

**INDEX OF SHEETS**

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY**

**SCALES**

PLAN	1 INCH	100 FT.
PROFILE, HOR.	1 INCH	100 FT.
PROFILE, VERT.	1 INCH	10 FT.
CROSS-SECTIONS	1 INCH	8 FT.

F.A. ROUTE 643 (S.B.I.-30)  
SECTION 11BR  
PROJECT BH-F-643(1)  
STARK COUNTY  
C-94-109-81

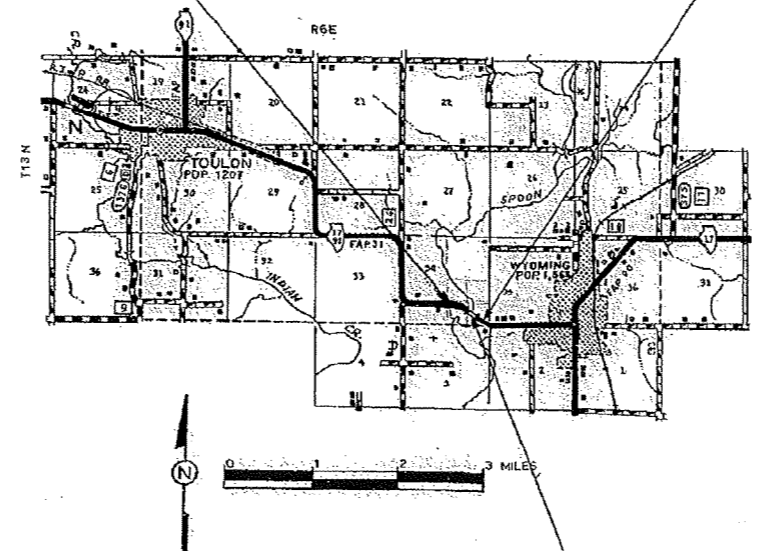
FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FA 643	11 BR	STARK	34	1

ILLINOIS PROJECT BH-F-643(1)  
P-94-111-71



PROPOSED IMPROVEMENT ENDS STA. 66 + 89.69

PROPOSED IMPROVEMENT BEGINS STA. 58 + 78.47



**LIST OF STANDARDS**

1686-4	2305-4
2113-2	2306-5
2143-3	2310-5
2230-13	2311-7
2298-6	2336-3
2299-9	2340-3
2300-2	2359-2
2302-4	2381

THE PROPOSED IMPROVEMENT INCLUDES THE REMOVAL & REPLACEMENT OF THE STRUCTURE OVER THE SPOON RIVER (NO. 088-0002)

GROSS LENGTH OF IMPROVEMENT = 811.22 FT. = .1536 MILES  
NET LENGTH OF IMPROVEMENT = 811.22 FT. = .1536 MILES

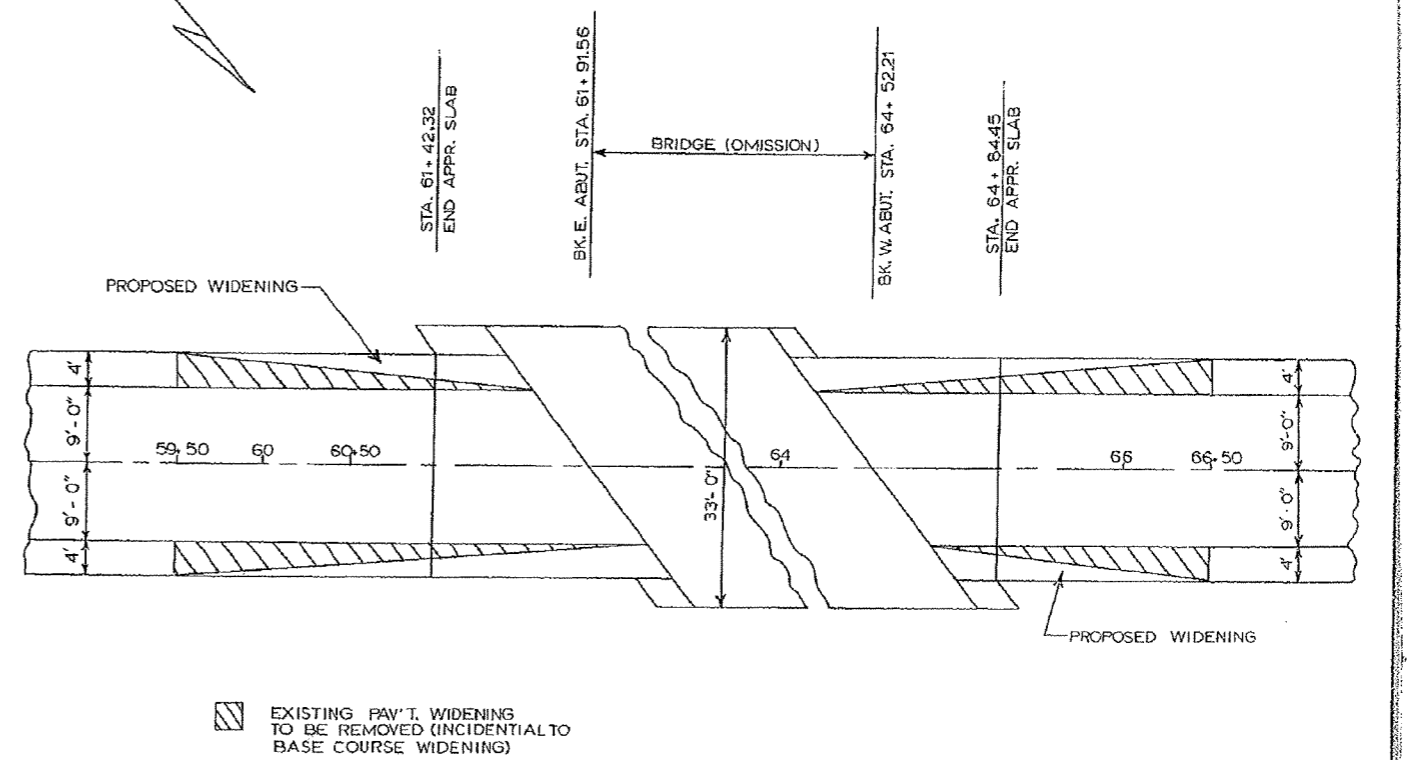
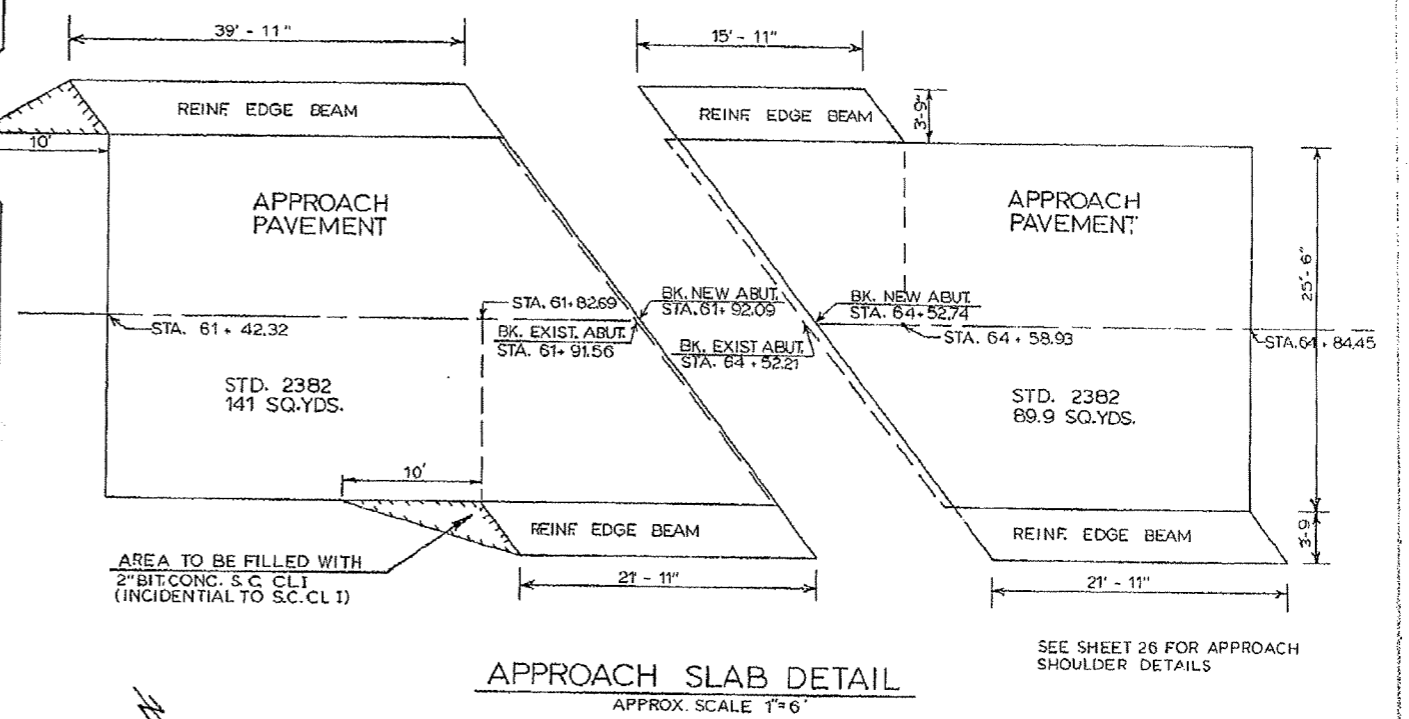
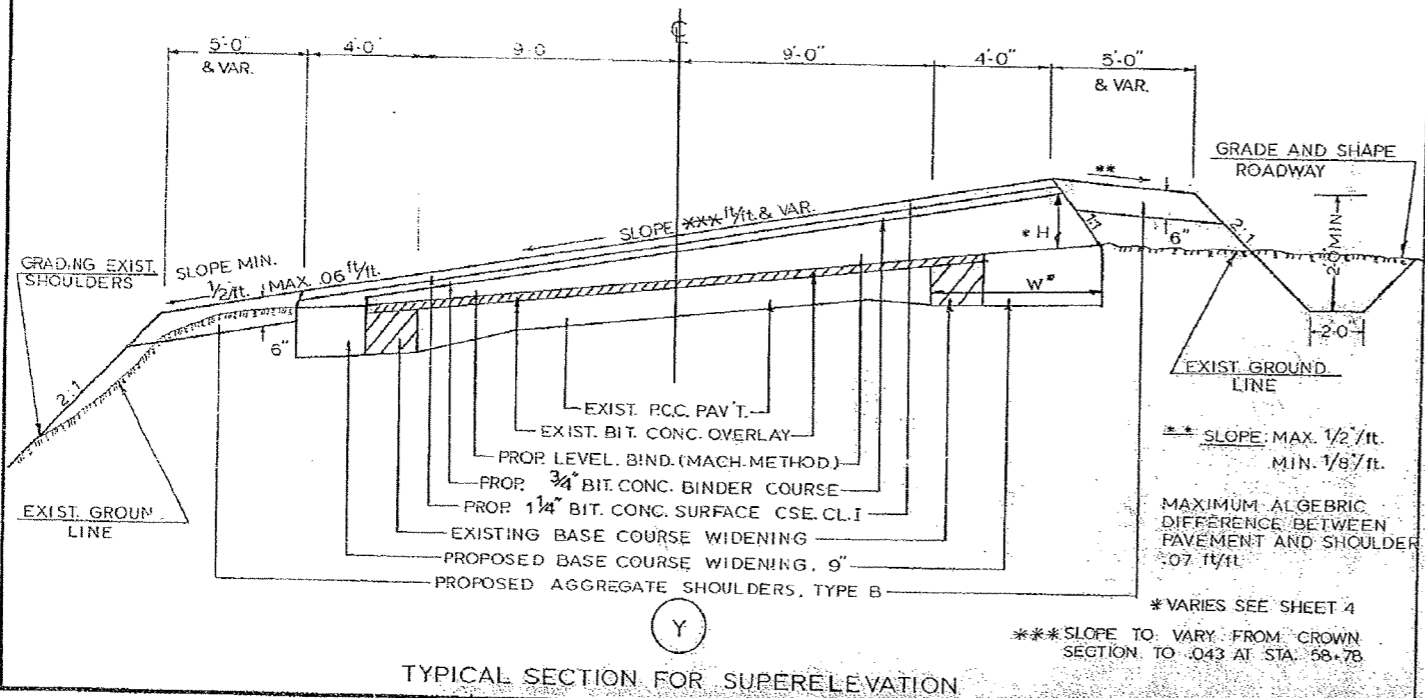
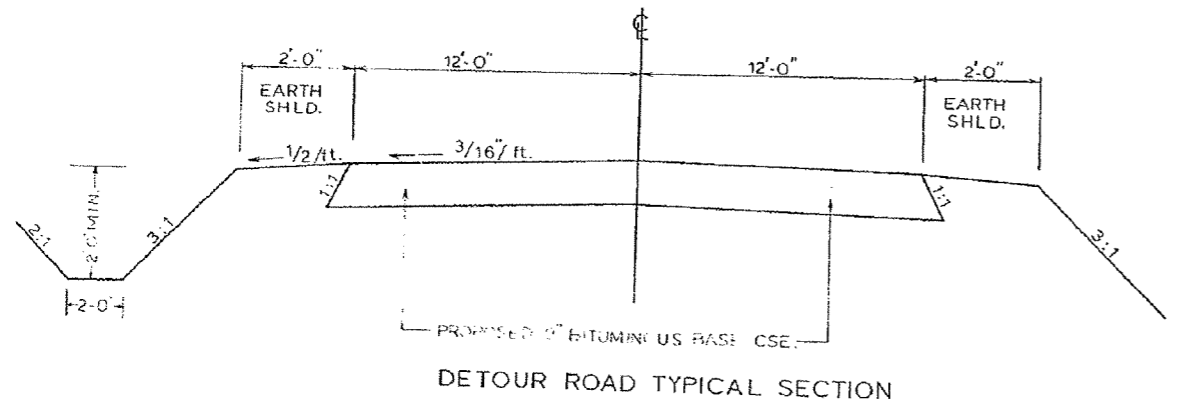
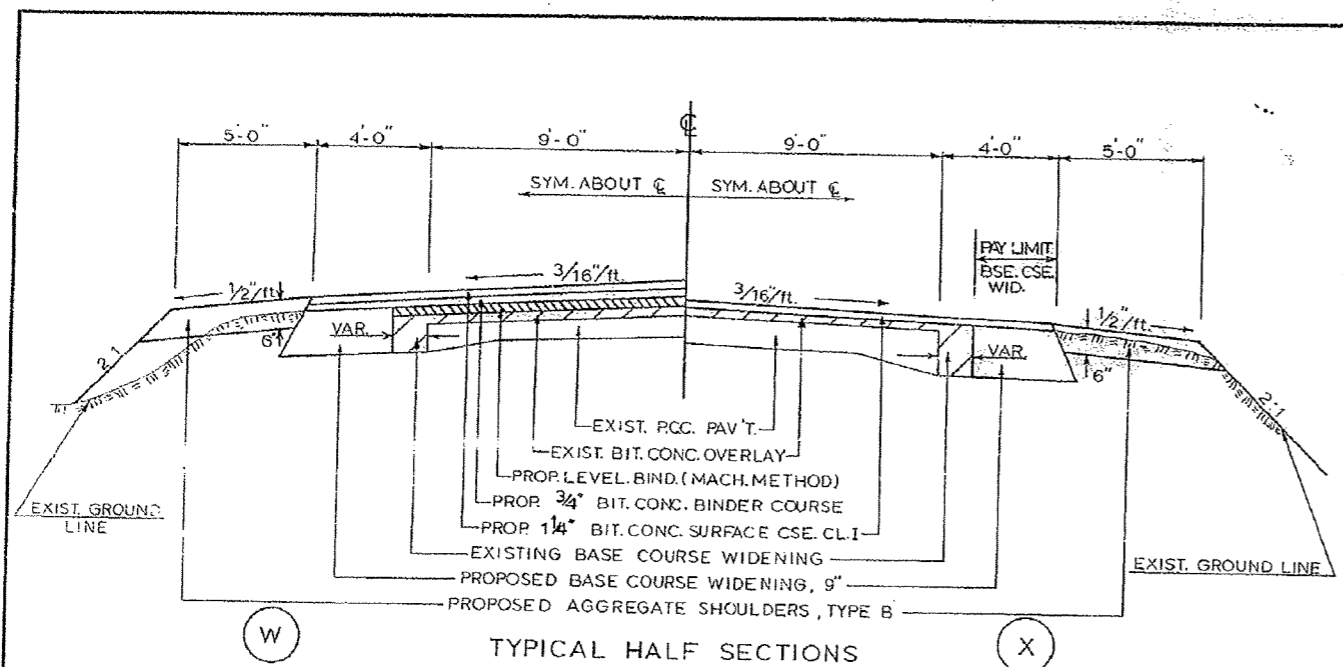
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED: 5-6-82  
EXAMINED: [Signature]  
PASSED: [Signature]  
APPROVED: [Signature]

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: [Signature]  
DIVISION ENGINEER DATE

ROUTE	SECTION	COUNTY	SHEET NO.
FA 643	11 BR	STARK	34
NO. 17			2
PROJ.	STA.	TO STA.	



EXISTING PAV'T. WIDENING TO BE REMOVED (INCIDENTAL TO BASE COURSE WIDENING)

T13N R6E 4PM  
SECTION 34

ROUTE	SECTION	COUNTY	SHEET
FA 643	11-BR	STARK	34
M.K.D. 17			4
PROJ.	STA. 50+00	TO STA. 80+00	

PI = 55+83.4  
Δ = 38°-00'  
D = 4°-00'  
T = 494.41  
R = 1432.69  
L = 952.08  
E = 82.9'  
SE = .043 ± (STA. 58 + 78)  
PC = 50+86.99  
PT = 60+39.14  
SA = 59+79.04 TO 61+59.07 (PROPOSED TO MATCH EXISTING SUPER)

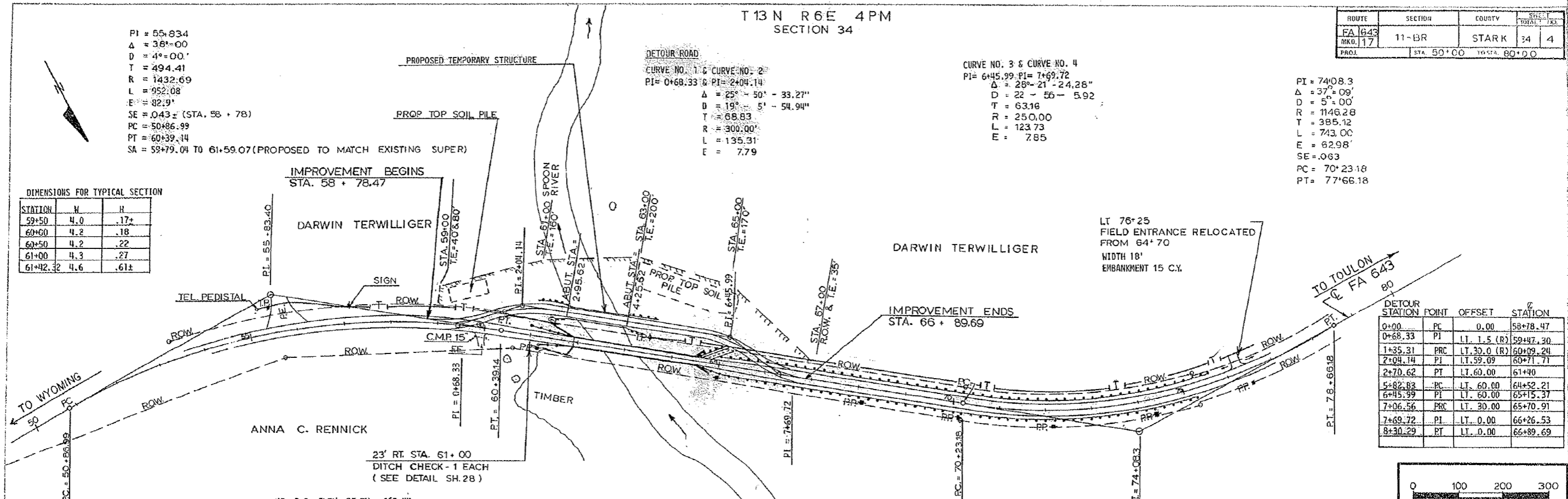
DETOUR ROAD  
CURVE NO. 1 & CURVE NO. 2  
PI = 0+68.33 & PI = 2+04.14  
Δ = 25°-50' - 33.27"  
D = 19°-5' - 54.94"  
T = 68.83  
R = 300.00  
L = 135.31  
E = 7.79

CURVE NO. 3 & CURVE NO. 4  
PI = 6+45.99 & PI = 7+69.72  
Δ = 28°-21' - 24.28"  
D = 22°-56' - 5.92"  
T = 63.16  
R = 250.00  
L = 123.73  
E = 7.85

PI = 74+08.3  
Δ = 37°-09'  
D = 5°-00'  
R = 1146.28  
L = 385.12  
T = 743.00  
E = 62.98'  
SE = .063  
PC = 70+23.18  
PT = 77+66.18

DIMENSIONS FOR TYPICAL SECTION

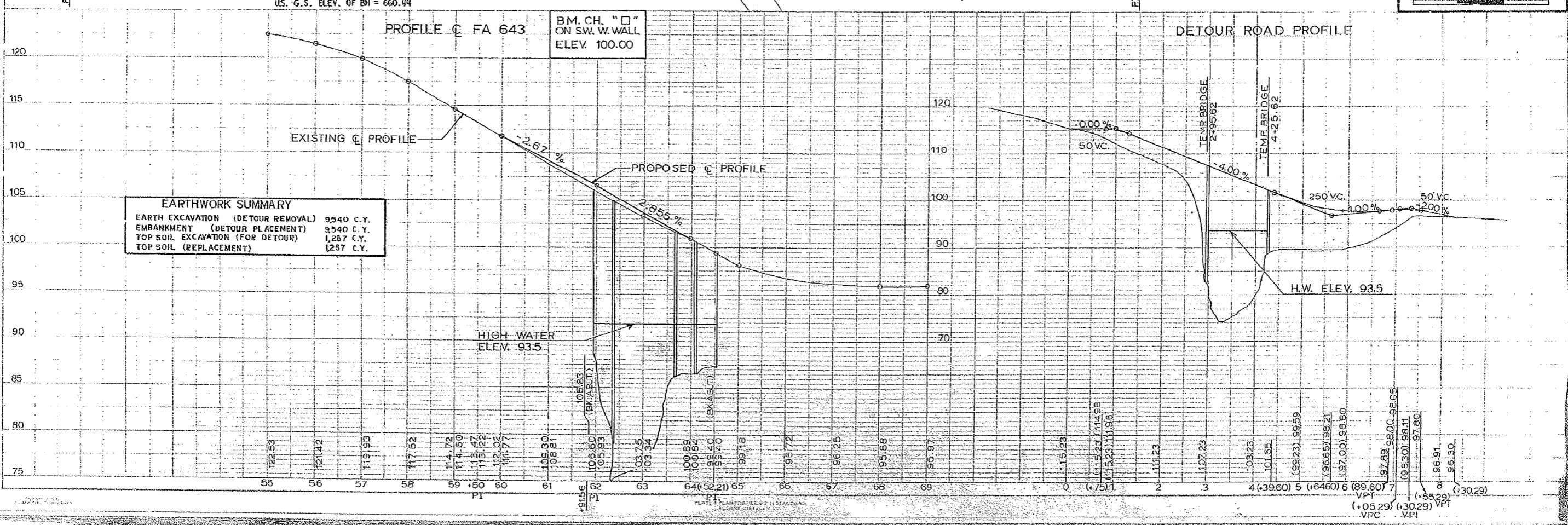
STATION	W	H
59+50	4.0	.17±
60+00	4.2	.18
60+50	4.2	.22
61+00	4.3	.27
61+42.32	4.6	.61±



DETOUR STATION	POINT	OFFSET	STATION
0+00	PC	0.00	58+78.47
0+68.33	PI	LT. 1.5 (R)	59+47.30
1+35.31	PRC	LT. 30.0 (R)	60+09.24
2+04.14	PI	LT. 59.09	60+71.71
2+70.62	PT	LT. 60.00	61+40
5+82.83	PC	LT. 60.00	64+52.21
6+45.99	PI	LT. 60.00	65+15.37
7+06.56	PRC	LT. 30.00	65+70.91
7+69.72	PI	LT. 0.00	66+26.53
8+30.29	PT	LT. 0.00	66+89.69

EARTHWORK SUMMARY

EARTH EXCAVATION (DETOUR REMOVAL)	9,540 C.Y.
EMBANKMENT (DETOUR PLACEMENT)	9,540 C.Y.
TOP SOIL EXCAVATION (FOR DETOUR)	1,287 C.Y.
TOP SOIL (REPLACEMENT)	1,287 C.Y.



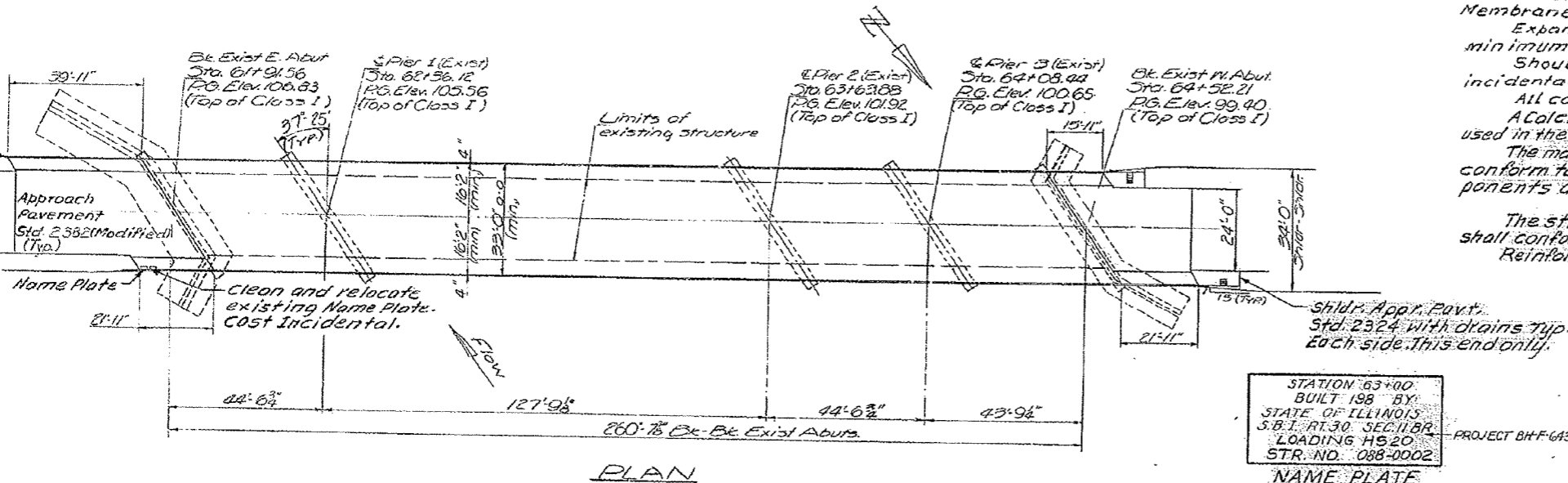
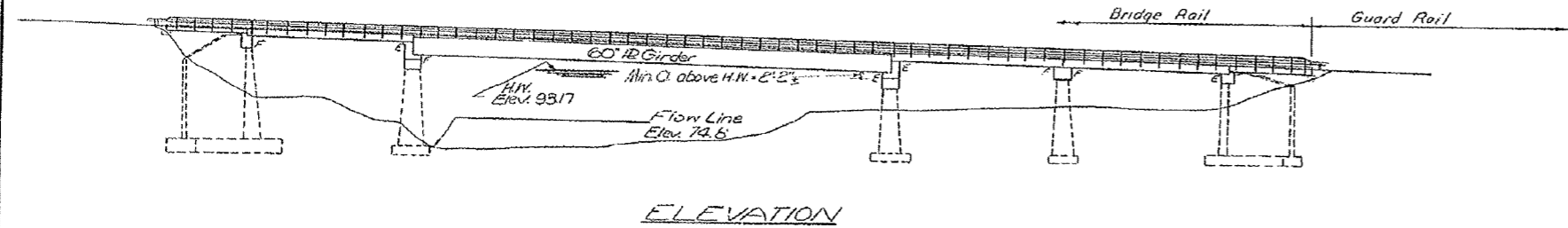
PLAN  
2404

PROFILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	5
SHEET NO. 1				
21 SHEETS				

Bl. Chisled to on 3M Wingwall Elev. 100.00  
Existing Structure. Built in 1989 as SBI 30, Sec. 11BR, of  
Sta. 63+00. The structure consists of 3 RC Deck Girders and  
1 thru Truss Span. Substructures are RC Classed Abutts  
and Solid concrete piers. Superstr. to be removed by  
Bridge Contr. No Salvage. Traffic during  
construction to be maintained on a detour run around  
to be provided by the Contractor.  
Exist. Struct. Number: 088-0002



GENERAL NOTES

AASHTO M 222 structural steel shall not be painted except that for a distance of three times the depth of the beams or girders (but not exceeding 10 feet) each way from deck joints, the AASHTO M 222 structural steel shall be cleaned and given one coat of the basic lead silico chromate primer and moroon field coat. Both coats to be applied in the shop with spot painting only in the field.

