MEMORANDUM

Missouri Department of Transportation
Construction and Materials
Southwest District

TO: Lydia Brownell, Geotechnical Director

CC: Johnny Teegardin, SW/DCME
Morgan Stockman, CO/CM
Stacy McMillian, CO/SLE
Tyler Lindsay, CO/SPM
Craig Switzer, SW/PM

FROM: Nicole Preuss, R.G.
Southwest District Geologist

DATE: March 3, 2025

SUBJECT: Materials and Construction
Preliminary Geotechnical Report
Route H, Bridge Replacement
JSR0143, McDonald County

The preliminary geotechnical report for the above noted job has been completed. Job length has not been determined as of this time but should be roughly long enough to replace the bridge and get a smooth grade across the new structure. The proposed improvements consist of replacing the existing structure, Bridge Number R0305, over Goodin Hollow with a new structure of the same height and on the same alignment. This preliminary geotechnical report was prepared in accordance with existing bridge plans dated March 1963 and discussion with district design.

Three borings were drilled for the project, with one boring located in each quadrant of the bridge except the NE quadrant. Logs of subsurface information and the lab summary sheet with descriptions and soil properties encountered are attached. Additionally, the suggested wording for a JSP concerning Contractor Furnished Embankment in Place – Borrow is attached.

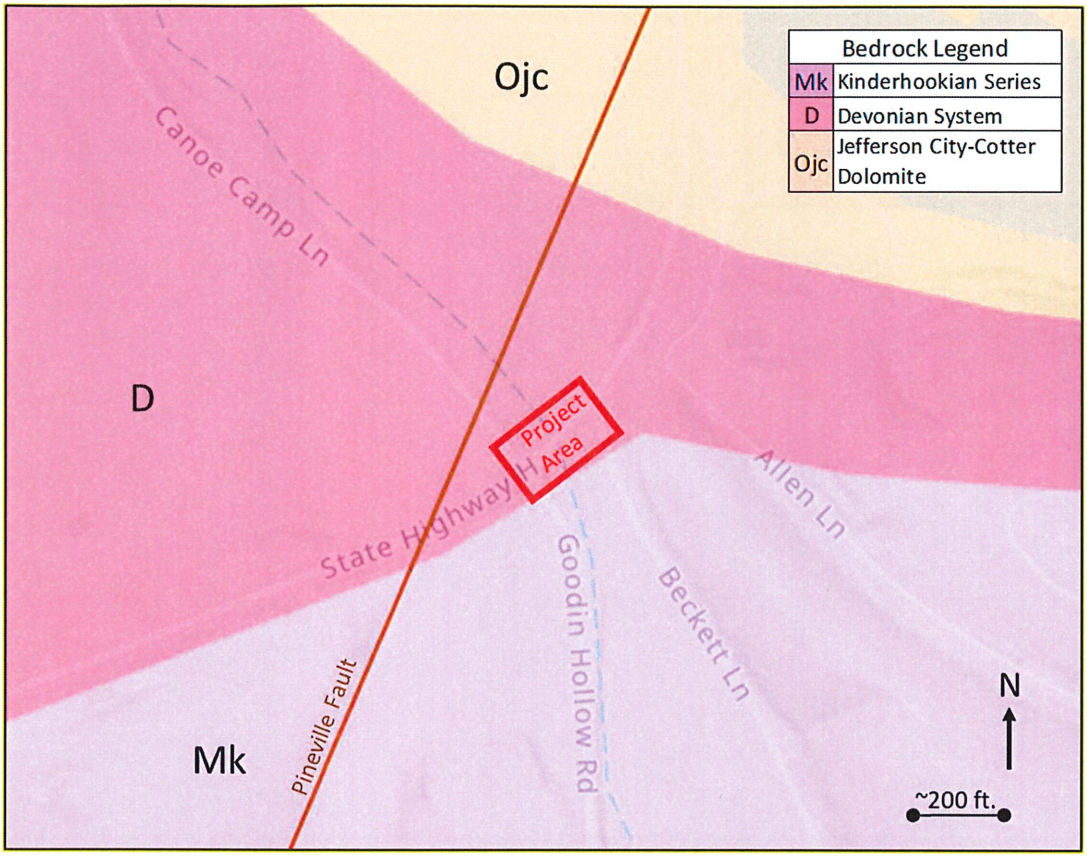
Soil Types and Geologic Formations

Soil to be encountered in the project limits as foundation soils is the Cedargap-Pomme-Waben Association as described by the USDA Natural Resources Conservation Service classification. The Waben-Cedargap soil is the most likely soil within the job area and is derived from alluvium. The soils are brown gravelly clays with low plasticity (CL) in the project limits. They have a plasticity index range of 8 to 11, liquid limit from 27 to 29 and group index between 0 and 4. They are medium stiff in consistency. Groundwater was not encountered.

Based on the Department of Natural Resources (DNR) GeoSTRAT map the most likely bedrock in the project area is Devonian aged (Fig. 1). The existing bridge plans from March 1963 indicate a black shale is present as bedrock. This is probably the Chattanooga Shale. Other bedrock near the project area are the Mississippian aged Kinderhookian Series and the Ordovician aged

Jefferson City-Cotter Dolomite. The Pineville fault is present north of the project area. Apparent bedrock was encountered in the borings at depths of between 24 to 26 feet below the surface.

Figure 1: Map showing the location of geologic structures and bedrock near the project area (per DNR GeoSTRAT website).



Grading Recommendations

It is unclear whether borrow material will be required to complete the job at this time. If the need for borrow is required Contractor Furnished Embankment in Place – Borrow will be employed. Suggested wording dealing with this JSP is attached.

Depending on the season of construction, soils may require moisture conditioning prior to placement of compacted fill material. If rock fill is required for the project, then material is available from the following operations: Benton County Stone – Mill Creek quarry, Anchor Stone – Jane quarry, or APAC – Gravette quarry.

Standard grading specifications now in effect should be adequate for this project.

Slopes

Lean clay soils with variable amounts of gravel and sand are present in the existing stable fill both east and west of Goodin Hollow. The fill was constructed in the 1960's and was built steeper than current guidelines allow. At this time, it is unclear whether the existing slopes will be widened in connection with a wider bridge than currently exists. If the existing fills are to be widened to accommodate a wider bridge/wider roadbed they should be constructed no steeper than 2.0H:1.0V. Likewise, if the grade is raised during final design of the project the slopes should also maintain the 2.0H:1.0V ratio. Widening of the existing slopes should be constructed in accordance with MODOT Standard Specification 203.4.11. Once plans are finalized, please submit them to the District Geologist for review to ensure preliminary recommendations are still valid.

Existing bridge fill heights are on the order of 12-feet. It is recommended the new design have a 2.0H:1.0V ratio for bridge fill spill with a rock blanket.

Foundations

Preliminary Bridge information for the structure over Goodin Hollow is available from plans of the existing structure. No critical foundation areas were discovered during this Preliminary Geotechnical Report.

Drainage

Proposed drainage will likely match the existing and discharge capacity will likely remain adequate.

Seeding

Seeding shall be as per MODOT Standard Specification Section 805 for the region that corresponds with the project location.

Attachments

1. JSP_Borrow_JSR0143
2. Lab_Summary_JSR0143
3. BL_Map_JSR0143
4. gINT_Logs_JSR0143
5. Subsurface Diagram_JSR0143
6. Soil_Map_JSR0143

Job No JSR0143
Route H
McDonald County

Suggested wording for Job Special Provision: Contractor Furnished Embankment in Place – Borrow:

Design of this project was based on alluvial soils which are lean clays of generally low plasticity (CL) with considerable rock content. The recommended slope angle is 2.0H:1.0V. Contractor furnished borrow shall be equal to or better than the material assumed for the design and will be subject to approval of the engineer as provided in MODOT Standard Specification Section 106, and in accordance with Specification Section 203.3. Approval will be based on upon consideration of (1) various soil characteristics and dispersion of test values, (2) comparison with those used for design, (3) compliance with slope selection criteria outlined in Table 321.1 of the MoDOT Engineering Policy Guide.

MISSOURI DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS
Summary for Preliminary Geotechnical Report*

COUNTY: McDonald **ROUTE:** H **JOB NUMBER:** JSR0143

	CLASSIFICATION				% PASSING								
SAMPLE DEPTH	ASTM	AASHTO	DESCRIPTION	SHRINKAGE FACTOR	#10	#40	#200	Moisture Content	LL	PL	PI	LOCATION SAMPLED	LAB NO.**
3.4-5.0'	CL	A-2-4(0)	Gravelly brown lean clay, moist, medium stiff	1.18	26.2	16.0	11.4	11%	28	20	8	354+48, 9.5'RT	25SWNEP015 R0305_SW
12.5-14.7'	CL	A-6(4)	Brown lean clay, with gravel, moist, medium stiff	1.18	73.7	65.5	58.6	21%	29	18	11	354+48, 9.5'RT	25SWNEP016 R0305_SW
6.1-8.3'	CL	A-4(1)	Gravelly brown lean clay, moist, medium stiff	1.18	58.8	49.5	44.9	17%	27	18	9	356+78, 934'RT	25SWNEP017 R0305_SE
16.1-17.8'	CL	A-4(1)	Gravelly brown lean clay, moist, medium stiff	1.18	67.3	56.8	49.3	20%	27	19	8	356+78, 934'RT	25SWNEP018 R0305_SE
4.7-6.5'	CL	A-2-4(0)	Gravelly brown lean clay, moist, medium stiff	1.18	32.6	23.0	17.8	16%	29	21	8	355+57, 19.7'LT	25SWNEP019 R0305_NW

SOIL ASSOCIATION:
Cedargap-Pomme-Waben

Remarks:

- Shrinkage factors are estimated average data, based upon typical properties of similar soils listed in the **Geology & Soils Manual**.
- These samples represent soil that is formed from alluvium.

Waben-Cedargap Complex for entire job length

*Descriptions & soil properties are represented only as average or typical values.
**Test reports are on file with the District Geologist and in eProjects.

FORM M41


JSR0143
Bridge R0305 over Goodin Hollow
Legend
Boring Location
R0305_SE
R0305_NW
R0305_SW
Google Earth
Image © 2025 Airbus
N
100 ft

Missouri Department of Transportation
Construction and Materials

BORING NO. R0305_SW

Job No.: JSR0143 **County:** McDonald **Route:** H

Design: R0305 **Skew:** **Location:** Goodin Hollow

Bent: **Logged By:** Nicole Preuss **Operator:** David Freeman

Station: 354+48.731 **Northing:** 151359.83 **Date of Work:** 01/29/25-01/29/25

Offset: 9.465 RT **Easting:** 2821956.56 **Depth to Water:**

Elevation: 879.1 **Requested Northing:** **Depth Hole Open:**

Requested Station: **Requested Easting:** **Time Change:**

Requested Offset: **Equipment:** Mobile B-31 ,Auger Cuttings

Requested Elevation: **Location Note:**

Drill No.: G-8807 **Hammer Efficiency:** **Drilling Method:** Continuous Flight Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Field Tests	Index Tests
0		0.0-1.3' Asphalt and roadbed gravel						
		1.3-5.2' (CL) Gravelly brown lean clay, moist, medium stiff						LL = 28 PL = 20 MC = 11.0%
		5.2-26.2' (CL) Brown lean clay, with gravel, moist, medium stiff	870					
10								LL = 29 PL = 18 MC = 21.0%
			860					
20								
		26.2-28.0' Likely shale						
		Bottom of borehole at 28.0 feet.						

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri West **Coordinate Proj. Factor:** 1.00009513

Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

Geologic formations encountered: Chattanooga Shale

Are pinnacles, crevices or cavities anticipated? No

Is scour anticipated? No

Is difficulty anticpated in gaining access to site? No

Foundation problems, if any: No

Will a special investigation be requested? No

Other comments:

LETTER BOREHOLE - DISTRICTS - MODOT 20150728.GDT - 2/28/25 09:04 - Z:\SG-DISTRICT\GINT\SOUTHWEST DISTRICT\PROJECT FILES\JSR0143_MCDONALD_H_GOODINHOLLOW.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. R0305_SE
Page 1 of 1

Job No.: JSR0143 **County:** McDonald **Route:** H
Design: R0305 **Skew:** **Location:** Goodin Hollow
Bent: **Logged By:** Nicole Preuss **Operator:** David Freeman
Station: 356+78.063 **Northing:** 151517.44 **Date of Work:** 01/29/25-01/29/25
Offset: 9.394 RT **Easting:** 2822125.5 **Depth to Water:**
Elevation: 879.1 **Requested Northing:** **Depth Hole Open:**
Requested Station: **Requested Easting:** **Time Change:**
Requested Offset: **Equipment:** Mobile B-31 ,Auger Cuttings
Requested Elevation: **Location Note:**
Drill No.: G-8807 **Hammer Efficiency:** **Drilling Method:** Continuous Flight Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Field Tests	Index Tests
0		0.0-0.7' Asphalt and roadbed gravel 0.7-24.7' (CL) Gravelly brown lean clay, moist, medium stiff						
			870					LL = 27 PL = 18 MC = 17.0%
10								
			860					LL = 27 PL = 19 MC = 20.0%
20								
		24.7-29.2' Likely shale						
			850					
		Bottom of borehole at 29.2 feet.						

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri West **Coordinate Proj. Factor:** 1.00009513
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

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Geologic formations encountered: Chattanooga Shale
Are pinnacles, crevices or cavities anticipated? No
Is scour anticipated? No
Is difficulty anticpated in gaining access to site? No
Foundation problems, if any: No
Will a special investigation be requested? No
Other comments:

LETTER BOREHOLE - DISTRICTS - MODOT 20150728.GDT - 2/28/25 09:04 - Z:\SG-DISTRICT\GINT\SOUTHWEST DISTRICT\PROJECT FILES\JSR0143_MCDONALD_H_GOODINHOLLOW.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. R0305_NW
Page 1 of 1

Job No.: JSR0143	**County:** McDonald	**Route:** H
Design: R0305	**Skew:**	**Location:** Goodin Hollow
Bent:	**Logged By:** Nicole Preuss	**Operator:** David Freeman
Station: 355+57.901	**Northing:** 151449.74	**Date of Work:** 01/29/25-01/29/25
Offset: 17.699 LT	**Easting:** 2822023.31	**Depth to Water:**
Elevation: 877.1	**Requested Northing:**	**Depth Hole Open:**
Requested Station:	**Requested Easting:**	**Time Change:**
Requested Offset:	**Equipment:** Mobile B-31 ,Auger Cuttings	
Requested Elevation:	**Location Note:**	
Drill No.: G-8807	**Hammer Efficiency:**	**Drilling Method:** Continuous Flight Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Field Tests	Index Tests
0		0.0-25.6' (CL) Gravelly brown lean clay, moist, medium stiff	875					
5			870					LL = 29 PL = 21 MC = 16.0%
10			865					
15			860					
20			855					
25		25.6-25.7' Likely shale Bottom of borehole at 25.7 feet.						

