

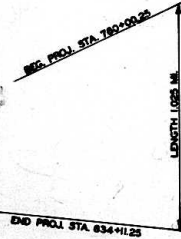
NO.	QUANTITY	PER. NO.	PER. NO.	PER. NO.	PER. NO.	PER. NO.	PER. NO.
60-B	MADISON	8	11	1-179-5		1	54

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

MISSOURI
STATE HIGHWAY COMMISSION

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

ILLINOIS SECTION NO. 60-B
MISSOURI BRIDGE NO. A-890
ST. LOUIS, MISSOURI—MADISON COUNTY, ILLINOIS
INTERSTATE ROUTE 270
SUBSTRUCTURE PROJECT I-270-5(71)242
1962



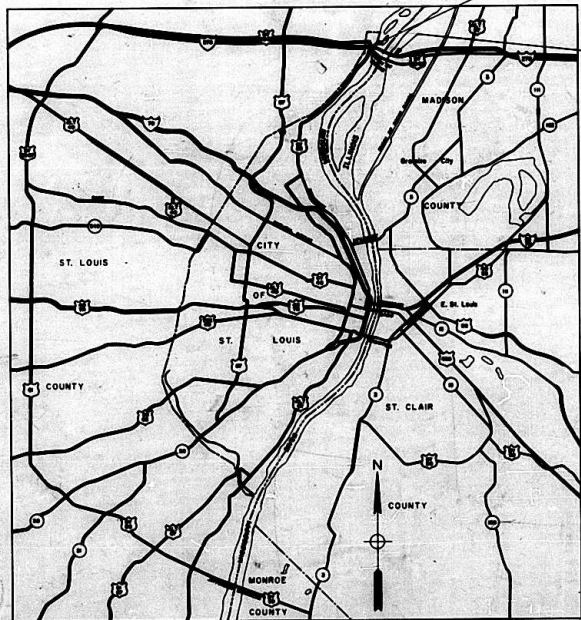
- INDEX OF SHEETS
1. TITLE SHEET, INDEX OF SHEETS
 2. PLAN & PROFILE, TYPICAL SECTION F.A.I. 270
 3. PLAN & PROFILE F.A.I. 270
 4. ENGINEER'S FIELD OFFICE
 - 5-28. BRIDGE PLANS (SUMMARY OF QUANTITIES, SHT. NO. 6)
 24. STANDARDS, 214, 215B-5 (SEE SPEC. PROJ.)
 - 34A-34J SUPERSTRUCTURE PLANS (FOR INFORMATION)

DESIGN DENOMINATION

ADT (1956) - 6600
ADT (1975) - 19,000
DNV (1975) - 1980
D - 50%
T - 8%
V - 70 mph

LIMITED ACCESS HIGHWAY
This shall be a fully limited access highway between Station 790+00.25 and Station 834+11.25. No abutting owner shall have the right of access to said highway on its right of way except that access will be permitted to roads which run parallel with or under said highway at a different elevation.
LEGEND: \circ Beginning and Ending of Limited Access
+ + + + + Limited Access

CONVENTIONAL SYMBOLS
State Line
County Line



APPROVED

FOR STRUCTURAL ADEQUACY ONLY
W. E. Bunneman 4/26/62
CHIEF ENGINEER OF BRIDGES & TRAFFIC STRUCTURES

MISSOURI

DATE: June 11, 1962
W. E. Bunneman

DATE: June 11, 1962
J. J. Curtis

ILLINOIS

DATE: June 23, 1962
W. E. Bunneman

DATE: July 23, 1962
W. E. Bunneman

DATE: July 23, 1962
W. E. Bunneman

DATE: July 23, 1962
W. E. Bunneman

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

BRIDGE ENGINEER DATE

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

BRIDGE ENGINEER DATE



LOCATION MAP SCALE: 1" = 2 MILES PROJECT LENGTH = 5,411.00 FT = 1.025 MI.

PER. REQ. APP. NO.	DATE	PER. REQ. APP. NO.	PER. REQ. APP. NO.	PER. REQ. APP. NO.	PER. REQ. APP. NO.
1		2	3	4	5
6		7	8	9	10

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

MISSOURI
STATE HIGHWAY COMMISSION

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

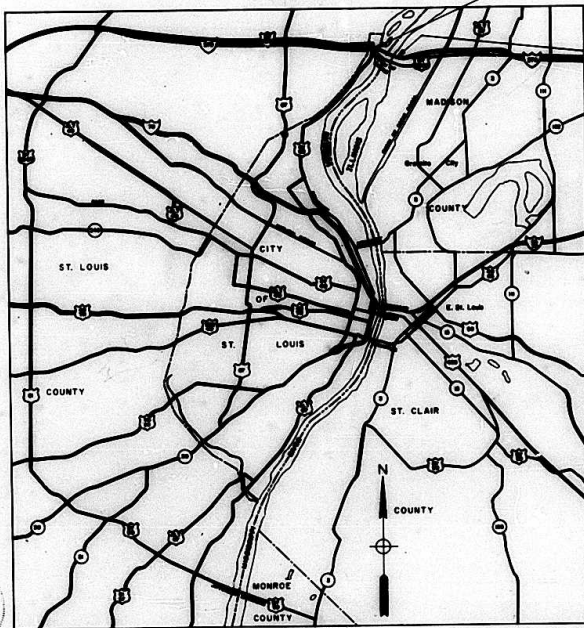
Sec. 60-B

MISSOURI BRIDGE NO. A-890
ST. LOUIS, MISSOURI—MADISON COUNTY, ILLINOIS
INTERSTATE ROUTE 270
SUPERSTRUCTURE PROJECT I-270-5(72)
1962

DESIGN DENOTATION
ADT (1960) - 6600
ADT (1975) - 19,800
DAV (1975) - 1980
D . . . 50%
T . . . 8%
V . . . 70 m.p.h.

LIMITED ACCESS HIGHWAY
This shall be a fully limited access highway between Station 100+00.25 and Station 034+11.25. No adjoining owner shall have the right of access to said highway or its right of way except that access will be permitted to roads which run parallel with or under said highway at a different elevation.
LEGEND: —○— Beginning and Ending of Limited Access
+---+ or --- Limited Access

CONVENTIONAL SYMBOLS
State Line ———
County Line ———



LOCATION MAP
SCALE: 1" = 2 MILES

MISSOURI
November 16, 1962
Pat G. Jensen
November 16, 1962
W. G. Jensen

ILLINOIS
November 26, 1962
Ed. Hansen
November 26, 1962
William A. Hall
November 26, 1962
Thomas
November 26, 1962
W. G. Jensen
November 26, 1962
W. G. Jensen

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

OVEROUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

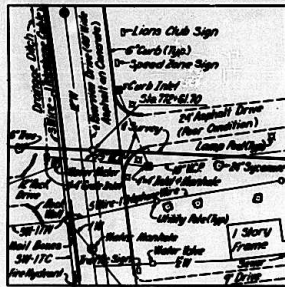
SUBMITTED BY *[Signature]*



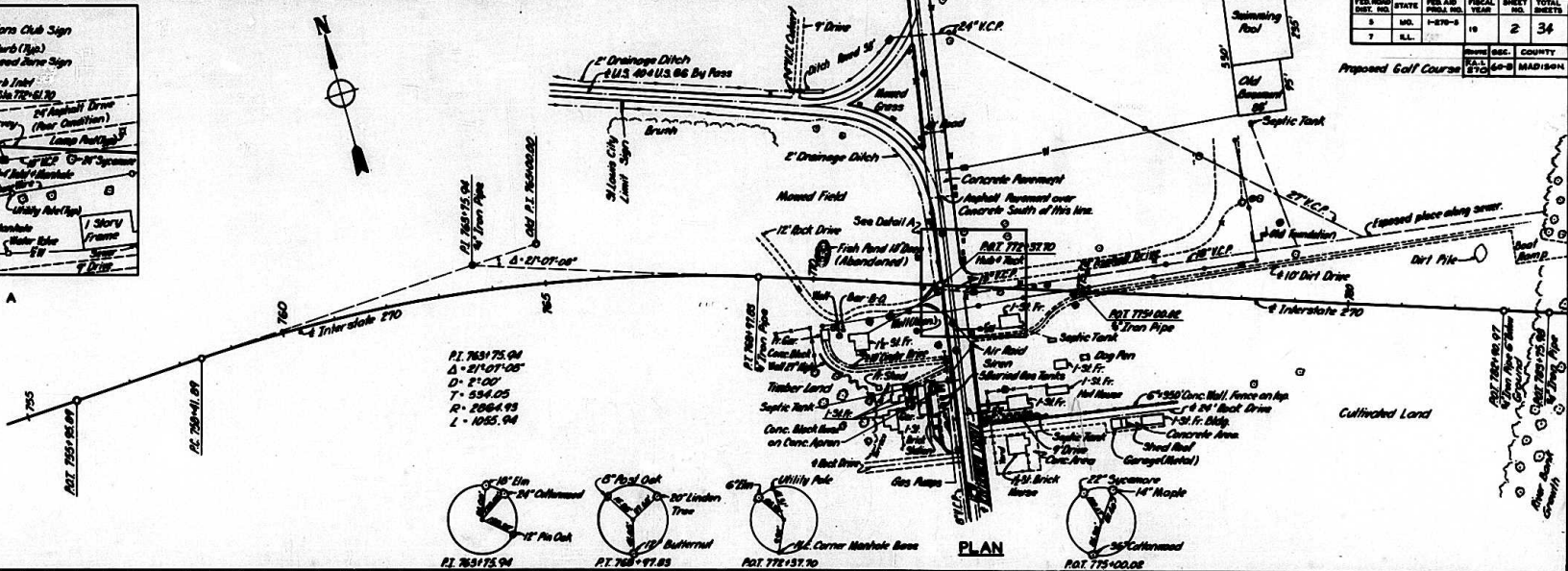
REGISTERED PROFESSIONAL ENGINEER
ILLINOIS, NO. 101,000

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.	I-270-5	19	2	34
7	ILL.				

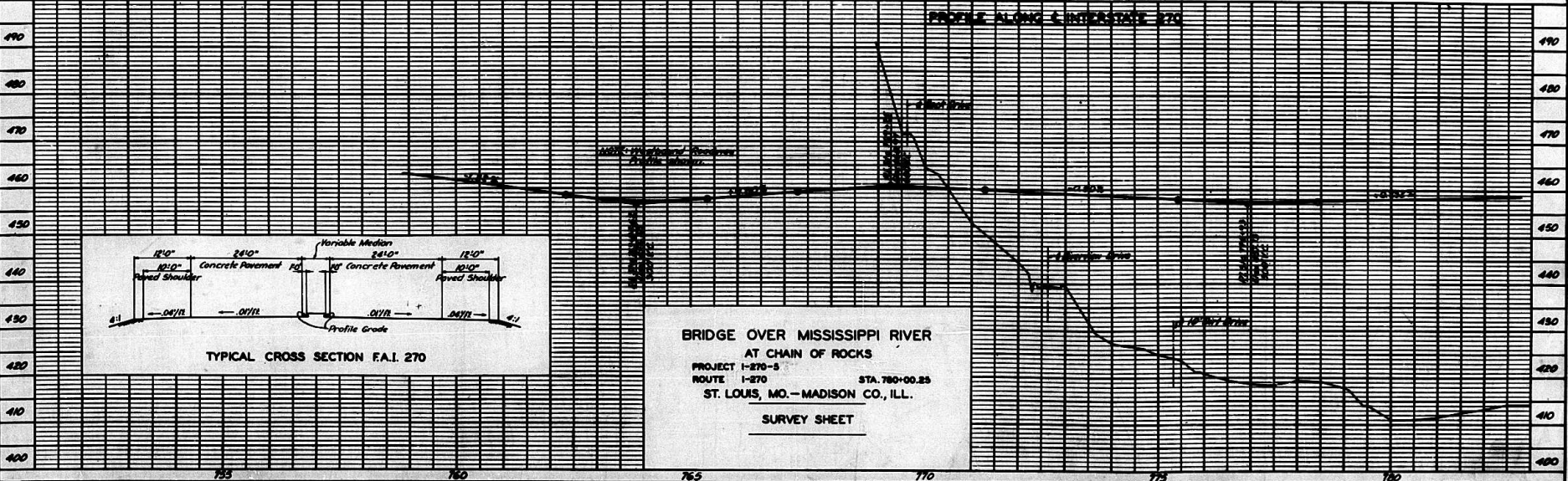
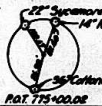
PROJECT NO. 64-8
COUNTY MADISON
SHEET NO. 2



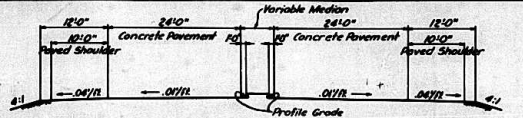
DETAIL A



PLAN



PROFILE ALONG INTERSTATE 270



TYPICAL CROSS SECTION F.A.I. 270

**BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS**
PROJECT I-270-5
ROUTE I-270 STA. 780+00.25
ST. LOUIS, MO.—MADISON CO., ILL.

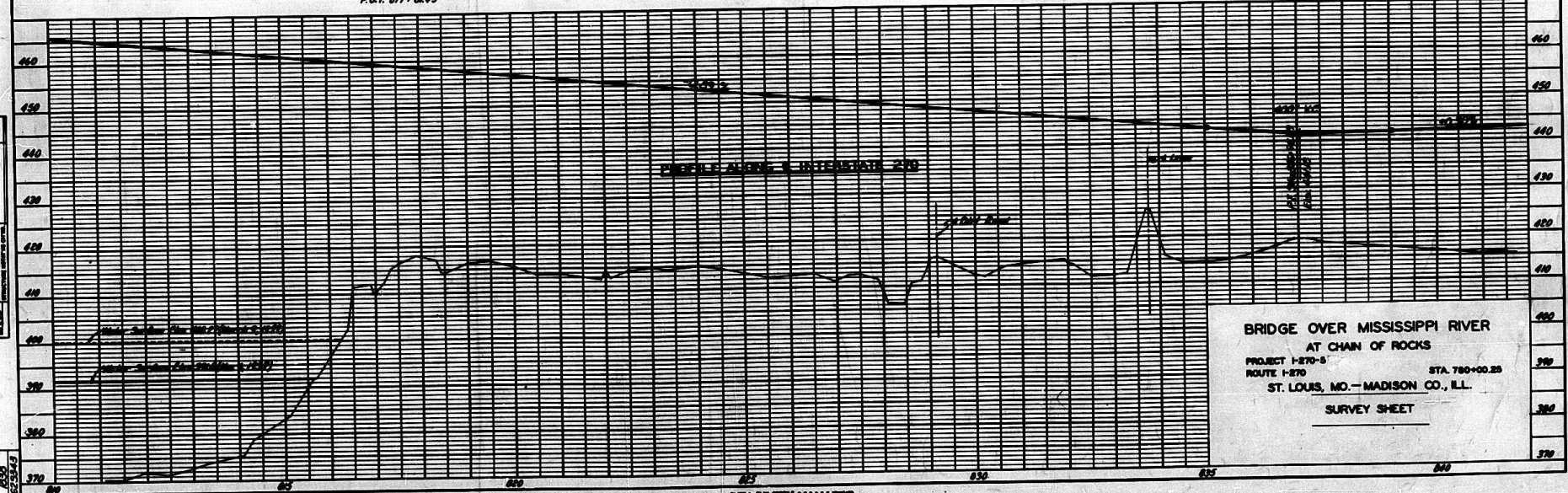
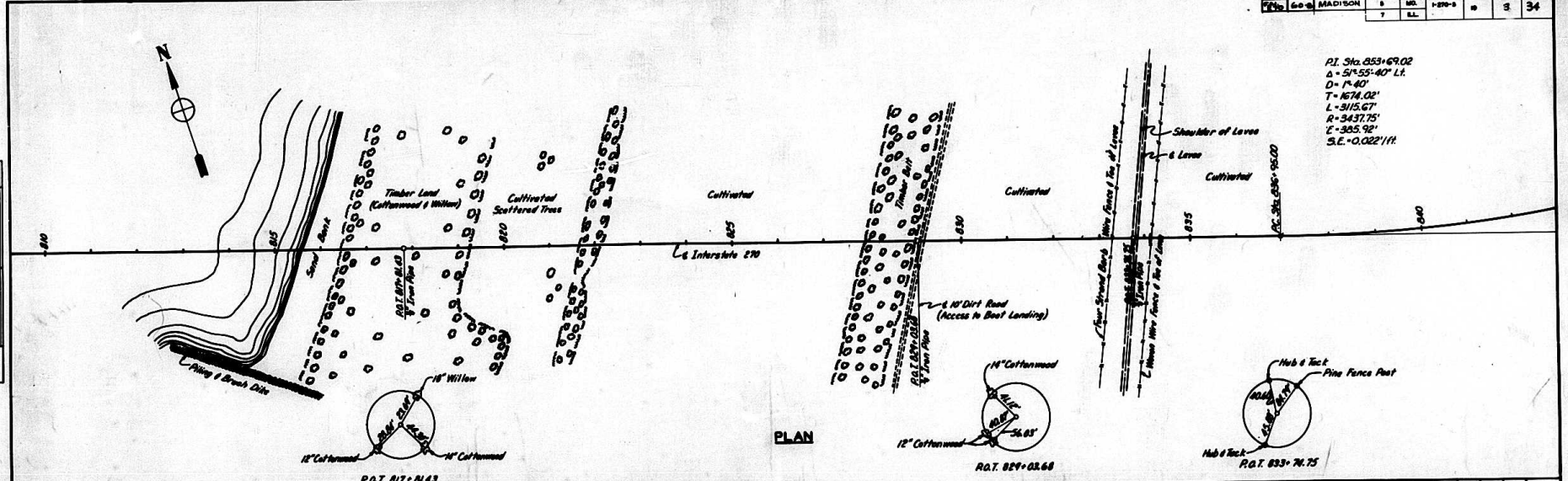
SURVEY SHEET

DATE	SEC.	COUNTY	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FED. AID FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7/24/74	60-6	MADISON	5	ILL.	1-870-5	8	3	34

P.I. Sta 253+69.02
 $\Delta = 51^{\circ}55'40''$ L.I.
 $D = 1^{\circ}40'$
 $T = 1674.02'$
 $L = 515.67'$
 $A = 3431.75'$
 $E = 385.92'$
 $S.E. = 0.022111$

PLAN	PROPOSED	EXISTING	CONSTRUCTION
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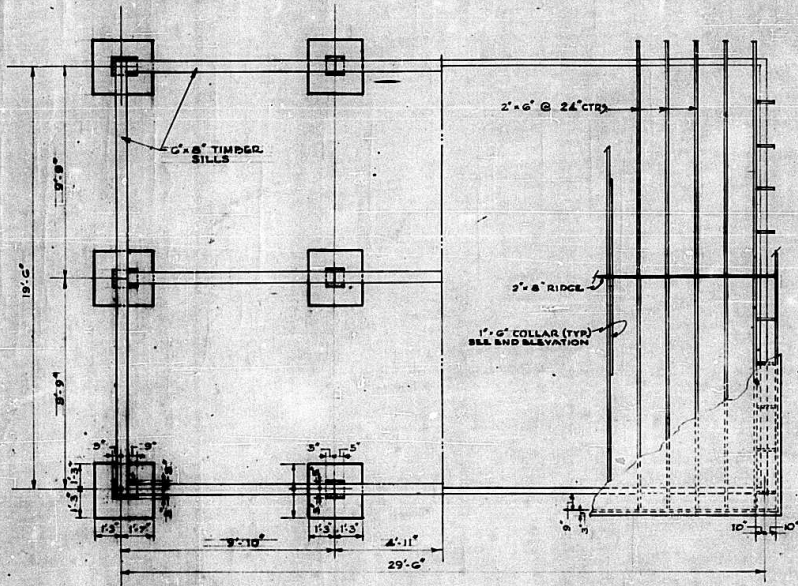
PROFILE	PROPOSED	EXISTING	CONSTRUCTION
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BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-870-5 STA. 780+00.25
 ROUTE 1-870 ST. LOUIS, MO. - MADISON CO., ILL.
 SURVEY SHEET

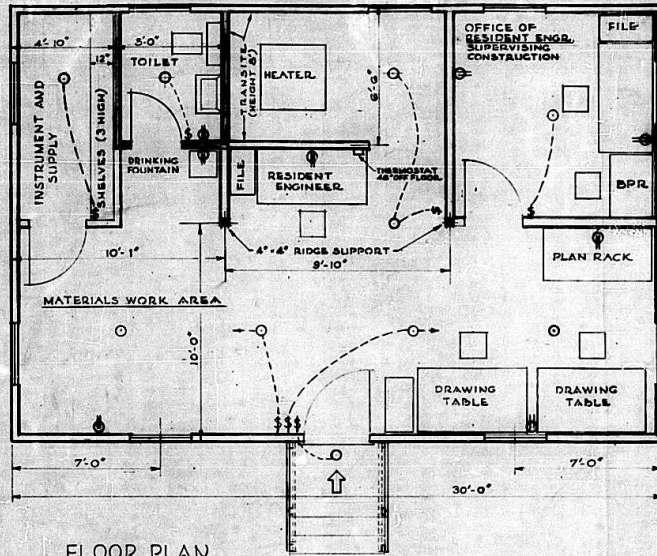
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

DESIGN NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
60-8	Madison	34	4

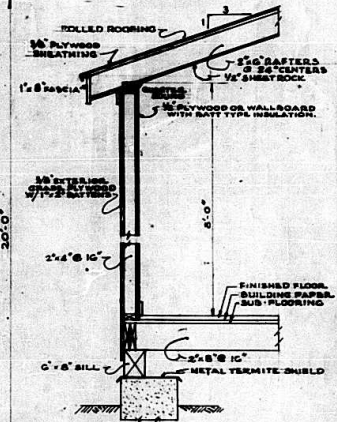


FOUNDATION PLAN

ROOF FRAMING



FLOOR PLAN



TYPICAL SECTION

ELECTRICAL SYMBOLS

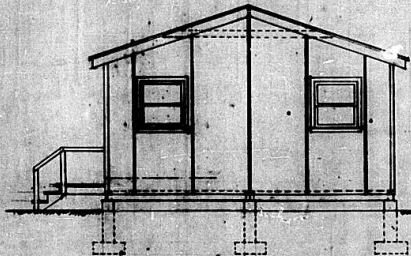
- OUTLET - OVERHEAD
- ⊖ RECEPTACLE - DUPLEX
- ⊕ SWITCH - SINGLE POLE

LIST OF FURNITURE

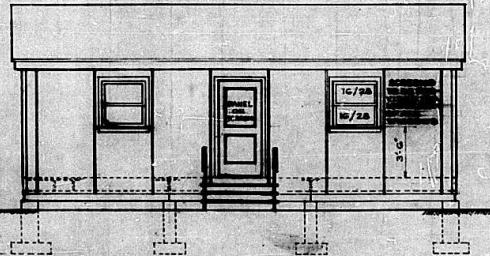
- 2 - DESKS
- 5 - CHAIRS
- 2 - FOLD DRAWER FILES
- 2 - DRAWING TABLES
- 4 - TABLES 3' x 6'
- 1 - PLAN RACK
- 2 - DRAFTING STOOLS

GENERAL NOTES

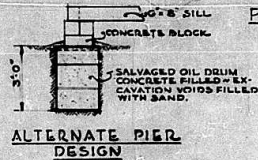
- THE CONTRACTOR SHALL CONSTRUCT ONE SUCH FIELD OFFICE ON THE ILLINOIS SIDE OF THE MISSISSIPPI RIVER, AND ONE ON THE MISSOURI SIDE OF SAID RIVER. SEE SPECIAL PROVISIONS.
- ALL PARTITIONS EXCEPT THOSE IN THE TOILET SHALL BE 8'-0" IN HEIGHT.
- TOILET PARTITIONS SHALL BE CEILING HEIGHT.
- INSIDE OF ALL EXTERIOR WALLS AND UNDER SIDE OF ROOF RAFTERS TO BE COVERED WITH 1/2" SHEET ROCK.
- INTERIOR SURFACES OF ALL WALLS, EXCEPT AS NOTED SHALL BE EITHER 1/2" WOOD OR WALL BOARD WITH BATT TYPE INSULATION INSIDE THE OUTSIDE WALLS. THE UNDERSIDE OF THE ROOF RAFTERS SHALL BE COVERED WITH 1/2" SHEET ROCK.
- THE EXTERIOR DOOR (5'-0" x 6'-6") SHALL BE FURNISHED WITH A REMOVABLE PANEL AND SCREEN FOR BREEZE. ALSO BE SATISFACTORY TO THE ENGINEERS SHALL BE INSTALLED ON EACH EXTERIOR DOOR.
- THE ROOF SHALL BE SERVICEABLE AND WEATHER TIGHT.
- ALL WINDOWS SHALL BE DOUBLE HUNG TYPE WOOD SASH. THE BOTTOM GLASS PANEL OF THE TOILET WINDOW SHALL BE GRASS.
- THE OFFICES SHALL BE WIRED FOR LIGHTS, WALL PLUGS AND SWITCHES AS SHOWN ON THE DRAWING AND EQUIPPED AND MAINTAINED WITH 100 WATT EQUIPMENT.
- TOILET FACILITIES SHALL BE PROPERLY VENTED AND SHALL BE CONNECTED TO ADEQUATE DISPOSAL SYSTEMS.
- BOTH OFFICES SHALL BE PROVIDED WITH AN OIL HEATER AND BLOWER AND SUFFICIENT DUCTS TO INSURE COMFORT IN WINTER. THE HEATERS SHALL BE PROPERLY VENTED.
- TWO FIRE EXTINGUISHERS MEETING APPROVAL OF THE ENGINEERS SHALL BE PROVIDED IN EACH OFFICE.
- ADEQUATE AIR CONDITIONING EQUIPMENT SHALL BE INSTALLED IN EACH OFFICE TO INSURE BUSINESS COMFORT. ADEQUATE LINE SERVICE SHALL BE PROVIDED TO INSURE SAFE AND CONTINUOUS OPERATION OF SAID EQUIPMENT.
- THE OFFICES SHALL BE GIVEN TWO COATS OF EXTERIOR PAINT OF A COLOR SUITABLE TO THE ENVIRONMENT.
- TELEPHONE S SHALL BE LOCATED AS DIRECTED BY THE ENGINEERS.
- CONSTRUCTION DETAILS AND MATERIALS MAY BE VARIED WITH WRITTEN APPROVAL OF THE ENGINEERS.
- FURNITURE LOCATED ON THE DRAWINGS INCLUDED IN LIST OF FURNITURE, AND MAY BE VARIED (IN SOME COUNTRIES) OR CONSTRUCTED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEERS.
- CERTAIN FACILITIES AT SOME COUNTRIES, IN ADDITION TO THE LIST OF FURNITURE, MAY BE REQUIRED FOR LABORATORY OPERATIONS IN CONNECTION WITH THE SUBSTRUCTURE CONTRACT FOR THIS PROJECT. SUCH FACILITIES SHALL BE PROVIDED IN THE FIELD OFFICE ON THE ILLINOIS SIDE OF THE RIVER AS DIRECTED BY THE ENGINEERS.



END ELEVATION



FRONT ELEVATION



ALTERNATE PIER DESIGN

DESIGN NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
60-8	Madison	34	4

44 87 62
 W.B. [Signature]
 [Signature]
 [Signature]

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

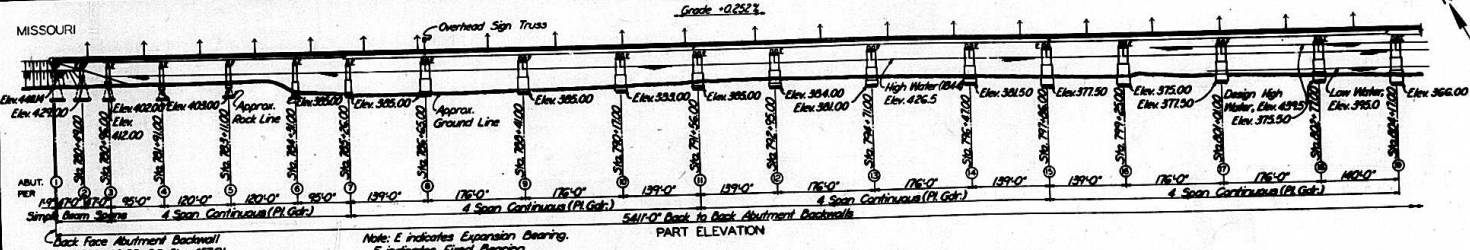
STA. 780 + 00.25

ST. LOUIS, MO.-MADISON CO., ILL.

FIELD OFFICES

FED. ROAD DIST. NO.	COUNTY	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MO 170	MADISON	MO.	1-170-1	19	5	34

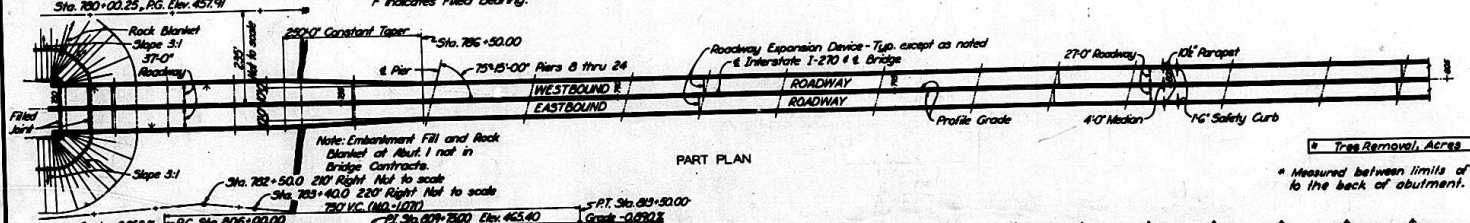
MISSOURI



BENCH MARKS
 12A - on East Curb of Riverway Drive Sta. 15+95, Elev. 440.66.
 - Nail in Willow Shump near it of approximate Sta. 021+94, Elev. 464.45.
 All elevations refer to Mean Sea Level U.S.G.S Datum, F29 Adjustment.
 Chain of Rocks, River Gage 0 = Elev. 313.91.

Note: All longitudinal dimensions are measured along the Interstate I-270.

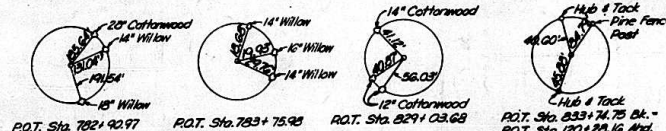
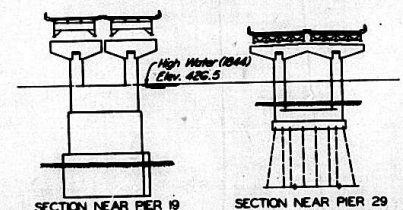
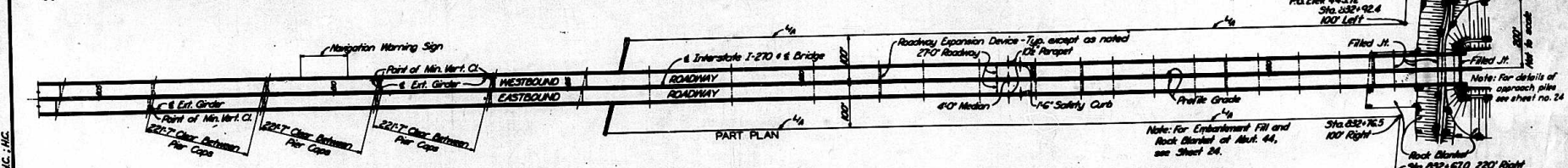
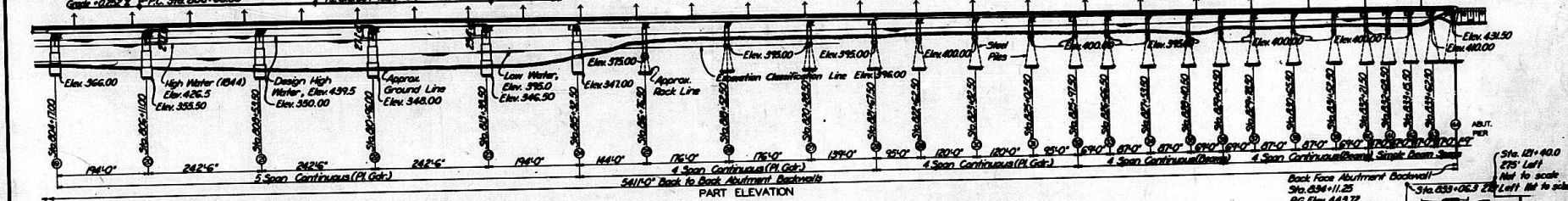
Note: Low Water Elevation is estimated minimum after U.S. Dam 27 is completed. See Special Provisions.
ALL CROSS REFERENCE NOTES REFER TO SHEET NUMBERS IN LOWER RIGHT HAND CORNER OF PLANS.



	Missouri Side	Illinois Side	Total
Tree Removal, Acres	4.5	9.1	13.6

* Measured between limits of right of way from estimated low water shore line to the back of abutment.

ILLINOIS



SUBSTRUCTURE BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1470-R(1) 242
 ROUTE 1470 ST. LOUIS, MO.—MADISON CO., ILL.
 GENERAL PLAN AND ELEVATION

DESIGNED BY T. SANDERS, OCT. 1961
 CHECKED BY H.A. REIDINGER, OCT. 1961
 J.L.C. - H.C.

OVERDUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 1 OF 29

MO. A-890

GENERAL NOTES

SPECIFICATIONS: Illinois Division of Highways "Standard Specifications for Road and Bridge Construction", 1958 Edition, Supplemental Specifications dated April 2, 1962, and Special Provisions.

DESIGN: In accordance with Division I of the A.A.S.H.O. "Standard Specifications for Highway Bridges", Seventh Edition (1957) as revised by Tentative A.A.S.H.O. Specifications for 1958, 1959 and 1960 with the following provisions, exceptions and interpretations.

DESIGN LOADING: Live Load: H20-S16-44 or the alternate Interstate special loading of E-24000 pound axles at 4'-0" centers.
Dead Load: Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.
Impact: No impact for substructure units

FOUNDATION DESIGN LOADS: Design loads for foundations are limited to the following:
For Vertical Forces:

10 @ P42 ----- 74 Tons per Pile
12 @ P53 ----- 93 Tons per Pile
Rock Bearing ----- 18 Tons per Sq. Ft.
For other loading cases the above loads are increased as specified in A.A.S.H.O. Article 1.4, except that no increase will be permitted for piles in the abutments.

DESIGN UNIT STRESSES FOR CONCRETE: Design unit stresses for all combinations of loading are limited to the following:
Flexure:

Concrete in Compression --- $f_c = 1200$ lbs. per sq. in., $n=10$
Reinforcing Steel --- $f_s = 20,000$ lbs. per sq. in.

CONCRETE: Concrete in abutments shall be Class X. All other concrete shall be Class A. All exposed edges of concrete shall be chamfered $\frac{3}{4}$ " unless otherwise shown or noted.

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to centerline of bar except where the clear dimension is noted from the face of concrete. All reinforcing steel shall be lapped a minimum of 3d diameters at splices unless otherwise shown or noted.

BRIDGE SEAT SEALANT: The top of all piers and bridge seat of abutments shall be coated with a protective epoxy overlay. See Special Provisions.

RUBBED FINISH: A rubbed surface finish will be required only on the exposed surface of concrete end posts above top of curbs.

CONSTRUCTION JOINTS: Construction joints shall be made only at the locations shown on the drawings unless authorized by the Engineer.

PILES: All piles shall be driven to rock and:
10B P42 shall be driven to sustain a minimum load of 74 tons as determined by results of loading tests.
12B P53 shall be driven to sustain a minimum load of 93 tons as determined by results of loading tests.
Nuts for piles for Abutments and Piers P43 shall be pre-cored through the embankment in accordance with Article 60.9(c) of the Standard Specifications.

PILE TEST LOADS: Piles designated as Test Piles on Plans shall be subjected to test loads equal to twice the formula capacity in accordance with Article 60.10(a) of the Standard Specifications. Upon completion of successful tests, test piles shall remain in place as permanent piles.

TEST HOLES: See Subfoundation Drilling in Special Provisions.

SUMMARY OF QUANTITIES

Code No.	Item	Unit	Quantity
01E004	Embankment Materials, Select	Cu Yds	23,770
02M002	Gravel or Crushed Stone Surface Course, Type B	Tons	170
030001	Class "X" Excavation for Structures	Cu Yds	6,507
030003	Class "B" Excavation for Structures	Cu Yds	85
030005	Rock Excavation for Structures	Cu Yds	477
030007	Cofferdam Excavation	Cu Yds	18,558
030011	Cofferdam - Pier 6	Each	1
030016	Cofferdam - Pier 7	Each	1
030018	Cofferdam - Pier 8	Each	1
030019	Cofferdam - Pier 9	Each	1
030020	Cofferdam - Pier 10	Each	1
030016	Cofferdam - Pier 11	Each	1
030017	Cofferdam - Pier 12	Each	1
030018	Cofferdam - Pier 13	Each	1
030019	Cofferdam - Pier 14	Each	1
030020	Cofferdam - Pier 15	Each	1
030021	Cofferdam - Pier 16	Each	1
030022	Cofferdam - Pier 17	Each	1
030023	Cofferdam - Pier 18	Each	1
030024	Cofferdam - Pier 19	Each	1
030025	Cofferdam - Pier 20	Each	1
030026	Cofferdam - Pier 21	Each	1
030027	Cofferdam - Pier 22	Each	1
030028	Cofferdam - Pier 23	Each	1
030029	Cofferdam - Pier 24	Each	1
030030	Cofferdam - Pier 25	Each	1
032002	Class "X" Concrete	Cu Yds	24,838.7
032003	Class "Y" Concrete	Cu Yds	228.7
033004	Seal Coat Concrete	Cu Yds	172.5
034001	Reinforcement Bars	Lbs	150,490
034002	Furnishing Steel Piles, 12B P53	Ln Ft	1,000
034003	Furnishing Steel Piles, 10B P42	Ln Ft	1,000
034004	Test Piles, Steel, 10B P42	Each	2
034005	Test Piles, Steel, 12B P53	Each	2
034007	Driving Steel Piles	Ln Ft	24,000
036004	Pile Test Loading	Each	3
042010	Rock Blanket	Cu Yds	6,000
046003	Pile Tip Reinforcement, 12B P53	Each	25
046004	Pile Tip Reinforcement, 10B P42	Each	57
041023	Bridge Seat Sealant	Sq Yds	1
060005	Furnishing Crossed Piles 20.1 to 28 Row	Ln Ft	226
060006	Driving Timber Piles	Ln Ft	276
090005	Tree Removal, Acres	Acres	13.6

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- 4 LOG OF BORINGS
- 5 LOG OF BORINGS
- 6 ABUTMENT I
- 7 END POST DETAILS
- 8 PIERS 2 & 3
- 9 PIERS 4 & 5
- 10 PIERS 6 & 7
- 11 PIERS 8, 10, 14, 16 & 18
- 12 PIERS 9, 13 & 17
- 13 PIERS 11 & 15
- 14 PIERS 19 & 24
- 15 PIERS 20, 21, 22 & 23
- 16 PIERS 25 & 27
- 17 PIERS 26 & 28
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- 21 PIERS 40, 41, 42 & 43
- 22 ABUTMENT 44
- 23 ANCHOR BOLT PLAN
- 24 EMBANKMENT AND SLOPE PROTECTION AT ABUTMENT 44
- 25 TYPICAL BAR TYPES AND HOOK DIMENSIONS
- 26 BAR LIST
- 27 BAR LIST
- 28 BAR LIST
- 29 BAR LIST AND SPECIAL BENDING DETAILS

* The pile loads shown are 80% of the critical pile loads caused by Group II or III loading.

PIER	NO.	COUNTY	SECTION	DATE	SCALE	NO.
7	11	MADISON	1-20-1	10	6	34

BREAKDOWN OF QUANTITIES FOR SUBSTRUCTURE UNITS

Abut or Pier	Class A Excavation (Cu Yds)	Class B Excavation (Cu Yds)	Rock Excavation (Cu Yds)	Cofferdam Excavation (Cu Yds)	Class X Concrete (Cu Yds)	Reinf. Bars (Lbs)	Steel Piles (Ln Ft)
1	234			12.9	4282	1246	
2	247			16.7	23,125	515	
3	286			12.9	37,125	450	
4	286			12.9	37,125	586	
5	300			54.03	43,028	384	
6			58	487	68.5	36,977	
7			18	38	33.8	33,578	
8			20	88.4	43,972		
9			129	77.5			
10			28	26.5	28.3	44,314	
11			56	497	63.82	39,917	
12			18	6.5	78.7	44,680	
13			17	78.2	68.0	47,333	
14			9	54	71.4	45,082	
15			11	67.9	86.25	60,774	
16			46	657	98.2	43,345	
17			15	53	97.4	48,080	
18			22	431	307.5	43,708	
19			9	28	77.0	41,027	
20			6	136	787.1	64,426	
21			18	112	138.5	24,326	
22			22	804	136.6	60,772	
23			20	108	185.0	39,201	
24			28	105	152.7	44,136	
25			910	371.3	43,008	1216	
26	339	24			338.6	30,942	1,990
27	40	26			337	35,247	1,372
28	249	21			236.3	23,445	696
29	310				2357	25,269	992
30	599				2733	30,165	1,260
31	204				231.5	24,066	1,024
32	289				464	20,085	910
33	294				237.2	24,273	1,072
34	244				187.7	24,028	1,173
35	187	19			170.5	21,447	952
36	294				182.6	19,201	932
37	250				161.5	20,776	1,088
38	215				191.9	23,207	1,034
39	289				188.2	20,217	1,034
40	234				233.5	18,515	840
41	216				110.5	15,271	840
42	145				110.4	15,917	832
43	222				100.7	12,805	960
44					111.4	3,944	1515

* Concrete in Abutments is Class X Concrete.
* Quantity given does not include 127.8 Cu Yds of Seal Coat Concrete.

