AS Built Plans

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 132	104 BR	MOULTRIE	58	1
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

JOB NO. P95-253-00

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
STATE BOND ISSUE HIGHWAY

SCALES:
- PLAN — 1 INCH = 50 FT.
- PROFILE HOR. — 1 INCH = 100 FT.
- PROFILE VERT. — 1 INCH = 10 FT.
- CROSS-SECTIONS — 1/4 INCH = 5 FT. VERT.; 1 INCH = 10 FT. HORZ.

S.B.I. ROUTE 132, SECTION 104 BR, MOULTRIE COUNTY

C-95-112-66

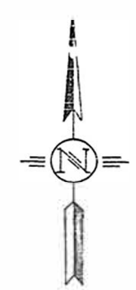
DESIGN CLASSIFICATION
500-M-70

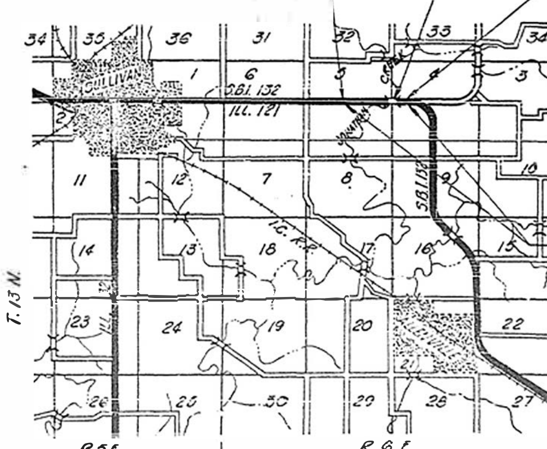
CORPS OF ENGINEERS
SHELBYVILLE RESERVOIR
ROAD ALTERATION SITE
RA-43

SECTION 104 BR INCLUDES SPECIAL BRIDGE
DESIGN: WF BEAM DECK GIRDER, 3 SPANS
@ 66'-3", 86'-5" & 66'-3"
ROADWAY: 30'-0"; SKEWED 35°
A.R. STA. 138+26.29

S.B.I. ROUTE 132, SECTION 104 BR
BEGINS STA. 102+50

S.B.I. ROUTE 132, SECTION 104 BR
ENDS STA. 144+00





CORPS OF ENGINEERS PROJECT
LIMITS - STA. 102+50 TO STA. 144+00

SCALE: 1 INCH = 1 MILE

FOR INDEX OF SHEETS
SEE SHEET NO. 3

FOR SUMMARY OF QUANTITIES
SEE SHEET NO. 3

TOTAL LENGTH OF SECTION 104 BR: 4,150 FEET = 0.786 MILES
NET LENGTH OF SECTION 104 BR: 4,150 FEET = 0.786 MILES

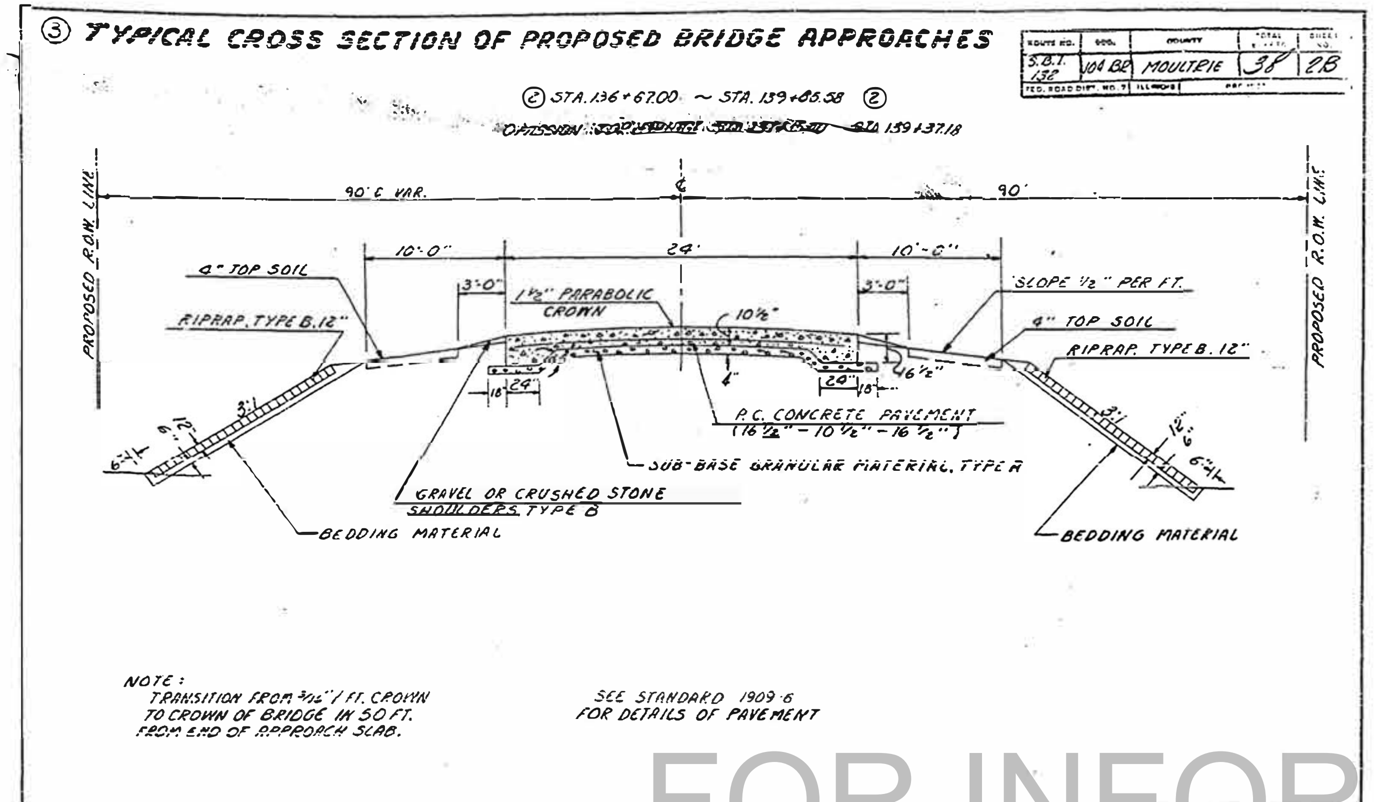
LOCATION OF SECTION INDICATED THUS:—

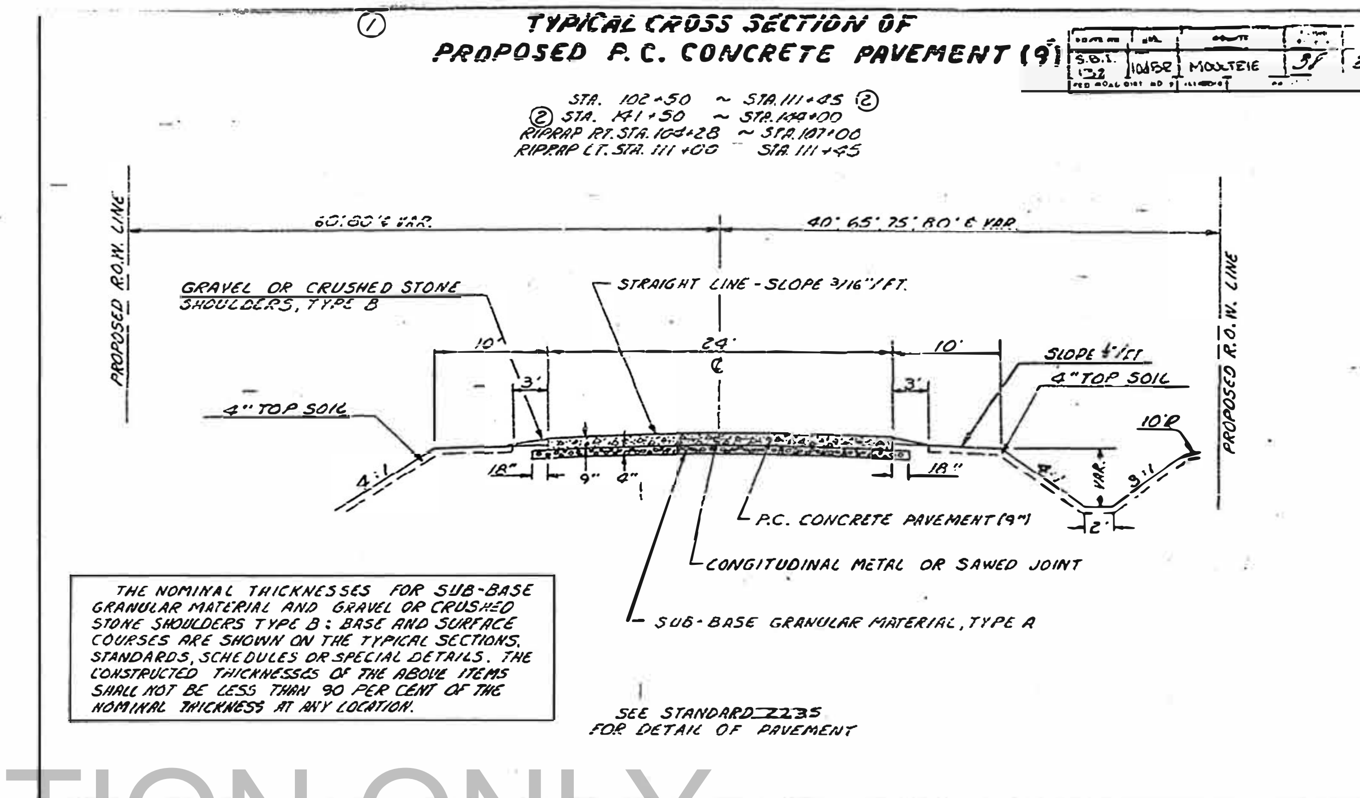
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

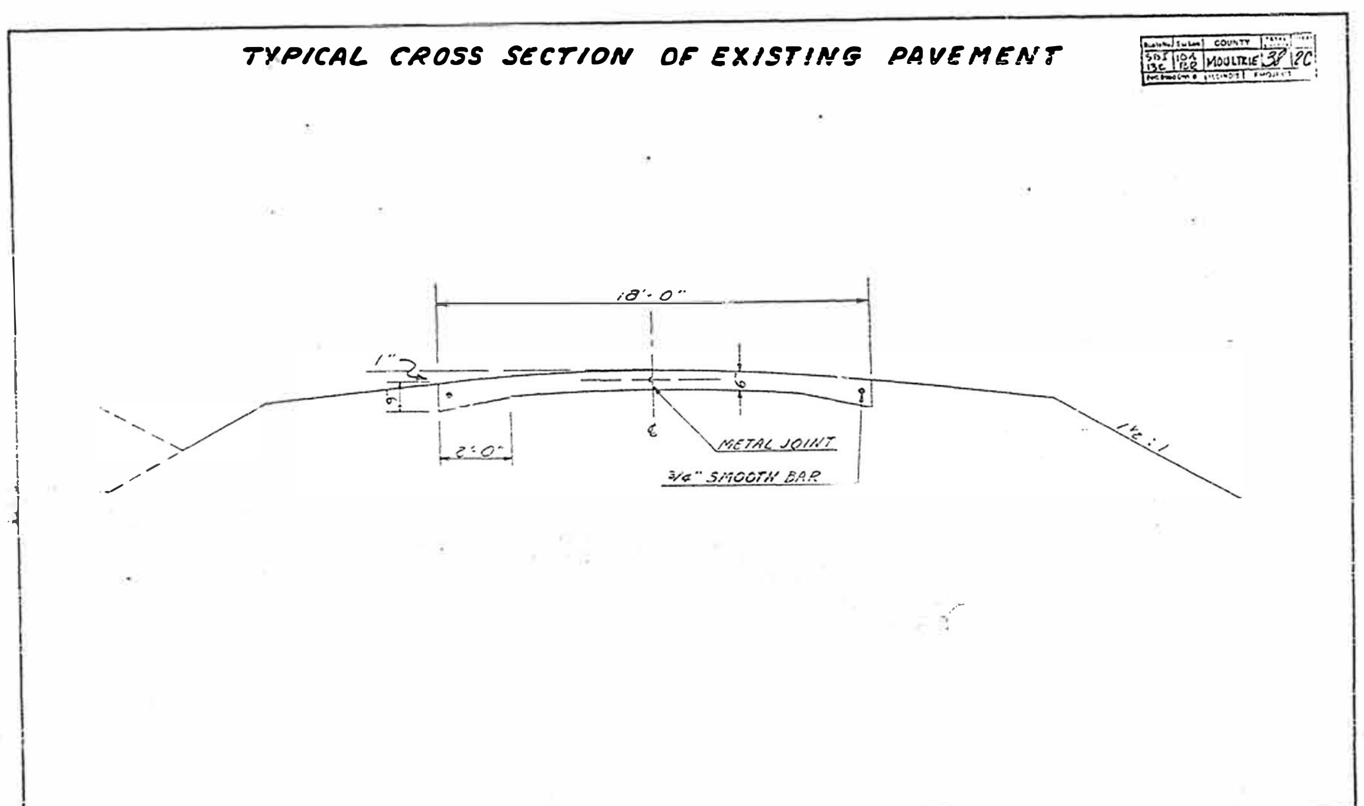
SUBMITTED October 26, 1966 — J.C. McLaren, DISTRICT ENGINEER
EXAMINED January 6, 1967 — A.W. Van Arsdall, ENGINEER OF ROAD PLANS AND CONTRACTS
PASSED January 6, 1967 — W.E. Baumann, ENGINEER OF DESIGN
APPROVED January 6, 1967 — CHIEF HIGHWAY ENGINEER
APPROVED January 6, 1967 — Francis S. Lorenz, DIRECTOR

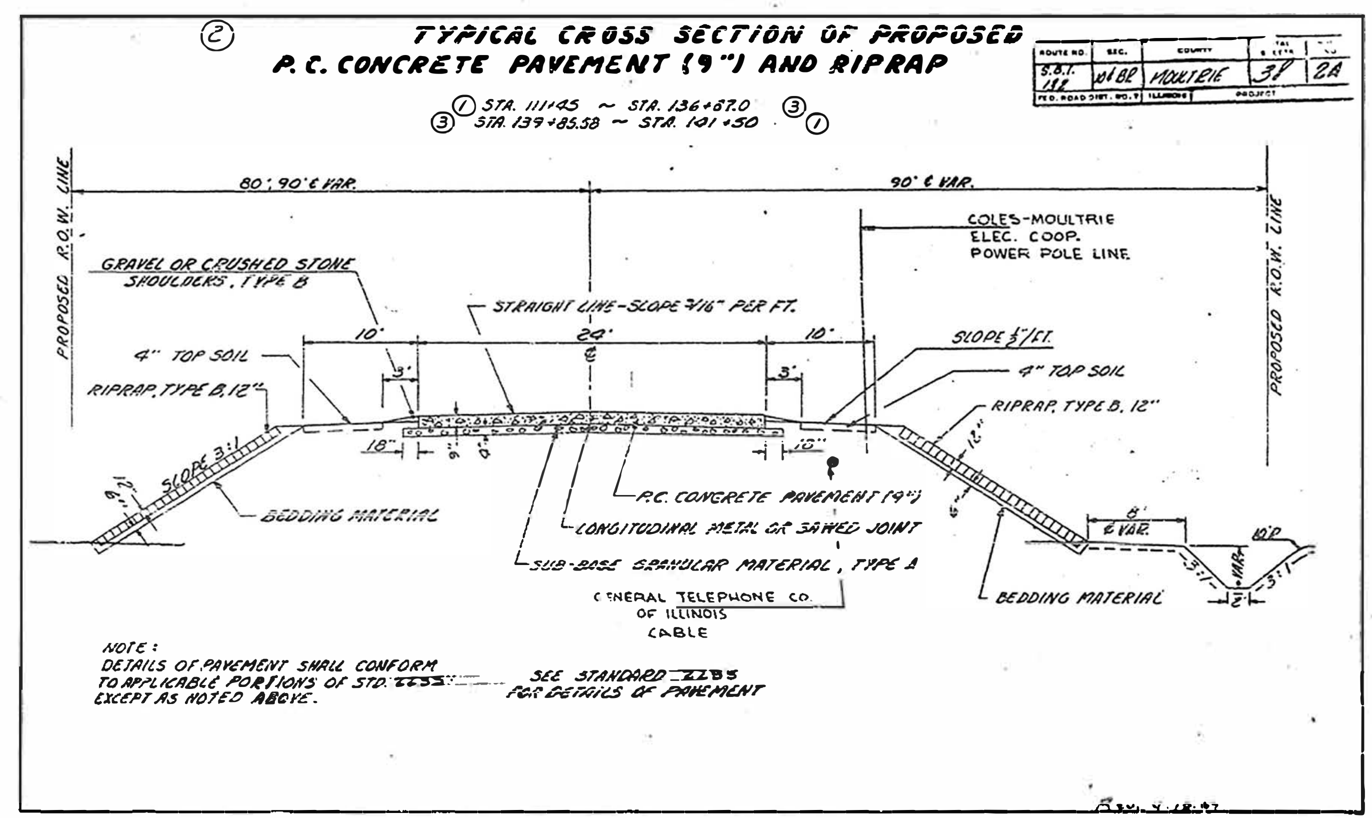
CONTRACT NO. 24985

REVISED SET 4/19/67









ROUTE NO	SEC.	COUNTY	TOTAL SHEETS	
881 132	104 BR	MOULTRIE	38	5

SUMMARY OF QUANTITIES (Continued)

				ROAD	BRIDGE	
	LOCATION OF WORK			102+50 to 144+00	138+26.29	102+50 to 144+00
	CONSTRUCTION TYPE CODE			7221	X071	7005
CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY			
111002	STRAW FOR ASPHALT-COATED MULCH	TONS	14			14
111003	EMULSIFIED ASPHALT	GALS.	1,400			1,400
112001	SODDING	SQ.YDS.	500			500
112002	SUPPLEMENTAL WATERING	UNITS	3			3
113004	NITROGEN FERTILIZER NUTRIENT	TONS	0.2			0.2
113007	PHOSPHOROUS FERTILIZER NUTRIENT	TONS	0.7			0.7
113008	POTASH FERTILIZER NUTRIENT	TONS	0.2			0.2
200004	ALUMINUM HANDRAIL	LIN.FT.	438		438	
200125	FURNISHING AND ERECTING DRAINAGE MARKERS	EACH	4	4		
200142	INCIDENTAL BITUMINOUS SURFACING	TONS	14	14		
200350	PERMANENT SURVEY MARKERS, TYPE I	EACH	5	5		
201002	EXPLORATORY TRENCH (52" DEPTH)	LIN.FT.	5,720	5,720		
201023	BRIDGE SEAT SEALANT	LUMP SUM	1		1	
201379	ENGINEER'S FIELD LABORATORY	EACH	*1			
201398	ENGINEER'S FIELD OFFICE, TYPE A	EACH	*1			
220278	DELINEATORS	EACH	103	103		
500170	GALVANIZED STEEL CONDUIT, ATTACHED TO BRIDGE, 2"	LIN.FT.	231		231	

*CONSTRUCTION TYPE CODE CE 58

INDEX OF SHEETS

SHEET NO.	CONTENTS
1	COVER SHEET
2.2A.2B,2C	TYPICAL CROSS SECTIONS
3	SUMMARY OF QUANTITIES AND INDEX OF SHEETS
4	GENERAL NOTES, SUMMARY OF CLASS X CONCRETE AND EXISTING CULVERTS TO BE REMOVED
5-8(INCL)	PLAN AND PROFILE SHEETS
9,9A,9B	DETAIL OF ENTRANCES, TYPICAL CROSS SECTION OF ENTRANCES, SPECIAL DESIGN FOR PAVED DITCH OUTLETS AND SPECIAL DESIGN FOR SIDEWALK STEPS
10	SPECIAL DESIGN FOR PAVED DITCH INLETS, SPECIAL DESIGN FOR PAVED DITCH AND SPECIAL DESIGN FOR TRANSITION FROM PIPE CULVERT TO PAVED DITCH
11	INSPECTION WELL DETAIL
12-20(Incl.)	SPECIAL BRIDGE DESIGN, STATION 138+26.29
21	SPECIAL CULVERT DESIGN, A.R. STA. 106+42.2
22	SPECIAL CULVERT DESIGN, A.R. STA. 119+12.8
23-28(Incl.)	STATION CROSS SECTIONS
29	ENTRANCE CROSS SECTIONS, LT. STA. 127+68
30,30A,30B	STANDARDS 1766-4, ____ and 2115-1
31	STANDARD 1909-6
32,32A,32B	STANDARDS 1527-3,2115-1 and 2215-1
33,33A	STANDARDS 2149-6 and 2171
34	STANDARD 2230-1
35	STANDARD 2231-1
36,36A,36B,36C	STANDARDS 1744-1, 1909-1, 2135 and 2143-1
37,37A,37B	STANDARDS 2114, ____ and 2206-2
38	STANDARD 2209-1
39	STANDARD 2235

ROUTE NO	SEC.	COUNTY	TOTAL SHEETS	
881 132	104 BR	MOULTRIE	38	3

SUMMARY OF QUANTITIES

			ROAD	BRIDGE	
	LOCATION OF WORK		102+50 to 144+00	138+26.29	102+50 to 144+00
	CONSTRUCTION TYPE CODE		7221	X071	7005
CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY		
010001	TREE REMOVAL (6" to 15" DIA.)	IN.DIA.	360	360	
010002	TREE REMOVAL (OVER 15" DIA.)	IN.DIA.	1,700	1,700	
011001	EARTH EXCAVATION	CU.YDS.	10,242	10,242	
012001	CHANNEL EXCAVATION	CU.YDS.	1,750		1,750
013001	BORROW EXCAVATION	CU.YDS.	125,266	125,266	
020001	TRENCH BACKFILL	CU.YDS.	95	95	
021001	POROUS GRANULAR BACKFILL	CU.YDS.	225	225	
024001	SUB-BASE-GRANULAR MATERIAL, TYPE A	TONS	2,850	2,850	
026003	GRAVEL OR CRUSHED STONE SHOULDERS, TYPE B	TONS	360	360	
027001	TOP SOIL	CU.YDS.	1,980		1,980
029001	GRAVEL OR CRUSHED STONE BASE COURSE, TYPE A	TONS	210	210	
046001	BITUMINOUS MATERIALS (Prime Coat)	GALS.	50	50	
046002	AGGREGATE (PRIME-COAT)	TONS	1	1	
048007	P. C. CONCRETE PAVEMENT (9")	SQ.YDS.	10,349	10,349	
048011	P. C. CONCRETE PAVEMENT (16½"-10½"-16½")	SQ.YDS.	259	259	
048018	REMOVING AND REPLACING CURING COVERING	UNITS	10	10	
048019	PAVEMENT FABRIC	SQ.YDS.	10,217	10,217	
049001	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	1
050002	CLASS B EXCAVATION FOR STRUCTURES	CU.YDS.	270		270
052002	CLASS A CONCRETE	CU.YDS.	244.5		244.5
052003	CLASS X CONCRETE	CU.YDS.	469.3	119.7	330.7 18.9
052021	PROTECTIVE COAT	SQ.YDS.	11,598	11,598	
054001	FURNISHING AND ERECTING STRUCTURAL STEEL	LBS.	221,450		221,450
058199	PIPE CULVERT, TYPE 1, 15"	LIN.FT.	80	80	
058200	PIPE CULVERT, TYPE 1, 18"	LIN.FT.	136	136	
059001	REINFORCEMENT BARS	LBS.	112,070	35,800	76,270
060001	FURNISHING UNTREATED PILES, UP TO 30'	LIN.FT.	1,239		1,239
060004	FURNISHING CREOSOTED PILES, UP TO 20'	LIN.FT.	210		210
060007	TEST PILE TIMBER	EACH	1		1
060008	DRIVING TIMBER PILES	LIN.FT.	1,449		1,449
060042	METAL SHOES	EACH	59		59
060043	DRIVING CONCRETE PILES	LIN.FT.	1,000		1,000
060044	FURNISHING CONCRETE PILES	LIN.FT.	1,000		1,000
060047	TEST PILE CONCRETE	EACH	1		1
061001	NAME PLATES	EACH	1		1
062016	BEDDING MATERIAL	TONS	9,700		9,700
062019	RIPRAP, TYPE B, 12"	TONS	14,300		14,300
066001	STORM SEWERS, TYPE 1, 8"	LIN.FT.	200	200	
066026	STORM SEWERS, TYPE 2, 12"	LIN.FT.	423	423	
066027	STORM SEWERS, TYPE 2, 15"	LIN.FT.	8	8	
066030	STORM SEWERS, TYPE 2, 24"	LIN.FT.	206	206	
066387	STORM SEWERS, TYPE 4, 6"	LIN.FT.	200	200	
070003	MANHOLES, TYPE A, 4 FT. DIA., WITH TYPE 1 FRAME, CLOSED LID	EACH	1	1	
070006	MANHOLES, TYPE A, 5 FT. DIA., WITH TYPE 1 FRAME, CLOSED LID	EACH	3	3	
082001	PAVEMENT REMOVAL	SQ.YDS.	1,415	1,415	
082006	SIDEWALK REMOVAL	SQ.FT.	67	67	
089003	P. C. CONCRETE SIDEWALK (5")	SQ.FT.	57	57	
093005	PAVED DITCH, 6 FEET	LIN.FT.	1,410		1,410
094001	STEEL PLATE BEAM GUARD RAIL	LIN.FT.	450	450	
098002	WOOD GUARD RAIL REMOVAL	LIN.FT.	196	196	
104001	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	50	50	
110015	SEEDING, CLASS IIA	ACRES	9.4		9.4
110016	SEEDING, CLASS III	ACRES	3.4		3.4

ROUTE NO	SEC.	COUNTY	TOTAL SHEETS
SBI 132	104 BR	MOULTRIE	38 | 4

GENERAL NOTES

ALL NOTES IN THESE PLANS APPLY TO SECTION 104BR UNLESS OTHERWISE SPECIFIED.

TREES WHICH, IN THE OPINION OF THE ENGINEER, INTERFERE WITH CONSTRUCTION OPERATIONS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

360 Inch Dia. TREE REMOVAL (6" to 15" Dia.)
1700 Inch Dia. TREE REMOVAL (OVER 15" Dia.)

EARTHWORK QUANTITIES FOR THE ENTIRE SECTION:

ESTIMATED QUANTITIES:

EARTH EXCAVATION CU.YDS.	EMBANKMENT CU.YDS.	BORROW CU.YDS.
10,242	112,923	125,266

10,242 CU.YDS. EARTH EXCAVATION
125,266 CU.YDS. BORROW EXCAVATION
OVERHAUL-NONE ALLOWED

TRENCH BACKFILL SHALL BE PLACED, AS DIRECTED BY THE ENGINEER, IN ALL TRENCHES IN THE PROPOSED SUBGRADE WHERE THE INNER EDGE OF THE TRENCH IS CLOSER THAN 2 FEET TO THE EDGE OF THE PROPOSED PAVEMENT.

ESTIMATED QUANTITY:

95 CU.YDS. TRENCH BACKFILL

SUB-BASE-GRANULAR MATERIAL SHALL BE PLACED 4" THICK COMPACTED UNDER THE PROPOSED P. C. CONCRETE PAVEMENT IN ACCORDANCE WITH THE TYPICAL CROSS SECTIONS INCLUDED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITY:

[illegible] TONS SUB-BASE-GRANULAR MATERIAL, TYPE A

GRAVEL OR CRUSHED STONE SHOULDERS SHALL BE BUILT IN ACCORDANCE WITH THE TYPICAL CROSS SECTIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITY:

360 TONS GRAVEL OR CRUSHED STONE SHOULDERS, TYPE B

TOP SOIL, 4" THICK, SHALL BE PLACED AT LOCATIONS SHOWN ON THE STATION CROSS SECTIONS AND AS DIRECTED BY THE ENGINEER.

QUANTITY:

1,930 CU.YDS. TOP SOIL

STONE OR CRUSHED STONE BASE COURSE, TYPE A, SHALL BE PLACED 6" THICK COMPACTED ON ENTRANCES AND 4" THICK COMPACTED ON MAIL BOX TURNOUTS AT LOCATIONS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITY:

210 TONS GRAVEL OR CRUSHED STONE BASE COURSE, TYPE A

INCIDENTAL BITUMINOUS SURFACING SHALL BE BUILT AT LOCATIONS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

50 GALS. BITUMINOUS MATERIALS (PRIME COAT)
1 TONS AGGREGATE (PRIME COAT)
14 TONS INCIDENTAL BITUMINOUS SURFACING

THE PROPOSED PORTLAND CEMENT CONCRETE PAVEMENT, 9 INCHES THICK, SHALL BE CONSTRUCTED AS SHOWN ON THE TYPICAL CROSS SECTIONS AND SPECIAL DETAILS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

10,349 SQ.YDS. P. C. CONCRETE PAVEMENT (9")
10,217 SQ.YDS. PAVEMENT FABRIC
11,595 SQ.YDS. PROTECTIVE COAT

CURING COVERING SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITY:

10 UNITS REMOVING AND REPLACING CURING COVERING

BEDDING MATERIAL SHALL BE PLACED 6" THICK LOOSE, UNDER THE PROPOSED RIPRAP, TYPE B, 12", IN ACCORDANCE WITH THE TYPICAL CROSS SECTIONS INCLUDED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITY:

9,700 TONS BEDDING MATERIAL

GENERAL NOTES (Continued)

THE PROPOSED RIPRAP, TYPE B, 12" THICK, SHALL BE PLACED AS SHOWN ON THE PLANS AND TYPICAL CROSS SECTIONS AND AS DIRECTED BY THE ENGINEER AT LOCATIONS WHERE THE TOE OF SLOPE IS BELOW ELEVATION 626.5 FEET.

ESTIMATED QUANTITY:

14,300 TON RIPRAP, TYPE B, 12"

BEFORE ORDERING PIPE CULVERTS AND STORM SEWERS THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR EXACT LENGTHS.

SYMBOLS FOR RIGHT OF WAY MARKERS:

⊠ INDICATES RIGHT OF WAY MARKER TO BE REMOVED.

■ INDICATES RIGHT OF WAY MARKER TO BE SET AT THIS LOCATION.

SYMBOLS FOR UTILITY POLES:

—⊖— INDICATES EXISTING TELEPHONE POLES

—⊟— INDICATES EXISTING POWER POLES

PORTIONS OF THE RIGHT OF WAY HAVING INSUFFICIENT VEGETATION SHALL BE SEEDED, FERTILIZED AND MULCHED AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

3.4 ACRES SEEDING, CLASS IIA
3.4 ACRES SEEDING, CLASS IIB
14 TONS STRAW FOR ASPHALT-COATED MULCH
1400 GALS. EMULSIFIED ASPHALT
0.2 TONS NITROGEN FERTILIZER NUTRIENT
0.7 TONS PHOSPHOROUS FERTILIZER NUTRIENT
0.2 TONS POTASH FERTILIZER NUTRIENT

A STRIP OF SOD 18" WIDE SHALL BE PLACED ON EACH SIDE OF PAVED DITCHES AND PAVED DITCH STRUCTURES AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

500 SQ.YD. SODDING
3 UNITS SUPPLEMENTAL WATERING

GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND STATION CROSS SECTIONS ARE FOR THE CENTERLINE OF THE PROPOSED PAVEMENT.

ELEVATIONS SHOWN ON THE PLANS ARE ESTABLISHED FROM U.S.C.G.S. DATUM.

THE MINIMUM RADIUS CURVE WITHIN THE LIMITS OF THIS SECTION IS AT STATION 131+00 WITH A RADIUS OF 72,626.45 FEET.

THE MAXIMUM GRADE IS 1.45% AT STATION 124+00.

THE MINIMUM STOPPING SIGHT DISTANCE IS 1,656' AT STATION 110+00.

THE MINIMUM HORIZONTAL CLEARANCE IS 30' AT STATION 138+26.29.

THE VERTICAL CLEARANCE IS UNLIMITED.

WHEREVER IN THESE PLANS REFERENCE IS MADE TO THE "STANDARD SPECIFICATIONS" IT IS UNDERSTOOD TO INCLUDE THE "SUPPLEMENTAL SPECIFICATIONS" EFFECTIVE JANUARY 3, 1966.