Calculated weight of Structural Steel = 149480 Lbs  
All structural steel shall be AASHTO M 222.

Field welding of construction accessories will not be permitted to the bottom flange of girders. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before bolting cross frames over supports.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4"

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 4,080 lbs., and 3/4" x 12" hooked bolts.

Shoulder transition to Wingwall shall be shaped with broken concrete. Cost incidental.

All contact surfaces of joints for the cross frames shall be free of paint or lacquer.

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs of the steel girders.

The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 222.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 53 Grade 60.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Protective Coat	Sq. Yds.	102		102
Class X Concrete	Cu. Yds.	125.8	98.6	224.4
Precast Concrete Bridge Slab	Sq. Ft.	374		374
Precast Prestressed Concrete Deck Beams (21')	Sq. Ft.	4308		4308
Structural Steel	Lump Sum	1		1
Stud Shear Connectors	Each	960		960
Steel Railing, Type T-1	Lin. Ft.	622		622
Reinforcement Bars	Lbs.	34,260	9,760	44,020
Concrete Removal	Cu. Yds.		76	76
Removal of Existing Superstructures	Each	1		1
Name Plates	Each	1		1
Waterproofing Membrane System	Sq. Yds.	886		886
Neoprene Expansion Joint (24")	Lin. Ft.	121		121
Portland Cement Mortar Finishing Course	Lin. Ft.	1274		1274
Elastomeric Bearing Assembly Type I	Each	5		5
Floor Drains	Each	6		6
Bituminous Concrete Surface Course, Class I	Tons	70		70
Expansion Bolts (4")	Each		166	166
Drainage Scuppers	Each	4		4

WATERWAY INFORMATION

Drainage Area	197a Mi	Low Grade Elev.	96.0	@ Sta	69+00	
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. HIKE.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	50	10,290	2278	2278	93.5 0.5 0.5	94.0 94.0
Base	100	11,710	2278	2278	94.0 0.63 0.63	94.63 94.63
Overlapping						
Max. Calc.	500	14,950	2574	2574	94.9 0.86 0.86	95.7 95.7

DESIGN STRESSES

FIELD UNITS  
 $f_c = 1400$  psi (Sub)  
 $f_s = 24,000$  psi (Reinf.)  
 $f_s = 27,000$  psi (Struct. Steel, M 222)  
 $f_c = 1200$  psi (Slab)  
 $n = 9$

PRECAST UNITS

$f_c = 4000$  psi  
 $f_s = 18000$  psi  
 $f_s = 20000$  psi  
 $n = 8$

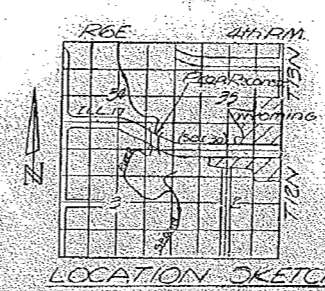
PRECAST PRESTRESSED UNITS

$f_c = 5000$  psi  
 $f_{ci} = 4000$  psi  
 $f_s = 270000$  psi 1/2" Strands  
 $f_{si} = 189000$  psi 1/2" Strands

Allow 25 Lbs/Sq. Ft. for Fut. W.S.  
Design Specifications 1977 AASHTO, 1978  
THRU 1982 Interims.

LOADING HS 20-44

PROPOSED PROFILE GRADE  
SBI RTE 30



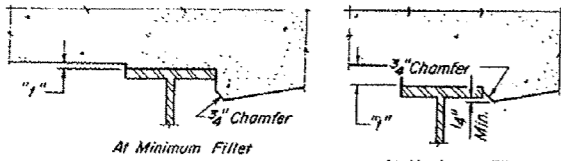
GENERAL PLAN and ELEVATION  
SBI RTE 30 over SPOON RIVER  
SBI RTE 30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

DESIGNED R.K. RKM  
 CHECKED D. Ryan  
 R.P.S.  
 DRAWN Ferrando  
 CHECKED JNP  
 Revised 6/3/1980 D.A.B./R.K.M.  
 5/7/1981

EXAMINED July 17 1975  
 PASSED  
 APPROVED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	6
SHEETS				



To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

**FILLET HEIGHTS**

**GIRDER 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6225.207	-14.000	105.507	105.507
Brig. Pier 1	6226.410	-14.000	105.472	105.472
A	6236.410	-14.000	105.187	105.261
B	6246.410	-14.000	104.902	105.050
C	6256.410	-14.000	104.617	104.839
D	6266.410	-14.000	104.332	104.591
E	6276.410	-14.000	104.047	104.336
F	6286.410	-14.000	103.762	104.081
G	6296.410	-14.000	103.477	103.784
H	6306.410	-14.000	103.192	103.468
I	6316.410	-14.000	102.907	103.153
J	6326.410	-14.000	102.622	102.813
K	6336.410	-14.000	102.337	102.454
L	6346.410	-14.000	102.052	102.095
Brig. Pier 2	6352.056	-14.000	101.892	101.892
End of Slab	6353.389	-14.000	101.853	101.853

**SOUTH LONGITUDINAL BONDED CONSTR. JT.**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6226.732	-12.000	105.494	105.494
Brig. Pier 1	6227.940	-12.000	105.460	105.460
A	6237.940	-12.000	105.175	105.249
B	6247.940	-12.000	104.890	105.038
C	6257.940	-12.000	104.605	104.821
D	6267.940	-12.000	104.320	104.578
E	6277.940	-12.000	104.035	104.324
F	6287.940	-12.000	103.750	104.069
G	6297.940	-12.000	103.465	103.771
H	6307.940	-12.000	103.180	103.456
I	6317.940	-12.000	102.895	103.141
J	6327.940	-12.000	102.610	102.801
K	6337.940	-12.000	102.325	102.441
L	6347.940	-12.000	102.040	102.082
Brig. Pier 2	6353.586	-12.000	101.879	101.879
End of Slab	6354.919	-12.000	101.841	101.841

**GIRDER 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6230.551	-7.000	105.463	105.463
Brig. Pier 1	6231.765	-7.000	105.429	105.429
A	6241.765	-7.000	105.144	105.218
B	6251.765	-7.000	104.859	105.007
C	6261.765	-7.000	104.574	104.796
D	6271.765	-7.000	104.289	104.548
E	6281.765	-7.000	104.004	104.293
F	6291.765	-7.000	103.719	104.038
G	6301.765	-7.000	103.434	103.740
H	6311.765	-7.000	103.149	103.425
I	6321.765	-7.000	102.864	103.110
J	6331.765	-7.000	102.579	102.770
K	6341.765	-7.000	102.294	102.411
L	6351.765	-7.000	102.009	102.052
Brig. Pier 2	6357.411	-7.000	101.840	101.840
End of Slab	6358.744	-7.000	101.810	101.810

**GIRDER 3 @ ROADWAY**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6235.912	0.0	105.420	105.420
Brig. Pier 1	6237.120	0.0	105.386	105.386
A	6247.120	0.0	105.101	105.175
B	6257.120	0.0	104.816	104.964
C	6267.120	0.0	104.531	104.753
D	6277.120	0.0	104.246	104.506
E	6287.120	0.0	103.961	104.250
F	6297.120	0.0	103.676	103.995
G	6307.120	0.0	103.391	103.697
H	6317.120	0.0	103.106	103.382
I	6327.120	0.0	102.821	103.066
J	6337.120	0.0	102.536	102.726
K	6347.120	0.0	102.251	102.367
L	6357.120	0.0	101.966	102.008
Brig. Pier 2	6362.766	0.0	101.805	101.805
End of Slab	6364.099	0.0	101.767	101.767

**GIRDER 4**

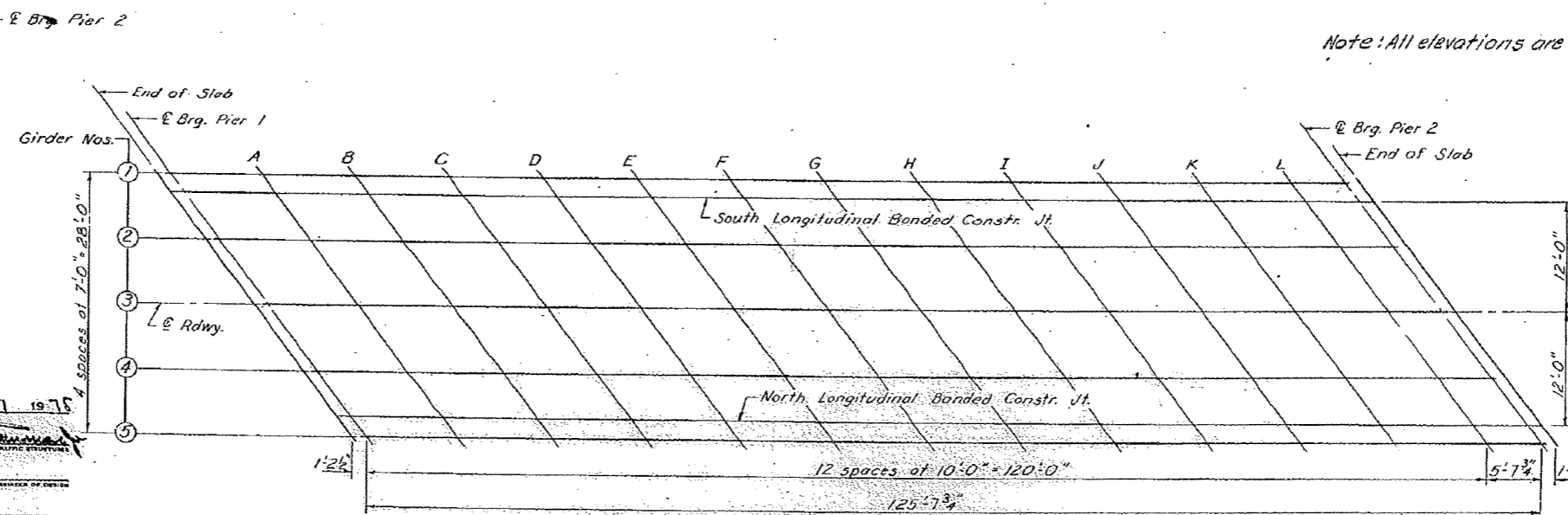
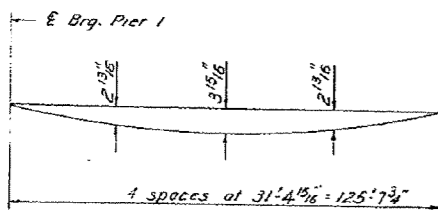
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6241.267	7.000	105.158	105.158
Brig. Pier 1	6242.475	7.000	105.124	105.124
A	6252.475	7.000	104.839	104.913
B	6262.475	7.000	104.554	104.702
C	6272.475	7.000	104.269	104.491
D	6282.475	7.000	103.984	104.242
E	6292.475	7.000	103.699	103.988
F	6302.475	7.000	103.414	103.733
G	6312.475	7.000	103.129	103.435
H	6322.475	7.000	102.844	103.120
I	6332.475	7.000	102.559	102.804
J	6342.475	7.000	102.274	102.464
K	6352.475	7.000	101.989	102.105
L	6362.475	7.000	101.704	101.746
Brig. Pier 2	6369.121	7.000	101.543	101.543
End of Slab	6369.453	7.000	101.505	101.505

**NORTH LONGITUDINAL BONDED CONSTR. JT.**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6245.092	12.000	104.971	104.971
Brig. Pier 1	6246.301	12.000	104.936	104.936
A	6256.301	12.000	104.651	104.725
B	6266.301	12.000	104.366	104.514
C	6276.301	12.000	104.081	104.304
D	6286.301	12.000	103.796	104.055
E	6296.301	12.000	103.511	103.800
F	6306.301	12.000	103.226	103.546
G	6316.301	12.000	102.941	103.298
H	6326.301	12.000	102.656	103.033
I	6336.301	12.000	102.371	102.677
J	6346.301	12.000	102.086	102.327
K	6356.301	12.000	101.801	101.978
L	6366.301	12.000	101.516	101.559
Brig. Pier 2	6371.946	12.000	101.356	101.356
End of Slab	6373.280	12.000	101.317	101.317

**GIRDER 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of Slab	6246.622	14.000	104.896	104.896
Brig. Pier 1	6247.831	14.000	104.862	104.862
A	6257.831	14.000	104.577	104.651
B	6267.831	14.000	104.292	104.440
C	6277.831	14.000	104.007	104.229
D	6287.831	14.000	103.722	103.980
E	6297.831	14.000	103.437	103.726
F	6307.831	14.000	103.152	103.471
G	6317.831	14.000	102.867	103.173
H	6327.831	14.000	102.582	102.858
I	6337.831	14.000	102.297	102.543
J	6347.831	14.000	102.012	102.202
K	6357.831	14.000	101.727	101.843
L	6367.831	14.000	101.442	101.489
Brig. Pier 2	6373.476	14.000	101.281	101.281
End of Slab	6374.810	14.000	101.243	101.243



Note: All elevations are at top of concrete deck.

**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete and deck surfacing only)  
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

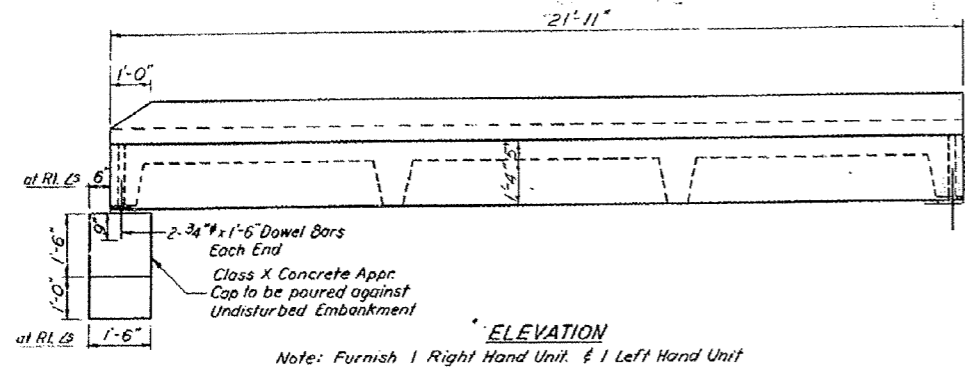
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CHECKED	D. RYAN	PASSED	
DRAWN	R. P. SUMNER	APPROVED	
CHECKED	JNP	DIRECTOR OF HIGHWAYS	

**TOP OF SLAB ELEVATIONS**  
**S.B.I. RT.30 SEC.11BR**  
**STARK COUNTY**  
**STATION 63+00**

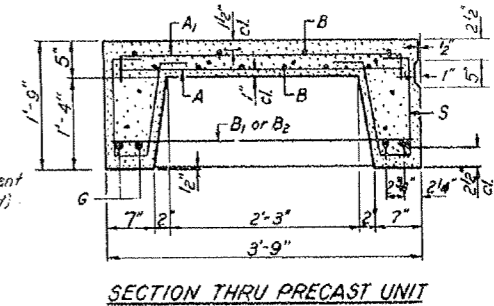
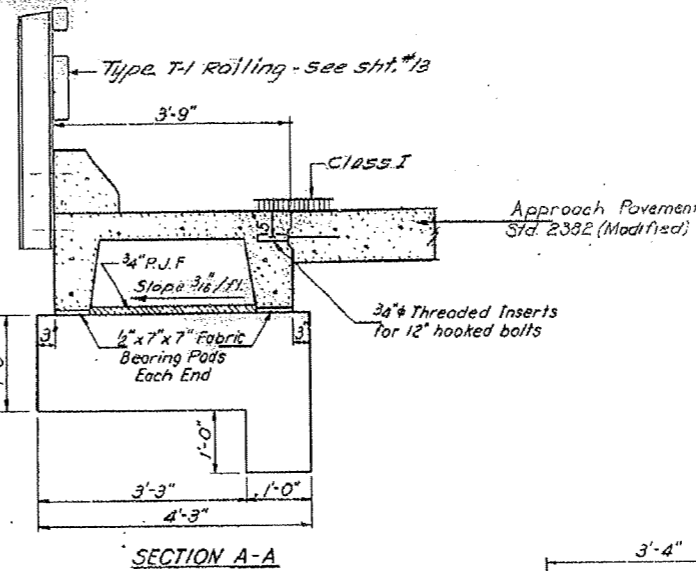
**PLAN SPAN 2**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	BRIDGE	TOTAL SHEETS	SHEET NO.	SHEETS
643	11 BR	STARK	34	7	2 SHEETS
DESIGNER		DRAWN		CHECKED	
R. P. SUMMER		J. N. P.		D. RYAN	



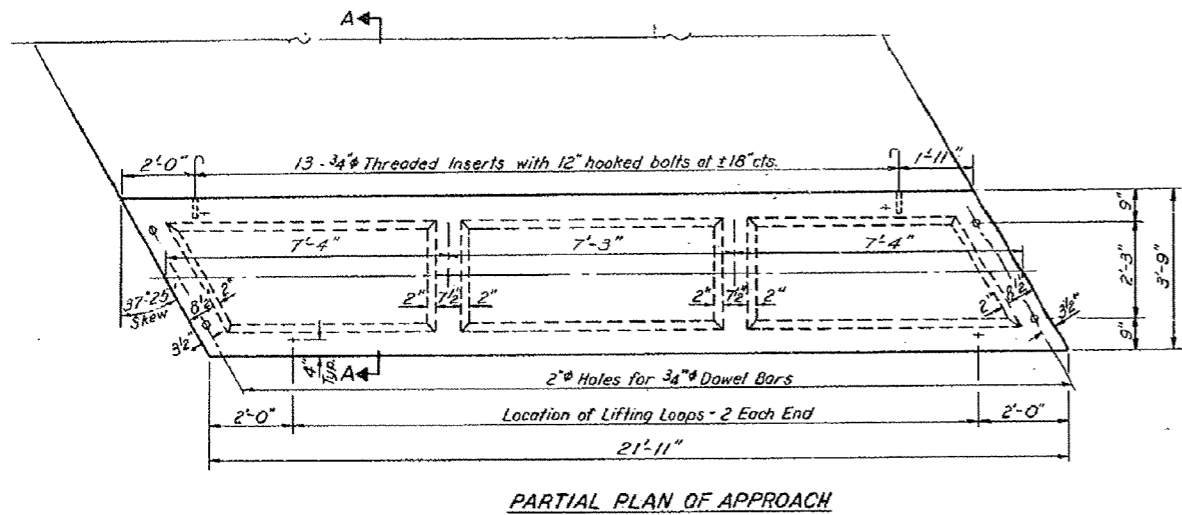
Northeast Elev. 104.84  
Northwest Elev. 96.15



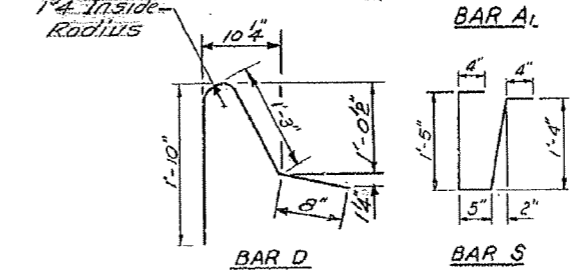
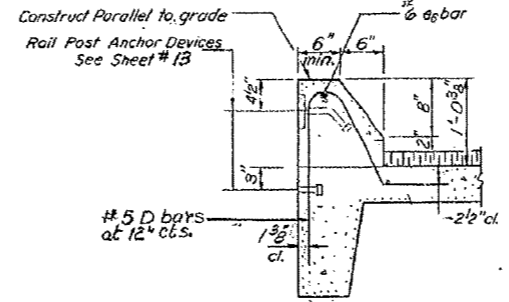
**BAR LIST - ONE UNIT**

Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	58	#4	3'-3"	—
A <sub>1</sub>	30	#4	4'-0"	—
B	10	#4	21'-6"	—
B <sub>1</sub>	4	#4	3'-6"	—
B <sub>2</sub>	4	#4	4'-4"	—
D	22	#5	3'-9"	—
G	4	#10	21'-6"	—
S	46	#3	3'-10"	—

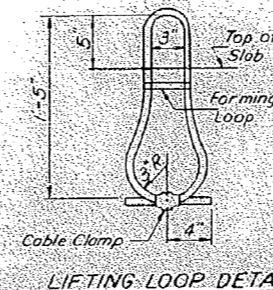
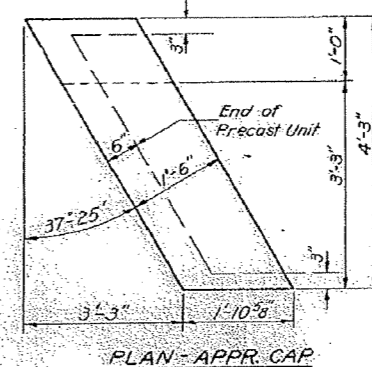
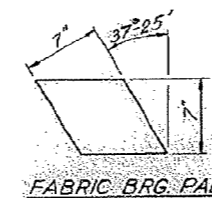
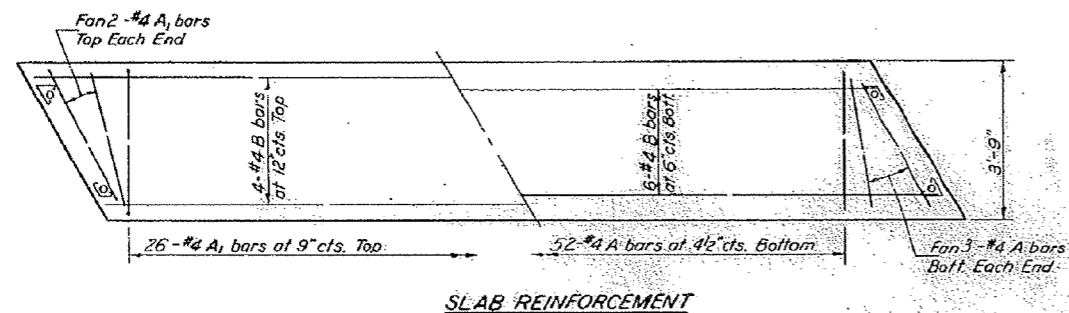
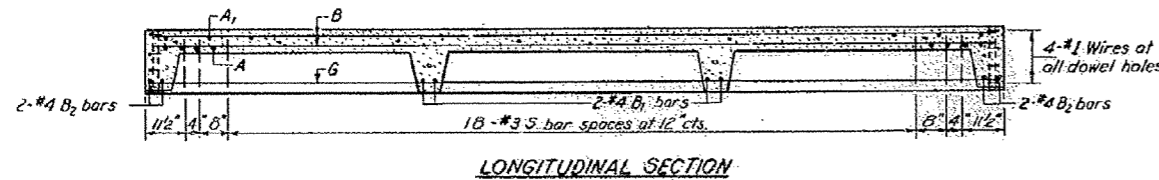


Construct Parallel to grade  
Rail Post Anchor Devices  
See Sheet #13



**NOTES**

Unless otherwise approved by the Engineer, lifting loops shall be 1/2" 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected. Holes shall be drilled and anchor dowels grouted in place. Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4" hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab." The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.