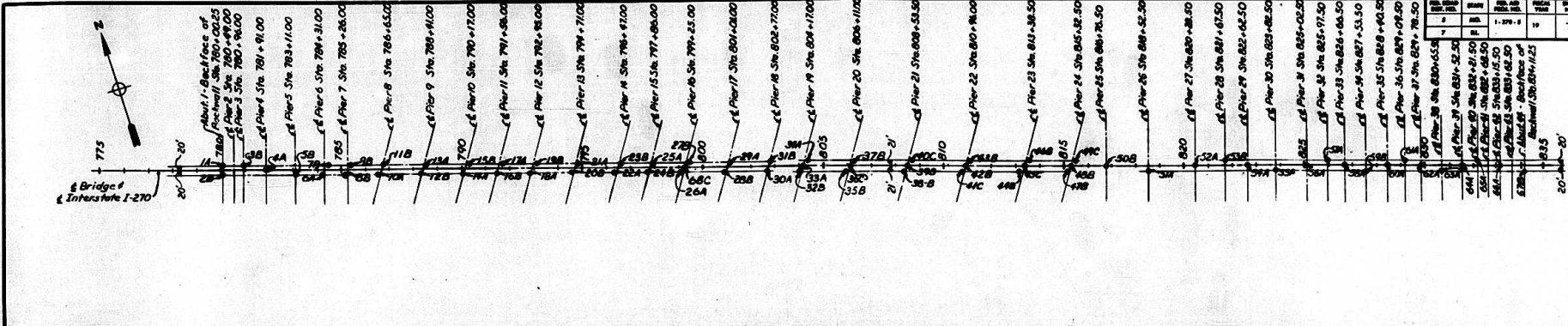
BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
PROJECT I-57-B
ROUTE I-579
ST. LOUIS, MO. - MADISON CO. ILL.
GENERAL NOTES,
QUANTITIES AND INDEX

MO. A-390

Abut or Pier	Maximum Computed Pile Load - Tons
1	45
2	59
3	77
4	88
5	84
6	91
7	93
8	87
9	95
10	97
11	97
12	68
13	70
14	78
15	71
16	66
17	71
18	72
19	72
20	68
21	60
22	60
23	60
24	60
25	60
26	60
27	60
28	60
29	60

REV	DATE	BY	APP'D
1	1-20-59	W.A. BISHOP	W.A. BISHOP
2	7-1-59	W.A. BISHOP	W.A. BISHOP
3	7-1-59	W.A. BISHOP	W.A. BISHOP
4	7-1-59	W.A. BISHOP	W.A. BISHOP
5	7-1-59	W.A. BISHOP	W.A. BISHOP
6	7-1-59	W.A. BISHOP	W.A. BISHOP
7	7-1-59	W.A. BISHOP	W.A. BISHOP
8	7-1-59	W.A. BISHOP	W.A. BISHOP
9	7-1-59	W.A. BISHOP	W.A. BISHOP
10	7-1-59	W.A. BISHOP	W.A. BISHOP



LOG OF BORINGS

HOLE NO. 1A	HOLE NO. 2B	HOLE NO. 3B	HOLE NO. 4A	HOLE NO. 5B	HOLE NO. 6A	HOLE NO. 7B	HOLE NO. 8B	HOLE NO. 9B	HOLE NO. 10A	HOLE NO. 11B	HOLE NO. 12B	HOLE NO. 13A
Sta. 780+02 (20' Left)	Sta. 780+08 (20' Right)	Sta. 780+06 (20' Left)	Sta. 781+01 (on)	Sta. 783+11 (20' Right)	Sta. 784+25 (20' Right)	Sta. 784+37 (20' Left)	Sta. 785+20 (20' Right)	Sta. 785+32 (20' Left)	Sta. 786+53 (20' Right)	Sta. 786+77 (20' Left)	Sta. 788+20 (20' Right)	Sta. 788+53 (20' Left)
420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330	420 410 400 390 380 370 360 350 340 330
ALL Grayish-Brown Silty, Dry Silty, Clay, Mng Silty, Sand Top of Rock Filled Cavity Gray Limestone Filled Cavity Greenish-gray Silt Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Gray Silty Silt Top of Rock Gray Limestone Filled Cavity Greenish-gray Silt Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Gray Silty Silt, Soft Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Grayish-Brown Silty, Dry Silty, Clay, Mng Silty, Sand Top of Rock Gray Limestone Filled Cavity Greenish-gray Silt Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Gray Silty Silt Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Gray Silty Sand Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Silty Sand Sand & Gravel Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Sand & Gravel Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Sand & Gravel Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Sand Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Sand Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5	ALL Water Sand Top of Rock Light Gray Limestone Filled Cavity Greenish-gray Silt Light Gray Limestone Filled Cavity From Elev. 387.7 to Elev. 387.3 Filled Cavity From Elev. 386.0 to Elev. 385.5

NOTES
 For log of borings of Holes 22A thru
 55A, see Sheet 4; for Holes 56A thru 67B
 see Sheet 5.
 The subsurface data shown hereon
 were obtained by wash borings and
 core borings at the locations indicated.
 These data are furnished for infor-
 mation only and do not guarantee
 the actual conditions which may be
 found when the work is executed.
 Number shown thus [9] indicates
 the number of blows of a 60 lb.
 hammer falling 30", required to drive
 a 2" split spoon sampler one foot.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-27-5
 ROUTE 1-59 STA. 781+85.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 LOG OF BORINGS

DRAWN BY: D.L. COMBES, JR. - SHEET 1
 CHECKED BY: W.A. BISHOP, CHIEF ENGR.

OVERHILL & PARSONS AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 1 OF 25

MO. A-390

DATE	NO.	REVISION	BY	CHECKED	DATE	NO.	REVISION	BY	CHECKED
12/17/60	00-0		AMOS/BAV		1-29-61	1			
						2			

LOG OF BORINGS

ELEV.	HOLE NO. 22A	HOLE NO. 23B	HOLE NO. 24B	HOLE NO. 25A	HOLE NO. 26A	HOLE NO. 27B	HOLE NO. 28B	HOLE NO. 29A	HOLE NO. 30A	HOLE NO. 31B	HOLE NO. 32B	HOLE NO. 33A	HOLE NO. 34A	ELEV.
	Sta. 796+35 (20' Right)	Sta. 796+59 (20' Left)	Sta. 797+74 (20' Right)	Sta. 797+98 (20' Left)	Sta. 799+13 (20' Right)	Sta. 799+37 (20' Left)	Sta. 800+59 (20' Right)	Sta. 801+13 (20' Left)	Sta. 802+05 (20' Right)	Sta. 802+49 (20' Left)	Sta. 804+02 (2' Right)	Sta. 804+17 (on G)	Sta. 804+32 (2' Left)	
420														420
410														410
400														400
390	392.5 - Water Brown Clean Sand	392.5 - Water Brown Clean Sand	392.0 - Water Brown Clean Sand	392.0 - Water Brown Clean Sand	392.0 - Water Brown Clean Sand	392.0 - Water Brown Clean Sand	392.6 - Water Brown Sand	392.4 - Water Brown Sand	392.4 - Water Brown Sand	392.4 - Water Brown Sand	392.4 - Water Brown Sand	392.0 - Water Brown Clean Sand	392.0 - Water Brown Clean Sand	390
380	382.1 - Top of Rock Light Gray Limestone	381.7 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	380
370		370.0 - Light Gray Limestone with Green Shale Bands	370.0 - Light Gray Limestone with Greenish-gray, Silty Limestone			370.0 - Cavity - Elev. 372.0 to 372.1 Light Gray Limestone Light Greenish-gray, Silty Limestone with Clay				371.7 - Limestone Stained, Light Grayish-green, Silty Limestone			370.0 - Carbonaceous Material	370
360														360
350														350
340														340
330														330
ELEV.	HOLE NO. 35B	HOLE NO. 36C	HOLE NO. 37B	HOLE NO. 38B	HOLE NO. 39B	HOLE NO. 40C	HOLE NO. 41C	HOLE NO. 42B	HOLE NO. 43B	HOLE NO. 44B	HOLE NO. 45C	HOLE NO. 46B	HOLE NO. 47B	ELEV.
	Sta. 805+96 (2' Right)	Sta. 806+11 (on G)	Sta. 806+26 (2' Left)	Sta. 808+38 (2' Right)	Sta. 808+53 (on G)	Sta. 808+68 (2' Left)	Sta. 810+01 (2' Right)	Sta. 810+74 (on G)	Sta. 811+11 (2' Left)	Sta. 813+38 (2' Right)	Sta. 813+38 (on G)	Sta. 813+53 (2' Left)	Sta. 815+17 (2' Right)	
420														420
410														410
400														400
390	392.4 - Water	392.4 - Water	392.4 - Water	392.6 - Water	392.6 - Water	392.6 - Water	392.4 - Water	392.4 - Water	392.4 - Water	392.4 - Water	392.0 - Water	392.0 - Water	392.0 - Water	390
380	382.4 - Fine to Coarse Sand with Greenish Brown Bottom of Overburden	382.0 - Clean Sand with Some Gravel	382.0 - Sand with Some Gravel	382.0 - Fine to Coarse Sand with Greenish Brown in Bottom	382.0 - Fine to Coarse Sand	382.0 - Fine to Coarse Sand	382.0 - Fine to Coarse Sand	382.0 - Fine to Coarse Brown to Gray Sand	382.0 - Fine to Coarse Brown to Gray Sand	382.0 - Fine to Coarse Brown to Gray Sand	382.0 - Fine to Coarse Brown to Gray Sand	382.0 - Fine to Coarse Brown to Gray Sand	382.0 - Fine to Coarse Sand with Some Fine Gravel	380
370	382.4 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	370
360														360
350														350
340														340
330														330
ELEV.	HOLE NO. 48B	HOLE NO. 49C	HOLE NO. 50B	HOLE NO. 51A	HOLE NO. 52A	HOLE NO. 53B	HOLE NO. 54A	HOLE NO. 55A	NOTES					ELEV.
	Sta. 815+32 (on G)	Sta. 815+47 (2' Left)	Sta. 816+25 (on G)	Sta. 818+51 (20' Right)	Sta. 820+28 (on G)	Sta. 821+67 (20' Left)	Sta. 822+62 (on G)	Sta. 823+82 (20' Right)	Work this sheet with Sheet 9.					
420														420
410														410
400														400
390	389.2 - Water	389.2 - Water	389.2 - Water	389.2 - Water	389.2 - Water	389.2 - Water	389.2 - Water	389.2 - Water						390
380	382.4 - Fine to Coarse Sand	382.0 - Fine to Coarse Sand with Some Gray to Brown Fine Gravel	382.0 - Dark Brown Silty Sand Dark Brown Sand Fine to Coarse Sand with Some Small Gravel	382.0 - Sand and Gravel	382.0 - Sand and Gravel	382.0 - Sand and Gravel	382.0 - Sand and Gravel	382.0 - Sand and Gravel						380
370	382.4 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone	382.0 - Top of Rock Light Gray Limestone						370
360														360
350														350
340														340
330														330

DRAWN BY D.L. COMPTON - Sept. 1960
 CHECKED BY W.A. PATTERSON - Oct. 1960

FRENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

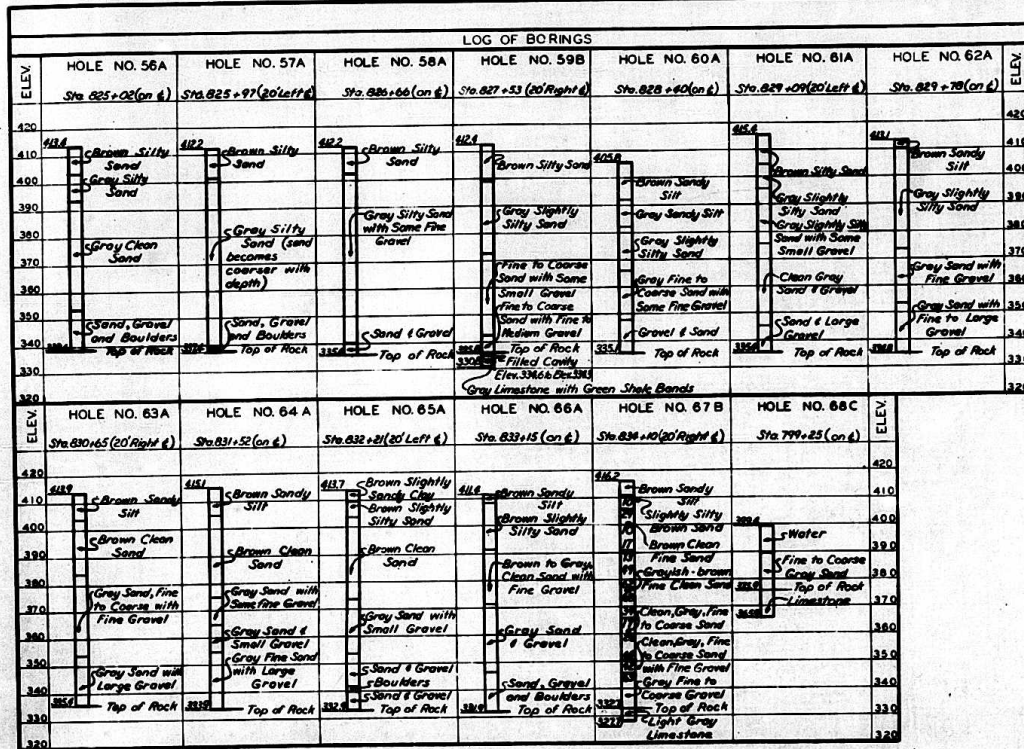
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-478-B
 ROUTE 1-478 STA. 780+00.00
 ST. LOUIS, MO.—MADISON CO., ILL.

LOG OF BORINGS

MO. A-990

DISTRICT	NO.	COUNTY	FED. ROAD DIST. NO.	SECT.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
ROUTE	60-0	MADISON	2	NO.	1-276-2	17	9	34



NOTES
Work this sheet with Sheet 3.

DRAWN BY: D.L. COMPTON - Supt. Proj.
 CHECKED BY: W.L. RICHMOND, Chief Eng.

OVERLUP & PARCELO AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

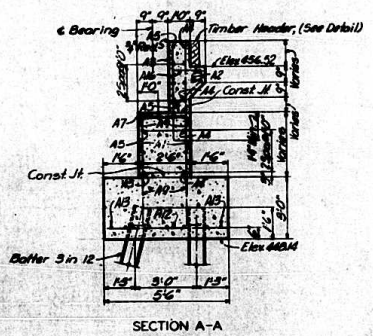
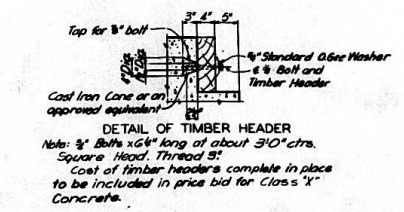
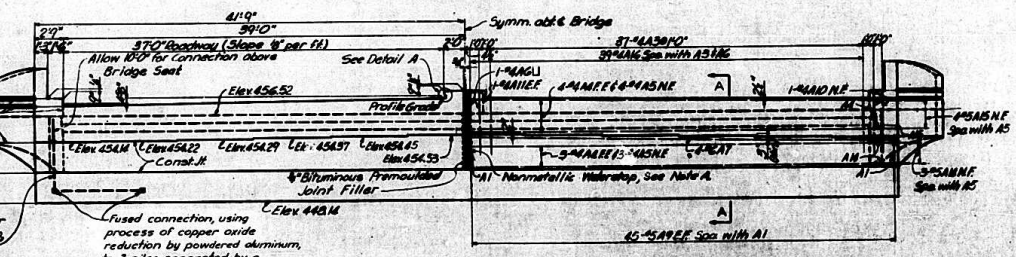
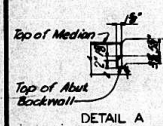
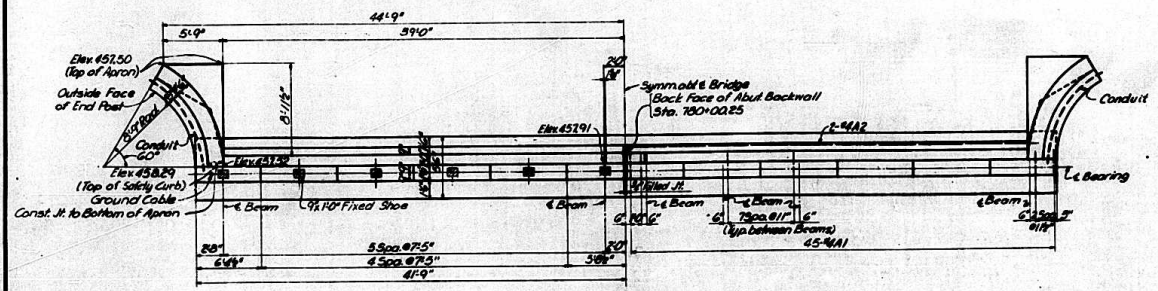
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 5 OF 29

MO. A-390

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-276-2
 ROUTE 1-276 STA. 789+25.25
 ST. LOUIS, MO. - MADISON CO., ILL.
 LOG OF BORINGS

PROJECT NO.	DATE	DESIGNER	PER. CHECKED	SCALE	DATE	SHEET NO.	TOTAL SHEETS
1-27-43	6-2	MADISON	ML	1-27-43	10	10	34

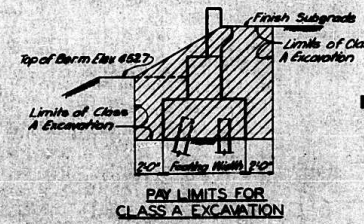
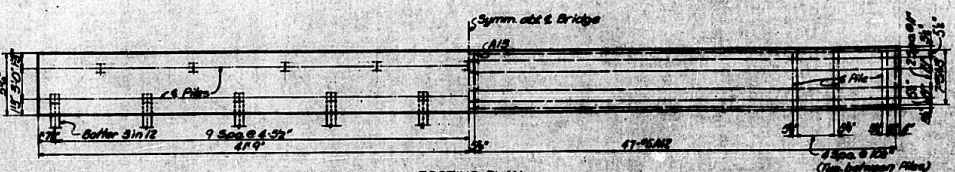


NOTES

Work this sheet with Sheet 7. All reinforcement to be 2" clear unless otherwise noted.

NE indicates Near Face
 EE indicates Far Face
 EF indicates Each Face

Payment for Bituminous Promoulded Joint Filler and Nonmetallic Waterstop shall be included in price bid for Class "X" Concrete.



BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS

PROJECT 1-27-43
 ROUTE 1-27

ST. LOUIS, MO.—MADISON CO., ILL.

ABUTMENT 1

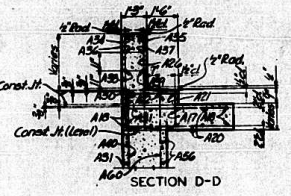
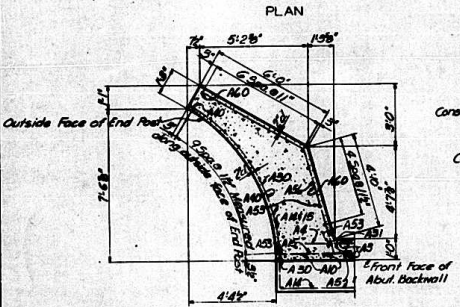
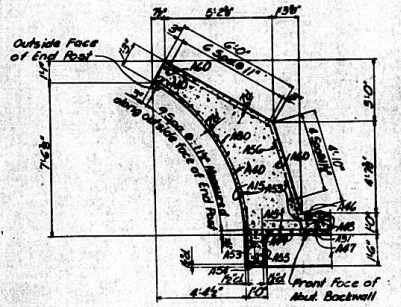
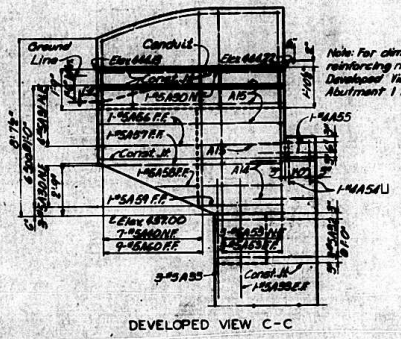
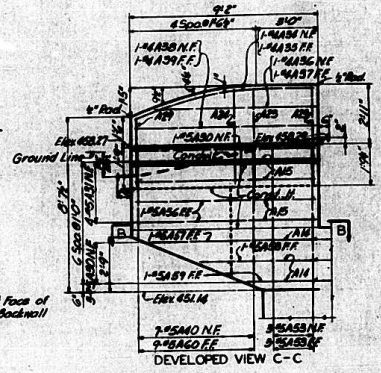
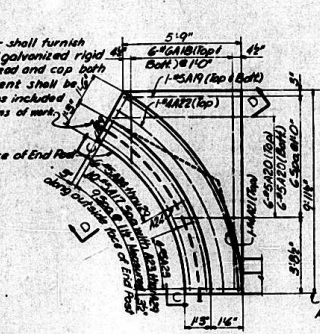
DRAWN BY: R.W.P. 0022
 CHECKED BY: R.W.P. 0022
 DATE: 6-2-43

OVERMAN & PARSONS AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

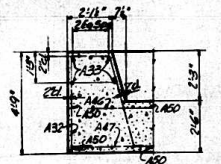
MO. A-890

NO.	REV.	DATE	BY	CHKD.	APP.	DATE
1						
2						
3						
4						
5						
6						
7						

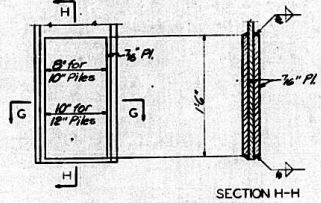
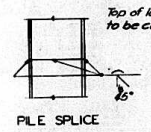
Note:
Contractor shall furnish and install 2" galvanized rigid conduit. Thread and cap both ends. Payment shall be considered as included in other items of work.



Note: N.F. indicates Near Face.
P.F. indicates Far Face.
E.F. indicates Each Face.
Bars A30, 31, 34 thru 39 are to be bent in field.



END POST AT ABUTMENT 44
Note: Plan and Section D-D same as for Abutment 1.



PILE TIP REINFORCEMENT
See Special Provisions.

NOTES
Work this sheet with Sheets G and 22.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-20-F
ROUTE 1-20
ST. LOUIS, MO.-MADISON CO., ILL.

END POST DETAILS

MO. A-890

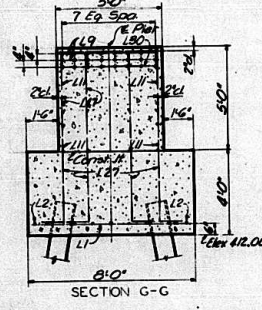
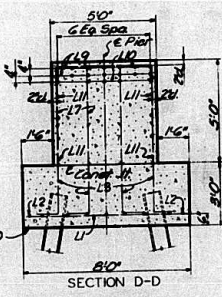
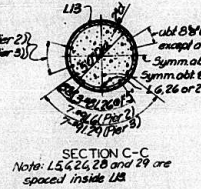
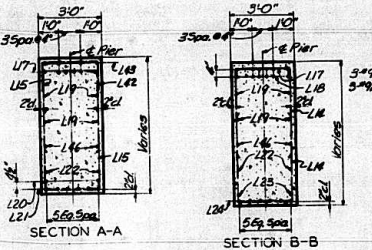
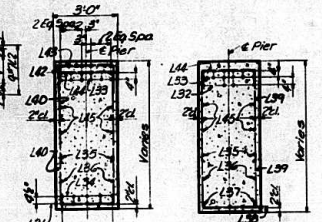
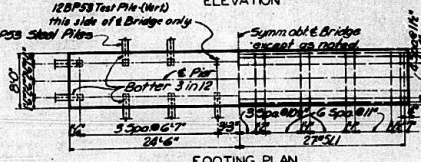
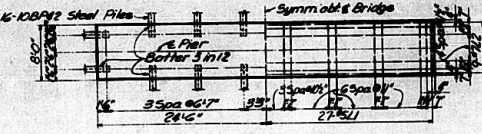
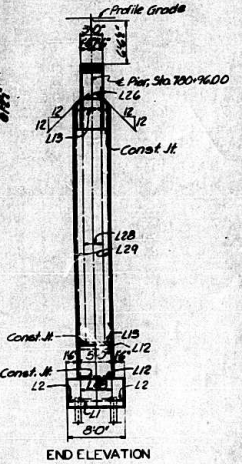
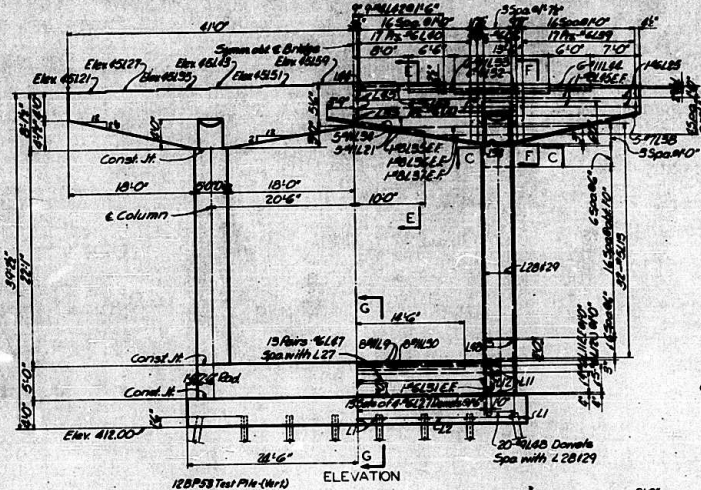
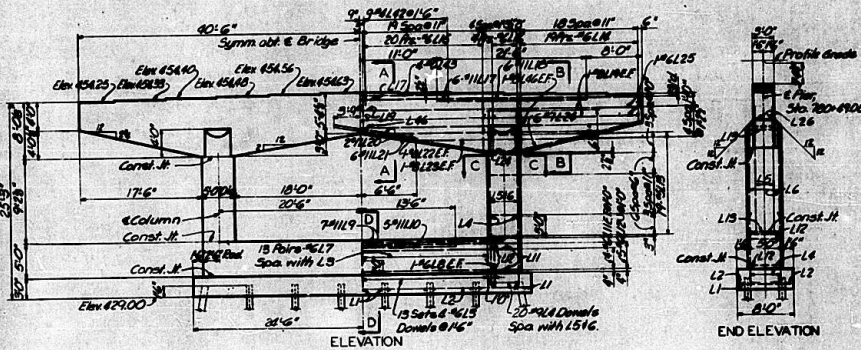
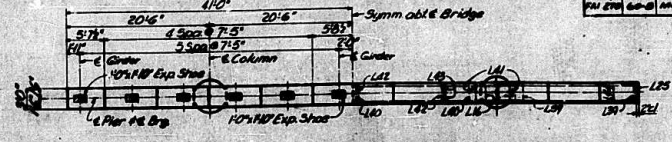
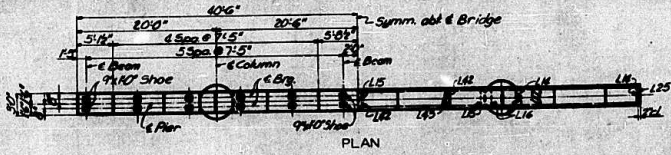
DRAWN BY: H.P. McNEIL, JR. (10/21/57)
 CHECKED BY: J.W. GIBSON
 CONSULTING ENGINEER: J.A. McNEIL, CIVIL ENGINEER

SVENDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 7 OF 29

NO.	DATE	REVISION	BY	CHKD.	APP'D.
1	11-20-54				
2					
3					
4					
5					
6					
7					



NOTES
 for Anchor Bolt Plan see sheet 23.
 for detail of Pile Splice and Pile
 Tip Reinforcement, see sheet 7.
 Pile spacing given at bottom
 of footing.
 E.F. indicates Each Face.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 PIERS 2 AND 3

DRAWN BY: H.P. MCDONALD, L.S. 182
 CHECKED BY: J.C. MCDONALD, L.S. 182
 DESIGNED BY: H.P. MCDONALD, L.S. 182
 DATE: 11-20-54

OVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

PIER 2

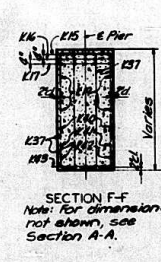
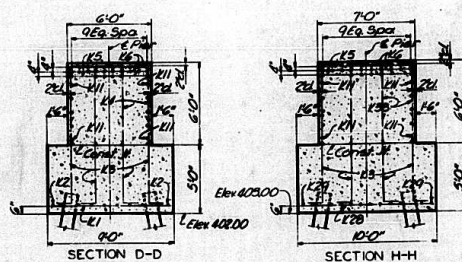
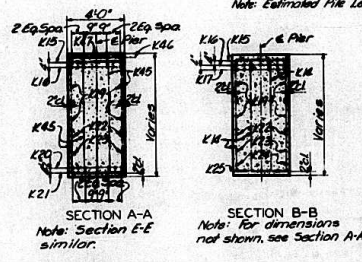
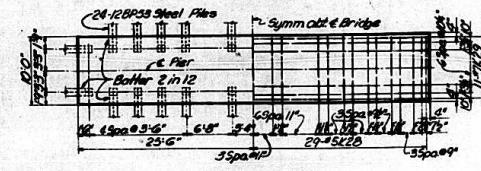
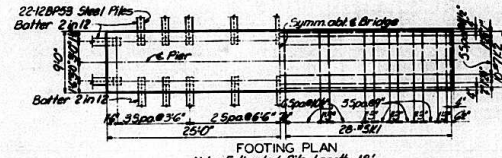
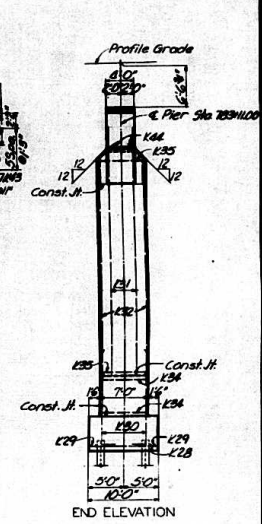
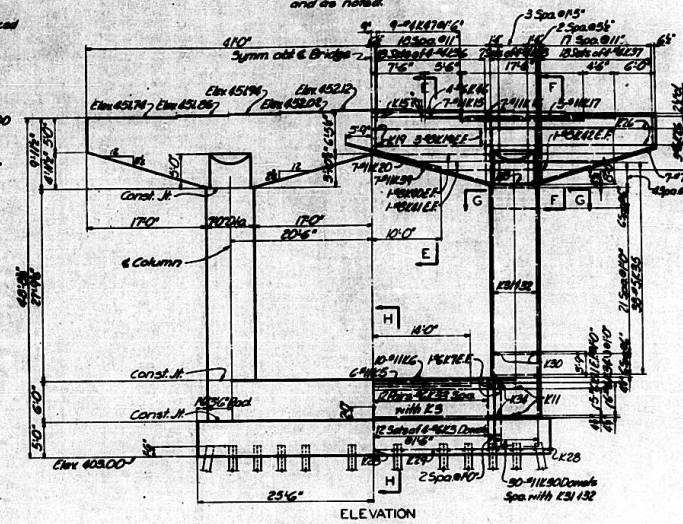
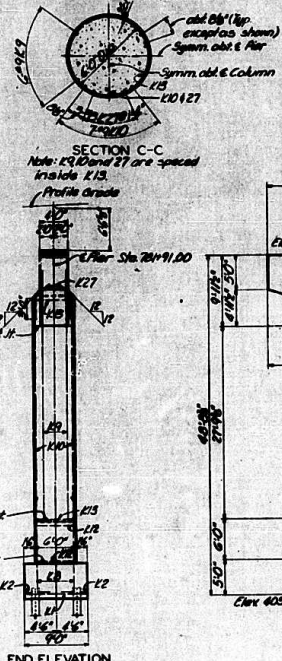
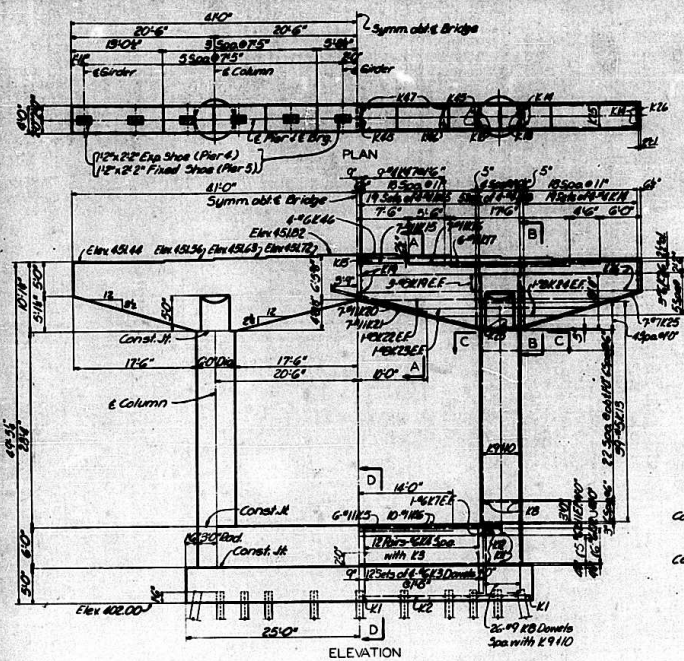
PIER 3

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 6 OF 29

MO. A-990

NO.	REV.	DATE	BY	CHK.	APP.	DESCRIPTION
1						
2						
3						
4						
5						
6						
7						



NOTES
 For Anchor Bolt Plans see Sheet 23.
 For details of Pile Spacing and Pile Tip Reinforcement, see Sheet 7.
 E.F. indicates Each Face.
 Pile spacing given at bottom of footing.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-S
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.

PIERS 4 AND 5

MO. A-890

DRAWN BY: P.D. WATSON, L.S. 1941
 CHECKED BY: W.A.L. HARRIS, C.E. 1941
 1855
 12371

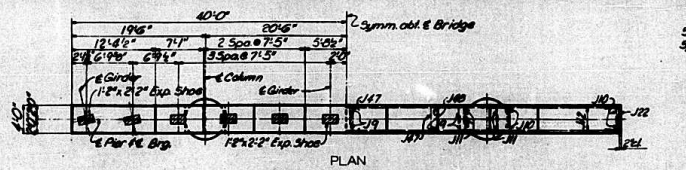
OVERDUP & PARSONS AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

PIER 4

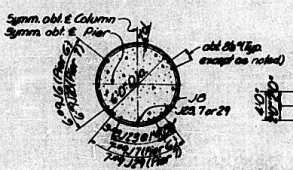
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 9 OF 29

DIST.	COUNTY	STATE	FED. PROJ. NO.	FISCAL YEAR	PIER NO.	TOTAL PIER NO.
MO. 270	MA. DEWEY	MO.	1-270-5	19	14	34

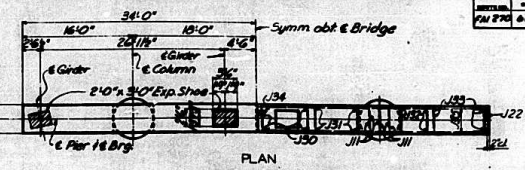


PLAN

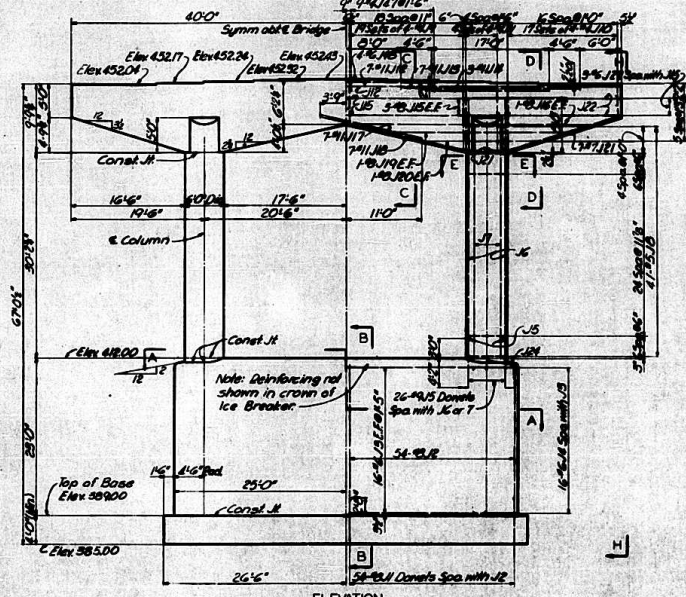


SECTION E-E

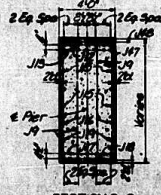
Note: JK, 28 and 29 are spaced inside JB.



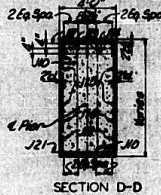
PLAN



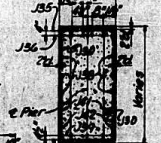
ELEVATION



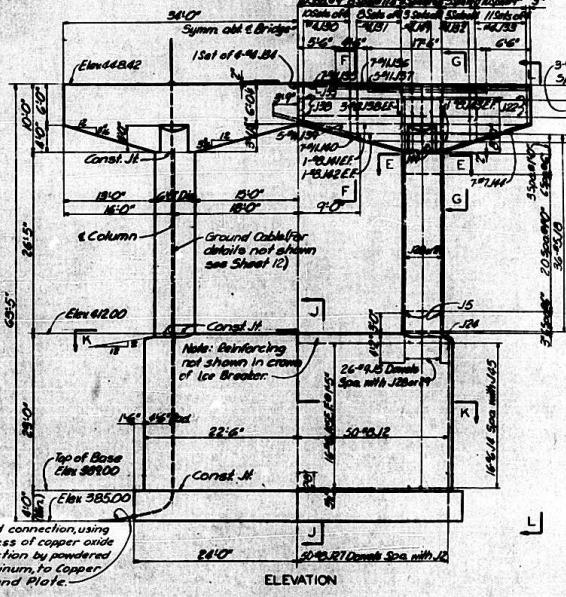
SECTION C-C



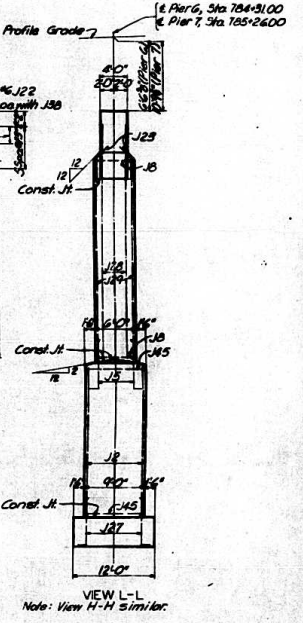
SECTION D-D



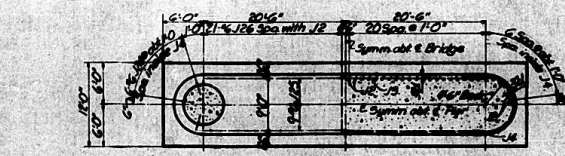
SECTION F-F



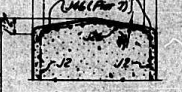
ELEVATION



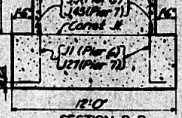
VIEW L-L



SECTION A-A



SECTION B-B

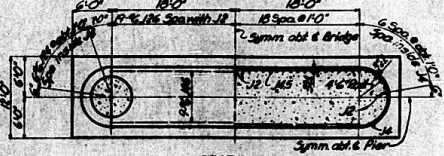


SECTION J-J

Note: Section J-J same except as noted (Pier 7).



SECTION G-G



SECTION K-K

PIER 7



ICE BREAKER CROWN

NOTES
E, F indicates Each Face.
For Anchor Bolt Plans, see Sheet 23.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-270-5
ROUTE 1-270
ST. LOUIS, MO. - MADISON CO., ILL.

PIERS 6 AND 7

OVERBURY & PARSONS AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

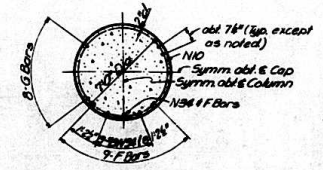
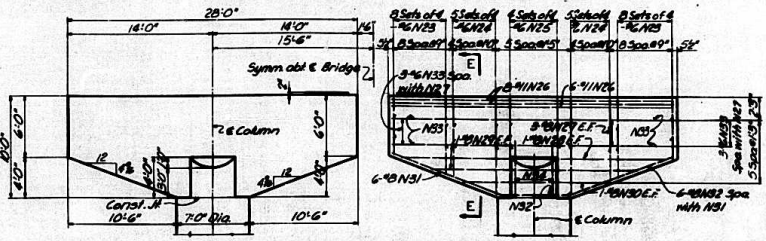
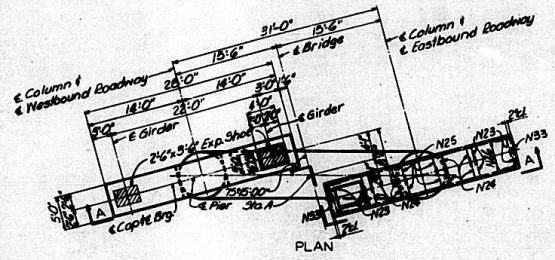
PIER 6

NOTE: DO NOT SCALE THIS DRAWING. PLEASE REFER TO THE ORIGINAL DRAWING.

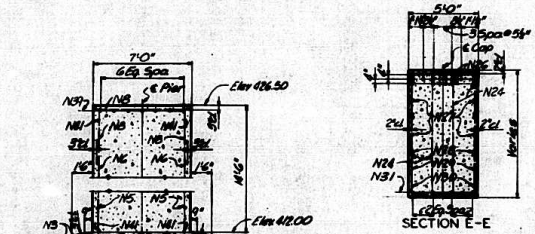
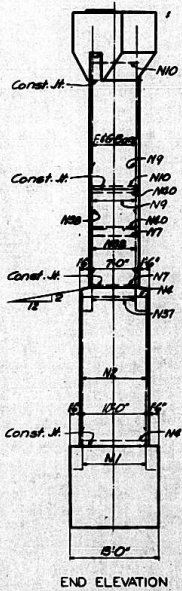
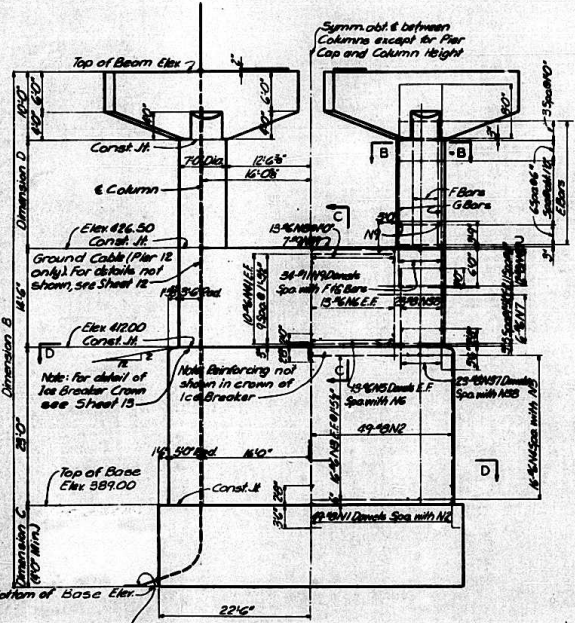
SHEET 10 OF 20

MO. A-390

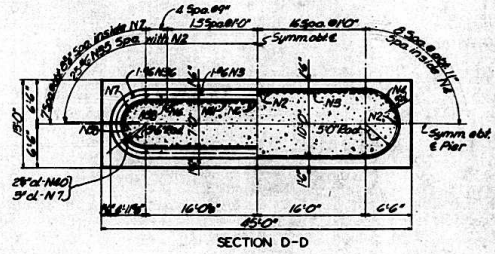
NO.	REVISION	DATE	BY	CHKD.	SCALE	SHEET NO.	TOTAL SHEETS
1	AS SHOWN	1.29.8	MM			15	34
2							
3							
4							
5							
6							
7							



SECTION B-B
Note: N24 Bars and G bars are spaced inside N22



PIER	1/4 Bars	Vertical Bars
B	21-#5ND 18-#11NB 12-#11NB	12
10	22-#5ND 18-#11NB 12-#11NB	12
12	23-#5ND 18-#11NB 12-#11NB	12
14	24-#5ND 18-#11NB 12-#11NB	12
16	25-#5ND 18-#11NB 12-#11NB	12
18	26-#5ND 18-#11NB 12-#11NB	12



NOTES
For Anchor Bolt Plan, see Sheet 23.
E.F. indicates Each Face.

