FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

1/161

ERI 6-7.31

F-FG-1042(6)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
ERI 6-7.31
ERIE COUNTY
PERKINS TOWNSHIP
GRADE SEPARATION WITH BALTIMORE & OHIO RAILROAD COMPANY

CONVENTIONAL SIGNS

Township Line
Corporation Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Railroad
Power Poles
Telephone Poles
Trees or Stumps

Property Line — PL
Right of Way with Limited Access — LA
Right of Way without Limited Access — R/W
Existing Right of Way

INDEX OF SHEETS

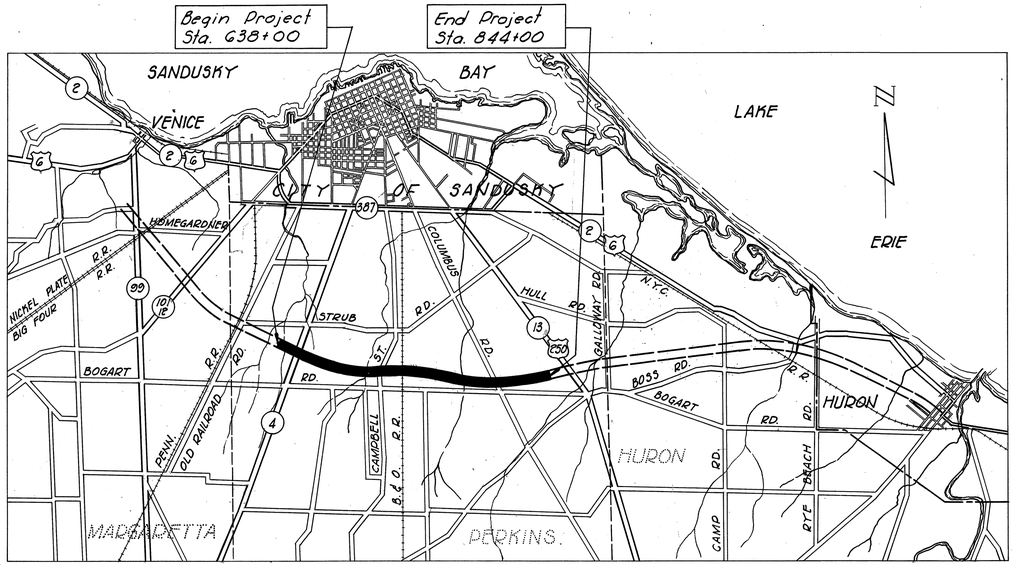
ERI-2-0927

LINE DATA

F-1042(6): Sta. 638+00 to 722+00 = 8,400.00 Lin.Ft.
Sta. 748+00 to 844+00 = 9,600.00 Lin.Ft.
Length of Project F-1042(6) = 18,000.00 Lin.Ft. or 3.409 Miles

FG-1042(6): Sta. 722+00 to 748+00 = 2,600.00 Lin.Ft.
Length of Project FG-1042(6) = 2,600.00 Lin.Ft. or 0.492 Miles
Total Length of Project = 20,600.00 Lin.Ft. or 3.901 Miles

Sta. 637+00 to 722+00, U.S.6 = 8,500.00 Lin.Ft.
Sta. 748+00 to 845+00, U.S.6 = 9,700.00 Lin.Ft.
Sta. 35+75 to 63+00, S.R.4 = 2,725.00 Lin.Ft.
Sta. 42+00 to C/+79.79 Campbell St. = 1,979.79 Lin.Ft.
Length of Work, F-1042(6) = 22,904.79 Lin.Ft. or 4.338 Miles
Sta. 722+00 to 748+00, U.S.6 = 2,600.00 Lin.Ft.
Length of Work, FG-1042(6) = 2,600.00 Lin.Ft. or 0.492 Miles
Total Length of Work = 25,504.79 Lin.Ft. or 4.830 Miles



Delivery Point: B&O. R.R. at Bogart Road

LOCATION PLAN
0 1 2 3
SCALE IN MILES

Average Haul: 1.2 Miles
Revision on sheet 50 (6-20-61) REB.

Portion to be improved...
State Roads.....
Other Roads.....

Plan
Profile: Horizontal 0 20 40 60 80 100
Profile: Vertical 0 4 8 12 16 20
Cross Section

SURVEY AND PLANS BY
SANZENBACHER, MILLER AND BRIGHAM
TOLEDO, OHIO

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of this highway and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

Approved Date 12-13-60 — Division Deputy Director
Approved Date 11-1-60 — Deputy Director of Planning and Programming
Approved Date 10-20-60 — Engineer of Bridges
Approved Date 10-25-60 — Engineer of Location and Design
Approved Date 10-25-60 — Deputy Director of Design and Construction
Approved Date 11-1-60 — First Assistant Director
Approved Date 11-1-60 — Director of Highways

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

Approved _____ Division Engineer _____ Date

FILE NO.	ERI. 6-7.31
130-E	Date of Letting _____ 196_____
	Contract No. _____

STANDARD CONSTRUCTION DRAWINGS

AS-1-54	12-1-54	L-3	4-1-50	S-27 P.C.3	2-20-45	I-15 No.1	5-21-59
RB-1-55	2-2-55	L-3-A	4-1-50	S-27 P.C.4	1-4-54	I-15 No.2-A	8-17-60
AR-1-57	2-2-57	RI-1	7-15-58	SP-53	11-25-58	I-21-23	8-1-56
CSB-2-56, Sh'ts. 2&3	2-2-59	T-35	1-2-56	J-1,2,3,4&5	4-24-58	G-7.07	6-1-56
F-2	10-1-58	B-T-50-70-71E No.1	10-1-47	I-8 C.B. 2-2-A&B	3-2-59	HW-A&B	7-15-57
F-3	9-1-59	B-T-71R	3-2-53	I-8 C.B. No.4	7-1-58	HW-C	7-15-57
DR-1	1-3-55	LJ No.1	7-1-55	I-8 C.B. No.6	1-26-59	I-8 C B No.5	7-1-58
L-1	4-1-50	TJ	9-12-60	I-12	7-1-54		

SUPPLEMENTAL SPECIFICATIONS

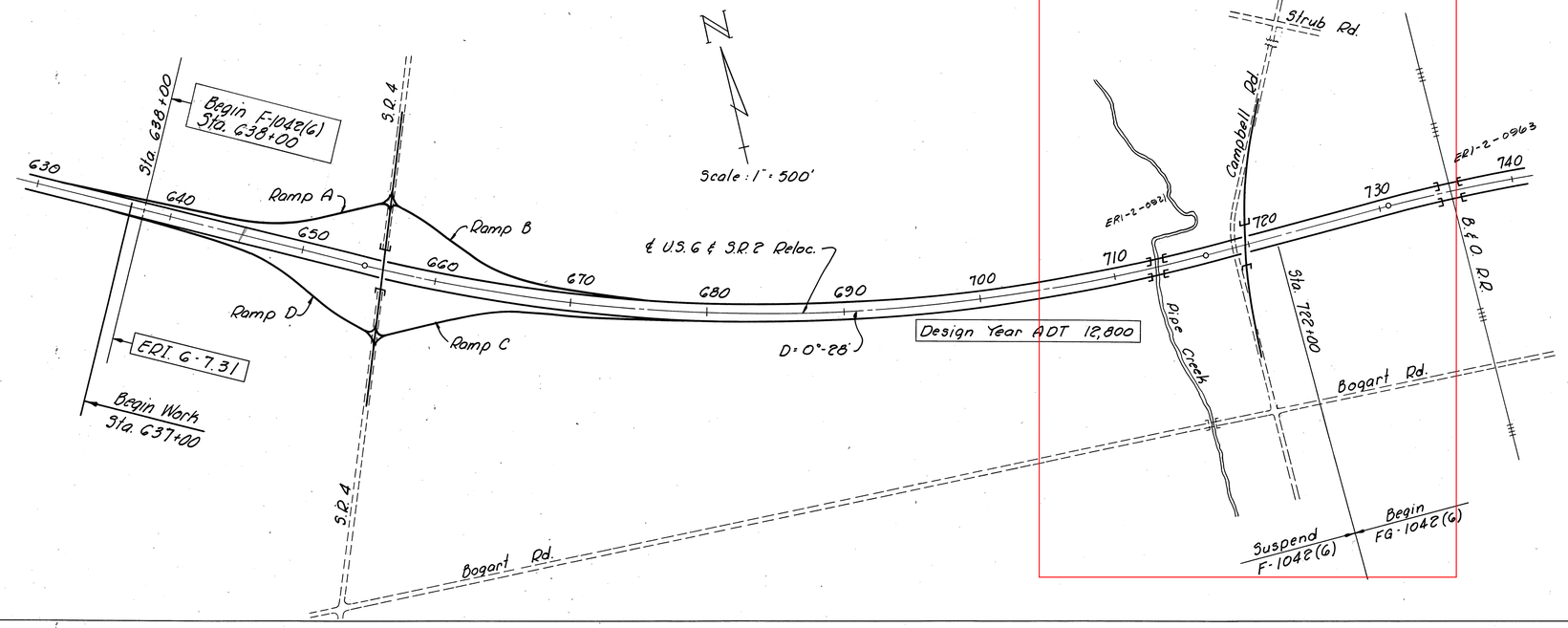
S-101	12-2-59
B-219	Rev. 3-12-59
M-206.6(b)	5-25-56
18	Rev. 6-15-59
I-124	1-11-56

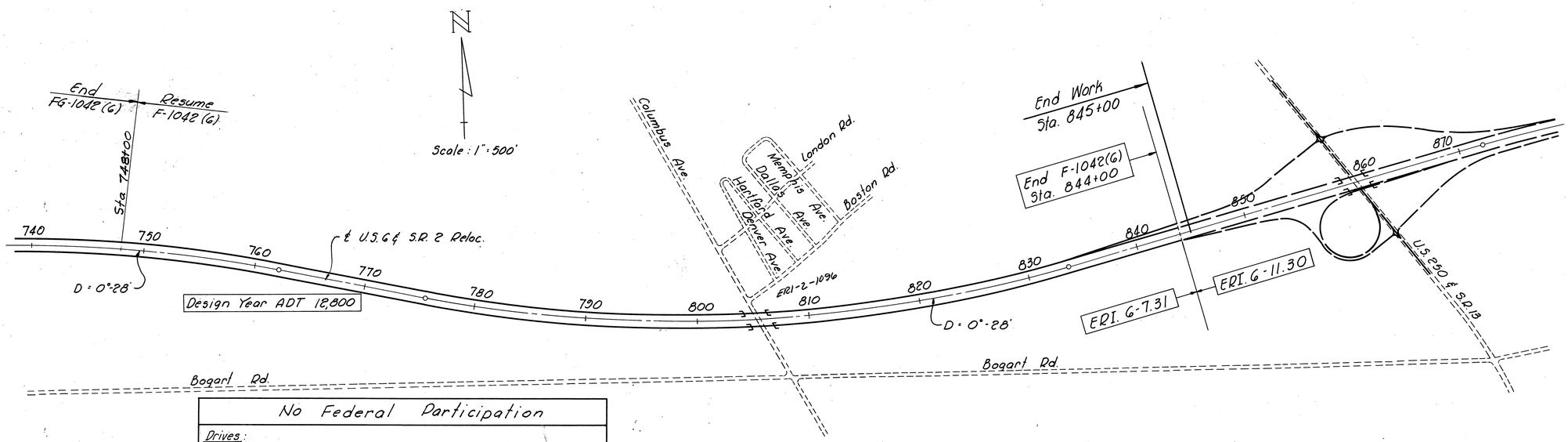
FED.RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

ERI. 6-7.31

SCHEMATIC PLAN

ERI-2-0927





No Federal Participation

Drives:
High type surface beyond end of flares, except where existing drive is high type.

