



**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead: Rhett Franks Inspection Date: May 03, 2021**



Latitude:35.39535, Longitude:-94.43729

Route:64 Section:00 Log:0.001

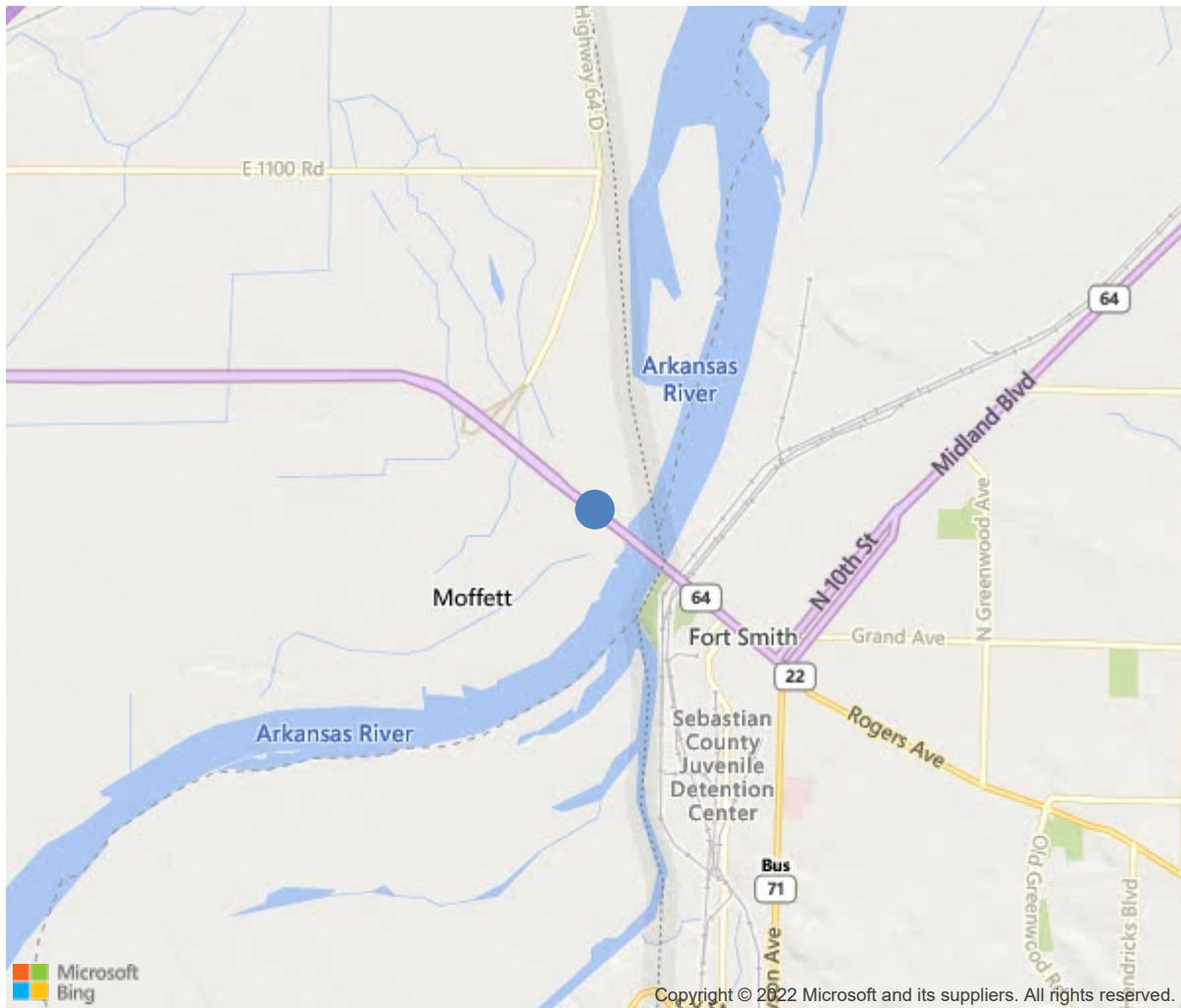
Arnold Road ID:65x64x0xA, Arnold Log mile:0

District 04, Sebastian County

Owner: 1-State Highway Agency

Place Code: 24550 - Fort Smith

AT OKLAHOMA & ARK ST LN



35.39535, -94.43729





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IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	05275
(5) Inventory Route	64
(2) Highway Agency District	04
(3) County Code	131-Sebastian County, Arkansas
(4) Place Code	24550
(6) Features Intersected	ARK RVR & ARKMO/BN RRS
(7) Facility Carried	US 64 - District 4
(9) Location	AT OKLAHOMA & ARK ST LN
(11) Mile Point	0.001 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000000064
(16) Latitude	35.39535
(17) Longitude	-94.43729
(98) Border Bridge State Code	406
(99) Border Bridge Structure No.	181470000000000
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	43
Material	4-Steel continuous
Type	3-Girder and floorbeam system
(44) Approach Structure Type	33
Material	3-Steel
Type	3-Girder and floorbeam system
(45) No. of Spans in Main Unit	3
(46) No. of Approach Spans	17
(107) Deck Structure Type	1-Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1-Monolithic Concrete (concurrently placed
Type of Membrane	0-None
Type of Deck Protection	0-None
AGE AND SERVICE	
(27) Year Built	1973
(106) Year Reconstructed	0
(42) Type of Service	18
On	1-Highway
Under	8-Highway-waterway-railroad
(28) Lane	
On	4
Under	2
(29) Average Daily Traffic	25000
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	5 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	340 ft
(49) Structure Length	3087 ft
(50) Curb or Sidewalk Width	
Left	5 ft
Right	5 ft
(51) Bridge Roadway Width Curb to Curb	59.7 ft
(52) Deck Width Out to Out	75.5 ft
(32) Approach Roadway Width (W/Shoulders)	84 ft
(33) Bridge Median	3-Closed median with no
(34) Skew	0 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	30.8 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	22.33 ft
Ref:	
(55) Min Lat Underclear RT	8 ft
Ref:	
(56) Min Lat Underclear LT	64.3 ft
NAVIGATION DATA	
(38) Navigation Control	1-Navigation control on waterway
(111) Pier Protection	2-In place and functioning
(39) Navigation Vertical Clearance	52.8 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	250 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	1
(26) Functional Class	14-Urban Other Principal Arterial
(100) Defense Highway	0-The inventory route is not a S
(101) Parallel Structure	N-No parallel structure exists.
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0-N/A
(110) Designated National Network	1-The inventory route is part of the
(20) Toll	3-On free road. The structure is toll-
(21) Maintain	1-State Highway Agency
(22) Owner	1-State Highway Agency
(37) Historical Significance	5-Bridge is not eligible for the NRHP
CONDITION	
(58) Deck	6
(59) Superstructure	5
(60) Substructure	7
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5-MS 18 / HS 20
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1-Load Factor(LF)
Rating	41
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	3
Rating	25
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	5
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	5
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	7
(36A) Bridge Railings	0-Inspected feature does not meet cur
(36B) Transitions	0-Inspected feature does not meet cur
(36C) Approach Guardrail	0-Inspected feature does not meet cur
(36D) Approach Guardrail Ends	0-Inspected feature does not meet cur
(113) Scour Critical Bridges	5-Bridge foundations determined to be
PROPOSED IMPROVEMENTS	
(75) Type of Work	
(76) Length of Structure Improvement	0 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 0
(96) Total Project Cost	\$ 0
(97) Year of Improvement Cost Estimate	
(114) Future ADT	32947
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			05/2020
(91) Frequency			24 Months
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	Yes	24	05/2021
B: Underwater Inspection	Yes	0	10/2018
C: Other Special Inspection	No	0	

\* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	233069	147971	41473	43625	0
1080	Delamination/Spall/Patched Area	SF	3953	0	3910	43	0
1120	Efflorescence/Rust Staining	SF	611	0	602	9	0
1130	Cracking (RC and Other)	SF	38784	0	36000	2784	0
(12)							
05/3/2021 RWF & APW Area maintenance yard placed temporary asphalt paths in the potholes during this fracture critical inspection. No large potholes were visible at the end of this inspection.							
01/16/2020 - MFF & JRT							
-Generally observation of apparent vehicle fire on top of driving surface. No apparent delaminations or spalls at this inspection.							
05/03/2018 - RWF & APW - All lanes have transverse and diagonal cracking at 1' centers. Westbound has been sealed Eastbound has not been finished. The driving surface has large repaired areas the appear to be delaminating at this inspection. Numerous areas of potholes, delaminating in the gutter lines and temporary asphalt patches. All lanes have light/medium wear in the wheel paths with isolated areas of exposed aggregate. The undersurface and overhangs have cracking with efflorescence at 2' to 4' foot centers. Typical. The deck drains are completely filled and compacted with dirt and debris.							
The Westbound and Eastbound deck has many Spalls filled with asphalt. (approx. 245 sf.), concrete patches (approx. 723 sf.), and open Spalls in the travel lanes (approx. 19 sf.) Photos linked							
Also, both East and Westbound lanes have numerous transverse cracks at 1foot centers throughout the deck surface. (Average crack width is 0.035"). Photos linked.							
The deck drains are full of dirt and debris. The gutter lines are full of dirt and debris.							
107	Steel Open Girder/Beam	LF	14616	13327	1255	32	2
1000	Corrosion	LF	354	0	348	6	0
515	Steel Protective Coating	SF	307724	50000	43615	151353	62756
3410	Chalking (Steel Protective Coatings)	SF	140921	0	0	140921	0
3420	Peeling/Bubbling/Cracking	SF	62756	0	0	0	62756
3440	Effectiveness (Steel Protective Coatings)	SF	1883	0	1883	0	0
(107)							
05/3/2021- RWF & APW - The plate girders have measurable section loss at the open expansion assembly joints to the web and bottom flanges. Ends of girders have section loss in lower web and bottom flange up to 3/16" at the pin and hanger assemblies. Field splice and lateral bracing have active corrosion with pack rust and loose bolts at scattered locations. Paint system has freckled rust covering throughout the stringers/girders. Visual hands on method of inspection, no apparent visible cracks.							
05/11/2020- RWF & APW - End of girders have section loss in lower web and bottom flange up to 3/16" at the pin and hanger assemblies. HBM maintenance forces have cleaned and painted end of girders at joints 4A, 8A and 15A since last inspection. Field splice and lateral bracing have loose bolts at scattered locations. Paint system has freckled rust covering all girders. Visual hands on method of inspection, no apparent visible cracks.The plate girders have measurable section loss at the open expansion assembly joints to the web and bottom flanges. The paint system is failing with flaking paint and freckled rust in a large percentage of the steel surface. The rest of the paint has dulled and is chalky. Previous notes still apply.							
5/16/2019 - MFF & JRT							
-The primer is showing along all the girders throughout the structure (Typical at all locations).							



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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>-The hangers and parts of the girders adjacent to Bent #4 have been painted (no apparent visible rust at this inspection).</p> <p>-Span 3 &amp; 4 (Girder 1) top flange has active corrosion from the leaching through the deck.</p> <p>-Bent 4 (Girder 2) has old section loss scars that are still present (maintenance forces have cleaned and painted this area).</p> <p>-Span 10 (Girders 3 &amp; 4) paint system is failing with light rust showing (typical throughout the structure).</p> <p>-The exterior girders have a failing paint system that is dull, chalky, and has lost its primer along with light rust showing throughout the structure.</p> <p>-Span 9 (Girder 3 – 2nd splice plate – AHD of Bent 9) has active corrosion (Typical with all the splice plate connections throughout the structure).</p> <p>-Span 10 (Girder 4 – AHD of Bent 10) has approximately ¼" pack rust with out-of-plane bending to the 1st splice plate.</p> <p>-Span 11 Girder 1 Active corrosion to top flange this is typical at all drain locations.</p> <p>-Joint 11 (Girder 2) has active corrosion with light flaking rust to the bottom flange and floor-beam connections.</p> <p>-Span 12 (Girder 2 – 1st splice plate – AHD of Bent 12) has one missing bolt.</p>							
113	Steel Stringer	LF	10080	1338	8715	27	0
1000	Corrosion	LF	8742	0	8715	27	0
515	Steel Protective Coating	SF	12237	0	12217	20	0
3440	Effectiveness (Steel Protective Coatings)	SF	12237	0	12217	20	0
(113)							
5/3/2021 - RWF & APW - Stringers have isolated areas of active corrosion and heavy corrosion to ends of stringers at the open joints and a failing paint system on the ends and scattered throughout.							
05/11/2020- RWF & APW - Stringers have isolated areas of active corrosion and heavy corrosion to ends of stringers at the open joints and a failing paint system.							
05/16/2019 - MFF & JRT							
-Span 9 (3rd Stringer) has one loose bolt.							
-The stringers have a failing paint system with active corrosion to the top flanges (Typical at various locations throughout the structure).							
05/03/2018 - RWF & APW - Stringers have large areas of active corrosion and are covered with freckled rust.							
Fix paint for 8' at pin connections							
Freckled rust has initiated in most areas. The end of stringers at the open joints are heavily corroded.							
152	Steel Floor Beam	LF	5940	4545	1250	145	0
1000	Corrosion	LF	1395	0	1250	145	0
515	Steel Protective Coating	SF	56052	2379	48003	5605	65

**Team Lead:** Rhett Franks, **Inspection Date:** May 03, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
3410	Chalking (Steel Protective Coatings)	SF	53598	0	47928	5605	65
3440	Effectiveness (Steel Protective Coatings)	SF	75	0	75	0	0
(152)							
05/3/2021 - RWF & APW - Floor beams at joints 4A, 8A, 11A and 15A have section loss up to 1/4" in lower web, bottom flange and vertical stiffeners. Floor beams have loose connections in Span 11 and 14. Span 11, First Floor Beam back of Pin and Hanger: Active corrosion with holes rusted through. Span 11 Girder 2 1/4" section loss to web, bottom flange, Span 11, Girder 3, Floor Beam Flange: Up to 5/16" section loss. Paint system has failing paint throughout entire structure. Visual hands on method of inspection, no apparent visible cracks at this inspection.							
05/11/2020 - RWF & APW - Floor beams at joints 4A, 8A, 11A and 15A have section loss up to 1/4" in lower web, bottom flange and vertical stiffeners. Floor beams have loose connections in Span 11 and 14. Paint system has freckle rust bleeding through entire structure. Visual hands on method of inspection, no apparent visible cracks.							
05/16/2019 - MFF & JRT							
-Span 1 (Floor-beam #5) has failing paint system (Typical at all locations).							
-Span 8 (3rd Floor-beam ADH of bent 7) has old section loss scars that has been painted over by maintenance forces with additional corrosion and section loss to the bottom flange of the floor-beam (approximately 1/8" section loss total).							
-Joint 11 (Girder 3 wind-lock) has approximately 1" of pack rust accumulation between the bottom flange of girder 3 and the wind-lock.							
-Joint 11 (Girder 3) floor-beam has approximately 1/2" pack rust to the web girder juncture along with a 4" hole that has rusted through the web at this location.							
-Joint 11 (Girder 3) floor-beam has active corrosion and holes rusted through the web. The bottom flange has approximately 1/8" section loss.							
-Joint 11A floor-beam bottom flange between girders 3 & 4 has active corrosion along the web and bottom flange with section loss (Typical throughout this floor-beam).							
-Joint 11 a Girder 2 Active corrosion with light flaking rust to bottom flange and floor beam connection.							
05/03/2018- RWF & APW - Floor beams at joints 4A, 8A, 11A and 15A have section loss up to 1/4" in lower web, bottom flange and vertical stiffeners. Floor beams have loose connections in Span 11 and 14. Paint system has freckle rust bleeding through entire structure. New paint system since last inspection 1 floor beam each direction at joints 4A, 8A and 15A. Visual hands on method of inspection, no apparent visible cracks.							
05/10/2017- RWF & KRM - Floor beams at joints 4A,8A,11A and 15A have section loss up to 1/4" in lower web, bottom flange and vertical stiffeners. Floor beams have loose connections in Span 11 and 14. Paint system has freckle rust bleeding through entire structure. Visual hands on method of inspection, no apparent visible cracks or noteworthy changes at this inspection.							
Freckled rust has initiated in most areas. Floor Beams at open expansion assembly joints are heavily corroded.							
161	Steel Pin, Pin and Hanger Assembly	EA	24	20	3	1	0
1000	Corrosion	EA	4	0	3	1	0
515	Steel Protective Coating	SF	348	292	56	0	0
3440	Effectiveness (Steel Protective Coatings)	SF	56	0	56	0	0
(161)							
05/3/2021- RWF & APW - Pin and hanger assemblies have isolated areas active corrosion and pack rust. Joints 4A and 8A have							



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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>been cleaned and painted. No visible cracks at this inspection.</p> <p>05/16/2019 - MFF &amp; JRT</p> <p>-Joint 11 (Girder 3 wind-lock) has approximately 1" of pack rust accumulation between the bottom flange of girder 3 and the wind-lock.</p> <p>05/03/2018- RWF &amp; APW - Pin and hanger assemblies at 4A, 8A and 15A have been cleaned and painted since last inspection. Joint 11A still has active corrosion with pack rust. Typical at this joint. All pins were inspected using Olympus ultrasonic machine. Visual hands on method of inspection, no apparent visible cracks.</p> <p>05/10/2017- RWF &amp; KRM - Pin and hanger assemblies have active corrosion and pack rust. Joints 4A and 8A have been cleaned and painted since last inspection.</p> <p>Active corrosion and pack rust is prevalent to many of the pin and hanger assembly's. All pins were inspected using Olympus ultrasonic machine. The pins showed no signs of cracks or fracture.</p>							
210	Reinforced Concrete Pier Wall	LF	419	411	8	0	0
<p>(210)</p> <p>05/03/2018- RWF &amp; APW - Pier walls have numerous vertical and diagonal cracking typical, with light abrasion on the pier walls in the channel.</p>							
215	Reinforced Concrete Abutment	LF	256	195	52	9	0
1130	Cracking (RC and Other)	LF	14	0	14	0	0
<p>(215)</p> <p>05/03/2018- RWF &amp; APW - Bent 1 has settlement in the approach slabs this is impacted the bridge ends. Large repaired areas in the driving surface and vertical cracking in the breast wall and bridge seats.</p>							
220	Reinforced Concrete Pile Cap/Footing	LF	41	31	10	0	0
1130	Cracking (RC and Other)	LF	10	0	10	0	0
<p>(220)</p> <p>05/03/2018 - RWF &amp; APW - Pier 3 &amp; 4 Footings are exposed at this inspection with no apparent scour problems at this inspection.</p>							
234	Reinforced Concrete Pier Cap	LF	1293	1278	15	0	0
1010	Cracking	LF	14	0	14	0	0
1090	Exposed Rebar	LF	1	0	1	0	0
<p>(234)</p> <p>05/03/2018- RWF &amp; APW -05/03/2018- RWF &amp; APW - Caps have small/medium width diagonal and vertical cracking typical throughout.</p> <p>All caps have small in width diagonal and vertical cracks at their cantilevered sections.</p>							
305	Assembly Joint without Seal	LF	525	525	0	0	0
<p>(305)</p> <p>05/03/2018- RWF &amp; APW - Assembly joints have heavy amount of debris impactation in the troughs typical on the exterior discharge outlets for about 3' at each end.</p>							

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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
No deficiencies noted.							
311	Movable Bearing	EA	80	66	14	0	0
1000	Corrosion	EA	8	0	8	0	0
(311)							
05/11/2020 - RWF & APW - Bearings have a failing paint system with isolated areas of active corrosion from the leaking deck joints.							
All bearings have active corrosion.							
313	Fixed Bearing	EA	34	31	0	3	0
(313)							
05/03/2018- RWF & APW - Bearings have a failing paint system with isolated areas of active corrosion from the leaking deck joints.							
All bearings have active corrosion.							
321	Reinforced Concrete Approach Slab	SF	3960	5	3905	0	50
1130	Cracking (RC and Other)	SF	90	0	40	0	50
4000	Settlement	SF	3865	0	3865	0	0
(321)							
05-11-2020 - No apparent change since last inspection.							
05/03/2018 - RWF & APW - The approach slabs have settled and shifted causing the end joints to tighten. The approach slabs have wide full-length open cracks in the driving surfaces.							
330	Metal Bridge Railing	LF	5040	5040	0	0	0
(330)							
05/03/2018- RWF & APW - Metal pedestrian bridge railing has numerous loose bolted/riveted connection with five bolts that have sheared off in scattered locations.							
331	Reinforced Concrete Bridge Railing	LF	12348	7140	5148	60	0
1080	Delamination/Spall/Patched Area	LF	160	0	100	60	0
1130	Cracking (RC and Other)	LF	3320	0	3320	0	0
(331)							
05/03/2018- RWF & APW - Concrete bridge railing has numerous vertical cracks, spalls, exposed reinforcing steel with active corrosion.							
All parapet walls have numerous vertical spalls along the face with corroded rebar exposed. In some areas, the spalls are at 6" spacing. This condition is typical and appears to be caused by the reinforcing steel being placed too close to the surface.							
13 Sheared bolts							



Inventory.



Splice plate corrosion with pack rust





Span 2 Left LRge potholes forming





Typical undersurface



Span 11, Girder 3, Floor Beam Flange: Up to 5/16" section loss.





Span 11, Girder 3, Floor Beam Web, At Pin & Hanger: Holes rusted through.



Span 11 Girder 2 1/4" section loss to web, bottom flange



Span 11 Typical splice



Span 12 Left Typical paint





Span 1 typical



Typical undersurface





Typical cracking in overhangs



Typical undersurface efflorescence





Inventory.



Inventory with direction of log mile.



The hangers and parts of the girders adjacent to Bent #4 have been painted (no apparent visible rust at this inspection).



Joint 11A floor-beam bottom flange between girders 3 & 4 has active corrosion along the web and bottom flange with section loss (Typical throughout this floor-beam).





Span 10 (Girder 4 &ndash; AHD of Bent 10) has approximately  $\frac{1}{4}$ " pack rust with out-of-plane bending to the 1st splice plate.



Typical undersurface





Span 8 (3rd Floor-beam ADH of bent 7) has old section loss scars that has been painted over by maintenance forces with additional corrosion and section loss to the bottom flange of the floor-beam (approximately 1/8" section loss total)



The primer is showing along all the girders throughout the structure (Typical at all locations).





Span 12 (Girder 2 &ndash; 1st splice plate &ndash; AHD of Bent 12) has one missing bolt.



The exterior girders have a failing paint system that is dull, chalky, and has lost its primer along with light rust showing throughout the structure.





Joint 7 has recently been cleaned and painted.



Span 12 (Eastbound-inside lane) has a deep spall with exposed reinforcing steel that is in the wheel path on the driving surface.





Joint 11 (Girder 3) floor-beam has active corrosion and holes rusted through the web. The bottom flange has approximately 1/8" section loss.



Span 3 (Westbound - Inside lane) has a deep spall with exposed reinforcing steel that is in the wheel path.





Span 11 (Girder 1) has active corrosion to the top flange (typical at all the drain locations).



Joint 11 (Girder 3) floor-beam has approximately 1/2" pack rust to the web girder juncture along with a 4" hole that has rusted through the web at this location.





Joint 11 (Girder 3 wind-lock) has approximately 1" of pack rust accumulation between the bottom flange of girder 3 and the wind-lock.



Span 9 (3rd Stringer) has one loose bolt.





Span 11 and 12 cross frame typical.



Joint 11 (Eastbound - Inside lane) adjacent to the assembly joint there is a deep spall with exposed reinforcing steel that is in the wheel path on the driving surface.





Span 9 (Girder 3 &ndash; 2nd splice plate &ndash; AHD of Bent 9) has active corrosion (Typical with all the splice plate connections throughout the structure).



Span 12 (Eastbound) has 3 deep spalls with exposed reinforcing steel that is in the wheel path.





Span 10 (Girders 3 & 4) paint system is failing with light rust showing (typical throughout the structure).



Elevation





Joint 11 (Girder 2) has active corrosion with light flaking rust to the bottom flange and floor-beam connections.



Span 3 & 4 (Girder 1) top flange has active corrosion from the leaching through the deck.





Bent 4 (Girder 2) has old section loss scars that are still present (maintenance forces have cleaned and painted this area).



Span 10 (Eastbound - Inside lane) has a deep spall with exposed reinforcing steel in the wheel path.





Typical deck with Maintenance forces cleaning gutters and deck drains patching spalls.



Elevation





Generally observation of apparent vehicle fire on top of driving surface. No apparent delaminations or spalls at this inspection.



Sealed cracking that has failed this is typical throughout structure.





Deck drains full of dirt and debris this is typical with all joints.



Span 3 Girder 2 Second splice plate loose bolts





Span 12 Spalling in the undersurface



Typical paint river spans





Span 13 Flaking paint



Span 11 Girder 2 Active corrosion



Span 11 Girder 3 Floor beam active corrosion.



Span 11, Floor Beam back of Pin and Hanger: Active corrosion with holes rusted through.





Span 11 2 Second floor beam active corrosion



Span 11 Girder 2 Floor beam connection advanced section loss





Typical pier walls



Abutment 1 right vertical crack in back wall





Bent 10 Right Spalling with exposed reinforcing steel



Bent 12 Active corrosion in bearings





West bound outside lane sealable deck cracking.



Spalling in parapet walls typical throughout structure.





Span 5 eastbound 1' spall. CS-3



Vertical cracking in parapet wall.



Abutment 1 girders 3 and 4 active corrosion with flaking rust.



**Maintenance Needs**

**Date Reported:** 05/02/2012  
**Priority:** G - General/ Preventive maintenance  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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**Deficiency Description**

R/C COLUMNS:

Graffiti on piers 1, 2, 3, 4, 5, 6, 7, 8, 13, 16 & 17.

**Remarks**

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Typical graffiti on piers.

**Date Reported:** 05/02/2012  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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### Deficiency Description

#### PAINTED STEEL OPEN GIRDERS

MFF & JRT - 05-15-2019 - all previous maintenance items still exist. Joint 11-A (Girder 3 wind-lock) has approximately 1" of pack rust accumulation between the bottom flange of girder 3 at the wind-lock. Appears pin is froze up at this location. (see photos 12 and 13 in roll up view for a general condition at this joint)

Paint system is failing. Surface rust and freckled rust on all girders.

Paint is peeling at end of girders at joints. Typical throughout.

Field splice connections have pack rust beginning to form between connections. Typical throughout.

Areas of corrosion to the top flange at the connection to the deck in scattered locations.

Girders have heavy pigeon dung in scattered locations throughout.

Joints 11A, 15A & 17A: Active corrosion and section loss is occurring to the bottom flange of girders.

P13, G1, Ahd: The girder has a bend in the outside horizontal web stiffener.

Span 16, G1, 2nd Field Splice: One loose bolt in bottom flange.

### Remarks

Girder ends , x-frames and lateral bracing cleaned at Joints 4A and 8A 11/11/2016 new maintenance item created t reflect these repairs 4A and 8A removed from this maintenance need.

Joints 11A and !7A Painted new maintenance Item created to show completion of these items. 9/28/2017 CSL

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Span 13 looking back.



Joint 11 (Girder 3) floor-beam has approximately 1/2" pack rust to the web girder juncture along with a 4" hole that has rusted through the web at this location.





Joint 11 (Girder 3) floor-beam has active corrosion and holes rusted through the web. The bottom flange has approximately 1/8" section loss.



Span 5 girder 1: general paint condition.



Joint 11 (Girder 3 wind-lock) has approximately 1" of pack rust accumulation between the bottom flange of girder 3 at the wind-lock. Appears pin is froze up at this location.



Span 13 Girder 2 typical paint condition.





Span 4, Girder 1: Typical beam corrosion.



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**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead:** Rhett Franks **Inspection Date:** May 03, 2021

**Date Reported:** 05/02/2012

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

**Deficiency Description**

R/C CAPS:

Pier 10, Rt, Bk: Shallow spall with rebar exposed on face of cap.

Pier 8, Rt: Shallow spall with rebar exposed on end of cap.

**Remarks**

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**Date Reported:** 05/02/2012

**Priority:** D- Routine



**Type of Work:** Repair  
**Status:** Monitor  
**Component:** Miscellaneous

---

**Deficiency Description**

**PIER PROTECTION CELLS:**

MFF & RWF - 05-11-2020 - maintenance item still exist it appears this has gotten worse from the previous photos.  
Pier 12, Upstream: Rock fill missing from the cell. Access ladder damaged near the waterline.

**Remarks**

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Pier 12, Upstream: Rock fill missing from the cell.  
Access ladder damaged near the waterline.



Bent 12 Upstream pier protector missing fill material.



**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead: Rhett Franks Inspection Date: May 03, 2021**



Pier protector missing fill material.



**Date Reported:** 05/02/2012  
**Priority:** D- Routine  
**Type of Work:** Repair  
**Status:** Monitor  
**Component:** Approach

---

### Deficiency Description

#### APPROACH SLABS:

MFF & RWF - 05-11-2020 - maintenance items still exist.

**EASTBOUND APPROACH SLABS:** The approach slab at the East End of the bridge has settled and shifted causing the end joint to tighten on the right side. The approach slab at the west end of the bridge is settled with a full-length open crack in the left lane.

#### WESTBOUND APPROACH SLABS:

The approach slab at the west end of the bridge is broken and settled with a full-length open crack at the centerline.

### Remarks

---



Bent 1, Approach Slab: Cracking with minor settlement.



Abutment 1, Back Wall, Westbound, Outside Lane: Repair.



**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead: Rhett Franks Inspection Date: May 03, 2021**



Bent 1 enact bound approach slab large  
longitudinal crack.21' CS-3





**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead:** Rhett Franks **Inspection Date:** May 03, 2021

**Date Reported:** 05/02/2012  
**Priority:** G - General/ Preventive maintenance  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

---

### Deficiency Description

#### UTILITIES:

Joint 11A, Fiber optic conduit has separated at the joint.  
Span 11, Eastbound, Light Pole: Loose conduit.

#### Remarks

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Span 11, Eastbound, Light Pole: Loose conduit.

**Date Reported:** 05/02/2012  
**Priority:** G - General/ Preventive maintenance  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

---

**Deficiency Description**

VEGETATION:

Vines growing on columns 1-7.

**Remarks**

---



Pier 1-7: Vegetation growing on columns. Typical.





Bridge #05275(Fracture Critical)

US 64 - District 4 over ARK RVR & ARKMO/BN RRS

Location: AT OKLAHOMA & ARK ST LN

Team Lead: Rhett Franks Inspection Date: May 03, 2021

Date Reported: 05/02/2012

Priority: D- Routine

Type of Work: None

Status: Monitor

Component:

---

### Deficiency Description

#### LATERAL BRACING:

Joints 4A, 8A and 11A: Active corrosion and section loss to 1/8" is occurring to the ends of the lateral bracing. Bolts missing from many of the lateral brace connections to gusset plates throughout bridge. Braces are welded to gusset plates instead.

#### Remarks

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Up to 1/8" section loss.

**Date Reported:** 05/02/2012  
**Priority:** D- Routine  
**Type of Work:** Repair  
**Status:** Monitor  
**Component:** 331 - Reinforced Concrete Bridge Railing

---

### Deficiency Description

#### CONCRETE BRIDGE RAIL:

MFF & RWF - 05-11-2020 - Maintenance items still exist no apparent changes since last inspection.

All parapet walls have numerous vertical spalls along the face with corroded rebar exposed. In some areas, the spalls are at 6" spacing. This condition is typical and appears to be caused by the reinforcing steel being placed too close to the surface.

Joint 4A: Concrete rail is broken at the expansion joint behind metal plate.

East Abutment, Rt: Concrete rail is broken at the expansion joint behind metal plate.

### Remarks

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Span 5, Eastbound: Spalling in concrete portions of bridge railing.



Span 7 Eastbound spalling with exposed reinforcing steel parapet wall.



**Date Reported:** 05/02/2012

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

**Deficiency Description**

**BEARING DEVICES:**

Abut. 1, Abut. 2 & Piers 1, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15, 16, 17, 18 & 19. Bearing devices are beginning to rust with minor corrosion between the masonry plate and the rocker.

**Remarks**

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Pier 12 girder 1 bearing. Typical condition of all bearings.



Bearings: Typical corrosion.



Bridge #05275(Fracture Critical)

US 64 - District 4 over ARK RVR & ARKMO/BN RRS

Location: AT OKLAHOMA & ARK ST LN

Team Lead: Rhett Franks Inspection Date: May 03, 2021

Date Reported: 05/02/2012

Priority: D- Routine

Type of Work: None

Status: Monitor

Component:

---

### Deficiency Description

INSPECTION CATWALK:

Catwalk supports are corroding at joints 4A, 8A & 11A.

Added on 5/21/2014, TJB

Joint 11A: Catwalk has heavy corrosion.

Sp.14, 8th FB Ahd of P13: 1 missing and 1 loose bolt in catwalk splice plate.

### Remarks

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At G2 pack rust at the cantilevered inspection platform to girder connection.



Span 13, Ahead of Pier 12, Walkway: Repaired bolt.





**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead:** Rhett Franks **Inspection Date:** May 03, 2021

**Date Reported:** 05/02/2012

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

**Deficiency Description**

DRAINS:

Pier 16, Lt, Bk: Drain pipe is broken.

**Remarks**

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**Date Reported:** 05/02/2012

**Priority:** D- Routine

**Type of Work:** Repair  
**Status:** Monitor  
**Component:** Substructure

---

### Deficiency Description

#### ABUTMENTS:

MFF & RWF - 05-11-2020 - Maintenance items still exist no apparent changes since last inspection.

#### ABUT. #1

Vertical cracks in the backwall.

Top of headwall is broken in the eastbound lanes.

3' shallow spall in backwall.

Rt: Concrete is deteriorating on top of wing wall.

Graffiti on the abutment.

#### ABUT. #2

Full height open vertical cracks in backwall. Several 45 degree cracks in the breast wall on Lt and Rt.

Rt. end of the turn back wing wall has a large open crack that has spalled at the top.

Lt. end of the turn back wing wall has a vertical crack that has spalled at the top.

Heavy graffiti on backwall.

Between G7-G8: 3 shallow spalls with rebar exposed.

Added on 5/21/2014, by TJB

Between G3-G4, G5-G6: Shallow spalls with rebar exposed.

### Remarks

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Abutment : Spalling in the back wall with minor vertical cracking.



Abutment 1 left spall on the back wall





Abutment 2 diagonal cracking in wing wall juncture.



Abutment 2 spalling with exposed reinforcing steel.



Abutment 2 left wing wall cracking.





**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead:** Rhett Franks **Inspection Date:** May 03, 2021

**Date Reported:** 05/02/2012  
**Priority:** D- Routine  
**Type of Work:** Repair  
**Status:** Monitor  
**Component:** 330 - Metal Bridge Railing

---

**Deficiency Description**

PEDESTRIAN HAND RAIL:  
MFF & RWF - 05-11-2020 - Maintenance items still exist.

Lt. & Rt. Many missing and loose bolts in pedestrian handrail scattered throughout the bridge.  
Abutment 2, Rt: Collision damage to the pedestrian handrail.

**Remarks**

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**Date Reported:** 05/16/2019  
**Priority:** C - Important

**Type of Work:** None  
**Status:** Assigned  
**Component:**

---

### Deficiency Description

**DECK:**

MFF & RWF - 05-11-2020 - Maintenance force has place asphalt in spalled areas. repairs appear to be holding at this inspection.

MFF & JRT - 05/15/2019

Deep spalling in west and east bound lanes see photos for locations.

### Remarks

Notified Chad Davis in District to place asphalt material until crew could be assigned, down graded to a priority C , CSL 6/10/2019. HBM Crew to make patches and repairs using rapid setting cement.

---



Joint 11 (Eastbound - Inside lane) adjacent to the assembly joint there is a deep spall with exposed reinforcing steel that is in the wheel path on the driving surface.



Span 12 (Eastbound-inside lane) has a deep spall with exposed reinforcing steel that is in the wheel path on the driving surface.





Span 3 (Westbound - Inside lane) has a deep spall with exposed reinforcing steel that is in the wheel path.



Span 12 (Eastbound) has 3 deep spalls with exposed reinforcing steel that is in the wheel path.



Span 10 (Eastbound - Inside lane) has a deep spall with exposed reinforcing steel in the wheel path.



Bent 7 westbound spall with asphalt repair.





**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead: Rhett Franks Inspection Date: May 03, 2021**



Span 6 eastbound 30' CS-3 spalls with asphalt repairs.

**Date Reported:** 05/16/2019  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Assigned  
**Component:**

---

### Deficiency Description

FLOOR BEAM.

Joint 11 (Girder 3) floor-beam has approximately 1/2" pack rust to the web girder juncture with out of plane bending to the connection. Also there is a 4" hole that has rusted through the web at this location. All other joint locations has been cleaned and painted old section loss scars are still present.

### Remarks

HBM Crews to Clean and Paint

---



Joint 11 (Girder 2) has active corrosion with light flaking rust to the bottom flange and floor-beam connections.



Joint 11 (Girder 3) floor-beam has active corrosion and holes rusted through the web. The bottom flange has approximately 1/8" section loss.





Joint 11 (Girder 3) floor-beam has approximately 1/2" pack rust to the web girder juncture along with a 4" hole that has rusted through the web at this location.



Span 11, Girder 3, Floor Beam Flange: Up to 5/16" section loss.

**Date Reported:** 05/14/2020  
**Priority:** C - Important  
**Type of Work:** Repair  
**Status:** Monitor  
**Component:** Deck

---

**Deficiency Description**

**DECK:**

MFF & RWF - 05-11-2020 - East Abutment 4' CS-3 spalling.  
Span 5 west bound spall/delaminated 4' area.  
Span 1 eastbound 2x2 spall that has failed with asphalt patch.  
Span 8 eastbound spall. 2' CS-3

**Remarks**

spalls are not of depth that asphalt would work. CSL 6/1/2020

---



East Abutment 4' CS-3 spalling.



Span 5 west bound spall/delaminated 4' area .





Span 1 eastbound 2x2 spall that has failed with asphalt patch.



Span 8 eastbound spall. 2' CS-3



**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead: Rhett Franks Inspection Date: May 03, 2021**



Span 13 eastbound spalling with asphalt repairs.





**Bridge #05275**(Fracture Critical)

**US 64 - District 4 over ARK RVR & ARKMO/BN RRS**

**Location: AT OKLAHOMA & ARK ST LN**

**Team Lead:** Rhett Franks **Inspection Date:** May 03, 2021

### **Inspection Comments**

5/3/2021 RWF & APW - Fracture Critical inspection conducted the date. Visual hands on method of inspection using the A75. The plate girders have measurable section loss at the open expansion assembly joints to the web and bottom flanges. Ends of girders have section loss in lower web and bottom flange up to 3/16" at the pin and hanger assemblies. Field splice and lateral bracing have active corrosion with pack rust and loose bolts at scattered locations. Paint system has freckled rust covering throughout the stringers/girders. Visual hands on method of inspection. No apparent visible cracks at this inspection.

5/03/2018 - RWF & APW - Modified Routine/Fracture Critical inspection conducted this date. Bridge work on the Oklahoma side in the Westbound inside lane inhibited closing the Westbound outside lane. Visual hands on method of inspection was conducted everywhere but the exterior of Girder 1. All pins where inspected and ultrasonically tested with no cracks found.

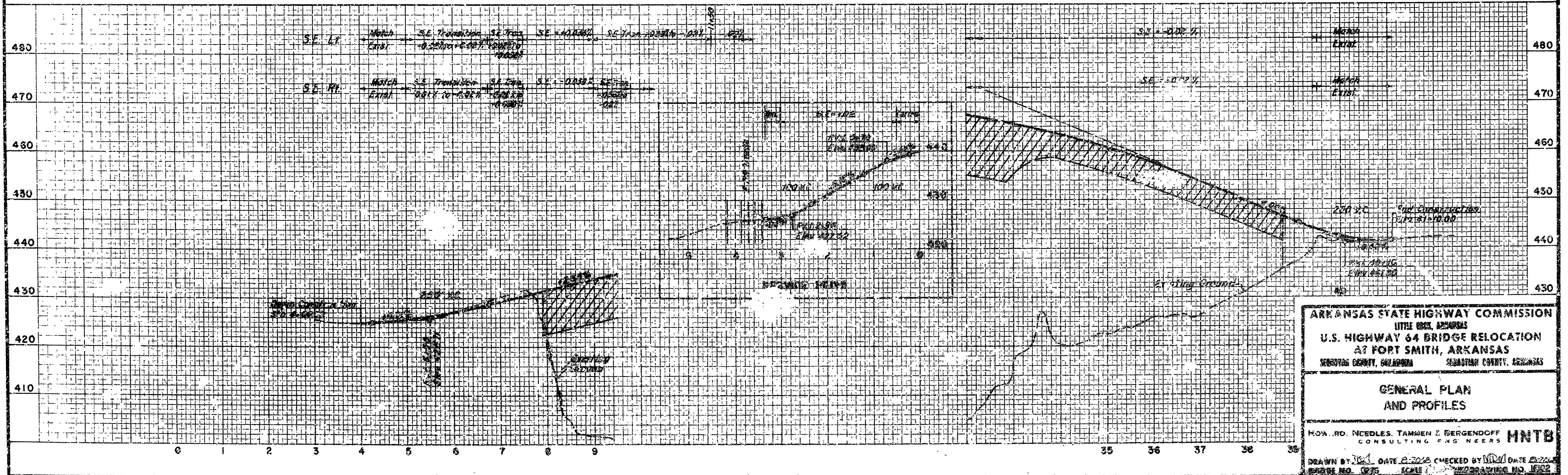
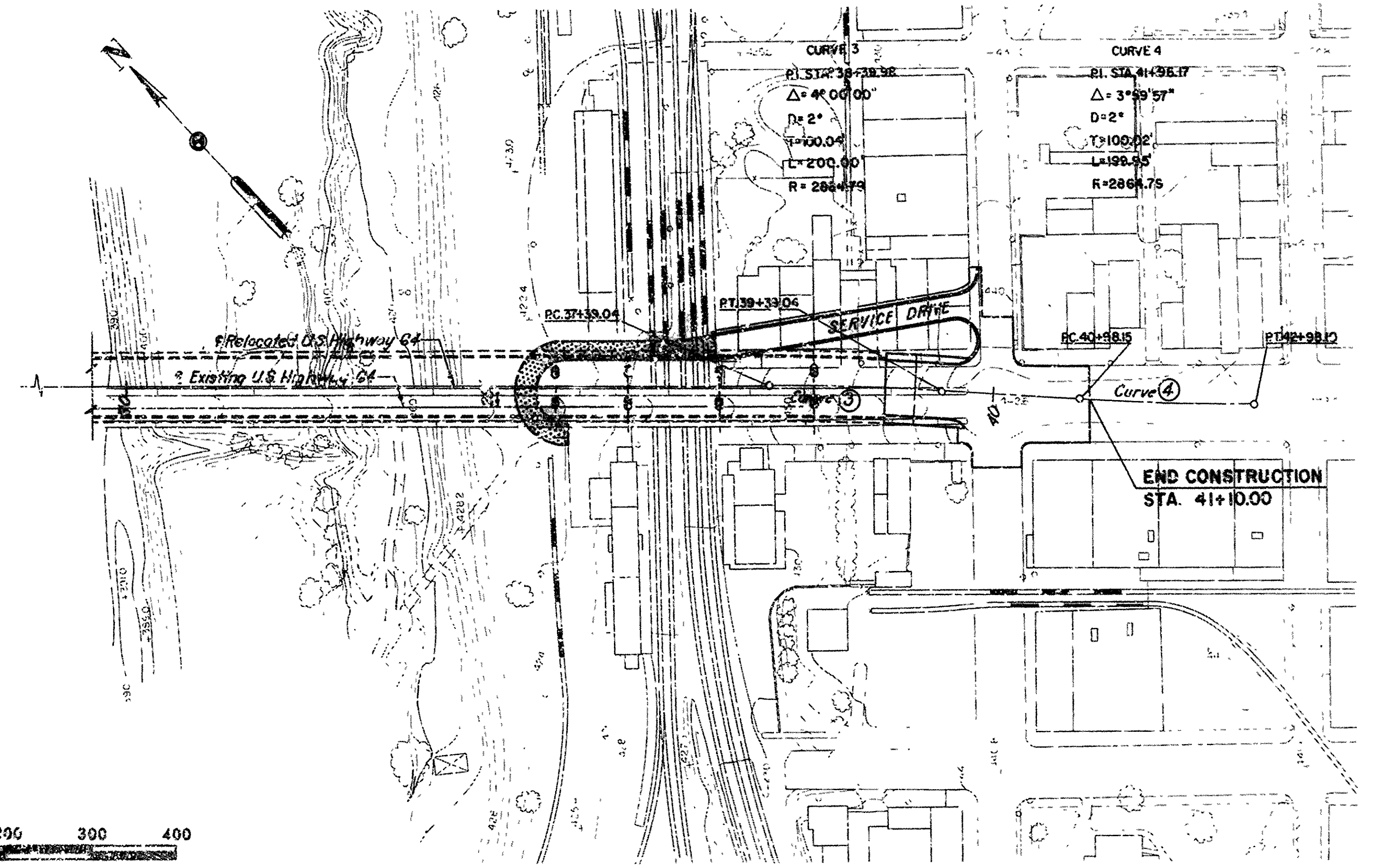
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closure information is in assets under other tabs.

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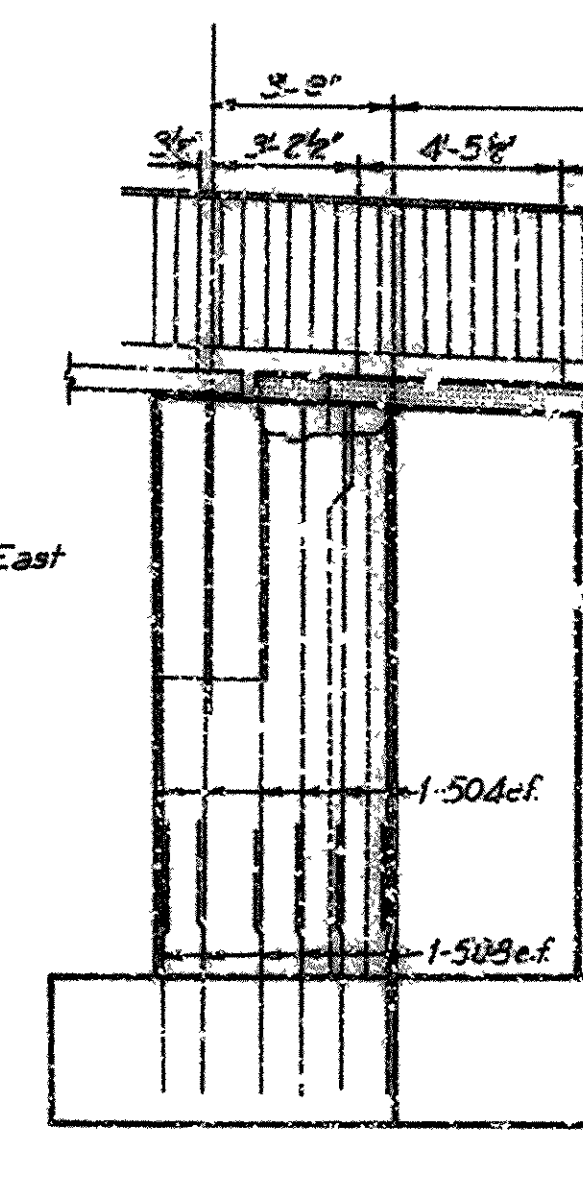
### **Superstructure Notes**



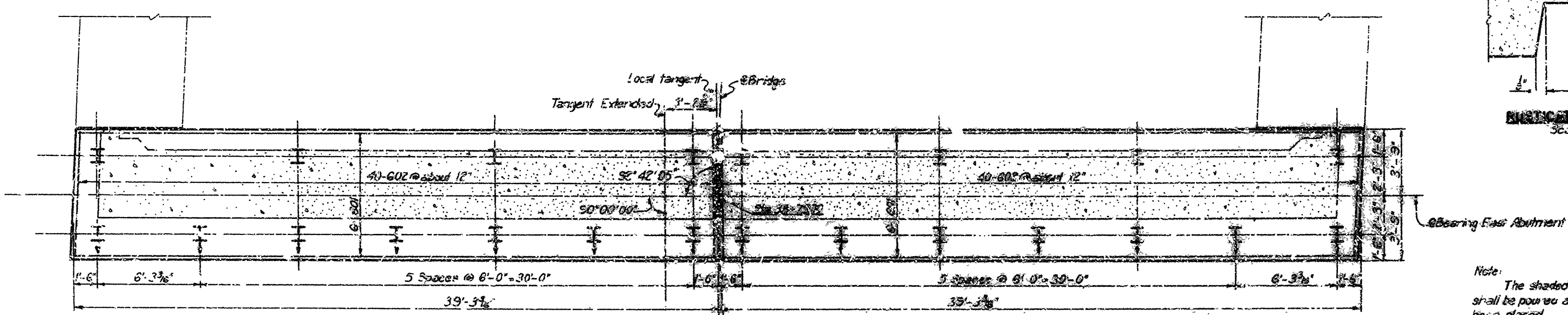
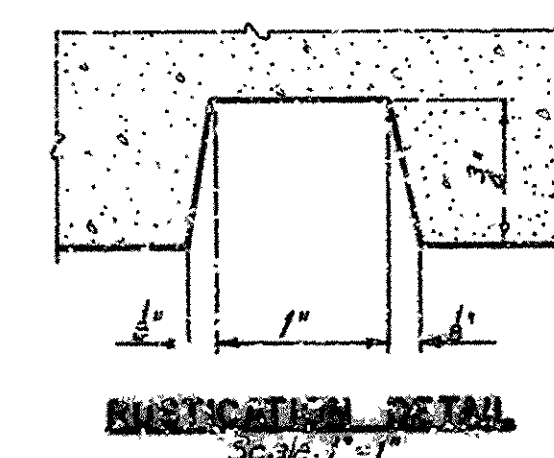
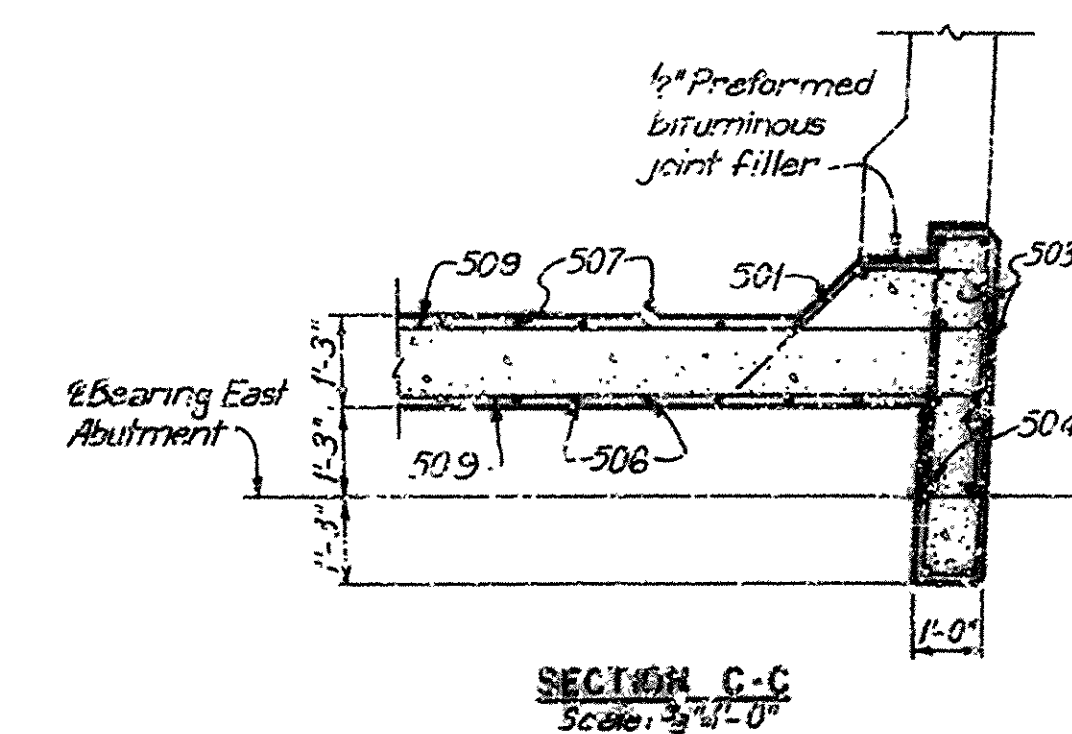
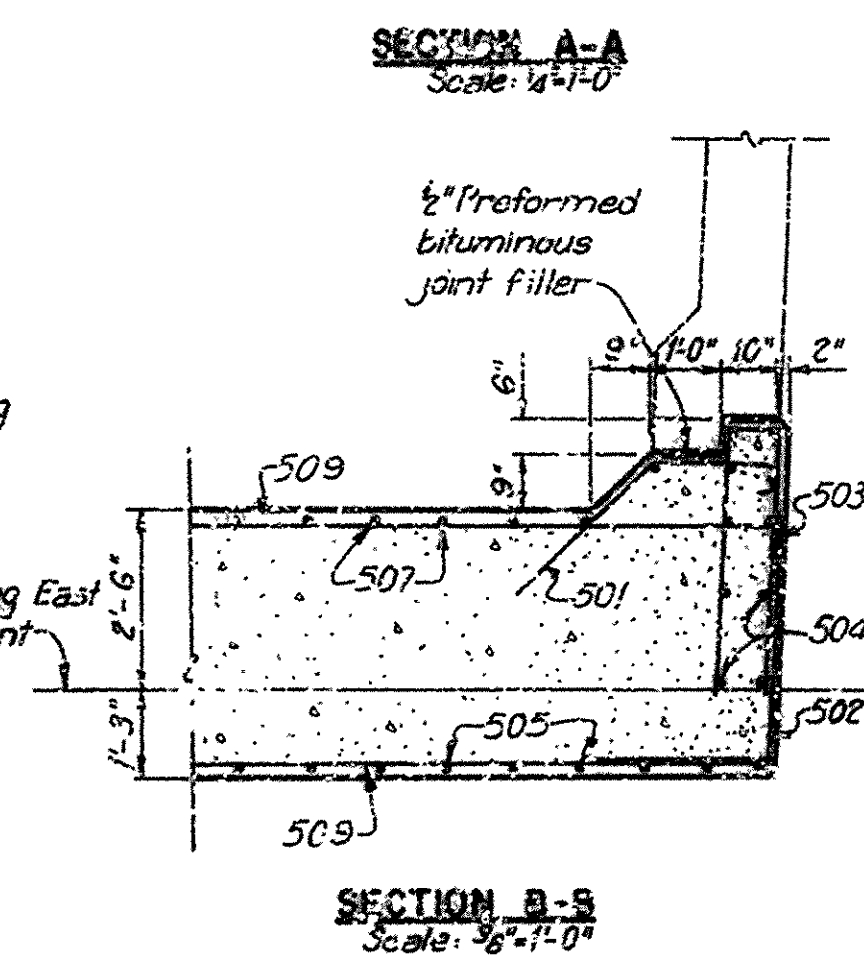
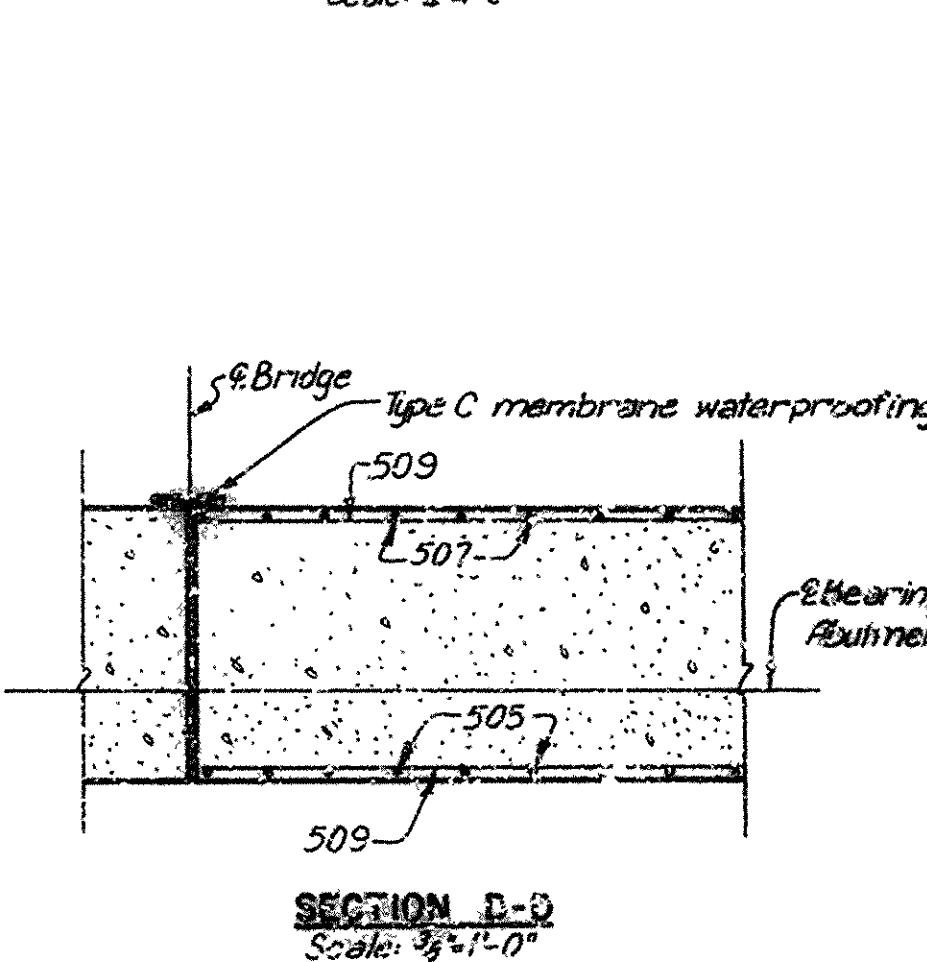
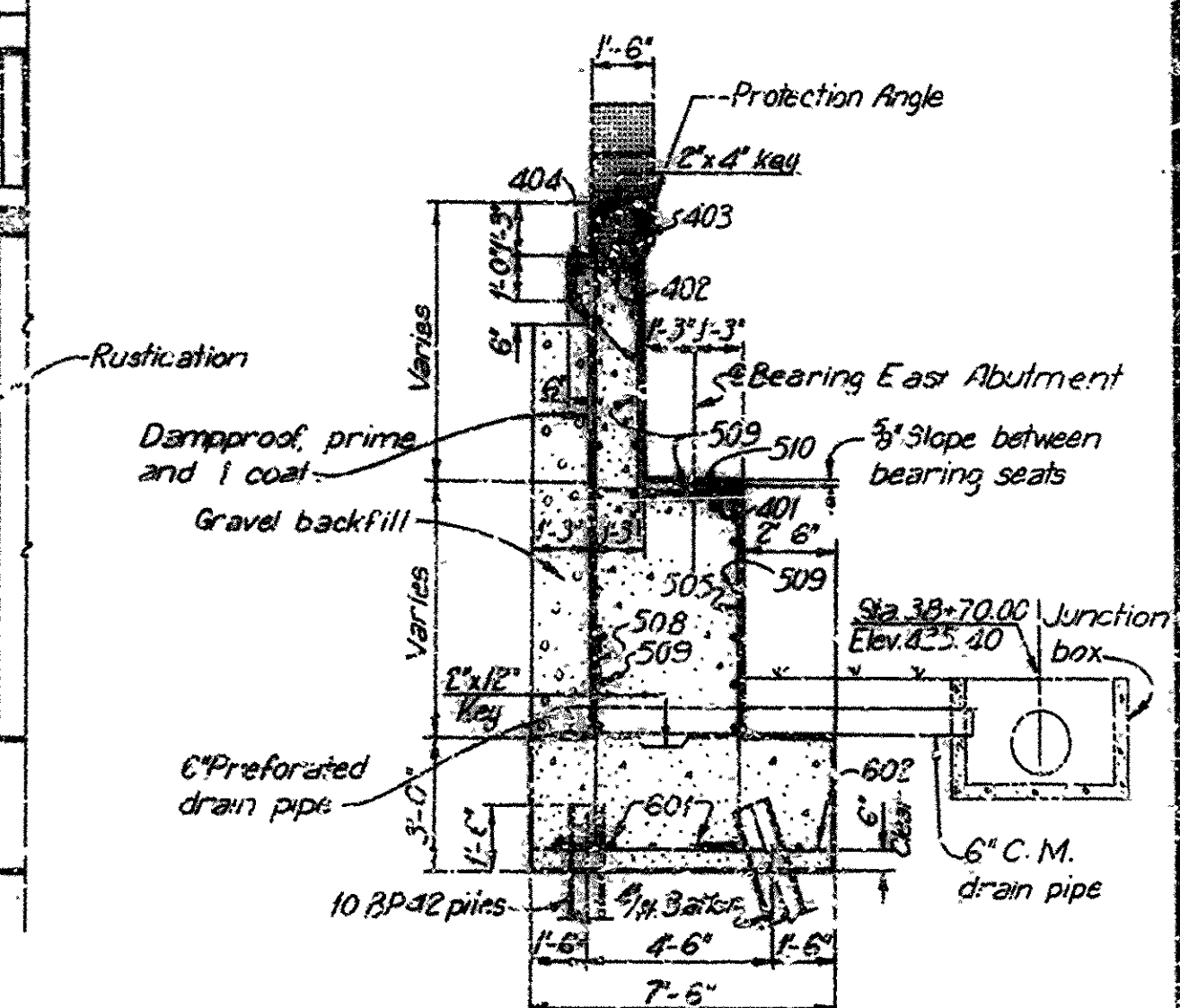








VIEW E-E  
Scale: 1/4"=1'-0"



Note: The shaded portions indicate concrete that shall be poured after the entire bridge slab has been placed.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEMPER COUNTY, OLLAGERS REYNOLDS COUNTY, ARKANSAS

EAST ABUTMENT

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS

INTB

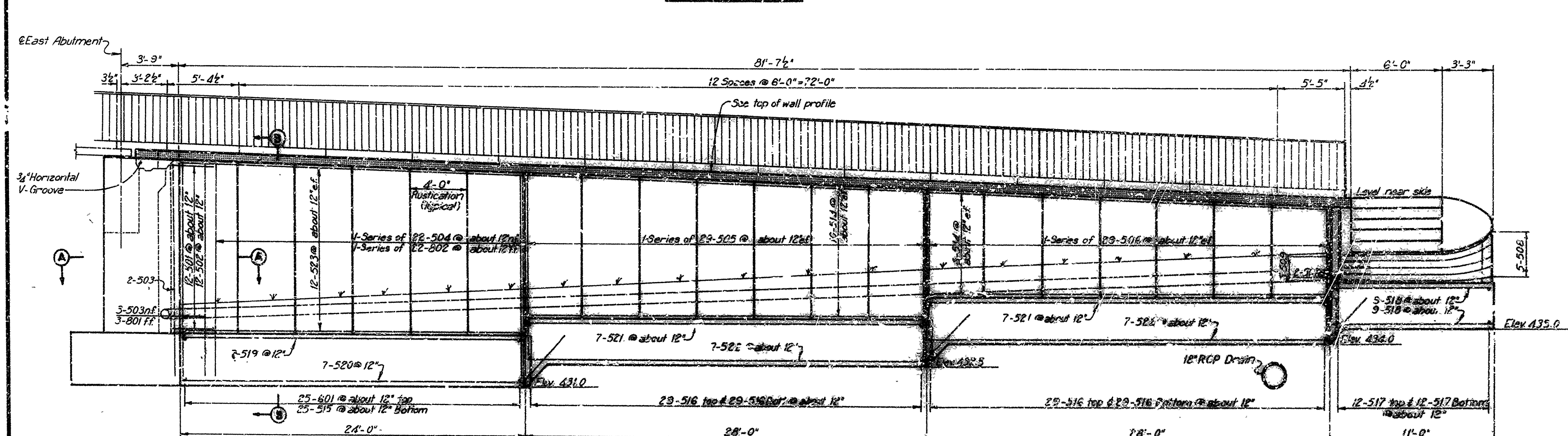
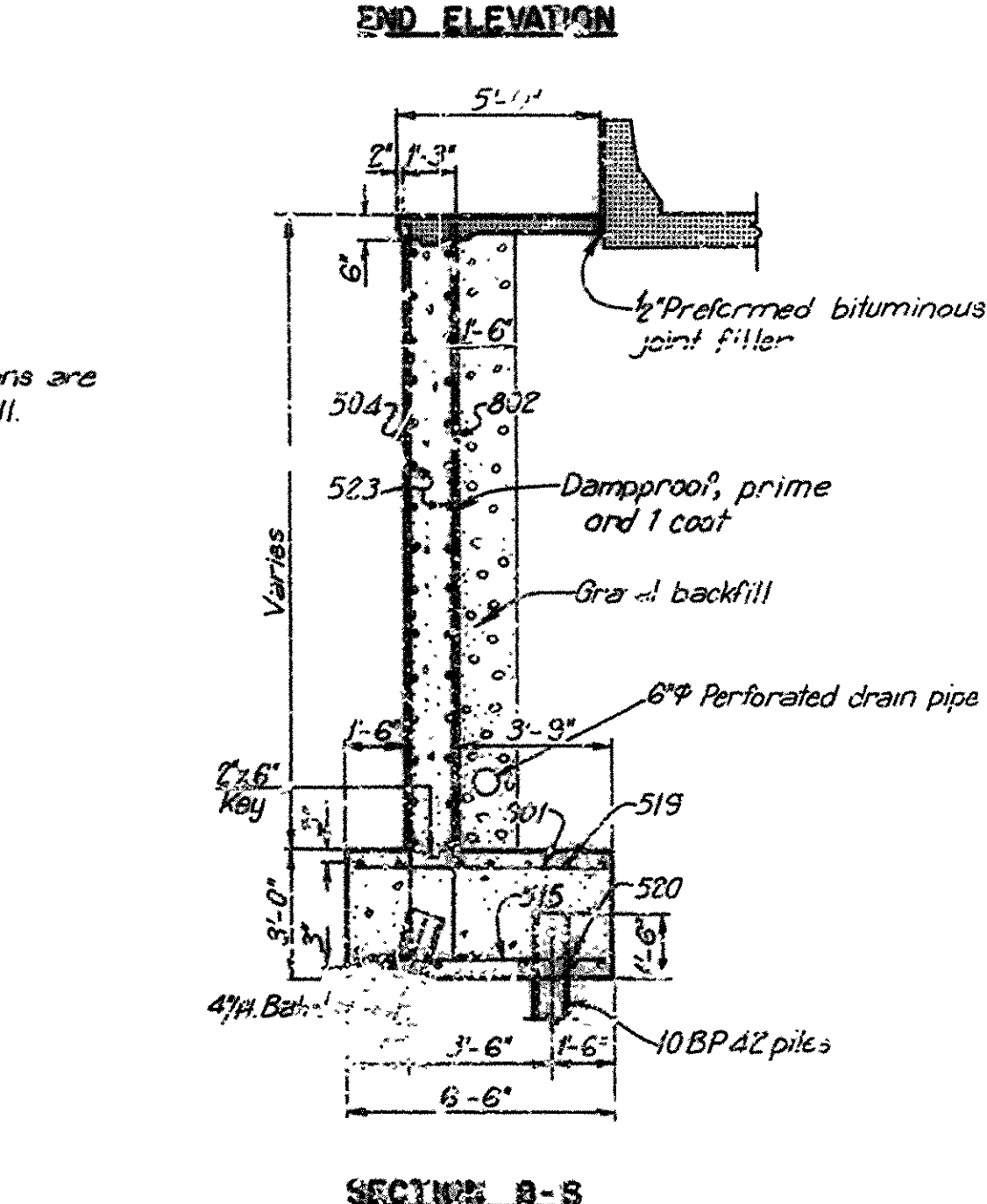
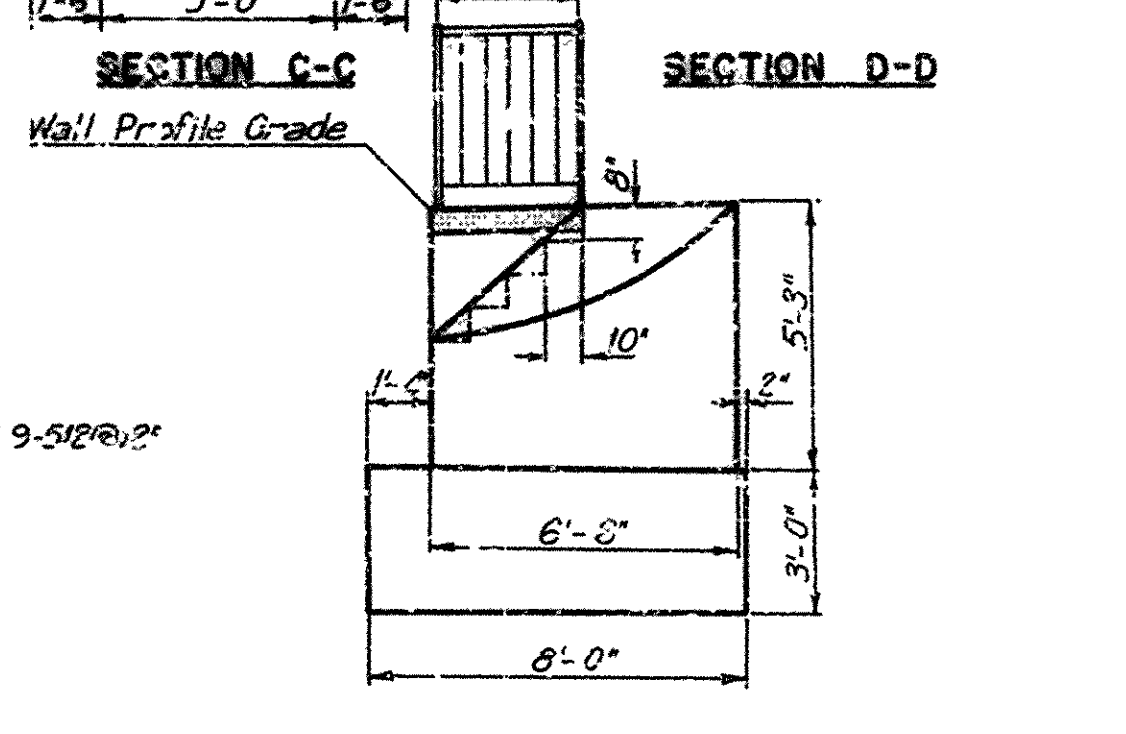
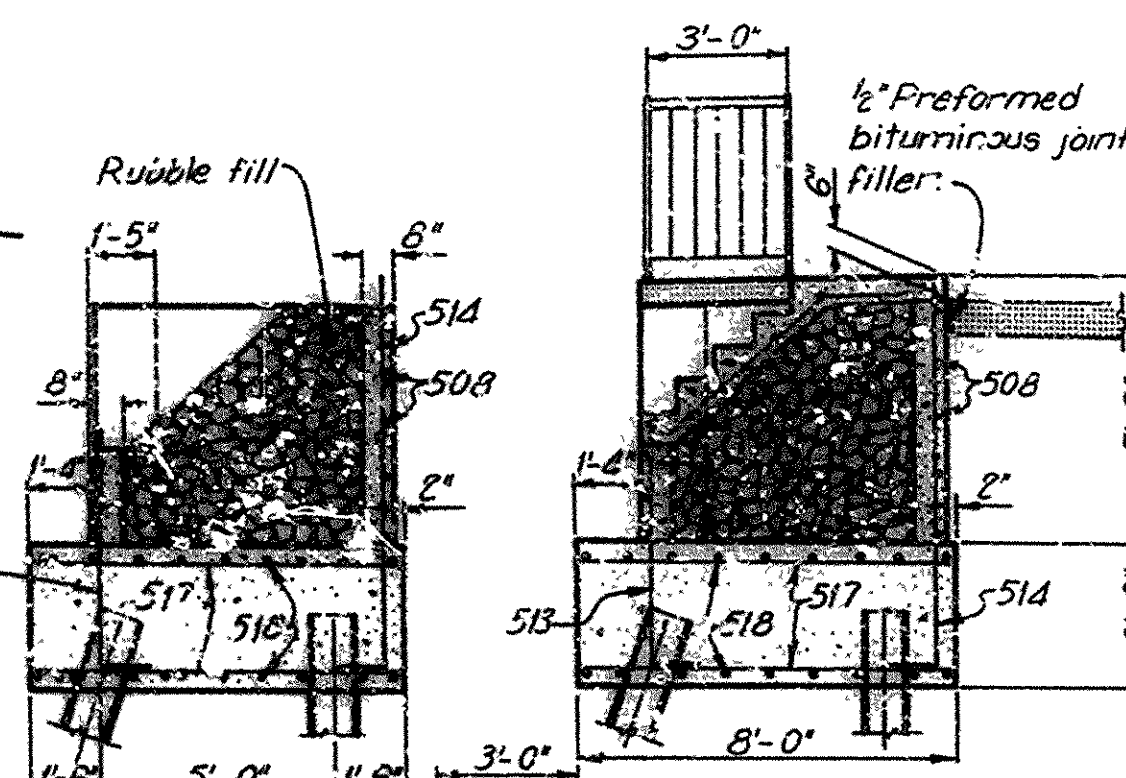
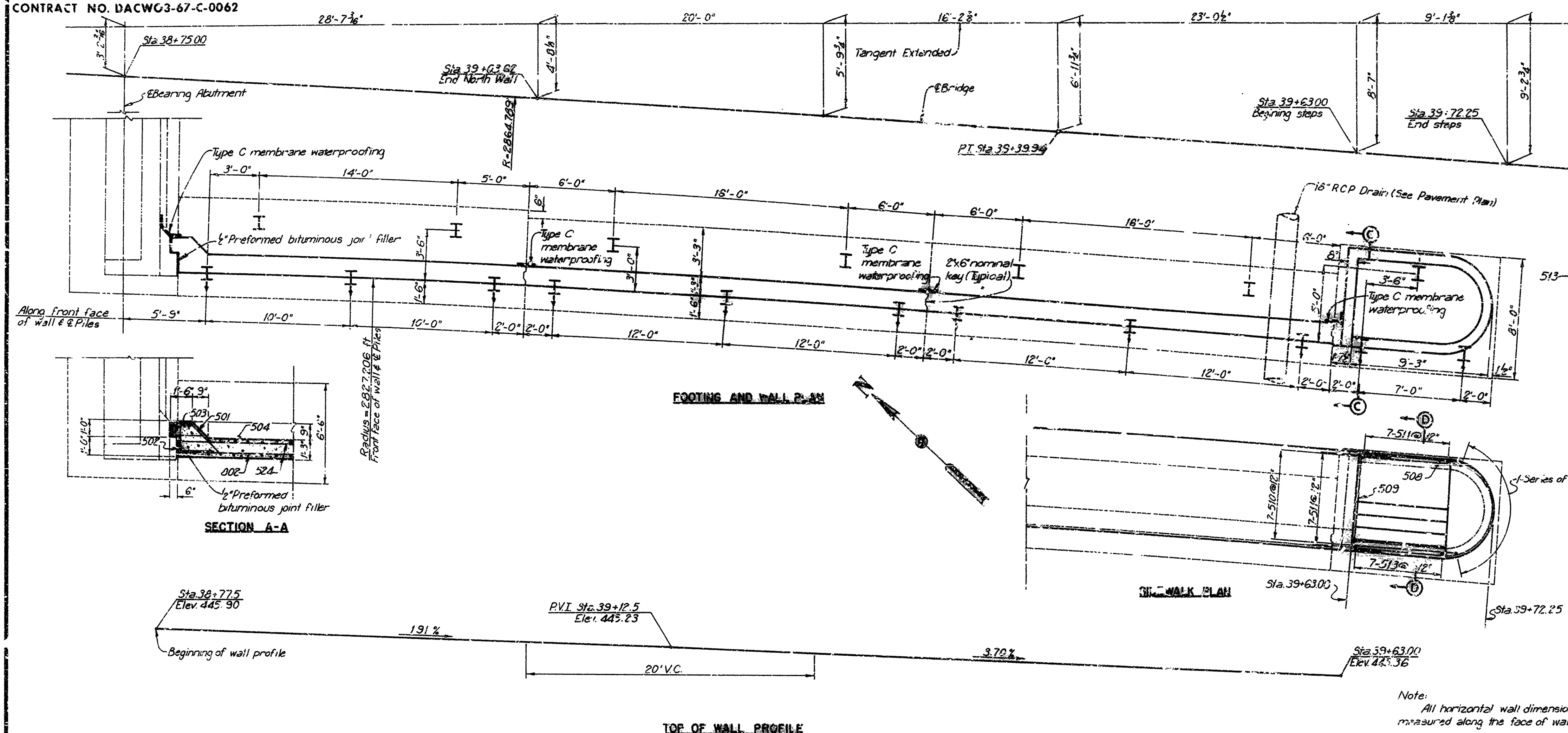
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FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		10	127
JOB NO. 4584				

30. WALL EAST ABUTMENT



Note:  
All horizontal wall dimensions are measured along the face of wall.