ROUTE NO	SEC.	COUNTY	TOTAL SHEETS
SBI 132	104 BR	MOULTRIE	38 | 4

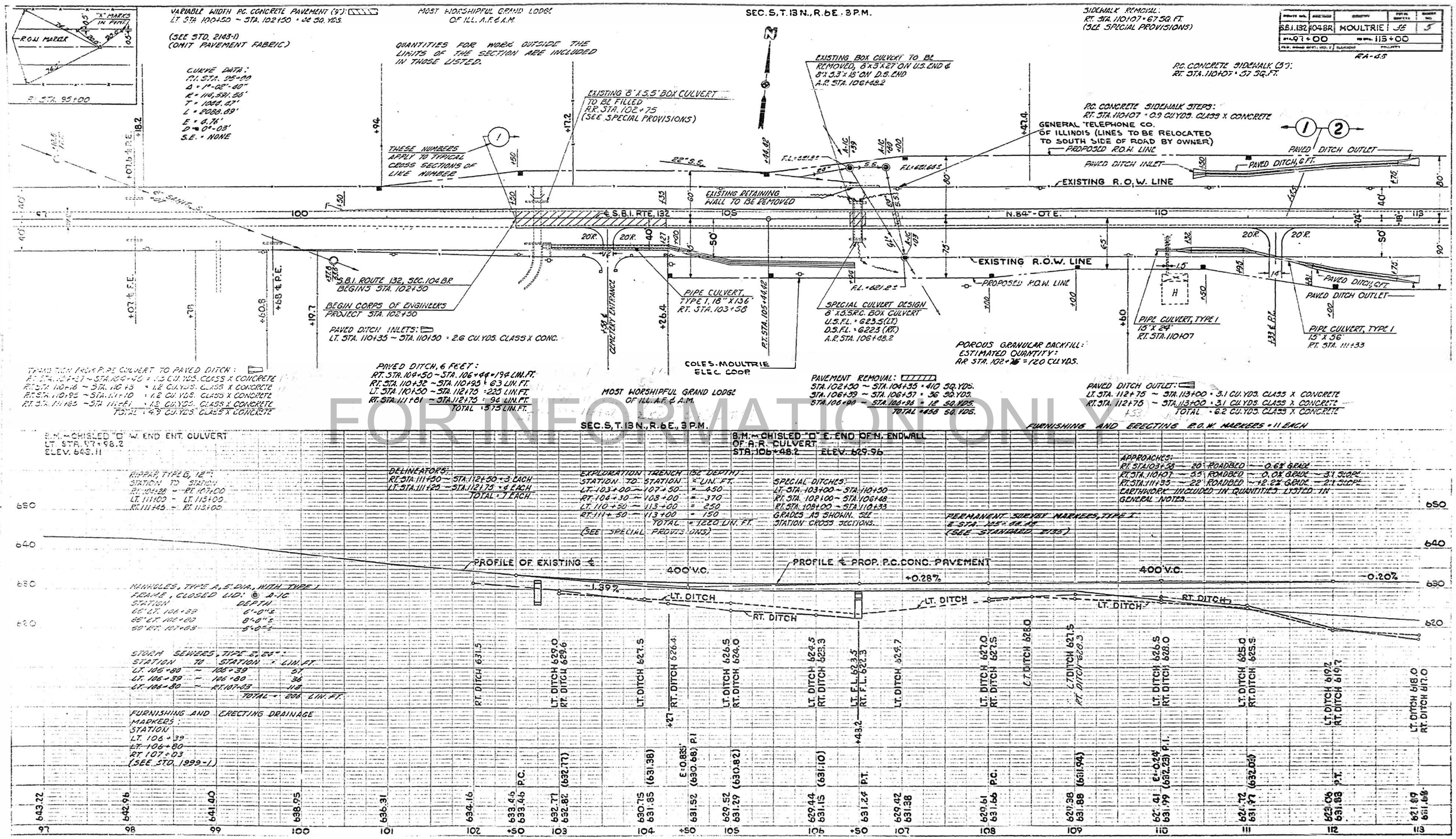
SUMMARY OF CLASS X CONCRETE

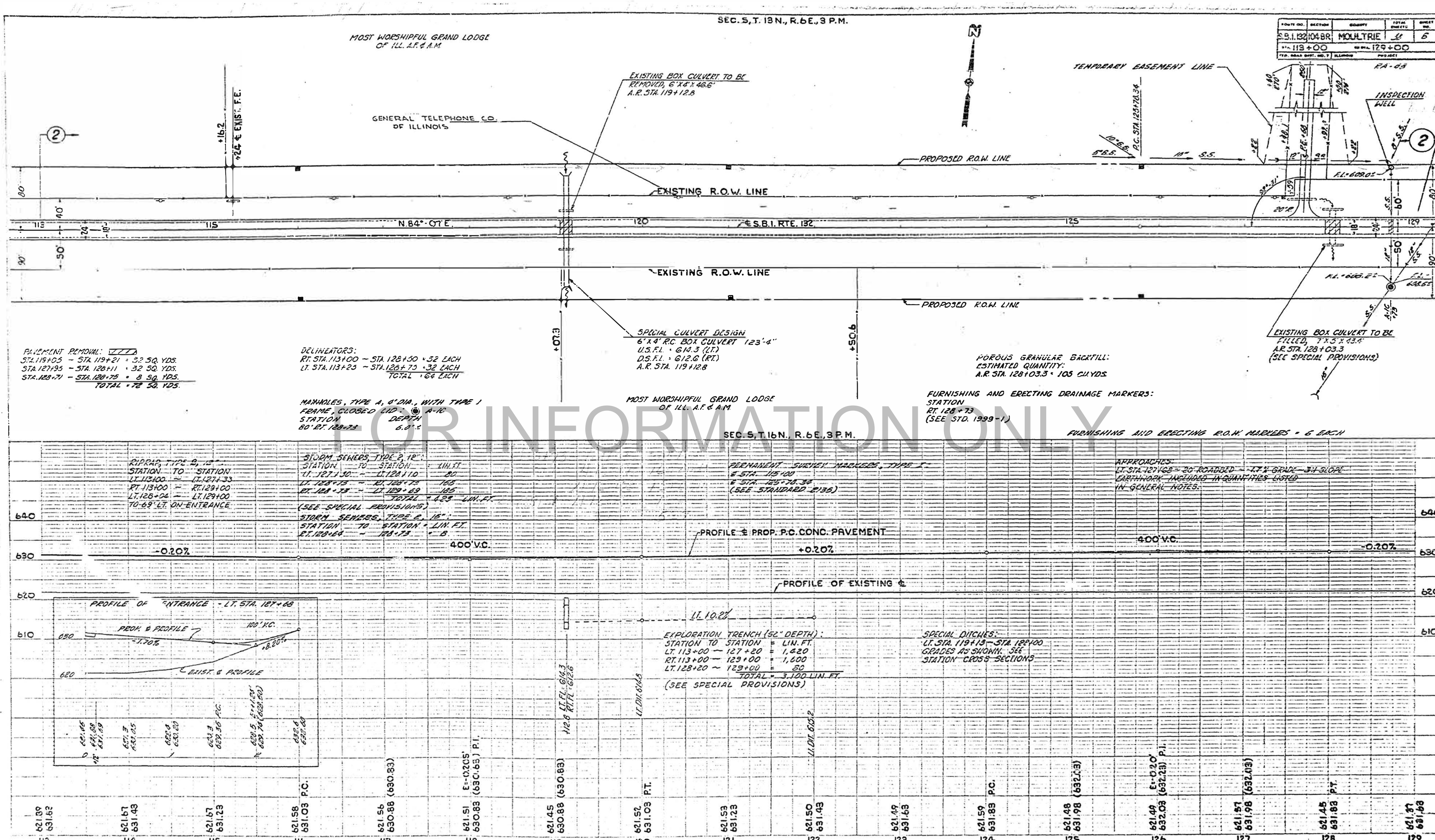
STATION	TYPE OF STRUCTURE	CU.YDS.
Rt. 104+40	SPECIAL TRANSITION FROM PIPE CULVERT TO PAVED DITCH	1.3
Lt. 106+[illegible].2	SPECIAL CULVERT DESIGN	52.7
Rt. 110+07	SPECIAL SIDEWALK STEPS	0.9
Rt. 110+18	SPECIAL TRANSITION FROM PIPE CULVERT TO PAVED DITCH	1.2
Lt. 110+35	SPECIAL PAVED DITCH INLET	2.6
Rt. 110+95	SPECIAL TRANSITION FROM PIPE CULVERT TO PAVED DITCH	1.2
Rt. 111+66	SPECIAL TRANSITION FROM PIPE CULVERT TO PAVED DITCH	1.2
Lt. 112+75	SPECIAL PAVED DITCH OUTLET	3.1
Rt. 112+75	SPECIAL PAVED DITCH OUTLET	3.1
AR 119+12.8	SPECIAL CULVERT DESIGN	62.0
AR 136+94.8	BRIDGE APPROACH SLAB CAP	2.05
138+26.29	SPECIAL BRIDGE DESIGN	380.7
AR 139+66.2	BRIDGE APPROACH SLAB CAP	2.05
Rt. 142+50	SPECIAL PAVED DITCH INLET	2.6
Lt. 142+50	SPECIAL PAVED DITCH INLET	2.6
	TOTAL CLASS X CONCRETE =	549.3

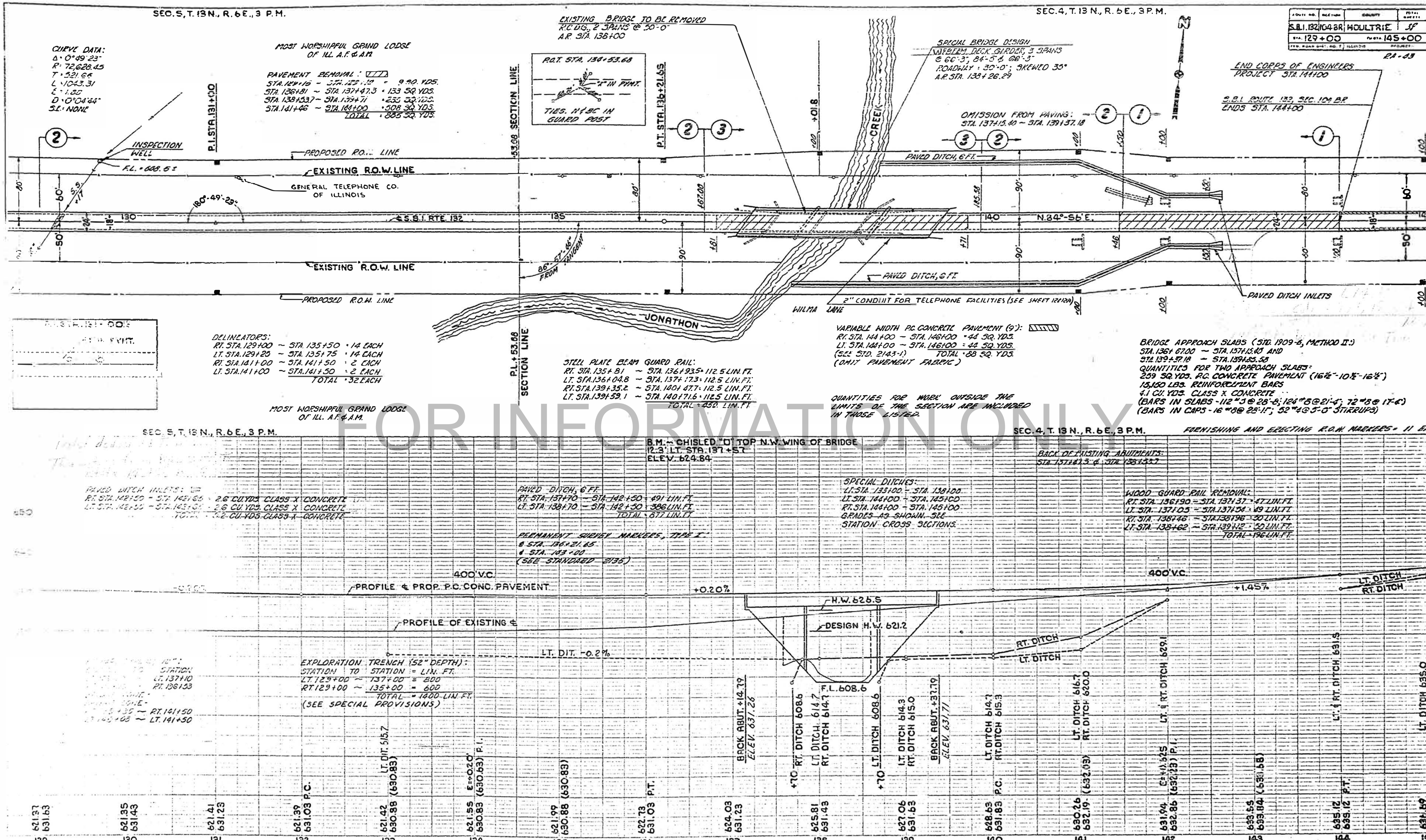
EXISTING CULVERTS TO BE REMOVED

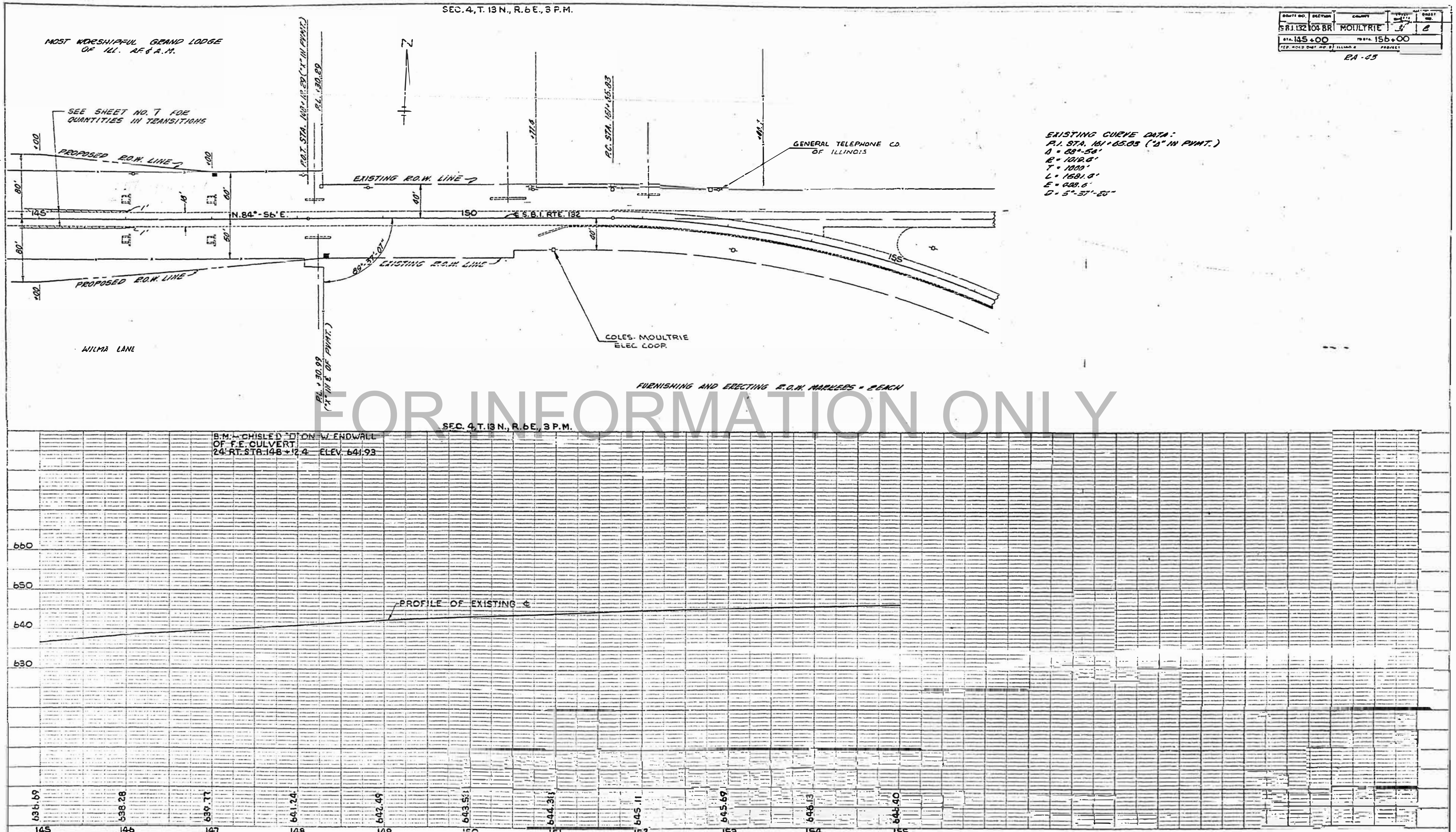
LOCATION	SIZE	TYPE
AR. STA. 106+48	8'x3'x27' & 8'x5'x18'	Box Culverts
RT. STA. 111+33	12" x 21'	PIPE CULVERT
LT. STA. 115+24	15" x 16.6'	PIPE CULVERT
AR. STA. 119+13	6'x4'x46.6'	BOX CULVERT
LT. STA. 127+68	15" x 35'	PIPE CULVERT

NOTE: ALL EXISTING CULVERTS TO BE REMOVED, EXCEPT AS OTHERWISE NOTED, SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH SECTION 49 OF THE STANDARD SPECIFICATIONS.









Rev. 4-18-67

		COUNTY	
S.R. 132	104 PR.	MOULTRIE	37

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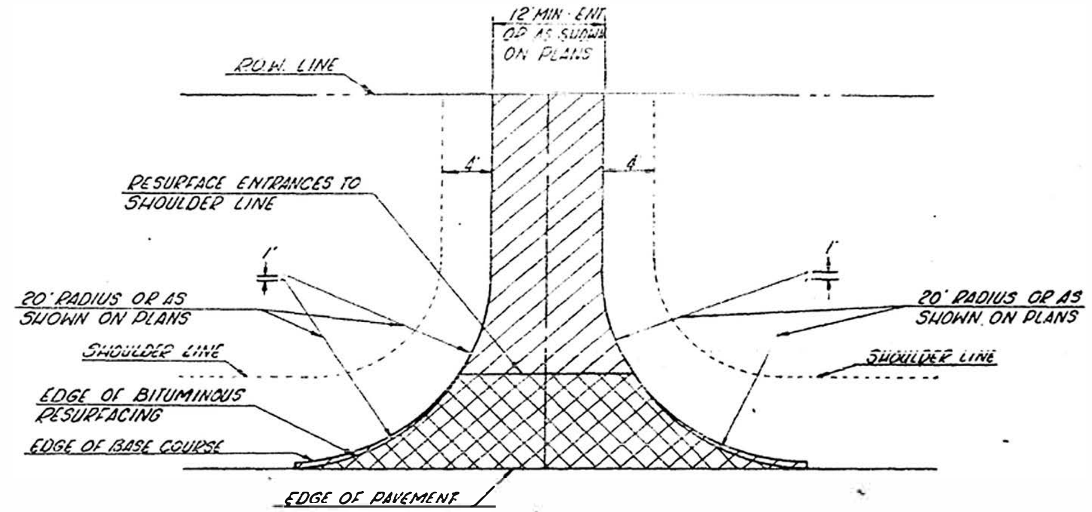
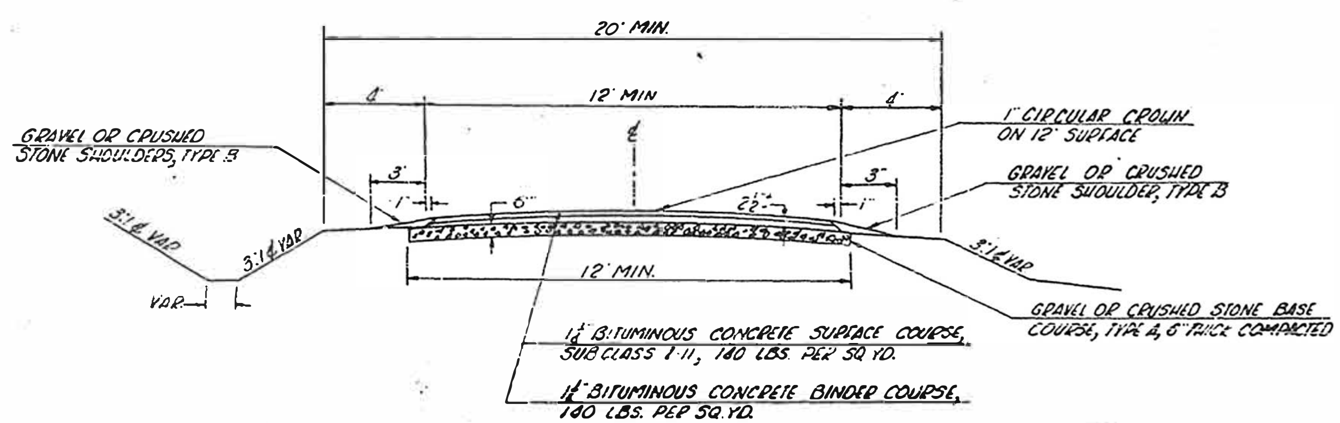
DETAIL OF INTERSECTING ENTRANCES



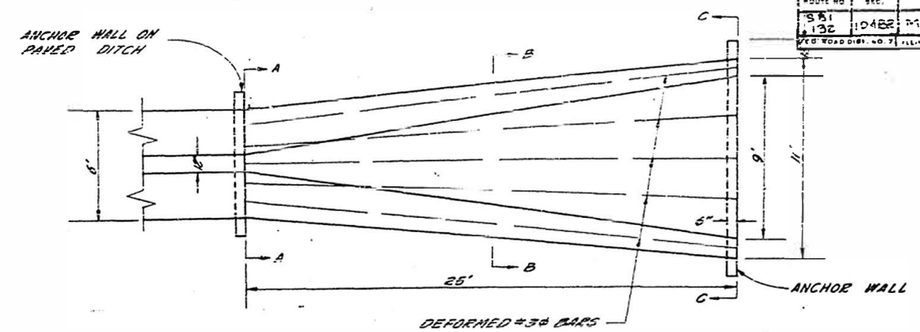
GRAVEL OR CRUSHED STONE BASE COURSE, TYPE A, 6" THICK COMPACTED.
BITUMINOUS CONCRETE RESURFACING.

TYPICAL CROSS SECTION OF INTERSECTING ENTRANCES

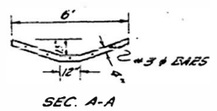


SPECIAL PAVED DITCH OUTLET

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
951 & 132	1048R	Moultrie	38	9
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

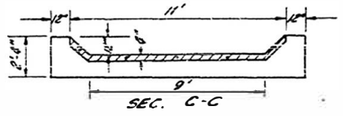


QUANTITIES:
SECTION A-A TO C-C AND ANCHOR WALL =
3.1 CU. YDS. CLASS X CONCRETE.



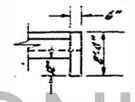
SEC. A-A

SEC. B-B



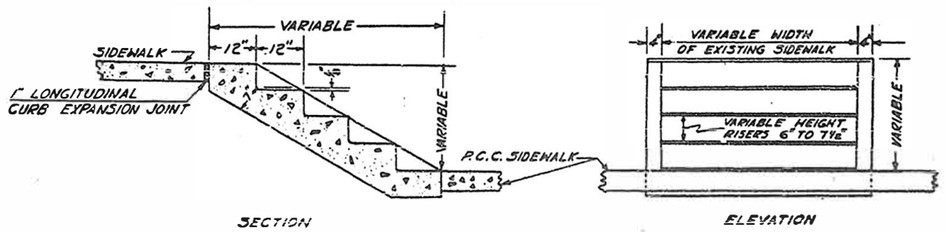
SEC. C-C

NOTE: CLASS X CONCRETE SHALL BE USED THROUGHOUT, WHICH PRICE SHALL INCLUDE FURNISHING AND PLACING THE REINFORCEMENT BARS.



DETAIL OF P.C.C. SIDEWALK STEPS

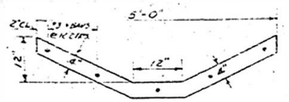
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
951 & 132	1048R	Moultrie	38	35
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



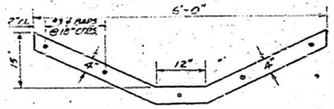
NOTE: CLASS "X" CONCRETE SHALL BE USED THROUGHOUT. THE NUMBER OF RISERS AND TREADS SHALL BE VARIED AS DIRECTED BY THE ENGINEER TO FIT CONDITIONS IN THE FIELD.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET
SBI 132	104 BR	MOULTRIE	38	10
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

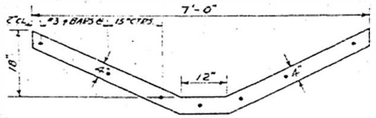
SPECIAL DESIGN FOR PAVED DITCH



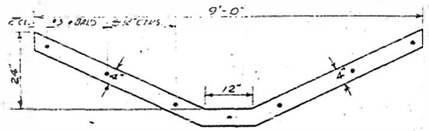
CROSS - SECTION
PAVED DITCH, 5 FEET



CROSS - SECTION
PAVED DITCH, 6 FEET



CROSS - SECTION
PAVED DITCH, 7 FEET



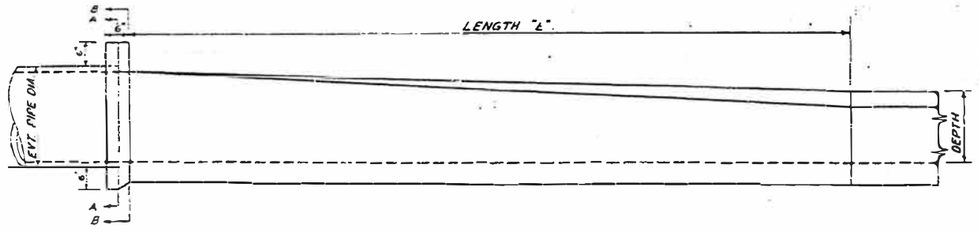
CROSS - SECTION
PAVED DITCH, 9 FEET

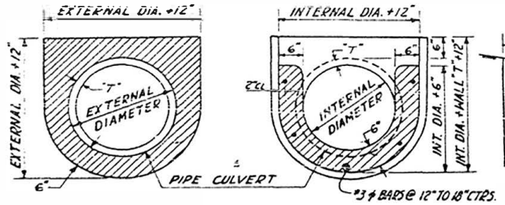
NOTE: PAVED DITCHES SHALL BE CONSTRUCTED OF CLASS "X" CONCRETE THROUGHOUT. TRANSITIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CLASS "X" CONCRETE, WHICH PRICE SHALL INCLUDE REINFORCEMENT BARS.

VOLUME IN TRANSITIONS
CU. YDS. OF CONCRETE REQUIRED

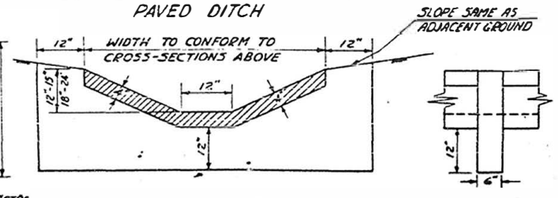
PIPE SIZE	5 FEET L	5 FEET CONC.	5 FEET C.M.P.	6 FEET L	6 FEET CONC.	6 FEET C.M.P.	7 FEET L	7 FEET CONC.	7 FEET C.M.P.	9 FEET L	9 FEET CONC.	9 FEET C.M.P.
12"	15'	1.0	1.0									
15"	15'	1.1	1.1									
18"	15'	1.2	1.2	15'	1.3	1.3						
21"	25'	2.2	2.2	15'	1.5	1.5						
24"				25'	2.5	2.5	15'	1.7	1.7			
30"				35'	4.0	3.9	25'	3.0	3.0	15'	2.1	2.1
33"							35'	4.3	4.3	25'	3.5	3.5
36"							35'	4.6	4.6	25'	3.7	3.6
42"										35'	5.5	5.5

SPECIAL DESIGN FOR TRANSITION FROM PIPE CULVERT TO PAVED DITCH





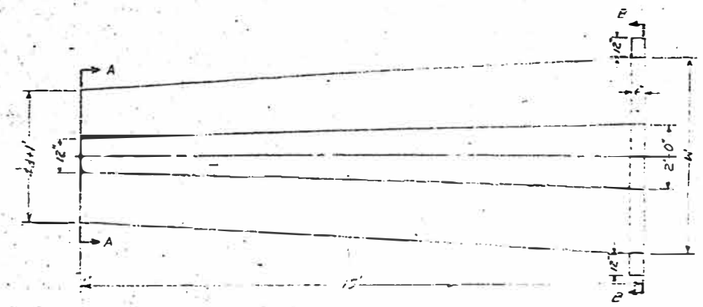
DETAIL OF ANCHOR WALL FOR PAVED DITCH



ANCHOR WALLS SHALL BE PROVIDED AT 30 FOOT CENTERS, AND SHALL BE MONOLITHIC WITH THE PAVED DITCH. PAVED DITCHES SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR PAVED DITCH OF THE WIDTH SPECIFIED, WHICH PRICE OR PRICES SHALL INCLUDE THE ANCHOR WALLS AND REINFORCEMENT BARS

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET
S.B.I. 132	104 BR	MOULTRIE	38	10
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SPECIAL DESIGN FOR PAVED DITCH INLETS

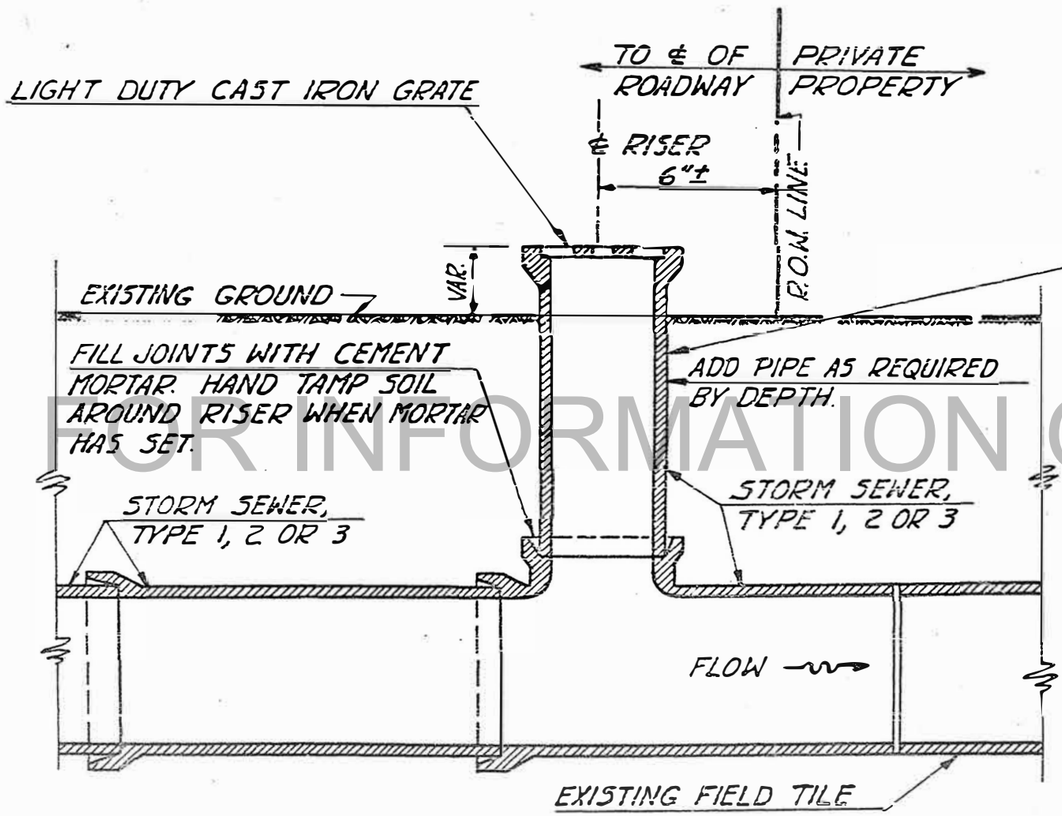


NOTE: PAVED DITCH INLETS SHALL BE CONSTRUCTED OF CLASS "X" CONCRETE THROUGHOUT AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CLASS "X" CONCRETE, WHICH PRICE SHALL INCLUDE REINFORCEMENT BARS.

SLOPES		5 FEET			6 FEET			7 FEET		
X:1	Y:1	d	w	CL."X" CONC. CU. YDS.	d	w	CL."X" CONC. CU. YDS.	d	w	CL."X" CONC. CU. YDS.
2:1	2:1	12"	8'	1.7	15"	9'	1.9	18"	10'	2.2
3:1	2:1	12"	9'-6"	1.8	15"	10'-9"	2.1	18"	12'	2.4
3:1	3:1	12"	11'	2.0	15"	12'-6"	2.3	18"	14'	2.7
4:1	2:1	12"	11'	2.0	15"	12'-6"	2.3	18"	14'	2.7
4:1	3:1	12"	12'-6"	2.2	15"	14'-3"	2.6	18"	16'	2.9
4:1	4:1	12"	14'	2.4	15"	16'	2.8	18"	18'	3.2

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 132	104 BR	MOULTRIE	38	11
... ROAD DIST. NO. 7	ILLINOIS	PROJECT		

INSPECTION WELL DETAIL



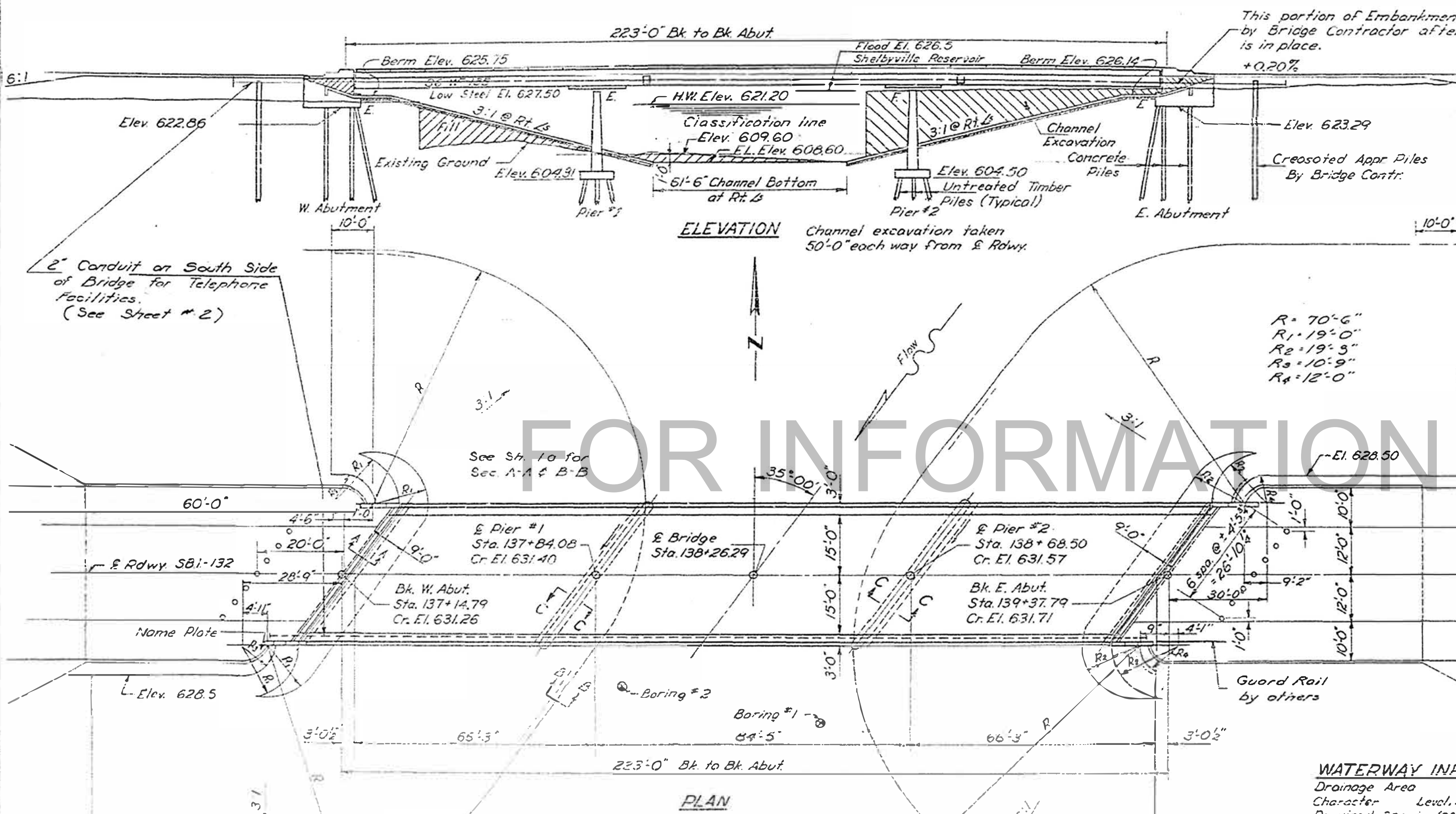
STANDARD SIZES	
STORM SEWER	RISER
6"	6"
8"	6"
10"	8"
12" OR OVER	10"

NOTE: WHERE STORM SEWER CROSSES R.O.W. INSPECTION WELLS SHALL BE PLACED 6" INSIDE R.O.W. LINE ON EACH SIDE. STORM SEWER RISER & GRATE TO BE INCIDENTAL TO STORM SEWERS OF THE SIZE AND TYPE SPECIFIED.