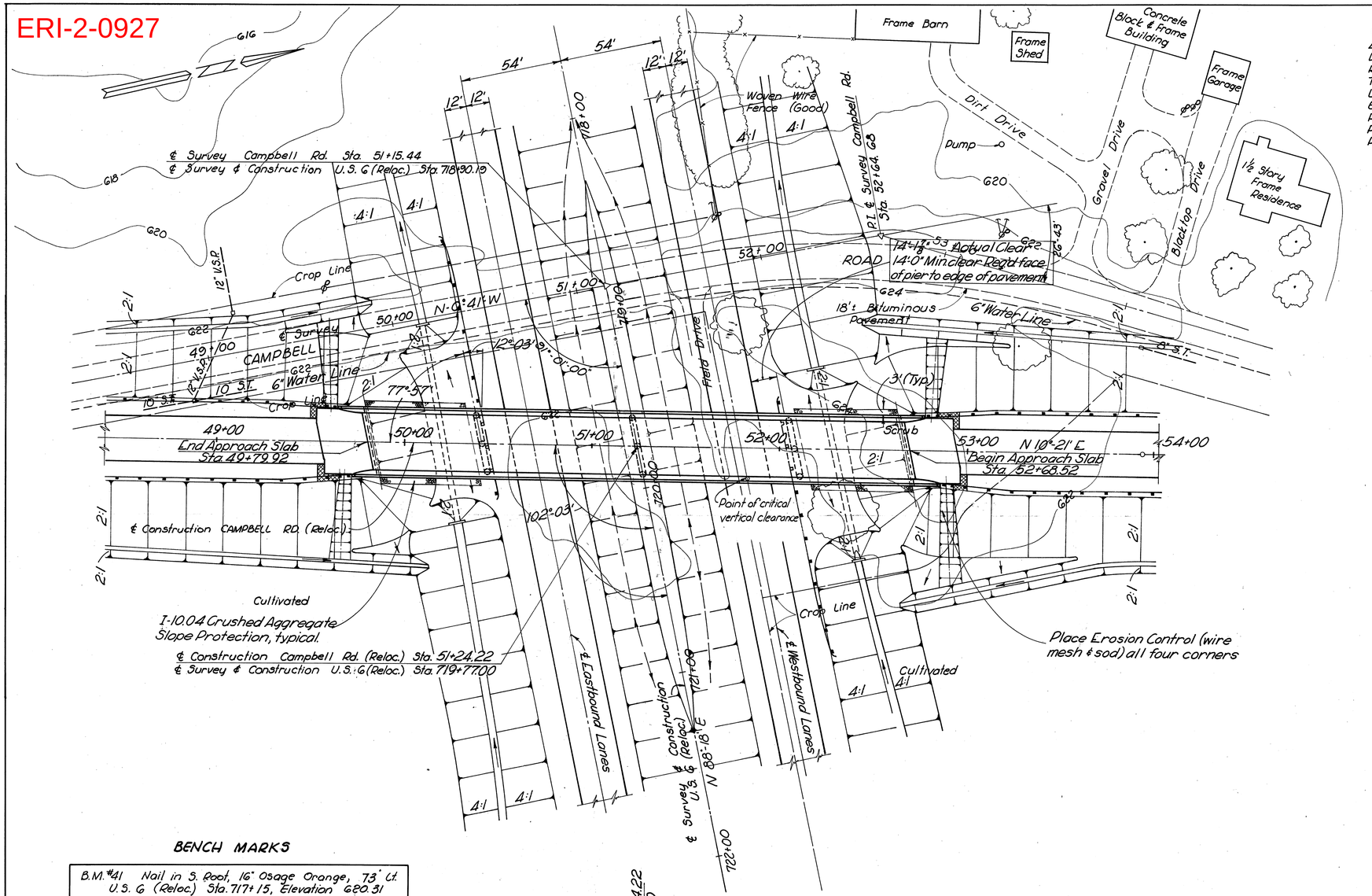
R/W Fence:
Except from Columbus Ave., 2600 ft. to east on north side, and 2600 ft. in vicinity of Columbus Ave. on south side.

Guard Rail:
Barrier rail at structures as shown on sheet 7.

Sanzenbacher, Miller & Brigham - Toledo, Ohio

SCHEMATIC PLAN

ERI-2-0927



CURVE DATA

Δ	=	16°-14' Rt.
D	=	2°-00'
R	=	2864.79'
T	=	408.57'
L	=	811.67'
E	=	28.99'
P.C.	=	53+53.77
P.I.	=	57+62.34
P.T.	=	61+65.44

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

123
161

ERI. 6-7.31
6.0 Miles West of Huron

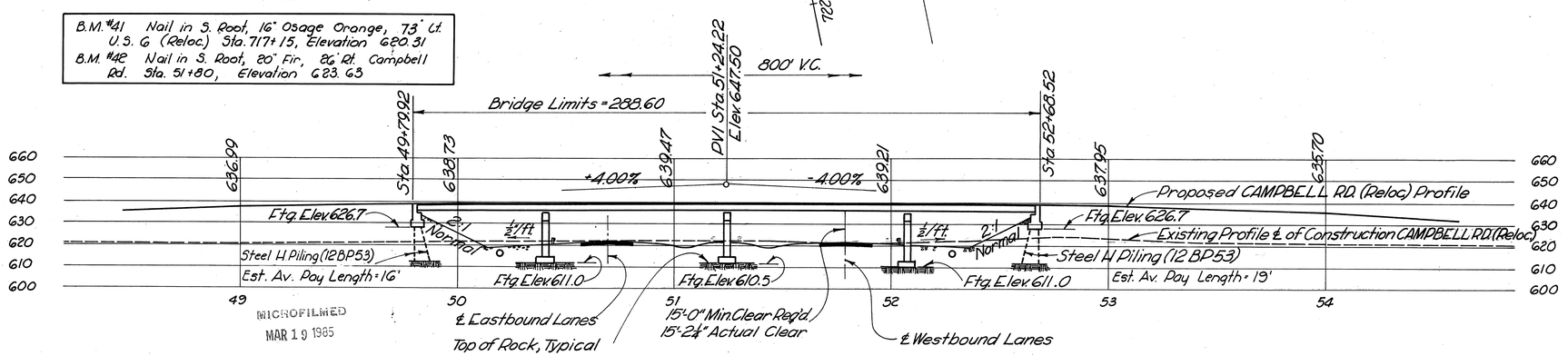
Design Year Traffic
ADT (1979) = 2190

FOUNDATION SOUNDINGS

Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

BENCH MARKS

B.M. #41 Nail in S. Root, 16" Osage Orange, 73' Lt. U.S. G (Reloc.) Sta. 717+15, Elevation 620.31
B.M. #42 Nail in S. Root, 20" Fir, 26' Rt. Campbell Rd. Sta. 51+80, Elevation 623.63



PROPOSED STRUCTURE

Type: Continuous steel beam with reinf. concrete deck. Reinf. concrete pier bents and stub abutments.
Spans: 58'-6", 83'-6", 83'-6", 58'-6" ℄ Brgs.
Roadway: 30'-0" face to face of 2'-3" safety curbs.
Load Frequency: CF-130 (57)
Skew: 12°-03' Right Forward
Wearing Surface: ¾" Monolithic Concrete
Approach Slabs: AS-1-54 (25'-0" Long)
Alignment: Tangent

SANZENBACHER MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

SITE PLAN

BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY STA 49+79.92
SCALE 1"=30' STA 52+68.52

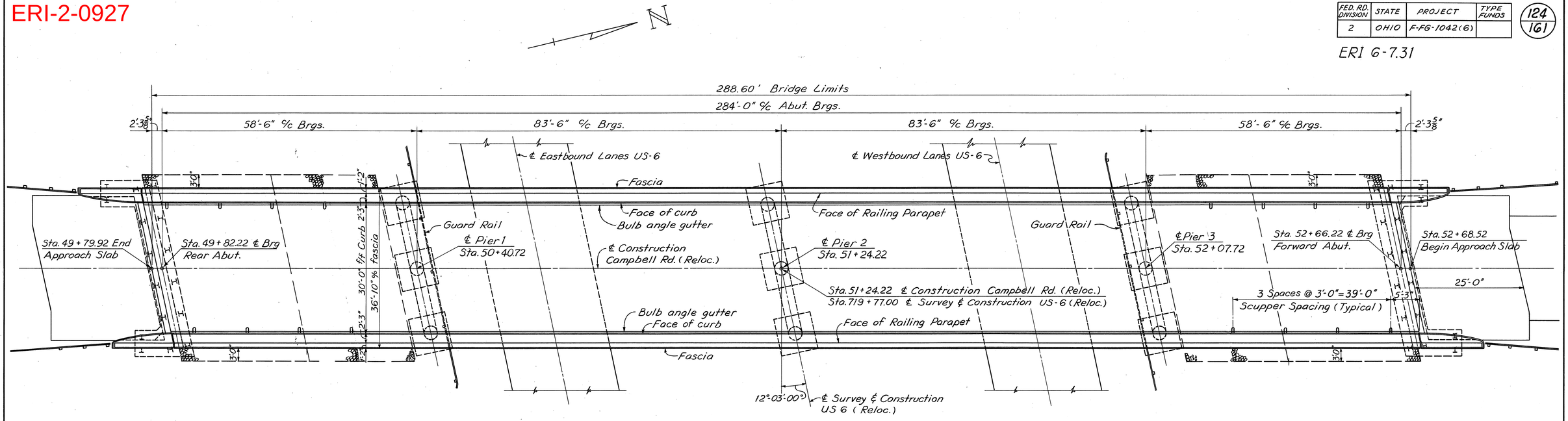
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED S.M.B.	DRAWN RJH-BB	DESIGNED CES	DRAWN CES	CHECKED TWD	REVIEWED DJM PCM 9-23-85

ERI-2-0927

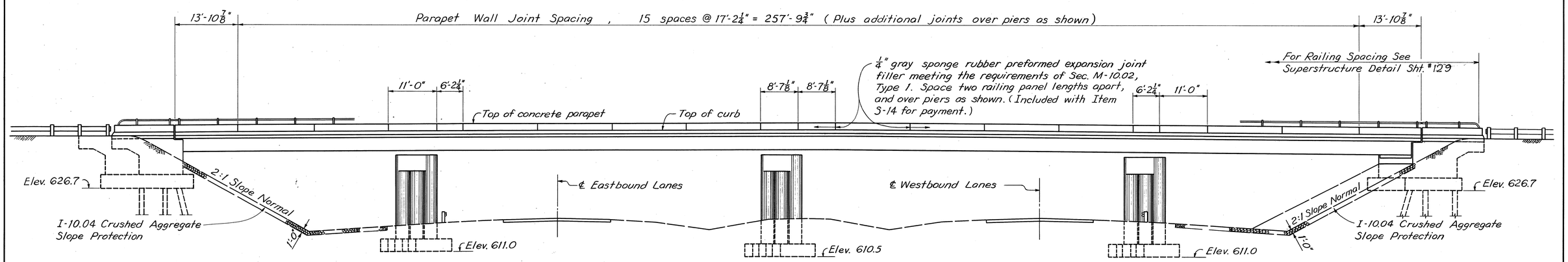
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

124
161

ERI 6-7.31



GENERAL PLAN



GENERAL ELEVATION

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION

BRIDGE NO. ERI.6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	JHY	TWD	BJH FCM	9-23-60	

