

12/19

Job No. SE0045

Replaces Bridge No. S0532

Missouri Department of Transportation

Bridge Survey Location Request

Page 1 to be completed by District staff.

Bridge over: Small Creek Route: N
 County: Cape Girardeau Section: 1 Township: 29 North Range: 11 East
 Latitude: 37°12'26.72"N Longitude: 89°46'55.44"W
 District Contact: Garrett Galyean (573-472-5221) Date: 5/3/2023

HIGH WATER ELEVATIONS AT PROPOSED BRIDGE SITE

Recorded high water elevations or elevation of high water marks

Extreme High Water (EHW) (Give date(s) of occurrence)		
Elevations and date(s) of same	Location	Source of information
4.5" Below (1986)	Below East End of Bridge	HW Book 8124A
Existing Bridge Overtopped <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown		Existing Roadway Overtopped <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown
		Approx. Overtopping Location(s):

LOCATION OF NEW BRIDGE

Replace in Existing Location	<input checked="" type="checkbox"/>	Provide details of any proposed changes to profile grade below or as an attachment.
Relocation (near existing Structure)	<input type="checkbox"/>	Provide details of proposed location and grade of the roadway across the floodplain, any proposed/potential channel changes or modifications, etc. below or as an attachment.
New Route	<input type="checkbox"/>	
Other:	<input type="checkbox"/>	

Additional Information:

page 2 & subsequent pages to be completed by Bridge Division

Note: Proposed elevations, distances, etc. are based on the best available data at the time the form was completed. Actual field conditions or recently acquired data may require deviation from the proposed values. Please contact the Bridge Division with concerns regarding the proposed values or if large deviations from these values are required.

Note: The information below supplements the survey requirements noted in the EPG, please consult EPG 238 for additional surveying requirements.

Bridge Contact: Garrett Hager, Garrett.Hager@modot.mo.gov, (573)751-7411

Survey Type: **1D Survey**

Stream Crossing Survey Location Details (1D)							
Item		Requirement	Standard Guidance		Specific Guidance		
Profiles* (EPG 238.3.36.1.3)	C/L Profile	Terminal Point	Limit of Longest offset Profile		Use Standard Guidance		
	Upstream Offset Profile	Terminal Point	Same as Valley Sections		Elevation =	365 ft	
		Offset Distance	On Natural Ground		Estimated Distance =	40 ft	
	Downstream Offset Profile	Terminal Point	Same as Valley Sections		Elevation =	365 ft	
		Offset Distance	On Natural Ground		Estimated Distance =	40 ft	
	Special	Please Provide Profile Along Median					
Streambed Profiles** (EPG 238.3.36.3.6)		Length	Natural Stream	Section limits (Min. of 1000' each side of crossing.)	Use Natural Stream Guidance (Upstream)		
			Drainage Ditch	500' Each Side of Crossing	Use Drainage Ditch Guidance (Down Stream)		
		Elevation Intervals	Within 1000' of Crossing	Nat. Stream 25'	Use Natural Stream Guidance (see EPG 238.3.36.3.6 if a significant slope change is encountered)		
				Drain. Ditch 50'			
			Beyond 1000' from Crossing	At Vertical and Horizontal Break Points (200' max.)			
		Valley Sections (EPG 238.3.36.3.8), (EPG 750.3.1.1)		Terminal Point	Natural Stream	5' above EHW	Elevation =
Drainage Ditch	50' Beyond Bankside Toe of Levee				Distance =	50' beyond toe of leave (downstream)	

Item	Requirement	Standard Guidance		Specific Guidance
Water Surface Profile (EPG 238.3.36.3.7)	Water Surface Profile Data Needed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
	Locations with flowing water	Drainage Ditch	100' and 200' each side of Crossing	Use Water Surface Profile Standard Guidance