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri West **Coordinate Proj. Factor:** 1.00009513

Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

Geologic formations encountered: Chattanooga Shale

Are pinnacles, crevices or cavities anticipated? No

Is scour anticipated? No

Is difficulty anticpated in gaining access to site? No

Foundation problems, if any: No

Will a special investigation be requested? No

Other comments:

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Missouri Department of Transportation

SUBSURFACE DIAGRAM

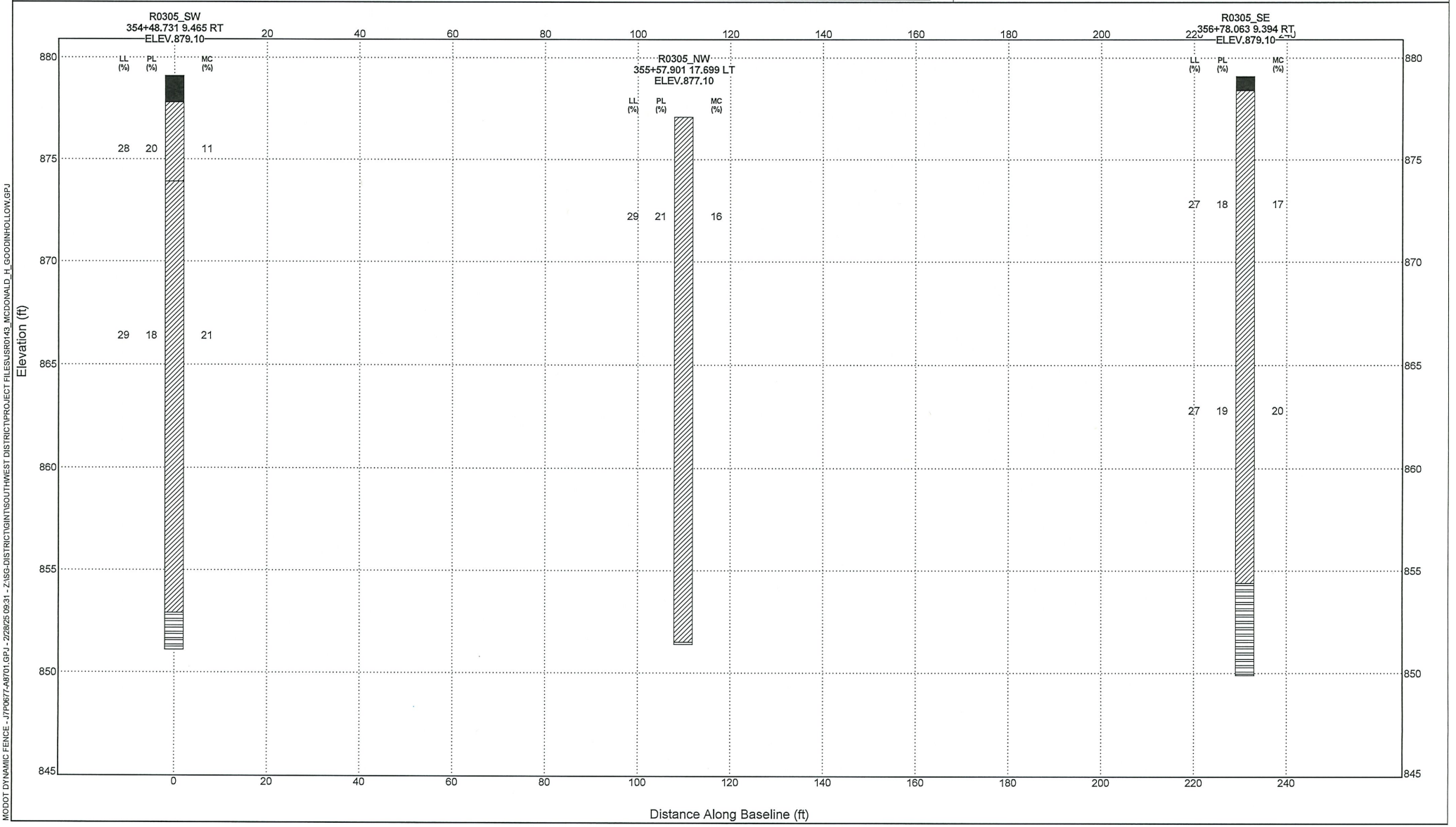
PROJECT NAME _____

PROJECT LOCATION Goodin Hollow

CLIENT _____

PROJECT NUMBER JSR0143

USCS Low Plasticity Clay | Shale | Asphalt



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KEY TO SYMBOLS

Missouri Department of Transportation

CLIENT _____ **PROJECT NAME** _____

PROJECT NUMBER JSR0143 **PROJECT LOCATION** Goodin Hollow

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

- Asphalt
- USCS Low Plasticity Clay
- Shale

SAMPLER SYMBOLS

- Auger Cuttings

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)
Qu - UNCONFINED COMPRESSIVE STRENGTH (PSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION

▽ Water Level at Time of Drilling

▼ Water Level at End of Drilling

▼ Water Level after Drilling

KEY TO SYMBOLS - MODOT 20150728.GDT - 2/28/25 09:32 - Z:\SG-DISTRICT\GINT\SOUTHWEST DISTRICT\PROJECT FILES\JSR0143_MCDONALD_H_GOODINHOLLOW.GPJ

Soil Map—McDonald County, Missouri
(JSR0143, Rte. H over Goodin Hollow)

Map Scale: 1:520 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: McDonald County, Missouri
Survey Area Data: Version 28, Aug 20, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 18, 2019—Nov 9, 2019

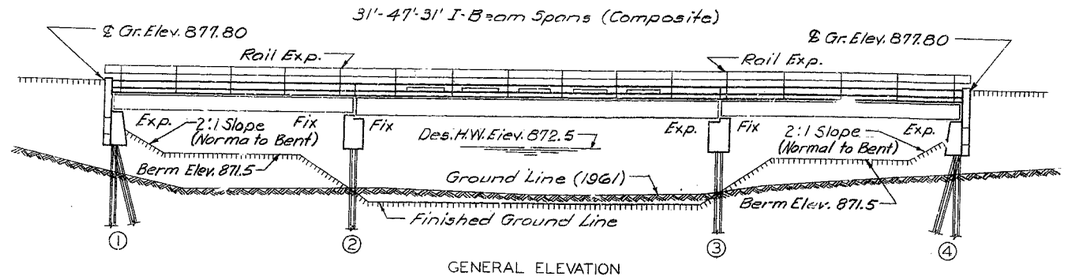
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

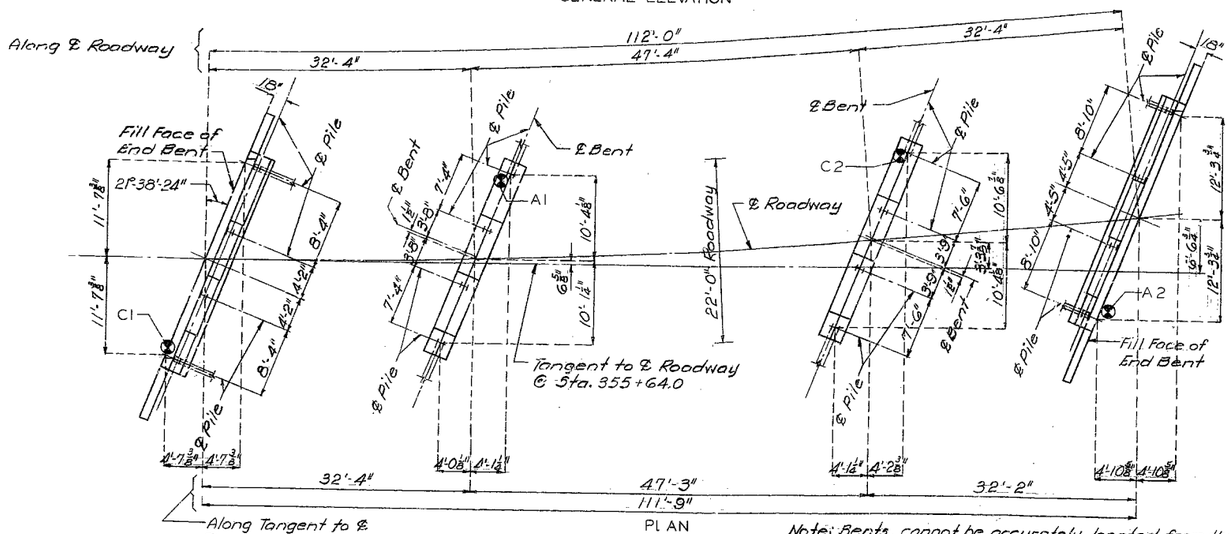
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
76754	Waben-Cedargap, occasionally flooded complex, 0 to 3 percent slopes	1.3	100.0%
Totals for Area of Interest		**1.3**	**100.0%**

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	33	



GENERAL ELEVATION



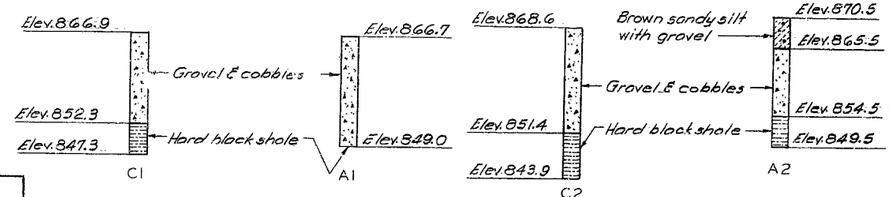
Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.
A1. bents are parallel.

PILE DATA					
Bent No.		1	2	3	4
Pile Type and Size		10BP42	10BP42	10BP42	10BP42
Number		4	4	4	4
Approximate Length	Ft.	25	25	25	25
Plan Bearing	Tons	37	37	37	37
Min. Required Bearing	Tons	19	27	27	19
Hammer		Power	Power	Power	Power
See Standard Specification 52.2.6.					

Note: All pile shall be driven to practical refusal on or into solid rock or other point bearing material at not less than the Plan Bearing shown, unless excessive splicing is required to obtain Plan Bearing, in which case the engineer will authorize a lesser bearing, but in no case less than the Minimum Required Bearing.

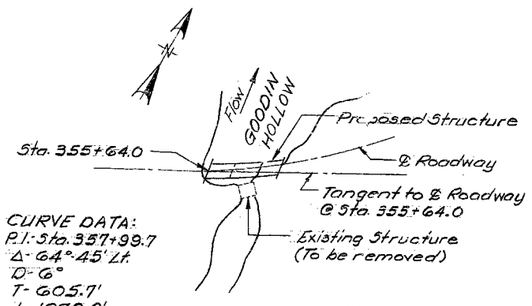
GENERAL NOTES:

Design Specifications A.A.S.H.O. - 1961
Loading H15-44 (1-Lane)
Structural Steel Stress (A.S.T.M. A36-62T) 20,000 psi
Reinforcing Steel Stress 20,000 psi
Concrete, Class B Stress 1,200 psi
Concrete, Class B1 Stress 1,600 psi
Superstructure concrete shall be Class B1.
Substructure concrete shall be Class B or Class B1 except payment will be on the basis of Class B.
Fabricated structural steel shall be A.S.T.M. A36-62T except as noted. Payment will be made as Fabricated Structural Carbon Steel.
See Standard Specification 55.3.13 for qualification of welding operators.
Field connections, High Strength Bolts ⅞", holes 1" except as noted.
Paint: shop, none; Field, none by contractor except as noted in Standard Specification 55.4.10.2.
Where joint filler is specified on the plans it shall conform to Standard Specification 1517.2.5.
Superstructure deck to be surface sealed. (See Special Provisions).



LOG OF SOUNDINGS

Note: "A" Indicates soundings taken with an Auger.
"C" Indicates soundings taken with a Core Drill.
"⊕" Indicates location of soundings.



LOCATION SKETCH

ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Steel Piles in Place (10")	Lin. Ft.	352		352
Steel Pile Cut-offs (10")	Lin. Ft.	48		48
Class B Concrete	C.U. Yd.	43.2		43.2
Class B1 Concrete	C.U. Yd.		61.2	61.2
Reinforcing Steel	Lb.	3,760	16,560	20,320
Fabricated Structural Carbon Steel	Lb.		41,520	41,520

Note: Cost of any required excavation for bridge will be included in price bid for other items.
Weight of bolts (steel to steel) is included in weight of Fabricated Structural Steel on the basis of the following weights per 100 bolts. ⅞" 40#, ¾" 65#, ⅞" 95#; 1" 135#.

B.M. #42 Elev. 872.50 'X' Ctr. S. Hdwll. Culv. 45' Rt. Sta. 356+22

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE
ABOUT 7.3 MILES N.E. OF NOEL
PROJECT NO. S-2056(1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

SUBMITTED BY D.B. Jewkes, BRIDGE ENGINEER, DATE 3/27/63
APPROVED BY W. J. Snider, CHIEF ENGINEER, DATE 3/27/63

DESIGNED AUG. 1962 BY MC CAFFERTY
Drawn Jan. 1963 by Turpin
Checked Mar. 1963 by Gifford

Note: This drawing is not to scale. Follow dimensions.

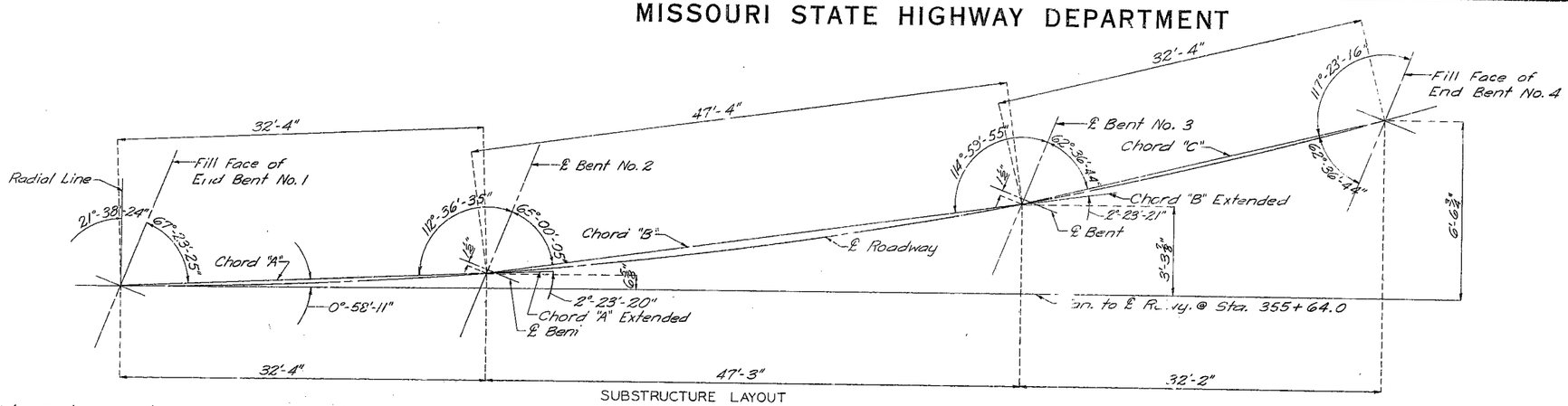
Sheet No. 1 of 10

STD. 54.00
R-305

407

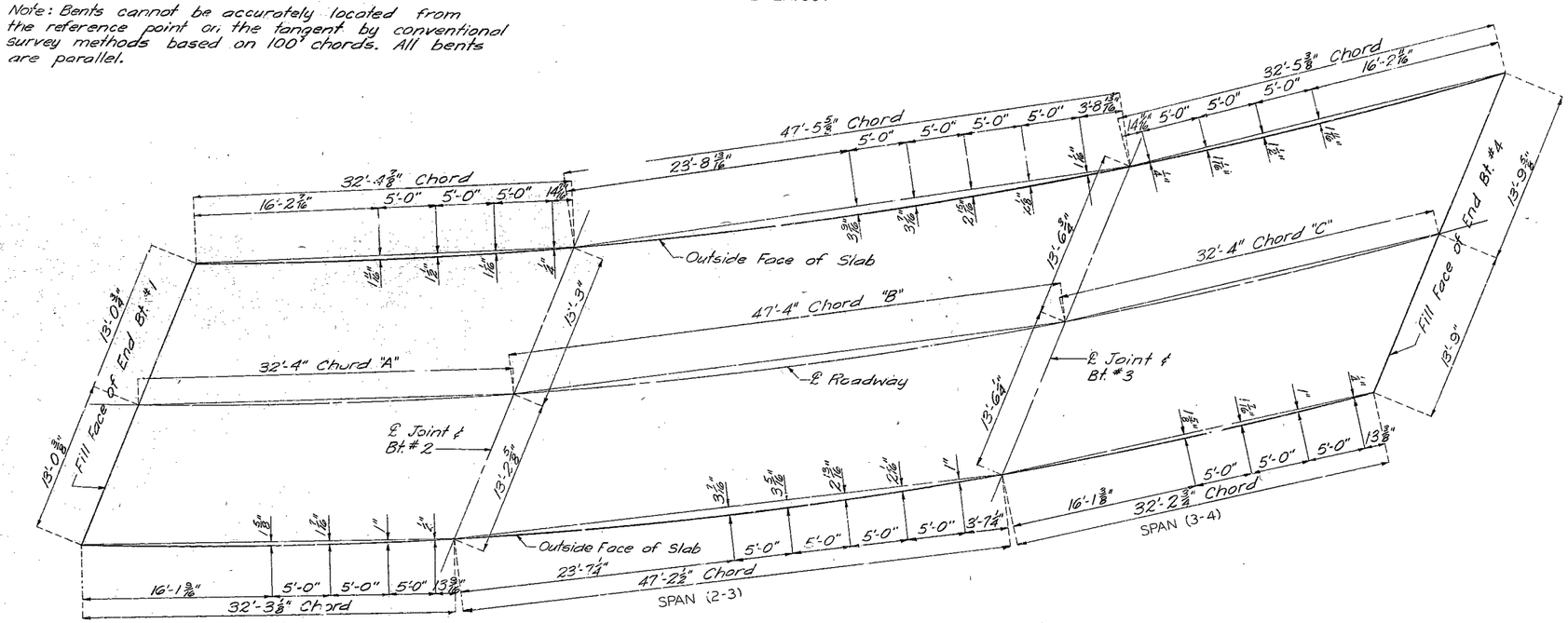
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	34	



SUBSTRUCTURE LAYOUT

Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords. All bents are parallel.