Note:  
The shaded portions indicate concrete that shall be poured after the entire bridge slab has been placed.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SOUTH WALL EAST ABUTMENT

HOWARD, NEEDLES, TAMMEN & BERENDSON  
CONSULTING ENGINEERS  
DATE 8-9-68 CHECKED BY DATE 8-27-68







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ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 54 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEbastian COUNTY, ARKANSAS

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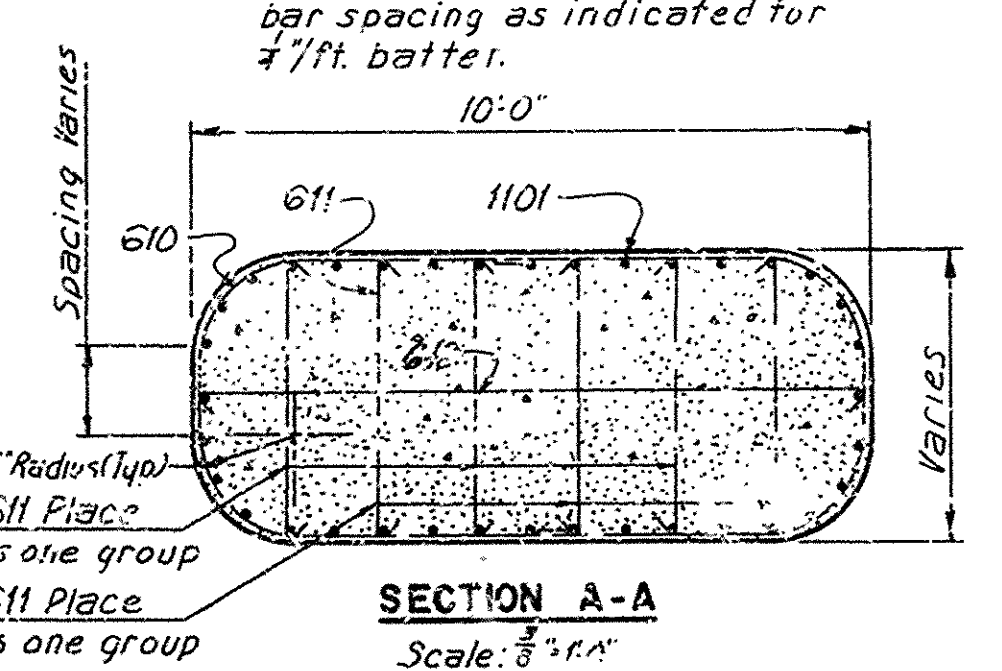
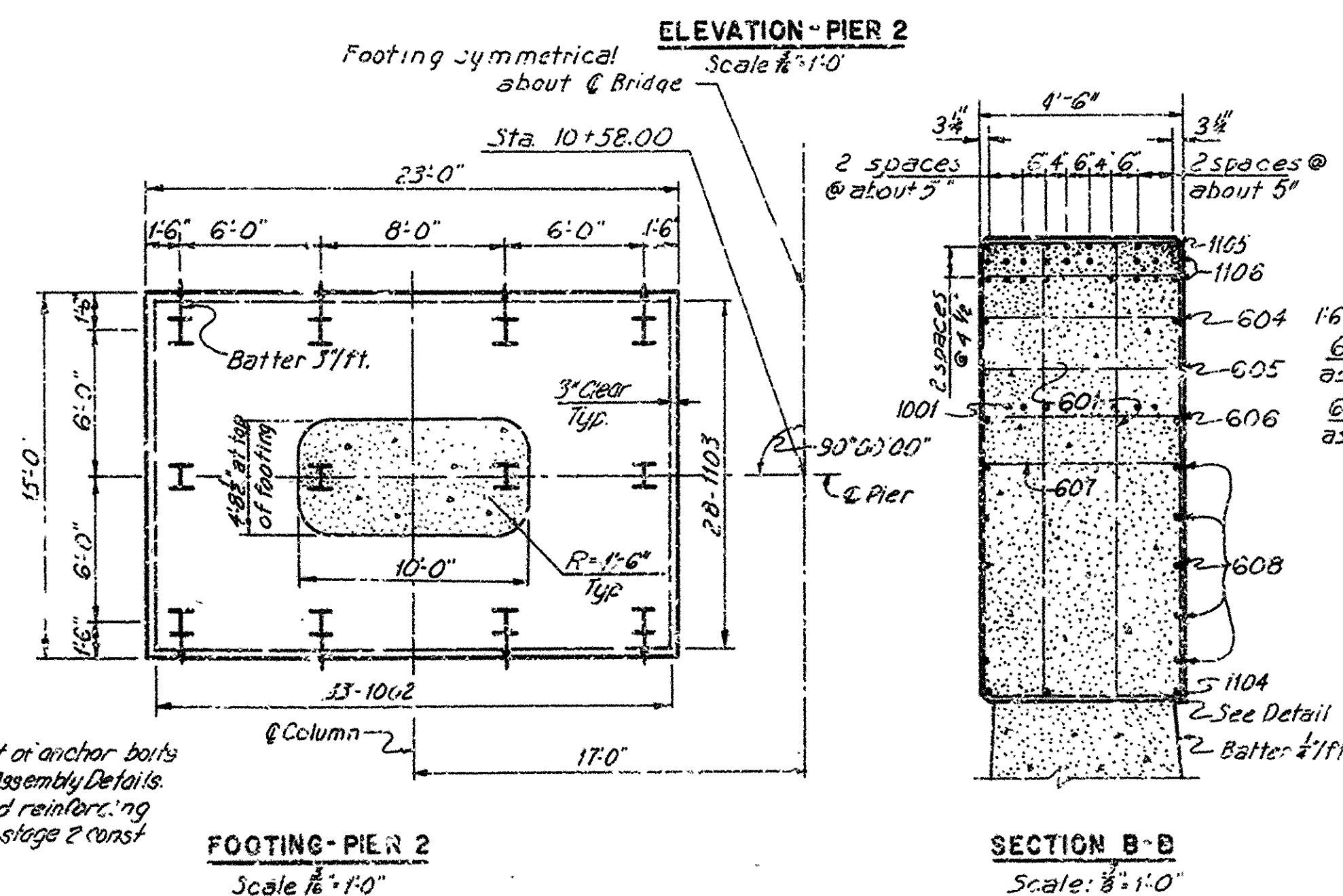
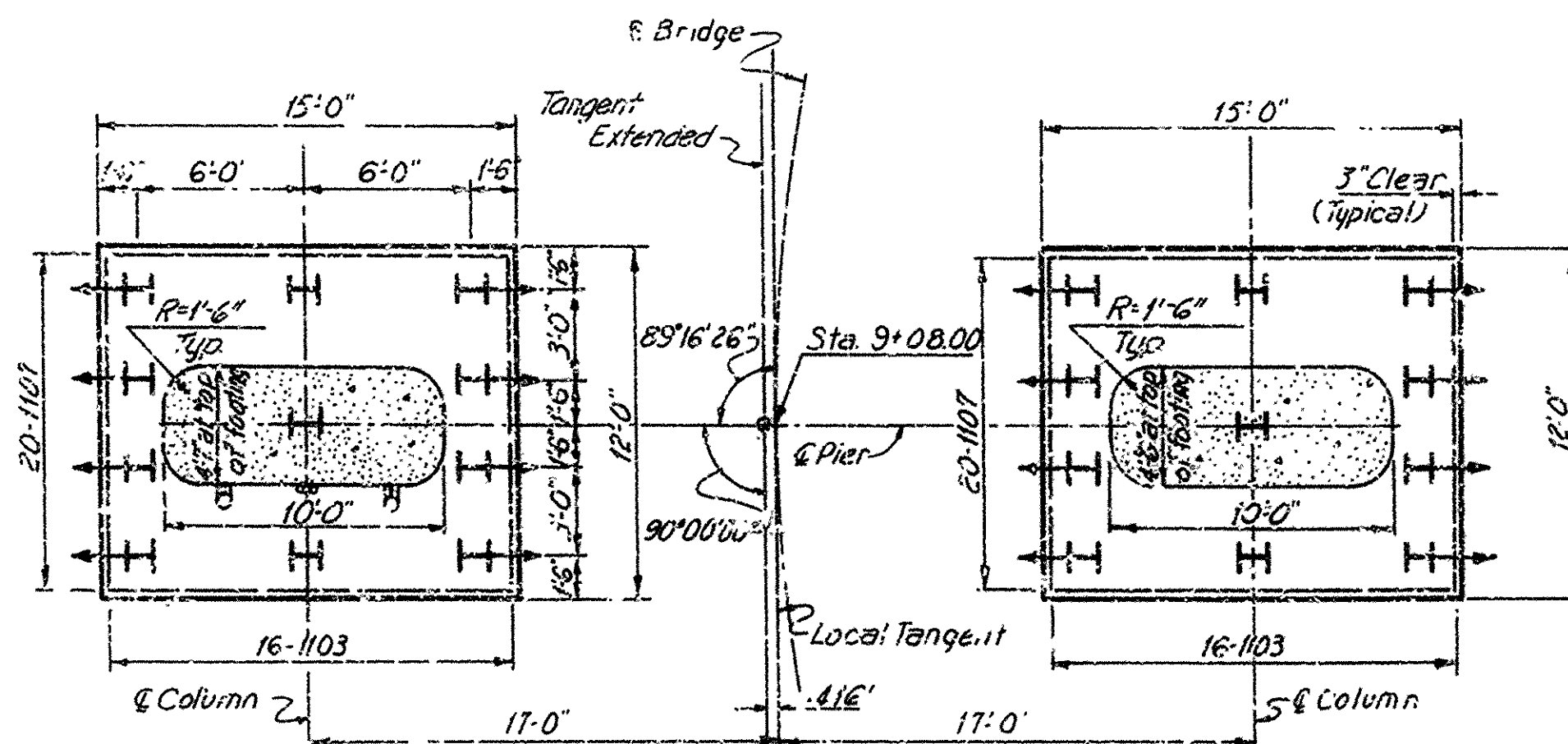
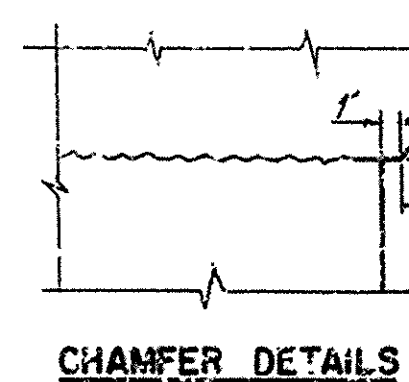
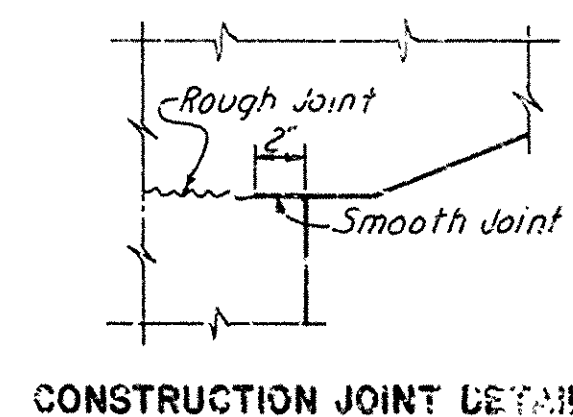
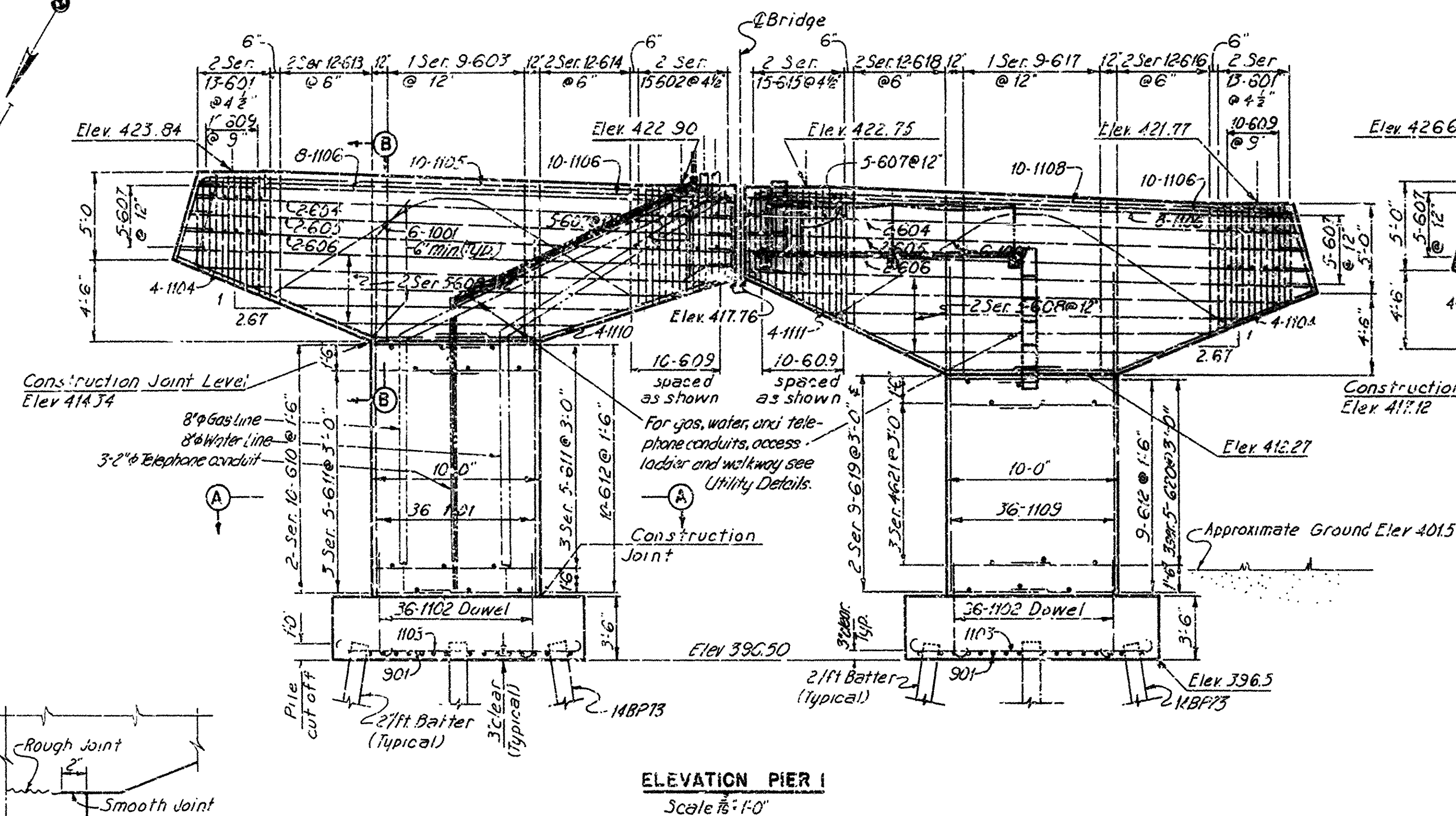
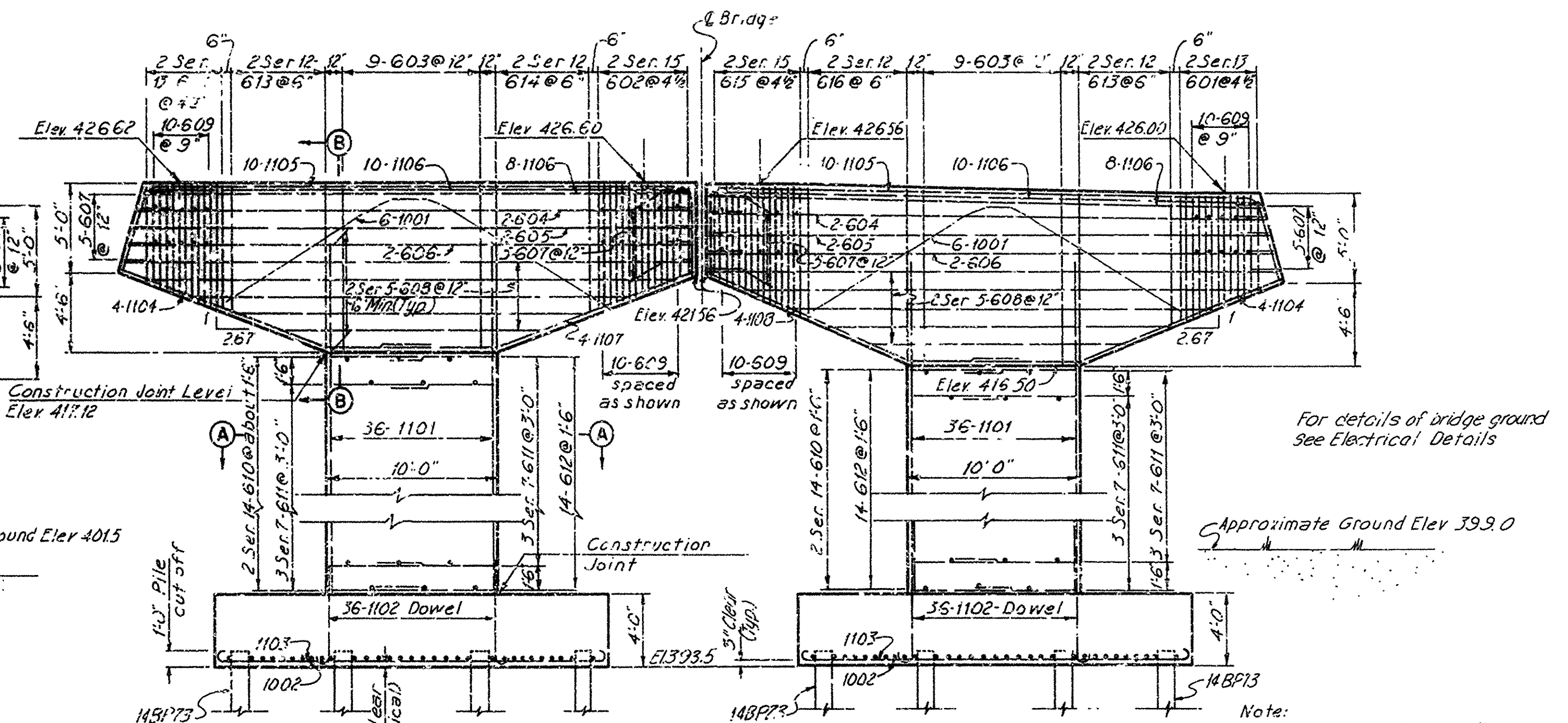
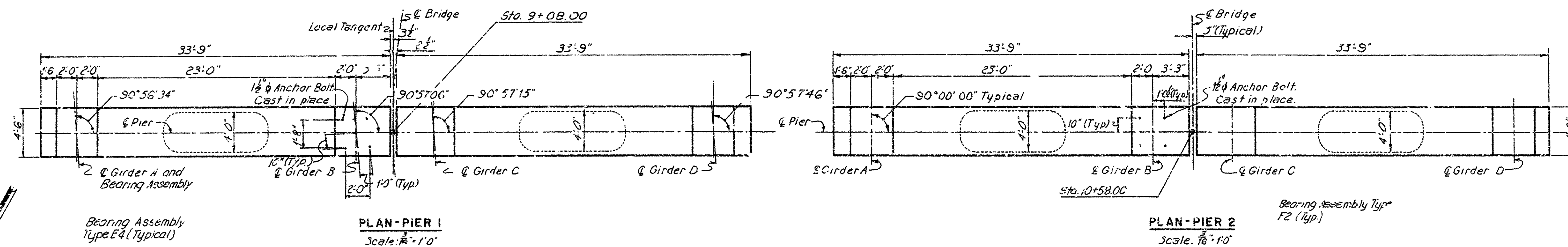
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ADJUSTMENTS AND WALLS

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HOWARD, NEEDLES, TAMMEN & BERGENDOFF HNTB  
CONSULTING ENGINEERS

DRAWN BY 16 DATE 10-7-66  
CHECKED BY 16 SCALE AS SHOWN  
DRAWING NO. 10-2





ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, OKLAHOMA SEBASTIAN COUNTY, ARKANSAS

PIERS 1 &amp; 2

HOWARD. NEEDLES. TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

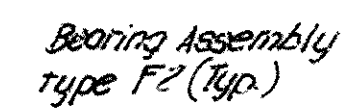
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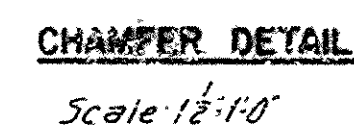


① PIERS 546



Bearing Assembly  
Type E4 Type.

DRAWN BY K.S. DATE 8-21-68 CHECKED BY JDR DAY 9-27-68  
 E-2000 NO. 627K SCALE AS SHOWN DRAWING NO. 15











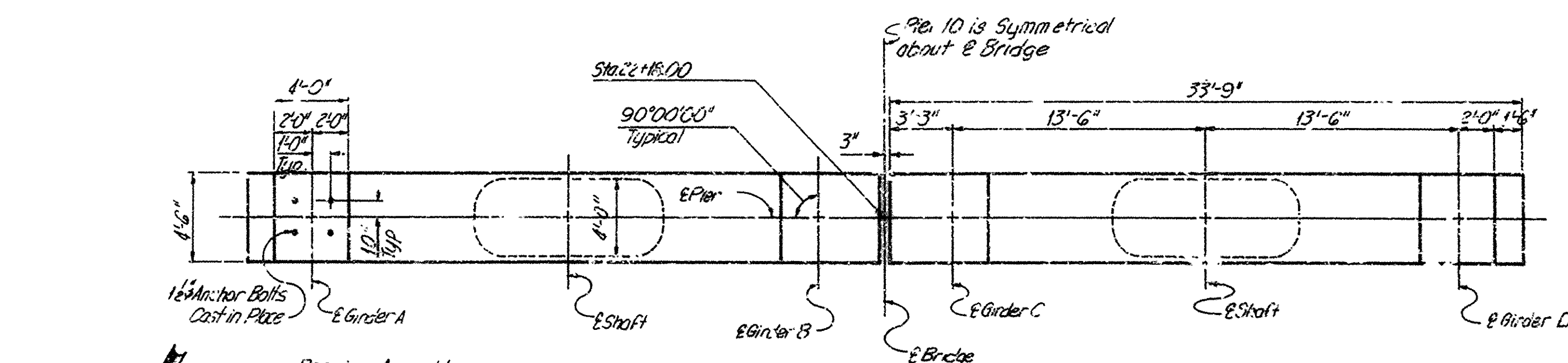




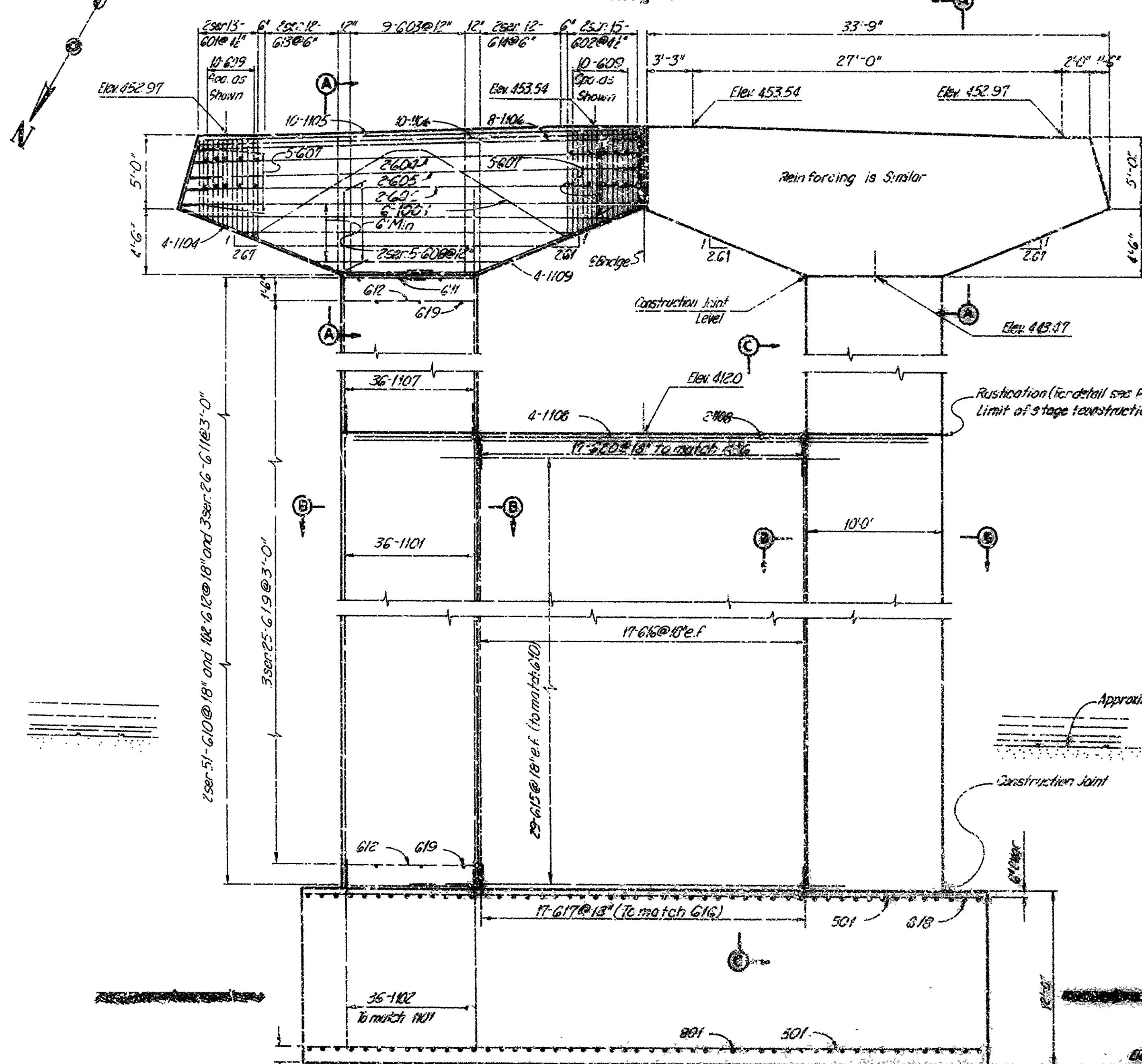


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6	ARK.			
JOB NO.	4584	19	127	

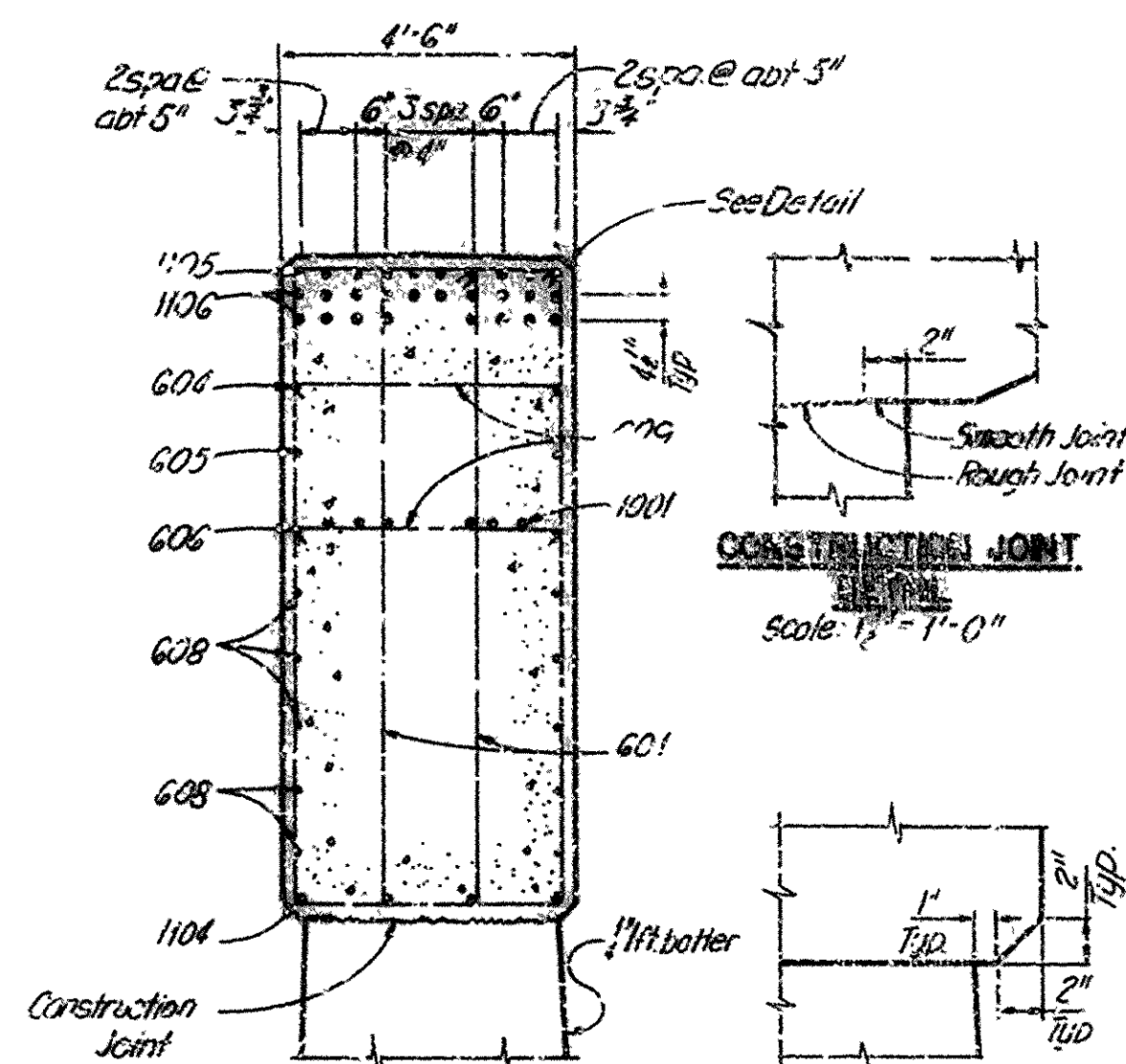
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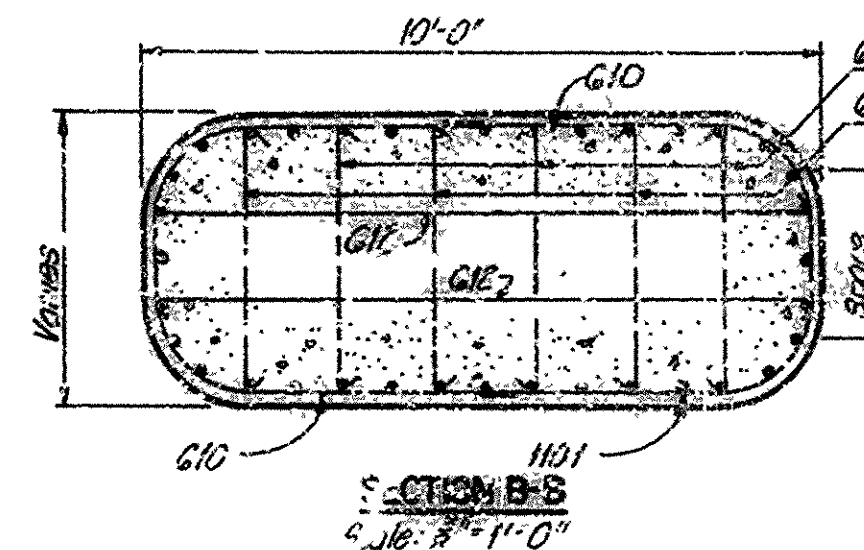


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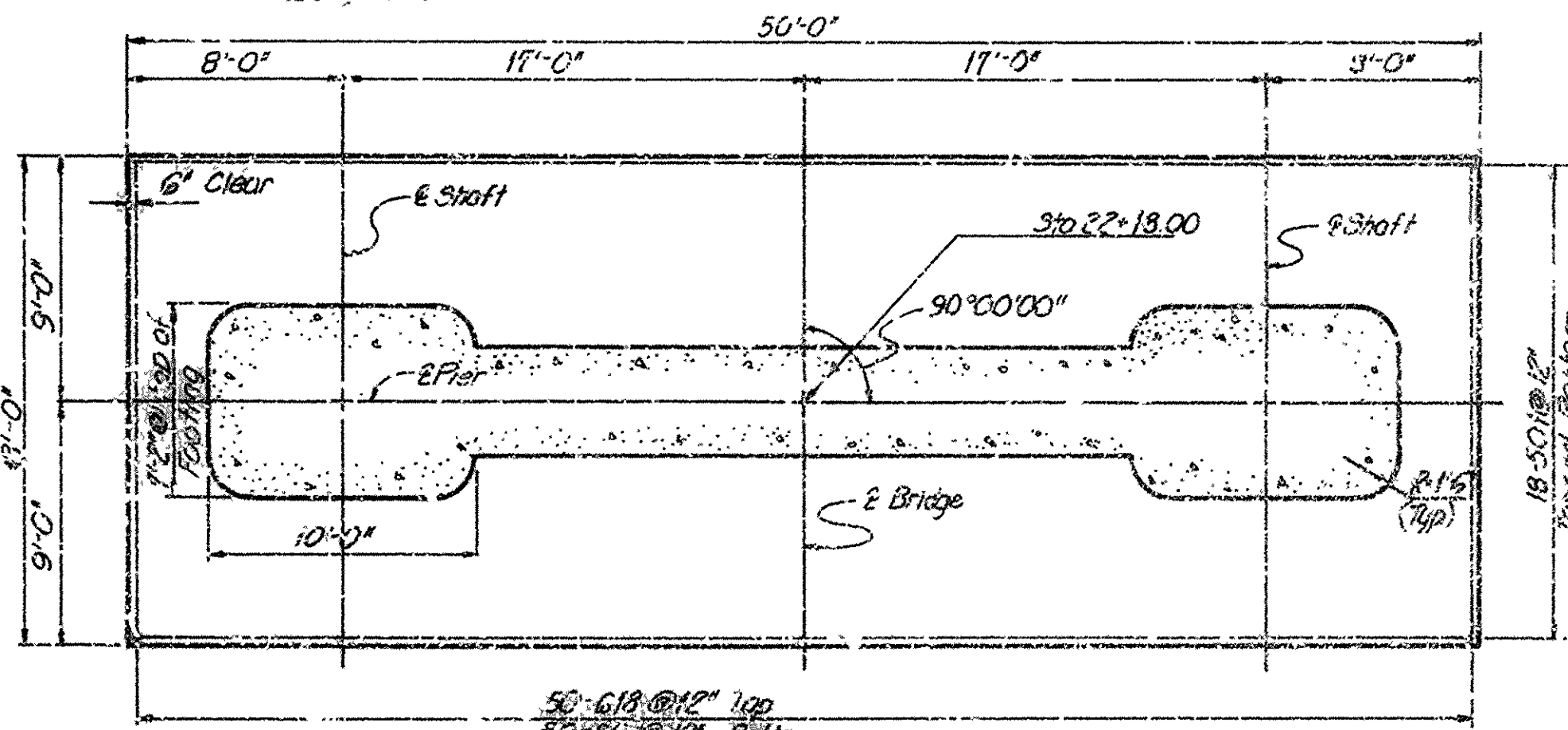


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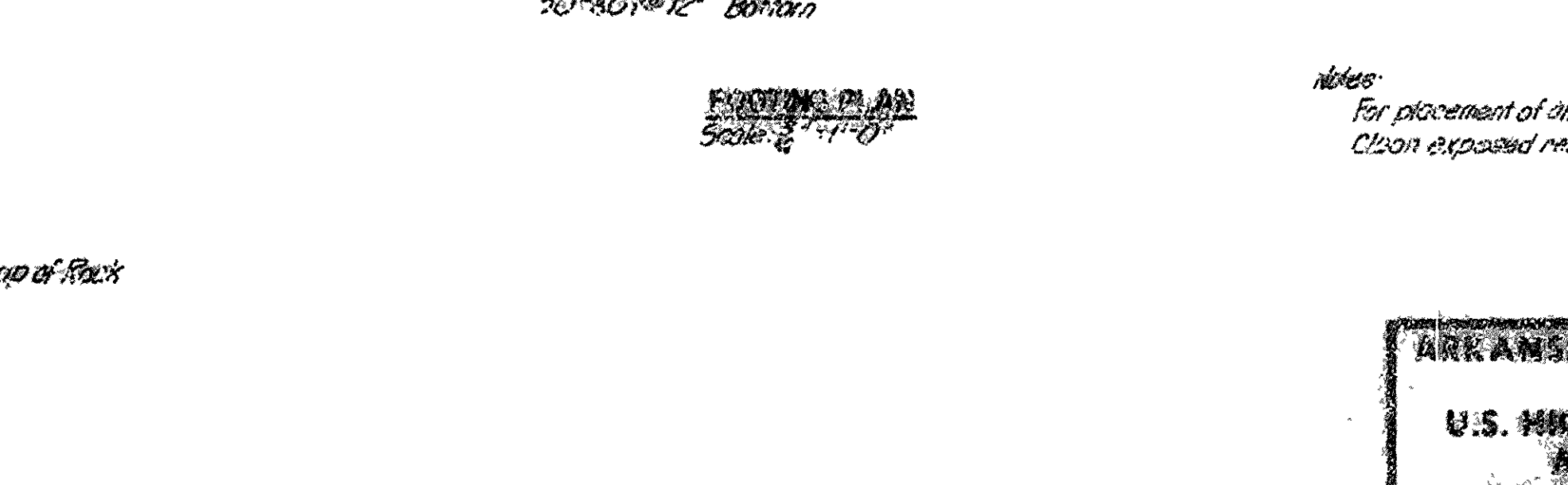
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Scale: 1/2" = 1'-0"



SECTION B-B  
Scale: 3/8" = 1'-0"



SECTION C-C  
Scale: 3/8" = 1'-0"



FRONT VIEW  
Scale: 3/8" = 1'-0"

Notes:  
For placement of anchor bolts see Bearing Assembly Details.  
Clean exposed reinforcing bars before Stage 2 construction.

ARKANSAS STATE HIGHWAY COMMISSION  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SECTION 100.00 TO 100.00  
PIER 10

HOWARD, NEEDLES, TAMMEN & BERGERDORFF  
CONSULTING ENGINEERS  
HNTB

DRAWN BY R.P. DATE 9/68 CHECKED BY M.D. DATE 12/68  
PIER 10







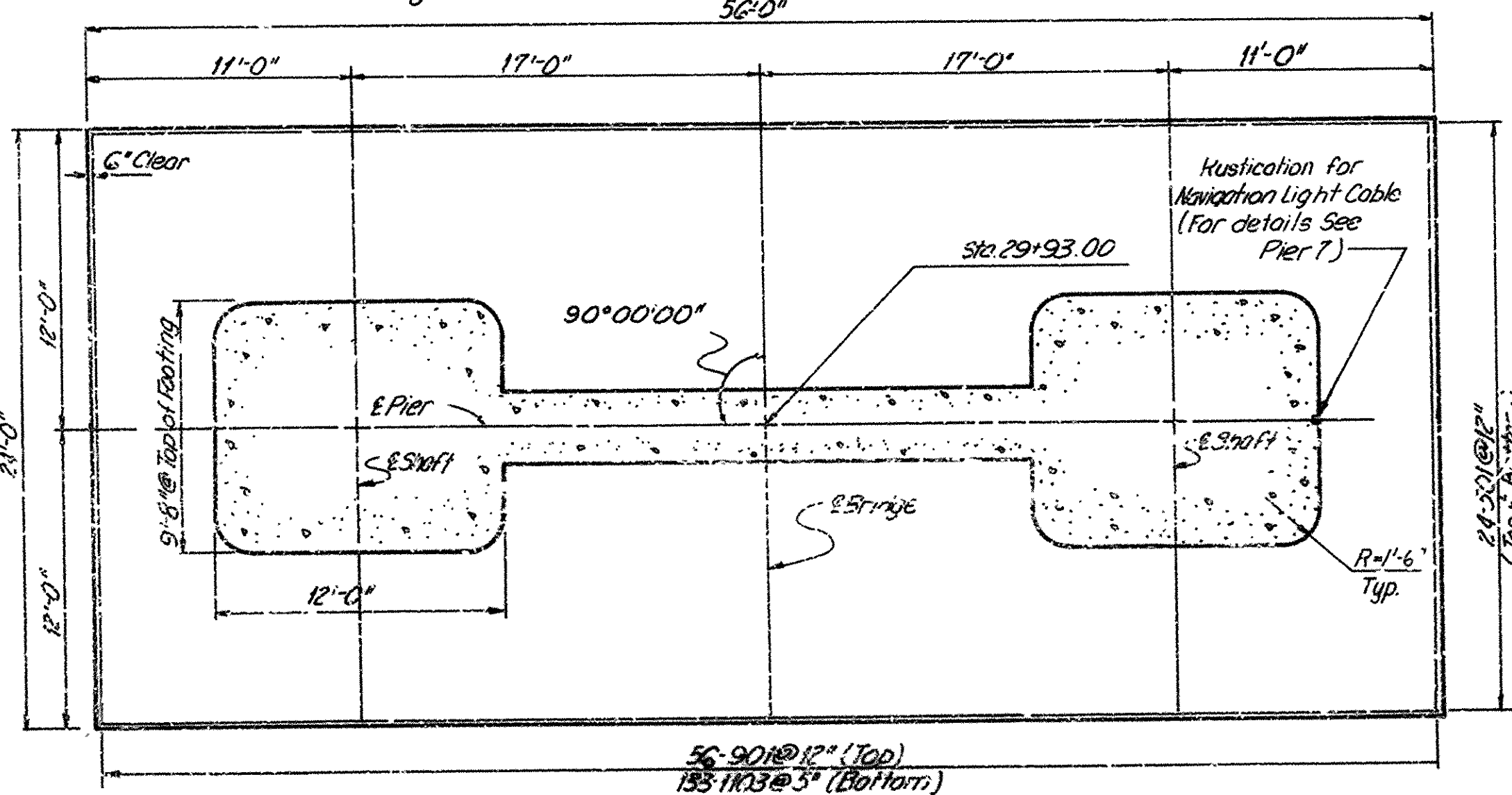
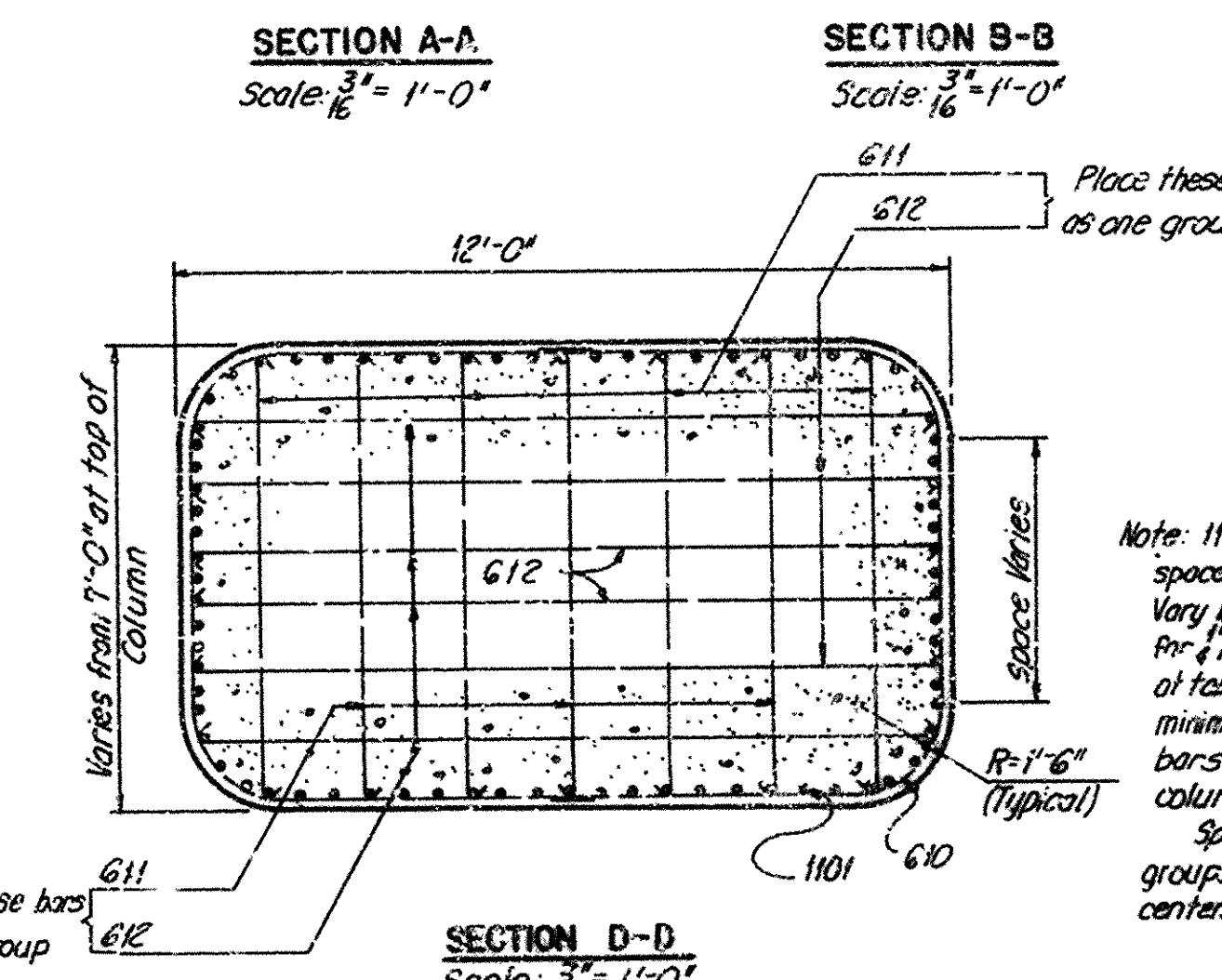
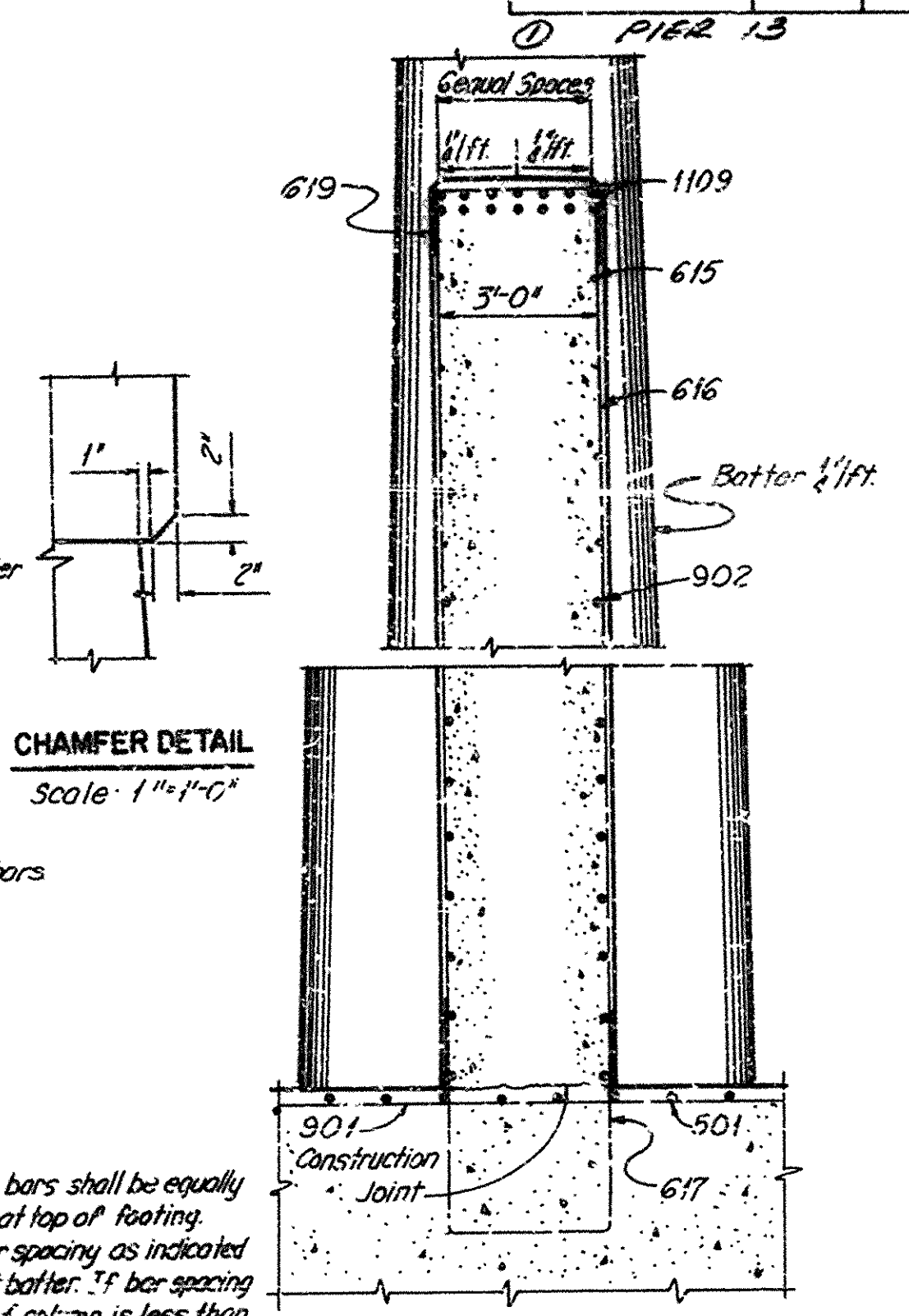
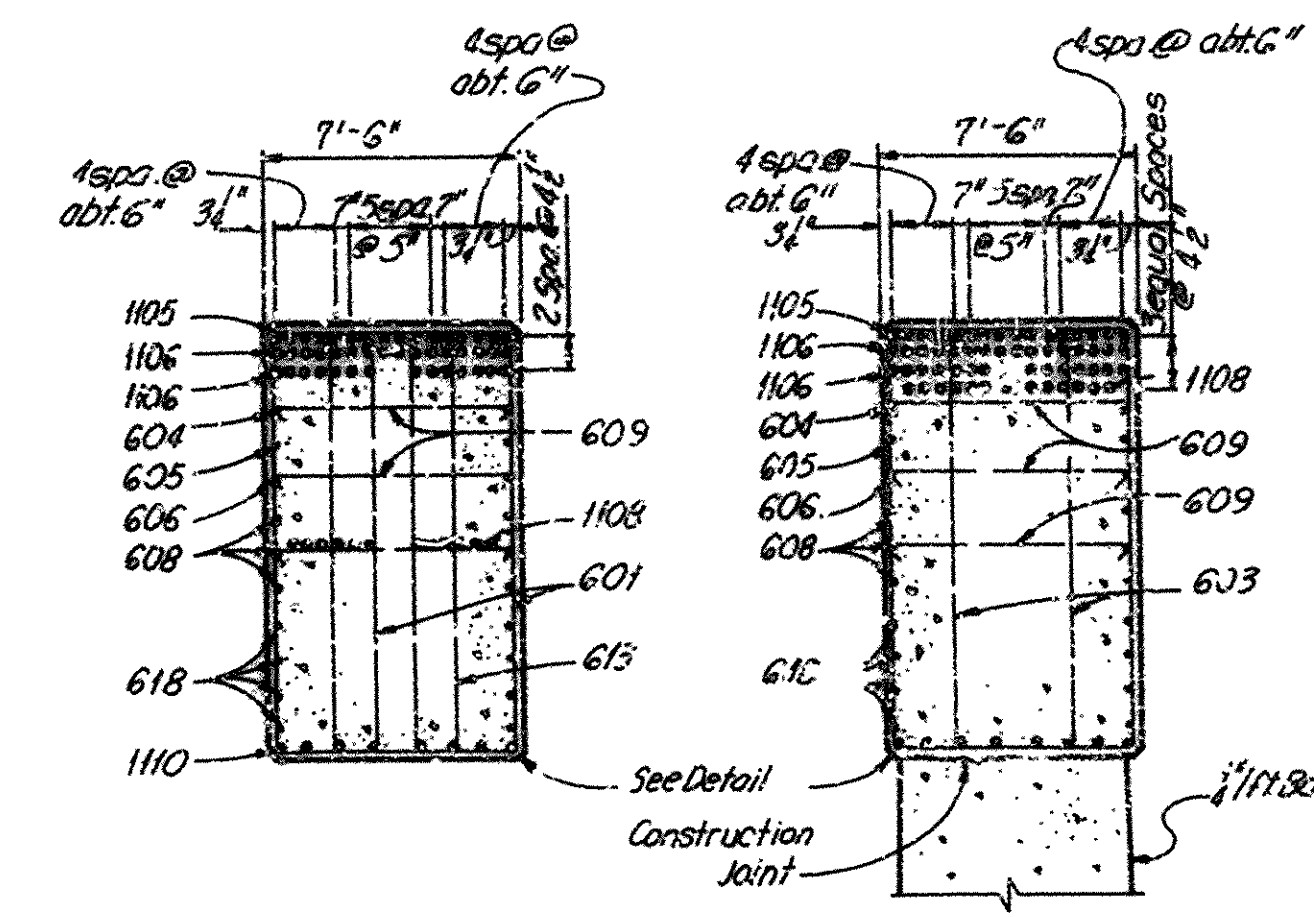
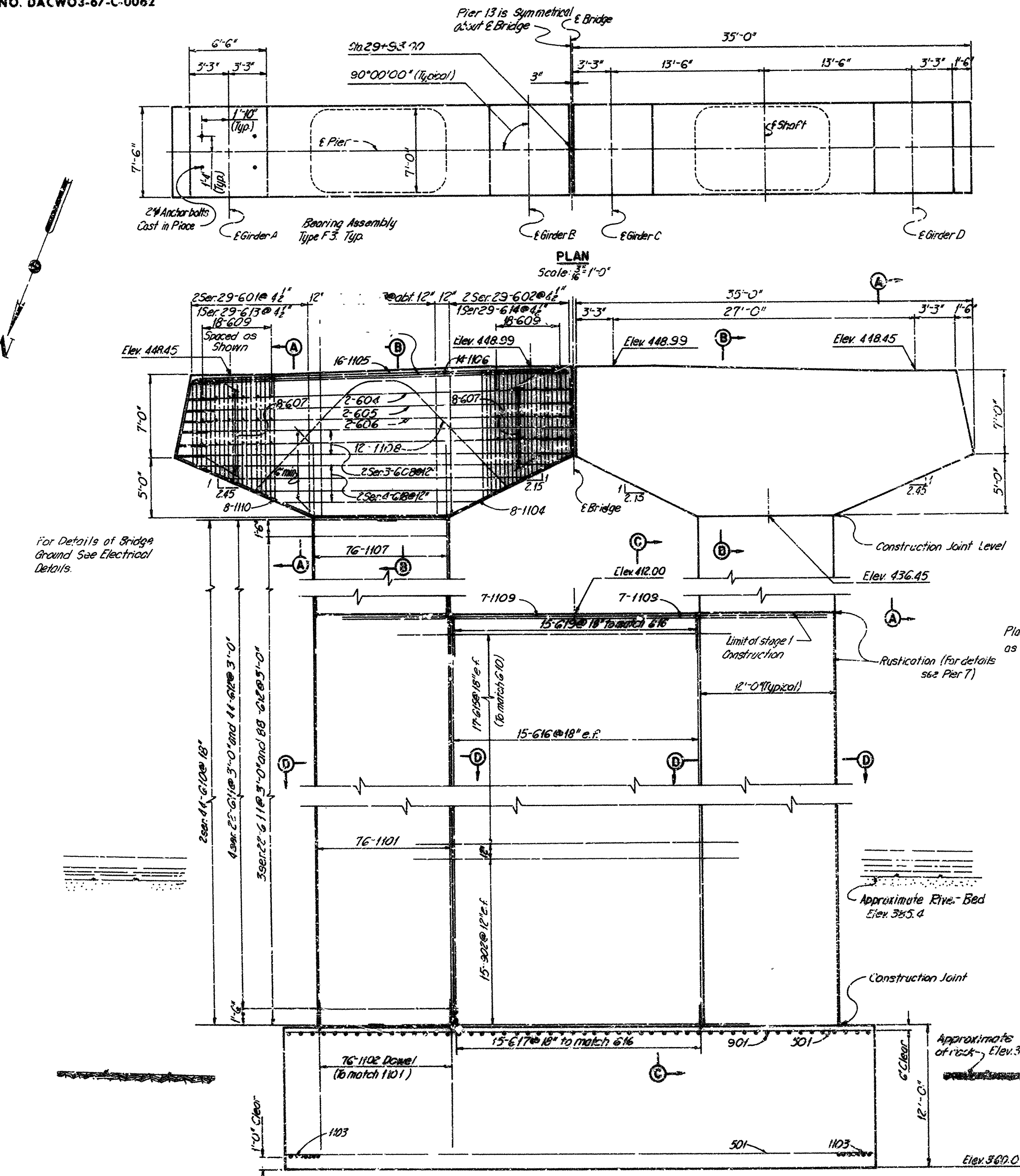
CONSULTING ENGINEERS

DESIGNED BY RDP DATE 8-20-68 CHECKED BY RDS DATE 9-24  
STANDARD NO. 7275 CASE NO. 7275 DRAWING NO. 1521



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ACCT. DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		22	127
JOB NO. 4584				



Note:  
For placement of Anchor Bolts see Bearing Assembly Details.  
Clean exposed reinforcing bars before stage 2 construction.

**CONSTRUCTION JOINT DETAILS**  
Scale:  $1\frac{1}{2}'' = 1'-0''$

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
**U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS**  
SHERMAN COUNTY, OKLAHOMA  
PIER 13

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
**HNTB**

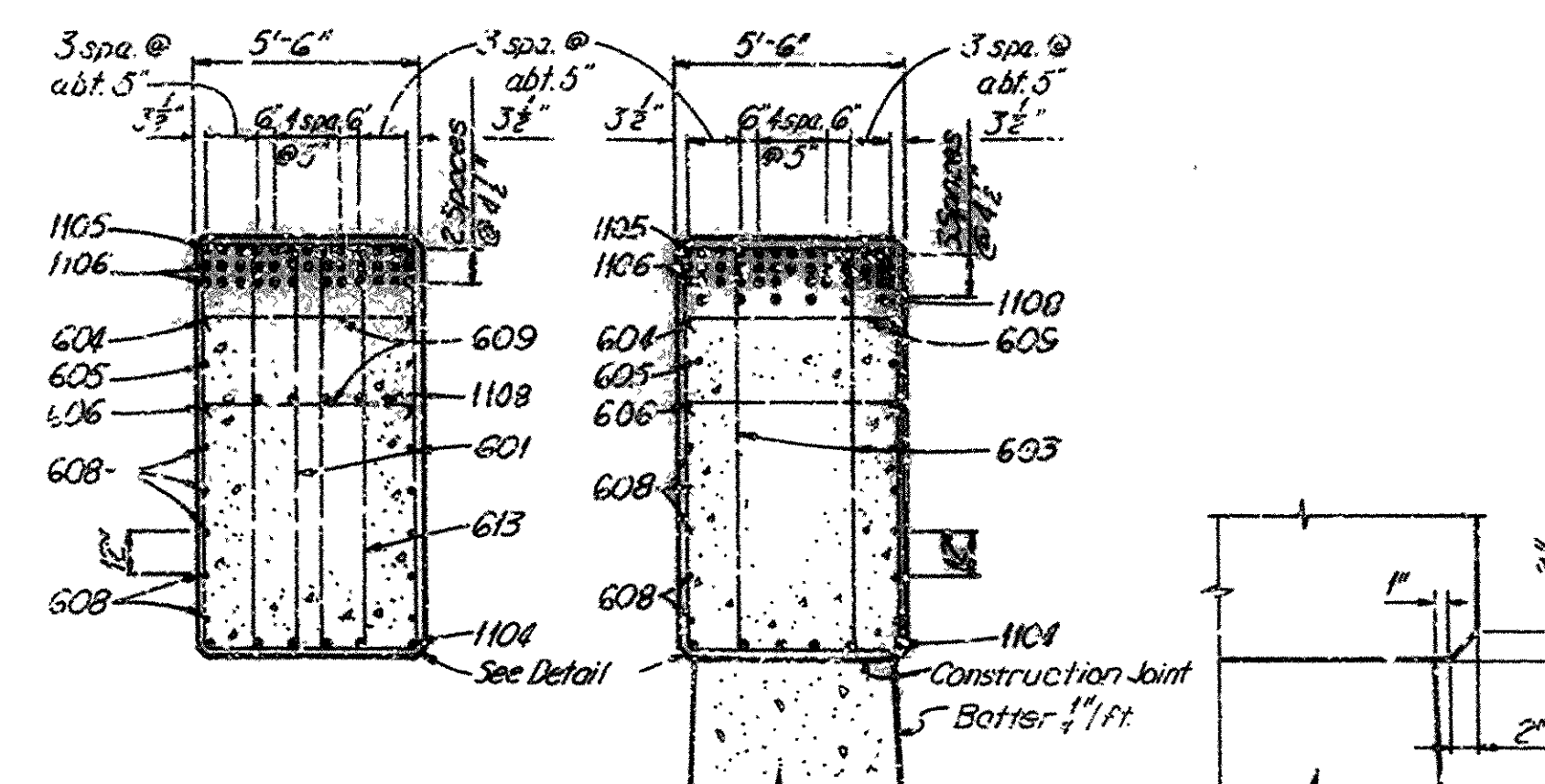
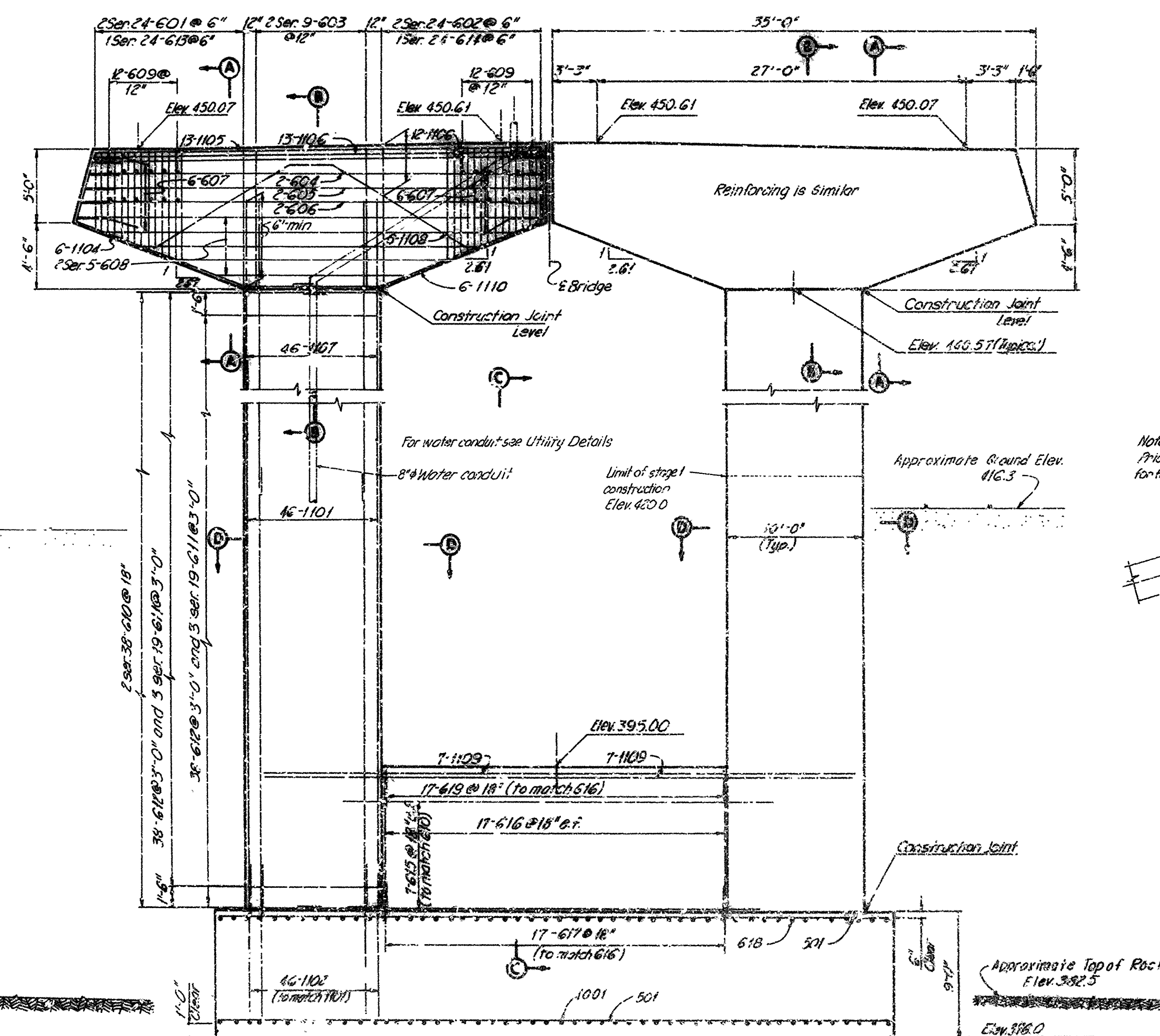
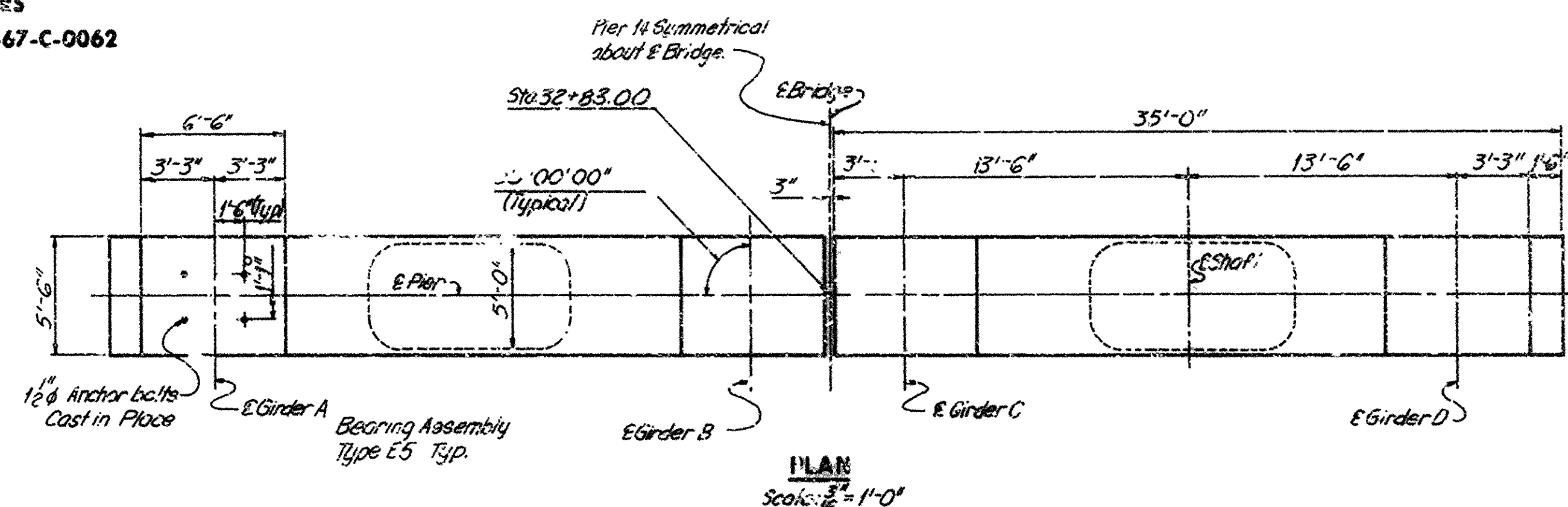
DRAWN BY R.P.P. DATE 8-20-68 CHECKED BY J.D.R. DATE 9-24-68  
DESIGN NO. 5275 SCALE 1/8" = 1'-0" DRAWING NO. 15122



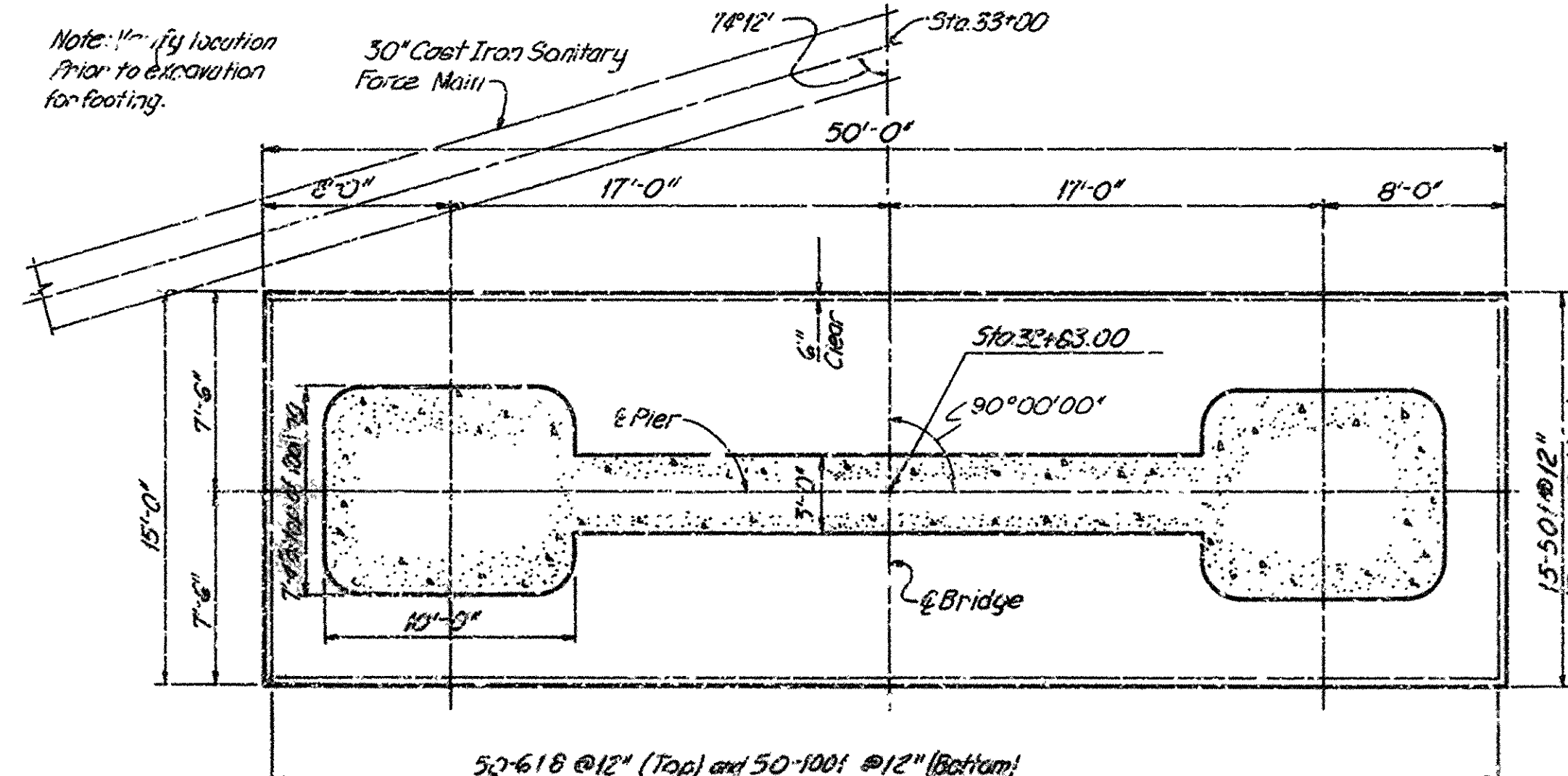
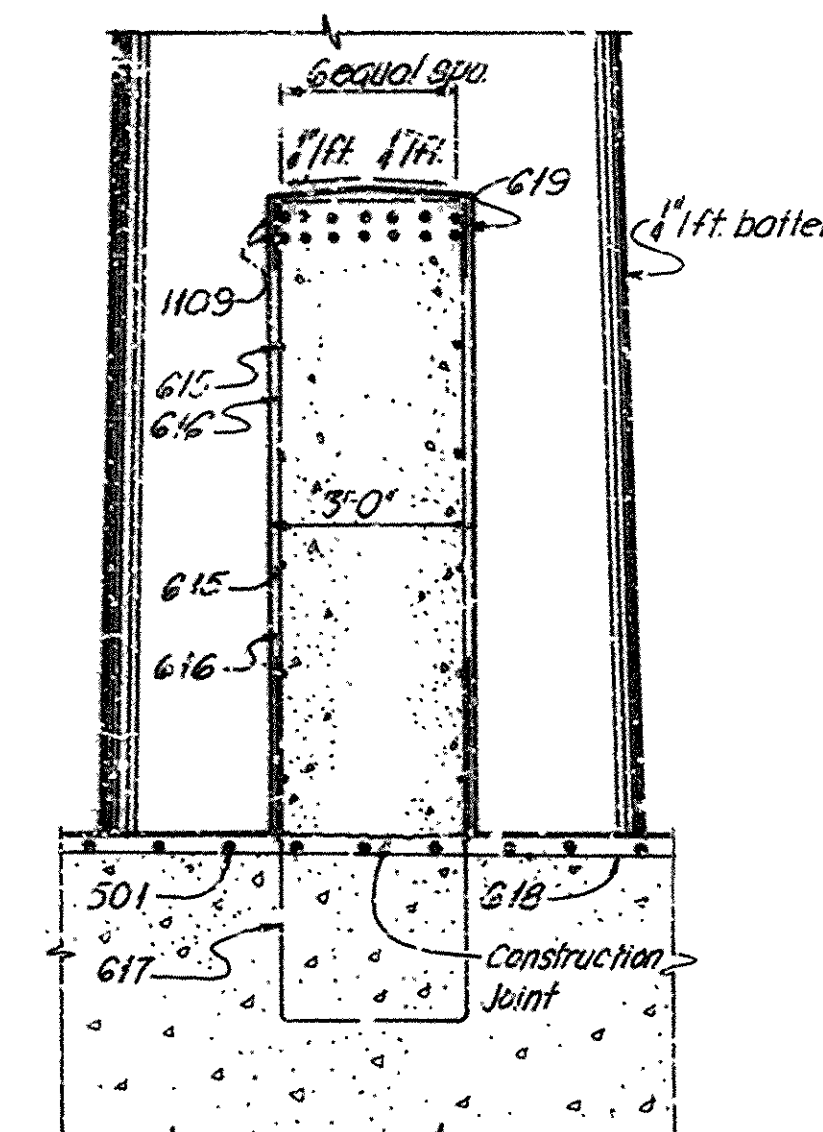
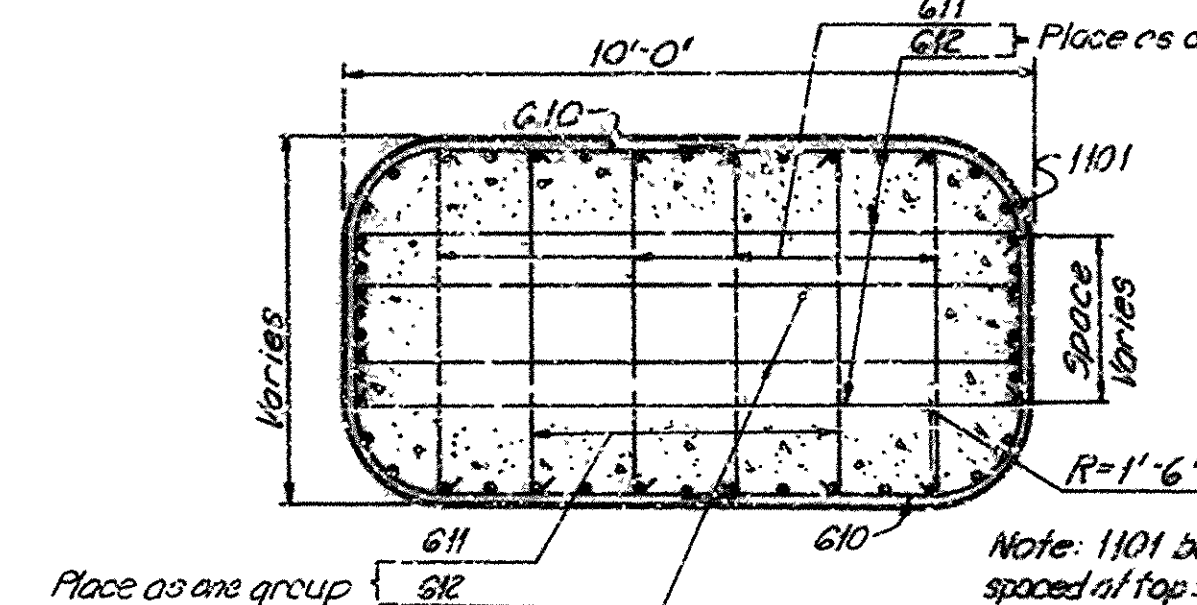
CC2PS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	ARK.			
JOB NO.	4504	23	127	