**STRESSES**

f<sub>c</sub> = 4,500 psi.

f<sub>c</sub> = 1,800 psi.

f<sub>s</sub> = 20,000 psi.

n = 8

**LOADING HS-20**

**BILL OF MATERIAL**

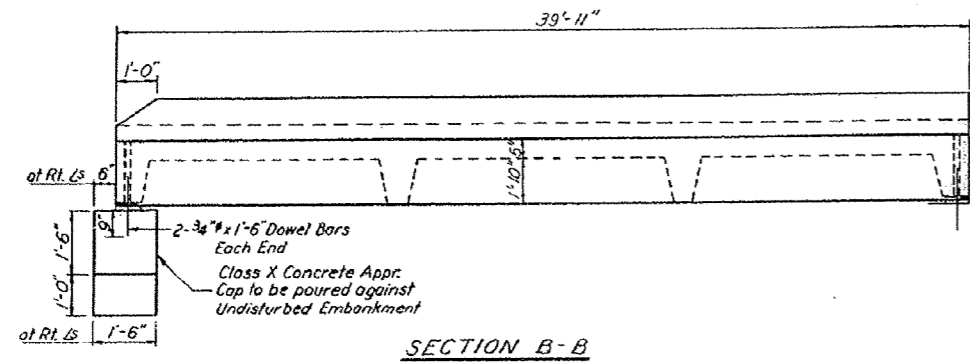
Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	154
Class X Concrete	Cu. Yds.	1.0

**NORTHEAST & NORTHWEST  
APPROACH DETAILS  
S.B.T. RT. 30 SEC. 11 BR  
STARK COUNTY  
STATION 63+00**

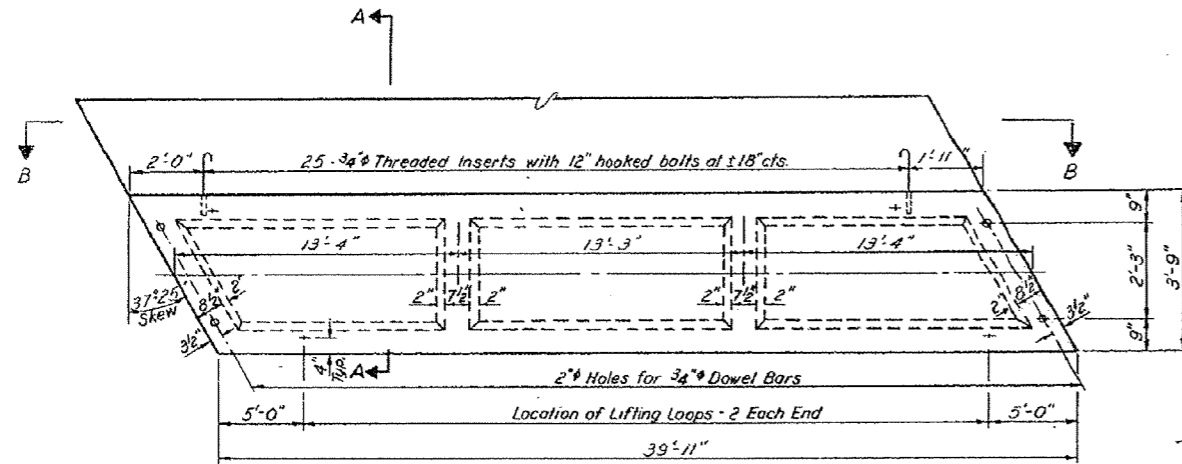
DESIGNED	R. P. SUMMER	EXAMINED	July 17 19 15
CHECKED	D. RYAN	PASSED	
DRAWN	R. P. SUMMER	APPROVED	
CHECKED	J. N. P.	DIRECTOR OF HIGHWAYS	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

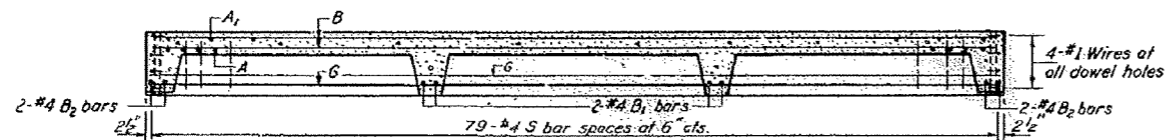
DATE	DESIGN	COUNTY	TOTAL SHEETS	SHEET NO.
6/17/75	11 BR	STARK	34	8
SHEETS				



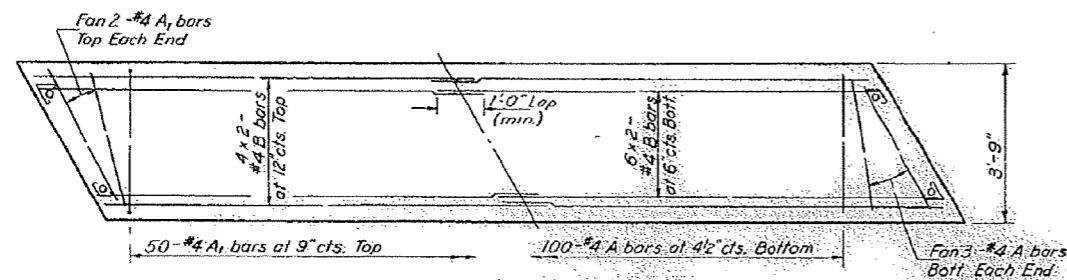
SECTION B-B



PARTIAL PLAN OF APPROACH



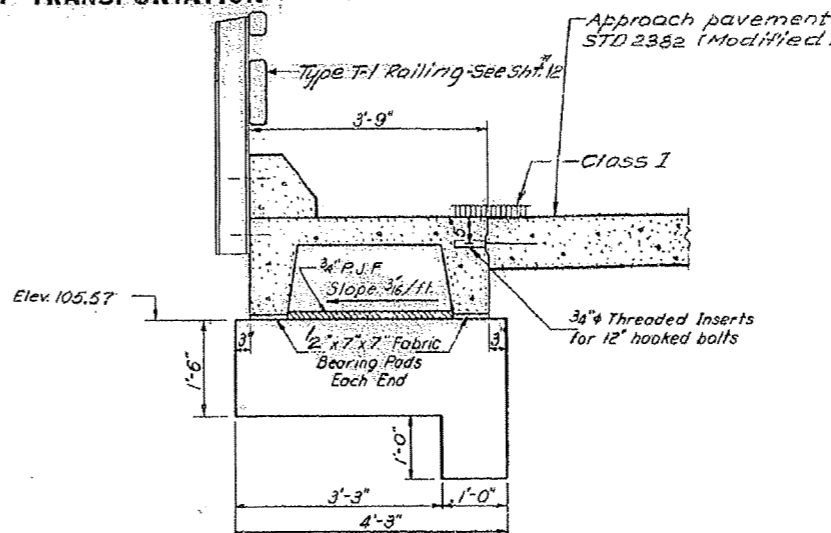
LONGITUDINAL SECTION



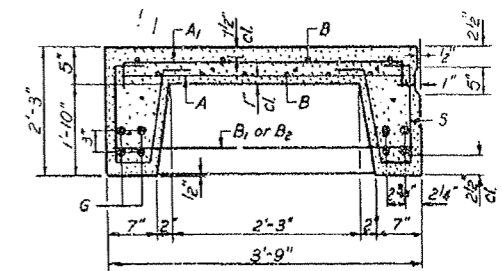
SLAB REINFORCEMENT

DESIGNED	R. W. Mathis
CHECKED	D. Ryan
DRAWN	R. P. Sumner
CHECKED	JNP

EXAMINED  
July 17 1975  
R. E. Hummer  
APPROVED  
DIRECTOR OF HIGHWAYS



SECTION A-A

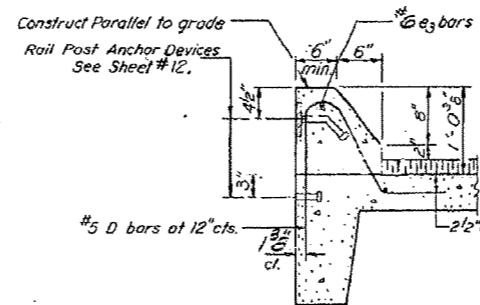


SECTION THRU PRECAST UNIT

BAR LIST - ONE UNIT

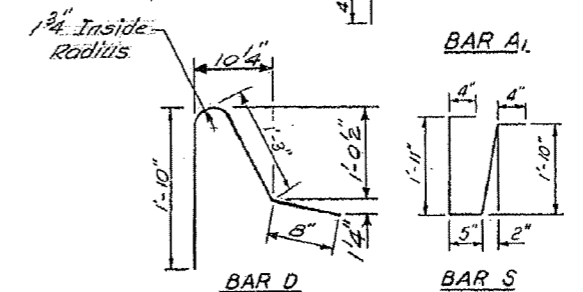
Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	106	#4	3'-5"	U
A1	54	#4	4'-0"	U
B	20	#4	20'-4"	U
B1	4	#4	3'-6"	U
B2	4	#4	4'-4"	U
D	40	#5	3'-9"	U
G	8	#11	39'-7"	U
S	160	#4	4'-10"	U



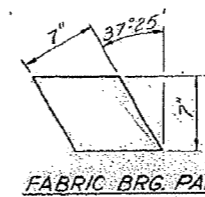
SECTION THRU CURB

Curbs shall be poured in the field. Class X Concrete & #3 bars in curbs are billed on Sheet #12.

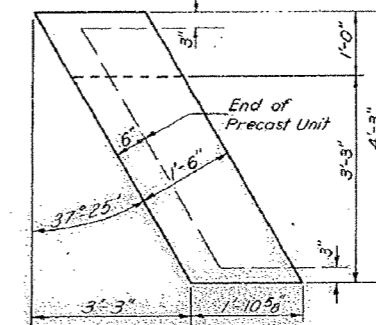


NOTES

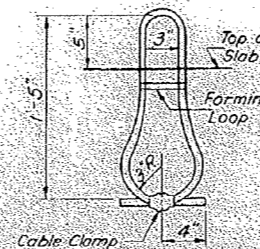
Unless otherwise approved by the Engineer, lifting loops shall be 5/8" 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 33,000 lbs. Loops shall be burned off after slab has been erected. Holes shall be drilled and anchor dowels grouted in place. Cast of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4" hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab." The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.



FABRIC BRG. PAD



PLAN - APPR. CAP



LIFTING LOOP DETAIL

STRESSES  
fc = 4,500 psi.  
fc = 1,800 psi.  
fs = 20,000 psi.  
n = 8  
LOADING HS-20

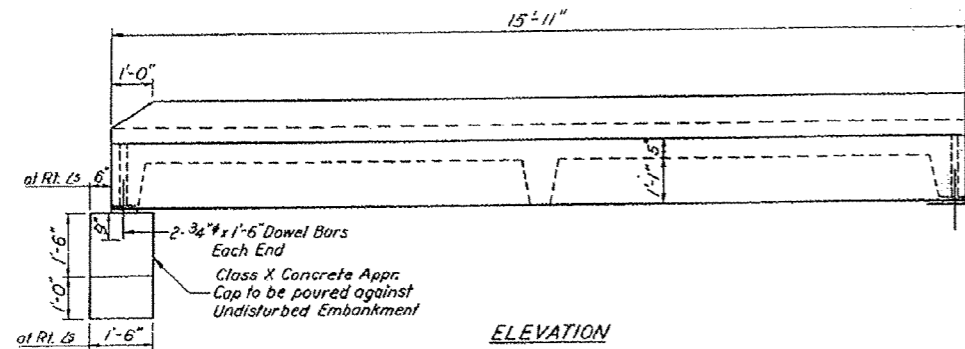
BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	150
Class X Concrete	Cu. Yds.	0.5

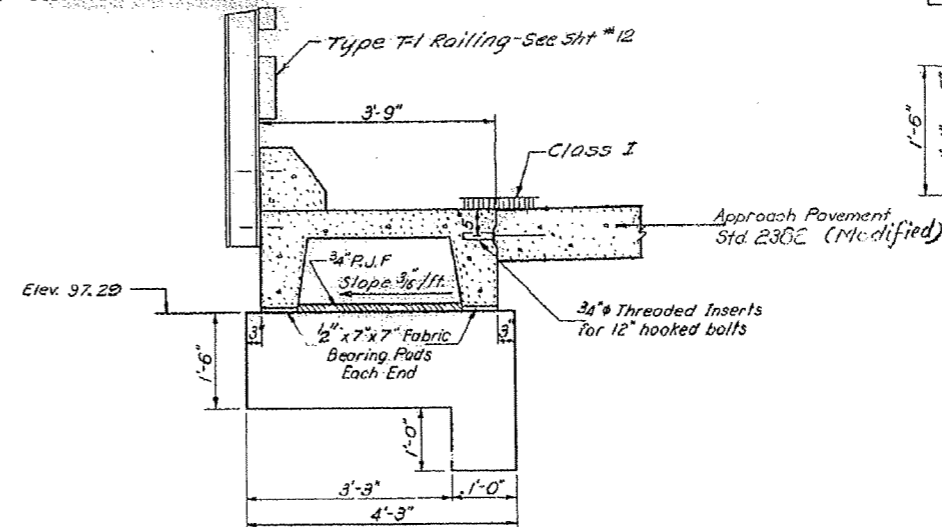
SOUTHEAST  
APPROACH DETAILS  
S.B.I. RT. 30 SEC. 11 BR  
STARK COUNTY  
STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

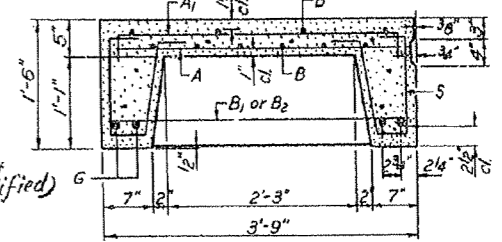
ROUTE NO.	DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	9
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	



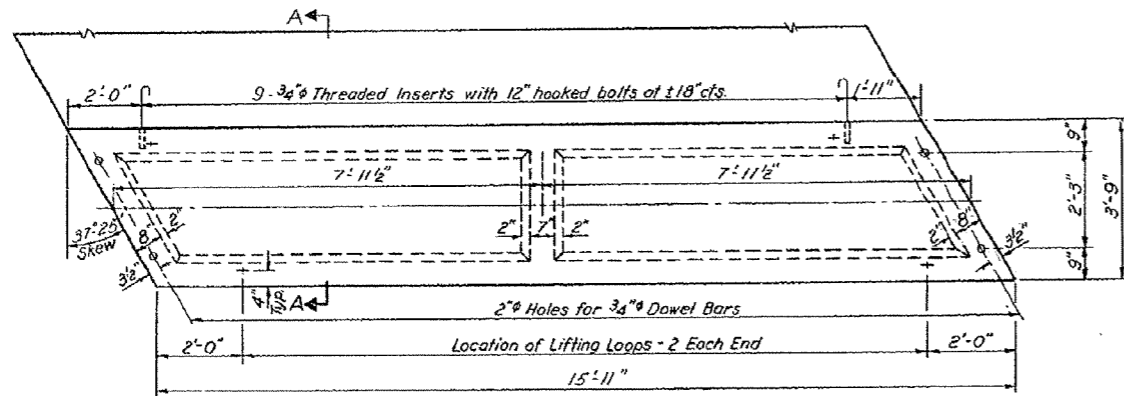
ELEVATION



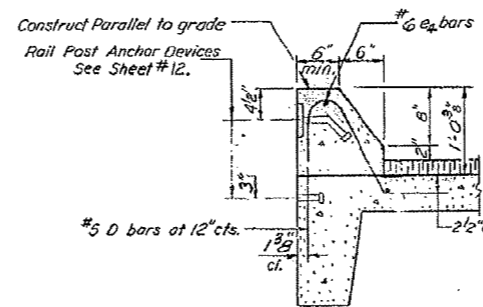
SECTION A-A



SECTION THRU PRECAST UNIT

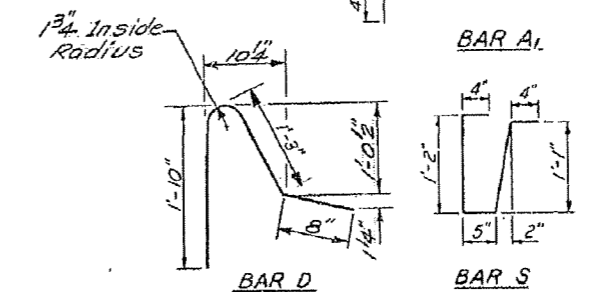


PARTIAL PLAN OF APPROACH



SECTION THRU CURB

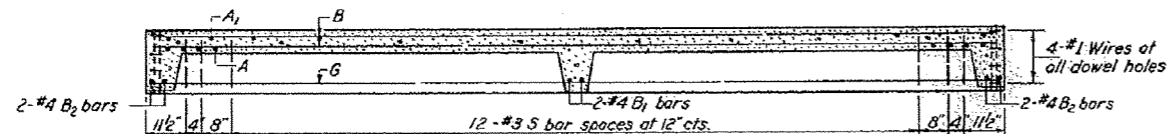
Curbs shall be poured in the field. Class X Concrete e bars in curbs are tilted on Sheet #12.



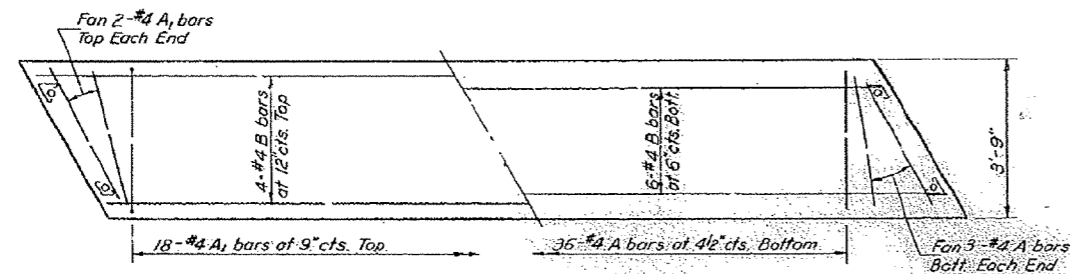
BAR LIST - ONE UNIT

Reinforcement to be cast into slab

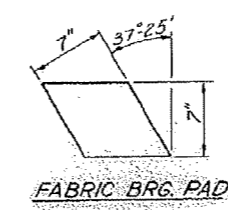
Bar	No	Size	Length	Shape
A	12	#4	3'-3"	—
A1	22	#4	4'-0"	—
B	10	#4	15'-6"	—
B1	2	#4	3'-6"	—
B2	4	#4	1'-4"	—
D	16	#5	3'-9"	U
G	4	#9	15'-6"	—
S	34	#3	3'-4"	U



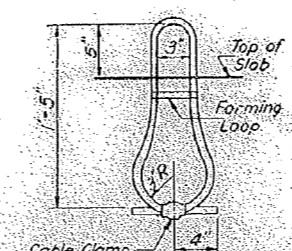
LONGITUDINAL SECTION



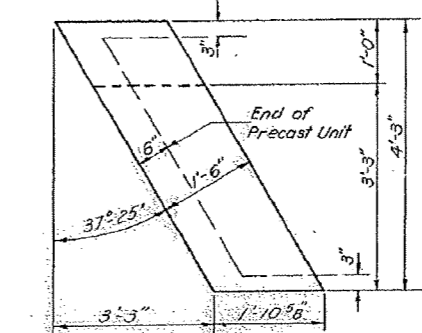
SLAB REINFORCEMENT



FABRIC BRG. PAD



LIFTING LOOP DETAIL



PLAN - APPR. CAP

STRESSES  
fc = 4,500 psi.  
fc = 1,800 psi.  
fs = 20,000 psi.  
n = 8  
LOADING HS-20

NOTES  
Unless otherwise approved by the Engineer, lifting loops shall be 1/2" 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected. Holes shall be drilled and anchor dowels grouted in place. Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4" hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab." The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	60
Class X Concrete	Cu. Yds.	0.5

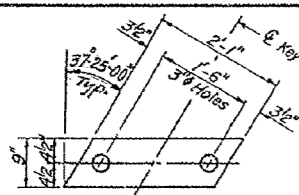
SOUTHWEST  
APPROACH DETAILS  
S.B.I. RT.30. SEC.11BR  
STARK COUNTY  
STATION 63+00

DESIGNED R. Matthews  
CHECKED D. Ryan  
DRAWN R. P. Summer  
CHECKED JNP  
EXAMINED July 17 1975  
PASSED  
APPROVED  
DIRECTOR OF HIGHWAYS

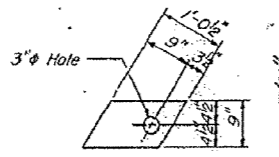


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

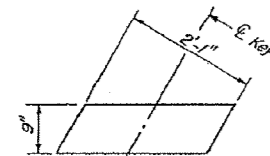
ADDER NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
643	11BR	STARK	34	10	21
FED. ROAD DIST. NO. 1		ILLINOIS		FED. AID PROJECT	



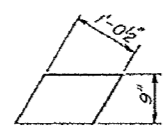
**FABRIC BEARING PAD**  
(Interior)



**FABRIC BEARING PAD**  
(Exterior)



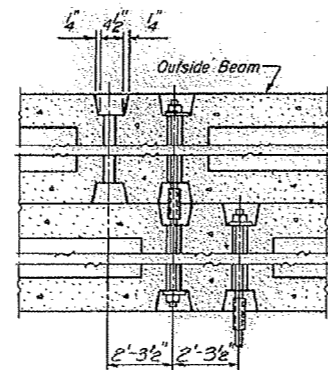
**GRAPHITED ASBESTOS BEARING PAD**  
(Interior)



**GRAPHITED ASBESTOS BEARING PAD**  
(Exterior)

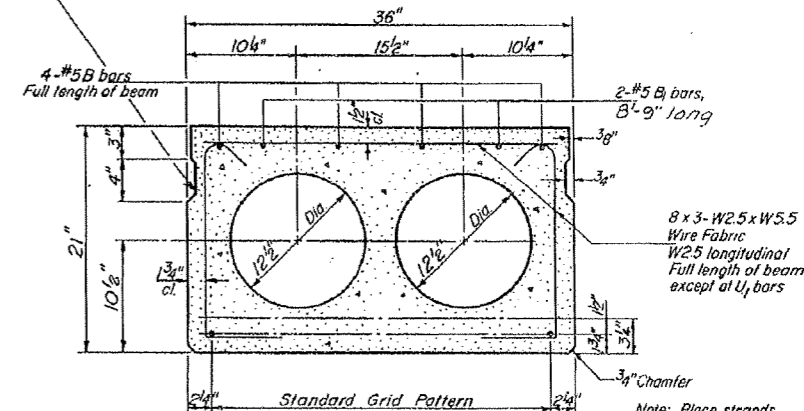
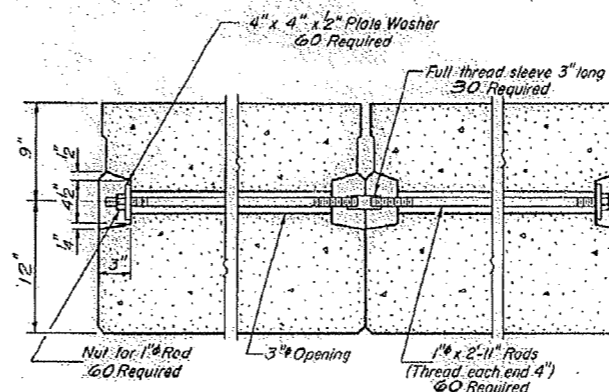
**U BAR**

**E BAR**



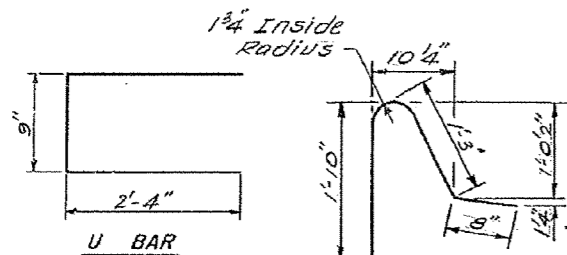
**TYPICAL TRANSVERSE TIE ASSEMBLY**

Omit key on exterior face of outside beams.



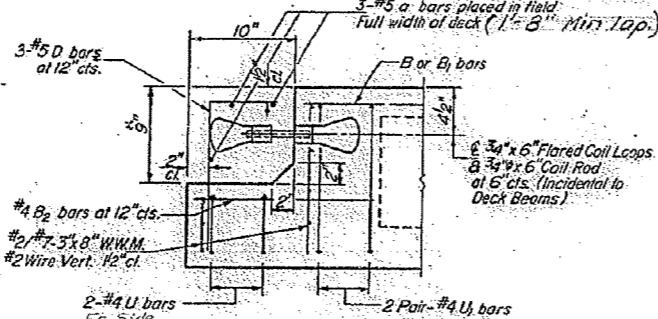
**TYPICAL SECTION**

1/2" Strands, Each Strand Stressed to 28,900 Lbs.  
9 - Strands 1 3/4" up

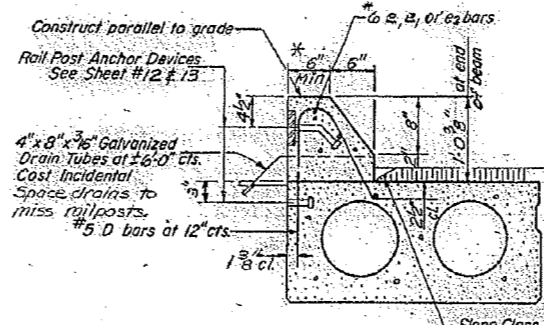


**U BAR**

**D BAR**



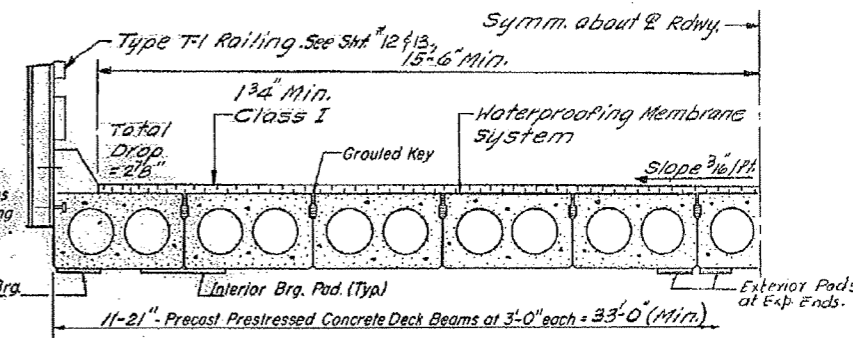
**END OF BEAM (EXP. END)**  
(Dimensions are at right angles)



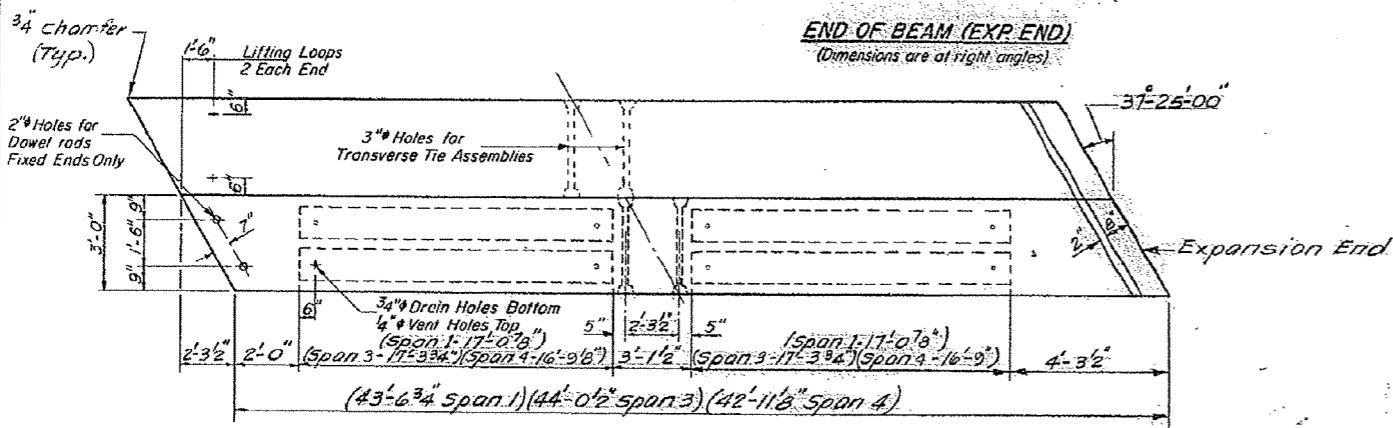
**SECTION THRU CURB**

Curbs shall be poured in the field. Class X Concrete & e bars for curbs are billed on Sheet #12 & 13.

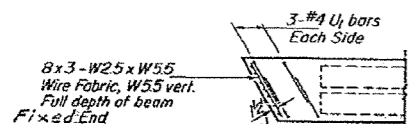
\* The outside face of curb shall line up with the exterior face of outer most Deck beam.



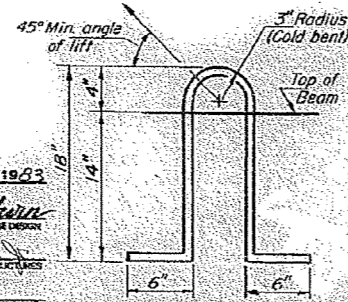
**HALF CROSS SECTION**



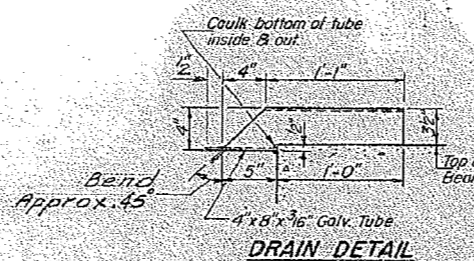
**PLAN**



**END PLAN**



**LIFTING LOOP DETAIL**



**DRAIN DETAIL**

**NOTES**

Prestressing steel shall be non-galvanized high strength stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be 2" and the nominal cross-sectional area shall be 0.153 sq in. Lifting loops shall be 3/8" diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 23,000 lbs. or 2-1/2" 270 ksi strands, as shown. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to AASHTO M 31 or M 53, Grade 60. The bearing pad surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/4" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. A Calcium Nitrate Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f<sub>cr</sub>, shall be 4000 psi and f<sub>c</sub> shall be 5000 psi. An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted.