PLAN OF SLAB SHOWING CURB ORDINATES

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056(1) (SH) **STA** 355+64.0

MC. DONALD **COUNTY**

Drawn JAN. 1963 by BRADLEY

Checked Mar. 1963 by Gifford

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 10.

R-305

NO CONSTRUCTION CHANGES

408

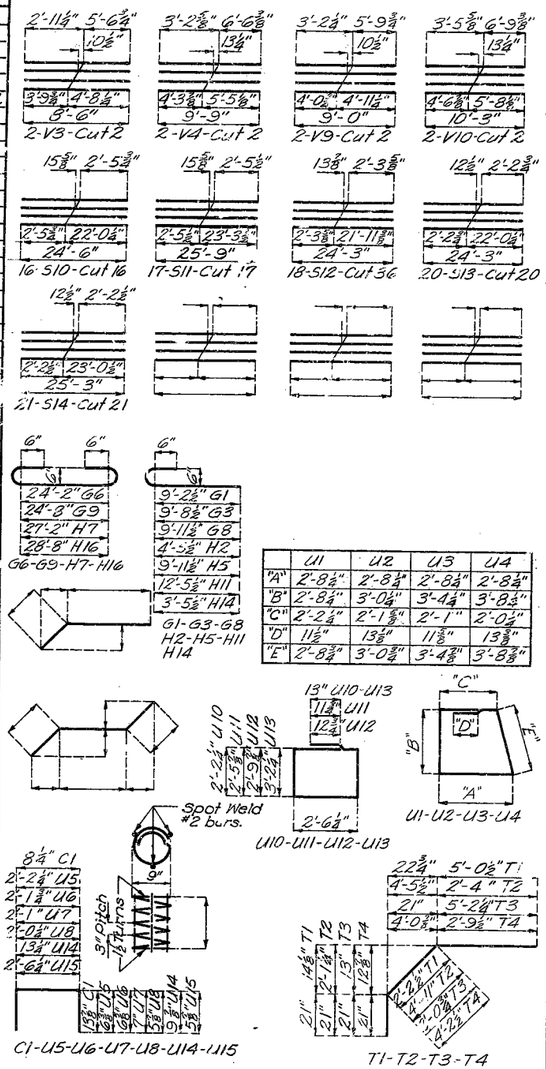
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	35	

COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION
End Bent No. 1				
4	#6	5'-9"	H2	Beam
3	#6	9'-3"	H3	"
4	#6	11'-3"	H5	Beam
4	#6	27'-5"	H6	Bm. & Bkwll.
4	#6	29'-9"	H7	Beam
6	#6	6'-9"	H8	Wing
2	#6	9'-0"	T1	Wing
2	#6	9'-0"	T2	"
2	#6	9'-0"	T3	"
2	#6	8'-9"	T4	"
9	#4	11'-3"	U1	Beam
7	#4	12'-0"	U2	"
7	#4	12'-6"	U3	"
5	#4	13'-3"	U4	"
2	#4	3'-3"	U5	"
2	#4	3'-3"	U6	"
2	#4	3'-3"	U7	"
2	#4	3'-0"	U8	"
52	#4	3'-3"	V1	Backwall
2	#4	4'-9"	V2	"
2	#4	8'-6"	V3	Wing
2	#4	9'-9"	V4	"
Int. Bent No. 2				
4	#6	10'-6"	G1	Beam
4	#6	9'-6"	G2	"
4	#6	11'-0"	G3	"
4	#4	2'-3"	G4	"
6	#4	8'-9"	G5	"
4	#6	26'-9"	G6	"
2	#6	24'-9"	G7	"
3	#4	10'-6"	U10	Beam
7	#4	11'-0"	U11	"
7	#4	11'-9"	U12	"
3	#4	12'-6"	U13	"
32	#4	2'-9"	U14	"
8	#4	3'-6"	U15	"
Int. Bent No. 3				
4	#6	10'-6"	G1	Beam
4	#6	9'-6"	G2	"
4	#4	2'-9"	G4	"
6	#4	8'-9"	G5	"
4	#6	11'-[illegible]"	G8	"
4	#6	27'-3"	G9	"
2	#6	25'-3"	G10	"
8	#4	10'-6"	U10	Beam
7	#4	11'-0"	U11	"
7	#4	11'-9"	U12	"
3	#4	12'-6"	U13	"
32	#4	2'-9"	U14	"
9	#4	3'-6"	U15	"

BENDING SKETCHES & CUTTING DIAGRAMS



	U1	U2	U3	U4
"A"	2'-8⅝"	2'-8¾"	2'-8¾"	2'-8⅝"
"B"	2'-8¼"	3'-0¼"	3'-4¼"	3'-8⅛"
"C"	2'-2½"	2'-1⅞"	2'-1"	2'-0¼"
"D"	11⅝"	13⅝"	11⅜"	13⅜"
"E"	2'-8¾"	3'-0¾"	3'-4⅞"	3'-8⅝"

NO.	SIZE	LENGTH	MARK	LOCATION
End Bent No. 4				
6	#6	6'-9"	H8	Wing
4	#6	13'-9"	H11	Beam
8	#6	9'-6"	H12	"
4	#6	4'-9"	H14	Beam
4	#6	29'-3"	H15	Bm. & Bkwll.
4	#6	31'-3"	H16	Beam
2	#6	9'-0"	T1	Wing
2	#6	9'-0"	T2	"
2	#6	9'-0"	T3	"
2	#6	8'-9"	T4	"
11	#4	11'-3"	U1	Beam
8	#4	12'-0"	U2	"
8	#4	12'-6"	U3	"
4	#4	13'-3"	U4	"
2	#4	3'-3"	U5	"
2	#4	3'-3"	U6	"
3	#4	3'-3"	U7	"
1	#4	3'-0"	U8	"
54	#4	3'-3"	V1	Backwall
2	#4	4'-9"	V2	"
1	#4	2'-3"	V8	Wing
2	#4	9'-0"	V9	"
2	#4	10'-3"	V10	"
Superstructure				
296	#5	24'-0"	S1	Slab
40	#5	32'-0"	S2	"
1	#5	[illegible]	[illegible]	"
1	#5	[illegible]	[illegible]	"
100	#4	17'-[illegible]	[illegible]5	"
1	#5	31'-[illegible]	[illegible]6	"
1	#5	32'-[illegible]	[illegible]7	"
44	#5	24'-[illegible]	[illegible]8	"
50	#4	24'-3"	S9	"
16	#5	24'-[illegible]"	S10	"
17	#5	25'-9"	S11	"
36	#5	24'-3"	S12	"
20	#5	24'-3"	S13	"
21	#5	25'-3"	S14	"
1	#5	25'-9"	S15	"
2	#5	25'-0"	S16	"
2	#5	25'-6"	S17	"
1	#5	27'-3"	S18	"
192	#5	3'-0"	C1	Curb
3	#6	31'-6"	C2	"
3	#6	32'-0"	C3	"
12	#6	24'-9"	C4	"
3	#6	32'-3"	C5	"
3	#6	31'-3"	C6	"

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No. 90.3	Revised
June 1961	

Drawn FEB. 1963 by BRADLEY
Checked Mar. 1963 by Gifford & Moberly

Note: This drawing is not to scale. Follow dimensions.

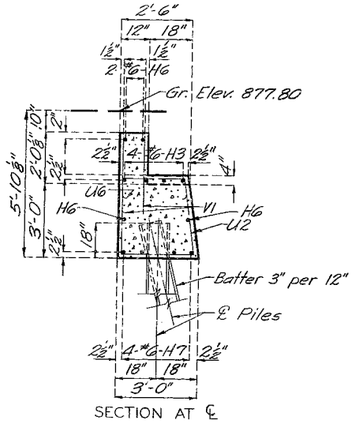
Sheet No. 3 of 10

BRIDGE OVER GOODIN HOLLOW
STATE ROAD FROM NOEL TO PINEVILLE
ABOUT 7.5 MILES N.E. OF NOEL
PROJECT NO. S-2056 (1) (SH) **STA.** 355+64.0
MC DONALD **COUNTY**

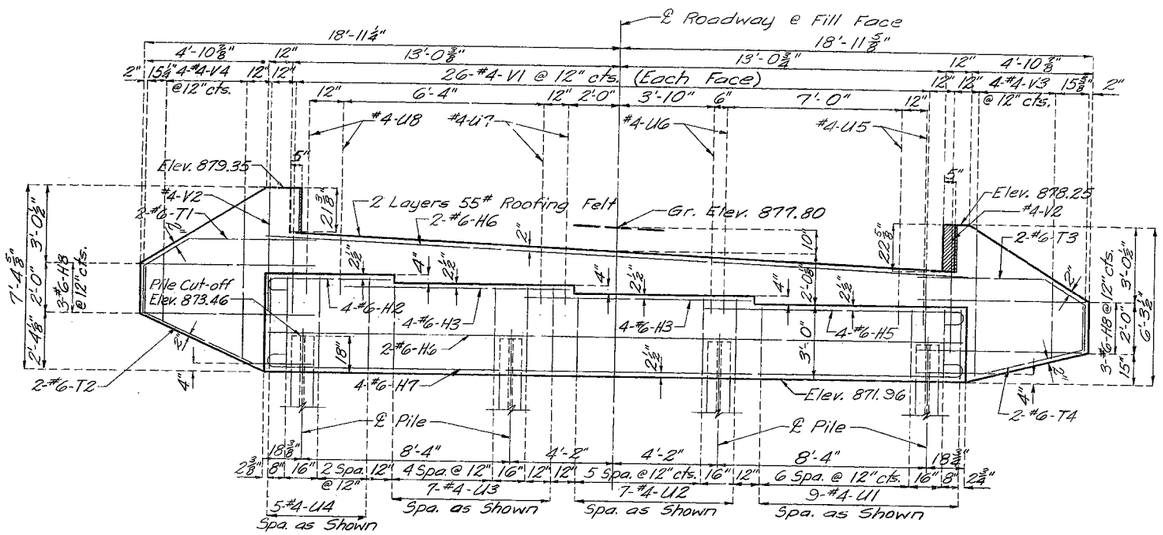
R-305

MISSOURI STATE HIGHWAY DEPARTMENT

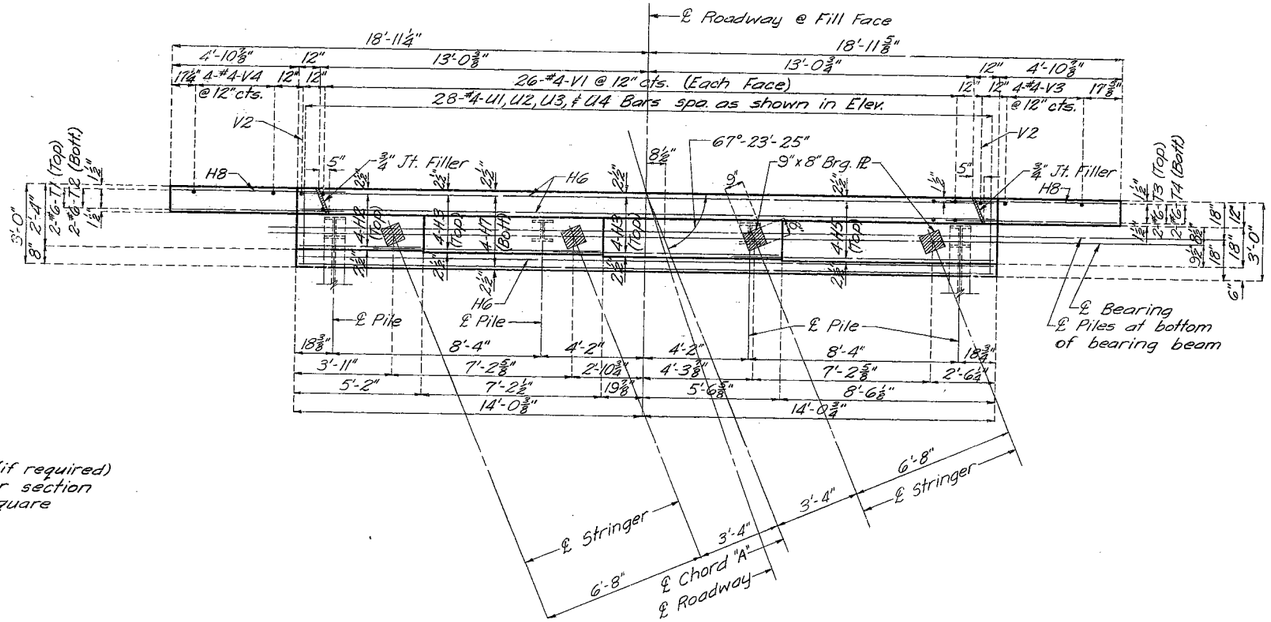
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	36	



SECTION AT ℄



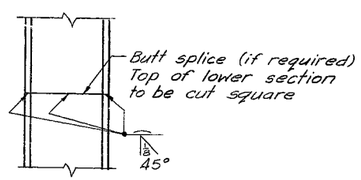
ELEVATION



PLAN

DETAILS OF END BENT NO. 1

Note: Fill at End Bent No. 1 shall not be carried above bottom of beam and wings until superstructure span (1-2) is in place.



