

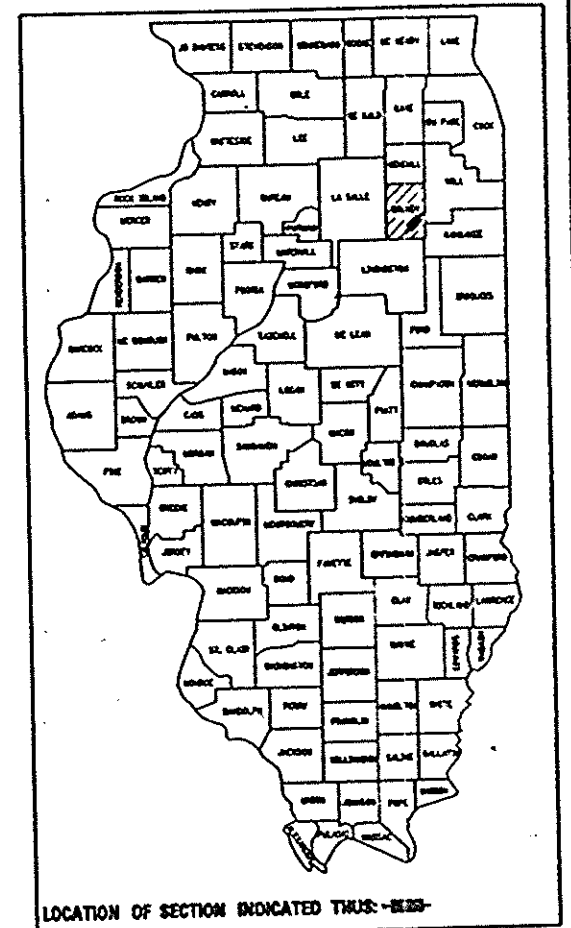
July 10, '92 3-178

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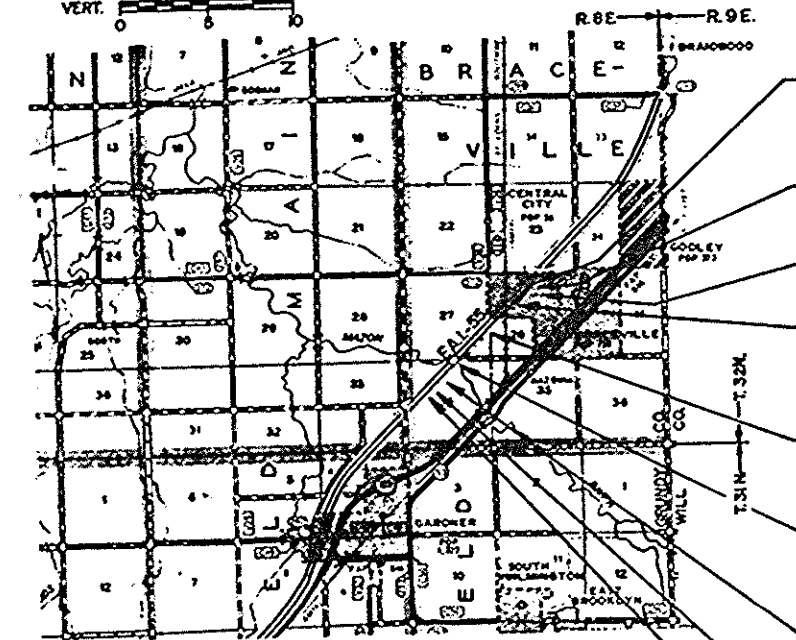
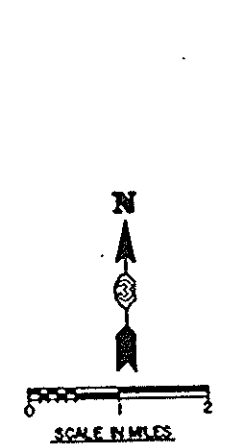
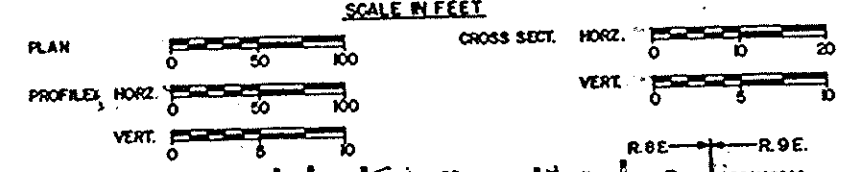
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAY
**PLANS FOR PROPOSED
 FEDERAL AID HIGHWAY**
 PROJECT IM-55-6(180)231
 F.A.I. RT. 55
 SECTION: (32-1)BR,VBR
 GRUNDY COUNTY
 C-93-101-92

FOR INDEX OF SHEETS SEE SHEET NO.2

F.A.I. RTE.	SECTION	COUNTY	LOT/SHEET
55		GRUNDY	88 1
* 032-1BR,VBR			
P-93-025-88			
D-93-034-91			



LOCATION OF SECTION INDICATED THUS: -BR-V-
 INTERSTATE ADT. 2001 (23482)
 PC = 74.2 SU = 2.5 MU = 23.3



- BEGIN PROJECT
BEGIN IMPROVEMENT
STA. 940+13.88
- DETOUR REMOVAL - SECTION (32-1)VBR
STA. 940+13.88 TO STA. 949+86.12
- OMISSION
STA. 949+86.12 TO STA. 960+00
- BRIDGE IMPROVEMENT - SECTION (32-1)VBR
S.B. STA. 960+00 TO STA. 967+00
N.B. STA. 960+00 TO STA. 967+50
S.N. 032-0007 & 032-0008
- OMISSION
S.B. STA. 967+00 TO STA. 1003+00
N.B. STA. 967+50 TO STA. 1003+00
- BRIDGE IMPROVEMENT - SECTION (32-1) BR
S.B. STA. 1003+00 TO STA. 1010+50
N.B. STA. 1003+00 TO STA. 1010+00
S.N. 032-0005 & 032-0006
- OMISSION
S.B. STA. 1010+50 TO STA. 1015+13.88
N.B. STA. 1010+00 TO STA. 1015+13.88
- DETOUR REMOVAL - SECTION (32-1)BR
STA. 1015+13.88 TO STA. 1024+86.12
- END PROJECT
END IMPROVEMENT
STA. 1024+86.12

GROSS LENGTH OF IMPROVEMENTS = 8,472.24 FEET = 1.605 MILES
 OMISSIONS = 5,077.76 FEET = 0.962 MILES
 NET LENGTH OF PROJECT = 3,394.48 FEET = 0.643 MILES

NET LENGTH OF SECTION (32-1)BR = 1,722.24 FEET = 0.326 MILES
 NET LENGTH OF SECTION (32-1)VBR = 1,672.24 FEET = 0.317 MILES

DESIGN DESIGNATION

MICROFILMED _____
 REEL NUMBER _____
 AWARDED _____
 RESIDENT ENGINEER _____
 AS BUILT CHANGES WERE MADE
 ON THE FOLLOWING SHEETS _____

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
 DIVISION ADMINISTRATOR

DATE _____

J.U.L.I.E. 1-800-892-0123
 PROJECT ENGINEER: LYLE SCHAUB
 SQUAD LEADER: KELLY VLASTNIK
 TOWNSHIP: BRACEVILLE

DISTRICT 3 PHONE NO.
 815-434-6131

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED May 5 1992
Karl Edalton
 DISTRICT ENGINEER

EXAMINED _____ 19____
 ENGINEER OF PLANS AND CONTRACTS

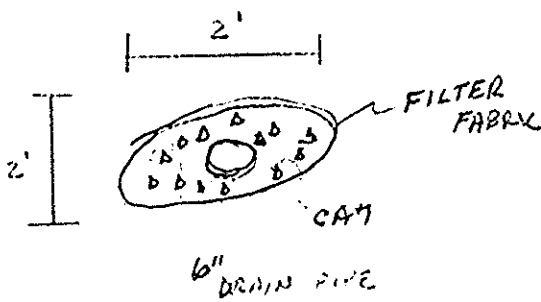
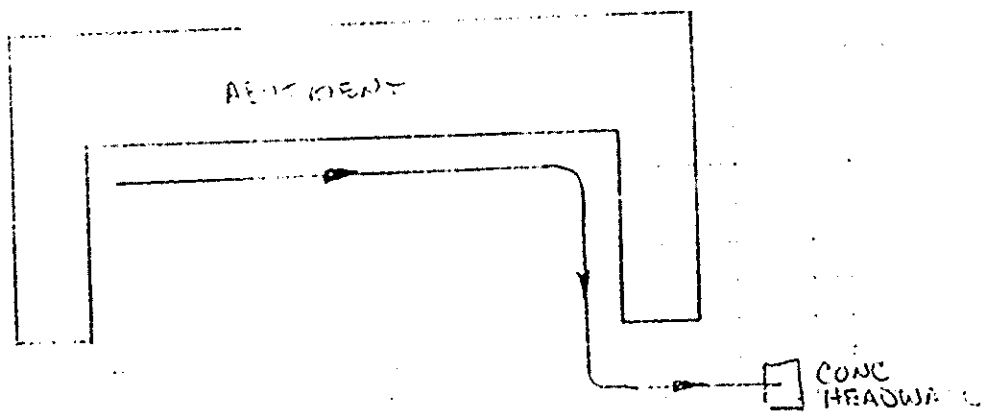
PASSED June 12 1992
Ray D. Gould
 ENGINEER OF DESIGN

APPROVED June 12 1992
Karl A. Wilson
 DIRECTOR, DIVISION OF HIGHWAYS



GARY R. FULTON
 ILLINOIS PROFESSIONAL ENGINEER NO. 36350
 REGISTRATION EXPIRES 11-30-92
 HENRY, MEISENHNER & GENDE INC.
 CONSULTING ENGINEERS
 CARLYLE, ILLINOIS 62231

TYPICAL



CONC FOR HEADWALL	0.15 CY
6" PERFORATED DRAIN PIPE (RIGID)	75 LF
FILTER FABRIC FOR EACH JOINT	85 SY
CA-7	20 TONS

THIS PRICE SHALL INCLUDE ALL EXCAVATION, BRICKWORK OF SOIL, DRAINPIPE, FITTINGS, FILTER FABRIC, CA-7 AND CONC. HEADWALL. THIS PRICE SHALL BE FOR EACH LOCATION, THERE ARE 8 LOCATIONS FOR THIS WORK TO BE PERFORMED.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS AND GENERAL NOTES
3	TYPICAL SECTIONS
4	SUMMARY OF QUANTITIES
5-6	SCHEDULE OF QUANTITIES
7	TRAFFIC FLOW AND STAGE CONSTRUCTION
8	PROJECT LAYOUT
9	PLAN AND PROFILE-DETOUR REMOVAL-STA. 940+13.88 TO STA. 949+86.12
10	PLAN AND PROFILE-S.P.C.S.L. RAILROAD
11	PLAN AND PROFILE-MAZON RIVER
12	PLAN AND PROFILE-DETOUR REMOVAL-STA. 1015+13.88 TO STA. 1024+86.12
13	MISCELLANEOUS DETAILS AND TRAFFIC CONTROL DETAILS
14-18	BRIDGE PLANS, STRUCTURES NO. 032-0007 (N.B.) AND 032-0008 (S.B.)
49-74	BRIDGE PLANS, STRUCTURES NO. 032-0005 (N.B.) AND 032-0006 (S.B.)
75-77	STATION CROSS SECTIONS-DETOUR REMOVAL-STA. 940+13.88 TO STA. 949+86.12
78-80	STATION CROSS SECTIONS-S.P.C.S.L. RAILROAD
81-83	STATION CROSS SECTIONS-MAZON RIVER
84-86	STATION CROSS SECTIONS-DETOUR REMOVAL-STA. 1015+13.88 TO STA. 1024+86.12
86A-86I	EXISTING BRIDGE PLANS (S.P.C.S.L. RAILROAD) → FOR INFORMATION ONLY
86J-86P	EXISTING BRIDGE PLANS (MAZON RIVER)

STANDARDS

1527-9	MANHOLE TYPE A
1686-4	SYMBOLS AND ABBREVIATIONS
2113-2	DETAIL OF NAME PLATE FOR BRIDGE
2213-4	FRAME AND LIDS TYPE 1
2228-4	METAL END SECTION FOR PIPE CULVERTS
2230-16	STEEL PLATE BEAM GUARD RAIL, TYPES A,B,C & D
2262-4	REINFORCED CONCRETE PIPE ELBOW AND PRECAST REINFORCED CONCRETE FLARED END SECTION
2298-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2299-13	DESIGN OF TRAFFIC CONTROL DEVICES
2300-3	FLAGMAN TRAFFIC CONTROL SIGN
2314-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES MULTILANE, DIVIDED AND UNDIVIDED, RURAL DAY OR NIGHT OPERATIONS
2316-15	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES MULTILANE, DIVIDED AND UNDIVIDED, RURAL OPERATIONS EXCEEDING ONE DAYLIGHT OPERATION
2317-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES MULTILANE, DIVIDED, RURAL DAY OR NIGHT OPERATIONS
2324-7	BRIDGE APPROACH SHOULDER PAVEMENT
2336-4	TRAFFIC BARRIER TERMINAL TYPE 1 & 1A
2337-2	TRAFFIC BARRIER TERMINAL TYPE 2
2340-4	TRAFFIC BARRIER TERMINAL TYPE 5 & 5A
2341-4	TRAFFIC BARRIER TERMINAL TYPE 6
2354-1	PRECAST REINFORCED CONCRETE FLAT SLAB TOP
2382-2	BRIDGE APPROACH PAVEMENT
2100-7	WOVEN WIRE FENCE
2222-4	SHOULDER INLET WITH CURB
2281	TEMPORARY EROSION CONTROL SYSTEMS

GENERAL NOTES

THE THICKNESS OF BITUMINOUS MIXTURES SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.

THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS BITUMINOUS LIFTS.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR RE-ESTABLISH ANY SECTION OR SUB-SECTION MONUMENTS DESTROYED BY HIS OPERATIONS.

PERMANENT PAVEMENT MARKINGS AND TEMPORARY STRIPING QUANTITIES ARE APPROXIMATE ONLY. PAYMENT SHALL BE MADE FOR ACTUAL QUANTITIES USED AS MEASURED IN THE FIELD.

THE EXISTING ROAD SIGNS THAT INTERFERE WITH CONSTRUCTION WILL BE REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER. AFTER THE CONSTRUCTION IS COMPLETED, THE CONTRACTOR WILL REPLACE THE SIGNS AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO COMPENSATION WILL BE ALLOWED.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED IN THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

GRANULAR MATERIALS	2.05	TONS/CU YD
BITUMINOUS MATERIALS PRIME COAT	0.08	GAL/SO YD(BITUM. SURF.) & 0.375 GAL/SO YD(AGG. SURF.)
BITUMINOUS CONCRETE SURFACE & BINDER COURSE	112	LBS/SO YD/INCH
NITROGEN FERTILIZER NUTRIENT	80	LBS/ACRE
PHOSPHORUS FERTILIZER NUTRIENT	160	LBS/ACRE
POTASSIUM FERTILIZER NUTRIENT	80	LBS/ACRE
TEMPORARY PAVEMENT MARKING MIXTURE FOR CRACKS, JOINTS & FLANGEWAYS	10	FT/100 FT OF APPLICATION
MULCH METHOD 2	0.0003	TONS/SO YD
EMULSIFIED ASPHALT	2	TONS/ACRE
	100	GAL/TON OF MULCH

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.26 OF THE STANDARD SPECIFICATIONS. THE JULIE NUMBER IS 1-800-892-0123. A MINIMUM OF FORTY-EIGHT HOURS ADVANCE NOTICE IS REQUIRED.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SEEDING SHALL BE PLACED ON ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION OPERATIONS. NUTRIENTS, MULCH, AND ASPHALT, IF REQUIRED, SHALL BE APPLIED TO ALL SEEDING AREAS. THE SEEDING SHALL BE DONE ACCORDING TO ARTICLES 642 AND 643 OF THE STANDARDS SPECIFICATION OR AS DIRECTED BY THE ENGINEER.

FOR ALL TEMPORARY PAVEMENT MARKINGS ON FINAL SURFACES (I.E., MAINLINE PAVEMENT), ONLY TEMPORARY PAVEMENT MARKING TAPE SHALL BE USED.

FOR THE PURPOSE OF THIS CONTRACT, FALL SEEDING IS DEFINED AS THAT PERFORMED BETWEEN JUNE 1ST AND DECEMBER 31ST. SEEDING WILL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. AREAS TO BE SEEDDED SHALL BE DETERMINED BY THE ENGINEER.

ALL SAW CUTTING OF EXISTING PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE MINIMUM SAW CUT DEPTH SHALL BE 1.75 INCHES UNLESS OTHERWISE SPECIFIED IN THE PLAN DETAILS.

DO NOT INCLUDE MULCH OR EMULSIFIED ASPHALT IN EXCELSIOR BLANKET AREAS.

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 RDR VSR	GRAND	86	2
F.M.P.A. REG. NO.	BLNOS	PROJECT		

INDEX OF SHEETS
&
GENERAL NOTES

N.V. & G. NO. 2083.12

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
(2A)	INDEX OF SHEETS AND GENERAL NOTES
3	TYPICAL SECTIONS
(4A)	SUMMARY OF QUANTITIES
5-6	SCHEDULE OF QUANTITIES
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11	PLAN AND PROFILE-WAZON RIVER
12	PLAN AND PROFILE-DETOUR REMOVAL-STA. 1015+13.88 TO STA. 1024+86.12
13	MISCELLANEOUS DETAILS AND TRAFFIC CONTROL DETAILS
14A, 15-20, 29A, 30-48	BRIDGE PLANS, STRUCTURES NO. 032-0007 (N.B.) AND 032-0008 (S.B.)
49A, 50-59, 60A, 61-78	BRIDGE PLANS, STRUCTURES NO. 032-0005 (N.B.) AND 032-0006 (S.B.)
75-77	STATION CROSS SECTIONS-DETOUR REMOVAL-STA. 940+13.88 TO STA. 949+86.12
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2160-7	WOVEN WIRE FENCE
2322-4	SHOULDER INLET WITH CURB
2391	TEMPORARY EROSION CONTROL SYSTEMS

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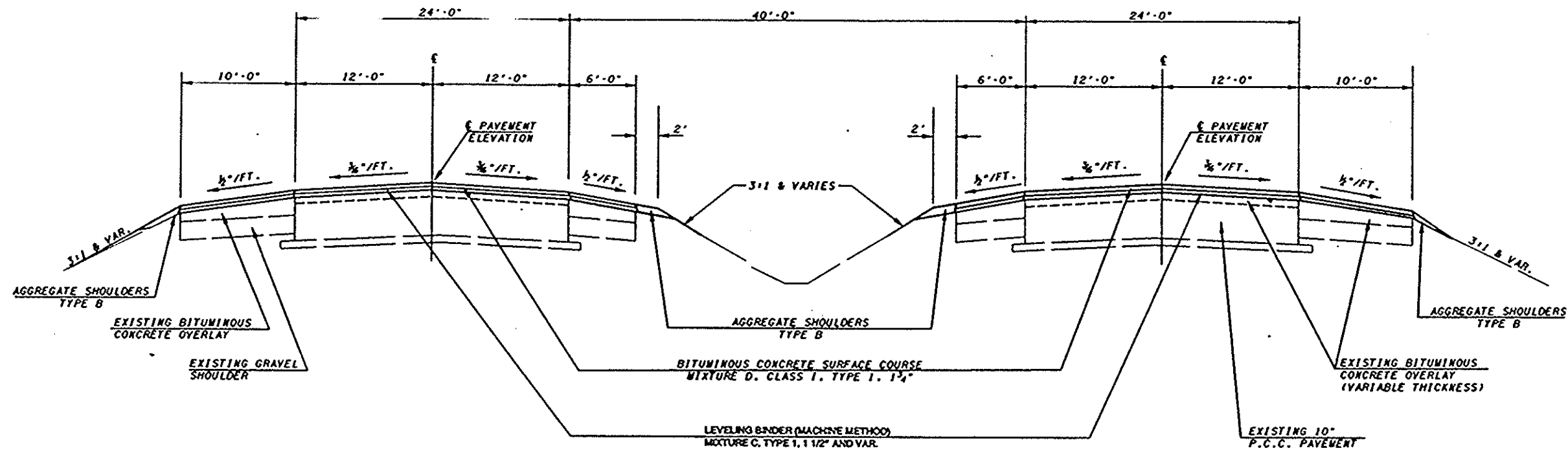
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AS REVISED: 4-8-93 S.T.C.

F.M.A. REG. NO.	SECTION	COUNTY	TOTAL SHEETS
55	1324 R.R. VBR	GRAND	86
			28

INDEX OF SHEETS
&
GENERAL NOTES

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 DRIVER	GRANDT	06	3
F.M.A. REG. NO.	RLNOS	PROJECT		



NORTH BOUND LANE
 STA. 960+00 TO STA. 962+23.20
 STA. 965+31 TO STA. 967+50
 STA. 1003+00 TO STA. 1005+05.17
 STA. 1007+78.83 TO STA. 1010+00

SOUTH BOUND LANE
 STA. 960+00 TO STA. 961+58
 STA. 964+65.80 TO STA. 967+00
 STA. 1003+00 TO STA. 1005+05.17
 STA. 1007+78.83 TO STA. 1010+00

**PROPOSED TYPICAL SECTION
 FAI-55**

THE NOMINAL THICKNESS FOR SUBBASE GRANULAR MATERIAL, BASE AND SURFACE COURSES ARE SHOWN ON THE TYPICAL SECTIONS, STANDARDS, SCHEDULES OR SPECIAL DETAILS. THE CONSTRUCTED THICKNESS OF THE ABOVE ITEMS SHALL NOT BE LESS THAN 90 PERCENT OF THE NORMAL THICKNESS AT ANY LOCATION.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DISTRICT THREE

PREPARED BY: *Andrew Sarkis*
 DISTRICT ENGINEER OF DESIGN

DATE: *May 6, 1992*

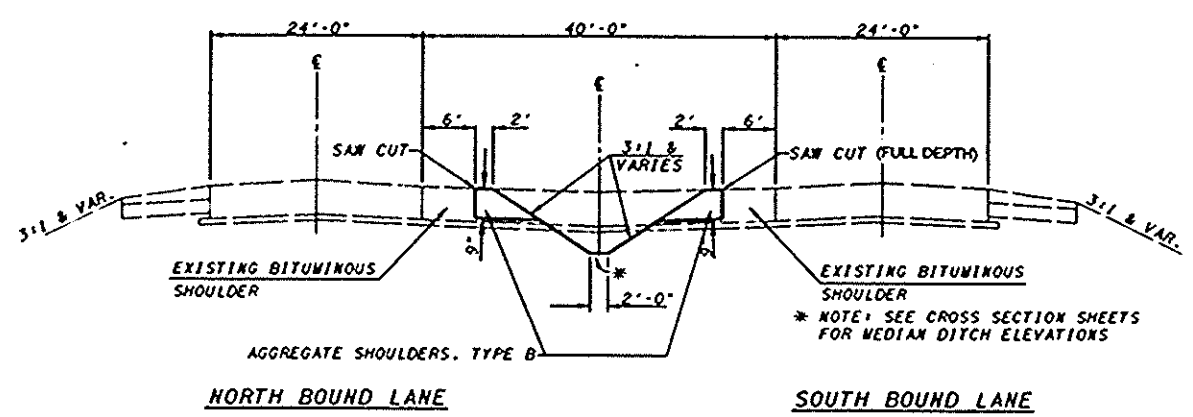
EXAMINED BY: *James J. [Signature]*
 DISTRICT ENGINEER OF CONSTRUCTION

Philip M. [Signature]
 DISTRICT ENGINEER OF MAINTENANCE

John M. [Signature]
 DISTRICT ENGINEER OF MATERIALS

Edward P. [Signature]
 DISTRICT ENGINEER OF TRAFFIC

Gregory [Signature]
 DISTRICT BUREAU OF PLANNING



NORTH BOUND LANE **SOUTH BOUND LANE**

**TYPICAL SECTION FOR MEDIAN
 DETOUR REMOVAL**

TYPICAL SECTIONS

11-21-86 G. W. 1047.12

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 R.R. VBR	GRANDT	86	4
F.H.P.A. REG. NO.	BLINDS	PROJECT		

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SECTION (32-1)VBR		SECTION (32-1)BR	
				ROAD STATION	S.P.C.S.L. RAILROAD	ROAD STATION	MAZON RIVER
				940+13.88 TO 967+50	N. BOUND 962+55.43 TO S. BOUND 964+98.77 TO 961+90.23 TO 964+33.57	1003+00 TO 1024+88.12	N. BOUND AND S. BOUND 1005+25.17 TO 1007+58.83
CONSTRUCTION CODE TYPE:							
				SFTY 30	X171-5.8	SFTY 30	X471-2A
20200100	EARTH EXCAVATION	CU YD	1,974	878	140	958	
20400100	BORROW EXCAVATION	CU YD	44	24		20	
21501200	AGGREGATE SHOULDERS, TYPE B	TON	844	478		368	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	632	308		328	
40600400	MIXTURE FOR CRACKS, JOINTS, AND FLANGWAYS	TON	3	1.4		1.8	
40600500	LEVELING BINDER (MACHINE METHOD) MIXTURE C, TYPE 1	TON	624	580		104	
40600610	LEVELING BINDER (HAND METHOD), TYPE 1	TON	4	1.9		2.1	
40600820	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 1	TON	775	375		400	
40601150	BRIDGE APPROACH PAVEMENT (STANDARD 2382)	SQ YD	557.2	344		213.2	
40601300	PROTECTIVE COAT	SQ YD	557.2	344		213.2	
40801500	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ YD	254.4	152.4		102.0	
50102400	CONCRETE REMOVAL	CU YD	243.9		181.5		82.4
50103000	EXPANSION BOLTS 3/4 INCH X 4 INCH	EACH	122		68		54
50103100	EXPANSION BOLTS 3/4 INCH X 6 INCH	EACH	122		68		54
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	4		2		2
50200100	STRUCTURE EXCAVATION	CU YD	634		384		300
50200300	COFFERDAM EXCAVATION	CU YD	80				80
50200600	COFFERDAM (PIER 1)	EACH	2				2
50200700	COFFERDAM (PIER 2)	EACH	2				2
50300100	FLOOR DRAINS	EACH	62				62
50300120	PREFORMED JOINT SEAL 2 1/2"	LN FT	84				84
50300150	NEOPRENE EXPANSION JOINT 2"	LN FT	118		118		
50300155	NEOPRENE EXPANSION JOINT 2 1/2"	LN FT	198		118		82
50300250	CLASS X CONCRETE SUPERSTRUCTURE	CU YD	1,276.3		874.4		601.9
50300300	PROTECTIVE COAT	SQ YD	6,025		2,583		2,442
50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	28		14		14
50300320	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	28		14		14
50400300	CLASS X CONCRETE	CU YD	487.9		338.9		149
50700100	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		.5		.5
50700600	STUD SHEAR CONNECTORS	EACH	1680		800		825.9
50700705	LACK AND REMOVE EXISTING BEARINGS	EACH	43		24		24
51113683	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 18"	EACH	1	1			
51115547	METAL END SECTIONS 12"	EACH	19	19			
51200100	REINFORCEMENT BARS	POUND	28,820	12,124	2,820	12,078	
51200200	REINFORCEMENT BARS, EPOXY COATED	POUND	349,850		191,050		158,800
51301800	FURNISHING STEEL PILES HP12X53	LN FT	215				215
51301700	FURNISHING STEEL PILES HP12X74	LN FT	148				148
51302200	FURNISHING CONCRETE PILES	LN FT	455		455		
51302700	DRIVING STEEL PILES	LN FT	363				363
51302800	DRIVING CONCRETE PILES	LN FT	455		455		
51303600	TEST PILE STEEL HP12X53	EACH	2				2
51304200	TEST PILE CONCRETE	EACH	2		2		
51400100	NAME PLATES	EACH	4		2		2
60100100	STONE RIPRAP, CLASS A5	SQ YD	1,668	28	820		820
60700600	PIPE DRAINS 12"	LN FT	1,193	1,193			
61224600	RESTRICTED DEPTH MANHOLES, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2	2			
61247000	TYPE C INLET BOX, STANDARD 2324	EACH	4	4			
61247100	TYPE D INLET BOX, STANDARD 2324	EACH	4	4			
61247120	TYPE F INLET BOX, STANDARD 2322	EACH	11	11			

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SECTION (32-1)VBR		SECTION (32-1)BR	
				ROAD STATION	S.P.C.S.L. RAILROAD	ROAD STATION	MAZON RIVER
				940+13.88 TO 967+50	N. BOUND 962+55.43 TO S. BOUND 964+98.77 TO 961+90.23 TO 964+33.57	1003+00 TO 1024+88.12	N. BOUND AND S. BOUND 1005+25.17 TO 1007+58.83
CONSTRUCTION CODE TYPE:							
				SFTY 30	X171-5.8	SFTY 30	X471-2A
61700100	PAVEMENT REMOVAL	SQ YD	3,254	1,627		1,627	
61701000	BITUMINOUS CONCRETE SURFACE REMOVAL	SQ YD	3,560	1,780		1,780	
61701410	BITUMINOUS SHOULDER REMOVAL AND REPLACEMENT	SQ YD	650	425		425	
61800300	SLOPE WALL 6 INCH	SQ YD	400				400
62200000	STEEL PLATE BEAM GUARD RAIL, TYPE A	LN FT	6,962.5	4,550		2,412.5	
62200035	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	18	8		8	
62200045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4	2		2	
62200070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	4	2		2	
62200085	TRAFFIC BARRIER TERMINAL, TYPE 8	EACH	14	7		7	
63002400	WOVEN WIRE FENCE TO BE REMOVED AND RE-ERECTED	LN FT	440	200		240	
63300300	STEEL PLATE BEAM GUARD RAIL REMOVAL	LN FT	6,425	3,784.5		1,640.5	
63600400	FURNISHING AGGREGATE	TON	170		170		
64200330	SEEDING, CLASS 6	ACRE	2	1		1	
64200400	NITROGEN FERTILIZER NUTRIENT	POUND	180	80		80	
64200500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	320	160		160	
64200800	POTASSIUM FERTILIZER NUTRIENT	POUND	180	80		80	
64300400	EXCELSIOR BLANKET	SQ YD	9,175	4,605		4,570	
64600400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	17	8.5		8.5	
64600600	ENGINEER'S FIELD LABORATORY	CAL MO	17	8.5		8.5	
64700102	TEMPORARY PAVEMENT MARKING (SPECIAL)	LN FT	49,590	24,795		24,795	
64701000	PAVEMENT MARKING TAPE, TYPE III 4"	LN FT	68,778	34,389		34,389	
64800800	TRAFFIC CONTROL AND PROTECTION, STANDARD 2318	L SUM	1	0.5		0.5	
64901100	TRAFFIC CONTROL AND PROTECTION, STANDARD 2317 (SPECIAL)	EACH	2	1		1	
65000100	MOBILIZATION	L SUM	1	0.5		0.5	
67400100	BITUMINOUS CONCRETE CURB	LN FT	3,228	3,228			
75060102	TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER, TYPE II	EACH	170	85		85	
75100300	GUARD RAIL REFLECTORS	EACH	205	134		71	
75180200	PERMANENT PAVEMENT MARKING - LINE 4"	LN FT	37,418	18,708		18,708	
75180400	PERMANENT PAVEMENT MARKING - LINE 6"	LN FT	5,648	2,824		2,824	
77004000	PRISMATIC BARRIER REFLECTOR	EACH	72	37		35	
80300441	GRAFFITI PROTECTION	SQ YD	415				415
80300777	REMOVE TEMPORARY TRAFFIC CONTROL DEVICES	L SUM	1	0.5		0.5	
80400504	RUBBED FINISH (MODIFIED)	SQ FT	7,010		3,578		3,434
82000070	BRIDGE DECK GROOVING	SQ YD	3,998		1,973		2,025
82007200	BRIDGE SEAT SEALER	L SUM	1		0.5		0.5
82013500	CONCRETE THRUST BLOCKS	EACH	15	15			
82015500	DEBRIS REMOVAL	L SUM	1				1
82017600	DRAINAGE SCUPPERS	EACH	8				8
82024405	FILTER FABRIC FOR USE WITH RIPRAP	SQ YD	848	28			820
82024478	FLEXIBLE DELINEATORS	EACH	240	120		120	
82037400	PAVEMENT MARKING REMOVAL	LN FT	3,200	1,600		1,600	
82047300	PROTECTIVE SHELD	SQ YD	490		240		240
82048865	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1		1		
82063800	RIVET REMOVAL AND REPLACEMENT	EACH	1,344		872		872
82070800	TEMPORARY PAINT PAVEMENT MARKING LINE 4"	LN FT	43,216	21,608		21,608	
82073400	TEMPORARY SUPPORT SYSTEM	EACH	4		4		
82078200	TRAINERS	HOURL	1,000				
X6320500	PEDING OF EXIST COVER PLATE WELDS	LN FT	48		24		24
X6320810	BRACED EXCAVATION	CU YD	582		582		
86194600	RIVET REMOVAL	EACH	288				288

* SPECIALTY ITEM
 Δ CONSTRUCTION TYPE CODE: Y080

SUMMARY OF QUANTITIES

M.W. & G. NO. 7083.12

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SECTION (32-1)VBR		SECTION (32-1)BR	
				ROAD STATION	S.P.C.S.L. RAILROAD	ROAD STATION	MAZON RIVER
				940+13.88 TO 967+50	N. BOUND 962+55.43 TO 964+93.77 S. BOUND 961+90.23 TO 964+33.57	1003+00 TO 1024+86.12	N. BOUND AND S. BOUND 1005+25.17 TO 1007+58.83
CONSTRUCTION CODE TYPE:							
				SFTY 30	X111-5.6	SFTY 30	X411-2A
20200100	EARTH EXCAVATION	CU YD	1,974	878	140	956	
20400100	BORROW EXCAVATION	CU YD	44	24			20
21501200	AGGREGATE SHOULDERS, TYPE B	TON	844	478		368	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	632	306		326	
40600400	MORTURE FOR CRACKS, JOINTS, AND FLANGEWAYS	TON	3	1.4		1.6	
40600500	LEVELING BINDER (MACHINE METHOD) MIXTURE C, TYPE 1	TON	684	590		104	
40600610	LEVELING BINDER (HAND METHOD), TYPE 1	TON	4	1.9		2.1	
40600820	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 1	TON	775	375		400	
40801150	BRIDGE APPROACH PAVEMENT (STANDARD 2382)	SO YD	557.2	344		213.2	
40801300	PROTECTIVE COAT	SO YD	557.2	344		213.2	
40801500	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SO YD	254.4	152.4		102.0	
50102400	CONCRETE REMOVAL	CU YD	243.9		161.5		82.4
50103000	EXPANSION BOLTS 3/4 INCH X 4 INCH	EACH	122		68		54
50103100	EXPANSION BOLTS 3/4 INCH X 6 INCH	EACH	122		68		54
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	4		2		2
50200100	STRUCTURE EXCAVATION	CU YD	684		384		300
50200300	COFFERDAM EXCAVATION	CU YD	80				80
50200600	COFFERDAM (PIER 1)	EACH	2				2
50200700	COFFERDAM (PIER 2)	EACH	2				2
50300100	FLOOR DRAINS	EACH	52				52
50300120	PREFORMED JOINT SEAL 2 1/2"	LN FT	84				84
50300150	NEOPRENE EXPANSION JOINT 2"	LN FT	118		118		
50300155	NEOPRENE EXPANSION JOINT 2 1/2"	LN FT	198		116		82
50300250	CLASS X CONCRETE SUPERSTRUCTURE	CU YD	1,278.3		674.4		603.9
50300300	PROTECTIVE COAT	SO YD	5,025		2,583		2,442
50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	28		14		14
50300320	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	28		14		14
50400300	CLASS X CONCRETE	CU YD	487.9		338.9		149
50700100	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		5		5
50700600	STUD SHEAR CONNECTORS	EACH	19,404		9,870		9,534
50700705	JACK AND REMOVE EXISTING BEARINGS	EACH	43		24		24
51113683	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 18"	EACH	1		1		
51115547	METAL END SECTIONS 12"	EACH	19		19		
51200100	REINFORCEMENT BARS	POUND	28,820	12,124	2,820		12,076
51200200	REINFORCEMENT BARS, EPOXY COATED	POUND	349,850		191,050		158,800
51301600	FURNISHING STEEL PILES HP12X53	LN FT	215				215
51301700	FURNISHING STEEL PILES HP12X74	LN FT	148		455		148
51302200	FURNISHING CONCRETE PILES	LN FT	455				455
51302700	DRIVING STEEL PILES	LN FT	363				363
51302800	DRIVING CONCRETE PILES	LN FT	455		455		
51303600	TEST PILE STEEL HP12X53	EACH	2				2
51304200	TEST PILE CONCRETE	EACH	2		2		
51400100	NAME PLATES	EACH	4		2		2
60100100	STONE RPPRAP, CLASS A5	SO YD	1,645		820		820
60700500	PIPE DRAINS 12"	LN FT	1,193		1,193		
61224600	RESTRICTED DEPTH MANHOLES, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2		2		
61247000	TYPE C INLET BOX, STANDARD 2324	EACH	4		4		
61247100	TYPE D INLET BOX, STANDARD 2324	EACH	4		4		
61247120	TYPE F INLET BOX, STANDARD 2322	EACH	11		11		

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SECTION (32-1)VBR		SECTION (32-1)BR	
				ROAD STATION	S.P.C.S.L. RAILROAD	ROAD STATION	MAZON RIVER
				940+13.88 TO 967+50	N. BOUND 962+55.43 TO 964+93.77 S. BOUND 961+90.23 TO 964+33.57	1003+00 TO 1024+86.12	N. BOUND AND S. BOUND 1005+25.17 TO 1007+58.83
CONSTRUCTION CODE TYPE:							
				SFTY 30	X111-5.6	SFTY 30	X411-2A
61700100	PAVEMENT REMOVAL	SO YD	3,254	1,627			1,627
61701000	BITUMINOUS CONCRETE SURFACE REMOVAL	SO YD	3,560	1,780			1,780
61701410	BITUMINOUS SHOULDER REMOVAL AND REPLACEMENT	SO YD	850	425			425
61800300	SLOPE WALL 6 INCH	SO YD	400				400
62800000	STEEL PLATE BEAM GUARD RAIL, TYPE A	LN FT	6,962.5	4,550			2,412.5
62900035	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	16	8			8
62900045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4	2			2
62900070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	4	2			2
62900085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	14	7			7
63002400	WOVEN WIRE FENCE TO BE REMOVED AND RE-ERECTED	LN FT	440	200			240
63300300	STEEL PLATE BEAM GUARD RAIL REMOVAL	LN FT	5,425	3,784.5			1,640.5
63600400	FURNISHING AGGREGATE	TON	170			170	
64200330	SEEDING, CLASS 6	ACRE	2	1			1
64200400	NITROGEN FERTILIZER NUTRIENT	POUND	160	80			80
64200500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	320	160			160
64200600	POTASSIUM FERTILIZER NUTRIENT	POUND	160	80			80
64300400	EXCELSIOR BLANKET	SO YD	9,175	4,665			4,510
64600400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	17	8.5			8.5
64600600	ENGINEER'S FIELD LABORATORY	CAL MO	17	8.5			8.5
64700102	TEMPORARY PAVEMENT MARKING (SPECIAL)	LN FT	49,590	24,795			24,795
64701000	PAVEMENT MARKING TAPE, TYPE II 4"	LN FT	68,778	34,389			34,389
64800800	TRAFFIC CONTROL AND PROTECTION, STANDARD 2318	L SUM	1	0.5			0.5
64801100	TRAFFIC CONTROL AND PROTECTION, STANDARD 2317 (SPECIAL)	EACH	2	1			1
65000100	MOBILIZATION	L SUM	1	0.5			0.5
67400100	BITUMINOUS CONCRETE CURB	LN FT	3,228	3,228			
TS050102	TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER, TYPE II	EACH	170	85			85
TS100300	GUARD RAIL REFLECTORS	EACH	206	134			72
TS160200	PERMANENT PAVEMENT MARKING - LINE 4"	LN FT	37,416	18,708			18,708
TS160400	PERMANENT PAVEMENT MARKING - LINE 6"	LN FT	5,648	2,824			2,824
TX000400	PRISMATIC BARRIER REFLECTOR	EACH	72	37			35
X0300441	GRAFFITI PROTECTION	SO YD	415				415
X0300777	REMOVE TEMPORARY TRAFFIC CONTROL DEVICES	L SUM	1	0.5			0.5
5A-06-501	RUBBED FINISH (MODIFIED)	SO FT	7,010		3,576		3,434
Z0006070	BRIDGE DECK GROOVING	SO YD	3,998		1,973		2,025
Z0007200	BRIDGE SEAT SEALER	L SUM	1		0.5		0.5
Z0013500	CONCRETE THRUST BLOCKS	EACH	15	15			
Z0015500	DEBRIS REMOVAL	L SUM	1				1
Z0017900	DRAINAGE SCUPPERS	EACH	8				8
Z0024405	FILTER FABRIC FOR USE WITH RPPRAP	SO YD	848	28			820
Z0024478	FLEXIBLE DELINEATORS	EACH	240	120			120
Z0037400	PAVEMENT MARKING REMOVAL	LN FT	3,200	1,600			1,600
Z0047300	PROTECTIVE SHIELD	SO YD	480		240		240
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1		1		
Z0063800	RYVET REMOVAL AND REPLACEMENT	EACH	1,344		672		672
Z0070800	TEMPORARY PAINT PAVEMENT MARKING LINE 4"	LN FT	43,216	21,608			21,608
Z0073400	TEMPORARY SUPPORT SYSTEM	EACH	4		4		
Z0076600	TRAINERS	SO YD	1,000				1,000
X0326853	PEENING OF EXIST COVER PLATE WELDS	LN FT	48		24		24
X6320870	BRACED EXCAVATION	CU YD	582		582		
X094660	RYVET REMOVAL	EACH	283				283

* SPECIALTY ITEM
 Δ CONSTRUCTION TYPE CODE: Y080

(AS REVISED: 4-6-93 S.T.D.)

SUMMARY OF QUANTITIES

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 RLYR	GRUNDY	66	5
FHWA REG. NO.		RLNOS	PROJECT	

SURFACING QUANTITIES

LOCATION	LENGTH	PAVEMENT & SHOULDER WIDTH	AREA	MIX FOR CRACKS, JOINTS & FLANGWAYS	LEVELING BINDER HAND METHOD TYPE 1	BITUMINOUS MATERIALS (PRIME COAT)	LEVELING BINDER MIXTURE C. TYPE 1	BITUMINOUS CONC. SURFACE CSE.. MIX D CLASS 1, TYPE 1
	LIN. FT.	LIN. FT.		SO. YD.	TON		TON	
S.P.C.S.L. RAILROAD								
LT. 960+00 TO 962+23.20	223.20	40	1023	0.4	0.5	82	133	101
RT. 960+00 TO 961+58	158.00	40	718	0.2	0.4	58	49	71
RT. 964+65.8 TO 967+00	234.20	40	1072	0.4	0.5	86	225	106
LT. 965+31 TO 967+50	219.00	40	980	0.4	0.5	80	173	97
MAZON RIVER								
LT. 1003+00 TO 1005+05.17	205.17	40	922	0.4	0.5	74	22	91
RT. 1003+00 TO 1005+05.17	205.17	40	922	0.4	0.5	74	11	91
LT. 1007+78.83 TO 1010+00	221.17	40	993	0.4	0.5	80	31	98
RT. 1007+78.83 TO 1010+50	271.17	40	1216	0.4	0.6	98	40	120
TOTALS				3	4	632	684	775

BITUMINOUS CONCRETE SURFACE REMOVAL

LOCATION	SO. YD.
SOUTHBOUND ROADWAY	
960+00 TO 961+00	445
966+00 TO 967+00	445
1003+00 TO 1004+00	445
1009+50 TO 1010+50	445
NORTHBOUND ROADWAY	
960+00 TO 961+00	445
966+50 TO 967+50	445
1003+00 TO 1004+00	445
1009+00 TO 1010+00	445
TOTAL	3,560

P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT

LOCATION	BRIDGE APPROACH SHLD. PAVEMENT STD. 2324	PROTECTIVE COAT
	SO. YD.	SO. YD.
LT. 1005+10.17 TO 1005+25.17 INSIDE	8.6	8.6
LT. 1005+10.17 TO 1005+25.17 OUTSIDE	16.9	16.9
RT. 1005+10.17 TO 1005+25.17 INSIDE	8.6	8.6
RT. 1005+10.17 TO 1005+25.17 OUTSIDE	16.9	16.9
LT. 1007+58.83 TO 1007+73.83 INSIDE	8.6	8.6
LT. 1007+58.83 TO 1007+73.83 OUTSIDE	16.9	16.9
RT. 1007+58.83 TO 1007+73.83 INSIDE	8.6	8.6
RT. 1007+58.83 TO 1007+73.83 OUTSIDE	16.9	16.9
RT. 961+46.23 TO 961+71.79 OUTSIDE	33.8	33.8
RT. 961+85.97 TO 962+11.53 INSIDE	12.5	12.5
LT. 962+15.91 TO 962+36.99 INSIDE	12.6	12.6
LT. 962+55.65 TO 962+76.73 OUTSIDE	17.3	17.3
RT. 964+12.27 TO 964+33.35 OUTSIDE	17.3	17.3
RT. 964+52.01 TO 964+73.09 INSIDE	12.6	12.6
LT. 964+77.47 TO 965+03.03 INSIDE	12.5	12.5
LT. 965+17.21 TO 965+42.77 OUTSIDE	33.8	33.8
TOTALS	254.4	254.4

PERMANENT PAVEMENT MARKING

LOCATION	TYPE	EPOXY PAVEMENT MARKING	
		4" LIN. FT.	6" LIN. FT.
NORTH BOUND 935+73 TO 1048+67	SKIP E		2.824
NORTH BOUND 935+73 TO 1029+27	EDGE LINE	18.708	
SOUTH BOUND 916+33 TO 1029+27	SKIP E		2.824
SOUTH BOUND 935+73 TO 1029+27	EDGE LINE	18.708	
TOTALS		37,416	5,660

BRIDGE APPROACH PAVEMENT (STANDARD 2382)

LOCATION	BRIDGE APPROACH PAVEMENT STD. 2382	REINF. BARS	PROTECTIVE COAT
	SO. YD.	LBS.	SO. YD.
LT. 1005+05.17 TO 1005+25.17	53.3	3,019	53.3
RT. 1005+05.17 TO 1005+25.17	53.3	3,019	53.3
LT. 1007+58.83 TO 1007+78.83	53.3	3,019	53.3
RT. 1007+58.83 TO 1007+78.83	53.3	3,019	53.3
LT. 962+23.20 TO 962+55.43	86.0	3,031	86.0
RT. 961+58 TO 961+90.23	86.0	3,031	86.0
RT. 964+33.57 TO 964+65.8	86.0	3,031	86.0
LT. 964+98.77 TO 965+31	86.0	3,031	86.0
TOTALS	557.2	24,200	557.2

TEMPORARY TRAFFIC CONTROL ITEMS

ITEM	UNIT	INITIAL INSTALLATION	DAMAGE REPLACEMENT*	TOTAL
FLEXIBLE DELINEATORS	EACH	150	90	240
PAVEMENT MARKING TAPE, TYPE III 4"	LIN FT	60,978	1,000	61,978
TEMPORARY RAISED PAVEMENT MARKERS TYPE II	EACH	150	20	170

*ESTIMATED QUANTITY

EROSION CONTROL

LOCATION	DESCRIPTION	EXCELSIOR BLANKET	STONE RIPRAP, CLASS A5 (THICKNESS=22")	FILTER FABRIC FOR USE WITH RIPRAP
		SO. YD.	SO. YD.	SO. YD.
LT. 947+00 INSIDE	FLARED END SECTION	19	-	-
RT. 961+51.23 OUTSIDE	METAL END SECTION	4	7	7
RT. 961+90.97 INSIDE	METAL END SECTION	11	-	-
E 961+93	METAL END SECTION	11	-	-
LT. 962+60.65 OUTSIDE	METAL END SECTION	4	7	7
RT. 964+28.35 OUTSIDE	METAL END SECTION	4	7	7
E 964+96	METAL END SECTION	11	-	-
LT. 964+98.03 INSIDE	METAL END SECTION	11	-	-
LT. 965+37.77 OUTSIDE	METAL END SECTION	4	7	7
	SEEDED AREAS	9096	-	-
TOTALS		9175	28	28

EARTHWORK SUMMARY

LOCATION	DETOUR REMOVALS		BRIDGES		ROADWAY	
	EARTH EXCAVATION (CU. YD.)	EARTH EXCAVATION (CU. YD.)	BORROW EXCAVATION (CU. YD.)	BORROW EXCAVATION (CU. YD.)	BORROW EXCAVATION (CU. YD.)	BORROW EXCAVATION (CU. YD.)
940+13.83 TO 949+86.12	878	-	-	-	-	-
960+00 TO 967+50	-	140	-	-	-	-
964+50 TO 971+75 RT	-	-	-	-	20	24
1003+00 TO 1010+50	-	-	-	-	-	-
1015+13.83 TO 1024+86.12	956	-	-	-	-	-
TOTALS	1,834	140	20	24		

* 1,834 CU. YD. OF MATERIAL IS TO WASTED BY THE CONTRACTOR. (SEE SPECIAL PROVISIONS)

** FILL IN ERODED AREAS.

BITUMINOUS CONCRETE CURB

LOCATION	TON
RT 953+77.79 TO 961+46.23 OUTSIDE	769
LT 957+01.98 TO 962+55.65 OUTSIDE	554
RT 964+33.35 TO 974+43.77 OUTSIDE	1,011
LT 965+42.77 TO 974+36.21 OUTSIDE	694
TOTAL	3,228

AGGREGATE SHOULDERS, TYPE B

LOCATION	TON
DETOUR REMOVAL	
940+13.88 TO 949+86.12	316
S.P.C.S.L. RAILROAD	
960+00 TO 967+50	160
MAZON RIVER	
1003+00 TO 1010+50	52
DETOUR REMOVAL	
1015+13.88 TO 1024+86.12	316
TOTAL	844

SCHEDULE OF QUANTITIES

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 BR. VDR	CAVADOT	86	6
F.H.P.A. REG. NO.	KLINGS	PROJECT		

STEEL PLATE BEAM GUARD RAIL

LOCATION	STEEL PLATE BEAM GUARD RAIL TYPE A LIN. FT.	TRAFFIC BARRIER TERMINAL			
		TYPE 5 EACH	TYPE 6 EACH	TYPE 1 EACH	TYPE 2 EACH
RT. 953+52.79 TO 953+77.79 OUTSIDE				1	
RT. 953+77.79 TO 961+40.29 OUTSIDE	762.5				
LT. 958+78.98 TO 957+01.98 OUTSIDE				1	
LT. 957+01.98 TO 962+51.98 OUTSIDE	550				
RT. 958+17.53 TO 958+42.53 INSIDE				1	
RT. 958+42.53 TO 961+80.03 INSIDE	337.5				
LT. 958+55.29 TO 958+80.29 INSIDE				1	
LT. 958+80.29 TO 962+17.79 INSIDE	337.5				
RT. 961+40.29 TO 961+67.10 OUTSIDE				1	
RT. 961+80.03 TO 962+06.84 INSIDE					1
LT. 961+99.74 TO 962+12.24 INSIDE					1
LT. 962+12.24 TO 962+25.49 INSIDE		1			
LT. 962+17.79 TO 962+44.60 INSIDE			1		
LT. 962+51.98 TO 962+65.23 OUTSIDE		1			
RT. 964+15.96 TO 964+43.77 OUTSIDE			1		
RT. 964+43.77 TO 974+43.77 OUTSIDE	1000				
RT. 964+56.70 TO 964+83.51 INSIDE			1		
LT. 964+82.15 TO 965+08.97 INSIDE				1	
RT. 964+83.51 TO 964+96.01 INSIDE					1
RT. 964+83.51 TO 968+21.01 INSIDE	337.5				
LT. 965+08.97 TO 968+46.47 INSIDE	337.5				
LT. 965+21.90 TO 965+48.71 OUTSIDE			1		
LT. 965+48.71 TO 974+36.21 OUTSIDE	687.5				
RT. 968+21.01 TO 968+46.01 INSIDE				1	
LT. 968+46.47 TO 968+71.47 INSIDE				1	
LT. 974+36.21 TO 974+61.21 OUTSIDE				1	
RT. 974+43.77 TO 974+68.77 OUTSIDE				1	
RT. 1001+32.17 TO 1001+57.17 INSIDE				1	
LT. 1001+39.87 TO 1001+64.87 INSIDE				1	
RT. 1001+57.17 TO 1004+94.67 INSIDE	337.5				
LT. 1001+64.87 TO 1005+02.37 INSIDE	337.5				
RT. 1001+82.17 TO 1002+07.17 OUTSIDE				1	
RT. 1002+07.17 TO 1004+94.67 OUTSIDE	287.5				
LT. 1004+01.42 TO 1004+26.42 OUTSIDE				1	
LT. 1004+26.42 TO 1005+01.42 OUTSIDE	75				
LT. 1004+88.92 TO 1005+01.42 INSIDE					1
RT. 1004+94.67 TO 1005+21.48 INSIDE			1		
RT. 1004+94.67 TO 1005+21.48 OUTSIDE			1		
LT. 1005+01.42 TO 1005+14.67 INSIDE		1			
LT. 1005+01.42 TO 1005+14.67 OUTSIDE		1			
LT. 1005+02.37 TO 1005+29.18 INSIDE			1		
LT. 1007+62.52 TO 1007+89.33 INSIDE			1		
LT. 1007+62.52 TO 1007+89.33 OUTSIDE			1		
RT. 1007+62.52 TO 1007+89.33 INSIDE			1		
RT. 1007+62.52 TO 1007+89.33 OUTSIDE			1		
LT. 1007+89.33 TO 1011+26.83 INSIDE	337.5				
RT. 1007+89.33 TO 1011+26.83 INSIDE	337.5				
LT. 1007+89.33 TO 1010+76.83 OUTSIDE	287.5				
RT. 1007+89.33 TO 1008+01.83 INSIDE					1
RT. 1007+89.33 TO 1012+01.83 OUTSIDE	412.5				
LT. 1010+76.83 TO 1011+01.83 OUTSIDE				1	
LT. 1011+26.83 TO 1011+51.83 INSIDE				1	
RT. 1011+26.83 TO 1011+51.83 INSIDE				1	
RT. 1012+01.83 TO 1012+26.83 OUTSIDE				1	
TOTALS	6,962.5	4	14	16	4

GUARD RAIL REFLECTORS

LOCATION	EACH
RT. 953+52.79 TO 961+67.10 OUTSIDE	17
LT. 958+78.98 TO 962+65.23 OUTSIDE	12
LT. 957+55 TO 962+73 OUTSIDE	11
RT. 958+17.53 TO 962+06.84 INSIDE	8
LT. 958+55.29 TO 962+44.60 INSIDE	8
LT. 961+99.74 TO 962+25.49 INSIDE	1
RT. 964+15.96 TO 974+68.77 OUTSIDE	22
RT. 964+56.70 TO 968+46.01 INSIDE	8
LT. 964+76 TO 966+20 INSIDE	3
LT. 964+82.15 TO 968+71.47 INSIDE	8
RT. 964+83.51 TO 964+96.01 INSIDE	1
LT. 965+14 TO 972+83 OUTSIDE	16
LT. 965+21.90 TO 974+61.21 OUTSIDE	19
RT. 1001+32.17 TO 1005+21.48 INSIDE	8
LT. 1001+39.87 TO 1005+29.18 INSIDE	8
RT. 1001+82.17 TO 1005+21.48 OUTSIDE	7
LT. 1004+00 TO 1005+22 OUTSIDE	3
LT. 1004+01.42 TO 1005+14.67 OUTSIDE	3
LT. 1004+88.92 TO 1005+14.67 INSIDE	1
LT. 1007+52 TO 1008+94 INSIDE	3
LT. 1007+52 TO 1009+17 OUTSIDE	4
RT. 1007+62.52 TO 1008+01.83 INSIDE	1
RT. 1007+62.52 TO 1011+51.83 INSIDE	8
RT. 1007+62.52 TO 1012+26.83 OUTSIDE	10
LT. 1007+62.52 TO 1011+51.83 INSIDE	8
LT. 1007+62.52 TO 1011+01.83 OUTSIDE	7
TOTALS	205

PRISMATIC BARRIER REFLECTORS

LOCATION	EACH
PHASE 1	
LT. 962+44.60 TO 964+76 INSIDE	5
LT. 962+73 TO 965+14 OUTSIDE	5
LT. 1005+22 TO 1007+52 OUTSIDE	5
LT. 1005+29.18 TO 1007+52 INSIDE	5
PHASE 2	
RT. 961+67.10 TO 964+15.96 OUTSIDE	5
RT. 962+06.84 TO 964+56.70 INSIDE	5
RT. 1005+21.48 TO 1007+62.52 OUTSIDE	5
RT. 1005+21.48 TO 1007+62.52 INSIDE	5
PHASE 3	
LT. 962+25.49 TO 964+82.15 INSIDE	6
LT. 962+65.23 TO 965+21.90 OUTSIDE	6
LT. 1005+14.67 TO 1007+62.52 INSIDE	5
LT. 1005+14.67 TO 1007+62.52 OUTSIDE	5
RT. 962+06.84 TO 964+56.70 INSIDE	5
RT. 1005+21.48 TO 1007+62.52 INSIDE	5
TOTALS	72

STEEL PLATE BEAM GUARD RAIL REMOVAL

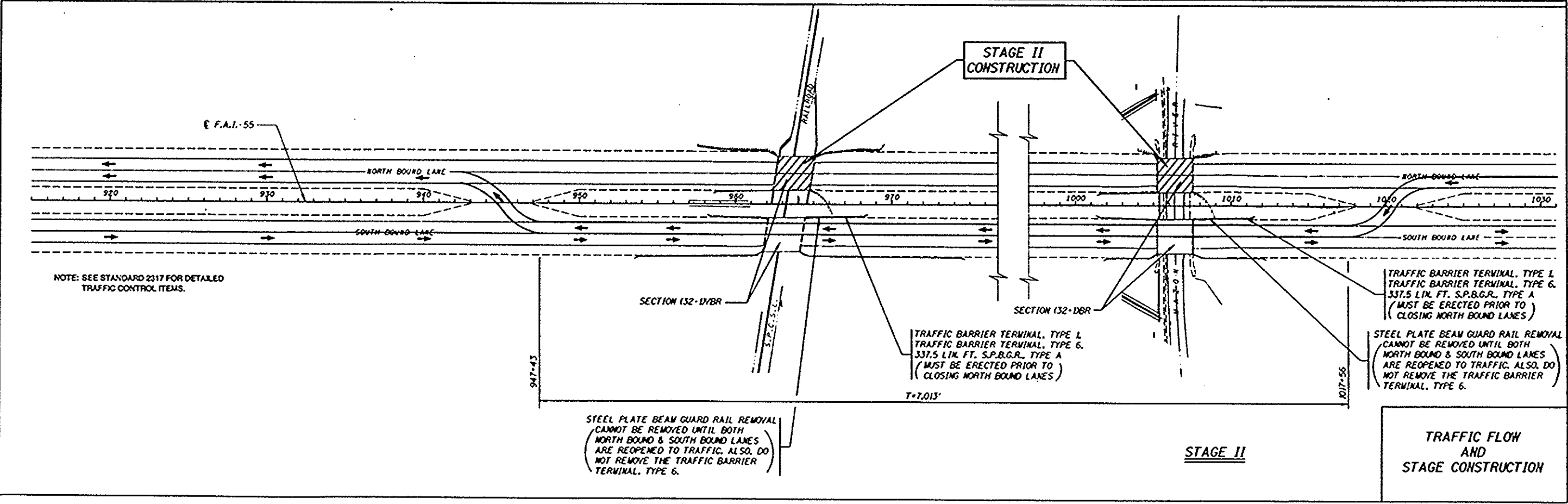
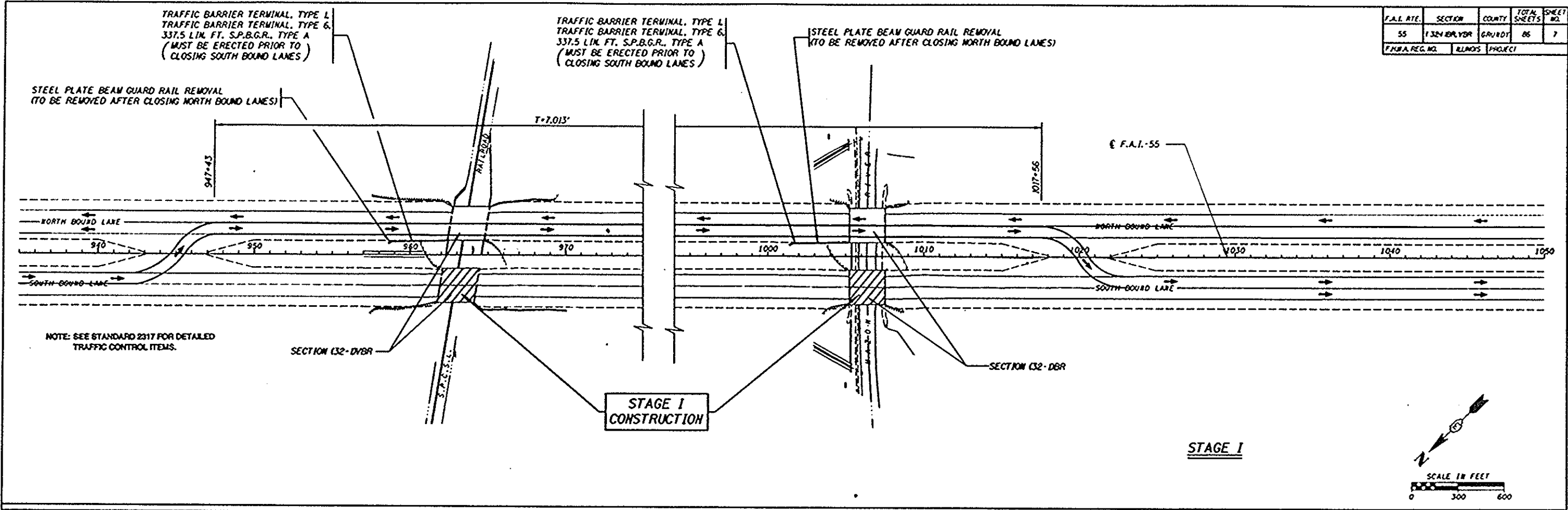
LOCATION	LIN. FT.
RT. 964+63 TO 961+74 OUTSIDE	711
LT. 957+55 TO 962+73 OUTSIDE	518
LT. 958+55.29 TO 962+44.60 INSIDE	390
RT. 960+68 TO 962+10 INSIDE	142
RT. 964+14 TO 971+62 OUTSIDE	748
RT. 964+83.51 TO 968+46.01 INSIDE	362.5
LT. 964+76 TO 966+20 INSIDE	144
LT. 965+14 TO 972+83 OUTSIDE	769
LT. 1001+39.87 TO 1005+29.18 INSIDE	390
RT. 1003+47 TO 1005+36 OUTSIDE	189
RT. 1003+82 TO 1005+36 INSIDE	154
LT. 1004+00 TO 1005+22 OUTSIDE	122
LT. 1007+52 TO 1008+94 INSIDE	142
LT. 1007+52 TO 1009+17 OUTSIDE	165
RT. 1007+54 TO 1008+70 OUTSIDE	116
RT. 1007+89.33 TO 1011+51.83 INSIDE	362.5
TOTALS	5,425

STORM SEWER SCHEDULE

STATION	TYPE	P.R.C. FLARED	METAL END	PIPE	TYPE C	TYPE D	TYPE F	RESTRICTED	CONCRETE
		END SECTION 18"	SECTION 12"	DRAIN 12"	INLET BOX (STD. 2324)	INLET BOX (STD. 2324)	INLET BOX (STD. 2322)	DEPTH MANHOLE 4' DIA. TYPE 1F & L	THRUST BLOCKS
		EA/00	EA/00	EA/00	EA/00	EA/00	EA/00	EA/00	EA/00
LT. 947+00 INSIDE	FLARED END SECTION	1							1
RT. 953+82.79 OUTSIDE	INLET BOX		1	75			1		1
RT. 962+50 OUTSIDE	INLET BOX		1	75			1		1
LT. 957+06.98 OUTSIDE	INLET BOX		1	77			1		1
RT. 959+00 OUTSIDE	INLET BOX		1	73			1		1
LT. 960+84 OUTSIDE	INLET BOX		1	77			1		1
RT. 961+53.23 OUTSIDE	INLET BOX		1	73		1			1
RT. 961+99.97 INSIDE	INLET BOX		1	9		1			
C 961+93	PIPE DRAIN		1	13					1
C 962+09	MANHOLE								1
LT. 962+20.91 INSIDE	INLET BOX		1	18		1			1
LT. 962+60.85 OUTSIDE	INLET BOX		1	72			1		1
RT. 964+28.35 OUTSIDE	INLET BOX		1	70		1			1
RT. 964+68.09 INSIDE	INLET BOX			18		1			1
C 964+80	MANHOLE								1
C 964+96	PIPE DRAIN		1	13					
LT. 964+98.03 INSIDE	INLET BOX		1	9		1			1
LT. 965+37.77 OUTSIDE	INLET BOX		1	75			1		1
RT. 966+81 OUTSIDE	INLET BOX		1	73			1		1
LT. 968+96 OUTSIDE	INLET BOX		1	76			1		1
RT. 969+34 OUTSIDE	INLET BOX		1	72			1		1
LT. 971+34 OUTSIDE	INLET BOX		1	76			1		1
RT. 971+87 OUTSIDE	INLET BOX		1	73			1		1
LT. 974+31.21 OUTSIDE	INLET BOX		1	76			1		1
TOTALS		1	19	1,193	4	4	11	2	15

SCHEDULE OF QUANTITIES

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 DBR/DYBR	GRANDT	06	7
FHWA REG. NO.		KLINGS	PROJECT	

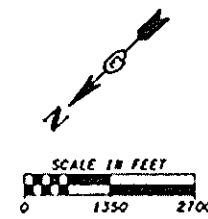


N. V. & C. NO. 3083.12

F.A.R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	132+VBRVBR	GRUNDY	86	8
F.N.W.A. REG. NO.	ALMOS	PROJECT		

CURVE DATA
 P.I. STA. 1123+58.70
 Δ=33°-05'-12"
 D=01°-00'-00"
 R=5729.58'
 T=1701.89'
 L=3308.66'
 E=247.42'
 S.E.=0.034'/FT.
 P.C. STA. 1106+56.81
 P.T. STA. 1139+65.47
 ATTAIN S.E. STA. 1104+86.81 TO 1107+41.81
 AND STA. 1138+80.47 TO 1141+35.47

T. 31 N. - R. 8 E. - 3rd P.M.



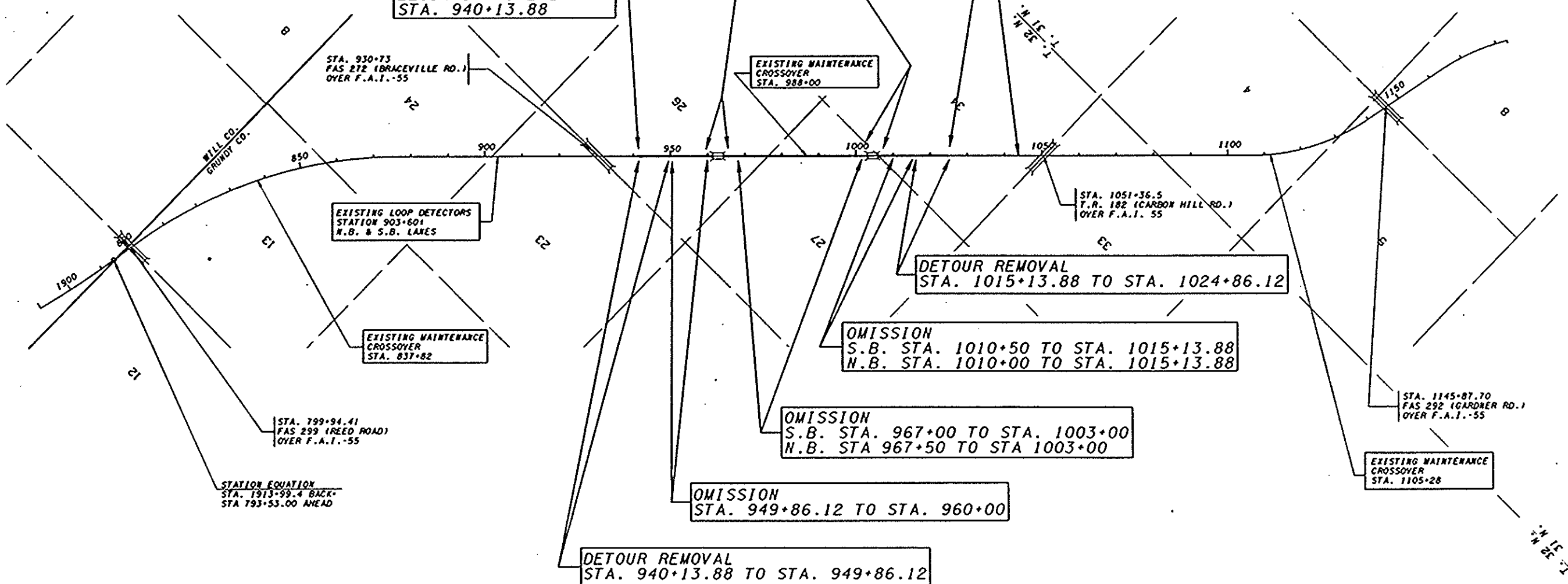
BRIDGE IMPROVEMENT-SECTION (32-1)BR (MAZON RIVER)
 S.B. STA. 1003+00 TO STA. 1010+50
 N.B. STA. 1003+00 TO STA. 1010+00

**END PROJECT
 END IMPROVEMENT
 STA. 1024+86.12**

BRIDGE IMPROVEMENT-SECTION (32-1)VBR (S.P.C.S.L. RAILROAD)
 S.B. STA. 960+00 TO 967+00
 N.B. STA. 960+00 TO 967+50

**BEGIN PROJECT
 BEGIN IMPROVEMENT
 STA. 940+13.88**

☉ F.A.I. - 55



CURVE DATA
 P.I. STA. 840+44.00
 Δ=35°-16'-08"
 D=00°-28'-00"
 R=12277.66'
 T=3902.82'
 L=7557.60'
 E=605.39'
 S.E.=0.0156'/FT.
 P.C. STA. 801+41.18
 P.T. STA. 876+98.78
 ATTAIN S.E. STA. 799+71.18 TO 802+26.18
 AND STA. 876+13.78 TO 878+68.78

T. 32 N. - R. 8 E. - 3rd P.M.

**PROJECT
 LAYOUT**

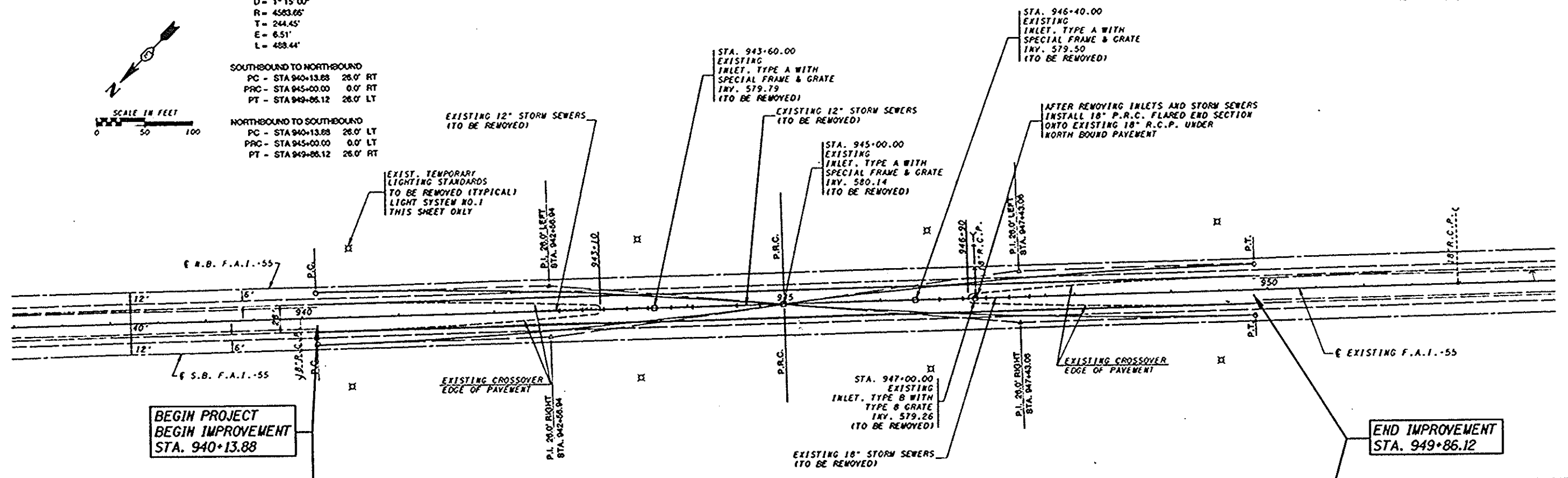
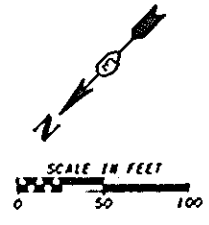
H.W. & C. NO. 3083.12

F.A.I. RTE.	SECTION	COUNTY	TOT. SHEETS	SHEET NO.
55	1.324 R/L V/R	CAUNTY	85	9
F.H.W.A. REG. NO.	ILLINOIS PROJECT			

CURVE DATA - ALL CURVES
 $\Delta = 6^\circ 05' 20''$
 $D = 1^\circ 15' 00''$
 $R = 4583.65'$
 $T = 244.45'$
 $E = 6.51'$
 $L = 488.44'$

SOUTHBOUND TO NORTHBOUND
 PC - STA 940+13.88 26.0' RT
 PRC - STA 945+00.00 0.0' RT
 PT - STA 949+86.12 26.0' LT

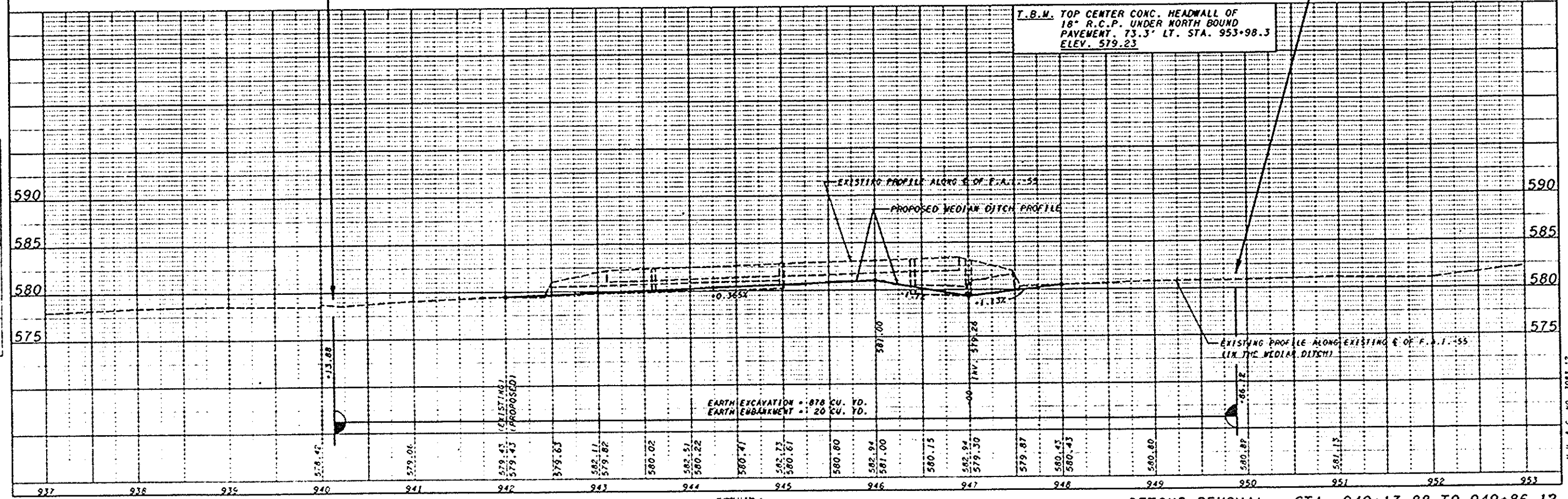
NORTHBOUND TO SOUTHBOUND
 PC - STA 940+13.88 26.0' LT
 PRC - STA 945+00.00 0.0' LT
 PT - STA 949+86.12 26.0' RT



**BEGIN PROJECT
 BEGIN IMPROVEMENT
 STA. 940+13.88**

**END IMPROVEMENT
 STA. 949+86.12**

**T.B.M. TOP CENTER CONC. HEADWALL OF
 18" R.C.P. UNDER NORTH BOUND
 PAVEMENT. 73.3' LT. STA. 953+98.3
 ELEV. 579.23**



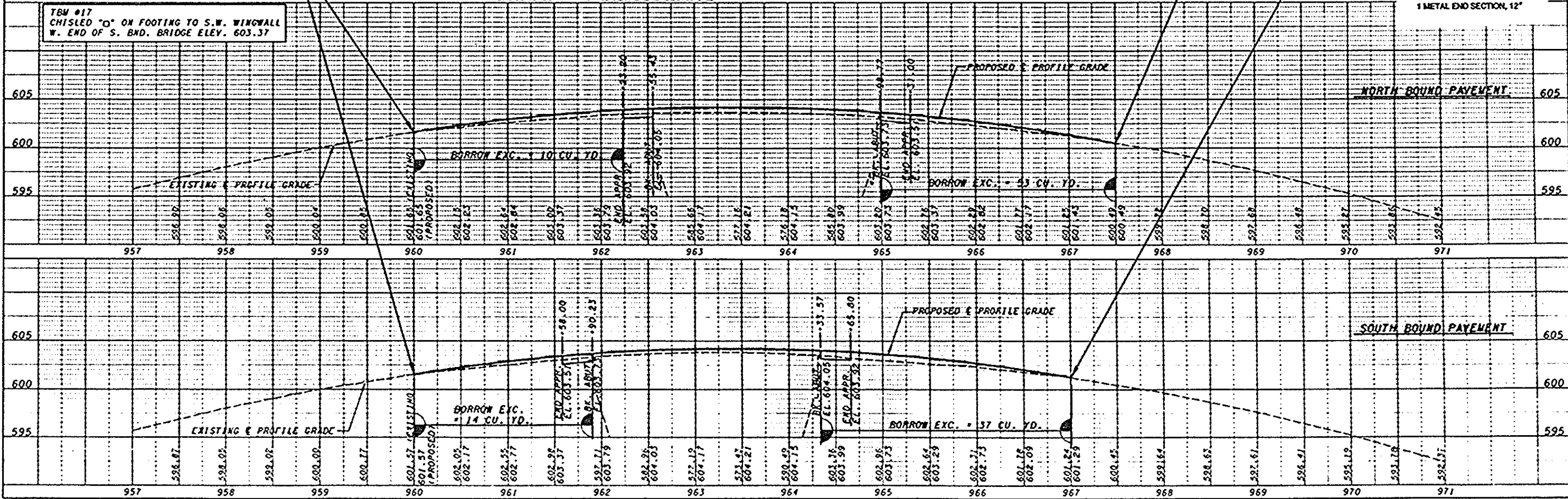
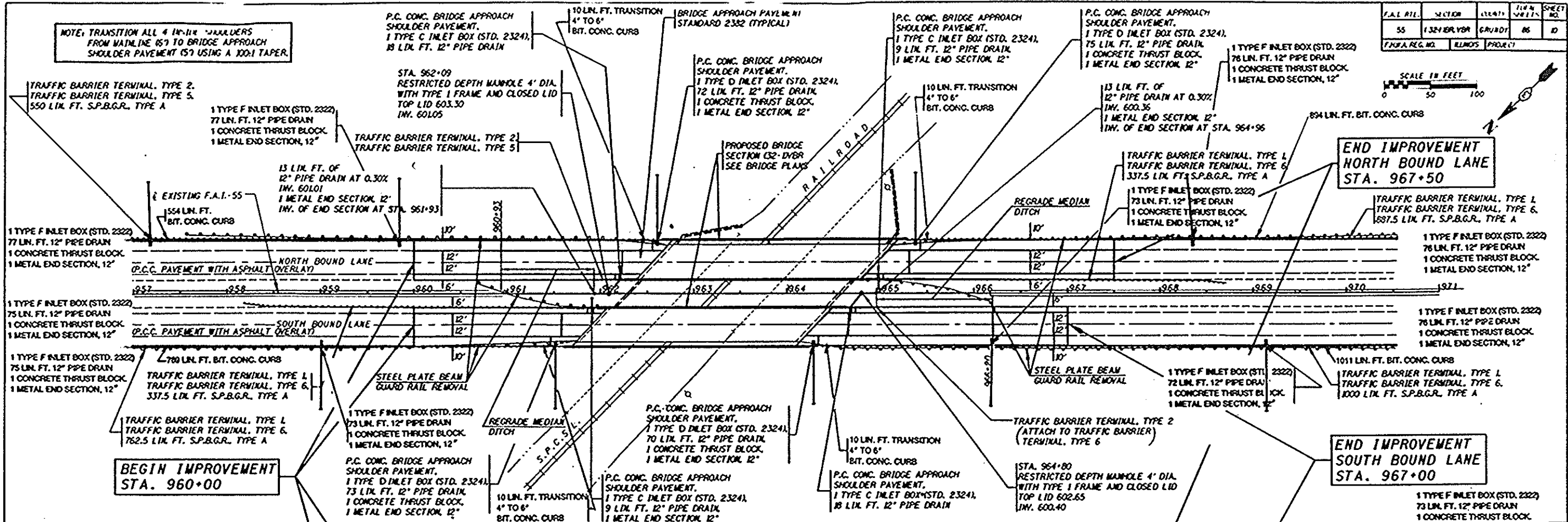
DETOUR REMOVAL STA. 940+13.88 TO 949+86.12

PLAN	DATE	BY	CHECKED

PROFILE	DATE	BY	CHECKED

H.P. & C. NO. 3083.17

F.A.L. R/L	SECTION	DATE	BY	SHEET NO.
55	13218R.VDR	6/1/07	MS	10
K.N.P.A. REG. NO.		ILLINOIS PROJ. #		



PLAN	DATE	BY	CHECKED

PROFILE	DATE	BY	CHECKED

SINGLE PLAN AND PROFILE

S.P.C.S.L. RAILROAD

P.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 R.R.V.R.	GRANDT	06	11
F.P.A. REG. NO.	ELIMOS	PROJECT		

NOTE: TRANSITION ALL 4 INSIDE SHOULDERS FROM MAINLINE (57) TO BRIDGE APPROACH SHOULDER PAVEMENT (57) USING A 100:1 TAPER.

TRAFFIC BARRIER TERMINAL, TYPE 2
TRAFFIC BARRIER TERMINAL, TYPE 5

BRIDGE APPROACH PAVEMENT
STANDARD 2382
TYPICAL

TRAFFIC BARRIER TERMINAL, TYPE L
TRAFFIC BARRIER TERMINAL, TYPE 6.
287.5 LIN. FT. S.P.B.G.R., TYPE A

END IMPROVEMENT
NORTH BOUND LANE
STA. 1010+00

TRAFFIC BARRIER TERMINAL, TYPE 2
TRAFFIC BARRIER TERMINAL, TYPE 5
75 LIN. FT. S.P.B.G.R., TYPE A

PROPOSED BRIDGE
SECTION (32'-DBR
SEE BRIDGE PLANS

TRAFFIC BARRIER TERMINAL, TYPE L
TRAFFIC BARRIER TERMINAL, TYPE 6.
337.5 LIN. FT. S.P.B.G.R., TYPE A

EXISTING E.F.A.I.-55

NORTH BOUND LANE
(P.C.C. PAVEMENT WITH ASPHALT OVERLAY)

SOUTH BOUND LANE
(P.C.C. PAVEMENT WITH ASPHALT OVERLAY)

TRAFFIC BARRIER TERMINAL, TYPE L
TRAFFIC BARRIER TERMINAL, TYPE 6.
337.5 LIN. FT. S.P.B.G.R., TYPE A

BEGIN IMPROVEMENT
STA. 1003+00

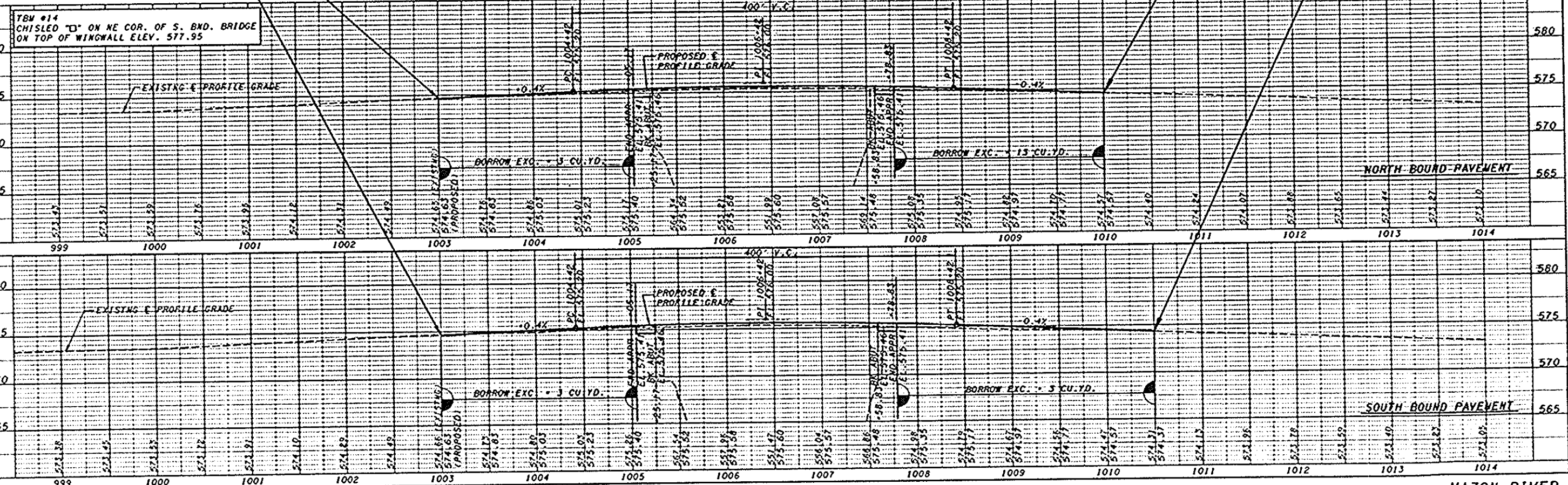
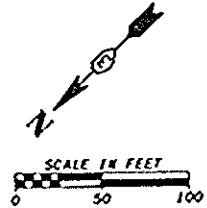
TRAFFIC BARRIER TERMINAL, TYPE L
TRAFFIC BARRIER TERMINAL, TYPE 6.
287.5 LIN. FT. S.P.B.G.R., TYPE A

STEEL PLATE BEAM
GUARD RAIL REMOVAL

TRAFFIC BARRIER TERMINAL, TYPE L
TRAFFIC BARRIER TERMINAL, TYPE 6.
112.5 LIN. FT. S.P.B.G.R., TYPE A

TRAFFIC BARRIER TERMINAL, TYPE 2
(ATTACH TO TRAFFIC BARRIER)
TERMINAL, TYPE 6

END IMPROVEMENT
SOUTH BOUND LANE
STA. 1010+50



MAZON RIVER

SINGLE PLAN AND PROFILE

PLAN	DATE	BY	CHKD.

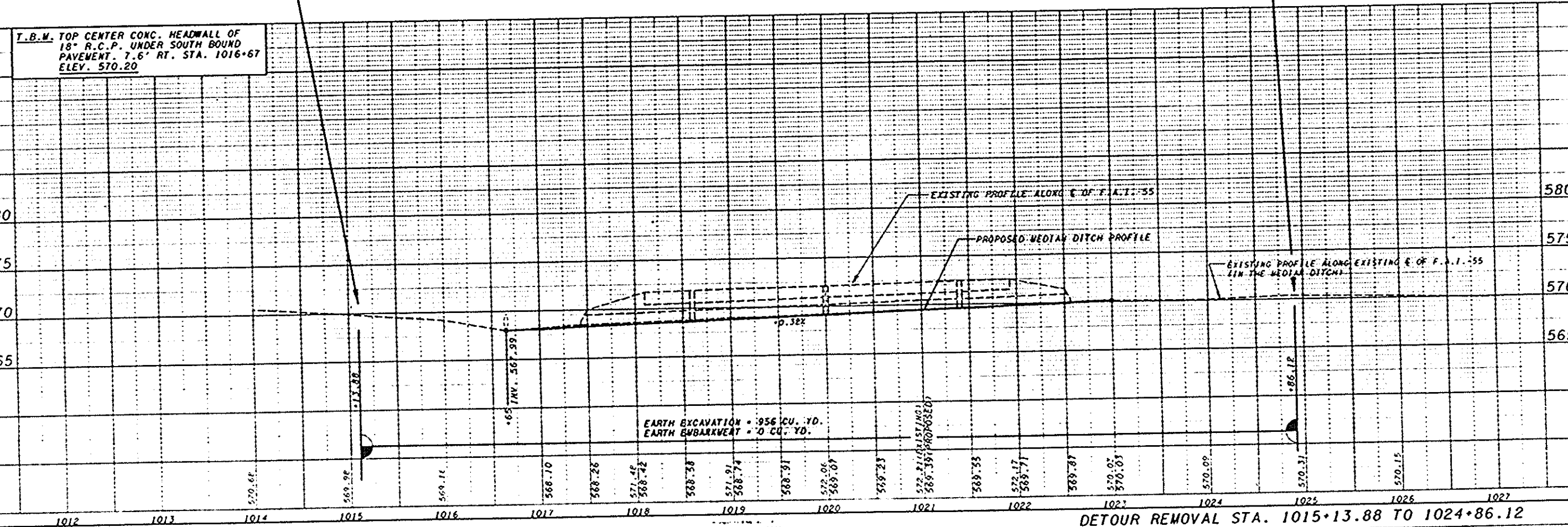
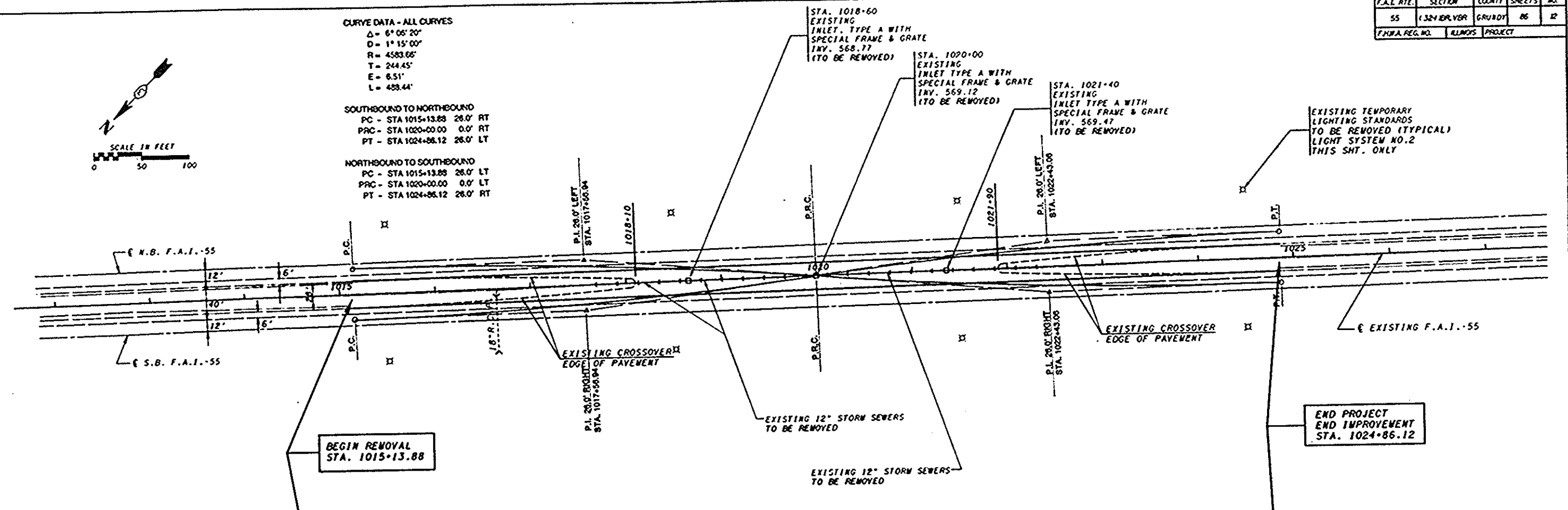
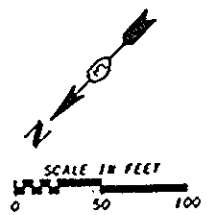
PROFILE	DATE	BY	CHKD.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 N.W. VBR	GRAND	86	12
FHWA REG. NO.		ILLINOIS PROJECT		

CURVE DATA - ALL CURVES
 $\Delta = 6^\circ 05' 20''$
 $D = 1^\circ 15' 00''$
 $R = 4583.05'$
 $T = 244.45'$
 $E = 6.51'$
 $L = 488.44'$

SOUTHBOUND TO NORTHBOUND
 PC - STA 1015+13.88 28.0' RT
 PRC - STA 1020+00.00 0.0' RT
 PT - STA 1024+86.12 28.0' LT

NORTHBOUND TO SOUTHBOUND
 PC - STA 1015+13.88 28.0' LT
 PRC - STA 1020+00.00 0.0' LT
 PT - STA 1024+86.12 28.0' RT



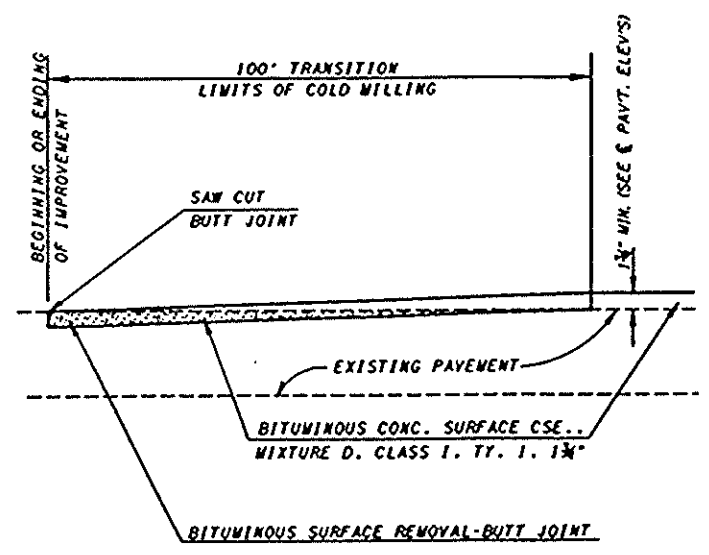
PLAN
 SCALE 1" = 40'

PROFILE
 SCALE 1" = 5'

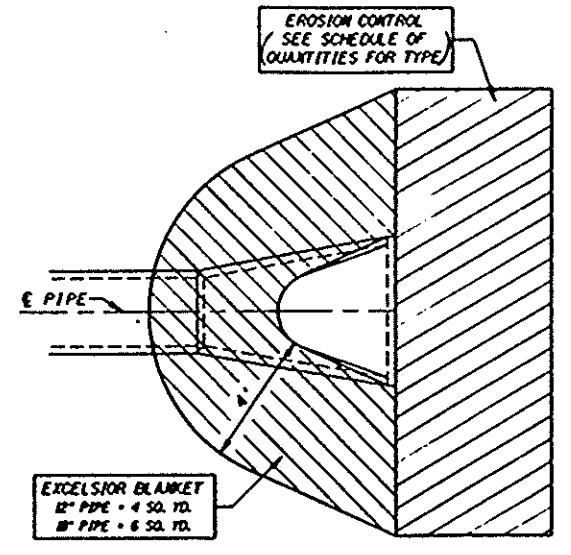
DETOUR REMOVAL STA. 1015+13.88 TO 1024+86.12

M. & S. 40. 1003.12

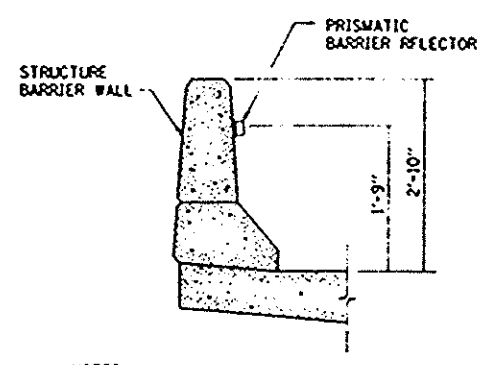
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(324) RLYRBR	GRANDT	85	43
F.P.O.A. REG. NO.	ILLINOIS	PROJECT		



BEGINNING AND ENDING OF H.B. AND S.B. LANES
F.A.I.-55

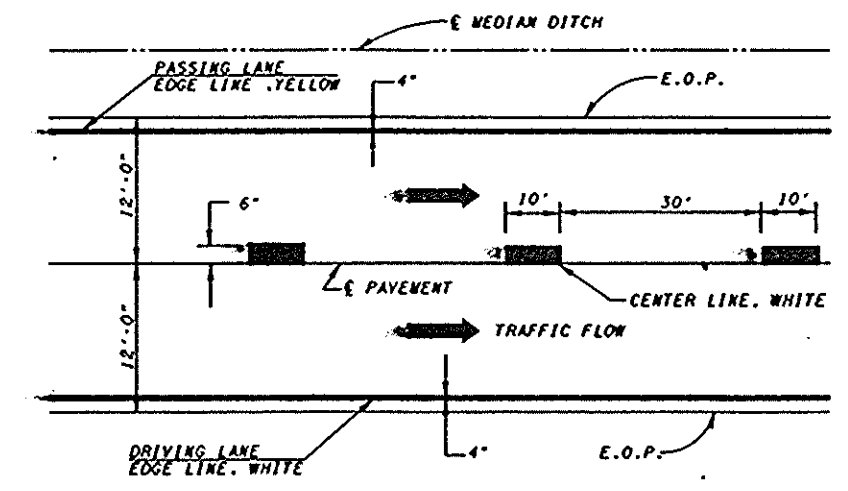


EROSION CONTROL AT END SECTIONS
(FOR DETAILS, SEE STANDARDS)



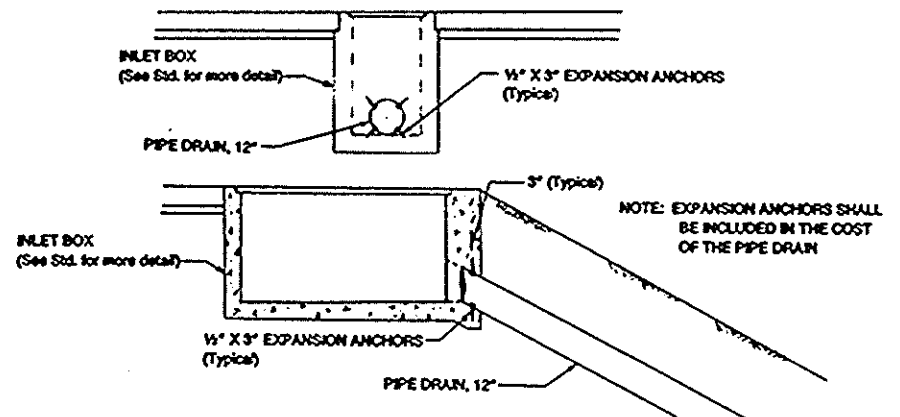
PRISMATIC BARRIER REFLECTOR DETAIL

NOTES:
REFLECTORS SHALL BE BIDIRECTIONAL AND COLORED WHITE. SPACING SHALL BE 50' CENTER TO CENTER.
REFER TO THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS ADOPTED APRIL 1, 1989, SECTION T508 FOR ADDITIONAL INFORMATION.

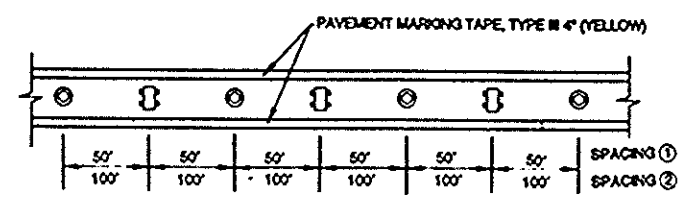


PAVEMENT MARKING

Unless directed by the Engineer, lines shall not be laid directly over a longitudinal crack or joint nor over a tar or asphalt pointed line. The edge of a center line or lane line shall be offset a minimum distance of 2 inches from a longitudinal crack or joint. Edge lines shall be approximately 2 inches from the edge of pavement. SEE SECTION T 502, OF THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS.



PIPE DRAIN CONNECTION

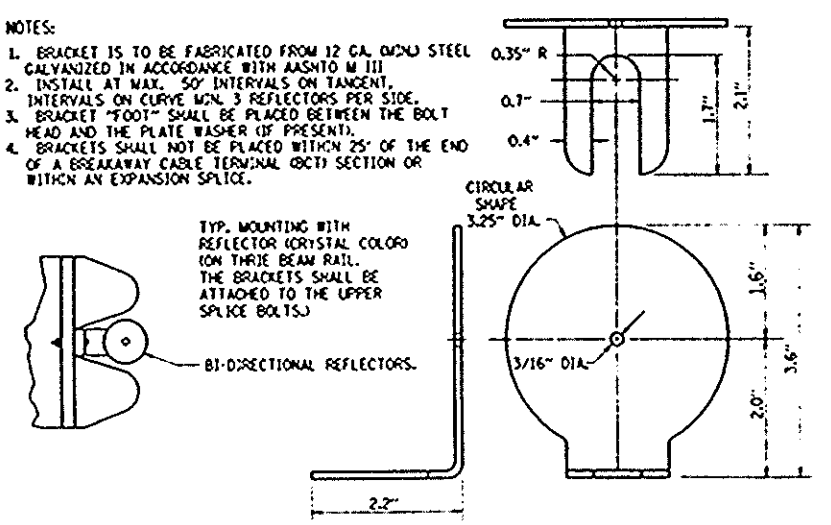


TYPICAL PLACEMENT OF FLEXIBLE DELINEATORS AND TEMPORARY RAISED PAVEMENT MARKERS II IN 'T' SECTIONS 250 FEET AFTER CROSSOVER

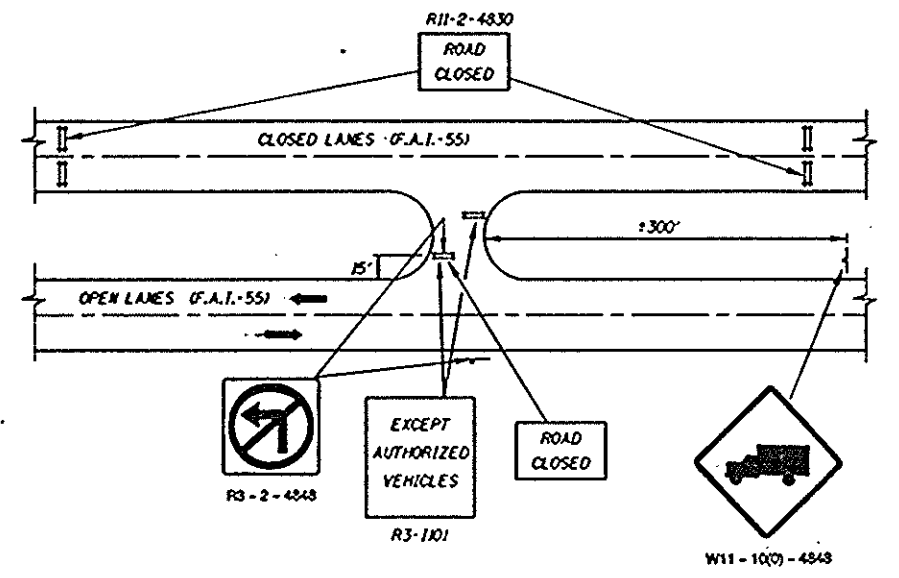
- Ⓜ TEMPORARY RAISED PAVEMENT MARKER TYPE II
- Ⓞ FLEDOBLE DELINEATOR AS SHOWN STANDARD 2298
- SPACING ① FIRST AND LAST 250' OF 'T'
- SPACING ② REMAINDER OF 'T'

NOTES:

1. BRACKET IS TO BE FABRICATED FROM 12 GA. (0.024) STEEL GALVANIZED IN ACCORDANCE WITH AASHTO M III
2. INSTALL AT MAX. 50' INTERVALS ON TANGENT, INTERVALS ON CURVE MIN. 3 REFLECTORS PER SIDE.
3. BRACKET "FOOT" SHALL BE PLACED BETWEEN THE BOLT HEAD AND THE PLATE WASHER (IF PRESENT).
4. BRACKETS SHALL NOT BE PLACED WITHIN 25' OF THE END OF A BREAKAWAY CABLE TERMINAL (OCT) SECTION OR WITHIN AN EXPANSION SPLICE.



GUARD RAIL REFLECTOR BRACKET



TYPICAL PROTECTION AT MEDIAN CROSSOVER MP 230

GENERAL NOTES:

- ⊞ INDICATE TYPE III BARRICADES AS SHOWN IN STANDARD 2298
- ALL SIGNS TO BE POST MOUNTED
- BARRICADE PLACEMENT AS DIRECTED BY THE ENGINEER

MISCELLANEOUS DETAILS AND TRAFFIC CONTROL DETAILS

JAN. 26, 1992

SHEET NO. 1 OF 35 SHEETS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FAI 55	(32-1) VBR	GRUNDY	06 14

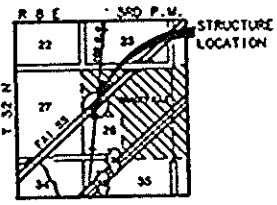
BENCHMARK: SPIKE & WASHER IN P.P.
210' RT. STA. 961+50
EL. 572.21

EXISTING STRUCTURE:

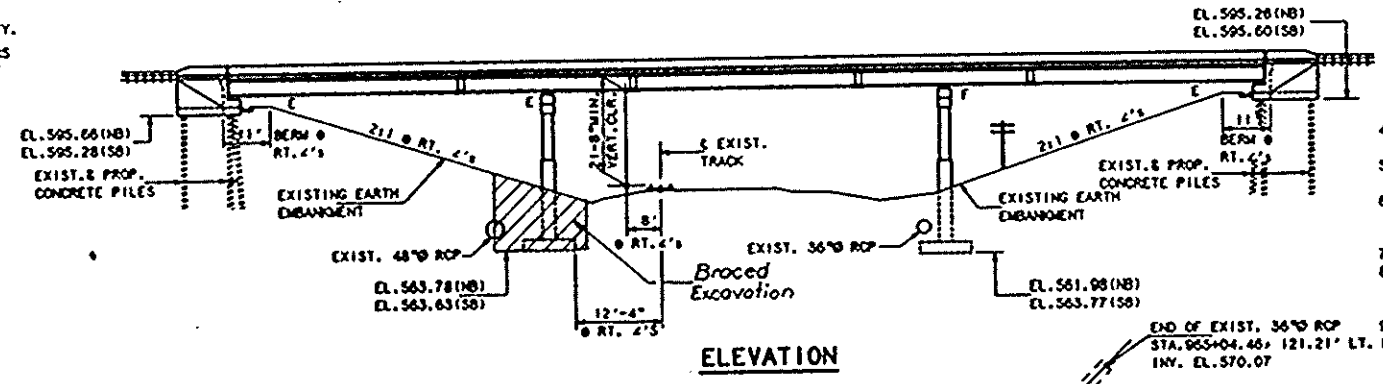
STRUCTURE NO. 032-0007 & 032-0008 BUILT IN 1955 AS F.A.R.TE.77, SEC. 91-YB-1, STA. 963+44.50 OVER THE I.C.G. RAILROAD IN GRUNDY COUNTY. THE SUPERSTRUCTURE CONSIST OF THREE SPANS OF CONTINUOUS WF GIRDERS MEASURING 72'-2", 92'-4" & 72'-2" WITH A TOTAL STRUCTURE LENGTH OF 243'-4" BK. 7BK. OF ABUTMENTS AND AN OVERALL STRUCTURE WIDTH 0.70. R.C. DECK OF 36"-0" EACH. THE SUBSTRUCTURES CONSIST OF TWO R.C. MULTI COLUMN PIERS AND SPILL THRU PILE BENT ABUTMENTS.

CONTRACTOR TO REMOVE AND DISPOSE OF THE EXISTING DECKS AND PORTION OF THE SUBSTRUCTURE AS SHOWN AND AS DETAILED HEREIN IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS. TRAFFIC TO BE DETOURD VIA MEDIAN CROSS OVER DURING CONSTRUCTION OF THE STRUCTURES RESPECTIVELY.

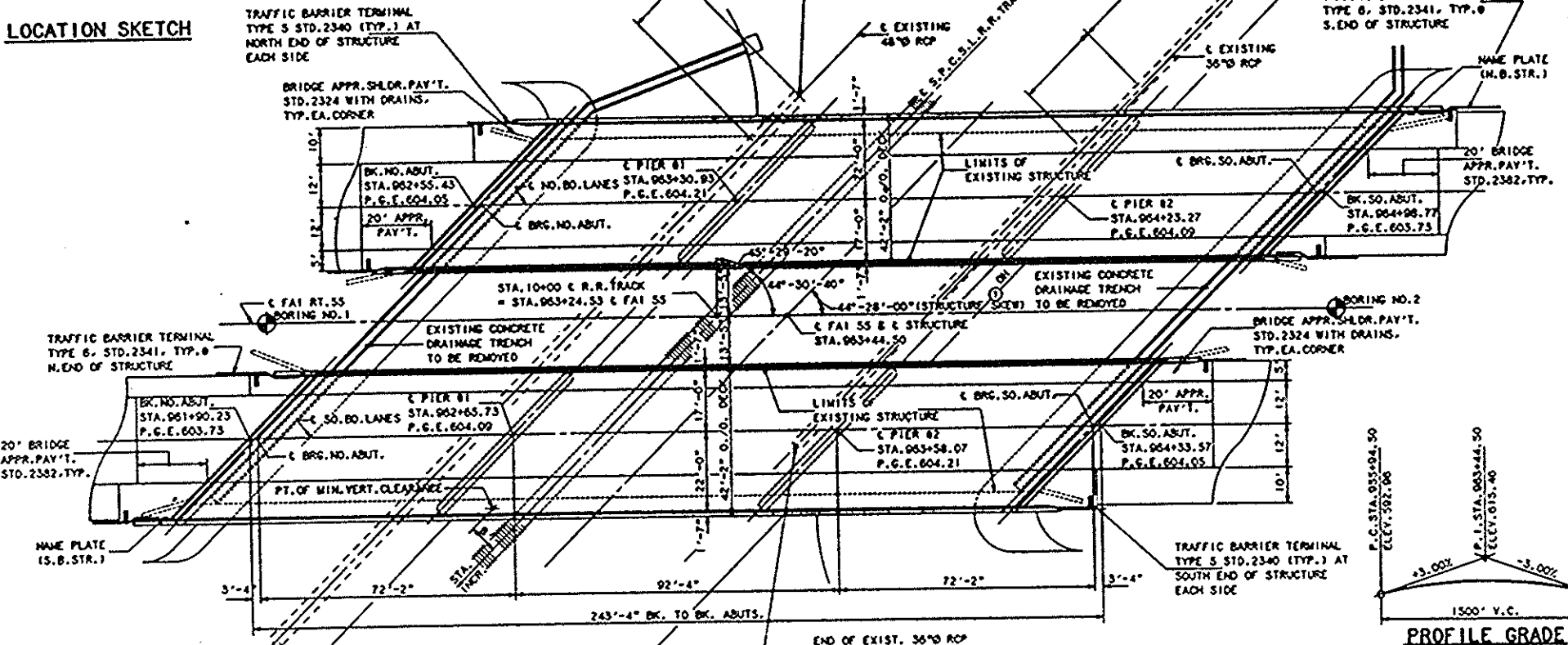
SALVAGE NO SALVAGE



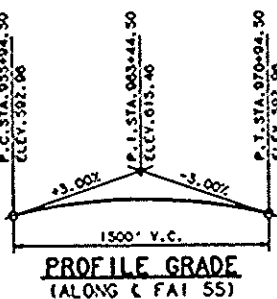
LOCATION SKETCH



ELEVATION



PLAN



PROFILE GRADE (ALONG & FAI 55)

S.P.C.S. & L. R.R.
BUILT 199 BY
STATE OF ILLINOIS
FAI RT. 55 SEC. (32-1) VBR
STA. 963+44.50 LOADING HS20 & ALT
STR. NO. #

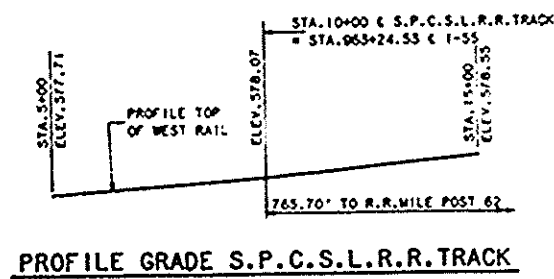
NAME PLATE

(SEE STD. 2113)
032-0007 FOR N.B. STR.
032-0008 FOR S.B. STR.

DESIGNED:	V.S.N.
CHECKED:	K.L.F.
DRAWN:	K.M.L.
CHECKED:	V.S.N./K.L.F.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
Engineer of Bridges and Structures

DATE: 4/21/92
KENNETH L. FIDGE
LICENSED STRUCTURAL ENGINEER
IN CARLYLE, ILLINOIS
NO. 081-007022
EXPIRES: NOVEMBER 30, 1992



PROFILE GRADE S.P.C.S. & L.R.R. TRACK

GENERAL NOTES:

- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8", OPEN HOLES 15/16", UNLESS OTHERWISE NOTED.
- CALCULATED WEIGHT OF NEW STRUCTURAL STEEL (A270 GR. 50) = 118,450 LBS.
- THE FIRST TWO COATS OF THE LEAD AND CHROMATE FREE ALKYLID PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL.
- STRUCTURAL STEEL SHALL ONLY BE CLEANED AND PAINTED AS REQUIRED BY THE SPECIAL PROVISION "CLEANING AND PAINTING NEW STEEL AND ADJACENT AREAS OF EXISTING STEEL STRUCTURES" PRIOR TO POURING THE NEW CONCRETE FOR THE DECK. ALL LOOSE RUST, LOOSE MILL SCALE, AND OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF THE FLANGES OF STRINGERS (GIRDERS). THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-11 FOR POWER TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING. Cost incidental to Concrete Removal.
- ALL CONTACT SURFACES BETWEEN NEW STRUCTURAL STEEL OF JOINTS FOR THE BOLTED FIELD SPLICES AND DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.
- ALL CONTACT SURFACE AREAS OF THE EXISTING STRUCTURAL STEEL TO WHICH THE NEW STEEL IS TO BE CONNECTED SHALL BE FREE OF PAINT OR LACQUER.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF THE BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
- ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
- THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL OF THE WIDE FLANGE BEAMS EXCEPT FILL PLATES.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60. PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT BID PRICE FOR THE WORK.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS SHOWN IN THE DETAILS SHALL BE PROVIDED AND PLACED, AS DETAILED.
- THE CONTRACTOR SHALL DRIVE ONE (1) STEEL H TEST PILE AT EACH ABUTMENT IN PERMANENT LOCATIONS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
- THE BRIDGE SEAT SEALER SHALL BE APPLIED AT THE ABUTMENTS TO THE TOP OF THE ABUTMENT SEAT. ESTIMATED QUANTITY OF BRIDGE SEAT SEALER = 708 SQ. FT.
- EXPANSION BOLTS SHALL BE APPROVED EXPANSION BOLTS, PROVIDING MINIMUM CERTIFIED PROOF LOAD OF 4,000 LBS., AND 3/4" X 6" AND 4" HOOKED BOLTS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR WILL BE REQUIRED TO MARK ON TOP OF THE CONCRETE DECK LOCATIONS OF THE TOP FLANGES OF ALL THE STEEL BEAMS PRIOR TO ANY REMOVAL OF THE BRIDGE CONCRETE DECK. SAW CUTTING DIRECTLY OVER THE TOP OF THE BEAM FLANGES IS NOT PERMITTED. PRENING OF EXISTING COVER PLATE WELDS IS REQUIRED BEFORE REMOVAL OF EXISTING CONCRETE DECK (SEE SPECIAL PROVISIONS).
- THE CONCRETE FOR BRIDGE FLOORS FINISHED IN ACCORDANCE WITH ARTICLE 503.15 OF THE STANDARD SPECIFICATIONS, SHALL BE PLACED AND COMPACTED PARALLEL TO THE SKEW IN UNIFORM INCREMENTS ALONG CENTERLINE OF BRIDGE THE FINISHING MACHINE, WHEN REQUIRED, SHALL BE SET PARALLEL TO THE SKEW FOR STRIKING OFF AND SCREEDING THE CONCRETE.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
REMOVAL OF EXISTING CONCRETE DECK	EACH	2		2
CONCRETE REMOVAL	CU. YD.		181.5	181.5
STRUCTURE EXCAVATION	CU. YD.		384	384
BRACED EXCAVATION	CU. YD.		582	582
NEOPRENE EXPANSION JOINT 2"	LIN. FT.	116		116
NEOPRENE EXPANSION JOINT 1 1/2"	LIN. FT.	116		116
CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	674.4		674.4
PROTECTIVE COAT	SO. YD.	2,583		2,583
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14		14
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	14		14
CLASS X CONCRETE	CU. YD.		338.9	338.9
FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM	1		1
REMOVE EXISTING BEARINGS	EACH	24		24
REINFORCEMENT BARS	POUND		2,620	2,620
REINFORCEMENT BARS, EPOXY COATED	POUND	156,110	34,940	191,050
CONCRETE PILES	LIN. FT.		455	455
TEST PILE CONCRETE	EACH	2		2
NAME PLATES	EACH	2		2
EXPANSION BOLTS 3/4 INCH X 4 INCH	EACH		68	68
EXPANSION BOLTS 3/4 INCH X 6 INCH	EACH		68	68
PRENING OF EXIST. COVER PLATE WELDS	LIN. FT.	24		24
BRIDGE SEAT SEALER	L. SUM		1	1
TEMPORARY SUPPORT SYSTEM	EACH		4	4
STUD SHEAR CONNECTORS	EACH	8,608		8,608
BRIDGE DECK GROOVING	SO. YD.	1,973		1,973
FURNISHING AGGREGATE	TON		170	170

DESIGN STRESSES

- 1# = 20,000 PSI (NEW STR. STEEL)
- 1# = 18,000 PSI (EXIST. STR. STEEL)
- 1#c = 3,500 PSI (NEW CONCRETE)
- 1# = 60,000 PSI (NEW REINFORCEMENT)

LOADING HS20-44 & ALTERNATE

ALLOW 25 PSF FOR FUTURE WEARING SURFACE
DESIGN SPECIFICATIONS: 1989 A.A.S.H.T.O. WITH 1990 AND 1991 INTERIMS.

GENERAL PLAN & ELEVATION
FAI 55 OVER S.P.C.S. & L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY
STA. 963+44.50
STRUCTURE NO'S. 032-0007 (N.B.)
032-0008 (S.B.)

JAN. 20, 1992

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FAI 55	(32-1) VBR	GRUNDY	66

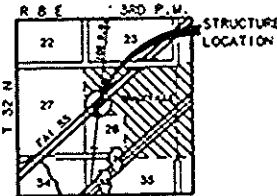
BENCHMARK: SPIKE & WASHER IN P.P.
210' RT. STA. 961+50
EL. 572.21

EXISTING STRUCTURE:

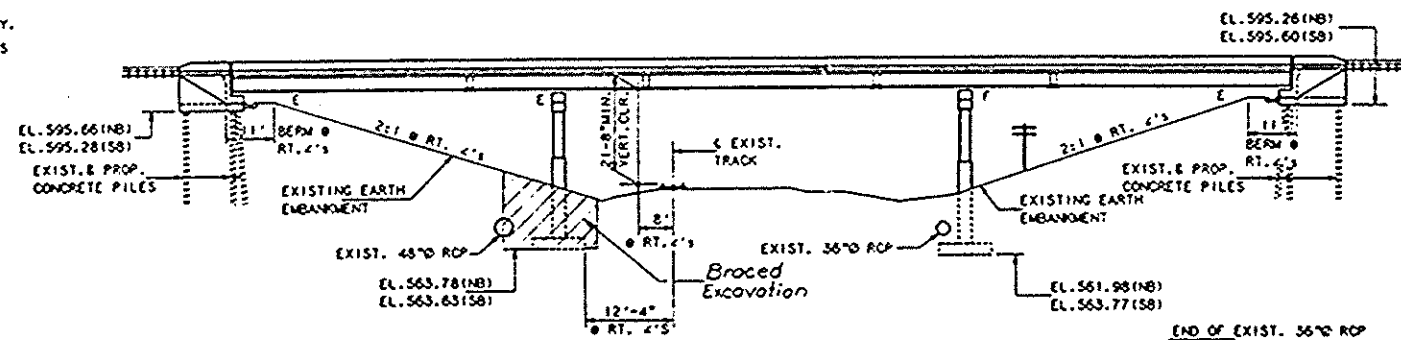
STRUCTURE NO. 032-0007 & 032-0008 BUILT IN 1955 AS F.A.R.TE.77, SEC. 91-YB-1, STA. 963+44.50 OVER THE I.C.G. RAILROAD IN GRUNDY COUNTY. THE SUPERSTRUCTURES CONSIST OF THREE SPANS OF CONTINUOUS GIRDER MEASURING 72'-2", 92'-4" & 72'-2" WITH A TOTAL STRUCTURE LENGTH OF 243'-4" BK. / BK. OF ABUTMENTS AND AN OVERALL STRUCTURE WIDTH 0.70, R.C. DECK OF 36"-0" EACH. THE SUBSTRUCTURES CONSIST OF TWO R.C. MULTI COLUMN PIERS AND SPILL THRU PILE BENT ABUTMENTS.

CONTRACTOR TO REMOVE AND DISPOSE OF THE EXISTING DECKS AND PORTION OF THE SUBSTRUCTURE AS SHOWN AND AS DETAILED HEREIN IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS. TRAFFIC TO BE DETOURED VIA MEDIAN CROSS OVER DURING CONSTRUCTION OF THE STRUCTURES RESPECTIVELY.

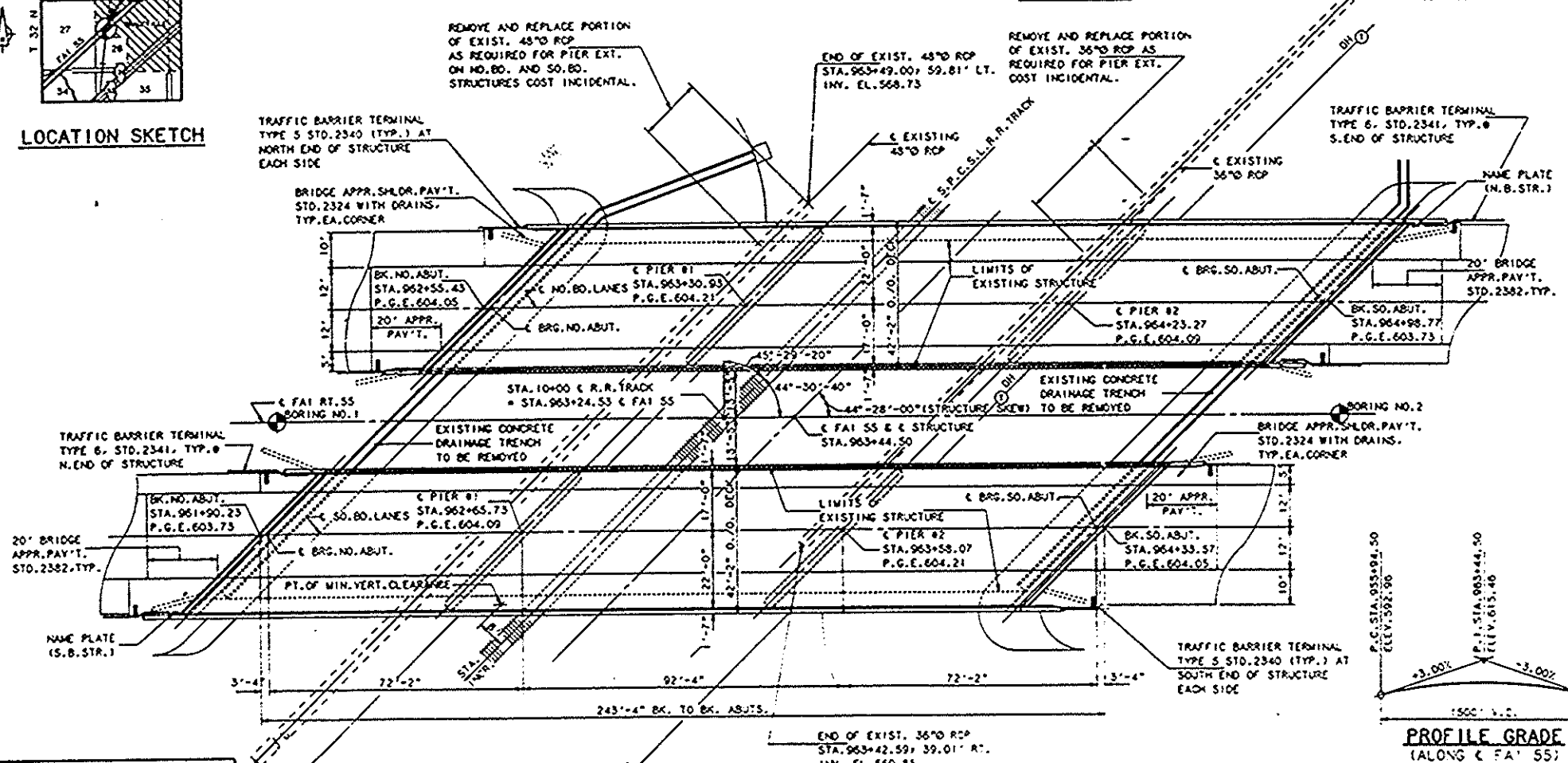
SALVAGE NO SALVAGE



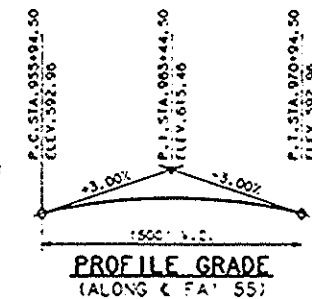
LOCATION SKETCH



ELEVATION



PLAN



PROFILE GRADE (ALONG & FA' 55)

(AS REVISED: 4-8-93 S.T.D.)

GENERAL NOTES:

- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8"Ø, OPEN HOLES 15/16"Ø, UNLESS OTHERWISE NOTED.
- CALCULATED WEIGHT OF NEW STRUCTURAL STEEL (M270 OR 35) = 118,450 LBS.
- THE FIRST TWO COATS OF THE LEAD AND CHROMATE FREE ALKYLID PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL.
- STRUCTURAL STEEL SHALL ONLY BE CLEANED AND PAINTED AS REQUIRED BY THE SPECIAL PROVISION "CLEANING AND PAINTING NEW STEEL AND ADJACENT AREAS OF EXISTING STEEL STRUCTURES" PRIOR TO POURING THE NEW CONCRETE FOR THE DECK. ALL LOOSE RUST, LOOSE MILL SCALE, AND OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF THE FLANGES OF STRINGERS (GIRDERS). THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-13 FOR POWER TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING. 25% INCIDENTAL TO CONCRETE REMOVAL.
- ALL CONTACT SURFACES BETWEEN NEW STRUCTURAL STEEL OF JOINTS FOR THE BOLTED FIELD SPLICES AND DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.
- ALL CONTACT SURFACE AREAS OF THE EXISTING STRUCTURAL STEEL TO WHICH THE NEW STEEL IS TO BE CONNECTED SHALL BE FREE OF PAINT OR LACQUER.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF THE BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
- ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
- THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL OF THE WIDE FLANGE BEAMS EXCEPT FILL PLATES.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60. PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT BID PRICE FOR THE WORK.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS SHOWN IN THE DETAILS SHALL BE PROVIDED AND PLACED, AS DETAILED.
- THE CONTRACTOR SHALL DRIVE ONE (1) STEEL H TEST PILE AT EACH ABUTMENT IN PERMANENT LOCATIONS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
- THE BRIDGE SEAT SEALER SHALL BE APPLIED AT THE ABUTMENTS TO THE TOP OF THE ABUTMENT SEAT. ESTIMATED QUANTITY OF BRIDGE SEAT SEALER = 705 SQ. FT.
- EXPANSION BOLTS SHALL BE APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD OF 4,000 LBS., AND 3/4"Ø X 6" AND 4" HOOKED BOLTS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR WILL BE REQUIRED TO MARK ON TOP OF THE CONCRETE DECK LOCATIONS OF THE TOP FLANGES OF ALL THE STEEL BEAMS PRIOR TO ANY REMOVAL OF THE BRIDGE CONCRETE DECK. SAW CUTTING DIRECTLY OVER THE TOP OF THE BEAM FLANGES IS NOT PERMITTED. PEENING OF EXISTING COVER PLATE WELDS IS REQUIRED BEFORE REMOVAL OF EXISTING CONCRETE DECK (SEE SPECIAL PROVISIONS).
- THE CONCRETE FOR BRIDGE FLOORS FINISHED IN ACCORDANCE WITH ARTICLE 503.15 OF THE STANDARD SPECIFICATIONS, SHALL BE PLACED AND COMPACTED PARALLEL TO THE SKEW IN UNIFORM INCREMENTS ALONG CENTERLINE OF BRIDGE THE FINISHING MACHINE, WHEN REQUIRED, SHALL BE SET PARALLEL TO THE SKEW FOR STRIKING OFF AND SCREEDING THE CONCRETE.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
REMOVAL OF EXISTING CONCRETE DECK	EACH	2		2
CONCRETE REMOVAL	CU. YD.		161.5	161.5
STRUCTURE EXCAVATION	CU. YD.		384	384
BRACED EXCAVATION	CU. YD.		582	582
NEOPRENE EXPANSION JOINT 2"	LIN. FT.	116		116
NEOPRENE EXPANSION JOINT 2 1/2"	LIN. FT.	116		116
CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	674.4		674.4
PROTECTIVE COAT	SQ. YD.	2,583		2,583
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14		14
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	14		14
CLASS X CONCRETE	CU. YD.		308.9	308.9
FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM	1		1
JACK AND REMOVE EXISTING BEARINGS	EACH	24		24
REINFORCEMENT BARS	POUND		2,620	2,620
REINFORCEMENT BARS, EPOXY COATED	POUND	155,110	34,940	190,050
CONCRETE PILES	LIN. FT.		455	455
TEST PILE CONCRETE	EACH		2	2
NAME PLATES	EACH	2		2
EXPANSION BOLTS 3/4 INCH X 4 INCH	EACH		68	68
EXPANSION BOLTS 3/4 INCH X 6 INCH	EACH		68	68
PEENING OF EXIST. COVER PLATE WELDS	LIN. FT.	24		24
BRIDGE SEAT SEALER	L. SUM			
TEMPORARY SUPPORT SYSTEM	EACH			
STUD SHEAR CONNECTORS	EACH	9,870		9,870
BRIDGE DECK GROOVING	SQ. YD.	1,975		1,975
FURNISHING AGGREGATE	TON		170	170

SEE SPECIAL PROVISIONS
QUANTITY IS FOR DECK AND PARAPETS

DESIGN STRESSES

- 18 = 20,000 PSI (NEW STR. STEEL)
- 18 = 18,000 PSI (EXIST. STR. STEEL)
- 116 = 3,500 PSI (NEW CONCRETE)
- 17 = 60,000 PSI (NEW REINFORCEMENT)

LOADING HS20-44 & ALTERNATE

ALLOW 25 PSF FOR FUTURE BEARING SURFACE
DESIGN SPECIFICATIONS: 1985 A.A.S.T.M. "C" WITH 1990 AND 1991 INTERIMS.

GENERAL PLAN & ELEVATION
FAI 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY
STA. 963+44.50
STRUCTURE NO'S. 032-0007 (N.B.)
032-0008 (S.B.)

S.P.C.S.L. R.R. BUILT 199 BY STATE OF ILLINOIS
FAI RT. 55 SEC. 132-11YBR
STA. 963+44.50 LOADING HS20 & A.T.
STR. NO. 8

NAME PLATE

(SEE STD. 2113)
032-0007 FOR N.B. STR.
032-0008 FOR S.B. STR.

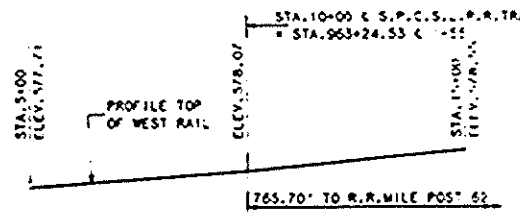
DESIGNED:	V.S.N.
CHECKED:	K.L.F.
DRAWN:	K.M.L.
CHECKED:	V.S.N./K.L.F.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

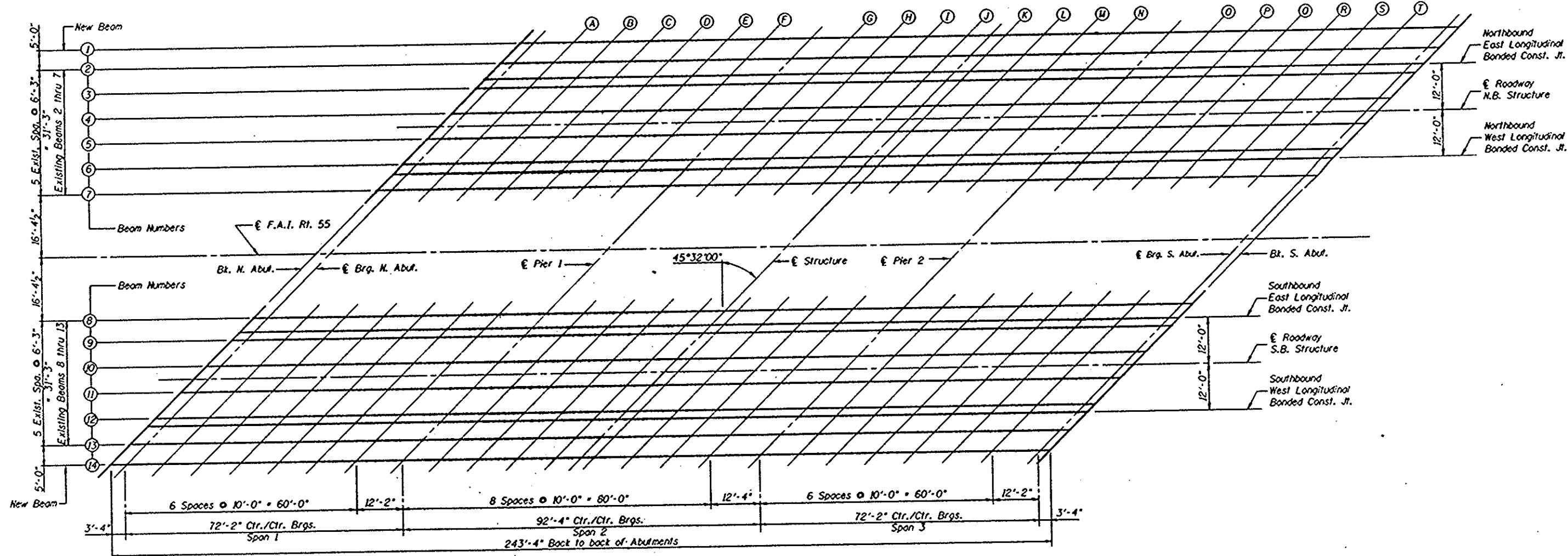
Ralph E. Anderson
Licenses of Bridges and Structures

DATE: 4/21/92
KENNETH L. FIORE
LICENSED STRUCTURAL ENGINEER
IN CARLYLE, ILLINOIS
NO. 081-007922 EXPIRES: NOVEMBER 30, 1992

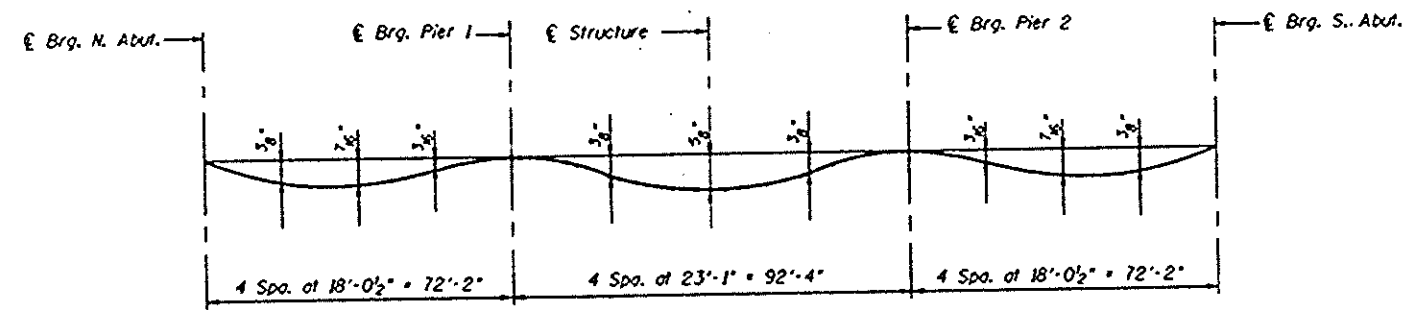
PROFILE GRADE S.P.C.S.L. R.R. TRACK



DATE	BY	CHECKED	SCALE	SHEET NO.	OF
F.A.I. 55	32-1 VBR	GRUNDY	66	15	35 SHEETS

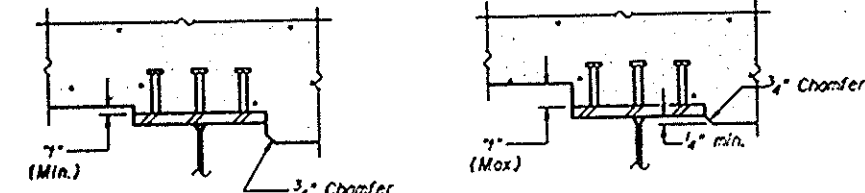


PLAN



DEAD LOAD DEFLECTION DIAGRAM
(Includes Weight of Concrete Only)

NOTE:
The above deflections are not for use in the field if the Engineer is working from the grade elevations adjusted for dead load deflections shown on Sheets 3 thru 9.