ERI-2-0927

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

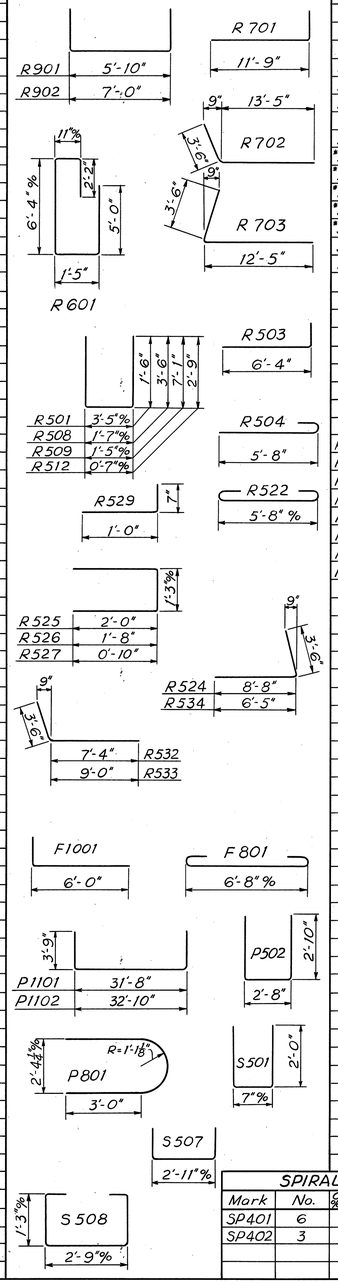
125
161

ERI 6-7.31

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shape
ABUTMENTS				
R901	10	7'-10"	266	B
R902	10	9'-0"	306	B
R701	24	12'-7"	617	B
R702	4	16'-9"	137	B
R703	4	15'-9"	129	B
R601	60	15'-2"	1,367	B
R501	88	6'-2"	566	B
R502	50	6'-7"	343	S
R503	50	6'-10"	356	B
R504	54	6'-3"	352	B
R505	12	40'-2"	503	S
R506	26	36'-7"	992	S
R507	4	13'-4"	56	S
R508	64	8'-4"	556	B
R509	8	15'-4"	128	B
R510	16	7'-3"	121	S
R511	12	3'-6"	44	S
R512	40	5'-10"	243	B
R513	8	12'-11"	108	S
R514	24	3'-7"	90	S
R515	8	4'-1"	34	S
R516	12	8'-11"	112	S
R517	24	11'-9"	294	S
R518	8	15'-0"	125	S
R519	8	8'-2"	68	S
R520	16	11'-0"	184	S
R521	16	2'-8"	44	S
R522	20	6'-10"	143	B
R523	8	12'-5"	104	S
R524	4	12'-1"	50	B
R525	20	5'-0"	104	B
R526	12	4'-4"	54	B
R527	8	2'-8"	22	B
R528	4	12'-3"	51	S
R529	40	1'-6"	63	B
*R530	8	12'-10"		S
*R531	8	12'-5"		S
R532	2	10'-9"	22	B
R533	4	12'-5"	52	B
R534	2	9'-10"	21	B
R535	8	7'-0"	58	S
PIERS				
F1001	90	7'-1"	2,743	B
F 801	162	8'-10"	3,821	B
P1101	6	38'-10"	1,238	B
P1102	6	39'-8"	1,264	B
P1103	9	15'-6"	741	S
P1001	60	19'-9"	5,099	S
P1002	30	20'-7"	2,657	S
P1003	6	33'-0"	852	S
P1004	6	32'-10"	848	S
P1005	6	32'-3"	833	S
P1006	6	31'-9"	820	S
P 801	12	9'-7"	307	B
P501	6	30'-9"	192	S
P502	108	8'-4"	939	B

Bending Diagrams



Mark	No.	Length	Weight	Shape
SUPERSTRUCTURE				
S701	343	37'-0"	25,940	S
S601	343	37'-0"	19,062	S
S602	456	37'-4"	25,570	S
S603	72	30'-0"	3,244	S
S501	432	4'-4"	1,953	B
*S502	16	13'-7"		S
*S503	16	10'-8"		S
*S504	16	5'-10"		S
*S505	16	8'-3"		S
*S506	96	16'-10"		S
S507	382	3'-11"	1,560	B
S508	382	6'-0"	2,391	B
REPLACEMENT BARS				
RE1101	1	7'-7"		S
RE1001	1	7'-3"		S
RE 901	1	6'-10"		S
RE 801	1	6'-6"		S
RE 701	2	6'-3"		S
RE 601	3	5'-11"		S
RE 501	1	5'-7"		S
RE 401	1	5'-3"		S

SPIRAL REINFORCING LIST

Mark	No.	Core Dia. % Spiral	Length	Pitch	No. Turns	Weight
SP401	6	32"	15' 11"	4½"	46	1,780
SP402	3	32"	16' 9½"	4½"	48	930

*Included with Item S-14 for payment

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Abutment Rear	Abutment Forward	Pier 1	Pier 2	Pier 3	Superstructure	General		
E-2	Lump	Sum	Cofferdams, cribs and sheeting							Lump		
E-2	531	Cu.Yds.	Unclassified excavation	134	134	77	100	86				
E-2	16	Cu.Yds.	Rock excavation			5	9	2				
S-1	300	Cu.Yds.	Class "C" concrete, superstructure						300			
S-1	84	Cu.Yds.	Class "C" concrete, pier caps and columns			28	28	28				
S-1	160	Cu.Yds.	Class "E" concrete, abutments	80	80							
S-1	51	Cu.Yds.	Class "E" concrete, pier footings			17	17	17				
S-4	113,669	Lbs.	Reinforcing steel	4442	4443	8305	8453	8306	79,720			
S-7	317,000	Lbs.	Structural steel						317,000			
S-8	317,000	Lbs.	Field painting of structural steel, as per plan						317,000			
S-14	623	Lin.Ft.	Railing (aluminum rail and supports, concrete parapet)						623			
S-16	Lump	Sum	First test pile							Lump		
S-18	560	Lin.Ft.	Steel piles, 12 BP 53	260	300							
S-29	26	Cu.Yds.	Porous backfill	13	13							
S-29	16	Each	Scuppers						16			
I-10	540	Sq.Yds.	Crushed aggregate slope protection							540		

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 "Reinforced Concrete Approach Slabs," revised 12-1-54; RB-1-55 "Rockers and Bolsters" revised 2-2-59; AR-1-57 "Aluminum Railing with Concrete Parapet", revised 2-2-59; and CSB-2-56 "Continuous Steel Beam Bridge" (sheets 2 & 3 of 6 sheets), revised 2-2-59, and to Supplemental Specification S-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. energy per blow to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 18.05 is not less than the following value for a pile hammer of the indicated energy rating:

53 tons per pile using an 11,000 ft. lb. hammer
45 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 28 tons per pile for the abutment piles.

PIER FOOTINGS shall extend a minimum of 3" into solid rock or to the elevations shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 7 tons per sq. ft.

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, a P501 is a No. 5 size bar, and a P1101 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. One and a half closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may at the option of the Contractor, be made in the shop. Class "B" welds are shown thus B>

CONCRETE DECK PLACING:
In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to the transverse reinforcing steel and are located near the center of any span.

EXCAVATION AND BACKFILL:
Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings. Backfill behind the abutments shall be compacted in accordance with the requirements for embankment compaction.

STRUCTURAL STEEL: See Proposal regarding A373 steel.

MACHINE FINISH: The top of the bridge deck slab shall be machine finished in accordance with the Proposal Note "Machine Finishing of Bridge Deck Slabs."

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO OHIO

GENERAL NOTES, REINFORCING STEEL & ESTIMATED QUANTITIES
BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49 + 79.92 to Sta. 52 + 68.52

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
JHY	RAR	JHY	TWD	BJH FCM 9-23-60	

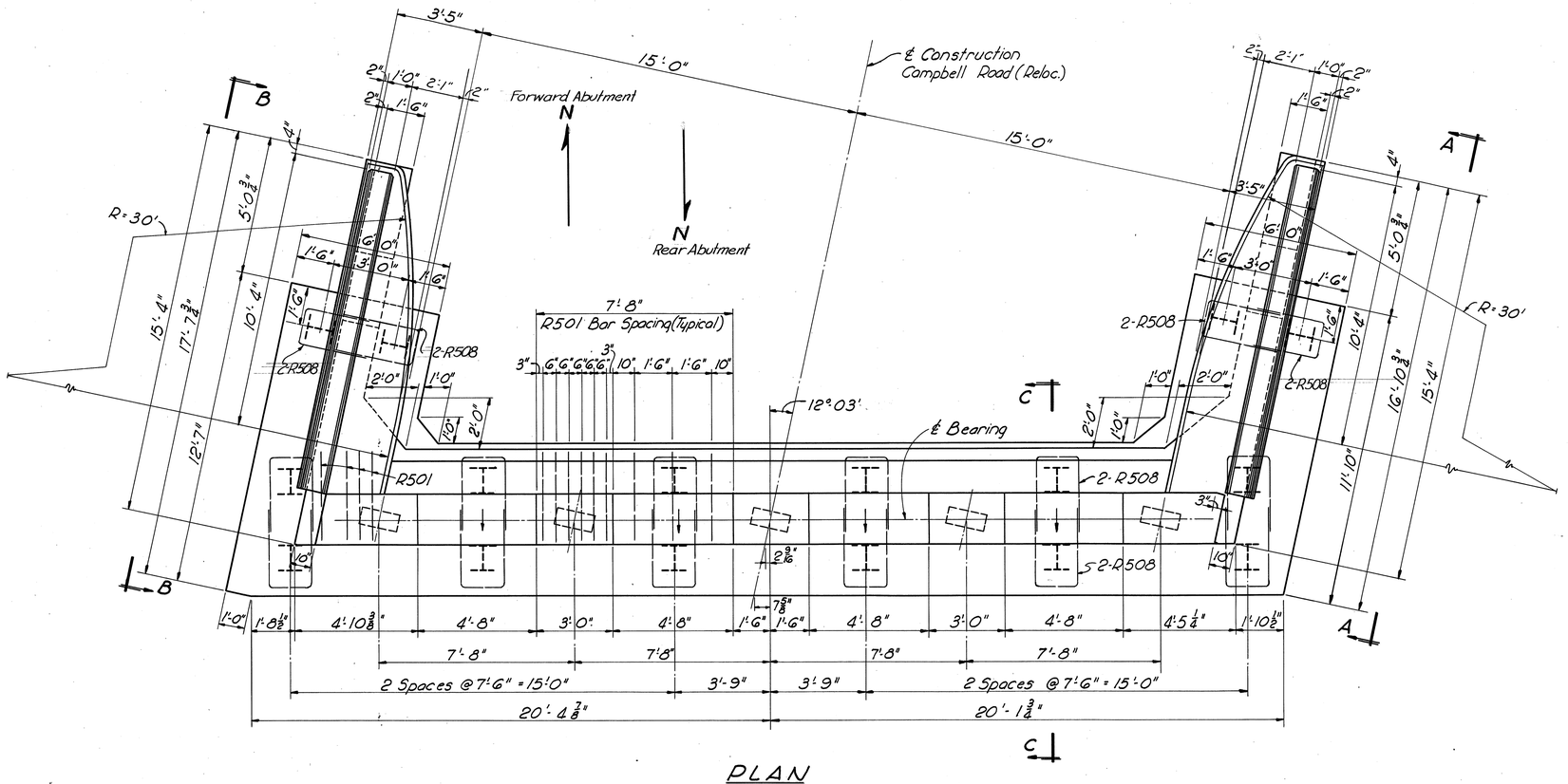
ERI-2-0927

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1048(6)	

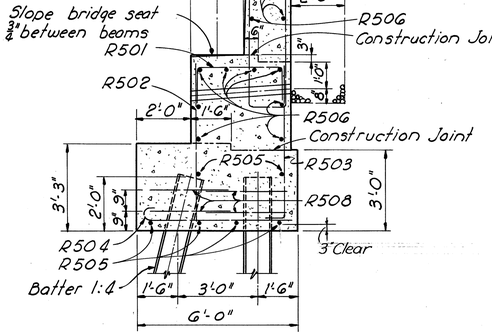
126
161

ERI 6-7.31

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment, and the piles driven.



