

DESIGN DESIGNATION

Current ADT (1984) = 3350
 Design Year ADT (2004) = 5952
 DHV = 95%
 D = 60%
 T = 5%
 V = 50 M.P.H.

MICROFILMED
 NOV 20 1990

**STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 TUS-800-33.47
 SANDY TOWNSHIP
 TUSCARAWAS COUNTY**

FHWA REGION	STATE	PROJECT	
5	OHIO	BHS-521(10)	1/24

TUS-800-33.47

BHS-521 (10)

MICROFILMED
 MAR 25 1992

CONVENTIONAL SIGNS

County Line
 Township Line
 Section Line
 Center Line
 Trees and Stumps
 Drain Pipe
 Guardrail
 Pole Line
 Fence Line
 Property Line
 Existing Right of Way Line
 Proposed Right of Way Line

-----	-----	-----
118	119	120
Exist. To be removed	Exist. New	Exist. New
-----	-----	-----
Power & Telephone	-----	-----
X	X	X
R/W	R/W	R/W

INDEX OF SHEETS

Title Page
 Typical Sections
 General Notes
 Temporary Pavement Markings
 Maintaining Traffic Plan
 Calculations and General Summary
 Plan and Profile
 Cross Sections
 Structure over 20' Span

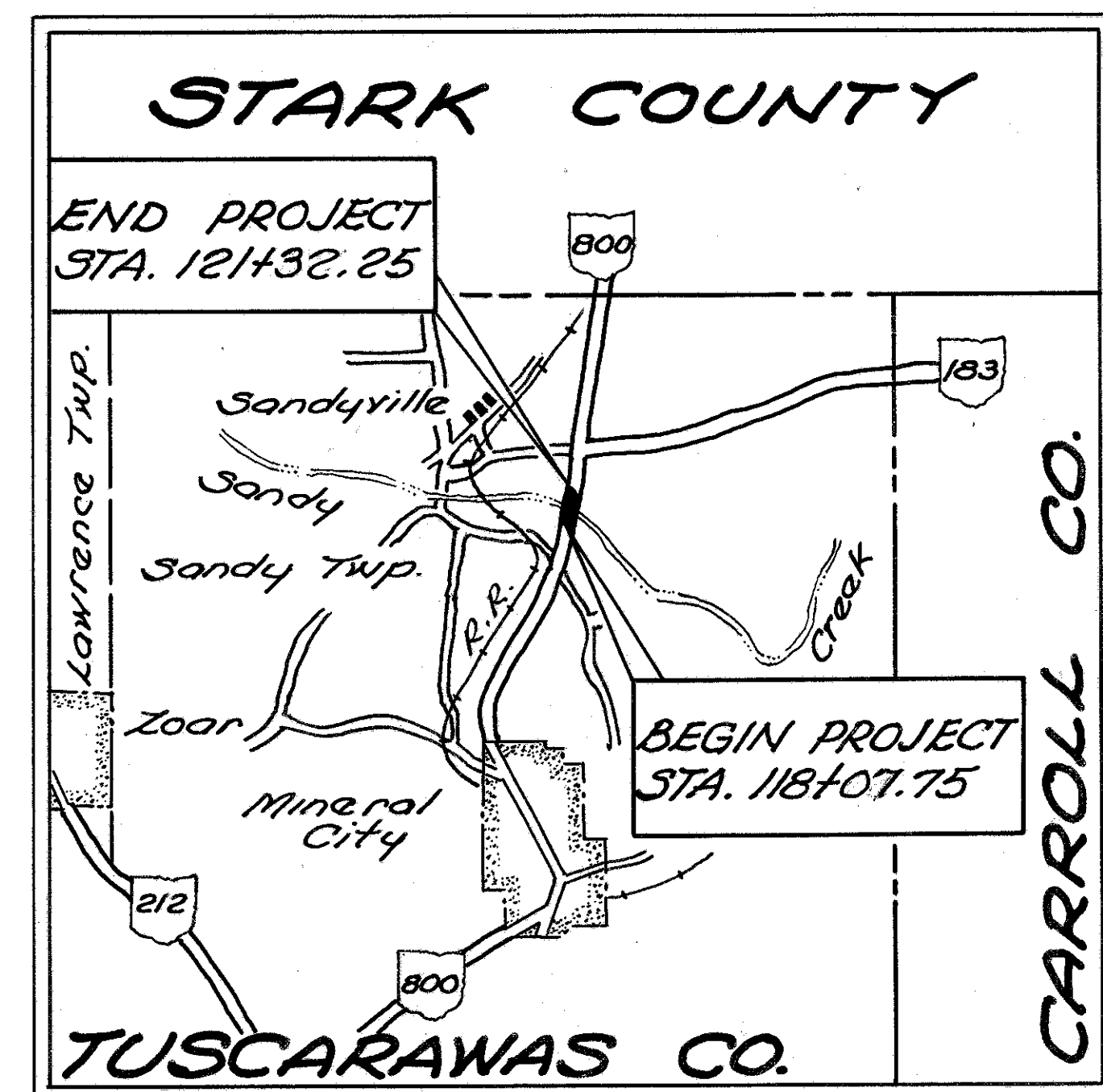
1
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LINE DATA

Begin project Sta. 118+07.75
 End project Sta. 121+32.25
 Length of Project 324.50 Lin. Ft. or 0.061 Mile

Begin work Sta. 116+98.00
 End work Sta. 122+26.00
 Length of Work 528.00 Lin. Ft. or 0.100 Mile

Plan Prepared by
 District 11
 Ohio Department of Transportation



LOCATION MAP
 Scale in Miles

Portion to be improved
 State Routes
 Other Roads

SCALES

Plan 0' 50' 100'
 Profile-Horizontal 0' 50' 100'
 Profile-Vertical 0' 10' 20'
 Cross Sections 0' 10' 20'

STANDARD DRAWINGS

BP-5	7-16-81	AS-1-81	11-21-81		
BP-11	1-30-84	DBR-2-73	4-10-73		
		ICD-1-82	11-15-82		
GR-1	2-5-82				
GR-2B	2-5-82				
GR-3	2-5-82				
GR-3A	2-5-82				

SUPPLEMENTAL SPECIFICATIONS

824	10-8-82
836	3-12-75
847	10-17-83
947	10-17-83
861	9-9-83
961	9-9-83

1985 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 _____
 Date 1-25-85 District Deputy Director of Transportation

ULH Approved _____
 Date 2-6-85 Engineer, Bureau of Bridges & Structural Design

Approved _____
 Date 2-15-85 Chief Engineer, Planning and Design

Approved _____
 Date 1-15-85 Director, Department of Transportation

UNDERGROUND UTILITIES

TWO WORKING DAYS
 BEFORE YOU DIG
 Call 800-362-2764 (Toll Free)
 Ohio Utilities Protection Service
 Non Members
 Must Be Called Directly

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

FILE NO	TUS-800-33.47
DATE OF LETTING	198
CONTRACT NO.	

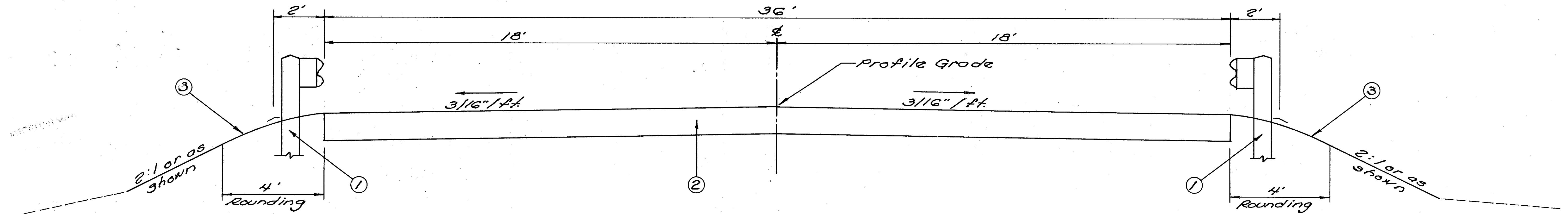
TYPICAL SECTIONS

FHWA REGION	STATE	PROJECT	
5	OHIO		

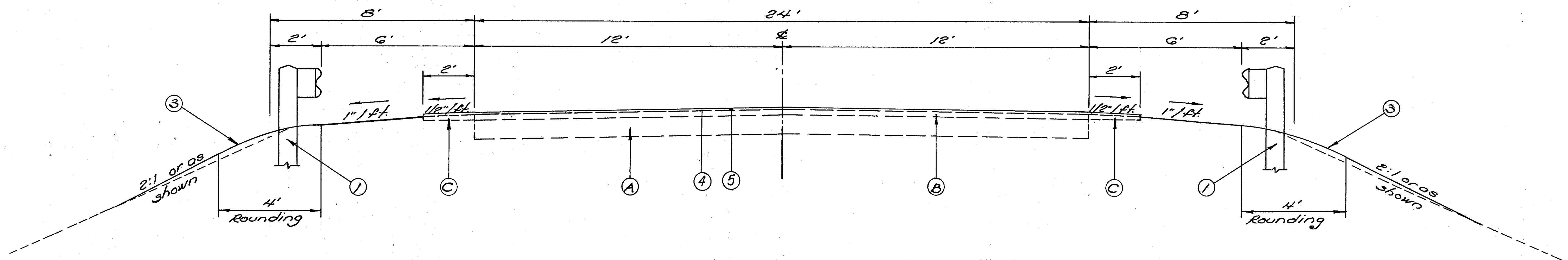
2
24

TUS-800-33.47

0' 2' 4'
Scale in Feet
TYPE 404



APPROACH SLAB SECTION
 Sta. 118+07.75 to Sta. 118+32.75 = 25 Lin. Ft.
 Sta. 121+07.25 to Sta. 121+32.25 = 25 Lin. Ft.
 Total = 50 Lin. Ft.



LEGEND

- (A) Existing Reinforced Concrete Base
- (B) Existing Asphalt Pavement
- (C) Existing Paved Shoulder
- (1) Item 606 - Guardrail, Type 5
- (2) Item 611 - Reinforced Concrete Approach Slab
- (3) Item 659 - Seeding and Mulching *
- (4) Item 407 - Tack Coat
- (5) Item 404 - 1/4" Asphalt Concrete, AC-20

* See Note on Sheet 3

GENERAL NOTES

QUANTITIES	
Calc. L.J.C. Date 12-12-84	Chkd. JNM Date 1-25-85

FHWA REGION	STATE	PROJECT
5	OHIO	

3
24

703-800-3347

FIELD OFFICE:

The Contractor shall provide a suitable field office having a minimum of 300 sq. ft. of floor space. Payment shall be at the lump sum price bid for Item 610, Field Office.

DATUM:

All elevations are based on U.S.G.S Datum.

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.

LOCATION OF GUARDRAIL:

The locations of Guardrail runs, as shown in these plans, are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for Traffic.

CONTINGENCY QUANTITIES:

The Contractor shall not order materials or perform work for plan items set up 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.

SEEDING:

Quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections.

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 G59.00.
Item G59-Water = 5 M-Gals.

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 followed and all costs shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

ITEM 407 - TACK COAT:

The Tack Coat and Cover Aggregate Operation shall be determined as per Sec. 407.05. Plan quantities indicate average application rates of 0.10 gallons per square yard of Tack Coat and 7 pounds per square yard of Cover Aggregate for estimating purposes only.

TEMPORARY STREAM CROSSING FORDS:

Where stream crossing fords are required for equipment crossings the following shall apply to the Contractor's operation.

The crossing shall consist of clean non-toxic granular or rock material, properly maintained to prevent erosion with provisions for conveyance of anticipated high flows. Furthermore, it shall follow Part 330.5 Specific Categories of Discharges - Nationally Permitted, paragraph (a) (4) Minor Road Crossing Fills - of the Federal Register - Corps of Engineers Final Regulations published July 22, 1982.

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 O.R.C.

Following is a list of the owners of Utilities known to be within the area of the project:

Ohio Bell Telephone Company
150 E. Gay Street
Columbus, Ohio 43215
Phone 614/223-8262

Warner A.M.E.X. T.V. Cable Co.
2700 Atlantic N.E.
P.O. Box 8559
Canton, Ohio 44711
Phone 216/456-8166

ITEM G22-TEMPORARY PRECAST CONCRETE BARRIER, AS PER PLAN AND ITEM 517-TEMPORARY RAILING, AS PER PLAN:

Item G22-Temporary Precast Concrete Barrier, as per plan and Item 517-Temporary Railing, as per plan, have been provided for Maintaining Traffic, and are shown on Sheet No. 5. The quantities shown are for one phase of Maintaining Traffic only. The Contractor shall utilize the same posts, barrier and railing in both phases of the reconstruction. Movement of the barrier and railing between phases shall be accomplished in one (1) working day. Flagmen shall be utilized for protection of vehicular traffic until movement of the barrier and railing is complete, and traffic is maintained as per phase II. All costs involved in removing and re-erecting the barrier and railing for maintaining traffic will be included in the unit price bid for Item G22-Temporary Precast Concrete Barrier, as per plan and Item 517-Temporary Railing, as per plan.

GUARDRAIL REMOVED FOR STORAGE:

Guardrail elements, standard terminals, blockouts and miscellaneous hardware shall be stored at the site on the Right of Way as directed by the Engineer for removal by State forces. All posts shall become the property of the Contractor and be disposed of by him. Payment for the above shall be included in the unit price bid per Lin. Ft. of Item 202-Guardrail Removed for Storage.

RIGHT OF WAY:

All work on this project will be performed within the existing Right of Way.

MAINTAINING TRAFFIC:

The Contractor shall maintain traffic at all times in accordance with the requirements of Specification G14 and the Construction Sequence shown on sheet No. 5. Traffic shall be maintained at all times by use of the existing pavement, portions of the existing and new bridges and Item G15, Temporary Pavement. The limits and duration of use of temporary roadways shall be held to an absolute minimum and shall in all cases be subject to the approval of the Engineer.

Alternating one-way traffic shall be maintained during Phase I and II, by use of Temporary Signals, as shown on sheet No. 6. Traffic shall be separated from the work area by means of Item G22-Temporary Precast Concrete Barrier, as per plan and Item 517-Temporary Railing, as per plan.

Payment for all of the above except Items 517, G15 and G22 shall be included in the price bid for Item G14 Maintaining Traffic.

The following estimated quantities have been carried to the General Summary to be used as required:

Item 517-Temporary Railing, as per plan 331.25 L.F.
Item G22-Temporary Precast Concrete Barrier, as per plan 180 L.F.
Item G15-Temporary Pavement, Class B 64 S.Y.

UNDERGROUND UTILITIES

48 Hours
BEFORE YOU DIG
Call 800-362-2764 (Toll Free)
Ohio Utilities Protection Service
Non-Members
Must Be Called Directly

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISUAL EFFECTIVENESS AND NIGHT VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL BE REPEATED EVERY 1 TO 2 MILES AND AT OTHER LOCATIONS AS NECESSARY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY. THE COST FOR FURNISHING AND ERECTING AND SUBSEQUENTLY REMOVING THESE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC, UNLESS SPECIFICALLY ITEMIZED.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR C PREFORMED MATERIAL. Where pavement marking are not liable to be tracked, either conventional or fast drying paint may be used for 621.02.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT THE INCREASE OF 25 PERCENT IN THE APPLICATION RATE FOR NEW BITUMINOUS PAVEMENT AND PARAGRAPH 621.14 SHALL NOT APPLY.

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

- 1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
- 2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
- 3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
- 4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 1.6 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 16 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS OR EQUIVALENT 614 CLASS I, PAINT MARKINGS SHALL BE APPLIED. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE PROVISIONS OF 108.07 WILL BE INVOKED, EXCEPT THAT BETWEEN NOVEMBER 15 AND APRIL 15 WEATHER CONDITIONS SHALL NOT BE AN ACCEPTABLE REASON FOR EXTENSION.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

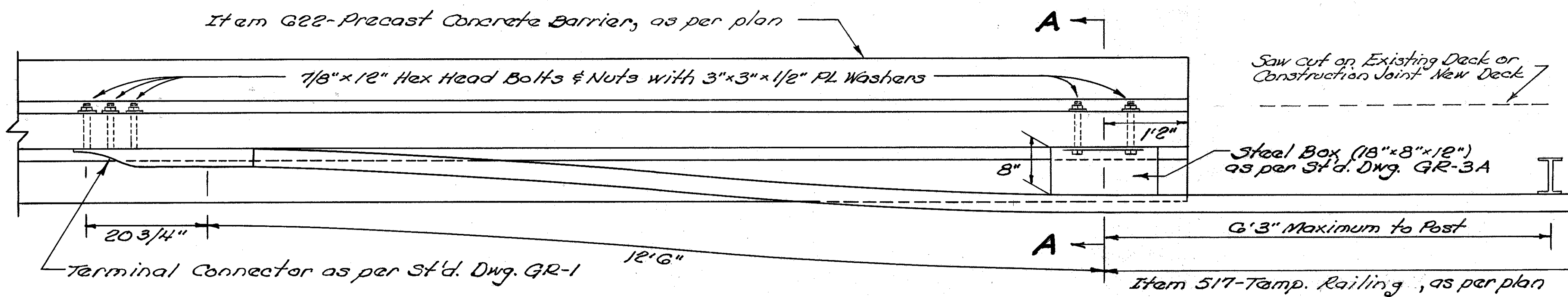
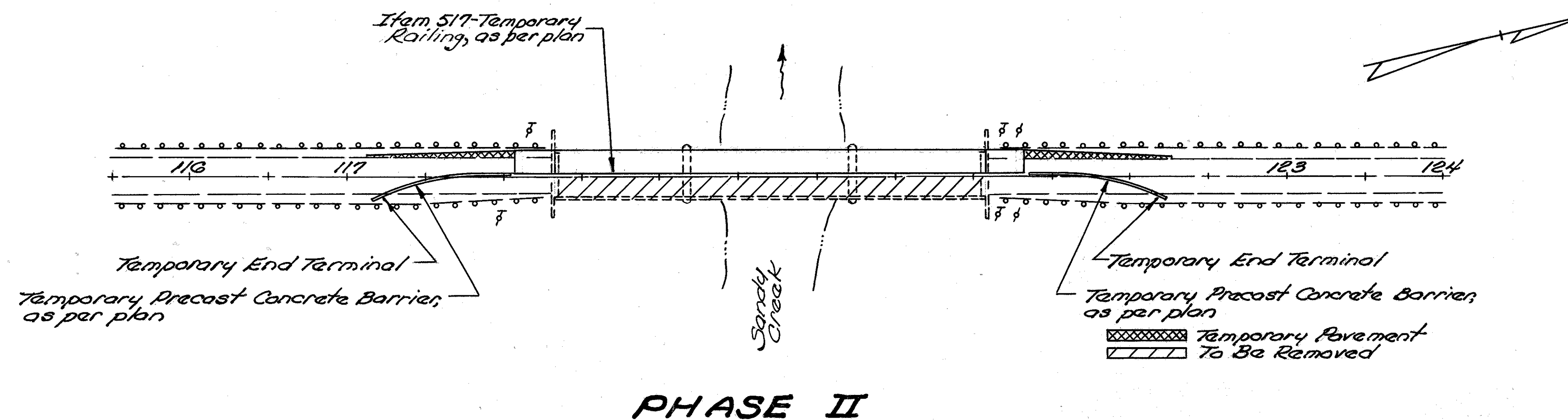
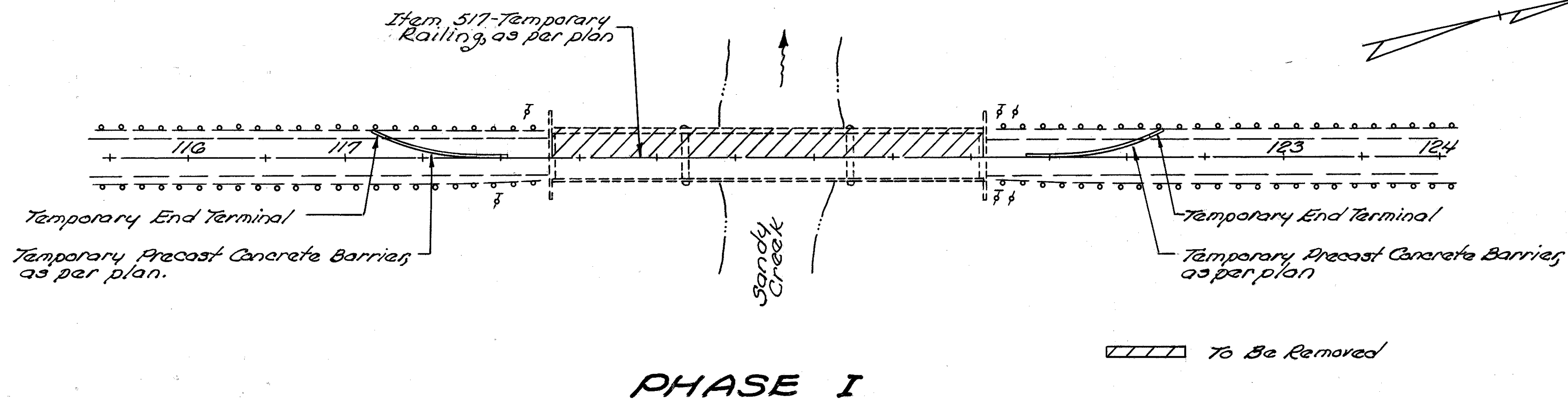
BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614	0.06 MILES	TEMPORARY CENTER LINES, CLASS <u>I</u> , 947.03 Type C
614	0.09 MILES	TEMPORARY CENTER LINES, CLASS <u>II</u> , *
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, *
614	MILES	TEMPORARY EDGE LINES, CLASS I, *
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, *
614	24 LIN. FT.	TEMPORARY STOP LINES, CLASS I, 947.03 Type C
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, *
614	EACH	TEMPORARY LANE ARROWS, CLASS I, *
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, *
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, *
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, *
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, *

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

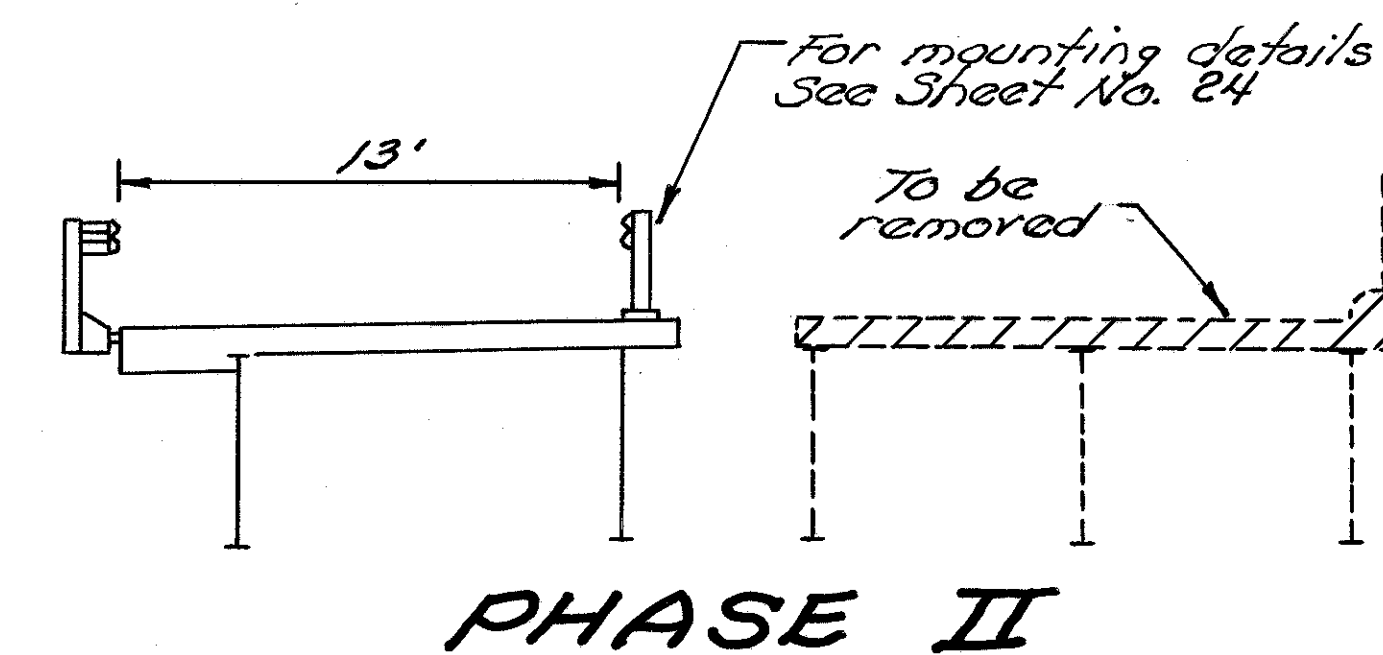
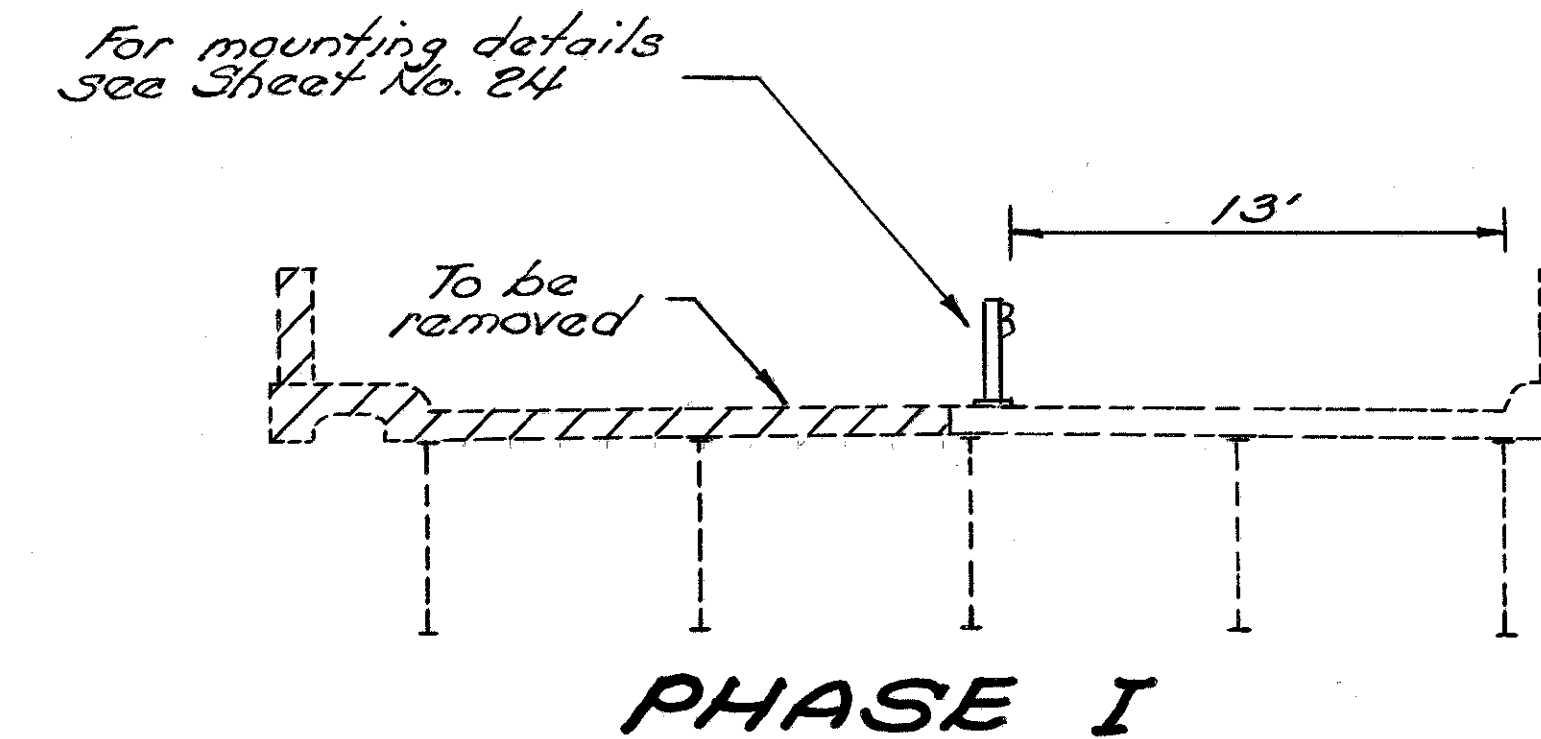
NOTE: PERMANENT SIGNS AND PAVEMENT MARKINGS TO BE FURNISHED AND INSTALLED BY O.D.O.T., DISTRICT II, WITHIN 30 DAYS AFTER COMPLETION OF PROJECT.



Cost of all Material and installation of the connector between the Temporary Railing and Temporary Concrete Barrier shall be included in the unit Price Bid for Item 517 Temporary Railing, as per plan.

Fasten Bottom Rail to Concrete Barrier with a Terminal Connector and self-drilling anchors as shown on Std. Dwg. GR-1.

SECTION A-A



CONSTRUCTION SEQUENCE

PHASE I

Before starting any bridge reconstruction which requires closing the existing pavement to traffic, all temporary signals, signs, temporary pavement markings, lights, temporary guardrail and temporary precast concrete barrier required for Phase I shall be furnished and erected before any existing pavement is closed to traffic.

When the above requirements have been satisfied, the temporary runaround shown for Phase I shall be opened to traffic. Construct a portion of the new bridge and approach slabs, complete the permanent earthwork, shoulder and guardrail construction on the west side of S. R. 800.

