

76F13

09-19-14 LETTING ITEM 076

MADISON

# 76

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

# PROPOSED HIGHWAY PLANS

FAI ROUTE I-70

SECTION 60-(11,12)RS-3

PROJECT ACNHPP-0070 (405)

RESURFACING & BRIDGE REPAIR

MADISON COUNTY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(11,12)RS-3	MADISON	242	1
ILLINOIS			CONTRACT NO. 76F13	

\* 242-1 = 241 TOTAL SHEETS

FOR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA- E OF 270

ADT CURRENT = 30000  
 ADT 2034 = 37000 (ESTIMATED)  
 SU = 2.8%  
 MU = 27.3%

TRAFFIC DATA- E OF IL 4

ADT CURRENT = 26800  
 ADT 2034 = 33000 (ESTIMATED)  
 SU = 2.9%  
 MU = 22.4%

TRAFFIC DATA- E OF IL 143

ADT CURRENT = 22700  
 ADT 2034 = 28000 (ESTIMATED)  
 SU = 3.1%  
 MU = 32.2%

TRAFFIC DATA- E OF US 40

ADT CURRENT = 22700  
 ADT 2034 = 28000 (ESTIMATED)  
 SU = 3.0%  
 MU = 33.2%

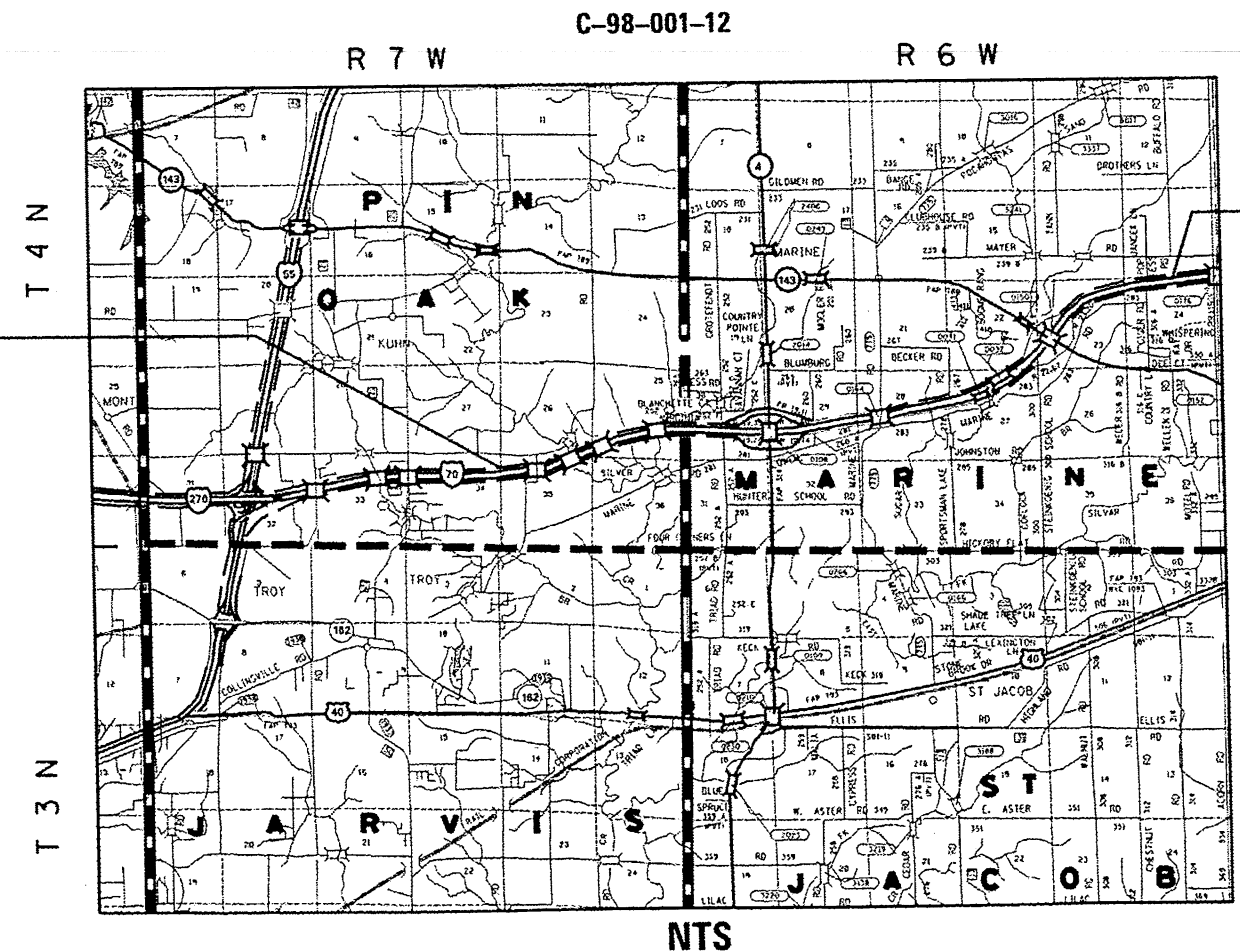
STATION EQUATION

1427+88.81 BACK  
 1503+23.46 AHEAD

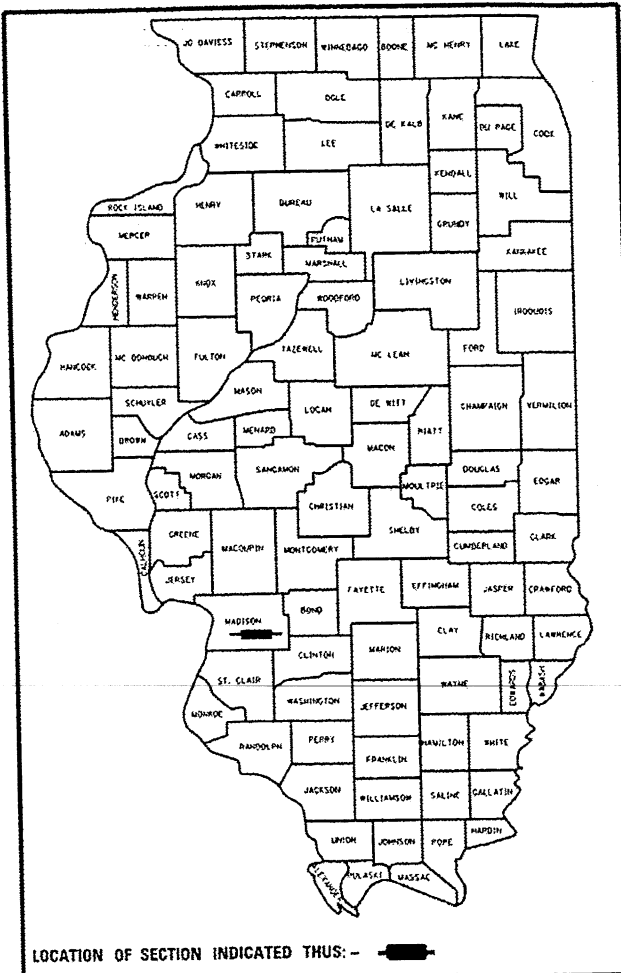
STATION EQUATION

1393+51.33 WB  
 1395+01.65 AHEAD WB

100%  
 10-24-2015

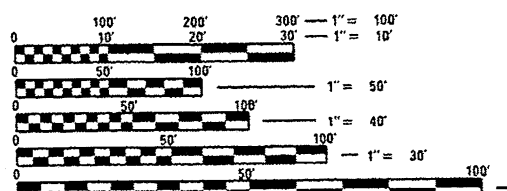


PROJECT END  
 STA 1588+00  
 N 38° 47'04.14"  
 W 89° 42'40.81"



LOCATION OF SECTION INDICATED THUS: -

D-98-004-12



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
 1-800-892-0123  
 OR 811

PROJECT ENGINEER: MICHAEL PRITCHETT (618)346-3180  
 DESIGNER: LEONARD CHILDS (618)346-3191

CONTRACT NO. 76F13 060-0174

MARINE TOWNSHIP  
 PIN OAK TOWNSHIP  
 GROSS LENGTH = 48265 FT. = 9.14 MILE  
 NET LENGTH = 48265 FT. = 9.14 MILE

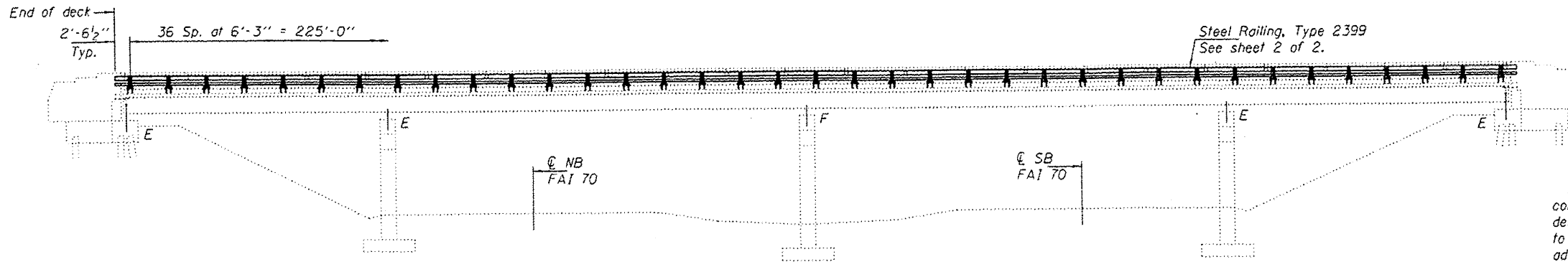
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

SUBMITTED *June 27, 2014*  
*John D. Baranzelli, PE*  
 DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

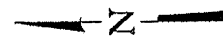
*Aug 15, 2014*  
*Ormer Osman, PE*  
 ENGINEER OF DESIGN AND ENVIRONMENT

*Aug 15, 2014*  
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS



**ELEVATION**

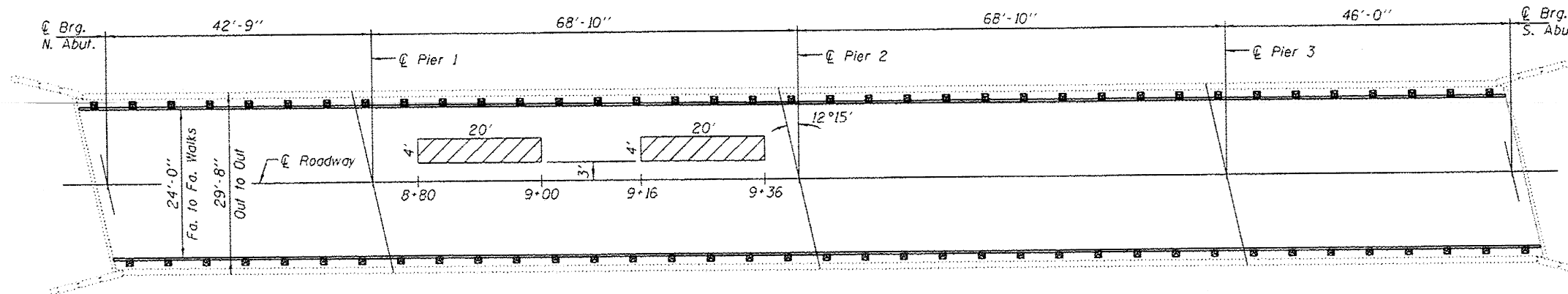


**GENERAL NOTES**

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

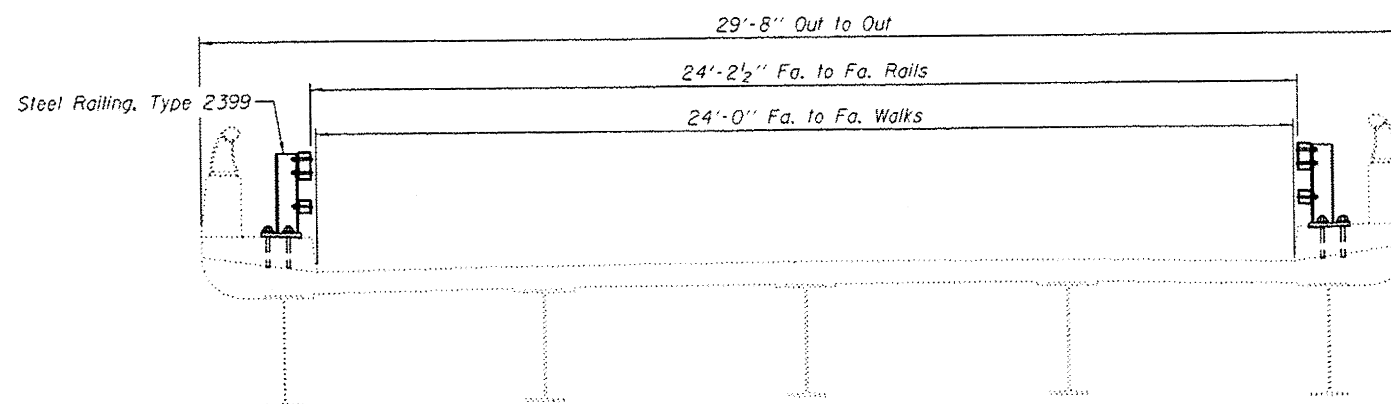
Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

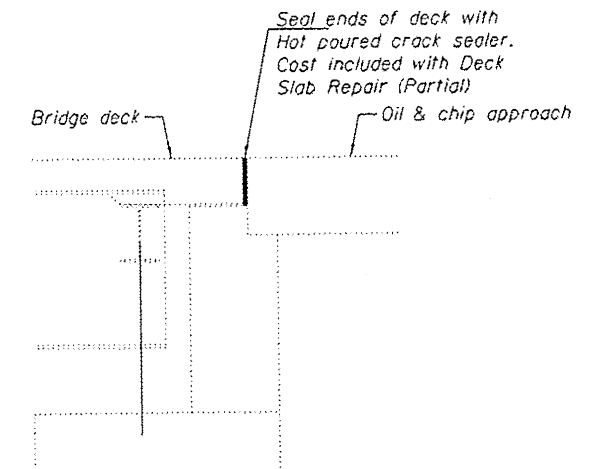


**PLAN**

Hatched areas indicate Deck Slab Repair (Partial)



**CROSS SECTION**



**SECTION THRU ABUTMENT**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Steel Railing, Type 2399	Foot	460
Deck Slab Repair (Partial)	Sq. Yd.	17.8



EXPIRES 11-30-2014

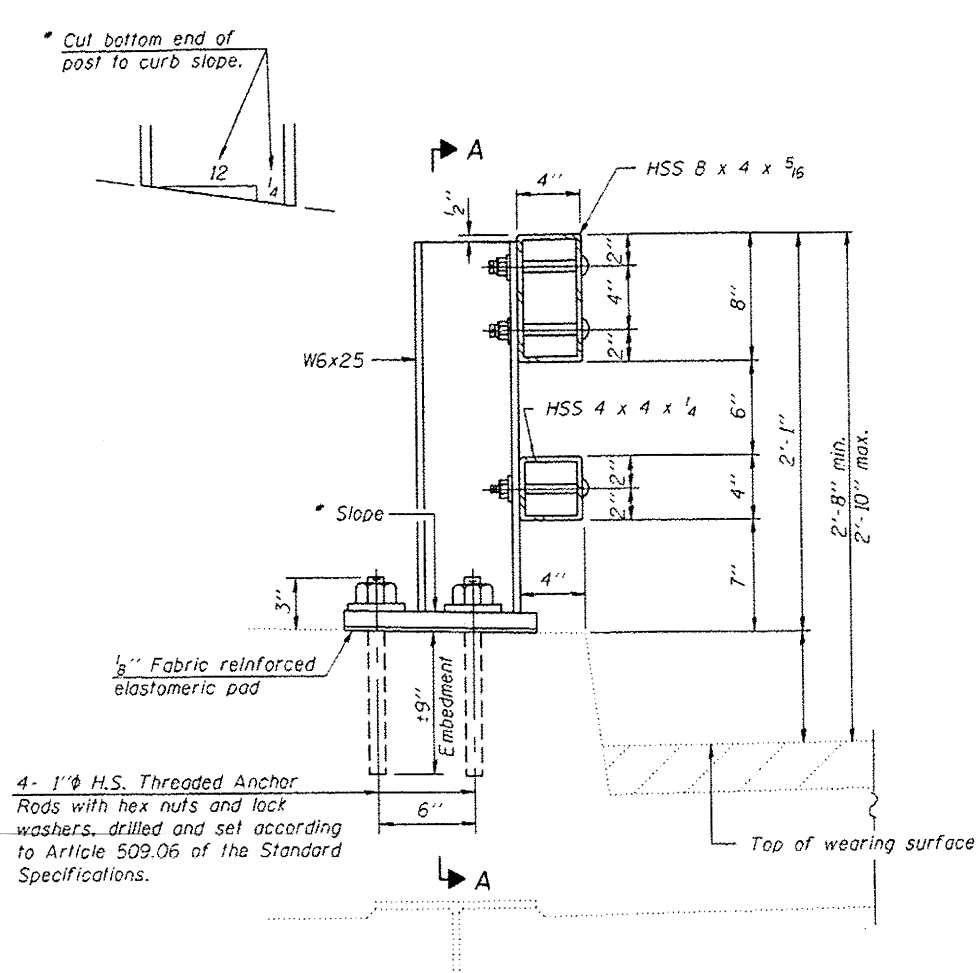
DESIGNED <i>John Clark</i>	EXAMINED <i>Trusty A. Alcott</i>	DATE <b>AUGUST 18, 2014</b>
CHECKED <i>Stephen M. Ryan</i>	PASSED <i>David Puzey</i>	REVISED
DRAWN <i>boliva</i>		REVISED
CHECKED <i>JLC SMR</i>		

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

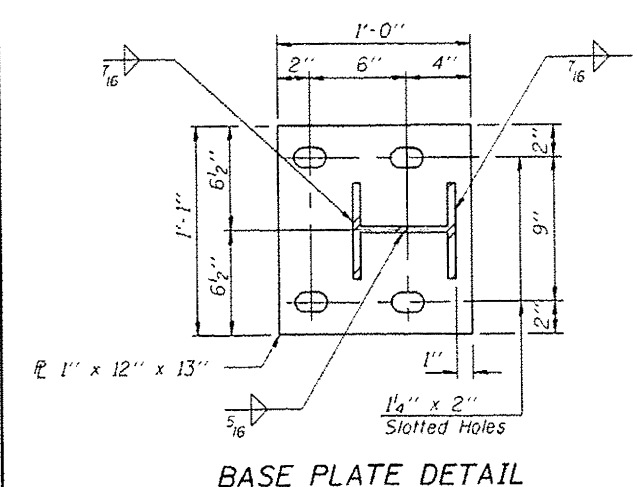
**PLAN AND ELEVATION  
OLD STAUNTON RD OVER FAI 70  
SN 060-0174**

SHEET NO. 1 OF 2 SHEETS

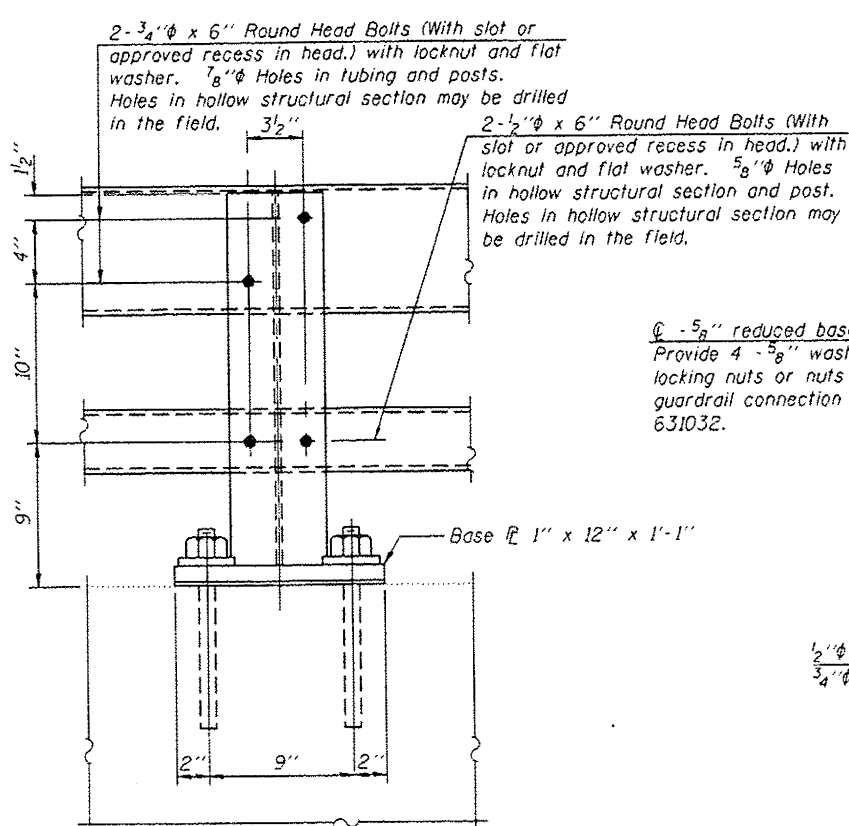
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-111,121RS-3	MADISON	242	219
			CONTRACT NO. 76F13	
ILLINOIS FED. AID PROJECT				