Existing Structure - 2 Spans @ 50' R.C.D.G.
21' Rdwy. Built 1930 on Conc. Substr.
To be removed by Bridge Contractor before new construction begins.
No Salvage. No Temporary Bridge Req'd.
B.M. Chiseled "□" top of Existing N.W. Wing Wall. Elev. = 624.84

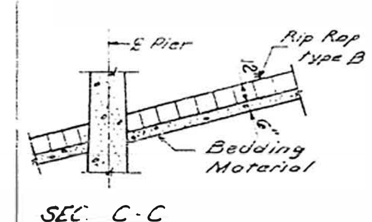
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

S.B.I. RT. 132	104 BR	MOULTRIE	38	12	SHEET NO. 1 / 9 SHEETS



Appr. Pile Data

Creosoted Approach Piles
Number Required - 14
Length: E. Abut. - 15'-0"
W. Abut. - 15'-0"



GENERAL NOTES

Coarse aggregate to be used in parapet handrails and end posts must be absolutely free of chert, flint, limonite, lignite and soft sandstone.

The concrete floor slab shall be finished in accordance with Article 51.19 of the Standard Specifications.

Layout of Rip Rap may be varied to suit ground conditions in the field as directed by the Engineer.

All structural steel shall conform to ASTM designation A-36.

Rivets 3/4" ϕ, Open Holes 13/16" ϕ, unless otherwise noted.

Anchor bolts shall be set before fastening diaphragms over supports.

The exposed surfaces of the expansion guard shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.

Expansion guards are included in the quantity of Structural Steel. Estimated weight 1870 lbs.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Article 56.1 to 56.5 inclusive of the Standard Specifications.

The contractor shall drive one test pile in permanent location at W. Abut. and one timber test pile in permanent location at Pier 1 as directed by the Engineer before ordering the remainder of piles.

See Special Provisions for stone Rip Rap protection of Slopes.

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

Excavation for portions of structures in the embankment shall not be classified.

STUD SHEAR CONNECTORS ON THE BEAM FLANGES SHALL BE PLACED IN THE FIELD AFTER THE STEEL HAS BEEN ERECTED AND THE DECK FORMS ARE IN PLACE.

TOTAL BILL OF MATERIAL

	Item	Unit	Super.	Sub.	Total
	Channel Excavation	Cu. Yds.			[illegible]
‡	Class B Excavation for Structures	Cu. Yds.			[illegible]
	Class A Concrete	Cu. Yds.		244.5	244.5
	Class X Concrete	Cu. Yds.	242.1	88.6	330.7
	Structural Steel	Lbs.	22,45[illegible]		22,4[illegible]
	Aluminum Handrail	Lin. Ft.			[illegible]
	Reinforcement Bars	Lbs.	57,040	19,170	[illegible]
	Creosoted Piles	Lin. Ft.			[illegible]
	Concrete Piles	Lin. Ft.		[illegible]	[illegible]
	Test Piles (Concrete)	Each			[illegible]
	Name Plates	Each			[illegible]
*	Bridge Seat Sealant	Lump Sum			1
**	Protective Coat	Sq. Yds.			[illegible]
	Removal of Existing Structure	Each			1
	Untreated Piles	Lin. Ft.		[illegible]	[illegible]
	Test Pile (Timber)	Each			1
	Metal Shoes	Each			69
	Galv. Steel Conduit, Attached to Br.	Lin. Ft.			23[illegible]

‡ Includes Excavation for Rip Rap

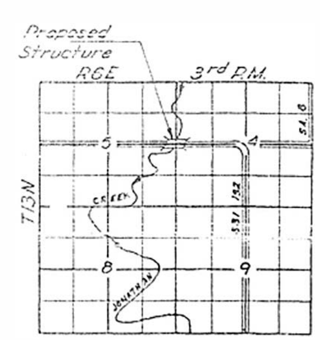
** Includes use on [illegible] exposed one of abutment wings

* At abutments only

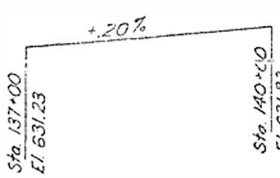
FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BOTTOM FLANGES OR FOR A DISTANCE OF ⅓ OF THE SPAN EACH WAY FROM PIER SUPPORTS ON THE TOP FLANGES OF BEAMS OR GIRDERS WILL NOT BE PERMITTED. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

WATERWAY INFORMATION

Drainage Area	35,371 Acres
Character	Level, Rolling, Cultivated
Required Opening (30 yr)	1200 Sq. Ft.
Present Opening	850 Sq. Ft.
Proposed Opening	1200 Sq. Ft.
Ordinary Water Elev.	610.8
Low Water Elev.	608.6



LOCATION SKETCH

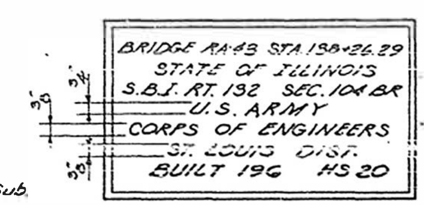


PROFILE SBI-132

DESIGN STRESSES

f'c = 1400 psi Super. & Sub.
vc = 75 psi Ftgs.
fs = 20,000 psi Reinf.
fs = 20,000 psi Struct.
n = 10
Allowable L.L. Defl. 1/1200

LOADING HS20-44



NAME PLATE

See Std 2113-1 Except as Shown

GENERAL PLAN & ELEVATION
JONATHAN CREEK
SBI RT. 132 SEC. 104 BR
MOULTRIE COUNTY
STA. 138+26.29

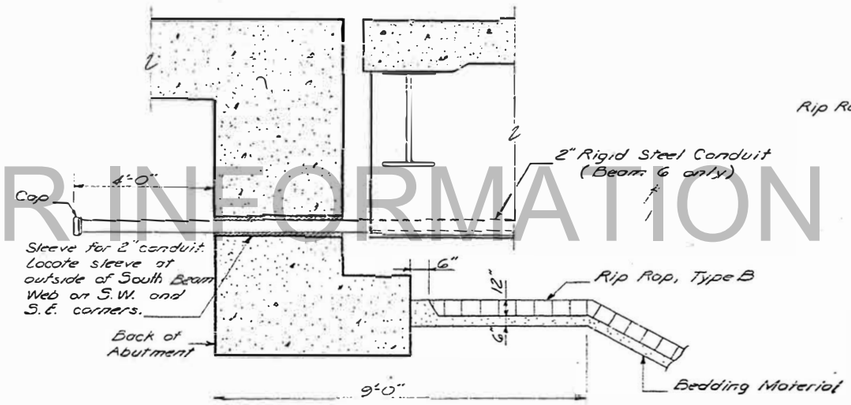
DESIGNED	Melvin [illegible]
CHECKED	Fred Stone
DRAWN	Thomas A. Lewis
CHECKED	M.T.

EXAMINED W.F. B[illegible]
PASSED [illegible]
APPROVED V. E. [illegible]

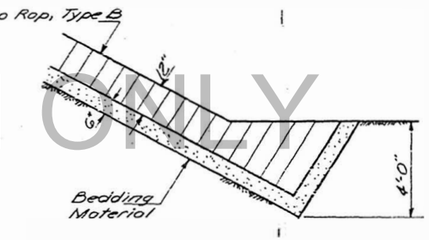
Changed total class X concrete from 328.9 cu. yds. to 330.7 cu. yds. [illegible]

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

					SHEET NO. 10
S.B.I. 132	104BR	MOULTRIE	38	12A	9 SHEETS
FED. ROAD DIST. NO. 7			FED. AID PROJECT-		



SECTION A-A



SECTION B-B

DESIGNED	
CHECKED	
DRAWN	D. Derringer
CHECKED	

19
EXAMINED
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

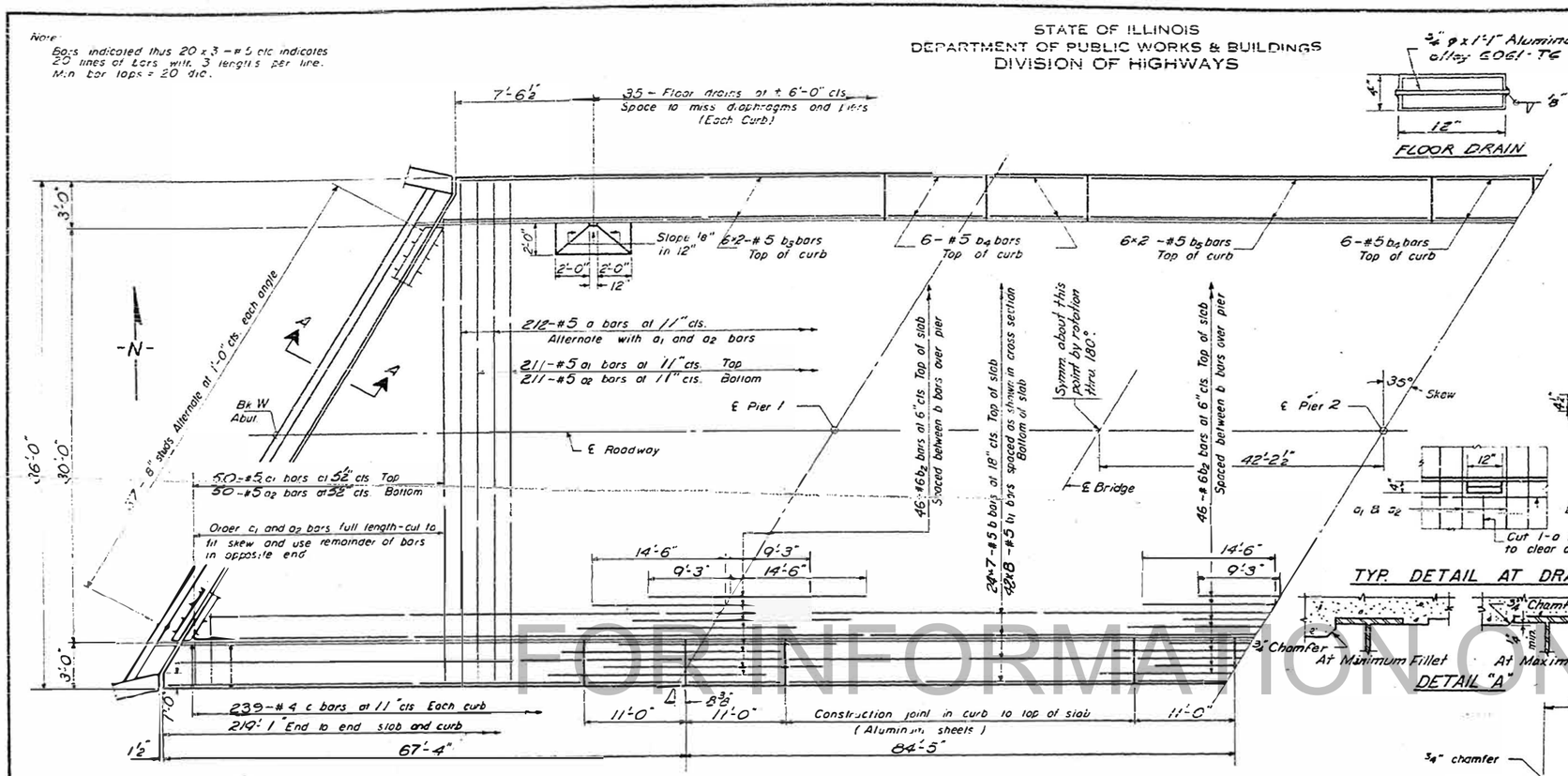
DETAILS
JONATHAN CREEK
S.B.I. RT. 132 SEC. 104 BR
MOULTRIE COUNTY
STA. 138+26.29

Note
Bars indicated thus 20 x 3 - #5 c/c indicates 20 lines of bars with 3 lengths per line. Min bar lap = 20 dia.

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

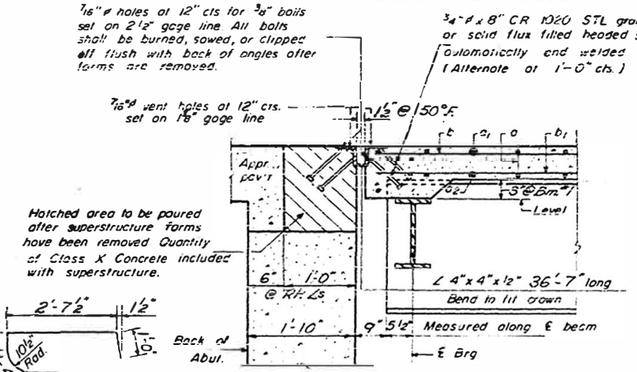
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. - 132	104-BR	MOULTRIE	38	15

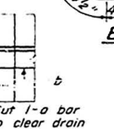
SHEET NO 2
9 SHEETS



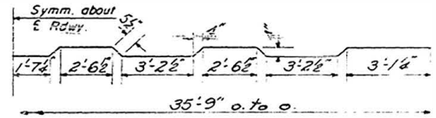
HALF PLAN

FLOOR DRAIN



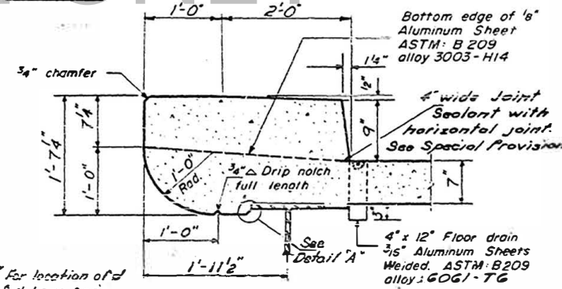


TYP. DETAIL AT DRAIN



BAR a

DETAIL "A"



CURB DETAIL

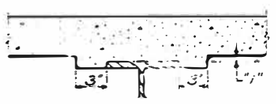
Cost of aluminum sheets and drains shall be incidental to Class X Concrete.

BILL OF MATERIAL

Bar	No	Size	Length	Shape
a	212	#5	37'-0"	
a1	26/	#5	35'-6"	
a2	26/	#5	34'-6"	
b	168	#5	32'-0"	
b1	336	#5	28'-6"	
b2	92	#6	23'-9"	
b3	48	#5	28'-9"	
b4	48	#5	10'-8"	
b5	24	#5	31'-9"	
c	478	#4	5'-9"	
Reinforcement Bars			Lbs	40720
* Structural Steel			Lbs	22,45
Class X Concrete			Cu. Yds	219

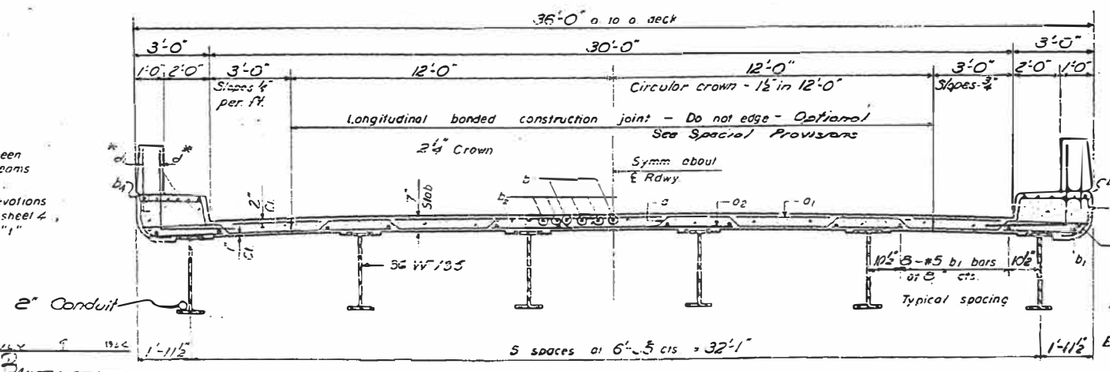
* Weight of bearing assemblies with lead plates and anchor bolts are included as structural steel
Est. Weight = 7,220 Lbs.

See sheet #5 for complete Bill of Material.



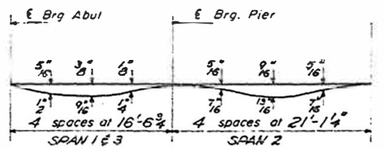
STANDARD FILLET DETAIL

To determine "i": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 4. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet 4, minus slab thickness, equals the fillet heights "i" above top of beams.



NEAR PIERS NEAR MIDSPAN

CROSS SECTION
(LOOKING WEST)



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete 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 on sheet 4.

DESIGNED	Milan Tomasevic	
CHECKED	Fred Stone	Thomas A. Lewis
DRAWN	D.L. Beemer	
CHECKED		

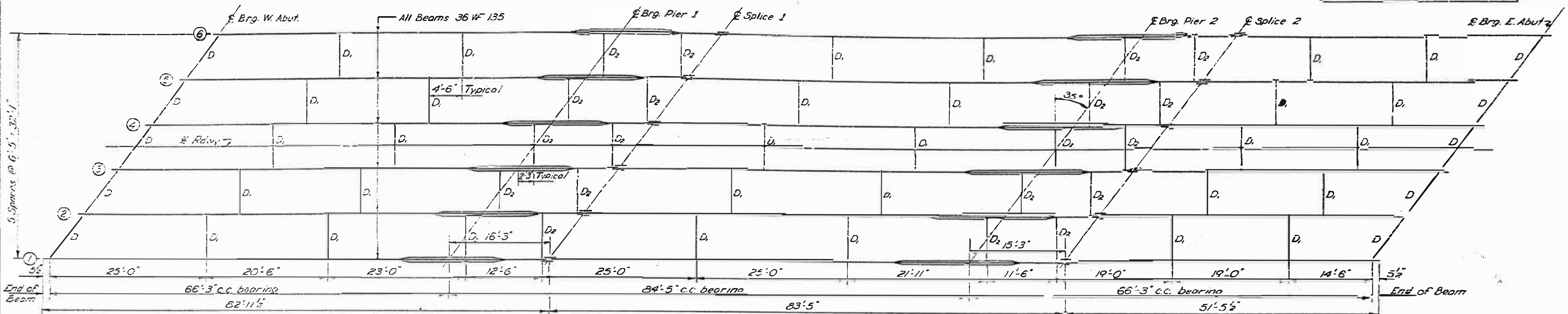
EXAMINED July 9 1962
PASSED
APPROVED

SUPERSTRUCTURE
S.B.I. RT. 132 SEC. 104 BR
MOULTRIE COUNTY
STA. 138+26.29

I-6-L (> 15°) 7-2-62 Rev. 11-9-62

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

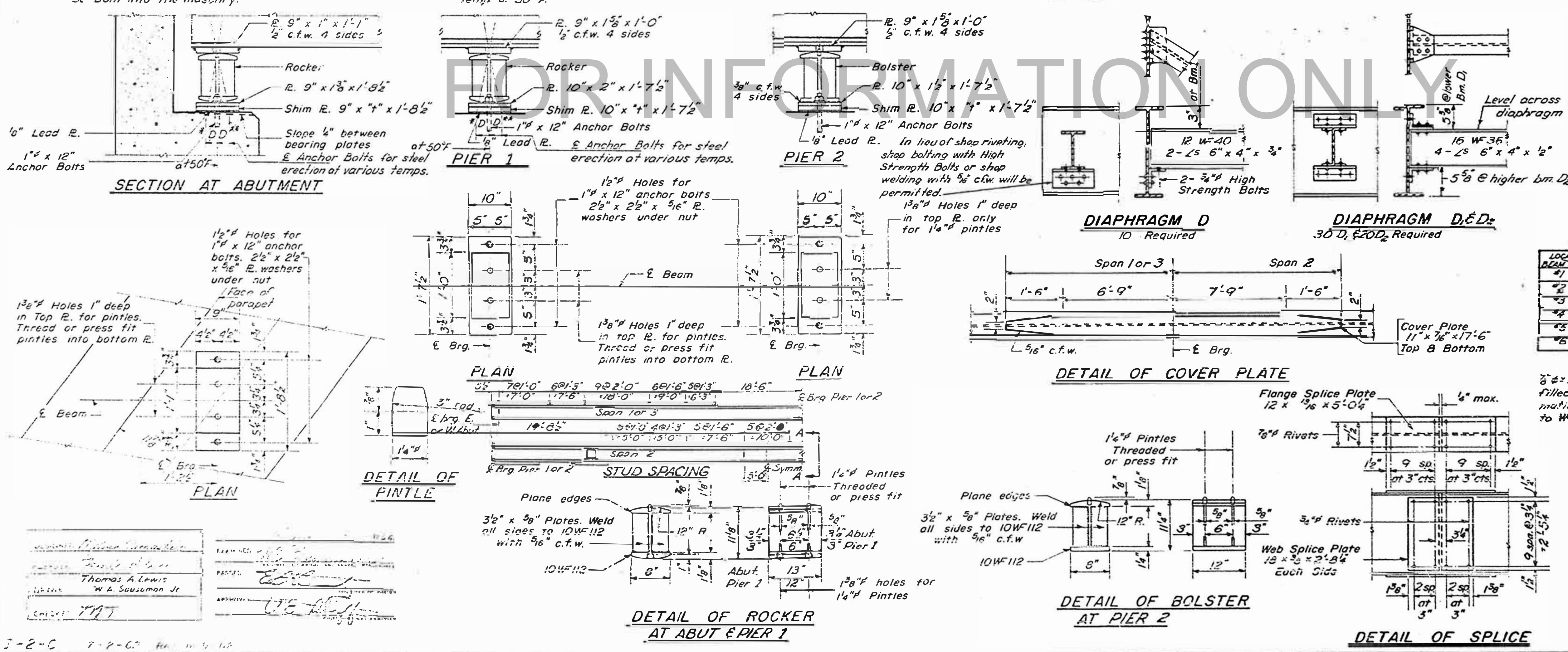
F.A.S. RT. 132 | SECTION 104 BR | COUNTY MOULTRIE | 36 | 14 | SHEET NO. 3



1" ⌀ x 12" Anchor Bolts to be grouted into drilled holes after beams are in place, or bolts at fixed pier may be built into the masonry.

*D = ⅛"/100 ft. of expansion for every 15° below the normal temp. of 50°F. D** = ⅛"/100 ft. of Exp. every 15° above the normal temp. of 50°F.

PLAN



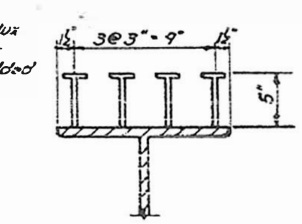
SHIM "t" DIMENSIONS

LOCATION / BEAM	W. Abut.	Pier 1	Pier 2	E. Abut.
#1	0	0	0	0
#2	0	0	0	0
#3	0	0	0	0
#4	⅛	⅛	⅛	⅛
#5	⅜	⅜	⅜	⅜
#6	½	½	½	½

ELEVATION TOP OF WF

LOCATION / BEAM	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Brg. Pier 2	℄ Splice 2	℄ Brg. E. Abut.
#1	630.45	630.54	630.56	630.70	630.73	630.88
#2	630.59	630.68	630.70	630.84	630.87	631.02
#3	630.67	630.76	630.78	630.92	630.95	631.10
#4	630.68	630.77	630.79	630.93	630.96	631.11
#5	630.62	630.71	630.73	630.87	630.90	631.05
#6	630.50	630.59	630.61	630.75	630.78	630.93

⅞"⌀ x 5" Granular flux filled studs. Automatically end welded to WF beam.



Total No. Studs = 2,448
Est. Wt. = 2,400#
Weight of studs are included in quantity of Structural Steel Sheet #2.

STRUCTURAL STEEL
S.B.I. RT. 132 SEC. 104 BR
MOULTRIE COUNTY
STA. 138+26.29

Thomas A. Lewis
W. L. Sousaman Jr.

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

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	104BR	MOULTRIE	38	15

SHEET NO. 4
9 SHEETS

	Beam	Station		Offset From ℄	Theoretical Grade Elev.	Elev. Adjusted By ℄ Defl.
Bk. W. Abut.	1	13708.050		9.625	631.166	631.166
	2	13712.544		3.208	631.246	631.246
	3	13714.790		.000	631.260	631.260
	4	13717.036	-	3.208	631.255	631.255
	5	13721.530	-	9.625	631.193	631.193
℄ Brg. W. Abut.	1	13711.092		9.625	631.172	631.172
	2	13715.585		3.208	631.252	631.252
	3	13717.632		.000	631.266	631.266
	4	13720.078	-	3.208	631.261	631.261
	5	13724.571	-	9.625	631.199	631.199
		13721.092		9.625	631.192	631.208
		13725.585		3.208	631.272	631.289
		13727.632		.000	631.286	631.302
		13730.078	-	3.208	631.281	631.298
		13734.571	-	9.625	631.219	631.235
		13731.092		9.625	631.212	631.240
		13735.585		3.208	631.292	631.321
		13737.832		.000	631.306	631.334
		13740.078	-	3.208	631.301	631.330
		13744.571	-	9.625	631.239	631.267
		13741.092		9.625	631.232	631.262
		13745.585		3.208	631.312	631.343
		13747.832		.000	631.325	631.356
		13750.078	-	3.208	631.321	631.352
		13754.571	-	9.625	631.259	631.289
		13751.092		9.625	631.252	631.275
		13755.565		3.208	631.332	631.358
		13757.832		.000	631.346	631.369
		13760.078	-	3.208	631.341	631.385
		13764.571	-	9.625	631.279	631.302
		13761.092		9.625	631.272	631.284
		13765.585		3.208	631.352	631.365
		13767.832		.000	631.366	631.378
		13770.078	-	3.208	631.361	631.374
		13774.571	-	9.625	631.299	631.311
		13771.092		9.625	631.292	631.297
		13775.585		3.208	631.372	631.377
		13777.832		.000	631.386	631.390
		13780.078	-	3.208	631.381	631.386
		13784.571	-	9.625	631.319	631.323
℄ Pier 1	1	13777.342		9.625	631.304	631.304
	2	13781.835		3.208	631.385	631.385
	3	13784.082		.000	631.398	631.398
	4	13786.328	-	3.208	631.394	631.394
	5	13790.821	-	9.625	631.331	631.331
		13787.342		9.625	631.324	631.336
		13791.835		3.208	631.405	631.416
		13794.082		.000	631.418	631.430
		13796.328	-	3.208	631.414	631.425
		13800.821	-	9.625	631.351	631.353
		13797.342		9.625	631.344	631.357
		13801.835		3.208	631.425	631.446
		13804.082		.000	631.438	631.461
		13806.328	-	3.208	631.434	631.457
		13810.821	-	9.625	631.371	631.394
		13807.342		9.625	631.364	631.397
		13811.835		3.208	631.445	631.477
		13814.082		.000	631.458	631.491
		13816.328	-	3.208	631.454	631.485
		13820.821	-	9.625	631.391	631.424
		13817.342		9.625	631.384	631.425
		13821.835		3.208	631.465	631.507
		13824.082		.000	631.478	631.520
		13826.328	-	3.208	631.474	631.516
		13830.821	-	9.625	631.411	631.453
		13827.342		9.625	631.404	631.441
		13831.835		3.208	631.485	631.522
		13834.082		.000	631.498	631.535
		13836.328	-	3.208	631.494	631.531
		13840.821	-	9.625	631.431	631.468
		13837.342		[illegible]	631.424	[illegible]
		13841.835		3.208	631.505	631.532
		13844.082		.000	631.518	631.546
		13846.328	-	3.208	631.514	631.541
		13850.821	-	9.625	631.451	[illegible]

	Beam	Station		Offset From ℄	Theoretical Grade Elev.	Elev. Adjusted By ℄ Defl.
		13847.342		9.625	631.444	631.461
		13851.835		3.208	631.525	631.541
		13854.082		.000	631.538	631.555
		13856.328	-	3.208	631.534	631.550
		13860.821	-	9.625	631.471	631.488
℄ Pier 2	1	13861.759		9.625	631.473	631.473
	2	13866.252		3.208	631.554	631.554
	3	13868.498		.000	631.567	631.567
	4	13870.745	-	3.208	631.563	631.563
	5	13875.238	-	9.625	631.500	631.500
		13871.759		9.625	631.493	631.501
		13876.252		3.208	631.574	631.581
		13878.498		.000	631.587	631.595
		13880.745	-	3.208	631.583	631.590
		13885.238	-	9.625	631.520	631.528
		13881.759		9.625	631.513	631.530
		13886.252		3.208	631.594	631.610
		13888.498		.000	631.607	631.623
		13890.745	-	3.208	631.603	631.619
		13895.238	-	9.625	631.540	631.557
		13891.759		9.625	631.533	631.561
		13896.252		3.208	631.614	631.641
		13898.498		.000	631.627	631.655
		13900.745	-	3.208	631.623	631.650
		13905.238	-	9.625	631.560	631.588
		13901.759		9.625	631.553	631.583
		13906.252		3.208	631.634	631.663
		13908.498		.000	631.647	631.677
		13910.745	-	3.208	631.643	631.672
		13915.238	-	9.625	631.580	631.610
		13911.759		9.625	631.573	631.60[illegible]
		13916.252		3.208	631.654	631.681
		13918.498		.000	631.667	631.694
		13920.745	-	3.208	631.663	631.690
		13925.238	-	9.625	631.600	631.627
		13921.759		9.625	631.593	631.604
		13926.252		3.208	631.674	631.684
		13928.498		.000	631.687	631.697
		13930.745	-	3.208	631.683	631.693
		13935.238	-	9.625	631.620	631.631
℄ Brg. E. Abut.	1	13928.009		9.625	631.606	631.606
	2	13932.502		3.208	631.686	631.686
	3	13934.748		.000	631.699	631.700
	4	13936.995	-	3.208	631.695	631.695
	5	13941.488	-	9.625	631.633	631.633
Bk. E. Abut.	1	13931.051		9.625	631.612	631.612
	2	13935.544		3.208	631.692	631.692
	3	13937.790		.000	631.706	631.706
	4	13940.037	-	3.208	631.701	631.701
	5	13944.530	-	9.625	631.639	631.639

	Beam	Station		Offset From ℄	Theoretical Grade Elev.	Elev. Adjusted By ℄ Defl.
Bk. W. Abut.	1	13703.557		16.041	631.028	631.028
	6	13726.022	-	16.041	631.073	631.073
℄ Brg. W. Abut.	1	13706.599		16.041	631.034	631.034
	6	13729.064	-	16.041	631.079	631.073
		13716.599		16.041	631.054	631.080
		13739.064	-	16.041	631.099	631.125
		13726.599		16.041	631.074	631.116
		13749.064	-	16.041	631.119	631.163
		13736.599		16.041	631.094	631.142
		13759.064	-	16.041	631.139	631.187
		13746.599		16.041	631.114	631.151
		13769.064	-	16.041	631.159	631.195
		13756.599		16.041	631.134	631.153
		13779.064	-	16.041	631.179	631.198
		13766.599		16.041	631.154	631.181
		13789.064	-	16.041	631.199	631.206
℄ Pier 1	7	13772.849		16.041	631.167	631.167
	6	13795.314	-	16.041	631.211	631.211
		13782.849		16.041	631.187	631.204
		13805.314	-	16.041	631.231	631.249
		13792.849		16.041	631.207	631.242
		13815.314	-	16.041	631.251	631.287
		13802.849		16.041	631.227	631.278
		13825.314	-	16.041	631.271	631.323
		13812.849		16.041	631.247	631.313
		13835.314	-	16.041	631.291	631.350
		13822.849		16.041	631.267	631.324
		13845.314	-	16.041	631.311	631.369
		13832.849		16.041	631.267	631.329
		13855.314	-	16.041	631.331	631.374
		13842.849		16.041	631.307	631.332
		13865.314	-	16.041	631.351	631.377
℄ Pier 2	7	13857.266		16.041	631.335	631.335
	6	13879.731	-	16.041	631.380	631.380
		13867.266		16.041	631.355	631.387
		13889.731	-	16.041	631.400	631.412
		13877.266		16.041	631.375	631.401
		13899.731	-	16.041	631.420	631.446
		13887.266		16.041	631.395	631.439
		13909.731	-	16.041	631.440	631.484
		13897.266		16.041	631.415	631.462
		13919.731	-	16.041	631.460	631.507
		13907.266		16.041	631.435	631.478
		13929.731	-	16.041	631.480	631.523
		13917.266		16.041	631.455	631.472
		13939.731	-	16.041	631.500	631.517
℄ Brg. E. Abut.	1	13923.516		16.041	631.468	631.468
	6	13945.981	-	16.041	631.513	631.513
Bk. E. Abut.	1	13926.558		16.041	631.474	631.474
	6	13949.088	-	16.041	631.519	631.519

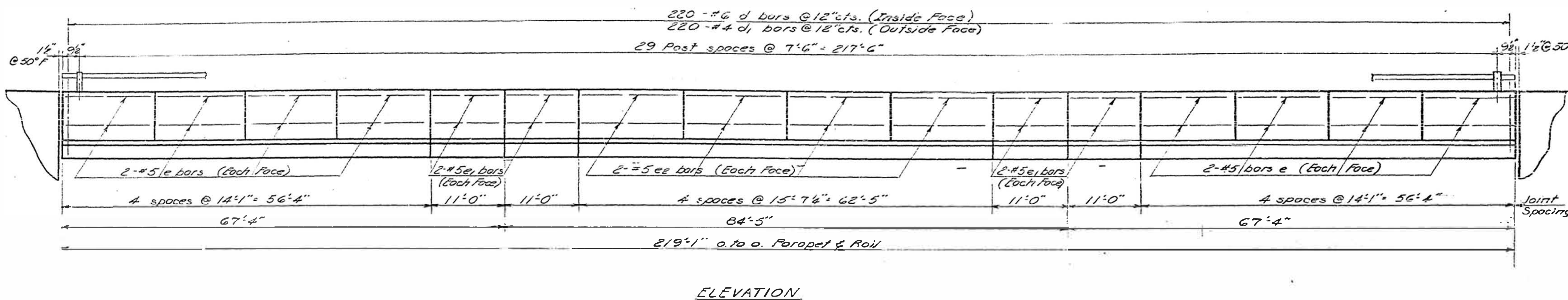
DESIGNED	[illegible]
CHECKED	Fred Stone
DRAWN	Thomas A. Lewis
CHECKED	