Item	Requirement	Standard Guidance	Specific Guidance
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Typical Channel Sections (EPG 238.3.36.3.9)	Typical Channel Section Data Needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	Within 300' each side of Centerline	Provide when Needed (i.e., Culvert on Perennial and Intermittent Stream)	

Item	Requirement	Standard Guidance	Specific Guidance
Existing Bridge Data	Existing Bridge Data Needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	Description	Provide General Description	N/A

Item	Requirement	Standard Guidance	Specific Guidance
Other Bridges (EPG 238.3.36.3.10)	Other Bridge Data Needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	Description	Provide General Description	N/A
	Profile Location	C/L Structure	N/A
	Profile Terminal Point	5' above EHW	Elevation = N/A

* additional profiles may be needed for relocated routes

** at confluent streams provide proposed data for both streams as appropriate.

Additional Information:

Valley Sections for each leg upstream, as well as a valley section between the structure and where the tributaries converge. Channel sections for each leg will be needed as well.

Additional Documents Provided:

Image & kmz file showing Valley Section Locations.

Roadway Design Notes for Bridge Survey:





The Bridge Survey should include all the pertinent items listed in [EPG 747](#) and the [Bridge Survey Checklist](#).

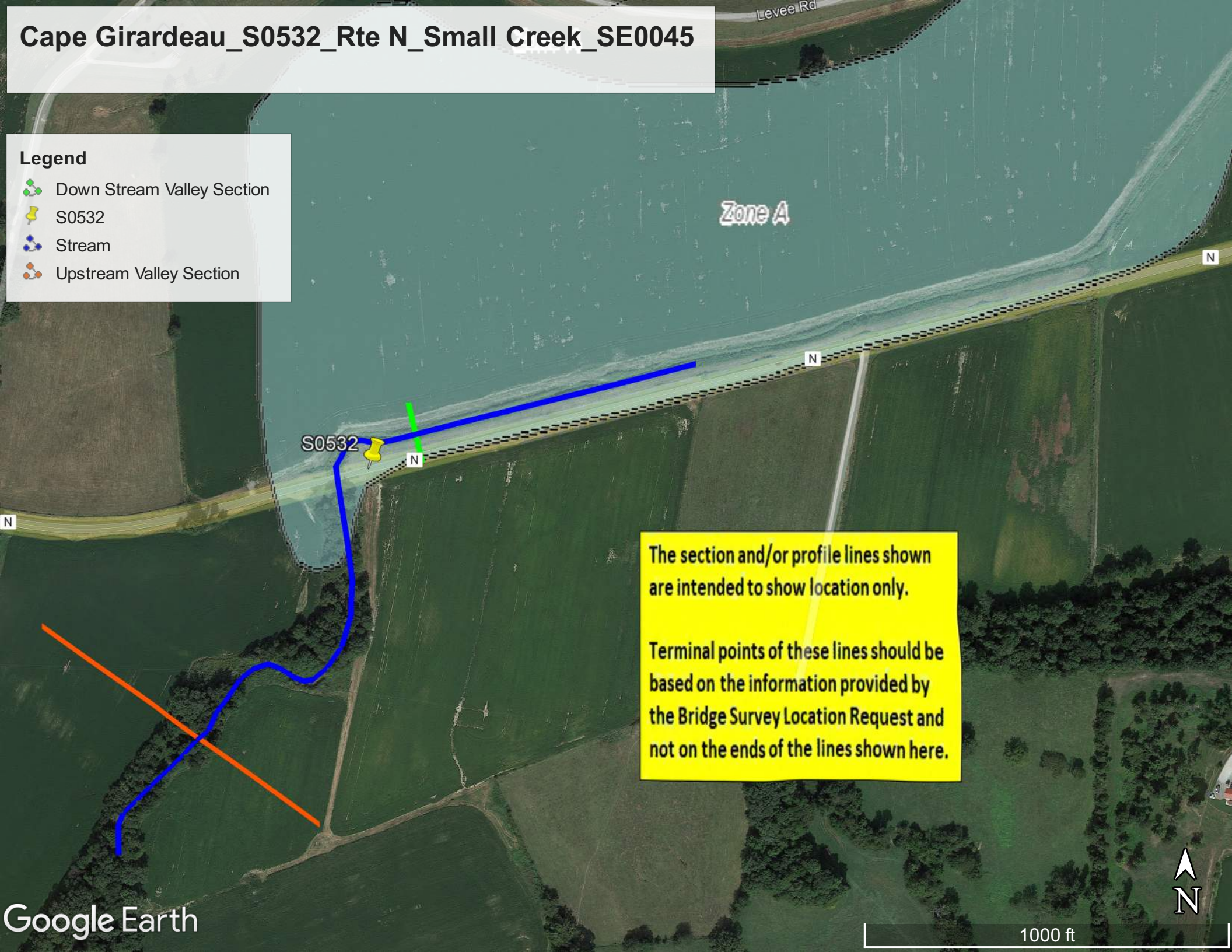
Bridge Design Notes:

FEMA Zone A, panel 29201C0075D eff. 6/5/2012

Cape Girardeau_S0532_Rte N_Small Creek_SE0045

Legend

-  Down Stream Valley Section
-  S0532
-  Stream
-  Upstream Valley Section



The section and/or profile lines shown are intended to show location only.

Terminal points of these lines should be based on the information provided by the Bridge Survey Location Request and not on the ends of the lines shown here.

Contractor shall maintain local traffic over Project during construction.

5N 182

SOUTHWESTERN MORTGAGE CO.

Δ 44° 38' Lt
 D 5°
 T 470.5
 L 892.7
 Super 0.0716 Per Ft

F.E. & S.E. APPROACHES					
Sta	15"	18"	SIA EXC	AIL	Remarks
E52+89	No	PPG		15	S.E.-ET

Between Sta 266+50 & 279+40
Excavate Special Ditch on Rt 8
Lt See X-sections

Sta	15"	12"	Fill	Remarks
258+00	22'		50	3E-Lt 103
258+35	25'		40	3E-Gr R
273+51	14'	10'	50	FE-Lt 3.

✓ 258100				1	Bottom - E.
✓ 258100	Pos	24° 10'	28° 10' E	2	
✓ 258145		18'	30' L	5	
✓ 279101	C-244	412	28 60 SE	7	219° NW - 15
✓ 258100				4	Bottom - E.

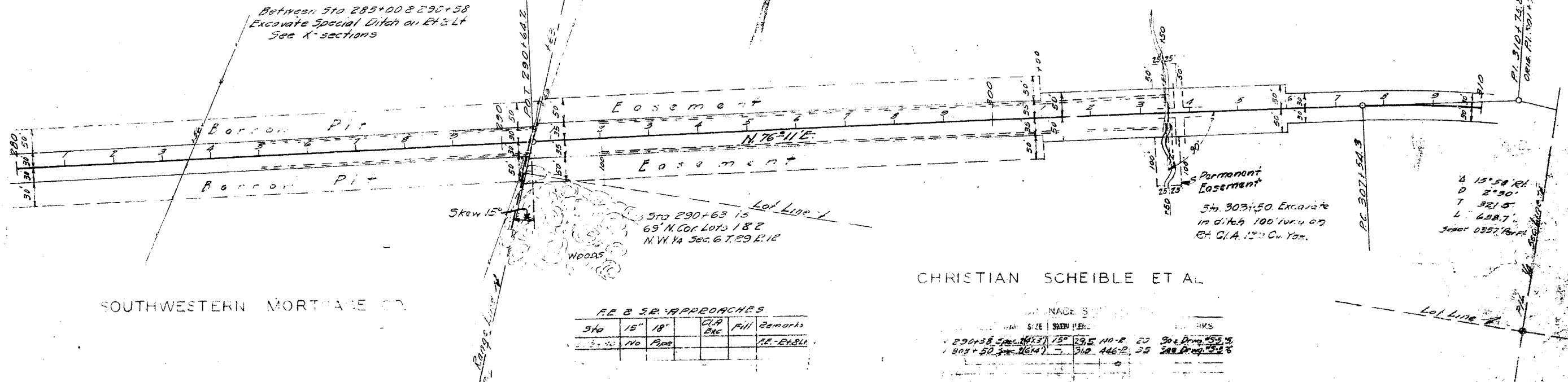
[illegible]