0 PIER 14



CHAMFER DETAIL  
Scale:  $\frac{1}{8}'' = 1'-0''$



CONSTRUCTION JOINT DETAIL  
Scale:  $\frac{1}{8}'' = 1'-0''$

Notes:  
For placement of anchor bolts see Bearing Assembly Details  
Clean exposed reinforcing bars before starting construction.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
A, FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS

PIER 14

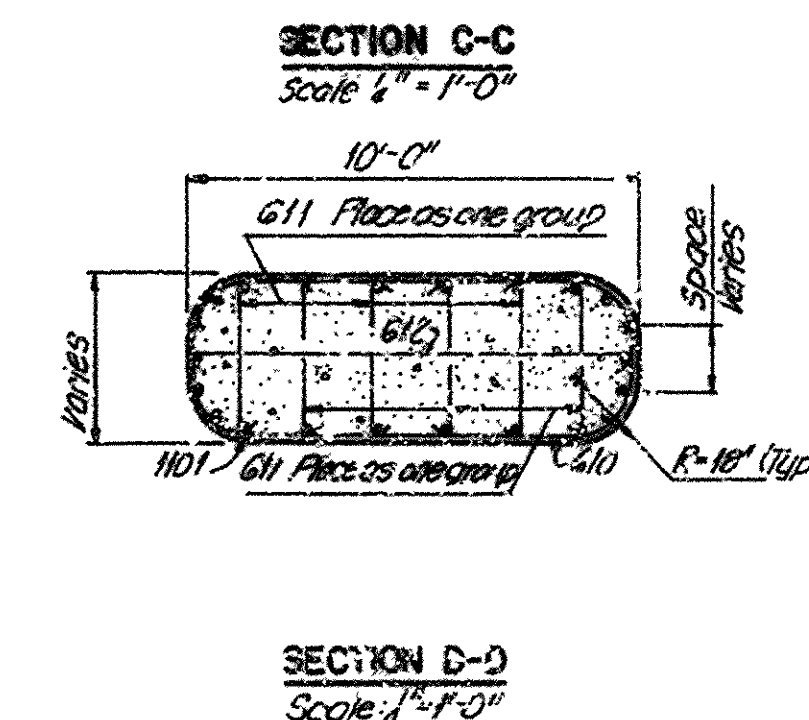
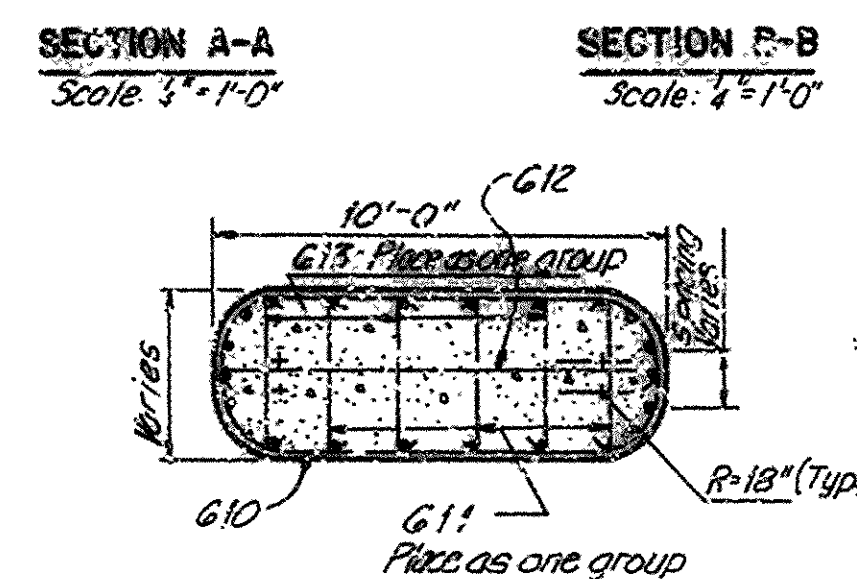
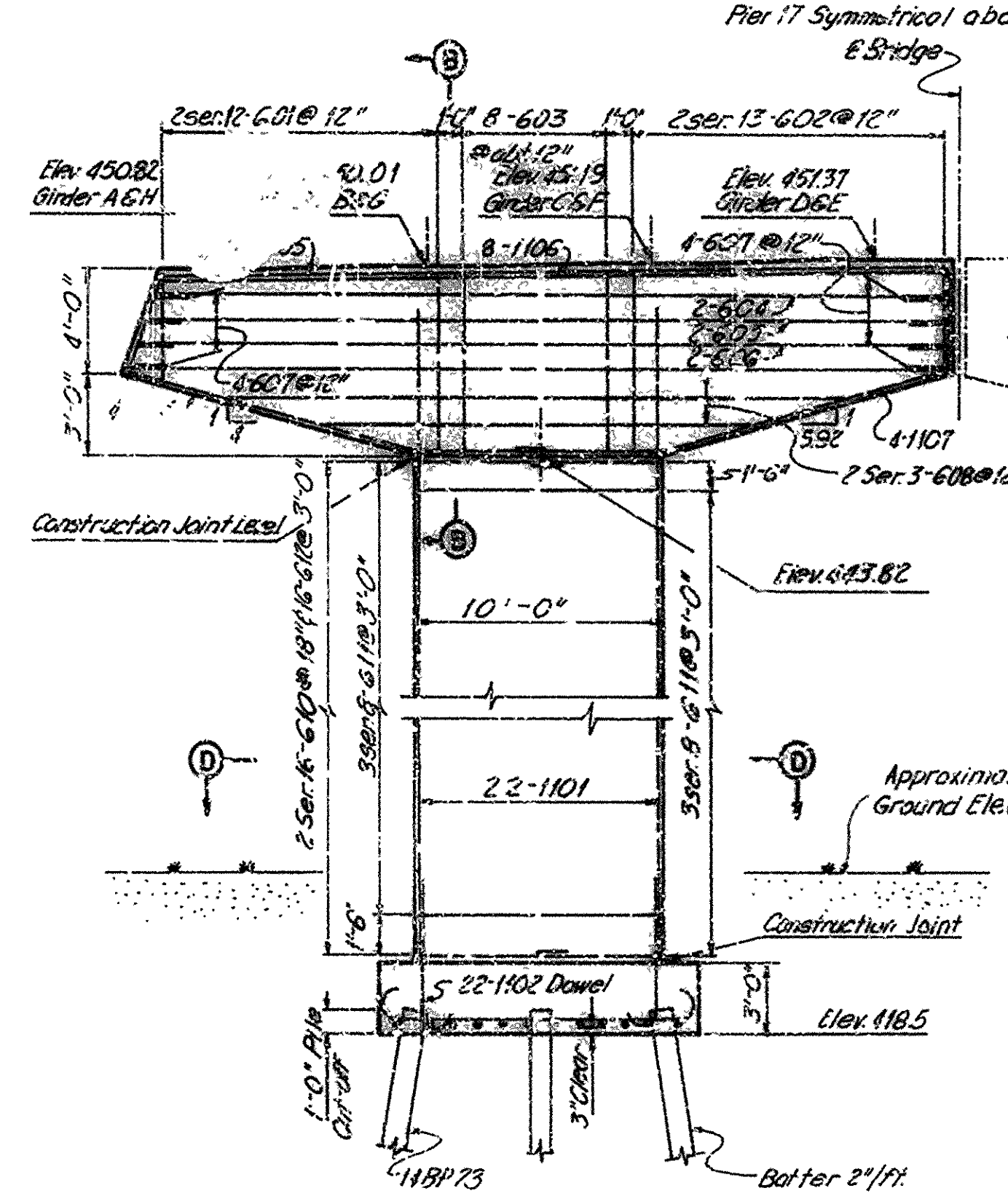
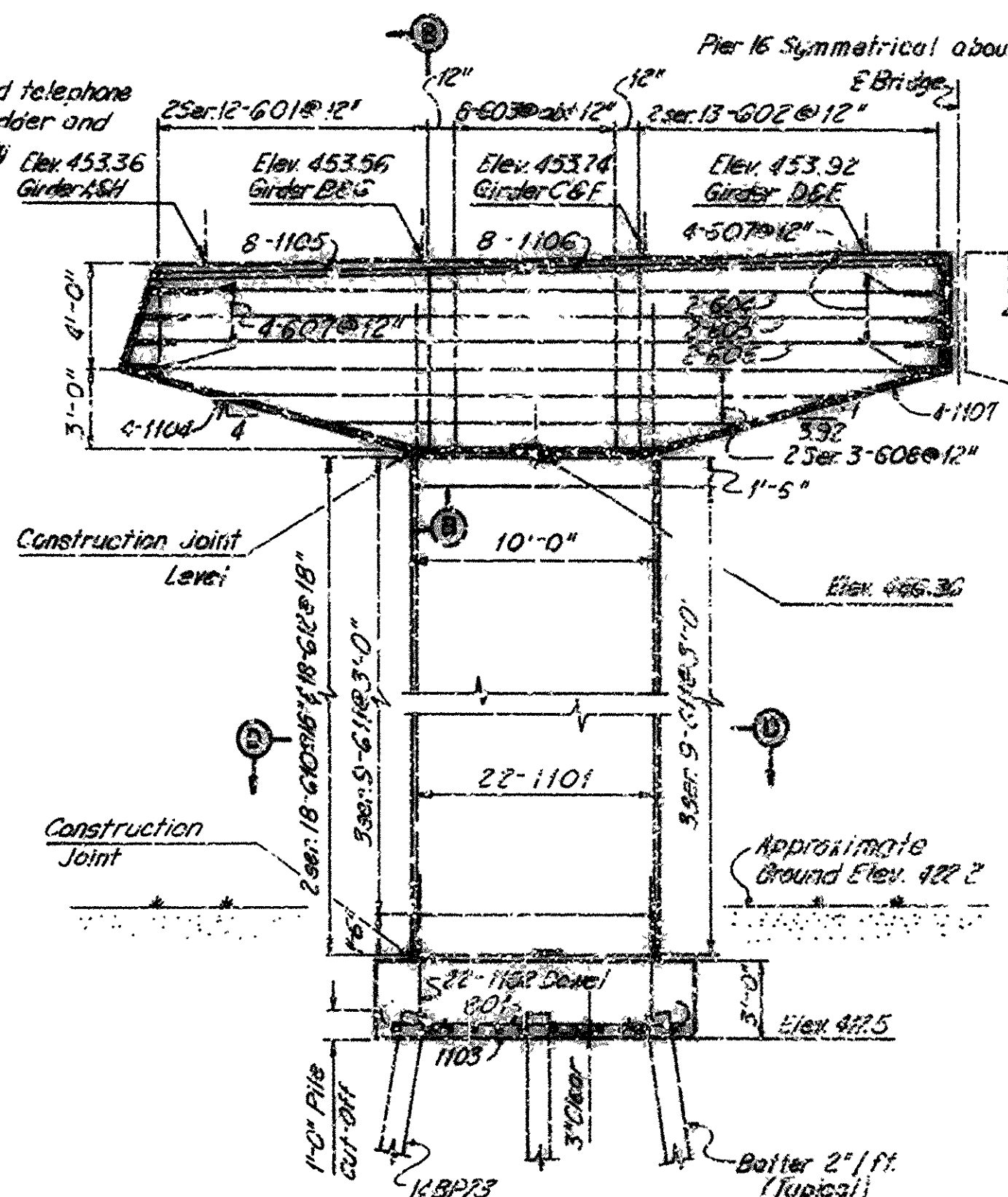
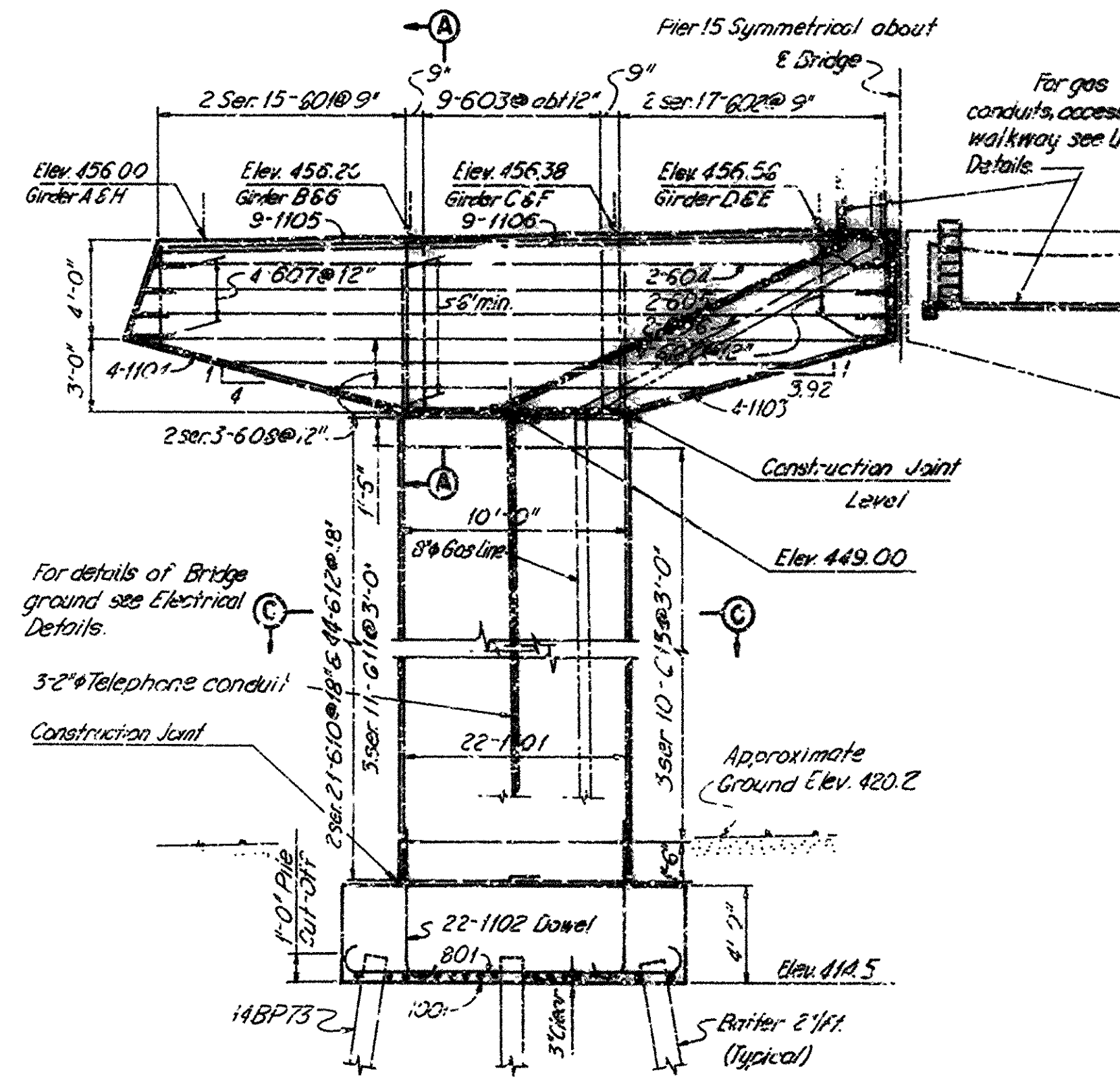
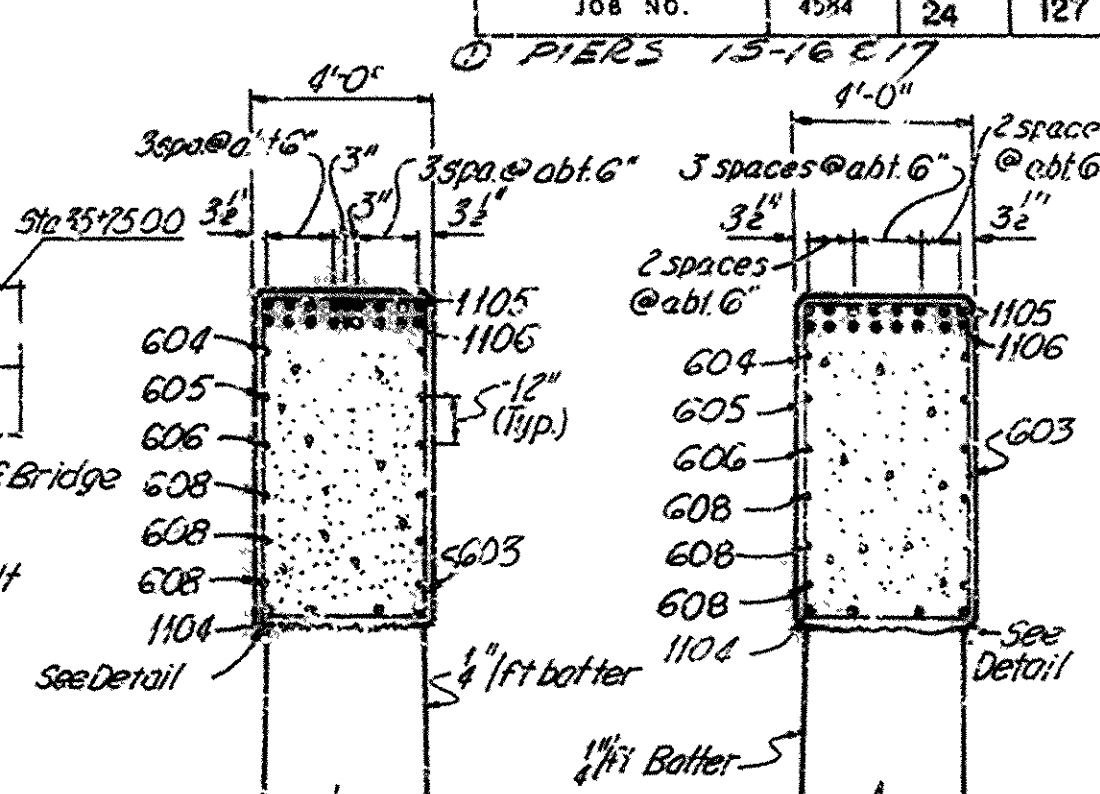
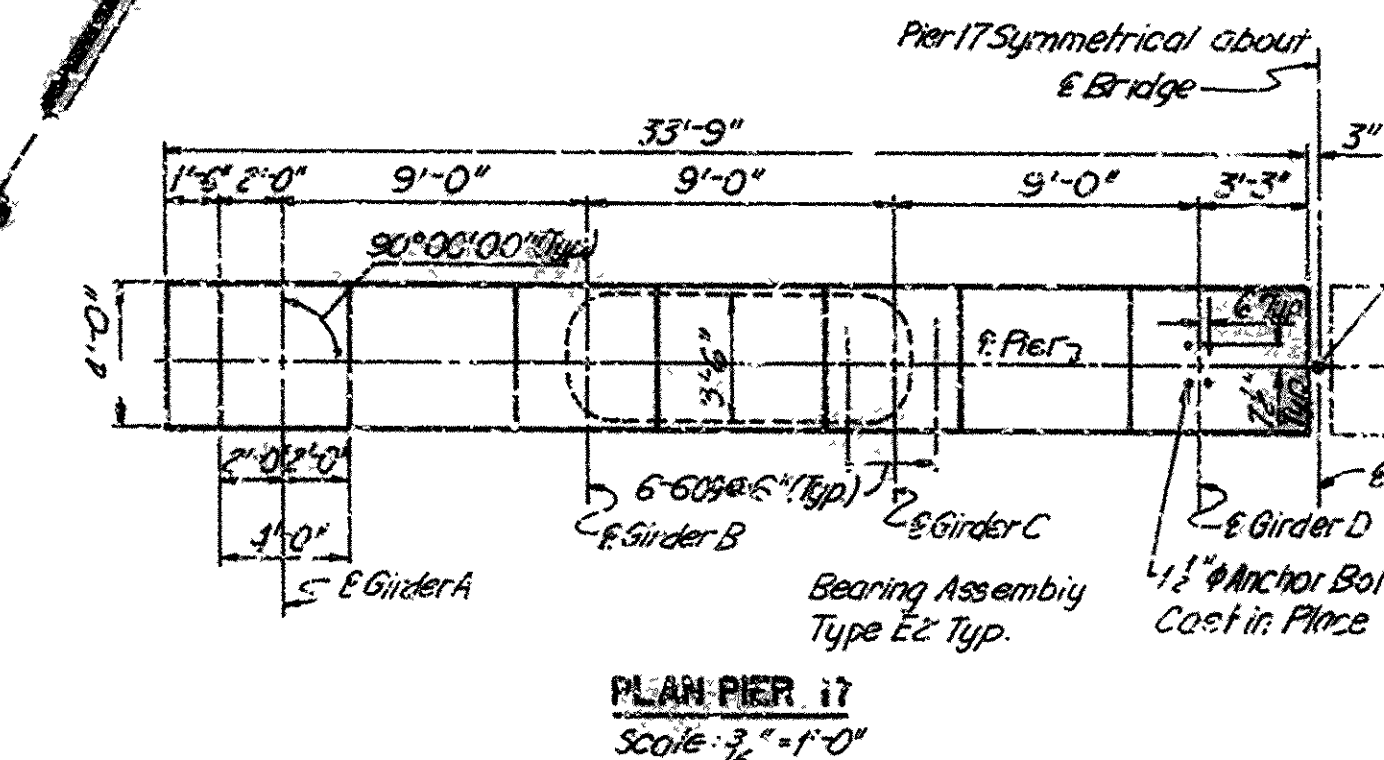
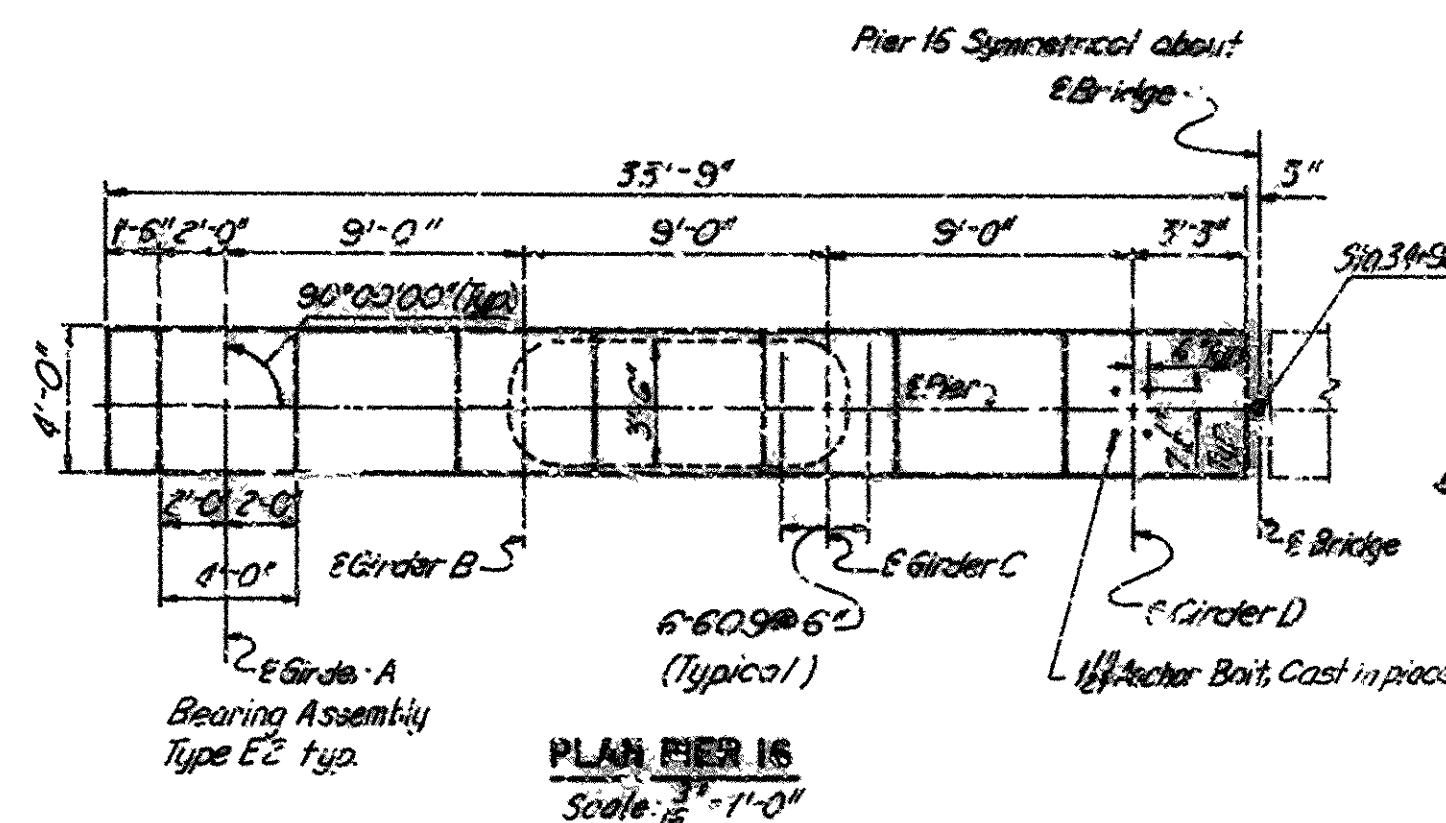
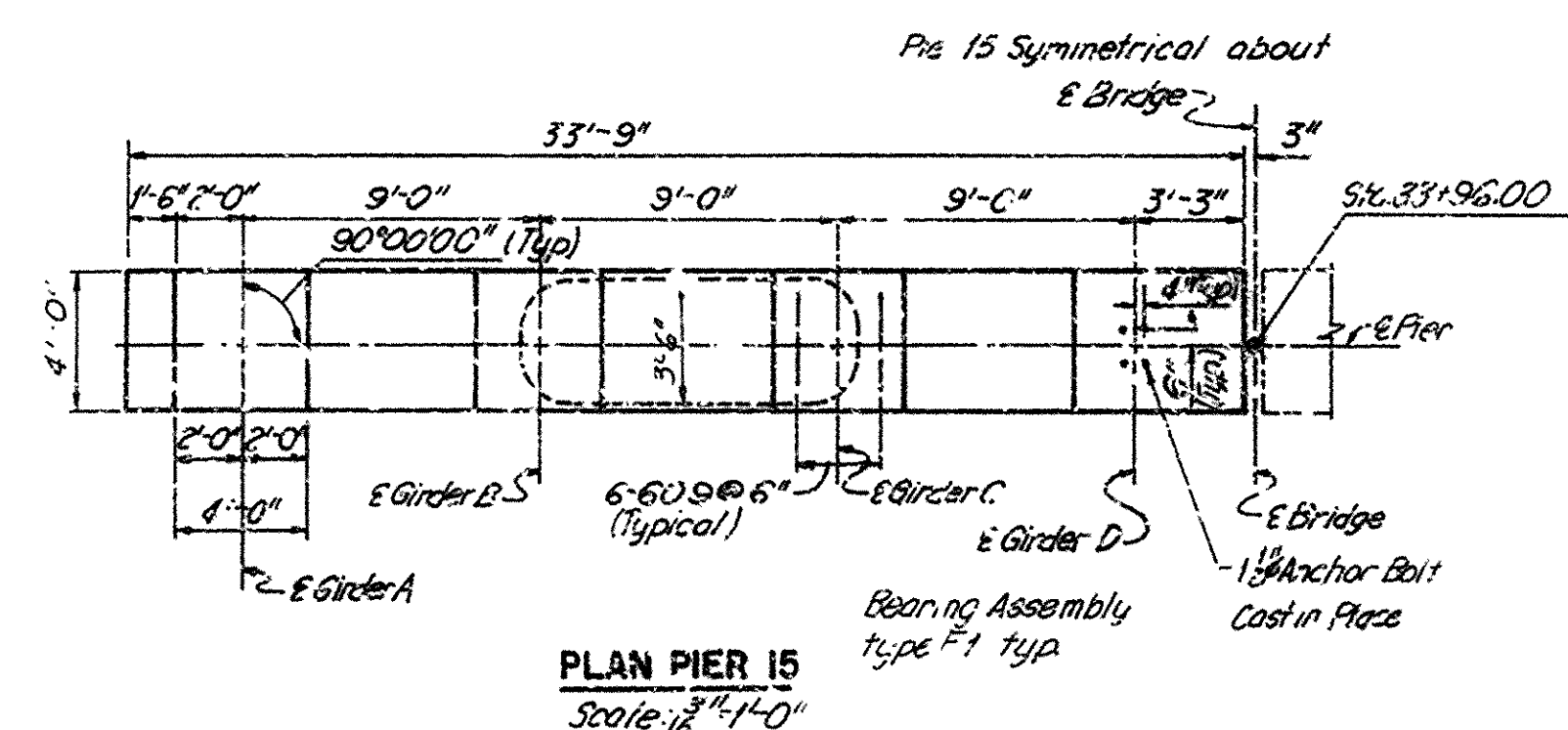
HOWARD, NEEDLES, TAMMEN & BERGENSOFF  
CONSULTING ENGINEERS

HNTB

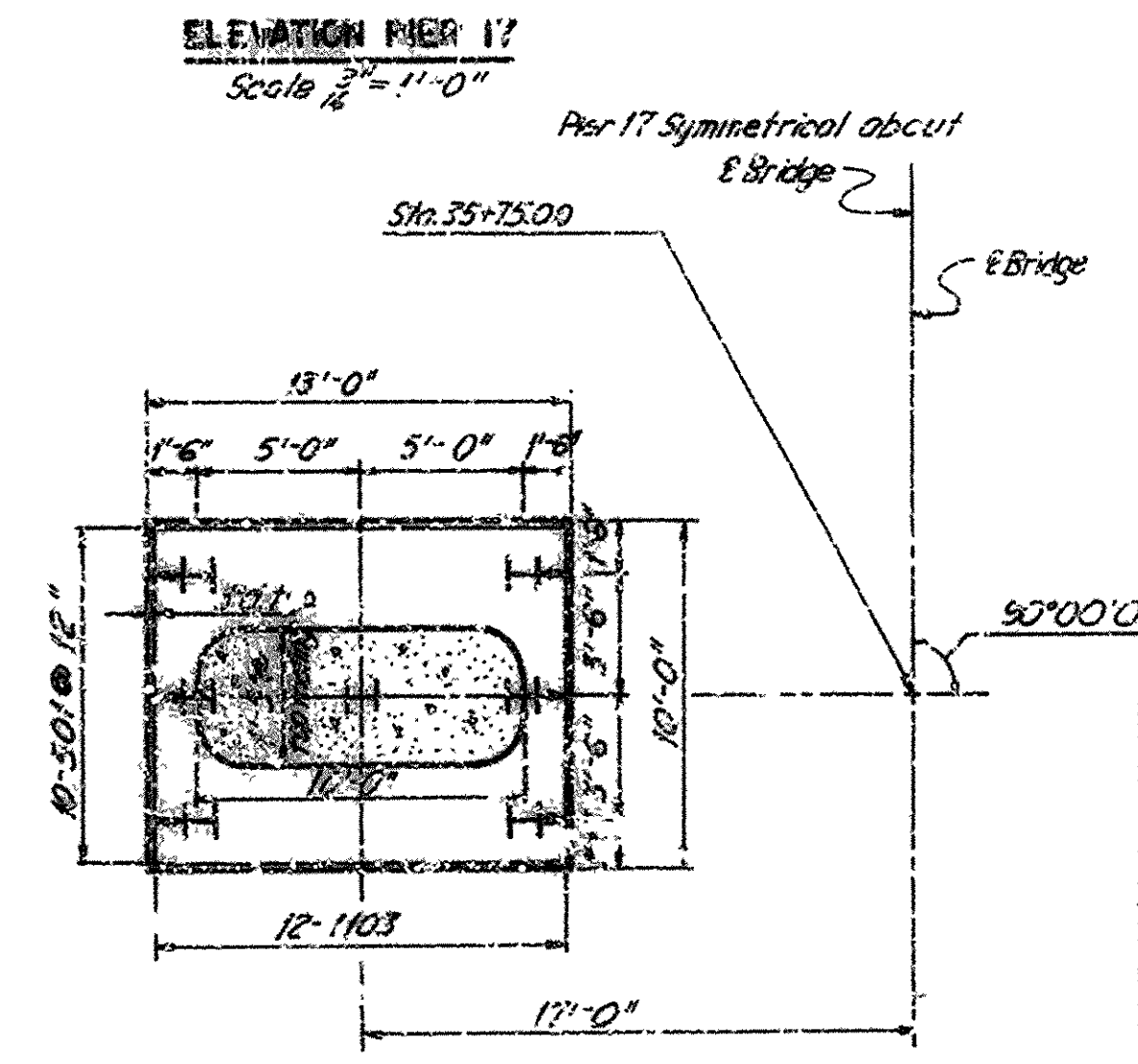
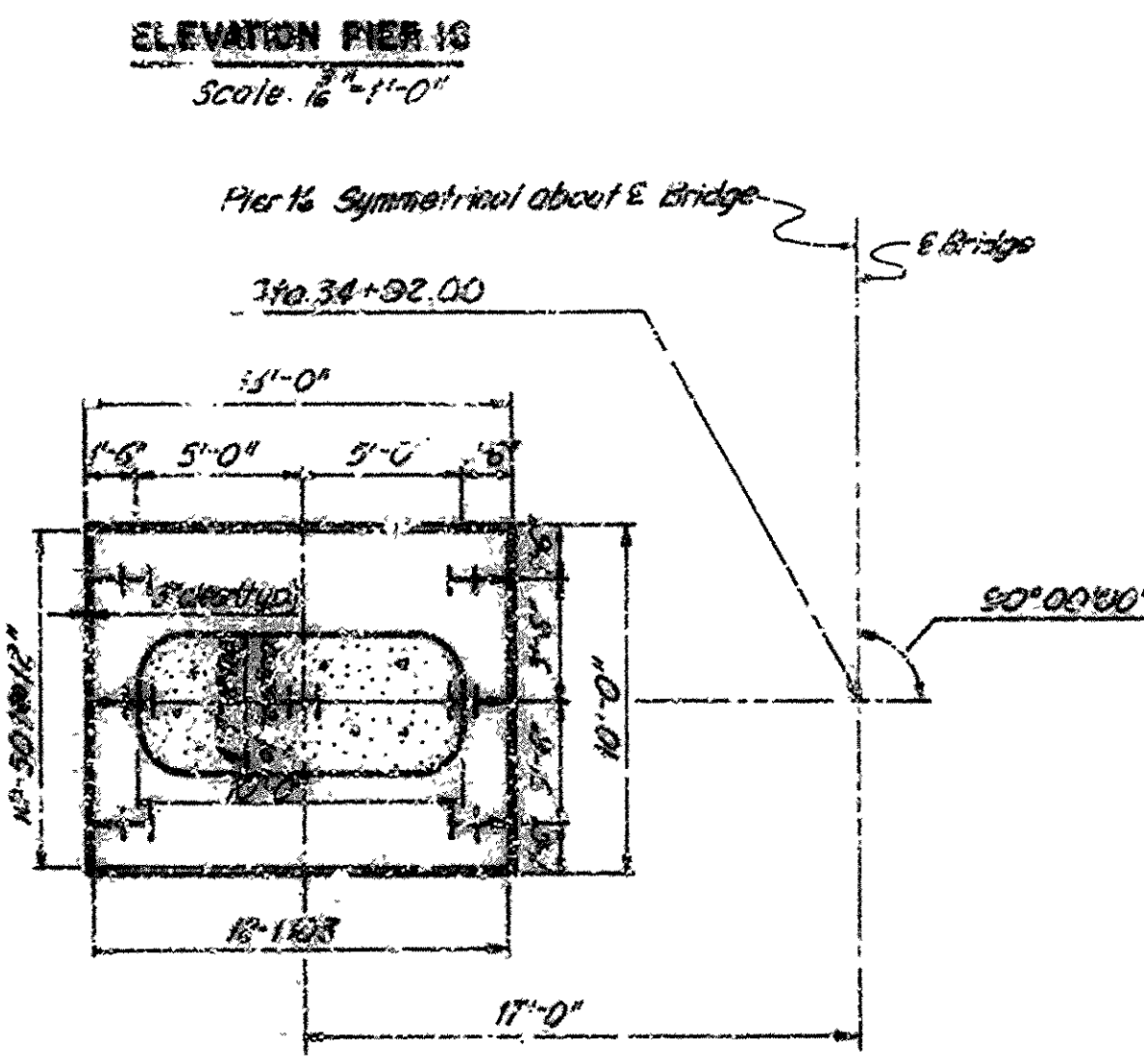
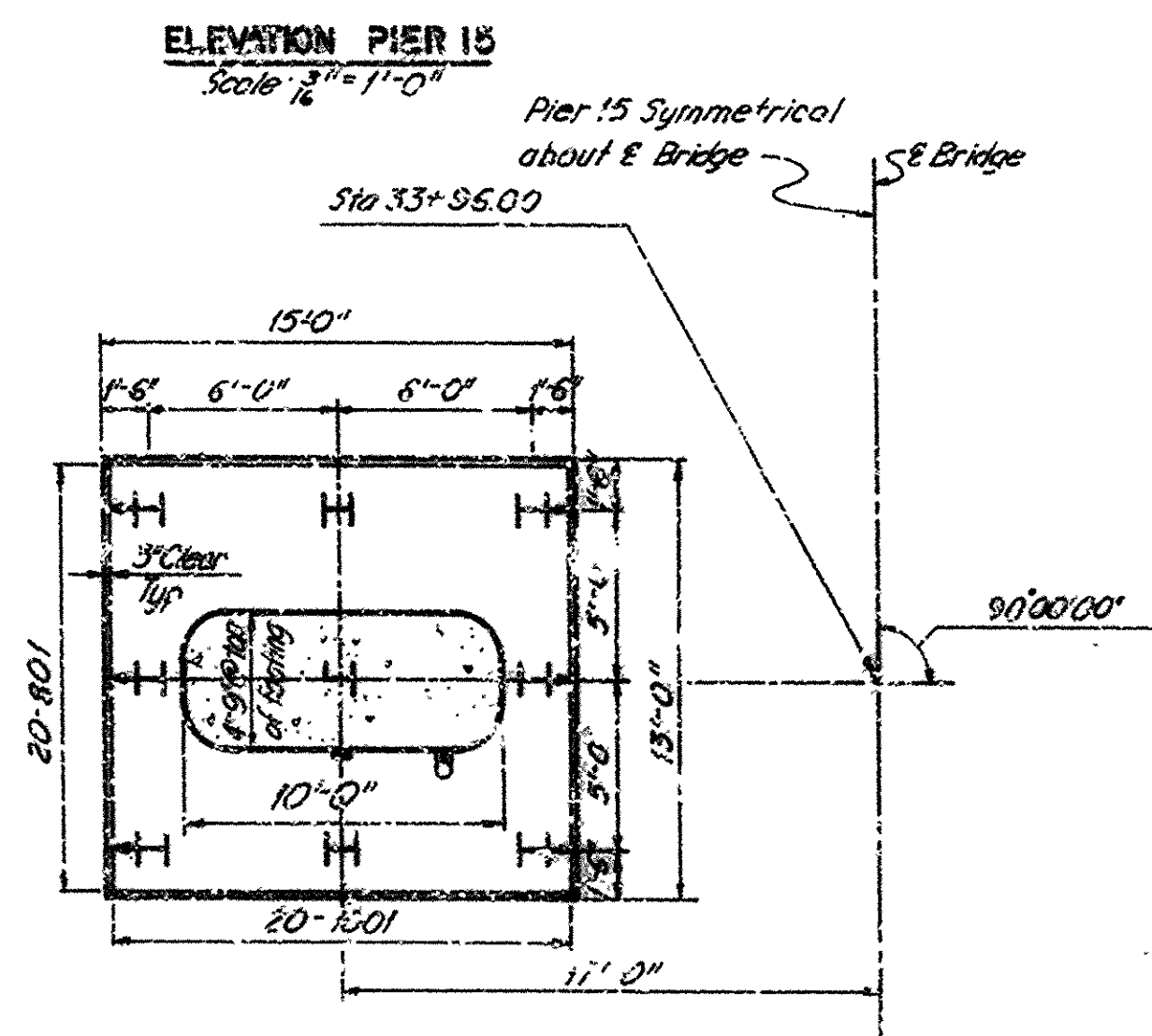
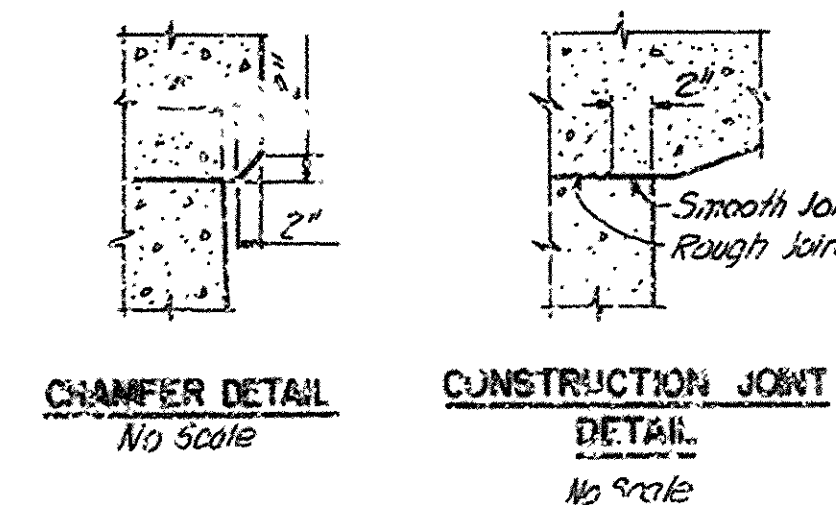
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DESIGNED BY BDP DATE 8-10-68 DRAWING NO. 15123



FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK		24	127
JOB NO.	4584			



Notes:  
For placement of anchor bolts see Bearing Assembly Details.  
Clean exposed reinforcing bars before stage 2 construction.



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEMPER COUNTY, ARKANSAS  
SEMPER COUNTY, ARKANSAS

PIERS 15, 16, 17

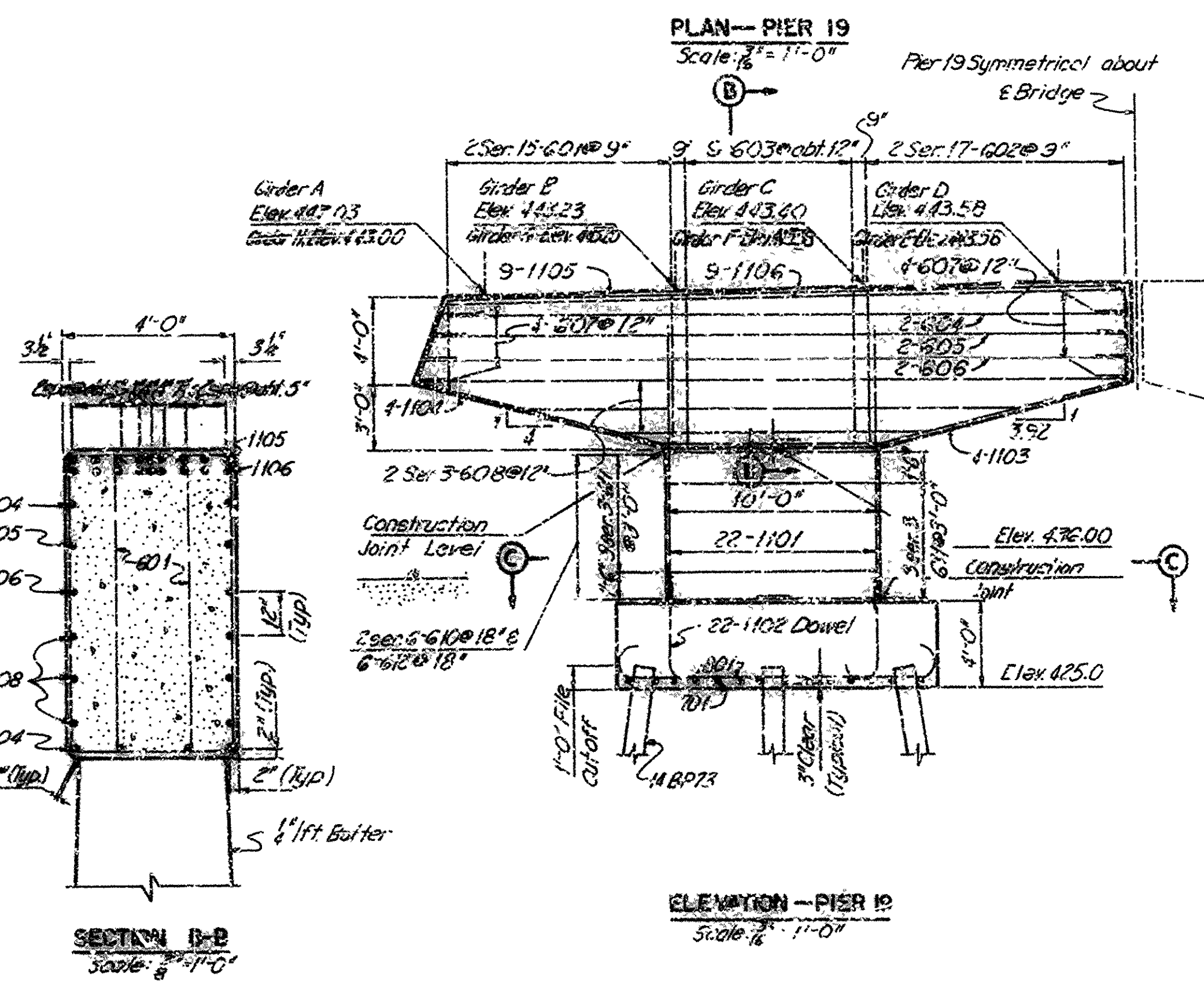
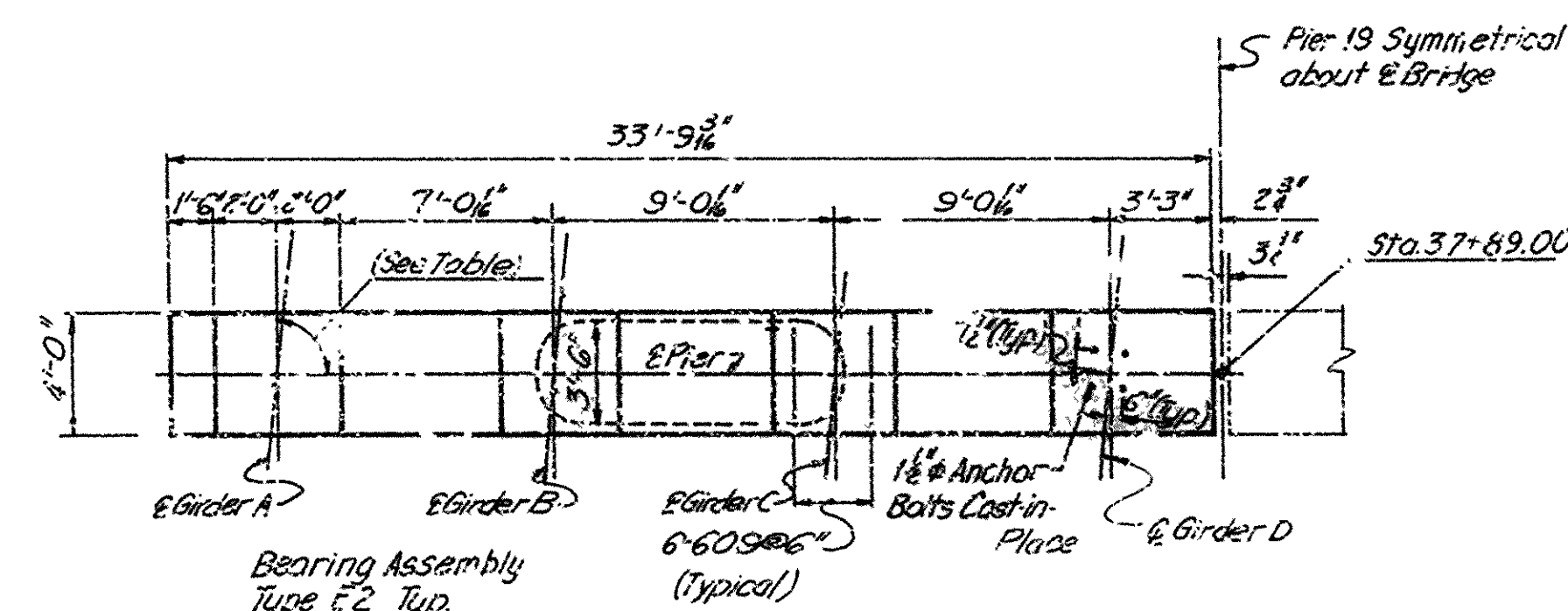
HOWARD NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS

HNTB

DRAWN BY RPP DATE 7-16-66 CHECKED BY RPP DATE 8-24-66  
SCALE: AS SHOWN DRAWING NO. 1012



11 PERS 13 E 10



Approximate Ground  
Elev. 431.2

10'-0"

*511 Place as one group*

610

611

*611 Place as one group*

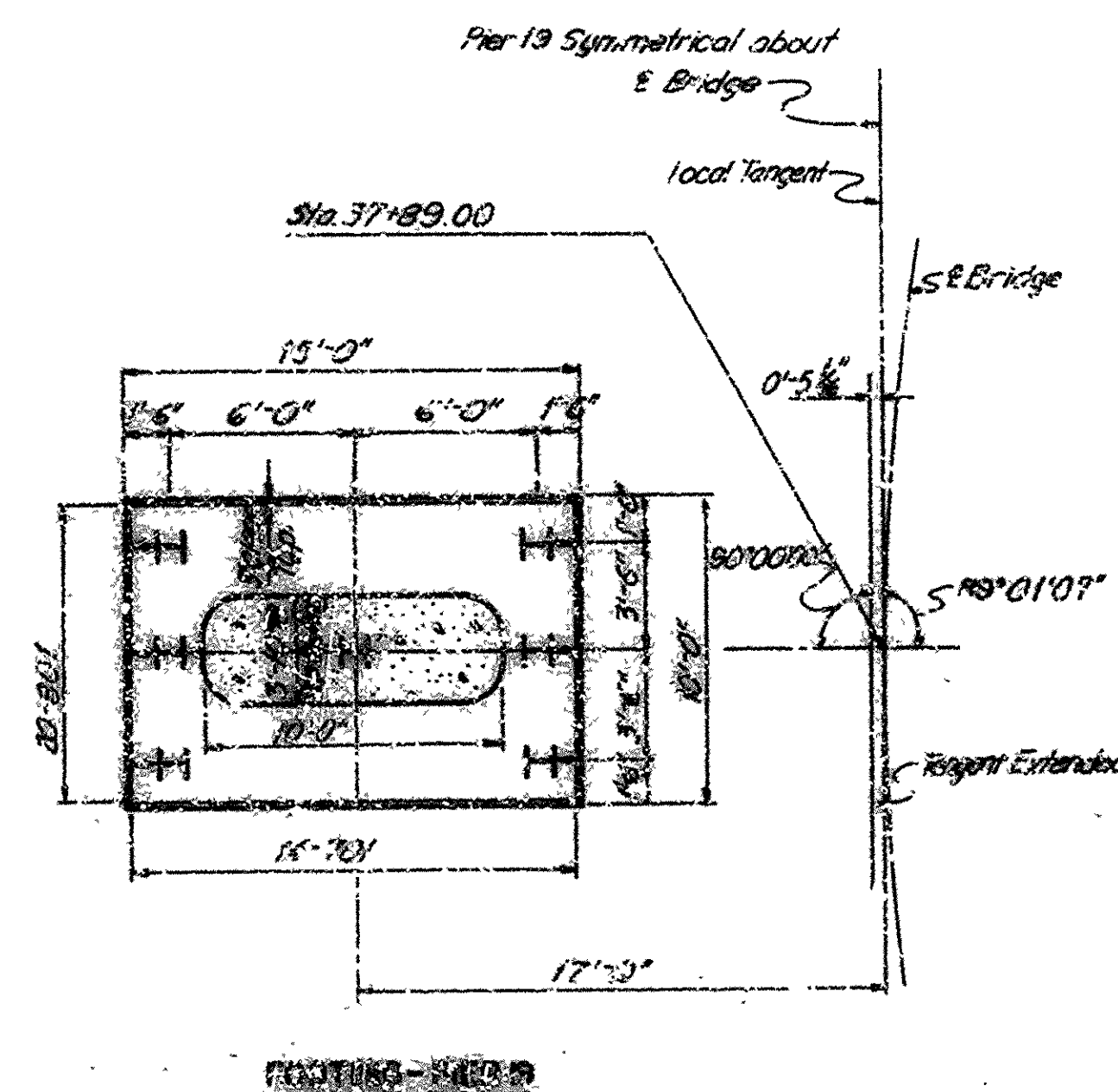
612

612

R-1'-6"  
(Typ.)

SECTION C-C

Scale: 3/4" = 1'-0"



Notes:  
For placement of anchor bolts see Bearing Assembly Details.  
Clean exposed reinforcing bars before stage 2 construction.

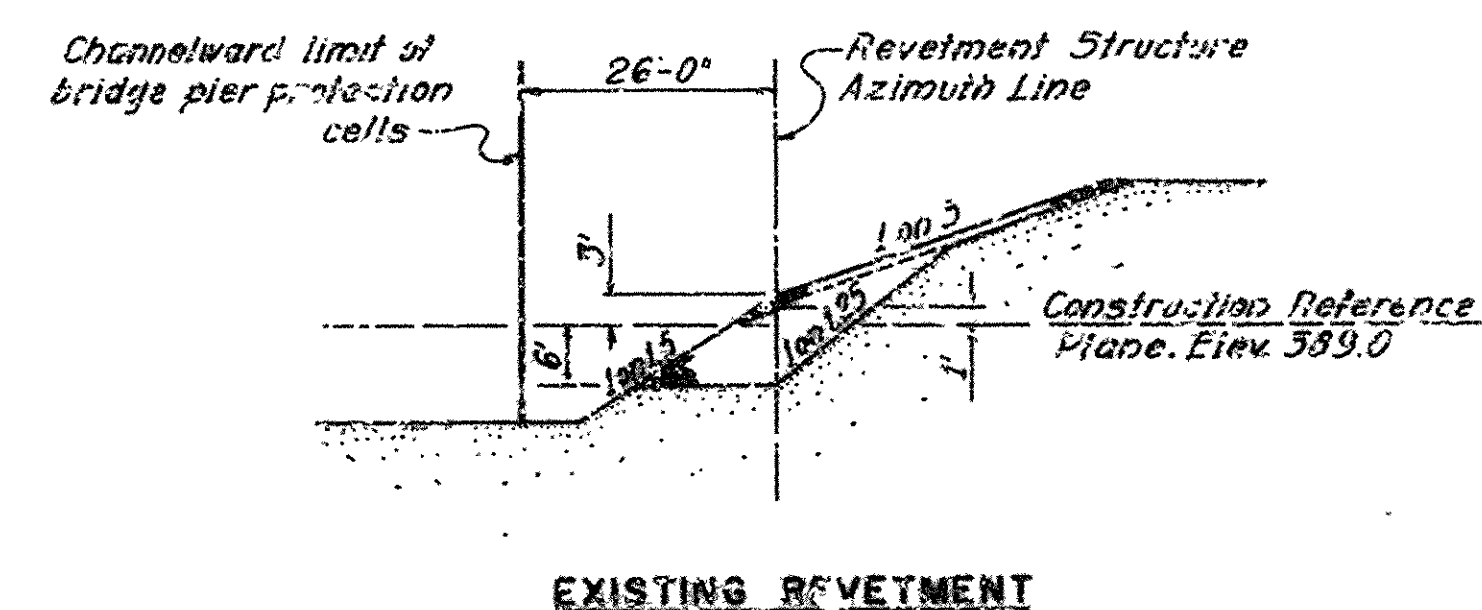
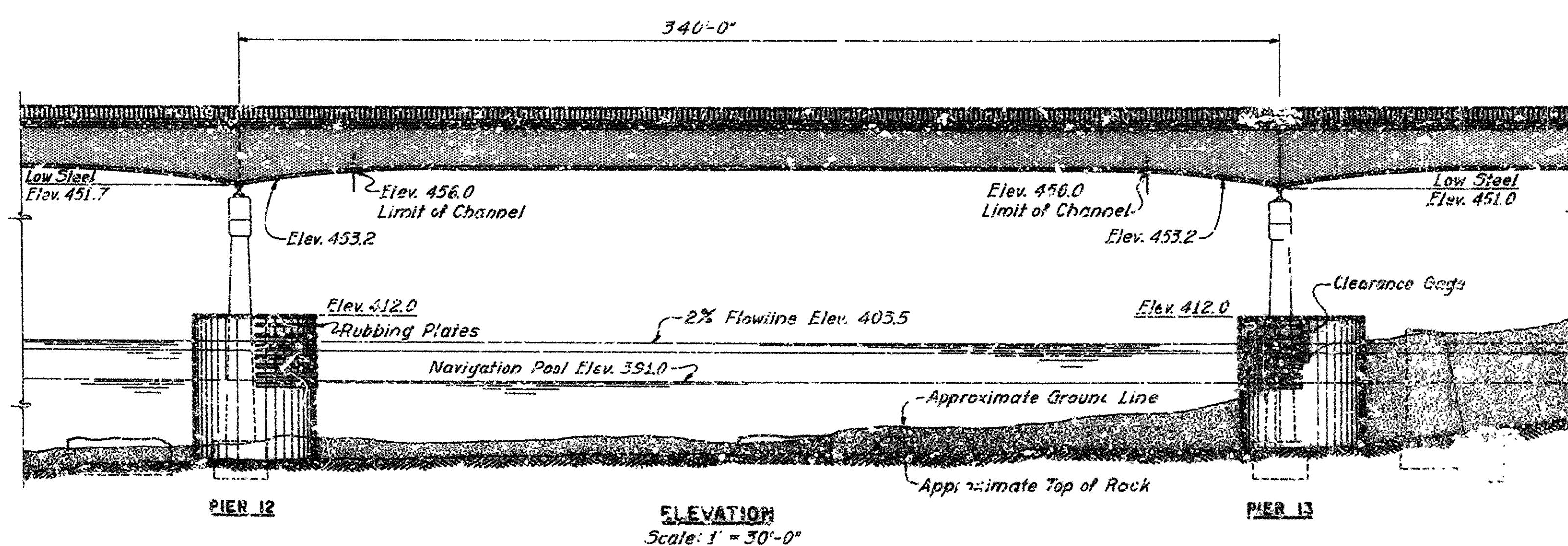
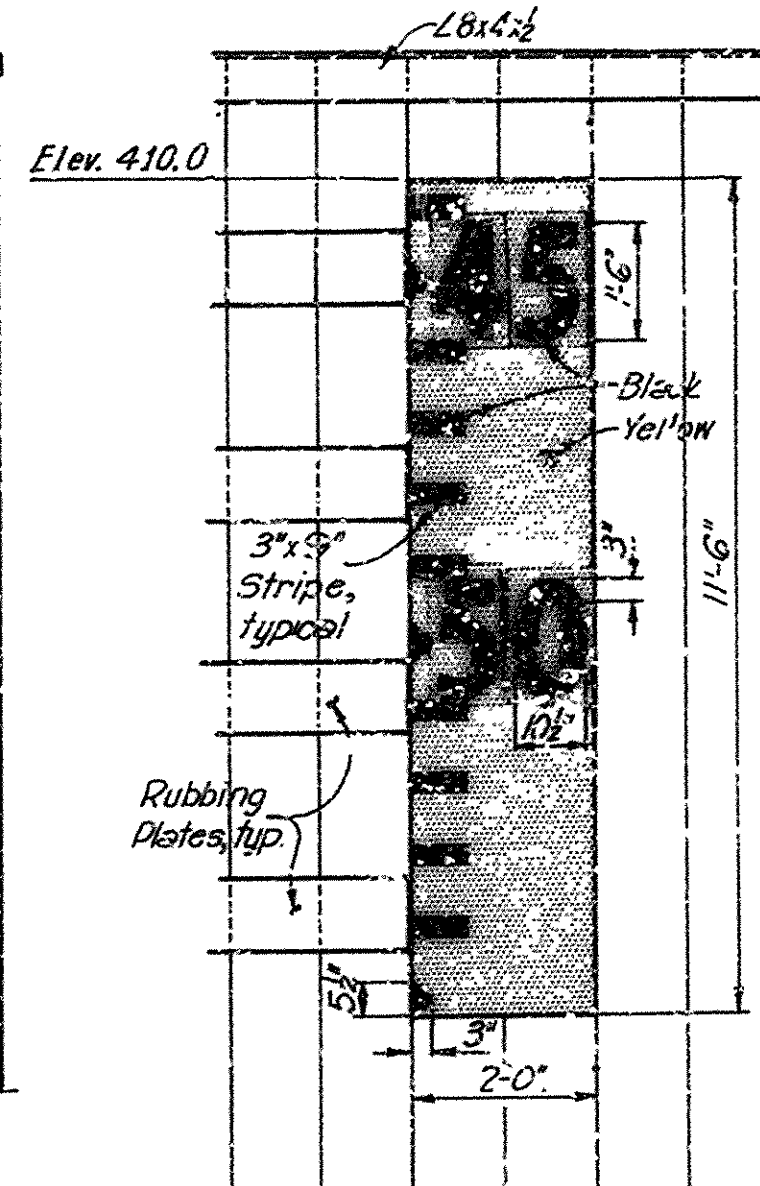
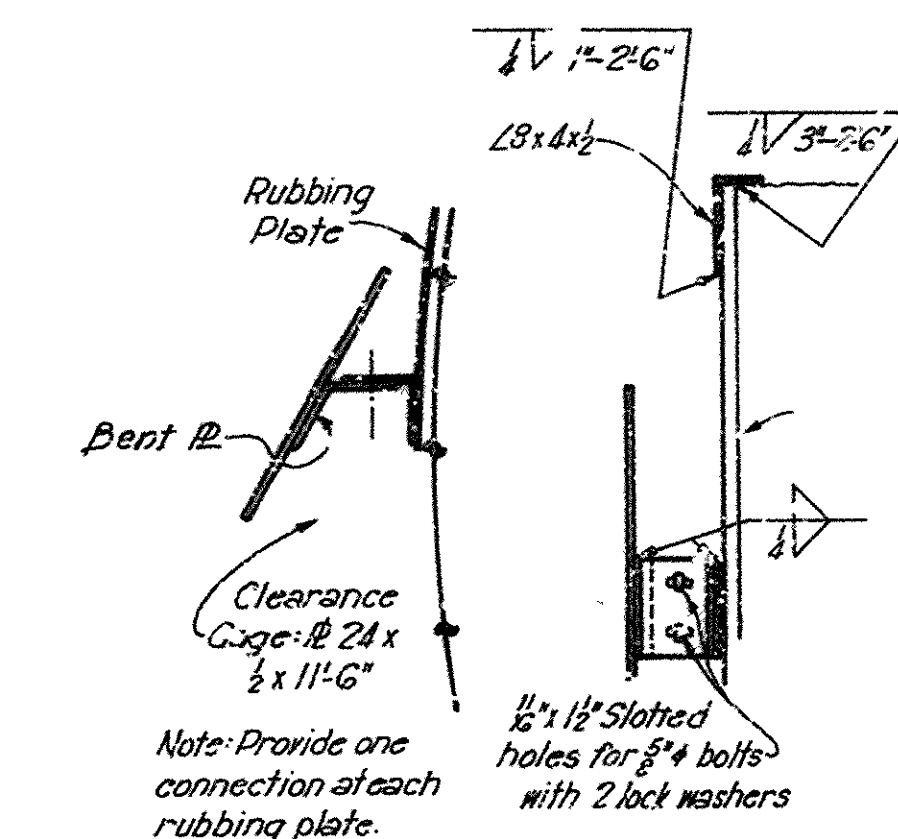
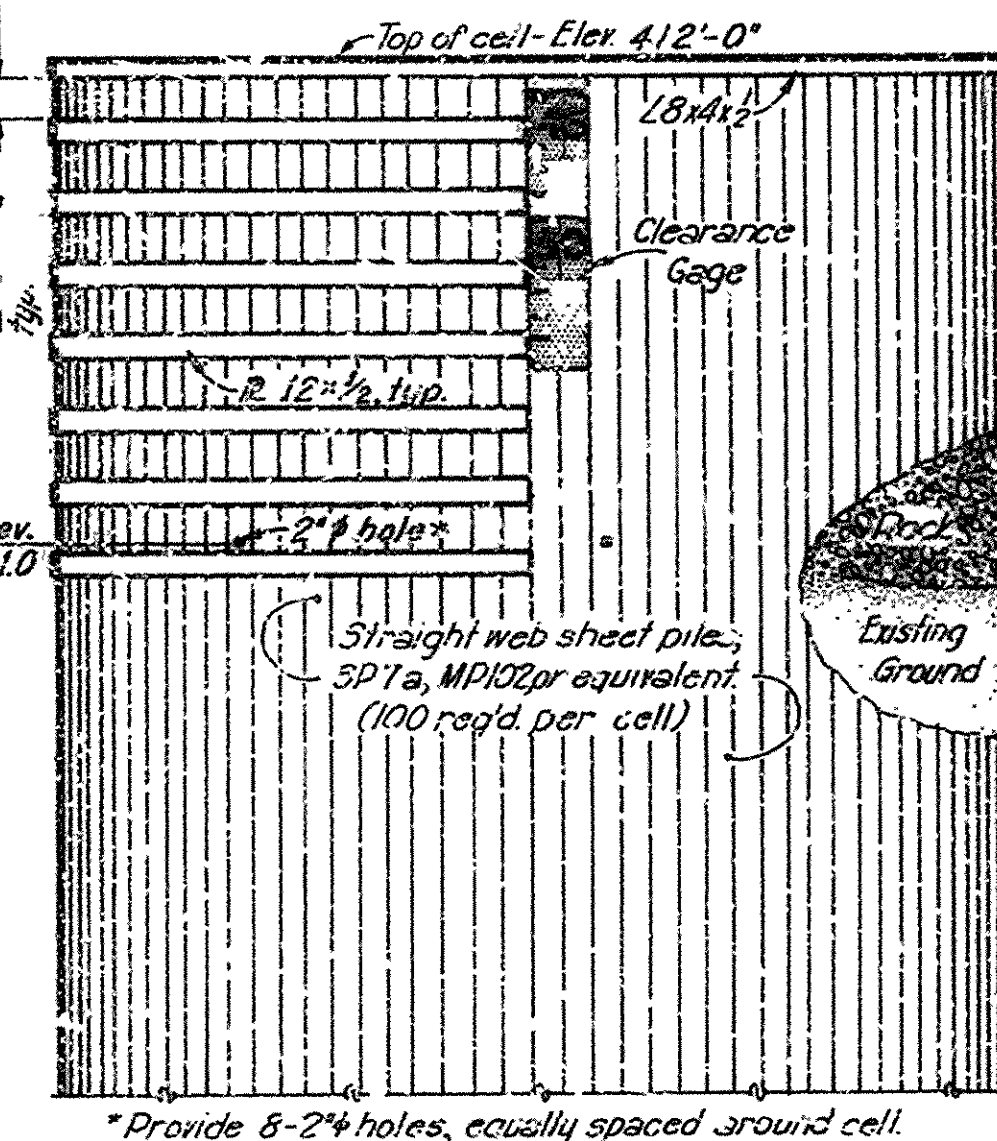
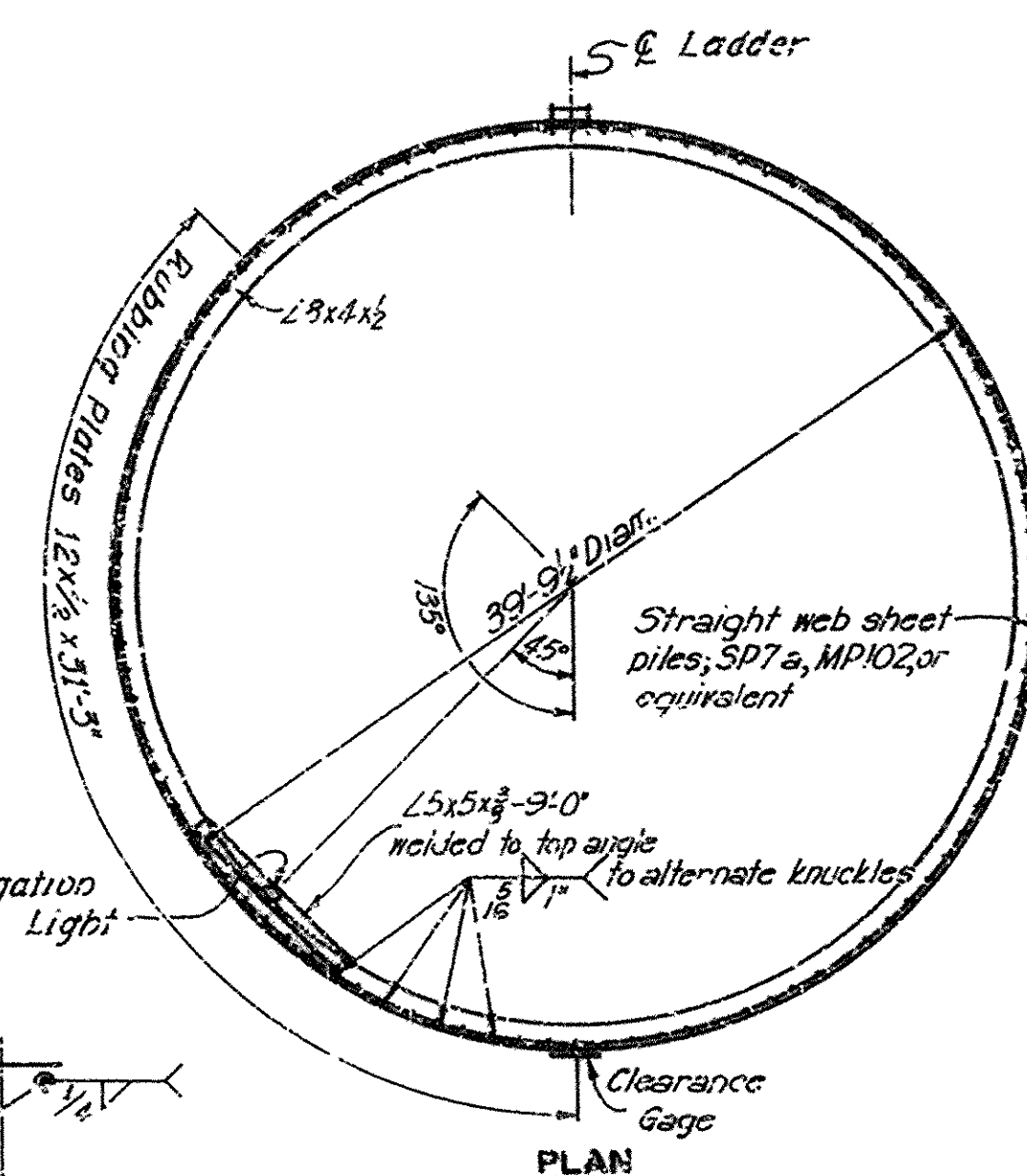
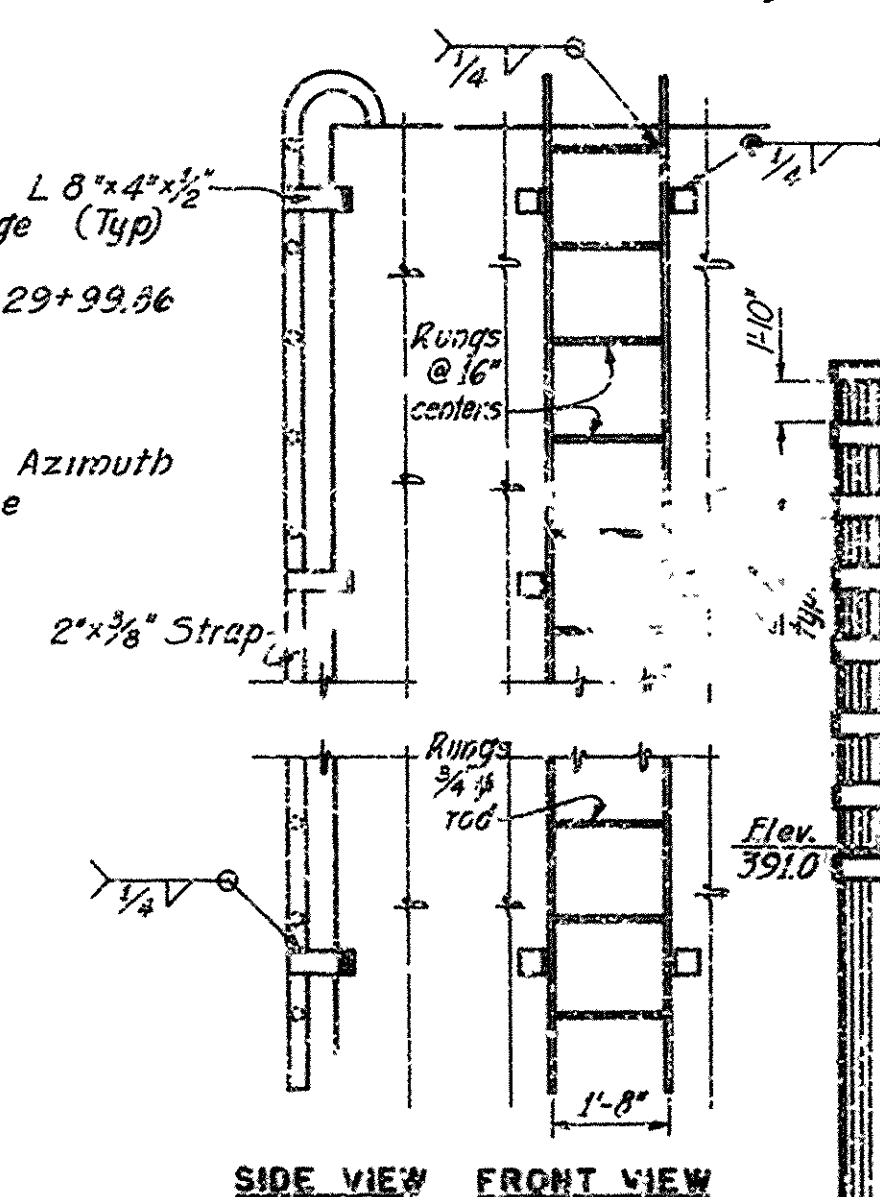
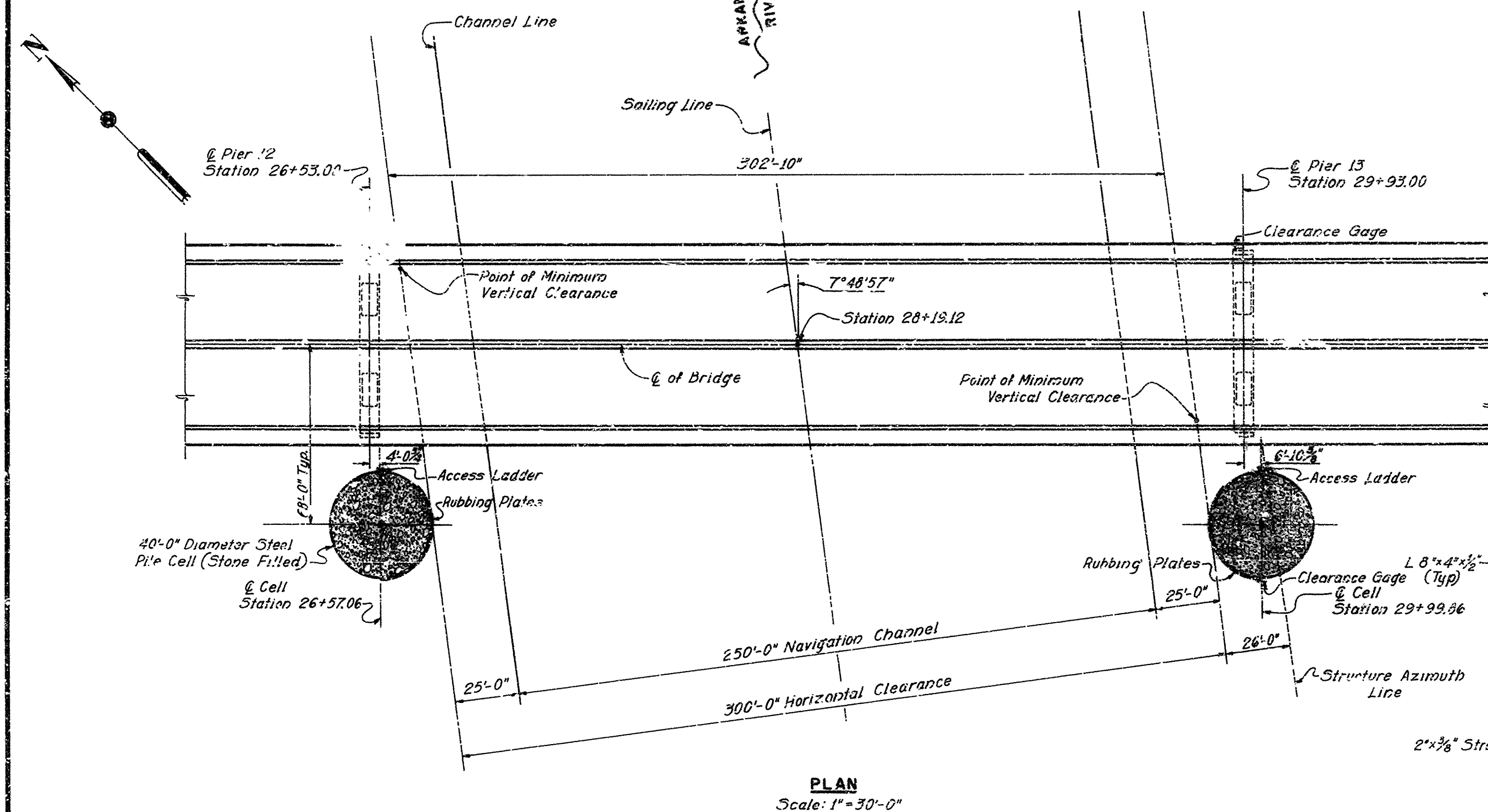
ARKANSAS STATE HIGHWAY COMMISSION  
1002 N.2, DEXTER  
U.S. HIGHWAY 44 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
STEELE COUNTY, GEORGIA      NEWBORN COUNTY, ARKANSAS  
PIERS 16 319