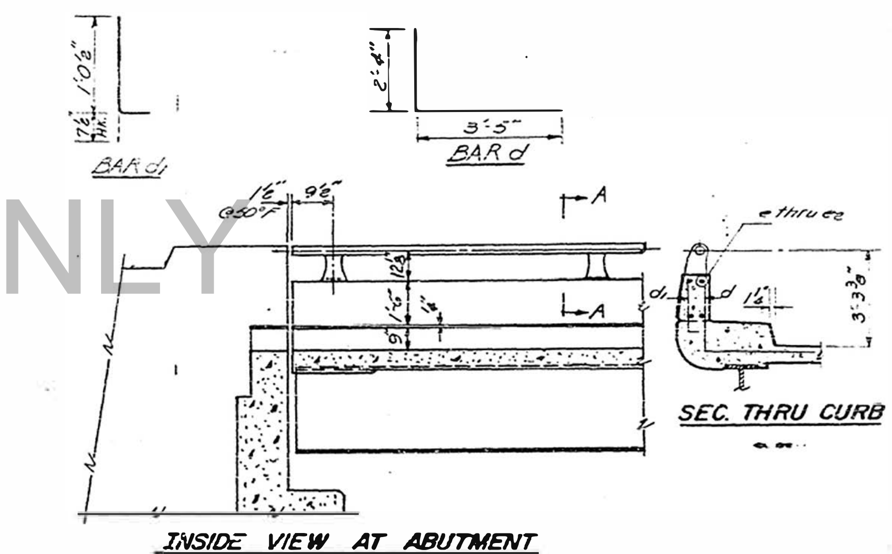
JULY 9 [illegible]
EXAMINED [illegible]
PASSED [illegible]
APPROVED [illegible]

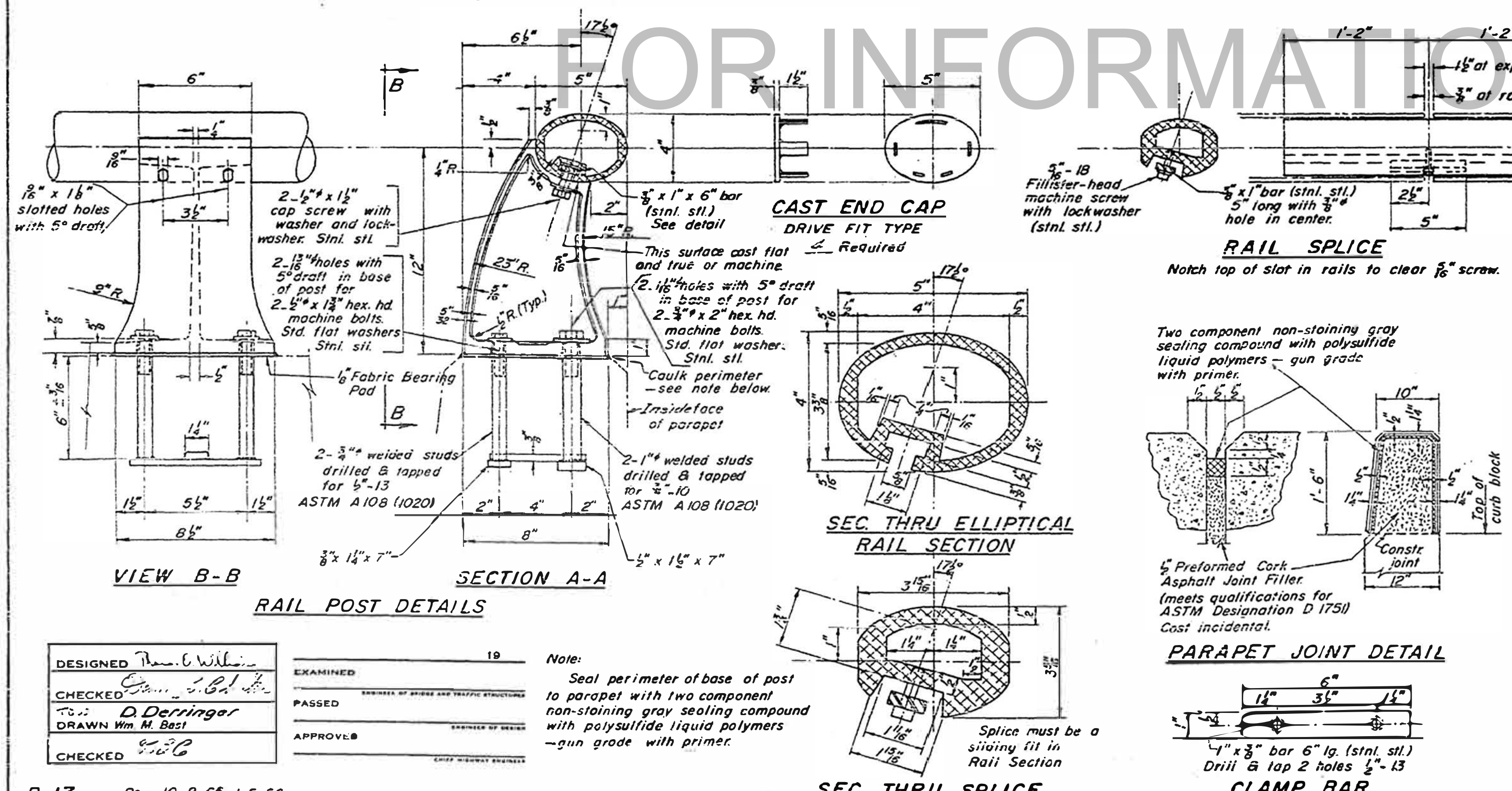
TOP OF SLAB ELEVATION
S.B.I. RT. 152 SEC. 104-SR
MOULTRIE COUNTY
STA [illegible]

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

S.B.I. 132	104BR	MOULTRIE	38	16	Sheet No. 5 — 9 Sheets







FOR INFORMATION ONLY

NOTES:

All Posts shall be normal to parapet.

All Aluminum Alloy Extruded Rail shall conform to ASTM specification B-221 alloy 6061-T6 and shall extend a minimum of 2 panel lengths (attached to a minimum of 3 posts) except at ends or at open joints where a minimum of 1 panel length is required. All joints in railing must be spliced per detail.

See Special Provisions for following Material Specifications:

Cast Aluminum Alloy Bridge Post— Alloy A344-T4.
Stainless Steel Bars, Cap Screws, Washers and Lockwashers.
Fabric Bearing Pad

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

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

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

Provide 1-1/8" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade — high spots shall be ground, and low spots shimmed.

PARAPETS & RAILS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
e	64	#5	13'-9"	——
e1	32	#5	10'-9"	——
e2	32	#5	15'-3"	——
d	440	#6	5'-9"	L
d1	440	#4	2'-6"	L
Class X Concrete			Cu. Yds.	22.3
Reinforcement Bars			Lbs	6320
Aluminum Handrail			Lin. Ft.	438

DESIGNED
CHECKED
Tr. D. Derringer
DRAWN Wm M. Best
CHECKED

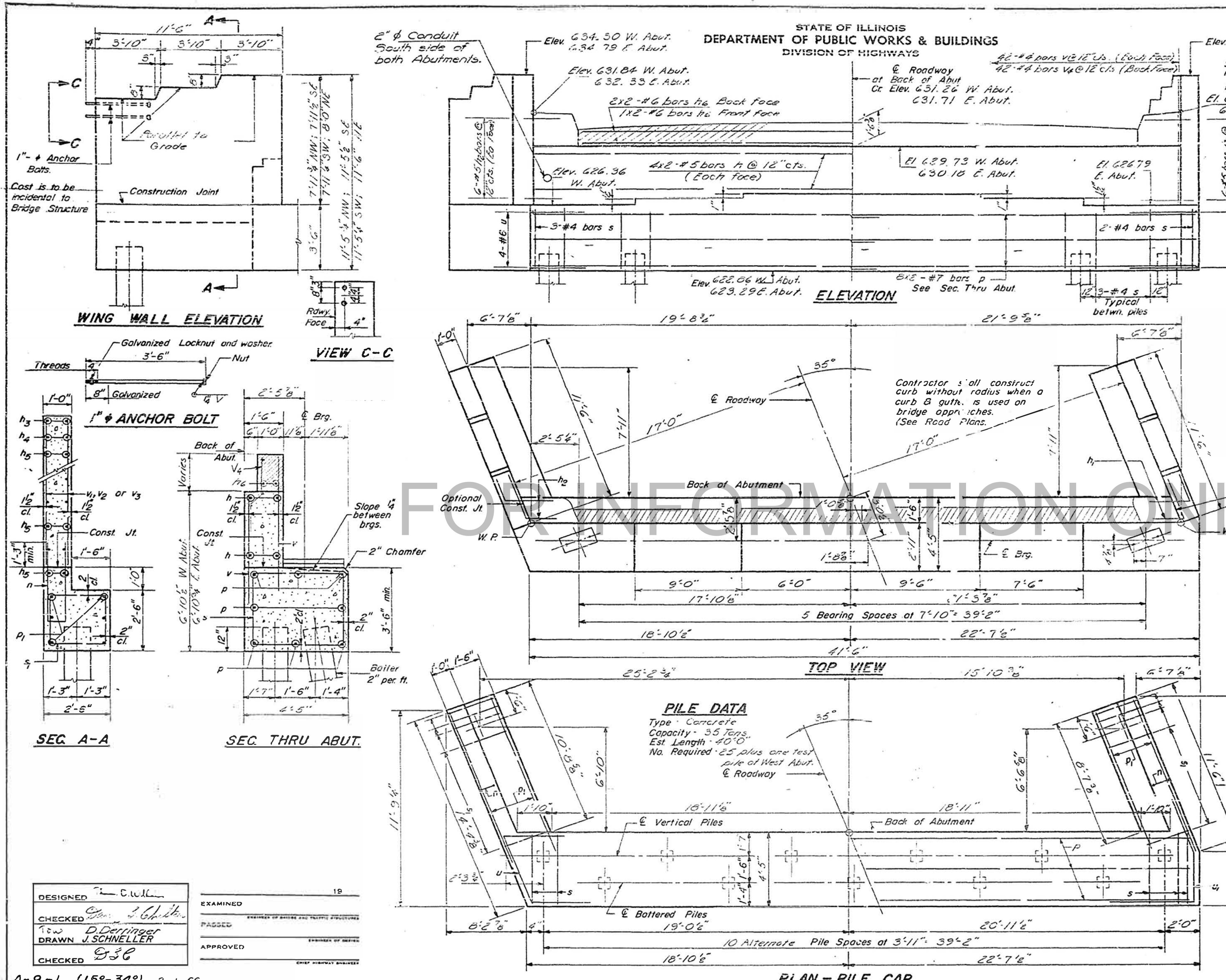
EXAMINED
PASSED
APPROVED

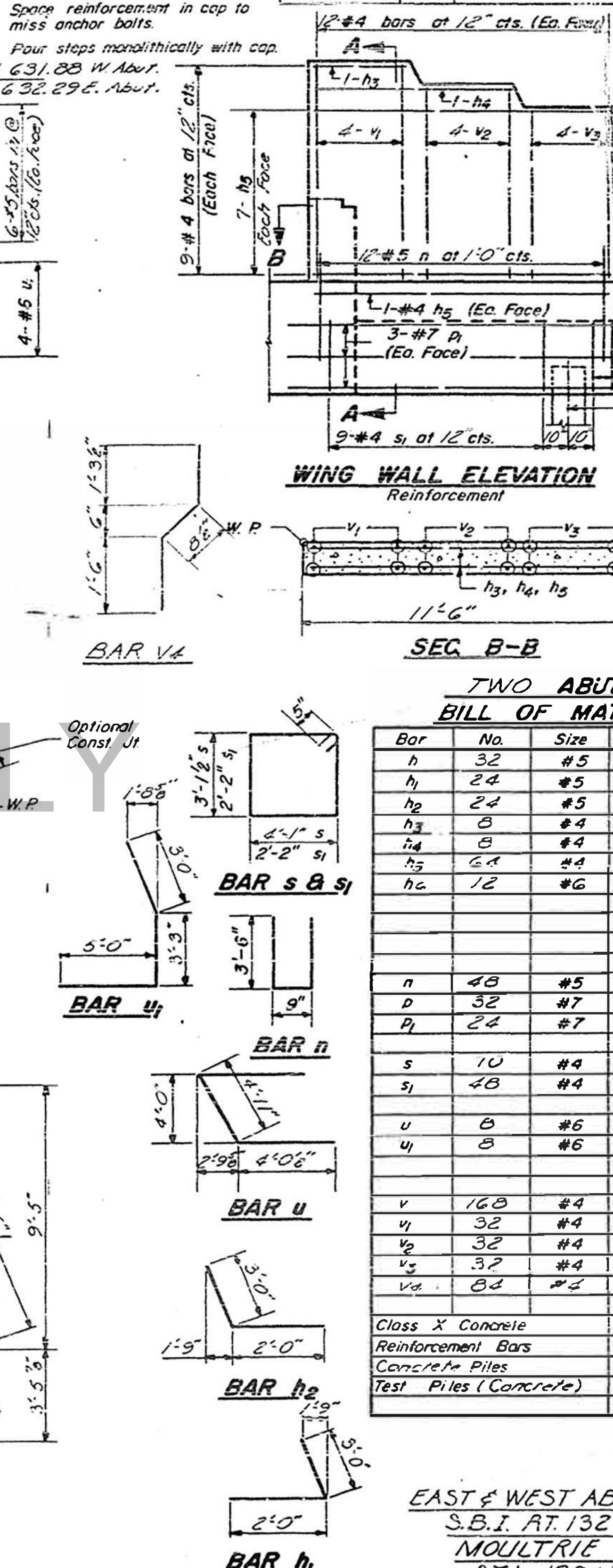
R-17 Rev 10-8-65 1-5-66

HANDRAIL DETAILS
S.B.I. RT. 132 SEC. 104 BR.
MOULTRIE COUNTY
STA. 138+26.29

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

132	104 BR	MOULTRIE	38	17	9 SHEETS





TWO ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	32	#5	21'-6"	
h_1	24	#5	5'-0"	
h_2	24	#5	5'-0"	
h_3	8	#4	3'-6"	
h_4	8	#4	7'-3"	
h_5	64	#4	11'-3"	
h_6	12	#6	19'-0"	
n	48	#5	7'-9"	
p	32	#7	22'-6"	
p_1	24	#7	11'-3"	
s	10	#4	15'-3"	
s_1	48	#4	9'-6"	
u	8	#6	13'-0"	
u_1	8	#6	11'-3"	
v	168	#4	6'-0"	
v_1	32	#4	7'-9"	
v_2	32	#4	7'-0"	
v_3	32	#4	6'-3"	
v_4	84	#4	3'-6"	
Class X Concrete			Cu. Yds.	83.6
Reinforcement Bars			Lbs.	6890
Concrete Piles			Lin. Ft.	1000
Test Piles (Concrete)			Ea.	1

EAST & WEST ABUTMENTS
S.B.I. RT. 132 SEC. 104 BR
MOULTRIE COUNTY
STA. 138+26.29

DESIGNED
CHECKED
Tew D. Derringer
DRAWN J. SCHNELLER
CHECKED

19
EXAMINED
PASSED
APPROVED

A-9-L (15°-34°) 2-1-66

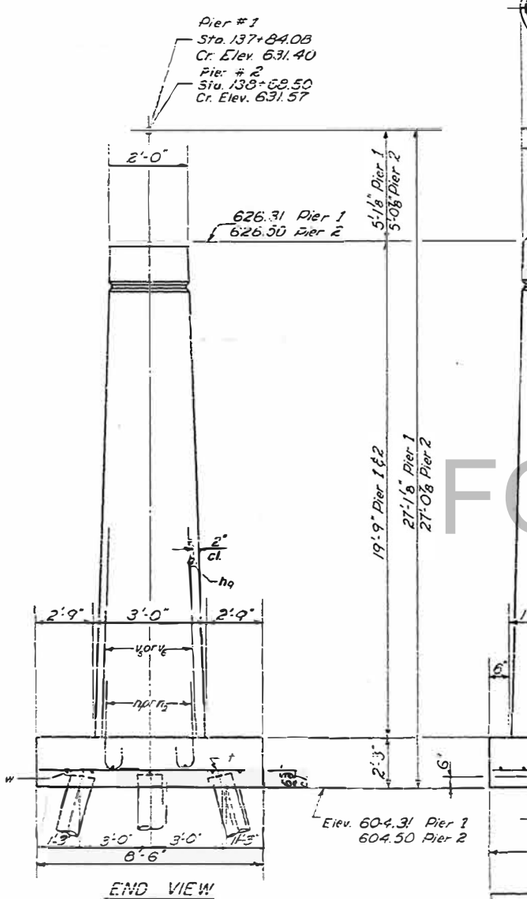
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

					SHEET NO. 7
F.A.P. 132	104BR	MOULTRIE	38	18	9 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.			

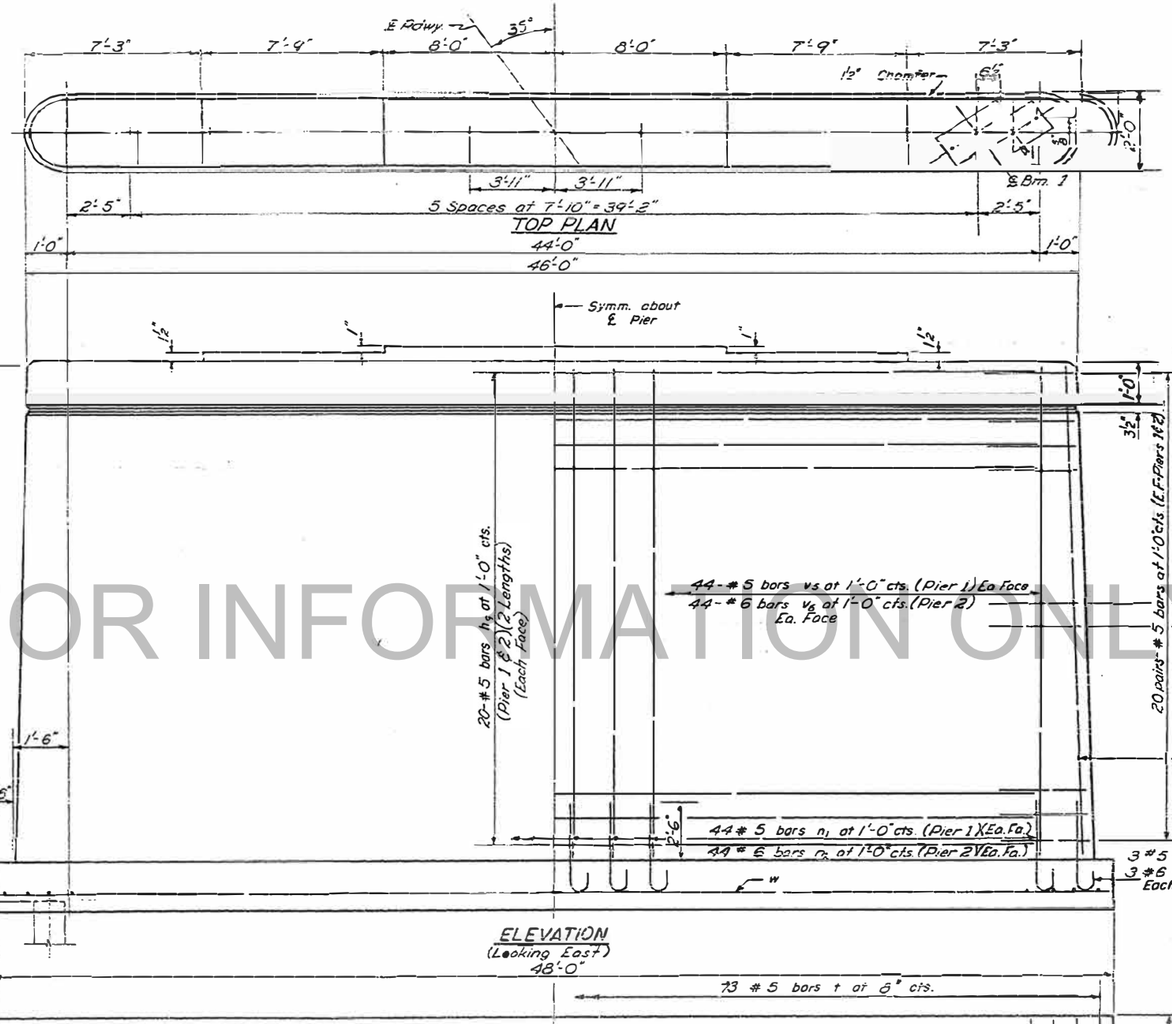
PILE DATA

Type - Untreated Pile
Capacity - 21 Tons
Est. Length - 21'-0" Pier 1, 21'-0 Pier 2
No. Req'd. - 59 + One Test Pile at Pier 1

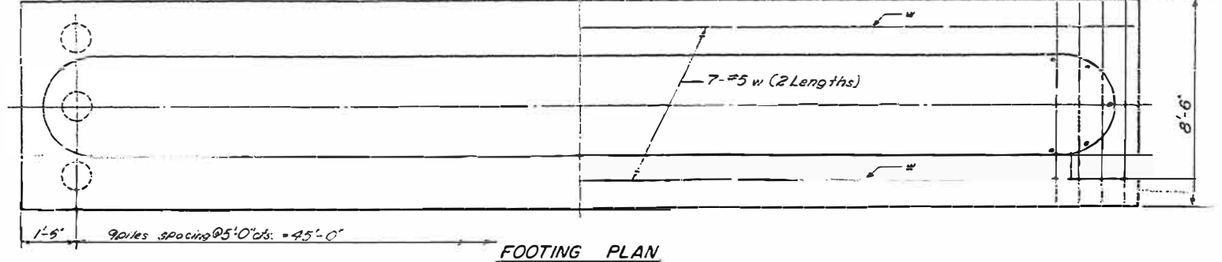
Pier # 1
Sta. 137+84.08
Cr. Elev. 631.40
Pier # 2
Sta. 138+68.50
Cr. Elev. 631.57



END VIEW

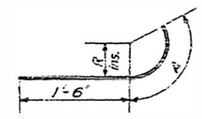


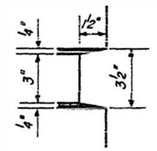
ELEVATION
(Looking East)
48'-0"



FOOTING PLAN

Note: Pour steps monolithically with cap.

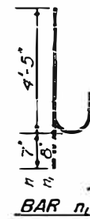




NOTCH DETAIL

Bar	R	A
h_{10}	1'-3½"	2'-9"
h_{11}	9½"	2'-0"

DETAIL OF BARS



BAR n_1 & n_2

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_9	160	#5	22'-9"	
h_{10}	80	#5	4'-3"	
h_{11}	80	#5	3'-6"	
n_1	94	#5	5'-0"	
n_2	94	#6	5'-1"	
t	146	#5	8'-2"	
v_3	94	#5	19'-6"	
v_6	94	#6	19'-6"	
w	28	#5	24'-6"	
Class "A" Concrete		Cu. Yds.	244.5	
Reinforcement Bars		Lbs.	12,260	
Untreated Pile		Lin. Ft.	1,239	
Test Pile (Timber)		Each	1	
Metal Shoes		Each	59	

DESIGNED	Melvin Parmenter
CHECKED	Fred Stone
DRAWN	Thomas A Lewis W. A. Sousoman
CHECKED	M.P.

JULY 9 1964

EXAMINED	H.G. Blaumann
PASSED	
APPROVED	

P-1 Re-drawn 7-21-59 Rev. 11-25-59

PIERS 1 & 2
S.B.I. RT. 132 SEC. 104 BR.
MOULTRIE COUNTY
STA. 138+26.29

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

132	104 BR	MOULTRIE	8	19

SHEET NO 8
9 SHEETS

Boring No. 1 — Station 138+46.5 — Offset 3?' Rt.

Ground Surface 616.9

Description	Elevation	N	Qu t/s.f.	w (%)
Medium dark brown to black SANDY CLAY LOAM & CLAY LOAM Allu. (Stratified)	0			
	-5	6	0.6	29
Soft highly organic CLAY LOAM Alluvium	610.9	4	0.3	27
	-10	2	0.1	3?
Medium grey stratified fine & coarse SAND with Some Fine Gravel	603.15	4	0.2	29
	-15	4	—	—
	-20	17	—	—
Bridge located near the NE corner of the SE¼ of Sec.5, T13N,R5E of the 3rd P.M.		14	—	—
	-25	19	—	—
		21	—	—
Medium grey stratified fine & coarse SAND with some fine gravel	-30	20	—	—
	-35	30	—	—
	-40	17	—	—
		29	—	—
	-45	25		

Boring No. 1 cont'd

Description	Elevation	N	Qu t/s.f.	w (%)
Medium grey stratified fine & coarse SAND with some fine gravel	-50	21	—	—
	-55 / 561.4	19	—	—
Limit of boring.				

Boring No. 2 — Station 137+90.5 — Offset 26.5' Rt.

Ground Surface 615.9

Description	Elevation	N	Qu t/s.f.	w (%)
Soft dark brown to black SILTY CLAY LOAM Alluvium	0			
Very soft black highly organic SANDY CLAY LOAM Alluvium	611.5 / -5	2	0.1	30
		3	—	—
Stiff to very stiff Brown CLAY LOAM Till	605.9 / -10	8	1.2	16
		12	3.1	12
Medium grey fine sand with some medium grey gravel	601.9 / -15	8	—	—
		11	—	—
	-20	12	—	—
	-25	18	—	—
	-30	26	—	—
Medium gray fine SAND with some medium gray gravel	-35	20	—	—
	-40	26		
	-45	29		

Boring No. 2 cont'd

Description	Elevation	N	Qu t/s.f.	w (%)
	-45	29	—	—
Medium Gray Fine SAND with some medium gray gravel	-50	16	—	—
	-55	23	—	—
	-60			
	-65			
Medium grey very fine grained SAND LOAM with some silt loam	547.9 / -70	6	0.6	20
Limit of boring				

N – Standard Penetration Test – Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"

Qu – Unconfined Compressive Strength – t/sf

w – Water Content – percentage of oven dry weight – %

Type failure:
B – Bulge Failure
S – Shear Failure
E – Estimated Value

DESIGNED [illegible signature]
CHECKED Fred Stone
DRAWN Paul G. Barnett
CHECKED

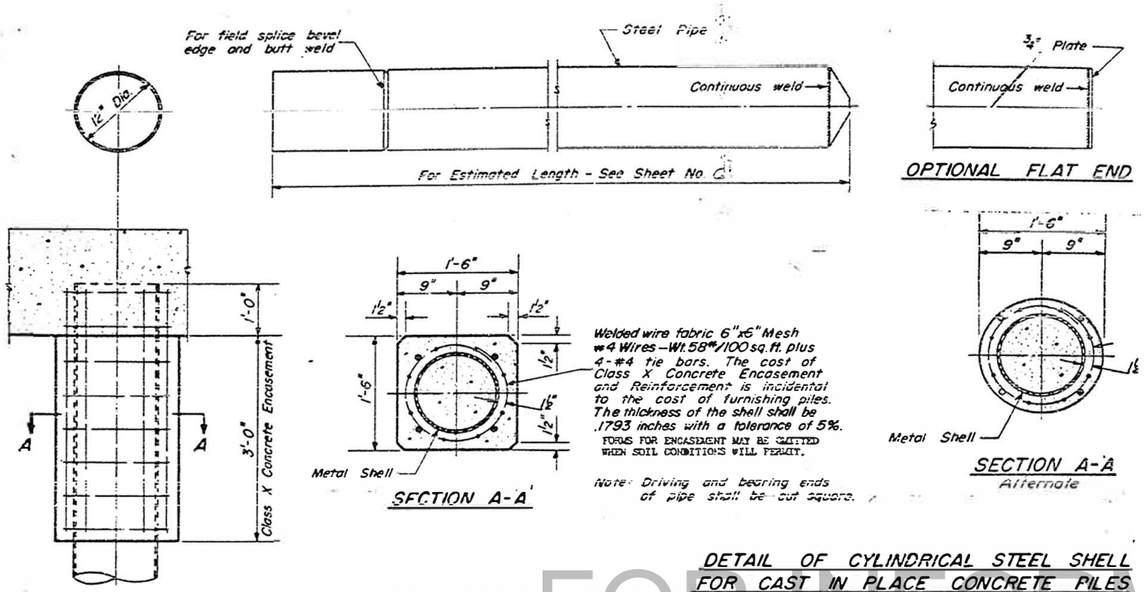
JULY 9 1964
EXAMINED W. E. Baum[illegible]
PASSED [illegible signature]
APPROVED V. E. [illegible]

BORING DATA
SBI 132 SEC. 104-BR
MOULTRIE COUNTY
STA. 138 + 26.29

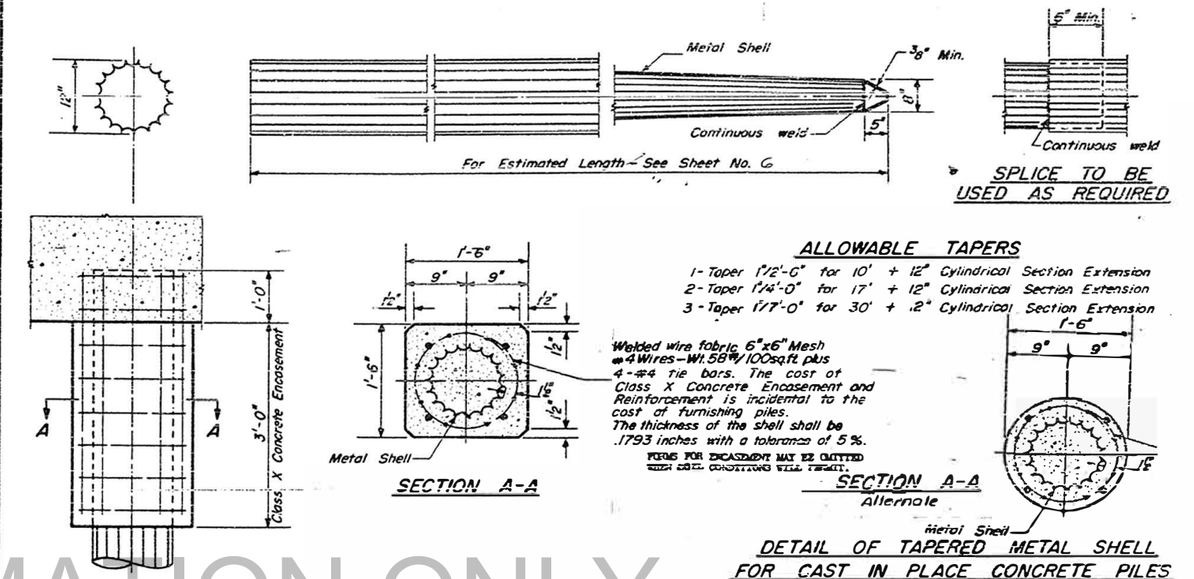
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 132	104BR	MOULTRIE	38	20
SPEC. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

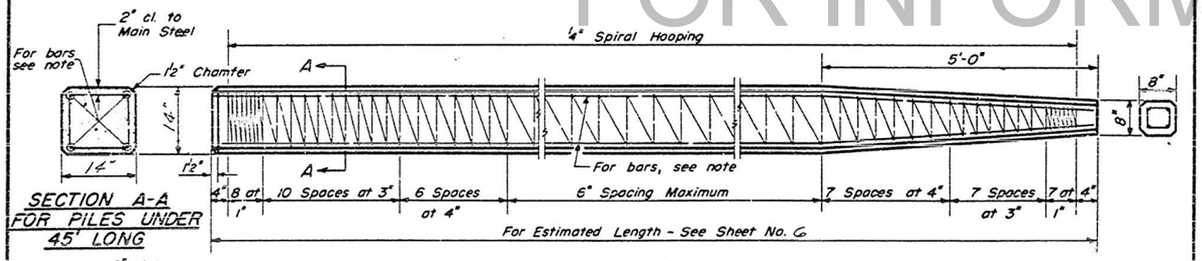
SHEET NO. 9
9 SHEETS



DETAIL OF CYLINDRICAL STEEL SHELL
FOR CAST IN PLACE CONCRETE PILES



DETAIL OF TAPERED METAL SHELL
FOR CAST IN PLACE CONCRETE PILES



Note: For 14" Piles 45' long or more use 8-#8 bars 4 for the full length and 4 to the point of bevel. For 14" Piles under 45' long use 4-#9 bars the full length.

Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 45', use three slings placed at a distance of 0.12 L* from each end and at mid-point of pile.

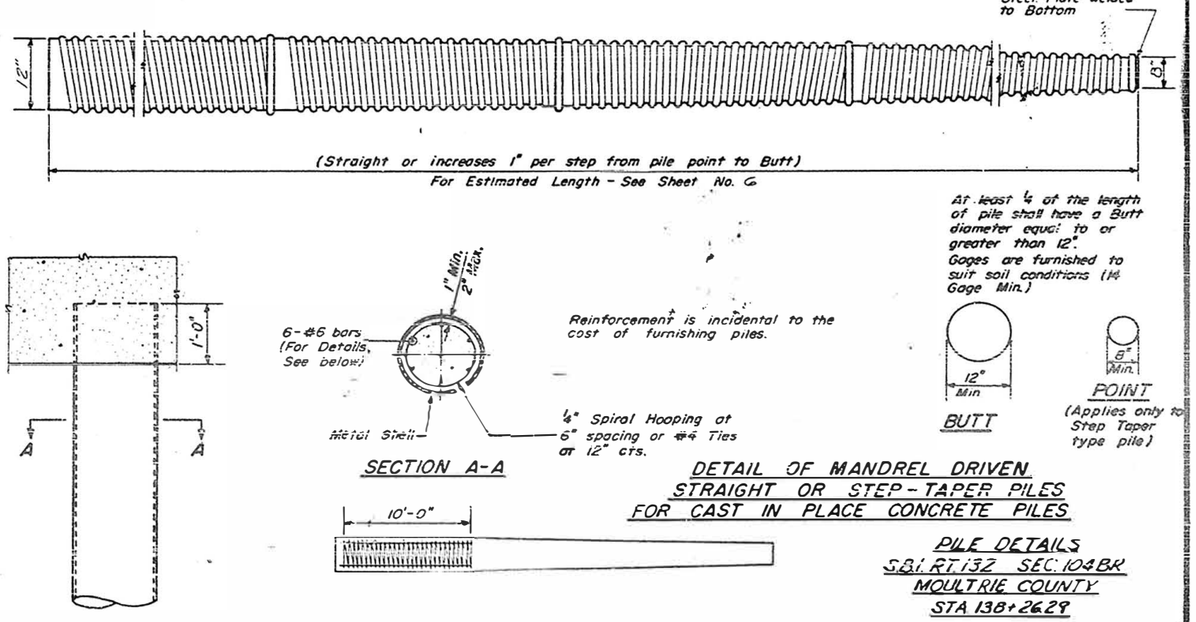
*L = Over all length of pile to be handled.