AT MINIMUM FILLET AT MAXIMUM FILLET

FILLET HEIGHTS

To determine "7", after all Structural Steel has been erected, Elevations of the Top Flanges of the Beams shall be taken at intervals shown on this Sheet. These Elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on Sheets 3 thru 9, minus Slab Thickness, equals the Fillet Heights "7" above Top Flange of Beams.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

€ BEAM NO.1

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 76.447	-20.625	603.750	603.750
CTR BRG N. ABUT	962 + 79.780	-20.625	603.759	603.759
A	962 + 89.780	-20.625	603.783	603.802
B	962 + 99.780	-20.625	603.803	603.835
C	963 + 09.780	-20.625	603.819	603.855
D	963 + 19.780	-20.625	603.831	603.862
E	963 + 29.780	-20.625	603.839	603.859
F	963 + 39.780	-20.625	603.842	603.848
CTR OF PIER #1	963 + 51.947	-20.625	603.842	603.842
G	963 + 61.947	-20.625	603.837	603.845
H	963 + 71.947	-20.625	603.828	603.852
I	963 + 81.947	-20.625	603.815 ⁴	603.854 ^{603.85}
J	963 + 91.947	-20.625	603.798 ⁴	603.847 ^{603.84}
K	964 + 01.947	-20.625	603.777 ⁴	603.827 ^{603.827}
L	964 + 11.947	-20.625	603.752 ⁴	603.794 ^{603.794}
M	964 + 21.947	-20.625	603.723 ⁴	603.751 ^{603.751}
N	964 + 31.947	-20.625	603.690 ⁴	603.702 ^{603.702}
CTR OF PIER #2	964 + 44.280	-20.625	603.644 ⁴	603.644 ⁴
O	964 + 54.280	-20.625	603.602 ⁴	603.607 ^{603.607}
P	964 + 64.280	-20.625	603.556 ⁴	603.572 ^{603.572}
Q	964 + 74.280	-20.625	603.506 ⁴	603.535 ^{603.535}
R	964 + 84.280	-20.625	603.452 ⁴	603.488 ^{603.488}
S	964 + 94.280	-20.625	603.394 ⁴	603.428 ^{603.428}
T	965 + 04.280	-20.625	603.332 ⁴	603.354 ^{603.354}
CTR BRG S. ABUT	965 + 16.447	-20.625	603.252 ⁴	603.252 ^{603.252}
BK OF S. ABUT	965 + 19.780	-20.625	603.228	603.228

€ BEAM NO.2

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 71.353	-15.625	603.840	603.840
CTR BRG N. ABUT	962 + 74.686	-15.625	603.850	603.850
A	962 + 84.686	-15.625	603.876	603.895
B	962 + 94.686	-15.625	603.897	603.929
C	963 + 04.686	-15.625	603.915	603.951
D	963 + 14.686	-15.625	603.929	603.960
E	963 + 24.686	-15.625	603.939	603.959
F	963 + 34.686	-15.625	603.945	603.951
CTR OF PIER #1	963 + 46.853	-15.625	603.947	603.947
G	963 + 56.853	-15.625	603.944	603.952
H	963 + 66.853	-15.625	603.937	603.961
I	963 + 76.853	-15.625	603.926 ⁴	603.965
J	963 + 86.853	-15.625	603.911 ⁷⁵	603.960 ⁷⁵
K	963 + 96.853	-15.625	603.892 ⁷³	603.942 ⁷⁵
L	964 + 06.853	-15.625	603.869 ⁷¹	603.911 ⁷⁵
M	964 + 16.853	-15.625	603.842 ⁴⁸	603.870 ⁷¹
N	964 + 26.853	-15.625	603.811 ⁶⁵	603.823 ⁶⁴
CTR OF PIER #2	964 + 39.186	-15.625	603.768 ⁶¹	603.768 ⁶¹
O	964 + 49.186	-15.625	603.728 ⁵⁷	603.733 ⁵⁹
P	964 + 59.186	-15.625	603.684 ⁵²	603.700 ⁵⁴
Q	964 + 69.186	-15.625	603.636 ⁴⁸	603.665 ⁵⁰
R	964 + 79.186	-15.625	603.584 ⁴²	603.620 ⁵⁰
S	964 + 89.186	-15.625	603.528 ³⁷	603.562 ⁴³
T	964 + 99.186	-15.625	603.468 ³¹	603.490 ³³
CTR BRG S. ABUT	965 + 11.353	-15.625	603.390 ²³	603.390 ²³
BK OF S. ABUT	965 + 14.686	-15.625	603.368	603.368

NORTHBOUND EAST LONGITUDINAL BONDED CONSTRUCTION JOINT

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 67.659	-12.000	603.904	603.904
CTR BRG N. ABUT	962 + 70.992	-12.000	603.915	603.915
A	962 + 80.992	-12.000	603.942	603.961
B	962 + 90.992	-12.000	603.965	603.997
C	963 + 00.992	-12.000	603.985	604.021
D	963 + 10.992	-12.000	604.000	604.031
E	963 + 20.992	-12.000	604.012	604.032
F	963 + 30.992	-12.000	604.019	604.025
CTR OF PIER #1	963 + 43.159	-12.000	604.022	604.022
G	963 + 53.159	-12.000	604.021	604.029
H	963 + 63.159	-12.000	604.016	604.040
I	963 + 73.159	-12.000	604.006	604.045
J	963 + 83.159	-12.000	603.993	604.042
K	963 + 93.159	-12.000	603.975	604.025
L	964 + 03.159	-12.000	603.954	603.996
M	964 + 13.159	-12.000	603.928	603.956
N	964 + 23.159	-12.000	603.899	603.911
CTR OF PIER #2	964 + 35.492	-12.000	603.857	603.857
O	964 + 45.492	-12.000	603.819	603.824
P	964 + 55.492	-12.000	603.776	603.792
Q	964 + 65.492	-12.000	603.730	603.759
R	964 + 75.492	-12.000	603.679	603.715
S	964 + 85.492	-12.000	603.625	603.659
T	964 + 95.492	-12.000	603.567	603.589
CTR BRG S. ABUT	965 + 07.659	-12.000	603.490	603.490
BK OF S. ABUT	965 + 10.992	-12.000	603.468	603.468

NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

€ BEAM NO.3

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 64.985	-9.375	603.937	603.937
CTR BRG N. ABUT	962 + 68.318	-9.375	603.947	603.947
A	962 + 78.318	-9.375	603.976	603.995
B	962 + 88.318	-9.375	604.000	604.032
C	962 + 98.318	-9.375	604.021	604.057
D	963 + 08.318	-9.375	604.037	604.068
E	963 + 18.318	-9.375	604.050	604.070
F	963 + 28.318	-9.375	604.058	604.064
CTR OF PIER #1	963 + 40.485	-9.375	604.063	604.063
G	963 + 50.485	-9.375	604.063	604.071
H	963 + 60.485	-9.375	604.058	604.082
I	963 + 70.485	-9.375	604.050 ^{2.89}	604.089 ^{3.93}
J	963 + 80.485	-9.375	604.038 ^{3.89}	604.087 ^{3.92}
K	963 + 90.485	-9.375	604.021 ^{3.87}	604.071 ^{3.91}
L	964 + 00.485	-9.375	604.001 ^{3.85}	604.043 ^{3.88}
M	964 + 10.485	-9.375	603.976 ^{3.82}	604.004 ^{3.84}
N	964 + 20.485	-9.375	603.948 ^{3.79}	603.960 ^{3.80}
CTR OF PIER #2	964 + 32.818	-9.375	603.908 ^{3.75}	603.908 ^{3.75}
O	964 + 42.818	-9.375	603.870 ^{3.71}	603.875 ^{3.71}
P	964 + 52.818	-9.375	603.829 ^{3.67}	603.845 ^{3.68}
Q	964 + 62.818	-9.375	603.784 ^{3.62}	603.813 ^{3.65}
R	964 + 72.818	-9.375	603.734 ^{3.57}	603.770 ^{3.61}
S	964 + 82.818	-9.375	603.681 ^{3.52}	603.715 ^{3.55}
T	964 + 92.818	-9.375	603.624 ^{3.46}	603.646 ^{3.49}
CTR BRG S. ABUT	965 + 04.985	-9.375	603.548 ^{3.39}	603.548 ^{3.39}
BK OF S. ABUT	965 + 08.318	-9.375	603.527	603.527

€ BEAM NO.4

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 58.618	-3.125	604.014	604.014
CTR BRG N. ABUT	962 + 61.951	-3.125	604.025	604.025
A	962 + 71.951	-3.125	604.056	604.075
B	962 + 81.951	-3.125	604.083	604.115
C	962 + 91.951	-3.125	604.106	604.142
D	963 + 01.951	-3.125	604.125	604.156
E	963 + 11.951	-3.125	604.140	604.160
F	963 + 21.951	-3.125	604.151	604.157
CTR OF PIER #1	963 + 34.118	-3.125	604.159	604.159
G	963 + 44.118	-3.125	604.161	604.169
H	963 + 54.118	-3.125	604.159	604.183
I	963 + 64.118	-3.125	604.153 ^{3.99}	604.192 ^{4.02}
J	963 + 74.118	-3.125	604.144 ^{3.92}	604.193 ^{4.02}
K	963 + 84.118	-3.125	604.130 ^{3.87}	604.180 ^{3.92}
L	963 + 94.118	-3.125	604.112 ^{3.85}	604.154 ^{3.89}
M	964 + 04.118	-3.125	604.090 ^{3.83}	604.118 ^{3.85}
N	964 + 14.118	-3.125	604.064 ^{3.80}	604.076 ^{3.82}
CTR OF PIER #2	964 + 26.451	-3.125	604.027 ^{3.87}	604.027 ^{3.87}
O	964 + 36.451	-3.125	603.992 ^{3.83}	603.997 ^{3.84}
P	964 + 46.451	-3.125	603.953 ^{3.78}	603.969 ^{3.81}
Q	964 + 56.451	-3.125	603.911 ^{3.75}	603.940 ^{3.78}
R	964 + 66.451	-3.125	603.864 ^{3.70}	603.900 ^{3.74}
S	964 + 76.451	-3.125	603.813 ^{3.65}	603.847 ^{3.68}
T	964 + 86.451	-3.125	603.758 ^{3.61}	603.780 ^{3.62}
CTR BRG S. ABUT	964 + 98.618	-3.125	603.686 ^{3.53}	603.686 ^{3.53}
BK OF S. ABUT	965 + 01.951	-3.125	603.665	603.665

€ ROADWAY NORTHBOUND STRUCTURE

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 55.434	+0.000	604.051	604.051
CTR BRG N. ABUT	962 + 58.767	+0.000	604.063	604.063
A	962 + 68.767	+0.000	604.095	604.114
B	962 + 78.767	+0.000	604.124	604.156
C	962 + 88.767	+0.000	604.148	604.184
D	962 + 98.767	+0.000	604.168	604.199
E	963 + 08.767	+0.000	604.185	604.205
F	963 + 18.767	+0.000	604.197	604.203
CTR OF PIER #1	963 + 30.934	+0.000	604.206	604.206
G	963 + 40.934	+0.000	604.210	604.218
H	963 + 50.934	+0.000	604.209	604.233
I	963 + 60.934	+0.000	604.205	604.244
J	963 + 70.934	+0.000	604.196	604.245
K	963 + 80.934	+0.000	604.184	604.233
L	963 + 90.934	+0.000	604.167	604.209
M	964 + 00.934	+0.000	604.146	604.174
N	964 + 10.934	+0.000	604.122	604.134
CTR OF PIER #2	964 + 23.267	+0.000	604.086	604.086
O	964 + 33.267	+0.000	604.052	604.057
P	964 + 43.267	+0.000	604.015	604.031
Q	964 + 53.267	+0.000	603.973	604.002
R	964 + 63.267	+0.000	603.928	603.964
S	964 + 73.267	+0.000	603.878	603.912
T	964 + 83.267	+0.000	603.825	603.847
CTR BRG S. ABUT	964 + 95.434	+0.000	603.754	603.754
BK OF S. ABUT	964 + 98.767	+0.000	603.734	603.734

NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

€ BEAM NO.5

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 52.250	+3.125	603.991	603.991
CTR BRG N. ABUT	962 + 55.583	+3.125	604.003	604.003
A	962 + 65.583	+3.125	604.037	604.056
B	962 + 75.583	+3.125	604.066	604.098
C	962 + 85.583	+3.125	604.092	604.128
D	962 + 95.583	+3.125	604.113	604.144
E	963 + 05.583	+3.125	604.131	604.151
F	963 + 15.583	+3.125	604.145	604.150
CTR OF PIER #1	963 + 27.750	+3.125	604.156	604.156
G	963 + 37.750	+3.125	604.160	604.168
H	963 + 47.750	+3.125	604.161	604.185
I	963 + 57.750	+3.125	604.158	604.197
J	963 + 67.750	+3.125	604.150	604.199
K	963 + 77.750	+3.125	604.139	604.189
L	963 + 87.750	+3.125	604.124	604.166
M	963 + 97.750	+3.125	604.105	604.133
N	964 + 07.750	+3.125	604.081	604.093
CTR OF PIER #2	964 + 20.083	+3.125	604.047	604.047 7.89
O	964 + 30.083	+3.125	604.015 3.85	604.020 3.36
P	964 + 40.083	+3.125	603.978 86	603.994 83
Q	964 + 50.083	+3.125	603.938 88	603.967 81
R	964 + 60.083	+3.125	603.894 72	603.930 77
S	964 + 70.083	+3.125	603.846 98	603.880 72
T	964 + 80.083	+3.125	603.794 92	603.816 88
CTR BRG S. ABUT	964 + 92.250	+3.125	603.725 57	603.725 57
BK OF S. ABUT	964 + 95.583	+3.125	603.705	603.705

€ BEAM NO.6

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 45.883	+9.375	603.869	603.869
CTR BRG N. ABUT	962 + 49.216	+9.375	603.882	603.882
A	962 + 59.216	+9.375	603.918	603.937
B	962 + 69.216	+9.375	603.950	603.982
C	962 + 79.216	+9.375	603.978	604.014
D	962 + 89.216	+9.375	604.002	604.033
E	962 + 99.216	+9.375	604.023	604.043
F	963 + 09.216	+9.375	604.039	604.045
CTR OF PIER #1	963 + 21.383	+9.375	604.053	604.053
G	963 + 31.383	+9.375	604.060	604.068
H	963 + 41.383	+9.375	604.063	604.087
I	963 + 51.383	+9.375	604.063	604.102
J	963 + 61.383	+9.375	604.058	604.107
K	963 + 71.383	+9.375	604.049	604.099
L	963 + 81.383	+9.375	604.036	604.078
M	963 + 91.383	+9.375	604.020	604.048
N	964 + 01.383	+9.375	603.999	604.011
CTR OF PIER #2	964 + 13.716	+9.375	603.968	603.968
O	964 + 23.716	+9.375	603.938	603.943
P	964 + 33.716	+9.375	603.904	603.920
Q	964 + 43.716	+9.375	603.867	603.896
R	964 + 53.716	+9.375	603.825	603.861
S	964 + 63.716	+9.375	603.779	603.813
T	964 + 73.716	+9.375	603.730	603.752
CTR BRG S. ABUT	964 + 85.883	+9.375	603.664	603.664
BK OF S. ABUT	964 + 89.216	+9.375	603.645	603.645

NORTHBOUND WEST LONGITUDINAL BONDED CONSTRUCTION JOINT

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 43.209	+12.000	603.817	603.817
CTR BRG N. ABUT	962 + 46.542	+12.000	603.831	603.831
A	962 + 56.542	+12.000	603.868	603.887
B	962 + 66.542	+12.000	603.901	603.933
C	962 + 76.542	+12.000	603.930	603.966
D	962 + 86.542	+12.000	603.955	603.988
E	962 + 96.542	+12.000	603.977	603.997
F	963 + 06.542	+12.000	603.994	604.000
CTR OF PIER #1	963 + 18.709	+12.000	604.009	604.009
G	963 + 28.709	+12.000	604.018	604.026
H	963 + 38.709	+12.000	604.022	604.046
I	963 + 48.709	+12.000	604.022	604.061
J	963 + 58.709	+12.000	604.019	604.068
K	963 + 68.709	+12.000	604.011	604.061
L	963 + 78.709	+12.000	603.999	604.041
M	963 + 88.709	+12.000	603.983	604.011
N	963 + 98.709	+12.000	603.964	603.976
CTR OF PIER #2	964 + 11.042	+12.000	603.934	603.934
O	964 + 21.042	+12.000	603.905	603.910
P	964 + 31.042	+12.000	603.873	603.889
Q	964 + 41.042	+12.000	603.836	603.865
R	964 + 51.042	+12.000	603.796	603.832
S	964 + 61.042	+12.000	603.751	603.785
T	964 + 71.042	+12.000	603.702	603.724
CTR BRG S. ABUT	964 + 83.209	+12.000	603.638	603.638
BK OF S. ABUT	964 + 86.542	+12.000	603.619	603.619

NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

€ BEAM NO.7

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 39.515	+15.625	603.727	603.727
CTR BRG N. ABUT	962 + 42.848	+15.625	603.740	603.740
A	962 + 52.848	+15.625	603.779	603.798
B	962 + 62.848	+15.625	603.814	603.846
C	962 + 72.848	+15.625	603.844	603.880
D	962 + 82.848	+15.625	603.871	603.902
E	962 + 92.848	+15.625	603.894	603.914
F	963 + 02.848	+15.625	603.912	603.918
CTR OF PIER #1	963 + 15.015	+15.625	603.930	603.930
G	963 + 25.015	+15.625	603.939	603.947
H	963 + 35.015	+15.625	603.945	603.969
I	963 + 45.015	+15.625	603.947	603.986
J	963 + 55.015	+15.625	603.945	603.994
K	963 + 65.015	+15.625	603.939	603.989
L	963 + 75.015	+15.625	603.928	603.970
M	963 + 85.015	+15.625	603.914	603.942
N	963 + 95.015	+15.625	603.896	603.908
CTR OF PIER #2	964 + 07.348	+15.625	603.868	603.868
O	964 + 17.348	+15.625	603.841	603.846
P	964 + 27.348	+15.625	603.810	603.826
Q	964 + 37.348	+15.625	603.775	603.804
R	964 + 47.348	+15.625	603.736	603.772
S	964 + 57.348	+15.625	603.692	603.726
T	964 + 67.348	+15.625	603.645	603.667
CTR BRG S. ABUT	964 + 79.515	+15.625	603.582	603.582
BK OF S. ABUT	964 + 82.848	+15.625	603.564	603.564

€ BEAM NO.8

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 06.151	-15.625	603.564	603.564
CTR BRG N. ABUT	962 + 09.484	-15.625	603.582	603.582
A	962 + 19.484	-15.625	603.634	603.653
B	962 + 29.484	-15.625	603.682	603.714
C	962 + 39.484	-15.625	603.726	603.762
D	962 + 49.484	-15.625	603.767	603.798
E	962 + 59.484	-15.625	603.803	603.823
F	962 + 69.484	-15.625	603.835	603.840
CTR OF PIER #1	962 + 81.651	-15.625	603.868	603.868
G	962 + 91.651	-15.625	603.891	603.899
H	963 + 01.651	-15.625	603.910	603.934
I	963 + 11.651	-15.625	603.925	603.964
J	963 + 21.651	-15.625	603.937	603.986
K	963 + 31.651	-15.625	603.944	603.994
L	963 + 41.651	-15.625	603.947	603.989
M	963 + 51.651	-15.625	603.946	603.974
N	963 + 61.651	-15.625	603.941	603.953
CTR OF PIER #2	963 + 73.984	-15.625	603.930	603.930
O	963 + 83.984	-15.625	603.916	603.921
P	963 + 93.984	-15.625	603.898	603.914
Q	964 + 03.984	-15.625	603.876	603.905
R	964 + 13.984	-15.625	603.850	603.887
S	964 + 23.984	-15.625	603.821	603.855
T	964 + 33.984	-15.625	603.787	603.809
CTR BRG S. ABUT	964 + 46.151	-15.625	603.740	603.740
BK OF S. ABUT	964 + 49.484	-15.625	603.727	603.727

SOUTHBOUND EAST LONGITUDINAL BONDED CONSTRUCTION JOINT

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	962 + 02.457	-12.000	603.619	603.619
CTR BRG N. ABUT	962 + 05.790	-12.000	603.638	603.638
A	962 + 15.790	-12.000	603.691	603.710
B	962 + 25.790	-12.000	603.741	603.773
C	962 + 35.790	-12.000	603.786	603.822
D	962 + 45.790	-12.000	603.828	603.859
E	962 + 55.790	-12.000	603.865	603.885
F	962 + 65.790	-12.000	603.899	603.905
CTR OF PIER #1	962 + 77.957	-12.000	603.934	603.934
G	962 + 87.957	-12.000	603.959	603.967
H	962 + 97.957	-12.000	603.979	604.003
I	963 + 07.957	-12.000	603.996	604.035
J	963 + 17.957	-12.000	604.008	604.057
K	963 + 27.957	-12.000	604.017	604.067
L	963 + 37.957	-12.000	604.022	604.064
M	963 + 47.957	-12.000	604.022	604.050
N	963 + 57.957	-12.000	604.019	604.031
CTR OF PIER #2	963 + 70.290	-12.000	604.009	604.009
O	963 + 80.290	-12.000	603.997	604.002
P	963 + 90.290	-12.000	603.981	603.997
Q	964 + 00.290	-12.000	603.960	603.989
R	964 + 10.290	-12.000	603.936	603.972
S	964 + 20.290	-12.000	603.908	603.942
T	964 + 30.290	-12.000	603.875	603.897
CTR BRG S. ABUT	964 + 42.457	-12.000	603.831	603.831
BK OF S. ABUT	964 + 45.790	-12.000	603.817	603.817

NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

K. H. S. G. 10. 20016

€ BEAM NO.9

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 99.783	-9.375	603.645	603.645
CTR BRG N. ABUT	962 + 03.116	-9.375	603.664	603.664
A	962 + 13.116	-9.375	603.718	603.737
B	962 + 23.116	-9.375	603.769	603.801
C	962 + 33.116	-9.375	603.815	603.851
D	962 + 43.116	-9.375	603.858	603.889
E	962 + 53.116	-9.375	603.897	603.917
F	962 + 63.116	-9.375	603.931	603.937
CTR OF PIER #1	962 + 75.283	-9.375	603.968	603.968
G	962 + 85.283	-9.375	603.993	604.001
H	962 + 95.283	-9.375	604.015	604.039
I	963 + 05.283	-9.375	604.033	604.072
J	963 + 15.283	-9.375	604.046	604.095
K	963 + 25.283	-9.375	604.056	604.106
L	963 + 35.283	-9.375	604.062	604.104
M	963 + 45.283	-9.375	604.064	604.092
N	963 + 55.283	-9.375	604.061	604.073
CTR OF PIER #2	963 + 67.616	-9.375	604.053	604.053
O	963 + 77.616	-9.375	604.042	604.047
P	963 + 87.616	-9.375	604.026	604.042
Q	963 + 97.616	-9.375	604.007	604.036
R	964 + 07.616	-9.375	603.984	604.020
S	964 + 17.616	-9.375	603.957	603.991
T	964 + 27.616	-9.375	603.925	603.947
CTR BRG S. ABUT	964 + 39.783	-9.375	603.882	603.882
BK OF S. ABUT	964 + 43.116	-9.375	603.869	603.869

€ BEAM NO.10

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 93.416	-3.125	603.705	603.705
CTR BRG N. ABUT	961 + 96.749	-3.125	603.725	603.725
A	962 + 06.749	-3.125	603.782	603.801
B	962 + 16.749	-3.125	603.835	603.867
C	962 + 26.749	-3.125	603.884	603.920
D	962 + 36.749	-3.125	603.929	603.960
E	962 + 46.749	-3.125	603.970	603.990
F	962 + 56.749	-3.125	604.007	604.013
CTR OF PIER #1	962 + 68.916	-3.125	604.047	604.047
G	962 + 78.916	-3.125	604.075	604.083
H	962 + 88.916	-3.125	604.099	604.123
I	962 + 98.916	-3.125	604.120	604.159
J	963 + 08.916	-3.125	604.136	604.185
K	963 + 18.916	-3.125	604.148	604.198
L	963 + 28.916	-3.125	604.156	604.198
M	963 + 38.916	-3.125	604.161	604.189
N	963 + 48.916	-3.125	604.161	604.173
CTR OF PIER #2	963 + 61.249	-3.125	604.156	604.156
O	963 + 71.249	-3.125	604.147	604.152
P	963 + 81.249	-3.125	604.134	604.150
Q	963 + 91.249	-3.125	604.118	604.147
R	964 + 01.249	-3.125	604.097	604.133
S	964 + 11.249	-3.125	604.072	604.106
T	964 + 21.249	-3.125	604.043	604.065
CTR BRG S. ABUT	964 + 33.416	-3.125	604.003	604.003
BK OF S. ABUT	964 + 36.749	-3.125	603.991	603.991

€ ROADWAY SOUTHBOUND STRUCTURE

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 90.232	+0.000	603.734	603.734
CTR BRG N. ABUT	961 + 93.565	+0.000	603.754	603.754
A	962 + 03.565	+0.000	603.813	603.832
B	962 + 13.565	+0.000	603.867	603.899
C	962 + 23.565	+0.000	603.918	603.954
D	962 + 33.565	+0.000	603.964	603.995
E	962 + 43.565	+0.000	604.006	604.026
F	962 + 53.565	+0.000	604.045	604.051
CTR OF PIER #1	962 + 65.732	+0.000	604.086	604.086
G	962 + 75.732	+0.000	604.115	604.123
H	962 + 85.732	+0.000	604.141	604.165
I	962 + 95.732	+0.000	604.163	604.202
J	963 + 05.732	+0.000	604.180	604.229
K	963 + 15.732	+0.000	604.194	604.244
L	963 + 25.732	+0.000	604.203	604.245
M	963 + 35.732	+0.000	604.208	604.236
N	963 + 45.732	+0.000	604.210	604.222
CTR OF PIER #2	963 + 58.065	+0.000	604.206	604.206
O	963 + 68.065	+0.000	604.199	604.204
P	963 + 78.065	+0.000	604.188	604.204
Q	963 + 88.065	+0.000	604.172	604.201
R	963 + 98.065	+0.000	604.153	604.189
S	964 + 08.065	+0.000	604.129	604.163
T	964 + 18.065	+0.000	604.102	604.124
CTR BRG S. ABUT	964 + 30.232	+0.000	604.063	604.063
BK OF S. ABUT	964 + 33.565	+0.000	604.051	604.051

NOTE:
1. Elevations are at Top of Concrete.
2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

ROUTE NO.	SECTION	PROJECT	SHEET	NO.	SHEET NO. 8 OF
F.A.I. 55	32-1 VBR	GRUNDY	66	21	35 SHEETS
FED. ROAD DIST. NO. 7		SHEET NO.		FOR OR. PROJECT NO.	

€ BEAM NO.11

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 87.048	+3.125	603.665	603.665
CTR BRG N. ABUT	961 + 90.381	+3.125	603.686	603.686
A	962 + 00.381	+3.125	603.746	603.765
B	962 + 10.381	+3.125	603.801	603.833
C	962 + 20.381	+3.125	603.853	603.889
D	962 + 30.381	+3.125	603.901	603.932
E	962 + 40.381	+3.125	603.944	603.964
F	962 + 50.381	+3.125	603.984	603.990
CTR OF PIER #1	962 + 62.548	+3.125	604.027	604.027
G	962 + 72.548	+3.125	604.058	604.066
H	962 + 82.548	+3.125	604.084	604.108
I	962 + 92.548	+3.125	604.107	604.146
J	963 + 02.548	+3.125	604.126	604.175
K	963 + 12.548	+3.125	604.141	604.191
L	963 + 22.548	+3.125	604.152	604.194
M	963 + 32.548	+3.125	604.158	604.186
N	963 + 42.548	+3.125	604.161	604.173
CTR OF PIER #2	963 + 54.881	+3.125	604.159	604.159
O	963 + 64.881	+3.125	604.153	604.158
P	963 + 74.881	+3.125	604.143	604.159
Q	963 + 84.881	+3.125	604.129	604.158
R	963 + 94.881	+3.125	604.110	604.146
S	964 + 04.881	+3.125	604.088	604.122
T	964 + 14.881	+3.125	604.062	604.084
CTR BRG S. ABUT	964 + 27.048	+3.125	604.025	604.025
BK OF S. ABUT	964 + 30.381	+3.125	604.014	604.014

€ BEAM NO.12

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 80.681	+9.375	603.527	603.527
CTR BRG N. ABUT	961 + 84.014	+9.375	603.548	603.548
A	961 + 94.014	+9.375	603.611	603.630
B	962 + 04.014	+9.375	603.669	603.701
C	962 + 14.014	+9.375	603.723	603.759
D	962 + 24.014	+9.375	603.773	603.804
E	962 + 34.014	+9.375	603.819	603.839
F	962 + 44.014	+9.375	603.862	603.868
CTR OF PIER #1	962 + 56.181	+9.375	603.908	603.908
G	962 + 66.181	+9.375	603.941	603.949
H	962 + 76.181	+9.375	603.970	603.994
I	962 + 86.181	+9.375	603.996	604.035
J	962 + 96.181	+9.375	604.017	604.066
K	963 + 06.181	+9.375	604.034	604.084
L	963 + 16.181	+9.375	604.048	604.090
M	963 + 26.181	+9.375	604.057	604.085
N	963 + 36.181	+9.375	604.062	604.074
CTR OF PIER #2	963 + 48.514	+9.375	604.063	604.063
O	963 + 58.514	+9.375	604.060	604.065
P	963 + 68.514	+9.375	604.052	604.068
Q	963 + 78.514	+9.375	604.040	604.069
R	963 + 88.514	+9.375	604.025	604.061
S	963 + 98.514	+9.375	604.005	604.039
T	964 + 08.514	+9.375	603.982	604.004
CTR BRG S. ABUT	964 + 20.681	+9.375	603.947	603.947
BK OF S. ABUT	964 + 24.014	+9.375	603.937	603.937

SOUTHBOUND WEST LONGITUDINAL BONDED CONSTRUCTION JOINT

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 78.007	+12.000	603.468	603.468
CTR BRG N. ABUT	961 + 81.340	+12.000	603.490	603.490
A	961 + 91.340	+12.000	603.553	603.572
B	962 + 01.340	+12.000	603.613	603.645
C	962 + 11.340	+12.000	603.668	603.704
D	962 + 21.340	+12.000	603.719	603.750
E	962 + 31.340	+12.000	603.766	603.786
F	962 + 41.340	+12.000	603.810	603.816
CTR OF PIER #1	962 + 53.507	+12.000	603.857	603.857
G	962 + 63.507	+12.000	603.891	603.899
H	962 + 73.507	+12.000	603.922	603.946
I	962 + 83.507	+12.000	603.948	603.987
J	962 + 93.507	+12.000	603.971	604.020
K	963 + 03.507	+12.000	603.989	604.039
L	963 + 13.507	+12.000	604.003	604.045
M	963 + 23.507	+12.000	604.014	604.042
N	963 + 33.507	+12.000	604.020	604.032
CTR OF PIER #2	963 + 45.840	+12.000	604.022	604.022
O	963 + 55.840	+12.000	604.020	604.025
P	963 + 65.840	+12.000	604.013	604.029
Q	963 + 75.840	+12.000	604.003	604.032
R	963 + 85.840	+12.000	603.988	604.024
S	963 + 95.840	+12.000	603.970	604.004
T	964 + 05.840	+12.000	603.947	603.969
CTR BRG S. ABUT	964 + 18.007	+12.000	603.914	603.914
BK OF S. ABUT	964 + 21.340	+12.000	603.904	603.904

NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

TOP OF SLAB ELEVATIONS

DATE	SECTION	DRY	25%	22'	SHEET NO. 9 OF 35 SHEETS
F.A.I. 55	32-1 VBR	GRUNDY	66	22	
DESIGNED BY: V.S.N.		DRAWN BY: K.H.L.		CHECKED BY: V.S.N./K.L.F.	

€ BEAM NO.13

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 74.313	+15.625	603.368	603.368
CTR BRG N. ABUT	961 + 77.646	+15.625	603.390	603.390
A	961 + 87.646	+15.625	603.455	603.474
B	961 + 97.646	+15.625	603.516	603.548
C	962 + 07.646	+15.625	603.572	603.608
D	962 + 17.646	+15.625	603.625	603.656
E	962 + 27.646	+15.625	603.674	603.694
F	962 + 37.646	+15.625	603.719	603.725
CTR OF PIER #1	962 + 49.813	+15.625	603.768	603.768
G	962 + 59.813	+15.625	603.804	603.812
H	962 + 69.813	+15.625	603.835	603.859
I	962 + 79.813	+15.625	603.863	603.902
J	962 + 89.813	+15.625	603.887	603.936
K	962 + 99.813	+15.625	603.907	603.957
L	963 + 09.813	+15.625	603.923	603.965
M	963 + 19.813	+15.625	603.935	603.963
N	963 + 29.813	+15.625	603.943	603.955
CTR OF PIER #2	963 + 42.146	+15.625	603.947	603.947
O	963 + 52.146	+15.625	603.946	603.951
P	963 + 62.146	+15.625	603.941	603.957
Q	963 + 72.146	+15.625	603.932	603.961
R	963 + 82.146	+15.625	603.919	603.955
S	963 + 92.146	+15.625	603.902	603.936
T	964 + 02.146	+15.625	603.881	603.902
CTR BRG S. ABUT	964 + 14.313	+15.625	603.850	603.850
BK OF S. ABUT	964 + 17.646	+15.625	603.840	603.840

€ BEAM NO.14

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	961 + 69.219	+20.625	603.228	603.228
CTR BRG N. ABUT	961 + 72.552	+20.625	603.251	603.251
A	961 + 82.552	+20.625	603.318	603.337
B	961 + 92.552	+20.625	603.381	603.413
C	962 + 02.552	+20.625	603.440	603.476
D	962 + 12.552	+20.625	603.495	603.526
E	962 + 22.552	+20.625	603.545	603.565
F	962 + 32.552	+20.625	603.592	603.598
CTR OF PIER #1	962 + 44.719	+20.625	603.644	603.644
G	962 + 54.719	+20.625	603.682	603.690
H	962 + 64.719	+20.625	603.716	603.740
I	962 + 74.719	+20.625	603.745	603.784
J	962 + 84.719	+20.625	603.771	603.820
K	962 + 94.719	+20.625	603.793	603.843
L	963 + 04.719	+20.625	603.811	603.853
M	963 + 14.719	+20.625	603.825	603.853
N	963 + 24.719	+20.625	603.835	603.847
CTR OF PIER #2	963 + 37.052	+20.625	603.842	603.842
O	963 + 47.052	+20.625	603.843	603.848
P	963 + 57.052	+20.625	603.840	603.856
Q	963 + 67.052	+20.625	603.833	603.862
R	963 + 77.052	+20.625	603.822	603.858
S	963 + 87.052	+20.625	603.807	603.841
T	963 + 97.052	+20.625	603.788	603.810
CTR BRG S. ABUT	964 + 09.219	+20.625	603.759	603.759
BK OF S. ABUT	964 + 12.552	+20.625	603.750	603.750

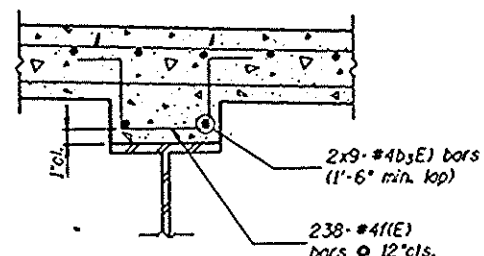
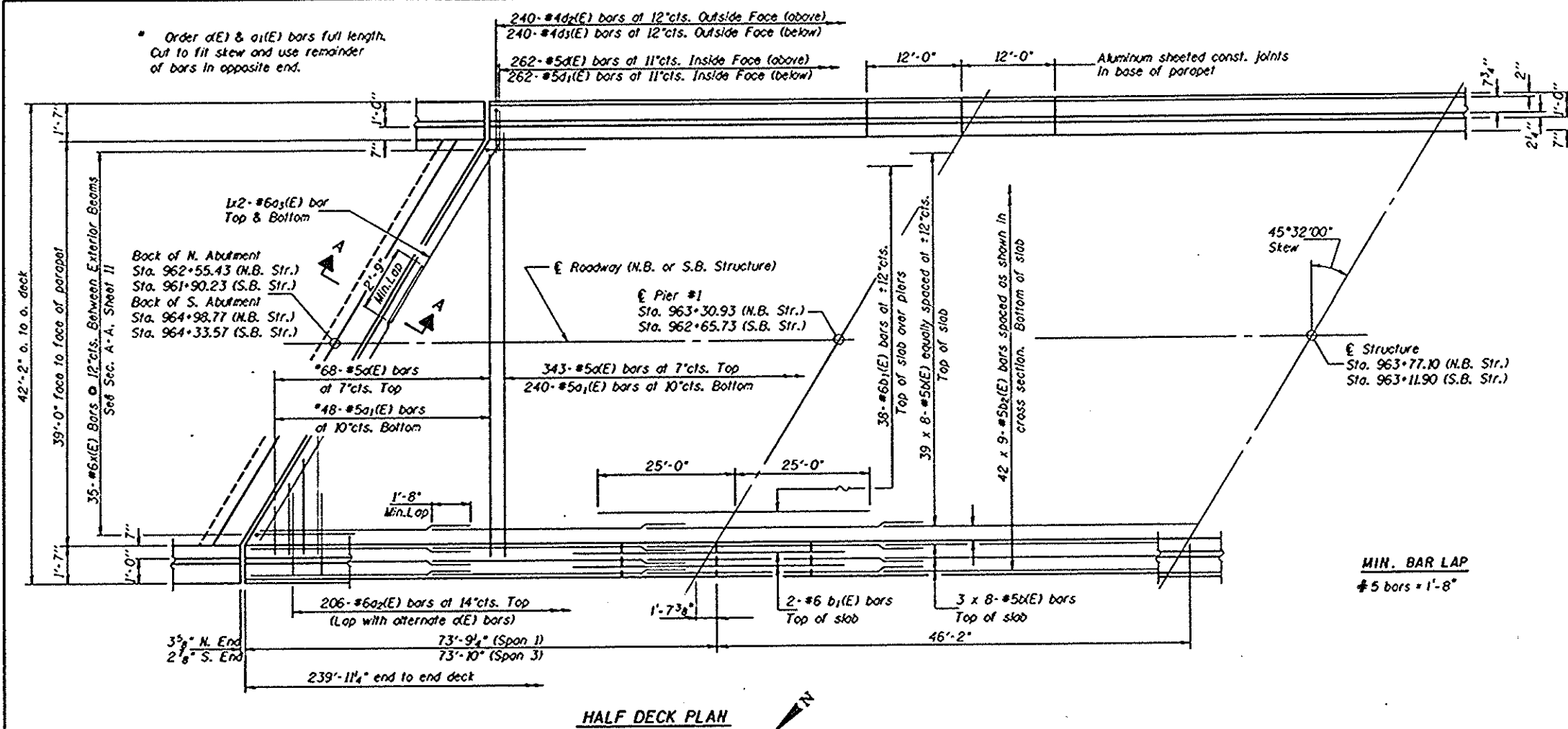
NOTE:
 1. Elevations are at Top of Concrete.
 2. For Location Plan see Sheet #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

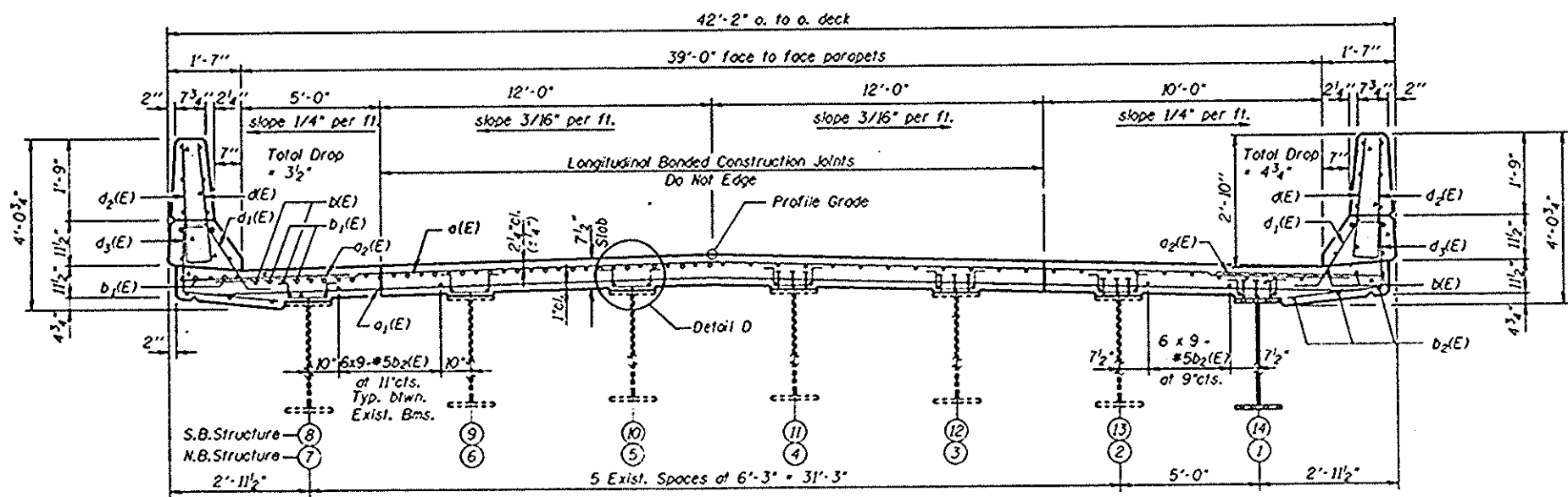
F.A.I. 55 OVER S.P.C.S.L. RAILROAD

DATE	BY	CHKD	DATE	SHEET NO. 23 OF 35 SHEETS
F.A.I. 55	52-D-52	GRUNDY	66	23



DETAIL D
 TYPICAL OF EACH BEAM
 1 THRU 14

Notes: See Sheet #11 for superstructure details and Bill of Material.
 Reinforcement bars designated (E) shall be epoxy coated.
 Bars indicated thus 39 x 8-#5 etc. indicates 39 lines of bars with 8 lengths per line.
 See Sheet #11 for parapet reinforcement.



CROSS SECTION
 (S.B. Structure looking South)
 (N.B. Structure looking North)

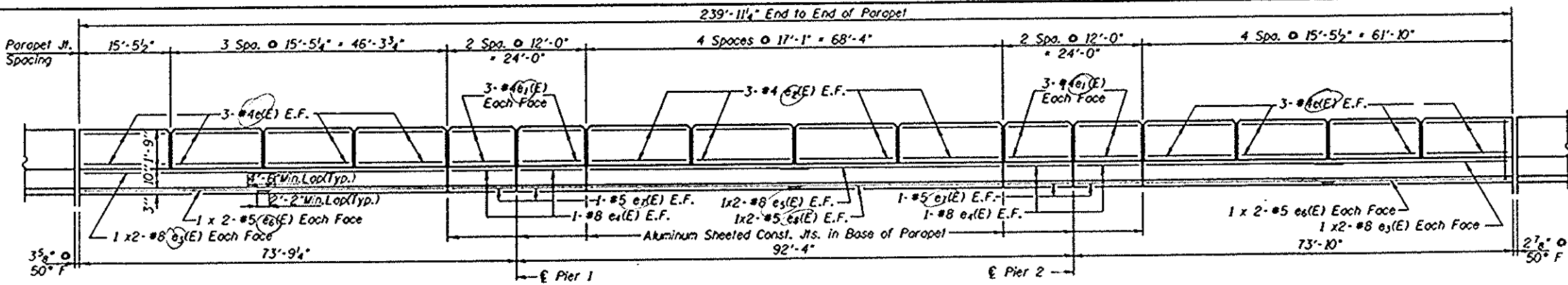
DECK PLAN & CROSS SECTION
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.M.L.
CHECKED	V.S.M./K.L.F.

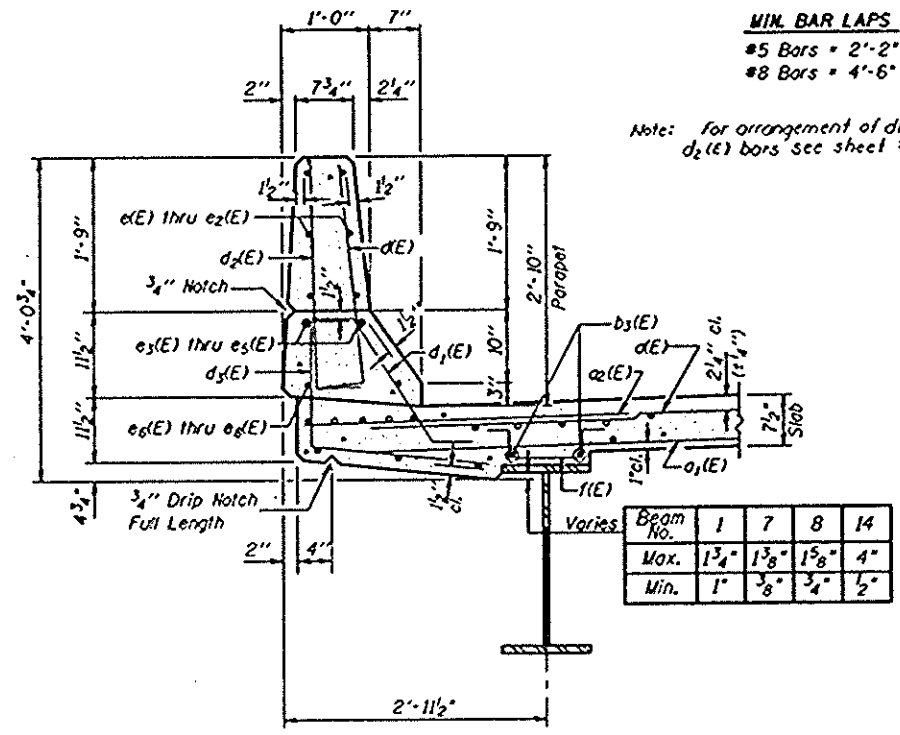
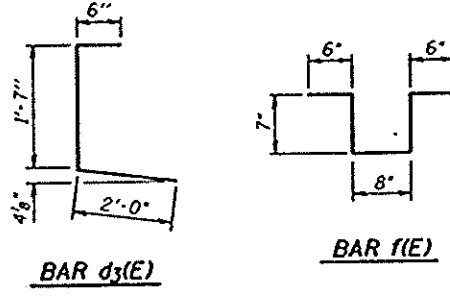
S-1-L (>15°) 12-31-87

M.B. & G. NO. 50135

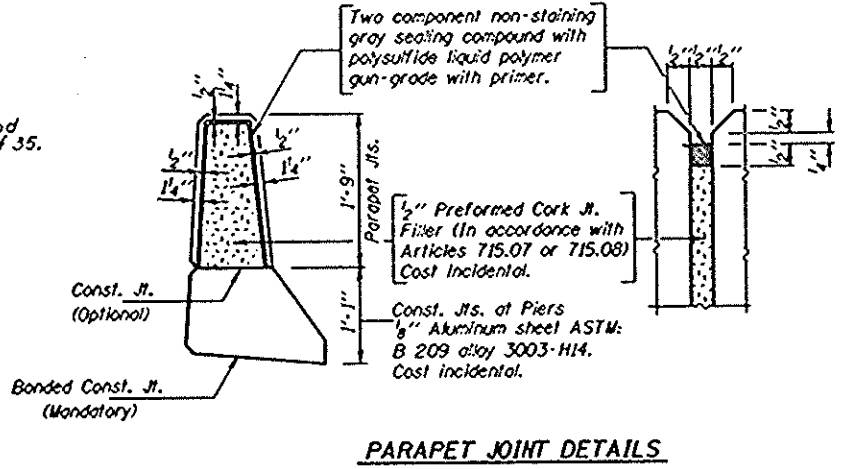
DATE	BY	CHKD	DATE	SHEET NO. 11 OF 35 SHEETS
F.A.I. 55	32-110	GRUDY	85	24
FOR NAME AND NO. Y		CLASS		FOR NO. PROJECT



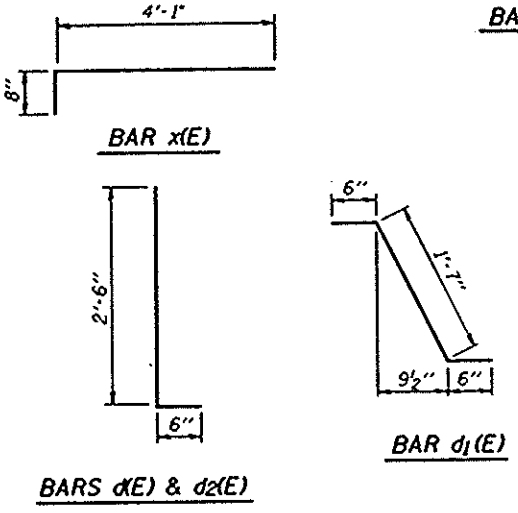
INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET



PARAPET JOINT DETAILS

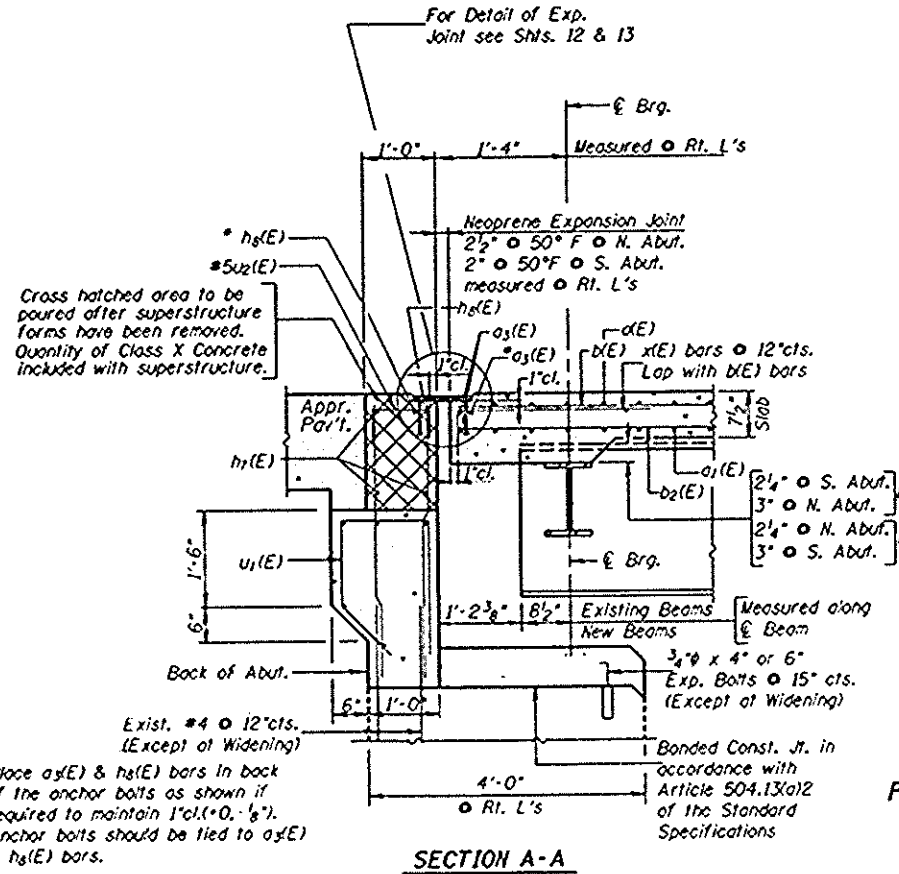


BARS d(E) & d2(E)

BILL OF MATERIAL 2-SUPERSTRUCTURES

Bar	No.	Size	Length	Shape
d(E)	822	#5	40'-2"	—
d1(E)	576	#5	39'-6"	—
d2(E)	824	#6	4'-0"	—
d3(E)	8	#6	30'-0"	—
d(E)	720	#5	31'-6"	—
d1(E)	168	#6	50'-0"	—
d2(E)	756	#5	28'-2"	—
d3(E)	252	#4	27'-10"	—
d(E)	1048	#5	3'-0"	—
d1(E)	1048	#5	2'-7"	—
d2(E)	960	#4	3'-0"	—
d3(E)	960	#4	4'-1"	—
d(E)	192	#4	15'-1"	—
e1(E)	96	#4	11'-8"	—
e2(E)	96	#4	16'-9"	—
e3(E)	32	#8	33'-0"	—
e4(E)	32	#8	11'-8"	—
e5(E)	16	#8	36'-3"	—
e6(E)	32	#5	31'-10"	—
e7(E)	32	#5	11'-8"	—
e8(E)	16	#5	35'-1"	—
f(E)	3332	#4	2'-10"	—
x(E)	140	#6	4'-9"	—
Reinforcement Bars (Epoxy Coated)			Lbs.	156,110
Class X Concrete Superstructure			Cu. Yds.	674.4

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.



SECTION A-A

PARAPET DETAILS & BILL OF MATERIAL
F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.M./K.L.F.
S-I-D	7-1-91

109
11 50
1 55
1 74
1 75

K. V. G. CO. 300355

DATE	REV.	BY	CHKD.	DATE	SHEET NO.
F.A.I. 55	32-1 VBR	GRUNDY	ES	25	35 SHEETS

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

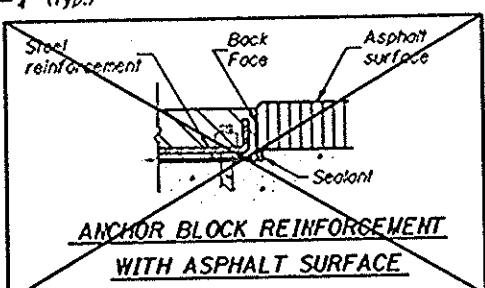
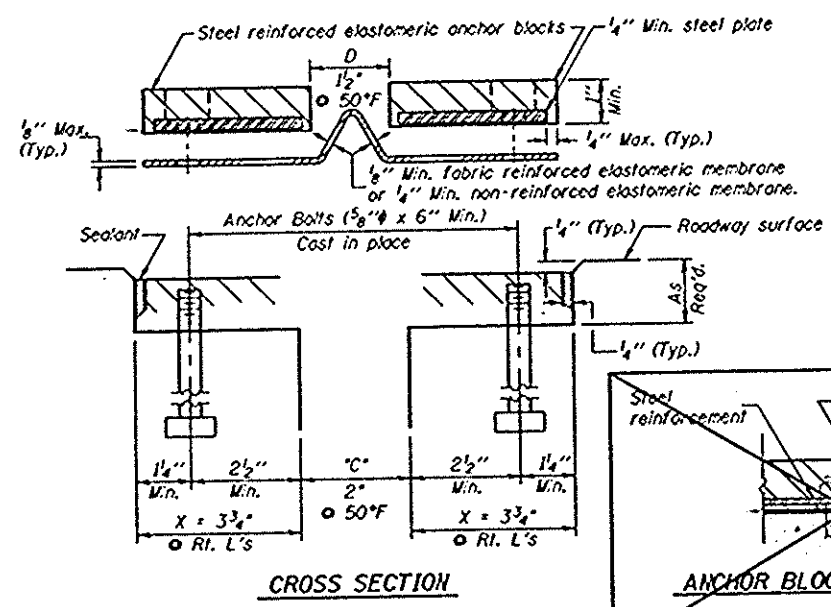
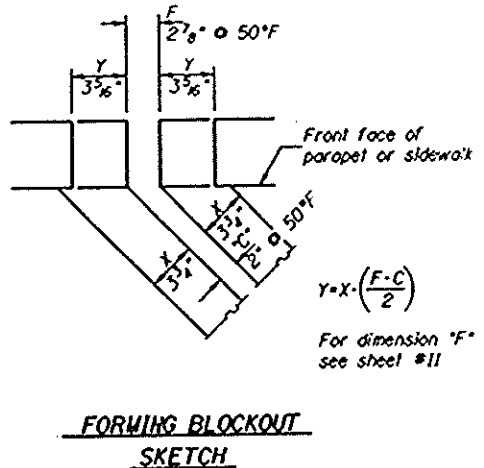
INSTALLATION NOTES

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

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

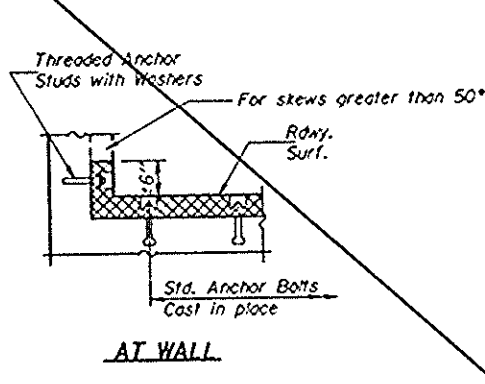
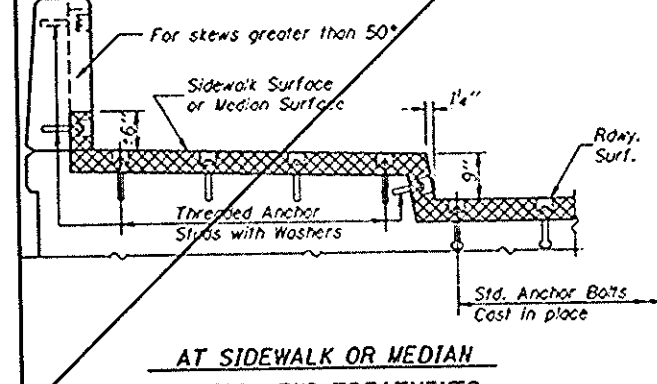
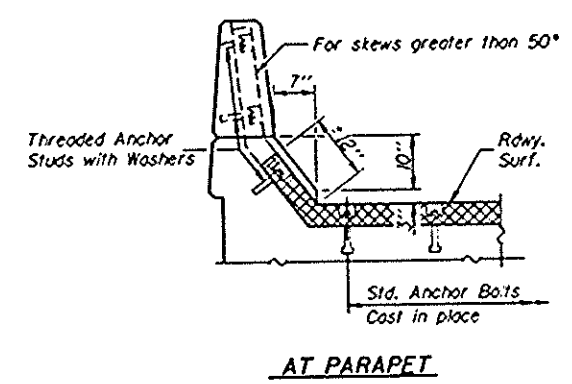
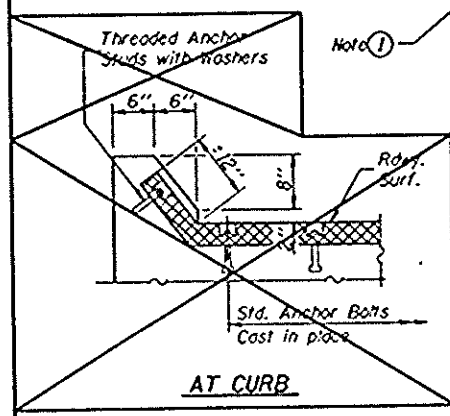
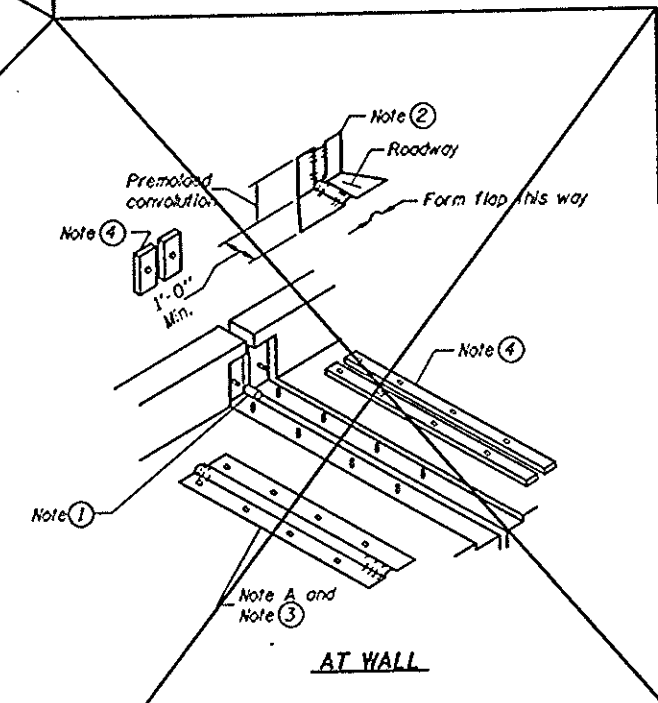
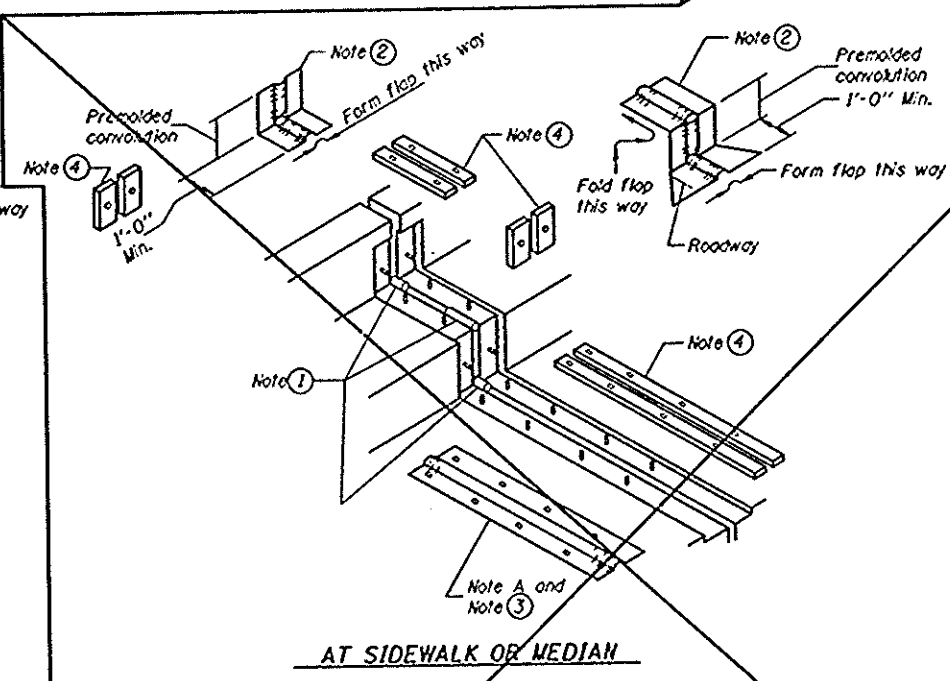
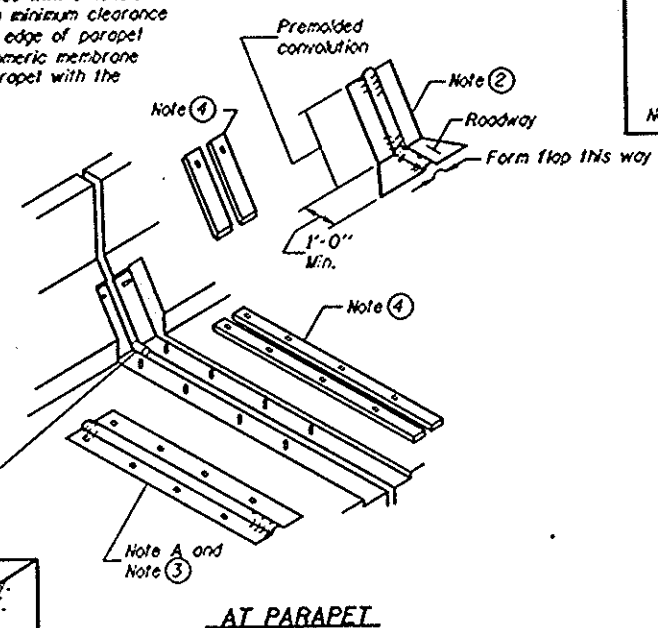
SKIEW LIMITATIONS

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



GENERAL NOTES

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



CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS
For 2" Movement

F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

EJ-CS 6-1-89

DATE	BY	CHKD	APP'D	SHEET NO. 13 OF 35 SHEETS
F.A.I. 55	32-1) VBR	GRUNDY	86	26

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

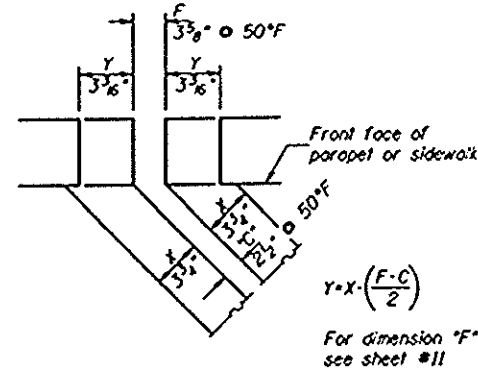
INSTALLATION NOTES

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

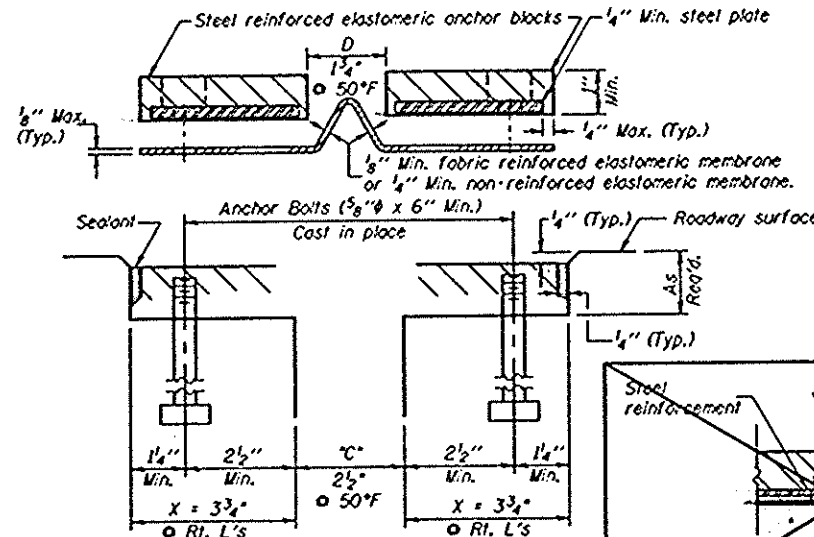
NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKIEW LIMITATIONS

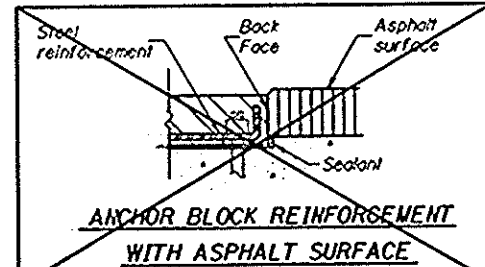
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/2" from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



FORMING BLOCKOUT SKETCH



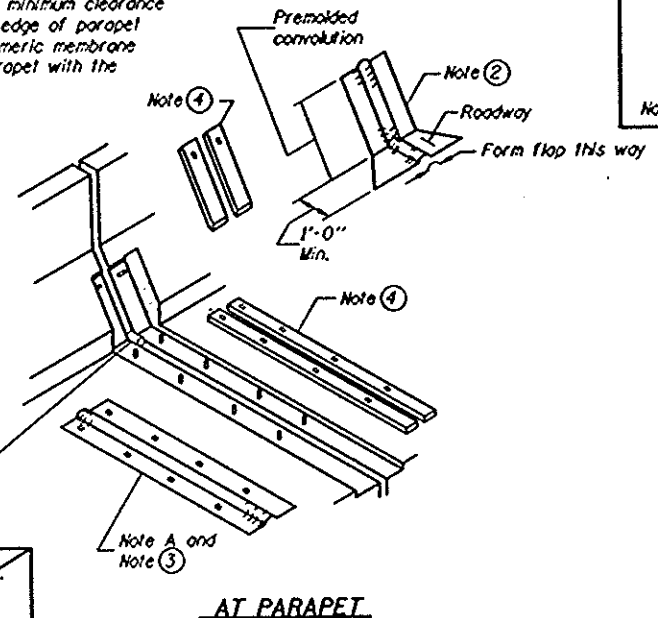
CROSS SECTION



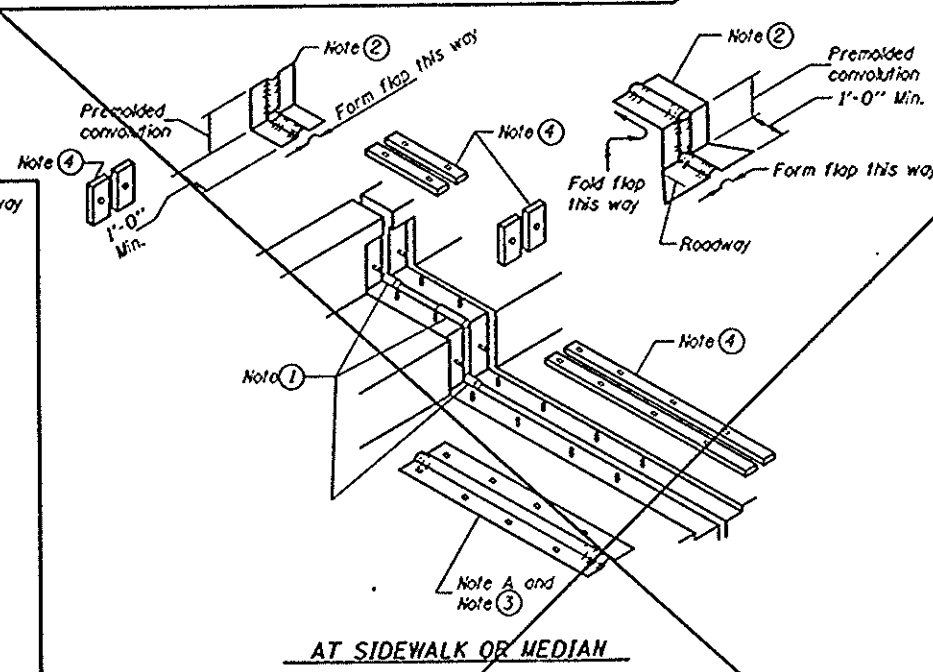
ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

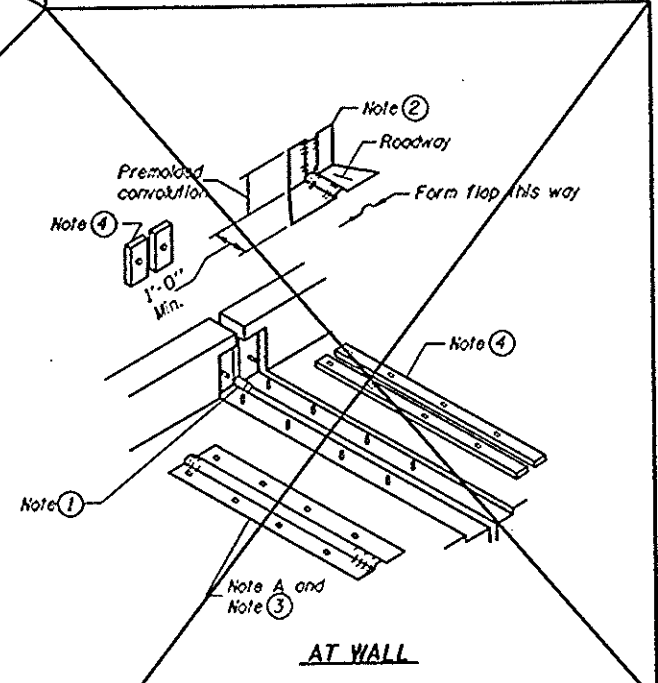
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions. The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory"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



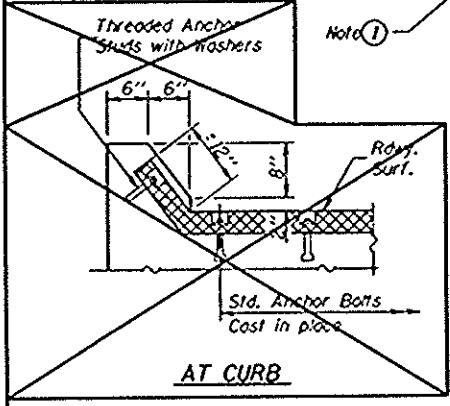
AT PARAPET



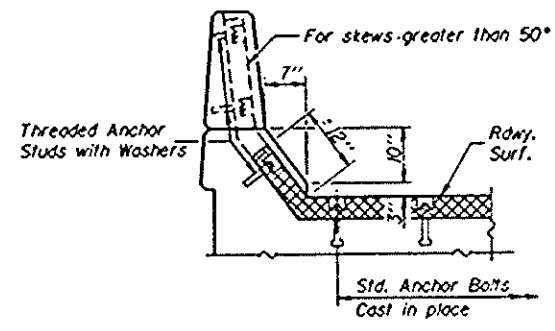
AT SIDEWALK OR MEDIAN



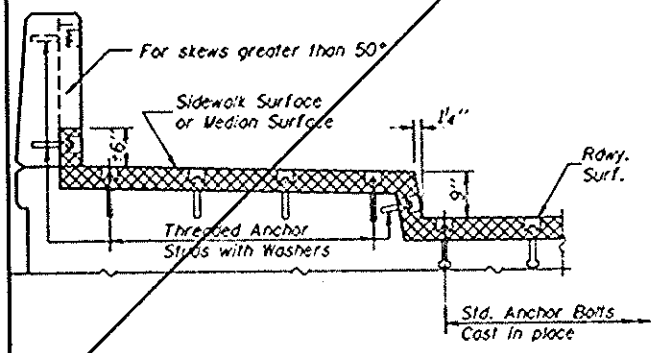
AT WALL



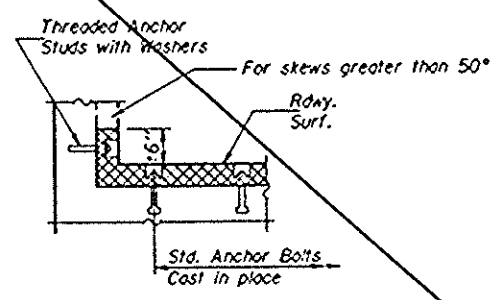
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN



AT WALL

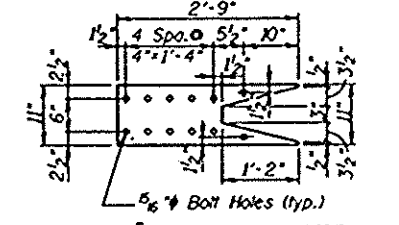
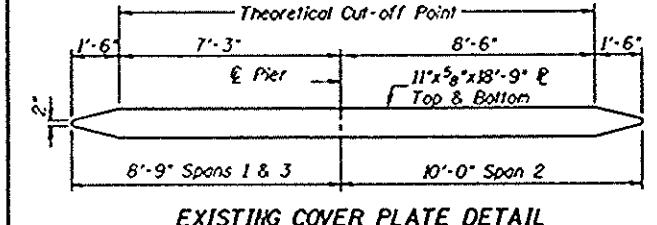
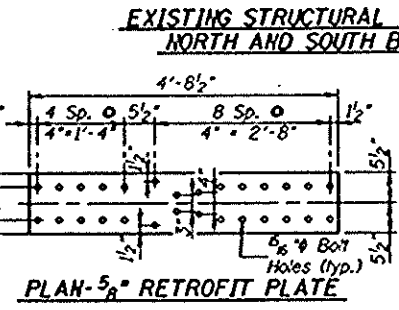
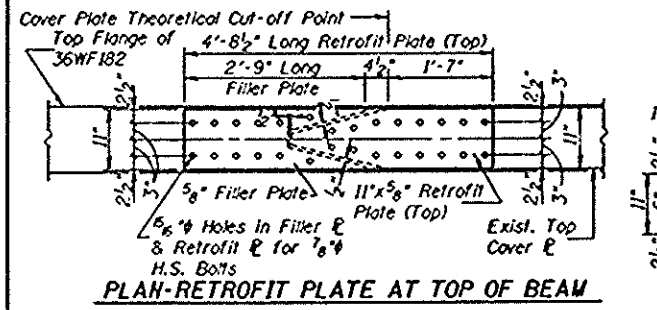
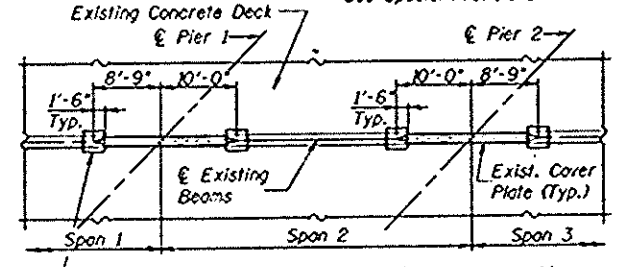
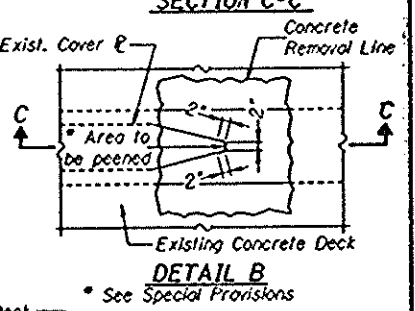
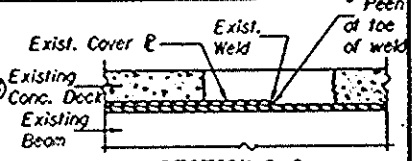
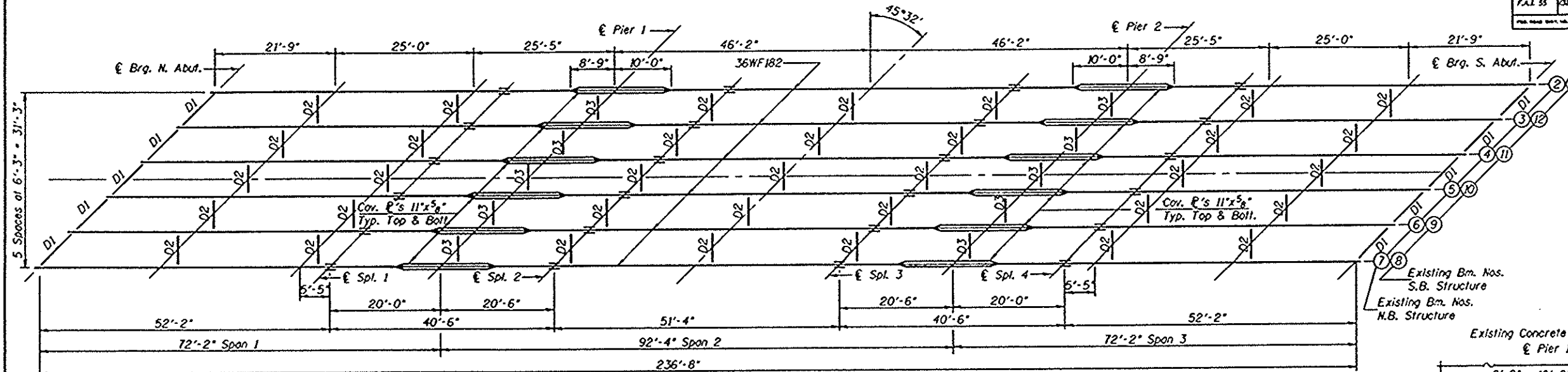
DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

EJ-CS 6-1-89

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

F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

PROJECT NO.	DATE	SCALE	SHEET NO. OF
F.A.I. 55	12-19-57	AS SHOWN	27
FOR ROAD DIST. NO. 7			35 SHEETS



RECOMMENDED PROCEDURE FOR REMOVAL AND REPLACEMENT OF EXISTING ABUTMENT BEARINGS

- Existing roller bearings at North and South Abutments for existing Bms. #2 thru #13 to be removed and replaced with elastomeric bearings as per details shown on Sheet 17.
- The cost of removal of existing abutment bearings shall be paid at the contract unit price each to "JACK AND REMOVE EXISTING BEARINGS". This price shall include supplying the necessary jacking equipment, providing and installing temporary cribbing and shoring at abutment berms and restoring the berms to the existing condition after removal of jacking and cribbing.
- Install temporary cribbing and shoring at abutment berms to support existing beams. Install jacks and lift existing Bms. #2 to #13 from existing roller bearings. Height of lift required to remove bearing assembly shall be 1/8" max. Roller stop bar welded to top of bottom plate may be removed if required to accomplish removal of bearing assembly within 1/8" maximum lift height. Jacking equipment, shoring and cribbing shall be capable of supporting 5,500 pound reaction at each beam.
- Construct abutments to bearing seat elevations shown on Sheets 21 to 28 of plans.
- Install new elastomeric bearings as per details shown on Sheets 17 & 18 of plans. Drill in and set anchor bolts as required.
- Lower the beams and remove cribbing.

PEENING OF EXISTING COVER PLATE WELDS

Prior to removal of the concrete decks, small areas of the deck shall be removed over both ends of the top cover plates so the welds can be peened as shown on the plans and as hereafter specified. Under no condition shall this peening be deferred until the deck is completely removed as it is vital that the peening be performed under essentially full load conditions. The removal of the concrete for the peening operation will not be paid for separately but will be incidental to the items for Removal of Existing Concrete Deck.

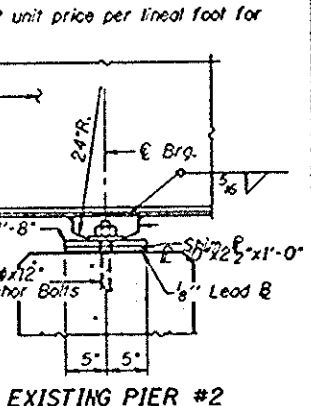
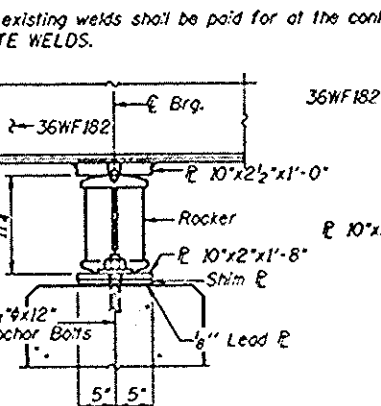
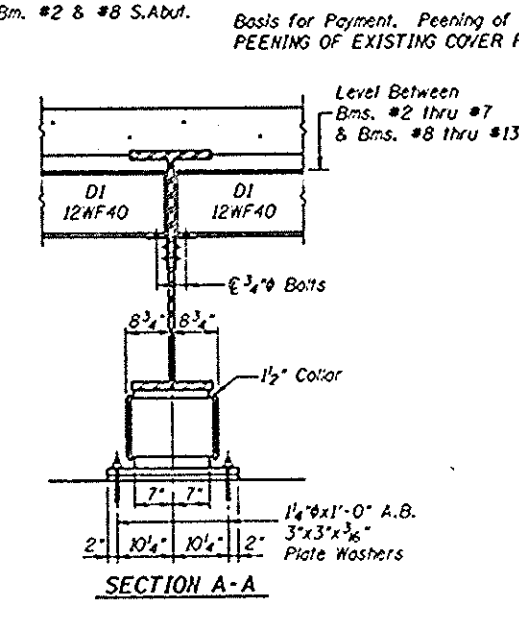
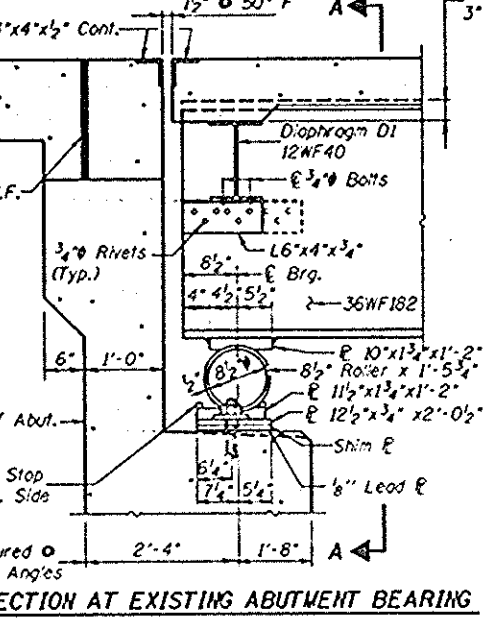
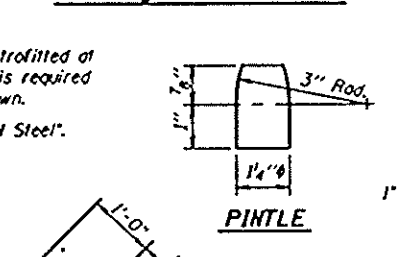
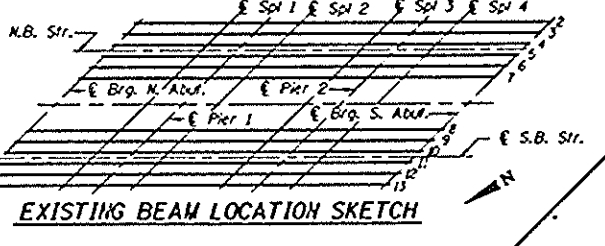
After the concrete removal over the areas to be peened, the end welds as shown on the plans, shall be mechanically air hammer peened until the weld toes are plastically deformed and rendered smooth. Peening shall be performed with a pneumatic air hammer operated at 25 psi. The peening tool shall have a smooth rounded nose which will not cut or gouge the weld. Peening shall be continued until the weld toe becomes smooth. If a crack is visually apparent in the weld, the Engineer shall be advised before proceeding with peening. Prior to peening, the weld areas shall be cleaned of rust and paint by sandblasting.

The peening shall be done as directed by the Engineer and shall meet his approval.

Basis for Payment. Peening of the existing welds shall be paid for at the contract unit price per lineal foot for PEENING OF EXISTING COVER PLATE WELDS.

COVER PLATE RETROFITTING

All top cover plates of the Existing Beams #2 thru #13 shall be retrofitted at both ends. Peening of the existing cover plate welds at both ends is required prior to retrofitting as per special provision and peening details shown. Retrofitting shall be included with "Furnishing and Erecting Structural Steel".



DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

PLAN AT EXISTING ABUTMENT

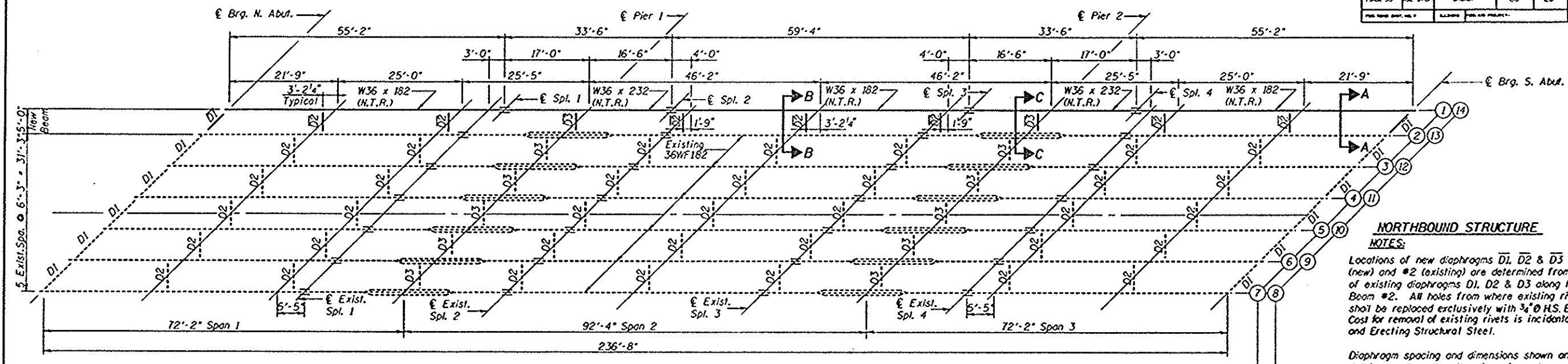
SECTION AT EXISTING ABUTMENT BEARING

SECTION A-A

EXISTING PIER #1 BEARING DETAIL
EXISTING PIER #2 BEARING DETAIL
EXISTING COVER PLATE RETROFIT & BEARING REPLACEMENT DETAILS

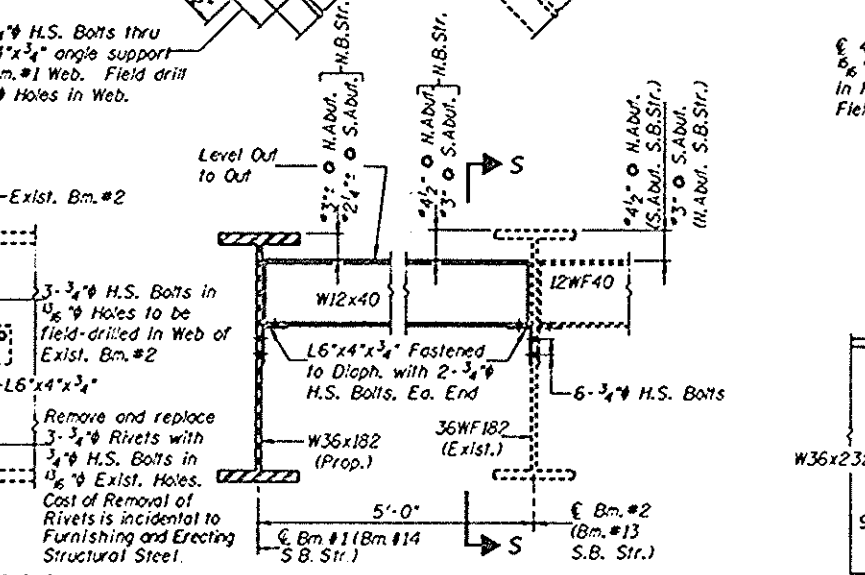
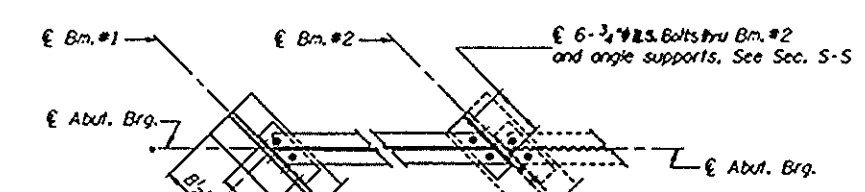
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

DATE	BY	CHKD	APP'D	SHEET NO. 15 OF 35 SHEETS
F.A.I. 55	32-1001	GRUNDY	66	28
FOR THE DIST. OF	ILLINOIS	FOR THE PROJECT		

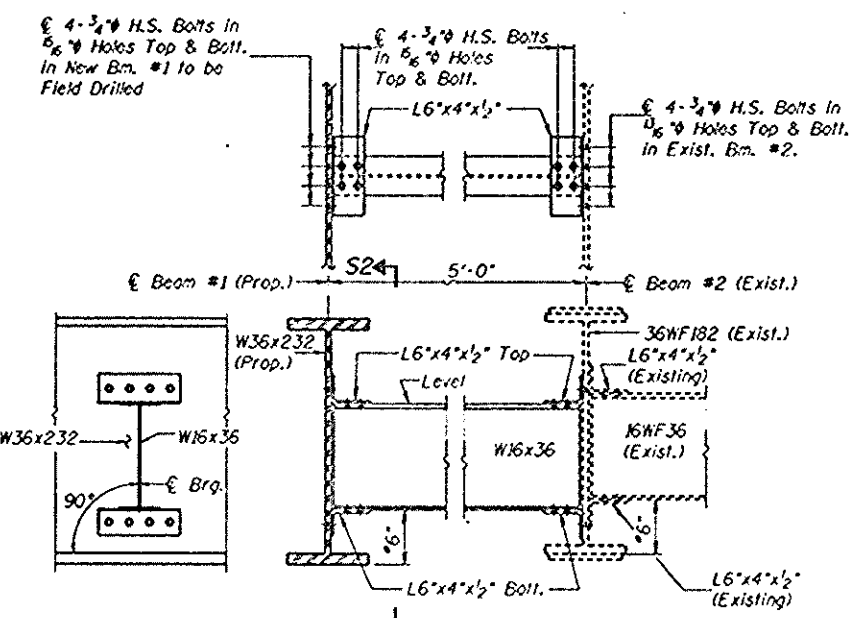


NORTHBOUND STRUCTURE
NOTES:
 Locations of new diaphragms $\bar{D}1$, $\bar{D}2$ & $\bar{D}3$ between Bms. #1 (new) and #2 (existing) are determined from the locations of existing diaphragms $\bar{D}1$, $\bar{D}2$ & $\bar{D}3$ along the existing Beam #2. All holes from where existing rivets are removed shall be replaced exclusively with $\frac{3}{4}$ " H.S. Bolt connectors. Cost for removal of existing rivets is incidental to Furnishing and Erecting Structural Steel.
 Diaphragm spacing and dimensions shown and the proposed details are based on the dimensions shown on the existing plans which shall be field verified.
 Cost of all field drilling for diaphragm connections is incidental to Furnishing and Erecting Structural Steel.

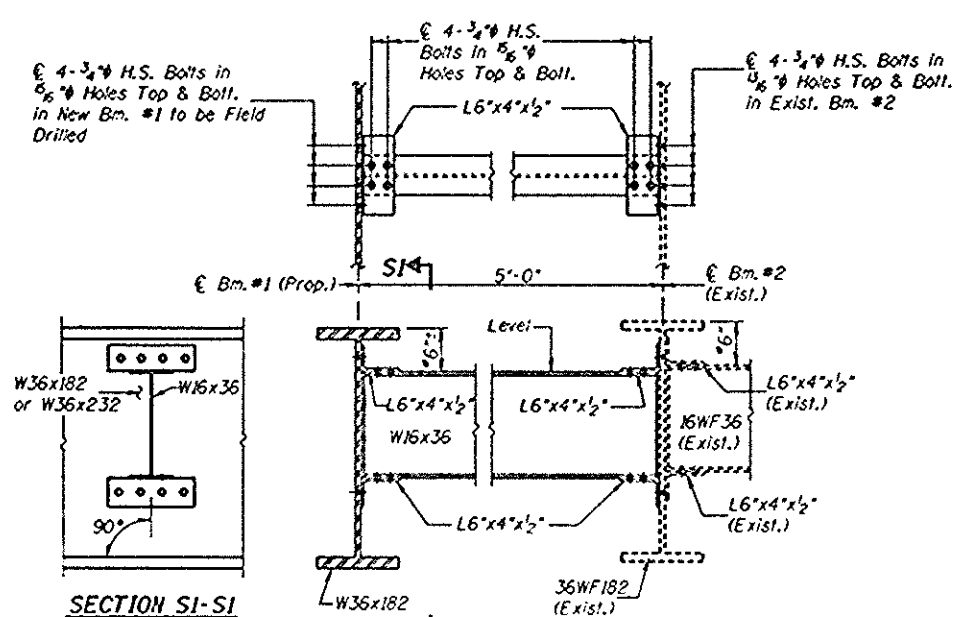
SOUTHBOUND STRUCTURE
 Diaphragm details and procedures similar to the above for N.B. Structure are applicable to the S.B. Structure except that the:
 Beams designated #1 thru #7 on the N.B. Structure correspond with Beams designated #14 thru #8 on the S.B. Structure.



PROPOSED DIAPHRAGM $\bar{D}1$
 (4 Required)



DIAPHRAGM $\bar{D}3$ -NEW BEAMS
 (4 Required)



DIAPHRAGM $\bar{D}2$ -NEW BEAMS
 (14 Required)

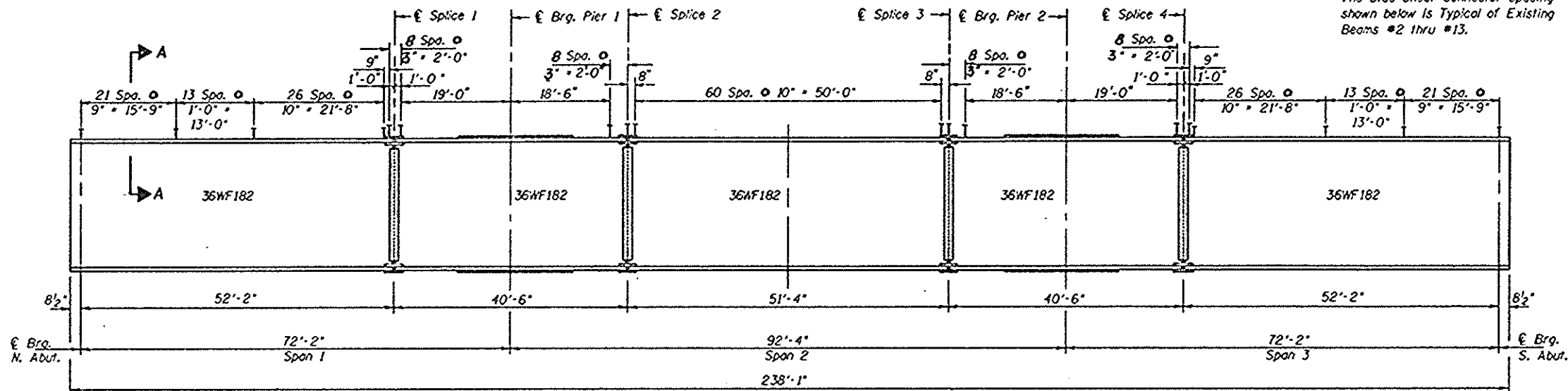
PROPOSED FRAMING PLAN & DETAILS
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

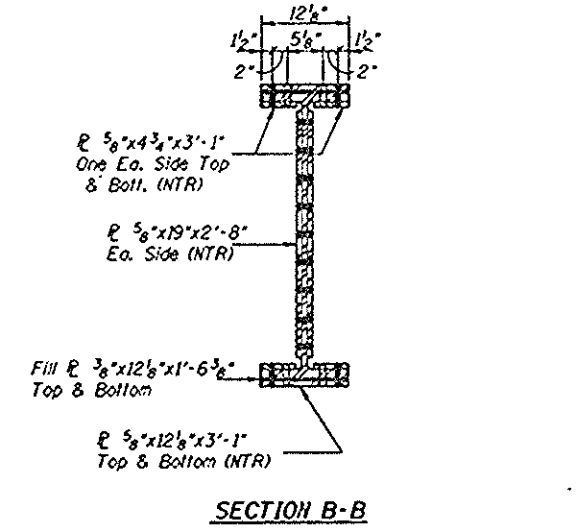
* These dimensions must be verified in field before use since their accuracy depends upon the validity of existing diaphragm/beam dimensions shown on existing plans. Adjustments may be necessary, hence it is proposed that all bolt holes in beams be field-drilled.

- NOTES:**
1. All diaphragm connecting bolts are $\frac{3}{4}$ " H.S. bolts in $\frac{5}{8}$ " holes except for the $\frac{13}{16}$ " holes in existing beams.
 2. Two hardened washers shall be required over all oversize holes.
 3. Existing structures shown dashed lines. Proposed structures shown solid lines.
 4. Details shown are for N.B. Structure. Details for S.B. Structure are similar except Beam Designations.

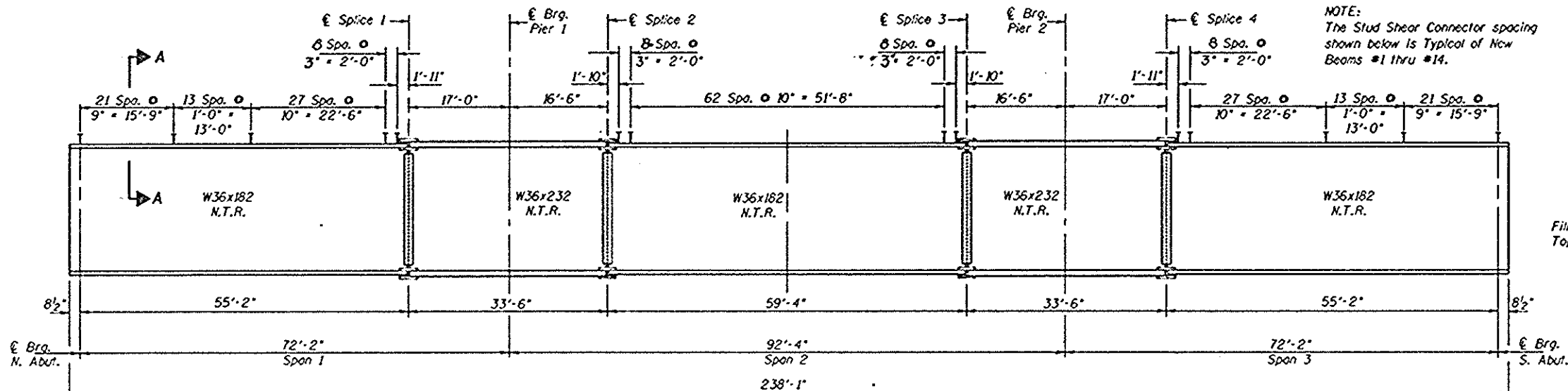
DATE	BY	CHKD	APP'D	SHEET NO.	OF
F.A.I. 55	V.S.N./K.L.F.	K.L.F.	66	29	35 SHEETS



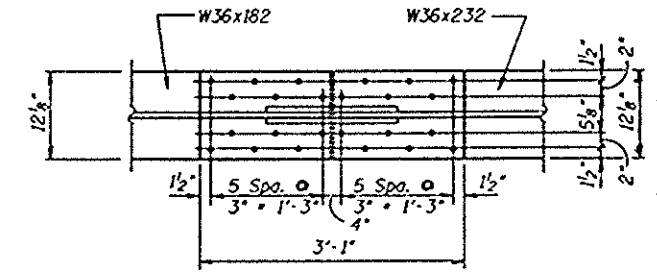
**BEAM ELEVATION
EXISTING BEAMS #2 THRU #13**



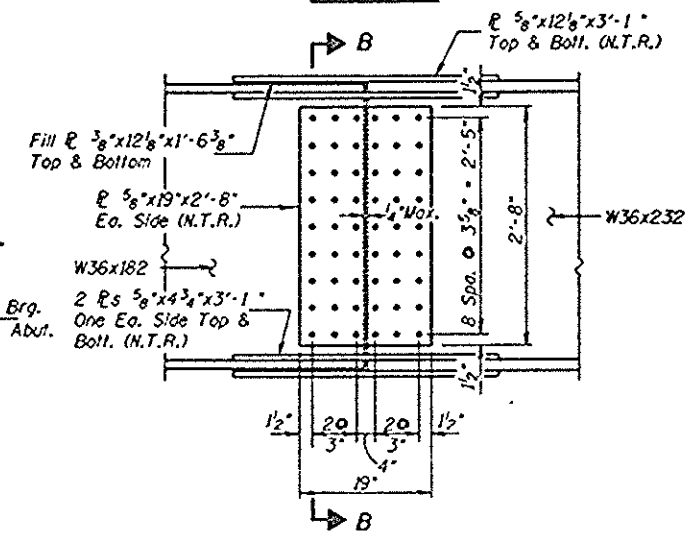
SECTION B-B



**BEAM ELEVATION
NEW BEAMS #1 & #14**



TOP PLAN



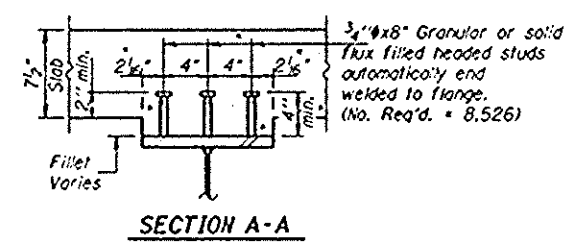
ELEVATION

**FIELD SPLICE DETAILS-NEW BEAMS
(8 Splices Thus)**

**ELEVATION - TOP OF BEAMS
(For Fabrication Only)**

NORTHBOUND STRUCTURE								
LOCATION	€ BRG.	SPLICE	€	SPLICE	SPLICE	€	SPLICE	€ BRG.
BEAM NO.	N. ABUT.	1	PIER 1	2	3	PIER 2	4	S. ABUT.
Beam 1	602.710	602.864	602.863	602.861	602.723	602.636	602.552	602.220
SOUTHBOUND STRUCTURE								
LOCATION	€ BRG.	SPLICE	€	SPLICE	SPLICE	€	SPLICE	€ BRG.
BEAM NO.	N. ABUT.	1	PIER 1	2	3	PIER 2	4	S. ABUT.
Beam 14	602.250	602.769	602.853	602.939	602.924	602.926	602.928	602.640

Elevations above are before any deflection at Top of Beam Flange of:
W36x182 at Abutments & W36x232 at Piers & Splices.



SECTION A-A

**FIELD SPLICE NOTES:
ALL BEAMS:**

1. All connecting bolts are 7/8" H.S. Bolts in 6/8" standard holes.
2. N.T.R. designates Notch Toughness Requirements.

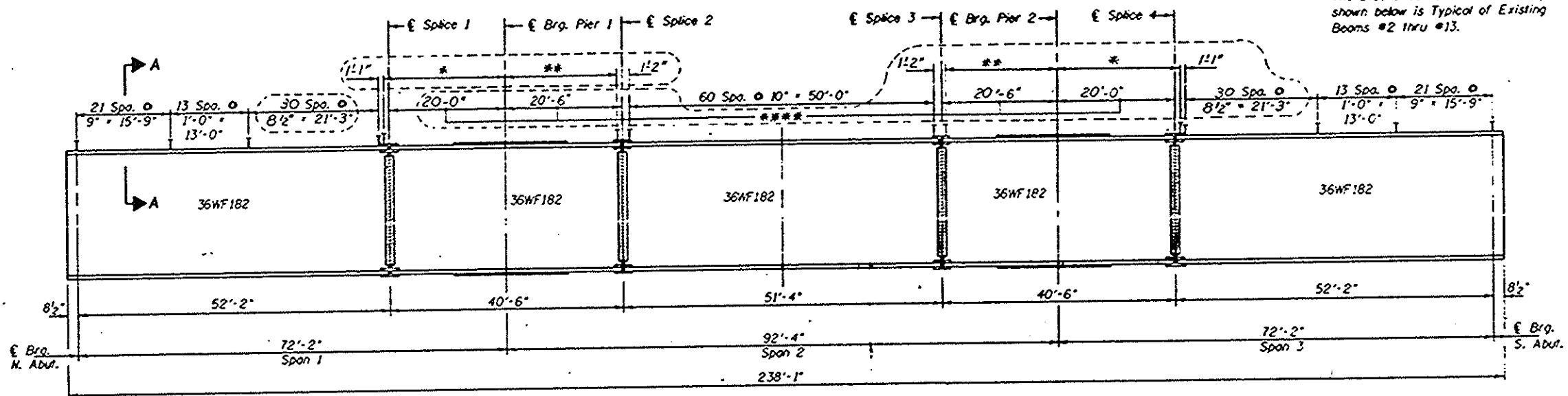
**STEEL BEAM & SPLICE DETAILS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY**

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

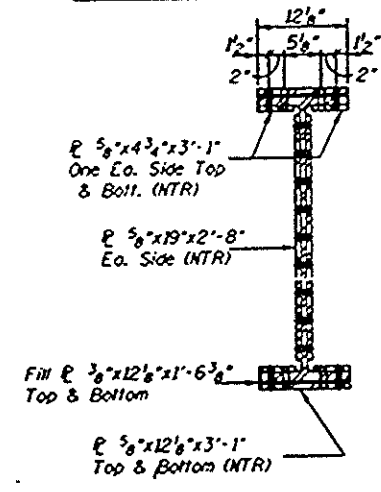
BMD76.DGN APRIL 15, 1992

DATE	BY	CHKD	APPD	SHEET NO.	TOTAL SHEETS
F.A.I. 55	02-08-92	GRUNDY	86	29A	35 SHEETS

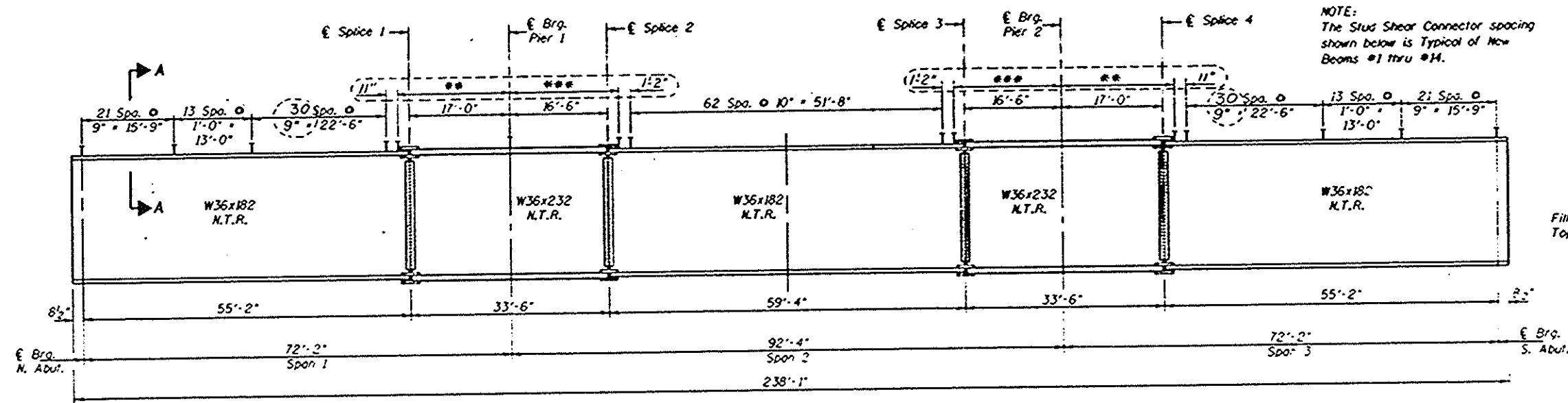
NOTE:
The Stud Shear Connector spacing shown below is Typical of Existing Beams #2 thru #13.



**BEAM ELEVATION
EXISTING BEAMS #2 THRU #13**

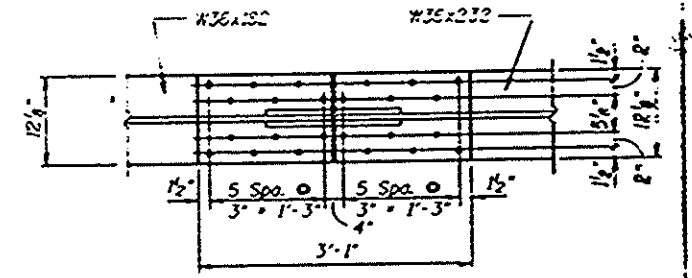


SECTION B-B

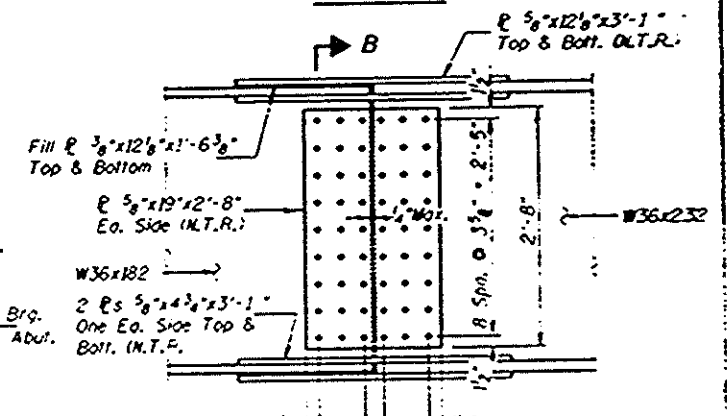


**BEAM ELEVATION
NEW BEAMS #1 & #14**

NOTE:
The Stud Shear Connector spacing shown below is Typical of New Beams #1 thru #14.



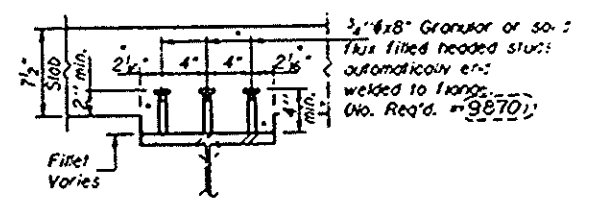
TOP PLAN



ELEVATION

**FIELD SPLICE DETAILS-NEW BEAMS
(8 Splices Thus)**

* 11 spaces of 1'-11" = 21'-11"
 ** 10 spaces of 2'-0" = 20'-0"
 *** 10 spaces of 1'-11" = 19'-2"
 **** Exist. nicks on top of top flanges of Brs. #2, #7, #8 and #13 shall be ground smooth in these areas.



SECTION A-A

FIELD SPLICE NOTES:
ALL BEAMS:
 1. All connecting bolts are 7/8" H.S. Bolts in 5/8" standard holes.
 2. N.T.R. designates Notch Toughness Requirements.
 (AS REVISED: 4-8-93 S.T.D.)

**ELEVATION - TOP OF BEAMS
(For Fabrication Only)**

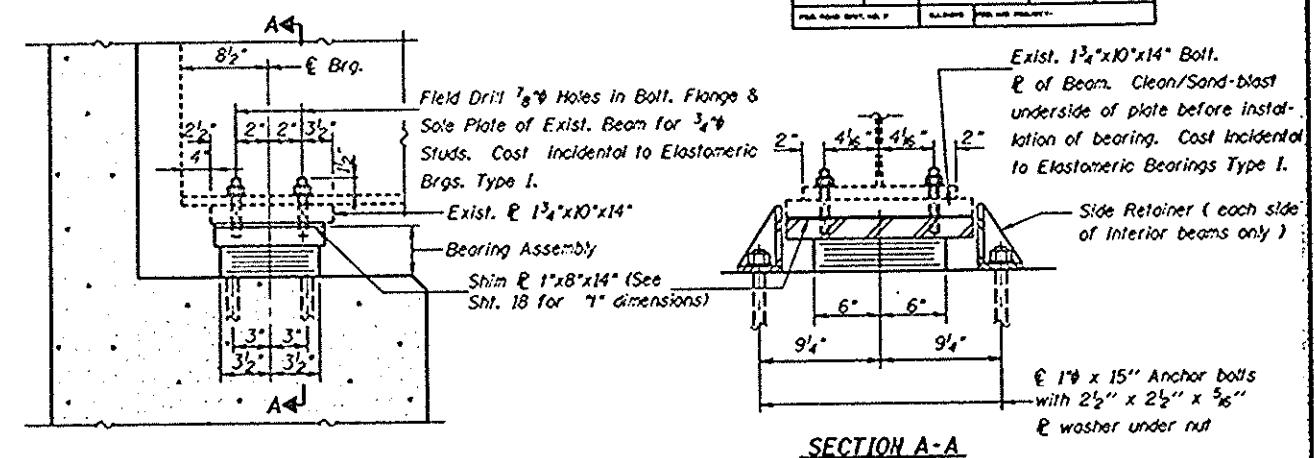
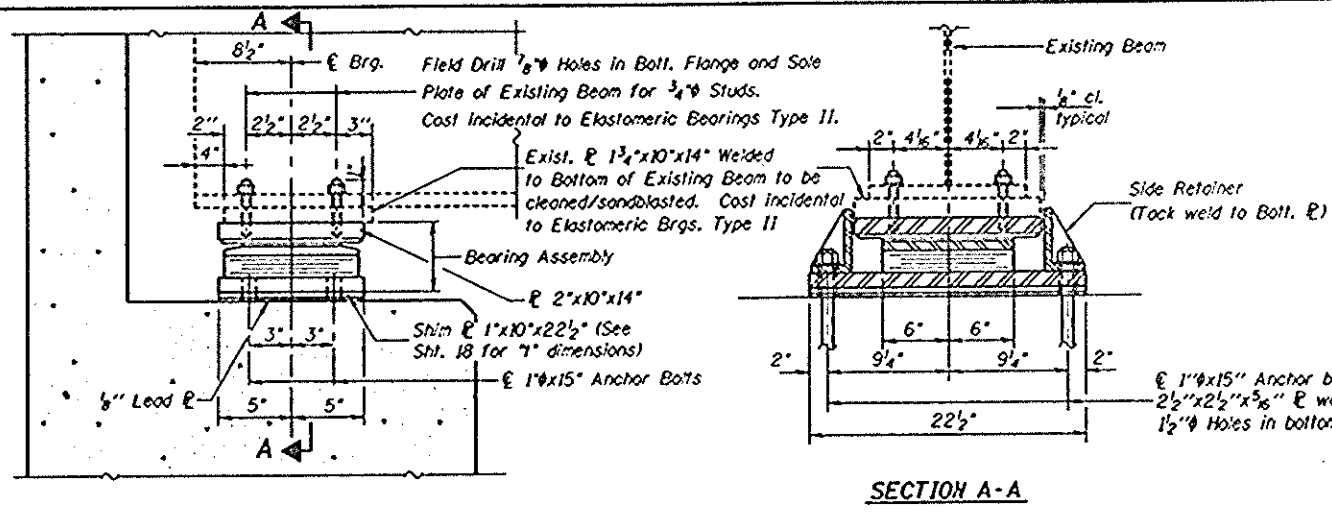
NORTHBOUND STRUCTURE							
LOCATION	E BRG.	SPLICE	E	SPLICE	E	SPLICE	E BRG.
BEAM NO.	N. ABUT.	1	PIER 1	2	PIER 2	4	S. ABUT.
Beam 1	602.710	602.664	602.863	602.861	602.723	602.636	602.220
SOUTHBOUND STRUCTURE							
LOCATION	E BRG.	SPLICE	E	SPLICE	E	SPLICE	E BRG.
BEAM NO.	N. ABUT.	1	PIER 1	2	PIER 2	4	S. ABUT.
Beam 14	602.250	602.769	602.853	602.939	602.924	602.926	602.928

Elevations above are before any deflection at Top of Beam Flange of:
 W36x182 at Abutments & W36x232 at Piers & Splices.

DESIGNED	V.S.M.
CHECKED	K.I.F.
DRAWN	K.H.L.
CHECKED	V.S.M./K.I.F.

STEEL BEAM & SPLICE DETAILS
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-D) VBR
 GRUNDY COUNTY

DATE	BY	CHKD	APP'D	SHEET NO.	OF
F.A.I. 55	32-11	GRUNDY	86	30	35 SHEETS

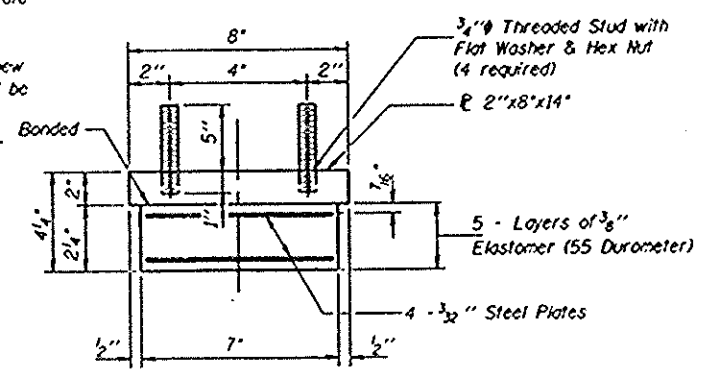
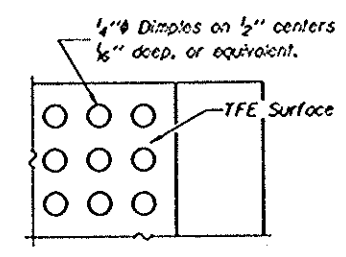
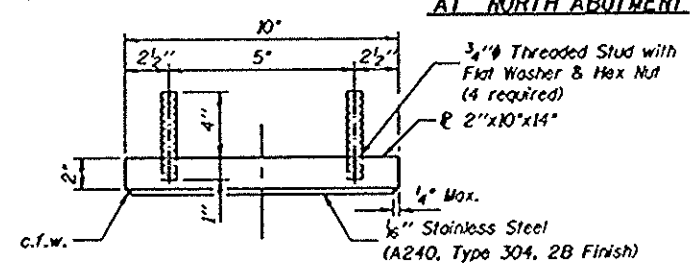


ELEVATION AT ABUT.
TYPE II TFE ELASTOMERIC EXP. BRG.
AT NORTH ABUTMENT

ELEVATION AT ABUT.
TYPE I ELASTOMERIC EXP. BRG.
AT SOUTH ABUTMENT

Notes:

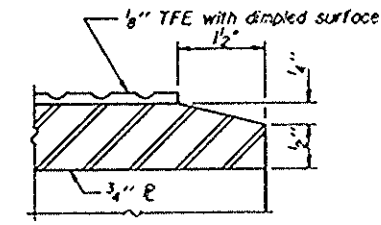
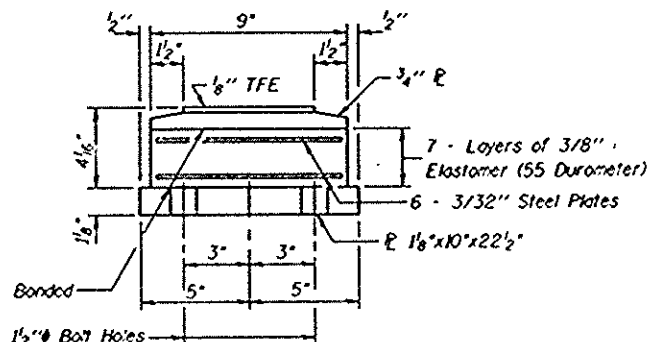
1. Grind off existing anchor bolts flush with concrete surface where bearings are to be replaced.
2. Existing roller bearings at abutments are to be replaced by Elastomeric Expansion Bearings.
3. Dashed lines on Elevations & Sections indicate Existing Structures and solid lines indicate Proposed New Structures.
4. After the existing beams are in place on new bearings, holes of expansion bearings shall be drilled and anchor bolts grouted in place.
5. See sheet #20 for Anchor Bolt Installation.



TOP BEARING ASSEMBLY

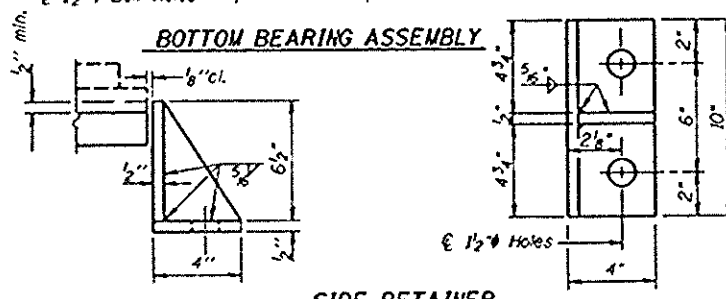
PLAN-TFE SURFACE

BEARING ASSEMBLY



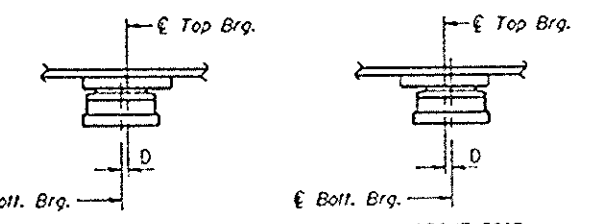
SECTION THRU TFE

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



SIDE RETAINER
(24 Req'd.)

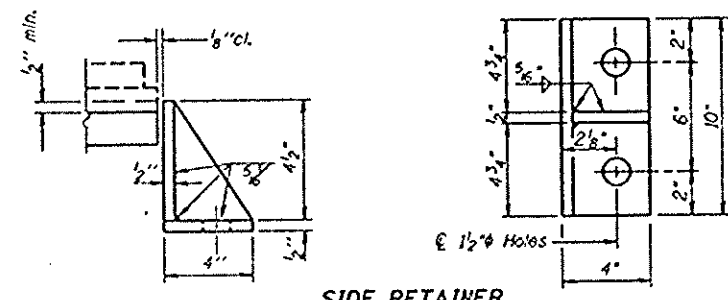
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SETTING ANCHOR BOLTS AT EXP. BRG.

(Move bott. brg. away from fixed brg.) (Move bott. brg. toward fixed brg.)

$D = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SIDE RETAINER
(20 Req'd.)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Elastomeric Bearing Assembly Type II	Each	12

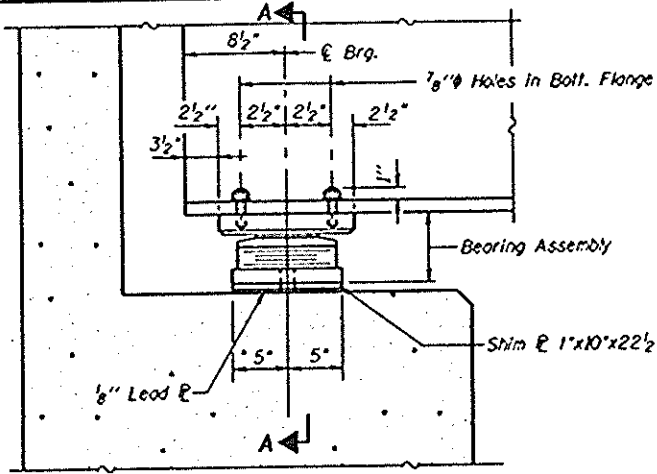
ABUTMENT BEARING DETAILS FOR EXISTING BEAMS

F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

1-2-E2 12-1-83

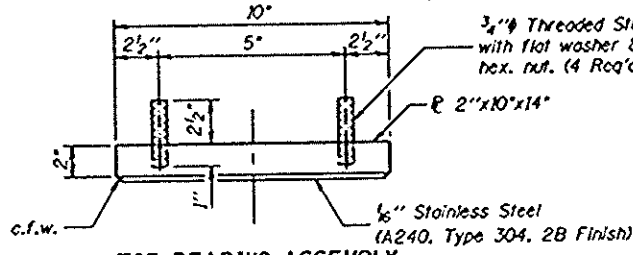
DATE	BY	CHKD	APP'D	SHEET NO.	OF
F.A.I. 55	CZ-DSP	GRACY	85	31	35 SHEETS



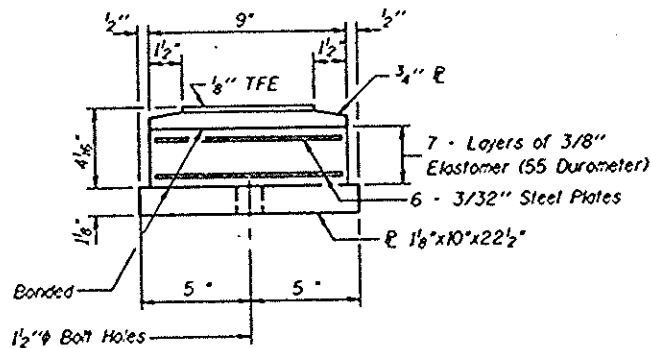
ELEVATION AT ABUT.

TYPE II TFE ELASTOMERIC EXP. BRG.

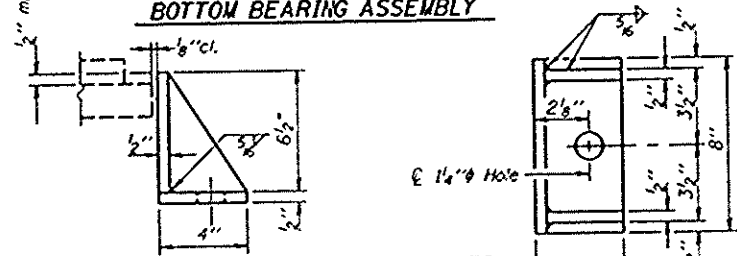
AT NORTH ABUTMENT



TOP BEARING ASSEMBLY

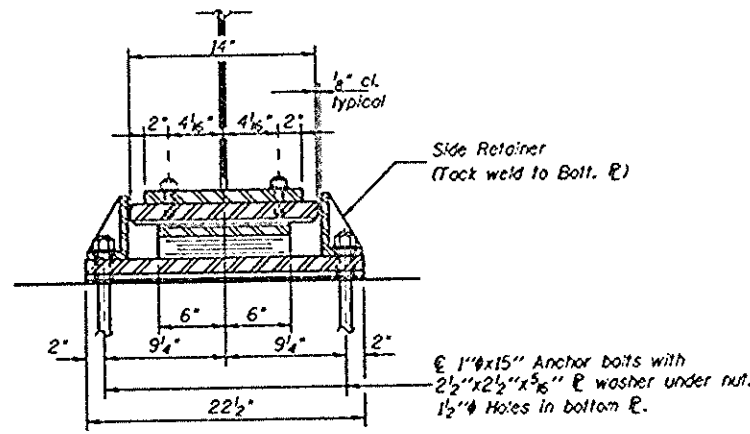


BOTTOM BEARING ASSEMBLY



SIDE RETAINER

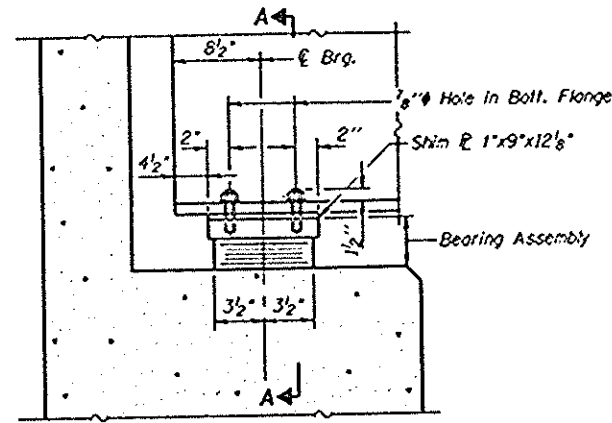
(4 Req'd.)
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SECTION A-A

Notes:

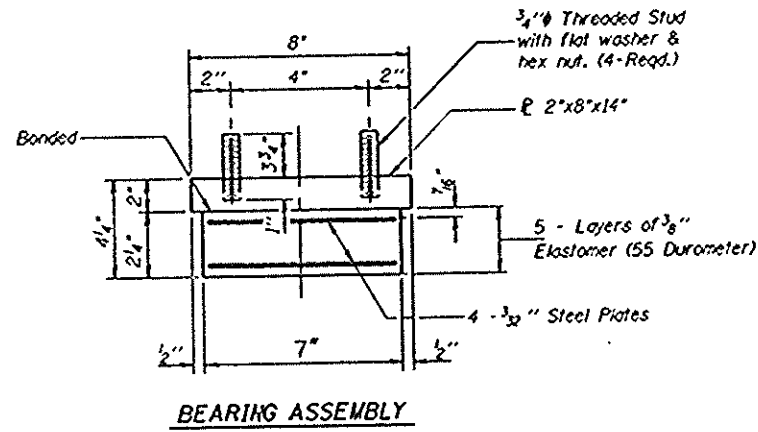
1. After new beams have been erected notes of expansion bearings shall be drilled and anchor bolts grouted in place.
2. See Sheet #20 for Anchor Bolt Installation.



ELEVATION AT ABUT.

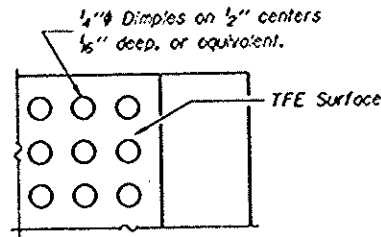
TYPE I ELASTOMERIC EXP. BRG.

AT SOUTH ABUTMENT

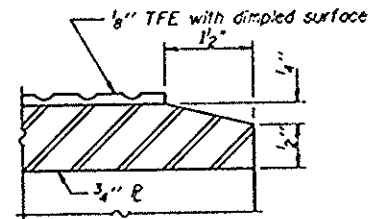


BEARING ASSEMBLY

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



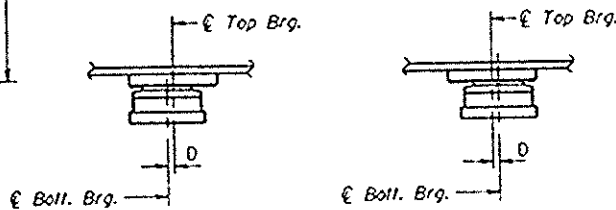
PLAN-TFE SURFACE



SECTION THRU TFE

Note: The 1/8\"/>

Bonding of 1/8\"/>



BELOW 50°F.

(Move bott. brg. away from fixed brg.)

ABOVE 50°F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8\"/>

TABLE OF 7\"/>

N.B. STR.	LOCATION	BEAM						
		1	2	3	4	5	6	7
	N. ABUT.	1/4"	0	0	3/8"	1/8"	0	0
	S. ABUT.	1/6"	0	0	0	5/8"	3/8"	0

S.B. STR.	LOCATION	BEAM													
		8	9	10	11	12	13	14							
	N. ABUT.	0	1/2"	3/8"	0	0	0	0	1/6"						
	S. ABUT.	0	0	3/8"	5/8"	0	0	0	1/4"						

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	2
Elastomeric Bearing Assembly Type II	Each	2

ABUTMENT BEARING DETAILS FOR NEW BEAMS

F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

I-2-E2 12-1-83

MOMENT AND REACTION TABLES-SYMMETRICAL COMPOSITE 3 SPAN

EXISTING BEAMS

Table with 3 columns: Moment/Reaction, 0.4 Sp.1 or 3 Pier 1 or 2, 0.5 Sp.2. Rows include Is, Ic, Ss, Sc, D, MR, fs non-comp, sP, MsP, Mt, M (Imp), Total, fs-comp, fs Total, VR.

PROPOSED NEW BEAMS

Table with 3 columns: Moment/Reaction, 0.4 Sp.1 or 3 Pier 1 or 2, 0.5 Sp.2. Rows include Is, Ic, Ss, Sc, D, MR, fs non-comp, sP, MsP, Mt, M (Imp), Total, fs-comp, fs Total, VR.

Table with 3 columns: Reaction, Abutment, Pier. Rows include RR, RL, R (Imp), R (Total).

Table with 3 columns: Reaction, Abutment, Pier. Rows include RR, RL, R (Imp), R (Total).

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs Total. Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs Total. VR is the maximum live load + impact shear range in span.

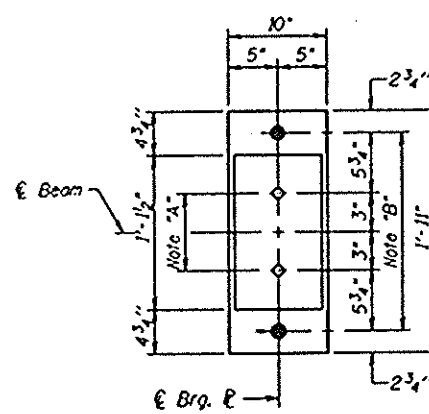
NOTES:

- 1. The "Bearing Assembly Details" shown at Piers are for the two new beams No. 1 and 14.
2. The existing bearings for existing beams No. 3 thru 10 at Pier No. 2 shall be modified as per the details shown.
3. The existing bearings for existing beams No. 2 and 13 at Piers No. 1 and 2 shall be removed and the beams temporarily supported until the Pier extensions have been completed.
4. Anchor Bolts at fixed bearings may be built into the masonry.
5. See Sheet #20 for Anchor Bolt installation.

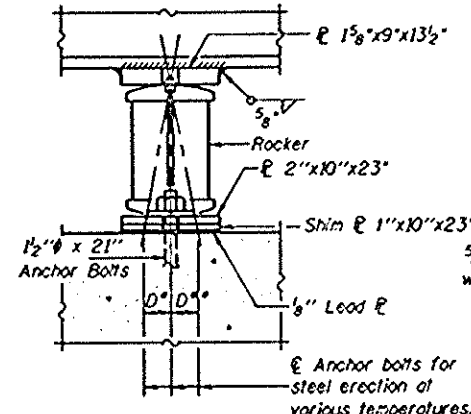
TABLE OF 7" DIMENSIONS

Table with 4 columns: N.B. STR., LOCATION, BEAM #1, #2, #13, #14. Rows for Pier 1 and Pier 2.

Table with 2 columns: DESIGNED, CHECKED, DRAWN, CHECKED. Values: V.S.N., K.L.F., K.H.L., V.S.N./K.L.F.



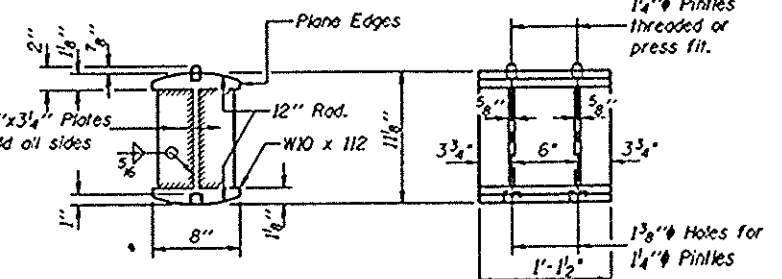
PLAN AT PIER #1



ELEVATION AT PIER #1

Note "A": 1 3/8" Holes - 1" deep in top E for 1 1/2" Pinholes. Thread or press fit Pinholes in Bottom E.

Note "B": 2" Holes for 1 1/2" x 21" Anchor Bolts - 3/8" x 3" x 3" E washer under nut.



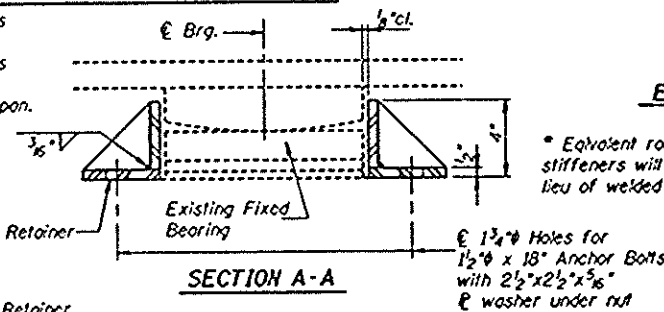
ROCKER

NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

- a.) D* (Side of brg. away from fixed brg.) D* = 1/8" per each 100' of expansion for every 15" fall below the normal temp. of 50° F.
D** (Side of brg. toward fixed brg.) D** = 1/8" per each 100' of expansion for every 15" rise above the normal temp. of 50° F.
b.) After beams have been erected and dimensions D* & D** determined, holes shall be drilled and anchor bolts shall be installed as shown on Sheet #20.

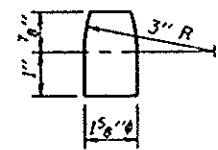
PINTLE FOR PIER #1 BRG.

BEARING ASSEMBLY DETAILS EXPANSION BEARING AT PIER #1 FOR BEAMS 1 & 14 (No. Required = 2)

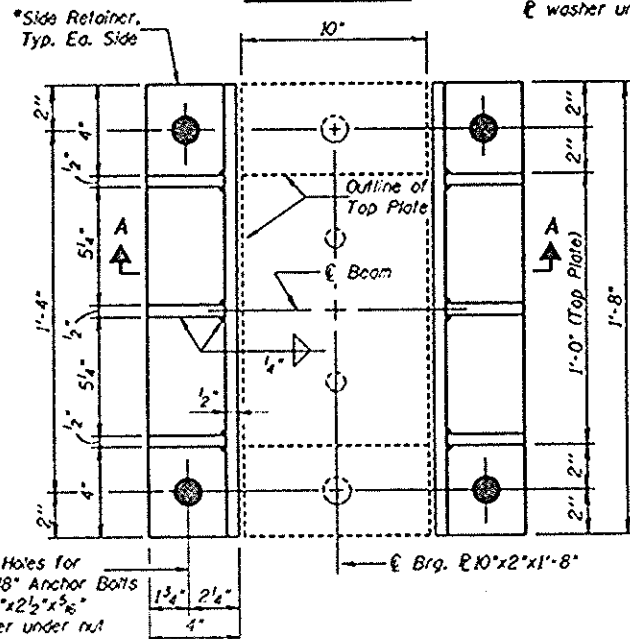


SECTION A-A

* Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates



PINTLE FOR PIER #2 BRG.

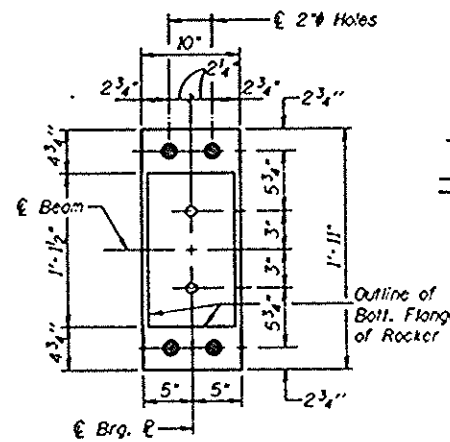


PLAN AT PIER #2

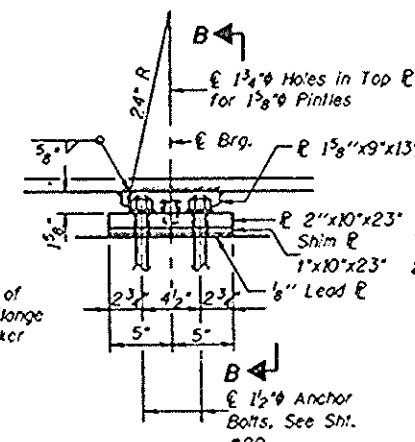
(No. of Exist. Brgs. to be modified thus = 12)

MODIFICATIONS TO EXISTING BEARINGS AT PIER #2 FOR BEAMS 2 THRU 13

Note: Cost for modification to existing steel bearings shall be incidental in the Lump Sum Bid Price for Furnishing and Erecting Structural Steel.