**BILL OF MATERIAL**

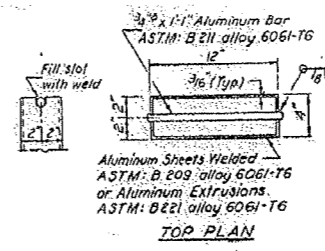
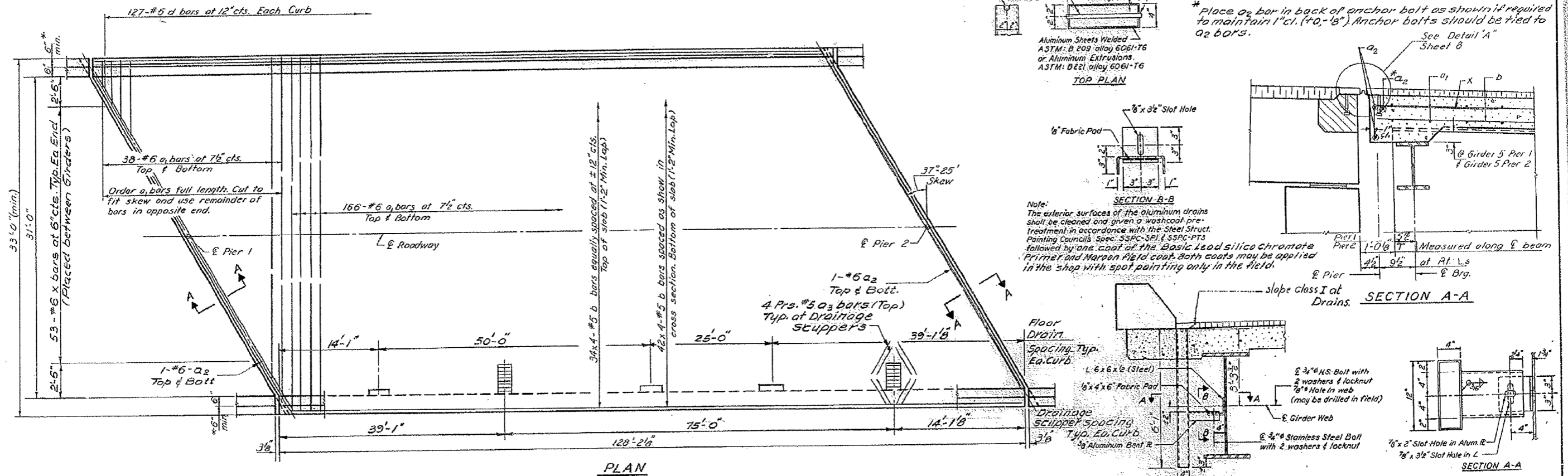
Bar	No.	Size	Length	Shape
		# 5	21'-9"	
Precast Prestressed Concrete Deck Beams (21")	Sq Ft		4308	
Class X Concrete	Cu Yds.		2.8	
Reinforcement Bars	Lbs.		410	

SPANS 1, 3 & 4  
SUPERSTRUCTURE  
S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STA. 63+00

DESIGNED	June 23 1943
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	APPROVED

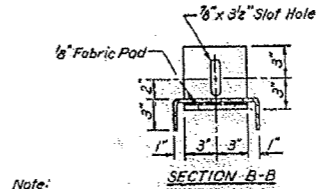
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
A. S. 643	11BR	STARK	34	11
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	21 SHEETS

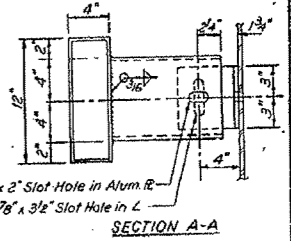
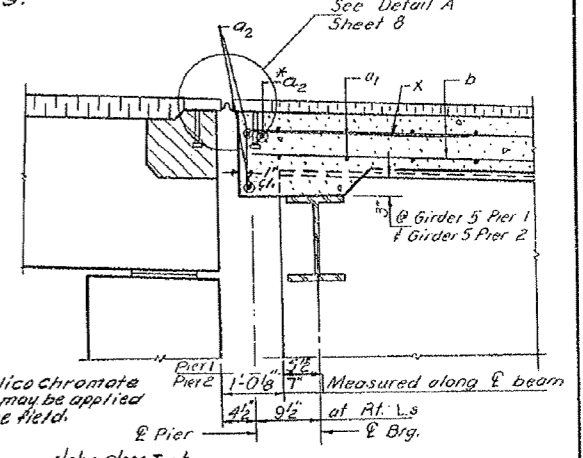


Aluminum Sheets Welded  
ASTM: B 209 alloy 6061-T6  
or Aluminum Extrusions  
ASTM: B221 alloy 6061-T6

\* Place a2 bar in back of anchor bolt as shown if required to maintain 1" cl. (+0, -3") Anchor bolts should be tied to a2 bars.



Note:  
The exterior surfaces of the aluminum drains shall be cleaned and given a washcoat pre-treatment in accordance with the Steel Struct. Painting Council's Spec. SSPC-SP 1 & SSPC-PT 5 followed by one coat of the Basic lead silico Chromate Primer and Marbon Field coat. Both coats may be applied in the shop with spot painting only in the field.



PLAN

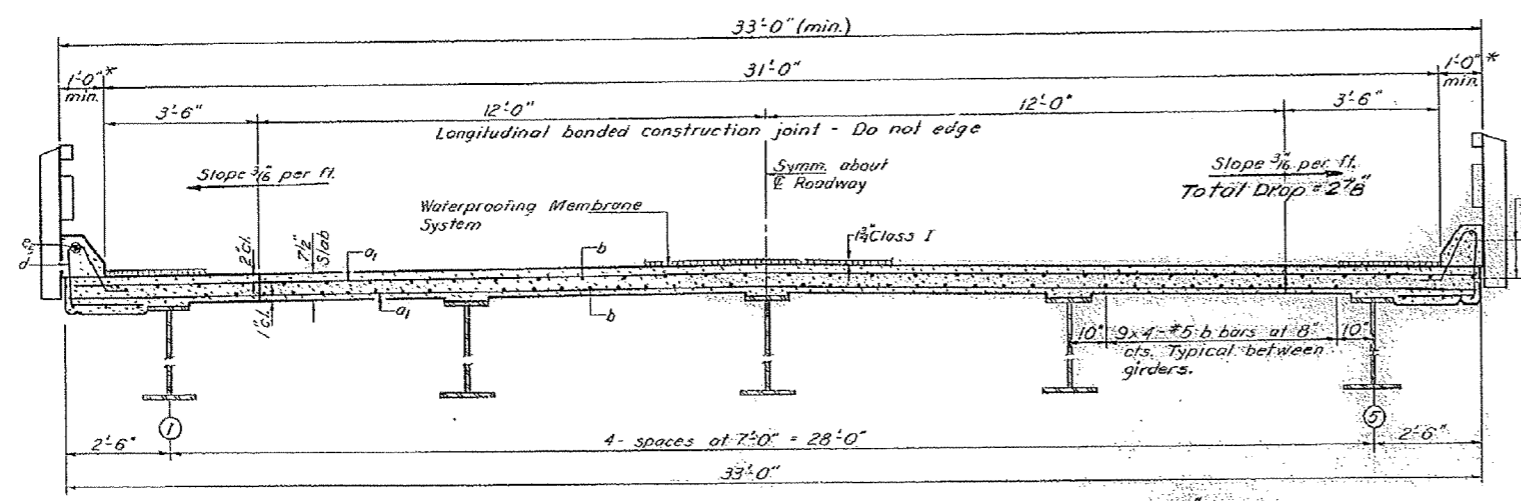
SECTION AT CURB (Showing Floor Drains)

BILL OF MATERIAL

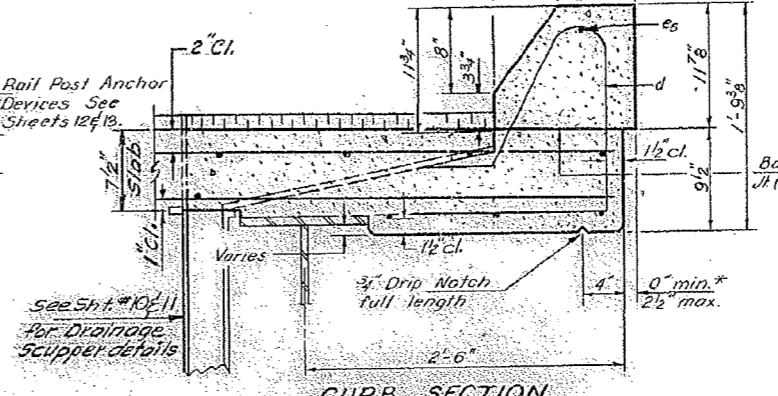
Bar	No.	Size	Length	Shape
a1	408	#6	32'-9"	—
a2	4	#6	40'-0"	—
a3	32	#5	2'-0"	—
b	304	#5	33'-0"	—
d	254	#5	5'-2"	∩
x	106	#6	4'-1"	—
Reinforcement Bars			Lbs.	32,860
Class X Concrete			Cu. Yds.	104.0

Curb a2 bars and Class X Concrete are billed on Sheets 12 & 13

\* The Outside face of Curb shall line up with the exterior face of outer most Deck beam. Use shim plates if necessary to attach Rail Post to the slab. Cast incidental to Steel Railing, 6" x 6" Type T-1 Shim plates detailed on Shts. 12 & 13.

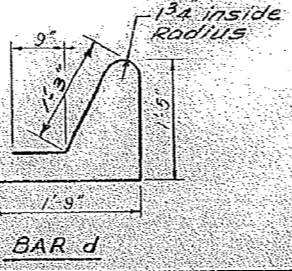


CROSS SECTION



CURB SECTION (Showing Drainage Scupper)

Floor drains and drainage scuppers shall be located clear of all cross frames.



BAR - X

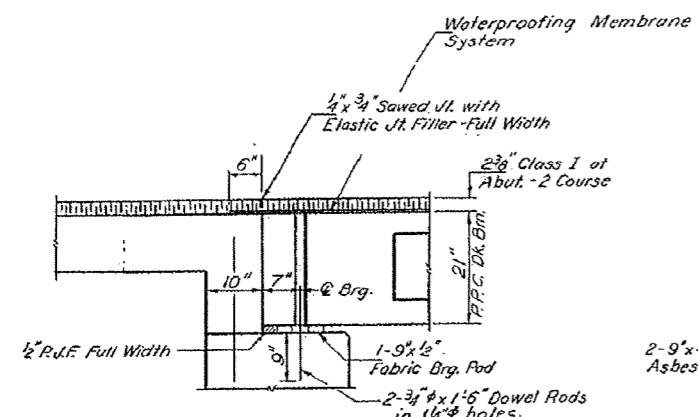
SPAN 2  
SUPERSTRUCTURE  
S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

DESIGNED R. W. Mathis	EXAMINED [Signature] 1975
CHECKED D. Ryan	PASSED [Signature]
DRAWN P. Summer	APPROVED [Signature]
CHECKED JNP	DIRECTOR OF HIGHWAYS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

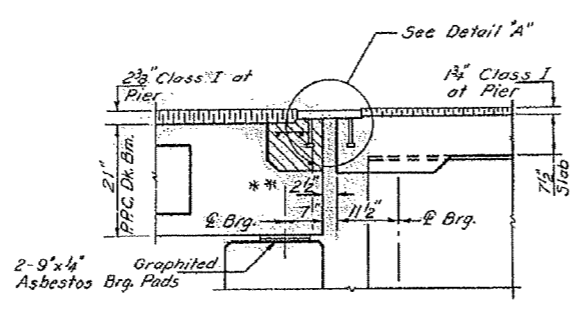
PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	12
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 5  
21 SHEETS



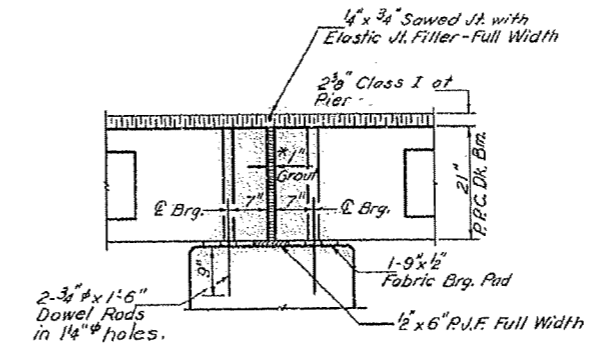
**SECTION THRU E. ABUTMENT**  
AT E. RDWY.

Ends of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed end. Dowel Rods to be grouted & grout allowed to cure (24 hours minimum) prior to grouting the shear keys.



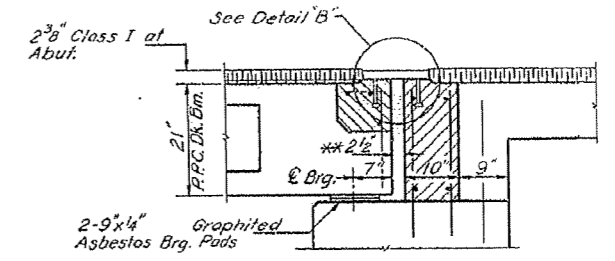
**SECTION THRU PIERS 1 & 2**  
(Looking South Pier 1)  
(Looking North Pier 2)

Dimensions are at right angles.



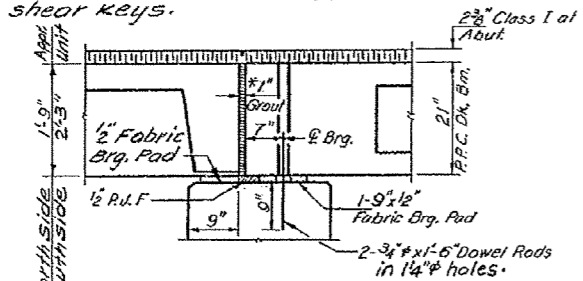
**SECTION THRU PIER 3**

\* 1" joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. This dimension may vary plus or minus to accommodate tolerance in beam lengths.

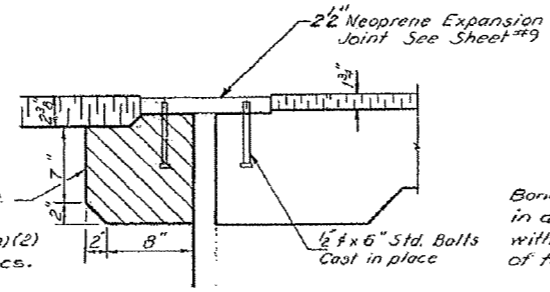


**SECTION THRU W. ABUTMENT**  
AT E. RDWY.

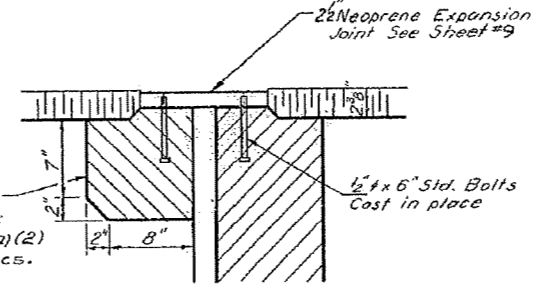
Hatched areas to be poured after beams have been erected and joints grouted.



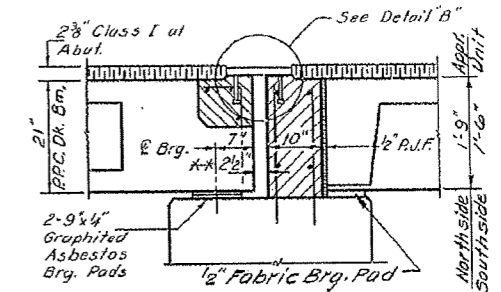
**SECTION THRU E. ABUTMENT**  
AT OUTSIDE BEAM



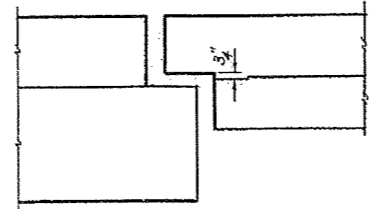
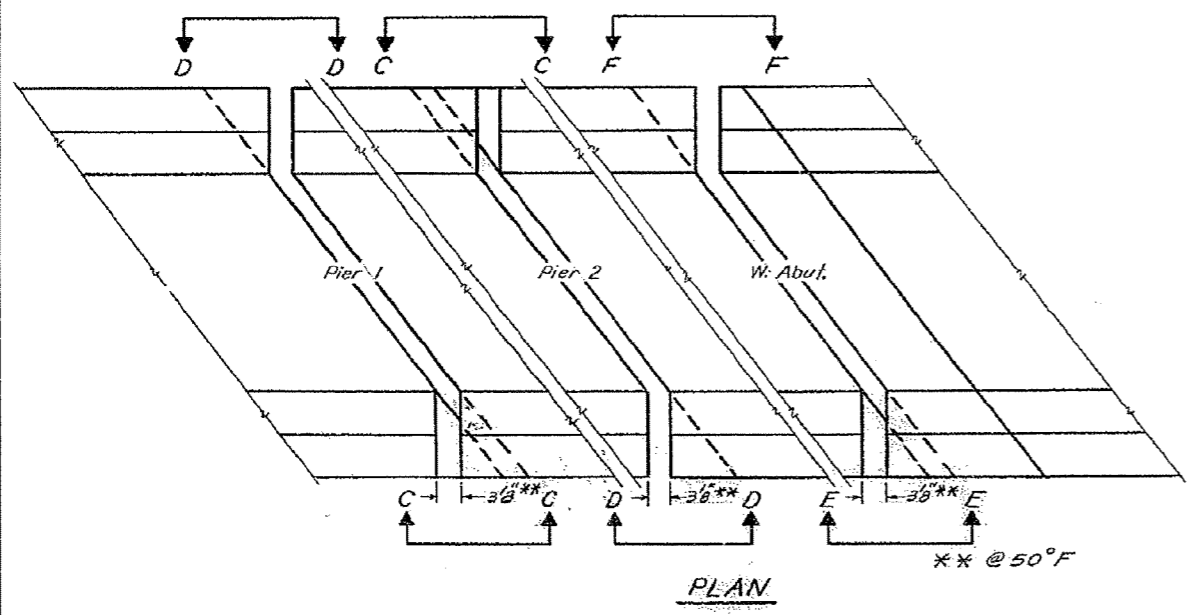
**DETAIL "A"**



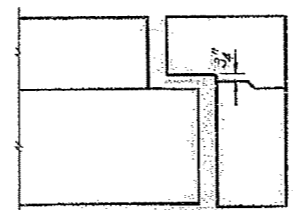
**DETAIL "B"**



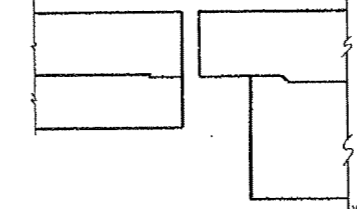
**SECTION THRU W. ABUTMENT**  
AT OUTSIDE BEAM



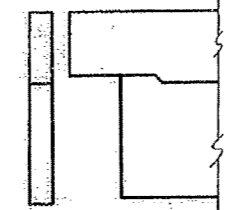
**VIEW C-C**



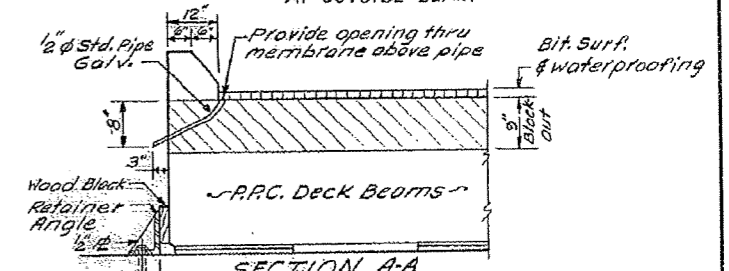
**VIEW E-E**



**VIEW D-D**



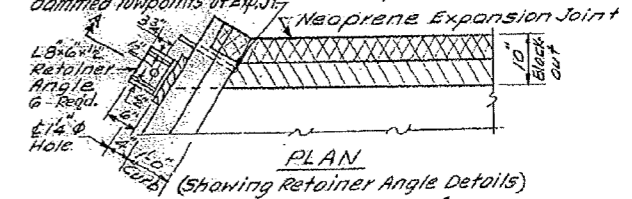
**VIEW F-F**



**SECTION A-A**

\*\*\* 1/2 x 12 Galv. Anchor Bolt with 2 1/2 x 2 1/2 x 5/8 Plate under nut. Provide drainholes at dammed lowpoints of Exp. Jt.

\*\*\* Anchor bolts may be cast into masonry or placed in drilled holes and grouted in place. Cast including Retainer Angle and accessories incidental to P.C. deck beams.



**PLAN**  
(Showing Retainer Angle Details)

Note: After black-outs are poured & cured the Retainer Angles shall be removed. Anchor Bolts may be left in place. Provide one Retainer Assembly at Ea. End of each Expansion Joint.

**SUPERSTRUCTURE DETAILS**  
S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

DESIGNED R. u. mottura	EXAMINED [Signature] 10 75
CHECKED D. Ryan	PASSED [Signature]
DRAWN B. P. Summer	APPROVED [Signature]
CHECKED JNP	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
P.A. 643	11BR	STARK	34	13
FILED DATE	DATE	FILE NO.	PROJECT	

SHEET NO. 9  
21 SHEETS

Joint Size	"C" at 50°F	"D" at 50°F
2	2"	1 1/2" min.
2 1/2	2 1/2"	1 3/4" min.
4	3"	2 1/2" min.

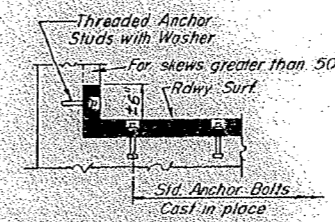
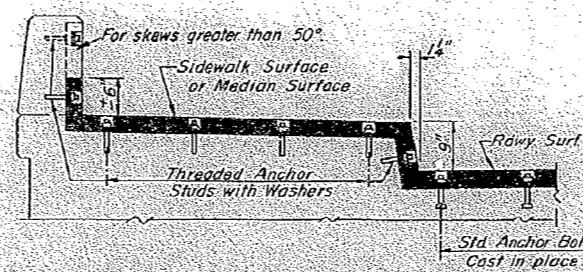
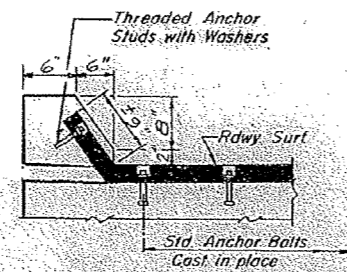
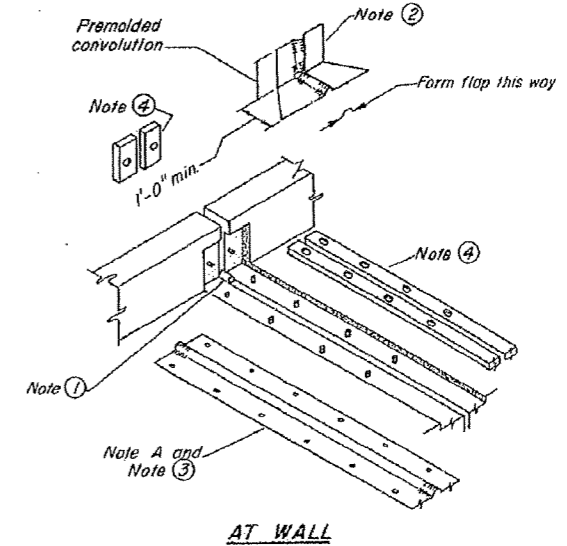
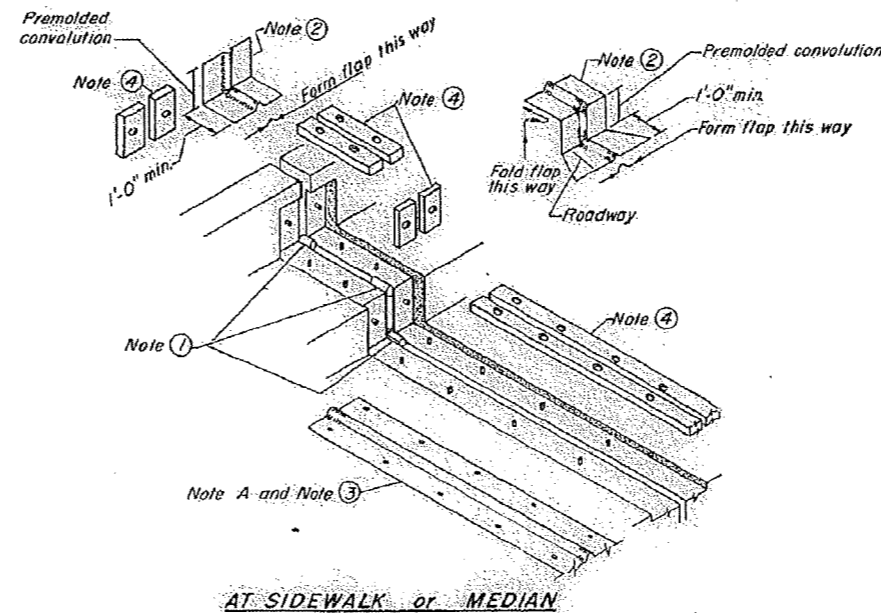
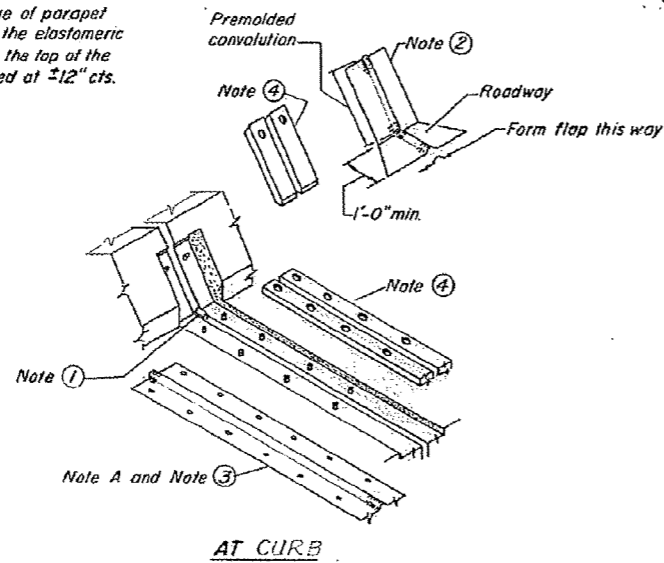
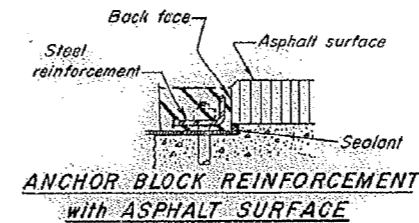
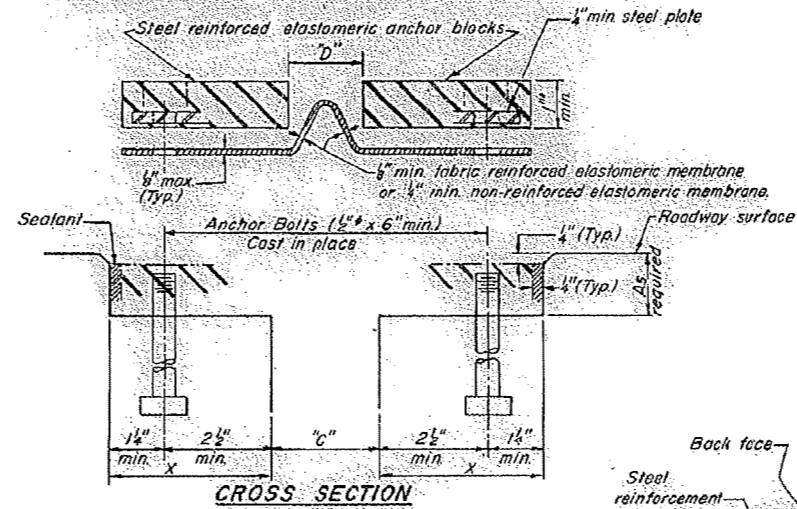
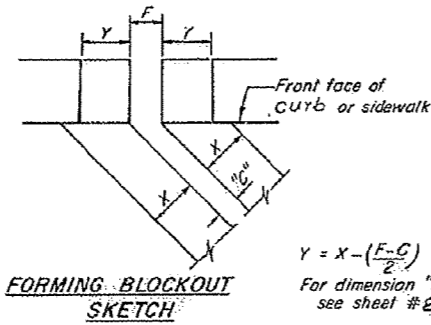
**INSTALLATION NOTES**

- ① Install sponge mandrels into positions shown to form flap convolution.
- ② Install curb or sidewalk piece (trim roadway flap to fit before applying epoxy).
- ③ Install continuous seal in roadway.
- ④ Install anchor blocks as indicated.