PLAN



SECTION C-C

MICROFILMED
MAR 19 1985

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO OHIO

ABUTMENTS
BRIDGE NO. ERI. G-0886
UNDER CAMPBELL ROAD
ERIE COUNTY

Sta. 49+79.92 to Sta. 52+68.52

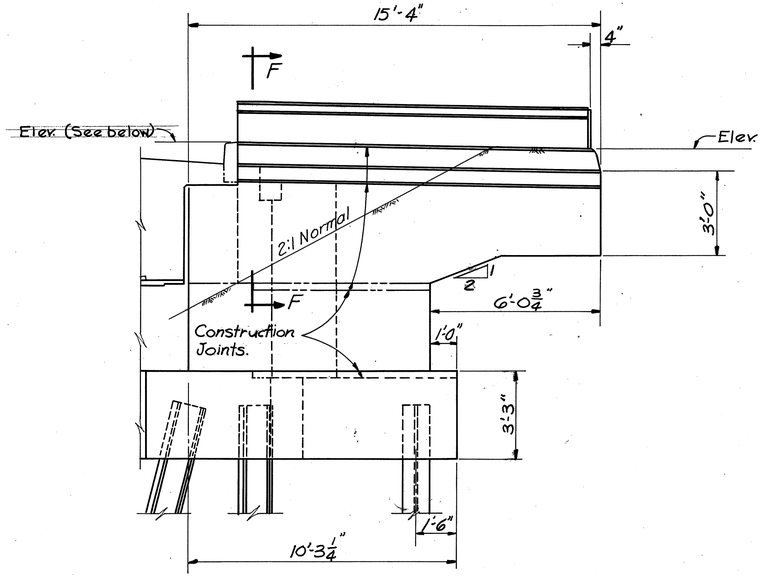
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	TWD	TWD	BJH FCM	9-23-60	

ERI-2-0927

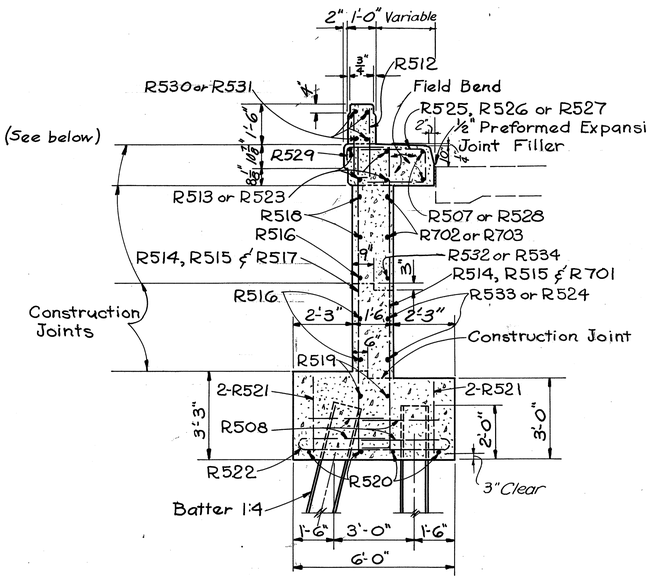
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

127
161

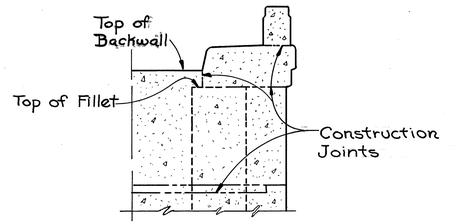
ERI 6-7.31



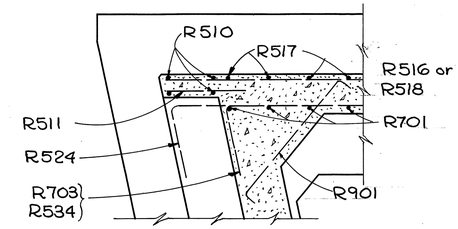
WINGWALL ELEVATION
(Construction Details)



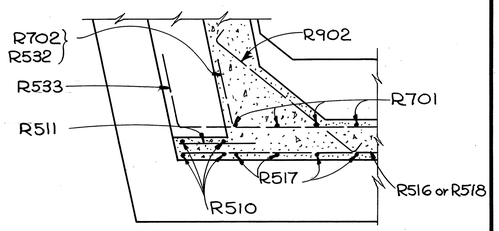
SECTION C-C



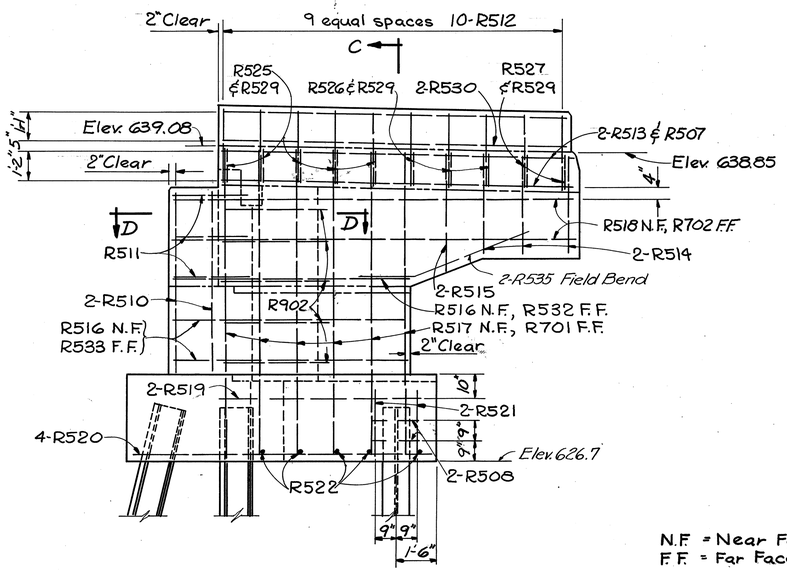
SECTION F-F



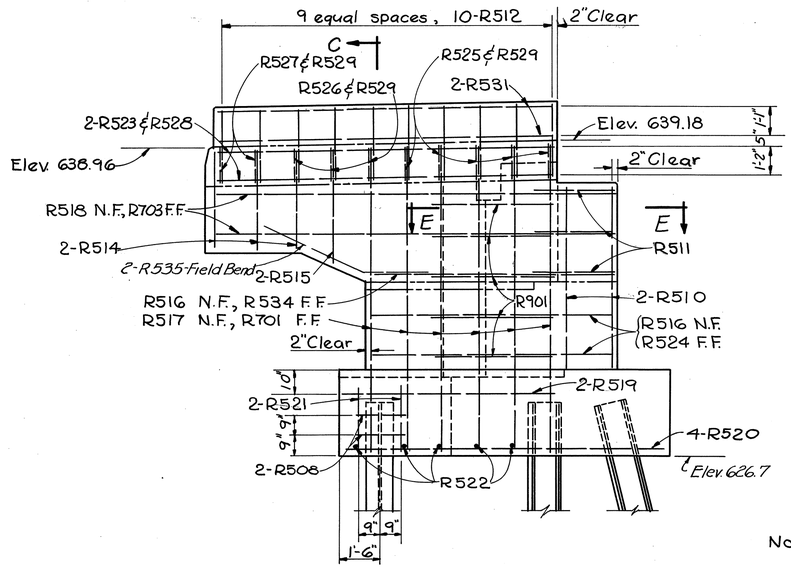
SECTION E-E



SECTION D-D



WINGWALL ELEVATION VIEW A-A
(Reinforcing Bar Details)



WINGWALL ELEVATION VIEW B-B
(Reinforcing Bar Details)

N.F. = Near Face
F.F. = Far Face

Note:
The 1/2" Preformed Expansion Joint Filler adjacent to the approach slab is included with the approach slab for payment.

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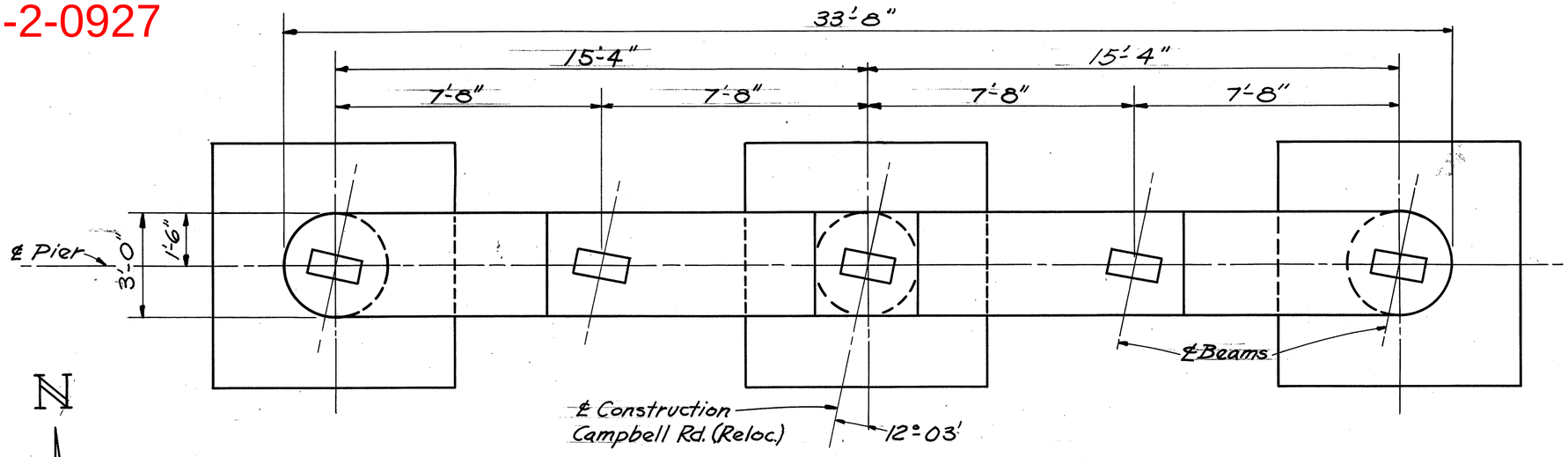
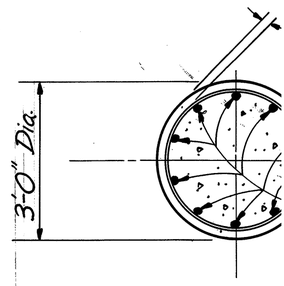
ABUTMENTS

BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
RAR	RAR	CPS	TWD	BJH FCM 9-23-80	