PHASE II

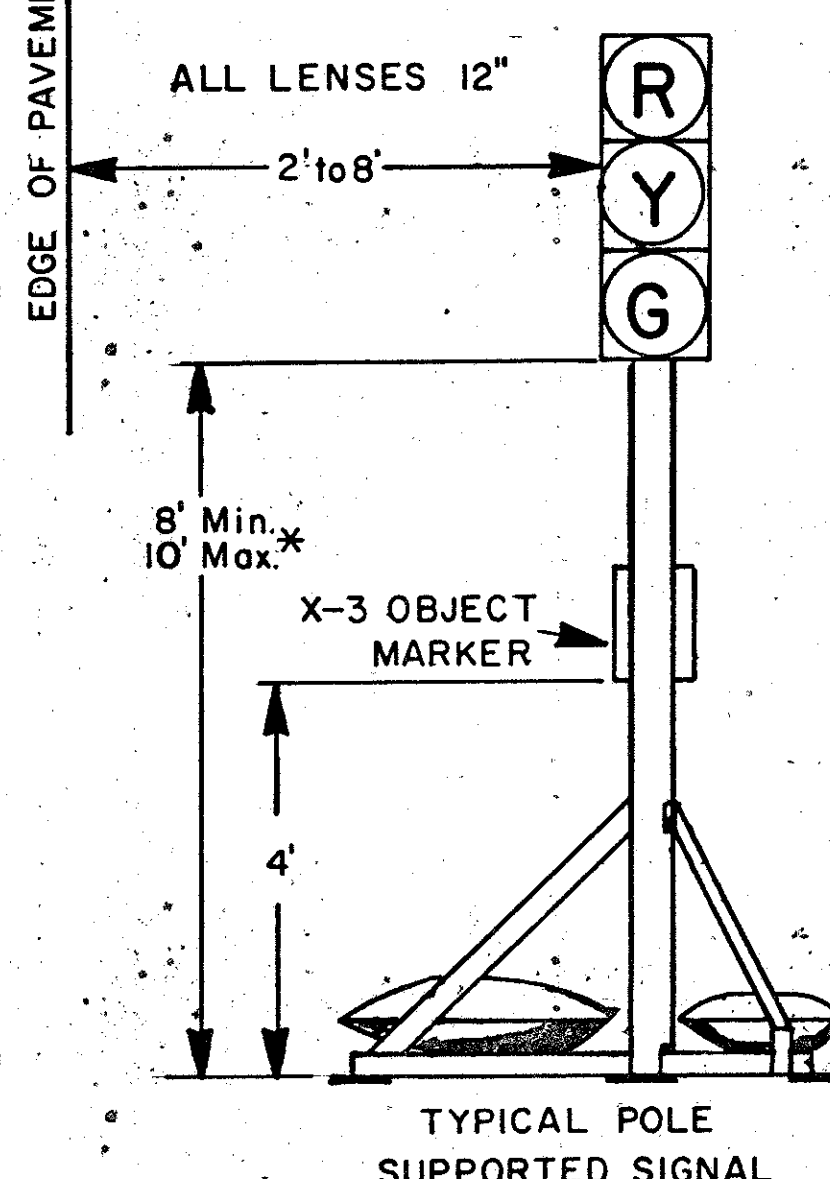
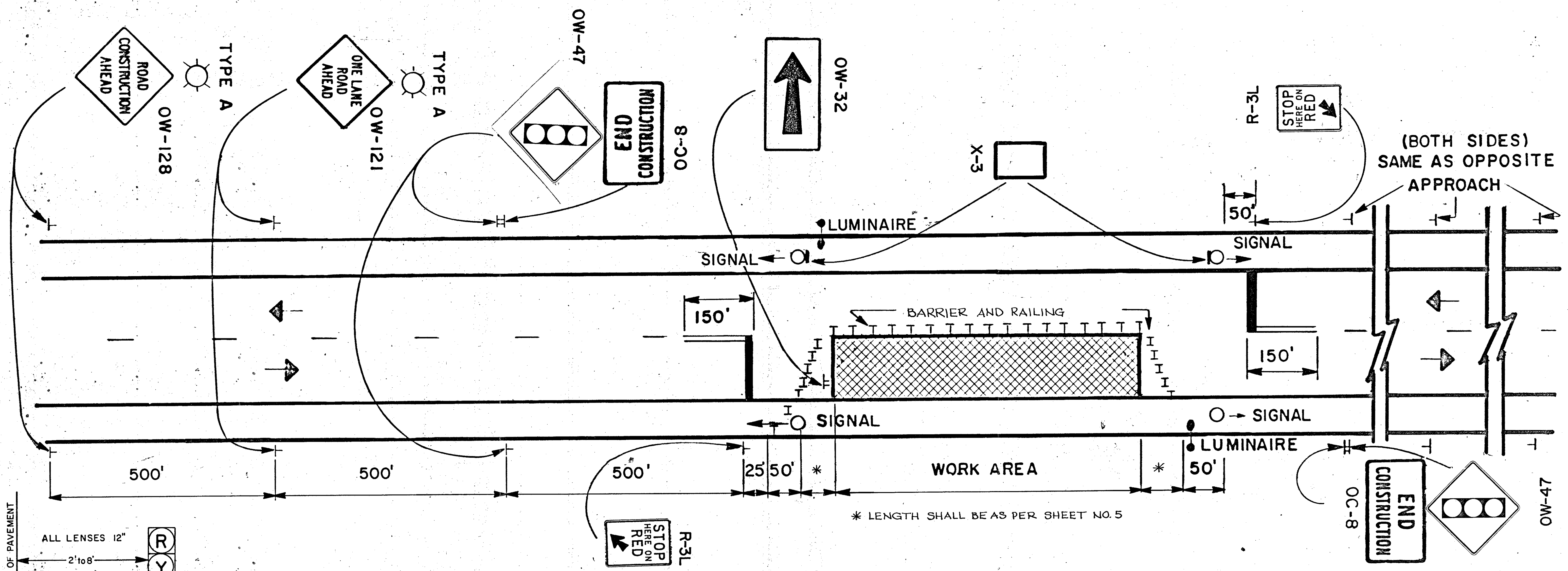
Relocate the temporary guardrail and temporary precast concrete barrier as shown for Phase II and relocate temporary signs, lights and pavement markings accordingly. Movement of temporary guardrail, temporary precast concrete barrier, signs, lights and pavement markings shall be accomplished in one (1) working day. Flaggers shall be utilized for the protection of vehicular traffic until relocation of the temporary guardrail, temporary precast concrete barrier, pavement markings and signs is completed.

The completed portion of the new bridge, approach slabs and pavement shall then be opened to traffic. Remove the remainder of the existing bridge and complete construction of the new bridge.

Complete all remaining construction, before opening new bridge to two-way traffic.

Calculation - Item G15 - Temporary Pavement, Class B, as per plan.
 $(54 \div 2) \times 95 \times 2 \div 9 = 63.3$ use G4 39.4ds.

Quantity carried to Sheet 3



GENERAL NOTES:

- The maximum length of work area for one way Traffic Signal control shall be as shown on Sheet No. 5
- Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.
- Drums or barricades shall be spaced at 50' to 60' center to center within the work area. Drums or barricades on the advance and return tapers shall be spaced at 10' center to center.
- Adequate area illumination to clearly identify both ends of the work area at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one signal for each direction of traffic as shown above. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearance shall be 20 feet above the pavement.
- Twenty-four (24) inch stop lines shall be installed and where no passing lines are not already in place they shall be added. Removable pavement markings may be used. Existing conflicting pavement markings and raised pavement marker reflectors between the work area and the stop line shall be removed. After completion of the work the stop lines and added no passing lines shall be removed in accordance with 621.134 and the raised pavement marker reflectors shall be replaced in kind.
- The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.
- Type C steady burning barricade warning lights shall be erected on Temp. Conc. Barrier and Temp. Railing for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
- The horizontal or vertical alignment of the roadway may require adjustments in the location of the advance warning signs (the distances shown for advance warning sign spacings are minimums). The vertical alignment of the roadway may require adjustments in the height of the signal heads within the range specified in the Typical Pole Supported Signal Detail.
- All traffic signals and equipment used in this traffic signal installation, such as a signal cable and signal heads, shall be in conformance with Specifications 632 and 732. However, the performance test provision noted in Specification 632.27, paragraph 6 and the working drawing requirements of 632.03 are waived. The controller, flashers, load switches, conflict monitor and other controller accessories shall comply with Supplemental Specifications 861 and 961, except that the requirements of 861.03 and 861.05 are waived, as well as the requirements of 961.01 for expandible three dial units and twelve circuits for pretimed controllers. Used equipment meeting current ODOT Specifications is acceptable. Conflict monitors shall be furnished at all locations unless an electromechanical pretimed controller with cam shaft is provided.
- When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

OHIO DEPARTMENT OF TRANSPORTATION	
SIGNALIZED CLOSING 1 LANE OF A 2 LANE HIGHWAY	DATE 12/82 3/84

* Above pavement grade at center of roadway

CALCULATIONS

Pavement Area
 Sta. 117+40 to Sta. 118+07.15 = 67.75 Lin. Ft.
 Sta. 121+32.25 to Sta. 122+00 = 67.75 Lin. Ft.
 Total = 135.50 Lin. Ft.

Item 404 - Asphalt Concrete AC-20
 $135.50 \times 28 \times (1\frac{1}{4} \div 12) \div 27 = 14.64$ Use 15 Cu.Yds.

Item 407 - Tack Coat
 $135.50 \times 28 \div 9 \times 0.10 = 42.15$ Use 43 Gals.

Item 407 - Cover Aggregate
 $135.50 \times 28 \div 9 \times (7 \div 2000) = 1.48$ Use 2 Ton

Item 203 - Subgrade Compaction
 Area from Approach Slabs = 212 Sq.Yds.

Item 202 - Pavement Removed
 Area from Existing Approach Slabs = 170 Sq.Yds.

Item 659 - Commercial Fertilizer
 From Seeding - 509 Sq.Yds.
 $509 \times 9 \div 1000 \times 20 \div 2000 = 0.05$ Tons

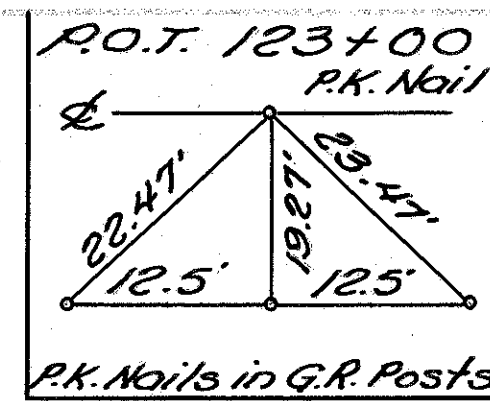
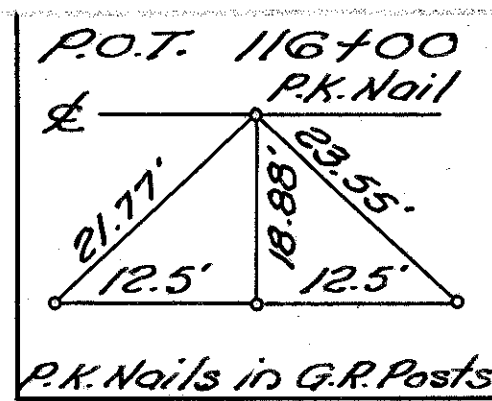
Item 659 - Agricultural Liming
 From Seeding - 509 Sq.Yds.
 $509 \times 9 \div 1000 \times 100 \div 2000 = 0.23$ Tons

Sheet No.	Station		Excavation Cu.Yds.	Embankment Cu.Yds.	Seeding Sq.Yds.
	From	To			
9	117+00	122+00	48	129	509

GENERAL SUMMARY

Sheet Numbers					Item	Quant.	Unit	DESCRIPTION
3	4	7	8					
								ROADWAY
					Lump	201	Lump	Clearing and Grubbing
			170			202	170	Sq.Yd. Pavement Removed
			500.80			202	500.80	Lin.Ft. Guardrail Removed For Storage.
			48			203	48	Cu.Yd. Excavation, not including Embankment Construction
			129			203	129	Cu.Yd. Embankment
			212			203	212	Sq.Yd. Subgrade Compaction
						517	331.25	Lin.Ft. Temporary Railing, as per Plan
				512.50		606	512.50	Lin.Ft. Guardrail, Type 5
				4		606	4	Each Bridge Terminal Assembly, Standard Type B
						614	0.06	Mile Temporary Center Lines, Class I, 947.03 Type C
						614	0.09	Mile Temporary Center Lines, Class II
						614	24	Lin.Ft. Temporary Stop Lines, Class I, 947.03 Type C
						615	64	Sq.Yd. Temporary Pavement, Class B
				48		Special	48	Lin.Ft. Pressure Relief Joint, Standard Type C
						622	180	Lin.Ft. Temporary Precast Concrete Barrier, As per Plan
								EROSION CONTROL
				509		659	509	Sq.Yd. Seeding and Mulching
				0.05		659	0.05	Ton Commercial Fertilizer
				0.23		659	0.23	Ton Agricultural Liming
						659	5	M-gal. Water
								DRAINAGE
				44		605	44	Lin.Ft. Aggregate Drains
								PAVEMENT
				15		404	15	Cu.Yd. Asphalt Concrete, AC-20
				43		407	43	Gal. Tack Coat
				2		407	2	Ton Cover Aggregate
				212		611	212	Sq.Yd. Reinforced Concrete Approach Slabs (T=15")
								FOR BRIDGE QUANTITIES, SEE SHEET 13
						Lump	614	Lump Maintaining Traffic
						Lump	619	Lump Field Office
						Lump	623	Lump Construction Layout Stakes
						Lump	624	Lump Mobilization

MICROFILMED
NOV 20 1980



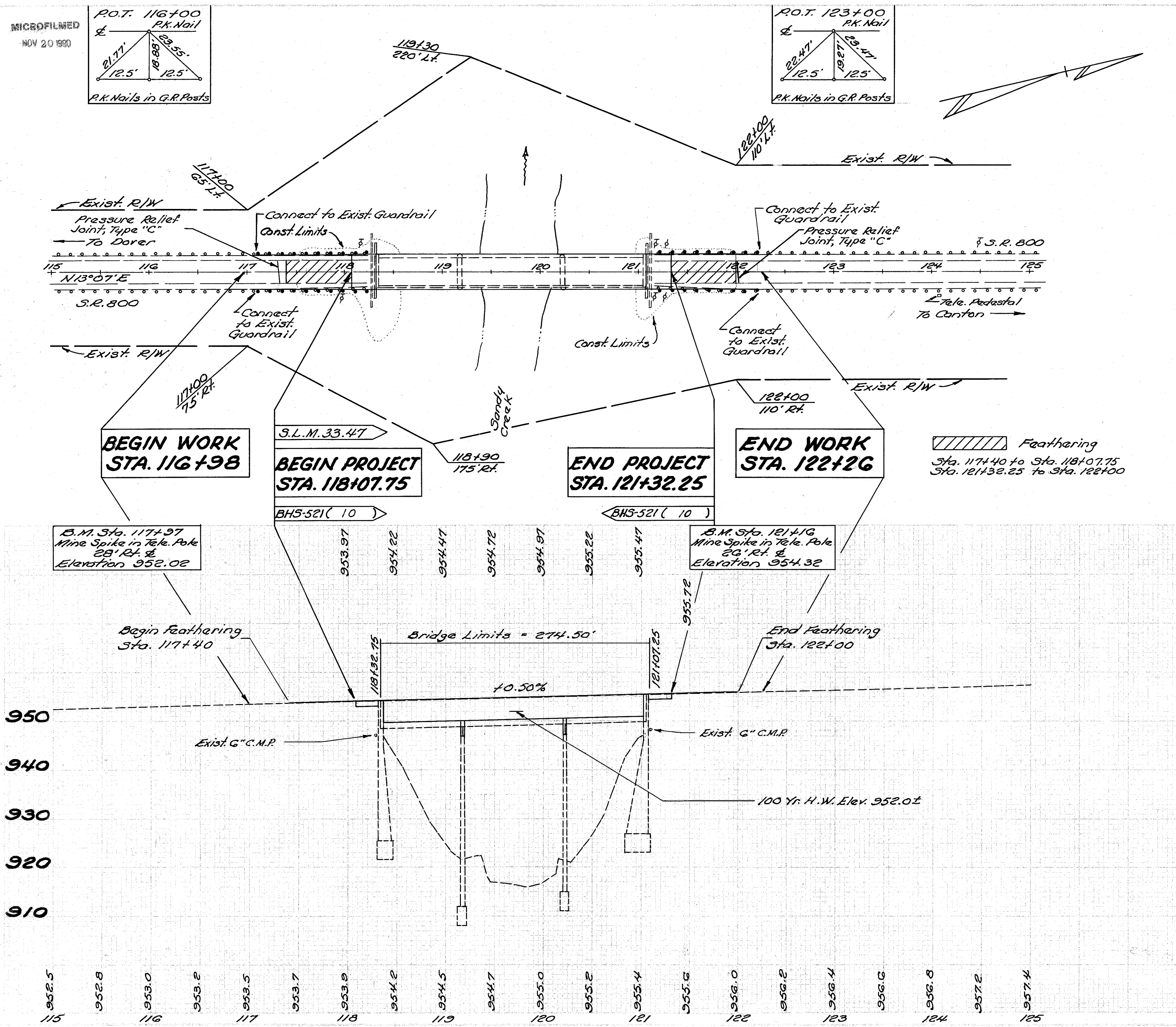
QUANTITIES	
Calc. L.J.C.	Chkd. JNM
Date 1-18-85	Date 1-25-85

FHWA REGION	STATE	PROJECT	8
5	OHIO		24

TUS-800-33.47

EXISTING STRUCTURE
 Type: Con'g. Riveted Steel Girder (Built 1946)
 Spans: 84'-105'-84'
 Roadway: 27'-8"
 Skew: None
 Alignment: Tangent

PROPOSED STRUCTURE
 Type: New continuous composite steel girder and reinf. conc. deck on existing substructure
 Spans: 84'-105'-84' 9c brgs.
 Roadway: 36'-0" w/ Guardrails
 Skew: 0°
 Design Loading: HS20-44 Case II & Alt. Military Loading
 Approach Slabs: AS-1-81 (25' Long)
 Alignment: Tangent
 Superlevation: None
 Wearing Surface: Monolithic concrete

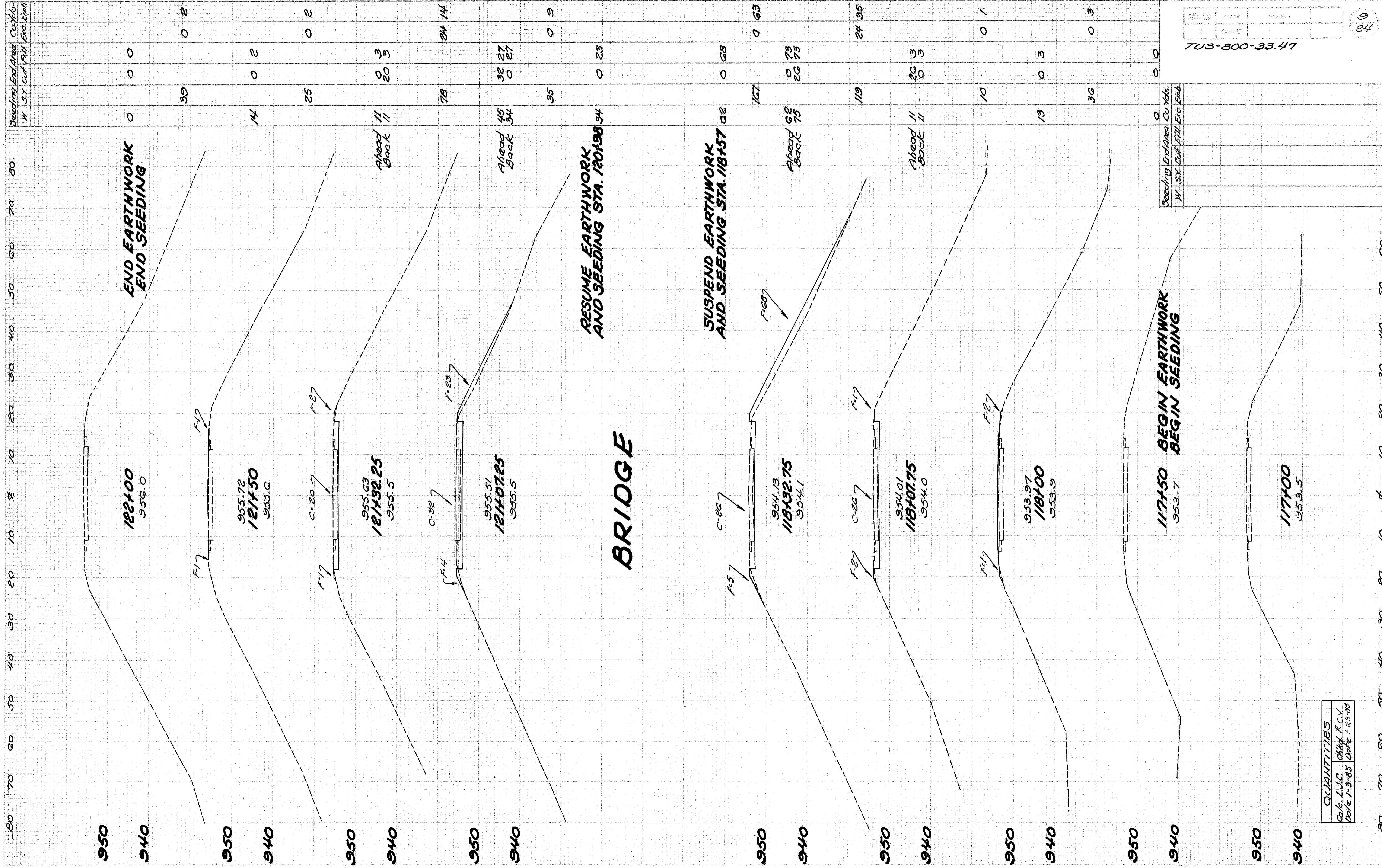


GUARDRAIL					
Station		Side &	Item 606		Item 202
From	To		Guardrail Type 5 Lin. Ft.	Bridge Terminal Assembly Type B Each	Guardrail Removed for Storage Lin. Ft.
116+98.13	118+29.38	Lt.	131.25	1	
116+98.13	118+29.38	Rt.	131.25	1	
121+10.63	122+35.63	Lt.	125.00	1	
121+10.63	122+35.63	Rt.	125.00	1	
117+01.50	118+32.80	Rt.			131.30
117+02.00	118+33.50	Lt.			131.50
121+07.00	122+26.00	Rt.			119.00
121+07.00	122+26.00	Lt.			119.00
Totals			512.50	4	500.80

APPROACH SLABS				
Station		Calculation	Item 611 Reinf. Conc. Appr. Slabs (7'-15") 3g. Yds.	
From	To			
118+07.75	118+32.75	25'x38'+9	105.5g	
121+07.25	121+32.25	25'x38'+9	105.5g	
Total			211.1g	
			Use	212.0

MISCELLANEOUS			
Station	Item Special Pressure Relief Joint Type "C" Lin. Ft.	Item 605 Aggregate Drain Lin. Ft.	
117+32.70	24'	22	
122+02.80	24'	22	
Total	48	44	

STA. 115+00 TO STA. 125+00



QUANTITIES
 Calc. L.J.C. Chkd. R.C.V.
 Date 1-3-85 Date 1-23-85

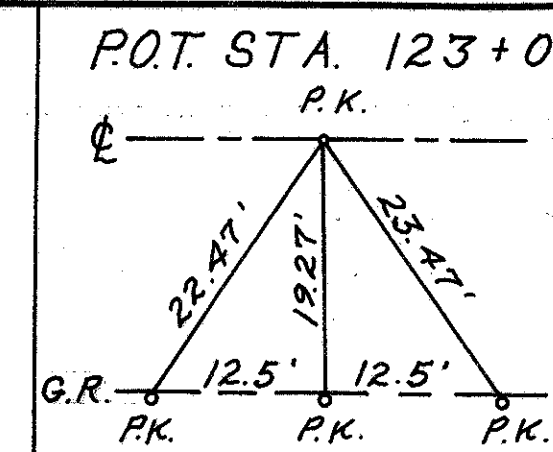
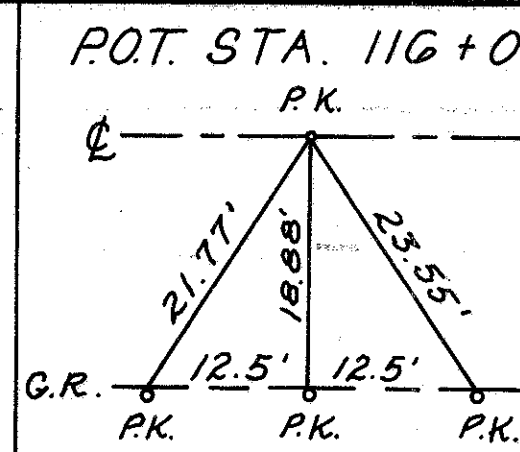
STA. 117+00 TO STA. 122+00

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NOV 20 1990

B.M. STA. 117+97
Mine Spike in ϕ
28' Rt. ϕ
Elev. 952.02'

B.M. STA. 121+16
Mine Spike in ϕ
26' Rt. ϕ
Elev. 954.32'

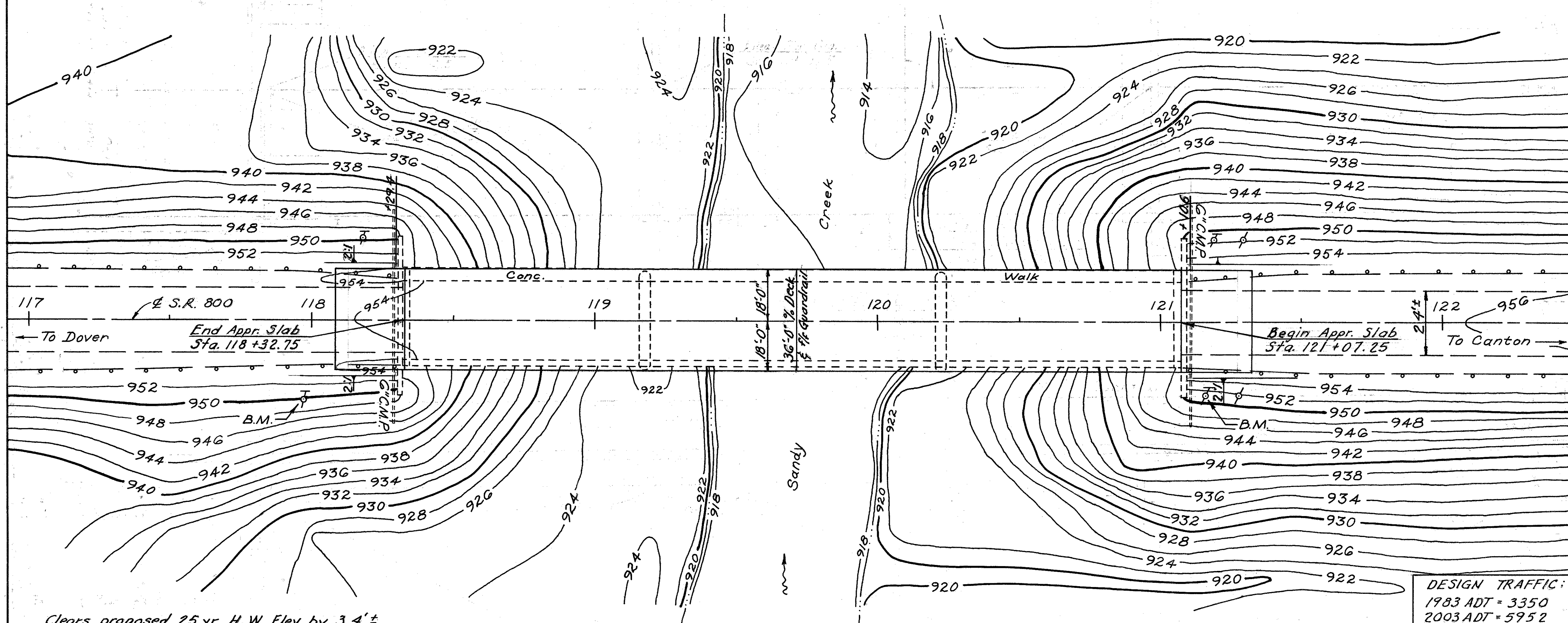
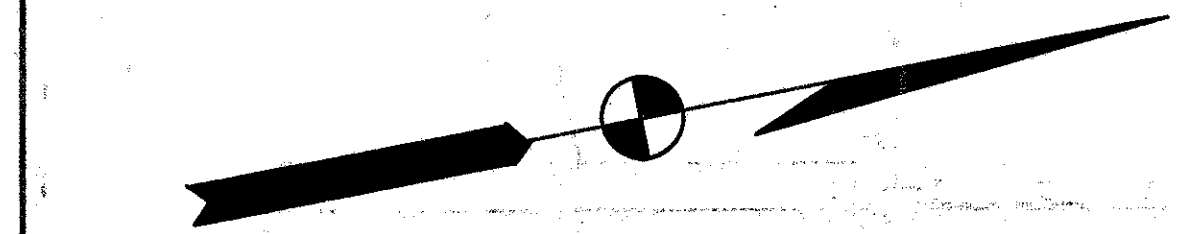
Drainage Area 293 sq. mi.



F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

10
24

TUS-800-3347
1.8 mi. North of Mineral City



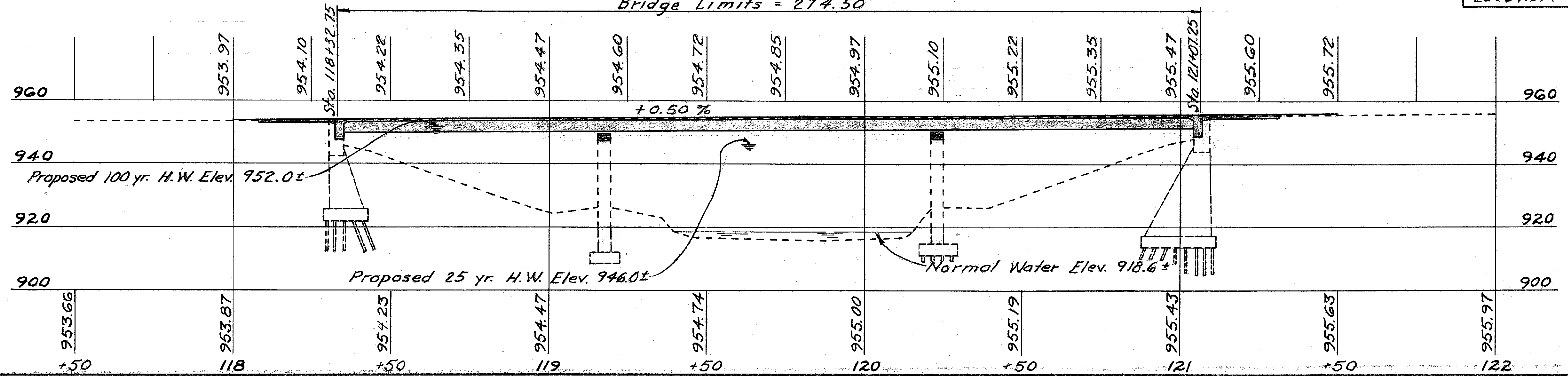
Clears proposed 25 yr. H.W. Elev. by 3.4'±

Bridge Limits = 274.50'

DESIGN TRAFFIC:
1983 ADT = 3350
2003 ADT = 5952
2003 ADTT = 298

EXISTING STRUCTURE
TYPE: Cont. Riveted Steel Girder (Built 1946)
SPANS: 84'-105'-84'
ROADWAY: 27'-8"
SKEW: None
ALIGNMENT: Tangent
STRUCTURAL FILE NO. 7906757

PROPOSED STRUCTURE MODIFICATION
TYPE: New continuous composite steel girder and reinf. conc. deck on exist. substructure
SPANS: 84'-105'-84' 1/2 brgs.
ROADWAY: 36'-0" 1/4 Guardrails
SKEW: 0°
DESIGN LOADING: HS20-44 Case II ϕ All. Military
APPROACH SLAB: AS+BI (25' long) Loading
ALIGNMENT: Tangent
SUPERELEVATION: None
WEARING SURFACE: Monolithic concrete



STATE OF OHIO 1/15
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

SITE PLAN
BRIDGE No. TUS-800-3347
OVER SANDY CREEK
TUSCARAWAS COUNTY S.R. 800
Sta. 118+32.75
121+07.25

PRES. TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
DIST II	DIST II	ULH	ULH	MJR	N.J.B.

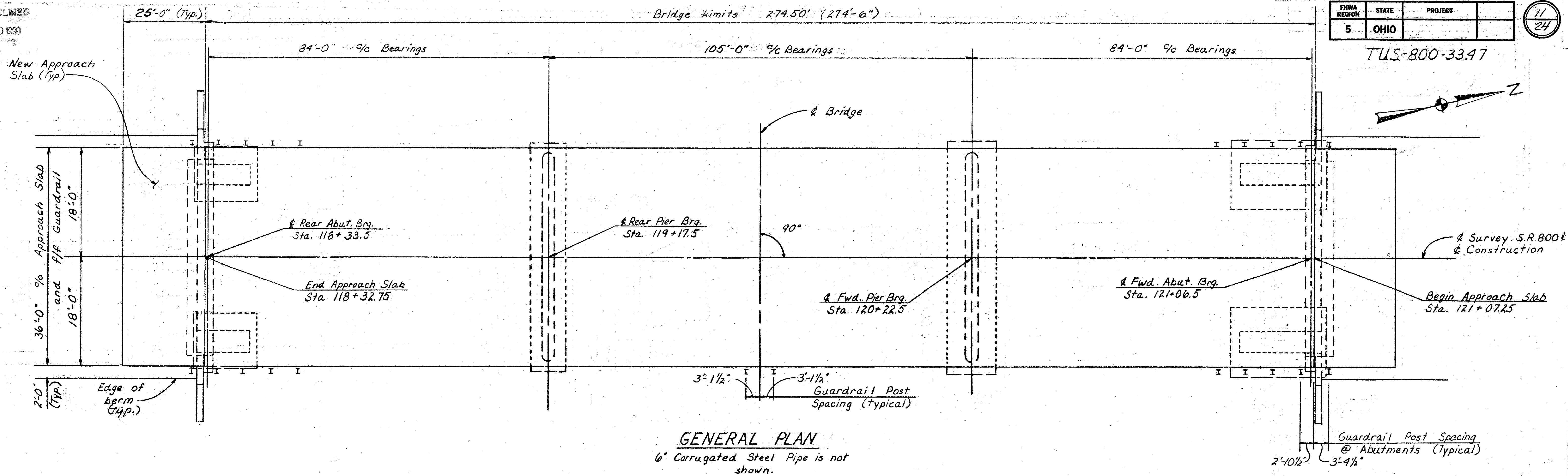
MICROFILMED
NOV 20 1990

Bridge limits 274.50' (274'-6")

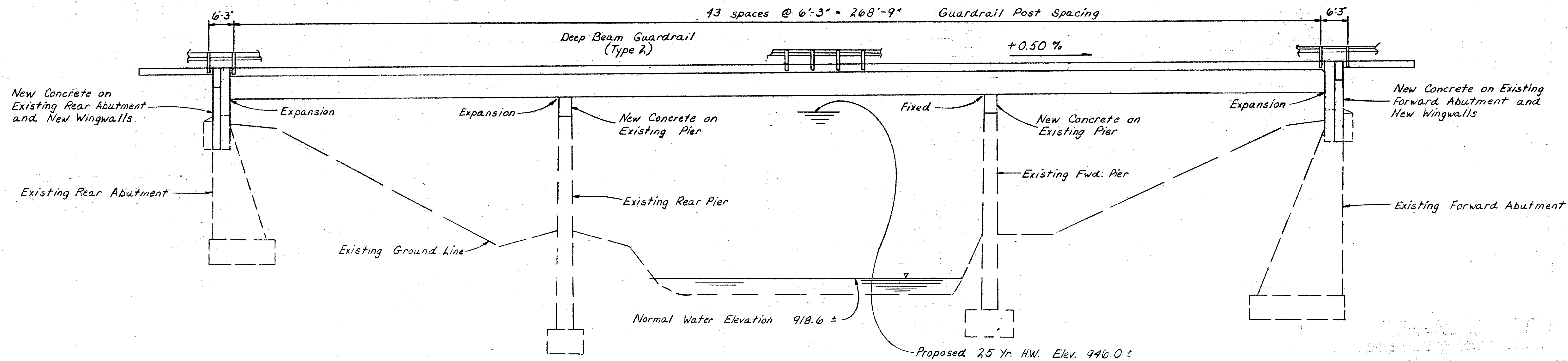
FIRMA REGION	STATE	PROJECT
5	OHIO	

11
24

TUS-800-3347



GENERAL PLAN
6" Corrugated Steel Pipe is not shown.