SOUTHWESTERN MORTGAGE CO

CHRISTIAN SCHEIBLE ET AL

Between Sta 285+00 & 290+58
Excavate Special Ditch on R.T. & L.T.
See X-sections

Between Sta 292+00 & 303+50
Excavate Special Ditch on R.T. & L.T.
See X-sections



SOUTHWESTERN MORTGAGE CO

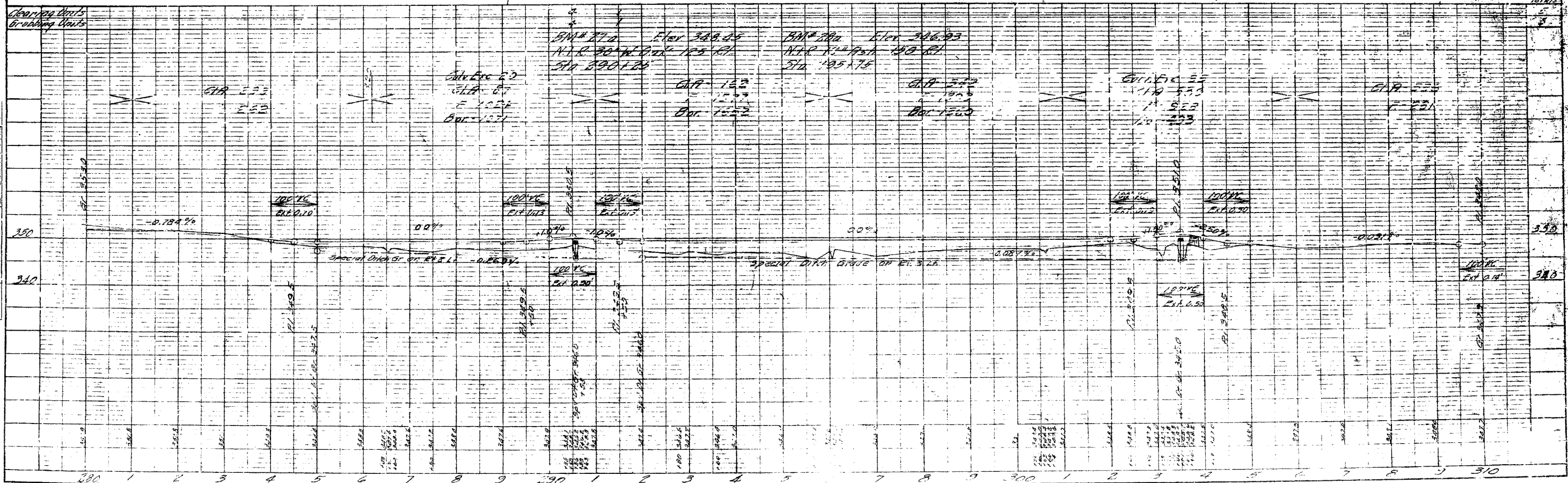
CHRISTIAN SCHEIBLE ET AL

FE & SR APPROACHES

Sta	15'	18'	CLR	Exc	Fill	Remarks
285+00	140	100				FE-EX-11

STATIONAGE SUMMARY

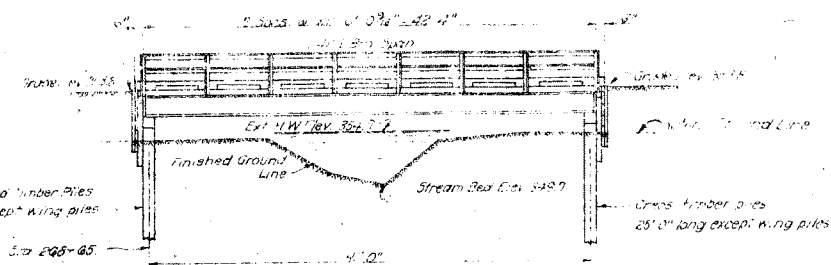
Sta	15'	18'	CLR	Exc	Fill	Remarks
290+58	140	100				FE-EX-11
303+50	140	100				FE-EX-11



DATE: MAY 20, 1981

MISSOURI STATE HIGHWAY DEPARTMENT

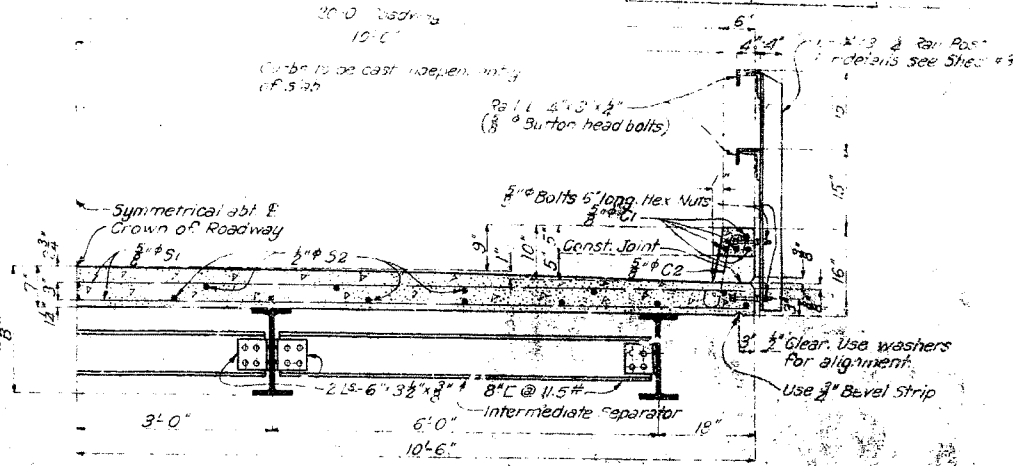
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	SA-57	19		