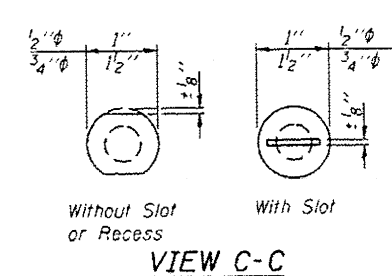
SECTION AT RAIL POST



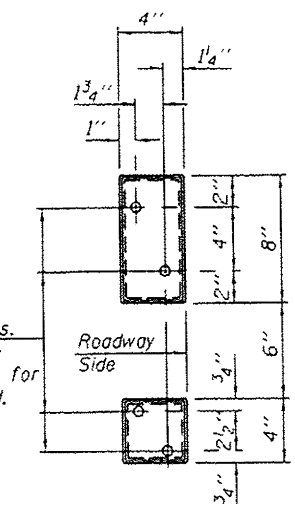
BASE PLATE DETAIL



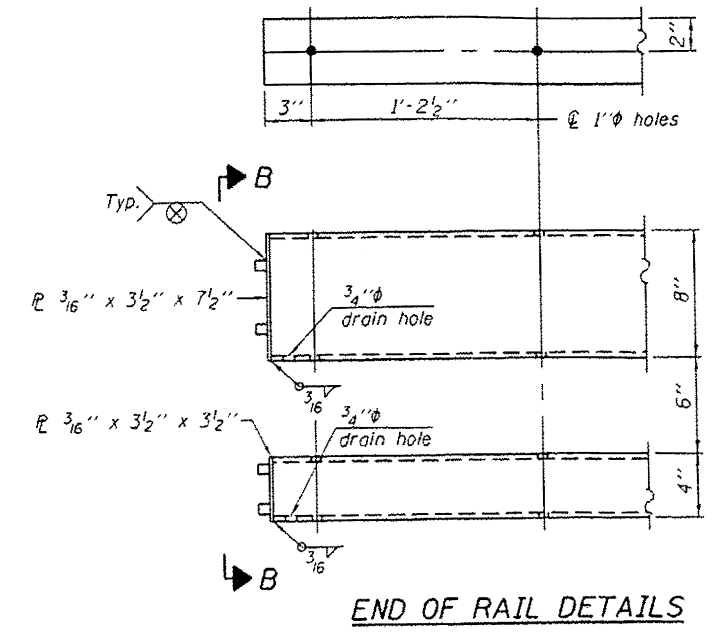
SECTION A-A



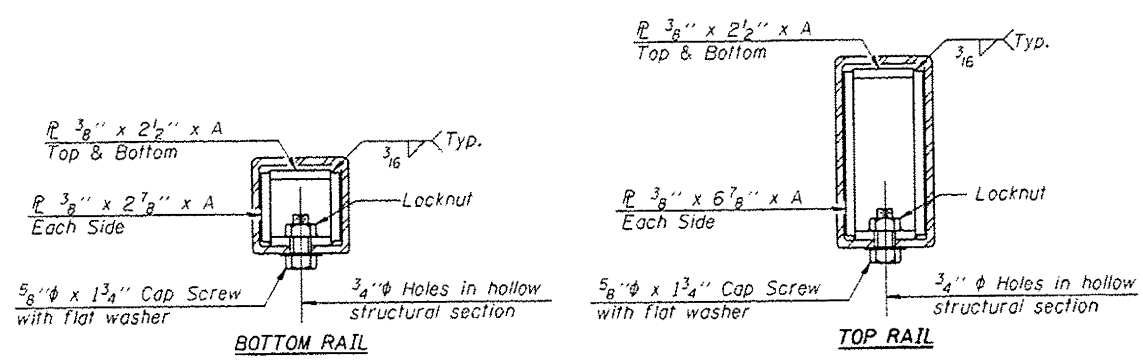
VIEW C-C



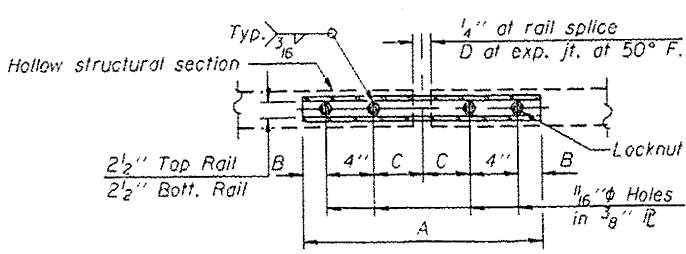
VIEW B-B



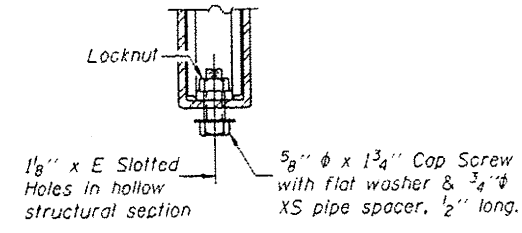
END OF RAIL DETAILS



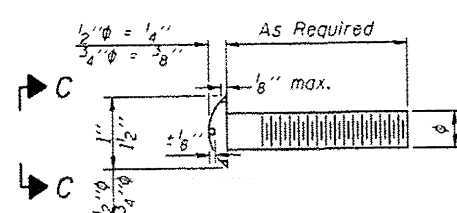
SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.



DETAIL OF 1/2"  $\phi$  & 3/4"  $\phi$  ROUND HEAD BOLTS

Notes:

All field drilled holes shall be coated with an approved zinc rich paint before erection.

Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.

Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	460

-114B

M. J. ...

11/10/58

SECTION	REC.	COUNTY	DATE	BY
60-11	114B	MADISON	11/10/58	

See sheet No. 2a for Index of Sheets

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS AND BUILDINGS  
 DIVISION OF HIGHWAYS  
 PLANS FOR PROPOSED  
 FEDERAL AID INTERSTATE HIGHWAY  
 ROUTE 70

SECTION 60-II PROJECT 1-70-2(37)21  
 SECTION 60-IIHB

SECTION 60-II

SECTION 60-IIHB

GROSS LENGTH 22,100.00 FEET = 4.1856 MILES  
 OMISSION LENGTH 396.94 FEET = 0.0752 MILES  
 PROJECT LENGTH 21,703.06 FEET = 4.1104 MILES

ROADWAY NET LENGTH 1462.75 FEET = 0.2770 MILES  
 BRIDGE NET LENGTH 230.25 FEET = 0.0436 MILES  
 TOTAL NET LENGTH 1693.00 FEET = 0.3206 MILES

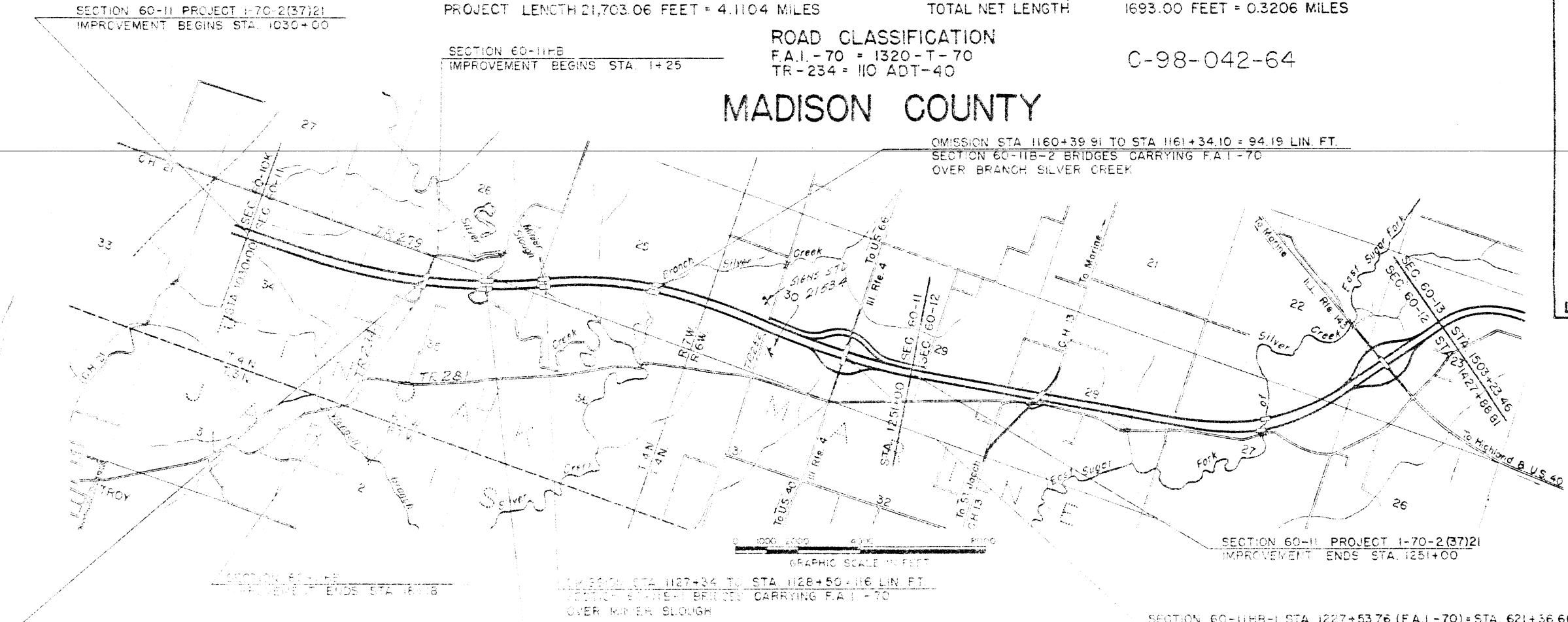
SECTION 60-IIHB  
 IMPROVEMENT BEGINS STA. 1+25

ROAD CLASSIFICATION  
 F.A.I. - 70 = 1320-T-70  
 TR-234 = 110 ADT-40

C-98-042-64

MADISON COUNTY

OMISSION STA 1160+39.91 TO STA 1161+34.10 = 94.19 LIN. FT.  
 SECTION 60-IIHB-2 BRIDGES CARRYING F.A.I.-70  
 OVER BRANCH SILVER CREEK



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

SUBMITTED BY: *[Signature]*

EXAMINED BY: *[Signature]*

APPROVED BY: *[Signature]*

DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER:

DATE:

Reel 8-58  
 1088 + 95.78  
 60-114B

CRAWFORD, MURPHY & TOLLE  
 CONSULTING ENGINEERS  
 SPRINGFIELD, ILLINOIS

CONTRACT NO. 28558

REEL 8-5

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 70	60-118 60-118B	MADISON	119	2A
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT				

INDEX OF SHEETS

SHEET NO.	TITLE SHEET
1	TITLE SHEET
2	TYPICAL CROSS SECTIONS
2A	INDEX TO SHEETS, GENERAL NOTES
2B	TYPICAL CROSS SECTIONS (SHOULDER DETAILS)
3	SUMMARY OF QUANTITIES
4	BRIDGE, CULVERT AND STORM SEWER SCHEDULE
5	EARTHWORK ANALYSIS
6	PLAN AND PROFILE FAI ROUTE 70 STATION 1030+00 TO STATION 1053+00
7	PLAN AND PROFILE FAI ROUTE 70 STATION 1053+00 TO STATION 1083+00
8	PLAN AND PROFILE FAI ROUTE 70 STATION 1083+00 TO STATION 1113+00
9	PLAN AND PROFILE FAI ROUTE 70 STATION 1113+00 TO STATION 1140+00
10	PLAN AND PROFILE FAI ROUTE 70 STATION 1140+00 TO STATION 1170+00
11	PLAN AND PROFILE FAI ROUTE 70 STATION 1170+00 TO STATION 1200+00
12	PLAN AND PROFILE FAI ROUTE 70 STATION 1200+00 TO STATION 1230+00
13	PLAN AND PROFILE FAI ROUTE 70 STATION 1230+00 TO STATION 1251+00
14	PLAN AND PROFILE T.R. 234 STATION 1+25 TO STATION 18+18
15 & 16	PLAN AND PROFILE FRONTAGE ROADS
17	PLAN AND PROFILE ILL. ROUTE 4 STATION 608+40.72 TO STATION 634+96.76
18	INTERCHANGE BETWEEN FAI ROUTE 70 AND ILL. ROUTE 4 GEOMETRICS
19	INTERCHANGE BETWEEN FAI ROUTE 70 AND ILL. ROUTE 4 GRADING LIMITS, RIGHT OF WAY AND DRAINAGE
20	INTERSECTION DETAILS BETWEEN RAMPS AND ILL. ROUTE 4
21 - 24	INTERSECTION DETAILS BETWEEN RAMPS AND FAI ROUTE 70
25	PROFILE RAMP I
26	PROFILE RAMP II
27	PROFILE RAMP III
28	PROFILE RAMP IV
28A	CRITICAL PATH METHOD
29 - 38	BRIDGE DRAWINGS TR 234 OVER FAI ROUTE 70 SHEETS 1 THRU 10
39	9'-0" x 6'-0" R.C. BOX CULVERT STATION 1144+15
40 - 43	SPECIAL HEADWALL DETAILS
44 - 45	EARTHWORK CROSS SECTIONS FAI ROUTE 70
86 - 87	EARTHWORK CROSS SECTIONS TR 234
88 - 94	EARTHWORK CROSS SECTIONS - FRONTAGE ROADS
95 - 98	EARTHWORK CROSS SECTIONS - ILL. ROUTE 4
99 - 102	EARTHWORK CROSS SECTIONS - RAMPS
103 - 108	CULVERT PROFILES

ROUTE NO.	SECTION	COUNTY	SHEETS	NO.
FAI 70	60-118 60-118B	MADISON	119	2A
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT				

INDEX OF SHEETS  
(CONTINUED)

SHEET NO.	TITLE SHEET
109, A, B, C	STANDARD 2179, 2179-1, CORRUGATED METAL PIPES, CASES I, II AND III, STD. 1999-1
110	STANDARD 2169-2
111	STANDARD 2138-3
112	STANDARD 2051
113, A, B	STANDARDS 1976, 1258R, 1683-1
114, A	STANDARDS 1897-T, 2214
115, A	STANDARDS 1686-2, 1687-3
116, A	STANDARDS 1766-3, 2153-4
117, A, B	STANDARDS 1744-1, 2114, 2130
118, A	STANDARDS 2208-4, 2113-1
119	REINFORCEMENT DETAILS FOR 8" C.R.P.C.C. PAVT.
119 A	CONT. REINFORCED 8" P.C.C. PAVT. DETAILS

GENERAL NOTES

- Continuously Reinforced  
Dual Portland Cement Concrete Pavement 24' wide and 8" thick, as shown on Typical Section, used throughout this section on FAI Route 70 unless otherwise shown by details.
- Indicates location for furnishing and erecting right of way markers.
- Temp signs shall be erected in accordance with Standard 2153-4 at location shown on the plans. (See Cover sheet)
- The following utility companies have facilities within the limits of construction which may require adjustment:  
 Illinois Power Company  
 Southwestern Electric Coop.  
 Illinois Bell Telephone Co.
- 4,000,000 Tons Sub-base Granular Material 6" thick throughout this section, unless otherwise shown by details.
- Shoulders, Sideslopes, Ditches and Backslopes to be seeded. (See Special Provisions)  

53.1	Acres	Temporary Seeding
53.1	Acres	Complete Seeding
8.5	Tons	Fertilizer Nutrients
212	Tons	Straw for Asphalt Coated Mulch
21,200	Gals	Emulsified Asphalt
- Datum used for Survey is U.S.G.S.
- Shoulders shall be constructed as shown on Detail of Stabilized Shoulders (Interstate)  
 ---//---//--- Indicates Woven Wire Fence

Where Section or Sub-Section monuments are encountered, the Engineer shall be notified before such monuments are removed.  
 The Contractor shall protect and carefully preserve all property marks and monuments until the owner, an authorized surveyor or agent has witnessed or otherwise referenced their location.

9. LOCATIONS OF LUGS

BEGINS	ENDS
STA. 1030+07	STA. 1031+27
WEST SIDE OF STRUCTURE AT STA. 1108+85.07	EAST SIDE OF STRUCTURE AT STA. 1108+85.07
WEST SIDE OF STRUCTURE AT STA. 1127+92	EAST SIDE OF STRUCTURE AT STA. 1127+92
WEST SIDE OF STRUCTURE AT STA. 1160+87	EAST SIDE OF STRUCTURE AT STA. 1160+87

THE CROSS SECTIONS AND THE BALANCE QUANTITIES HAVE NOT BEEN ADJUSTED TO AGREE WITH REVISIONS SHOWN ON TYPICAL SECTIONS; HOWEVER, THE SUMMARY OF QUANTITIES HAVE BEEN CORRECTED ACCORDINGLY.

SUMMARY OF QUANTITIES

CODE NUMBER	ITEM	LOCATION OF WORK	UNIT	TOTAL QUANTITY	PROJECT I-70-2(37)21		SECTION 60-11B	
					SECTION 60-11 ROAD Station 1030+00 to Station 1251+00	SECTION 60-11B BRIDGE at Station 9+56.16	SECTION 60-11B ROAD Station 1+25 to Station 18+18	BRIDGE at Station 9+56.16
		CONSTRUCTION TYPE CODE			7223		(7223)	X731
01005	TREE REMOVAL, ACRE		ACRE	8.9	8.9			
011001	EARTH EXCAVATION		CU YD	422,936	410,246		12,670	
013001	BORROW EXCAVATION		CU YD	50,631	50,631			
020001	TRENCH BACKFILL		CU YD	18	18			
024003	SUB-BASE GRANULAR MATERIAL, TYPE B		TON	7,389	5,790		1,599	
024016	STABILIZED SUB-BASE 4"		50 YD	146,008	146,008			
029003	GRAVEL OR CRUSHED STONE BASE COURSE, TYPE B		TON	6,465	5,066		1,399	
035001	BITUMINOUS MATERIALS (PRIME COAT)		GALLON	7,916	6,203		1,713	
035002	BITUMINOUS MATERIALS (COVER AND SEAL COATS)		GALLON	9,499	7,444		2,055	
035003	COVER COAT AGGREGATE		TON	198	155		43	
035004	SEAL COAT AGGREGATE		TON	198	155		43	
046012	BITUMINOUS CONCRETE BINDER COURSE (SHOULDERS)		TONS	6,155	6,155			
046013	BITUMINOUS CONCRETE SURFACE COURSE, SUB-CLASS I-11, (SHOULDERS)		TONS	6,155	6,155			
046008	PORTLAND CEMENT CONCRETE PAVEMENT, 10"		SQ YD	13,045	13,045			
046012	PORTLAND CEMENT CONCRETE PAVEMENT, 16 1/2-12-16 1/2		SQ YD	1,312	1,312			
048031	PAVEMENT REINFORCEMENT		SQ YD	114,437	114,437			
048019	PAVEMENT FABRIC		SQ YD	13,045	13,045			
048027	CONTINUOUSLY REINFORCED P.C. CONCRETE PAVEMENT 8"		SQ YD	114,437	114,437			
050001	CLASS A EXCAVATION FOR STRUCTURES		CU YD	154			154	
052003	CLASS X CONCRETE		CU YD	622.8	198.1		424.7	
052016	CLASS X CONCRETE, HEADWALL		CU YD	82.9	59.8		23.1	
052021	PROTECTIVE COAT		SQ YD	129,614	128,794			820
054001	FURNISHING & ERECTING STRUCTURAL STEEL		POUND	165,440				165,440
700004	ALUMINUM HANDRAIL		LIN FT	456				456
050964	PIPE CULVERT, TYPE 1A, R.C.C.P. 24"		LIN FT	1056	1056			
050965	PIPE CULVERT, TYPE 1A, R.C.C.P. 30"		LIN FT	161	161			
050985	PIPE CULVERT, TYPE 2A, R.C.C.P. 24"		LIN FT	68	68			
050987	PIPE CULVERT, TYPE 2A, R.C.C.P. 36"		LIN FT	505	505			
055199	PIPE CULVERT, TYPE 1, 15"		LIN FT	148	24		124	
058004	PIPE CULVERT, TYPE 1A, 15"		LIN FT	10	10			
058005	PIPE CULVERT, TYPE 1A, 15"		LIN FT	42			42	
058007	PIPE CULVERT, TYPE 1A, 24"		LIN FT	134	134			
058202	PIPE CULVERT, TYPE 1, 24"		LIN FT	24	24			
058028	PIPE CULVERT, TYPE 2A, 24"		LIN FT	160	99		61	
058030	PIPE CULVERT, TYPE 2A, 24"		LIN FT	55			55	
058034	PIPE CULVERT, TYPE 2A, 36"		LIN FT	118			118	
059001	REINFORCEMENT BARS		POUNDS	195,687	133,466		461	61,660
060043	DRIVING CONCRETE PILES		LIN FT	340				340
060044	FURNISHING CONCRETE PILES		LIN FT	340				340
060047	TEST PILE CONCRETE		EACH	1				1
061001	NAME PLATES		EACH	2				2
063001	CORRUGATED METAL PIPE, 12"		LIN FT	356	356			
063007	CORRUGATED METAL PIPE, 24"		LIN FT	66	66			
063009	CORRUGATED METAL PIPE, 30"		LIN FT	40	40			
070001	PIPE UNDERDRAINS, 6"		LIN FT	100	100			
070002	PIPE UNDERDRAINS, 8"		LIN FT	100	100			
070003	PIPE UNDERDRAINS, 10"		LIN FT	100	100			
070016	PIPE UNDERDRAINS, 4"		LIN FT	100	100			
075100	INLETS, TYPE A, TYPE 3 FRAME		EACH	2	2			
075111	INLETS		EACH	3	3			
075001	CAST IRON GRATES		POUND	776	776			
050092	COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.24		LIN FT	1,018	1,018			