PIER	STATION A	DIMENSIONS				ELEVATIONS	
		W.B. Entry	E.B. Entry	W.B. Entry	E.B. Entry	Top of Pier	Bottom of Base
B	70+00.00	63'-6"	63'-6"	6'-0"	11'-0"	11'-0"	205.00
10	70+70.00	65'-3"	65'-3"	6'-0"	12'-0"	12'-0"	205.00
12	71+00.00	65'-7"	65'-7"	6'-0"	12'-6"	12'-6"	205.00
14	71+30.00	67'-1"	67'-1"	7'-6"	14'-6"	14'-6"	205.00
16	71+60.00	70'-5"	70'-5"	11'-0"	15'-0"	15'-0"	205.00
18	72+00.00	72'-11"	72'-11"	13'-0"	15'-11"	15'-11"	205.00

Note: W.B. Entry, indicates Westbound Roadway.
E.B. Entry, indicates Eastbound Roadway.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-29-P
ROUTE 1-29
ST. LOUIS, MO.-MADISON CO., ILL.

PIERS 8, 10, 12, 14, 16 AND 18

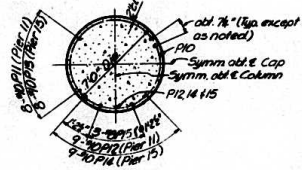
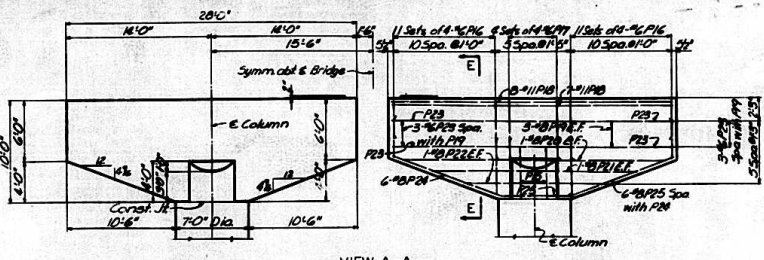
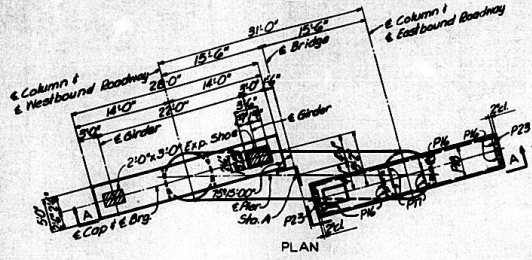
OVERLAP & PARSONS AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

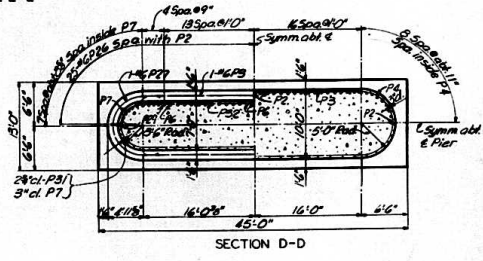
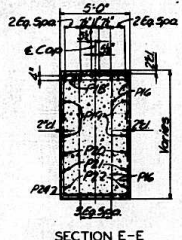
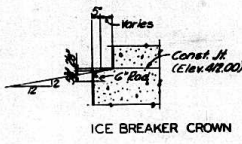
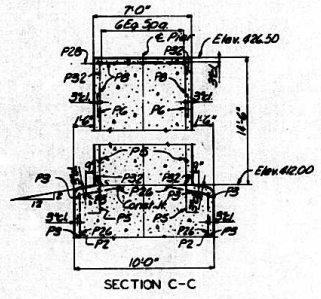
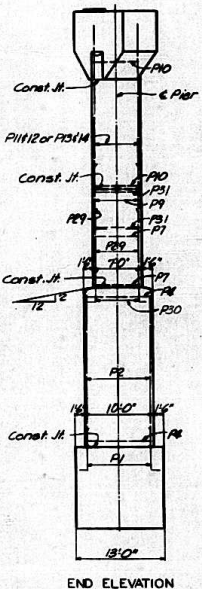
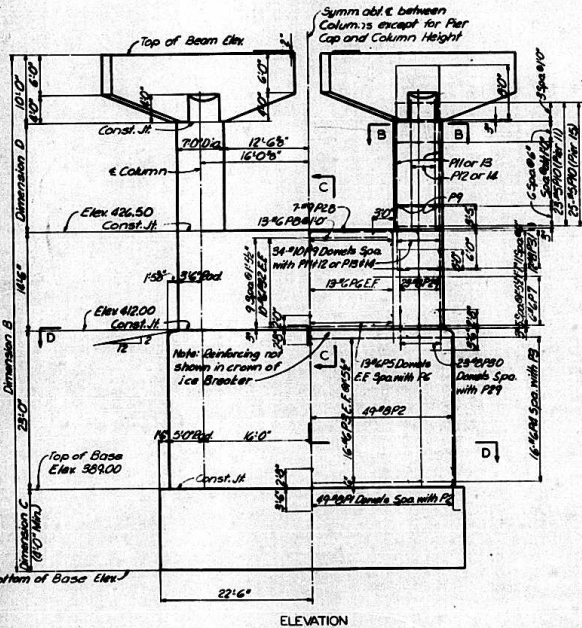
SHEET 11 OF 25

MO. A-990

NO.	DATE	BY	CHKD.	APP.	REV.
1	1-29-8	17	34		



Note: P11 thru 15 are spaced inside P10.



NOTES

For Anchor Bolt Plan, see Sheet 23.
E.F. indicates Each Face.

PIER	STATION	DIMENSIONS				ELEVATIONS			
		B	C	D	Top of Beam	Bottom of Base	Top of Base		
11	7915.60	65'10"	65'10"	40'	15'6"	15'6"	450.06	450.06	585.00
15	7970.60	72'7"	72'7"	11'6"	15'7"	15'7"	451.64	451.64	577.20

Note: W.B. Rehy. indicates Westbound Roadway.
E.B. Rehy. indicates Eastbound Roadway.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

PROJECT 1-27-8
ROUTE 1-479
ST. LOUIS, MO.-MADISON CO., ILL.

PIERS 11 AND 15

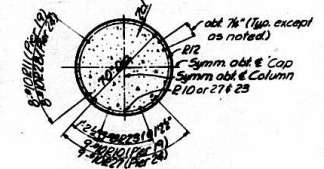
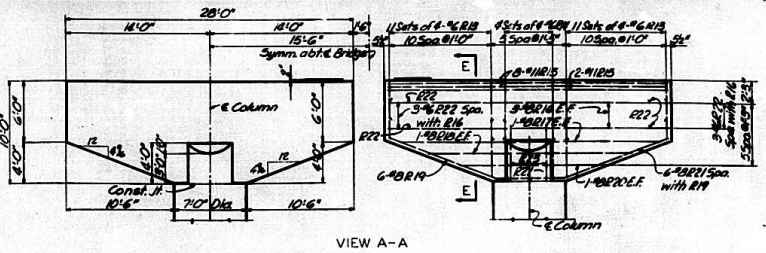
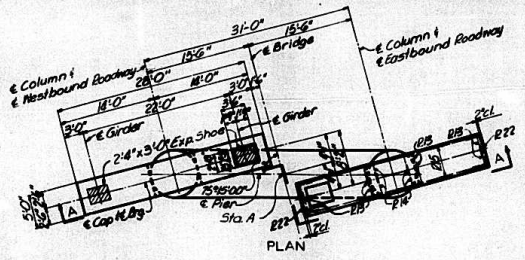
OVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

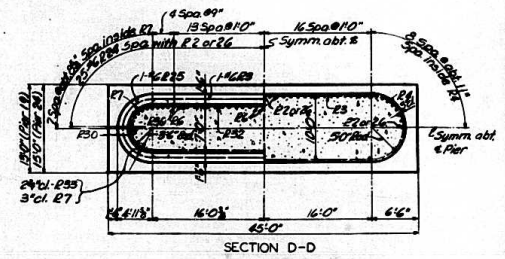
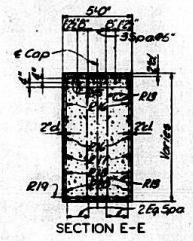
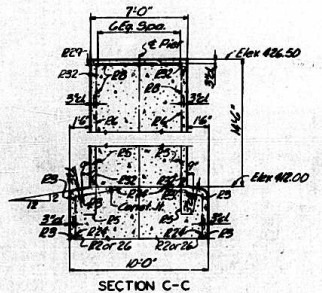
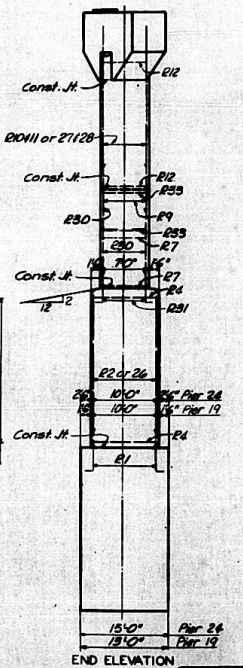
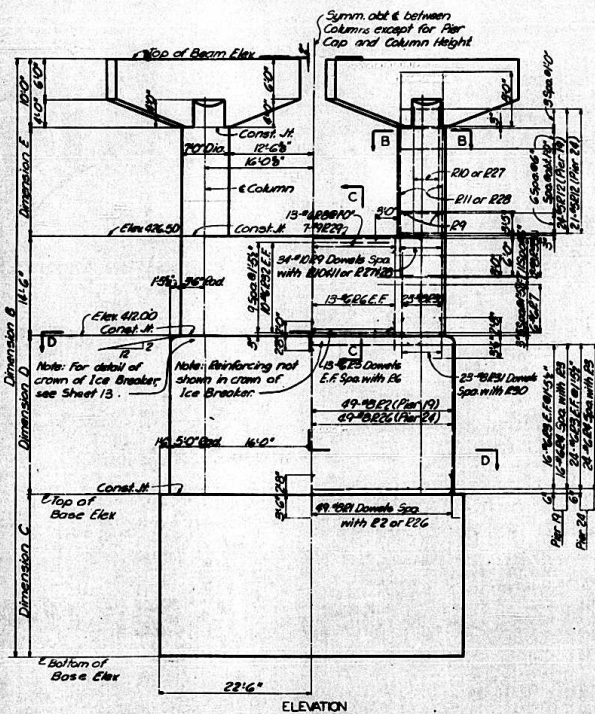
SHEET 13 OF 25

MO. A-890

NO.	DATE	REVISION	BY	CHKD	APP'D	TOTAL
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3	1-27-53					3
4	1-27-53					4
5	1-27-53					5
6	1-27-53					6
7	1-27-53					7



SECTION B-B
Note: R10, R12, R21 & R22 are spaced inside R12.



NOTES
For Anchor Bolt Plan see Sheet 23.
E.F. Indicates Each Face.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-275-3
ROUTE 1-275
ST. LOUIS, MO.—MADISON CO., ILL.
PIERS 19 AND 24

PIER	STATION	DIMENSIONS				ELEVATIONS	
		B	C	D	E	Top of Beam	Bottom of Base
19	204+11.00	25'-0"	23'-0"	23'-0"	23'-0"	42.17	36.00
24	215+32.30	120'-0"	120'-0"	90'-0"	90'-0"	44.16	34.70

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

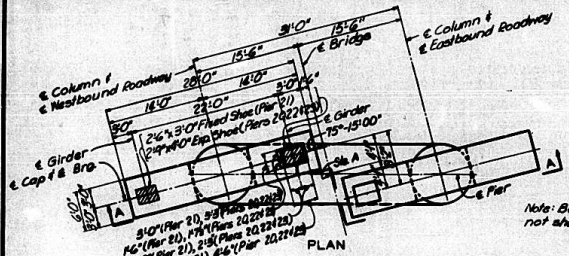
SHEET 14 OF 29

MO. A-890

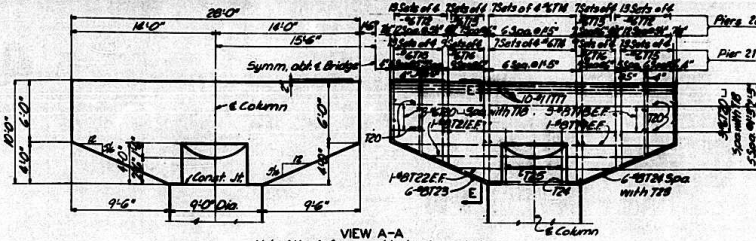
DRAWN BY: H.P. MONTGOMERY, JR., P.E.
 CHECKED BY: H.P. MONTGOMERY, JR., P.E.
 DATE: 1-27-53

OVERSHUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS—ARCHITECTS
ST. LOUIS, MO.

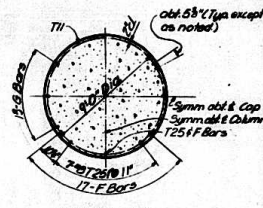
NO.	REV.	DATE	BY	CHKD.
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34	1	11/19/88	MM	MM



Note: Beam reinforcing not shown in Plan.

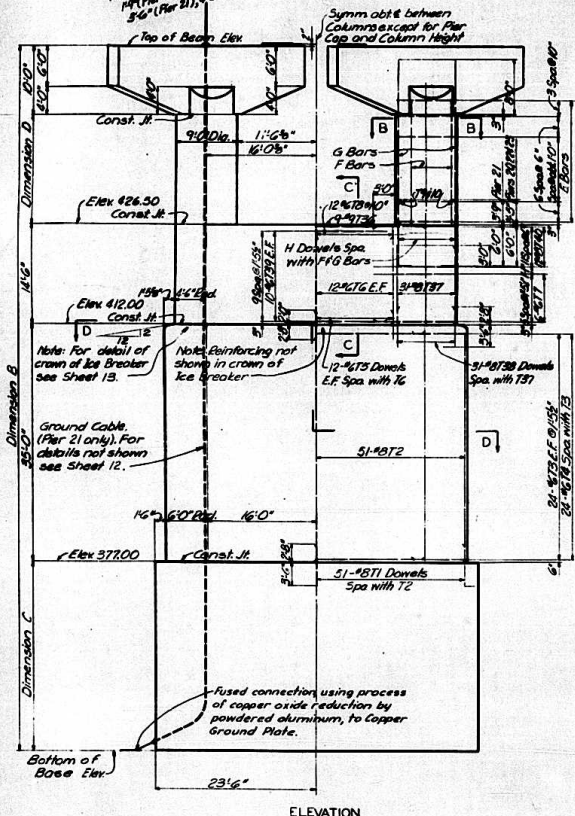


VIEW A-A
Note: All reinforcement in top beam to be 4" clear min. from edge of Anchor Bolt Nuts. Bar shall be moved slightly where necessary.

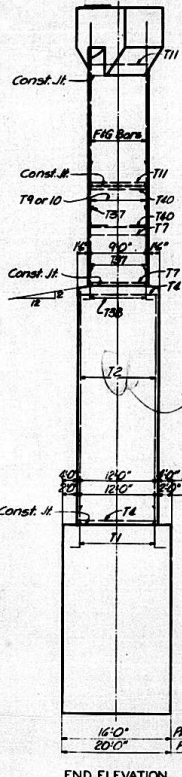


SECTION B-B
Note: T25 Bars and 6 bars are spaced inside T71.

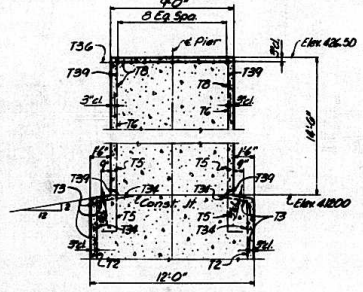
COLUMN REINFORCING					
PIER	Tie Bars	Vertical Bars	Diagonals	Horizontal Bars	Diagonals
	E	F	G	H	I
20	24-#5T11	24-#7E28	22-#10T19	20-#10T19	20-#10T19
21	22-#5T11	24-#7E28	22-#10T19	20-#10T19	20-#10T19
22	23-#5T11	24-#7E28	22-#10T19	20-#10T19	20-#10T19
23	22-#5T11	24-#7E28	22-#10T19	20-#10T19	20-#10T19



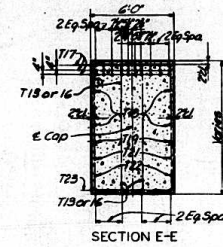
ELEVATION



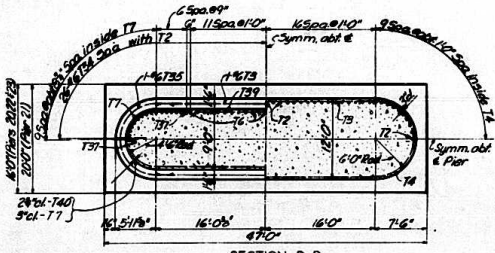
END ELEVATION



SECTION C-C



SECTION E-E



SECTION D-D

NOTES

For Anchor Bolt Plan, see Sheet 23. E.F. indicates Each Face.

PIER	STATION	DIMENSIONS				ELEVATIONS	
		B	C	D	Top of Beam	Bottom of Base	
20	806+11.00	75'-04"	75'-04"	27'-6"	142'-21"	451'-04"	355'-50"
21	806+28.50	114'-04"	114'-04"	27'-0"	151'-26"	451'-72"	355'-00"
22	807+26.00	122'-04"	122'-04"	27'-0"	151'-08"	450'-34"	348'-00"
23	809+38.50	122'-31"	122'-31"	27'-0"	151'-21"	448'-74"	348'-50"

Note: N.B. Eddy indicates Westbound Roadway. E.B. Eddy indicates Eastbound Roadway.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-278-S
ROUTE 1-278 STA. 78+00.25
ST. LOUIS, MO.—MADISON CO., ILL.

PIERS 20, 21, 22 AND 23

DRAWN BY: H.D. McLaughlin, S.E., P.E.
 CHECKED BY: J.L. Robinson, C.E., P.E.
 REVISED BY: J.L. Robinson, C.E., P.E.
 DATE: 11/19/88

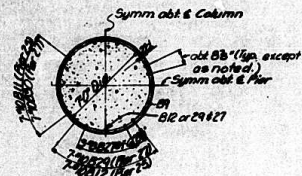
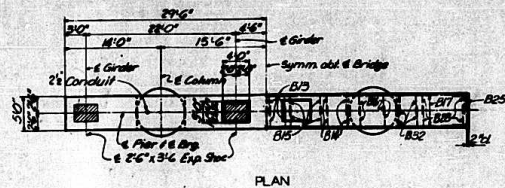
OVERDUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

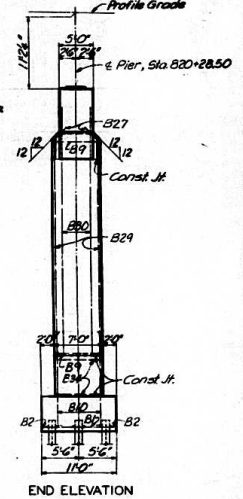
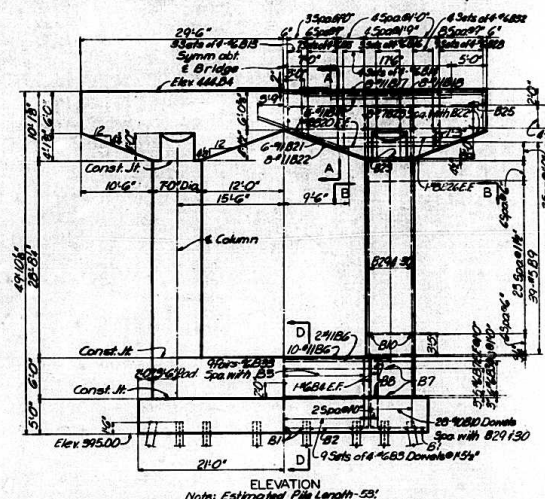
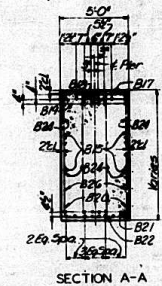
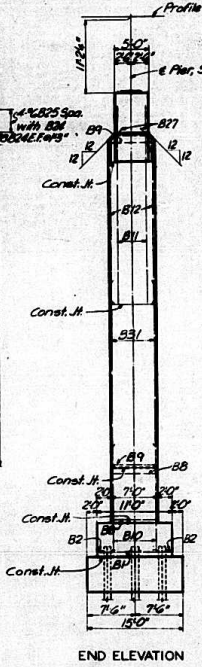
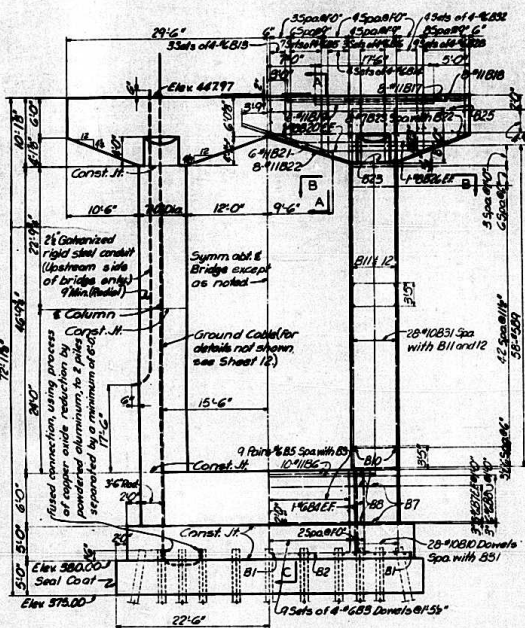
SHEET 15 OF 29

MO. A-890

NO.	REV.	DATE	BY	CHK.	APP.	REASON
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2	1	1-10-59	19	20	34	
7	1					

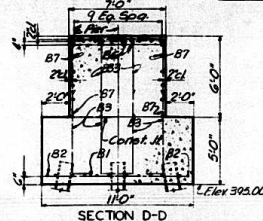
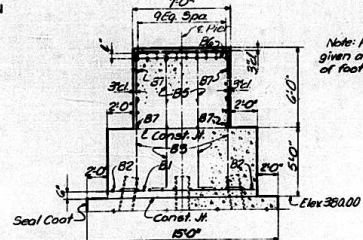
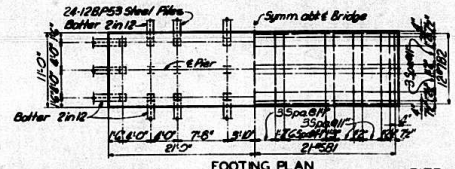
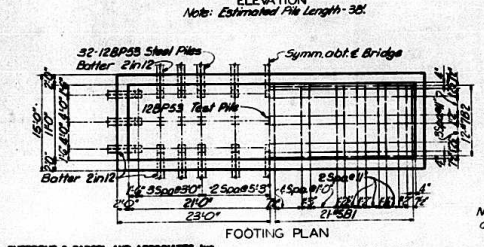


Note: Top Plan not shown. Same as Pier 25.



NOTES

E.F. indicates Each Face. For Anchor Bolt Plan, see Sheet 25. For detail of Pile Splice and Pile Top Reinforcement, see Sheet 7. Substructure Contractor shall furnish and install 24 galvanized rigid steel conduit. Payment for conduit will be considered as included in other items of work. The Seal Coat of Pier 25 was designed for water at Elevation 400 with 9 Tons per pile uplift.



NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

OVERDRUP & PANCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

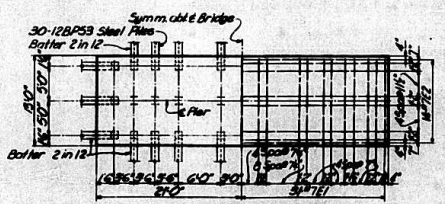
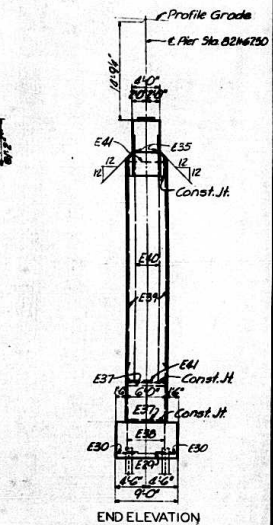
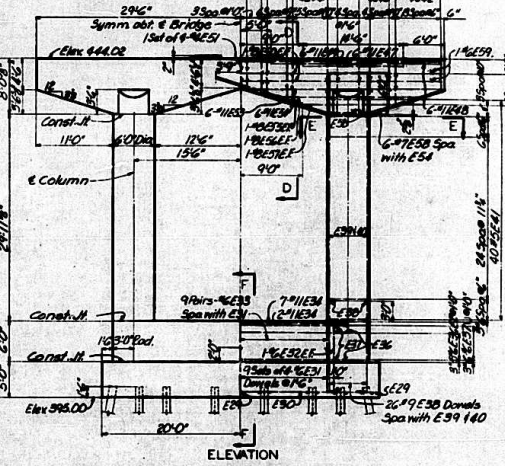
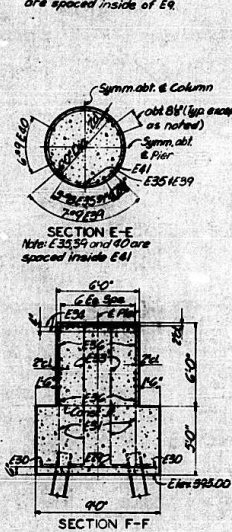
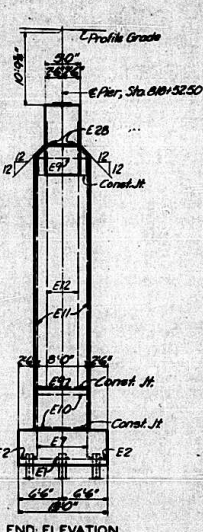
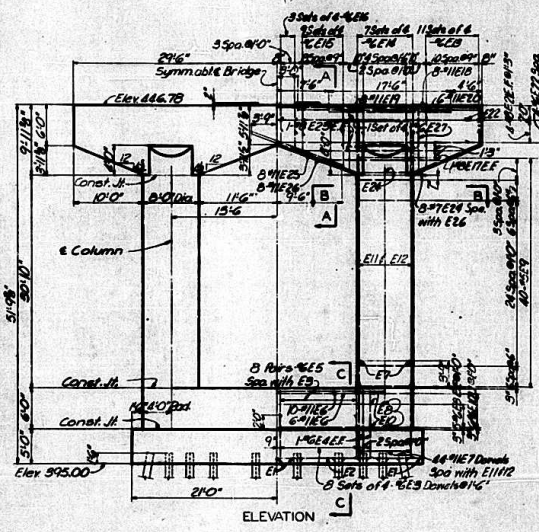
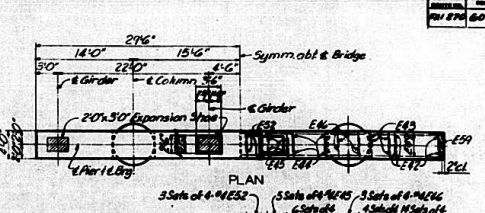
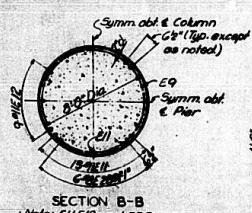
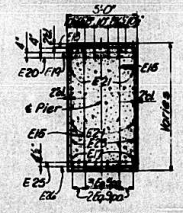
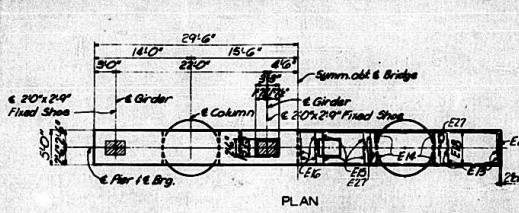
BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-570-B
ROUTE 1-570
ST. LOUIS, MO.-MADISON CO., ILL.

PIEPS 25 AND 27

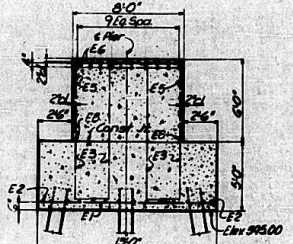
MO. A-890

SHEET 16 OF 29

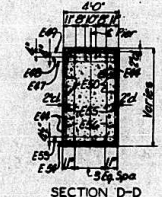
NO.	DATE	REVISION	BY	CHK	APP'D	SCALE	SHEET NO.	TOTAL SHEETS
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7								



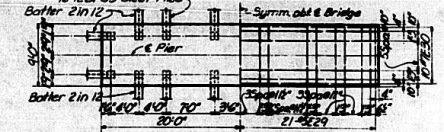
PIER 26



SECTION C-C



SECTION D-D



PIER 28

NOTES
For Anchor Bolt Plan, see Sheet 25.
For detail of Pile Splice and Pile Tip Reinforcement, see Sheet 7.
E.E. indicates each face.
Pile spacing given at bottom of footing.

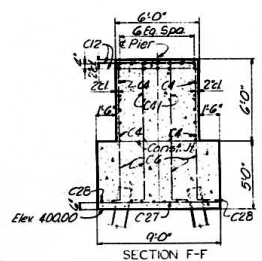
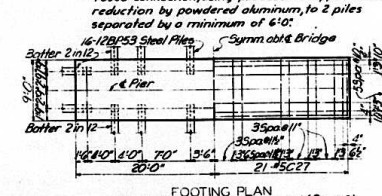
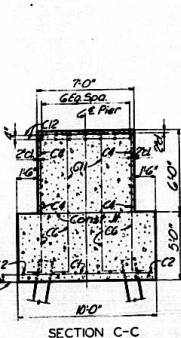
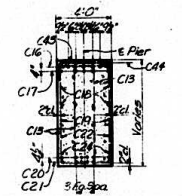
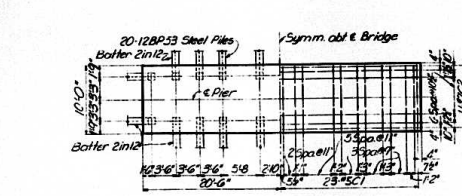
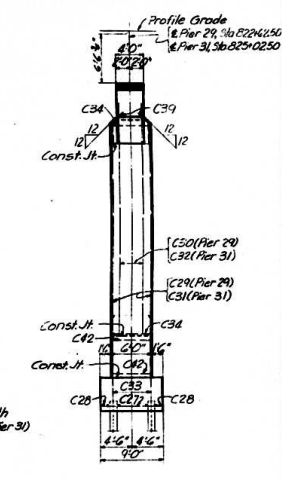
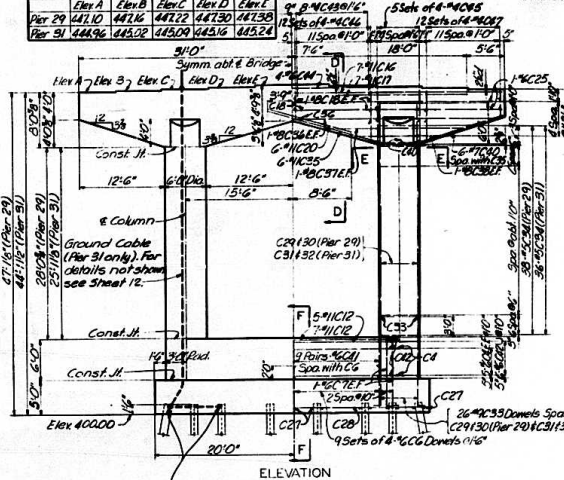
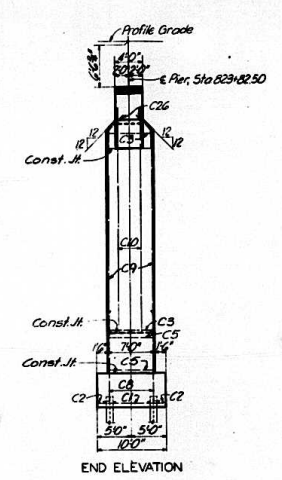
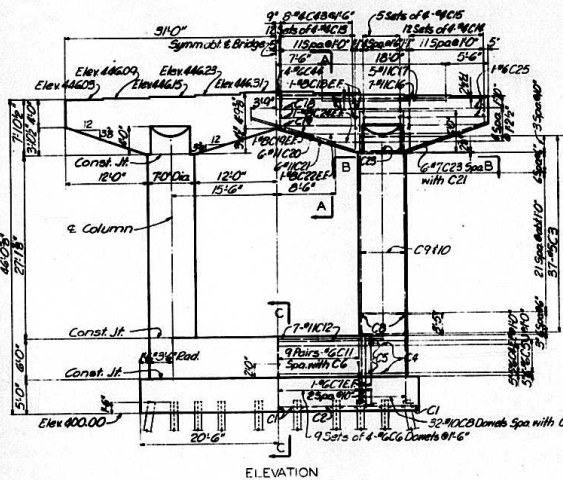
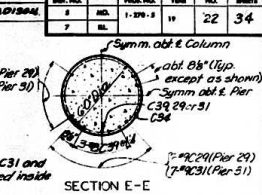
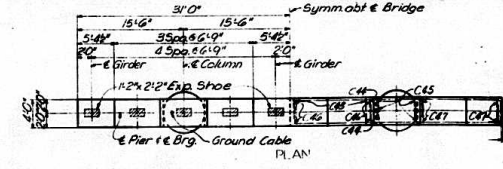
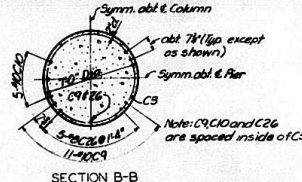
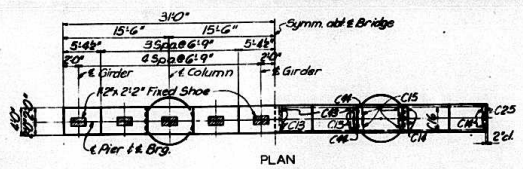
BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-27-58
ROUTE 1-57
ST. LOUIS, MO.-MADISON CO., ILL.
PIERS 26 AND 28

OVERDRIP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

MO. A-890

NO.	DATE	BY	CHKD.	APP'D.	SCALE	PROJECT	SHEET	TOTAL
7	11-27-81	ML	ML	ML	1" = 20'-0"	22	34	



NOTES
 For Anchor Bolt Plan, see Sheet 28.
 For detail of Pile Splice and Pile Tip Reinforcement, see Sheet 7.
 E.F. Ind. Kales. Each Face.
 Pile spacing given at bottom of footing.

PIERS 29 AND 31
BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-204
 ROUTE 1-20
 ST. LOUIS, MO.—MADISON CO. ILL.
 PIERS 29, 30 AND 31

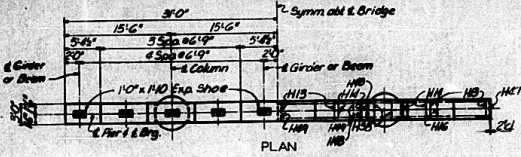
SVENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 18 OF 29

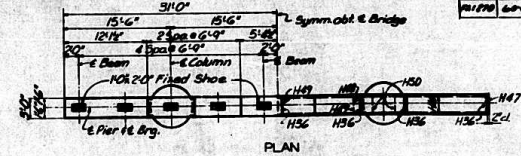
MO. A-90

NO.	DATE	DESCRIPTION	BY	CHK.	APP.	NO.	DATE	DESCRIPTION	BY	CHK.	APP.
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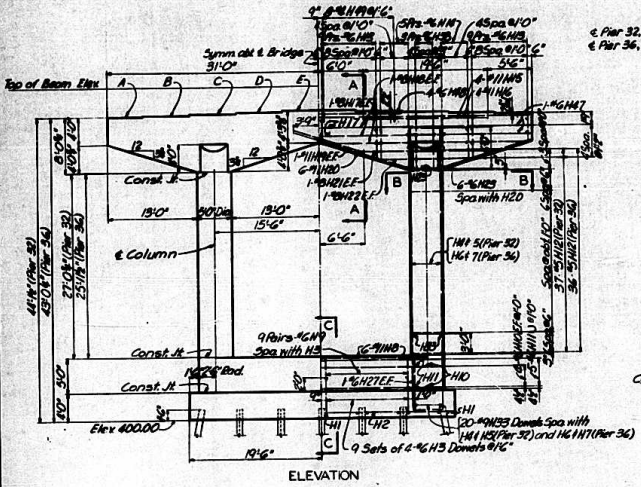


PLAN

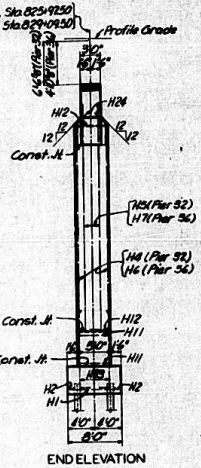
PIER	TOP OF BEAM ELEVATIONS				
	A	B	C	D	E
32	444.13	444.20	444.25	444.25	444.13
34	445.36	445.71	445.81	445.71	445.36
36	446.38	446.73	446.83	446.73	446.38
38	447.50	447.85	447.95	447.85	447.50



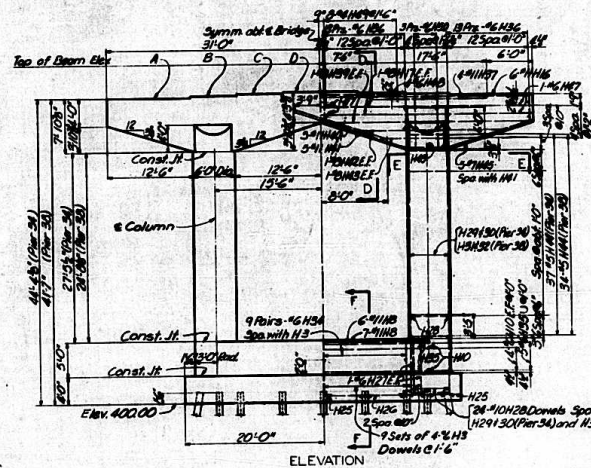
PLAN



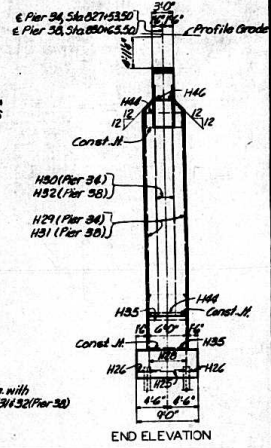
ELEVATION



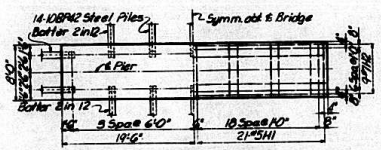
END ELEVATION



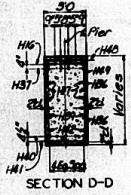
ELEVATION



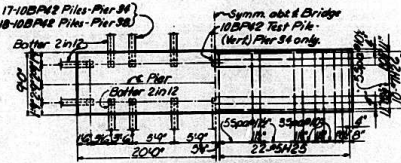
END ELEVATION



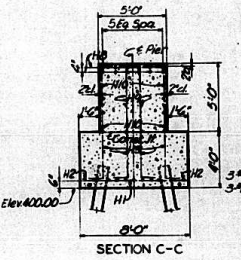
FOOTING PLAN
Note: Estimated Pile Length: 65' (Pier 32), 60' (Pier 36).



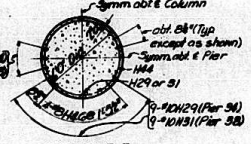
SECTION D-D



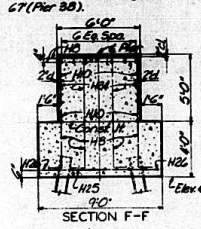
FOOTING PLAN
Note: Estimated Pile Length: 64' (Pier 34), 67' (Pier 38).



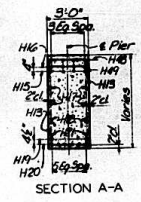
SECTION C-C



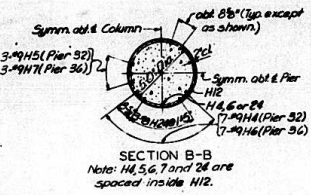
SECTION E-E
Note: H29, 30, 31, 32 and 46 are spaced inside of H46.



SECTION F-F



SECTION A-A



SECTION B-B
Note: H4, 5, 6, 7 and 28 are spaced inside H12.