ELEVATION
PILES NOT SHOWN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN		2 / 15
GENERAL PLAN AND ELEVATION		
BRIDGE NO. TUS-800-3347 OVER SANDY CREEK		
DESIGNED BRA	DRAWN BRA	TRACED CAD
CHECKED CAD	REVIEWED ULH	DATE 11-14-84
REVISED		

FHWA REGION	STATE	PROJECT	
5	OHIO		

12
24

TUS-800-3347

GENERAL NOTES

REFERENCE shall be made to Standard Drawings:

AS-1-81 dated 11-27-81
 DBR-2-73 dated 04-10-73
 ICD-1-82 dated 11-15-82
 GR-1 dated 02-05-82

and to supplemental Specification:

824 dated 10-8-82
 836 dated 03-12-75

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983, and the Ohio "Supplement" to these specifications.

DESIGN DATA:

Design Loading - HS20-44 Case II and the Alternate Military Loading.

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

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

Structural Steel ASTM A588 - yield strength 50,000 p.s.i.

Deck Protection Method: Epoxy coated reinforcing steel, both mats and liquid sealant, as per plan.

MONOLITHIC WEARING SURFACE is assumed, for design purposes, to be 1" thick.

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/or 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 work 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 into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 154 pounds is included in Item 509 for this purpose.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing superstructure shall be removed. Abutments and piers shall be removed, as per plan. Suitable waste masonry may be placed as Bank Protection as directed by the Engineer. See Plan Sheet 15/15 for Construction Procedure detailing part-width construction.

MAINTENANCE OF TRAFFIC: One lane of traffic with a minimum horizontal width of 12'-0" shall be maintained at all times. For details refer to Construction Procedure, Plan Sheet 15/15.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A concrete sealer, either silane or an epoxy sealer, shall be applied to the following surfaces: each deck fascia, the top surface of the deck from each fascia to 6" in from each fascia, the underside of the deck extending beyond the fascia girders, and abutment surfaces shown in detail on Plan Sheet 7/15. See the Proposal for surface preparation requirements, application rates, materials requirements and application procedures.

ITEM SPECIAL - RAILING, TEMPORARY, AS PER PLAN: Deep beam rail-Type 6 and steel posts shall conform to the requirements of CMS 606 and Std. Dwg. GR-1. All bolts, nuts and washers shall meet the requirements of ASTM-A325 and structural steel plates shall be ASTM-A36. Coil anchors shall be galvanized in accordance with ASTM-A123 or ASTM-A153; galvanizing requirements for all other parts are waived. Payment will be at the contract price bid for Item Special, Lin. Ft., Railing, Temporary, As Per Plan, with deep beam rail and steel posts and which shall include all materials, labor, equipment and incidentals necessary to complete this item, and the subsequent removal of the same. Also included is the grouting of slab holes after removal.

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF BRIDGES AND STRUCTURAL DESIGN

3/15

GENERAL NOTES

BRIDGE NO. TUS-800-3347
 OVER SANDY CREEK

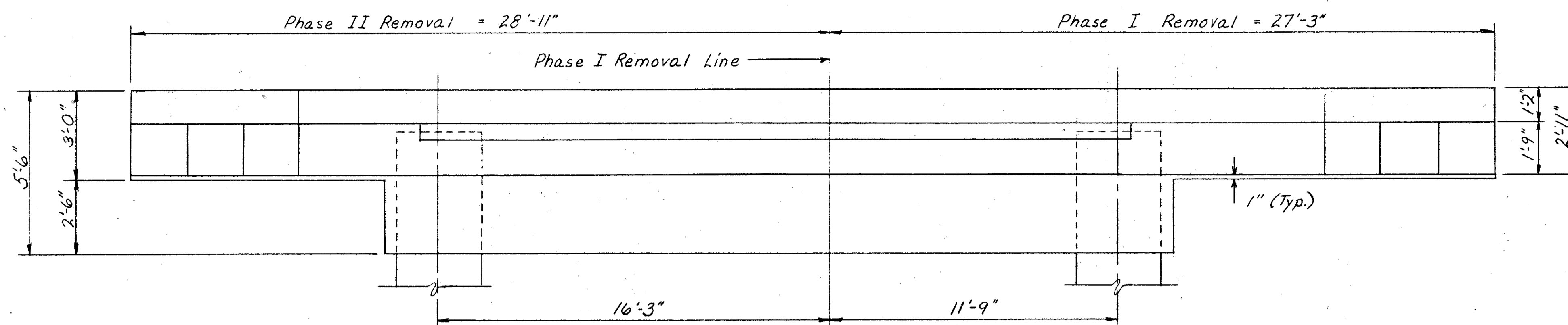
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BRA	BRA		CAD	ULH	11-14-84	

NOV 20 1987

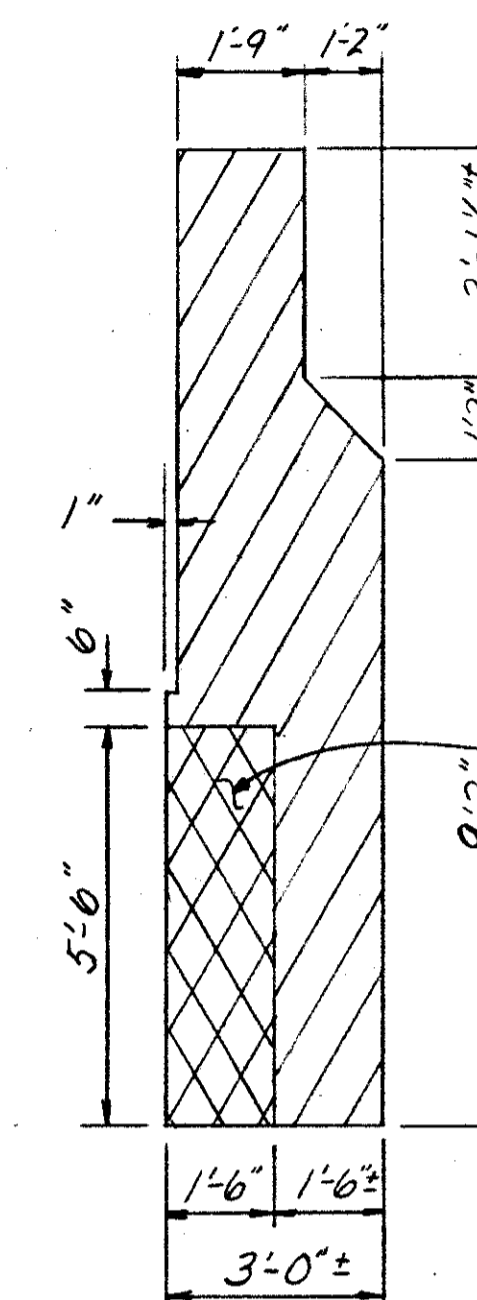
FHWA REGION	STATE	PROJECT
5	OHIO	

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24

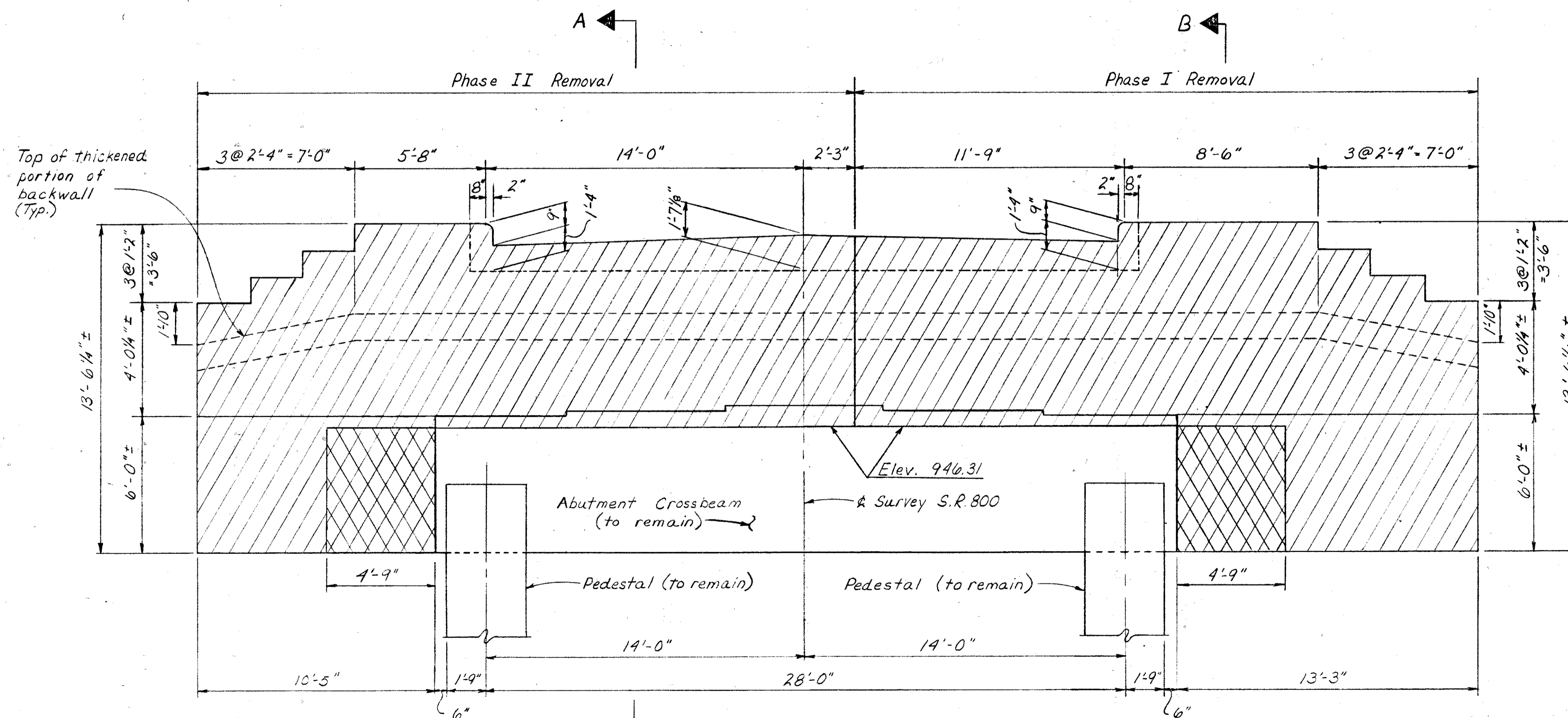
TUS-800-3347



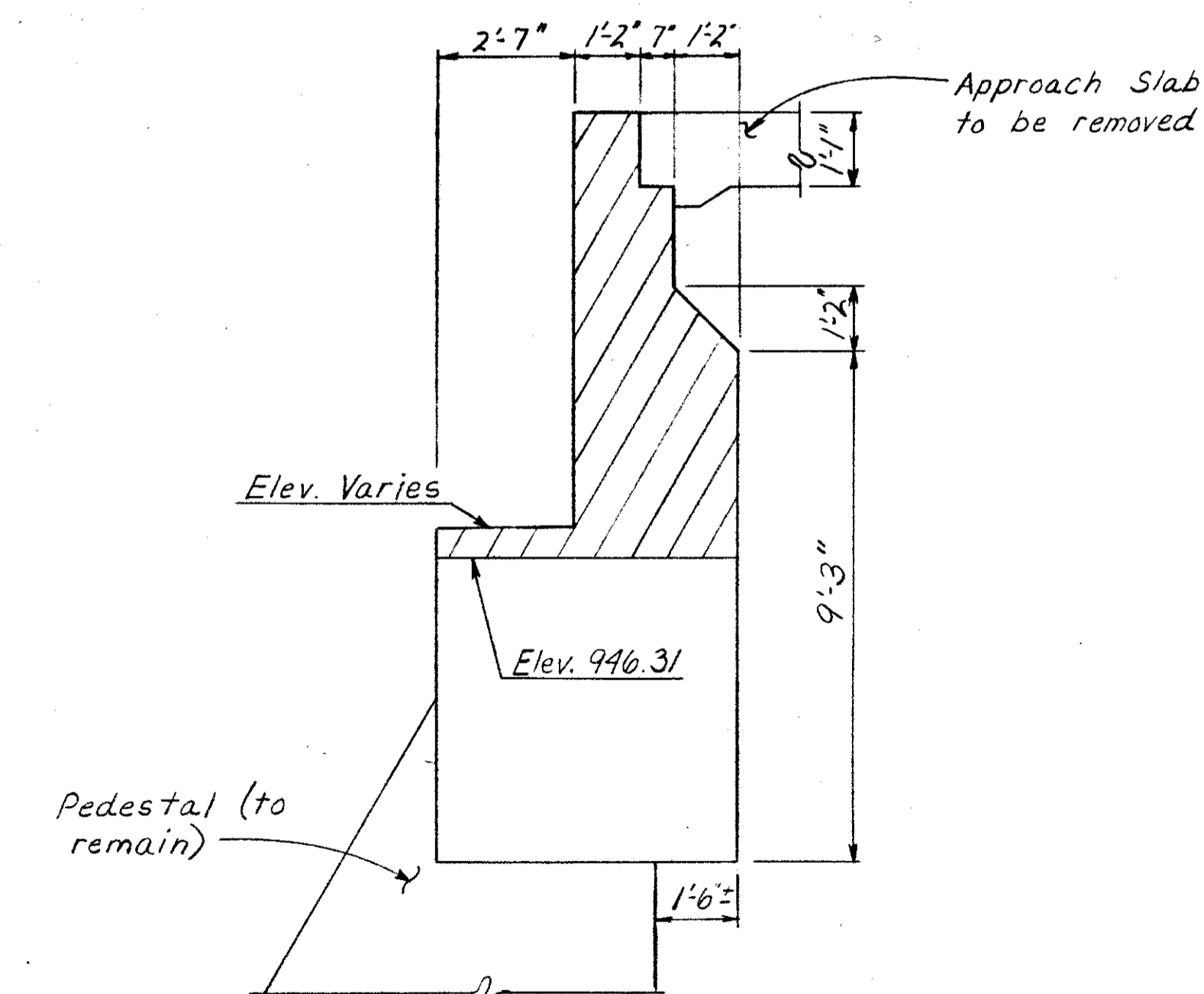
PLAN
Portions of structure to be removed are not shown.



SECTION B-B



ELEVATION



SECTION A-A

- LEGEND**
- Portions of structure to be completely removed.
 - Portions of structure to be carefully removed.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

5/15

**REAR ABUTMENT
REMOVAL DETAILS**
BRIDGE NO. TUS-800-3347
OVER SANDY CREEK

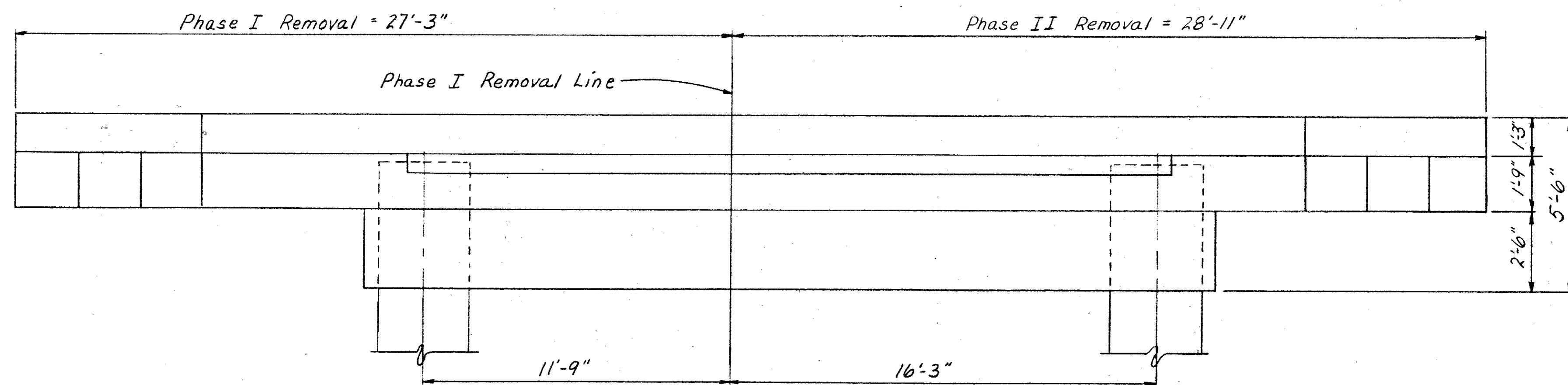
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BRA	BRA		CAD	ULH	11-14-84	

NOV 20 1984

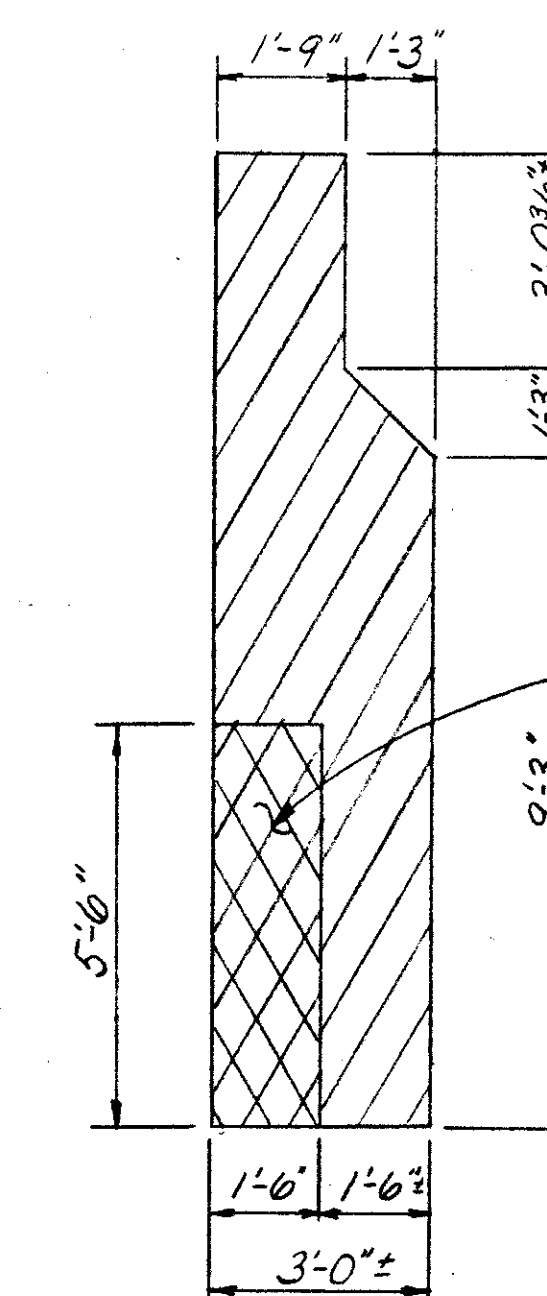
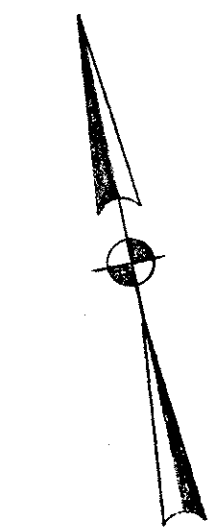
FHWA REGION	STATE	PROJECT
5	OHIO	

15
24

TUS-800-33.47

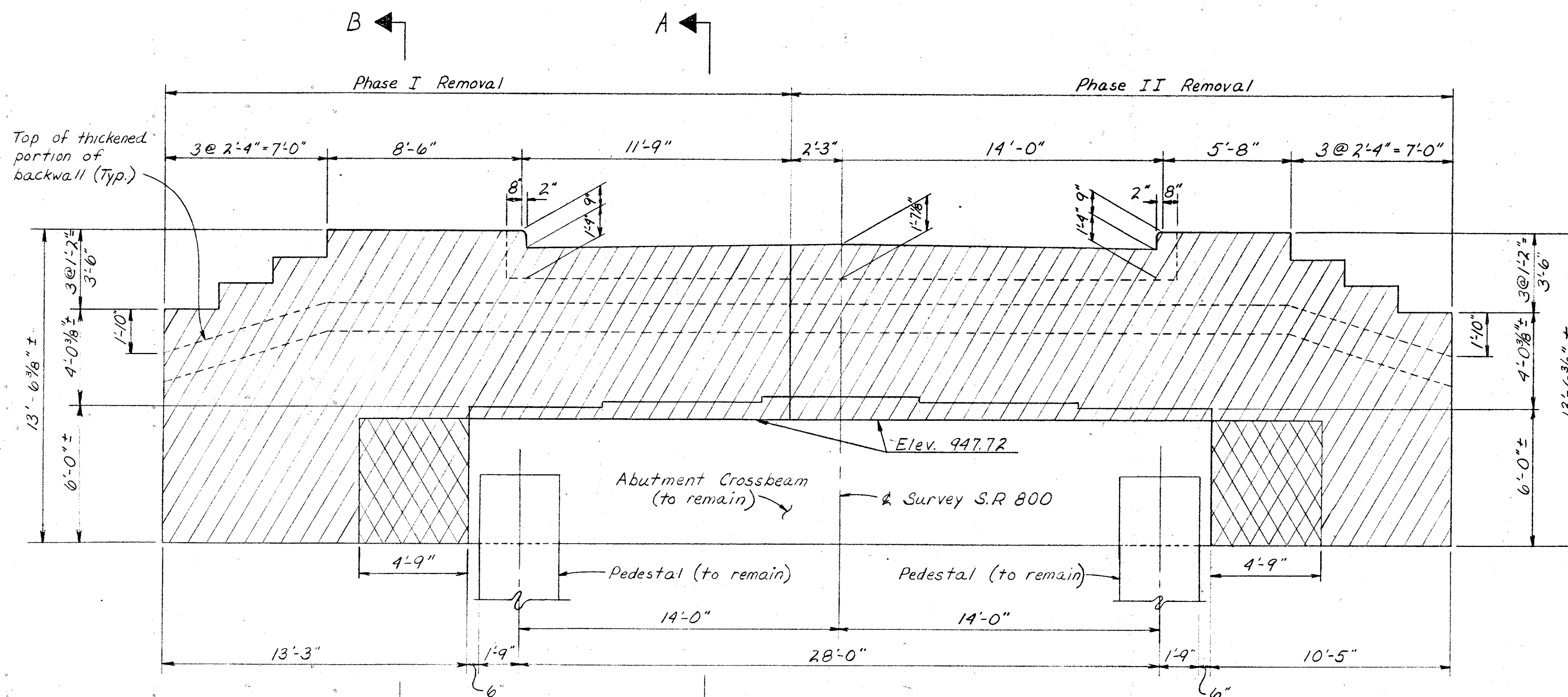


PLAN
Portions of the structure to be removed are not shown.

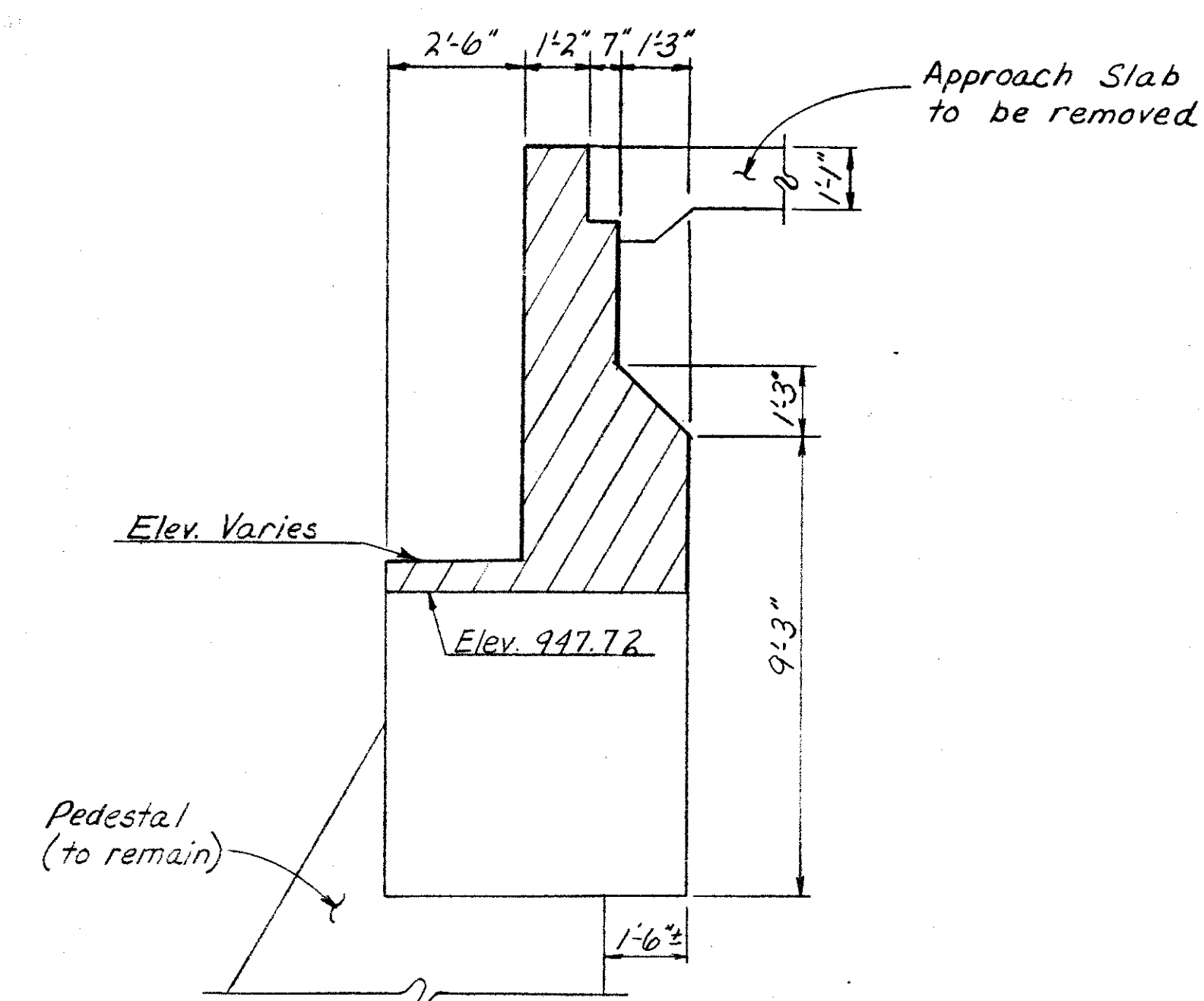


Careful removal of existing concrete and vertical reinforcement. Horizontal reinforcement shall be preserved and cleaned.

SECTION B-B



ELEVATION



SECTION A-A

- LEGEND
- Portions of structure to be completely removed.
 - Portions of structure to be carefully removed.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

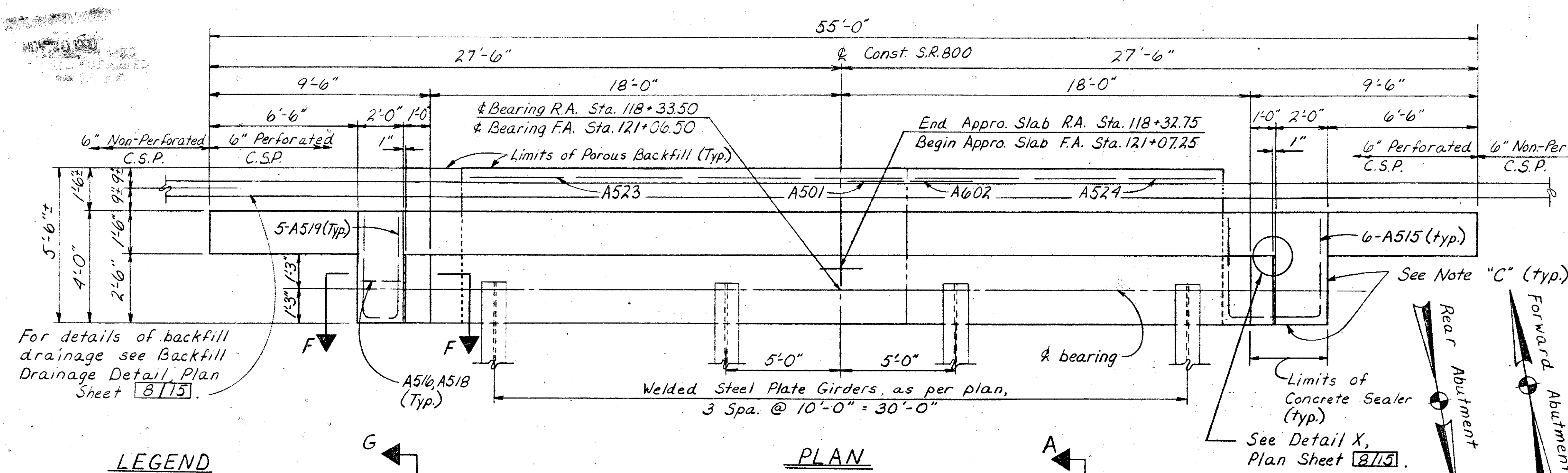
FORWARD ABUTMENT
REMOVAL DETAILS
BRIDGE NO. TUS-800-3347
OVER SANDY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11-14-84	

TUS-800-33.17

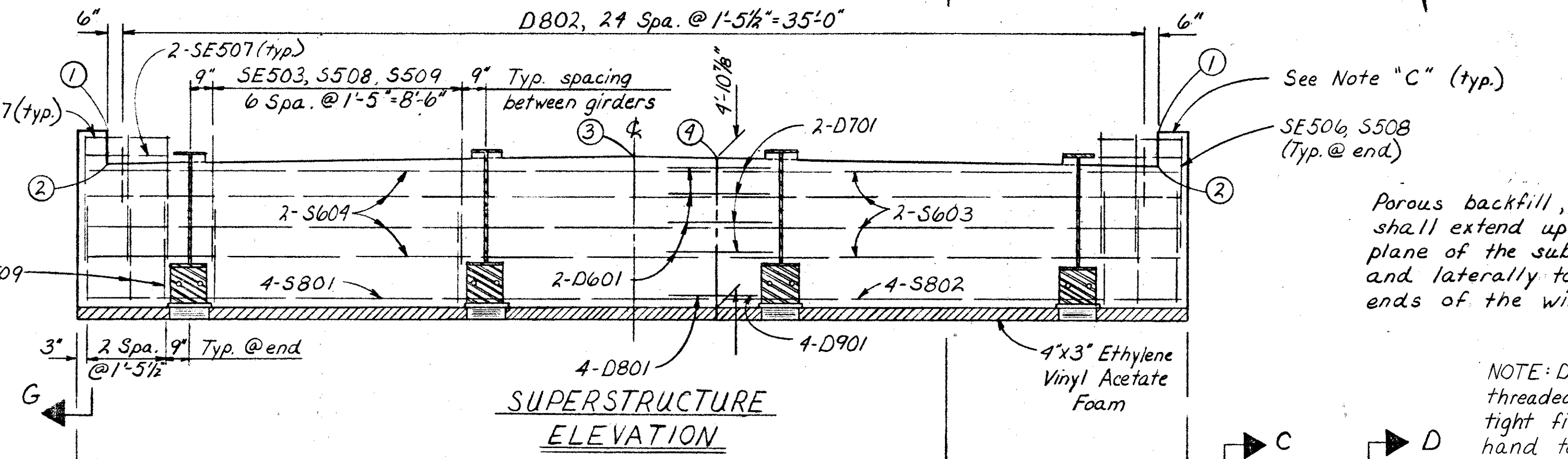
NOTES:

- Note "A" - New $\frac{1}{16}$ " ϕ dowel holes to be drilled $\frac{1}{3}$ " into the existing abutment crossbeam. A504 bars to be grouted in and protruding portion spliced to A505 bars. See Section E-E, Plan Sheet 8/15, for details.
- Note "B" - Existing #8 bars, far face, @ 6 " ϕ , and existing #5 bars center, @ 2 "- 0 " ϕ . New A515 bars, near face, @ 1 "- 0 " ϕ . Typical spacing for each wingwall. See Section C-C, Plan Sheet 8/15, for details.
- * - Evazote 50 as provided by E-Poxy Industries, Inc., or approved equal. Payment shall be made at the contract price bid for Item Special, Lin. ft., Ethylene Vinyl Acetate.
- D602, D701, D901 and D1101 dowel splicer bars and D501, D601, D801 and D1001 dowel "in" bars shall be as provided by the Richmond Screw Anchor Co., Inc., Ft. Worth, Texas or approved equal.
- Note "C" - Item Special, Sealing of Concrete Surfaces. See General Notes Plan Sheet 3/15. Seal surfaces above ground line only.