DETAIL OF STEEL PILE SPLICE

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BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056 (1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

R-305

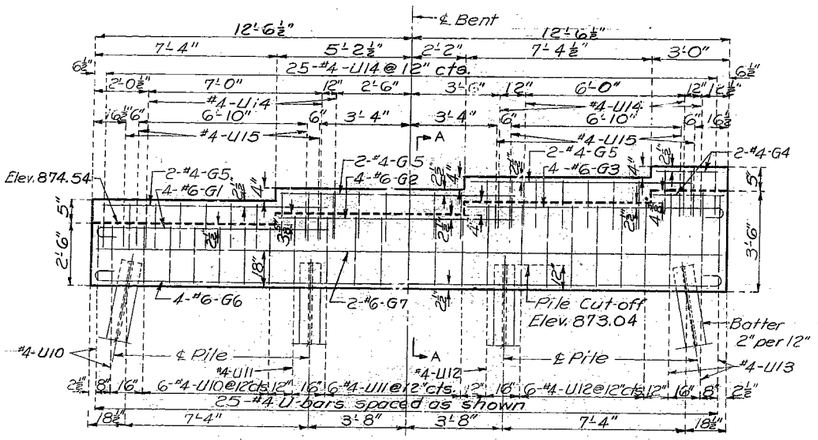
Drawn FEB. 1963 by BRADLEY

Checked Mar. 1963 by Gifford & Moberly

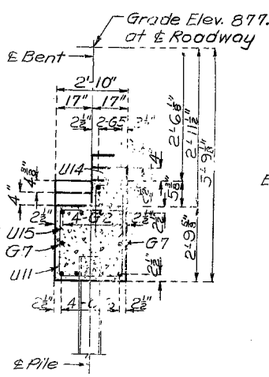
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

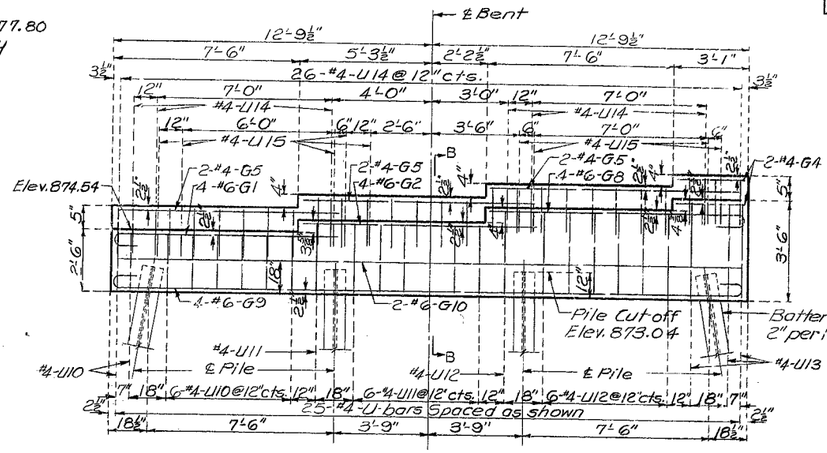
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	37	



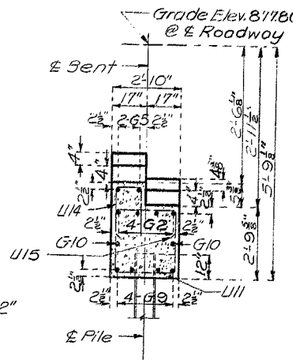
ELEVATION



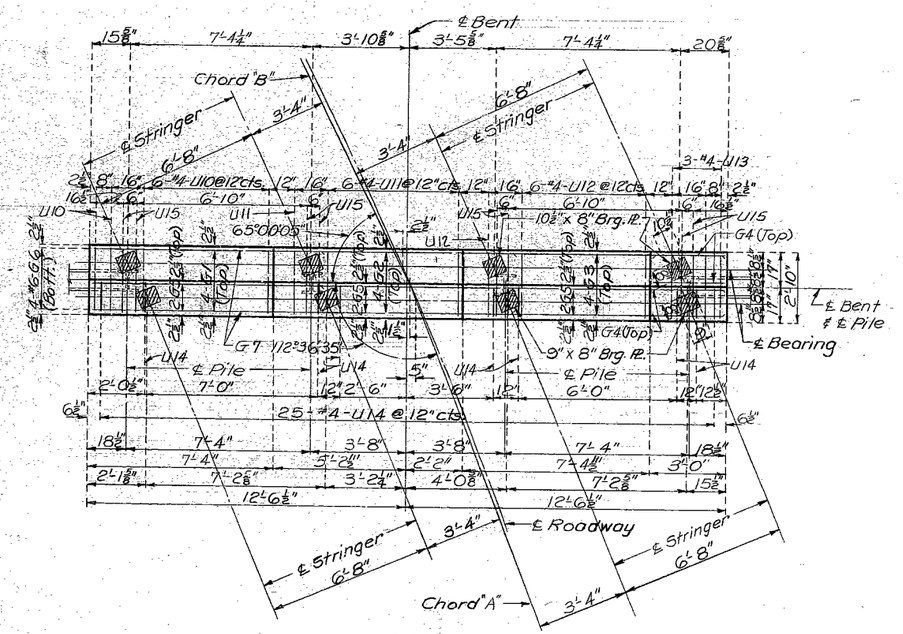
SECTION A-A



ELEVATION

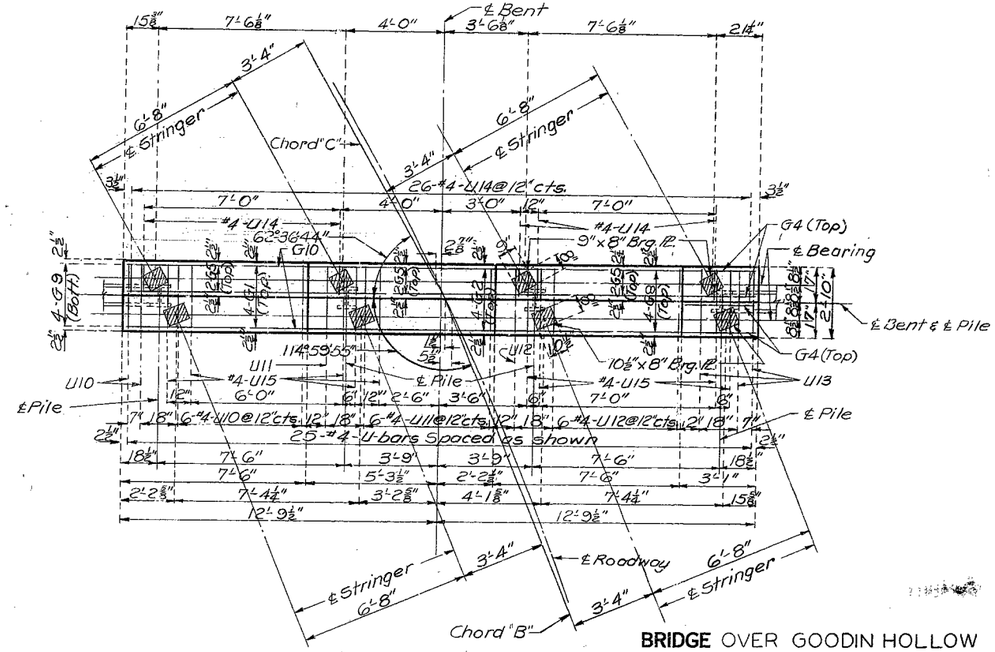


SECTION B-B



PLAN

DETAILS OF INTERMEDIATE BENT NO. 2



PLAN

DETAILS OF INTERMEDIATE BENT NO. 3

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056(1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

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Drawn Feb. 1963 by Proctor

Checked Mar. 1963 by Gifford & Moberly

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5 of 10

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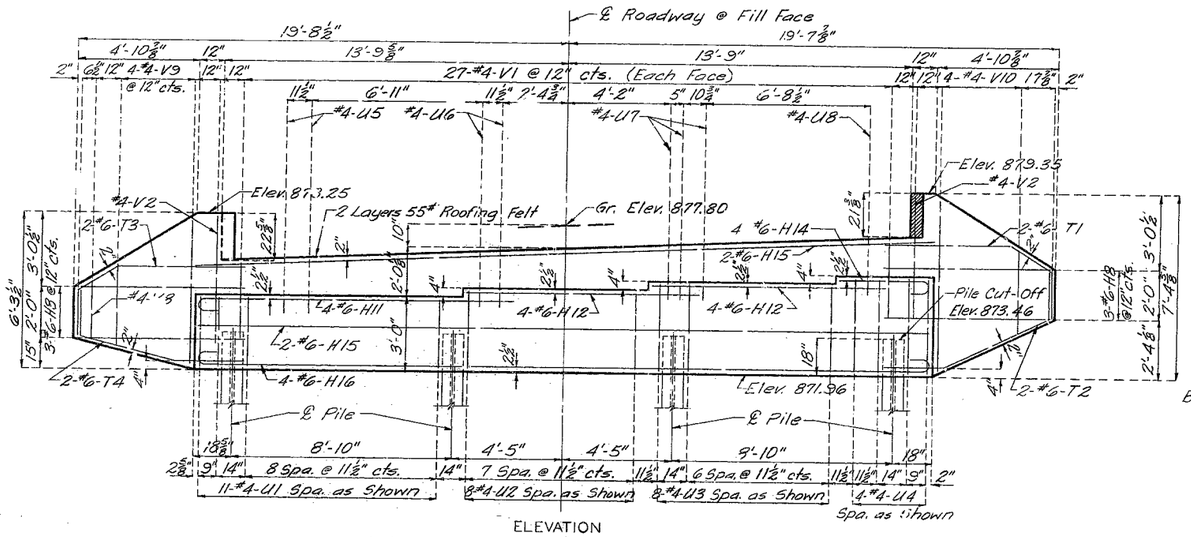
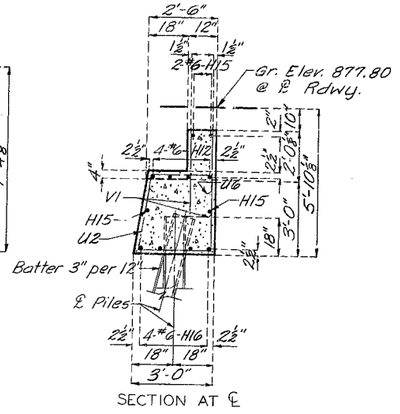
MISSOURI STATE HIGHWAY DEPARTMENT

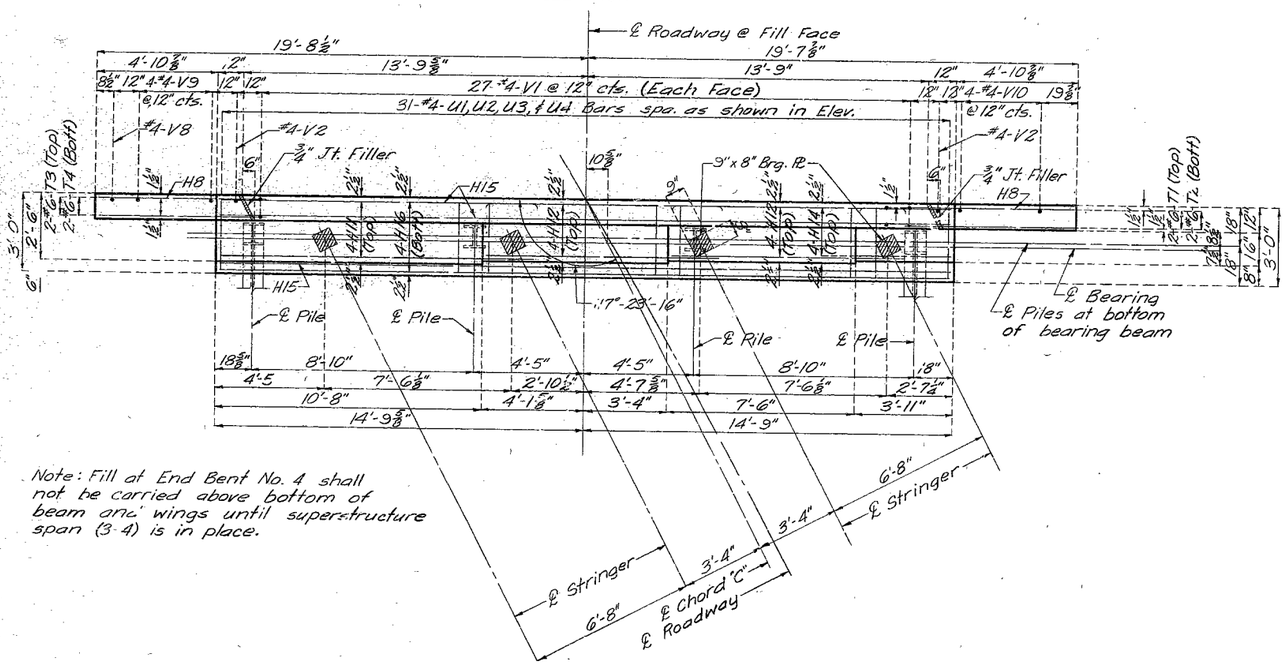
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	38	



ELEVATION



SECTION AT ℄



PLAN

DETAILS OF END BENT NO. 4

Note: Fill at End Bent No. 4 shall not be carried above bottom of beam and wings until superstructure span (3-4) is in place.

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BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056 (1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

Drawn FEB. 1963 by BRADLEY

Checked Mar. 1963 by Gifford & Moberly

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 10

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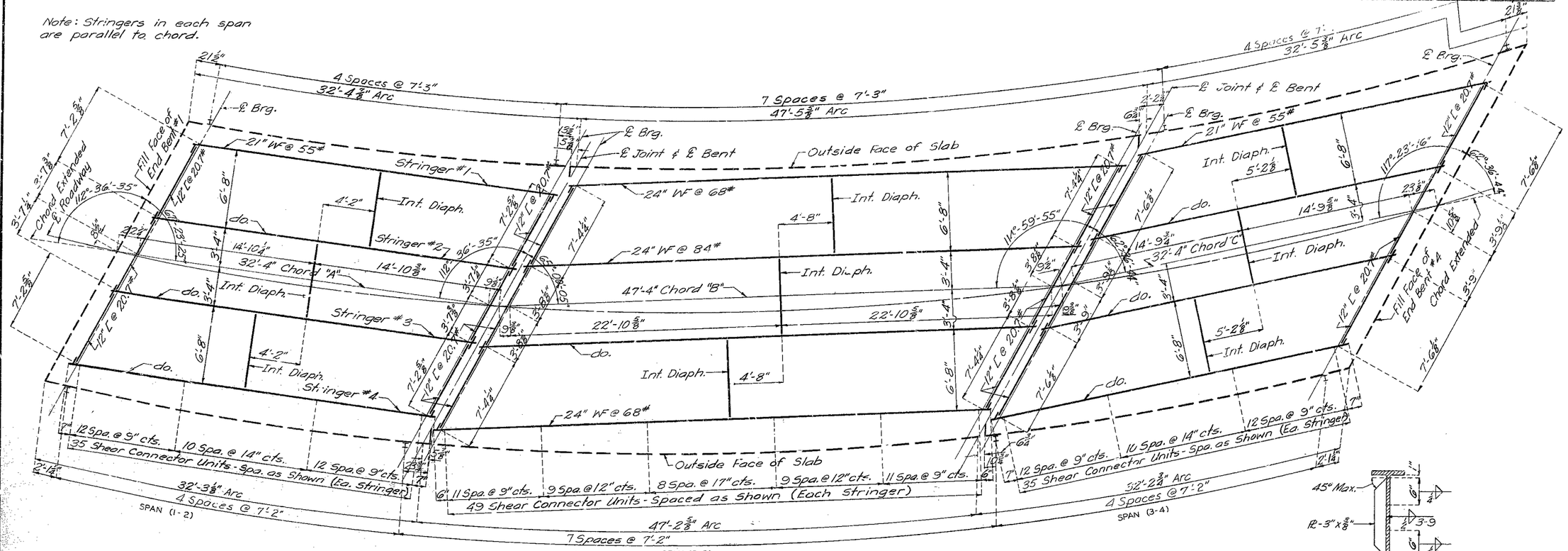
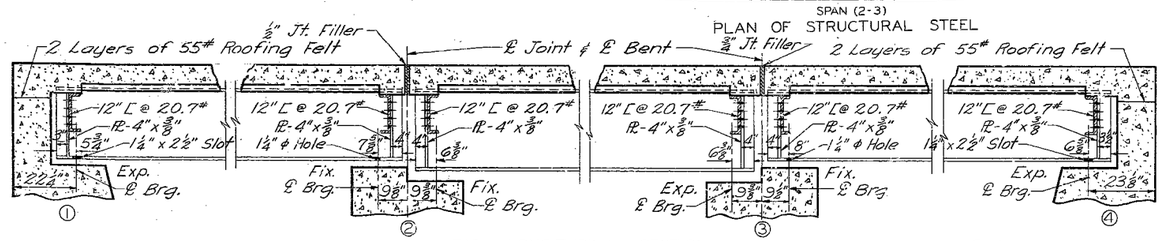
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD PROJ. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
S	MO.		19	39	

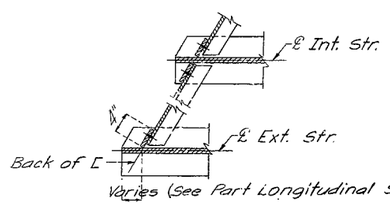
Note: Stringers in each span are parallel to chord.