NOTE A - Maximum spacing of anchor bolts shall be 12" centers.

**SKREW LIMITATIONS**

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.  
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



AT CURB  
For curb forming details of expansion joints see Sht. #8

AT SIDEWALK or MEDIAN  
TYPICAL END TREATMENTS

AT WALL

**GENERAL NOTES**

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.  
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.  
The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.  
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.  
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.  
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.

DESIGNED	Re Matlin
CHECKED	Kenny D. Coker
DRAWN	JH
CHECKED	KDC

EXAMINED	June 23 1983 James J. Anthony ENGINEER IN CHARGE DESIGN
PASSED	Carl E. Hummer CHIEF OF BRIDGES AND STRUCTURES
APPROVED	DIRECTOR OF HIGHWAYS

EJ-CS 2-1-83

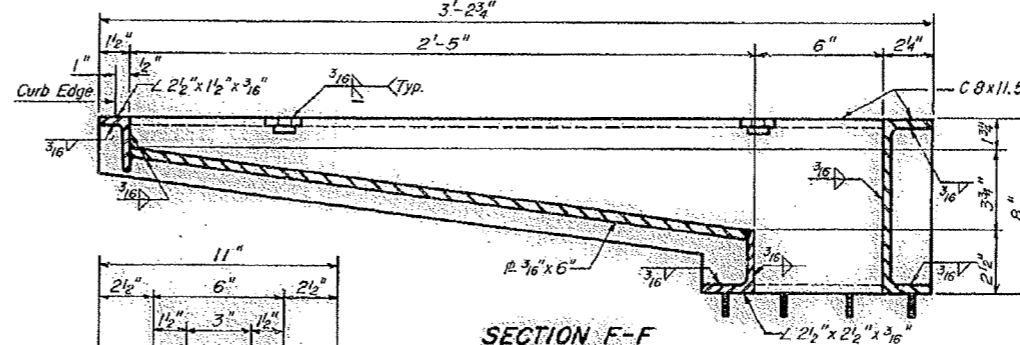
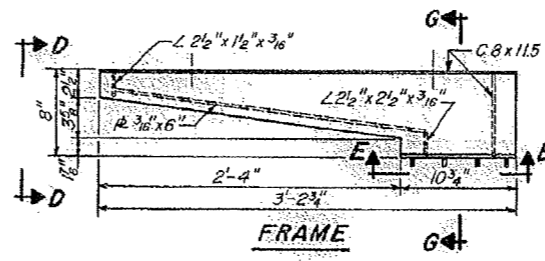
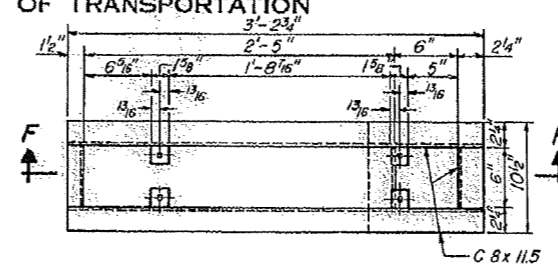
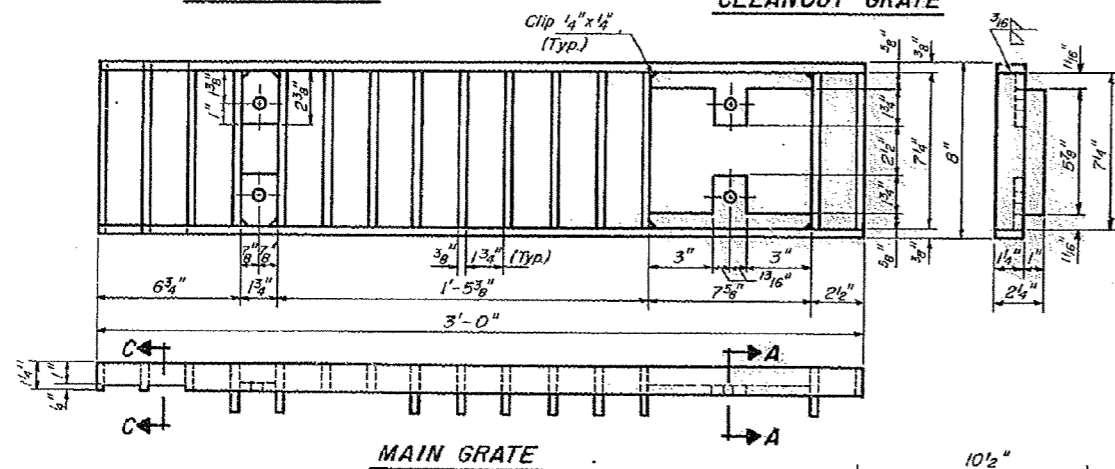
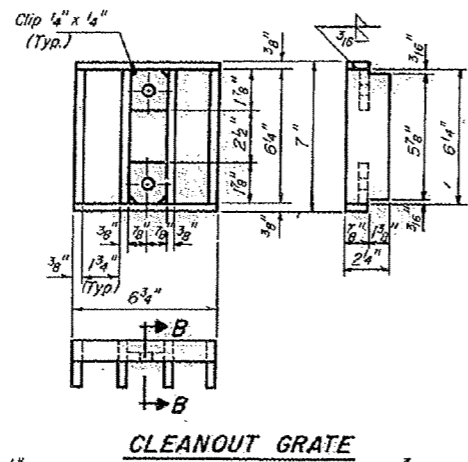
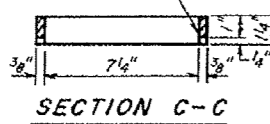
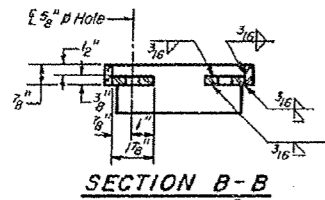
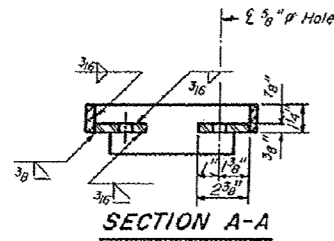
CONTINUOUS SEAL TYPE  
NEOPRENE EXPANSION JOINTS  
For 2", 2 1/2" and 4" Movement

S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STA. 63+00

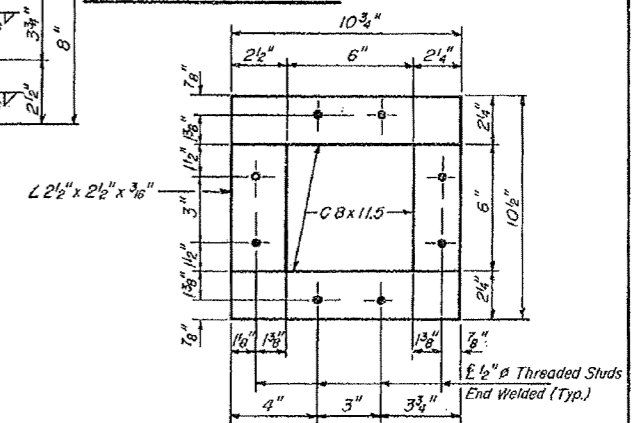
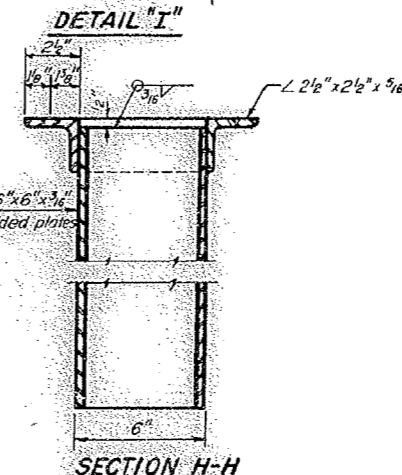
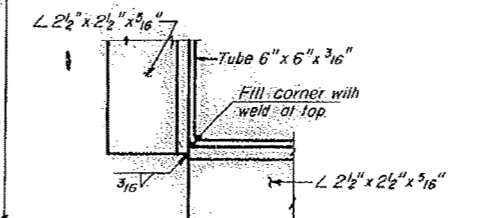
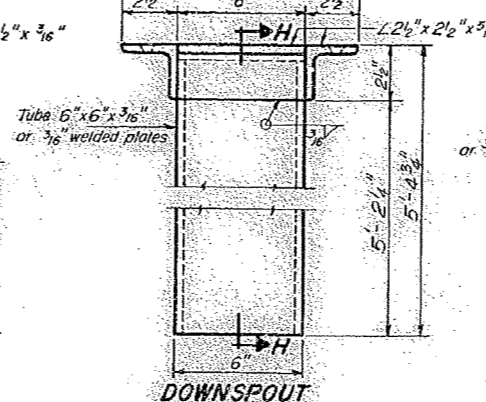
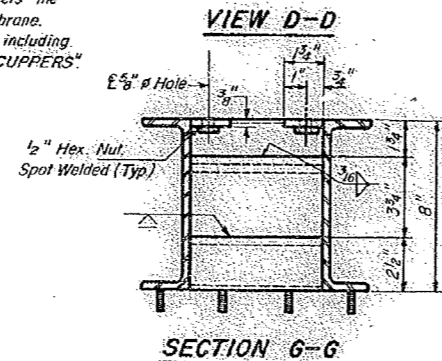
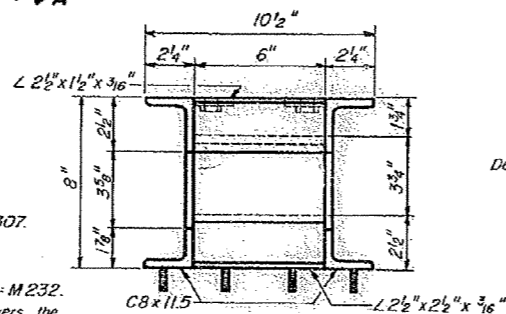
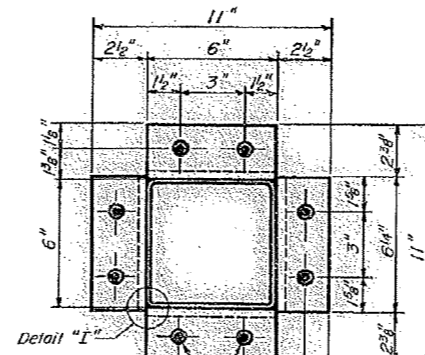
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	14
FED. AID DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 10  
21 SHEETS



DRAINAGE SCUPPER



Notes:  
Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B, or A-501 Structural Steel Tubing.  
All other shapes, plates and bars shall conform to the requirements of A.A.S.H.T.O. M 183.  
Bolts, studs, washers and nuts shall conform to the requirements of A.S.T.M. A-307.  
The Main Grate, Cleanout Grate, Frame and Downspout shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M 111 & A.S.T.M. A-385.  
All bolts, washers and nuts shall be galvanized in accordance with A.A.S.H.T.O. M 232.  
The Waterproofing Membrane System shall be installed such that the membrane covers the frame flanges and extends down into the frame with the grates placed on top of the membrane.  
Cost of the Main Grate, Cleanout Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper shall be paid for at the unit bid price for "DRAINAGE SCUPPERS".

DESIGNED	Ramathur
CHECKED	King D. Carter
DRAWN	JK
CHECKED	KCC

DATE	June 23, 1983
EXAMINED	James J. Roubicek
PASSED	Carl E. ...
APPROVED	...

DS-1 4-15-75 (W.T. to inside of exterior slinger flange shall not be > 3'-11")

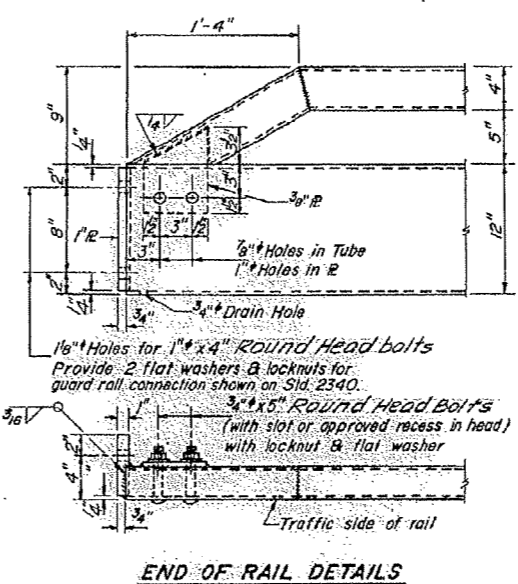
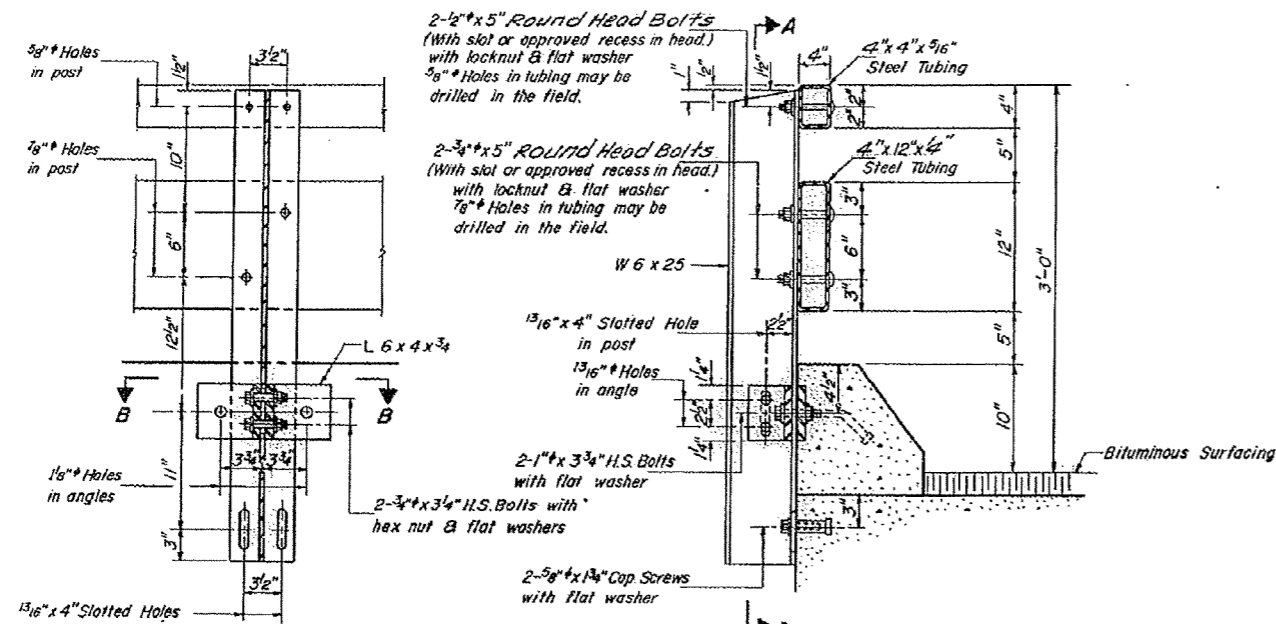
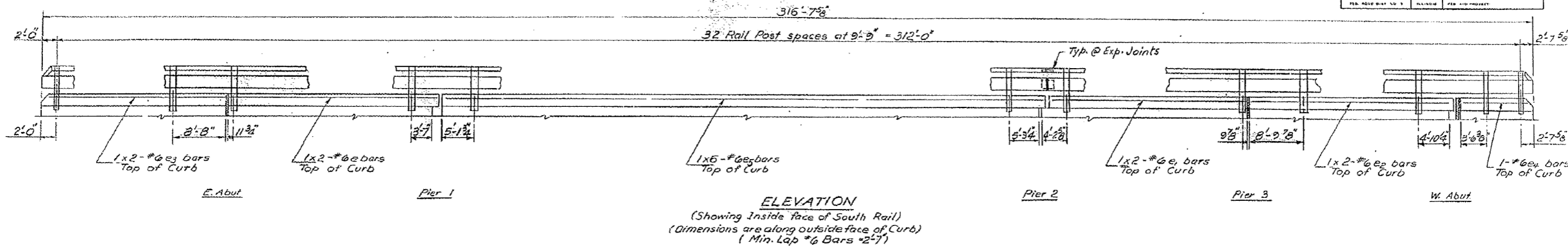
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Drainage Scupper	Each	4

**DRAINAGE SCUPPER**  
S.B.I. RT. 30 SEC. 11 BR  
STARK COUNTY  
STA. 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

NOTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET
643	11BR	STARK	34	16	2/ SHEETS



**NOTES**

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-163 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 and A.S.T.M. A-385. Galvanized rail shall not be painted.

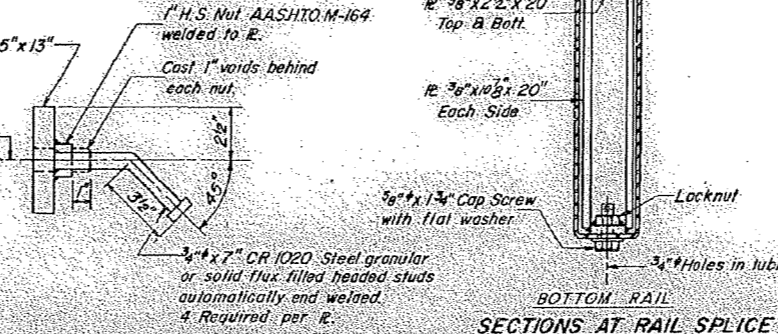
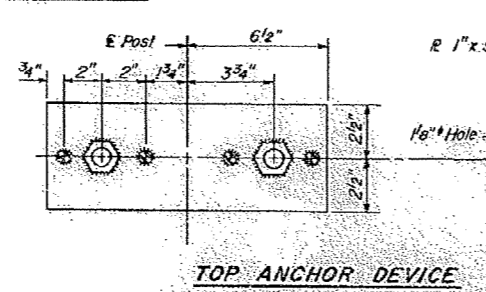
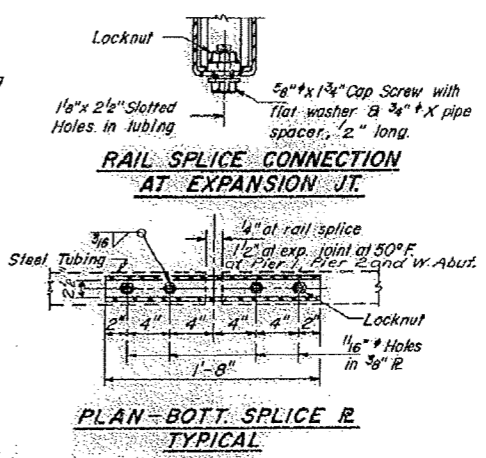
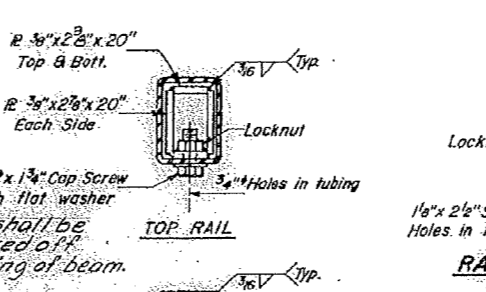
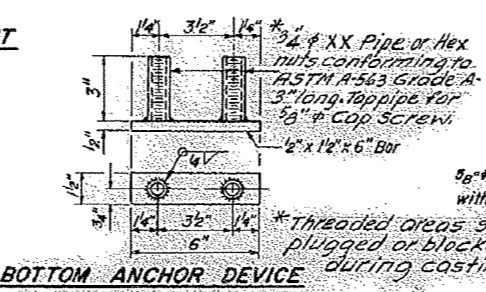
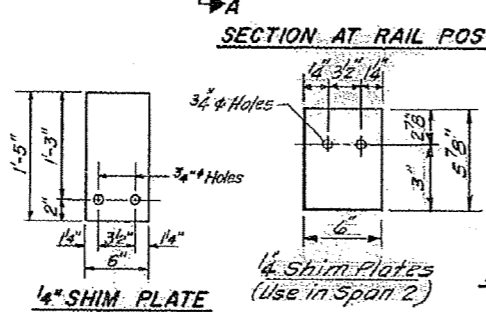
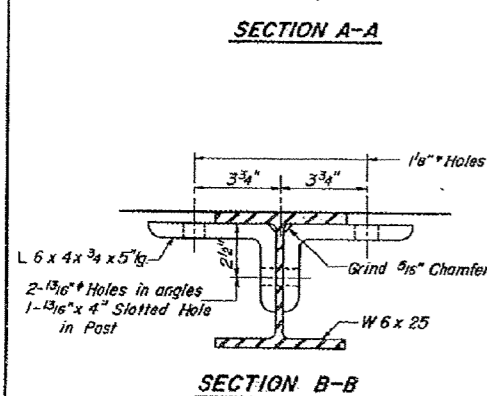
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE T-1.

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

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/2" fabric bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6x4x3/4 angles to the post shall be tightened in accordance with Article 50704(g)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient 1/4" x 6" x 1-5/8" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.



**SOUTH CURB & RAIL BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
e	2	#6	23'-0"	
e1	2	#6	23'-3"	
e2	2	#6	22'-9"	
e3	2	#6	21'-3"	
e4	1	#6	15'-6"	
e5	6	#6	23'-6"	
Reinforcement Bars				Lbs. 510
Class X Concrete				Cu. Yds. 9.7
Steel Railing, Type T-1				Ln. Ft. 317

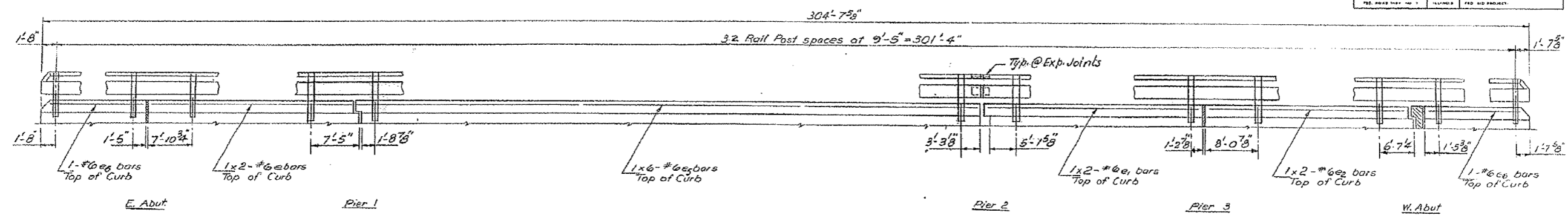
**TYPE T-1 STEEL RAILING SOUTH CURB & RAIL S.B.I. RT. 30 SEC. 11BR STARK COUNTY STATION 6.3+00**

DESIGNED: [Signature]  
CHECKED: [Signature]  
DRAWN: V.H.  
CHECKED: J.A.B.