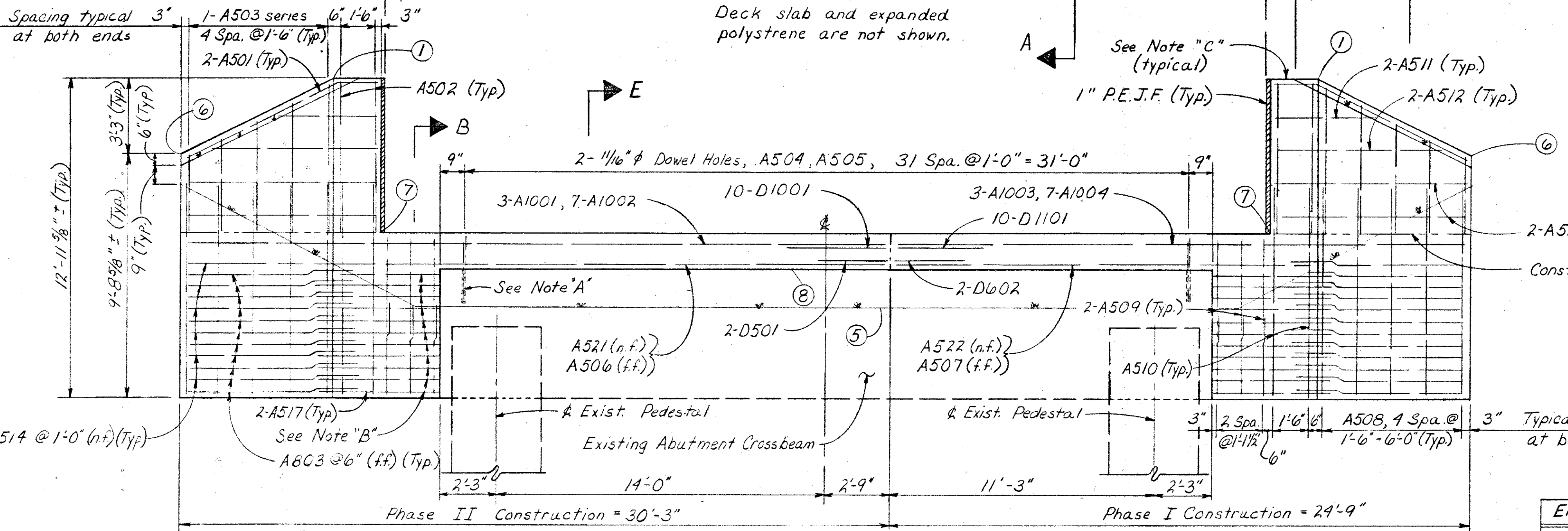


PLAN

- LEGEND**
- C.S.P. - Corrugated Steel Pipe
 - F.A. - Forward Abutment
 - R.A. - Rear Abutment
 - n.f. - near face
 - ff. - far face
 - PE.J.F. - Preformed Expansion Joint Filler



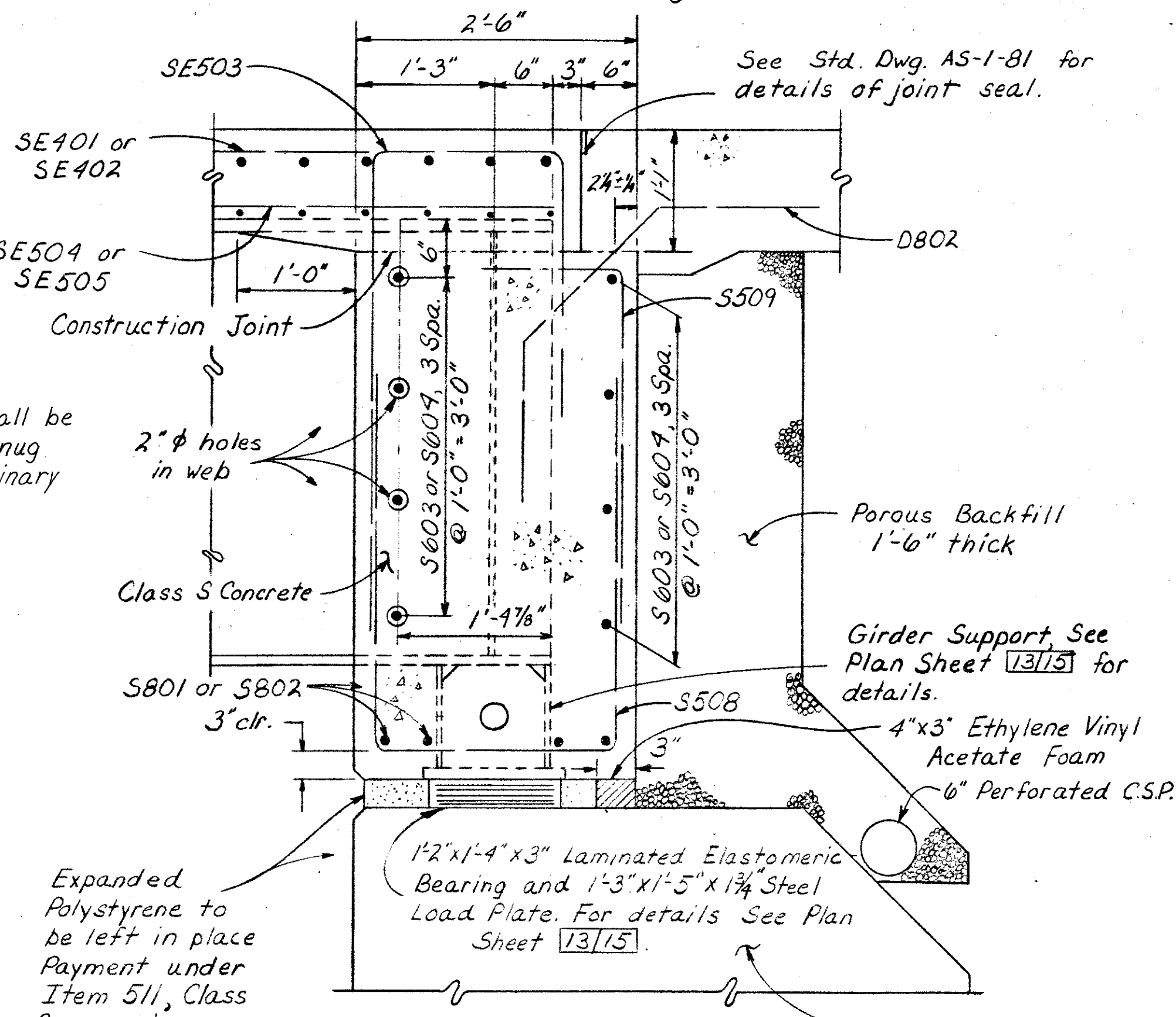
SUPERSTRUCTURE ELEVATION



ELEVATION

For Sections not shown see Plan Sheet 8/15.

Rear Abutment shown. Forward Abutment is opposite hand.



SECTION A-A

Welded shear stud connectors are not shown.

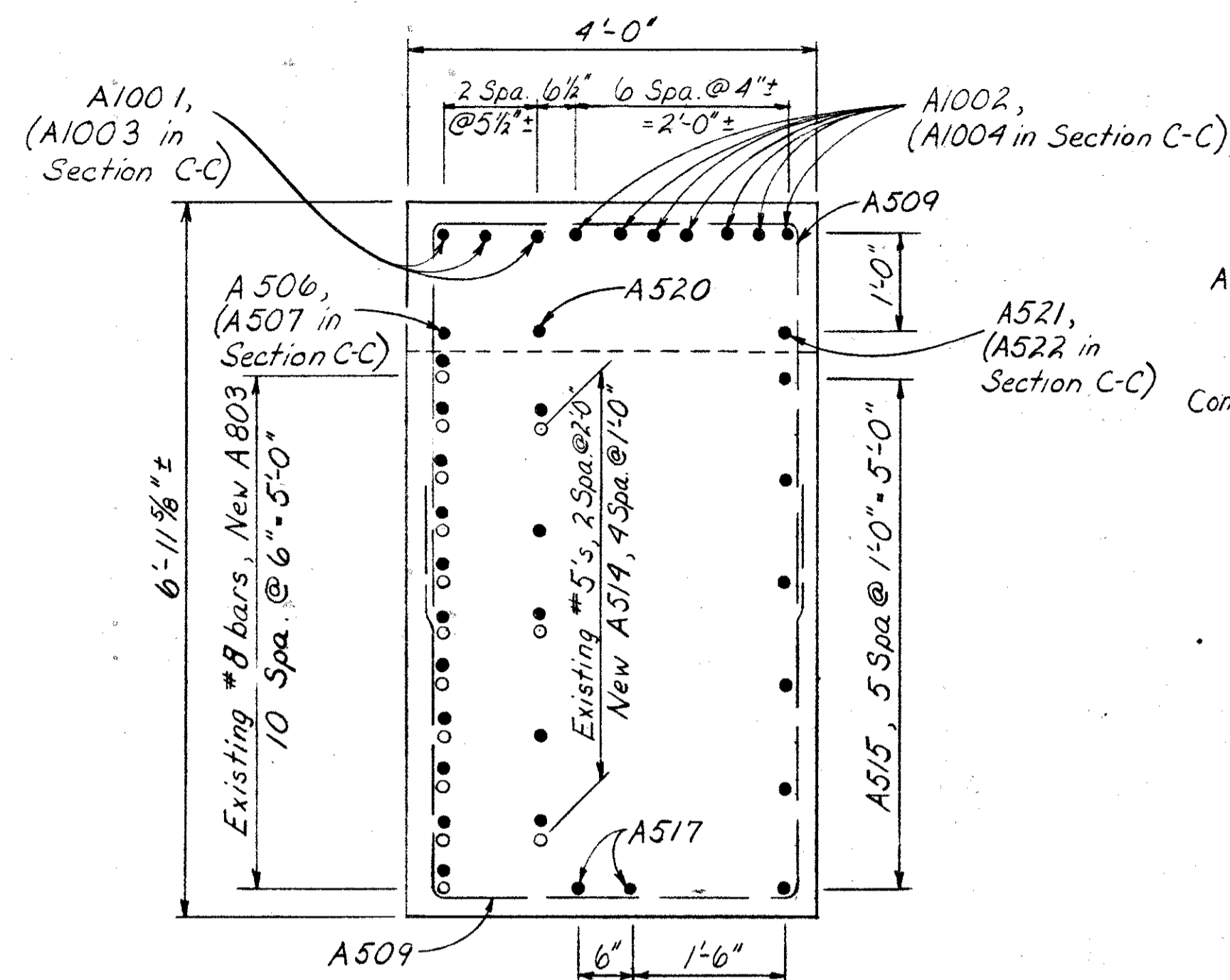
NOTE: Dowel bars shall be threaded in to a snug tight fit, using ordinary hand tools.

Elev.	①	②	③	④
R. A.	953.85	952.77	953.05	953.01
F. A.	955.24	954.16	954.44	954.40
Elev.	⑤	⑥	⑦	⑧
R. A.	944.98	950.60	947.85	946.31
F. A.	946.91	951.99	949.24	947.72

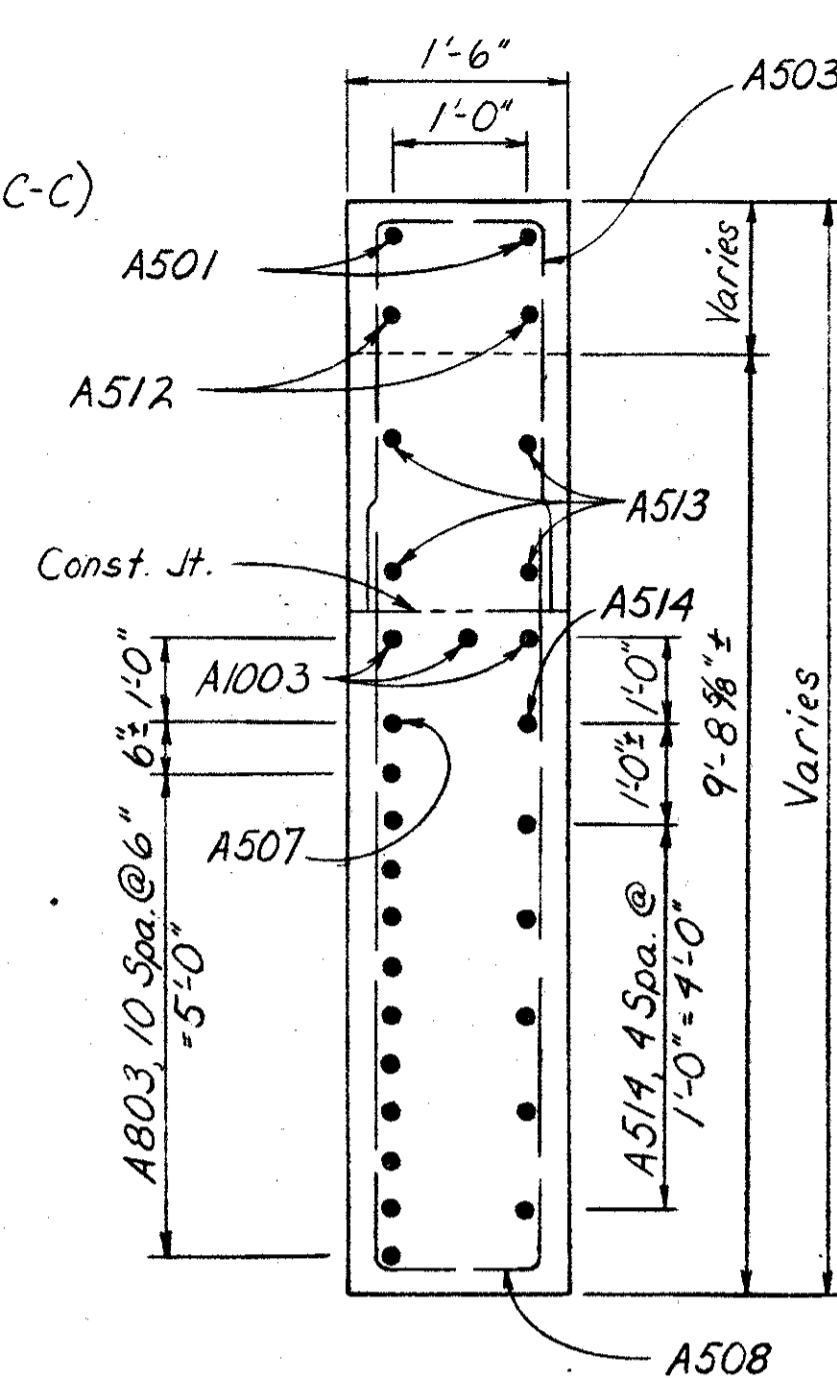
SUPERSTRUCTURE AND ABUTMENT DETAILS

BRIDGE NO. TUS-800-33.17
OVER SANDY CREEK

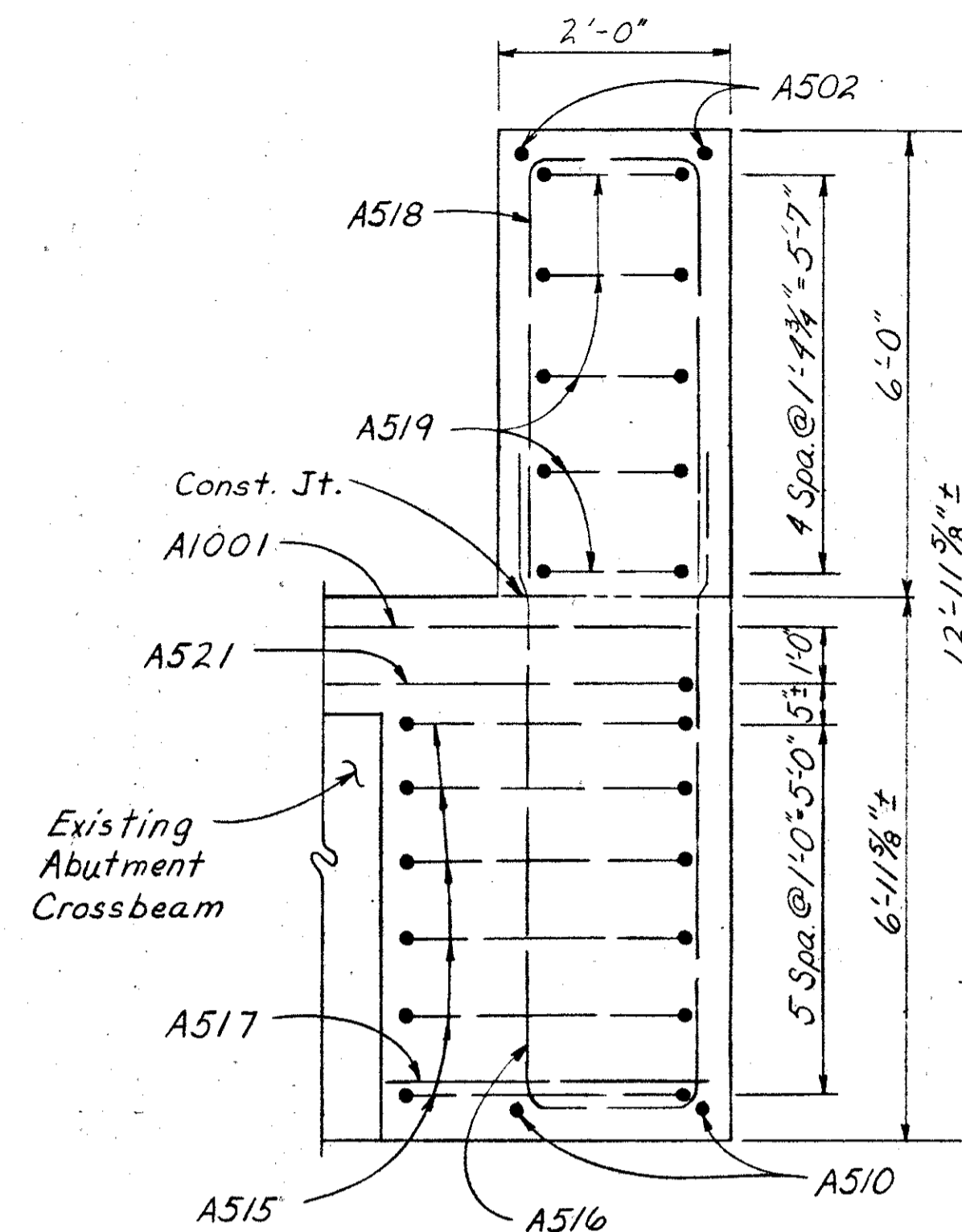
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	VLH	11-14-84	



SECTION B-B

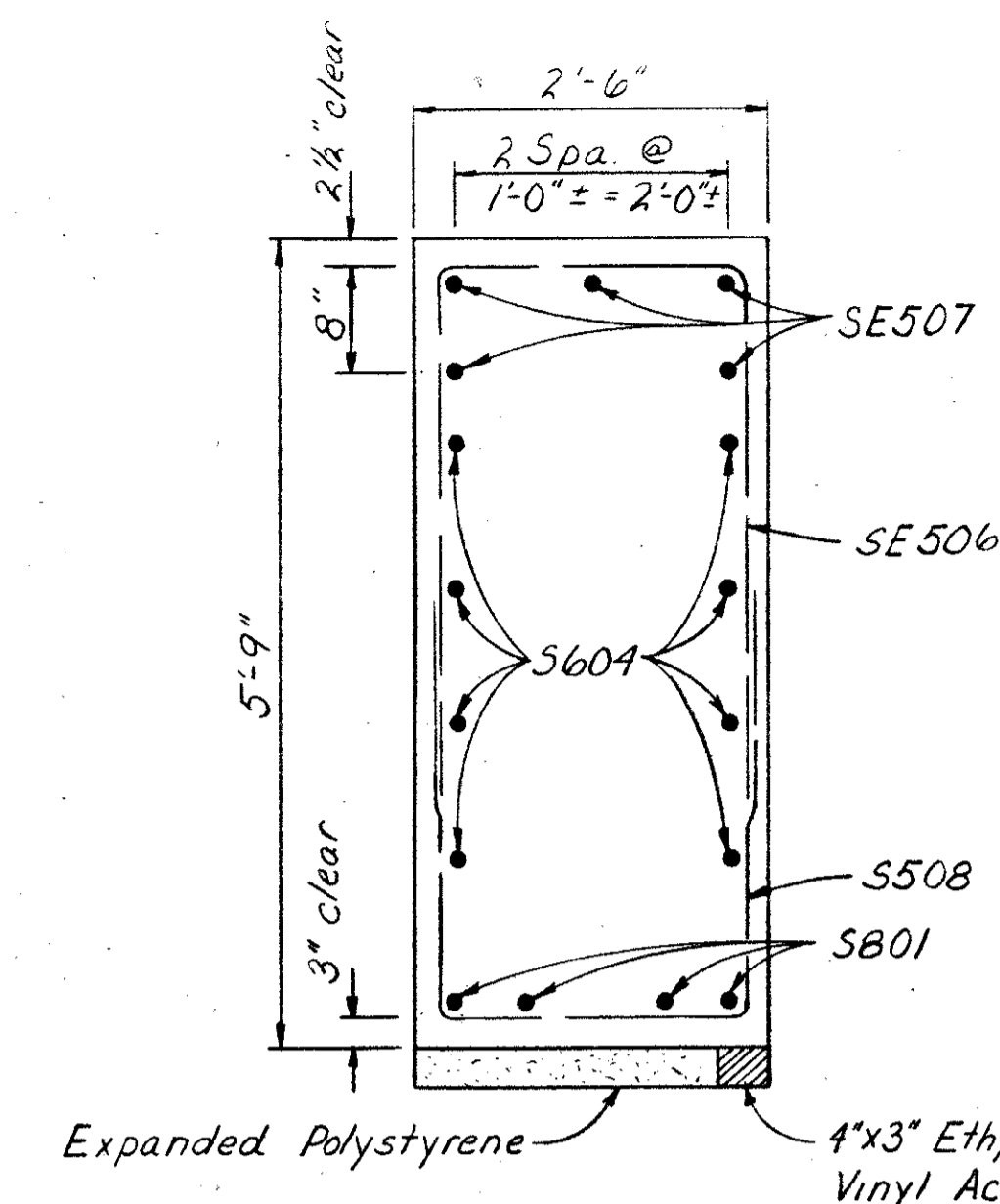


SECTION D-D



SECTION F-F

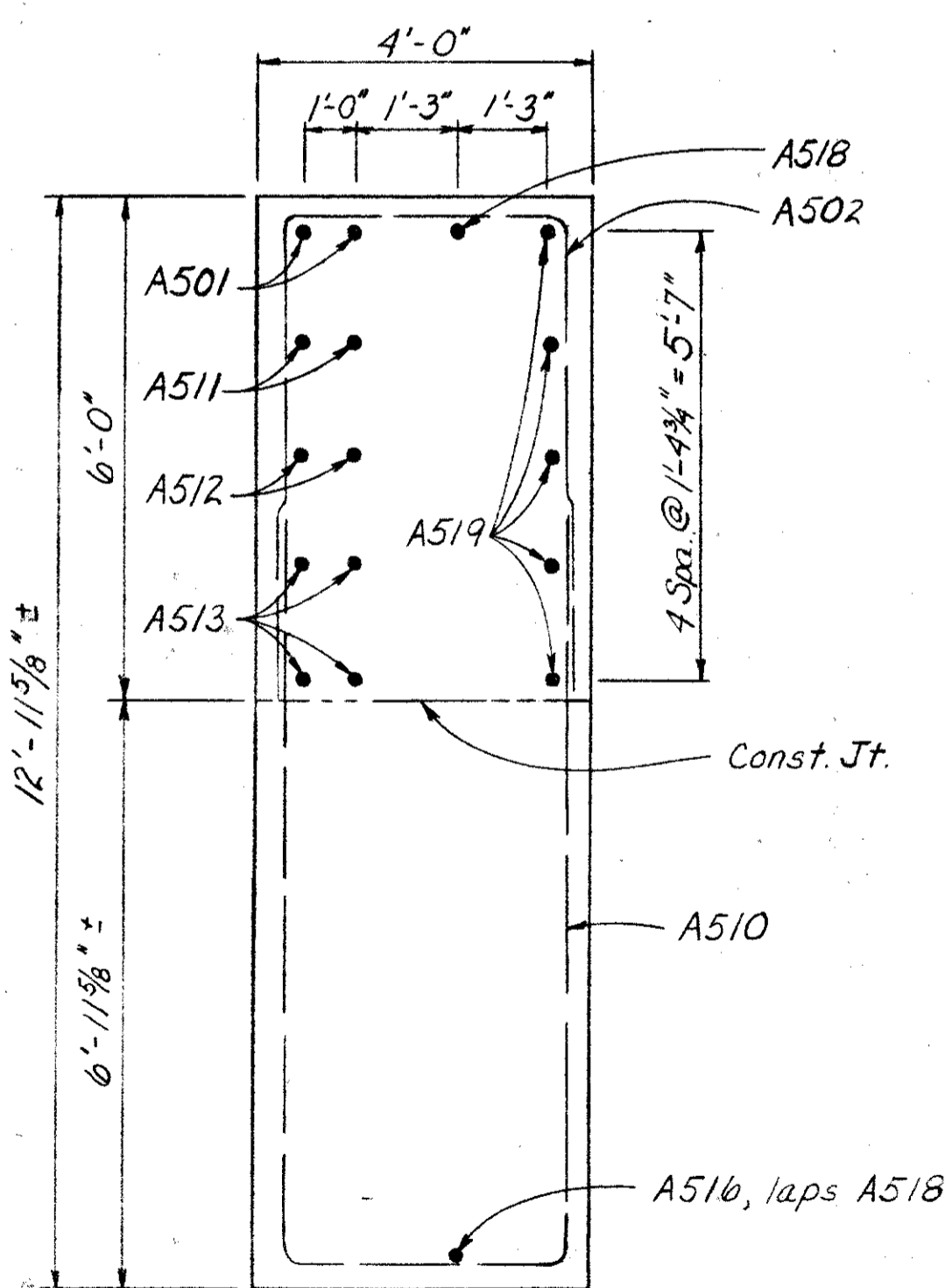
1" PE.J.F. and A509 bars are not shown.



SECTION G-G

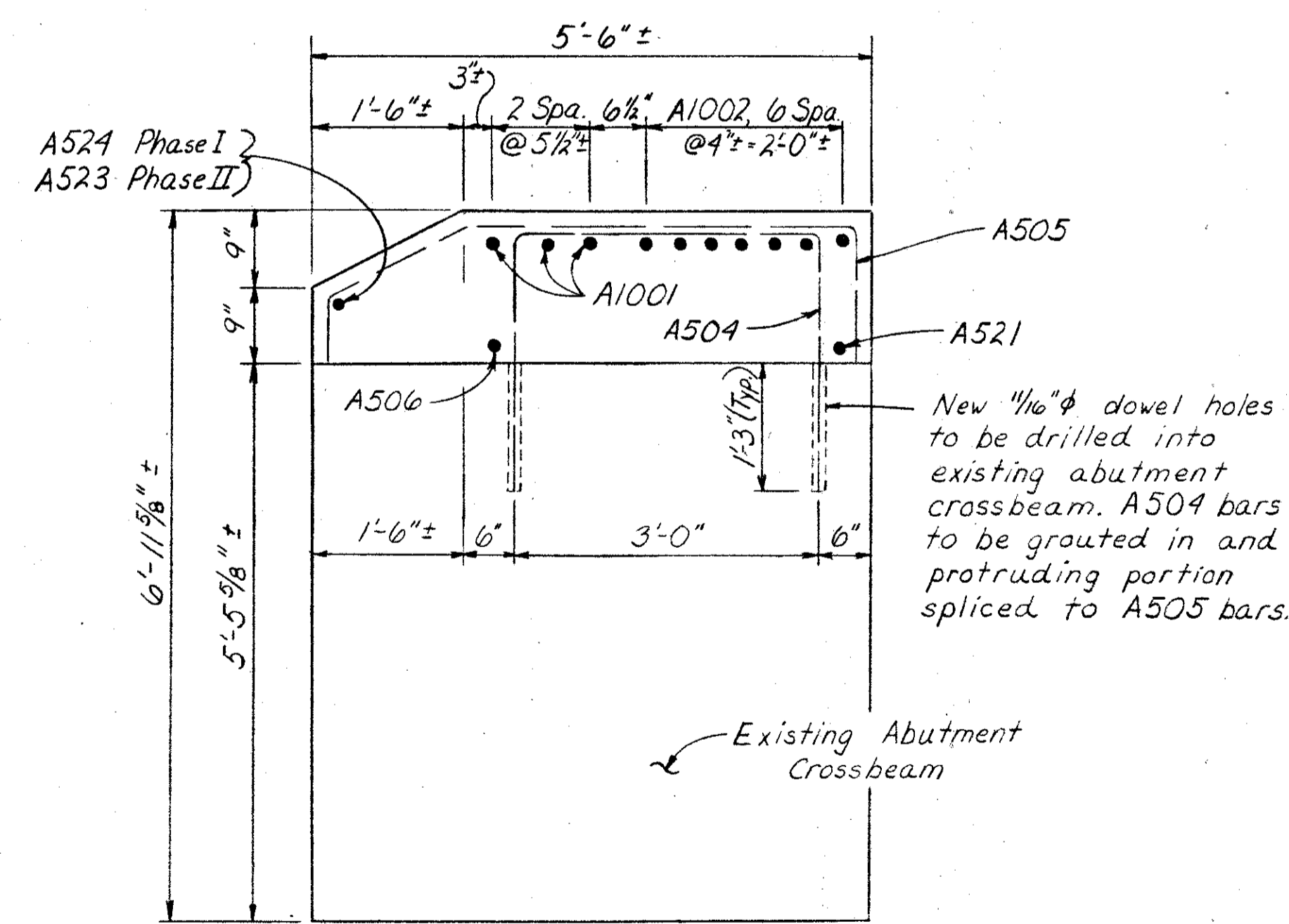
For spacing of S504 and S801 bars see Section A-A, Plan Sheet 7715.

≠ Crushed aggregate slope protection shall meet the requirements of Item 601 and shall be included with Item 518, Non-Perforated, Helical Corrugated Steel Pipe for payment.