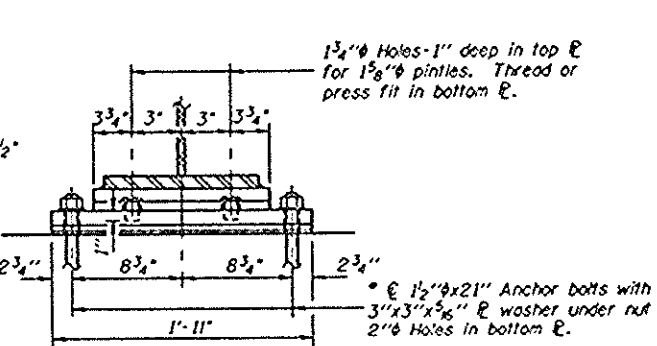


PLAN AT PIER #2



ELEVATION AT PIER #2

BEARING ASSEMBLY DETAILS FIXED BEARING AT PIER #2 FOR BEAMS 1 & 14 (No. Required = 2)



SECTION B-B

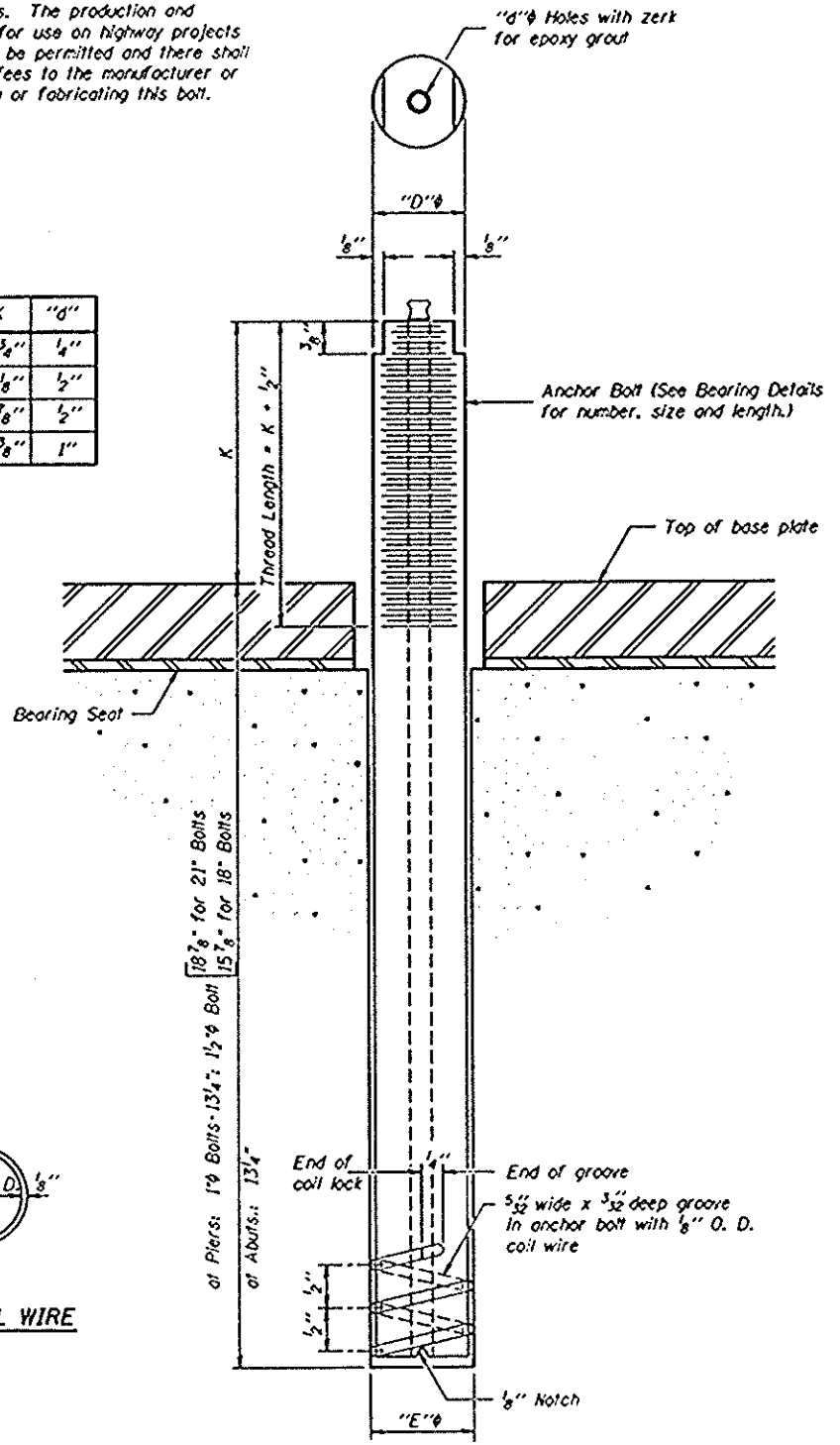
PIER BEARING DETAILS NEW & EXISTING BEAMS

F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

PROJECT NO.	SECTION	GROUP	DATE	SIZE	SHEET NO. 200F
F.A.I. 55	OVER	GRAND	66	33	35 SHEETS
DESIGNED BY		DRAWN BY		CHECKED BY	

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	3 1/8"	1 3/4"	1/4"
1 1/2"	1 3/8"	1 5/8"	2 1/8"	1/2"
2"	2 1/8"	1 3/4"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/8"	3 3/8"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK

ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.
 The coil wire shall be made of any suitable soft steel wire.
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS

COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk filling with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.
 The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
 1. A threaded rod stud with nut and washer conforming to ASTM A307.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
 The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

ABB-1 12-1-83

ANCHOR BOLT DETAILS FOR BEARINGS

F.A.I. 55 OVER S.P.C.S.L. RAILROAD SECTION (32-1) VBR GRUNDY COUNTY

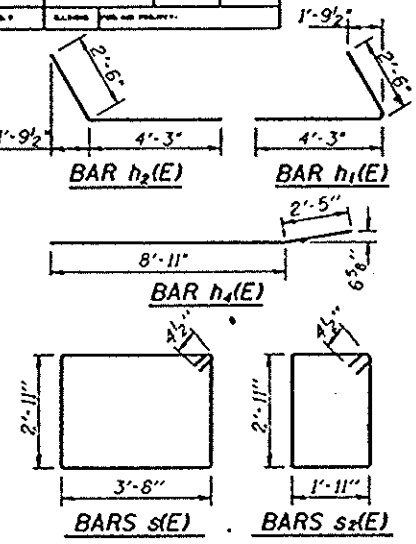
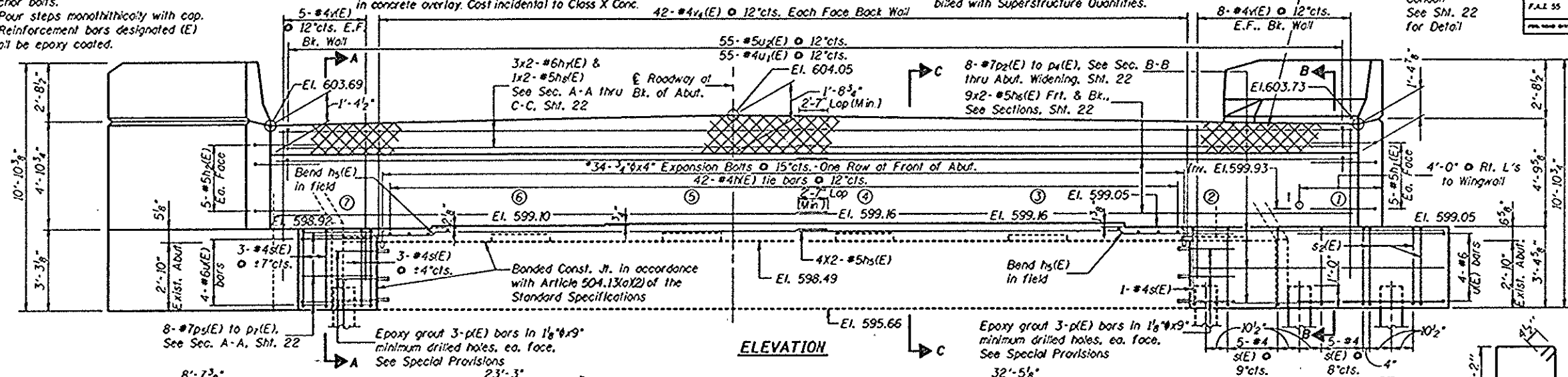
Notes: Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Reinforcement bars designated (E) shall be epoxy coated.

* Grind off existing bearing pedestals level before installing expansion bolts there to ensure full height embedment of the bolts in concrete overlay. Cost incidental to Class X Conc.

Cross Hatched area to be poured after superstructure falsework has been removed. Quantity of Class X Concrete billed with Superstructure Quantities.

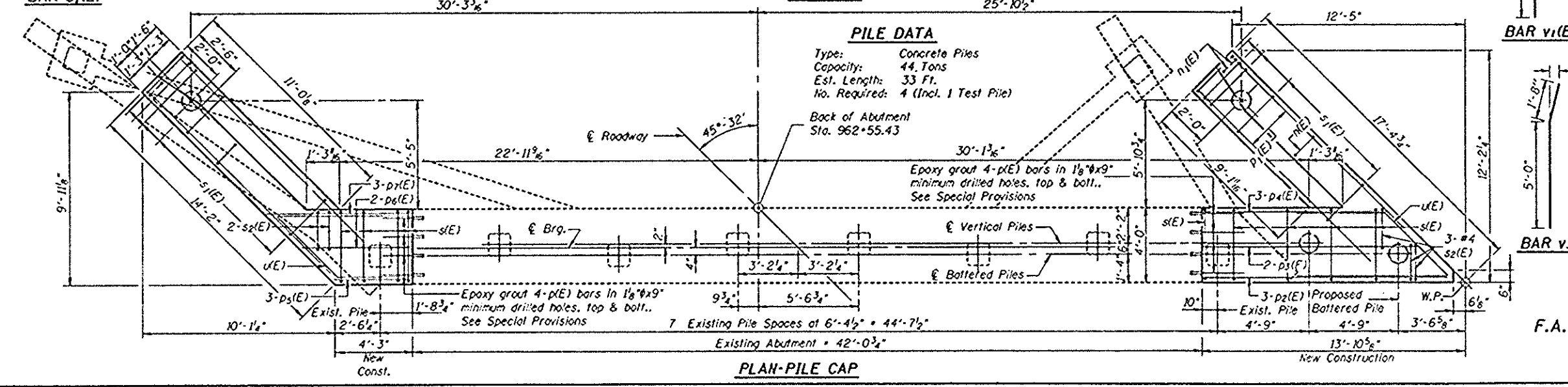
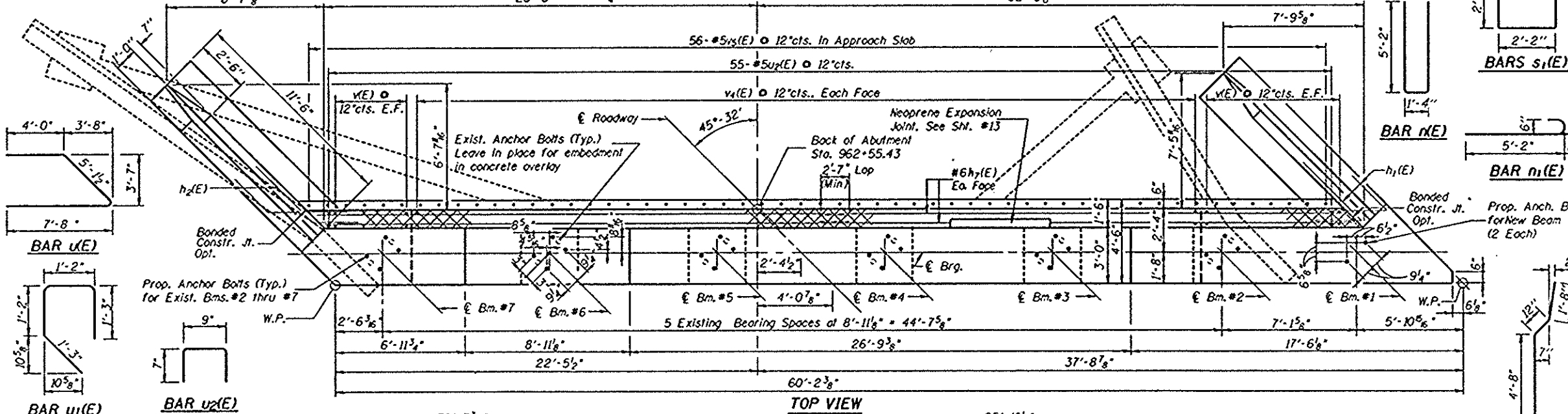
12" Elec. Conduit See Sht. 22 for Detail

DATE	BY	CHKD	DATE	SHEET NO. 21 OF 35 SHEETS
F.A.I. 55	S2-1050	GRACE	66	34



BILL OF MATERIAL

Bar No.	Size	Length	Shape
r(E)	#4	3'-8"	
h1(E)	#5	6'-9"	
h2(E)	#4	6'-9"	
h3(E)	#4	11'-3"	
h4(E)	#4	11'-4"	
h5(E)	#5	25'-0"	
h6(E)	#5	28'-9"	
h7(E)	#6	29'-0"	
h8(E)	#5	29'-0"	
n(E)	#6	11'-8"	
n1(E)	#6	5'-10"	
p(E)	#7	13'-3"	
p1(E)	#7	13'-2"	
p2(E)	#7	11'-6"	
p3(E)	#7	9'-6"	
p4(E)	#7	3'-11"	
p5(E)	#7	6'-0"	
p6(E)	#7	8'-0"	
s(E)	#4	13'-11"	
s1(E)	#4	9'-5"	
s2(E)	#4	10'-5"	
u(E)	#6	16'-10"	
u1(E)	#4	4'-10"	
u2(E)	#5	1'-11"	
v(E)	#4	6'-6"	
v1(E)	#6	7'-4"	
v2(E)	#6	7'-1"	
v3(E)	#6	6'-8"	
v4(E)	#4	5'-0"	
v5(E)	#5	2'-6"	



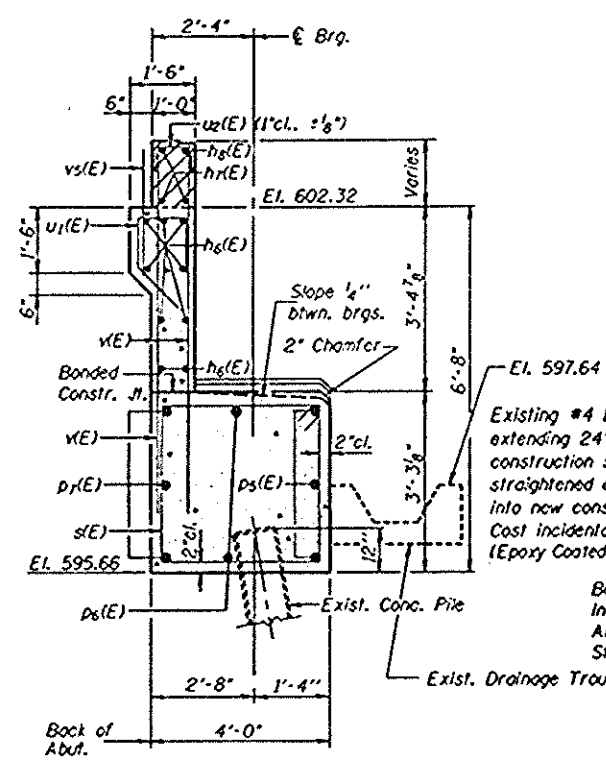
PILE DATA

Type: Concrete Piles
 Capacity: 44 Tons
 Est. Length: 33 Ft.
 No. Required: 4 (Incl. 1 Test Pile)

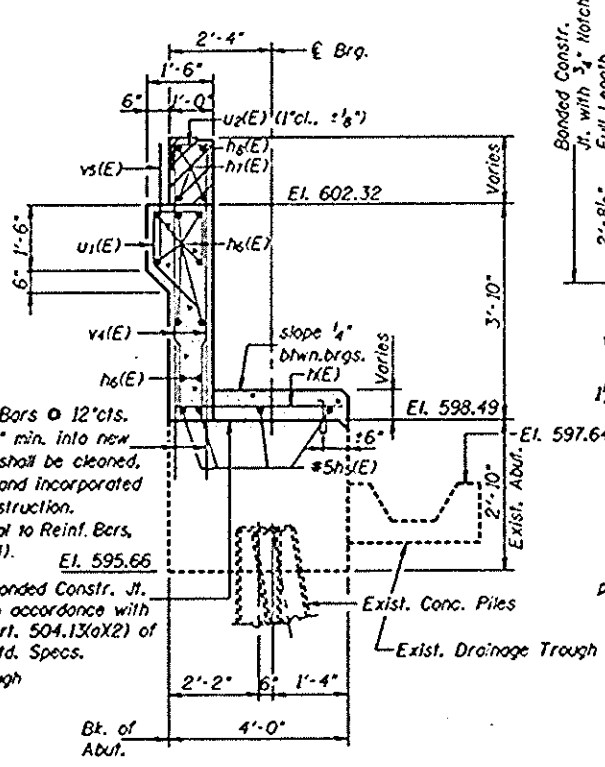
Structure Excavation	Cu. Yd.	96
Class X Concrete	Cu. Yd.	38.6
Reinforcement Bars (Epoxy Coated)	Lbs.	4,560
Concrete Piles	Lin. Ft.	99
Test Pile Concrete	Each	1
Expansion Bolts 3/4"x4"	Each	34
Concrete Removal	Cu. Yd.	26.4

NORTH ABUTMENT (I.I.B. STR.)
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

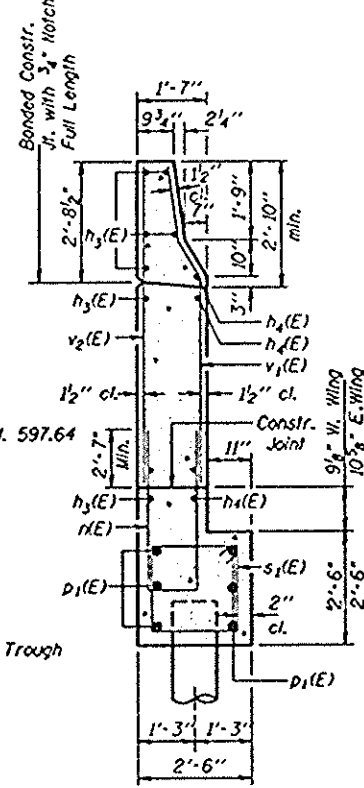
PROJECT NO.	SECTION	DATE	SHEET NO.	TOTAL SHEETS
F.A.I. 55	32-11	GRUNDY	65	35
DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY	
V.S.N.	K.L.F.	K.H.L.	V.S.N./K.L.F.	



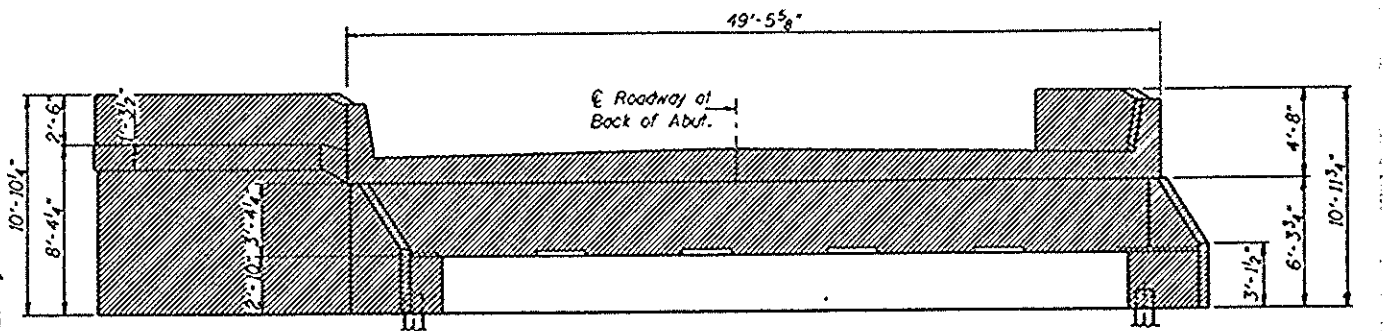
SEC. A-A THRU ABUT. WIDENING



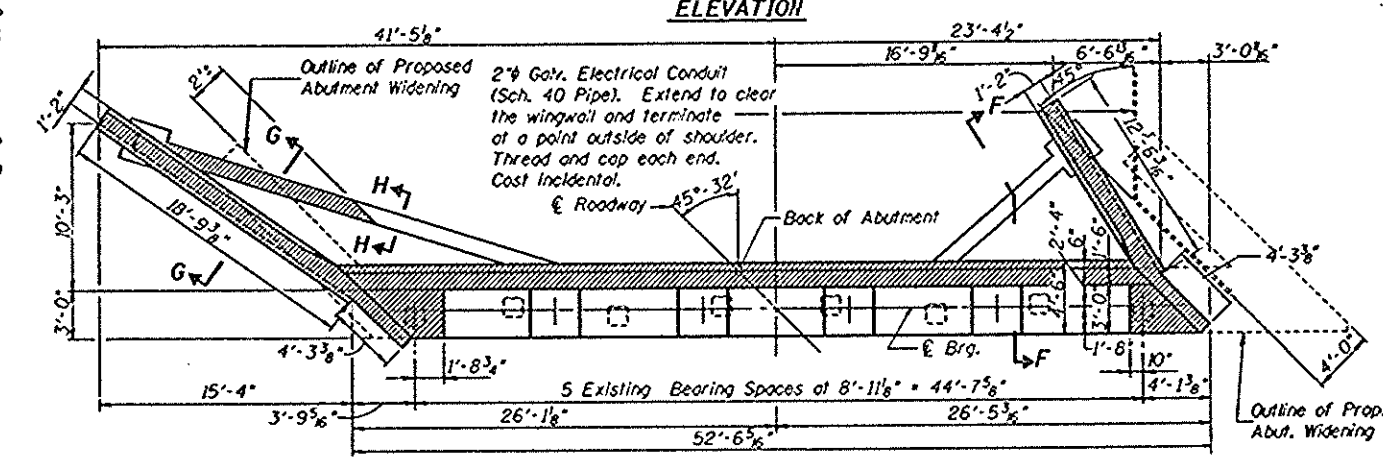
SEC. C-C THRU EXIST. ABUT.



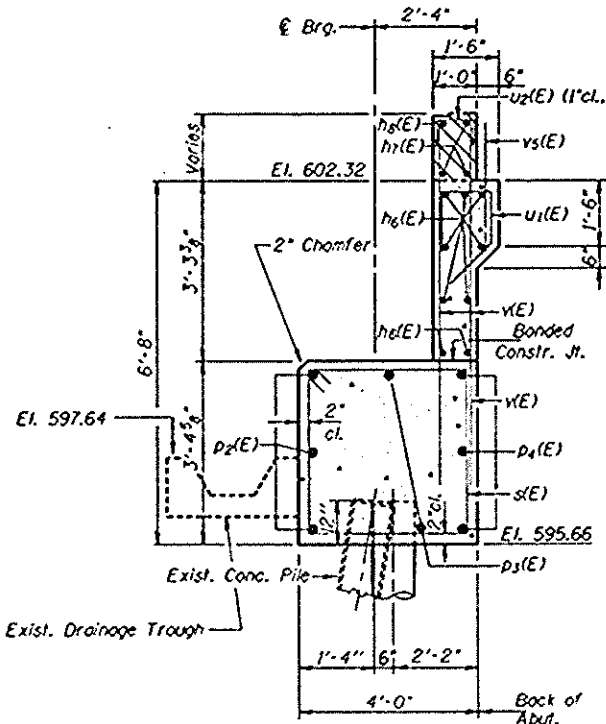
SECTION D-D



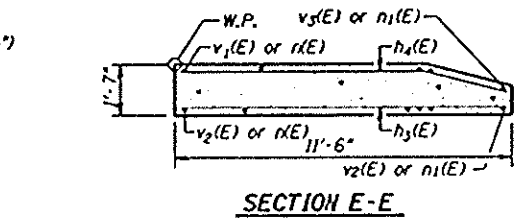
ELEVATION



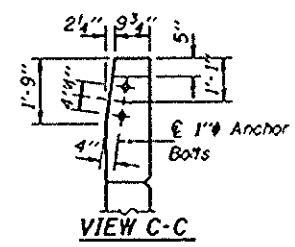
TOP VIEW



SEC. B-B THRU ABUT. WIDENING

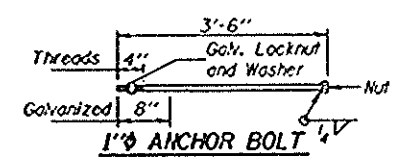


SECTION E-E

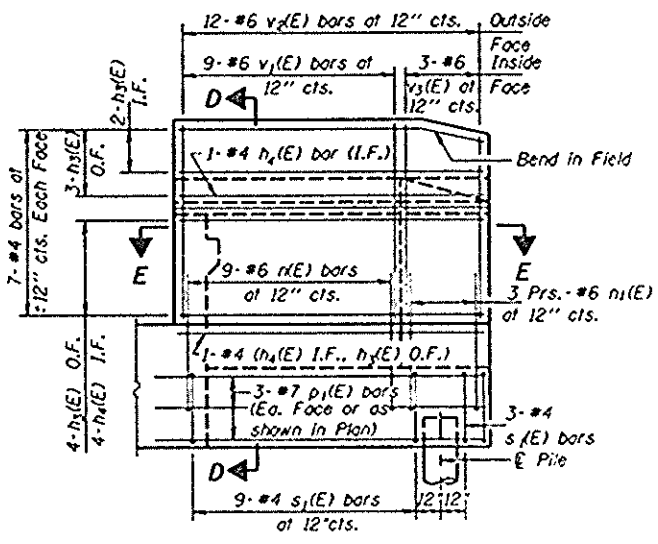


VIEW C-C

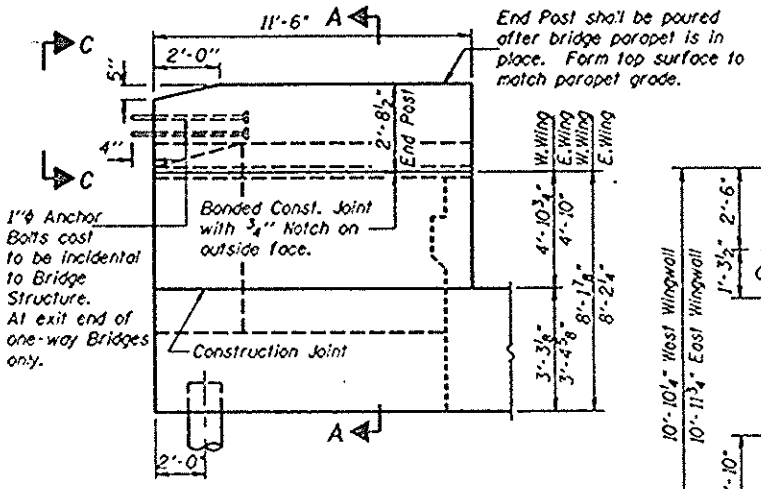
NOTE: Concrete Removal shown hatched.



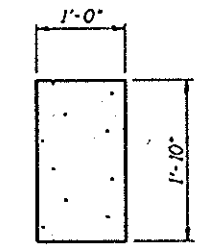
1-INCH ANCHOR BOLT



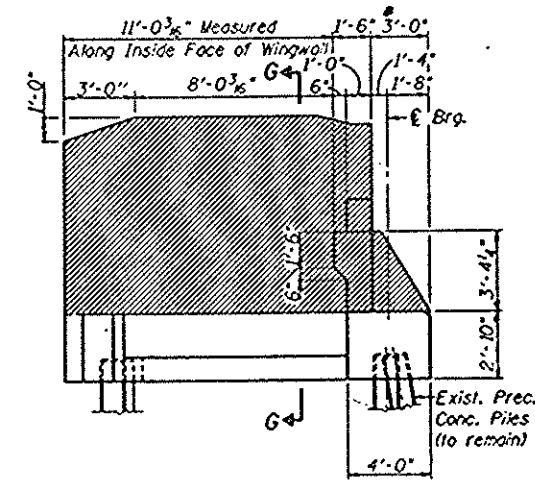
WING WALL ELEVATION Reinforcement



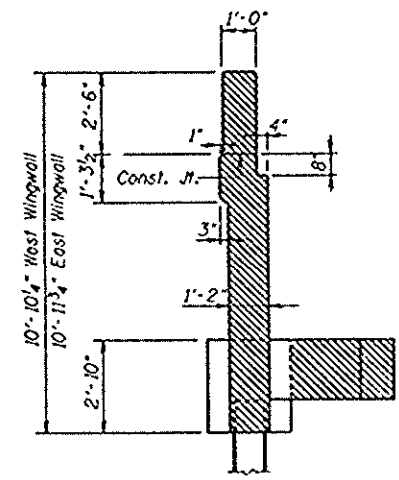
WING WALL ELEVATION



SECTION H-H



WINGWALL ELEVATION F-F



SECTION G-G

NORTH ABUTMENT (N.B. STR.)
ABUTMENT DETAILS
& CONCRETE REMOVAL
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

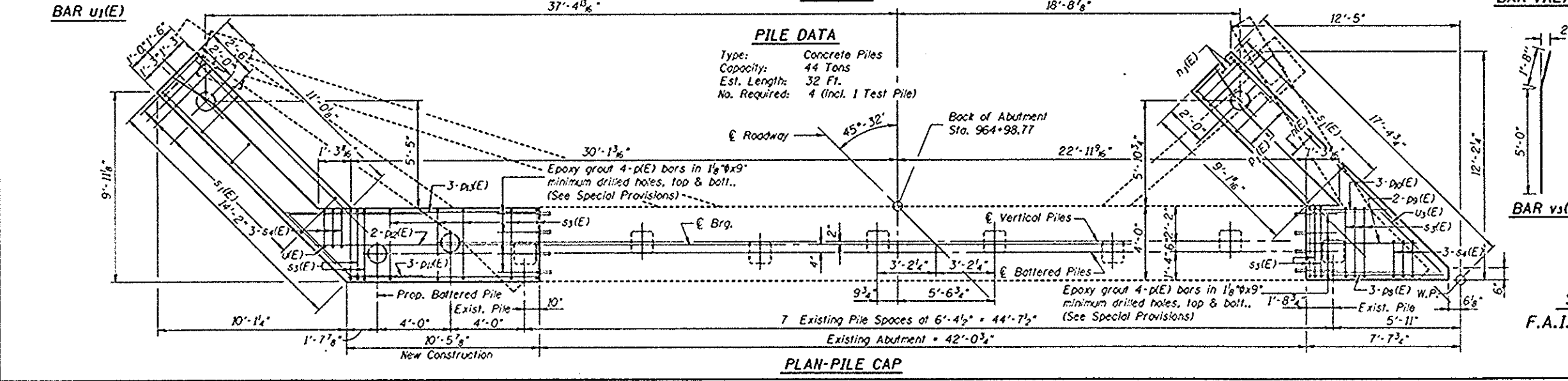
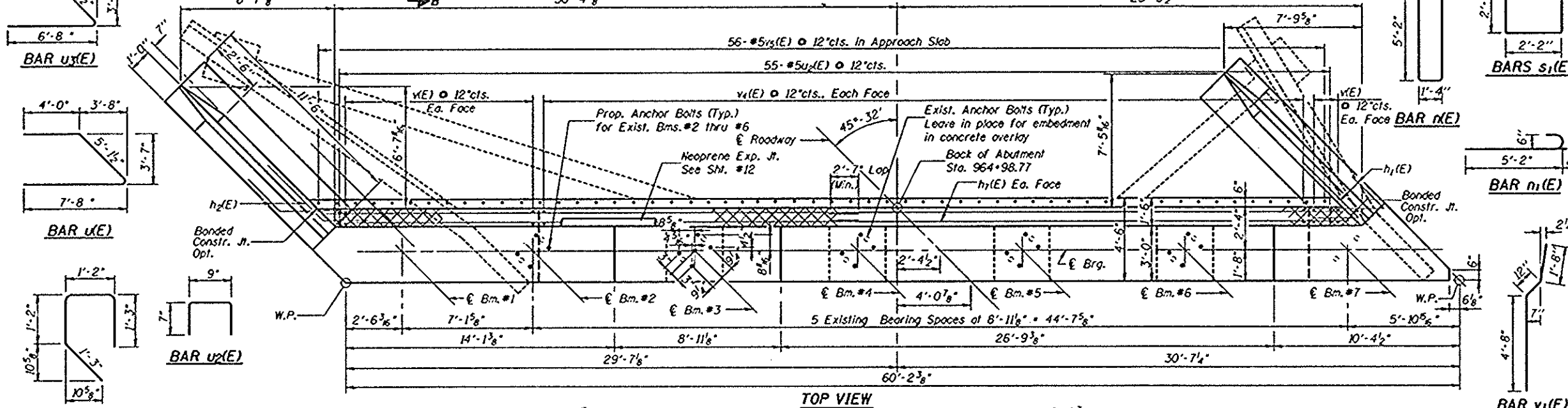
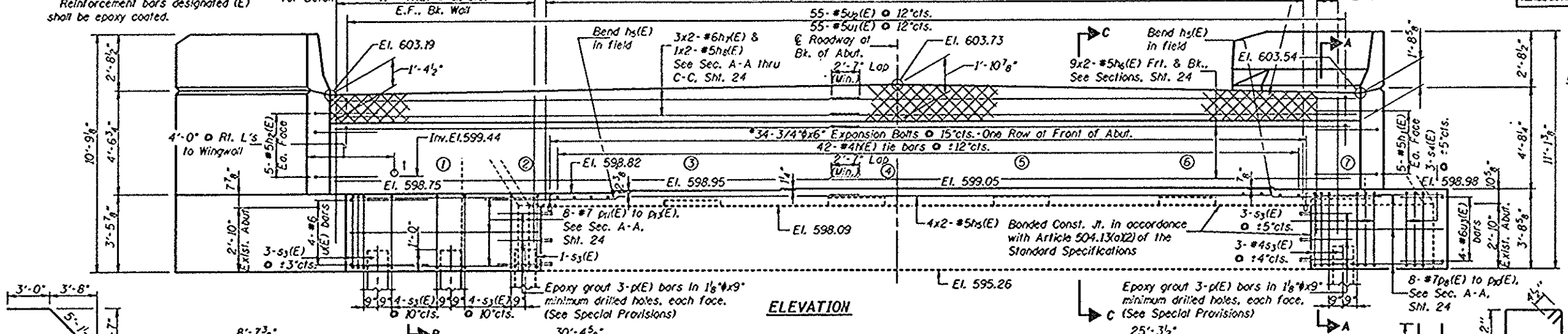
DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DATE	BY	CHECKED	NO.	SHEET NO. 23 OF 35 SHEETS
F.A.I. 55	W.P.	GRUNDY	66	36

Notes: Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.

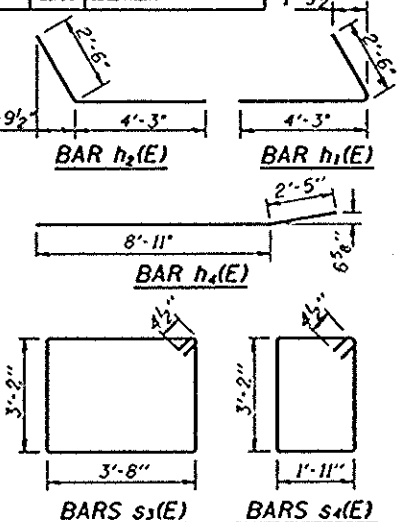
Grind off existing bearing pedestals level before installing expansion bolts there to ensure full height embedment of bolts in concrete overlay. Cost incidental to Class X Concrete.

Cross Hatched area to be poured after superstructure falsework has been removed. Quantity of Class X Concrete billed with Superstructure Quantities.



PILE DATA

Type: Concrete Piles
 Capacity: 44 Tons
 Est. Length: 32 Ft.
 No. Required: 4 (Incl. 1 Test Pile)



BILL OF MATERIAL

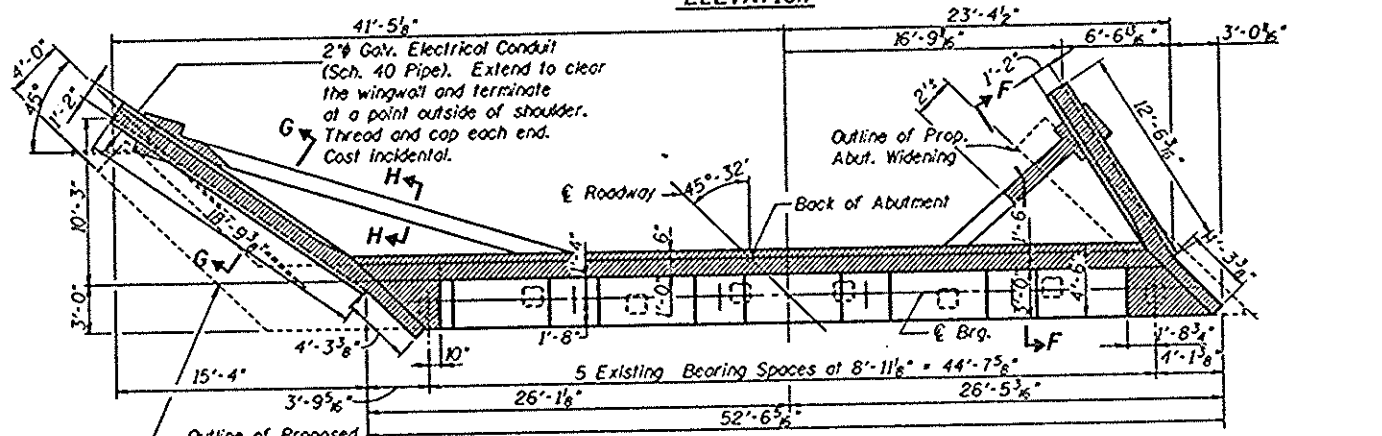
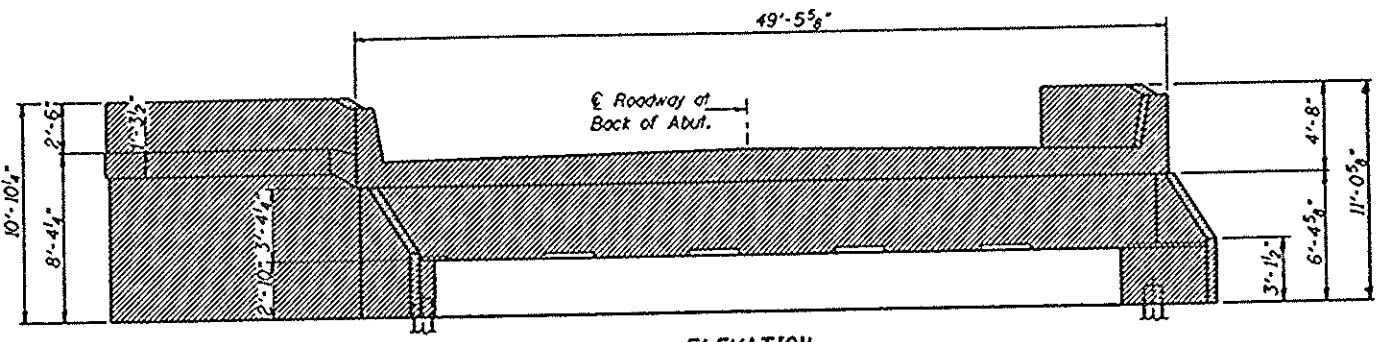
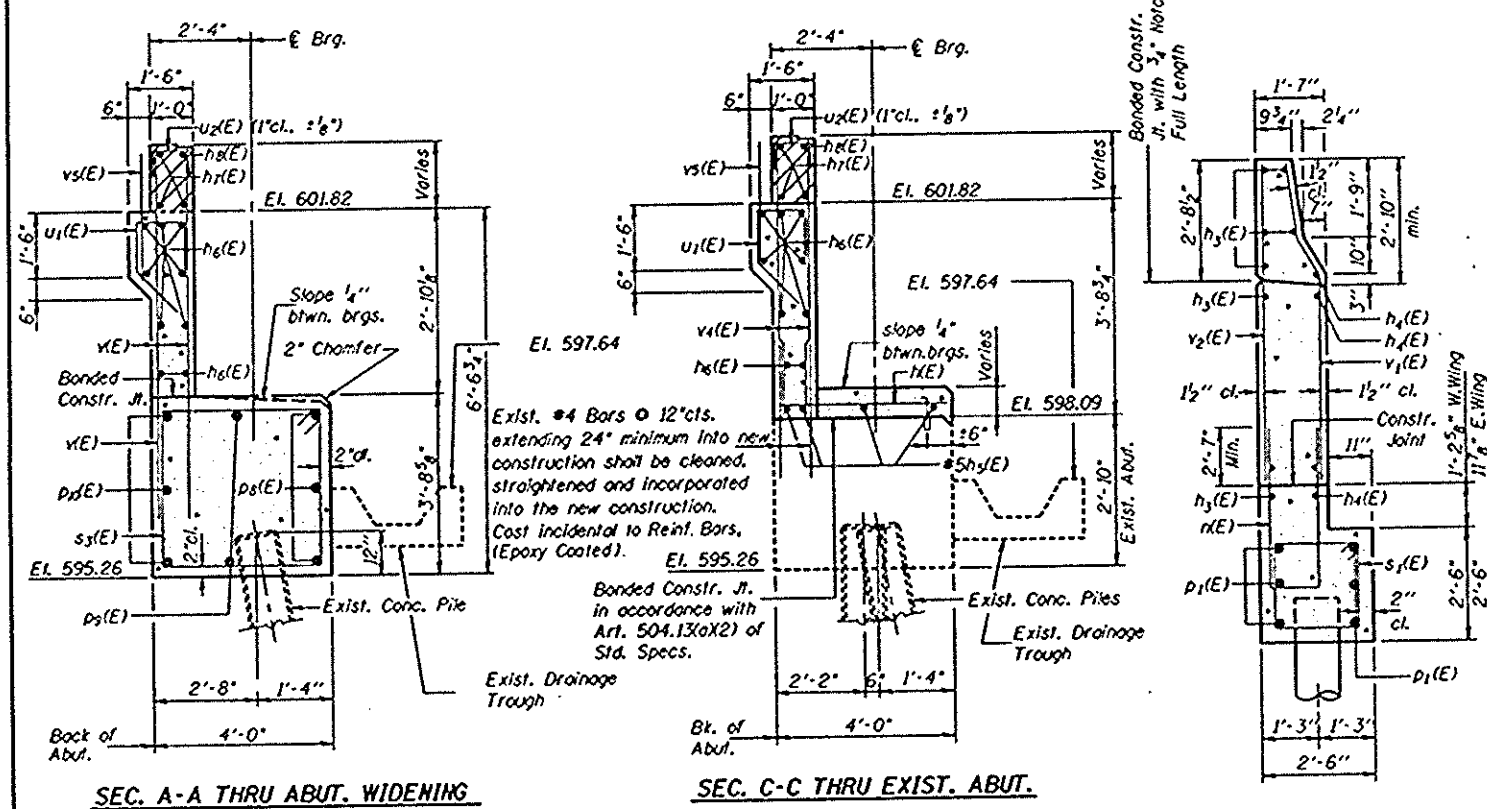
Bar No.	Size	Length	Shape
h2(E)	#4	3'-8"	
h1(E)	#5	6'-9"	
h4(E)	#5	6'-9"	
h3(E)	#4	11'-3"	
h2(E)	#4	11'-4"	
h3(E)	#5	25'-0"	
h4(E)	#5	28'-9"	
h1(E)	#6	29'-0"	
h2(E)	#5	29'-0"	
n(E)	#6	11'-8"	
n1(E)	#6	5'-10"	
u(E)	#7	3'-8"	
u1(E)	#7	13'-3"	
u2(E)	#7	6'-11"	
u3(E)	#7	5'-3"	
u4(E)	#7	3'-3"	
u5(E)	#7	10'-2"	
u6(E)	#7	12'-2"	
u7(E)	#7	14'-2"	
s1(E)	#4	9'-5"	
s2(E)	#4	14'-5"	
s3(E)	#4	10'-11"	
v(E)	#6	16'-10"	
v1(E)	#6	7'-4"	
v2(E)	#6	7'-1"	
v3(E)	#6	6'-8"	
v4(E)	#4	5'-0"	
v5(E)	#5	2'-6"	

Structure Excavation	Cu. Yd.	96
Class X Concrete	Cu. Yd.	37.5
Reinforcement Bars (Epoxy Coated)	Lbs.	4,570
Concrete Piles	Lin. Ft.	96
Test Pile Concrete	Each	1
Expansion Bolts 4"x6"	Each	34
Concrete Removal	Cu. Yd.	26.0

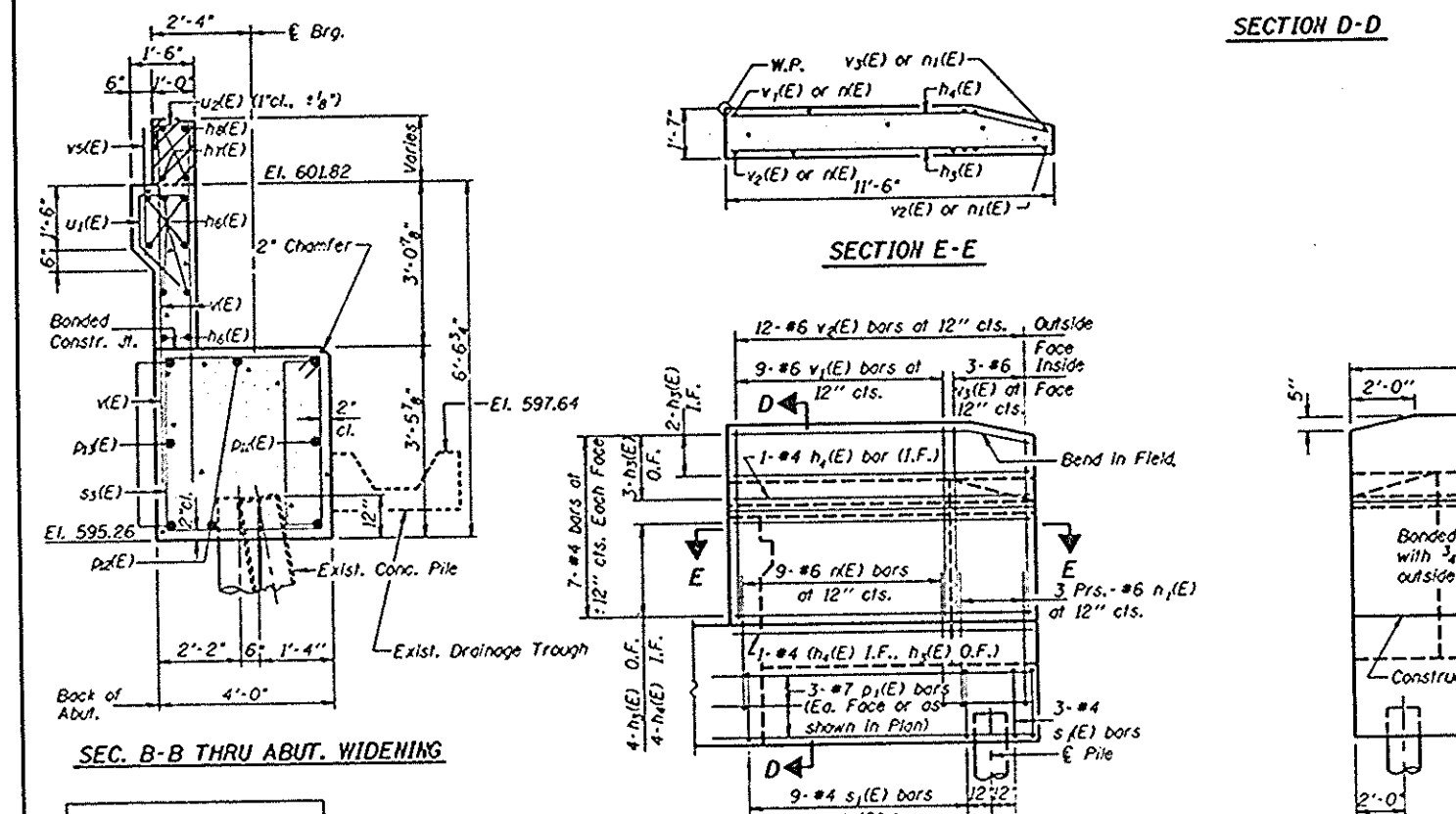
11 See Sht. 24 for Concrete Removal details.

SOUTH ABUTMENT (I.B. STR.)
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

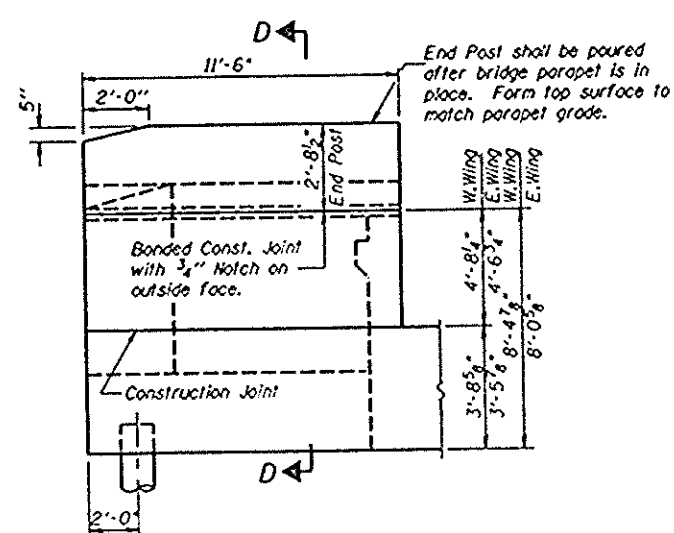
ROUTE NO.	SECTION	DATE	BY	NO.	SHEET NO. 24 OF
F.A.I. 55	32-1 VBR	GRUNDY	66	37	35 SHEETS



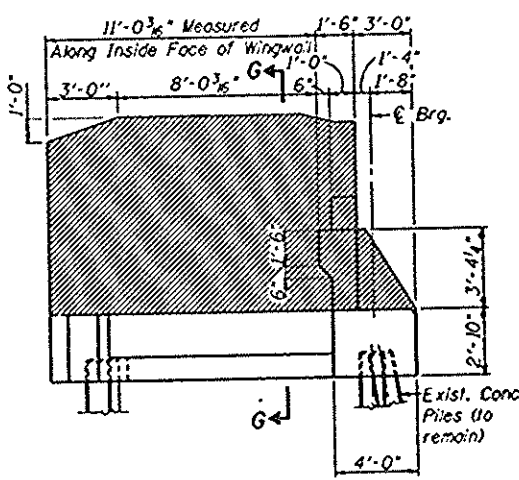
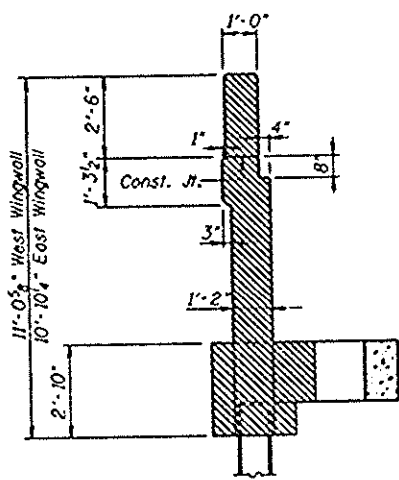
NOTE: Concrete Removal shown hatched.



SECTION D-D



SECTION H-H



**SOUTH ABUTMENT (N.B. STR.)
ABUTMENT DETAILS
& CONCRETE REMOVAL
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY**

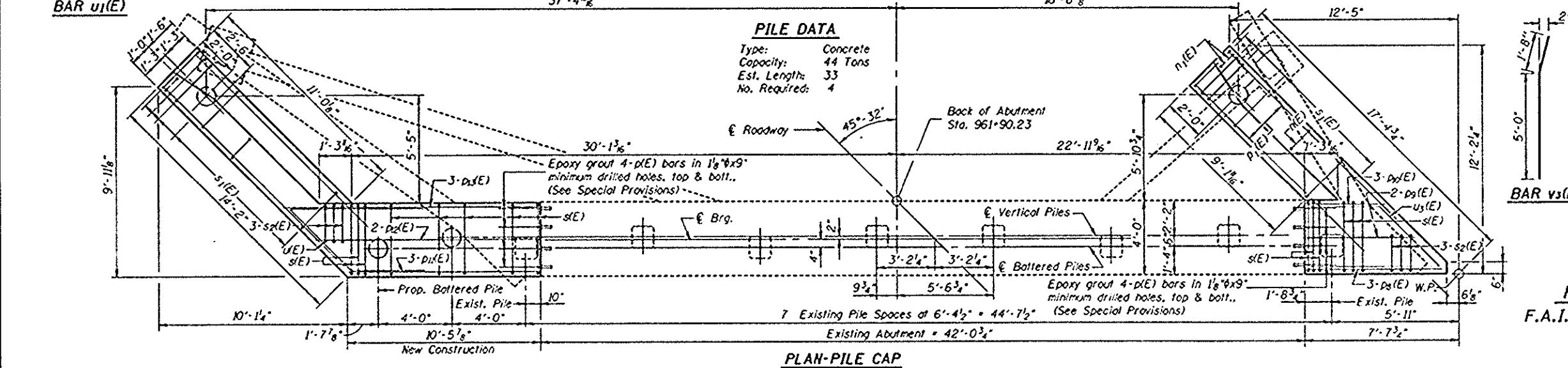
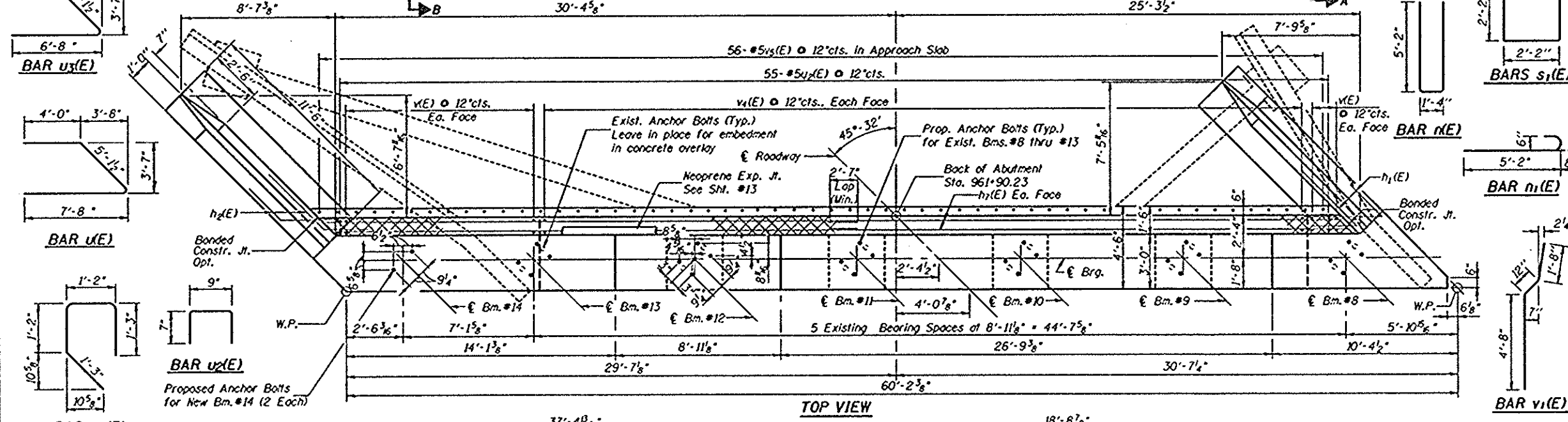
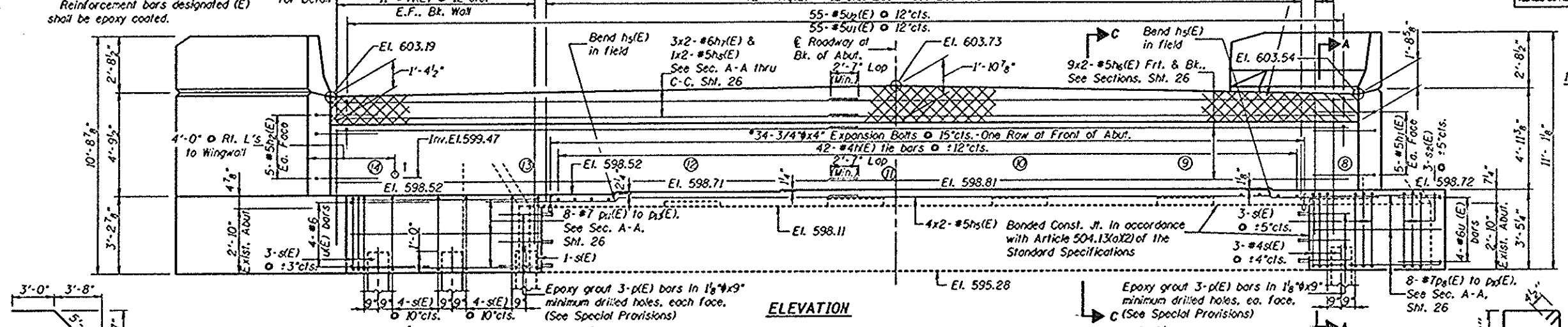
DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

Notes: Space reinforcement in cap to miss anchor bolts.
 12" Elec. Conduit See Sht. 26 for Detail.
 Pour steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.

Grind off existing bearing pedestals level before installing expansion bolts there to ensure full height embedment of bolts in concrete overlay. Cost incidental to Class X Concrete.

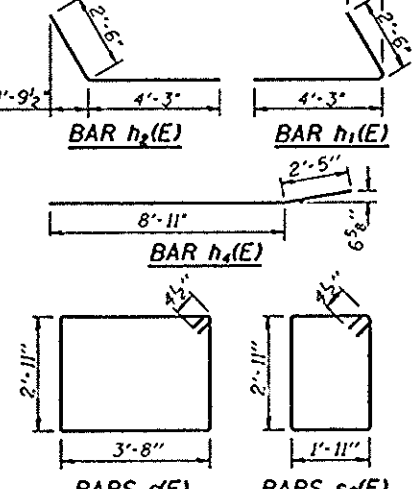
Cross Hatched area to be poured after superstructure falsework has been removed. Quantity of Class X Concrete billed with Superstructure Quantities.

DATE	BY	CHKD	DATE	SHEET NO. 25 OF 35 SHEETS
F.A.I. 55	32-118	GRACY	86	35
PROJECT NO.	SCALE	DATE	BY	



PILE DATA

Type: Concrete
 Capacity: 44 Tons
 Est. Length: 33
 No. Required: 4



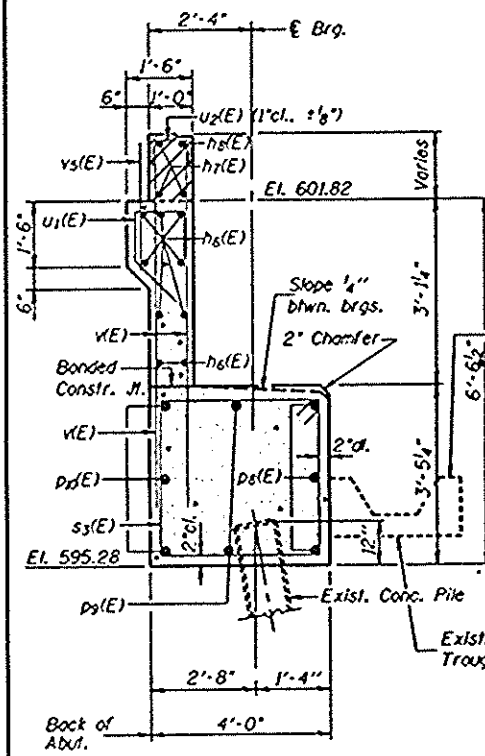
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	42	#4	3'-8"	
h2(E)	10	#5	6'-9"	
h3(E)	10	#5	6'-9"	
h4(E)	20	#4	11'-3"	
h5(E)	12	#4	11'-4"	
h6(E)	8	#5	25'-0"	
h7(E)	18	#5	28'-9"	
h8(E)	6	#6	29'-0"	
h9(E)	2	#5	29'-0"	
n(E)	18	#6	11'-8"	
u1(E)	12	#6	5'-10"	
u2(E)	20	#7	6'-5"	
u3(E)	12	#7	13'-3"	
u4(E)	3	#7	6'-11"	
u5(E)	2	#7	5'-3"	
u6(E)	3	#7	3'-3"	
u7(E)	3	#7	10'-2"	
u8(E)	2	#7	12'-2"	
u9(E)	3	#7	14'-2"	
s1(E)	18	#4	13'-11"	
s2(E)	24	#4	9'-5"	
s3(E)	6	#4	10'-5"	
v1(E)	4	#6	16'-10"	
v2(E)	55	#4	4'-10"	
v3(E)	55	#5	1'-11"	
v4(E)	4	#6	14'-10"	
v5(E)	26	#4	6'-6"	
v6(E)	18	#6	7'-4"	
v7(E)	24	#6	7'-1"	
v8(E)	6	#6	6'-8"	
v9(E)	84	#4	5'-0"	
v10(E)	56	#5	2'-6"	
Structure Excavation		Cu. Yd.	96	
Class X Concrete		Cu. Yd.	35.7	
Reinforcement Bars (Epoxy Coated)		Lbs.	4,570	
Concrete Piles		Lin. Ft.	132	
Expansion Bolts 3/4"x4" Each			34	
Concrete Removal		Cu. Yd.	26.0	

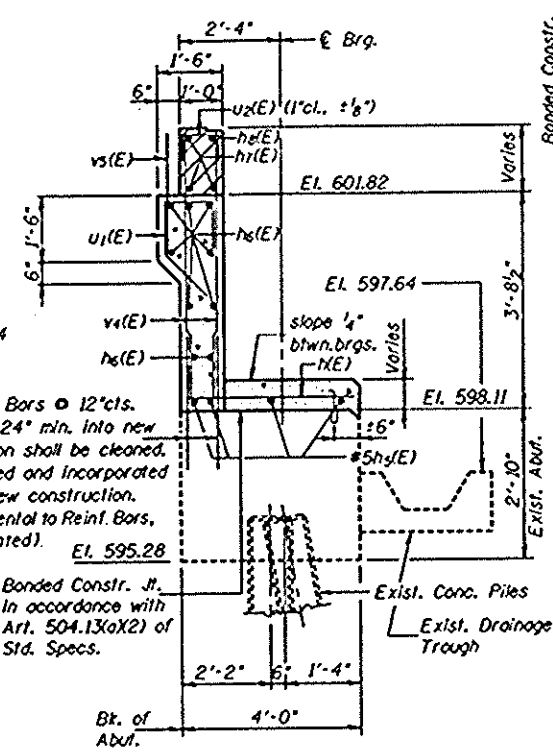
NORTH ABUTMENT (S.B. STR.)
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

11 See Sht. 26 for Concrete Removal details.

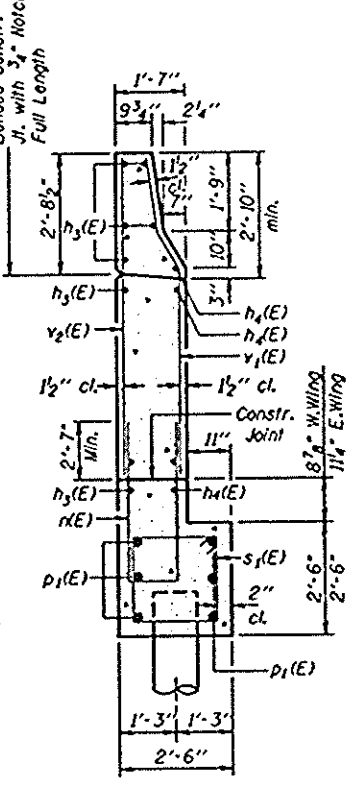
ROUTE NO.	SECTION	DATE	BY	CHECKED	SHEET NO. 26 OF 35 SHEETS
F.A.I. 55	32-1 VBR	GRACY	ES	39	
PREPARED BY	DESIGNED BY	DATE AND PROJECT			



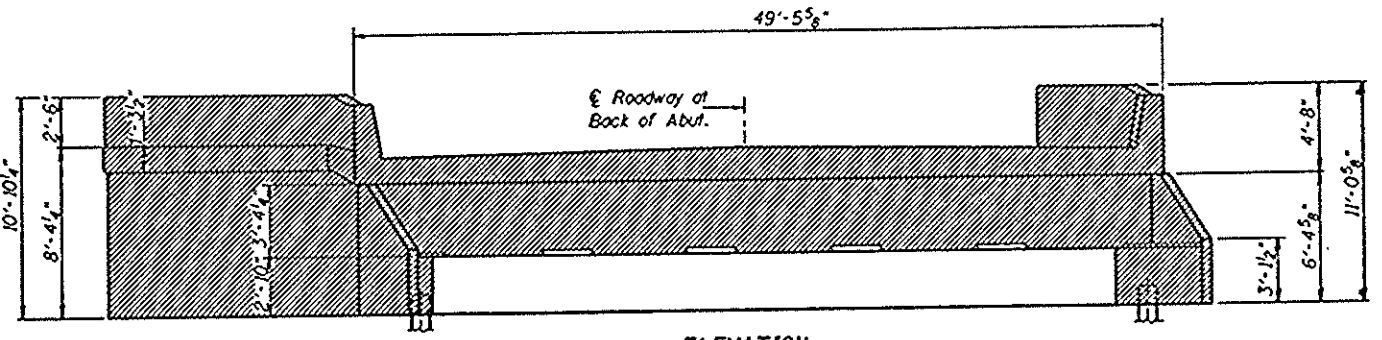
SEC. A-A THRU ABUT. WIDENING



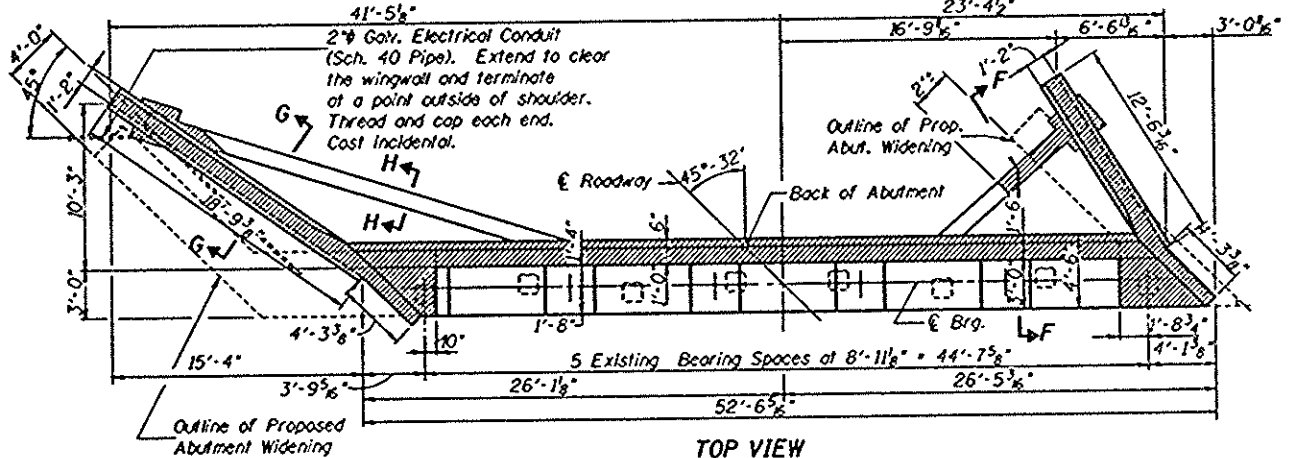
SEC. C-C THRU EXIST. ABUT.



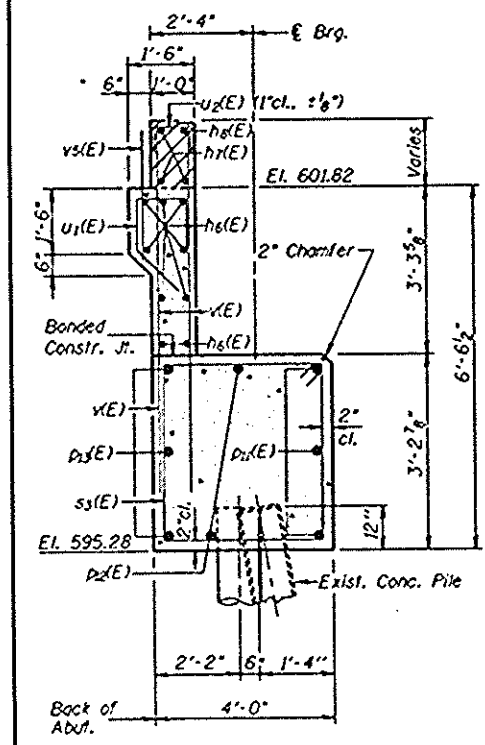
SECTION D-D



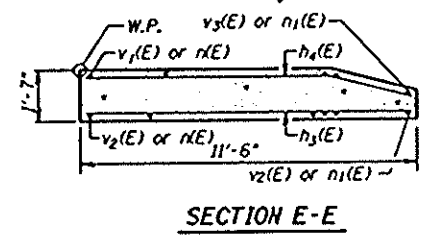
ELEVATION



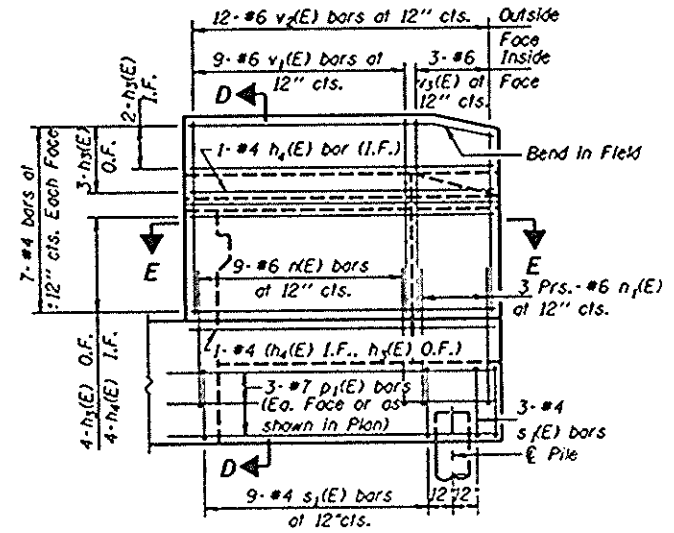
TOP VIEW



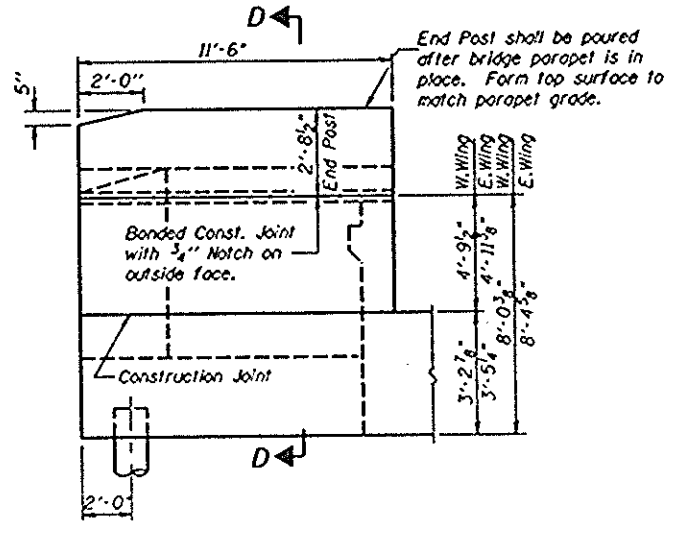
SEC. B-B THRU ABUT. WIDENING



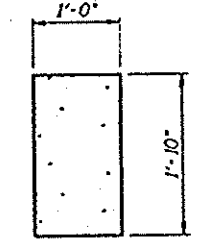
SECTION E-E



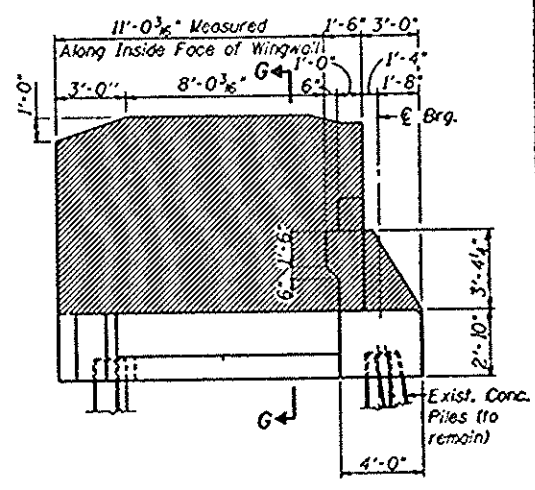
**WING WALL ELEVATION
Reinforcement**



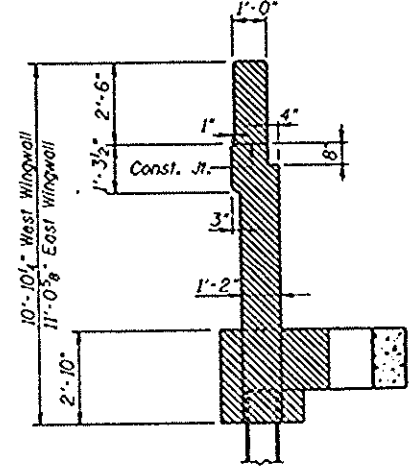
WING WALL ELEVATION



SECTION H-H



WINGWALL ELEVATION F-F



SECTION G-G

**NORTH ABUTMENT (S.B. STR.)
ABUTMENT DETAILS
& CONCRETE REMOVAL
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY**

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.M.L.
CHECKED	V.S.N./K.L.F.

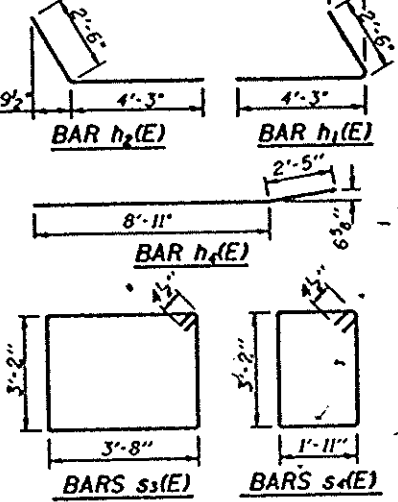
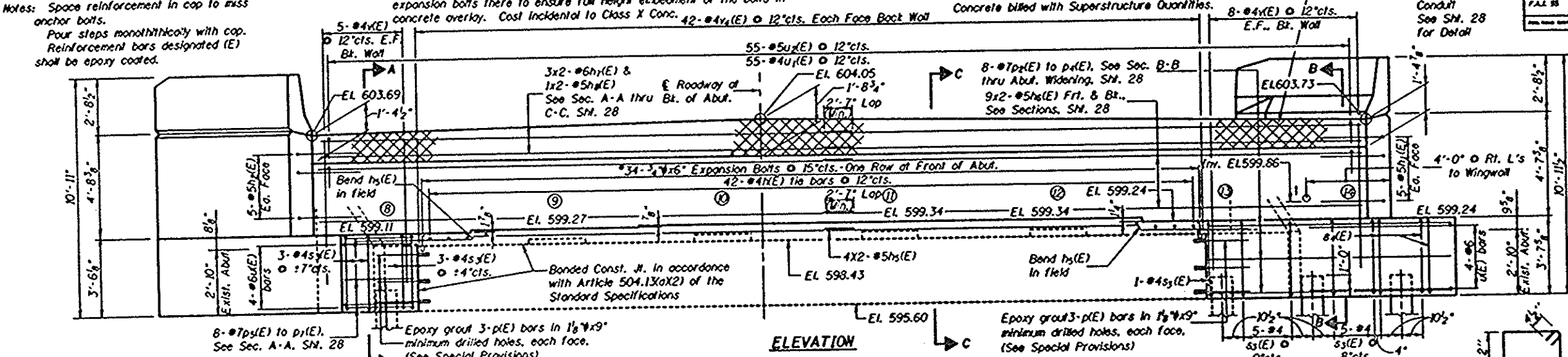
DATE	BY	CHK'D	DATE	SHEET NO. 27 OF 35 SHEETS
FALL 55	CP-508	GRUNDY	ES 40	

Notes: Space reinforcement in cap to miss anchor bolts. Pour steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.

* Grind off existing bearing pedestals level before installing expansion bolts there to ensure full height embedment of the bolts in concrete overlay. Cost incidental to Class X Conc. 42-#4_v(E) @ 12"cls. Each Face Back Wall

Cross Hatched area to be poured after superstructure falsework has been removed. Quantity of Class X Concrete billed with Superstructure Quantities.

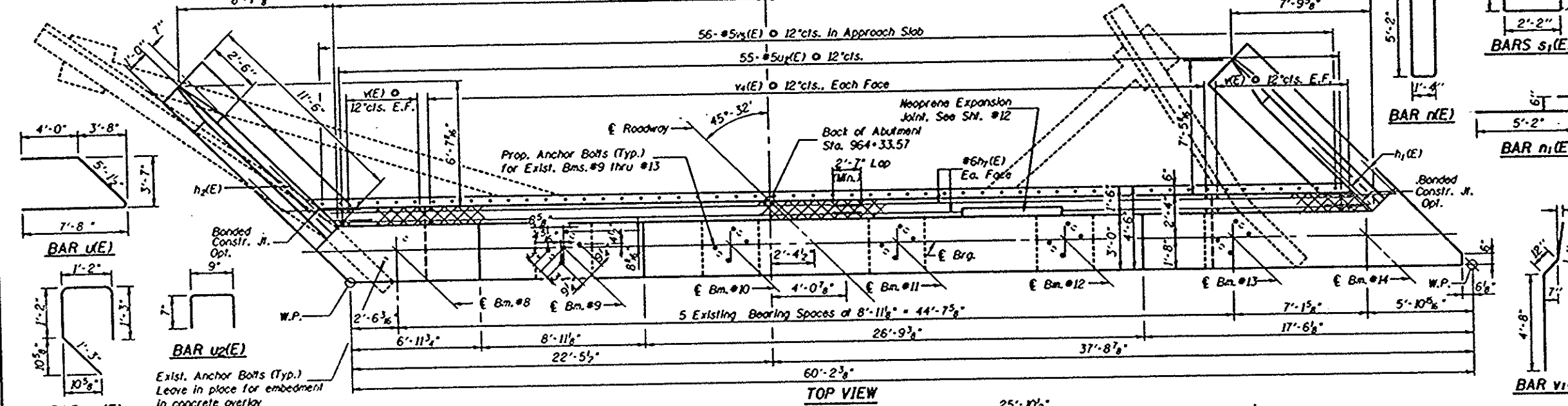
12" Elec. Conduit See SH. 28 for Detail



BILL OF MATERIAL

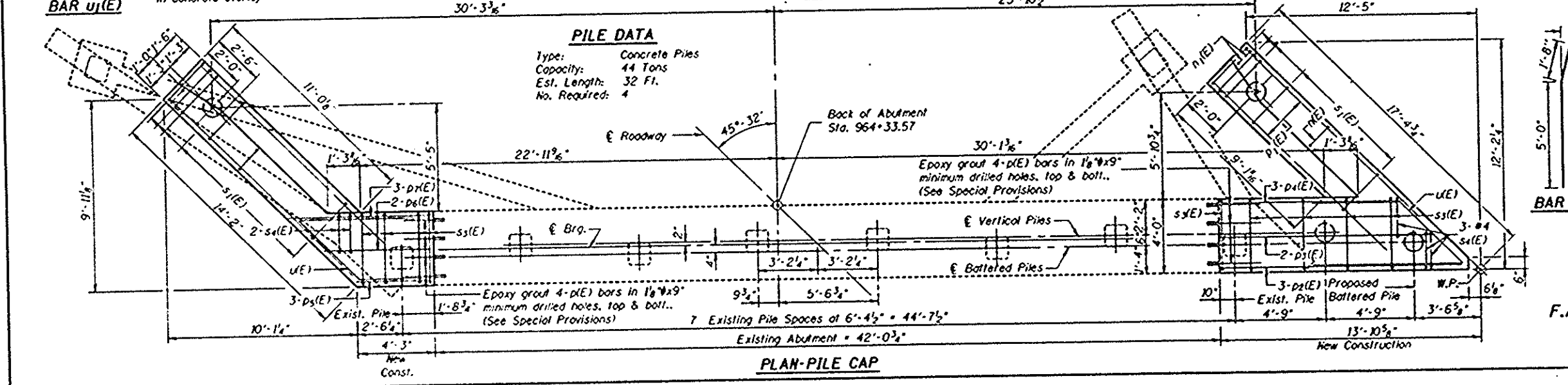
Bar	No.	Size	Length	Shops
n(E)	42	#4	3'-8"	
h1(E)	10	#5	6'-9"	
h2(E)	10	#5	6'-9"	
h3(E)	20	#4	11'-3"	
h4(E)	12	#4	11'-4"	
h5(E)	8	#5	25'-0"	
h6(E)	18	#5	28'-9"	
h7(E)	6	#6	29'-0"	
h8(E)	2	#5	29'-0"	
n1(E)	18	#6	11'-8"	
n2(E)	12	#6	5'-10"	
p1(E)	20	#7	3'-8"	
p2(E)	12	#7	13'-3"	
p3(E)	3	#7	13'-2"	
p4(E)	2	#7	11'-6"	
p5(E)	3	#7	9'-6"	
p6(E)	3	#7	3'-11"	
p7(E)	2	#7	6'-0"	
p8(E)	3	#7	8'-0"	
s1(E)	24	#4	9'-5"	
s2(E)	17	#4	14'-5"	
s3(E)	5	#4	10'-11"	
u(E)	8	#6	15'-10"	
u1(E)	55	#4	4'-10"	
u2(E)	55	#5	1'-11"	
v(E)	26	#4	6'-6"	
v1(E)	18	#6	7'-4"	
v2(E)	24	#6	7'-1"	
v3(E)	6	#6	6'-8"	
v4(E)	84	#4	5'-0"	
v5(E)	56	#5	2'-6"	
Structure Excavation		Cu. Yd.	96	
Class X Concrete		Cu. Yd.	40.4	
Reinforcement Bars (Epoxy Coated)		Lbs.	4,570	
Concrete Piles		Lin. Ft.	128	
Expansion Bolts 3/4"x6"		Each	34	
Concrete Removal		Cu. Yd.	26.4	

II See SH. 28 for Concrete Removal details.



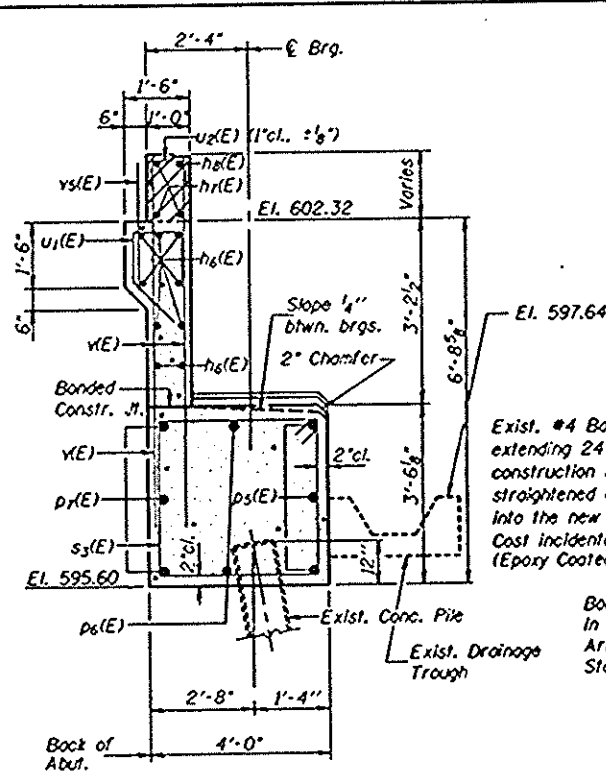
PILE DATA

Type: Concrete Piles
Capacity: 44 Tons
Est. Length: 32 Ft.
No. Required: 4

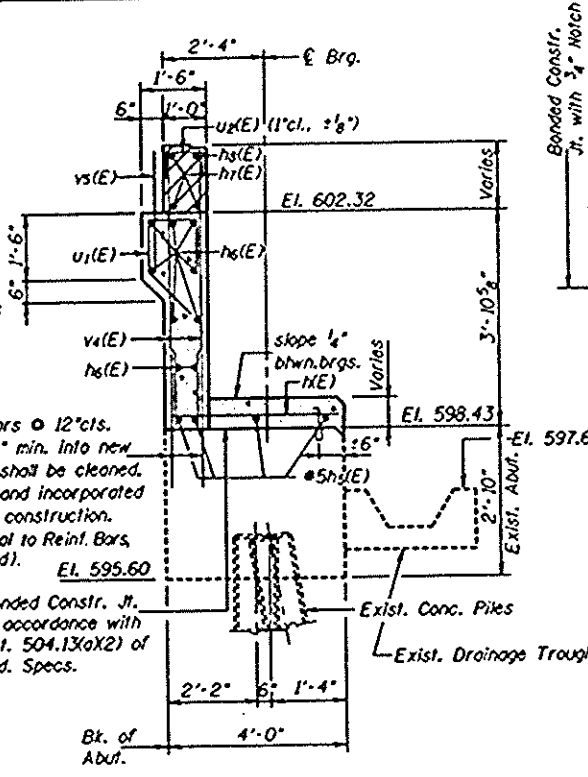


SOUTH ABUTMENT (S.B. STR.)
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

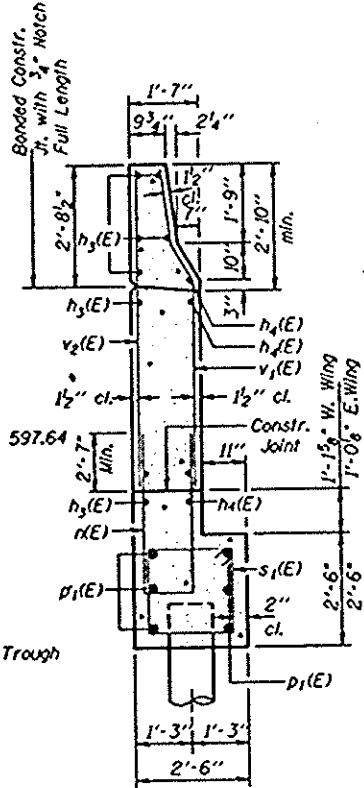
ROUTE NO.	SECTION	DATE	BY	CHECKED	SHEET NO. 28 OF 35 SHEETS
F.A.I. 55	32-11	GRANDY	85	41	
<p>DESIGNED: V.S.N. CHECKED: K.L.F. DRAWN: K.H.L. CHECKED: V.S.N./K.L.F.</p>					



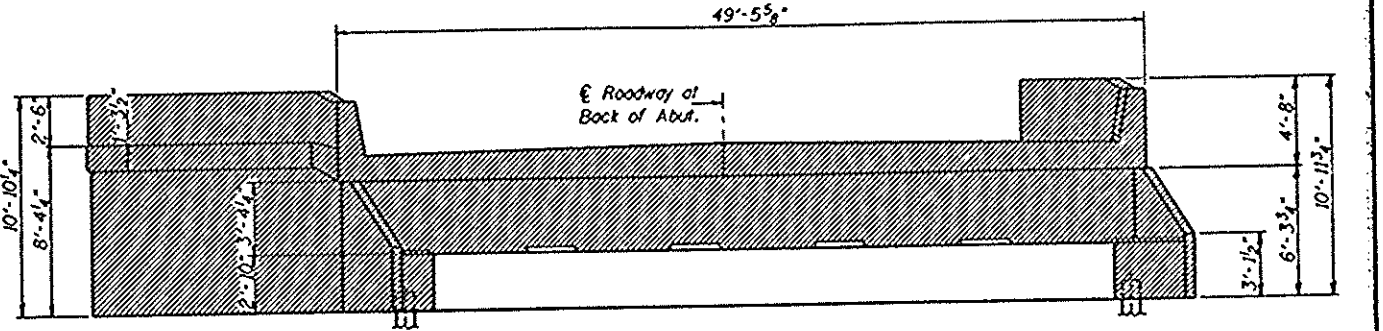
SEC. A-A THRU ABUT. WIDENING



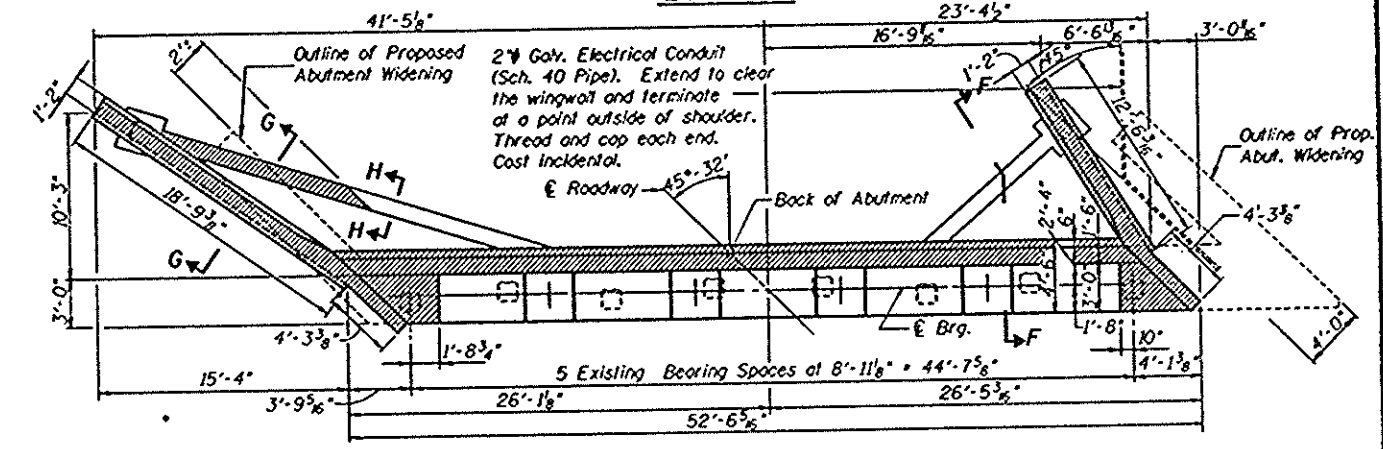
SEC. C-C THRU EXIST. ABUT.



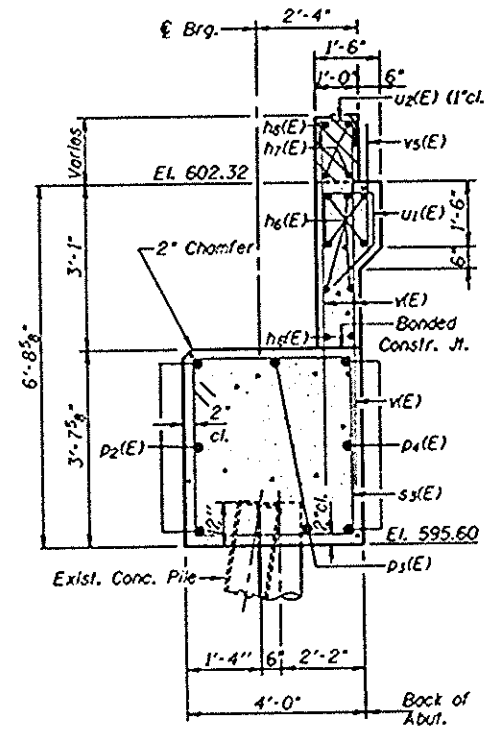
SECTION D-D



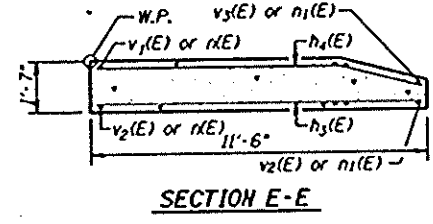
ELEVATION



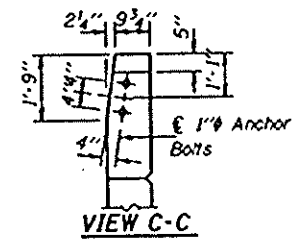
TOP VIEW



SEC. B-B THRU ABUT. WIDENING

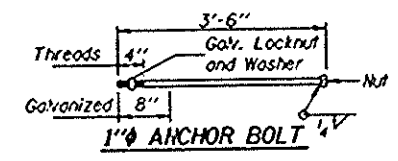


SECTION E-E

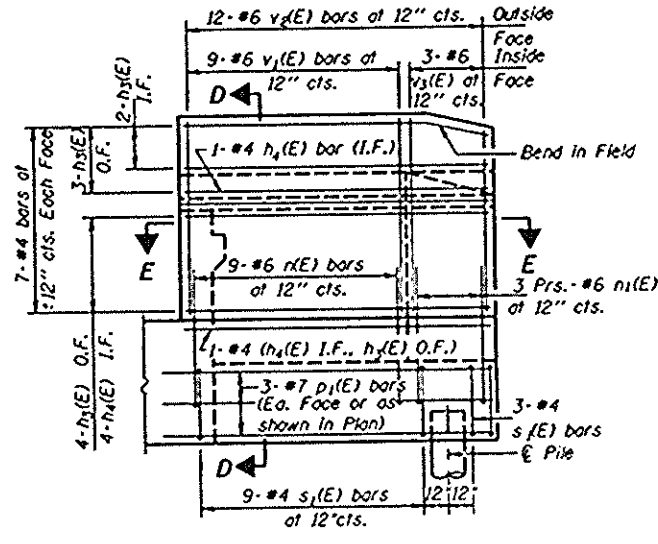


VIEW C-C

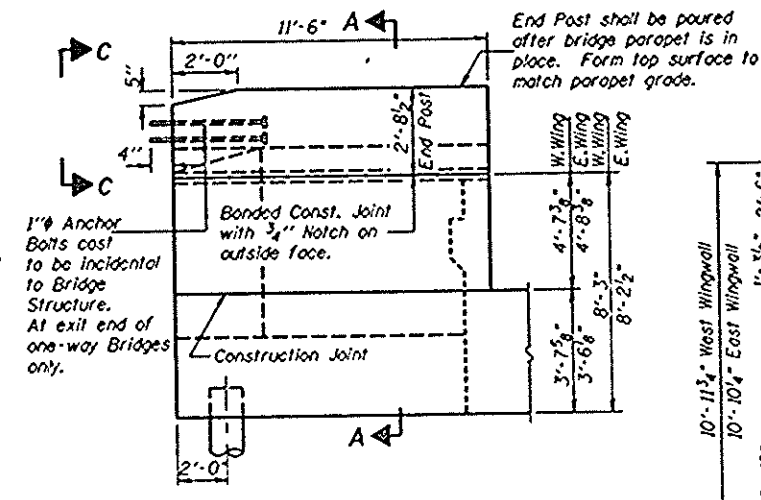
NOTE: Concrete Removal shown hatched.



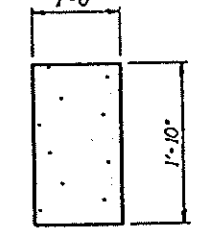
1" ANCHOR BOLT



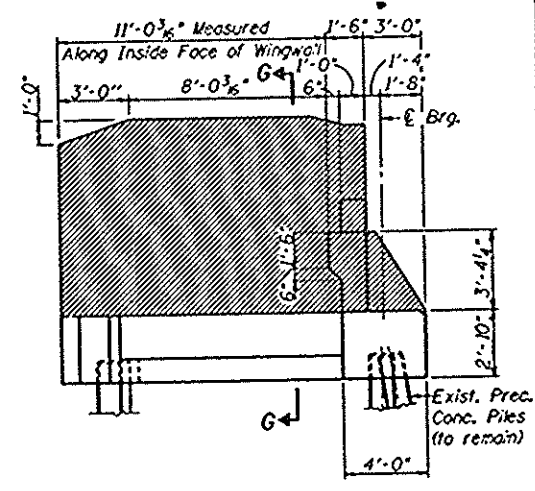
**WING WALL ELEVATION
Reinforcement**



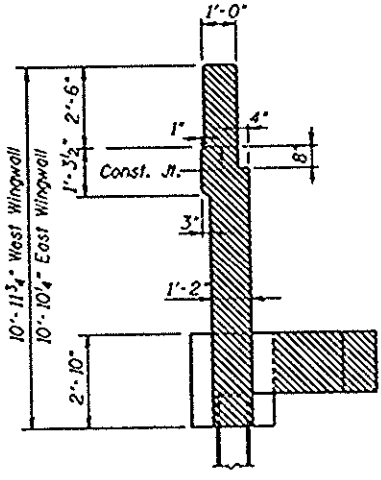
WING WALL ELEVATION



SECTION H-H



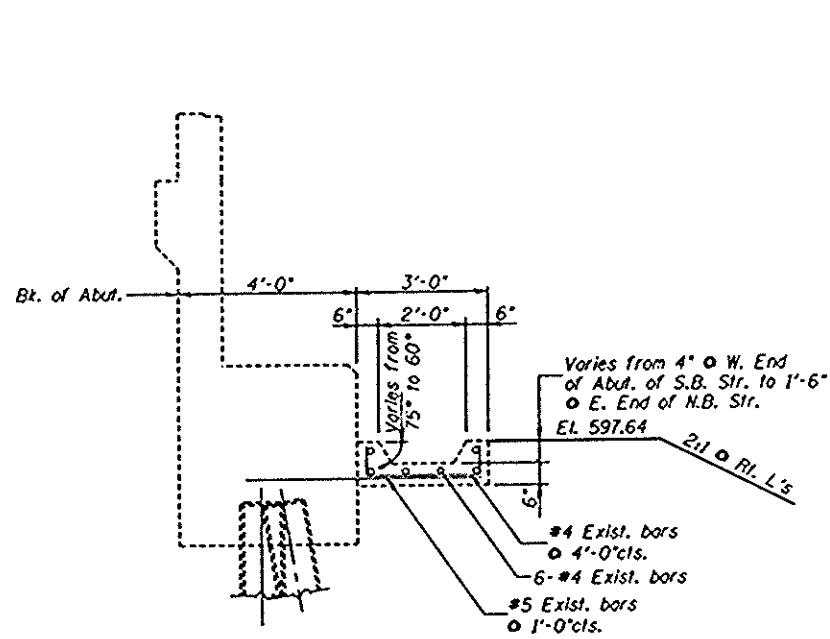
WINGWALL ELEVATION F-F



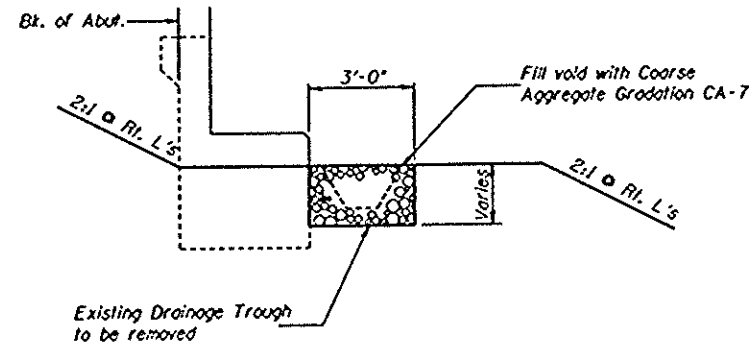
SECTION G-G

**SOUTH ABUTMENT (S.B. STR.)
 ABUTMENT DETAILS
 & CONCRETE REMOVAL
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY**

ROUTE NO.	SECTION	PROJECT	DATE	SHEET NO. 29 OF
F.A.I. 55	(32-1) VBR	GRUNDY	86	42
DESIGNED BY: V.S.N.		SHEET NO. 29 OF 35 SHEETS		

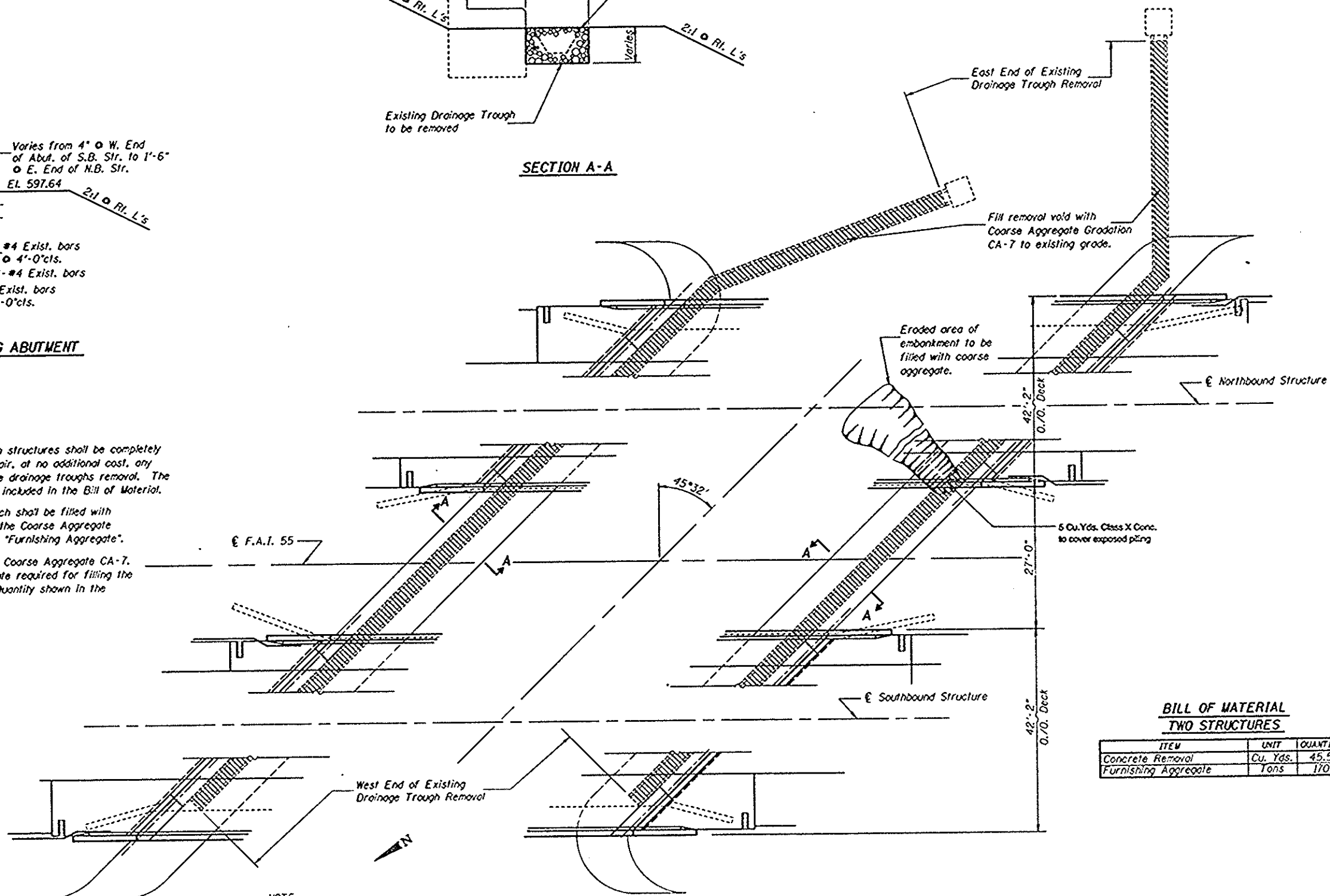


SECTION THRU EXISTING ABUTMENT



SECTION A-A

- NOTE:**
- The existing drainage troughs at abutments and between structures shall be completely removed as shown this sheet. The Contractor shall repair, at no additional cost, any damage done to the front faces of the abutments by the drainage troughs removal. The concrete removal quantities of the drainage troughs are included in the Bill of Material.
 - The entire void left by the removal of the drainage trench shall be filled with Coarse Aggregate Gradation CA-7. Filling of void with the Coarse Aggregate shall be paid for at the contract unit price per ton for "Furnishing Aggregate".
 - Eroded areas shown in plan shall also be filled with the Coarse Aggregate CA-7. An arbitrary quantity of 30 tons of the Coarse Aggregate required for filling the erosion ditch has been allowed in the Total Aggregate Quantity shown in the Bill of Material.



- NOTE:**
Existing Structures shown dashed.
Proposed Structures shown solid.
Hatching indicates concrete removal.

PLAN OF STRUCTURES AT ABUTMENTS
Scale: 1" = 10'

**BILL OF MATERIAL
TWO STRUCTURES**

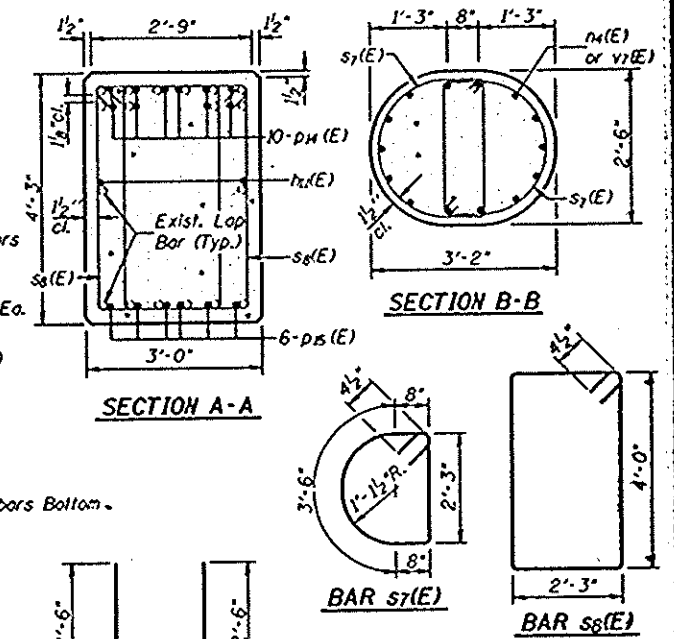
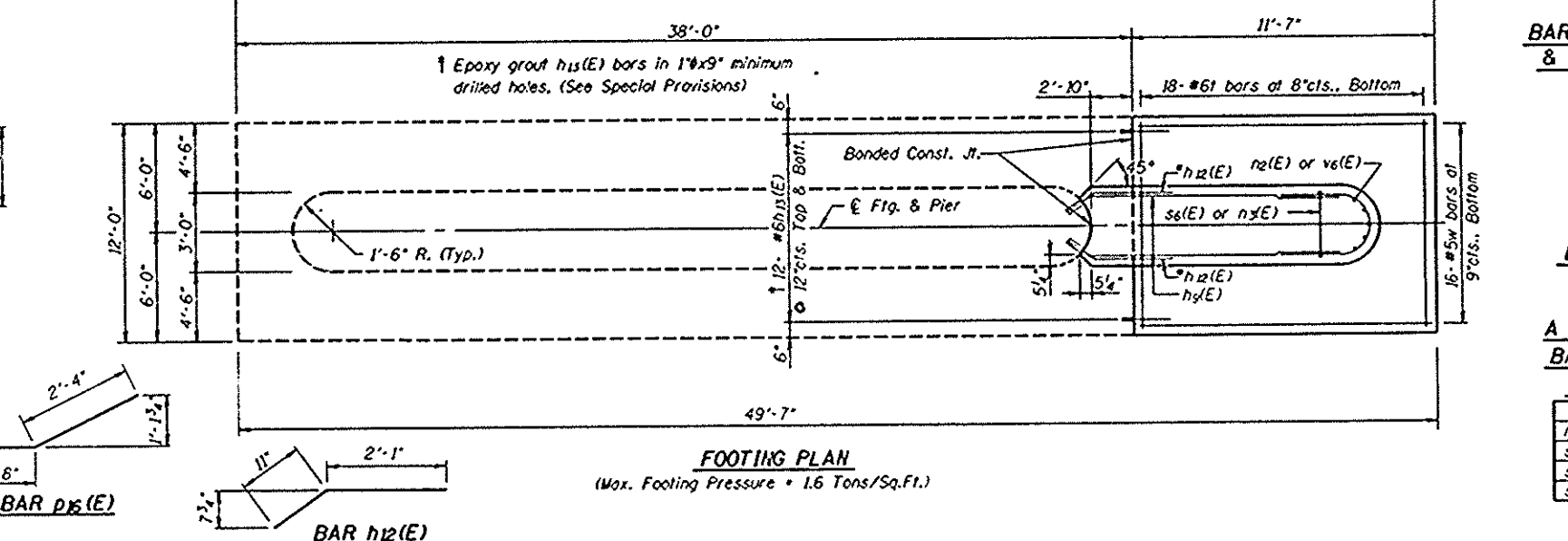
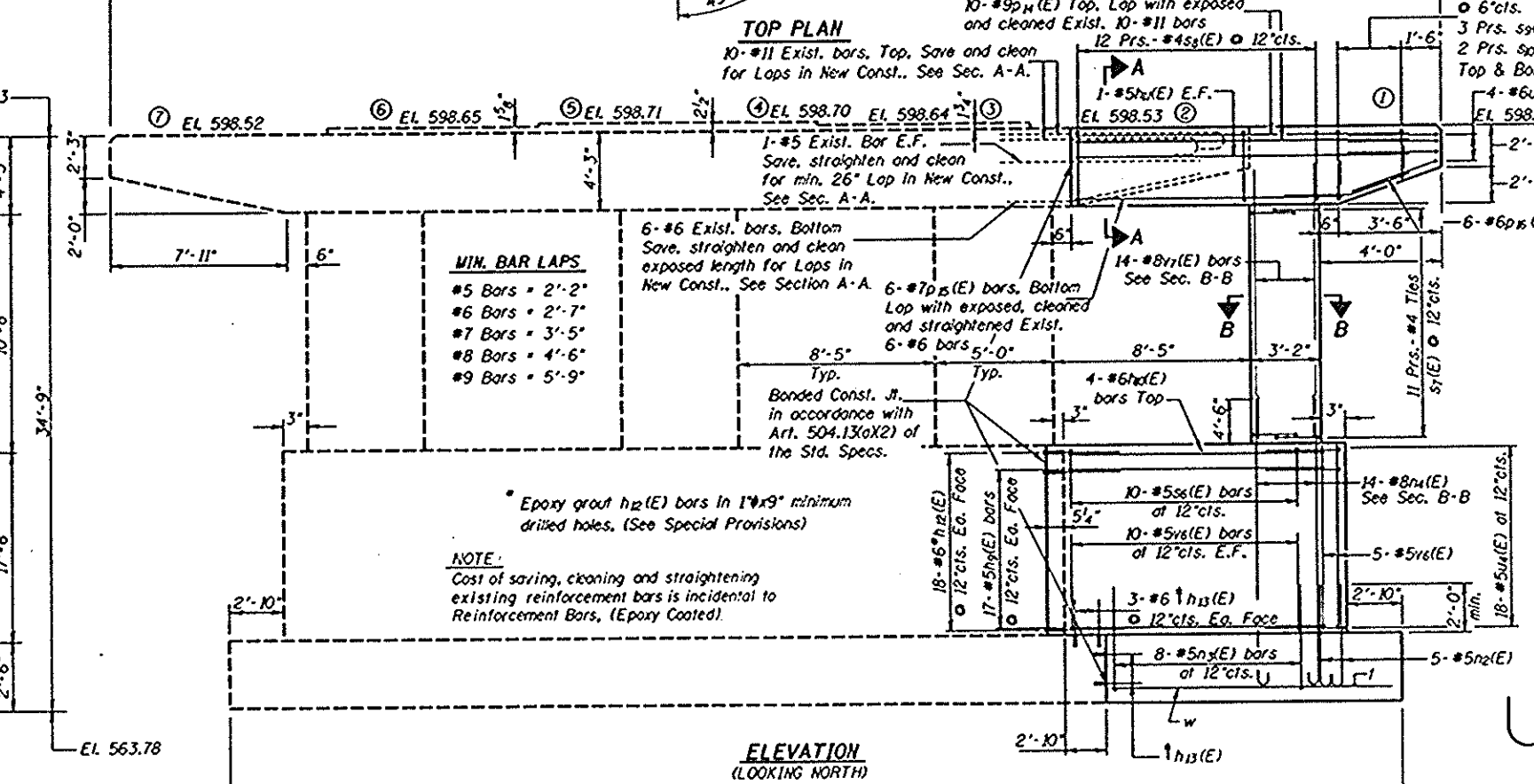
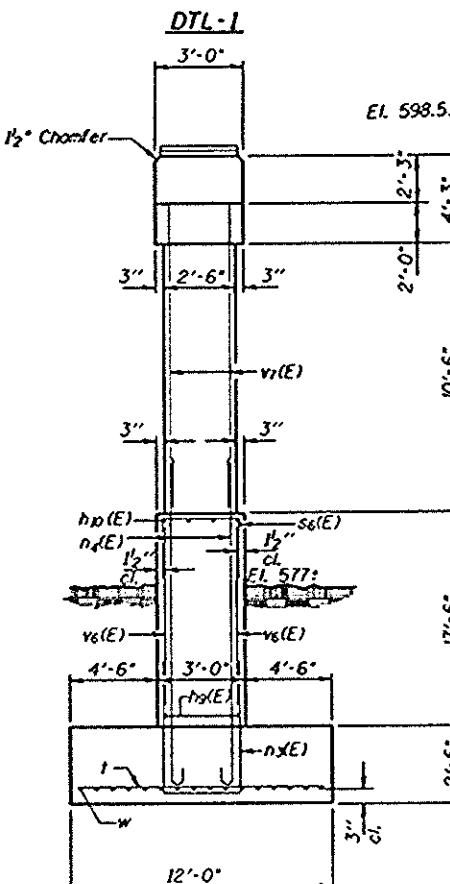
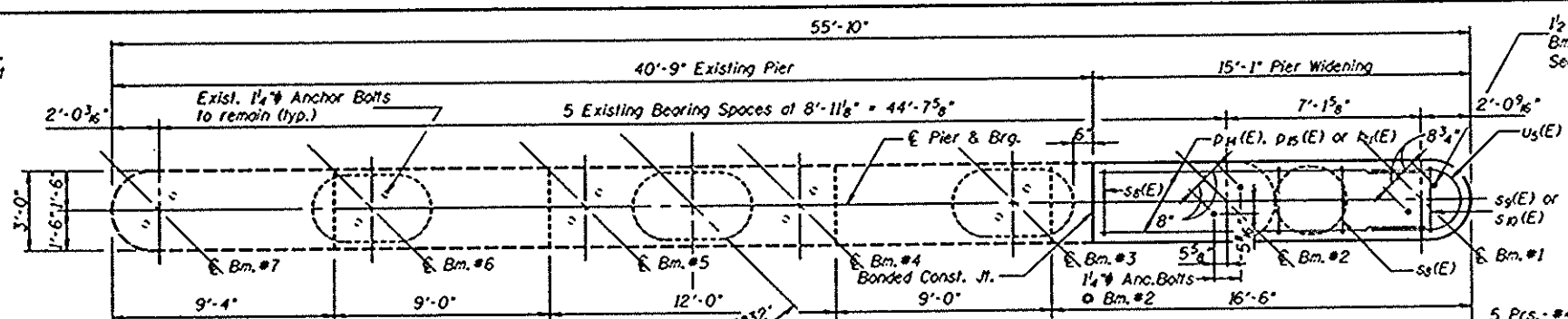
ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	45.5
Furnishing Aggregate	Tons	170

DRAINAGE TROUGH REMOVAL DETAILS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 1/2" chamfer except as noted.
 Temporary support system is required for supporting existing Bm. #2 during Pier Const.
 Est. Reaction = 20 kips

DATE	NO.	BY	CHKD.	REV.	SHEET NO. 30 OF 35 SHEETS
F.A.I. 55	32-11	GRUNDY	66	43	



- MIN. BAR LAPS**
- #5 Bars = 2'-2"
 - #6 Bars = 2'-7"
 - #7 Bars = 3'-5"
 - #8 Bars = 4'-6"
 - #9 Bars = 5'-9"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	34	#5	9'-11"	—
h2(E)	4	#6	9'-11"	—
h11(E)	2	#5	13'-5"	—
h2(E)	36	#6	3'-0"	—
h12(E)	30	#6	3'-0"	—
n1(E)	5	#5	4'-10"	U
n2(E)	8	#5	11'-3"	U
n1(E)	14	#8	25'-2"	U
p14(E)	10	#9	13'-6"	—
p15(E)	6	#7	11'-4"	—
p16(E)	6	#6	4'-0"	—
s6(E)	10	#5	6'-9"	U
s7(E)	22	#4	7'-10"	U
s8(E)	24	#4	13'-3"	U
s9(E)	12	#4	8'-5"	U
s10(E)	8	#4	7'-7"	U
u1	18	#6	11'-8"	—
u4(E)	18	#5	9'-3"	U
u5(E)	4	#6	10'-1"	U
v6(E)	25	#5	17'-3"	—
v7(E)	14	#8	14'-3"	—
w	16	#5	11'-4"	—
Class X Concrete			Cu. Yd.	44.4
Reinforcement Bars			Lbs.	500
Reinforcement Bars, Epoxy Coated			Lbs.	4,120
Epoxy Coated Concrete Removal			Cu. Yd.	2.8
Braced Excavation			Cu. Yd.	133
Temporary Support System			Each	1

Reinforcement Bars designated (E) shall be epoxy coated.

PIER NO. 1 (H.B. STR.)
 F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

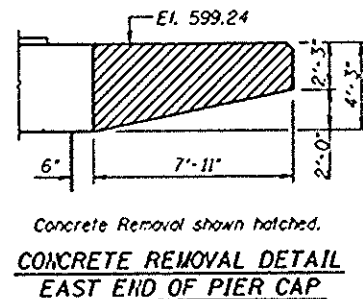
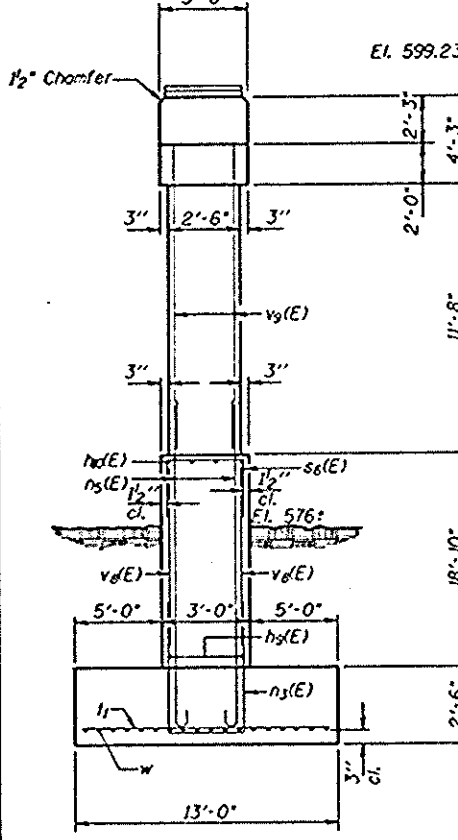
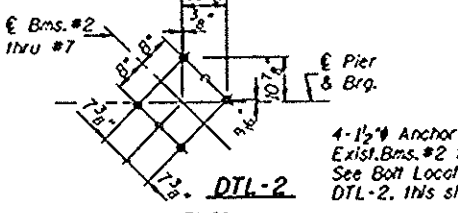
DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

P-24 6-1-89

NOTES:

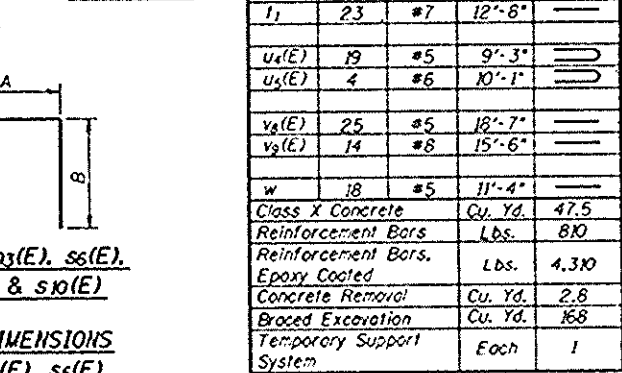
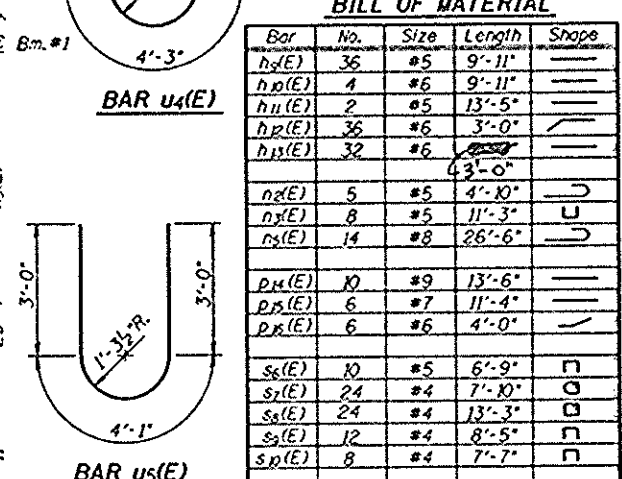
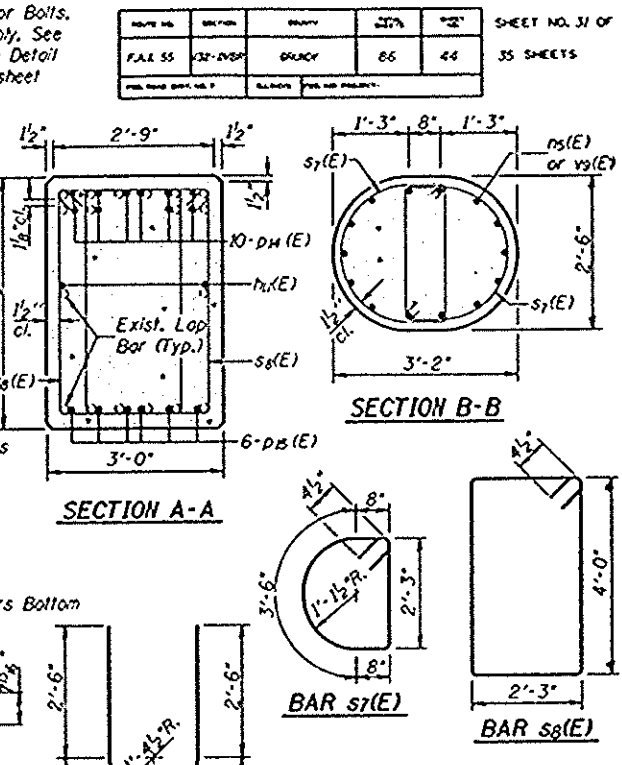
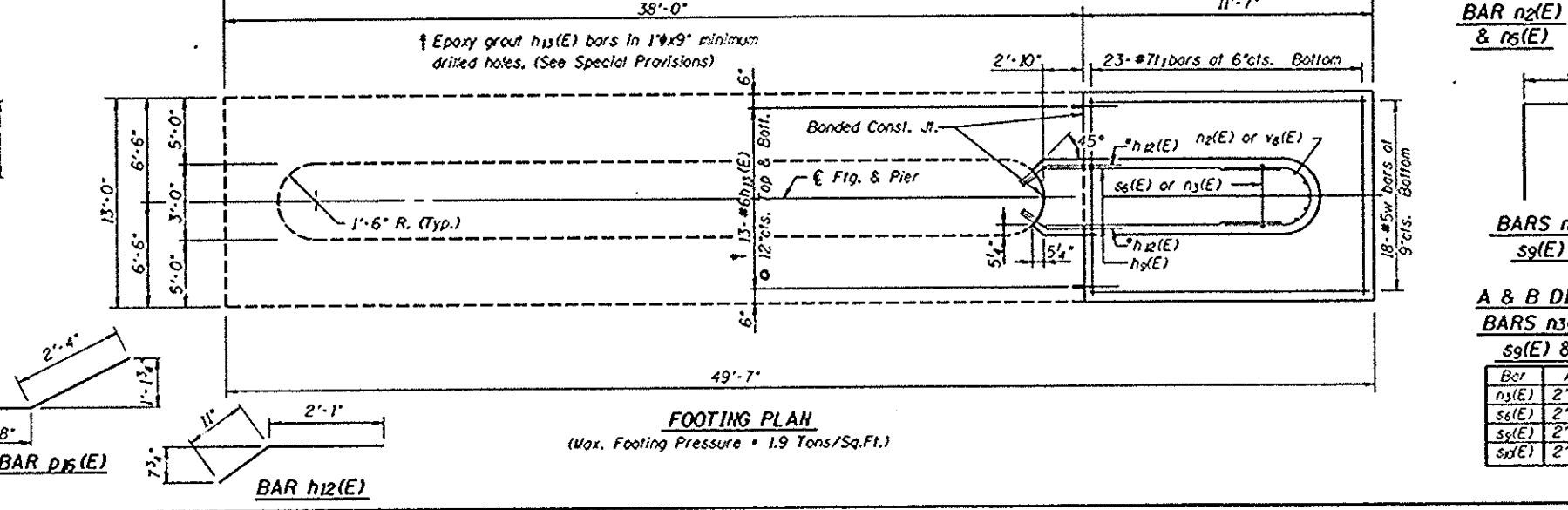
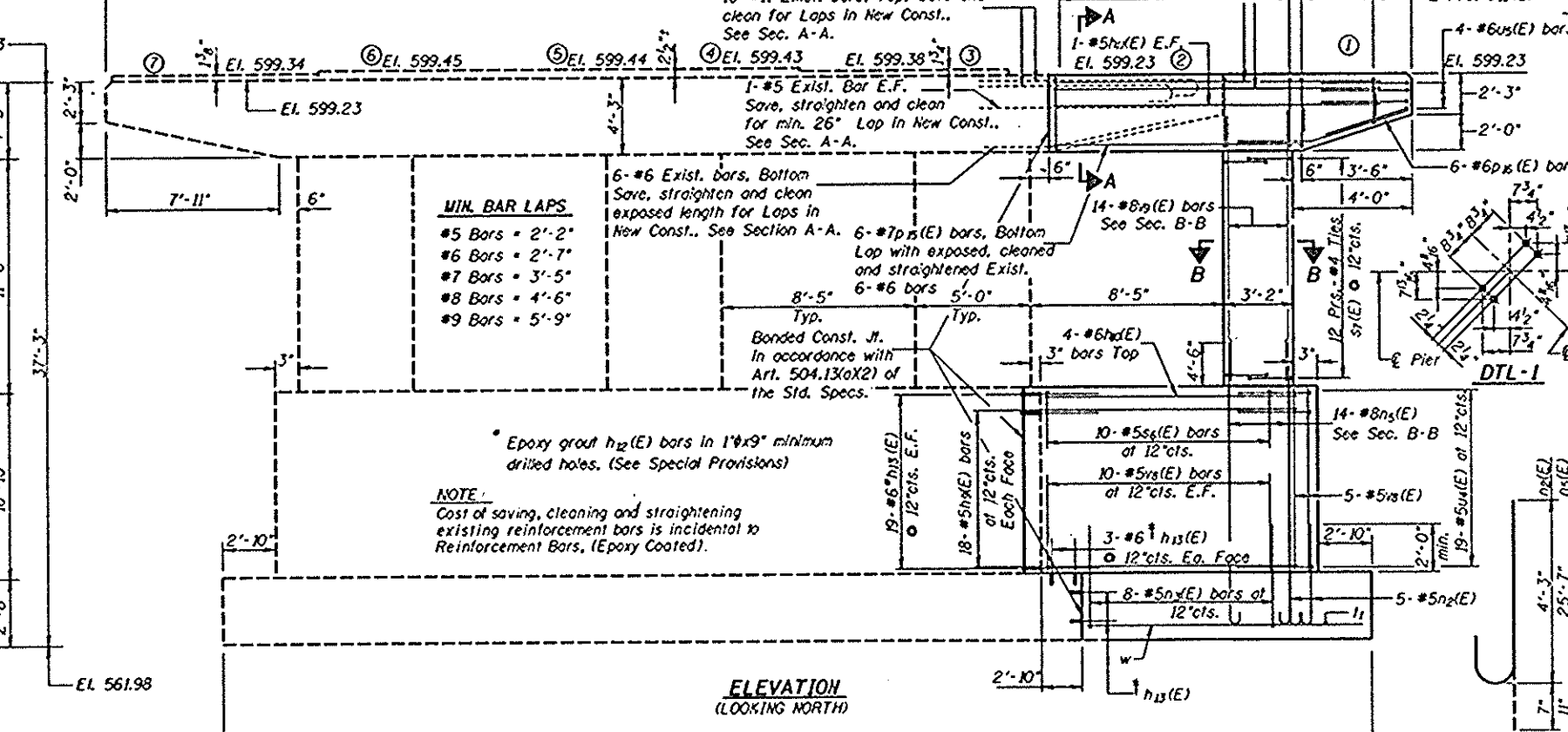
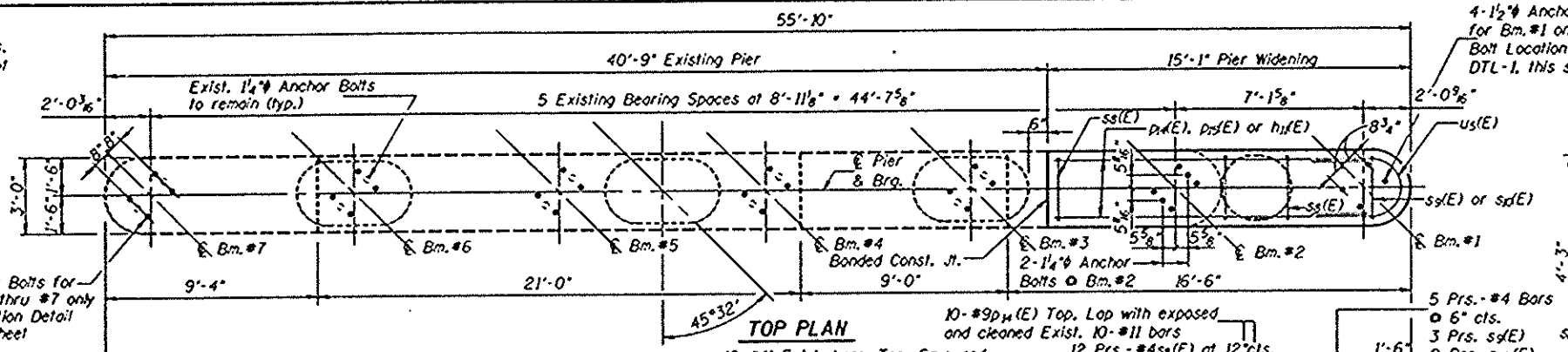
Space Reinforcement in cap to miss anchor bolts. All edges shall have standard 1/2" chamfer except as noted. Temporary support system is required for supporting existing Bm. #2 during Pier Const. Est. Reaction = 20 kips

DATE	BY	CHKD	APP'D	SHEET NO. 31 OF 35 SHEETS
F.A.I. 55	J.S.P.	K.L.F.	E.S.	



DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

P-24 6-1-89



**A & B DIMENSIONS
BARS n3(E), s6(E), s9(E) & s10(E)**

Bar	A	B
n3(E)	2'-9"	4'-3"
s6(E)	2'-9"	2'-0"
s9(E)	2'-9"	2'-10"
sd(E)	2'-9"	2'-5"

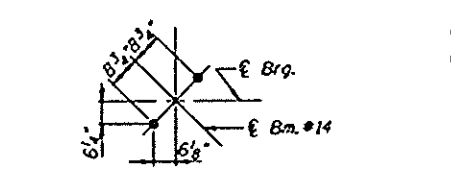
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2(E)	36	#5	9'-11"	—
h10(E)	4	#6	9'-11"	—
h11(E)	2	#5	13'-5"	—
h12(E)	36	#6	3'-0"	—
h13(E)	32	#6	3'-0"	—
h14(E)	4	#5	4'-10"	—
h15(E)	8	#5	11'-3"	—
h16(E)	14	#8	26'-6"	—
h17(E)	10	#9	13'-6"	—
h18(E)	6	#7	11'-4"	—
h19(E)	6	#6	4'-0"	—
h20(E)	10	#5	6'-9"	—
h21(E)	24	#4	7'-10"	—
h22(E)	24	#4	13'-3"	—
h23(E)	12	#4	8'-5"	—
h24(E)	8	#4	7'-7"	—
h25(E)	23	#7	12'-8"	—
h26(E)	19	#5	9'-3"	—
h27(E)	4	#6	10'-1"	—
h28(E)	25	#5	18'-7"	—
h29(E)	14	#8	15'-6"	—
h30(E)	18	#5	11'-4"	—
h31(E)	Class X Concrete	Qty. Yd.	47.5	—
h32(E)	Reinforcement Bars	Lbs.	810	—
h33(E)	Reinforcement Bars, Epoxy Coated	Lbs.	4,310	—
h34(E)	Concrete Removal	Cu. Yd.	2.8	—
h35(E)	Brood Excavation	Cu. Yd.	168	—
h36(E)	Temporary Support System	Each	1	—

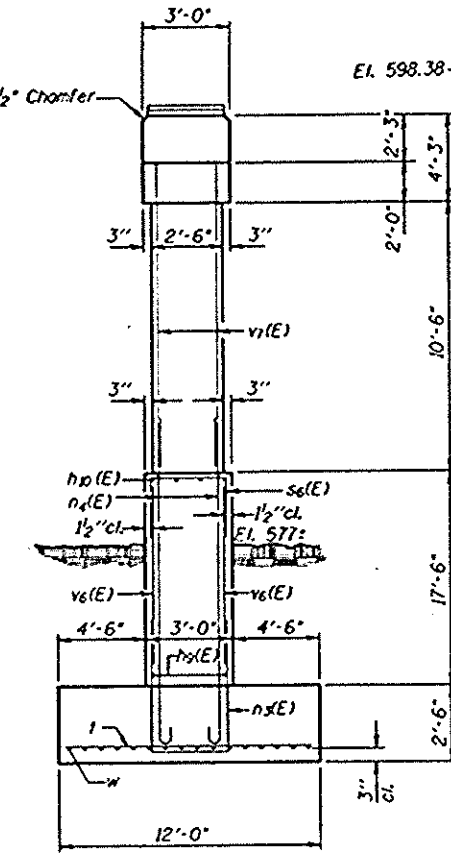
**PIER NO. 2 (I.B. STR.)
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY**

NOTES:
 Space Reinforcement in cap to miss anchor bolts.
 All edges shall have standard 1/2" chamfer except as noted.
 Temporary support system is required for supporting existing Bm. #13 during Pier Const.
 Est. Reaction = 20 kips

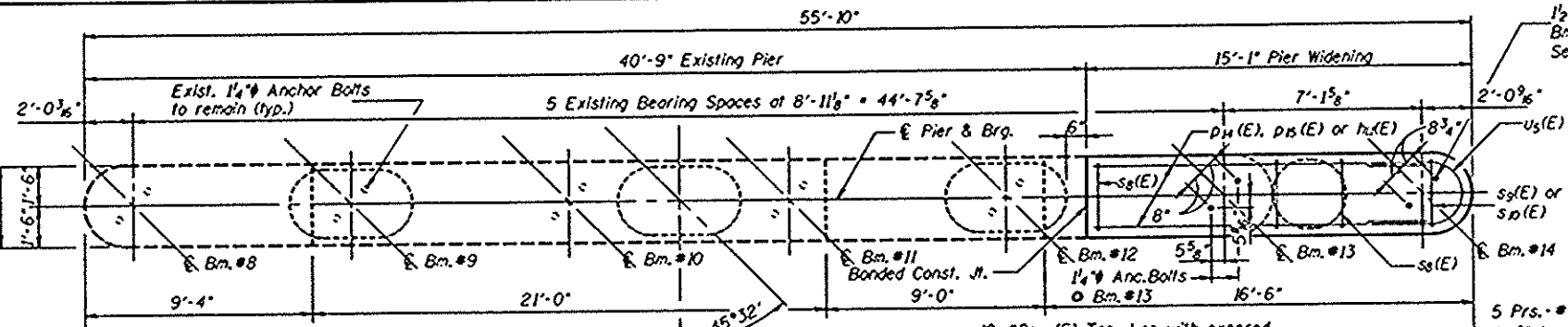
PROJECT NO.	SECTION	DATE	SCALE	SHEET NO. 32 OF 35 SHEETS
F.A.I. 55	32-1	06/86	1/4" = 1'-0"	



DTL-1



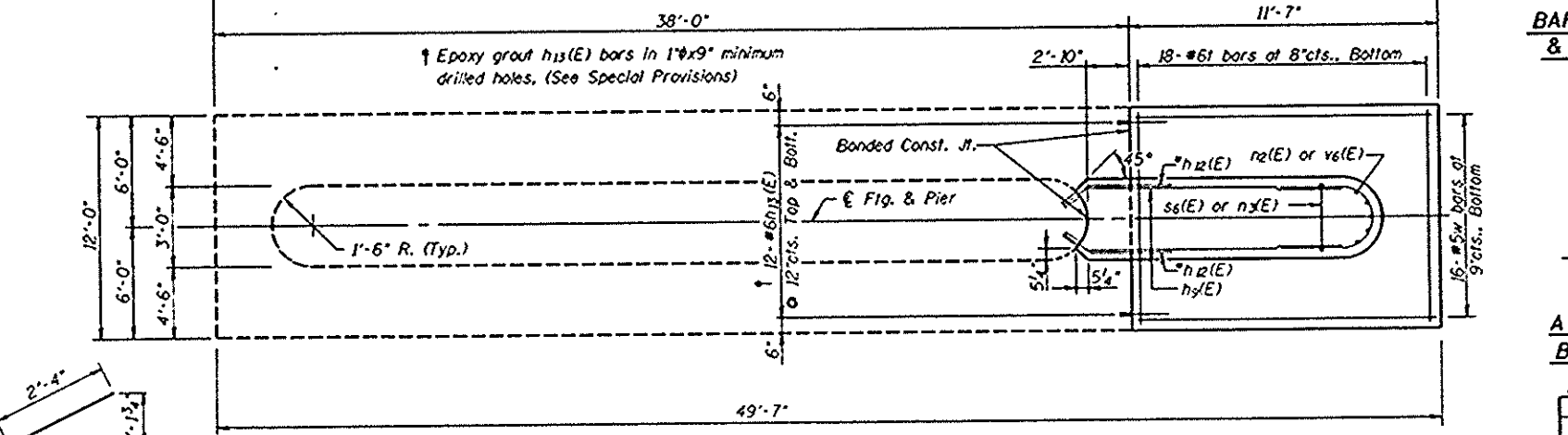
TOP PLAN



MIN. BAR LAPS
 #5 Bars = 2'-2"
 #6 Bars = 2'-7"
 #7 Bars = 3'-5"
 #8 Bars = 4'-6"
 #9 Bars = 5'-9"

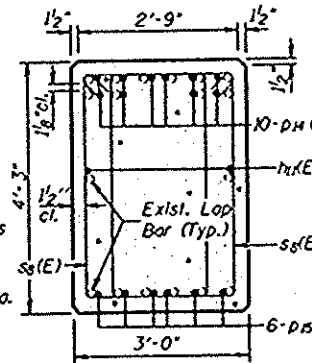
NOTE:
 Cost of sawing, cleaning and straightening existing reinforcement bars is incidental to Reinforcement Bars, (Epoxy Coated)

ELEVATION (LOOKING SOUTH)

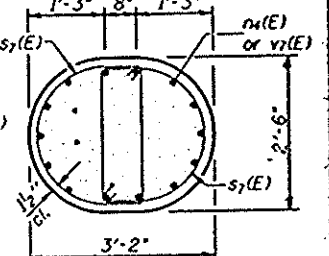


FOOTING PLAN

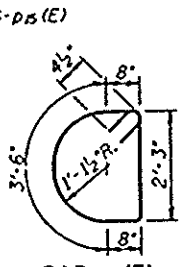
(Max. Footing Pressure = 1.6 Tons/Sq.Ft.)



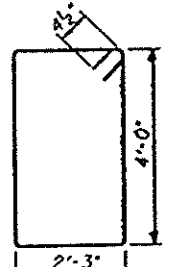
SECTION A-A



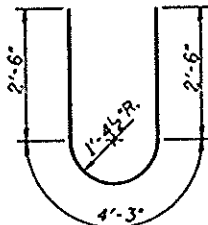
SECTION B-B



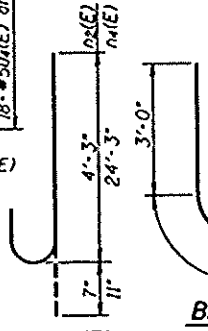
BAR s7(E)



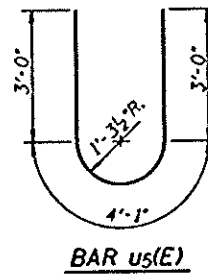
BAR s9(E)



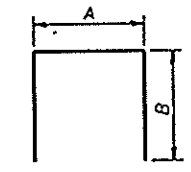
BAR u4(E)



BAR n2(E) & n4(E)



BAR u5(E)



BARS n3(E), s6(E), s9(E) & s10(E)

A & B DIMENSIONS

Bar	A	B
n3(E)	2'-9"	4'-3"
s6(E)	2'-9"	2'-0"
s9(E)	2'-9"	2'-10"
s10(E)	2'-9"	2'-5"

BILL OF MATERIAL

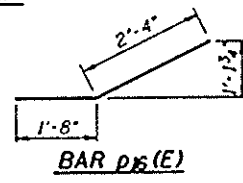
Bar	No.	Size	Length	Shape
h12(E)	34	#5	9'-11"	—
h10(E)	4	#6	9'-11"	—
h11(E)	2	#5	13'-5"	—
h12(E)	36	#6	3'-0"	—
h13(E)	30	#6	3'-0"	—
n2(E)	5	#5	4'-10"	U
n3(E)	8	#5	11'-3"	U
n4(E)	14	#8	25'-2"	U
p14(E)	10	#9	13'-6"	—
p15(E)	6	#7	11'-4"	—
p16(E)	6	#6	4'-0"	—
s4(E)	10	#5	6'-9"	□
s7(E)	22	#4	7'-10"	□
s8(E)	24	#4	13'-3"	□
s9(E)	12	#4	8'-5"	□
s10(E)	8	#4	7'-7"	□
u4(E)	18	#6	11'-8"	—
u5(E)	4	#6	10'-1"	—
v6(E)	25	#5	17'-3"	—
v7(E)	14	#8	14'-3"	—
w	16	#5	11'-4"	—
Class X Concrete		Cu. Yd.	44.4	
Reinforcement Bars		Lbs.	500	
Reinforcement Bars, Epoxy Coated		Lbs.	4,120	
Concrete Removal		Cu. Yd.	2.8	
Braced Excavation		Cu. Yd.	135	
Temporary Support System		Each	1	

PIER NO. 1 (S.B. STR.)