HOWARD, MICHAEL, TAKING S B, 4, 1977  
CONSULTING ENGINEER 444 71  
NEW IN MY REP DIV 2228 CHECKED BY 216 JUNE 1978  
MILWAUKEE, WI 53201



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		36	127
JOB NO. 127				
PIER PROTECTION CELL				



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
MURPHY COUNTY, CALLEDONIA  
SEBASTIAN COUNTY, ARKANSAS  
PIER PROTECTION CELL

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB  
DRAWN BY J.E. DATE 2-11-68 CHECKED BY J.E. DATE 2-20-68  
BRIDGE NO. 5273 SCALE AS SHOWN DRAWING NO. 10123



CORPS OF ENGINEERS  
CONTRACT NO DACWO3-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
0	ARK.		27	127
JOB NO.		4584	27	127

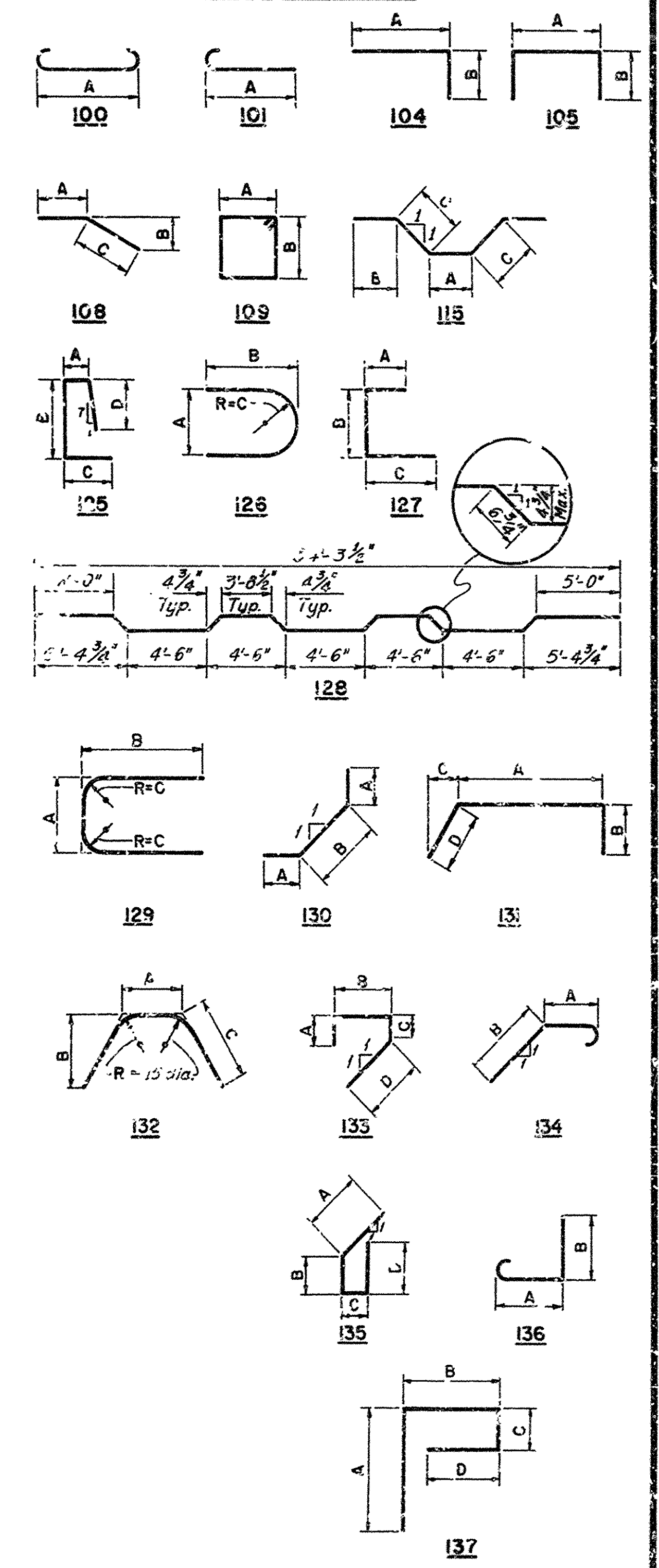
		DIMENSIONS			
MARK	NUMBER	LENGTH	TYPE	A	B
PIER 1					
601	4 Ser.	17'-6" to 109	2'-10" 5'-3" to		
	13	20'-9"	6'-11"		
602	2 Ser.	16'-6" to 109	2'-10" 4'-10"		
	15	20'-0"	7'-0" 6'-1"		
603	1 Ser.	26'-16" to 109	4'-2" 8'-5" to		
	9	27'-6"	8'-11"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	2 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	10	15'-4"	4'-3" 6'-0" 1'-4"		
611	6 Ser.	5'-0" 100	5'-8" 4'-3"		
	5	5'-6"	4'-3"		
612	19	11'-0"	100 9'-8"		
613	2 Ser.	21'-0" 129	2'-10" 7'-1"		
	12	24'-9"	8'-11"		
614	2 Ser.	20'-6" to 109	2'-10" 6'-8" to		
	12	23'-3"	8'-5"		
615	2 Ser.	16'-3" to 109	2'-10" 4'-8" to		
	15	21'-0"	7'-1"		
616	2 Ser.	21'-3" to 109	2'-10" 7'-2" to		
	12	25'-9"	9'-5"		
617	1 Ser.	28'-6" to 109	4'-2" 9'-3" to		
	9	29'-3"	9'-10"		
618	2 Ser.	21'-6" to 109	2'-10" 7'-3" to		
	12	25'-3"	9'-10"		
619	2 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	9	15'-3"	4'-2" 6'-0" 1'-4"		
620	3 Ser.	5'-0" 100	3'-8" 4'-2"		
	5	5'-6"	4'-2"		
621	3 Ser.	5'-0" 100	3'-8" 4'-2"		
	4	5'-6"	4'-2"		
1001	12	24'-9"	132 3'-0" 5'-6" 11'-6"		
1101	36	20'-6"	Str.		
1102	72	9'-6"	101 7'-8"		
1103	32	15'-0"	100 11'-6"		
1104	8	19'-11"	108 7'-4" 4'-6" 12'-7"		
1105	10	41'-5"	131 3'-11" 4'-10" 1'-6" 4'-11"		
1106	36	32'-0"	Str.		
1107	40	18'-0"	100 14'-6"		
1108	10	41'-6"	131 3'-11" 4'-8" 1'-6" 4'-11"		
1109	36	18'-3"	Str.		
1110	4	19'-4"	108 7'-4" 3'-5" 12'-0"		
1111	4	20'-1"	108 7'-4" 5'-6" 12'-9"		
PIER 2					
601	4 Ser.	17'-6" to 109	2'-10" 5'-3" to		
	13	20'-9"	6'-11"		
602	2 Ser.	16'-6" to 109	2'-10" 4'-10"		
	15	20'-0"	7'-0" 6'-1"		
603	18	28'-0"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	14	15'-5"	4'-4" 6'-0" 1'-4"		
611	12 Ser.	5'-0" 100	3'-8" 4'-4"		
	7	5'-6"	4'-4"		
612	28	11'-0"	100 9'-8"		
613	4 Ser.	21'-0" to 109	2'-10" 7'-1" to		
	12	25'-3"	9'-2"		
614	2 Ser.	20'-6" to 109	2'-10" 6'-8" to		
	12	25'-3"	9'-2"		

		DIMENSIONS			
MARK	NUMBER	LENGTH	TYPE	A	B
PIER 3					
601	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	13	20'-9"	6'-11"		
602	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	15	20'-9"	6'-11"		
603	18	28'-3"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	13	15'-6"	4'-5" 6'-0" 1'-4"		
611	6 Ser.	5'-0" 100	3'-8" 4'-5"		
	5	5'-9"	4'-5"		
612	52	11'-0"	100 9'-8"		
613	4 Ser.	21'-0" to 109	2'-10" 7'-1" to		
	12	25'-6"	9'-4"		
614	4 Ser.	21'-0" to 109	2'-10" 7'-1" to		
	12	26'-0"	9'-5"		
615	6 Ser.	5'-0" 100	3'-8" 4'-5"		
	7	5'-9"	4'-5"		
1001	12	24'-9"	132 3'-0" 5'-6" 11'-6"		
1101	72	23'-6"	Str.		
1102	72	9'-6"	101 7'-8"		
1103	32	15'-0"	100 11'-6"		
1104	8	19'-11"	108 7'-4" 4'-6" 12'-7"		
1105	20	42'-0"	131 3'-11" 5'-2" 1'-6" 4'-11"		
1106	36	32'-0"	Str.		
1107	8	19'-8"	108 7'-4" 4'-6" 12'-4"		
1108	40	18'-0"	100 14'-6"		
PIER 4					
601	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	17	21'-3"	7'-3"		
602	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	19	22'-0"	7'-7"		
603	18	28'-3"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	13	15'-6"	4'-5" 6'-0" 1'-4"		
611	6 Ser.	5'-0" 100	3'-8" 4'-5"		
	6	5'-9"	4'-5"		
612	26	11'-0"	100 9'-8"		

		DIMENSIONS			
MARK	NUMBER	LENGTH	TYPE	A	B
PIER 5					
601	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	16	21'-6"	7'-3"		
602	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	18	22'-0"	7'-7"		
603	18	28'-3"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	21	15'-6"	4'-11" 6'-0" 1'-4"		
611	6 Ser.	5'-0" 100	3'-8" 4'-11"		
	10	6'-3"	4'-11"		
612	42	11'-0"	100 9'-8"		
613	4 Ser.	21'-0" to 109	2'-10" 7'-1" to		
	19	25'-5"	9'-3"		
614	4 Ser.	22'-3" to 109	2'-10" 7'-9" to		
	10	25'-9"	9'-4"		
615	6 Ser.	5'-0" 100	3'-8" 4'-11"		
	11	6'-3"	4'-11"		
1001	12	24'-9"	132 3'-0" 5'-6" 11'-6"		
1002	56	16'-9"	100 13'-6"		
1101	72	35'-6"	Str.		
1102	72	11'-0"	101 9'-0"		
1103	56	26'-0"	100 22'-6"		
1104	8	19'-11"	108 7'-4" 4'-6" 12'-7"		
1105	20	42'-0"	131 3'-11" 5'-2" 1'-6" 4'-11"		
1106	40	32'-0"	Str.		
1107	8	19'-8"	108 7'-4" 4'-6" 12'-4"		
PIER 6					
601	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	16	21'-6"	7'-3"		
602	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	18	22'-0"	7'-7"		
603	18	28'-3"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	13	15'-6"	4'-5" 6'-0" 1'-4"		
611	6 Ser.	5'-0" 100	3'-8" 4'-5"		
	24	15'-9"	5'-1" 6'-0" 1'-4"		
612	12 Ser.	5'-0" 100	3'-8" 4'-5"		
	12	6'-6"	5'-1"		

		DIMENSIONS			
MARK	NUMBER	LENGTH	TYPE	A	B
PIER 7					
501	34	49'-0"	Str.		
601	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	17	21'-3"	7'-3"		
602	4 Ser.	17'-3" to 109	2'-10" 5'-2" to		
	19	22'-0"	7'-7"		
603	18	28'-3"	109 4'-2" 9'-4"		
604	4	32'-3"	Str.		
605	4	32'-9"	Str.		
606	4	33'-0"	Str.		
607	20	9'-0"	105 4'-0" 2'-6"		
608	4 Ser.	15'-0" to Str.			
	5	33'-3"			
609	40	5'-6"	100 4'-2"		
610	4 Ser.	14'-9" to 129	3'-8" 6'-0" 1'-4"		
	44	16'-9"	6'-3" 6'-0" 1'-3"		
611	12 Ser.	4'-9" 100	3'-6" 6'-3"		
	22	7'-5"	6'-3"		
612	176	10'-9"	100 9'-6"		
613	4 Ser.	21'-9" to 109	2'-10" 7'-5" to		
	6	25'-6"	2'-10" 9'-4"		
614	4 Ser.	22'-6" to 109	2'-10" 7'-5" to		
	6	25'-9"	2'-10" 9'-5"		
615	58	29'-0"	Str.		
616	34	42'-6"	Str.		
617	17	13'-5"	105 3'-5" 5'-0"		
618	50	16'-0"	Str.		
619	17	6'-7"	105 1'-4" 2'-6"		
801	50	15'-0"	Str.		
1001	12	24'-9"	132 3'-0" 5'-6" 11'-6"		
1101	72	47'-6"	Str.		
1102	72	15'-6"	Str.		
1104	8	19'-11"	108 7'-4" 4'-6" 12'-7"		
1105	20	42'-0"	131 3'-11" 5'-2" 1'-6" 4'-11"		
1106	32	32'-0"	Str.		
1107	72	28'-0"	Str.		
1108	6	43'-9"	Str.		
1109	8	19'-8"	108 7'-4" 4'-6" 12'-4"		

BENDING DIAGRAMS



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEbastien COUNTY, ARKANSAS SEbastien COUNTY, ARKANSAS

BILL OF REINFORCING  
PIERS 1-7

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY J.G. DATE \_\_\_\_\_ CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
SHEET NO. 5075 SCALE \_\_\_\_\_ DRAWING NO. 6127



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
PIER 8							
501	34	49'-0"	Str.				
601	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	12	20'-3"		2'-10"	6'-11"		
602	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	15	20'-3"		2'-10"	6'-8"		
603	18	28'-3"	109	4'-2"	9'-4"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	20	9'-0"	105	4'-0"	2'-6"		
608	4 Ser.	15'-0"	Str.				
	5	33'-3"					
609	40	5'-6"	100	4'-2"			
610	4 Ser.	14'-0"	129	3'-6"	6'-0"	1'-3"	
	47	16'-9"		6'-4"	5'-0"	1'-3"	
611	6 Ser.	4'-9"	100	3'-6"			
	24	7'-9"		6'-4"			
612	188	10'-9"	100	9'-6"			
613	4 Ser.	21'-0"	109	2'-10"	7'-1"		
	12	25'-6"		2'-10"	9'-4"		
614	4 Ser.	20'-6"	109	2'-10"	6'-10"		
	12	26'-0"		2'-10"	9'-6"		
615	58	29'-0"	Str.				
616	34	43'-6"	Str.				
617	17	13'-0"	105	3'-6"	5'-0"		
618	50	16'-0"	Str.				
619	6 Ser.	4'-9"	100	3'-6"			
	25	7'-9"		6'-4"			
620	17	6'-9"	105	1'-8"	2'-6"		
PIER 9							
501	36	49'-0"	Str.				
601	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	17	21'-3"		2'-10"	7'-3"		
602	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	19	22'-0"		2'-10"	7'-7"		
603	18	28'-3"	109	4'-2"	9'-4"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	20	9'-0"	105	4'-0"	2'-6"		
608	4 Ser.	15'-0"	Str.				
	5	33'-3"					
609	40	5'-6"	100	4'-2"			
610	4 Ser.	14'-0"	129	3'-6"	6'-0"	1'-3"	
	49	17'-0"		6'-6"	6'-0"	1'-3"	
611	6 Ser.	4'-9"	100	3'-6"			
	25	7'-9"		6'-4"			
612	196	13'-9"	120	5'-6"			
613	4 Ser.	21'-9"	109	2'-10"	7'-5"		
	6	25'-6"		2'-10"	9'-4"		
614	4 Ser.	22'-6"	109	2'-10"	7'-9"		
	6	25'-9"		2'-10"	9'-5"		

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
615	58	29'-0"	Str.				
616	34	43'-6"	Str.				
617	17	13'-8"	105	3'-8"	5'-0"		
618	50	17'-0"	Str.				
619	6 Ser.	4'-9"	100	3'-6"			
	24	7'-9"		6'-6"			
620	17	6'-10"	105	1'-10"			
901	50	17'-0"	Str.				
902	48	42'-0"	Str.				
903	48	15'-6"	Str.				
1001	12	24'-9"	132	3'-0"	5'-6"	11'-6"	
1101	72	48'-6"	Str.				
1102	72	15'-6"	Str.				
1104	8	19'-11"	108	7'-4"	4'-6"	12'-7"	
1105	20	42'-0"	131	31'-11"	5'-2"	1'-6"	4'-11"
1106	32	32'-0"	Str.				
1107	72	34'-0"	Str.				
1108	6	43'-0"	Str.				
1109	8	19'-8"	108	7'-4"	4'-6"	12'-4"	
PIER 10							
501	36	49'-0"	Str.				
601	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	12	20'-9"		2'-10"	6'-11"		
602	4 Ser.	17'-3"	109	2'-10"	5'-2"		
	15	20'-5"		2'-10"	6'-8"		
603	18	28'-3"	109	4'-2"	9'-4"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	20	9'-0"	105	4'-0"	2'-6"		
608	4 Ser.	15'-0"	Str.				
	5	33'-3"					
609	40	5'-6"	100	4'-2"			
610	4 Ser.	14'-0"	129	3'-6"	6'-0"	1'-3"	
	51	17'-3"		6'-8"	6'-0"	1'-3"	
611	6 Ser.	4'-9"	100	3'-6"			
	26	8'-0"		6'-8"			
612	204	10'-9"	120	9'-6"			
613	4 Ser.	21'-0"	109	2'-10"	7'-1"		
	12	25'-6"		2'-10"	9'-4"		
614	4 Ser.	20'-6"	109	2'-10"	6'-10"		
	12	26'-0"		2'-10"	9'-6"		
615	58	29'-0"	Str.				
616	34	43'-6"	Str.				
617	17	13'-10"	105	3'-10"	5'-0"		
618	50	17'-0"	Str.				
619	6 Ser.	4'-9"	100	3'-6"			
	25	8'-0"		6'-8"			
620	17	7'-0"	105	2'-0"	2'-6"		
801	50	17'-0"	Str.				
1001	12	24'-9"	132	3'-0"	5'-6"	11'-6"	
1101	72	48'-5"	Str.				
1102	72	15'-6"	Str.				
1104	8	19'-11"	108	7'-4"	4'-6"	12'-7"	
1105	20	42'-0"	131	31'-11"	5'-2"	1'-6"	4'-11"
1106	36	32'-0"	Str.				
1107	72	34'-0"	Str.				
1108	6	43'-0"	Str.				

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
1109	8	19'-8"	108	7'-4"	4'-6"	12'-4"	
PIER 11							
501	36	49'-0"	Str.				
601	4 Ser.	16'-0"	109	2'-3"	5'-1"		
	24	24'-3"		2'-3"	5'-1"		
602	4 Ser.	16'-6"	109	2'-3"	5'-2"		
	24	24'-9"		2'-3"	9'-6"		
603	4 Ser.	28'-0"	109	4'-1"	9'-3"		
	9	28'-3"		4'-1"	9'-5"		
604	4	33'-6"	Str.				
605	4	34'-0"	Str.				
606	4	34'-3"	Str.				
607	24	10'-0"	105	5'-0"	2'-6"		
608	4 Ser.	34'-6"	Str.				
	5	13'-3"					
609	48	6'-6"	100	5'-2"			
610	4 Ser.	15'-0"	129	4'-6"	6'-0"	1'-3"	
	51	18'-0"		7'-7"	6'-0"	1'-3"	
611	6 Ser.	5'-9"	100	4'-6"			
	26	8'-9"		7'-5"			
612	205	10'-9"	100	9'-6"			
613	2 Ser.	16'-9"	109	2'-8"	5'-1"		
	24	25'-0"		2'-8"	9'-3"		
614	2 Ser.	16'-0"	109	2'-8"	4'-8"		
	24	25'-9"		2'-8"	9'-6"		
615	58	29'-0"	Str.				
616	34	43'-10"	Str.				
617	17	12'-8"	105	2'-8"	5'-0"		
618	17	7'-8"	105	2'-8"	2'-6"		
619	6 Ser.	5'-9"	100	4'-6"			
	25	8'-9"		7'-5"			
701	50	17'-0"	Str.				
1101	92	46'-6"	Str.				
1102	98	16'-0"	Str.				
1103	50	17'-0"	Str.				
1104	12	20'-0"	108	7'-4"	4'-6"	12'-7"	
1105	26	43'-3"	131	33'-2"	5'-2"	1'-6"	4'-1"
1106	50	33'-3"	Str.				
1107	92	39'-6"	Str.				
1108	12	24'-9"	132	3'-0"	5'-6"	11'-6"	
1109	14	42'-0"	Str.				
1110	12	21'-1"	108	7'-4"	4'-6"	13'-9"	
PIER 12							
501	36	55'-0"	Str.				
601	4 Ser.	21'-6"	109	3'-0"	7'-2"		
	29	30'-6"		3'-0"	11'-7"		
602	4 Ser.	21'-6"	109	3'-0"	7'-2"		
	29	31'-0"		3'-0"	11'-10"		
603	4 Ser.	35'-0"	109	5'-3"	11'-8"		
	11	35'-6"		5'-3"	11'-11"		
604	4	33'-9"	Str.				
605	4	34'-0"	Str.				
606	4	34'-6"	Str.				
607	32	12'-0"	105	7'-0"	2'-6"		
608	4 Ser.	30'-0"	Str.				
	3	34'-6"					
609	72	8'-6"	100	7'-2"			
610	4 Ser.	19'-0"	129	6'-6"	7'-0"	1'-3"	
	45	21'-8"		2'-3"	7'-0"	1'-3"	
611	8 Ser.	8'-0"	100	6'-6"			
	46	10'-6"		3'-3"			



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		29	127
JOB NO.	458			

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
PIER 14							
501	30	49'-0"	Str.				
601	4 Ser.	16'-0"	109	2'-3"	5'-1"		
	24	24'-3"		2'-3"	9'-3"		
602	4 Ser.	16'-6"	109	2'-3"	5'-2"		
	24	24'-9"		2'-3"	9'-6"		
603	4 Ser.	28'-0"	109	4'-1"	9'-3"		
	9	28'-3"		4'-1"	9'-5"		
604	4	33'-6"	Str.				
605	4	34'-0"	Str.				
606	4	34'-3"	Str.				
607	24	10'-0"	105	2'-0"	2'-6"		
608	4 Ser.	34'-6"	Str.				
	5	15'-3"					
609	48	6'-6"	100	5'-2"			
610	4 Ser.	15'-0"	129	4'-6"	6'-0"	1'-3"	
	36	17'-3"		6'-10"	6'-0"	1'-3"	
611	12 Ser.	5'-9"	100	4'-6"			
	12	8'-0"		6'-3"			
612	152	10'-9"	100	9'-8"			
613	2 Ser.	16'-9"	109	2'-8"	5'-1"		
	24	25'-0"		2'-8"	9'-3"		
614	2 Ser.	16'-0"	109	2'-8"	4'-8"		
	24	25'-9"		2'-8"	9'-6"		
615	4	20'-0"	Str.				
616	34	8'-6"	Str.				
617	17	12'-8"	105	2'-8"	5'-0"		
618	50	14'-0"	Str.				
619	17	7'-9"	105	2'-6"	2'-8"		
1001	50	14'-0"	Str.				
1101	92	26'-0"	Str.				
1102	92	12'-6"	Str.				
1104	12	19'-11"	108	7'-4"	4'-4"	12'-7"	
1105	26	43'-3"	131	33'-2"	5'-2"	1'-6"	4'-11"
1106	50	33'-3"	Str.				
1107	92	40'-0"	Str.				
1108	12	24'-9"	132	3'-0"	5'-6"	11'-6"	
1109	14	42'-0"	Str.				
1110	12	21'-1"	108	7'-4"	4'-4"	13'-9"	
PIER 15							
601	4 Ser.	14'-9"	109	2'-8"	4'-1"		
	15	20'-0"		2'-8"	5'-11"		
602	4 Ser.	15'-0"	109	2'-8"	4'-3"		
	17	20'-5"		2'-8"	7'-0"		
603	19	22'-6"	109	3'-3"	7'-0"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	15	8'-6"	105	3'-6"	2'-5"		
608	4 Ser.	16'-3"	Str.				
	3	33'-3"					
609	48	5'-8"	105	3'-8"	1'-0"		
610	4 Ser.	14'-3"	129	3'-2"	6'-0"	1'-6"	
	21	15'-6"		4'-5"	6'-0"	1'-6"	
611	6 Ser.	4'-6"	100	3'-2"			
	11	5'-9"		4'-5"			
612	42	11'-0"	100	9'-7"			
613	6 Ser.	4'-2"	100	3'-2"			
	10	5'-9"		4'-5"			
801	40	16'-9"	100	14'-6"			
1001	50	14'-0"	Str.				
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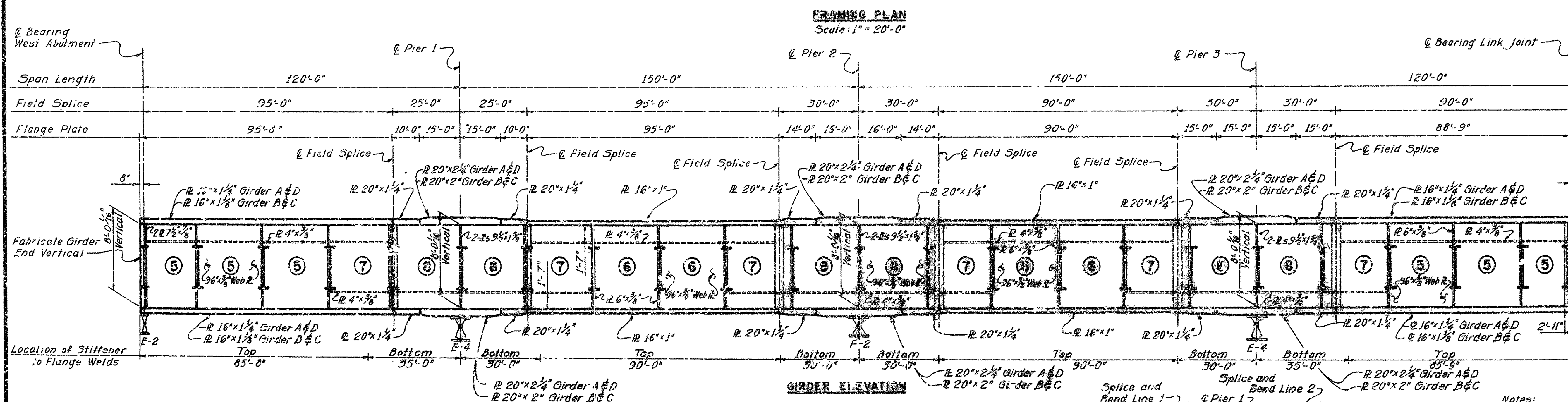
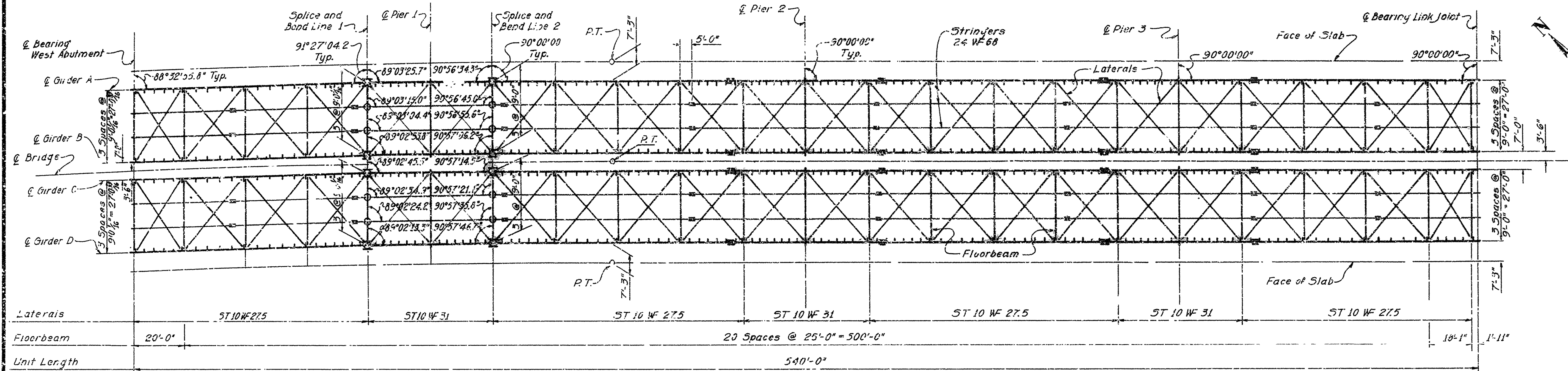
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
1101	44	36'-6"	Str.				
1102	44	10'-0"	101	8'-2"			
1103	8	19'-4"	108	7'-4"	3'-0"	12'-0"	
1104	8	16'-6"	108	7'-4"	3'-0"	12'-2"	
1105	18	40'-3"	131	31'-11	4'-3"	1'-6"	4'-0"
1106	18	32'-0"	Str.				
PIER 16							
501	20	13'-9"	100	12'-6"			
601	4 Ser.	14'-3"	109	2'-8"	4'-1"		
	12	20'-0"		2'-8"	6'-11"		
602	4 Ser.	15'-0"	109	2'-8"	4'-3"		
	13	20'-6"		2'-8"	7'-0"		
603	16	22'-6"	109	3'-8"	7'-0"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	16	8'-6"	105	3'-6"	2'-6"		
608	4 Ser.	16'-3"	Str.				
	3	33'-3"					
609	48	5'-3"	105	3'-8"	1'-0"		
610	4 Ser.	14'-3"	129	3'-2"	6'-0"	1'-4"	
	18	15'-3"		4'-3"	6'-0"	1'-4"	
611	12 Ser.	4'-6"	100	3'-2"			
	9	5'-6"		4'-3"			
612	36	11'-0"	100	9'-7"			
1101	4		Str.				
1102	4		101	7'-2"			
1103	24	13'-0"	100	9'-6"			
1104	8	15'-6"	108	7'-4"	3'-0"	12'-2"	
1105	16	40'-3"	131	31'-11	4'-3"	1'-6"	4'-0"
1106	16	32'-0"	Str.				
1107	8	19'-0"	108	7'-4"	3'-0"	12'-0"	
PIER 17							
501	20	13'-9"	100	12'-6"			
601	4 Ser.	14'-9"	109	2'-8"	4'-1"		
	12	20'-5"		2'-8"	6'-11"		
602	4 Ser.	15'-0"	109	2'-8"	4'-3"		
	13	20'-6"		2'-8"	7'-0"		
603	16	22'-6"	109	3'-8"	7'-0"		
604	4	32'-3"	Str.				
605	4	32'-9"	Str.				
606	4	33'-0"	Str.				
607	16	8'-5"	105	3'-6"	2'-6"		
608	4 Ser.	16'-3"	Str.				
	3	33'-3"					
609	48	5'-2"	105	3'-8"	1'-0"		
610	4 Ser.	16'-3"	129	3'-2"	6'-0"	1'-4"	
	16	33'-3"		4'-1"	6'-0"	1'-4"	
611	12 Ser.	4'-6"	100	3'-2"			
	8	5'-3"		4'-1"			
612	32	11'-0"	100	9'-7"			
1101	44	28'-6"	Str.				
1102	44	9'-0"	101	7'-2"			
1103	24	13'-0"	100	9'-6"			
1104	8	15'-6"	108	7'-4"	3'-0"	12'-2"	
1105	16	40'-3"	131	31'-11"	4'-3"	1'-6"	4'-0"
1106	16	32'-0"	Str.				
1107	8	19'-0"	108	7'-4"	3'-0"	12'-0"	
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MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D



CORPS OF ENGINEERS  
CONTRACT NO. PACWO3-67-C-0367

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		30	127
JOB NO. 4584				
① FR. PLAN & GDR. EL. UNIT 1				



- LEGEND**
- = Splice and Bend Point
  - ||||| = Stiffeners
  - = Field Splice
  - = Splice
  - = Bend Point

**PAVEMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS**

POINT	WABUT.	2	4	6	8	PIER 1	2	4	6	8	PIER 2	2	4	6	8	PIER 3	2	4	6	8	LINK JOINT
ELEV. GIRDER A	432.43	432.99	433.55	434.11	434.65	434.67	435.16	435.60	436.18	436.68	437.19	437.65	438.15	438.62	439.08	440.00	440.41	440.88	441.30	441.70	442.00
ELEV. GIRDER D	430.10	430.74	431.21	431.65	432.05	432.43	432.89	433.34	433.90	434.38	434.80	435.26	435.70	436.11	436.50	437.44	437.84	438.24	438.64	439.05	439.45
GIRDERS ΔT	0	.077	.109	.085	.031	.029	0	.032	.044	.114	.115	.047	0	.047	.115	.044	0	.021	.039	.063	.047
A & D ΔC	0	.063	.008	.068	.025	.024	0	.026	.036	.092	.092	.033	0	.038	.092	.036	0	.018	.027	.056	.039
ELEV. GIRDER B	431.33	431.94	432.50	433.07	433.62	433.64	434.10	434.70	435.28	435.87	436.36	436.85	437.35	437.83	438.30	439.24	439.64	440.04	440.44	440.84	441.24
ELEV. GIRDER C	431.23	431.79	432.35	432.91	433.46	433.48	434.06	434.66	435.47	435.49	435.20	435.69	436.11	436.52	436.95	437.89	438.29	438.69	439.09	439.49	439.89
GIRDERS ΔT	0	.076	.110	.085	.032	.030	0	.030	.041	.106	.107	.043	0	.043	.107	.041	0	.032	.034	.070	.049
B & C ΔC	0	.064	.096	.069	.026	.024	0	.024	.033	.085	.085	.033	0	.035	.086	.033	0	.015	.028	.057	.040

\*ΔT will be increased by 5.2% from Pier 1 to Link joint due to the weight of the utilities.

**Notes:**  
Intermediate transverse stiffeners are on the inside of girder only. Longitudinal stiffeners are on the outside.  
⑥ = Number of equal stiffener spaces per floorbeam panel for 6" x 3/8" stiffeners.

**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARKANSAS  
**U.S. HIGHWAY 64 BRIDGE RELOCATION**  
AT FORT SMITH, ARKANSAS  
DESIGNED BY: HNTB  
SEBASTIAN COUNTY, ARKANSAS

**FRAMING PLAN AND GIRDER ELEVATION**  
UNIT 1

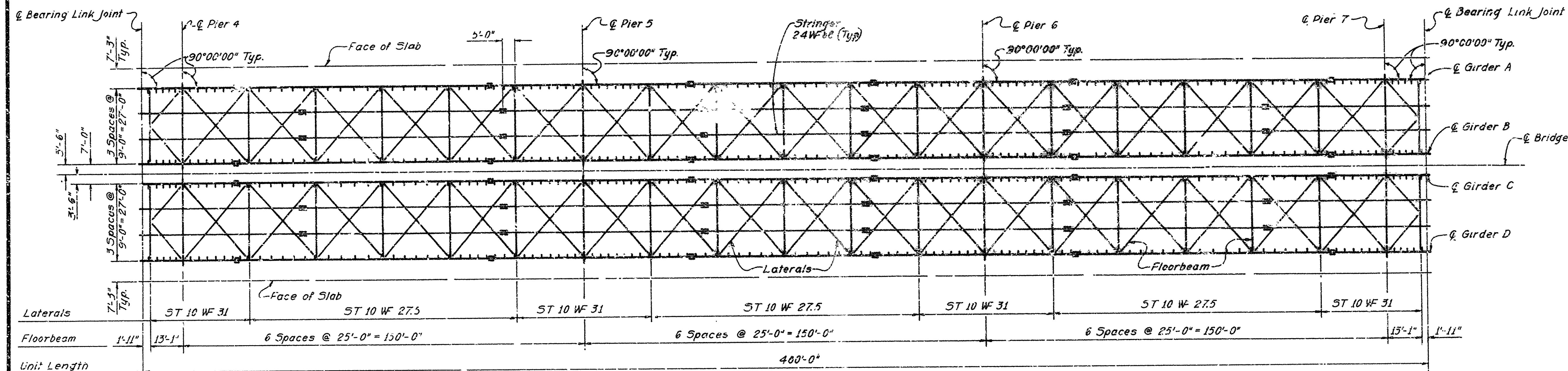
HOWARD D. NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
**HNTB**

DRAWN BY: J.G. DATE: 6-24-68 CHECKED BY: RDB DATE: 6-30-68  
PROJECT NO. 275 SCALE: AS SHOWN DRAWING NO. 1830

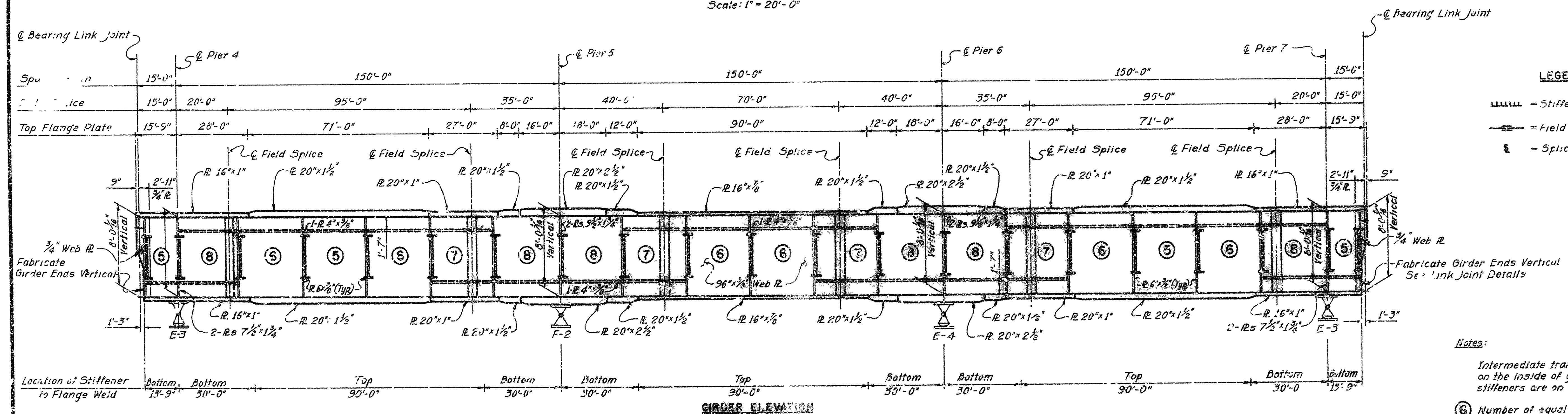


CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4584	31	127	
FR. PLAN & GIR. EL. UNIT 2				



FRAMING PLAN  
Scale: 1" = 20'-0"



# LEGEND

- ===== = Stiffeners
- = Field Splice
- ⊥ = Splice

## Notes:

Intermediate transverse stiffeners are on the inside of girder only. Longitudinal stiffeners are on the outside.

- ⑥ Number of equal stiffener spaces per floorbeam panel for 6"x $\frac{3}{4}$ " stiffener

PAVEMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS																									
POINT		LINK JT.	PIER 4	5	6	7	8	9	PIER 5	6	7	8	9	10	11	12	PIER 6	7	8	9	10	11	12	PIER 7	LINK JT.
GIRDERS A & D	ELEV.	443.42	443.77	444.24	444.47	445.10	445.88	446.47	446.59	447.29	448.00	448.23	448.70	449.31	449.88	450.11	450.82	451.52	451.64	452.23	452.91	453.64	454.79	454.79	454.79
	ΔT	-.037	0	.082	.120	.191	.170	.055	.077	0	0	.013	.042	.042	.014	0	0	.071	.095	.170	.191	.120	.082	0	-.037
	ΔC	-.030	0	.066	.097	.154	.137	.076	.062	0	0	.011	.034	.044	.011	0	0	.062	.076	.137	.154	.097	.066	0	-.030
GIRDERS B & C	ELEV.	443.96	444.31	444.70	445.01	445.72	446.32	447.01	447.13	447.83	448.54	448.77	449.24	449.85	450.42	450.65	451.36	452.06	452.18	452.77	453.47	454.18	454.88	454.88	454.88
	ΔT	-.037	0	.076	.113	.179	.159	.089	.075	0	0	.013	.055	.039	.013	0	0	.073	.099	.159	.179	.113	.076	0	-.037
	ΔC	-.030	0	.061	.090	.142	.126	.071	.058	0	0	.010	.051	.033	.010	0	0	.053	.071	.126	.142	.090	.061	0	-.030

\* $\Delta T$  will be increased by 52% due to the weight of the utilities.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SECAHON COUNTY, OKLAHOMA SECAHON COUNTY, ARKANSAS

FRAMING PLAN AND GIRDER ELEVATION  
UNIT 2

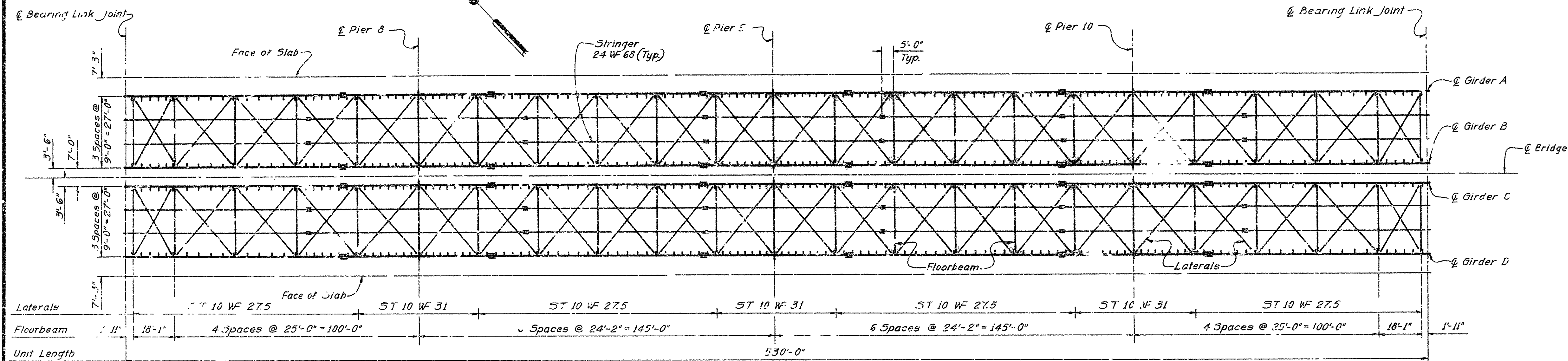
HOWARD NEEDLES TAMMEN & BERGENSOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY J.G. DATE 4-29-60 CHECKED BY R.D. DATE 5-30-60  
LITTLE ROCK, ARK. 5275 SCALE AS SHOWN DRAWING NO. 10131



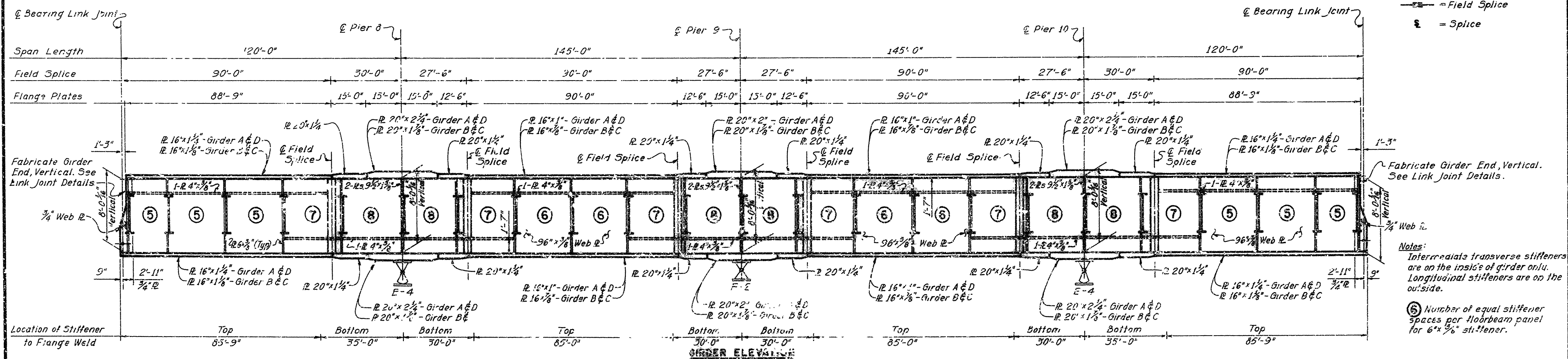
CORPS OF ENGINEERS  
CONTRACT 116 DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4584	32	127	
1) FR. PLAN & GIR. EL. UNIT 3				



## LEGEND

- ===== = Stiffeners  
--- = Field Splice  
= = Splice



Notes:  
Intermediate transverse stiffeners are on the inside of girder only. Longitudinal stiffeners are on the outside.  
⑤ Number of equal stiffener spaces per floorbeam panel for 6"x 3/4" stiffener.

PAYMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS																											
POINT		LINK JT.	2	4	6	8	PIER 8	2	4	6	8	2	4	6	8	PIER 9	2	4	6	8	2	4	6	8	LINK J		
GIRDERS A & D	ELEV.	454.70	455.26	455.82	456.39	456.81	456.95	457.52	458.16	458.80	459.56	460.24	460.88	460.92	461.57	461.60	462.29	462.97	463.65	463.68	464.29	464.91	464.93	465.29	465.76	466.20	466.62
	ΔT	-.037	-.051	-.092	-.075	-.039	-.026	0	-.030	-.033	-.092	-.034	-.037	-.034	0	-.034	-.037	-.094	-.092	-.033	-.030	0	-.001	-.007	-.025	-.016	-.164
	ΔC	-.030	-.042	-.075	-.061	-.032	-.022	0	-.025	-.027	-.075	-.077	-.030	-.028	0	-.028	-.030	-.077	-.075	-.027	-.025	0	-.005	-.011	-.023	-.027	-.110
GIRDERS B & C	ELEV.	455.24	455.80	456.36	456.93	457.35	457.49	458.06	458.70	459.42	460.10	460.78	460.82	461.46	461.41	462.14	462.81	463.51	464.19	464.22	464.83	465.35	465.47	465.83	466.30	466.74	467.11
	ΔT	-.037	-.052	-.094	-.076	-.039	-.027	0	-.032	-.035	-.095	-.098	-.040	-.037	0	-.037	-.039	-.095	-.095	-.035	-.032	0	-.004	-.011	-.030	-.025	-.151
	ΔC	-.030	-.042	-.076	-.062	-.032	-.022	0	-.026	-.028	-.077	-.079	-.032	-.030	0	-.030	-.032	-.079	-.077	-.023	-.026	0	-.008	-.015	-.034	-.034	-.098

\*ΔT will be increased by 5.2% due to the weight of the utilities.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SARVIS JENNY, DESIGNER  
SEBASTIAN COUNTY, ARKANSAS

FRAMING PLAN AND GIRDER ELEVATION  
UNIT 3

HOWARD, NEEDLES TAMMEN & BERGENOFF  
CONSULTING ENGINEERS  
HNTB

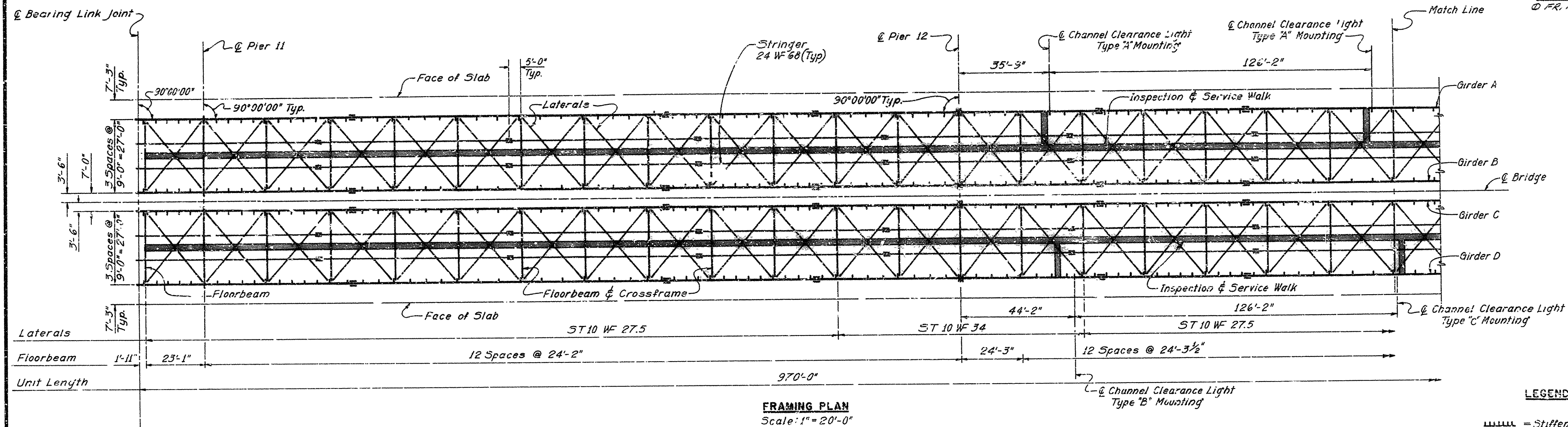
DRAWN BY L.G. DATE 5-8-68 CHECKED BY R.M. DATE 7-30-68  
PROJECT NO. 3275 SCALE AS SHOWN DRAWING NO. 16132



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

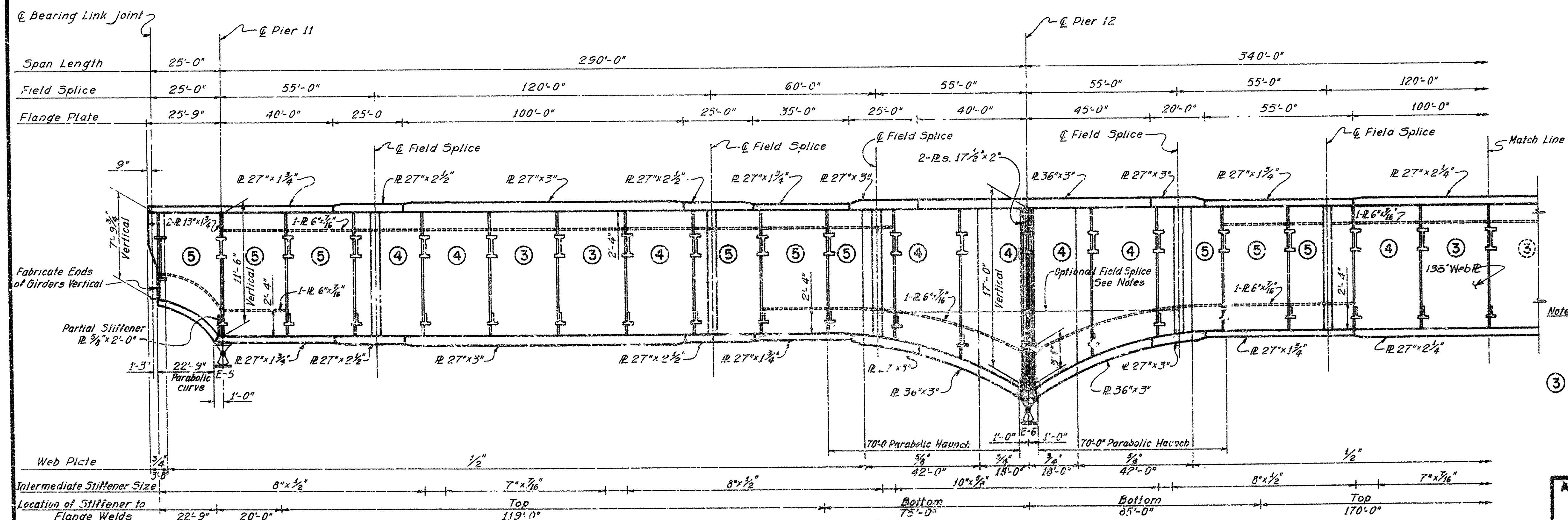
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		33	127
JOB NO.	4584			

Q FR. PLAN & GDR. EL. UNIT 4



# LEGEND

- ===== Stiffeners
- Field Splice
- ⊥ Splice



## Notes:

Intermediate transverse stiffeners are on the inside of girder only. Longitudinal stiffeners are on the outside.

③ Indicates the number of equal stiffeners spaces per floorbeam panel.

See Electrical Details for Navigation Light mounting bracket.

\*ΔT will be increased by 5.2% due to the weight of the utilities.

PAVEMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS																				
POINT	LINK JT.	PIER 11	.1	.2	.3	.4	.5	.6	.7	.8	.9	PIER 12	.1	.2	.3	.4	.5			
GIRDERS A & D	ELEV.	466.62	467.04	467.49	467.90	468.26	468.63	468.95	469.24	469.55	469.87	470.02	470.11	470.14	470.24	470.28	470.28	470.27	470.22	470.22
	ΔT	-.164	0	.213	.388	.431	.521	.577	.556	.503	.462	.333	.181	.102	.063	0	.049	.082	.169	.498
	ΔC	-.110	0	.143	.266	.291	.351	.388	.375	.339	.317	.224	.122	.069	.042	0	.033	.055	.114	.355
GIRDERS B & C	ELEV.	467.16	467.58	468.03	468.44	468.80	469.17	469.49	469.78	469.77	470.02	470.23	470.41	470.41	470.78	470.82	470.82	470.81	470.76	470.76
	ΔT	-.151	0	.196	.365	.480	.531	.513	.464	.433	.307	.167	.094	.058	0	.046	.075	.155	.303	.459
	ΔC	-.098	0	.126	.236	.267	.310	.343	.331	.299	.280	.198	.108	.061	.037	0	.029	.049	.100	.297

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, OLLA, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS

FRAMING PLAN AND GIRDER ELEVATION  
UNIT 4

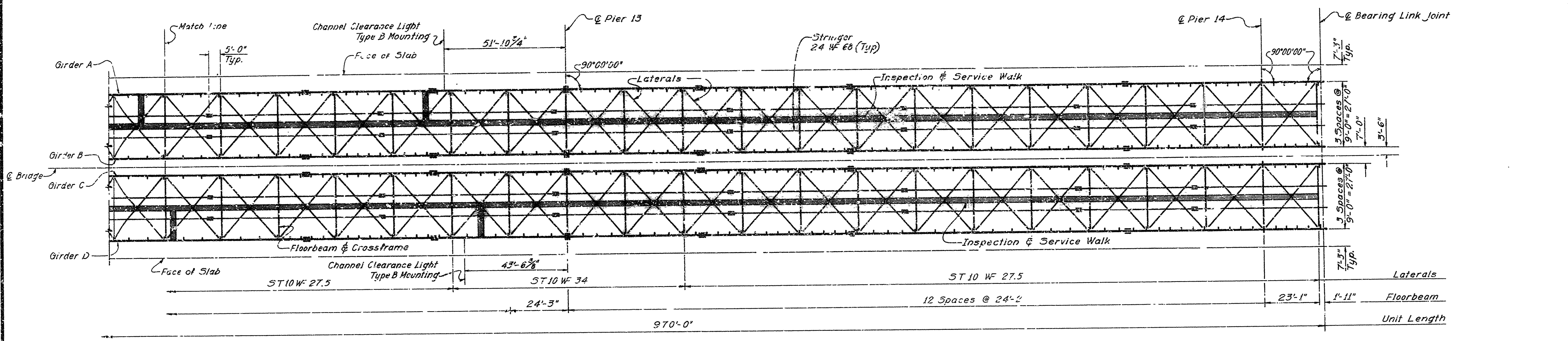
HOWARD NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY J.C. DATE 5-31-68 CHECKED BY RDR. DATE 7-30-68  
PIECE NO. 5275 SCALE AS SHOWN (DRAWING) NO. 16133

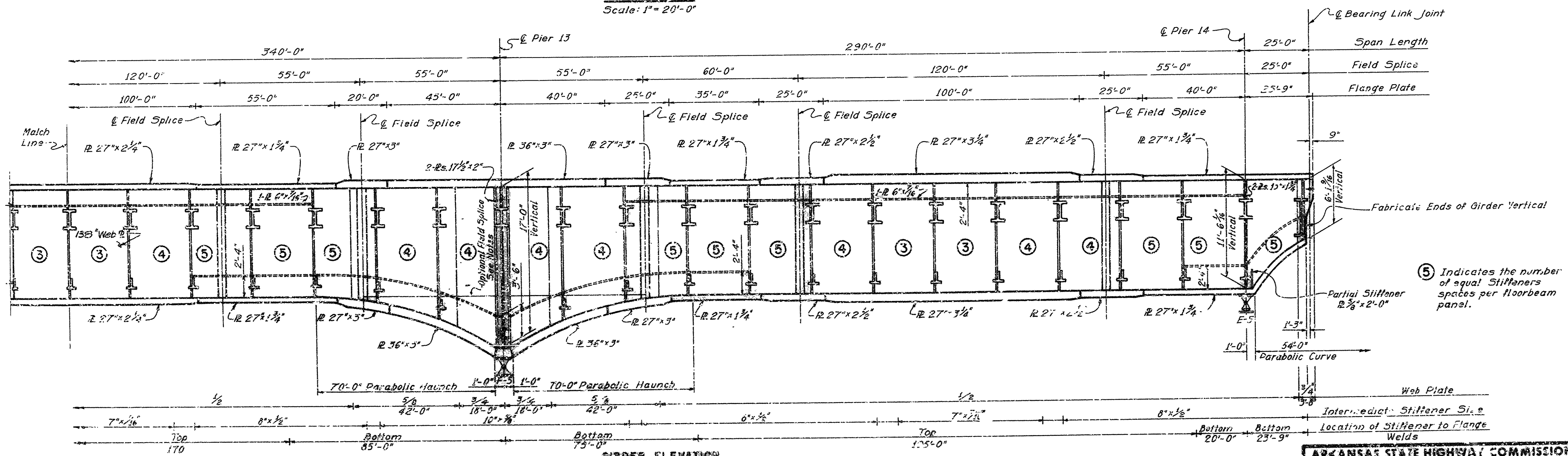


CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		4584	34	127
FR. PLAN & GIR. EL. UNIT 4				



FRAMING PLAN  
Scale: 1" = 20'-0"



GIRDER ELEVATION

\*AT will be increased by .05 due to the weight of the utilities.

PAVEMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS																							
POINT		.5	.6	1	.7	.8	2	.9	PIER 13	..	1	.2	.3	.4	1	2	.6	.7	1	.8	.9	PIER 14	LINK JT.
GIRDERS A & D	ELEV.	470.22	470.12	470.01	469.97	469.79	469.52	469.55	469.27	468.99	468.59	468.68	468.34	467.96	467.97	467.55	467.10	466.65	466.06	466.12	465.57	465.00	464.47
	ΔT	.498	.450	.35	.322	.362	.576	.045	0	.063	.102	.101	.335	.474	.506	.560	.581	.530	.444	.409	.224	0	.178
	ΔC	.335	.303	.268	.217	.09	.051	.030	0	.042	.069	.152	.226	.315	.341	.317	.391	.357	.299	.275	.151	0	.119
GIRDERS B & C	ELEV.	470.76	470.66	470.55	470.51	470.32	470.06	470.08	469.81	469.55	469.52	469.22	468.88	468.36	468.31	467.89	467.64	467.17	466.61	466.66	466.11	465.54	465.01
	ΔT	.459	.417	.356	.297	.149	.076	.042	0	.058	.054	.167	.309	.436	.466	.516	.536	.480	.404	.377	.267	0	.164
	ΔC	.297	.258	.237	.192	.096	.046	.027	0	.037	.031	.108	.200	.282	.301	.333	.346	.315	.264	.233	.134	0	.105

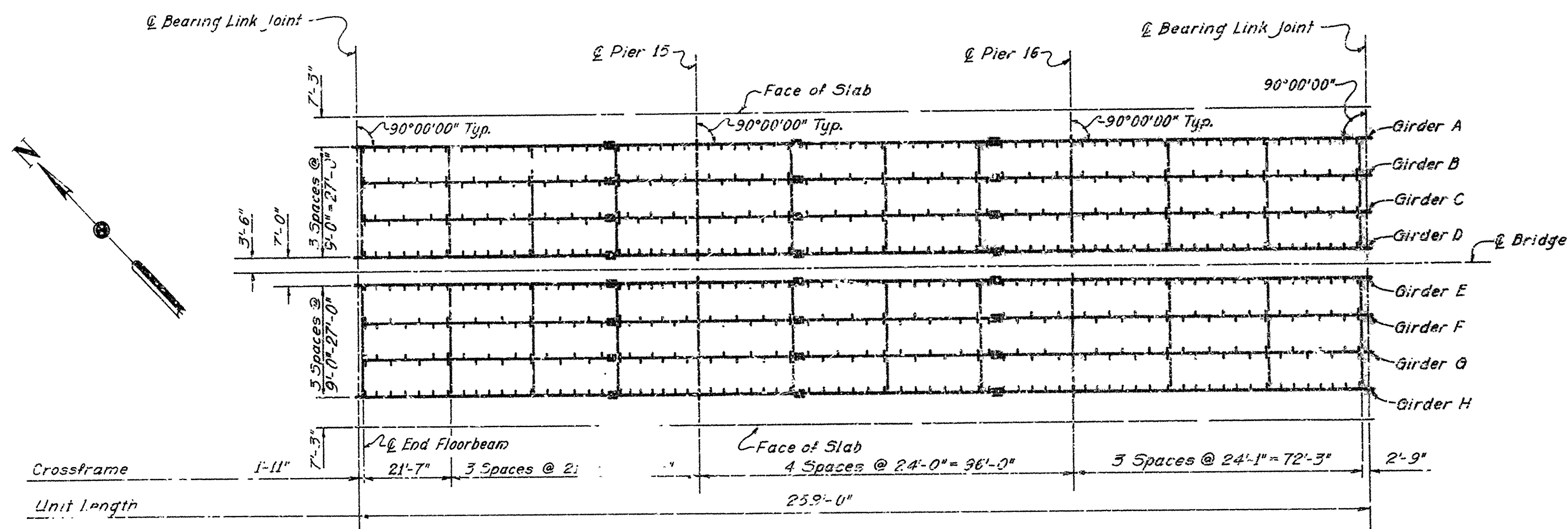
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS  
FRAMING PLAN AND GIRDER ELEVATION  
UNIT 4  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB  
DRAWN BY J.G. DATE 5-31-68 CHECKED J.G.D. DATE 7-30-68  
PROJECT NO. 5275 SCALE AS SHOWN DRAWING NO. 15134



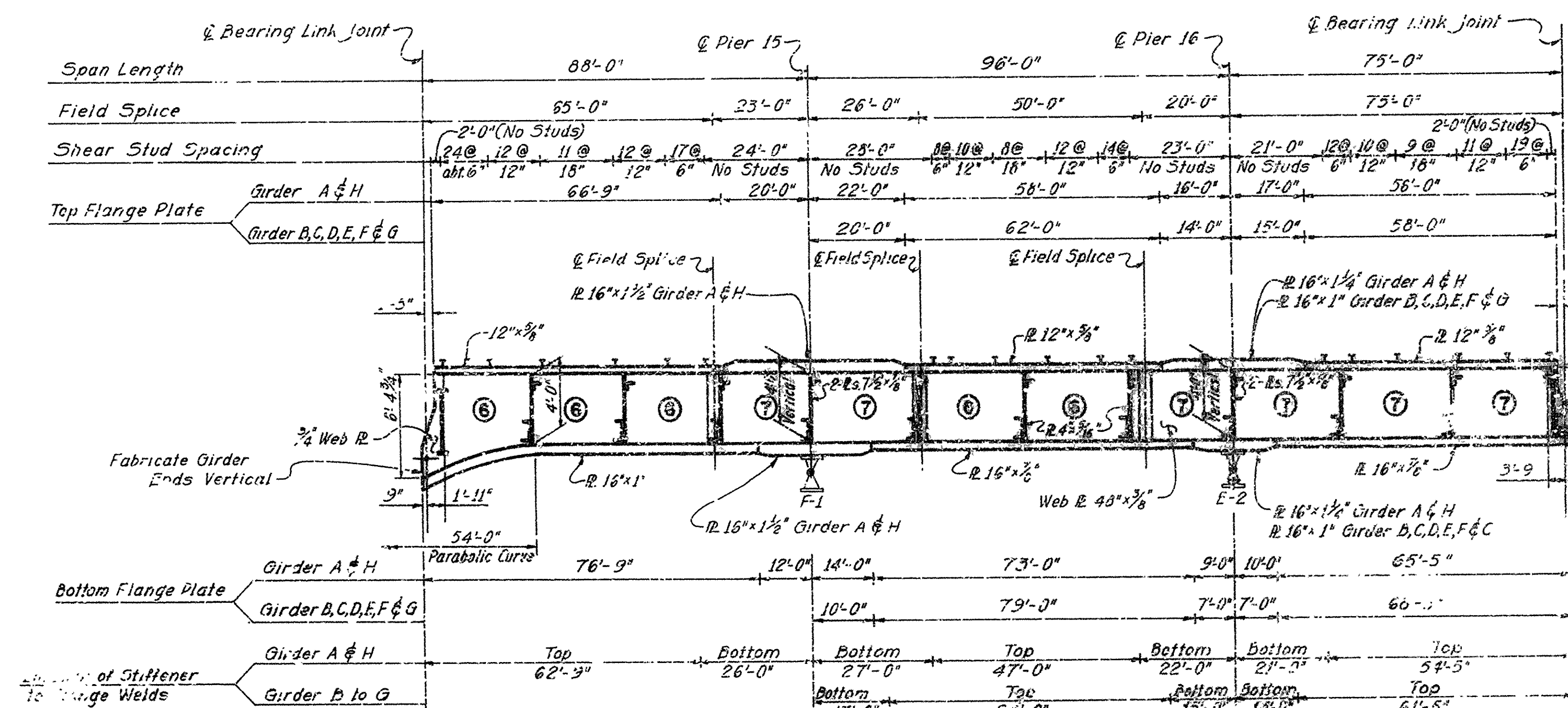
CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

6	ARK			
105	107	108	109	110
111	112	113	114	115
116	117	118	119	120
121	122	123	124	125
126	127	128	129	130

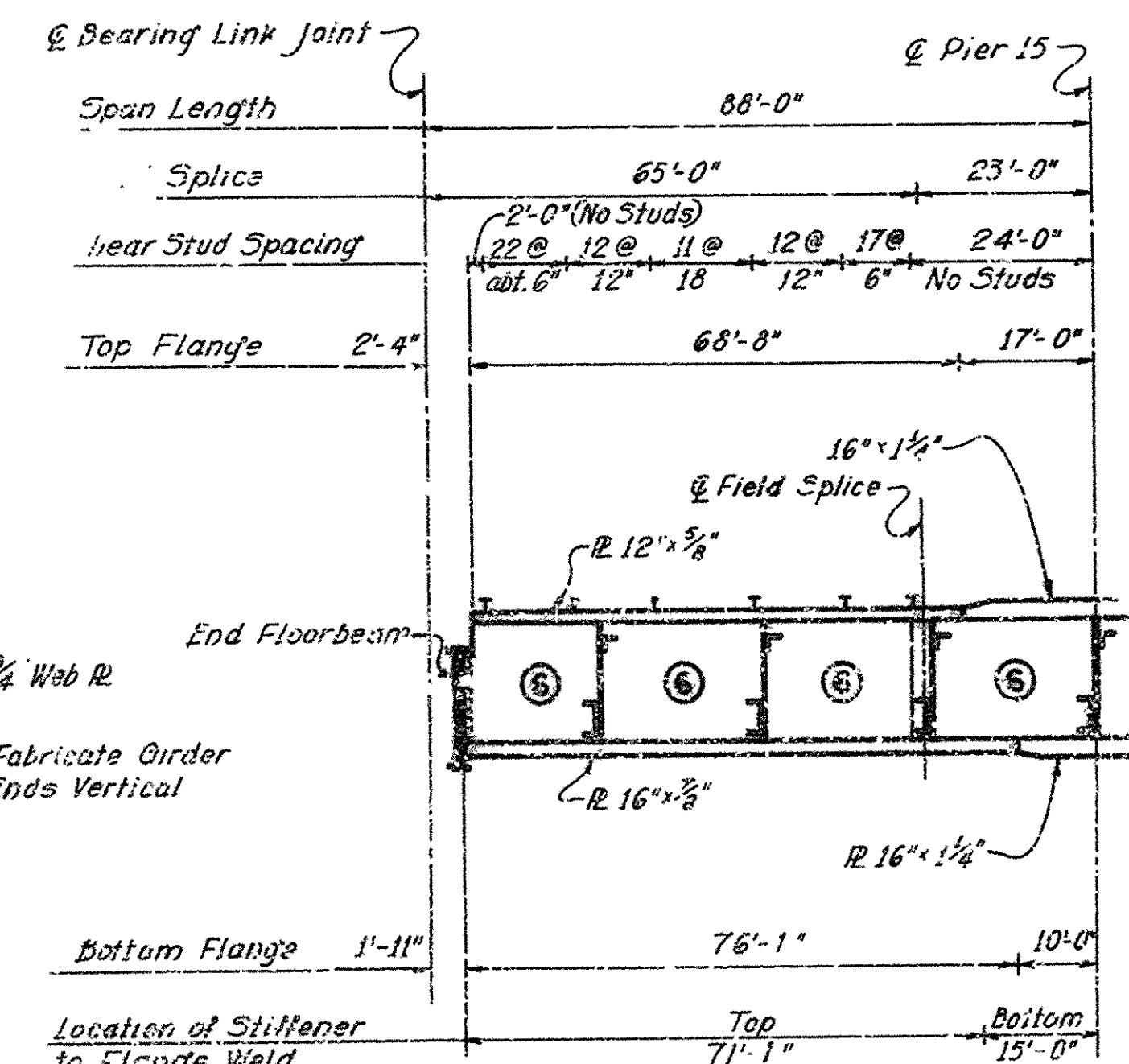
1. FR. PLAN & GIRDER ELEV. UNIT 5



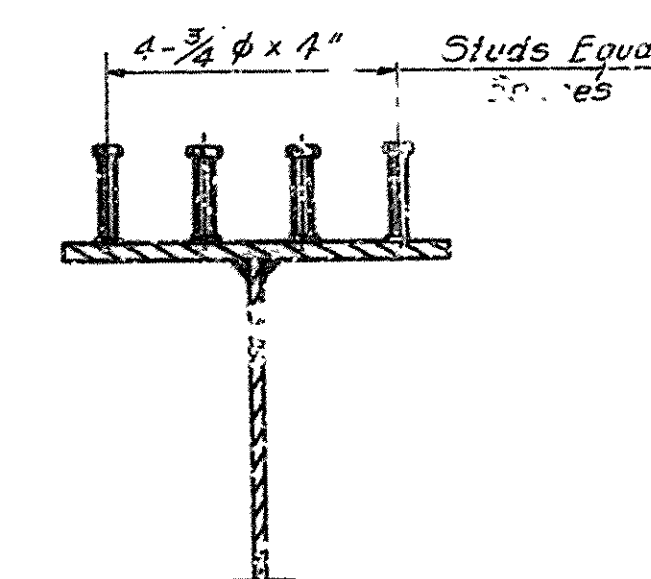
**FRAMING PLAN**  
Scale: 1" = 20'-0"



**GIRDER ELEVATION**



**SPAN 1, GIRDERS B TO G**  
**PART GIRDER ELEVATION**



**SHEAR STUD DETAIL**

Notes:

- ⑥ Indicates the number of equal stiffeners spaces per crossframe panel for 4"x6" stiffener.
- Transverse intermediate stiffeners are on the inside of exterior girders and on both sides of interior girders.

ELEVATION ELEVATIONS AND DEAD LOAD REFLECTIONS															
POINT	LINK JT.	.25	.50	.75 & 1	PIER 15	.25	.50	.75	1	PIER 16	.25	.50	.75	LINK JT.	
GIRDERS A & H	ELEV.	464.47	463.99	463.49	462.37	462.43	461.82	461.74	461.19	460.53	460.42	459.85	459.41	458.74	457.58
	ΔT	.178	.030	.032	.013	0	.006	.008	.034	.016	.010	0	.015	.037	.053
	ΔC	.119	0	.014	.020	0	.005	.007	.033	.014	.009	0	.013	.032	.046
GIRDERS B & G	ELEV.	464.55	464.17	463.67	463.15	462.61	462.00	461.97	461.37	460.71	460.60	460.03	459.59	458.92	457.76
	ELEV.	464.83	464.35	463.85	463.33	462.79	462.18	462.15	461.55	460.89	460.78	460.21	459.67	458.90	457.54
	ELEV.	465.01	464.53	464.03	463.51	462.97	462.36	462.33	461.73	461.07	460.96	460.39	459.85	458.90	457.54
GIRDERS C & F	ELEV.	464.83	464.35	463.85	463.33	462.79	462.18	462.15	461.55	460.89	460.78	460.21	459.67	458.90	457.54
	ΔT	.164	.027	.030	.012	0	.007	.009	.035	.017	.012	0	.012	.031	.049
	ΔC	.105	.002	.042	.018	0	.006	.007	.029	.015	.010	0	.011	.027	.041
GIRDERS D & E	ELEV.	464.83	464.35	463.85	463.33	462.79	462.18	462.15	461.55	460.89	460.78	460.21	459.67	458.90	457.54
	ΔT	.164	.027	.030	.012	0	.007	.009	.035	.017	.012	0	.012	.031	.049
	ΔC	.105	.002	.042	.018	0	.006	.007	.029	.015	.010	0	.011	.027	.041

\*ΔT will be increased 5.2% due to the weight of the utilities. From Link Joint near Pier 15 to Pier 16.