NOTES
For Anchor Bolt Pile, see Sheet 23.
For Detail of Pile Splice and Pile Tip Reinforcement, see Sheet 7.
E.F. indicates Each Face.
Pile spacing given at bottom of footing.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
PROJECT I-270-B
ROUTE I-270
ST. LOUIS, MO. - MADISON CO., ILL.
STA. 780+00.25

PIERS 32, 34, 36 AND 38

MO. A-890

DRAWN BY: J.P. WOODRUFF, CIVIL ENGR.
 CHECKED BY: W.A. FRENCH, CIVIL ENGR.
 1838
 12/17/57

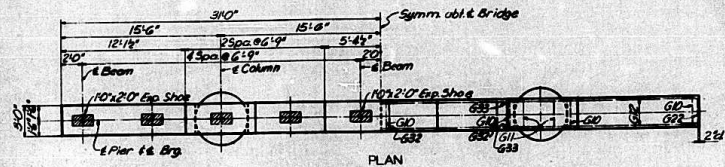
OVERDUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

PIERS 32 AND 36

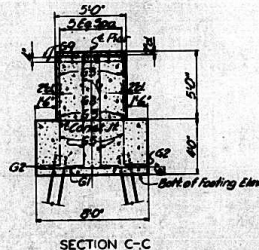
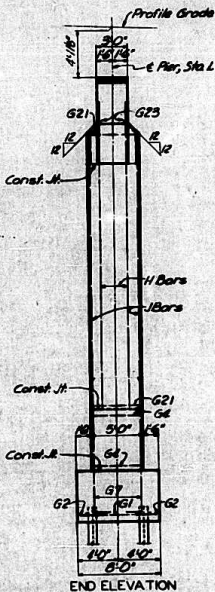
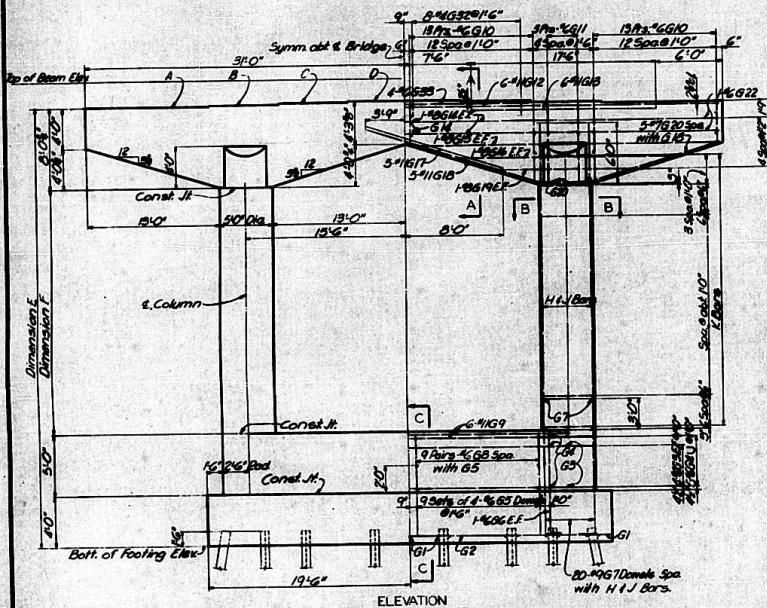
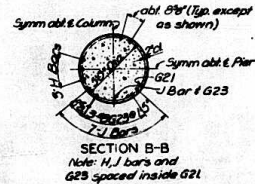
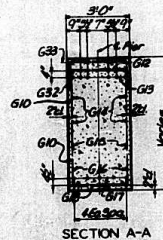
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 19 OF 29

NO.	DESCRIPTION	DATE	BY	CHKD.	SCALE	SHEET NO.	TOTAL SHEETS
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		7	ML				

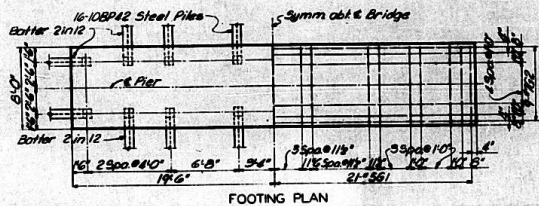


Pier	H	J	K
35	C-1000	W-1000	W-1000
35	C-1000	W-1000	W-1000
37	C-1000	W-1000	W-1000
39	C-1000	W-1000	W-1000



NOTES

For Anchor Bolt Plan, see Sheet 23.
 For detail of Pile Splice and Pile
 Tip Reinforcement, see Sheet 7.
 E.F. indicates Each Face.
 Pile spacing given at bottom of footing.



Pier	Sta. L	ELEVATIONS				DIMENSIONS	
		A	B	C	D	E	F
35	844.40	423.14	423.25	423.36	423.47	400.00	65'-0" 8'-0"
35	844.40	423.14	423.25	423.36	423.47	375.00	65'-0" 8'-0"
37	847.50	423.14	423.25	423.36	423.47	375.00	65'-0" 8'-0"
39	847.50	423.14	423.25	423.36	423.47	375.00	65'-0" 8'-0"

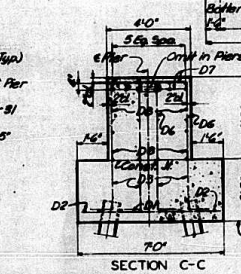
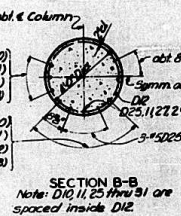
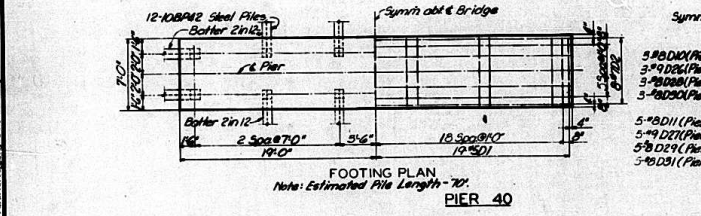
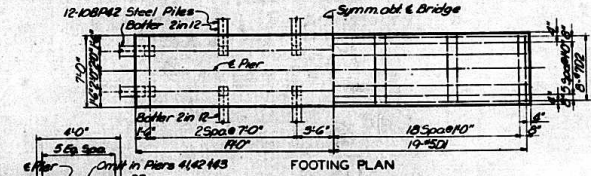
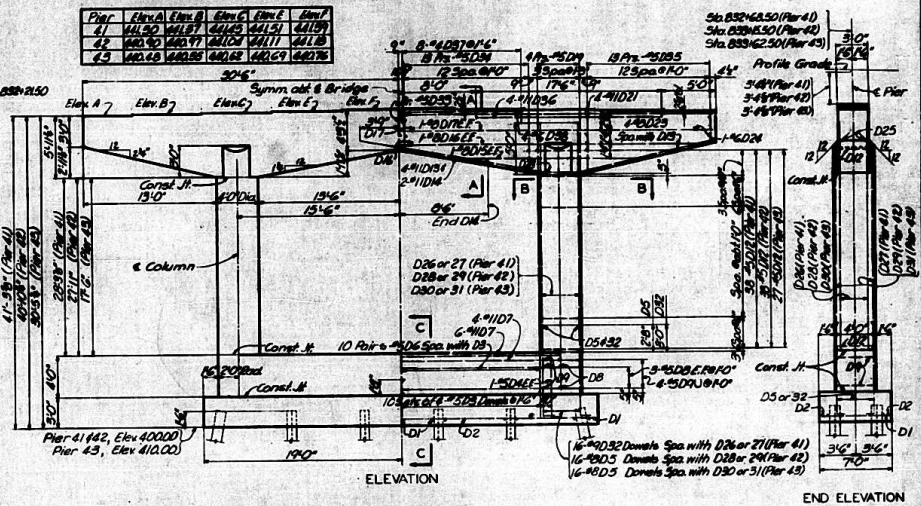
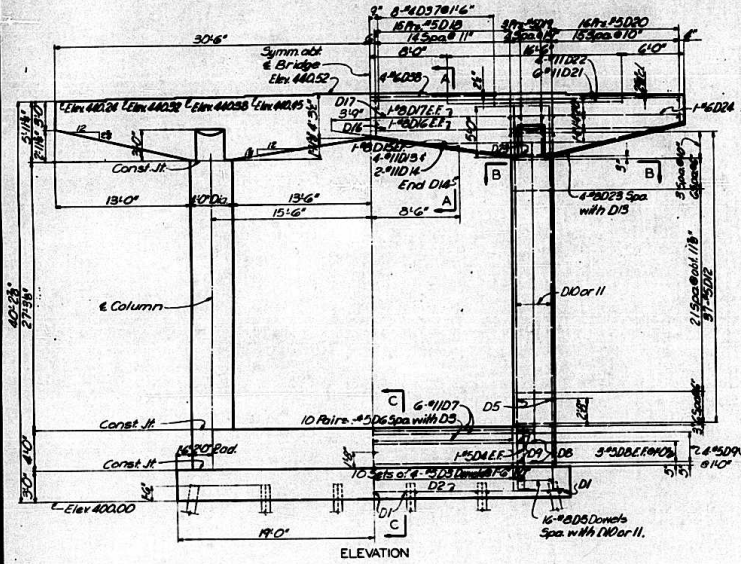
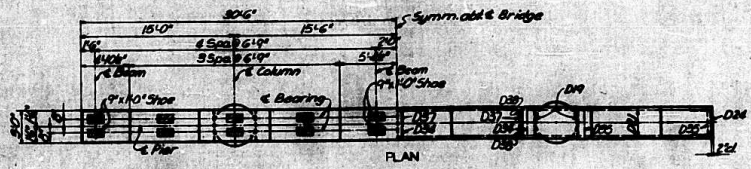
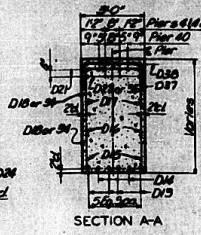
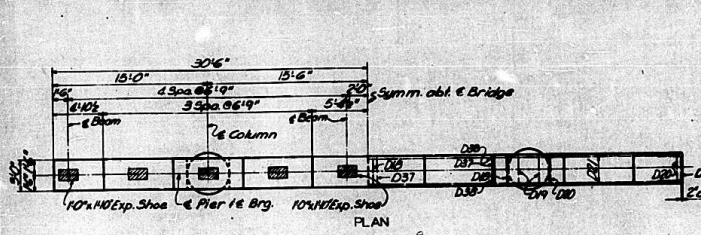
Note: Estimated Pile Length as follows:
 Pier 35 - 67'
 Pier 35 - 62'
 Pier 37 - 68'
 Pier 39 - 69'

BRIDGE OVER MISSISSIPPI RIVER AT CHAIN OF ROCKS

PROJECT 1-278-B
 ROUTE 1-278
 ST. LOUIS, MO.-MADISON CO., ILL.

PIERS 33, 35, 37 AND 39

DATE	BY	CHKD	APP'D	SCALE	SHEET NO.	TOTAL SHEETS
11-20-54	W.A. HARRISON			1"=20'-0"	25	34



NOTES
 For Anchor Bolt Plan, see Sheet 25.
 For detail of Pile Splice and Pile Tip Reinforcement, see Sheet 7.
 E.C. Indications: Each Force Pile spacing given at bottom of footing.

Note: Estimated Pile Lengths as follows:
 Pier 41 - 70'
 Pier 42 - 71'
 Pier 43 - 60'

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-274
 ROUTE 1-570
 ST. LOUIS, MO. - MADISON CO., ILL.

PIERS 40, 41, 42 AND 43

DRAWN BY: W.A. HARRISON, CIVIL ENGR.
 CHECKED BY: W.A. HARRISON, CIVIL ENGR.
 1158
 11/16/54

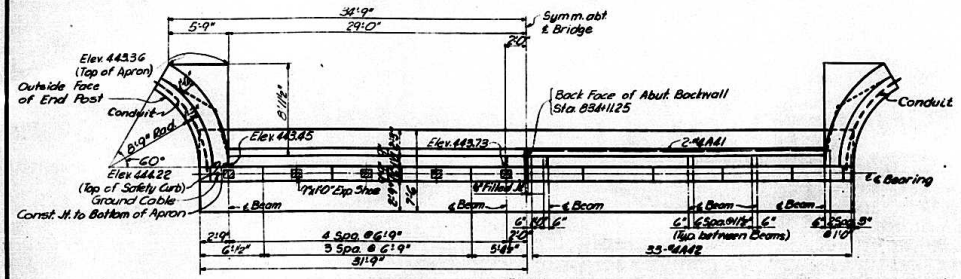
SHENKLE & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

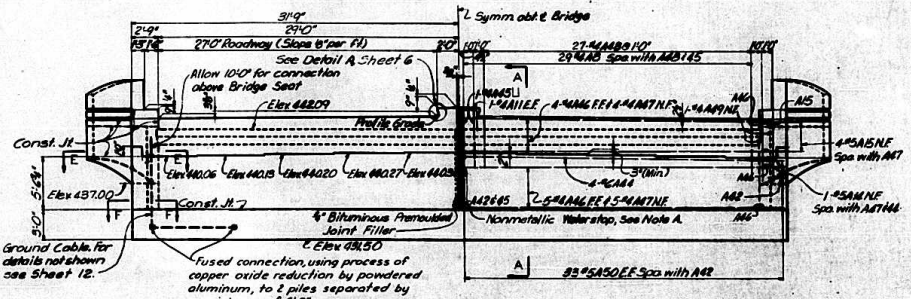
SHEET 21 OF 29

MO. A-890

PROJECT	NO.	DATE	REV. NO.	DATE	BY	CHECKED	DATE	TOTAL SHEETS
MO 870	60-0	MADISON	1	1-29-52	19	26	34	
			7	BL				



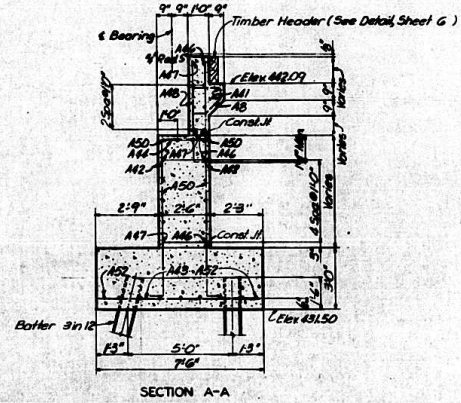
PLAN
Note: Elevations shown are top of backwall unless otherwise noted.



ELEVATION
Note: Piles, footing reinforcing and End Post reinforcing not shown.

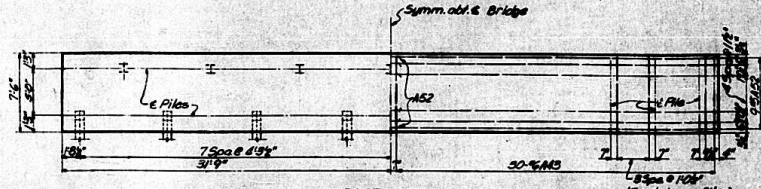
Note A: Nonmetallic Waterstop to be in accordance with Article 210.64 of the Standard Specifications. Limits of Nonmetallic Waterstop to be from top of footing to Elev 442.09.

Note: Estimated Pile Length - 101'



SECTION A-A

NOTES
See Sheet 7 for Sections E-E, F-F and End Post Details. All reinforcement to be 2" clear unless otherwise noted.
N.F. indicates Near Face.
F.F. indicates Far Face.
E.F. indicates Each Face.
For Anchor Bolt Plan, see Sheet 23.
Payment for Bituminous Prepacked Joint Filler and Nonmetallic Waterstop shall be included in price bid for Class "X" Concrete.



FOOTING PLAN
Note: 17-10B142 piles required for Abutment 44.

Note: Pile spacing given at bottom of footing.

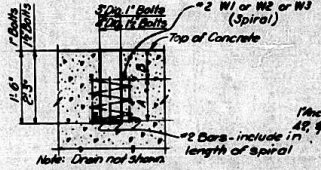
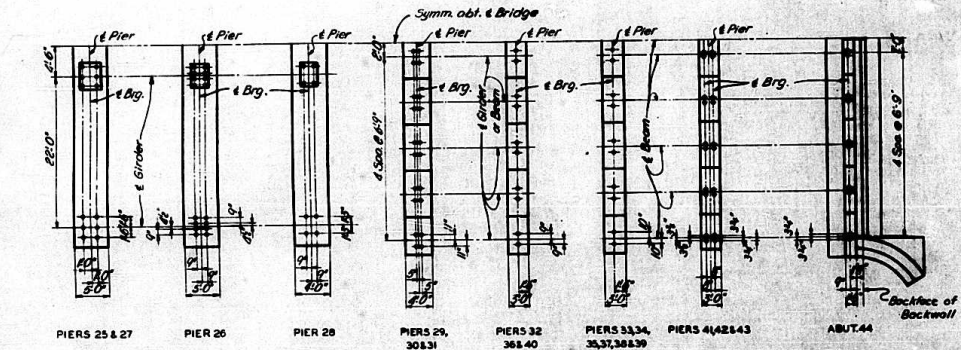
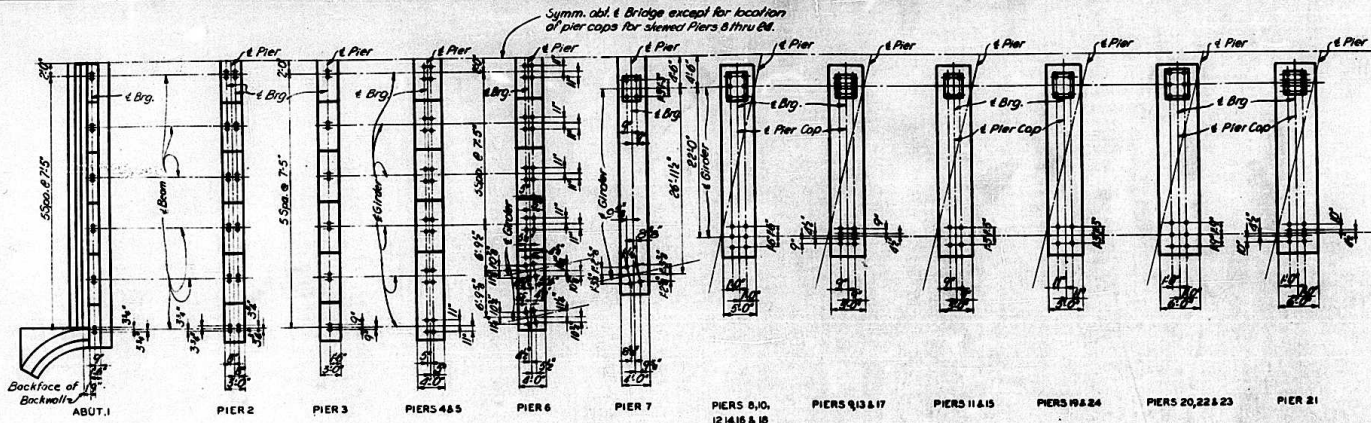
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGNED BY: A.E. MOHRMAN, DIST. ENG.
CHECKED BY: W.H.A. REINIGER, DIST. ENGR.
DATE: 1-2-52

OVERDUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-570-B
ROUTE 1-230
ST. LOUIS, MO.—MADISON CO., ILL.
ABUTMENT 44

DATE	NO.	REVISION	BY	DATE	NO.	REVISION
MAY 27 1961	60-B	ADD PIER 21				



CAST-IN-PLACE ANCHOR BOLT
(212 Required)
1" Anchor bolts at Abuts. 1 & 4 and Piers 2, 4, 45, & 45 to be cast-in-place.

Note: 1" Dia Cast-in-place anchor bolts shall be furnished and placed by Substructure Contractor. Include in price bid for concrete (Class A-1) in which bolts are placed.

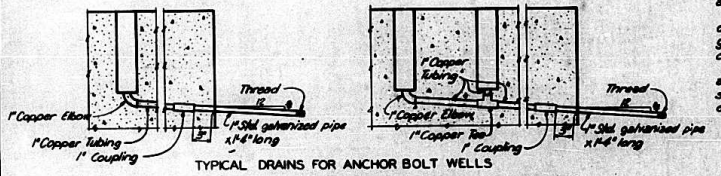
ANCHOR BOLT WELL
Not to Scale
Note: 1" Anchor bolts of Piers 3 & 38 thru 40
1 1/2" Anchor bolts of Piers 4 thru 31

NOTES

All anchor bolts to be grouted in wells except as noted. Anchor bolt wells shall be kept dry in freezing weather. See Special Provisions.
Anchor bolt wells shall be formed in substructure by placing and setting with a template. Care shall be exercised in locating anchor bolts and anchor bolt wells to the dimensions shown on the drawing.

Note: 1" Copper drains and galvanized pipe shall be furnished and placed to drain all anchor bolt wells as indicated by typical sections.
The drains shall be placed flush with the bottom of the wells and the embedded portion of the 1/4" galvanized pipe shall be grouted before being cast in concrete.
Cost of forming anchor bolt wells, furnishing and placing copper drains and galvanized pipe shall be included in the price bid for other items of work.

Location	Per Pier	Dimensions
Piers 2 and 38 thru 40	1	9" x 9"
Piers 13, 15, 19, 20, and 21	1	7 1/2" x 9"
Piers 7 thru 24	2	15" x 15"



TYPICAL DRAINS FOR ANCHOR BOLT WELLS

Note: Anchor bolt wells shall be formed with: stippleform and special provisions.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-27-61
ROUTE 1-27
ST. LOUIS, MO.-MADISON CO., ILL.

ANCHOR BOLT PLAN

DRAWN BY: F. P. PAVEL, June 1961
 CHECKED BY: A. P. PAVEL, June 1961
 1839
 61572

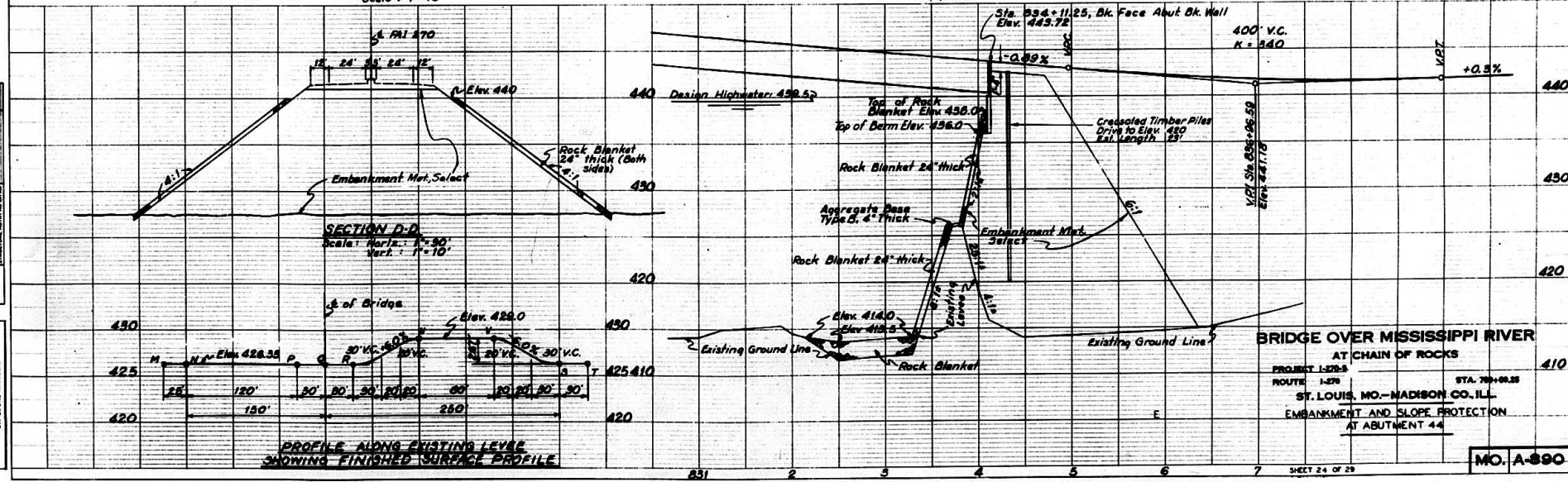
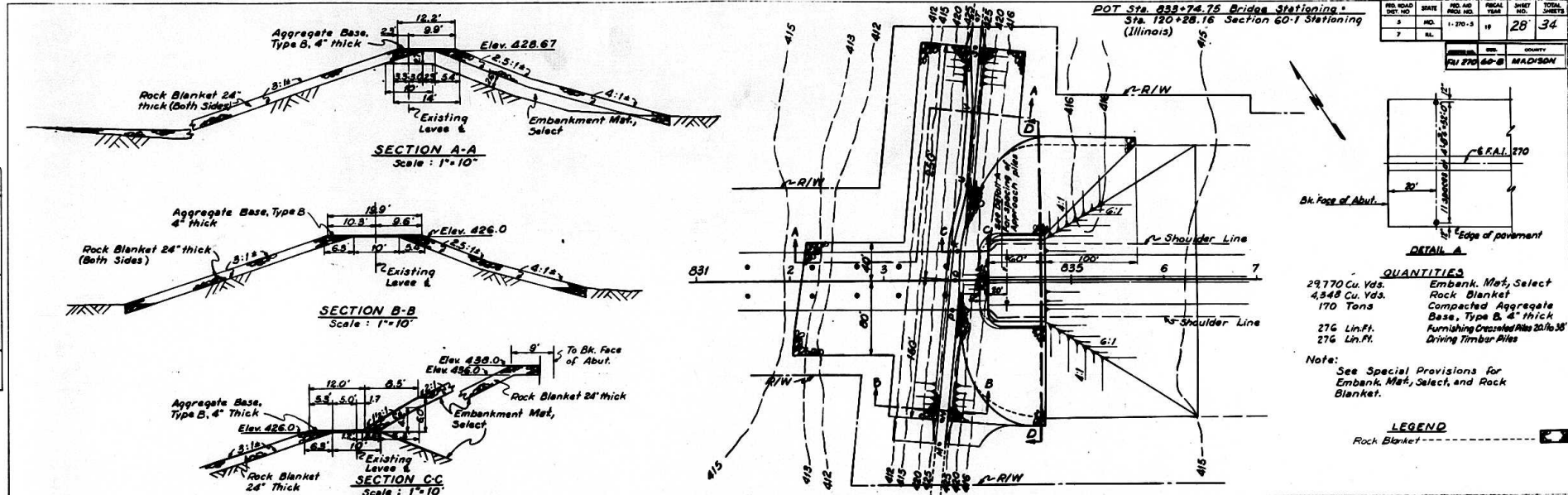
OVERDULP & PAVEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

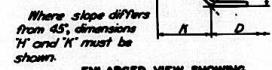
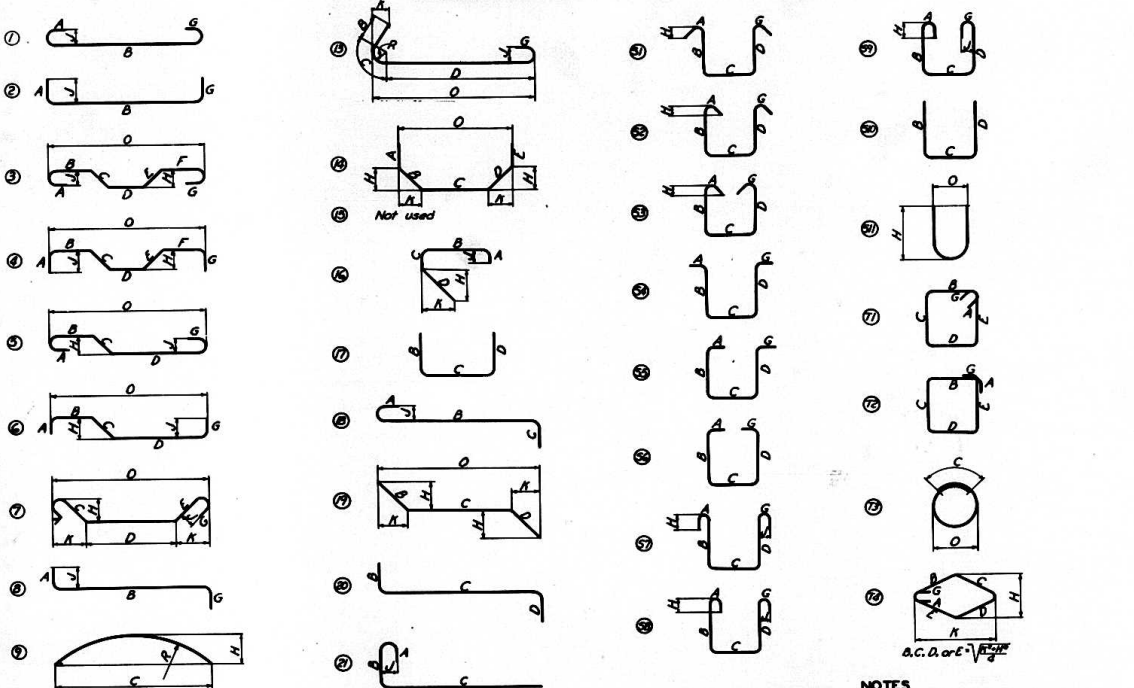
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TYPICAL BAR TYPES

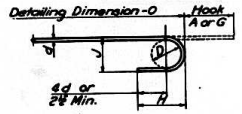


ENLARGED VIEW SHOWING BAR BENDING DETAILS

NOTES

- All dimensions are out to out, except 'R' which is to inside of bend.
- 'J' Dimension on 180° hooks to be shown in Bar List only where necessary to restrict hook size, otherwise standard hooks are to be used.
- Where 'J' can exceed 'H', it should be shown in Bar List.
- 'H' Dimension on stirrups to be shown on Bar List where necessary to restrict hooks.
- Corrections in length, due to bending around a mandrel, will be made only when the radius 'R' (as in types 11 and 13) exceeds the standard radii indicated in standard hook dimensions. However, the dimensions 'A' or 'G' shown for standard hooks have been corrected for curvature.
- All bands shown are bent around a standard mandrel, except where radius 'R' is indicated.
- Figures in circles show bar types.
- Where 'K' is shown on bar types 9, 10, 11 and 13, the length of band shall be measured along outside of bend. The length of bar type 13 shall also be measured along outside of bar.

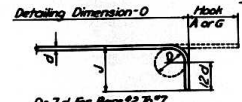
STANDARD HOOK DIMENSIONS



D = 6d for Bars #2 to #7
 D = 8d for Bars #8 to #11
 D = 11d Max.

180° HOOK

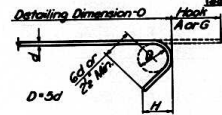
Bar Size	Hook A or G	J	H
#2	4"	2"	3/8"
#3	5"	3"	1/2"
#4	6"	4"	5/8"
#5	7"	5"	3/4"
#6	8"	6"	1"
#7	10"	7"	1 1/8"
#8	12"	8"	1 1/4"
#9	14"	10"	1 3/4"
#10	16"	12"	2"
#11	17"	13"	2 1/8"



D = 7d for Bars #2 to #7
 D = 8d for Bars #8 to #11

90° HOOK

Bar Size	Hook A or G	J	H
#2	3 1/2"	4"	1/2"
#3	5 1/2"	6"	3/4"
#4	7 1/2"	8"	1"
#5	9 1/2"	10"	1 1/4"
#6	11 1/2"	12"	1 3/4"
#7	14"	15 1/2"	2"
#8	16 1/2"	17 1/2"	2 1/4"
#9	18 1/2"	20"	2 3/4"
#10	20 1/2"	22 1/2"	3 1/4"
#11	22 1/2"	24 1/2"	3 3/4"



D = 3d

180° STIRRUP HOOK

Bar Size	Hook A or G	J	H
#2	3 1/2"	4"	1/2"
#3	5"	6"	3/4"
#4	6"	8"	1"
#5	7"	10"	1 1/4"

BAR SIZE EQUIVALENTS

#2	#3	#4	#5
#6	#7	#8	#9
#10	#11	#12	#13

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 TYPICAL BAR TYPES AND HOOK DIMENSIONS

DRAWN BY: A.T. SANDERS, May 1942
 CHECKED BY: [illegible]
 CONSULTING ENGINEER: H. H. CARPENTIER, May 1942

SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 25 OF 29

MO. A-890
 STANDARD BI

DIMENSIONS FOR BENDINGS										DIMENSIONS FOR BENDINGS										DIMENSIONS FOR BENDINGS																																																																																							
NO.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O	NO.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O	NO.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O																																																						
ABUTMENTS 1 & 44																																				PIERS 2 & 3 (CONT'D)																																				PIERS 6 & 7 (CONT'D)																																			
PIERS 4 & 5																																				PIERS 2 & 3																																				PIERS 6 & 7																																			

NOTES
 A dash is used in the appropriate dimension column to indicate that a hook, bend or portion of the standard bar type is to be omitted.
 See Sheet 25 for Typical Bar Types and Hook Dimensions.
 Bars listed as Spcl in the type column require special bending, see Sheet 24 for details.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-8
 ROUTE 1-270
 ST. LOUIS, MO.-MADISON CO., ILL.

BAR LIST

Drawn by: D. Connerly, Ch. Eng.
 Checked by: M. Bradshaw, Ch. Eng.
 11/23/67

DIMENSIONS FOR BENDING										DIMENSIONS FOR BENDING										DIMENSIONS FOR BENDING																																	
NO.	BAR	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O	NO.	BAR	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O	NO.	BAR	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O
PIERS 8,10,12,14,6 & 18																	PIERS 11 & 15																	PIERS 20,21,22 & 23 (CONT'D)																			
1	2	250	11	2	Reinforcing	150	650											1	2	250	11	2	Reinforcing	150	650											1	2	250	11	2	Reinforcing	150	650										

NOTES

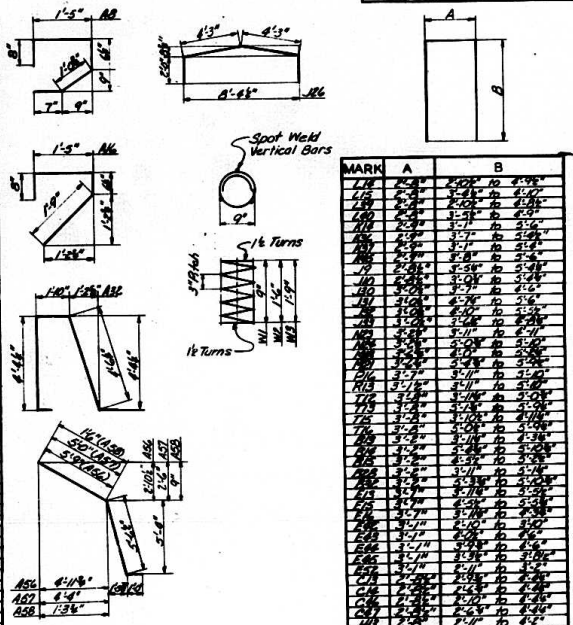
A dash is used in the appropriate dimension column to indicate that a hook, bend or portion of the standard bar type is to be omitted.

See Sheet 25 for Typical Bar Types and Hook Dimensions. Bars listed as Spec. in the type column require special bending, see Sheet 24 for details.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-3
 ROUTE 1-270
 ST. LOUIS, MO.-MADISON CO. ILL.

BAR LIST

DIMENSIONS FOR BENDING														DIMENSIONS FOR BENDING																																																			
NO. REIN.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O	NO. REIN.	SIZE	LENGTH	MARK	TYPE	LOCATION	A	B	C	D	E	F	G	H	J	K	R	O																														
PIERS 33, 35, 37 & 39																																	PIERS 40, 41, 42 & 43																																
141	2	7'-6"	AK	Reinforcing	Top													141	2	7'-6"	AK	Reinforcing	Top																																										
142	2	7'-6"	AK	Reinforcing	Top													142	2	7'-6"	AK	Reinforcing	Top																																										
143	2	7'-6"	AK	Reinforcing	Top													143	2	7'-6"	AK	Reinforcing	Top																																										
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146	2	7'-6"	AK	Reinforcing	Top													146	2	7'-6"	AK	Reinforcing	Top																																										
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178	2	7'-6"	AK	Reinforcing	Top													178	2	7'-6"	AK	Reinforcing	Top																																										
179	2	7'-6"	AK	Reinforcing	Top													179	2	7'-6"	AK	Reinforcing	Top																																										
180	2	7'-6"	AK	Reinforcing	Top													180	2	7'-6"	AK	Reinforcing	Top																																										



MARK	A	B
AK	2'-0"	2'-0"
AL	2'-0"	2'-0"
AN	2'-0"	2'-0"
AO	2'-0"	2'-0"
AP	2'-0"	2'-0"
AQ	2'-0"	2'-0"
AR	2'-0"	2'-0"
AS	2'-0"	2'-0"
AT	2'-0"	2'-0"
AU	2'-0"	2'-0"
AV	2'-0"	2'-0"
AW	2'-0"	2'-0"
AX	2'-0"	2'-0"
AY	2'-0"	2'-0"
AZ		

GENERAL NOTES

SPECIFICATIONS: Missouri State Highway Commission "Standard Specifications for State Roads, Materials, Bridges, Culverts and Incidental Structures", 1961 Edition and Special Provisions.

DESIGN: In accordance with Division I of the A.A.S.H.O. "Standard Specifications for Highway Bridges", Seventh Edition (1957), as revised by Tentative A.A.S.H.O. Specifications for 1959, 1959 and 1960 with the following provisions, exceptions and interpretations.

DESIGN LOADING: Live Load - H20-S16-44 or the alternate Interstate special loading of 2-24,000 pound axles at 4'-0" centers. Dead Load - Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.

DESIGN UNIT STRESSES FOR CONCRETE:
Class "B-1" Concrete in flexure 1_c = 1600 p.s.i.
Reinforcing Steel 1_s = 20,000 p.s.i.

DESIGN UNIT STRESSES FOR STEEL:
Structural Low Alloy Steel Stresses in accordance with A.A.S.H.O. Article 1.4.7.
Structural Quench Tempered Low Alloy Steel:
Tension in extreme fiber of girders 45,000 p.s.i.
Shear in web, gross section 30,000 p.s.i.
Axial Compression, Stiffeners 45,000 p.s.i.
Compression in extreme fiber of girders 45,000 - 42.5 p.s.i.
Bearing on milled stiffeners 60,000 p.s.i.

METALS: All material not otherwise designated shall be Structural Carbon Steel and shall conform to A.S.T.M. A-7.
Material designated (W.S.) shall be Structural Steel for Welding and shall conform to A.S.T.M. A-573.
Material designated (A.S.) shall be Structural Low Alloy Steel and shall conform to A.S.T.M. A-441.
Materials designated (H.S.) shall be Structural Q.T. Low Alloy Steel and shall conform to the Special Provisions.
High-Strength Bolts shall conform to A.S.T.M. A-325.
Cast Steel shall conform to A.S.T.M. A-27, Grade 10-36 fully annealed.
Forged Carbon Steel Pins shall conform to A.S.T.M. A-235 Class C1, finish all over.
Forged Alloy Steel Pins shall conform to A.S.T.M. A-237 Class A, finish all over.
Lead Plates shall conform to A.S.T.M. B-29, chemical lead.
Wrought Iron Plates shall conform to A.S.T.M. A-42.

CONCRETE: All concrete shall be Class B-1. All exposed edges of concrete shall be chamfered 1/4" unless otherwise shown or noted.

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to centerline of bar except where the clear dimension is noted from the face of concrete. All reinforcing steel shall be lapped a minimum of 32 diameters at splices unless otherwise shown or noted.

ROADWAY SLAB: The roadway slab as detailed includes a 1" wearing surface poured monolithically with the slab. The distribution reinforcement in bottom of slabs is 67 percent of the main reinforcement.

CONSTRUCTION JOINTS: Construction joints shall be made only at the locations shown on the drawings unless authorized by the Engineer.

TURNED BOLTS: The diameter billed on the drawings shall be the shank diameter. The diameter of the threaded portion shall be 1/8" smaller than the shank and the diameter of hole shall be 3/8" larger than the shank.

JOINT FILLER: Where filled joints are shown on the drawings, they shall conform to the requirements for "Gray Sponge Rubber Compound Expansion and Partition Joints" as given in Section 157.2.4 of the Standard Specifications. Payment for filler will be included in contract prices for items in which it is placed.

JOINT SEAL: Where joint seal is specified on the drawings, it shall conform with the requirements of the Standard Specifications, Section 157.1.4. Payment for joint seal will be included in contract prices for other items of work.

FABRICATION: Fabrication shall be in accordance with the requirements of the Standard Specifications as revised and supplemented by the Special Provisions and these design plans.

WELDING: All welding shall be in accordance with the Special Provisions. No field welding will be permitted unless specified on the drawings or approved by the Engineer.

SURFACE SEALING: Superstructure deck shall be waterproofed in accordance with the Special Provisions and Section 53.4.1B of the Standard Specifications.

ERECTION: See Special Provisions.

PAINTING OF METAL WORK: See Special Provisions.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	1-270-5	19	94A	
7	ILL.				

Item	ESTIMATED QUANTITIES		
	Proj. I-270-5(32)a	Proj. I-270-5(32)b	Proj. I-270-5(32)c
Class B1 Concrete	Unit	Quantity	
	Cu Yd	9239.3	
Reinforcing Steel	Lb.	2,709,768	
Fabricated Structural Carbon Steel (Beam Spans)	Lb.	135,190	
Fabricated Structural Carbon Steel (Girder Spans)	Lb.	1,701,250	
Fabricated Structural Steel for Welding (Beam Spans)	Lb.	1,308,290	
Fabricated Structural Steel for Welding (Girder Spans)	Lb.	850,390	
Fabricated Structural Low Alloy Steel (Beam Spans)	Lb.	64,560	
Fabricated Structural Low Alloy Steel (Girder Spans)	Lb.	402,910	
Fabricated Structural Q.T. Low Alloy Steel (Girder Spans)	Lb.	936,210	
Carbon Steel Castings	Lb.	18,990	
Fabricated Structural Steel Bearings	Lb.	343,040	
Painting	Lump Sum		
Bridge Rail (Single Tube Type)	Lt. Ft.	10,817	
Roadway Lighting System	Lump Sum		
Navigation Warning Sign Lighting	Lump Sum		
Navigation Warning Sign	Lump Sum		

Note: The material for expansion devices near Piers 36 and 40 is included in the appropriate structural steel item for Beam Spans. All other expansion device material is included in the appropriate structural steel item for Girder Spans.

