705.1'

Elev.	Depth	Std. Pen.	Per. Log	Description	Sample No.	Physical Characteristics										SHIL Class	
						Mo.	C.S.	F.S.	Silt	Clay	LL	PL	W.C.	Grain			
705.1	0																
700.9	2			BROWN SHINY CLAY W/ STONE FRAGMENTS (DRILLER'S DESC.)													
698.4	4	4/4/3		BROWN SANDY SILT AND CLAY W/ STONE FRAGMENTS	4										19		YISUMI
695.8	6	10/7/7		BROWN SILTY SANDY GRAVEL TOP OF ROCK	5	53	10	10	20	7	NP	NP	22				A-2-4
693.4	8	15/50		SHALE, BLACK, CARBORACEOUS, BROKEN AND JOINTED	6										14		YISUMI
693.8	10	50(0.1')		SHALE, BLACK, CARBORACEOUS	7										3		YISUMI
693.8	12																
693.8	14																

NOTE: ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH MAY 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 9/7/93

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. ROS-772-0899
 OVER RALSTON RUN
 SEC. ROS-772-8.94

CHECKED BY A.F. REVIEWED BY M.R.S. DATE 4/28/93

BENCHMARK
 Cut on Existing NE Wingwall of Bridge NO. Ros-772-0899
 Station 475+28.53, 64.18' Lt.
 Elevation 713.03

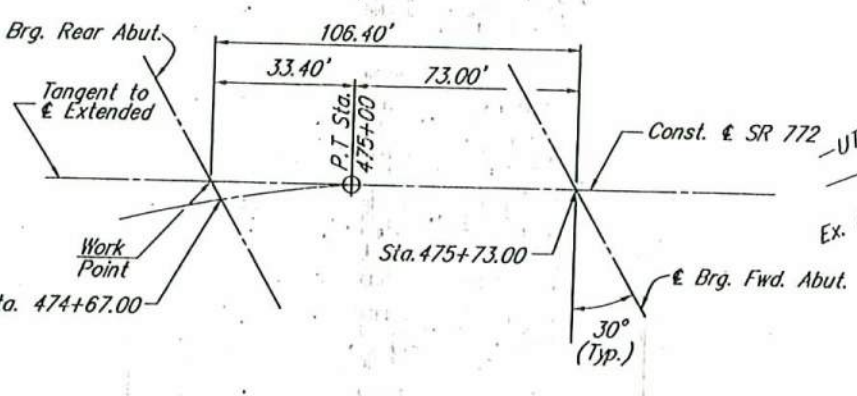
EXISTING UTILITIES
 The Chillicothe Telephone Company: Overhead and Underground telephone cables
 South Central Power: Overhead power lines
 United Video Cable:
 Ross County Water Company: 3" Water Main on west side

CURVE DATA
 Prop. Curve B
 Const. & S.R. 772
 P.C.C. Sta. 472+33.33
 P.T. Sta. 475+00.00
 $\Delta = 20^{\circ}00'00''$
 $D = 7^{\circ}30'00''$
 $R = 763.94'$
 $L = 266.67'$

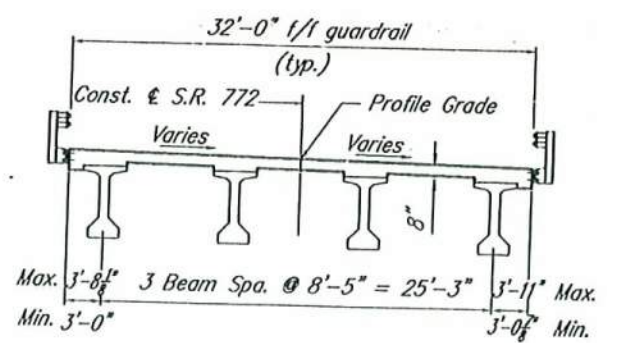
FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