**LEGEND**

- ===== Stiffeners
- Field Splice
- ~ Splice

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, OKLAHOMA SEBASTIAN COUNTY, ARKANSAS

**FRAMING PLAN AND GIRDER ELEVATION**  
UNIT 5

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS

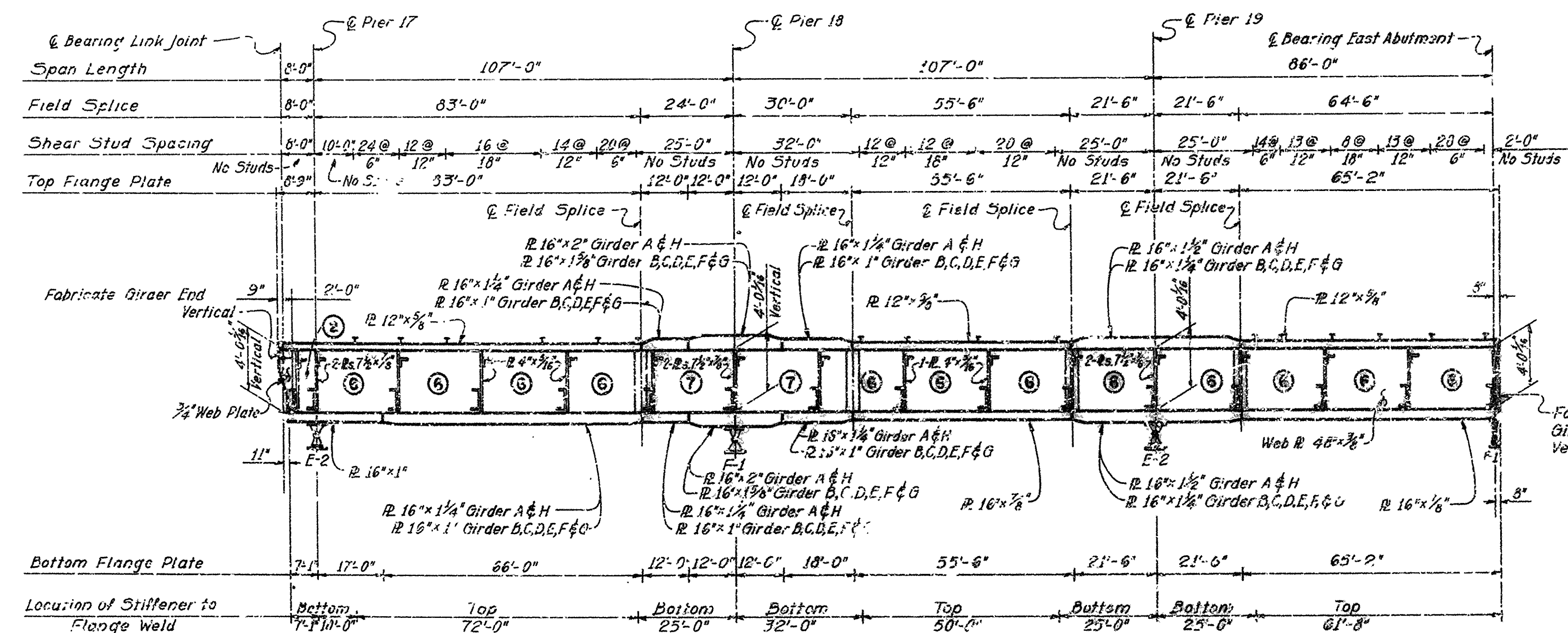
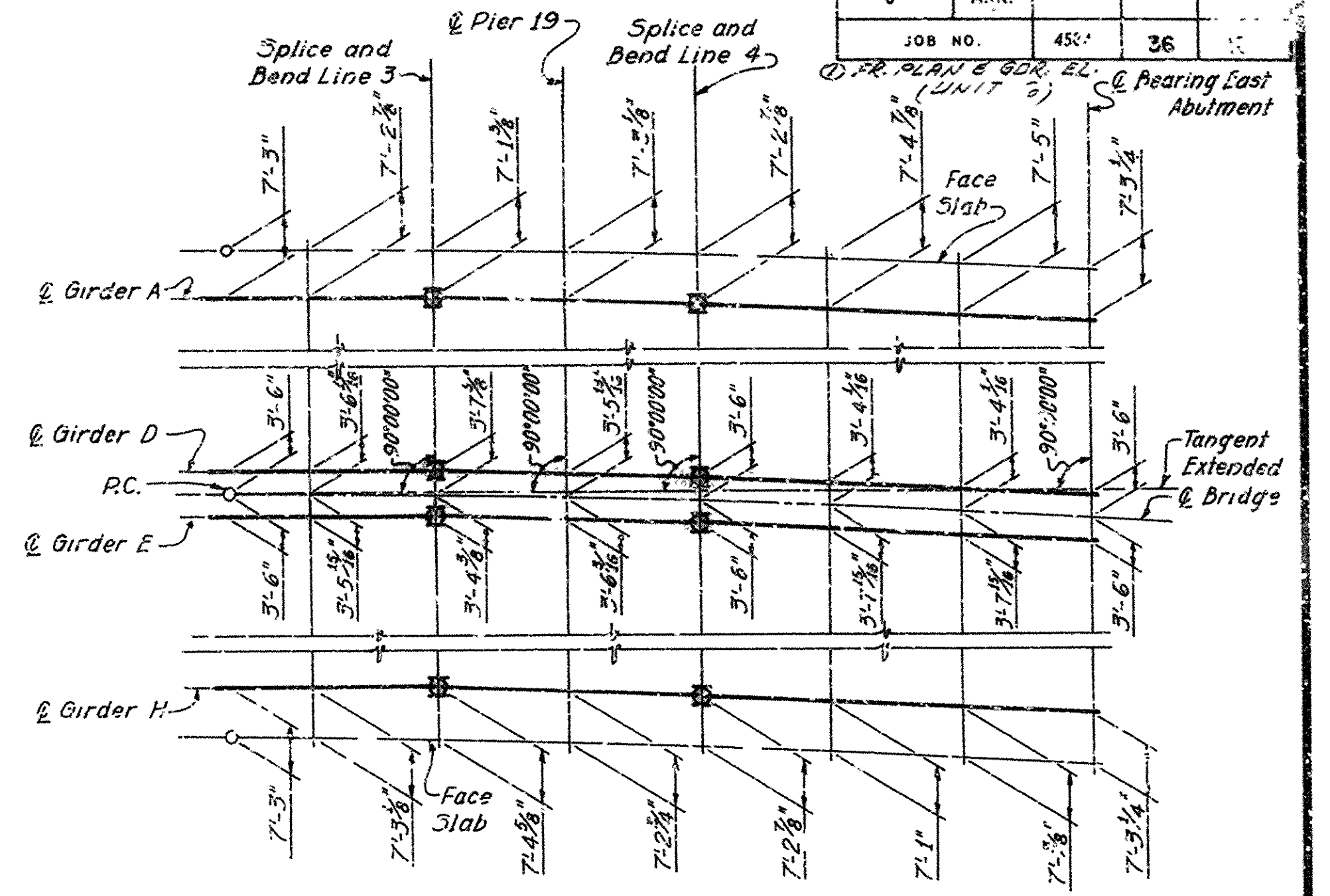
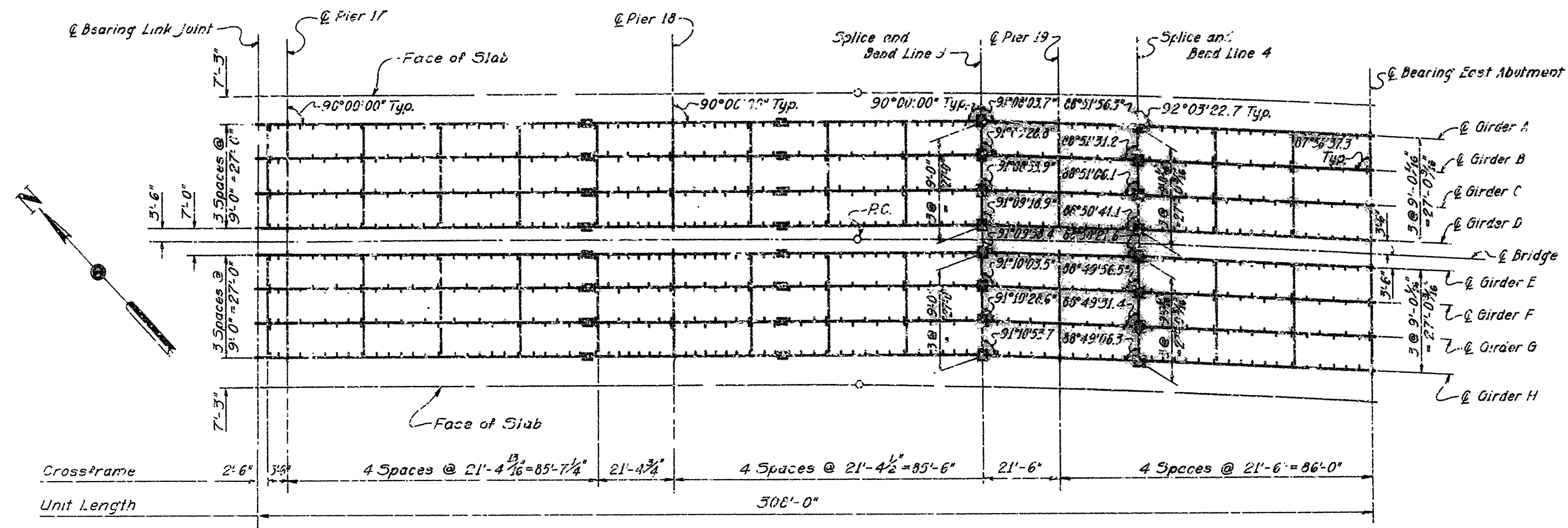
**HNTB**

DRAWN BY: J.C. DATE: 6-24-68 CHECKED BY: J.D.H. DATE: 6-30-68  
REVISION NO. 5375 REVISION NO. 5375 DRAWING NO. 1635



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	453	36	
JOB NO.				



PAVEMENT ELEVATIONS AND DEAD LOAD DEFLECTIONS																			
POINT	LINK	PIER 17	.25	.50	.75	PIER 18	.25	.50	.75	PIER 19	.25	.50	.75	EABUT					
ELEV. GIRDER A	457.58	457.33	456.45	455.55	454.63	454.53	453.67	452.68	452.56	451.67	450.63	450.43	449.58	448.73	447.88	447.53	446.18		
ELEV. GIRDER H	457.58	457.33	456.45	455.55	454.63	454.53	453.67	452.68	452.56	451.67	450.63	450.43	449.58	448.73	447.88	447.53	446.18		
GIRDERS	ΔT	-0.93	0	.172	.214	.106	.092	0	.001	.007	.044	.021	.012	0	.061	.122	.103	0	
A & H	ΔC	-0.46	0	.147	.182	.090	.078	0	.001	.006	.037	.018	.011	0	.052	.104	.089	0	
ELEV. GIRDER B	457.76	457.1	456.63	455.73	454.61	454.71	453.85	452.86	452.74	451.85	450.80	450.60	449.76	448.79	447.89	447.19	446.67		
ELEV. GIRDER C	457.94	457.69	456.81	455.91	454.99	454.89	454.03	453.04	452.92	452.03	450.99	450.78	449.93	449.07	448.22	447.36	446.50		
ELEV. GIRDER D	458.14	457.87	456.99	456.09	455.17	455.07	454.21	453.22	453.10	452.21	451.21	450.96	450.10	449.23	448.33	447.53	446.67		
ELEV. GIRDER E	458.12	457.87	456.99	456.09	455.17	455.07	454.21	453.22	453.10	452.21	451.21	450.96	450.10	449.23	448.33	447.53	446.67		
ELEV. GIRDER F	457.94	457.69	456.81	455.91	454.99	454.89	454.03	453.04	452.92	452.03	450.99	450.78	449.93	449.07	448.22	447.36	446.50		
ELEV. GIRDER G	457.76	457.1	456.63	455.73	454.61	454.71	453.85	452.86	452.74	451.85	450.80	450.60	449.76	448.79	447.89	447.19	446.67		
GIRDERS	ΔT	-0.49	0	.160	.200	.099	.085	0	-.001	.004	.040	.018	.010	0	.056	.115	.098	0	
B, C, D, E, F & G	ΔC	-0.41	0	.132	.164	.081	.070	0	-.001	.004	.033	.015	.008	0	.046	.095	.080	0	

Notes:  
Transverse intermediate stiffeners are on the inside of exterior girders and on both sides of interior girders.  
(6) Indicates the number of equal stiffeners spaces per crossframe panel for 4"x16" stiffener.

- LEGEND
- = Splice and Bend Point
  - ===== = Stiffeners
  - = Field Splice
  - = Splice

ARKANSAS STATE HIGHWAY COMMISSION  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARK. 45AS  
SEDERBERG COUNTY, MISSOURI SHERMAN COUNTY, ARKANSAS

FRAMING PLAN AND GIRDER ELEVATION  
UNIT 6

HOWARD NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

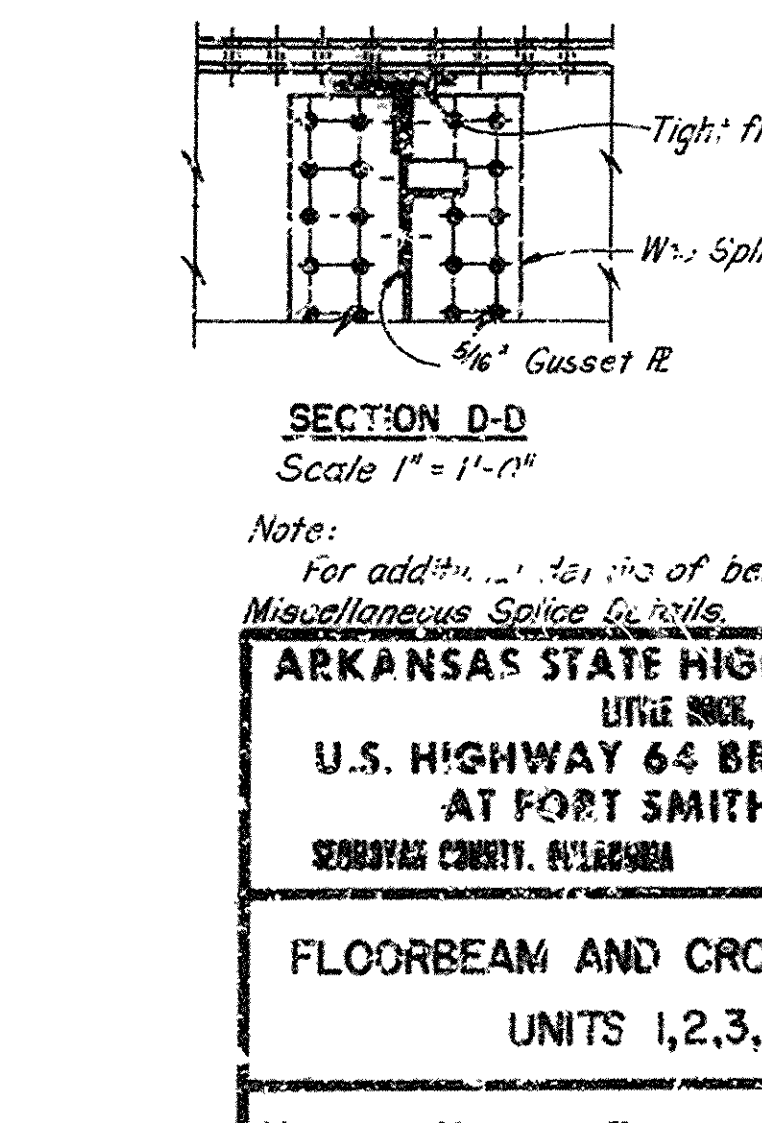
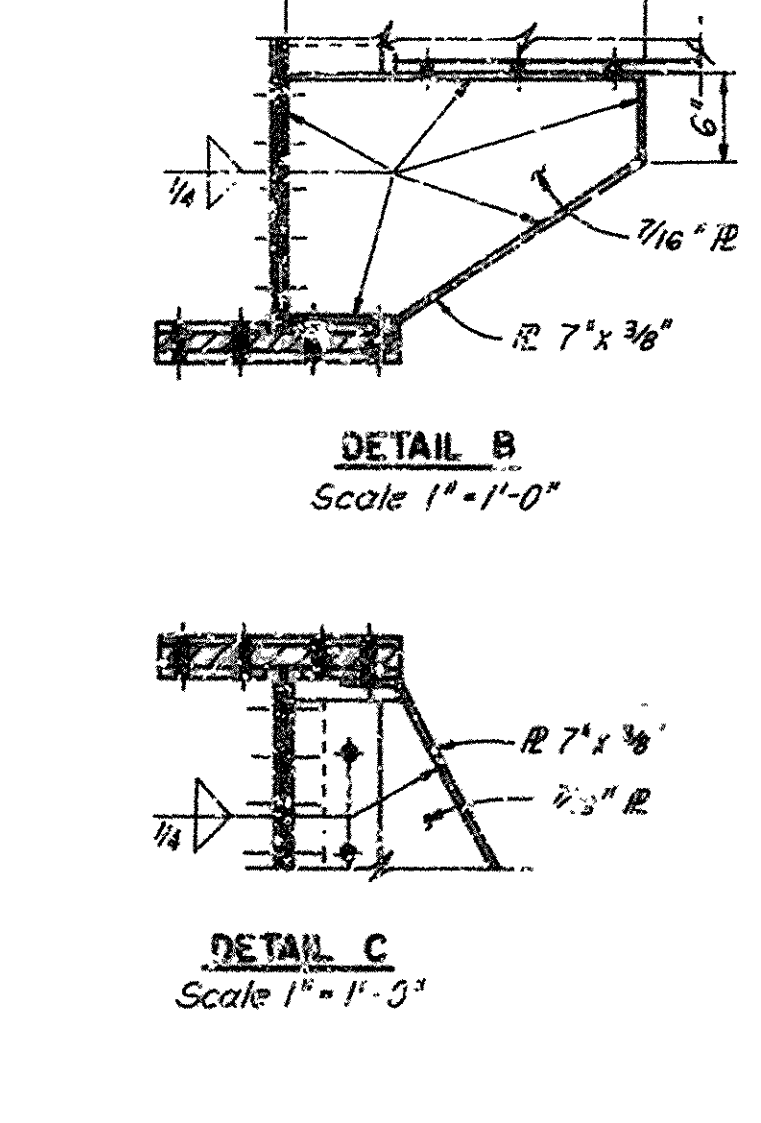
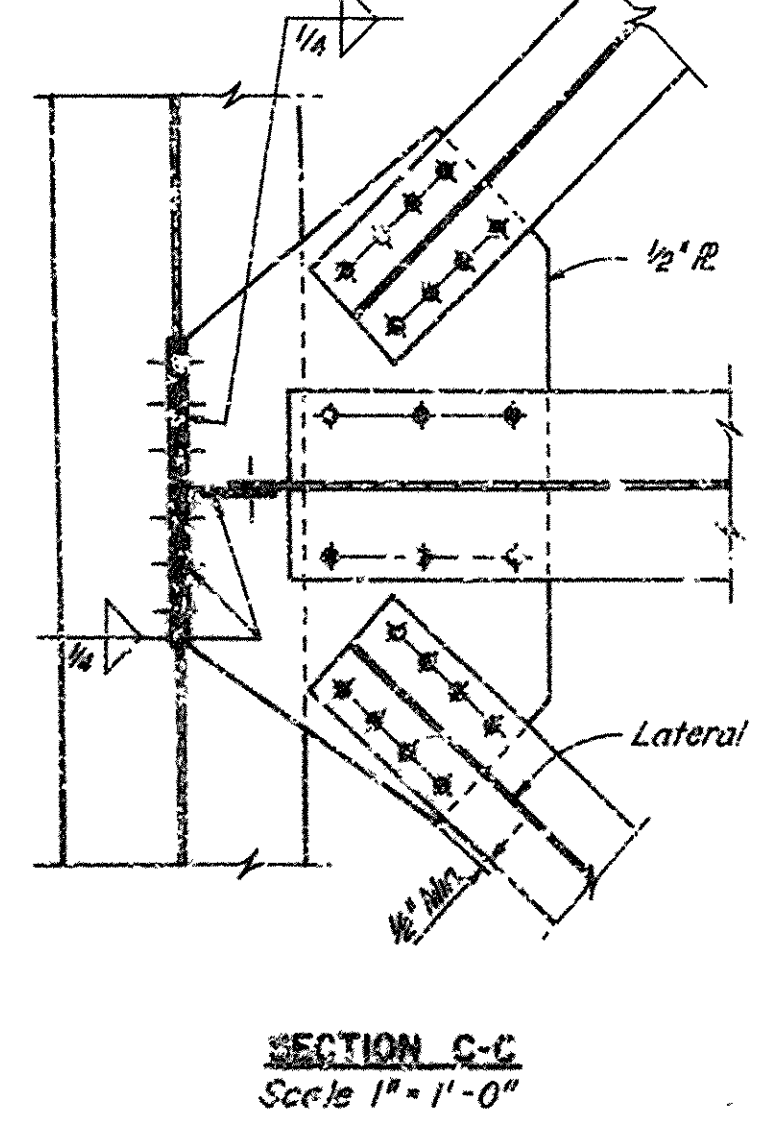
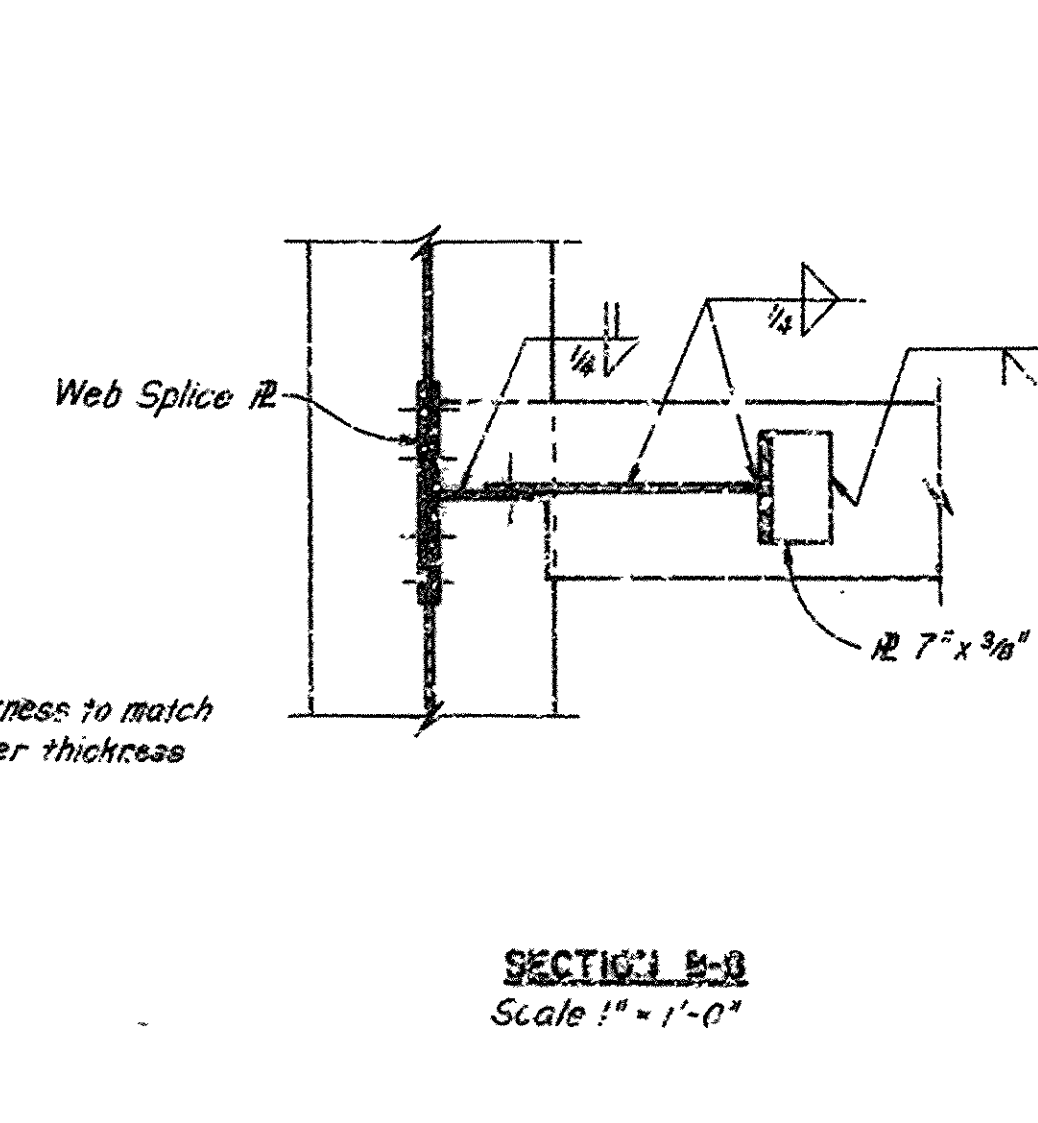
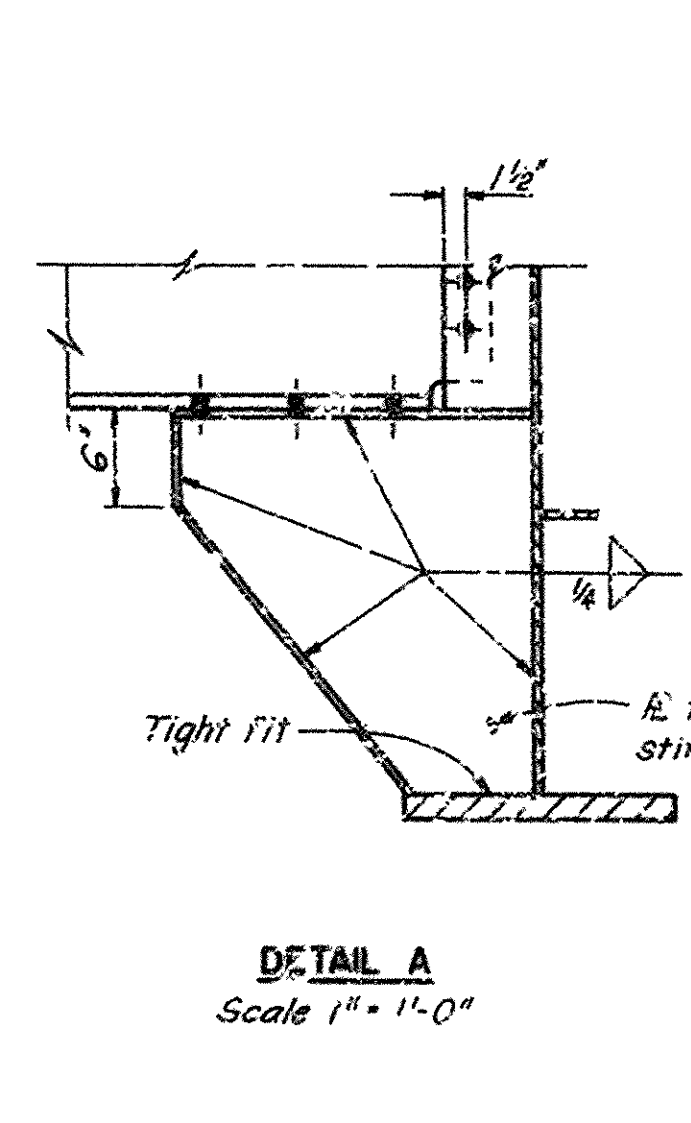
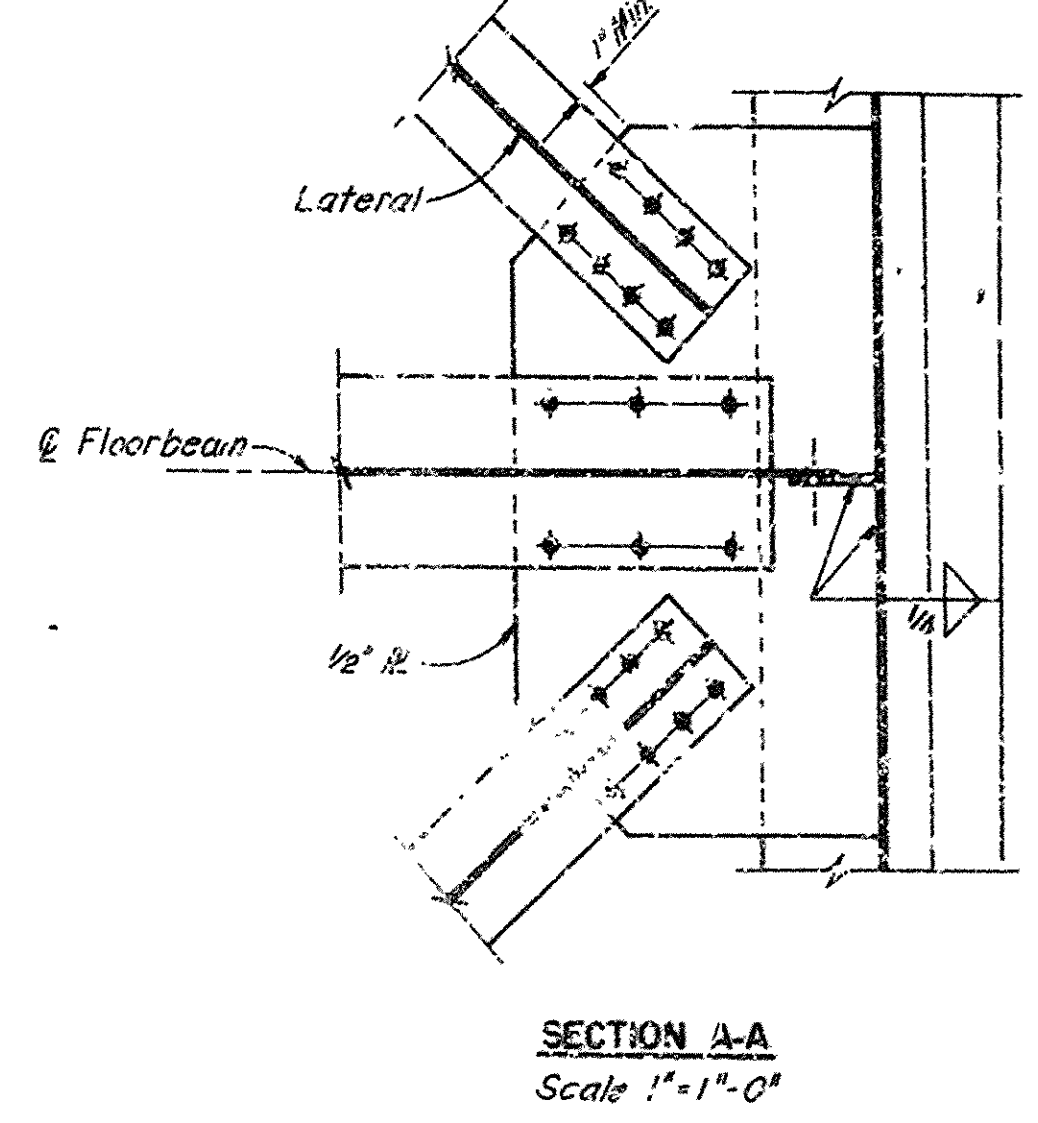
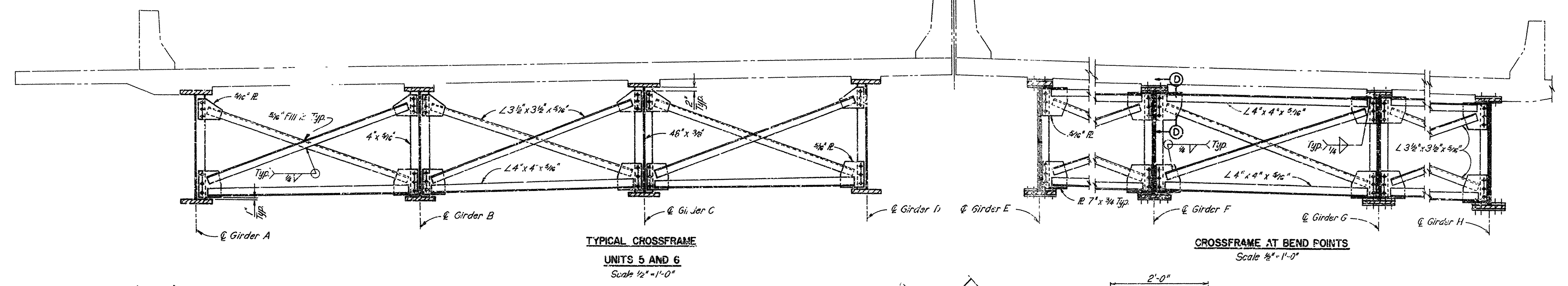
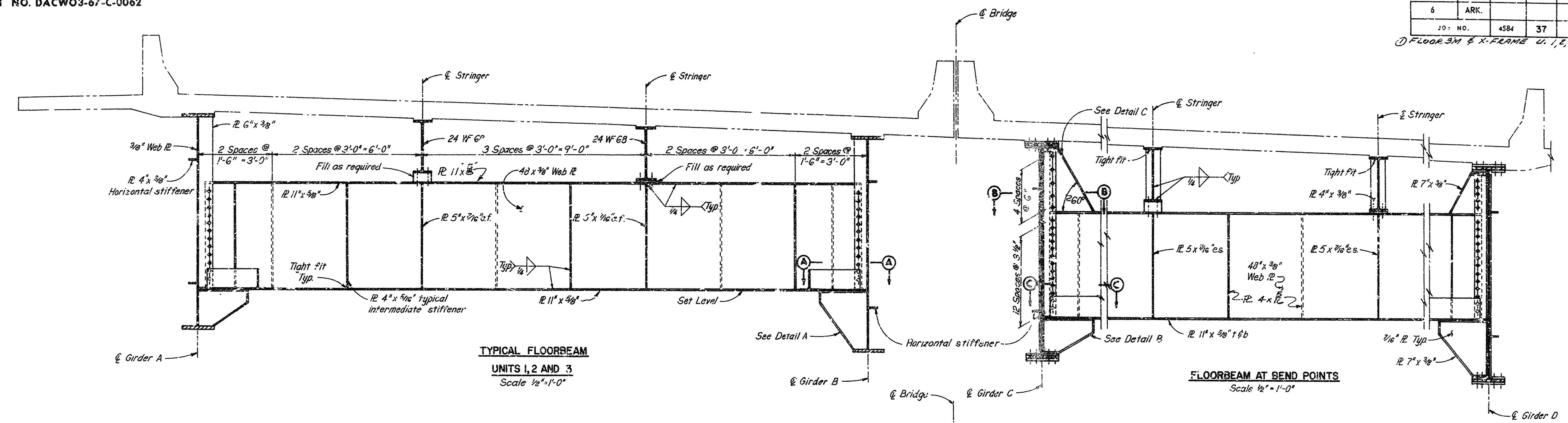
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BRIDGE NO. 3275 SCALE DRAWING NO. 15136



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		37	127
JO. NO. 4584				

① FLOOR BEAM & X-FRAME U. 1, 2, 3, 5, 6



Note:  
For additional details of bend point splice see  
Miscellaneous Splice Details.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS

FLOORBEAM AND CROSSFRAME DETAILS  
UNITS 1, 2, 3, 5 AND 6

HOWARD, NEEDLE, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB

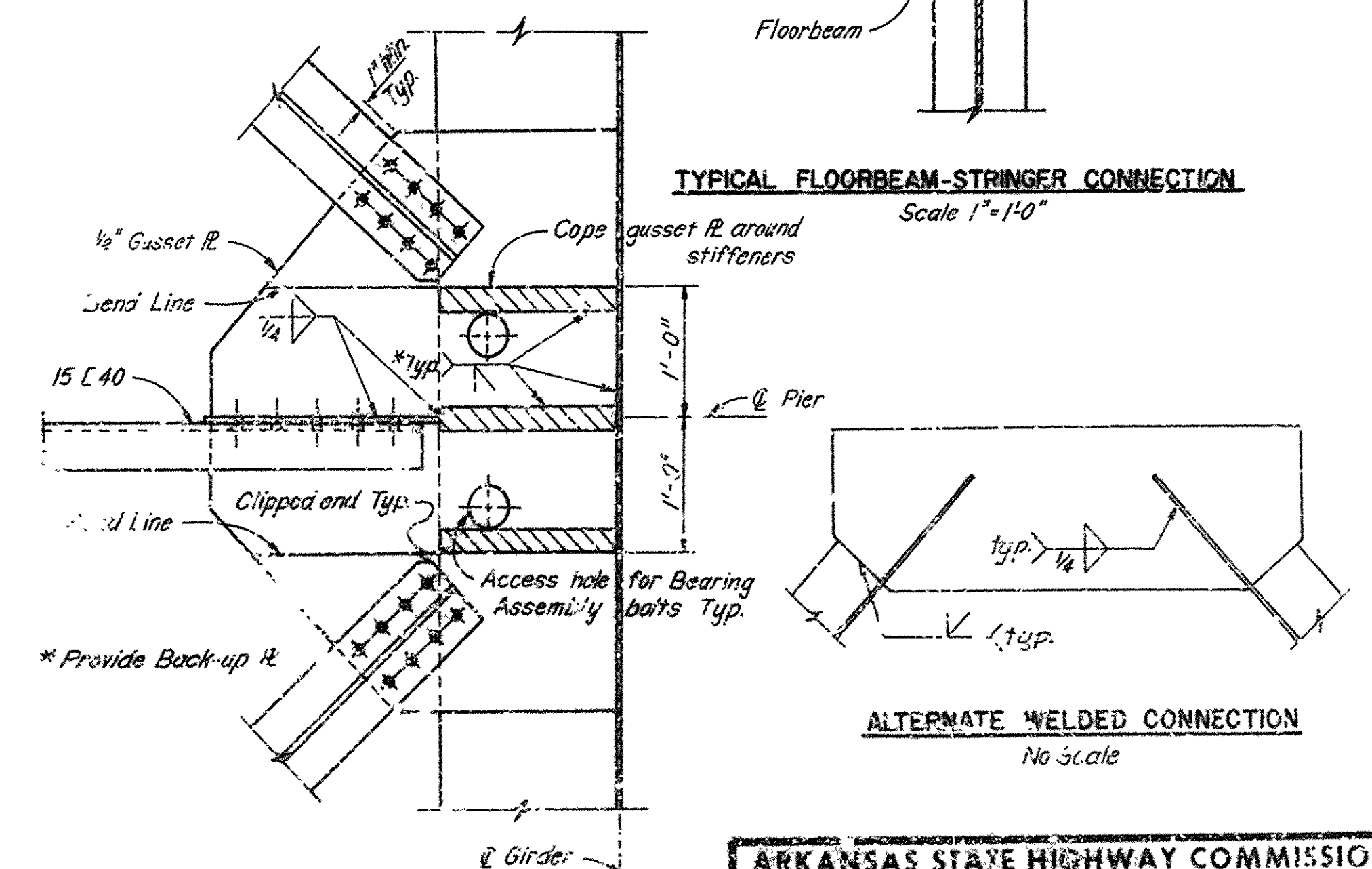
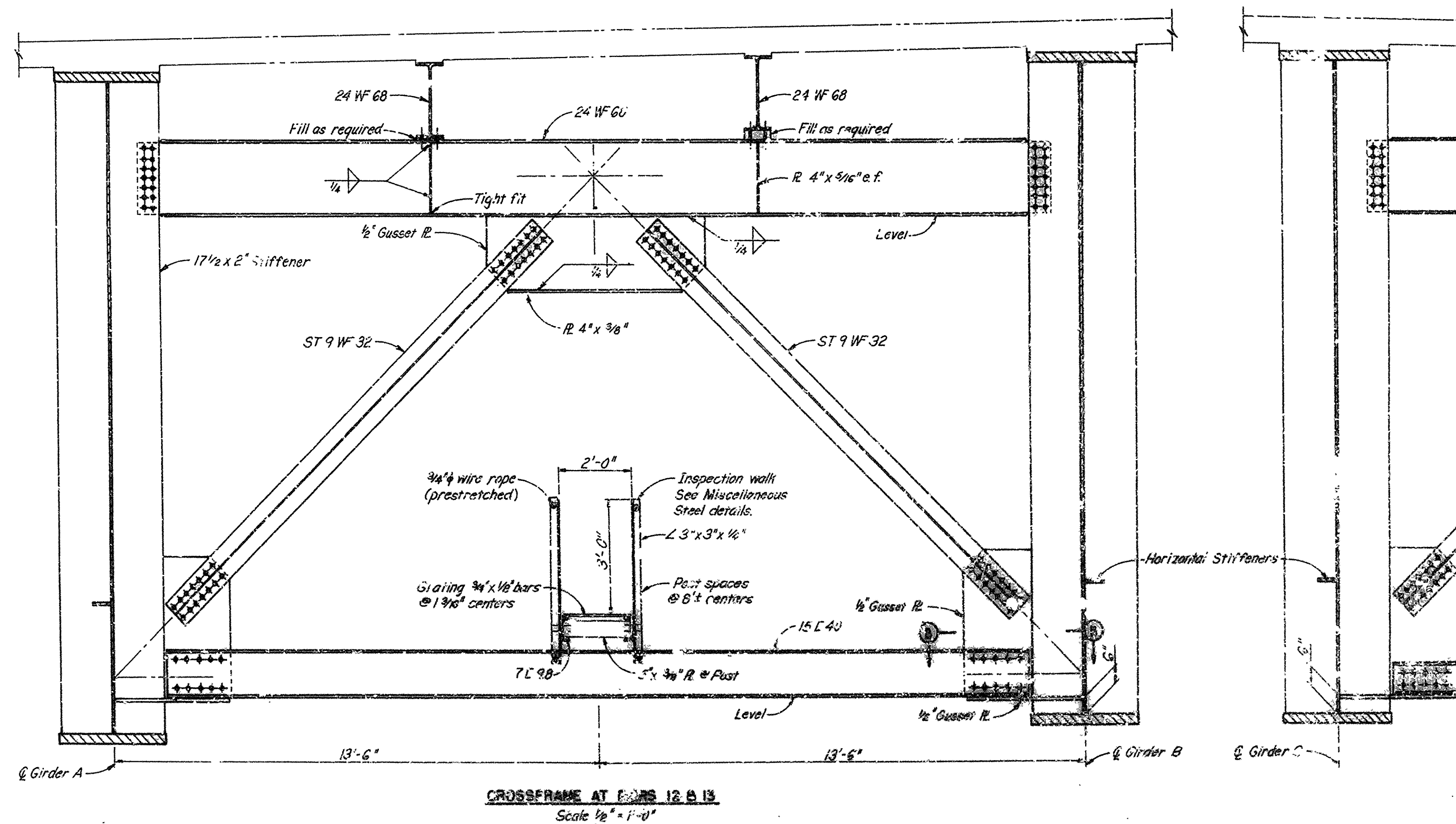
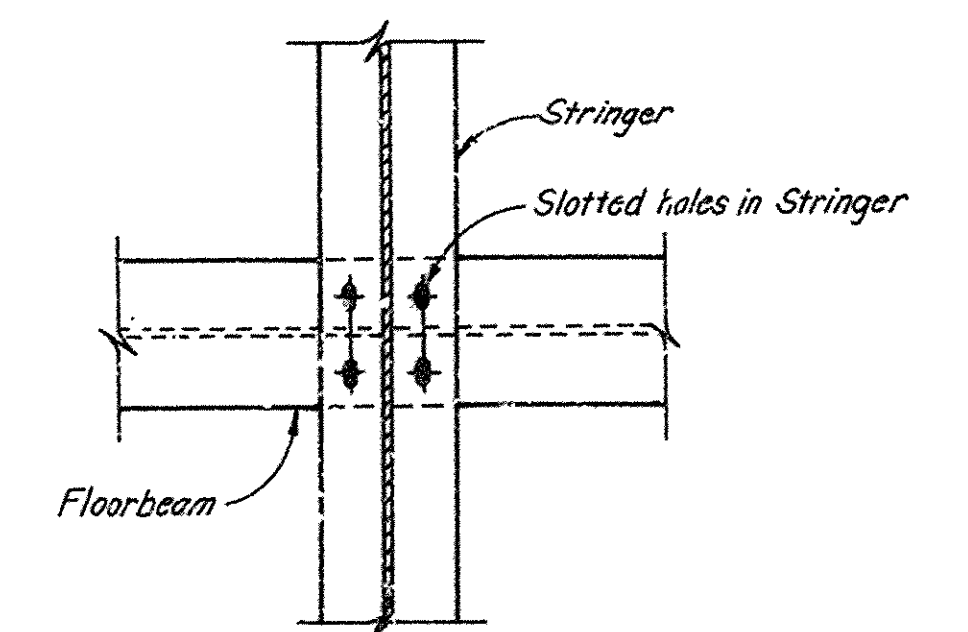
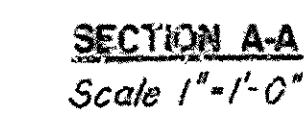
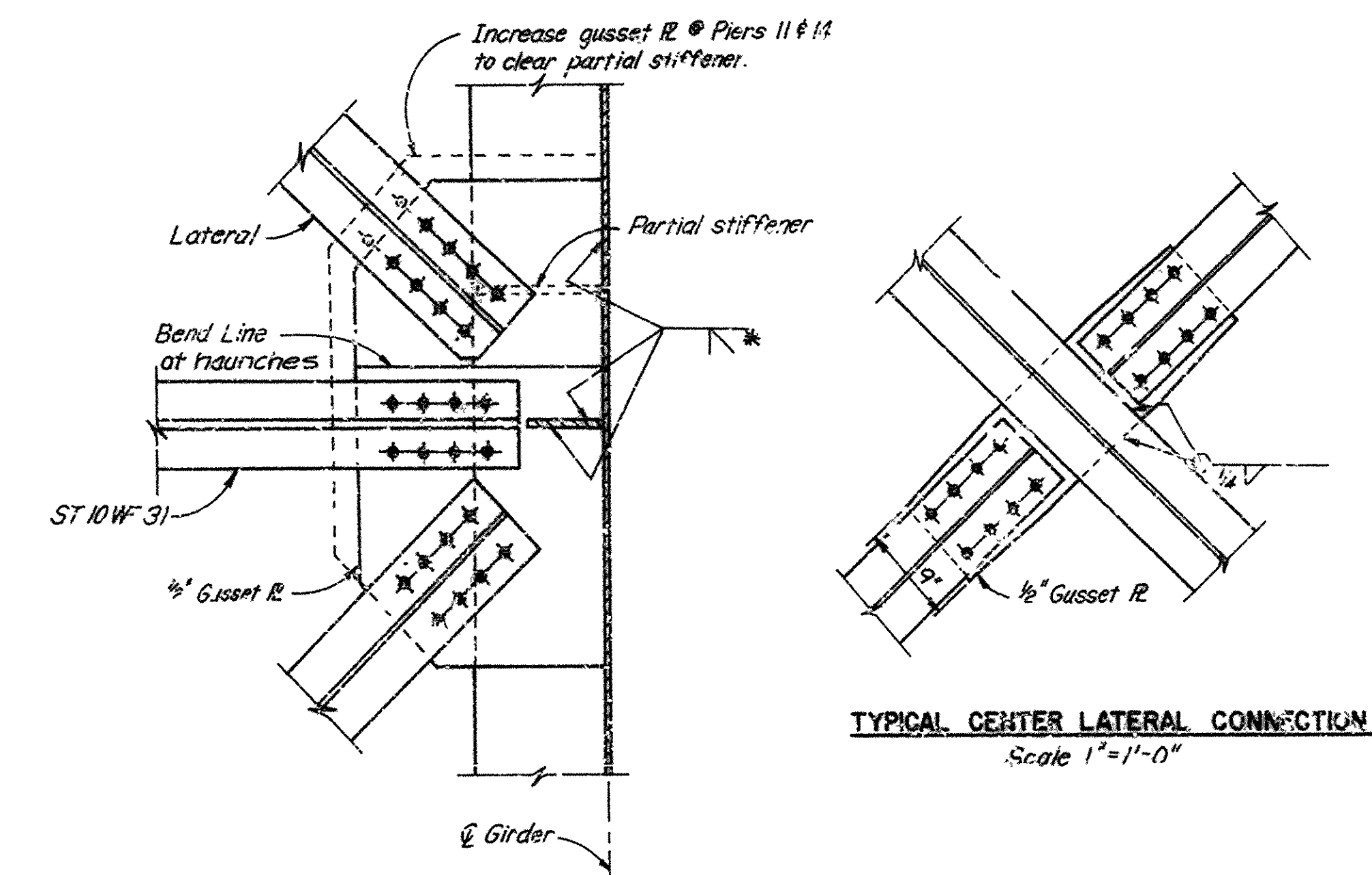
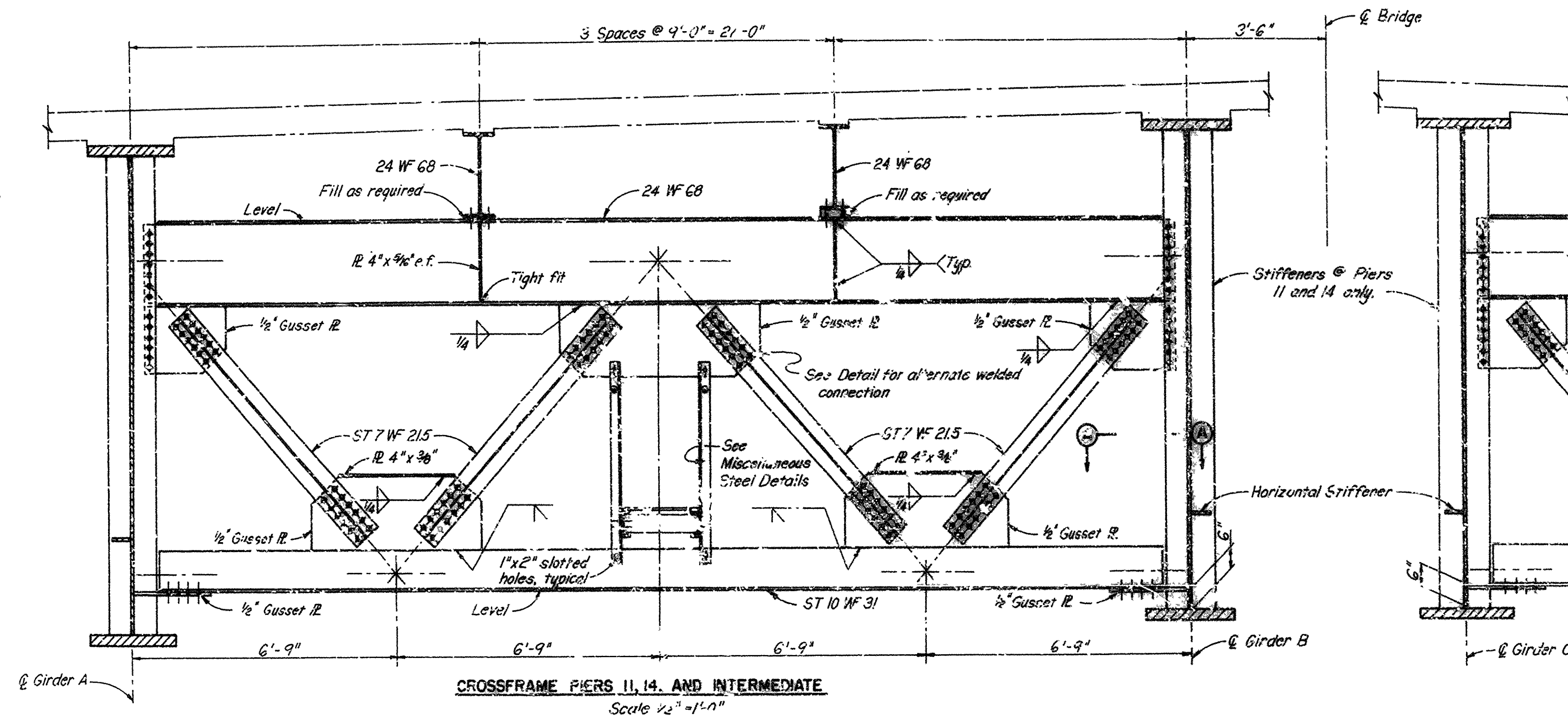
DRAWN BY SDH DATE 7-9-68 CHECKED BY RDR DATE 7-26-68  
BRIDGE NO. 5275 SCALE OF DRAWING DRAWING NO. 1637



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST NO.	STATE	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
6	ARK			
JOB NO.		4584	38	127

① CROSS FRAME DET. UNIT 4



**SECTION D-B**  
Scale 1"=1'-0"

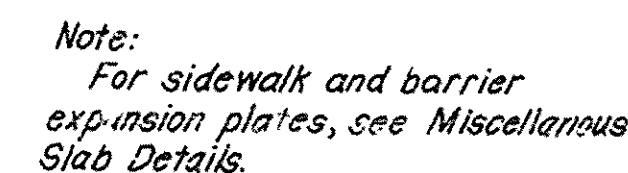
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, OKLAHOMA SEBASTIAN COUNTY, ARKANSAS

CROSSFRAME DETAILS  
UNIT 4

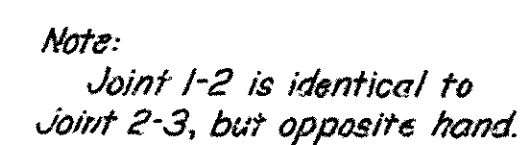
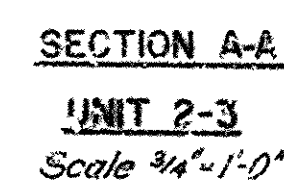
HOWARD NEEDLES TAMMEN & BERGENDOFF CONSULTING ENGINEERS HNTB

DRAWN BY GDH DATE 6-16-68 CHECKED BY RCP DATE 9-20-68  
DESIGN NO. 5233 SCALE AS SHOWN DRAWING NO. 1513B

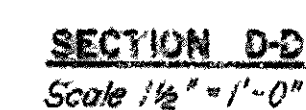




\* At 60° F



UNIT 2-3



HOWARD. NEEDLES. TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS **HNTB**

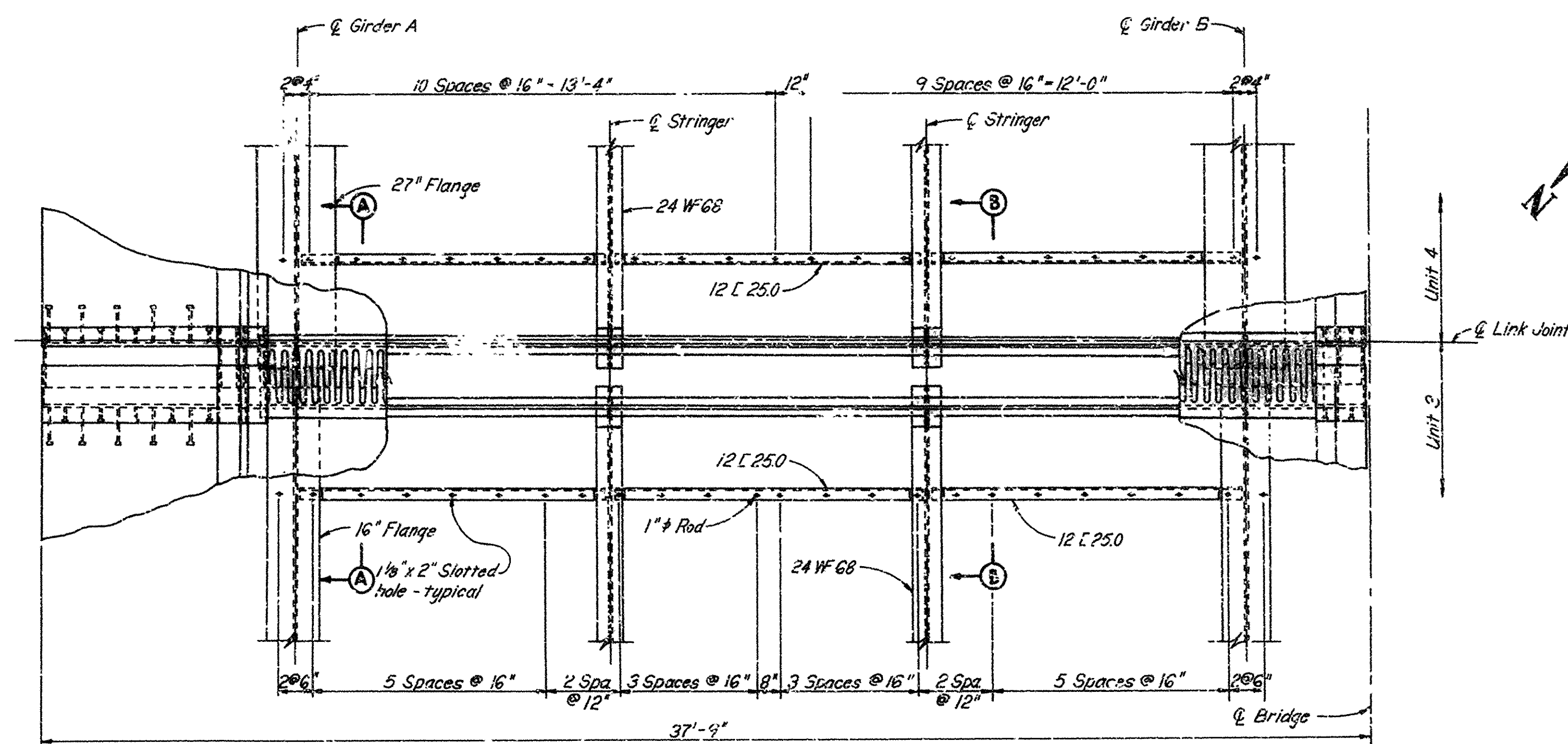
DRAWN BY GDN DATE 8-21-68 CHECKED BY RDR DATE 9-26-68  
BRIDGE NO. 5275 SCALE As shown DRAWING NO. 16139



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

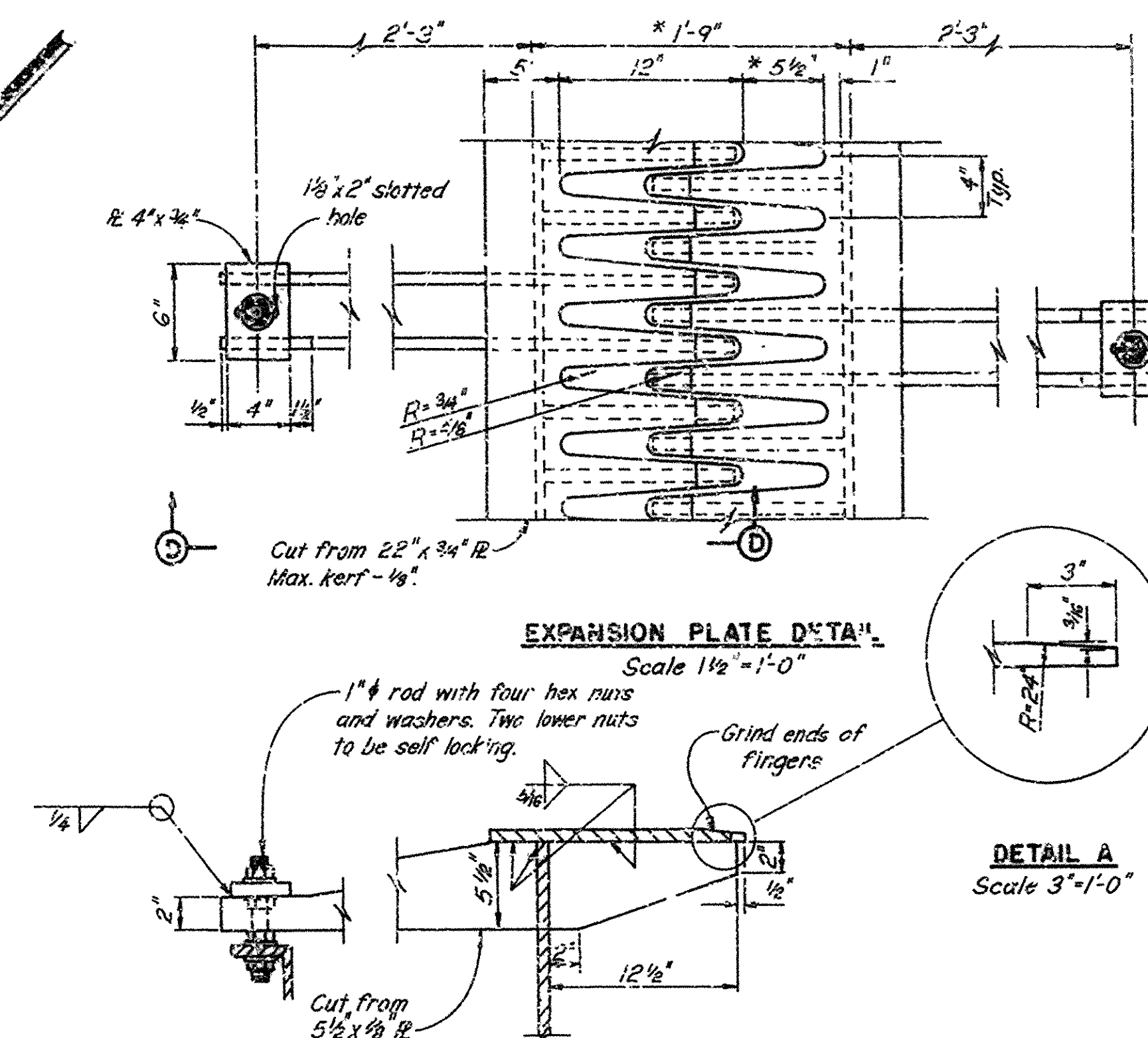
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
5	ARK.		40	127
JOB NO.	4584			

LINK & EXP. JT. UNIT 3-4



Note:  
For sidewalk and barrier expansion plates,  
see Miscellaneous Slab Details.

EXPANSION JOINT PLAN  
Scale 3/8" = 1'-0"



SECTION D-D  
Scale 1 1/2" = 1'-0"

#### LINK PIN ASSEMBLIES:

The pin plates, link plates and wing shear plates shall be A.S.T.M. A588 steel; the link pins A.S.T.M. A235 class C-1 steel forgings; the bronze washers A.S.T.M. B22-61 alloy E and the recessed pin nuts A.S.T.M. A-36 steel.

The diameter of the pin hole shall not exceed that of the pin by more than 1/32" and the finish of the pin and pin hole contact surfaces shall conform to A.S.A. 125. The pin nuts shall be adjusted, to allow free movement of the links, before the set screws are placed.

The final adjustment of the expansion joint finger plates shall be made after all the midspan and pier areas (1 and 2) of the bridge deck have been poured and immediately prior to pouring the expansion joint area (3). See Pouring Sequence.

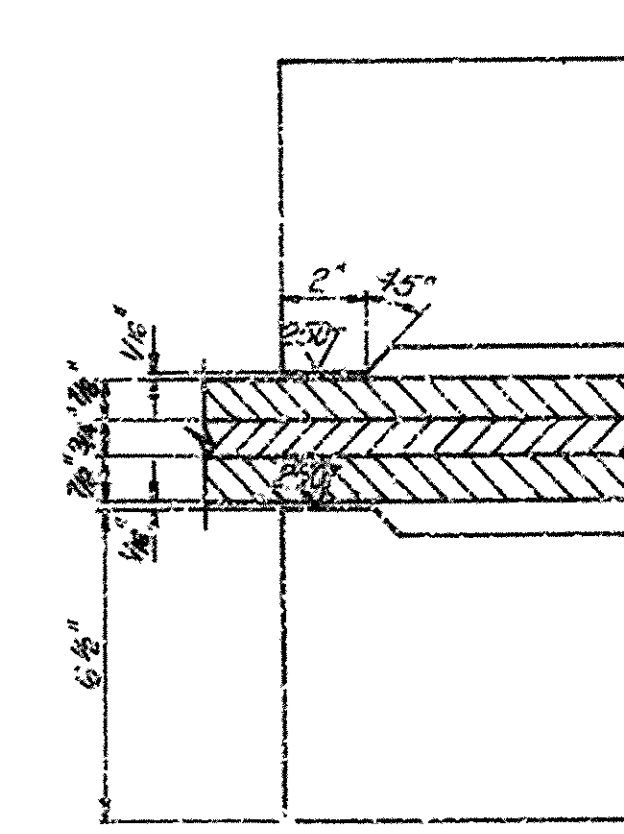
#### EXPANSION JOINTS

The expansion joint shall be galvanized or painted with a zinc rich paint as follows:

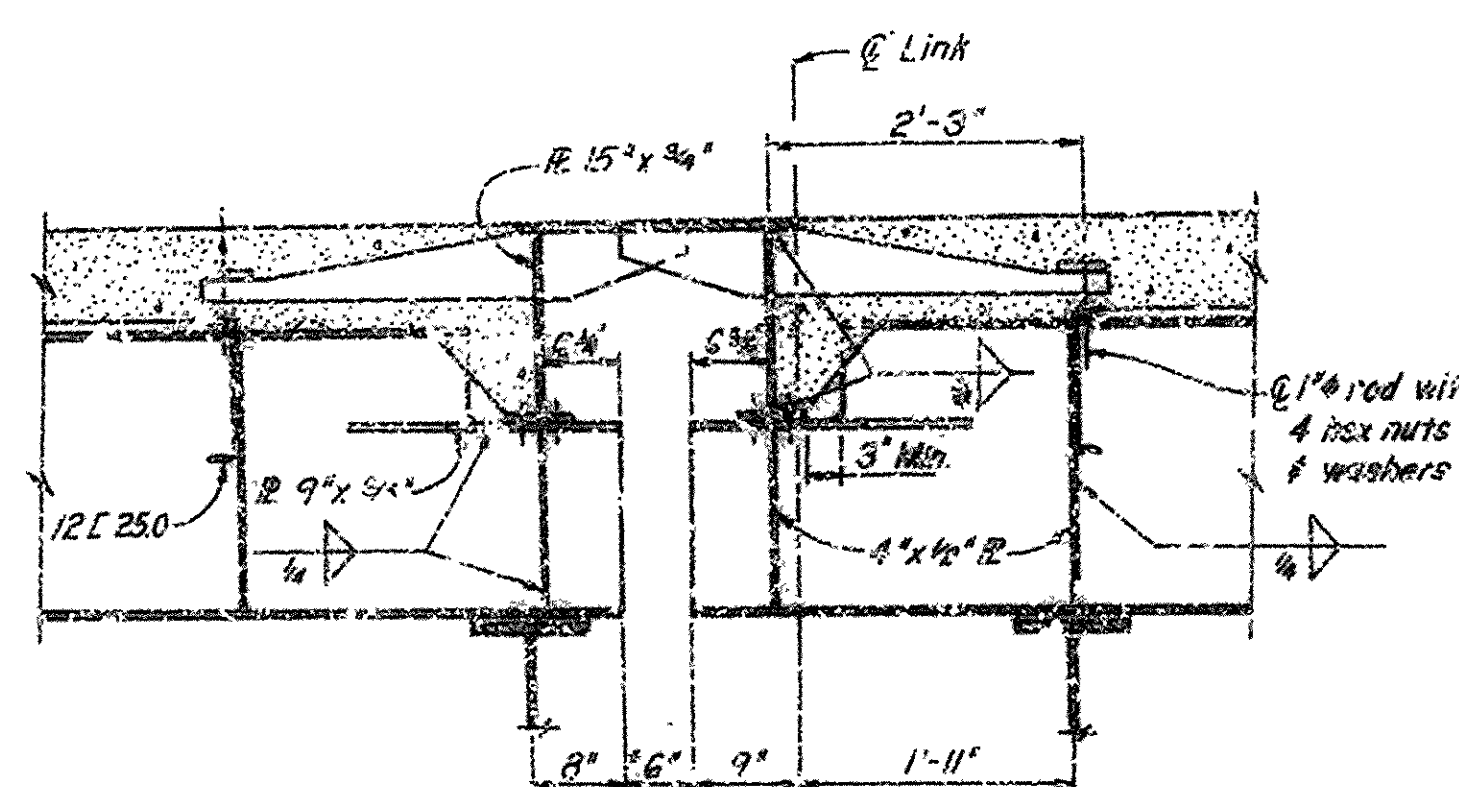
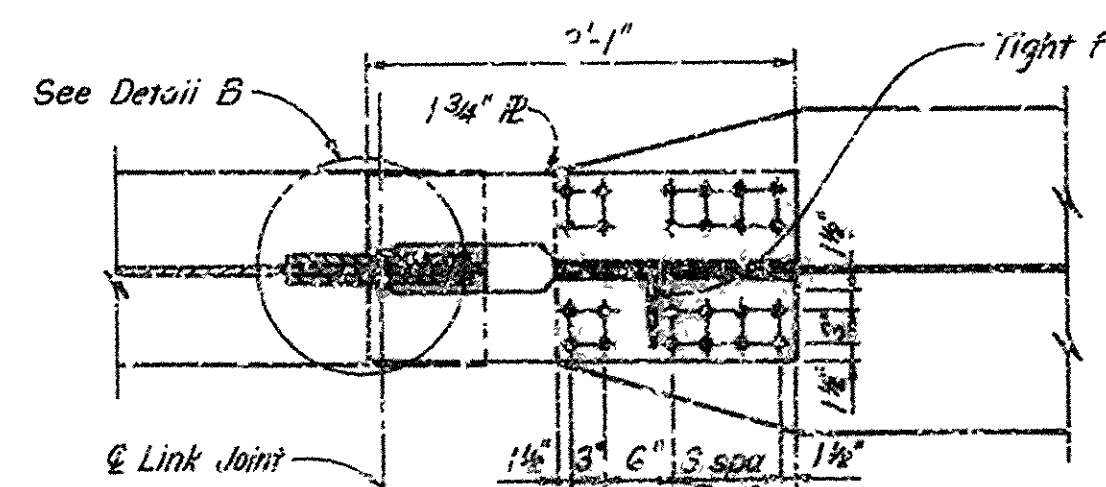
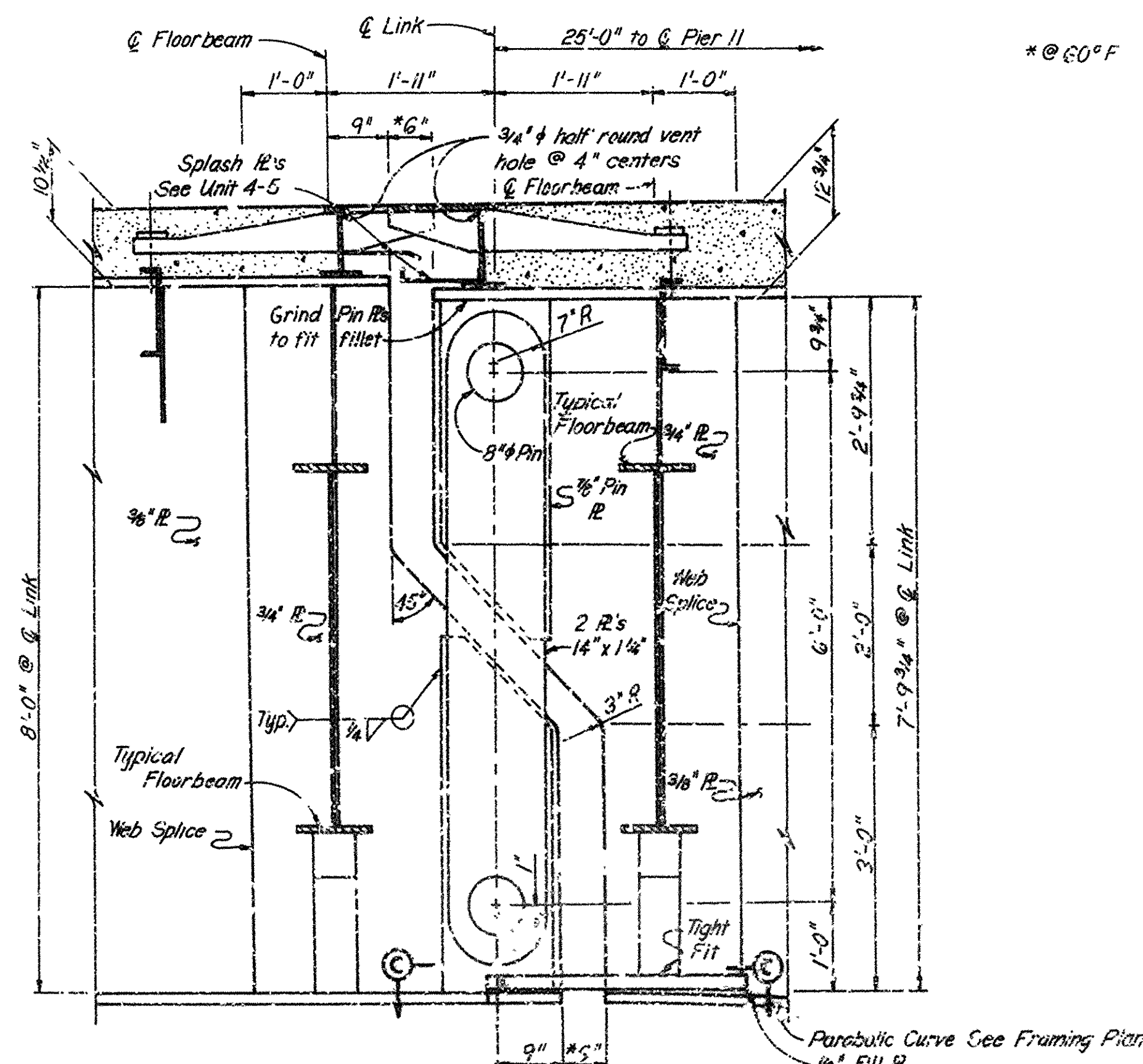
The parts to be galvanized shall include finger plate, plate, plate, and dam assembly, tie down bars, protection angle, bearing plate, stop plate and the entire barrier curb expansion assembly.

The parts to be painted with the zinc rich paint shall generally include all parts of the girders, floor beam and stringers within five feet either side of the joint as well as the links, pins and pin nuts. See Special Provisions.

Galvanizing shall be done after fabrication and in accordance with A.S.T.M. 123.



Note:  
For Link Pin details, see Units 1-2 and 2-3



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBASTIAN COUNTY, ARKANSAS  
LINK AND EXPANSION JOINT DETAIL  
UNIT 3-4

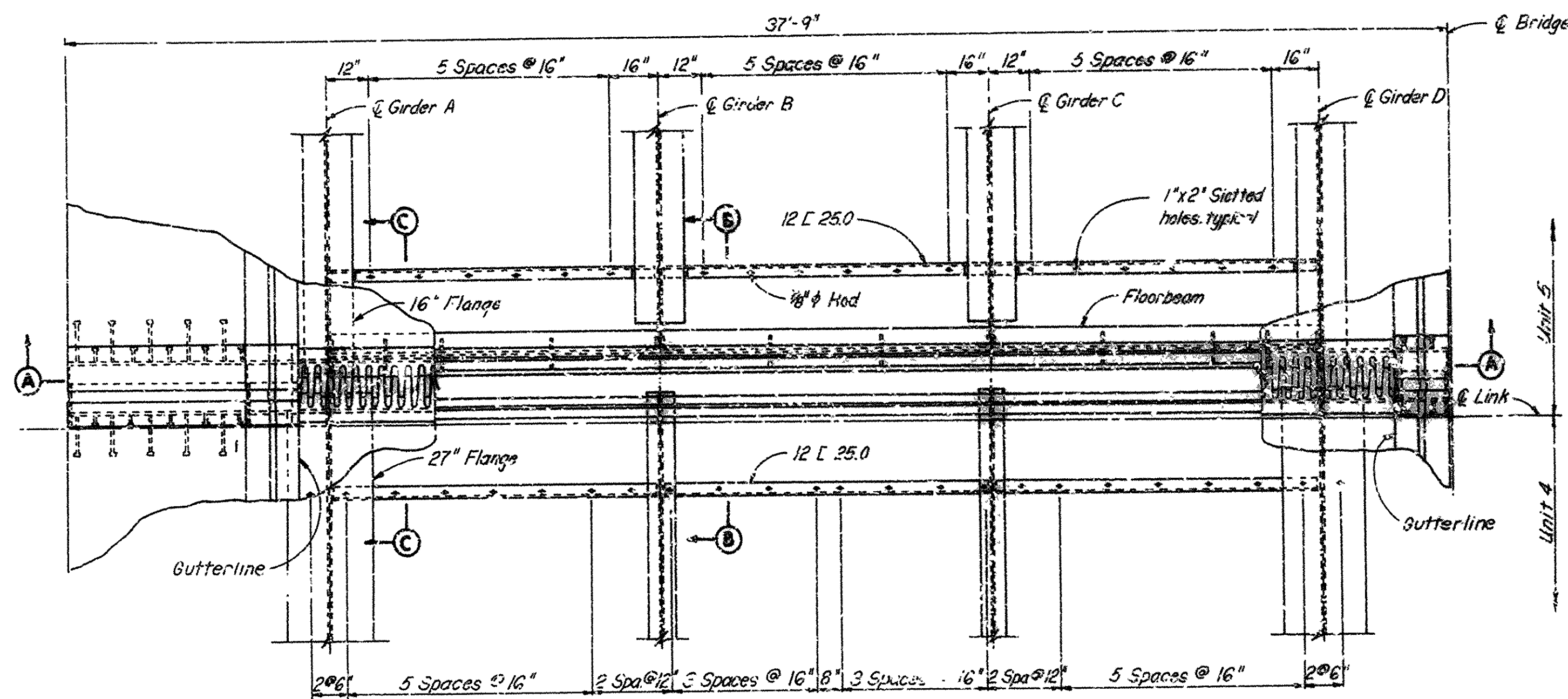
HOWARD, NEEDLES, TAMMEN & BERGENSOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY G.D.L. DATE 2-28-69 CHECKED BY D.D.L. DATE 2-28-69  
BRIDGE NO. 5275 SCALE 3/8" = 1'-0" DRAWING NO. 3-4



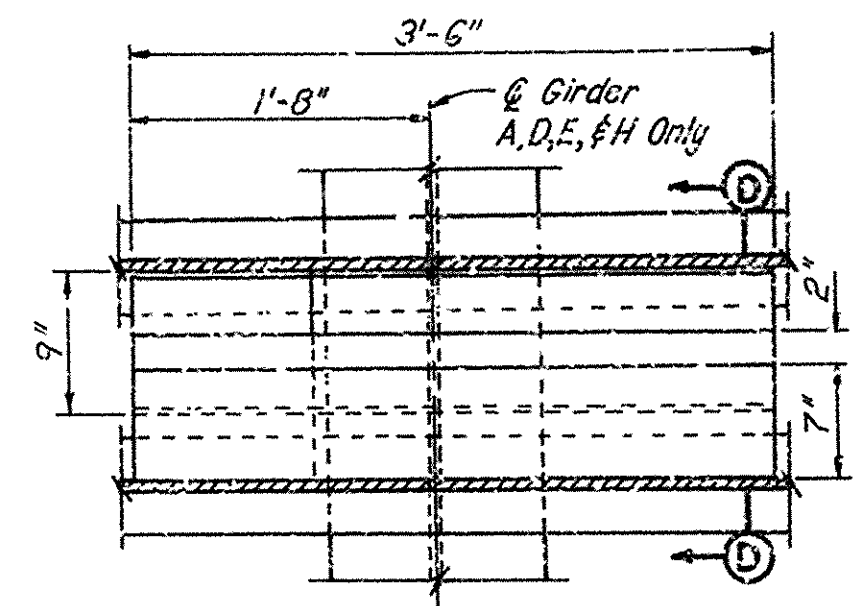
CORPS OF ENGINEERS  
CONTRACT NO. DACWG3-67-C-0062

JOB NO.	STATE	FED AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		41	127
LINK & EXP. JT. UNIT 4-B				

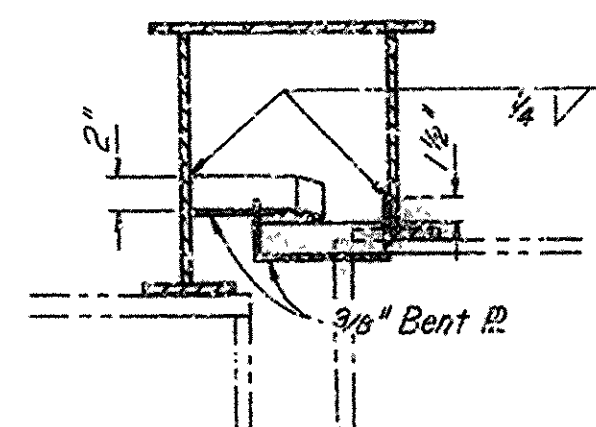


Notes:  
For sidewalk and barrier expansion plates,  
see Miscellaneous Slab Details.