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- GENERAL PLAN AND ELEVATION
- GENERAL NOTES, QUANTITIES AND INDEX
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- BEAM FRAMING PLAN-SPANS 1, 2 & 40 TO 43
- BEAM DETAILS-SPANS 1, 2 & 40 TO 43
- GIRDER FRAMING PLAN-SPANS 3 TO 6
- GIRDER FRAMING PLAN-SPANS 28 TO 31
- GIRDER DETAILS-SPANS 3 TO 6 & 28 TO 31
- BEAM AND GIRDER SHOES-SPANS 3 TO 6 & 28 TO 39
- GIRDER FRAMING PLAN-SPANS 7 TO 10
- GIRDER FRAMING PLAN-SPANS 11 TO 18
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- GIRDER DETAILS-SPANS 7 TO 18 & 24 TO 27
- GIRDER DETAILS-SPANS 7 TO 18 & 24 TO 27
- GIRDER CROSS SECTIONS-SPANS 7 TO 18 & 24 TO 27
- GIRDER SHOES-SPANS 7 TO 18 & 24 TO 27
- GIRDER FRAMING PLAN-SPANS 19 TO 23
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- GIRDER CROSS SECTIONS-SPANS 19 TO 23
- GIRDER SHOES-SPANS 19 TO 23
- BEAM FRAMING PLAN-SPANS 32 TO 39
- BEAM DETAILS-SPANS 32 TO 39
- EXPANSION DEVICES NEAR PERS 3, 32, 36 & 40
- EXPANSION DEVICES NEAR PERS 7 & 28
- EXPANSION DEVICES NEAR PERS 11 & 15
- EXPANSION DEVICES NEAR PERS 19 & 23
- SLAB-SPANS 1 TO 27
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- SLAB CROSS SECTIONS
- SAFETY CURBS, PARAPETS AND MEDIANS
- ALUMINUM HANDRAIL
- BRIDGE ROADWAY LIGHTING DETAILS
- APPROACH ROADWAY LIGHTING DETAILS
- ROADWAY LIGHTING SUBSTATION
- NAVIGATION WARNING SIGN
- TYPICAL BAR TYPES AND HOOK DIMENSIONS
- BAR LIST AND SPECIAL BENDING DETAILS

ALL CROSS REFERENCE NOTES REFER TO SHEET NUMBERS IN LOWER RIGHT CORNER OF PLANS.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

PROJECT 1-270-5
ROUTE 1-270
ST. LOUIS, MO.-MADISON CO., ILL.
GENERAL NOTES,
QUANTITIES AND INDEX

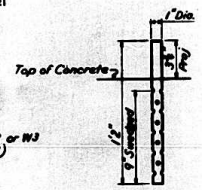
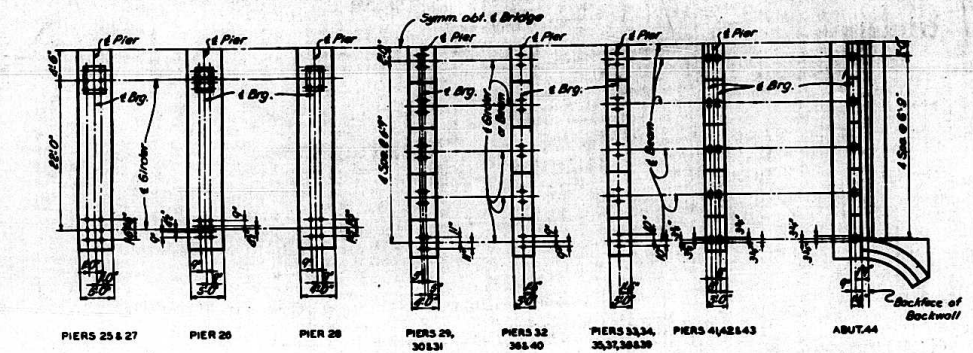
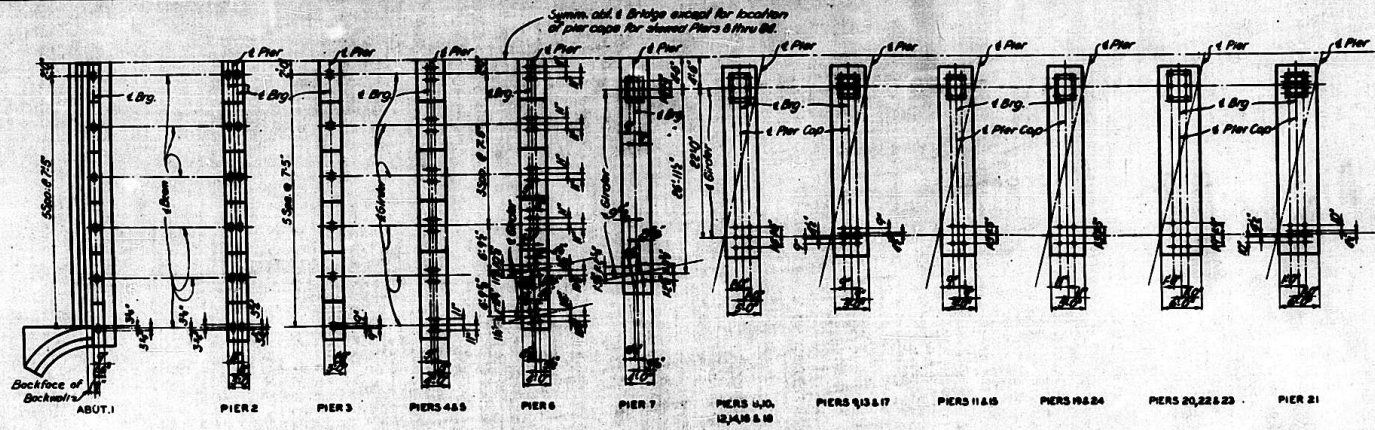
MO. A-890

DRAWN BY: J. Seabury, Oct. 1967
 CHECKED BY: H. A. Robinson, Oct. 1968
 1838
 25337

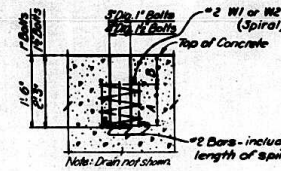
EVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 2 OF 37



Note: 1" Dia Cast-in-place anchor bolts will be furnished and placed by Substructure Contractor.



ANCHOR BOLT WELL
Not to Scale
Note: 1" Anchor bolts of Piers 3 & 32 thru 40
1 1/2" Anchor bolts of Piers 4 thru 31

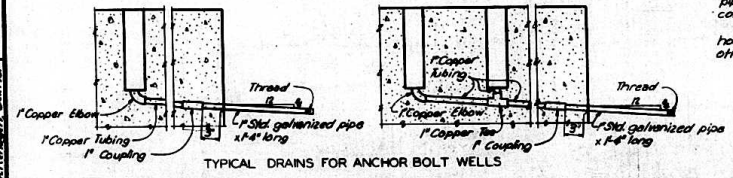
CAST-IN-PLACE ANCHOR BOLT
(212 Required)
1" Anchor bolts at Abutts. 1 & 44 and Piers 2, 41, 42, & 43 to be cast-in-place.

NOTES
All anchor bolts to be grouted in wells except as noted. Anchor bolt wells shall be kept dry in freezing weather. See Special Provisions.

Note: After the anchor bolts are grouted in place, the Contractor shall remove all 1/4" lengths of pipe and grout the holes flush with the face of concrete.

Cost of removing galvanized pipe and grouting holes shall be included in the price bid for other items of work.

Location	Bar Size	Dimensions
Piers 3 and 32 thru 40	#1	3" x 3"
Piers 4, 5, 6, 14, 15, and 31	#2	1 1/2" x 3"
Piers 7 thru 28	#3	1 1/2" x 4"



TYPICAL DRAINS FOR ANCHOR BOLT WELLS

DRAWN BY: J.P. Ward, June 1951
 CHECKED BY: W.H. Thompson, Oct 1951
 1510
 55349

OVERMURP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

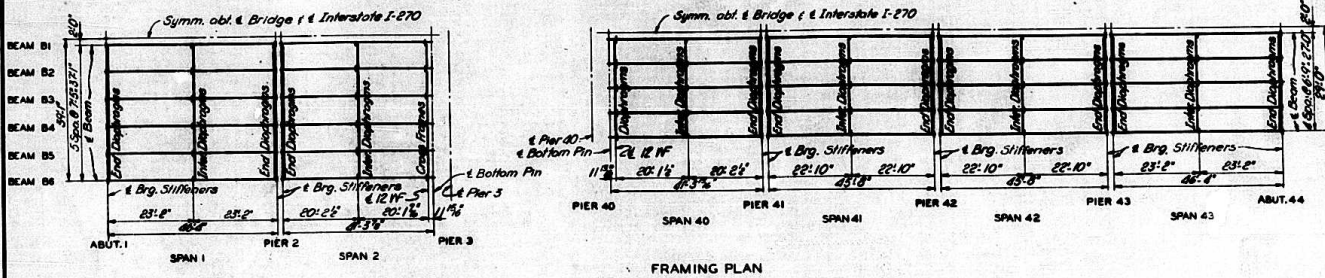
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-27-5
ROUTE 1-27
ST. LOUIS, MO.—MADISON CO., ILL.
ANCHOR BOLT PLAN

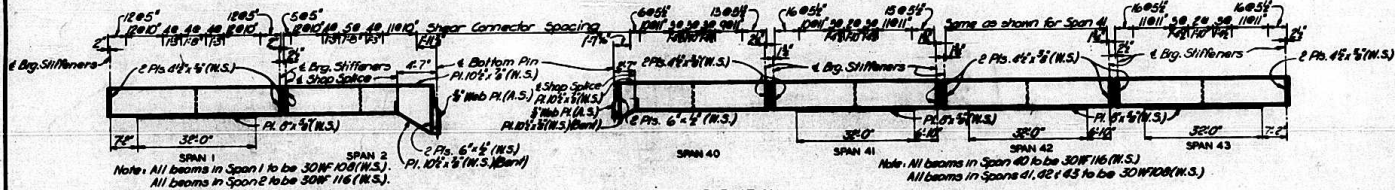
SHEET 3 OF 37

MO. A-590

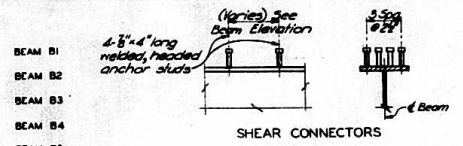
REV.	DATE	BY	CHK.	APP.	DESCRIPTION
1	M.D.	1-27-58	19		34C
2	BL				



FRAMING PLAN



BEAM ELEVATION



BEAM B1
BEAM B2
BEAM B3
BEAM B4
BEAM B5

STRUCTURAL STEEL NOTES

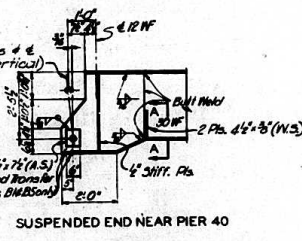
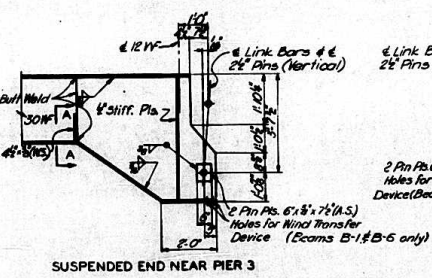
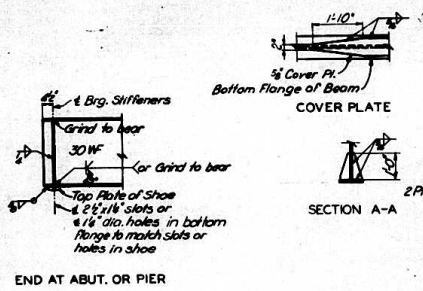
GENERAL NOTES: See Sheet 2

FIELD CONNECTIONS: All field connections shall be made with 7/8" high-strength bolts unless otherwise designated on the drawing.

DETAILS: All dimensions shown on the drawings are at normal temperature of 60°F. All longitudinal dimensions are measured parallel to centerline of bridge along top of girder spans and along top of rolled beams for beam spans. All crossframes, diaphragms and transverse stiffeners are to be placed normal to grade. Field splices may be shifted slightly from the positions shown on the drawings. Flange and splice plates shall be universal mill plates except as provided by the Special Provisions.

WELDING: Web and flange butt welds and flange to web fillet welds shall be made by submerged arc. Other welds may be made by submerged arc or manual shielded arc. See Special Provisions.

CAMBER: Girder spans 7 through 27 shall be cambered as shown on the drawings. Spans 1 through 6 and 28 through 43 shall not be cambered.



NOTES

For Cross Sections and Shoes, see Sheet 5.
For Expansion Devices, see Sheet 23.
For Hinge Details and Wind Transfer Device, see Sheet 22.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-276-B
ROUTE 1-270
ST. LOUIS, MO.—MADISON CO., ILL.
BEAM FRAMING PLAN—
SPANS 1, 2 & 40 TO 43

DESIGNED BY: F.P. HICK, MISSOURI
 CHECKED BY: C. W. HARRIS, MISSOURI
 DRAWING NO. ACCUSTRUCT-204-104

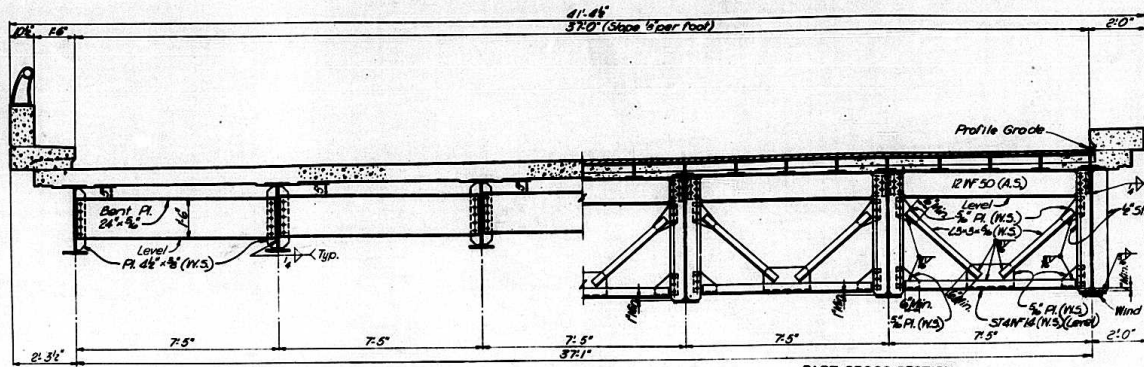
EVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 4 OF 37

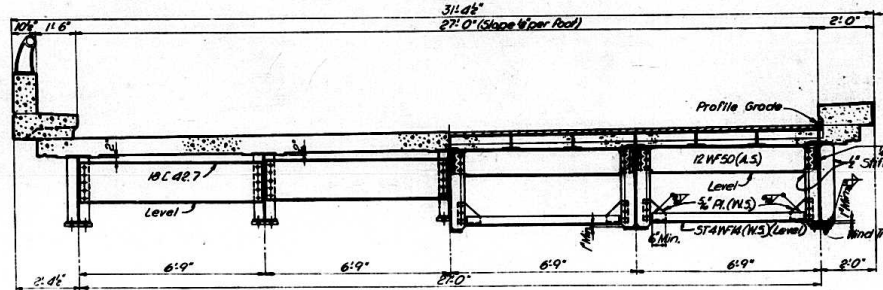
MO. A-290

DESIGN NO.	DATE	REV. NO.	REVISION
1	IND. 1-27-61	10	34D
7	BL.		



PART CROSS SECTION NEAR INTERMEDIATE DIAPHRAGMS
End diaphragms similar to end diaphragms shown for Spans 40 thru 43.

ROADWAY CROSS SECTION SPANS 1 AND 2
Note: Use 3/4\"/>



PART CROSS SECTION NEAR END DIAPHRAGMS
Intermediate diaphragm similar to intermediate diaphragm shown for Spans 1 and 2.
Note: Use 3/4\"/>

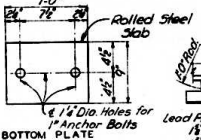
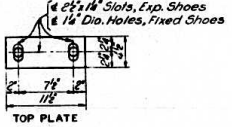
ROADWAY CROSS SECTION SPANS 40 THRU 43

PART CROSS SECTION NEAR DIAPHRAGMS AT HINGE IN SPAN 40
Note: Use 3/4\"/>

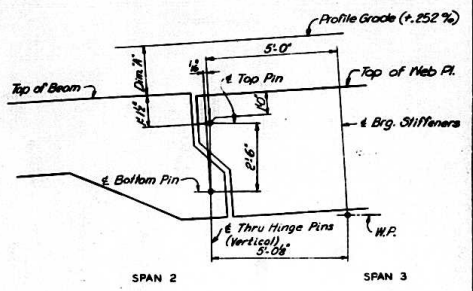
Symm. obl. & Bridge & Interstate I-270

BEAM	DIMENSION "A"	
	SPANS 1 AND 2	SPANS 40 THRU 43
B1	7 1/2"	7 1/2"
B2	8 1/2"	8 1/2"
B3	9 1/2"	9 1/2"
B4	10 1/2"	10 1/2"
B5	11 1/2"	11 1/2"
B6	12 0"	-

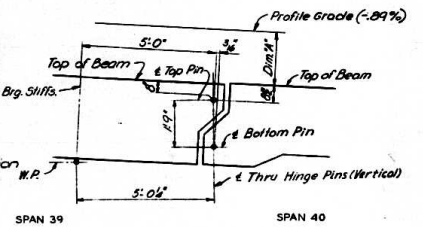
Note: Dimension "A" is true only of & Brg. Stiffeners or & Pins. At other points the dead load deflection must be added.



SHOE DETAIL
(42 Expansion Shoes Required)
(64 Fixed Shoes Required)

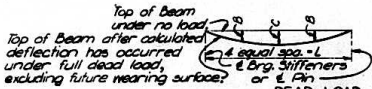


LAYOUT AT PIER 3



LAYOUT AT PIER 40

BEAM	SPAN 1		SPAN 2		SPAN 40		SPAN 41 & 42		SPAN 43	
	L	C	L	C	L	C	L	C	L	C
B1	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0
B2	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0
B3	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0
B4	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0
B5	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0
B6	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0	14.4	1.0



DEAD LOAD DEFLECTION ORDINATES
Note: Deflection due to weight of steel only equals about 15% of ordinates shown for Beams B2 thru B5, Spans 1 and 2 and Beams B2 thru B4, Spans 40 thru 43. For other beams the deflection equals about 10% of ordinates shown.

NOTES

For Framing Plan, see Sheet 4.
For Structural Steel Notes, see Sheet 4.
For Shoe Notes, see Sheet 9.

BRIDGE OVER MISSISSIPPI RIVER AT CHAIN OF ROCKS

PROJECT 1-270-S
ROUTE 1-270
ST. LOUIS, MO.-MADISON CO., ILL.
BEAM DETAILS- SPANS 1, 2 & 40 TO 43

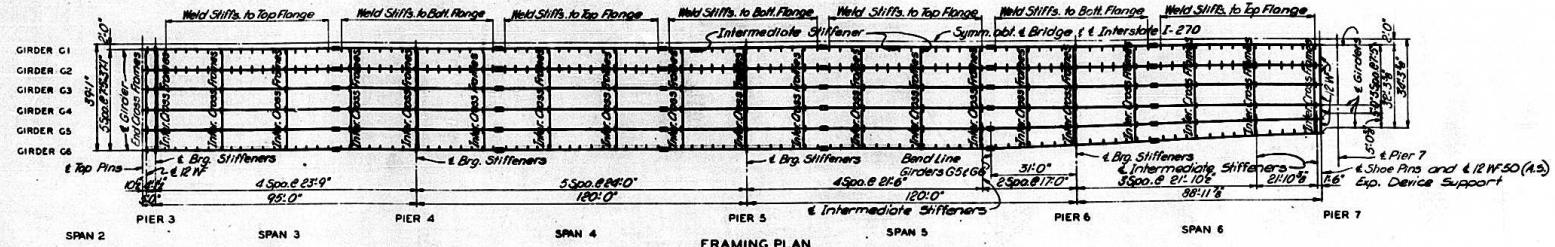
DRAWN BY: F.P. HAY, MAY 1961
 CHECKED BY: W.C. HAY, MAY 1961
 ENGINEER: W.C. HAY, MAY 1961

BYVENDRUP & PANCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

MO. A-390

SHEET 5 OF 31

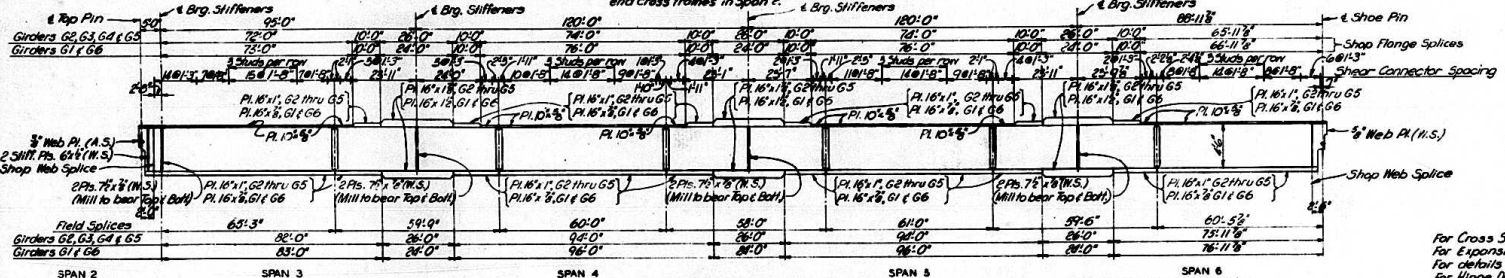
REV.	NO.	DATE	BY	CHK.	TOTAL SHEETS
1	1	1-27-55	19	34E	
2	1				



FRAMING PLAN

Note: Location of intermediate stiffeners for Girders G3, G4 & G5 same as shown for G2.

All intermediate stiffeners to be 58" x 9" (N.S.) except at end cross frames in Span 2.



GIRDER ELEVATION

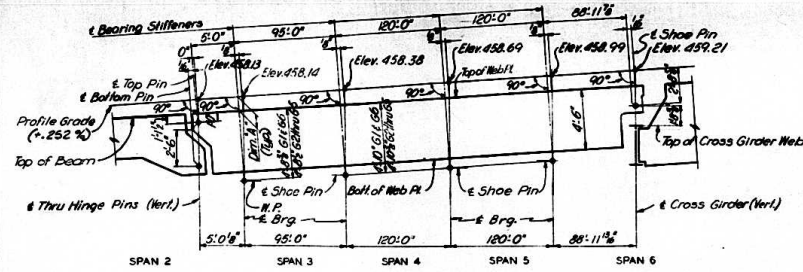
Web plates are 5/8" (N.S.) except as otherwise shown at each end of girder. All flange plate material to be (N.S.).

Note: Flange field splice plates not shown.

Note: For shear connectors use 4 studs per row unless otherwise noted.

NOTES

For Cross Sections and Girder Details see Sheet 8.
For Expansion Devices, see Sheets 23 & 24.
For details of shoes, see Sheet 9.
For Hinge Details and Wind Transfer Device, see Sheet 22.



GIRDER LAYOUT

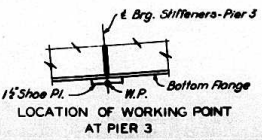
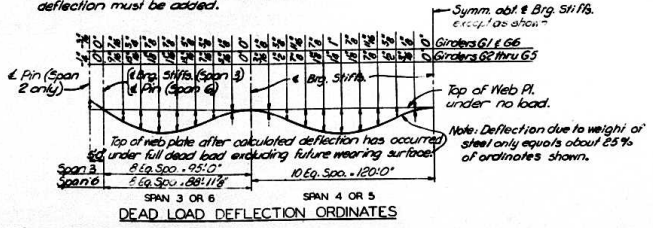


TABLE OF VARIABLES

GIRDER	DIM. IN.	ELEVATIONS OF 1/2 SHOE PINS OR W/P
		PIER 3 PIER 4 PIER 5 PIER 6
G1	9"	452.70 452.80 453.10 453.01
G2	9"	452.61 452.70 453.00 453.30
G3	10"	452.53 452.61 452.92 453.22
G4	11"	452.46 452.54 452.84 453.14
G5	11-0/8"	452.37 452.46 452.76 453.06
G6	11"	452.31 452.42 452.72 453.02

Note: Dimension 'A' is true only of 1/2 Brg. Stiffeners or 1/2 Pins. At other points the dead load deflection must be added.



DEAD LOAD DEFLECTION ORDINATES

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-270-5

ROUTE 1-270

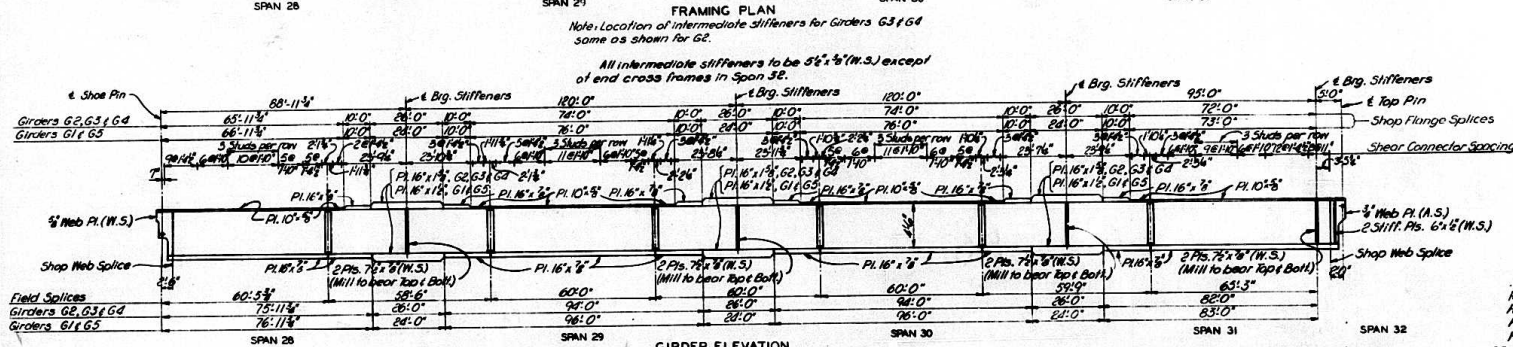
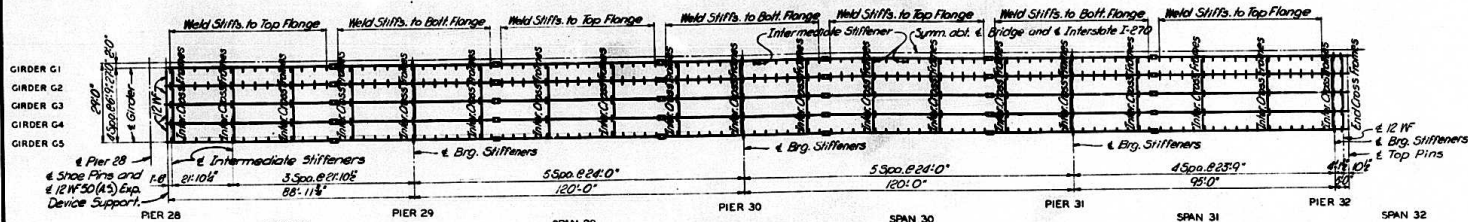
STA. 780+00.25

ST. LOUIS, MO.-MADISON CO., ILL.

GIRDER FRAMING PLAN - SPANS 3 TO 6

DRAWN BY: F.P. VICK, MAY 1956
 CHECKED BY: C.C. WILSON, JUL 1956
 1838
 675777

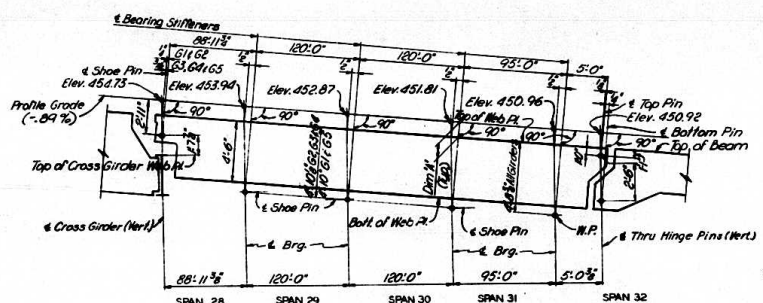
SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.



Note: for shear connectors use 4 studs per row unless otherwise noted.

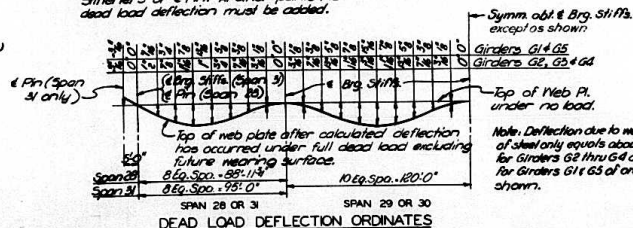
NOTES

for Cross Sections and Girder Details, see Sheet 8.
 For Expansion Devices, see Sheets 23 & 24.
 For details of shoes, see Sheet 9.
 For Hinge Details and Wind Transfer Device see Sheet 22.



GIRDER	DIM. IN.	ELEVATIONS OF 1/2" SHOE PINS OR WELLS			
		PIER 28	PIER 30	PIER 31	PIER 32
G1	9"	448.36	447.29	446.22	445.15
G2	9"	448.27	447.19	446.12	445.05
G3	10"	448.20	447.13	446.07	445.00
G4	11"	448.14	447.07	446.00	444.93
G5	12"	448.08	447.01	445.94	444.87

Note: Dimension is a true only at 1/2" Brg. Stiffeners or 1/2" Pin. At other points the dead load deflection must be added.

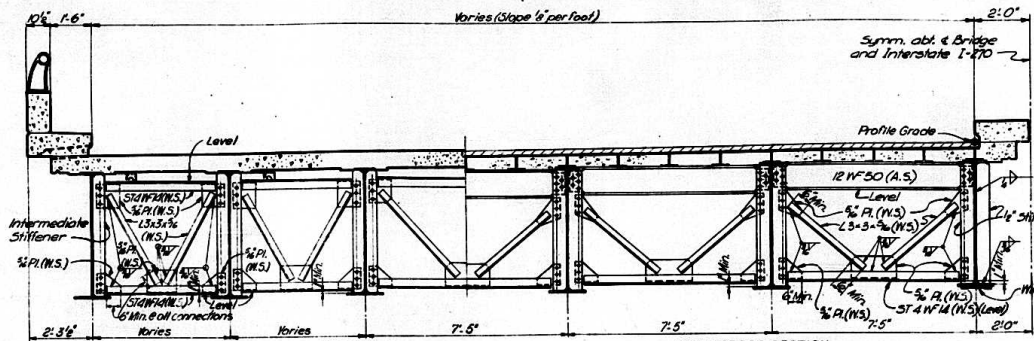


BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
 PROJECT I-279-S
 ROUTE I-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 GIRDER FRAMING PLAN—
 SPANS 28 TO 31

DRAWN BY: F.F. HARRIS, MASH, 1962
 CHECKED BY: W.C. GIBSON, MASH, Oct. 1962
 1838
 605179

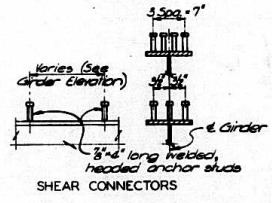
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2	ILL.	1-279-2	19	34G	
7	ILL.				



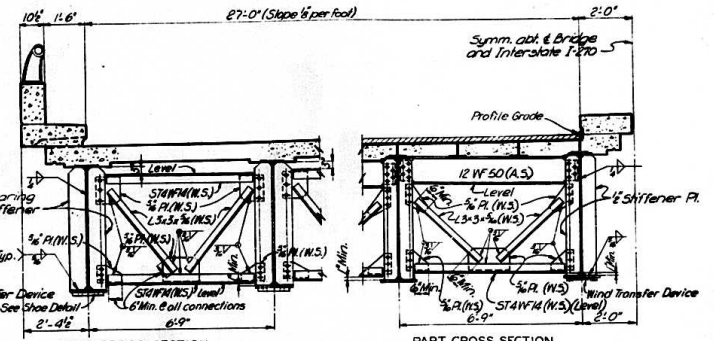
PART CROSS SECTION NEAR INTERMEDIATE CROSS FRAMES
PART CROSS SECTION NEAR END CROSS FRAMES

Typical intermediate cross frames shown.
 Cross section of piers similar to section shown for Spans 28 thru 31.

ROADWAY CROSS SECTION SPANS 3 THRU 6
 Note: Use 3/4\"/>



SHEAR CONNECTORS

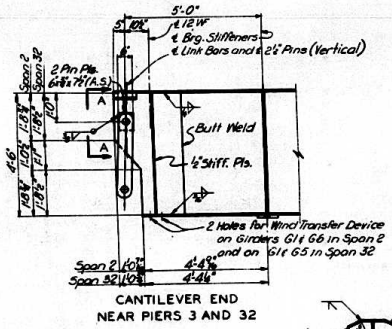


PART CROSS SECTION AT PIER 32
PART CROSS SECTION NEAR END CROSS FRAMES IN SPAN 32

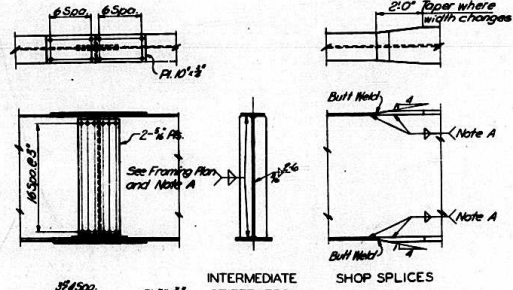
Cross section of other piers same except bearing stiffeners are not clipped on top.
 Cross section of intermediate cross frames similar to section shown for Spans 3 thru 6.

ROADWAY CROSS SECTION SPANS 28 THRU 31
 Note: Use 3/4\"/>

Note A: Size of fillet welds Plates 3/4\"/>



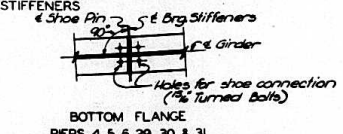
CANTILEVER END NEAR PIERS 3 AND 32



INTERMEDIATE STIFFENERS & SHOP SPLICES

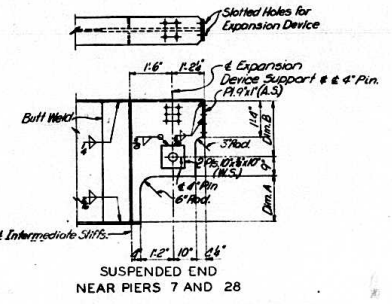


FIELD SPLICE
 Note: See Framing Plan for splice in Span 5 requiring bent vertical splice plates for Girders 65 & 66.



BOTTOM FLANGE

PIERS 4, 5, 6, 29, 30 & 31
 Note: Shown for Girders 65 and 66 at Pier 6, others are similar.



SUSPENDED END NEAR PIERS 7 AND 28

Span	Dim A	Dim B	Span 28	Dim A	Dim B
G1	11.9'	11.1'	G1	11.7'	11.2'
G2	11.0'	11.0'	G2	11.7'	11.1'
G3	11.1'	11.0'	G3	11.8'	11.0'
G4	11.0'	11.0'	G4	11.9'	11.0'
G5	11.0'	11.0'	G5	11.0'	11.0'
G6	11.0'	11.0'			

NOTES
 For Framing Plan, see Sheets 6 & 7.
 For Structural Steel Notes, see Sheet 4.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-279-2
 ROUTE 1-270 STA. 700+25
 ST. LOUIS, MO.-MADISON CO., ILL.
 GIRDER DETAILS-
 SPANS 3 TO 6 & 28 TO 31

DRAWN BY: F.P. WILSON, JUNIOR (1961)
 CHECKED BY: C.C. LITZ (1961)
 1938
 2/5/77

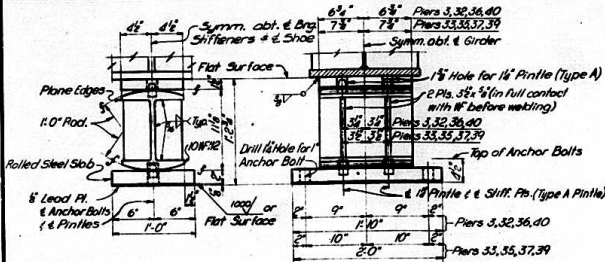
OVERBURY & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 8 OF 37

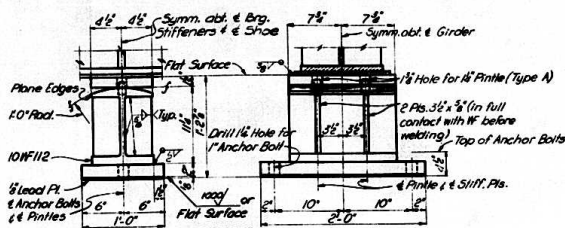
MO. A-890

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	PROJ. YEAR	SHEET NO.	TOTAL SHEETS
7	MO.	1-270-5	19	344	



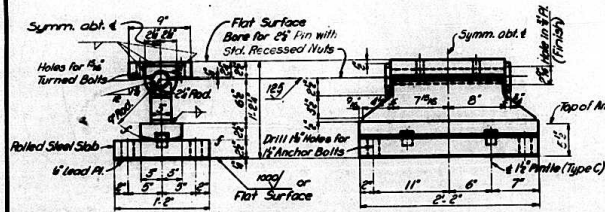
**EXPANSION SHOE AT
PIERS 3, 32, 33, 35, 36, 37, 39 AND 40**

(22 Required)
Note: Provide fill pl. 1/4\"/>



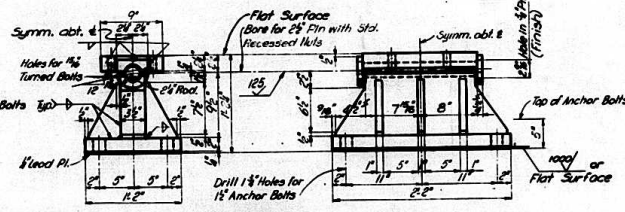
**FIXED SHOE AT
PIERS 34 AND 38**

(20 Required)
Note: Provide fill pl. 1/4\"/>



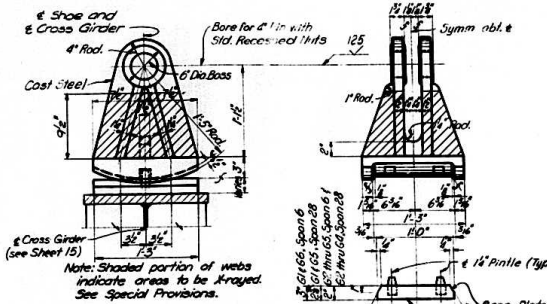
**EXPANSION SHOE AT
PIERS 4, 6, 29 AND 31**

(21 Required)
Note: Provide fill pl. 1/4\"/>



**FIXED SHOE AT
PIERS 5 AND 30**

(22 Required)
Note: Provide fill pl. 1/4\"/>

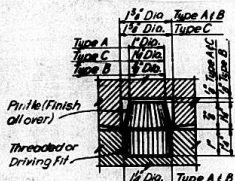


**SHOES ON CROSS GIRDER
IN SPANS 6 AND 28**

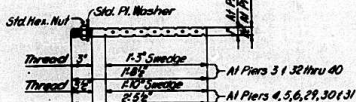
(22 Required)

SHOE NOTES

Fillets on castings shall have 1/2 radius.
For surface roughness requirements of the finish designations on the drawings, see Article 53.3.25, Missouri Standard Specifications. All surfaces marked F or (Finish) shall have a 250 surface roughness. Finish all other surfaces as shown on details.
The cost of furnishing and placing lead jobsites shall be considered as included in the contract unit price bid for other items.
The axis of the rollers of expansion shoes is to be vertical of the normal temperature of 60°F. Correction for temperature above or below 60°F. shall be made in setting shoes using a coefficient of expansion of 0.000065.
Unless otherwise noted shoes shall be made of (W.S.) steel. Rolled steel slabs, fill plts, pintles and anchor bolts shall be structural carbon steel.
All pins shall be forged carbon steel unless otherwise noted. The tongues in base slabs of the expansion shoes shall be machined from the parent rolled slab.



DETAIL OF PINTLE
(Type A: 368 Req'd.)
(Type B: 44 Req'd.)
(Type C: 88 Req'd.)



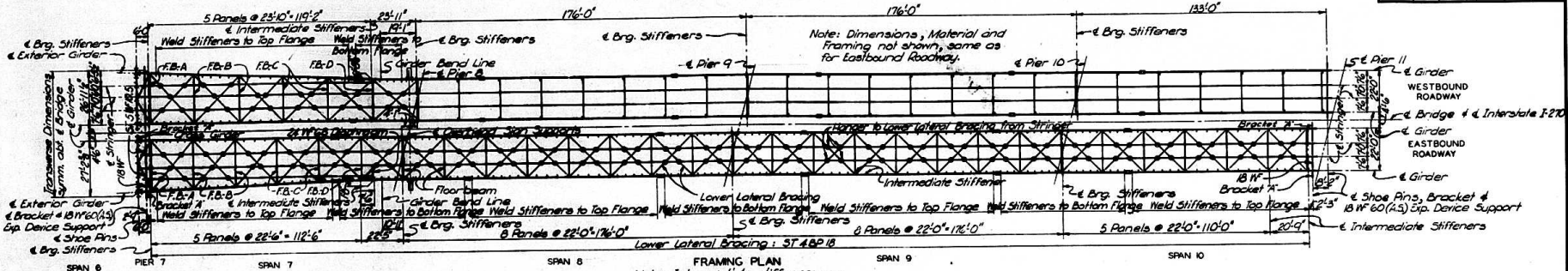
DETAIL OF ANCHOR BOLT
(204 - 1\"/>

**BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS**

PROJECT 1-270-5
ROUTE 1-270
ST. LOUIS, MO.-MADISON CO., ILL.
BEAM AND GIRDER SHOES-
SPANS 3 TO 6 & 28 TO 39

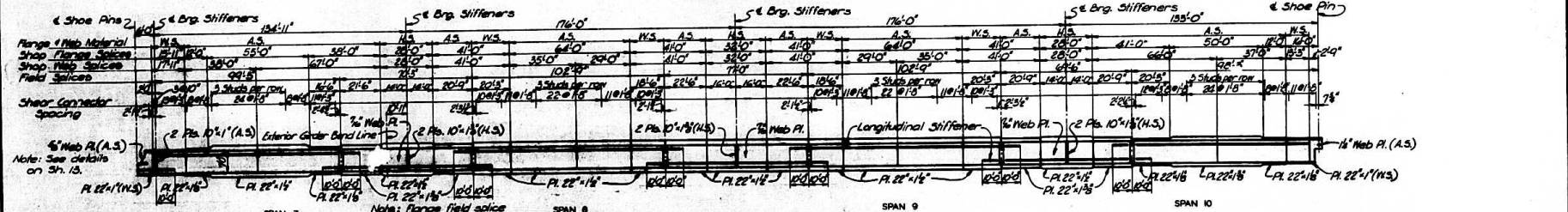
DRAWN BY: J. H. HARRIS, JUNIOR, P.E.
 CHECKED BY: G. C. WILSON, JR., P.E.
 DATE: 10/27/53

REV. NO.	DATE	REV. BY	REV. NO.	DATE	REV. BY	TOTAL SHEETS
3	MS.	1-270-3	19			341
7	MS.					



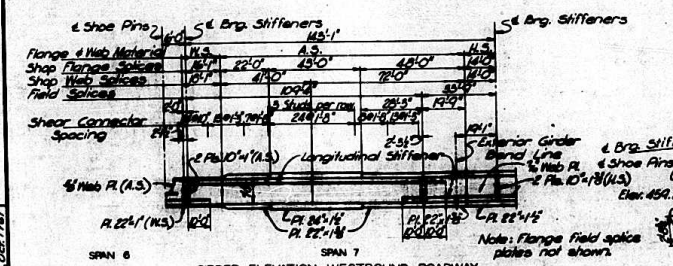
Note: FB indicates Floorbeam. Floorbeams of piers have been designed for jacking of steel superstructure.

Note: Intermediate stiffeners are 2 1/2" x 1/4" (MS) and shall be placed normal to girder web except on exterior girders in Span 7 at floorbeams B, C & D. Stringers are 24" W 60.