ROSS COUNTY
 ROS-772-8.94

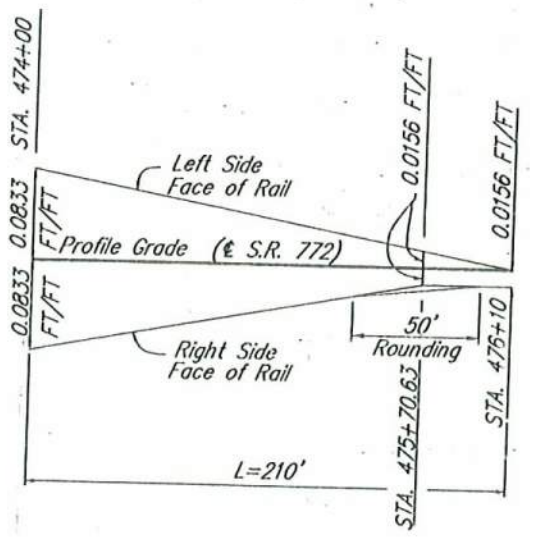
NOTES:
 EARTHWORK limits are approximate. Actual slopes shall conform to plan cross-sections.
 Rock Channel Protection, Type A is included with Roadway Plans for payment.



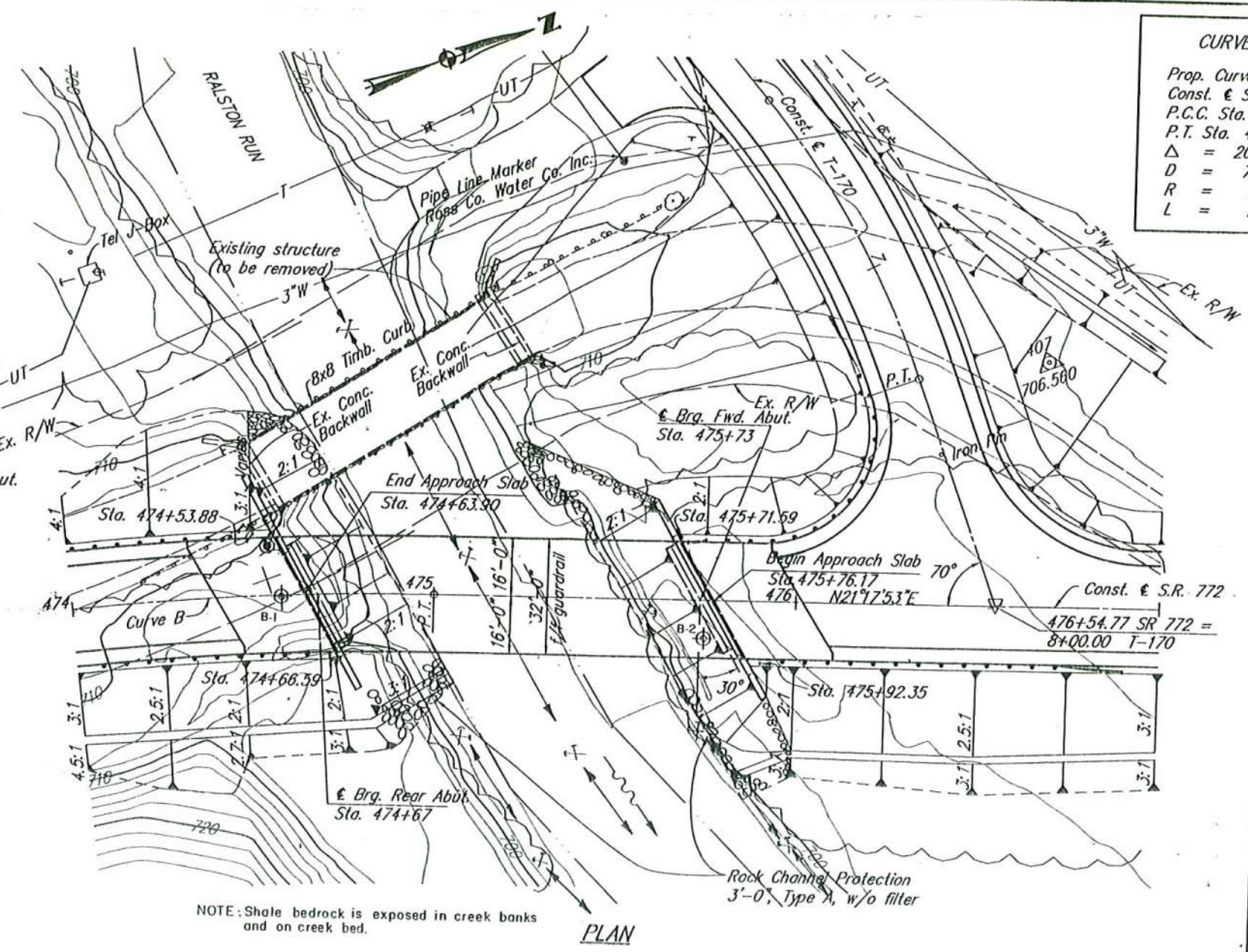
BRIDGE LAYOUT



PROPOSED TYPICAL SECTION
 (Looking Ahead)

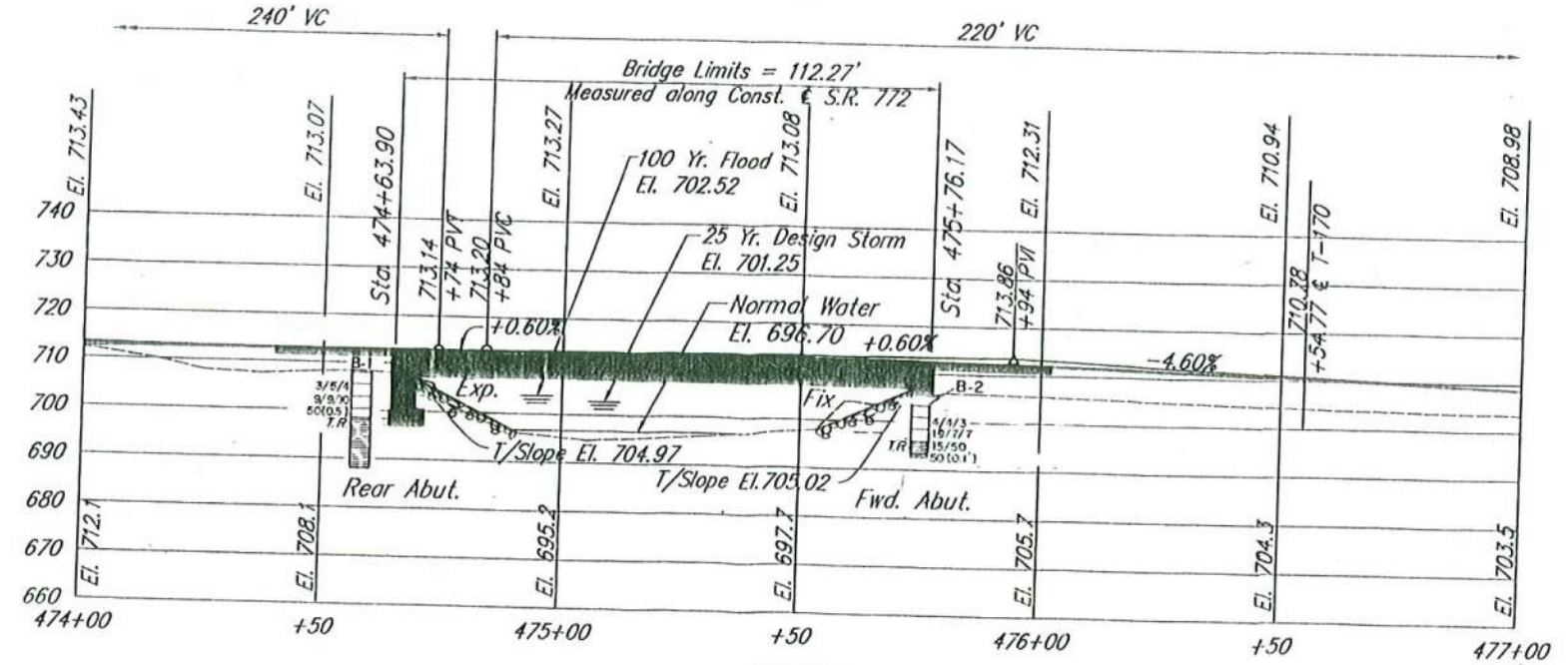


PAVEMENT TRANSITION DIAGRAM
 See Roadway Typical Sections for remainder of Transition