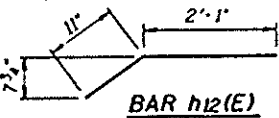
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
 SECTION (32-1) VBR
 GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

P-24 6-1-89



BAR p14(E)



BAR h12(E)

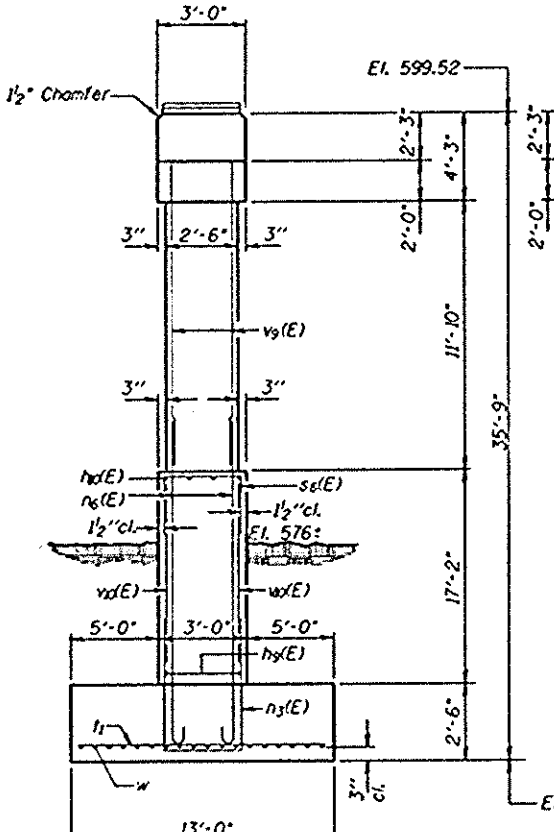
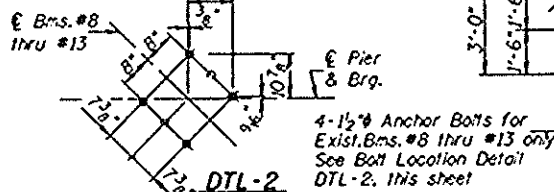
K.H.L. & S. V. 1988

NOTES:

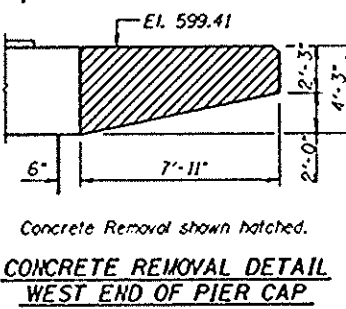
Space Reinforcement in cap to miss anchor bolts. All edges shall have standard 1/2" chamfer except as noted. Temporary support system is required for supporting existing Bm. #13 during Pier Const. Est. Reaction = 20 kips

4-1/2" Anchor Bolts for Exst. Bms. #8 thru #13 only See Bolt Location Detail DTL-2, this sheet

DATE	BY	CHKD	APP'D	SHEET NO.	OF
F.A.I. 55	32-1	DRACY	65	46	35 SHEETS



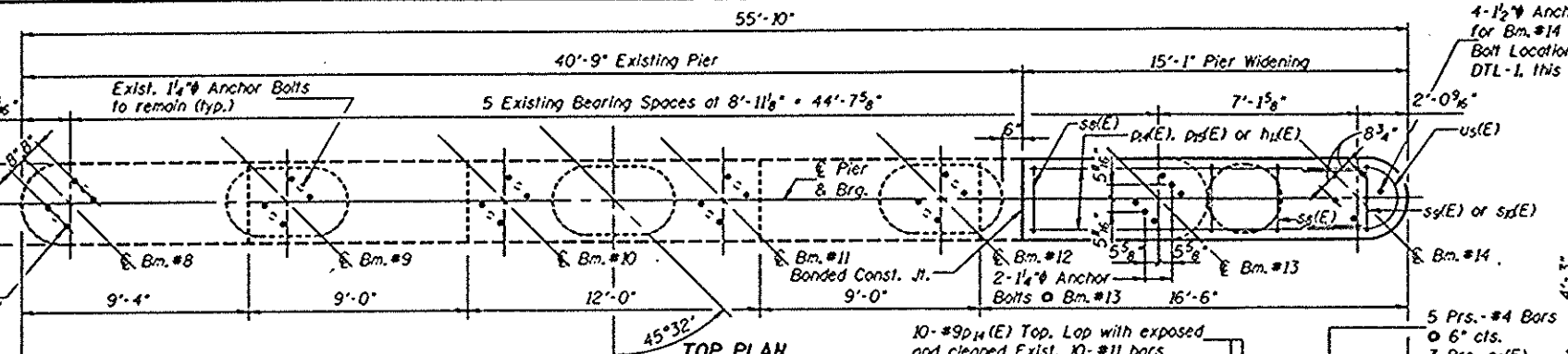
END VIEW



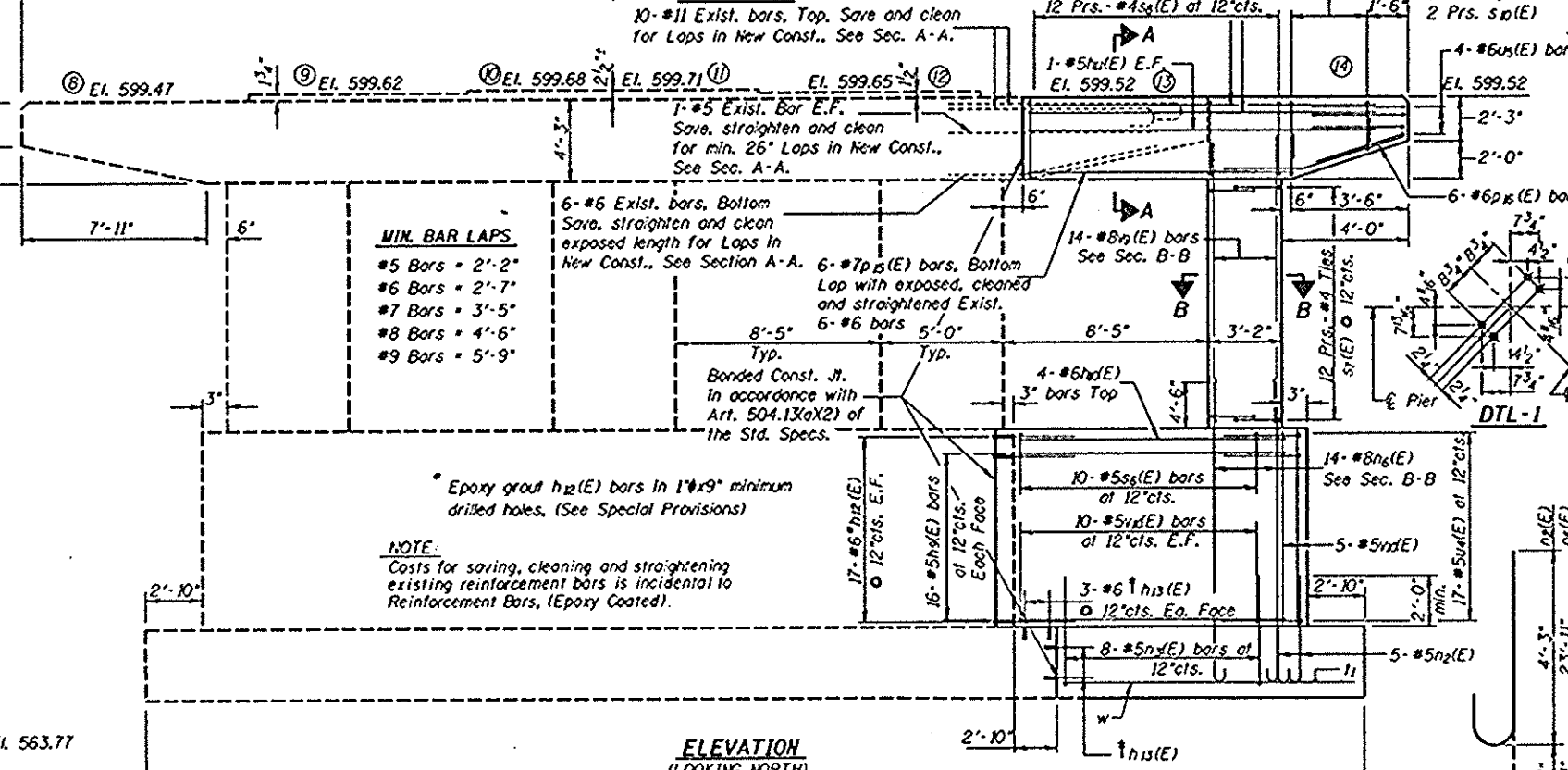
CONCRETE REMOVAL DETAIL WEST END OF PIER CAP

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

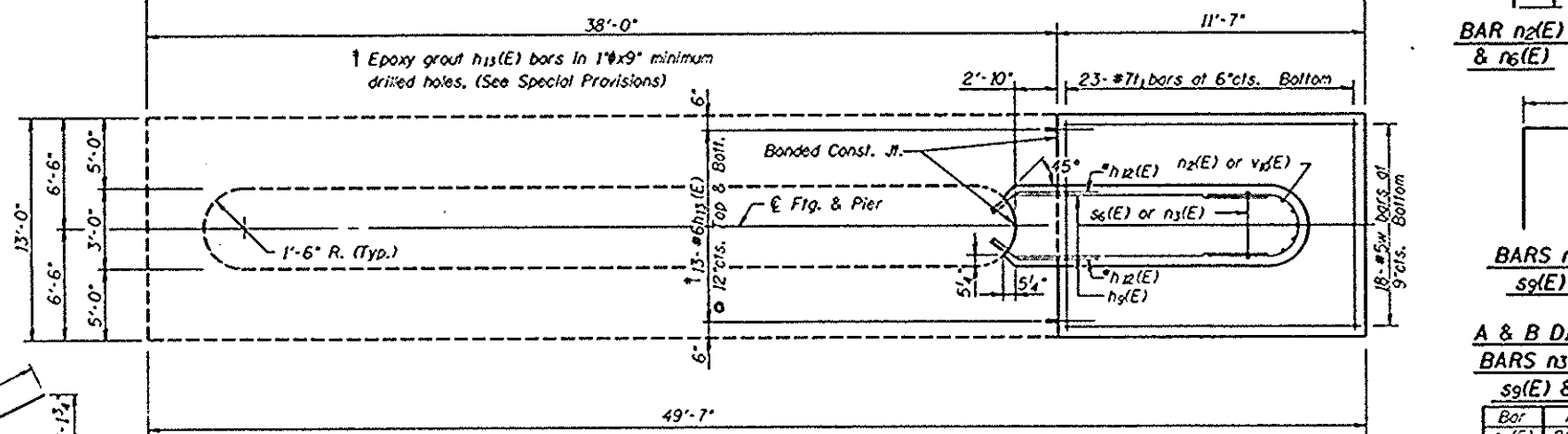
P-24 6-1-89



TOP PLAN

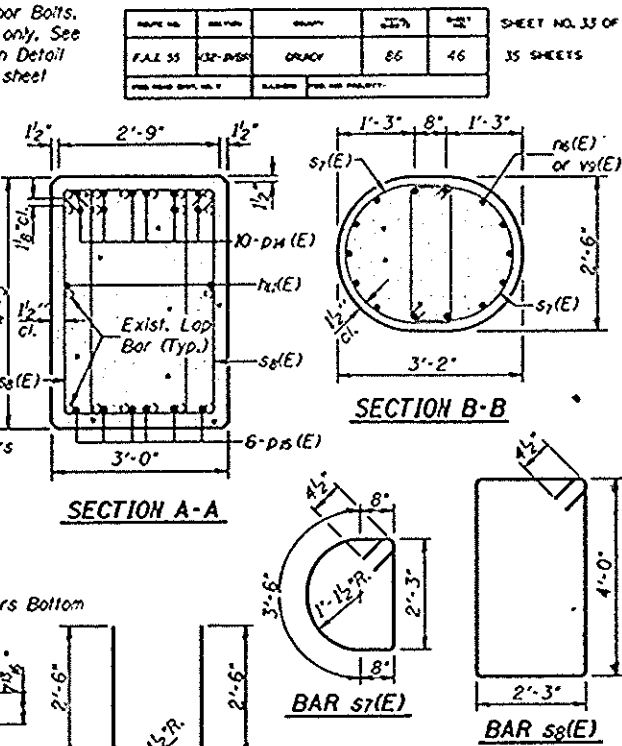


ELEVATION (LOOKING NORTH)



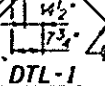
FOOTING PLAN

(Max. Footing Pressure = 1.9 Tons/Sq.Ft.)

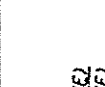


SECTION A-A

SECTION B-B



DTL-1



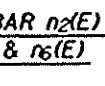
BAR n2(E) & n6(E)



BAR u4(E)



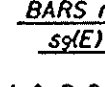
BAR u5(E)



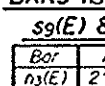
BAR n3(E), s6(E), s9(E) & s10(E)



A & B DIMENSIONS



BAR n3(E), s6(E), s9(E) & s10(E)



BAR n3(E), s6(E), s9(E) & s10(E)

Bar	A	B
n3(E)	2'-9"	4'-3"
s6(E)	2'-9"	2'-10"
s9(E)	2'-9"	2'-10"
s10(E)	2'-9"	2'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2(E)	32	#5	9'-11"	—
h10(E)	4	#6	9'-11"	—
h11(E)	2	#5	13'-5"	—
h12(E)	34	#6	3'-0"	—
h13(E)	32	#6	4'-3"	—
n2(E)	5	#5	4'-10"	—
n4(E)	8	#5	11'-3"	U
n6(E)	14	#8	24'-10"	U
PH(E)	10	#9	13'-6"	—
PS(E)	6	#7	11'-4"	—
PK(E)	6	#6	4'-0"	—
s1(E)	10	#5	6'-9"	□
s7(E)	24	#4	7'-10"	□
s8(E)	24	#4	13'-3"	□
s9(E)	12	#4	8'-5"	□
s10(E)	8	#4	7'-7"	□
u1	23	#7	12'-8"	—
u4(E)	17	#5	9'-3"	—
u5(E)	4	#6	10'-1"	—
v2(E)	14	#8	15'-6"	—
v7(E)	25	#5	16'-11"	—
w	19	#5	11'-4"	—
Class X Concrete			Cu. Yd.	45.4
Reinforcement Bars			Lbs.	810
Reinforcement Bars, Epoxy Coated			Lbs.	4,120
Concrete Removal			Cu. Yd.	2.8
Braced Excavation			Cu. Yd.	146
Temporary Support System			Each	1

Reinforcement Bars designated (E) shall be epoxy coated.

PIER NO. 2 (S.B. STR.)
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-1) VBR
GRUNDY COUNTY

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Three Materials
SW1/4 NW1/4 SECTION 26 T22N R2E 37W
Sh. 1 of 2
Date 10/31/32

PROJECT BRIDGE 032-0007 & 032-0008
DATE 10/31/32
BORED BY E. WHITTINGTON
CHECKED BY E. RICHARD

COUNTY Grundy		Part Wet Bl. at Compl		Part Wet Bl. at Compl	
Boring No. 1	Sta 25101 E. A.W.T.	Bl.	W	Bl.	W
0/8 ON CONTROLLER	0/8 ON CONTROLLER	1/2 ft	1/2 ft	1/2 ft	1/2 ft
Ground Surface 582.0					
Very Stiff Gray & Brown to Black LOAM (FILL)					
589.4					
Stiff Gray SANDY LOAM (FILL)					
594.4					
Medium Gray SAND Interbedded with Brown SANDY LOAM (FILL)					
598.4					
Medium Gray SANDY LOAM (FILL)					
594.4					

3-Std Penetr Test: 2" O.D. Sampler, 1400 Hammer Falling 30" (Type Fall, 3-Pulse 6-Shear 2-Estimated P-Penetrometer)

COUNTY Grundy		Part Wet Bl. at Compl		Part Wet Bl. at Compl	
Boring No. 1	Sta 25101 E. A.W.T.	Bl.	W	Bl.	W
0/8 ON CONTROLLER	0/8 ON CONTROLLER	1/2 ft	1/2 ft	1/2 ft	1/2 ft
Dense Gray SILT					
552.9					
Dense Gray SAND					
548.9					

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Three Materials
SW1/4 NW1/4 SECTION 26 T22N R2E 37W
Sh. 1 of 2
Date 11/01/32

PROJECT BRIDGES 032-0007 & 032-0008
DATE 11/01/32
BORED BY E. WHITTINGTON
CHECKED BY E. RICHARD

COUNTY Grundy		Part Wet Bl. at Compl		Part Wet Bl. at Compl	
Boring No. 2	Sta 25101 E. A.W.T.	Bl.	W	Bl.	W
0/8 ON CONTROLLER	0/8 ON CONTROLLER	1/2 ft	1/2 ft	1/2 ft	1/2 ft
Ground Surface 582.0					
Stiff Brown SAND to SANDY LOAM (FILL)					
594.8					
Stiff Gray & Brown SILTY CLAY LOAM TILL (FILL)					
599.8					
Loose Gray SAND					
593.8					
Medium Black SANDY LOAM					
570.2					
Loose Gray SAND					
567.2					
Hard Gray SILTY CLAY LOAM TILL					
548.2					
Stiff Gray CLAY					
540.2					

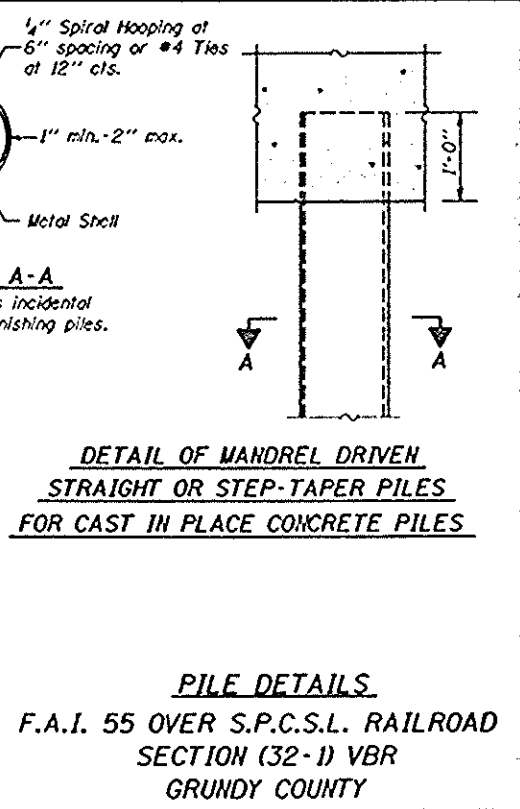
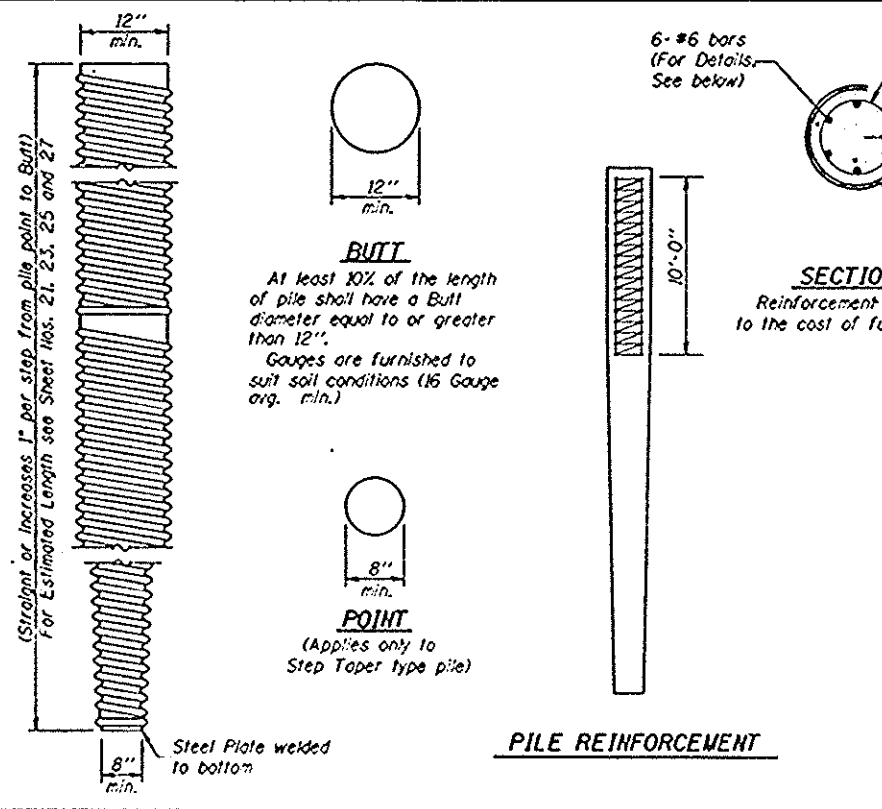
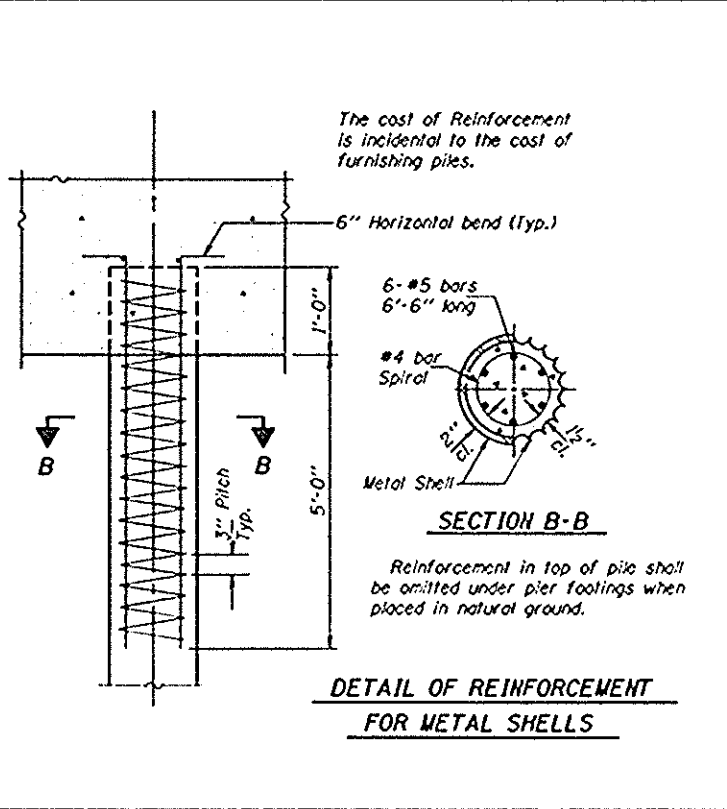
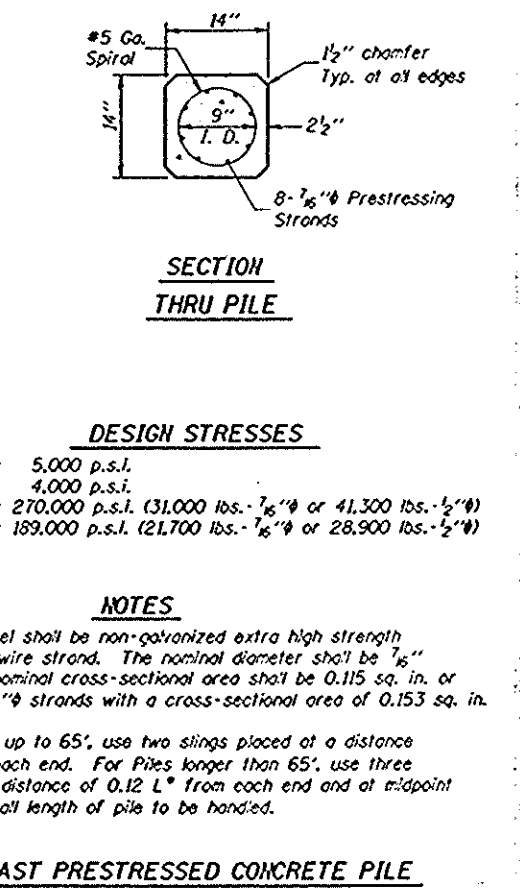
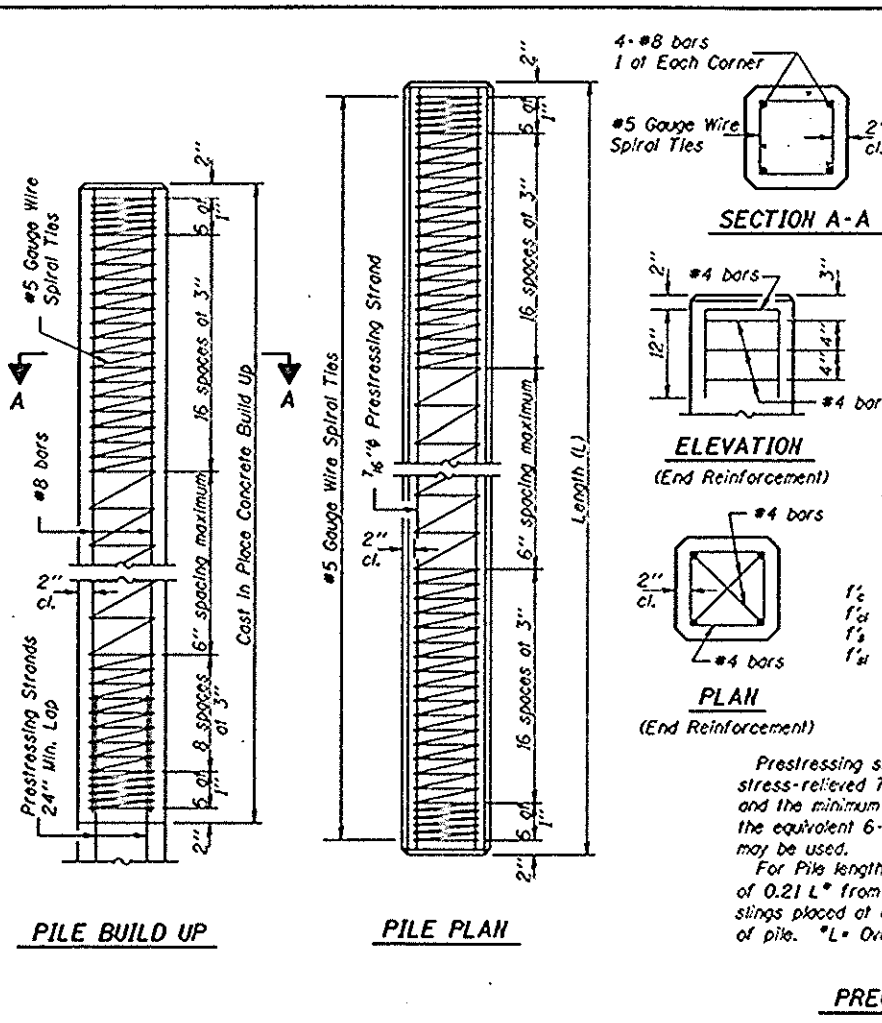
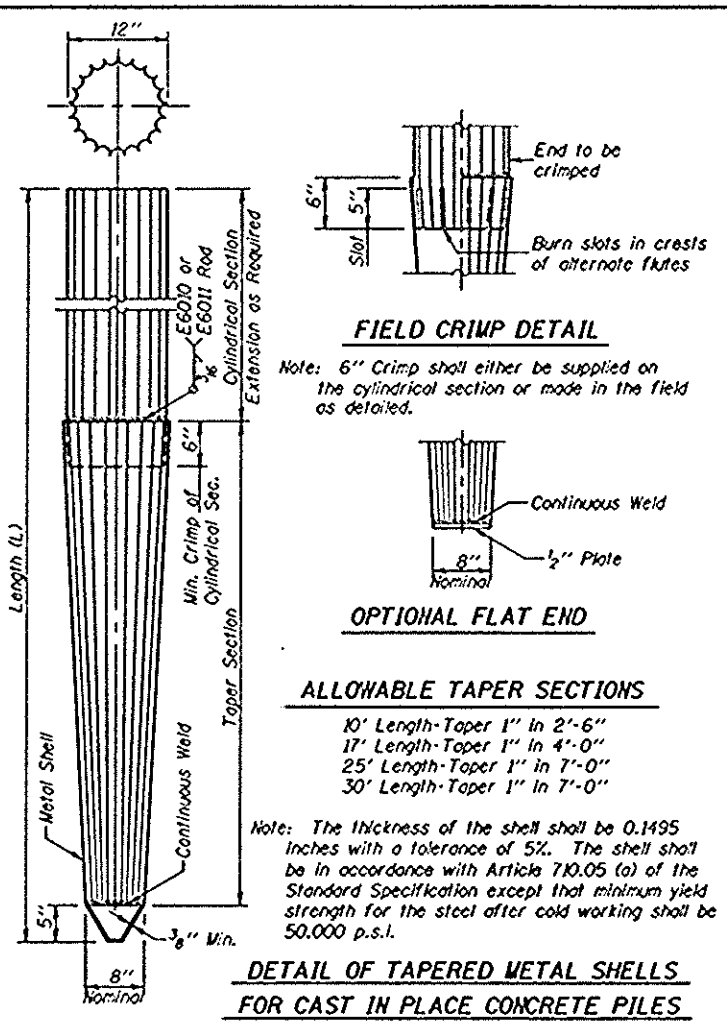
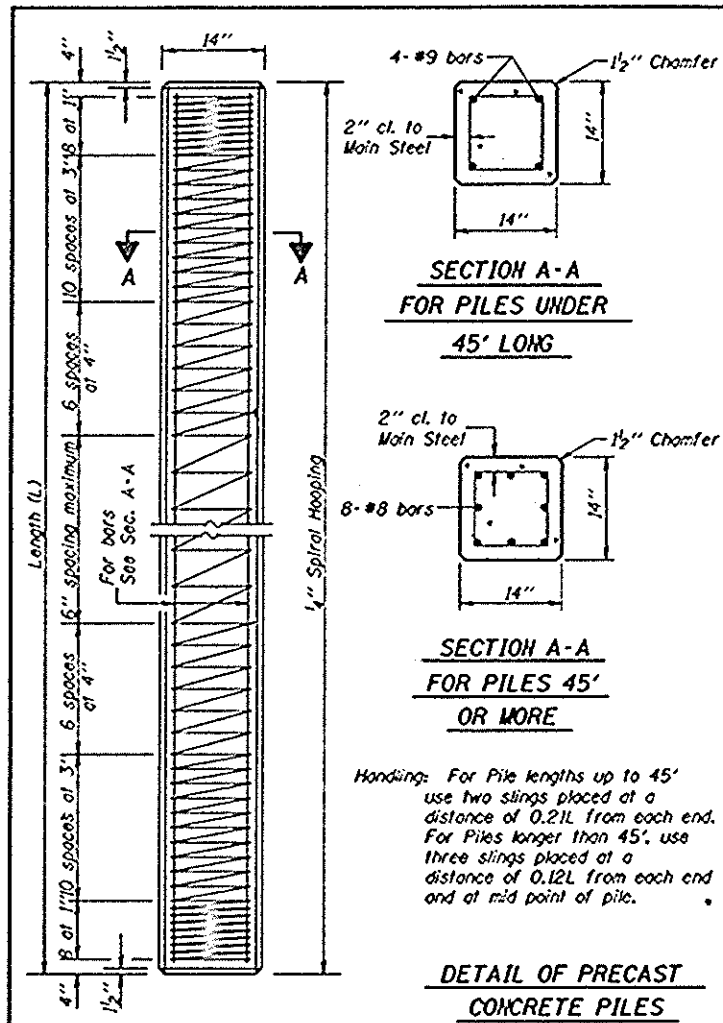
3-Std Penetr Test: 2" O.D. Sampler, 1400 Hammer Falling 30" (Type Fall, 3-Pulse 6-Shear 2-Estimated P-Penetrometer)

COUNTY Grundy		Part Wet Bl. at Compl		Part Wet Bl. at Compl	
Boring No. 2	Sta 25101 E. A.W.T.	Bl.	W	Bl.	W
0/8 ON CONTROLLER	0/8 ON CONTROLLER	1/2 ft	1/2 ft	1/2 ft	1/2 ft
Stiff Gray CLAY					
548.2					
Medium Gray SILT					
546.2					
Loose Gray Wet SILT					
541.8					

DESIGNED: V.S.N.
CHECKED: K.L.F.
DRAWN: J.O.B.
CHECKED: V.S.N./K.L.F.

BORING LOGS
F.A.I. 55 OVER S.P.C.S.L. RAILROAD
SECTION (32-I)VBR
GRUNDY COUNTY

DATE	REV.	BY	CHK.	APP.	SHEET NO. 35 OF 35 SHEETS
F.A.I. 55	32-1008	CHADY	66	48	



DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

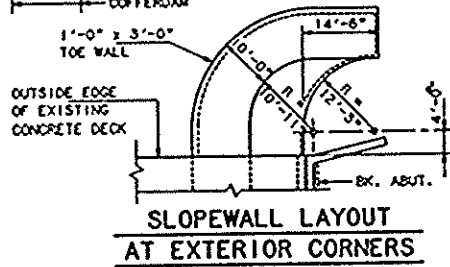
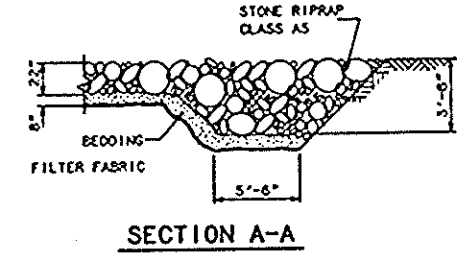
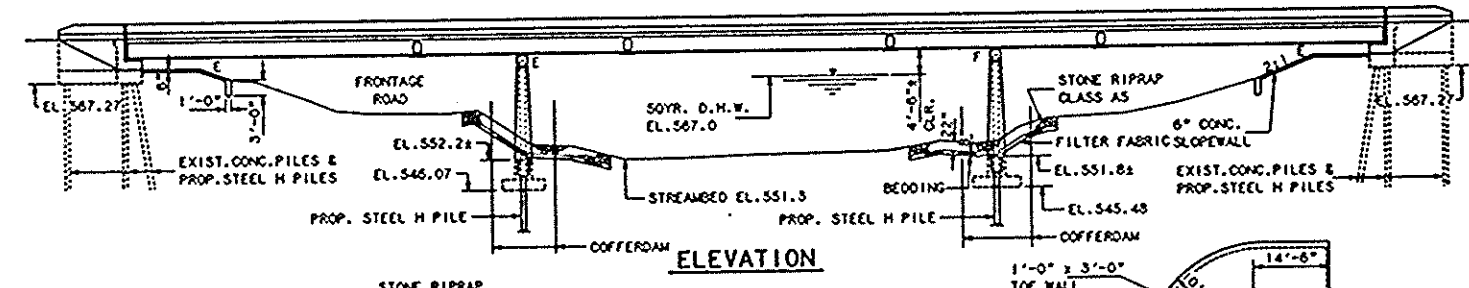
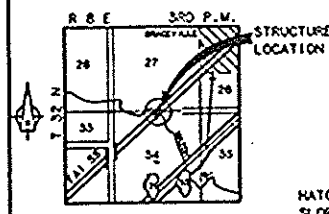
X-3 8-30-83

DATE: FEB 20 1992

BENCHMARK: TOP WINDMILL EXIST. S.B. STRUCTURE STA. 1005+22, 14.8' RT. EL. 577.93

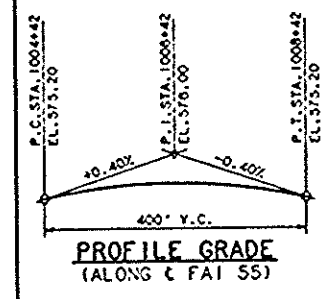
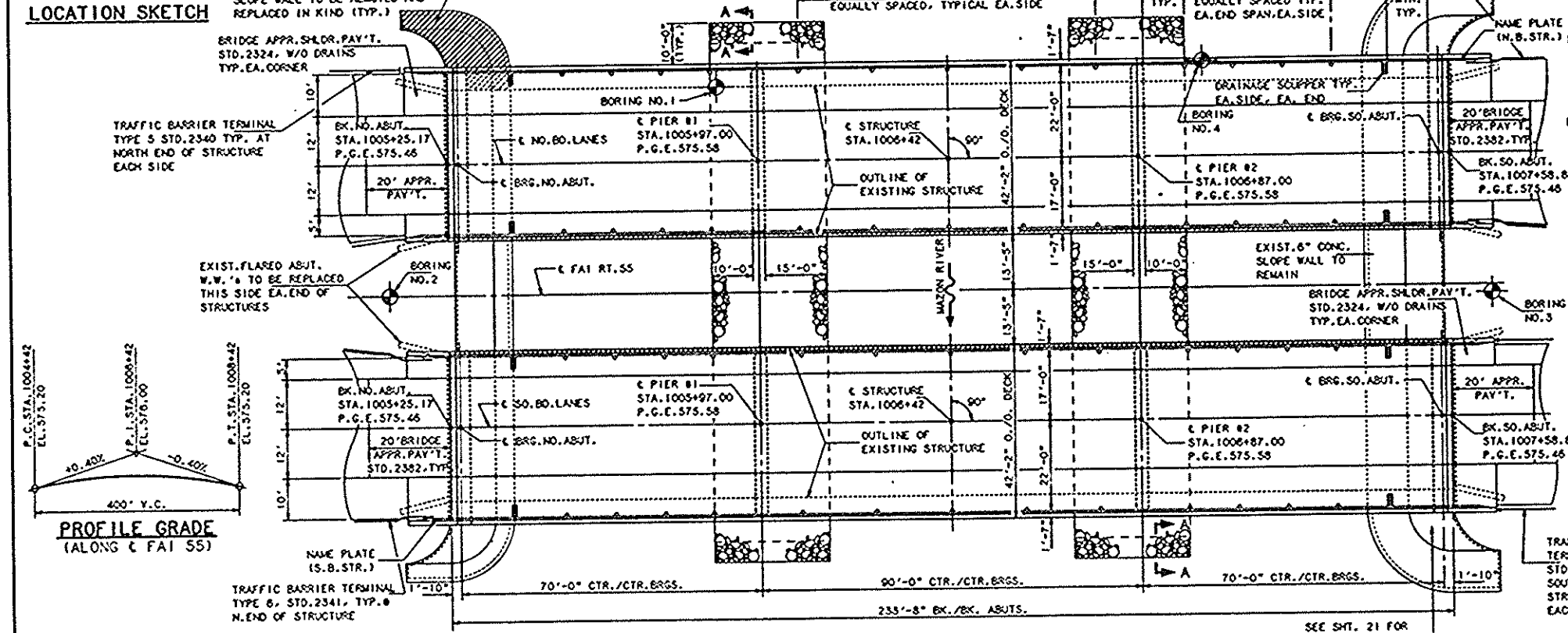
EXISTING STRUCTURE:
STRUCTURES NO. 032-0005 & 032-0006 BUILT IN 1955 AS F.A. RTE. 77, SEC. 91-B-1, STA. 1006+42.00 OVER THE MAZON RIVER IN GRUNDY COUNTY. THE SUPERSTRUCTURES CONSIST OF THREE SPANS OF CONTINUOUS WF GIRDERS MEASURING 70'-0", 90'-0" & 70'-0" WITH A TOTAL STRUCTURE LENGTH OF 233'-8" BK./BK. OF ABUTMENTS AND AN OVERALL STRUCTURE WIDTH 0'-0". R.C. DECK OF 36"-0" EACH.
THE SUBSTRUCTURES CONSIST OF TWO SOLID R.C. PIERS ON SPREAD FOOTINGS AND SPILL THRU PILE BENT ABUTMENTS.
CONTRACTOR TO REMOVE AND DISPOSE OF THE EXISTING DECK AND PORTIONS OF THE SUBSTRUCTURE AS DETAILED HEREIN AND IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS.
TRAFFIC TO BE DETOURED VIA MEDIAN CROSS OVER DURING CONSTRUCTION OF THE STRUCTURES RESPECTIVELY.

SALVAGE: NO SALVAGE



GENERAL NOTES:

- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8"Ø. OPEN HOLES 15/16"Ø. UNLESS OTHERWISE NOTED.
- (1) CALCULATED WEIGHT OF NEW STRUCTURAL STEEL (A270, GR. 50) = 128,300 LBS.
- THE FIRST TWO COATS OF LEAD AND CHROMATE FREE ALKYLID PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL.
STRUCTURAL STEEL SHALL ONLY BE CLEANED AND PAINTED AS REQUIRED BY THE SPECIAL PROVISION "CLEANING AND PAINTING NEW STEEL AND ADJACENT AREAS OF EXISTING STEEL STRUCTURES." PRIOR TO POURING THE NEW CONCRETE FOR THE DECK. ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF FLANGES OF STRINGERS (GIRDERS). THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-11 FOR POWER TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING. COST SHALL BE INCIDENTAL TO CONCRETE REMOVAL.
- ALL CONTACT SURFACES BETWEEN NEW STRUCTURAL STEEL OF JOINTS FOR THE BOLTED FIELD SPLICES AND DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.
- ALL CONTACT SURFACE AREAS OF THE EXISTING STRUCTURAL STEEL TO WHICH THE NEW STEEL IS TO BE CONNECTED SHALL BE FREE OF PAINT OR LACQUER.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF THE BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
- ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
- THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL OF THE WIDE FLANGE BEAMS EXCEPT FILL PLATES.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.
- LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT BID PRICE FOR THE WORK.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS SHOWN ON THE DETAILS SHALL BE PROVIDED AND PLACED, AS DETAILED.
- THE CONTRACTOR SHALL DRIVE ONE (1) STEEL TEST PILE AT EACH ABUTMENT IN PERMANENT LOCATIONS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
- THE BRIDGE SEAT SEALER SHALL BE APPLIED AT THE ABUTMENTS TO THE TOP OF THE ABUTMENT SEATS IN ACCORDANCE WITH THE PROVISIONS OF BSPI. ESTIMATED QUANTITY OF BRIDGE SEAT SEALER = 422 SQ. FT.
- EXPANSION BOLTS SHALL BE APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD OF 4,000 LBS., 3/4"Ø X 6" AND 4" HOOKED BOLTS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR WILL BE REQUIRED TO MARK ON TOP OF THE CONCRETE DECK, LOCATIONS OF THE TOP FLANGES OF ALL THE BEAM BEAMS PRIOR TO ANY REMOVAL OF THE BRIDGE CONCRETE DECK. SAW CUTTING DIRECTLY OVER THE TOP OF THE BEAM FLANGES IS NOT PERMITTED. PEENING OF EXISTING COVER PLATE WELDS IS REQUIRED BEFORE REMOVAL OF EXISTING CONCRETE DECK. (SEE SPECIAL PROVISIONS).



STATION 1006+42.00 BUILT 199 BY STATE OF ILLINOIS F.A. 1, RT. 55 SEC. 132-11BR F.A. PROJ. DMS-60B(251) LOADING HS20 & ALT. STR. NO. #

NAME PLATE
(SEE STD. 2113)
032-0005 N.B. STRUCTURE
032-0006 S.B. STRUCTURE

DESIGNED: Y.S.N.
CHECKED: K.L.F.
DRAWN: K.H.L.
CHECKED: Y.S.N./K.L.F.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph L. Anderson
KENNETH L. FIGLI
LICENSED STRUCTURAL ENGINEER
IN ILLINOIS
NO. 081-002992, EXPIRES 11/30/92

WATERWAY INFORMATION

DRAINAGE AREA = 218.6 SQ. MI.		LOW GRADE EL. = 574.64 @ STA. 1003 + 00						
FLOOD YR.	Q C.F.S.	OPENING SQ. FT.	NAT. EXIST.	PROP.	H.W.E.	HEAD - FT. EXIST.	PROP.	HEADWATER EL.
DESIGN	50	10,024	1,979	N/C	567.0	1.1	N/C	568.1
BASE	100	11,275	2,119	N/C	567.7	1.2	N/C	568.9
OVERTOPPING	N/A							
MAX. CALC.	500	14,161	2,387	N/C	569.0	1.4	N/C	570.4

N/C = NO CHANGE

DESIGN STRESSES

- 1# = 20,000 PSI (NEW STR. STEEL)
- 1s = 18,000 PSI (EXIST. STR. STEEL)
- 1c = 3,500 PSI (NEW CONC.)
- 1r = 60,000 PSI (NEW REINFORCEMENT)

LOADING HS20-44 & ALTERNATE

ALLOW 25 PSF FOR FUTURE WEARING SURFACE
DESIGN SPECIFICATIONS: 1989 AASHTO WITH 1990 AND 1991 INTERIMS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
REMOVAL OF EXISTING CONCRETE DECK	EACH	2		2
CONCRETE REMOVAL	CU. YD.		82.4	82.4
STRUCTURE EXCAVATION	CU. YD.		300	300
COFFERDAM PIER 1	EACH		2	2
COFFERDAM PIER 2	EACH		2	2
COFFERDAM EXCAVATION	CU. YD.		80	80
FLOOR DRAINS	EACH	52		52
DRAINAGE SCUPPERS	EACH	8		8
NEOPRENE EXPANSION JOINT 2 1/2"	LIN. FT.	82		82
CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	601.9		601.9
PROTECTIVE COAT	SQ. YD.	2,442		2,442
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14		14
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	14		14
CLASS X CONCRETE	CU. YD.		149.0	149.0
FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM	1		1
JACK AND REMOVE EXISTING BEARINGS	EACH	24		24
REINFORCEMENT BARS, EPOXY COATED	POUND	141,440	17,360	158,800
STEEL PILES HP12 X 53	LIN. FT.		215	215
STEEL PILES HP12 X 74	LIN. FT.		148	148
TEST PILE STEEL HP12 X 53	EACH		2	2
NAME PLATES	EACH	2		2
EXPANSION BOLTS 3/4 INCH X 4 INCH	EACH		54	54
EXPANSION BOLTS 3/4 INCH X 6 INCH	EACH		54	54
REMOVAL OF EXISTING RIVETS	EACH	288		288
BRIDGE SEAT SEALER	L. SUM	1		1
STONE RIPRAP CLASS AS	SQ. YD.		820	820
FILTER FABRIC FOR USE WITH RIPRAP	SQ. YD.		820	820
PREFORMED JOINT SEAL 2 1/2"	LIN. FT.	84		84
PEENING OF EXISTING COVER PLATE WELDS	LIN. FT.	24		24
STUD SHEAR CONNECTORS	EACH	8,253		8,253
BRIDGE DECK GROOVING	SQ. FT.	2,025		2,025
SLOPEWALL 6"	SQ. FT.		400	400

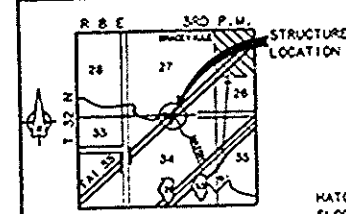
GENERAL PLAN & ELEVATION
FAI 55 OVER THE MAZON RIVER
SECTION (32-1)BR
GRUNDY COUNTY
STA. 1006+42.00
STRUCTURE NUMBERS: 032-0005 (N.B.)
032-0006 (S.B.)

10003333 GCFC FOR GFC
 MAY 5, 1992

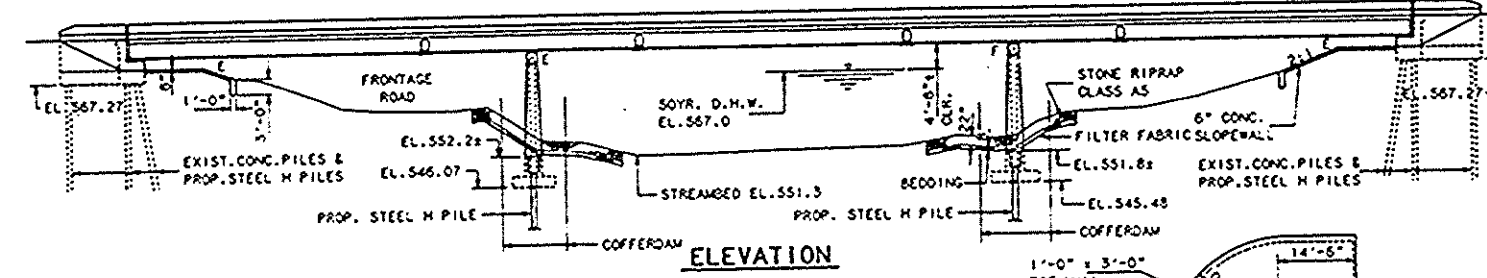
BENCHMARK: TOP WINDWALL EXIST. S.B. STRUCTURE
 STA. 1005+22. 14.8' RT.
 EL. 577.95

EXISTING STRUCTURE:
 STRUCTURES NO. 032-0005 & 032-0006 BUILT IN 1955 AS
 F.A. RTE. 77, SEC. 91-8-1, STA. 1006+42.00 OVER THE
 MAZON RIVER IN GRUNDY COUNTY. THE SUPERSTRUCTURES
 CONSIST OF THREE SPANS OF CONTINUOUS WF GIRDERS
 MEASURING 70'-0", 90'-0" & 70'-0" WITH A TOTAL
 STRUCTURE LENGTH OF 233'-8" BK./BK. OF ABUTMENTS
 AND AN OVERALL STRUCTURE WIDTH 0.70. R.C. DECK OF
 35'-0" EACH.
 THE SUBSTRUCTURES CONSIST OF TWO SOLID R.C. PIERS
 ON SPREAD FOOTINGS AND SPILL THRU PILE BENT
 ABUTMENTS.
 CONTRACTOR TO REMOVE AND DISPOSE OF THE EXISTING
 DECK AND PORTIONS OF THE SUBSTRUCTURE AS
 DETAILED HEREIN AND IN ACCORDANCE WITH SECTION 501
 OF THE STANDARD SPECIFICATIONS.
 TRAFFIC TO BE DETOURED VIA MEDIAN CROSS OVER DURING
 CONSTRUCTION OF THE STRUCTURES RESPECTIVELY.

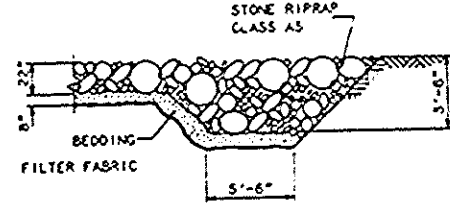
SALVAGE: NO SALVAGE



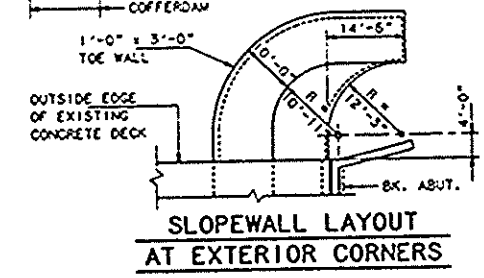
LOCATION SKETCH



ELEVATION

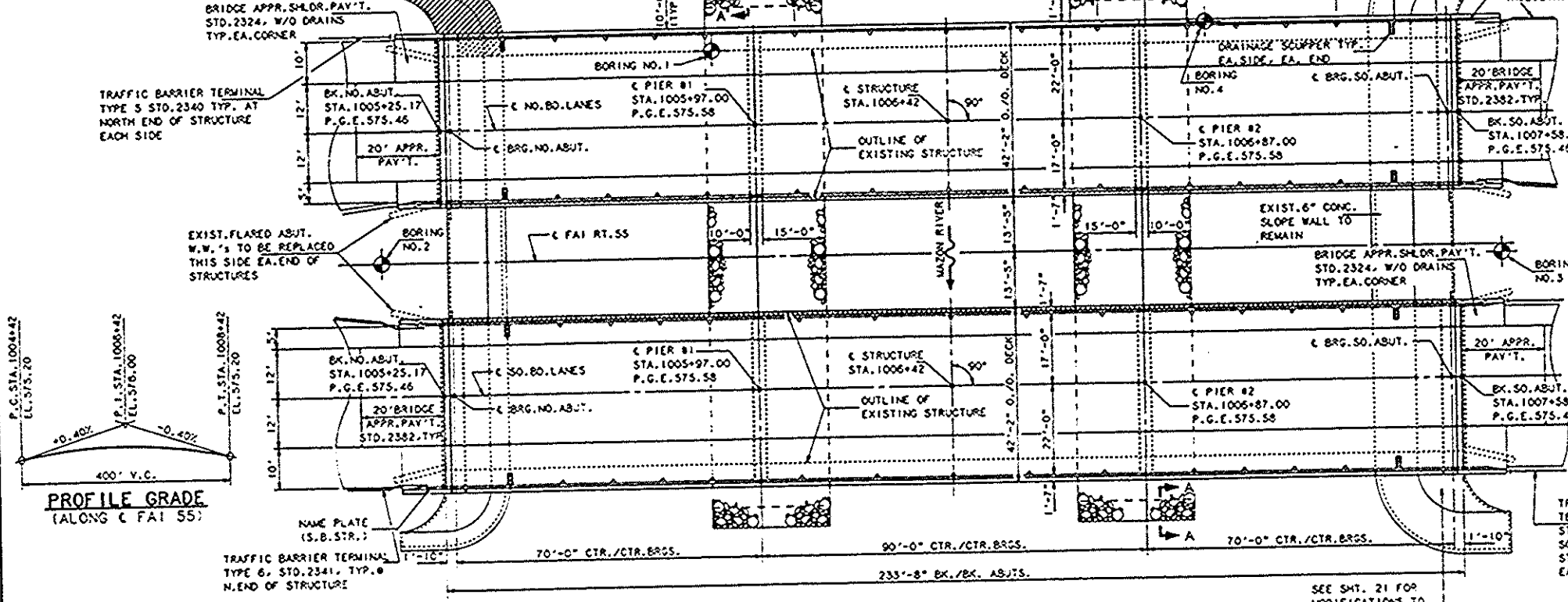


SECTION A-A

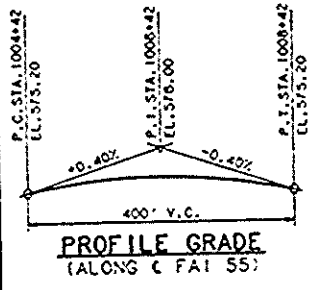


SLOPEWALL LAYOUT AT EXTERIOR CORNERS

- GENERAL NOTES:**
- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8"Ø. OPEN HOLES 15/16"Ø. UNLESS OTHERWISE NOTED.
 - (1) CALCULATED WEIGHT OF NEW STRUCTURAL STEEL (A270, GR. 36) = 128,300 LBS.
 - THE FIRST TWO COATS OF LEAD AND CHROMATE FREE ALKYLID PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL.
 - STRUCTURAL STEEL SHALL ONLY BE CLEANED AND PAINTED AS REQUIRED BY THE SPECIAL PROVISION "CLEANING AND PAINTING NEW STEEL AND ADJACENT AREAS OF EXISTING STEEL STRUCTURES." PRIOR TO POURING THE NEW CONCRETE FOR THE DECK. ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF FLANGES OF STRINGERS (GIRDERS). THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF "THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-11 FOR POWER TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING. COST SHALL BE INCIDENTAL TO CONCRETE REMOVAL.
 - ALL CONTACT SURFACES BETWEEN NEW STRUCTURAL STEEL OF JOINTS FOR THE BOLTED FIELD SPLICES AND DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.
 - ALL CONTACT SURFACE AREAS OF THE EXISTING STRUCTURAL STEEL TO WHICH THE NEW STEEL IS TO BE CONNECTED SHALL BE FREE OF PAINT OR LACQUER.
 - FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF THE BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQ. TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
 - ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
 - THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL OF THE WIDE FLANGE BEAMS EXCEPT FILL PLATES.
 - REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.
 - LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
 - PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT B'D PRICE FOR THE WORK.
 - BEARING SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS SHOWN ON THE DETAILS SHALL BE PROVIDED AND PLACED, AS DETAILED.
 - THE CONTRACTOR SHALL DRIVE ONE (1) STEEL TEST PILE AT EACH ABUTMENT IN PERMANENT LOCATIONS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
 - THE BRIDGE SEAT SEALER SHALL BE APPLIED AT THE ABUTMENTS TO THE TOP OF THE ABUTMENT SEATS IN ACCORDANCE WITH THE PROVISIONS OF BSPI. ESTIMATED QUANTITY OF BRIDGE SEAT SEALER = 422 SQ. FT.
 - EXPANSION BOLTS SHALL BE APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD OF 4,000 LBS., 3/4"Ø X 6" AND 4" HOOKED BOLTS, UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR WILL BE REQUIRED TO MARK ON TOP OF THE CONCRETE DECK, LOCATIONS OF THE TOP FLANGES OF ALL THE STEEL BEAMS PRIOR TO ANY REMOVAL OF THE BRIDGE CONCRETE DECK. SAW CUTTING DIRECTLY OVER THE TOP OF THE BEAM FLANGES IS NOT PERMITTED. PEENING OF EXISTING COVER PLATE WELOS IS REQUIRED BEFORE REMOVAL OF EXISTING CONCRETE DECK. (SEE SPECIAL PROVISIONS.)



PLAN



PROFILE GRADE (ALONG C FAI 55)

STATION 1006+42.00
 BUILT 199 BY
 STATE OF ILLINOIS
 F.A. I. RT. 55 SEC. 132-118A
 F.A. PROJ. D456-4080231
 LOADING HS20 & ALT.
 STR. NO. =

NAME PLATE
 (SEE STD. 2113)
 = 032-0005 N.B. STRUCTURE
 = 032-0006 S.B. STRUCTURE

DESIGNED: V.S.N.
 CHECKED: K.L.F.
 DRAWN: K.M.L.
 CHECKED: V.S.N./K.L.F.

APPROVED
 FOR STRUCTURAL ADEQUACY BY

 KENNETH R. GIESE
 LICENSED STRUCTURAL ENGINEER
 IN ILLINOIS
 NO. 081-002922 - EXPIRES 11/30/92

WATERWAY INFORMATION

LOW GRADE EL. = 574.64 @ STA. 1003+00

FLOOD DESIGN BASE	FREQ. YR.	C.F.S.	OPENING SO. FT.		NAT. H.W.E.	HEAD - FT.		EXIST. PROP.	EXIST. PROP.	HEADWATER EL.
			EXIST.	PROP.		EXIST.	PROP.			
50	10	10,024	1,979	N/C	567.0	1.1	N/C	568.1	N/C	
100	11	11,275	2,119	N/C	567.7	1.2	N/C	568.9	N/C	
500	14	14,161	2,387	N/C	569.0	1.4	N/C	570.4	N/C	

MAX. CALC. N/C = NO CHANGE

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	S'99.	TOTAL
REMOVAL OF EXISTING CONCRETE DECK	EACH	2	---	2
CONCRETE REMOVAL	CU. YD.	---	82.4	82.4
STRUCTURE EXCAVATION	CU. YD.	---	300	300
COFFERDAM PIER 1	EACH	---	2	2
COFFERDAM PIER 2	EACH	---	2	2
COFFERDAM EXCAVATION	CU. YD.	---	80	80
FLOOR DRAINS	EACH	52	---	52
DRAINAGE SCUPPERS	EACH	8	---	8
NEOPRENE EXPANSION JOINT 2 1/2"	LIN. FT.	82	---	82
CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	601.9	---	601.9
PROTECTIVE COAT	SG. YD.	2,442	---	2,442
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14	---	14
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	14	---	14
CLASS X CONCRETE	CU. YD.	---	45.0	45.0
FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM	1	---	1
WACK AND REMOVE EXISTING BEARINGS	EACH	24	---	24
REINFORCEMENT BARS, EPOXY COATED	POUND	141,440	---	158,800
STEEL PILES HP12 X 53	LIN. FT.	---	2.5	215
STEEL PILES HP12 X 74	LIN. FT.	---	48	145
TEST PILE STEEL HP12 X 53	EACH	---	2	2
NAME PLATES	EACH	2	---	2
EXPANSION BOLTS 3/4" Ø X 4" INCH	EACH	---	54	54
EXPANSION BOLTS 3/4" Ø X 6" INCH	EACH	---	54	54
REMOVAL OF EXISTING R.I.E.'S	EACH	288	---	288
BRIDGE SEAT SEALER	L. SUM	---	1	1
STONE RIPRAP CLASS A5	SG. YD.	---	820	820
FILTER FABRIC FOR USE W/ RIPRAP	SG. YD.	---	820	820
PREFORMED JOINT SEAL 2 1/2"	LIN. FT.	84	---	84
PEENING OF EXISTING COVER PLATE WELOS	LIN. FT.	24	---	24
STUD SHEAR CONNECTORS	EACH	9,534	---	9,534
BRIDGE DECK GROOVING	SG. YD.	2,025	---	2,025
SLOPEWALL 6"	SG. FT.	---	400	400

DESIGN STRESSES

- 1s = 20,000 PSI (NEW STR. STEEL)
- 1e = 18,000 PSI (EXIST. STR. STEEL)
- 1'c = 3,500 PSI (NEW CONC.)
- 1y = 60,000 PSI (NEW REINFORCEMENT)

LOADING HS20-44 & ALTERNATE

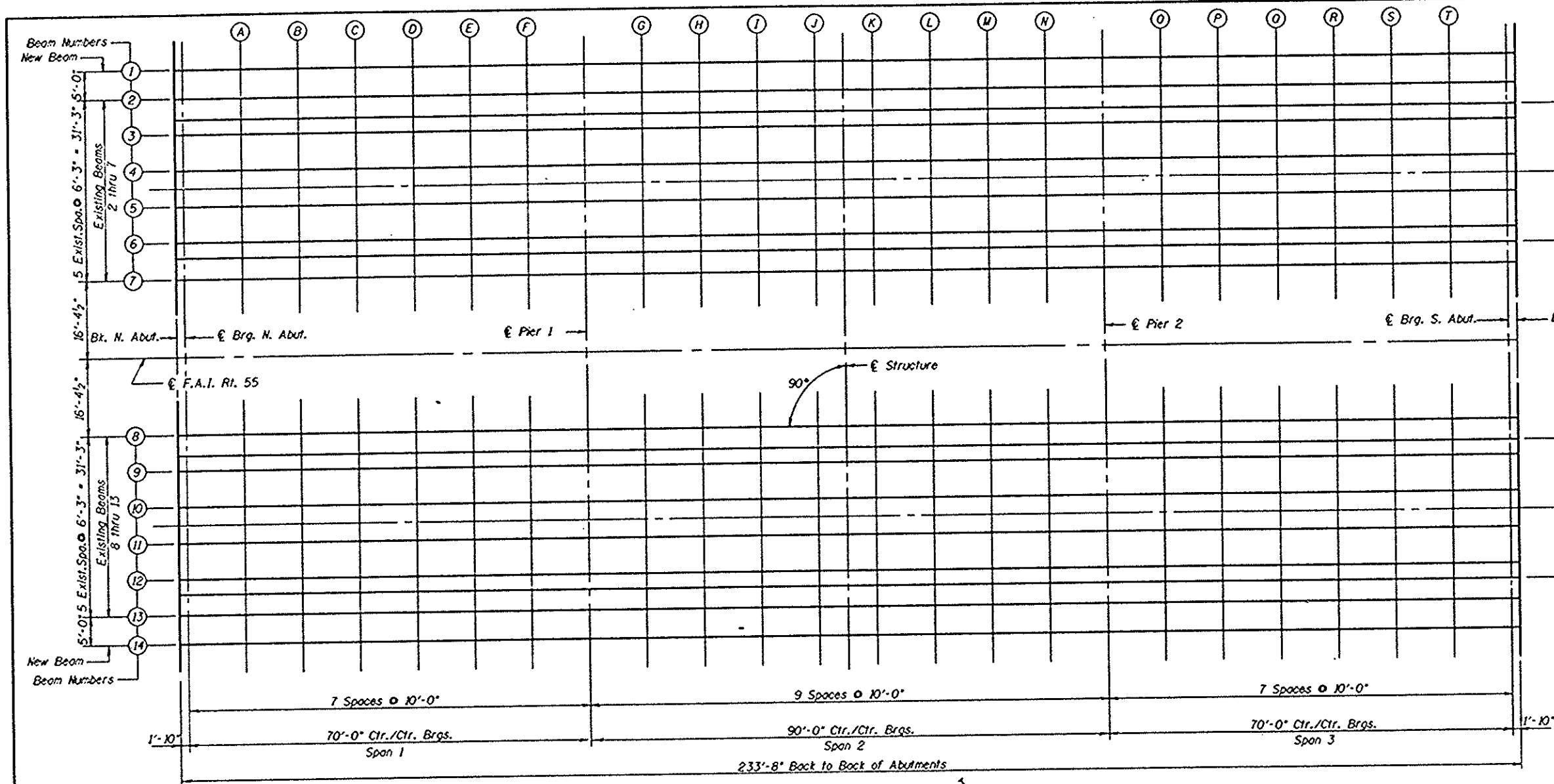
ALLOW 25 PSF FOR FUTURE WEARING SURFACE
 DESIGN SPECIFICATIONS: 1989 AASHTO WITH 1990 AND 1991 INTERIMS

GENERAL PLAN & ELEVATION
FAI 55 OVER THE MAZON RIVER
 SECTION (32-1) BR
 GRUNDY COUNTY
 STA. 1006+42.00
 STRUCTURE NUMBERS: 032-0005 (N.B.)
 032-0006 (S.B.)

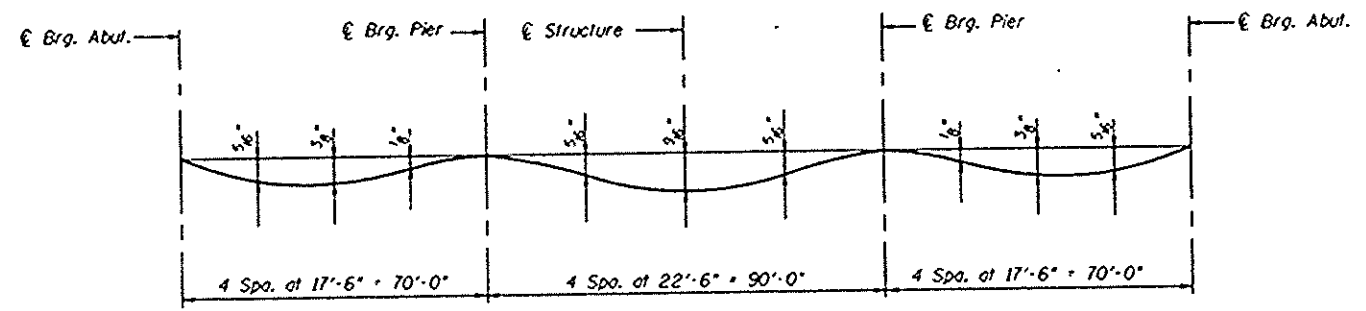
AS REVISED: 4-8-93 S.T.D.

DATE	BY	CHECKED	DATE	SHEET NO.
F.A.I. 55	C2-204	GRUNDY	65	50

SHEET NO. 2 OF 26 SHEETS

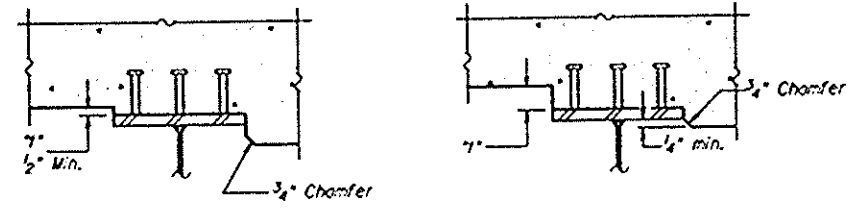


PLAN



DEAD LOAD DEFLECTION DIAGRAM
(Includes Weight of Concrete Only)

NOTE:
The above deflections are not for use in the field if the Engineer is working from the grade elevations adjusted for dead load deflections shown on Sheets 3 and 4.



FILLET HEIGHTS

To determine "f", after all Structural Steel has been erected, Elevations of the Top Flanges of the Beams shall be taken at intervals shown on this Sheet. These Elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on Sheets 3 and 4, minus Slab Thickness, equals the Fillet Heights "f" above Top Flange of Beams.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.M./K.L.F.

K.H. & G. W. 50455

€ ROADWAY (H.B. STR./S.B. STR.)

€ BEAM #4 OR #5 (H.B. STR.)
/ € BEAM #10 OR #11 (S.B. STR.)

€ BEAM #3 OR #6 (H.B. STR.)
/ € BEAM #9 OR #12 (S.B. STR.)

LOCATION	STATION	OFFSET FROM CTRLINE	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	0.000	575.464	575.464
CTR BRG N. ABUT	1005 + 27.000	0.000	575.468	575.468
A	1005 + 37.000	0.000	575.490	575.507
B	1005 + 47.000	0.000	575.510	575.538
C	1005 + 57.000	0.000	575.528	575.559
D	1005 + 67.000	0.000	575.544	575.570
E	1005 + 77.000	0.000	575.558	575.573
F	1005 + 87.000	0.000	575.570	575.574
CTR OF PIER #1	1005 + 97.000	0.000	575.580	575.580
G	1006 + 07.000	0.000	575.588	575.596
H	1006 + 17.000	0.000	575.594	575.616
I	1006 + 27.000	0.000	575.598	575.634
J	1006 + 37.000	0.000	575.600	575.645
K	1006 + 47.000	0.000	575.600	575.645
L	1006 + 57.000	0.000	575.598	575.634
M	1006 + 67.000	0.000	575.594	575.616
N	1006 + 77.000	0.000	575.588	575.596
CTR OF PIER #2	1006 + 87.000	0.000	575.580	575.580
O	1006 + 97.000	0.000	575.570	575.574
P	1007 + 07.000	0.000	575.558	575.573
Q	1007 + 17.000	0.000	575.544	575.570
R	1007 + 27.000	0.000	575.528	575.559
S	1007 + 37.000	0.000	575.510	575.538
T	1007 + 47.000	0.000	575.490	575.507
CTR BRG S. ABUT	1007 + 57.000	0.000	575.468	575.468
BK OF S. ABUT	1007 + 58.833	0.000	575.464	575.464

LOCATION	STATION	OFFSET FROM CTRLINE (LT OR RT)	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	-3.125	575.415	575.415
CTR BRG N. ABUT	1005 + 27.000	3.125	575.419	575.419
A	1005 + 37.000	3.125	575.441	575.458
B	1005 + 47.000	3.125	575.461	575.489
C	1005 + 57.000	3.125	575.479	575.510
D	1005 + 67.000	3.125	575.495	575.521
E	1005 + 77.000	3.125	575.509	575.524
F	1005 + 87.000	3.125	575.521	575.525
CTR OF PIER #1	1005 + 97.000	3.125	575.531	575.531
G	1006 + 07.000	3.125	575.539	575.547
H	1006 + 17.000	3.125	575.545	575.567
I	1006 + 27.000	3.125	575.549	575.585
J	1006 + 37.000	3.125	575.551	575.596
K	1006 + 47.000	3.125	575.551	575.596
L	1006 + 57.000	3.125	575.549	575.585
M	1006 + 67.000	3.125	575.545	575.567
N	1006 + 77.000	3.125	575.539	575.547
CTR OF PIER #2	1006 + 87.000	3.125	575.531	575.531
O	1006 + 97.000	3.125	575.521	575.525
P	1007 + 07.000	3.125	575.509	575.524
Q	1007 + 17.000	3.125	575.495	575.521
R	1007 + 27.000	3.125	575.479	575.510
S	1007 + 37.000	3.125	575.461	575.489
T	1007 + 47.000	3.125	575.441	575.458
CTR BRG S. ABUT	1007 + 57.000	3.125	575.419	575.419
BK OF S. ABUT	1007 + 58.833	3.125	575.415	575.415

LOCATION	STATION	OFFSET FROM CTRLINE (LT OR RT)	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	9.375	575.317	575.317
CTR BRG N. ABUT	1005 + 27.000	9.375	575.321	575.321
A	1005 + 37.000	9.375	575.343	575.360
B	1005 + 47.000	9.375	575.363	575.391
C	1005 + 57.000	9.375	575.381	575.412
D	1005 + 67.000	9.375	575.397	575.423
E	1005 + 77.000	9.375	575.411	575.426
F	1005 + 87.000	9.375	575.423	575.427
CTR OF PIER #1	1005 + 97.000	9.375	575.433	575.433
G	1006 + 07.000	9.375	575.441	575.449
H	1006 + 17.000	9.375	575.447	575.469
I	1006 + 27.000	9.375	575.451	575.487
J	1006 + 37.000	9.375	575.453	575.498
K	1006 + 47.000	9.375	575.453	575.498
L	1006 + 57.000	9.375	575.451	575.487
M	1006 + 67.000	9.375	575.447	575.469
N	1006 + 77.000	9.375	575.441	575.449
CTR OF PIER #2	1006 + 87.000	9.375	575.433	575.433
O	1006 + 97.000	9.375	575.423	575.427
P	1007 + 07.000	9.375	575.411	575.426
Q	1007 + 17.000	9.375	575.397	575.423
R	1007 + 27.000	9.375	575.381	575.412
S	1007 + 37.000	9.375	575.363	575.391
T	1007 + 47.000	9.375	575.343	575.360
CTR BRG S. ABUT	1007 + 57.000	9.375	575.321	575.321
BK OF S. ABUT	1007 + 58.833	9.375	575.317	575.317

NOTE:
1. Elevations are at Top of Concrete.
2. For Location Plan, see Shl. #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

M & C. CO. 50035

ROUTE NO.	DISTRICT	PROJECT	SHEET NO.	TOTAL SHEETS
F.A.I. 55	CR. 10A	GRANDY	85	52
PROJECT NO. 1005		SHEET NO. 4 OF 26 SHEETS		

LONGITUDINAL BONDED CONSTRUCTION JOINT
E. OR W. (N.B. STR./S.B. STR.)

LOCATION	STATION	OFFSET FROM CTRLINE (LT OR RT)	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	12.000	575.276	575.276
CTR BRG N. ABUT	1005 + 27.000	12.000	575.280	575.280
A	1005 + 37.000	12.000	575.302	575.319
B	1005 + 47.000	12.000	575.322	575.350
C	1005 + 57.000	12.000	575.340	575.371
D	1005 + 67.000	12.000	575.356	575.382
E	1005 + 77.000	12.000	575.370	575.385
F	1005 + 87.000	12.000	575.382	575.386
CTR OF PIER #1	1005 + 97.000	12.000	575.392	575.392
G	1006 + 07.000	12.000	575.400	575.408
H	1006 + 17.000	12.000	575.406	575.428
I	1006 + 27.000	12.000	575.410	575.446
J	1006 + 37.000	12.000	575.412	575.457
K	1006 + 47.000	12.000	575.412	575.457
L	1006 + 57.000	12.000	575.410	575.446
M	1006 + 67.000	12.000	575.406	575.428
N	1006 + 77.000	12.000	575.400	575.408
CTR OF PIER #2	1006 + 87.000	12.000	575.392	575.392
O	1006 + 97.000	12.000	575.382	575.386
P	1007 + 07.000	12.000	575.370	575.385
Q	1007 + 17.000	12.000	575.356	575.382
R	1007 + 27.000	12.000	575.340	575.371
S	1007 + 37.000	12.000	575.322	575.350
T	1007 + 47.000	12.000	575.302	575.319
CTR BRG S. ABUT	1007 + 57.000	12.000	575.280	575.280
BK OF S. ABUT	1007 + 58.833	12.000	575.276	575.276

☉ BEAM #2 OR #7 (N.B. STR.)
/ ☉ BEAM #8 OR #13 (S.B. STR.)

LOCATION	STATION	OFFSET FROM CTRLINE (LT OR RT)	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	15.625	575.200	575.200
CTR BRG N. ABUT	1005 + 27.000	15.625	575.205	575.205
A	1005 + 37.000	15.625	575.227	575.244
B	1005 + 47.000	15.625	575.247	575.275
C	1005 + 57.000	15.625	575.265	575.296
D	1005 + 67.000	15.625	575.281	575.307
E	1005 + 77.000	15.625	575.295	575.310
F	1005 + 87.000	15.625	575.307	575.311
CTR OF PIER #1	1005 + 97.000	15.625	575.317	575.317
G	1006 + 07.000	15.625	575.325	575.333
H	1006 + 17.000	15.625	575.331	575.353
I	1006 + 27.000	15.625	575.335	575.371
J	1006 + 37.000	15.625	575.337	575.382
K	1006 + 47.000	15.625	575.337	575.382
L	1006 + 57.000	15.625	575.335	575.371
M	1006 + 67.000	15.625	575.331	575.353
N	1006 + 77.000	15.625	575.325	575.333
CTR OF PIER #2	1006 + 87.000	15.625	575.317	575.317
O	1006 + 97.000	15.625	575.307	575.311
P	1007 + 07.000	15.625	575.295	575.310
Q	1007 + 17.000	15.625	575.281	575.307
R	1007 + 27.000	15.625	575.265	575.296
S	1007 + 37.000	15.625	575.247	575.275
T	1007 + 47.000	15.625	575.227	575.244
CTR BRG S. ABUT	1007 + 57.000	15.625	575.205	575.205
BK OF S. ABUT	1007 + 58.833	15.625	575.200	575.200

☉ BEAM #1 (N.B. STR.)
/ ☉ BEAM #14 (S.B. STR.)

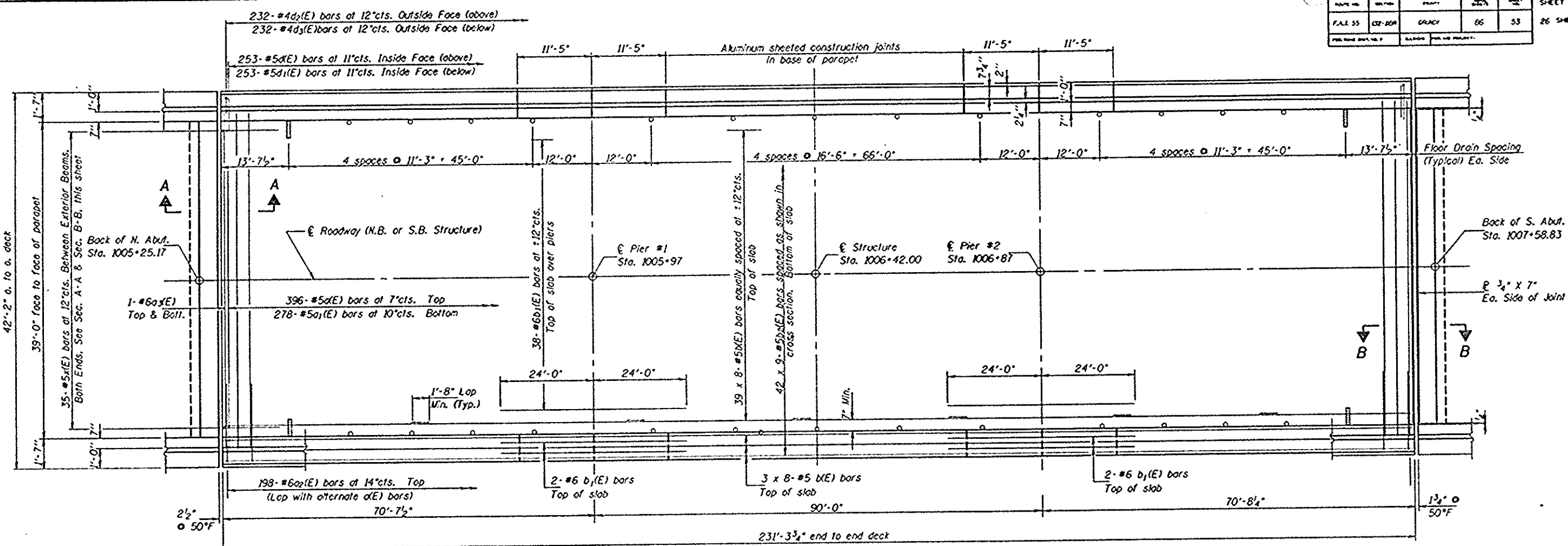
LOCATION	STATION	OFFSET FROM CTRLINE (LT OR RT)	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
BK OF N. ABUT	1005 + 25.167	20.625	575.096	575.096
CTR BRG N. ABUT	1005 + 27.000	20.625	575.101	575.101
A	1005 + 37.000	20.625	575.123	575.140
B	1005 + 47.000	20.625	575.143	575.171
C	1005 + 57.000	20.625	575.161	575.192
D	1005 + 67.000	20.625	575.177	575.203
E	1005 + 77.000	20.625	575.191	575.206
F	1005 + 87.000	20.625	575.203	575.207
CTR OF PIER #1	1005 + 97.000	20.625	575.213	575.213
G	1006 + 07.000	20.625	575.221	575.229
H	1006 + 17.000	20.625	575.227	575.249
I	1006 + 27.000	20.625	575.231	575.267
J	1006 + 37.000	20.625	575.233	575.278
K	1006 + 47.000	20.625	575.233	575.278
L	1006 + 57.000	20.625	575.231	575.267
M	1006 + 67.000	20.625	575.227	575.249
N	1006 + 77.000	20.625	575.221	575.229
CTR OF PIER #2	1006 + 87.000	20.625	575.213	575.213
O	1006 + 97.000	20.625	575.203	575.207
P	1007 + 07.000	20.625	575.191	575.206
Q	1007 + 17.000	20.625	575.177	575.203
R	1007 + 27.000	20.625	575.161	575.192
S	1007 + 37.000	20.625	575.143	575.171
T	1007 + 47.000	20.625	575.123	575.140
CTR BRG S. ABUT	1007 + 57.000	20.625	575.101	575.101
BK OF S. ABUT	1007 + 58.833	20.625	575.096	575.096

NOTE:
1. Elevations are at Top of Concrete.
2. For Location Plan, see Sht. #2.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

TOP OF SLAB ELEVATIONS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

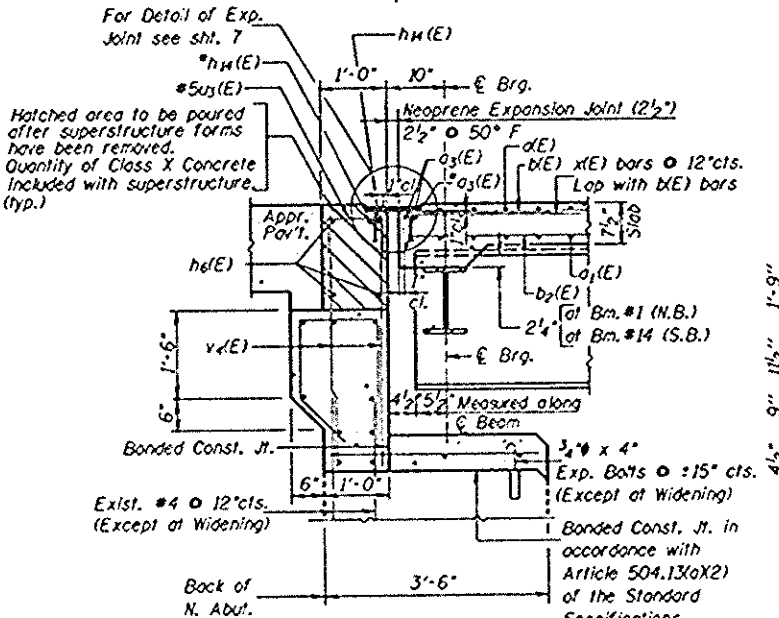
DATE	BY	PROJECT	SHEET	NO.
F.A.I. 55	CR-804	GRUNDY	66	53
DESIGNED		CHECKED		SHEET NO. 5 OF 26 SHEETS



DECK PLAN

MIN. BAR LAP
#5 bars = 1'-8"

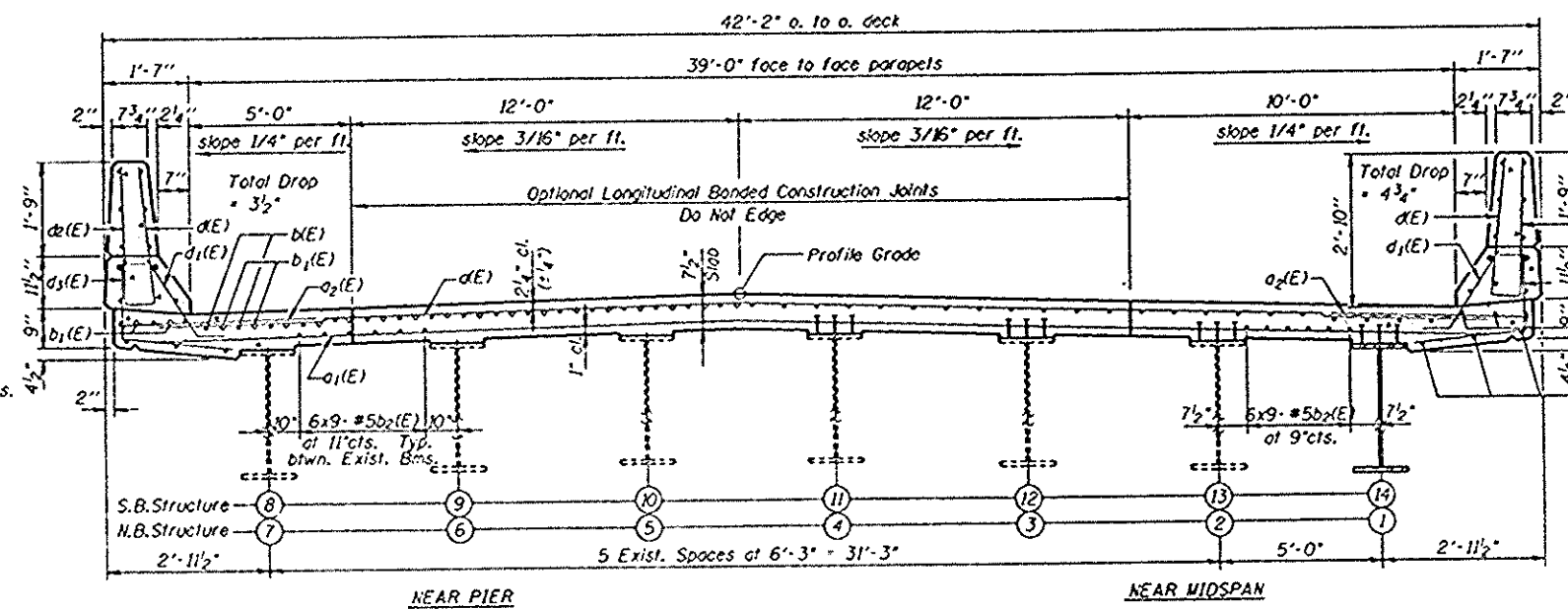
Notes: See Sheet #6 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 39 x 8-#5 etc. indicates 39 lines of bars with 8 lengths per line.
See Sheet #6 for parapet reinforcement.
Scoop on plans shown thus |
Floor drain on plans shown thus o



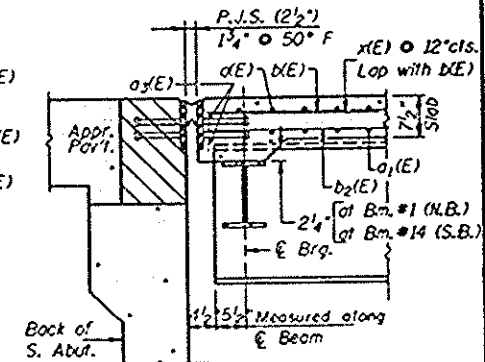
SECTION A-A AT N. ABUT.

DESIGNED	V.S.N.
CHECKED	K.I.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

S-1-0 12-31-87



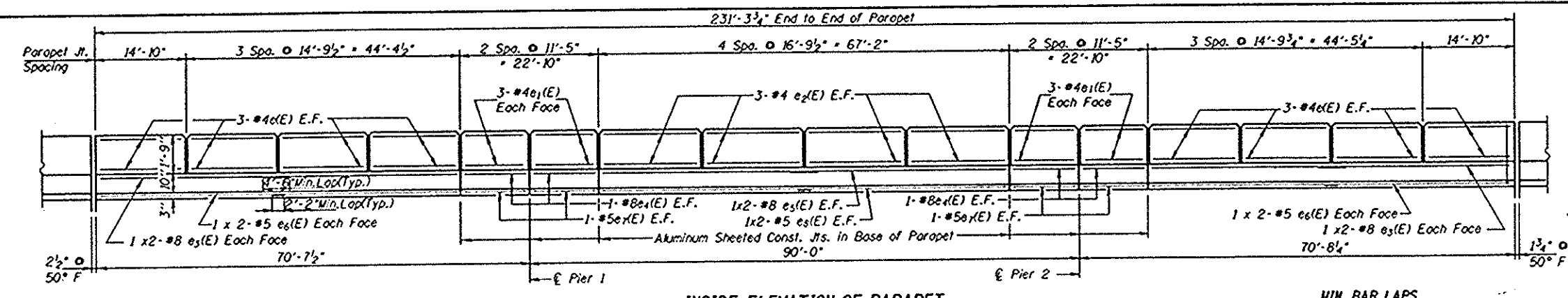
CROSS SECTION
(S.B. Structure looking South)
(N.B. Structure looking North)



SECTION B-B AT S. ABUT.

DECK PLAN & CROSS SECTION
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

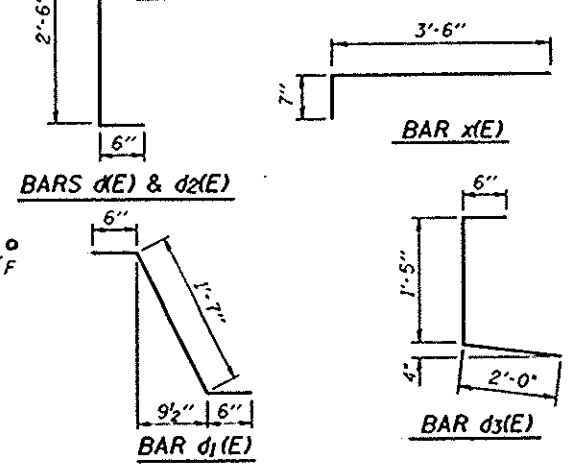
PROJECT NO.	DESIGN NO.	DATE	BY	CHECKED	SHEET NO. 6 OF 26 SHEETS
F.A.I. 55	32-109	GRUNDY	65	54	



INSIDE ELEVATION OF PARAPET

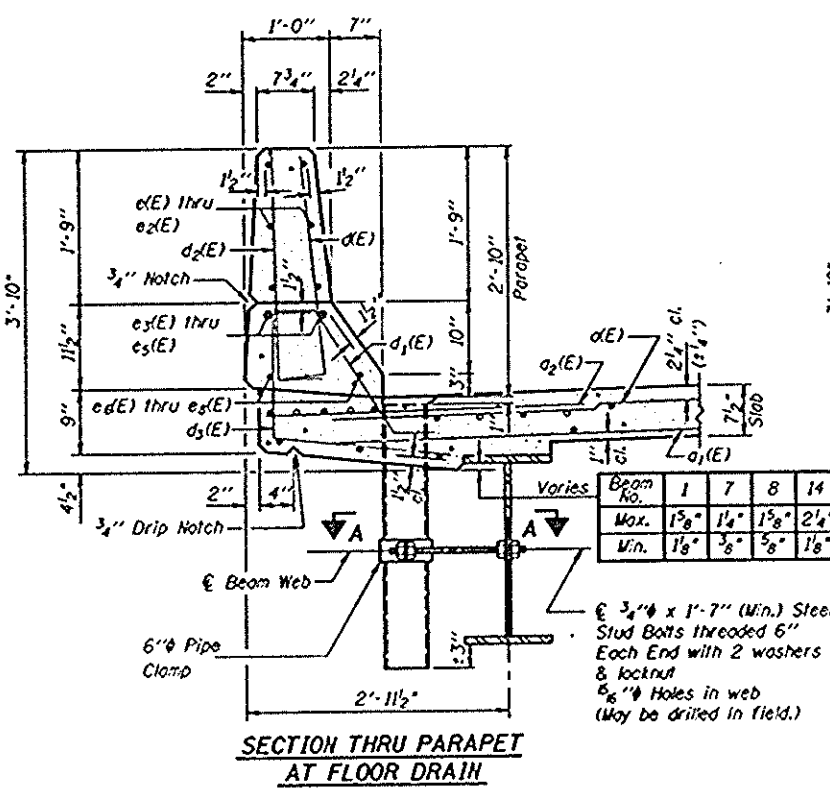
MIN. BAR LAPS
 #5 bars = 2'-2"
 #8 bars = 4'-6"

Note: For arrangement of d1(E) and d2(E) bars see sheet #5 of 26.

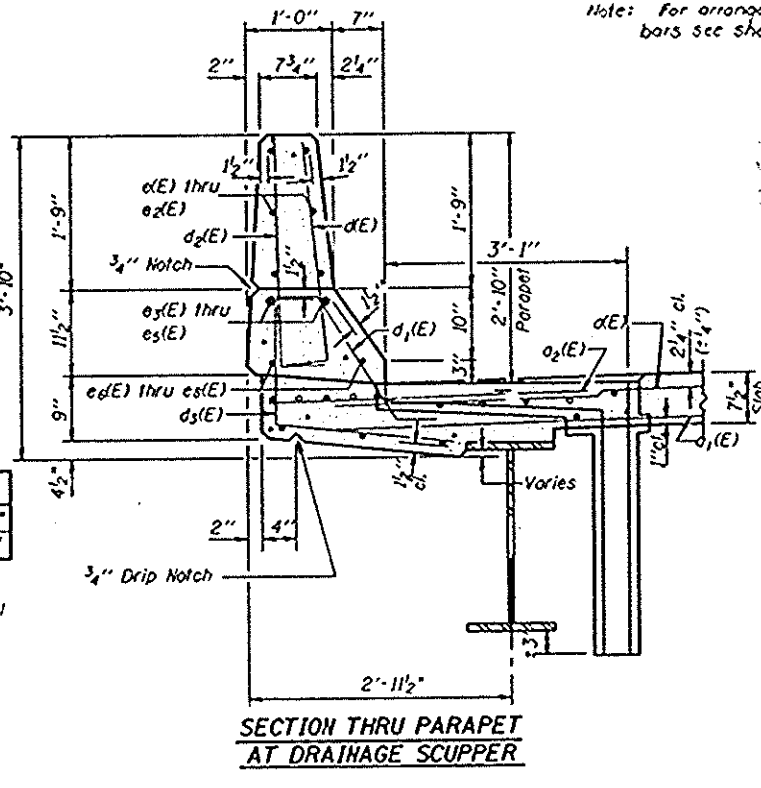


**BILL OF MATERIAL
2 SUPERSTRUCTURES**

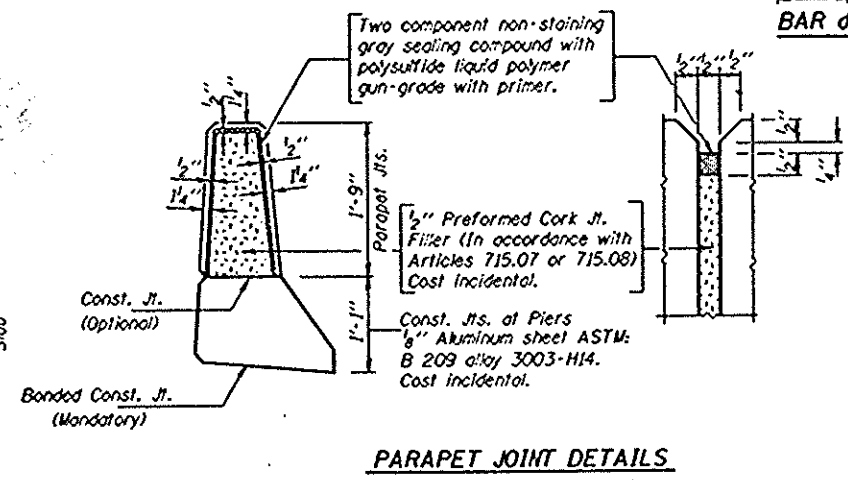
Bar	No.	Size	Length	Shape
d(E)	792	#5	41'-6"	—
d1(E)	556	#5	39'-6"	—
d2(E)	792	#6	4'-0"	—
d3(E)	8	#6	41'-6"	—
d4(E)	64	#5	2'-0"	—
d(E)	720	#5	30'-7"	—
b1(E)	168	#6	18'-0"	—
b2(E)	756	#5	27'-4"	—
d(E)	1012	#5	3'-0"	—
d1(E)	1012	#5	2'-7"	—
d2(E)	928	#4	3'-0"	—
d3(E)	928	#4	3'-11"	—
e(E)	192	#4	14'-6"	—
e1(E)	96	#4	11'-1"	—
e2(E)	96	#4	16'-6"	—
e3(E)	32	#8	37'-5"	—
e4(E)	32	#8	11'-1"	—
e5(E)	16	#8	35'-8"	—
e6(E)	32	#5	36'-3"	—
e7(E)	32	#5	11'-1"	—
e8(E)	16	#5	34'-6"	—
x(E)	140	#5	4'-1"	—
Reinforcement Bars (Epoxy Coated) Lbs. 141,440				
Class X Concrete Superstructure Cu. Yds. 601.9				



SECTION THRU PARAPET AT FLOOR DRAIN

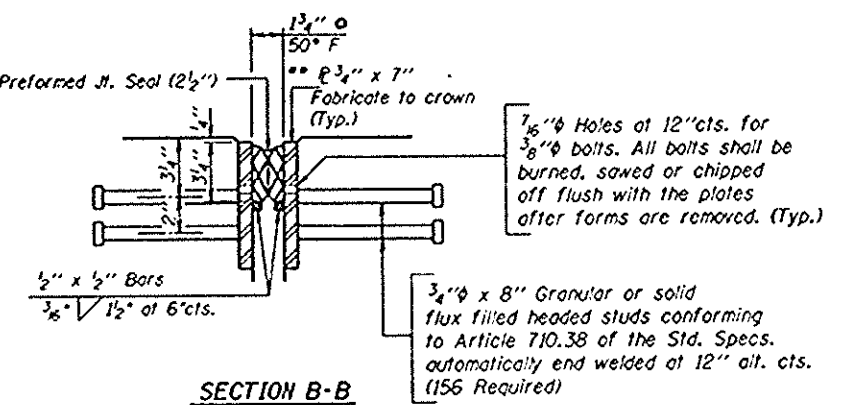
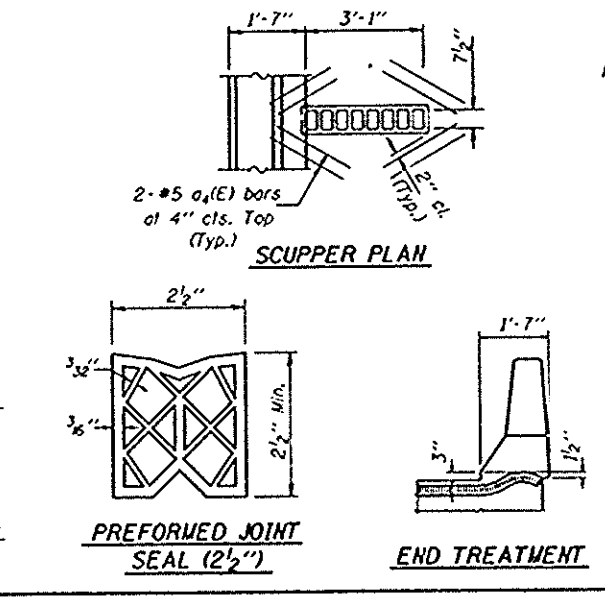
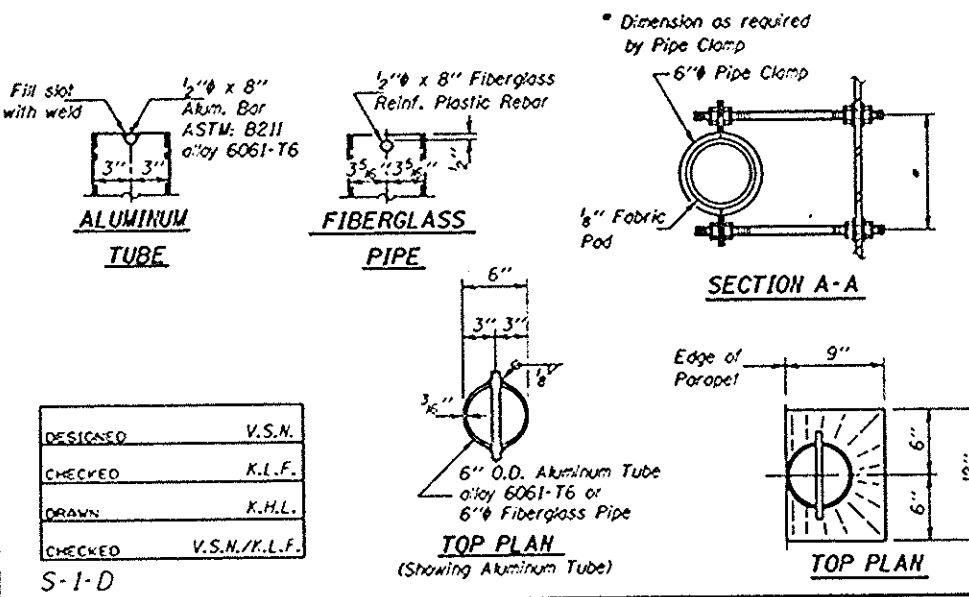


SECTION THRU PARAPET AT DRAINAGE SCUPPER



PARAPET JOINT DETAILS

Notes:
 The exterior surfaces of the Floor Drain shall be painted with the paint specified for Structural Steel. The exterior surface of the Aluminum tube shall be cleaned and given a washcoat pretreatment in accordance with Steel Structural Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting. Fiberglass to have prewash as per MIL-P-15328 prior to painting.
 Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.



SECTION B-B EXPANSION JOINT DETAIL

Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel. After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for structural steel. No field painting required.

**PARAPET DETAILS & BILL OF MATERIAL
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR GRUNDY COUNTY**

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

S-1-D

PROJECT NO.	DISTRICT	DIVISION	DATE	SHEET NO.	TOTAL SHEETS
F.A.I. 55	CS-104	GRNDY	85	55	26 SHEETS
SHEET NO. 7 OF 26 SHEETS					

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

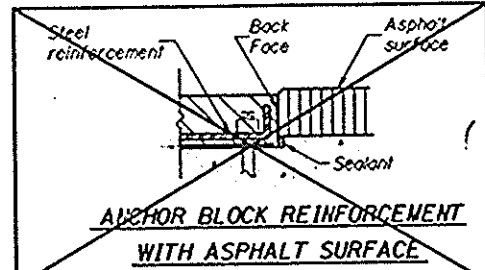
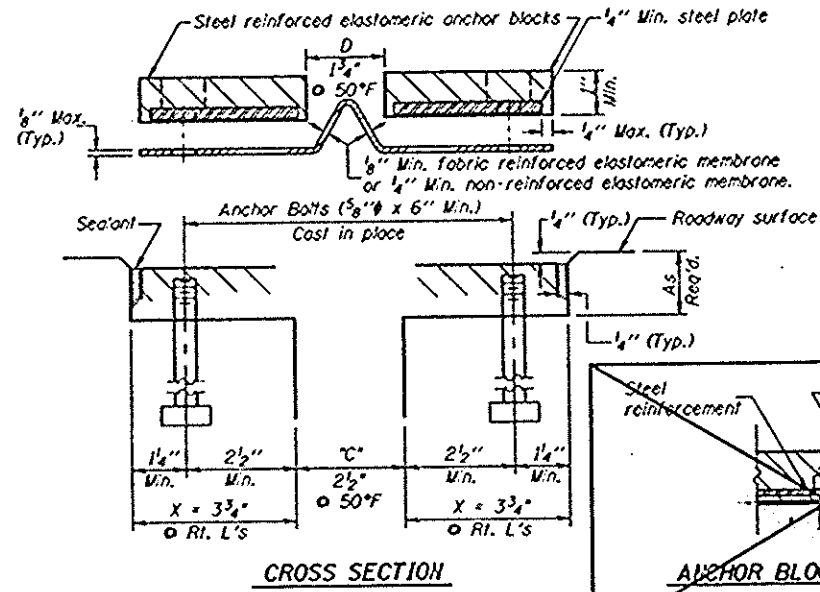
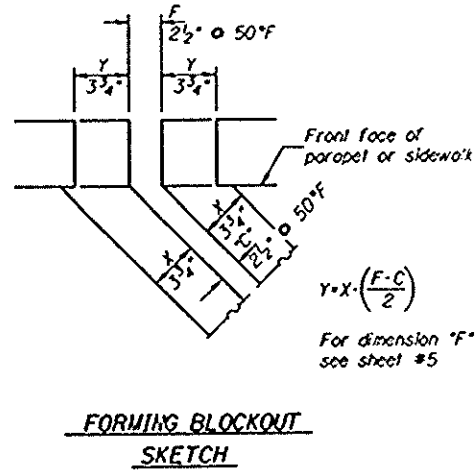
INSTALLATION NOTES

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

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

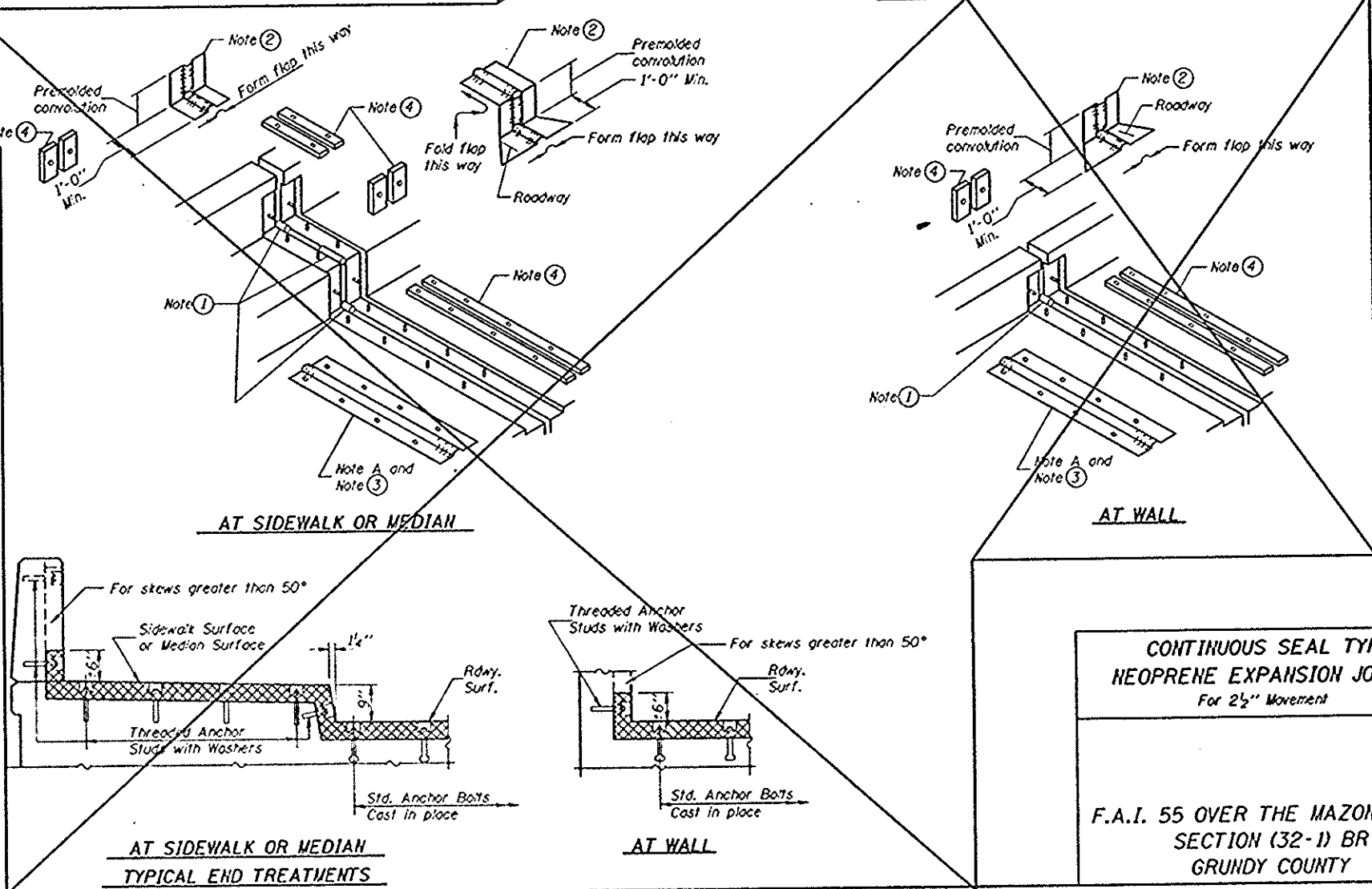
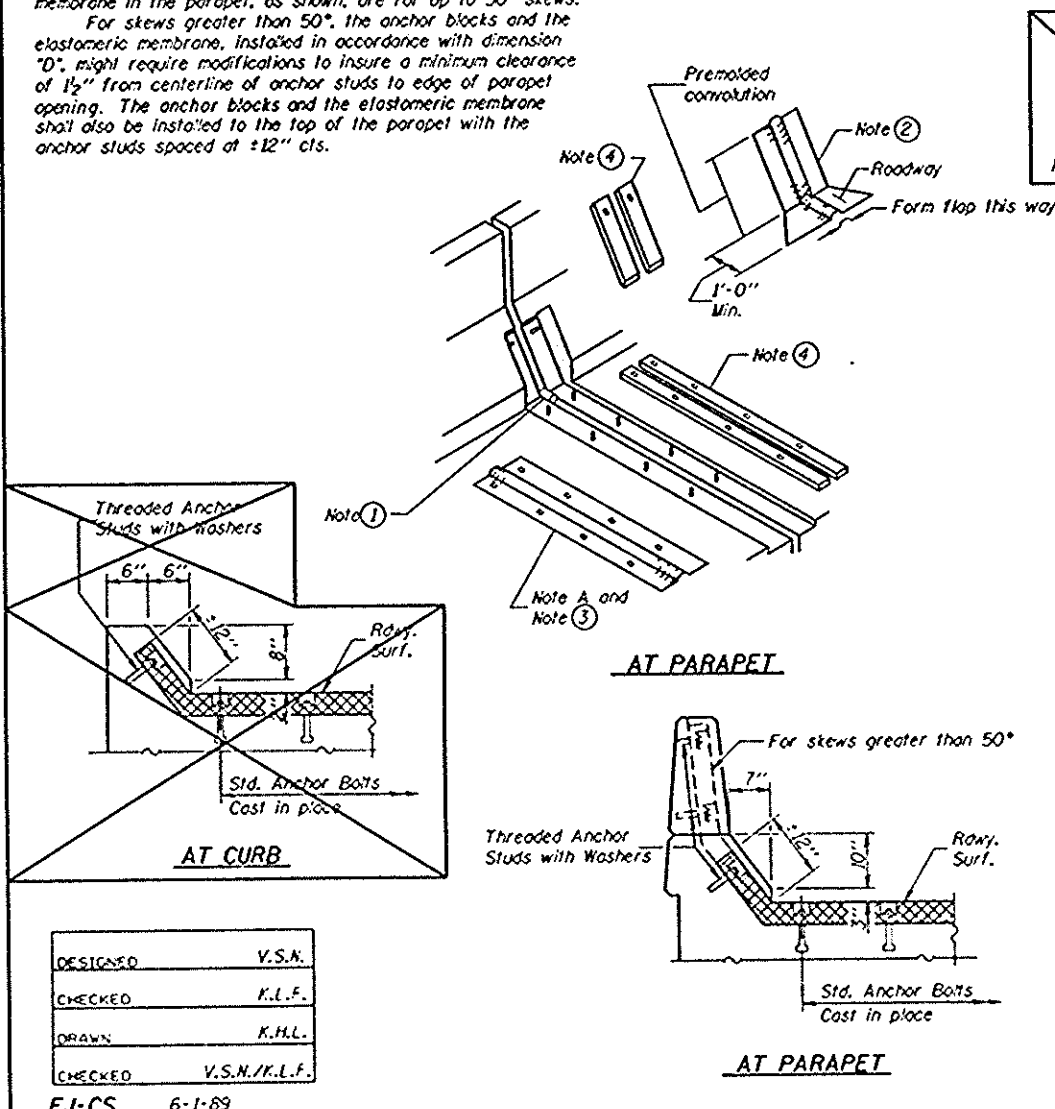
SKREW LIMITATIONS

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



GENERAL NOTES

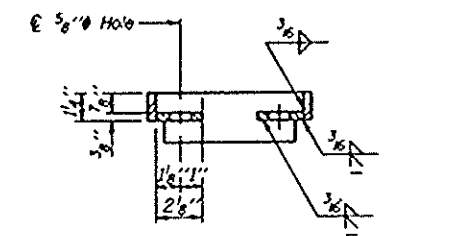
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.
 The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory"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



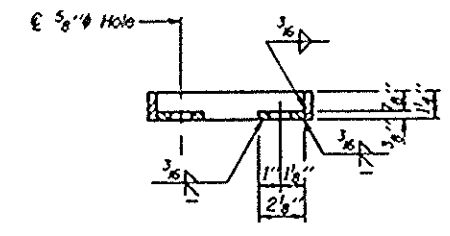
CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS
 For 2 1/2" Movement
F.A.I. 55 OVER THE MAZON RIVER SECTION (32-1) BR GRUNDY COUNTY

DESIGNED	V.S.A.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.
EJ-CS	6-1-89

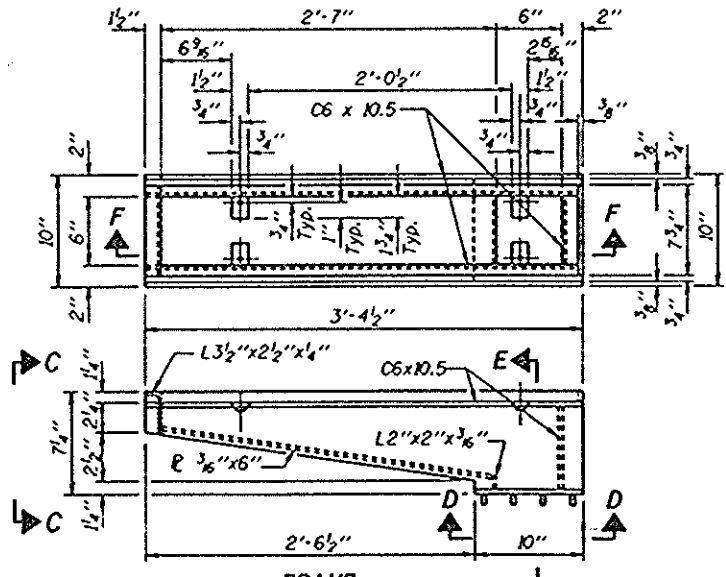
DATE	BY	CHKD	APP'D	SHEET NO. 8 OF 26 SHEETS
F.A.I. 55	CS-209	GRAND	65	36



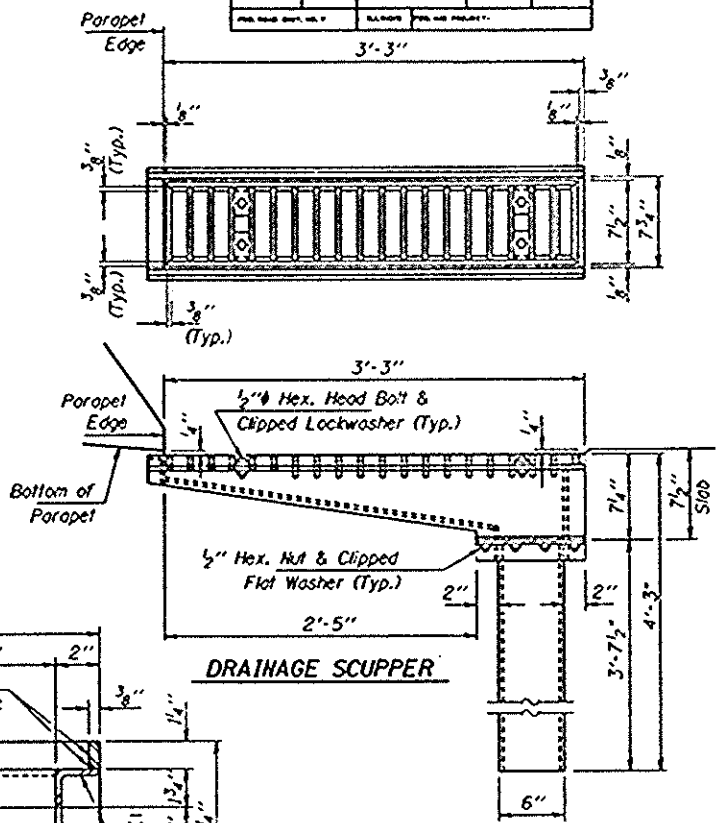
SECTION A-A



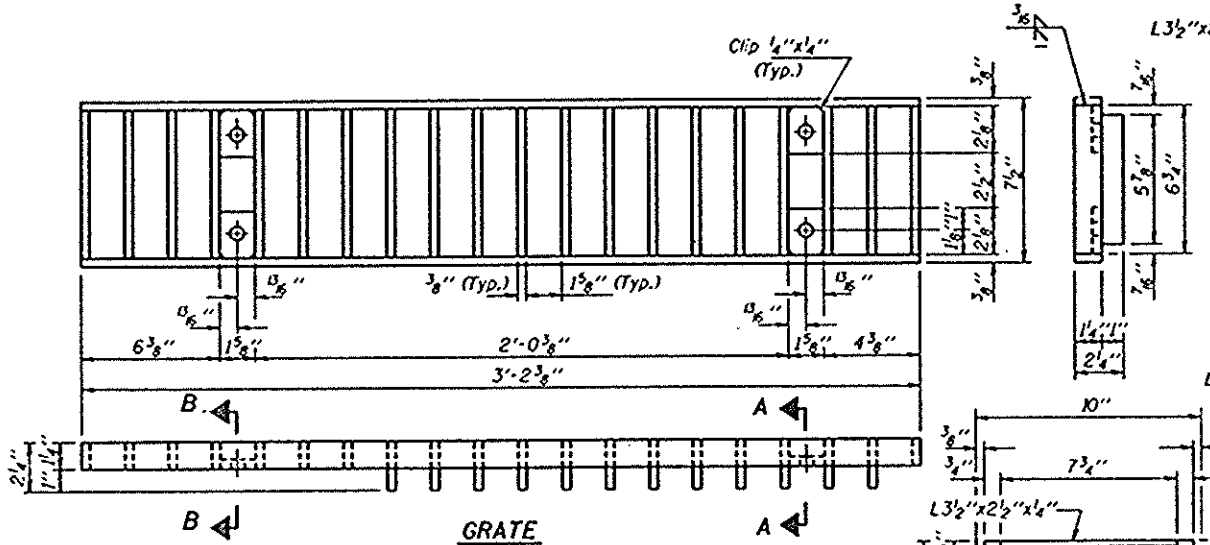
SECTION B-B



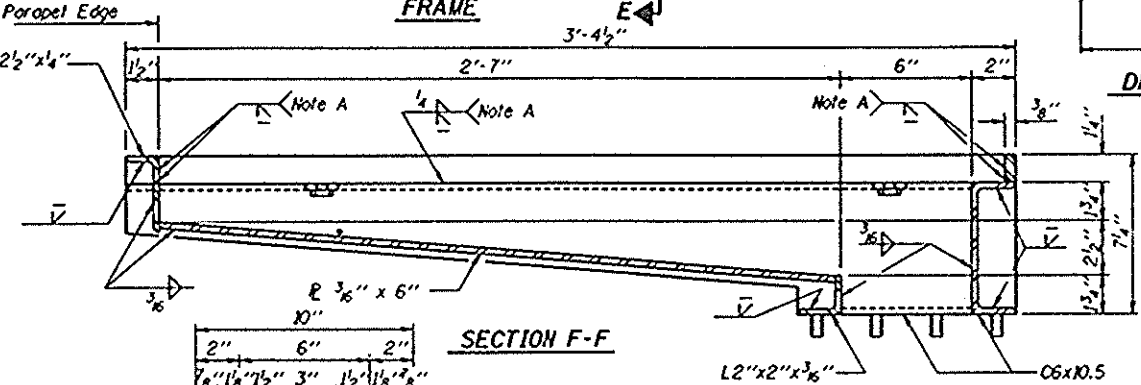
FRAME



DRAINAGE SCUPPER

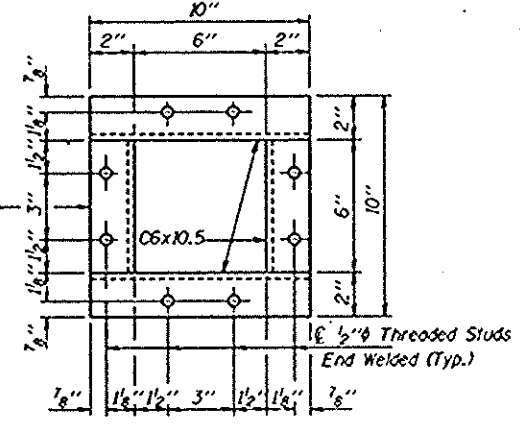


GRATE



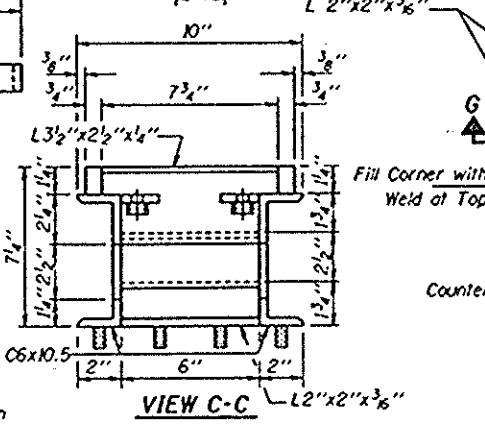
SECTION F-F

Note A: Surface of welds shall be recessed 1/8" Max. or placed flush with inside face of bars to provide clearance for Grate.

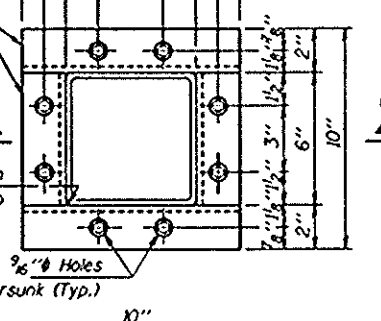


VIEW D-D

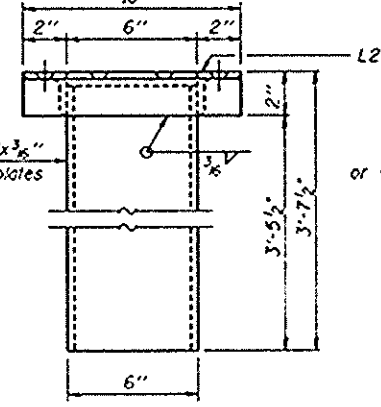
Notes:
 Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 Grade B, or A501 Structural Steel Tubing.
 All other shapes, plates and bars shall conform to the requirements of AASHTO M183.
 Bolts, studs, washers and nuts shall conform to the requirements of ASTM A307.
 The Grate, Frame and Downspout shall be galvanized after shop fabrication in accordance with AASHTO M111 & ASTM A385.
 All bolts, washers and nuts shall be galvanized in accordance with AASHTO M232.
 Cost of the Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper will be paid for at the unit bid price for "DRAINAGE SCUPPERS."



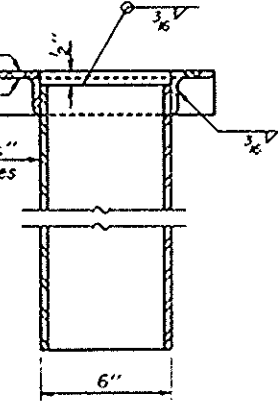
VIEW C-C



SECTION E-E



DOWNSPOUT



SECTION G-G

BILL OF MATERIAL

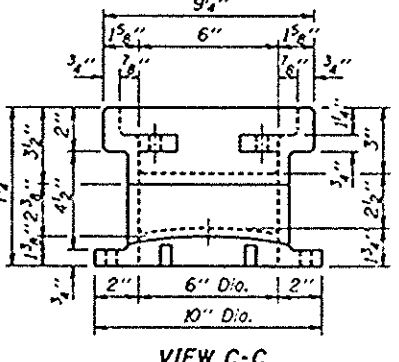
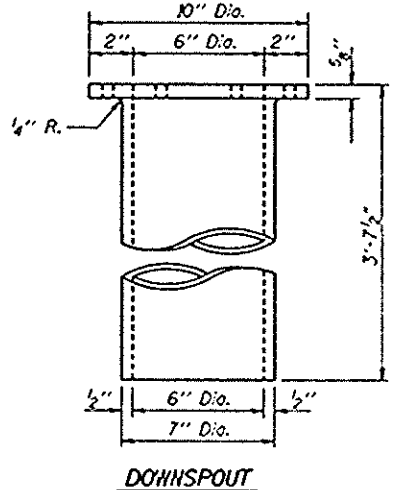
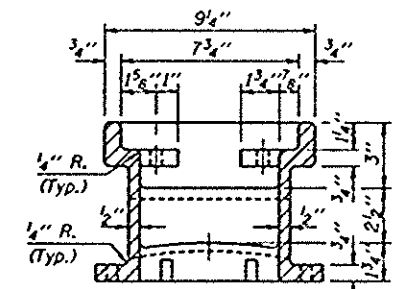
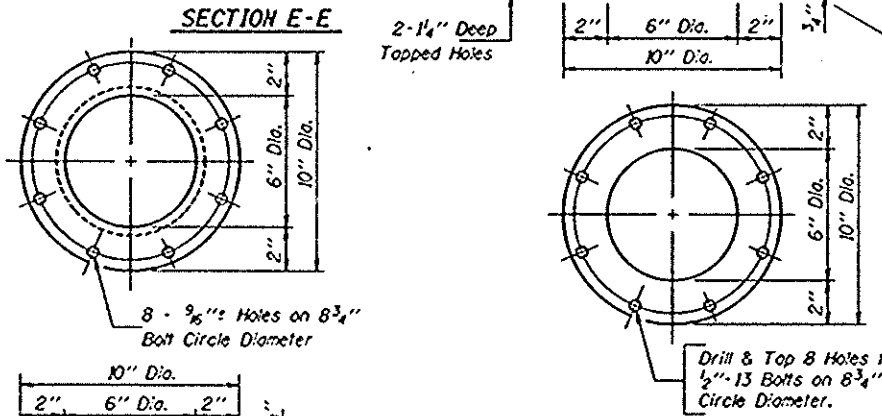
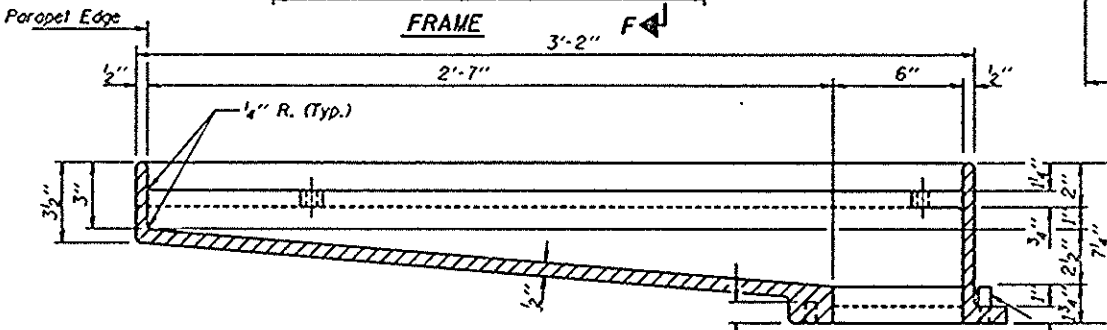
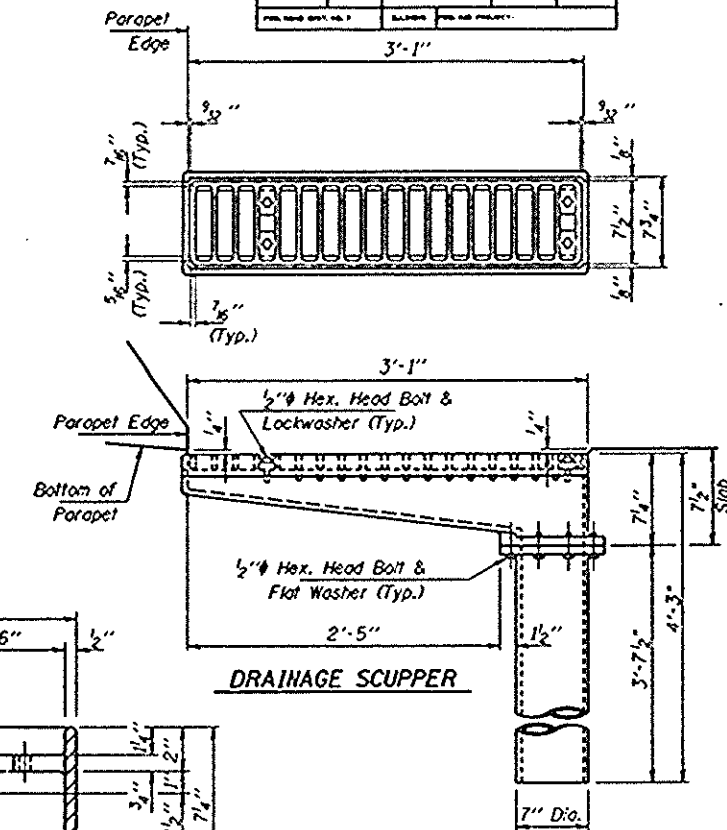
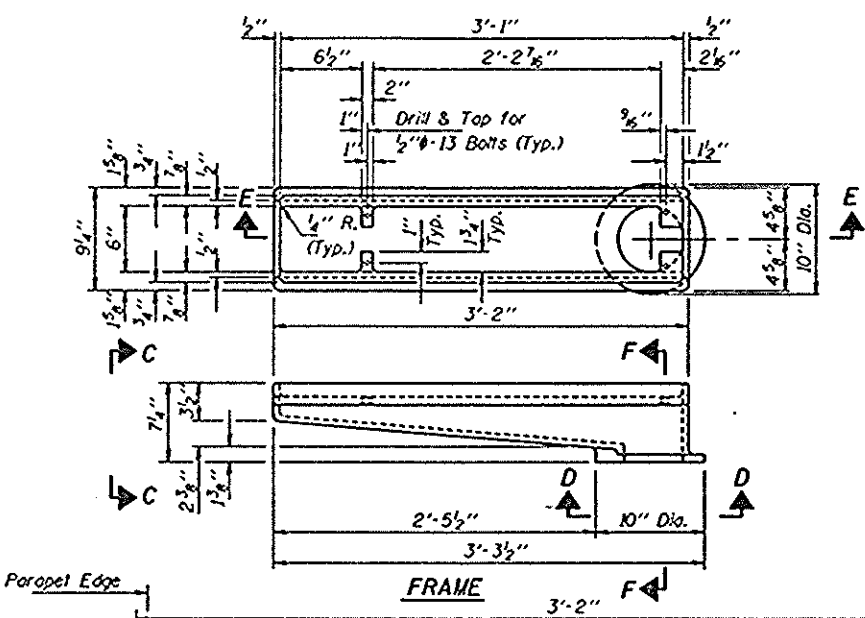
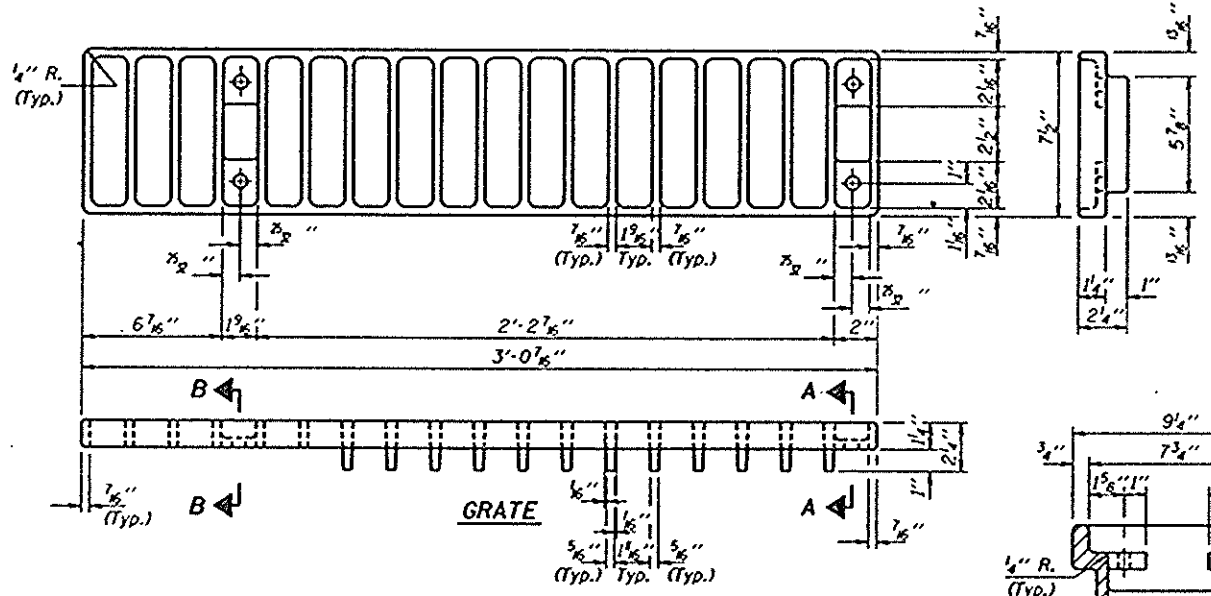
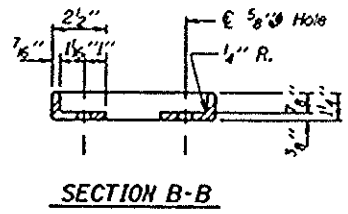
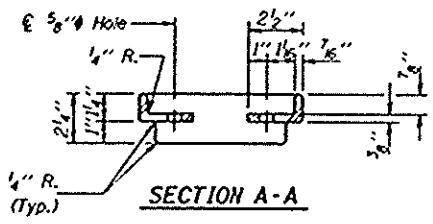
ITEM	UNIT	QUANTITY
Drainage Scupper	Each	8

(Sheet 1 of 2)
STEEL DRAINAGE SCUPPER
 F.A.I. 55 OVER THE MAZON RIVER
 SECTION (32-1) BR
 GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DS-3 12-1-83 (N.T. to inside of exterior stringer flange shall not be >3'-11")

ROUTE NO.	SECTION	DRY	DATE	NO.	SHEET NO. 9 OF
F.A.I. 55	CS-20P	GRAND	66	57	26 SHEETS
DESIGNED BY: V.S.M.		CHECKED BY: K.L.F.		DRAWN BY: K.H.L.	
CHECKED BY: V.S.N./K.L.F.					



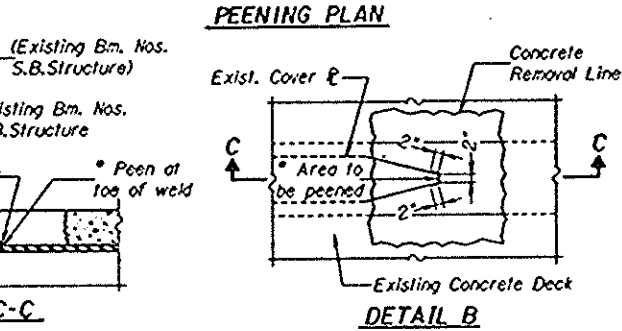
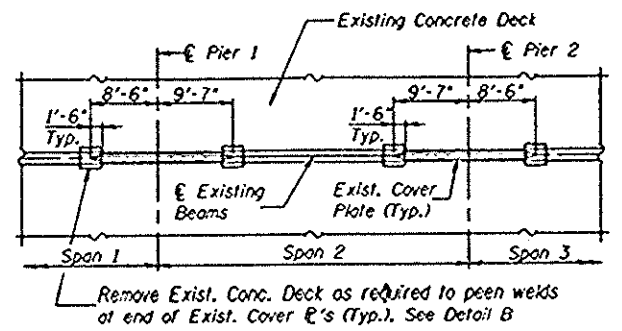
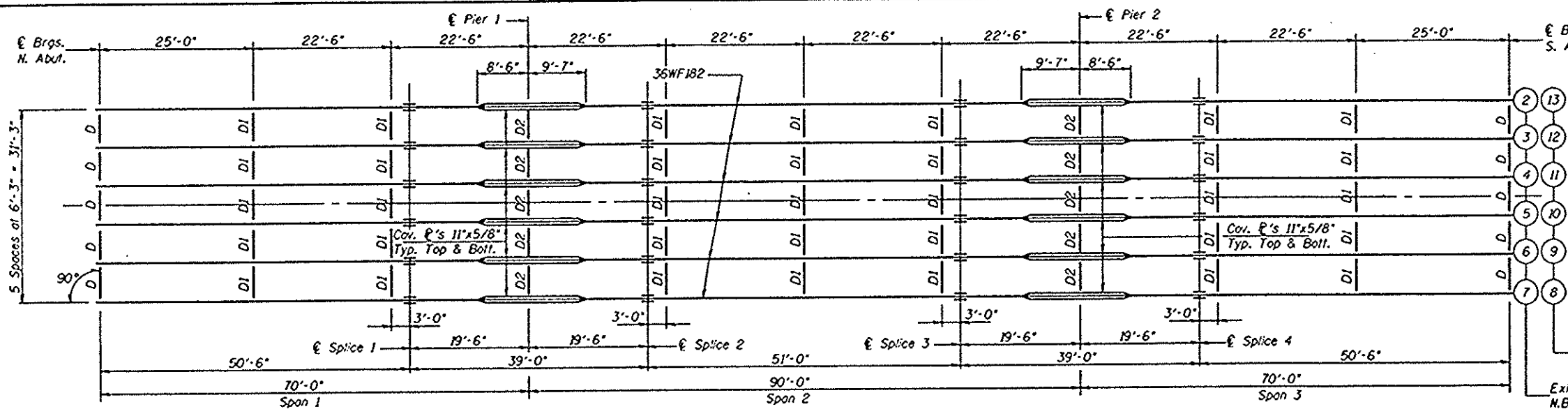
Notes:
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 30.
 Bolts and washers shall conform to the requirements of ASTM A307.
 All bolts and washers shall be galvanized in accordance with AASHTO M232.
 As an alternate bolts and washers may be stainless steel conforming to the requirements of ASTM A193, Type 304.
 Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper will be paid for at the unit bid price for "DRAINAGE SCUPPERS."
 The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DS-4 12-1-83 (N.T. to inside of exterior stringer flange shall not be >3'-11")

(Sheet 2 of 2)
ALTERNATE - CAST IRON DRAINAGE SCUPPER
 F.A.I. 55 OVER THE MAZON RIVER
 SECTION (32-1) BR
 GRUNDY COUNTY

DATE	BY	CHKD	APP'D	SHEET NO. OF
F.A.I. 55	CR-204	GRACY	86	58
PROJECT NO. 107				26 SHEETS



EXISTING STRUCTURAL STEEL FRAMING PLAN NORTH & SOUTH BOUND STRUCTURES

RECOMMENDED PROCEDURE FOR REMOVAL AND REPLACEMENT OF EXISTING ABUTMENT BEARINGS

- Existing roller bearings at North and South Abutments for existing Bms. #2 thru #13 to be removed and replaced with elastomeric bearings as per details shown on Sheet 14.
- The cost of removal of existing abutment bearings shall be paid at the contract unit price each to "JACK AND REMOVE EXISTING BEARINGS". This price shall include supplying the necessary jacking equipment, providing and installing temporary cribbing and shoring at abutment berms and restoring the berms to the existing condition after removal of jacking and cribbing.
- Install temporary cribbing and shoring at abutment berms to support existing beams. Install jacks and lift existing Bms. #2 thru #13 from existing roller bearings. Height of lift required to remove bearing assembly shall be 1/8" maximum. Roller stop bar welded to top of bottom plate may be removed if required to accomplish removal of bearing assembly within 1/8" maximum lift height. Jacking equipment, shoring and cribbing shall be capable of supporting 5,500 pound reaction at each beam.
- Construct abutments to bearing seat elevations shown on Sheets 17 & 18 of plans.
- Install new elastomeric bearings as per details shown on Sheets 13 & 14 of plans. Drill in and set anchor bolts as required.
- Lower the beams and remove cribbing.

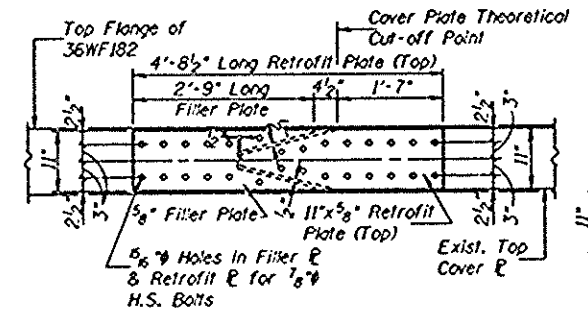
PEENING OF EXISTING COVER PLATE WELDS

Prior to removal of the concrete decks, small areas of the deck shall be removed over both ends of the top cover plates so the welds can be peened as shown on the plans and as hereafter specified. Under no condition shall this peening be deferred until the deck is completely removed as it is vital that the peening be performed under essentially full load conditions. The removal of the concrete for the peening operation will not be paid for separately but will be incidental to the items for Removal of Existing Concrete Deck.

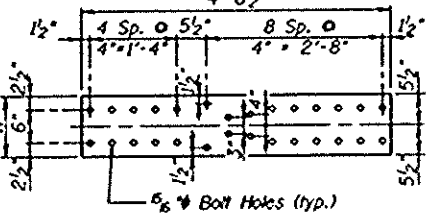
After the concrete removal over the areas to be peened, the end welds as shown on the plans shall be mechanically air hammer peened until the weld toes are plastically deformed and rendered smooth. Peening shall be performed with a pneumatic air hammer operated at 25 psi. The peening tool shall have a smooth rounded nose which will not cut or gouge the weld. Peening shall be continued until the weld toe becomes smooth. If a crack is visually apparent in the weld, the Engineer shall be advised before proceeding with peening. Prior to peening, the weld areas shall be cleaned of rust and paint by sandblasting.

The peening shall be done as directed by the Engineer and shall meet his approval.

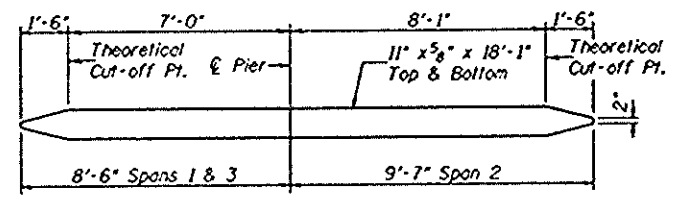
Basis for Payment. Peening of the existing welds shall be paid for at the contract unit price per lineal foot for PEENING OF EXISTING COVER PLATE WELDS.



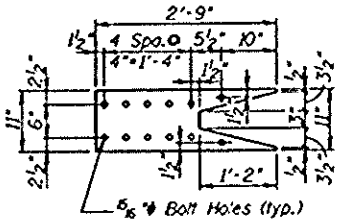
PLAN-RETROFIT PLATE AT TOP OF BEAM



PLAN-3/4" RETROFIT PLATE



EXISTING COVER PLATE DETAIL

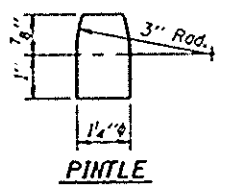


PLAN-5/8" FILLER PLATE

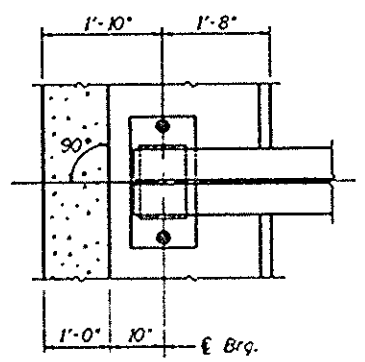
COVER PLATE RETROFITTING:

All top cover plates of the existing Beams #2 thru #13 shall be retrofitted at both ends. Peening of the existing cover plate welds at both ends is required prior to retrofitting as per special provision and peening details shown.

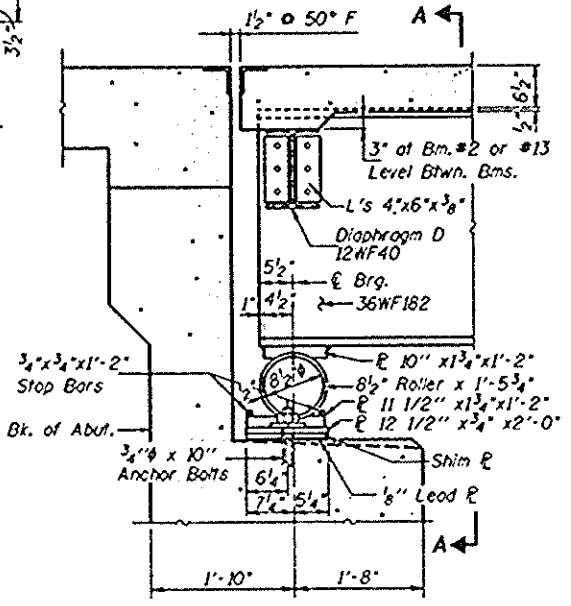
Retrofitting shall be included with "Furnishing and Erecting Structural Steel".