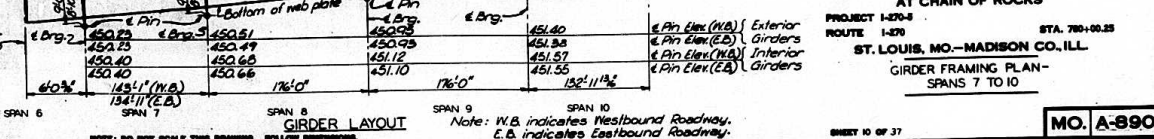


GIRDER ELEVATION-EASTBOUND ROADWAY
 Note: Longitudinal stiffeners are 6" x 1/2" Pls. (See Notes).
 Web plates are 3/8" except as otherwise shown at each end of girder and at intermediate piers.
 For shear connectors use 4 studs per row unless otherwise noted.

NOTES
 For details of Expansion Device, see Sheets 24 and 25.
 Longitudinal stiffener material to be same as shown for web plates.
 Top flange plates are same as shown for bottom flange. Note 24" wide plates in Span 7, Westbound Roadway.
 For Girder Details, see Sheet 13.
 For Cross Section and Girder Details, see Sheet 14.
 For Cross Sections and Cross Girder, see Sheet 15.
 For details of Shoes, see Sheet 16.



GIRDER ELEVATION-WESTBOUND ROADWAY
 Note: Material not shown and Spans 8, 9 and 10 same as for Eastbound Roadway Girders.



NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

Note: W.B. indicates Westbound Roadway. E.B. indicates Eastbound Roadway.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-07-4
 ROUTE 1-270
 STA. 780+0.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 GIRDER FRAMING PLAN—SPANS 7 TO 10

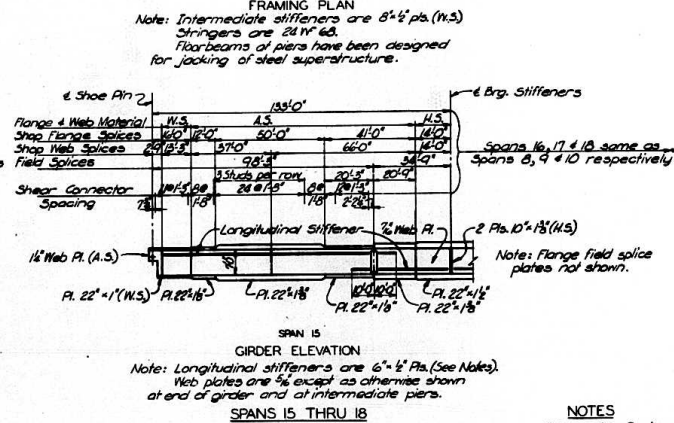
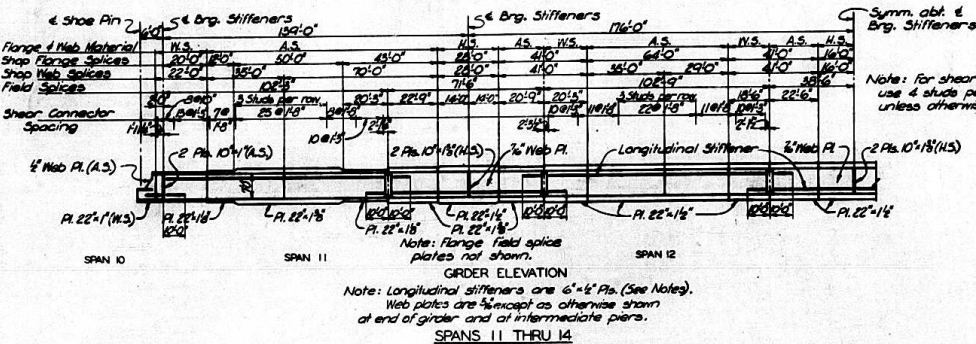
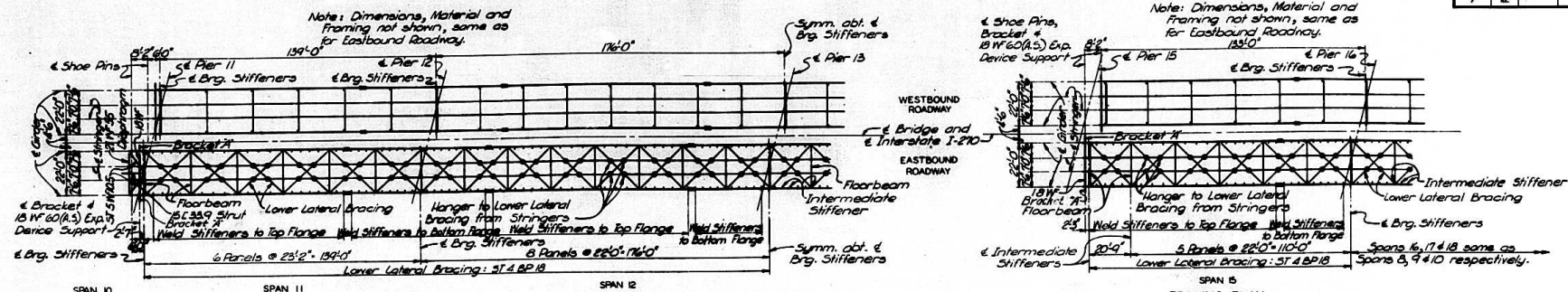
MO. A-890

DRAWN BY: M.C. ZURBRUG
 CHECKED BY: G.C. WILSON
 DATE: 12/1/74

OVERDRUP & PARZEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

SHEET 10 OF 37

NO. ROAD DIST. NO.	DATE	NO. AS. PROJ. NO.	SCALE	SHEET NO.	TOTAL SHEETS
7	BL	1-270-2	1"	34	J



NOTES

- For details of Expansion Device, see Sheets 25 and 26.
- Longitudinal stiffener material to be same as shown for web plates.
- Top flange plates are same as shown for bottom flange.
- For Girder Details, see Sheet 13.
- For Camber Diagrams and Stringer Details, see Sheet 14.
- For Cross Sections, see Sheet 15.
- For details of Shoes, see Sheet 16.
- For Framing Plan and Girder Elevation of spans 8, 9 and 10, see Sheet 10.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-270-2 STA. 760+00.25
ROUTE 1-270

ST. LOUIS, MO.-MADISON CO., ILL.

GIRDER FRAMING PLAN - SPANS 11 TO 18

DESIGNED BY: M.C. FURBER, M.A.S.C.E.
CHECKED BY: C.G. WILSON, M.A.S.C.E.
DATE: 7/27/70

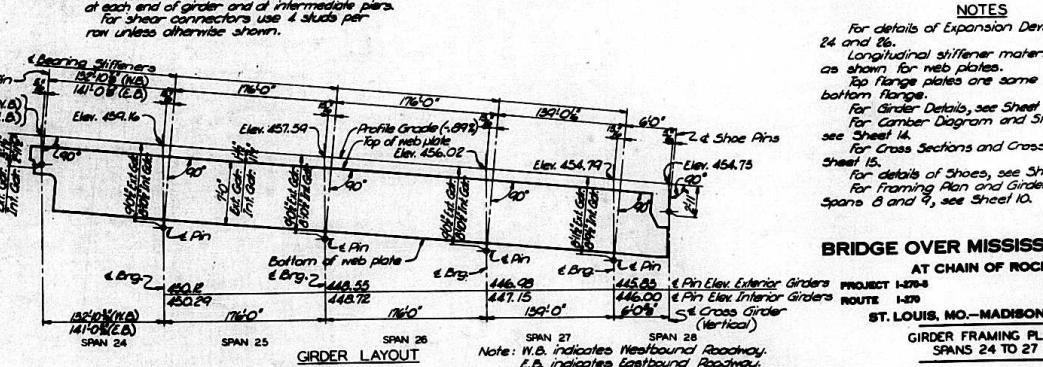
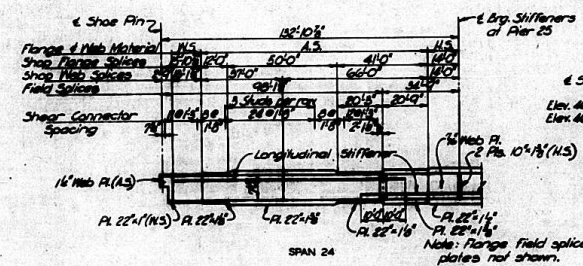
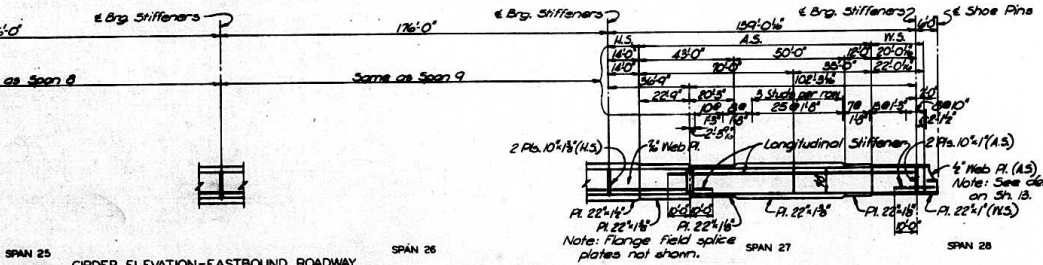
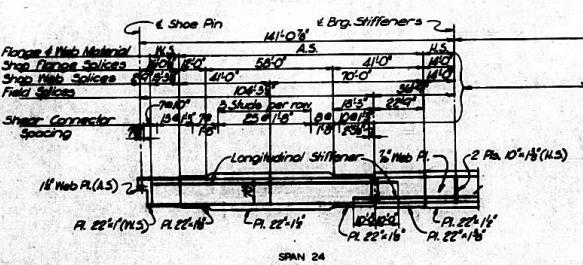
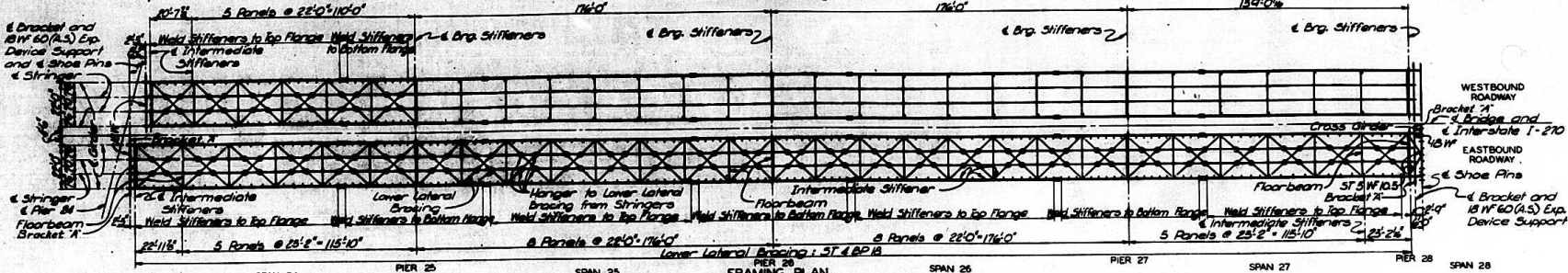
OVERQUIP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

GIRDER LAYOUT
NOTE: W.B. INDICATES WESTBOUND ROADWAY.
E.B. INDICATES EASTBOUND ROADWAY.

SHEET 11 OF 37
MO. A-990

NO.	DATE	BY	CHKD.	APP. FOR	SCALE	TITLE
1						
2						
7						

Note: Dimensions, Material and Framing not shown, same as for Eastbound Roadway.



NOTES

- For details of Expansion Device, see Sheets 24 and 26.
- Longitudinal stiffener material to be same as shown for web plates.
- Top flange plates are same as shown for bottom flange.
- For Girder Details, see Sheet 13.
- For Camber Diagram and Stringer Details, see Sheet 14.
- For Cross Sections and Cross Girder, see Sheet 15.
- For details of Shoes, see Sheet 16.
- For Framing Plan and Girder Elevation of Spans 8 and 9, see Sheet 10.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-274
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
GIRDER FRAMING PLAN—
 SPANS 24 TO 27

DRAWN BY: M.C. DUNN, MAY 1961
 CHECKED BY: C.C. DUNN, MAY 1961
 15757

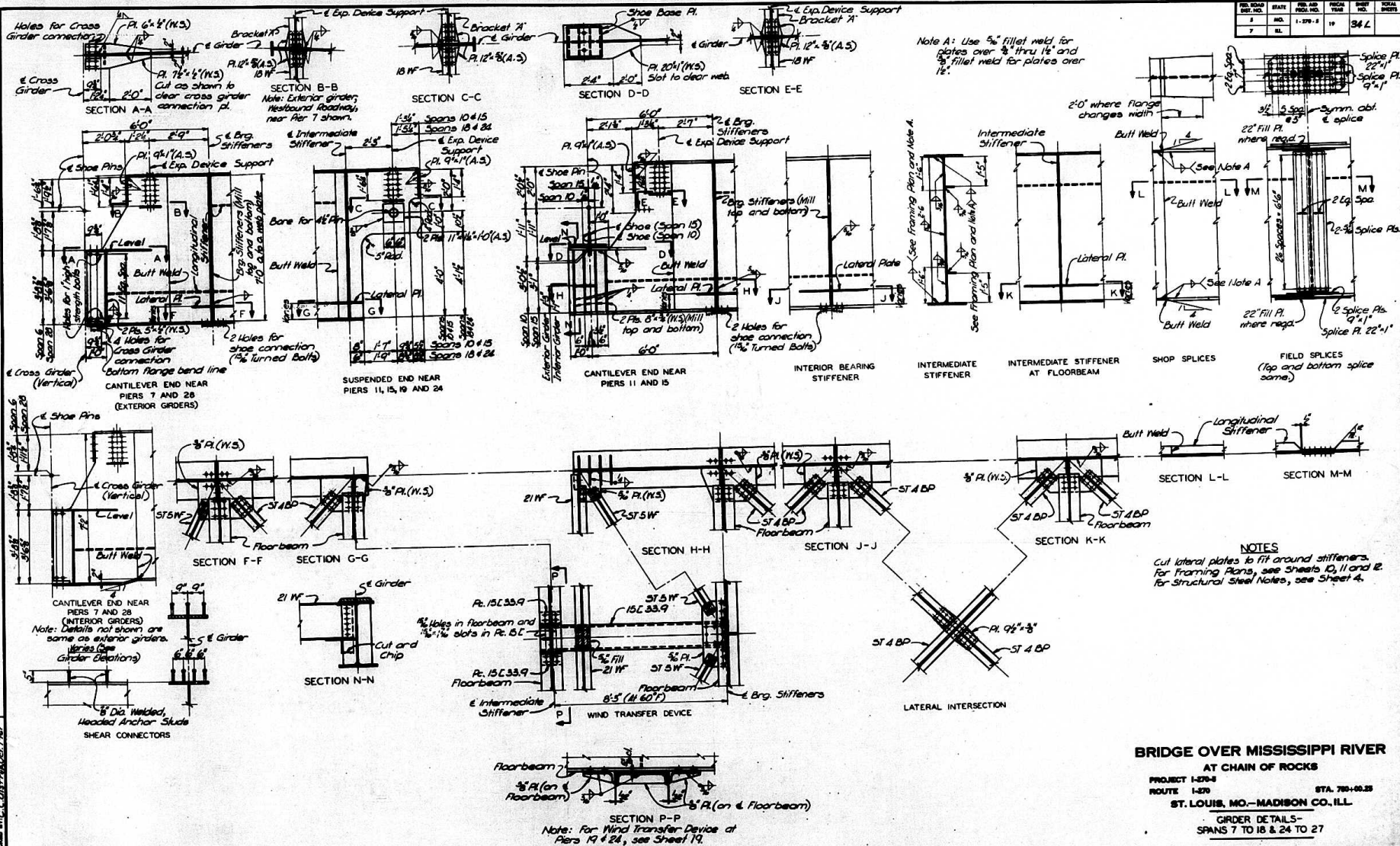
OVERBURY & PARSONS AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 12 OF 37

MO. A-990

REV.	DATE	BY	CHK.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1				1-378-S	19	34 L
2						
7						



BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS

PROJECT 1-378-A
 ROUTE 1-378
 ST. LOUIS, MO.—MADISON CO., ILL.

GRIDER DETAILS—
 SPANS 7 TO 16 & 24 TO 27

DRAWING BY: M.C. LUTHERS, June 1961
 CHECKED BY: G.C. WILSON, Oct. 1961
 1899
 6250

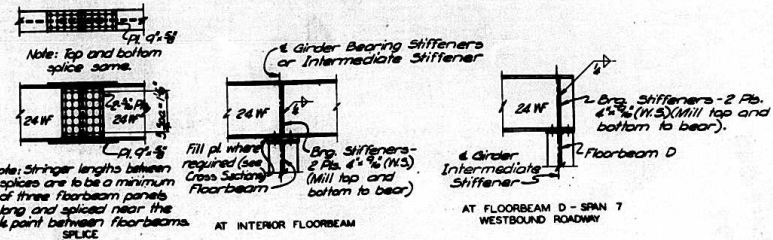
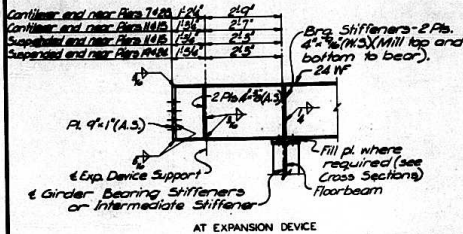
EVENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

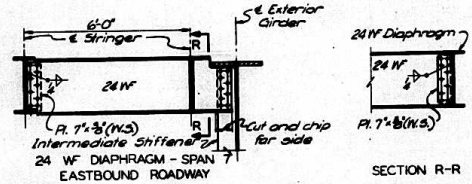
MO. A-390

SHEET 13 OF 37

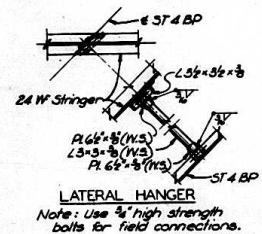
REV.	DATE	BY	CHK.	APP.	DESCRIPTION
1	1-27-53				
7	EL.				



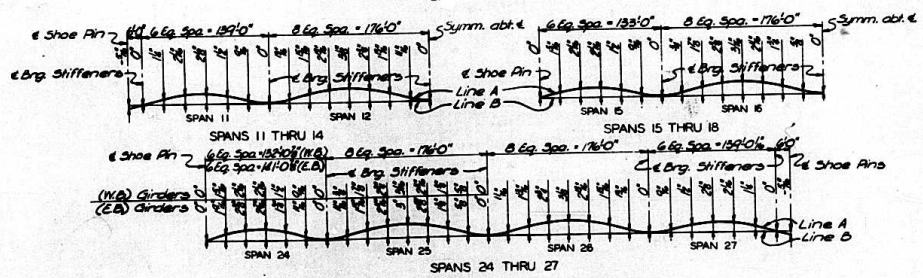
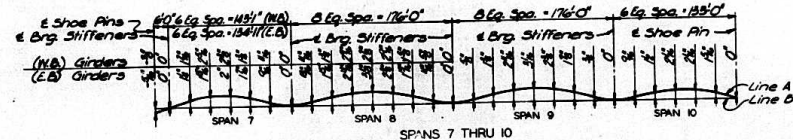
STRINGER DETAILS



SECTION R-R

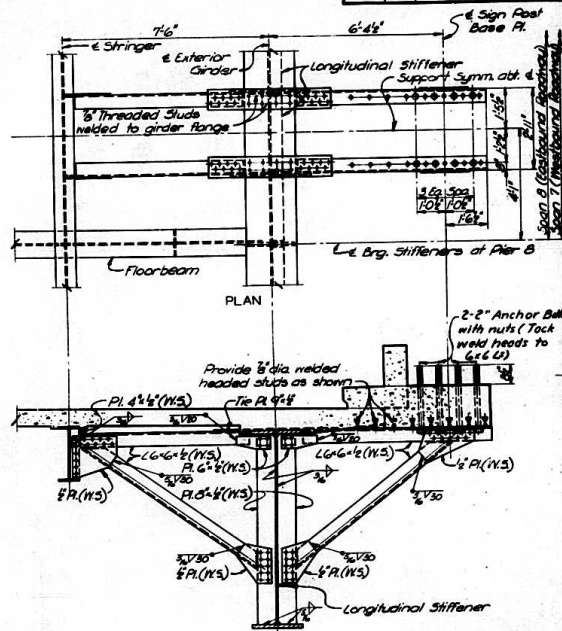


LATERAL HANGER
Note: Use 3/4\"/>



GIRDER DEAD LOAD CAMBER DIAGRAMS

Line A indicates top of web plate before dead load deflection occurs. Line B indicates top of web plate after calculated deflection has occurred under full dead load, excluding future wearing surface. The dead load deflection due to weight of steel only equals about 17% of above ordinates.
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



SECTION NEAR SUPPORT

OVERHEAD SIGN SUPPORT
Note: Sign Post is not part of this contract.

NOTES
For Framing Plans, see Sheets 10, 11 and 12.
For Structural Steel Notes, see Sheet 4.

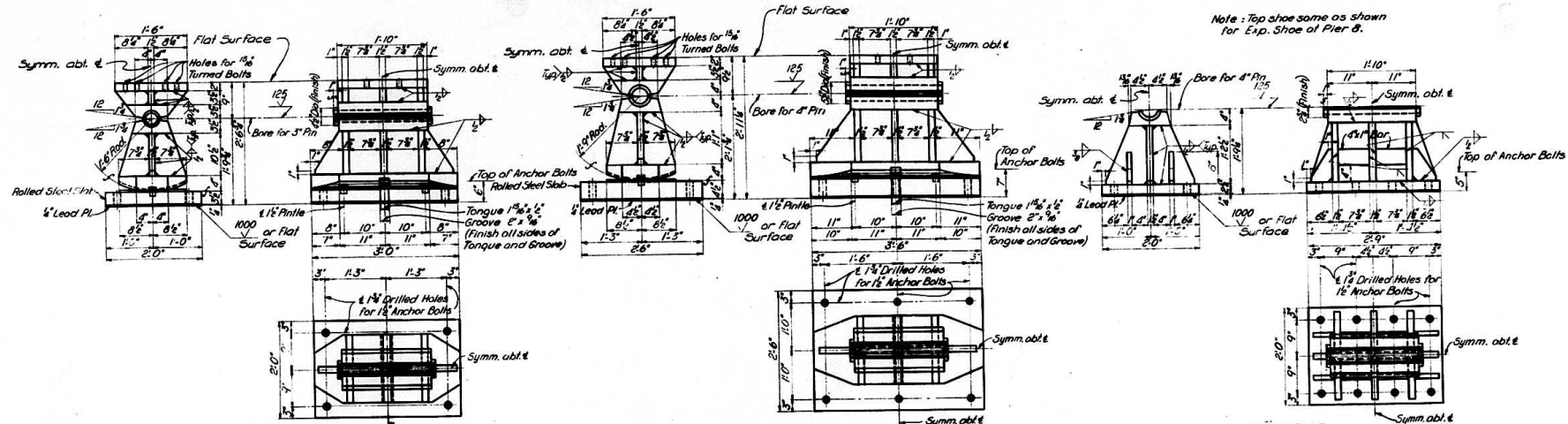
BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

PROJECT 1-200-3
ROUTE 1-270
ST. LOUIS, MO.-MADISON CO., ILL.
GIRDER DETAILS -
SPANS 7 TO 18 & 24 TO 27

DESIGNED BY: M.C. BROWN, L.S. 104
 CHECKED BY: C.C. WILSON, C.E. 1761
 1836
 CIVIL

SVENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.	1-370-3	19	340	
7	ILL.				



Note: Top shoe same as shown for Exp. Shoe of Pier 8.

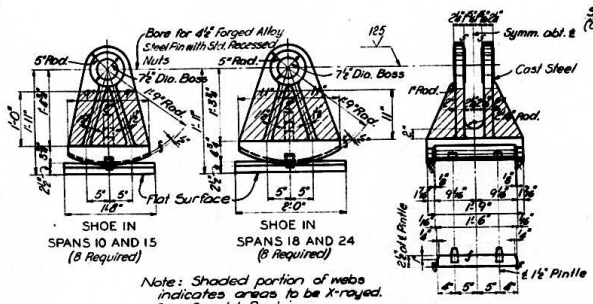
EXPANSION SHOE AT PIERS 7, 11, 15 AND 28 (16 Required)

EXPANSION SHOE AT PIERS 8, 10, 12, 14, 16, 18, 23 AND 27 (32 Required)

FIXED SHOE AT PIERS 9, 13, 17 AND 26 (16 Required)

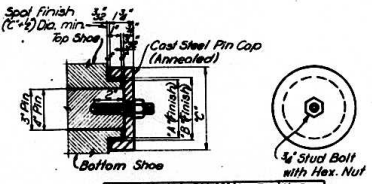
NOTES

For Shoe Notes, see Sheet 9.
Shoe pin under exterior girder at Pier 7 is perpendicular to girder.



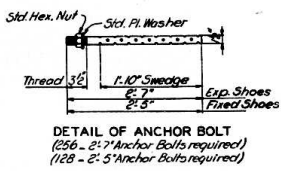
EXPANSION SHOE AT GIRDER HINGES

Note: Shaded portion of webs indicates areas to be X-rayed. See Special Provisions.

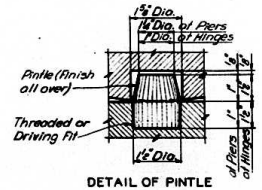


DETAIL OF PIN CAP

Pin Dia.	1 1/2"	1 3/4"	2"	2 1/4"	2 3/4"	3"	No. Pins No. Caps
3"	4	5	6	6	16	32	
4"	5	5	7	7	20	40	40



DETAIL OF ANCHOR BOLT (256 - 2 1/2" Anchor Bolts required) (128 - 2" Anchor Bolts required)



DETAIL OF PINTLE

DRAWN BY: E.F. WILSON, M.A.S.C.E., P.E.
 CHECKED BY: G.C. WILSON, O.C.E., P.E.
 1838

OVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

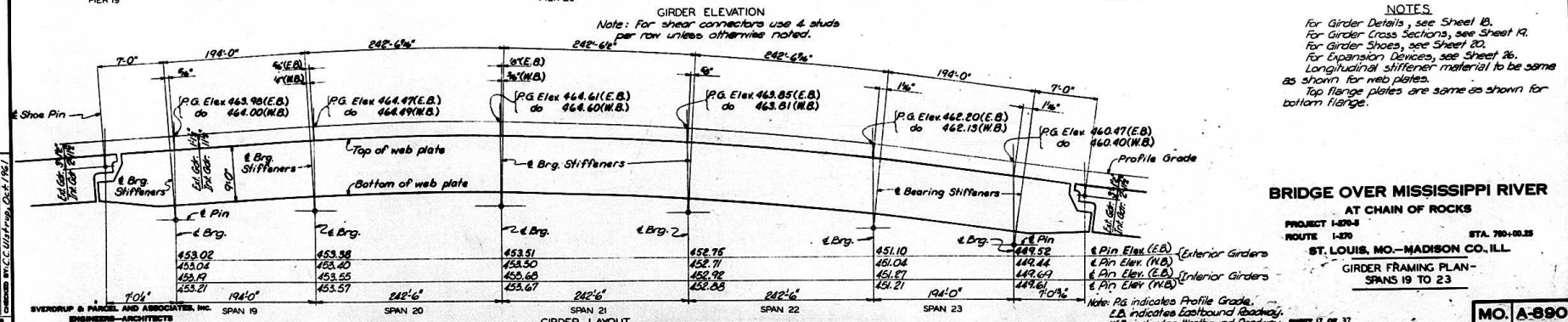
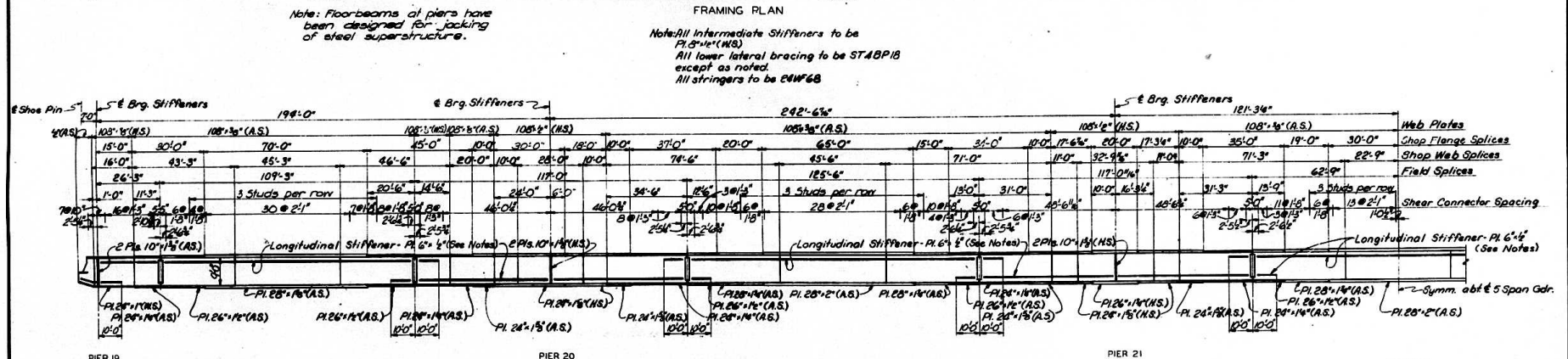
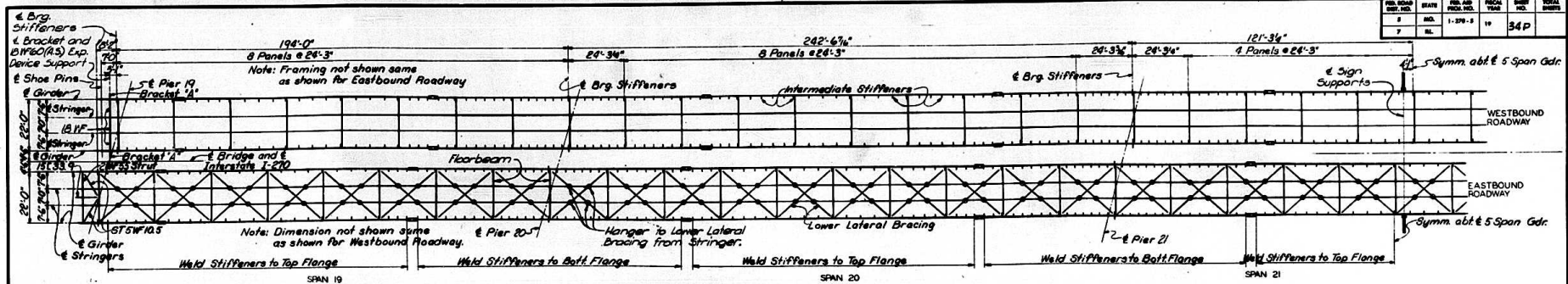
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 16 OF 37

MO. A-890

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-370-3
 ROUTE 1-570
 ST. LOUIS, MO.-MADISON CO., ILL.
 GIRDER SHOES -
 SPANS 7 TO 18 & 24 TO 27
 STA. 700+00.25

REV.	DATE	BY	CHK.	APP.	DESCRIPTION
1	1-27-53	19			
2					
3					
4					
5					
6					
7					



NOTES

For Girder Details, see Sheet 18.

For Girder Cross Sections, see Sheet 19.

For Girder Shoes, see Sheet 20.

For Expansion Devices, see Sheet 26.

Longitudinal stiffener material to be same as shown for web plates.

Top flange plates are same as shown for bottom flange.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

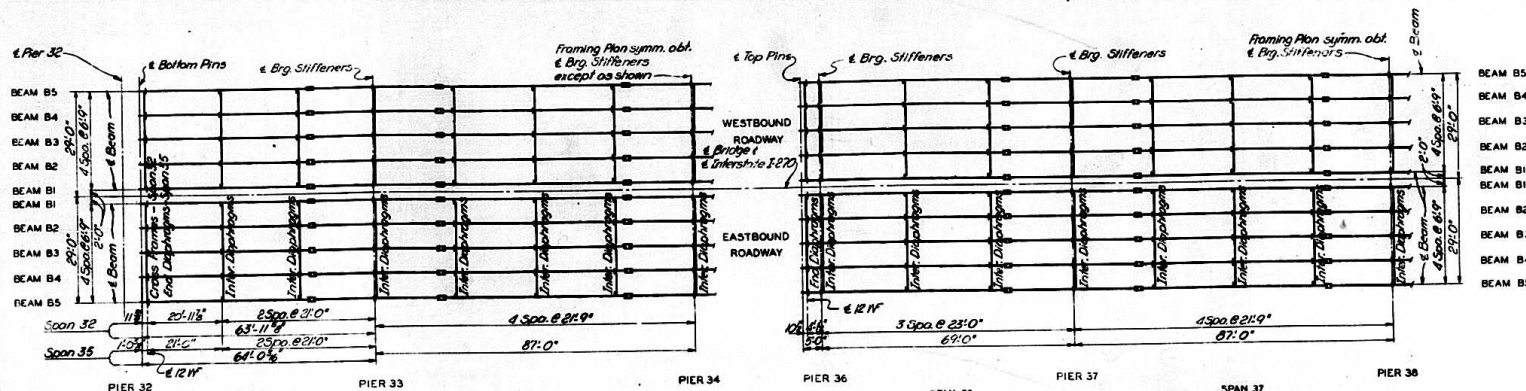
PROJECT L-809
 ROUTE I-270

STA. 700+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.

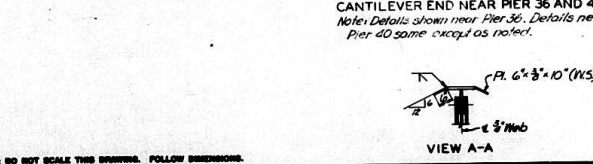
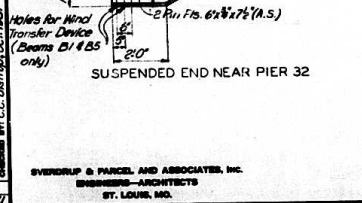
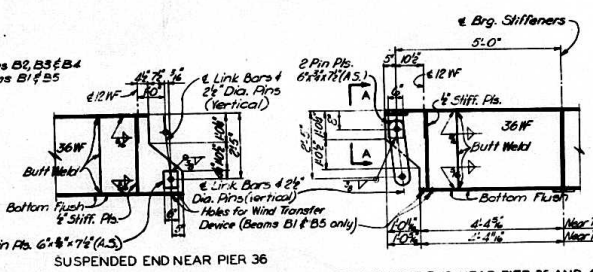
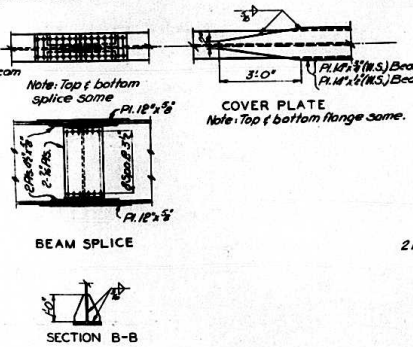
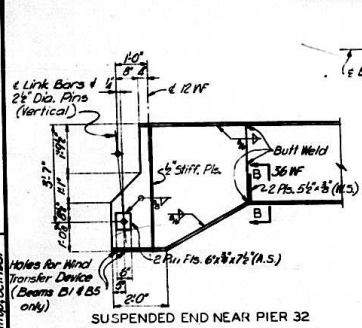
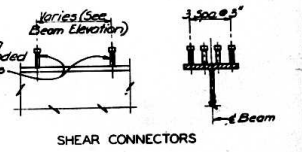
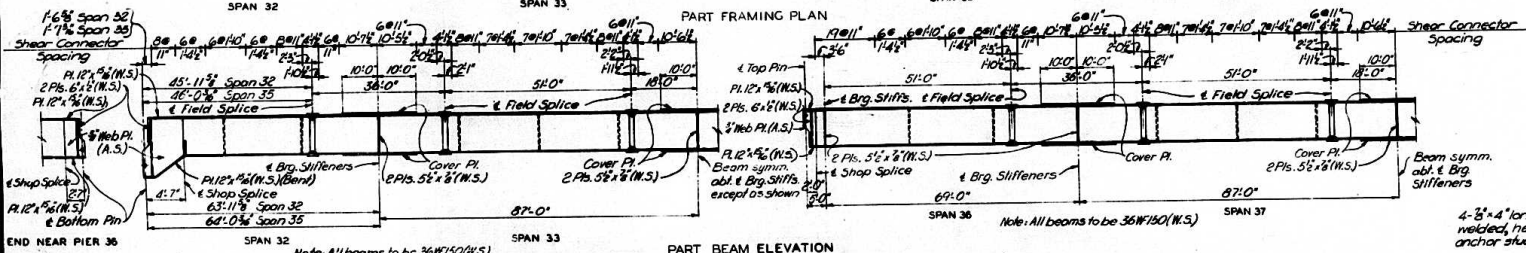
GIRDER FRAMING PLAN—
 SPANS 19 TO 23

DRAWN BY: V.L. Strickland, April 1, 1954
 CHECKED BY: C.C. Williams, Oct. 7, 1954
 1836
 628740

REV.	DATE	BY	CHK.	APP.	NO.
6	IND.	1-27-8	19		347
7	BL.				



NOTES
 For Beam Layout, Cross Sections, Wind Transfer Device and Hinge Details, see Sheet 22.
 For details of Expansion Devices, see Sheet 23.
 For details of shoes, see Sheet 9.



BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-27-8 STA. 780-0.25
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 BEAM FRAMING PLAN—
 SPANS 32 TO 39

DRAWN BY: E.P. WHELAN, APRIL 1961
 CHECKED BY: C.C. DIERSPY, OCT. 1961
 DESIGNED BY: C.C. DIERSPY, OCT. 1961
 45171

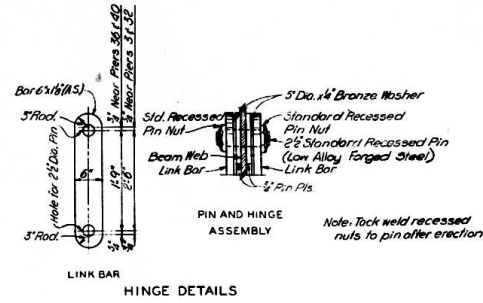
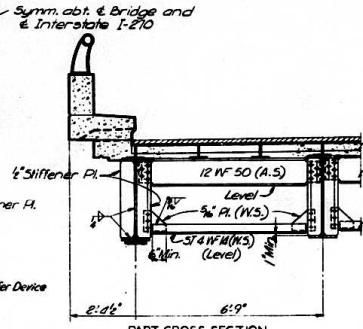
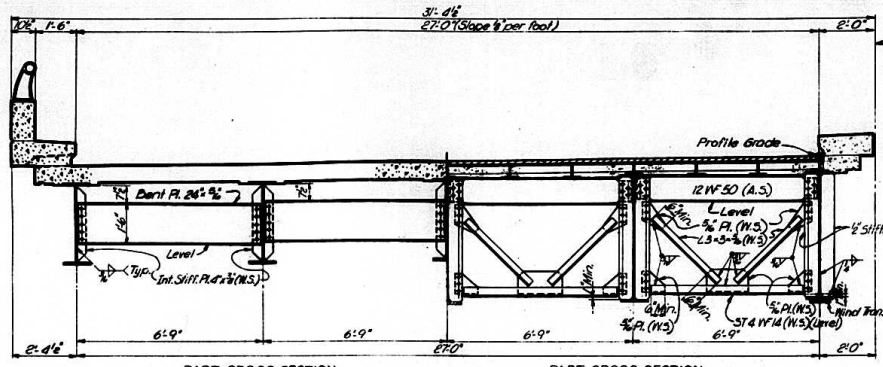
OVERSHP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 21 OF 37

MO. A-820

P.L. DRAW. NO.	DATE	P.L. AD. NO.	P.L. AD. DATE	SHEET NO.	TOTAL SHEETS
7	BL		1-27-81	19	34U

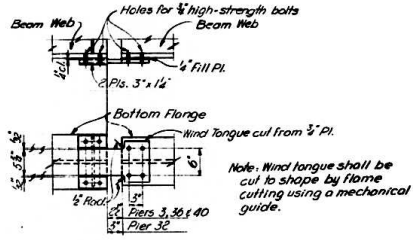
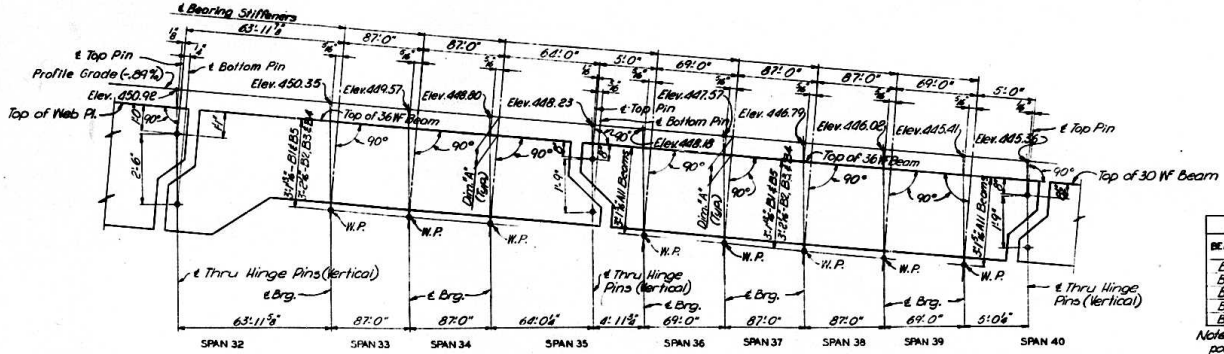


PART CROSS SECTION NEAR INTERMEDIATE DIAPHRAGMS
Intermediate diaphragms of piers some except for bearing stiffeners. See Sheet 21 for detail of bearing stiffener.
Note: Connect diaphragms with 3/4\"/>

PART CROSS SECTION NEAR CROSS FRAMES AT HINGE IN SPAN 32
Note: Use 3/4\"/>

PART CROSS SECTION NEAR END DIAPHRAGMS AT HINGE IN SPANS 35 AND 40
Note: Use 3/4\"/>

ROADWAY CROSS SECTION SPANS 32 THRU 39

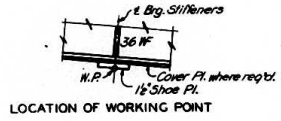


WIND TRANSFER DEVICE
Note: Wind Transfer Device of Piers 32, 36 and 40 to be on Beams B1 & B5 only. At Pier 3 on Beams B1 & B6 only.
Wind Transfer Device shown in normal position at 60°.