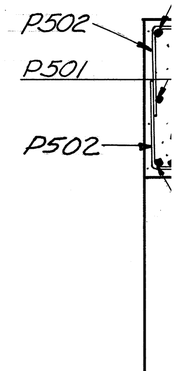


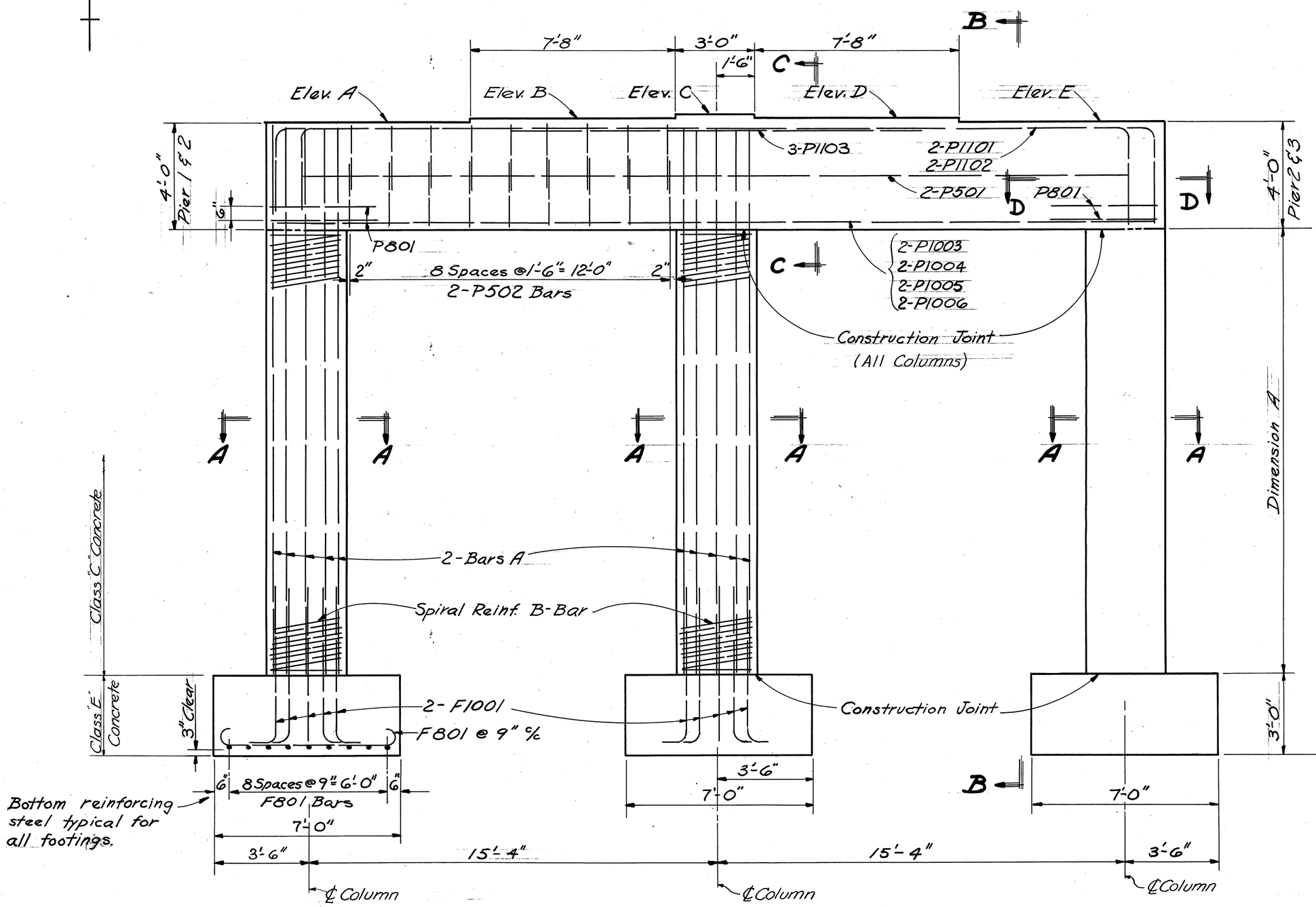
PLAN



SECTIO

PIER
Pier No. 1
Pier No. 2
Pier No. 3





ELEVATION

SECT

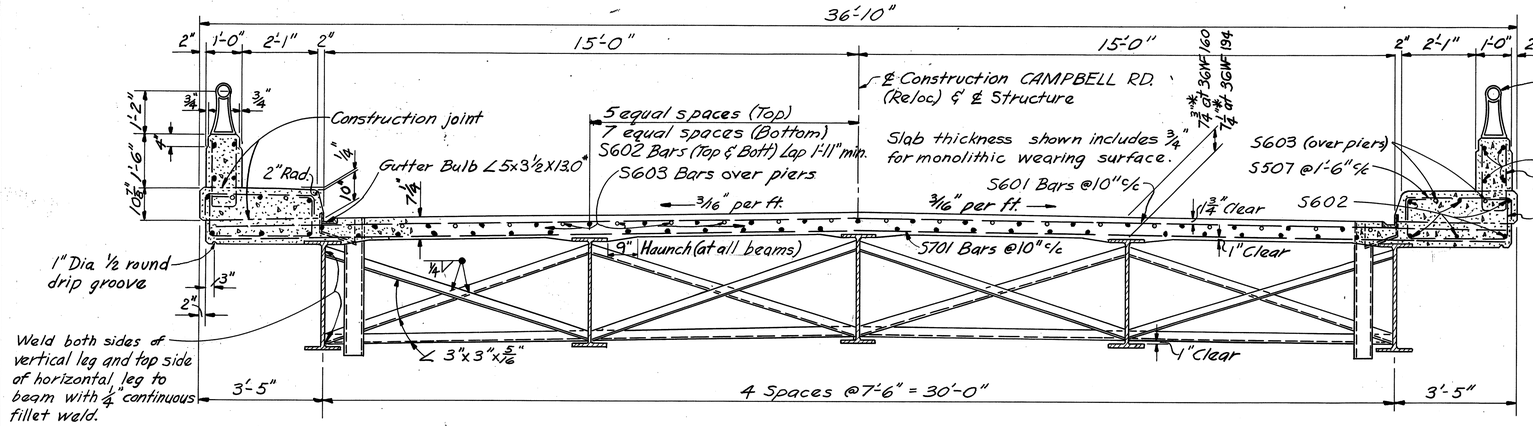
All pier details and reinforcement are symmetrical about the center line of the pier, unless otherwise noted.

ERI-2-0927

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1092(6)	

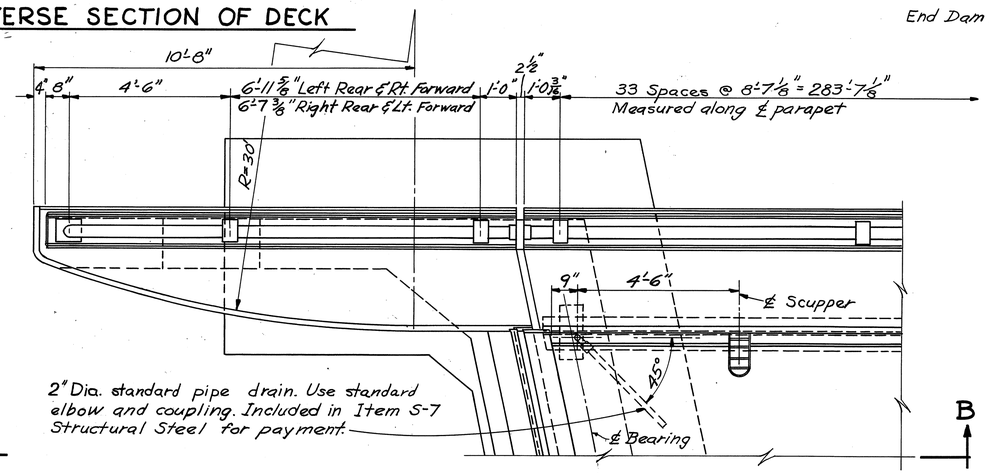
129/161

ERI G-7.31

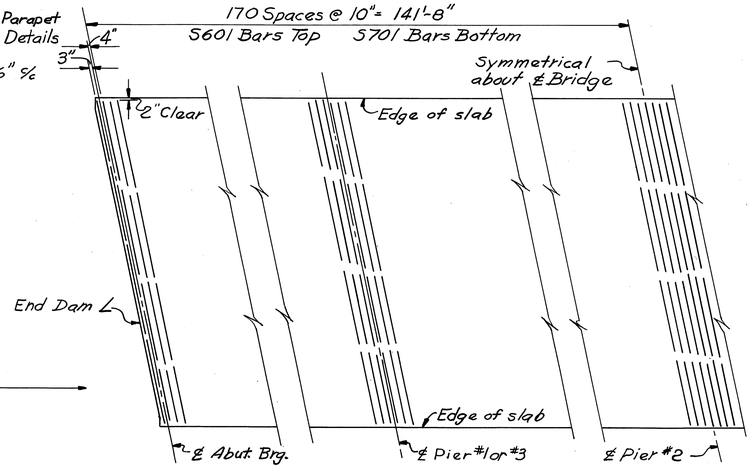


* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

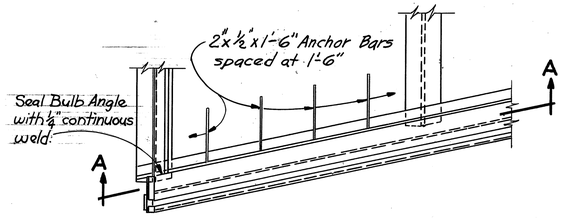
TRANSVERSE SECTION OF DECK



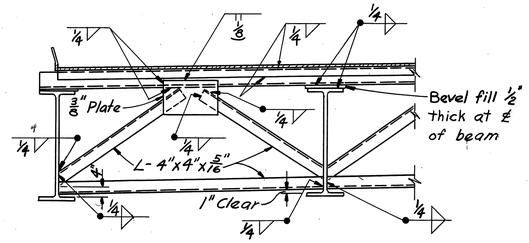
PLAN AT ABUTMENT



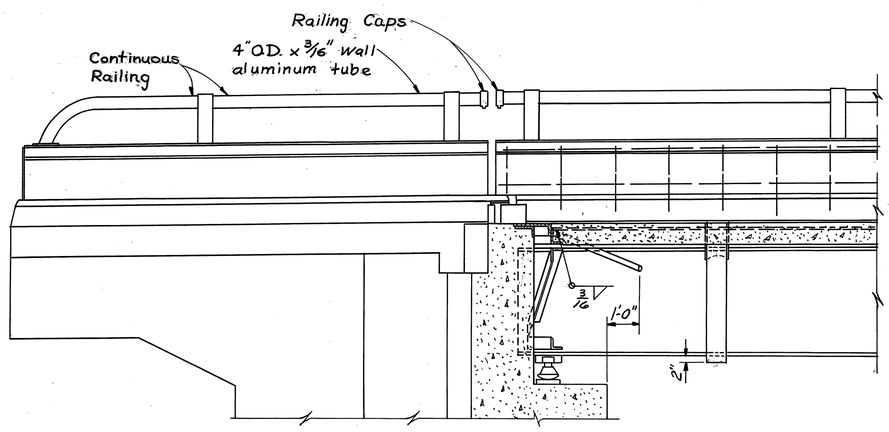
SLAB TRANSVERSE REINFORCING STEEL



PART END DAM PLAN



SECTION A-A



SECTION B-B

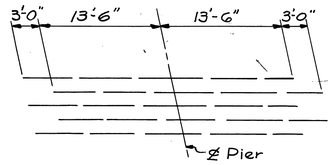
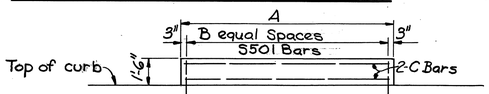


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS



PARAPET WALL PANEL DETAIL

NOTE:
Refer to Standard CSB-2-56 sheet 2 or 3 of 6 for the following details:
Roadway End Dam
Welded Butt Joint in Superstructure End Dam Angles.
Scupper Details.
Gutter Supports
Curb Plate Details.

PARAPET WALL DIMENSIONS			
Panel See Sheet 2	Dimension A	No. Space B	Reinforcing C Bars.
End	13'-10 7/8"	9	S502
Pier 1 & 3	11'-0"	7	S503
Pier 1 & 3	6'-2 1/8"	4	S504
Pier 2	8'-7 1/8"	6	S505
Intermediate	17'-2 1/4"	12	S506

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SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to Sta. 52+68.52

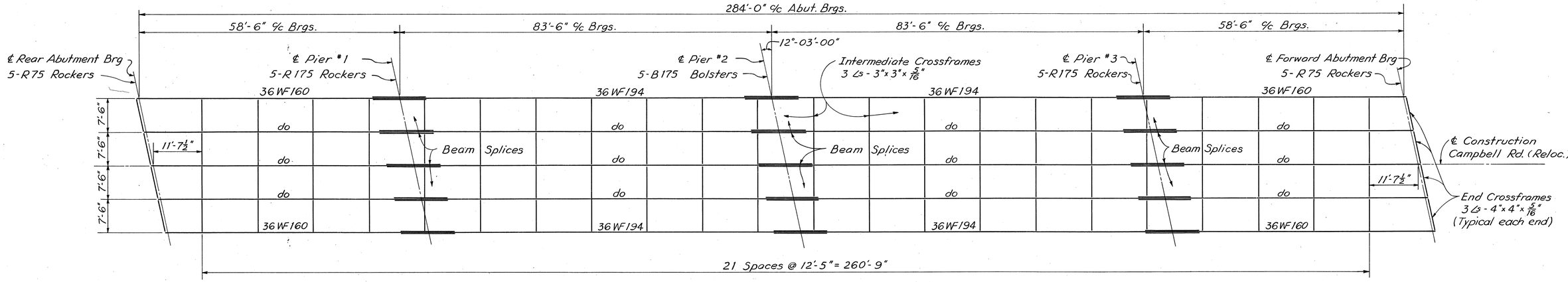
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
RAR	RAR	CPS	TWD	BJH FCM 9-23-80	