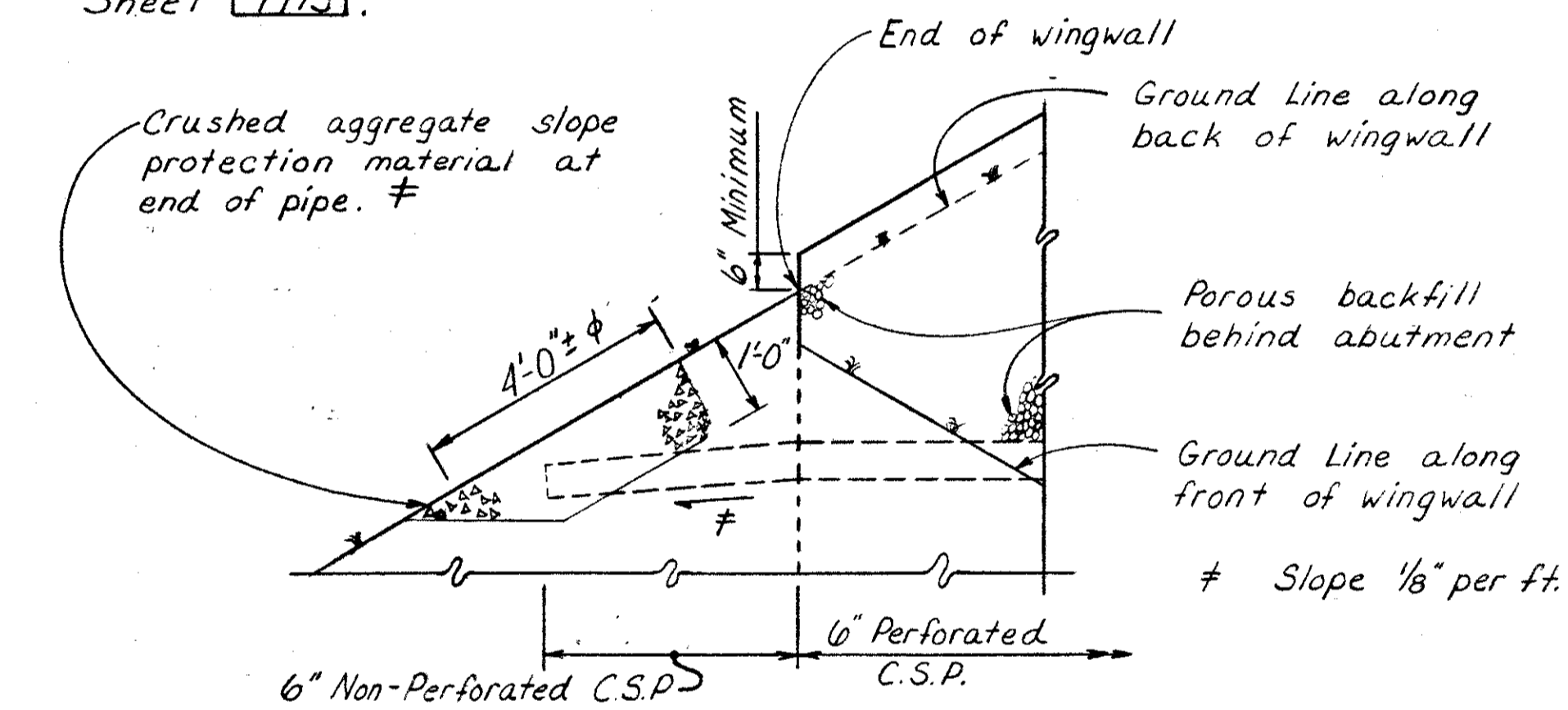
SECTION C-C

All horizontal reinforcement below the construction joint is not shown. See Section B-B, above, for details of additional reinforcement below the construction joint.

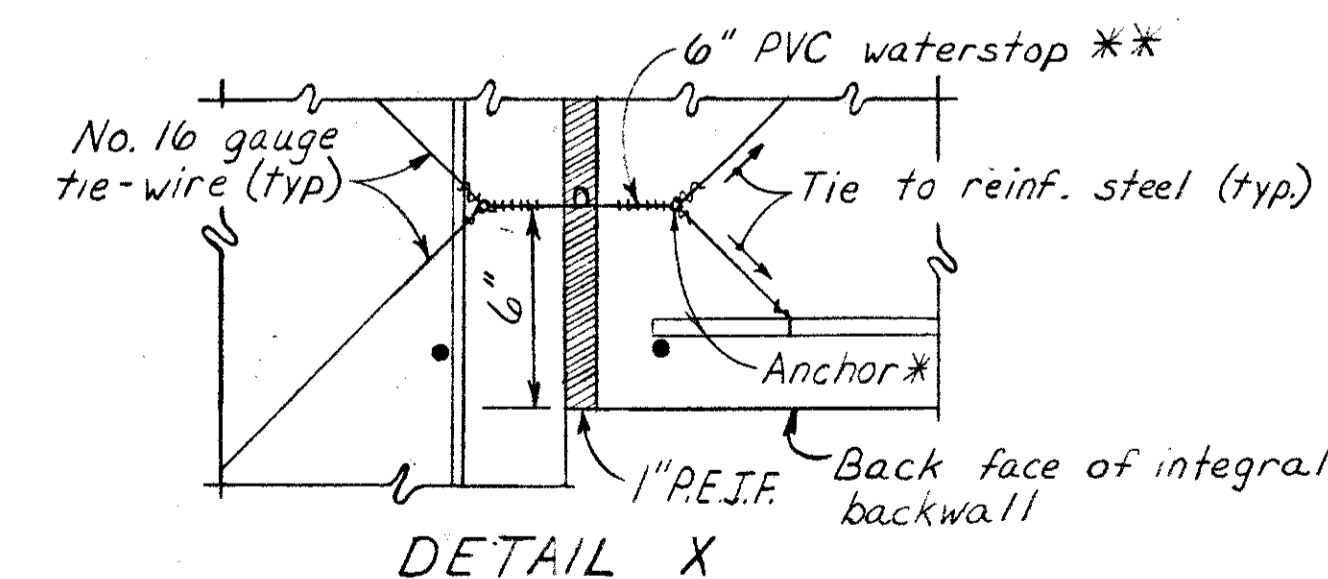


SECTION E-E

LEGEND:
C.S.P. - Corrugated Steel Pipe



BACKFILL DRAINAGE DETAIL



DETAIL X

* For the first pour the waterstop should be held securely in place by the use of split forms and tie-wires. For the second pour, secure the free end of waterstop in proper position with tie-wires. Alternate methods, as approved by the Engineer, may be used to insure the correct positioning of the waterstop.

** For details of 6" PVC waterstop see Std. Dwg. ICD-1-82, Sheet 4 of 5, Waterstop Detail.

WATERSTOP: A 6" PVC waterstop shall be centered on the backwall construction joint to form a continuous waterproof seal. The waterstop shall be capable of accommodating 1/2" of joint movement.

The 6" PVC waterstop shall terminate 2" below the top elevation of the backwall construction joint.

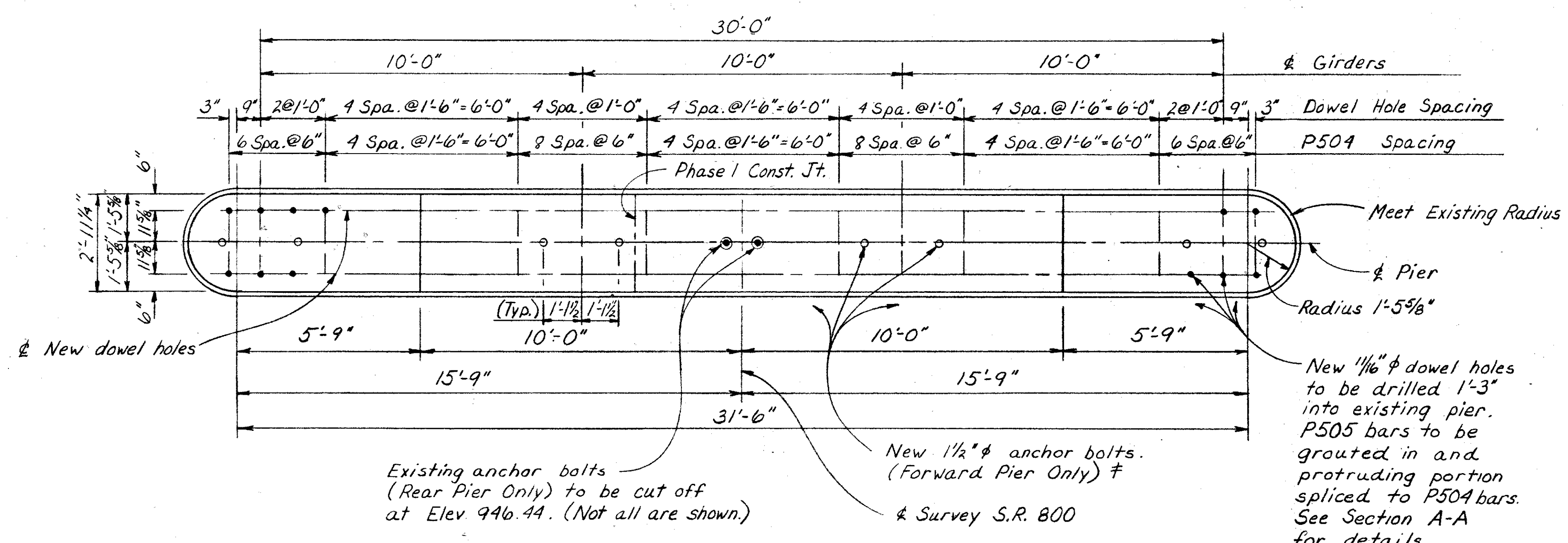
NOTES:

* During Phase I Construction the existing pier cap shall be removed above the Removal Elevation and to the left of Removal Line "A". New pier caps shall then be constructed left of the Phase I Vertical Construction Joint. When Phase I construction has been completed and traffic has been diverted to the Phase I portion of the structure, the existing concrete to the right of Removal Line "A" and above the Removal Elevation shall be removed and Phase II Construction shall be completed.

BRIDGE SEAT REINFORCING: Reinforcement in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors. (Forward Pier Only.)

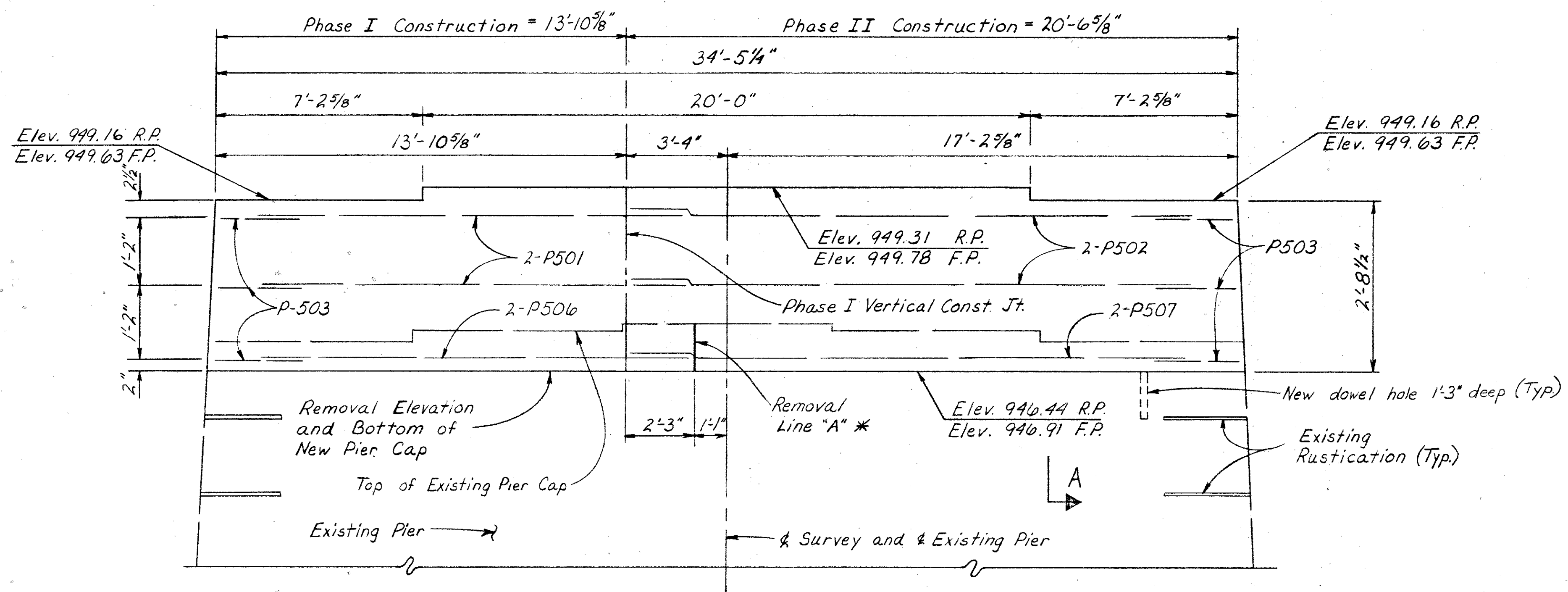
BEARING ANCHORS: At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place. (Forward Pier Only.)

† For details of Forward Pier Anchor Bolts, see Forward Pier Bearing detail, Plan Sheet 4115.



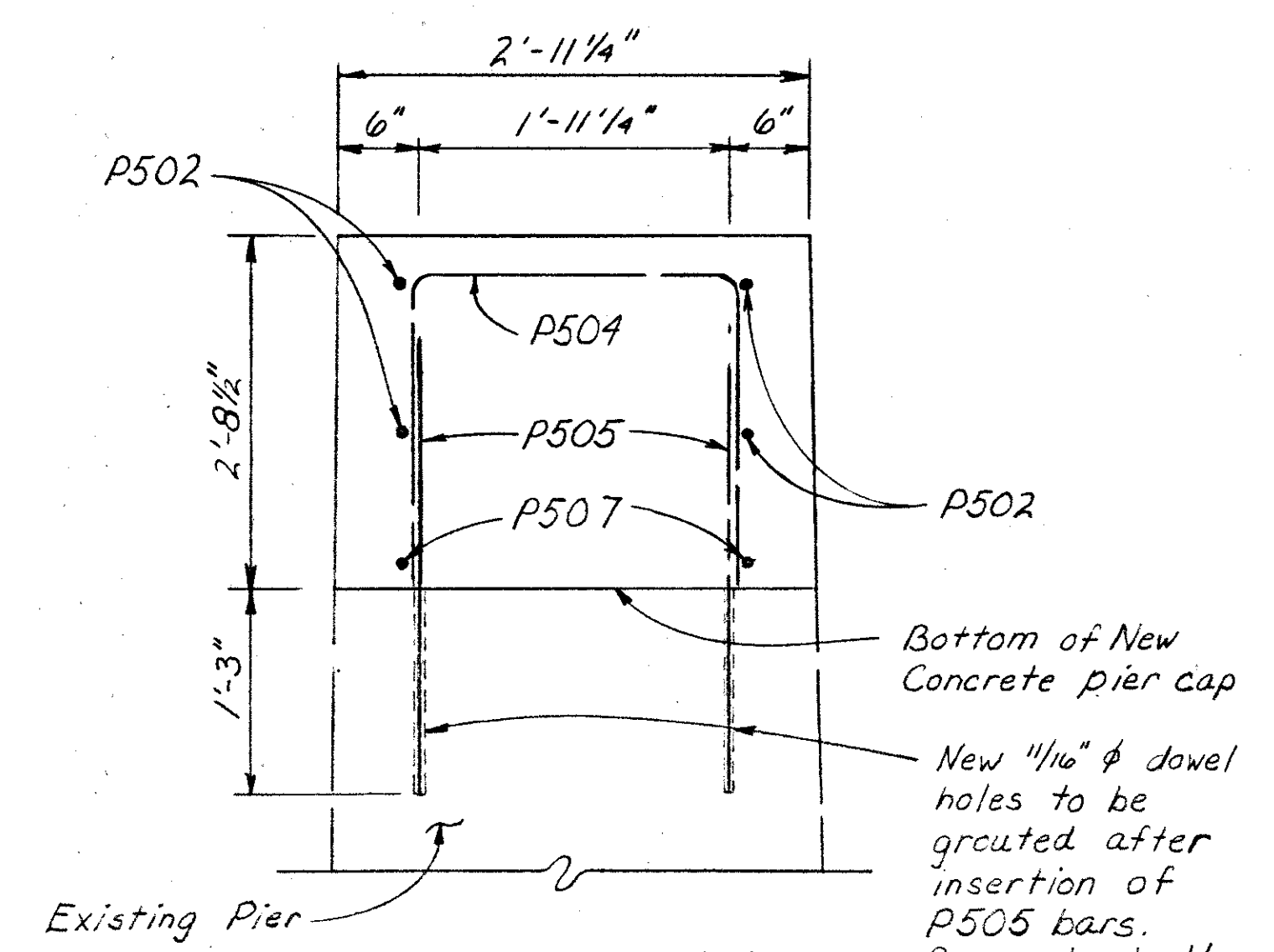
PIER CAP PLAN

A



PIER CAP ELEVATION

Vertical reinforcement and existing reinforcement is not shown. See Pier Cap Plan, above, for details and spacing of vertical reinforcement.



SECTION A-A

LEGEND

R.P. - Rear Pier
F.P. - Forward Pier

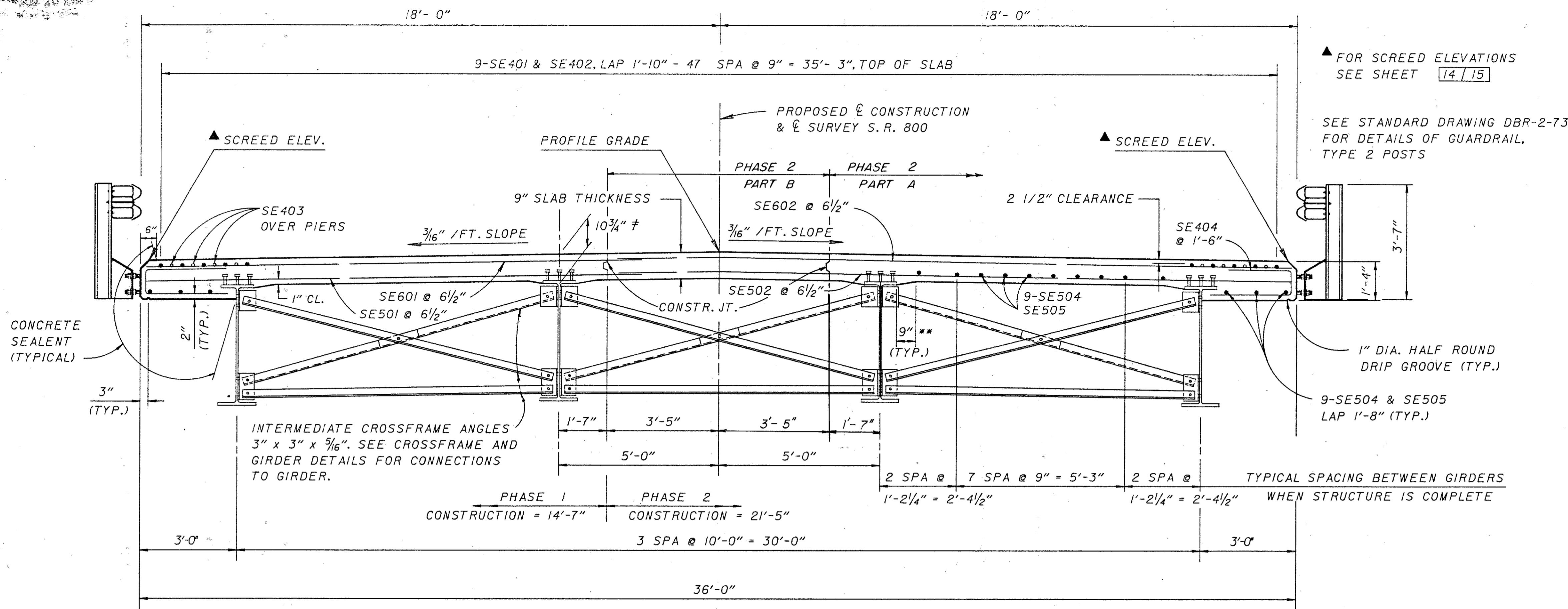
PIER DETAILS
BRIDGE NO TUS-800-3347
OVER SANDY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11-14-84	

FHWA REGION	STATE	PROJECT
5	OHIO	

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TUS-800-33.47



▲ FOR SCREED ELEVATIONS SEE SHEET 14/15

SEE STANDARD DRAWING DBR-2-73 FOR DETAILS OF GUARDRAIL, TYPE 2 POSTS

NOTES
 *DIMENSIONS SHOWN REPRESENTATIVE OF END SPANS. DIMENSIONS OVER PIERS AND IN CENTER SPAN VARY. SEE PLAN SHEET 12/15 FOR DETAILS.

** A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE, HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" IN WIDTH.

THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.

ERECTOR BOLTS: HOLE DIAMETER IN THE CROSSFRAMES AND THE LONG SLOTTED HOLE WIDTH IN THE WT6X20 SECTIONS SHALL BE RESPECTIVELY 1/16" AND 1/4" LARGER THAN THE DIAMETER OF THE ERECTOR BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTOR BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTOR BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513.

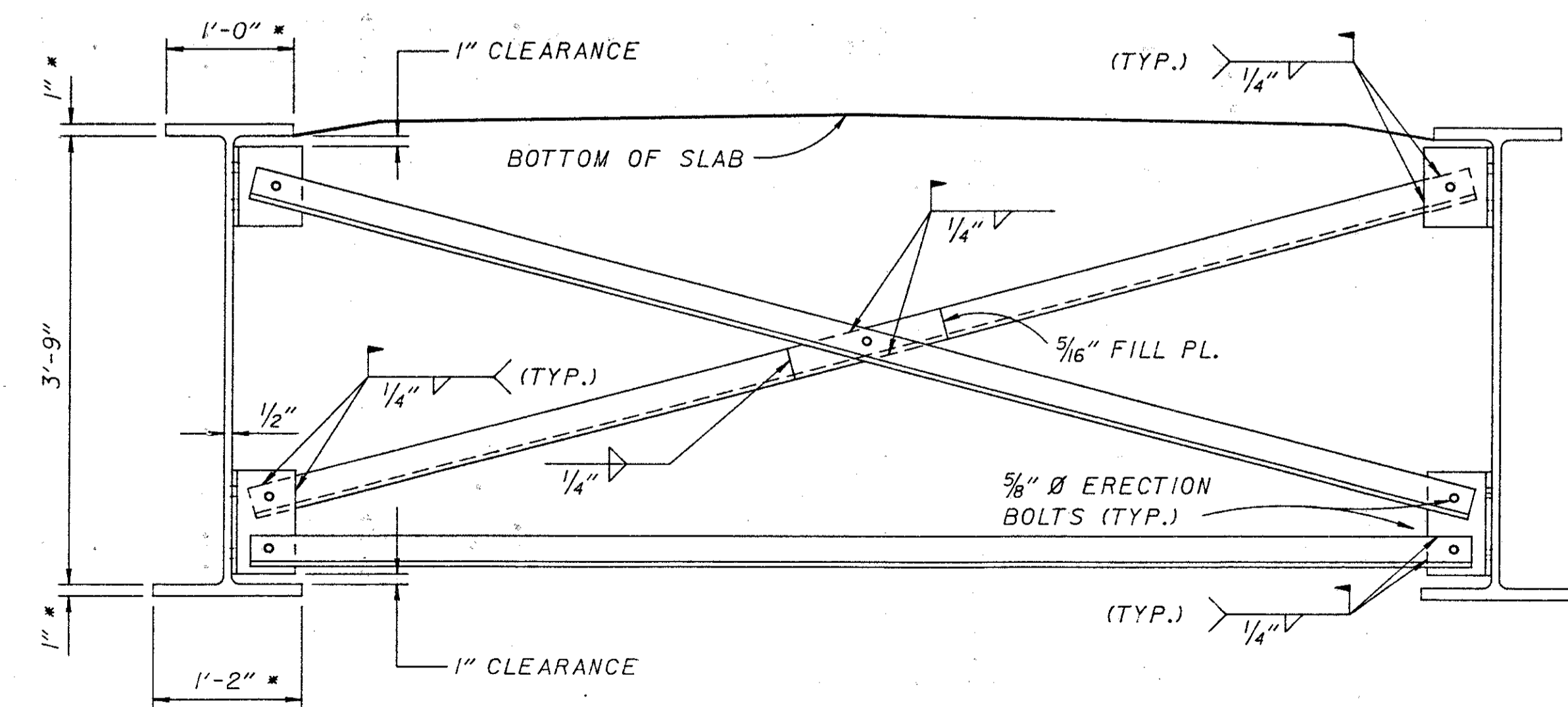
IN LIEU OF ERECTOR BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06)

HIGH STRENGTH BOLTS FOR CONNECTING WT6X20 SECTIONS TO THE GIRDER WEB SHALL BE 3/4" DIAMETER HIGH STRENGTH BOLTS A325, TYPE 3. BOLTS USED FOR PERMANENT CONNECTION BETWEEN THE CROSSFRAMES AND WT6X20 SECTIONS SHALL BE 5/8" DIAMETER HIGH STRENGTH BOLTS A325, TYPE 3.

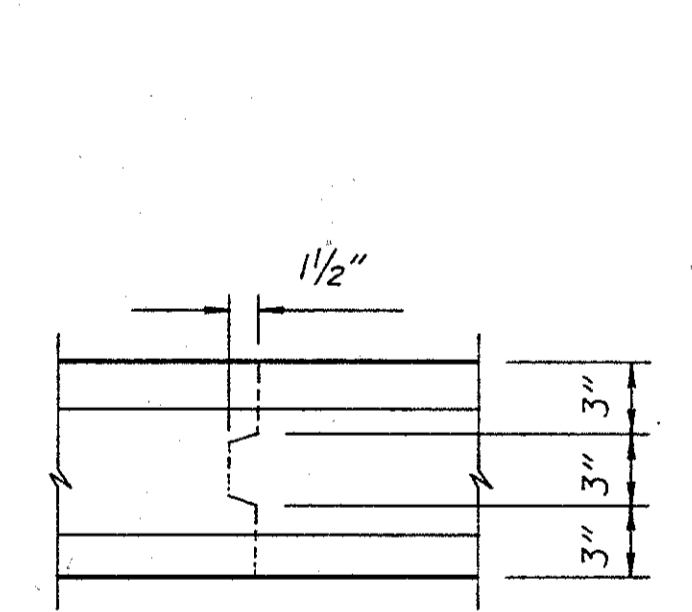
SEE PLAN SHEET 15/15 FOR PART-WIDTH CONSTRUCTION DETAILS.

- SUPERSTRUCTURE ERECTION NOTES**
- SE501 BARS SHALL NOT BE TIED TO SE502 BARS NOR SHALL SE601 BARS BE TIED TO SE602 BARS UNTIL THE PHASE 2 PART A PORTION OF THE DECK SLAB HAS CURED.
 - THE MIDDLE CROSSFRAME SHALL BE ERECTED FOLLOWING COMPLETION OF THE PHASE 2 PART A DECK POUR AND PRIOR TO PLACEMENT OF THE PHASE 2 PART B PORTION OF THE DECK SLAB.
 - THE PHASE 2 PART B PORTION OF THE DECK SLAB MAY BE FINISHED USING A NON-MOTORIZED FINISHING MACHINE.

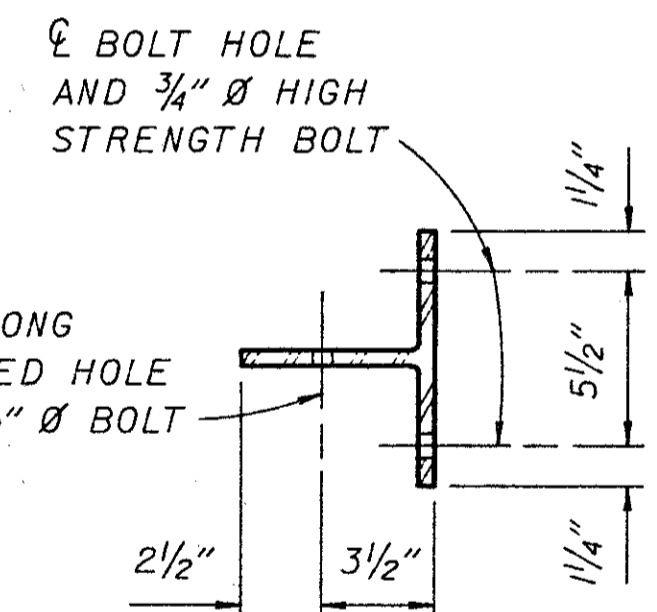
TRANSVERSE SECTION



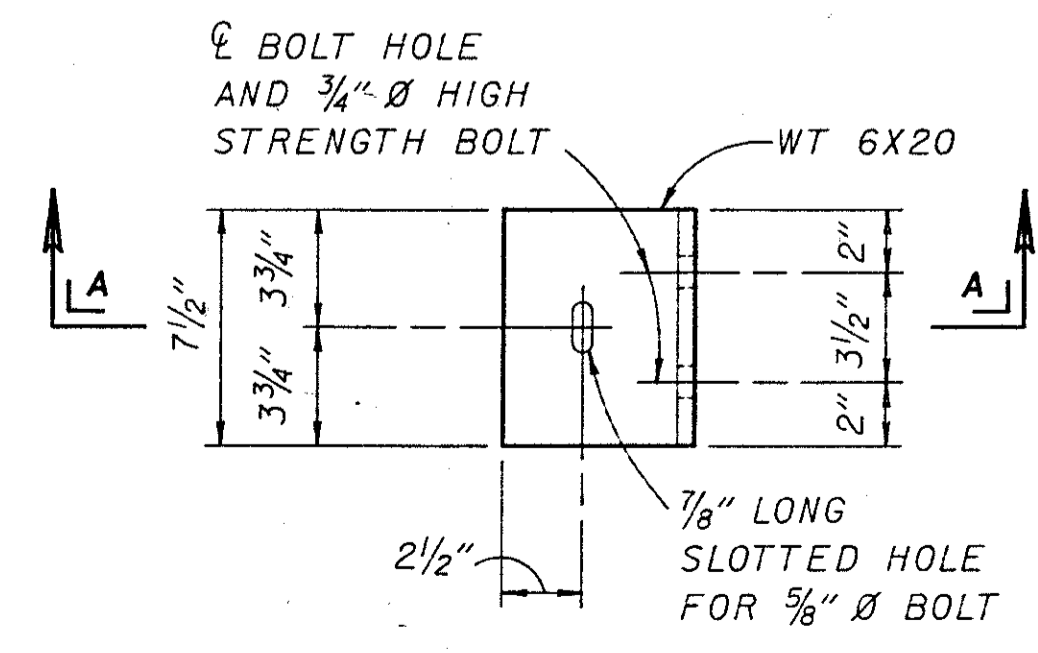
CROSSFRAME AND GIRDER DETAILS
 FOR CONNECTION DETAILS AT STIFFENER LOCATIONS SEE PLAN SHEET 14/15