SUMMARY OF QUANTITIES (CONTINUED)

CODE NUMBER	ITEM	LOCATION OF WORK	UNIT	TOTAL QUANTITY	PROJECT I-70-2(37)21		SECTION 60-11B	
					SECTION 60-11 ROAD Station 1030+00 to Station 1251+00	SECTION 60-11B BRIDGE at Station 9+56.16	SECTION 60-11B ROAD Station 1+25 to Station 18+18	BRIDGE at Station 9+56.16
		CONSTRUCTION TYPE CODE			7221		(7223)	X731
080094	COMBINATION CONCRETE CURB & GUTTER, TYPE M-6.06		LIN FT	130	130			
089009	PORTLAND CEMENT CONCRETE MEDIAN SURFACE, 4"		SQ FT	320	320			
083002	SLOPE WALL 4 INCH		SQ YD	396				396
091002	PAVED DITCH 3 FEET		LIN FT	38			38	
091004	PAVED DITCH 5 FEET		LIN FT	76			76	
091008	PAVED DITCH 9 FEET		LIN FT	25	25			
094001	STEEL PLATE BEAM GUARD RAIL		LIN FT	2,963	1,725		1,238	
104001	FURNISHING AND ERECTING RIGHT OF WAY MARKERS		EACH	90	83		7	
110001	TEMPORARY SEEDING		ACRE	53.1	52.1		1.0	
110004	COMPLETE SEEDING		ACRE	53.1	52.1		1.0	
110005	FERTILIZER NUTRIENTS		TON	8.6	8.4		0.2	
111002	STRAW FOR ASPHALT COATED MULCH		TON	212	208		4	
111003	EMULSIFIED ASPHALT		GAL	21,200	20,800		400	
X00015	JUTE MATTING		SQ YD	13,431	13,431			
Z00125	FURNISH & ERECT DRAINAGE MARKERS		EACH	10	10			
Z00693	STABILIZED SHOULDERS		SQ YD	73,276	73,276			
Z01028	WOVEN WIRE FENCE		LIN FT	40,318	40,318			
Z01356	LUGS		EACH	56	56			
010001	TREE REMOVAL (6 TO 15 INCH DIAMETER)		IN. DIA	200	200			
010002	TREE REMOVAL (OVER 15 INCH DIAMETER)		IN. DIA	265	265			

ELDON ENGELING  
Cultivated

CURVE DATA

D 221.50' (111)  
D 0.15  
L 8874.08  
L 7344.44  
R 19078.59  
E 88896  
PI STA 1084.19445  
PC STA 1048.12060  
PT STA 1122.16481  
NO SUPERELEVATION

TRA ROW MARKERS

Cultivated  
ELDON ENGELING

Life Netting

1. STA 1088+00 TO STA 1088+50 SIDE DITCH 10' WIDE x 6' DEEP  
2. STA 1088+50 TO STA 1088+100 SIDE DITCH 10' WIDE x 6' DEEP  
3. STA 1088+100 TO STA 1088+150 SIDE DITCH 10' WIDE x 6' DEEP  
4. STA 1088+150 TO STA 1088+200 SIDE DITCH 10' WIDE x 6' DEEP  
5. STA 1088+200 TO STA 1088+250 SIDE DITCH 10' WIDE x 6' DEEP  
6. STA 1088+250 TO STA 1088+300 SIDE DITCH 10' WIDE x 6' DEEP  
7. STA 1088+300 TO STA 1088+350 SIDE DITCH 10' WIDE x 6' DEEP  
8. STA 1088+350 TO STA 1088+400 SIDE DITCH 10' WIDE x 6' DEEP  
9. STA 1088+400 TO STA 1088+450 SIDE DITCH 10' WIDE x 6' DEEP  
10. STA 1088+450 TO STA 1088+500 SIDE DITCH 10' WIDE x 6' DEEP  
TOTAL 5055 SY

TRIN BRIDGE Carrying FAH Route 70 Over Silver Creek  
Section 60-11B Sta 1104+15.075  
Sta 1107+19.170 To Sta 1109+78.465 = 183.75 Lin. Ft  
3 Span Continuous T-Beam Bridges on solid concrete  
Piers & Concrete Pier Bent Abutments  
Span 28'57'-0"  
18'37'-07"

PROJECT NO. SEC. COUNTY DISTRICT  
FAH-70 60-11B MADISON 1110  
089-60  
PROJECT NO. 7

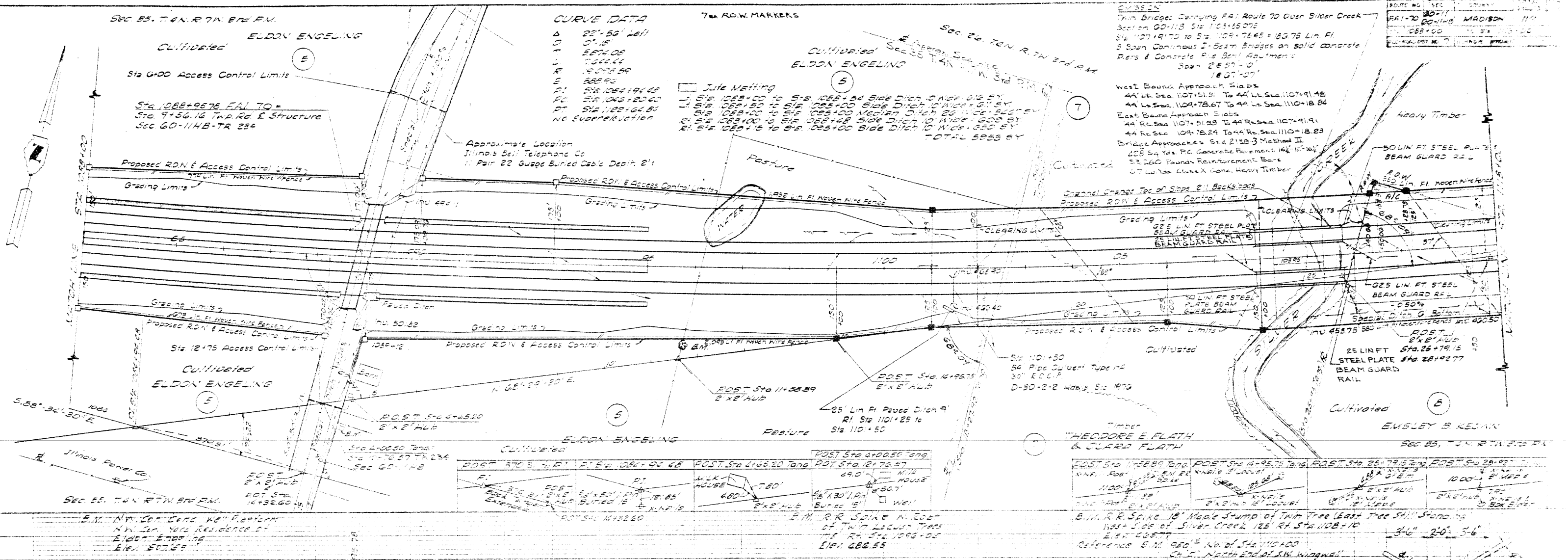
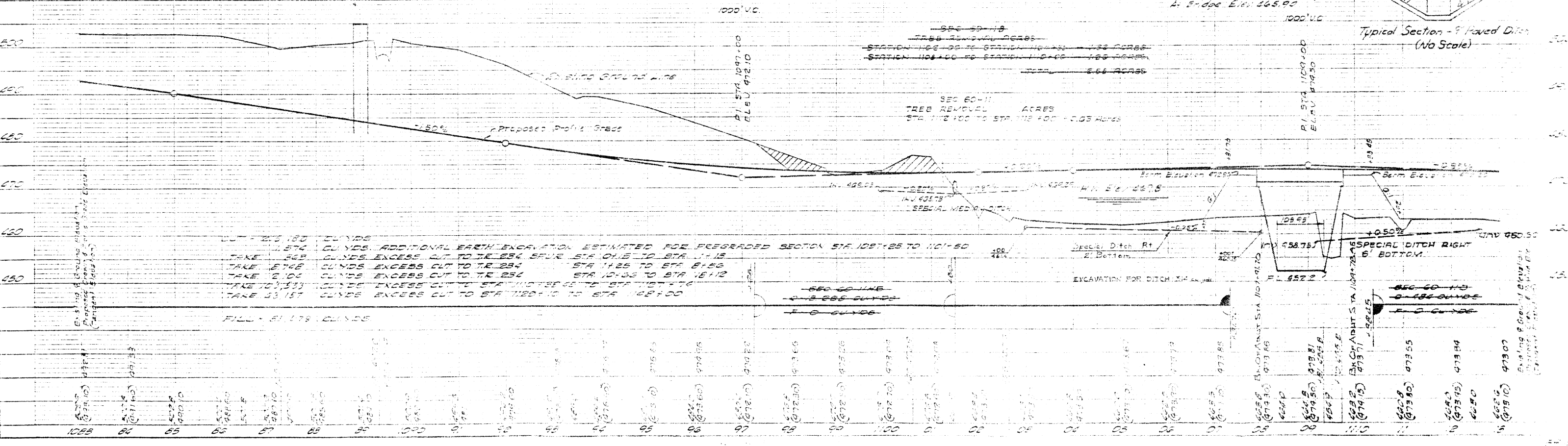


Table with 4 columns: POST STA, TANG, POST STA, TANG, POST STA, TANG, POST STA, TANG. Includes notes like 'MILK HOUSE', 'WELL', and 'B.M. R.R. SPIKE MARKER'.

Table with 4 columns: POST STA, TANG, POST STA, TANG, POST STA, TANG, POST STA, TANG. Includes notes like 'B.M. R.R. SPIKE MARKER' and 'Reference B.M. 950'.



CUT - 225.180 CU YDS  
TAKE 1.274 CU YDS. ADDITIONAL EARTH EXCAVATION ESTIMATED FOR PREGRADED SECTION STA 1097+25 TO 1101+50  
TAKE 263 CU YDS. EXCESS CUT TO TR 234 SPUR STA 1011+10 TO STA 1115  
TAKE 8768 CU YDS. EXCESS CUT TO TR 234 STA 1125 TO STA 8156  
TAKE 2.106 CU YDS. EXCESS CUT TO TR 234 STA 10+33 TO STA 18112  
TAKE 10,133 CU YDS. EXCESS CUT TO STA 1125+55 TO STA 1127+74  
TAKE 33,157 CU YDS. EXCESS CUT TO STA 1129+10 TO STA 1131+00

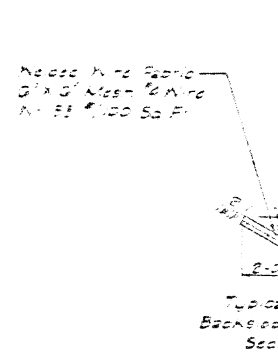
FILL - 61,179 CU YDS

Table with 2 columns: Stationing (1085 to 1135) and Elevation (973.07 to 973.00).

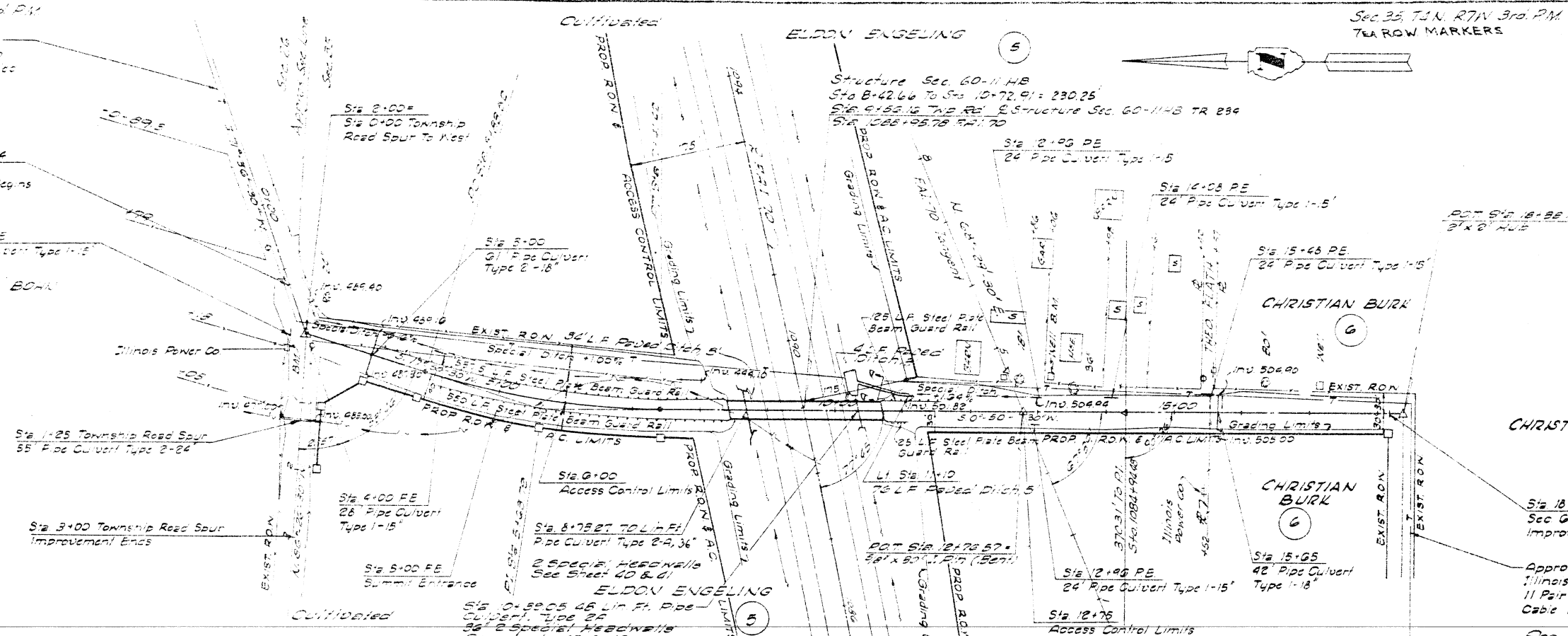
**CURVE DATA**

Approximate Location  
11.5' Bell Telephone Co  
Pair 22 Gauge Buried  
Cable Depth 2'-2

Station	7100
Point	1400
PC	1400
PT	1400
Curve Length	200.00
Radius	1500.00
Chord Length	141.42
Delta	36.00
Chord Bearing	S 36.00 W
Station	7100
Point	1400
PC	1400
PT	1400
Curve Length	200.00
Radius	1500.00
Chord Length	141.42
Delta	36.00
Chord Bearing	S 36.00 W



ARTHUR BORN  
T.I.P.C. Section  
Back and Paved Ditch  
Sec A-A

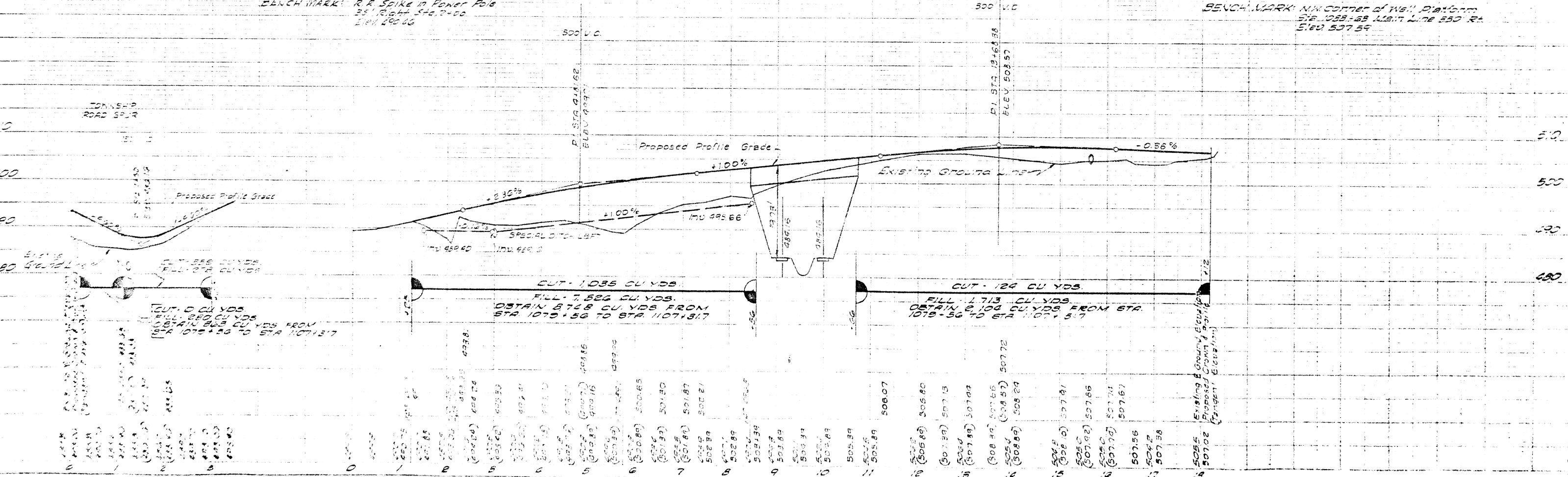


CLASS 'B' ROAD  
30' Shoulder to Shoulder  
18' Gravel or Crushed Stone Base  
Course 1-2  
18' Sub-base Granular Material  
Type B 6'  
18' Bituminous Surface Treatment  
Class A 5/4\"/>

**CURVE DATA**

L	22'-60\"/>
---	------------

STA 0+00	PI STA 2+00	PC STA 3+15.52	P STA 5+12.79	P STA 7+11.62	POT STA 2+26.37	POT STA 14+32.60	POT STA 18+38.15
<p>Notes on stationing and points of interest, including 'BENCH MARK: R.R. Spike in Power Pole' and 'BENCH MARK: NW Corner of Well Platform'.</p>							



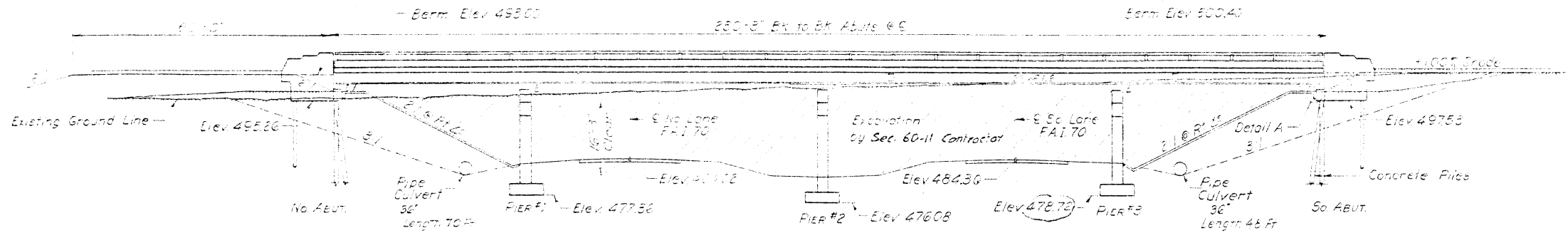


E.M. N. W. Corner of Sec. 60, Twp. 234 N., R. 70 E., S. 11 N.  
 Main Line 130 Ft. Elev. 50758  
 No Existing Structures

This portion of embankment  
 to be filled by Bridge Contractor  
 after Abut. is in place

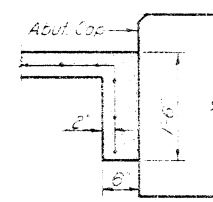
STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
 DIVISION OF HIGHWAYS

DATE	DESCRIPTION
10/15/21	Final Design
10/15/21	Final Elevation
10/15/21	Final Plan