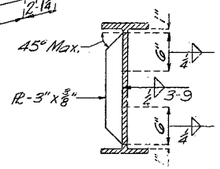
PLAN OF STRUCTURAL STEEL



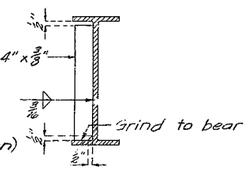
PAR. LONGITUDINAL SECTION



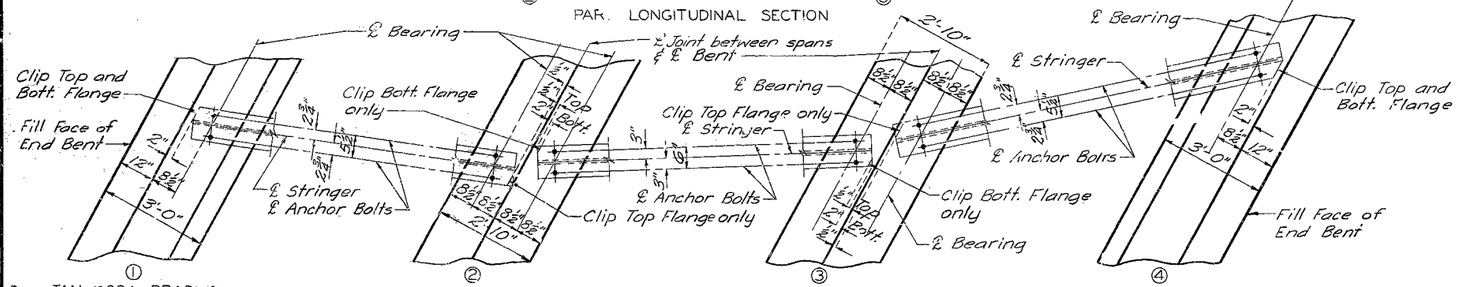
PLAN LOCATING END DIAPHRAGMS



CONN. PLATE FOR INT. DIAPHRAGMS



CONN. PLATE FOR END DIAPHRAGMS



PART ANCHOR BOLT PLAN

Note: This drawing is not to scale. Follow dimensions.

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056 (1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

Drawn JAN. 1963 by BRADLEY

Checked Mar. 1963 by Gifford

Sheet No. 7 of 10

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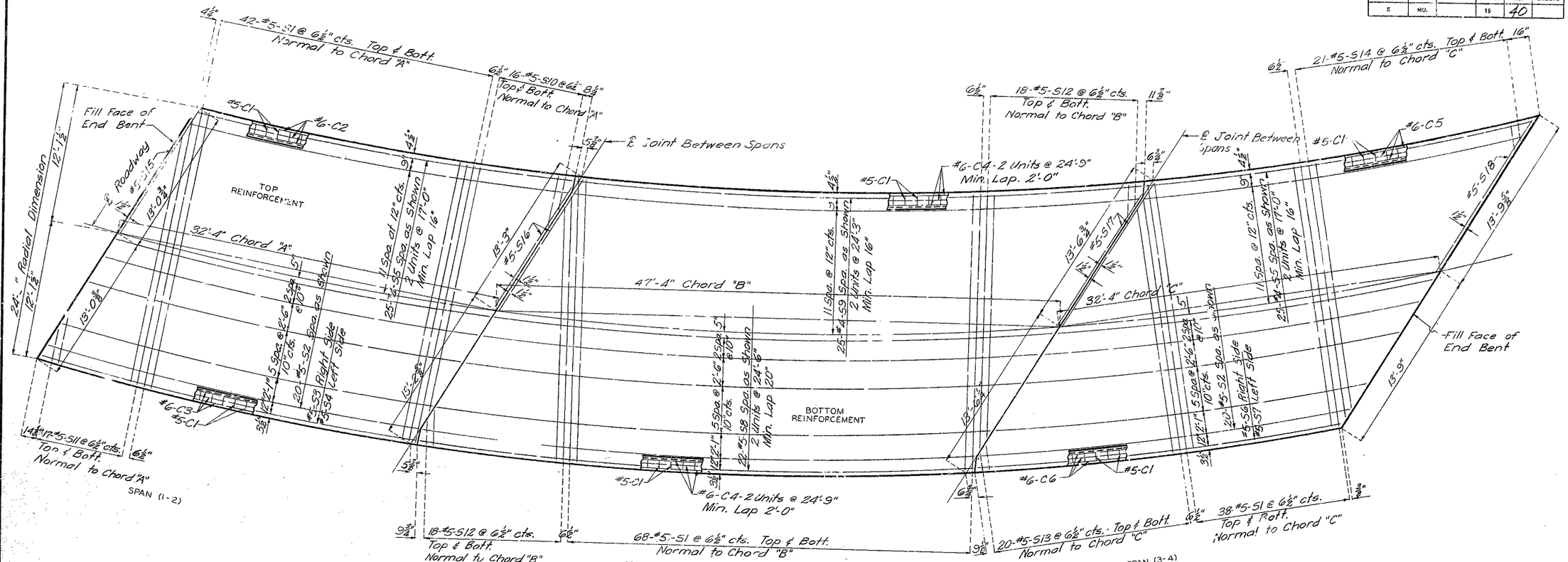
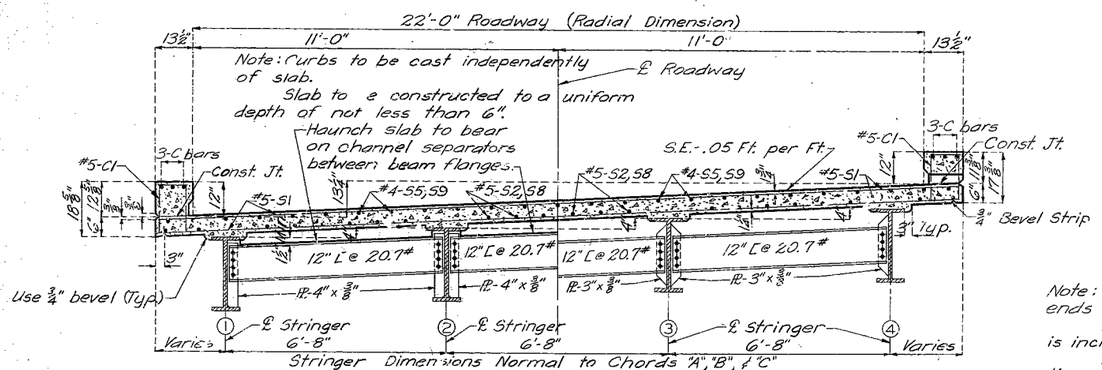
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	40	



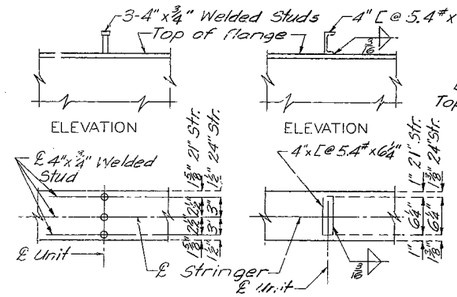
PLAN OF SLAB SHOWING REINFORCEMENT

Note: For details of curbs and handrail not shown see sheet No. 10 of 10.



HALF SECTION SHOWING END DIAPHRAGMS

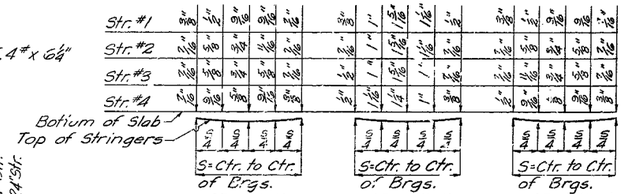
HALF SECTION NEAR INTERMEDIATE DIAPHRAGMS



PLAN OF STUD CONN. PLAN OF CHANNEL CONN.

Note: Locate channel connectors with backs toward ends of spans.
Weight of 0.80# of shear connectors (based on studs) is included in weight of Fabricated Structural Carbon Steel.
Payweight for shear connectors will be based on the weight of studs regardless of the type actually furnished.
See Special Provisions for shear connectors.

DETAILS OF SHEAR CONNECTORS



Note: The slab shall be built parallel to grade and to a minimum thickness of 6". Dead load deflection (10% due to weight of structural steel) and superelevation shall be taken care of by haunching to the top of stringers by the dimensions shown. The additional concrete (flange excluded) is included in Estimated Quantities.

SLAB HAUNCHING DIAGRAM

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056(1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

R-305

4/4

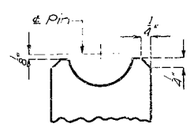
Drawn JAN. 1963 by BRADLEY
Checked Mar. 1963 by Gifford

Note: This drawing is not to scale. Follow dimensions.

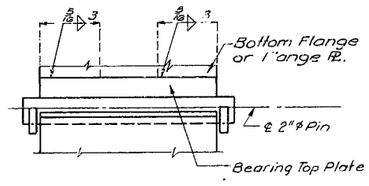
Sheet No. 8 of 10.

MISSOURI STATE HIGHWAY DEPARTMENT

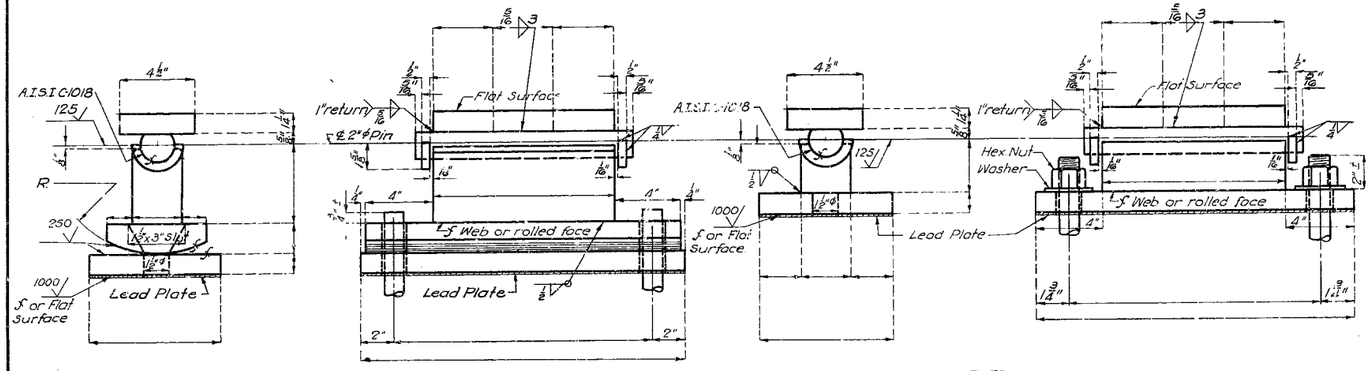
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	41	



END VIEW OF WEB EXPANSION BEARING



WELDING DETAILS



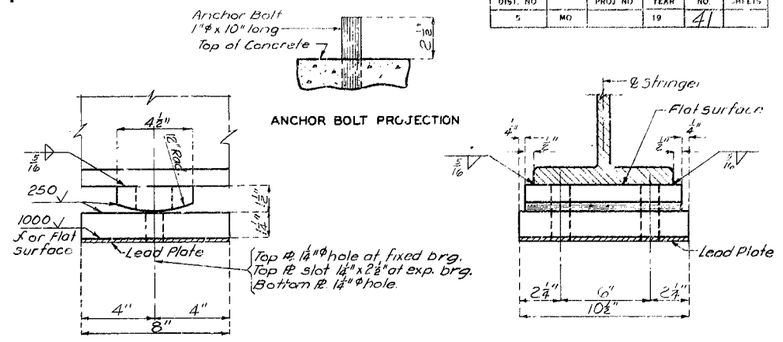
EXPANSION

Required :

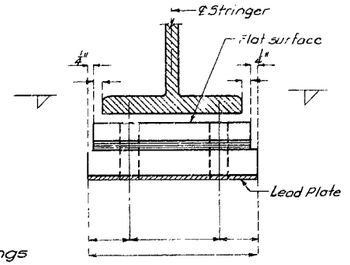
FIXED

Required :

TYPE "D" BEARINGS
(Estimated Weight)

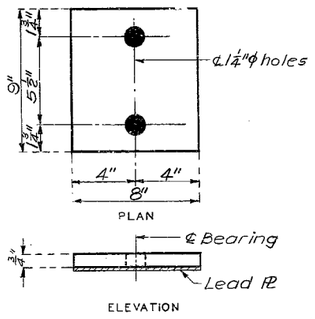


END ELEVATION



Required : 4 - Fixed Bearings
4 - Expansion Bearings

TYPE "C" BEARINGS
(Estimated Weight 364#)



Required : 16 Plates

Note: Flat plate bearings shall be Fabricated Structural Carbon Steel and straightened to plane surfaces.

Anchor bolts shall be 1"ϕ swedged bolts, 10" long with no heads or nuts. Top of anchor bolts shall be set approximately ½" above top of bottom flange.

Bottom flange of beam to have 1¼"ϕ holes at fixed end and 1¼" x 2½" slots at expansion end.

DETAILS OF FLAT PLATE BEARINGS - SPANS (1-2) & (3-4)
(Estimated Weight 237#)

Assembled Feb. 1963 by Proctor
Checked Mar. 1963 by Gifford

Note: This drawing is not to scale. Follow dimensions

NOTES: TYPE "C" BEARINGS

Anchor Bolts for Type "C" Bearings shall be 1"ϕ swedged bolts, 10" long with no heads or nuts. Top of Anchor Bolts shall be set approximately 1/4" below top of bearing.

NOTES: TYPE "D" BEARINGS

Anchor Bolts for Type "D" Bearings shall be 1¼"ϕ swedged bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Expansion Bearings.

GENERAL NOTES:

Lead plates under bearings shall be approximately ⅛" thickness and weigh 8#/sq.ft. Cost of lead plates shall be included in price bid for other items.