PLAN

NOTE: Shale bedrock is exposed in creek banks and on creek bed.



PROFILE
 (Along Const. & S.R. 772)

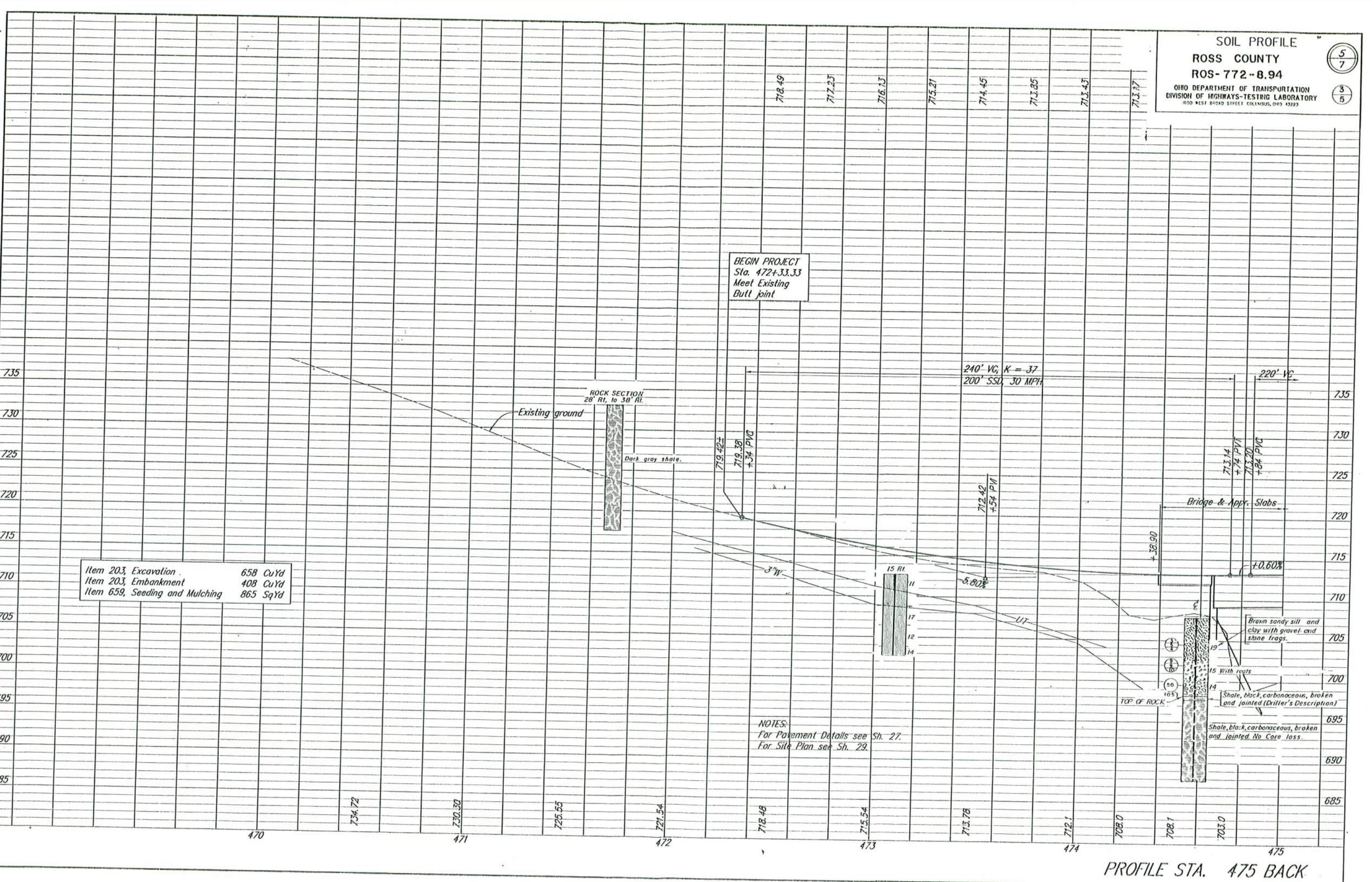
DRAINAGE
 25 Year Storm Elevation = 701.25
 Discharge = 2087 cfs
 Max. Velocity = 6.77 ft./sec.
 100 Year Storm Elevation = 702.52
 Discharge = 2928 cfs
 Max. Velocity = 7.40 ft./sec.
 Low Water Elevation: 696.70 ft
 Drainage Area: 8.89 sq. miles
 Waterway Opening = 742 s.f. (existing)
 Waterway Opening = 739 s.f. (proposed)

