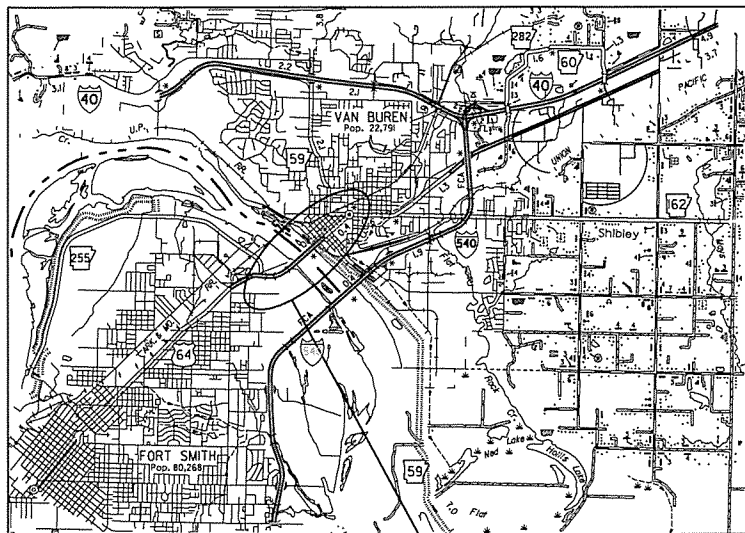


DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				4	ARK.			
						040672	1	22

2 ARK. RIVER BRIDGE SUPPORT ASSEMBLY REPAIR (HWY.64) (FORT SMITH) (S)



PROJECT LOCATION

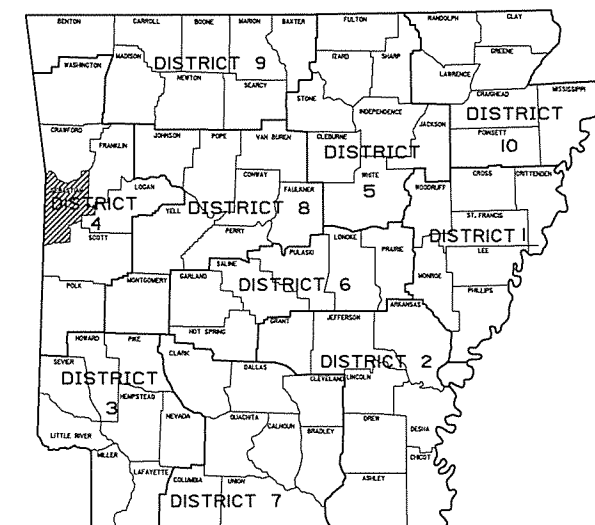
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

ARK. RIVER BRIDGE SUPPORT ASSEMBLY REPAIR (HWY. 64) (FORT SMITH) (S)

SEBASTIAN COUNTY
ROUTE 64 SECTION 1

JOB 040672

FED. AID PROJ. EBS-9150(27)

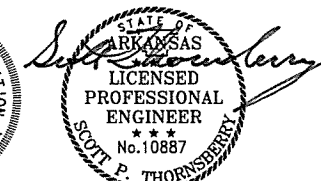
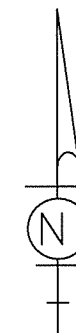
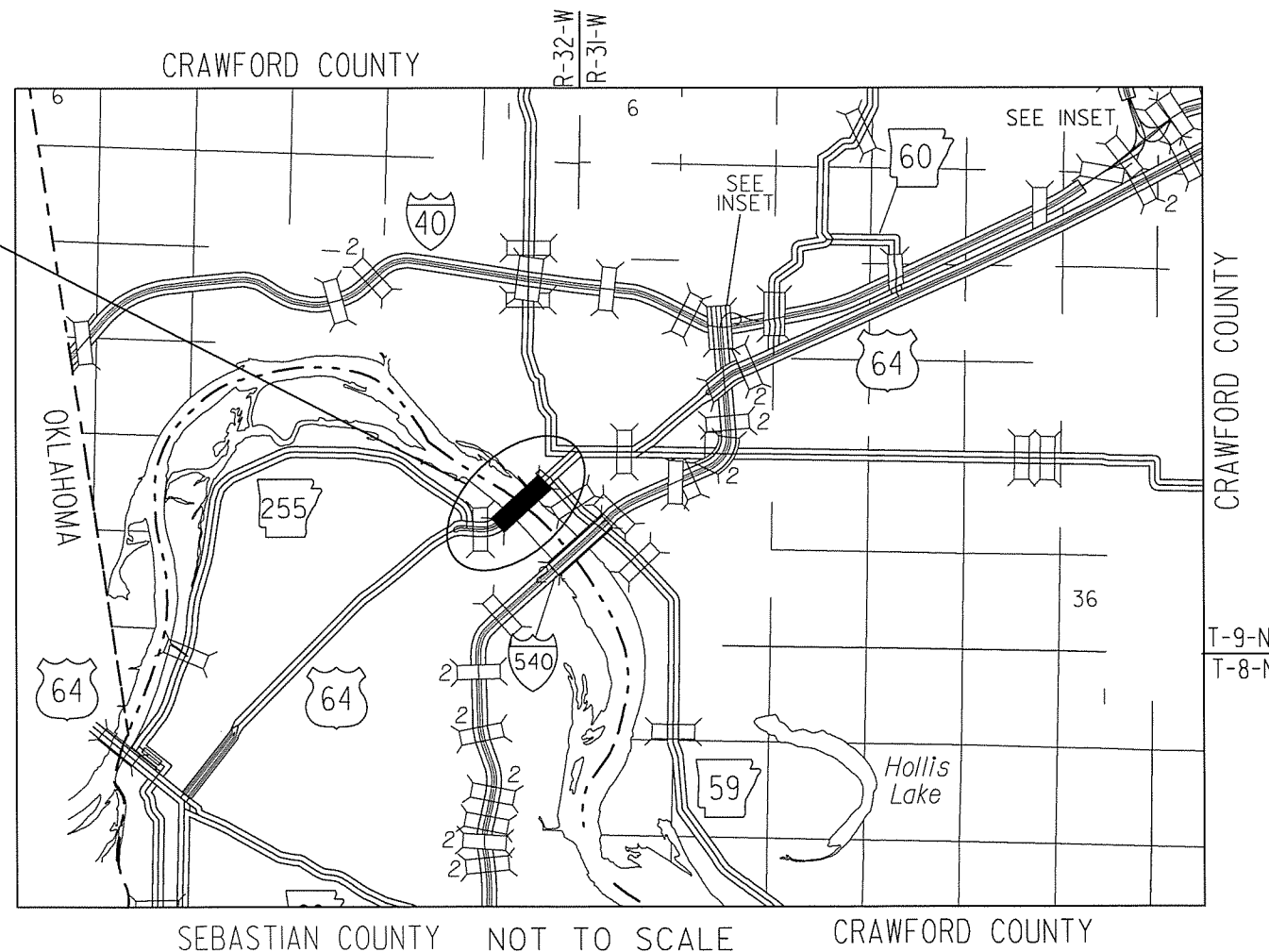


ARK. HWY. DIST. NO. 4

PROJECT LOCATION
BRIDGE NO. 05176

BRIDGE DATA

CONT. PL GIRDER UNITS: 326', 620', 737', 620', 297'
BRIDGE NO. 05176
3,043'-2 3/4" TOTAL LENGTH
ROUTE HWY. 64 SECTION 1
L.M. 5.16
SEBASTIAN COUNTY



3-9-2015

JOB SITE	
LATITUDE	N 35° 25' 44"
LONGITUDE	W 94° 21' 30"

P.E. JOB 040672
NON-PART.

william.greenup 3/9/2015 10:53:17 AM
 WORKSPACE: William.Greenup
 c:\pwworking\local\Baker_projects\william.greenup\0328572\040672_01.hwy64_TL_01.dgn
 REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				4	ARK.			
						JOB NO. 040672	2	22

2 INDEX, GOVERNING SPECIFICATIONS, & GENERAL NOTES

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG. NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
3	MAINTENANCE OF TRAFFIC			
4	BRIDGE QUANTITIES, SUMMARY OF QUANTITIES, AND REVISIONS	05176	56906	
5	EXISTING BRIDGE LAYOUT (SHEET 1 OF 3) FOR INFORMATION ONLY	05176	56907	
6	EXISTING BRIDGE LAYOUT (SHEET 2 OF 3) FOR INFORMATION ONLY	05176	56908	
7	EXISTING BRIDGE LAYOUT (SHEET 3 OF 3) FOR INFORMATION ONLY	05176	56909	
8	DETAILS OF EXISTING EXPANSION DEVICES FOR INFORMATION ONLY	05176	56910	
9	CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (297' UNIT)	05176	56911	
10	CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (297' UNIT)	05176	56912	
11	CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (297' UNIT)	05176	56913	
12	CATCHER SUPPORT SYSTEM DETAILS, MEDIAN GIRDER (297' UNIT)	05176	56914	
13	CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (620' UNIT)	05176	56915	
14	CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (620' UNIT)	05176	56916	
15	CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (620' UNIT)	05176	56917	
16	CATCHER SUPPORT SYSTEM DETAILS, MEDIAN GIRDER (620' UNIT)	05176	56918	
17	PIN AND HANGER REPLACEMENT DETAILS	05176	56919	
18	GENERAL NOTES	05176	56920	
19	FINGER JOINT REPAIR DETAILS	05176	56921	
20	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12/15/11
21	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	09/12/13
22	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10/15/09

GENERAL NOTES

The purpose of this project is to remove and replace existing pins and hanger bars at the existing link joints. The work also includes the installation of redundant catcher systems at each pin and hanger location. Four hanger assemblies are adjacent to each of the following piers: pier 3, pier 7, pier 10, and pier 14. Work also includes cleaning and painting existing structural steel areas near the existing link joints and the new structural steel, as well as the removal of existing steel fill plates on the finger expansion joint located at Sta. 59+04.00 (eastbound lanes only).

Utilities shall be located by the Contractor.

The contractor shall submit to the Engineer a proposed method of access to the bridge and receive approval before beginning the work. The proposed method shall include erosion control details. Should the contractor elect to use a method of access that requires traffic control devices in addition to those shown in Maintenance of Traffic Plans, those devices shall be furnished at the Contractor's expense. No additional payment will be made for traffic control devices.

Any property that is disturbed during construction shall be restored to its original condition by the Contractor. Such property will include, but not be limited to, pavement, shoulder, embankments, grass, fences, field roads, existing riprap, right-of-way markers, and bridge components. No direct payment will be made for this restoration; payment shall be subsidiary to other quantity items.

It is anticipated that the work can be accomplished entirely from the existing rights of way. Acquisition of extra work space from private property owners required as a result of the method operations, will be documented on forms provided by the contractor and contain releases for restoration work or work agreed to by the Contractor. Copies of the completed forms shall be provided to the Engineer.

Work done on Highway right-of-way, including stockpiling materials and construction of access roads or staging areas, in order to complete the project must be approved by the Engineer. Damages caused by the Contractor must be corrected to a condition equal to or better than the conditions which existed prior to the work taking place.

Work involved in restoring private property and the right of way must meet the approval of the Engineer.

All land monuments located within the construction area shall be protected in accordance with Section 107.12 of the Standard Specifications.

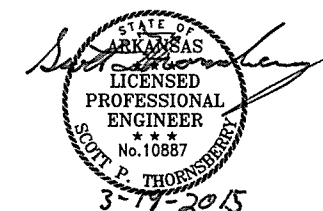
CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (7th Edition) with current Interim specifications.

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 040672	ASTM A490 ALLOY STEEL HIGH-STRENGTH BOLTS
JOB 040672	BIDDING REQUIREMENTS AND CONDITIONS
JOB 040672	CATCHER SUPPORT SYSTEM
JOB 040672	DETAILS FOR RIVER TRAFFIC SAFETY
JOB 040672	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 040672	FINGER JOINT REPAIR
JOB 040672	MAINTENANCE OF TRAFFIC
JOB 040672	NESTING SITES OF MIGRATORY BIRDS
JOB 040672	PARTNERING REQUIREMENTS
JOB 040672	PIN AND HANGER REPLACEMENT
JOB 040672	TRUCK-MOUNTED ATTENUATOR
JOB 040672	UTILITY ADJUSTMENTS
JOB 040672	VALUE ENGINEERING
JOB 040672	ZEBRA MUSSEL CONTAINMENT

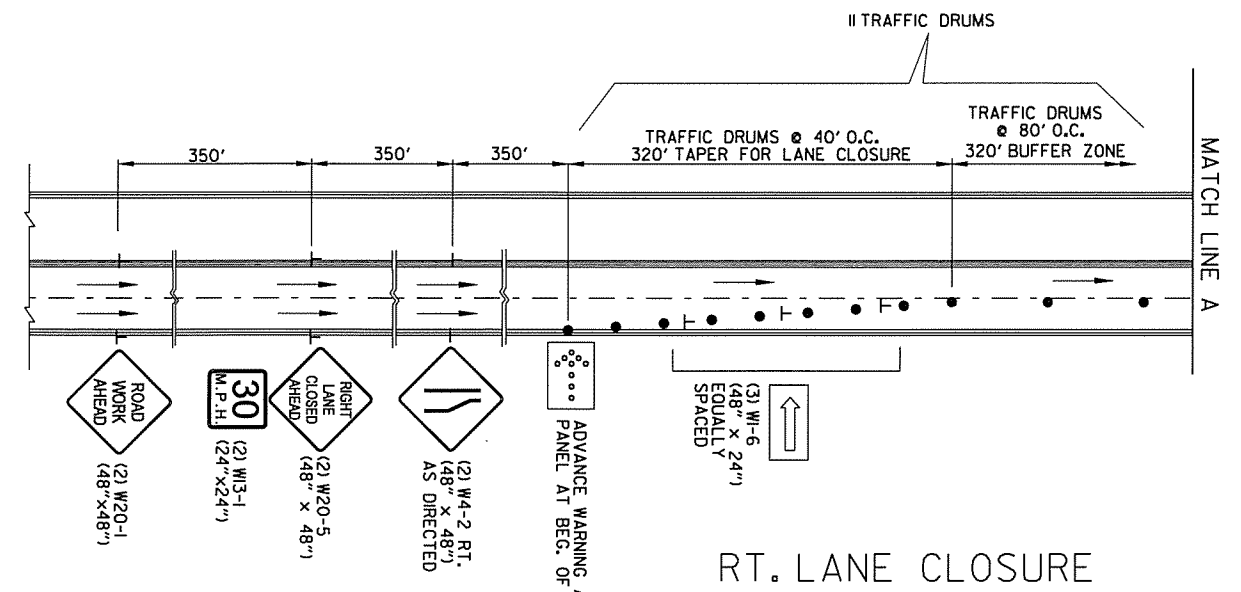


INDEX OF SHEETS,
GOVERNING SPECIFICATIONS,
& GENERAL NOTES

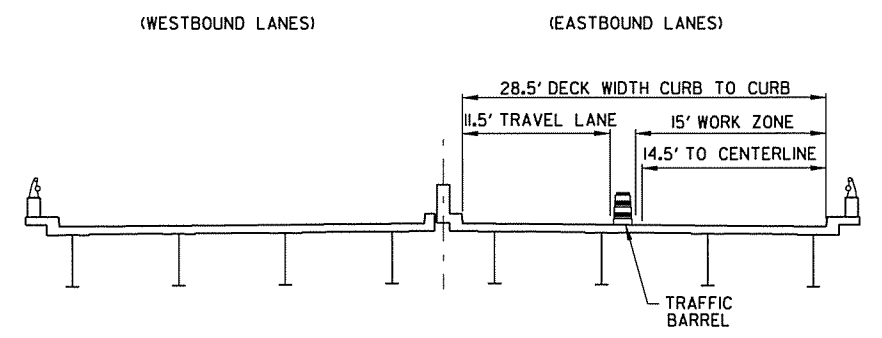
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				4	ARK.			
							JOB NO.	040672
							SHEET NO.	3
							TOTAL SHEETS	22

② MAINTENANCE OF TRAFFIC

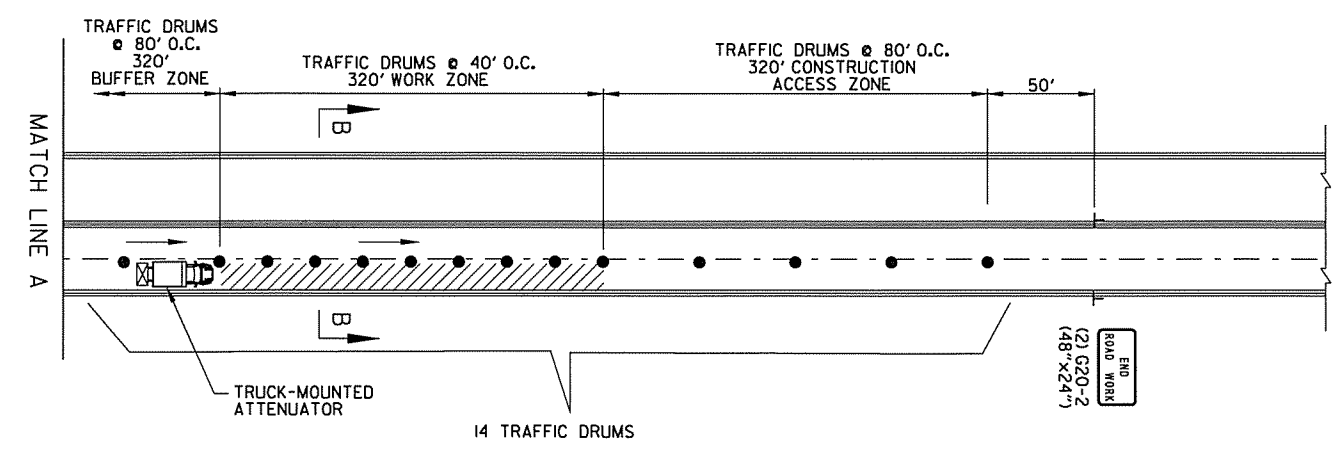
THIS MAINTENANCE OF TRAFFIC PLAN IS INTENDED TO PROVIDE LANE CLOSURES TO FACILITATE REMOVAL OF STEEL FILL PLATES ON FINGER EXPANSION JOINT LOCATED AT STA. 59+04.00 (EASTBOUND LANES ONLY). SEE SHEET NO. 19 FOR ADDITIONAL DETAILS.



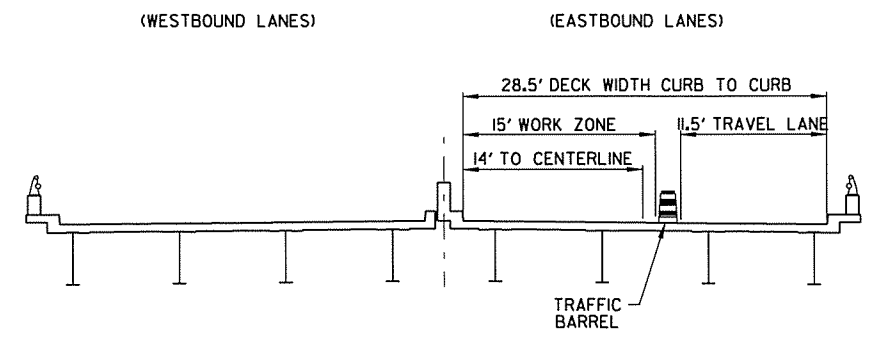
RT. LANE CLOSURE



SECTION B-B

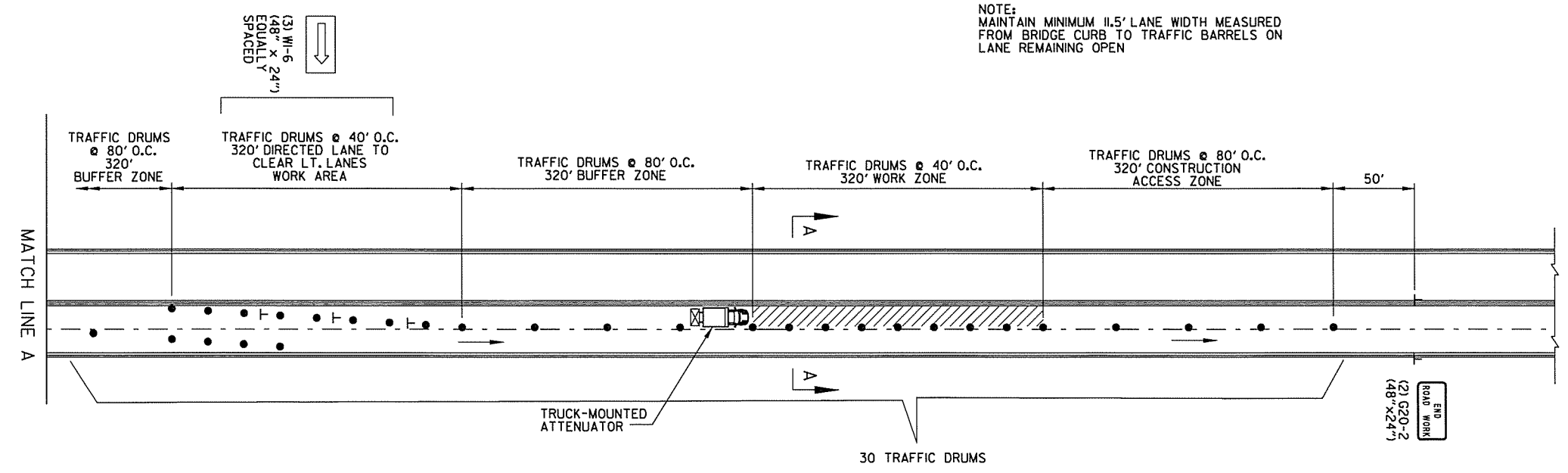


DIVERSION FOR RT. LANE WORK ZONE



SECTION A-A

NOTE: MAINTAIN MINIMUM 11.5' LANE WIDTH MEASURED FROM BRIDGE CURB TO TRAFFIC BARRELS ON LANE REMAINING OPEN



DIVERSION FOR LT. LANE WORK ZONE

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 13640
 BYRON O. LAWRENCE
 2-27-15