"Estimated Weight" does not include weight of anchor bolts.

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056 (1) (SH) **STA** 335+64.0

MC DONALD **COUNTY**

R-305

Sheet No. 9 of 16.

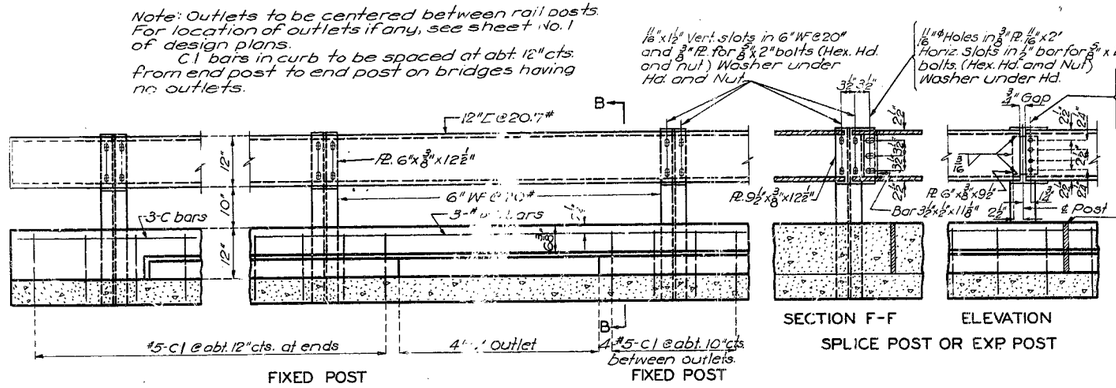
4.15

No.	Revised
4.1	Dec. 6, 1962
Dec. 1961	

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	42	

Note: Outlets to be centered between rail posts. For location of outlets if any, see sheet No. 1 of design plans.
C.I bars in curb to be spaced at abt. 12" cts. from end post to end post on bridges having no outlets.



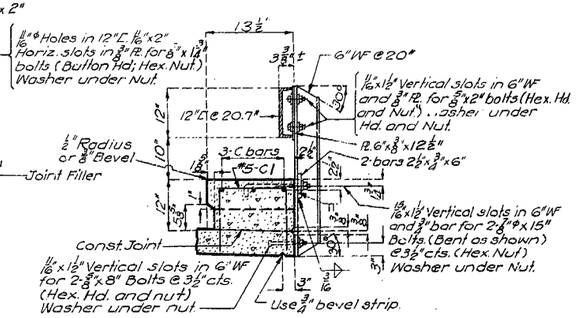
FIXED POST

FIXED POST

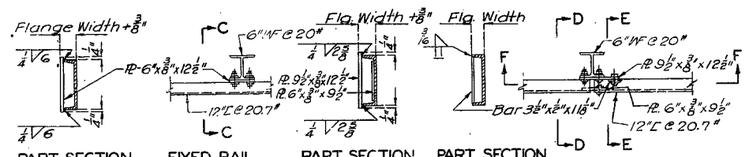
SECTION F-F

ELEVATION

SPLICE POST OR EXP. POST



SECTION B-B



PART SECTION C-C

FIXED RAIL CONNECTION

PART SECTION D-D

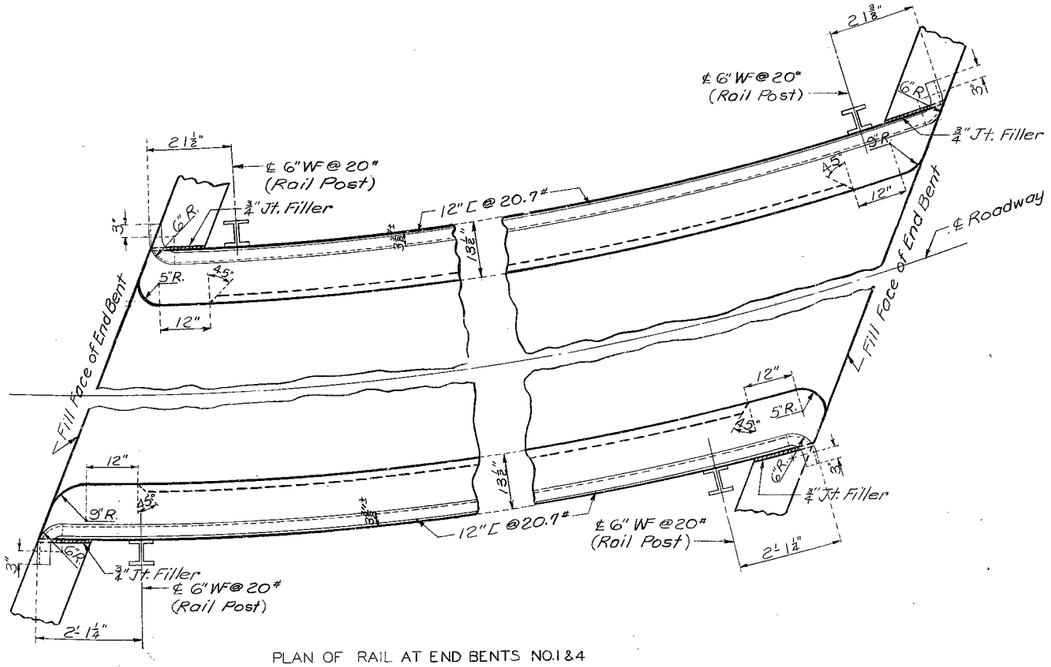
PART SECTION E-E

RAIL SPLICE-RAIL EXP.

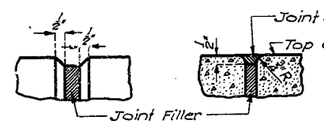
Note: Channel rail to be adjusted for horizontal alignment by use of full size metal shims placed between 6" WF and connection Rd. Shims 6" x 12" x 3/8" and 1/4" thickness with 11/16" x 1 1/2" vertical slots to be furnished with structural steel. Cost of shims to be included in price bid for other items.

GENERAL NOTES:

Top of curb to be built parallel to grade.
6" WF posts to be set normal to grade.
12" L rails shall be fabricated to conform to horizontal and vertical alignment of curb.



PLAN OF RAIL AT END BENTS NO. 1 & 4



Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with 3/4" radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.

DETAILS OF BEVEL FOR FILLED JOINTS

BRIDGE OVER GOODIN HOLLOW

STATE ROAD FROM NOEL TO PINEVILLE

ABOUT 7.5 MILES N.E. OF NOEL

PROJECT NO. S-2056(1) (SH) **STA.** 355+64.0

MC DONALD **COUNTY**

R-305

416

No.	Revised
1.3	Jan. 1963
May 1962	

Drawn Feb. 1963 by Proctor
Checked Mar. 1963 by Gifford

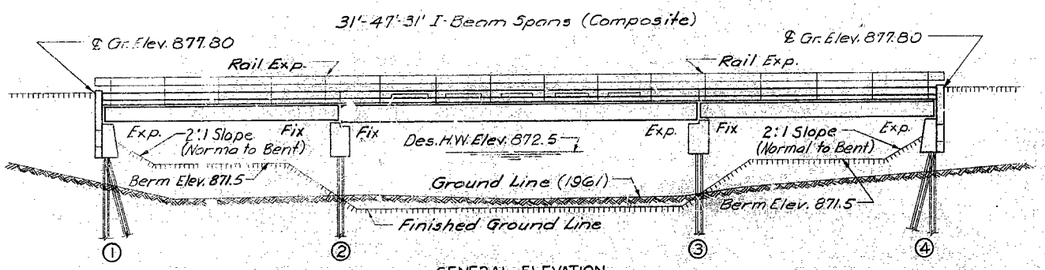
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 10.

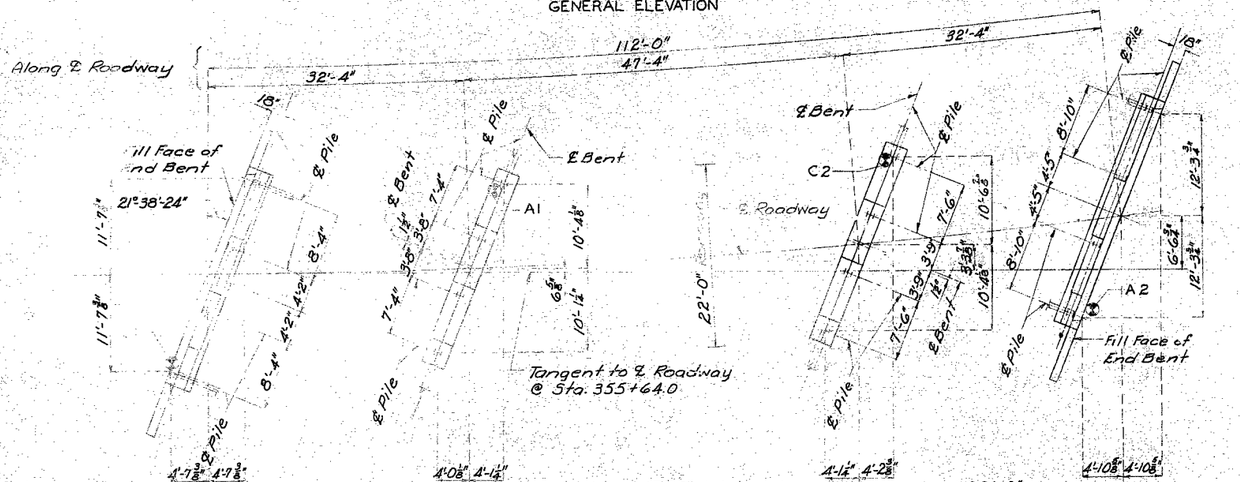
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	MO.		19	33	



GENERAL ELEVATION



Along Tangent to ℄ Roadway @ Sta. 355+64.0

PLAN

Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.
All bents are parallel.

PILE DATA					
Bent No.		1	2	3	4
Pile Type and Size		10BP42	10BP42	10BP42	10BP42
Number		4	4	4	4
Approximate Length	Ft.	25	25	25	25
Plan Bearing	Tons	37	37	37	37
Min. Required Bearing	Tons	19	27	27	19
Hammer		Power	Power	Power	Power

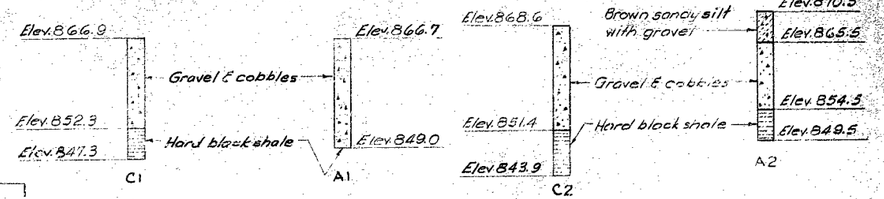
See Standard Specification 52.2.6.

Note: All pile driven to practical refusal on or into solid rock or other point bearing material at not less than the Plan Bearing shown.

GENERAL NOTES:

Design Specifications A.A.S.H.O.-1961
Loading H15-44 (1-Lane)
Structural Steel Stress (A.S.T.M. A36-62T) 20,000 psi
Reinforcing Steel Stress 20,000 psi
Concrete, Class S Stress 1,200 psi
Concrete, Class B1 Stress 1,600 psi
Superstructure concrete Class B.
Substructure concrete Class B

Fabricated structural steel A.S.T.M. A36-62T except as noted. Payment made as Fabricated Structural Carbon Steel.
See Standard Specification 55.3.13 for qualification of welding operators.
Field connections, High Strength Bolts ⅞", holes 1" except as noted.
Paint: shop, none; Field, none by contractor except as noted in Standard Specification 55.4.10.2.
Where joint filler is specified on the plans it conforms to Standard Specification 1517.2.5.
Superstructure deck surface sealed (See Special Provisions).



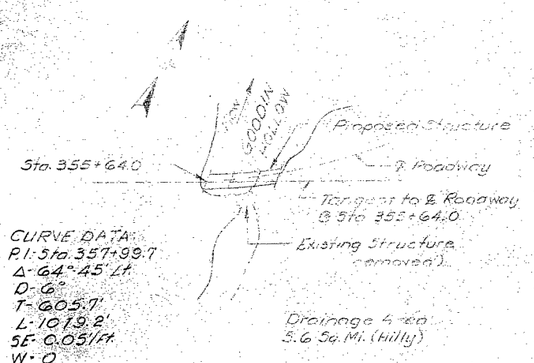
LOG OF SOUNDINGS

Note: "B" Indicates soundings taken with an Auger.
"C" Indicates soundings taken with a Core Drill
"⊙" Indicates location of soundings.

B.M. "X" on Top of Right Wing, Abut. #1 Elev. 878.25

FINAL QUANTITIES				
Item		Substr.	Superstr.	Total
Steel Piles in Place (10")	Lin. Ft.	354		354
Steel Pile Cut-offs (10")	Lin. Ft.	44		44
Class B Concrete	Cu. Yd.	93.2		93.2
Class B1 Concrete	Cu. Yd.		61.2	61.2
Reinforcing Steel	Lb.	3,760	16,560	20,320
Fabricated Structural Carbon Steel	Lb.		41,260	41,260

Note: Cost of any required excavation for bridge included in price bid for other items.
Weight of bolts (steel to steel) is included in weight of Fabricated Structural Steel on the basis of the following weights per 100 bolts. ⅝" 40#, ¾" 65#, ⅞" 95#, 1" 135#.



CURVE DATA
P.I. Sta. 357+98.7
Δ - 64°-45' Lt
D - 6°
T - 605.7'
L - 1019.2'
SE - 0.05 ft/ft
W - 0

LOCATION SKETCH

BRIDGE OVER GOODIN HOLLOW
STATE ROAD FROM NOEL TO PINEVILLE
ABOUT 7.5 MILES N.E. OF NOEL
PROJECT NO. S-2056(1) (SH) **STA.** 355+64.0 **FINISHED**
MC DONALD **COUNTY**

SUBMITTED BY D.B. Gerstner BRIDGE ENGINEER DATE 3/27/63
APPROVED BY M. J. Snider CHIEF ENGINEER DATE 3/27/63

FINISHED

STD. 54.00
R-305

DESIGNED AUG. 1962 BY MC CAFFERTY
Drawn Jan. 1963 by TU. pin
Checked Mar. 1963 by Gifford

Note: This drawing is not to scale. Follow dimensions.

FINISHED

Sheet No. 1A of 1
PLANS

417

Bridge Number:

R0305 H/McDonald

Asbestos-Containing Material Present?

Yes: ☐ No: ☒

If yes, see report for location(s).

Structural Steel Present?

Yes: ☒ No: ☐

If No, then skip the following.

Lead-Based Paint (LBP) Present?

Yes: ☐ No: ☐

Trusses LBP?

Yes: ☐ No: ☐

Girder LBP?

Yes: ☒ No: ☐

Railing LBP?

Yes: ☒ No: ☐

Pile LBP?

Yes: ☒ No: ☐

MEMORANDUM

Missouri Department of Transportation
Construction and Materials
Central Laboratory

TO: TMS

FROM: Diane Roegge
Environmental Chemist

DATE: August 25, 2015

SUBJECT: Materials
Asbestos Inspection & Heavy Metal Paint Survey
Route H
Bridge R-0305
McDonald County

We are providing you with the results of the inspection on the above referenced bridge. The inspection report contains an asbestos and a heavy metals survey. The asbestos inspection included identifying suspect asbestos-containing material and NVLAP accredited testing to confirm the presence of asbestos.