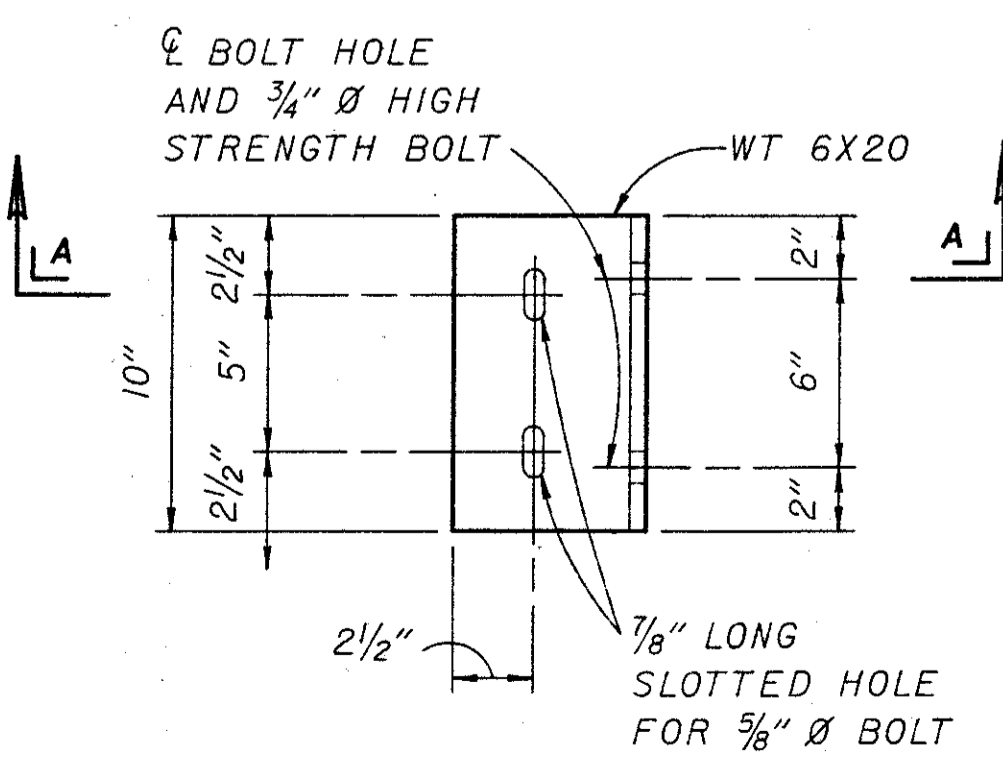
DECK CONSTRUCTION JOINT



SECTION A-A



TOP CONNECTION



BOTTOM CONNECTION

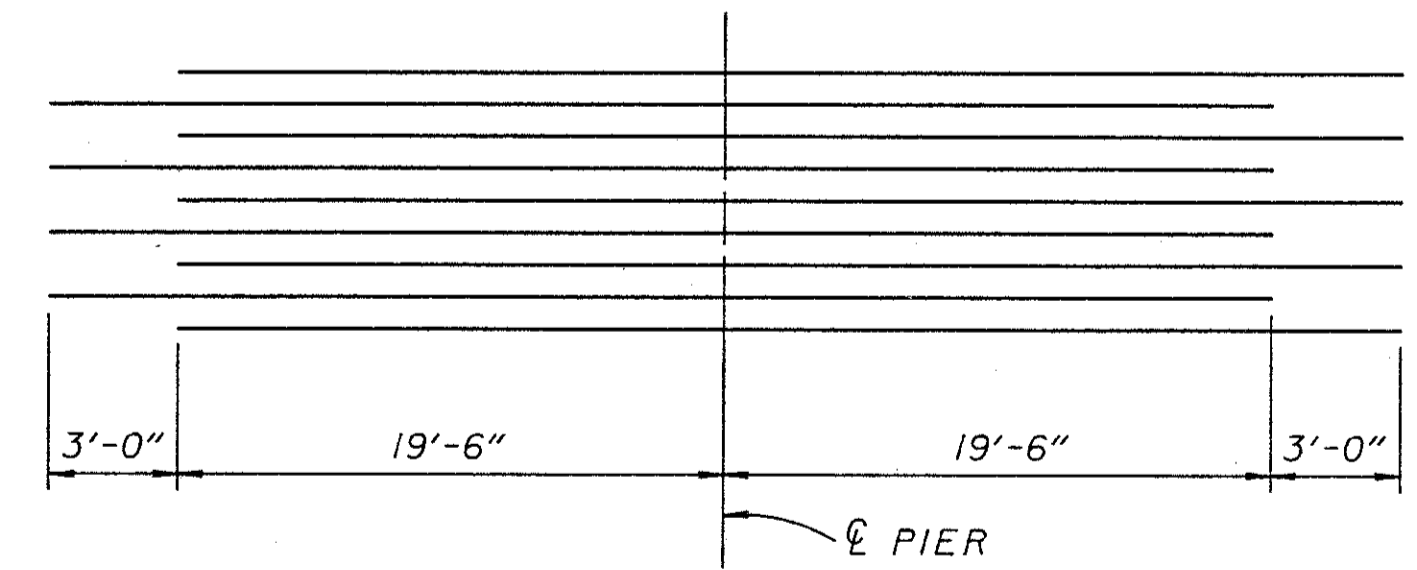
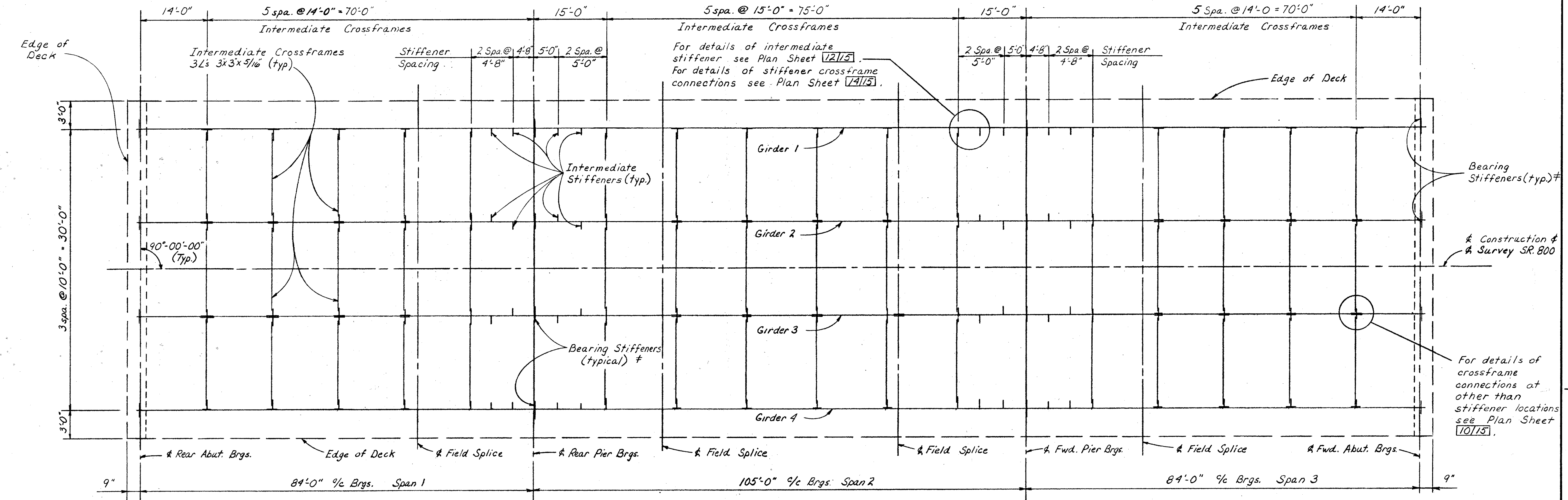
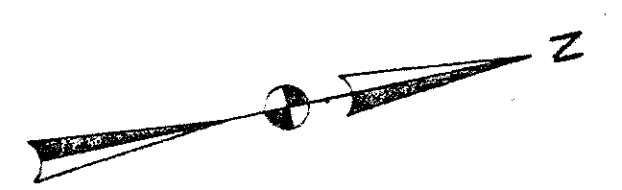
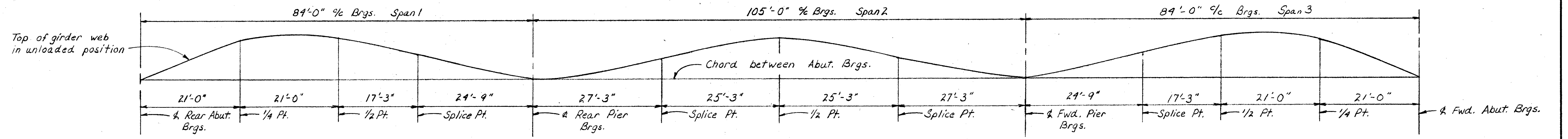


DIAGRAM SHOWING STAGGER OF SE403 BARS OVER PIERS

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						10/15
SUPERSTRUCTURE DETAILS						
BRIDGE NO. TUS-800-3347						
OVER SANDY CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	REF		CAD	ULH	11-14-84	



STEEL FRAMING PLAN



$\frac{1}{8}$		$\frac{1}{8}$	$\frac{1}{10}$		$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{10}$		$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	Deflection due to weight of steel
$\frac{3}{4}$		$\frac{13}{16}$	$\frac{1}{2}$		$\frac{7}{16}$	$\frac{3}{4}$	$\frac{7}{16}$		$\frac{1}{2}$	$\frac{13}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	Deflection due to remaining dead load
$\frac{7}{8}$		$\frac{15}{16}$	$\frac{9}{10}$		$\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{2}$		$\frac{9}{10}$	$\frac{15}{16}$	$\frac{7}{8}$	$\frac{7}{8}$	Required Shop Camber in inches

CAMBER DIAGRAM

For details of bearing stiffeners see Plan Sheet [12/15]. For details of crossframe-bearing stiffener connections see Plan Sheet [17/15].

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

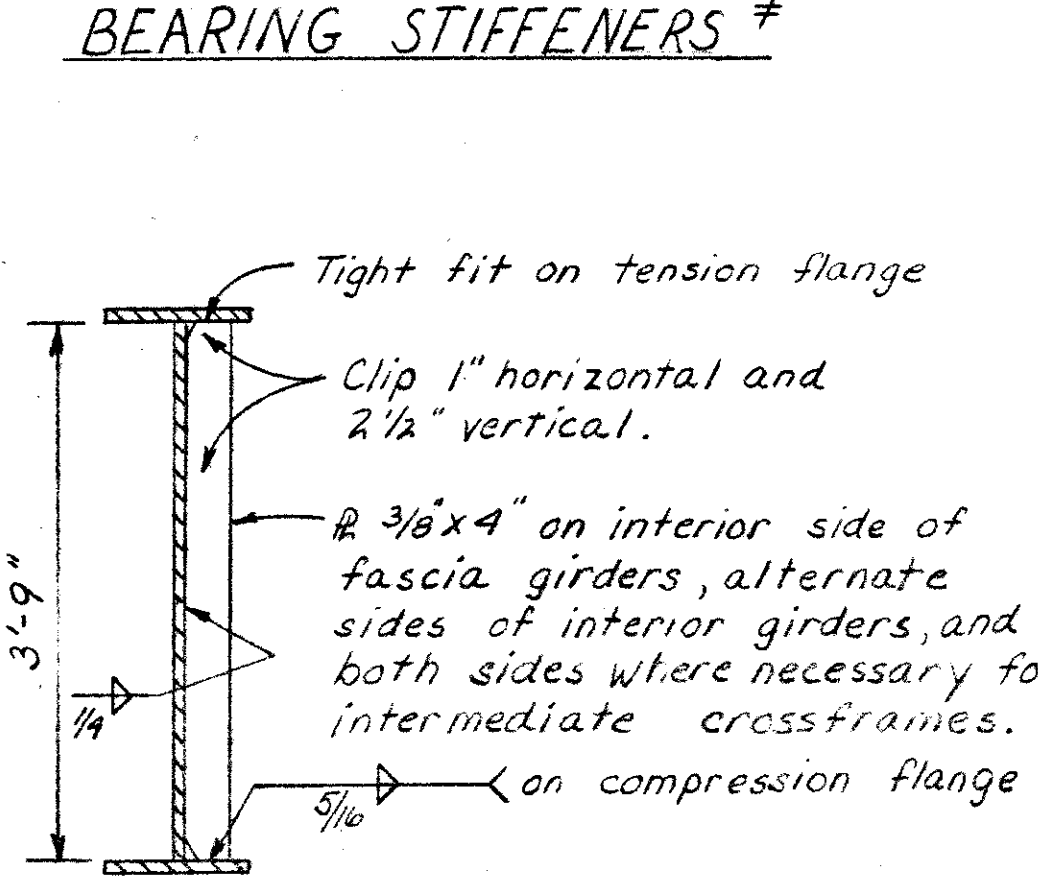
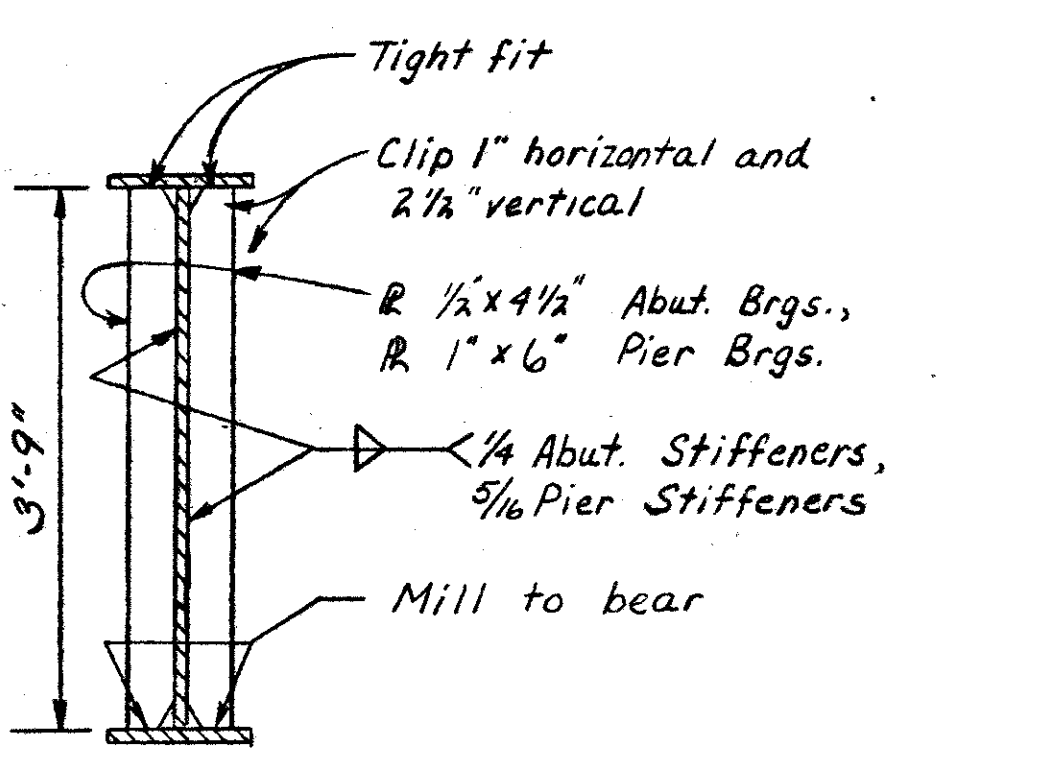
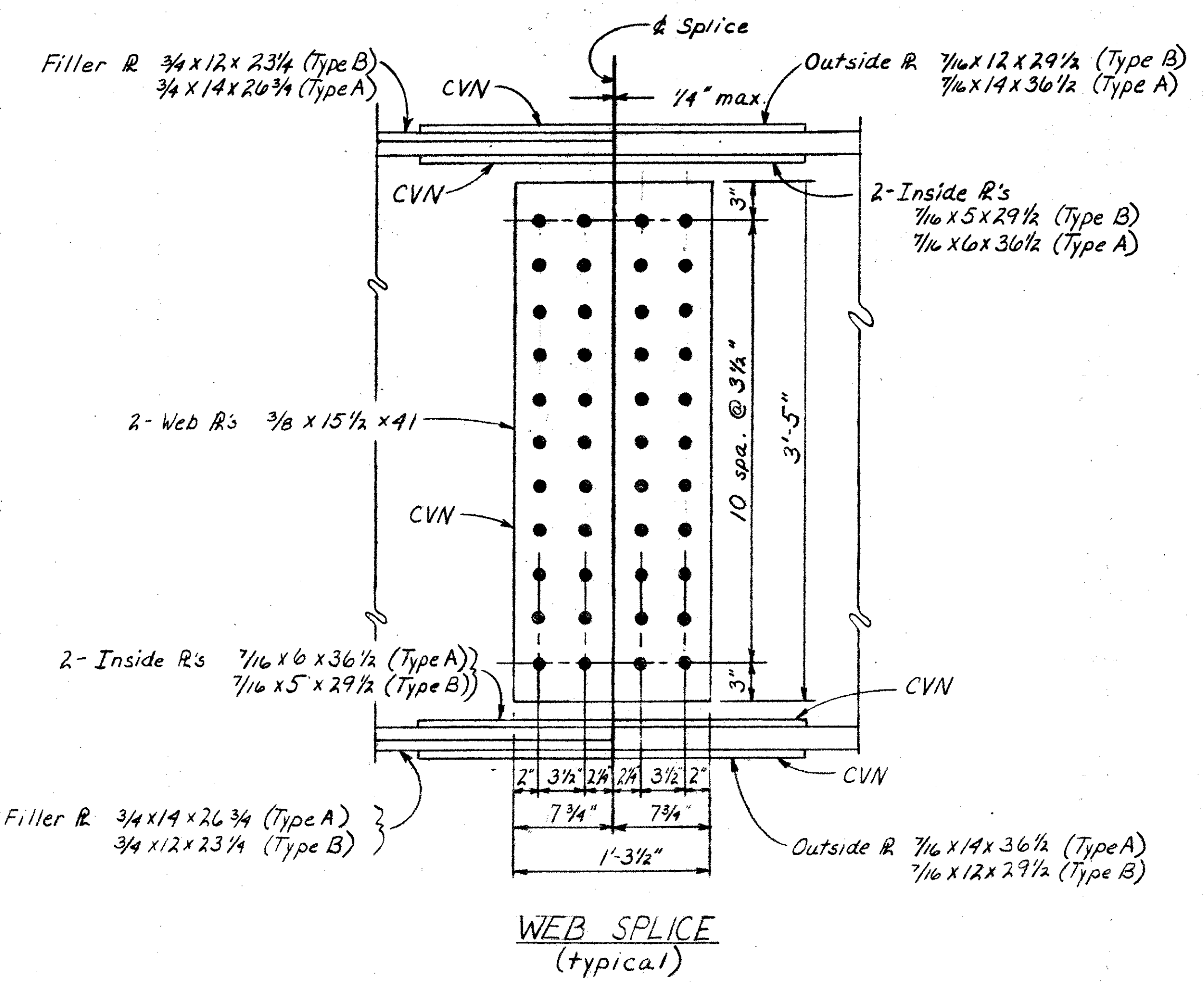
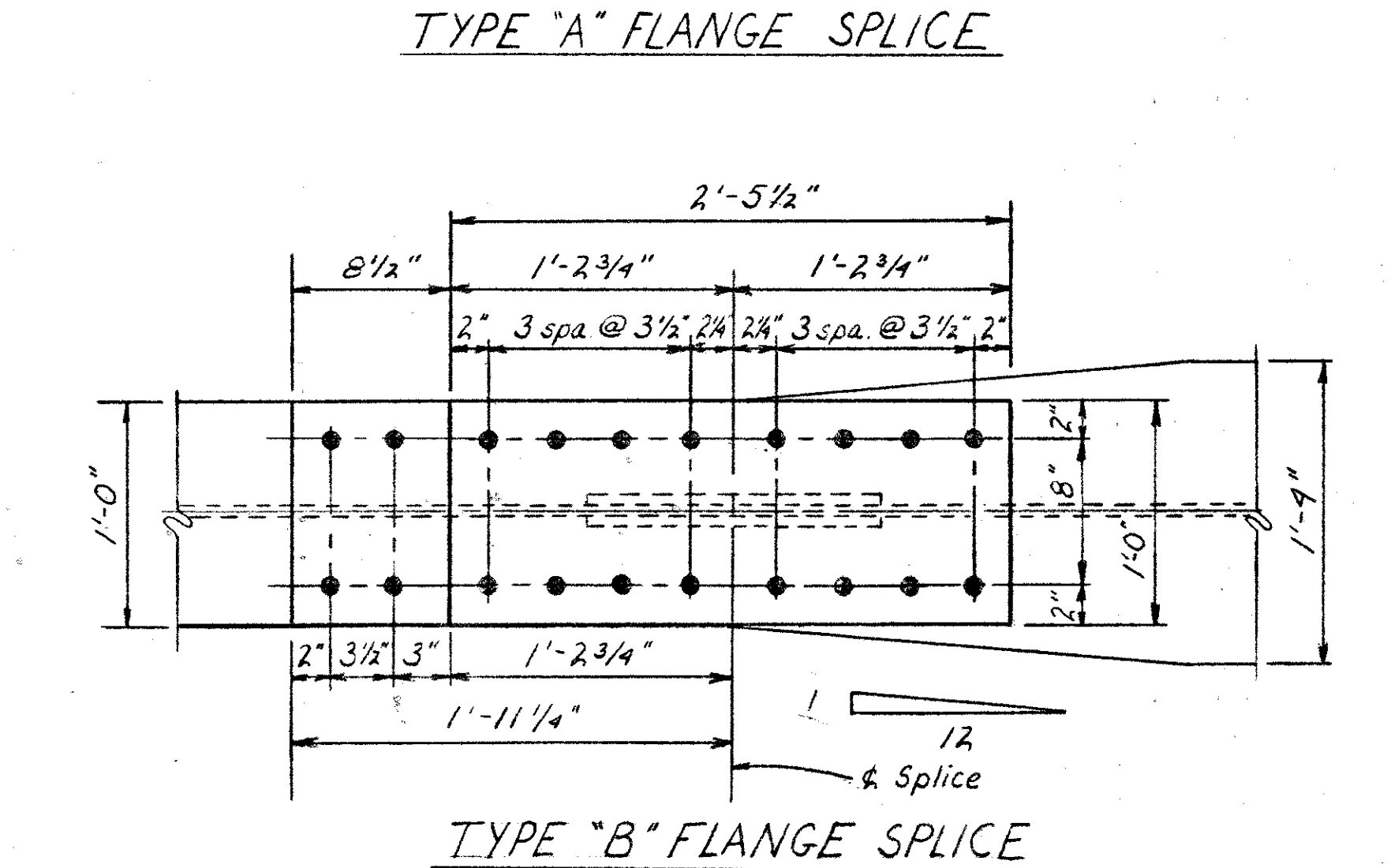
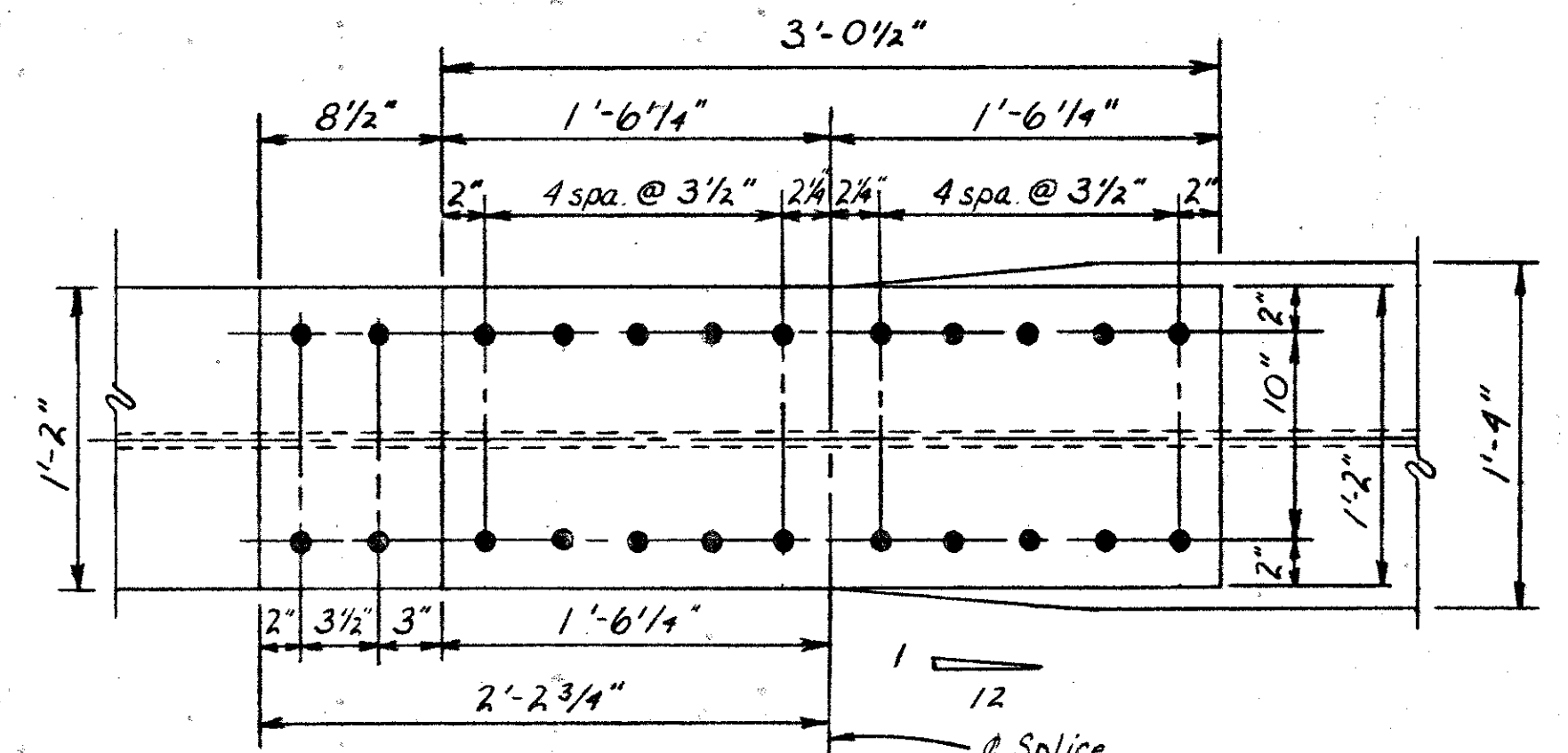
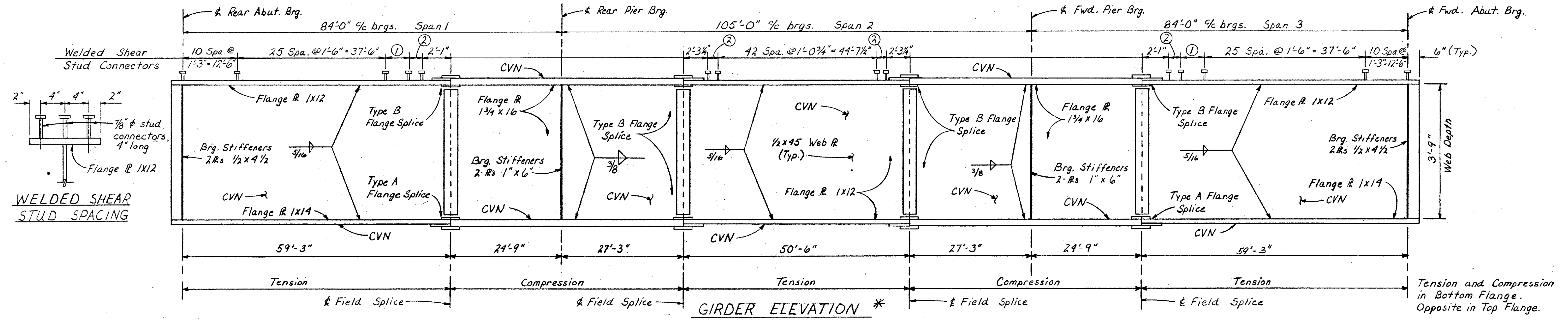
11/15

SUPERSTRUCTURE DETAILS

BRIDGE NO. TUS-800-3347
OVER SANDY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11-17-84	

- ① - 13 Spa. @ 6" = 6'-6"
- ② - 2 Spa. @ 4" = 8"



NOTES

* Intermediate stiffeners are not shown. See Steel Framing Plan for location.

Where a shape or plate is designated (CVN) the material shall meet specified minimum notch toughness requirements as specified in 711.01 of CMS.

WELDED ATTACHMENT of supports for concrete deck finishing machine may be made to areas of the fascia stringer flanges designated "Compression". Attachments shall not be made to areas designated "Tension". Fillet welds to compression flanges shall be not closer than 1" from the edge of the flange, be not more than 2" long, and be not smaller than the minimum size required by AASHTO.

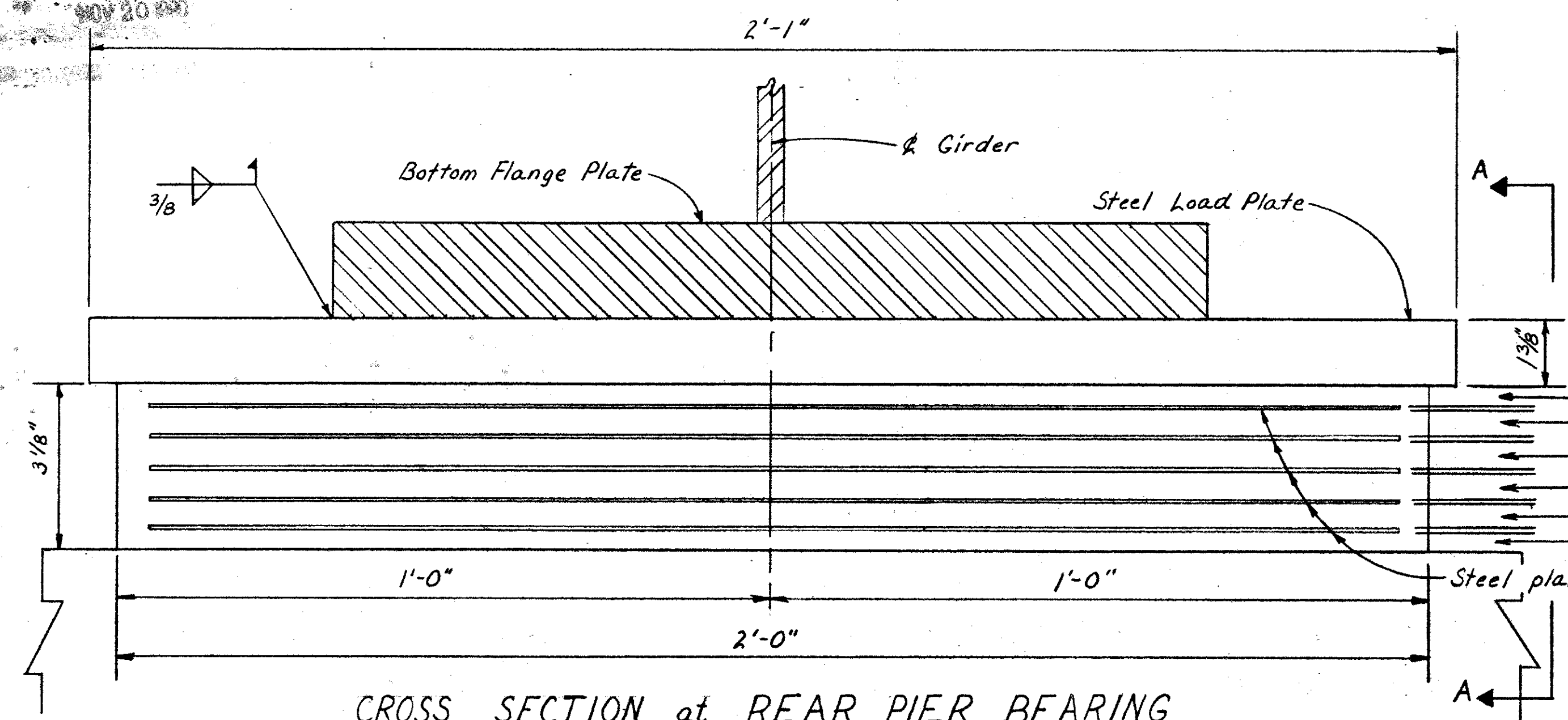
A588 Steel is to be left unpainted. See CMS 513.221 for cleaning requirements.

ADDITIONAL NOTES: See Plan Sheet 7115.

High strength bolts shall be 1" A325, Type 3, unless otherwise noted.