MAINTENANCE OF TRAFFIC

William Greenup 2/27/2015 9:20:53 AM
 WORKSPACE: William Greenup
 c:\dww\bi-local\baker_projects\William Greenup\0328572_8040672_06_Hwy64-MT_01.dgn
 REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-13-15				4	ARK.			
							JOB NO.	040672
								4
								22

05176 - QUANT. & REVISIONS - 56906

SCHEDULE OF BRIDGE QUANTITIES FOR JOB NO. 040672

BRIDGE NUMBER	CODE NUMBER	UNIT OF STRUCTURE	ITEM NO.	807	807	820	SP JOB 040672	SP JOB 040672	SP JOB 040672
			ITEM	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)	PAINTING STRUCTURAL STEEL	CLEANING AND PAINTING EXISTING STRUCTURAL STEEL (TYPE II)	CATCHER SUPPORT SYSTEM	FINGER JOINT REPAIR	PIN AND HANGER REPLACEMENT
			UNIT	LB.	TON	TON	LUMP SUM	LUMP SUM	LUMP SUM
05176	X071	16 PIN & HANGER ASSEMBLIES		79,100	39.6	8.1			
TOTALS FOR JOB NO. 040672				79,100	39.6	8.1			

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
601	MOBILIZATION	1.00	LUMP SUM
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
604	ADVANCE WARNING ARROW PANEL	2	DAY
SS & 604	SIGNS	168	SQ. FT.
SS & 604	TRAFFIC DRUMS	41	EACH
SP	TRUCK-MOUNTED ATTENUATOR	2	DAY
STRUCTURES OVER 20' SPAN			
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50)	79100	LB.
807	PAINTING STRUCTURAL STEEL	39.6	TON
820	CLEANING AND PAINTING EXISTING STRUCTURAL STEEL (TYPE II)	8.1	TON
SP	CATCHER SUPPORT SYSTEM	1.00	LUMP SUM
SP	FINGER JOINT REPAIR	1.00	LUMP SUM
SP	PIN AND HANGER REPLACEMENT	1.00	LUMP SUM

REVISIONS

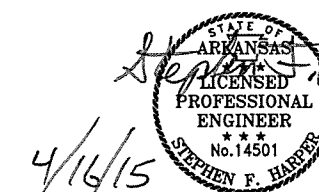
DATE	REVISIONS	SHEET NUMBER
4-13-15	REVISED SPECIAL PROVISIONS: "MAINTENANCE OF TRAFFIC", "CATCHER SUPPORT SYSTEM", AND "PIN AND HANGER REPLACEMENT."	4

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		ADVANCE WARNING ARROW PANEL	TRAFFIC DRUMS	TRUCK-MOUNTED ATTENUATOR
						NO.	SQ. FT.			
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	32.0			
G20-2	END ROAD WORK	48"x24"	2	2	2	2	16.0			
W13-1	SPEED LIMIT (ADVISORY)	24"x24"	2	2	2	2	8.0			
W20-5	RIGHT LANE CLOSED AHEAD	48"x48"	2	2	2	2	32.0			
W4-2 RT	LANE CLOSED RIGHT	48"x48"	2	2	2	2	32.0			
W1-6	LARGE ARROW	48"x24"	3	6	6	6	48.0			
	ADVANCE WARNING ARROW PANEL		1	1	1			2		
	TRAFFIC DRUMS		25	41	41				41	2
	TRUCK-MOUNTED ATTENUATOR									2
TOTALS:							168.0	2	41	2

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

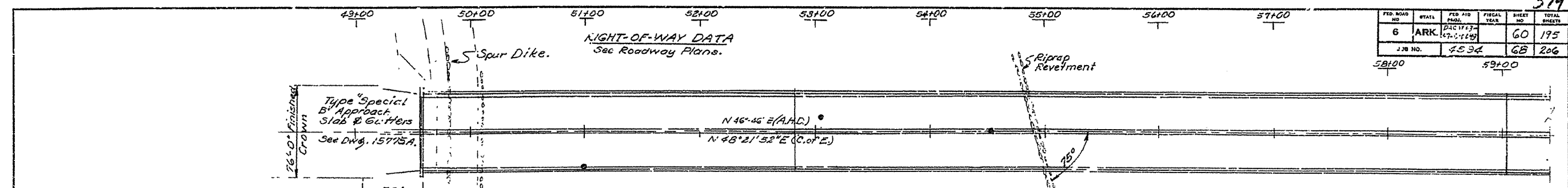
BRIDGE QUANTITIES, SUMMARY OF QUANTITIES AND REVISIONS
 ARK. RIVER BRIDGE SUPPORT ASSEMBLY
 REPAIR (HWY. 64) (FORT SMITH) (S)
 SEBASTIAN COUNTY
 ROUTE 64 SECTION 1
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARKANSAS



4/16/15

BRIDGE ENGINEER
 PRINT DATE: 4/16/2015

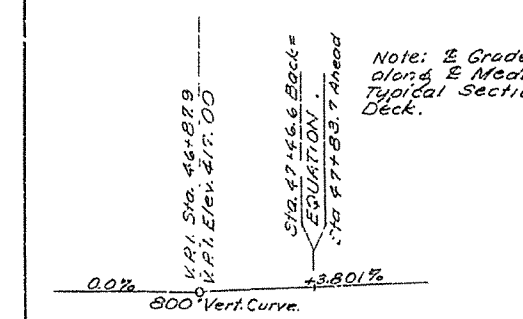
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 CHECKED BY: SFH DATE: 2/15
 DESIGNED BY: WEG DATE: 11/14 SCALE: No Scale
 BRIDGE NO. 05176 DRAWING NO. 56906



MINIMUM DEPTH OF EXCAVATION INTO SHALE

PIER NUMBER	MINIMUM DEPTH
1, 2, 3, 4, 10, 11, 12, 13, 14	3'
5, 6, 7, 8 & 9	7'

Note: Plan Quantities for Rock Excavation were calculated using the following depths of shale:
 Piers 1, 2, 3, 4, 10, 11, 12, 13 & 14 - 5' Min.
 Piers 5, 6, 7, 8 & 9 - 3' Min.



GENERAL NOTES

All concrete to be poured in the dry. Exposed corners to be chamfered 3/4" unless otherwise noted.

In general all construction joints in bents and piers shall be horizontal and shall be provided with keys not less than 1 1/2" high covering the middle third of both dimensions.

The borings, profile and water elevations shown on the plans were obtained for use only by the Department in the preparation of structural designs, and the Engineer hereby cautioned that the Department assumes no responsibility for the accuracy of these data. Claims for additional compensation due to variations between conditions encountered in construction and as indicated by the plans will not be allowed.

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

See table above for minimum depth of excavation into shale for each pier.

All piling shall be driven with an approved air, steam, or diesel hammer to the capacity shown.

Piles in End Bent No. 1 shall be 12RPS3 and shall be driven (after abandonment to subgrade is in place) to a minimum capacity of 70 tons per pile and to the material designated as shale on the boring logs. Lengths of pile shown are for estimating quantities only. Order lengths shown; cut-off; or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

Piles in Piers 15 through 25, abutment no. 2 and Retaining Wall sections shall be 16" octagonal precast concrete or 16" concrete filled metal shells and shall be driven to a minimum bearing capacity of 4 tons per pile. Lengths of piling shown are for estimating quantities only. Actual lengths to be determined in the field. Drive one 30" test pile in Piers 15 and 16 and Section "B, 9," of the retaining wall. These test piles shall be test loaded and paid for according to the Standard Specifications.

Any damage to bank stabilization works, rev. mant or the levee shall be repaired by the Contractor at his own expense to the satisfaction of the Corps of Engineers.

BENCH MARK:
 THVR-19
 24" R.I. Sta. 54+98
 Elev. 400.94.

① - 2 1/2' Med Firm Brown Sand
 ② - 20'-26' Brown Sand & Large Gravel (Firm)
 ③ - 26'-44 1/2' Coarse Gray Sand & Gravel Med Comp Wet
 ④ - 44'-47' Hard Blue Shale

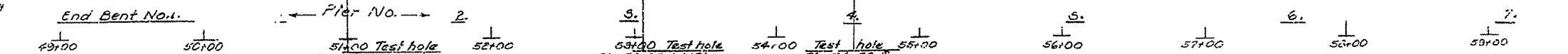
① - 0-9' Med Firm Brown Sandy Clay (Most Sand)
 ② - 9'-12 1/2' Fine Brown Sandy Clay f Large Gravel Firm
 ③ - 12 1/2'-41 1/2' Firm Coarse Brown Sand f Small Gravel (wet)
 ④ - 41 1/2'-45' Hard Blue Shale

① - 0-4' Soft Fine Brown Sand
 ② - 4'-16' Med Firm Fine Brown Sand
 ③ - 16'-26' Med Coarse Brown Sand f Few Gravel Firm
 ④ - 26'-31 1/2' Coarse Gray Sand f Gravel f Med Comp
 ⑤ - 31 1/2'-40' Hard Blue Shale

PIN AND HANGER REPLACEMENT LOCATION (4 ASSEMBLIES)

FOR INFORMATION ONLY

PIN AND HANGER REPLACEMENT (4 ASSEMBLIES) & FINGER JOINT REPAIR (EASTBOUND LANES ONLY)



ELEVATION

Stationing: 49+00, 50+00, 51+00, 52+00, 53+00, 54+00, 55+00, 56+00, 57+00, 58+00, 59+00

SHEET 1 OF 3 SHEET 3

**LAYOUT OF BRIDGE
 OVER ARKANSAS RIVER
 VAN BUREN BRIDGE (HWY. 64)
 SEBASTIAN AND CRAWFORD COUNTIES**

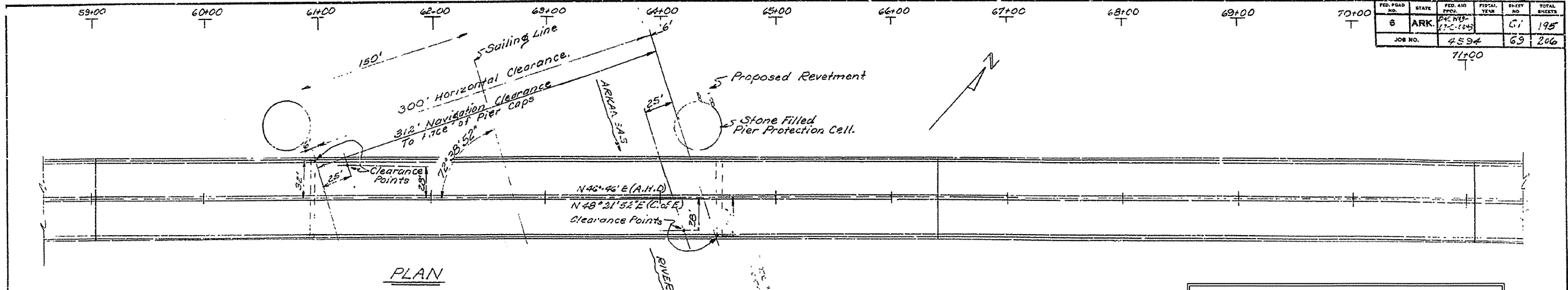
ROUTE 64 SEC. 1 & 2

ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

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 TRACED BY: *VR* DATE: 1-25-67
 CHECKED BY: *VR* DATE: 1-25-67

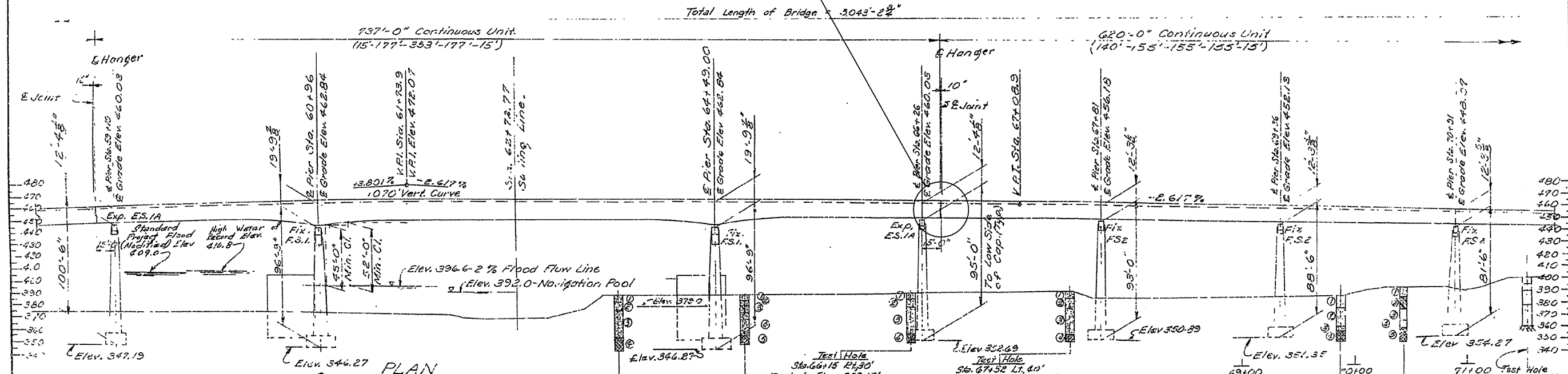
SCALE: 1" = 40'
 56907
 BRIDGE NO. 5176 DRAWING NO. 15917

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				4	ARK.			
						JOB NO. 040672	6	22
						05176 - EXIST. BRIDGE LAYOUT - 56908		



FOR INFORMATION ONLY

PIN AND HANGER REPLACEMENT LOCATION (4 ASSEMBLIES)



Drainage area, including half structures is 150,483 square miles, of which 128,742 square miles contribute directly to surface runoff. Standard Project flood (modified) equals 540,000 cfs.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications thereto, and designated Special Provisions.

DESIGN SPECIFICATIONS: AASHO 1965

Live Loading: HS 20

Unit Stresses:

Class A Concrete (n-15)	810 psi
Class C Concrete (n-10)	1,200 psi
Class S (AL) Concrete (n-10)	1,200 psi
Reinforcing Steel	20,000 psi
Structural Steel (A 36)	20,000 psi
Structural Steel (A 441) 3/4" and less	27,000 psi
Structural Steel (A 441) (Modified) 4" and less	27,000 psi

Test Hole Sta. 63+61 LT. 42' Top hole Elev. 387.55'

- 0-5' Soft Fine Brown Sand
- 5-12' Fine Brown Sand Med. Firm
- 12-33.9' Firm Gray Sand & Small Coarse Gravel
- 33.9-45' Hard Blue Shale

Test Hole Sta. 71 LT. 43' Top hole Elev. 387.65'

- 0-4' Soft Fine Brown Sand-Dry
- 4-8.6' Med. Firm Fine Brown Sand
- 8.6-14' Firm Fine Brown Sand & Small Gravel
- 14-33.4' Coarse Gray Sand & Small Gravel Comp. Wet
- 33.4-40' Hard Blue Shale

Test Hole Sta. 69+88 ET. 70' Top hole Elev. 350.25'

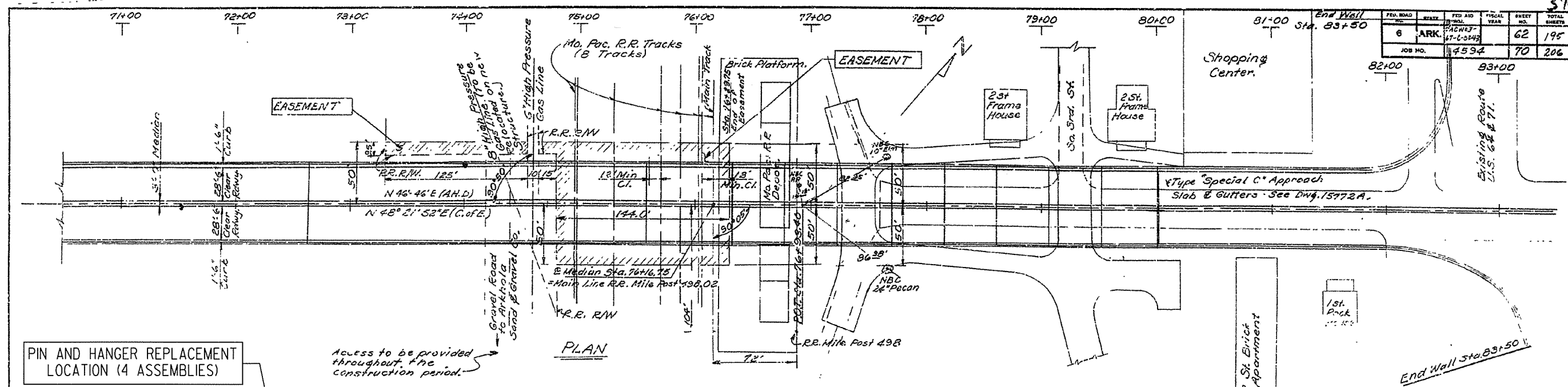
- 0-10' Soft Gray Silty Sand-Wet
- 10-25.7' Med. Firm Gray Sand-Water Bearing
- 25.7-29.6' Firm Gray Sand & Gravel
- 29.6-33' Hard Blue Shale

Test Hole Sta. 70+44 ET. 4' Top hole Elev. 392.35'

- 0-2' Fine Brown Sand Med. Firm
- 2-18' Fine Gray Sandy Clay-Wet Soft
- 18-27.8' Med. Firm Gray Sand-Water Bearing
- 27.8-33.1' Firm Gray Sand & Gravel Water Bearing
- 33.1-45' Hard Blue Shale

LAYOUT OF BRIDGE OVER ARKANSAS RIVER
 VAN RUREN BRIDGE (HWY. 64)
 SEBASTIAN AND CRAWFORD COUNTIES
 ROUTE 64 SEC. 182
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
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 CHECKED BY: [Signature] DATE: 2-2-67
 BRIDGE NO. 5176 SCALE: 1" = 40'
 DRAWING NO. 5718 56908

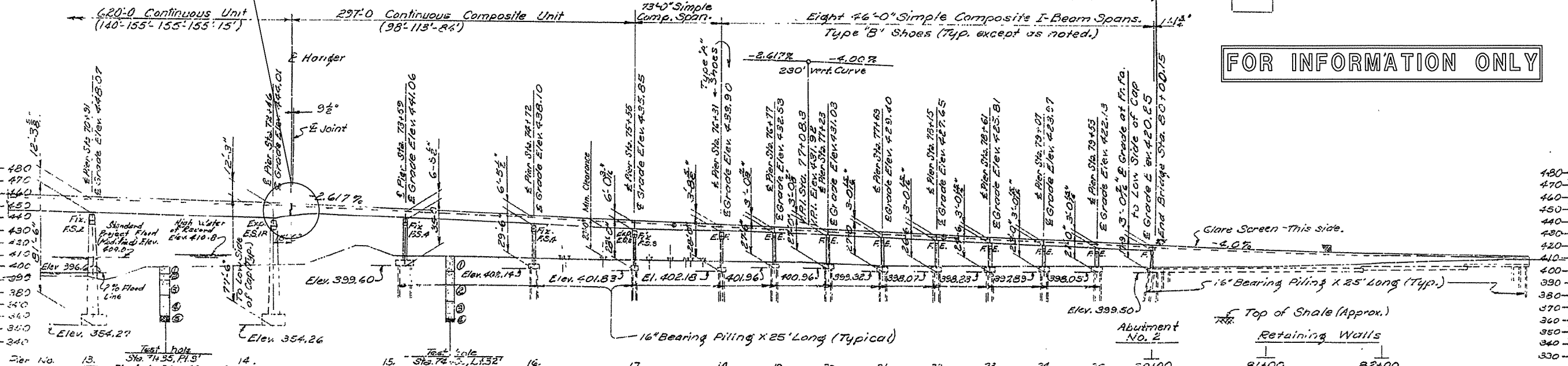
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 WORKSPACE: William.Greenup
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 REVISED DATE:



PIN AND HANGER REPLACEMENT LOCATION (4 ASSEMBLIES)

Access to be provided throughout the construction period.

Total Length of Bridge = 3043' 2 1/2"



FOR INFORMATION ONLY

ELEVATION

- | Ser. No. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. | 23. | 24. | 25. |
|----------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | 3'-6" | 6'-11" | 11'-23.2" | 25.2'-40.2" | 40.2'-45" | 0-11.5" | 11.5'-56" | 36'-50.1" | 50.1'-52" | | | | |
| | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' | Sta. 74.35, P.I. 3' |
| | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' | Top hole Elev. 420.55' |
| | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" | 1) 0-11.5" |
| | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" | 2) 6'-11" |
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| | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" | 4) 25.2'-40.2" |
| | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" | 5) 40.2'-45" |
| | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" | 6) 0-11.5" |
| | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" | 7) 11.5'-56" |
| | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" | 8) 36'-50.1" |
| | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" | 9) 50.1'-52" |
| | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" | 10) 0-11.5" |
| | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" | 11) 11.5'-56" |
| | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" | 12) 36'-50.1" |
| | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" | 13) 50.1'-52" |

THICKEN MASONRY ON HIGH SIDE OF PIER

PIER NUMBER	PLATE THICKENING
19	3/8"
20	1/2"
21, 22, 23	5/8"
24 & 25	3/4"

NOTE: See Drawing 15730 for layout of Abutment No. 2 and Retaining Walls and for additional Soundings.