Form T746 – This will show if samples were taken, where from, and, if the sample was found to contain asbestos, our estimated quantity of material present. Under the column "Friability Category" this is the meaning for the following:

N-ACM – No asbestos detected.
I NF – Asbestos is present. Material shall be handled carefully by a licensed abatement worker and kept wet if removing as part of a maintenance activity.
II NF – Asbestos is present. If removal is required for the maintenance activity, use an abatement contractor.

In accordance with Missouri Department of Natural Resources' Technical Bulletin "Managing Construction and Demolition Waste" dated January 31, 2003, a heavy metal paint survey has been performed on the above referenced bridge. This survey includes locating concrete which has been painted with something other than traffic paint or graffiti, and testing the painted surface(s) to determine if hazardous heavy metals are present. If the bridge is being removed completely, or the maintenance repairs include removing the painted concrete, then, non-hazardous painted concrete may be used as clean fill materials, if properly handled. You must contact the Central Office Design Division for proper handling of the reported painted surfaces.

Although our survey included observing and sampling all accessible areas, it is possible that potentially hidden asbestos-containing materials may exist within the structure. Should you have any questions regarding these reports, please contact me at (573) 526-4359.

db/fr/dr
http://sp/sites/cm/chemicallab/environmental/shared documents/asbestos/districts/southwest (sw)/mt/r0305/dr1508255.docx
Attachments

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All Suspect ACM

ROUTE:	H	**SURVEYED BY:**	Frank Reichart and Diane Roegge
MODOT JOB NO.:	N/A	**CERTIFICATION #:**	7118110514MOIR11239, F.R.
DISTRICT:	SW	**CERTIFICATION #:**	7118110514MOIR7165, D.R.
COUNTY:	McDonald	**SITE ADDRESS:**	Over Goodin Hollow
DATE OF SURVEY:	August 25, 2015	**TYPE(S) OF STRUCTURE(S):**	Bridge
PARCEL NO.:	Bridge R-0305		

Sample ID	Type of Materials	Location of Material	Friability Category	Field Measure
15MFJR 189	Asphalt Joint Material	2-Deck and 4-Curb Joints	N-ACM	
	Bridge Paint is not a suspect ACM per MSDS's on file.			

N-ACM = Non-Asbestos Containing Material I NF = Category I Nonfriable II NF = Category II Nonfriable F = Friable
NAFD = No Asbestos Fiber Detected * = Tested By Point Count Procedure

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
Nonfriable Asbestos-Containing Materials
(Abatement not required if not made friable during demolition.)

ROUTE:	H	**TESTED BY:**	Frank Reichart
MODOT JOB NO.:	N/A	**CERTIFICATION #:**	7118110514MOIR11239
DISTRICT:	SW	**SITE ADDRESS:**	Over Goodin Hollow
COUNTY:	McDonald	**TYPE(S) OF STRUCTURE(S):**	Bridge
DATE OF TESTS:	September 2, 2015		
PARCEL NO.:	Bridge R-0305		

Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
		None Located	I NF			

All necessary work to handle this material is the contractor's responsibility.

I NF = Category I Nonfriable

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All materials requiring removal or special handling.

ROUTE:	H	**TESTED BY:**	Frank Reichart
MODOT JOB NO.:	N/A	**CERTIFICATION #:**	7118110514MOIR11239
DISTRICT:	SW	**SITE ADDRESS:**	Over Goodin Hollow
COUNTY:	McDonald	**TYPE(S) OF STRUCTURE(S):**	Bridge
DATE OF TESTS:	September 2, 2015		
PARCEL NO.:	Bridge R-0305		

Bid Item No.	Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
			None Located	F			
			None Located	II NF			

I NF = Category I Nonfriable II NF = Category II Nonfriable F = Friable * = Tested By Point Count Procedure

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Metals Survey Report of Painted Concrete, Block, Brick Surfaces for Clean Fill Purposes

ROUTE:	H	**TESTED BY:**	N/A
MODOT JOB NO.:	N/A	**DATE OF TESTS:**	N/A
DISTRICT:	SW	**PARCEL NO.:**	Bridge R-0305
COUNTY:	McDonald	**SITE ADDRESS:**	Over Goodin Hollow
SURVEYED BY:	Frank Reichart	**TYPE(S) OF STRUCTURE(S):**	Bridge
DATE OF SURVEY:	August 25, 2015		

Sample ID	Color/Location of Material/Substrate	Metals (ppm)							
		As	Cr	Pb	Cd	Se	Ba	Hg	Ag
	No samples taken. No painted surfaces located.								

All results are by XRF unless otherwise indicated: a = USEPA SW-846 Method 3050
b = USEPA SW-846 Method 7471

Expiration Date **11/5/2015**

Training Date: **11/5/2014**

Certificate Number: 7118110514MOIR11239

Missouri State Certificate for Asbestos Related Occupations

issued by Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-4817

Francis J. Reichart

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

12/31/2014
Date

Kyra L Moore
Director of Air Pollution Control Program

Expiration Date **11/5/2015**

Certificate Number: 7118110514MOIR7165

Training Date: **11/5/2014**

Missouri State Certificate for Asbestos Related Occupations

issued by Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-4817

Diane R. Roegge

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

12/31/2014
Date

Kyra L Moore
Director of Air Pollution Control Program

MEMORANDUM

Missouri Department of Transportation
Construction and Materials
Central Laboratory

TO: TMS

CC:

FROM: Frank Reichart
Environmental Chemist, Lead License #110506-300003364

DATE: August 25, 2015

SUBJECT: Materials
Job No. N/A
H/McDonald County
Bridge R-0305

On August 25, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR190
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	117,926 ppm** (11.8%)
Cadmium (Cd)	142 ppm
Selenium (Se)	LOD
Barium (Ba)	7,956 ppm (0.8%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument **ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 2006. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr
http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/southwest (sw)/mt/r0305/lbp r0305.docx

Missouri Department of Transportation
State Bridge Inspection Report

April 22, 2025
7:28:56AM

COUNTY: MCDONALD **DISTRICT: SW** **CLASS: STATBR** **FED-ID: 8262** **BRIDGE: R0305**

GENERAL STRUCTURE INFORMATION

ROUTE: RTHE
FEATURE: GOODIN HOLLOW
STATUS: P-POSTLOAD
LOG MILE: 6.749
DETOUR: 19.00 MILES
NHS: NO
BUILT: 1963
REHAB:
LOCATION: S 3 T 21 R 32 W
LATITUDE: 36 34 57.80 (DMS)
LONGITUDE: 94 23 13.94 (DMS)

 # SPANS: 3
LANES ON: 2
LANES UNDER: 0
COMPASS DIRECTION: WEST to EAST
DIRECTION OF TRAFFIC: 2-WAY TRAF
FUNCTIONAL CLASS: RL-MAJOR COLLECTOR
NBI OWNER: MODOT
NBI MAINTAINED: MODOT
MAINTENANCE DISTRICT: SW
MAINTENANCE COUNTY: MCDONALD
SUB AREA: 7G01

PLACE CODE: 92805 MCDONALD 92805
LENGTH: 112 FT 0 IN
MAXIMUM SPAN: 47 FT 3 IN
APPROACH ROADWAY: 21 FT 0 IN
CURB TO CURB: 22 FT 0 IN
OUT TO OUT: 24 FT 4 IN
AADT: 1356
AADT YEAR: 2024
AADT TRUCK: 10.9%
FUTURE AADT: 2373
FUTURE AADT YEAR: 2044

BRIDGE INSPECTION INFORMATION

DATE: 10/10/2024 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 12 **CALCULATED INTERVAL**:** 12
TEAM LEADER: DAVE O'CONNOR **ELEMENT:** NO
INSPECTOR 2: LAURA CAMPBELL **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: 01/30/2023 **RESPONSIBILITY:** DISTRICT **CATEGORY:** DAMAGE POST INCIDE
FREQUENCY: 999 **CALCULATED INTERVAL**:** **NBI:** NO
TEAM LEADER: MATTHEW GEIGER **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

(GEIGEM1, 02/02/2023)--BRIDGE RAIL AND WINGWALL COLLISION DAMAGE

UNDERWATER INSPECTION INFORMATION

DATE: 10/10/2024 **RESPONSIBILITY:** DISTRICT **CATEGORY:** DRY
FREQUENCY: 60 **CALCULATED INTERVAL**:** 12 **NBI:** NO
TEAM LEADER: **INSPECTOR 3:** DAVE O'CONNOR **METHOD:** VISUAL
INSPECTOR 2: LAURA CAMPBELL **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION COMMENTS

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD
11/10/2022	120	CHANNEL CROSS SECTIONS	NO	115	DISTRICT	WT TAPE

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

Design_No = r0305

COUNTY: MCDONALD **DISTRICT: SW** **CLASS: STATBR** **FED-ID: 8262** **BRIDGE: R0305**

STRUCTURE POSTING

APPROVED CATEGORY: S-16 TRKS OVR 17 TNS 15MPH ON BR EXCPT SNGLE UNIT TRKS WT LIMIT 22 TNS&ALL OTHR TRKS WT LIMIT 39 TNS.
Ton 1: 17 **Ton 2:** 22 **Ton 3:** 39
COMMENTS:

FIELD CATEGORY: S-16 TRKS OVR 17 TNS 15MPH ON BR EXCPT SNGLE UNIT TRKS WT LIMIT 22 TNS&ALL OTHR TRKS
Ton 1: 17 **Ton 2:** 22 **Ton 3:** 39 **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 07/30/2008)--(32'-47'-32') SMP COMP WF GDR SPANS

[ITEM 58] DECK: 4-POOR CONDITION
RATING : 12/05/2018
COMMENTS: (GEIGEM1, 10/13/2021)--50% - 55% SATURATION SPANS 1 & 2

[ITEM 59] SUPER: 3-SERIOUS CONDITION
RATING : 10/30/2024
COMMENTS: (NUNNT, 10/30/2024)--ADVANCED BOTTOM FLANGE SECTION LOSS @ INT. BT. BEARINGS.

[ITEM 60] SUB: 4-POOR CONDITION
RATING : 12/04/2020
COMMENTS: (NUNNT, 12/04/2020)--MODERATE - ADVANCED H-PILE SECTION LOSS AT FEW LOCATIONS.

[ITEM 61] BANK/CHANNEL: 7-MINOR DAMAGE
RATING : 11/14/2014
COMMENTS: (FODGEC1, 12/05/2018)--MINOR DRIFT @ BT. 3

[ITEM 113] SCOUR: 8-STABLE FOR CALCULATED
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS: (CAMPBL1, 10/26/2023)--SMALL CRITTER HOLES AT WEST ABUTMENT.

[ITEM 71] WATERWAY ADEQUACY: DECK ABOVE FLOOD ELEV
RATING : 05/18/2001
COMMENTS:

[ITEM 72] APPRRDWY ALIGNMENT: 8-VERYGOOD
RATING : 05/18/2001
COMMENTS:

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *12/21/2004* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	CURB	BOTH	
STEEL	CHANNEL-12"	BOTH	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
COLLISION DAMAGE	RANDOM		MODERATE	(GEIGEM1, 02/02/2023)--NORTHEAST QUAD

[ITEM 36B] TRANSITION RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36C] APPROACH RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36D] RAIL END TREATMENT RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT	BITUMINOUS MAT	BOTH	GOOD	

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	*WEARING SURFACE*	*ASPHALT*	*CINDER SEAL*	*.4 IN*	*2018*		*FAIR*

COMMENT:

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
SPALLS	THROUGHOUT		MINOR	

DECK PROTECTION	*NOTAPPLICABLE*	*NONE*

COMMENT:

MEMBRANE	*NOTAPPLICABLE*	*NONE*

COMMENT:

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	*REINFORCED CONCRETE*	*CURB OUTLET*		

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
BENT-2		*CLOSED EXPANSION JOINT*	*FELT*	*FILLED JOINT*				

COMMENT:

BENT-3		*CLOSED EXPANSION JOINT*	*FELT*	*FILLED JOINT*				

COMMENT:

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	*DECK*	*REINFORCED CONCRETE*	*CAST-IN-PLACE*	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	RANDOM		LIGHT		
PATCHES	THROUGHOUT		MODERATE		
REBAR EXPOSED	BOTTOM		FEW		
SATURATION	THROUGHOUT		MODERATE	50 %	
SCALING	THROUGHOUT		LIGHT		
SPALLS	THROUGHOUT		MINOR	3 %	
TRANSVERSE CRACKS	THROUGHOUT		MANY		

MAIN SPANS-2 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	RANDOM		LIGHT		
FULL DEPTH PATCHES	RANDOM		MODERATE	2 %	
PATCHES	THROUGHOUT		MODERATE		
SATURATION	THROUGHOUT		MODERATE	55 %	
SCALING	THROUGHOUT		LIGHT		
SPALLS	RANDOM		MINOR	2 %	
TRANSVERSE CRACKS	THROUGHOUT		MANY		

MAIN SPANS-3 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
MAP CRACKS	THROUGHOUT		FINE		
PATCHES	THROUGHOUT		MODERATE		
SATURATION	THROUGHOUT		MODERATE	35 %	
SCALING	THROUGHOUT		LIGHT		
SPALLS	RANDOM		SMALL	1 %	
TRANSVERSE CRACKS	THROUGHOUT		MANY		

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	*SIMPLE SPAN*	*STEEL*	*WIDE FLANGE GIRDERS*		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	COMPOSITE	32 FT 4 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
OTHER	RANDOM		NOT APPLICABLE		(NUNNT, 10/30/2024)--BT. 2 - G1 - 85% SECTION LOSS BOTTOM FLANGE AT BEARING - 2.5" X 2 HOLE SOUTH FLANGE. G2 - 85% SECTION LOSS BOTTOM FLANGE AT BEARING - 2" X 1" HOLE NORTH FLANGE. G3 - 95% SECTION LOSS BOTTOM FLANGE - MISSING 3" SECTION NORTH FLANGE, 1" X 1.5" HOLE SOUTH FLANGE. 25% SECTION LOSS BOTTOM WEB AT BEARING. G4 - 75% SECTION LOSS BOTTOM FLANGE AT BEARING.
PACK RUST	BOTTOM FLANGE		HEAVY		(NUNNT, 12/04/2020)--AT BT. 2 AND MODERATE AT WEST ABUTMENT.
RUSTING	AT JOINTS		HEAVY		(NUNNT, 12/04/2020)--TOP & BOTTOM FLANGES.
SECTION LOSS	BOTTOM FLANGE		ADVANCED		(NUNNT, 12/04/2020)--AT BT. 2 AND MINOR AT WEST ABUTMENT.
SECTION LOSS	GDR1		MINOR		(NUNNT, 11/18/2022)--WEB AT BT. 2.