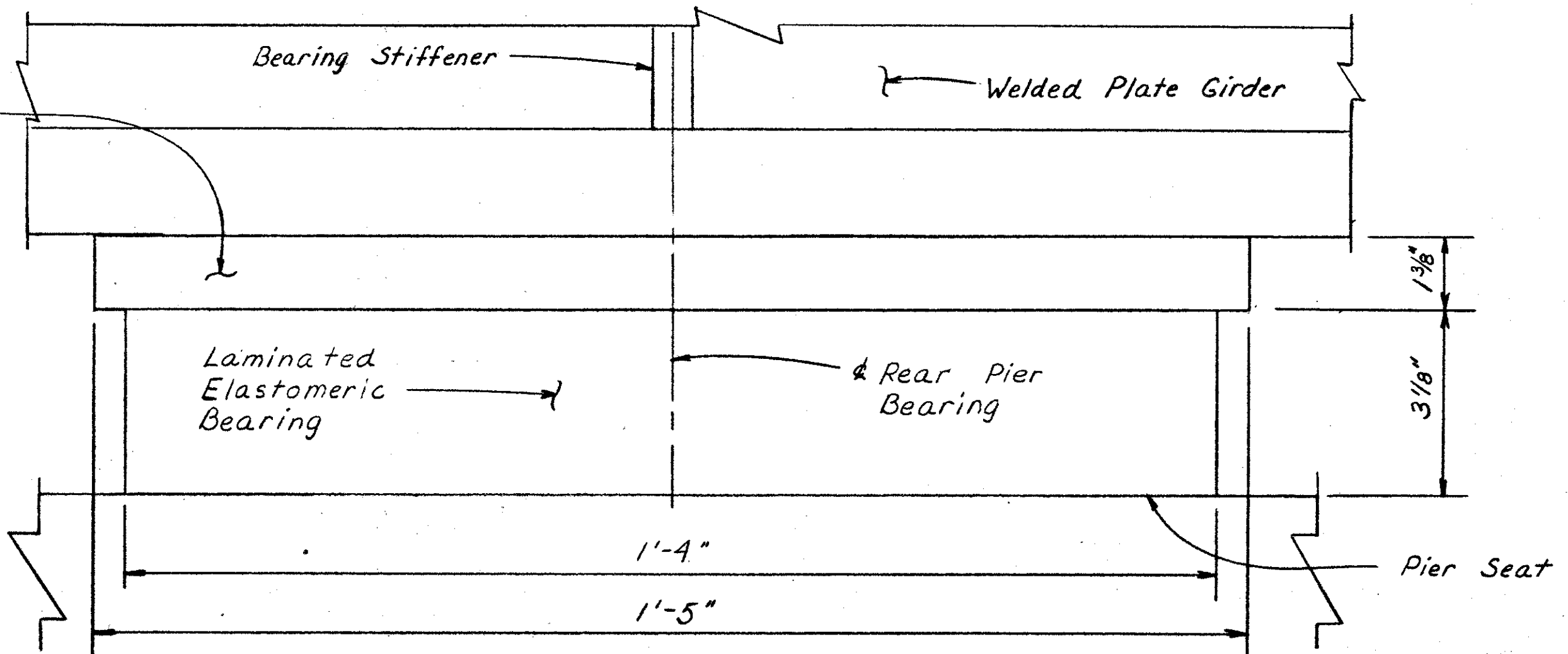
See sheet 7415 for details of intermediate stiffeners and bearing stiffeners to which crossframes will be attached.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN		12/15
SUPERSTRUCTURE DETAILS		
BRIDGE NO. TUS-800-3347 OVER SANDY CREEK		
DESIGNED	DRAWN	TRACED
BRA	BRA	CAD
CHECKED	REVIEWED	DATE
ULH	ULH	11-14-84
REVIS	REVIS	REVIS



CROSS SECTION at REAR PIER BEARING

Steel load plate shall be ASTM-A588 and shall be vulcanized to the bearing under heat and pressure.

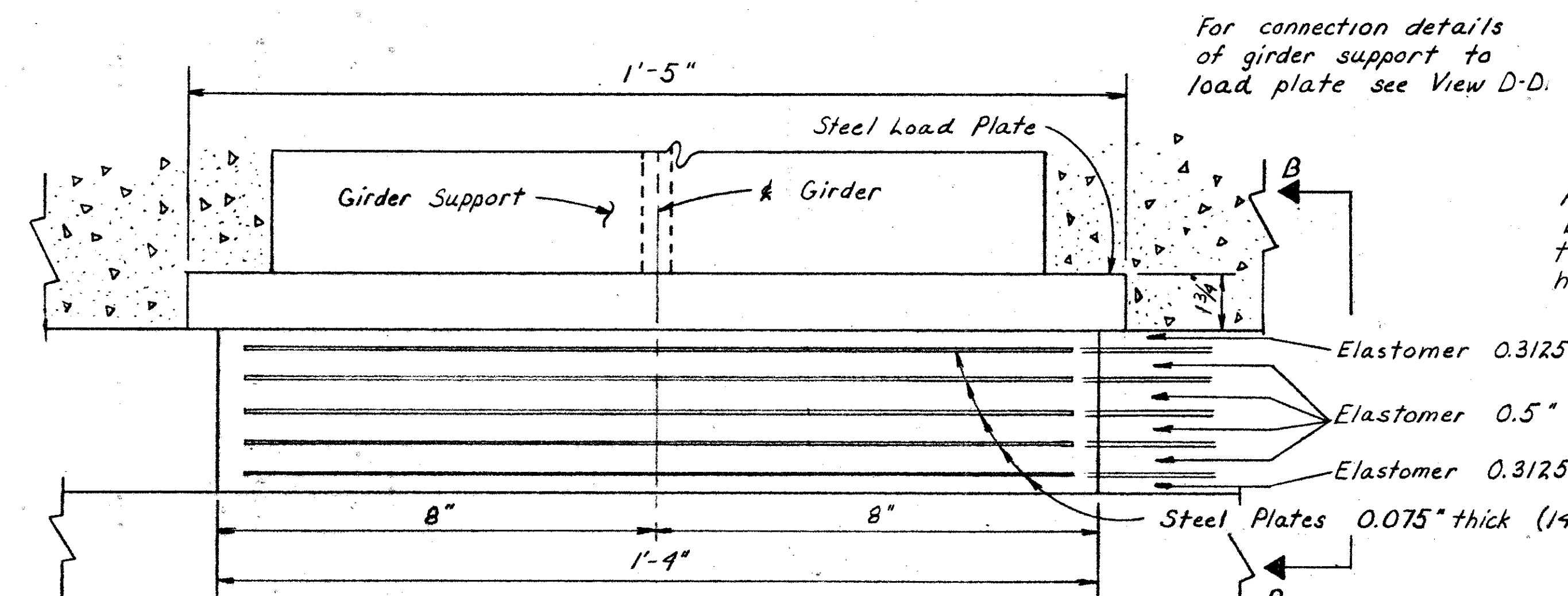


VIEW A-A

Neoprene hardness for all bearings shall be 50 durometer.

WELDING shall be controlled so that the plate temperature at the elastomer bonded surface does not exceed 300°F as determined by use of pyrometric sticks or other temperature monitoring devices.

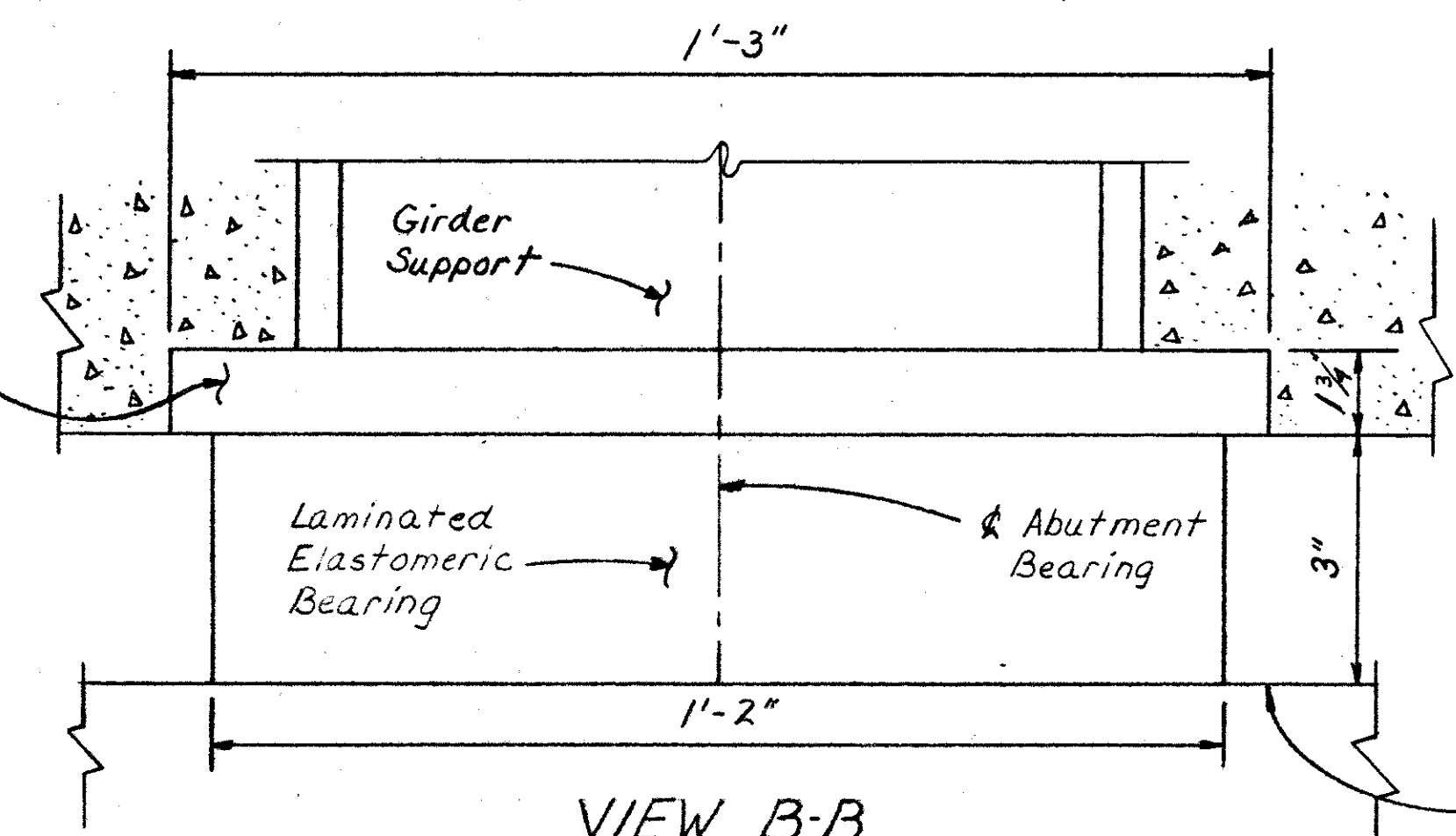
For details of the Forward Pier Bearing see Plan Sheet 14/15.



CROSS SECTION at ABUTMENT BEARING

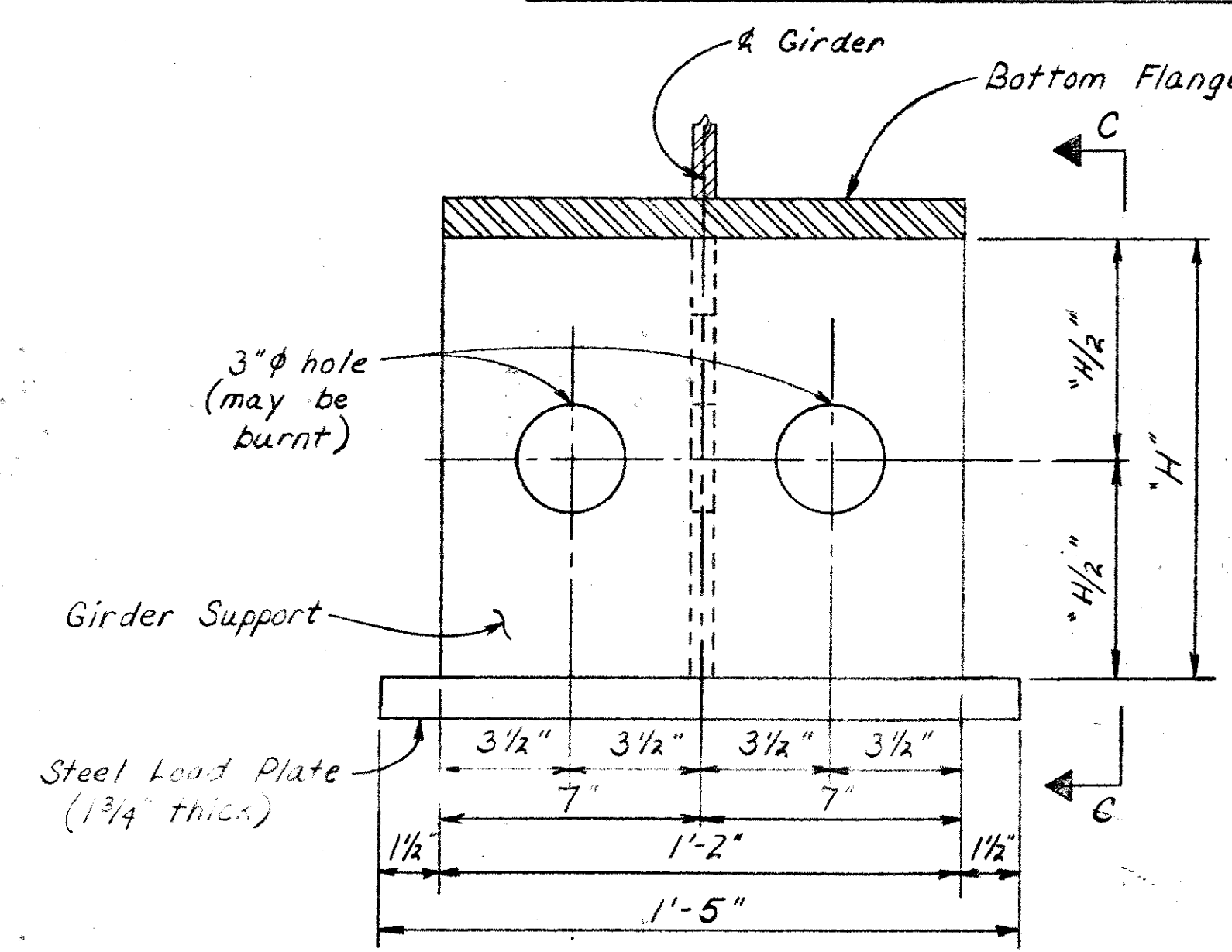
For connection details of girder support to load plate see View D-D.

Steel load plate shall be ASTM-A588 and shall be vulcanized to the bearing under heat and pressure.



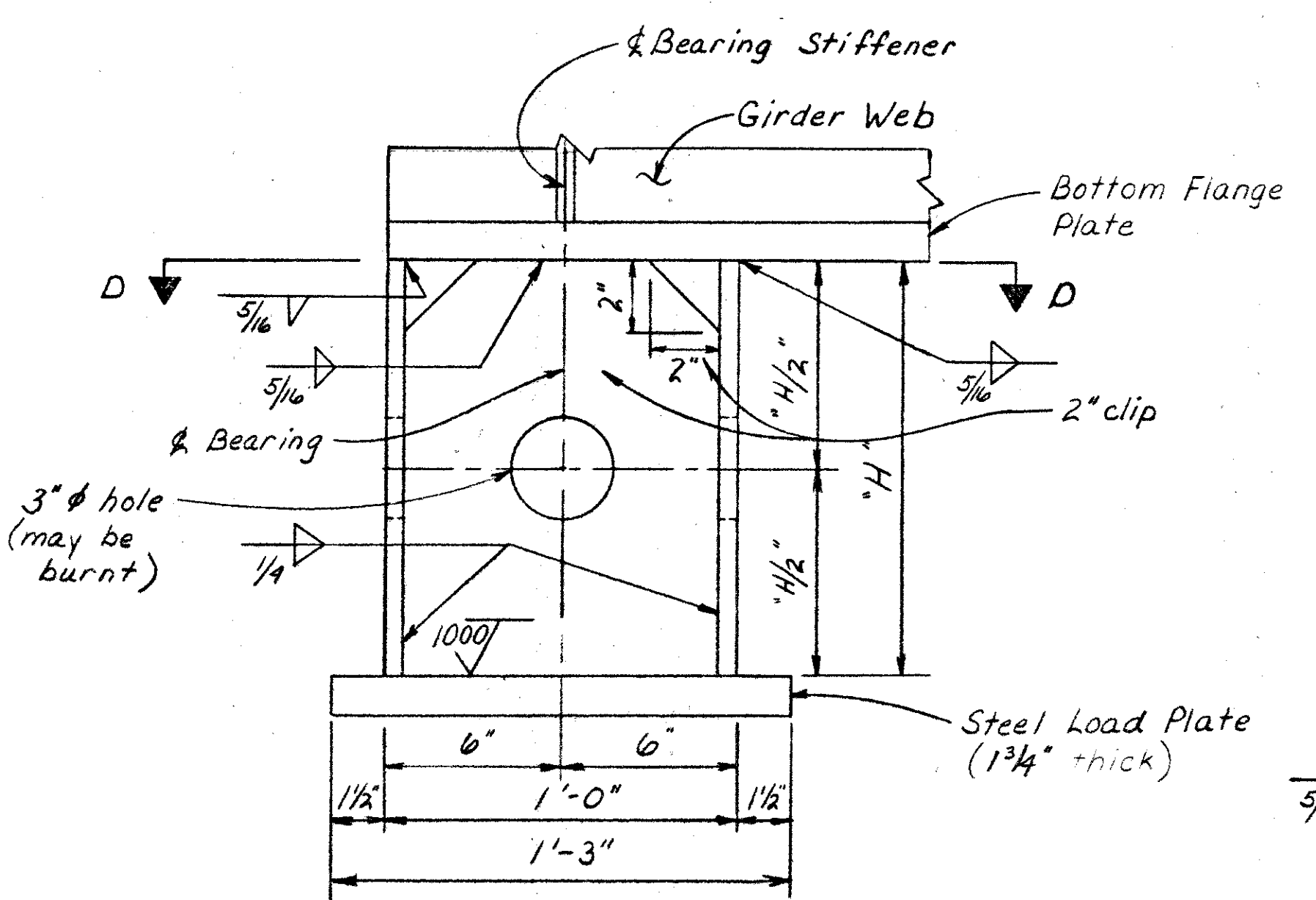
VIEW B-B

Abutment Seat

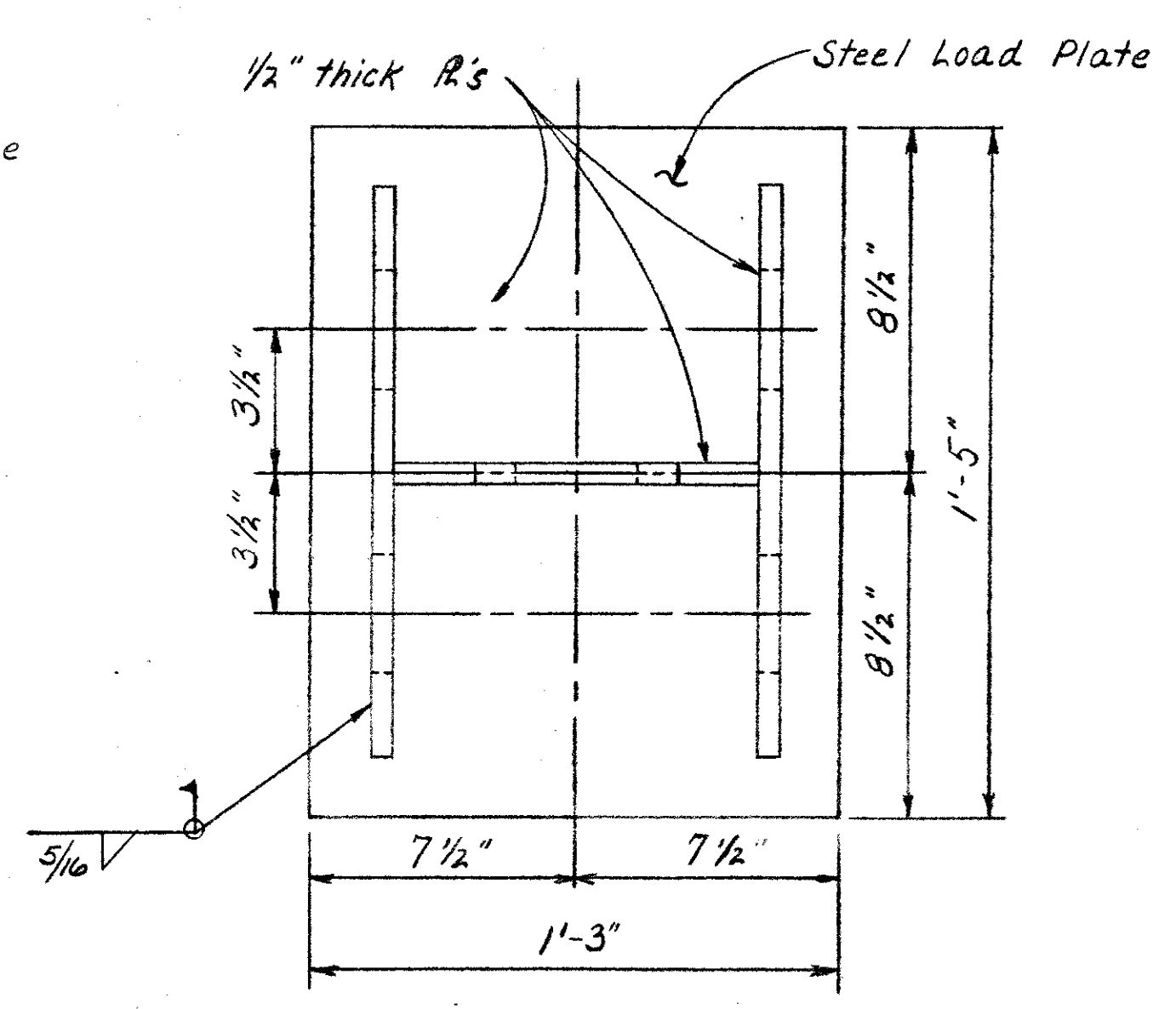


CROSS SECTION of GIRDER SUPPORT

DIMENSION "H"	
REAR ABUTMENT	
GIRDER	VALUE
1	11 1/16"
2	1'-0 5/16"
3	1'-0 9/16"
4	11 1/16"
FORWARD ABUTMENT	
GIRDER	VALUE
1	11 1/16"
2	1'-0 5/16"
3	1'-0 9/16"
4	11 1/16"



VIEW C-C

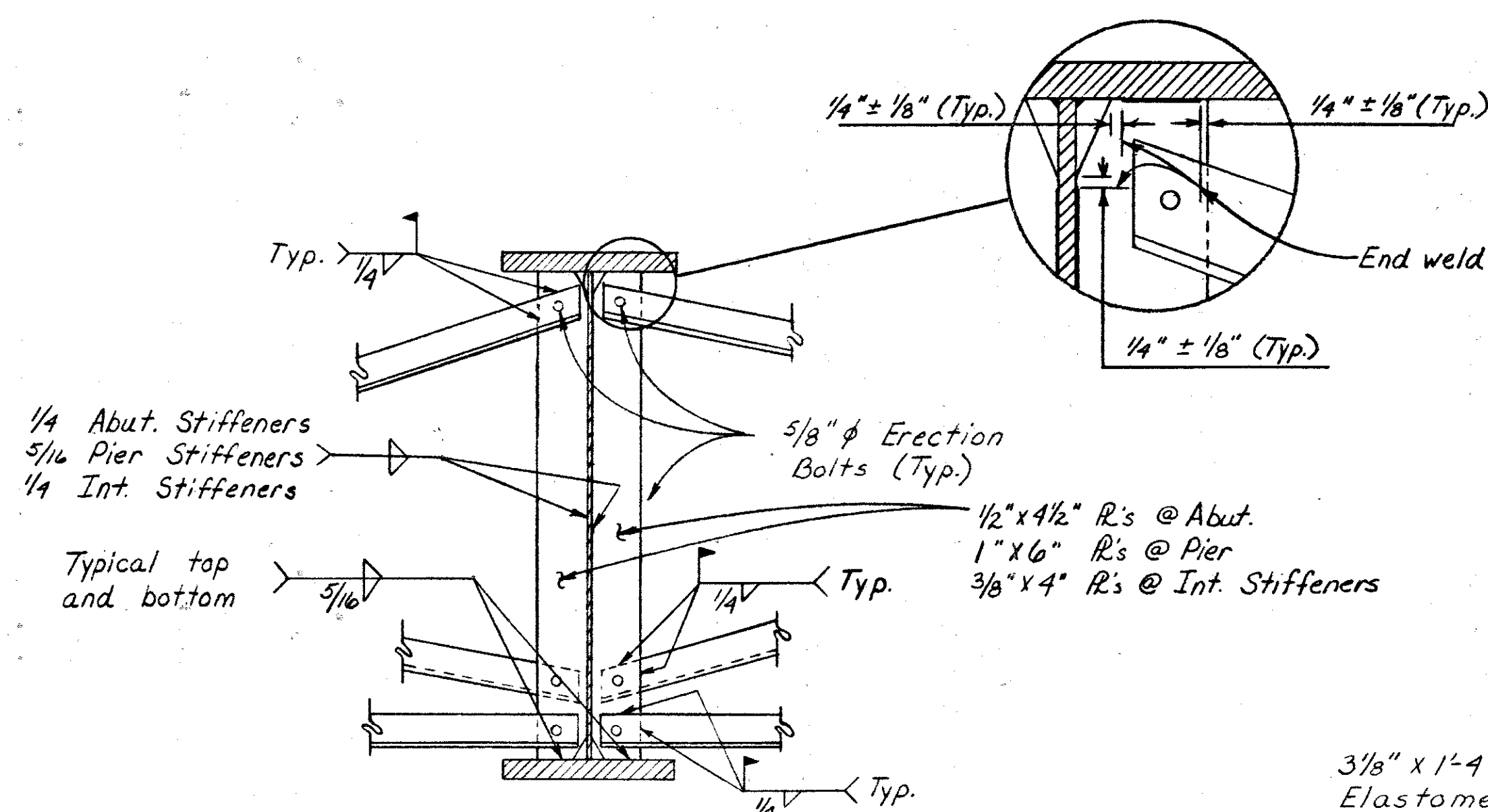


VIEW D-D

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						13/15
SUPERSTRUCTURE DETAILS						
BRIDGE NO. TUS-800-33.97 OVER SANDY CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11-14-84	

SCREED ELEVATIONS			
Station	Elevation	Station	Elevation
118+33.50	953.86	119+95.00	954.69
118+45.00	953.95	120+20.00	954.79
118+70.00	954.09	120+45.00	954.94
118+95.00	954.19	120+70.00	955.09
119+20.00	954.29	120+95.00	955.20
119+45.00	954.44	121+06.50	955.22
119+70.00	954.59		

Screed elevations are given at the top of the portland cement concrete at the edges of the deck. These elevations are required before the concrete is placed. Proper allowance has been made for the dead load deflection caused by the weight of the concrete. Screed elevations for the left and right edges of the deck are the same for any one given station.



CROSSFRAME CONNECTION AT STIFFENERS*

For details of crossframe unit refer to sheet 10115.

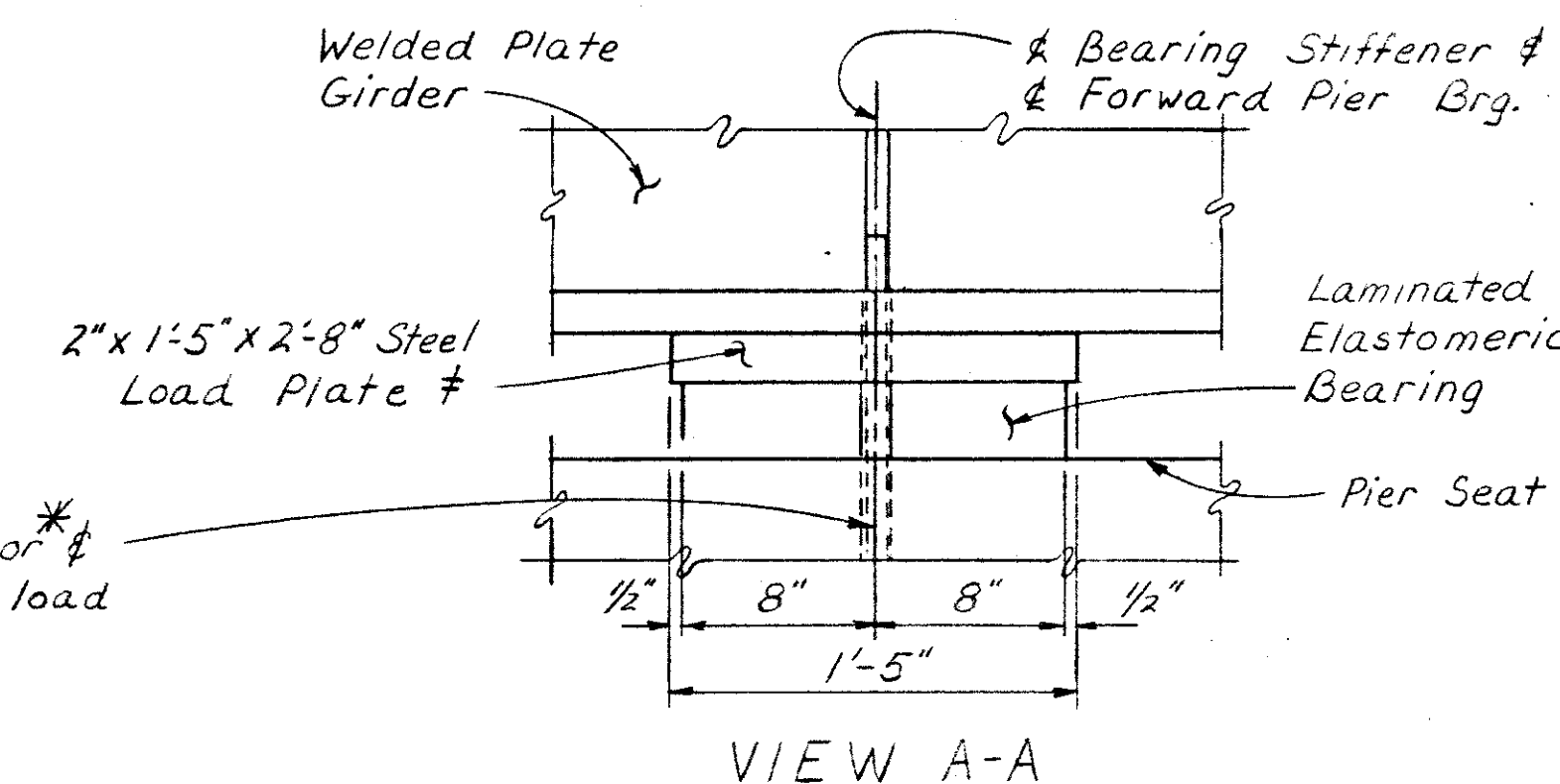
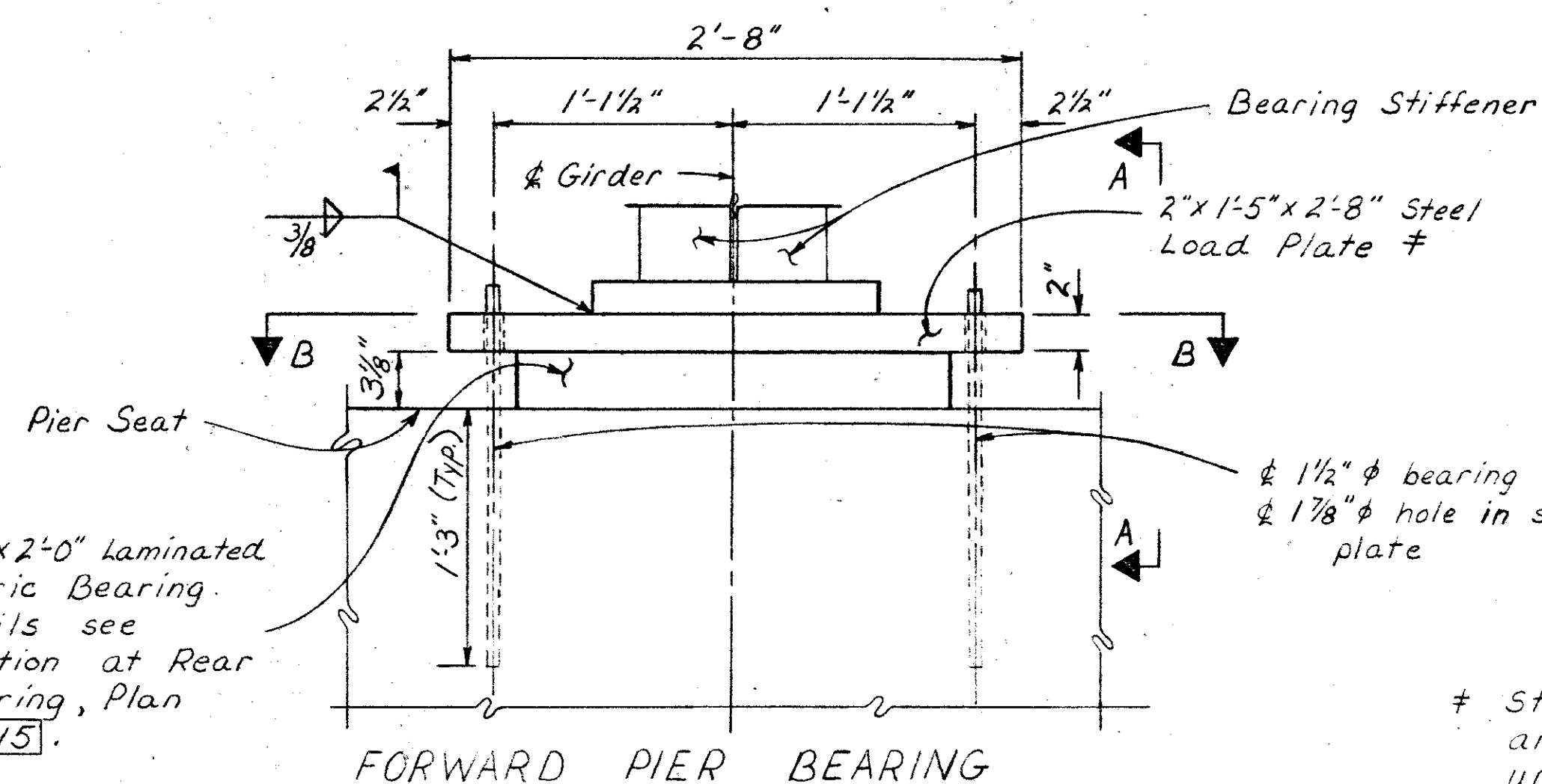
ERECTION BOLTS: Hole diameter in the crossframes and girder stiffeners shall be respectively 1/16" and 1/4" larger than the diameter of the erection bolts. Unless replaced by permanent high strength bolts, erection bolts shall remain in place. Lock washers shall be furnished for other than fully torqued high strength erection bolts. Bolts shall be furnished as part of 513.