**EXPANSION JOINT PLAN**  
Scale 3/8"=1'-0"

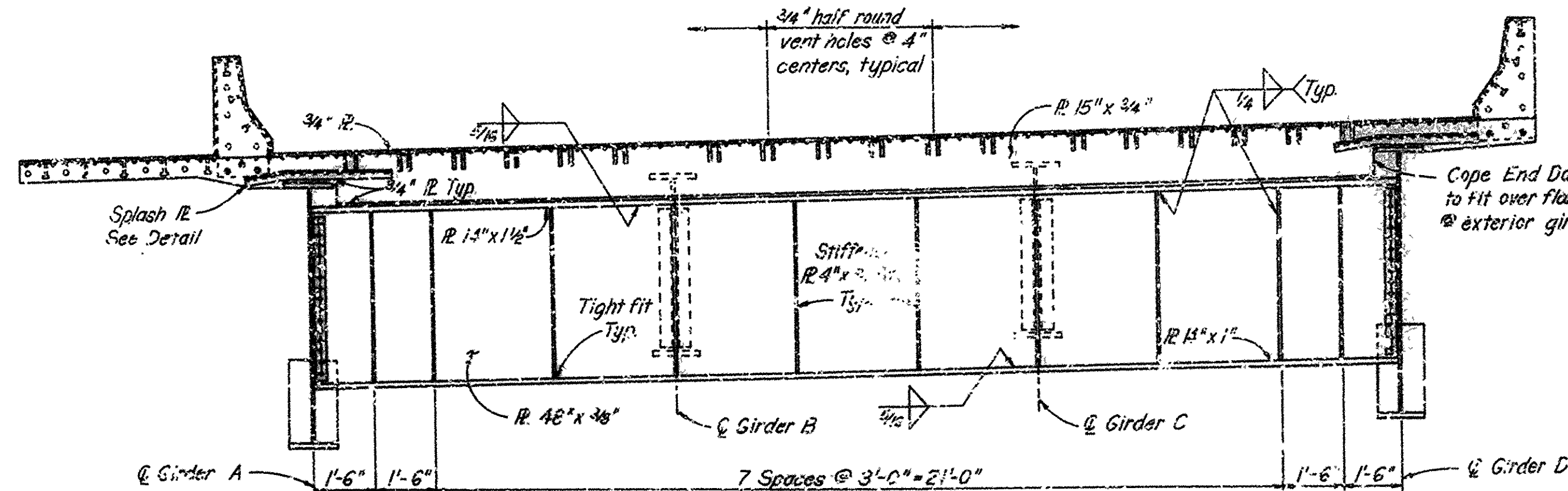


**PART PLAN**

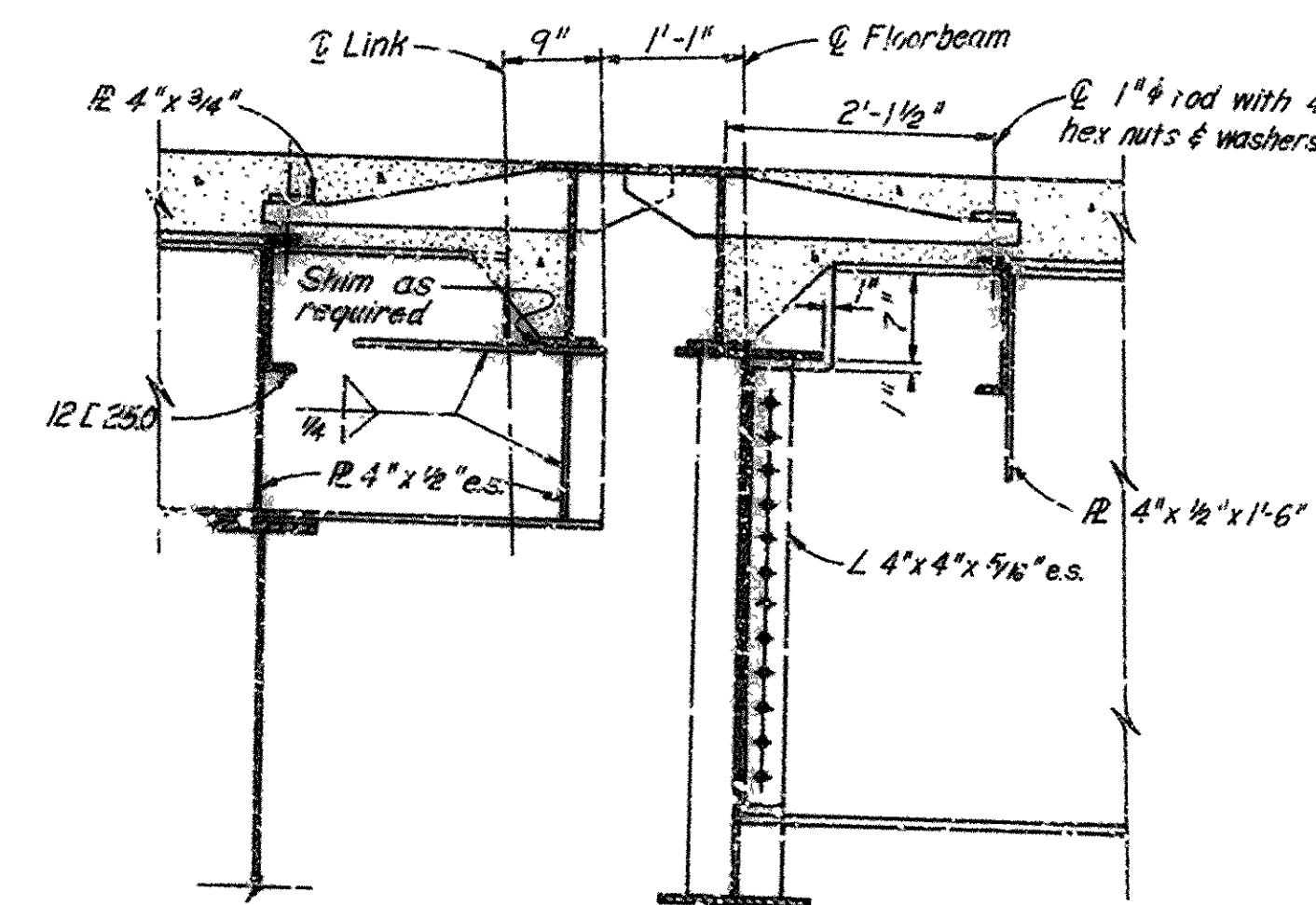
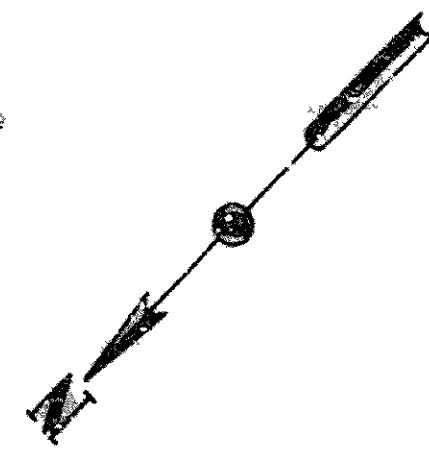


**SECTION D-D**

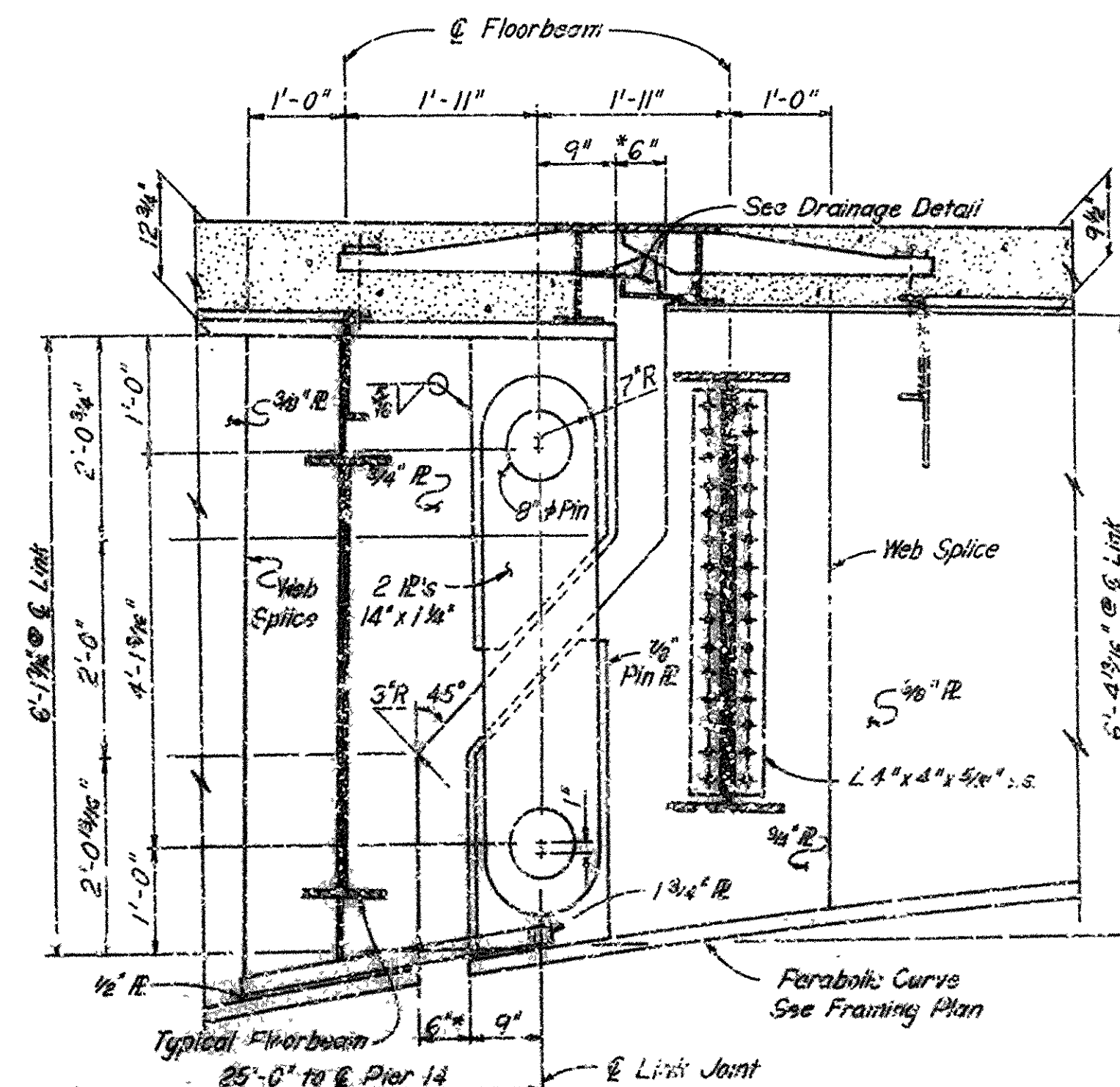
**SPLASH PLATE DETAILS**  
Scale 1"=1'-0"



**SECTION A-A**  
Scale 3/8"=1'-0"



**SECTION B-B**  
Scale 3/8"=1'-0"



**SECTION C-C**  
Scale 3/8"=1'-0"

Note:  
For Link Pin and Expansion Plate details,  
see Units 1-2 and 2-3.

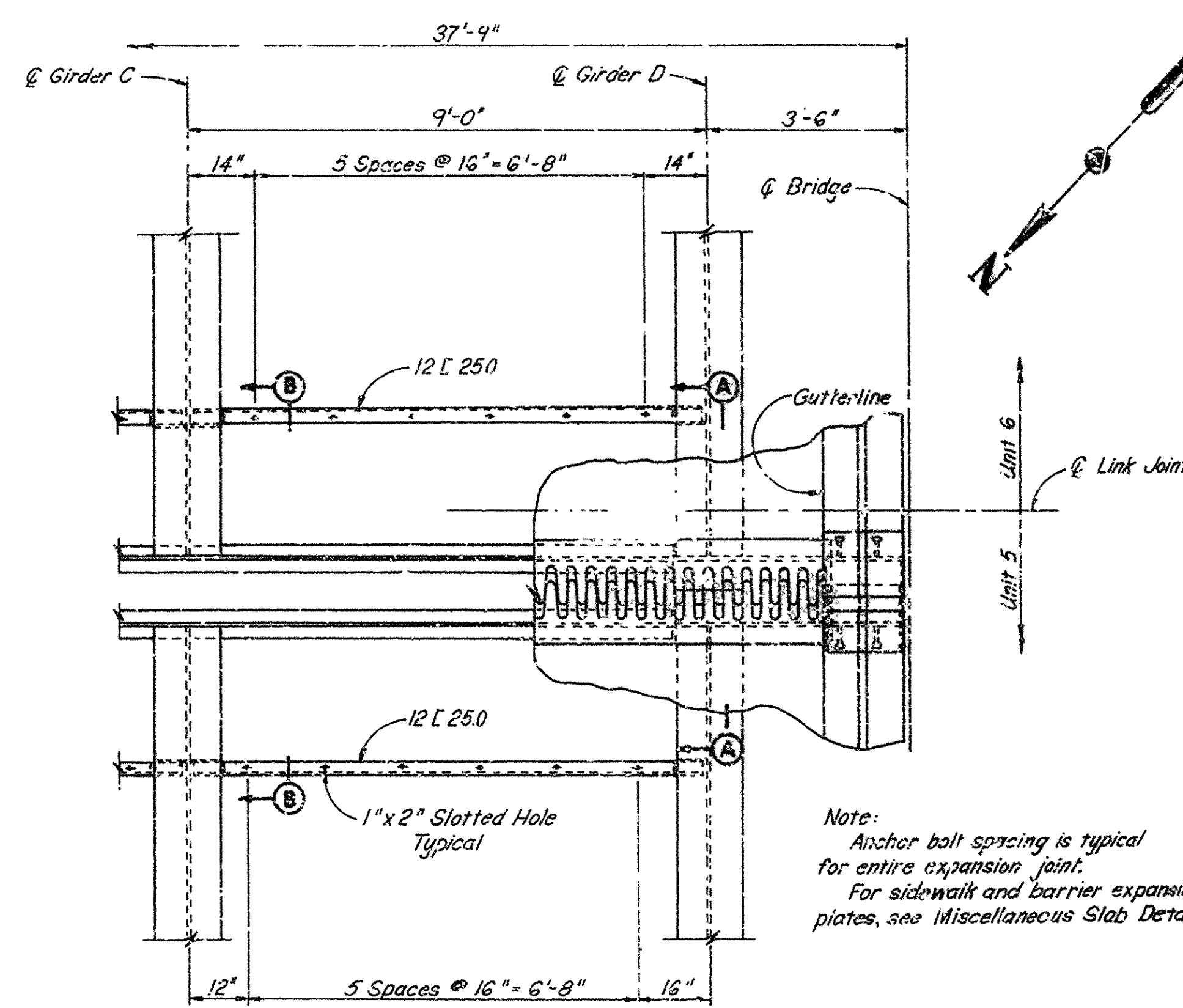
ARKANSAS STATE HIGHWAY COMMISSION  
UNIT 4-B  
U.S. HIGHWAY 6-7 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SARASOTA COUNTY, FLORIDA  
SARASOTA COUNTY, ARKANSAS  
LINK AND EXPANSION JOINT DETAIL  
UNIT 4-B

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB  
DRAWN BY G.D.H. DATE 8-29-68 CHECKED BY E.T.P. DATE 8-29-68  
PROJECT NO. 73075

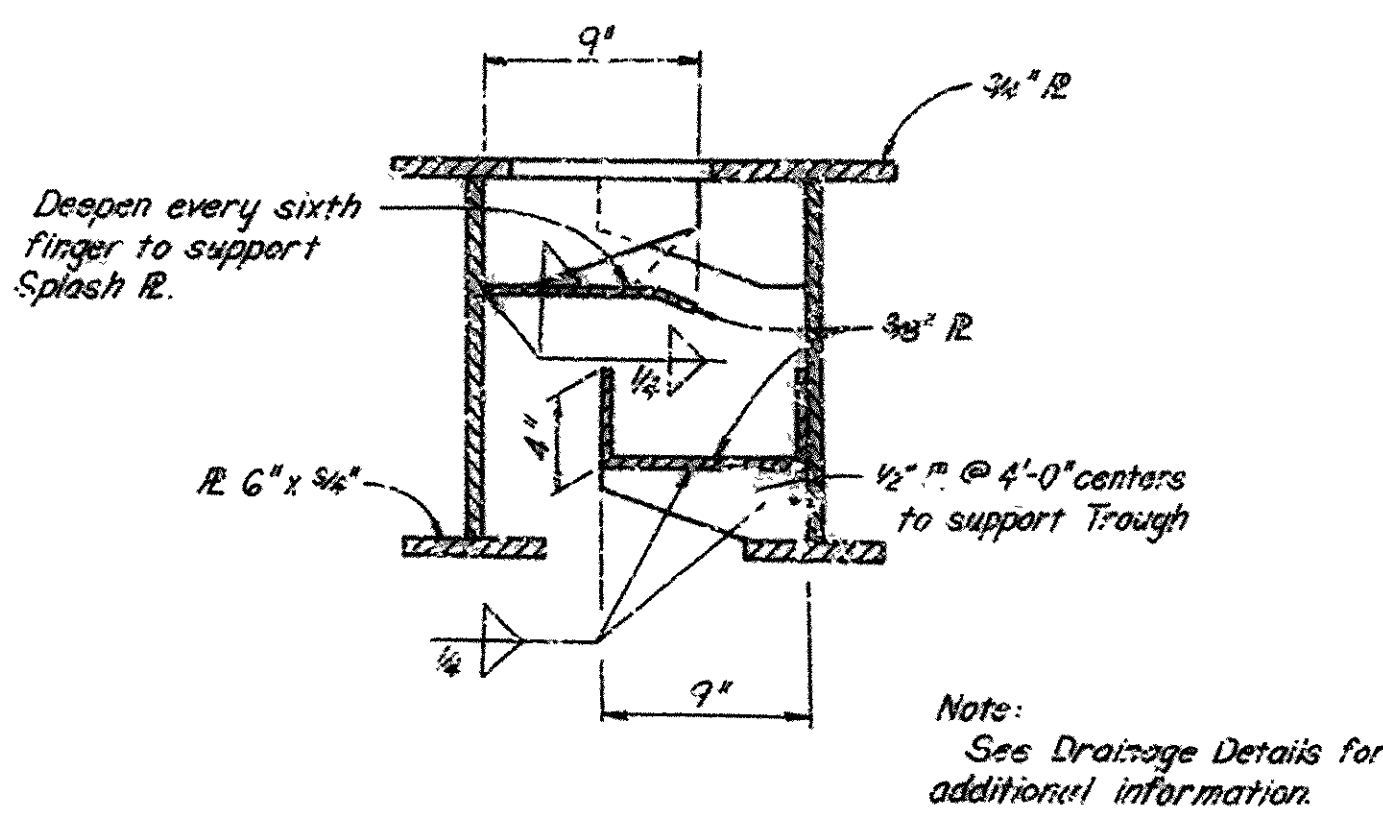


FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4584	42	127	

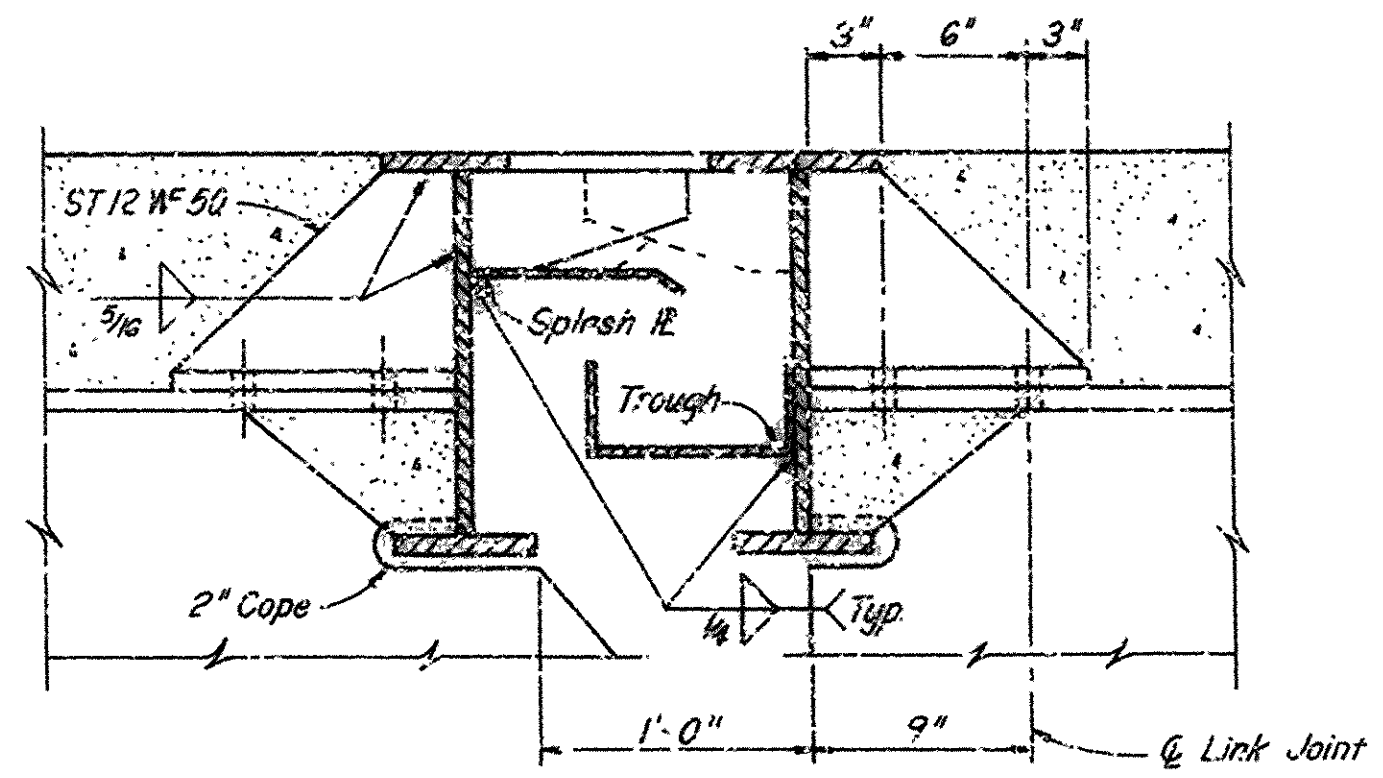
UNIT 5-6



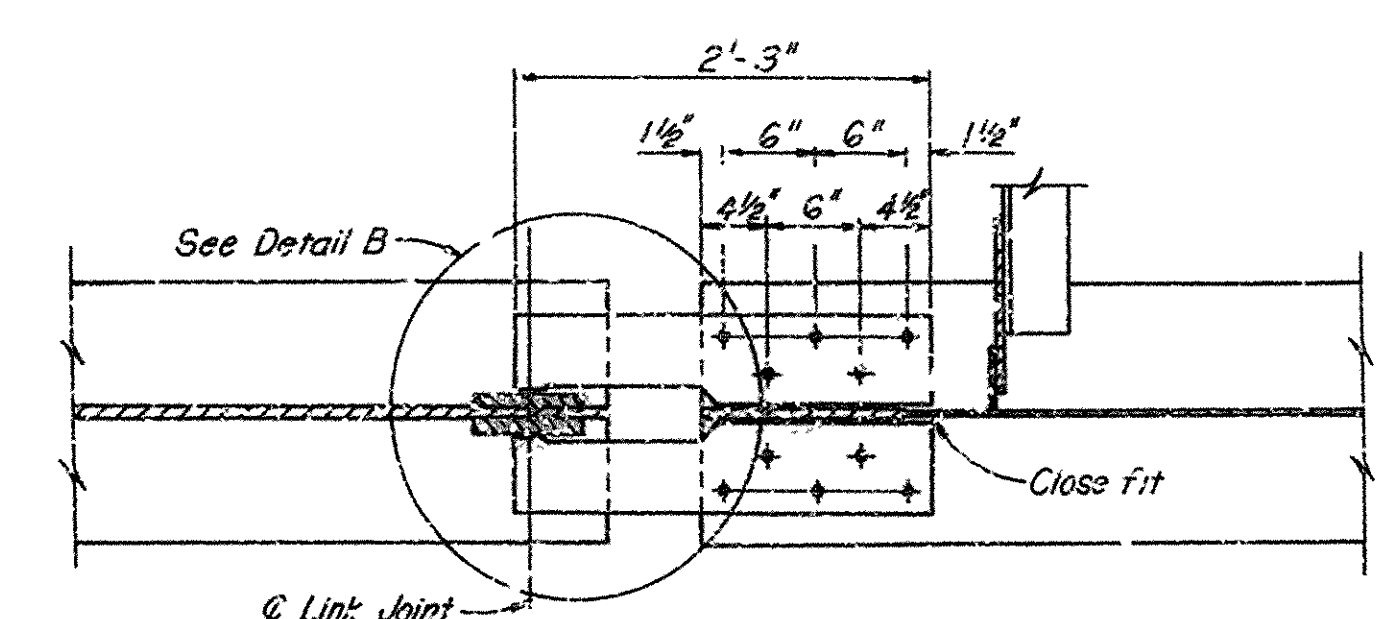
PART PLAN - EXPANSION JOINT  
Scale 1/2" = 1'-0"



TROUGH DETAILS  
Scale 1 1/2" = 1'-0"

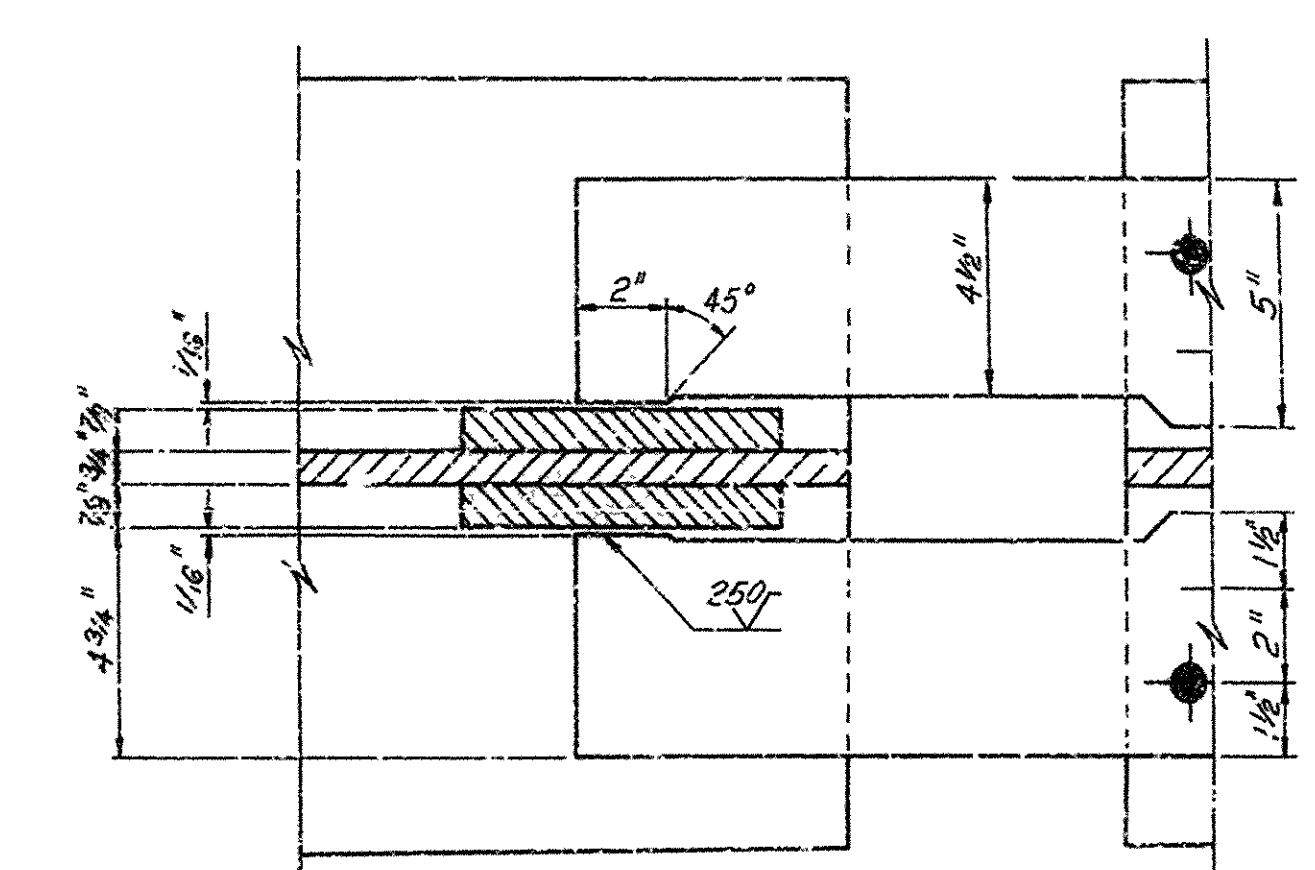


END DAM CONNECTION AT INTERIOR GIRDER  
Scale 1 1/2" = 1'-0"

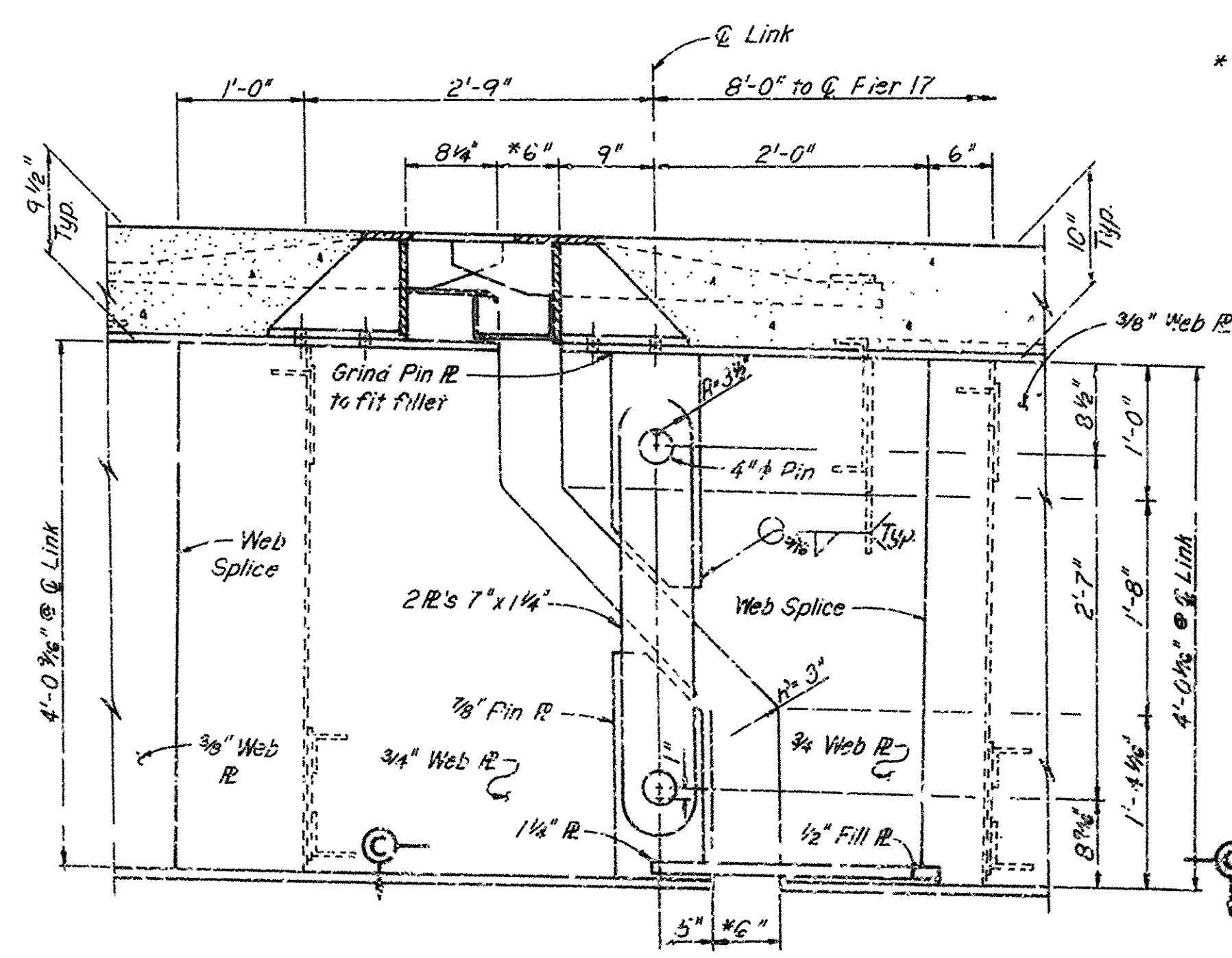


SECTION C-C  
Scale 1" = 1'-0"

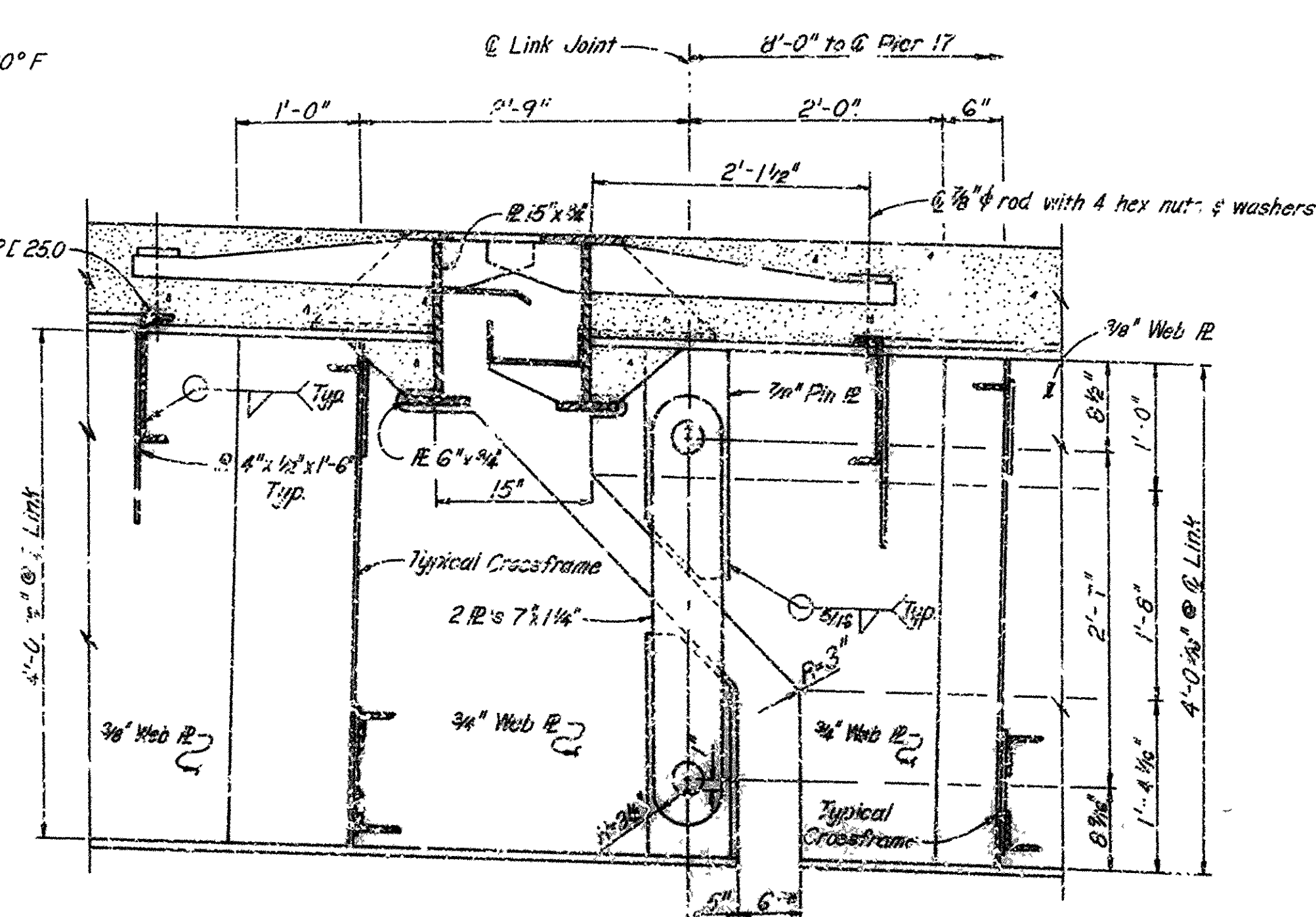
Note:  
Wind Shear Device is on  
Girders A, D, E, & H only.



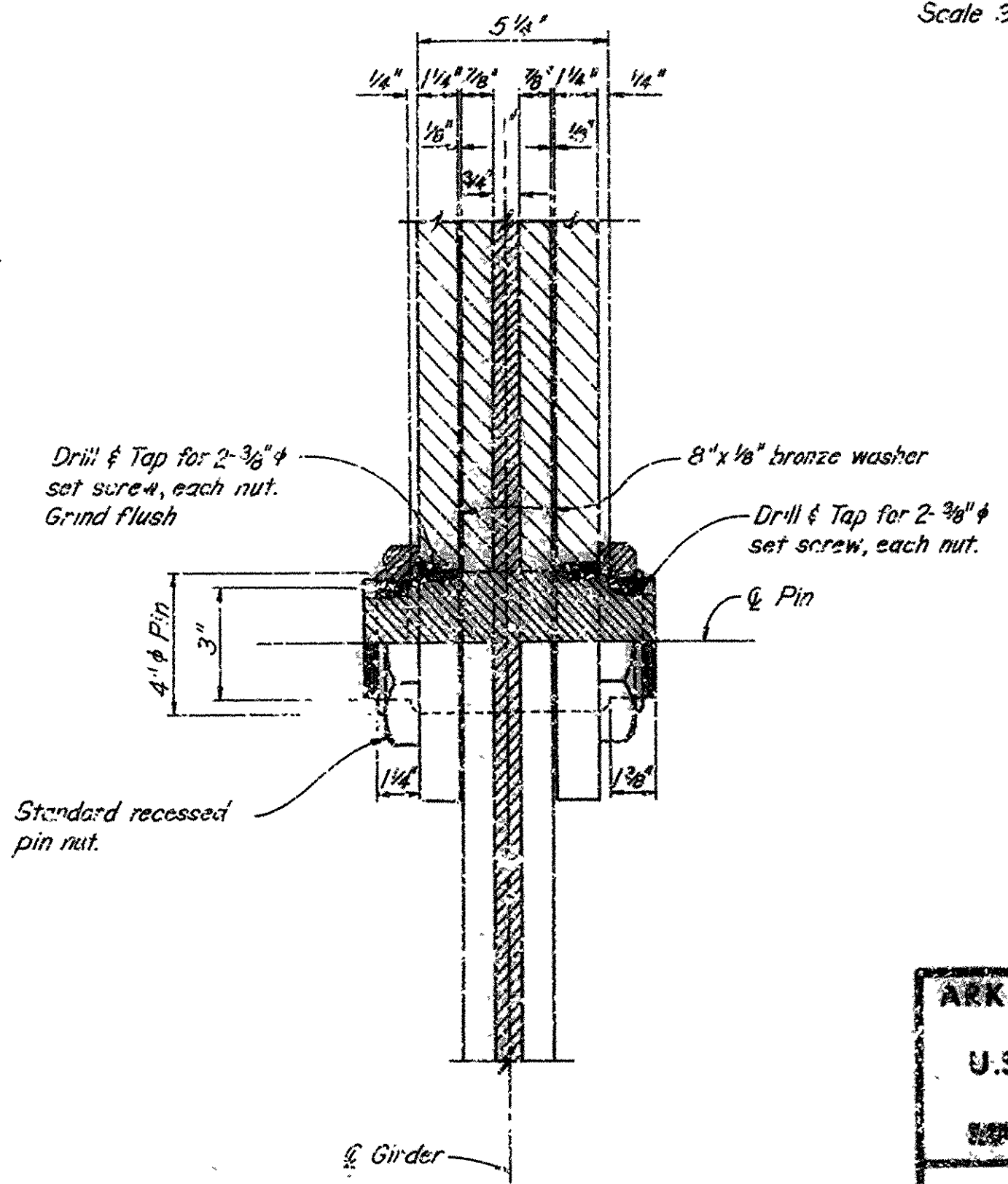
DETAIL B  
Scale 3" = 1'-0"



SECTION A-A  
Scale 1" = 1'-0"



SECTION B-B  
Scale 1" = 1'-0"



LINK JOINT PIN DETAIL  
Scale 3" = 1'-0"

Note:  
For Finger Plate Details, see Units 1-2  
and 2-3.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEMPER PARVA COUNTY, ARKANSAS

LINK AND EXPANSION JOINT DETAIL  
UNIT 5-6

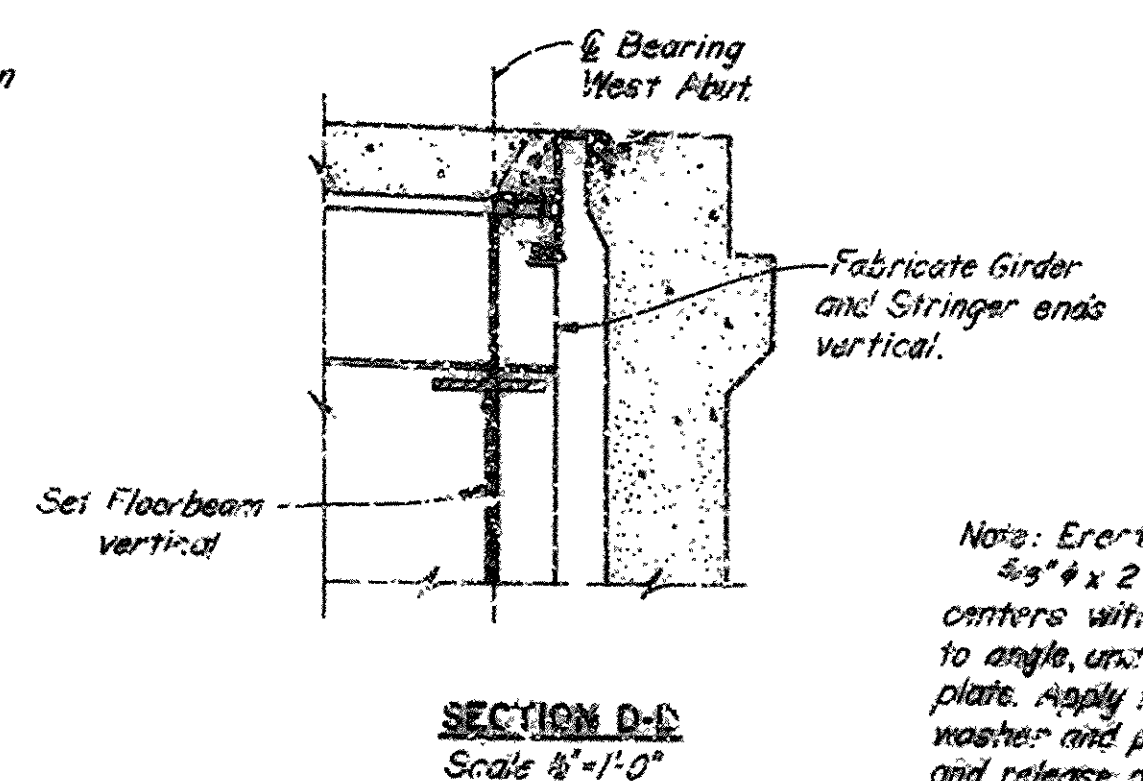
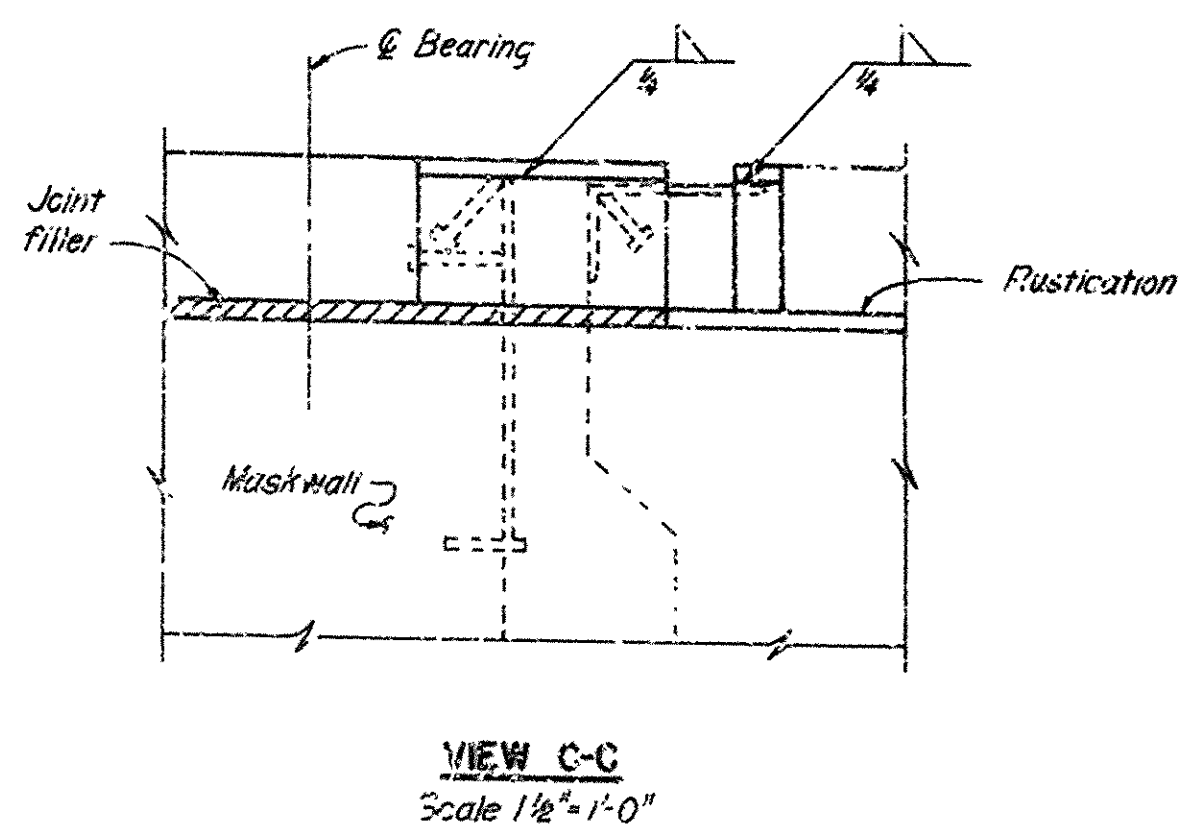
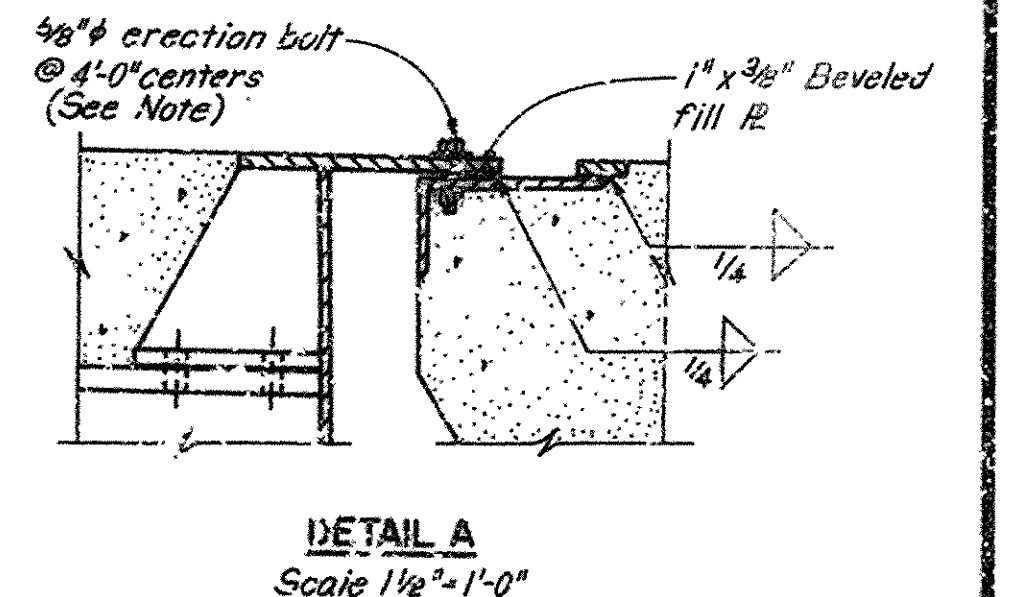
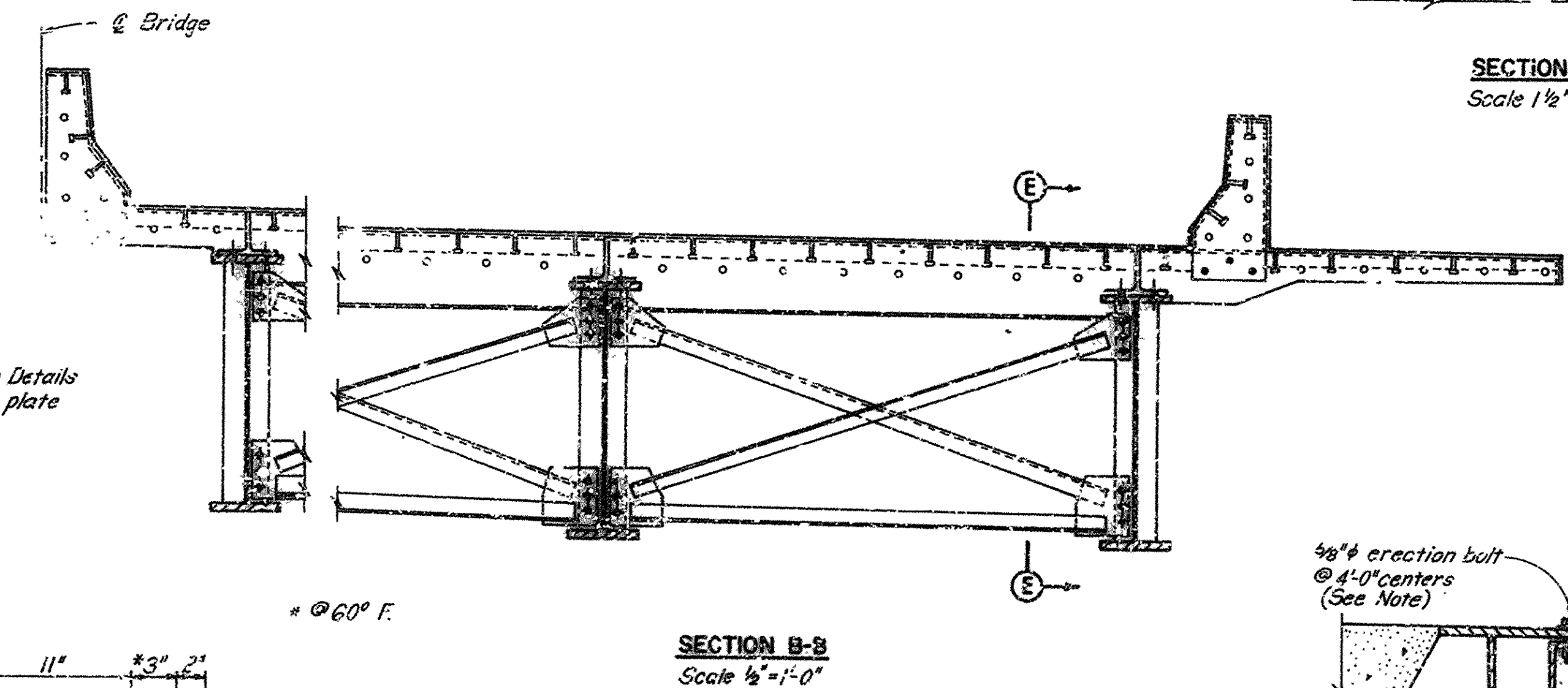
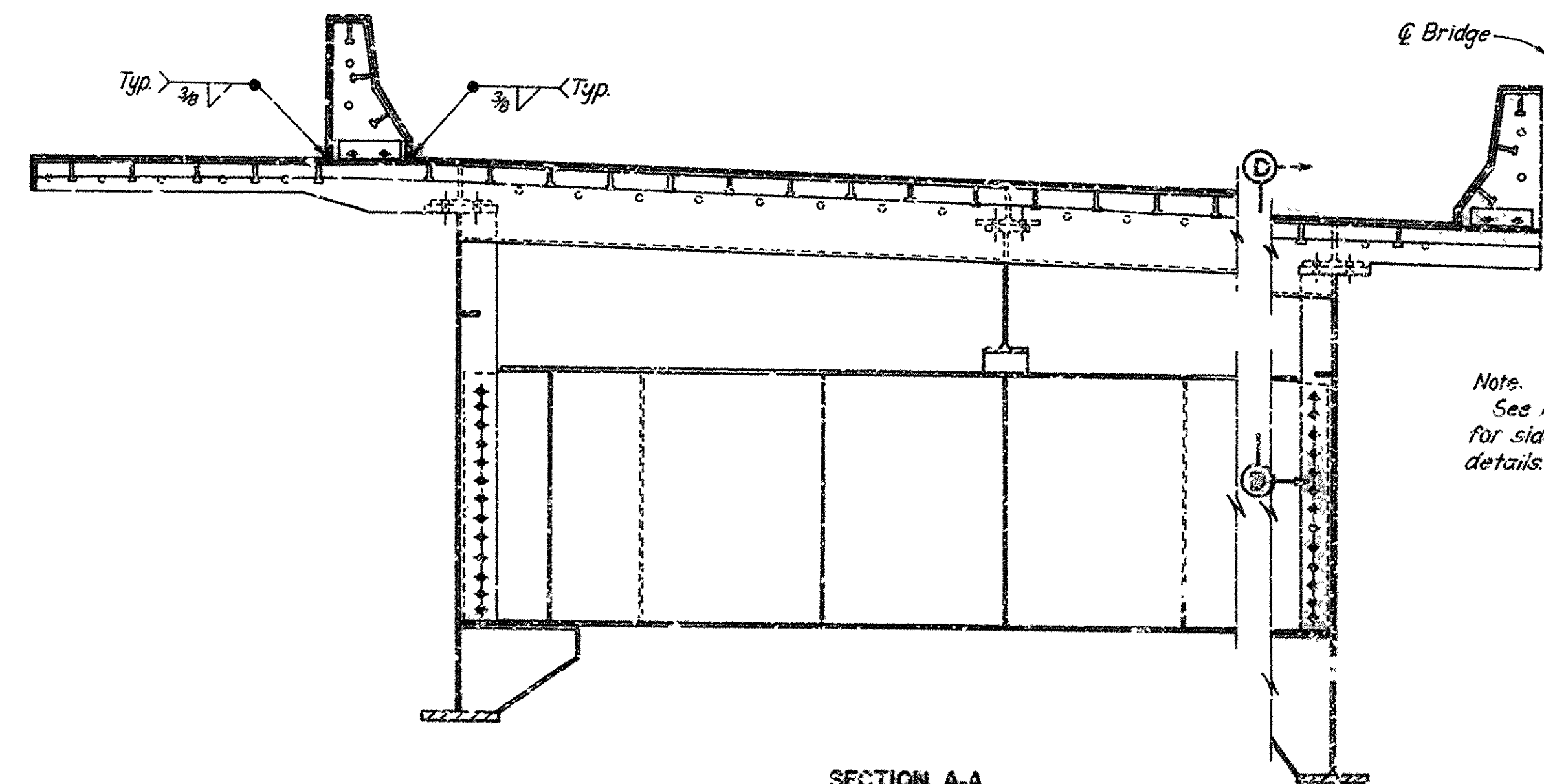
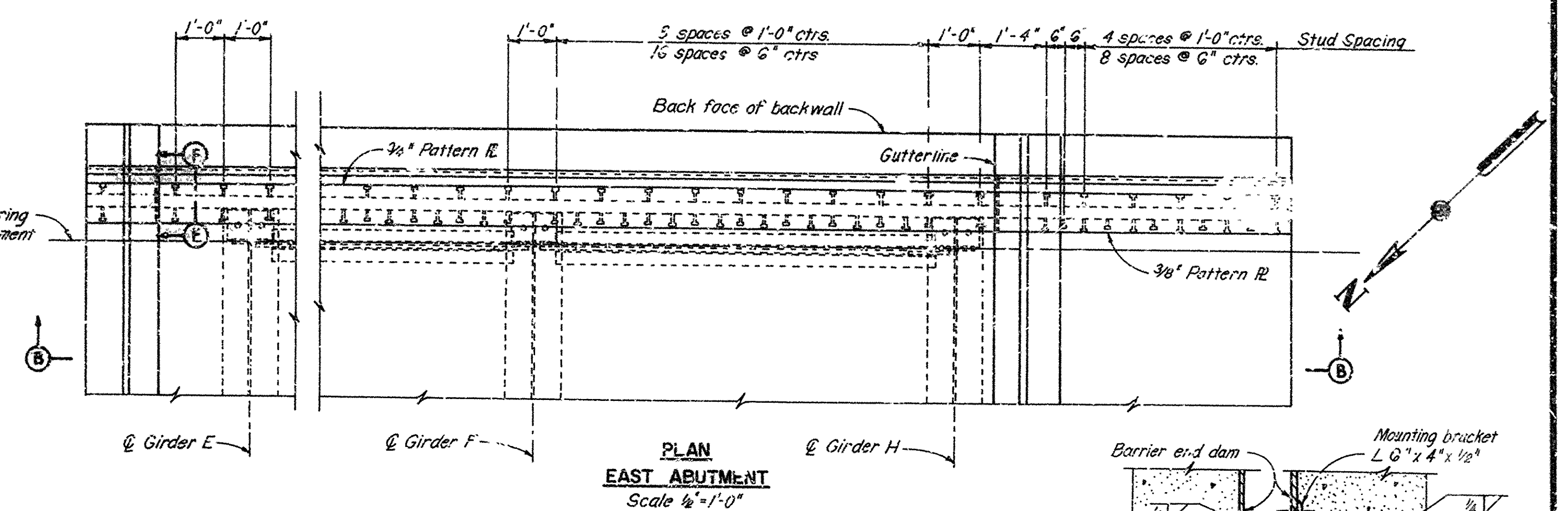
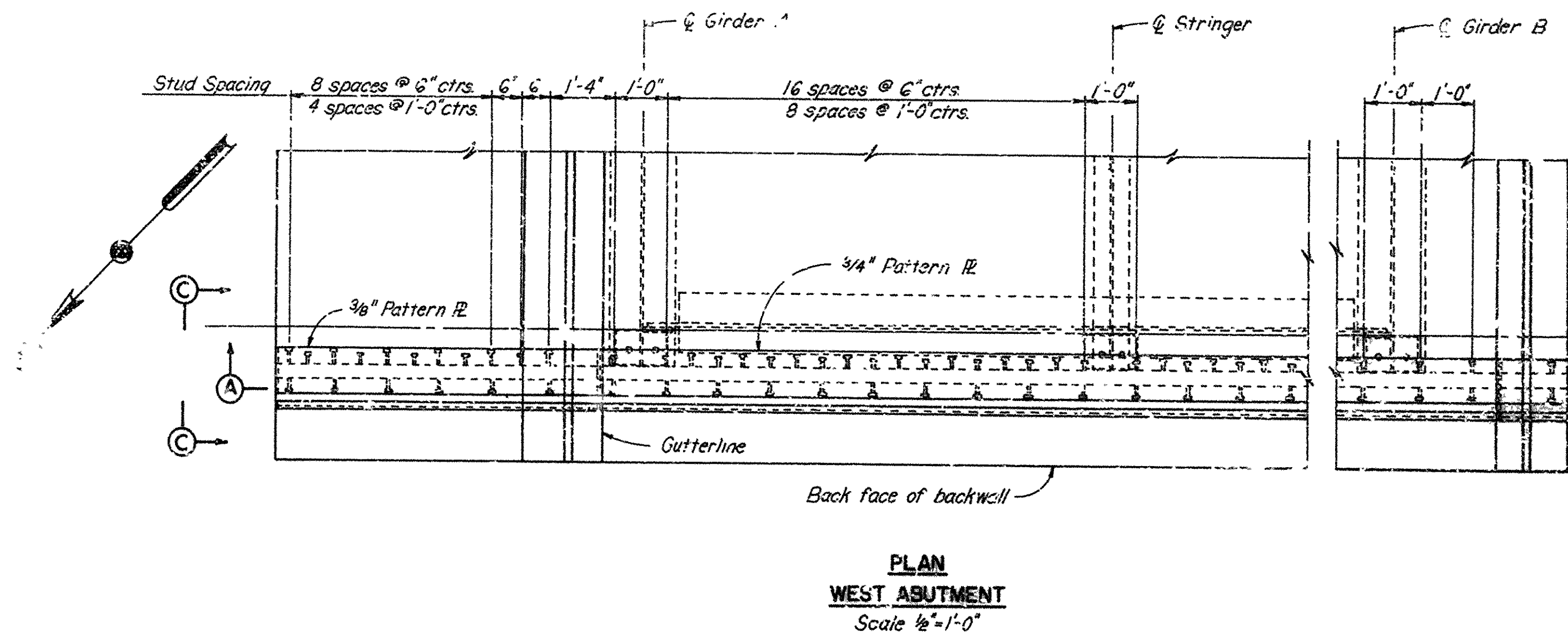
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB

DRAWN BY G.D.H. DATE 2-3-68 CHECKED BY P.D.R. DATE 2-26-68  
BRIDGE NO. 5275 SCALE AS SHOWN DRAWING NO. 16142

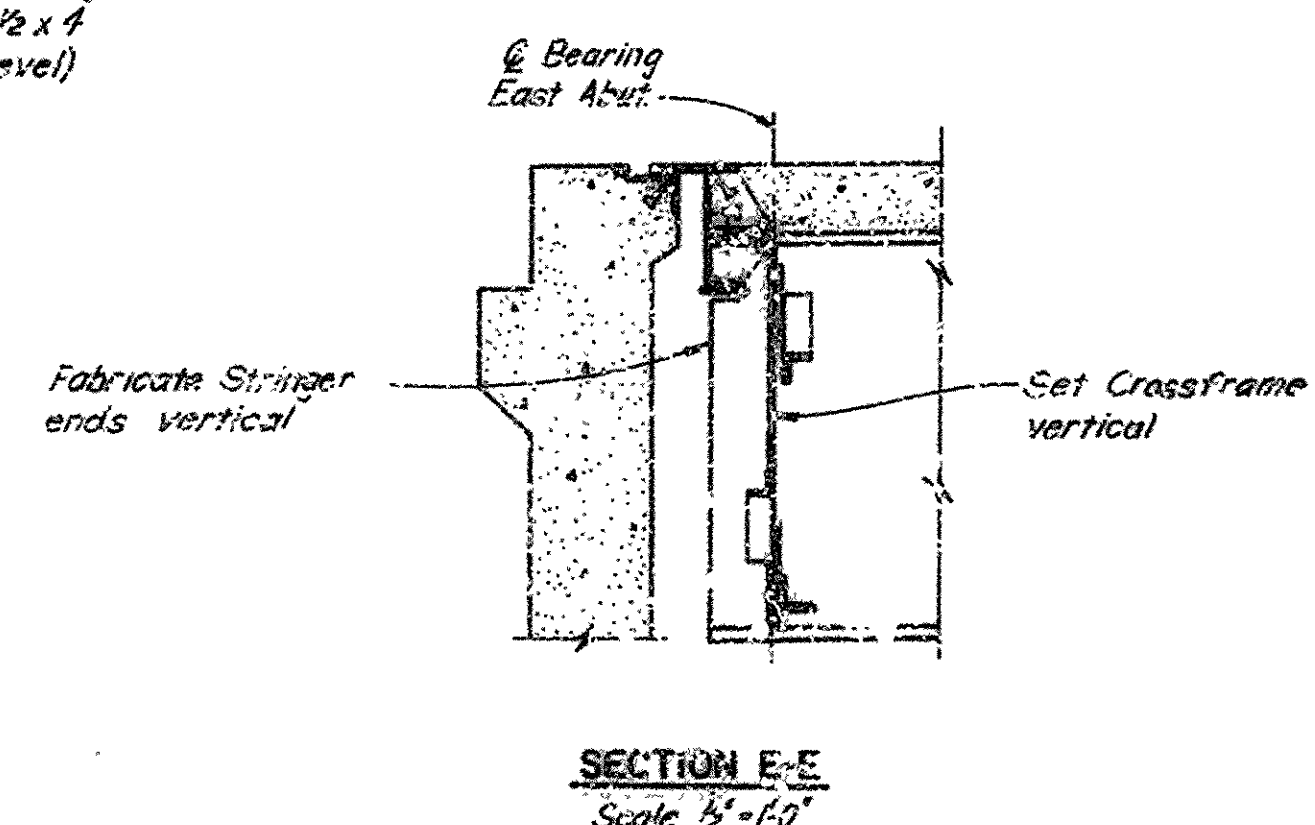
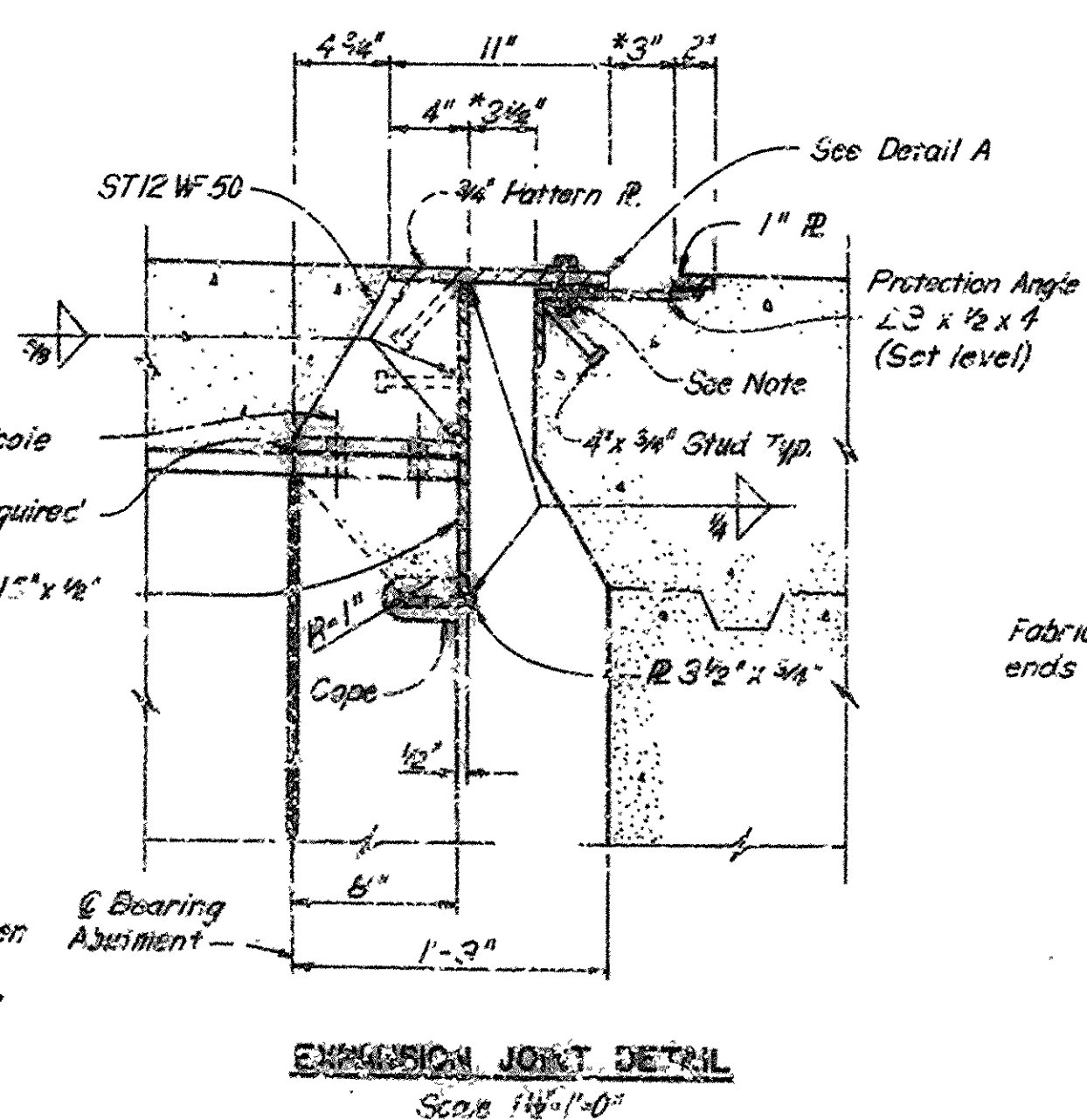


FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		43	127
JOB NO.	4584			

9847 EXP. J. DETAILS



Note: Erection Bolts  
5/8" x 2 1/2" bolts @ 4'-0" centers with nuts and washers welded to angle, and 1/2" holes in upper plate. Apply Fluorograde between washer and plate. Turn bolts tight and release one half turn. Remove bolts as soon as concrete is set, preferably within two hours after placing. Fill holes with bituminous material.



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEBERTON COUNTY, OKLAHOMA SEBERTON COUNTY, ARKANSAS

ABUTMENT EXPANSION  
JOINT DETAILS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

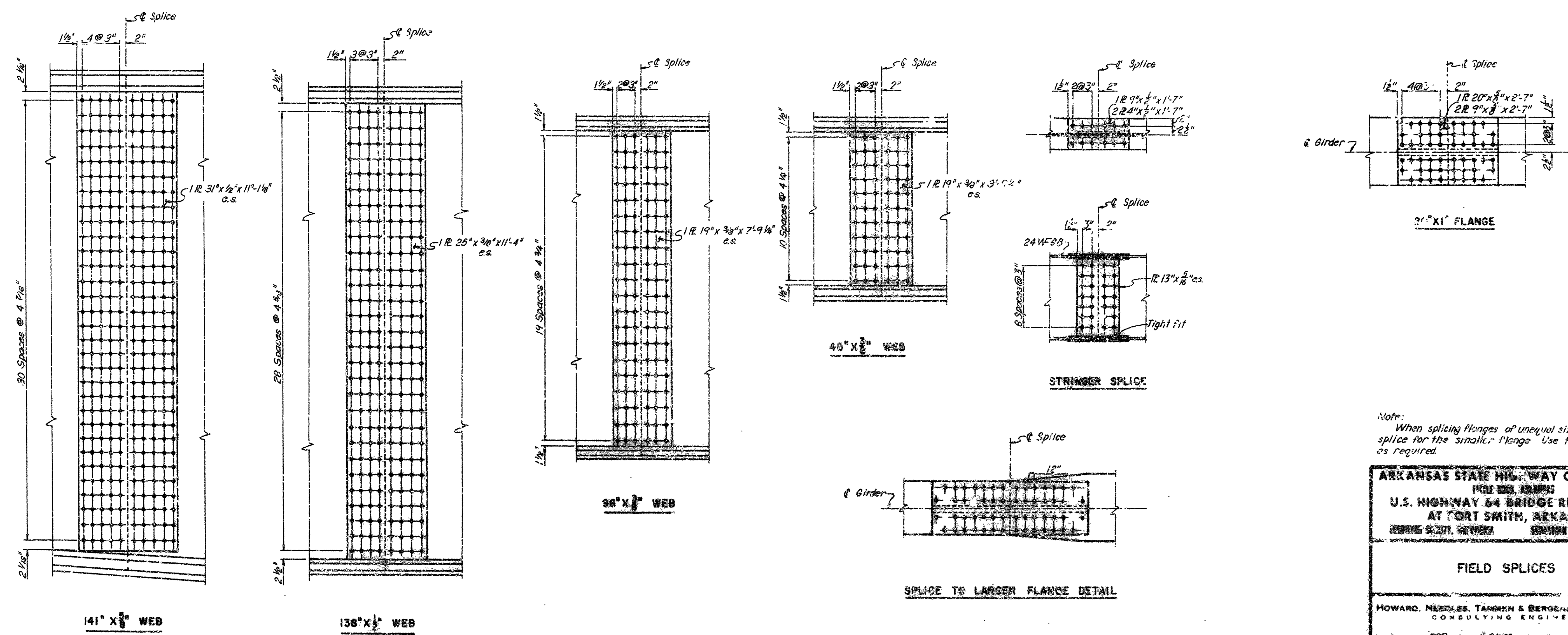
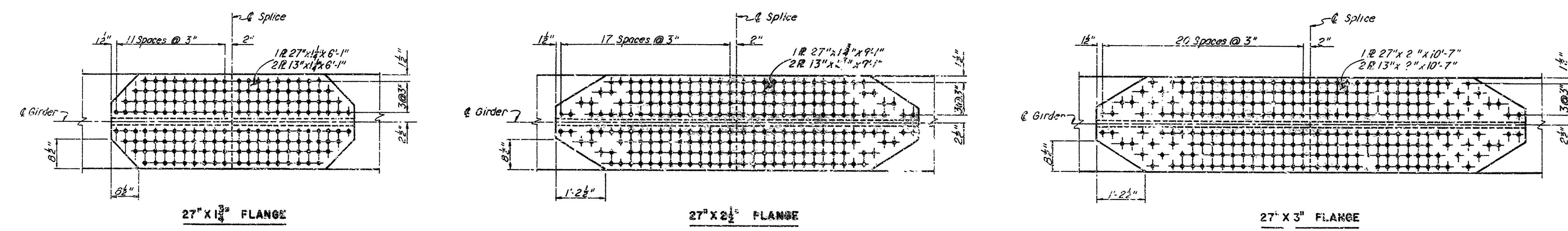
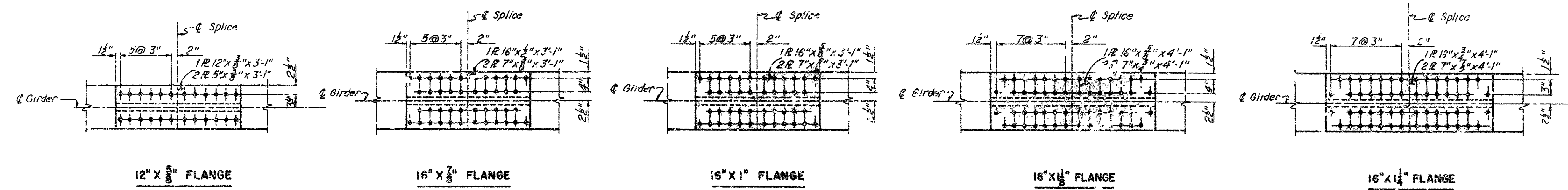
DRAWN BY: GDH DATE: 7-11-68 CHECKED BY: HJR DATE: 7-22-68  
BRIDGE NO. 3275 SCALE: AS SHOWN DRAWING NO. 1063



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		44	127
JOB NO. 4584				

FIELD SPLICES



Note:  
When splicing flanges of unequal size, use the splice for the smaller flange. Use fill plates as required.