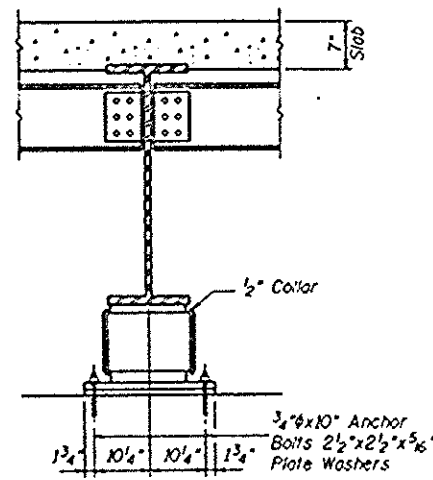
PINTLE



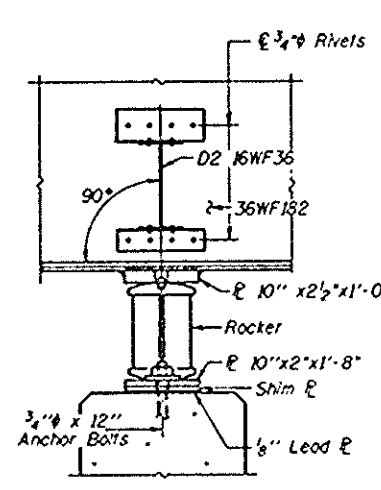
PLAN AT EXISTING ABUTMENT BEARING



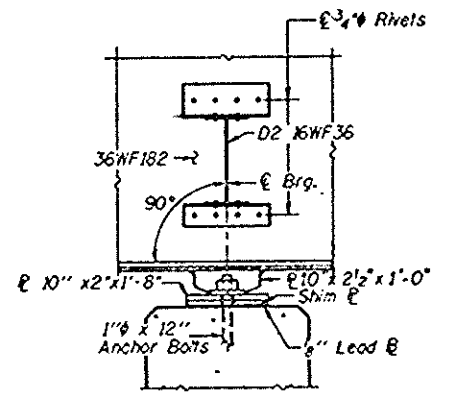
SECTION AT EXISTING ABUTMENT BEARING



SECTION A-A



EXISTING PIER #1 BEARING DETAIL

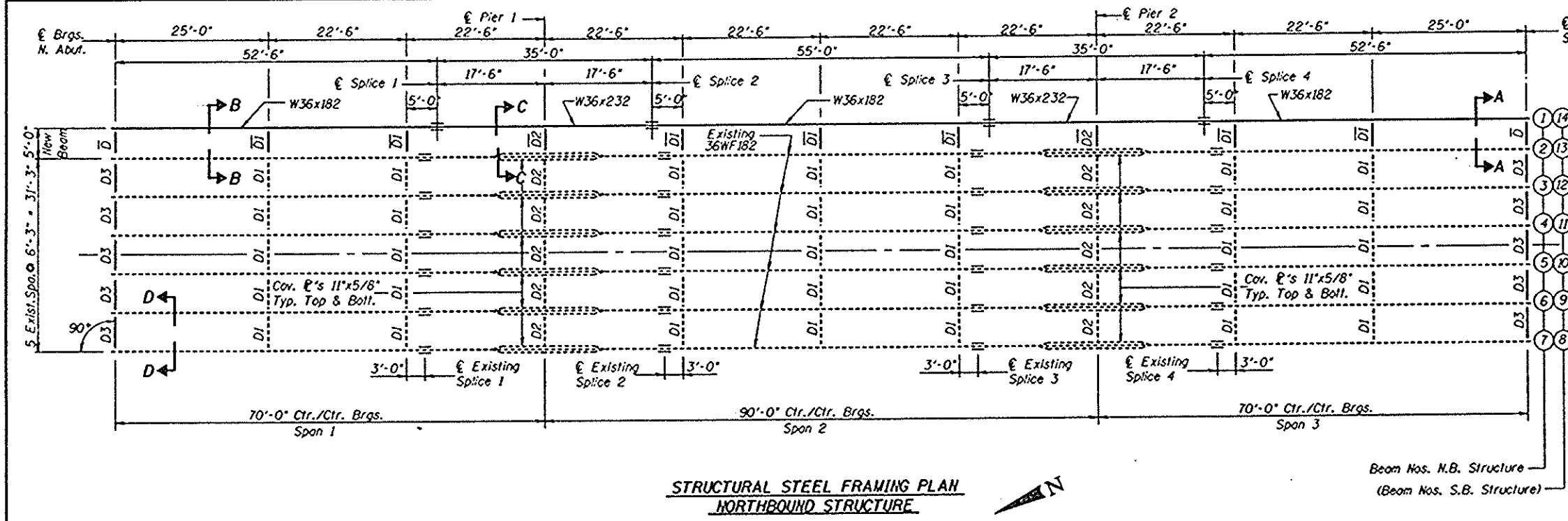


EXISTING PIER #2 BEARING DETAIL

EXISTING COVER PLATE RETROFIT & BEARING REPLACEMENT DETAILS
F.A.I. 55 OVER THE MAZON RIVER SECTION (32-1) BR GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DATE	BY	CHECKED	SCALE	SHEET NO.	OF
F.A.I. 55	02-10A	GRUNDY	86	59	26 SHEETS



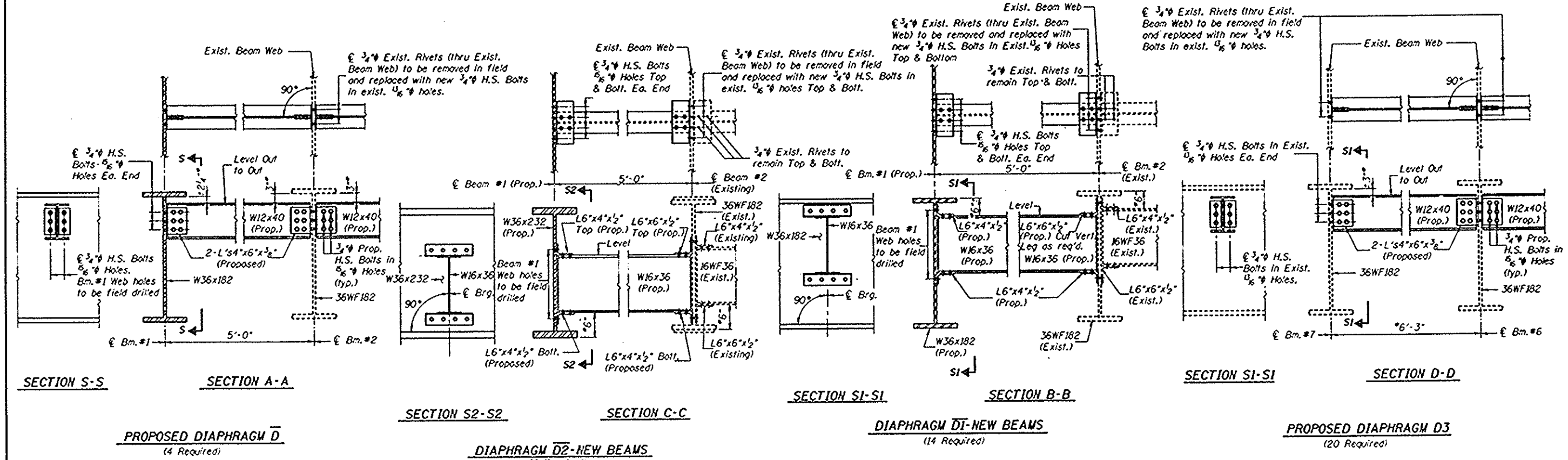
NORTHBOUND STRUCTURE

NOTES:
 Locations of new diaphragms \bar{D}_1 , \bar{D}_1 & \bar{D}_2 between Brgs. #1 (new) and #2 (existing) are determined by the location of the existing Beam #2 connections from where existing $\frac{3}{4}$ " rivets will be removed and replaced with $\frac{3}{4}$ " H.S. Bolts for connecting new diaphragms.
 New End Diaphragms \bar{D}_3 shall replace Existing End Diaphragms \bar{D} shown on Sheet 10.
 Diaphragm spacing and dimensions shown on the proposed details are based on the dimensions shown on the existing plans which shall be field verified.
 Cost of all field drilling for diaphragm connections is incidental to Furnishing and Erecting Structural Steel.

SOUTHBOUND STRUCTURE

Diaphragm details and procedures similar to the above for N.B. Structure are applicable to the S.B. Structure except that the Beams designated #1 thru #7 on the N.B. Structure correspond with Beams designated #14 thru #8 on the S.B. Structure.

**STRUCTURAL STEEL FRAMING PLAN
NORTHBOUND STRUCTURE**



DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

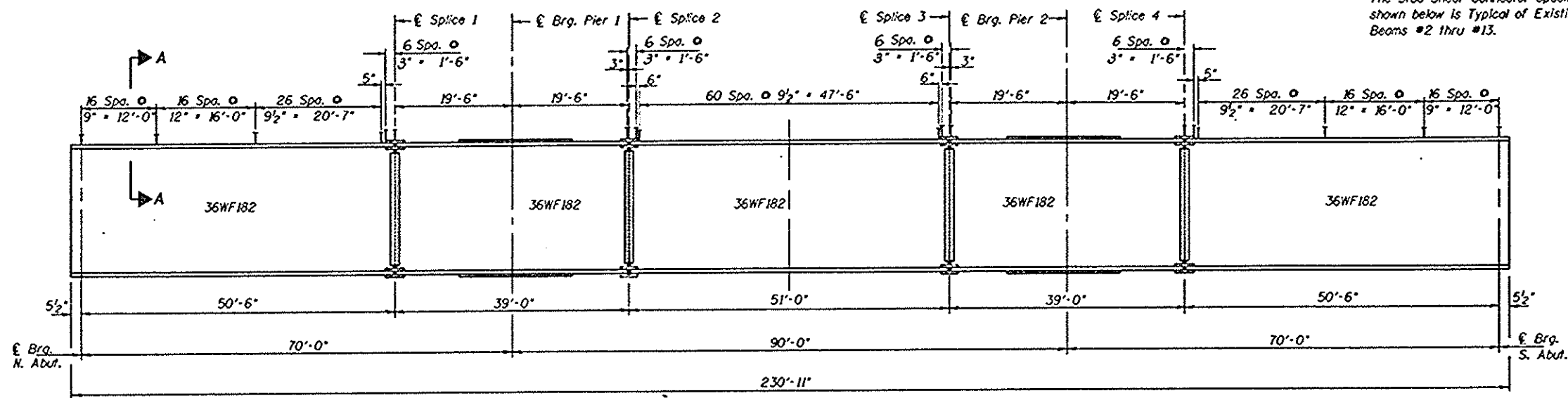
* These dimensions must be verified in field before use since their accuracy depends upon the validity of existing diaphragm/beam dimensions shown on existing plans. Adjustments may have to be made due to the possible inaccuracy of vertical dimensions shown on the diaphragm elevations. To facilitate this, Beam #1 holes have been proposed to be field drilled.

- NOTES:**
- All diaphragm connecting bolts are $\frac{3}{4}$ " H.S. bolts in $\frac{1}{8}$ " holes, except for the $\frac{1}{8}$ " holes in existing beams.
 - Two hardened washers shall be required over all oversize holes.
 - Existing structures shown dashed lines. Proposed structures shown solid lines.

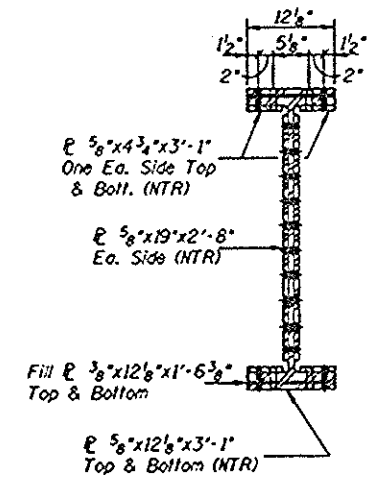
**PROPOSED FRAMING PLAN & DETAILS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY**

K.H.L. 5/10/71

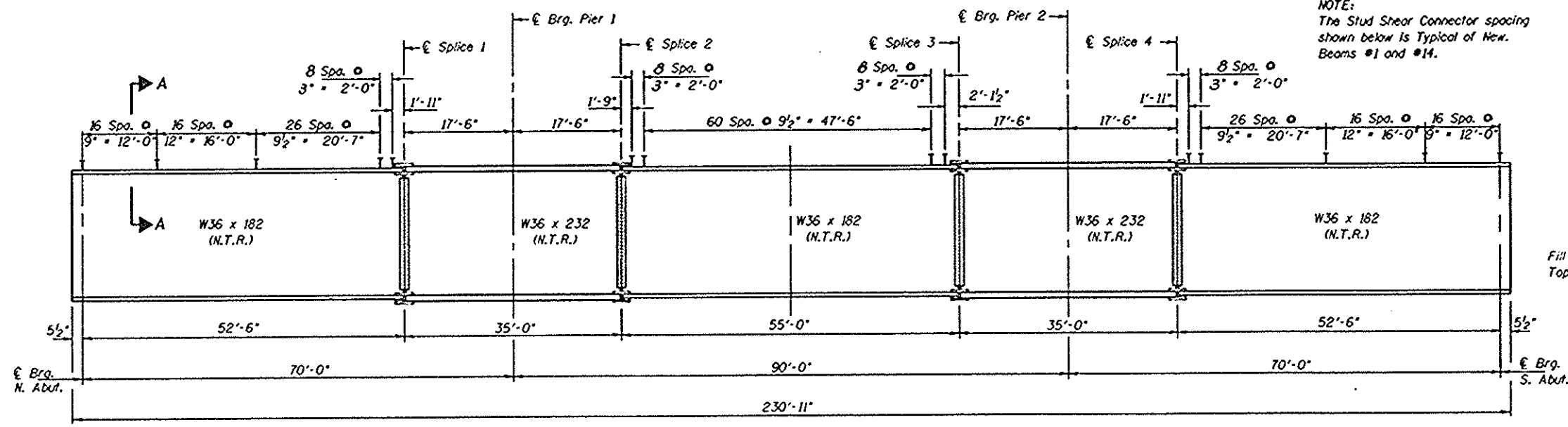
DATE	SECTION	PROJECT	DATE	NO.	SHEET NO. 2 OF 26 SHEETS
F.A.I. 55	02-104	GRUNDY	66	60	



**BEAM ELEVATION
EXISTING BMS. #2 THRU #13**

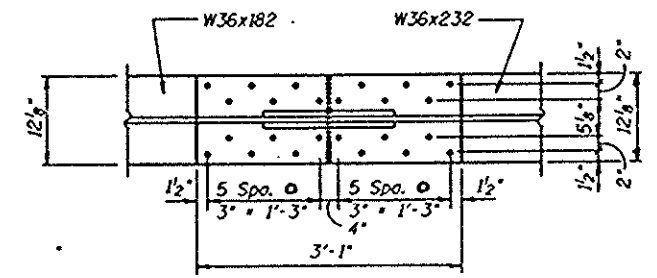


SECTION B-B

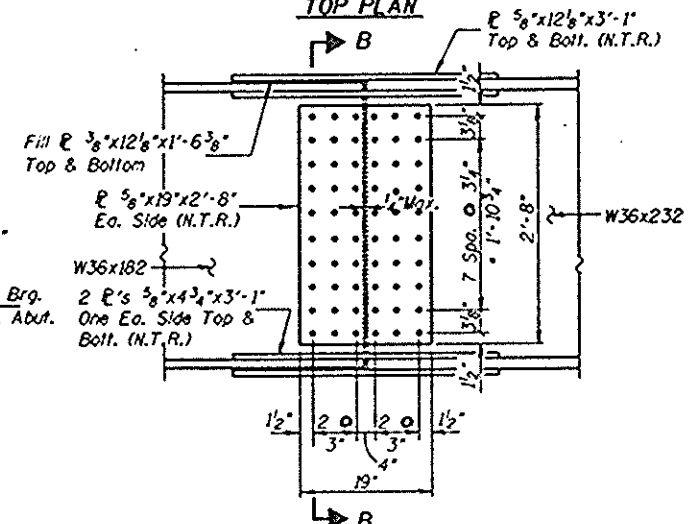


**BEAM ELEVATION
NEW BMS. #1 & #14**

NOTE:
The Stud Shear Connector spacing shown below is Typical of New Beams #1 and #14.



TOP PLAN



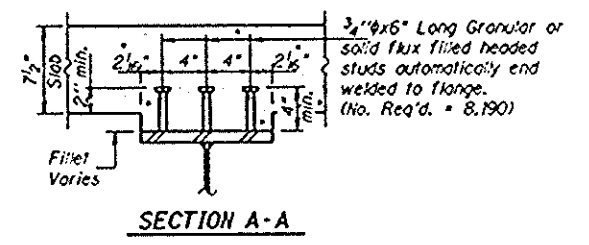
ELEVATION

**FIELD SPLICE DETAILS-NEW BEAMS
(8 Splices Thus)**

**ELEVATIONS AT TOP OF TOP FLANGE OF BEAMS
(For Fabrication Only)**

NORTHBOUND STRUCTURE								
LOCATION	BRG. N. ABUT.	SPLICE 1	PIER 1	SPLICE 2	SPLICE 3	PIER 2	SPLICE 4	BRG. S. ABUT.
Beam 1	574.27	574.37	574.40	574.44	574.42	574.39	574.36	574.28
SOUTHBOUND STRUCTURE								
LOCATION	BRG. N. ABUT.	SPLICE 1	PIER 1	SPLICE 2	SPLICE 3	PIER 2	SPLICE 4	BRG. S. ABUT.
Beam 14	574.27	574.38	574.42	574.47	574.46	574.42	574.38	574.26

Elevations above are before any deflection at Top of Beam Flange of:
W36x182 at Abutments & W36x232 at Piers & Splices



SECTION A-A

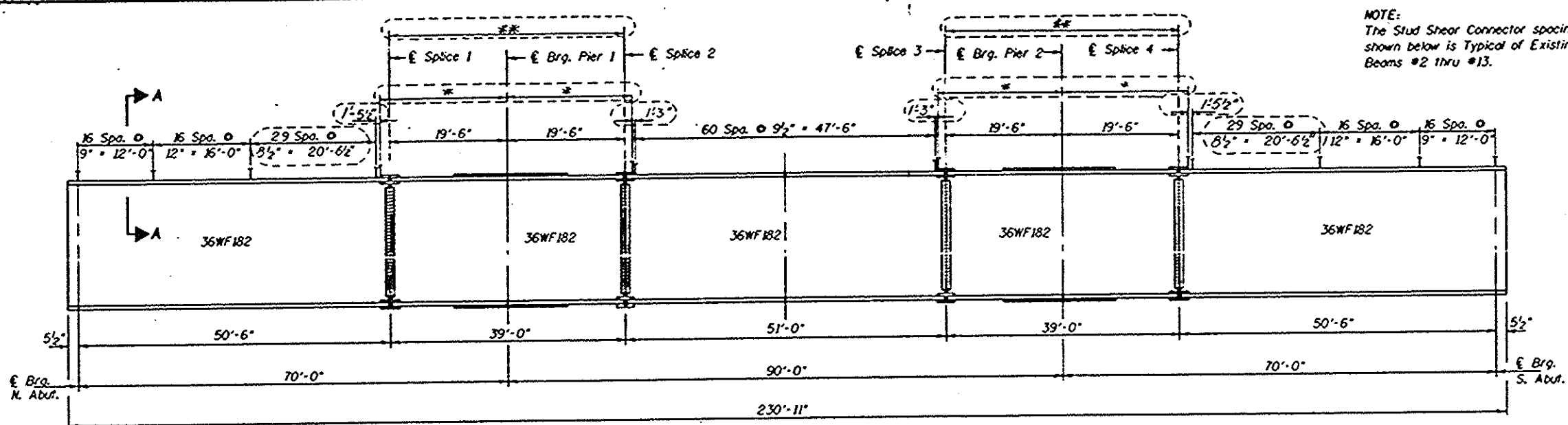
- FIELD SPLICE NOTES:**
ALL BEAMS:
1. All connecting bolts are 7/8" H.S. Bolts in 6/8" standard holes.
2. N.T.R. designates Notch Toughness Requirements.

STEEL BEAM & SPLICE DETAILS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

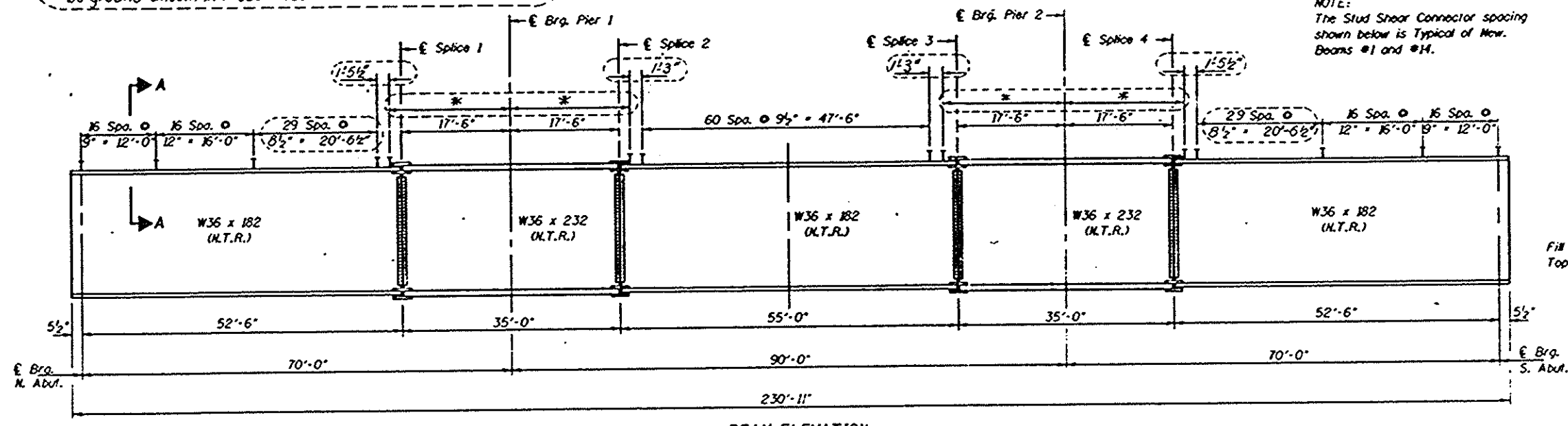
DATE	BY	CHKD	DATE	SHEET NO.	TOTAL SHEETS
F.A.I. 55	02-1989	GRUNDY	06	(60A)	26 SHEETS

NOTE:
The Stud Shear Connector spacing shown below is Typical of Existing Beams #2 thru #13.



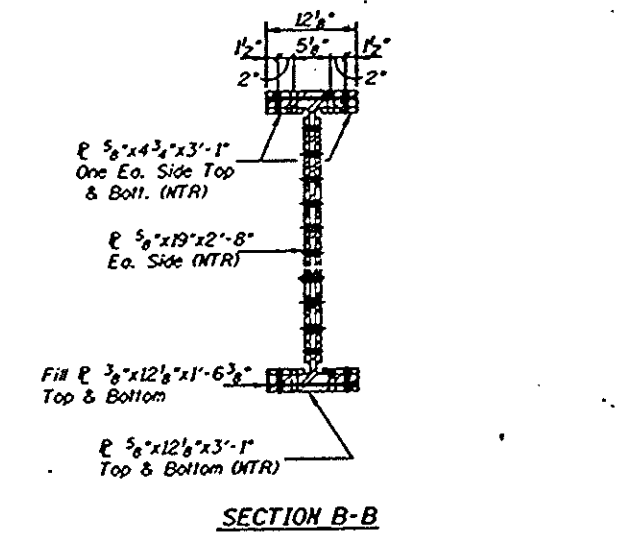
* 10 spaces @ 2'-0" = 20'-0" (fillet weld is not allowed in these areas)
** Exist. nicks on top of top flanges of Bms #2, #7, #8 and #13 shall be ground smooth in these areas.

BEAM ELEVATION EXISTING BMS #2 THRU #13

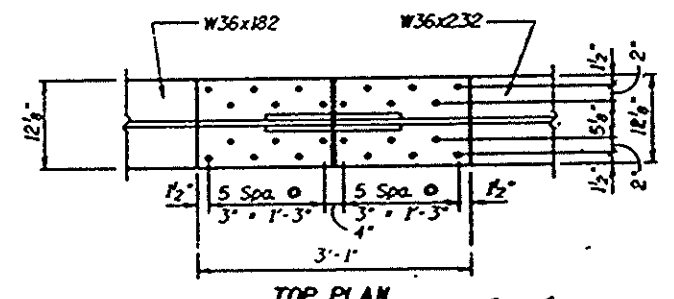


NOTE:
The Stud Shear Connector spacing shown below is Typical of New Beams #1 and #14.

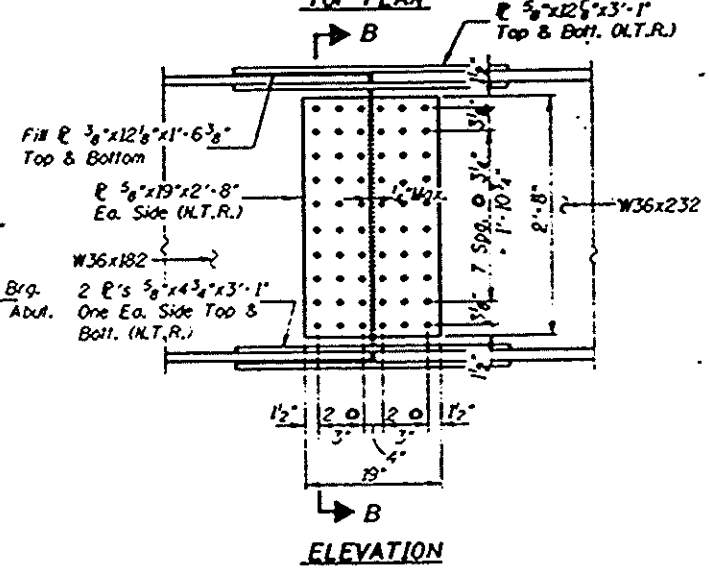
BEAM ELEVATION NEW BMS #1 & #14



SECTION B-B



TOP PLAN



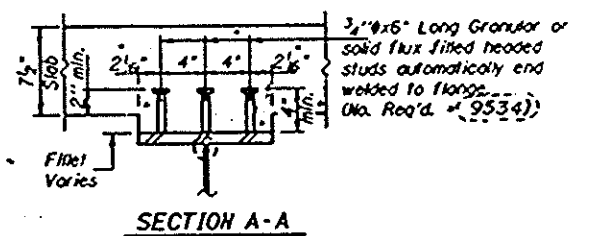
ELEVATION

FIELD SPLICE DETAILS-NEW BEAMS (8 Splices Thus)

ELEVATIONS AT TOP OF TOP FLANGE OF BEAMS (For Fabrication Only)

NORTHBOUND STRUCTURE								
LOCATION	€ BRG. N. ABUT.	SPLICE 1	€ PIER 1	SPLICE 2	SPLICE 3	€ PIER 2	SPLICE 4	€ BRG. S. ABUT.
Beam 1	574.27	574.37	574.40	574.44	574.42	574.39	574.36	574.28
SOUTHBOUND STRUCTURE								
LOCATION	€ BRG. N. ABUT.	SPLICE 1	€ PIER 1	SPLICE 2	SPLICE 3	€ PIER 2	SPLICE 4	€ BRG. S. ABUT.
Beam 14	574.27	574.38	574.42	574.47	574.46	574.42	574.38	574.26

Elevations above are before any deflection at Top of Beam Flange of: W36x182 at Abutments & W36x232 at Piers & Splices



SECTION A-A

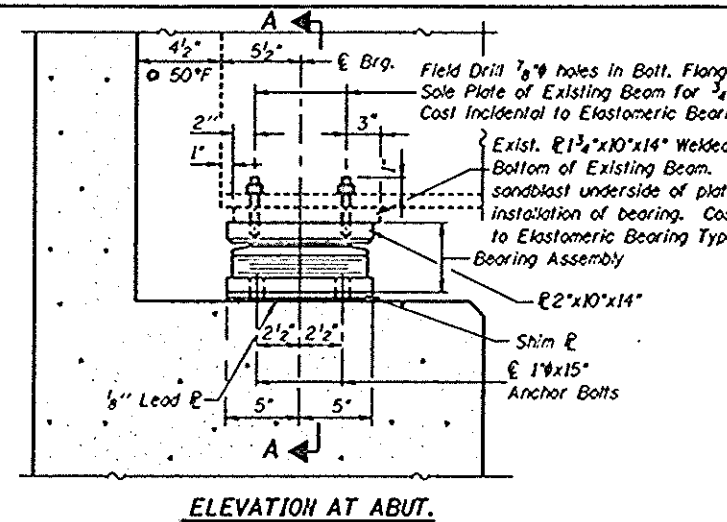
FIELD SPLICE NOTES:
ALL BEAMS:
1. All connecting bolts are 7/8" H.S. Bolts in 5/8" standard holes.
2. N.T.R. designates Notch Toughness Requirements.

AS REVISED: 4-8-93 S.T.D.

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.M./K.L.F.

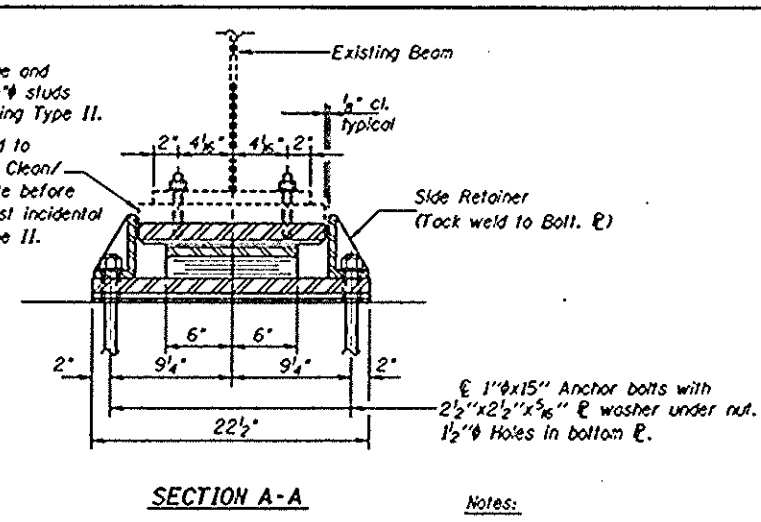
STEEL BEAM & SPLICE DETAILS
F.A.I. 55 OVER THE MAZON RIVER
SECTION C32-D BR
GRUNDY COUNTY

DATE	BY	CHKD	APP'D	SHEET NO. 13 OF 26 SHEETS
F.A.I. 55	CSE-204	GRACY	86	61

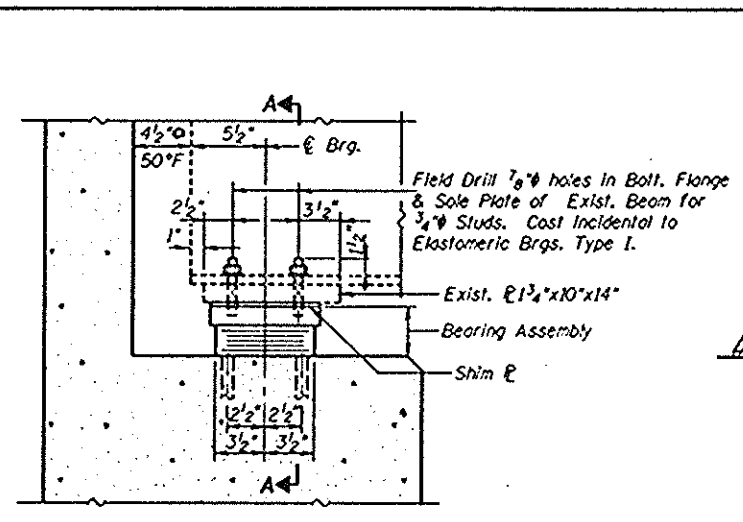


ELEVATION AT ABUT.

TYPE II TFE ELASTOMERIC EXP. BRG.

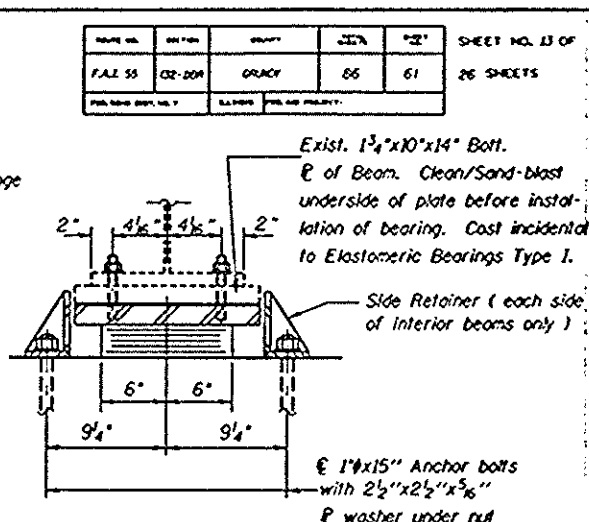


SECTION A-A



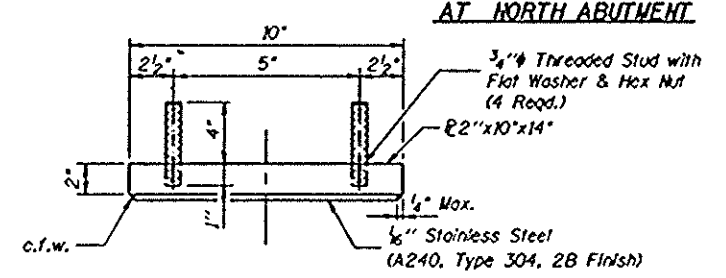
ELEVATION AT ABUT.

TYPE I ELASTOMERIC EXP. BRG.

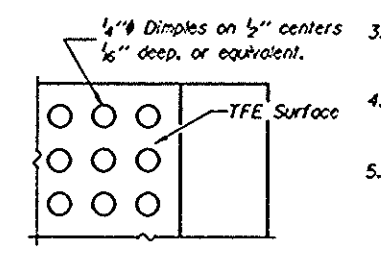


SECTION A-A

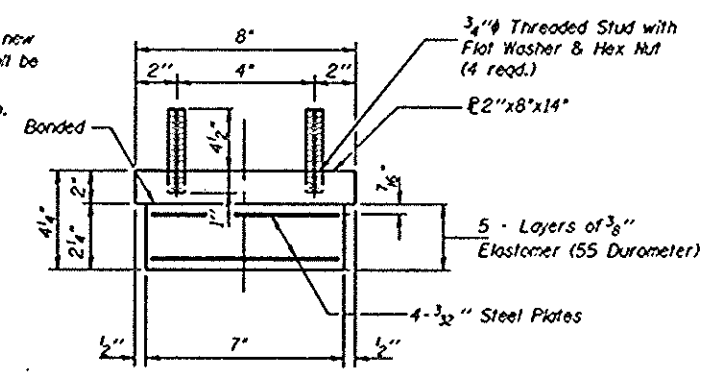
- Notes:**
- Grind off existing anchor bolts flush with concrete surface where bearings are to be replaced.
 - Existing roller bearings at abutments are to be replaced by Elastomeric Expansion Bearings.
 - Dashed lines on Elevations & Sections indicate Existing Structures and solid lines indicate Proposed New Structures.
 - After the existing beams are in place on new bearings, holes at expansion bearings shall be drilled and anchor bolts grouted in place.
 - See sheet #16 for Anchor Bolt Installation.



TOP BEARING ASSEMBLY

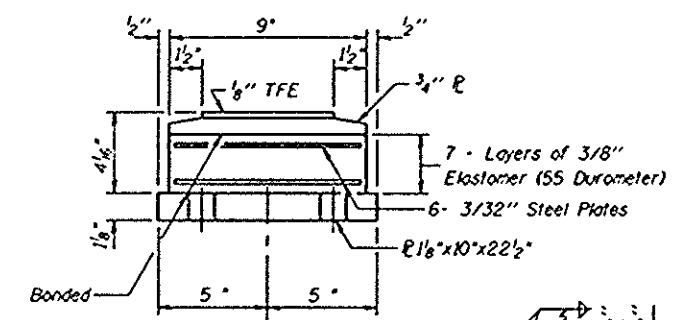


PLAN-TFE SURFACE

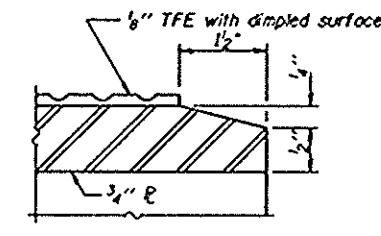


BEARING ASSEMBLY

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



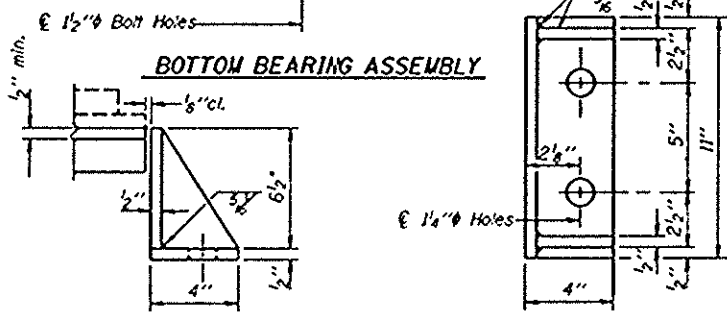
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

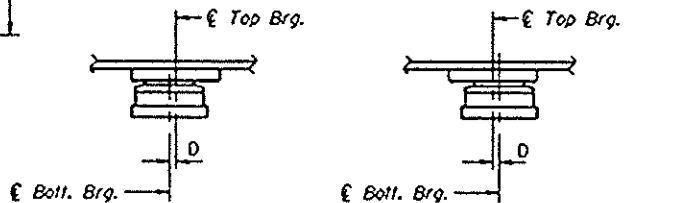
Note: The 1/8 inch TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification, UUU-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8 inch TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



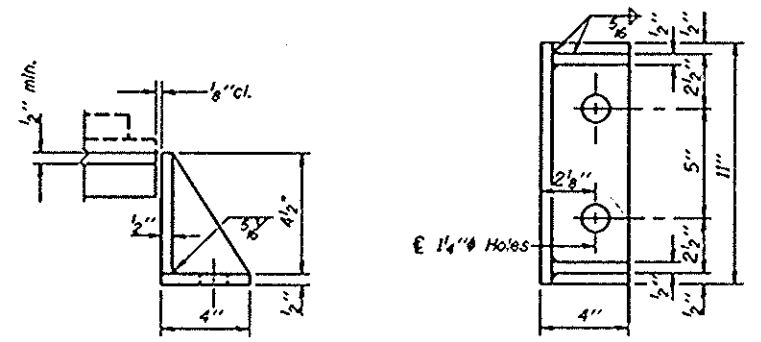
SIDE RETAINER (24 Req'd.)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SETTING ANCHOR BOLTS AT EXP. BRG.

0 1/8 inch per each 100 feet of expansion for every 15 degree change from the normal temp. of 50°F.



SIDE RETAINER (20 Req'd.)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Elastomeric Bearing Assembly Type II	Each	12

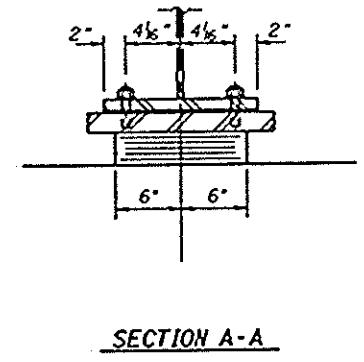
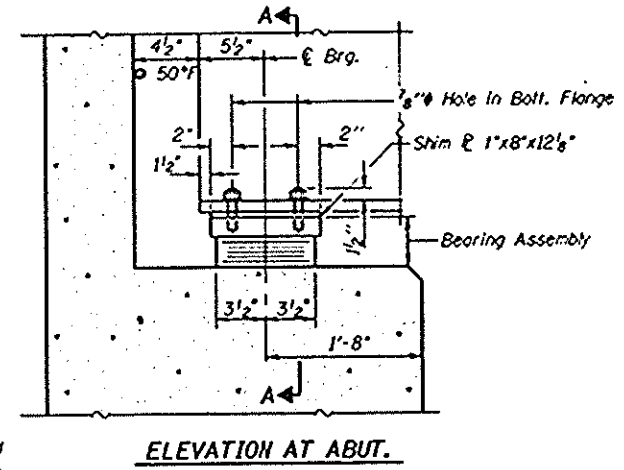
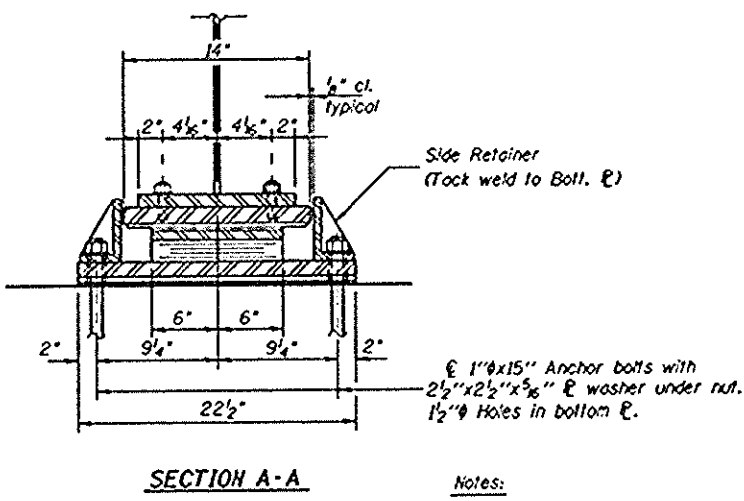
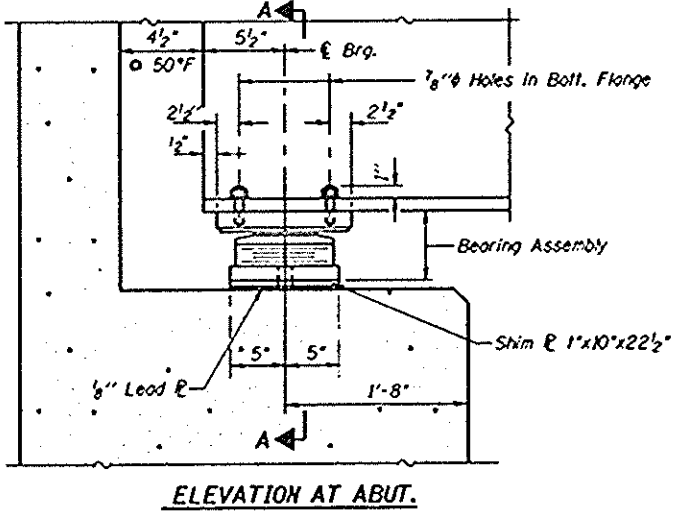
ABUTMENT BEARING DETAILS FOR EXISTING BEAMS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

1-2-E2 12-1-83

E:\NEWSLOC\ JAN. 6, 1982

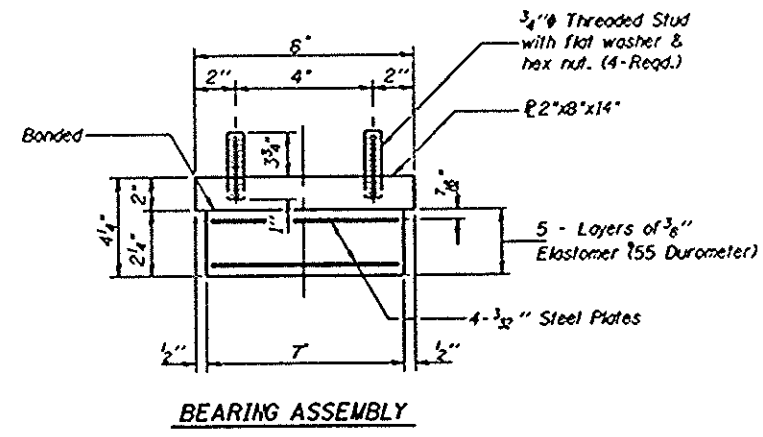
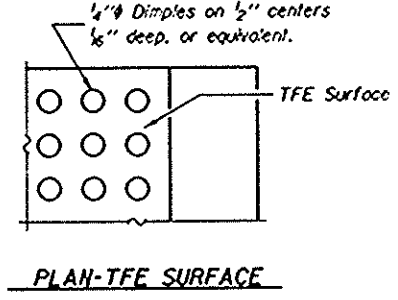
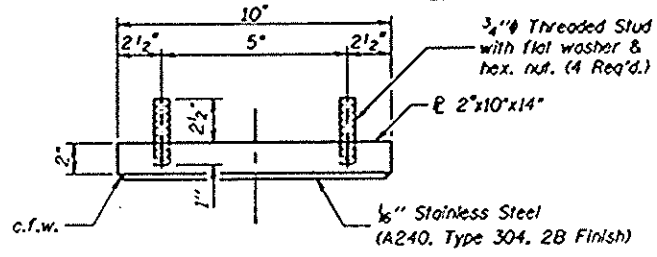
DATE	BY	CHKD	DATE	SHEET NO. OF
F.A.I. 55	CZ-204	GRACY	66	62
PROJECT NO. 117				26 SHEETS



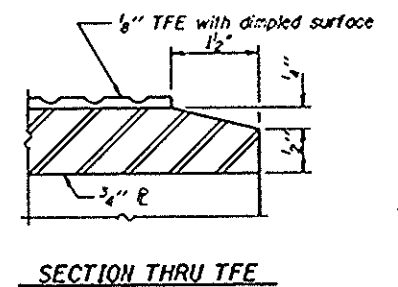
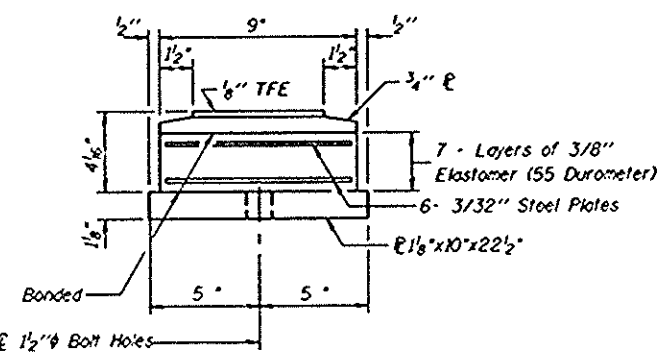
TYPE II TFE ELASTOMERIC EXP. BRG. AT NORTH ABUTMENT

TYPE I ELASTOMERIC EXP. BRG. AT SOUTH ABUTMENT

- Notes:**
1. After new beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place.
 2. See Sheet #16 for Anchor Bolt Installation.

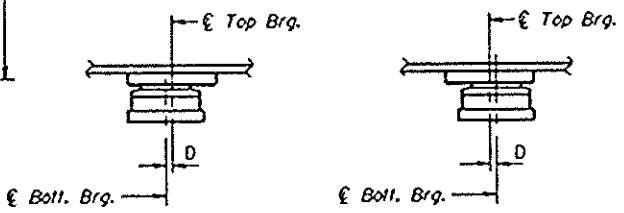
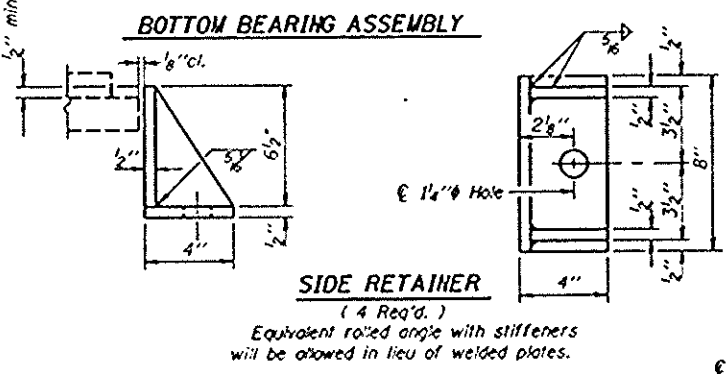


Note: Shim plates shall not be placed under Bearing Assembly.



Note: The 1/8\" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8\" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



BELOW 50°F. (Move bott. brg. away from fixed brg.)
ABOVE 50°F. (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
D=1/8\" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

TABLE OF 7\" DIMENSIONS AT ABUTMENT BEARINGS

LOCATION	BEAM	#1
NORTHBOUND STRUCTURE	N.ABUT.	1'
	S.ABUT.	1'
LOCATION	BEAM	#14
SOUTHBOUND STRUCTURE	N.ABUT.	1'
	S.ABUT.	1 1/6\"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	2
Elastomeric Bearing Assembly Type II	Each	2

ABUTMENT BEARING DETAILS FOR NEW BEAMS

F.A.I. 55 OVER THE MAZON RIVER SECTION (32-1) BR GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

I-2-E2 12-1-83

REV. 6. 10. 80/85

MOMENT AND REACTION TABLES-SYMMETRICAL COMPOSITE 3 SPAN

EXISTING BEAMS

INTERIOR BEAM MOMENT TABLE "A"

Table with 4 columns: Moment type (Is, Ic, Ss, Sc, D, MR, fs non-comp, sR, MsR, Mt, M (Imp), Total, fs comp, fs Total, VR), and 3 rows for spans 0.4 Sp.1 or 3 Pier 1 or 2, 0.5 Sp.2, and 0.5 Sp.2.

INTERIOR REACTION TABLE "B"

Table with 3 columns: Reaction type (RR, Rt, R (Imp), R (Total)), Abutment, and Pier.

PROPOSED NEW BEAMS

INTERIOR BEAM MOMENT TABLE "C"

Table with 4 columns: Moment type (Is, Ic, Ss, Sc, D, MR, fs non-comp, sR, MsR, Mt, M (Imp), Total, fs comp, fs Total, VR), and 3 rows for spans 0.4 Sp.1 or 3 Pier 1 or 2, 0.5 Sp.2, and 0.5 Sp.2.

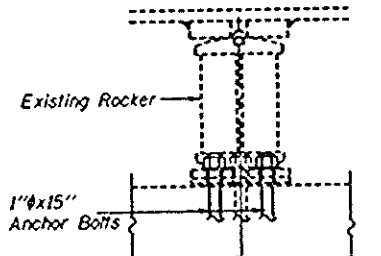
INTERIOR REACTION TABLE "D"

Table with 3 columns: Reaction type (RR, Rt, R (Imp), R (Total)), Abutment, and Pier.

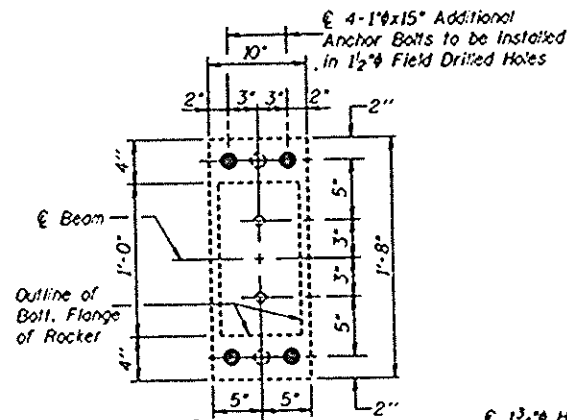
Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs Total. Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs Total. VR is the maximum live Load + Impact shear range in span.

NOTES:

- 1. The "Bearing Assembly Details" shown at Piers are for the two new beams #1 & #14.
2. The existing bearings at Piers for exist. beam #2 thru #13 shall continue to support the existing beams there with some modifications as shown on this sheet.
3. Anchor Bolts at fixed bearings may be built into the masonry.
4. See Sheet #16 for Anchor Bolt Installation.
5. Existing Structures are shown dashed lines and Proposed New Structures are shown solid lines.

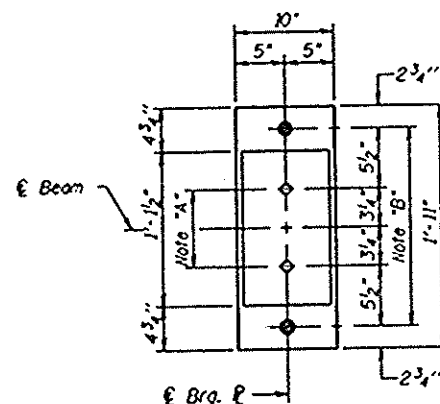


ELEVATION AT PIER #1



PLAN AT PIER #1

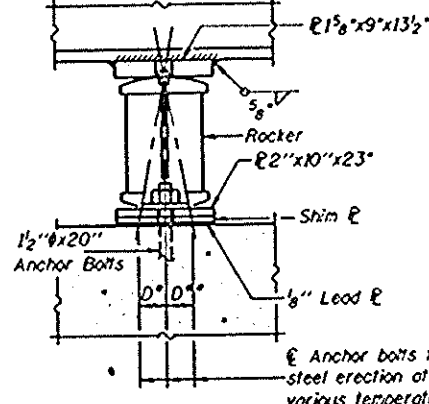
(No. of Exist. Brqs. to be modified thus = 12)



PLAN AT PIER #1 NEW BEAMS

Note "A": 1 3/8" Holes - 1" deep in top flange for 1 1/2" Pintles. Thread or press fit Pintles in Bottom flange.

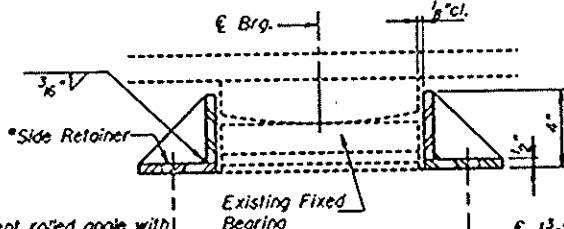
Note "B": 2" Holes for 1 1/2" x 20" Anchor Bolts - 3/8" x 3" x 3" washer under nut.



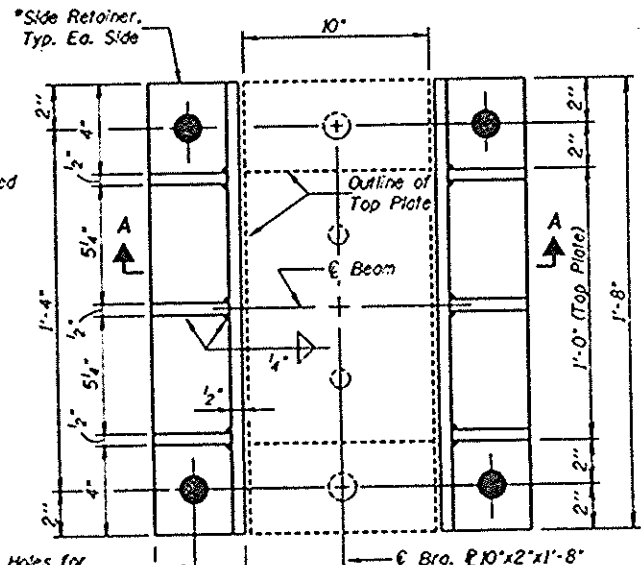
ELEVATION AT PIER #1 NEW BEAMS

BEARING ASSEMBLY DETAILS EXPANSION BEARING AT PIER #1 FOR NEW BEAMS

(No. Required = 2)



SECTION A-A

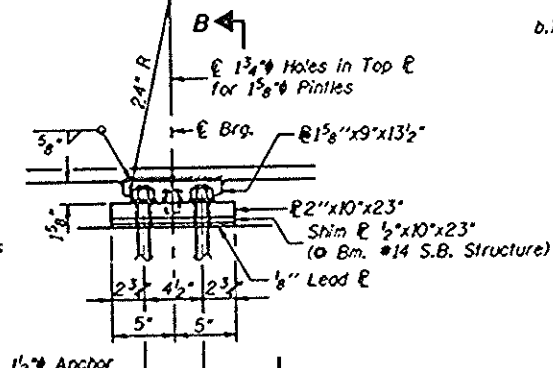


PLAN AT PIER #2

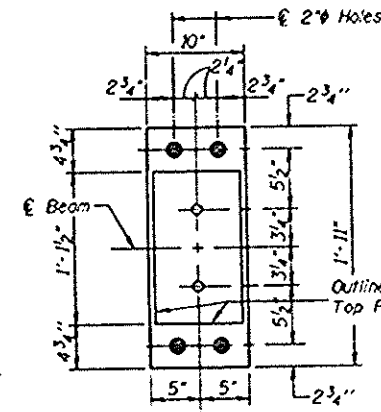
(No. of Exist. Brqs. to be modified thus = 12)

MODIFICATIONS TO EXISTING BEARINGS AT PIERS

Note: Cost of Modifications to Existing Bearings at Piers is incidental to Structural Steel.



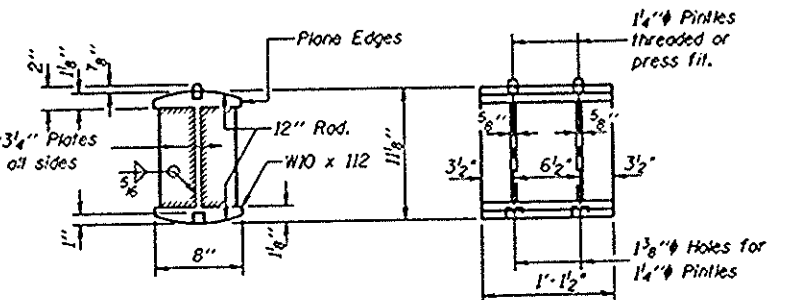
ELEVATION AT PIER #2 NEW BEAMS



PLAN AT PIER #2 NEW BEAMS

BEARING ASSEMBLY DETAILS FIXED BEARING AT PIER #2 FOR NEW BEAMS

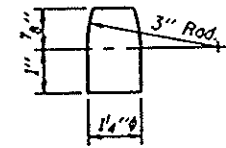
(No. Required = 2)



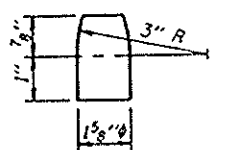
ROCKER

NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

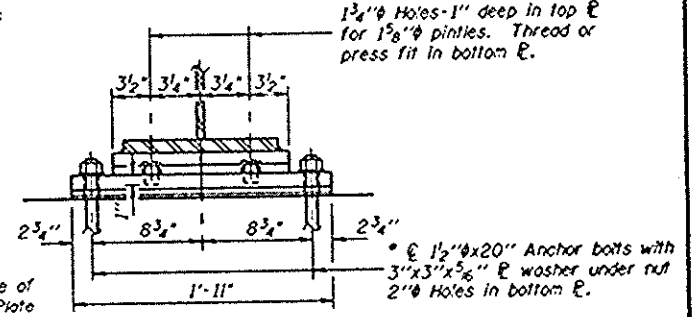
- a.) D° (Side of brg. away from fixed brg.) D° = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50° F.
D** (Side of brg. toward fixed brg.) D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50° F.
b.) After beams have been erected and dimensions D° & D** determined, holes shall be drilled and anchor bolts shall be installed as shown on Sheet #16. All fixed anchor bolts may be built into the masonry.



PINLE FOR PIER #1 BRG.



PINLE FOR PIER #2 BRG.



SECTION B-B

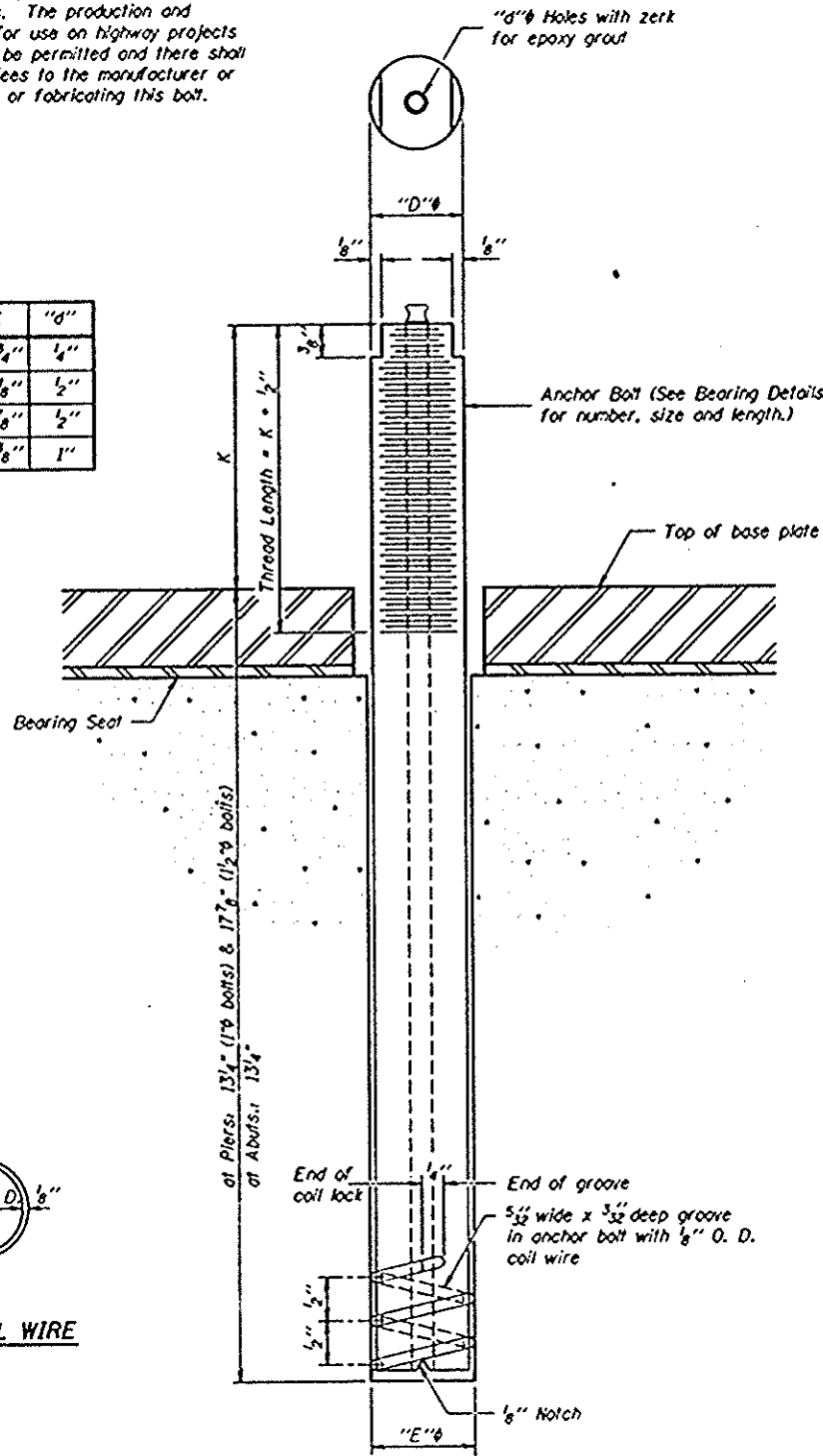
PIER BEARING DETAILS NEW & EXISTING BEAMS

F.A.I. 55 OVER THE MAZON RIVER SECTION (32-1) BR GRUNDY COUNTY

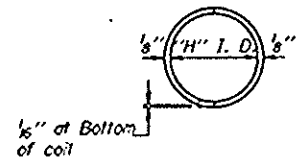
DESIGNED V.S.N., CHECKED K.L.F., DRAWN K.H.L., CHECKED V.S.N./K.L.F.

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	3/8"	1 3/4"	1/4"
1 1/2"	1 5/8"	1 1/8"	2 1/8"	1/2"
2"	2 1/8"	1 3/8"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 1/8"	3 3/8"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

ABB-1 12-1-83

MATERIALS FOR ILLINOIS COIL-LOCK

ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS

COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk filling with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

ROUTE NO.	SECTION	BRIDGE	SPAN	POST	SHEET NO. OF
F.A.I. 55	32-204	GRUNDY	65	64	26 SHEETS

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

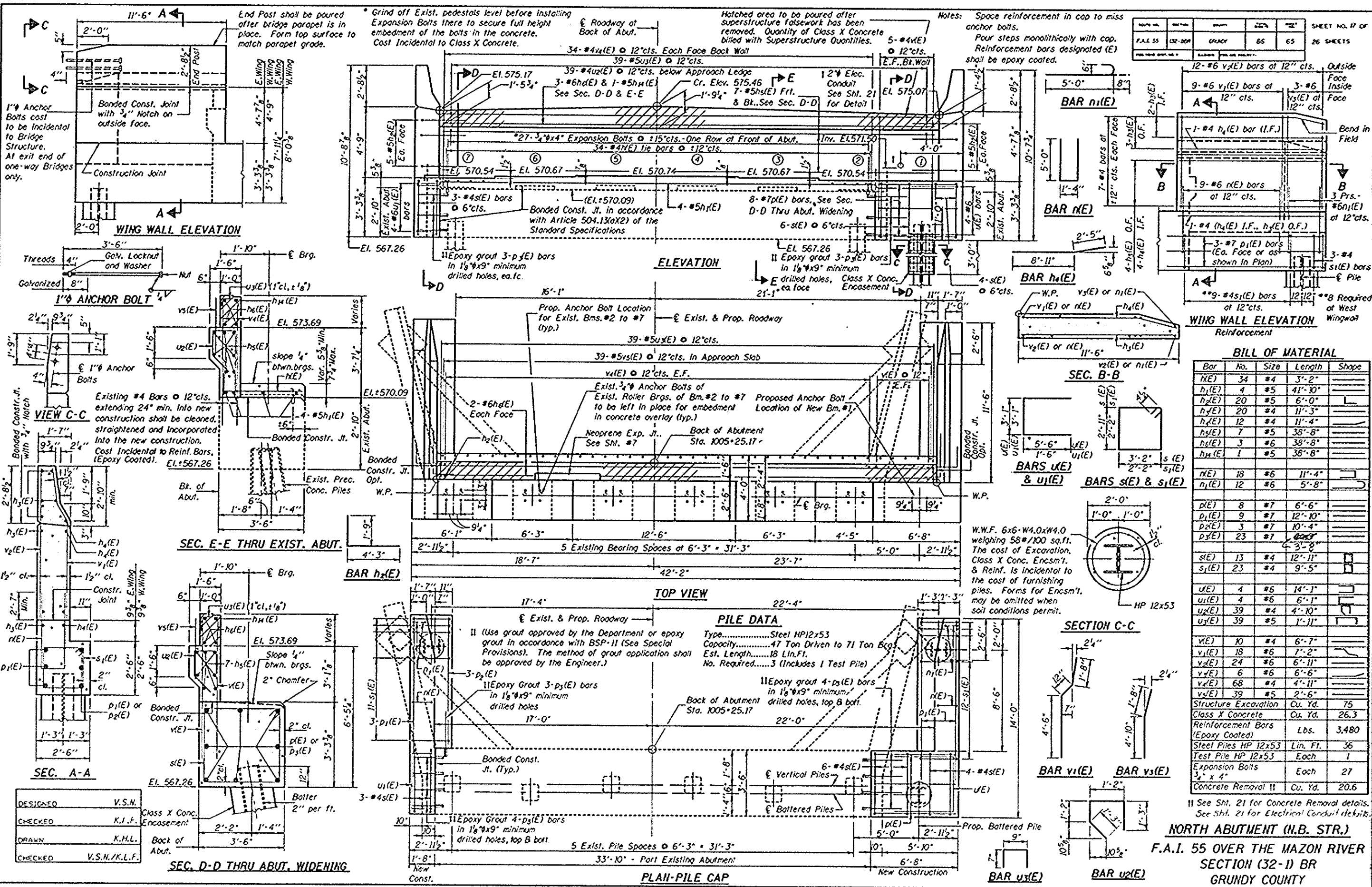
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

ANCHOR BOLT DETAILS FOR BEARINGS

F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

PROJECT NO.	DATE	DRAWN BY	CHECKED BY	SHEET NO. 17 OF 26 SHEETS
F.A.I. 55	12-20-68	K.H.L.	K.L.F.	



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n(E)	34	#4	3'-2"	
h1(E)	4	#5	41'-10"	
h2(E)	20	#5	6'-0"	
h3(E)	20	#4	11'-3"	
h4(E)	12	#4	11'-4"	
h5(E)	7	#5	38'-8"	
h6(E)	3	#6	38'-8"	
h7(E)	1	#5	38'-8"	
n(E)	18	#6	11'-4"	
n1(E)	12	#6	5'-8"	
n(E)	8	#7	6'-6"	
n1(E)	9	#7	12'-10"	
n2(E)	3	#7	10'-4"	
n3(E)	23	#7	4'-3'-8"	
s(E)	13	#4	12'-11"	
s1(E)	23	#4	9'-5"	
u(E)	4	#6	14'-1"	
u1(E)	4	#6	6'-1"	
u2(E)	39	#4	4'-10"	
u3(E)	39	#5	1'-11"	
v(E)	10	#4	6'-7"	
v1(E)	18	#6	7'-2"	
v2(E)	24	#6	6'-11"	
v3(E)	6	#6	6'-6"	
v4(E)	68	#4	4'-11"	
v5(E)	39	#5	2'-6"	
Structure Excavation	Cu. Yd.			75
Class X Concrete	Cu. Yd.			26.3
Reinforcement Bars (Epoxy Coated)	Lbs.			3,480
Steel Piles HP 12x53	Lin. Ft.			36
Test Pile HP 12x53	Each			1
Expansion Bolts	Each			27
3" x 4" Concrete Removal	Cu. Yd.			20.6

See Sht. 21 for Concrete Removal details. See Sht. 21 for Electrical Conduit details.

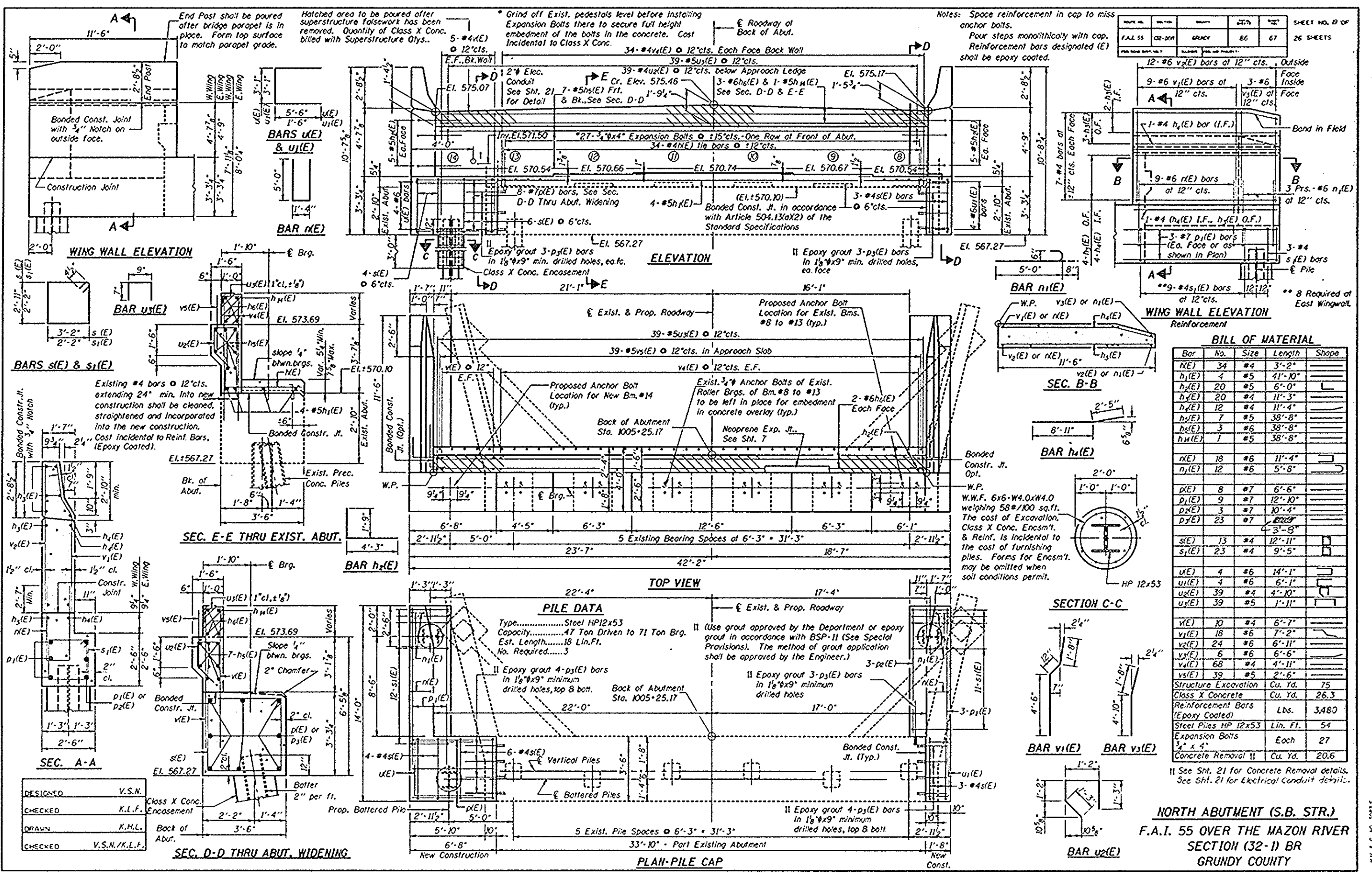
NORTH ABUTMENT (N.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

Class X Conc. Encasement
 Back of Abut.

REV. 6. 6. 68. 5015

DATE	BY	CHKD	NO.	SHEET NO. OF
F.A.I. 55	02-10-71	GRUNDY	66	67
				26 SHEETS



BILL OF MATERIAL

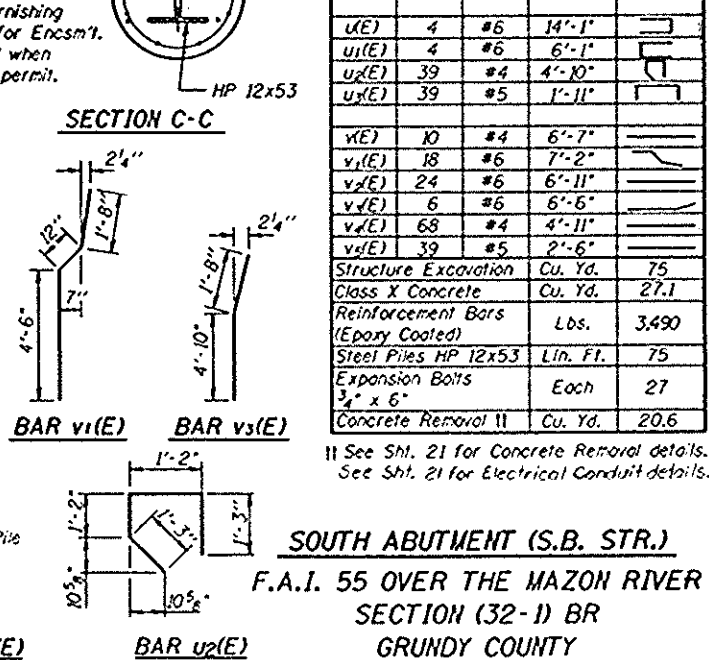
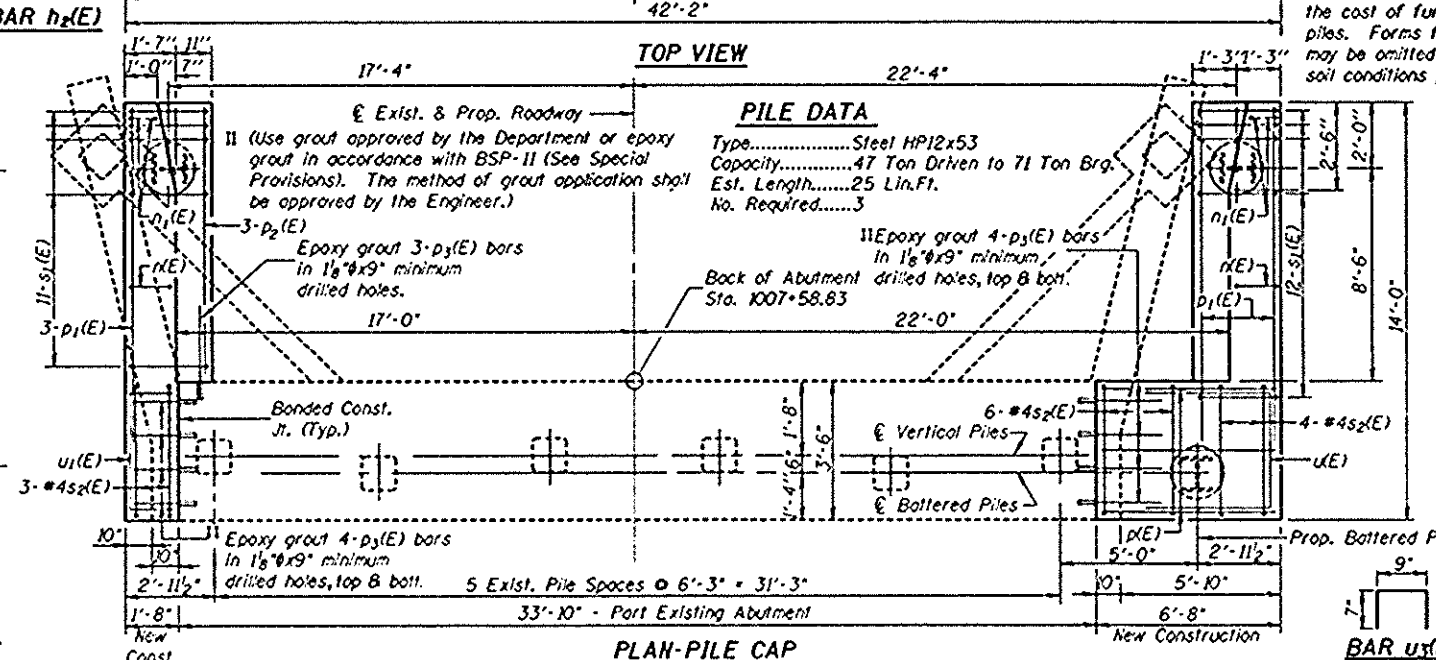
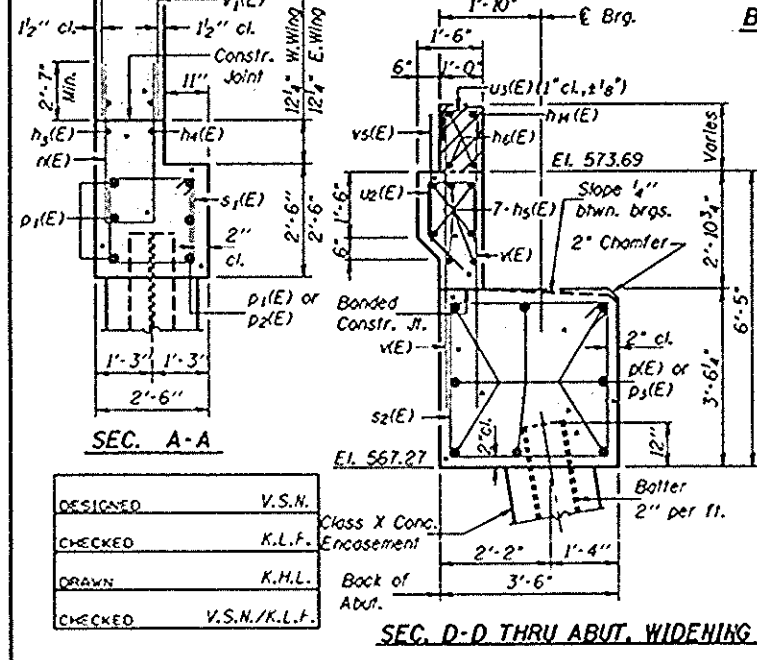
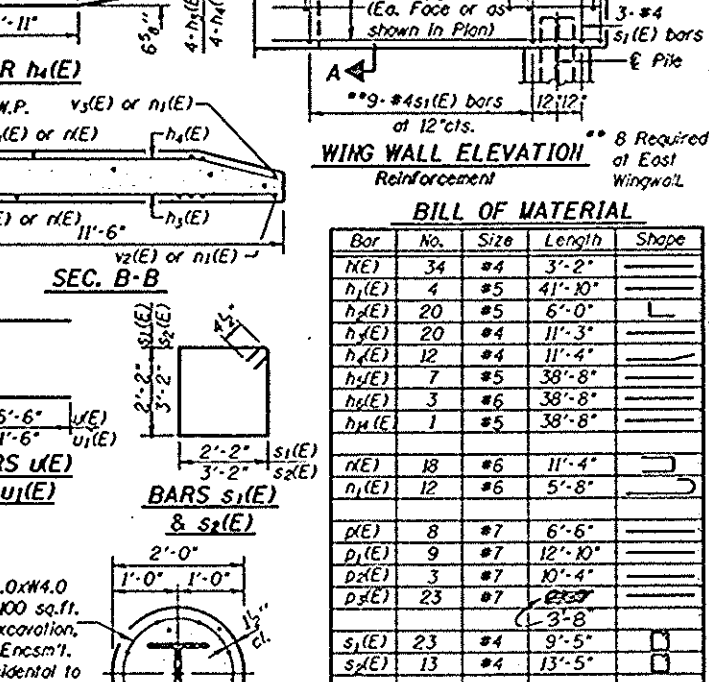
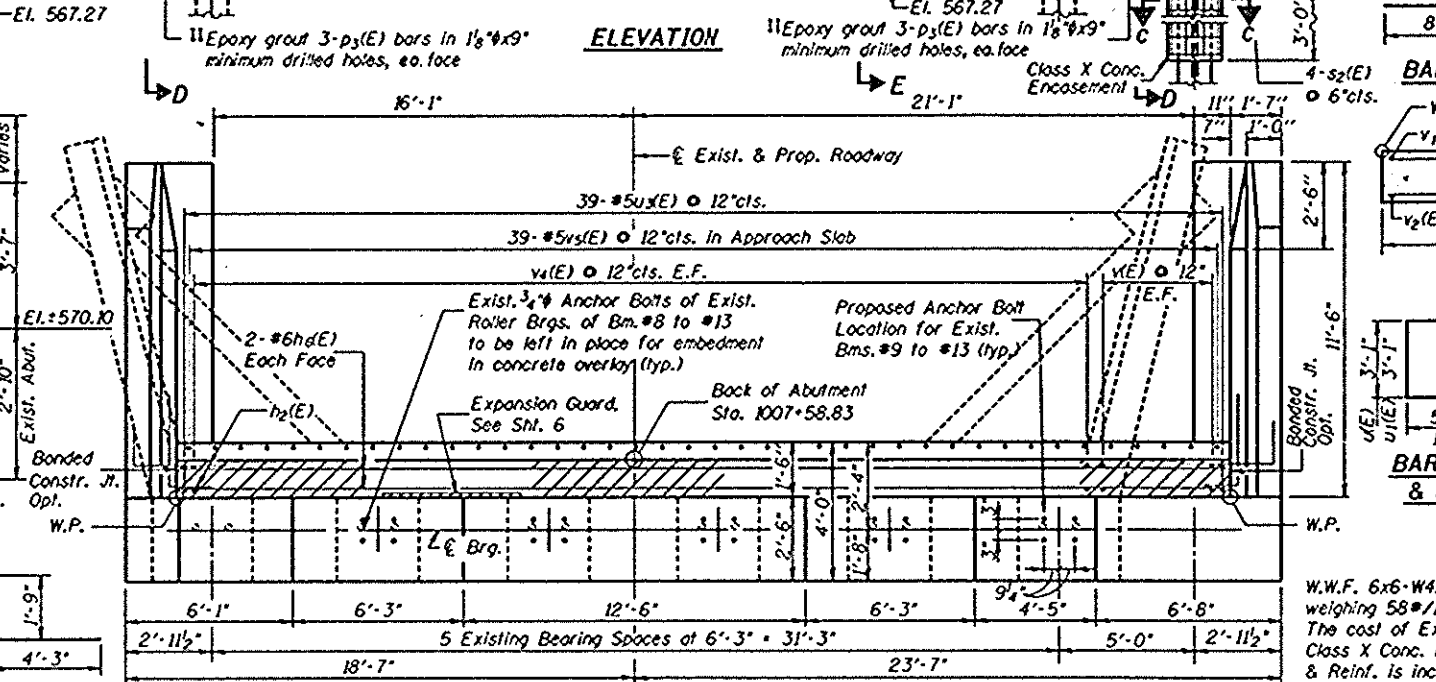
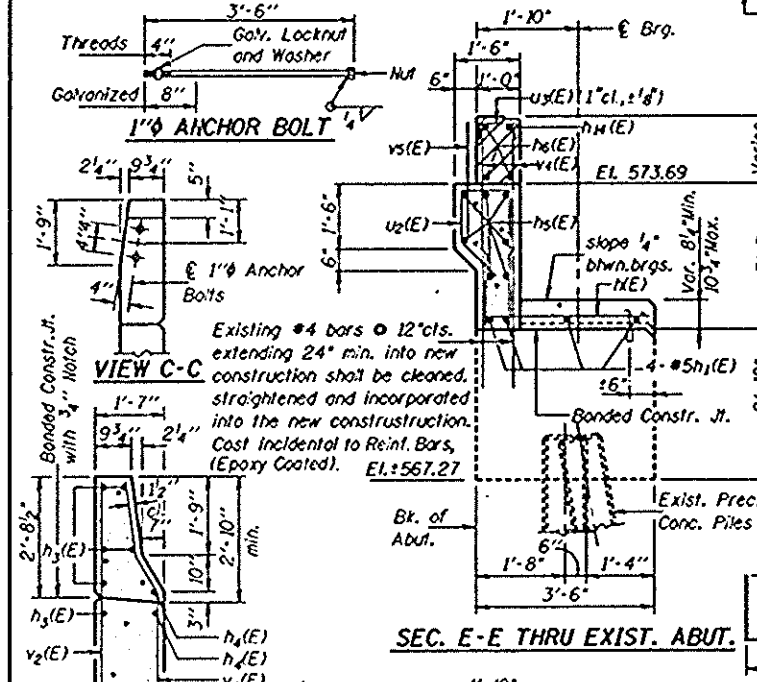
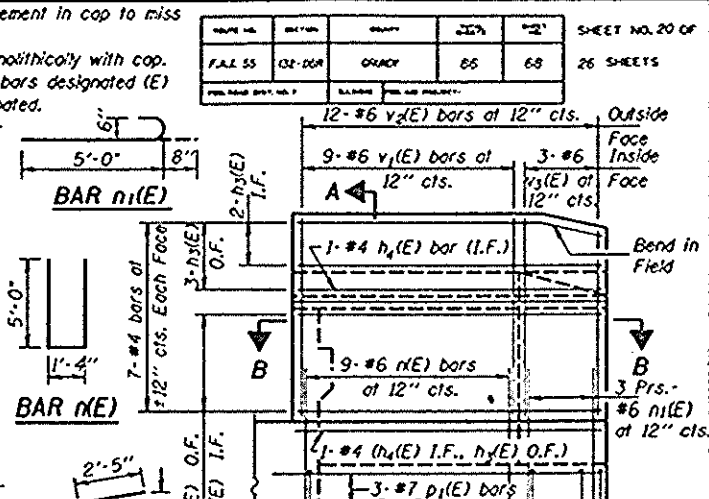
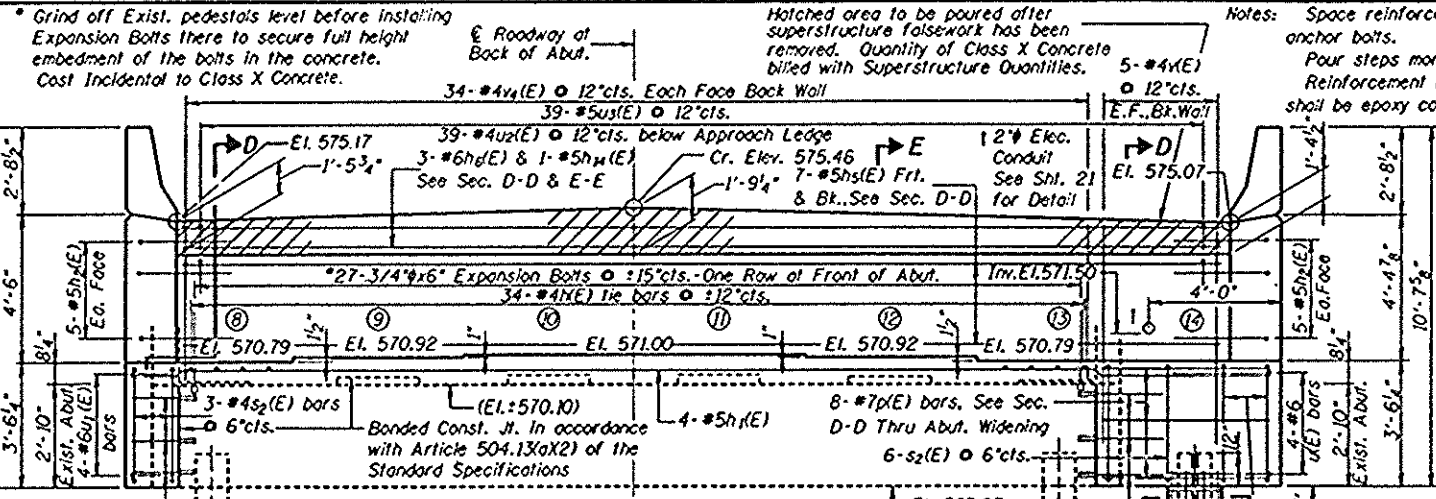
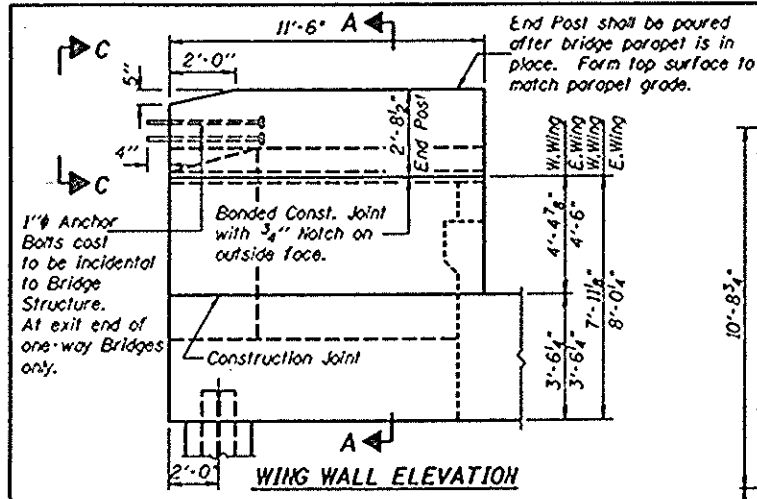
Bar	No.	Size	Length	Shape
u(E)	34	#4	3'-2"	
v(E)	4	#5	41'-10"	
h(E)	20	#5	6'-0"	
h(E)	20	#4	11'-3"	
h(E)	12	#4	11'-4"	
h(E)	7	#5	38'-8"	
h(E)	3	#6	38'-8"	
h(E)	1	#5	38'-8"	
n(E)	18	#6	11'-4"	
n(E)	12	#6	5'-8"	
p(E)	8	#7	6'-6"	
p(E)	9	#7	12'-10"	
p(E)	3	#7	10'-4"	
p(E)	23	#7	4'-3'-8"	
s(E)	13	#4	12'-11"	
s(E)	23	#4	9'-5"	
u(E)	4	#6	14'-1"	
u(E)	4	#6	6'-1"	
u(E)	39	#4	4'-10"	
u(E)	39	#5	1'-11"	
v(E)	10	#4	6'-7"	
v(E)	18	#6	7'-2"	
v(E)	24	#6	6'-11"	
v(E)	6	#6	6'-6"	
v(E)	68	#4	4'-11"	
v(E)	39	#5	2'-6"	
Structure Excavation			Cu. Yd.	75
Class X Concrete			Cu. Yd.	26.3
Reinforcement Bars (Epoxy Coated)			Lbs.	3480
Steel Piles HP 12x53			Lin. Ft.	54
Expansion Bolts 3/4" x 4"			Each	27
Concrete Removal			Cu. Yd.	20.6

See Sht. 21 for Concrete Removal details.
See Sht. 21 for Electrical Conduit details.

NORTH ABUTMENT (S.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DATE	BY	CHKD	DATE	SHEET NO.	OF
F.A.I. 55	CSJ-DEB	GRANDY	85	68	26 SHEETS



PILE DATA

Type.....	Steel HP12x53
Capacity.....	47 Ton Driven to 71 Ton Brg.
Est. Length.....	25 Lin.Ft.
No. Required.....	3

Notes: (Use grout approved by the Department or epoxy grout in accordance with BSP-II (See Special Provisions). The method of grout application shall be approved by the Engineer.)

BILL OF MATERIAL

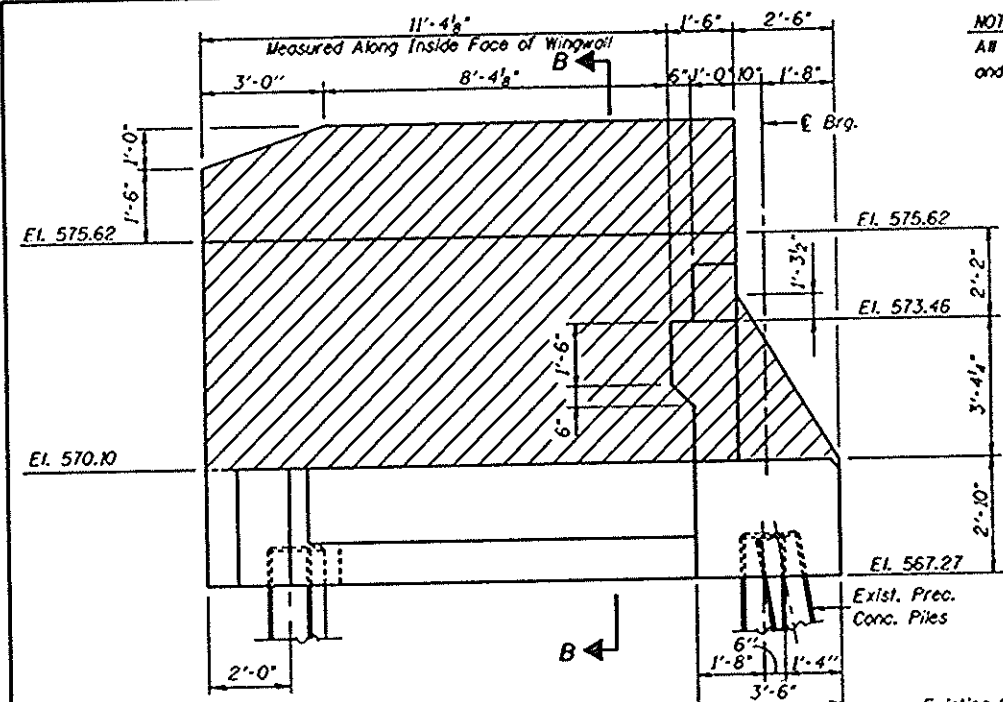
Bar	No.	Size	Length	Shape
n(E)	34	#4	3'-2"	
n ₁ (E)	4	#5	41'-10"	
n ₂ (E)	20	#5	6'-0"	
n ₃ (E)	20	#4	11'-3"	
n ₄ (E)	12	#4	11'-4"	
n ₅ (E)	7	#5	38'-8"	
n ₆ (E)	3	#6	38'-8"	
n ₇ (E)	1	#5	38'-8"	
n(E)	18	#6	11'-4"	
n ₁ (E)	12	#6	5'-8"	
p(E)	8	#7	6'-6"	
p ₁ (E)	9	#7	12'-10"	
p ₂ (E)	3	#7	10'-4"	
p ₃ (E)	23	#7	3'-8"	
s ₁ (E)	23	#4	9'-5"	
s ₂ (E)	13	#4	13'-5"	
u(E)	4	#6	14'-1"	
u ₁ (E)	4	#6	6'-1"	
u ₂ (E)	39	#4	4'-10"	
u ₃ (E)	39	#5	1'-11"	
v(E)	10	#4	6'-7"	
v ₁ (E)	18	#6	7'-2"	
v ₂ (E)	24	#6	6'-11"	
v ₃ (E)	6	#6	6'-5"	
v ₄ (E)	68	#4	4'-11"	
v ₅ (E)	39	#5	2'-6"	
Structure Excavation			Cu. Yd.	75
Class X Concrete			Cu. Yd.	27.1
Reinforcement Bars (Epoxy Coated)			Lbs.	3,490
Steel Piles HP 12x53			Lin. Ft.	75
Expansion Bolts 3/4" x 6"			Each	27
Concrete Removal II			Cu. Yd.	20.6

Notes: See Sht. 21 for Concrete Removal details. See Sht. 21 for Electrical Conduit details.

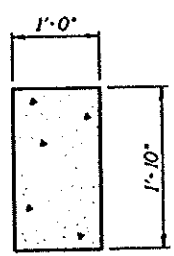
SOUTH ABUTMENT (S.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

ROUTE NO.	DIST.	SECTION	POST MILE	POST	SHEET NO. 21 OF 26 SHEETS
F.A.I. 55	32-10A	BR	65	69	
DATE: APRIL 2, 1972					

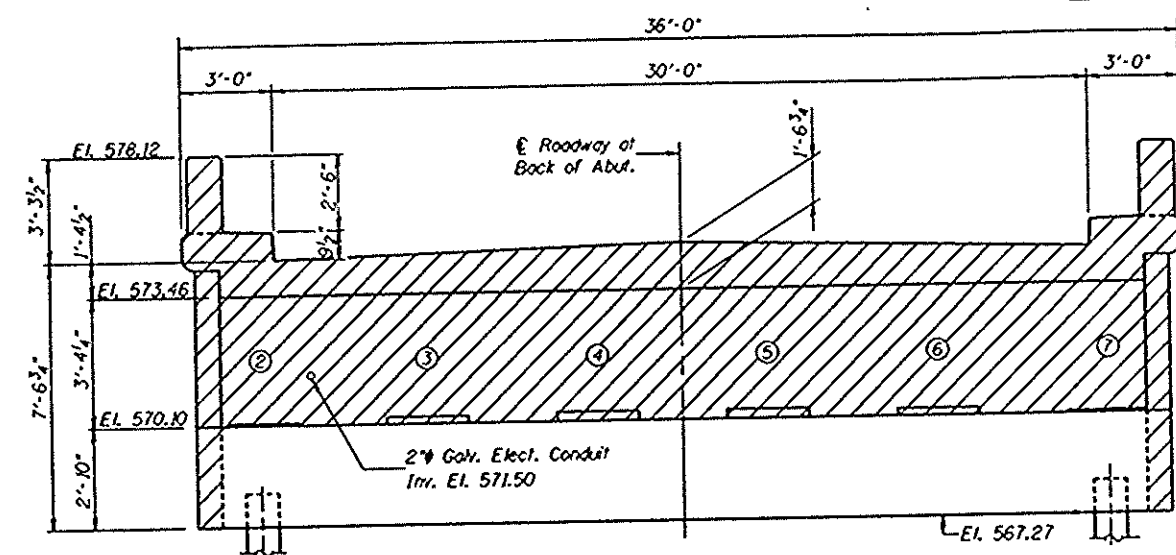
NOTE:
All dimensions refer to the existing structure and shall be verified in the field.



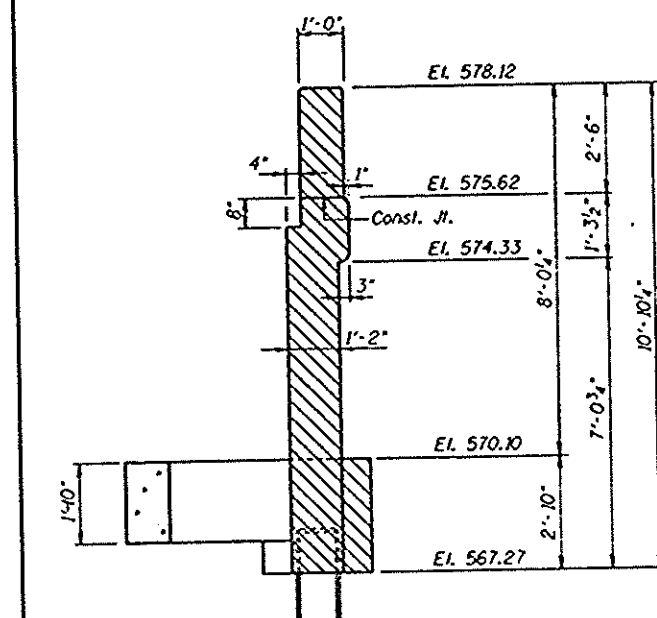
WING WALL ELEVATION A-A



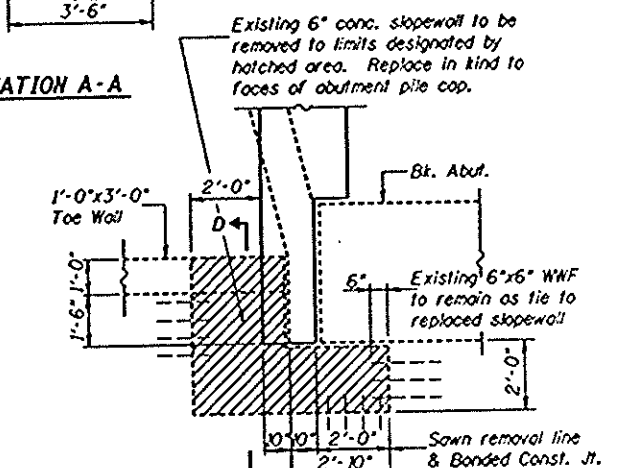
SECTION C-C



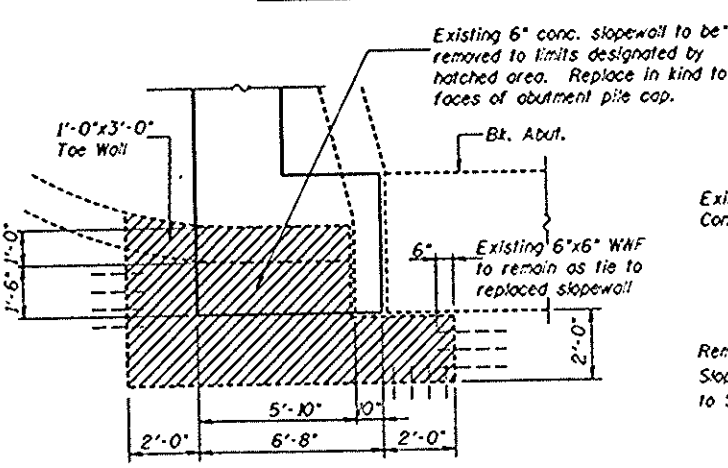
ELEVATION



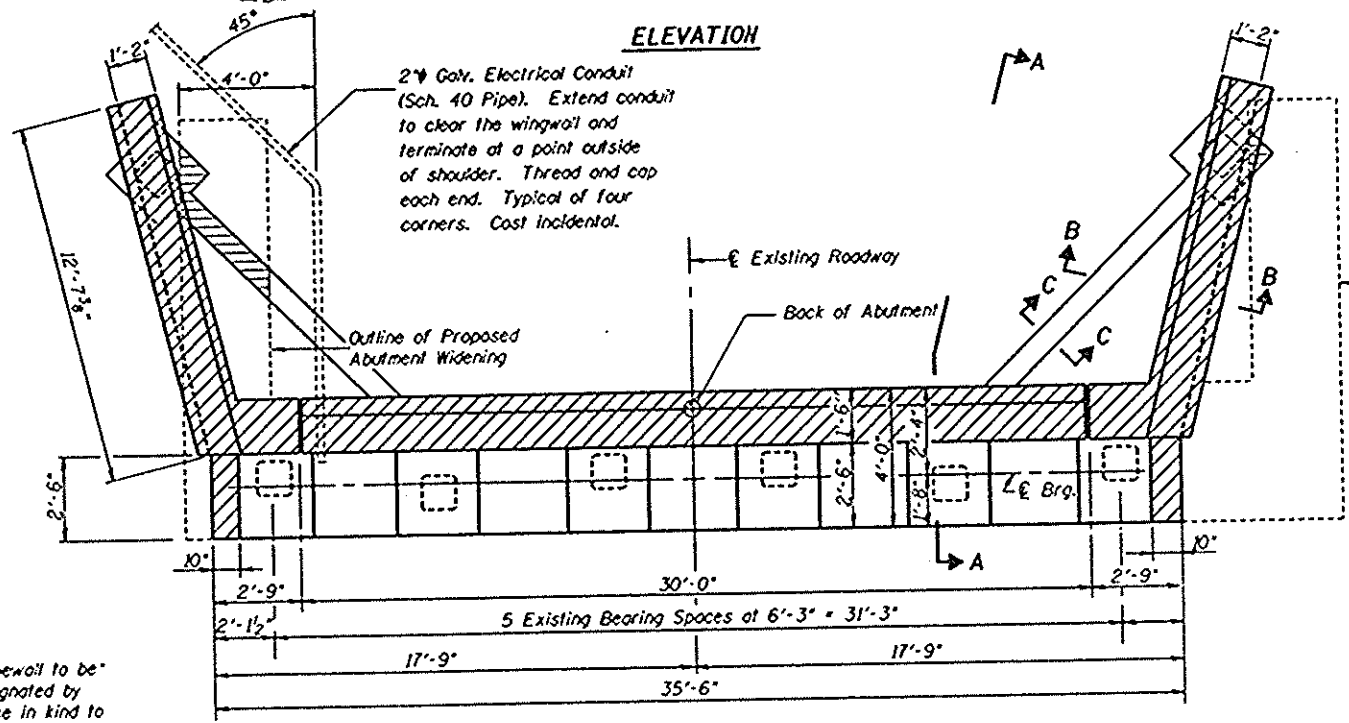
SECTION B-B



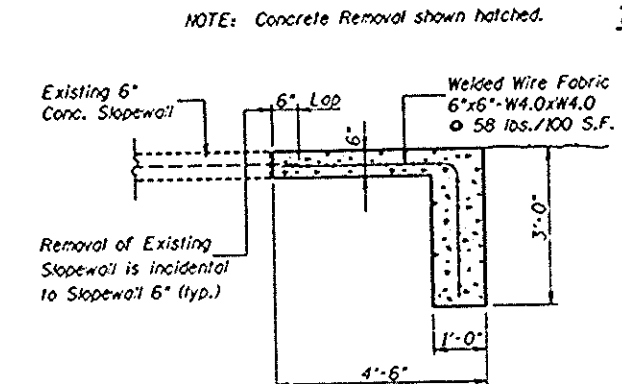
**PLAN AT N.E. & S.E. OF S.B.STR.
PLAN AT N.W. & S.W. OF N.B.STR.
SLOPEWALL 6"**



**PLAN AT N.W. & S.W. OF S.B.STR.
PLAN AT S.E. OF N.B.STR. (N.E. OF N.B. IS SIMILAR)
SLOPEWALL 6"**



TOP VIEW



SECTION D-D

DESIGNED	V.S.M.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.M./K.L.F.

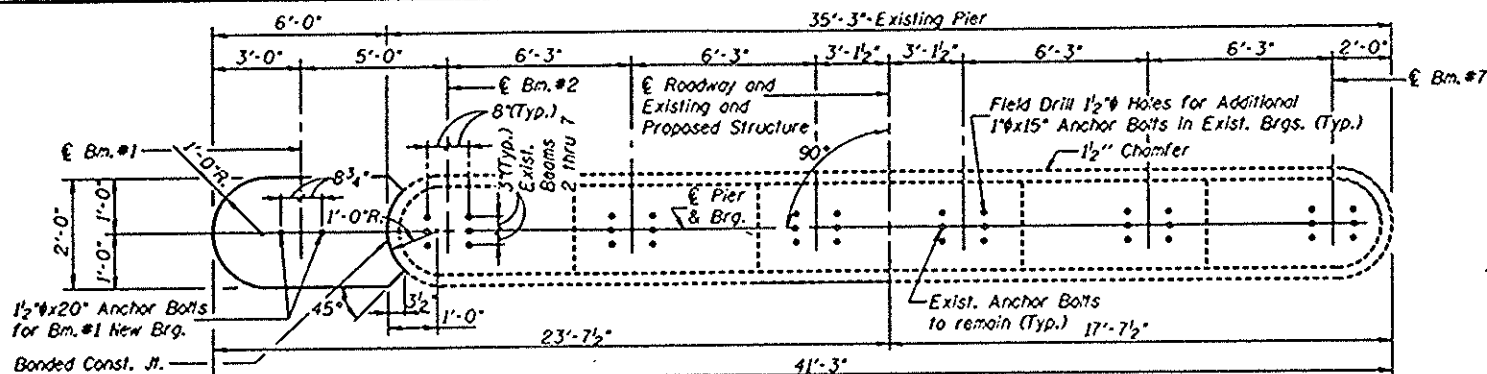
**EXISTING ABUTMENT
CONCRETE REMOVAL DETAIL (TYP.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY**

Notes: Space reinforcement in cap to miss anchor bolts.

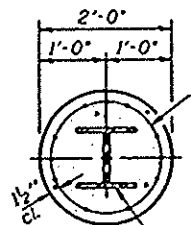
ROUTE NO.	SECTION	DATE	SCALE	SHEET NO.	TOTAL SHEETS
F.A.I. 55	02-204	GRUNDY	06	70	26 SHEETS

PILE DATA

Type: Steel HP12x74
 Capacity: Drive to Refusal
 Est. Length: 37 Lin. Ft.
 No. Req'd: 1

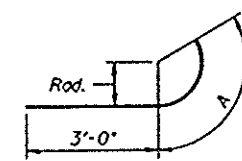


TOP PLAN



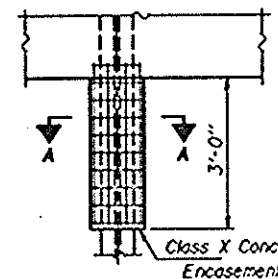
SECTION A-A

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Class X Concrete Encasement & Reinf. is incidental to the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.

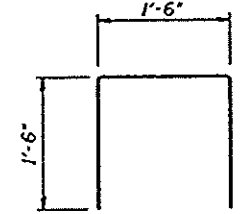


Bar	Rod	A
h ₁ (E)	10"	2'-6"
h ₂ (E)	11 1/2"	2'-9"
h ₃ (E)	13"	3'-0"
h ₄ (E)	15"	3'-3"

DETAIL OF BARS
h₁(E) to h₄(E)



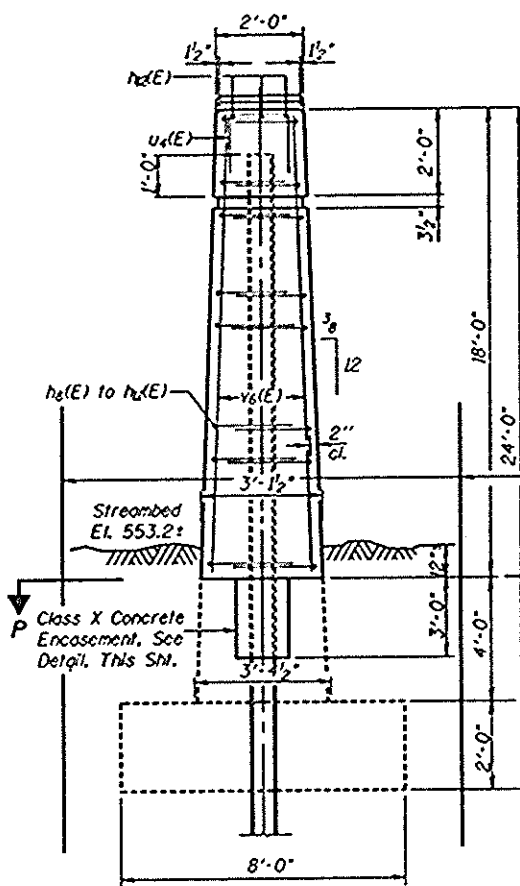
PILE ENCASEMENT DETAIL



BAR u₁(E)

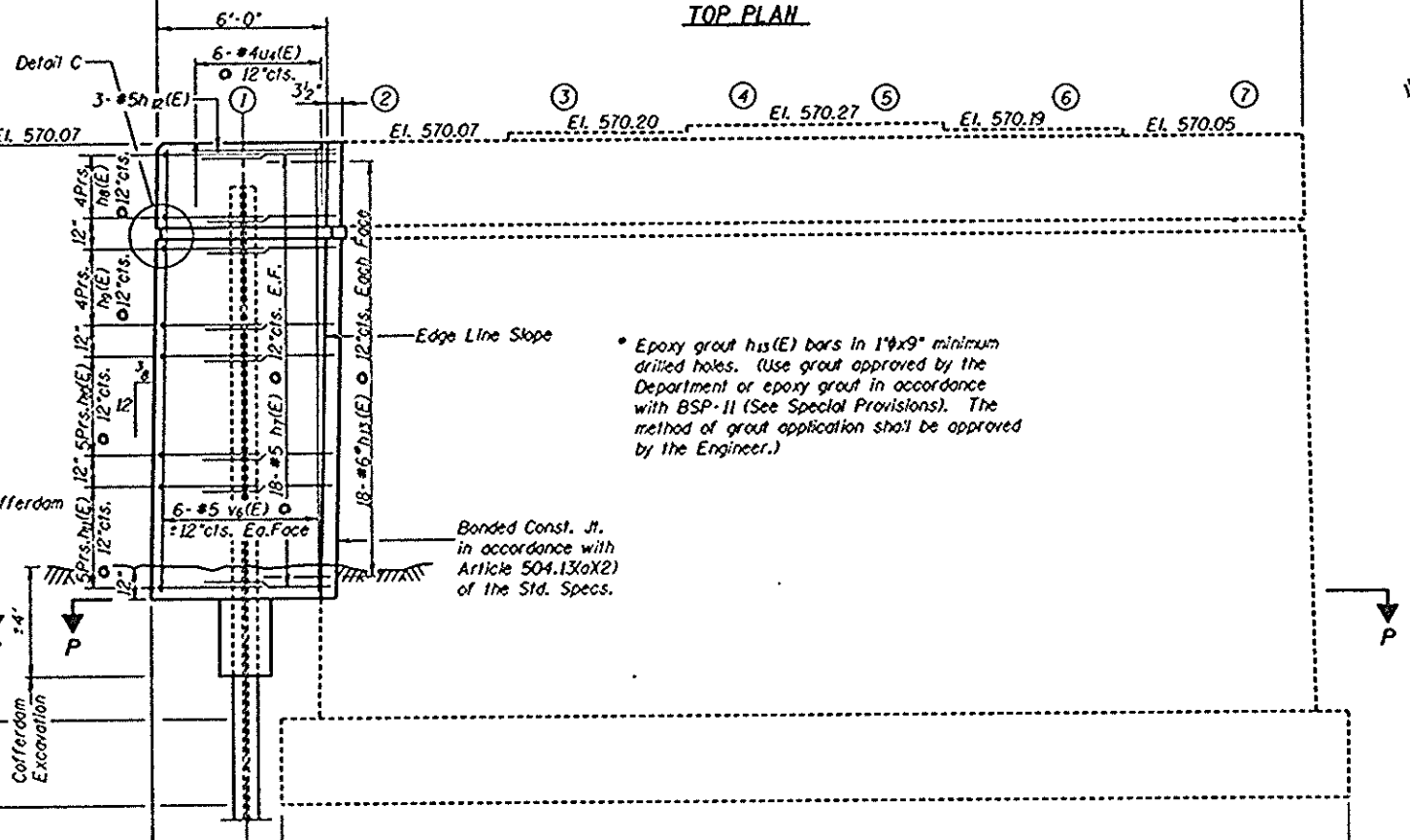
* Epoxy grout h₁₃(E) bars in 1 1/4 x 9" minimum drilled holes. (Use grout approved by the Department or epoxy grout in accordance with BSP-11 (See Special Provisions). The method of grout application shall be approved by the Engineer.)

Bonded Const. Jt. in accordance with Article 504.13(a)(2) of the Std. Specs.

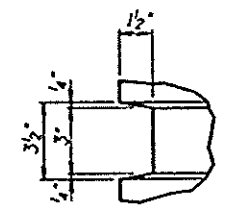


END VIEW

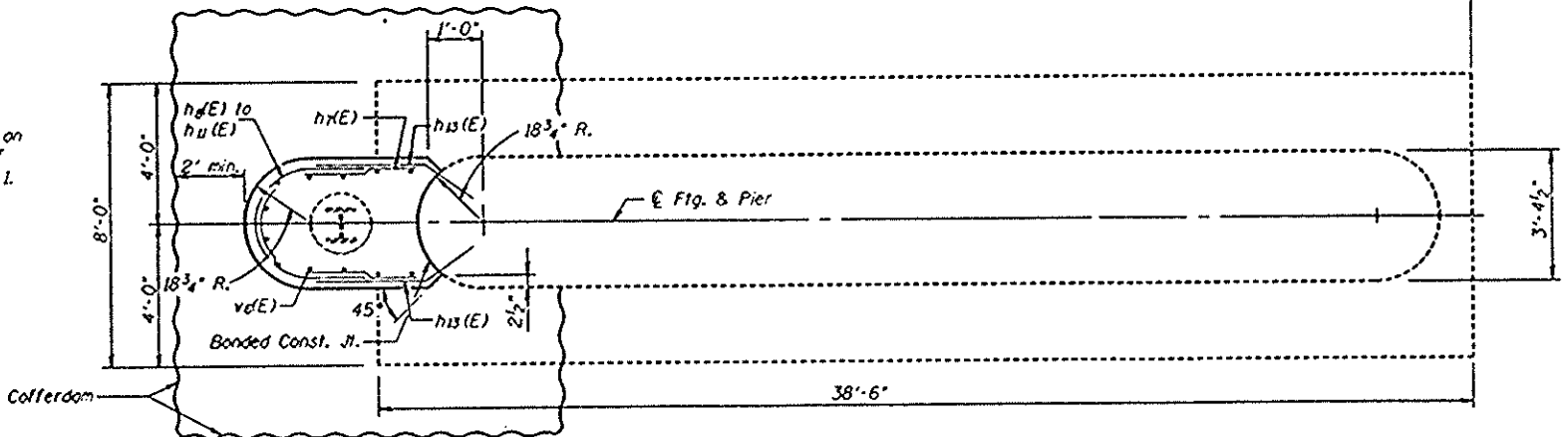
The Cofferdam Sheeting shall be left in place below an elevation 2' below the finished slope. The top 2' of backfill to be with Stone Riprap as shown on Sheet 1.



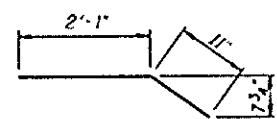
ELEVATION
(Looking South)



DETAIL C



FOOTING PLAN P-P



BAR h₁₃(E)

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
h ₁ (E)	36	#5	5'-0"	—	
h ₂ (E)	8	#5	5'-6"	—	
h ₃ (E)	8	#5	5'-9"	—	
h ₄ (E)	10	#5	6'-0"	—	
h ₅ (E)	10	#5	6'-3"	—	
h ₆ (E)	3	#5	5'-4"	—	
h ₁₃ (E)	36	#6	3'-0"	—	
u ₁ (E)	6	#4	4'-6"	—	
v ₆ (E)	12	#5	17'-9"	—	
Class X Concrete				Cu. Yd.	10.1
Steel Piles HP12x74				Lin. Ft.	37
Reinforcement Bars, Epoxy Coated				Lbs.	830
Cofferdam Pier 1				Each	1
Cofferdam Excavation				Cu. Yd.	20

Reinforcement Bars designated (E) shall be epoxy coated.

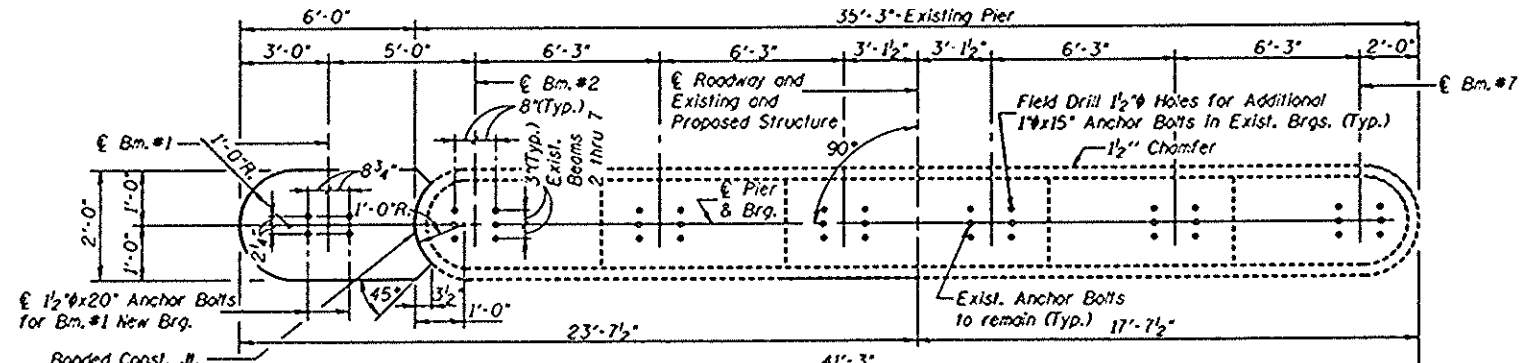
PIER NO. 1 (N.B. STR.)
 F.A.I. 55 OVER THE MAZON RIVER
 SECTION (32-1) BR
 GRUNDY COUNTY

P2405.024 APRIL 6, 77

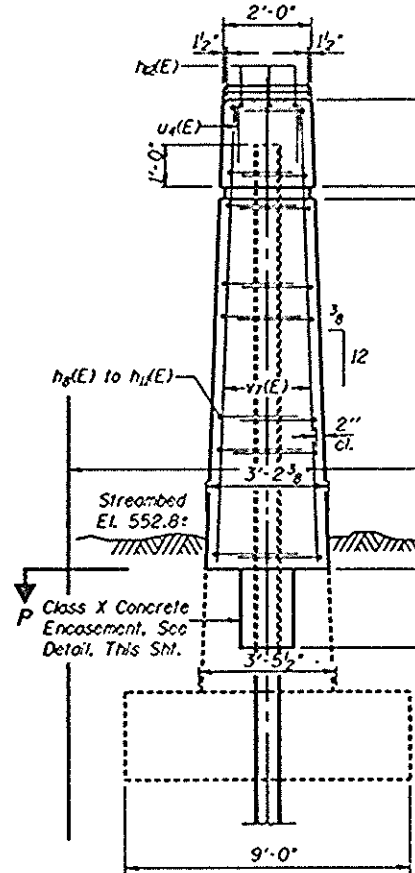
Notes: Space reinforcement in cap to miss anchor bolts.

PROJECT NO.	DATE	BY	CHKD	DATE	SHEET NO. 23 OF 26 SHEETS
F.A.I. 55	02-05A	GRUNDY	85	71	

PILE DATA
 Type: Steel HP12x74
 Capacity: Drive to Refusal
 Est. Length: 37 Lin. Ft.
 No. Req'd: 1

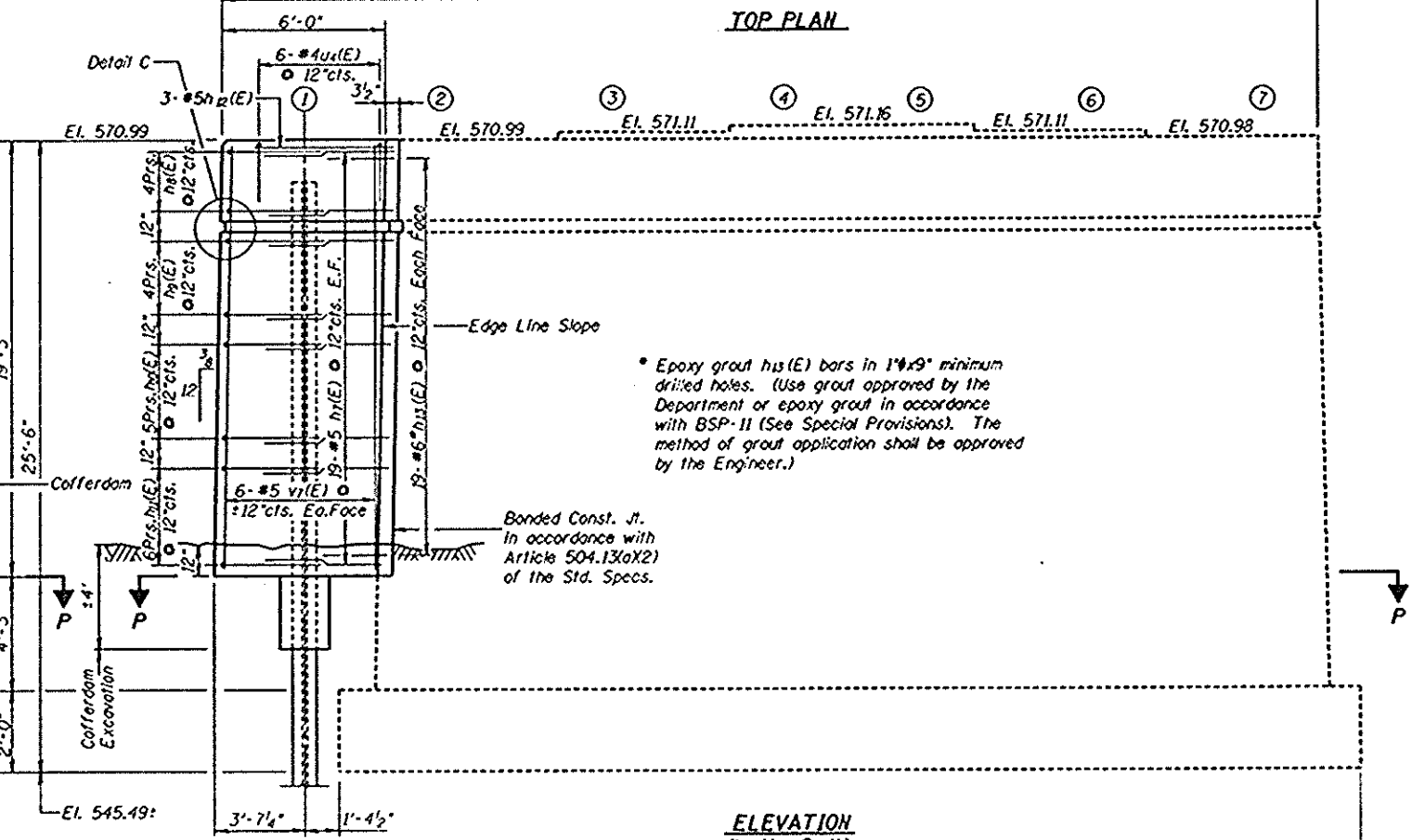


TOP PLAN

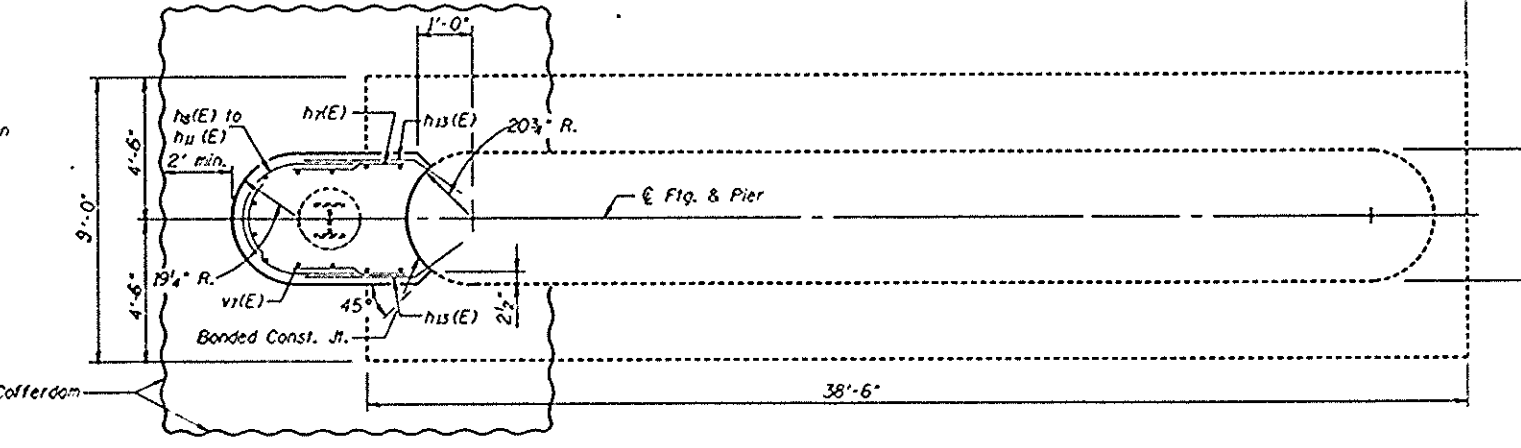


END VIEW

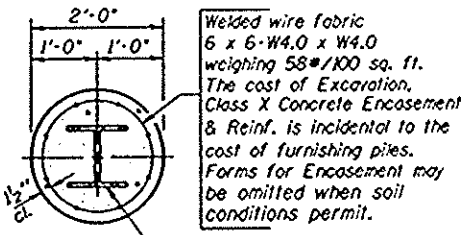
The Cofferdam Sheeting shall be left in place below an elevation 2' below the finished slope. The top 2' of backfill to be with Stone Riprap as shown on Sheet 1.



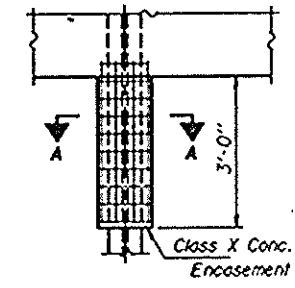
ELEVATION (Looking South)



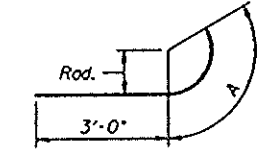
FOOTING PLAN P-P



SECTION A-A HP12x74

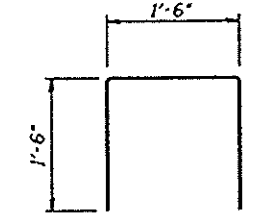


PILE ENCASEMENT DETAIL

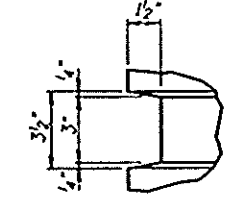


Bar	Rad.	A
h8(E)	10"	2'-6"
h9(E)	11 1/2"	2'-9"
h10(E)	13"	3'-0"
h11(E)	15"	3'-3"

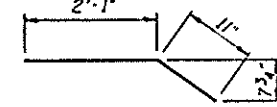
DETAIL OF BARS h8(E) to h11(E)



BAR u1(E)



DETAIL C



BAR h13(E)

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	38	#5	5'-0"	—
h8(E)	8	#5	5'-6"	—
h9(E)	8	#5	5'-9"	—
h10(E)	10	#5	6'-0"	—
h11(E)	12	#5	6'-3"	—
h12(E)	3	#5	5'-4"	—
h13(E)	38	#6	3'-0"	—
u1(E)	6	#4	4'-6"	—
v1(E)	12	#5	19'-0"	—
Class X Concrete				Cu. Yd. 11.0
Steel Piles HP12x74				Lin. Ft. 37
Reinforcement Bars, Epoxy Coated				Lbs. 880
Cofferdam Pier 2				Each 1
Cofferdam Excavation				Cu. Yd. 20

Reinforcement Bars designated (E) shall be epoxy coated.

PIER NO. 2 (H.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

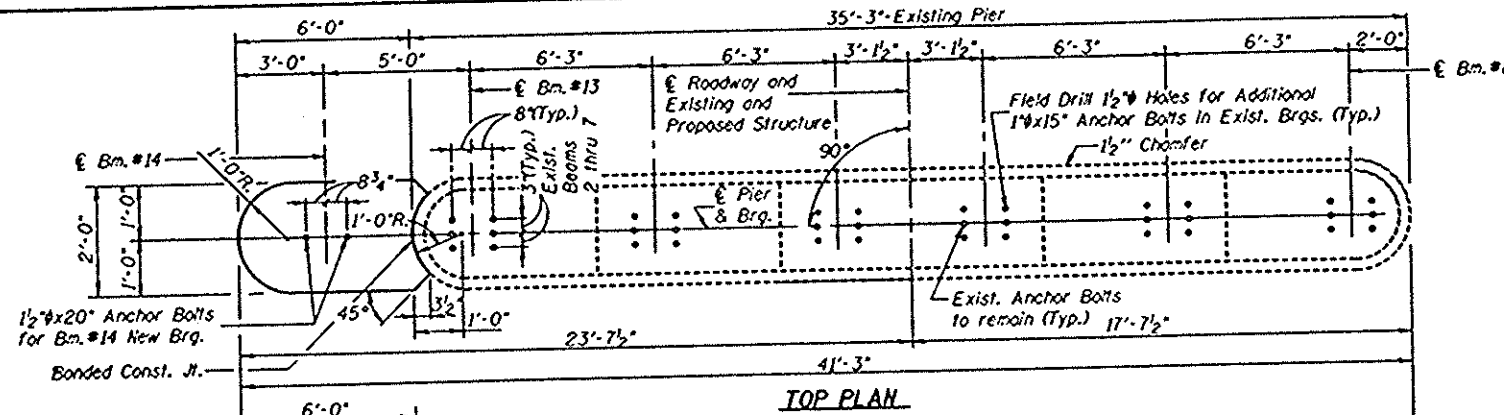
K.M. & G. NO. 30835

DATE	BY	CHKD	APP'D	SHEET NO. 24 OF 26 SHEETS
F.A.I. 55	C.R. DOR	GRADY	86	72

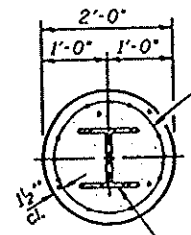
Notes: Space reinforcement in cap to miss anchor bolts.

PILE DATA

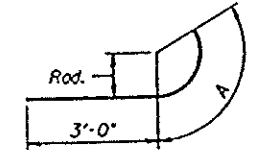
Type: Steel HP12x74
 Capacity: Drive to Refusal
 Est. Length: 37 Lin. Ft.
 No. Req'd: 1



TOP PLAN

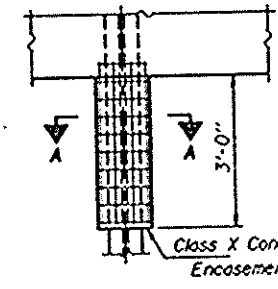


SECTION A-A HP12x74

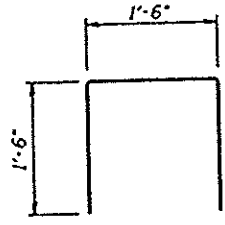


Bar	Rod	A
h ₁ (E)	10"	2'-6"
h ₂ (E)	11 1/2"	2'-9"
h ₃ (E)	13"	3'-0"
h ₁₁ (E)	15"	3'-3"

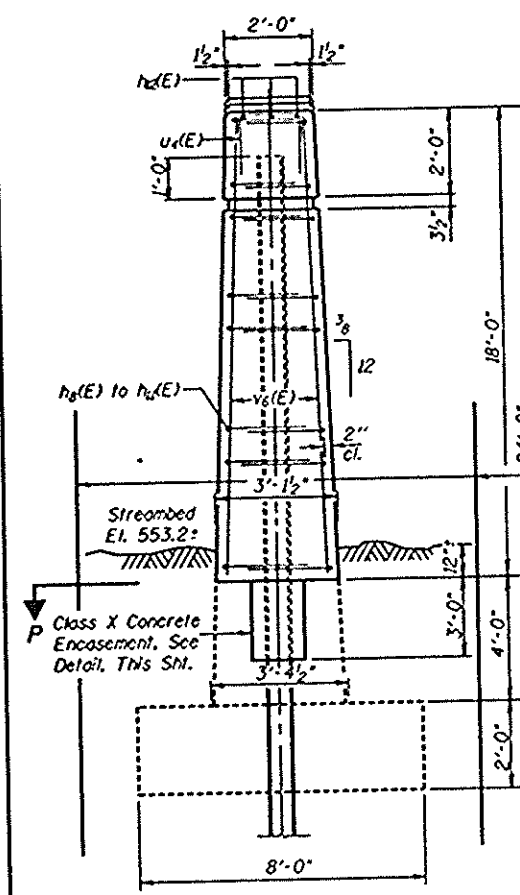
DETAIL OF BARS
h₁(E) to h₁₁(E)



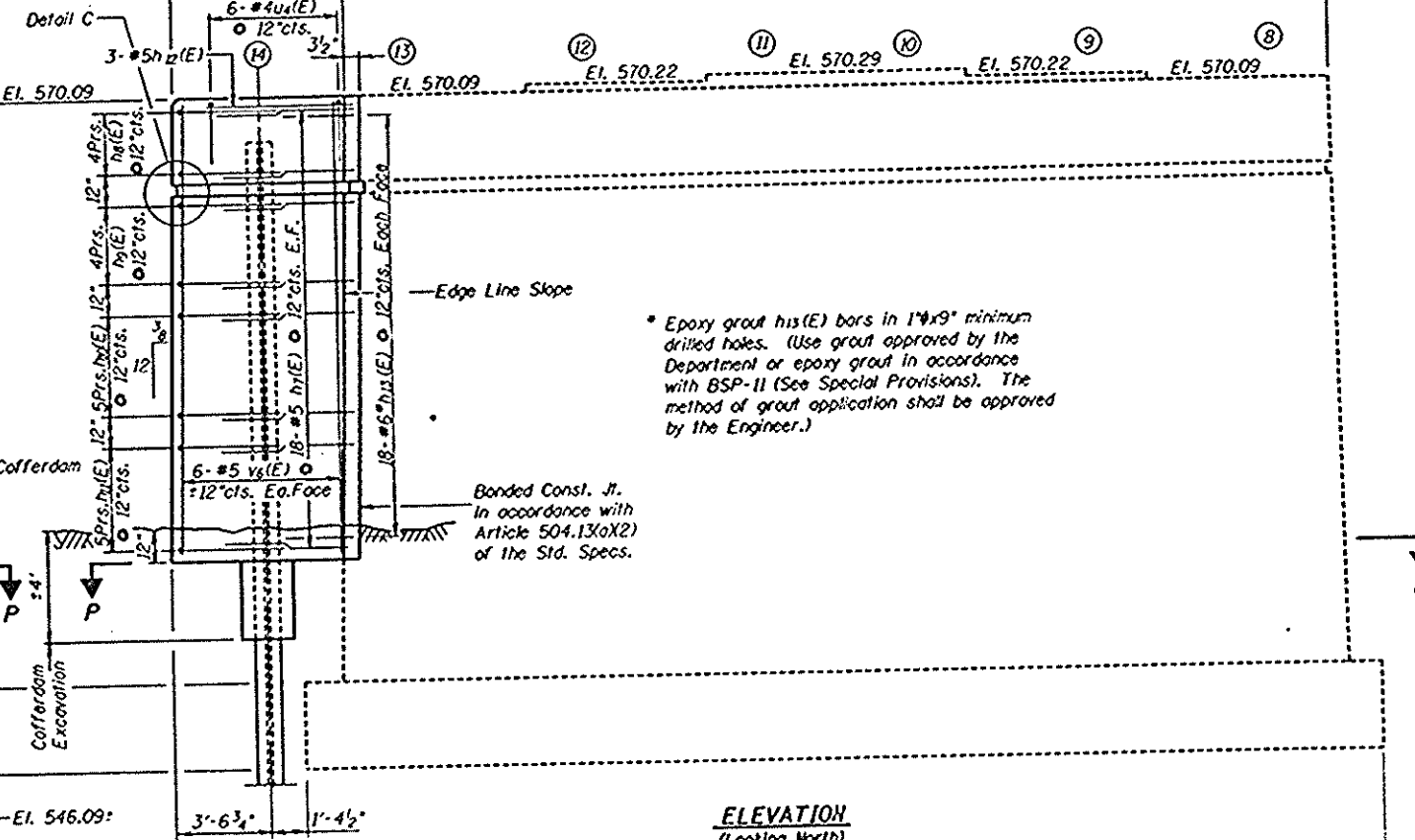
PILE ENCASEMENT DETAIL



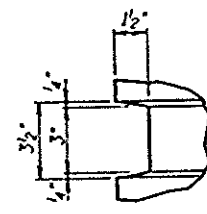
BAR u₁(E)



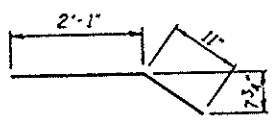
END VIEW



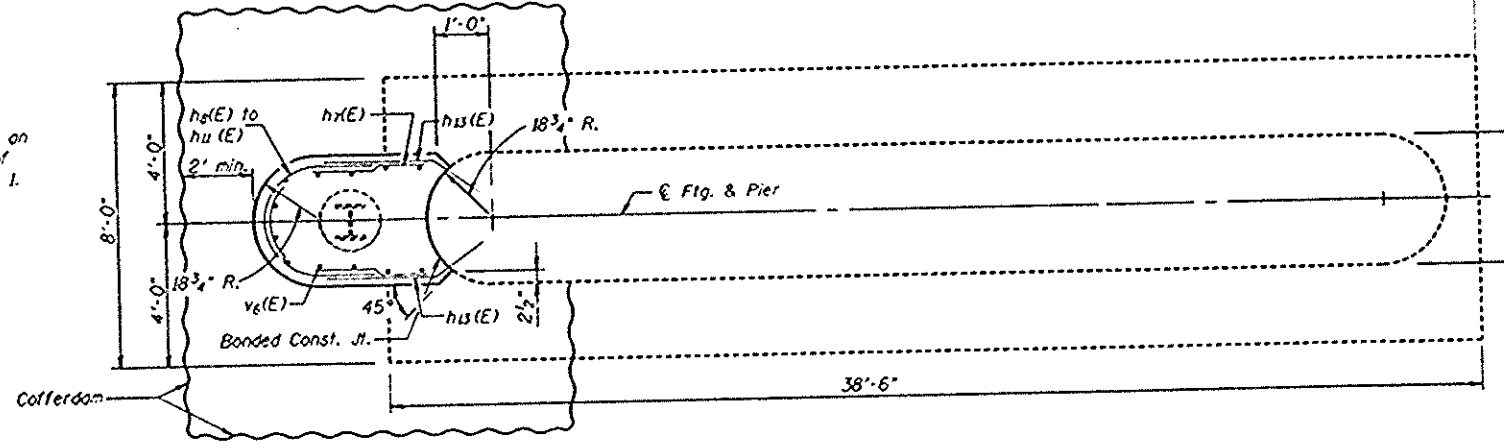
ELEVATION
(Looking North)



DETAIL C



BAR h₁₃(E)



FOOTING PLAN P-P

The Cofferdam Sheeting shall be left in place below an elevation 2' below the finished slope. The top 2' of backfill to be with Stone Riprap as shown on Sheet 1.