DESIGNED	
CHECKED	
DRAWN	P.G. Barnett, W.A. Sausaman, E. Derringer
CHECKED	

19
EXAMINED
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED
APPROVED
CHIEF HIGHWAY ENGINEER

X-1 Rev. 5-12-61 9-27-62 4-20-64 7-26-65

DETAIL OF PRECAST CONCRETE PILES

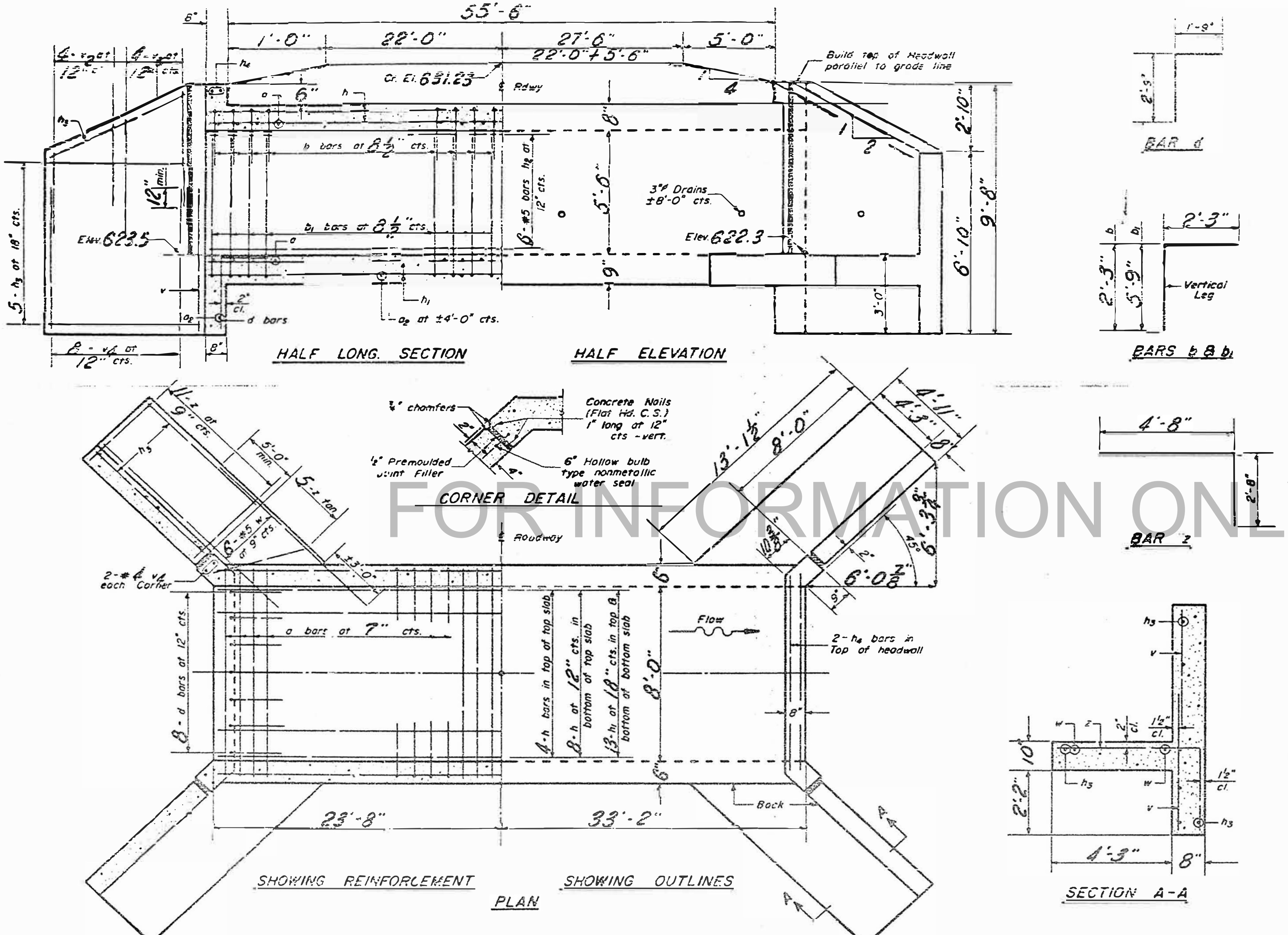


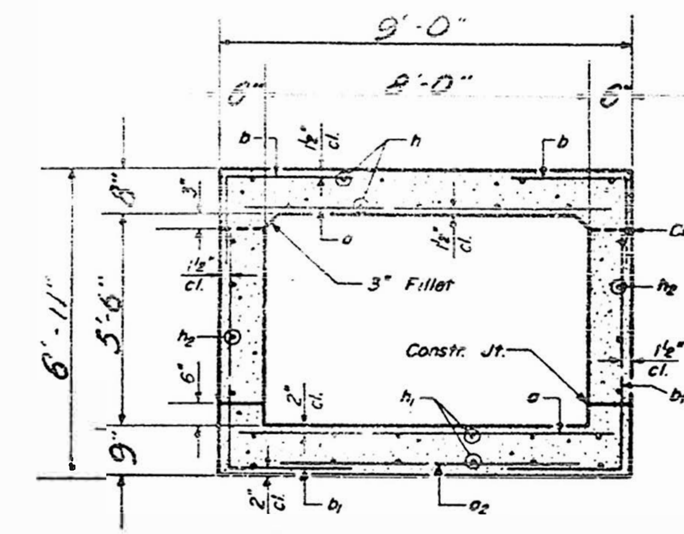
DETAIL OF MANDREL DRIVEN
STRAIGHT OR STEP-TAPER PILES
FOR CAST IN PLACE CONCRETE PILES

PILE DETAILS
SBI RT 132 SEC. 104BR
MOULTRIE COUNTY
STA 138+2629

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

[illegible]	[illegible]	MOULTRIE	38	21





BILL OF MATERIAL

Bar	No.	Size	Length
a	196	#7	8'-8"
a_2	17	#4	5'-3"
b	162	#5	4'-0"
b_1	162	#5	8'-0"
d	16	#4	4'-6"
h	24	#5	28'-9"
h_1	26	#5	28'-9"
h_2	24	#5	28'-9"
h_3	32	#4	7'-9"
h_4	4	#6	8'-9"
v_2	16	#4	3'-6"
v_3	16	#4	5'-0"
v_4	20	#4	5'-3"
w	28	#5	12'-3"
z	64	#4	7'-4
Class X Concrete		Cu. Yds.	52.7
Reinforcement Bars		Lbs.	8,985

GENERAL NOTES

Class X Concrete shall be used throughout.
Exposed edges shall be beveled ¾".
For backfilling and embankment see St'd. Spec's.
All bars shall be lapped 20 diameters unless otherwise specified.
The top of the culvert, the backs of the sidewalls above the lower construction joint and backs of the wings above the tops of the footings shall be waterproofed in accordance with Art. 51.21 of the St'd. Spec's.
Nonmetallic water seal used in the wingwall joints shall extend from the top of the footing to within 6" of the top of the headwall.

fs = 20,000 psi.
fc = 1400 psi. barrel
fc = 1000 psi. wings
v = 90 psi. barrel
v = 75 psi. footing
n = 10

LOADING HS 20-44

SPECIAL CULVERT DESIGN
8' x 5.5' R.C. BOX CULVERT
A.R. STA. 106+48.2

DESIGNED J. N. FISER
CHECKED F. M. SEEBER
DRAWN M. R. KELLY
CHECKED FISER

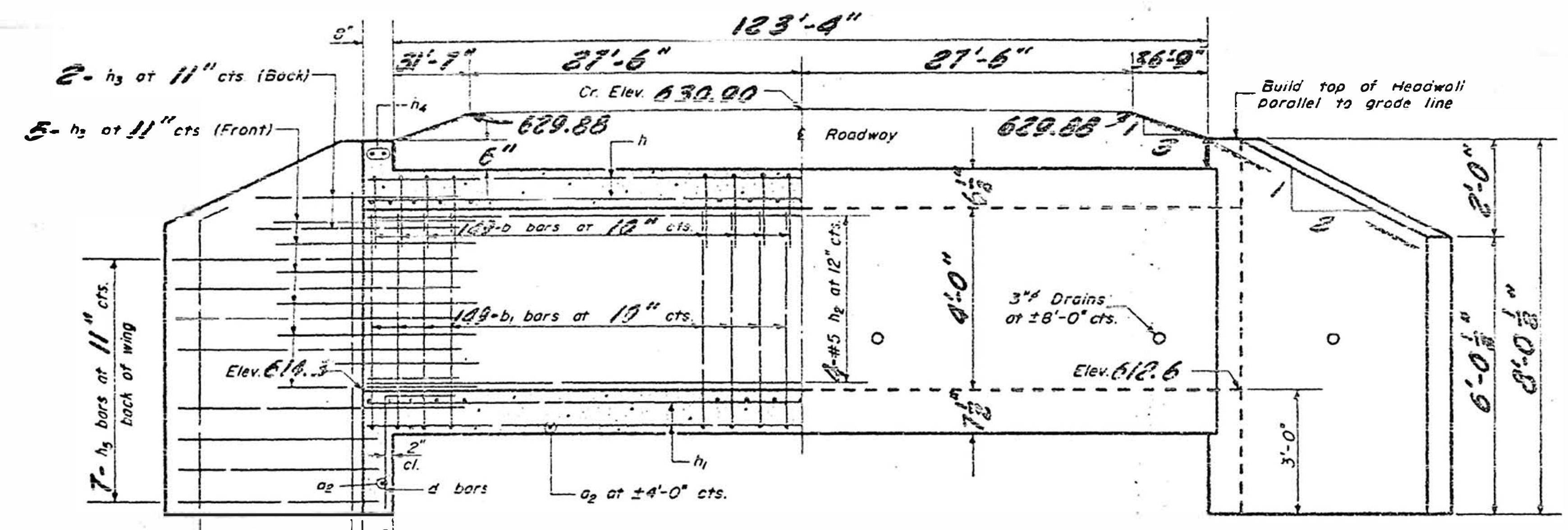
EXAMINED
PASSED
APPROVED

FOR INFORMATION ONLY

STANDARD 2033R

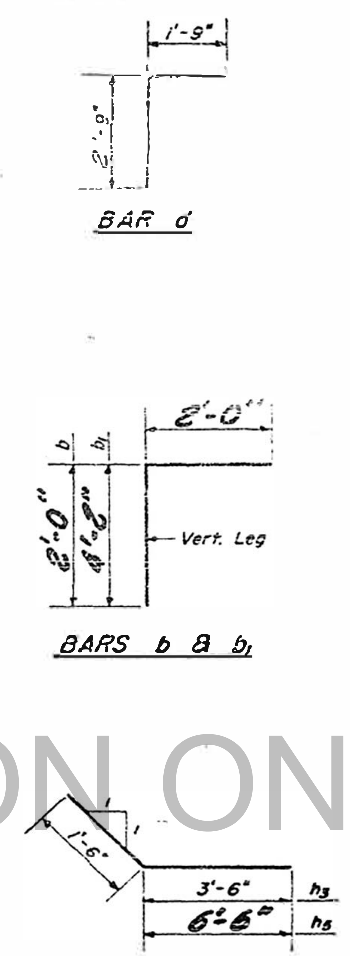
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

		COUNTY	TOTAL SHEETS	SHEET NO.
135	104 BR	MOULTRIE	38	22



HALF LONG SECTION

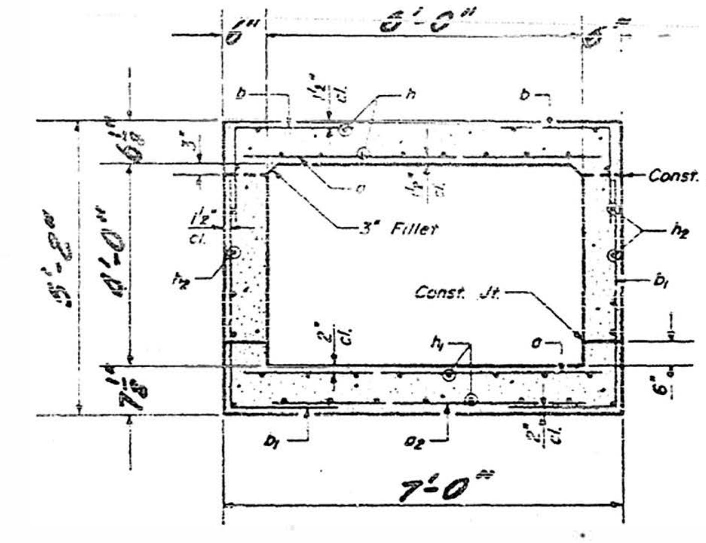
HALF ELEVATION



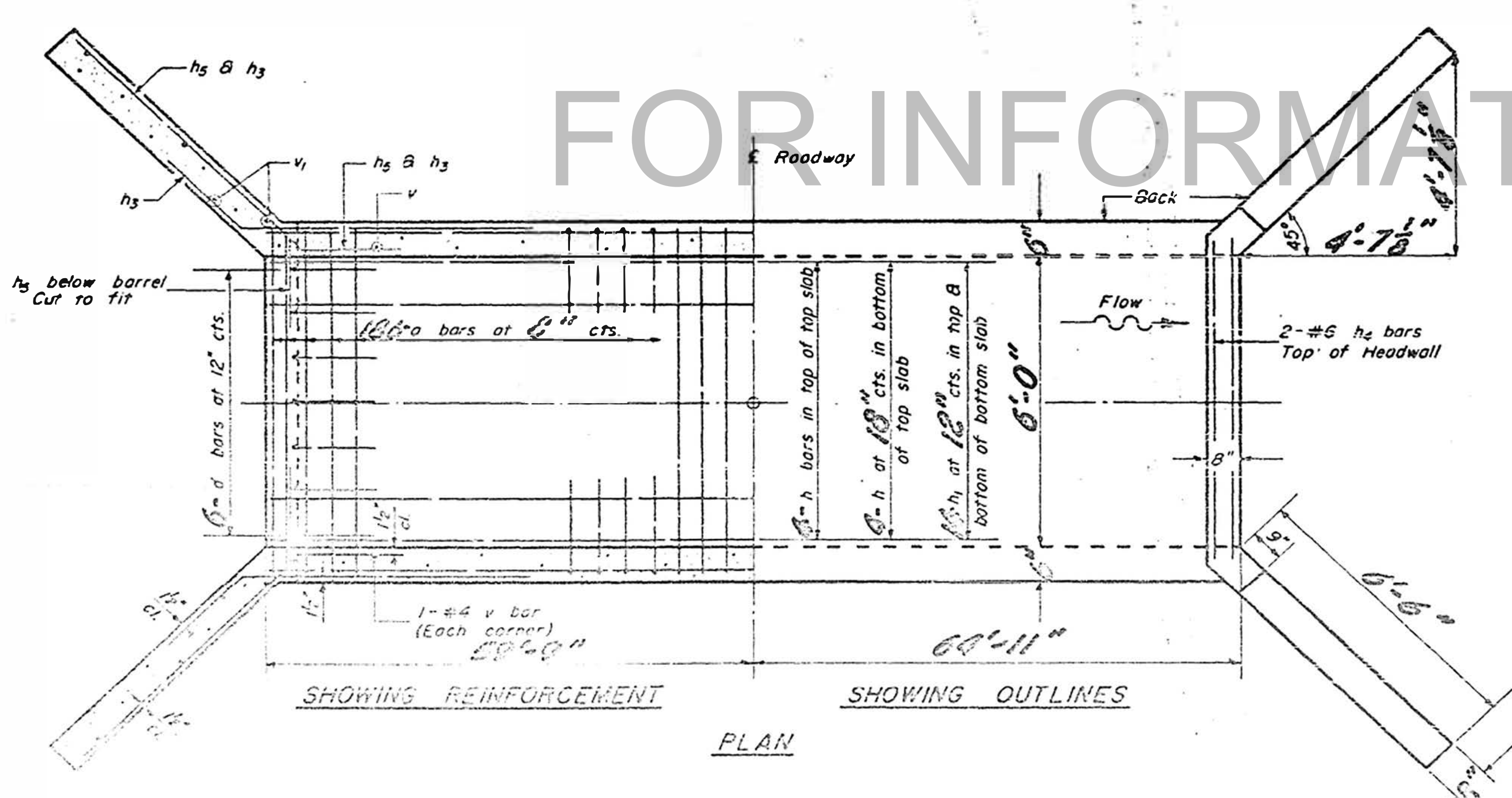
BAR d

BARS b & b1

BARS h3 & h5



SECTION THRU BARREL



SHOWING REINFORCEMENT

SHOWING OUTLINES

PLAN

BILL OF MATERIAL

Bar	No.	Size	Length
a	372	#6	6'-8"
a2	34	#4	3'-9"
b	298	#5	4'-0"
b1	298	#5	6'-2"
d	12	#4	4'-6"
h	32	#5	32'-3"
h1	56	#5	32'-3"
h2	32	#5	32'-3"
h3	28	#6	5'-0"
h4	4	#6	6'-6"
h5	28	#6	8'-0"
v	4	#4	5'-0"
v1	16	#4	7'-5"
Class X Concrete		Cu. Yds.	62.0
Reinforcement Bars		Lbs.	11,725

SPECIAL CULVERT DESIGN
6'x4' R.C. BOX CULVERT
A.R. STA. 119+12.8

GENERAL NOTES

Class X Concrete shall be used throughout.
At least six feet of barrel shall be poured monolithically with wingwalls.
Exposed edges shall be beveled ¾".
For backfilling & embankments see St'd. Spec's.
Tilt hook of "a1" bars, if necessary, to obtain 1½" minimum clearance at top of hook.
The top of the culvert, the backs of the sidewalls above the lower construction joint and the backs of the wings shall be waterproofed in accordance with Art. 51.21 of the St'd. Spec's.
All bars shall be lapped 20 diameters unless otherwise specified.

fs = 20,000 psi.
fc = 1400 psi. Barrel
fc = 1200 psi. Wings
v = 90 psi.
n = 10

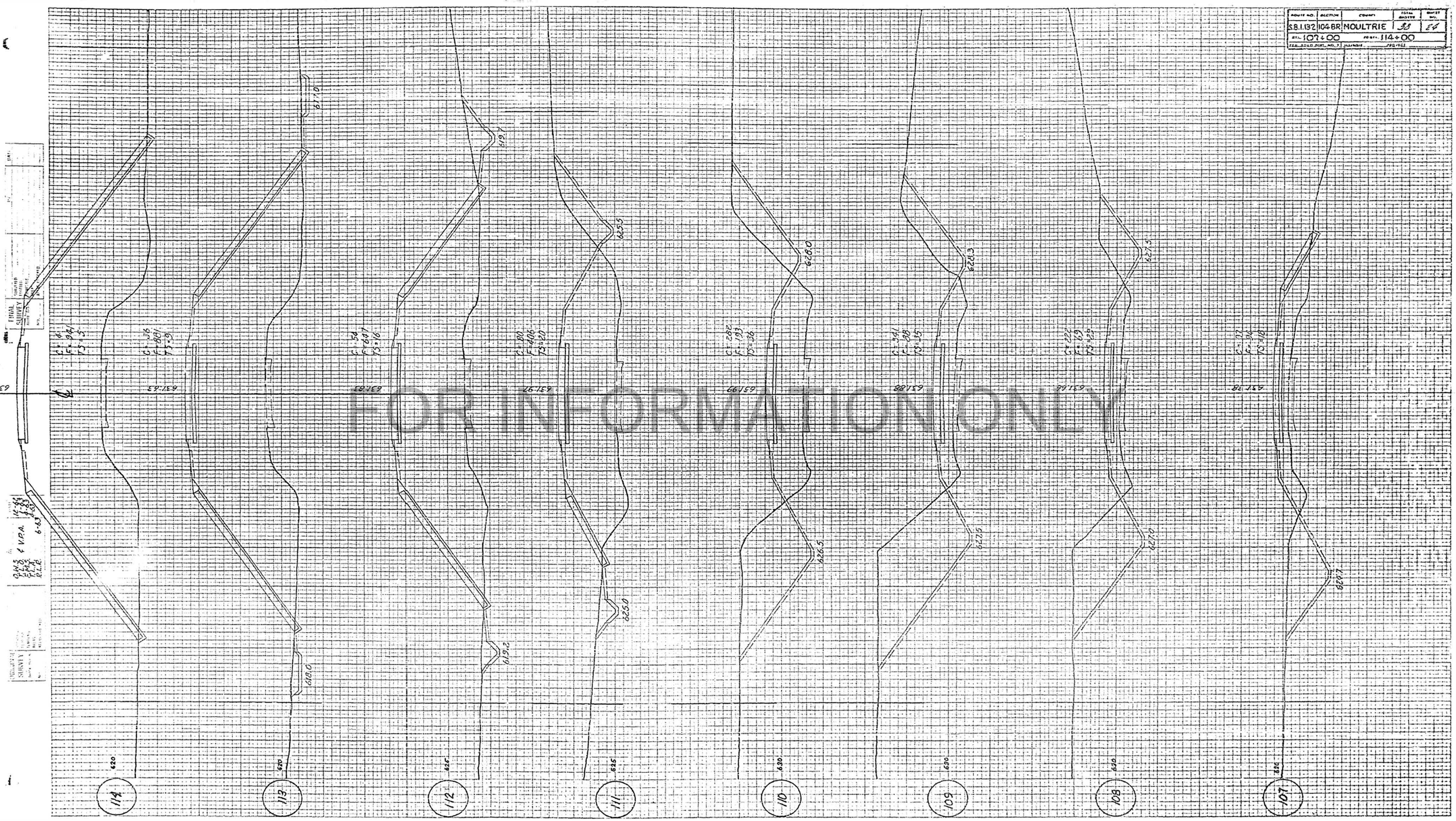
LOADING HS 20-44

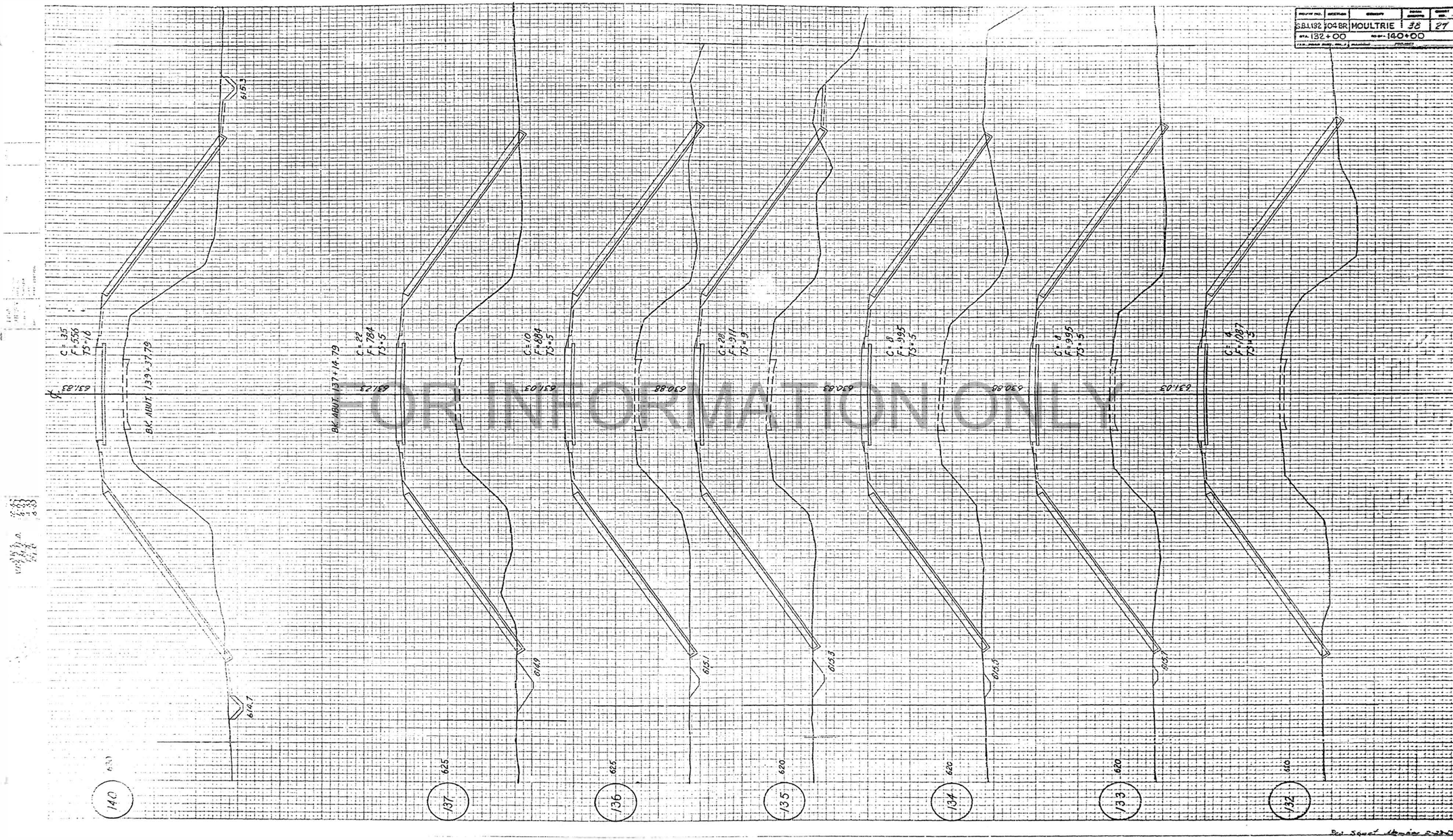
DESIGNED
CHECKED
DRAWN
CHECKED

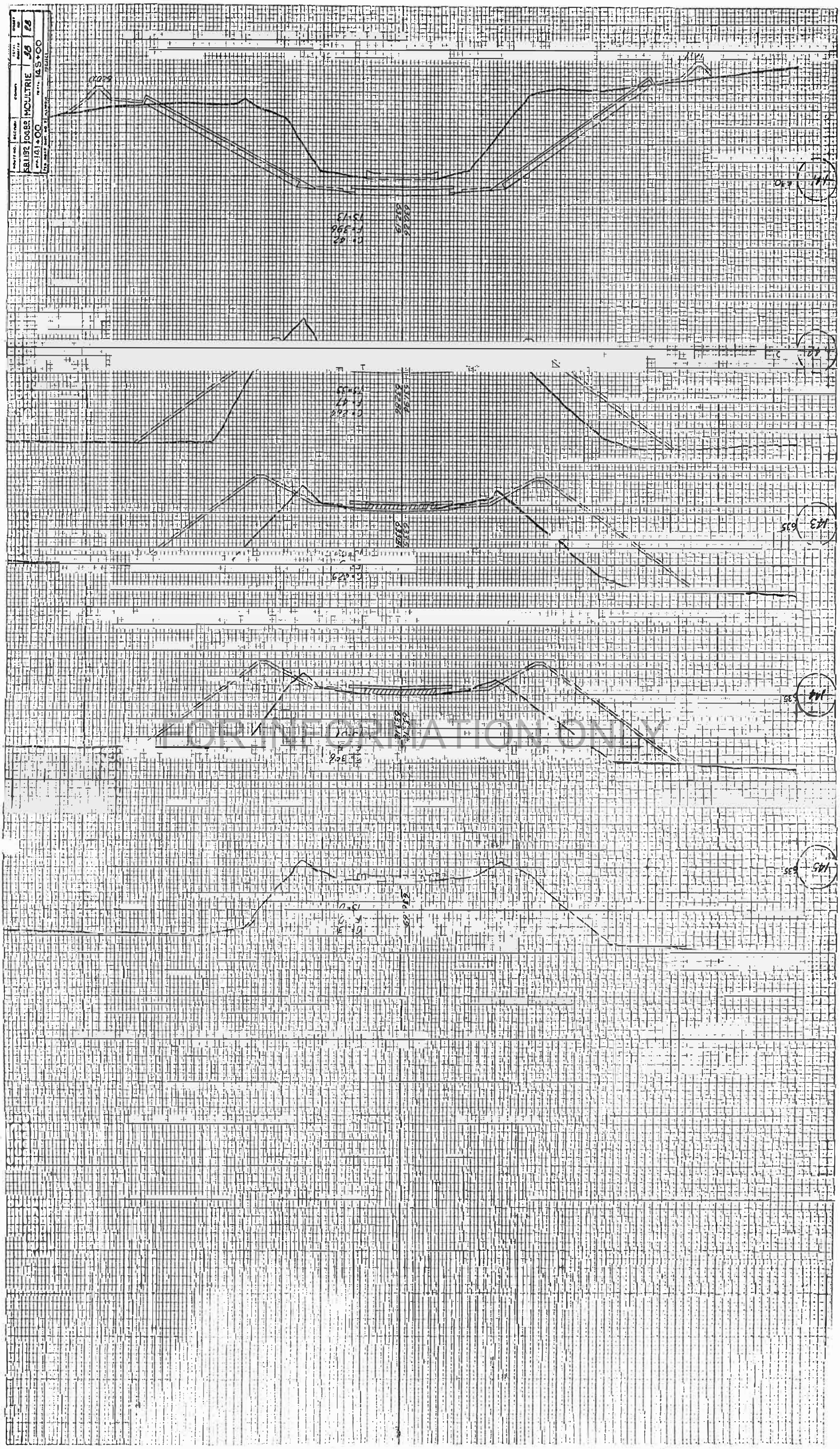
EXAMINED
PASSED
APPROVED

STANDARD 2030R

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I.132	1048R	MOULTRIE	31	25
STA. 103+00		TO STA. 106+00		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

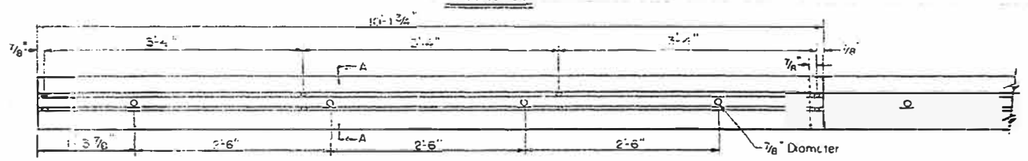


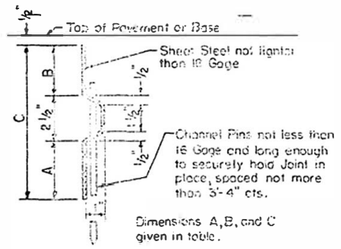




ALTERNATE DESIGNS FOR LONGITUDINAL METAL JOINT

TYPE A



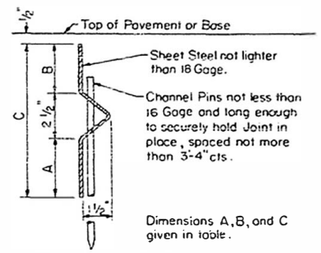


SECTION A-A

Dimensions for TYPE A Metal Joint

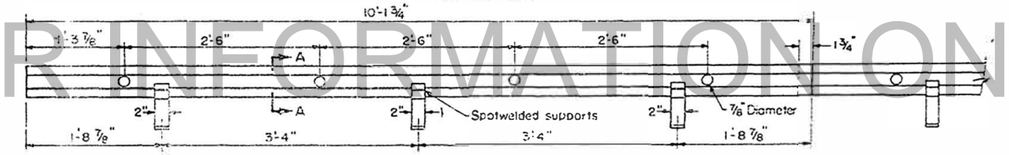
TYPE	A	B	C
P.C. Concrete (9")	3 1/2"	2 3/4"	6 1/2"
Bituminous (8" P.C. Conc. Base)	2 3/8"	2 1/8"	7 1/2"
P.C. Concrete (10")	3 3/8	3 1/4	9 1/2"
Bituminous (9" P.C. Conc. Base)	3 1/8"	2 3/8	8 1/2"

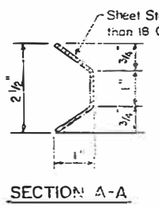
NOTE:
This type permitted where pavement on each side of the joint is constructed either in one or separate operations. Metal joints shall remain in place in all cases.



ALTERNATE SECTION

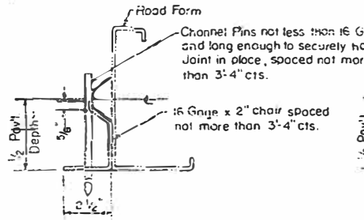
TYPE C



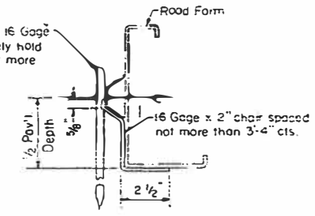


SECTION A-A

NOTE:
This type permitted only where pavement on each side of the joint is constructed in separate operations. The metal joint may be left in place.