ELEVATION

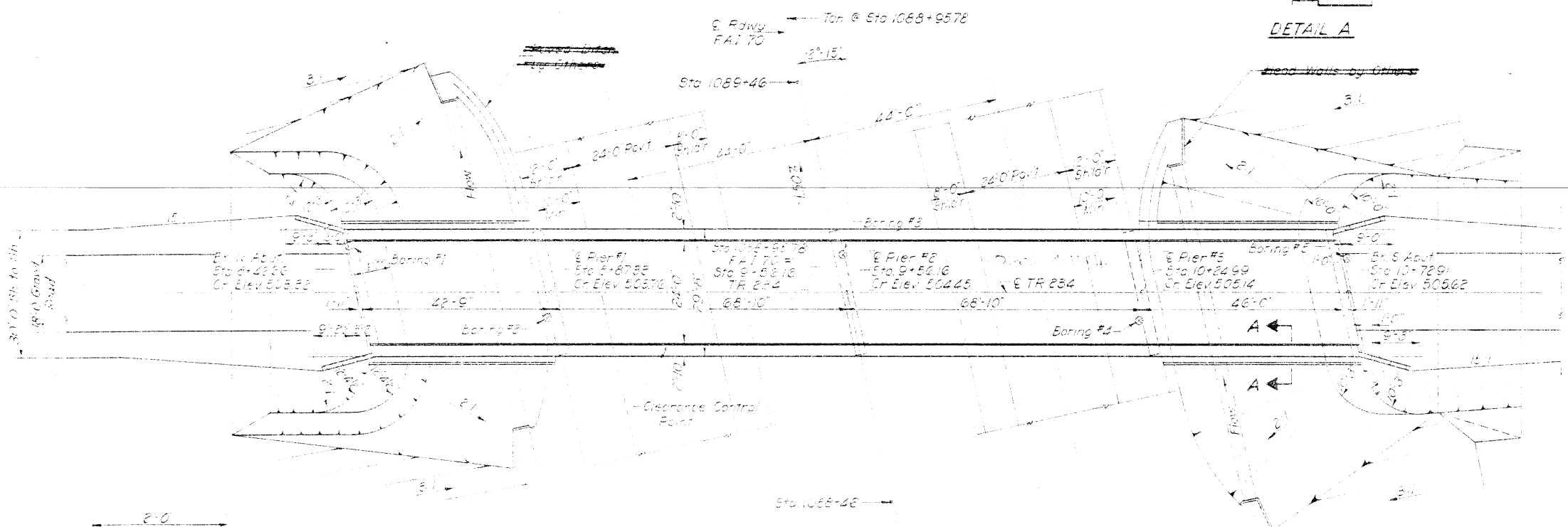
Note: For quantity of Embankment  
 See Road Plan



DETAIL A

**GENERAL NOTES**

Class A concrete shall be used for all structures.  
 Coarse aggregate which is to be used in concrete shall be absolutely free of dirt, flat, rounded, light and dark spots.  
 The concrete floor slab shall be finished in accordance with Article 5119 of the Standard Specifications.  
 Slope wall shall be reinforced with welded wire fabric, 12 mesh, #4 wires, weighing 56 lbs per 100 sq ft.  
 Rivets 3/4" open holes 1 1/2", unless noted.  
 All rockers, bolsters, bearing plates, lead plates, girders and anchor bolts shall be fabricated and set in accordance with Article 5115 of the Standard Specifications and are included in quantity of Structural Steel Est. No. 225.  
 Anchor bolts shall be set before fastening a subgrade over supports.  
 Expansion guards shall be fabricated and erected in accordance with Article 5113(d) of the Standard Specifications and are included in quantity of Structural Steel Est. No. 225.  
 Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint.  
 The outside faces of the vertical legs of expansion guards shall be given two shop coats of red lead paint.  
 All paint shall be furnished and applied by the Contractor.  
 The contractor shall drive one concrete test pile in a permanent location of North Abutment as directed by the Engineer before ordering remainder of the steel.  
 All structural steel shall conform to A.S.T.M. Designation A36.



PLAN

STATION 1088+95.78  
 BUILT 196 BY  
 STATE OF ILLINOIS  
 F.A. RT 57 SEC. 60-11HB  
 F.A. PROJ. I-70-2(3)  
 LOADING H15-S12

NAME PLATE LETTERING  
 See Sheet 5 for Location of Lettering

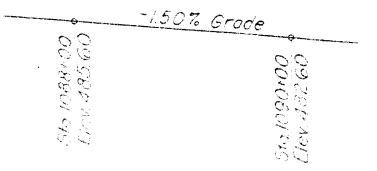
TOTAL BILL OF MATERIAL

Item	Unit	Quantity	Value
Class A Excavation for Structures	Cu Yds	120	120
Class X Concrete	Cu Yds	400	400
Structural Steel	Lbs	35,440	15,440
Aluminum Hanger	Lip Ft	100	100
Pipe Culvert 36" Type 2A	Lip Ft	118	118
Reinforcement Bars	Lbs	22,125	22,125
Concrete Piles	Lip Ft	300	300
Test Piles (Concrete)	Each	1	1
Name Plates	Each	1	1
Slope Wall 14"	Sq Yds	172	172
Protective Coat	Sq Yds	300	300

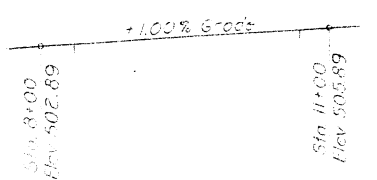
F.A.I. 70  
 CURVE DATA

Δ = 22° 56' Left  
 D = 0° 18'  
 T = 3874.06'  
 L = 7644.44'  
 P = 5038.59'  
 E = 388.96'  
 P.I. Sta 1064+94.48  
 P.C. Sta 1046+20.40  
 P.T. Sta 1122+64.84  
 No Superelevation

PROPOSED  
 GRADE PROFILE  
 F.A.I. 70



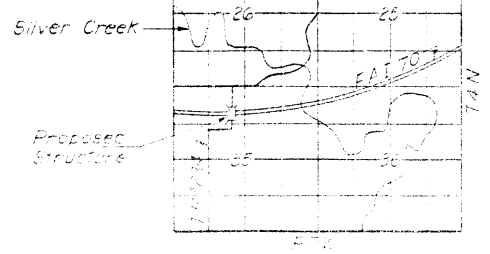
PROPOSED  
 GRADE PROFILE  
 Twp. Rd. 234



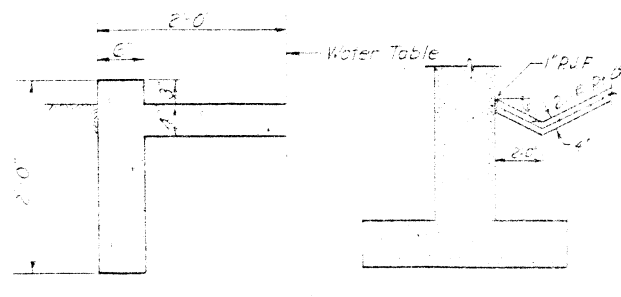
DESIGN STRESSES

f<sub>c</sub> = 1400 psi Super 4.5.5  
 f<sub>c</sub> = 75 psi Figs  
 f<sub>s</sub> = 20,000 psi Reinf  
 f<sub>s</sub> = 20,000 psi Struct (A-36)  
 Allowable 4. Defl = 1/1000  
 n = 10

LOADING H15-S12-44



LOCATION PLAN



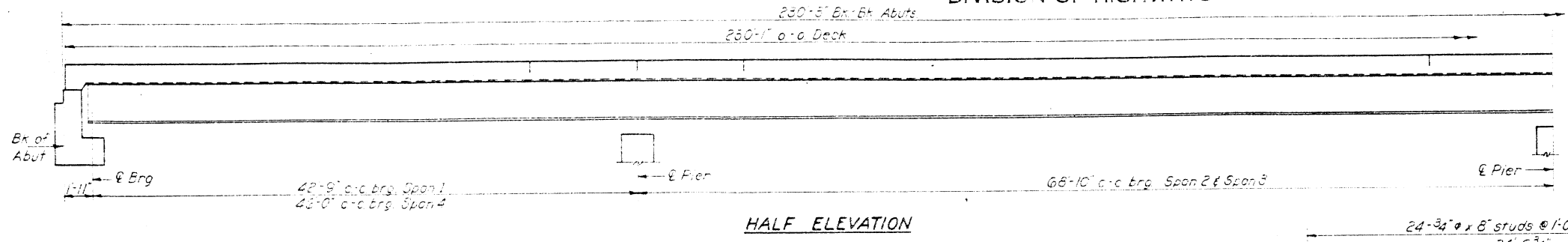
SECTION A-A

SECTION THRU PIER

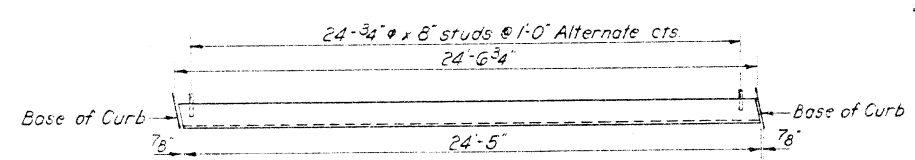
DESIGNED *Edwin Tomatase*  
 CHECKED *Ted Tanaka & J.V.R.*  
 DRAWN *J.L. Armstrong*  
 CHECKED *J.J. Pimsay*

EXAMINED *[Signature]*  
 PASSED *[Signature]*  
 APPROVED *[Signature]*

PROJ. I-70-2(3)21  
 GENERAL PLAN & ELEVATION  
 TWP. RD. 234 OVER F.A.I. RT 70  
 SEC. 60-11HB  
 MADISON COUNTY  
 STA. 1088+95.78



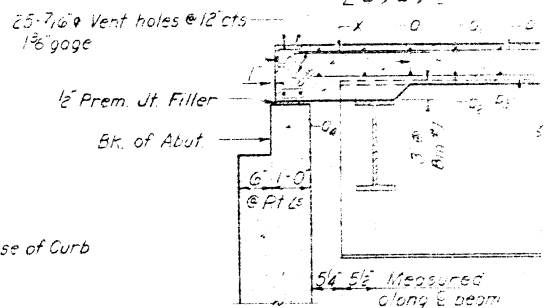
**HALF ELEVATION**



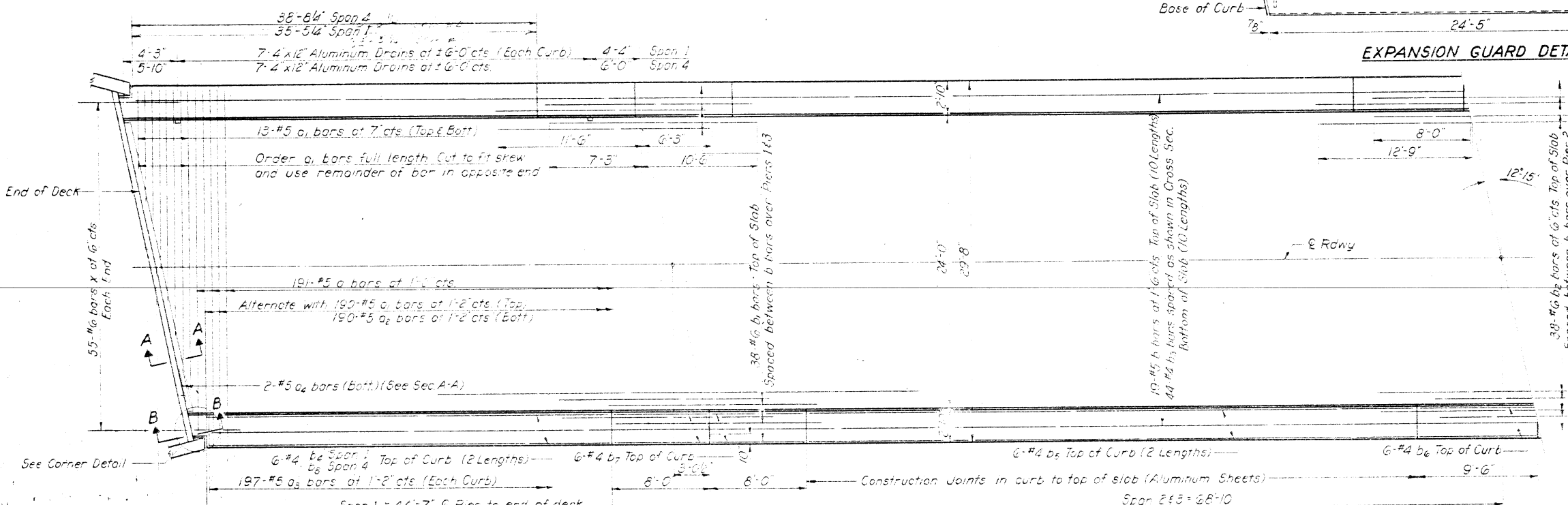
**EXPANSION GUARD DETAIL (2 Req'd)**

1/2" holes at 12" cts for 3/8" bolts  
All bolts shall be burned, sowed or  
clipped off flush with back of  
angles after forms are removed.

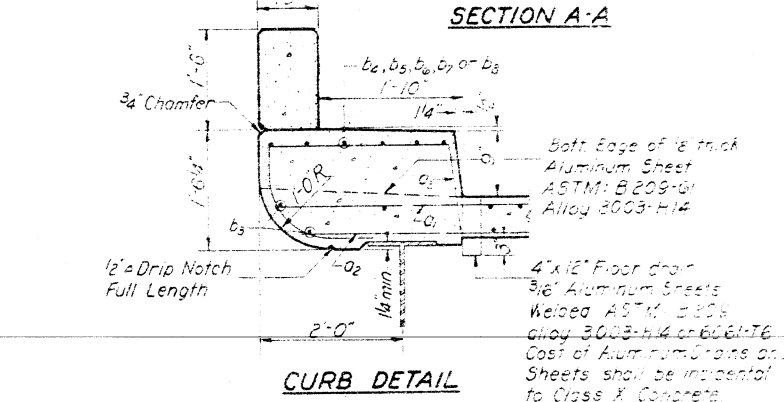
24" x 8" CP 1000 ST. Granular  
or sika flux filled ducts  
automatically exp. welded  
alternate at 1'-0" cts



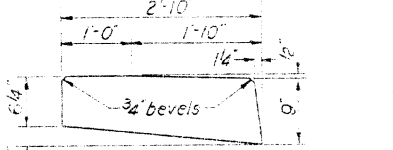
**SECTION A-A**



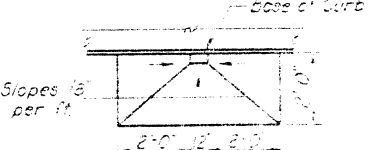
**HALF PLAN**



**CURB DETAIL**

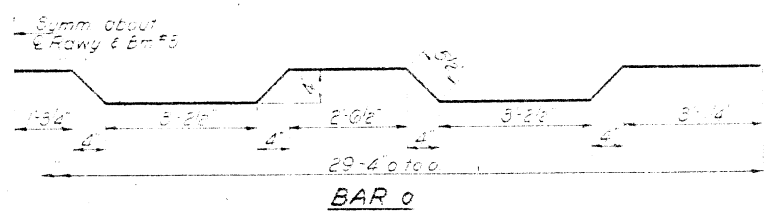


**DETAIL OF 1/8" ALUMINUM SHEET**  
Used in curb joints (3003-H14)

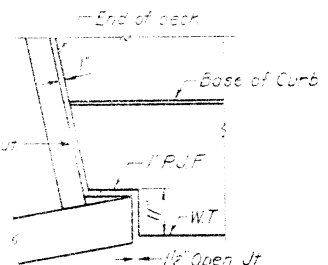


**PLAN OF DRAIN**

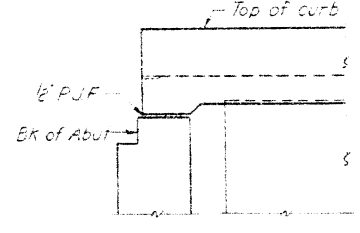
**METHOD OF DETERMINING FILLET HEIGHTS "f"**  
After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at the stations shown on sheet #8. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet #6, minus floor thickness equals the fillet heights, above top of beams.



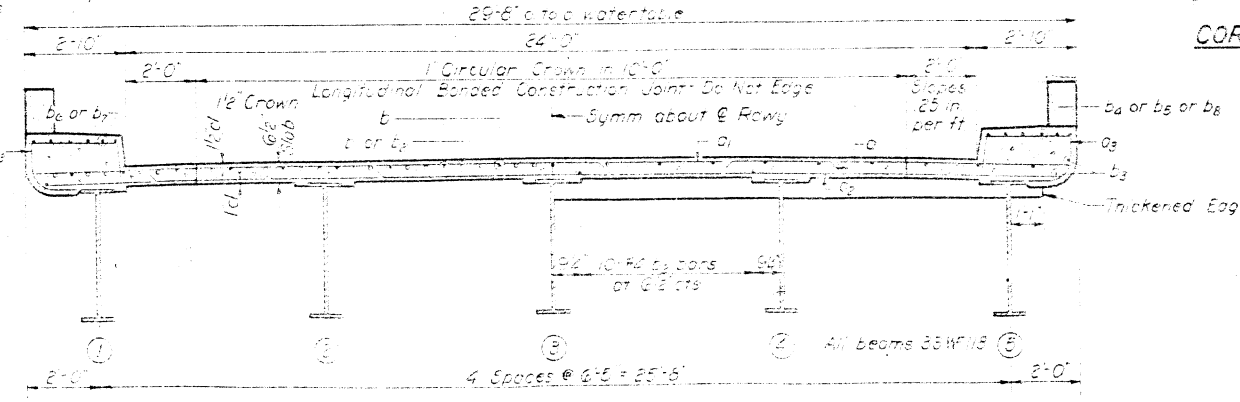
**BAR 0**



**CORNER DETAIL**

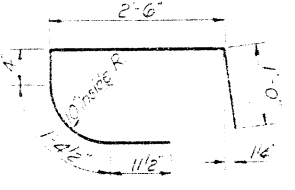


**SECTION B-B**

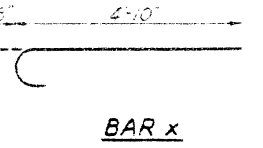


**CROSS SECTION**

**TYPICAL**



**BAR 03**



**BAR x**

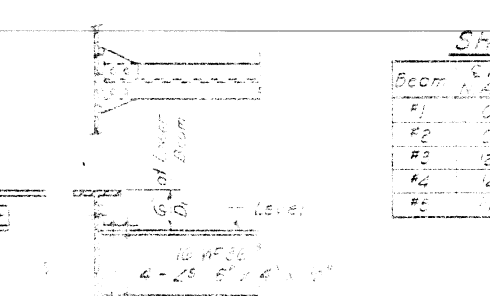
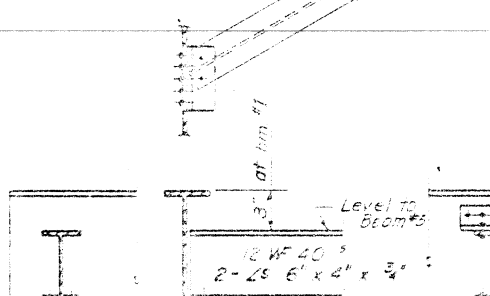
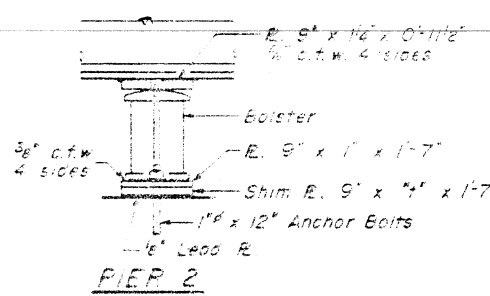
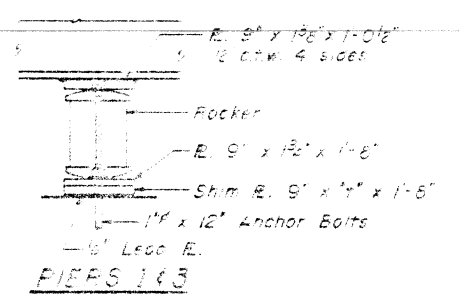
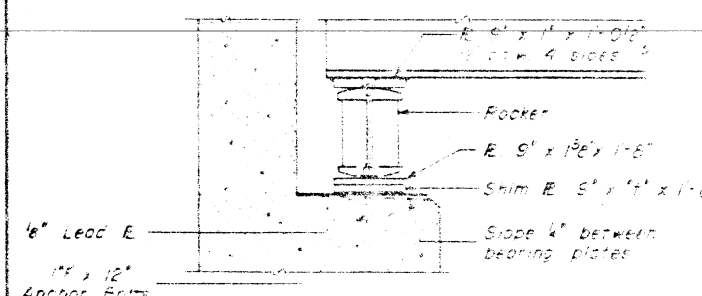
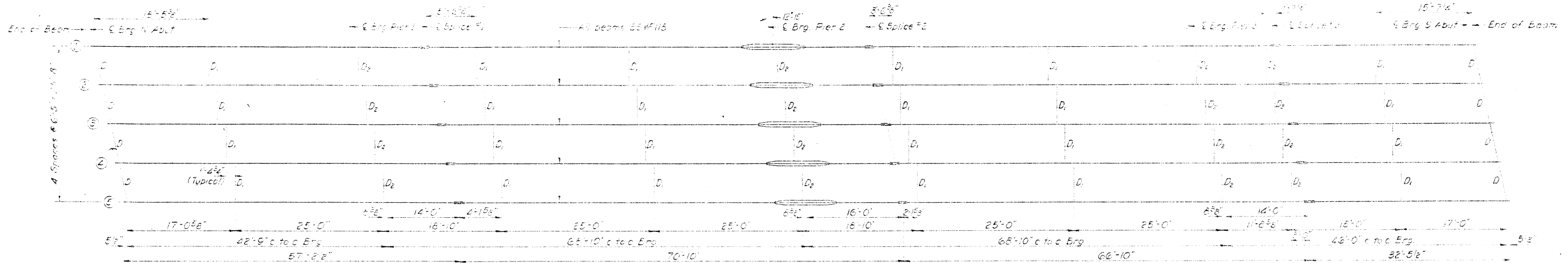
**BILL OF MATERIAL**