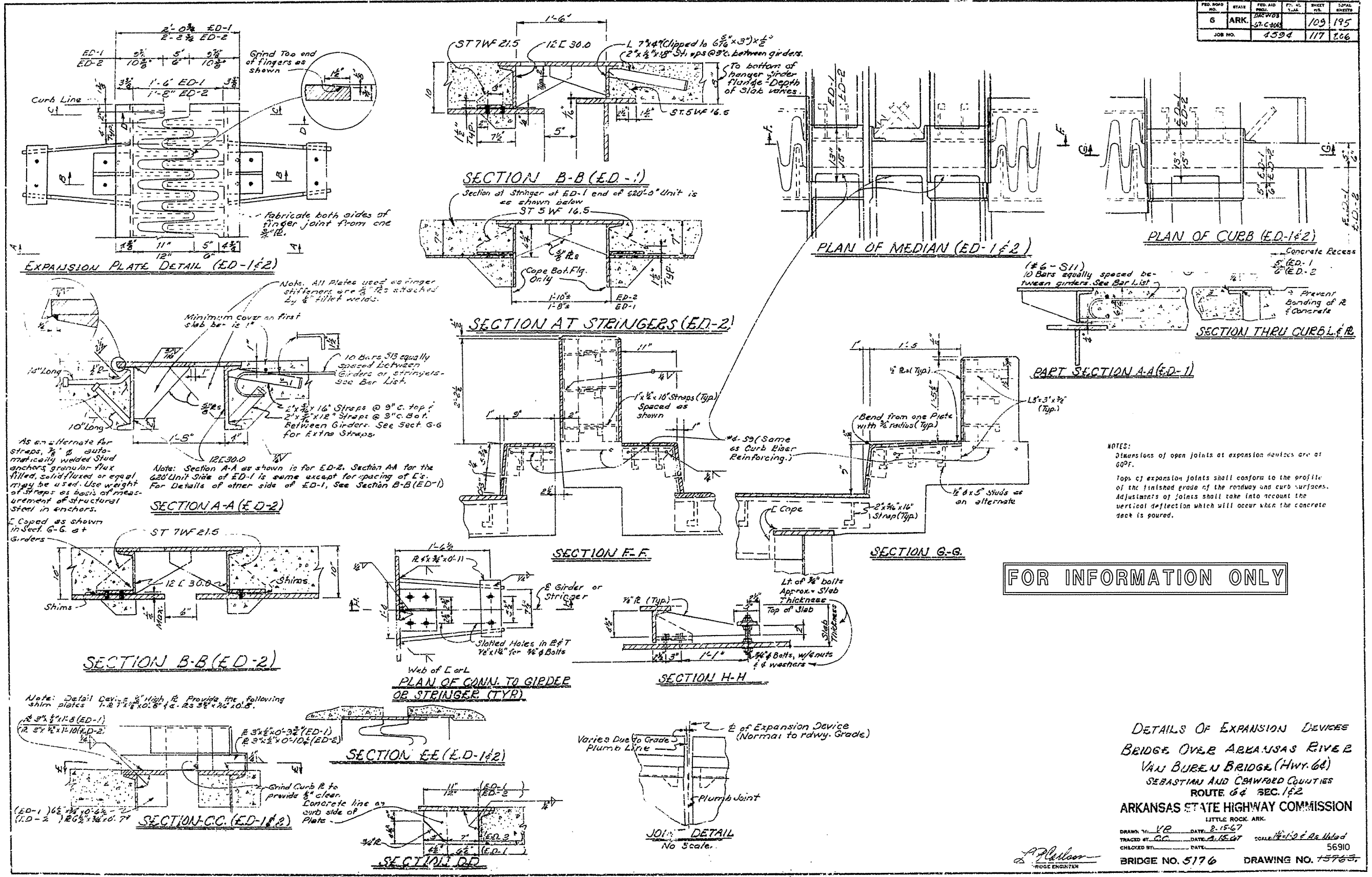
SHEET 3 OF 3 SHEETS
(EXHIBIT A)
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
VAN BUREN BRIDGE (HWY. 64)
SEBASTIAN AND CRAWFORD COUNTIES
ROUTE 64 SEC. 1 & 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: J.P. DATE: 12-67
CHECKED BY: J.M. DATE: 1-28-68
BRIDGE NO. 5176 DRAWING NO. 15719
56909

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				4	ARK.			
				JOB NO.		040672	8	22

05176 - EXIST. EXPANSION DEVICES - 56910

45

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	040672	109	195
JOB NO.		4594	117	166

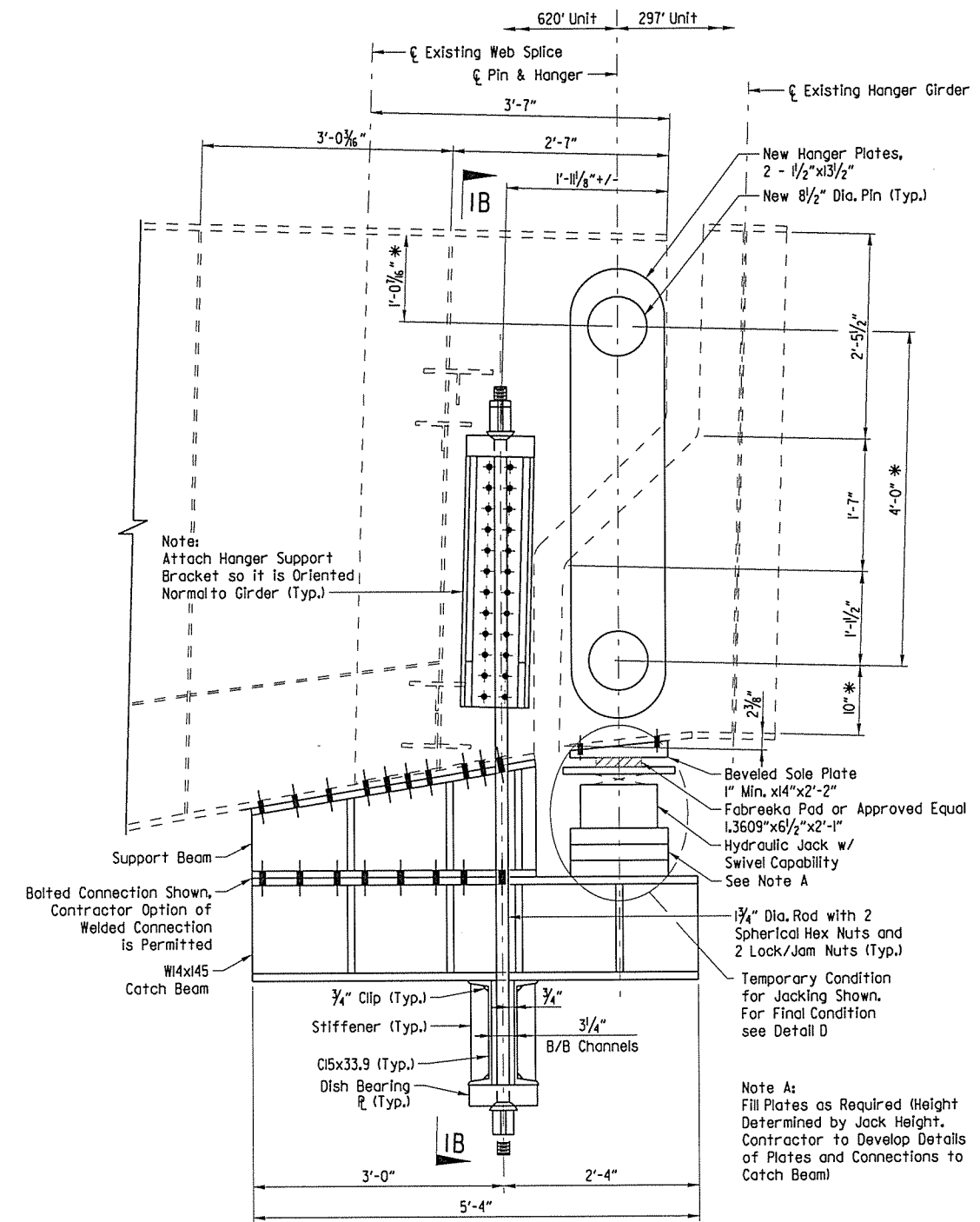


FOR INFORMATION ONLY

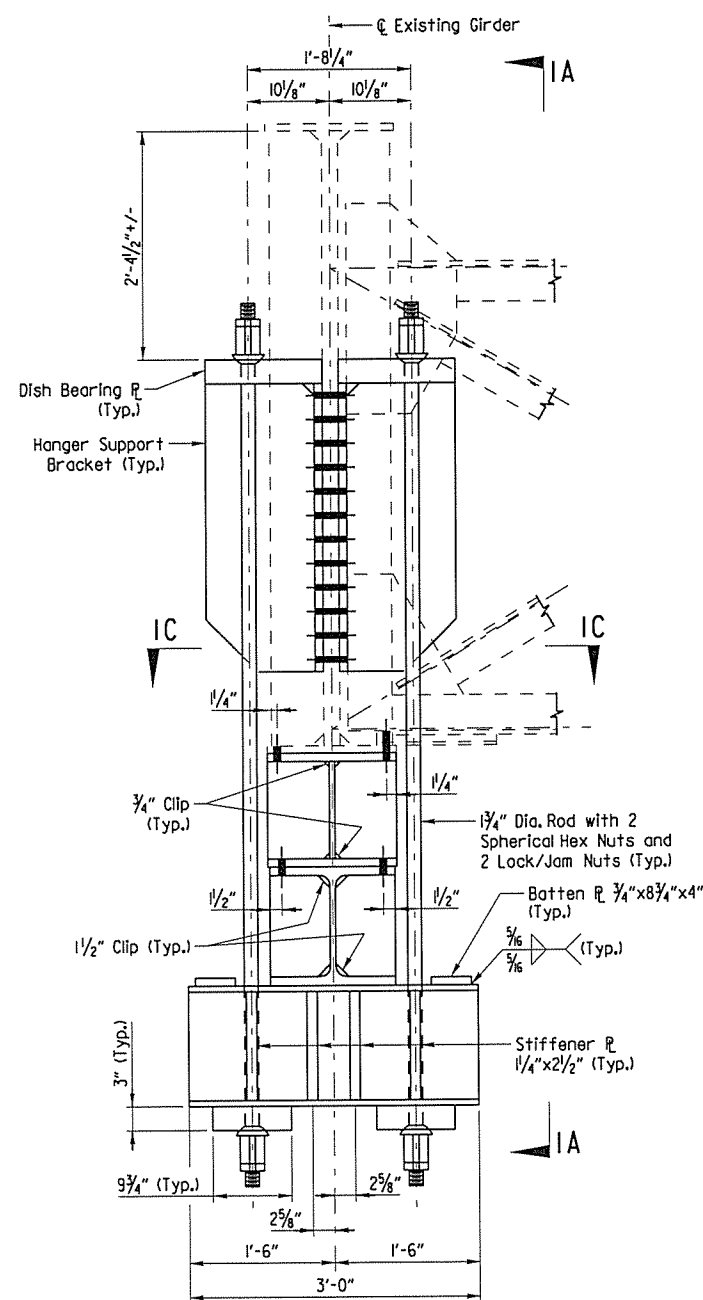
DETAILS OF EXPANSION DEVICES
 BRIDGE OVER ARKANSAS RIVER
 VAN BUREN BRIDGE (HWY. 64)
 SEBASTIAN AND CRAWFORD COUNTIES
 ROUTE 64 SEC. 162
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: VR DATE: 8-15-67
 TRACED BY: GC DATE: 2-15-67
 CHECKED BY: DATE: 11-10-67
 BRIDGE NO. 5176 DRAWING NO. 15765

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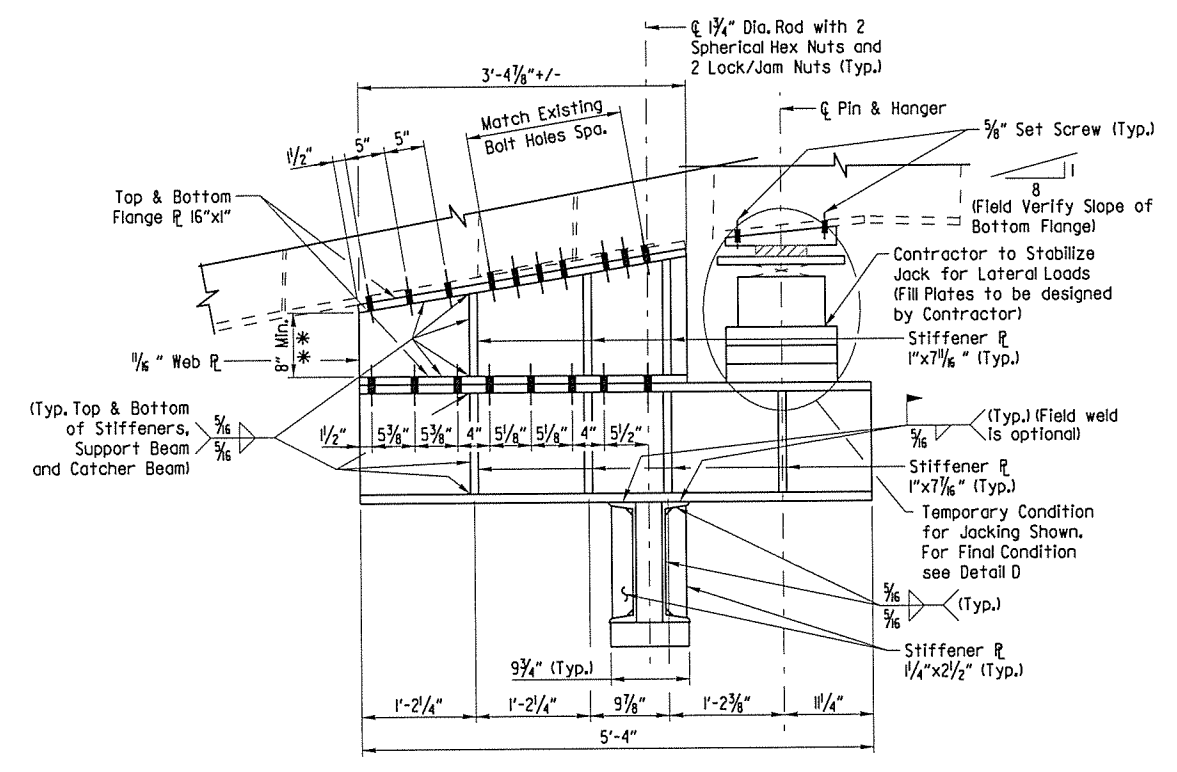
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				4	ARK.		9	22
JOB NO. 040672							9	22
05176 - PIN & HANGER DETAILS - 5691I								



ELEVATION IA-IA
PIN AND HANGER ASSEMBLY DETAIL @
EXTERIOR GIRDER & GIRDER HANGER (SHOWN)
620' UNIT AND 297' UNIT (SHOWN)
326' UNIT AND 620' UNIT (SIMILAR)
 Scale: 1"=1'-0"



SECTION IB-IB
 Scale: 1"=1'-0"

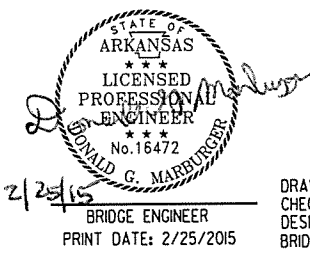


SUPPORT BEAM AND CATCH BEAM DETAIL
 Scale: 1"=1'-0"

LEGEND
 * Dimensions May be Adjusted to Achieve Proper Fit. Refer to SP Job 040672 "Catcher Support System" and SP Job 040672 "Pin and Hanger Replacement."
 ** Height May Require Adjustment to Accommodate Jacking System.

REFERENCE	DRAWING
1. Section IC-IC	56912
2. Hanger Support Bracket	56912
3. Detail D	56912
4. Fabreeka Detail	56912
5. Pin & Hanger Details	56919
6. Minimum Weld Table	56920
7. General Notes	56920

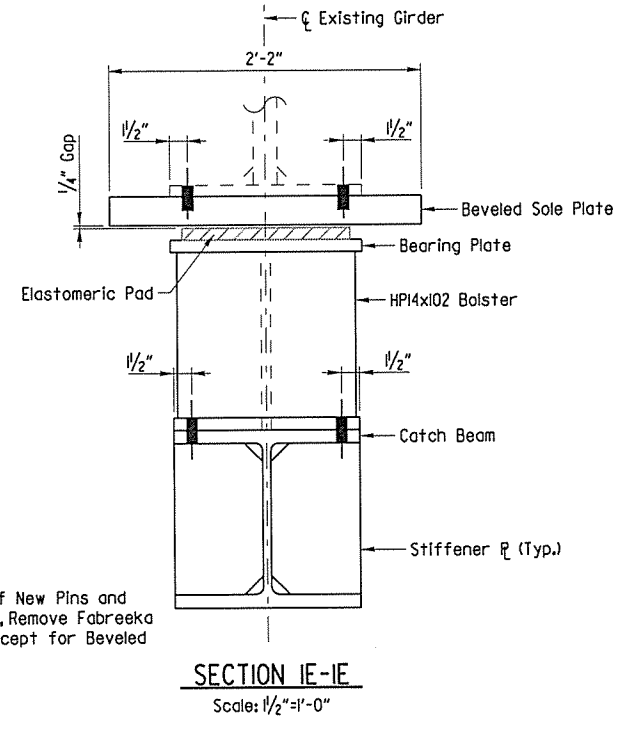
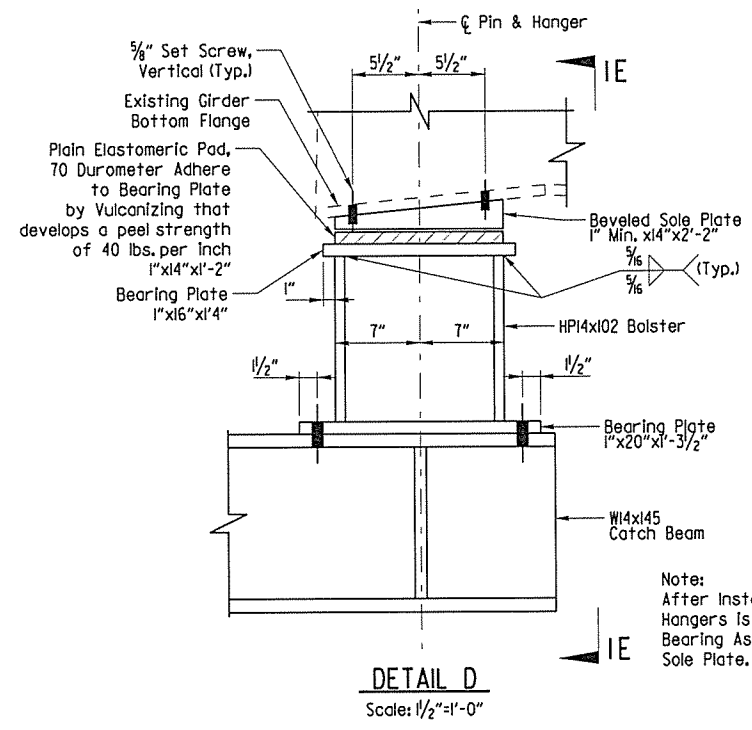
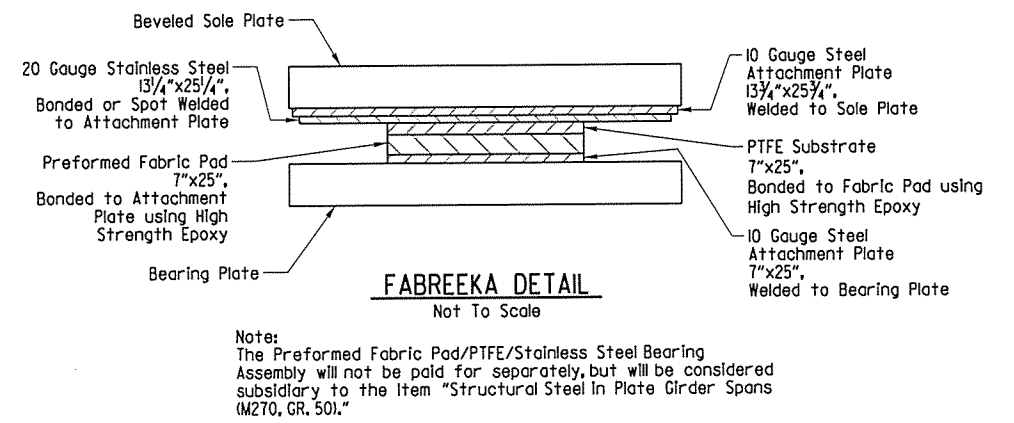
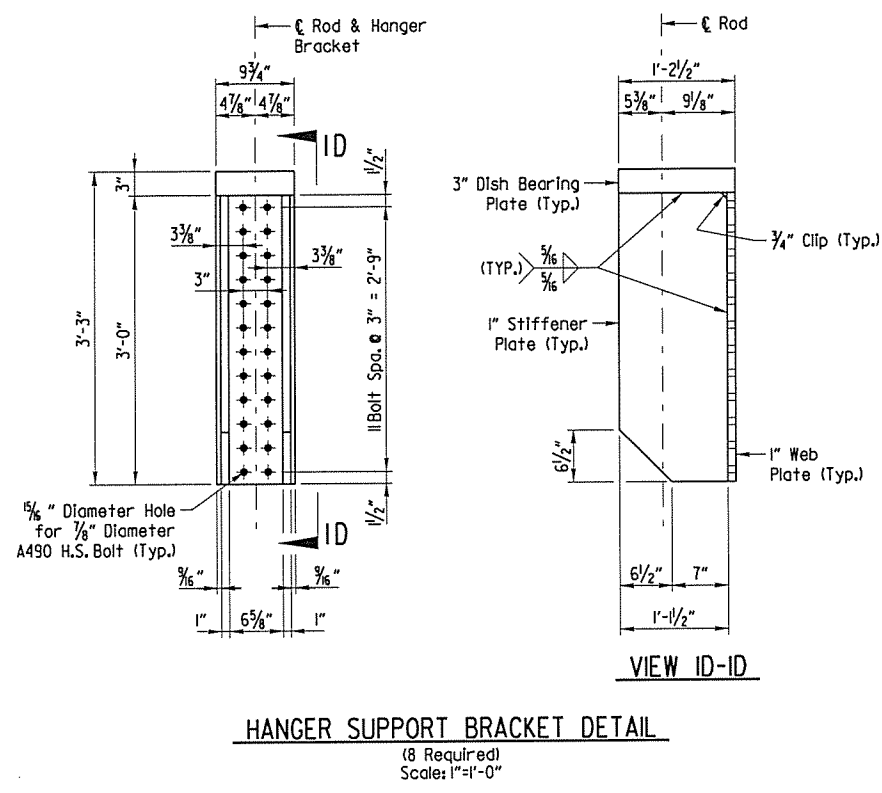
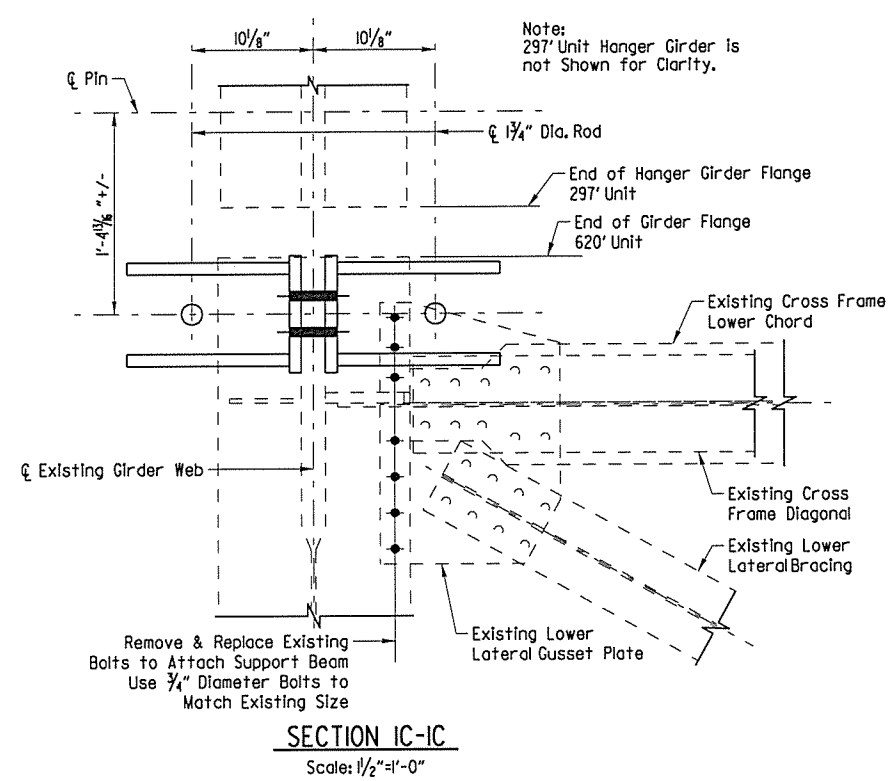
CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (297' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS



DRAWN BY: FEM DATE: 02/13/15 FILENAME: 8040672.XLSII
 CHECKED BY: DGM DATE: 02/24/15
 DESIGNED BY: RTH DATE: 01/16/15 SCALE: As Shown
 BRIDGE ENGINEER
 PRINT DATE: 2/25/2015 BRIDGE NO. 05176 DRAWING NO. 5691I

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				4	ARK.			
						JOB NO.	040672	10
						05176 - PIN & HANGER DETAILS - 56912		



NOTE
Provide details of dish in Bearing Plate in accordance with rod and Spherical Hex Nut manufacturer's recommendations.

REFERENCE	DRAWING
1. Location of Section IC-IC	5691I
2. Location of Hanger Support Bracket	5691II
3. Minimum Weld Table	56920
4. General Notes	56920

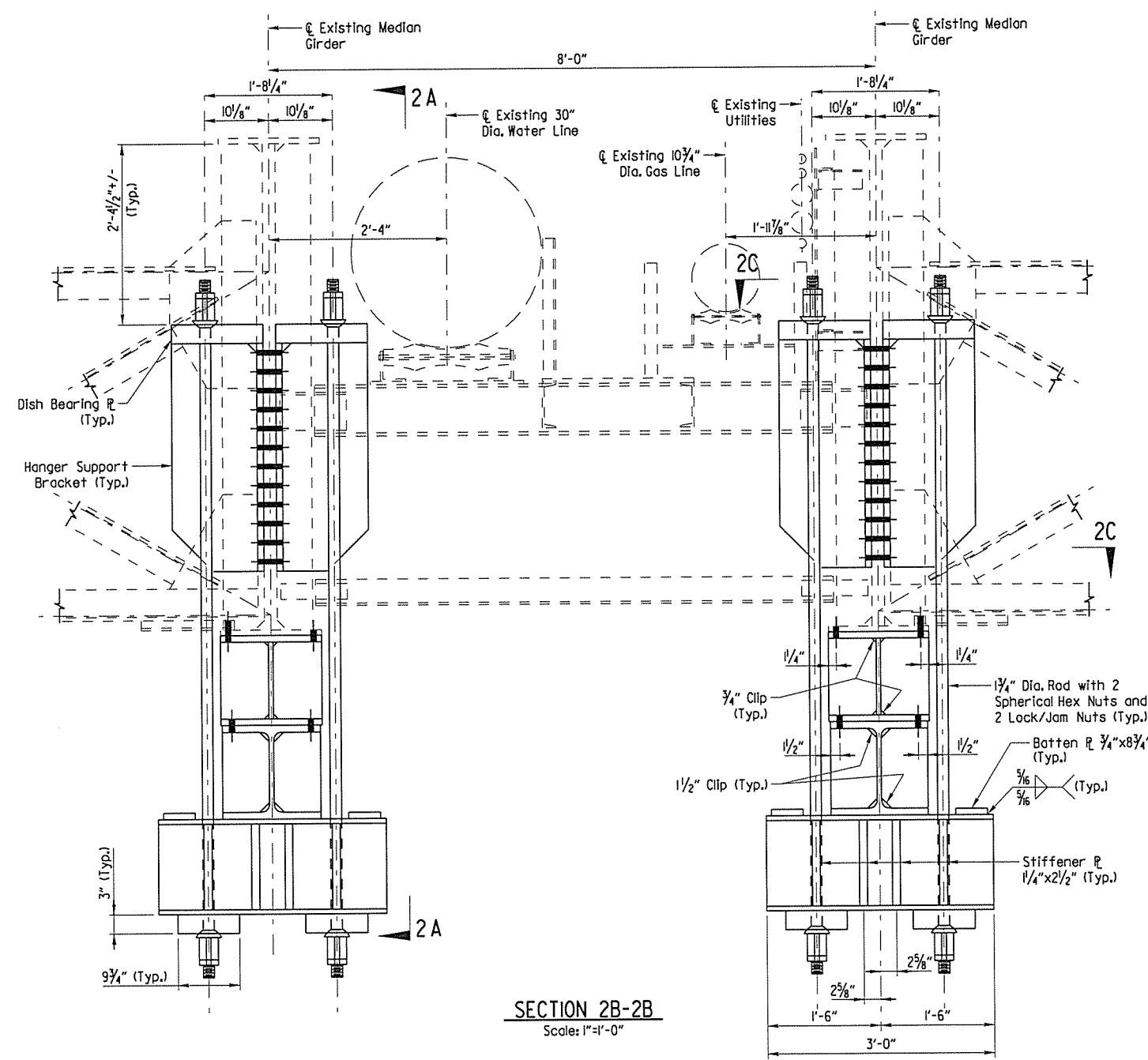
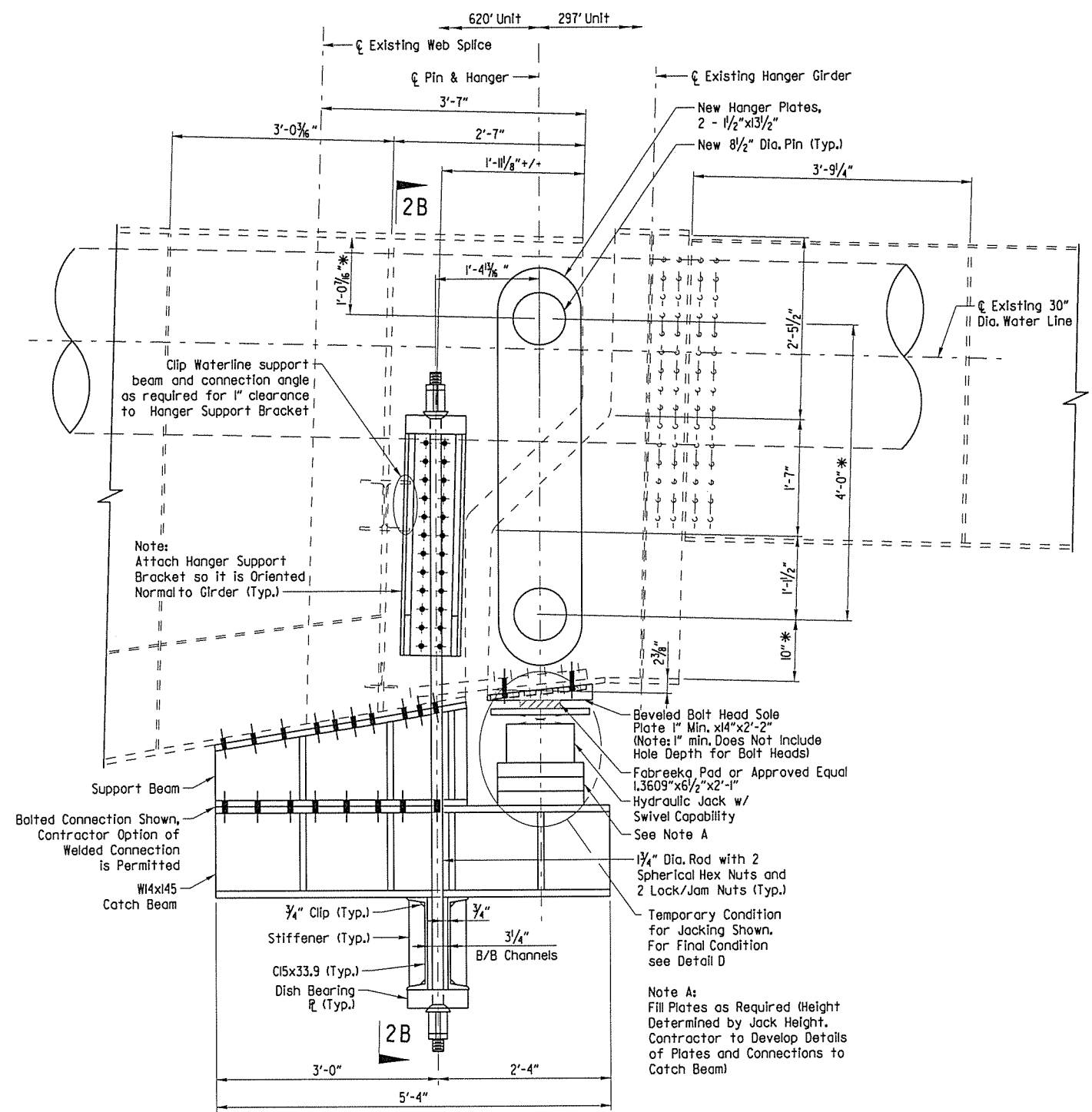
CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (297' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
DONALD G. MARRUTTER
No. 16472
BRIDGE ENGINEER
PRINT DATE: 2/25/2015

DRAWN BY: EEM DATE: 02/13/15 FILENAME: B040672XLS2
CHECKED BY: DGM DATE: 02/24/15
DESIGNED BY: RTH DATE: 01/16/15 SCALE: As Shown
BRIDGE NO. 05176 DRAWING NO. 56912

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				4	ARK.		II	22
				JOB NO. 040672		II		22
① 05176 - PIN & HANGER DETAILS - 56913								



ELEVATION 2A-2A
PIN AND HANGER ASSEMBLY DETAIL @
MEDIAN GIRDER & GIRDER HANGER
620' UNIT AND 297' UNIT (SHOWN)
326' UNIT AND 620' UNIT (SIMILAR)
 Scale: 1"=1'-0"

SECTION 2B-2B
 Scale: 1"=1'-0"

CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (297' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION I
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

REFERENCE	DRAWING
1. Fabreeka Detail	56912
2. Detail D	56912
3. Section 2C-2C	56914
4. Hanger Support Bracket	56914
5. Support Beam and Catch Beam Detail	56914
6. Pin & Hanger Details	56919
7. Minimum Weld Table	56920
8. General Notes	56920

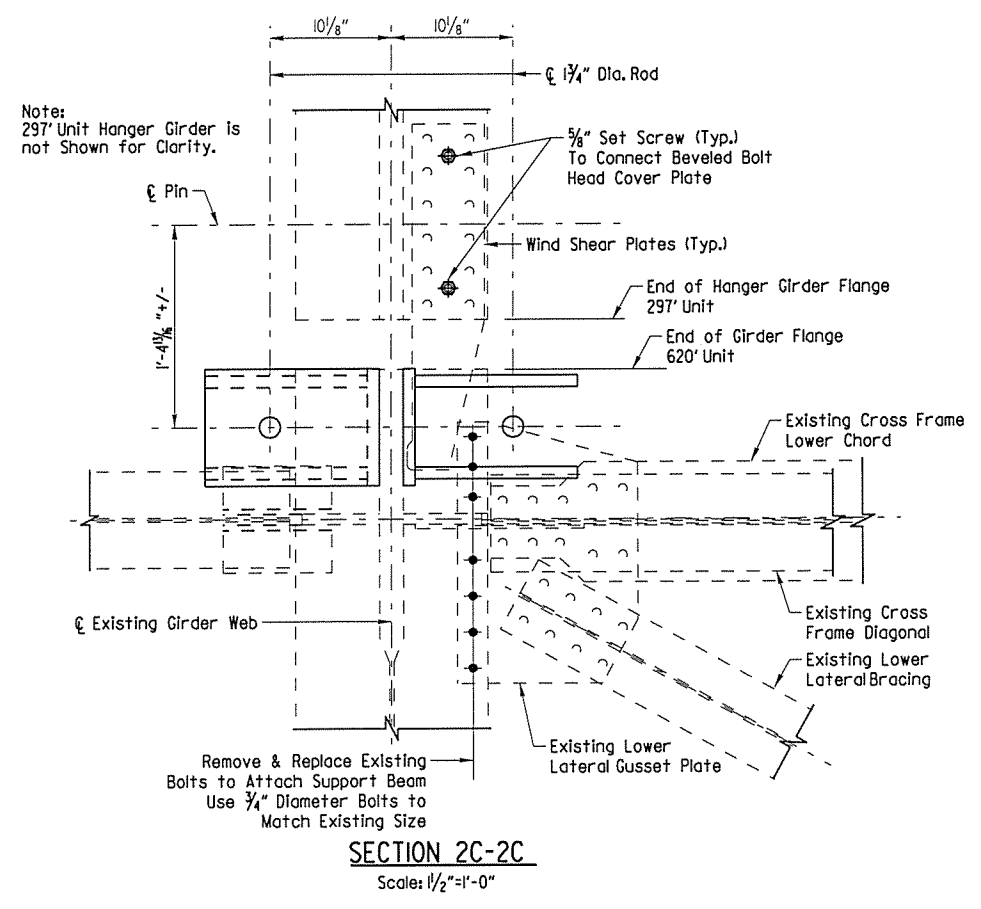
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 BRIDGE NO. 05176 DRAWING NO. 56913

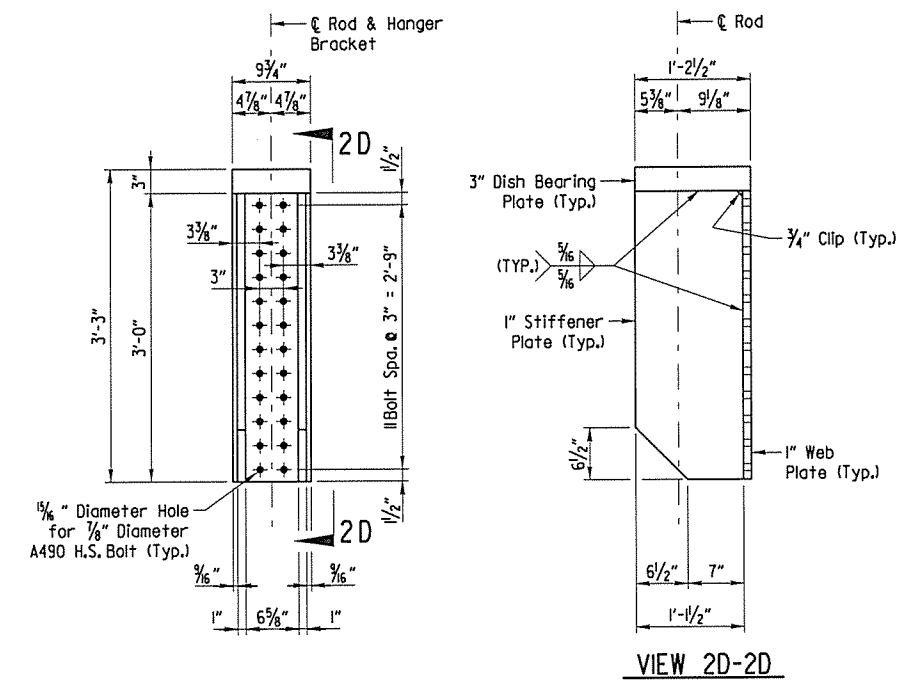
LEGEND
 * Dimensions May be Adjusted to Achieve Proper Fit. Refer to SP Job 040672 "Catcher Support System" and SP Job 040672 "Pin and Hanger Replacement."

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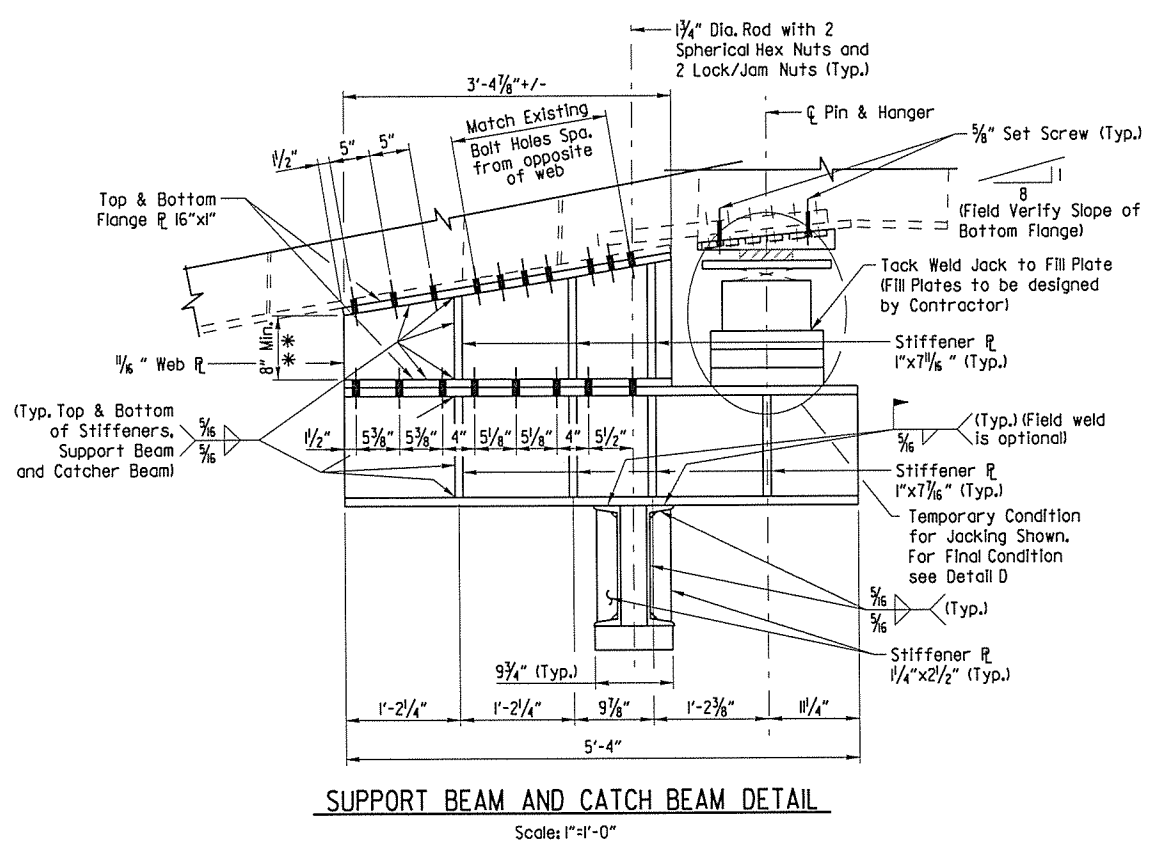
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JOB NO. 040672							12	22
05176 - PIN & HANGER DETAILS - 56914								



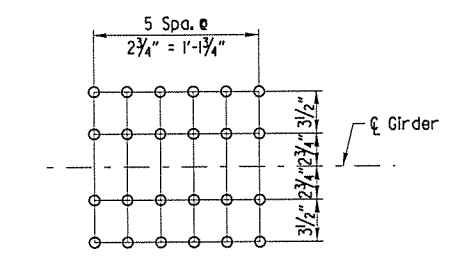
SECTION 2C-2C
Scale: 1/2"=1'-0"



HANGER SUPPORT BRACKET DETAIL
(8 Required)
Scale: 1"=1'-0"



SUPPORT BEAM AND CATCH BEAM DETAIL
Scale: 1"=1'-0"



HOLE PATTERN FOR BEVELED BOLT HEAD SOLE PLATE
Scale: 1/2"=1'-0"

Note:
Drill Partial Depth Holes in Plate to Accommodate Existing Bolt Heads. Hole Diameter to Allow 1/8" Clearance to Corners of Hex Heads.
Field Verify Dimensions.