* Epoxy grout h₁₃(E) bars in 1" x 9" minimum drilled holes. (Use grout approved by the Department or epoxy grout in accordance with BSP-11 (See Special Provisions). The method of grout application shall be approved by the Engineer.)

Bonded Const. Jt. In accordance with Article 504.13(x2) of the Std. Specs.

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Class X Concrete Encasement & Reinf. is incidental to the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₁ (E)	36	#5	5'-0"	—
h ₂ (E)	8	#5	5'-6"	—
h ₃ (E)	8	#5	5'-9"	—
h ₁₀ (E)	10	#5	6'-0"	—
h ₁₁ (E)	10	#5	6'-3"	—
h ₁₂ (E)	3	#5	5'-4"	—
h ₁₃ (E)	36	#6	3'-0"	—
u ₁ (E)	6	#4	4'-6"	□
v ₆ (E)	12	#5	17'-9"	—
Class X Concrete		Cu. Yd.	10.1	
Steel Piles HP12x74		Lin. Ft.	37	
Reinforcement Bars, Epoxy Coated		Lbs.	830	
Cofferdam Pier 1		Each	1	
Cofferdam Excavation		Cu. Yd.	20	

Reinforcement Bars designated (E) shall be epoxy coated.

PIER NO. 1 (S.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

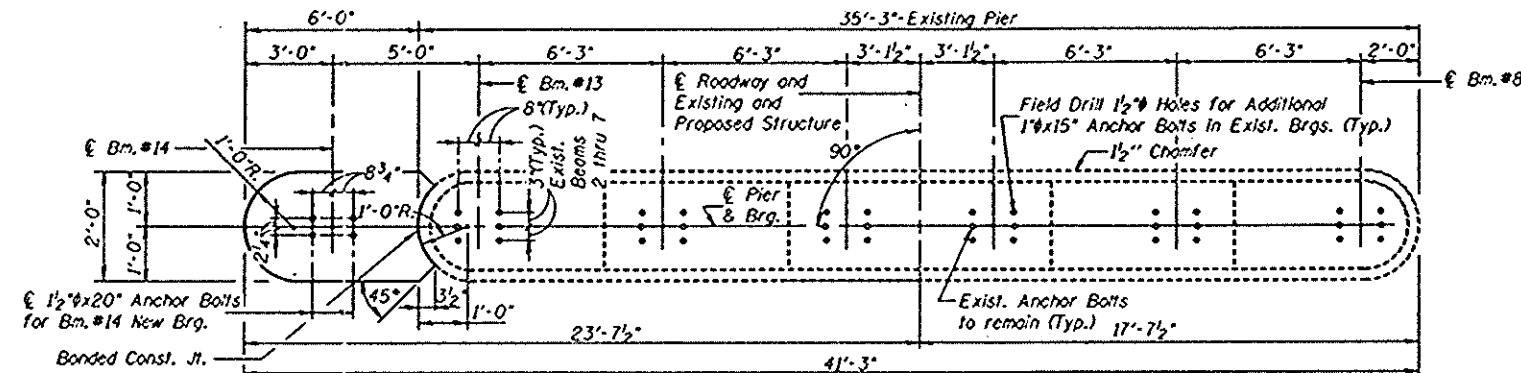
DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

DATE	BY	CHKD	DATE	SHEET NO. 25 OF 26 SHEETS
F.A.I. 55	CR-DOR	GRACY	66	73

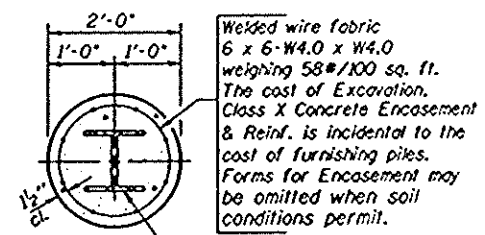
Notes: Space reinforcement in cap to miss anchor bolts.

PILE DATA

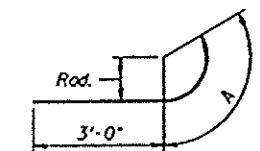
Type: Steel HP12x74
 Capacity: Drive to Refusal
 Est. Length: 37 Lin. Ft.
 No. Req'd: 1



TOP PLAN

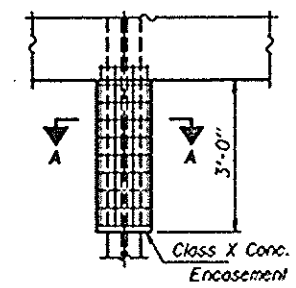


SECTION A-A
HP12x74

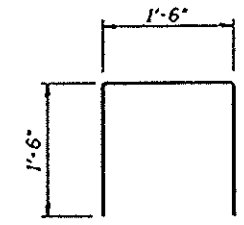


Bar	Rad.	A
h1(E)	10"	2'-6"
h2(E)	11 1/2"	2'-9"
h3(E)	13"	3'-0"
h11(E)	15"	3'-3"

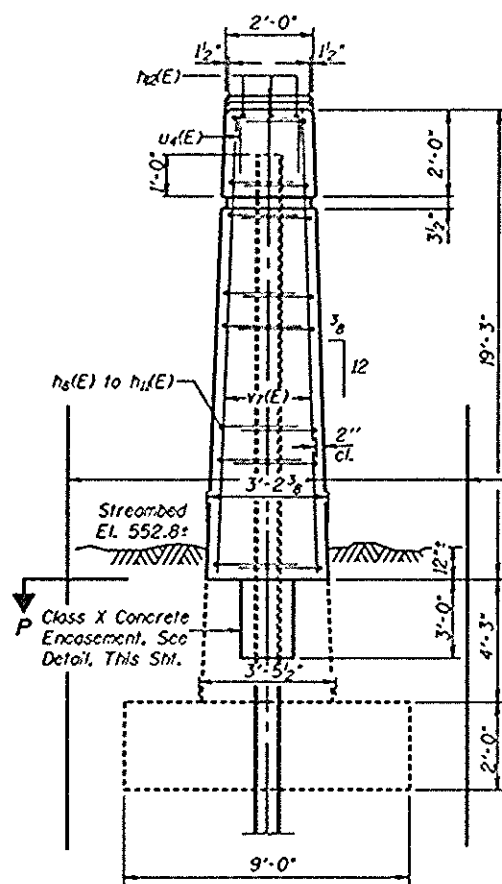
DETAIL OF BARS
hg(E) to h11(E)



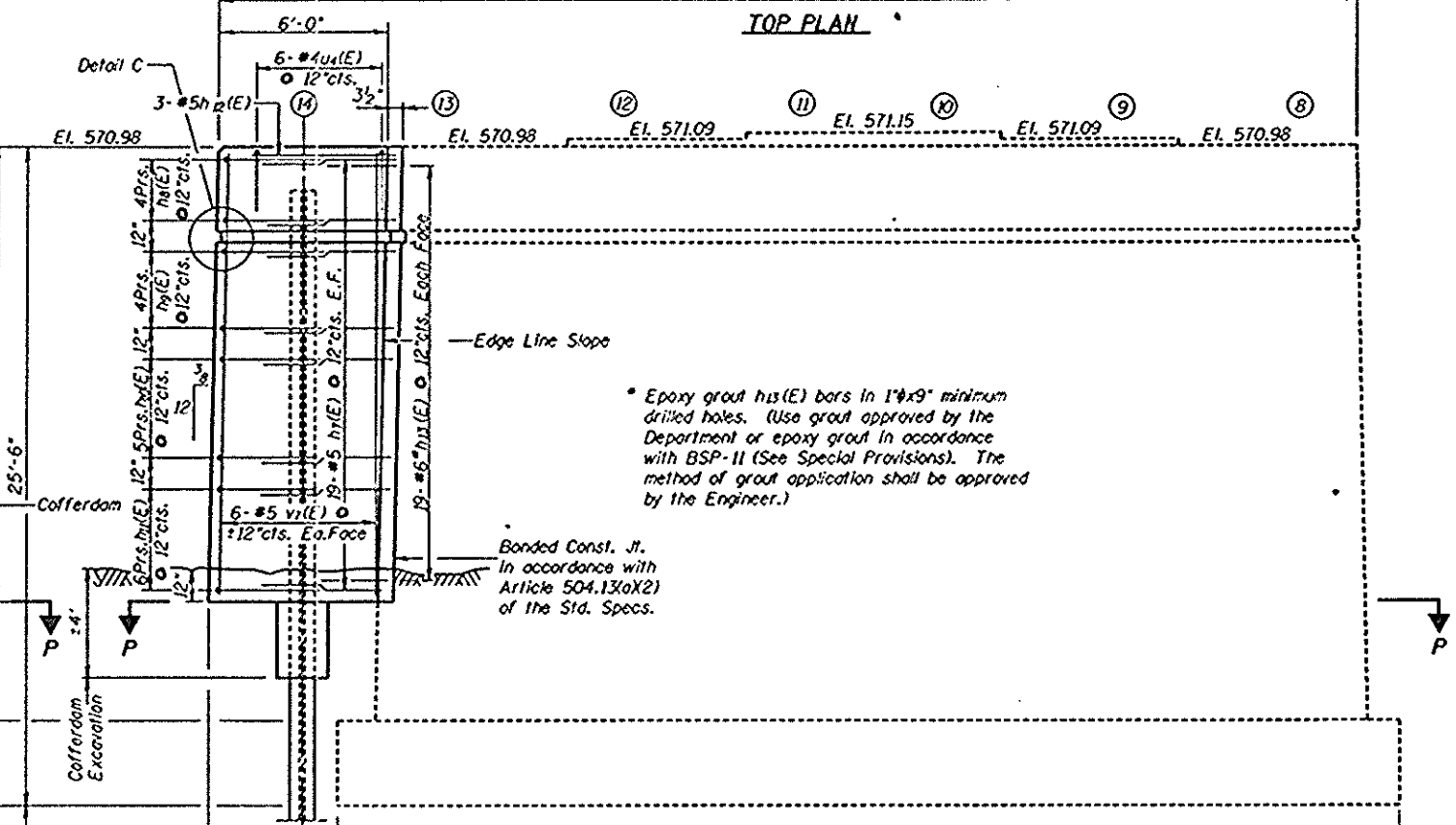
PILE ENCASEMENT DETAIL



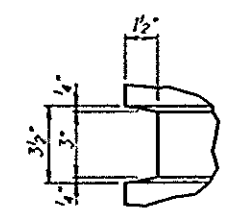
BAR u1(E)



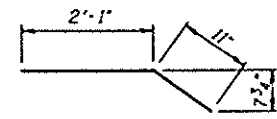
END VIEW



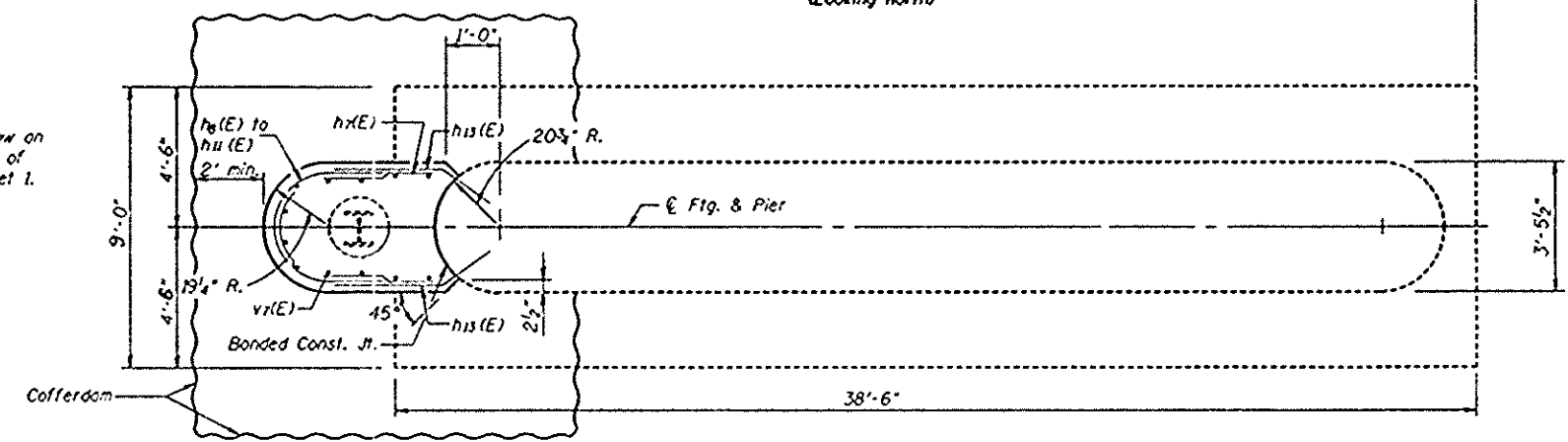
ELEVATION
(Looking North)



DETAIL C



BAR h13(E)



FOOTING PLAN P-P

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	V.S.N./K.L.F.

The Cofferdam Sheeting shall be left in place below on elevation 2' below the finished slope. The top 2' of backfill to be with Stone Riprap as shown on Sheet 1.

* Epoxy grout h13(E) bars in 1"x9" minimum drilled holes. (Use grout approved by the Department or epoxy grout in accordance with BSP-II (See Special Provisions). The method of grout application shall be approved by the Engineer.)

Bonded Const. Jt. in accordance with Article 504.13(a)(2) of the Std. Specs.

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Class X Concrete Encasement & Reinf. is incidental to the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	38	#5	5'-0"	—
h2(E)	8	#5	5'-6"	—
h3(E)	8	#5	5'-9"	—
h10(E)	10	#5	6'-0"	—
h11(E)	12	#5	6'-3"	—
h22(E)	3	#5	5'-4"	—
h13(E)	38	#6	3'-0"	—
u1(E)	6	#4	4'-6"	—
v1(E)	12	#5	19'-0"	—
Class X Concrete		Cu. Yd.	11.0	
Steel Piles HP12x74		Lin. Ft.	37	
Reinforcement Bars, Epoxy Coated		Lbs.	880	
Cofferdam Pier 2		Each	1	
Cofferdam Excavation		Cu. Yd.	20	

Reinforcement Bars designated (E) shall be epoxy coated.

PIER NO. 2 (S.B. STR.)
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1) BR
GRUNDY COUNTY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 55	(32-1)BR	GRUNDY	66	74

SHEET NO. 26 OF 26 SHEETS

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
BRIDGE FOUNDATION BORING LOG

Project: Bridge 100-2003 & 2005 Date: 8/21/09
Route: F.A.I. 55 Over Mazon River Bored By: S. J. Hillinger
Sta: 129+10.00 STA: 129+10.00 Checked By: S. Hillinger
County: Grundy Boring No.: 100-2003 Station: 129+10.00 Offset: 0'

Surface Elev. (ft.)	Groundwater (ft.) at Completion	After	Notes
521.1	521.1	521.1	TOP OF SOIL
520.4	520.4	520.4	STIFF CL. 20"
519.4	519.4	519.4	VERY SOFT CL. 24"
518.1	518.1	518.1	MOD. CL. 24"
517.1	517.1	517.1	LOOSE CL. 24" & CO. (1.5 FEET)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
BRIDGE FOUNDATION BORING LOG

Project: Bridge 100-2003 & 2005 Date: 8/21/09
Route: F.A.I. 55 Over Mazon River Bored By: S. J. Hillinger
Sta: 129+10.00 STA: 129+10.00 Checked By: S. Hillinger
County: Grundy Boring No.: 100-2003 Station: 129+10.00 Offset: 0'

Surface Elev. (ft.)	Groundwater (ft.) at Completion	After	Notes
521.1	521.1	521.1	TOP OF SOIL
520.4	520.4	520.4	STIFF CL. 20"
519.4	519.4	519.4	VERY SOFT CL. 24"
518.1	518.1	518.1	MOD. CL. 24"
517.1	517.1	517.1	LOOSE CL. 24" & CO. (1.5 FEET)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
BRIDGE FOUNDATION BORING LOG

Project: Bridge 100-2003 & 2005 Date: 8/21/09
Route: F.A.I. 55 Over Mazon River Bored By: S. J. Hillinger
Sta: 129+10.00 STA: 129+10.00 Checked By: S. Hillinger
County: Grundy Boring No.: 100-2003 Station: 129+10.00 Offset: 0'

Surface Elev. (ft.)	Groundwater (ft.) at Completion	After	Notes
521.1	521.1	521.1	TOP OF SOIL
520.4	520.4	520.4	STIFF CL. 20"
519.4	519.4	519.4	VERY SOFT CL. 24"
518.1	518.1	518.1	MOD. CL. 24"
517.1	517.1	517.1	LOOSE CL. 24" & CO. (1.5 FEET)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
BRIDGE FOUNDATION BORING LOG

Project: Bridge 100-2003 & 2005 Date: 8/21/09
Route: F.A.I. 55 Over Mazon River Bored By: S. J. Hillinger
Sta: 129+10.00 STA: 129+10.00 Checked By: S. Hillinger
County: Grundy Boring No.: 100-2003 Station: 129+10.00 Offset: 0'

Surface Elev. (ft.)	Groundwater (ft.) at Completion	After	Notes
521.1	521.1	521.1	TOP OF SOIL
520.4	520.4	520.4	STIFF CL. 20"
519.4	519.4	519.4	VERY SOFT CL. 24"
518.1	518.1	518.1	MOD. CL. 24"
517.1	517.1	517.1	LOOSE CL. 24" & CO. (1.5 FEET)

DESIGNED: V.S.N.
CHECKED: K.L.F.
DRAWN: J.O.B.
CHECKED: V.S.N./K.L.F.

BORING LOGS
F.A.I. 55 OVER THE MAZON RIVER
SECTION (32-1)BR
GRUNDY COUNTY

DATE: 8/21/09

FINAL SURVEY
 DATE: 11/11/85
 BY: [Signature]

ORIGINAL SURVEY
 DATE: 11/11/85
 BY: [Signature]

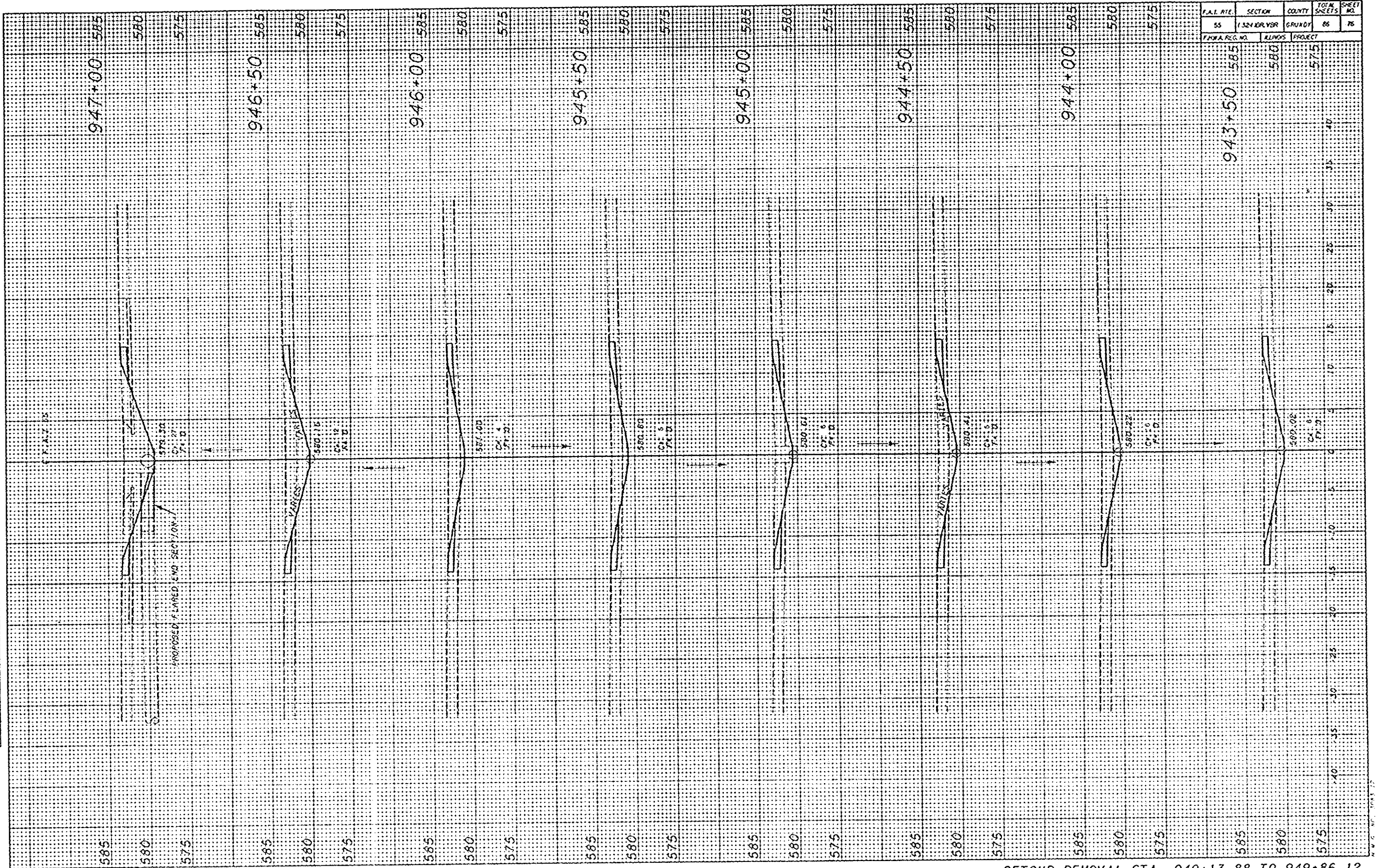


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 BRVDR	GRANDT	86	75
F.P.M.A. REG. NO.	ALONGS	PROJECT		

DETOUR REMOVAL STA. 940+13.88 TO 949+86.12

FINAL SURVEY
 DATE: 11/21/2013
 BY: J. M. [unclear]

PROPOSED EARTHWORK
 DATE: 11/21/2013
 BY: J. M. [unclear]



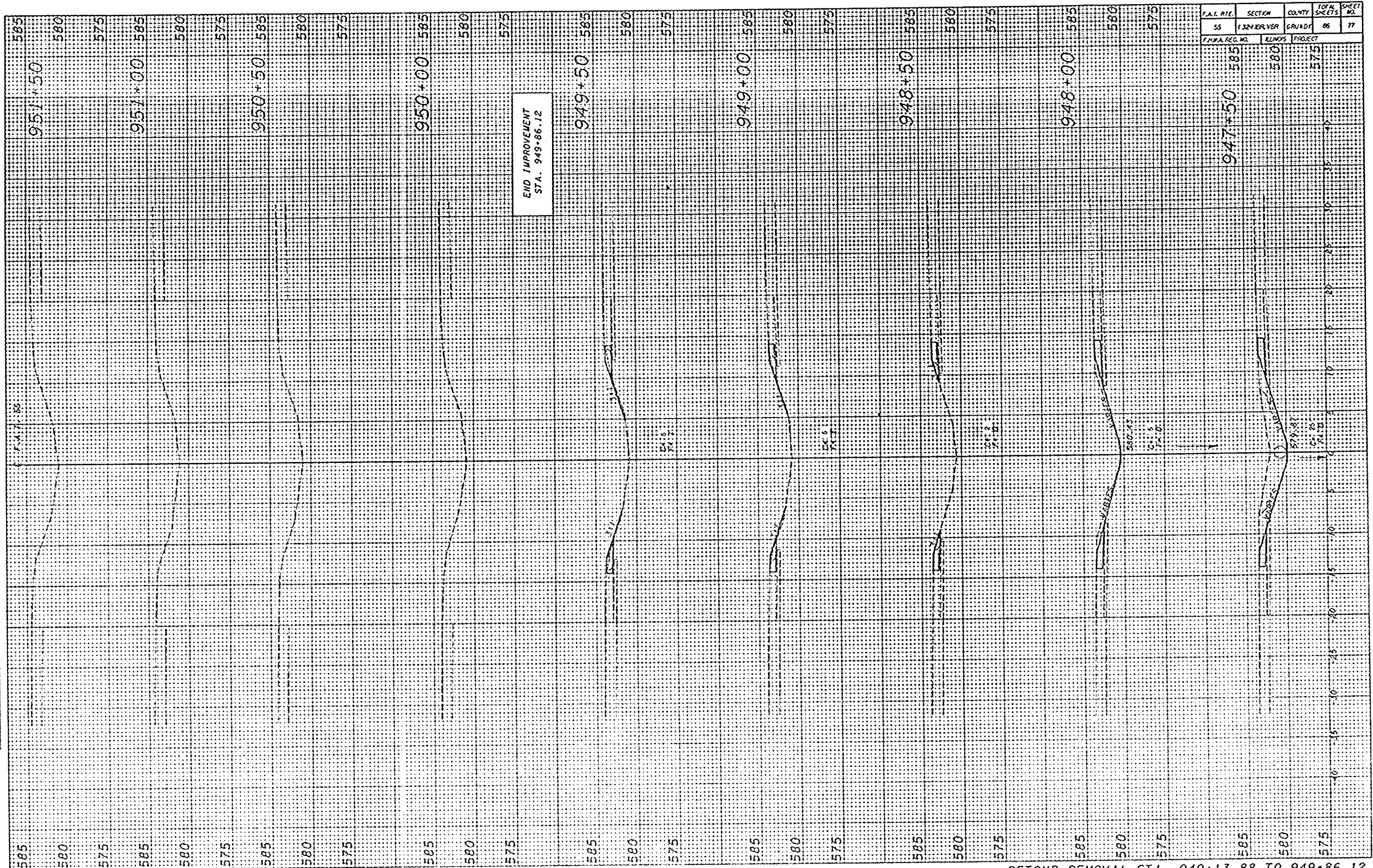
F.A.L. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1321 DR. VBR	GRUNDY	86	76

STATION	ELEVATION	TYPE
947+00	585	GROUND
947+00	580	GROUND
947+00	575	GROUND
946+50	585	GROUND
946+50	580	GROUND
946+50	575	GROUND
946+00	585	GROUND
946+00	580	GROUND
946+00	575	GROUND
945+50	585	GROUND
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945+50	575	GROUND
945+00	585	GROUND
945+00	580	GROUND
945+00	575	GROUND
944+50	585	GROUND
944+50	580	GROUND
944+50	575	GROUND
944+00	585	GROUND
944+00	580	GROUND
944+00	575	GROUND
943+50	585	GROUND
943+50	580	GROUND
943+50	575	GROUND

DETOUR REMOVAL STA. 940+13.88 TO 949+86.12

ORIGINAL SURVEY
 DATE: 11/27/85
 BY: [Signature]
 CHECKED: [Signature]

ORIGINAL SURVEY
 DATE: 11/27/85
 BY: [Signature]
 CHECKED: [Signature]

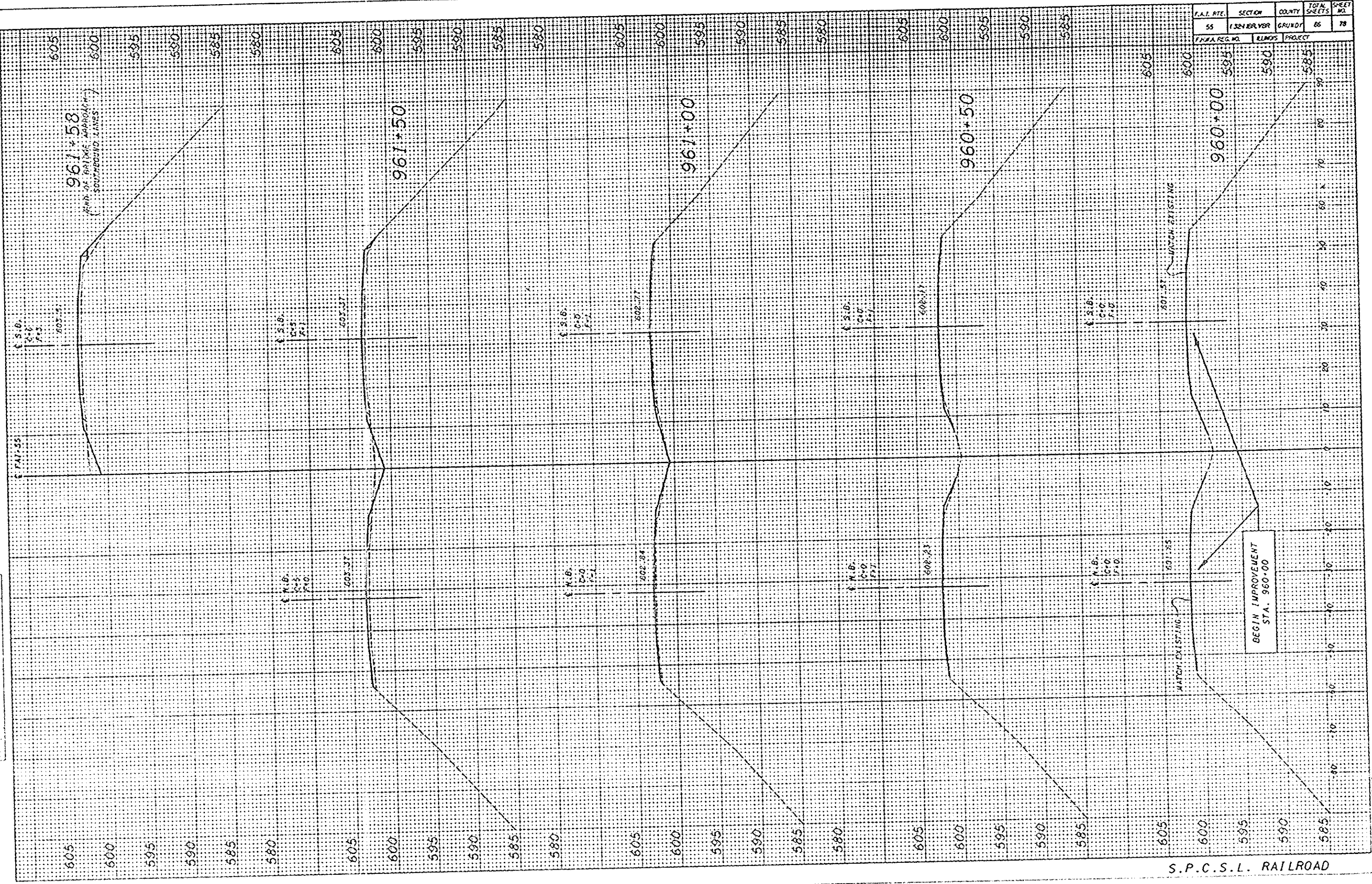


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 RIVER	GRAND	86	77
F.H.W.A. REG. NO.	ALINDOS	PROJECT		

DETOUR REMOVAL STA. 940+13.88 TO 949+86.12

FINAL SURVEY
 DATE: 10/15/55
 BY: J. B. [unclear]
 CHECKED BY: [unclear]

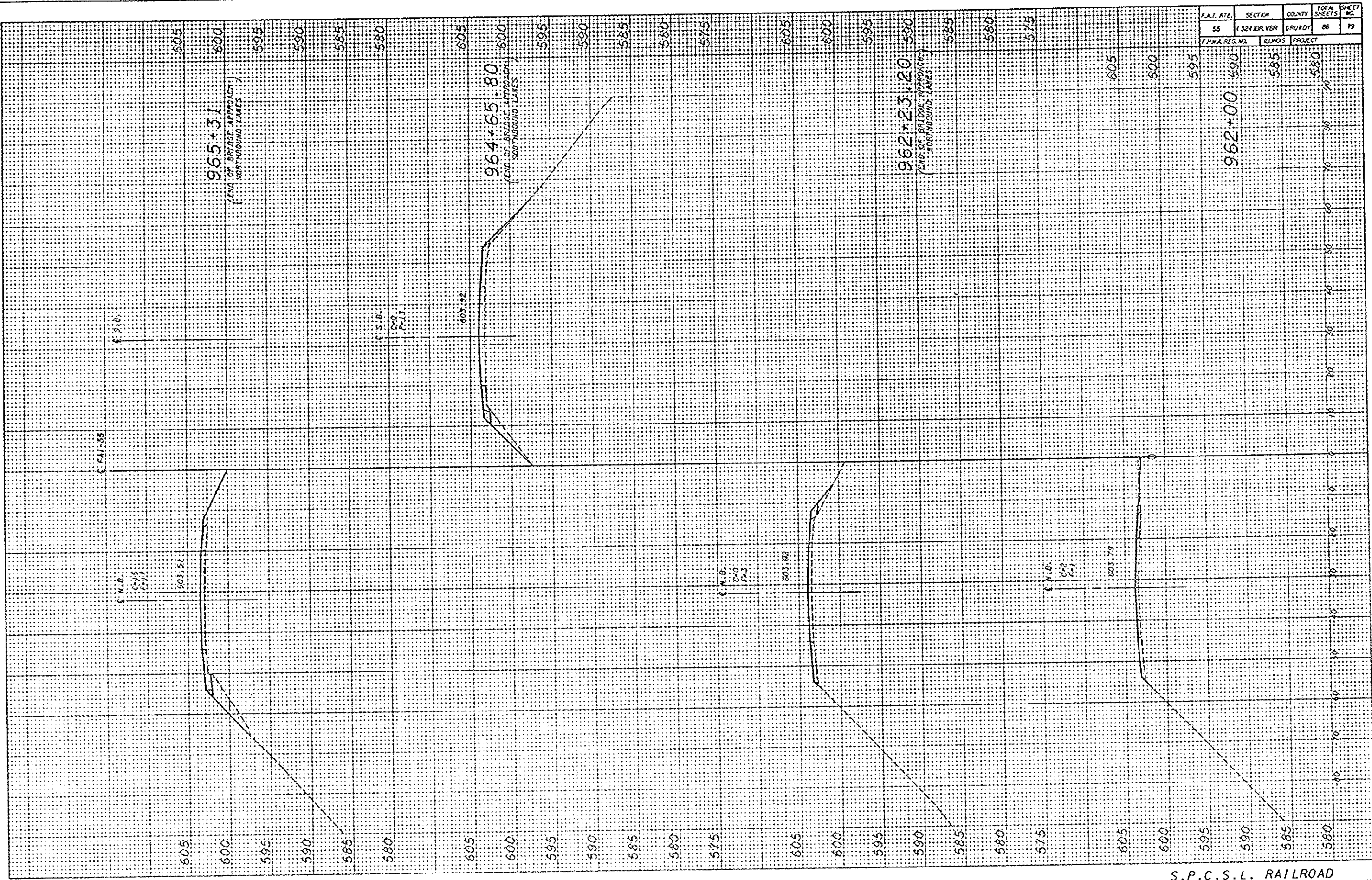
ORIGINAL SURVEY
 DATE: 10/15/55
 BY: J. B. [unclear]
 CHECKED BY: [unclear]



F.A.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.524 PER YR	GRUNDY	86	78
F.M.A. REG. NO.	ILLINOIS PROJECT			

FINAL SURVEY
 DATE: 12/15/54
 BY: J. W. BROWN
 CHECKED: J. W. BROWN
 SCALE: AS SHOWN

ORIGINAL SURVEY
 DATE: 12/15/54
 BY: J. W. BROWN
 CHECKED: J. W. BROWN
 SCALE: AS SHOWN



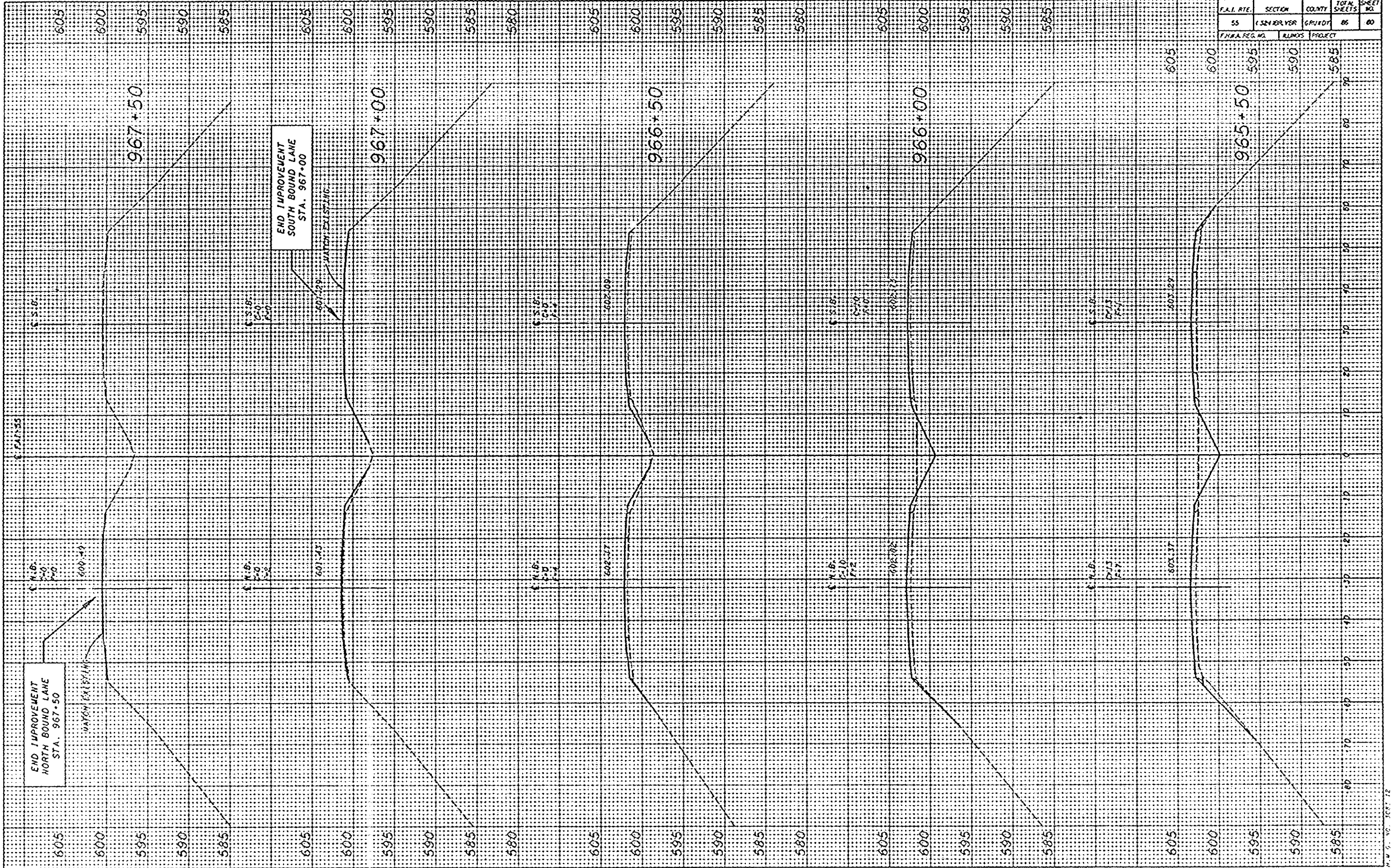
F.A.I. ATE.	SECTION	COUNTY	TOTAL SHEET NO.
55	1.524 R.R. VBR	GRANDT	86

T.H.W.A. REG. NO.	RUNNOES	PROJECT

S.P.C.S.L. RAILROAD

FINAL SURVEY	DATE
APPROVED	
DATE	
BY	

ORIGINAL SURVEY	DATE
APPROVED	
DATE	
BY	

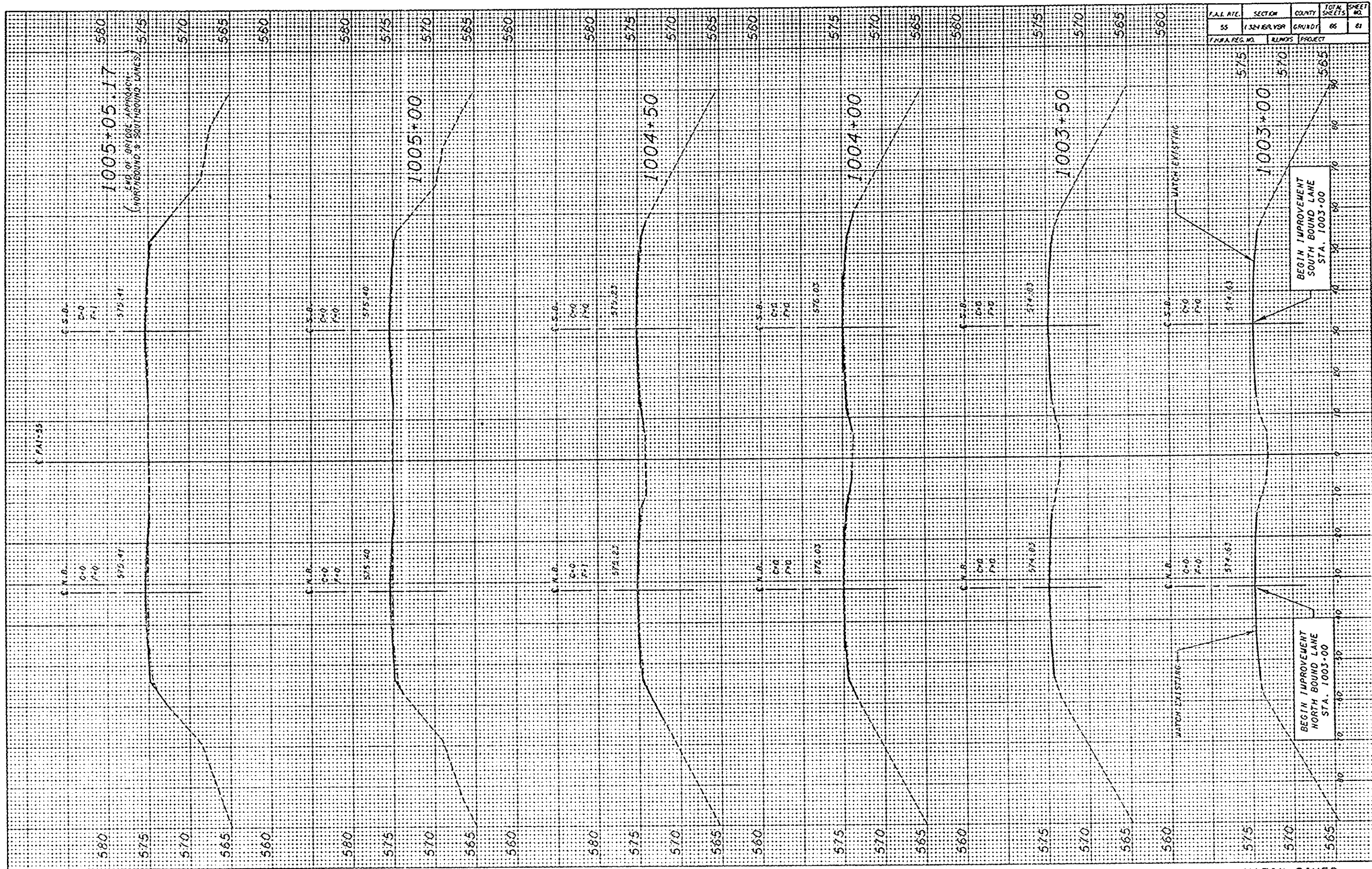


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1	GRAND	85	80
FINRA REG. NO.	BLKMS	PROJECT		
	595	590	585	

S.P.C.S.L. RAILROAD

ORIGINAL SURVEY
 DATE: 11/11/03
 BY: J. R. BROWN
 SCALE: AS SHOWN
 SHEET NO. 61

ORIGINAL SURVEY
 DATE: 11/11/03
 BY: J. R. BROWN
 SCALE: AS SHOWN
 SHEET NO. 61

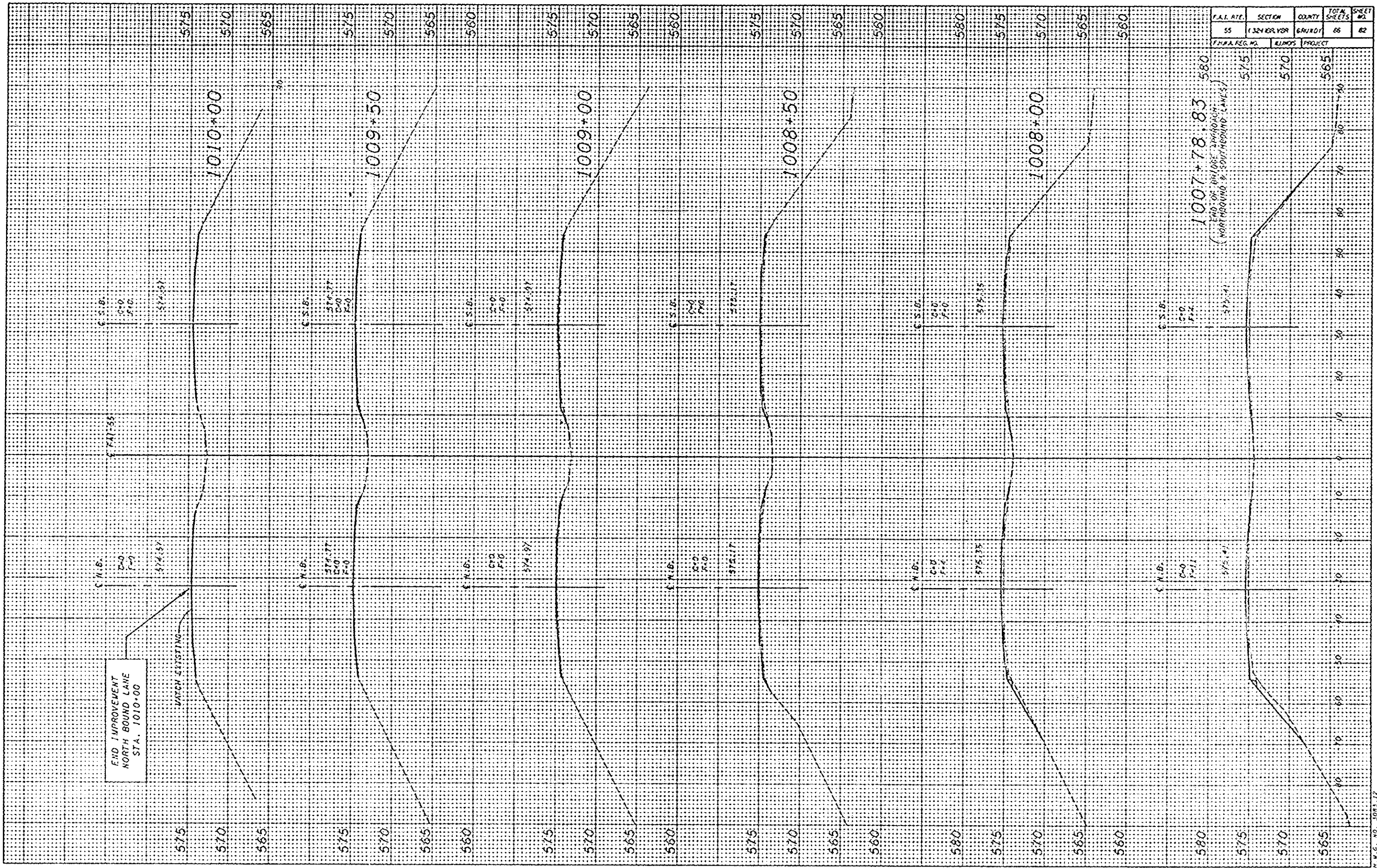


P.A.L. REC.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	13245R.VSR	GRANDT	85	61
F.N.R.A. REG. NO.	BLINDS	PROJECT		

MAZON RIVER

FINAL SURVEY
 DATE: 10/11/83
 BY: [Signature]
 CHECKED BY: [Signature]

ORIGINAL SURVEY
 DATE: 10/11/83
 BY: [Signature]
 CHECKED BY: [Signature]



F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 R.R. YOR	BRUNDT	88	82

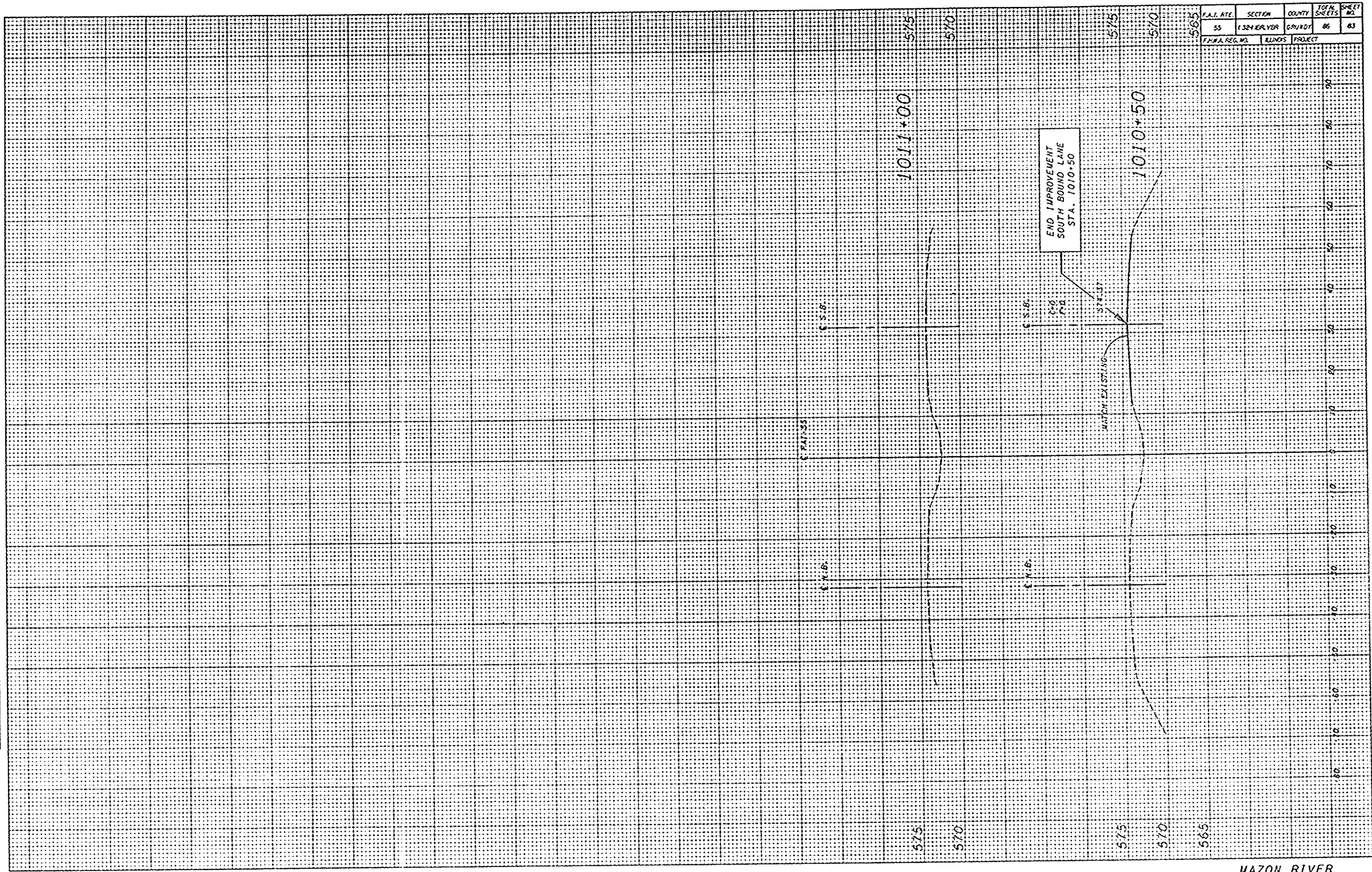
F.H.A. REG. NO.	BLUMPS	PROJECT

1007+78.83
 END OF BRIDGE APPROACH
 (NORTHBOUND & SOUTHBOUND LANES)

MAZON RIVER

FINAL SURVEY
 DATE: 11/11/08
 BY: [Signature]
 CHECKED: [Signature]

ORIGINAL SURVEY
 DATE: 11/11/08
 BY: [Signature]
 CHECKED: [Signature]

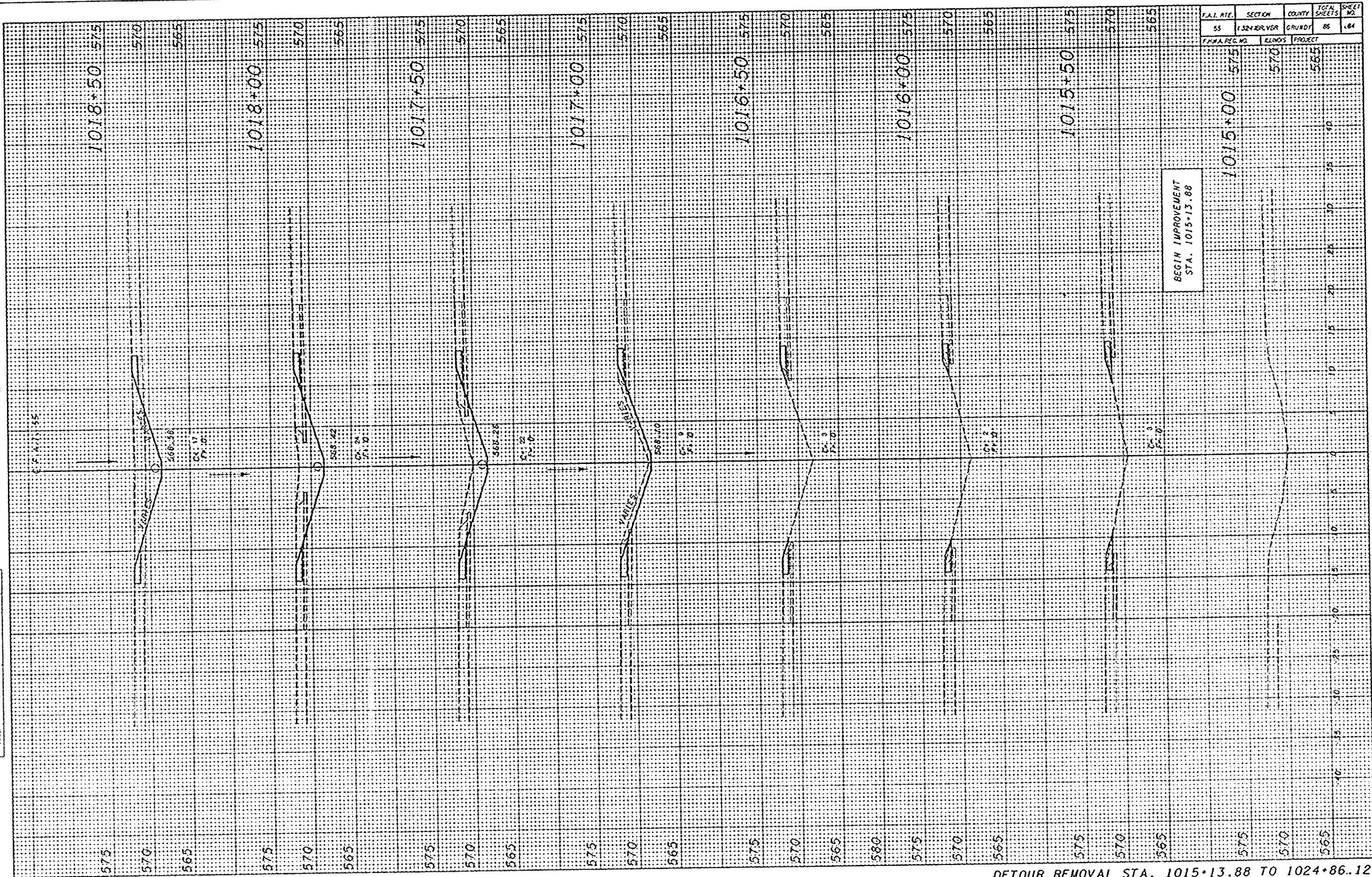


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1.324 RIVER	GRUNDY	85	83
FHWA REG. NO.		KUNOS PROJECT		

MAZON RIVER

FINAL SURVEY
DATE: 10/15/88
BY: [Signature]

ORIGINAL SURVEY
DATE: 10/15/88
BY: [Signature]



BEGIN IMPROVEMENT
STA. 1015+13.88

F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1321 BR. VER	GRUNDY	88	184

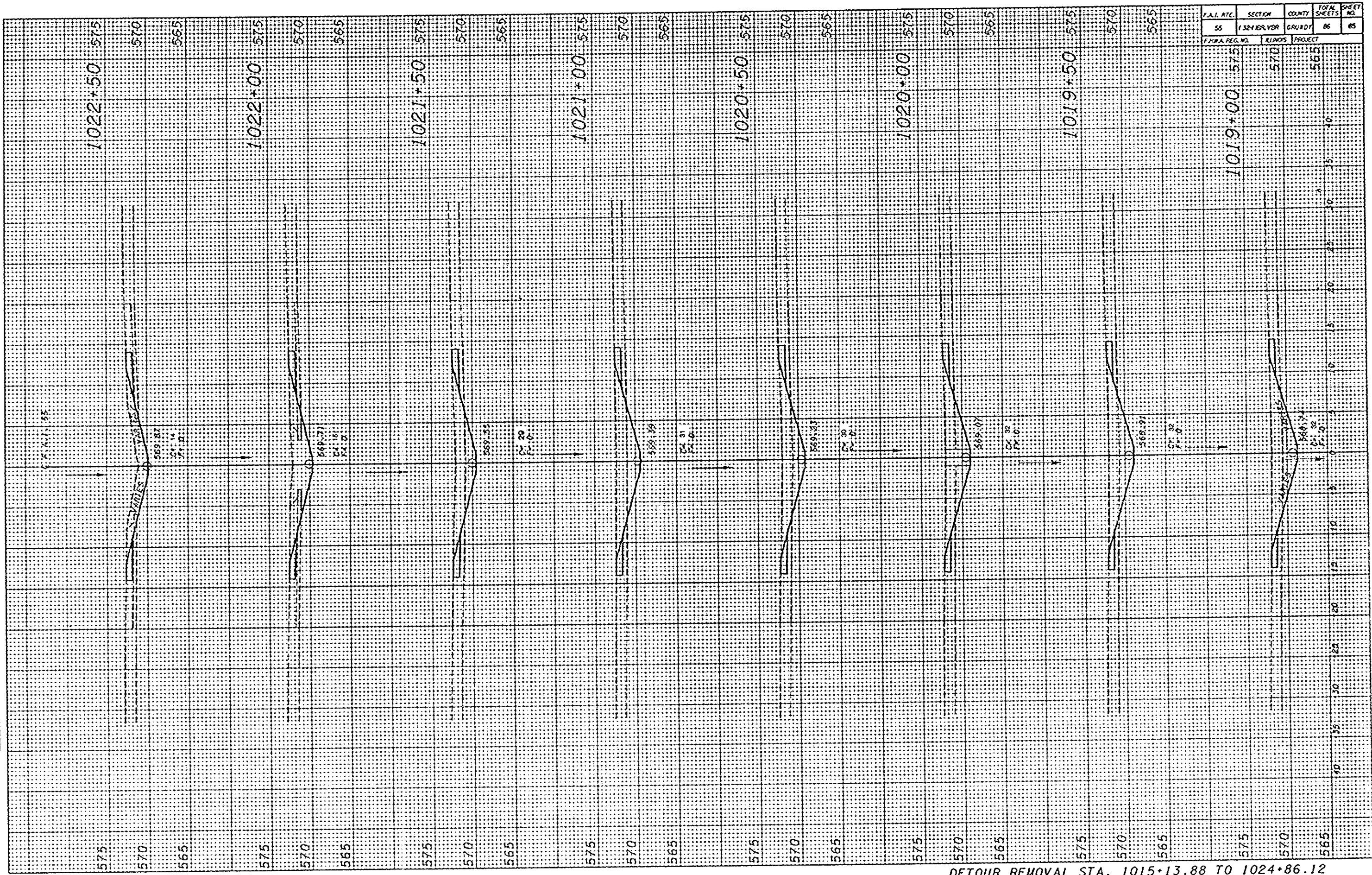
F.P.W.A. REG. NO.	ILLINOIS PROJECT
1015+00	575

STATION	ELEVATION
1015+00	575
1015+05	570
1015+10	565
1015+15	570
1015+20	575
1015+25	570
1015+30	565
1015+35	570
1015+40	575
1015+45	570
1015+50	565

DETOUR REMOVAL STA. 1015+13.88 TO 1024+86.12

FINAL SURVEY
 DATE: 10/15/88
 BY: J. W. B. / J. W. B.
 CHECKED: J. W. B. / J. W. B.
 SCALE: AS SHOWN

ORIGINAL SURVEY
 DATE: 10/15/88
 BY: J. W. B. / J. W. B.
 CHECKED: J. W. B. / J. W. B.
 SCALE: AS SHOWN

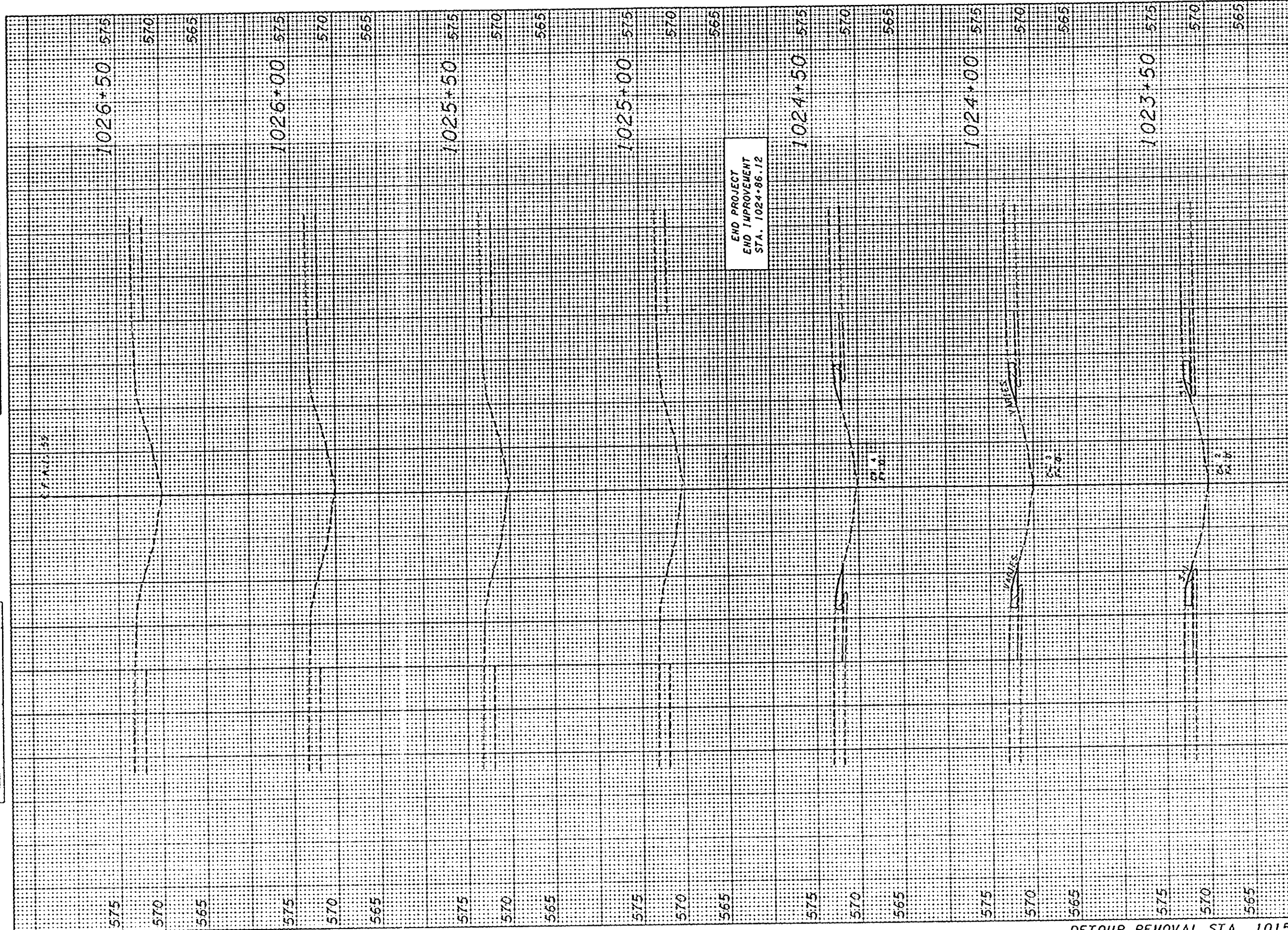


DETOUR REMOVAL STA. 1015+13.88 TO 1024+86.12

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	1324 R.R. VSR	GRUNDY	86	85
F.P.N.A. REG. NO.	ELIMOS PROJECT			
1019+00	575			
	570			
	565			
			10	
			20	
			30	
			40	
			50	
			60	
			70	
			80	
			90	
			100	
			110	
			120	
			130	
			140	
			150	
			160	
			170	
			180	
			190	
			200	
			210	
			220	
			230	
			240	
			250	
			260	
			270	
			280	
			290	
			300	
			310	
			320	
			330	
			340	
			350	
			360	
			370	
			380	
			390	
			400	
			410	
			420	
			430	
			440	
			450	
			460	
			470	
			480	
			490	
			500	
			510	
			520	
			530	
			540	
			550	
			560	
			570	
			580	
			590	
			600	
			610	
			620	
			630	
			640	
			650	
			660	
			670	
			680	
			690	
			700	
			710	
			720	
			730	
			740	
			750	
			760	
			770	
			780	
			790	
			800	
			810	
			820	
			830	
			840	
			850	
			860	
			870	
			880	
			890	
			900	
			910	
			920	
			930	
			940	
			950	
			960	
			970	
			980	
			990	
			1000	

FINAL SURVEY
 DATE: _____
 BY: _____
 CHECKED BY: _____
 DATE: _____

ORIGINAL SURVEY
 DATE: _____
 BY: _____
 CHECKED BY: _____
 DATE: _____



F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	13	GRUNDY	86	86

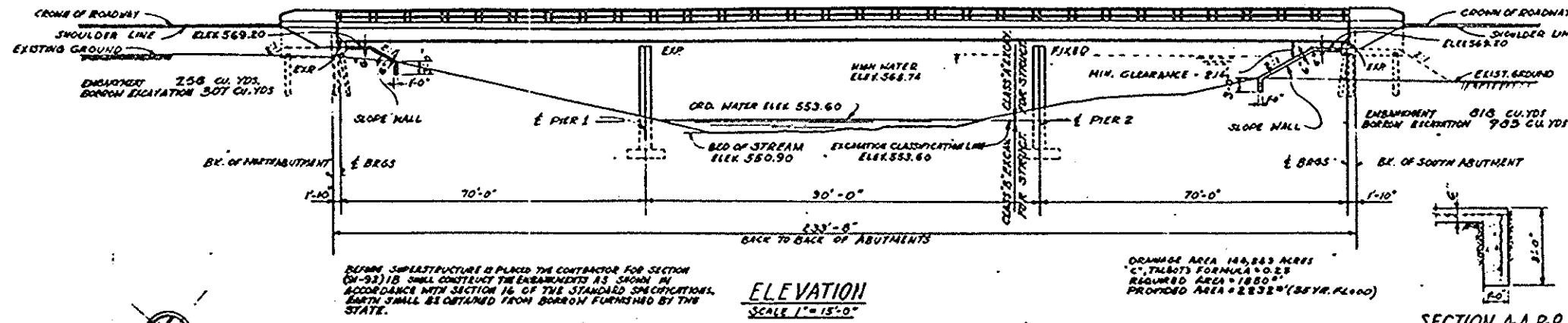
F.H.W.A. REG. NO.	ALUMOS	PROJECT
1023+00	575	565
		40
		50
		60
		70
		80
		90
		100
		110
		120
		130
		140
		150
		160
		170
		180
		190
		200
		210
		220
		230
		240
		250
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		320
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		340
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		360
		370
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		390
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		410
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		870
		880
		890
		900
		910
		920
		930
		940
		950
		960
		970
		980
		990
		1000

DETOUR REMOVAL STA. 1015+13.88 TO 1024+86.12

N.V.S. 40 2083.12

NO EXISTING STRUCTURE
 B.M. 126 - SQUARE, TOP, EAST END, SOUTH
 MIDWALL, SIDE ROAD CULVERT, RIGHT
 STA. 1006+70, ELEV. 566.68

PROJECT NO.	55	REV.	RE-REV	COUNTY	GRUNDY	DATE	8-20-86
STA. 1006+25.77			TO STA. 1007+58.83				
FOR ROAD DIST. NO. 1							
ILLINOIS FOR AND PROJECT LE 973(17)							



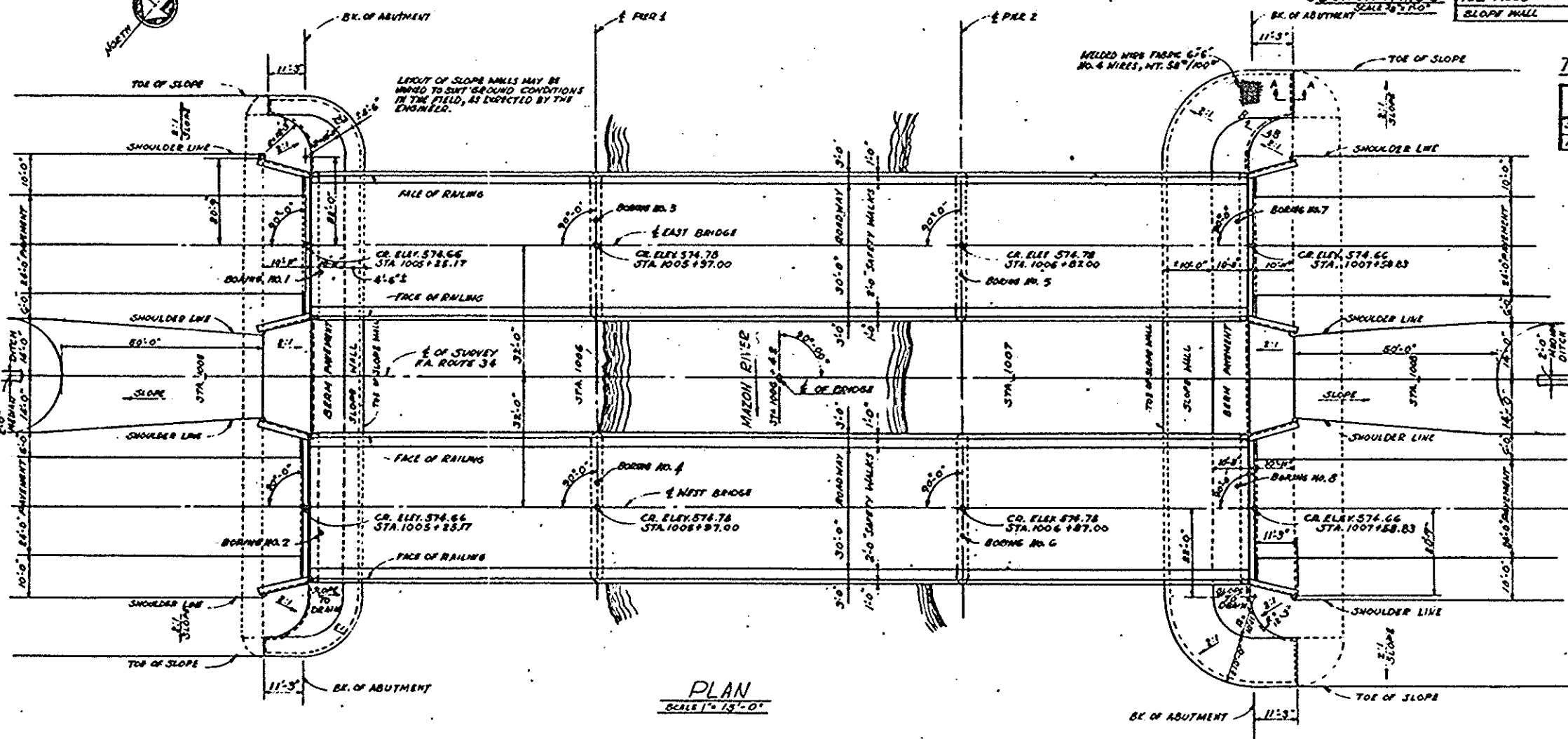
BEFORE SUPERSTRUCTURE IS PLACED THE CONTRACTOR FOR SECTION (C1-32) SHALL CONSTRUCT THE EMBANKMENTS AS SHOWN IN ACCORDANCE WITH SECTION 16 OF THE STANDARD SPECIFICATIONS. EARTH SHALL BE OBTAINED FROM BORROW FURNISHED BY THE STATE.

ELEVATION
 SCALE 1" = 15'-0"

DRAINAGE AREA 148,883 ACRES
 C. TILLOT'S FORMULA = 0.25
 REQUIRED AREA = 1880'±
 PROVIDED AREA = 2852'± (BY V.R. PL. 100)

TOTAL BILL OF MATERIAL - SECTION 91-B-1

ITEM	UNIT	QUANTITY				TOTAL FOR 2 BRIDGES
		EAST BRIDGE	WEST BRIDGE	SUBSTR.	SUPERSTR.	
CLASS X CONCRETE	CU. YDS.	224.9	273.5	224.9	273.5	998.8
HANDMADE CONCRETE	CU. YDS.	—	4.2	—	4.2	8.4
REINFORCEMENT BARS	LBS.	10,370	15,870	10,370	15,870	112,520
STRUCTURAL STEEL	LBS.	308,700	—	308,700	—	607,400
METAL HANDRAIL	LIN. FT.	462.7	—	462.7	—	925.4
RAMME PLATES	EACH	1	—	1	—	2
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	—	76	—	76	152.0
CLASS B EXCAVATION FOR STRUCTURES	CU. YDS.	—	334	—	334	668.0
BOLETON FOUNDATION	CU. YDS.	—	—	—	—	1290
PREPARING CONCRETE PILES	LIN. FT.	—	280	—	224	504
DRIVING CONCRETE PILES	LIN. FT.	—	280	—	224	504
TEST PILES	EACH	—	2	—	2	4
SLOPE WALL	SQ. YDS.	—	—	—	—	753



PLAN
 SCALE 1" = 15'-0"

TOTAL BILL OF MATERIAL - SECTION 91-F-1

ITEM	UNIT	QUANTITY		TOTAL
		EAST BRIDGE	WEST BRIDGE	
STRUCTURAL STEEL	LBS.	308,700	308,700	607,400
METAL HANDRAIL	LIN. FT.	462.7	462.7	925.4

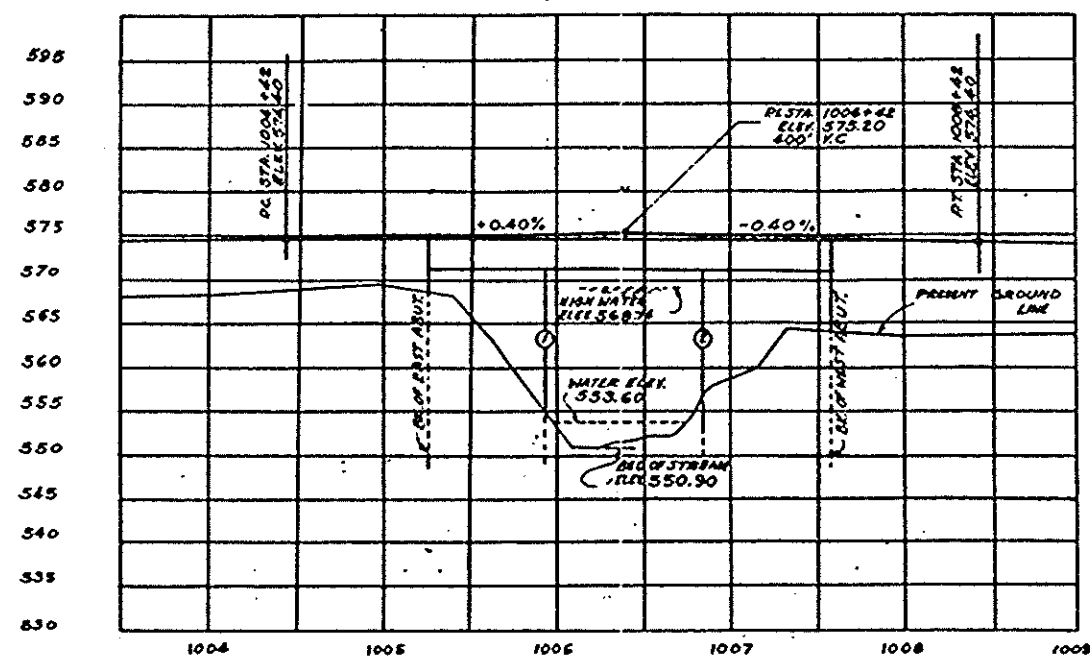
STRESSES
 $f_s = 18,000$ PSI - STRUCTURAL STEEL
 $f_r = 20,000$ PSI - REINFORCING STEEL
 $f_c = 1,200$ PSI - SUPERSTRUCTURE
 $E = 300,000$ PSI - PIERS
 $n = 10$
DESIGN LOAD
 H20-S16-44

FOR INFORMATION ONLY

GENERAL PLAN & ELEVATION
 BRIDGE OVER MAZON RIVER
 PROJECT I.N. 373(19)
 E.A. ROUTE 77 SECTION 91 B1&F-1
 GRUNDY COUNTY
 STA. 1006+42

ALFRED BENESECH & ASSOCIATES CONSULTING ENGINEERS
 30 EAST ADAMS STREET CHICAGO - ILLINOIS

PROJECT NO.	DATE	COUNTY	SHEET NO.	TOTAL SHEETS
SS	12-1-78	GRUNDY	86	86
BY: K&E P.E. 17		TO: ILL. DOT F&S 83		
PRO. NAME: STA. 1006+42		SHEET NO. FROM TOTAL: 86		



STATION 1006+42
BUILT 195- BY
STATE OF ILLINOIS
F.A. RT 77 SEC. 91-B-1&F-1
F.A. PROJ. LN. 313(19)
LOADING H2O-SIG

SEE STATE OF ILLINOIS STD. 2113

LETTERING FOR NAME PLATE

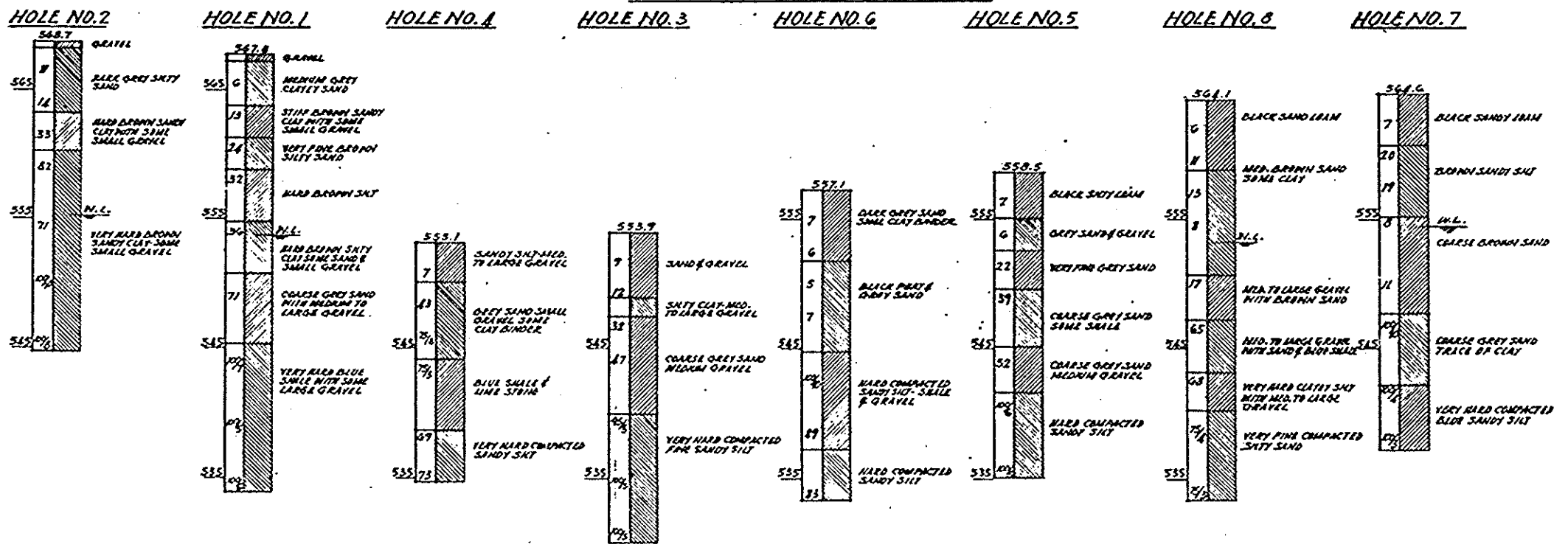
GENERAL NOTES

CLASS X CONCRETE SHALL BE USED THROUGHOUT EXCEPT AS NOTED.
REINFORCING CONCRETE SHALL BE USED IN THE TOP PORTIONS OF THE WALLS AS SHOWN.
CONCRETE FLOOR SLAB SHALL BE PLACED IN ONE CONTINUOUS OPERATION BETWEEN CONSTRUCTION JOINTS SHOWN AND SHALL BE FINISHED IN ACCORDANCE WITH ARTICLE 211.00 OF THE STANDARD SPECIFICATIONS. SEE SPECIAL PROVISIONS.
ALL CONNECTIONS FOR STRUCTURAL STEEL SHALL BE RIVETED EXCEPT AS NOTED. ALL RIVETS SHALL BE 3/8" IN DIA. UNLESS OTHERWISE SPECIFIED.
ROLES FOR BEAM SPACES SHALL BE PUNCHED HOLE AND REINFORCED TO COLLECT STEEL WITH STAINLESS ASSEMBLED POLL LENGTH IN THE SHOP, IN PROPER POSITION, WITH OR WITHOUT DIAPHRAGMS IN PLACE. LEADS ASSEMBLED FOR INSPECTION.
ALL BOLDS, RODS, BEARING PLATES AND ANCHOR BOLTS SHALL BE FABRICATED AND SET IN ACCORDANCE WITH ARTICLE 211.00 OF THE STANDARD SPECIFICATIONS AND ARE INCLUDED FOR PAYMENT AS STRUCTURAL STEEL.
ESTIMATED WEIGHT: 125 LBS. FOR TWO BRACES.
ANCHOR BOLTS SHALL BE SET BEFORE KNIFE DIAPHRAGMS OVER FEAS AND ADJUSTMENTS.
STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF ALUMINUM PAINT.
SHOP INSPECTION OF STRUCTURAL STEEL BY THE ILLINOIS DIVISION OF HIGHWAYS AS PER PAR. 211.00.
THE CONTRACTOR SHALL DRUM ONE TEST PILE AT EACH ABUTMENT IN A PERMANENT LOCATION AS DIRECTED BY THE ENGINEER, BEFORE GRADING THE REMAINDER OF THE PILES.

PROFILE OF C OF F.A. ROUTE 77

SCALE 1" = 50'-0" HORIZONTALLY
1" = 10'-0" VERTICALLY

SOIL TEST BORINGS

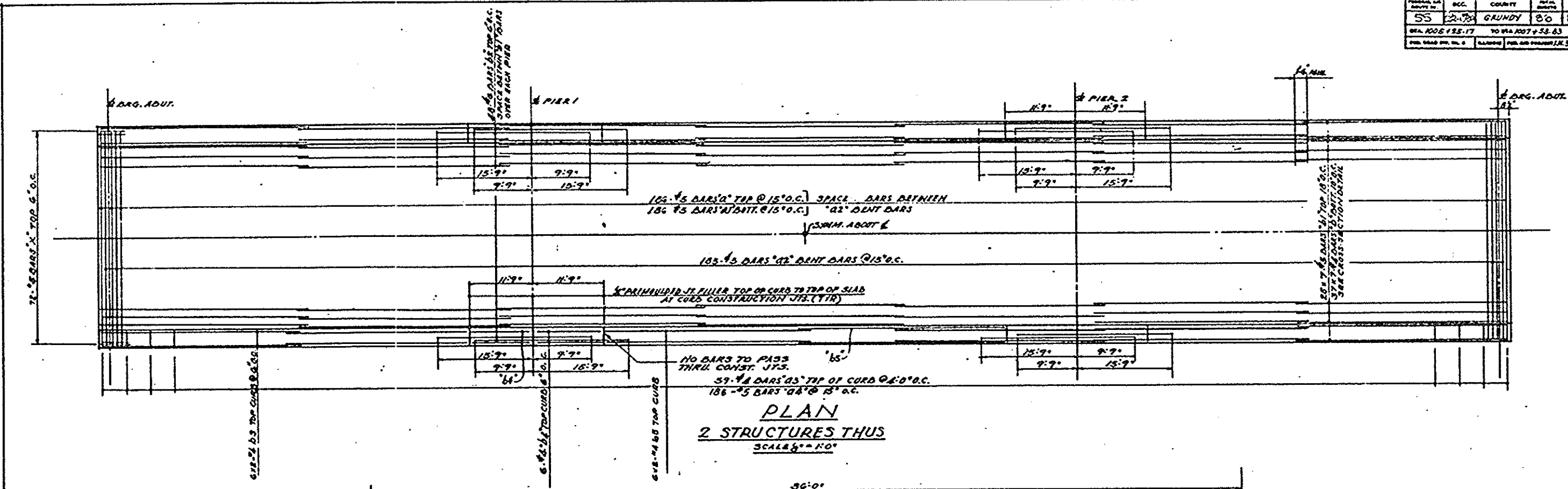


NOTE:
NUMBERS IN LEFT HAND COLUMN INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE SAMPLING PIPE 12" WITH 140 LB. PUNGE FALLING 50"
FOR LOCATION OF BORINGS SEE SHEET NO. 7
BORING DATA ARE GIVEN ONLY AS A GUIDE FOR BIDDERS IN ESTIMATING SOIL CONDITIONS WHICH MAY BE ENCOUNTERED IN THE WORK.

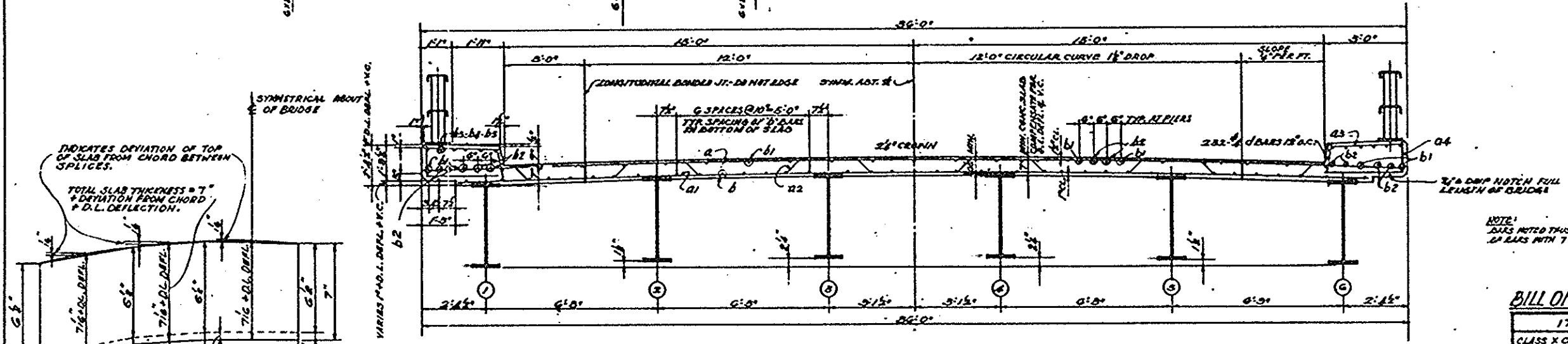
FOR INFORMATION ONLY

PROFILE BORINGS, NAME PLATES
BRIDGE OVER MAZON RIVER
PROJECT LN. 313(19)
F.A. ROUTE 77 SECTION 91 B-1&F-1
GRUNDY COUNTY
STA. 1006+42

PROJECT NO.	55	DIST.	GRUNDY	SECTION	80	SHEET NO.	80C
F.A. ROUTE 77		TO F.A. ROUTE 77		STATION 1006+42			
DESIGNED BY		CHECKED BY		DATE			



PLAN
2 STRUCTURES THUS
SCALE 1/8" = 1'-0"



CROSS SECTION
SCALE 1/2" = 1'-0"

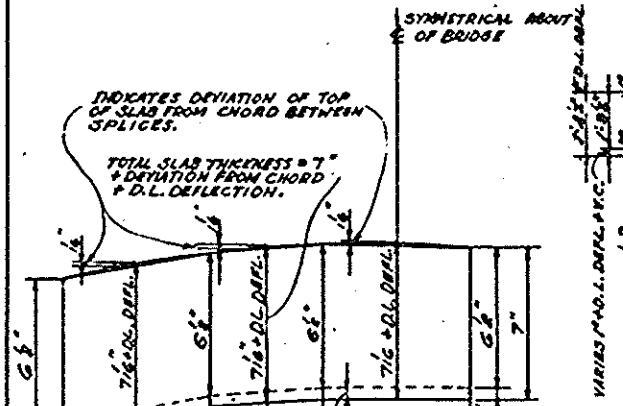
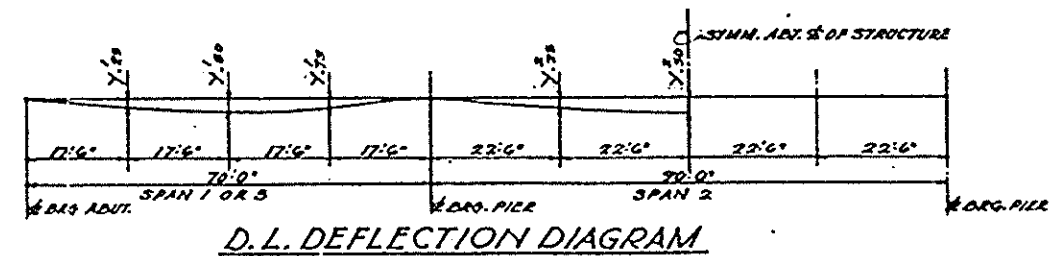


DIAGRAM SHOWING RELATIONSHIP OF FLOOR SLAB TO STRINGERS



D.L. DEFLECTION DIAGRAM

TABLE OF 'Y' DIMENSIONS

'Y'	Y ₂₀	Y ₁₈	Y ₁₆	Y ₁₄	Y ₁₂
NO. 1	5/8"	1/4"	5/16"	3/8"	1"
NO. 2-3	7/8"	1/2"	3/4"	3/8"	1 1/16"

BILL OF MATERIALS SUPERSTRUCTURE

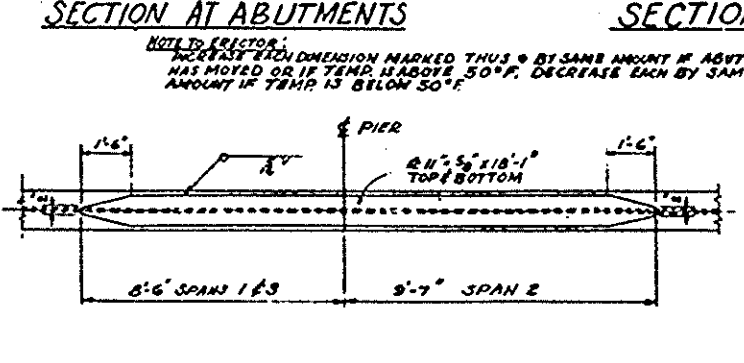
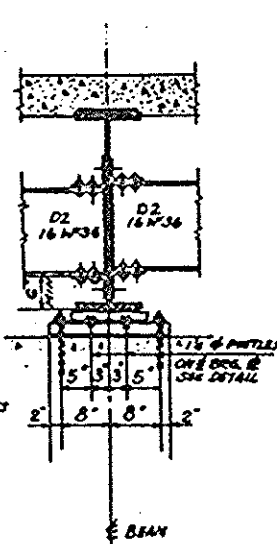
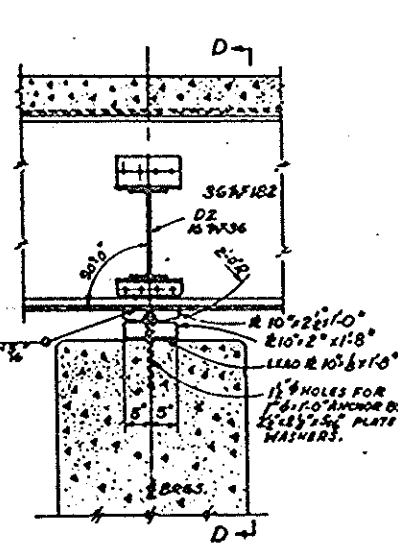
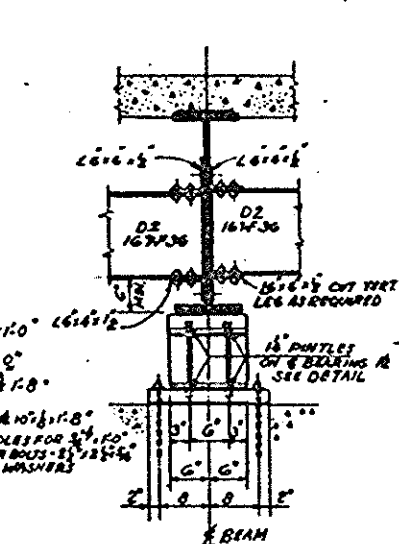
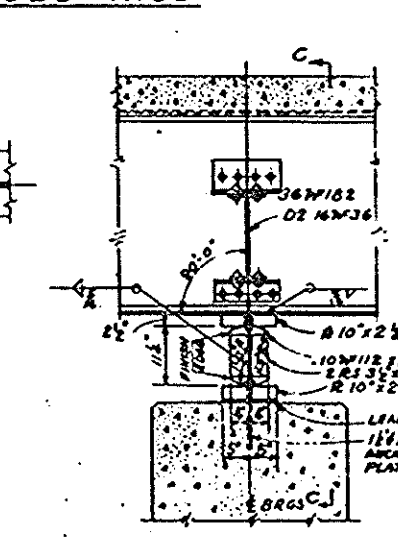
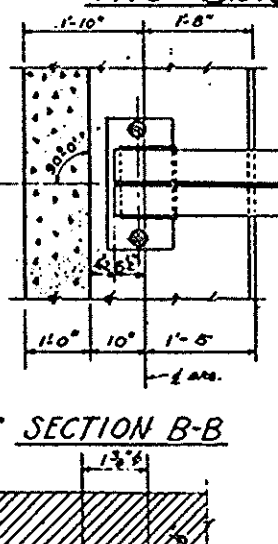
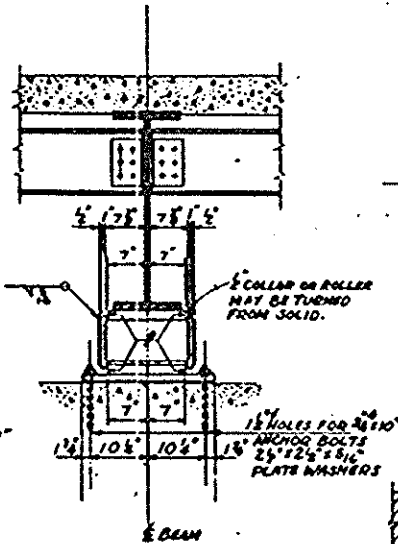
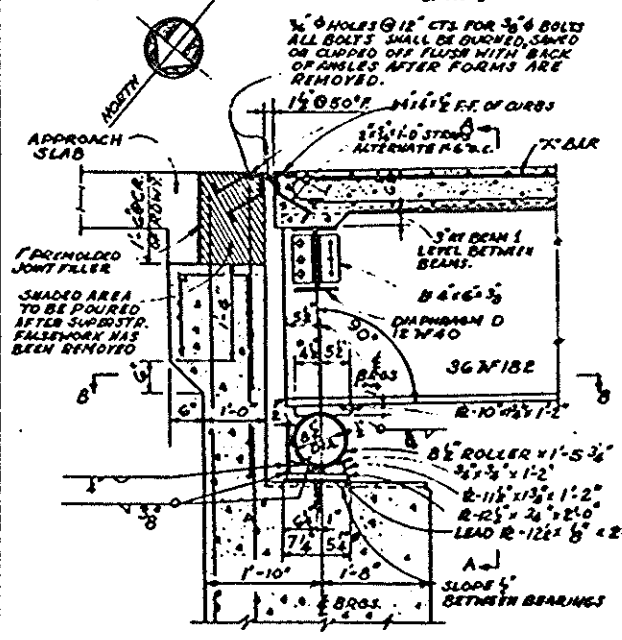
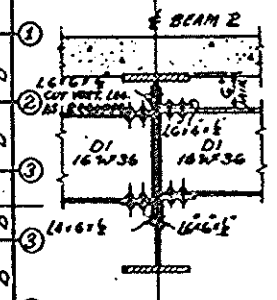
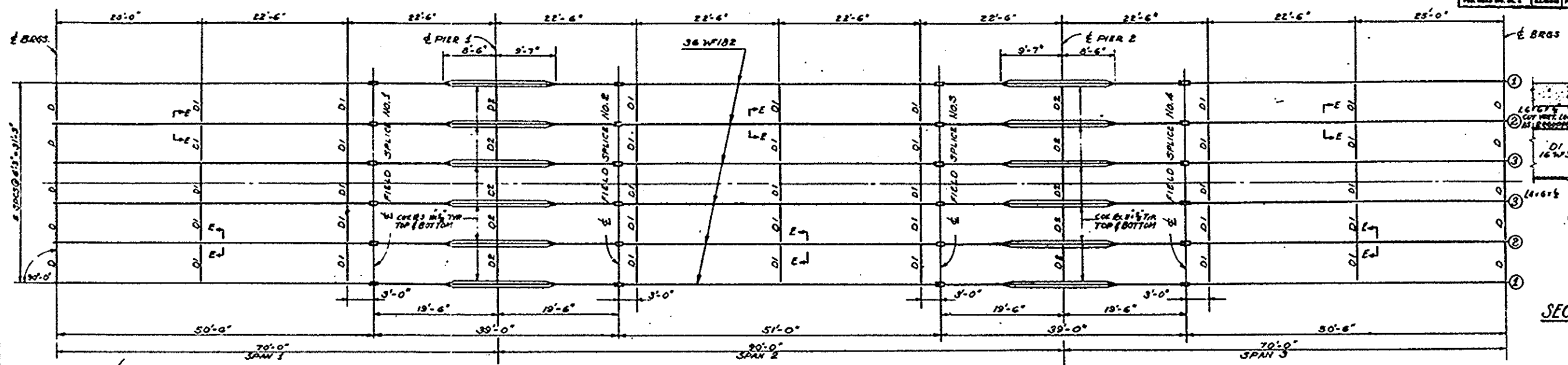
ITEM	UNIT	QUANTITY	QUANTITY
CLASS X CONCRETE	CU. YDS.	228.9	228.9
REINFORCEMENT BARS	LBS.	80,370	80,370
STRUCTURAL STEEL	LBS.	308,700	308,700
METAL HANDRAIL	LN. FT.	82.7	82.7

FOR INFORMATION ONLY

DECK REINFORCEMENT PLAN
BRIDGE OVER MAZON RIVER
PROJECT LN. 373(19)
F.A. ROUTE 77 SECTION 91 B-18 F-1
GRUNDY COUNTY
STA. 1006+42

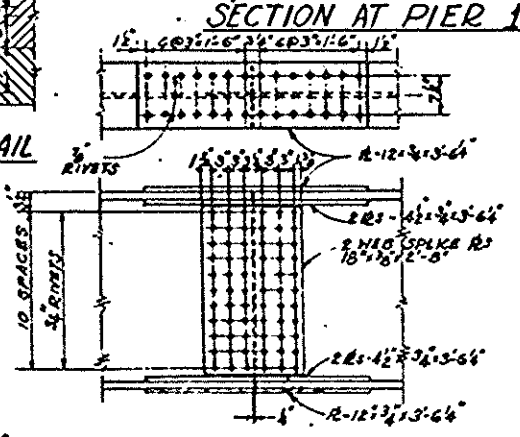
ALFRED BENECH & ASSOCIATES CONSULTING ENGINEERS
80 EAST ADAMS STREET CHICAGO - ILLINOIS

NO. 55	COUNTY	SCALE	DATE
55	GRUNDY	8/6	8/6
STATION 128.17 TO STA. 1006.42		NO. 55	
FOR ROAD NO. 77		FOR ROAD NO. 77	



BEAM NO.	1	2	3
LOCATION	573.92	574.04	574.11
FIELD SPICE NO. 1	574.02	574.14	574.21
PIER NO. 1	574.04	574.16	574.23
FIELD SPICE NO. 2	574.15	574.17	574.24

BEAM ELEVATIONS
ALL ELEVATIONS ARE GIVEN TO TOPS OF BEAMS



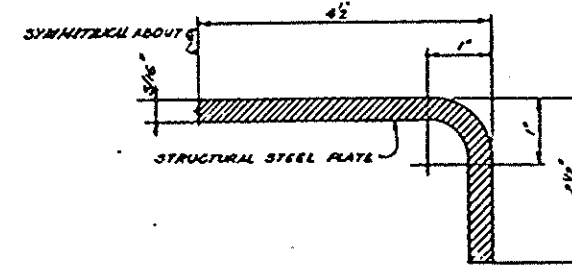
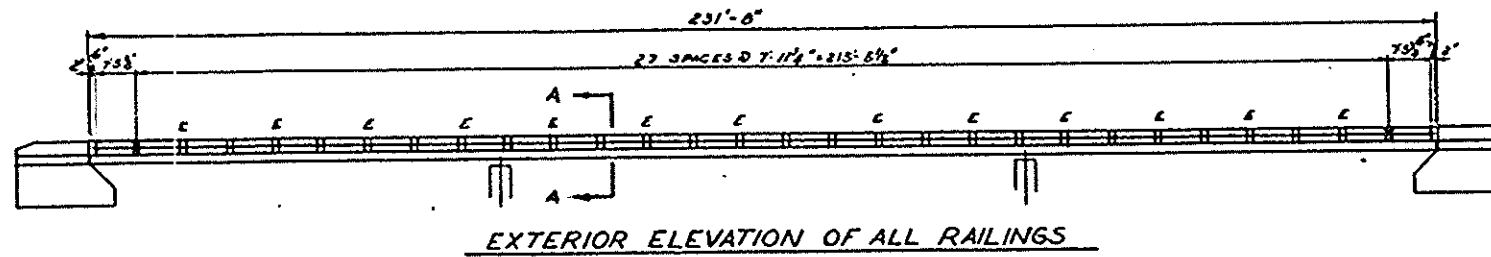
NOTE: ALL DIAPHRAGMS TO BE LEVEL BETWEEN STRINGERS.

FOR INFORMATION ONLY

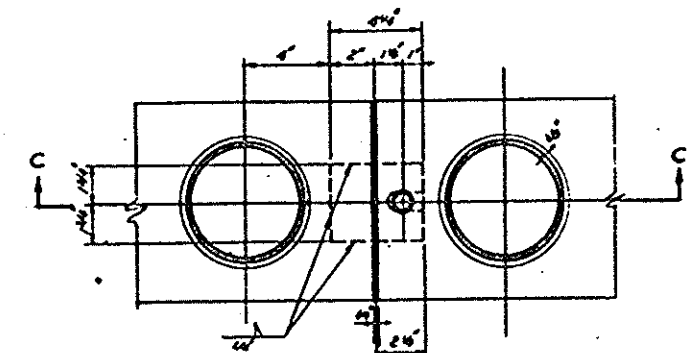
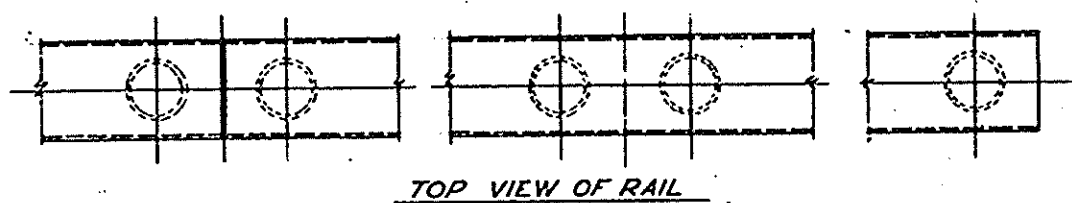
STRUCTURAL STEEL PLAN & DETAILS
BRIDGE OVER MAZON RIVER
PROJECT LN. 373(19)
FA ROUTE 77 SECTION 91.81&F-1
GRUNDY COUNTY
STA. 1006+42

ALFRED BENSCH & ASSOCIATES CONSULTING ENGINEERS
50 EAST ADAMS STREET CARBON - ILLINOIS

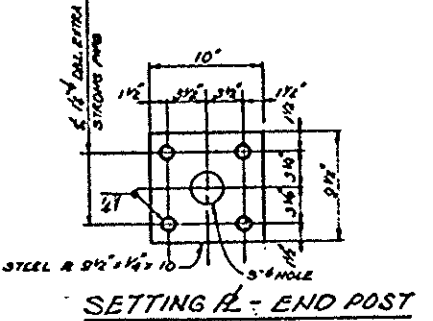
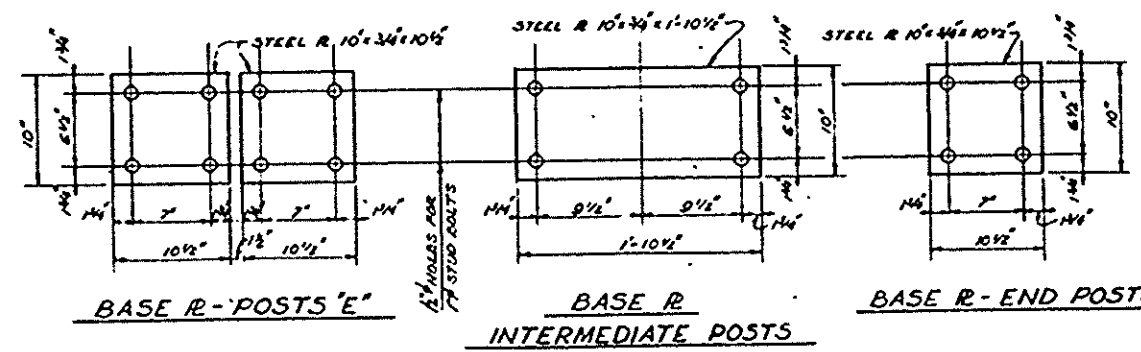
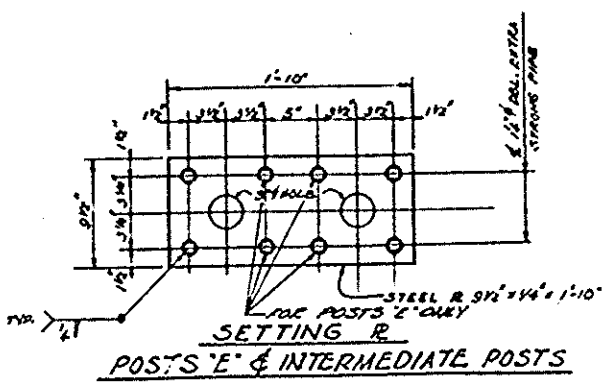
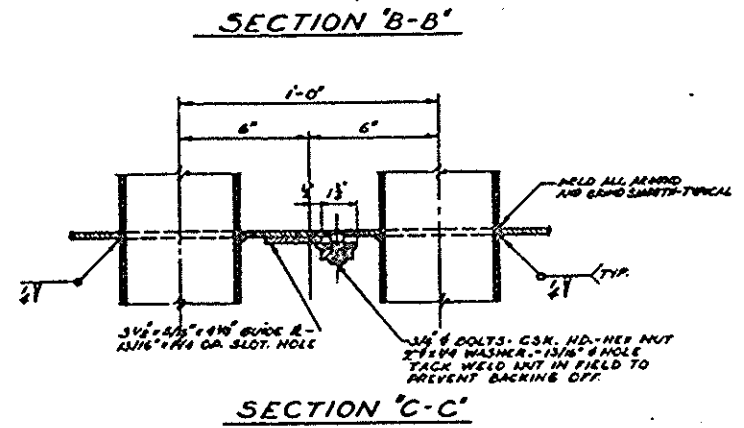
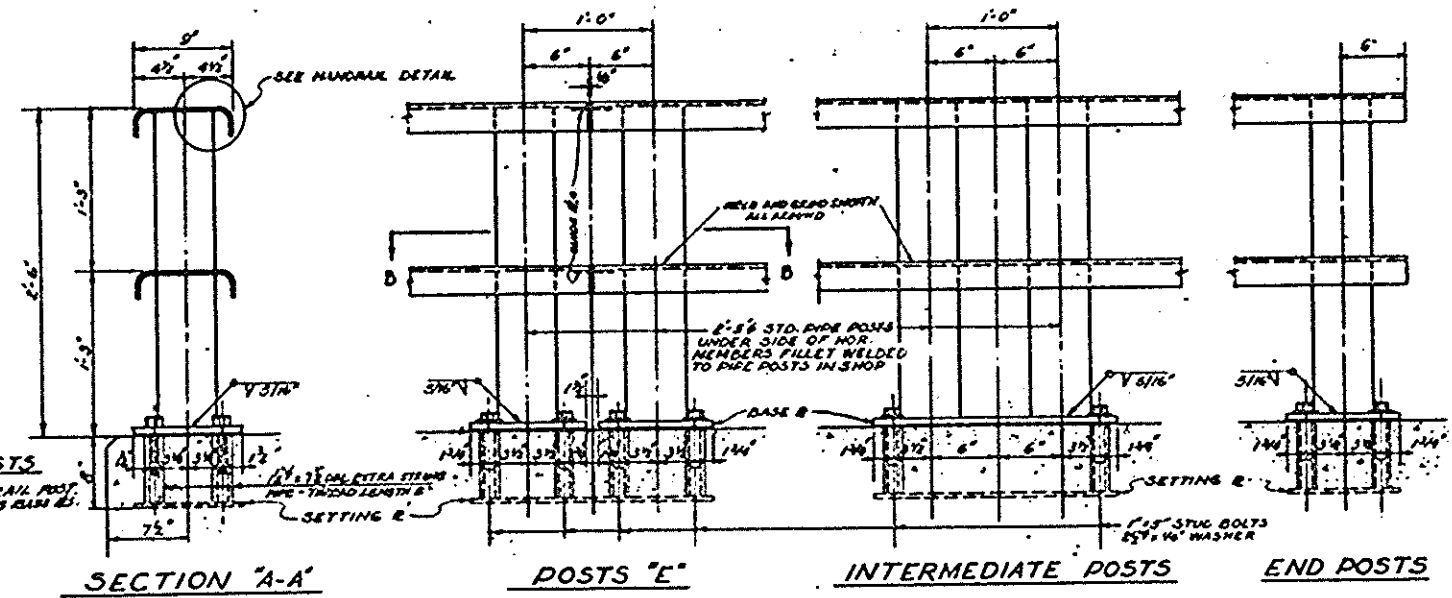
PROJECT NO.	BCC	COUNTY	DATE	SCALE
55	32-02A	GRANDY	8-26	8-6E
BY: J.O.S. 11.17	TO: R.A. 1007/1.1.13			
REV. NO. 1	DATE	BY	REASON	NO.



NOTES
 RAIL SHALL BE FABRICATED & ERECTED TO CONFORM TO VERTICAL CURVE OF ROADWAY
 RAIL POSTS SHALL BE TRULY VERTICAL
 WELDING OF RAIL POSTS TO HORIZONTAL MEMBERS AND BASE RS SHALL BE CONTINUOUS WELDS ALL AROUND
 RAIL POSTS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR WELDED AND SEAMLESS STEEL PIPE A.S.T.M. A 53 WITH MINIMUM YIELD POINT OF 30,000 P.S.I.
 HAND RAIL SHALL BE GIVEN ONE SHOP COAT OF RED LEAD AND 2 FIELD COATS OF ALUMINUM PAINT. SEE SPECIAL PROVISIONS.



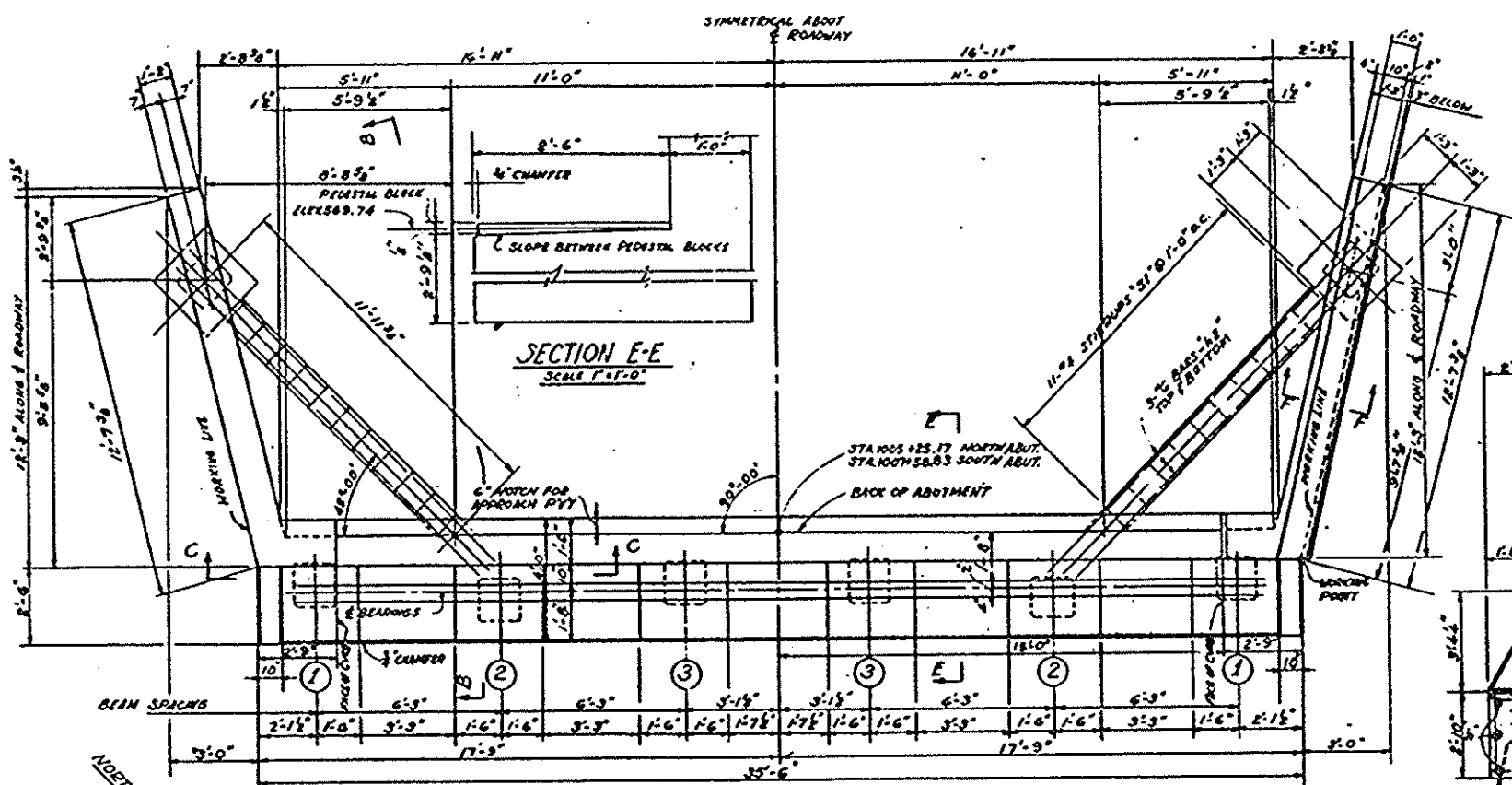
SHIM PLATES FOR RAIL POSTS
 FURNISH ONE 1/2" LEAD PLATE AT EACH RAIL POST. LEAD PLATES TO BE SAME DIMENSIONS AS BASE R.



FOR INFORMATION ONLY
 HANDRAIL DETAILS
 BRIDGE OVER MAZON RIVER
 PROJECT I.N. 373 (19)
 F.A. ROUTE 77 SECTION 91 B-1 & F-1
 GRUNDY COUNTY
 STA. 1006+42

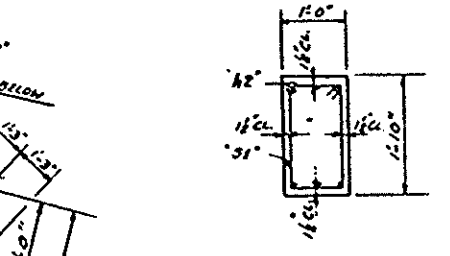
ALFRED DENESCH & ASSOCIATES CONSULTING ENGINEERS
 90 EAST ADAMS STREET CHICAGO - ILLINOIS

PROJECT NO.	55	SEC.	6208	COUNTY	GRUNDY	SCALE	1/4" = 1'-0"
STA. 1005 + 25.17					TO STA. 1007 + 58.83		
FOR ROAD BY CH. 2		ALABAMA		FOR SUBMITTAL SEE STS (C)			

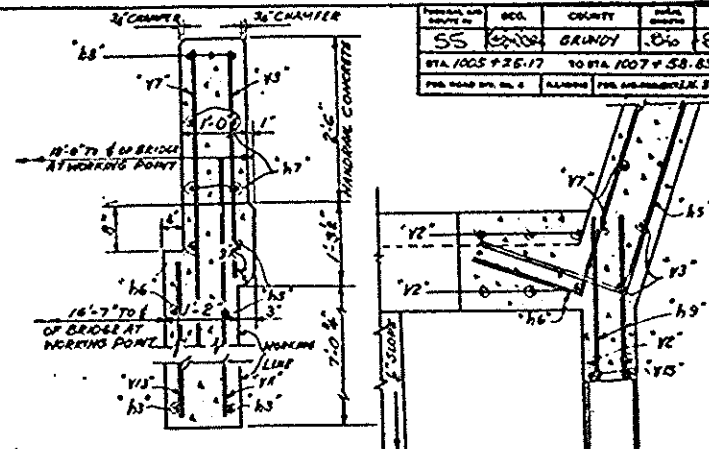


HALF SECTION A-A
SCALE 1/4" = 1'-0"

HALF PLAN
SCALE 1/4" = 1'-0"

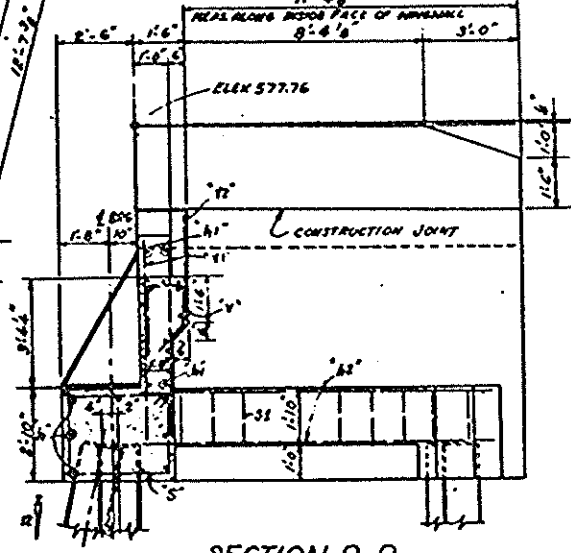


SECTION D-D
SCALE 3/4" = 1'-0"

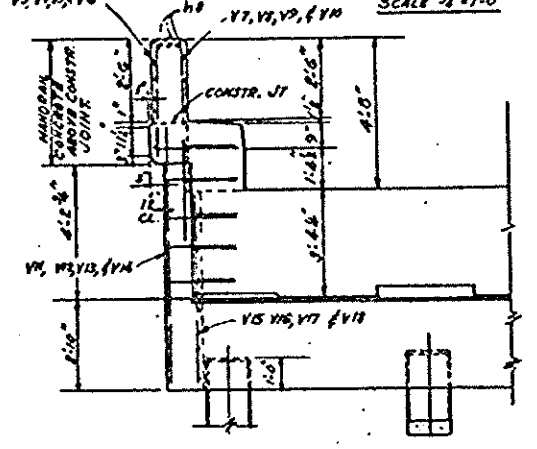


SECTION F-F
SCALE 3/4" = 1'-0"

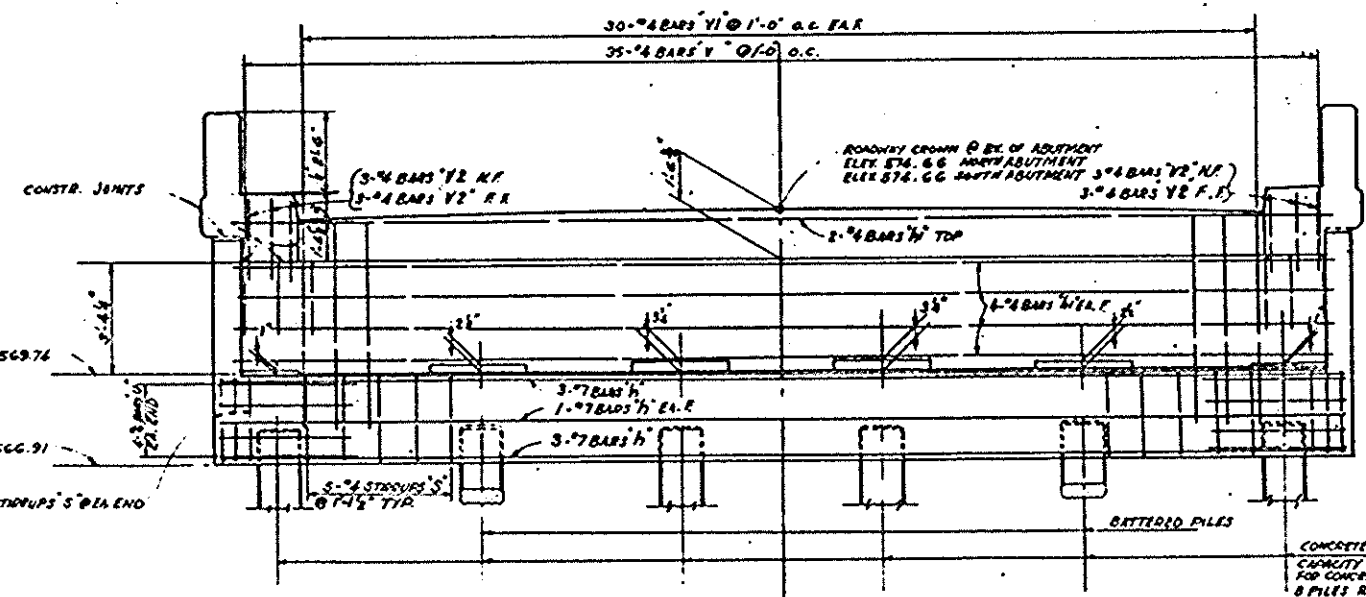
CORNER DETAIL
SCALE 3/4" = 1'-0"



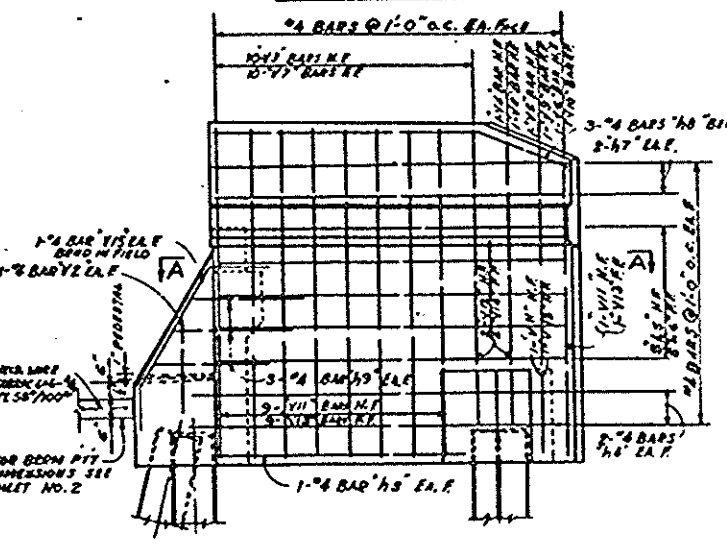
SECTION B-B
SCALE 3/4" = 1'-0"



SECTION C-C
SCALE 3/4" = 1'-0"



FRONT ELEVATION
SCALE 3/8" = 1'-0"
4 STRUCTURES THUS



END VIEW
SCALE 3/8" = 1'-0"

BILL OF MATERIAL
FOR NORTH & SOUTH ABUTMENTS & WINGWALLS

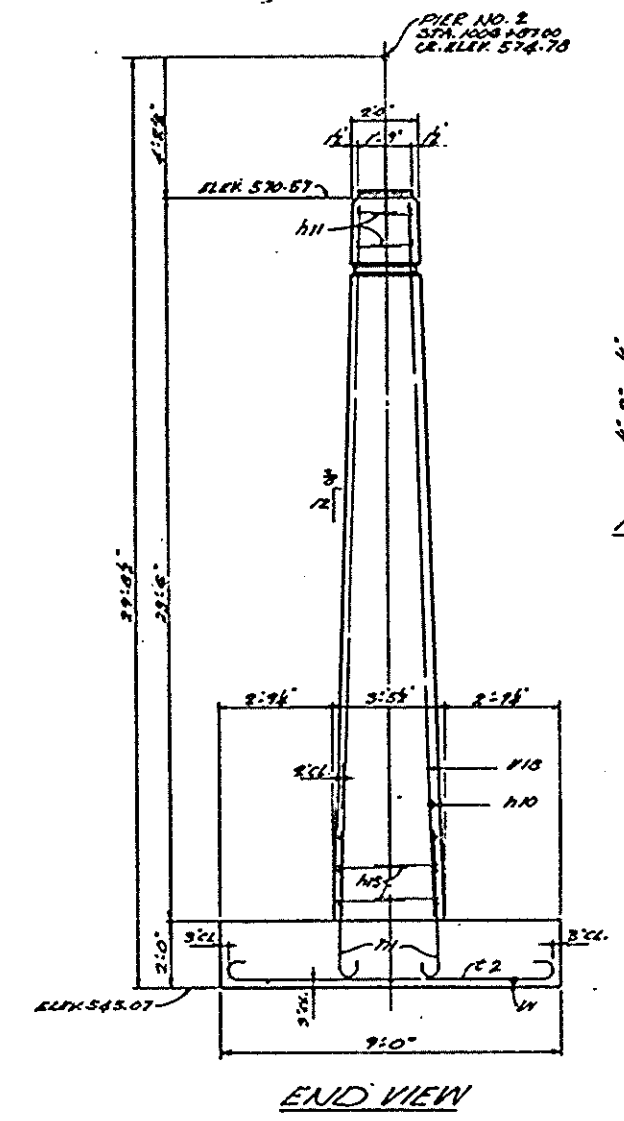
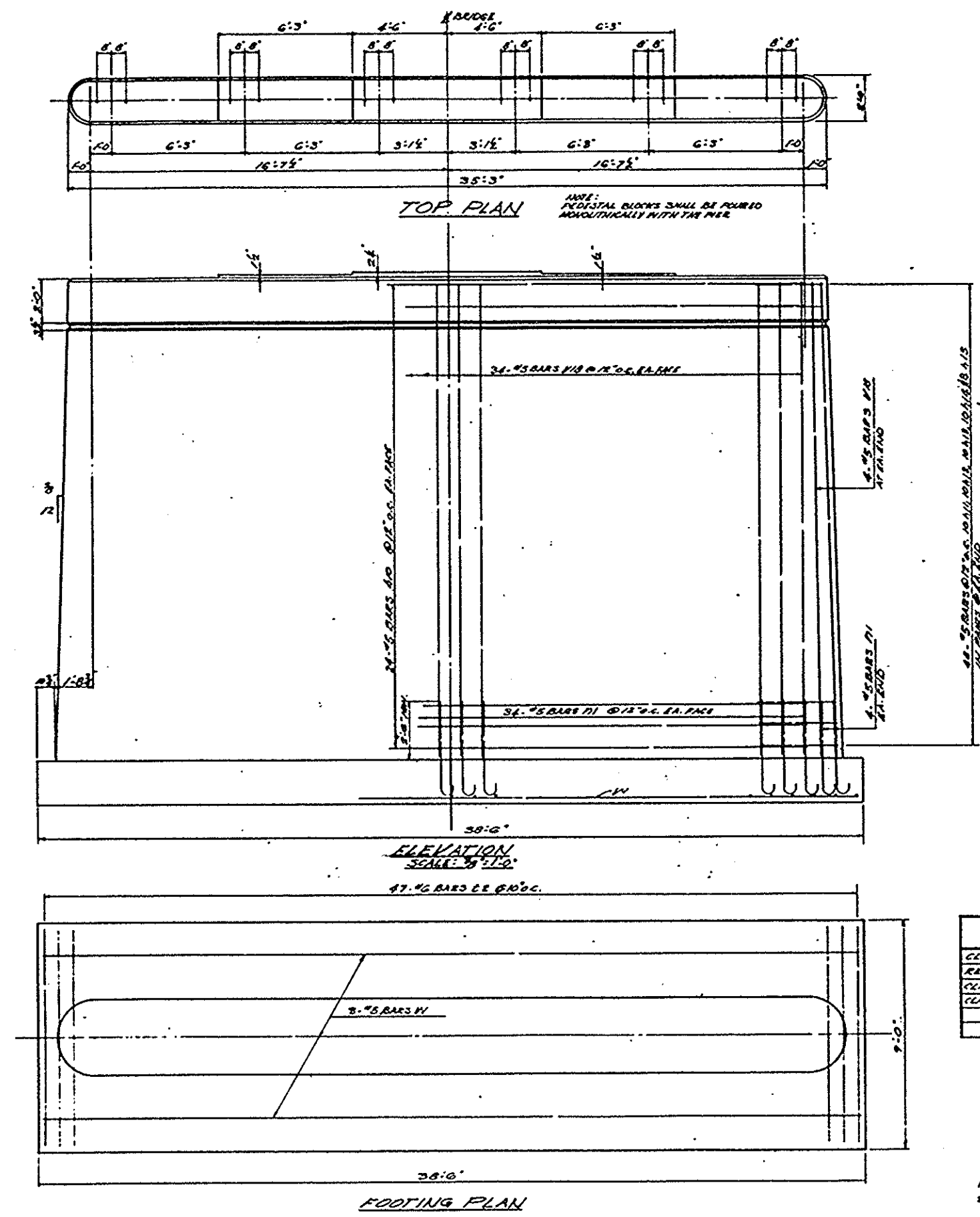
ITEM	UNIT	QUANTITY
CLASS 25 CONCRETE	CU YDS	65.4
MONOLITHIC CONCRETE	CU YDS	42
REINFORCEMENT BARS	LBS.	5760
CONCRETE PILES	LINEAL FT	200
TEST PILES	EACH	2

FOR INFORMATION ONLY

NORTH & SOUTH ABUTMENTS & WINGWALLS
BRIDGE OVER MAZON RIVER
PROJECT I.N. 373 (19)
F.A. ROUTE 77 SECTION 91 B-18 F-1
GRUNDY COUNTY
STA. 1006+42

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
30 EAST ADAMS STREET CHICAGO - ILLINOIS

Project No.	55	DCR.	GRUNDY	Dist. No.	86	Sheet No.	866
Sta. 1006+28.17	To Sta. 1007+48.83						
Plan Scale 1" = 40'	Alldene	Plan No. 1006+28.17	Proj. No. 1006+28.17	Proj. No. 1006+28.17	Proj. No. 1006+28.17	Proj. No. 1006+28.17	



BILL OF MATERIAL

ITEM	UNIT	QUANTITY	
		NET	GROSS
CEMENT CONCRETE	CU YDS.	109.7	109.7
REINFORCEMENT BARS	LBS.	5,390	5,390
CLASS A EXCAVATION FOR STRUCTURES	CU YDS.	58	58
CLASS B EXCAVATION FOR STRUCTURES	CU YDS.	175	175

FOR INFORMATION ONLY

PIERS NO 2
BRIDGE OVER MAZON RIVER
PROJECT LN. 373 (19)
F.A. ROUTE 77 SECTION 9-B 18 F-1
GRUNDY COUNTY
STA. 1006+42

ALFRED BEHESCH & ASSOCIATES CONSULTING ENGINEERS
30 EAST ADAMS STREET CHICAGO - ILLINOIS

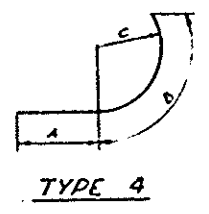
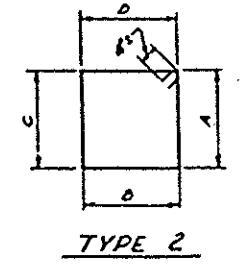
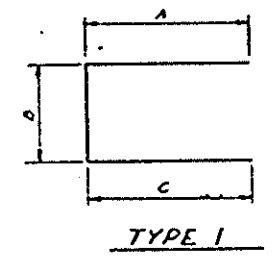
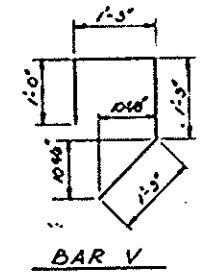
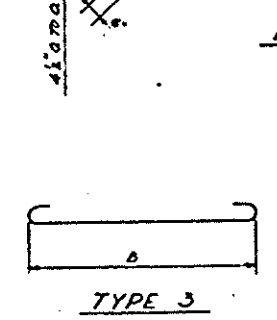
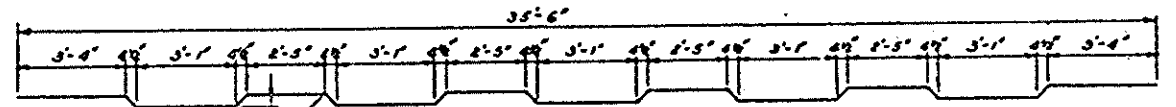
REINFORCEMENT BAR LISTS

NO OF PIECES		BAR SIZE	BAR LENGTH	BAR MARK	TYPE	A	B	C	D	E	PIN
WEST END/EAST END		SUPERSTRUCTURE STRAIGHT BARS									
96	96	#5	25-6	02							
186	186	#5	35-6	01							
186	186	#5	33-0	01							
173	173	#5	34-3	01							
110	110	#5	2-9	03							
258	258	#5	34-3	0							
48	48	#5	30-3	03							
48	48	#5	11-6	04							
28	28	#5	34-0	08							
464	464	#5	1-0	0							
BENT BARS											
185	185	#5	34-0	02	SEE DETAIL						
372	372	#5	2-0	06	1	1-0	1-0				3
144	144	#5	4-6	X	3	1	3-7				

NO OF PIECES		BAR SIZE	BAR LENGTH	BAR MARK	TYPE	A	B	C	D	E	PIN
WEST END/EAST END		ABUTMENTS STRAIGHT BARS									
16	16	#7	35-0	A							
24	24	#6	13-0	02							
20	20	#6	35-0	01							
8	8	#6	10-6	03							
16	16	#6	14-0	04							
16	16	#6	12-3	07							
12	12	#6	12-6	08							
24	24	#6	3-8	09							
132	132	#6	6-9	01							
20	20	#6	3-3	02							
40	40	#6	3-6	03							
4	4	#6	3-3	04							
4	4	#6	3-9	05							
4	4	#6	2-6	06							
60	60	#6	6-0	07							
4	4	#6	3-9	08							
4	4	#6	3-3	09							
4	4	#6	3-0	10							
62	62	#6	10-0	01							
8	8	#6	3-0	02							
42	42	#6	7-6	03							
8	8	#6	6-6	04							
8	8	#6	7-9	05							
BENT BARS											
16	16	#6	7-6	U	1	4-3	3-0	4-3			
20	20	#6	14-0	05	1	12-3	2-6				
20	20	#6	14-0	06	1	12-3	1-9				
70	70	#6	4-8	V	SEE DETAIL						
62	62	#6	12-0	3	2	2-6	3-2	2-6	3-2		
44	44	#6	5-6	51	2	1-7	0	1-7	0		

NO OF PIECES		BAR SIZE	BAR LENGTH	BAR MARK	TYPE	A	B	C	D	E	PIN
WEST END/EAST END		STRAIGHT BARS									
48	48	#5	31-3	010							
76	76	#5	31-9	011							
76	76	#5	23-3	012							
2	3	#5	30-0	W							
BENT BARS											
47	47	#6	11-2	02	3	1-1	0-0	1-1			6
20	20	#5	5-0	01	4	2-6	2-6	10			
20	20	#5	3-3	01	4	2-6	2-9	11			
20	20	#5	3-9	02	4	2-6	3-3	11-3			
20	20	#5	6-6	03	4	2-6	0-0	11-3			
8	16	#5	6-0	04	4	2-6	4-3	11-7			
76	76	#5	5-0	01	5	11	4-1				5
52	52	#5	0-9	01	3	11	7-6	11			5

NOTE: ALL DIMENSIONS GIVEN OUT TO OUT.