GENERAL ELEVATION

Note: See Special Provisions in regard to ordering Piles. All piles to be cross-timber and order in the following lengths: 6 @ 25' 0" and 6 @ 15' 0". These lengths include 12" cut-offs. Wing piles to be driven to full penetration unless bearing of 15 ton is obtained at a lesser depth, in which case they shall be driven to Elev. 335.0.

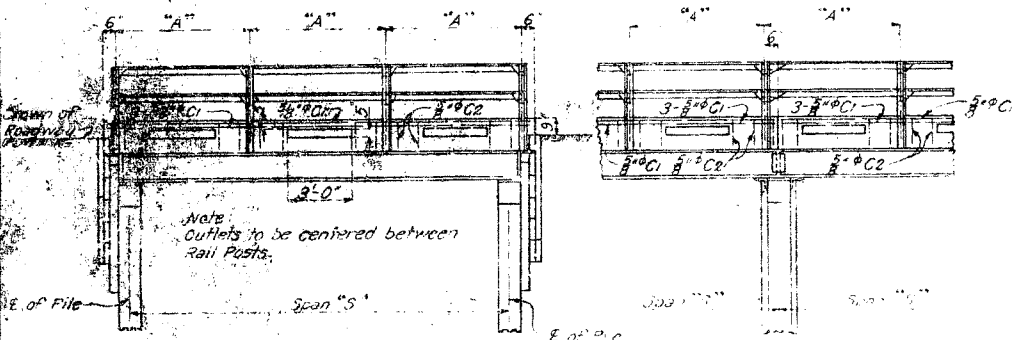
DIMENSION "B"	
SPAN "S"	"B"
15'-0"	20'-8"
17'-0"	21'-0"
19'-0"	22'-0"
21'-0"	23'-0"
23'-0"	23'-8"
25'-0"	24'-0"
27'-0"	24'-8"
29'-0"	25'-0"
31'-0"	25'-8"
33'-0"	26'-0"
35'-0"	26'-8"
37'-0"	27'-0"
39'-0"	27'-8"
41'-0"	28'-0"
43'-0"	28'-8"
45'-0"	29'-0"
47'-0"	29'-8"
49'-0"	30'-0"