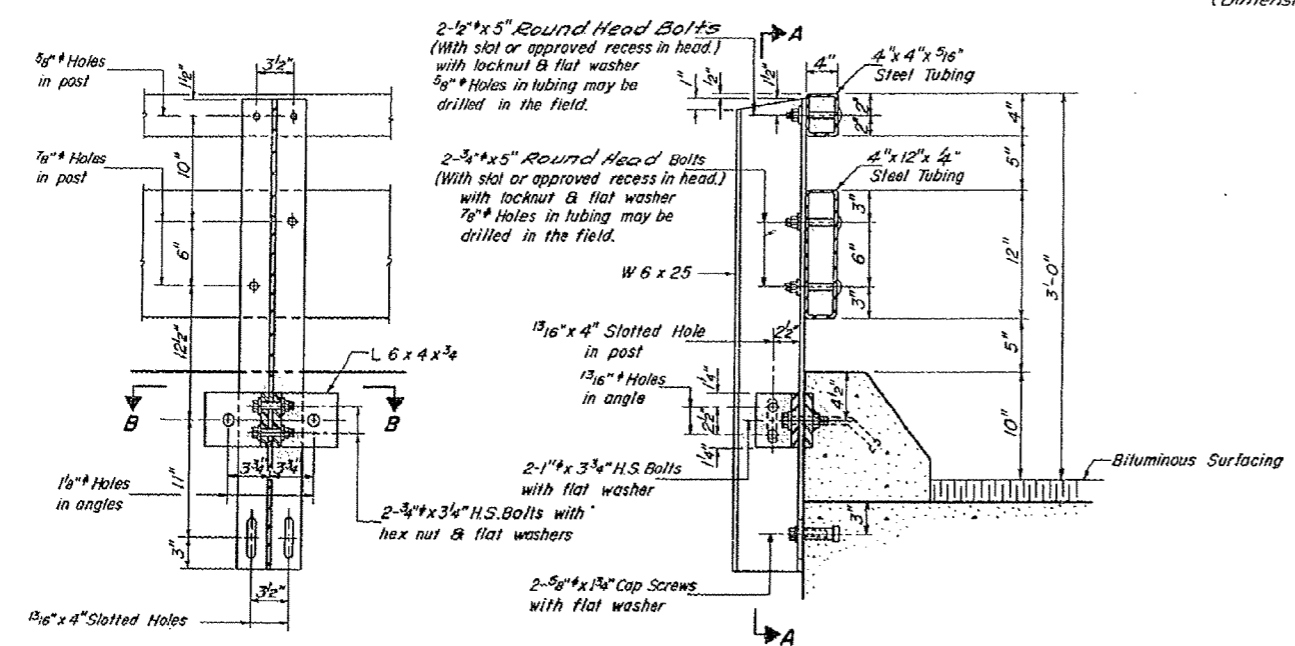
EXAMINED: [Signature]  
PASSED: [Signature]  
APPROVED: [Signature]

R-24 4-1-79

updated 6.21.83

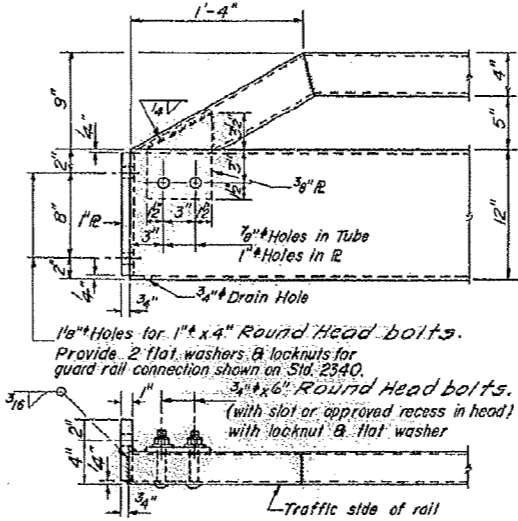


**ELEVATION**  
(Showing Outside Face of North Rail)  
(Dimensions are along outside face of Curb)  
(Min. Lap = 6 Bars \* 2'7")

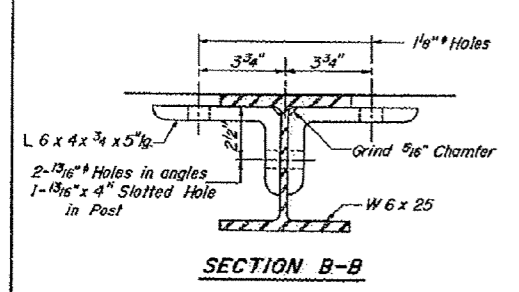


**SECTION A-A**

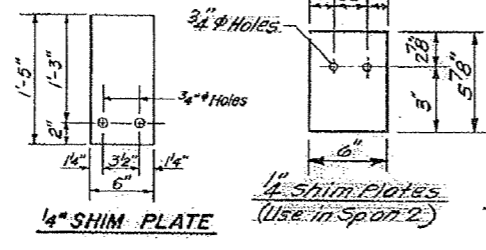
**SECTION AT RAIL POST**



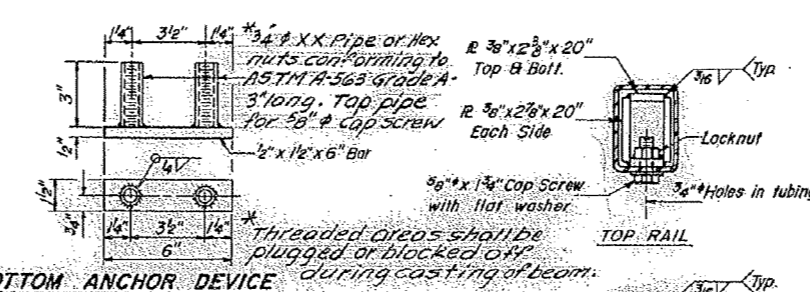
**END OF RAIL DETAILS**



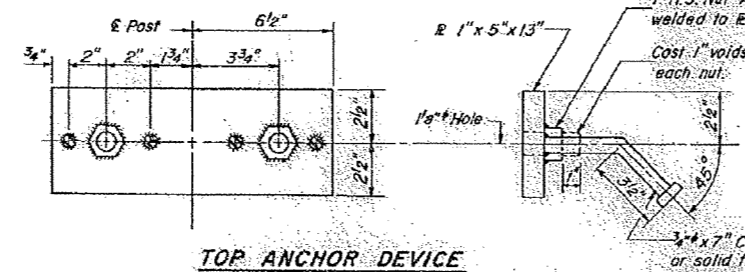
**SECTION B-B**



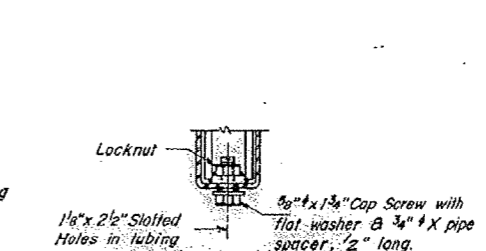
**1/4" SHIM PLATE**



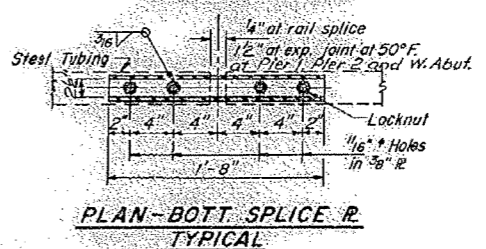
**BOTTOM ANCHOR DEVICE**



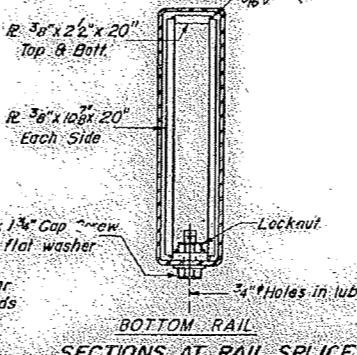
**TOP ANCHOR DEVICE**



**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**PLAN-BOTT SPLICE R. TYPICAL**



**SECTIONS AT RAIL SPLICE**

DESIGNED *V.F.*  
CHECKED *V.F.*  
DRAWN *V.F.*  
CHECKED *V.F.*

EXAMINED *V.F.* JUN 3 1983  
PASSED  
APPROVED  
DIRECTOR OF HIGHWAYS

R-24 4-1-79

updated 6.21.83 RKM

**NOTES**

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-103 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50. Bolts, cap screws, and nuts shall conform to the requirements of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-III and A.S.T.M. A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE T-1.

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

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/2" fabric-bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 3/8" cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient 4" x 6" x 1-5" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

**NORTH CURB & RAIL BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
e	2	#6	23'-0"	
e <sub>1</sub>	2	#6	23'-3"	
e <sub>2</sub>	2	#6	22'-9"	
e <sub>3</sub>	6	#6	23'-6"	
e <sub>6</sub>	2	#6	21'-6"	
Reinforcement Bars			Lbs.	480
Class X Concrete			Cu. Yds.	9.3
Steel Railing, Type T-1			Lin. Ft.	305

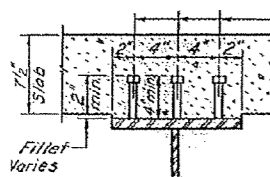
**TYPE T-1 STEEL RAILING**  
NORTH CURB & RAIL  
S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

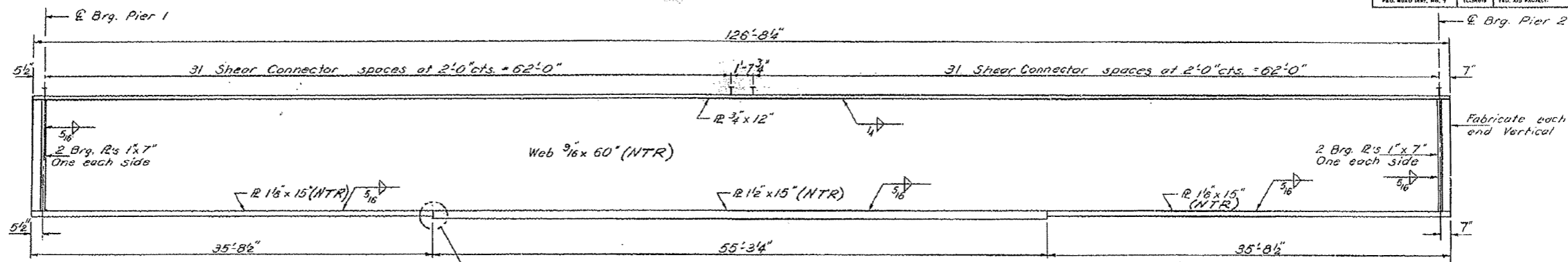
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
643	11BR	STARK	34	18
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 14  
21 SHEETS

3/4" Granular or solid  
flux filled headed studs  
automatically end welded  
(No. Req'd. = 360)



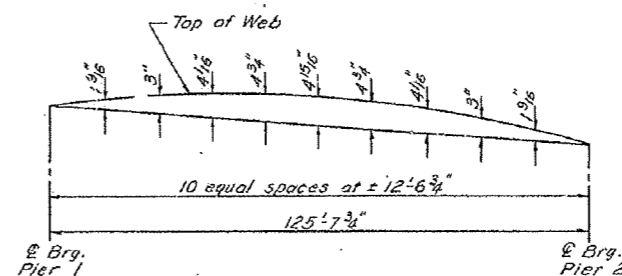
**SHEAR STUDS**



See Detail 'E'  
on sheet No. 15 (Typ.)

**ELEVATION**

'NTR' designates plates to which  
notch toughness requirements  
are applicable.



**CAMBER DIAGRAM**

**INTERIOR GIRDER  
MOMENT TABLE**

	0.5 Sp. 2
$I_s$	(in <sup>4</sup> ) 37014
$I_c$	(in <sup>4</sup> ) 92452
$S_s$	(in <sup>3</sup> ) 1476
$S_c$	(in <sup>3</sup> ) 2031
$\bar{Q}$	(in) 0.930
$M_g$	(ik) 1811
$F_s(g)$	(ksi) 14.7
$S_{I\bar{Q}}$	(in <sup>2</sup> ) 0.357
$M_{s_g}$	(ik) 706
$M_{s_c}$	(ik) 1261
$M_{imp}$	(ik) 252
TOTAL	(ik) 2279
$F_s(s+g)$	(ksi) 13.1
$F_s$ TOTAL	(ksi) 27.8
VR	(k) 50.9

**INTERIOR GIRDER  
REACTION TABLE**

	Piers
$R_g$	(k) 80.0
$R_k$	(k) 42.4
Imp.	(k) 8.5
$R$ TOTAL	(k) 130.9

**TOP OF WEB ELEVATIONS**

	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
@ Brg. Pier 1	104.74	104.70	104.66	104.40	104.13
@ Brg. Pier 2	101.16	101.12	101.08	100.81	100.55

(For fabrication only)

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section.  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing  $F_s$ .  
VR is the maximum  $\frac{1}{2}$  Impact shear range in span used to determine shear connector spacing.

DESIGNED	R. Matthews
CHECKED	D. Ryan
DRAWN	R. P. Sumner
CHECKED	JNP

EXAMINED	[Signature]	10/75
PASSED	[Signature]	
APPROVED	[Signature]	

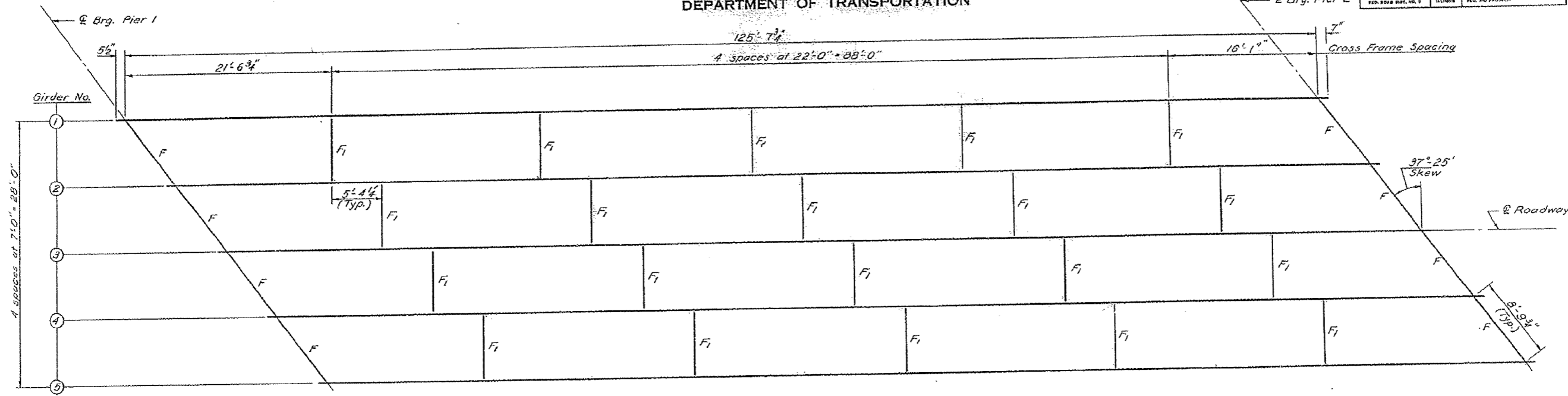
**STRUCTURAL STEEL**  
**S.B.I. RT. 30 SEC. 11BR**  
**STARK COUNTY**  
**STATION 63+00**



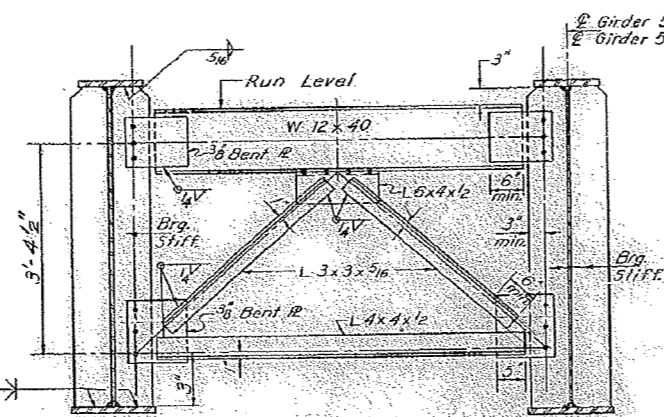
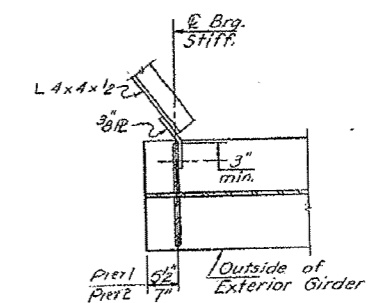
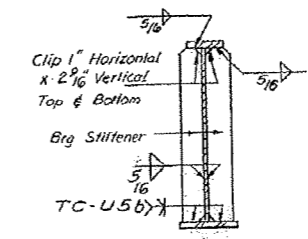
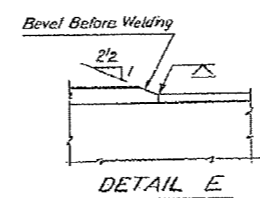
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. 643	11BR	STARK	34	19
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

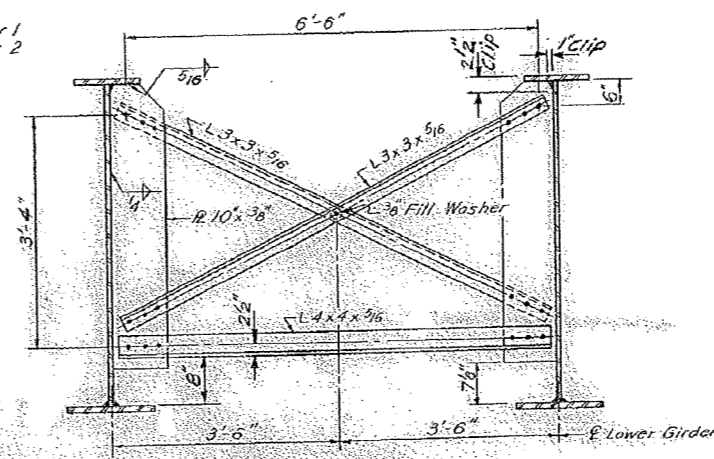
21 SHEETS



FRAMING PLAN



CROSS FRAME F  
(8 Required)



CROSS FRAME F1  
(20 Required)

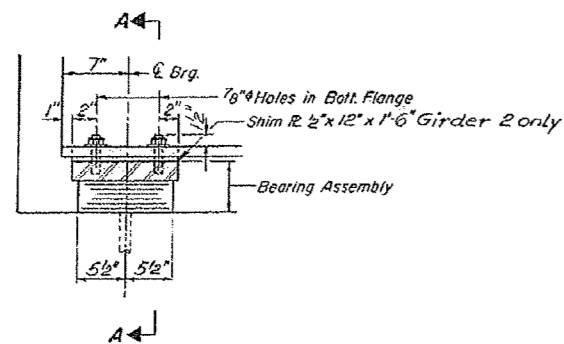
NOTE: Cross Frame bolts shall be 3/4" H.S. bolts in 1 5/16" holes. Hardened washers shall be used over holes.

DESIGNED	R. W. Mathis	1875
CHECKED	D. Ryan	
DRAWN	R. P. Summer	
CHECKED	JNP	

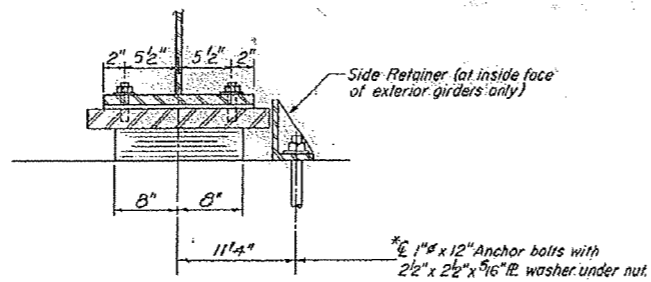
STRUCTURAL STEEL  
S.B.I. RT-30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

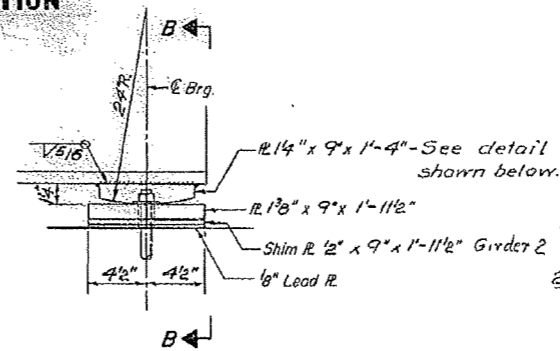
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. / SHEETS
S. I. 643	11BR	STARK	34	20	21 SHEETS
FILE ROAD MAP NO. 7	PLANETS	FILE APPROXIMATE			



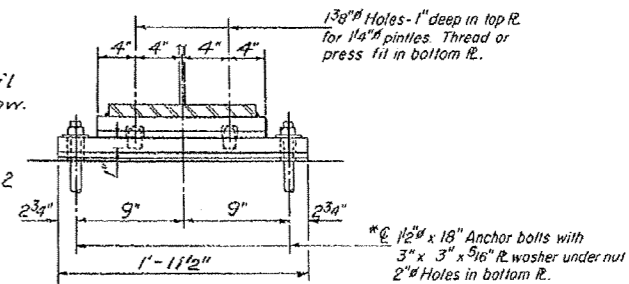
SECTION AT PIER 2



SECTION A-A



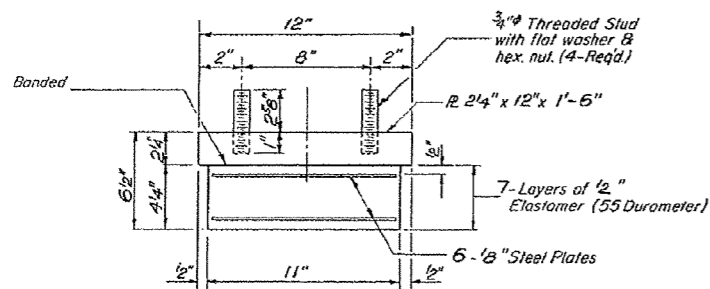
ELEVATION AT PIER-1



SECTION B-B

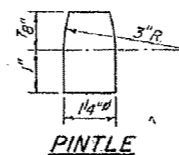
TYPE I ELASTOMERIC EXP. BRG.

\*Note: After girders have been erected holes of expansion bearings shall be drilled and anchor bolts grouted in place. Anchor bolts at fixed bearings may be built into the masonry.

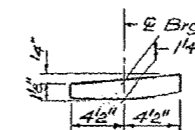


BEARING ASSEMBLY

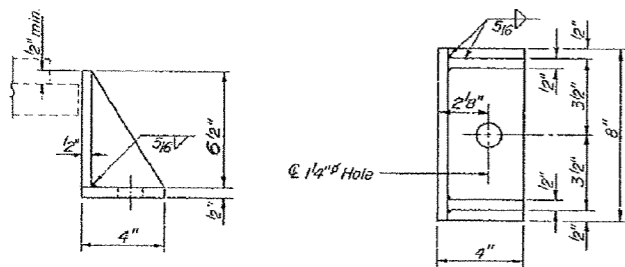
Note: Shim plates shall not be placed under Bearing Assembly.



PINTLE



BEARING PLATE - PIER 1



SIDE RETAINER

DESIGNED	<i>Donna Behm</i>
CHECKED	<i>L. K. Walker</i>
DRAWN	DAB
CHECKED	<i>L. K. Walker</i>

EXAMINED	<i>June 3 1980</i>
PASSED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>

I-2-EI 4-1-79

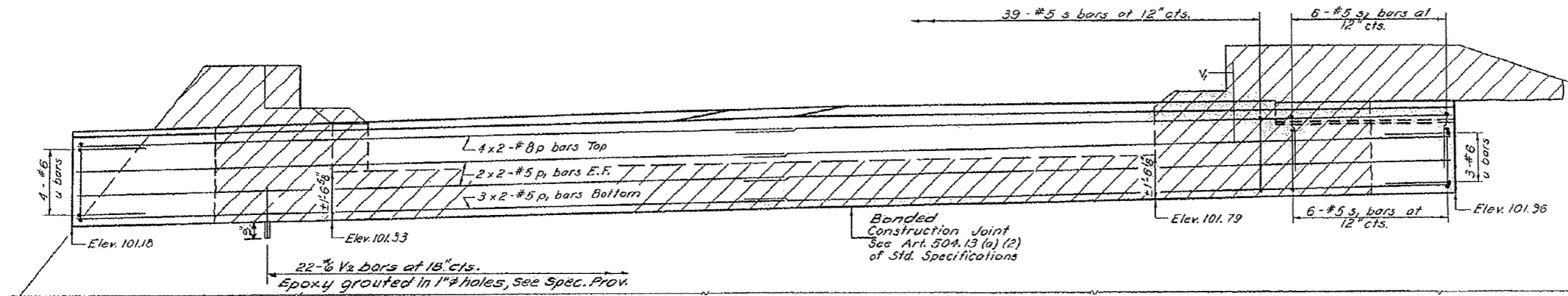
BEARING DETAILS  
S.B.I. RT.30 SEC.11BR  
STARK COUNTY  
STATION 63+00

Updated 6-21-83 RKM

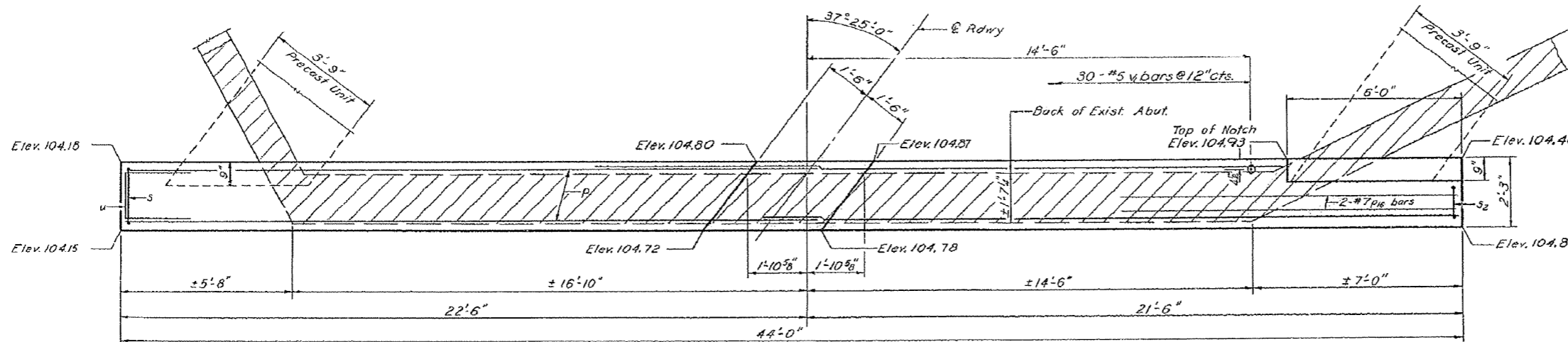
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	QUANTITY	TOTAL SHEETS	SHEET NO.
P.A. 643	11BR	STARK	34	21
ILLINOIS		FED. AID PROJECT		

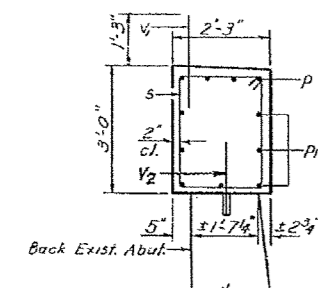
SHEET NO. 17  
21 SHEETS



ELEVATION

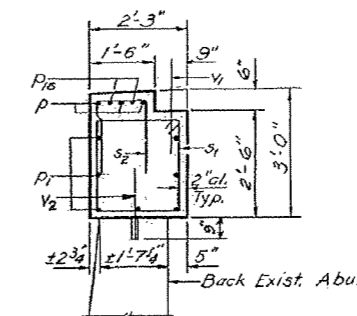


PLAN



END VIEW

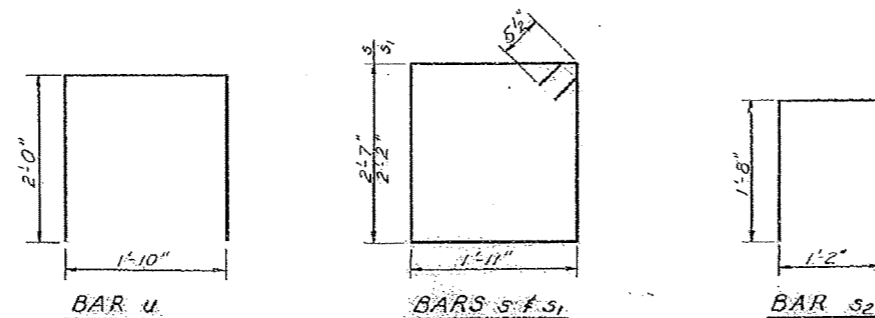
NOTES:  
 area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.  
 Expansion bolts shall be anchored in sound concrete. All edges shall have standard 3/8" chamfers except as noted.  
 Min Bar Laps:  
 #5-2'-2"  
 #8-4'-6"



END VIEW

DESIGNED	R. K. Mattur
CHECKED	D. Ryan
DRAWN	R. P. Summer
CHECKED	JNP

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



BILL OF MATERIAL

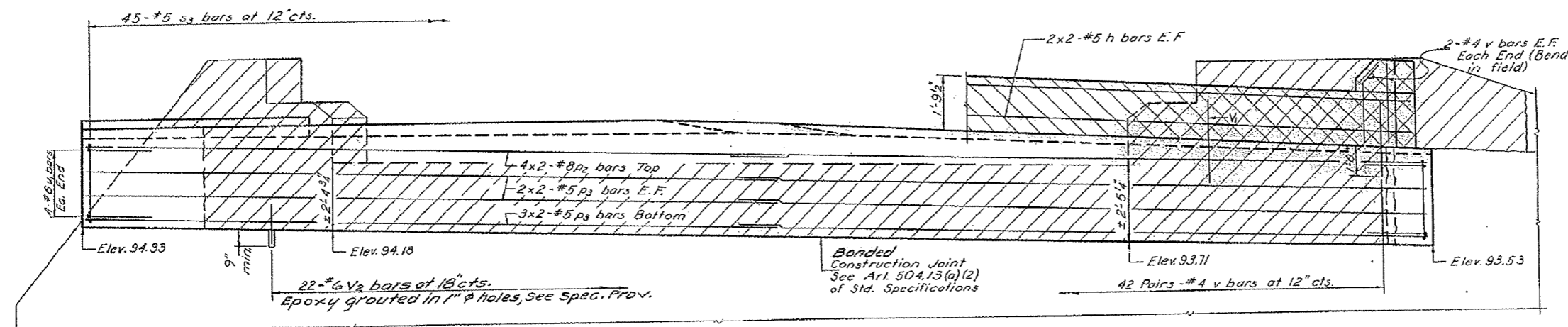
Bar	No.	Size	Length	Shape
p	8	#8	24'-2"	—
p1	14	#5	23'-0"	—
p16	2	#7	11'-0"	—
s	39	#5	9'-11"	□
s1	6	#5	9'-1"	□
s2	6	#5	4'-6"	□
u	7	#6	5'-10"	□
v1	30	#5	2'-6"	—
v2	22	#6	2'-6"	—
Class X Concrete			Cu.Yds.	11.1
Reinforcement Bars			Lbs.	1610
Concrete Removal			Cu.Yds.	5

EAST ABUTMENT  
 S.B.I. RT.30 SEC. 11BR  
 STARK COUNTY  
 STATION 63+00

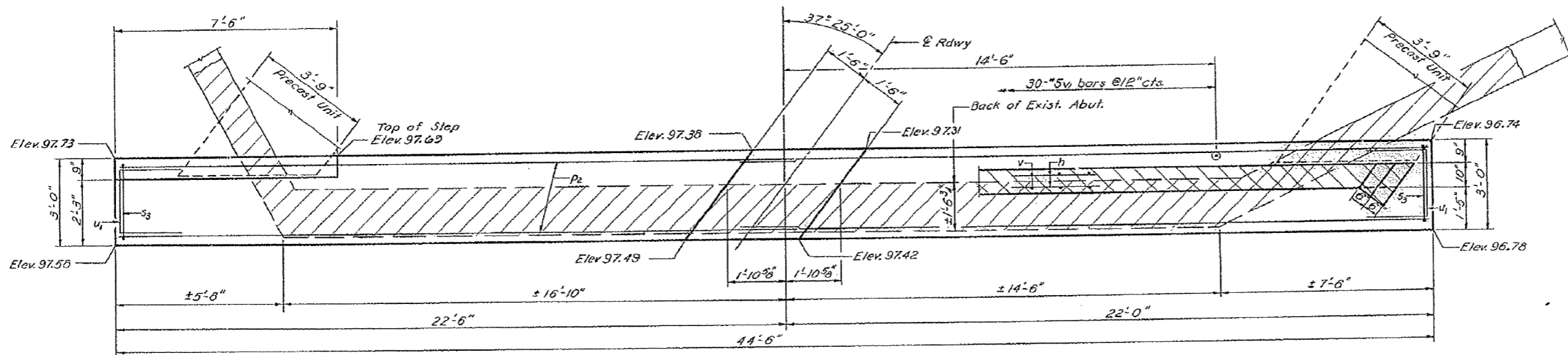
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. 7-2-643	SEASON 11BR	COUNTY STARK	TOTAL SHEETS 34	SHEET NO. 22	SHEET NO. 18 21 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	TAR. AND PROJECT		

NOTES:  
 [Hatched area] area indicates Concrete Removal  
 Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.  
 [Cross-hatched area] area shall be poured after beams are in place.  
 Expansion bolts shall be anchored in sound concrete.  
 All edges shall have standard  $\frac{3}{4}$ " chamfers except as noted.  
 Min. bar laps:  
 #5 = 2'-2"  
 #8 = 4'-6"



ELEVATION



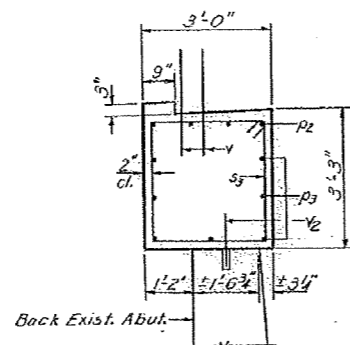
PLAN

BILL OF MATERIAL

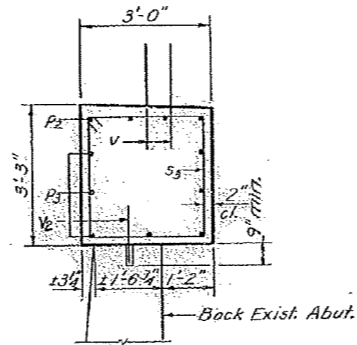
Bar	No.	Size	Length	Shape
h	8	#5	21'-9"	—
p2	8	#8	24'-5"	—
p3	14	#5	23'-3"	—
s3	45	#5	11'-11"	□
u1	8	#6	6'-7"	□
v	92	#4	2'-6"	—
v1	30	#5	2'-6"	—
v2	22	#6	2'-6"	—
Class X Concrete			Cu. Yds.	19.0
Reinforcement Bars			Lbs.	2,000
Concrete Removal			Cu. Yds.	7

DESIGNED R. K. WATKINS  
 CHECKED D. RYAN  
 DRAWN R. P. SUMMER  
 CHECKED J. N. F.