ARKANSAS STATE HIGHWAY COMMISSION  
FORT SMITH, ARKANSAS  
U.S. HIGHWAY 54 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
DESIGNED BY: HOWARD, NEEDLES, TAMMEN & BERGEN, INC.  
CONSTRUCTED BY: HUNT

FIELD SPLICES

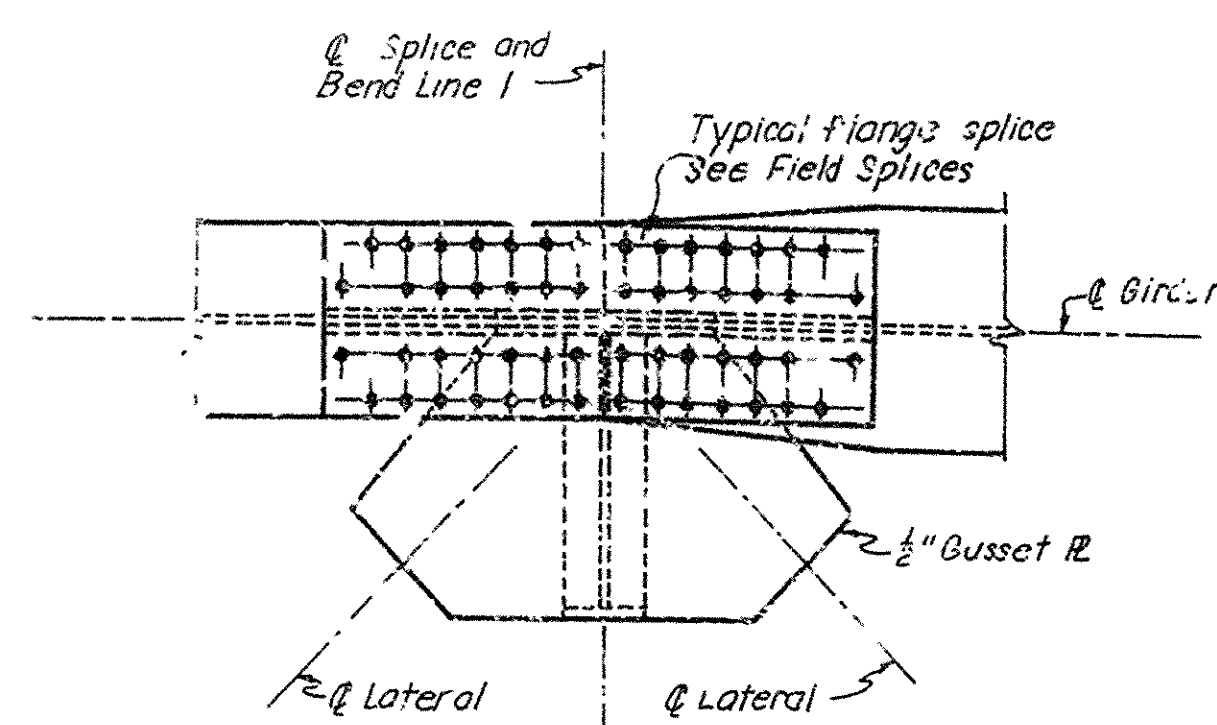
HOWARD, NEEDLES, TAMMEN & BERGEN, INC.  
CONSULTING ENGINEERS

DRAWN BY: ROR DATE 8-24-68 CHECKED BY: DATE 8-24-68

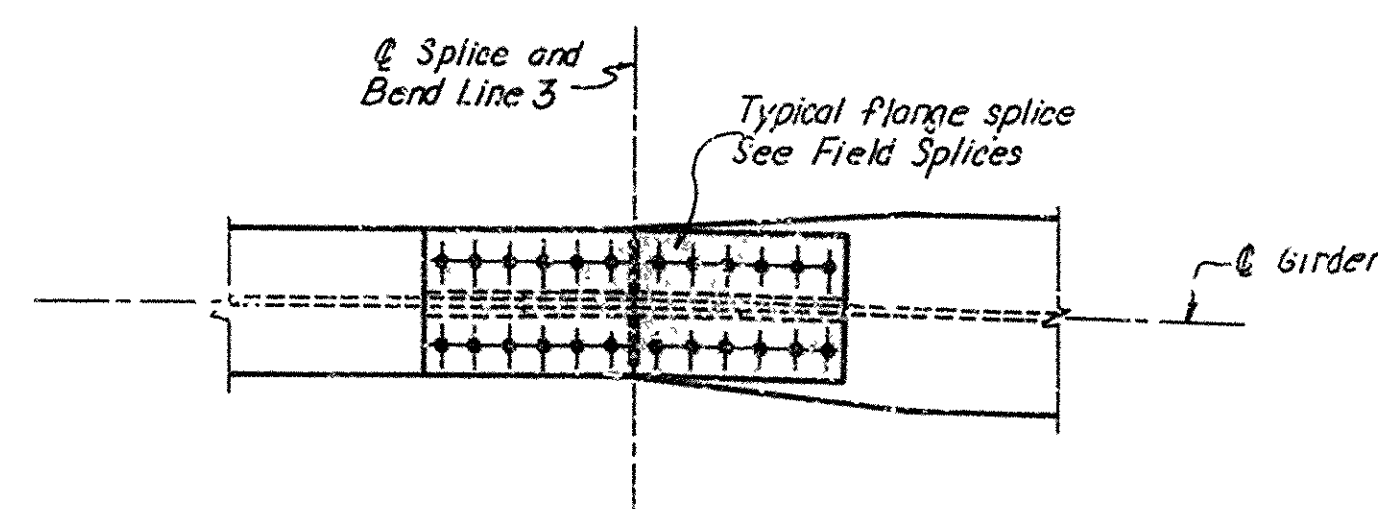


FED. ROAD DIST. NO.	STATE	DES. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4384	45	127	

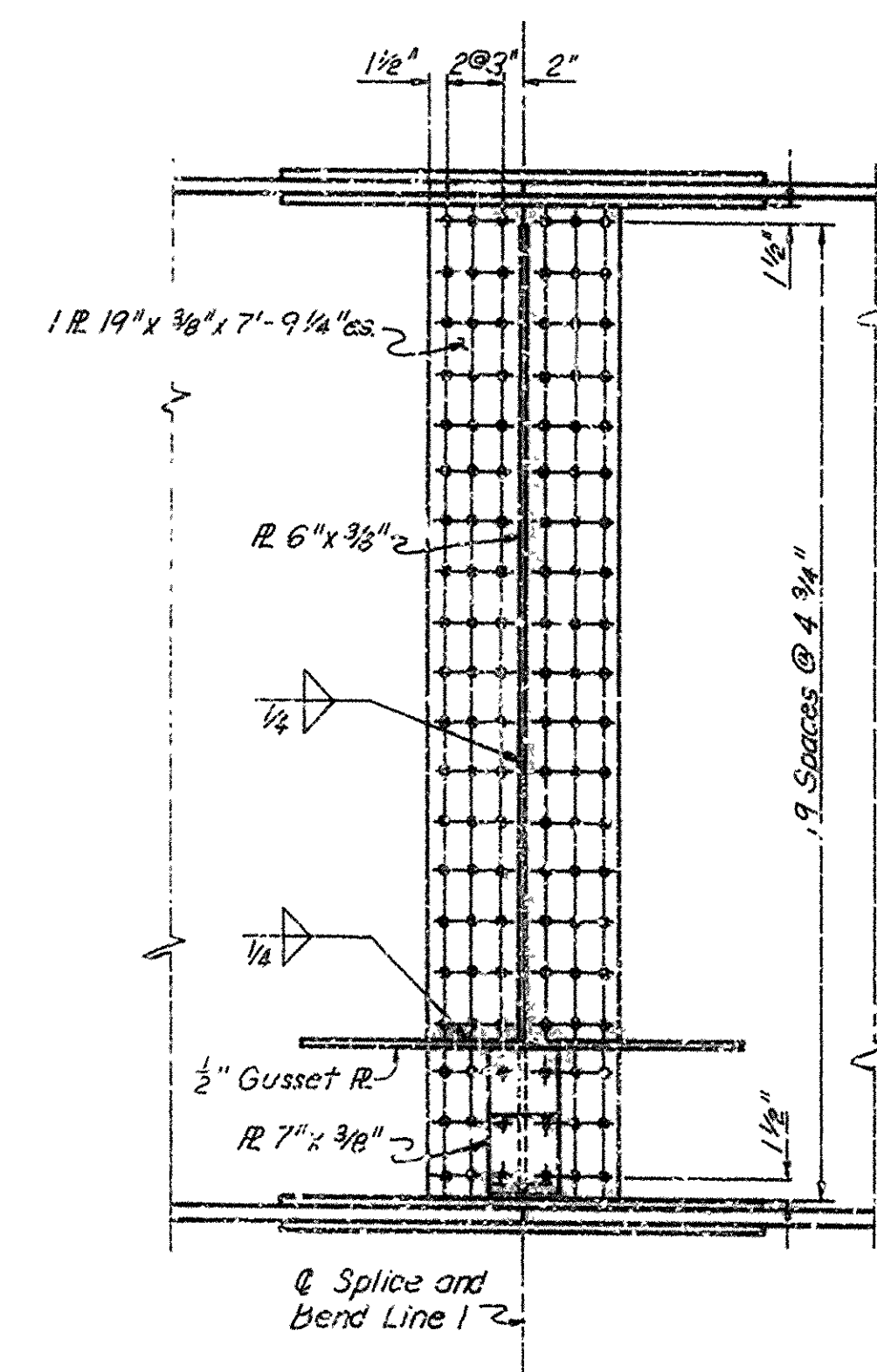
① MISC. SPLICE DETAILS



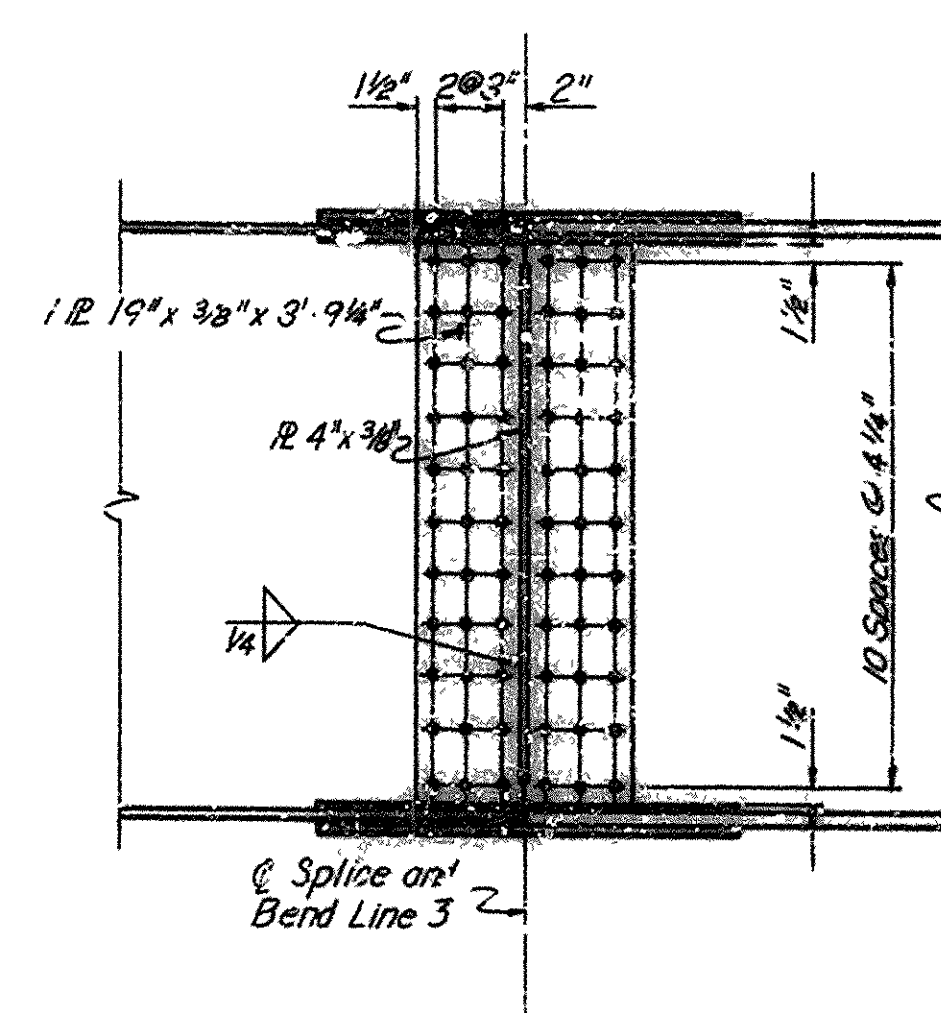
PLAN - BEND LINE 1  
Bend Line 2 is similar



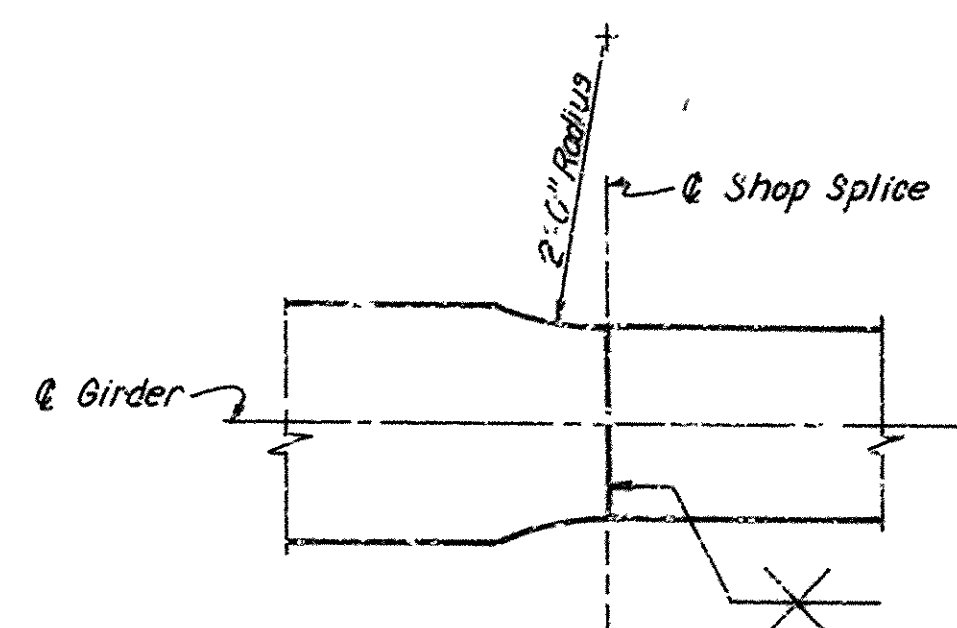
PLAN - BEND LINE 3  
Bend Line 4 is similar



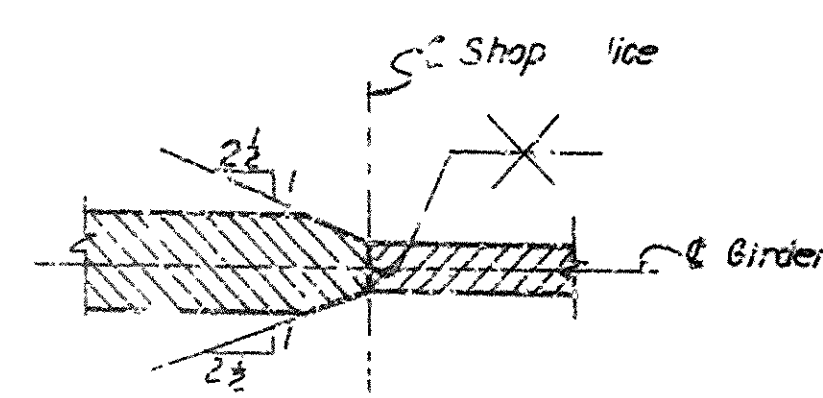
ELEVATION - BEND LINE 1  
Bend Line 2 is similar



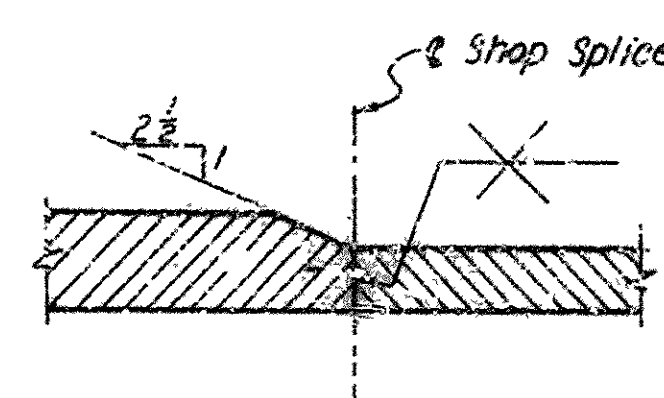
ELEVATION - BEND LINE 3  
Bend Line 4 is similar



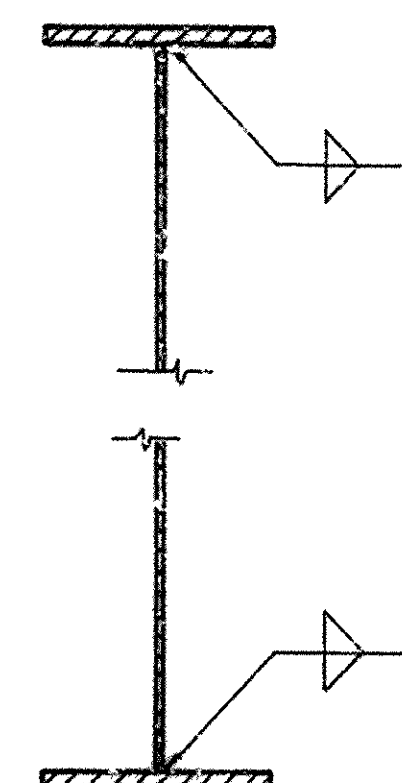
FLANGE TAPER DETAIL



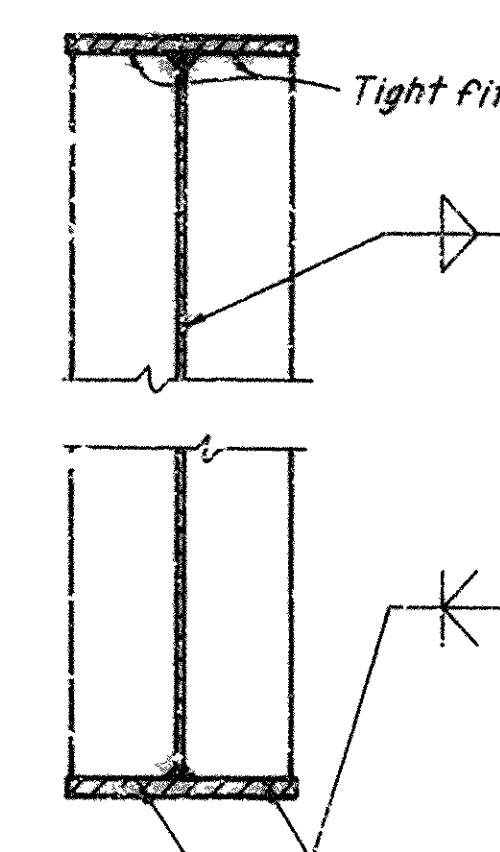
WELDED WEB SPLICE



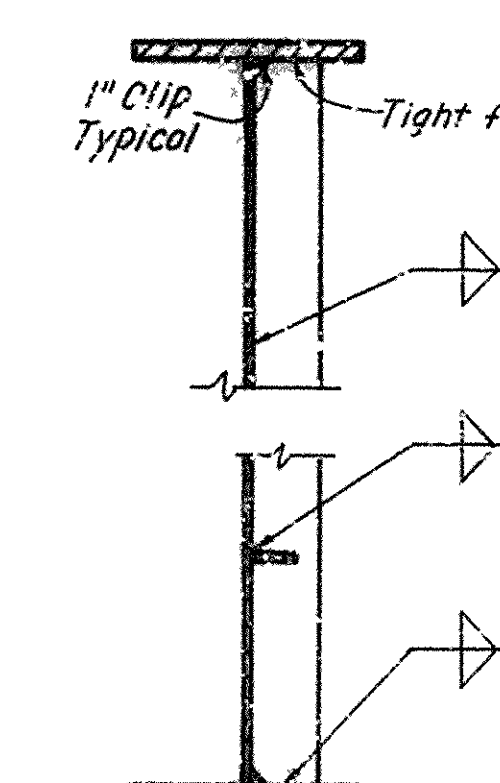
WELDED FLANGE SPLICE



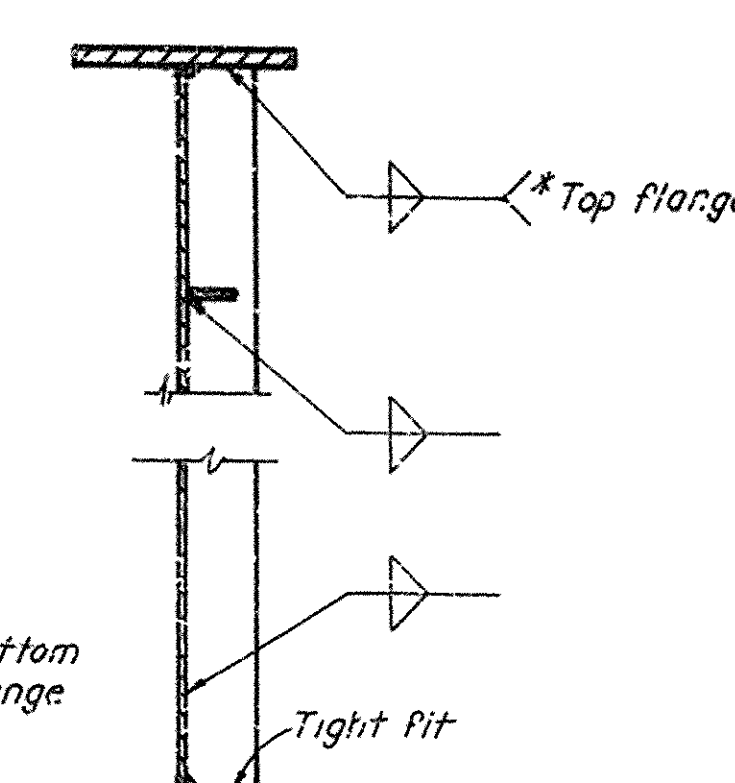
FLANGE TO WEB WELDS



BEARING STIFFENER WELDS



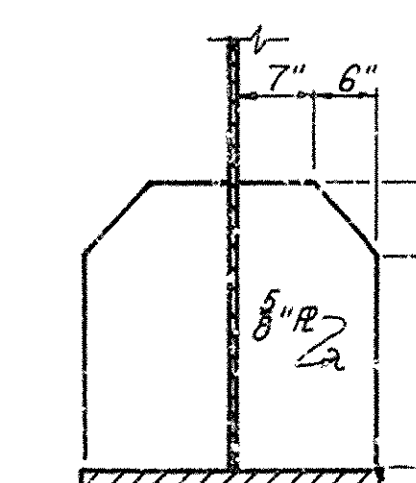
INTERMEDIATE AND LONGITUDINAL STIFFENER WELDS



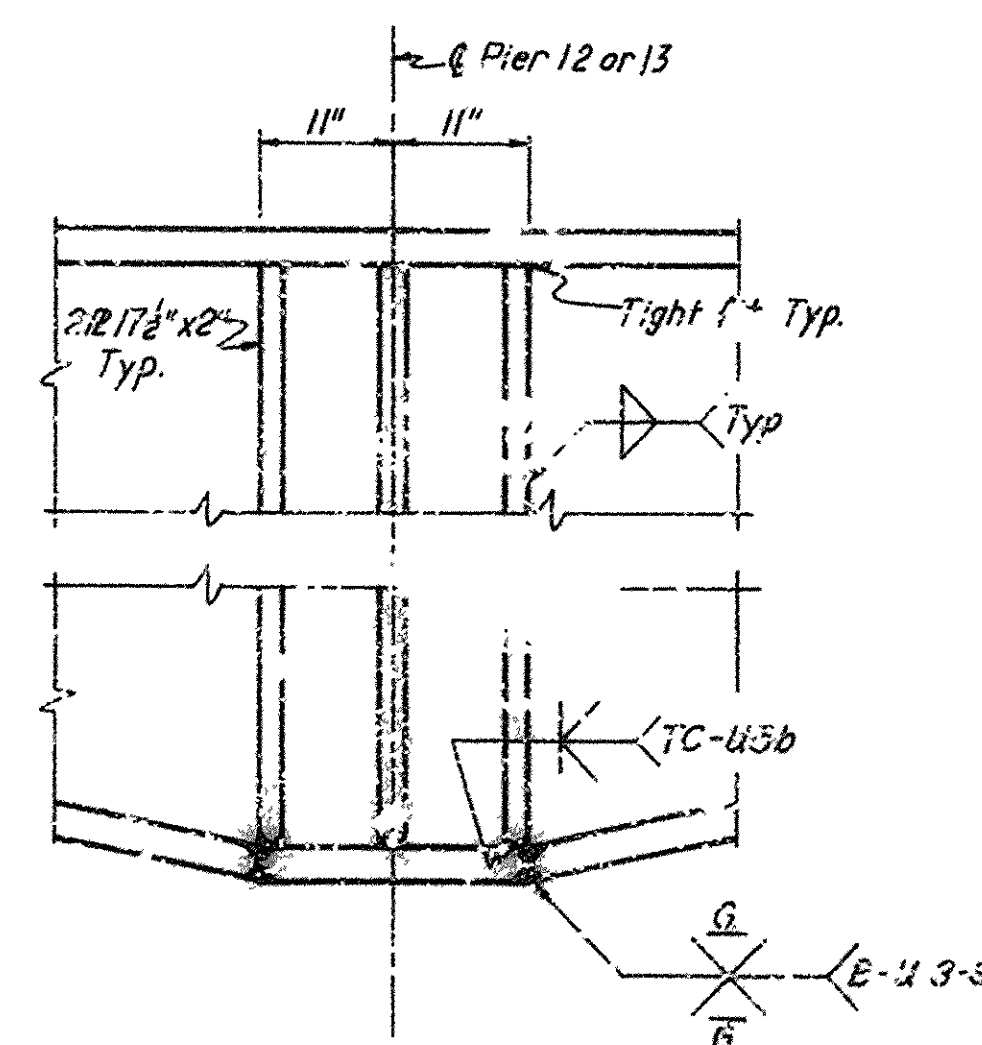
\* As indicated on Girder Elevations

TABLE OF FILLET WELDS	
MAXIMUM PLATE THICKNESS	WELD SIZE*
To 1/2" inclusive	1/4"
Over 1/2" to 1 1/4"	3/8"
Over 1 1/4" to 2 1/4"	1/2"
Over 2 1/4" to 4"	5/8"

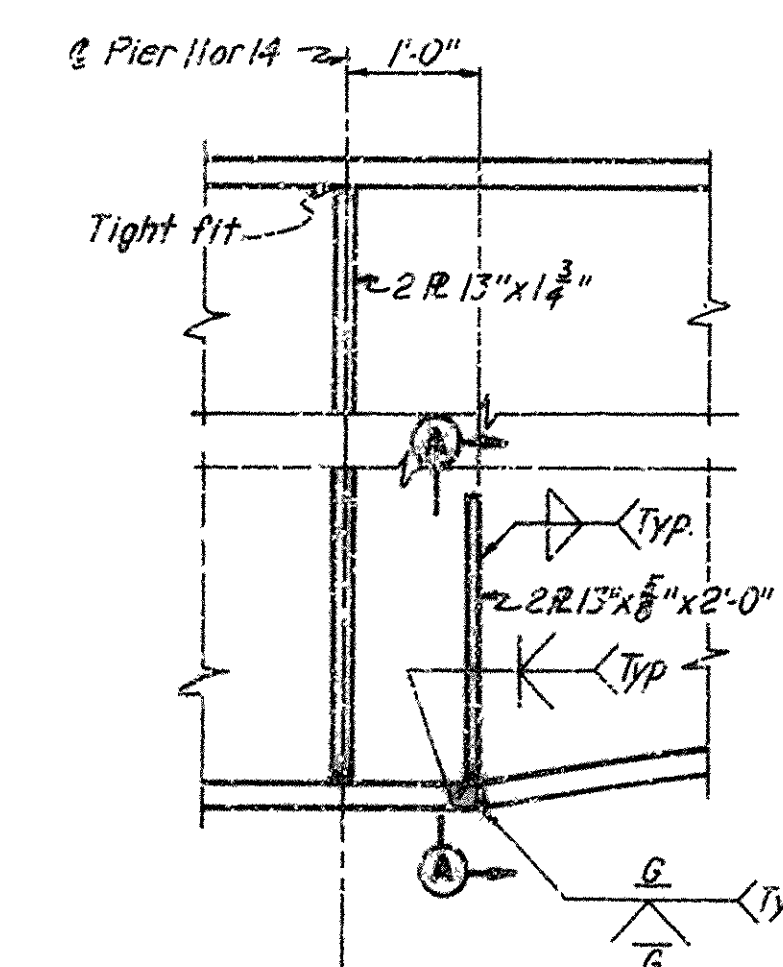
\*But not greater than thinnest part joined



SECTION A-A



BEARING DETAIL



NAUNCH DETAIL

Note:  
For additional details of bend line connections, see Floorbeam and Crossframe Details.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEDOYIA COUNTY, OKLAHOMA SEBASTIAN COUNTY, ARKANSAS

MISCELLANEOUS SPLICE DETAILS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

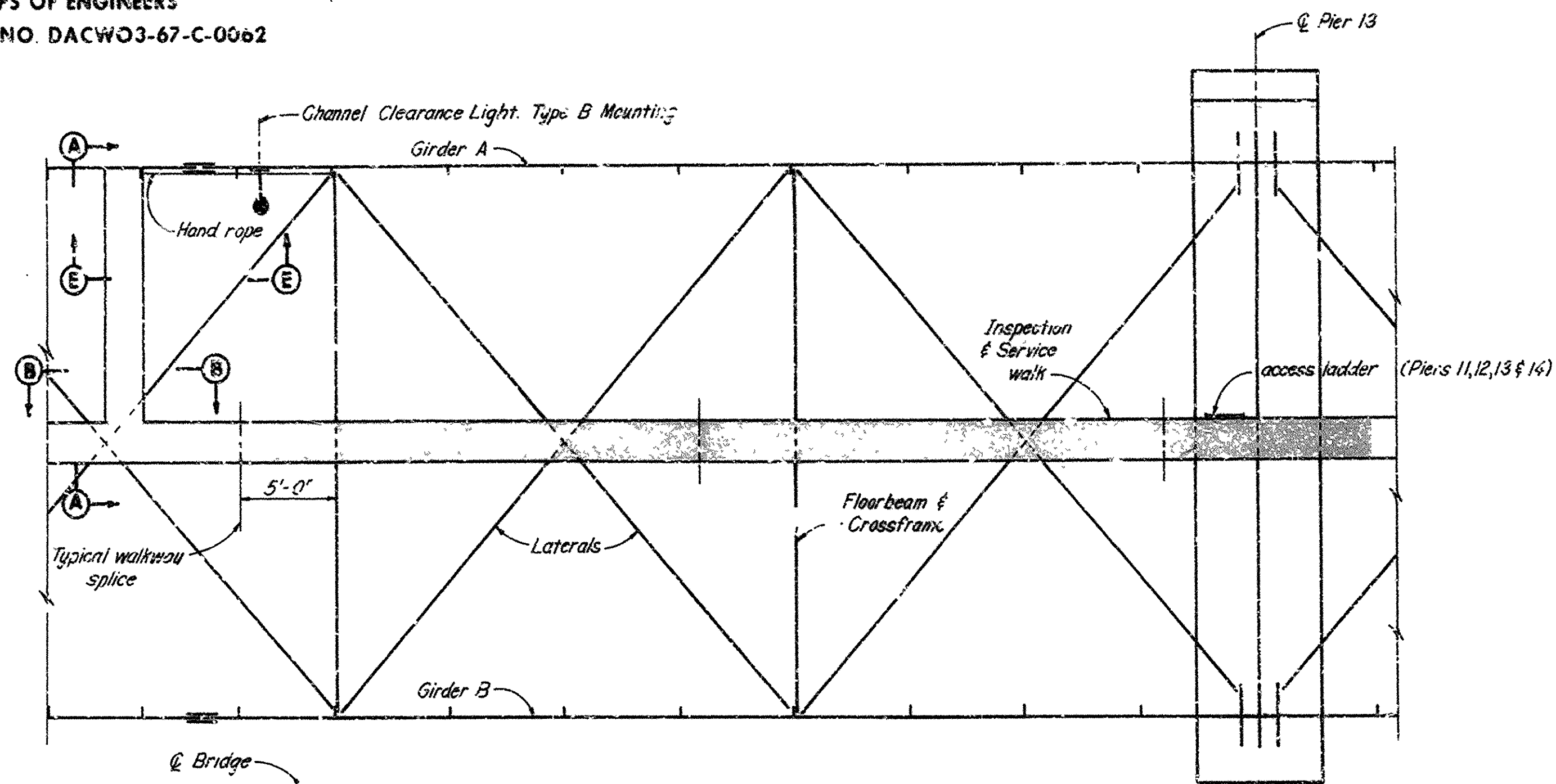
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BRIDGE P.C. 5275 SCALE 3/4"=1'-0" DRAWING NO. 16145



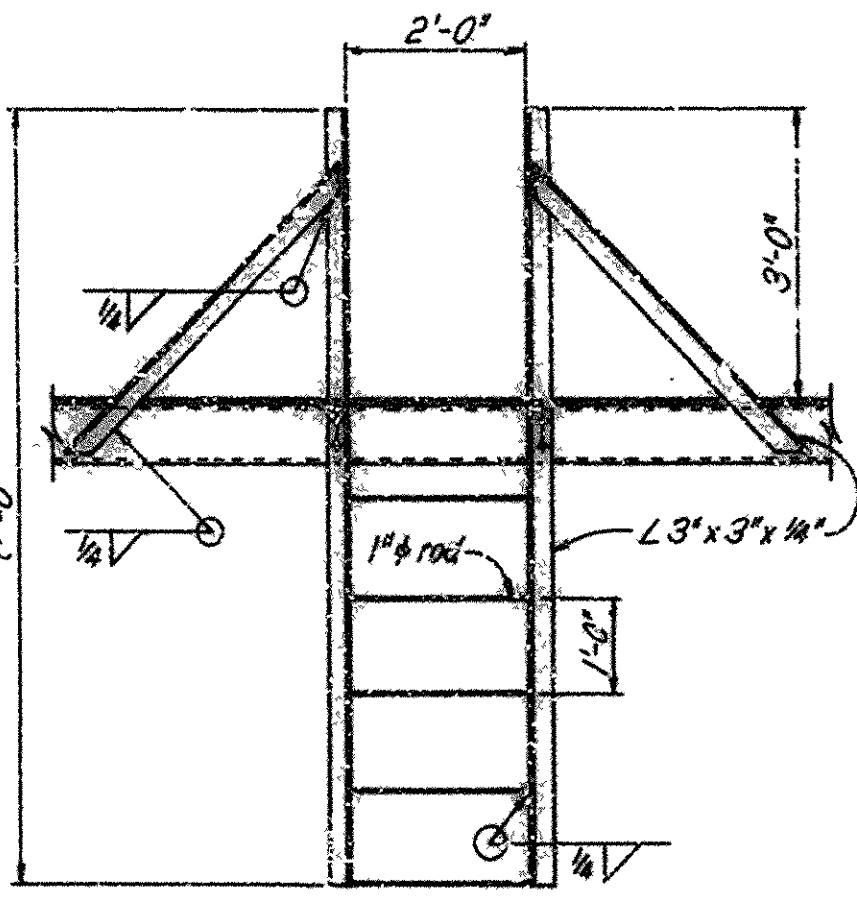
CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4584	46	127	

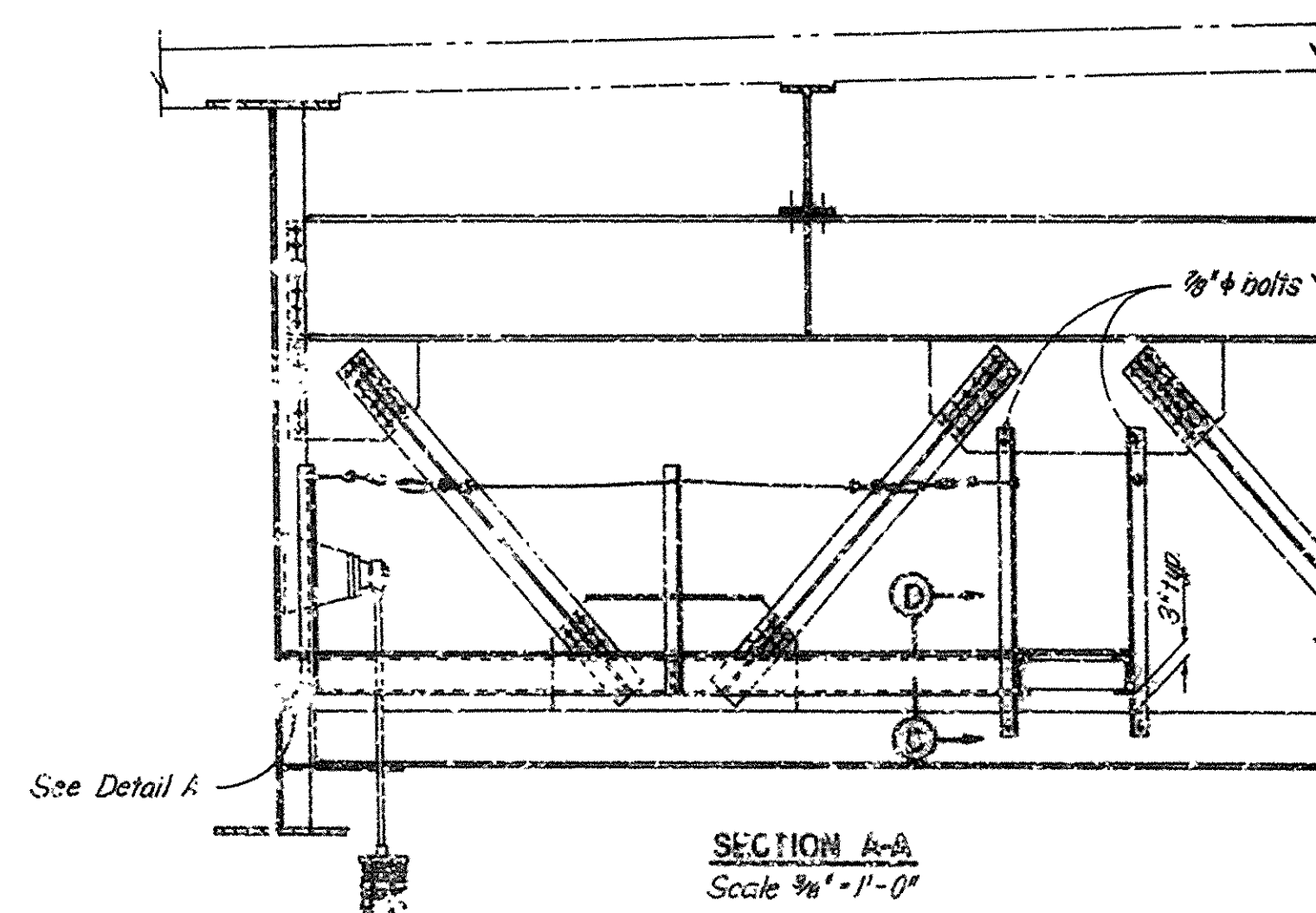
① MISC. STEEL DETAILS



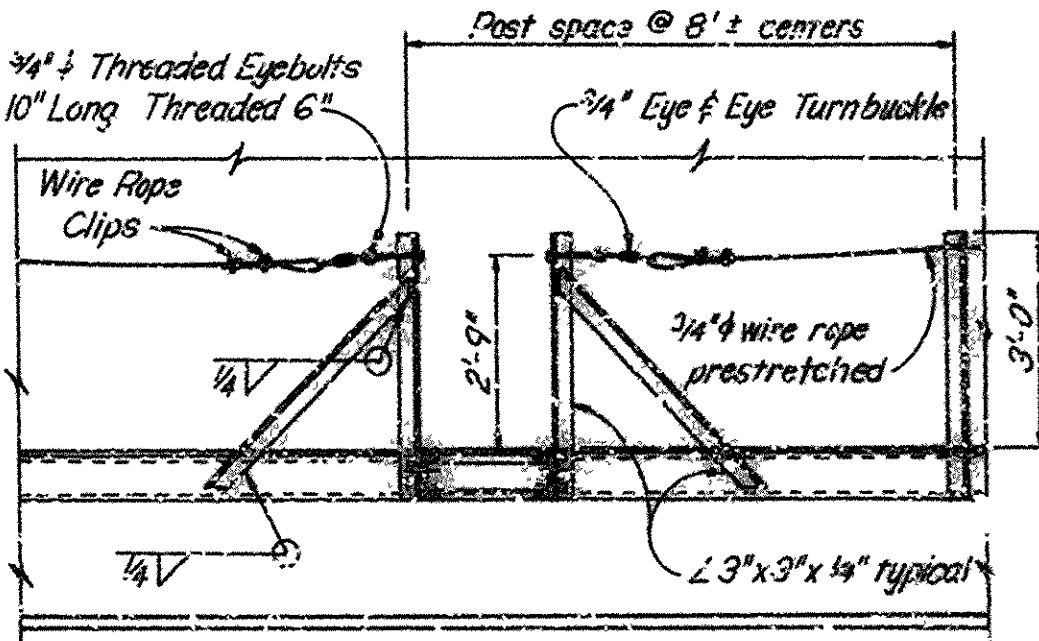
PART PLAN  
Scale 3/16" = 1'-0"



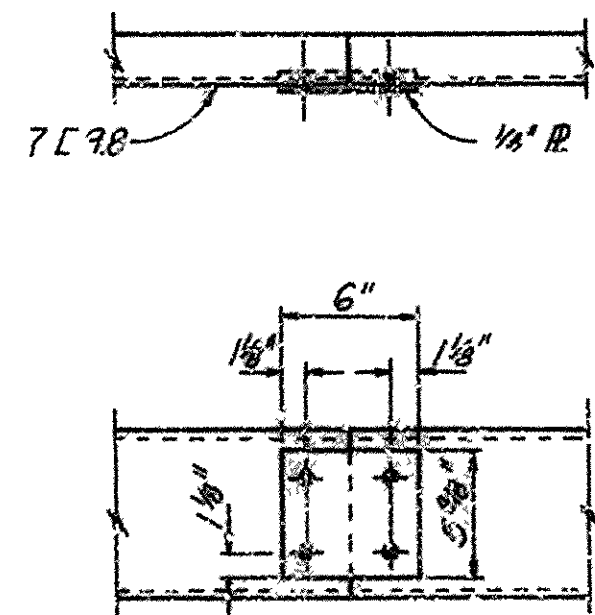
ACCESS LADDER DETAILS  
Scale 1/2" = 1'-0"



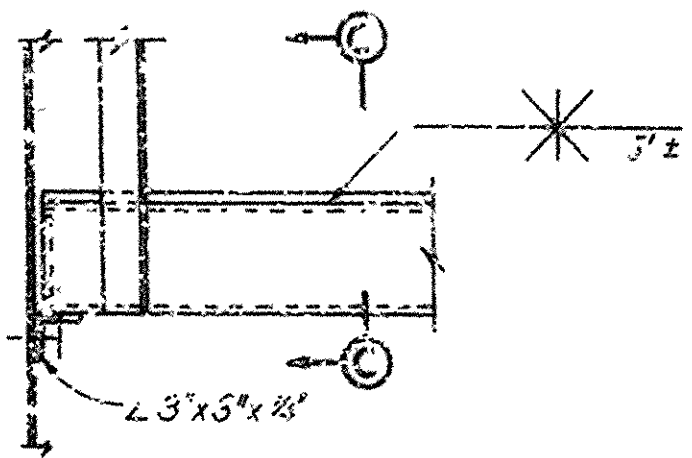
SECTION A-A  
Scale 3/8" = 1'-0"



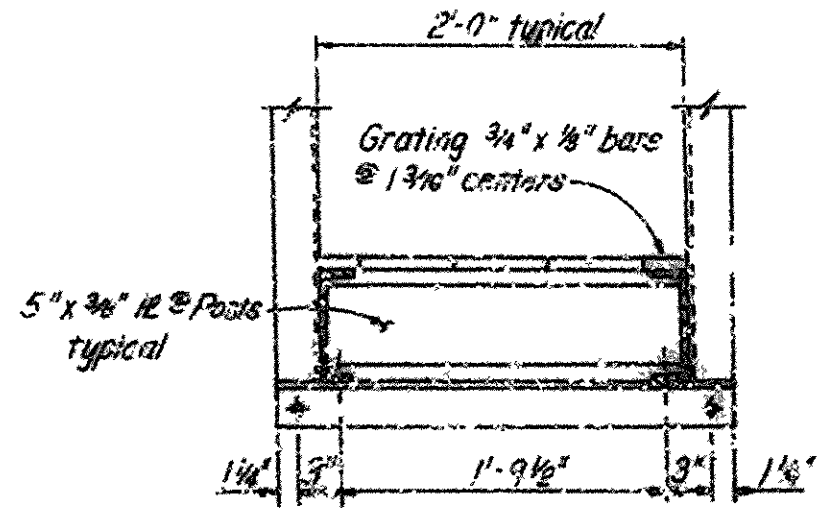
SECTION B-B  
Scale 3/8" = 1'-0"



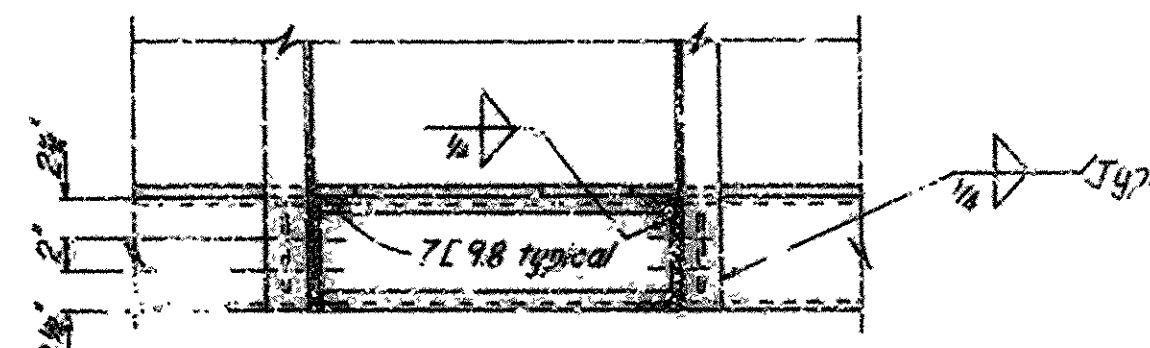
SPICE DETAIL  
Scale 1/2" = 1'-0"



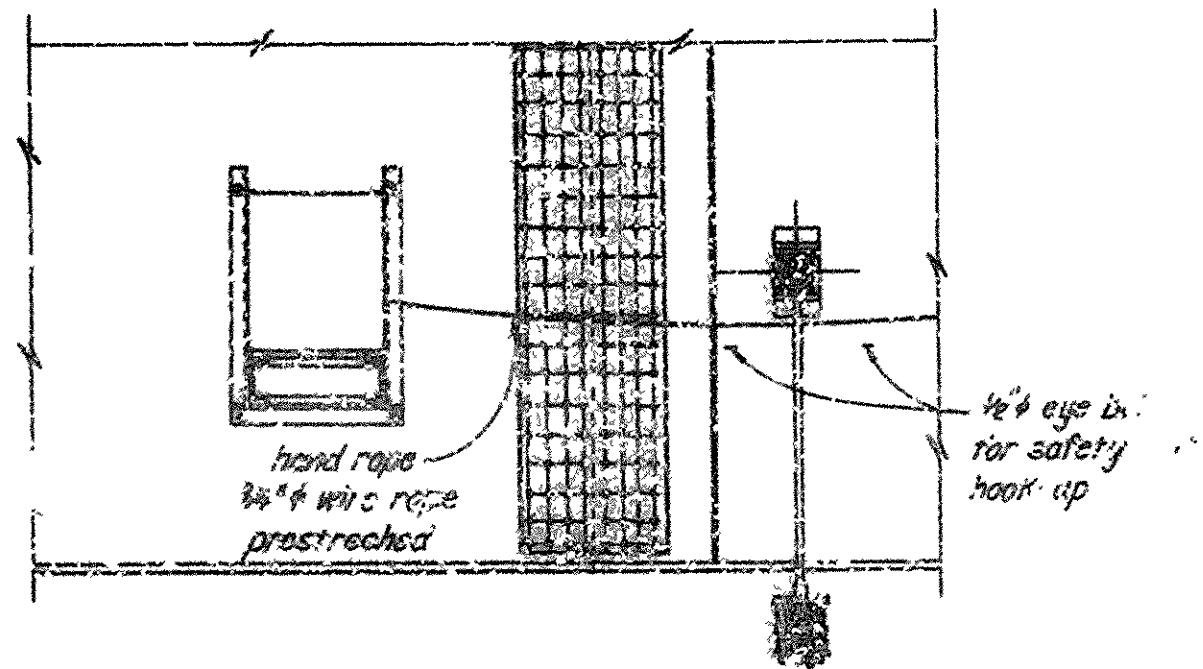
DETAIL A  
Scale 1" = 1'-0"



SECTION C-C  
Scale 1" = 1'-0"



SECTION D-D  
Scale 1" = 1'-0"



SECTION E-E  
Scale 3/8" = 1'-0"

Notes:  
Connections to floorbeam at joints 3-4 and 4-5 are similar to the connection shown in Section C-C. Use 3/8" bolts for walkway connections unless otherwise noted.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEASON COUNTY, ARKANSAS  
SECTION COUNTY, ARKANSAS  
MISCELLANEOUS STEEL  
DETAILS  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB  
DRAWN BY G.D.H. DATE 3-18-69 CHECKED BY R.D.F. DATE 3-26-69  
REVISIONS: 1-69 2-69 3-69 4-69 5-69 6-69 7-69 8-69 9-69 10-69 11-69 12-69

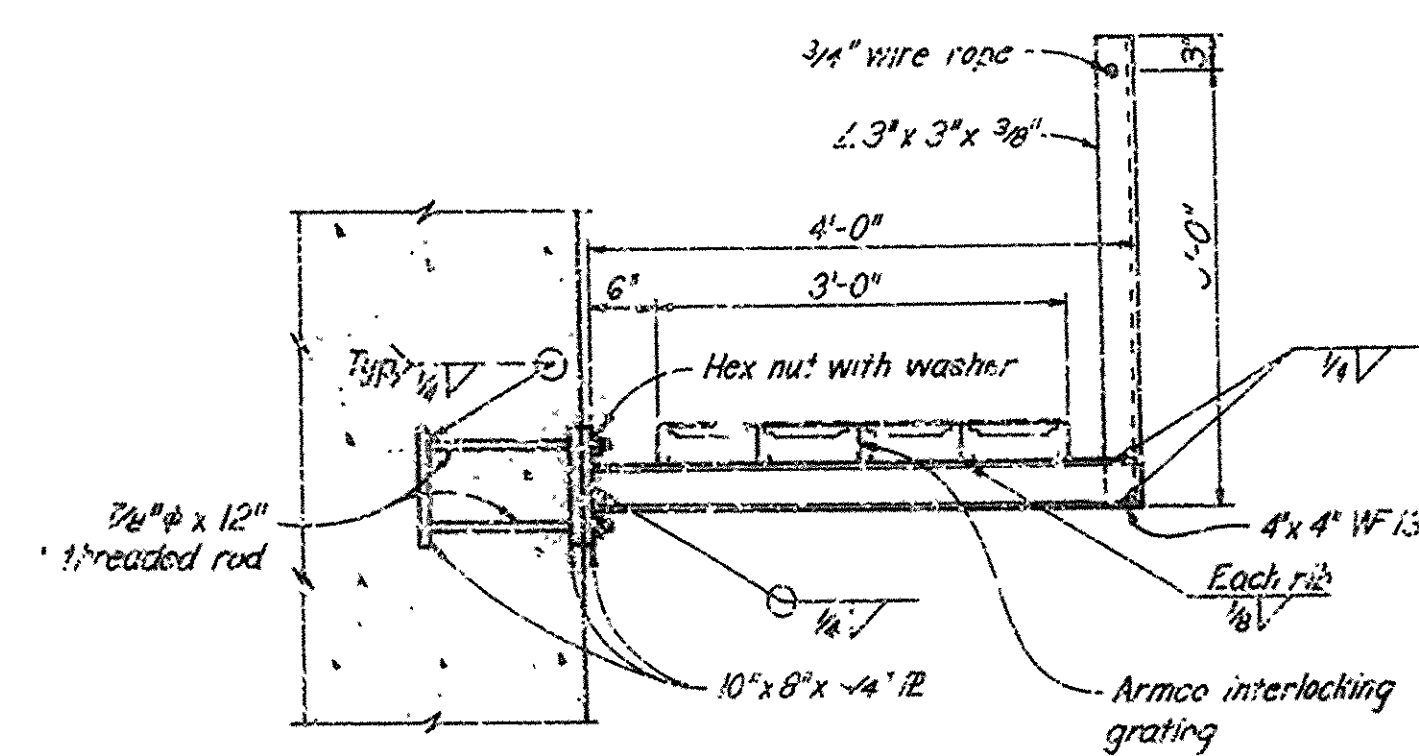
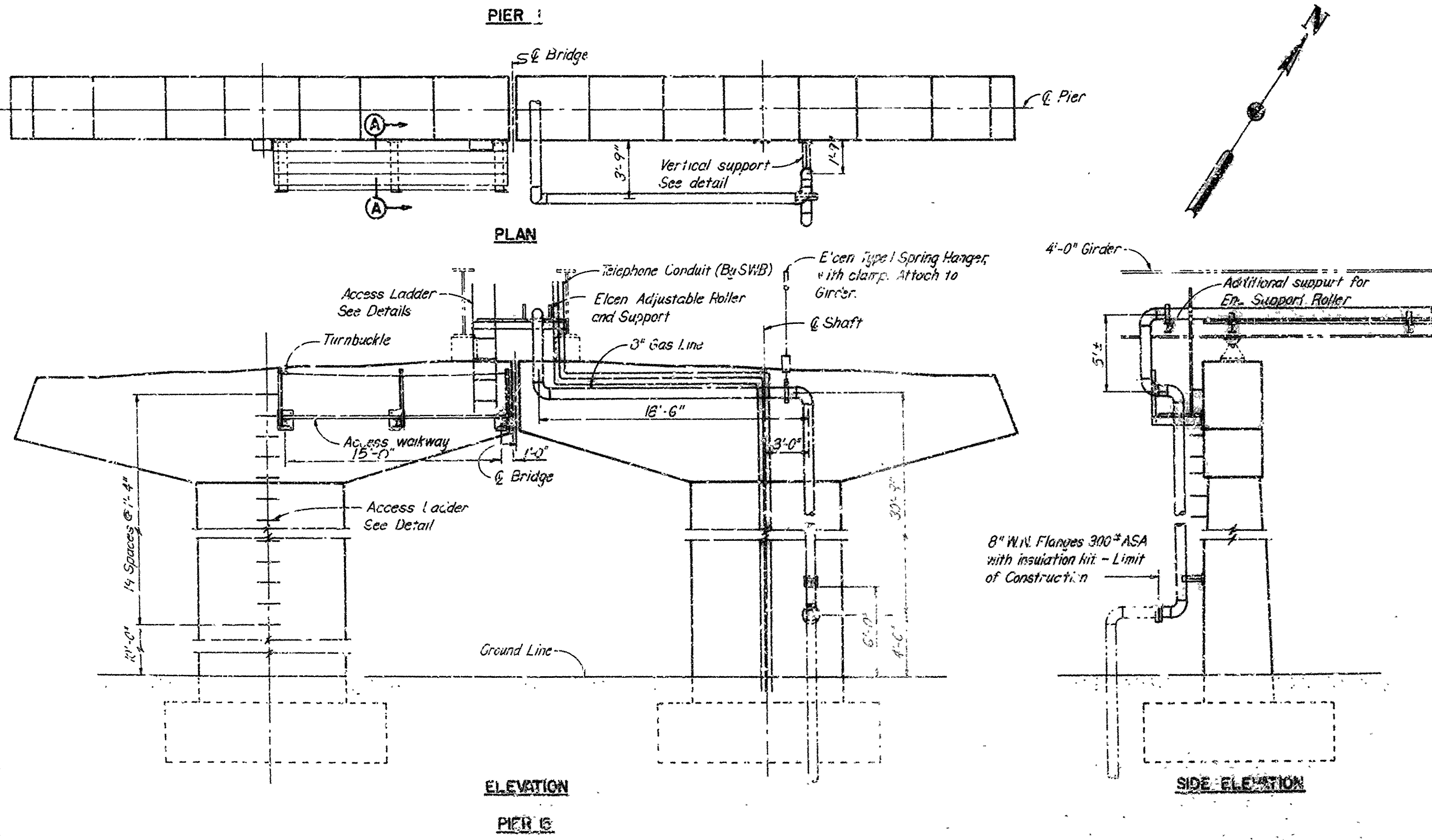
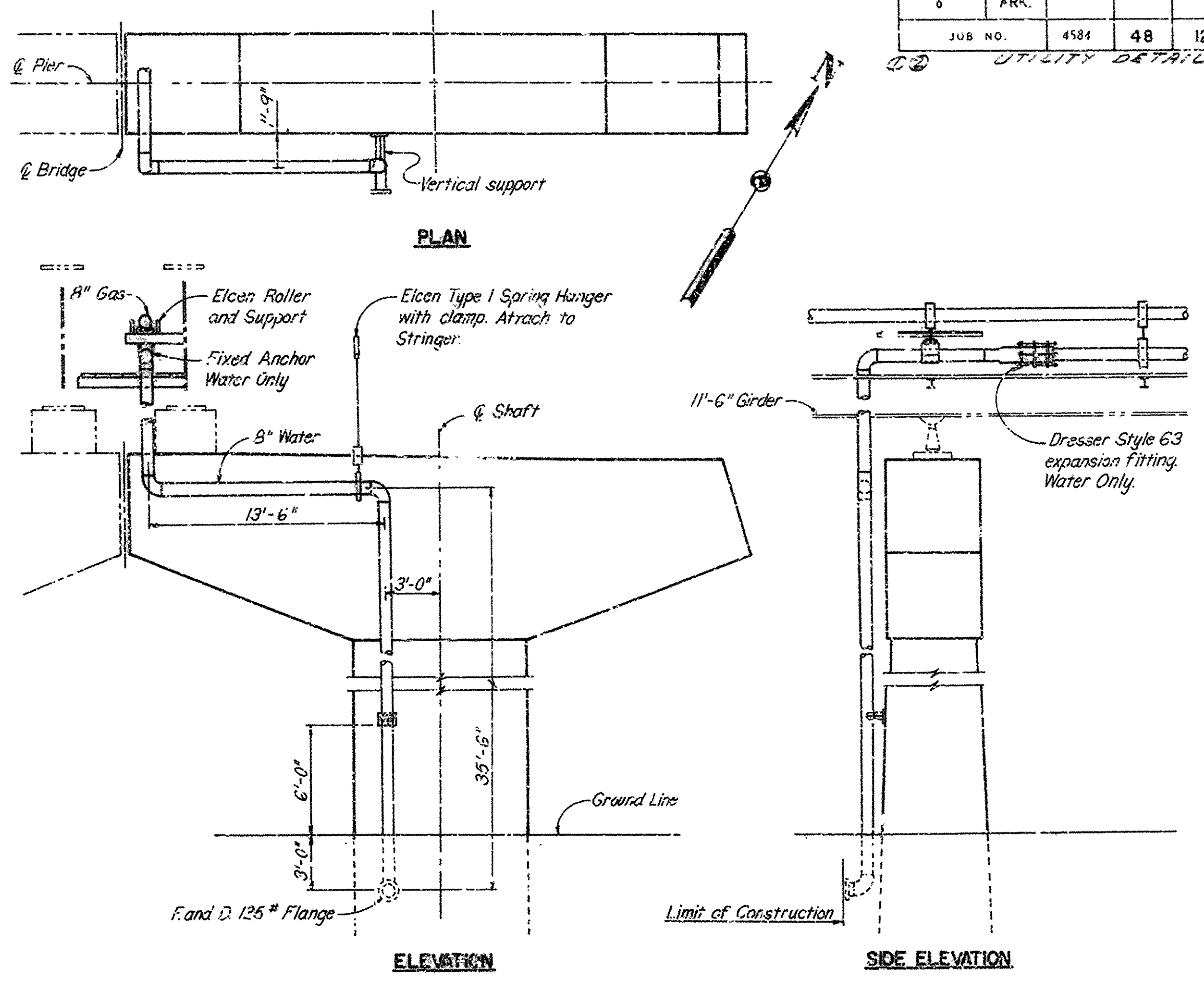
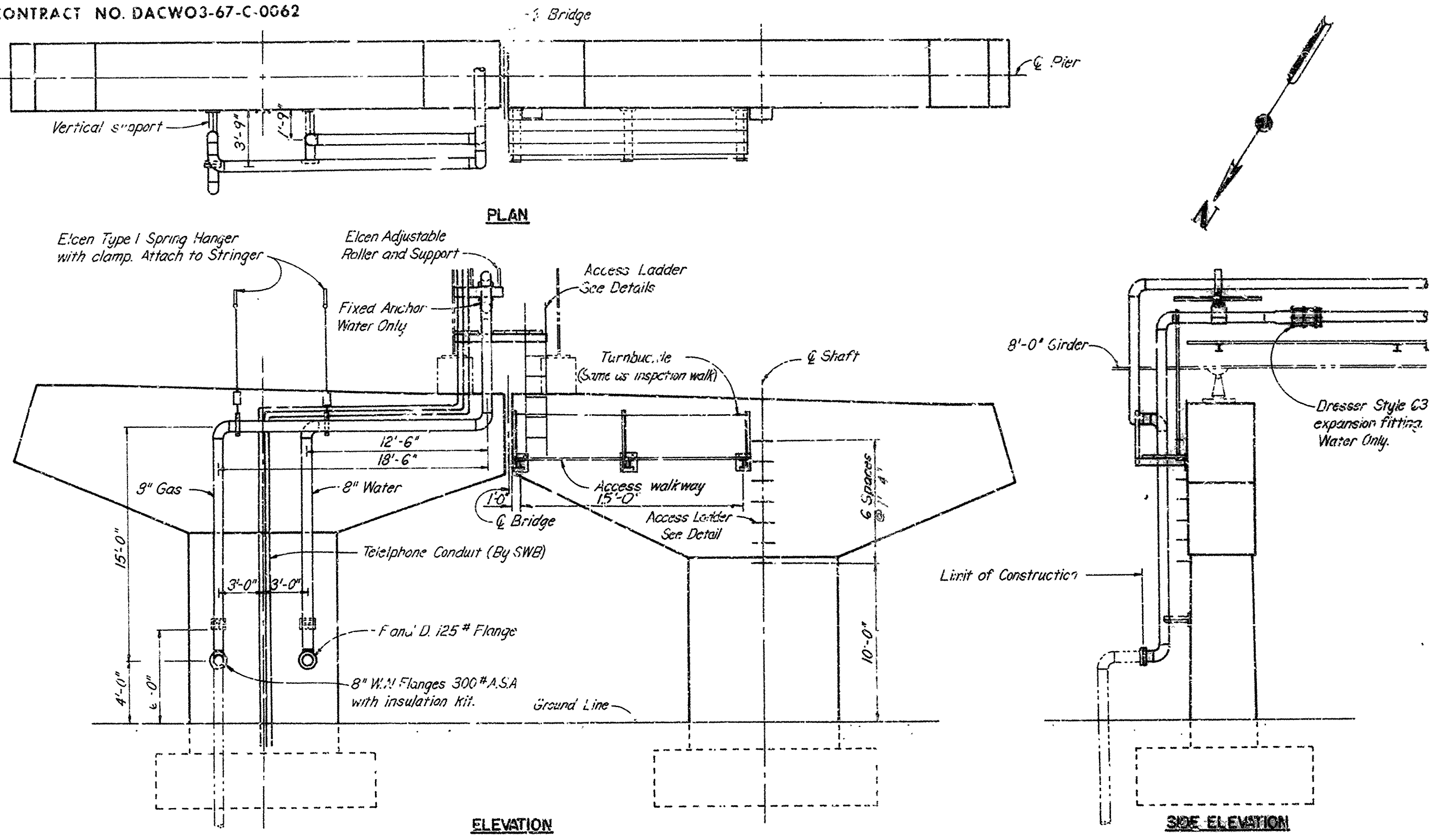






CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		48	127
JUB. NO. 4584				



ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SENECA COUNTY, OKLAHOMA      SEBASTIAN COUNTY, ARKANSAS

UTILITY DETAILS

HOWARD, NEEDLES, TAMMEN & BERGENOFF  
CONSULTING ENGINEERS      HNTB

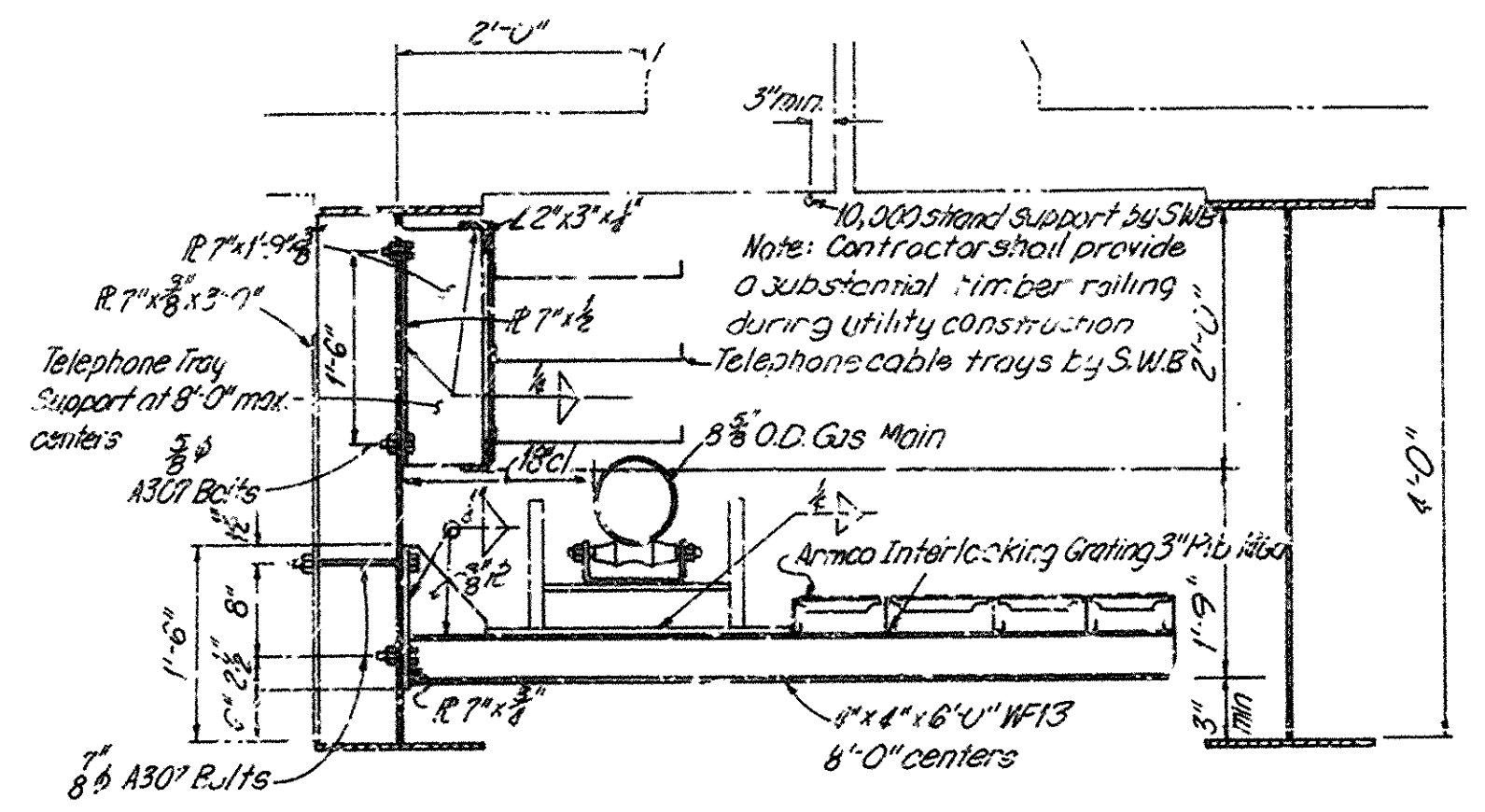
DRAWN BY SDH DATE 12/1/68 CHECKED BY D.L. DATE 1/1/69  
BRIDGE NO. 507 SCALE 3/8" = 1'-0" SHEET NO. 48



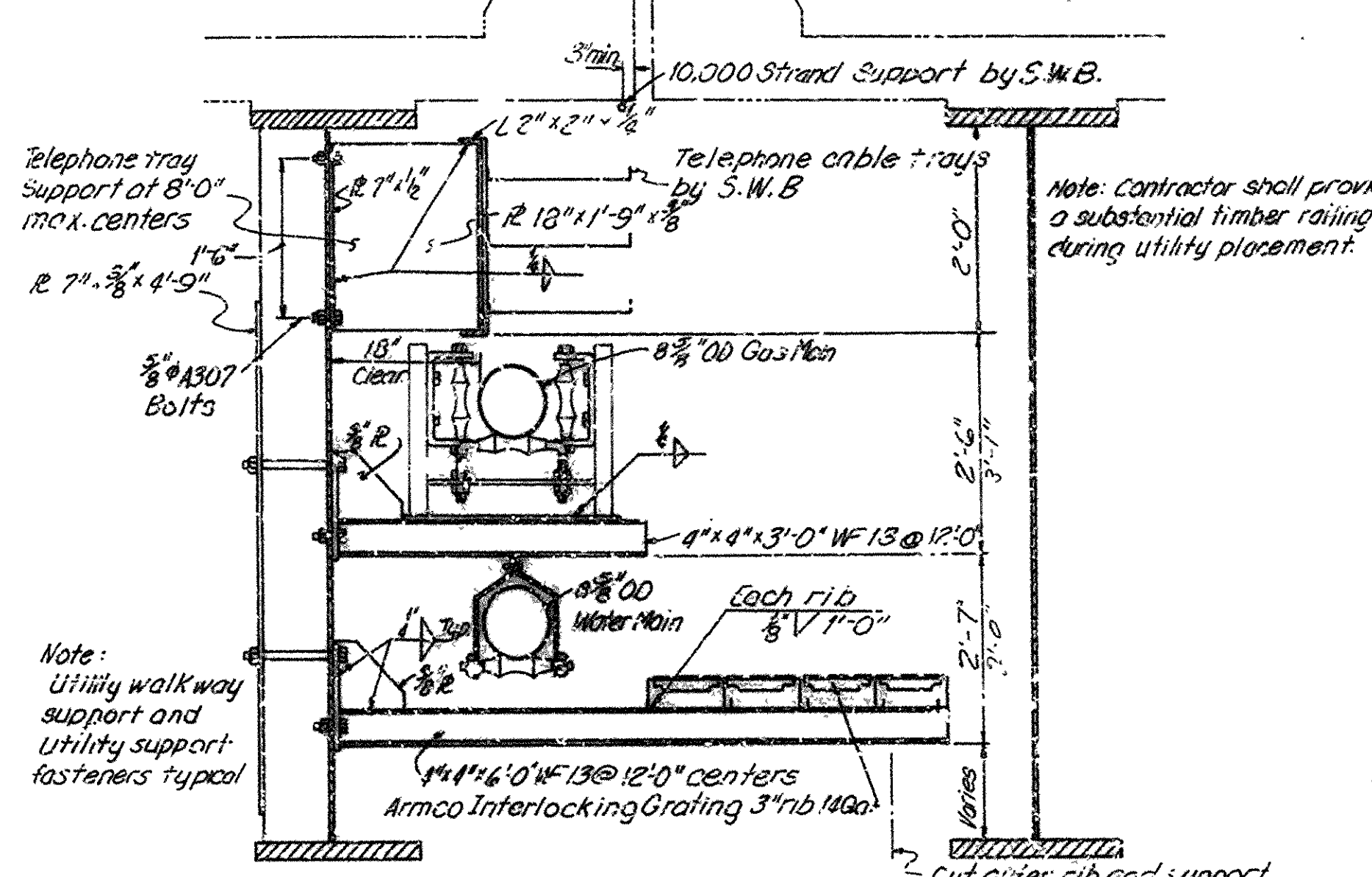
US CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	4584	49	127	