Note: Top of channel separators at ends of each I-Beam Span to be flush with bottom of floor slab as shown in section thru end bent at E.

Note: Depth of outside stringers will in some cases be a fraction of an inch less than that of inside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of outside stringers.

HALF SECTION THRU SPAN



ELEVATION

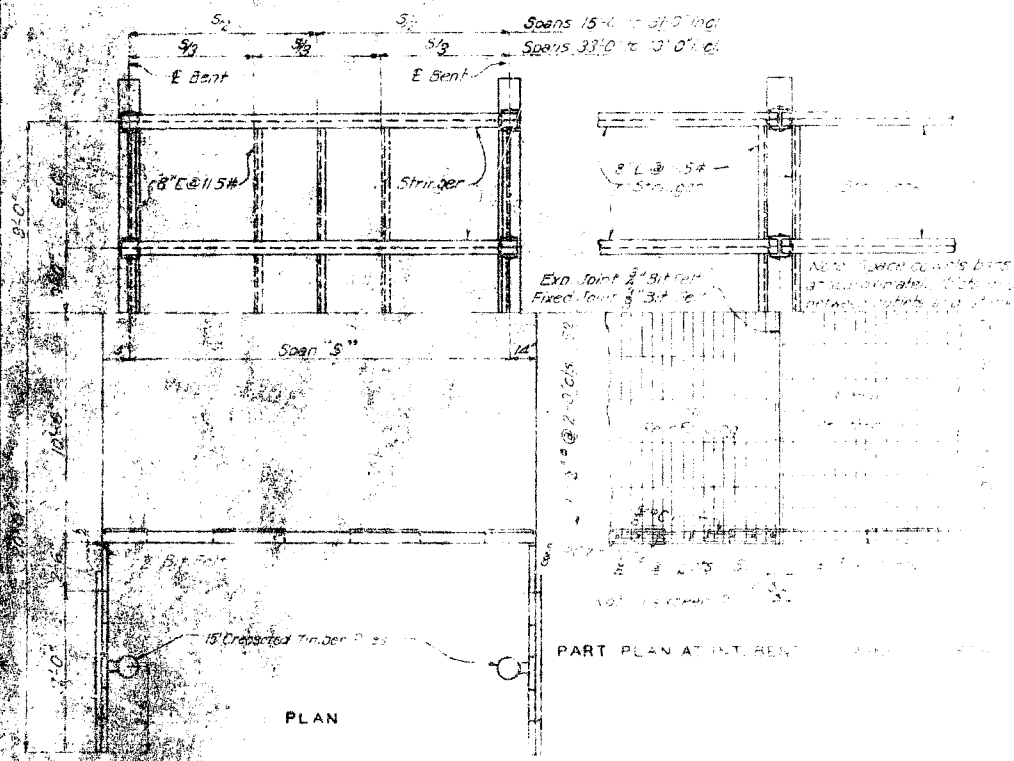
PART ELEVATION AT INT. BENT

HANDRAIL SPACING					
"A" DIMENSIONS					
SPAN "S"	NO. PANELS	SINGLE SPAN	1ST INT. SPAN	ALL INT. SPANS	LAST INT. SPAN
15'-0"	3	5'-5 1/2" abt	5'-0 1/2" abt	5'-0"	5'-4 1/2" abt
17'-0"	3	6'-1 1/2" abt	5'-0 1/2" abt	5'-0"	6'-0 1/2" abt
19'-0"	3	6'-9 1/2" abt	6'-4 1/2" abt	6'-4"	6'-8 1/2" abt
21'-0"	4	5'-7"	5'-3 1/2"	5'-3"	5'-6 1/2"
23'-0"	4	6'-1"	5'-9 1/2"	5'-9"	6'-0 1/2"
25'-0"	4	6'-7"	6'-3 1/2"	6'-3"	6'-6 1/2"
27'-0"	5	5'-8"	5'-5 1/2" abt	5'-4 1/2" abt	5'-7 1/2" abt
29'-0"	5	6'-0 1/2" abt	5'-10"	5'-9 1/2" abt	6'-0 1/2" abt
31'-0"	5	6'-5 1/2" abt	6'-2 1/2" abt	6'-2 1/2" abt	6'-5 1/2" abt
33'-0"	6	5'-8 1/2" abt	5'-6 1/2" abt	5'-6"	5'-9 1/2" abt
35'-0"	6	6'-0 1/2" abt	5'-10 1/2" abt	5'-10"	6'-0 1/2" abt
37'-0"	6	6'-4 1/2" abt	6'-2 1/2" abt	6'-2"	6'-4 1/2" abt
39'-0"	7	5'-9 1/2" abt	5'-7 1/2" abt	5'-6 1/2" abt	5'-8 1/2" abt
41'-0"	7	6'-0 1/2" abt	6'-2 1/2" abt	6'-1 1/2" abt	6'-0 1/2" abt
43'-0"	8	6'-4"	6'-2 1/2" abt	6'-1 1/2" abt	6'-3 1/2" abt
45'-0"	8	6'-9 1/2"	5'-10 1/2"	5'-10"	6'-0 1/2"