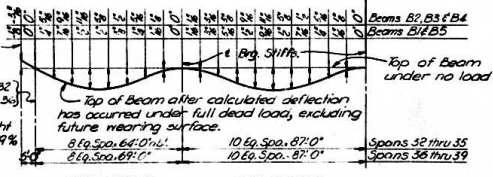
BEAM	DIM ^W	ELEVATIONS OF WORKING POINT							
		PIER 33	PIER 34	PIER 35	PIER 36	PIER 37	PIER 38	PIER 39	PIER 40
B1	8"	446.53	447.73	448.95	449.40	449.73	449.97	449.20	441.63
B2	8"	446.53	447.56	448.88	449.33	449.66	449.88	449.11	441.55
B3	10"	446.56	447.59	448.91	449.36	449.69	449.91	449.14	441.48
B4	10"	446.50	447.53	448.85	449.30	449.63	449.85	449.08	441.42
B5	11"	446.24	447.27	448.59	449.04	449.37	449.59	448.82	441.35

Note: Dimension 'A' is true only of 1/2\"/>

BEAM LAYOUT



Note: Deflections due to weight of steel only equate about 47% for beams B2, B3, B4 and 23% for beams B1 & B5 ordinates shown.



DEAD LOAD DEFLECTION ORDINATES

NOTES
for Framing Plan, see Sheet 21.
for Structural Steel Notes, see Sheet 4.

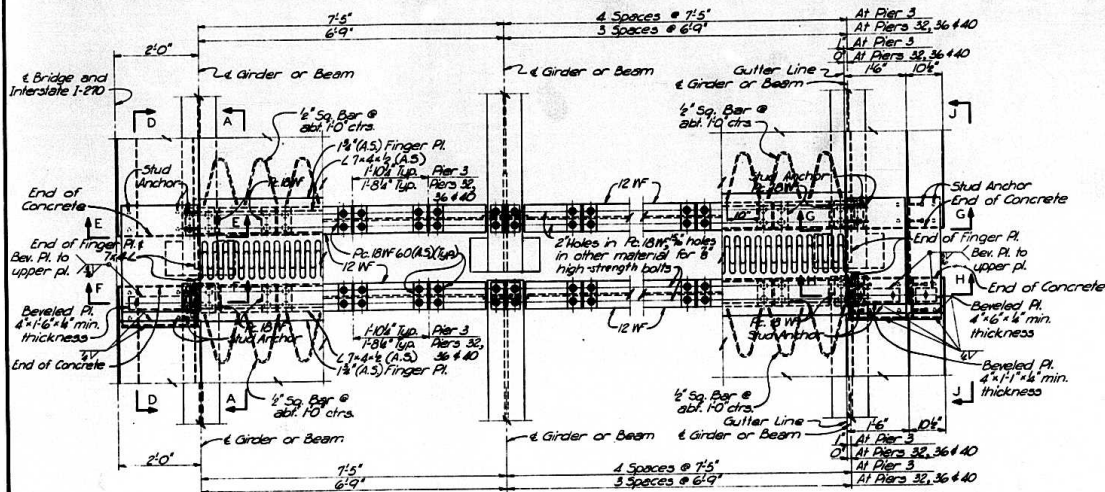
BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT I-270-S
ROUTE 1-270 STA. 780+00.25
ST. LOUIS, MO.—MADISON CO., ILL.
BEAM DETAILS—
SPANS 32 TO 39

DRAWN BY: F.P. NORTON, MAR 01 1981
 CHECKED BY: L.C. URRUTIA, OCT 1981
 1838
 8/27/82

SVENDRUP & PANCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

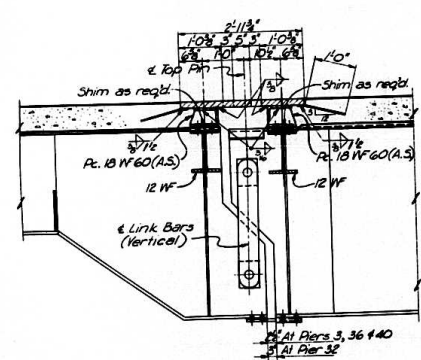
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	AL	1-370-5	19	34 V	



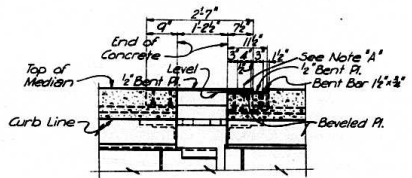
PLAN
 Note: Expansion device at Pier 3, Eastbound Roadway shown. Expansion devices at Piers 32, 36 and 40, Westbound Roadway, are similar and as noted.

EXPANSION DEVICE NOTES
 Expansion devices are shown in a normal position at a temperature of 60°F.
 Flame cutting of finger plates shall be as narrow as practicable and shall not exceed 1/4" in width. A mechanical guide shall be used to guide the cutting torch. All burrs shall be ground smooth.
 Dimensions shown for finger plates are based on 1/8" loss in metal.
 Finger plates may be furnished in convenient lengths with permissible joints as shown on Sheet 26.
 All field connections to be 5/8" high-strength bolts unless otherwise noted.

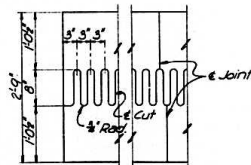
Note 1/4" x 1/2" x 1/4" slots in upper pl. and beveled pl., 1/2" holes in bottom pl. for 3/8" bolts. Weld 3/8" nut to bottom pl. Remove bolt after concrete has set.



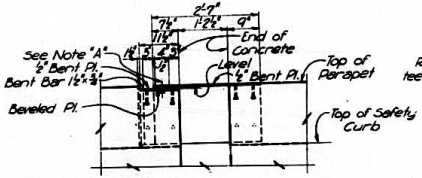
SECTION A-A
 Note: Section shown at Pier 3. Sections at Piers 32, 36 and 40 are similar and as noted.



SECTION D-D
 Note: Detail of safety curb similar.



FINGER PLATES



VIEW J-J

NOTES
 For Sections E-E, F-F, G-G and H-H, see Sheet 26.
 For Framing Plans, see Sheets 4, 6, 7 and 21.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
 PROJECT 1-370-5
 ROUTE 1-370 STA. 780+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 EXPANSION DEVICES
 NEAR PIERS 3, 32, 36 AND 40

DRAWN BY: M.C. CURTIS, Nov. 1961
 CHECKED BY: JAMES W. HARRIS
 CONSULTING ENGINEER: WILLIAM W. MANN, P.E.

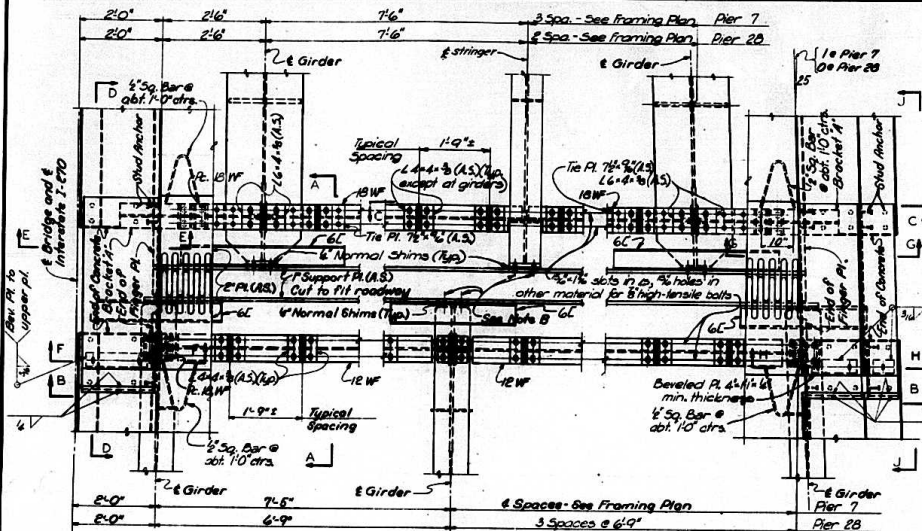
SYVERUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

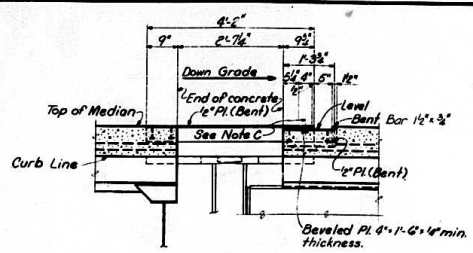
SHEET 23 OF 37

MO. A-890

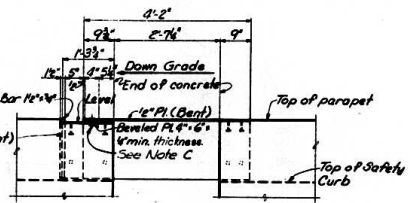
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2	MO.	1-270-5	19	34 W	
7	IL				



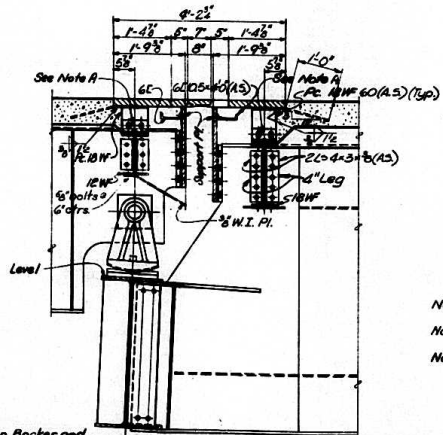
PLAN
 Note: Plan shown for expansion device at Pier 7, Eastbound Roadway. Expansion device at Pier 28, Westbound Roadway, similar.



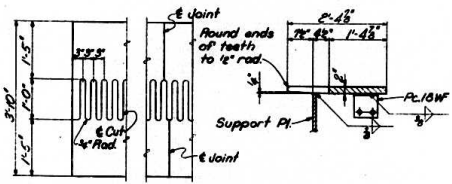
SECTION D-D
 Details of safety curb similar



VIEW J-J

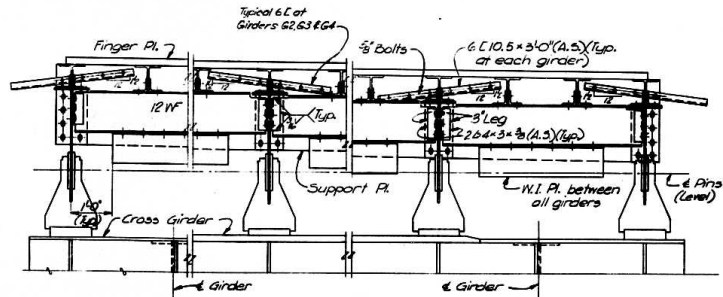


SECTION A-A
 Note: Section of Safety Curb same.



CUTTING PLAN
 FINGER PLATES

Note A: 1/4" x 1/4" slots in 1/2" holes in P.C. 18WF for 3/8" high-strength bolts.
 Note B: 1/4" x 1/4" slots in connection pl. 1/2" holes in support pl. and shims for 3/8" high-strength bolts.
 Note C: 1/4" x 1/4" slots in upper pl. and beveled pl. 1/2" holes in bottom pl. for 3/8" bolts. Weld 3/8" nut to bottom pl. Remove bolt after concrete has set.



SECTION B-B
 (Concrete not shown)

NOTES
 For Expansion Device Notes, see Sheet 23
 For Framing Plan, see Sheets 6, 7, 10, 4, 12
 For Sections C-C, E-E, F-F, G-G and H-H, see Sheet 26. In Section C-C omit 15E with support D.

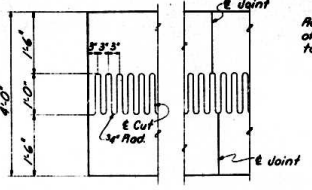
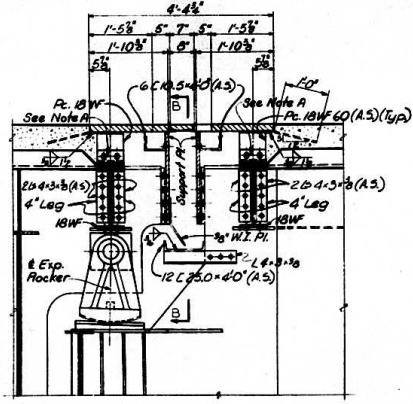
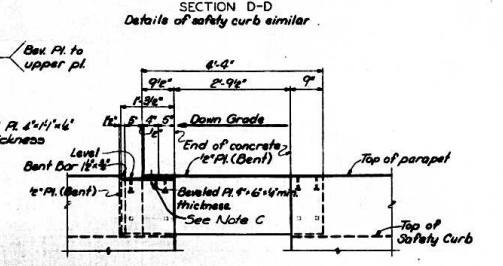
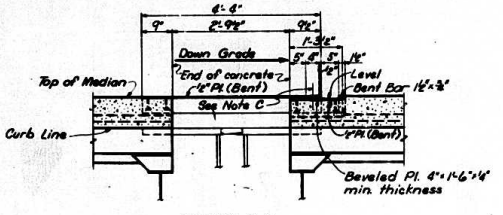
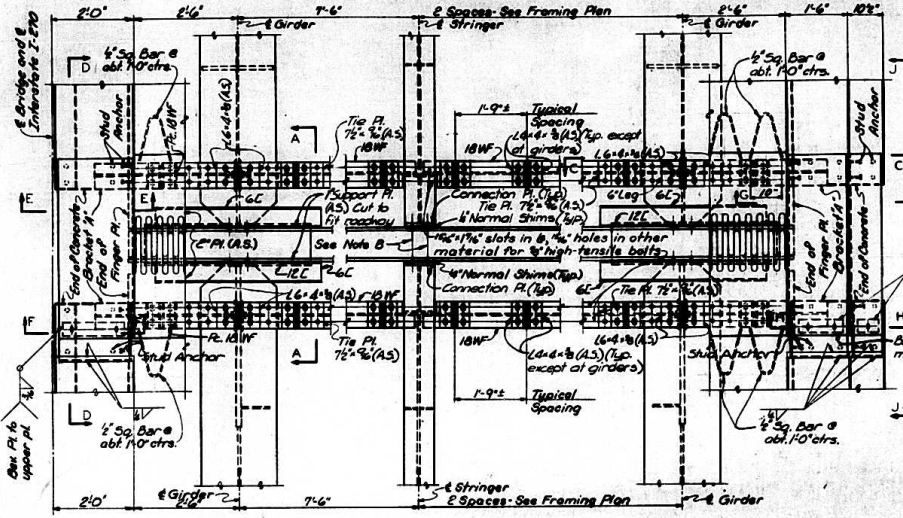
BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270
 STA. 700.00-25
 ST. LOUIS, MO.-MADISON CO., ILL.
 EXPANSION DEVICES
 NEAR PIERS 7 & 28

DRAWN BY: L. STRICKLAND, June 1961
 CHECKED BY: C.C. HARRISON, Oct. 1961
 1838
 2/19/61

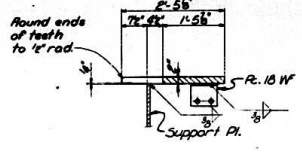
SVERDRUP & PARSONS AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

REV.	DATE	BY	APP.	REASON
1	1-27-8	ML		
2	ML			
3	ML			



FINGER PLATES



- Notes:
- Note A: $\frac{1}{4}$ " x $\frac{1}{4}$ " slots in $\frac{1}{8}$ " holes in Pc.
 - Note B: $\frac{1}{4}$ " x $\frac{1}{4}$ " slots in connection pl. $\frac{1}{4}$ " holes in support pl and shims for $\frac{1}{8}$ " high-strength bolts.
 - Note C: $\frac{1}{4}$ " x $\frac{1}{4}$ " slots in upper pl and beveled pl. $\frac{1}{4}$ " holes in bottom pl for $\frac{3}{8}$ " bolts. Weld $\frac{1}{8}$ " sq. nut to bottom pl. Remove bolt after concrete has set.

NOTES
For Expansion Device Notes, see Sheet 23
For Framing Plan, see Sheets 10 & 11
Sections B-B, C-C, E-E, F-F, G-G and H-H similar to same sections shown on Sheet 26

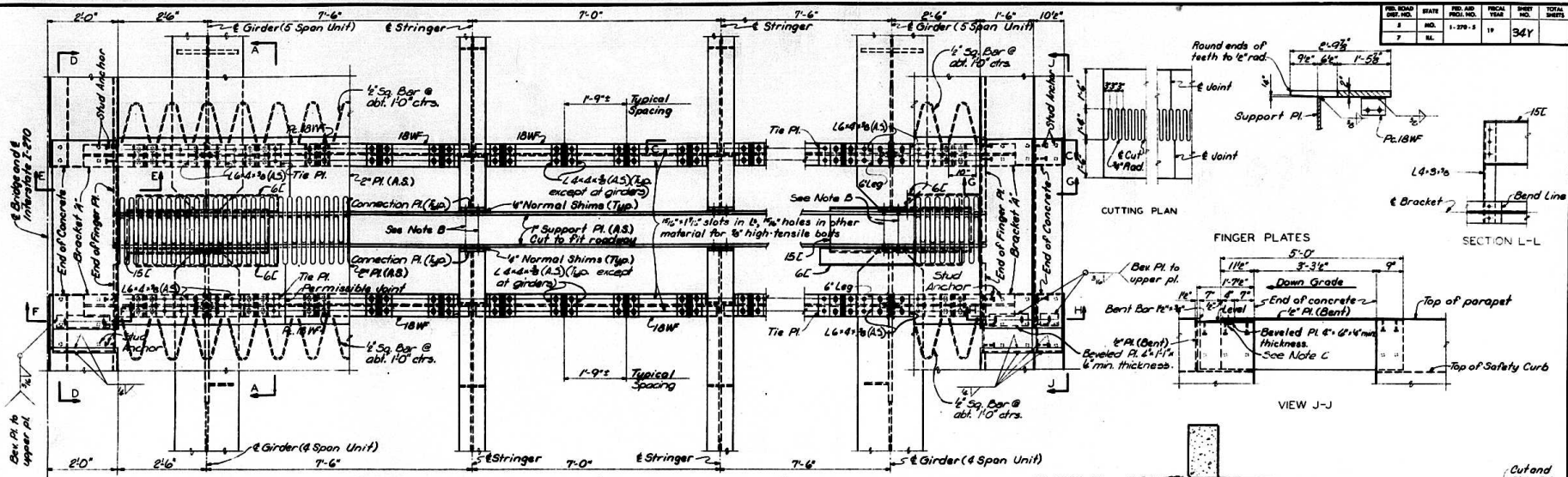
BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
PROJECT 1-270-F
ROUTE 1-270
ST. LOUIS, MO.—MADISON CO., ILL.
EXPANSION DEVICES
NEAR PIERS 11 & 15

DRAWN BY: ILL. STRUCT. DEPT. 1962
 CHECKED BY: C. W. C. ILL. STRUCT. DEPT. 1962
 1530
 2-1-62

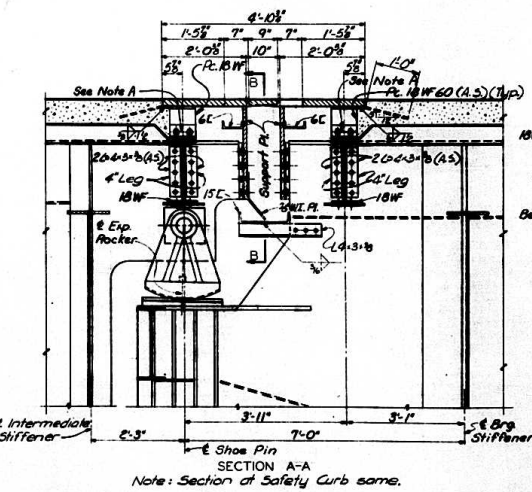
EVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

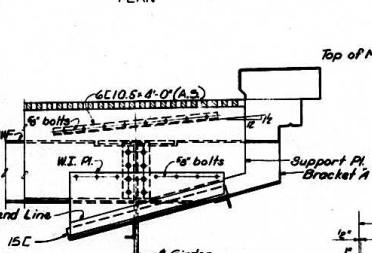
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	TOTAL PROJECT MILES	SHEET NO.	TOTAL SHEETS
7	MO.	1-270-5	19	34Y	



PLAN

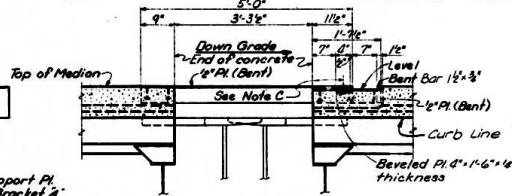


SECTION A-A
Note: Section of Safety Curb same.

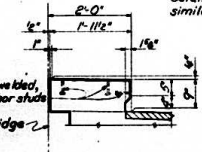


SECTION B-B

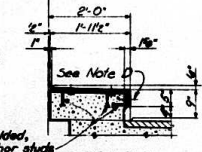
Note A: $\frac{1}{8}$ " x $\frac{1}{8}$ " slots in $1\frac{1}{2}$ " holes in P.C. 18WF for $\frac{3}{8}$ " high-strength bolts.
 Note B: $\frac{1}{8}$ " x $\frac{1}{8}$ " slots in connection pl. $\frac{1}{8}$ " holes in support pl. and shims for $\frac{3}{8}$ " high-strength bolts.
 Note C: $\frac{3}{8}$ " x $\frac{1}{8}$ " slots in upper pl. and beveled pl. $\frac{1}{8}$ " holes in bottom pl. for $\frac{3}{8}$ " bolts. Weld $\frac{1}{2}$ " sq. nut to bottom pl. Remove bolt after concrete has set.
 Note D: $\frac{1}{8}$ " x $\frac{1}{8}$ " slot in outside pl. $\frac{1}{8}$ " hole in inside pl. for $\frac{3}{8}$ " bolt. Weld $\frac{1}{2}$ " sq. nut to inside pl. Remove bolt after concrete has set.



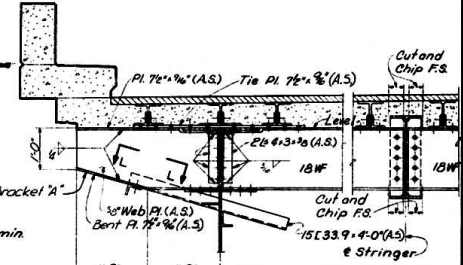
SECTION D-D
Details of safety curb similar



SECTION E-E



SECTION F-F



SECTION C-C

Note: FS indicates far Side.

NOTES
 For Expansion Device Notes, see Sheet 23
 For Framing Plan see Sheets 11 & 17

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 EXPANSION DEVICES
 NEAR PIERS 19 & 23
 STA. 760+00.25

DRAWN BY L. SPRUE, MAY 1964
 CHECKED BY R. W. COOPER, MAY 1964
 1038

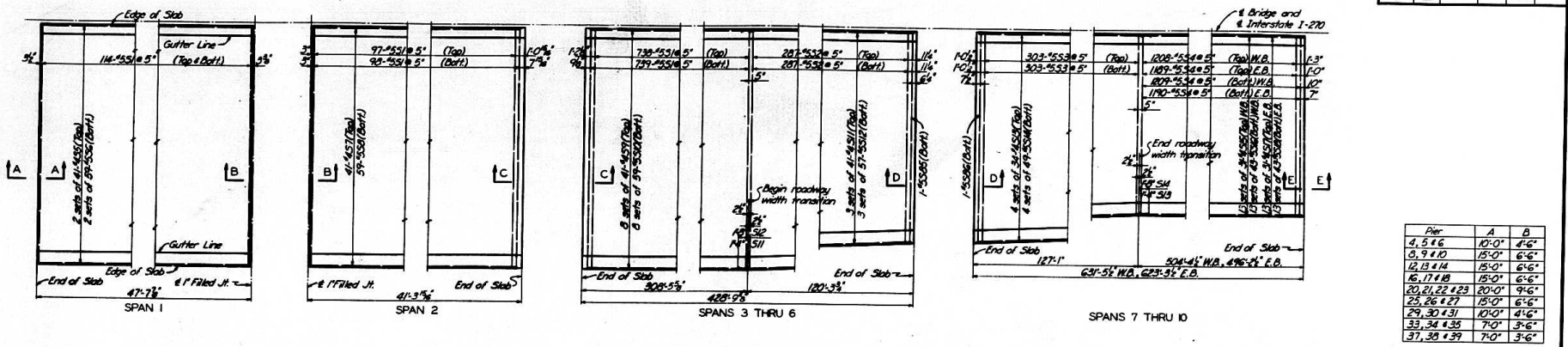
EVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

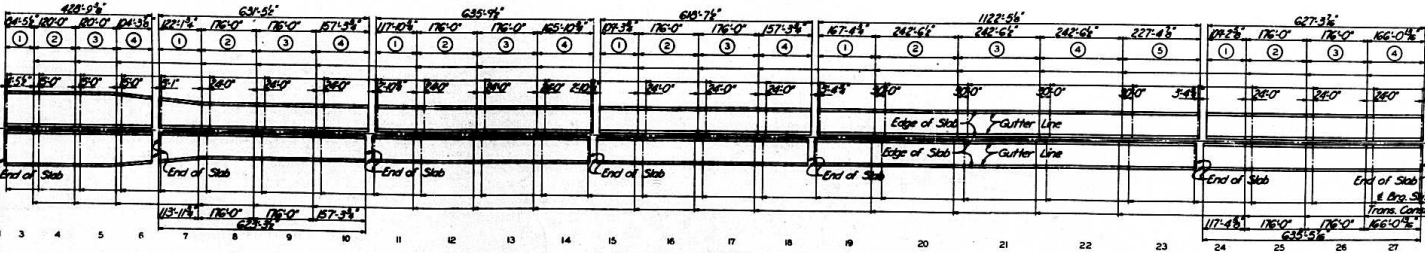
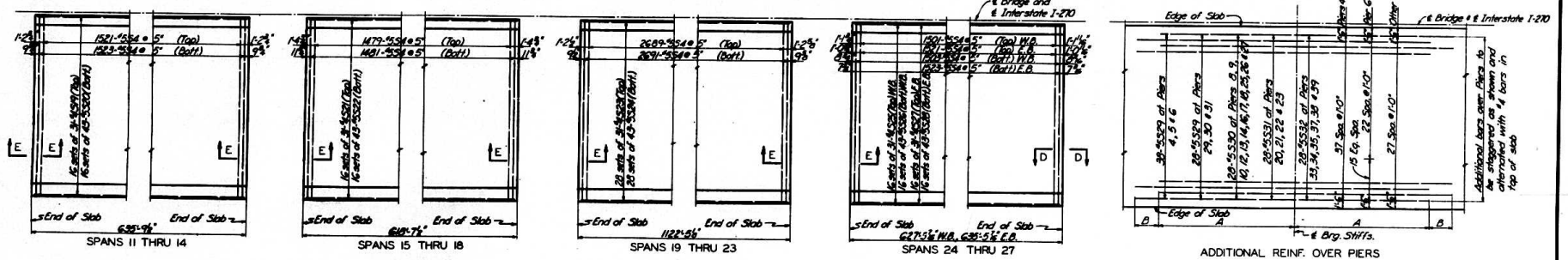
SHEET 26 OF 37

MO. A-890

REV. NO.	DATE	BY	CHKD.	REASON	TOTAL SHEETS
1	1-27-83	ML			342
2					
3					
4					
5					
6					
7					



Pier	A	B
4, 5 & 6	10'-0"	4'-6"
5, 9 & 10	15'-0"	6'-6"
12, 13 & 14	15'-0"	6'-6"
16, 17 & 18	15'-0"	6'-6"
20, 21, 22 & 23	20'-0"	9'-6"
25, 26 & 27	15'-0"	6'-6"
29, 30 & 31	10'-0"	4'-6"
33, 34 & 35	7'-0"	3'-6"
37, 38 & 39	7'-0"	3'-6"



NOTES
 All longitudinal dimensions are measured along Profile Grade.
 W.B. indicates Westbound Roadway.
 E.B. indicates Eastbound Roadway.
 See Slab Notes, Sheet 25.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
 PROJECT 1-270-3
 ROUTE 1-270
 STA. 780+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 SLAB—SPANS 1 TO 27

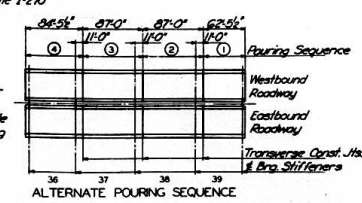
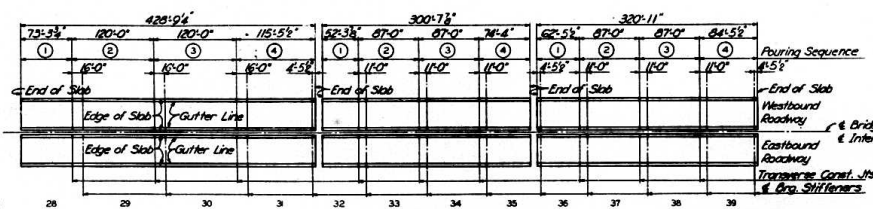
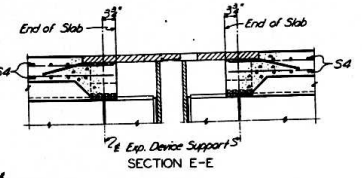
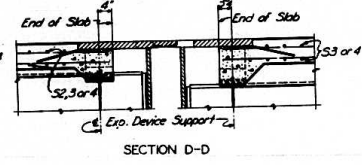
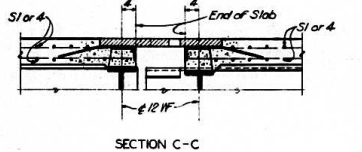
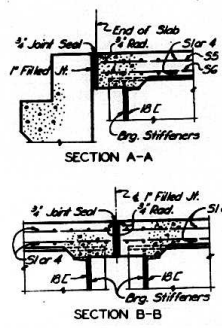
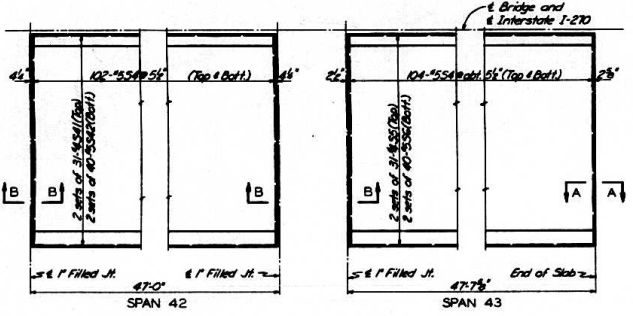
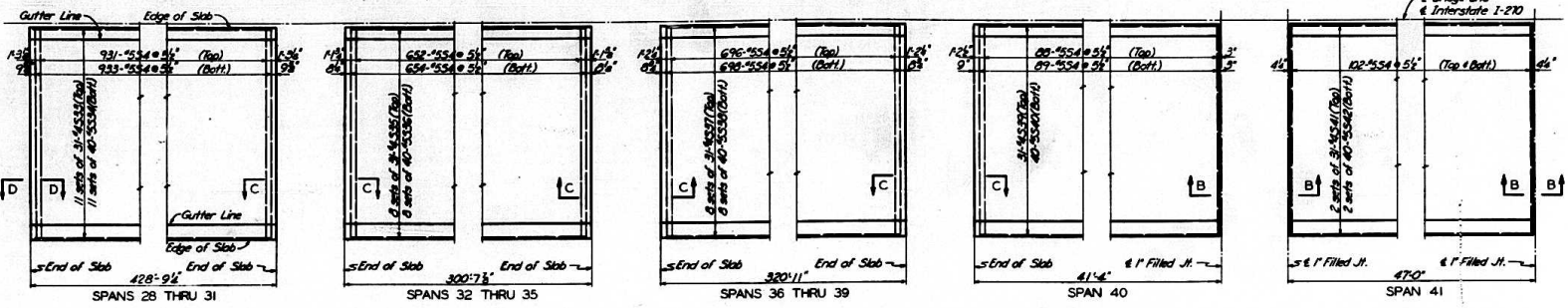
DRAWN BY: T. SANDERS, J. ALLEN, R. W. HARRIS
 CHECKED BY: C. G. LINDVOLD, G. J. P. ROY
 1838
 12/22/83

EVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

PLAN
 Note: Pairing sequence and dimensions not shown on Eastbound Roadway are same as shown on Westbound Roadway.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	MO.	1-270-1	19	54AA	



SLAB NOTES

All longitudinal dimensions are measured along Profile Grade. For Expansion Devices, see Sheets 23, 24, 25 & 26.

All hatches to be 12 on 12.

Permanent forms will not be permitted in forming the concrete slab.

Longitudinal construction joints in slab will not be permitted. The Contractor shall use an approved oscillating screed-type self-propelled mechanical finisher and such other equipment as may be required to pour and satisfactorily finish the roadway slabs at a maintained rate of not less than 45 cubic yards per hour.

See Special Provisions for required use of retarder in concrete for Spans 3 to 31 inclusive.

Note: Pouring sequence and dimensions not shown on Eastbound Roadway are same as shown on Westbound Roadway.

Note: The pouring sequence may be reversed for any continuous unit provided the transverse construction joints are placed on the opposite side of bearing stiffeners. The Alternate Pouring Sequence shown Spans 36 thru 39 as a typical example.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270
 ST. LOUIS, MO.—MADISON CO., ILL.
 SLAB—SPANS 28 TO 43

DRAWN BY: T. Sanders, A.S. ME
 CHECKED BY: C.C. USTING, C.E.T. 762
 1838
 25247

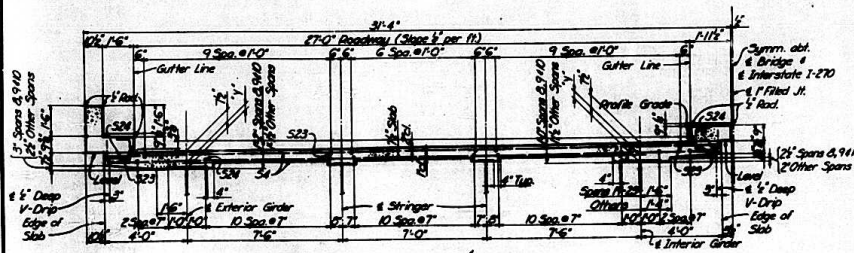
BEVERLIP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

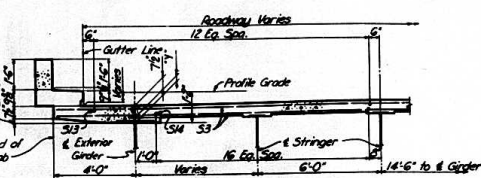
SHEET 28 OF 37

MO. A-890

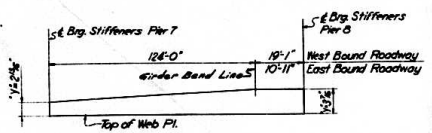
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	MO.	1-279-1	19	34	86
7	MO.				



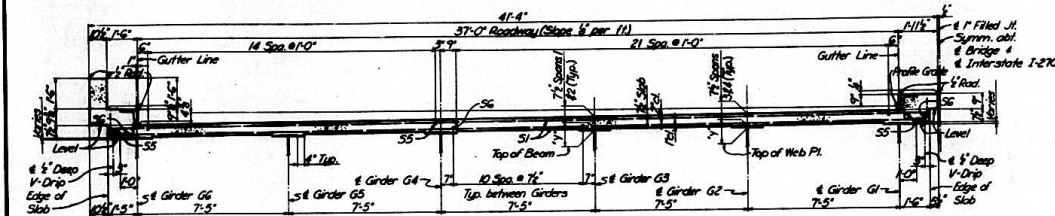
HALF CROSS SECTION- SPANS 8 THRU 27
Span 19 thru 23 shown. Other spans similar.



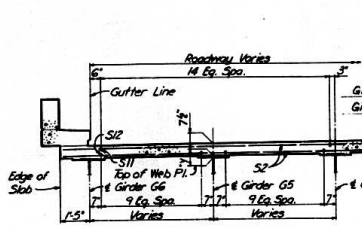
PART CROSS SECTION- SPAN 7
Note: For details not shown, see Half Cross Section- Spans 8 thru 27.



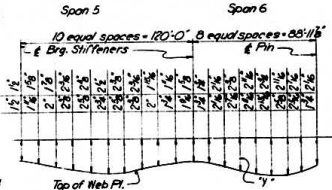
VARIATION IN HAUNCH "Y-Y"
EXTERIOR GIRDER-SPAN 7
(For interior girder haunch, see Table)



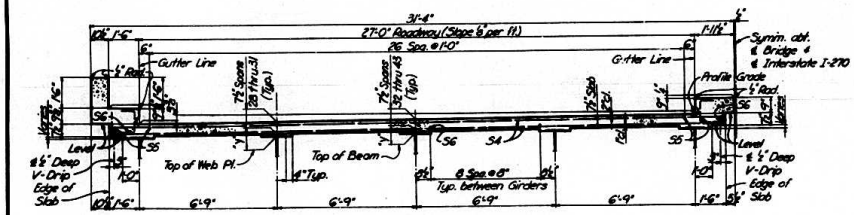
HALF CROSS SECTION- SPANS 1 THRU 4
Span 1 shown. Other spans similar.



PART CROSS SECTION- SPANS 5 & 6
Note: For details not shown, see Half Cross Section- Spans 1 thru 4.



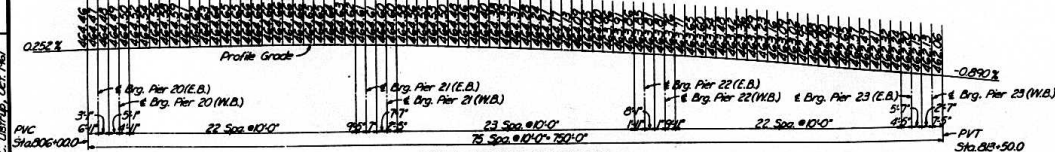
VARIATION IN HAUNCH "Y-Y"
GIRDERS G5 & G6 - SPANS 5 & 6
(For other girder haunches, see Table)



HALF CROSS SECTION- SPANS 28 THRU 43
Span 43 shown. Other spans similar.

HAUNCH DIMENSION "Y-Y"		
SPAN	GIRDER OR BEAM	"Y-Y"
1 & 2	All Beams	Δ
3 & 4	All Girders	16" + Δ
5 & 6	G1 thru G4	12" + Δ
7	Interior	6" + Δ
8, 9 & 10	Interior	4" + Δ
8, 9 & 10	Exterior	3" + Δ
11 thru 21	Interior	3" + Δ
11 thru 21	Exterior	2" + Δ
22 thru 31	All Girders	12" + Δ
32 thru 39	All Beams	8" + Δ
40 thru 43	All Beams	Δ

Δ = Dead Load Deflection and is given on the following sheets:
Spans 1 & 2, 40 thru 43, Sheet 5
Spans 3 thru 6, Sheet 6
Spans 28 thru 31, Sheet 7
Spans 32 thru 39, Sheet 22



PROFILE GRADE ELEVATIONS
Note: Longitudinal dimensions are measured horizontally.

BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS

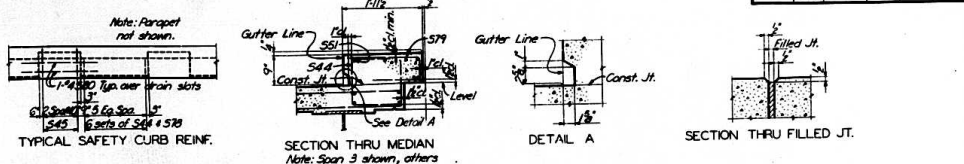
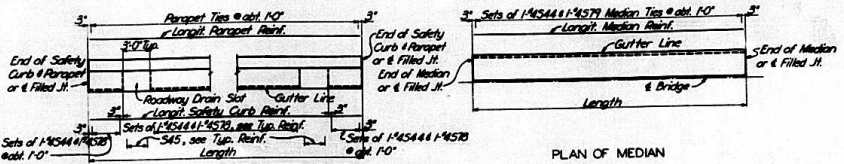
PROJECT 1-279-8
ROUTE 1-279
ST. LOUIS, MO.-MADISON CO., ILL.
ETA. 780-00.25

SLAB CROSS SECTIONS

DRAWN BY: J. S. SPENCER - Aug. 1961
CHECKED BY: C. C. LINDHEAD - Oct. 1961
CONCEDED BY: C. C. LINDHEAD - Oct. 1961

SYVERUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

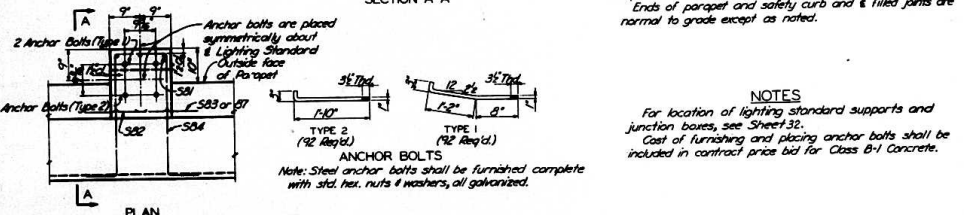
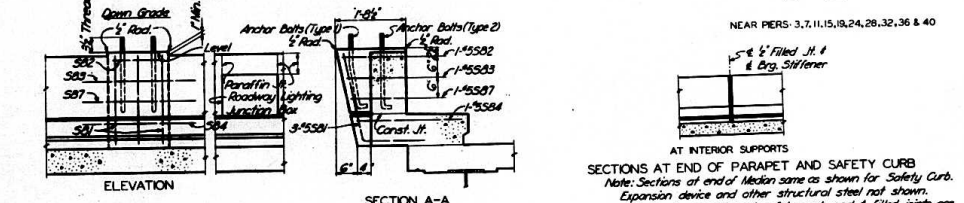
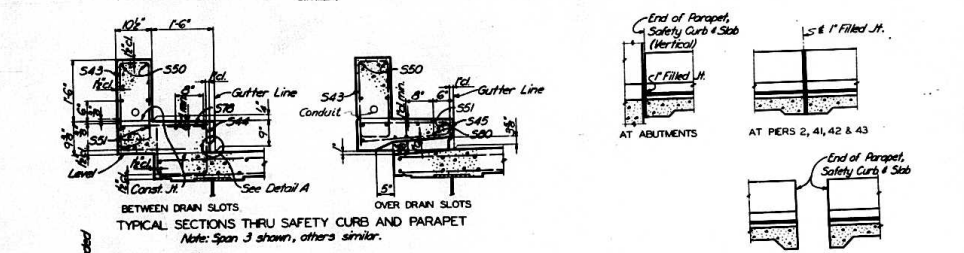
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



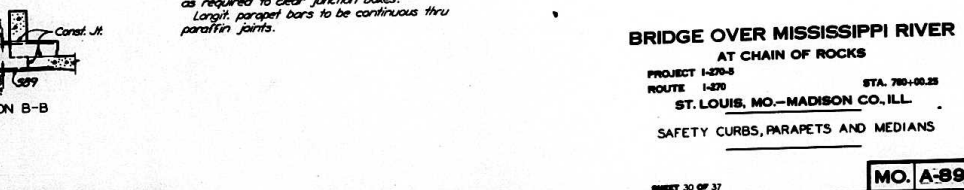
PLAN OF PARAPET AND SAFETY CURB
 Note: Roadway drain slots are carried between all handrail posts except where expansion devices and expansion joints occur in slab and as noted in table below.