Bar No.	Size	Length	Quantity
a	191	#5	32
a1	215	#5	28
a2	190	#5	32
a3	382	#5	28
a4	2	#5	28
b	190	#5	28
b1	76	#5	28
b2	38	#5	28
b3	440	#5	28
b4	22	#5	28
b5	48	#5	28
b6	24	#5	28
b7	48	#5	28
b8	24	#5	28
x	110	#5	28

\* Class X Concrete  
\* Structural Steel  
\* Reinforcement Bars  
\* Weight of roakers, casters, leveling plates, lead plates and anchor bolts included on Structural Steel. See Weight Table for details.  
\* Includes quantities from drawing not shown on sheet #7

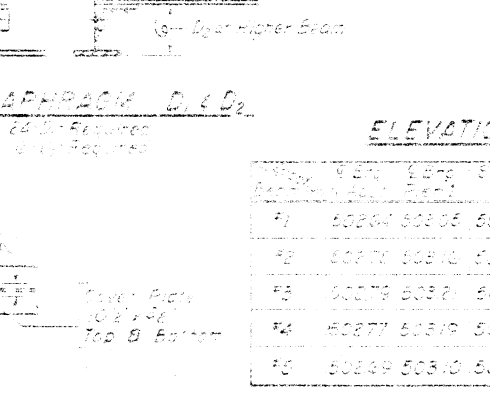
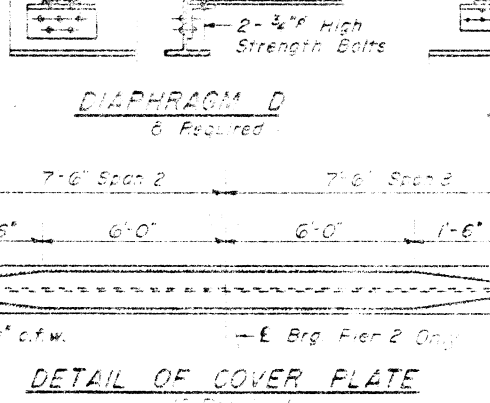
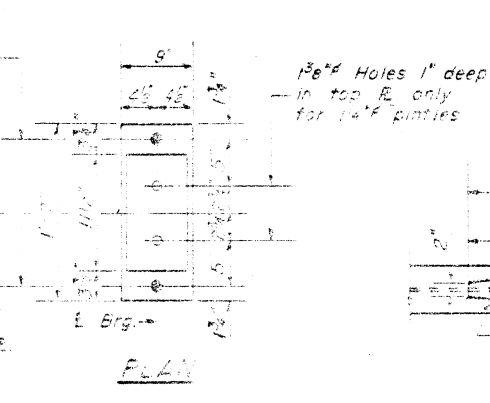
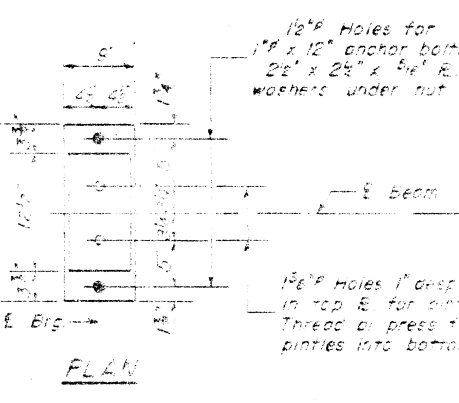
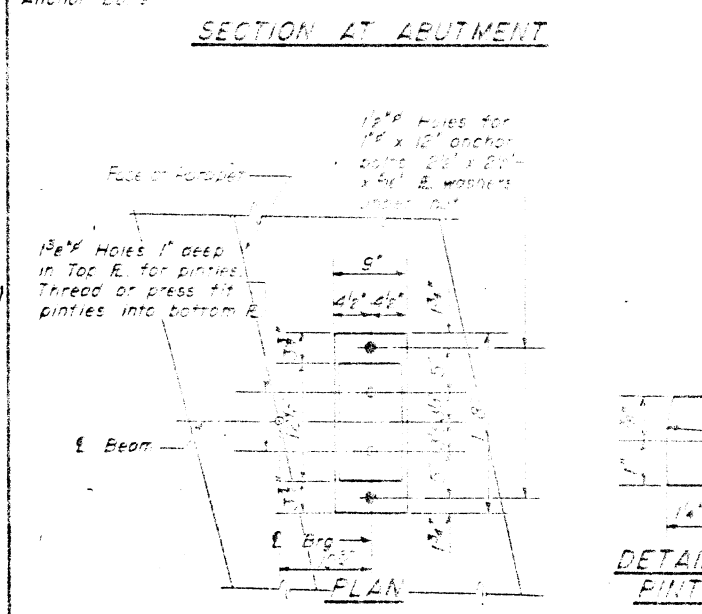
DESIGNED	J. L. Armstrong
CHECKED	J. L. Armstrong
DRAWN	J. L. Armstrong
CHECKED	J. L. Armstrong

EXAMINED	J. L. Armstrong
PASSED	J. L. Armstrong
APPROVED	J. L. Armstrong



SHIM #1 DIMENSIONS

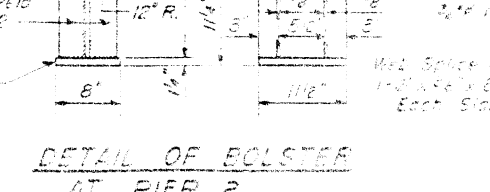
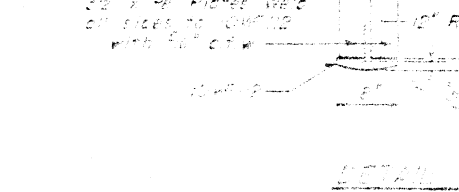
Beam No.	E Brg	Per 1	Per 2	Per 3	E Brg
#1	0	0	0	0	0
#2	0	0	0	0	0
#3	2	12	12	12	2
#4	12	12	12	12	12
#5	12	12	12	12	12



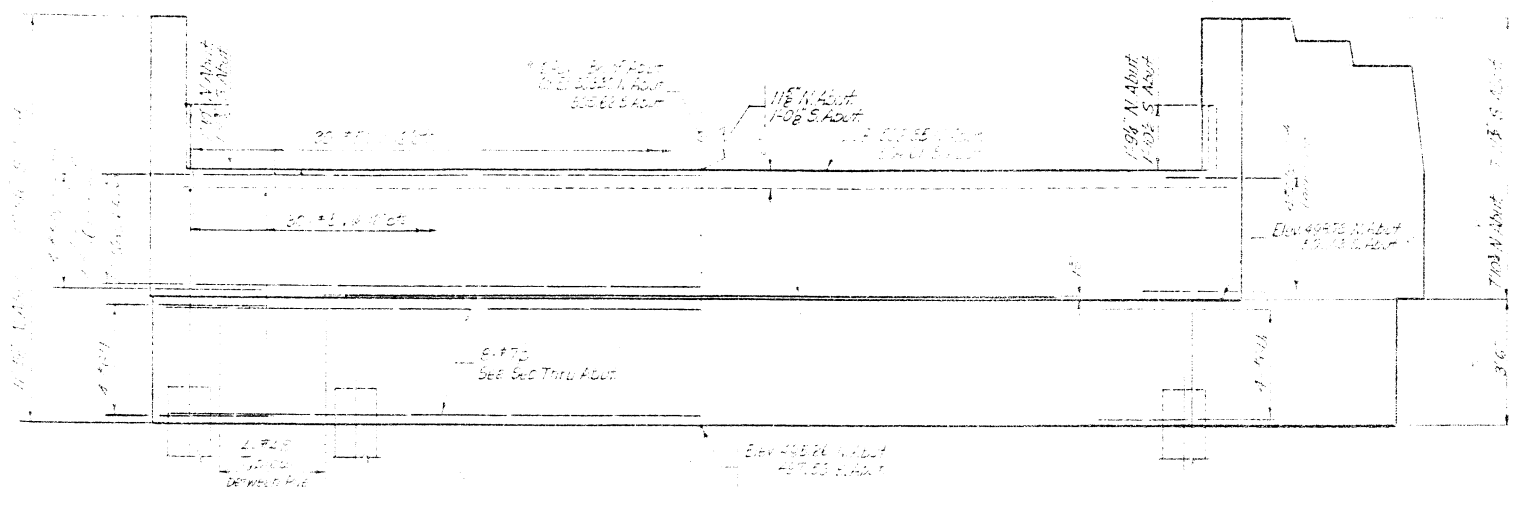
ELEVATION TOP OF WF

Span	E Brg	Splice	E Brg	Splice	E Brg	Splice	E Brg
#1	50204	50206	50208	50209	50210	50211	50212
#2	50213	50214	50215	50216	50217	50218	50219
#3	50220	50221	50222	50223	50224	50225	50226
#4	50227	50228	50229	50230	50231	50232	50233
#5	50234	50235	50236	50237	50238	50239	50240

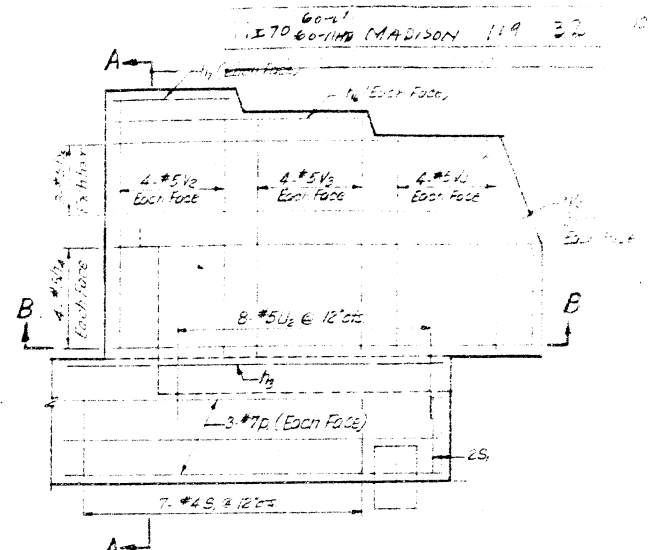
DESIGNED: [Signature]  
CHECKED: TED TANAKA  
DRAWN: J. L. Armstrong  
CHECKED: J. J. Rimsoy



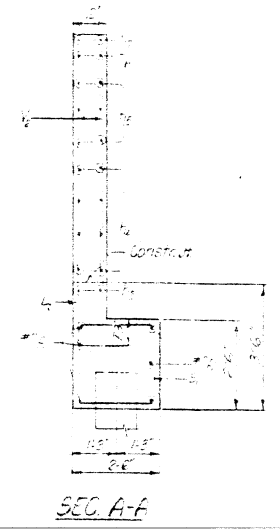
STRUCTURAL STEEL  
F.A.I. RT. 70 SEC. 60-1185  
MADISON COUNTY  
STA. 1088+95.78



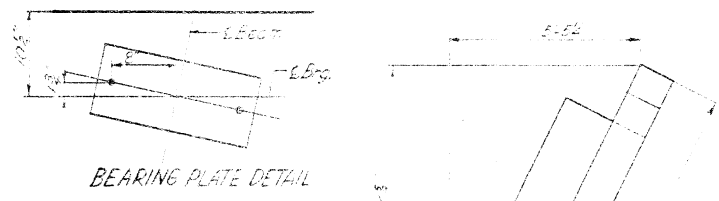
ELEVATION



WINGWALL ELEVATION (Reinforcement)



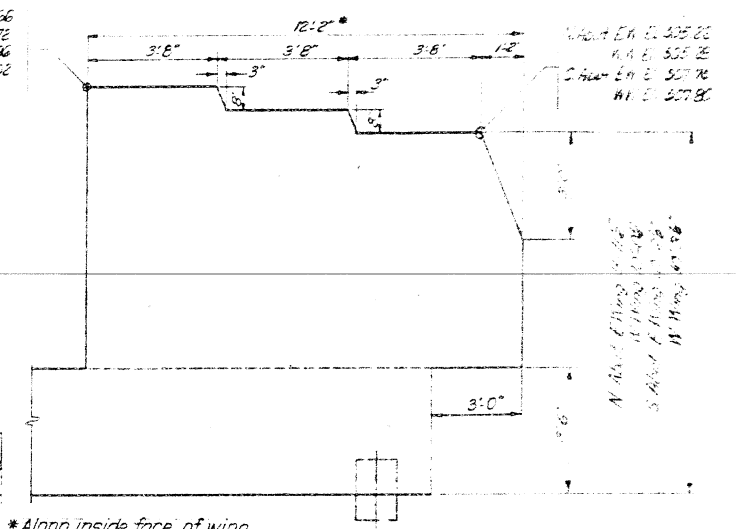
SEC. A-A



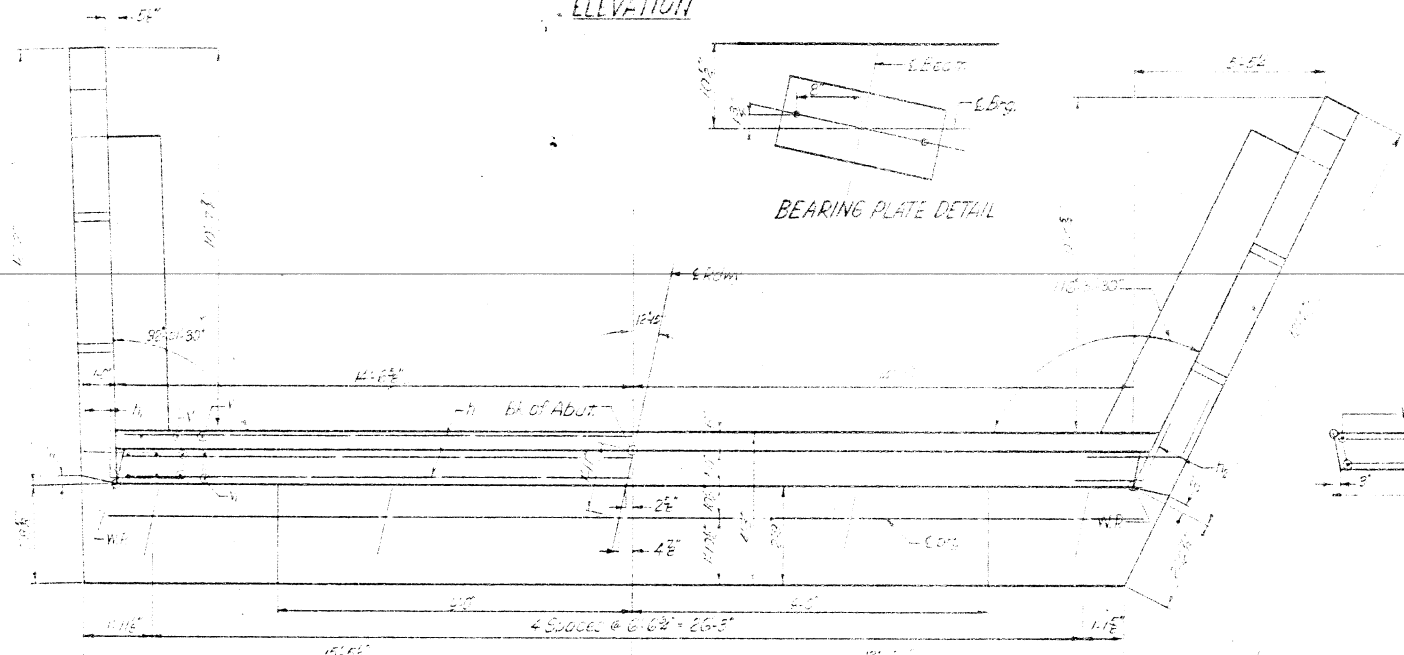
BEARING PLATE DETAIL

N. Abut. E. Wing El. 506.66  
 W. Wing El. 506.72  
 S. Abut. E. Wing El. 506.96  
 N. Abut. El. 509.02

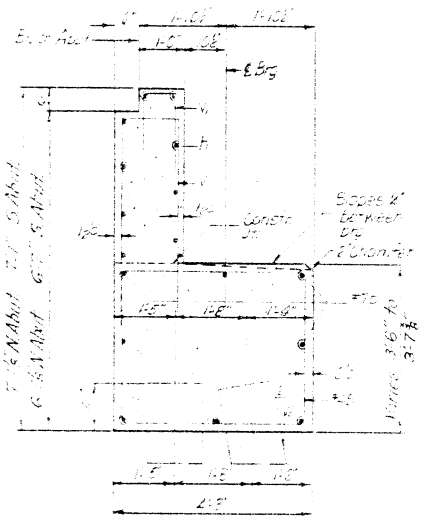
PILE DATA  
 Type - Concrete Piles  
 Capacity - 30T  
 Est. Length - 20 Ft.  
 No. Piles - 17 + One test Pile



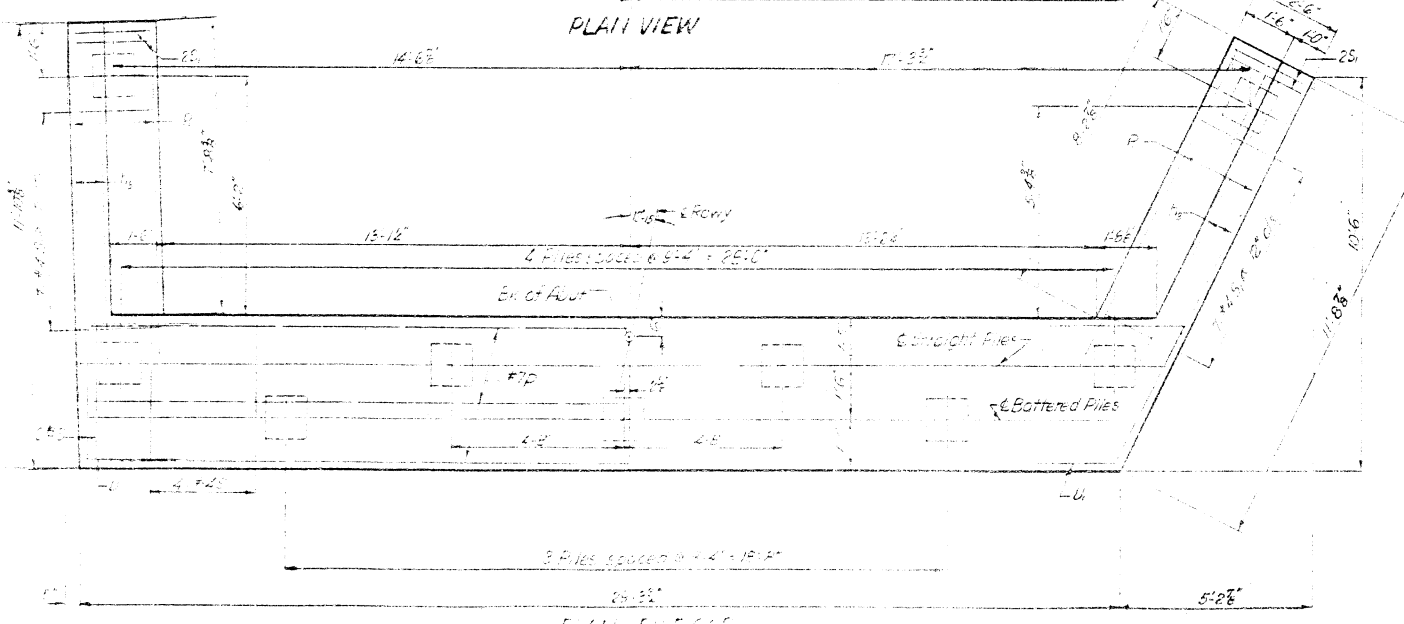
WINGWALL ELEVATION (Dimensions)



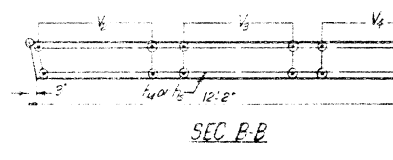
PLAN VIEW



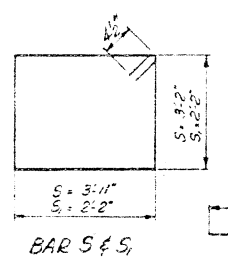
SEC. THROUGH ABUT.