ERI-2-0927

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

130
161

ERI 6-7.31

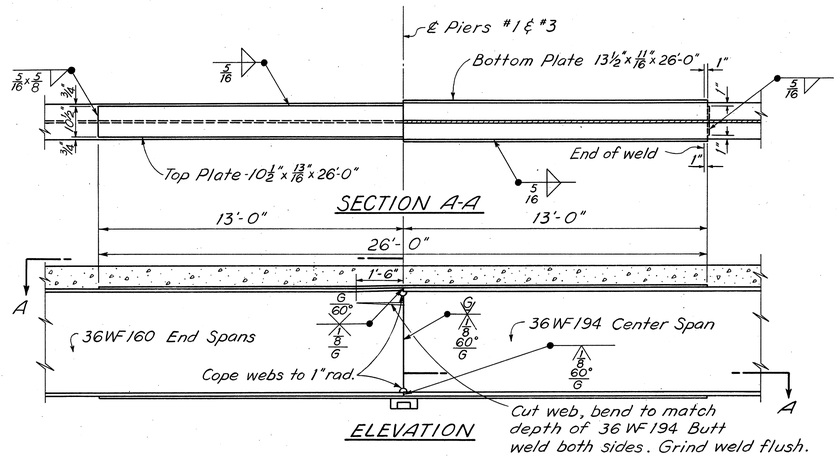


STEEL FRAMING PLAN

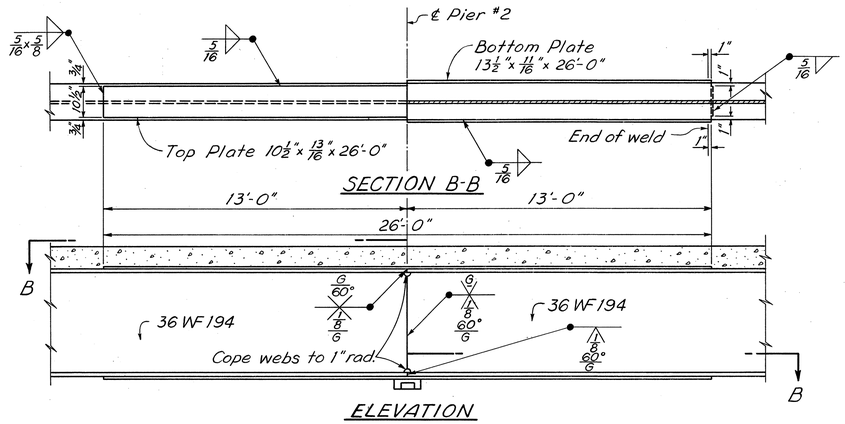
Cambering of beams is required in accordance with the following table:

DEFLECTION AND CAMBER

Location	Interior Beams				Exterior Beams			
	Span 1	Span 2	Span 3	Span 4	Span 1	Span 2	Span 3	Span 4
Deflection due to weight of steel	1/16"	1/8"	1/8"	1/16"	1/16"	1/8"	1/8"	1/16"
Deflection due to remaining dead load	3/16"	1/2"	1/2"	3/16"	3/16"	1/2"	1/2"	3/16"
Camber required for vertical curve	1/2"	1"	1"	1/2"	1/2"	1"	1"	1/2"
Total Camber	3/4"	1 3/8"	1 3/8"	3/4"	3/4"	1 3/8"	1 3/8"	3/4"
Required Shop Camber	1"	1 3/8"	1 3/8"	1"	1"	1 3/8"	1 3/8"	1"



BEAM SPLICE DETAILS (Pier 1 & 3)



BEAM SPLICE DETAILS (Pier 2)

BEAM SPLICE WELDING PROCEDURE:

1. Raise end of beam at Pier 2, 2½".
2. Butt weld beam flanges and web at Pier 1 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at Pier 1.
4. Lower end of beam at Pier 2.
5. Make splice at Pier 2 and Pier 3 in the same manner raising the end of the beams 3½" at Pier 3 and 7/8" at the Forward Abutment.

PAINTING

After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.

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SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to Sta. 52+68.52

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	JHY	TWD	BJH FCM	9-23-60	

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

BS–1–93M	DATED	12–15–94
VPF–1–90M	DATED	3–20–95
PCB–91M	DATED	7- 6-99
AS–1–81M	DATED	10–25–94
BR–1M	DATED	1–6–99
CS–1–93M	DATED	6–30–95
EXJ–4–87M	DATED	2–18–97
IRJ–8–95M	DATED	7–06–95
SICD–1–96M	DATED	2–12–97
RB–1–55M	DATED	10–25–94
GSD–1–96M	DATED	11–21–97

AND TO SUPPLEMENTAL SPECIFICATION(S):

815	DATED	5-30-96	863	DATED	9–9–97
816	DATED	4-21-97	910	DATED	7–28–98
844	DATED	1–6–99	954	DATED	9–9–97
846	DATED	9–9–97			

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

DESIGN LOADING: MS18 (CASE I) AND THE ALTERNATE MILITARY LOADING FOR S.R. 2 MAINLINE STRUCTURES.

MS18 (CASE II) AND THE ALTERNATE MILITARY LOADING FOR ALL OTHER STRUCTURES.

DESIGN DATA:

CONCRETE CLASS S – COMPRESSIVE STRENGTH 31.0 MPA (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPA (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 400 MINIMUM YIELD STRENGTH 400 MPA
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M OR A615M.

STRUCTURAL STEEL
ASTM A572M – YIELD STRENGTH 350 MPA (RYE BEACH ROAD STRUCTURE)
A36M – YIELD STRENGTH 250 MPA (ALL OTHER STRUCTURES)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.

65MM CONCRETE COVER

MICRO–SILICA, MODIFIED CONCRETE OVERLAY.

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

PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, SUPERSTRUCTURE

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS, EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 kg BUT NOT TO EXCEED 41 kg MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, SUBSTRUCTURE
SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE–RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 kg FOR REMOVAL WITHIN 450mm OR PORTIONS TO BE PRESERVED. OUTSIDE THE 450mm LIMITS, A HAMMER HEAVIER THAN 16 kg, BUT NOT TO EXCEED 41 kg, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ERI–2–24816 (1542)
PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANT OF 60 METERS BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

ERI–2–24816 (1542)
PILES TO BEDROCK: PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL MILLIMETERS WITH A MINIMUM RESISTANCE OF 20 BLOWS PER 25mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THE RECEIVED AT LEAST 20 BLOWS.

THE ULTIMATE BEARING VALUE IS 529 kN PER PILE FOR THE HP250X62 ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 727 kN PER PILE FOR THE HP310X79 PIER PILES.

ABUTMENT PILES:

10 PILES 7 METERS LONG, ESTIMATED LENGTH
10 PILES OF ORDER LENGTH 8.5 METERS LONG
10 PILES 8 METERS LONG, ESTIMATED LENGTH
10 PILES OF ORDER LENGTH 9.5 METERS LONG
10 SPLICES

PIER PILES:

36 PILES 4 METERS LONG, ESTIMATED LENGTH
36 PILES OF ORDER LENGTH 5.5 METERS LONG
18 SPLICES

ITEM 507, STEEL POINTS, AS PER PLAN: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD., CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ASSOCIATES, INC., 3467 GRIBBLE ROAD, MATHEWS, NORTH CAROLINA 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO DIRECTOR.

ERI–2–23770 (1477)
RAILROAD CONSTRUCTION CLEARANCE OF 5.486 METERS HORIZONTALLY FROM THE CENTER OF TRACKS AND 6.706 METERS VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 1.8 METERS FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATION OF 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.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WOK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED IN TO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THEIR COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. INCLUDED WITH ITEM 511 FOR PAYMENT.

ERI–2–19312 (1200)
ERI–2–23770 (1477)
ITEM 863, STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION, AS PER PLAN
STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH SS 863 AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE CROSS FRAMES.

ITEM 518, POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN
POROUS BACKFILL SHALL BE #57 GRAVEL IN LIEU OF THE MATERIAL LISTED IN 518.02

ERI–2–24816(1542)

ITEM 516 – REFURBISHING & RESETTING BEARING DEVICES, AS PER PLAN
THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY RESET & ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING AS REQUIRED BY SYSTEM OZEU, REPLACEMENT OF ANY DAMAGED STEEL LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIM OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 16°C, LUBRICATING SLIDING SURFACES, REASSEMBLY OF THE BEARINGS, AND PLACEMENT OF NEW ANCHOR BOLTS FOR BOLSTERS. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT BID PRICE FOR ITEM 516 – REFURBISH AND RESET BEARING DEVICES, AS PER PLAN.

SEE PROPOSAL NOTE FOR THE FOLLOWING ITEMS:

ITEM SPECIAL: SEALING OF CONCRETE SURFACES (EPOXY–URETHANE)

ITEM SPECIAL: CONCRETE REPAIR BY EPOXY INJECTION INCLUDING SURFACE PREPARATION

SEALING OF CONCRETE SURFACES: EPOXY–URETHANE SEALER SHALL BE THE "BUFF" COLOR PER FEDERAL COLOR STANDARD NO. 37722, AND APPLIED PER THE LOCATIONS DETAILED IN THE PLANS.

SURVEY DISC ON STRUCTURE THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST ONE(1) WEEK IN ADVANCE OF POURING THE CONCRETE FOR COMPLETION OF THE HEADWALL/ABUTMENT. THE ENGINEER WILL PROVIDE THE CONTRACTOR ONE(1) SURVEY DISC FOR EACH STRUCTURE (OBTAINED FROM THE DISTRICT SURVEYOR) WHICH THE CONTRACTOR SHALL PLACE IN THE SURFACE OF THE FRESH CONCRETE. THE LOCATION OF THE DISC SHALL BE ON THE HEADWALL/ABUTMENT, AND ON A FLAT, HORIZONTAL SURFACE BEYOND THE EDGE OF DECK AND GUARDRAIL OR PARAPET. THE BENCHMARK SHALL BE ACCESSIBLE TO A SURVEYOR'S ROD WITHOUT ANY OBSTRUCTIONS. COST OF THIS WORK IS CONSIDERED INCIDENTAL TO THE CONCRETE BID ITEM.

THE FOLLOWING STRUCTURES APPLY:
ERI–2–14822 L/R ERI–2–17638 L/R ERI–2–19312 L/R ERI–2–23770 L/R
ERI–2–24430 L/R ERI–2–24816

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
J.T.Y.	RAN	G.A.B.	10–97
CHECKED	REVISED	STRUCTURE FILE NUMBER	
M.E.M.			

STRUCTURAL NOTES

ERI–2–12.558

324
432

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FILE NAME: SHT1 I:\5033\006\TRAN\BRIDGE\GENNOTE.DWG 7-20-99 2:01:33 pm EST

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ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE:
THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATION OF STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORT.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25mm OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION." COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

PAINTING OF 863 STEEL NEW STEEL SHALL BE SHOP PRIMED, WHICH SHALL BE INCLUDED IN THE COST OF ITEM 863. THE NEW STEEL SHALL ALSO BE PREPARED AND PAINTED PER SUPPLEMENTAL SPECIFICATION 815 IN THE FIELD AS IF IT WERE EXISTING STEEL. QUANTITIES AND PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE SQUARE FOOT (SQ M) UNIT PRICE BID FOR EACH OF THE 815 ITEMS.

INSPECTION OF STRUCTURAL STEEL: THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLAT FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 842, CLASS S & CLASS C CONCRETE, AS PER PLAN: COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE. SLIPFORMING OF PARAPETS IS NOT ALLOWED.

ITEM 844 – HIGH PERFORMANCE CONCRETE, AS PER PLAN THE DESIGN MIX SHALL BE MIX NO. 4 LIMESTONE. THE OPTION OF SLIPFORM CONSTRUCTTION OF THE BRIDGE RAILING IS NOT PERMITTED.