47'-0"	8	6'-9 1/2"	6'-4"	6'-4"	6'-2"

TABLE OF STRINGERS							
SPAN "S"	PER PLANS		PERMISSIBLE SUBSTITUTIONS				
	CARNEGIE BEAMS		STANDARD I-BEAMS		BETHLEHEM BEAMS		
	Inside	Outside	Inside	Outside	Inside	Outside	
15'-0"	14 @ 30#	14 @ 30#	12 @ 40.8#	12 @ 35#	14 @ 30#	14 @ 30#	
17'-0"	14 @ 33#	14 @ 33#	15 @ 42.9#	15 @ 42.9#	14 @ 33#	14 @ 33#	
19'-0"	16 @ 37#	16 @ 37#	15 @ 42.9#	15 @ 42.9#	16 @ 37#	16 @ 37#	
21'-0"	16 @ 40#	16 @ 37#	15 @ 50#	15 @ 45#	16 @ 40#	16 @ 37#	
23'-0"	16 @ 45#	16 @ 40#	18 @ 54.7#	18 @ 51.7#	16 @ 45#	16 @ 40#	
25'-0"	18 @ 47#	18 @ 47#	18 @ 54.7#	18 @ 54.7#	18 @ 47#	18 @ 47#	
27'-0"	18 @ 52#	18 @ 47#	18 @ 60#	18 @ 54.7#	18 @ 52#	18 @ 47#	
29'-0"	20 @ 55#	20 @ 55#	20 @ 65.4#	20 @ 65.4#	20 @ 55#	20 @ 55#	
31'-0"	21 @ 58#	21 @ 58#	20 @ 70#	20 @ 65.4#	21 @ 58#	21 @ 58#	
33'-0"	21 @ 60#	21 @ 58#	20 @ 75#	20 @ 70#	22 @ 62#	22 @ 58#	
35'-0"	21 @ 74#	21 @ 60#	20 @ 84#	20 @ 75#	22 @ 71#	22 @ 60#	
37'-0"	24 @ 70#	24 @ 70#	24 @ 79.9#	24 @ 79.9#	24 @ 70#	24 @ 70#	
39'-0"	24 @ 71#	24 @ 70#	24 @ 79.9#	24 @ 79.9#	24 @ 71#	24 @ 71#	
41'-0"	24 @ 81#	24 @ 71#	24 @ 85.4#	24 @ 79.9#	24 @ 81#	24 @ 71#	
43'-0"	24 @ 85#	24 @ 81#	24 @ 91#	24 @ 85.4#	26 @ 85#	26 @ 81#	
45'-0"	27 @ 85#	27 @ 85#	24 @ 105.9#	24 @ 90#	26 @ 85#	26 @ 85#	
47'-0"	27 @ 92#	27 @ 85#	24 @ 105.9#	24 @ 99.9#	28 @ 92#	28 @ 85#	
49'-0"	27 @ 94#	27 @ 92#	27 @ 115#	27 @ 105.9#	28 @ 94#	28 @ 92#	