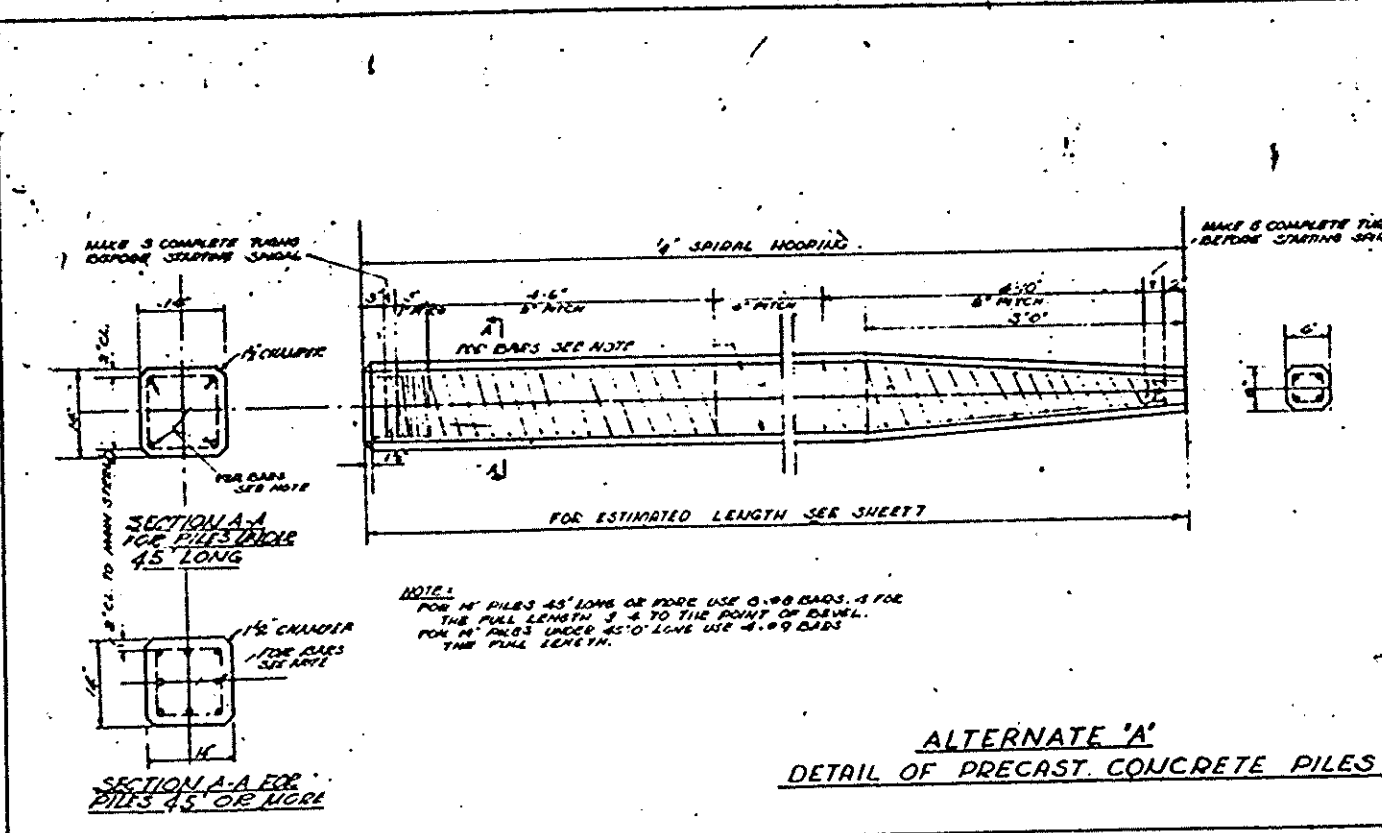
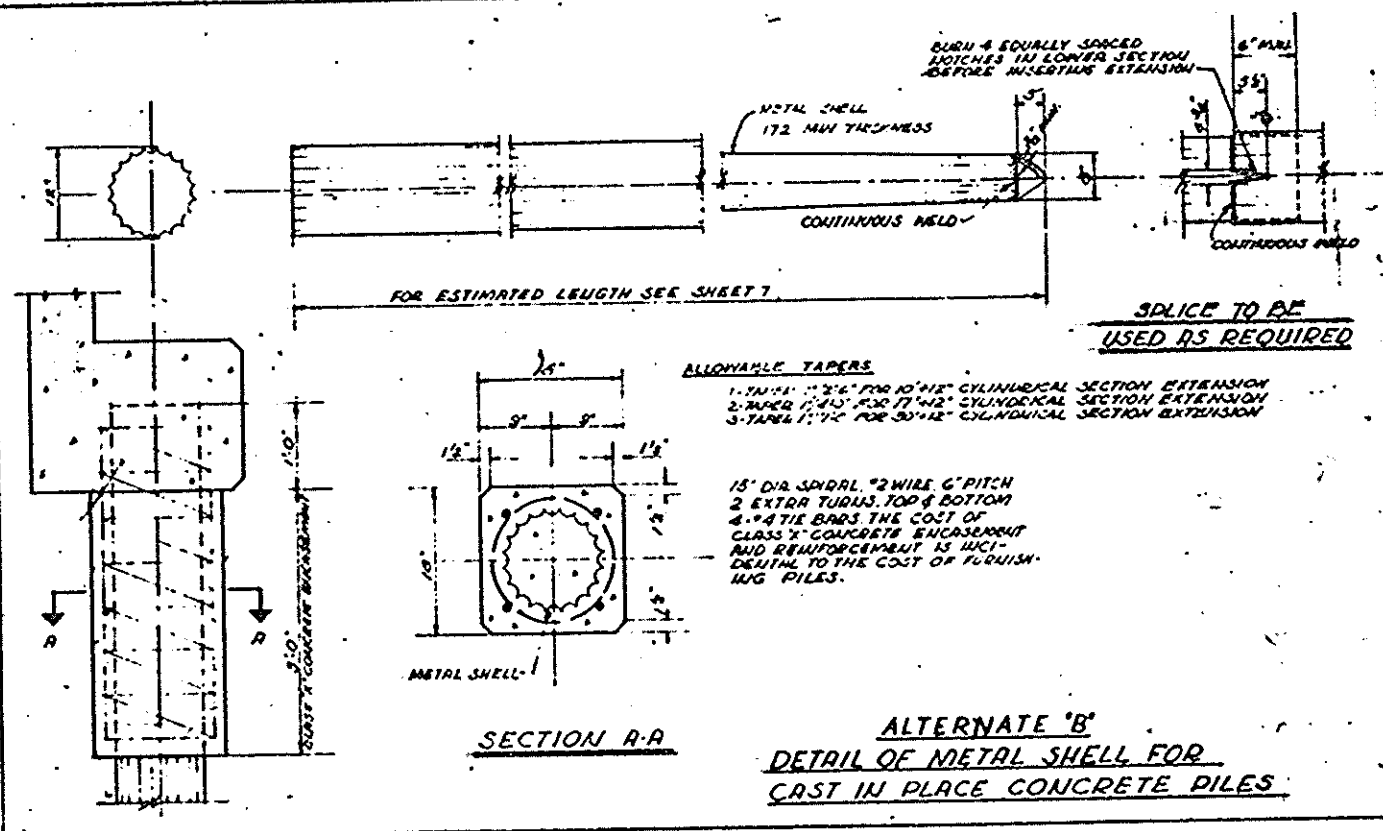
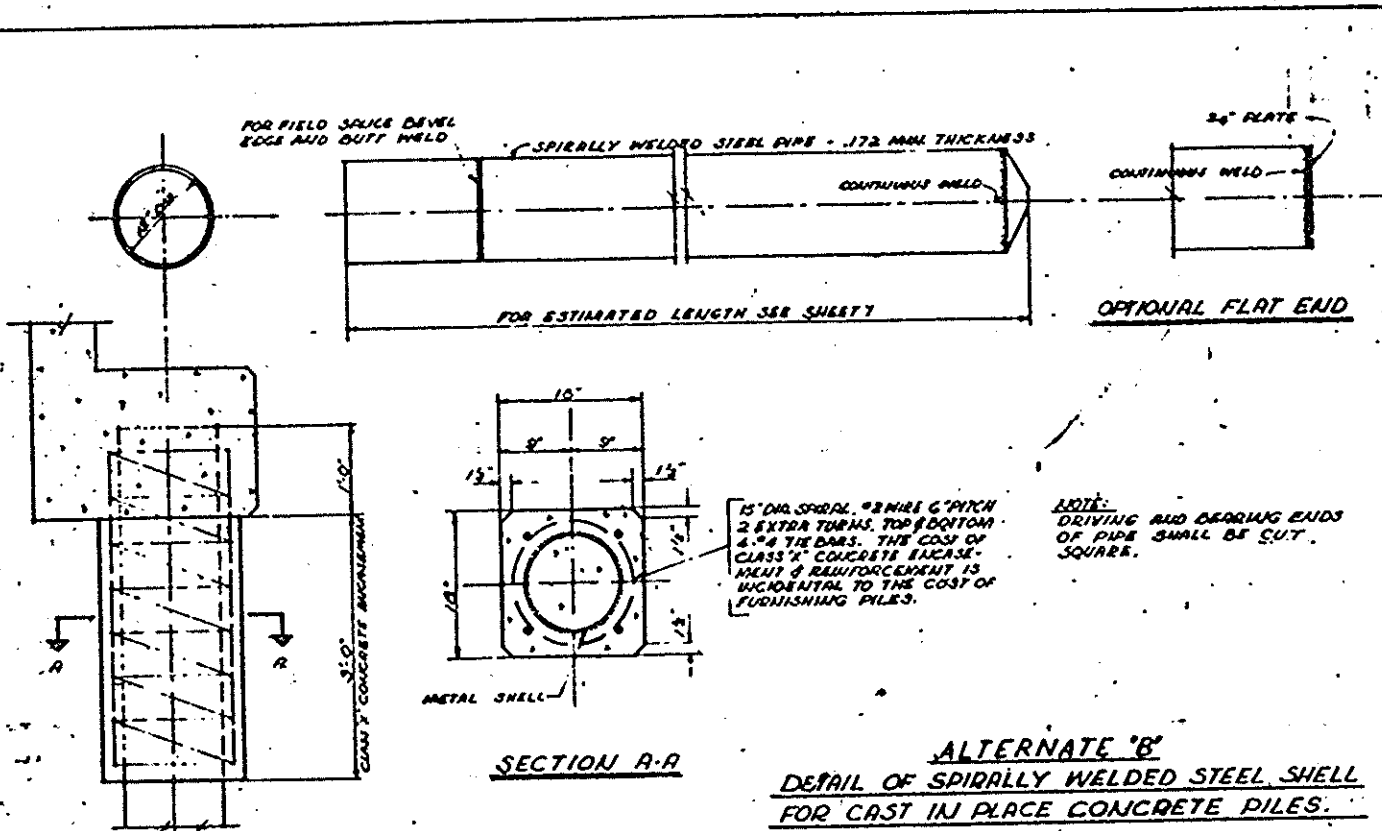
FOR INFORMATION ONLY

REINFORCEMENT BAR LISTS
 BRIDGE OVER MAZON RIVER
 PROJECT I.N. 373(19)
 F.A. ROUTE 77 SECTION 91 B-1&F-1
 GRUNDY COUNTY
 STA. 1006+42

ABUTMENT PILES

NOTE: PILES TO BE USED AT THE ABUTMENTS SHALL BE ANY OF THE VARIOUS KINDS SHOWN BELOW.

PROJECT NO.	55	DISTRICT	GRUNDY	SECTION	B-1
DATE	12/28/58	BY	W. J. B. S.	SCALE	AS SHOWN
PREPARED BY: W. J. B. S. TO: DISTRICT ENGINEER, GRUNDY COUNTY, MISSOURI DRAWN BY: W. J. B. S. CHECKED BY: W. J. B. S.					



FOR INFORMATION ONLY

PILE DETAILS
BRIDGE OVER MAZON RIVER
PROJECT L.N. 373(19)
F.A. ROUTE 77 SECTION 08 B-1 & F-1
GRUNDY COUNTY
STA. 1006+42

ALFRED BECKEN & ASSOCIATES, CIVIL ENGINEERS
30 EAST MAIN STREET, CHESTER, MO.

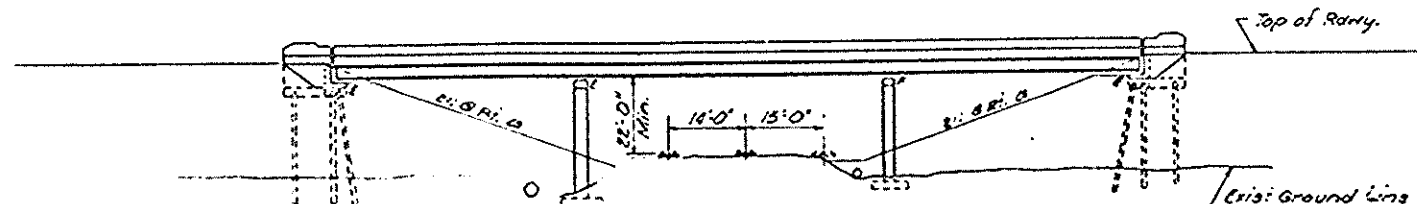
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER	SHEET NO.
FA 55	32-1	GRUNDY	80	80	8 SHEETS

Existing Structure: 3 Span continuous V.C. with
7" R.C. Deck Built as F.A. RT 77
Sec. 9: VB:1 Sta. 903+44.50
Contractor shall remove existing s.d., curb and
handrail as shown.
1 to Salvage.

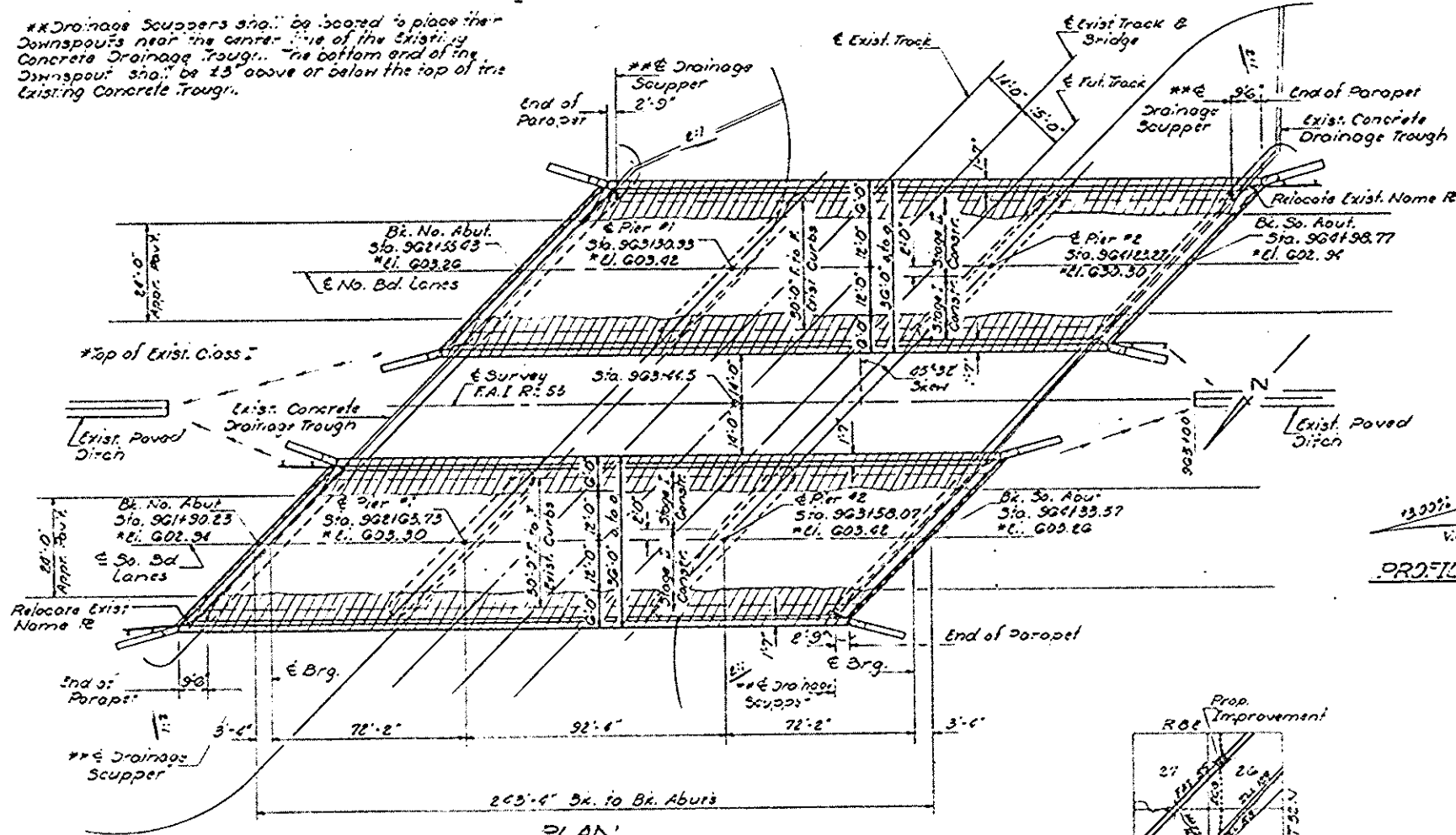
GENERAL NOTES

Expansion bolts shall consist of self drilling expansion anchors and 3/4" x 12" hooked bolts.
It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.
The concrete rail section above the mandatory construction part of the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.
Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.
Expansion angles shall be A.A.S.H.T.O. M-183 and shop primed with two coats of basic lead zinc chromate paint.
New reinforcement shall conform to the requirements of A.A.S.H.T.O. M-31 or M-33, Grade 60.

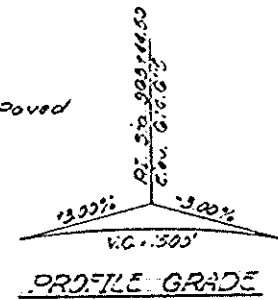


ELEVATION

** Drainage Scuppers shall be located to place the downspouts near the center line of the existing concrete drainage trough. The bottom end of the downspout shall be 15" above or below the top of the existing concrete trough.



PLAN



PROFILE GRADE

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Bit. Conc. Surf. Cst. Coss	Tons	54		54
Concrete Removal	Cu. Yds.	207	6	213
Protective Coat	Sq. Yds.	405		405
Class X Concrete	Cu. Yds.	256.1	4.4	260.5
Expansion Bolts (3/4")	ea.	28		28
Reinforcement Bars	Lbs.	42,099	120	42,219
Waterproofing Membrane Sys.	Sq. Yds.	500		500
Structural Steel	Lbs.	300		300
Wearable Double Core Barrier	Lin. Ft.	320		320
Neoprene Expansion Jt (2")	Lin. Ft.	54		54
Drainage Scupper	ea.	4		4
Resurfacing Existing Name Plate	ea.	2		2

DESIGN STRESSES (New Constr.)

- f_c = 3500 psi
- f_y = 40,000 psi (Exist Reinf.)
- f_y = 60,000 psi (New Reinf.)
- f_y = 20,000 psi (New Struct. Steel)
- γ = 1.8

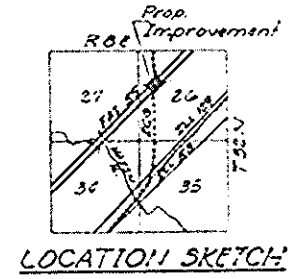
LOADING HS 20-44 (New Constr.)

GENERAL PLAN & ELEVATION PROJECT

F.A. RT. 55 OVER I.C.G. RAILROAD
F.A. RT. 55 SEC. (32-1) VB:Y
GRUNDY COUNTY
STA. 903+44.50

Design specification A.A.S.H.T.O. 1973 and 1974, 1975 and 1976 Interim specification.

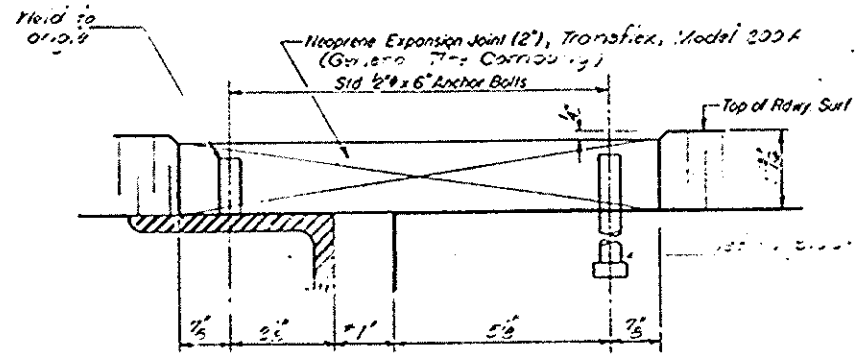
DESIGNED <i>James J. Brunsfeld</i>	EXAMINED <i>[Signature]</i>
CHECKED <i>John A. Wilkins</i>	PASSED
DRAWN <i>J. SCHNELLER</i>	APPROVED
CHECKED <i>gall</i>	



LOCATION SKETCH

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER	SHEETS
FAISS 32-08	BRUNDRY	GRUNDY	86	86	86
ILLINOIS PROJECT					

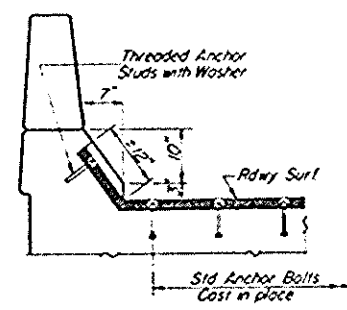


CROSS SECTION
At 50°F
Dimensions are at right angles

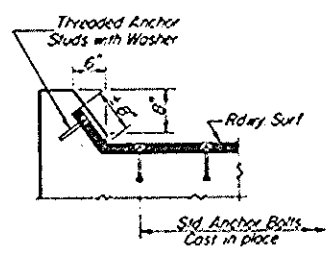
NOTE:
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Std Spec's when the deck is poured at an ambient temperature other than 50°F



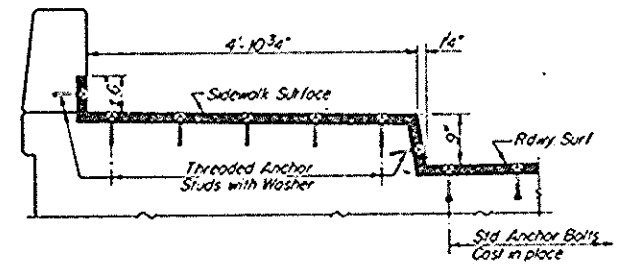
PLAN



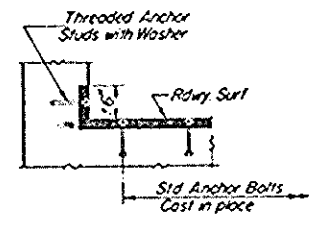
AT CURBS



TYPICAL END TREATMENTS



AT SIDEWALK



AT ABUTMENT

DESIGNED <i>[Signature]</i>	EXAMINED _____
CHECKED <i>[Signature]</i>	PASSED _____
DRAWN <i>[Signature]</i>	APPROVED _____
CHECKED <i>[Signature]</i>	INSPECTOR OF HIGHWAYS _____

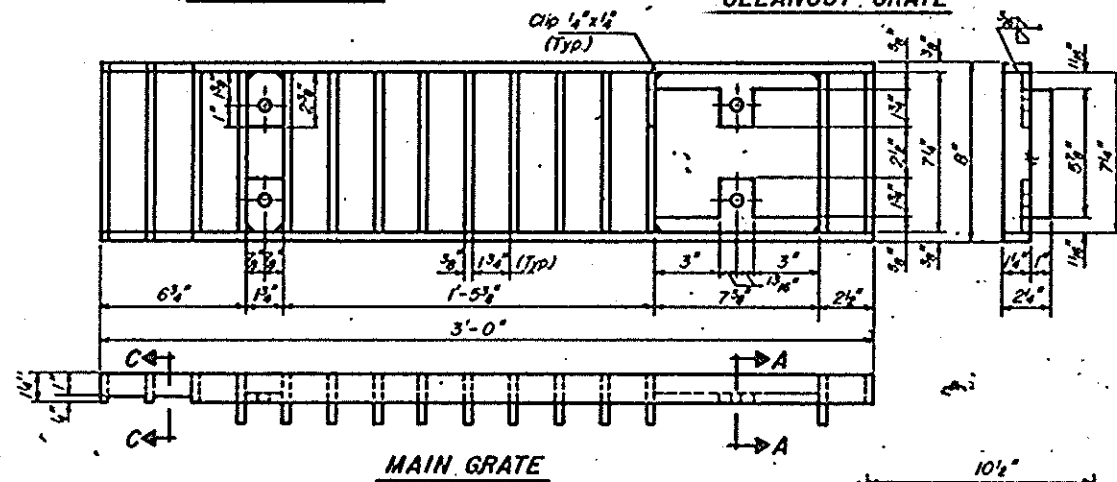
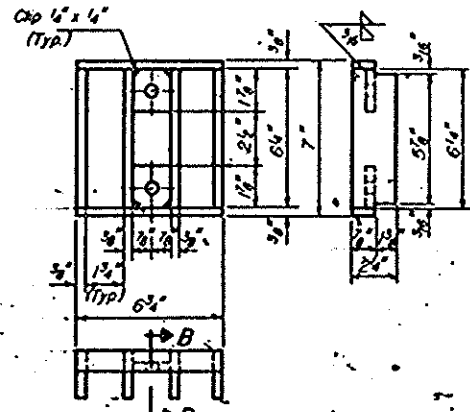
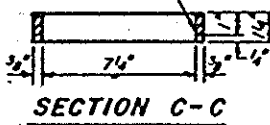
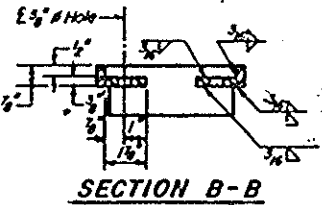
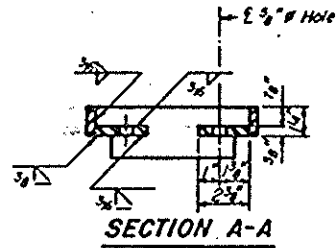
EJ-1 2-10-77

NEOPRENE EXPANSION JOINTS (2")
FOR EXPANSION LENGTH OF DECK = 0 TO 150 FT

FAISS 32-08 SEC. 02-11-V3
GRUNDY COUNTY
S.A. 963+46.50

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

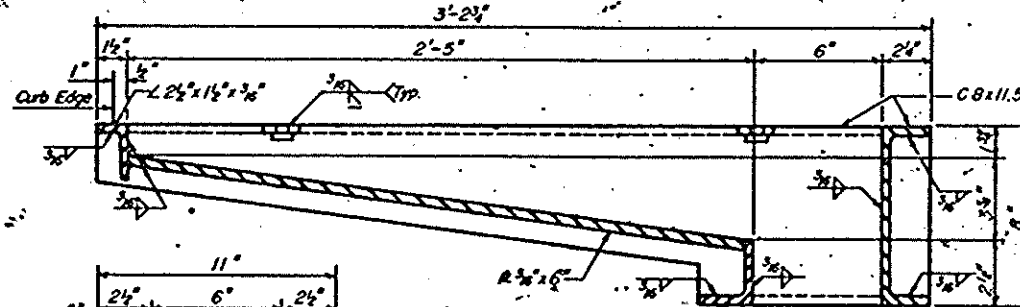
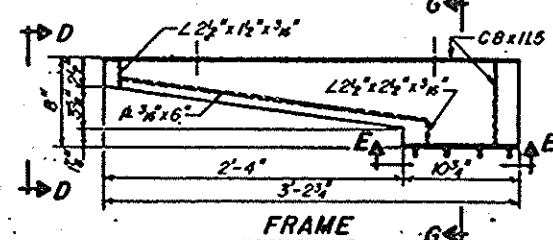
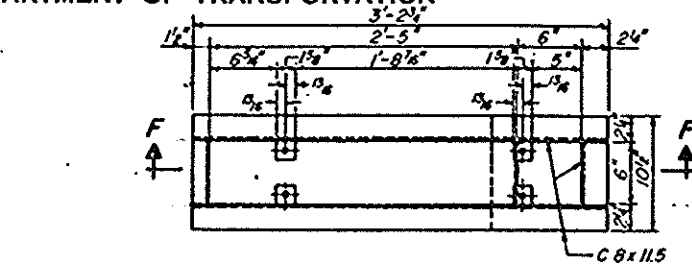
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 55	32-188	GRUNDY	86	86
E.M.V.A. FIG. 4		ILLINOIS	PROJECT	



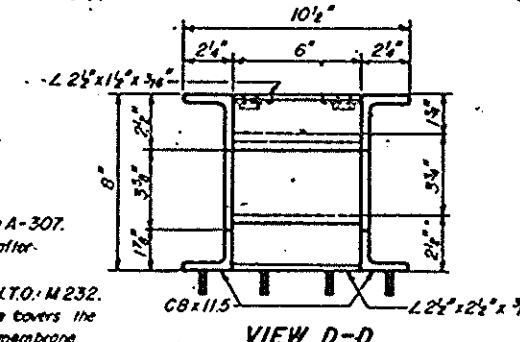
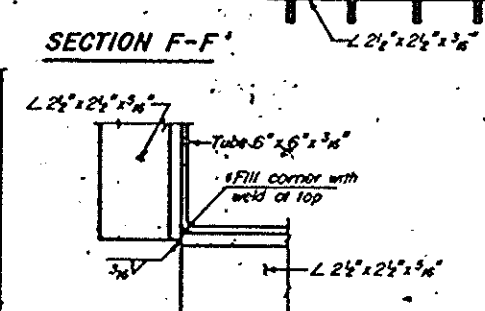
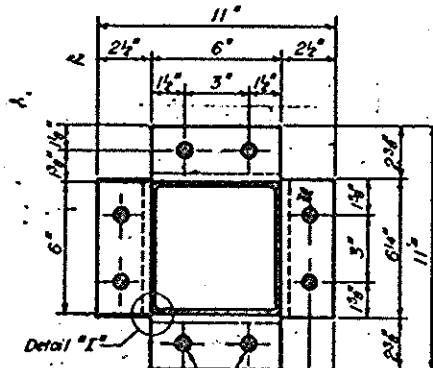
Notes:
Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B, or A-501 Structural Steel Tubing.
All other shapes, plates and bars shall conform to the requirements of A.A.S.H.T.O. M 183.
Bolts, studs, washers and nuts shall conform to the requirements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

DESIGNED	John A. Millia	EXAMINED	
CHECKED	Frank Douglas	PASSED	
DRAWN	J. SCHNEIDER	APPROVED	
CHECKED	J.N.		

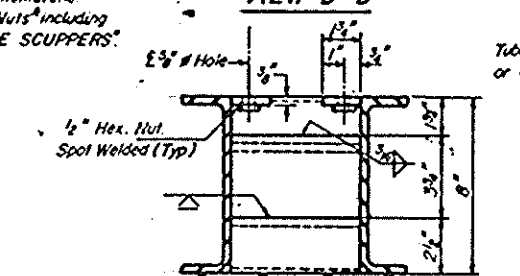
DS-1 4-15-75 (WT to inside of exterior stringer flange shall not be > 3'-11")



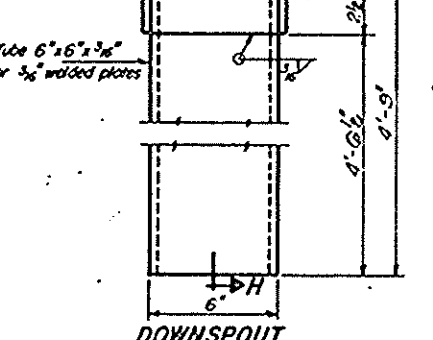
DRAINAGE SCUPPER



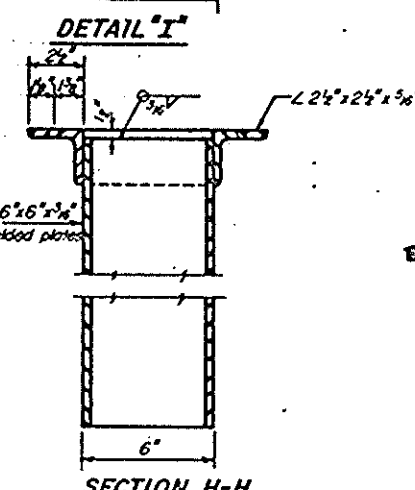
VIEW D-D



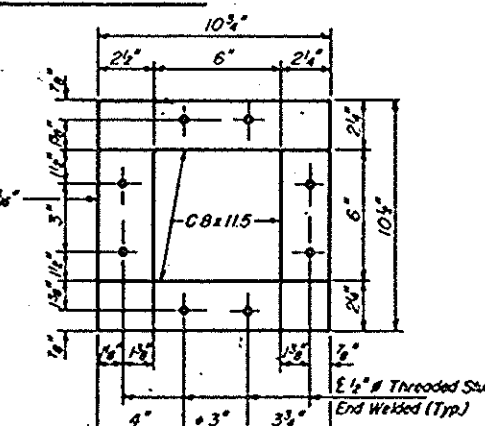
SECTION G-G



DOWNSPOUT



SECTION H-H



VIEW E-E

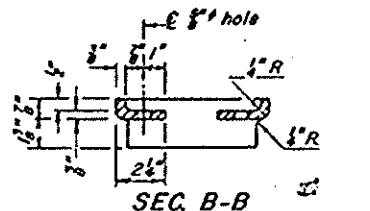
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper	Each	2

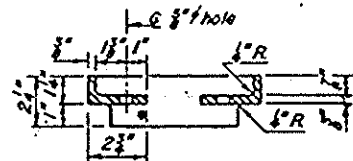
DRAINAGE SCUPPER
FAI-RT. 55 SEC. 32-118VBY
GRUNDY COUNTY
STA. 905+44.50

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

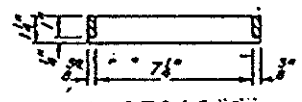
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PA 55	32-0008	GRUNDY	86	86



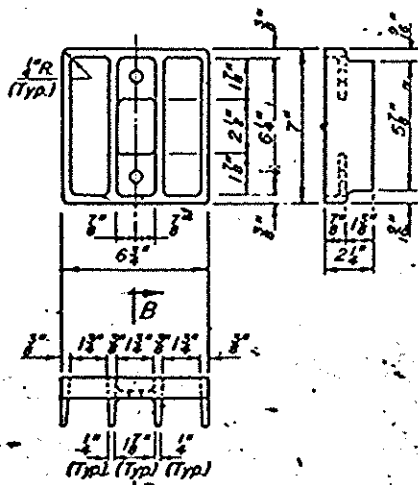
SEC. B-B



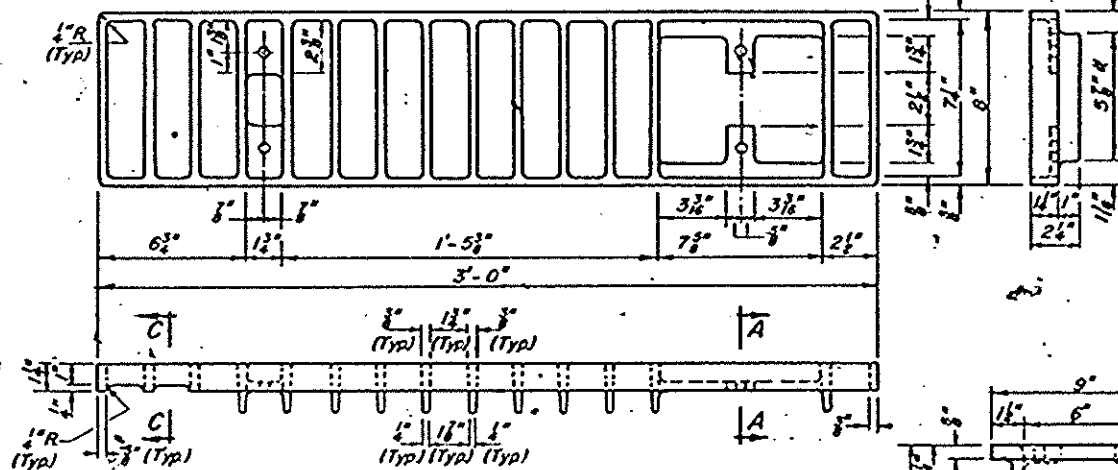
SEC. A-A



SEC. C-C



CLEANOUT GRATE



MAIN GRATE

NOTES:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 30.

Bolts, washers and nuts shall conform to the requirements of ASTM A-307.

All bolts, washers and nuts shall be galvanized in accordance with AASHTO M-232.

The waterproofing membrane system shall be installed such that the membrane covers the frame flanges and extends down into the frame with the grates placed on top of the membrane.

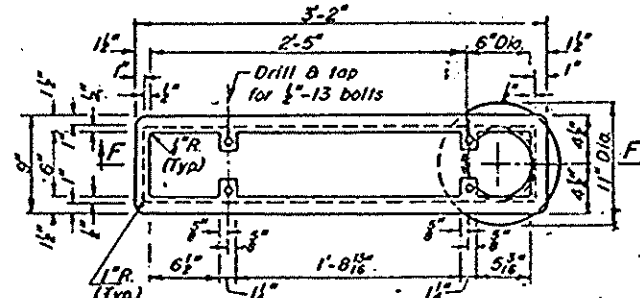
Cost of the Main Grate, Cleanout Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper shall be paid for at the unit bid price for "DRAINAGE SCUPPERS".

The Contractor may use of his option steel frames and steel grates or cast frames and cast grates, but will not be allowed to use steel grates with cast frames nor cast grates with steel frames.

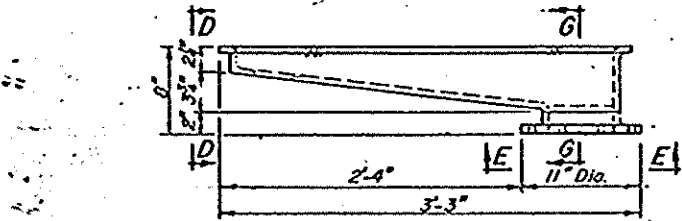
DESIGNED BY: John A. Morris
CHECKED BY: Frank D. Douglas
DRAWN BY: J. SCHNELLER
DATE: Jan

EXAMINED BY: _____
PERMITTED BY: _____
DATE: _____

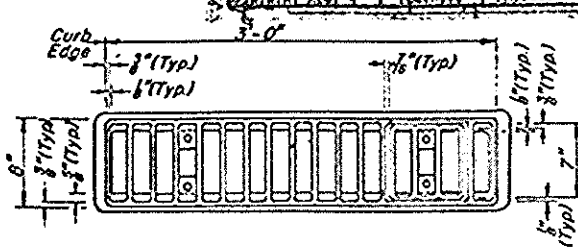
DS-2 7-25-75 (W.T. to inside of exterior stringer flange shall not be -3'-11")



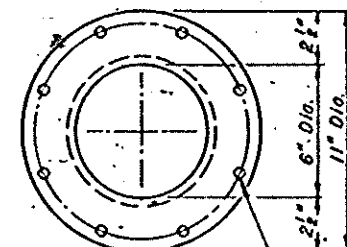
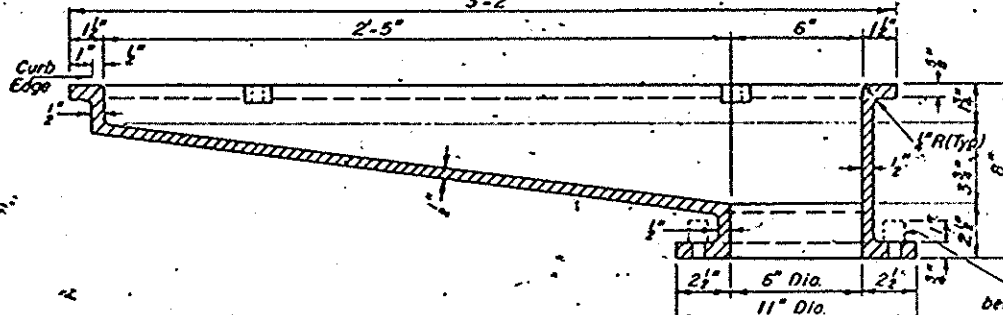
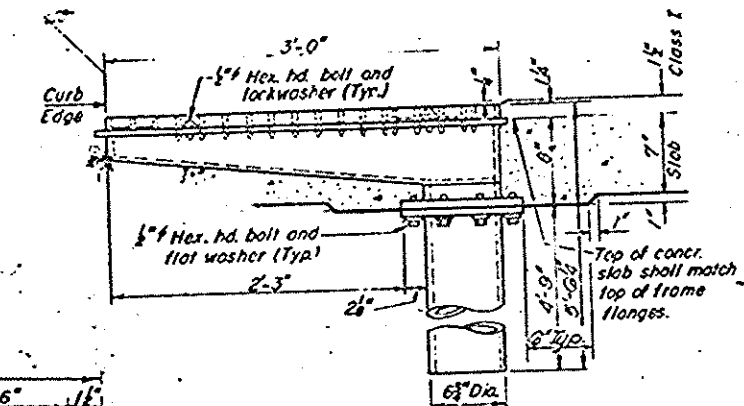
FRAME



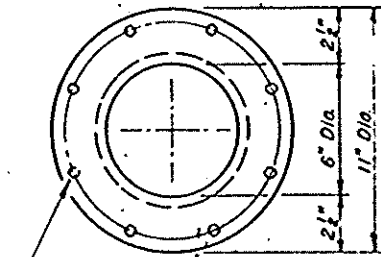
SECTION F-F



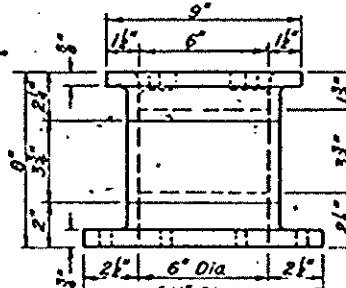
DRAINAGE SCUPPER



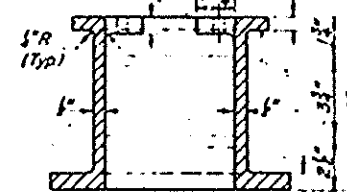
VIEW D-D



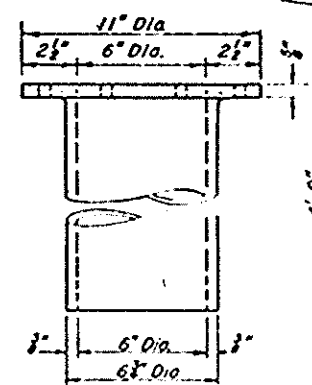
VIEW E-E



VIEW D-D



SEC. G-G

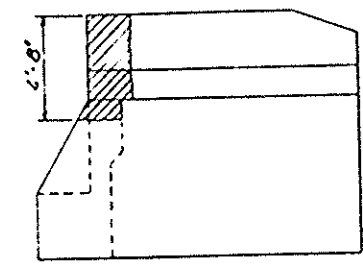


DOWNSPOUT

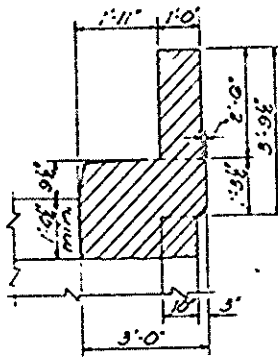
ALTERNATE - CAST IRON
DRAINAGE SCUPPER
F.A.T. RT. 55 - SEC. (32-1) VBY
GRUNDY COUNTY
STA. 963+44.50

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

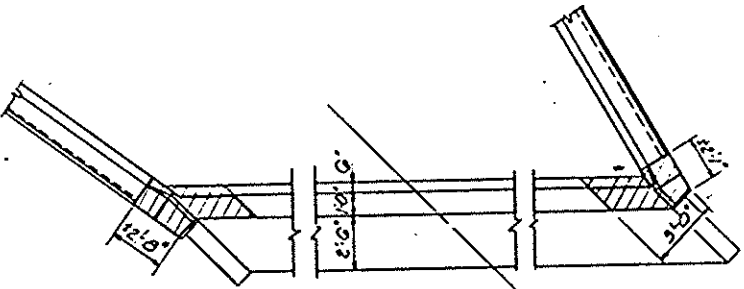
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAISS	32-100	GRUNDY	86	86P
PROJECT		ILLINOIS		



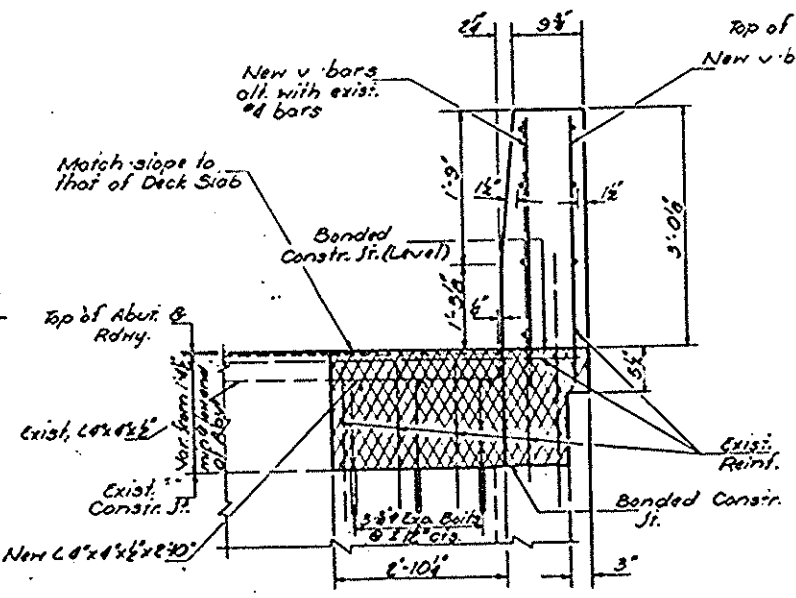
EXIST. WING ELEVATION



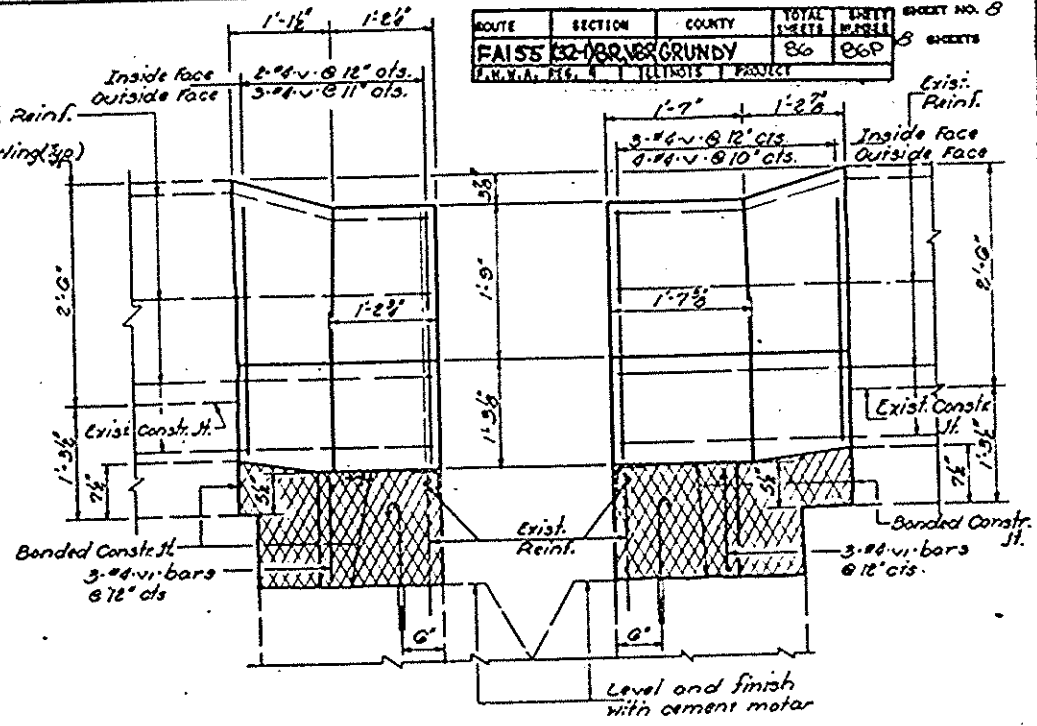
EXIST. FRONT CORNER ELEVATION



PLAN

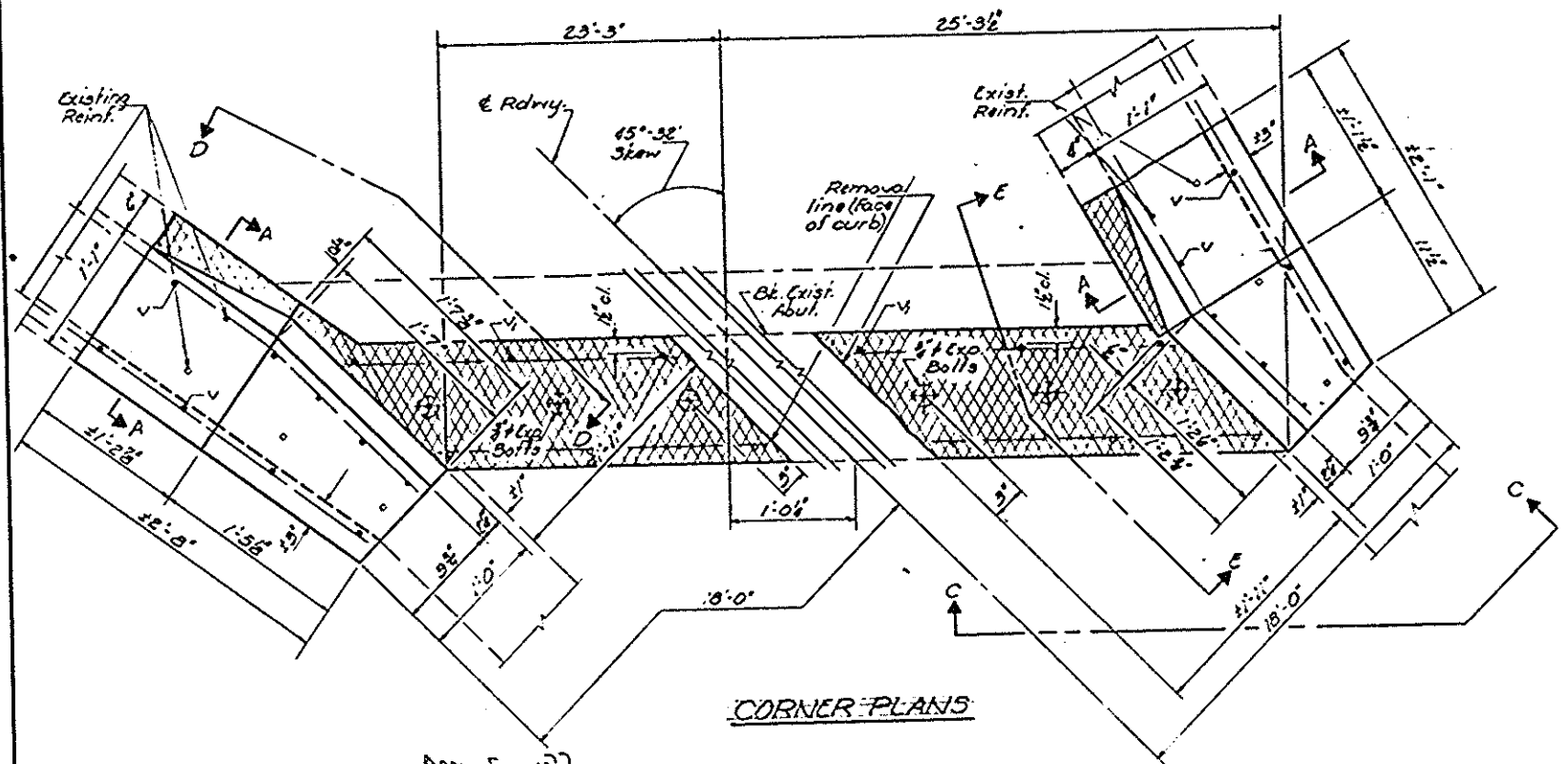


VIEW C-C



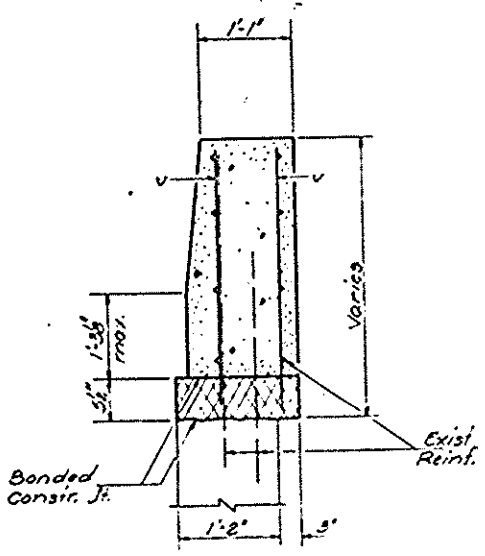
SECTION E-E

SECTION D-D



CORNER PLANS

NOTES:
All existing reinforcement bars shall be cut, cleaned and bent in the field and incorporated into new section.
Hatched Area indicates concrete removal.
Cross Hatched Areas to be poured after superstructure falsework has been removed.



SECTION A-A

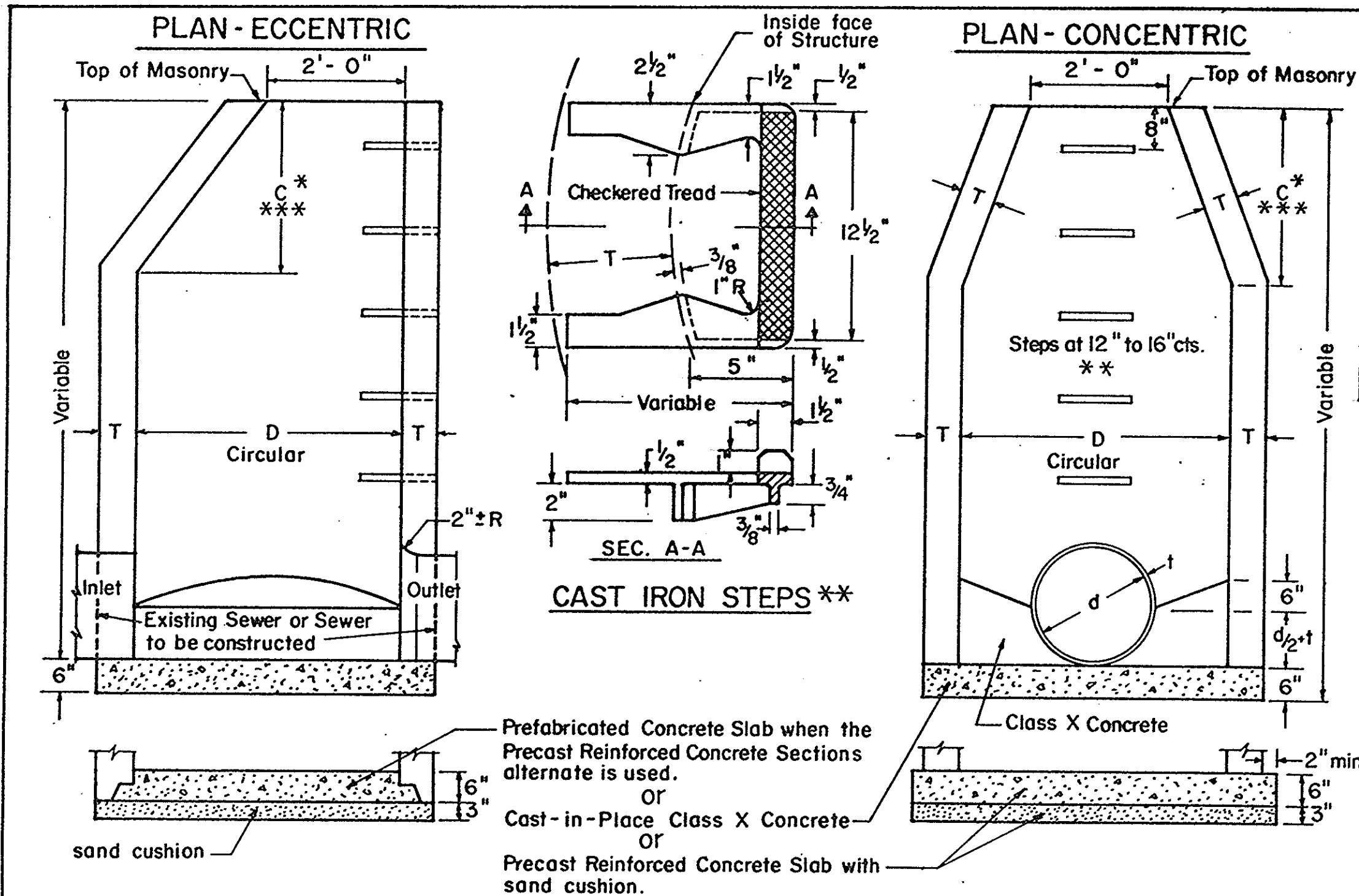
FOUR ABUTMENTS
BILL OF MATERIAL

Bar No.	Size	Length	Shops
v	#8	5'-5"	
vi	#4	1'-0"	
Reinf. Bars		Lbs	120
Conc. Removal		Cu.Yds	0
Class X Conc.		Cu.Yds	0.0
Expansion Bolts (??)		Co	20

DESIGNED *Frank S. ...*
CHECKED *John A. Morris*
DRAWN *J. SCHNELLER*
CHECKED *jam*

APRIL 5 1977
EXAMINED *[Signature]*
PASSED
APPROVED

ABUTMENTS
F.A.I. RT. 55 SEC. 32-100 BYBY
GRUNDY COUNTY
STA. 903+44.50



ALTERNATE MATERIALS FOR WALLS	D	C	T (Min)
Concrete Masonry Units	4'-0"	2'-6"	5"
	5'-0"	3'-9"	5"
Brick Masonry	4'-0"	2'-6"	8"
	5'-0"	3'-9"	8"
Precast Reinforced Concrete Sections	4'-0"	2'-6"	4"
	5'-0"	3'-9"	5"
Cast-in-Place Concrete	4'-0"	2'-6"	6"
	5'-0"	3'-9"	6"

NOTES
 * Dimension "C" for Precast Reinforced Concrete Sections may vary from the dimension given to plus 6 inches.
 ** The cast iron steps as detailed hereon are typical. Steps of other design and material that will conform to the minimum requirements of the steps shown, may be used when approved by the Engineer.
 *** For Optional Precast Concrete Flat Slab Top refer to Standard 2354.

In addition to the requirements of Art. 612.13 of the Standard Specifications, the contract unit price for Manholes, Type A shall include the sand cushion when required, furnishing and installing steps when required, and furnishing and compacting the specified backfill material.

Cast Iron steps shall be Gray Iron conforming to the requirements of Art. 710.17 of the Standard Specifications.
 Steps shall be embedded into wall a minimum of 3 inches. Steps shall not be extended on the outside.
 Steps shall be omitted for work in Cook County, when the depth of the Manhole is 10 feet or less.

MANHOLE TYPE A
STANDARD 1527-9

Illinois Department of Transportation
 PASSED Apr. 25 1978
 APPROVED Apr. 25 1978

ISSUED 11-3-53	
REVISIONS	
D.W.W. Sr	4-25-78

Redrawn 4-25-78

B-6-0-R

STANDARD SYMBOLS AND ABBREVIATIONS

THESE SYMBOLS AND ABBREVIATIONS ARE USED THROUGHOUT THESE PLANS UNLESS OTHERWISE NOTED

<p>North Arrow</p> <p>State Line</p> <p>County Line</p> <p>Township Line</p> <p>City, Village or Town Limits</p> <p>Section or Grant Line</p> <p>Section Corner</p> <p>Quarter Corner</p> <p>Some Ownership</p> <p>Unfenced Property Line</p> <p>Fenced Property Line</p> <p>Fence Line</p> <p>Construction Identification Sign</p> <p>Right of Way Marker</p> <p>Existing Right of Way Line</p> <p>Existing Fenced Right of Way Line</p> <p>Proposed Right of Way Line</p> <p>Proposed Right of Way Line coincident with access control line</p> <p>Access Control Line (Not coincident with Right of Way Line)</p> <p>Proposed Right of Way Dimension</p> <p>Construction Limits</p> <p>Base or Survey Line</p> <p>Channel Change Easement</p> <p>Temporary Easement (Detour, Grading etc.)</p> <p>Stream</p> <p>Lake or Pond</p> <p>Marsh</p> <p>Levee</p> <p>Summit</p> <p>Deciduous Trees</p> <p>Evergreen Trees</p> <p>Hedge</p> <p>Centerline</p>	<p>SS. or SAN.S. Existing Storm or Sanitary Sewer</p> <p>Railroad or Utility Tracks</p> <p>Curb Wall</p> <p>Retaining Wall</p> <p>Existing Drive or Traveled Way</p> <p>Pipe Lines</p> <p>Gas</p> <p>Water</p> <p>Oil</p> <p>Longitudinal Joint with Tie Bars (Sawed or Poly.)</p> <p>Longitudinal Joint with Tie Bars and Keyway</p> <p>Longitudinal Joint with Keyway only</p> <p>Contraction Joint with Dowels</p> <p>Contraction Joint without Dowels</p> <p>Expansion Joint with capped Dowels</p> <p>Expansion Joint without Dowels</p> <p>Wide Flange Beam Terminus Joint</p> <p>Guard Rail</p> <p>Existing Pavement, Curb & Gutter, Driveway Pavement & Sidewalk to be removed</p> <p>Existing Culvert</p> <p>Culvert to be Constructed</p> <p>Culvert with Drop Inlet</p> <p>Elevation of Surface of Finished Pavement at Point Indicated</p> <p>936.25</p> <p>936.50</p> <p>936.00</p> <p>SS 59.467</p> <p>TD 51.97</p> <p>Storm Sewer (Direction of Flow & Invert Elevation Indicated)</p> <p>Tile Drain (Direction of Flow & Invert Elevation Indicated)</p> <p>Existing inlet, inlet to be Adjusted, or Inlet to be Reconstructed</p> <p>Inlet to be Constructed</p> <p>Inlet to be filled with Sand & Connection Sealed</p> <p>Existing Catch Basin, Catch Basin to be Adjusted or Catch Basin to be Reconstructed</p> <p>Catch Basin to be Constructed</p> <p>Underground Electric Cable</p> <p>Underground Telephone Cable</p>	<p>Catch Basin to be filled with Sand & Connection Sealed</p> <p>Existing Manhole, Manhole to be Adjusted, or Manhole to be Reconstructed</p> <p>Manhole to be Constructed</p> <p>Manhole to be filled with Sand & Connection Sealed</p> <p>Existing Valve Vault, Valve Vault to be Adjusted, or Valve Vault to be Reconstructed</p> <p>Valve Vault to be Constructed</p> <p>Valve Vault to be filled with Sand & Connection Sealed</p> <p>Existing Fire Hydrant, or Fire Hydrant to be Adjusted</p> <p>Fire Hydrant & Auxiliary Valve to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Light Standard or Light Standard to be Adjusted</p> <p>Light Standard to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Traffic Signal, or Traffic Signal to be Adjusted</p> <p>Traffic Signal to be Moved (Symbol with Letter Indicates New Location)</p> <p>Existing Traffic Sign, or Traffic Sign to be Adjusted</p> <p>Traffic Sign to be Moved (Symbol with Letter Indicates New Location)</p> <p>House Service Box or House Meter Vault to be Moved (Symbol with Letter Indicates New Location)</p> <p>House Service Box or Main Meter Vault, or Main Service Box or Main Meter Vault to be Moved (Symbol with Letter Indicates New Location)</p> <p>Main Service Box or Main Meter Vault to be Moved (Symbol with Letter Indicates New Location)</p> <p>Trolley Pole</p> <p>Telephone or Telegraph Pole</p> <p>Power Line Pole</p> <p>House</p> <p>Church</p> <p>Shed</p> <p>Commercial Building</p> <p>Barn</p> <p>School</p> <p>Town Hall</p> <p>Roadway</p> <p>Traffic Direction Arrow</p>
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ABBREVIATIONS

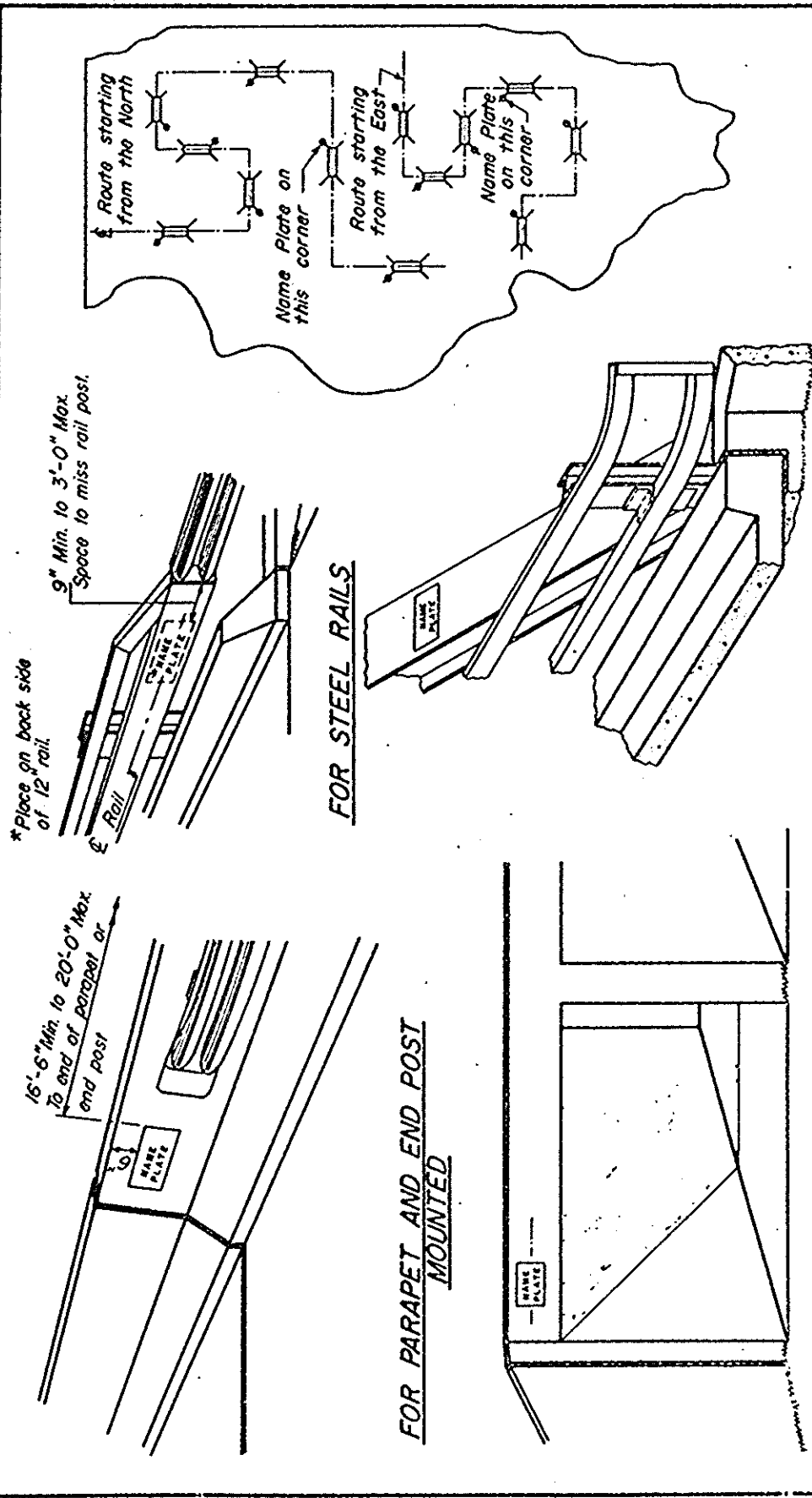
<p>T.D. Tile Drain</p> <p>S.S. Storm Sewer (Existing)</p> <p>S.S. Storm Sewer 18" x 24" (Size, Length and Type) TYPE I</p> <p>S.S. Storm Sewer 18" x 24" (Size, Length, Type and Material) TYPE I RCP</p> <p>C.M.P. Corrugated Metal Pipe</p> <p>C.I.P. Cast Iron Pipe</p> <p>P.C. Pipe Culvert (Existing)</p> <p>P. Pipe Culvert 18" x 24" (Size, Length and Type) TYPE I</p> <p>P. Pipe Culvert 18" x 24" (Size, Length, Type and Material) TYPE IA CMCP</p> <p>P.C.C. Portland Cement Concrete</p> <p>F-F. Face to Face of Curb</p> <p>B-B. Back to Back of Curb</p> <p>Centerline to Face of Curb</p> <p>Centerline to Back of Curb</p> <p>Central Angle</p> <p>Degree of Curve</p> <p>Tangent Length</p> <p>Curve Length</p> <p>Radius of Curve</p> <p>External Distance</p> <p>Superelevation (ft. per ft. of width)</p> <p>Point of Curvature</p> <p>Point of Intersection</p> <p>Point of Tangency</p> <p>Point on Tangent</p> <p>Point of Compound Curvature</p> <p>Point of Reverse Curvature</p> <p>Vertical Curve</p> <p>External Distance of Vertical Curve</p> <p>Sanitary Sewer</p> <p>R.P.S. Reference Point State</p> <p>I.P. Iron Pipe</p> <p>N&W Noit & Washer</p> <p>T.P. Telephone Pole</p> <p>P.P. Power Pole</p> <p>F.P. Fence Post</p> <p>F.H. Fire Hydrant</p> <p>B.M. Bench Mark</p> <p>R.R.S. Railroad Spike</p> <p>R.O.W. Right of Way</p> <p>Inv. Invert</p> <p>F.L. Flow Line</p> <p>S.M. State of Illinois Survey Marker</p> <p>U.S.C.&G.S. U.S. Coast & Geodetic Survey</p> <p>U.S.G.S. U.S. Geological Survey</p> <p>Elev. Elevation</p> <p>Rt. Route</p>	<p>Sec. Section</p> <p>Sta. Station</p> <p>P.L. Property Line</p> <p>F.E. Field Entrance</p> <p>P.E. Private Entrance</p> <p>F.A.I. Federal-aid Interstate</p> <p>F.A. Federal-aid</p> <p>F.A.S. Federal-aid Secondary</p> <p>S.B.I. State Bond Issue</p> <p>M.F.T. Motor Fuel Tax</p> <p>S.R. State-Route</p> <p>C.H. County Highway</p> <p>T.R. Township Road</p> <p>C.S. City Street</p> <p>Proj. Project</p> <p>A.C. Access Control</p> <p>FAUS. Federal-aid Urban System</p>
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<p>ILLINOIS Department of Transportation</p> <p>PASSED... July 15, 1977</p> <p>APPROVED... July 15, 1977</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>BY</th> <th>DATE</th> </tr> <tr> <td>J.F.L.</td> <td>11-18-59</td> </tr> <tr> <td>W.F.</td> <td>9-9-59</td> </tr> <tr> <td>W.F.</td> <td>11-19-62</td> </tr> <tr> <td>W.F.</td> <td>5-12-66</td> </tr> <tr> <td>D.W.W.</td> <td>7-15-77</td> </tr> </table>	BY	DATE	J.F.L.	11-18-59	W.F.	9-9-59	W.F.	11-19-62	W.F.	5-12-66	D.W.W.	7-15-77
	BY	DATE											
J.F.L.	11-18-59												
W.F.	9-9-59												
W.F.	11-19-62												
W.F.	5-12-66												
D.W.W.	7-15-77												
<p>Drawn 3-17-53 Redrawn 11-19-62</p> <p>STANDARD 1686-4 (Half Size)</p>													

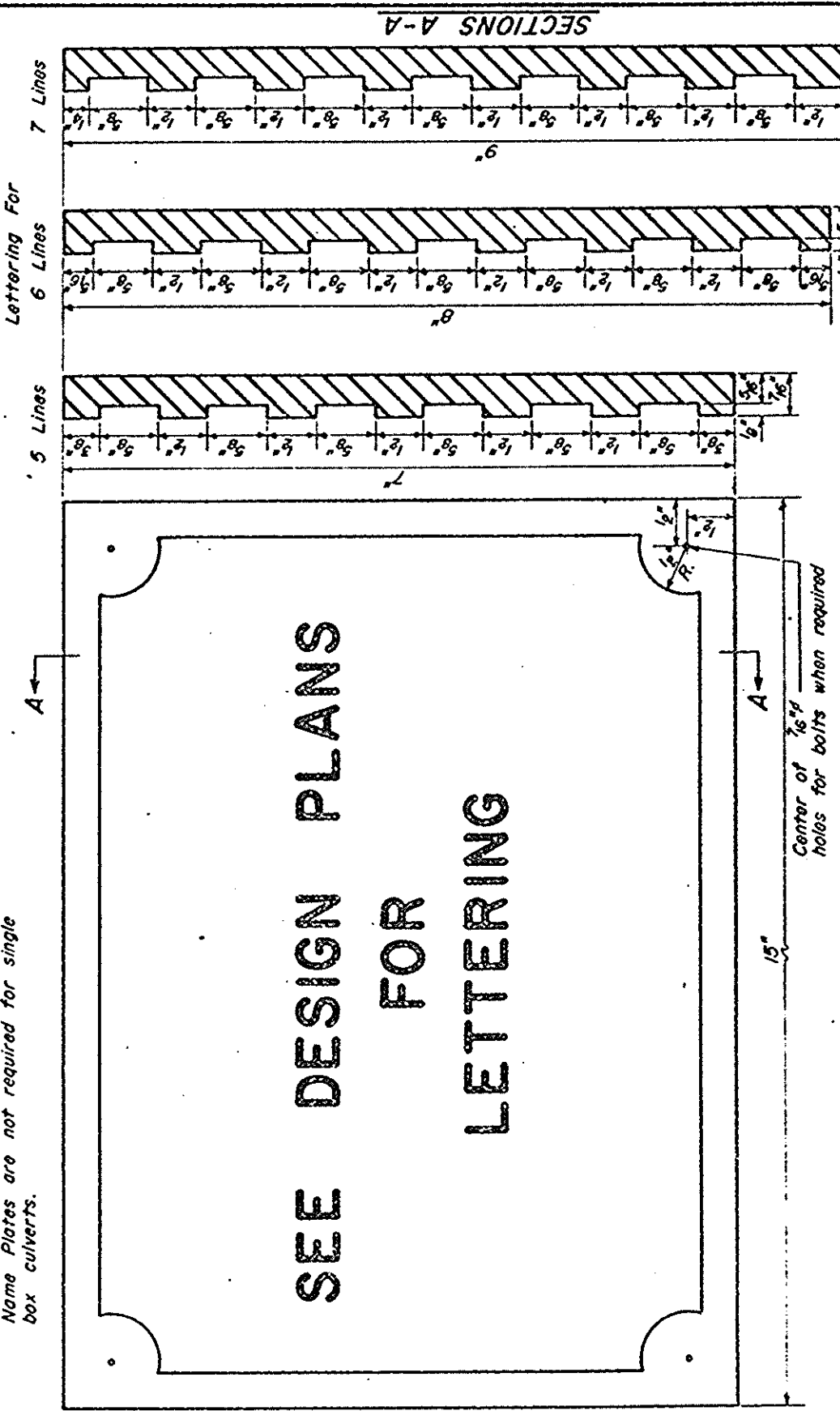
If it is definitely known that adjustment or reconstruction is required, place A or R inside the symbol. If a new casting is required, show the casting number. Use P for open, C for closed lid. Example - Catch Basin to be reconstructed with new type 5 frame, open lid = 5P.

First character denotes type of structure. Use Sp. for special design. Second character denotes number of frame or grate. Example - Type A manhole with type I frame and closed lid = A-1C

H-4.00 a



FOR MULTI-SPAN CULVERTS
 Note: Unless otherwise noted on the plans, Name Plates are not required for single box culverts.



Material: Best quality brass or bronze.
 Border & Lettering: Raised 1/8 inch. Square cut and not tapered. Top surface polished.

For Concrete Parapets, Culverts - Four lugs at least three inches long.
 For Headwalls & Subways - 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 - 3/8" x 1" Stainless Steel or Brass Cap Screws, self tapping or drill and tap in field.

For Concrete Parapets - Plate to be placed 16'-6" min. to 20'-0" max. to end of parapet.

For Steel Truss Span - Plate to end post about five feet above roadway.

For Steel Rails - Place on back side of 1/2" rail.

For Subways - See design plans for location.

MINNED Department of Transportation

PASSED FEBRUARY 15, 1980

Approved by [Signature]

APPROVED FEBRUARY 15, 1980

Approved by [Signature]

Engineer of Design

PLACEMENTS

FASTENINGS

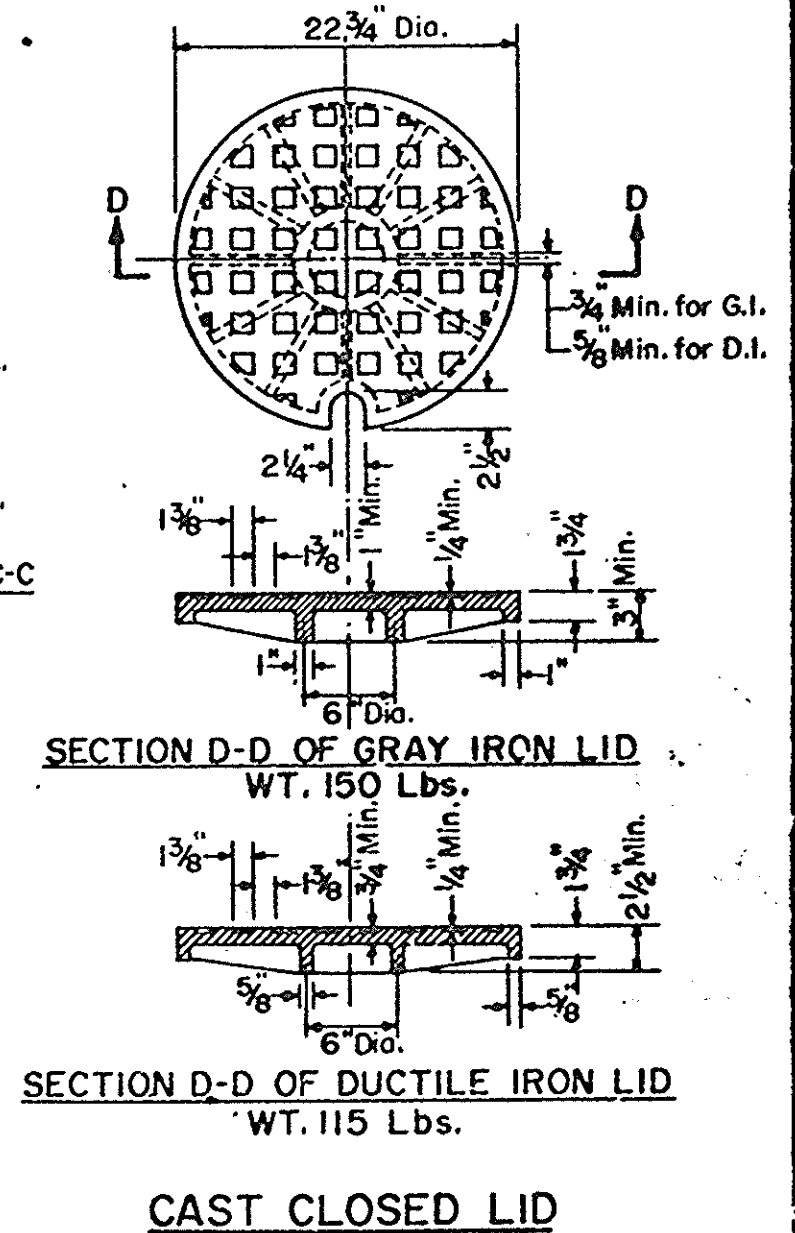
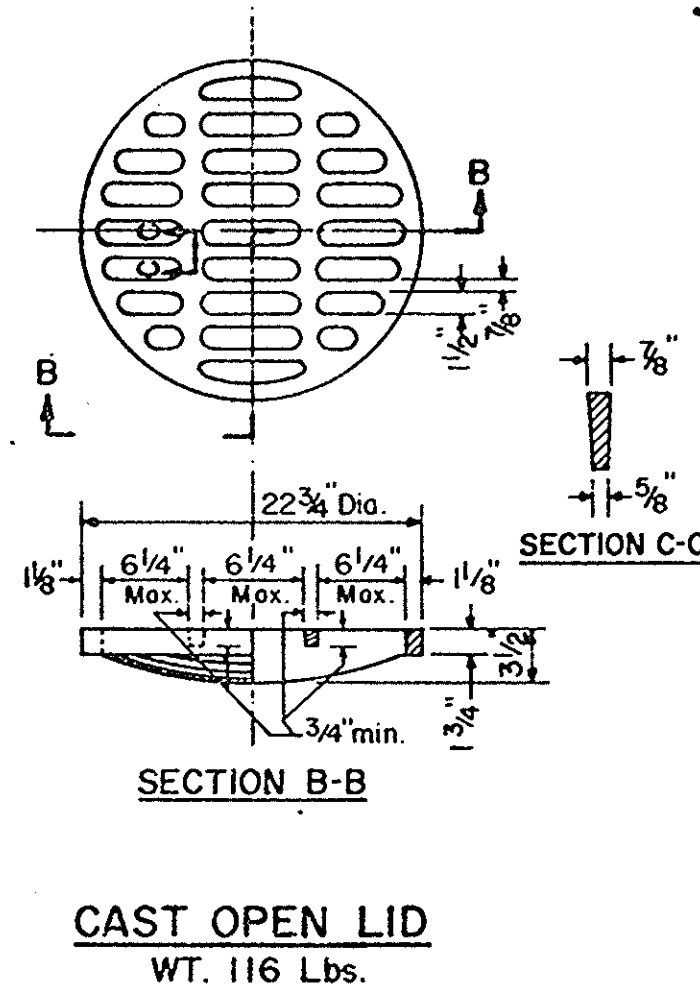
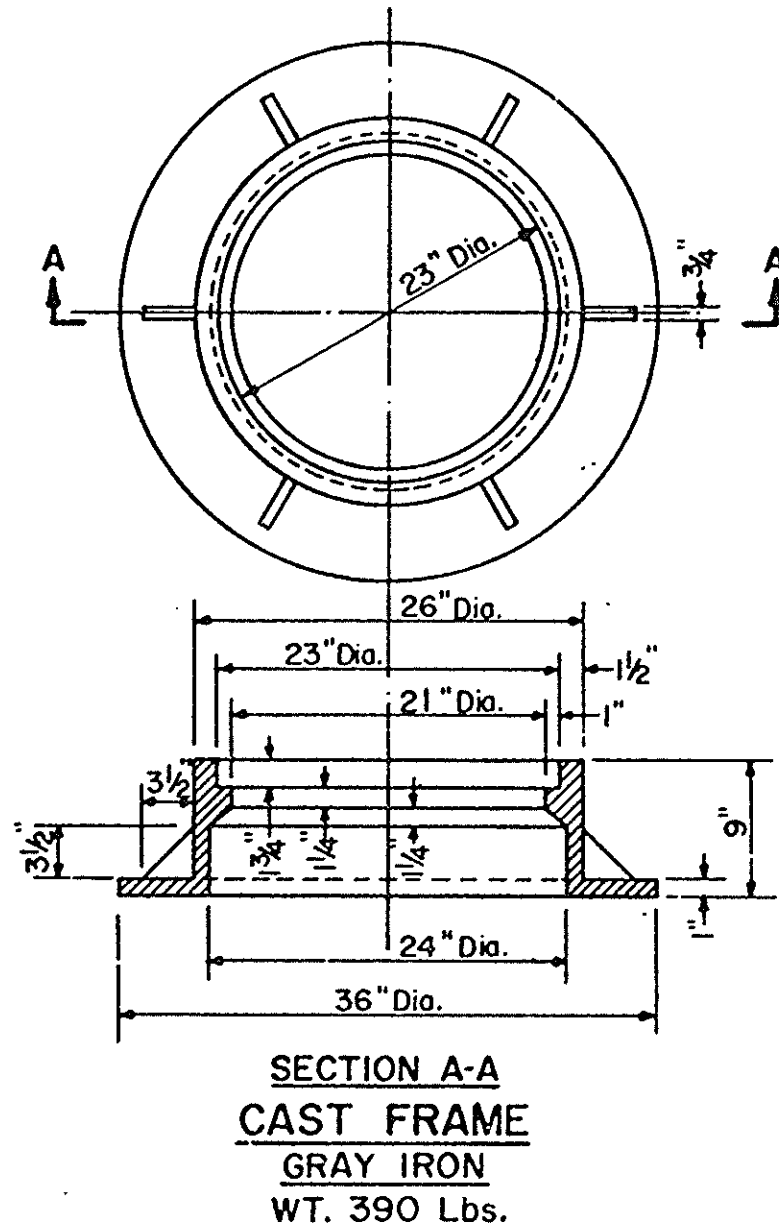
MINNED # - 15-63

DETAIL OF NAME PLATE FOR BRIDGES

STD. 2113-2

M/105

STANDARD DESIGN FRAME AND LIDS TYPE I



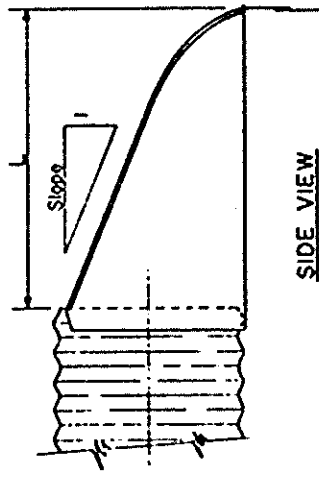
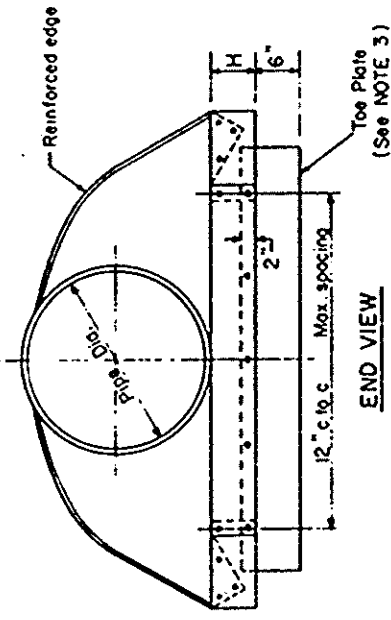
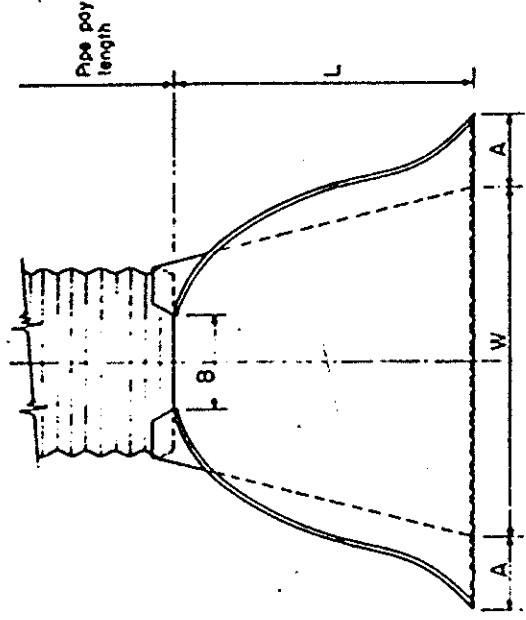
The open and closed lids may be made of either Gray Iron, or Ductile Iron, conforming to the Standard Specifications. Ductile Iron casting shall be Grade 60-40-18, and shall be proof loaded in accordance with Federal Specifications RR-F-621 b, Section 3.8. The proof load shall be 25,000 lbs. on a 9"x9" cast block.

STATE OF ILLINOIS	ISSUED 1-4-65
DEPARTMENT OF TRANSPORTATION	REVISIONS
PASSED <u>September 18, 1973</u>	W.F. 9-15-65
<i>W.E. Baumann</i> Engineer of Standards and Services	W.F. 3-11-68
APPROVED <u>September 18, 1973</u>	W.F. 1-17-72
<i>W.E. Baumann</i> Engineer of Design	D.W.W. 9-18-73

STANDARD 2213-4
(1/4 Size)

B-10.30

STANDARD DESIGN METAL END SECTION FOR PIPE CULVERTS

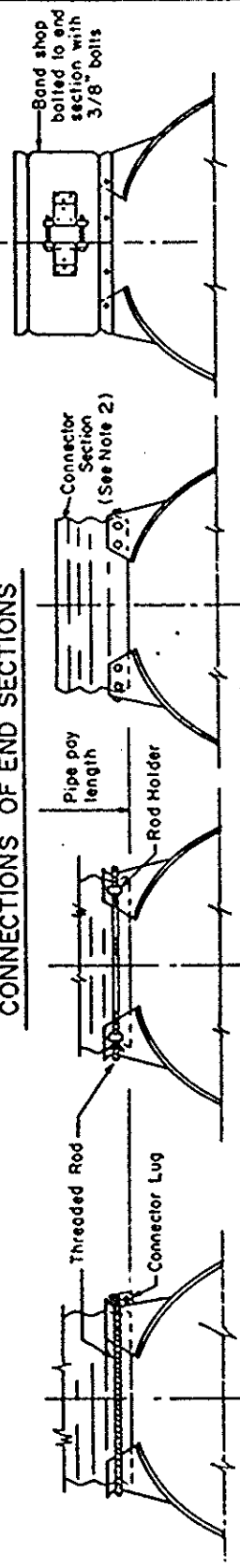


PIPE DIA. (INCHES)	THICKNESS (INCHES)	DIMENSIONS					SLOPE (Approx)	BODY
		A (1"±) (Max)	B (1"±) (Max)	H (1"±)	L (1/2"±)	W (2"±)		
12	0.064	6	6	6	21	24	2 1/2	1 Pc.
15	0.064	7	8	6	26	30	2 1/2	1 Pc.
18	0.064	8	10	6	31	36	2 1/2	1 Pc.
21	0.064	9	12	6	36	42	2 1/2	1 Pc.
24	0.064	10	13	6	41	48	2 1/2	1 Pc.
30	0.079	12	16	8	51	60	2 1/2	1 Pc.
36	0.079	14	19	9	60	72	2 1/2	2 Pc.
42	0.109	16	22	11	69	84	2 1/2	2 Pc.
48	0.109	18	27	12	78	90	2 1/4	2 Pc.
54	0.109	18	30	12	84	102	2	2 Pc.
60	0.109	18	33	12	87	114	1 3/4	3 Pc.
66	0.109	18	36	12	87	120	1 1/2	3 Pc.
72	0.109	18	39	12	87	126	1 1/2	3 Pc.
78	0.109	18	42	12	87	132	1 1/4	3 Pc.
84	0.109	18	45	12	87	138	1 1/6	3 Pc.

NOTES:

- All 3 piece bodies shall have .109 inch sides and .138 inch center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies shall have lap seams which shall be tightly joined with 3/8" rivets or bolts.
- For 60" thru 84" sizes, reinforced edges shall be supplemented with stiffener angles. The angles shall be 2" x 2" x 1/2" for 60" thru 72" diameter and 2 1/2" x 2 1/2" x 1/4" for 78" and 84" diameter. The angles shall be attached by 3/8" rivets or bolts.
- The toe plate shall be the same thickness metal as the end section.

CONNECTIONS OF END SECTIONS

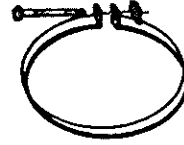


TYPE #1
For 12" thru 24" only
(See Note 1)

TYPE #2
For 30" & 36" only
(See Note 1)

TYPE #3
(See Note 2)

TYPE #4
(See Note 3)

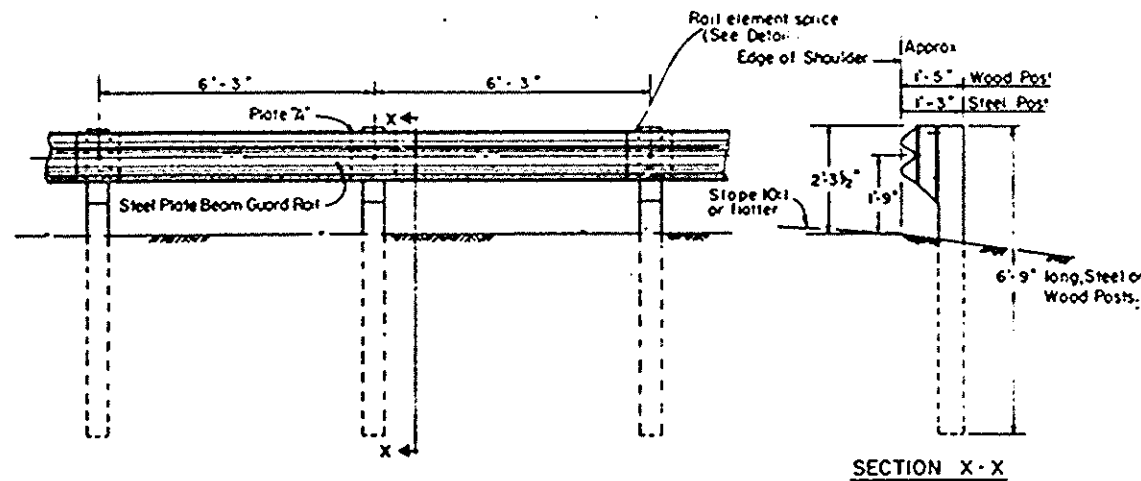


1" Wide, 0.109" thick strap with standard 6" x 1/2" band bolt and nut.

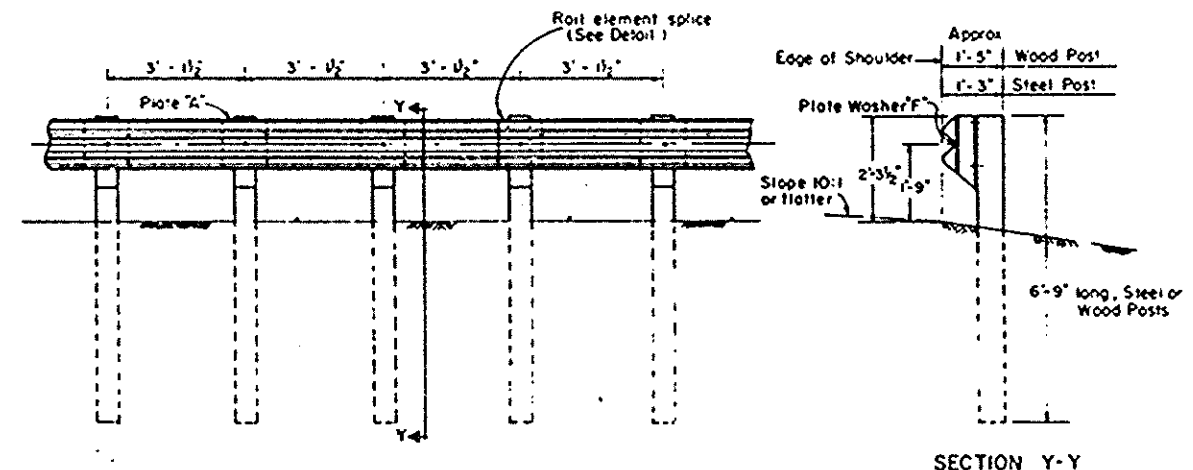
ALTERNATE STRAP CONNECTOR
(For TYPE 1 only)

- NOTE:**
- Types #1 and #2 for pipes with annular ends only.
 - Type #3 connection can be used for all pipe sizes and includes 1 foot of the pipe length. The connector section shall be attached to the end section by rivets or bolts and shall be the same metal thickness as the end section. Stub to be either 2-2/3" pitch x 1/2" depth or 3" pitch x 1" depth annular corrugated pipe.
 - Type #4 connection can be used for all pipe sizes. Coupler shall be 2-2/3" x 1/2" dimple, huggar or annular band or 3" x 1" annular band. The dimple, huggar, or annular band may be used with corrugated metal pipes having annular ends. For corrugated metal pipes having helical ends, only the dimple band will be allowed.
 - When the pipe is bituminous coated, it will not be necessary to coat end sections or connector sections.

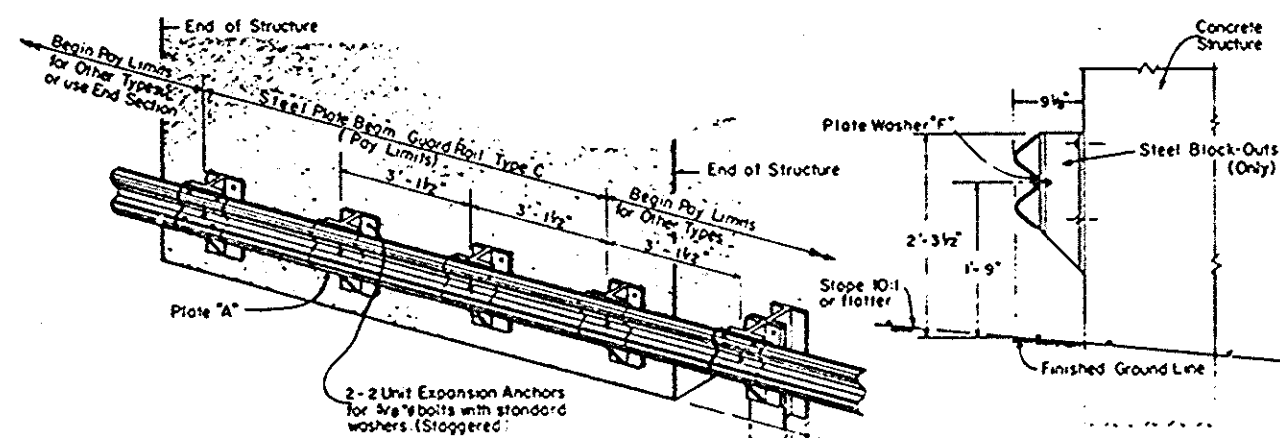
PASSED APPROVED [Signature] Engineer of Design Operating 1977	ISSUED 12-9-65 REVISIONS G.R. 8-1-69 W.F. 1-17-72 D.W.W.Sr. 8-25-76 D.W.W.Sr. 6-1-77



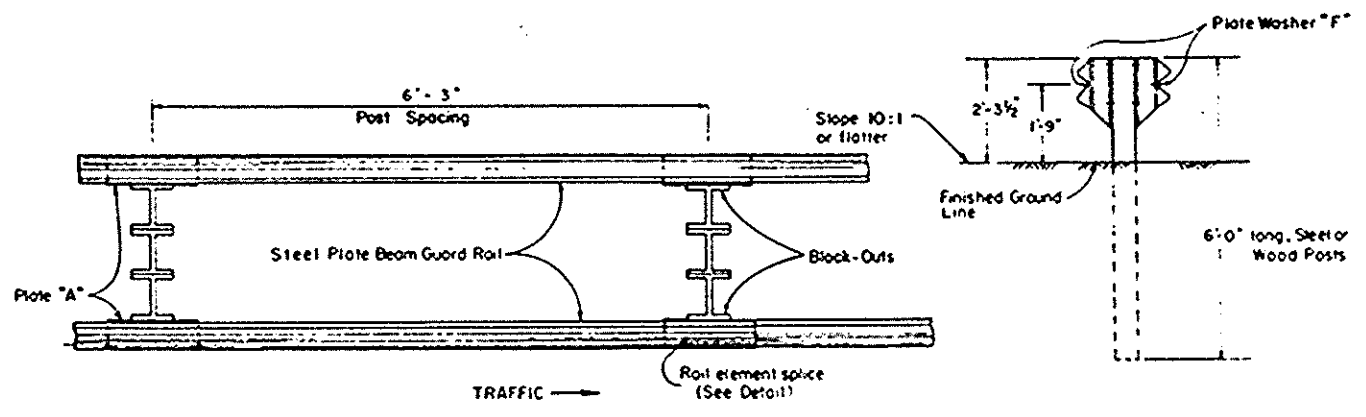
TYPE A
(6'-3" Typical Post Spacing)



TYPE B
(3'-1 1/2" Closed Post Spacing)

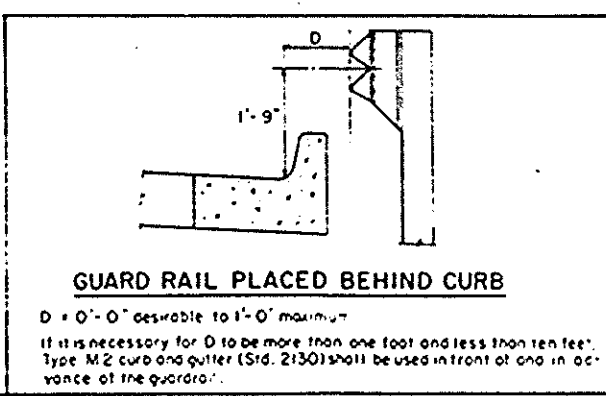


TYPE C
(3'-1 1/2" Block-Out Spacing)



TYPE D
(Double Steel Plate Beam Guard Rail, with 6'-3" Typical Post Spacing)

NOTE: Rail element lap in direction of traffic of the adjacent lane for all types



Missouri Department of Transportation

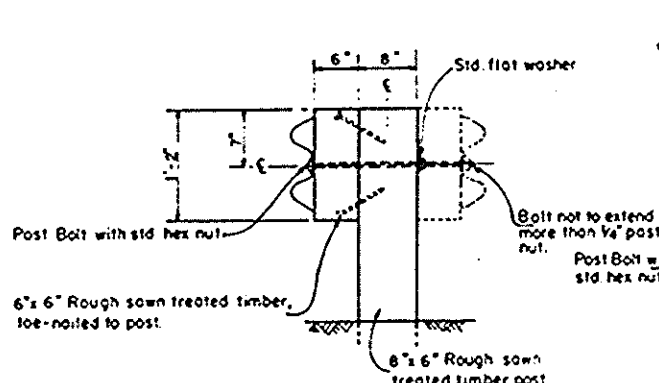
PASSED April 9, 1990
APPROVED April 9, 1990

STEEL PLATE BEAM GUARD RAIL
TYPES A, B, C & D

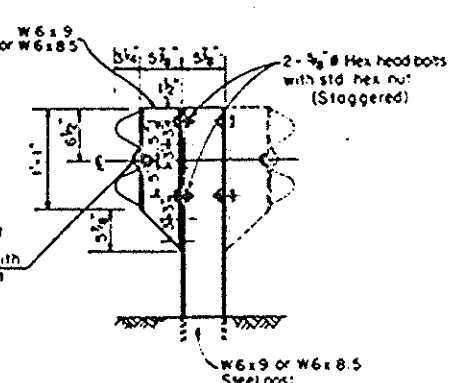
Sheet 1 of 2 Sheets

STANDARD 2230-16

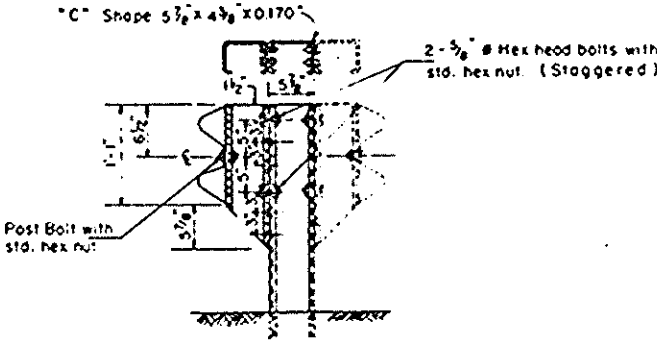
Full Size DWG 5



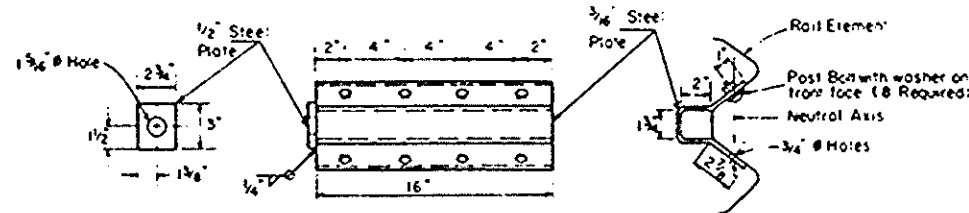
TYPICAL DETAIL OF WOOD POST CONSTRUCTION



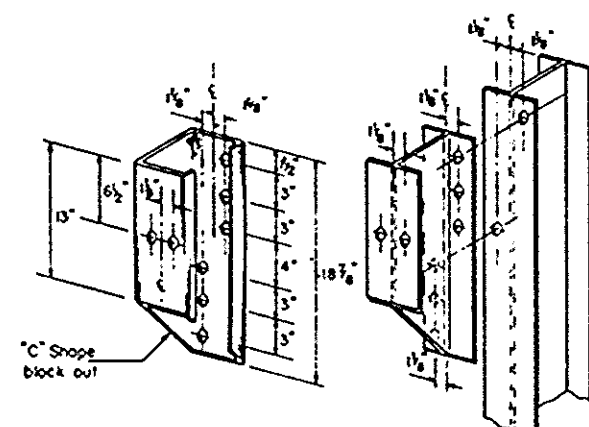
TYPICAL DETAIL OF STEEL POST CONSTRUCTION



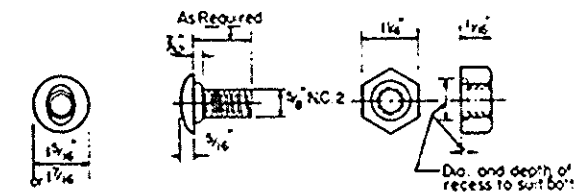
TYPICAL DETAIL OF STEEL POST CONSTRUCTION (ALTERNATE "C" SHAPE)



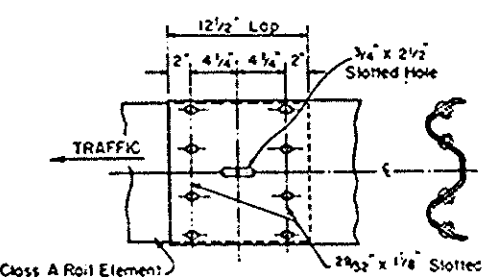
ANCHOR PLATE "T" DETAILS
Anchor Plate "T" shall be used to attach cable assembly to guard rail when required on Traffic Barrier Terminals.



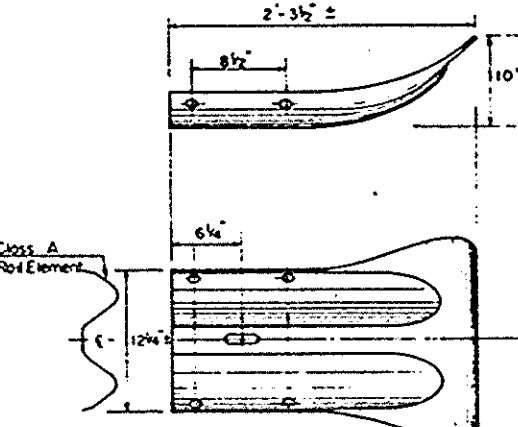
BLOCK-OUT DETAILS



POST OR SPLICE BOLT & NUT

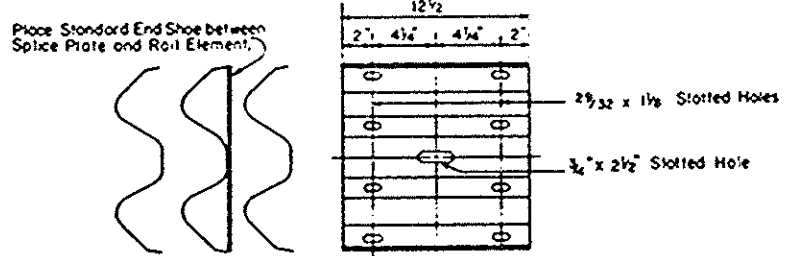


RAIL ELEMENT SPLICE



END SECTION

NOTE:
End Section shall be used only when specified on the contract plans.
Cost included in the bid unit price for Guard Rail.



SPLICE PLATE

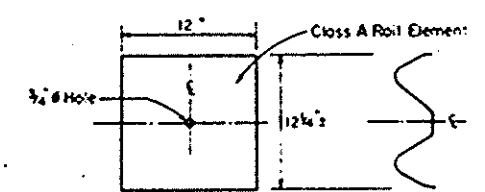


PLATE "A"

NOTE:
Plate "A" shall be placed between rail element and block-out at all non-splice mounting points.

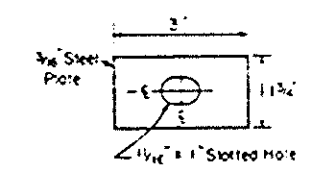
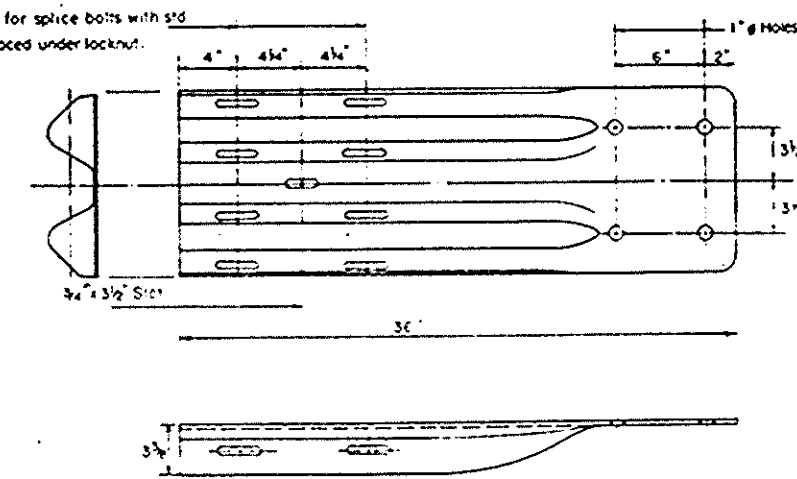


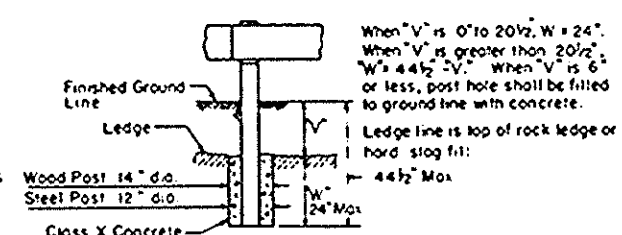
PLATE WASHER "F"

Plate Washer "F" shall be used on Type A Guardrail only where specified. Plate Washer "F" shall be used at all other locations where rail element is bolted to a block-out unless otherwise noted.



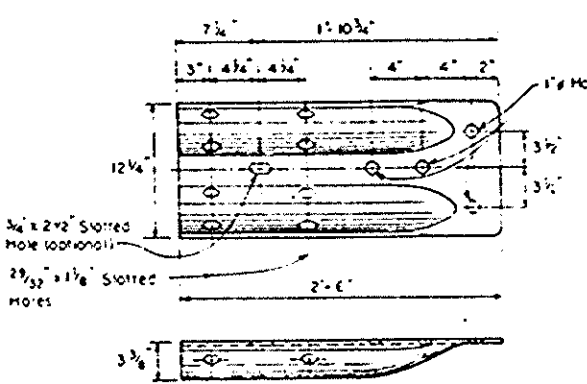
END SHOE

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guard rail movement. The Standard End Shoe shall be attached to the concrete with Pre-drilled or Self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete. Externally threaded studs protruding from the surface of the concrete will not be permitted.



FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

When "V" is 0" to 20 1/2", W = 24".
When "V" is greater than 20 1/2", W = 44 1/2" V. When "V" is 6" or less, post hole shall be filled to ground line with concrete.
Ledge line is top of rock ledge or hard slag fill.



ALTERNATE END SHOE

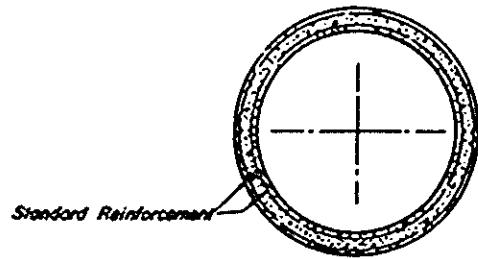
GENERAL NOTES

All rail element shall be Class A unless otherwise noted.
All holes in posts and block-outs shall be 3/4" #.
All concrete, and accessories used in the placing of the guard rail shall be included in the bid unit price for guard rail.
Rail element may be furnished in nominal lengths of either 12'-6" or 25'-0".
All rail elements and accessories shall conform to AASHTO M-180 unless otherwise noted.
For steel block-outs attached to wood posts, use 2-3/8" lag bolts (staggered) in pre-drilled post holes.
The Contractor shall load test 10% of all expansion anchor bolts in guard rail installations in the presence of the Engineer. The equipment and method used shall meet the approval of the Engineer. The minimum test load shall be 8,000 pounds for 3/4" bolts and 3,000 pounds for 5/8" bolts in direct pull. For each anchor that fails the test requirements, two (2) more anchor bolts, picked by the Engineer shall be tested. Each anchor bolt that fails to meet the test requirement shall be reset or removed and the hole drilled deeper. All reset anchor bolts shall meet minimum test requirements.

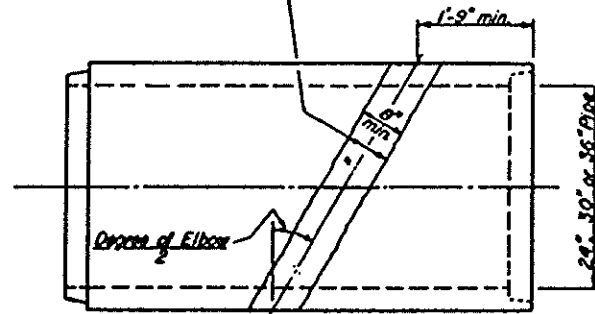
STEEL PLATE BEAM GUARD RAIL
(Sheet 2 of 2 Sheet)
STANDARD 2230-16

Illinois Department of Transportation
PASSED: April 9, 1990
APPROVED: April 9, 1990
ISSUED: 2-11-62

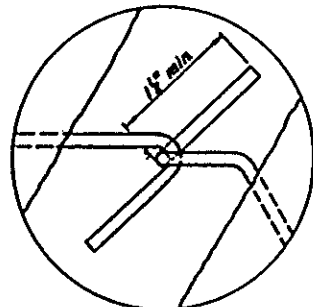
Remove concrete in pipe along these lines.
Clean reinforcement for either tied or welded laps of longitudinal and circumferential reinforcement.



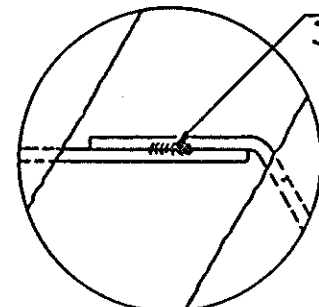
TRANSVERSE SECTION



PLAN
Reinforced Concrete Pipe

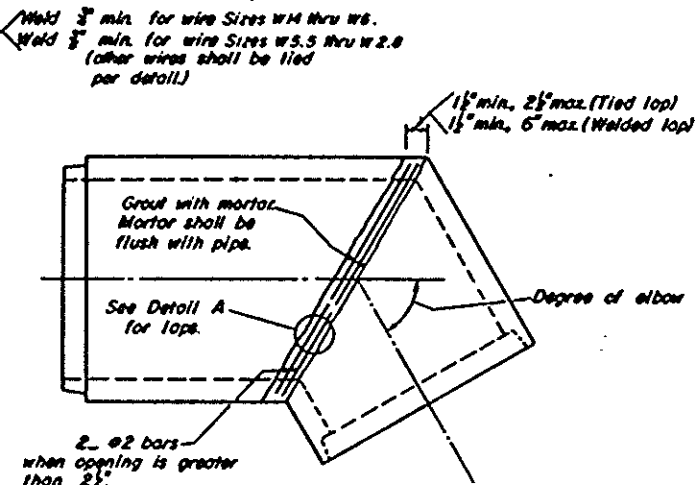


Tied Lap



Welded Lap

DETAIL A



PLAN
Reinforced Concrete Pipe Elbow

NOTES:

Reinforced Concrete Pipe shall conform to AASHTO M-170

Additional reinforcement shall conform to AASHTO M-31 or M-53

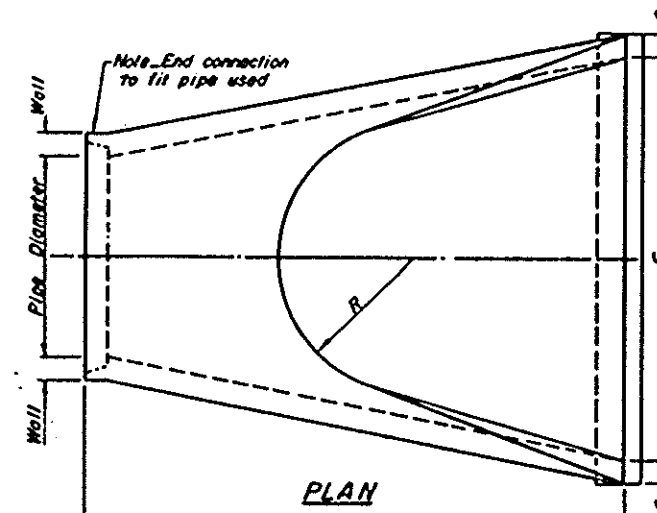
Degree of elbow and Pipe size required shall be as indicated on detail plan for each individual installation.

Cement mortar with bonding agent shall be approved by the Engineer.

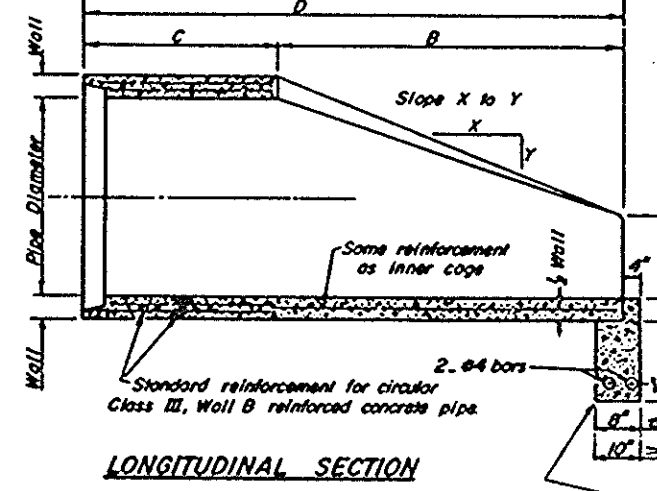
Basis of Payment—Reinforced Concrete Pipe Elbow shall be paid for at the contract unit price "each" complete in place for the pipe size specified. The section of pipe which includes the elbow will not be included in the lineal foot measurement of the pipe run in which it is included.

Missouri Department of Transportation ISSUED 3-4-69 REVISIONS W.F. 1-17-72 D.W.W. 2-1-74 W.M.B. 8-11-78 D.W.W. 10-27-78	DESIGNED BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
	DATE: Nov. 21, 1978 PROJECT NO.: 1572

REINFORCED CONCRETE PIPE ELBOW



PLAN



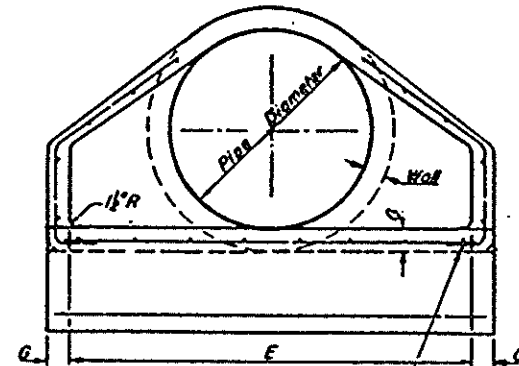
LONGITUDINAL SECTION

NOTES:

- Precast concrete flared end sections shall conform to the applicable requirements of AASHTO M-170 Class III, Wall B reinforced concrete pipe.
- Precast concrete flared end section for pipe diameter required shall be as indicated on detail plan for each individual installation.
- The end block shall be placed prior to the installation of the flared end section. The end block shall be backfilled in accordance with Art. 502.11 of the Standard Specifications, cost incidental to End Section.

Pipe Dia.	Approx. Wt. (lbs.)	Wall	A	B	C	D	E	G	R	Slope
12"	530	2"	4"	2'-0"	4'-0"	6'-0"	2'-0"	2"	9"	3:1
15"	740	2 1/2"	6"	2'-3"	3'-10"	6'-1"	2'-6"	2 1/2"	11"	3:1
18"	990	2 3/4"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2 3/4"	12"	3:1
21"	1280	2 3/4"	9"	2'-11"	3'-2"	6'-1"	3'-6"	2 3/4"	13"	3:1
24"	1520	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3"	14"	3:1
27"	1930	3 1/2"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	4'-6"	3 1/2"	14 1/2"	3:1
30"	2190	3 1/2"	1'-0"	4'-6"	1'-7 1/2"	6'-1 1/2"	5'-0"	3 1/2"	15"	3:1
33"	3200	3 3/4"	1'-1 1/2"	4'-10 1/2"	3'-3 1/2"	6'-1 1/2"	5'-6"	3 3/4"	17 1/2"	3:1
36"	400	4"	1'-3"	5'-3"	2'-10 1/2"	6'-1 1/2"	6'-0"	4"	20"	3:1
42"	5380	4 1/2"	1'-9"	5'-3"	2'-11"	6'-2"	6'-6"	4 1/2"	22"	3:1
48"	6550	5"	2'-0"	6'-0"	2'-2"	6'-2"	7'-0"	5"	22"	3:1
54"	8240	5 1/2"	2'-3"	5'-5"	2'-1"	6'-4"	7'-6"	5 1/2"	24"	24:1
60"	8730	6"	2'-11"	5'-0"	3'-3"	6'-3"	8'-0"	5"	#	2:1
66"	10710	6 1/2"	2'-6"	6'-0"	2'-3"	6'-3"	8'-5"	5 1/2"	#	2:1
72"	12520	7"	3'-0"	6'-6"	1'-9"	6'-3"	9'-0"	6"	#	186:1
78"	14770	7 1/2"	3'-0"	7'-6"	1'-9"	9'-3"	9'-6"	6 1/2"	#	182:1
84"	18160	8"	3'-0"	7'-6"	1'-9"	9'-3"	10'-0"	6 1/2"	#	15:1

*Radius as furnished by manufacturer



END VIEW

Precast or Cast In Place End Block (See Note 3)

Optional 24 Dia. Splice minimum

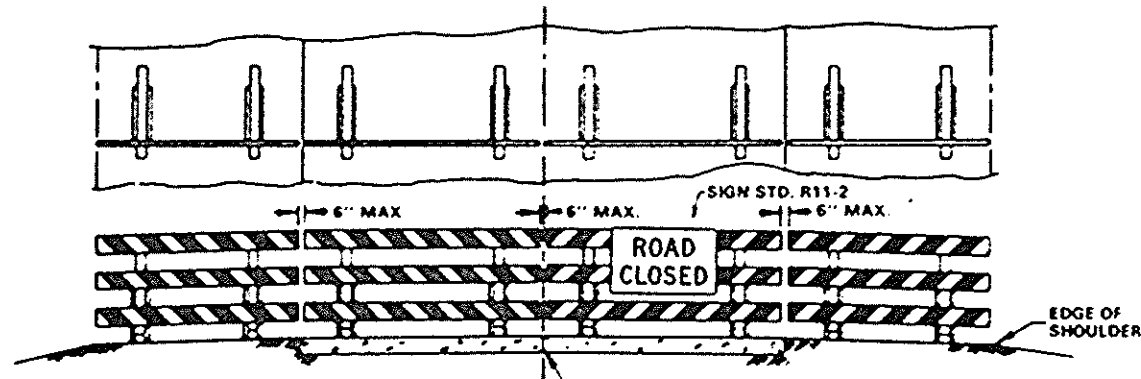
PRECAST REINFORCED CONCRETE FLARED END SECTION

STANDARD 2262-A

(Full Size)

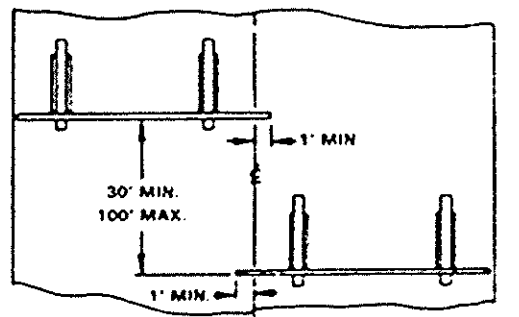
J-11-02

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD



ROAD CLOSED TO ALL TRAFFIC

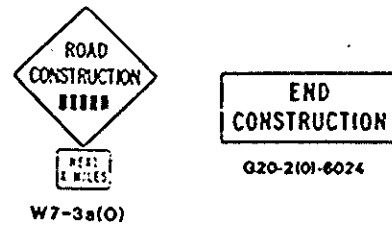
Reflectorized striping may be omitted on the back side of the barricades. The barricades shall be to the edge of the shoulders except when otherwise directed by the Engineer or shown on the detailed construction plans.



ROAD CLOSED TO ALL THRU TRAFFIC

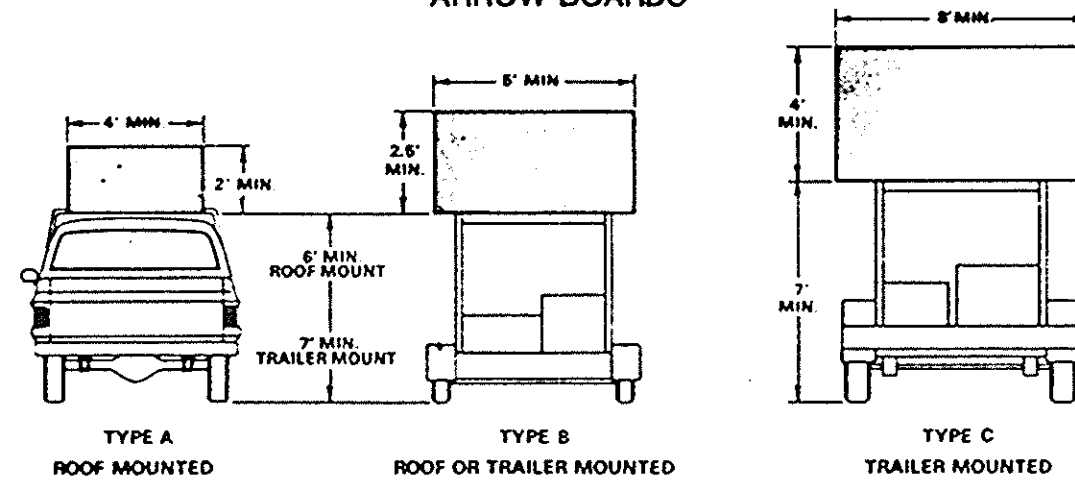
Reflectorized striping shall appear on both sides of barricades. The barricades shall be to the edge of the pavement, except when otherwise directed by the Engineer or shown on the detailed construction plans.

WORK LIMIT SIGNING



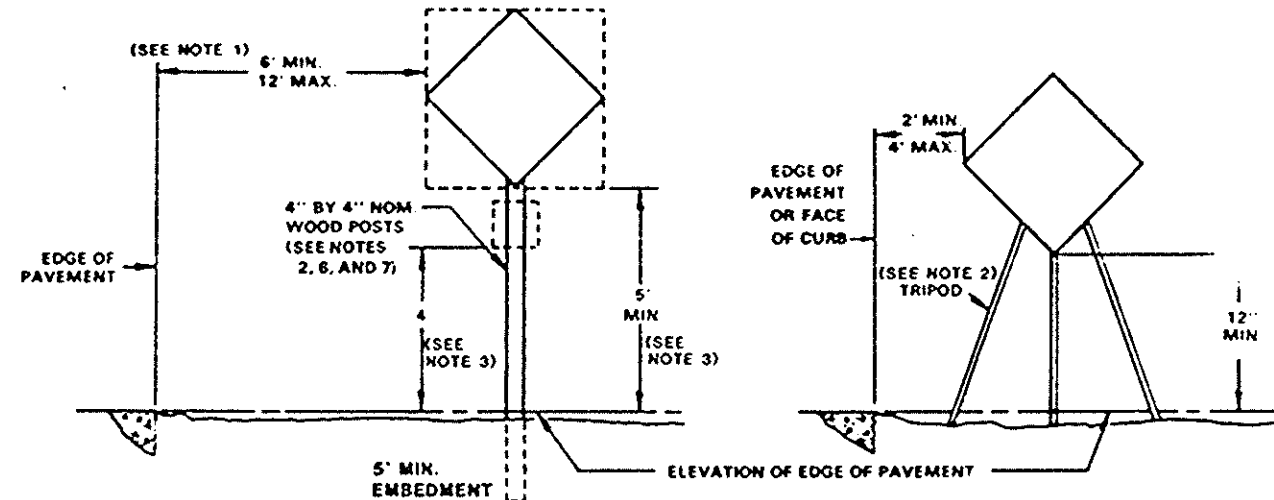
The NEXT X MILES supplemental plate shall be installed below the first warning sign in the series of all projects over two miles in length. The END CONSTRUCTION sign shall also be erected near the end of these projects, unless another project is within 2 miles beyond the end of the job.

ARROW BOARDS



Arrow boards shall conform to Article 718.22 of the Standard Specifications. On roads with speeds of 45 miles per hour and above, Type C units are to be used for all operations 24 hours or more in duration and Type B units may be used for operations less than 24 hours in duration. Type A, B or C units may be used for all operations on roads with speeds less than 45 miles per hour. Arrow boards shall not be used to direct passing moves into lanes used by opposing traffic.

TYPICAL SIGN INSTALLATIONS



- 2 ft. minimum to face of curb.
- Alternate designs and or materials may be permitted when authorized by the Engineer. All materials shall be substantial and durable.
- Add 2 ft. if parking exists within 200 ft. in advance of the sign location or if pedestrian movement is likely to occur at any time during the project.
- Signs on temporary supports shall be within 20° of a vertical position.
- Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize signs other than sand-bags must be rigidly attached to the sign support as close to the ground as possible.
- Two posts shall be used for signs greater than 16 sq. ft. in area or where the height between the sign and the ground exceeds 7 ft. Bracing no heavier than 2" x 4" wood may be used for added support. Any brace placed parallel to the road shall be sloped down toward approaching traffic.
- If approved by the Engineer, skids may be used to support signs where posts are impractical. If used, they shall not exceed the structural design of Type III barricades and shall be no greater than 4 ft. in length.

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

SHEET 1 OF 2

STANDARD 2298-9

Wisconsin Department of Transportation
 Approved: 2/4/92
 [Signature]
 Engineer of Traffic

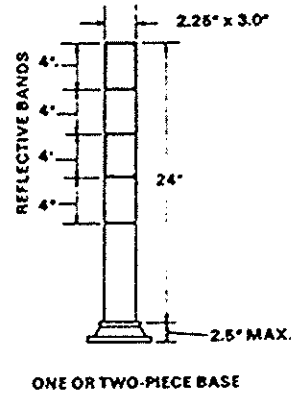
F-6-0011

FLEXIBLE DELINEATORS

Flexible delineators shall be tubular in shape and designed to bend under repeated impacts and return to an upright position without damage to the impacting vehicle or the tubes. They shall be attached to the pavement with epoxy meeting the recommendations of the delineator manufacturer. The use of studs will not be permitted without the approval of the Engineer.

The tubes shall be orange in color and have two reflectorized orange and two reflectorized white bands meeting the requirements for signs Article 718.17 of the Standard Specifications.

The tubes shall be readily removable from the bases to permit field replacement. All missing or severely damaged tubes shall be replaced prior to suspension of work each working day and once each non-working day on a schedule approved by the Engineer.



WING BARRICADES

The stripes shall be 6 inches wide, alternating reflectorized orange and reflectorized white, sloping downward at 45 degrees toward the side on which traffic will pass. The reflective sheeting shall meet the requirements of Articles 718.17 and 718.18 of the Standard Specifications.

Sand bags may be placed on the legs for ballast. No other types of weights will be allowed.

Flashing lights shall be used during hours of darkness and shall be mounted above the top rail of the side nearest traffic.

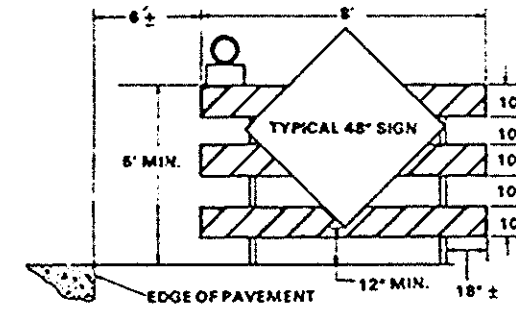
Barricade rails shall be wood (no thicker than 1 inch), sheet aluminum, plastic or fiberglass.

The optional back bracing shown on the wood or metal barricade may be used provided it attaches to the upright no higher than 12 inches above the bottom and provided that if wood is used, the bracing shall be no heavier than 2 inches by 4 inches in size.

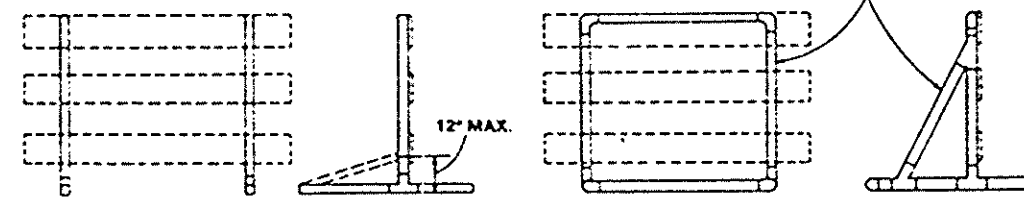
Other light weight designs may be used with the approval of the Engineer.

All heights shown shall be measured above the pavement surface.

The name of the agency, contractor, or supplier shall not be shown on the face parts of any barricades, whether such parts are striped or not. Identification markings may be placed only on the back side of the barricade rails.



FRAMES SHALL BE NO HEAVIER THAN:
 4" x 4" WOOD OR
 2" x 2" x 1/8" STEEL TUBING OR
 2" x 2" x 3/16" STEEL ANGLES

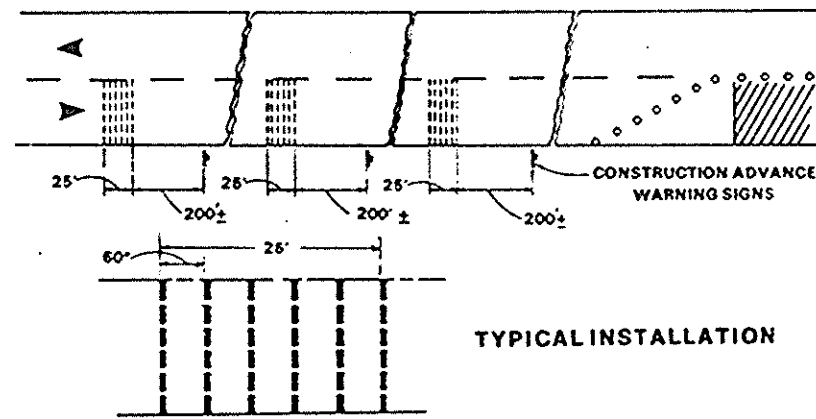
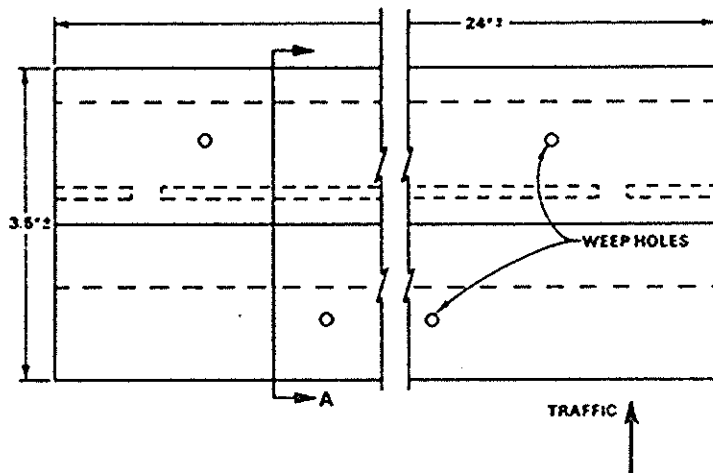


WOOD OR METAL SUPPORTS

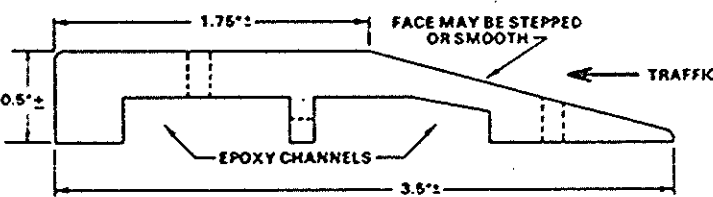
PVC PIPE SUPPORTS

TYPICAL DESIGNS

TEMPORARY RUMBLE STRIPS



TYPICAL INSTALLATION



A-A
 DETAIL OF RUMBLE STRIPS

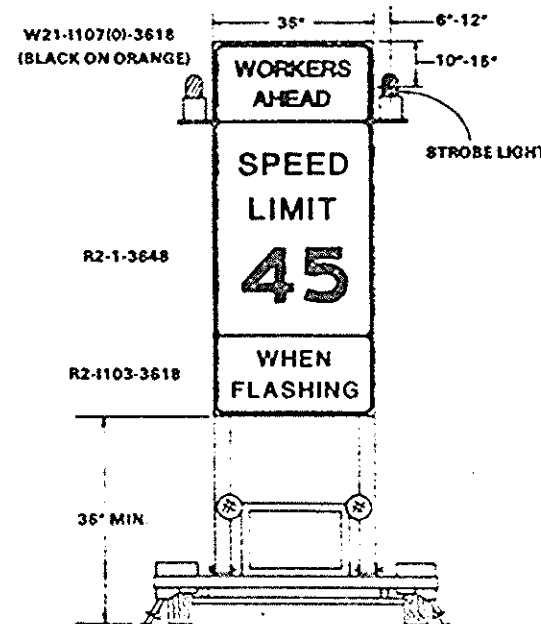
The rumble strip shall be black in color and formed of high strength formed polycarbonate. It shall be of one-piece construction with two channels on the underside for flexibility and proper epoxy bondage. The channels shall be interconnected at four or more locations to permit epoxy to flow from one channel to the other. There shall be at least six weep holes through one or both channels to the upper surface of the strip and at least four through the leading edge of the strip to prevent air voids between the strip and the epoxy.

The rumble strip shall support a load of 6,000 pounds. This shall be determined by placing a strip over the open end of a one-inch high vertically-positioned hollow metal cylinder having an internal diameter of 3 inches and a wall thickness of 0.25 inches. The load shall be applied slowly through a one-inch diameter by one-inch high metal rod centered on the top flat portion of the strip. (No weep holes shall be in the compression area.) Breakage or significant permanent deformation of the strip shall constitute failure.

The strips shall be placed end to end and extend completely across the traffic lane. They shall be attached to the pavement with an adhesive meeting the recommendations of the rumble strip manufacturer.

Other similar designs may be used with the approval of the Engineer.

CONSTRUCTION SPEED LIMIT SIGN



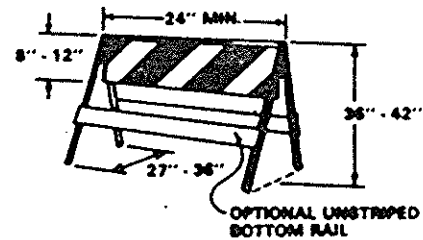
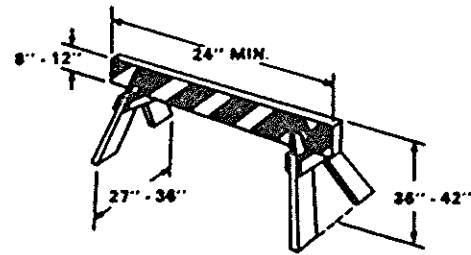
The sign assembly shall be trailer mounted. The trailer shall conform to Article 718.23 of the Standard Specifications.

All signs shall be reflectorized meeting the requirements of Article 718.17 of the Standard Specifications. The signs may be combined on a single panel.

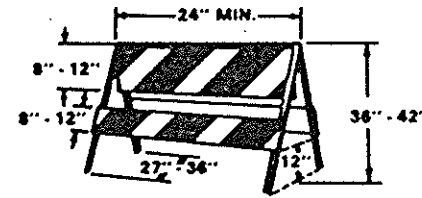
The flashing lights for the construction speed limit sign shall feature mono-directional amber lenses with reflectors and shall be visible through a range of 120 degrees when viewed facing the sign. The lights, either strobe, halogen or incandescent lamps, shall be visible for a minimum distance of one mile and have a minimum flash rate of 40 per minute. An "on" indicator light shall be provided on the back of the sign visible for 500 feet to provide confirmation to workers the light is operating. The lights shall operate on either full battery power with solar panel charging (capable of maintaining a charged battery level) and 135 amp, 12 volt deep cycle battery(s) or a gasoline or diesel powered generator with a maximum fuel capacity of 25 gallons.

The assembly shall only be used where specified or when approved by the Engineer. The flashing lights shall be activated ONLY when workers are present in a closed lane adjacent to one open to traffic. The speed limit shown shall be 45 MPH or 10 MPH below the normal posted speed limit whichever is lower. At all other times, the lights shall be turned off and the assembly removed or the sign covered. The sign shall not be used where the normal posted speed limit is below 45 miles per hour.

TYPE I BARRICADES



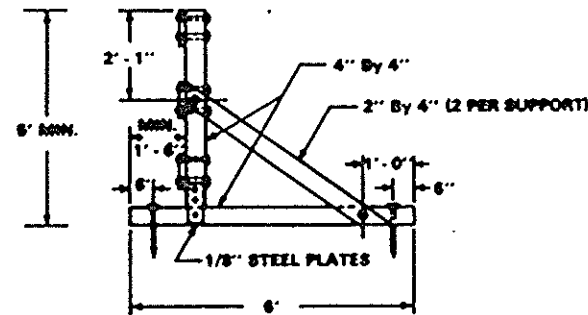
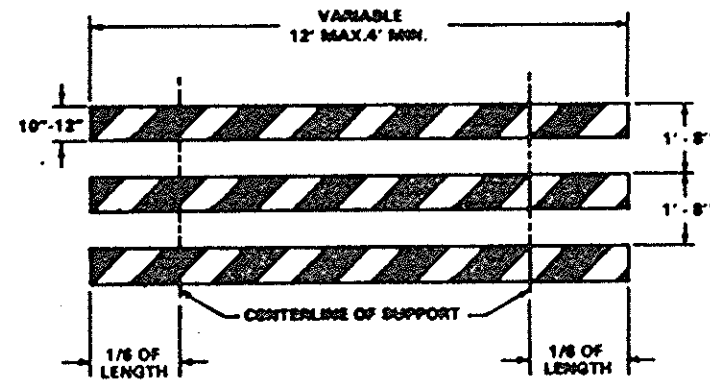
TYPE II BARRICADES



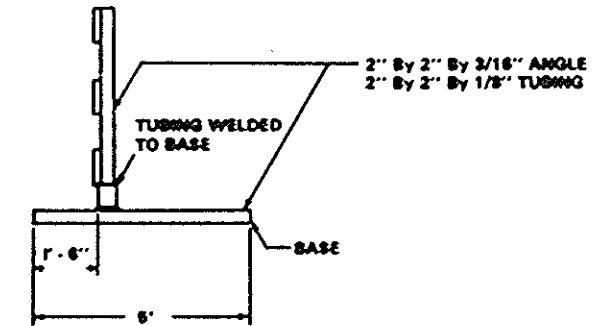
GENERAL NOTES

1. Type I Barricades are intended for use on lower speed roads and shall not be used where normal speeds are greater than 40 MPH unless the reflective area of the upper rail is at least 288 square inches.
2. Type I and Type II Barricades shall not be intermixed within an individual string of barricades.
3. Type III Barricades are intended for road and lane closures and shall not be used for channelization or delineation.
4. All heights shown shall be measured above the pavement surface.
5. Unless otherwise noted, the reflective sheeting used for barricades, drums, and vertical panels shall meet the requirements of Article 718.17 and 718.18 of the Standard Specifications for Road and Bridge Construction.
6. All barricades and vertical panels shall have alternating reflectorized white and reflectorized orange stripes sloping downward at 45° toward the side on which traffic will pass. Barricade stripes shall be 6 inches in width on barricades 36 inches or greater in length and 4 inches in width on barricades less than 36 inches in length. Type I and Type II Barricades shall be striped on both sides. Type III Barricades shall be striped on both sides where traffic approaches from either direction. Vertical panels placed on the outside of curves shall be striped on both sides. The predominant color for other barricade components shall be white or silver, except that unpainted galvanized metal or aluminum components may be used.
7. Drums shall be non-metallic and have alternating reflectorized orange and reflectorized white horizontal, circumferential stripes 4 inches to 8 inches in width. There shall be at least two orange and at least two white stripes on each drum. If nonreflective spaces are left between the orange and white stripes, they shall be no more than 2 inches in width. All nonreflectorized portions of the drums shall be orange or white. Drums may be slightly conical in shape and may have one or more flat surfaces to minimize rolling when hit.
8. Frames for Type I and Type II Barricades shall be designed so as to provide a stable support and should be constructed of light weight steel or aluminum angles or tubing, wood, plastic, or rubber and have no rigid stay bracing for "A" frame designs. As Type III Barricades are only used at closures, they may be constructed of heavier materials than Type I or Type II Barricades. However, they should not have any vertical or sloping supports heavier than 4-inch by 4-inch lumber, 2-inch by 2-inch by 1/8-inch steel tubing, or 2-inch by 2-inch by 3/16-inch steel angles.
9. Barricade rails shall be no heavier than 1-inch thick lumber or plywood except for the "sawhorse" design Type I Barricade which may have a rail no heavier than 2-inch thick lumber. Other light weight weather resistant materials such as plastic, fiberglass or sheet aluminum may be used. Barricade rails may be sloping or vertical. Nominal lumber dimensions may be used to satisfy wooden barricade component dimensions.
10. The name and phone number only of an agency, contractor, or supplier may be shown on the nonreflective surface of the face part of a barricade. Such identification shall be in one color and nonreflective with letters not to exceed 1-inch in height.
11. When used, warning lights on barricades, drums, or vertical panels shall be mounted above the top of the device to the side on which traffic will pass and shall not obscure any reflectorized portion of the device.
12. Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize barricades other than sandbags must be rigidly attached to the legs of the barricades as close to the ground as possible. No sandbags will be allowed on the top rail of barricades. Sandbags may be placed on barricade legs, over striped bottom rails not facing traffic, over unstriped bottom rails, or suspended from the barricade rail or frame in such a manner so that the bulk of the sand is at least 18 inches below the top of the barricade. Drums may be weighted internally with just enough sand, water, or other material to provide stability.
13. Cones shall be constructed of durable material able to withstand abuse by vehicular traffic. Minimum weights shall be 4 pounds for 18 inch, 7 pounds for 28 inch, and 10 pounds for 36 inch cones with a minimum of 60 percent of the total weight in the base. On fully access-controlled facilities, cones shall be a minimum of 28 inches in height. Reflectorized cones shall only be used as specified on the plans or as approved by the Engineer. When used, reflectorized cones shall be a minimum 28 inches in height and shall have two reflective bands; one a minimum of six inches wide placed three inches from the top of the cone and the other a minimum of four inches placed two inches below the six inch band.
14. Vertical panels may be either post mounted, frame supported or attached to the top of a barrier. Post mounted vertical panels shall be firmly attached to light weight wood or metal posts with the top a minimum height of 48 inches above the pavement surface. Frame supported vertical panels shall conform to General Notes 8, 9, 10 and 12 of this Standard and shall only be used where normal speeds are 40 MPH or less with the top a minimum height of 35 inches above the pavement surface.