LEGEND

** Height May Require Adjustment to Accommodate Jacking System.

NOTE

Provide details of dish in Bearing Plate in accordance with rod manufacturer's recommendations.

REFERENCE

1. Fabreeka Detail
2. Detail D
3. Location Section 2C-2C
4. Location of Hanger Support Bracket
5. Minimum Weld Table
6. General Notes

DRAWING

- 56912
- 56912
- 56913
- 56913
- 56920
- 56920

CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (297' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY. 64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS



BRIDGE ENGINEER
PRINT DATE: 2/25/2015

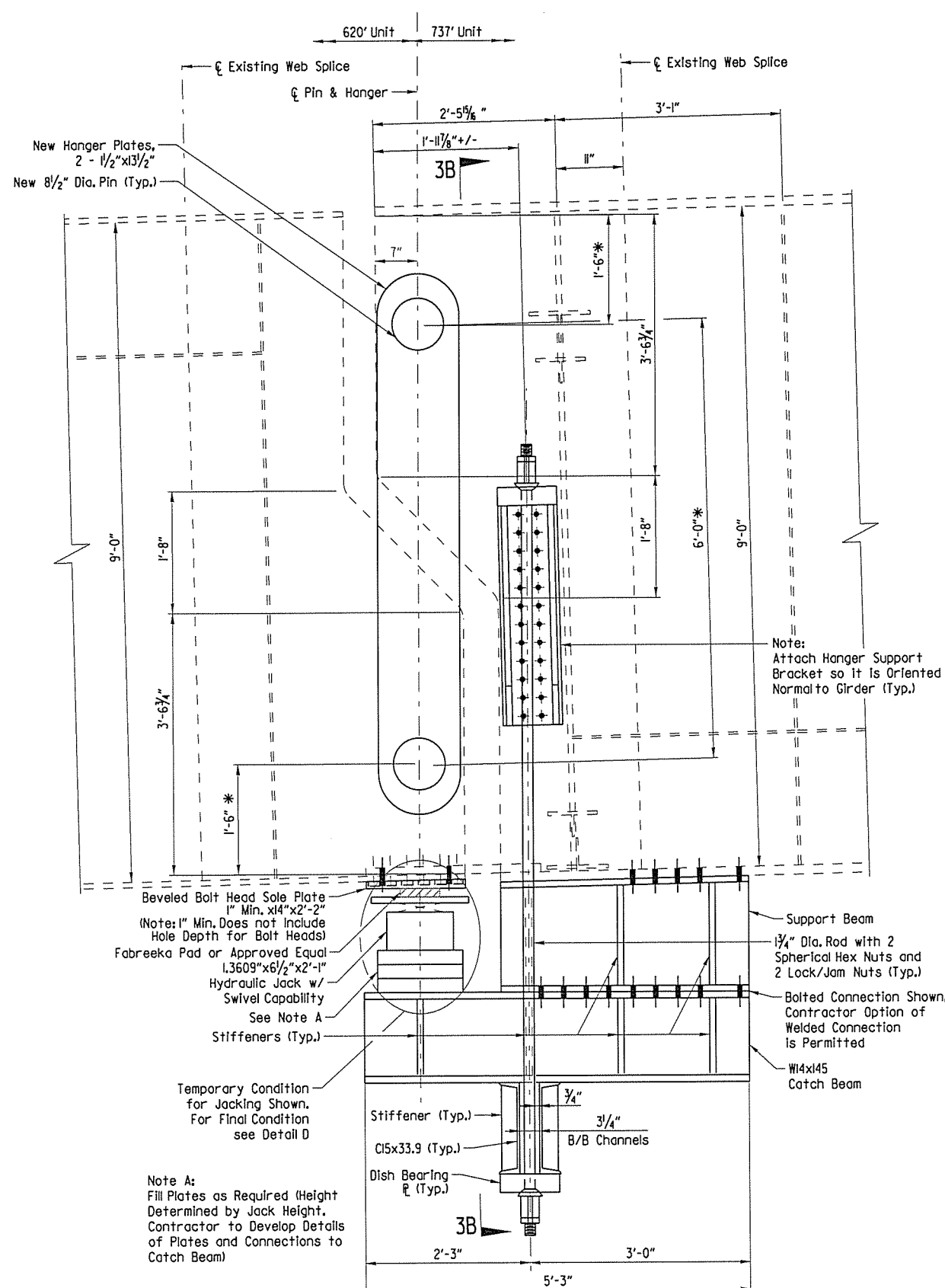
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CHECKED BY: DGM
DESIGNED BY: RTH
BRIDGE NO. 05176

DATE: 02/13/15
DATE: 02/24/15
DATE: 01/16/15

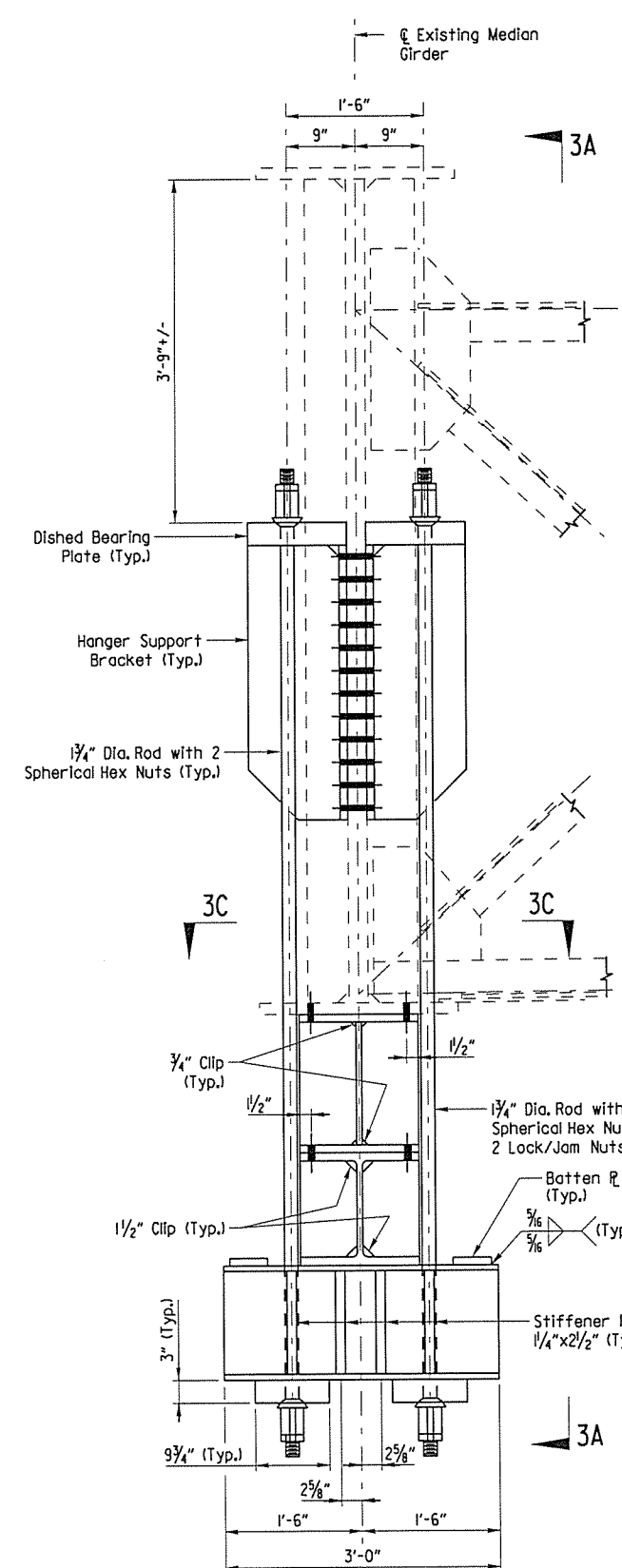
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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				4	ARK.			
				JOB NO.	040672	13	22	
① 05176 - PIN & HANGER DETAILS - 56915								



ELEVATION VIEW 3A-3A
PIN AND HANGER ASSEMBLY DETAIL @
620' UNIT AND 737' UNIT
EXTERIOR GIRDERS
 Scale: 1"=1'-0"



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

LEGEND

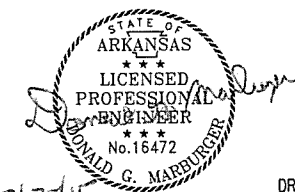
* Dimensions May be Adjusted to Achieve Proper Fit.
 Refer to SP Job 040672 "Catcher Support System" and SP Job 040672 "Pin and Hanger Replacement."

REFERENCE

1. Fabreka Detail	56912
2. Detail D	56916
3. Section 3C-3C	56916
4. Hanger Support Bracket	56916
5. Support Beam and Catch Beam detail	56916
6. Pin & Hanger Details	56919
7. Minimum Weld Table	56920
8. General Notes	56920

DRAWING

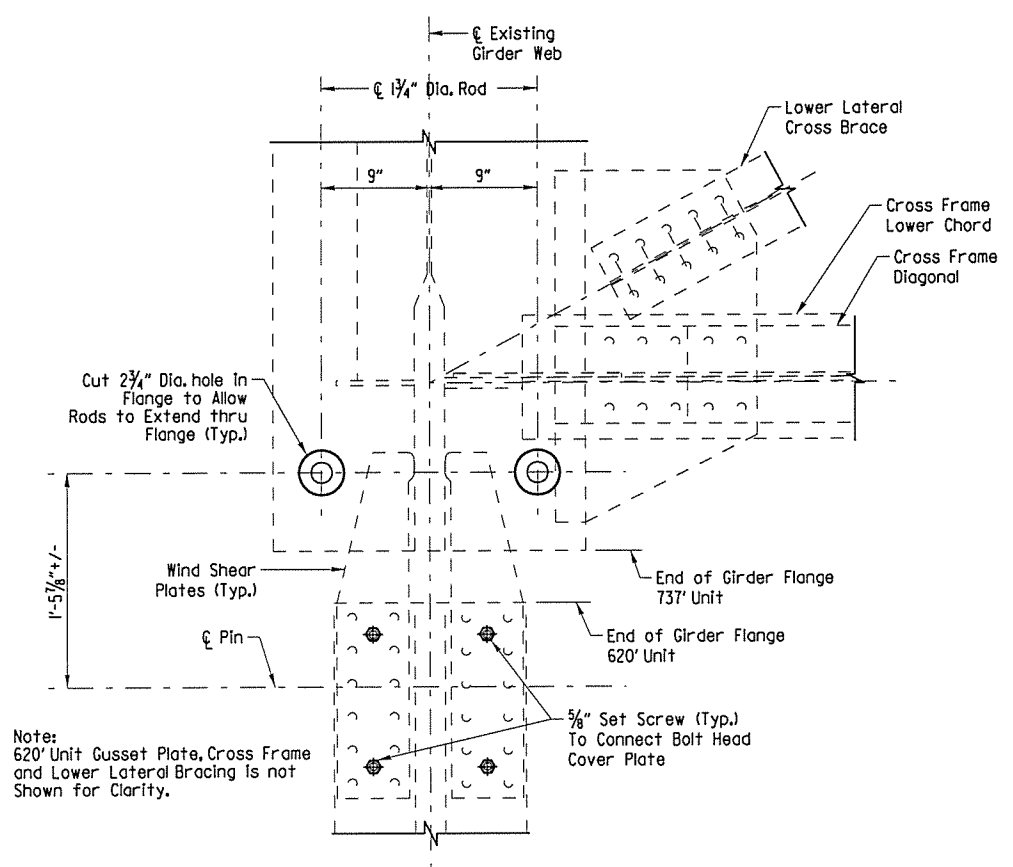
CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (620' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS



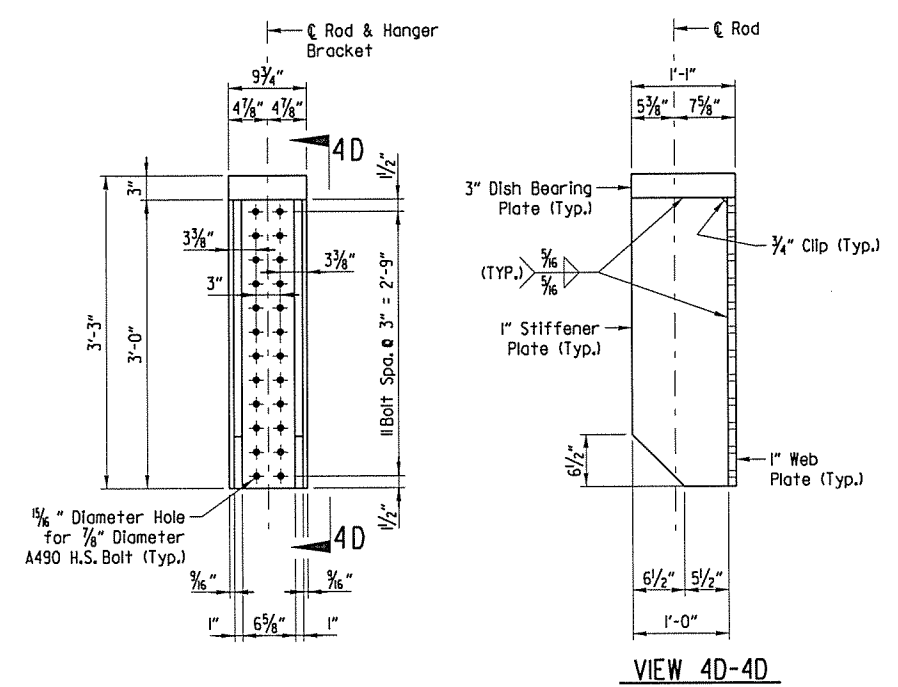
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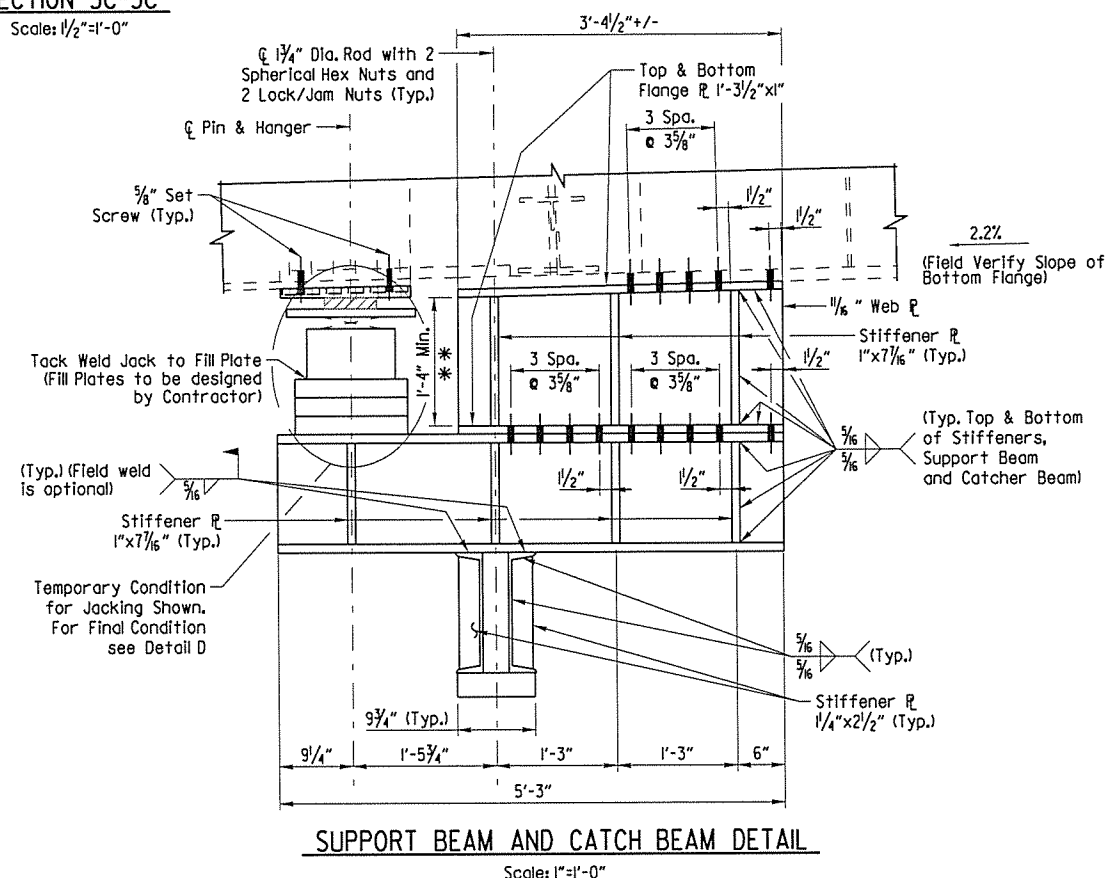
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							JOB NO. 040672	14	22
1 OS176 - PIN & HANGER DETAILS - 56916									



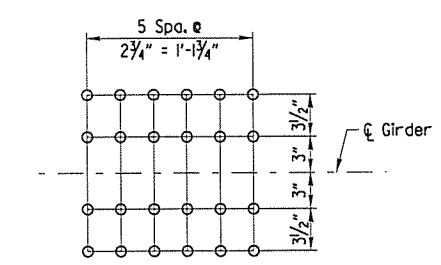
SECTION 3C-3C
Scale: 1/2"=1'-0"



HANGER SUPPORT BRACKET DETAIL
(8 Required)
Scale: 1"=1'-0"



SUPPORT BEAM AND CATCH BEAM DETAIL
Scale: 1"=1'-0"



HOLE PATTERN FOR BEVELED BOLT HEAD SOLE PLATE
Scale: 1/2"=1'-0"

Note:
Drill Partial Depth Holes in Plate to Accommodate Existing Bolt Heads. Hole Diameter to Allow 1/8" Clearance to Corners of Hex Heads.
Field Verify Dimensions.

LEGEND

** Height May Require Adjustment to Accommodate Jacking System.

NOTE

Provide details of dish in Bearing Plate in accordance with rod manufacturer's recommendations.