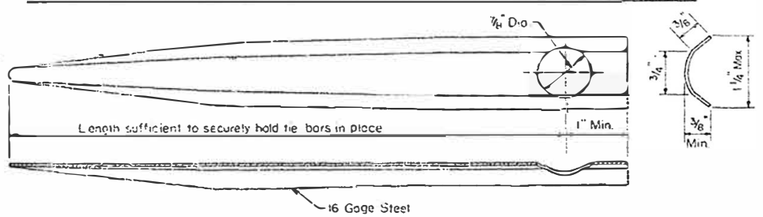


SUPPORTING CHAIR ALTERNATE



SUPPORTING CHAIR ALTERNATE

SUPPORT PIN DESIGN FOR TIE BARS THRU LONGITUDINAL METAL JOINTS



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

PASSED November 15 1959
W. Van Buskirk
Engineer of Road Plans And Contracts

APPROVED November 23 1959
Engineer of Design

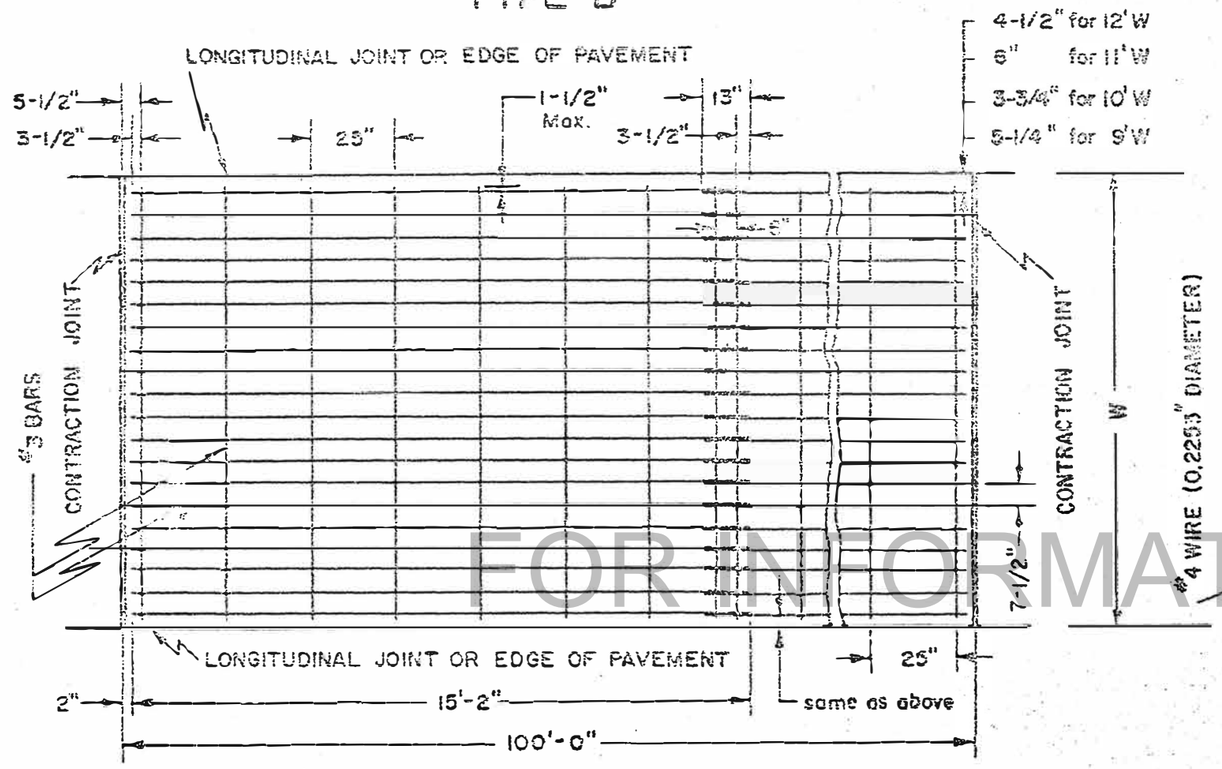
REVISIONS	
BY	DATE
W.H.F.	11-9-59
W.H.F.	11-21-61
W.F.	4-1-65

NOTE:
Except as otherwise noted on plans, tie bars, with support pins, shall be used with the longitudinal metal joint. The following sizes of tie bars will be required:
For P.C.C. Pavement and P.C.C. Base Course less than 10" thick, use #4 bars 2'-6" long
For P.C.C. Pavement 10" thick, use # 5 bars 2'-6" long.

STANDARD 1766-4

STANDARD DESIGN FOR PAVEMENT FABRIC

TYPE B

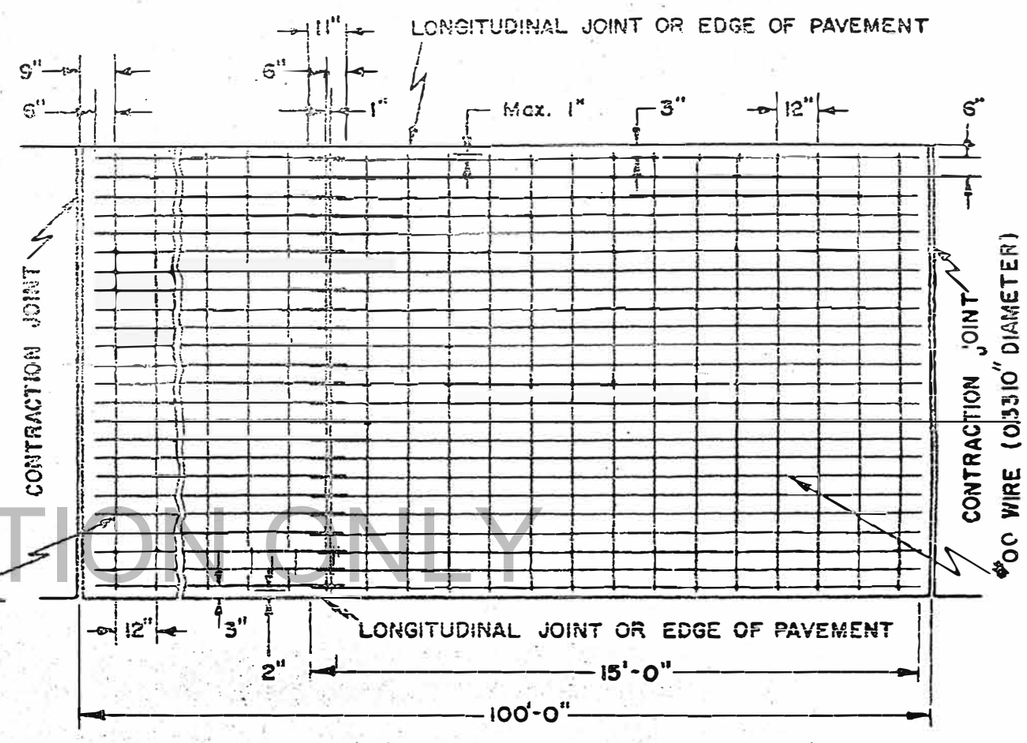


Approximate weight per 100 square feet = 80 pounds. The Pavement Fabric shall conform to the requirements of the Specifications for Fabricated Steel Bar or Rod Mats for Concrete Reinforcement, A.S.T.M. Designation A-184.

Hard grade billet-steel, hard grade axle-steel or rail-steel shall be used for the longitudinal bars. Intermediate grade billet-steel or axle-steel shall be used for the transverse bars. All bars shall meet the requirements specified in Article 124.11 of the Standard Specifications for Road and Bridge Construction.

Each bar intersection shall be clipped using #9 gage wire.

TYPE A



Approximate weight per 100 square feet = 78 pounds. The Pavement Fabric shall conform to the requirements of the Specifications for Welded Steel Wire Fabric for Concrete Reinforcement, A.S.T.M. Designation A-185. Welded wire fabric for concrete pavement may be furnished in either flat sheets or hinged flat sheets; the method of hinging the hinged sheets shall meet the approval of the Engineer.

NOTE:

Pavement Fabric which is lapped transversely shall have a minimum lap of six (6) inches.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BLDGS.
DIVISION OF HIGHWAYS

PASSED Sept. 24 1954
H. L. Orton
ENGINEER OF ROAD PLANS AND CONTRACTS
APPROVED Sept. 24 1954
ENGINEER OF DESIGN

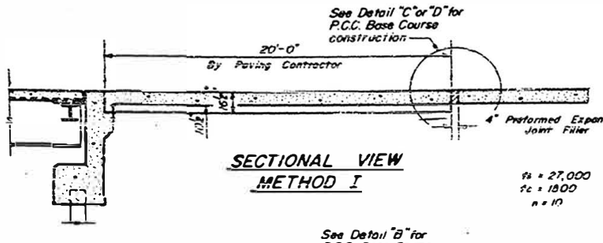
REVISIONS	
BY	DATE
WMJ	11-19-58
W.H.F.	7-3-61

Specification References: Articles 48.12, 48.17, 48.35, 48.36 and 124.11

STANDARD 2115-1

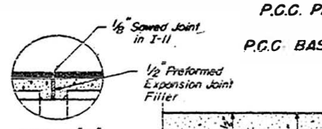
DETAILS OF BRIDGE APPROACHES

P.C.C. PAVEMENT (16½"-10½"-16½") AND P.C.C. BASE COURSE (16½"-10½"-16½")

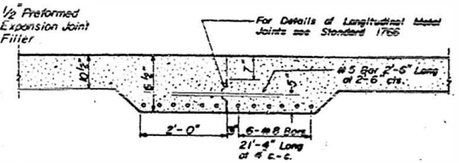


SECTIONAL VIEW
METHOD I

fs = 27,000
fc = 1800
n = 10

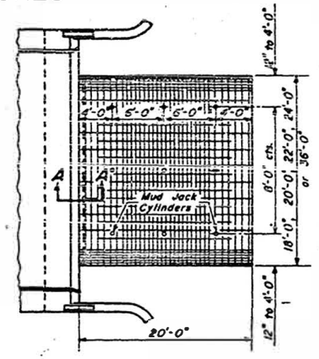


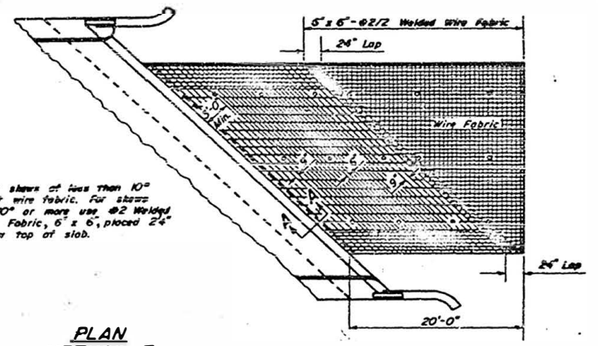
DETAIL "B"
(When bituminous surface is being placed on bridge and approach)



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.

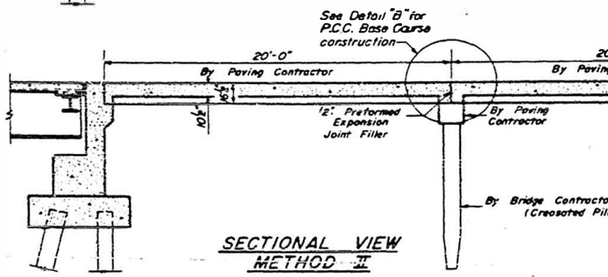




For skews of less than 10° omit wire fabric. For skews of 10° or more use #2 Welded Wire Fabric, 6" x 6", placed 2" below top of slab.

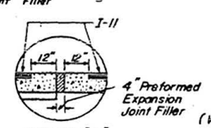
PLAN
METHOD I

Expanded Metal weighing not less than 75 Lbs. per 100 sq. ft. or a welded bar mat weighing not less than 75 Lb. per 100 sq. ft. having members of equal size in both directions and spaced not over 6" o.c. may be used instead of the #2 Welded Wire Fabric, 6" x 6", provided the expanded metal or bar mat is furnished at no additional cost to the State.

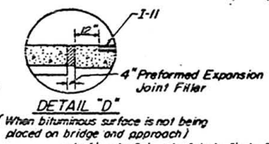


SECTIONAL VIEW
METHOD II

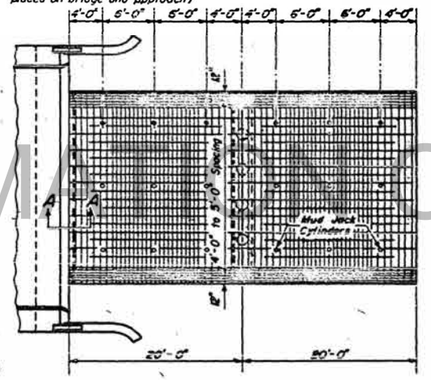
fs = 27,000
fc = 1800
n = 10
(Both Spans)

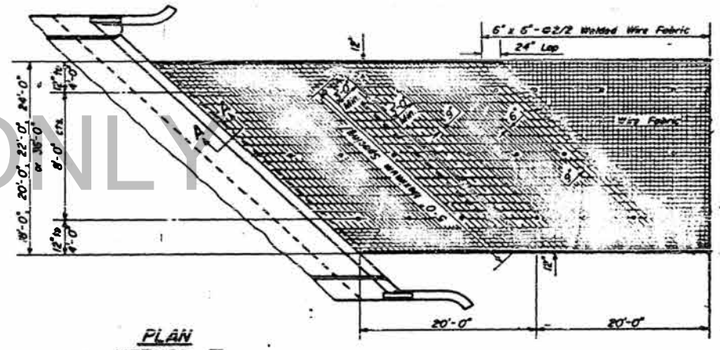


DETAIL "C"
(When bituminous surface is being placed on bridge and approach)

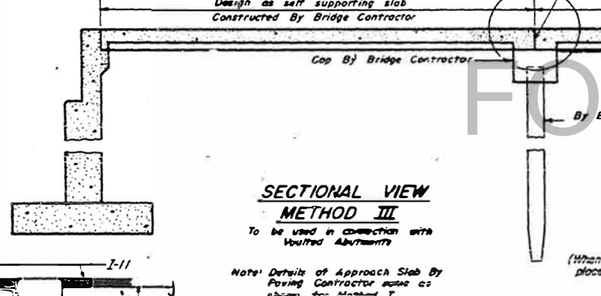


DETAIL "D"
(When bituminous surface is not being placed on bridge and approach)





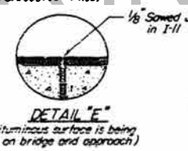
PLAN
METHOD II



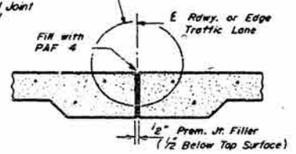
SECTIONAL VIEW
METHOD III

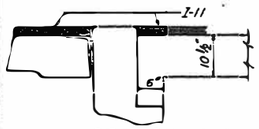
To be used in connection with Vaulted Abutments

Note: Details of Approach Slab By Paving Contractor same as shown for Method I

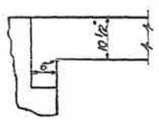


DETAIL "E"
(When bituminous surface is being placed on bridge and approach)





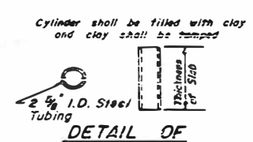
SECTION A-A
(When bituminous surface is being placed on bridge and approach)



SECTION A-A
(P.C.C. Pavement construction)

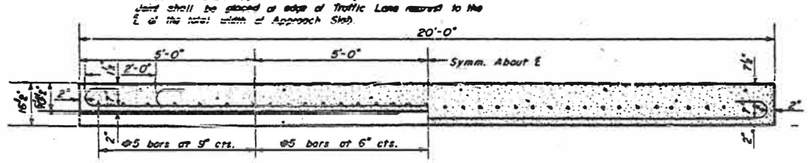
LONGITUDINAL EXPANSION JOINT

To be used when Approach Slabs are greater than 36'-0" wide. Joint shall be placed at edge of Traffic Lane nearest to the ℄ of the total width of Approach Slab.



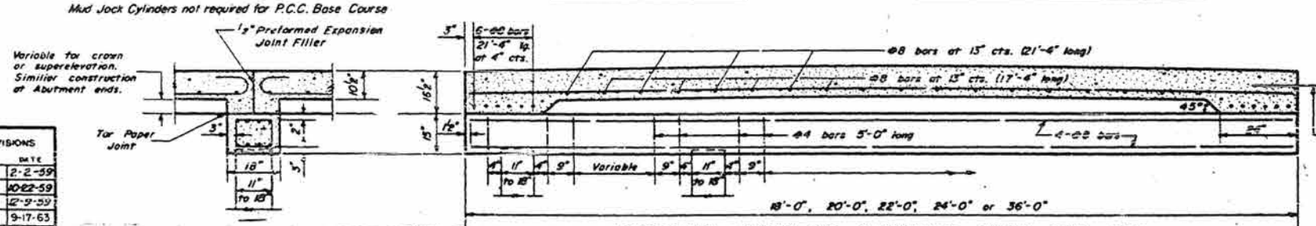
DETAIL OF
MUD JACK CYLINDER

Mud Jock Cylinders not required for P.C.C. Base Course



LONGITUDINAL SECTION THRU
CENTER OF SLAB

LONGITUDINAL SECTION THRU
THICKENED EDGE OF SLAB



SECTIONAL VIEW OF CONCRETE SLAB AND CAP

Note: When road plans show curb and gutter or gutter adjacent to approach slabs place the Tie bar 2'-6" long at 2'-6" cts. Cost of tie bars included in contract unit price for Curb & Gutter or Gutter.

The transition for gutter shall be made in 100 feet and will be paid for as CONCRETE GUTTER, of the type specified.

The transition for curb and gutter shall be made in 20 feet and will be paid for as COMBINATION CURB and GUTTER, of the type specified.

GENERAL NOTES

FOR P.C.C. PAVEMENT

The slab or slabs will be paid for at the contract unit price for PORTLAND CEMENT CONCRETE PAVEMENT (16½"-10½"-16½").

The concrete cap will be paid for at the contract unit price for CLASS X CONCRETE.

All Reinforcement Bars will be paid for at the contract unit price for REINFORCEMENT BARS, except as noted.

The Welded Wire Fabric, Mud Jack Cylinders, and Preformed Expansion Joint Filler shall be included in the unit prices bid for PORTLAND CEMENT CONCRETE PAVEMENT (16½"-10½"-16½").

Preformed Expansion Joint Filler shall conform to Section 129 of the Standard Specification.

Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.

The Contractor shall, after completion of the finishing operations, mark the location of the Mud Jack Cylinders.

FOR P.C.C. BASE COURSE

The slab or slabs will be paid for at the contract unit prices for PORTLAND CEMENT CONCRETE BASE COURSE (16½"-10½"-16½").

The concrete cap will be paid for at the contract unit prices for CLASS X CONCRETE.

All Reinforcement Bars will be paid for at the contract unit prices for REINFORCEMENT BARS, except as noted.

The Welded Wire Fabric, Concrete Headers, and Preformed Expansion Joint Filler shall be included in the unit price bid for PORTLAND CEMENT CONCRETE BASE COURSE (16½"-10½"-16½").

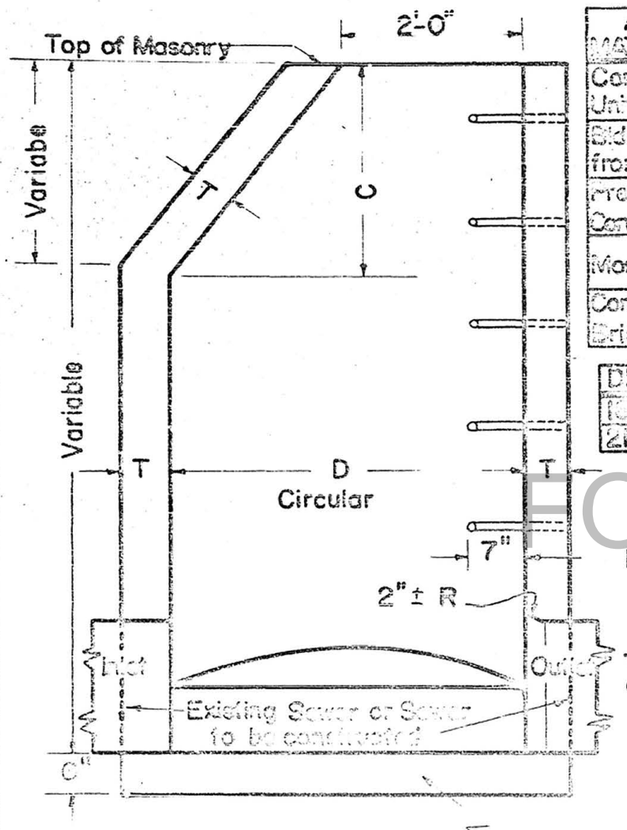
Preformed Expansion Joint Filler shall conform to Section 129 of the Standard Specification.

Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS		REVISIONS	
APPROVED Dec. 18 1959		BY	DATE
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES		WAS	2-2-59
APPROVED Dec. 18 1959		CET	10-22-59
ENGINEER OF DESIGN		WAS	12-9-59
		W.H.F.	9-17-63
		K.H.W.	7-29-64
		W.F.	10-28-64

STANDARD 1509-6

STANDARD DESIGN OF MANHOLE TYPE A



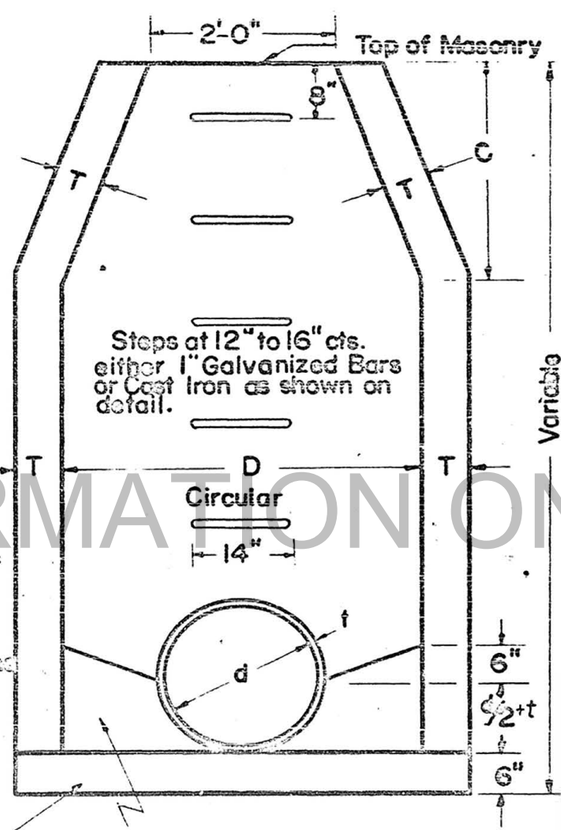
ALTERNATE MATERIALS for Walls	D	C	T (Min.)
Concrete Masonry Units	4'-0"	2'-6"	5"
	6'-0"	3'-9"	5"
Bldg. Brick, Gr. SW, from Clay or Shale	4'-0"	2'-6"	6"
	5'-0"	3'-9"	6"
Precast Reinforced Concrete Risers	4'-0"	2'-6"	4"
	5'-0"	3'-9"	5"
Monolithic Concrete	4'-0"	2'-6"	6"
	5'-0"	3'-9"	6"
Concrete Building Brick, Grade A	4'-0"	2'-6"	8"
	5'-0"	3'-9"	8"

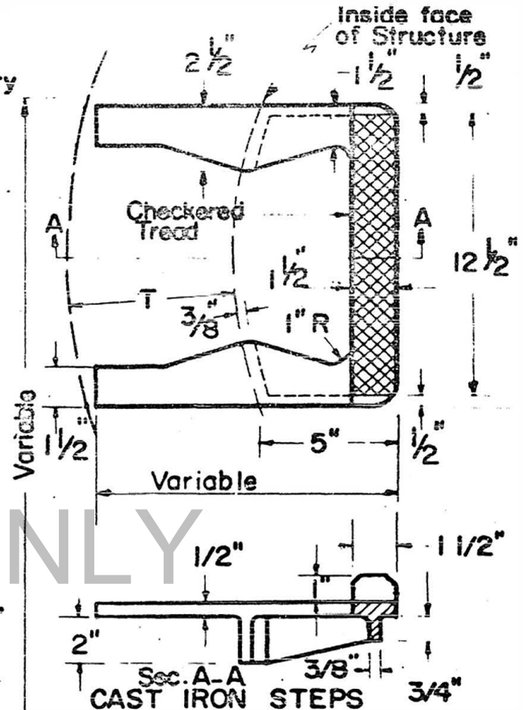
DIAMETER of MAIN SEWER	D
To and Under	4'-0"
21" to 42" Inclusive	5'-0"

NOTES

Manhole Type A, shall be provided with: Type 1 frame and Closed Lid or Type 5 frame and Closed Lid

The contract unit price for Manholes Type A shall include the Frame or Frame and Closed Lid as specified.

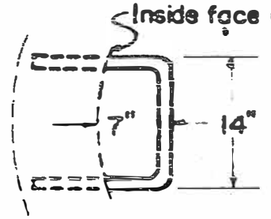




CAST IRON STEPS

Cast iron steps shall be Gray Iron conforming to the requirements of Article 124.14 of the Standard Specifications.

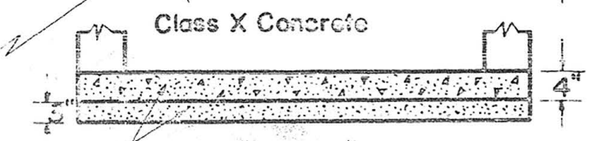
Steps shall be embedded into wall a minimum of 4 inches. Steps shall not be extended on the outside.



1" ROUND GALVANIZED IRON STEPS

See Plan Sheets for elevation of invert and diameter of sewer.

Bottom to be either Class X Concrete or Precast Reinforced Concrete slabs not less than 12" wide and sand cushion. Furnishing and installing sand cushion to be included in the contract unit price for Manholes Type A.



Steps shall be omitted for work in Cook County when the depth of the Manhole is 10 feet or less.

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

PASSED June 10, 1966
ENGINEER OF ROAD PLANS AND CONSTRUCTION

APPROVED June 10, 1966
ENGINEER OF DESIGN

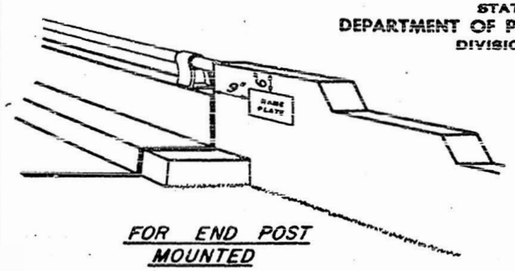
STANDARD 1527-3

Drawn 11-3-53

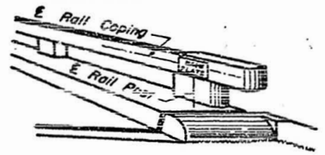
Revised 9-9-60 I.E.B. & G.M.M. Rev. 12-20-57 W.F.A.
Revised 6-10-66 W.F. J.T.M. Rev. 6-20-58 Rev. J.F.L. 11-12-68
Re-Traced W.M.S. 2-9-59

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

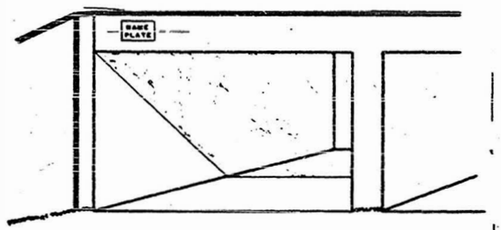
Sheet 1 of 1



FOR END POST MOUNTED

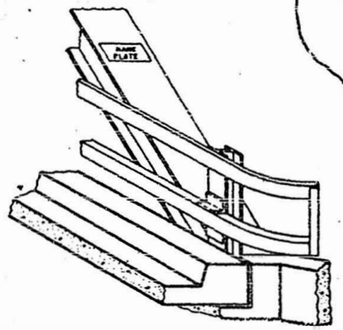


FOR CONCRETE RAILS

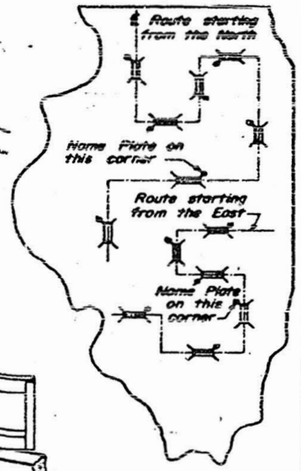


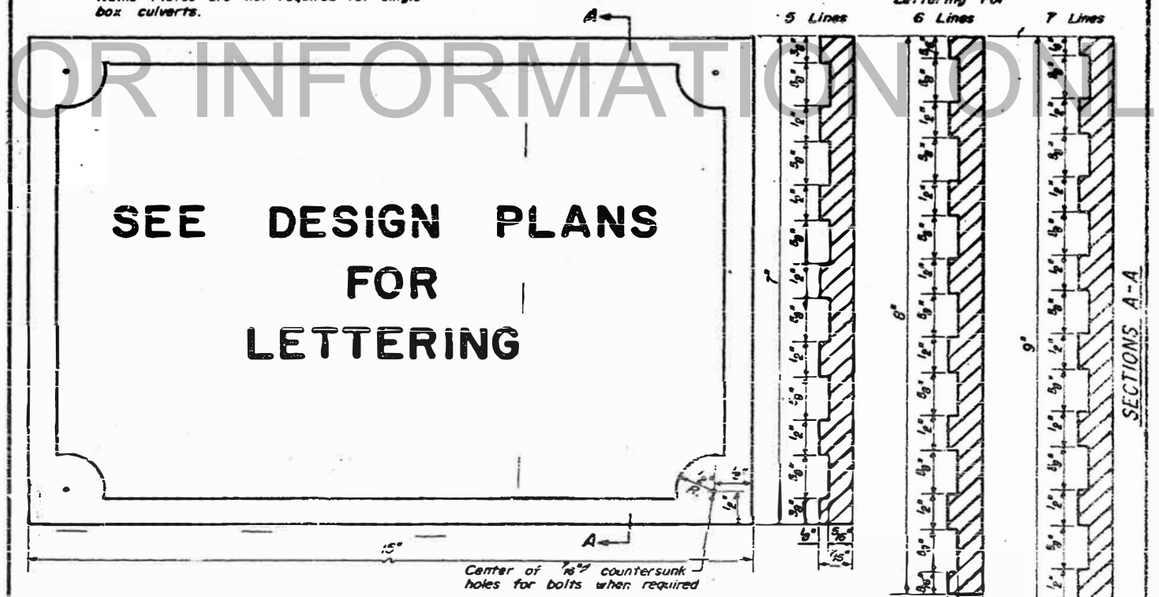
FOR MULTI-SPAN CULVERTS

Note: Unless otherwise noted on the plans, Name Plates are not required for single box culverts.



FOR TRUSSES





Material: Best quality brass or bronze.
Border & Lettering: Raised ⅛ inch. Square cut and not tapered. Top surface polished.

Fastenings and Placings:
- For Concrete Rails, Culvert Headwalls & Subways — Four lugs at least three inches long, cast on back of plate.
- For Steel Truss Span — Plate to be fastened on steel member at fabricating shop by brazing around entire perimeter of plate.
- For Steel Rails — Plate to be bolted on with 4 - ⅜" brass or bronze machine bolts with countersunk head.
- For Concrete Rails — Plate to be centered on ℄ of rail post and ℄ of handrail coping.
- For Steel Truss Span — Braze to end post about five feet above roadway.
- For Steel Rails — Place midway between horizontal rail members.
- For Subways — See design plans for location.

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

PASSED NOVEMBER 15, 1963
Engineer of Road Plans and Contracts

APPROVED NOVEMBER 15, 1963
Engineer of Bridges

DETAIL OF NAME PLATE FOR BRIDGES
(Half size)

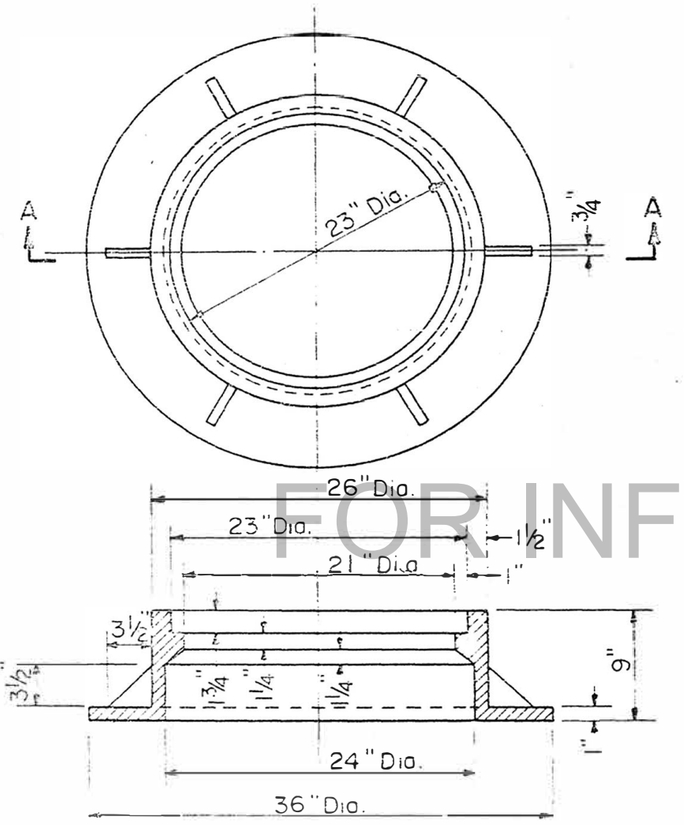
Rev. 11-15-63

23d

STD. 2113-1

STANDARD DESIGN

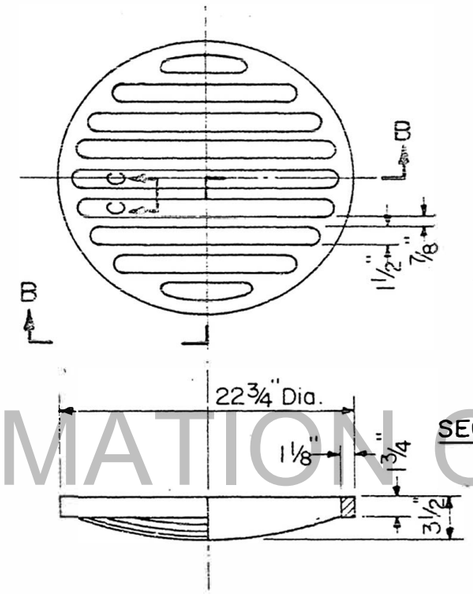
FRAME AND LIDS TYPE I



SECTION A-A

FRAME

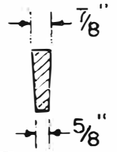
WT. 390 Lbs.



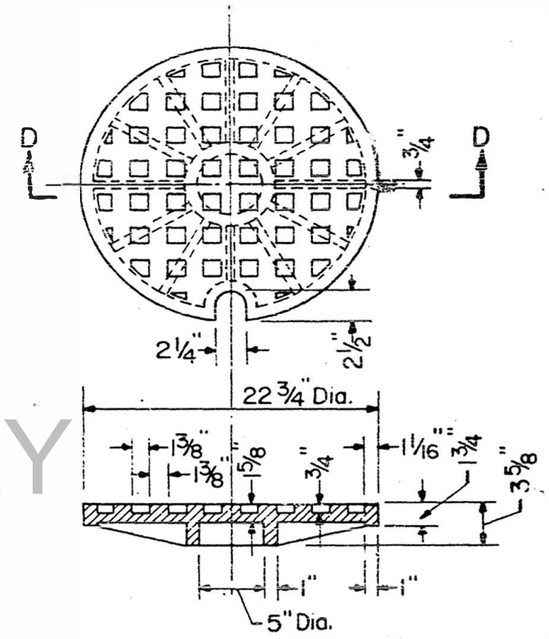
SECTION B-B

OPEN LID

WT. 116 Lbs.