Span	Length	Parapet Reinforcement			Safety Curb Reinforcement					Median Reinforcement	
		Ties	Longit.	Over	West End	Between Slots	Over Slots	East End	Longit.*	Ties	Longit.
1	47.78	40-4543	2 sets of 4-4544	2 Sets	37 Sets	18-4545	4 Sets	2 sets of 4-4547	40 Sets	2 sets of 4-4547	
2	41.35	42-4543	2 sets of 4-4544	2 Sets	34 Sets	15-4545	5 Sets	2 sets of 4-4549	42 Sets	2 sets of 4-4549	
3	92.35	120-4543	2 sets of 4-4549	2 Sets	66 Sets	36-4545	5 Sets	3 sets of 4-4551	100 Sets	3 sets of 4-4551	
4	120.0'	121-4543	4 sets of 4-4552	4 Sets	70 Sets	42-4545	5 Sets	4 sets of 4-4553	121 Sets	4 sets of 4-4553	
5	120.0'	121-4543	4 sets of 4-4552	4 Sets	84 Sets	45-4545	1 Set	4 sets of 4-4555	129 Sets	4 sets of 4-4555	
6	89.35	90-4543	3 sets of 4-4554	3 Sets	54 Sets	30-4545	2 Sets	3 sets of 4-4557	106 Sets	4 sets of 4-4557	
7	117.78	117-4543	4 sets of 4-4556	4 Sets	64 Sets	45-4545	2 Sets	4 sets of 4-4559	130 Sets	4 sets of 4-4559	
8	120.0'	121-4543	5 sets of 4-4560	5 Sets	70 Sets	45-4545	2 Sets	4 sets of 4-4561	130 Sets	4 sets of 4-4561	
9	176.0'	177-4543	5 sets of 4-4560	5 Sets	120 Sets	57-4545	4 Sets	5 sets of 4-4563	177 Sets	5 sets of 4-4563	
10	133.35	134-4543	4 sets of 4-4562	4 Sets	120 Sets	63-4545	5 Sets	5 sets of 4-4565	177 Sets	5 sets of 4-4565	
11	114.0'	113-4543	4 sets of 4-4562	4 Sets	96 Sets	49-4545	6 Sets	4 sets of 4-4567	153 Sets	4 sets of 4-4567	
12	176.0'	177-4543	5 sets of 4-4560	5 Sets	120 Sets	63-4545	4 Sets	5 sets of 4-4569	177 Sets	5 sets of 4-4569	
13	176.0'	177-4543	5 sets of 4-4560	5 Sets	120 Sets	63-4545	5 Sets	5 sets of 4-4561	177 Sets	5 sets of 4-4561	
14	141.05	141-4543	4 sets of 4-4564	4 Sets	96 Sets	51-4545	6 Sets	4 sets of 4-4565	142 Sets	4 sets of 4-4565	
15	128.35	134-4540	4 sets of 4-4562	4 Sets	90 Sets	49-4545	1 Set	4 sets of 4-4563	135 Sets	4 sets of 4-4563	
16	176.0'	177-4543	5 sets of 4-4560	5 Sets	120 Sets	63-4545	5 Sets	5 sets of 4-4561	177 Sets	5 sets of 4-4561	
17	176.0'	177-4543	5 sets of 4-4560	5 Sets	126 Sets	66-4545	3 Sets	5 sets of 4-4561	177 Sets	5 sets of 4-4561	
18	133.35	134-4543	4 sets of 4-4562	4 Sets	90 Sets	49-4545	2 Sets	4 sets of 4-4567	133 Sets	4 sets of 4-4567	
19	117.78	113-4543	4 sets of 4-4562	4 Sets	120 Sets	72-4545	4 Sets	4 sets of 4-4563	133 Sets	4 sets of 4-4563	
20	141.05	141-4543	4 sets of 4-4564	4 Sets	120 Sets	72-4545	4 Sets	4 sets of 4-4563	133 Sets	4 sets of 4-4563	
21	128.35	134-4540	4 sets of 4-4562	4 Sets	174 Sets	90-4545	1 Set	7 sets of 4-4561	243 Sets	7 sets of 4-4561	
22	141.05	141-4543	4 sets of 4-4564	4 Sets	174 Sets	90-4545	4 Sets	7 sets of 4-4561	243 Sets	7 sets of 4-4561	
23	117.78	113-4543	4 sets of 4-4562	4 Sets	120 Sets	72-4545	6 Sets	4 sets of 4-4567	133 Sets	4 sets of 4-4567	
24	133.35	134-4543	4 sets of 4-4562	4 Sets	90 Sets	49-4545	2 Sets	4 sets of 4-4567	133 Sets	4 sets of 4-4567	
25	176.0'	177-4543	5 sets of 4-4560	5 Sets	96 Sets	51-4545	4 Sets	5 sets of 4-4561	177 Sets	5 sets of 4-4561	
26	176.0'	177-4543	5 sets of 4-4560	5 Sets	120 Sets	63-4545	4 Sets	5 sets of 4-4561	177 Sets	5 sets of 4-4561	
27	128.35	134-4540	4 sets of 4-4562	4 Sets	96 Sets	51-4545	5 Sets	4 sets of 4-4563	143 Sets	4 sets of 4-4563	
28	89.35	90-4543	3 sets of 4-4554	3 Sets	54 Sets	30-4545	4 Sets	3 sets of 4-4557	109 Sets	3 sets of 4-4557	
29	120.0'	121-4543	4 sets of 4-4552	4 Sets	84 Sets	45-4545	2 Sets	4 sets of 4-4559	121 Sets	4 sets of 4-4559	
30	120.0'	121-4543	4 sets of 4-4552	4 Sets	70 Sets	42-4545	2 Sets	4 sets of 4-4553	121 Sets	4 sets of 4-4553	
31	99.35	100-4543	3 sets of 4-4550	3 Sets	66 Sets	36-4545	5 Sets	3 sets of 4-4551	100 Sets	3 sets of 4-4551	
32	53.35	62-4543	2 sets of 4-4546	2 Sets	48 Sets	24-4545	2 Sets	2 sets of 4-4548	62 Sets	2 sets of 4-4548	
33	87.0'	88-4543	2 sets of 4-4546	2 Sets	60 Sets	33-4545	2 Sets	2 sets of 4-4548	88 Sets	2 sets of 4-4548	
34	63.4'	64-4543	2 sets of 4-4546	2 Sets	42 Sets	24-4545	5 Sets	2 sets of 4-4548	64 Sets	2 sets of 4-4548	
35	73.5'	74-4543	2 sets of 4-4546	2 Sets	40 Sets	27-4545	2 Sets	2 sets of 4-4548	74 Sets	2 sets of 4-4548	
36	73.5'	74-4543	2 sets of 4-4546	2 Sets	60 Sets	33-4545	5 Sets	2 sets of 4-4548	88 Sets	2 sets of 4-4548	
37	87.0'	88-4543	2 sets of 4-4546	2 Sets	40 Sets	27-4545	2 Sets	2 sets of 4-4548	74 Sets	2 sets of 4-4548	
38	41.4'	42-4543	2 sets of 4-4546	2 Sets	24 Sets	15-4545	5 Sets	2 sets of 4-4548	42 Sets	2 sets of 4-4548	
39	28.5'	29-4543	2 sets of 4-4546	2 Sets	30 Sets	15-4545	4 Sets	2 sets of 4-4548	42 Sets	2 sets of 4-4548	
40	41.4'	42-4543	2 sets of 4-4546	2 Sets	30 Sets	15-4545	4 Sets	2 sets of 4-4548	42 Sets	2 sets of 4-4548	
41	47.78	48-4543	2 sets of 4-4546	2 Sets	30 Sets	15-4545	4 Sets	2 sets of 4-4548	42 Sets	2 sets of 4-4548	
42	47.78	48-4543	2 sets of 4-4546	2 Sets	30 Sets	15-4545	4 Sets	2 sets of 4-4548	42 Sets	2 sets of 4-4548	

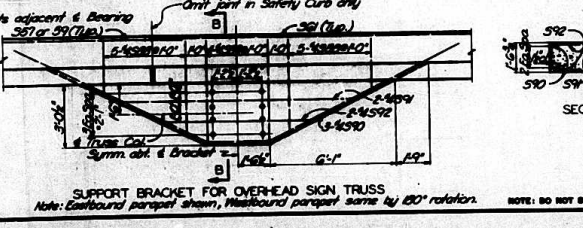
* For additional longitudinal bars over drain slots, see Typ. Safety Curb Reinf. detail.
 Note: Reinf. billed for each span in Table is for one roadway only.
 Reinf. same in both roadways except as noted.
 All longitudinal dimensions are measured along top of parapet and parallel to a Bridge.
 † Only first two Roadway Drain Slots adjacent to Bearing Pier A.



NOTES
 For location of lighting standard supports and junction boxes, see Sheet 32.
 Cost of furnishing and placing anchor bolts shall be included in contract price bid for Class B-1 Concrete.
ANCHOR BOLTS
 Note: Steel anchor bolts shall be furnished complete with std. hex. nuts & washers, all galvanized.

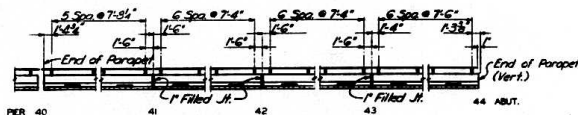
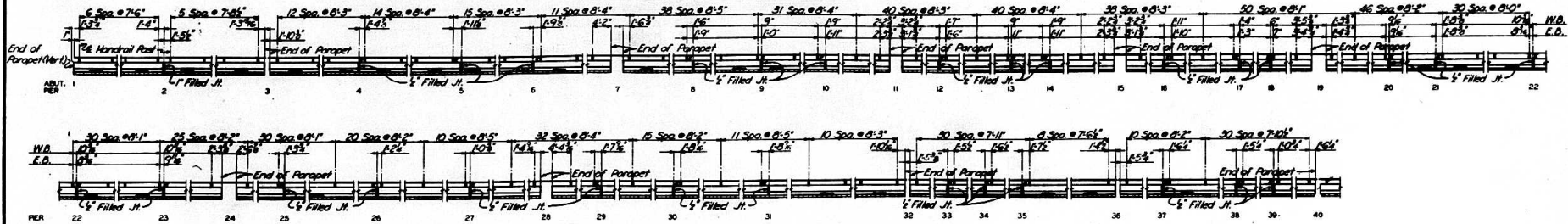


BRIDGE OVER MISSISSIPPI RIVER AT CHAIN OF ROCKS
 PROJECT 1-270-3 STA. 780+00.25
 ROUTE 1-270 ST. LOUIS, MO.—MADISON CO., ILL.
 SAFETY CURBS, PARAPETS AND MEDIANS
 SHEET 30 OF 37
MO. A-390

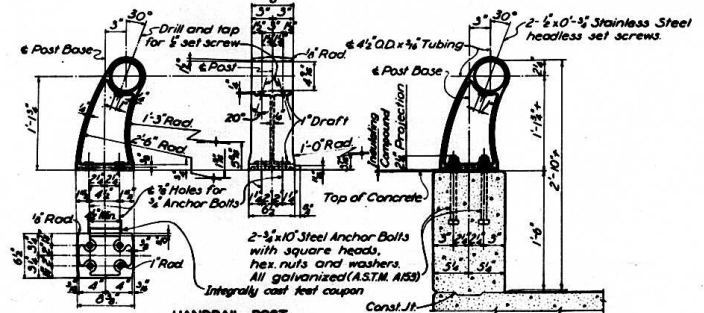


Note: Eastbound parapet shown, Westbound parapet same by 180° rotation.
 NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

NO. DRAWING	DATE	BY	CHECKED BY	SCALE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
2	MAY 1970	J.P.	J.P.	1"=20'-0"	10	3400	
7							

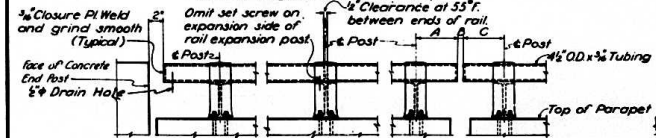


ELEVATION - WESTBOUND ROADWAY
 Note: Spacing for Eastbound Roadway same except as shown.
 All longitudinal dimensions are measured along top of parapet.
 Location of 'E' indicates expansion side of rail expansion posts.



SECTION THRU HANDRAIL

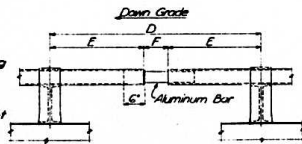
Note: All fillets 1/4" except as noted.
 All draft angles 3° except as noted.



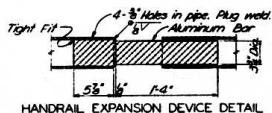
TYPICAL HANDRAIL DETAILS

Note: All handrail posts shall be set normal to grade.
 Aluminum washer shims between insulation pad and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be 3/8". Where more lifting of post is required for proper alignment, concrete bearing area shall be ground down.
 Pipe rail shall be fabricated in two or three panel lengths unless otherwise approved.

ALUMINUM HANDRAIL



AT EXPANSION DEVICE



HANDRAIL EXPANSION DEVICE DETAIL

Pier	A	B	C
2	1'-3 3/4"	1'	1'-4 3/4"
3	2'-1"	2'	2'-1 1/2"
32	2'-1 1/2"	2'	2'-1 1/2"
36	1'-11 1/2"	2'	1'-11 1/2"
40	1'-11 1/2"	2'	1'-11 1/2"
41 & 42	1'-5 1/2"	1'	1'-5 1/2"
43	1'-5 1/2"	1'	1'-5 1/2"

Pier	D	E	F
7 & 8	0'-4"	5'-1 1/2"	5"
9	0'-3"	5'-1 1/2"	5"
19	0'-1"	5'-9"	7"
24	0'-2"	5'-9"	7"

DRAWN BY: T. SANDERS - SHOP, P.E.
 CHECKED BY: H.A. ROBINSON, CIVIL, P.E.
 1838
 5/2/70

SVENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

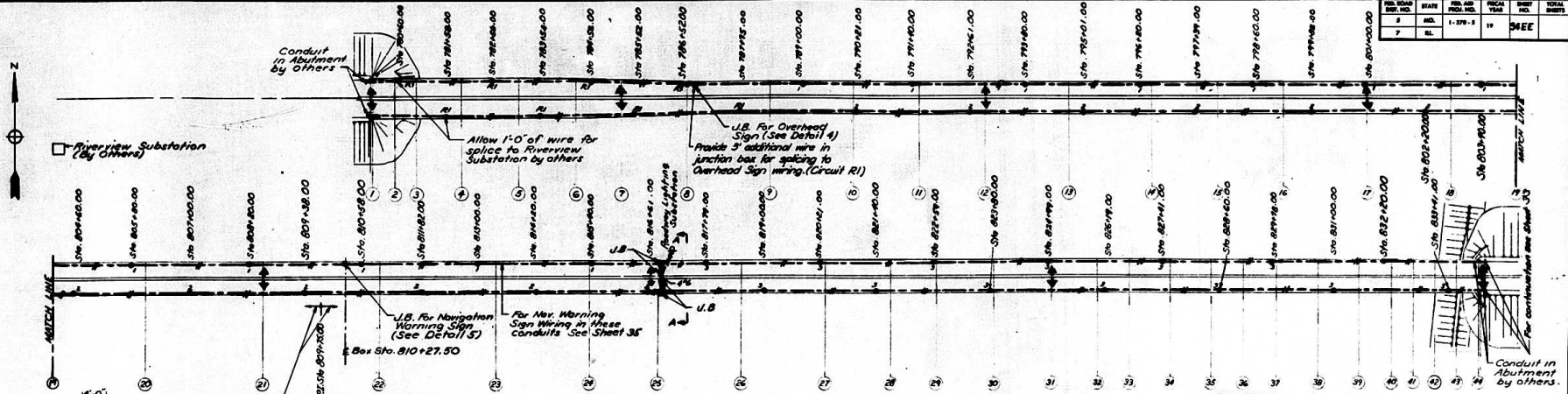
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
 PROJECT I-270-S
 ROUTE I-270 STA. 760+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.

ALUMINUM HANDRAIL

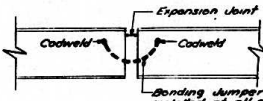
REV.	NO.	DATE	BY	CHKD.	DESCRIPTION
1	1	1-27-5	SEE		
2	2	1-27-5	SEE		



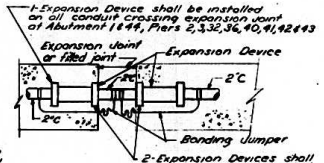
PLAN

SYMBOLS

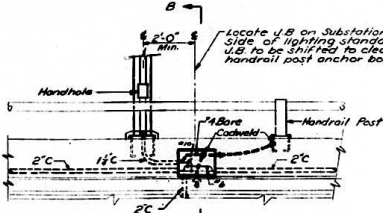
- 400W Luminaire, standard, bracket arm & U.S.
- See Detail 3
- △ Roadway Lighting Substation See Sheet 34.
- Conduit fitting
- Conduit concealed, 2" Rigid steel except as noted
- Conduits indicate number of 1/2" #6-600V conductors (Nav. Warning Sign conductors not shown on this sheet see Sheet 35)
- Conduit exposed, 2" except as noted.
- #6 Ground conductor, stranded copper insulated except as noted.
- ↓ Ground conductor in pier or abutment by others. See Per Dugs.



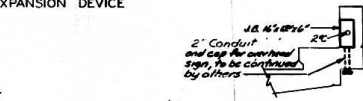
DETAIL 1
BONDING JUMPER



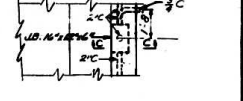
DETAIL 2
EXPANSION DEVICE



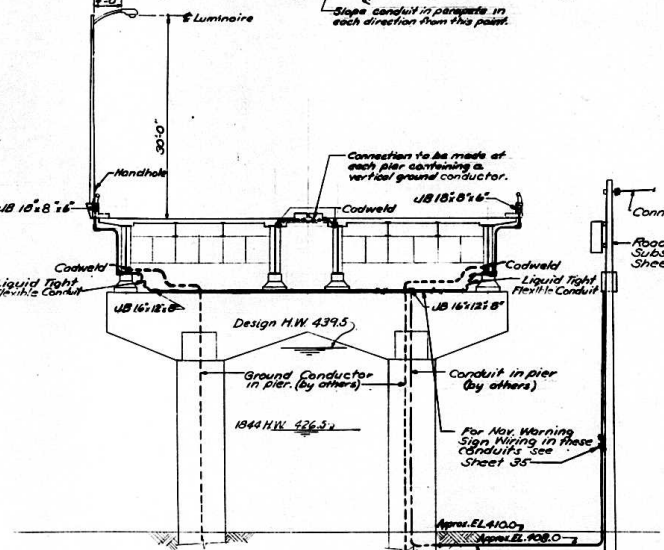
ELEVATION
(Viewed From Roadway)



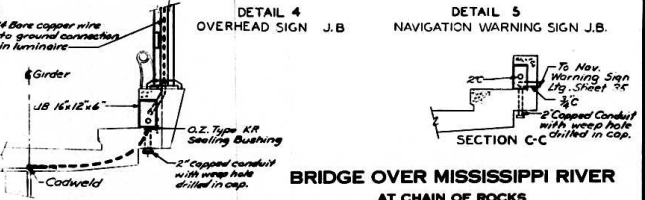
DETAIL 4
OVERHEAD SIGN J.B.



DETAIL 5
NAVIGATION WARNING SIGN J.B.



SECTION A A (TYPICAL)



SECTION C-C

**BRIDGE OVER MISSISSIPPI RIVER
AT CHAIN OF ROCKS**

PROJECT 1-270-5
ROUTE 1-270 STA. 760+00.25
ST. LOUIS, MO.—MADISON CO., ILL.

BRIDGE ROADWAY LIGHTING DETAILS

**DETAIL 3
ROADWAY LIGHTING & GROUNDING**

DRAWN BY: RMP & CSA - Nov. 1954
 CHECKED BY: H.V. Nov. 1954
 APPROVED BY: H.V.

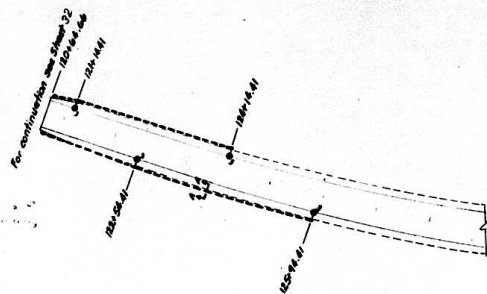
EVERDUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

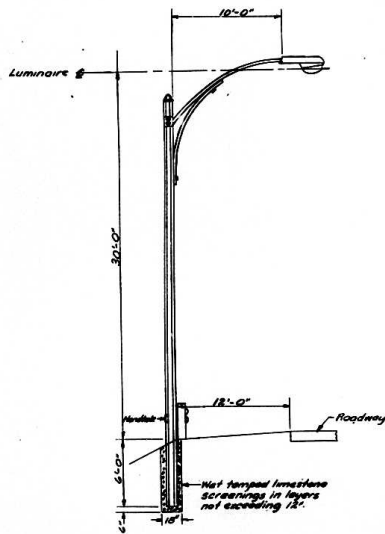
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MO.	1-270-5	19	3477	
7	BL.				

SYMBOLS

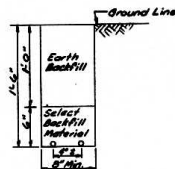
- 400W Luminaire, standard & bracket arm
— Circuit No.
- 2-1/2 #6 stranded type R.R. 600V direct burial cables in trench.



PLAN



LIGHTING STANDARD



SECTION A-A

DRAWN BY: M.K.K. Nov. 1967
 CHECKED BY: H.W. Nov. 1967 W.S.C.

EVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS-ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270 STA. 780+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 APPROACH ROADWAY LIGHTING DETAILS

SHEET 33 OF 37

MO. A-890

REV. NO.	DATE	BY	CHKD. BY	REASON
1	NOV. 1934	...	...	...
2	NOV. 1934	...	...	...
7	...	...	...	...

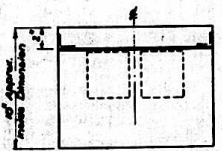
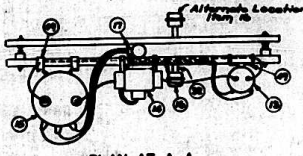
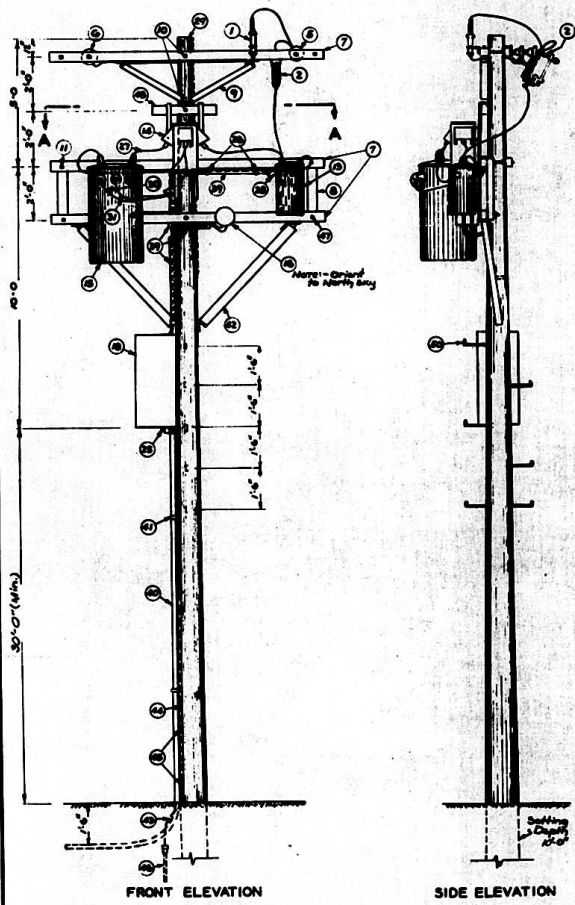
LIST OF MATERIAL

QTY.	DESCRIPTION
1	Lightning Arrester, Valve Type
2	Primary Fuse Cutout and Fuse Link
3	
4	
5	Insulator, Disc Type
6	Insulator, - Pin Type
7	Cross Arm, 3 1/2" x 4 1/2" x 8'-0" wood (See General Note 1)
8	Wood Bolt Brass
9	Cross Arm Brass
10	Mechanic Bolt, 3/8" x 4" with 2 1/2" square washers
11	Double Arming Bolt, 3/8" x 15" with 2 1/2" square washers
12	
13	Control Transformer, 16, 60 Cycle, Secondary - 120/240V.
14	Primary Oil Switch, - 15KV for circuits up to 7200V.
15	Distribution Transformer, 16, 60 cycle, Secondary 240/480 V.
16	Photoelectric Control and Signal Buzzer
17	Service Head
18	Control Cabinet
19	Type AB Symbol Case Circuit Breaker, 100A-600V (See Parting)
20	Terminal Block
21	"Hydraulic-Off-Auto" Selector Switch, 60-120 V, 2 Poles, 3 Pos.
22	Enclosure for Selector Switch, NEMA 3
23	Enclosed Fuse Cut-out, 30A-150V, Single Pole
24	Fuse, Midget Type, 10A-250V, Cartridge Type
25	Rubber Bushing Type Connector
26	Single Copper Conduit
27	No. 6 Single Conductor 5 KV Insulated Wire
28	No. 12 Single Conductor 600V Insulated Wire, Type RHW
29	Wood Pole - Class II (55' long)
30	No. 4 Single Conductor 600V Insulated Wire, Type RHW
31	No. 8 Single Conductor 600V Insulated Wire, Type RHW
32	U-Bolt for Cross Arm, 3/4" x 4 1/2"
33	
34	
35	
36	
37	
38	
39	
40	Conduit Fittings, 3"
41	Conduit Rigid Galv. 3 1/2" length as required
42	Conduit Brass, 2 1/2" Recess with lag screws
43	Steel Braces
44	Wire, No. 6 Bare Copper
45	Ground Wire Mounting
46	Ground Wire Mounting Strap
47	Ground Rod, 3/4" x 10' with Ground Wire Clamp
48	Mechanic Bolt, 3/8" x 4" with 2 1/2" square washers
49	Cross Arm, 3 1/2" x 4 1/2" x 8'-0" wood
50	Transformer Cross Arm Menger, Galvanized Pole Strap

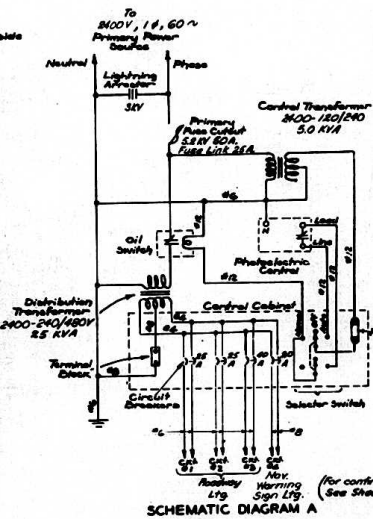
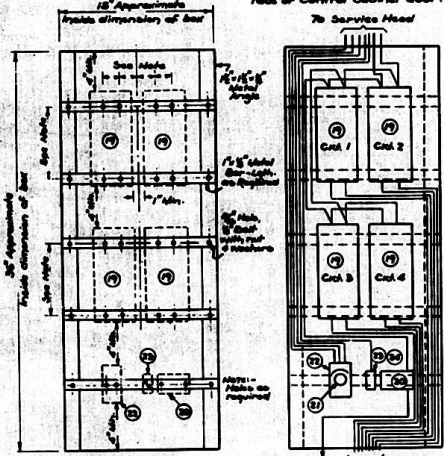
GENERAL NOTES -
 1. Cross arms shall be untreated, Douglas Fir, conforming to the requirements of Paragraphs 172 and 174A of Standard Grading and Dressing Rules of the West Coast Lumber Inspection Bureau, No. 15, effective March 15, 1936.

**BRIDGE OVER MISSISSIPPI RIVER
 AT CHAIN OF ROCKS**

PROJECT 1-270-4
 ROUTE 1-370
 ST. LOUIS, MO.-MADISON CO., ILL.
 ROADWAY LIGHTING SUBSTATION



NOTE - Ground all non-current carrying metal parts of equipment and conductor enclosures.
NOTE - A copy of schematic diagram is to be furnished to inside face of Control Cabinet door.



DRAWN BY: R.V.P. Nov 1934
 CHECKED BY: H.V. Nov 1934
 ENGINEER: L.C.K.

REV.	DATE	BY	CHK.	APP.	REVISION
8	MO.	1-29-53	19		
7	AL.				34 H.H.

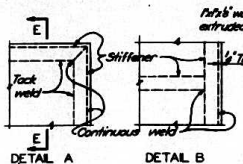
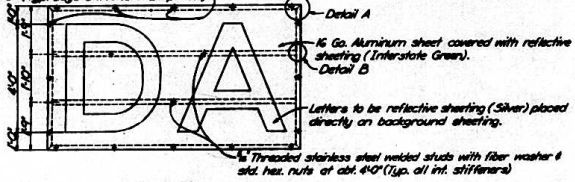
Note: 4"O' letters and spacing shall be proportioned in accordance with Missouri Highway Standard 72.00 Sheet 3 of 5, Series D.



ELEVATION

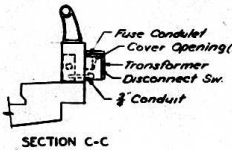
Note: Center of sign to be placed at center of Span 21, Sta. 809+74.75. Sign is to be placed on exterior face of upstream girder only.

1/2" Threaded stainless steel welded studs with fiber washers & std. hex. nuts at 4"O' (Top edge stiffeners all panels)

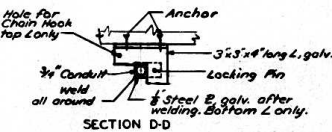


SECTION E-E

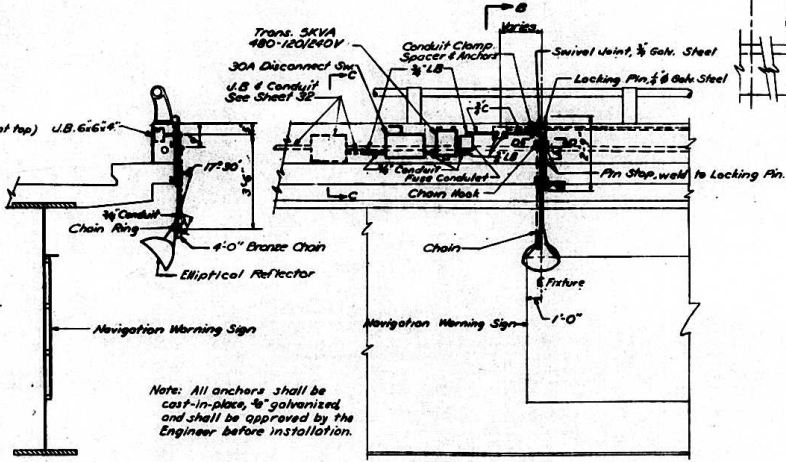
TYPICAL PANEL
Note: Length of panels to be determined by the Contractor.
All joints in sheet and welded studs must clear letters.



SECTION C-C



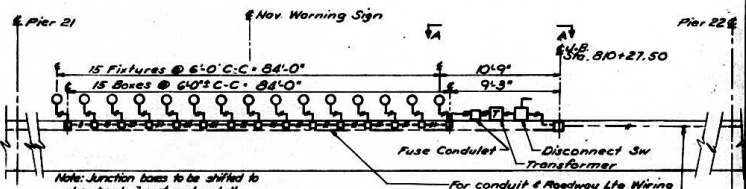
SECTION D-D



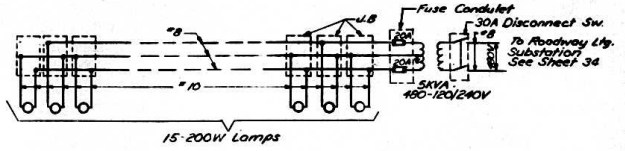
SECTION B-B

Note: All anchors shall be cast-in-place, 1/2" galvanized and shall be approved by the Engineer before installation.

ELEVATION A-A



PART PLAN
NAVIGATION WARNING SIGN LIGHTING



SCHEMATIC DIAGRAM

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
PROJECT 1-29-53
ROUTE 1-29
ST. LOUIS, MO.—MADISON CO., ILL.

NAVIGATION WARNING SIGN

DRAWING BY: J.T.S. & D.S.M. Rev. 10/2
 CHECKED BY: J.H.C. Rev. 1/2
 1953

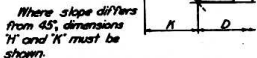
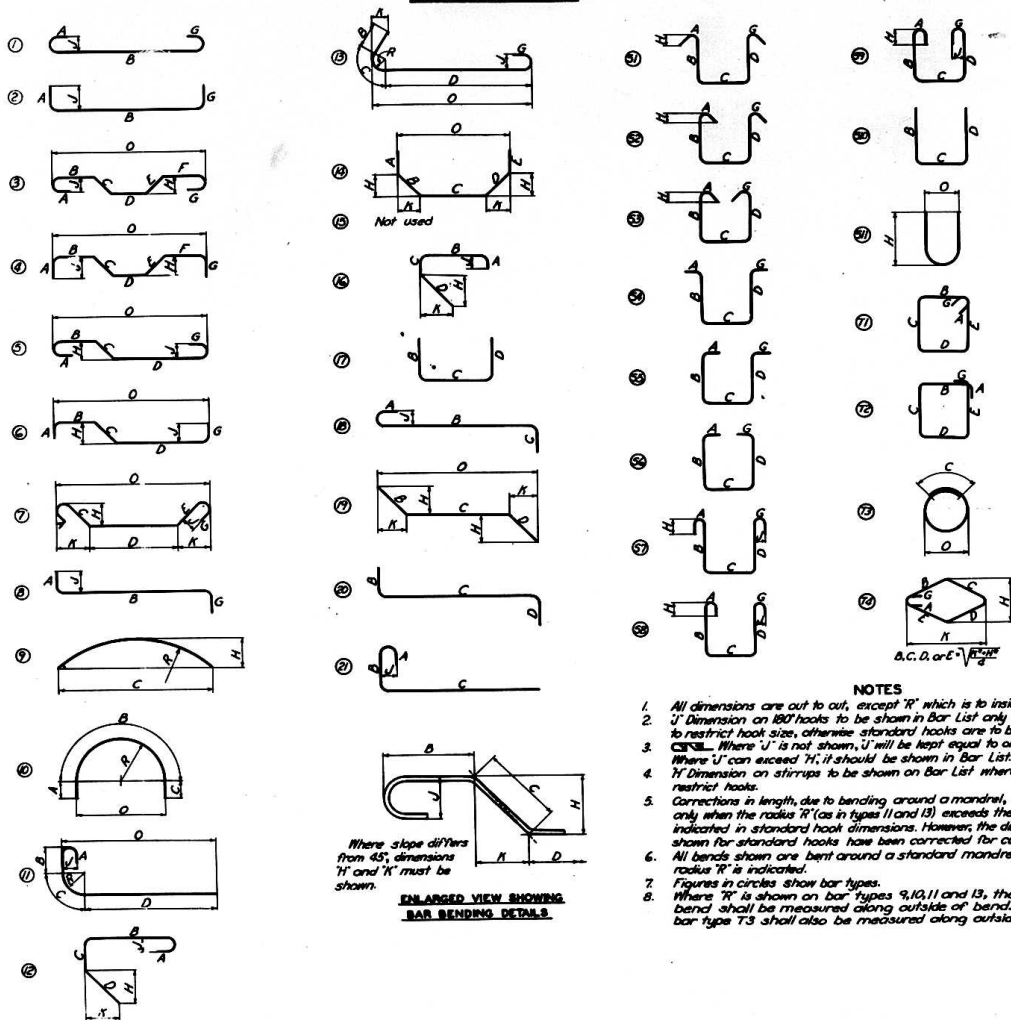
EVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 35 OF 37

MO. A-890

TYPICAL BAR TYPES

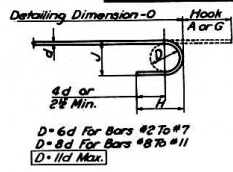


ENLARGED VIEW SHOWING BAR BENDING DETAILS

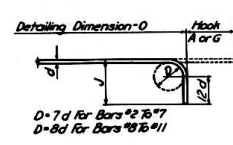
NOTES

- All dimensions are cut to out, except 'R' which is to inside of bend.
- 'J' Dimension on 180° hooks to be shown in Bar List only where necessary to restrict hook size, otherwise standard hooks are to be used.
- Where 'U' is not shown, 'U' will be kept equal to or less than 'H'. Where 'U' can exceed 'H', it should be shown in Bar List.
- 'H' Dimension on stirrups to be shown on Bar List where necessary to restrict hooks.
- Corrections in length, due to bending around a mandrel, will be made only when the radius 'R' (as in types 1) and 3) exceeds the standard radii indicated in standard hook dimensions. However, the dimensions 'A' or 'G' shown for standard hooks have been corrected for curvature.
- All bends shown are bent around a standard mandrel, except where radius 'R' is indicated.
- Figures in circles show bar types.
- Where 'R' is shown on bar types 9, 10, 11 and 13, the length of bend shall be measured along outside of bend. The length of bar type T3 shall also be measured along outside of bar.

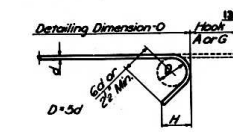
STANDARD HOOK DIMENSIONS



Bar Size	Hook A or G	J	Approx H
#2	4"	2"	3 1/2"
#3	5"	3"	4"
#4	6"	4"	4 1/2"
#5	7"	5"	5"
#6	8"	6"	6"
#7	10"	7"	7"
#8	11"	10"	9"
#9	13"	11"	10 1/2"
#10	15"	13"	11 1/2"
#11	17"	15"	13 1/2"



Bar Size	Hook A or G	J
#2	3 1/2"	4"
#3	5 1/2"	6"
#4	7 1/2"	6 1/2"
#5	9"	10 1/2"
#6	10 1/2"	10 1/2"
#7	12 1/2"	12 1/2"
#8	13 1/2"	15 1/2"
#9	14 1/2"	17 1/2"
#10	15 1/2"	19 1/2"
#11	17 1/2"	21 1/2"



Bar Size	Hook A or G	Approx H
#2	3 1/2"	2 1/2"
#3	4"	3 1/2"
#4	5"	3 1/2"
#5	6"	3 1/2"
#6	7"	4 1/2"

BAR SIZE EQUIVALENTS

#2	#6	#7	#8
#3	#8	#9	#10
#4	#9	#10	#11
#5	#10	#11	#12
#6	#11	#12	#13

BRIDGE OVER MISSISSIPPI RIVER

AT CHAIN OF ROCKS
 PROJECT 1-270-5
 ROUTE 1-270 STA. 780+00.25
 ST. LOUIS, MO.—MADISON CO., ILL.
 TYPICAL BAR TYPES AND HOOK DIMENSIONS

DRAWN BY: J. H. Beckwith, Jr., P.E.
 CHECKED BY: J. H. Gonzalez, P.E.
 1838
 225-270

SVENDRUP & PANGEL AND ASSOCIATES, INC.
 ENGINEERS—ARCHITECTS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

SHEET 36 OF 37

MO. A-890

STANDARD BI

REV.	DATE	BY	CHKD.
1	10-1-59	JL	ML
2			
3			

NO.	BAR NO.	LENGTH	MARK	TYPE	LOCATION	DIMENSIONS FOR BENDING													
						A	B	C	D	E	F	G	H	J	K	R	O		
SUPERSTRUCTURE																			
1000	1	12'-0"	1000	STC	SP														
1001	2	12'-0"	1000	STC	SP														
1002	3	12'-0"	1000	STC	SP														
1003	4	12'-0"	1000	STC	SP														
1004	5	12'-0"	1000	STC	SP														
1005	6	12'-0"	1000	STC	SP														
1006	7	12'-0"	1000	STC	SP														
1007	8	12'-0"	1000	STC	SP														
1008	9	12'-0"	1000	STC	SP														
1009	10	12'-0"	1000	STC	SP														
1010	11	12'-0"	1000	STC	SP														
1011	12	12'-0"	1000	STC	SP														
1012	13	12'-0"	1000	STC	SP														
1013	14	12'-0"	1000	STC	SP														
1014	15	12'-0"	1000	STC	SP														
1015	16	12'-0"	1000	STC	SP														
1016	17	12'-0"	1000	STC	SP														
1017	18	12'-0"	1000	STC	SP														
1018	19	12'-0"	1000	STC	SP														
1019	20	12'-0"	1000	STC	SP														
1020	21	12'-0"	1000	STC	SP														
1021	22	12'-0"	1000	STC	SP														
1022	23	12'-0"	1000	STC	SP														
1023	24	12'-0"	1000	STC	SP														
1024	25	12'-0"	1000	STC	SP														
1025	26	12'-0"	1000	STC	SP														
1026	27	12'-0"	1000	STC	SP														
1027	28	12'-0"	1000	STC	SP														
1028	29	12'-0"	1000	STC	SP														
1029	30	12'-0"	1000	STC	SP														
1030	31	12'-0"	1000	STC	SP														
1031	32	12'-0"	1000	STC	SP														
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1035	36	12'-0"	1000	STC	SP														
1036	37	12'-0"	1000	STC	SP														
1037	38	12'-0"	1000	STC	SP														
1038	39	12'-0"	1000	STC	SP														
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1043	44	12'-0"	1000	STC	SP														
1044	45	12'-0"	1000	STC	SP														
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1076	77	12'-0"	1000	STC	SP														
1077	78	12'-0"	1000	STC	SP														
1078	79	12'-0"	1000	STC	SP														
1079	80	12'-0"	1000	STC	SP														
1080	81	12'-0"	1000	STC	SP														
1081	82	12'-0"	1000	STC	SP														
1082	83	12'-0"	1000	STC	SP														
1083	84	12'-0"	1000	STC	SP														
1084	85	12'-0"	1000	STC	SP														
1085	86	12'-0"	1000	STC	SP														
1086	87	12'-0"	1000	STC	SP														
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1088	89	12'-0"	1000	STC	SP														
1089	90	12'-0"	1000	STC	SP														
1090	91	12'-0"	1000	STC	SP														
1091	92	12'-0"	1000	STC	SP														
1092	93	12'-0"																	