TYPE III BARRICADES

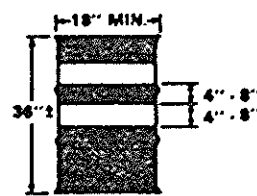


TYPICAL WOOD SUPPORT

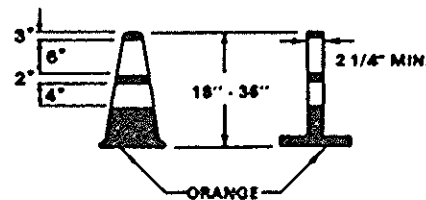


TYPICAL STEEL SUPPORT

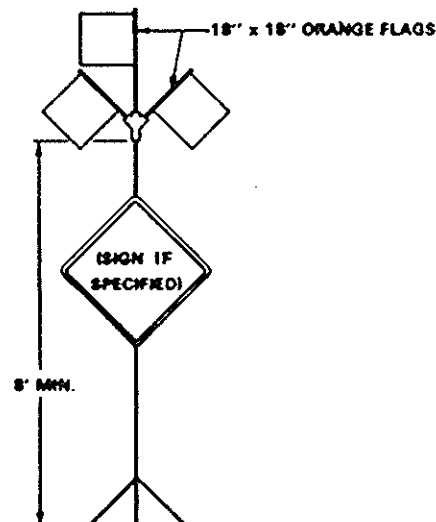
DRUMS



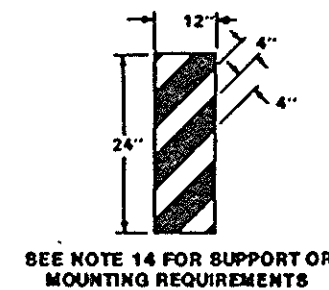
CONES



HIGH LEVEL WARNING DEVICE



VERTICAL PANELS



Ohio Department of Transportation
 Approved: 2/4/82
 [Signature]
 Engineer of Traffic

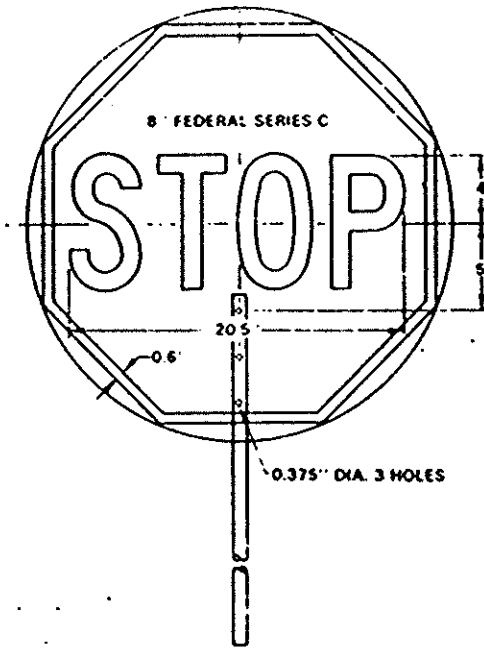
DESIGN OF TRAFFIC CONTROL DEVICES FOR
 HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

STANDARD 2299-13

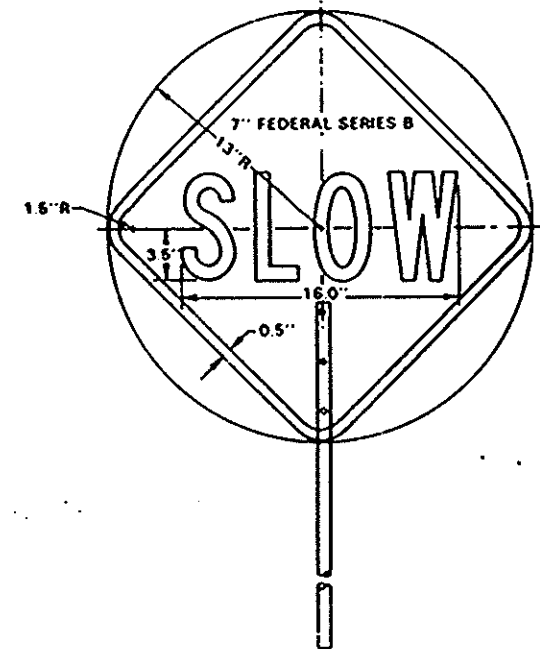
1200



STAFF



FRONT SIDE



REVERSE SIDE

GENERAL NOTES

1. The "STOP" face shall consist of white letters and border on a red reflectorized background.
2. The "SLOW" face shall consist of black letters and border on an orange reflectorized background.
3. Areas outside sign borders shall be light blue or black.
4. The sign blank may be octagonal in shape in lieu of circular.
5. The portion of the staff within the sign face shall match the sign colors.
6. All colors and letters shall meet applicable federal standards.
7. The staff shall consist of two sections joined by a coupling located 60 in. from the bottom of the staff. Alternate designs may be used when approved by the Engineer. All materials shall be substantial and durable.
8. This sign shall be furnished by the contractor and shall be used by the flagger in lieu of flags or other signaling devices. The cost of furnishing and maintaining the sign shall be considered incidental to the contract and no additional compensation will be allowed.

Missouri Department of Transportation

Approved October 21, 1983

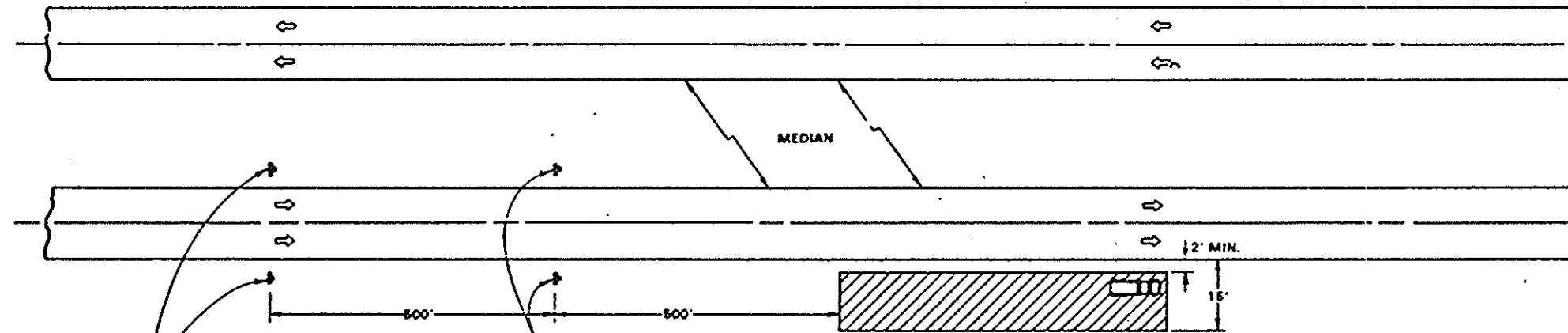
E. J. [Signature]
Engineer of Traffic

Revised 4-3-83

FLAGGER TRAFFIC CONTROL SIGN

STANDARD 2300-3

E-6.03C



FOR CONTRACT
CONSTRUCTION
PROJECTS



W20-1101-48

FOR MAINTENANCE
AND UTILITY
PROJECTS



W21-4101-48



W21-1101-08

OR



W20-1110

TYPICAL APPLICATIONS

- Utility Operations
- Culvert Extensions
- Side Slope Changes
- Guard Rail Installation and Maintenance
- Defineator Installation
- Landscaping Operations
- Sign Installation and Maintenance
- Shoulder Repair

GENERAL NOTES

1. If the work operation does not exceed 60 minutes, traffic control may be in conformance with STANDARD 2307.
2. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the work area which in the opinion of the Engineer constitutes a hazard shall be protected by barricades at 50 ft. centers, with flashing lights at night. If the hazard exceeds 100 ft. in length, steady burning lights shall be substituted for flashing lights. When the distance is greater than 250 ft., barricade spacing may be increased to 100 ft.
3. If the work operation requires that four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a Flagger sign shall be substituted for the Worker sign.
4. Signs mounted in the median may be omitted when the median is less than 10 feet wide.
5. This standard also applies when work is being performed on a multilane undivided highway. Under these conditions the signs normally mounted in the median shall be omitted.
6. Longitudinal dimensions may be adjusted to fit field conditions.

SYMBOLS

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Sign on Portable or Permanent Support

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

MULTILANE, DIVIDED AND UNDIVIDED,
RURAL DAY OR NIGHT OPERATIONS.

Where at any time, any vehicle, equipment,
workers or their activities will encroach in the
area closer than 15 ft. but not closer than 2 ft.
to the edge of pavement.

STANDARD 2314-6

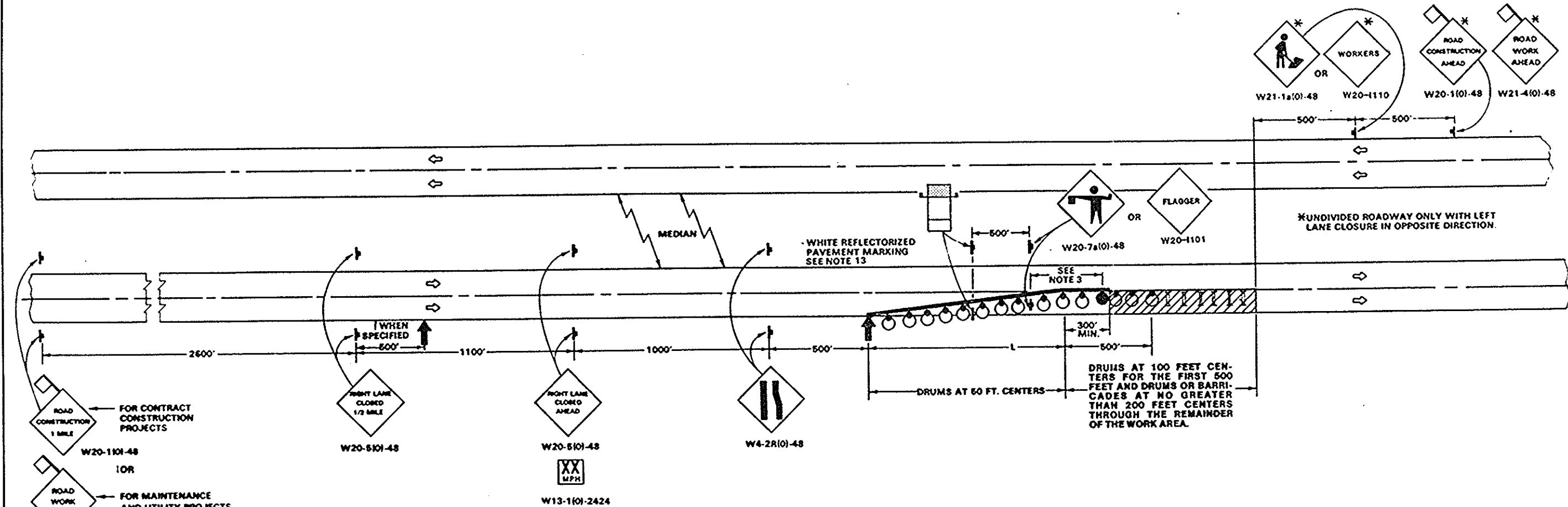
Illinois Department of Transportation

Approved: 3/12/92

W. Jones
Engineer of Traffic

8/27/92

F-6.199



GENERAL NOTES

- The "L" distance equals the lane width times the taper ratio.
- When no work is being performed, the flagger will not be required. If the flagger is not present, the Flagger and Worker signs shall be removed or covered.
- The Construction Speed Limit sign and the Flagger sign shall be moved as necessary to maintain a spacing of 500 feet to 1.5 miles between the flagger and the Flagger sign.
- This standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown. On left lane closures with narrow medians, the arrow board at the beginning of the lane closure shall be relocated behind the taper as necessary so that a clearance of at least 4 ft. can be maintained from the opposing traffic.
- The speed limit to be shown on the Construction Speed Limit signs and Advisory Speed plates shall be 10 miles per hour less than the normal posted speed limit or 45 MPH, whichever is less. The signs shall not be used where the normal posted speed limit is below 45 miles per hour.
- The flashing lights on the Construction Speed Limit signs shall be activated only when workers are present in a lane adjacent to one open to traffic. At all other times, the flashing lights shall be turned off and the signs may be removed.

Normal Posted Speed m.p.h.	Taper Ratio ft./ft.
65	65/1
60	60/1
55	55/1
50	50/1
45 or less	45/1

- Median signs may be omitted when the median is less than 10 feet wide.
- This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.
- Cones may be substituted for barricades or drums at half the spacing during day operations. On fully access-controlled facilities, cones shall be a minimum of 28 in. in height.
- Steady burning lights will not be required on drums for day operations. All drum lights shall be monodirectional.
- All signs shall be post-mounted if the closure time exceeds four days.
- Flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two signs in each series.
- ReflectORIZED temporary pavement marking tape shall be placed throughout the taper and for 300 feet along-side the work area where the closure time is greater than fourteen days. The edge line shall be yellow for left lane closures. Raised reflectORIZED pavement markers at 25 ft. centers may be used to supplement the pavement marking tape.
- Longitudinal dimensions may be adjusted to fit field conditions. The lateral placement of the flagger may be varied from that shown. The flagger shown at the beginning of the work area shall be stationed approximately 200 feet in advance of the work party.
- At all times when workers are present, a flagger shall be positioned in advance of the first work operation as shown. (See Note 2) An additional flagger, as required by Paragraph 10 of Article 107.14 of the Standard Specifications, shall be positioned in advance of each separate activity of the operation that requires frequent encroachment into a lane open to traffic.
- Form BT 725 is required.

SYMBOLS

- Construction Speed Limit Sign
- Work Area
- Arrow Board
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign (Note 15)
- Barricade or Drum
- Drum with Steady Burning Light
- 18 in. X 18 in. (minimum) Orange Flag

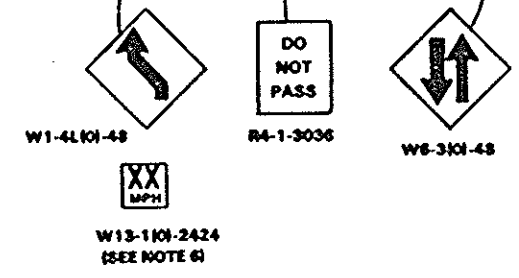
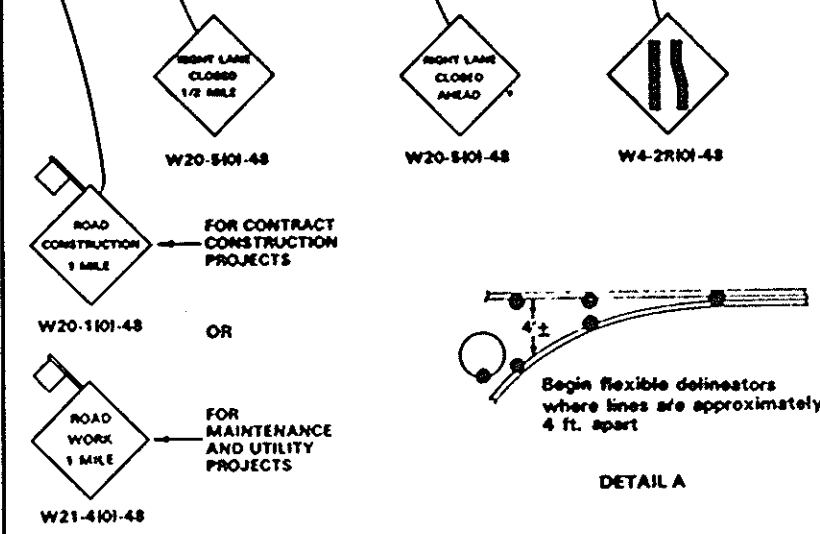
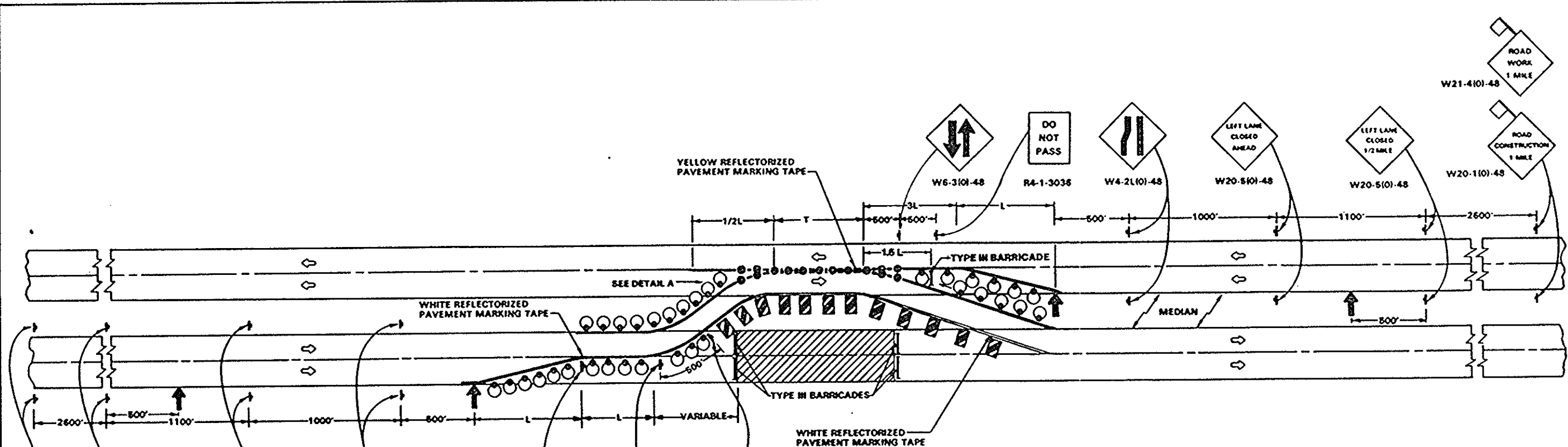
Illinois Department of Transportation
 Approved: 2/4/92
 [Signature]
 Engineer of Traffic

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
 HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE
 MULTILANE, DIVIDED AND UNDIVIDED, RURAL
 OPERATIONS EXCEEDING ONE DAYLIGHT OPERATION**

Where, at any time, any vehicle, equipment, workers or their activities will encroach on any portion of the lane immediately adjacent to the shoulder or on the shoulder within 2 feet of the edge of pavement.

STANDARD 2316-13

F-6211



- SYMBOLS**
- ↑ Arrow Board
 - ▨ Work Area
 - ◇ 18 in. X 18 in. (minimum) Orange Flag
 - ⊥ Sign on Portable or Permanent Support
 - Drum with Steady Burning Light
 - ▩ Vertical Panel
 - Flexible Delineator
 - ▬ Barricade

GENERAL NOTES

1. Reflective, solid edge lines and a double yellow centerline shall be used when the closure time exceeds four days or when the normal posted speed outside the area of operations exceeds 50 miles per hour. ReflectORIZED pavement marking tape shall be used for marking the edge lines and center line on existing pavement. Either tape or reflectORIZED pavement marking paint may be used for markings on the paved crossovers. Raised reflective pavement markers at 25 ft. centers shall also be installed to provide additional delineation. All existing pavement markings which conflict with the revised traffic pattern shall be removed.
2. Two-Way Traffic sign(s) shall be repeated every one-quarter mile in each direction through the tangent distance.
3. All drums and vertical panels shall be at 50 ft. centers. Where the tangent distance "T" on the temporary runaround exceeds 600 ft., clear delineators at 50 ft. centers may be substituted for the vertical panels, or spacing between vertical panels may be increased to 100 ft. within the limits of the tangent.
4. Cones may be substituted for drums or flexible delineators at half the spacing during day operations. On fully access-controlled facilities, cones shall be a minimum of 28 in. in height.
5. ReflectORIZED flexible delineators are to be attached to the pavement at 50 ft. centers for the first 250 feet at each end of "T", and at 100 ft. centers throughout the remainder of "T". Drums or Type I or Type II barricades no greater than 2-foot wide may be used in place of flexible delineators when the two-way operation is to be in place four days or less. Cones may be used for day operations only.
6. The speed limit to be shown on the advisory speed plate shall be 10 miles per hour below the normal posted speed limit or 45 MPH, whichever is less. The signs shall not be used where the normal posted speed limit is less than 45 miles per hour.
7. A curve sign will be required 500 ft. in advance of the exit end of the runarounds if "T" is equal to or greater than 1,000 feet.
8. The "L" distance equals the lane width times the taper ratio.

Normal Posted Speed m.p.h.	Taper Ratio ft./ft.
65	65/1
55	55/1
50	50/1
45 or less	45/1
9. Signs mounted in the median may be omitted when the median is less than 10 feet wide. Arrow boards mounted in the median may be omitted when the median is less than 20 feet wide.
10. Steady burning lights will not be required on drums for day operations. All drum lights shall be monodirectional.
11. All signs shall be post mounted if the closure time exceeds four days.
12. Flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two signs in each series.
13. Longitudinal dimensions may be adjusted to fit field conditions.
14. Form BT 725 is required.

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE**

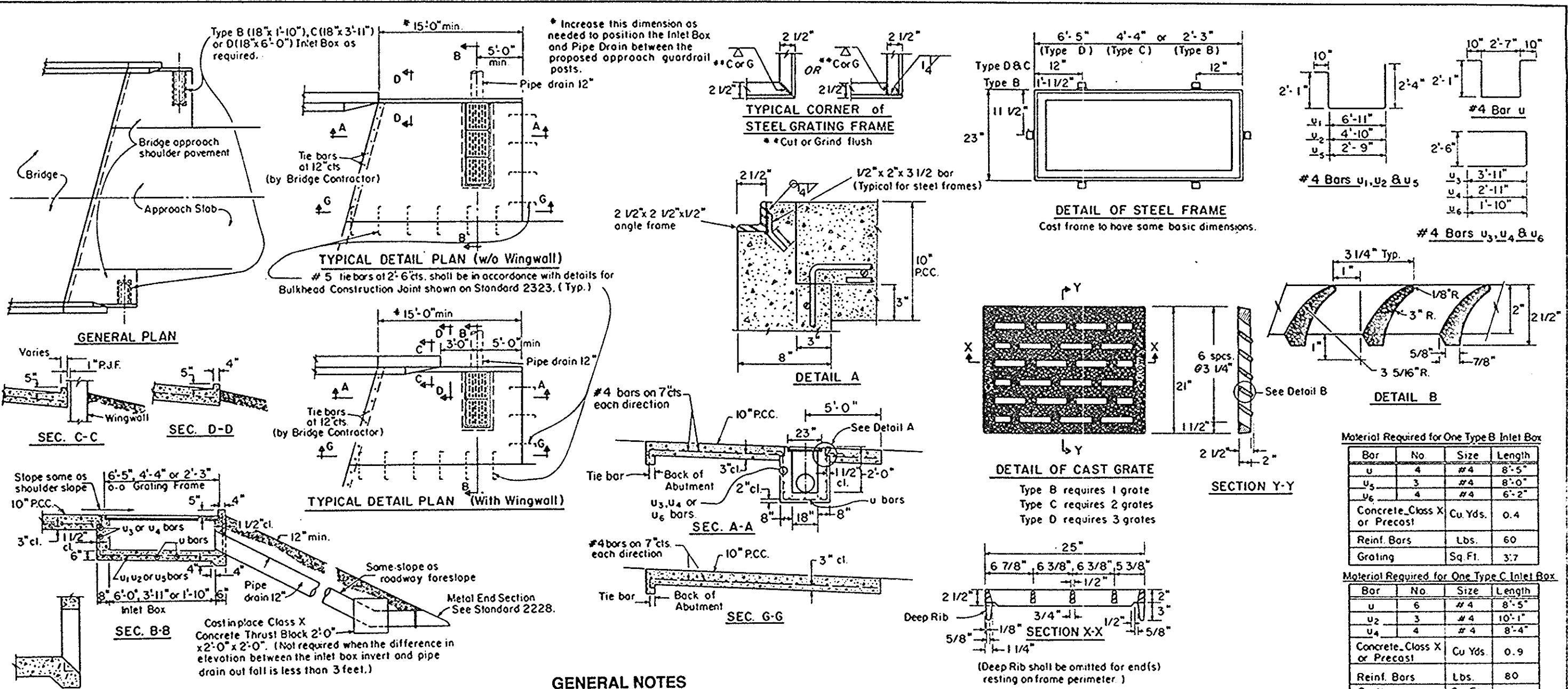
MULTILANE, DIVIDED, RURAL DAY OR NIGHT OPERATIONS

Where at any time, any vehicle, equipment, workers or their activities require the closure of two adjacent lanes and a temporary crossover is provided by making use of one lane of pavement normally used by the opposing flow of traffic and positive barrier is not used to separate the opposing traffic.

STANDARD 2317-7

Missouri Department of Transportation
 Approved 21 March 1969
R. H. Jones
 Chief of Traffic

F-6221



GENERAL NOTES

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

See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 5' and 6' shoulder widths, use Type D Inlet Box for 7' and wider shoulder widths, use Type B Inlet Box for shoulders less than 5' wide.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches or monolithic construction of Bridge Approach Shoulder Pavement, shoulder pavement will be as shown except omit tie bars.

The material for 12" Pipe Drains shall be either corrugated steel, aluminum alloy or polyethylene (P.E.) pipe with UV protection.

Corrugated steel and aluminum alloy pipe shall have 2" coupling bands. All pipe connections shall be water tight.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.

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

Class X concrete or precast concrete shall be used for the inlet.

Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i. after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled 3/4".

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep CA12 bedding conforming to Article 704.01, D Quality or better shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame.

Steel frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO M111 after fabrication.

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

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications, except sand bedding will not be required.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet. (0.8 Sq. Yds. Type B, 1.2 Sq. Yds. Type C or 1.7 Sq. Yds. Type D).

The contract unit price each for TYPE (B, C or D) INLET BOX STANDARD 2324, in place, shall include the frame and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfill.

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

BOX OUTLET WHEN PRECAST

Illinois Department of Transportation

APPROVED Nov. 14, 1990

Ralph C. Anderson
Engineer of Bridges and Structures

APPROVED Nov. 14, 1990

Debra
Engineer of Geology

BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324-7

(Full Size) DWW Sr

Material Required for One Type B Inlet Box

Bar	No	Size	Length
u	4	#4	8'-5"
u ₃	3	#4	8'-0"
u ₆	4	#4	6'-2"
Concrete, Class X or Precast		Cu Yds.	0.4
Reinf. Bars		Lbs.	60
Grating		Sq Ft.	3.7

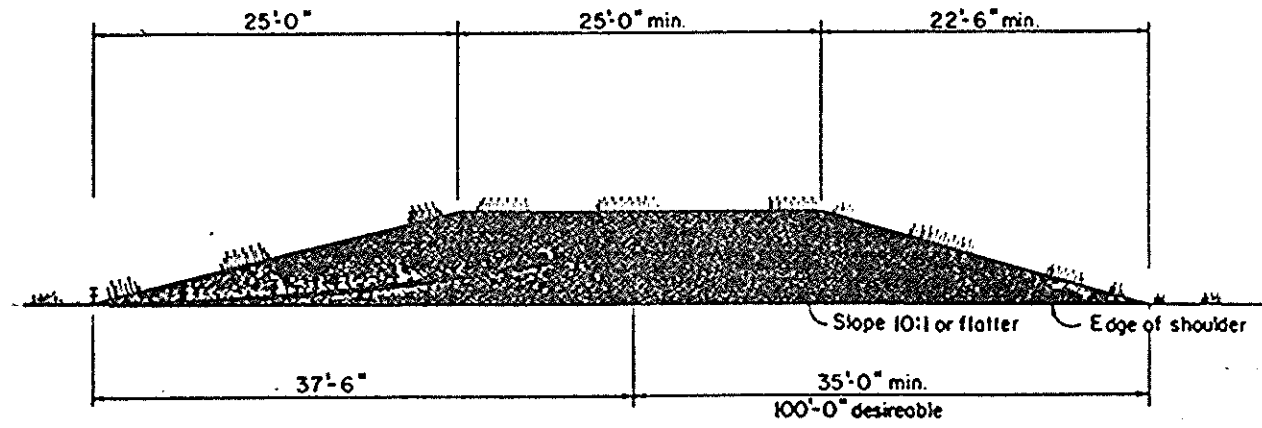
Material Required for One Type C Inlet Box

Bar	No	Size	Length
u	6	#4	8'-5"
u ₂	3	#4	10'-1"
u ₄	4	#4	8'-4"
Concrete, Class X or Precast		Cu Yds.	0.9
Reinf. Bars		Lbs.	80
Grating		Sq Ft.	7.3

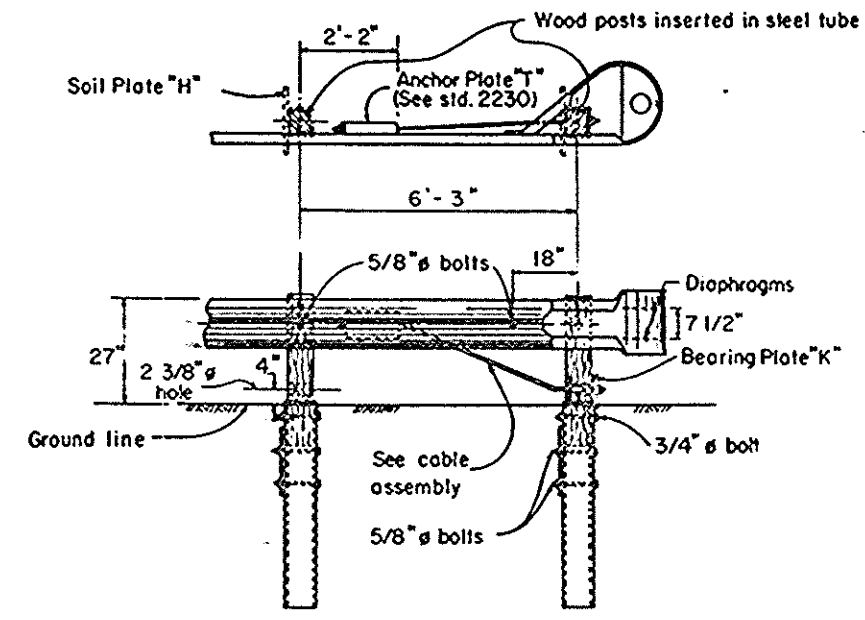
Material Required for One Type D Inlet Box

Bar	No	Size	Length
u	8	#4	8'-5"
u ₁	3	#4	12'-2"
u ₃	4	#4	10'-4"
Concrete, Class X or Precast		Cu Yds.	1.2
Reinf. Bars		Lbs.	100
Grating		Sq Ft.	11.0

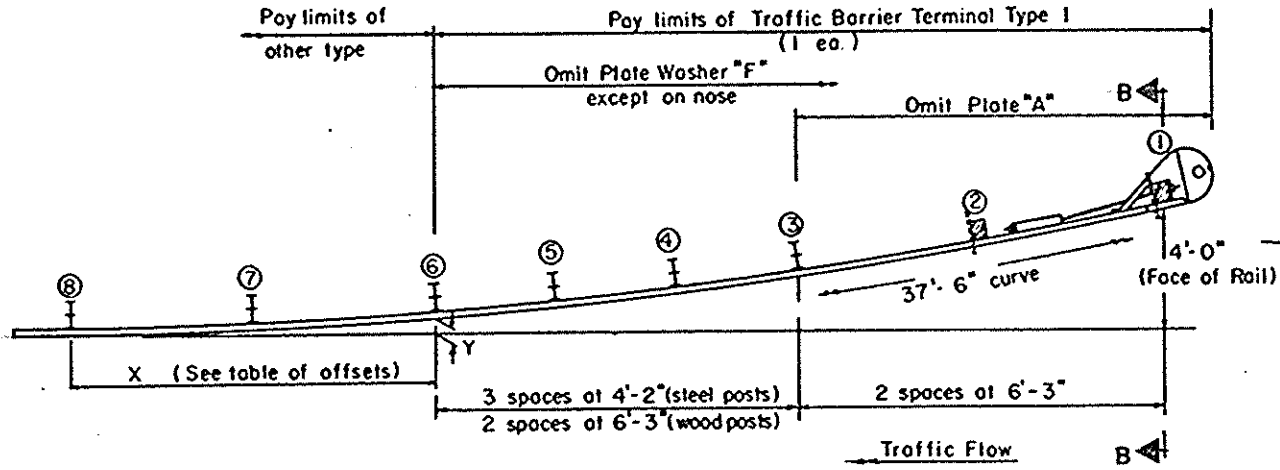
OFFSETS TO FACE OF RAIL (Feet)				
Post	X	TYPE 1		TYPE 1A
		Y (4')	Y (3')	Y (2')
①	37.22	4.00	3.00	2.00
②	31.09	2.79	2.09	1.40
③	24.92	1.79	1.34	0.90
④	20.79	1.25	0.94	0.62
⑤	16.64	0.80	0.60	0.40
⑥	12.49	0.45	0.34	0.23
⑦	6.25	0.11	0.08	0.06
⑧	0.00	0.00	0.00	0.00



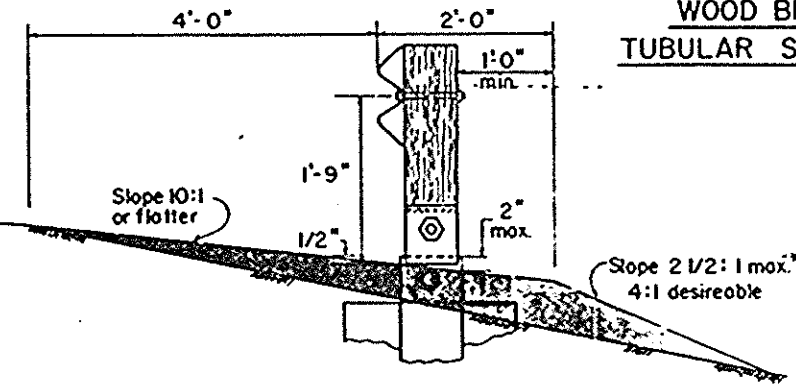
SHOULDER WIDENING TRANSITION



WOOD BREAKAWAY POSTS
TUBULAR STEEL FOUNDATIONS

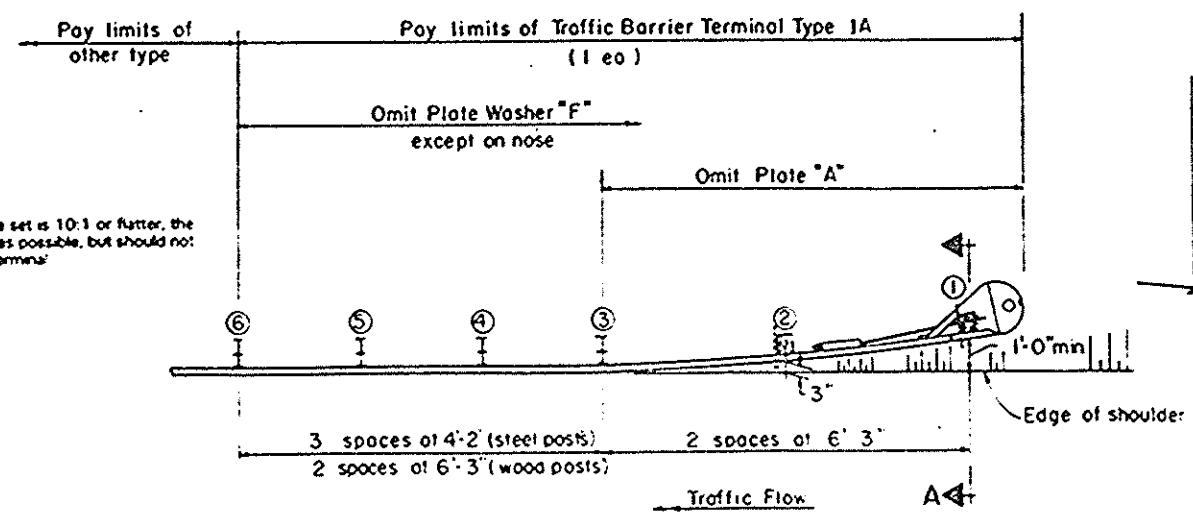


PLAN TYPE 1

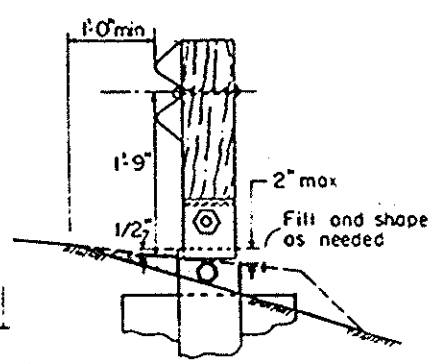


SECTION B-B

* If fill height exceeds 5'-0", use 3:1 max.



PLAN TYPE 1A



SECTION A-A

NOTE
If the surface upon which the barrier is to be set is 10:1 or flatter, the Type 1A Terminal should be flared as much as possible, but should not exceed the offsets provided for the Type 1 Terminal.

GENERAL NOTES

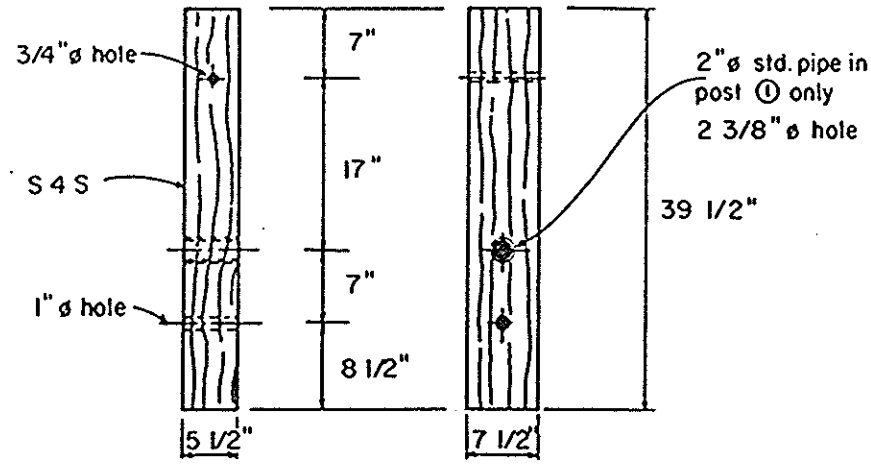
- See Standard 2230 for details of guard rail not shown.
- All steel parts shall be galvanized after fabrication.
- Posts at locations 1 & 2 shall be wood breakaway posts. Posts other than 1 & 2 may be either standard wood posts or steel posts, at the option of the Contractor. If standard wood posts are used, one post shall be located midway between and in lieu of posts 4 & 5. For Terminal Type 1, the offset (Y) for this post shall be 1.00 foot.
- The wood breakaway posts shall be treated and conform to the requirements of Art. 711.06 of the Standard Specifications.
- A two-piece assembly may be substituted for the one-piece nose shown above.
- Heavy structural tubing shall conform to the requirements of ASTM A-500 grade B or A-501.
- The Bearing Plate "K" shall be held in position by (2) two eightpenny nails driven into the post and bent over the top of the plate.

Missouri Department of Transportation
 PASSED BY ME: [Signature] 1987
 APPROVED BY: [Signature] 1987
 ENGINEER OF CONSTRUCTION

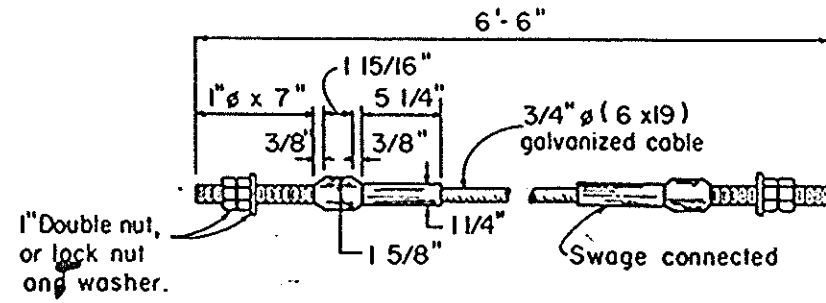
**TRAFFIC BARRIER
 TERMINAL TYPE 1 & 1A**
 (Sheet 1 of 2)
STANDARD 2336-4

F-324

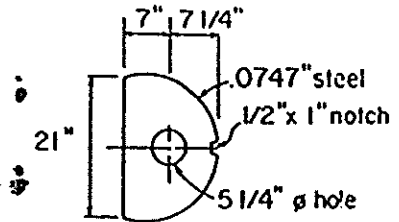
(Full Size) DWG SF



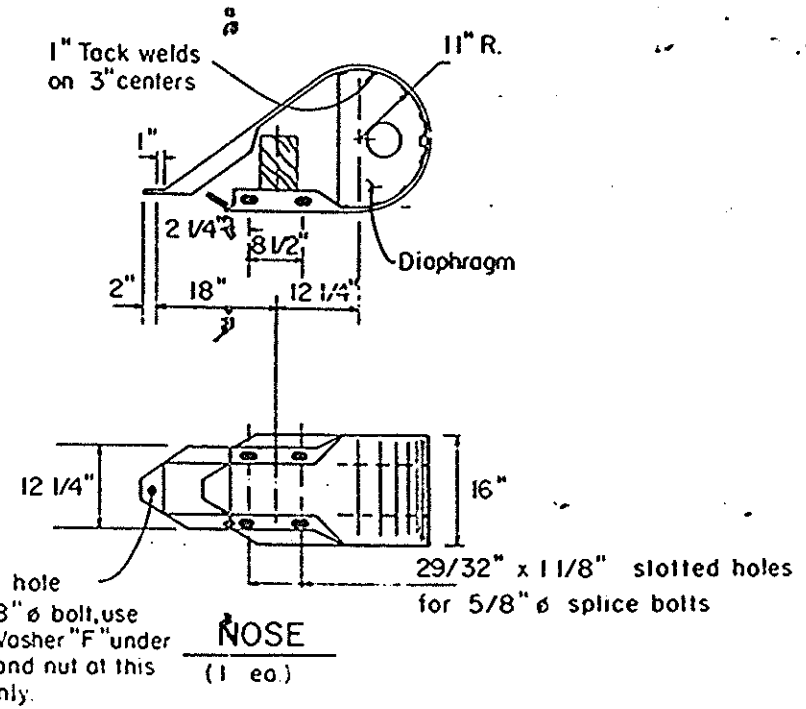
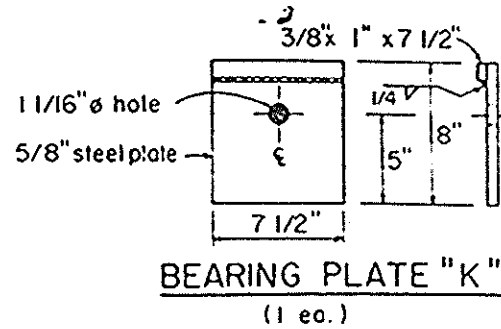
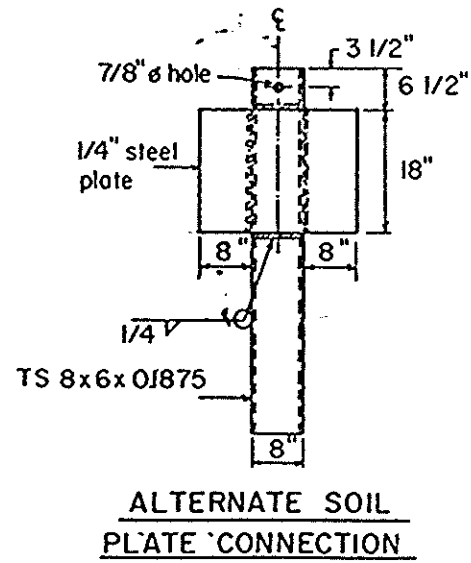
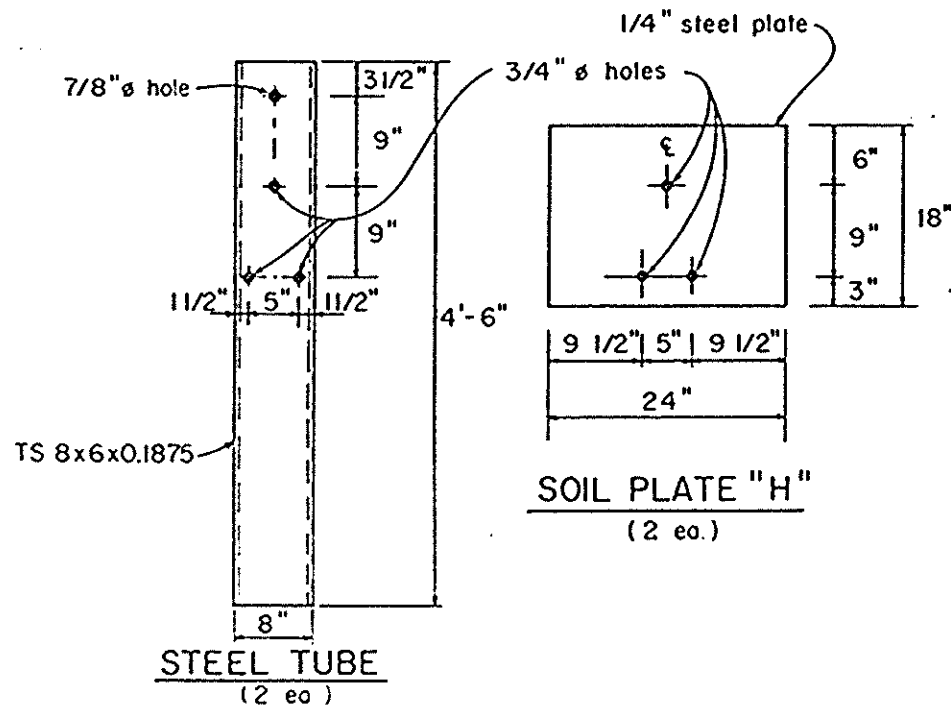
WOOD BREAKAWAY POST
 (2 ea.)



CABLE ASSEMBLY (1 ea.)
 (40,000 lbs. min. breaking strength)
 Tighten cable to taut tension.



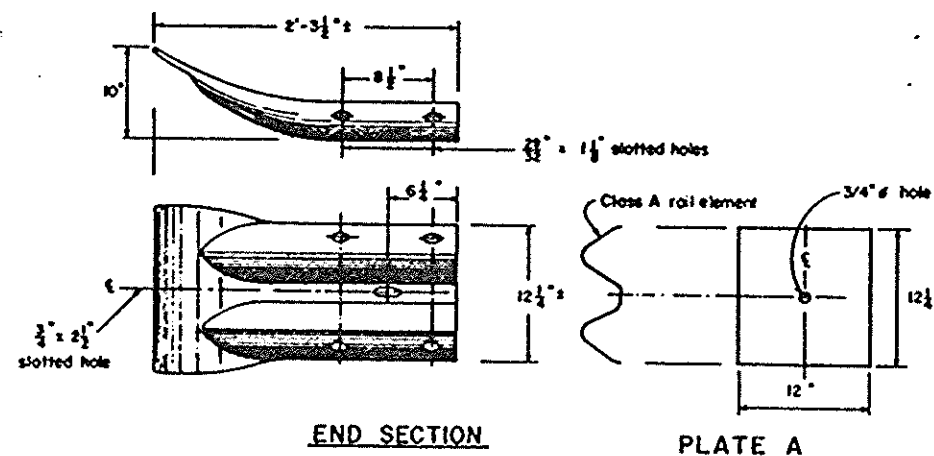
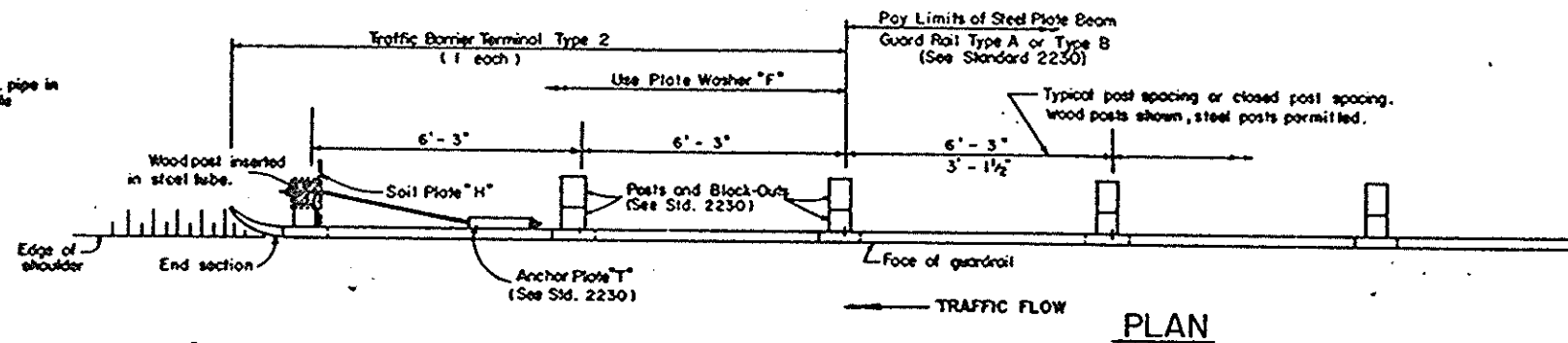
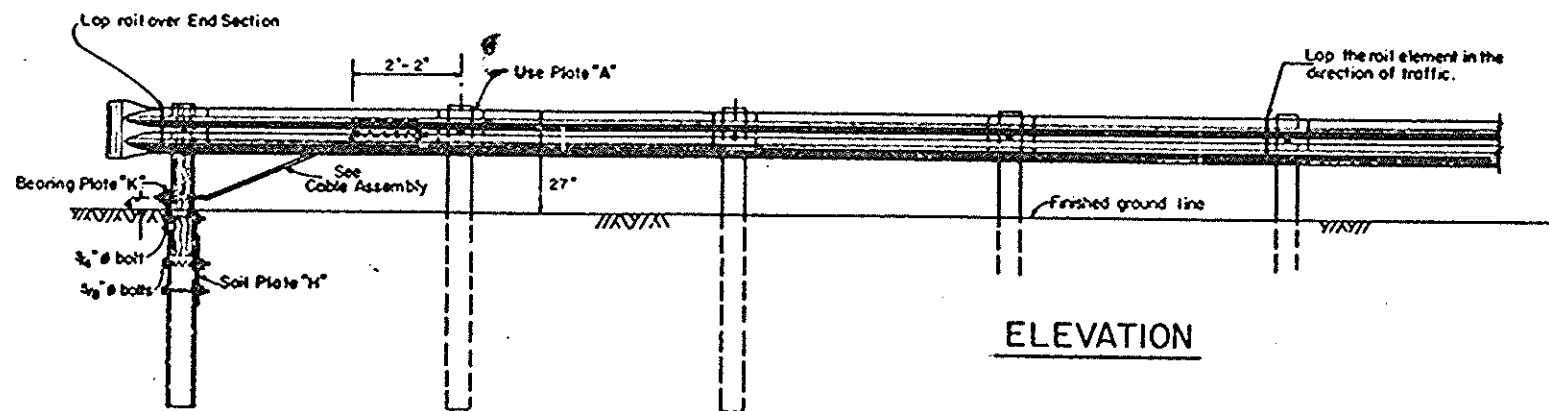
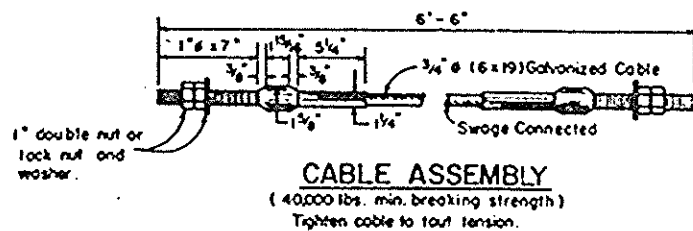
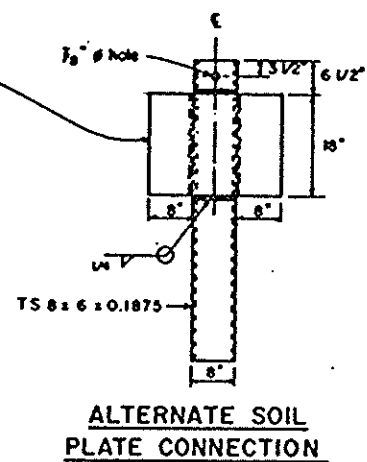
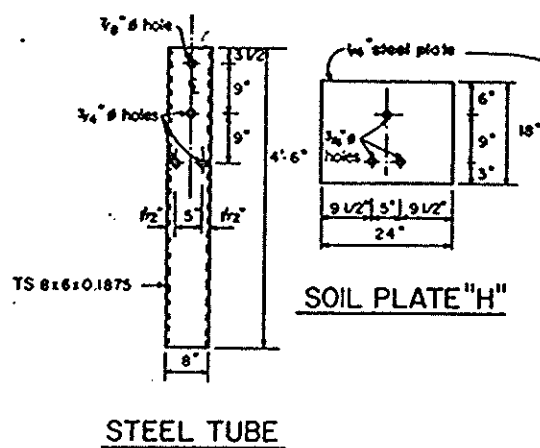
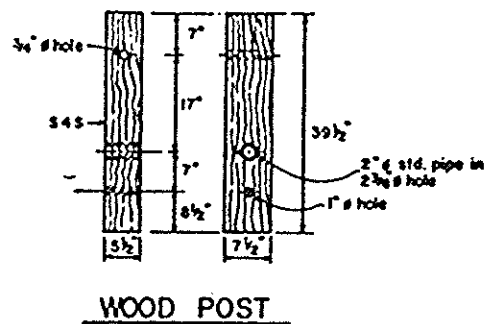
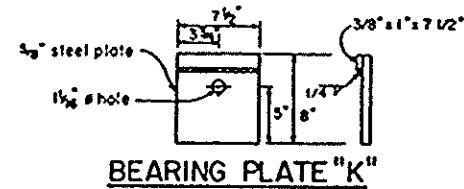
DIAPHRAGM
 (2 ea.)



Florida Department of Transportation
 PASSED Met. 30 1987
 APPROVED Met. 30 1987
 Engineer

TRAFFIC BARRIER
TERMINAL TYPE 1 & 1A
 (Sheet 2 of 2)
STANDARD 2336-4

2336-4



NOTES:

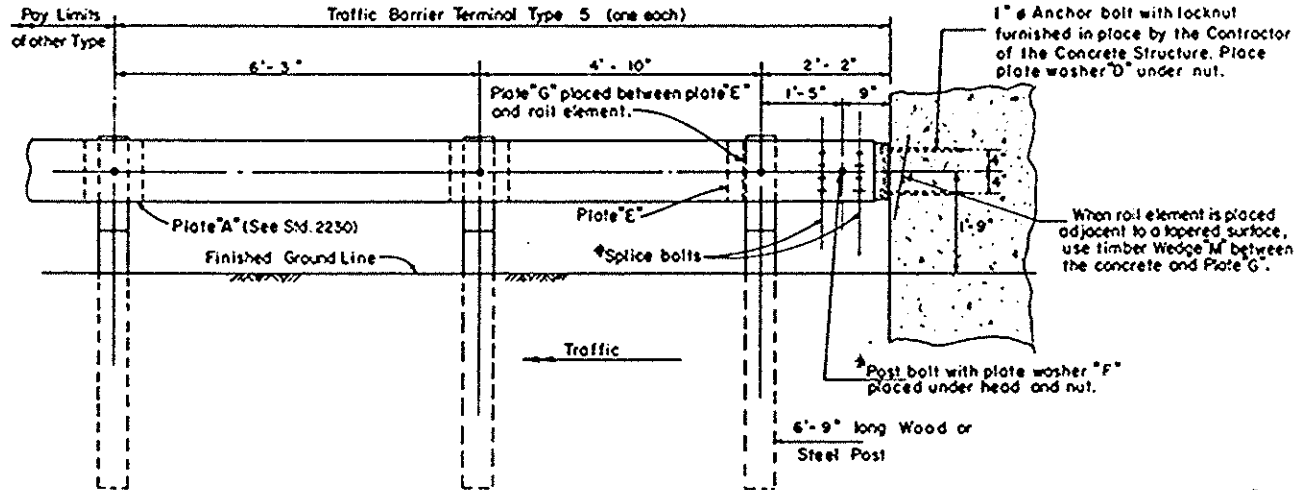
See Standard 2230 for details of Guardrail not shown.
The wood posts shall be treated and conform to the requirements of Article 711.05 of the Standard Specifications.
All steel parts shall be galvanized after fabrication.
Use Plate Washer "F" at all posts (See Std. 2230).

Missouri Department of Transportation
PASSED BY: [Signature] 3/23/91
APPROVED BY: [Signature] 3/23/91
ISSUED 8-11-77

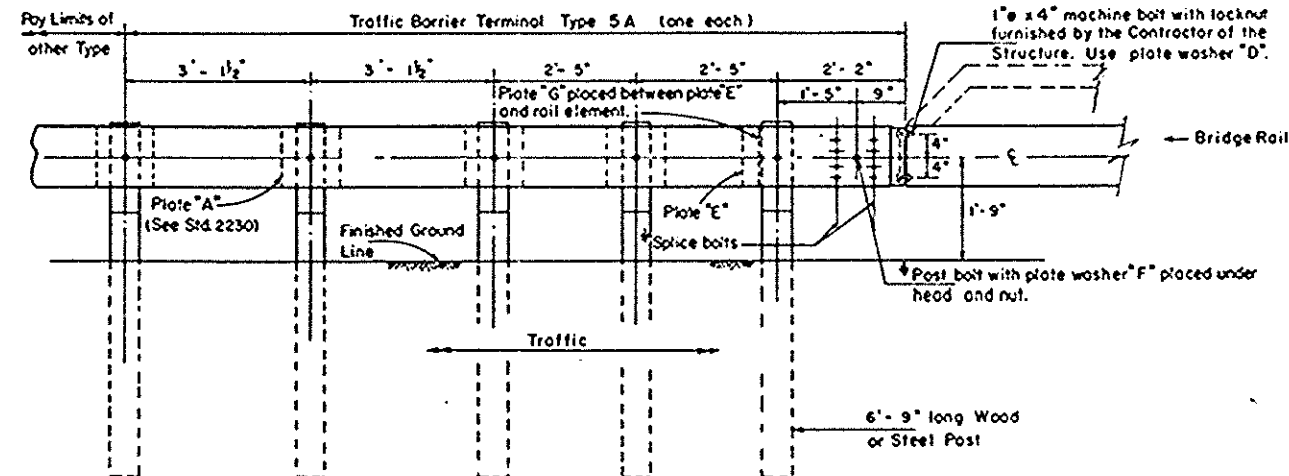
**TRAFFIC BARRIER
TERMINAL TYPE 2
STANDARD 2337-2**

Full Size

F-326 b



TRAFFIC BARRIER TERMINAL TYPE 5
ANCHORING RAIL ELEMENT TO CONCRETE BRIDGE PARAPET



TRAFFIC BARRIER TERMINAL TYPE 5A
ANCHORING RAIL ELEMENT TO TYPE "S", "S-I", "T" or "T-I" BRIDGE RAIL

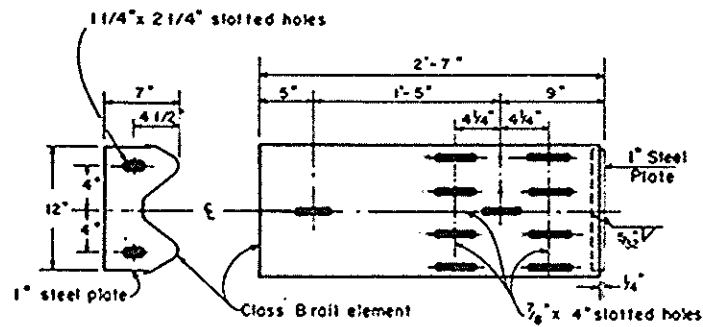


PLATE "G"

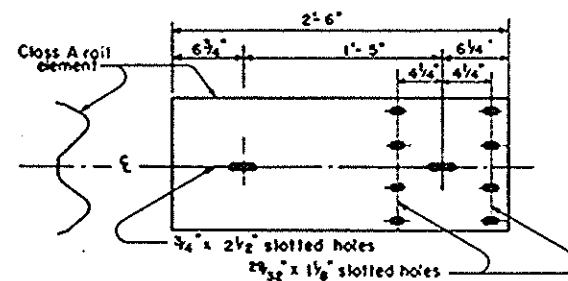


PLATE "E"

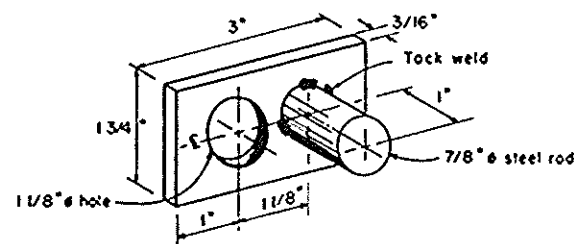
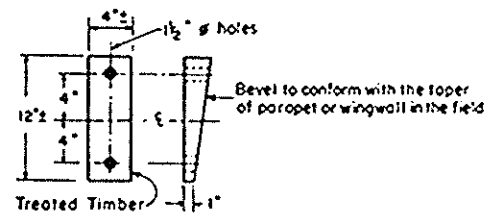
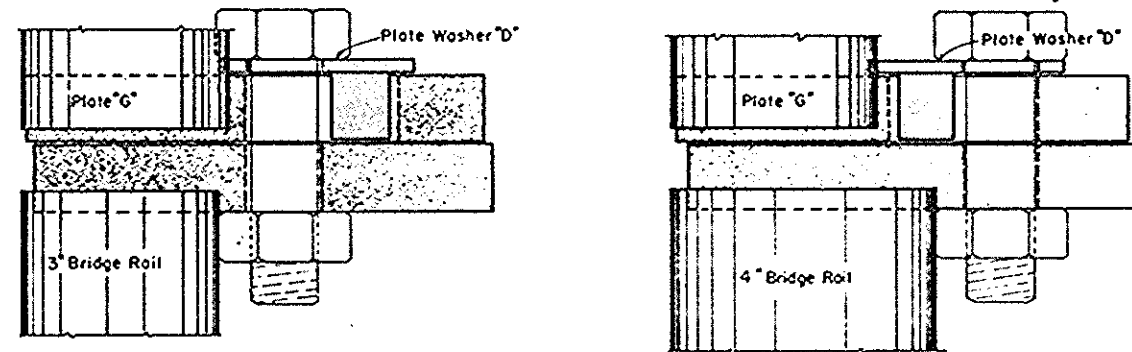


PLATE WASHER "D"



WEDGE "M"



ORIENTATION OF PLATE WASHER "D"
 (Top View)

NOTES:

Install the face of the guardrail flush with the face of the bridge rail or parapet. Install plate washer "D" so that the 1" projection fits the remainder of the slotted holes in the 1" end plate on plate "G" after the 1" bolts are in place.

* Bolts shall be provided with lock nut or double nut and shall be tightened only to a point that will allow plate "G" to be free to move when an expansion joint exists below the connector.

See Standard 2230 for details of guardrail not shown.

Missouri Department of Transportation

PASSED June 20 1984
John Elverson
 Engineer of Policy and Procedure

APPROVED June 20 1984
John Elverson
 Engineer of Design

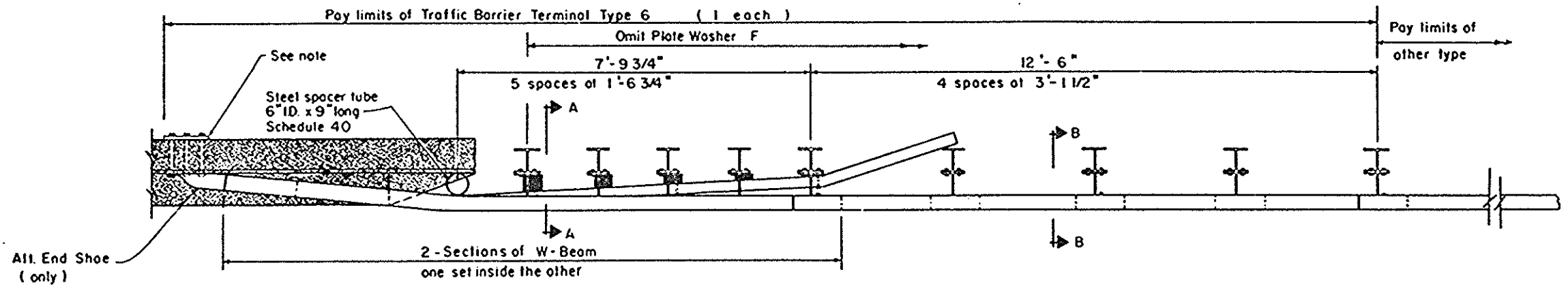
ISSUED 9-30-77

TRAFFIC BARRIER TERMINAL
TYPE 5 & 5A

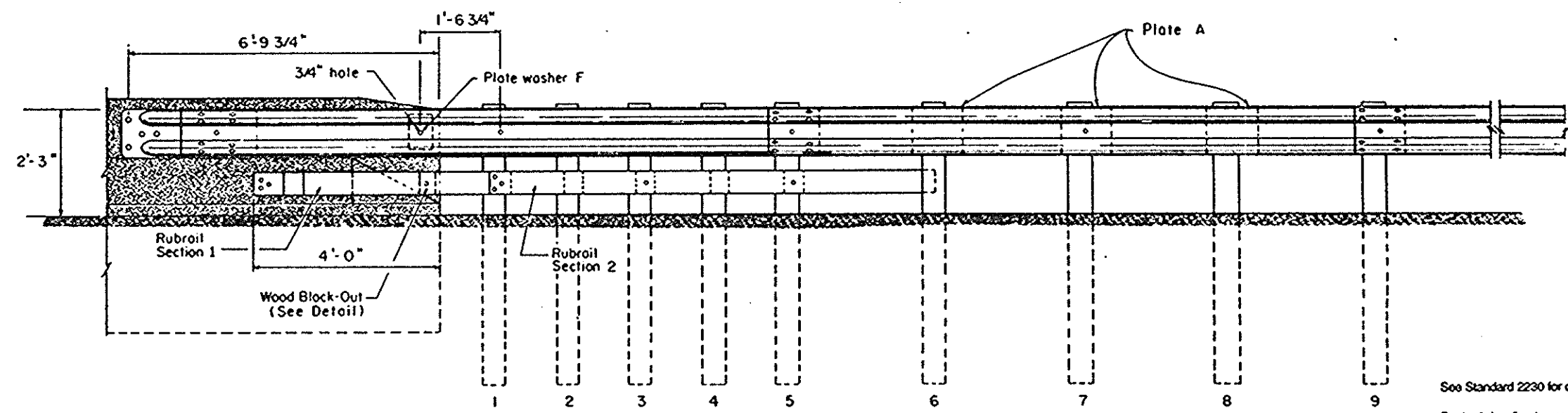
STANDARD 2340 - 4

(Full Size) D.W.W. Sr.

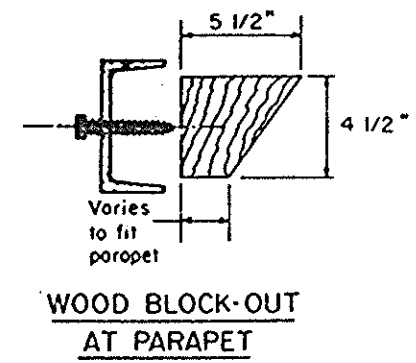
F-329 d



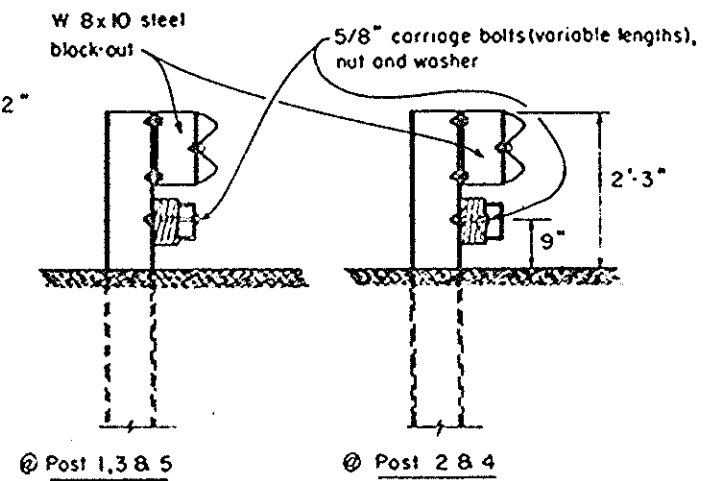
PLAN



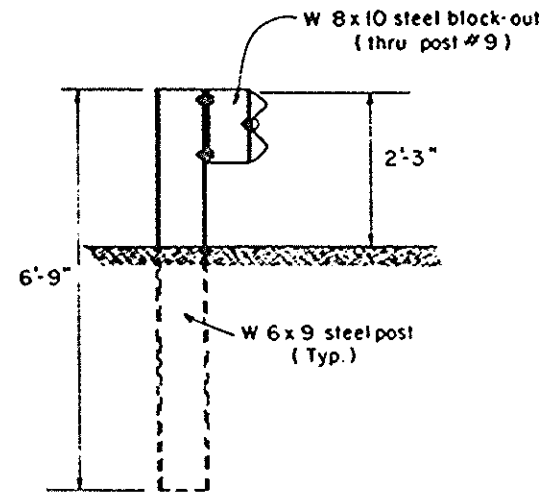
ELEVATION



WOOD BLOCK-OUT AT PARAPET



SECTION A-A



SECTION B-B

GENERAL NOTES

- See Standard 2230 for details of guardrail not shown.
- Posts 1 thru 5 only, require the hole 18 1/2" from the top of post.
- W-beam shall not be bolted to posts 2 thru 4, 6 and 8.
- Rubrail sections and the bearing plate shall conform to the requirements of AASHTO M-183. They shall be galvanized after fabrication in accordance with AASHTO M-111.
- The rubrail shall be fastened to the parapet/support by three 5/8" x 6" long hex bolts with 5/8" expansion anchors or other approved cast-in-place insert devices.
- The end shoe shall be fastened to the parapet/support by four 7/8" x 6" long hex bolts conforming to ASTM A-325 with approved 7/8" cast-in-place insert device. An alternate method which uses thru drilled holes with 5/8" bearing plate may also be used.
- Steel spacer tube shall be galvanized in accordance with Article 710.33 (b)(1) of the Standard Specifications.
- The Wood Block-Out shall be treated in accordance with Article 711.12 of the Standard Specifications.

Missouri Department of Transportation

PASSED No. 18 1991

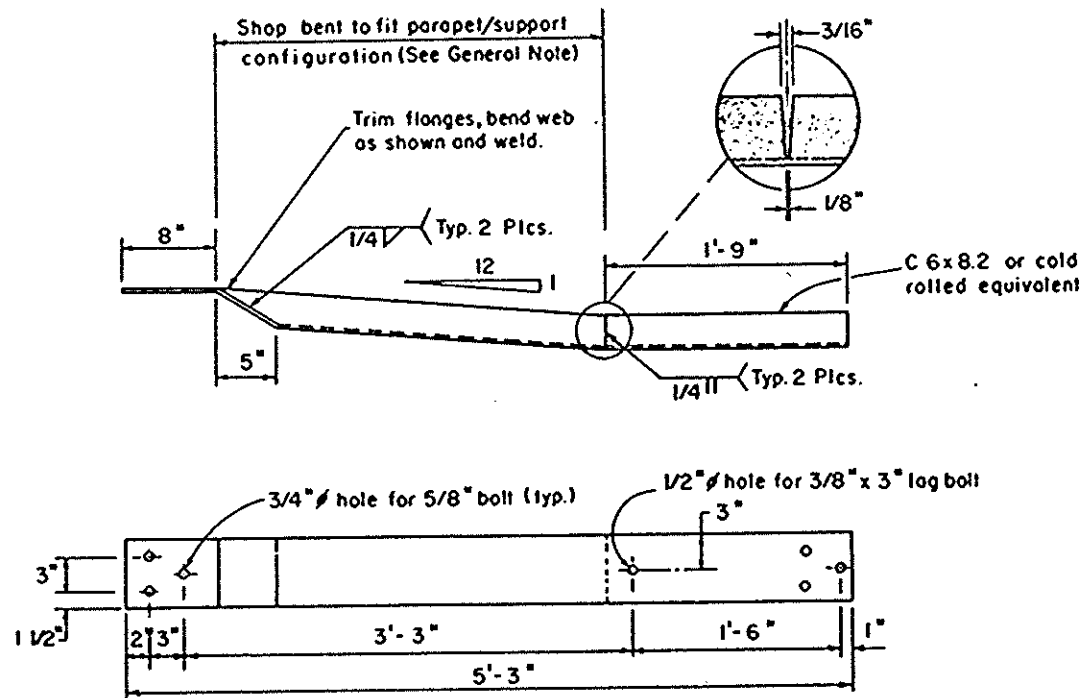
APPROVED No. 18 1991

Engineer of Design

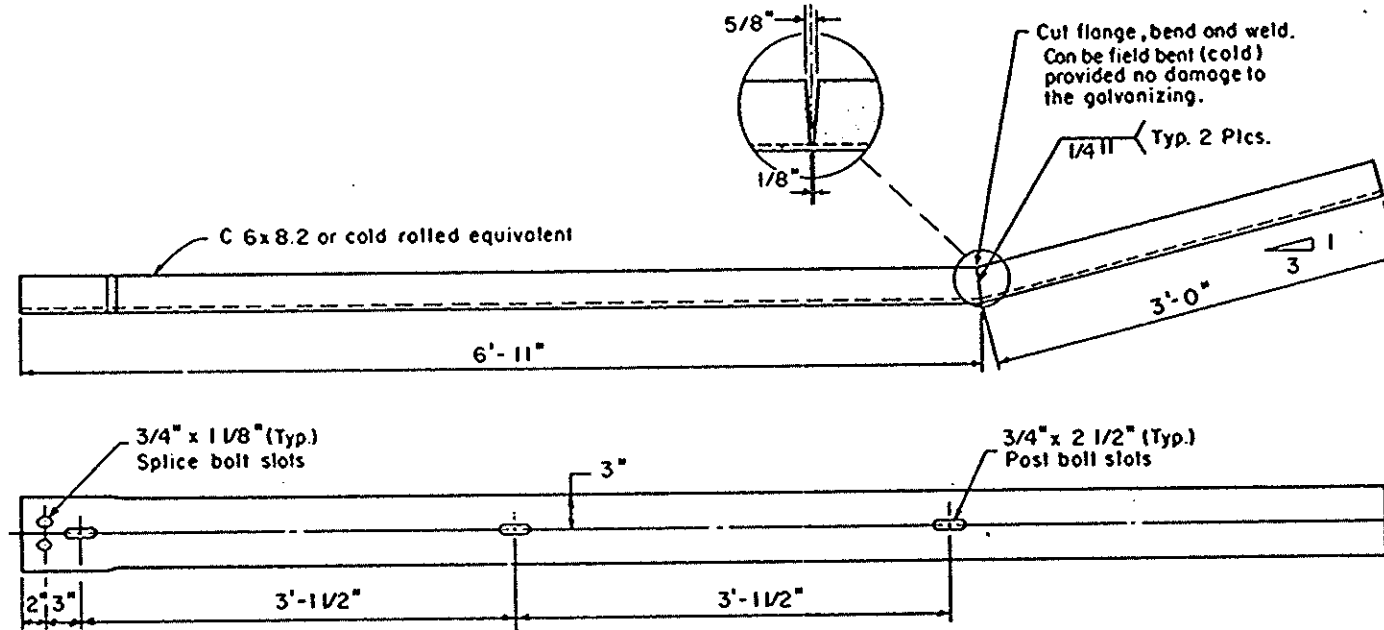
ISSUED 8-17-77

TRAFFIC BARRIER
 TERMINAL TYPE 6 (Sheet 1 of 2)
 STANDARD 2341 - 4
 (Full Size) DWS Sr

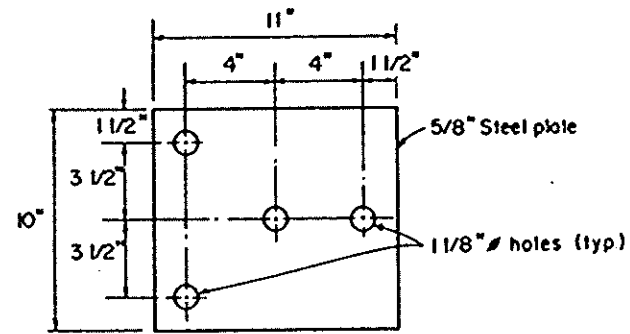
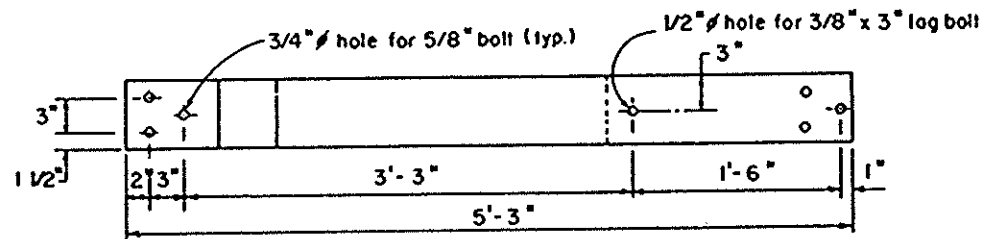
T U C C



RUBRAIL SECTION 1 DETAIL

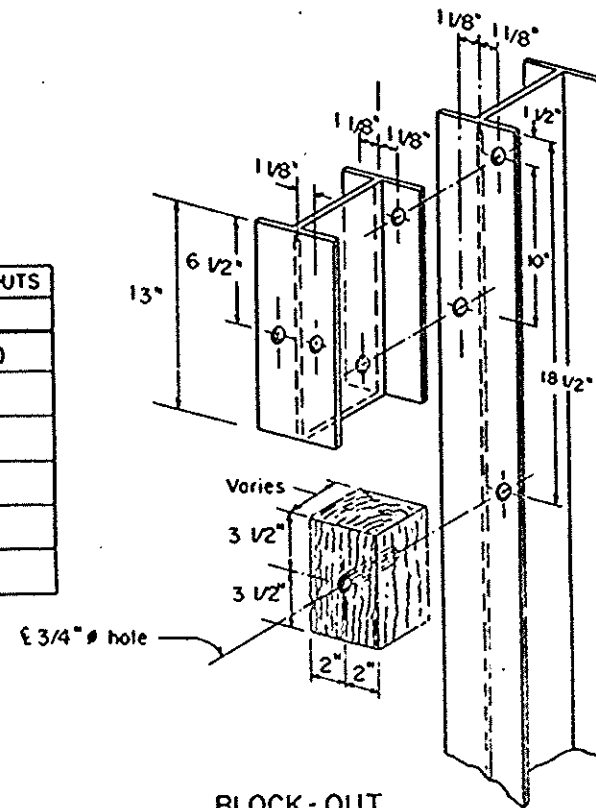


RUBRAIL SECTION 2 DETAIL



BEARING PLATE

RUBRAIL WOOD BLOCK-OUTS	
Location	Thickness
Parapet	(See Detail)
Post 1	6 1/4"
Post 2	5 1/4"
Post 3	4"
Post 4	3"
Post 5	2"



BLOCK-OUT DETAIL

TRAFFIC BARRIER
 TERMINAL TYPE 6 (Sheet 2 of 2)

STANDARD 2341-4

(Full Size)

DWW: Sr

F-331b

Illinois Department of Transportation

PASSED *[Signature]* Nov. 18, 1991

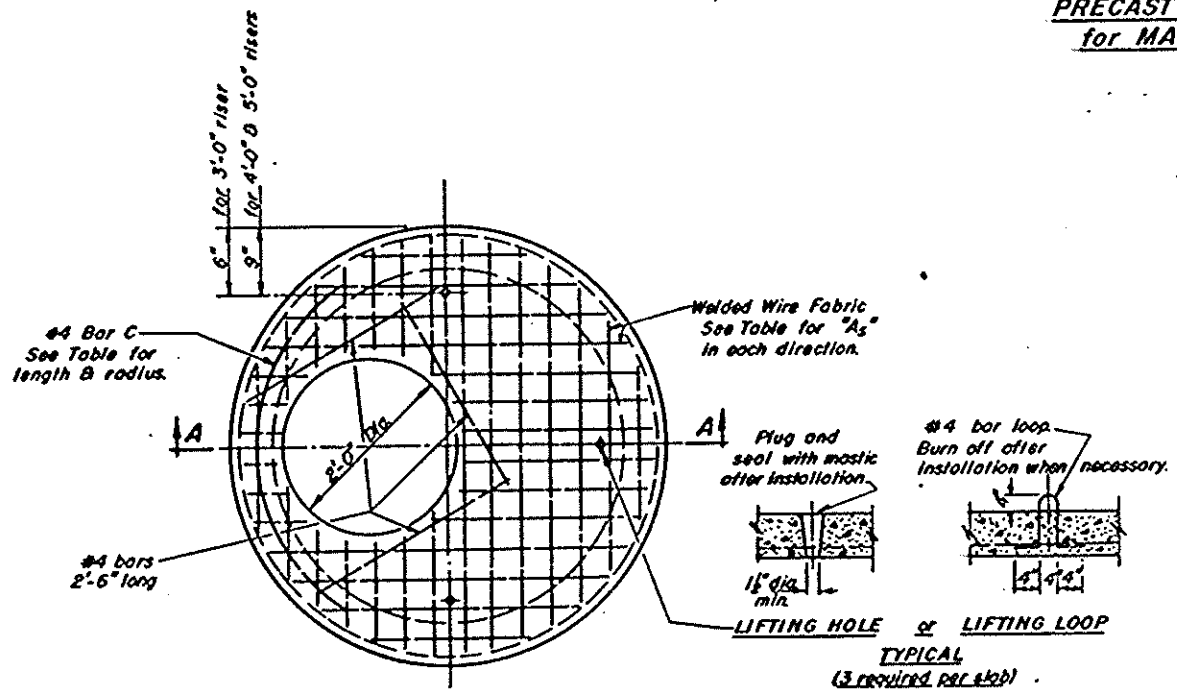
APPROVED *[Signature]* Nov. 18, 1991

ISSUED 8-11-77

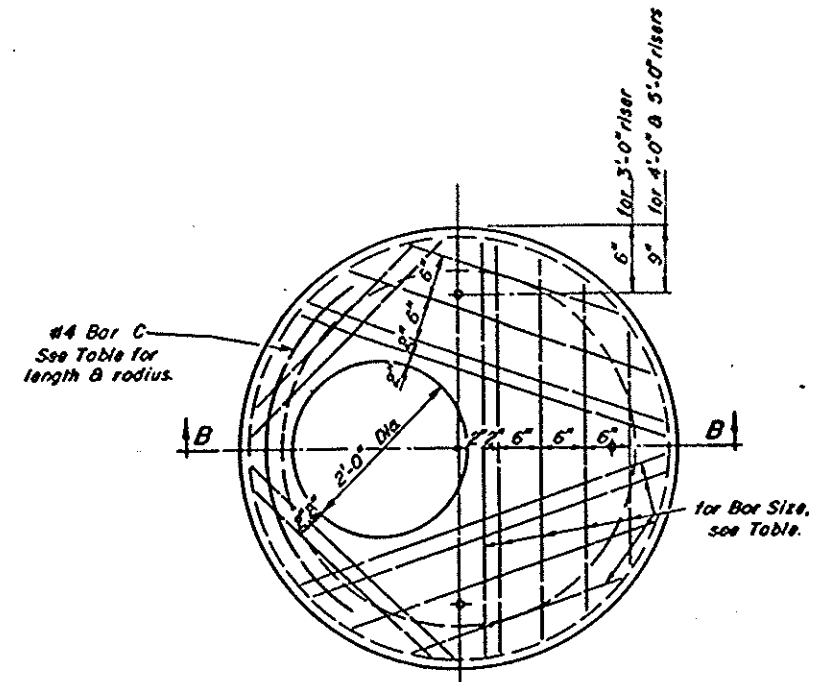
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST REINFORCED CONCRETE FLAT SLAB TOP
for MANHOLES, CATCH BASINS,
and VALVE VAULTS

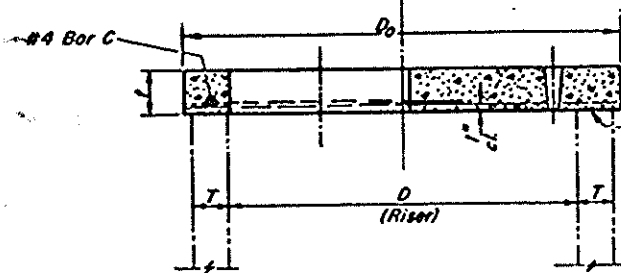
NOTE: Precast Flat Slab Tops shall conform to Section 505 of the Standard Specifications.
Reinforcement Bars or Welded Wire Fabric shall be in accordance with Article 710.13 of the Standard Specifications.
Joint configuration and dimensions shall match and fill the riser joint detail.
Lifting devices other than shown may be used subject to approval by the Engineer.
The Flat Slab Top may be used in lieu of the tapered tops shown on standards 1514, 1526, 1527, or 1886, at the option of the contractor or when field conditions prohibit the use of tapered tops.
The cost of furnishing and installing the Flat Slab Top shall be included in the unit price for Catch Basins, Manholes, or Valve Vaults.



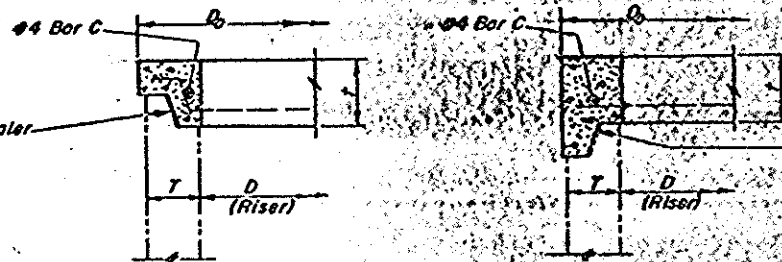
PLAN
Showing Welded Wire Fabric Reinforcement



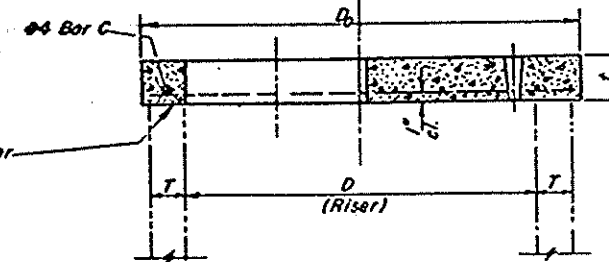
PLAN
Showing Re-bar Reinforcement with Typical Spacing



SECTION A-A



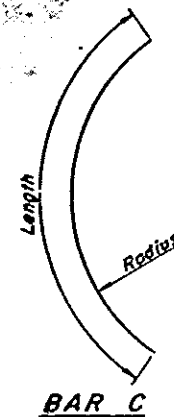
Alternate Joint Configurations



SECTION B-B

TABLE

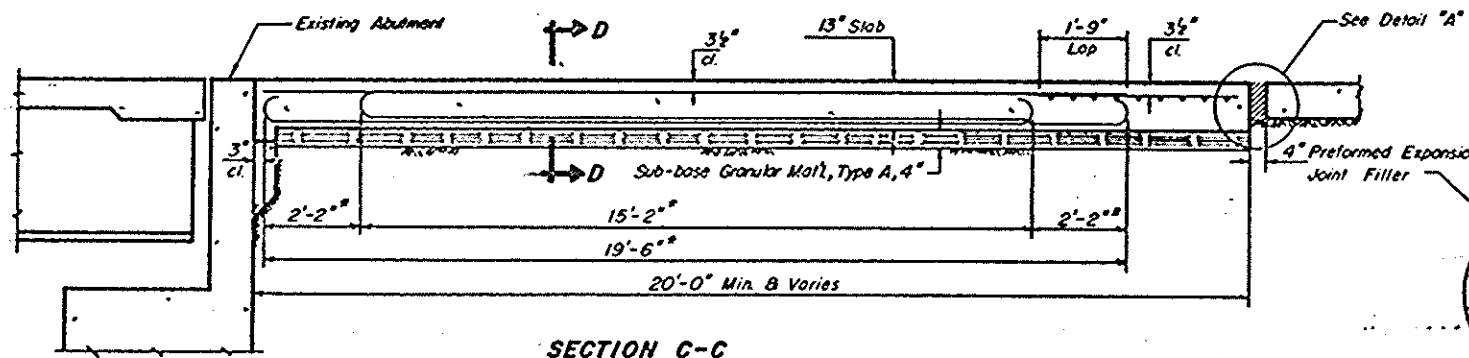
D	T	D ₀ (min.)	1	Reinforcement	
				"A _s " W.W.F. OR Bar Size each direction	#4 Bar C Length Radius
3'-0"	See Standards 1514, 1526, 1527 and 1886.	D + 2T	1	.20 sq. in. / lin. ft.	#4 4'-0" 1'-7"
4'-0"				.35 sq. in. / lin. ft.	#5 4'-6" 2'-2"
5'-0"				.35 sq. in. / lin. ft.	#5 5'-0" 2'-8"



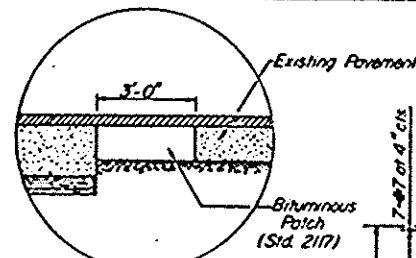
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ISSUED 9-18-74
PASSED NOV. 27, 1974	REVISIONS
APPROVED NOV. 27, 1974	DRW. NO. 11-25-74

STANDARD 2354-1
(Full Size)

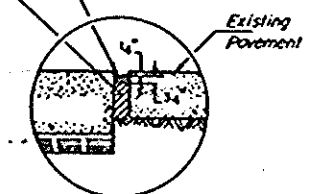
B 7.05 0



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

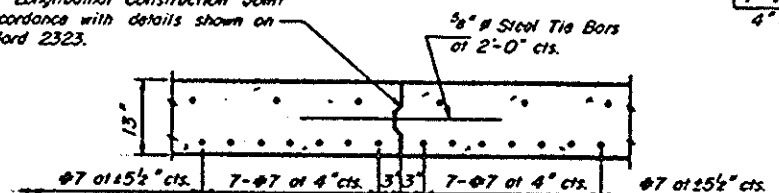


DETAIL "A"
 (When bituminous surface is being placed)

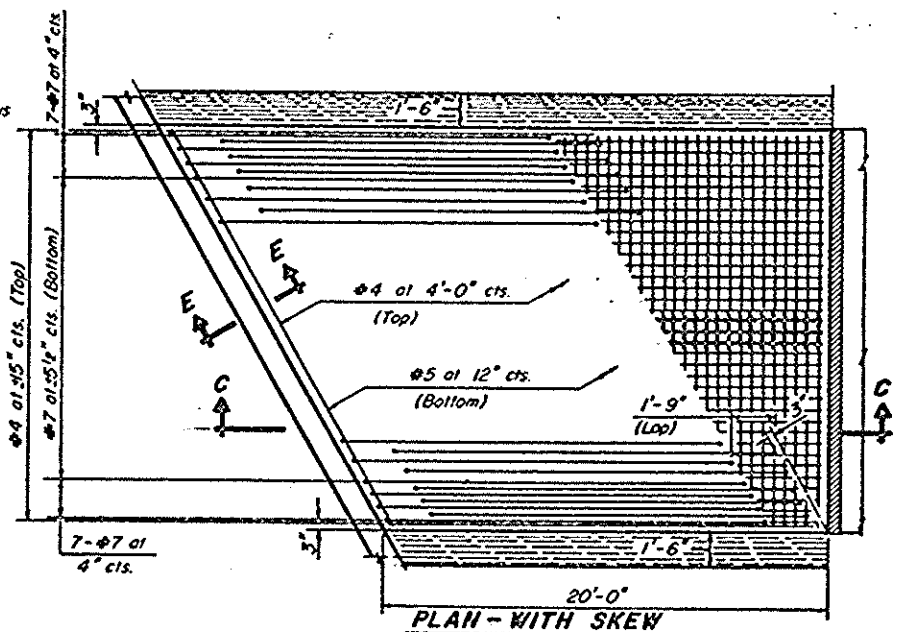


DETAIL "A"
 (P.C.C. Pavement Construction)

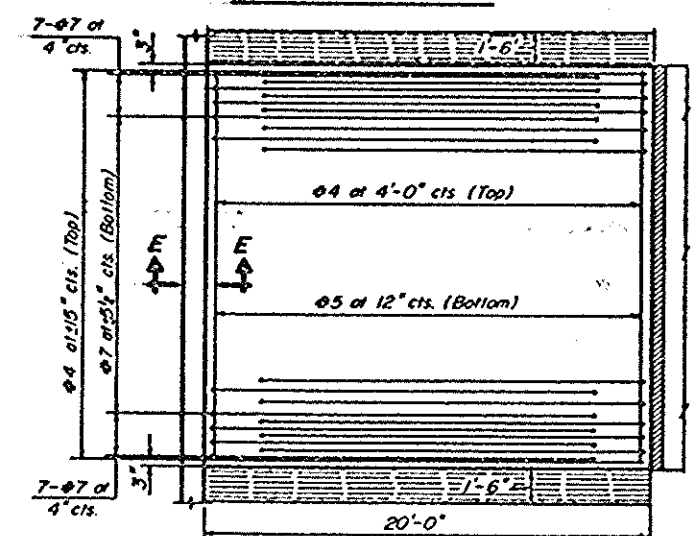
Keyed Longitudinal Construction Joint in accordance with details shown on Standard 2323.



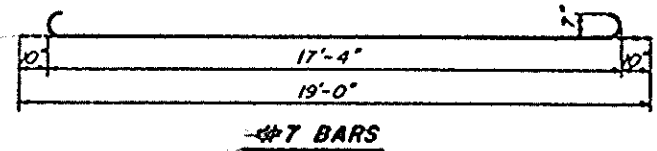
As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



PLAN - WITH SKEW

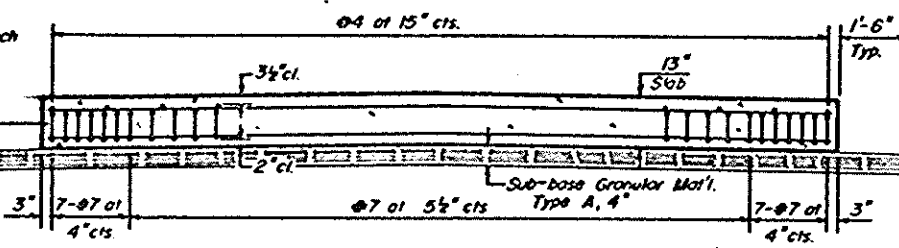


PLAN - WITHOUT SKEW

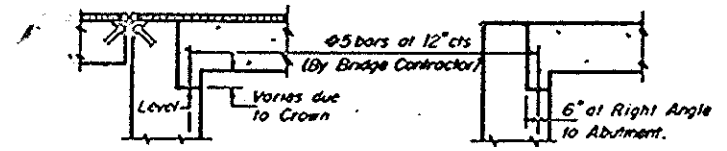


#7 BARS

When the road plans show curb and gutter, gutter, or bridge approach shoulder pavement adjacent to approach slabs, place 1/2" # steel tie bars at 2'-6" centers in accordance with the detail for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item. Transitions for curb and gutter or gutter shall be as shown on the plans.



SECTION D-D



SECTION E-E

Notes:
 For skew of less than 10° omit wire fabric. For skew of 10° or more use Welded Wire Fabric, 6" x 6" - W5.5 x W5.5, placed 3 1/2" below top of slab. Expanded Metal weighing not less than 78 Pounds per 100 Sq. Ft. or a welded bar mat weighing not less than 78 Pounds per 100 Sq. Ft. having members of equal size in both directions and spaced not over 8" apart may be used instead of the Welded Wire Fabric, 6" x 6" - W5.5 x W5.5, provided the expanded metal or bar mat is furnished at no additional cost to the State. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. 11.31 or 11.53, Grade 60.

DESIGN STRESSES

$f_y = 60,000$ p.s.i.
 $f'_c = 3,500$ p.s.i.
 $n = 8.5$

GENERAL NOTES

The cost of tie bars, expansion joint filler, sub-base, welded wire fabric and bituminous prime when required shall be considered as included in the unit cost of the Bridge Approach Pavement.
 Preformed Expansion Joint Filler shall conform to Art. 715.10 of the Standard Specifications. Width of Bridge Approach Slab shall be determined before the reinforcement bars are fabricated.
 The bituminous patch, when required, will be paid for in accordance with Section 620 of the Standard Specifications.

Ohio Department of Transportation
 APPROVED Mar. 10, 1986
 [Signature]
 APPROVED Mar. 10, 1986
 [Signature]

BRIDGE APPROACH PAVEMENT
 Sheet 1 of 2
STANDARD 2382-2

H-S-306

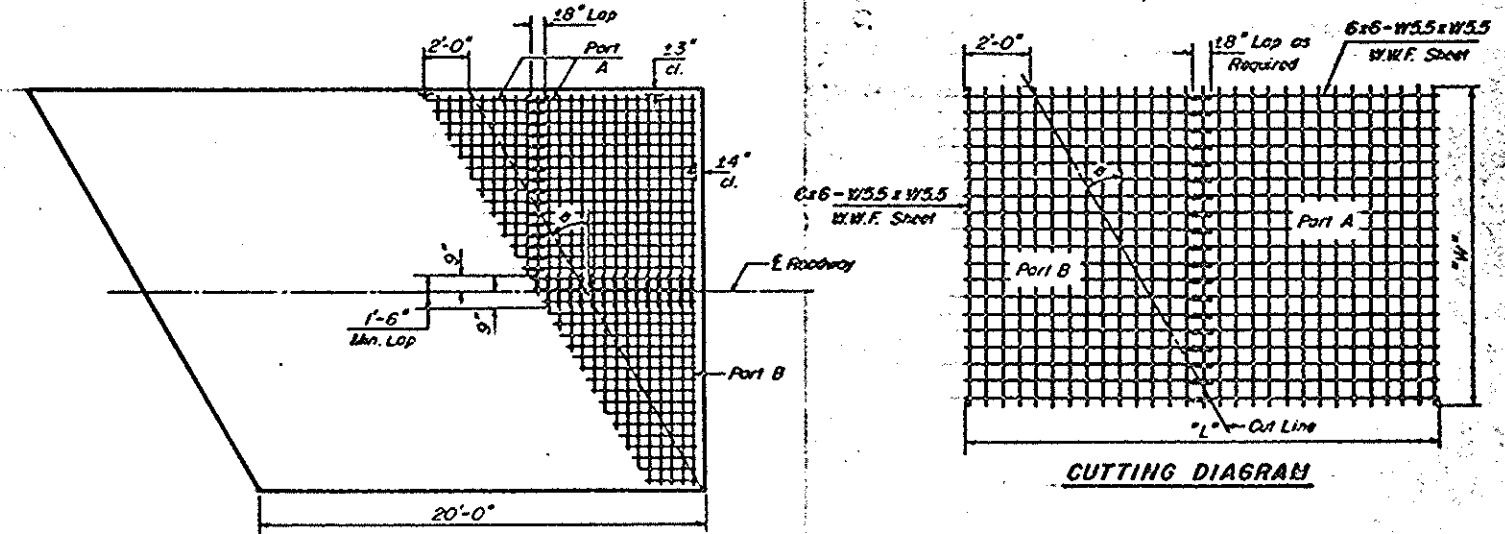
Note: The notation for the number of bars given as "4 x 2" indicates 4 lines of bars with 2 lengths per line. Min. bar lap = 1'-3"

Slew Angle Degrees	Bottom Reinforcement		Top Reinforcement		Reinforcement (Total Weight) (Pounds)	Slab Area (Sq Yds)	6x6-W5.5 x W5.5 W.W.F.	
	Transverse #5 No.	Longitudinal #7 Length	Transverse #4 No.	Longitudinal #4 Length			Dimensions L(11)xW(11)	Area* (Sq Yds)
18'-0" PAVEMENT								
0	20	17'-6"	6	17'-6"	2300	40.0		
5	20	17'-7"	6	17'-7"	2302	41.6		
10	20	17'-9"	6	17'-9"	2306	43.2	7'-0" x 9'-6"	7.4
15	20	18'-1"	5	18'-1"	2303	44.8	8'-6" x 9'-6"	9.0
20	19	18'-8"	5	18'-8"	2297	46.6	10'-6" x 9'-6"	11.1
25	18	19'-4"	5	19'-4"	2292	48.4	12'-3" x 9'-6"	12.9
30	18	20'-3"	5	20'-3"	2313	50.4	14'-3" x 9'-6"	15.0
35	17	21'-4"	5	21'-4"	2315	52.6	16'-6" x 9'-6"	17.4
40	16	22'-10"	4	22'-10"	2307	55.1	19'-0" x 9'-6"	20.1
45	14	24'-9"	4	24'-9"	2293	58.0	21'-9" x 9'-6"	23.0
50	13	27'-3"	4	27'-3"	2308	61.5	25'-6" x 9'-6"	26.9
55	12x2	15'-9"	3x2	15'-9"	2322	65.7	29'-9" x 9'-6"	31.4
60	10x2	18'-0"	3x2	18'-0"	2313	71.2	35'-3" x 9'-6"	37.2
24'-0" PAVEMENT								
0	20	23'-6"	6	23'-6"	3019	53.3		
5	20	23'-7"	6	23'-7"	3021	56.1		
10	20	23'-10"	6	23'-10"	3028	59.9	8'-0" x 12'-6"	11.1
15	20	24'-4"	5	24'-4"	3024	61.9	10'-3" x 12'-6"	14.2
20	19	25'-0"	5	25'-0"	3014	64.9	12'-6" x 12'-6"	17.4
25	18	25'-11"	5	25'-11"	3008	68.2	15'-0" x 12'-6"	20.8
30	18	27'-2"	5	27'-2"	3036	71.8	17'-9" x 12'-6"	24.7
35	17	28'-8"	5	28'-8"	3039	75.7	20'-9" x 12'-6"	28.8
40	16x2	16'-0"	4x2	16'-0"	3035	80.2	24'-0" x 12'-6"	33.3
45	14x2	17'-3"	4x2	17'-3"	3031	85.3	27'-6" x 12'-6"	38.2
50	13x2	18'-10"	4x2	18'-10"	3046	91.4	32'-9" x 12'-6"	45.5
55	12x2	21'-1"	3x2	21'-1"	3047	99.0	38'-3" x 12'-6"	53.1
60	10x2	24'-0"	3x2	24'-0"	3032	108.7	45'-6" x 12'-6"	63.2

*Area does not include 8" longitudinal laps.
W.W.F. = Welded Wire Fabric

Slew Angle Degrees	Bottom Reinforcement		Top Reinforcement		Reinforcement (Total Weight) (Pounds)	Slab Area (Sq Yds)	6x6-W5.5 x W5.5 W.W.F.	
	Transverse #5 No.	Longitudinal #7 Length	Transverse #4 No.	Longitudinal #4 Length			Dimensions L(11)xW(11)	Area* (Sq Yds)
26'-0" PAVEMENT								
0	20	25'-6"	6	25'-6"	3238	57.8		
5	20	25'-7"	6	25'-7"	3240	61.1		
10	20	25'-11"	6	25'-11"	3249	64.4	8'-6" x 13'-6"	12.8
15	20	26'-5"	5	26'-5"	3243	67.8	11'-0" x 13'-6"	16.5
20	19	27'-2"	5	27'-2"	3233	71.4	13'-6" x 13'-6"	20.3
25	18	28'-2"	5	28'-2"	3227	75.3	16'-3" x 13'-6"	24.4
30	18x2	15'-3"	5x2	15'-3"	3278	79.5	19'-0" x 13'-6"	28.5
35	17x2	16'-1"	5x2	16'-1"	3282	84.1	22'-3" x 13'-6"	33.4
40	16x2	17'-2"	4x2	17'-2"	3269	89.3	25'-9" x 13'-6"	38.6
45	14x2	18'-6"	4x2	18'-6"	3243	95.3	30'-0" x 13'-6"	45.0
50	13x2	20'-4"	4x2	20'-4"	3264	102.5	35'-0" x 13'-6"	52.5
55	12x2	22'-9"	3x2	22'-9"	3265	111.4	41'-3" x 13'-6"	61.9
60	10x2	26'-0"	3x2	26'-0"	3251	122.8	49'-0" x 13'-6"	73.5
36'-0" PAVEMENT								
0	20x2	18'-3"	6x2	18'-3"	4471	60.0		
5	20x2	18'-4"	6x2	18'-4"	4475	66.3		
10	20x2	18'-6"	6x2	18'-6"	4483	92.7	10'-0" x 18'-6"	20.6
15	20x2	18'-10"	5x2	18'-10"	4475	99.3	13'-0" x 18'-6"	27.7
20	19x2	19'-5"	5x2	19'-5"	4462	106.2	17'-0" x 18'-6"	34.9
25	18x2	20'-2"	5x2	20'-2"	4455	113.6	20'-6" x 18'-6"	42.1
30	18x2	21'-0"	5x2	21'-0"	4492	121.6	24'-9" x 18'-6"	50.8
35	17x2	22'-3"	5x2	22'-3"	4501	130.4	29'-0" x 18'-6"	59.6
40	16x2	23'-9"	4x2	23'-9"	4483	140.4	33'-9" x 18'-6"	69.4
45	14x2	25'-8"	4x2	25'-8"	4450	152.0	39'-6" x 18'-6"	81.2
50	13x2	28'-2"	4x2	28'-2"	4477	165.8	46'-6" x 18'-6"	95.6
55	12x3	21'-4"	3x3	21'-4"	4492	182.8	55'-0" x 18'-6"	113.0
60	10x3	24'-4"	3x3	24'-4"	4471	204.7	65'-9" x 18'-6"	135.1

*Area does not include 8" longitudinal laps.



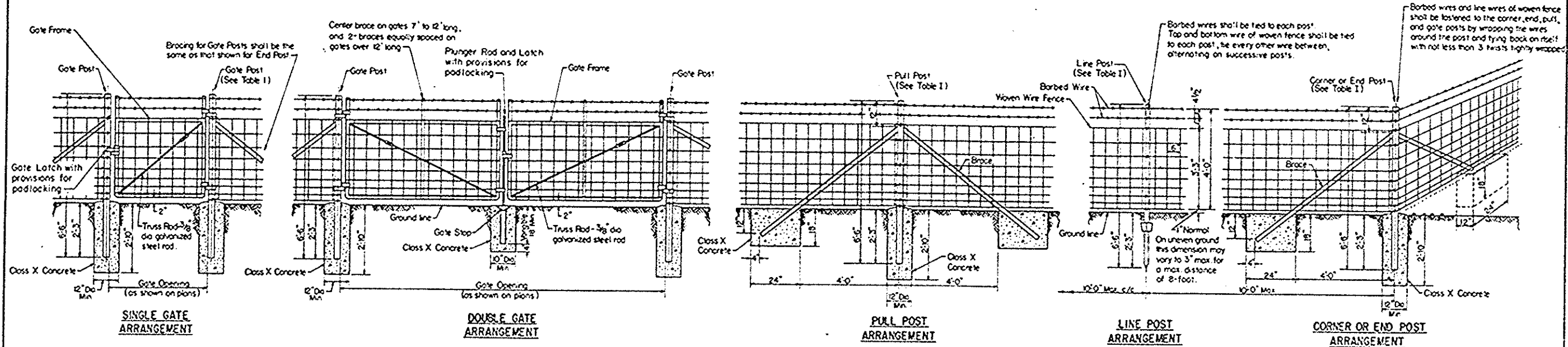
PLACEMENT OF 6x6-W5.5 x W5.5
W.W.F. only required on stews $\geq 10'$

CUTTING DIAGRAM

Missouri Department of Transportation
APPROVED: [Signature] May 10, 1986
Engineer of Bridges and Structures
APPROVED: [Signature] May 10, 1986
Engineer of Design

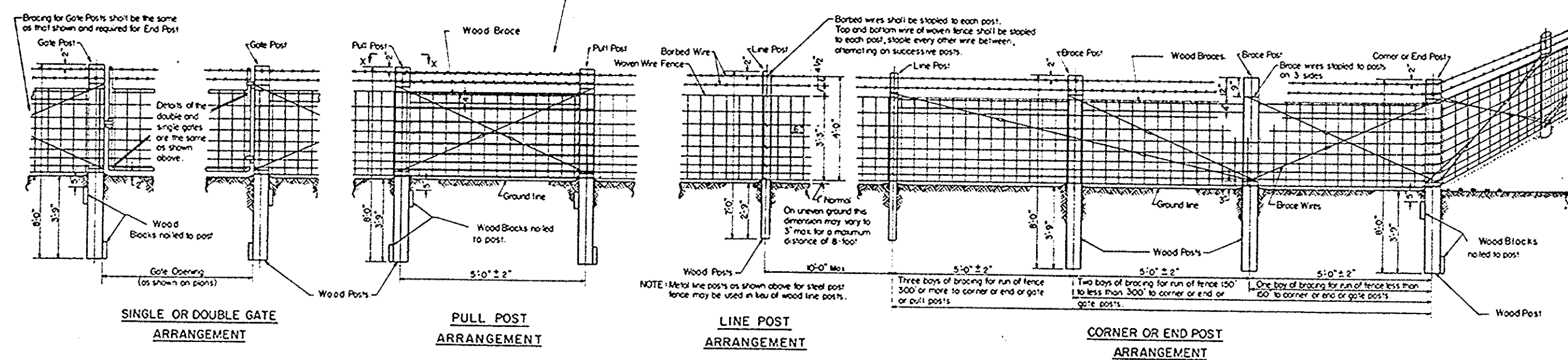
BRIDGE APPROACH PAVEMENT
Sheet 2 of 2
STANDARD 2382-2

H-S-31b



Vehicle gates to swing open 180°, and pedestrian gates to swing open 90°. Gate keepers shall be provided to hold gates in open position and they shall be located and installed as directed by the Engineer.

Pull posts shall be placed at locations determined by the Engineer. They shall be placed at 660-foot intervals between posts to which the ends of the fabric and barbed wires are fastened or midway between such posts when the distance is less than 1320' and greater than 660'.



NOTE: Metal line posts as shown above for steel post fence may be used in lieu of wood line posts.

Three bays of bracing for run of fence 300' or more to corner or end or gate or pull posts.

Two bays of bracing for run of fence 150' to less than 300' to corner or end or gate posts.

One bay of bracing for run of fence less than 60' to corner or end or gate posts.



Illinois Department of Transportation

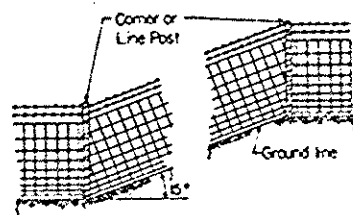
PASSED *[Signature]* DEC. 19, 1983
 ENGINEER OF DESIGN OPERATIONS

APPROVED *[Signature]* DEC. 19, 1983
 ENGINEER OF DESIGN

ISSUED 11/27/81

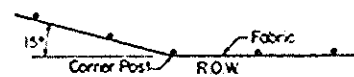
WOVEN WIRE FENCE
 (Sheet 1 of 2)
STANDARD 2169-7
 DWW S: (Full Size)

F-1104



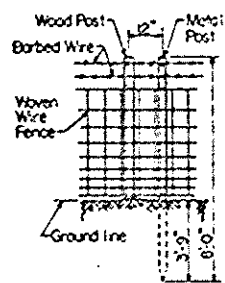
Where grade line has a change in slope of 15° or more, a corner post with bracing as required shall be placed as shown above.
Where angle is less than 15° line posts may be used.
When the tension of the fence tends to pull the posts from the ground, the line posts shall be anchored with the applicable concrete or wood anchorage specified for corner posts.

INSTALLATION ON SLOPES



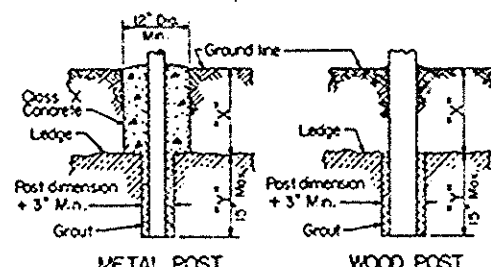
Where fence line has a change in direction of 15° or more, a corner post with bracing as required shall be placed as shown above. Where angle is less than 15° and existing conditions require corner post, they shall be placed as directed by the Engineer.

INSTALLATION AT CORNERS



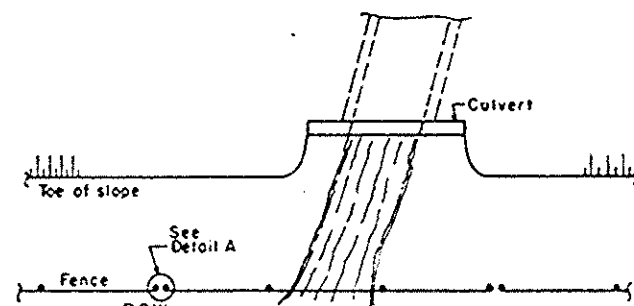
Continuous fence shall be grounded at intervals not exceeding 200 feet. There shall be a ground not exceeding 35 feet from a gate in each section of the fence adjacent to a gate. There shall be a minimum of one ground in any partial section of fence, constructed separately but in conjunction with main fence.
Fence under a power line shall be grounded by three grounds, one directly under the crossing and one on each side, 25 to 35 feet away. A single ground shall be placed directly under each telephone wire or cable crossing. Each barbed wire and the top and bottom wires of the woven fence shall be fastened to the metal post by a mechanical means to assure a tight connection for positive grounding. When metal line posts are used in lieu of wood line posts this grounding is not required.

PROTECTIVE ELECTRICAL GROUND FOR WOOD POST FENCE

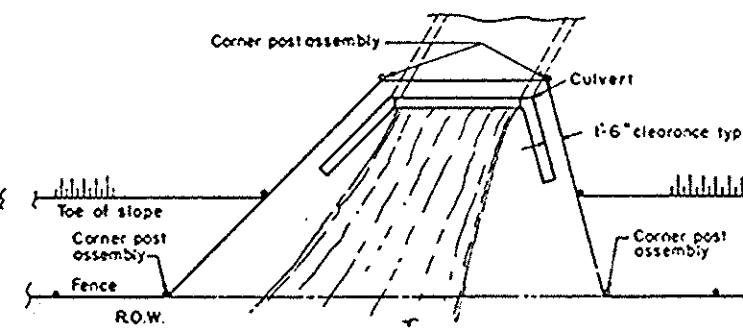


METAL POST
WOOD POST
"X" + "Y" shall not exceed 27", 33", or 45" as applicable. When "X" is 0" to 12", 18", or 30", "Y" = 15", and the post shall be shortened as required. When "X" exceeds 12", 18", or 30", "Y" shall be decreased correspondingly.

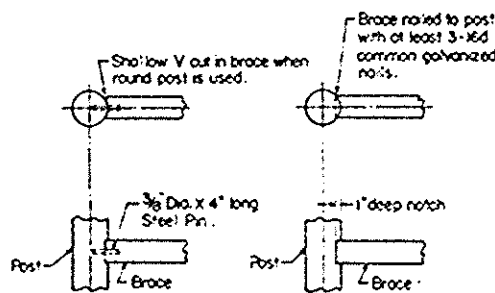
FOOTING FOR POSTS WHEN ROCK LEDGE IS ENCOUNTERED



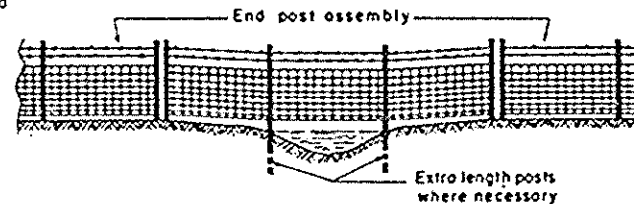
PLAN AT STREAM CROSSING



PLAN AT HEADWALL

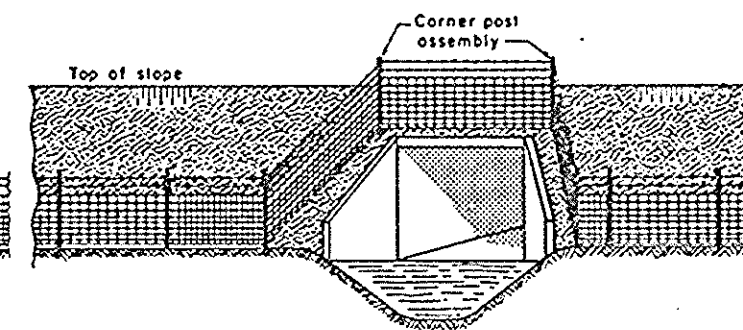


ALTERNATE DETAILS FOR FASTENING WOOD BRACE TO WOOD POST



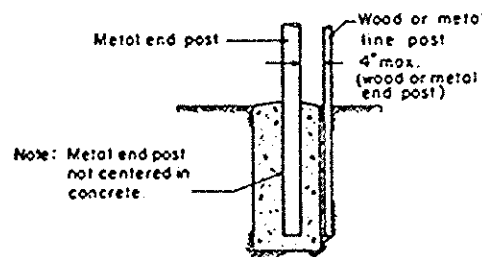
The woven wire fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts shown on DETAIL A when shown on the plans.

ELEVATION INSTALLATION OVER STREAM



When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.

ELEVATION INSTALLATION AROUND HEADWALL



Note: Metal end post not centered in concrete.

DETAIL A

METAL POSTS SIZES & WEIGHTS

GATE POSTS				GATE FRAMES		CORNER or END or PULL POSTS		LINE POSTS		BRACES	
Single gate up to 4 Ft. Double gate up to 8 Ft.		Single gate over 4 Ft. to 8 Ft. Double gate over 8 Ft. to 16 Ft.		Single gate over 8 Ft. to 12 Ft. Double gate over 16 Ft. to 24 Ft.		Section		Section		Section	
Section	Lbs./Lin.Ft.	Section	Lbs./Lin.Ft.	Section	Lbs./Lin.Ft.	Section	Lbs./Lin.Ft.	Section	Lbs./Lin.Ft.	Section	Lbs./Lin.Ft.
Type A: Pipe 2.375" O.D.	3.65	Type A: Pipe 2.875" O.D.	5.79	Type A: Pipe 3 1/2" O.D.	7.58	Type A: Pipe 2.375" O.D.	3.65	Type A: Pipe 1.315" O.D.	1.68	Type A: Pipe 1.66" O.D.	2.27
Type B: Pipe 2.375" O.D.	3.11	Type B: Pipe 2.875" O.D.	4.64	—	—	Type B: Pipe 2.375" O.D.	3.11	Type B: Pipe 1.315" O.D.	1.34	Type B: Pipe 1.66" O.D.	1.83
Type C: Pipe 2.375" O.D.	3.09	Type C: Pipe 2.875" O.D.	3.78	—	—	Type C: Pipe 2.375" O.D.	3.09	Type C: Pipe 1.315" O.D.	1.33	Type C: Pipe 1.66" O.D.	1.82
Tubing 2 1/2" Sq.	4.32	Tubing 3" Sq.	5.78	Tubing 3" Sq.	8.80	Tubing 2 1/2" Sq.	4.32	Tubing 1" Sq.	1.41	—	—
Ang. 2 1/2" x 2 1/2" x 1/4" H, I, U.	4.1	Ang. 3 1/2" x 3 1/2" x 1/4" H, I, U.	6.1	Ang. 3 1/2" x 3 1/2" x 3/8" H, I, U.	8.5	Ang. 2 1/2" x 2 1/2" x 1/4" H, I, U.	4.1	L, C, T, U, Y or other approved structural shapes	1.33 min	Ang. 2 1/2" x 2 1/2" x 1/4" or other approved structural shapes	3.19
structural shapes	4.1 min.	structural shapes	6.1 min.	structural shapes	8.5 min.	structural shapes	4.1 min.	structural shapes	1.33 min	structural shapes	3.1 min.

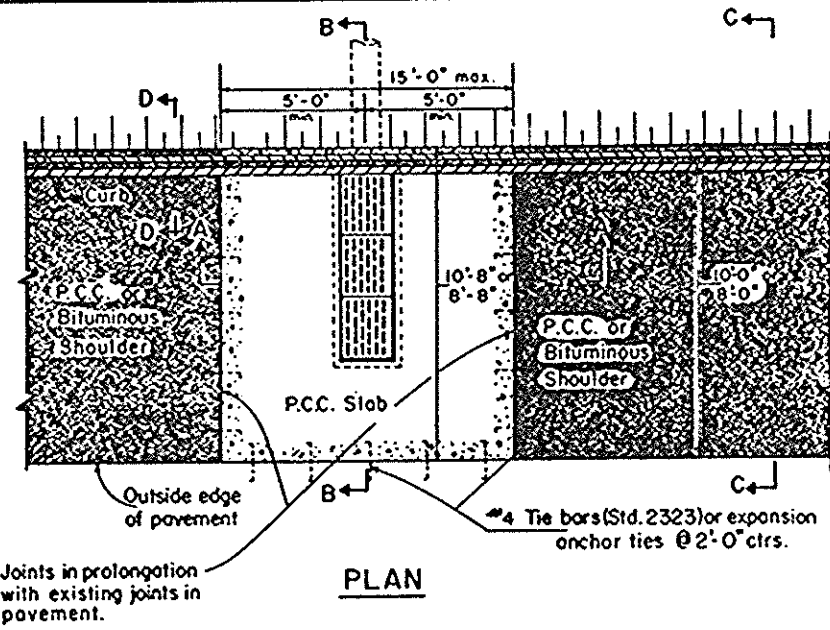
WOOD ITEMS

GATE, CORNER, END or PULL POSTS	BRACES and LINE POSTS	BLOCKS
6" to 7" Top dia	4" to 5" Top dia.	2" x 8" x 18" (S4S or Rough Sawn)
6" x 6" (S4S or Rough Sawn)	4" x 4" (S4S or Rough Sawn)	—
All wood posts, braces and blocks shall be treated in accordance with Section 711 of the Standard Specifications.		

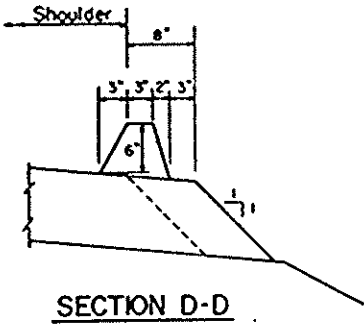
Missouri Department of Transportation
 PASSED: Dec 19, 1983
 APPROVED: Dec 19, 1983
 ISSUED 11-27-81

WOVEN WIRE FENCE
 (Sheet 2 of 2)
STANDARD 2169-7
 DWW Sr (Full Size)

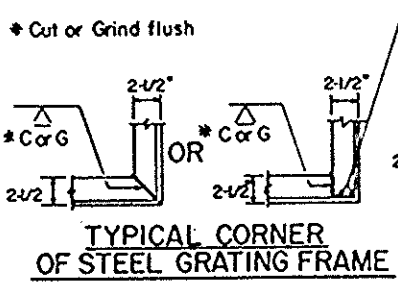
F-111



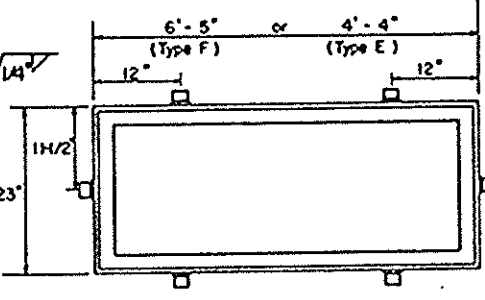
PLAN



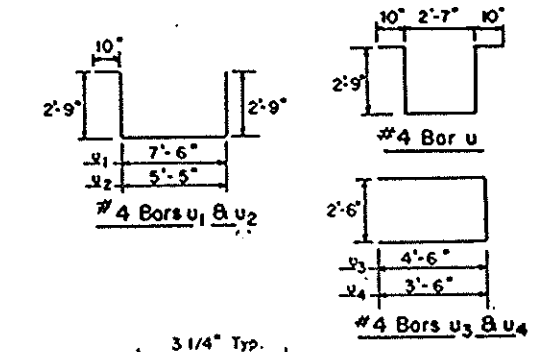
SECTION D-D



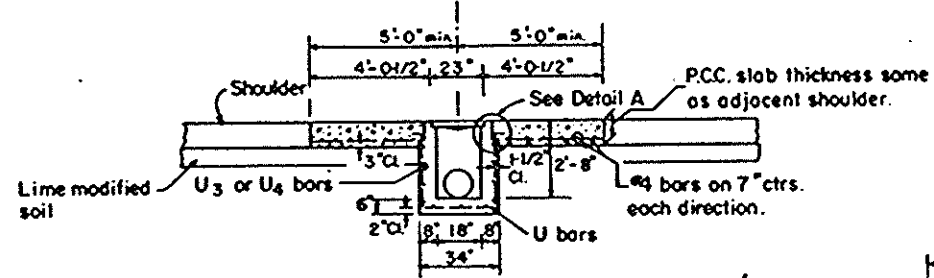
TYPICAL CORNER OF STEEL GRATING FRAME



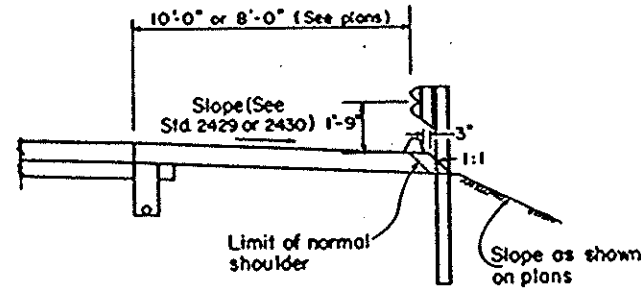
DETAIL OF STEEL FRAME



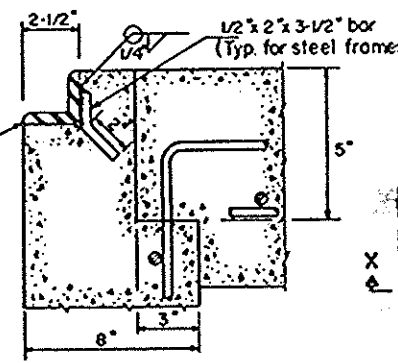
DETAIL B



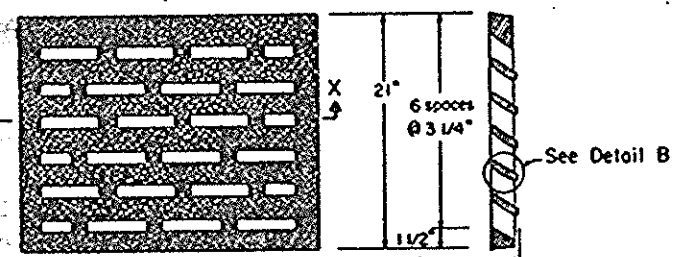
SECTION A-A



SECTION C-C

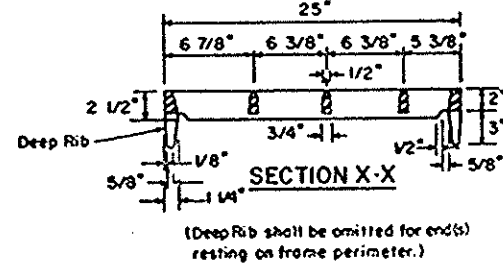


DETAIL A



DETAIL OF CAST GRATE

SECTION Y-Y



SECTION X-X

GENERAL NOTES

Use Type E Inlet Box for 6' shoulder widths; use Type F Inlet Box for 10' shoulder widths.
 The P.C. Concrete used in the slab shall meet the requirements of Section 405 of the Standard Specifications.
 When the slab is constructed adjacent to bituminous pavement and shoulders, the bituminous shoulder shall be placed first and then sawed full depth and removed in the area of the P.C.C. slab. The area of the bituminous shoulder removed will not be deducted from the area of bituminous shoulder originally measured for payment.
 When the slab is constructed adjacent to P.C.C. pavement and shoulders, it may be constructed separately or monolithic with the shoulders.
 The lengths of #4 bars used in the P.C.C. slab shall be as required to accommodate the length, width, and spacing shown.
 For placement of drainage elements on existing construction with existing rigid pavement, substitute expansion anchor ties for tie bars. For nonrigid pavements or monolithic construction of P.C.C. slab and shoulder, omit tie bars.
 The material for Pipe Drains - 12" shall be either corrugated steel, aluminum alloy pipe or polyethylene (PE) pipe with U.V. protection.
 The Contractor shall have the option to use bituminous or P.C.C. material to construct the curb.
 Corrugated steel and aluminum alloy pipe shall have 2' coupling bands for 2:1 slope or steeper. All pipe connections shall be watertight.

INLETS

Class X concrete or Precast concrete shall be used throughout. Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be not less than 4000 p.s.i. at 28 days. All exposed edges, except the upper perimeter, shall be beveled 3/4".
 A 3" deep sand bedding conforming to Article 703.01 (FA 1 or FA 2) shall be provided under the full length and width of precast units, and all voids around the pipe drain in entrance, both inside and outside, shall be sealed with mortar.
 Steel frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M111 after fabrication.
 Cast grating and frames shall conform to Article 710.17 of the Standard Specifications.

BASIS OF PAYMENT

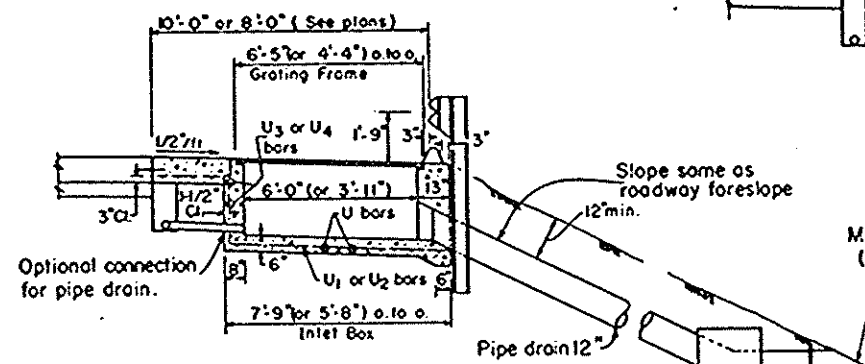
Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications.
 Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications. The Class X concrete thrust blocks will be paid for at the contract unit price each for CONCRETE THRUST BLOCKS and shall include all excavation and backfilling necessary.
 The contract unit price "Each" for TYPE E INLET BOX, STANDARD 2322 or TYPE F INLET BOX, STANDARD 2322, in place, shall include the frame and grating, Class X or Precast Concrete, reinforcement bars, excavation, bedding when required, and compacted backfilling.
 P.C.C. slab will be measured in place and paid for in square yards as PORTLAND CEMENT CONCRETE SHOULDERS of the thickness specified, which price shall include the cost of sawing and removal of the bituminous shoulder (when necessary), subgrade preparation, expansion anchor bars and reinforcement. In computing the area for payment, a deduction will be made for the area displaced by the inlet.

Material Required for One Type F Inlet Box

Bar	No.	Size	Length
u	8	#4	9'-9"
u ₁	3	#4	13'-10"
u ₃	6	#4	11'-6"
Concrete - Class X or Precast		Cu. Yds.	1.6
Reinf. Bars		Lbs.	125
Grating		Sq. Ft.	11.0

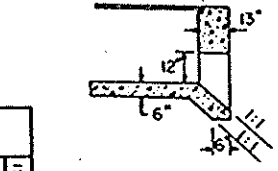
Material Required for One Type E Inlet Box

Bar	No.	Size	Length
u	6	#4	9'-9"
u ₂	3	#4	11'-9"
u ₄	6	#4	9'-6"
Concrete - Class X or Precast		Cu. Yds.	1.2
Reinf. Bars		Lbs.	100
Grating		Sq. Ft.	7.3



SECTION B-B

Cast in place class X concrete thrust block 2'-0" x 2'-0" x 2'-0" (Not required when the difference in elevation between the inlet box invert and pipe drain outfall is less than 3 feet.)

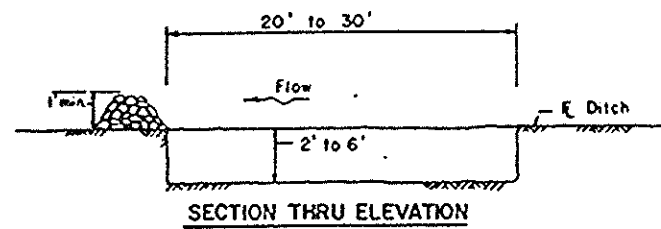


BOX OUTLET WHEN PRECAST

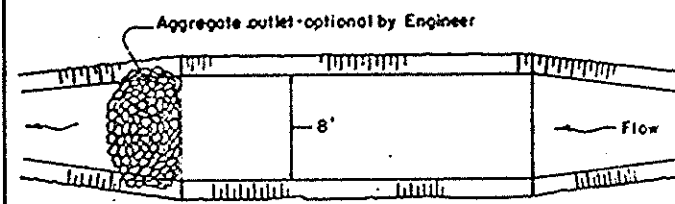
Missouri Department of Transportation
 PASSED: MEX 15 1989
 APPROVED: [Signature] 15 1989
 Engineer of Design

SHOULDER INLET WITH CURB
 STANDARD 2322 - 4
 (Full Size) DWW Sr.

SEDIMENT BASIN



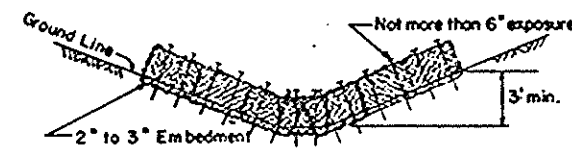
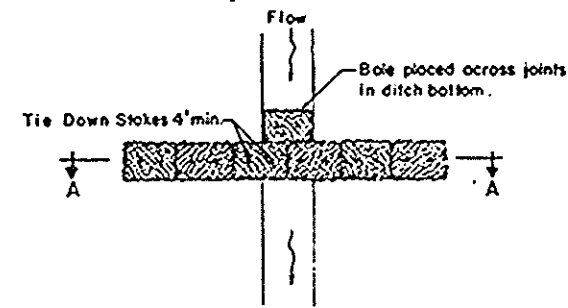
The performance of the basin will improve if put into a series.



PLAN VIEW

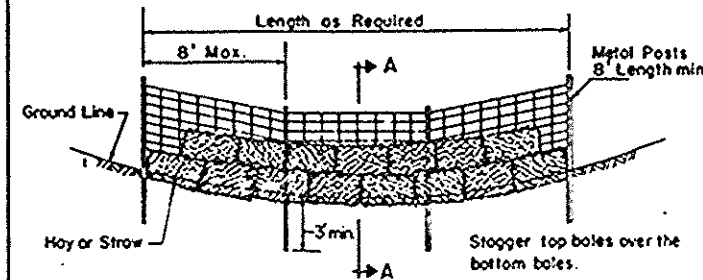
The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

HAY OR STRAW DITCH CHECK

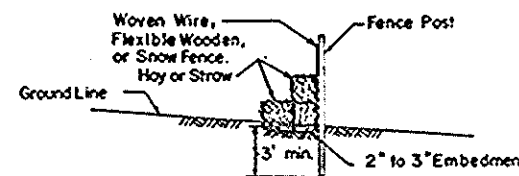


SECTION A-A

HAY OR STRAW DITCH CHECK - TWO BALES HIGH

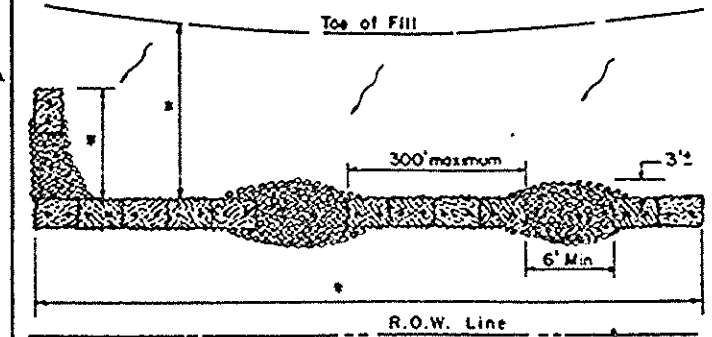


ELEVATION VIEW

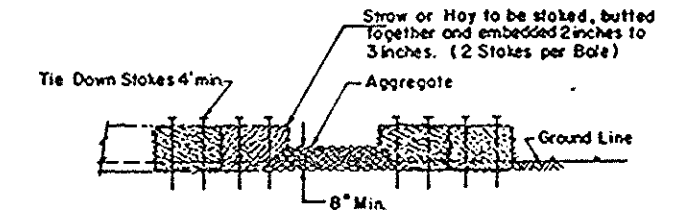


SECTION A-A

HAY OR STRAW EROSION CHECK - STONE OUTLETS



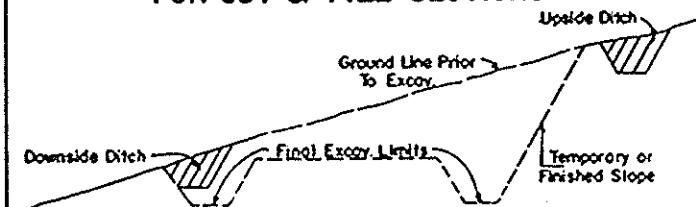
PLAN VIEW



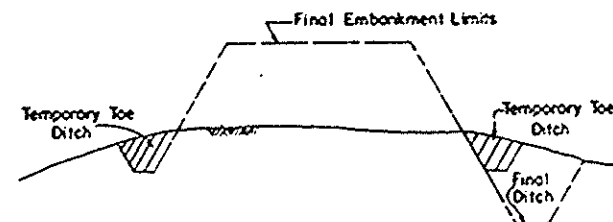
ELEVATION

* To be constructed as required

TEMPORARY DITCHES FOR CUT & FILL SECTIONS



TYPICAL CUT CROSS SECTION

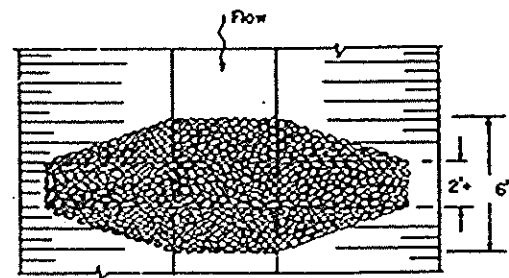


TYPICAL FILL CROSS SECTION

Temporary Ditches or the final ditch grades included in the plans shall be excavated at the earliest opportunity during construction in order to control runoff from the embankment or cut section per Art. 202.06 of the Standard Specifications. Some means of trapping siltation should be provided at the outflow of these ditch systems.

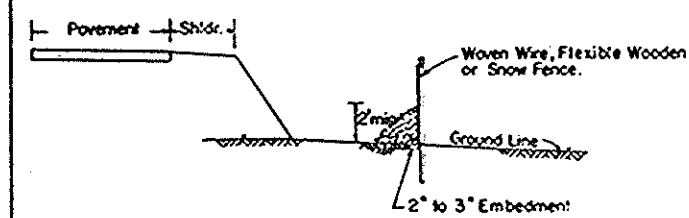
Illinois Department of Transportation
 PASSED *[Signature]* 5/1/79
 APPROVED *[Signature]* 5/1/79
 ISSUED 3-6-79

AGGREGATE DITCH CHECK

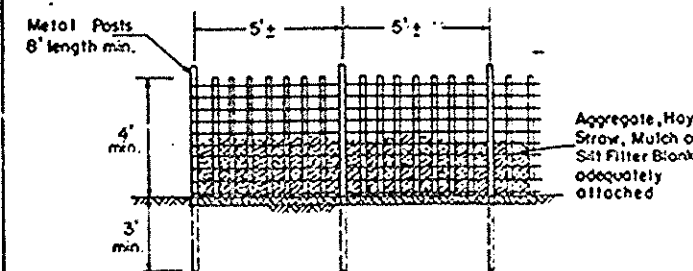


To be constructed by depositing material and shaping in a manner approved by the Engineer. If the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be graded to 4:1.

MULCH BARRIER



SIDE ELEVATION VIEW



FRONT ELEVATION VIEW

GENERAL NOTES

- Actual configuration and location of Temporary Erosion Control Systems shall be as shown on the plans or as directed by the Engineer.
- Ditch Checks and Sediment Basins should be constructed at appropriate intervals along the waterway to be effective.
- Where more than one row of bales are used, stagger bales to cover joints.
- Where bales are shown staked, a minimum of two stakes per bale shall be used.
- The Temporary Erosion Control Systems installed by the Contractor shall be properly maintained as directed by the Engineer to control siltation at all times during the life of the contract.
- All salvageable temporary erosion control items shall be removed and become the property of the Contractor at the completion of the contract.
- Existing R.O.W. fence may be utilized if such location is desired with use of Mulch Barrier or Hay or Straw Ditch Check - Two Bales High.

TEMPORARY EROSION CONTROL SYSTEMS
STANDARD 238I

Full Size D.W.W. Sr.

A-12-25