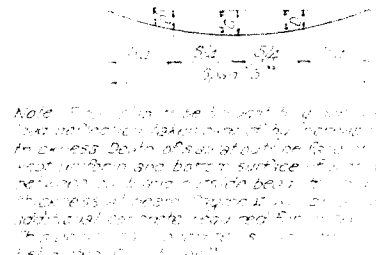
GENERAL NOTES:

Loading: One 10 Ton Truck, 80% of weight on rear axle, 30% impact, 14'-0" wheel base, 6'-0" gage, 10' tire.
 All concrete to be 1:2:4 mix.
 Exposed edges to be beveled 3" where no other bevel is noted.
 All timber to be creosoted Douglas Fir of the West Coast Region, Close-grained Structural Grade, creosoted Southern Yellow Pine, Dense-grained Structural Grade, or untreated California Redwood, Prime Structural Grade. All timber to be dressed to final dimensions by the contractor.
 When using counter-sunk heads are indicated on plans, cut washers shall be used under heads. 2.5 washers shall be used under heads of all other bolts and under nuts of all bolts.
 Number of bolts, cut washers, nuts and washers given exact; no allowance made for excess loss. Substructure hardware to be galvanized and fire treated for timber in place.
 Beams with fastenings, spacers, handrail, handrail posts with fastenings, cut washers and cap plate on end bent with fastenings, shall be made of structural steel. Cast of metal's edge moulding shall be made of structural steel. Cast of metal's edge moulding shall be made of structural steel.
 Field connections, except handrail, shall be hand-bolted.
 Field connections for handrail shall be 3" bolt on head.
 Cuts, & Plan.
 All work shall be submitted to the State Highway Department for approval and shall be approved before steel is placed.
 The contractor shall be responsible for the submission to the State Highway Department of all work.



PLAN

DEFLECTION	
SPAN "S"	DEFLECTION
15'-0"	1/4"
17'-0"	1/4"
19'-0"	1/4"
21'-0"	1/4"
23'-0"	1/4"
25'-0"	1/4"
27'-0"	1/4"
29'-0"	1/4"
31'-0"	1/4"
33'-0"	1/4"
35'-0"	1/4"
37'-0"	1/4"
39'-0"	1/4"
41'-0"	1/4"
43'-0"	1/4"
45'-0"	1/4"
47'-0"	1/4"
49'-0"	1/4"



DEFLECTION DIAGRAM

ESTIMATED QUANTITIES	
ITEM	QUANTITY
Bridge Deck (Concrete)	1,150
Bridge Deck (Reinforcing Steel)	100
Bridge Deck (Formwork)	175
Bridge Deck (Scaffolding)	100
Bridge Deck (Other Materials)	100
Bridge Deck (Labor)	100
Bridge Deck (Other Costs)	100
Bridge Deck (Total)	1,150

Designed by F.W.H.
 Drawn by R.J.G.
 Traced by R.J.G.
 Checked by R.J.G.
 Date: 1/1/33