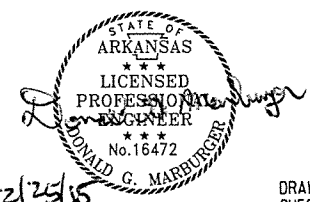
REFERENCE

1. Fabreeka Detail
2. Detail D
3. Location of Section 3C-3C
4. Minimum Weld Table
5. General Notes

DRAWING

1. 56912
2. 56912
3. 56915
4. 56920
5. 56920

**CATCHER SUPPORT SYSTEM, EXTERIOR GIRDER (620' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS**

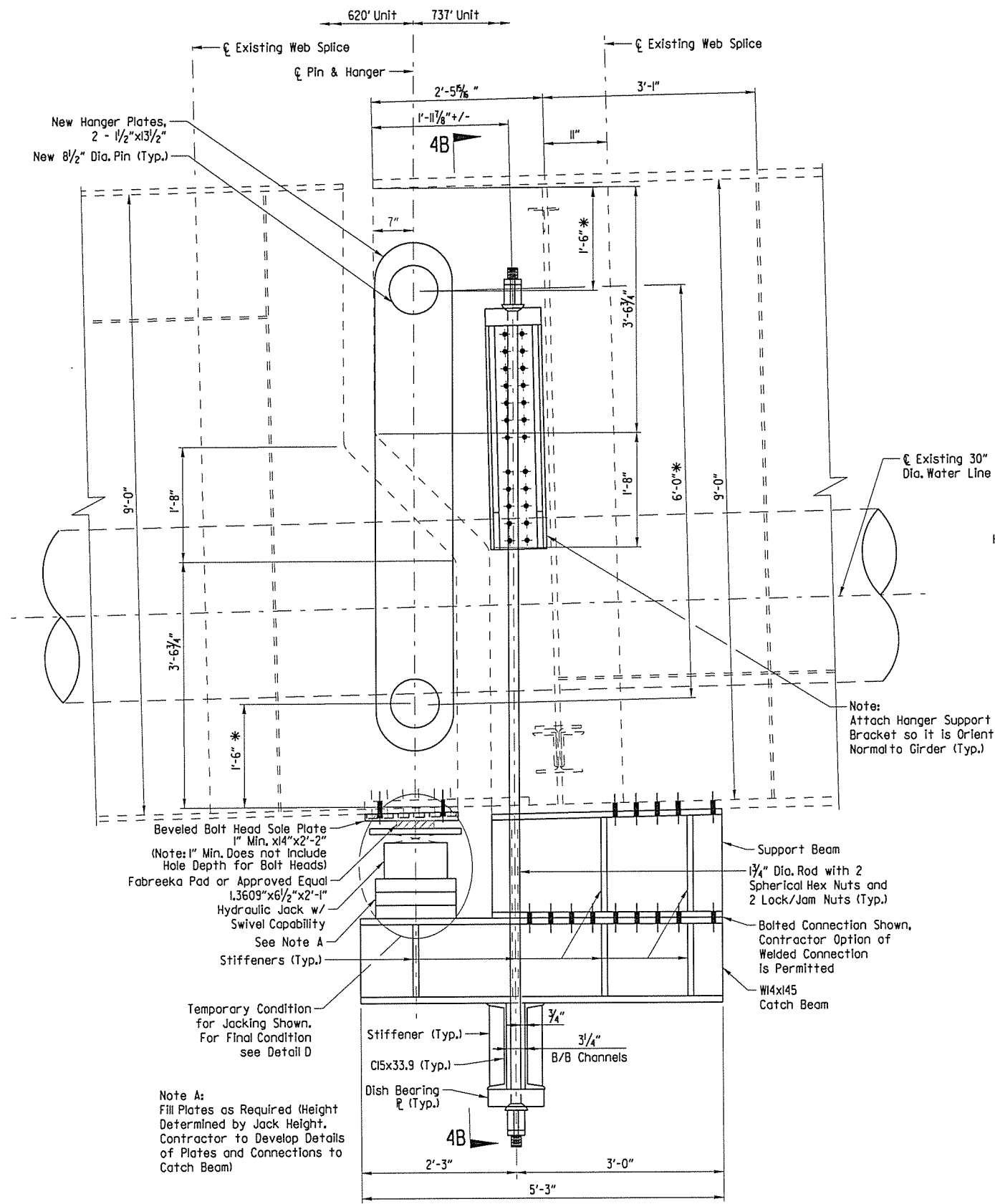


2/25/15
BRIDGE ENGINEER
PRINT DATE: 2/25/2015

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BRIDGE NO. 05176 DRAWING NO. 56916

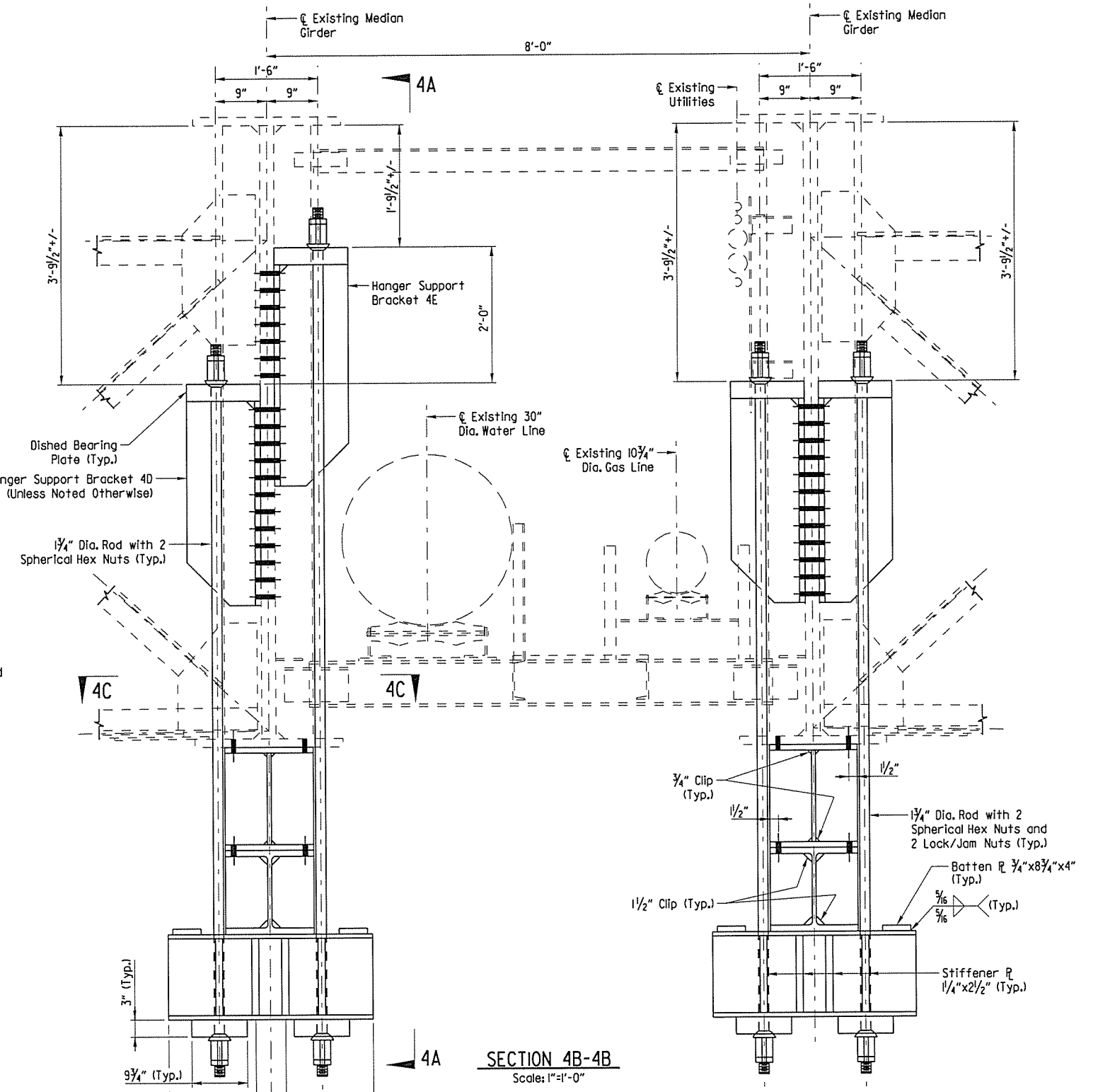
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				4	ARK.			
JOB NO. 040672							15	22
1 05176 - PIN & HANGER DETAILS - 56917								



ELEVATION VIEW 4A-4A
PIN AND HANGER ASSEMBLY DETAIL @
620' UNIT AND 737' UNIT
MEDIAN GIRDERS
 Scale: 1"=1'-0"

REFERENCE	DRAWING
1. Fabreeka Detail	56912
2. Detail D	56912
3. Section 4C-4C	56918
4. Hanger support Bracket D, E & F	56918
5. Support Beam and Catch Beam Detail	56918
6. Pin & Hanger Details	56919
7. Minimum Weld Table	56920
8. General Notes	56920



CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (620' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

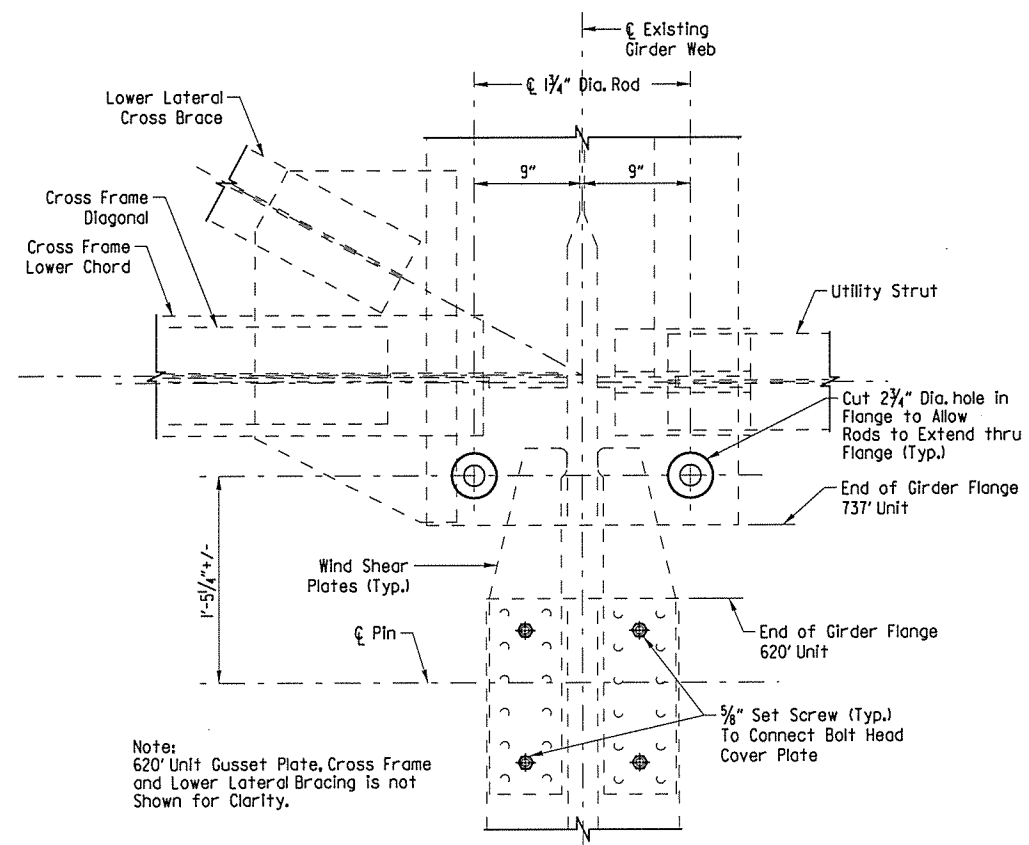
STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 DONALD G. MARRUBER
 No. 16472
 2/25/15
 BRIDGE ENGINEER
 PRINT DATE: 2/25/2015

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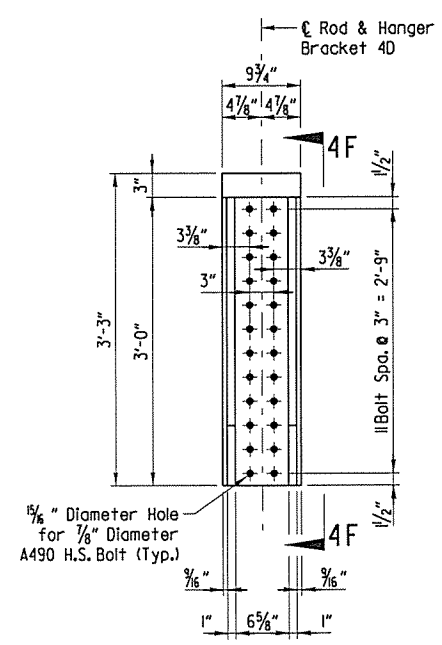
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 REVISED DATE:

LEGEND
 * Dimensions May be Adjusted to Achieve Proper Fit. Refer to SP Job 040672 "Catcher Support System" and SP Job 040672 "Pin and Hanger Replacement."

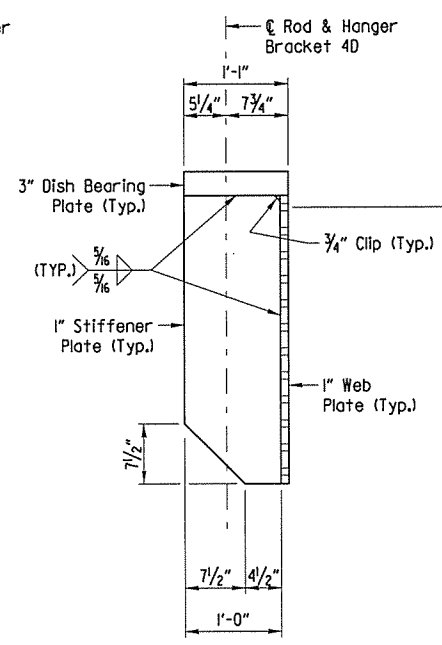
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				4	ARK.				
							JOB NO. 040672	16	22
05176 - PIN & HANGER DETAILS - 56918									



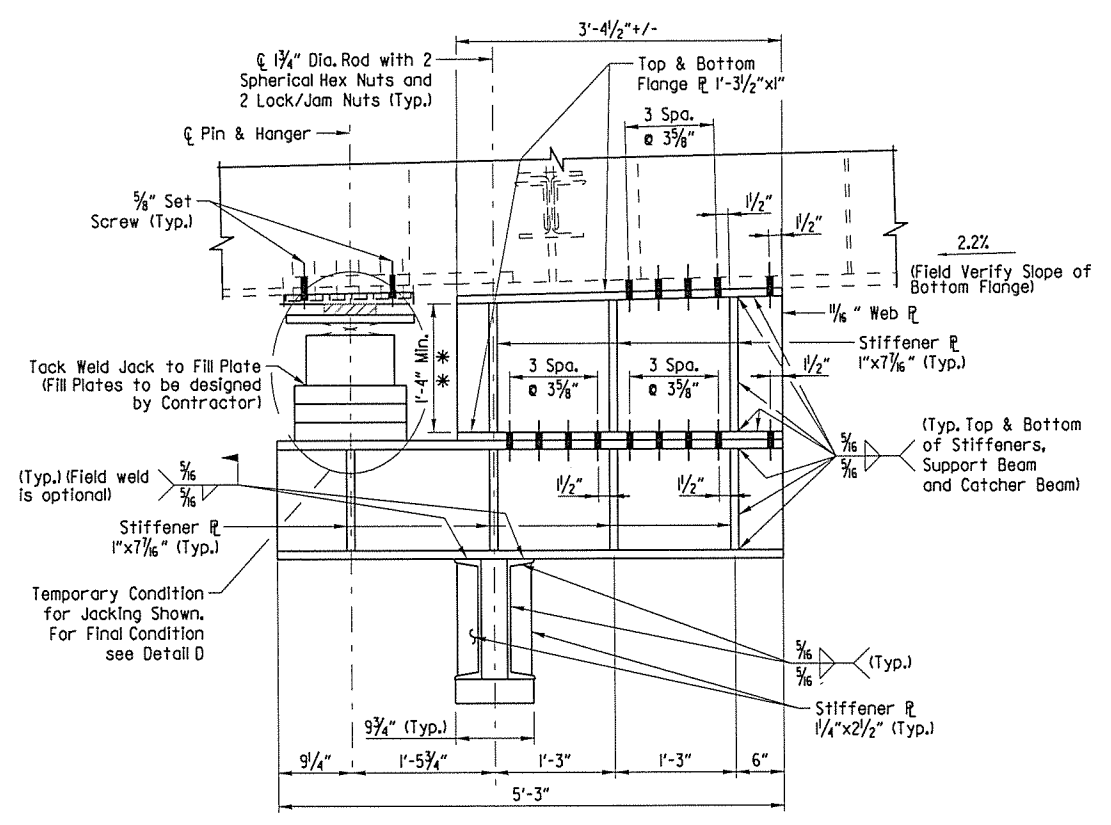
SECTION 4C-4C
Scale: 1/2"=1'-0"



HANGER SUPPORT BRACKET 4D
(6 Required)



HANGER SUPPORT BRACKET 4E
(2 Required)



SUPPORT BEAM AND CATCH BEAM DETAIL
Scale: 1"=1'-0"

HANGER SUPPORT BRACKET DETAILS
Scale: 1"=1'-0"

LEGEND

** Height May Require Adjustment to Accommodate Jacking System.

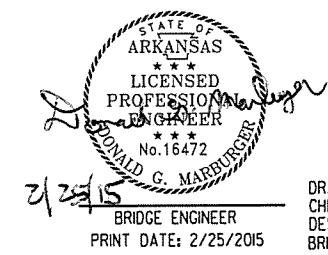
NOTE

Provide details of dish in Bearing Plate in accordance with rod manufacturer's recommendations.

REFERENCE

REFERENCE	DRAWING
1. Fabreeca Detail	56912
2. Detail D	56912
3. Beveled Bolt Head Sole Plate Hole Pattern	56916
4. Location of Section 4C-4C	56917
5. Minimum Weld Table	56920
6. General Notes	56920

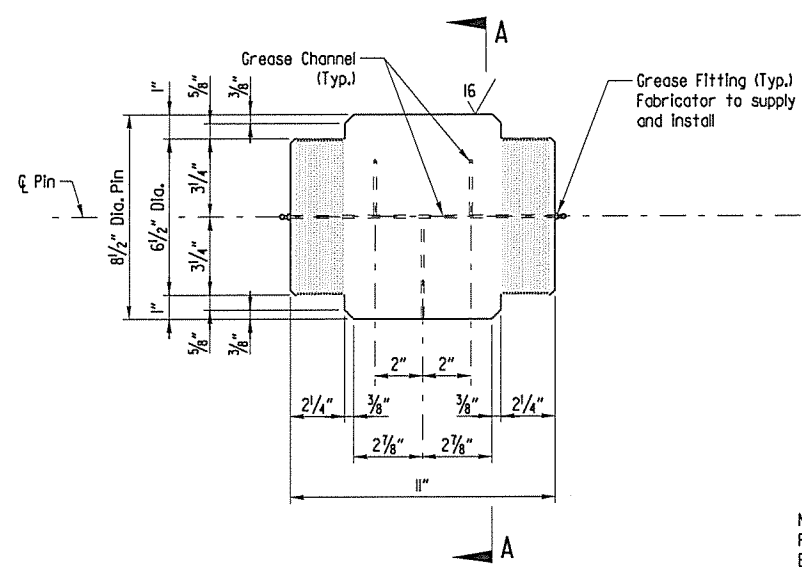
**CATCHER SUPPORT SYSTEM, MEDIAN GIRDER (620' UNIT)
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY. 64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS**



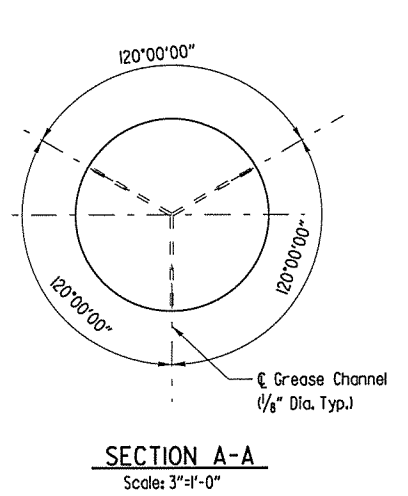
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DRAWING NO. 56918

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				4	ARK.			
				JOB NO.	040672	17	22	
05176 - PIN & HANGER DETAILS - 56919								



DETAIL OF PIN AND GREASE CHANNEL
Scale: 3"=1'-0"

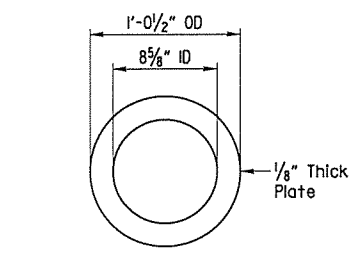


SECTION A-A
Scale: 3"=1'-0"

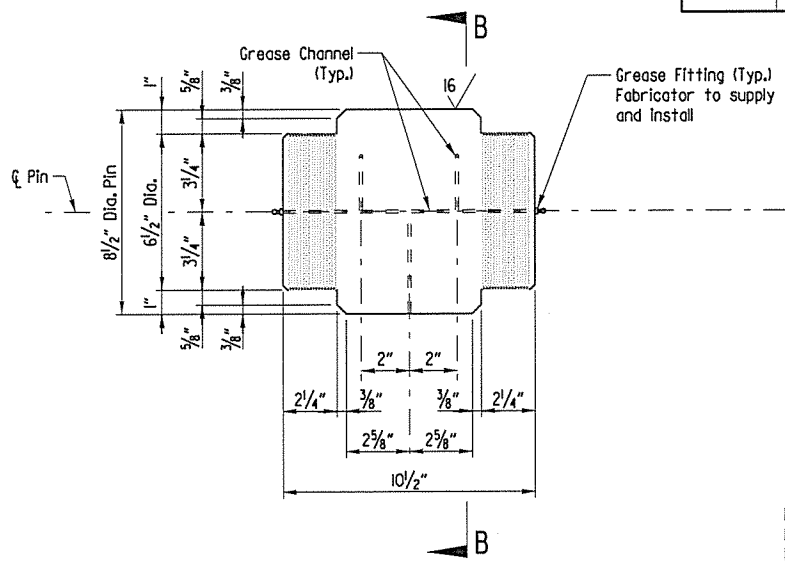
Note:
Position One Grease Channel to Bearing Surface, as noted below.

For Web:
Upper Pin Bearing Surface at Bottom of Pin.
Lower Pin Bearing Surface at Top of Pin.

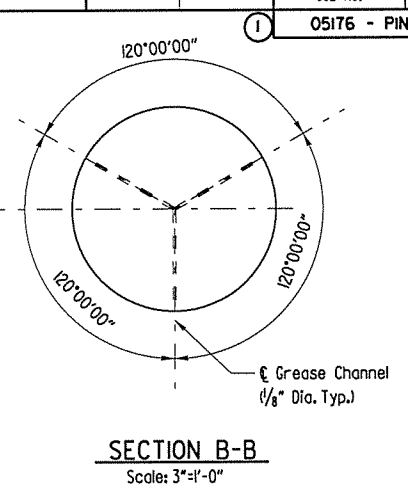
For Hangers:
Upper Pin Bearing Surface at Top of Pin.
Lower Pin Bearing Surface at Bottom of Pin.