ERI-2-17638 (1096)
ERI-2-19312 (1200)
ERI-2-23770 (1477)
ER-2-24816 (1542)
ITEM 842, CLASS C CONCRETE, ABUTMENT, AS PER PLAN: COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

INSTALL A 900mm WIDE STRIP, 2.5mm INCH THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLAN. SECURE THE 1 METER WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 32mm X 3mm (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25mm OUTSIDE DIAMETER, 3mm GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225mm. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150mm CENTER TO CENTER ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300mm IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5mm THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE", BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D 751	2.5+/-0.25
BREAKING STRENGTH, GRAB WXF, N. MINIMUM	D 751	3130 X 3130
ADHESIVE 25mm STRIP, 50mm MIN., N MIN.	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS T 100°C, 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT 40°C, BEND AROUND 6mm MANDREL	D2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 842 CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

ERI-2-19312 (1200)
ITEM 842 – CLASS C CONCRETE, MISC.: PIER ENCASEMENT:
THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.
THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.
THE FORMS SHALL BE LEFT IN PLACE FOR SEVEN DAYS. ANY EXPOSED AREAS SHALL BE WATER CURED THAT SAME 7 DAYS.

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

IMMEDIATELY BEFORE THE CONCRETE IS PLACED ALL ADJACENT CONCRETE SURFACES SHALL BE COVERED WITH A THIN LAYER OF BONDING GROUT. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTANCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE APPLIED FOR A SHORT DISTANCE IN ADVANCE OF THE PLACEMENT OF THE CONCRETE AND SHALL NOT BE DRY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 842 WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR MEETING THE REQUIREMENTS OF CMS 510. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED WITH THE APPROPRIATE 842 CONCRETE ITEM.

DRIP GROOVES THE DRIP GROOVES AS DETAILED ON STANDARD CONSTRUCTION DRAWINGS SHALL NOT BE CONSTRUCTED.

FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES FOR DECK REPLACEMENT PROJECT

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING AND REMOVING RIGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK EXCLUSIVE OF FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE ITEM INCLUDES PLATFORMS OR STAGING AS NEEDED TO PERMIT ACCESS FOR INSPECTION, TEMPORARY PLYWOOD OR OTHER SHEETING MATERIAL FOR CATCHING BROKEN CONCRETE OR OTHER MATERIALS, AND FOR ALL TEMPORARY SUPPORTS AND BRACES REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES.

REQUIREMENTS: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SUPPORTS UNDER PORTIONS OF THE STRUCTURE DURING REMOVAL, RECONSTRUCTION, AND CONSTRUCTION OPERATIONS, AS REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES. IF, IN THE OPINION OF THE ENGINEER, ADDITIONAL SUPPORTS ARE REQUIRED, THEY SHALL BE PROVIDED BY THE CONTRACTOR ENTIRELY AT HIS EXPENSE.

IN ORDER TO PROTECT VEHICULAR TRAFFIC AND PAVEMENTS AGAINST DAMAGE FROM FALLING MATERIAL, DEBRIS AND OTHER DEMOLITION OPERATIONS, WHILE SUPERSTRUCTURE CONCRETE IS BEING REMOVED OR WHILE THE CONTRACTOR IS WORKING OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT A TEMPORARY PROTECTIVE STRUCTURE UNDER THE SPANS THAT ARE DIRECTLY OVER THE ROADWAY AND SHOULDER AREAS PLUS ENOUGH ADDITIONAL COVERAGE IN THE AREA TO PREVENT ANY FALLING MATERIAL FROM ANY SPAN FROM REACHING THESE AREAS.

IN ADDITION TO THE TEMPORARY PROTECTIVE STRUCTURE, THE CONTRACTOR SHALL PROVIDE PLASTIC SHEETING OR OTHER APPROVED METHODS TO CONTROL WATER USED IN THE SAW CUTTING OPERATION FROM FALLING ON VEHICULAR TRAFFIC.

THE PROTECTIVE STRUCTURES SHALL MEET WITH THE APPROVAL OF THE ENGINEER. THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. AS A MINIMUM, TWO LAYERS OF 19mm PLYWOOD WITH LAPPED JOINTS OR AN EQUIVALENT DESIGN SHALL BE PLACED BETWEEN THE LOWER FLANGES OF THE STRUCTURAL STEEL BEAMS ABOVE THE PAVEMENT AND SHOULDERS OF ROADWAYS ON WHICH VEHICULAR TRAFFIC IS BEING MAINTAINED ON THE EXISTING LANES OR BY PARTIAL LANE CLOSURES. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXISTING AND/OR NEW EXTERIOR STRUCTURAL BEAMS A SUFFICIENT DISTANCE TO PROTECT UNDER THE EXISTING AND PROPOSED PARAPETS, AND SHALL HAVE SIDE WALLS EXTENDING UP 1220mm MINIMUM.

SIDEWALLS SHALL BE BRACED SUBSTANTIALLY TO RESIST WIND LOADS. DURING SAWCUTTING AND DECK REMOVAL OPERATIONS, TEMPORARY SHIELDS ATTACHED TO THE SIDE WALLS AND EXTENDING 305mm ABOVE THE TOP OF PARAPET, SHALL BE INSTALLED TO LIMITS AS DIRECTED BY THE ENGINEER. TEMPORARY SHIELDS SHALL BE REMOVED IMMEDIATELY AFTER THEY HAVE SERVED THEIR PURPOSE. DEBRIS SHALL NOT BE PERMITTED TO COLLECT ON THE PROTECTIVE STRUCTURES.

WHEN SUPPORTING THE PROTECTIVE STRUCTURES FROM THE STEEL WORK OF THE BRIDGE(S), ALL CONNECTIONS THERETO SHALL BE MADE BY MEANS OF APPROVED CLAMPS ON BOTH SIDES OF THE BEAM FLANGE. THE DRILLING OF HOLES IN THE STEEL WORK, OR WELDING THERETO, FOR THIS PURPOSE WILL NOT BE PERMITTED. NO PORTION OF THE TEMPORARY SUPPORT SYSTEM AND/OR PROTECTIVE STRUCTURES (INCLUDING CONNECTION DEVICES) SHALL EXTEND MORE THAN 255mm BELOW THE BOTTOM FLANGE OF THE STEEL STRINGERS OR COVER PLATES THAT IS OVER THE TRAVELED WAY (PAVEMENT AND SHOULDERS) OF A HIGHWAY ON WHICH TRAFFIC IS BEING MAINTAINED. HOWEVER, IN NO INSTANCE SHALL THE UNDERCLEARANCE BE LESS THAN 4270mm.

AFTER THE FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. PROTECTIVE STRUCTURES, INCLUDING SIDEWALLS, SHALL NOT BE REMOVED UNTIL THE PARAPETS ARE COMPLETED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

DETAILS OF THE FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES FOR CATCHING BROKEN CONCRETE AD OTHER MATERIALS SHALL BE SUBMITTED, IN QUADRUPLET, TO THE ENGINEER FOR APPROVAL. DETAILS SHALL INCLUDE THE EXISTING AND THE PROPOSED TEMPORARY UNDERCLEARANCES TO THE TRAVELLED WAY.

MEASUREMENT AND PAYMENT FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES WILL BE MEASURED AS A UNIT AND SHALL BE INCLUDED WITH ITEM 202, PORTION OF STRUCTURE REMOVED, AS PER PLAN, FOR PAYMENT. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

CONCRETE PARAPETS: AS SOON AS THE CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAW CUTS SHALL BE PLACED AT A MINIMUM OF 2000mm AND A MAXIMUM OF 3000mm CENTERS. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E TO A MINIMUM DEPTH OF 25mm. SLIP FORMING OF CONCRETE PARAPETS IS NOT ALLOWED.

ITEM 815 – FIELD PAINTING SYSTEM OZEU ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISHED COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE A GREEN COLOR MEETING FEDERAL STANDARD NUMBER 15056. IN ADDITION TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSS FRAMES AND BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

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DESIGNED	DRAWN	REVIEWED	DATE
J.T.Y.	RAN	G.A.B.	10-97
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M.E.M.			

STRUCTURAL NOTES

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J.E.F. FILE NAME: SHT2 I:\5033\006\TRAN\BRIDGE\GENNOTE.DWG 7-12-99

5033-006

SR 2 UNDER SR 4 ERI-2-13084 '(0813) SFN #2201356

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	405	SQ. METER	SEALING OF CONCRETE SURFACES '(EPOXY-URETHANE)	135	135	135

SR 2 UNDER CAMPBELL ST. ERI-2-15031 '(0934) SFN #2200724

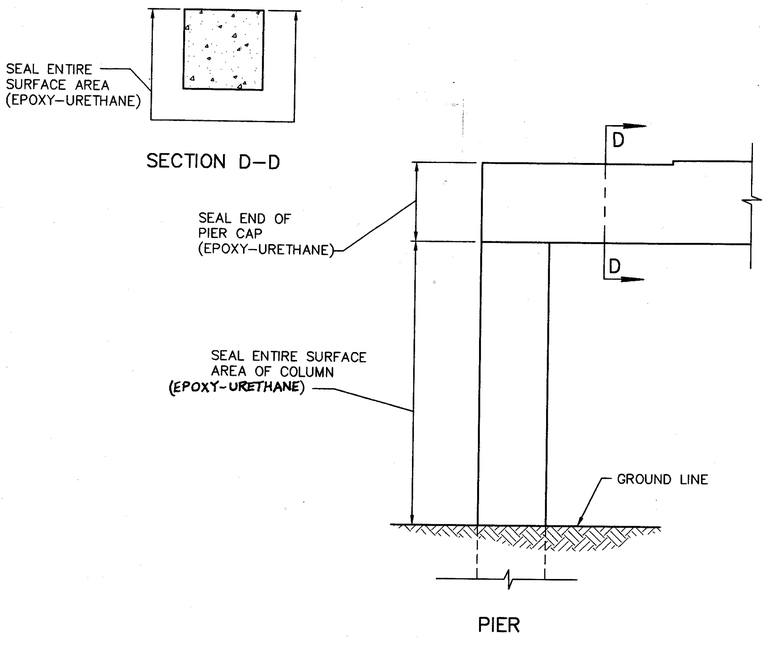
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	207	SQ. METER	SEALING OF CONCRETE SURFACES '(EPOXY-URETHANE)	69	69	69

SR 2 UNDER GALLOWAY ROAD ERI-2-20133 '(1251) SFN #2200996

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	156	SQ. METER	SEALING OF CONCRETE SURFACES '(EPOXY-URETHANE)	52	52	52

SR 2 UNDER CAMP ROAD ERI-2-22724 '(1412) SFN #2201054

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	156	SQ. METER	SEALING OF CONCRETE SURFACES '(EPOXY-URETHANE)	52	52	52



LIMITS OF SEALING OF CONCRETE SURFACES

PLOTTED: APRIL 11, 1998
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DESIGNED	DRAWN	REVIEWED	DATE
J.T.Y.	RAN	G.A.B.	10-97
CHECKED	REVISED	STRUCTURE FILE NUMBER	
M.E.M.			