PLAN - PILE CAP



SEC. B-B



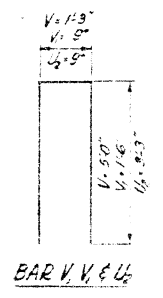
BAR S & S1



BAR U1



BAR U2



BAR V, V1 & U2

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	SHAPE
h1	18	#5	2'-10"	
h2	16	#5	4'-9"	
h3	16	#5	4'-8"	
h4	8	#5	5'-4"	
h5	32	#5	1'-5"	
h6	24	#5	10'-5"	
h7	8	#5	7'-0"	
F	16	#7	22'-0"	
F	24	#7	2'-0"	
S	50	#4	4'-0"	
S	36	#4	4'-0"	
U	8	#6	8'-0"	
U1	8	#6	1'-0"	
U2	32	#5	7'-0"	
V	60	#5	1'-5"	
V1	60	#5	2'-0"	
V2	32	#5	7'-0"	
V3	32	#5	7'-0"	
V4	40	#5	1'-0"	

1085 X CONCRETE  
 Reinforcement Bars  
 Concrete Piles  
 Test Pile Concrete

NO. 1 SQ. ABUTMENTS  
 FAZ RT TO SCOTTS BL  
 MADISON COUNTY  
 STA. 1088 + 55.75

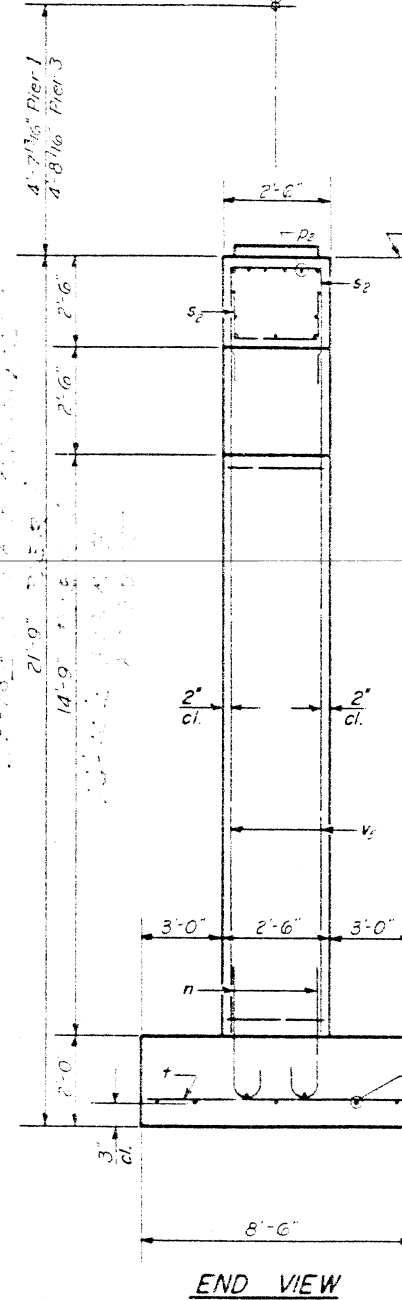
Checked by: [Signature]  
 Design by: [Signature]  
 Date: [Date]

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5 10 SHEETS
70	60-11HB	MADISON	119	33	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Pier #1  
Sta. 6+67.33  
Cr. Elev. 503.76

Pier #2  
Sta. 10+24.99  
Cr. Elev. 506.14

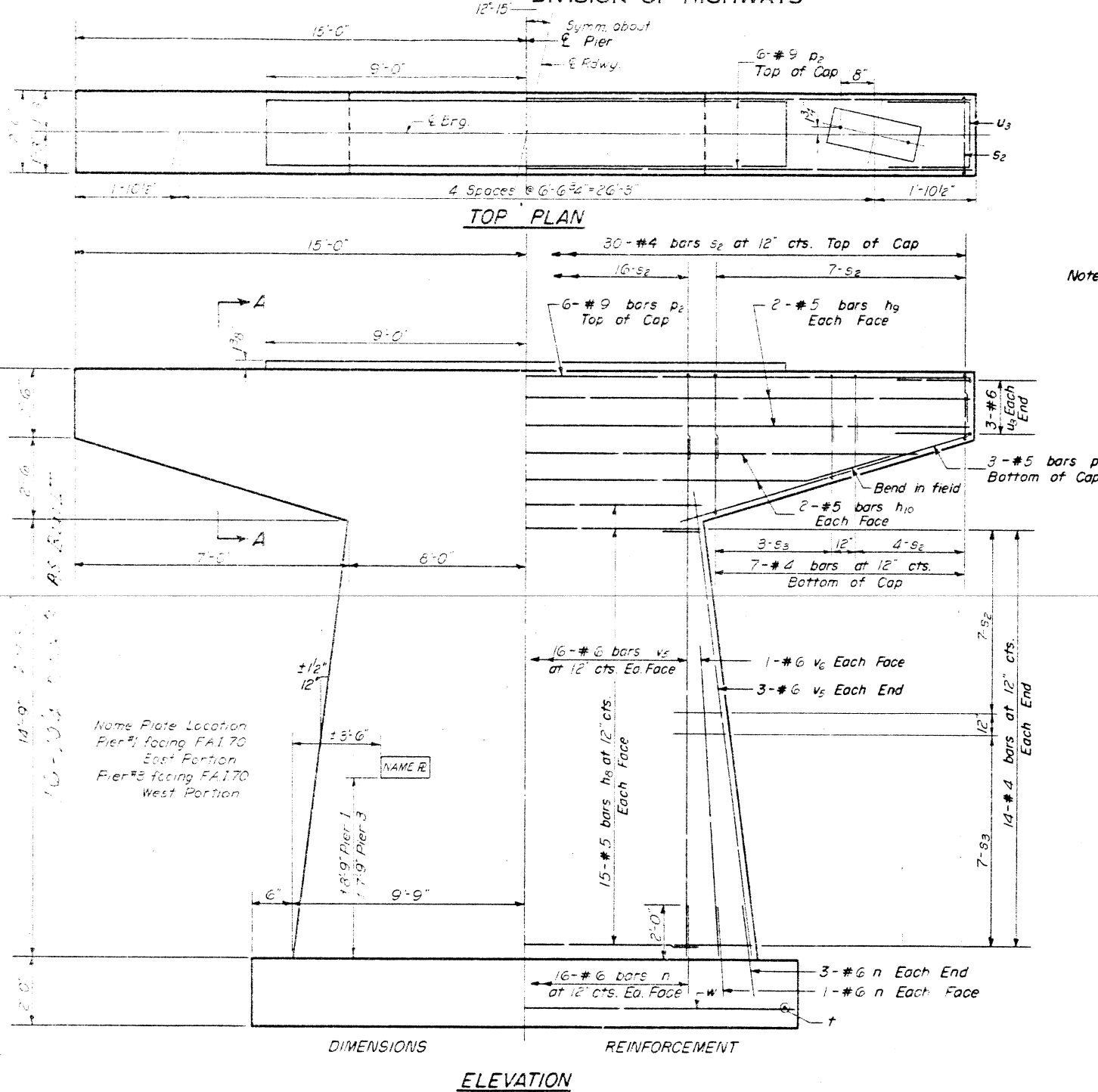


Elev. 477.36 - Pier 1  
476.70 - Pier 3

FOOTING PRESSURE  
 $q = 1.73 \frac{1}{4}$

DESIGNED: *W. A. Sausaman*  
CHECKED: *Ted Tanaku*  
DRAWN: *W. A. Sausaman*  
CHECKED: *T. T. & J. J. R.*

EXAMINED: *W. E. Johnson*  
PASSED: *J. L. Armstrong*  
APPROVED: *W. A. Sausaman*

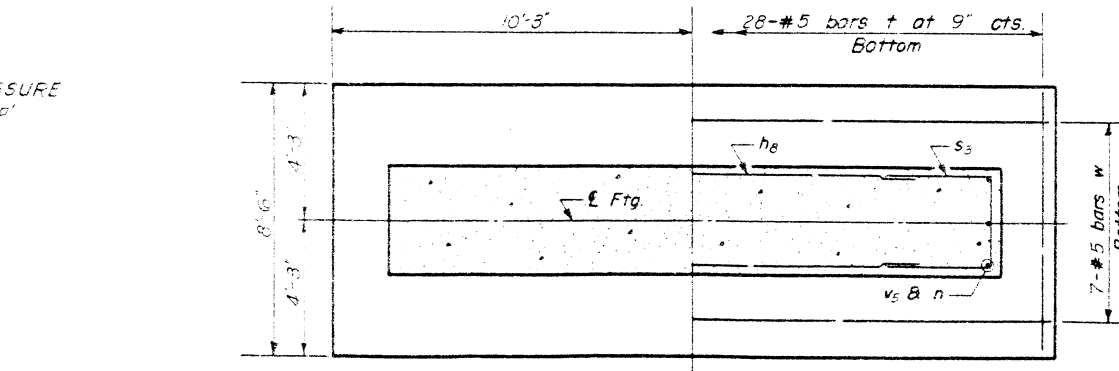


Name Plate Location  
Pier #1 facing FA 170  
East Portion  
Pier #3 facing FA 170  
West Portion

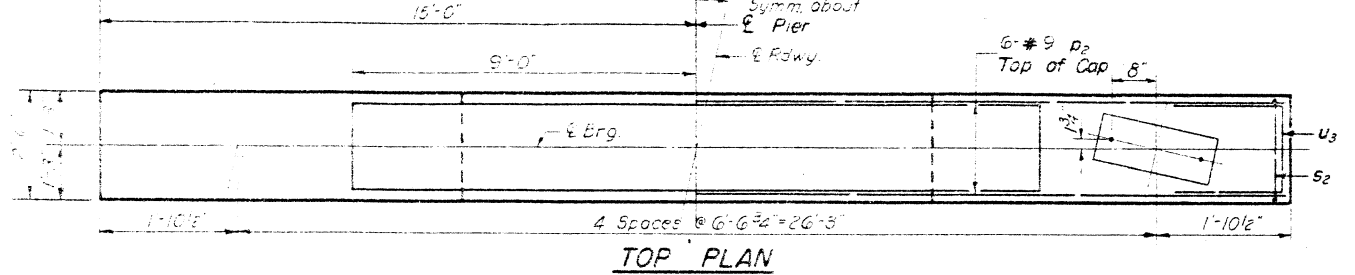
DIMENSIONS

REINFORCEMENT

ELEVATION

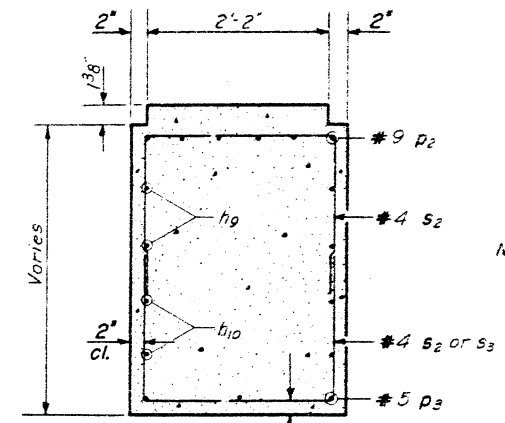


FOOTING PLAN



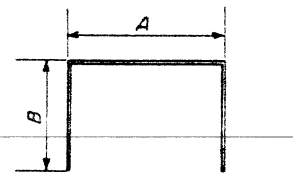
TOP PLAN

Note: All edges shall have standard 3/4" chamfers except footings.



SECTION A-A

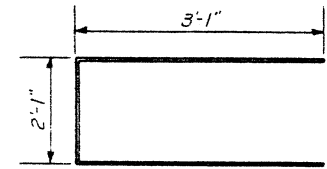
Note: Space reinf. bars to miss anchor bolts.



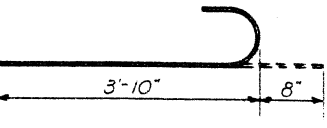
A & B DIMENSIONS

Bar	A	B
s2	2'-2"	2'-2"
s3	2'-2"	3'-3"

s BARS



u3 BAR



n BAR

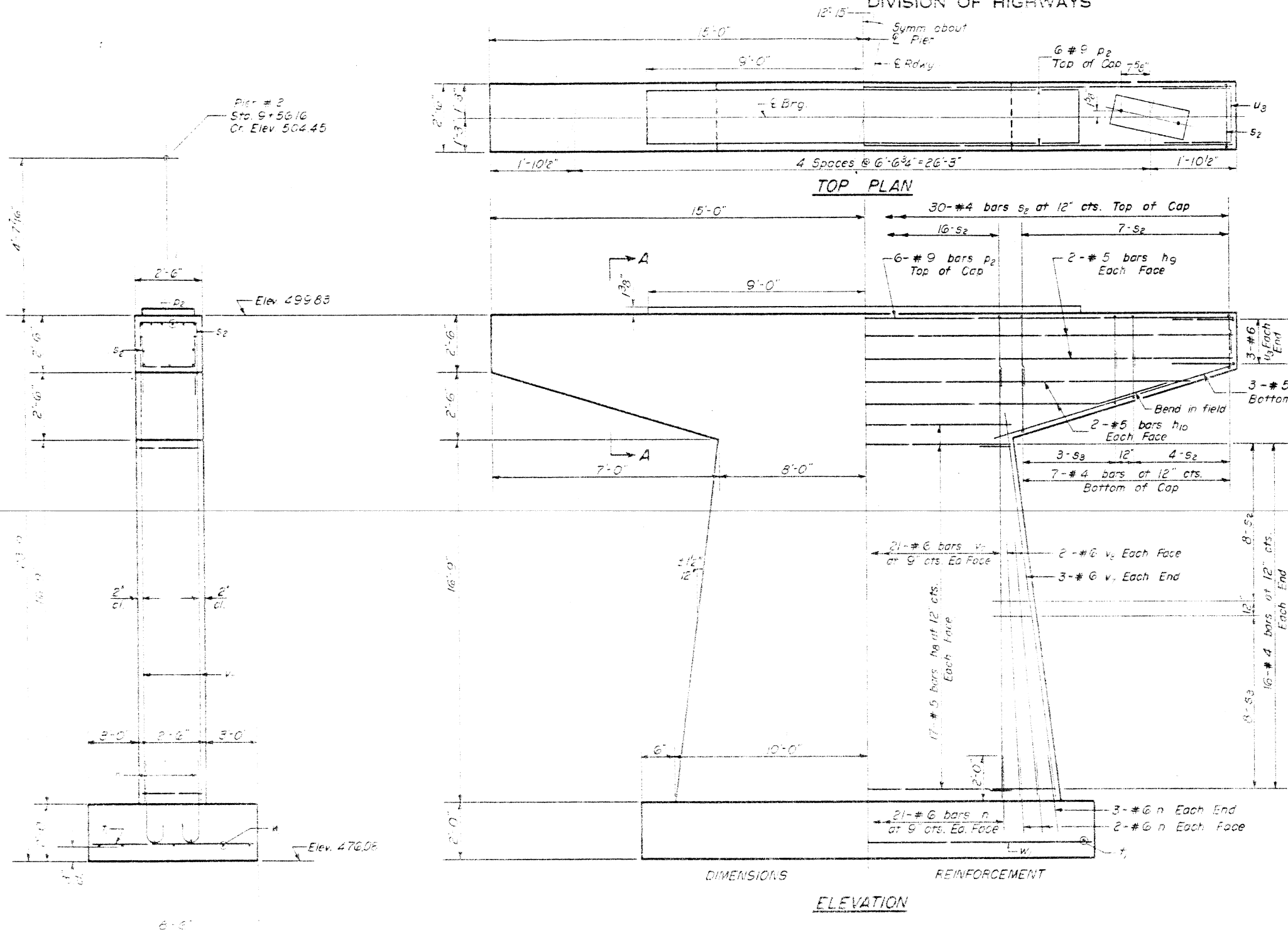
PIERS 1 & 3  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8	60	#5	15'-6"	—
h9	8	#5	29'-6"	—
h10	8	#5	25'-0"	—
n	84	#6	4'-6"	U
p2	12	#9	29'-6"	—
p3	12	#5	9'-0"	—
s2	104	#4	6'-6"	□
s3	40	#4	8'-6"	□
t	56	#5	8'-3"	—
u3	12	#6	8'-3"	□
v5	76	#6	18'-6"	—
v6	8	#6	10'-0"	—
w	14	#5	20'-3"	—
Class X Concrete		Cu. Yds.	99.1	
Reinforcement Bars		Lbs.	7,500	
Class A Excavation		Cu. Yds.	102.0	

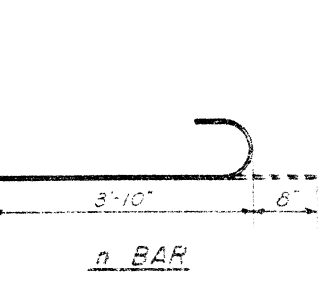
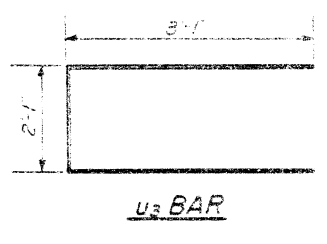
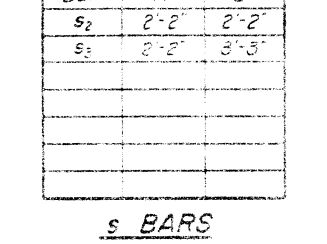
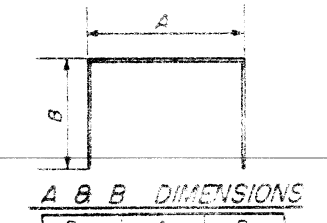
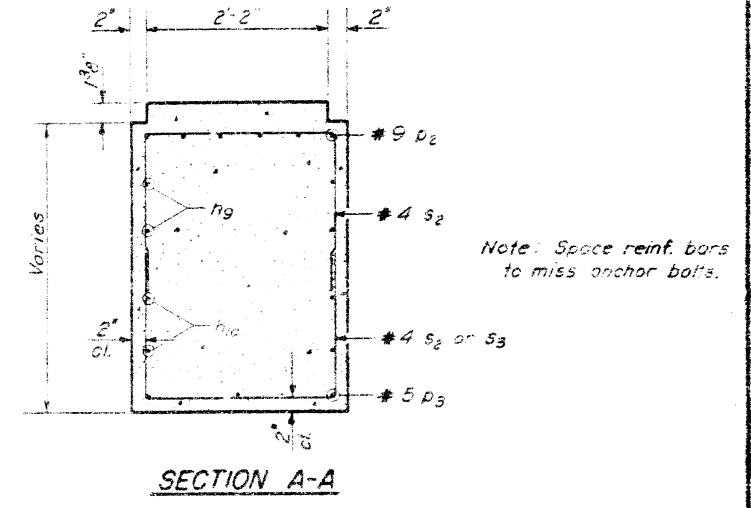
PIERS 1 & 3  
FAI RT. 70 SEC. 60-11HB  
MADISON COUNTY  
STA. 1088+95.78

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. OF SHEETS
70	60-11B	MADISON	119	34	6



Note: All edges shall have standard 3/4" chamfers except footings.