BRONZE WASHER PLATE
SCALE: 1 1/2"=1'-0"



DETAIL OF PIN AND GREASE CHANNEL
Scale: 3"=1'-0"

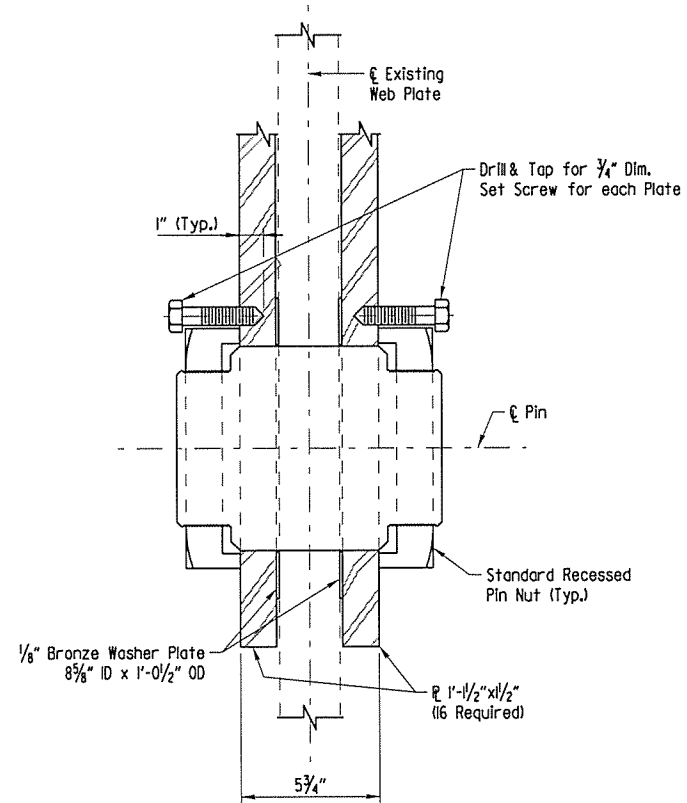


SECTION B-B
Scale: 3"=1'-0"

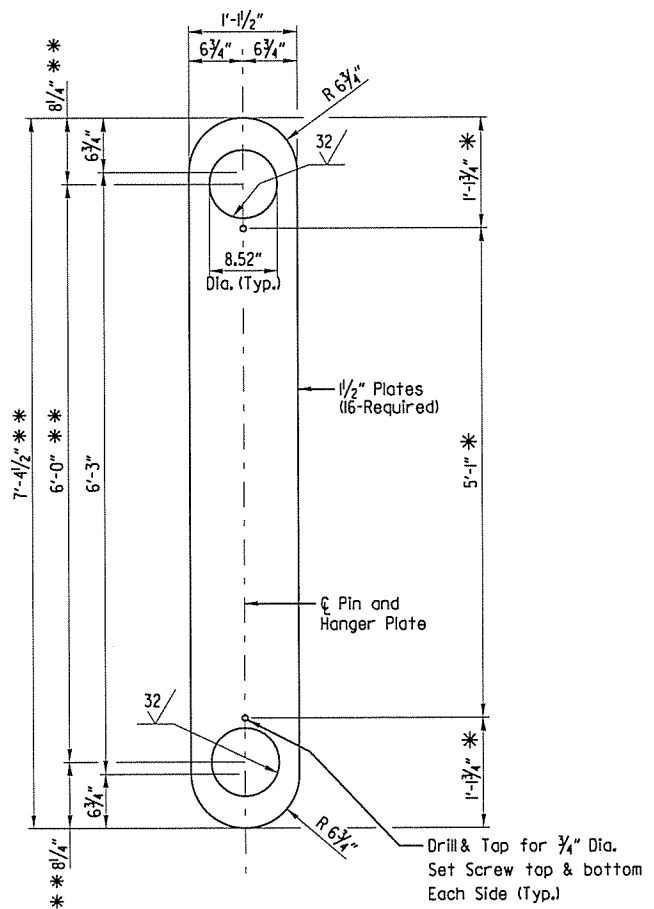
Note:
Position One Grease Channel to Bearing Surface, as noted below.

For Web:
Upper Pin Bearing Surface at Bottom of Pin.
Lower Pin Bearing Surface at Top of Pin.

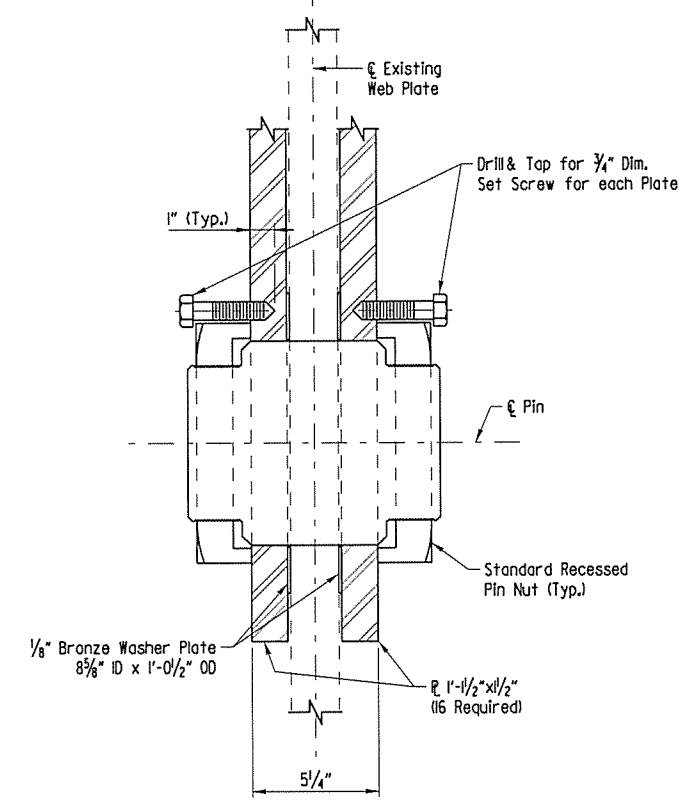
For Hangers:
Upper Pin Bearing Surface at Top of Pin.
Lower Pin Bearing Surface at Bottom of Pin.



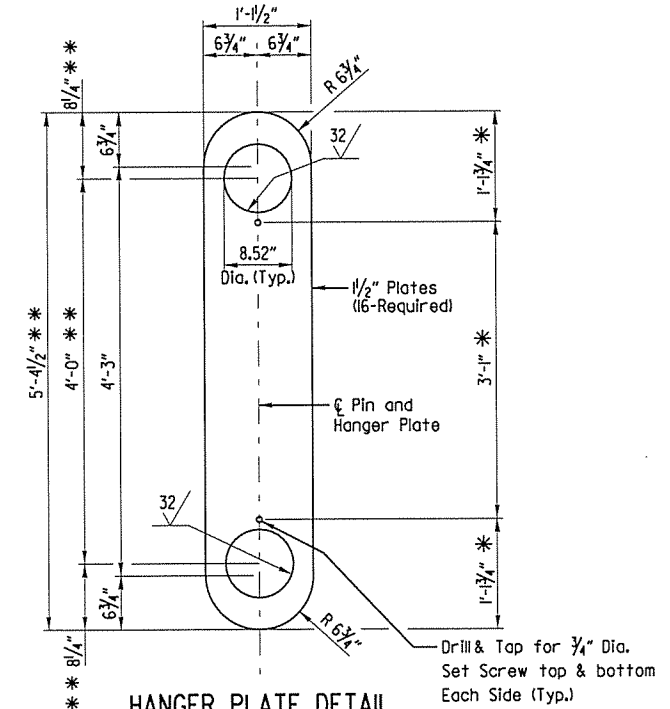
PIN DETAILS
Scale: 3"=1'-0"



HANGER PLATE DETAIL
@ 620' UNIT & 737' UNIT
Scale: 1"=1'-0"



PIN DETAILS
Scale: 3"=1'-0"



HANGER PLATE DETAIL
@ 326' UNIT & 620' UNIT (SHOWN)
297' UNIT & 620' UNIT (SIMILAR)
Scale: 1"=1'-0"

LEGEND
* Adjust as Necessary for Actual Nut Dimensions
** Adjust Dimension as Necessary to Achieve Proper Fit. Refer to SP Job 040672 "Catcher Support System" and SP Job 040672 "Pin and Hanger Replacement."

REFERENCE
I. General Notes

DRAWING
56920

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
DONALD G. MARSHALL
No. 16472
BRIDGE ENGINEER
PRINT DATE: 2/25/2015

PIN AND HANGER REPLACEMENT DETAILS
PIN AND HANGER DETAILS
ARK. RIVER BRIDGE SUPPORT ASSEMBLY
REPAIR (HWY.64) (FORT SMITH) (S)
SEBASTIAN COUNTY
ROUTE 64 SECTION 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: EEM DATE: 02/13/15 FILENAME: B040672X1.S3I
CHECKED BY: DGM DATE: 02/24/15
DESIGNED BY: RTH DATE: 01/16/15 SCALE: As Shown
BRIDGE NO. 05176 DRAWING NO. 56919

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 REVISION DATE:

STRUCTURAL GENERAL NOTES

Construction Specification: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, Section and Subsection refer to the Standard Construction Specifications.

Design Specifications: AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002, with current Interim specifications, Load Factor Design Method

Half-size detail drawings and fabrication drawings of existing Bridge No. 05176 may be obtained from the Construction Contract Procurement Section of the Program Management Division upon request; Drawings Nos. 15717 through 15771.

Structural Steel: Except as noted, all structural steel shall be AASHTO M270, Gr. 50 and shall be painted in accordance with Subsection 807.75. Pins shall be 8 1/2" diameter standard recessed pins with two standard recessed nuts and two bronze washers. Recessed pins shall be AASHTO M102, Class G. Bronze washers shall be ASTM B22-14. Recessed pin nuts shall be AASHTO M102, Class G. New bolts shall be ASTM A490 High Strength bolts. All items listed above shall be measured and paid for at the unit price per pound bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

Bolt Sizes - When Replacing Existing Bolts or Rivets, use A490 Bolts that are the same Diameter of the Bolt or Rivet that they are Replacing. All New Bolts Shall be A490, 7/8" Bolts, unless noted otherwise. Refer to SP Job 040672 "ASTM A490 Bolts."

Required Minimum Bolt Tension for A 490 Bolts:

- 3/4" Dia. - 35 kips
- 7/8" Dia. - 49 kips
- 1" Dia. - 64 kips

Hanger bars shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the tensile stresses.

Hanger bars and pins are main load carrying members and are fracture critical. They shall meet the longitudinal Charpy V-notch test as specified in Subsection 807.05 for a minimum of 25 ft-lbs @ 70 degrees F. This work and materials are to be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50)" and will not be paid for directly.

All welding that is to be done during fabrication, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If the Contractor or Erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer for approval. All welding shall conform to Subsection 807.26 and applicable Supplemental Specifications.

Temporary welds to existing members to remain shall be removed and ground flush.

Prior to the fabrication of the pins and hangers, the Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the proposed work to existing conditions. These field verification measurements shall be submitted to the Engineer prior to shop drawing approval.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approved secured before fabrication is begun.

Type II Cleaning and Painting: The existing webs and insides of flanges, between the stiffeners to either side of the joint where the pin and hangers are located, shall be cleaned and painted according to Section 820 and shall be measured and paid for at the unit price per ton bid for "Cleaning and Painting Structural Steel (Type II)". Paint color shall be aluminum.

Pins shall be coated with a thin coat of graphite dry film lubricant after machining prior to the formation of rust.

Pin Lubrication: The pins shall be greased through the grease fittings after they are installed and before loads are applied to the pins. Grease fittings and greasing of the pins shall not be paid for separately, but will be subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50)". Grease shall be marine bearing grease.

Removal and Salvage: The existing pins and hangers shall remain the property of the Department. The Contractor shall disassemble the pins and hangers, mark them to identify what location they were removed from and store them safely in a suitable location near the construction site as approved by the Engineer.

Maintenance of Traffic: See SP Job 040672 "Maintenance of Traffic".

STRUCTURAL GENERAL NOTES CONTINUED

Hanger Rods and Attachments: Hanger rods shall be ASTM A722 with an ultimate stress of 150 ksi (Grade 150). Provide nuts and washers in accordance with the manufacturer's recommendations. Provide nuts that will develop at least the strength of the hanger rods.

Set screws - shall conform to ASTM A307.

Pre-Tension Rods to 5 kip load.

Care must be taken to not damage hanger rods, catcher support system, jacking system, or existing steel to be retained by torch cutting or welding operations near them.

Field Welding of existing members is not permitted without permission of the Engineer.

Provide Elastomeric Bearings in accordance with Subsections 808.02, and 808.03.

Elastomeric Bearings will not be paid for separately, but will be considered subsidiary to the item SP Job 040672 "Catcher Support System."

PTFE: Virgin TFE Resin in accordance with ASTM D-4894.

Preformed Fabric Pad: in accordance with Subsection 807.15(a).

Stainless Steel Plate shall conform to ASTM A167 or ASTM A240.

The Preformed Fabric Pad/PTFE/Stainless Steel Bearing Assembly will not be paid for separately, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50)."

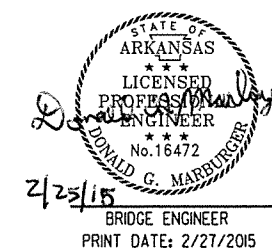
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				4	ARK.			
						JOB NO.	040672	18 22
						① 05176 - PIN & HANGER DETAILS - 56920		

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	Must Be Used
Over 3/4"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

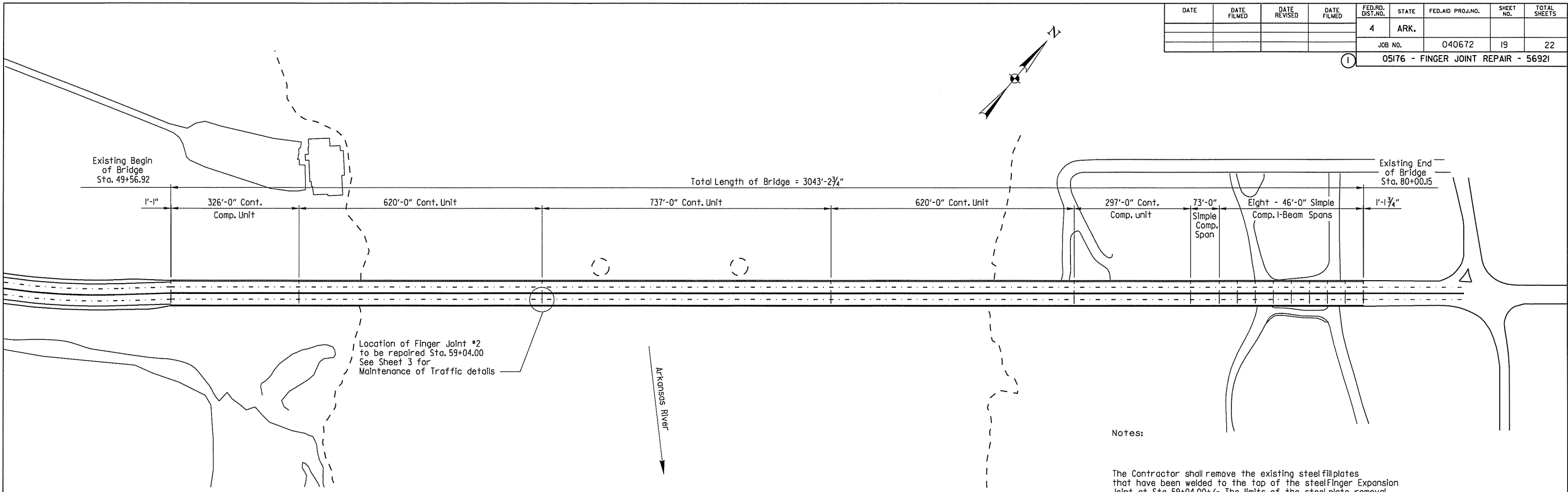
GENERAL NOTES
 PIN AND HANGER DETAILS
 ARK. RIVER BRIDGE SUPPORT ASSEMBLY
 REPAIR (HWY. 64) (FORT SMITH) (S)
 SEBASTIAN COUNTY
 ROUTE 64 SECTION 1
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARKANSAS



2/25/15
 BRIDGE ENGINEER
 PRINT DATE: 2/27/2015

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JOB NO. 040672							19	22
05176 - FINGER JOINT REPAIR - 56921								



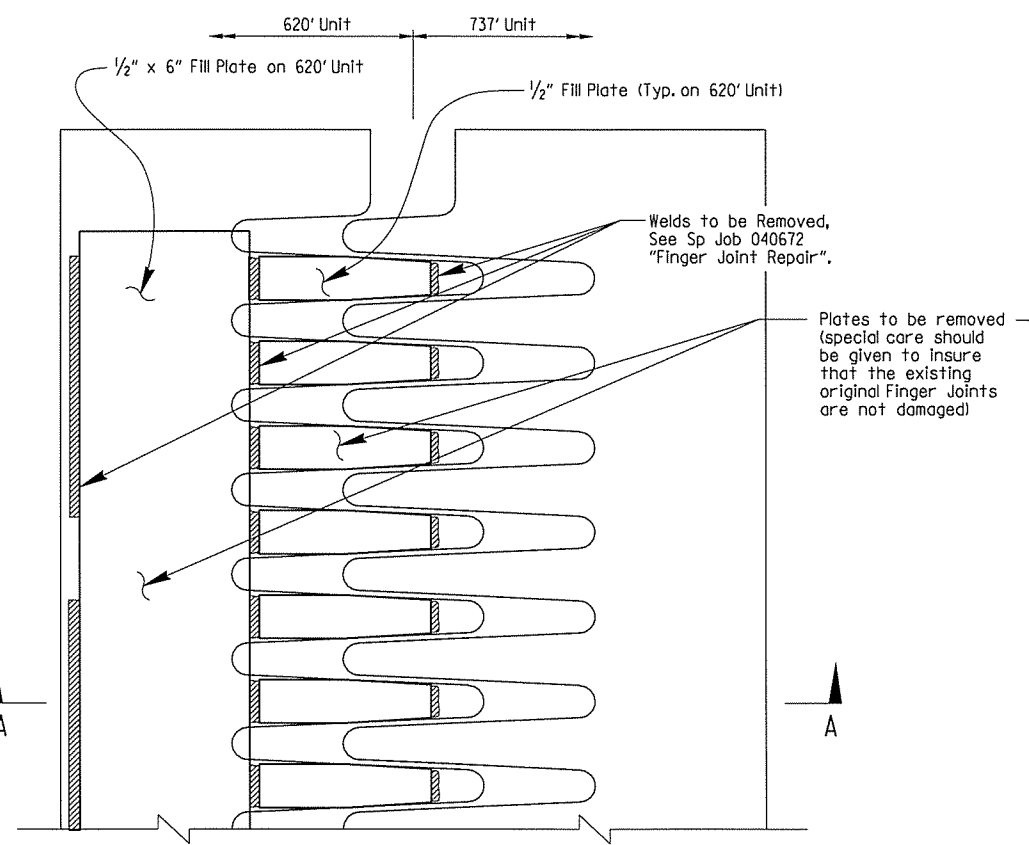
LOCATION SKETCH

Notes:

The Contractor shall remove the existing steel fill plates that have been welded to the top of the steel Finger Expansion Joint at Sta. 59+04.00+/- . The limits of the steel plate removal are between the gutterlines on the eastbound lanes only. All welds in the fill plates shall be removed and ground flush with the original top of joint assembly. See SP Job 040672 "Finger Joint Repair".

For additional details and information, See original construction Drawing No. 15763.

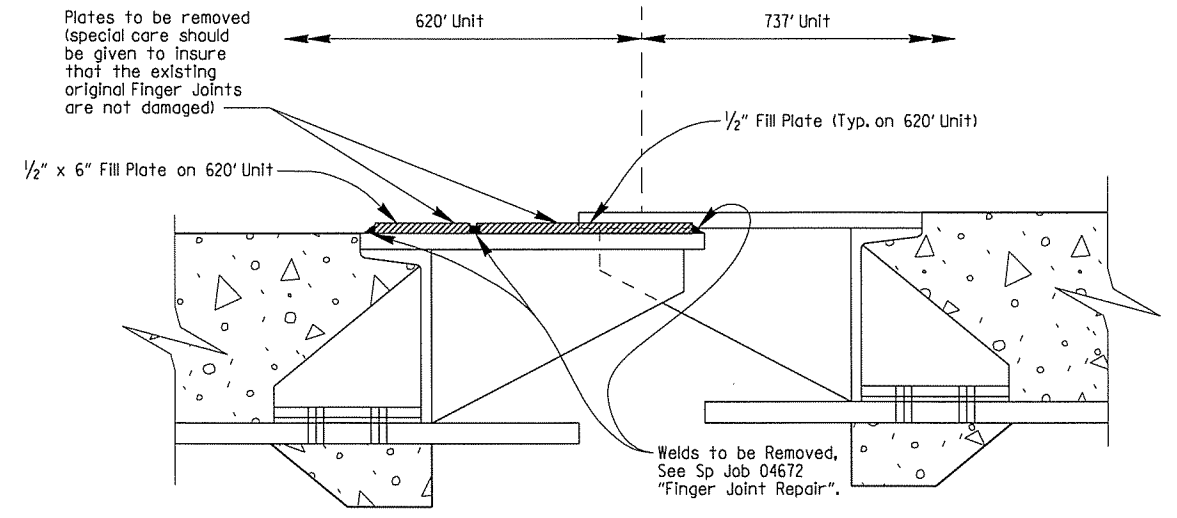
For additional maintenance of traffic requirements, See SP Job No. 040672 "Maintenance of Traffic".