SECTION C-C



SECTION D-D

CLOSED LID

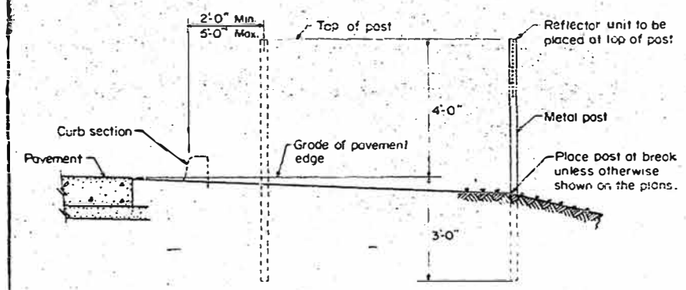
WT. 150 Lbs

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	REVISIONS	
	BY	DATE
PASSED January 4 1965	W.F.	9-15-65
A.V. Van Auskirk Engineer of Road Plans And Contracts		
APPROVED January 4 1965		
A.J. Acton Engineer of Design		

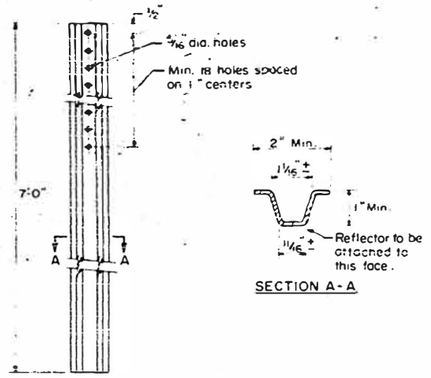
The open and closed lids may be made of either Gray Iron conforming to the Standard Specifications or Nodular Iron conforming to the Specifications for Nodular Iron Casting, A.S.T.M. Designation: A339, Grade 60-45-10.

STANDARD 2213-1

STANDARD DESIGN
DELINEATORS

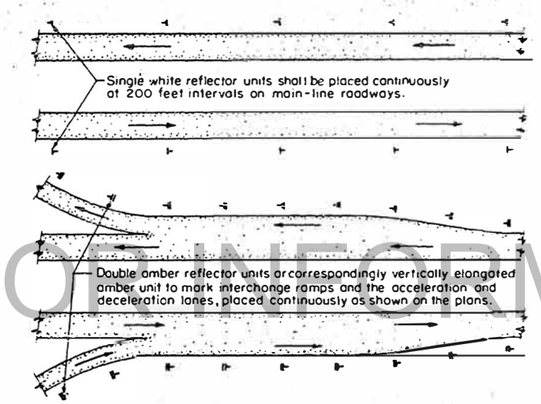


SECTIONAL VIEW

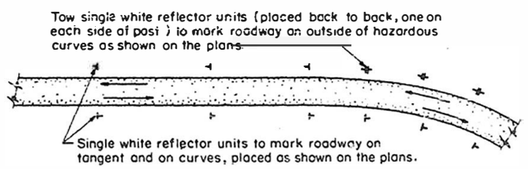


SECTION A-A

DETAIL OF METAL POST



PLAN VIEW FOR DUAL HIGHWAYS



PLAN VIEW FOR TWO-WAY ROADWAYS

SPACING FOR DELINEATORS ON HORIZONTAL CURVES
FOR TWO-WAY ROADWAYS AND INTERCHANGE RAMPS

Degree of Curve	Radius in Feet	Spacing on Curve	Spacing in Advance and Beyond Curve 1st Space	2nd Space	3rd Space
1	10,000	200	200	200	200
		152	200	200	200
	5,000	141	200	200	200
2	3,000	109	196	200	200
		106	191	200	200
	2,500	99	178	200	200
3	2,000	88	158	200	200
		86	155	200	200
	1,800	84	151	200	200
4	1,600	78	140	200	200
		74	133	200	200
	1,400	74	133	200	200
5	1,200	68	122	200	200
		66	119	200	200
	1,000	62	112	200	200
7	900	58	104	200	200
		55	99	200	200
	800	55	99	200	200
9	700	51	92	200	200
		48	86	200	200
	600	47	85	200	200
12	500	42	76	200	200
		41	74	200	200
	400	37	67	200	200
15		36	65	200	200
	350	35	63	200	200
18		33	59	200	200
	300	32	58	196	200
21		30	54	182	200
	250	28	50	169	200
25		28	50	169	200
	200	24	43	145	200
30		24	43	145	200
	150	20	36	121	200
40		19	34	115	200
	100	14	25	85	141

The spacing S on the curve is found from the formula $S = 2\sqrt{R-50}$, where R is the radius of the curve in feet. The spacing to the first delineator in advance of and beyond the curve is 1.6 S, to the next delineator 3 S, and to the next 6 S, but not to exceed 200 feet. Minimum spacing is 10 feet.

GENERAL NOTES

METAL POST: The metal post, galvanized or aluminum, shall conform to the requirements stipulated in Article 124.32.

REFLECTOR: The reflector unit shall conform to one of the three types of acrylic plastic prismatic reflectors stipulated in Article 131.7. Only one type of reflector and geometric shape will be permitted within the limits of a contract.

HARDWARE: The delineator reflectors shall be fastened to the post with aluminum bolts and vandal-proof nuts conforming to the Specifications for Aluminum Alloy Bars, Rods, and Wire, A.S.T.M. Designation: B211, Alloy CG42A-T4, or stainless steel bolts and vandal-proof nuts.

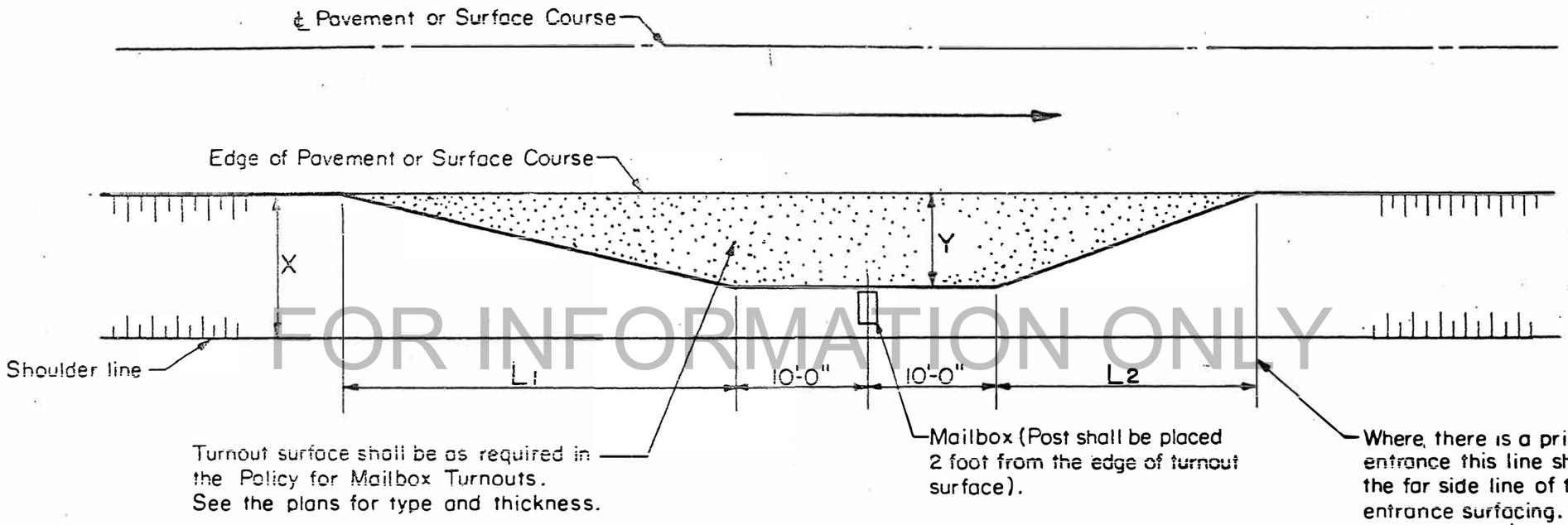
BASIS OF PAYMENT: This work will be paid for at the contract unit price each for DELINEATORS, which price shall be payment in full for furnishing the posts or brackets, the single white, or double reflector units and mounting hardware, erecting the posts, or installing the brackets, and fastening the single, or double units to the posts, or brackets, and all items of work incidental thereto. No additional compensation will be allowed for two single reflector units placed back to back.

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	ISSUED 6-15-60	
	REVISIONS	
	W.F.	12-23-66
PASSED Dec. 23, 1966		
Engineer of Roads Plans And Controls		
APPROVED Dec. 23, 1966		
Engineer of Design		

STANDARD 2149-7

(½ Size) Redrawn

STANDARD DESIGN
MAILBOX TURNOUT



DIMENSIONS

"X" Width of Shoulder	12'	10'	8'	6'	5'	4'
"Y" Width of Turnout	8'	8'	6'	4'	3'	2'
"L1"	30'	30'	23'	15'	11'	8'
"L2"	20'	20'	15'	10'	8'	5'

NOTE: Dimensions for Township and District Roads may vary from the above dimensions.

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

PASSED October 26, 1962
Engineer of Road Plans And Contracts

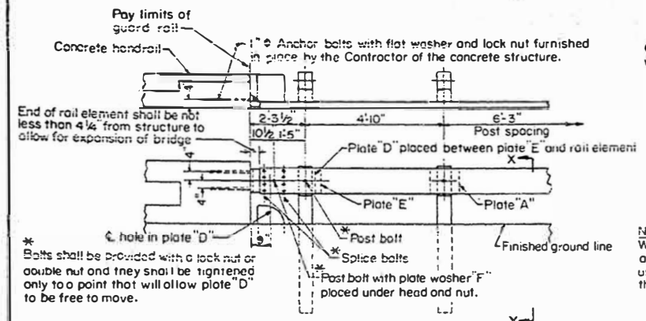
APPROVED October 26, 1962
Engineer of Design

REVISIONS	
BY	DATE

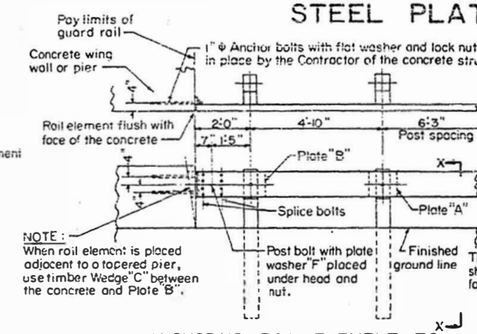
STANDARD 2171

STANDARD DESIGN

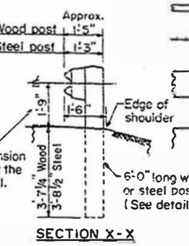
STEEL PLATE BEAM GUARD RAIL



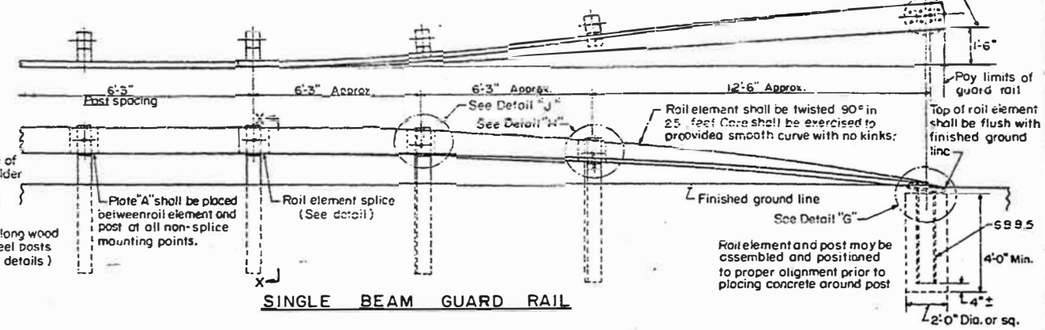
ANCHORING RAIL ELEMENT TO CONCRETE HANDRAIL ON BRIDGE WITH OPEN EXPANSION JOINT



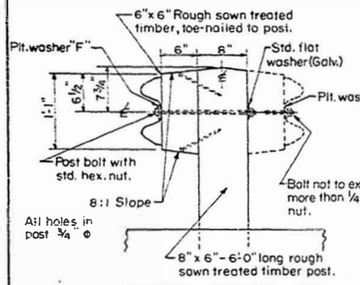
ANCHORING RAIL ELEMENT TO CONCRETE WING WALL AND PIER



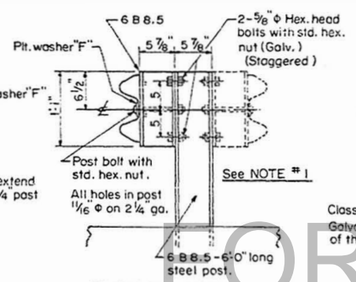
SECTION X-X



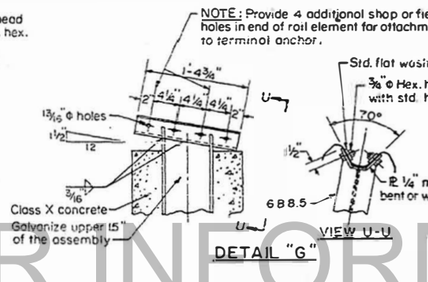
SINGLE BEAM GUARD RAIL



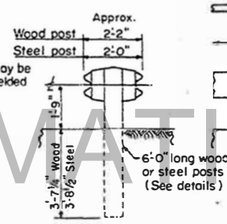
TYPICAL DETAIL OF WOOD POST CONSTRUCTION



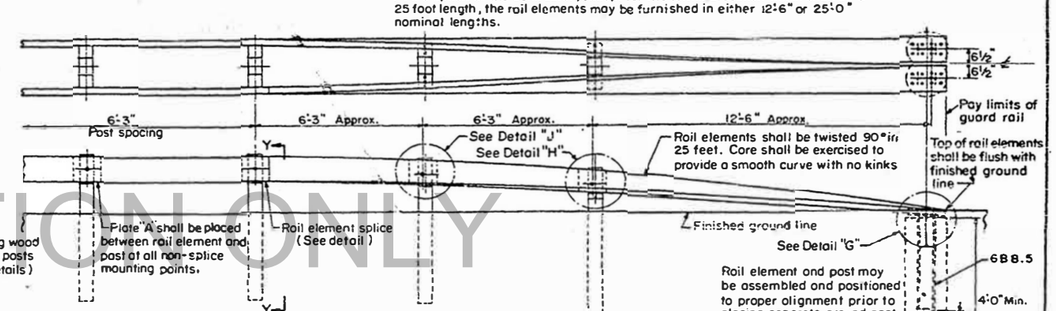
TYPICAL DETAIL OF STEEL POST CONSTRUCTION



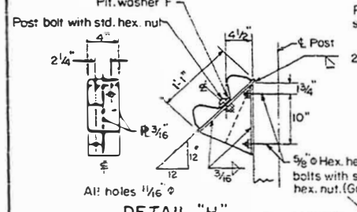
DETAIL "G"



SECTION Y-Y

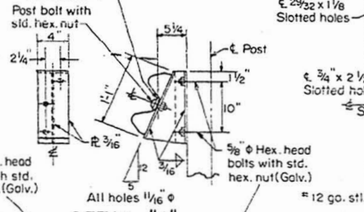


DOUBLE BEAM GUARD RAIL



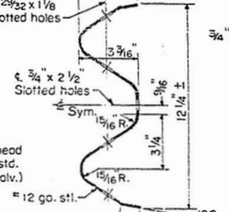
DETAIL "H"

See NOTE #1



DETAIL "J"

For Double Beam Guard Rail with wood posts, bolts shall be ⅝" ϕ stud bolts with std. hex. nut at each end



SECTION THROUGH RAIL ELEMENT

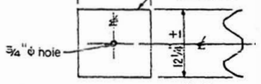


PLATE "A"

NOTE:
All concrete, reinforcement bars, and accessories used in the placing of the guard rail shall be incidental to the contract.

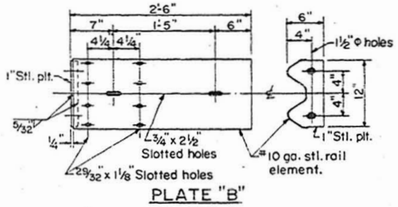
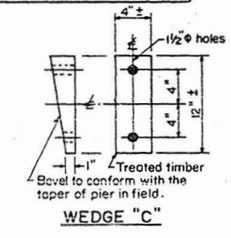


PLATE "B"



WEDGE "C"

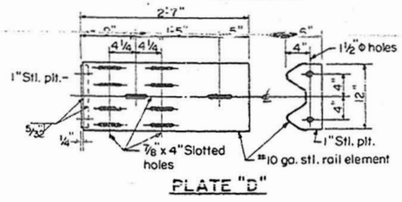


PLATE "D"

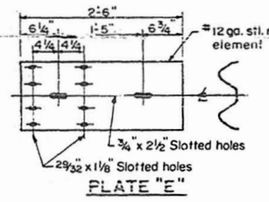
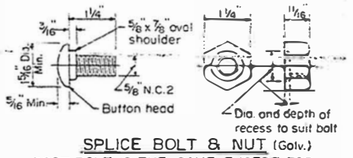
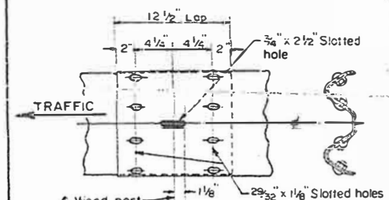


PLATE "E"



SPLICE BOLT & NUT (Galv.)
POST BOLT IS THE SAME EXCEPT FOR LENGTH AND WITH STANDARD HEX. NUT



RAIL ELEMENT SPLICE

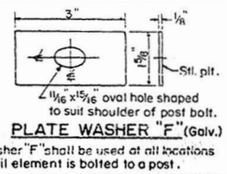
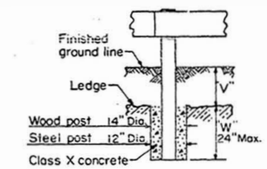


PLATE WASHER "F" (Galv.)

NOTE
Plate washer "F" shall be used at all locations where rail element is bolted to a post.

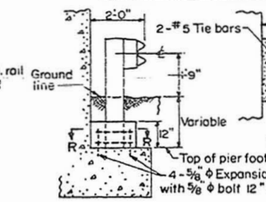
NOTE #1
Steel brackets Detail "H" and "J", steel block-outs, and steel posts may be provided with additional holes so that these items will not be required to be made right and left handed.
Steel brackets Detail "H" and "J" may be fabricated from 6 B 8.5 beam in lieu of the flat plate specified, by cutting web of beam as shown dotted and welding together on both sides.



"V" + "W" shall not exceed 44½". When "V" is 0" to 20½", "W" = 24", and the post shall be shortened as required. When "V" exceeds 20½", "W" shall be decreased correspondingly. When "V" is 6" or less, post hole shall be filled to ground line with concrete.

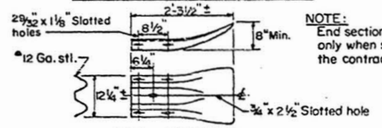
Ledge line is top of a rock ledge or hard slag fill.

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED



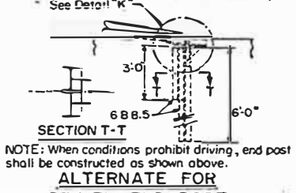
SECTION R-R

POST ANCHOR AT PIERS



END SECTION

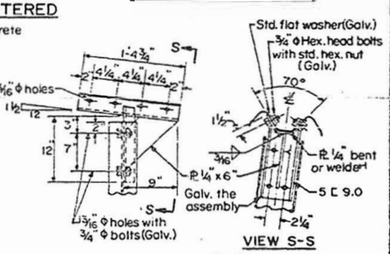
NOTE:
End section shall be used only when specified on the contract plans.



SECTION T-T

NOTE: When conditions prohibit driving, end post shall be constructed as shown above.

ALTERNATE FOR DRIVEN END POST



VIEW S-S

DETAIL "K"

See Standard 2231 for Typical Applications of the Steel Plate Beam Guard Rail

STANDARD 2230-1

(Full Size)

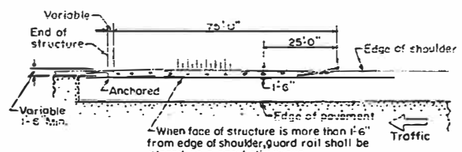
W.F.

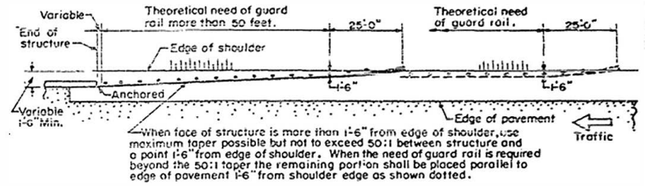
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	ISSUED 2-11-66	
	REVISIONS	
PASSED May 4 1967	W.F.	5-4-67
A V VanArsdall Engineer of Road Plans And Contracts		
APPROVED May 4 1967		
H E Bammann Engineer of Design		

REDRAWN 5-4-67

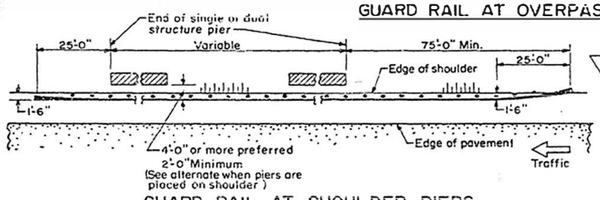
STANDARD DESIGN

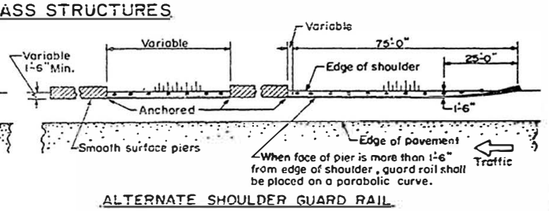
TYPICAL APPLICATIONS OF STEEL PLATE BEAM GUARD RAIL



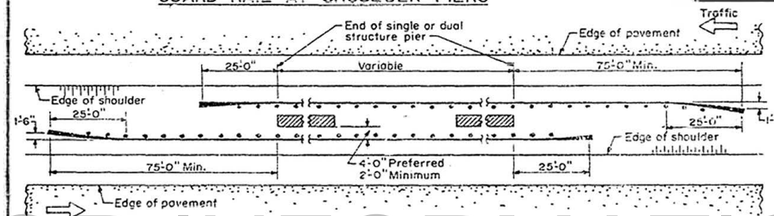


GUARD RAIL AT OVERPASS STRUCTURES

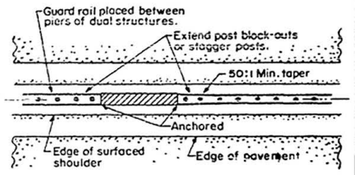




GUARD RAIL AT SHOULDER PIERS

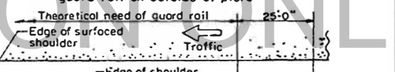


ALTERNATE SHOULDER GUARD RAIL



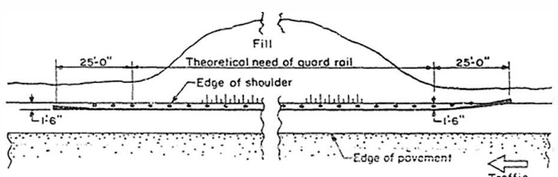
ALTERNATE MEDIAN GUARD RAIL

NOTE: Alternates used only when clearance will not permit guard rail on outside of piers

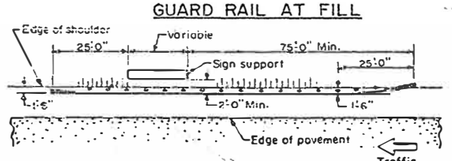


GUARD RAIL AT PIERS IN MEDIAN GREATER THAN 30 FEET

GUARD RAIL IN MEDIAN OF 30 FEET OR LESS



GUARD RAIL AT FILL



GUARD RAIL AT SIGN SUPPORT

GUARD RAIL TREATMENT AT OVERPASS STRUCTURES:

For two-lane, two-way highway a minimum of 75 feet of single beam guard rail shall be placed at both ends of the structure and on both sides of the highway.

For dual highway with twin bridges place a minimum of 75 feet of single beam guard rail at the approach end of the structure and on both the right and left shoulders. Where a single structure is used with a raised median, place a minimum of 75 feet at the approach end of the structure on the right shoulder only.

GUARD RAIL TREATMENT AT SHOULDER PIERS:

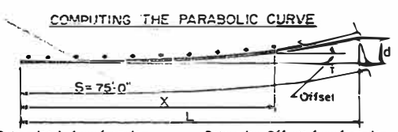
Single beam guard rail shall be placed as shown at all shoulder piers when face of pier is less than 30 feet from edge of pavement.

GUARD RAIL TREATMENT IN MEDIAN:

Single beam guard rail shall be placed as shown at all median piers where median width is greater than 30 feet and less than 64 feet.

On highways Class A, B, FR, and EX, double beam guard rail shall be placed in all medians having a width of 30 feet or less.

COMPUTING THE PARABOLIC CURVE



Determine L from formula- $L = \frac{S \pm \sqrt{S^2 - 10.67\,d^2}}{2}$

Determine Offsets from formula- $\text{Offset} = (\frac{X}{L})^2 \times d$

For details of the Steel Plate Beam Guard Rail see Standard 2230

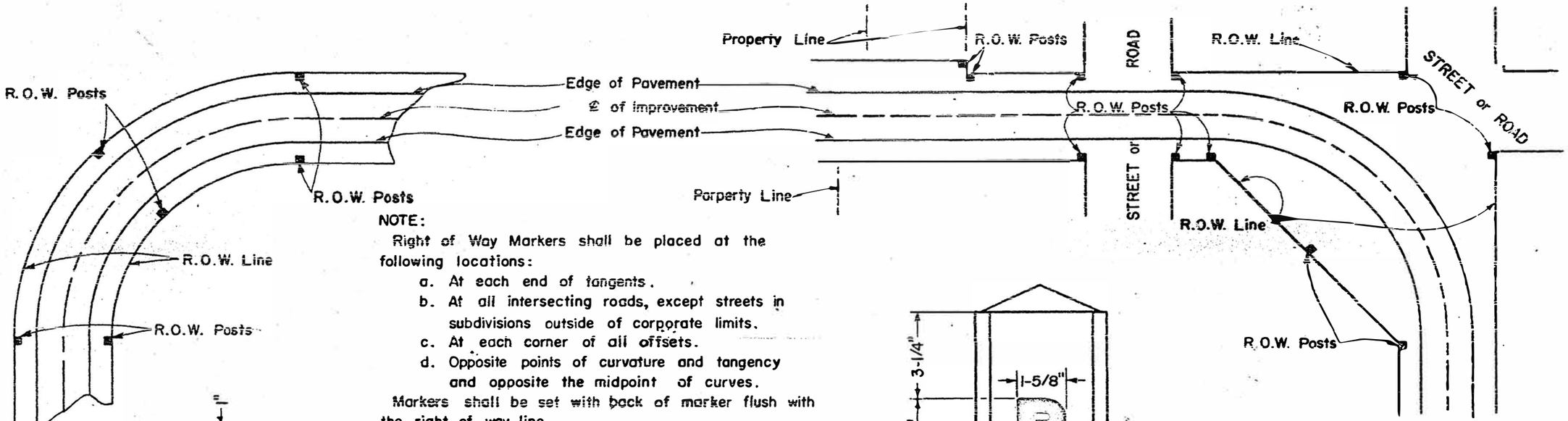
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	ISSUED 2-11-66	
	REVISIONS	
PASSED May 4 1967	W.F.	5-4-67
Engineer of Road Plans and Contracts		
APPROVED May 4 1967		
Engineer of Design		

Redrawn 5-4-67

STANDARD 2231-1

(Half Size) W.F.

STANDARD DESIGN FOR RIGHT OF WAY MARKERS

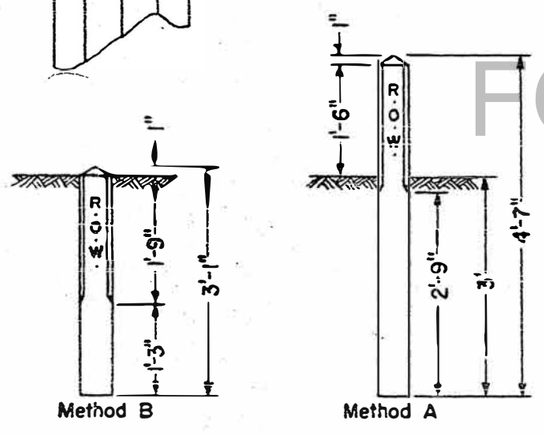


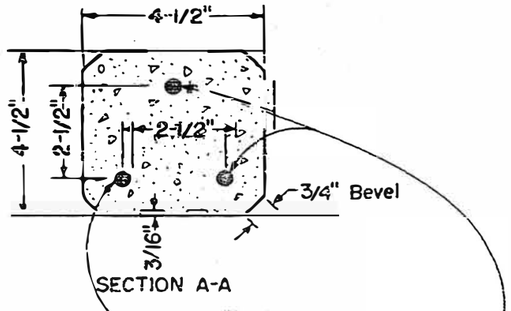
NOTE:

Right of Way Markers shall be placed at the following locations:

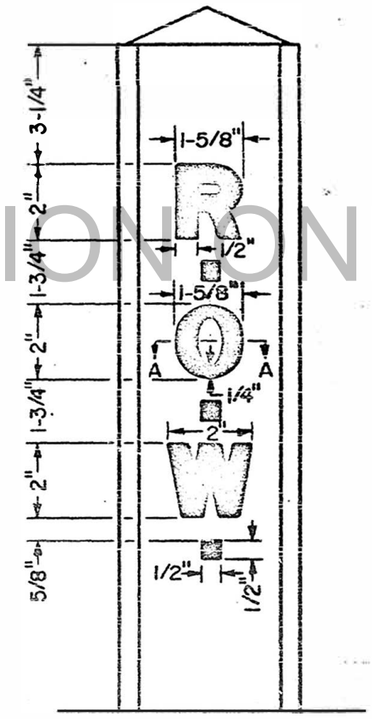
a. At each end of tangents.
b. At all intersecting roads, except streets in subdivisions outside of corporate limits.
c. At each corner of all offsets.
d. Opposite points of curvature and tangency and opposite the midpoint of curves.

Markers shall be set with back of marker flush with the right of way line.





Use # 3 bars 4'-2" long for Method A
Use # 3 bars 2'-8" long for Method B



Method B, Right of Way Markers shall be used within improved residential areas at the locations indicated on the plans or as directed by the Engineer.

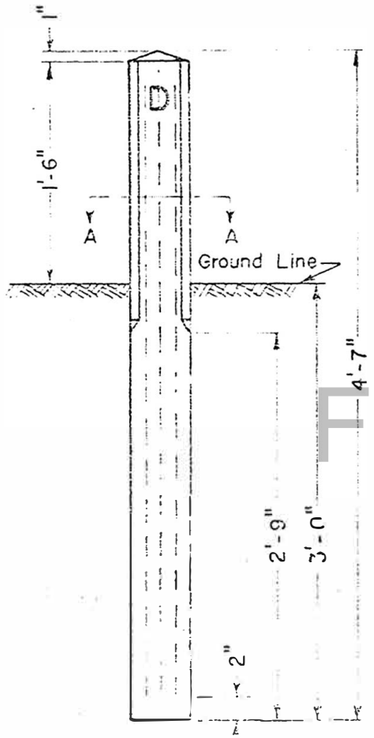
Class X Concrete shall be used in the posts.

Specification Reference: Section 104

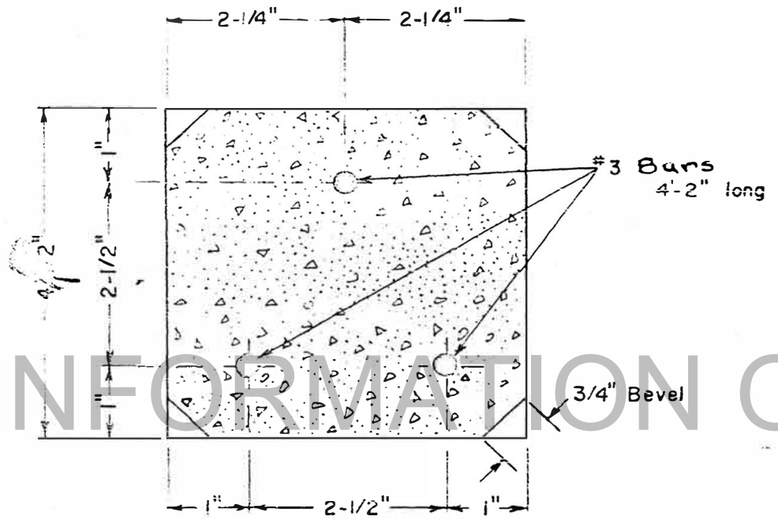
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BLDGS. DIVISION OF HIGHWAYS	REVISIONS	
	BY	DATE
	J.F.L.	11-19-58
PASSED August 16, 1954		
J. L. Acton		
ENGINEER OF ROAD PLANS AND CONTRACTS		
APPROVED August 16, 1954		
[signature]		
ENGINEER OF DESIGN		

STANDARD 1744-I

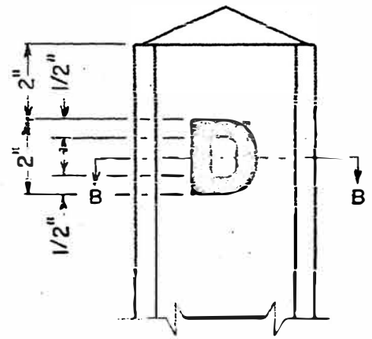
STANDARD DESIGN
FOR
DRAINAGE MARKERS



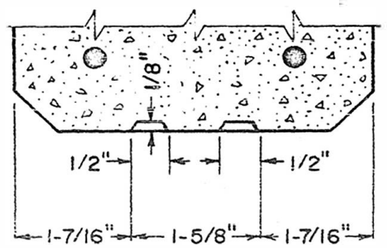
FRONT
ELEVATION



SECTION A-A



DETAIL
OF
LETTER



SECTION B-B

NOTE:

Drainage Markers shall be constructed of Class X Concrete. All materials shall conform to Division III of the Standard Specifications.

Markers shall be placed on the right of way line at the locations shown on the plans or where directed by the Engineer. They shall be erected in accordance with Sec. 105.3 of the Standard Specifications.

This work will be paid for at the contract unit prices each for ERECTING DRAINAGE MARKERS or FURNISHING AND ERECTING DRAINAGE MARKERS, which price shall include the cost of furnishing and placing the reinforcement bars.