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-13084(0813), ERI-2-15031(0934), ERI-2-20133(1251) AND ER-2-22724(1412)

ERI-2-12.558

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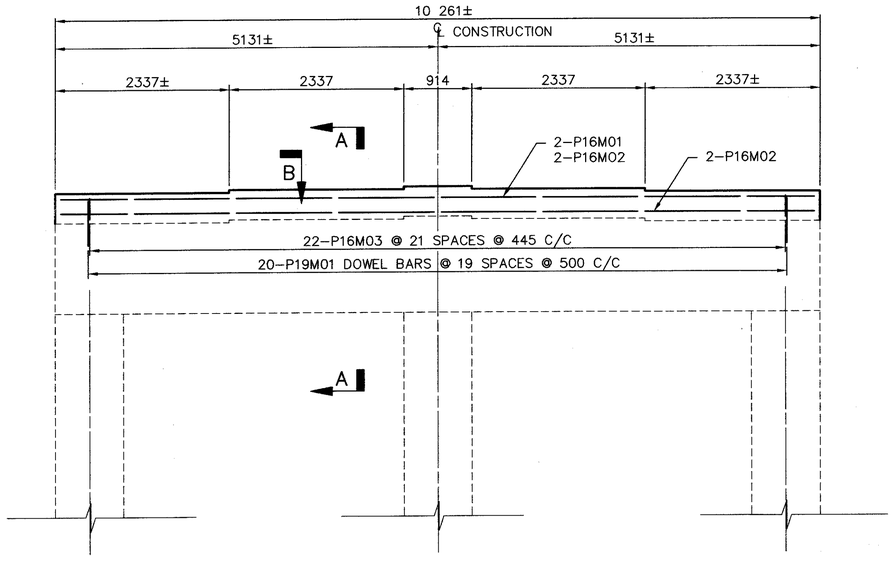
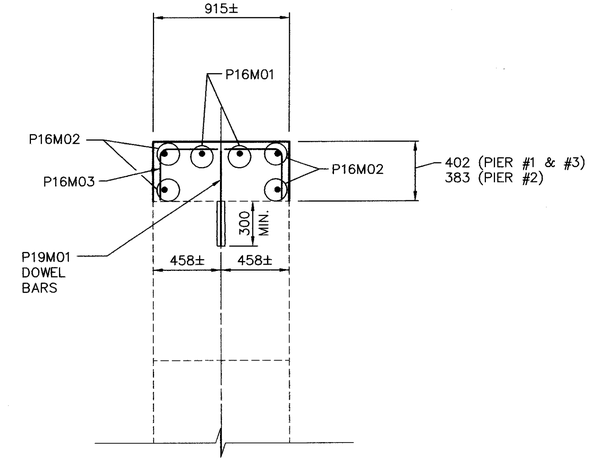
ERI-2-0927



PIER ELEVATION



SECTION A–A

NOTE: ALL DIMENSIONS ARE GIVEN IN MILLIMETERS UNLESS OTHERWISE STATED, EXCEPT FOR STATIONING AND ELEVATIONS WHICH ARE GIVEN IN METERS.
THIS SHEET IS FOR INFORMATION FOR SEALING THE **CONCRETE SURFACES** ONLY.

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DESIGNED	DRAWN	REVIEWED	DATE
J.T.Y.	RAN	G.A.B.	10–97
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M.E.M.		220724	

PIER ELEVATION AND DETAILS
BRIDGE NO. ERI–2–15031 (0934)
UNDER CAMPBELL STREET

ERI–2–12.558

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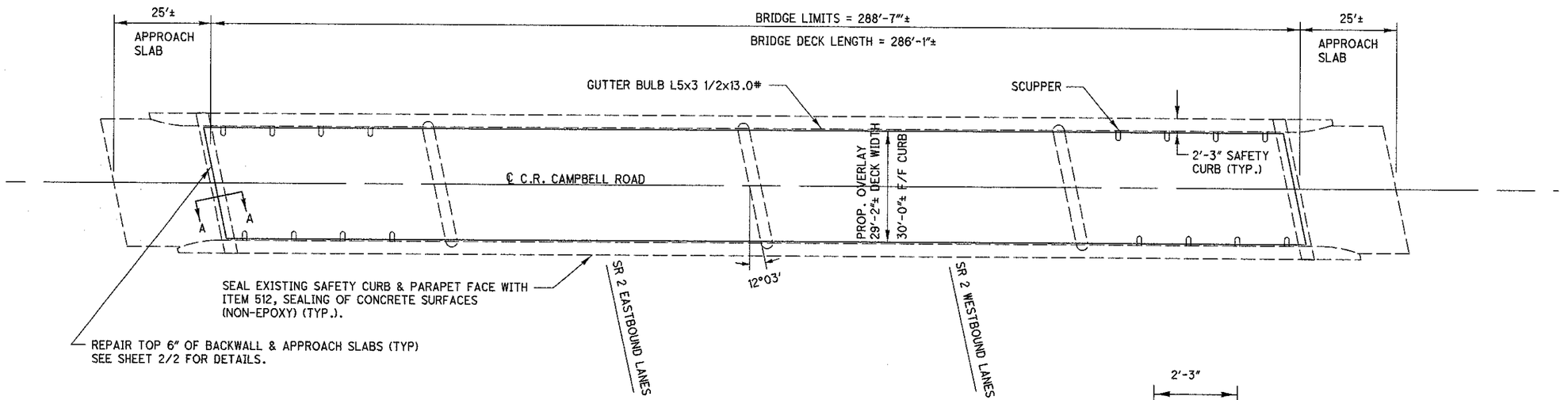
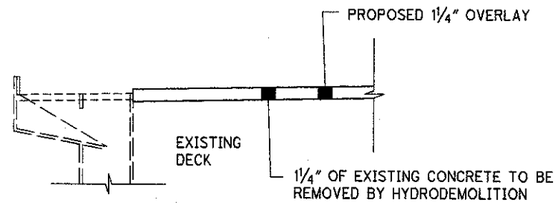
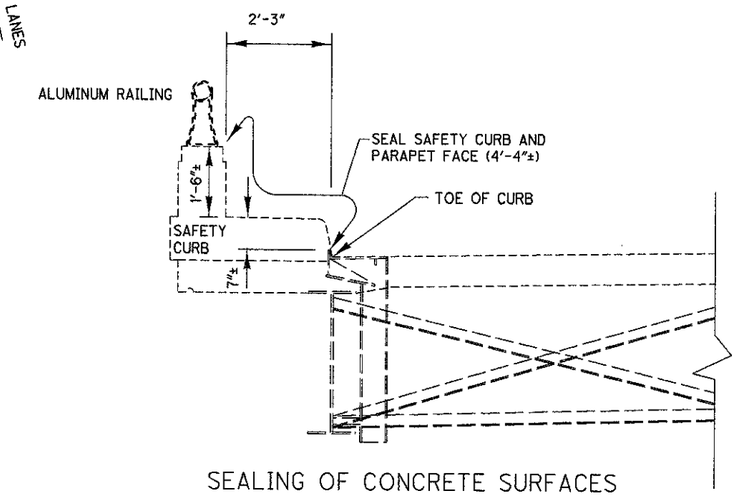
ERI-2-0927



PLAN VIEW



ELEVATION VIEW AT SCUPPER



SEALING OF CONCRETE SURFACES

SEALING SAFETY CURB AND PARAPET FACE ON BRIDGE DECK & WINGWALLS (AVG. LENGTH= 311'-6"±).

ITEM	QUANTITY	UNIT	DESCRIPTION
512	300	SQ YD	SEALING CONCRETE SURFACES (NON-EPOXY)
646	0.13	MILE	EDGE LINE, AS PER PLAN
646	0.06	MILE	CENTER LINE, AS PER PLAN
848	927	SQ YD	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1¼" THICK)
848	927	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION
848	13	CU YD	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	28	SQ YD	HAND CHIPPING
848	LUMP		TEST SLAB
848	1	CU YD	FULL-DEPTH REPAIR

QUANTITIES CARRIED TO GENERAL SUMMARY

NOTES:

1) THE EXISTING APPROACH GUARDRAIL AND BRIDGE RAIL IS NOT SHOWN.

2) THE PROPOSED OVERLAY PROFILE ELEVATIONS SHALL MATCH THE EXISTING BRIDGE DECK PROFILE ELEVATIONS.

3) THE PROPOSED OVERLAY SHALL BE SLOPED TO DRAIN TO THE EXISTING SCUPPERS; HOWEVER, THE EXISTING SCUPPERS SHALL NOT BE DISTURBED.

4) FOR BACKWALL & APPROACH SLAB REPAIR DETAILS, SEE SHEET 2/2.

DESIGN AGENCY: DISTRICT THREE, OFFICE OF PRODUCTION
DESIGNED CAL | DRAWN CAL | REVIEWED RDN | DATE 3/08 | CHECKED HYH | REVISED | STRUCTURE FILE NUMBER 2200724

PLAN VIEW
ERI-2-0934
UNDER CAMPBELL STREET (C.R. 110)

D03-BH-FY2009(A)

1 / 2

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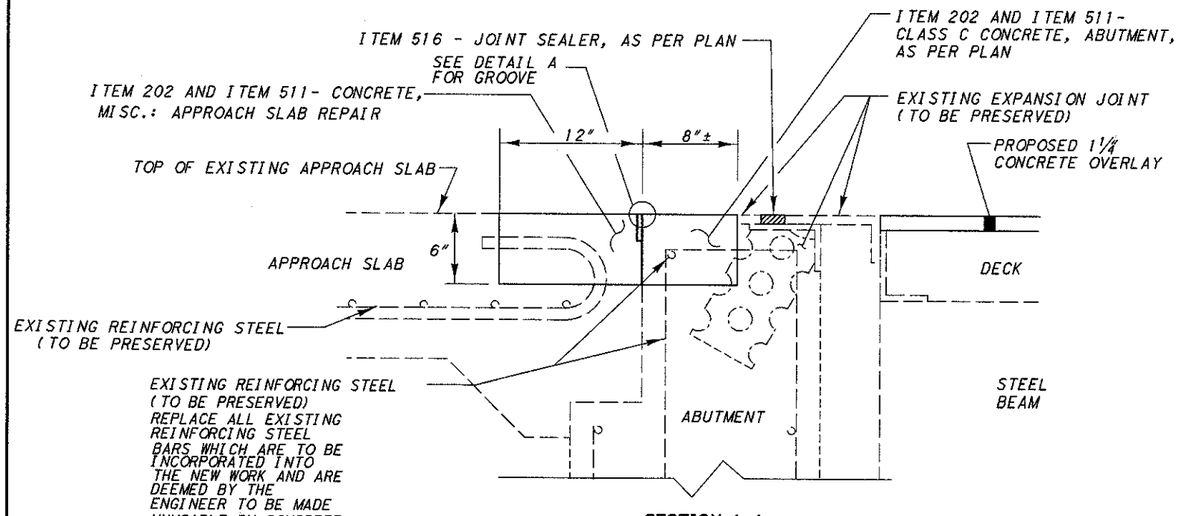
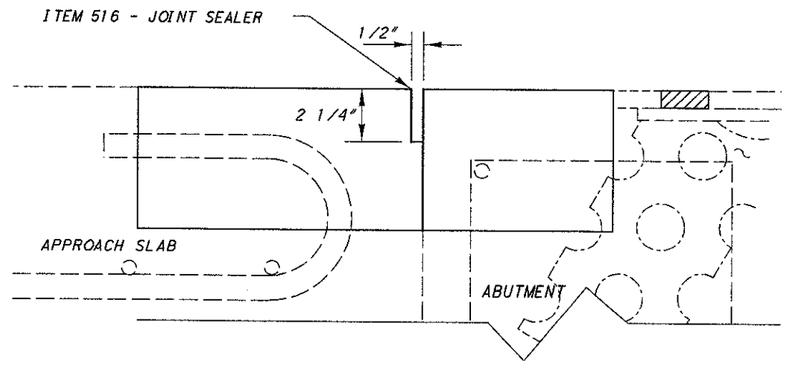
DESIGN FILE: $$$$$.DGN FILESPECIFICATIONS$$$$$$
WORKSTATION: $TERMINAL$ DATE: $$$$$DATE$$$$$

ERI-2-0927



SECTION A-A

(BACKWALL & APPROACH SLAB REPAIR LENGTH = 30'-0"±)



DEATAIL A

APPROACH SLAB GROOVE LENGTH = 30'-0"±

ITEM	QUANTITY	UNIT	DESCRIPTION
202	2	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
511	1	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (REPAIR)
511	1	CU YD	CONCRETE, MISC: APPROACH SLAB REPAIR
516	60	FT	JOINT SEALER
516	60	FT	JOINT SEALER, AS PER PLAN

QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: $$$$$.DGN FILESPECIFICATIONS$$$$$
WORKSTATION: $TERMINAL$ DATE: $$$$$DATE$$$$$

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

DESIGNED	DRAWN	REVISED	DATE
CAL	CAL	RDN	3/08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HTH		2200724	

PLAN VIEW
ERI-2-0934
UNDER CAMPBELL STREET (C.R. 110) W

D03-BH-FY2009(A)

2 / 2

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