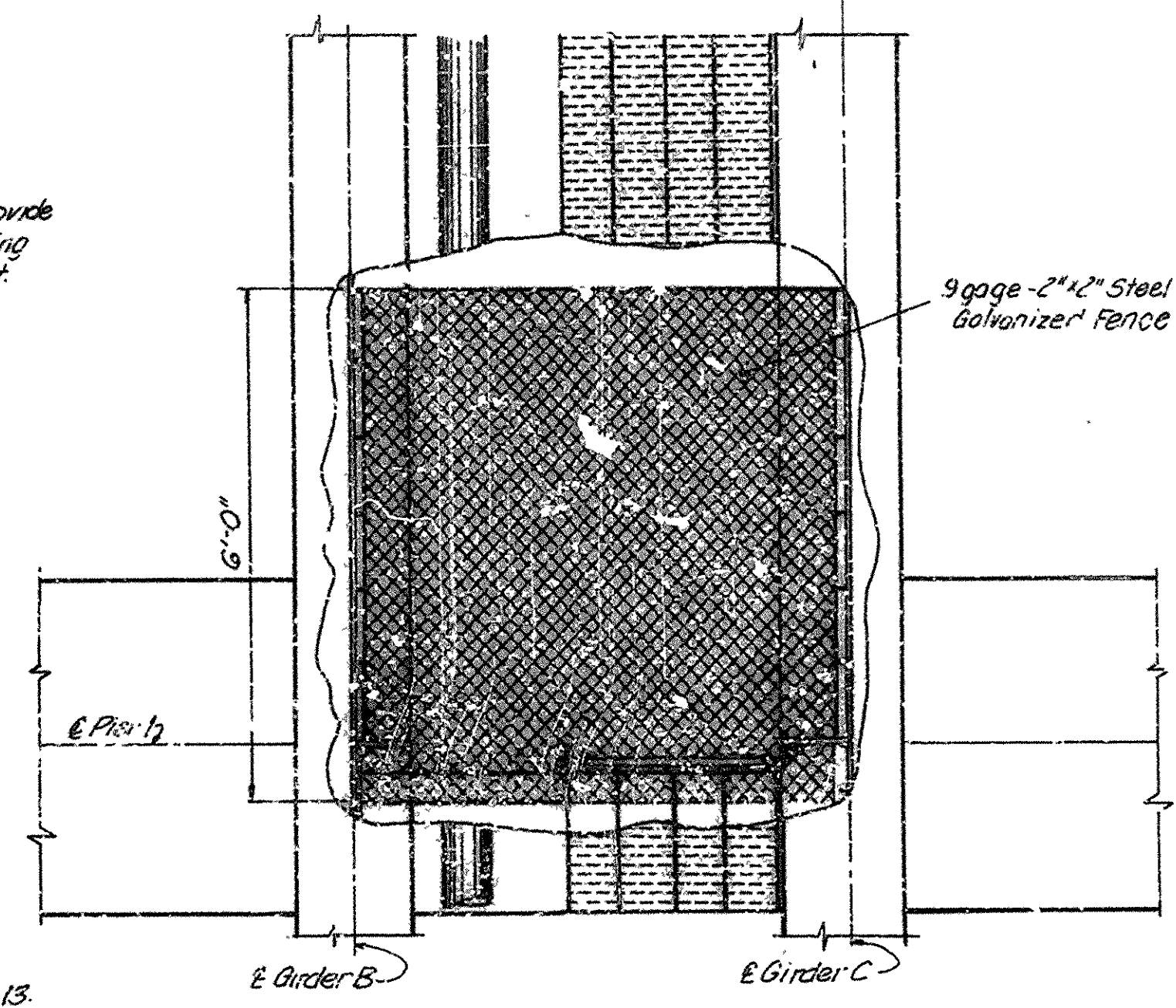
UTILITY DETAILS



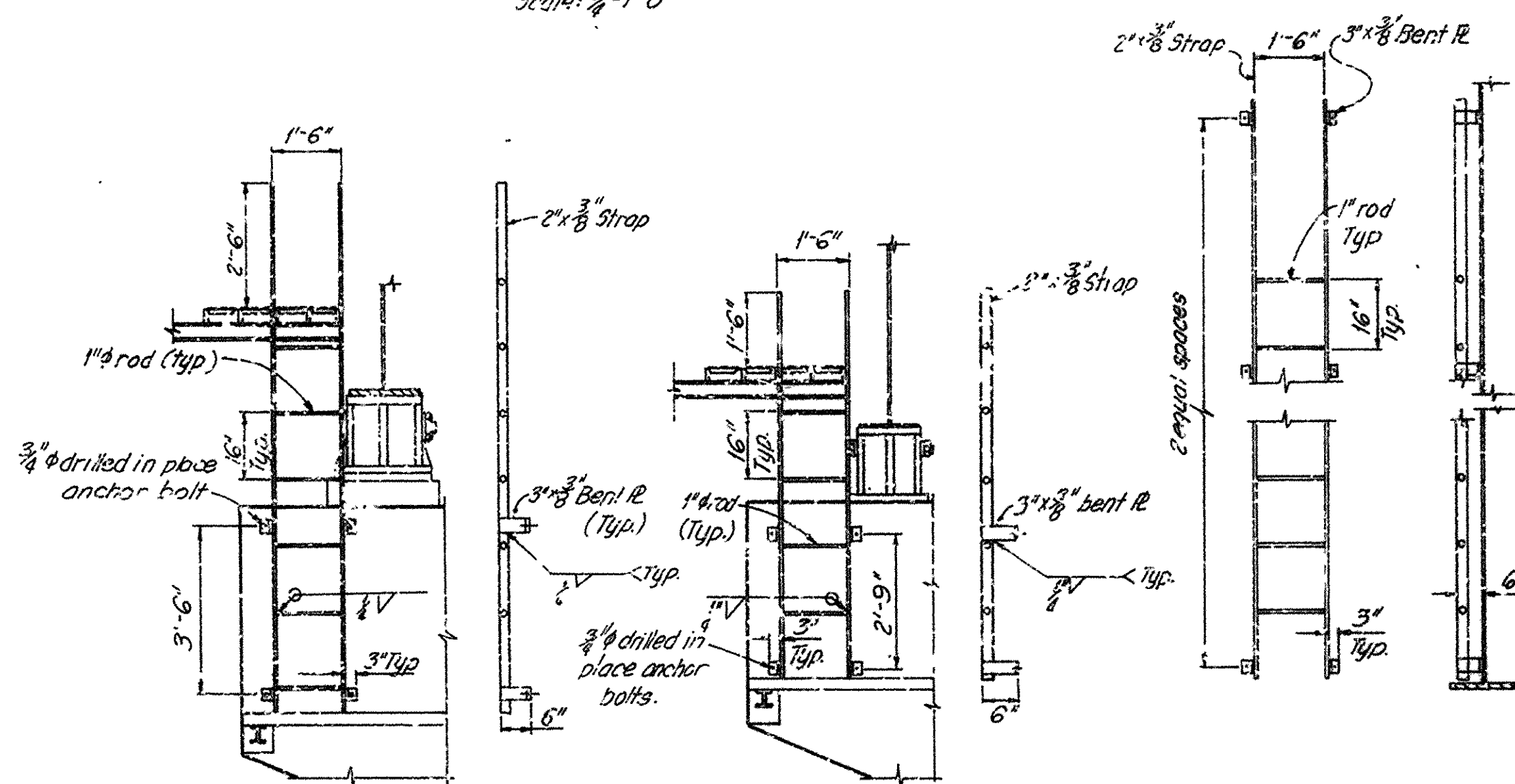
UTILITY WALKWAY AND SUPPORT  
PIER 14 TO PIER 15  
Scale: 3/8" = 1'-0"



UTILITY WALKWAY AND SUPPORT  
PIER 1 TO PIER 14  
No Scale



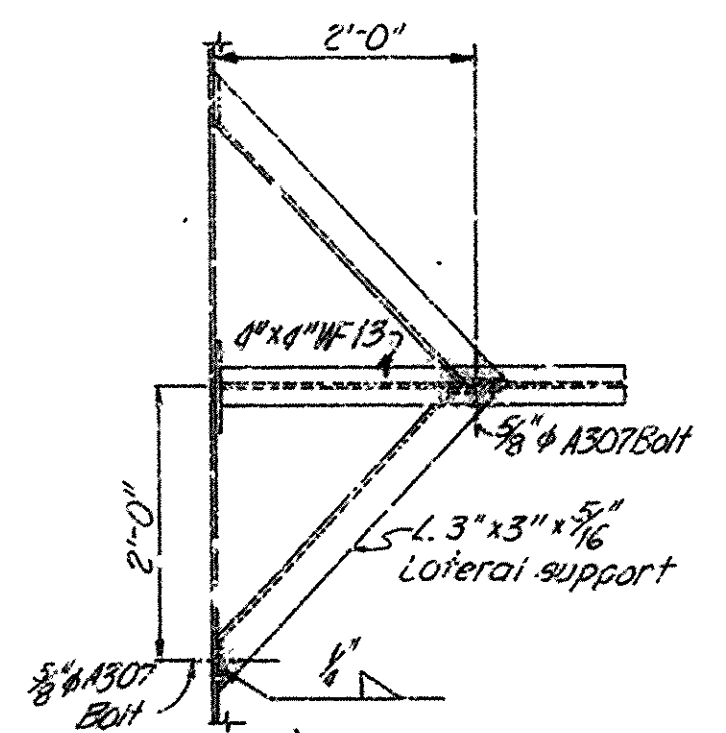
GATE ENCLOSURE DETAILS  
PLAN  
Scale: 3/8" = 1'-0"



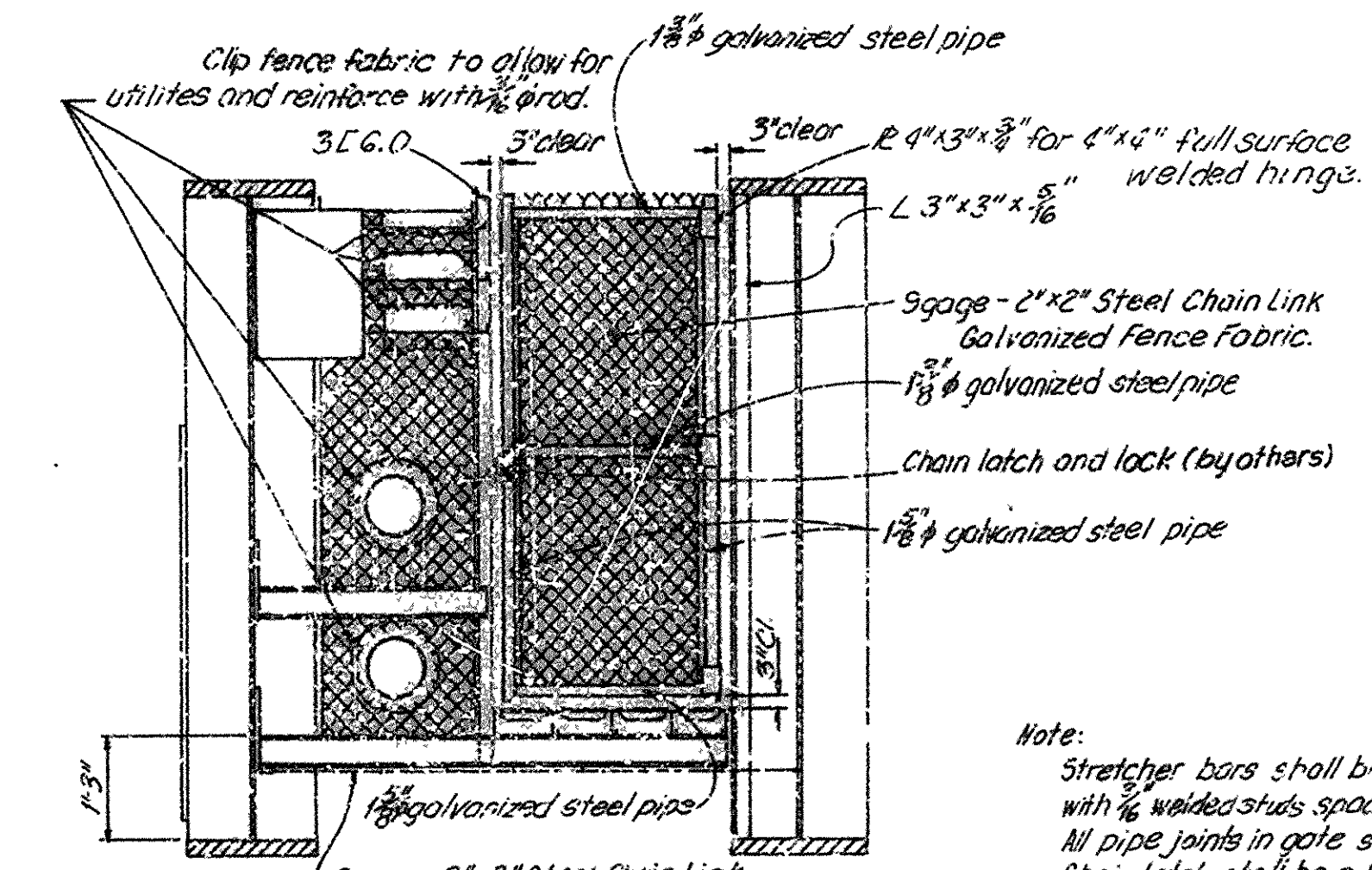
UTILITY ACCESS LADDER DETAILS  
PIER 1  
Scale: 3/8" = 1'-0"

UTILITY ACCESS LADDER DETAILS  
PIER 15  
Scale: 3/8" = 1'-0"

LADDER DETAILS  
PIER 1  
Scale: 3/8" = 1'-0"

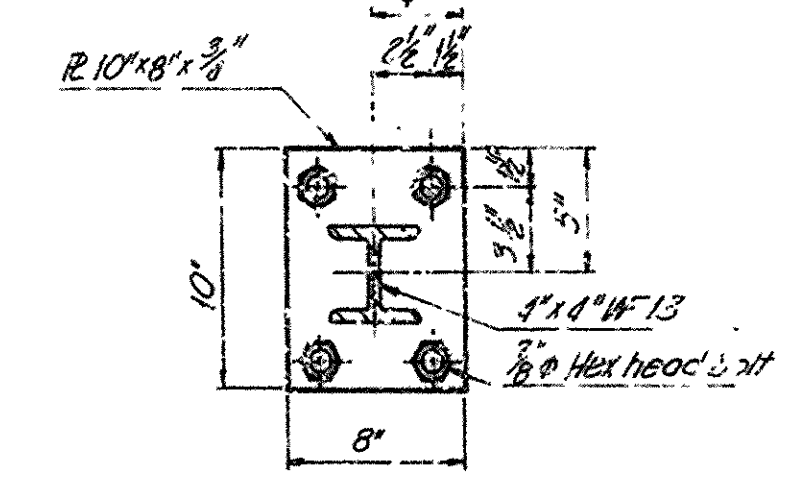


LATERAL BRACE  
UTILITY SUPPORT  
Scale: 3/8" = 1'-0"

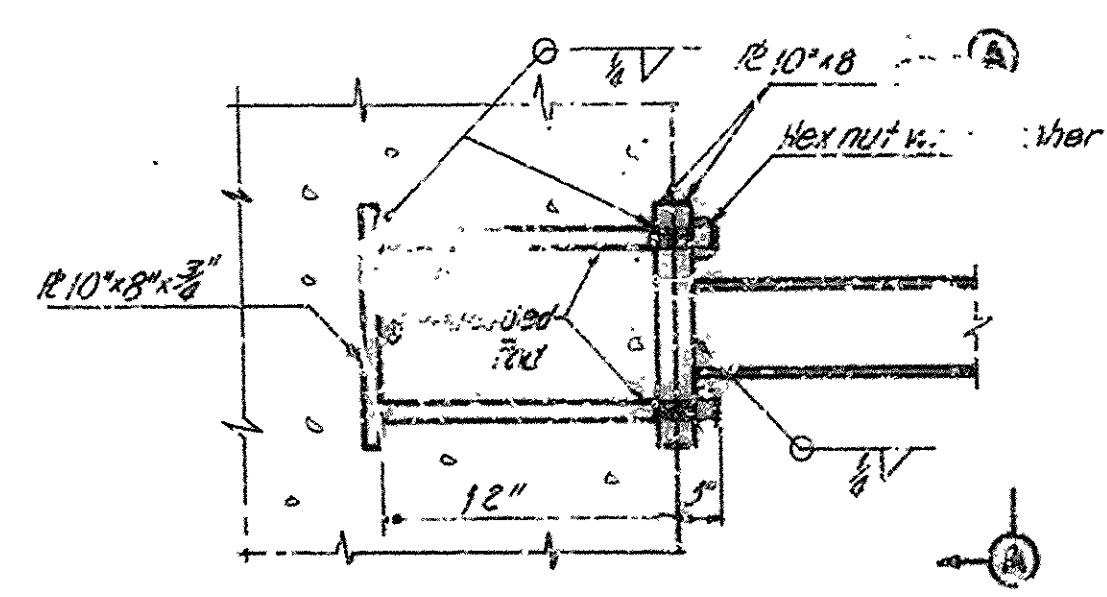


GATE ENCLOSURE DETAILS  
ELEVATION  
Scale: 3/8" = 1'-0"

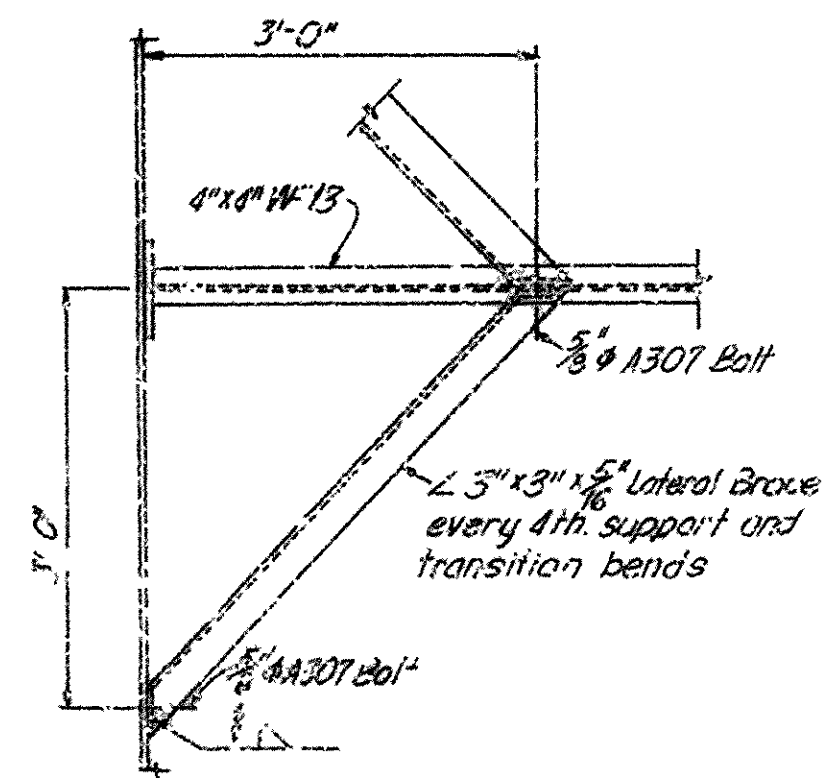
Note:  
Stretchers shall be fastened to supports with 1/2" welded studs spaced at 1'-0" centers. All pipe joints in gate shall be welded. Chain latch shall be a loose connection to allow for bridge expansion. The Chain Link fence fabric connected to the bottom of the utility enclosure shall be placed loosely to allow for bridge expansion.



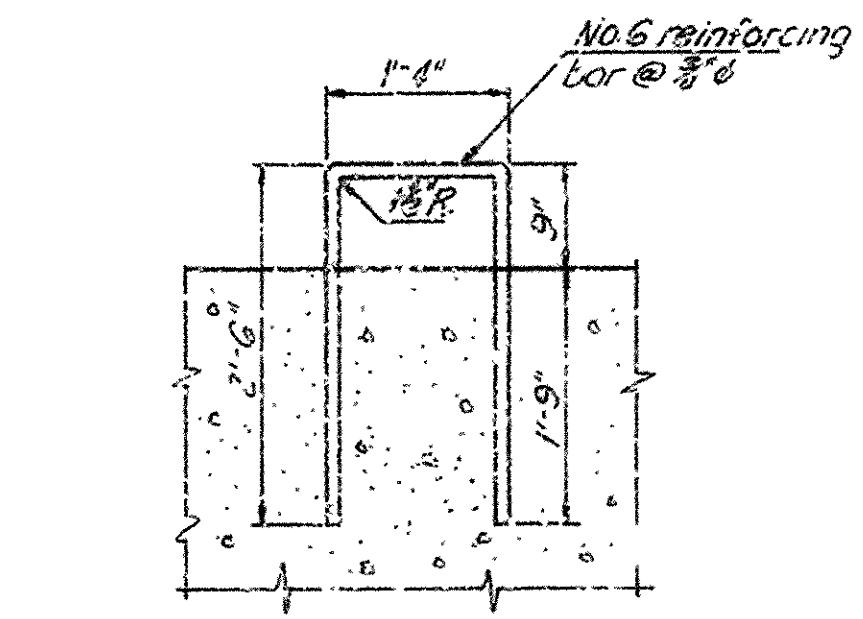
SECTION A-A  
Scale: 1/2" = 1'-0"



PIER WALKWAY SUPPORT DETAIL  
Scale: 1/2" = 1'-0"



LATERAL BRACE  
UTILITY WALKWAY  
Scale: 3/8" = 1'-0"



CAST-IN-PLACE PIER LADDER DETAILS  
Scale: 3/8" = 1'-0"

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
JEFFERSON COUNTY, ARKANSAS SEBASTIAN COUNTY, ARKANSAS

UTILITY DETAILS

HOWARD NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

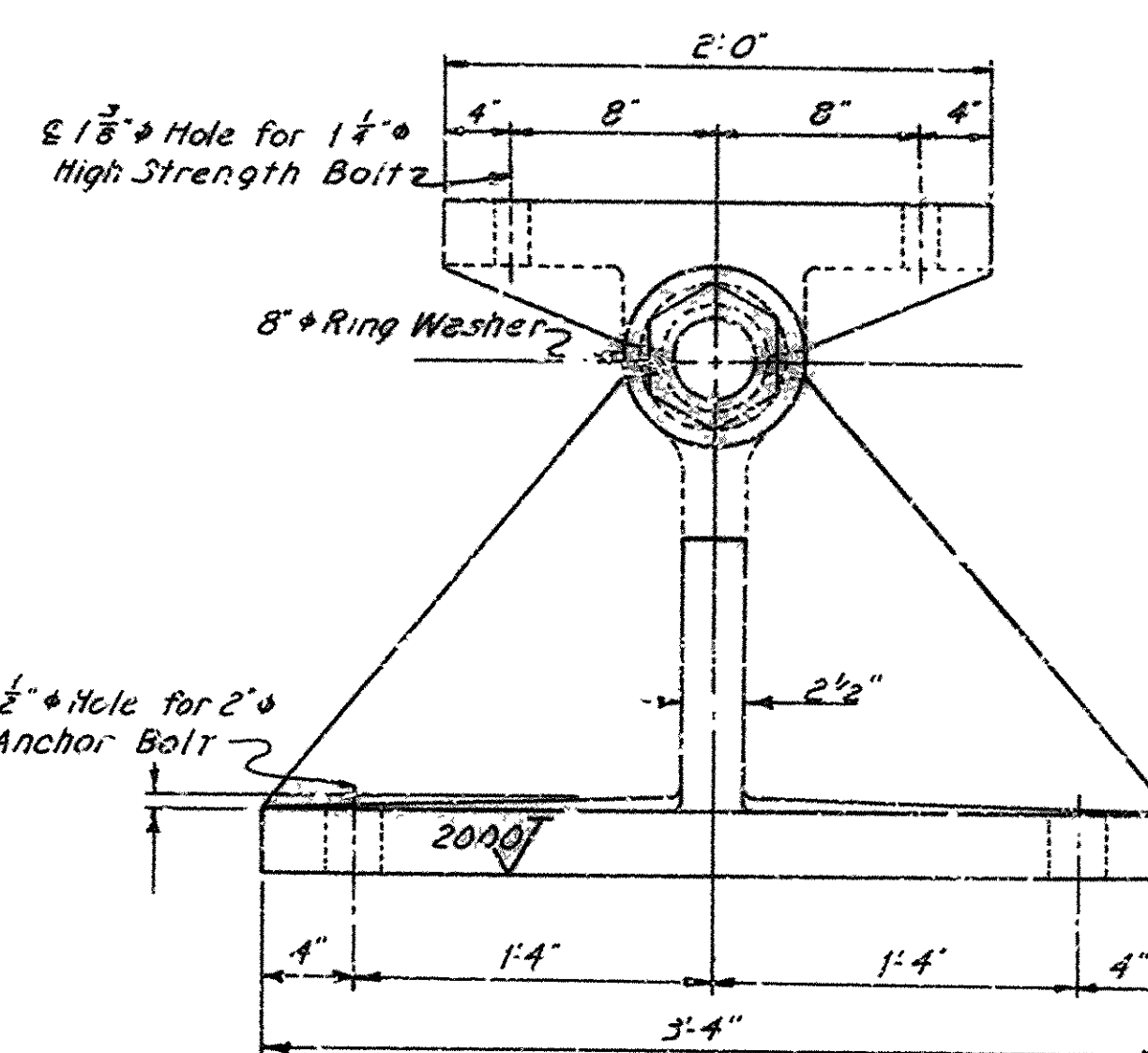
DRAWN BY DATE 12/68 CHECKED BY DATE 12/68  
SCALE AS SHOWN DRAWING NO. 12149







① BEARING ASSEMBLY & TAIL



Top of Upper Casting

Top casting, pin and bottom casting are identical to Type FJ Bearing Assembly.

Drill and Tap for 1" x 2 1/2" cap screw. Typ Top and Bottom.

8" Roller

Stay Plate

Dimensions:

- Top View: 10", 1'-10", 1'-10", 10"
- Side View: 5", 2'-5", 2'-5", 5"
- Front View: 5'-4"

5" 5" 10" 10" 5" 5"

250T

4" Radius (Typical)

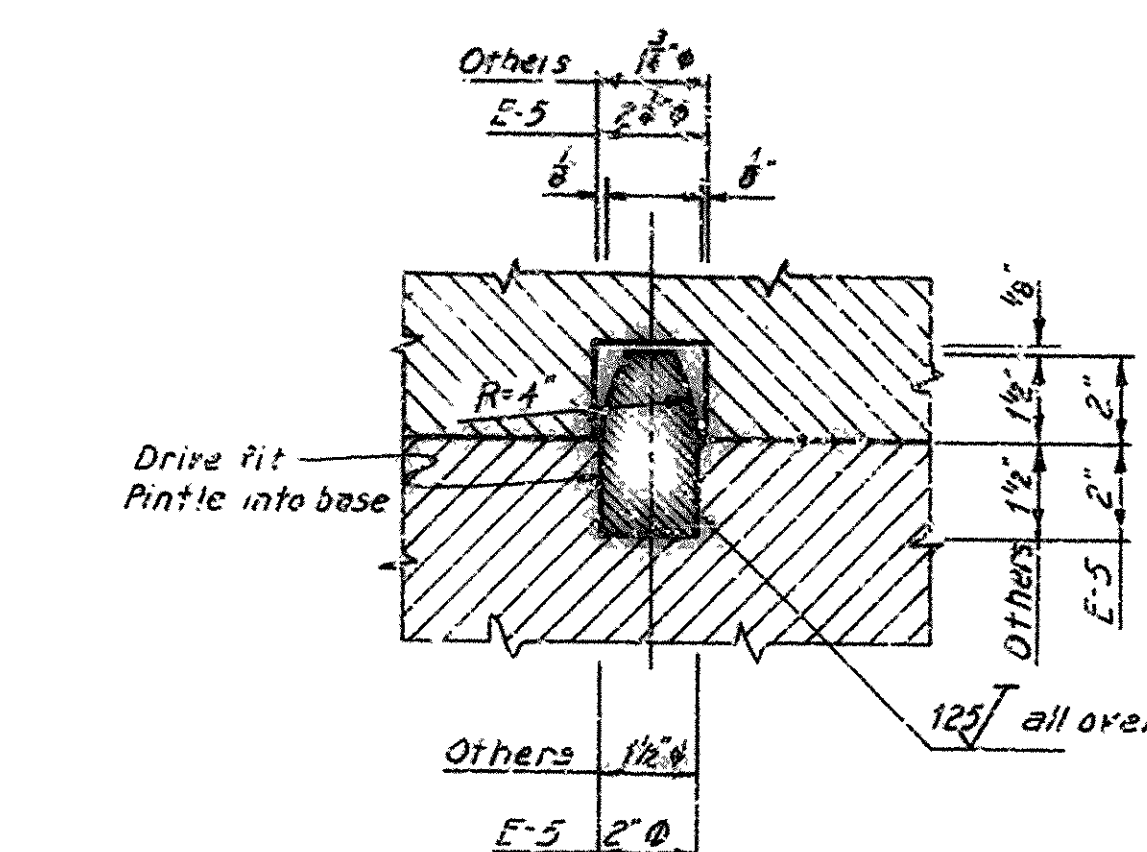
2000T

10" 5" 5" 10"

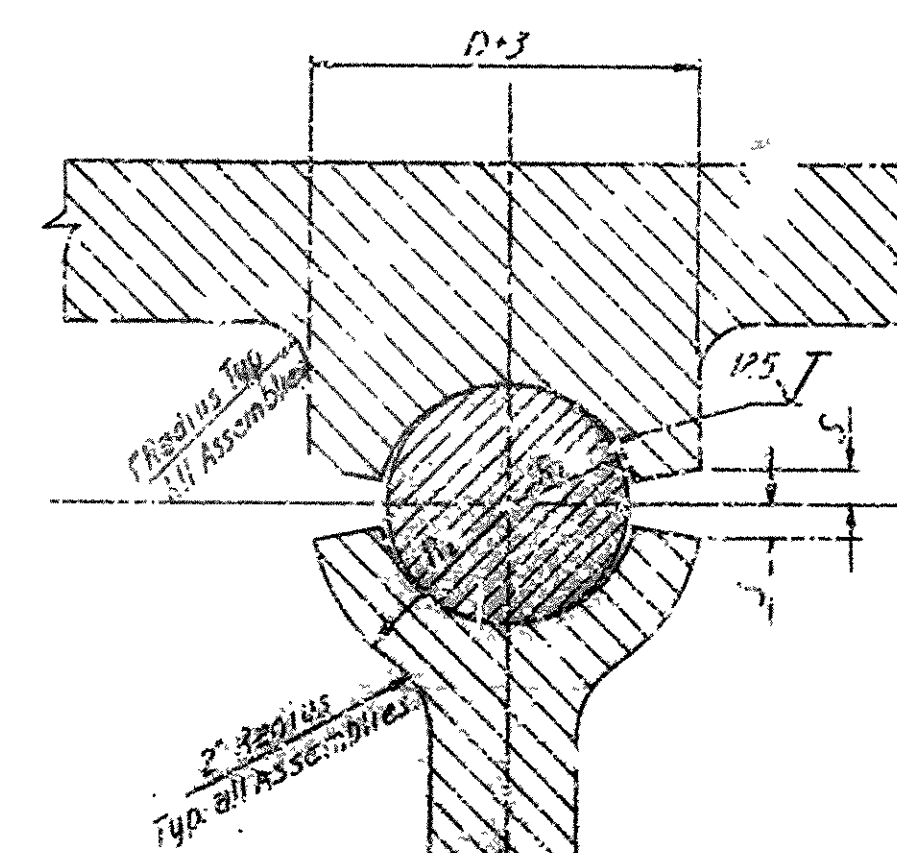
4" 1 1/4" 1 1/4" 4"

5 1/4"

2 1/2" hole for 2" Anchor Bolt and clip washers to clear Stay B.



PIN	$R_1$	$R_2$	S	D	d
3"	$1\frac{11}{12}$ "	5"	$\frac{1}{8}$ "	3"	$2\frac{1}{2}$ "
4"	$2\frac{3}{4}$ "	$3\frac{1}{2}$ "	$\frac{3}{4}$ "	4"	3"
5"	$2\frac{1}{2}$ "	4"	$\frac{3}{4}$ "	5"	4"



4"

Thread

See Table

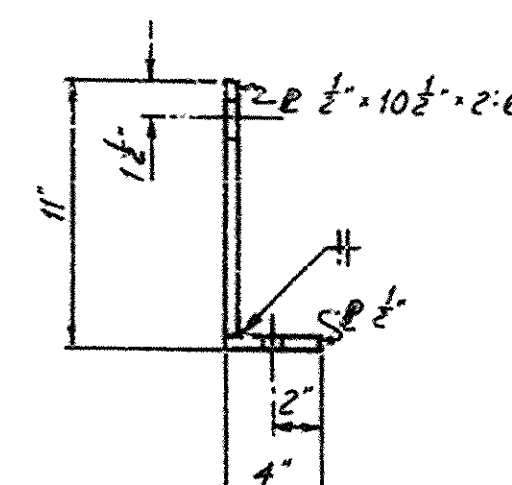
1'-6"

1'-6"

Diagram illustrating the Plan view of the front of the box. Dimensions include a total width of 5 1/2", a height of 1'-11", and a depth of 2 1/2". Three 18" holes for 1" capscrews are indicated. A 45° Typical angle is shown on the right side. A note states: "Note: After removal, leave trash".

Note:  
After final erection of girders  
remove bottom cap screws and  
leave Stay Plate in position as  
trash guard.

Note:  
After final erection of girders  
remove bottom cap screws and  
leave Stay Plate in position as  
trash guard.



END ELEVATION

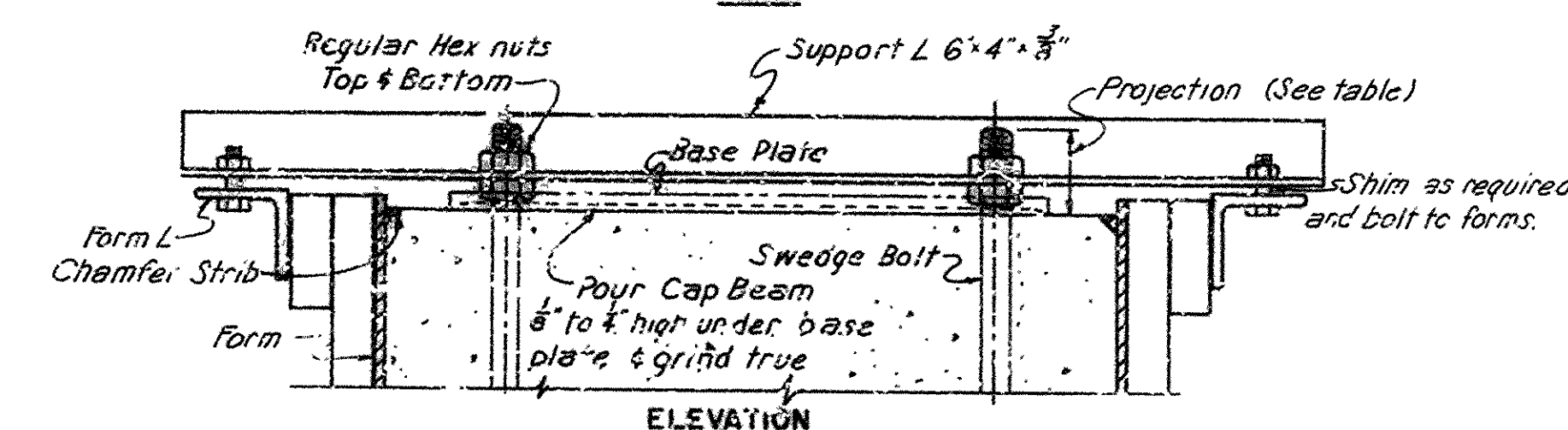
Scale: 1" = 1'-0"

Base Plate

PLAN

Scale:  $1\frac{1}{2}'' = 1'-0''$

PLAN



ELEVATION 10000

Scale:  $1\frac{1}{2}'' = 1'-0$

BOLT DETAILS			
BEARING ASSEMBLY		ANCHOR BOLT	BOLT PROJECTION
S-1	F-1 F-2	1 1/2"	5"
	E-2	1 1/2"	6"
	E-6 F-3	2"	6"
E-3	E-4 E-5	1 1/2"	8"

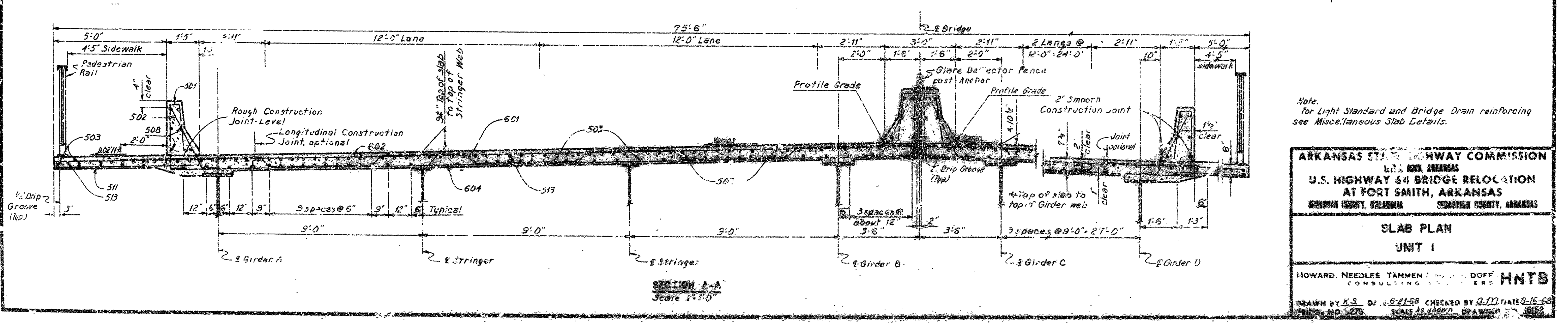
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
LOGAN COUNTY, OKLAHOMA      SEBERTON COUNTY, ARKANSAS

BEARING ASSEMBLY  
DETAILS

HOWARD NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY K.S. DATE 7-16-68 CHECKED BY RDR DATE 7-22-68  
 SHEET NO. 5075 SCALE 1/2" = 1'-0" DRAWING NO. 18151

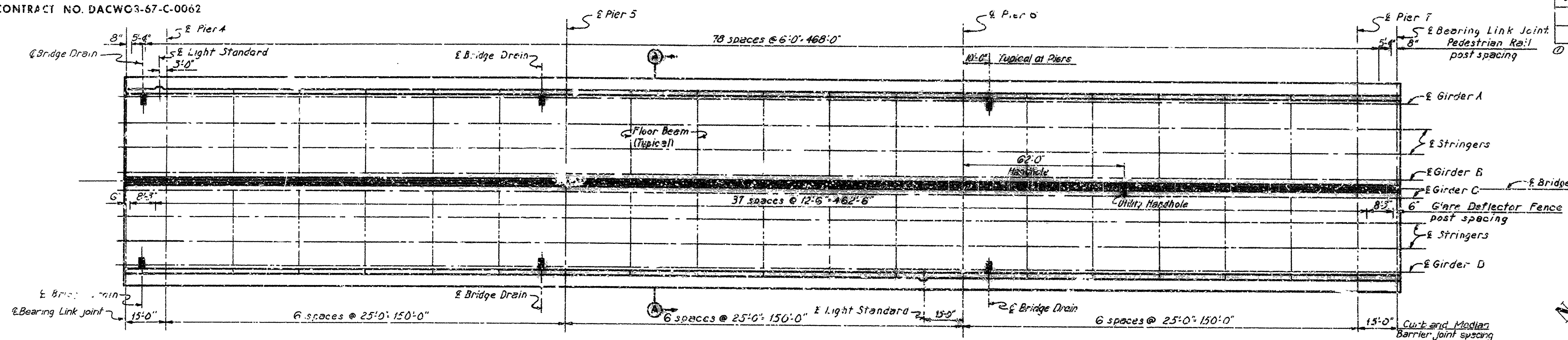




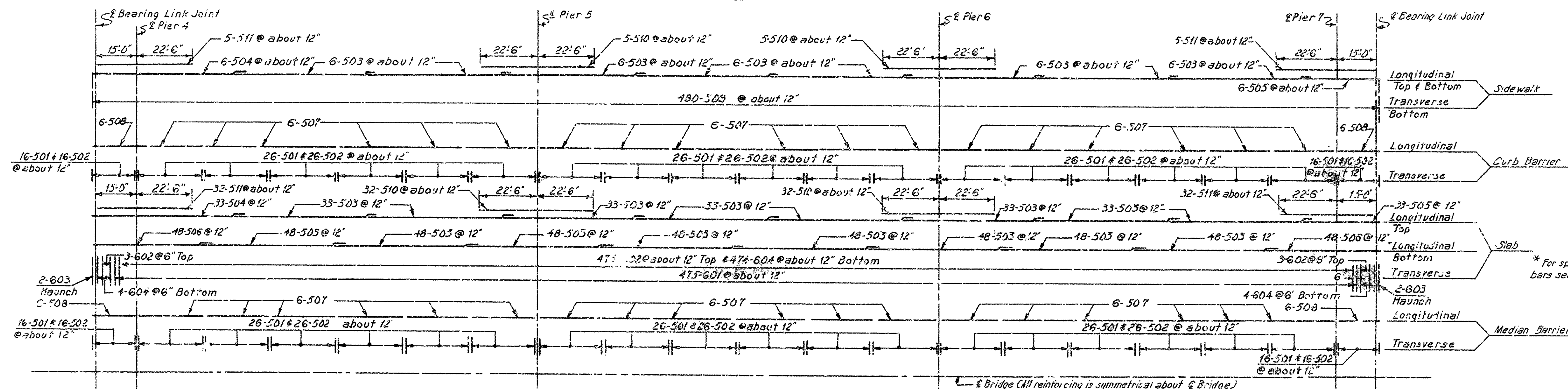


CORPS OF ENGINEERS  
CONTRACT NO. DACWC3-67-C-0062

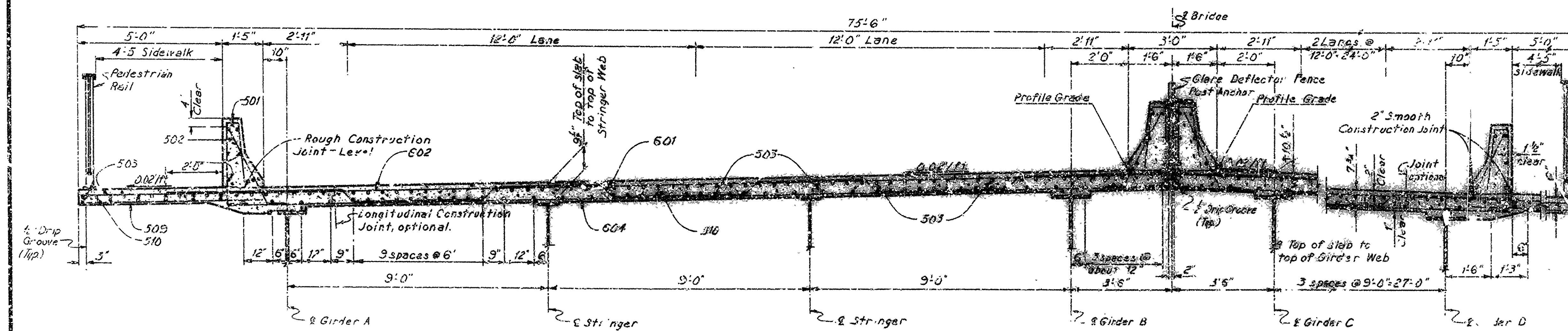
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		53	127
JOB NO. 4584				
DRAWING NO. 53				
DATE 12/1/68				



PLAN  
Scale 1" = 20'-0"



SLAB REINFORCEMENT SCHEMATIC  
Not to Scale



SECTION A-A  
Scale 1" = 8'-0"

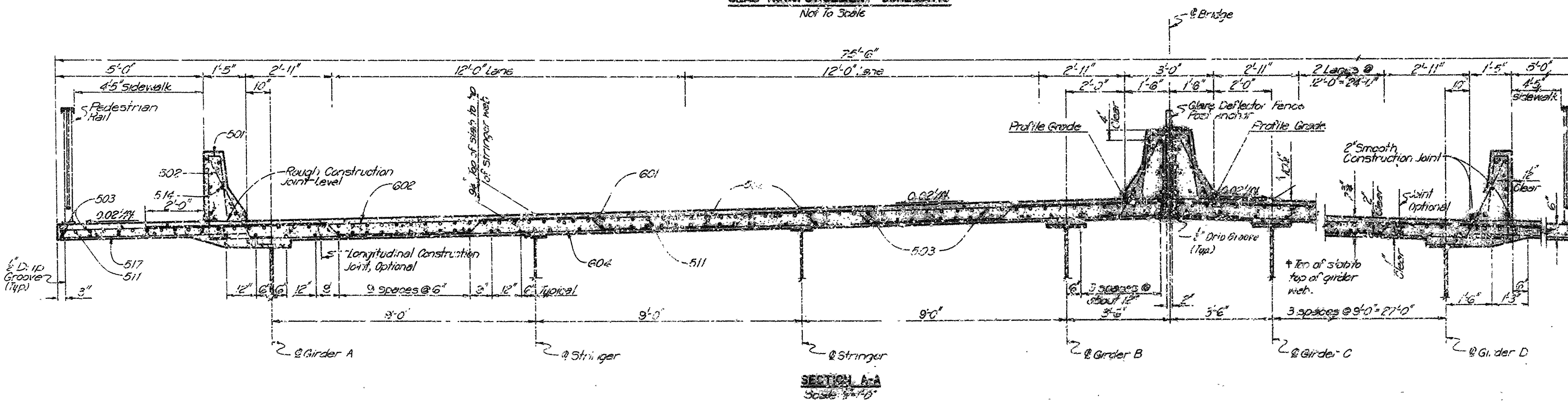
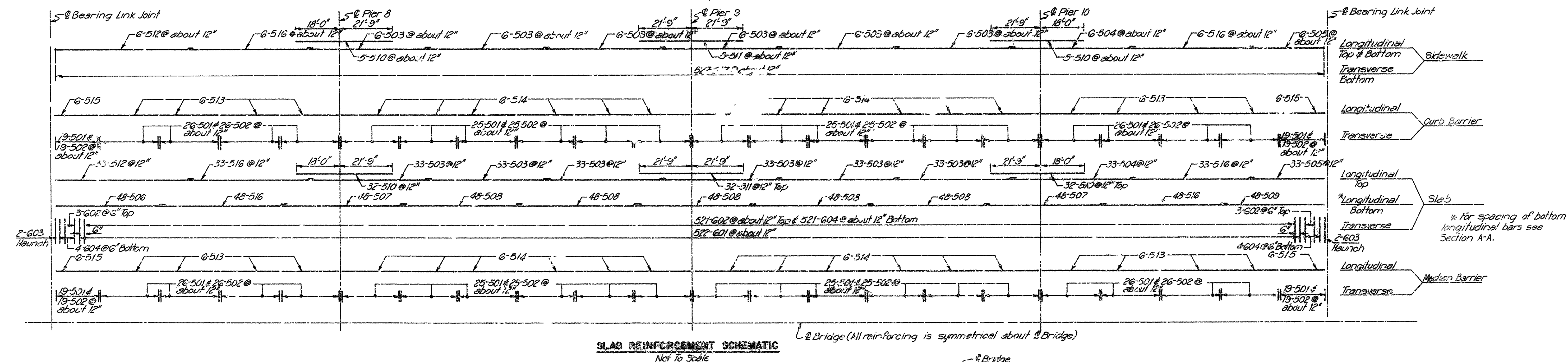
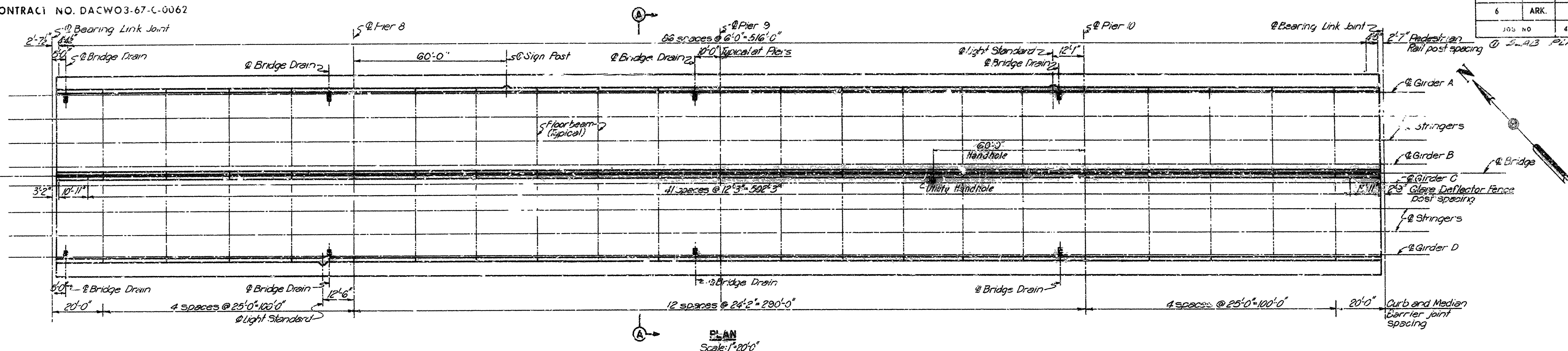
Note:  
For Light Standard and Bridge Drain reinforcing  
see Miscellaneous Slab Details.

ARKANSAS STATE HIGHWAY COMMISSION  
JULIE C. BARNES  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
SLAB PLAN  
UNIT 2  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
DRAWN BY K.S. DATE 12/1/68 CHECKED BY J.T. DATE 12/1/68



CORPS OF ENGINEERS  
CONTRACT NO. DACWO3-67-C-0062

FED. ROAD DIST. NO	STATE	FED. AID PROJECT	SHEET NO	TOTAL SHEETS
6	ARK.			
JOB NO		4584	54	127



Notes:  
For Light Standard and Edge Drain reinforcing  
see Miscellaneous Slab Details.

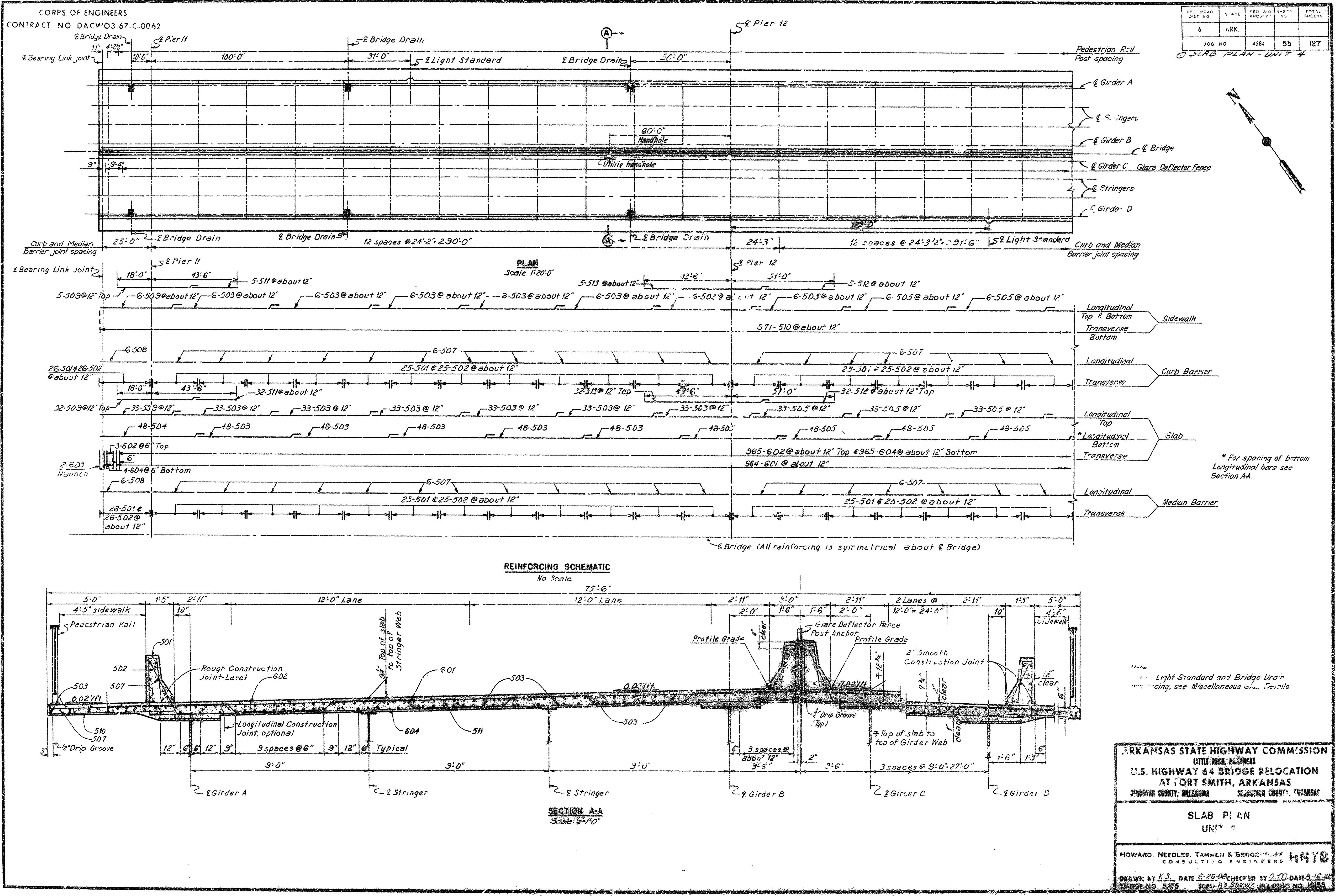
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SOUTHWESTERN SECURITY, INC. SOUTHWESTERN SECURITY, INC.  
SOUTHWESTERN SECURITY, INC. SOUTHWESTERN SECURITY, INC.

SLAB PLAN  
UNIT 3

HOWARD, NEEDLES TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS

DRAWN BY LDL DATE 5-2-78 CHECKED BY Q.M. DATE 6-11-78



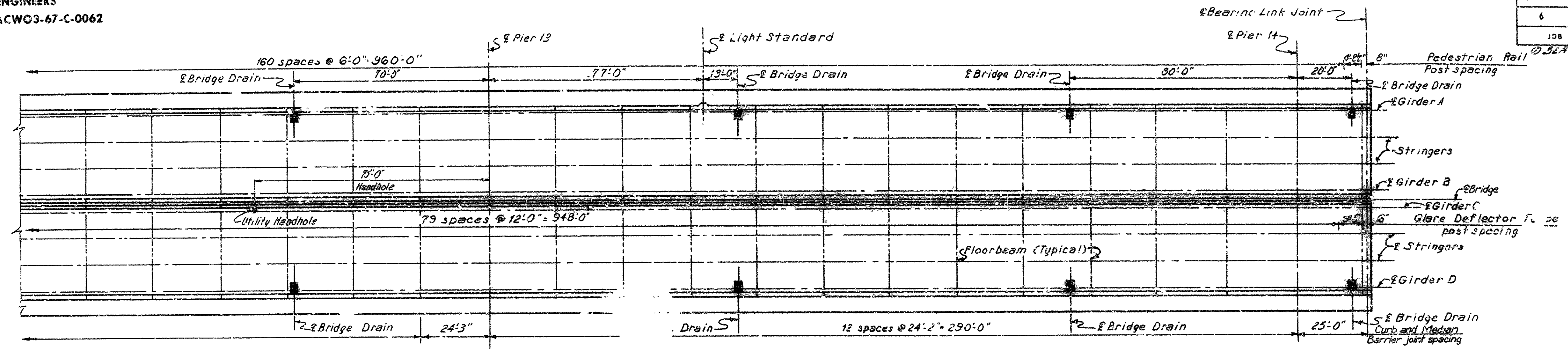




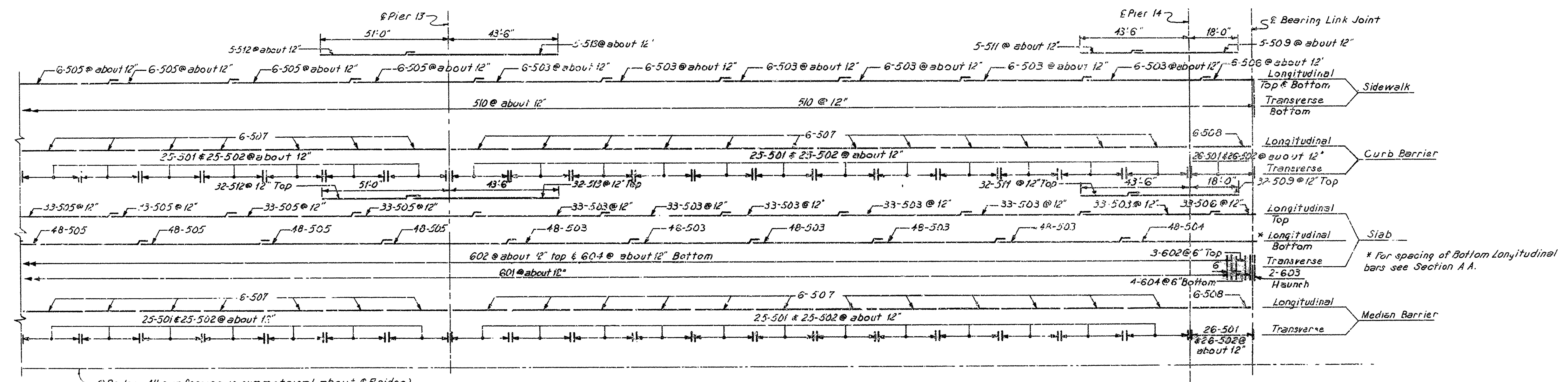
CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

F.D. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		56	127
JOB NO. 4584				

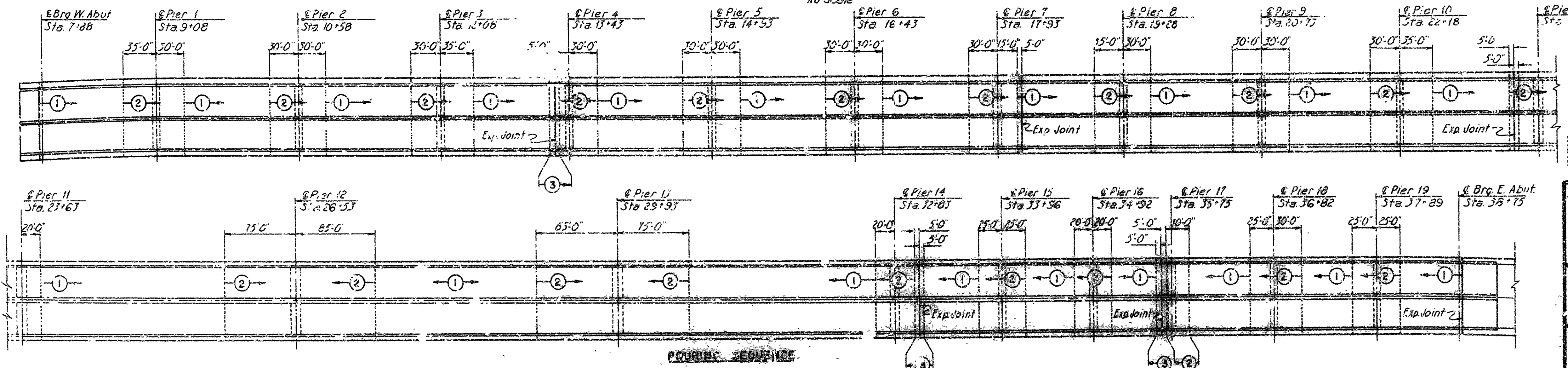
PLAN - A, SEQ. UNIT 4



PLAN  
Scale: 1" = 20'-0"



REINFORCING SCHEMATIC  
No Scale



POURING SEQUENCE

Note:  
For Light Standard and Bridge Drain Reinforcing, see Miscellaneous Slab Details.  
See General Notes - Pouring Sequence  
Indicates the number, direction and starting point of pour.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARKANSAS  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SEDOVIA COUNTY, OKLAHOMA SEDGWICK COUNTY, ARKANSAS

SLAB PLAN UNIT 4  
6 POURING SEQUENCE

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS HNTB

DRAWN BY K.S. DATE 9-4-64 CHECKED BY J.M. DATE 8-16-68  
PROJECT NO. 5275 SCALE As Shown DRAWING NO. 1656







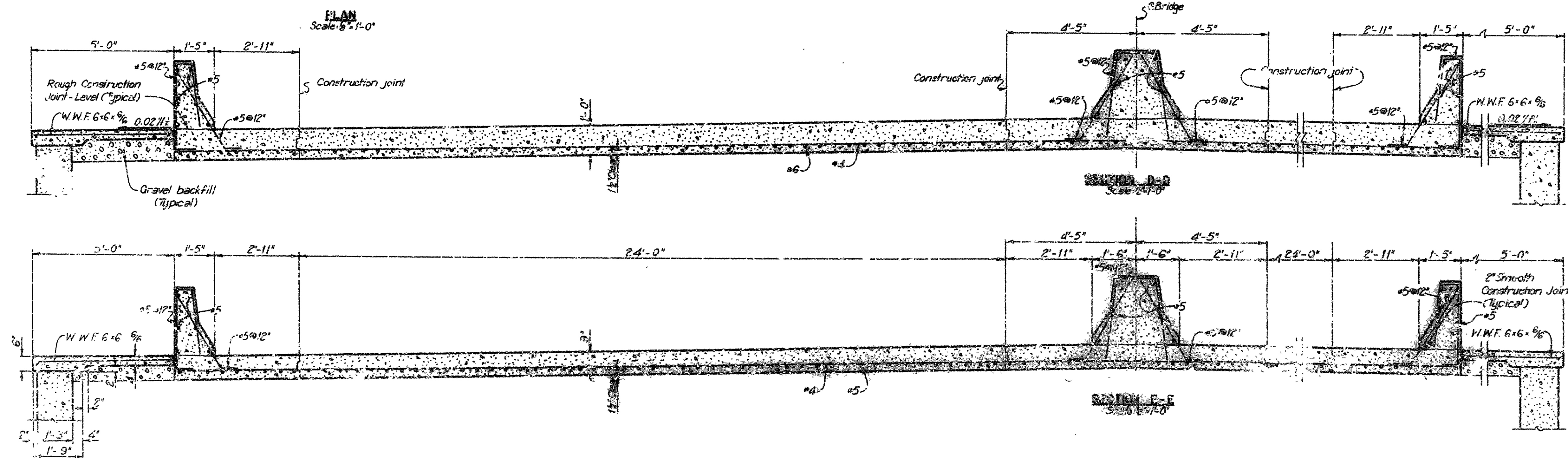
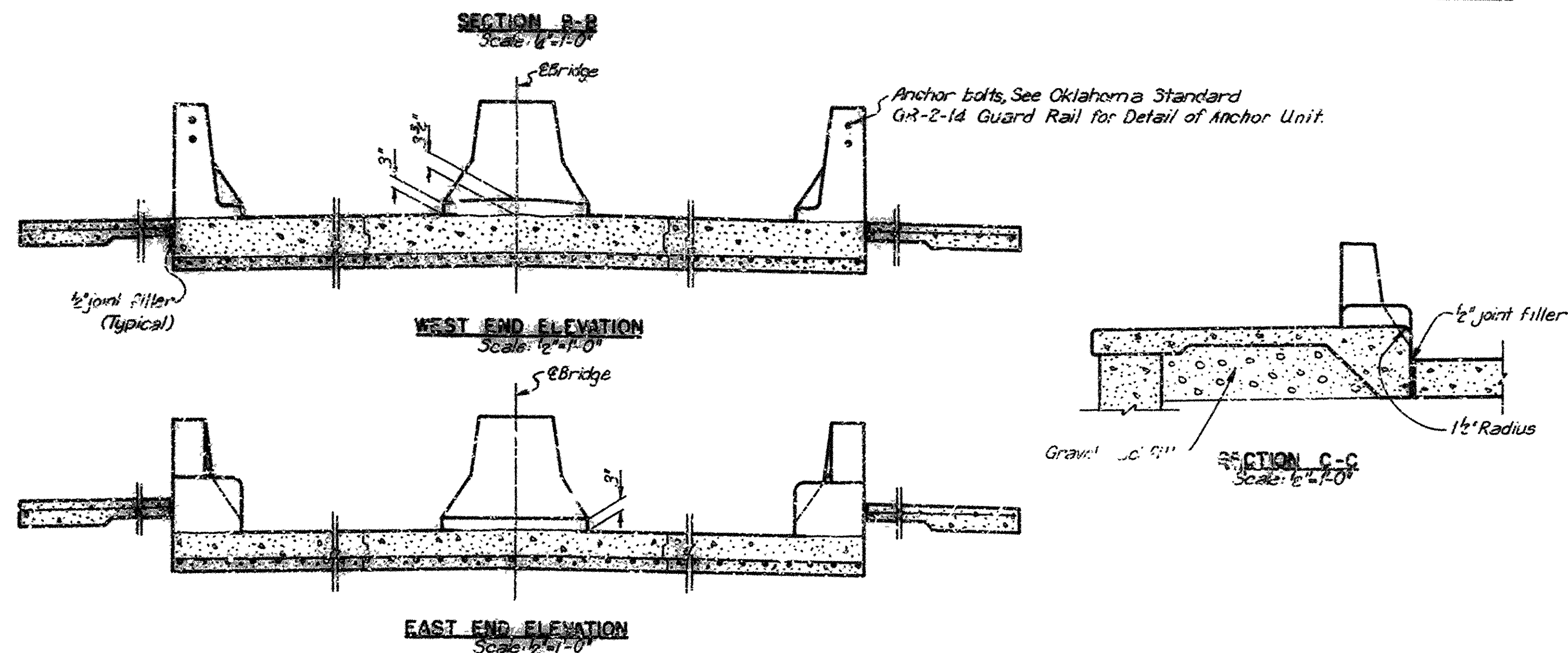
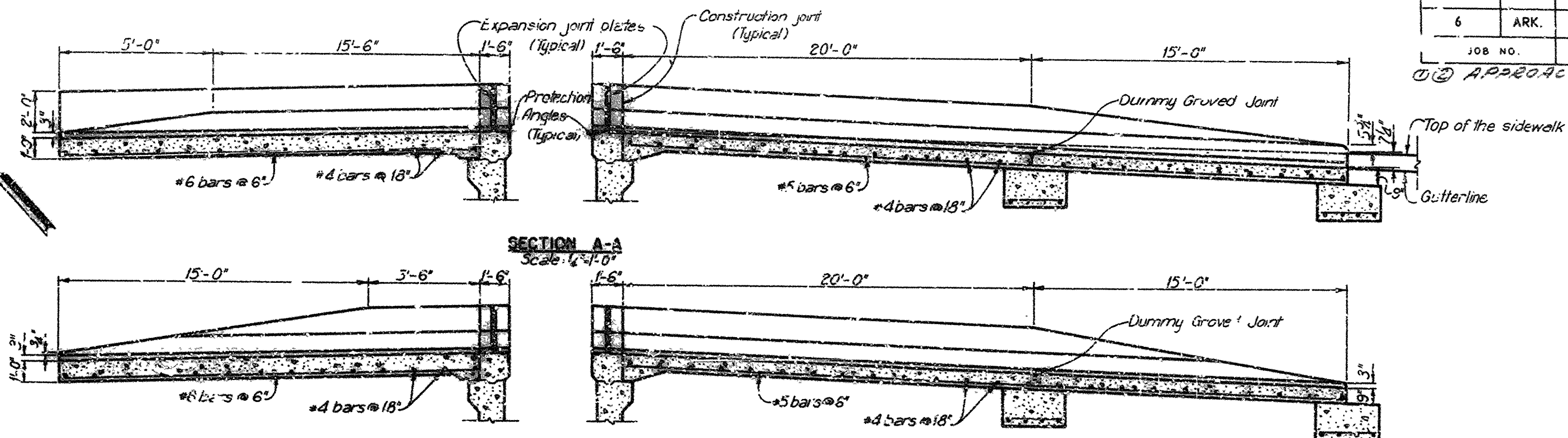
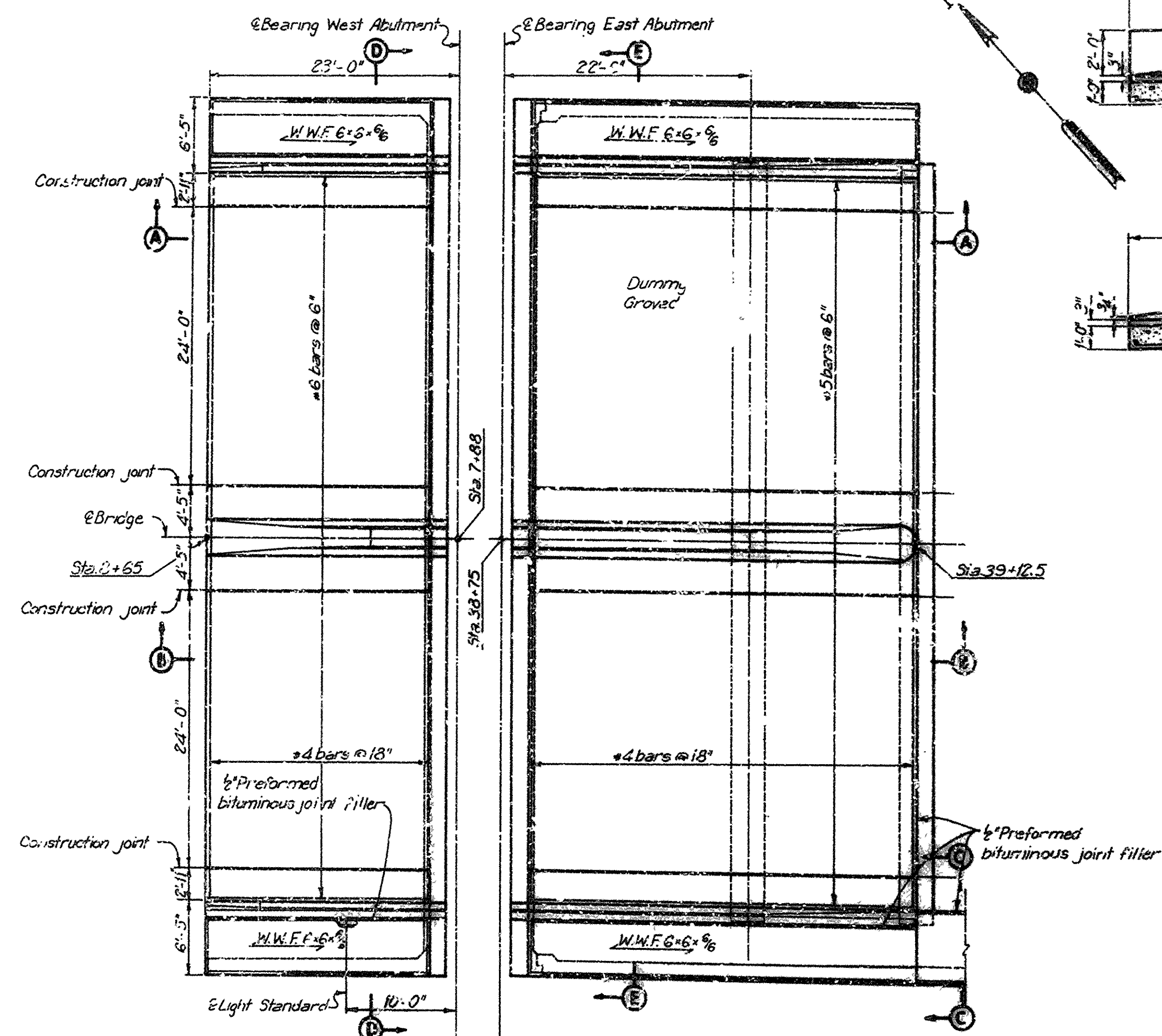








FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		60	127
JOB NO. 4584				
U.S. APPROACH SLAB DETAILS				



Note:  
For additional information and minor details see Oklahoma Standard 1A5D-3 Approach Slab and Arkansas Standard 1898F(Rev.) Approach Slabs and Gullies.  
For median and sidewalk barrier details see Miscellaneous Slab Details.

ARKANSAS STATE HIGHWAY COMMISSION  
U.S. HIGHWAY 64 BRIDGE RELOCATION  
AT FORT SMITH, ARKANSAS  
SOUTH COUNTY, ARKANSAS  
APPROACH SLAB DETAILS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
HNTB

DRAWN BY *277* DATE *3-24-68* CHECKED BY *112* DATE *3-25-68*  
BRIDGE NO. 5275 SCALE 1/8" = 1'-0" DRAWING NO. 5275



CORPS OF ENGINEERS  
CONTRACT NO. DACW03-67-C-0062

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
UNIT 1							
501	2240	5'-10"	125	5"	2'-8"	9"	2'-0"
502	2240	3'-6"	108	9"	2'-5"	2'-9"	
503	1556	52'-3"	Str.				
504	96	45'-0"	Str.				
505	78	3'-6"	Str.				
506	78	60'-3"	Str.				
507	96	45'-6"	Str.				
508	480	24'-6"	Str.				
509	24	19'-5"	Str.				
510	24	17'-9"	Str.				
511	1074	7'-3"	Str.				
512	148	40'-5"	Str.				
513	74	45'-0"	Str.				
601	1066	36'-4"	128				
602	1076	37'-3"	Str.				
603	8	26'-6"	Str.				
604	1078	32'-3"	Str.				
LIGHT & SIGN STANDARD & BRIDGE DRAINS							
501	6	5'-8"	115	1'-0"	1'-0"	1'-4"	
502		5'-4"	127	1'-0"	2'-8"	1'-10"	
503	4	8'-0"	Str.				
504	4	7'-3"	Str.				
505	4	5'-3"	Str.				
UNIT 2							
501	2000	5'-10"	125	5"	2'-8"	9"	2'-0"
502	2000	2'-6"	108	9"	2'-5"	2'-9"	
503	1392	52'-3"	Str.				
504	78	54'-5"	Str.				
505	78	23'-9"	Str.				
506	132	42'-3"	Str.				
507	432	24'-6"	Str.				
508	48	15'-0"	Str.				
509	960	7'-3"	Str.				
510	148	45'-0"	Str.				
511	148	37'-6"	Str.				
601	950	36'-4"	128				
602	960	37'-3"	Str.				
603	8	26'-6"	Str.				
604	964	32'-3"	Str.				
LIGHT STANDARD & BRIDGE DRAINS							
501	6	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	4	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	4	8'-0"	Str.				
504	4	7'-3"	Str.				
505	4	5'-3"	Str.				
UNIT 3							
501	2184	5'-10"	125	5"	2'-8"	9"	2'-0"
502	2184	3'-6"	108	9"	2'-5"	2'-9"	
503	540	51'-0"	Str.				
504	90	51'-9"	Str.				
505	90	30'-6"	Str.				
506	96	45'-0"	Str.				
507	192	51'-3"	Str.				
508	480	50'-6"	Str.				
509	36	43'-0"	Str.				
510	148	39'-9"	Str.				
511	74	43'-8"	Str.				
512	90	56'-9"	Str.				
513	192	24'-6"	Str.				
514	288	23'-9"	Str.				
515	48	17'-9"	Str.				
516	372	52'-3"	Str.				
517	1054	7'-3"	Str.				
601	1044	36'-4"	128				
602	1054	37'-3"	Str.				
603	8	26'-6"	Str.				
604	1058	32'-3"	Str.				
SIGN & LIGHT STANDARD & BRIDGE DRAINS							
501	9	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	6	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	6	8'-0"	Str.				
504	32	7'-3"	Str.				
505	32	5'-9"	Str.				
UNIT 4							
501	4008	5'-10"	125	5"	2'-8"	9"	2'-0"
502	4008	3'-6"	108	9"	2'-5"	2'-9"	
503	1896	50'-0"	Str.				
504	192	51'-9"	Str.				
505	1314	50'-9"	Str.				
506	78	15'-9"	Str.				
507	912	23'-9"	Str.				
508	40	24'-9"	Str.				
509	228	39'-6"	Str.				
510	1942	7'-3"	Str.				
511	148	24'-3"	Str.				
512	3	34'-6"	Str.				
513	148	60'-0"	Str.				
601	502	36'-4"	128				
602	512	37'-3"	Str.				
603	8	26'-6"	Str.				
604	516	32'-3"	Str.				
LIGHT STANDARD & BRIDGE DRAINS							
501	3	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	2	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	2	8'-0"	Str.				
504	16	7'-3"	Str.				
505	16	5'-9"	Str.				

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			
				A	B	C	D
UNIT 3							
501	2184	5'-10"	125	0'-5"	2'-8"	0'-9"	2'-0"
502	2184	3'-6"	108	0'-9"	2'-3"	2'-9"	
503	540	51'-0"	Str.				
504	90	51'-9"	Str.				
505	90	30'-6"	Str.				
506	96	45'-0"	Str.				
507	192	51'-3"	Str.				
508	480	50'-6"	Str.				
509	36	43'-0"	Str.				
510	148	39'-9"	Str.				
511	74	43'-8"	Str.				
512	90	56'-9"	Str.				
513	192	24'-6"	Str.				
514	288	23'-9"	Str.				
515	48	17'-9"	Str.				
516	372	52'-3"	Str.				
517	1054	7'-3"	Str.				
601	1044	36'-4"	128				
602	1054	37'-3"	Str.				
603	8	26'-6"	Str.				
604	1058	32'-3"	Str.				
SIGN & LIGHT STANDARD & BRIDGE DRAINS							
501	9	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	6	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	6	8'-0"	Str.				
504	32	7'-5"	Str.				
505	32	5'-9"	Str.				
UNIT 4							
501	4008	5'-10"	125	5"	2'-8"	9"	2'-0"
502	4008	3'-6"	108	9"	2'-5"	2'-9"	
503	1896	50'-0"	Str.				
504	192	51'-6"	Str.				
505	1314	50'-9"	Str.				
506	78	15'-9"	Str.				
507	912	23'-9"	Str.				
508	40	24'-9"	Str.				
509	228	39'-6"	Str.				
510	1942	7'-3"	Str.				
511	148	24'-3"	Str.				
512	3	34'-6"	Str.				
513	148	60'-0"	Str.				
601	1926	36'-4"	138				
602	1942	37'-3"	Str.				
603	8	26'-6"	Str.				
604	1946	32'-3"	Str.				
LIGHT STANDARD & BRIDGE DRAINS							
501	9	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	6	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	6	8'-0"	Str.				
504	78	7'-3"	Str.				
505	56	5'-9"	Str.				
UNIT 5							
501	1064	5'-10"	125	5"	2'-8"	9"	2'-0"
502	1064	3'-6"	108	9"	2'-5"	2'-9"	
503	24	28'-0"	Str.				
504	240	23'-6"	Str.				
505	72	21'-0"	Str.				
506	24	20'-6"	Str.				
507	174	42'-6"	Str.				
508	618	50'-3"	Str.				
509	78	33'-9"	Str.				
510	78	38'-3"	Str.				
511	74	25'-6"	Str.				
512	74	27'-9"	Str.				
513	512	7'-3"	Str.				
601	502	36'-4"	128				
602	512	37'-3"	Str.				
603	8	26'-6"	Str.				
604	516	32'-3"	Str.				
LIGHT STANDARD & BRIDGE DRAINS							
501	3	5'-8"	115	1'-0"	1'-0"	1'-4"	
502	2	5'-4"	127	1'-0"	2'-8"	1'-10"	
503	2	8'-0"	Str.				
504	16	7'-3"	Str.				
505	16	5'-9"	Str.				
UNIT 6							
501	1316	5'-10"	125	5"	2'-8"	9"	2'-0"
502	1316	3'-6"	108	9"	2'-5"	2'-9"	
503	24	28'-0"	Str.				
504	240	23'-6"	Str.				
505	72	21'-0"	Str.				
506	24	20'-6"	Str.				
507	174	42'-6"	Str.				
508	618	50'-3"	Str.				
509	78	33'-9"	Str.				
510	78	38'-3"	Str.				
511	74	25'-6"	Str.				
512	74	27'-9"	Str.				
513	512	7'-3"	Str.				
601	502	36'-4"	128				
602	512	37'-3"	Str.				
603	8	26'-6"	Str.				
604	516	32'-3"	Str.				