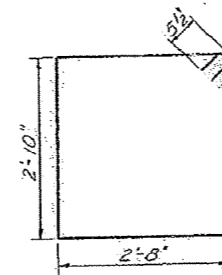
EXAMINED [Signature] 17 JUL 1975  
 PASSED [Signature]  
 APPROVED [Signature]  
 ENGINEER OF DESIGN  
 DIVISION OF HIGHWAYS



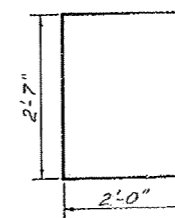
END VIEW



END VIEW



BAR s3

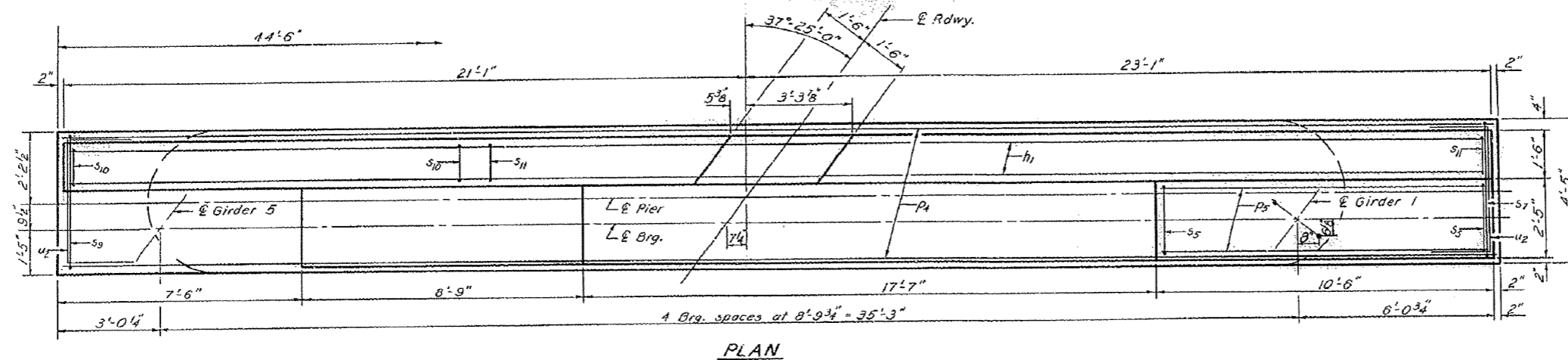


BAR u1

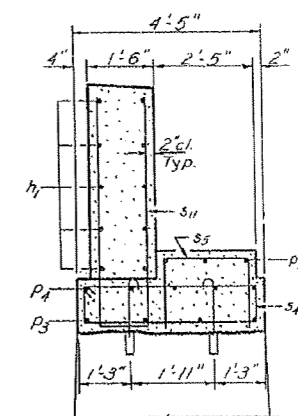
WEST ABUTMENT  
 S.B.I. RT. 30 SEC. 11BR  
 STARK COUNTY  
 STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

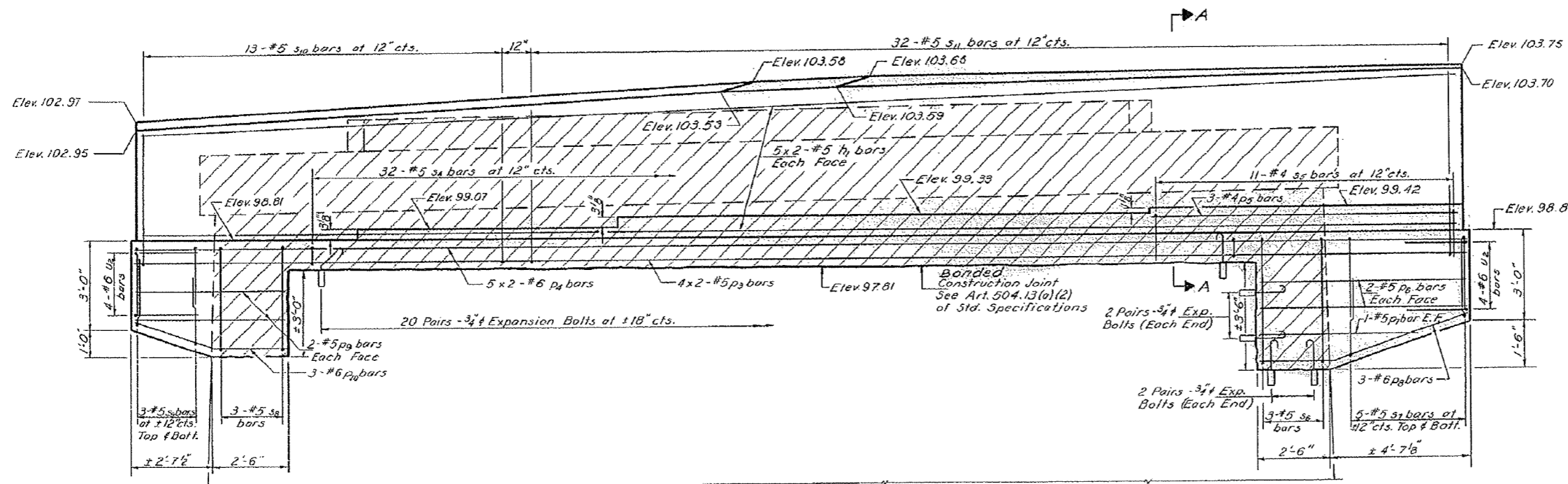
PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 19
643	11BR	STARK	34	23	21 SHEETS
FED. ROAD DIST. NO. 1	ILLINOIS	PAV. AID PROJECT			



PLAN



SECTION A-A



ELEVATION  
(LOOKING EAST)

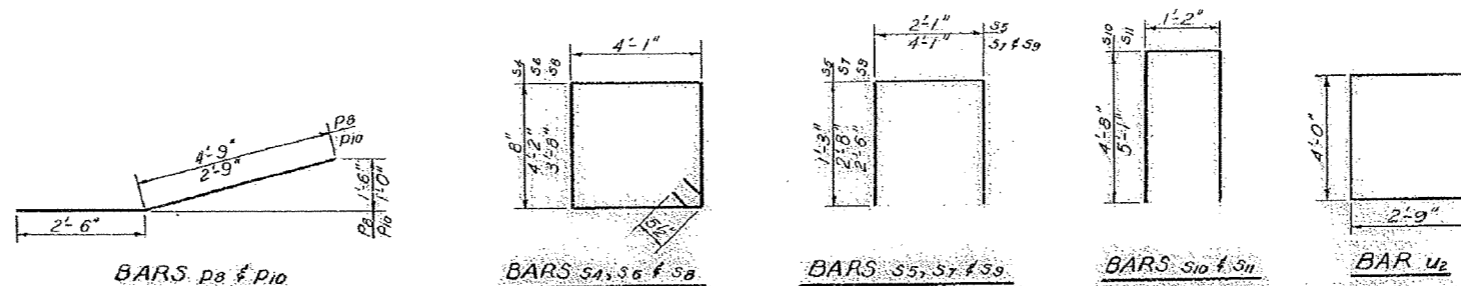
NOTES:  
 [Hatched Area] area indicates Concrete Removal.  
 Expansion bolts shall be anchored in sound concrete.  
 All edges shall have standard 3/4 chamfers except as noted.  
 Min. bar laps:  
 #5-2'-2"  
 #6-2'-7"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1	20	#5	23'-0"	□
p3	8	#5	23'-3"	□
p4	10	#6	23'-6"	□
p5	3	#4	10'-3"	□
p6	4	#5	6'-9"	□
p7	2	#5	5'-3"	□
p8	3	#6	7'-3"	□
p9	4	#5	4'-9"	□
p10	3	#6	5'-3"	□
s4	32	#5	10'-5"	□
s5	11	#4	4'-7"	□
s6	3	#5	17'-5"	□
s7	10	#5	9'-5"	□
s8	3	#5	16'-5"	□
s9	6	#5	9'-1"	□
s10	13	#5	10'-6"	□
s11	32	#5	11'-4"	□
u2	8	#6	9'-6"	□
Class X Concrete				Cu.Yds. 26.0
Reinforcement Bars				Lbs. 2340
Expansion Bolts 3/4"				Each 56
Concrete Removal				Cu.Yds. 29

DESIGNED	R. K. Mattheis
CHECKED	D. Ryan
DRAWN	R. P. Summer
CHECKED	JNP

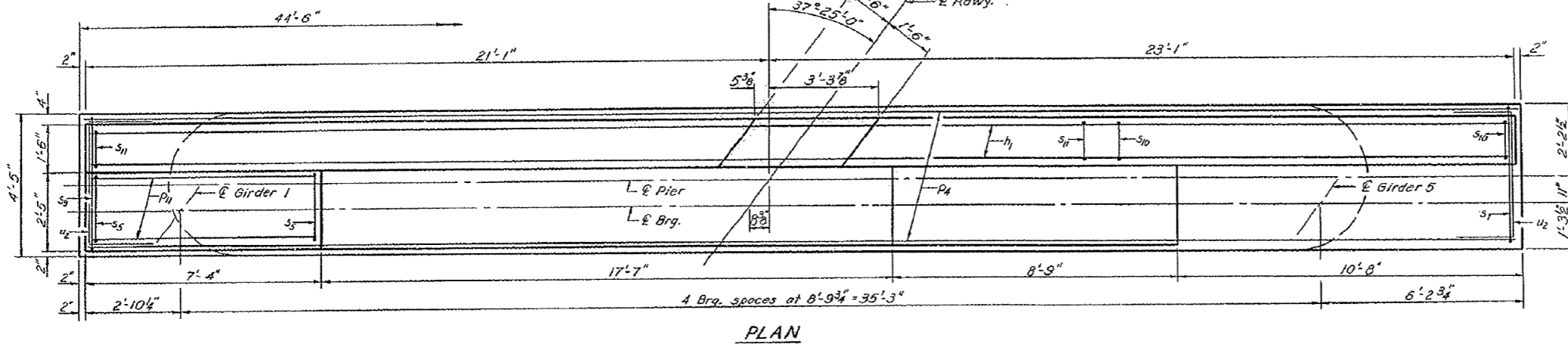
EXAMINED	[Signature]	12.15
PASSED	[Signature]	
APPROVED	[Signature]	



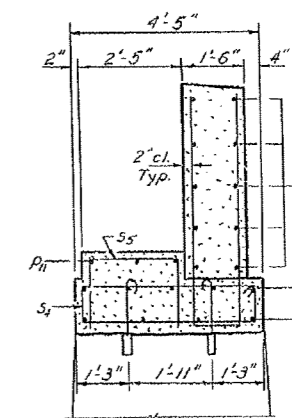
PIER 1  
S.B.I. RT.30 SEC.11BR  
STARK COUNTY  
STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

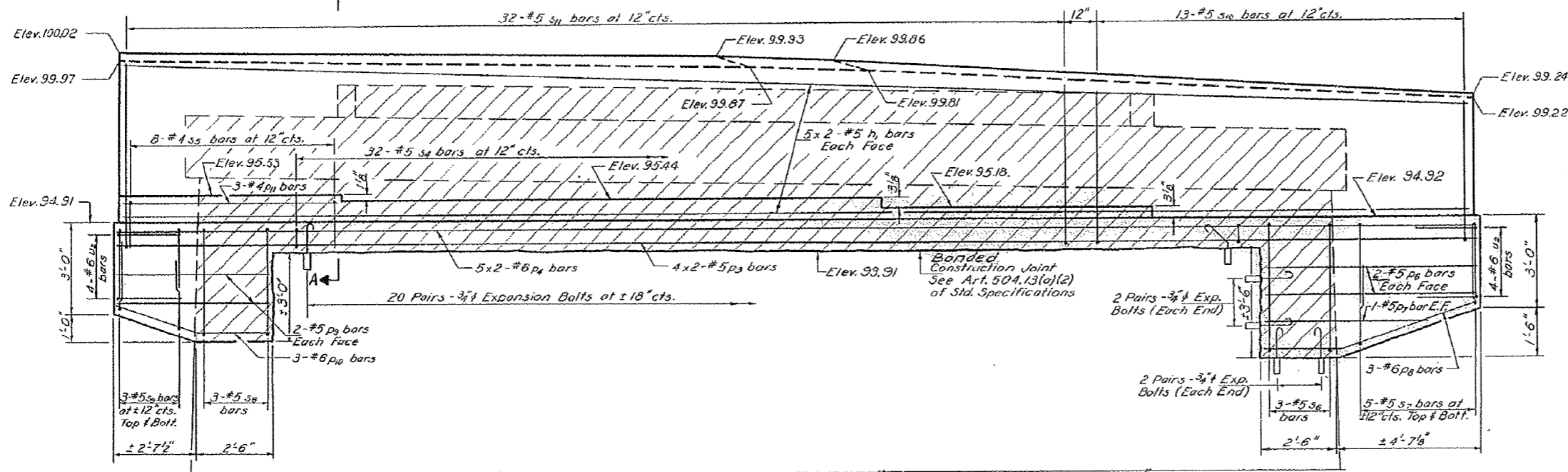
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.R.L. No. 643	11BR	STARK	34	23A
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		21 SHEETS



PLAN



SECTION A-A

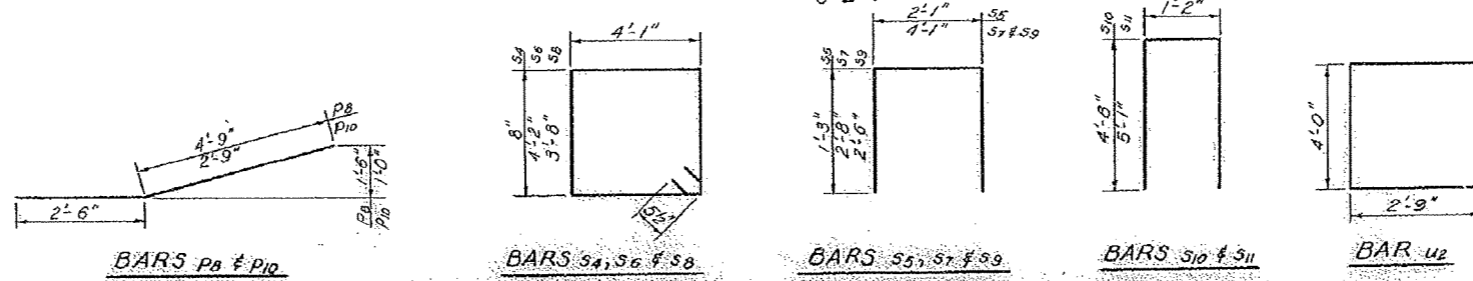


ELEVATION  
(LOOKING WEST)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1	20	#3	23'-0"	—
p3	8	#5	23'-3"	—
p4	10	#6	23'-6"	—
p6	4	#5	6'-9"	—
p7	2	#5	5'-3"	—
p8	3	#6	7'-3"	—
p9	4	#5	4'-9"	—
p10	3	#6	5'-3"	—
p11	3	#4	7'-0"	—
s4	32	#5	10'-5"	□
s5	8	#4	4'-7"	□
s6	3	#5	17'-5"	□
s7	10	#5	9'-5"	□
s8	3	#5	16'-5"	□
s9	6	#5	9'-2"	□
s10	13	#5	10'-6"	□
s11	32	#5	11'-4"	□
u2	8	#6	9'-6"	□
Class X Concrete		Cu. Yds.	26.0	
Reinforcement Bars		Lbs.	2920	
Expansion Bolts 3/4"		Each	56	
Concrete Removal		Cu. Yds.	33	

NOTES:  
 ■ area indicates Concrete Removal  
 Expansion bolts shall be anchored in sound concrete.  
 All edges shall have standard 3/4 chamfers except as noted  
 Min. bar laps  
 #5 = 2'-2"  
 #6 = 2'-7"

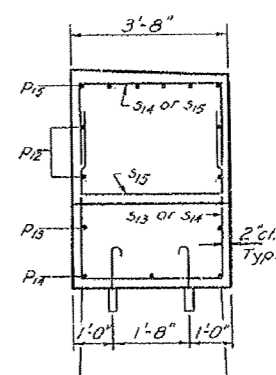
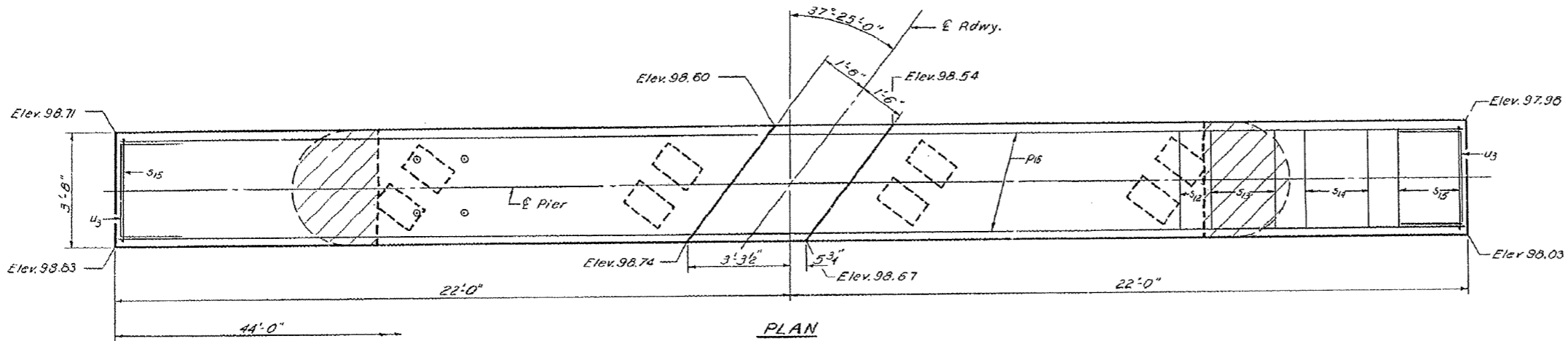


DESIGNED	R. A. Mather	EXAMINED	[Signature]
CHECKED	D. Ryan	PASSED	[Signature]
DRAWN	R. P. Sumner	APPROVED	[Signature]
CHECKED	JWP		

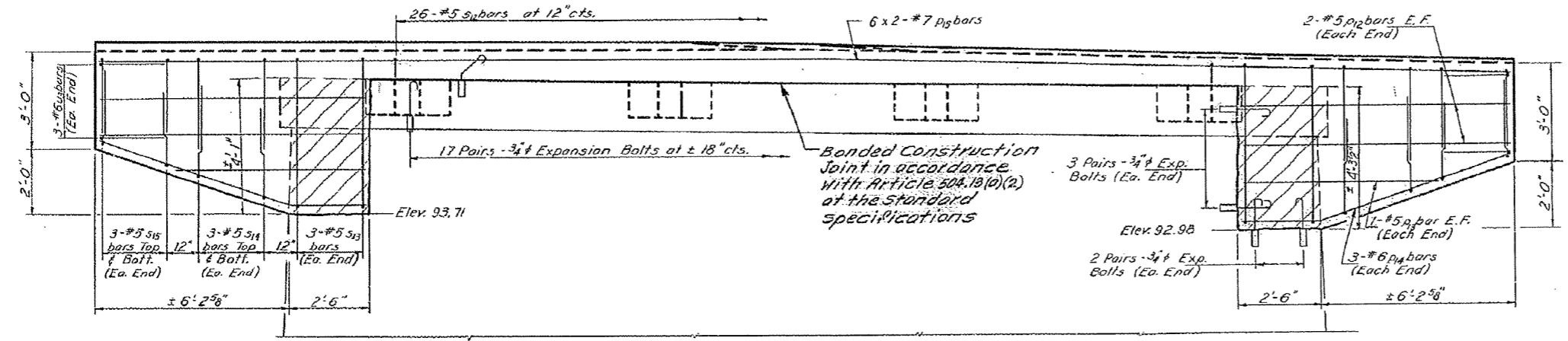
PIER 2  
S.B.I. RT.30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 21
643	11BR	STARK	34	238	21 SHEETS
ILLINOIS		FED. ROAD DIST. NO. 7			



END VIEW



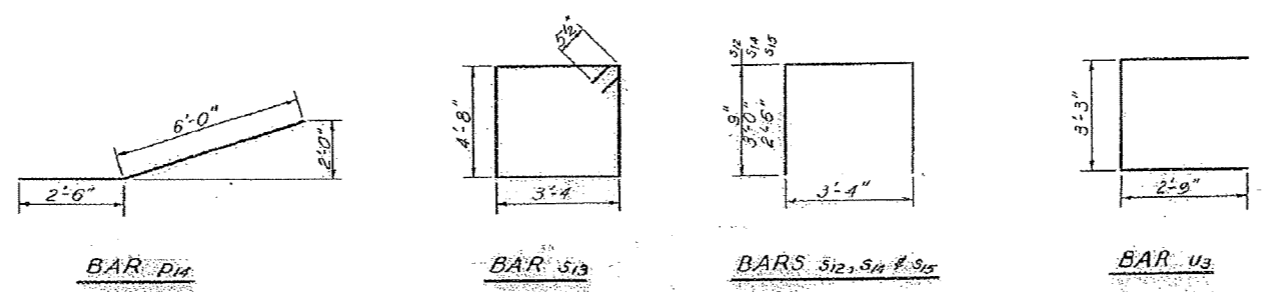
ELEVATION  
(LOOKING WEST)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
P12	8	#5	8'-5"	—
P13	4	#5	6'-0"	—
P14	6	#6	8'-6"	—
P16	12	#7	23'-7"	—
S12	26	#5	4'-10"	□
S13	6	#5	16'-11"	□
S14	12	#5	9'-4"	□
S15	12	#5	8'-4"	□
U3	6	#6	8'-9"	□
Class X Concrete			Cu. Yds.	14.5
Reinforcement Bars			Lbs.	1,290
Expansion Bolts 3/4"			Each	54
Concrete Removal			Cu. Yds.	2

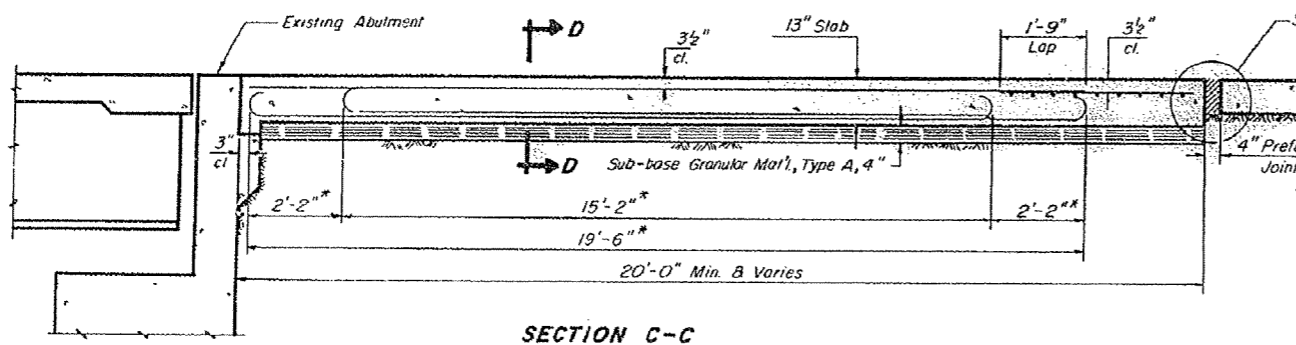
NOTES  
 Hatched area indicates Concrete Removal.  
 Expansion Bolts shall be anchored in sound concrete.  
 All edges shall have standard 3/4" chamfers except as noted.  
 Min. bar lap #7=3'-5"

DESIGNED	R. K. Mathews	EXAMINED	July 17 1975
CHECKED	D. Ryan	PASSED	[Signature]
DRAWN	R. P. Summer	APPROVED	[Signature]
CHECKED	JNP		



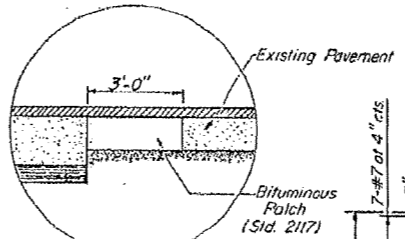
PIER 3  
S.B.I. RT. 30 SEC. 11BR  
STARK COUNTY  
STATION 63+00

ROUTE	SECTION	COUNTY	CHEF
FA 643	11 BR	STARK	34 24
MKD. 17			
PROJ.	STA.	TO STA.	