In lieu of erection bolts and at the option of the Contractor, alternative means of temporary bracing may be used subject to the approval of the Director (501.06).

Bolts used for permanent connection between the crossframes and girder stiffeners shall be 5/8" diameter high strength bolts ASTM A325, Type 3.

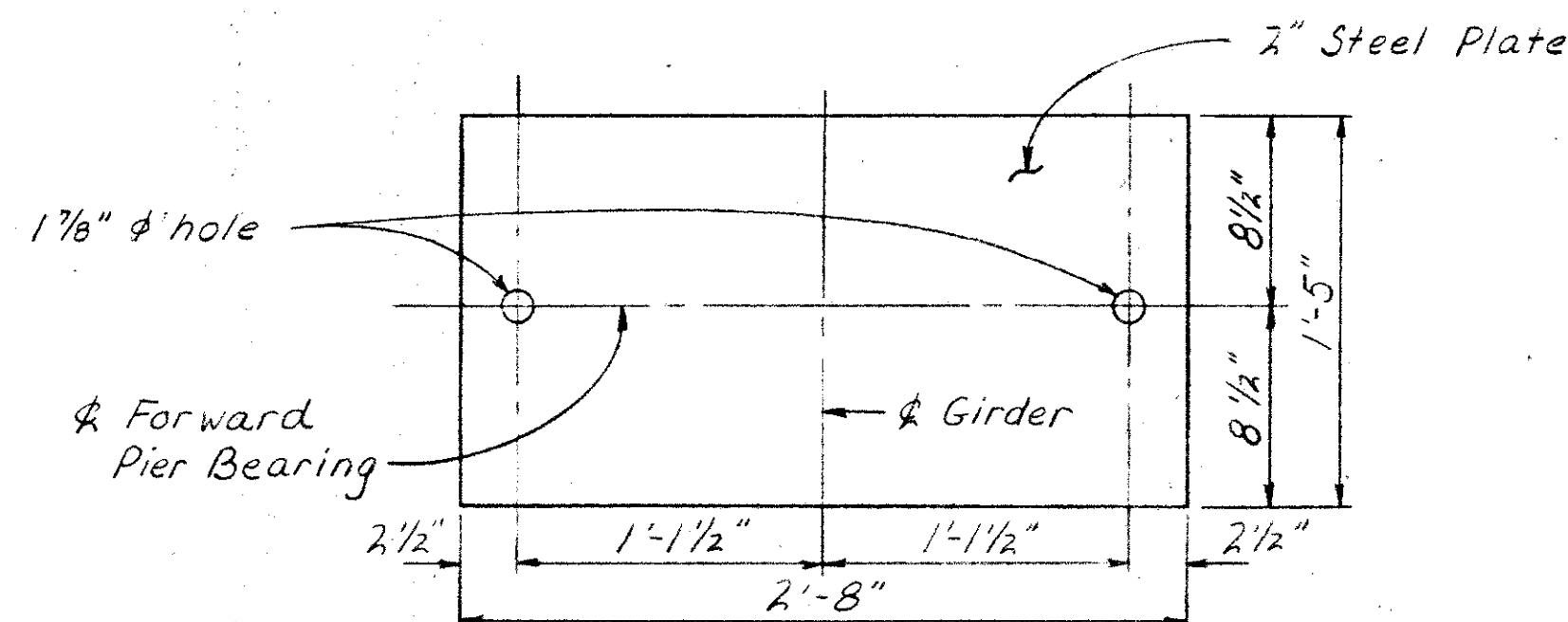
Neoprene hardness for all bearings shall be 50 Durometer.

WELDING shall be controlled so that the plate temperature at the elastomer bonded surface does not exceed 300°F as determined by use of pyrometric sticks or other temperature monitoring devices.



* Steel load plates shall be ASTM-A588 and shall be vulcanized to the bearing under heat and pressure.

* Bearing anchors shall be 1 1/2" φ x 1-10", ASTM-A36, dowels, and shall be galvanized in accordance with CMS 711.02. If formed holes are used the bearing anchors shall be grouted according to CMS 510. Furnishing, installing and grouting (including furnishing the grout) of the bearing anchors shall be included with Item 516, Laminated Elastomeric Bearing (3/8" x 1-4" x 2-0" elastomeric pad with 2" x 1-5" x 2-8" steel load plate), for payment.



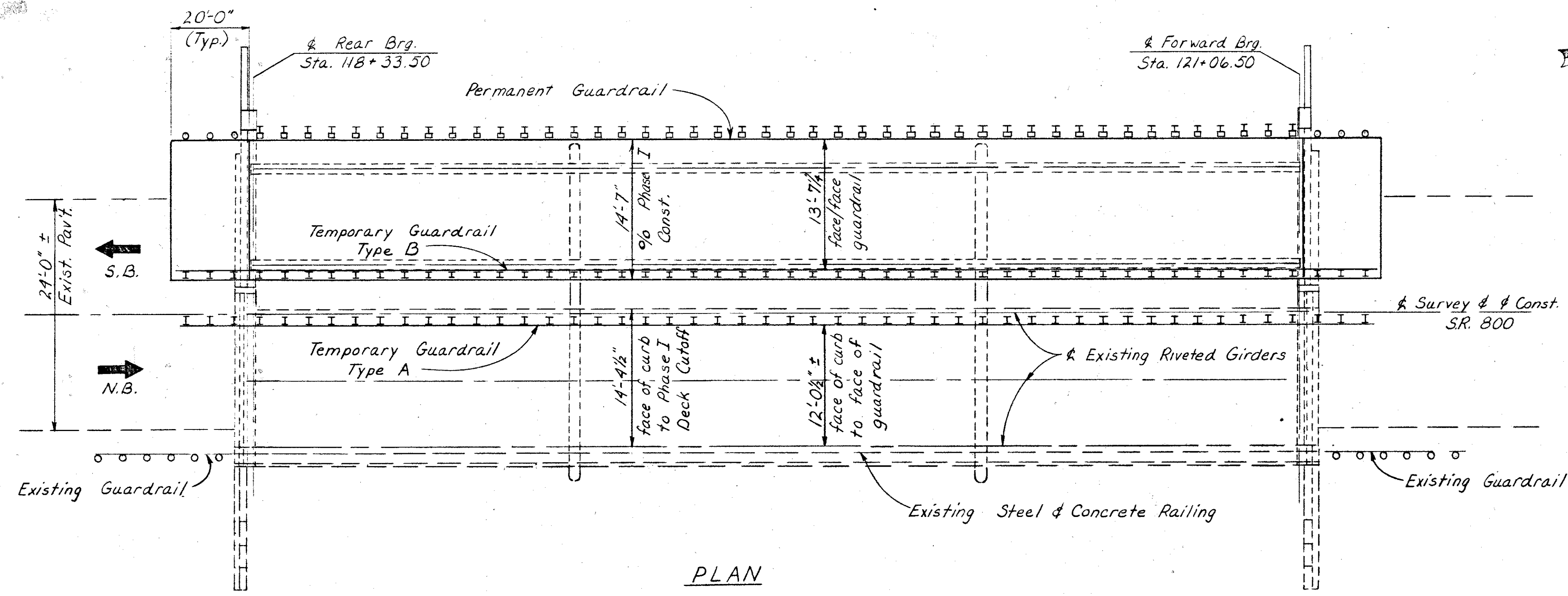
VIEW B-B
Laminated Elastomeric Bearing and Pier Seat are not shown.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						14/15
SUPERSTRUCTURE DETAILS						
BRIDGE NO. TUS-800-3347 OVER SANDY CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11-14-84	

FHWA REGION	STATE	PROJECT
5	OHIO	

24
24

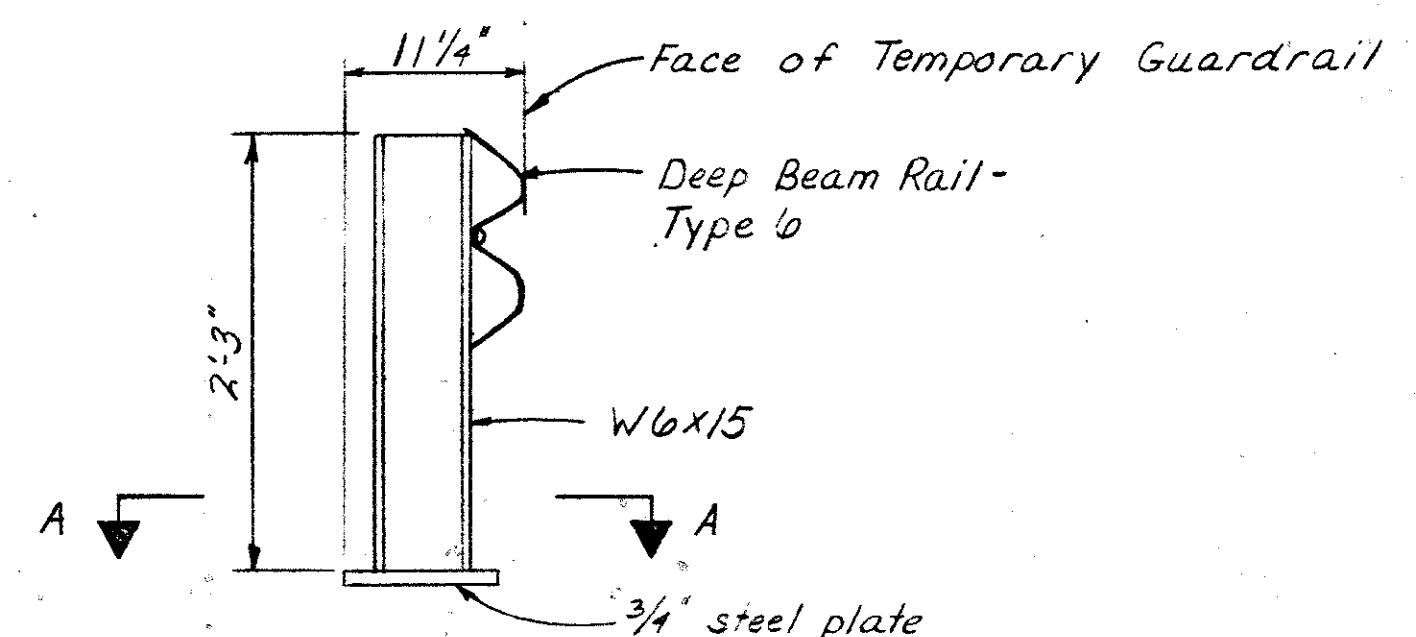
TUS-800-33.47



PLAN

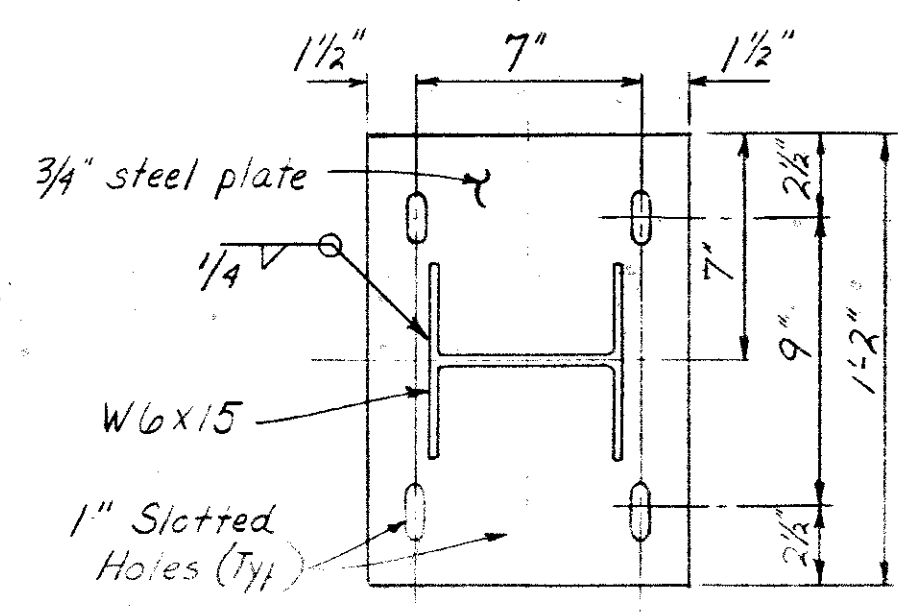
CONSTRUCTION PROCEDURE

- Initially divert all traffic to northbound lane of existing structure.
- Drill 1 1/8" φ holes, (4 per post), through existing deck and complete construction of Temporary Guardrail - Type A.
- Saw through existing deck, remove left half of deck slab, remove left 2 lines of existing girders, and complete Phase I removal of the substructure as detailed on Plan Sheets 5/15, 6/15 and 9/15.
- Complete Phase I modification of substructure as detailed on Plan Sheets 7/15 and 9/15, erect left two lines of girders and complete construction of southbound portions of the deck slab and the approach slabs.
- While maintaining traffic barrier for northbound lane with Temporary Guardrail - Type A, mount permanent guardrail on left side of new slab and mount Temporary Guardrail - Type B on right side of new slab.
- Divert all traffic to completed southbound lane.
- Remove remaining portion of the existing deck slab, remove the remaining 3 lines of existing girders and complete Phase II removal of the substructure as detailed on Plan Sheets 5/15, 6/15 and 9/15.
- Complete Phase II modification of the substructure as detailed on Plan Sheets 7/15 and 9/15, erect remaining 2 lines of girders, complete construction of northbound portion of deck slab and approach slabs, and complete all remaining items of construction in accordance with Superstructure Erection Notes shown on Plan Sheet 10/15.

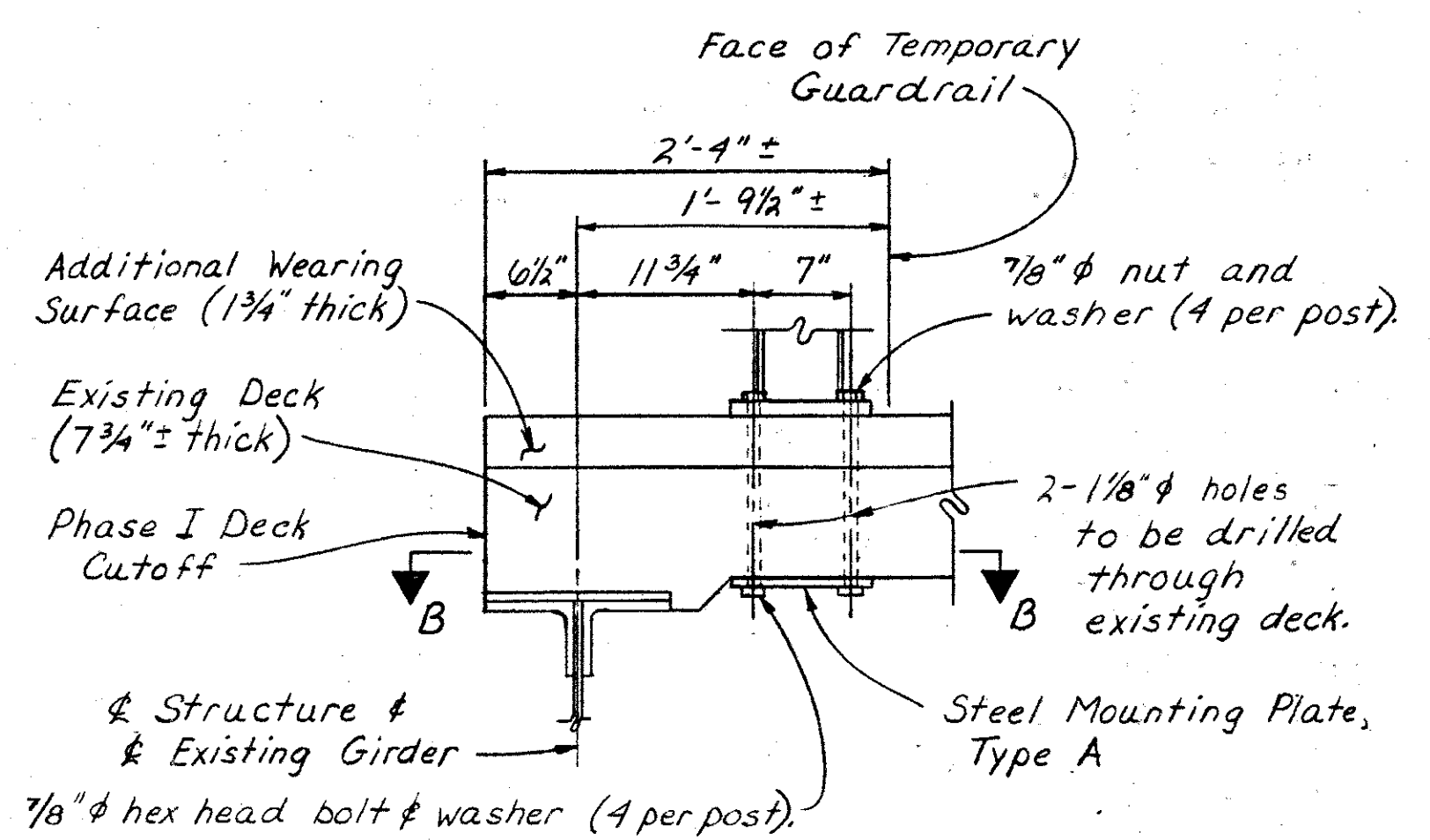


TEMPORARY GUARDRAIL UNIT

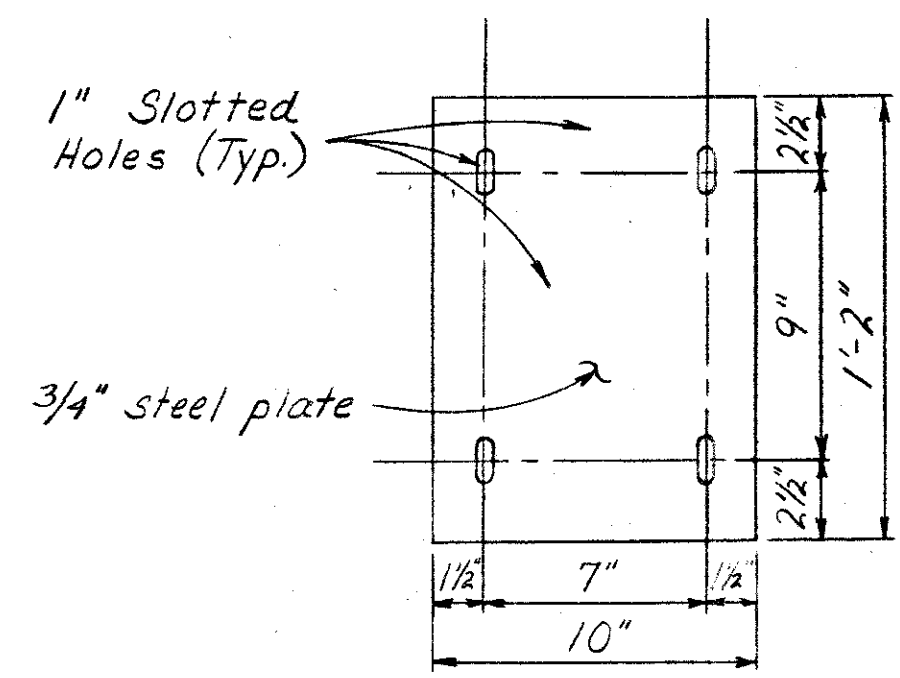
Temporary Guardrail, Type A and Type B shall use the same Temporary Guardrail Unit. Only mounting details differ for Type A and Type B and are detailed at right.



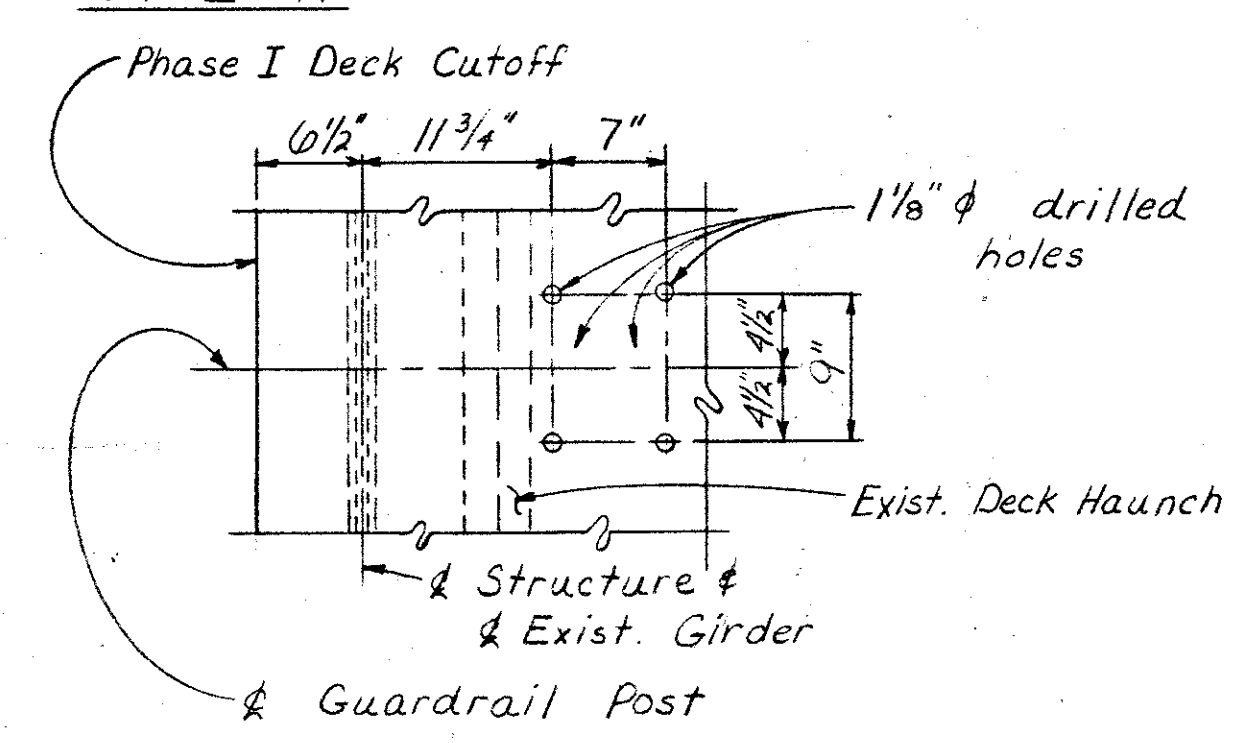
SECTION A-A



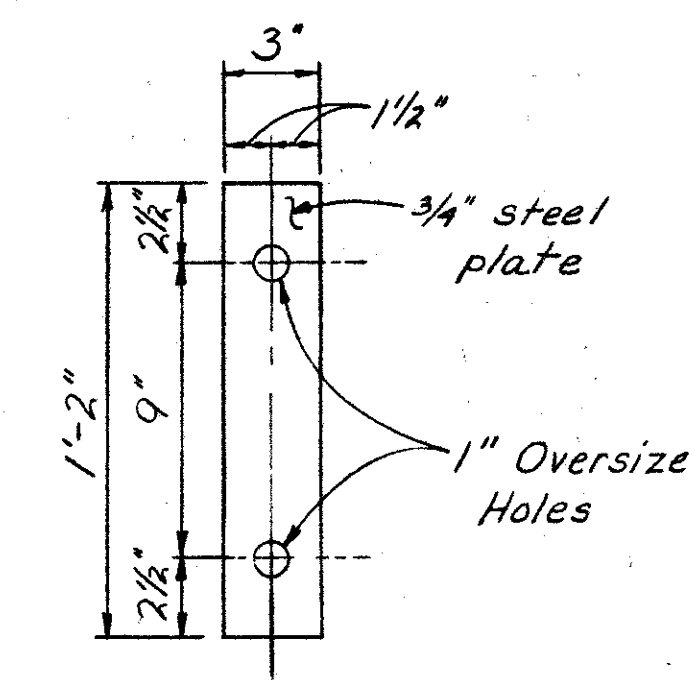
TEMPORARY GUARDRAIL TYPE A



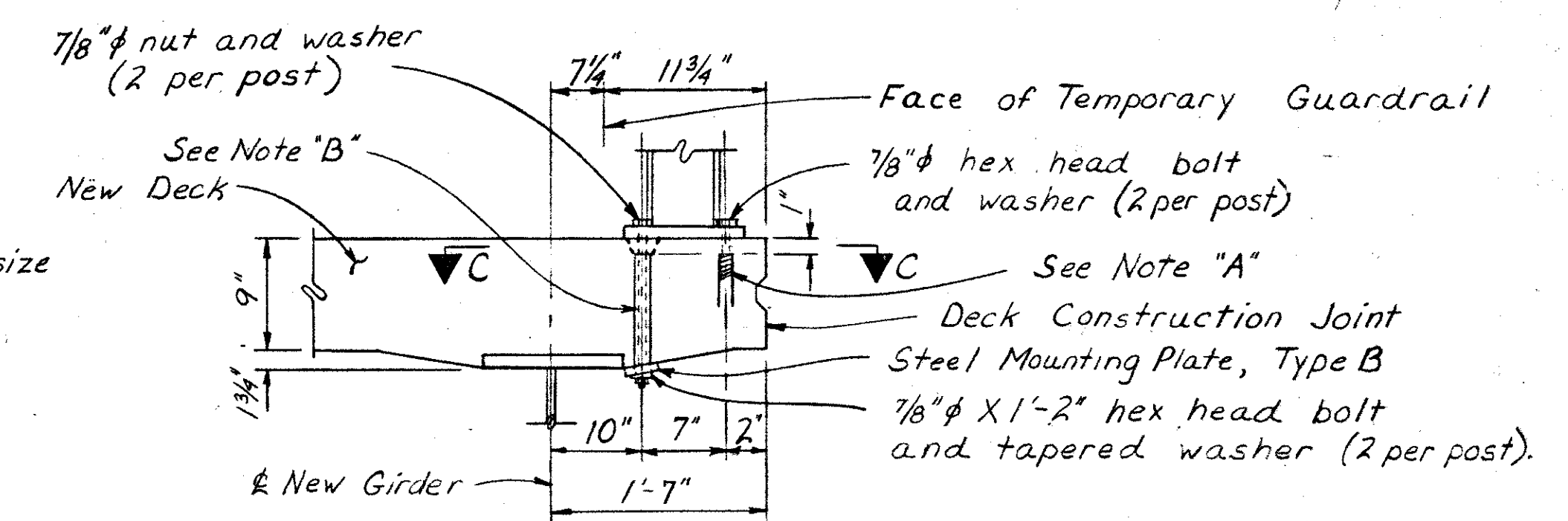
STEEL MOUNTING PLATE - TYPE A



SECTION B-B



STEEL MOUNTING PLATE - TYPE B

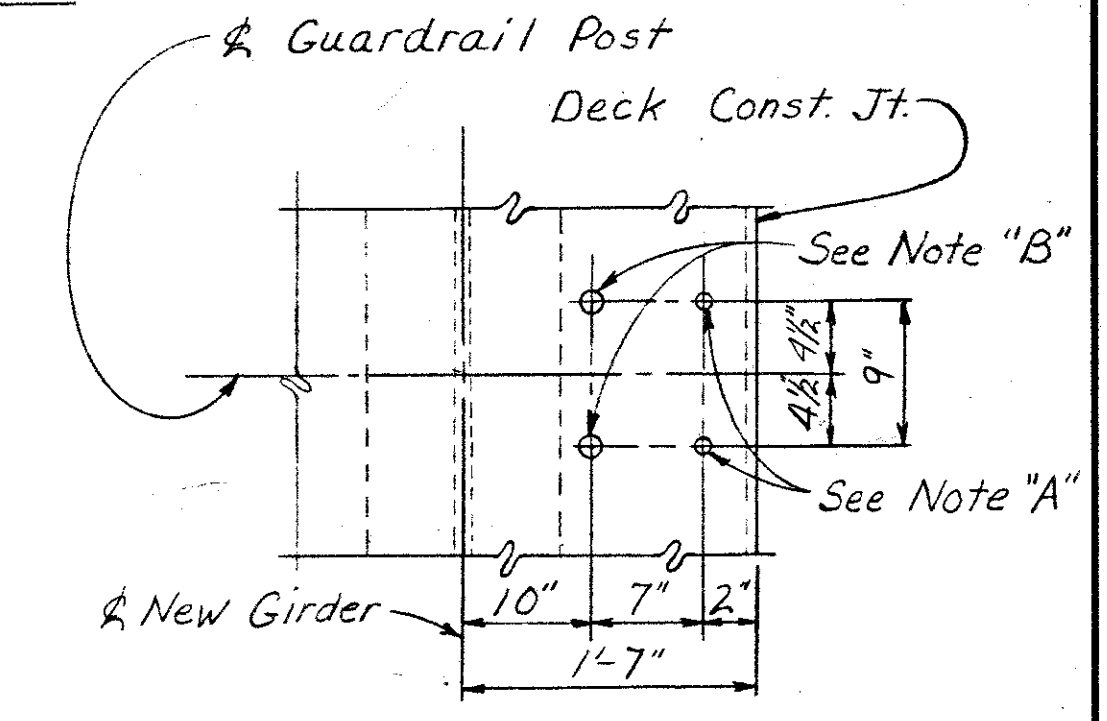


TEMPORARY GUARDRAIL TYPE B

NOTES:

- Note "A": Provide 7/8" I.D. coil anchor, with a minimum coil depth of 2 1/2". The anchors shall be installed a minimum of 1" clear of the finished grade. After removal of temporary guardrail all holes are to be filled with a non-shrinking epoxy grout as furnished by POLY-CARB or an approved equal.
- Note "B": Provide 1 1/8" φ sleeve, 9 3/4" long. The sleeves shall be installed a minimum of 1" clear of the finished grade. The sleeves shall be trimmed to meet the slope of the forms and shall be installed in a vertical direction. After removal of temporary guardrail all holes are to be filled with a non-shrinking epoxy grout as furnished by POLY-CARB or an approved equal.

For description of materials to be used and method of payment refer to ITEM SPECIAL-RAILING, TEMPORARY, AS PER PLAN, under General Notes, Plan Sheet 3/15.



SECTION C-C

STATE OF OHIO		15/15
DEPARTMENT OF TRANSPORTATION		
BUREAU OF BRIDGES AND STRUCTURAL DESIGN		

PART-WIDTH CONSTRUCTION DETAILS

BRIDGE NO. TUS-800-3347

OVER SANDY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BRA	BRA		CAD	ULH	11/14/84	