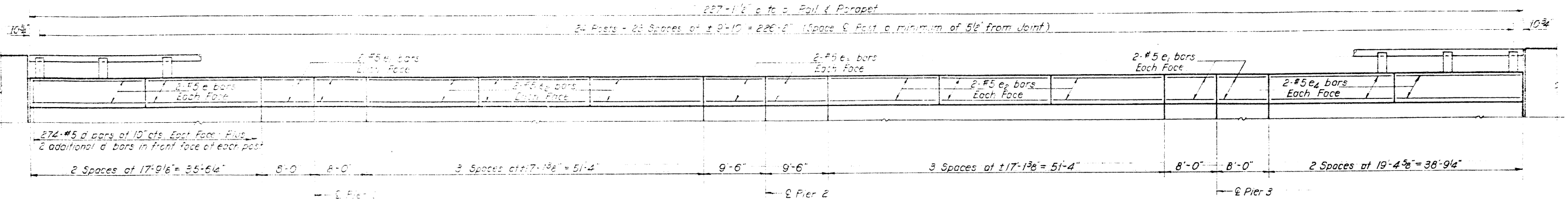
PIER 2  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8	34	#5	15'-6"	—
h9	4	#5	29'-6"	—
h10	4	#5	25'-0"	—
n	56	#6	4'-6"	U
p2	6	#9	24'-6"	—
p3	6	#5	9'-0"	—
s2	54	#4	6'-6"	U
s3	22	#4	8'-8"	U
v	23	#7	6'-3"	—
u3	6	#6	8'-3"	U
v-	48	#6	20'-9"	—
v6	6	#6	12'-0"	—
w	7	#5	20'-9"	—
Class X Concrete			Cu Yds	53.6
Reinforcement Bars			Lbs.	4430
Class A Excavation			Cu Yds	52

FOOTING PRESSURE  
q(max) = 294 Tsf

DESIGNED: *W. A. Sausman*  
CHECKED: *Ted Tanaka*  
EXAMINED: *W. A. Sausman*  
APPROVED: *W. A. Sausman*

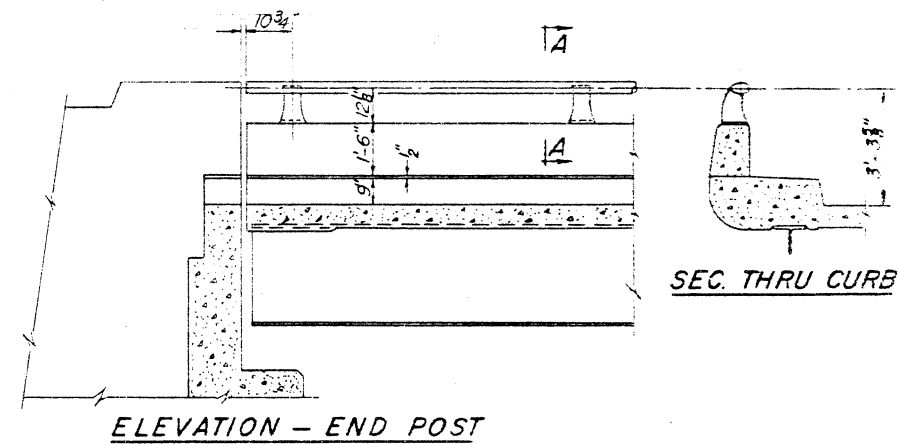
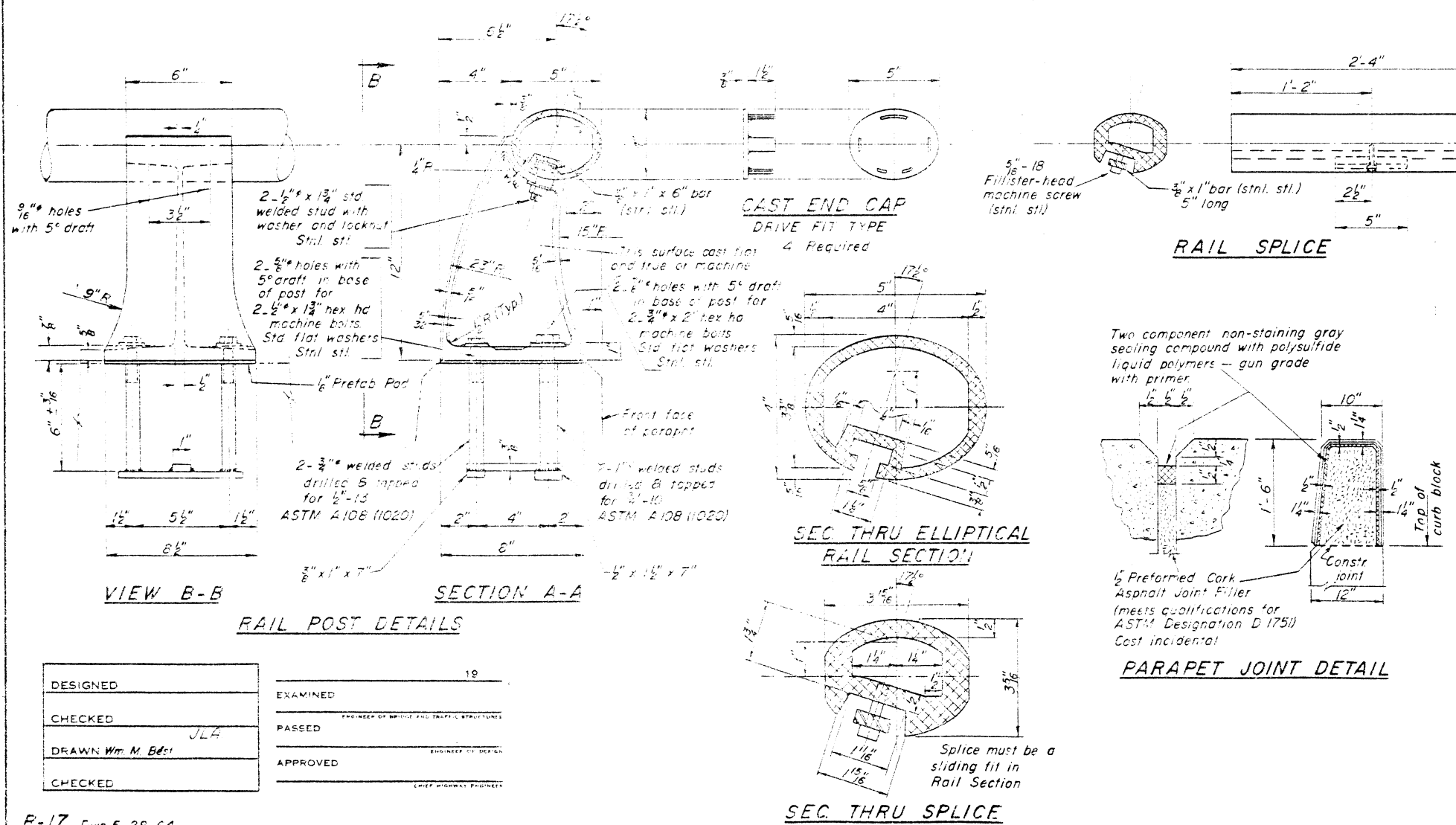
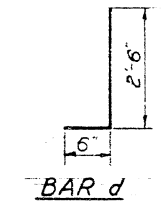
PIER 2  
F.A.I. RT. 70 SEC. 60-11HB  
MADISON COUNTY  
STA. 1088 + 95.78



ELEVATION

BAR LIST

Bar	No	Size	Length	Shape
d	1192	#5	3'-0"	J
e	16	#5	17'-6"	—
e <sub>1</sub>	32	#5	7'-9"	—
e <sub>2</sub>	48	#5	16'-9"	—
e <sub>3</sub>	16	#5	9'-3"	—
e <sub>4</sub>	16	#5	19'-0"	—



NOTES:

All Posts shall be normal to parapet.

All Aluminum Alloy Extruded Rail shall conform to ASTM specification B-235 alloy 6061-T6, or 6062-T6, and shall extend a minimum of 2 panel lengths (attached to minimum of 3 posts) except at ends or at open joints where a minimum of 1 panel length is required. All joints in railing must be spliced per detail.

See Special Provisions for following Material Specifications:

Cast Aluminum Alloy Bridge Post— Alloy 344-T4  
Stainless Steel Welded Stud Bolts, Washers, and Locknuts

For material composition of Prefabricated Pad, see Article 54.9(f), (Bearing and Anchorage), of the Standard Specifications.

METHOD OF MEASUREMENT: Aluminum handrail shall be measured in lineal feet. The length paid for shall be the over all length along the top longitudinal railing member thru all posts and gaps.

BASIS OF PAYMENT: Aluminum handrail shall be paid for at the contract unit price per lineal foot for ALUMINUM HANDRAIL, measured as specified, which price shall be payment in full for all materials, fabrication, transportation, and erection.

Cost of rail splice, end caps, and hardware to be incidental to item ALUMINUM HANDRAIL.

BILL OF MATERIAL

Item	Unit	Quantity
ALUMINUM HANDRAIL	Lin. Ft.	456

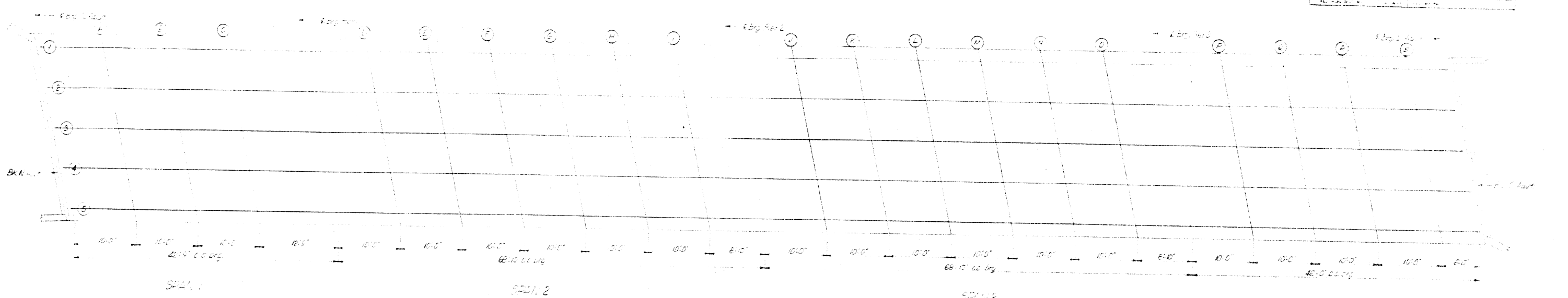
ALUMINUM HANDRAIL

HANDRAIL DETAILS  
F.A.I. RT. 70 SEC. 60-11HB  
MADISON COUNTY  
STA. 1088+9578

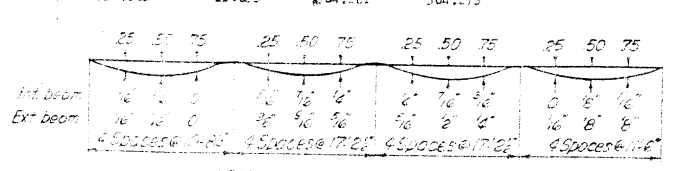
DESIGNED	19	EXAMINED	PROFESSOR OF BRIDGE AND TRAFFIC STRUCTURES
CHECKED	JLA	PASSED	ENGINEER OF DESIGN
DRAWN	Wm. M. Best	APPROVED	CHIEF HIGHWAY ENGINEER
CHECKED			

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

DATE	12-70
BY	W.M. MAZUR
PROJECT	316
SHEET NO.	5
TOTAL SHEETS	10



Type	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection																						
																				Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection																	
Sk N Abut	88+267	6.416	503.268	503.268		L Erg Pier 1	88+933	6.416	503.715	503.715		L Erg Pier 2	95+767	6.416	504.403	504.403	L Erg Pier 3	102+600	6.416	505.092	505.092																				
	88+640	.000	503.317	503.317																																					



Note: The diagram above is included as matter of record only. Allowance for dead load deflection is included in Theoretical Grade Elevation Adjusted for Dead Load Deflection (Last Column).

ELEVATION - TOP OF SLAB  
F.A.I. TO SEC. 60+11.6  
MADISON COUNTY  
STA. 1068+98.76

DESIGNED: W. Samosh

CHECKED: Ed Toruka

DRAWN: M.T.

CHECKED: [Signature]

EXAMINED: [Signature] 1962

PASSED: [Signature]

APPROVED: [Signature]



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

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO.
60-11 HB	11A	MADISON	1:1	37

SHEET NO. 37  
10 SHEETS

Boring No. 1  
Station 0+46.6  
Offset 21 ft. W. of C.

Elevation	Notes	W (%)	CU	Penetration
500.9	Ground Surface			
496.1				
495.1	Light Red-Brown Mottled with Brown Aeolian Silty CLAY, Moist, stiff			
493.6				
492.6		8	0.98	28
491.1				
490.1		8	1.04	25
489.4				
488.6	Mottled Light Red Gray & Brown CLAY Glacial Till with small grit, Moist, Stiff			
487.6		8	1.37	23
486.9				
486.1	Water			
486.1	Brown & Dark Brown Mottled with Gray CLAY, Glacial Till, with small grit, Moist, Stiff			
486.1		8	1.53	25
483.6				
482.1		8	1.53	19
480.6				
481.1	Brown Clayey Fine SAND, Glacial Till, Wet Loose			
480.1		7	NC	-
478.9				
478.6				
477.6	Gray CLAY, Glacial Till, with small to Medium grit.	76	5.75	11
476.1				
475.1	Damp	55	8.15	9
474.4				
473.6	Gray, soft, weathered SHALE, CLAY			
472.6		100	8.15	13
472.0	Damp, Hard			
471.8				
471.1	Gray Flaty, Soft weathered, SHALE			
469.6				
468.8	Dry Hard			

END OF BORING  
NC Non-Cohesive

Boring No. 2  
Station 0+53.7  
Offset 7 ft. W. of C.

Elevation	Notes	W (%)	CU	Penetration
500.9	Ground Surface			
487.6	Mottled Brown & Gray CLAY, Glacial Till with small to Medium grit, Moist, Very Stiff			
487.6				
485.8	Water			
485.8	Red Brown, Fine GLACIAL SAND, Wet, Loose			
485.4				
484.4	Washed out a light brown fine to medium sand with small to medium grit, Moist, Very Stiff			
483.6	Gray CLAY, Glacial Till with small grit			
483.6				
477.4	Damp, Hard			
476.9	Dark Gray soft weathered SHALE CLAY			
476.9		88	NC	13
476.9	Mottled, Very Stiff			
476.9	Damp, Hard			
476.9				
476.9	Dry, Hard			
476.9				
476.9	Gray Flaty Soft weathered SHALE			
476.9				
476.9	Dry, Hard			

END OF BORING  
NC Non-Cohesive

Boring No. 3  
Station 0+53.7  
Offset 7 ft. W. of C.

Elevation	Notes	W (%)	CU	Penetration
504.7	Ground Surface			
488.7	Mottled Brown & Gray CLAY Glacial Till with small grit			
488.7				
488.7	Water			
488.7	Moist, Stiff	7	1.20	22
488.7				
488.7	Moist, Stiff	8	1.50	23
488.7				
488.7	Moist, very soft	2.00	23	
488.7				
488.7	Brown Glacial Till, Very Sandy CLAY Wet Medium	8	0.62	22
488.7				
488.7	Brown Sandy CLAY Glacial Till with small to medium grit, Dry Hard	25	8.34	11
488.7				
488.7	Gray-Brown Sandy, Silty CLAY Glacial Till with small to medium grit Dry Hard	75	8.19	10
488.7				
488.7	Gray, soft, platy weathered SHALE Damp, Hard	99	-	16
488.7				
488.7	Gray Flaty Weathered SHALE (Very hard to auger) Damp, hard			
488.7				
488.7	Dry, Hard			
488.7				
488.7	Dry, Hard			

END OF BORING  
\* No Failure

Boring No. 4  
Station 0+24  
Offset 8 ft. E. of C.

Elevation	Notes	W (%)	CU	Penetration
507.8	Ground Surface			
492.8	Brown, mottled with Brown- Gray, CLAY Glacial Till, with small grit, Wet, Stiff			
492.8				
492.8	Water			
492.8		9	1.27	20
492.8				
492.8	Brown CLAY, Glacial Till with small to medium grit, moist Very Stiff			
492.8		12	2.17	22
492.8				
492.8	Brown Sandy CLAY Glacial Till, with small to medium grit Moist Stiff			
492.8		10	1.50	29
492.8				
492.8	Mottled with Brown & Light Brown Sandy CLAY Glacial Till with small to medium grit, moist Hard			
492.8		25	6.44	12
492.8				
492.8	Light Brown, very Sandy CLAY Glacial Till with small to med- ium grit, Damp hard			
492.8		53	5.37	12
492.8				
492.8	Gray Sandy CLAY, Glacial Till with small to medium grit, Damp, hard			
492.8		75	8.80	11
492.8				
492.8	Gray Soft, Platy Weathered SHALE			
492.8		100+		8
492.8				
492.8	Damp, Hard			
492.8				
492.8	Dry, Hard			
492.8				
492.8	Dry, Hard			

END OF BORING

Boring No. 5  
Station 0+70.9  
Offset 8 ft. E. of C.

Elevation	Notes	W (%)	CU	Penetration
507.8	Ground Surface			
499.8	Brown mottled with Gray, Aeolian Silty CLAY Moist, Stiff			
499.8				
499.8				
499.8	Light Red-Brown Aeolian Silty CLAY Moist Stiff			
499.8		7	0.95	30
499.8				
499.8				
499.8	Light Red-Brown Mottled with Gray Aeolian Silty CLAY Moist Stiff			
499.8		7	1.00	24
499.8				
499.8	Water			
499.8		7	2.01	25
499.8				
499.8	Brown mottled with Gray CLAY Glacial Till, Moist Stiff			
499.8		10	1.85	22
499.8				
499.8	Brown mottled with Gray CLAY, Glacial Till, with small grit Moist, Very Stiff			
499.8		12	2.20	23
499.8				
499.8				
499.8	Brown mottled with Gray Sandy CLAY Glacial Till, Wet Medium			
499.8		6	0.59	24
499.8				
499.8	Brown, Fine Glacial SAND			
499.8		25	NC	-
499.8				
499.8	Wet			
499.8				
499.8	Brown Silty CLAY Glacial Till, with medium grit, Damp, Hard			
499.8		100+	8.14	12
499.8				
499.8	Gray Silty CLAY Glacial Till with Medium grit, Damp Hard			
499.8		45	5.68	12
499.8				
499.8	Damp, Hard			
499.8		100+		15
499.8				
499.8	Damp, Hard			
499.8		100+		12
499.8				
499.8	Gray, Soft, Platy Weathered, SHALE			
499.8				
499.8	Dry, Hard			

END OF BORING  
NC Non-Cohesive

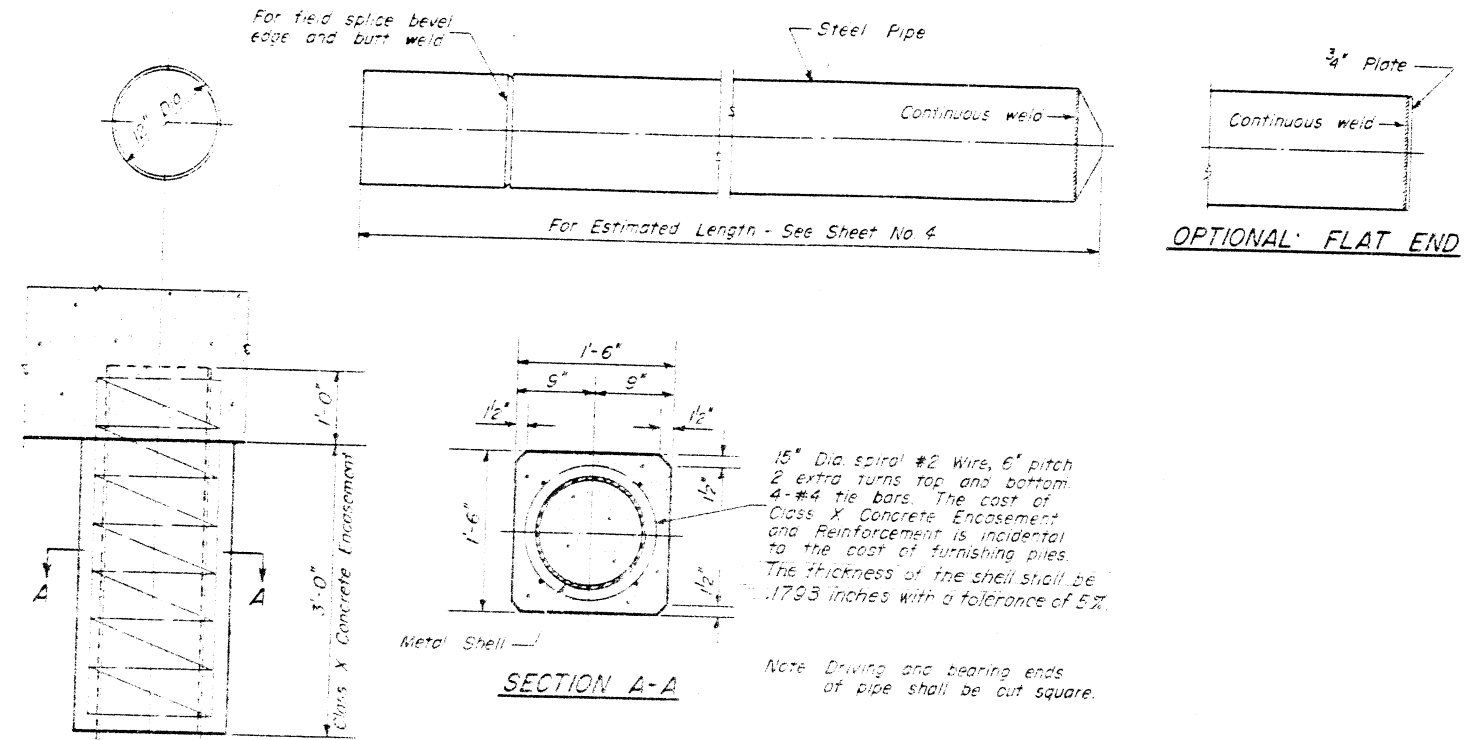
N - Standard Penetration Test - Blows per foot to drive 2" S.P.S. Split Spoon Sampler 12" with 140# hammer falling 30".  
CU - Unconfined Compressive Strength - 1/2" dia.  
W - Water Content - percentage of over dry weight-%  
Type failure  
B - Bulge Failure  
S - Shear Failure  
E - Estimated value