EXISTING STRUCTURE
 STRUCTURE FILE NO: 7105436
 TYPE: Simple Span, Steel beam bridge with plank deck on floor diaphragms supported on stone and concrete abutments
 SPANS: 79'-1 1/4" (c/c bearings)
 ROADWAY: 19'-11" face to face of wheel guards.
 SKEW: 0°
 CONDITION: Fair
 APPROACH SLABS: None
 ALIGNMENT: Tangent (between reverse curves)
 DATE OF CONSTRUCTION: 1960

ADT (2,013)
 Cars: 2,370
 Trucks: 70

PROPOSED STRUCTURE
 TYPE: Simple span, precast concrete I-beam bridge with reinforced concrete deck and abutments.
 SPAN: 106'-0" (c/c bearings)
 ROADWAY: 32'-0" face to face of guard rail
 LIVE LOADING: HS 20-44, and the Alternate Military Loading
 WEARING SURFACE: Monolithic Concrete
 APPROACH SLABS: AS-1-B1 (25' long)
 ALIGNMENT: 7° 30' Curve and Tangent
 SUPERELEVATION: Varies, See Diagram
 SKEW: 30° R.F.

REVISED 9/7/93
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 STRUCTURE FOUNDATION INVESTIGATION
 BRIDGE NO. ROS-772-0899
 OVER RALSTON RUN
 SEC. ROS-772-8.94
 PLAN AND PROFILE



BEGIN PROJECT
 Sta. 472+33.33
 Meet Existing
 Butt joint

Item 203, Excavation . 658 CuYd
 Item 203, Embankment 408 CuYd
 Item 659, Seeding and Mulching 865 SqYd

NOTES:
 For Pavement Details see Sh. 27.
 For Site Plan see Sh. 29.

Bridge & Appr. Slabs
 +0.60%
 Brown sandy silt and clay with gravel and stone frags.
 15 With roots
 14 Shale, black, carbonaceous, broken and jointed (Driller's Description)
 13 Shale, black, carbonaceous, broken and jointed. No Core loss.