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	COMPOSITE	47 FT 3 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
OTHER	RANDOM		NOT APPLICABLE		(NUNNT, 10/30/2024)--BT. 2 - G1 - 25% SECTION LOSS BOTTOM FLANGE AT BEARING. G2-G4 MINOR. BT. 3 - G1 - 50% SECTION LOSS BOTTOM FLANGE AT BEARING. G2 - MINOR 5% SECTION LOSS BOTTOM FLANGE AT BEARIG. G3 - 25% SECTION LOSS BOTTOM FLANGE AT BEARING. G4 - MINOR 10% SECTION LOSS BOTTOM FLANGE AT BEARING.
PACK RUST	AT JOINTS		MODERATE		
RUSTING	AT JOINTS		HEAVY		
RUSTING	BOTTOM FLANGE		HEAVY		(FODGEC1, 12/05/2018)--@ BT. 2 AND 3
SECTION LOSS	BOTTOM FLANGE		MINOR		(FODGEC1, 12/05/2018)--@BT. 2 AND 3

MAIN SPANS-3 COMPOSITE 32 FT 2 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
OTHER	RANDOM		NOT APPLICABLE		(NUNNT, 10/30/2024)--BT. 3 - G1 - 85% SECTION LOSS BOTTOM FLANGE AT BEARING - 1" X 1" HOLE SOUTH FLANGE. G2 - 90% SECTION LOSS BOTTOM FLANGE AT BEARING - MISSING 2" SECTION NORTH FLANGE. G3 - 90% SECTION LOSS BOTTOM FLANGE AT BEARING - 1" X 1.5" HOLE SOUTH FLANGE.
PACK RUST	BOTTOM FLANGE		HEAVY		(NUNNT, 12/04/2020)--@ BT. 3.
RUSTING	AT JOINTS		HEAVY		(SIMPSB, 02/11/2005)--TOP FLANGE
RUSTING	BOTTOM FLANGE		HEAVY		(NUNNT, 12/04/2020)--@ BT. 3.
SECTION LOSS	BOTTOM FLANGE		ADVANCED		(NUNNT, 12/04/2020)--50% LOSS GDR. 1, 2, 3, @ BT. 3, MODERATE GDR. 4 @ BT. 3. (GEIGEM1, 10/13/2021)--WOOD BLOCKING INSTALLED IN 2020

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1	*LA-22 DEGREES*	*28 FT 2 IN*	*REINFORCED CONCRETE*	*NON-INTEGRAL*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
DELAMINATION	RANDOM		SMALL		
HORIZONTAL CRACKS	TOP		LARGE		
OTHER	GROUND LINE		NOT APPLICABLE		(CAMPBL1, 10/26/2023)--FEW SMALL CRITTER HOLES UNDER ABUTMENT
RUST STAINS	RANDOM		MINOR		
VERTICAL CRACKS	RANDOM		FINE		
PILING	STEEL	H-SHAPE			
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
PATCHES	TOP		LARGE		
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
SHOVING	BACKWALL		MINOR		
EXPANSION BEARING	STEEL	SLIDING FLAT PLATE			
PACK RUST	THROUGHOUT		MODERATE		
RUSTING	THROUGHOUT		HEAVY		

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
BENT-2	*LA-22 DEGREES*	*25 FT 1 IN*	*REINFORCED CONCRETE*	*PILE CAP*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
DELAMINATION	BOTTOM		MODERATE		
HORIZONTAL CRACKS	BOTTOM		MEDIUM		
REBAR EXPOSED	BOTTOM		FEW		
RUST STAINS	RANDOM		MODERATE		
SATURATION	THROUGHOUT		MINOR		
SPALLS	BOTTOM		MODERATE		
VERTICAL CRACKS	RANDOM		MEDIUM		
PILING	STEEL	H-SHAPE			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

PACK RUST	RANDOM		HEAVY		
RUSTING	RANDOM		HEAVY		
SECTION LOSS	TOP		ADVANCED		(NUNNT, 11/18/2022)--AT H-PILE / BEAM CAP INTERFACE, H-PILE 1 60% LOSS TOP 2", H-PILE 2 - 15% LOSS TOP 1".
SECTION LOSS	WATERLINE		ADVANCED		(NUNNT, 11/18/2022)--H-PILE 1 60% LOSS TIPS OF FLANGE
FIXED BEARING	STEEL	FLAT PLATE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
PACK RUST	THROUGHOUT		HEAVY		
RUSTING	THROUGHOUT		HEAVY		

BENT-3 LA-22 DEGREES 25 FT 7 IN REINFORCED CONCRETE PILE CAP

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
DELAMINATION	RANDOM		MINOR		
HORIZONTAL CRACKS	BOTTOM		MEDIUM		
RUST STAINS	RANDOM		MINOR		
SPALLS	ENDS		SMALL		(FODGEC1, 12/05/2018)--HIGH STEEL
PILING	STEEL	H-SHAPE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
COLLISION DAMAGE	THROUGHOUT		MINOR		(NUNNT, 12/04/2020)--H-PILE 1 & 3 MINOR BEND IN FLANGE
DRIFT	WATERLINE		SMALL AMOUNT		
PACK RUST	GROUND LINE		MODERATE		
PACK RUST	TOP		MODERATE		
RUSTING	GROUND LINE		HEAVY		
RUSTING	TOP		HEAVY		
RUSTING	GROUND LINE		HEAVY		
RUSTING	TOP		HEAVY		
SECTION LOSS	GROUND LINE		ADVANCED		(NUNNT, 10/30/2024)--H-PILE 1 - 20% SECTION LOSS FLANGE AND WEB. H-PILE 2 - 60% LOSS WEST FLANGE.
SECTION LOSS	TOP		MODERATE		(NUNNT, 11/18/2022)--H-PILE 3 - 30% LOSS, TOP 1".
EXPANSION BEARING	STEEL	SLIDING FLAT PLATE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FIXED BEARING	STEEL	FLAT PLATE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
PACK RUST	THROUGHOUT		HEAVY		
RUSTING	THROUGHOUT		HEAVY		

ABUTMENT-4 LA-22 DEGREES 29 FT 7 IN REINFORCED CONCRETE NON-INTEGRAL

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
HORIZONTAL CRACKS	TOP		LARGE		
LEACHING	RANDOM		MINOR		
PILING	STEEL	H-SHAPE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
COLLISION DAMAGE	RANDOM		MODERATE		(GEIGEM1, 02/02/2023)--NORTHEAST QUAD
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
EXPANSION BEARING	STEEL	SLIDING FLAT PLATE			

COUNTY: MCDONALD **DISTRICT: SW** **CLASS: STATBR** **FED-ID: 8262** **BRIDGE: R0305**

CONDITION	*LOCATION 1*	*LOCATION 2*	*SEVERITY*	*MEASUREMENT*	*COMMENT*
PACK RUST	RANDOM		MINOR		
RUSTING	THROUGHOUT		HEAVY		

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

STRUCTURE PAINT INFORMATION

CONDITION: FAIR **RUST AMOUNT :** 7 = .2% OF SURFACE RUSTED **STEEL TONS :** 21

ORIGINAL PAINT

PAINT TYPE : A SYSTEM
NAME : RED LEAD
PAINT COLOR : ALUMINUM
PAINT YEAR : 1964
MILS : 4

CONTRACT REPAINT

PAINT TYPE :
NAME :
PAINT COLOR :
PAINT YEAR :
MILS :

DEPARTMENT REPAINT

PAINT TYPE : S SYSTEM
NAME : CAL SULPH/LEAD PAINT
PAINT COLOR : GRAY
PAINT YEAR : 2006
MILS : 12
MANUFACTURE : WATSON
SURFACE PREP : HAND CLEANED

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

RESPONSIBILITY	*LOCATION*	*ITEM*	*CATEGORY*	*PRIORITY*	*DATE*	*WORK ITEM COMMENT*
REGIONAL	SUPER-GIRDERS	REPAIR GIRDER ENDS	SUPERSTRUCTURE	2	10/16/2014	(NUNNT, 12/04/2020)--BOTTOM FLANGES @ BT. 3.
REGIONAL	BENT	REPAIR STEEL H-PILE	SUBSTRUCTURE	2	10/08/2020	(GEIGEM1, 10/13/2021)--BT. 2 H-PILE 1 @ TOP, BT. 3 H-PILE 2 AND BT.2 H-PILE 1 @ GROUNDLINE.
DISTRICT SPECIAL	ROADWAY SURFACE	REPAIR CONCRETE < 50 SF	DECK	3	10/08/2020	(GEIGEM1, 10/13/2021)--50 SF
DISTRICT ROUTINE	SLOPE	CUT BRUSH & TREES	SLOPE	3	10/22/2022	
STIP			REPLACEMENT		04/10/2024	(GEIGEM1, 04/11/2022)--2026 - WT LIMIT, 4/4/4

UTILITY ATTACHMENTS

COUNTY: MCDONALD **DISTRICT: SW** **CLASS: STATBR** **FED-ID: 8262** **BRIDGE: R0305**

UTILITY	*OWNER*	*METHOD*	*MEASUREMENT TYPE*	*VALUE*	*NUMBER*	*UTILITY ATTACHMENT COMMENT*

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	2-BASICALLY INTOLRBLE REQ	4/2/2003
[Item 68] Deck Geometry Rating:	3-BASICALLY INTOL CORRECT	12/8/2020
[Item 69] Underclearance:	N-NOT APPLICABLE	5/18/2001
Sufficiency Rating:	4.0%	12/8/2020
Deficiency:	STRUCTURAL	4/2/2003
Funding Eligibility:		----
Estimated New Structure Length:		----
Estimated Structure Cost:		----
Estimated Total Project Cost:		----
Year of Cost Estimate:		----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1	DELINEATOR		

OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**
STATUS: **DATE:**
NOTES:

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

April 22, 2025
7:31:21am

COUNTY : MCDONALD **BRIDGE :** R0305 **REVIEW STATUS :** APPROVED **NBI STATUS :** T
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 4/18/2025 **SUBMITTAL YEAR :** 2025

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	SW
3	County	MCDONALD
8	Federal ID No.	8262
27	Year Built	1963
106	Year Reconstructed	0
42A	Type of Service On	HIGHWAY
21	Structure Maintenance	STATE HIGHWAY AGENCY
22	Structure Owner	STATE HIGHWAY AGENCY
33	Br. Median Code	NO MEDIAN
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	YES

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE CARRIED 'ON' STRUCT
5B	Route Signing Prefix	MO
5C	Designated Level of Service	MAINLINE
5D	Route Number	0000H
5E	Directional Suffix	NOT APPLICABLE
7	Facility Carried	RT H E
12	Base Hwy. Network	NO
13A	LRS Inventory Route No.	
13B	Subroute No.	
20	Toll Status	ON FREE ROAD
26	Functional Classification	07-RURAL MAJOR COLLECTOR
28A	Lanes on Structure	02
100	STRAHNET Designation	RTE NOT A DEFENSE HWY
104	National Highway System	NOT ON NHS
105	Federal Lands Highway	NOT APPLICABLE
110	Designated Nat. Network	NO

STRUCTURE LOCATION INFORMATION

4	Place	MCDONALD 92805
	Code	92805
9	Location	S 3 T 21 N R 32 W
11	Milepoint	6.79 miles
16	Latitude	36 D 34 M 58 S
17	Longitude	94 D 23 M 14 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	1356
30	AADT Year	2024
102	Direction of Traffic	2-WAY TRAFFIC
109	AADT Truck Percent	11%
114	Future AADT	2373
115	Future AADT Year	2044

UNDERRECORD INFORMATION

6	Features Intersected	GOODIN HOLLOW
42B	Type of Service Under	WATERWAY
28B	Lanes Under Structure	00
54A	Vert. Clearance Ref.	N/A
54B	Vert. Clearance	0 Ft. 0 In.
55A	Rt. Lat Clear Ref.	N/A
55B	Rt. Lat Clearance	0 Ft. 0 In.
56	Left Lat Clearance	0 Ft. 0 In.
38	Navigation Control	PERMIT NOT REQ
39	Nav Vertical Clear	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.
111	Nav. Pier Protection	
116	Nav. Cl. Vert. Clear	

STRUCTURE GEOMETRIC INFORMATION

10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
19	By pass Detour Length	19.38 miles
32	Approach Roadway Width	20 Ft. 12 In.
34	Skew	22.00 Degrees
35	Struct. Flared	NO
47	Total Horiz. Clear	21 Ft. 12 In.
48	Maximum Span Length	47 Ft. 3 In.
49	Structure Length	111 Ft. 11 In.
50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
51	Curb to Curb Br. Width	21 Ft. 12 In.
52	Deck Width (Out-Out)	24 Ft. 3 In.
53	Vert.Clearance Over Deck	99 Ft. 99 In.

Design_No = r0305 and Inventory_Appraisal_Submittal_Year = 2025

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

April 22, 2025
7:31:21am

COUNTY : MCDONALD **BRIDGE :** R0305 **REVIEW STATUS :** APPROVED **NBI STATUS :** T
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 4/18/2025 **SUBMITTAL YEAR :** 2025

LOAD RATING AND POSTING INFORMATION

31	Design Load	H 15
41	Structure Status	POSTED FOR LOAD
63	Oper. Rating Meth.	ALLOWABLE STRESS
64	Operating Rating	26 Tons.
65	Inventory Rating Meth	ALLOWABLE STRESS
66	Inventory Rating	13 Tons.
70	Bridge Posting Code	20.0-29.9% BELOW

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating	4.0 Percent
	Deficiency Rating	STRUCTURAL
	Funding Eligibility	FULL
75A	Proposed Work	REPLACEMENT SUBSTND LOAD
75B	Work Done By	Contract
76	New Struc Length	141 Ft. 1 In.
94	Struc Improve Cost	$ 818,000
95	Roadway Improve Cost	$ 82,000
96	Total Project Cost	$ 1,226,000
97	Year of Cost Estimates	2025

APPRAISAL RATING INFORMATION

36A	Br. Rail App. Rating	DOES NOT MEET ACCEPT STND
36B	Transition Rail App. Rating	DOES NOT MEET ACCEPT STND
36C	Approach Rail App. Rating	DOES NOT MEET ACCEPT STND
36D	Rail End Treat. App. Rating	DOES NOT MEET ACCEPT STND
67	Struc Eval App. Rating	2
68	Deck Geometry App. Rating	3
69	Underclearance App. Rating	N
71	Waterway Adeq. App. Rating	8
72	Approach Road App. Rating	8
113	Scour Assess App. Rating	8

APPROVED POSTING INFORMATION

Approved Posting Category S-16

	Ton1	Ton2	Ton3
Tonnage Values for Posting Sign	17	22	39

General Text for Posting Sign

TRKS OVR 17 TNS 15MPH ON BR EXCPT SNGLE UNIT TRKS WT LIMIT 22 TNS&ALL OTHR TRKS WT LIMIT 39 TNS.

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	STEEL
43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
45	# of Main Spans	3
44A	Appr Struc. Mat type	000
44B	Appr Struc. Cnstr. type	000
46	# of Approach Span	0
107	Deck Mat/Constr.	1 CONCRETE CIP
108A	Wear Surf Mat/Constr.	6 BITUMINOUS
108B	Membrane Mat/Constr.	0 NONE
108C	Deck Protect Mat/Constr.	0 NONE

CONDITION RATING INFORMATION

58	Deck Cond. Rating	4
59	Superstructure Cond. Rating	3
60	Substructure Cond. Rating	4
61	Channel /Channel Protection Cond. Rating	7
62	Culvert Cond. Rating	N

INSPECTION INFORMATION

90	Gen. Insp Date	10 / 24	
91	Gen. Insp. Frequency	12	Months
92A	Frac. Critical Inspection	N	Months
93A	Frac. Critical Insp. Date		
92B	Underwater Inspection	N	Months
93B	Underwater Insp. Date		
92C	Special Inspection	N	Months
93C	Special Inspection Date		

BORDER BRIDGE INFORMATION

98	Neighboring State Code
98B	Neighboring State % Respon
99	Neighboring State Struc. No.

FIELD POSTING INFORMATION

Field Posting Category S-16

	Ton1	Ton2	Ton3
Tonnage Values for Posting Sign	17	22	39

General Text for Posting Sign

TRKS OVR 17 TNS 15MPH ON BR EXCPT SNGLE UNIT TRKS WT LIMIT 22 TNS&ALL OTHR TRKS WT LIMIT 39 TNS.

Design_No = r0305 and Inventory_Appraisal_Submittal_Year = 2025