DESIGNED *M. T.*  
CHECKED *Ted Tanaka*  
DRAWN *M. T.*  
CHECKED *T. T.*

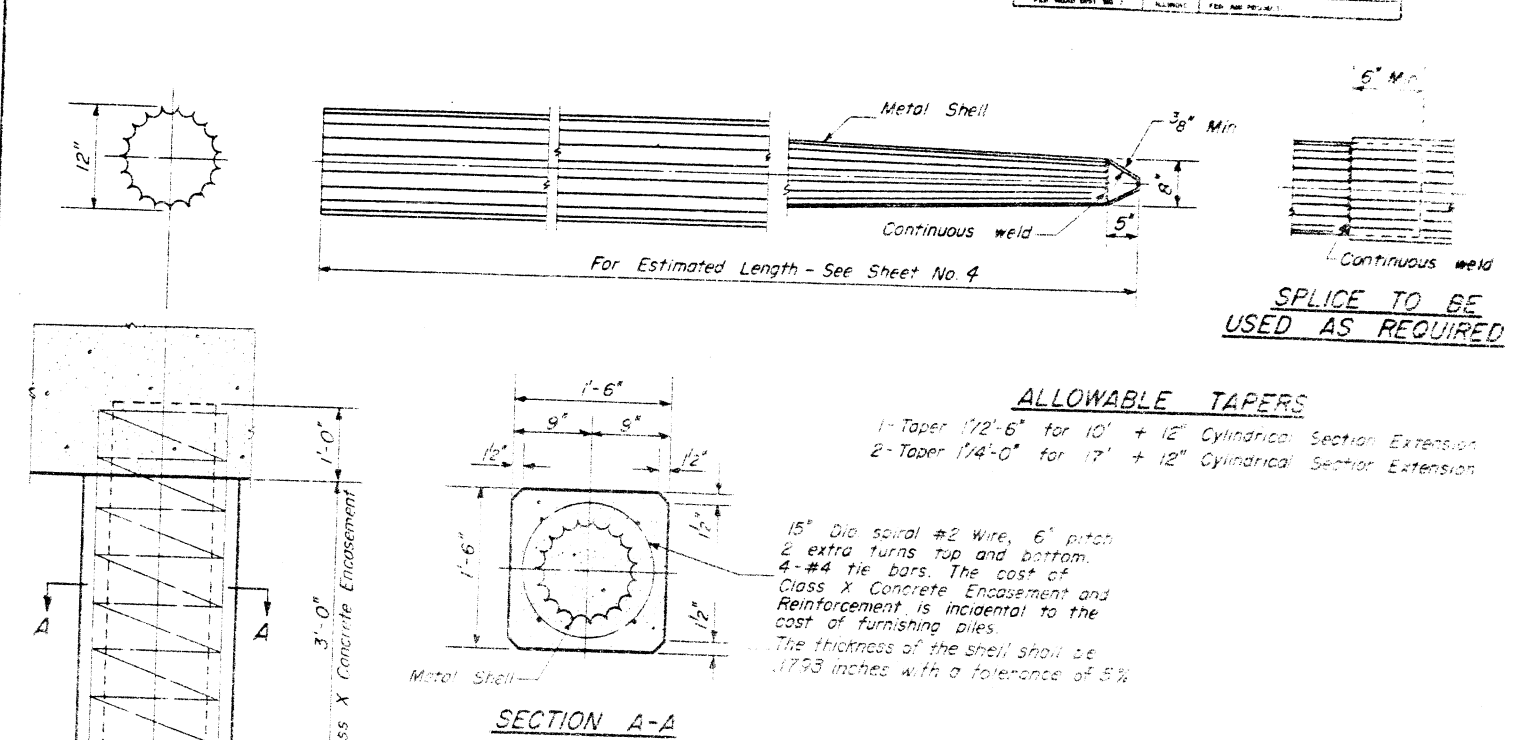
EXAMINED *M. T.*  
PASSED *M. T.*  
APPROVED *M. T.*

BORING DATA  
FAI TO SEC 60-11 HB  
MADISON COUNTY  
STA. 1088+95.78

ROUTE NO.	SECTION	LOCALITY	SHEET NO.	SHEET TOTAL
60-11	1-470	MADISON	119	38
SHEET NO. 11 10 SHEETS				

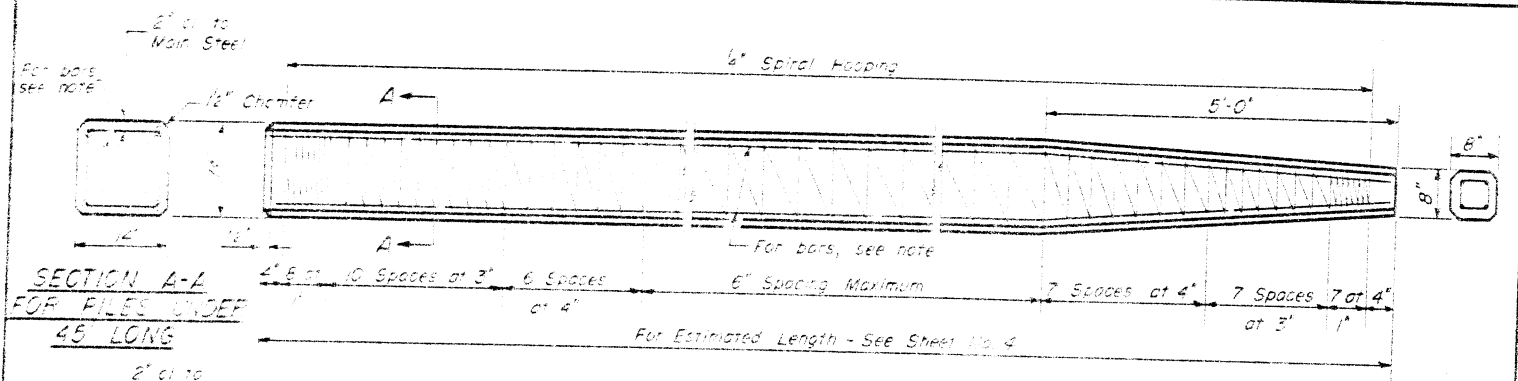


DETAIL OF CYLINDRICAL STEEL SHELL  
FOR CAST IN PLACE CONCRETE PILES



ALLOWABLE TAPERS  
1-Taper 1/2"-6" for 10' + 12" Cylindrical Section Extension  
2-Taper 1/4"-0" for 17' + 12" Cylindrical Section Extension

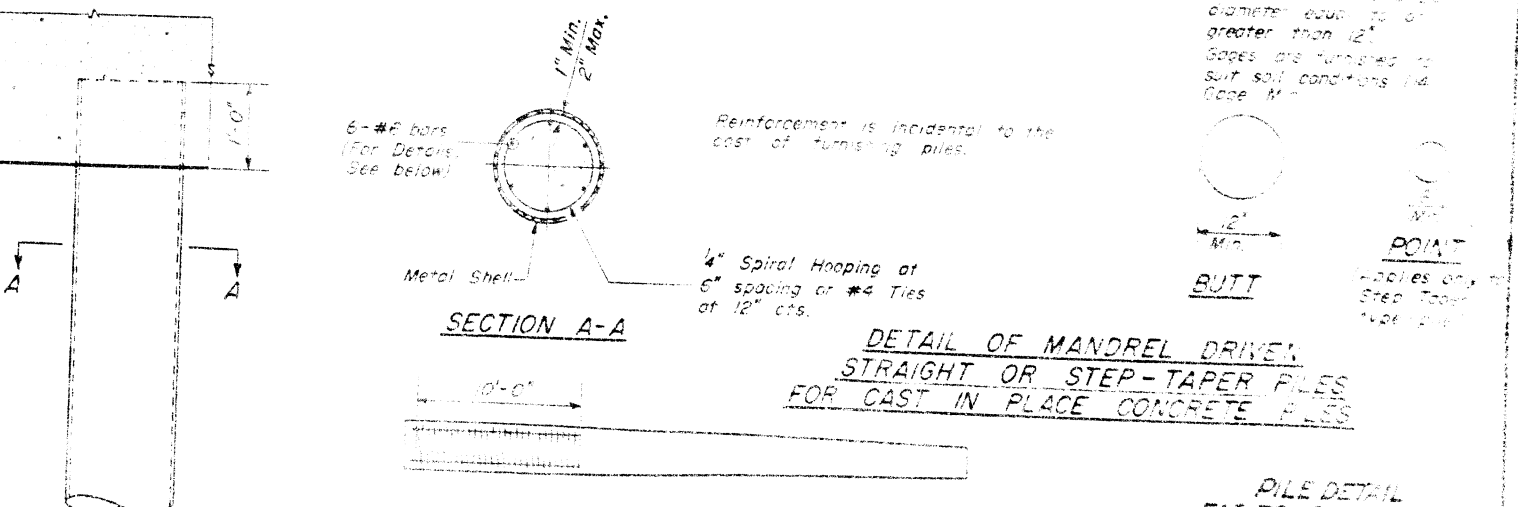
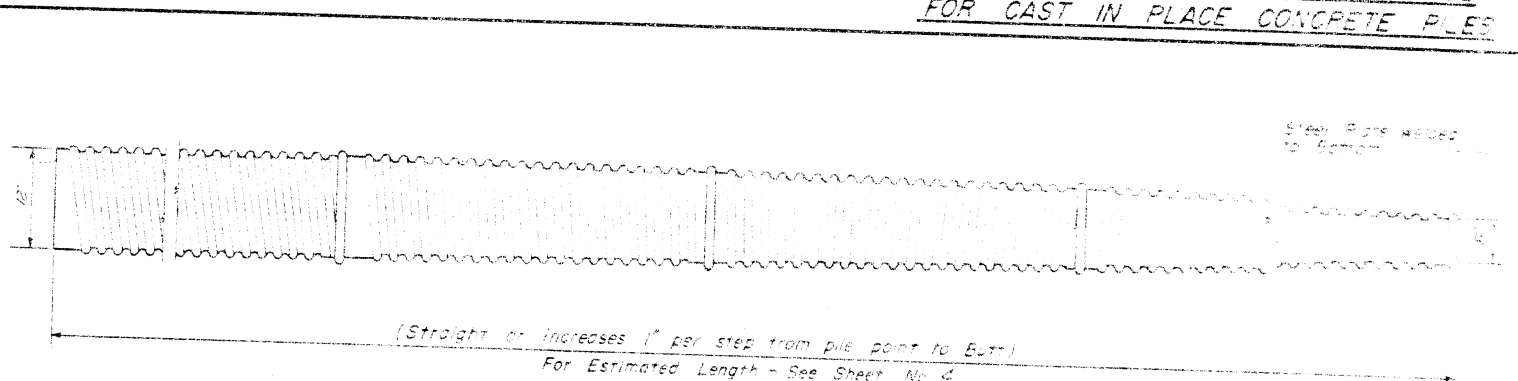
DETAIL OF TAPERED METAL SHELL  
FOR CAST IN PLACE CONCRETE PILES



SECTION A-A  
FOR PILES UNDER  
45' LONG

DESIGNED BY: [Signature]  
CHECKED BY: [Signature]  
DATE: [Date]  
CHECKED BY: [Signature]

DETAIL OF PRECAST CONCRETE PILES

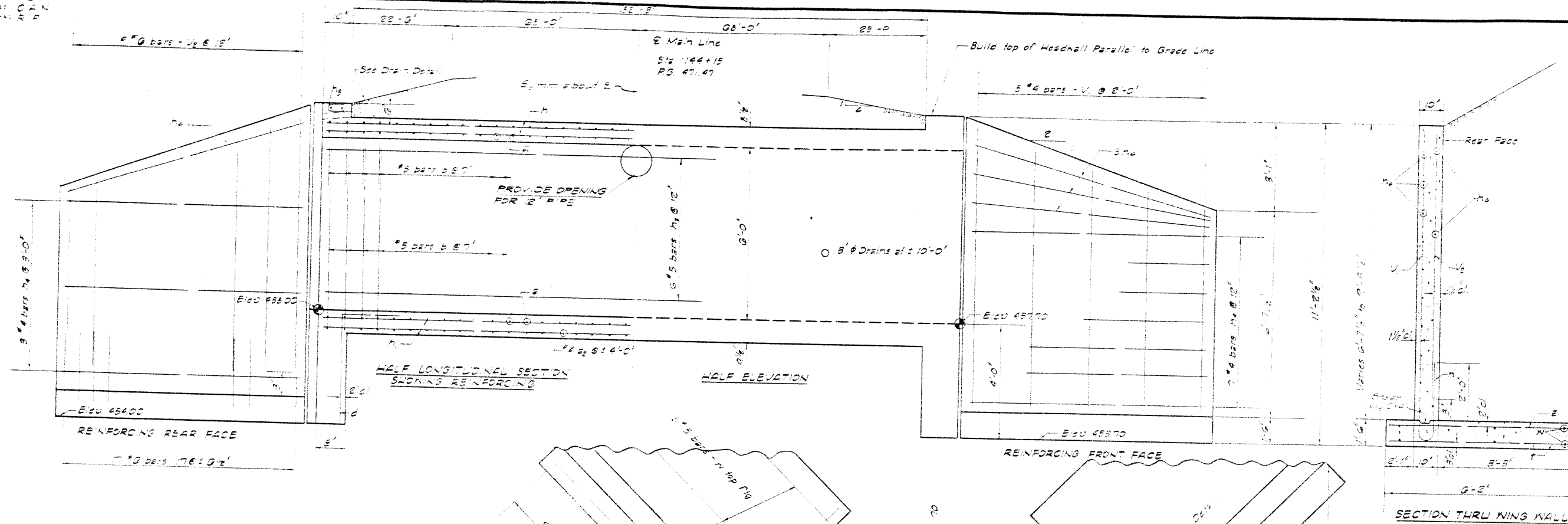


DETAIL OF MANDEL DRIVEN  
STRAIGHT OR STEP-TAPER PILES  
FOR CAST IN PLACE CONCRETE PILES

PILE DETAIL  
FAI 70 SEC 60-11-75  
MADISON COUNTY  
STA 1066-95.75

DESIGNED BY  
 DRAWN BY  
 CHECKED BY  
 GENERAL CONTRACTOR

STATION 1144+15  
 F.A.I. ROUTE 70  
 9'-0" X 6'-0" R.C. BOX CULVERT 0° SKEW

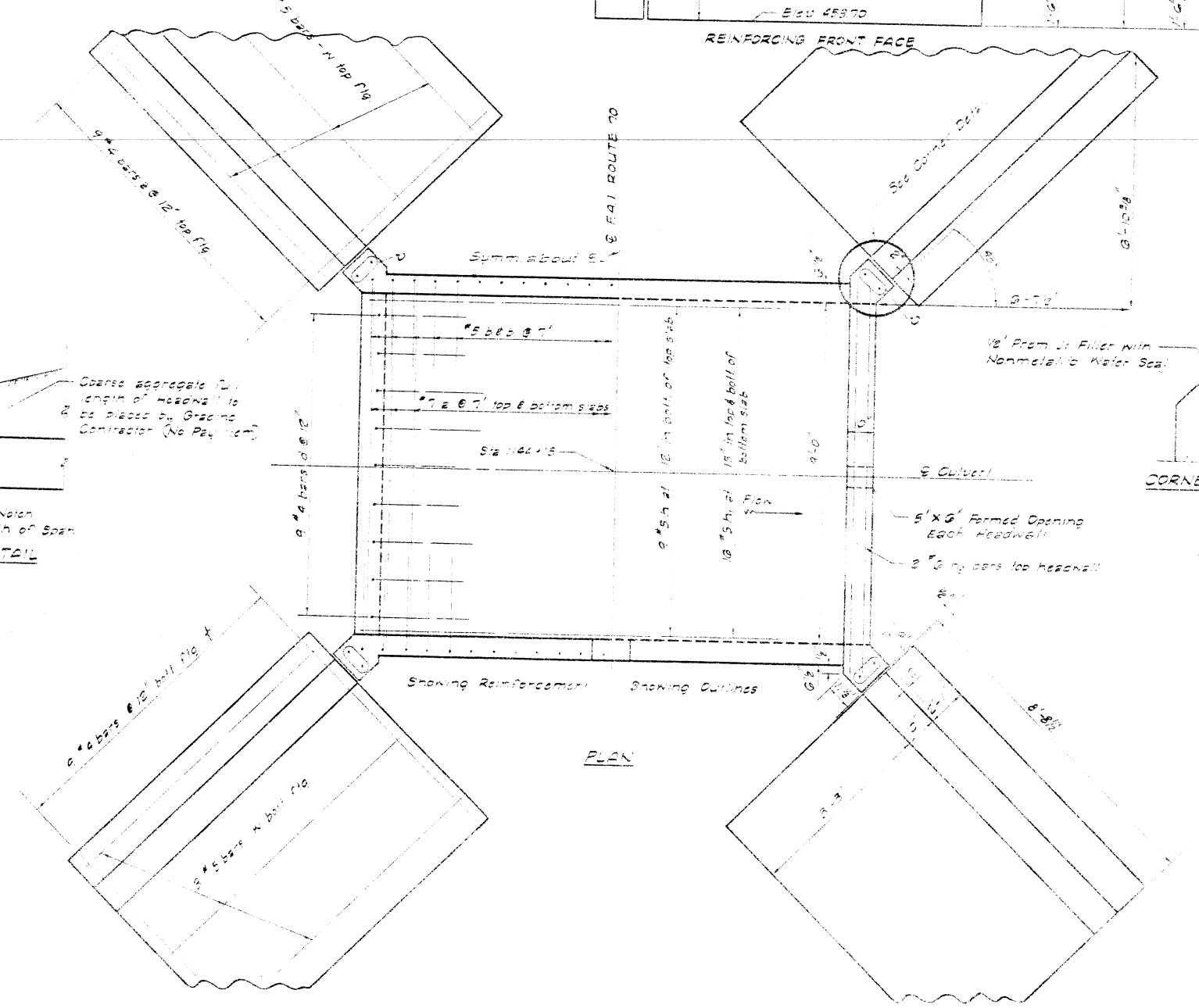
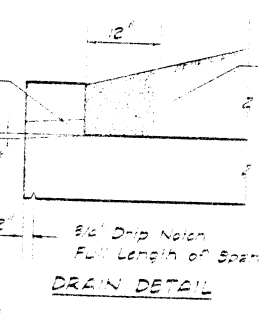
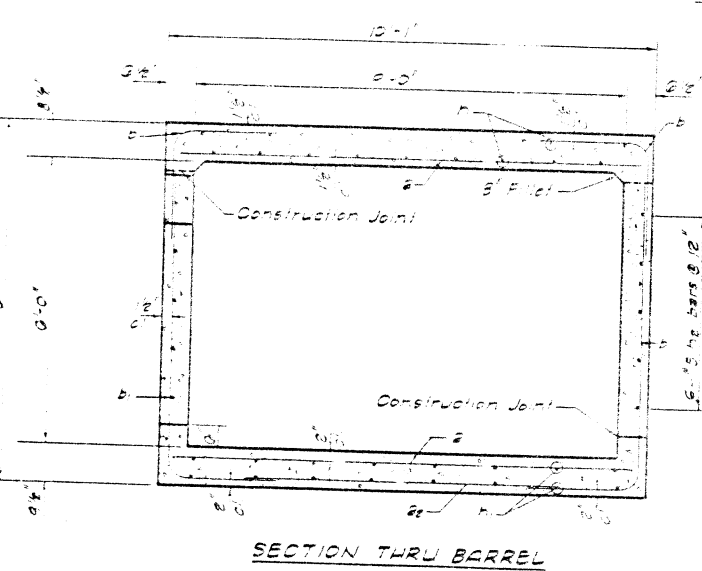


**GENERAL NOTES**

Exposed edges shall be beveled #4  
 All bars shall be lapped 20 diameters unless otherwise shown  
 For backfilling & embankment, see S10 Specs  
 The top of the culvert, the backs of the exterior walls above the lower construction joint and backs of the wings above the tops of the footings shall be waterproof in accordance with the Standard Specifications, Article 8121

**DESIGN STRESSES**

$f_s = 20,000$  psi Reinforcement  
 $f_c = 1,000$  psi for Nines & Nines  
 $f_c = 1,400$  psi for Bars  
 $n = 10$   
 #20 used  
 Max Soil Pressure = 2,450 lb/ft<sup>2</sup>



**BILL OF MATERIAL**

Bar No	Size	Length	Quantity
a	#22	5'-0"	1
b	#22	5'-0"	1
c	#22	5'-0"	1
d	#22	5'-0"	1
e	#22	5'-0"	1
f	#22	5'-0"	1
g	#22	5'-0"	1
h	#22	5'-0"	1
i	#22	5'-0"	1
j	#22	5'-0"	1
k	#22	5'-0"	1
l	#22	5'-0"	1
m	#22	5'-0"	1
n	#22	5'-0"	1
o	#22	5'-0"	1
p	#22	5'-0"	1
q	#22	5'-0"	1
r	#22	5'-0"	1
s	#22	5'-0"	1
t	#22	5'-0"	1
u	#22	5'-0"	1
v	#22	5'-0"	1
w	#22	5'-0"	1
x	#22	5'-0"	1
y	#22	5'-0"	1
z	#22	5'-0"	1

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

STATION 1144+15 F.A.I. ROUTE 70  
 9'-0" X 6'-0" R.C. BOX CULVERT 0° SKEW

CRAWFORD, MURPHY & TILLY  
 CONSULTING ENGINEERS  
 SPRINGFIELD, ILLINOIS

SCALE 1/4" = 1'-0"

DATE

JOB NO.

Rev. 3-18-64 Class X Conc. from 169.5 to 171.2 Yd<sup>3</sup> and Reinf. Bars from 31,335 to 31,590 lbs.