TOP OF ROCK

19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

240' VG, K = 37
 200' SSL, 30 MPH

220' VG

712.42
 +54' PVI

713.14
 +74' PVI

713.20
 +84' PVI

719.42±
 719.38
 +34' PVI

15 RI

5.80%

3"W

UT

718.49

717.23

716.13

715.21

714.45

713.85

713.43

713.17

734.72

730.30

725.55

721.54

718.48

715.54

713.78

712.1

708.0

708.1

703.0

470

471

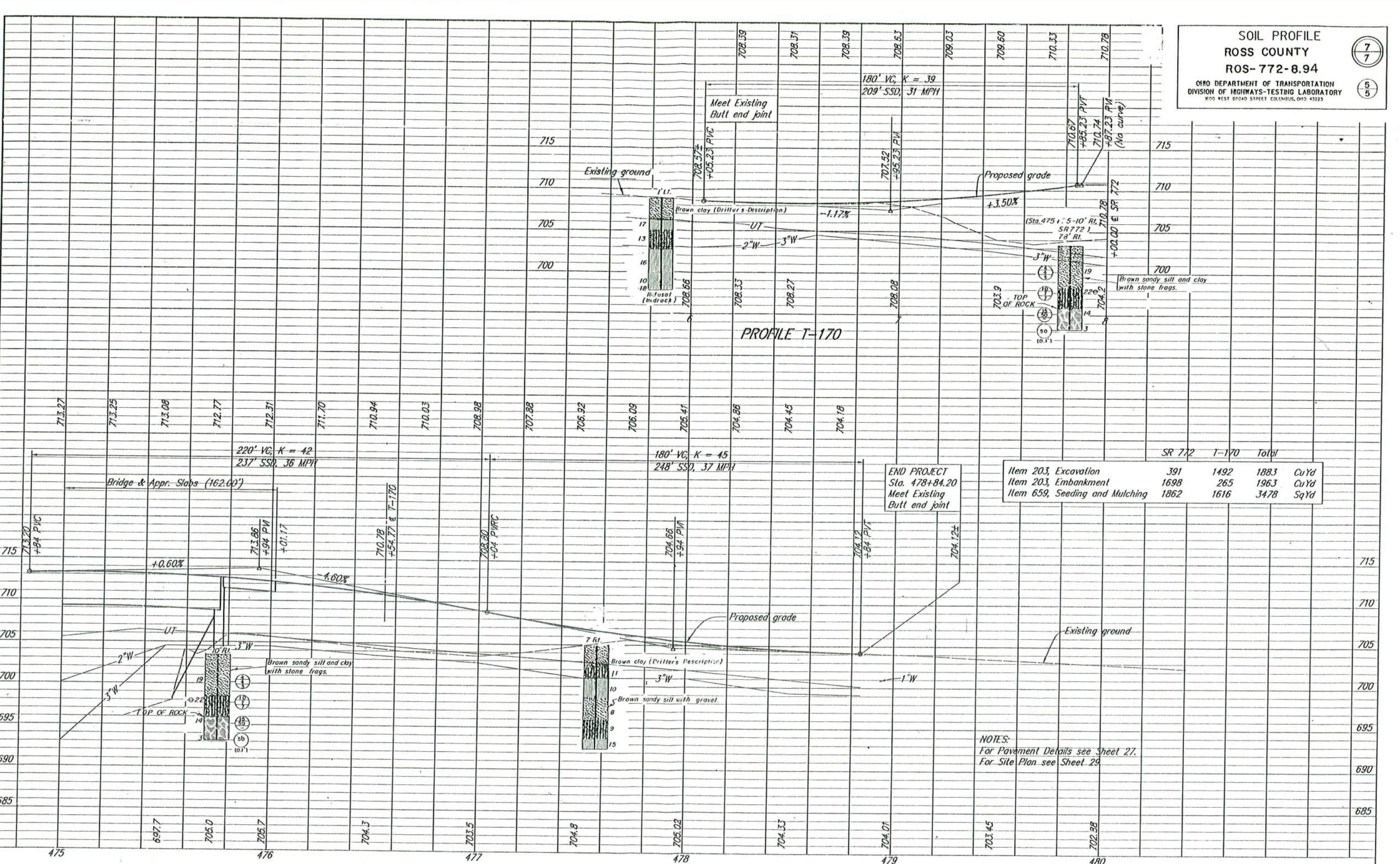
472

473

474

475

PROFILE STA. 475 BACK



	SR 772	T-170	Total	
Item 203, Excavation	391	1492	1883	CuYd
Item 203, Embankment	1698	265	1963	CuYd
Item 659, Seeding and Mulching	1862	1616	3478	SqYd

NOTES:
For Pavement Details see Sheet 27.
For Site Plan see Sheet 29.