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

PASSED... September 15... 1954

ENGINEER OF ROAD PLANS AND CONTRACTS

APPROVED... September 15... 1954

ENGINEER OF DESIGN

REVISIONS	
BY	DATE
R.L.	11-18-53

STANDARD 1999-1

DETAILS OF PERMANENT SURVEY MARKERS

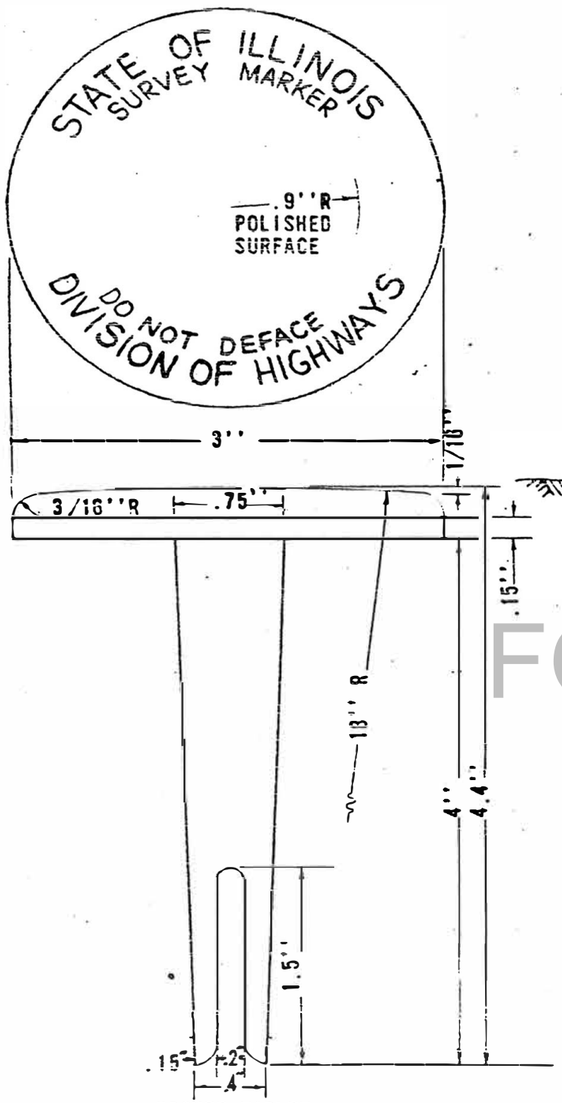
THE MARKERS MAY BE EITHER PRECAST OR CONSTRUCTED ON THE SITE EXCEPT WHERE IT IS NECESSARY TO INSTALL THE TABLET IN AN EXISTING ROCK LEDGE, THE CONCRETE PAVEMENT, OR A STRUCTURE.

THE LOCATION OF THE MARKERS SHALL BE IN ACCORDANCE WITH THE PLANS. IN GENERAL, THE MARKERS WILL BE PLACED AT THE P.T.'S AND P.C.'S OF HORIZONTAL CURVES AND SPACED ALONG THE TANGENTS IN A WAY THAT A MINIMUM OF TWO MARKERS ARE ALWAYS INTER-VISIBLE.

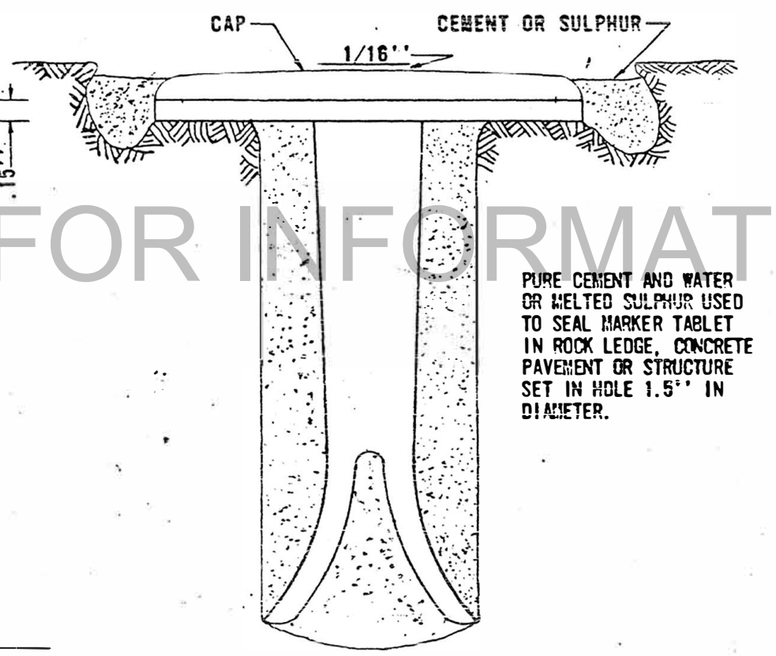
THE MARKERS SHALL BE PLACED UNDER THE DIRECTION OF THE ENGINEER AND SHALL BE INSTALLED IN A WORKMANLIKE MANNER IN ORDER THAT THERE BE NO FUTURE SETTLEMENT OR HORIZONTAL SHIFTING. THE MONUMENTS SHALL BE PLACED IN A WAY THAT THE SURVEY POINT WILL FALL WITHIN THE PORTION OF THE PLAQUE PROVIDED FOR THAT PURPOSE.

THE PROJECT DESIGNATION, THE CENTERLINE STATION, THE SURVEY POINT, AND THE ELEVATION SHALL BE PERMANENTLY MARKED BY THE USE OF METAL DIES AFTER THE MARKER HAS BEEN INSTALLED.

THE CONTRACT UNIT PRICE FOR PERMANENT SURVEY MARKERS WILL BE PAYMENT IN FULL FOR FURNISHING, INSTALLING, AND PERMANENTLY MARKING THE TYPE SPECIFIED.



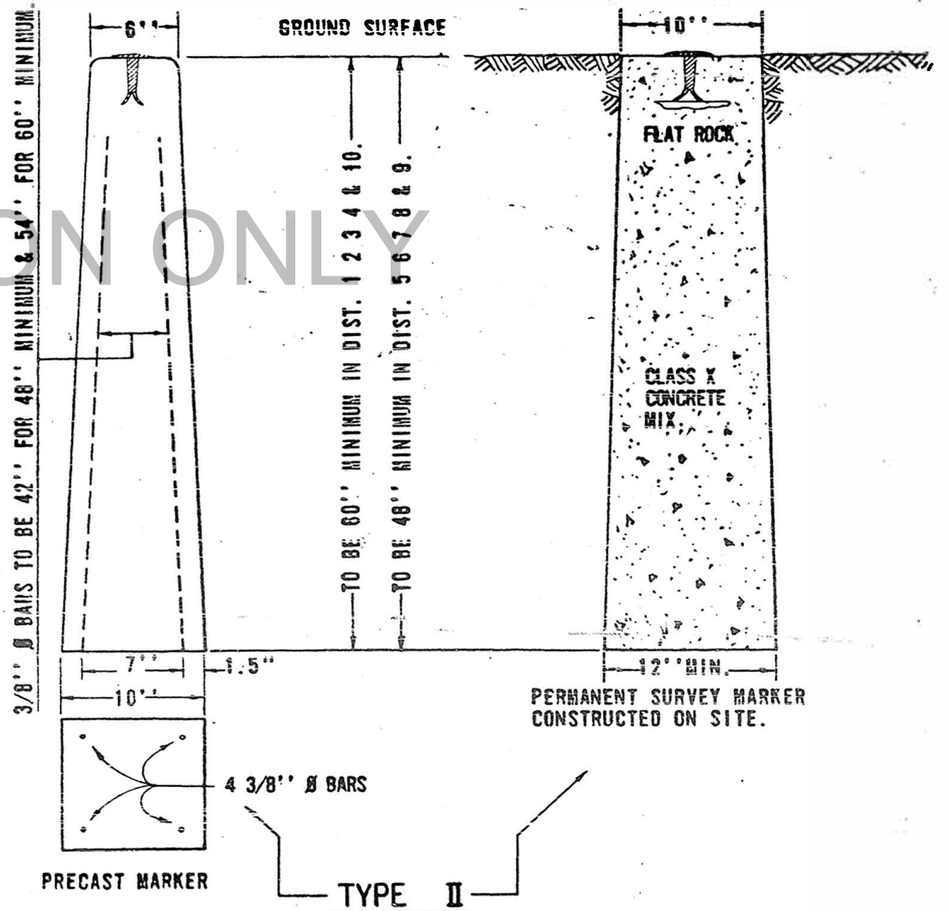
BRONZE TABLET
SCALE FULL SIZE



PURE CEMENT AND WATER OR MELTED SULPHUR USED TO SEAL MARKER TABLET IN ROCK LEDGE, CONCRETE PAVEMENT OR STRUCTURE SET IN HOLE 1.5" IN DIAMETER.

TABLET CONSTRUCTED IN ROCK LEDGE OR CONCRETE.
SCALE FULL SIZE

TYPE I



PRECAST MARKER

PERMANENT SURVEY MARKER CONSTRUCTED ON SITE.

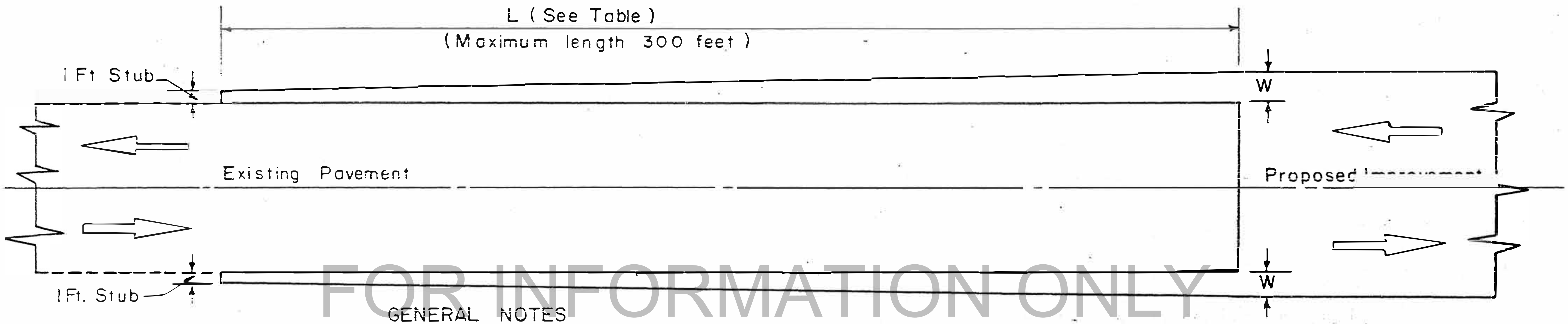
TYPE II

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	REVISIONS BY	DATE
PASSED August 8 1958		
A U Van Arsdale ENGINEER OF ROAD PLANS AND CONTRACTS		
APPROVED August 8 1958		
E. L. Stuntz ENGINEER OF DESIGN		

STANDARD 2135

STANDARD DESIGN

WIDTH TRANSITION



GENERAL NOTES

Barricades and warning signs shall be provided, erected, and maintained by the Contractor in accordance with Article 7.14 of the Standard Specifications. The barricades and warning signs shall conform with those shown on Standard 1977-4, and they shall be placed at the locations designated by the Engineer.

At locations where there will be a temporary gap in the widening due to a narrow bridge which is being, or is to be, reconstructed or widened, the length of transition from the wider surface to the bridge shall be as shown in the table.

The material used for the transition shall be the same type as was used to construct the widening or pavement. The thickness shall be the same as that of the widening or pavement being constructed.

This work will be paid for at the contract unit price included in the contract for the type of widening or pavement being constructed.

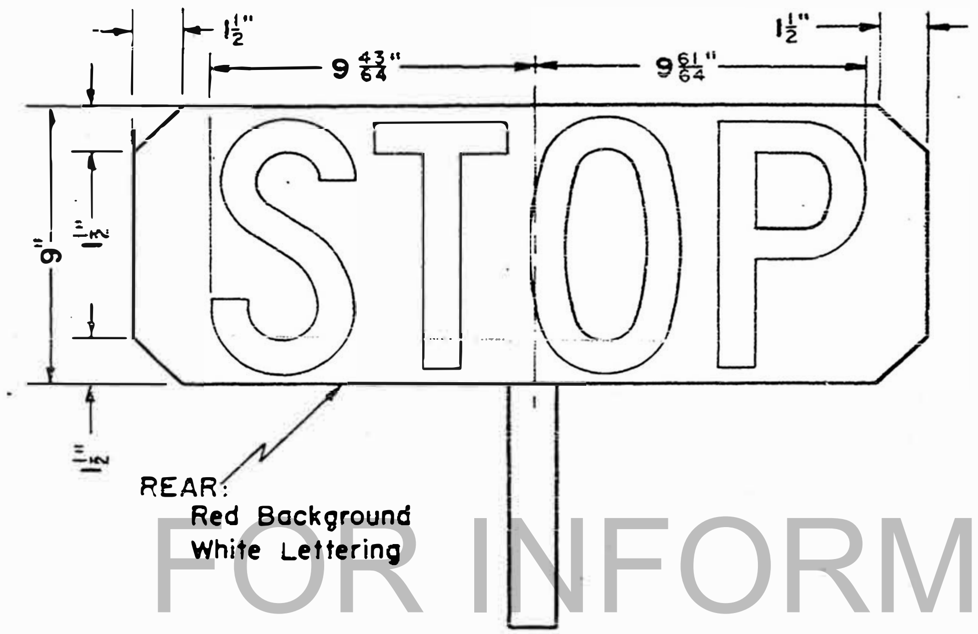
TRANSITION LENGTHS FOR VARIOUS WIDTHS

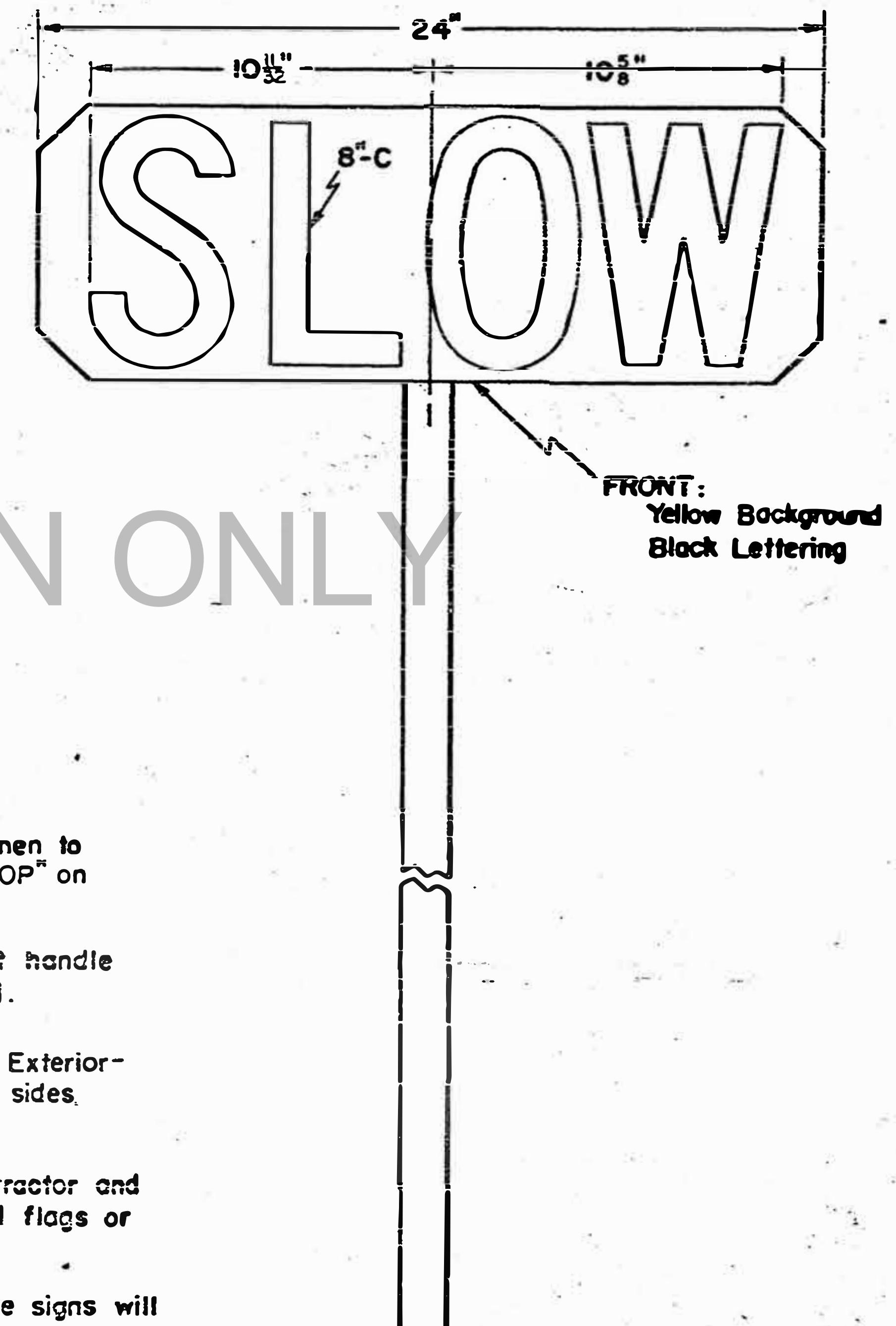
W feet	L feet
2	150
3	200
4	250
6	300

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	REVISIONS	
	BY	DATE
PASSED JULY 1, 1959	KHW	3-23-64
A V Van Ausdall Engineer of Road Plans And Contracts		
APPROVED JULY 1, 1959		
[signature] Engineer of Design		

STANDARD 2143-1

STANDARD DESIGN FOR FLAGMAN TRAFFIC CONTROL SIGN





—NOTE—

The paddle type sign used by the flagmen to direct traffic shall be constructed with "STOP" on one side and "SLOW" on the reverse side.

Signs may be constructed with a short handle or a long staff which rests on the ground.

The material for the sign shall be 1/4" Exterior-Grade A-A Plywood or Exterior D.F.P.A.-2 sides sound.

These signs shall be furnished by the Contractor and shall be used by the flagmen in lieu of red flags or other signaling devices.

The cost of furnishing and maintaining the signs will be considered incidental to the contract and no additional compensation will be allowed.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BLDGS.
DIVISION OF HIGHWAYS

PASSED April 10 1954
H. L. Oetm
ENGINEER OF ROAD PLANS AND CONTRACTS

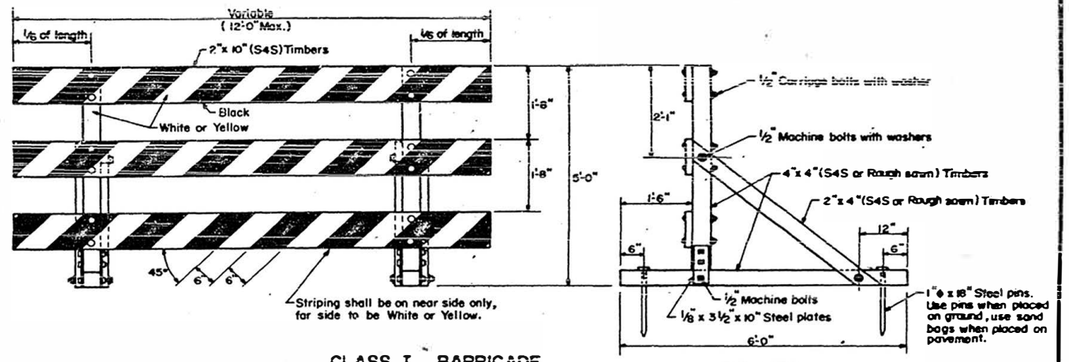
APPROVED April 12 1954
E. L. Pierce
ENGINEER OF DESIGN

REVISIONS	
BY	DATE

STANDARD 2114

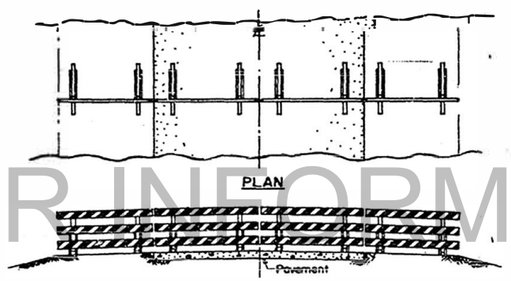
Rev. 5. 4-8-54

STANDARD DESIGN
BARRICADES

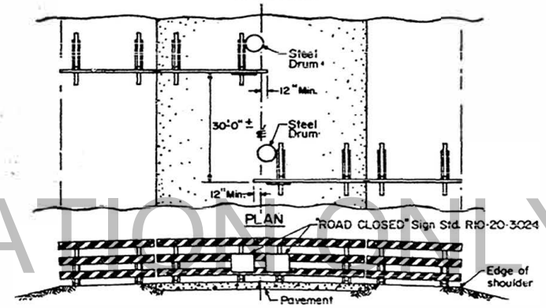


CLASS I BARRICADE

END VIEW



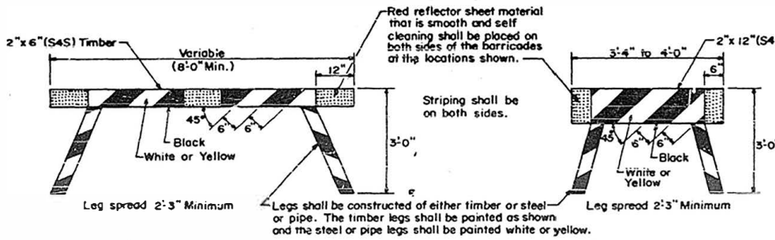
Placement of barricades when it is not necessary for road to be kept open for local traffic.



Placement of barricades when road must be kept open for local traffic.

TYPICAL APPLICATIONS OF CLASS I BARRICADES CLOSING A ROAD

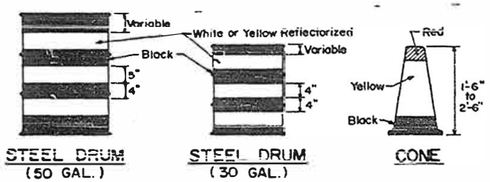
The barricade shall be to the edge of shoulders except when otherwise directed by the Engineer or shown on the detail construction plans.



TYPE "A" BARRICADE HORSE

TYPE "B" BARRICADE HORSE

SIGN
(STD. RIO-20-3024)



STEEL DRUM (50 GAL.)

STEEL DRUM (30 GAL.)

CONE

GENERAL NOTES

No word message will be permitted on the barricades.

A name plate not exceeding 6 inches wide, bearing the owners name may be suspended from the barricade.

All lumber and materials shall be substantial and durable and shall be approved by the Engineer.

When required the steel drums shall be anchored as directed by the Engineer.

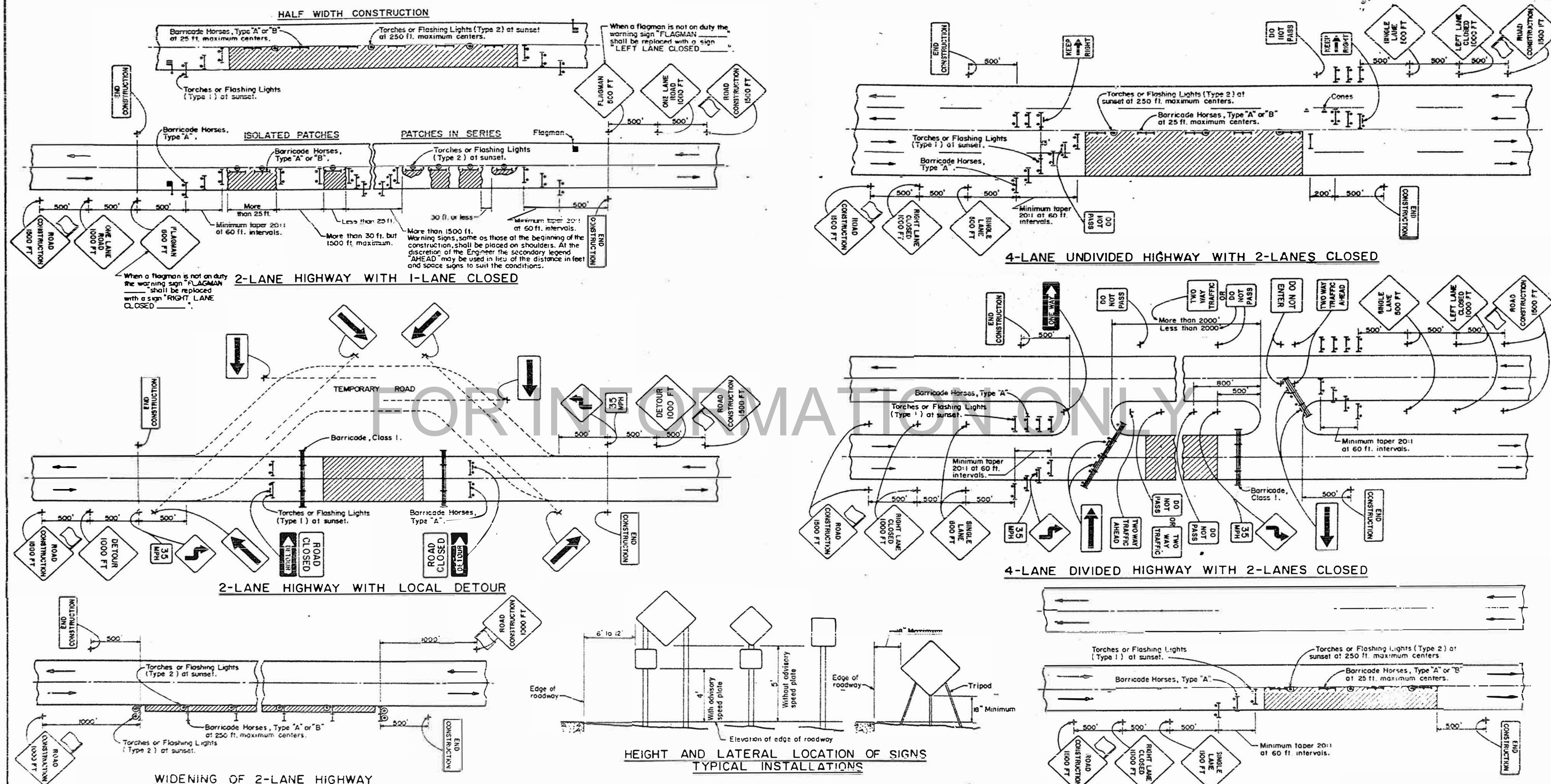
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS	REVISIONS BY	DATE
PASSED January 4, 1965	W.F.	11-24-64
A J VanArsdall Engineer of Road Plans And Contracts	W.F.	9-7-65
APPROVED January 4, 1965		
Engineer of Design		

STANDARD 2208-2

(Half Size) Redrawn 11-24-64 W.F.

STANDARD DESIGN

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND REPAIRS



GENERAL NOTES

The location of signs and barricades at each repair job as indicated in detail on the sketches shall be varied for local conditions. Judgment shall be used in the placement of these signs and barricades to give traffic ample warning of the obstruction.

The "ROAD CONSTRUCTION ______" signs are to be placed only at the limits of the zones of repairs as shown in the sketches.

Red flags shall be displayed on the "ROAD CONSTRUCTION ______" signs at each end of the zone of repairs. The frequency of flags on the barricade horses, will rest with the judgment of the Engineer or Foreman in charge of the repair crew. It is suggested, however, that the flags be displayed at least on the first barricade of a zone of repairs.

Barricades placed parallel to center line shall not project into lanes open to traffic.

Type 1 Flashing Light shall have one 7 inch diameter yellow lens

Type 2 Flashing Light shall have two 7 inch diameter yellow lens.

Type 1 and Type 2 Flashing Lights shall be regulated to flash 70 to 80 times per minute; the length of dwell, or on-time, shall not be less than 25%; bulbs shall be GE1850 or equal.

Flashing Lights shall be placed at least 2 feet above pavement.

Type "A" Barricade Horse with support at one end, may be used on widening.

Type "B" Barricade Horse may be used as delineators to direct flow of traffic.

When approved by the Engineer the Contractor may use two Type "B" (4'-0") Barricade Horses in lieu of one Type "A" Barricade Horse.

Torches or Flashing Lights and Barricades shall be furnished and maintained by the Contractor.

Reflectorized signs will be furnished the Contractor by the Department in accordance with Article 7.14 of the Standard Specifications.

Refer to Standard 2208 for detail of Barricades.

KEY TO SYMBOLS

- Type "A" Barricade Horse
- Type "A" or "B" Barricade Horse
- Class 1 Barricade
- Type 1 Flashing Light
- Type 2 Flashing Light
- Flagman
- Cone

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

PASSED August 3, 1964
Engineer of Road Plans and Contracts
APPROVED August 3, 1964
Engineer

REVISIONS	
BY	DATE
W F	1-14-66

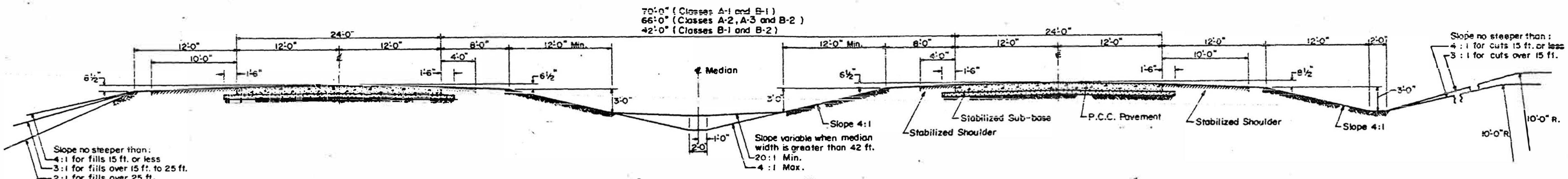
STANDARD 2209-1

(Full Size) 7-30-64 WF

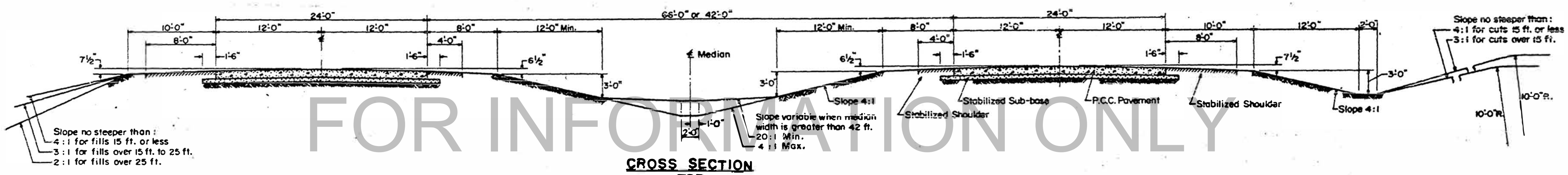
STANDARD DESIGN

ROADWAY CROSS SECTIONS FOR DUAL 24 FT. P.C.C. PAVEMENT

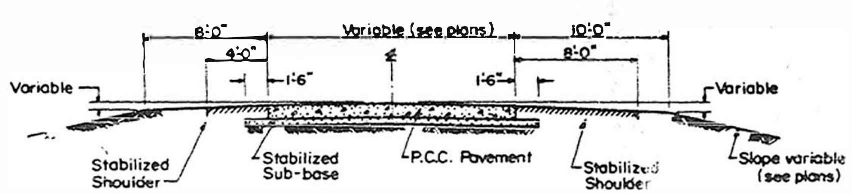
(HIGHWAY CLASSES A-1, A-2, A-3, B-1, B-2, B-3, AND RAMP)



CROSS SECTION FOR HIGHWAY CLASSES A-1, A-2, A-3, B-1, & B-2

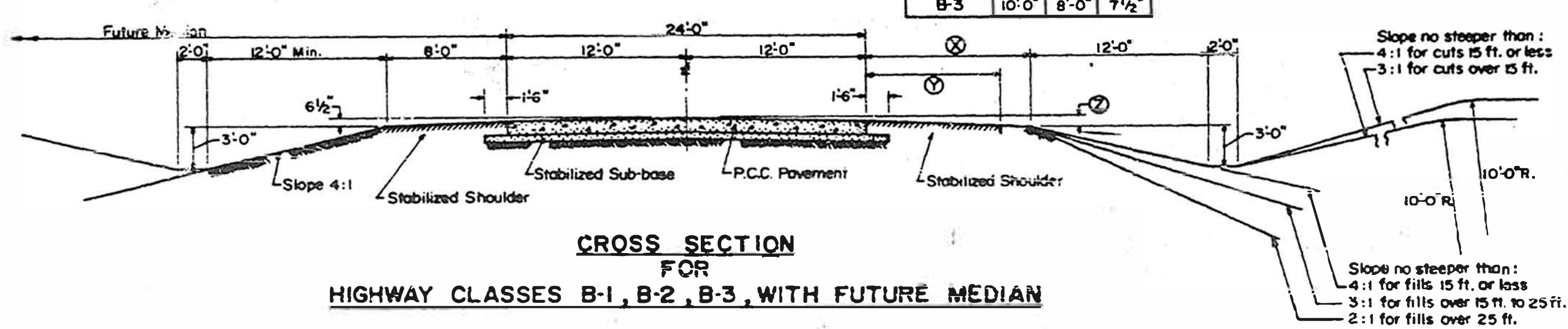


CROSS SECTION FOR HIGHWAY CLASS B-3



CROSS SECTION FOR RAMP

CLASS	⊗	Ⓨ	Ⓩ
B-1 & B-2	12'-0"	10'-0"	8½"
B-3	10'-0"	8'-0"	7½"



CROSS SECTION FOR HIGHWAY CLASSES B-1, B-2, B-3, WITH FUTURE MEDIAN

Portland Cement Concrete Pavement:-

The thickness and type of the pavement shall be as shown on the plans or specified in the special provisions.

For detail of the pavement see Standards:
2179 Standard reinforced pavement.
2224 Continuously reinforced pavement.

Stabilized Sub-base:-

The stabilized sub-base shall be 4 inches thick unless shown otherwise on the plans.

When a slip form paver is used the stabilized sub-base may be extended to a width 6 inches greater than the width from outside to outside of the slip form paver tracks. Such extended width will not be measured for payment but shall be considered as being incidental to the contract.

Stabilized Shoulders:-

The stabilized shoulders shall be as detailed on Standard 2237 unless shown otherwise on the plans.

General Notes:-

The superelevation of the pavement shall be as shown on the plans.

The shoulders and side slopes shall be rounded 12 inches in each direction from the tangent intersection of these surfaces.

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

PASSED July 7 1966
Engineer of Road Plans And Contracts

APPROVED July 7 1966
Engineer of Design

REVISIONS	
BY	DATE

STANDARD 2235
(Full Size)