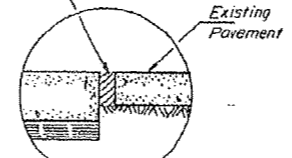


**SECTION C-C**

\* Stagger alternate #7 bars as shown on plan - full width.

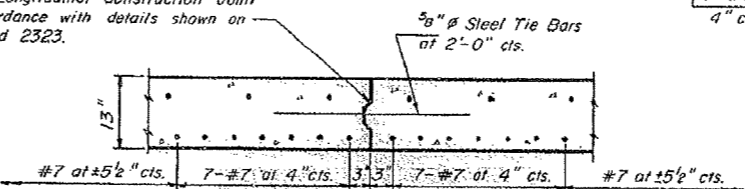


**DETAIL "A"**  
(When bituminous surface is being placed)



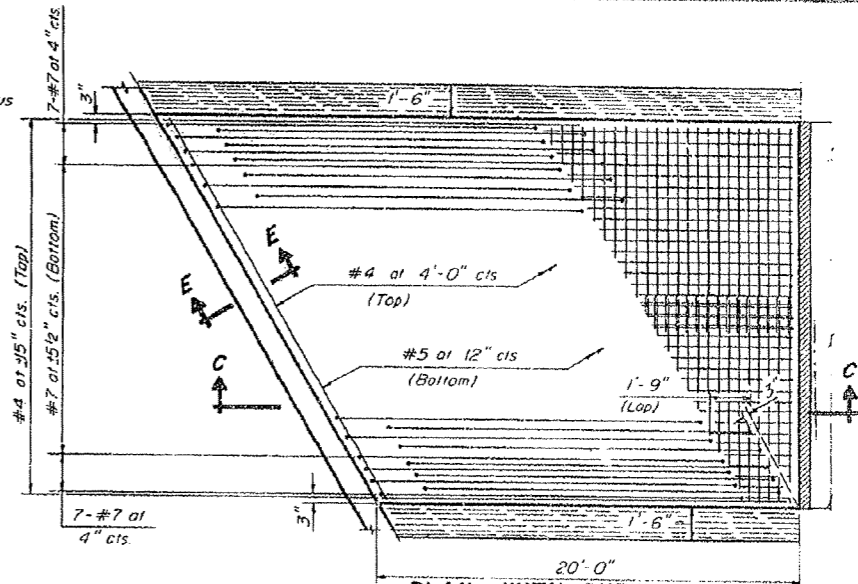
**DETAIL "A"**  
(P.C.C. Pavement Construction)

Keyed Longitudinal Construction Joint in accordance with details shown on Standard 2323.

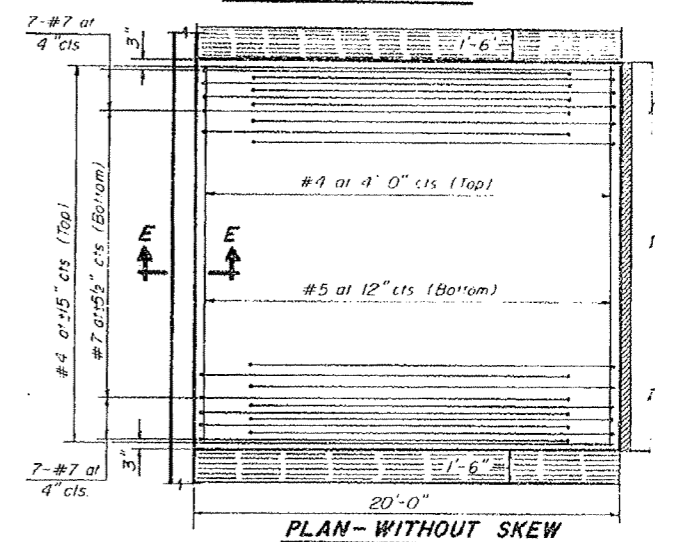


**OPTIONAL LONGITUDINAL CONSTRUCTION JOINT**

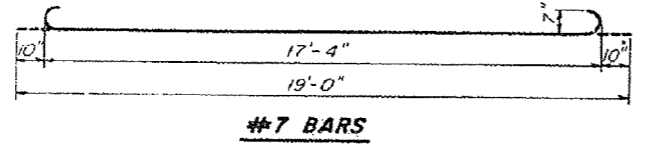
As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



**PLAN - WITH SKEW**

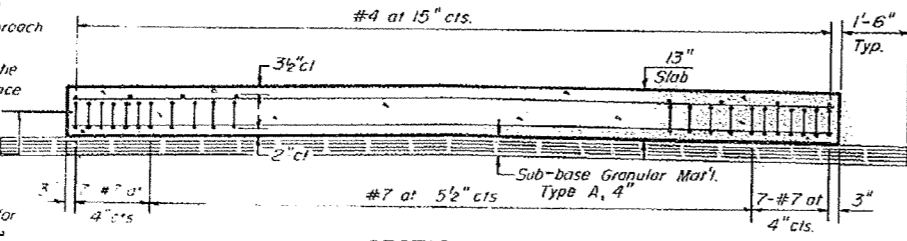


**PLAN - WITHOUT SKEW**

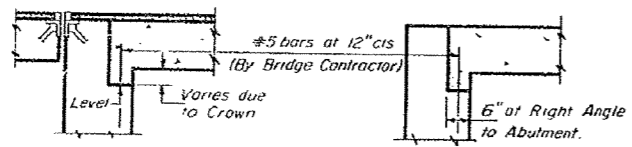


**#7 BARS**

When the road plans show curb and gutter, gutter, or bridge approach shoulder pavement adjacent to approach slabs, place 2" steel tie bars at 2'-6" centers in accordance with the detail for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent items. Transitions for curb and gutter or gutter shall be as shown on the plans.



**SECTION D-D**



**SECTION E-E**

Notes:  
For skews of less than 10° omit wire fabric. For skews of 10° or more use Welded Wire Fabric, 6" x 6" - W55 x W55, placed 3/2" below top of slab. Expanded Metal, weighing not less than 78 Pounds per 100 Sq. Ft. or a welded bar mat weighing not less than 78 Pounds per 100 Sq. Ft. having members of equal size in both directions and spaced not over 8" apart may be used instead of the Welded Wire Fabric, 6" x 6" - W55 x W55, provided the expanded metal or bar mat is furnished at no additional cost to the State. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-53, Grade 60.

**DESIGN STRESSES**

$f_c = 60,000$  p.s.i.  
 $f_s = 3,500$  psi  
 $n = 8.5$

**GENERAL NOTES**

The cost of tie bars, expansion joint filler, sub-base, welded wire fabric and bituminous prime when required shall be considered as included in the unit cost of the Bridge Approach Pavement.

Preformed Expansion Joint Filler shall conform to Section 715 of the Standard Specifications. Width of Bridge Approach Slab shall be determined before the reinforcement bars are fabricated.

The bituminous patch, when required, will be paid for in accordance with Section 620 of the Standard Specifications.

Missouri Department of Transportation

PASSED Sept 4, 1919  
E. L. Hummer  
Engineer of Bridge and Traffic Structures

APPROVED Sept 4, 1919  
Thomas B. Bright  
Engineer of Design

**BRIDGE APPROACH PAVEMENT**



Note: The notation for the number of bars given as "4x2" indicates 4 lines of bars with 2 lengths per line. Min bar lap = 1'-3"

ROUTE	SECTION	COUNTY	SHEET TOTAL
FA 643	11 BR	STARK	34 25
PROJ. 17	STA.	TO STA.	

Skew Angle Degrees	Bottom Reinforcement			Top Reinforcement			Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F.	
	Transverse #5	Longitudinal #7	No. Required	Transverse #4	Longitudinal #4	No. Required			Dimensions L (ft.)xW (ft.)	Area* (Sq.Yds.)
<b>18'-0" PAVEMENT</b>										
0	20	17'-6"		6	17'-6"		2300	40.0		
5	20	17'-7"		6	17'-7"		2302	41.6		
10	20	17'-9"		6	17'-9"		2306	43.2	7'-0"x9'-6"	7.4
15	20	18'-1"		5	18'-1"		2303	44.8	8'-6"x9'-6"	9.0
20	19	18'-8"		5	18'-8"		2297	46.6	10'-6"x9'-6"	11.1
25	18	19'-4"		5	19'-4"		2292	48.4	12'-3"x9'-6"	12.9
30	18	20'-3"		5	20'-3"		2313	50.4	14'-3"x9'-6"	15.0
35	17	21'-4"		5	21'-4"		2315	52.6	16'-6"x9'-6"	17.4
40	16	22'-10"		4	22'-10"		2307	55.1	19'-0"x9'-6"	20.1
45	14	24'-9"		4	24'-9"		2293	58.0	21'-9"x9'-6"	23.0
50	13	27'-3"		4	27'-3"		2308	61.5	25'-6"x9'-6"	26.9
55	12x2	15'-9"		3x2	15'-9"		2322	65.7	29'-9"x9'-6"	31.4
60	10x2	18'-0"		3x2	18'-0"		2313	71.2	35'-3"x9'-6"	37.2
<b>24'-0" PAVEMENT</b>										
0	20	23'-6"		6	23'-6"		3019	53.3		
5	20	23'-7"		6	23'-7"		3021	56.1		
10	20	23'-10"		6	23'-10"		3028	58.9	8'-0"x12'-6"	11.1
15	20	24'-4"		5	24'-4"		3024	61.9	10'-3"x12'-6"	14.2
20	19	25'-0"		5	25'-0"		3014	64.9	12'-6"x12'-6"	17.4
25	18	25'-11"		5	25'-11"		3008	68.2	15'-0"x12'-6"	20.8
30	18	27'-2"		5	27'-2"		3036	71.8	17'-9"x12'-6"	24.7
35	17	28'-8"		5	28'-8"		3039	75.7	20'-9"x12'-6"	28.8
40	16x2	16'-0"		4x2	16'-0"		3055	80.2	24'-0"x12'-6"	33.3
45	14x2	17'-3"		4x2	17'-3"		3031	85.3	27'-6"x12'-6"	38.2
50	13x2	18'-10"		4x2	18'-10"		3046	91.4	32'-9"x12'-6"	45.5
55	12x2	21'-1"		3x2	21'-1"		3047	99.0	38'-3"x12'-6"	53.1
60	10x2	24'-0"		3x2	24'-0"		3032	108.7	45'-6"x12'-6"	63.2
37'-25'	17x2	15'-11"		5x2	15'-11"		3274	141.0	23'-6"x13'-3"	34.6
							3274	89.9	25'-6"x13'-3"	37.5

7 (Each Edge Beam) + 29 (Slab) at 5/8" c/c - 19'-0" long Weight = 1670 Pounds

7 (Each Edge Beam) + 42 (Slab) at 5/8" c/c - 19'-0" long Weight = 2175 Pounds

7 (EACH EDGE BEAM) + 46 SLAB at 3/8" C/C'S 19'-0" LONG WT=2330 POUNDS

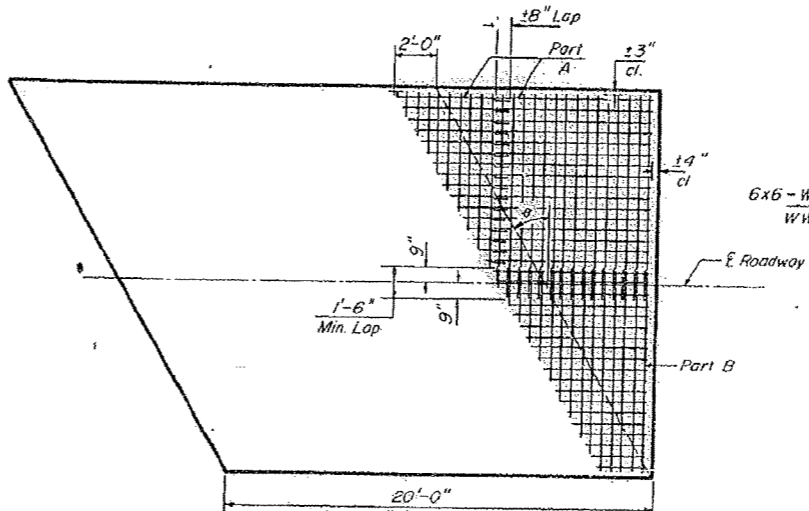
20 bars - 19'-6" long Weight = 260 Pounds

21 BARS - 19'-6" LONG WT=274 LBS

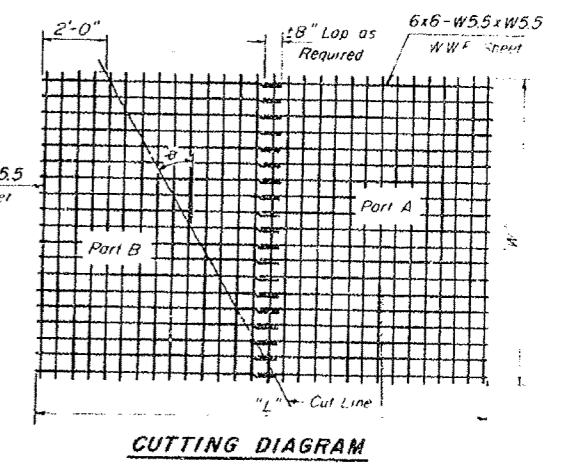
\*AREA DOES NOT INCLUDE 8" LONGITUDINAL LAPS  
 W.W.F=WELDED WIRE FABRIC  
 BRIDGE APPROACH PAVEMENT PAVEMENT FABRIC EAST APPROACH AREA = 567 SQYD.

Skew Angle Degrees	Bottom Reinforcement			Top Reinforcement			Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F.	
	Transverse #5	Longitudinal #7	No. Required	Transverse #4	Longitudinal #4	No. Required			Dimensions L (ft.)xW (ft.)	Area* (Sq.Yds.)
<b>26'-0" PAVEMENT</b>										
0	20	25'-6"		6	25'-6"		3238	57.8		
5	20	25'-7"		6	25'-7"		3240	61.1		
10	20	25'-11"		6	25'-11"		3249	64.4	8'-6"x13'-6"	12.8
15	20	26'-5"		5	26'-5"		3243	67.8	11'-0"x13'-6"	16.5
20	19	27'-2"		5	27'-2"		3233	71.4	13'-6"x13'-6"	20.3
25	18	28'-2"		5	28'-2"		3227	75.3	16'-3"x13'-6"	24.4
30	18x2	15'-3"		5x2	15'-3"		3278	79.5	19'-0"x13'-6"	28.5
35	17x2	16'-1"		5x2	16'-1"		3282	84.1	22'-3"x13'-6"	33.4
40	16x2	17'-2"		4x2	17'-2"		3269	89.3	25'-9"x13'-6"	38.6
45	14x2	18'-5"		4x2	18'-5"		3243	95.3	30'-0"x13'-6"	45.0
50	13x2	20'-4"		4x2	20'-4"		3264	102.5	35'-0"x13'-6"	52.5
55	12x2	22'-9"		3x2	22'-9"		3265	111.4	41'-3"x13'-6"	61.9
60	10x2	26'-0"		3x2	26'-0"		3251	122.8	49'-0"x13'-6"	73.5
<b>36'-0" PAVEMENT</b>										
0	20x2	18'-3"		6x2	18'-3"		4471	80.0		
5	20x2	18'-4"		6x2	18'-4"		4475	86.3		
10	20x2	18'-6"		6x2	18'-6"		4483	92.7	10'-0"x18'-6"	20.6
15	20x2	18'-10"		5x2	18'-10"		4475	99.3	13'-0"x18'-6"	27.7
20	19x2	19'-5"		5x2	19'-5"		4462	106.2	17'-0"x18'-6"	34.9
25	18x2	20'-2"		5x2	20'-2"		4455	113.6	20'-6"x18'-6"	42.1
30	18x2	21'-0"		5x2	21'-0"		4492	121.6	24'-9"x18'-6"	50.8
35	17x2	22'-3"		5x2	22'-3"		4501	130.4	29'-0"x18'-6"	59.6
40	16x2	23'-9"		4x2	23'-9"		4483	140.4	33'-9"x18'-6"	69.4
45	14x2	25'-8"		4x2	25'-8"		4450	152.0	39'-6"x18'-6"	81.2
50	13x2	28'-2"		4x2	28'-2"		4477	165.8	46'-6"x18'-6"	95.6
55	12x3	21'-4"		3x3	21'-4"		4492	182.8	55'-0"x18'-6"	113.0
60	10x3	24'-4"		3x3	24'-4"		4471	204.7	65'-9"x18'-6"	135.1

\*Area does not include 8" longitudinal laps



PLACEMENT OF 6x6-W5.5xW5.5 W.W.F. only required on stews ≥ 10°

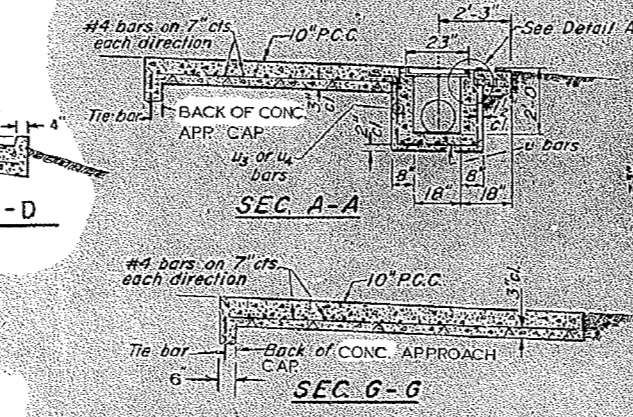
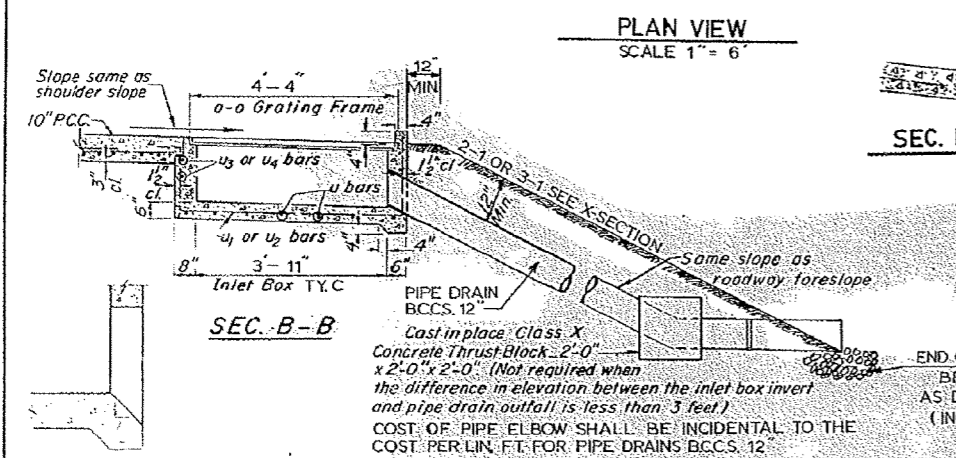
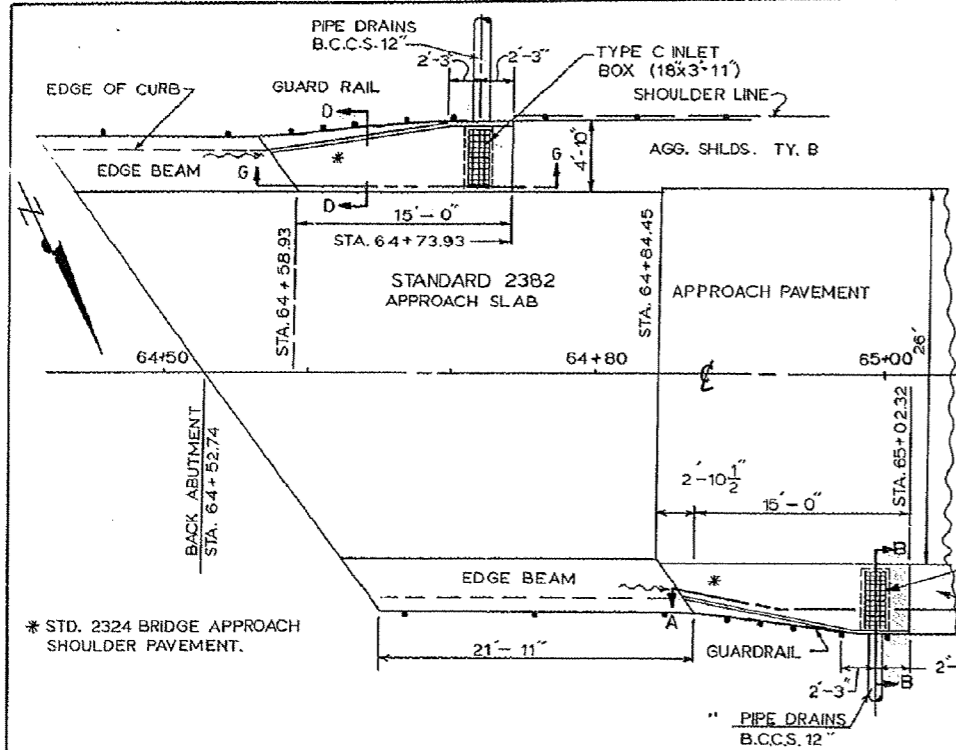


CUTTING DIAGRAM

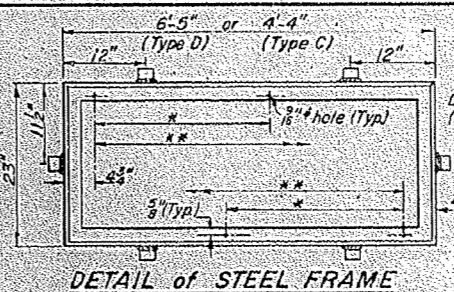
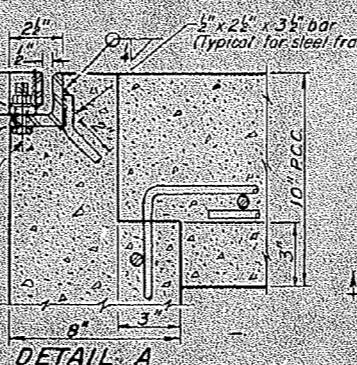
Illinois Department of Transportation  
 PASSED Sept 4 1979  
 APPROVED Sept 4 1979  
 Engineer of Design

BRIDGE APPROACH PAVEMENT

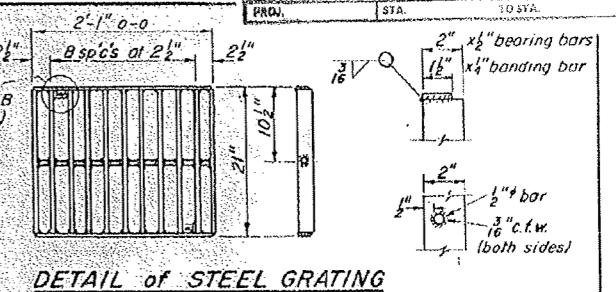
Sheet 2 of 2  
 STANDARD 2382-1



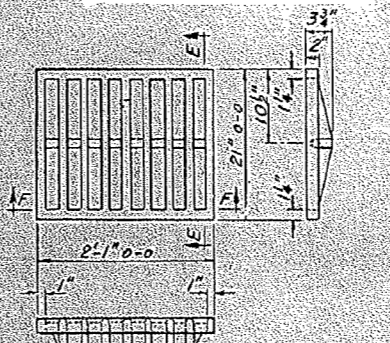
TYPICAL CORNER OF STEEL GRATING FRAME



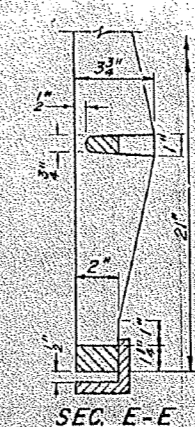
DETAIL of STEEL FRAME  
Cast frame to have same basic dimensions  
\* 1 space of 2'-1" for Type C



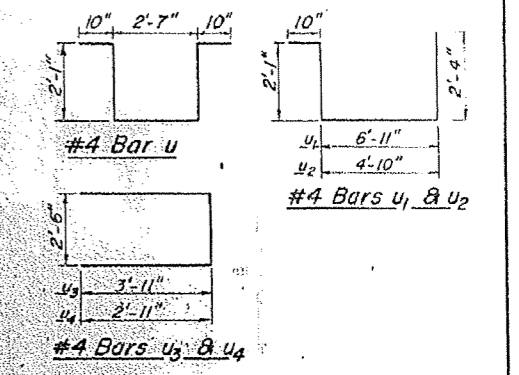
DETAIL of STEEL GRATING  
Type C requires 2 grates



DETAIL of CAST GRATING  
Type C requires 2 grates



SEC. E-E



P.C.C. BRIDGE APPROACH SHLDR. PAV'T.

LT. STA. 64+68.68	LT. STA. 64+73.73	6.2 S.Y.
RT. STA. 64+84.45	RT. STA. 65+02.32	6.3 S.Y.
		TOTAL QUANTITY 12.5 S.Y.

TYPE C INLET BOX STANDARD 2324

LT. STA. 64+71.68	1 EA.
RT. STA. 65+00.07	1 EA.
TOTAL QUANTITY 2 EA.	

Material Required for One Type C Inlet Box

Bar	No.	Size	Length
u	6	#4	8'-5"
u2	3	#4	10'-1"
u4	4	#4	8'-4"
Concrete - Class X or Precast		Cu. Yds.	0.9
Reinf. Bars		Lbs.	80
Grating		Sq. Ft.	7.3

PIPE DRAINS B. C. C. S. PIPE 12"

LT. STA. 64+68	24 LIN. FT.
RT. STA. 64+94.20	24 LIN. FT.
TOTAL QUANTITY 48 LIN. FT.	

CONCRETE THRUST BLOCK

36 LT. STA. 64+71.68	1 EA.
32 RT. STA. 65+00.07	1 EA.
TOTAL QUANTITY 2 EA.	

BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324 MODIFIED

NOT TO SCALE

**GENERAL NOTES**

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

For a full length of bridge approach shoulder pavement, shoulder widths shall be as shown for 4' thru 6' shoulder widths;

For a partial length of approach shoulder pavement or existing construction, the shoulder width shall be as shown except that tie bars in approach pavement shall be as shown.

The material for Pipe Drains 12" shall be B.C.C.S. PIPE

The P.C. Concrete used in the shoulder slab shall meet the requirements of Article 701.04 of the Standard Specifications.

END OF PIPE TO BE RIPRAPED WITH BROKEN CONCRETE FROM BRIDGE AS DIRECTED BY ENGINEER. (INCIDENTAL TO PIPE DRAINS)

The lengths of #4 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet. Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i. after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled.

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep sand bedding conforming to Article 703.01 (FA.1 or FA.2) shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M11 after fabrication.

Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet, 11.2 sq. yds. Type C.

The contract unit price "Each" for TYPE C INLET BOX STANDARD 2324, in place, shall include the frames and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfilling.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.