PARTIAL PLAN OF TYPICAL FINGER JOINT



PHOTOGRAPH OF FINGER JOINT TO BE REPAIRED



SECTION A-A


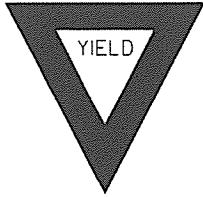
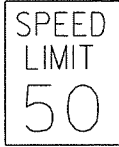
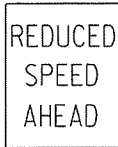

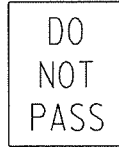



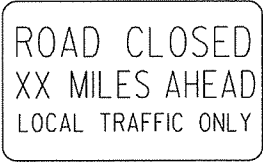
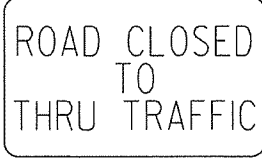

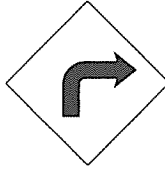
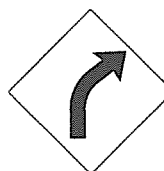
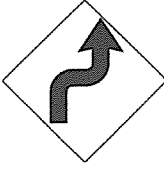
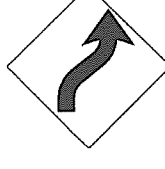
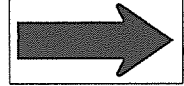
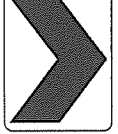
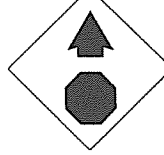
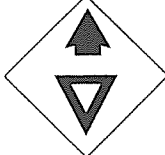
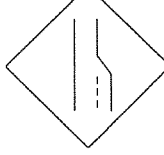



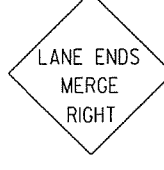


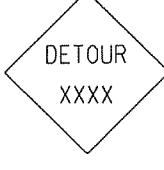



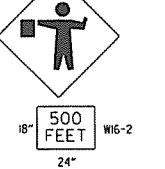


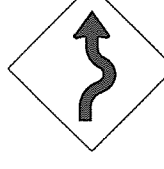



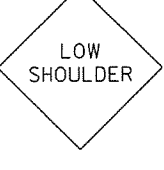
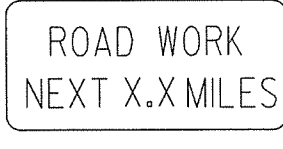
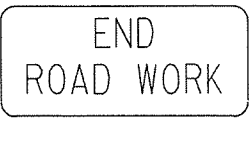
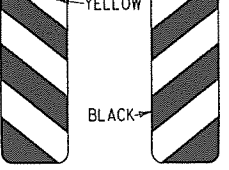
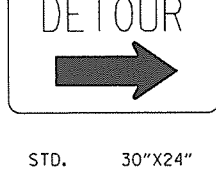
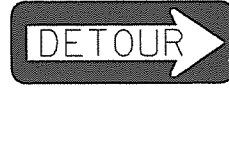
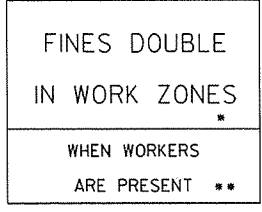
STEPHEN F. HARPER
 LICENSED PROFESSIONAL ENGINEER
 No. 14501
 2/27/15

BRIDGE ENGINEER
 PRINT DATE: 2/27/2015

FINGER JOINT REPAIR DETAILS
 ROUTE SECTION
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARKANSAS

DRAWN BY: WEG DATE: 11/21/14 FILENAME: B040672X1.S33
 CHECKED BY: CPB DATE: 2/11/15
 DESIGNED BY: SFH DATE: 11/14 SCALE: No Scale
 BRIDGE NO. 05176 DRAWING NO. 56921

William.Greenuip 2/27/2015 9:25:08 AM
 WORKSPACE: William.Greenuip
 C:\BWD\B1-loc\B040672.dwg
 PROJECTS\William.Greenuip\0328572\B040672_06_Hwy64_Mt_02.dgn
 REVISED DATE:

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>WI-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>WHEN WORKERS ARE PRESENT **</p> <p>* USE 6" C LETTERS ** USE 4" D LETTERS</p>

20

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

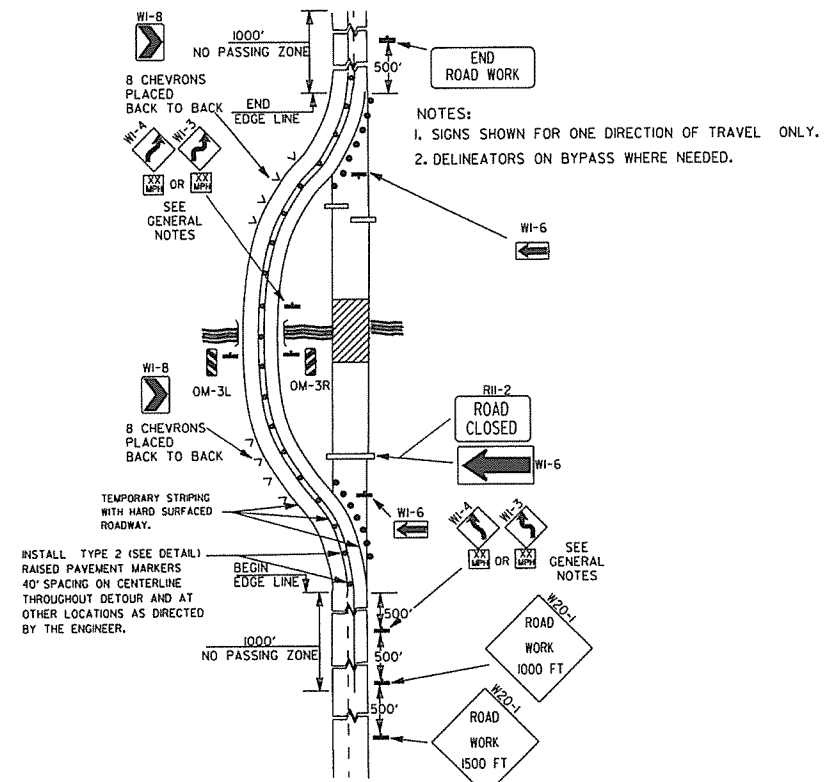
GENERAL NOTES:

- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
- EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED, SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
- POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
- ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

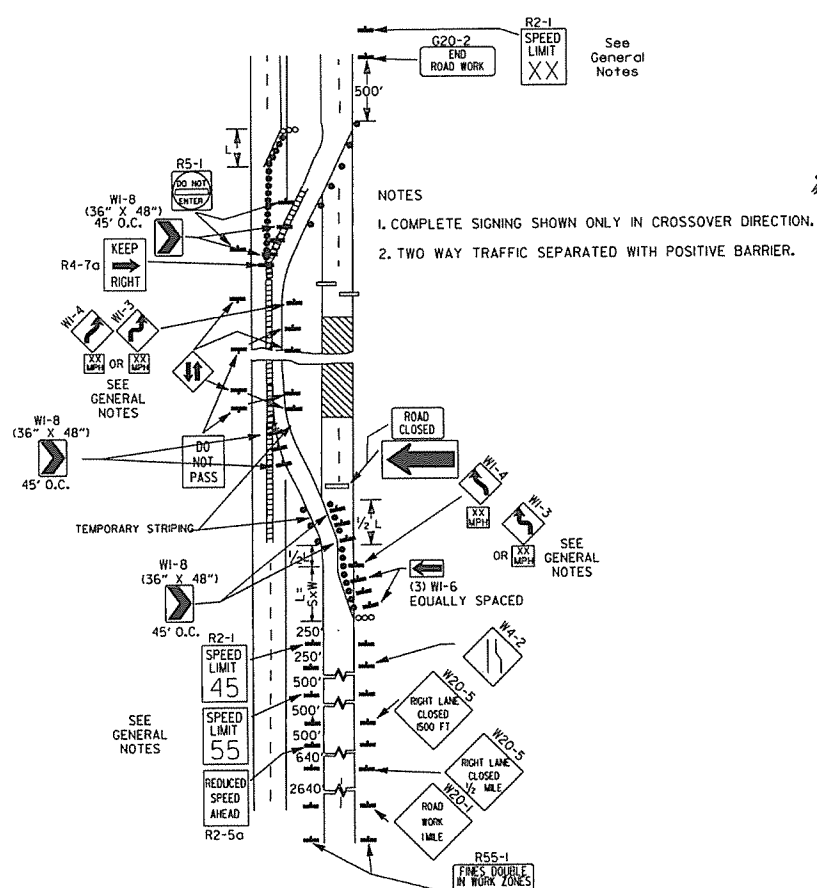
NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

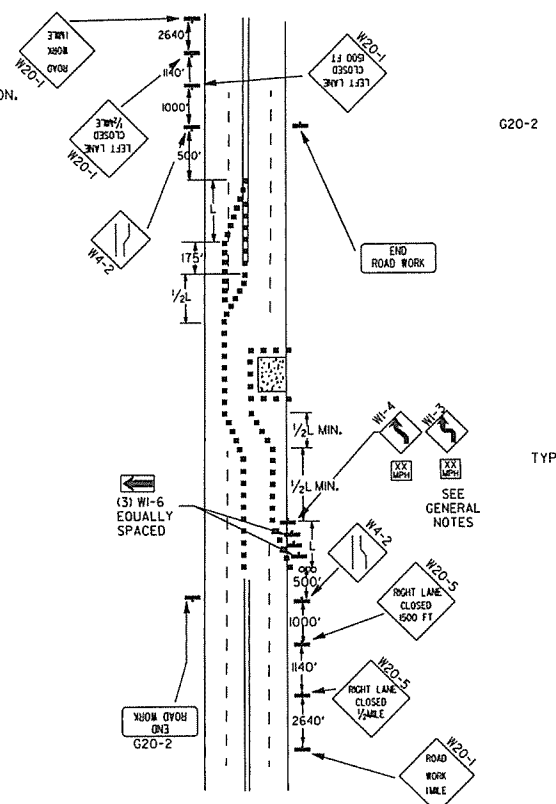
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



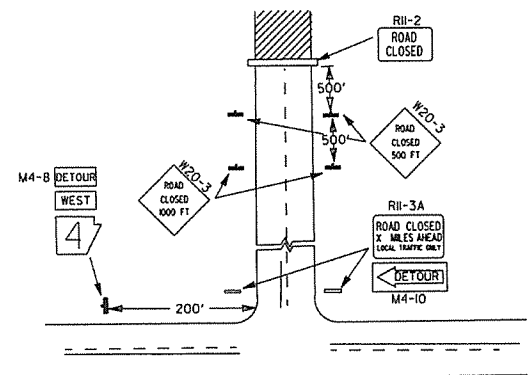
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



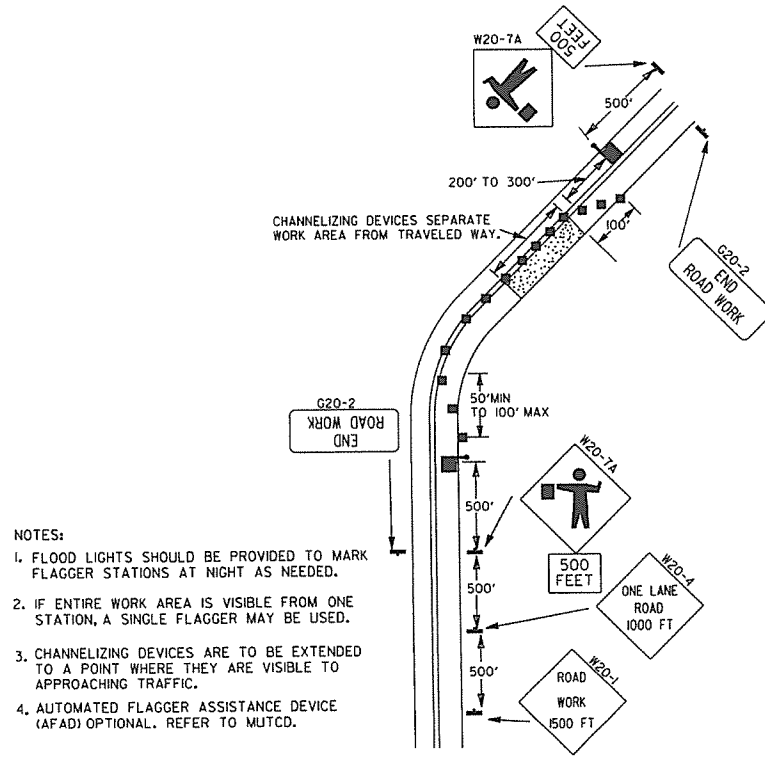
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



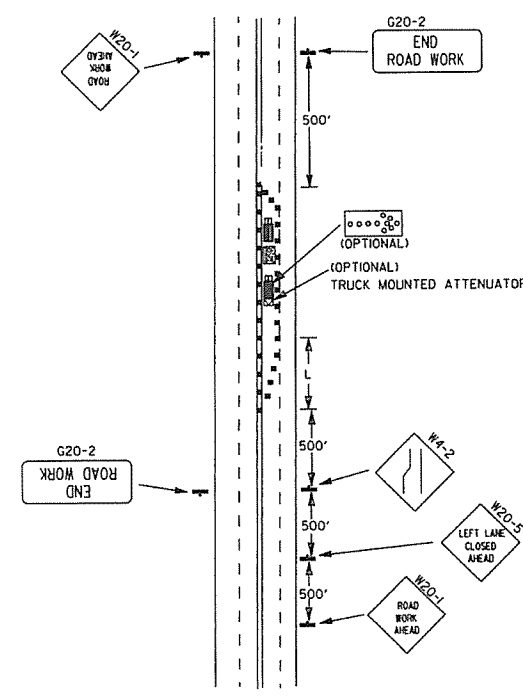
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.

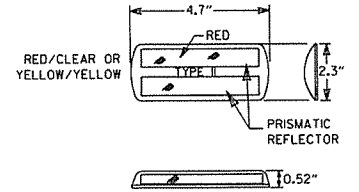


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

- KEY:
- FLAGGER
 - POSITIVE BARRIER
 - ARROW PANEL (IF REQUIRED)
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
 - RAISED PAVEMENT MARKER



TYPICAL ADVANCE WARNING SIGN PLACEMENT

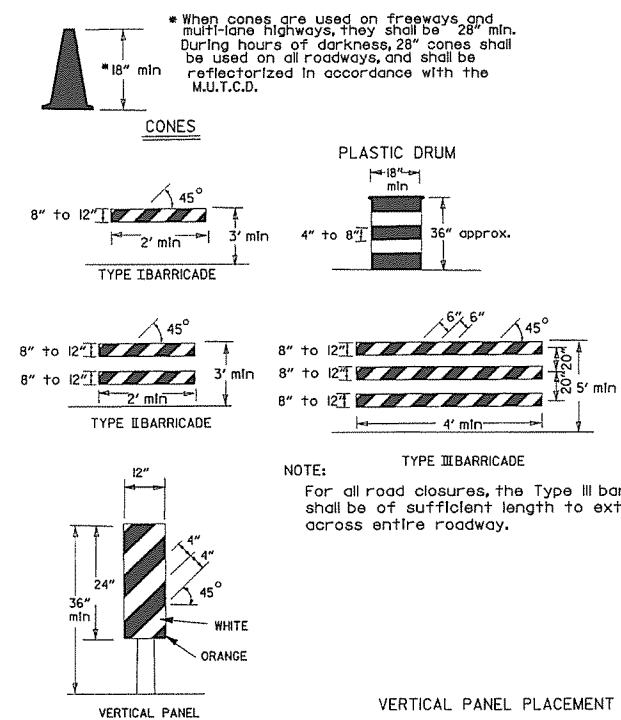
TAPER FORMULAE:

$L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
 2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
 5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

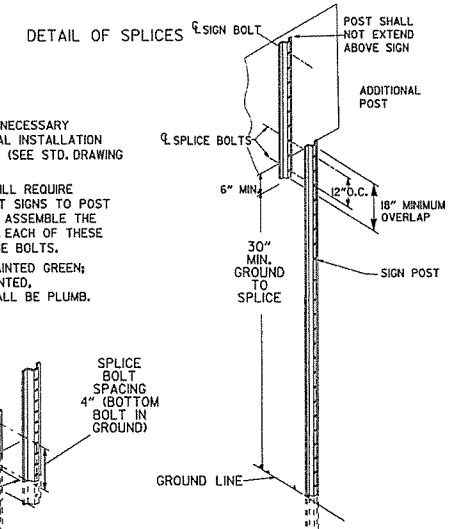
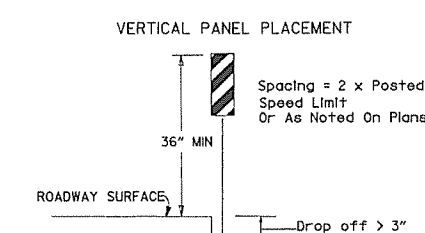
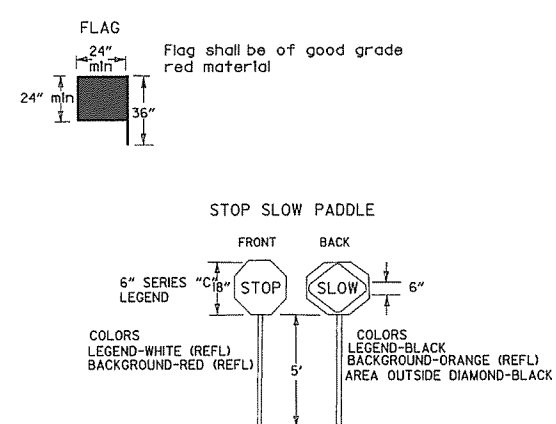
Channelizing devices



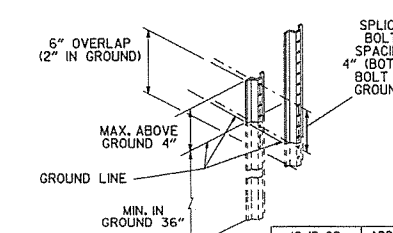
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-II
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-I and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

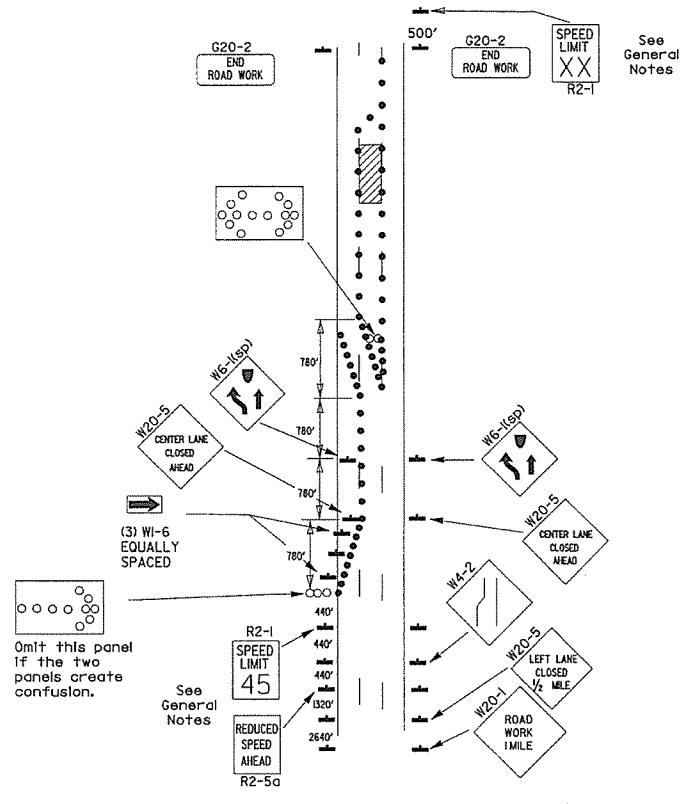
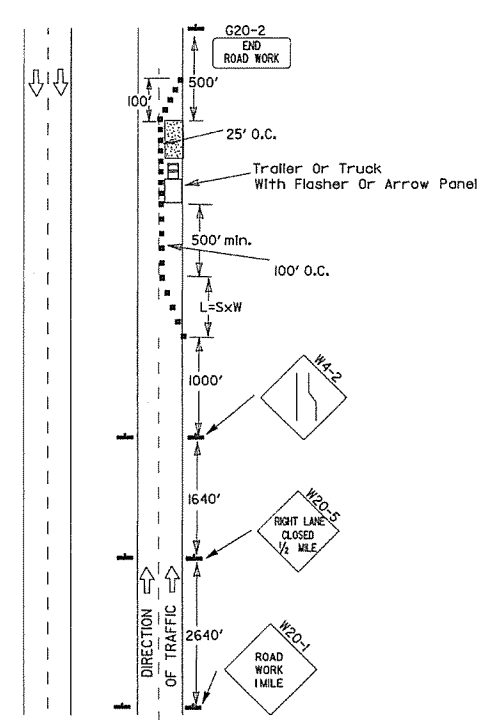


NOTES:
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.
SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-I & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

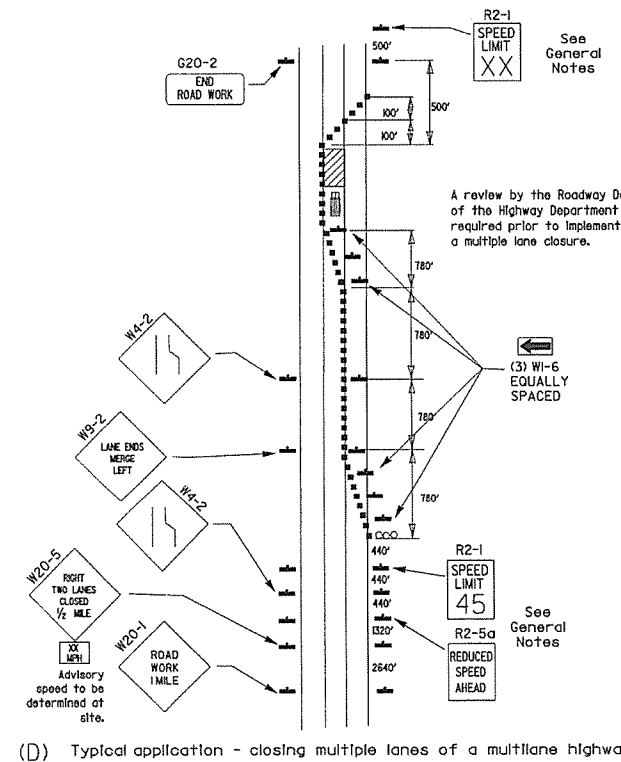
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-3



(B) Typical application - 3-lane oneway roadway where center lane is closed.

- KEY:**
 ○○○ Arrow Panel (if Required)
 ■ Channelizing Device
 ● Traffic drum

- GENERAL NOTES:**
- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
 - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
 - Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 - Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 - The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 1/2 mile in advance of the job limit. Additional W20-1 (1/2 MILE) signs are not required in advance of lane closures that begin inside the project limits.
 - Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
 - All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
 - Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



(D) Typical application - closing multiple lanes of a multilane highway.

(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.