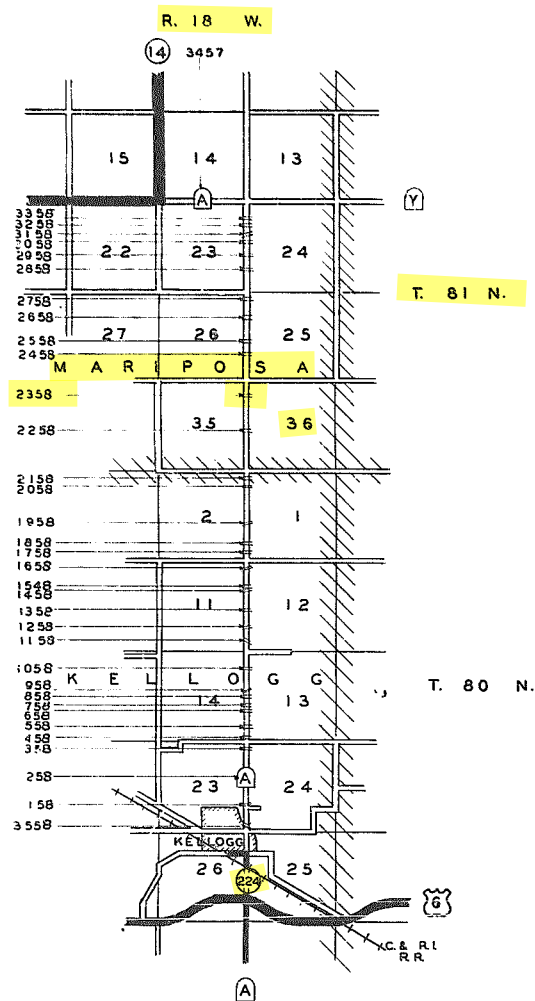


29 APRIL 1958

STATE OF IOWA
STATE HIGHWAY COMMISSION
DESIGN FOR
30'X24' PRESTRESSED CONCRETE BRIDGE
& CONCRETE CULVERTS
SECONDARY ROAD SYSTEM - PROJECT S-273 (2)
JASPER COUNTY
JANUARY 1958

SPECIFICATIONS:
ALL MATERIALS AND CONSTRUCTION TO BE IN
ACCORDANCE WITH IOWA STATE HIGHWAY COMMISSION
STANDARD SPECIFICATION SERIES 1956 WITH
CURRENT SPECIAL PROVISIONS.

MILEAGE SUMMARY: Bridge at Sta. 18+70 = 0.0061 Mi.



IN LETTING of APRIL 29, 1958	DESIGN	LOCATION			DESCRIPTION	ESTIMATED BRIDGE QUANTITIES														
		SEC.	TWP.	STA.		SIZE & TYPE	CONC. CY.	STRUCT. STEEL LB.	REINF. STEEL LB.	EXCAV.			REMOVAL	PILING CRO. TRESTLE L.F.	STEEL CRO. BM. RAIL	CL. 10 EXCAV. CHANNEL	LUMBER CREO. FBM	HD'WR LB	PRESTRESSED BEAMS (30'-0)	
										CL. 20	CL. 21	CL. 22								
	3558	23-24	KELLOGG	18 + 70.0	30'x24' PRE-STRESSED CONCRETE BRIDGE	49.3	6 9 9 1	6 1 9 9	400	20	-	26'x20' CONC. BRIDGE	* 1215	80	4	209	8,828	201	6	

* 14 @ 40' = 560' Over Size

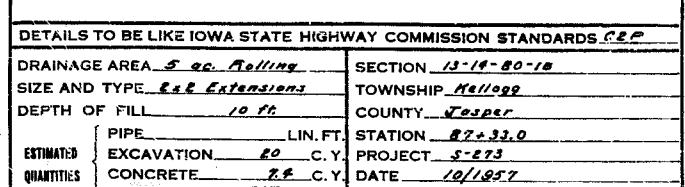
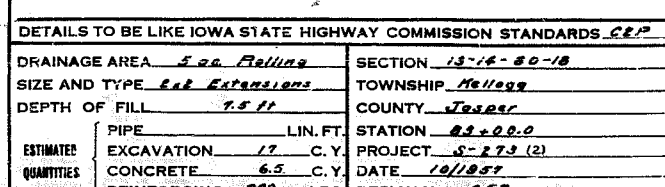
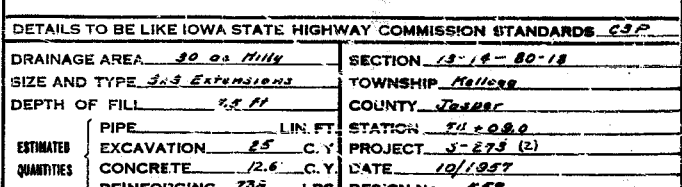
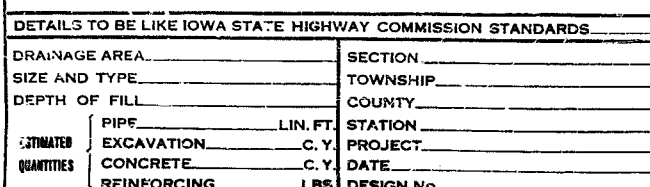
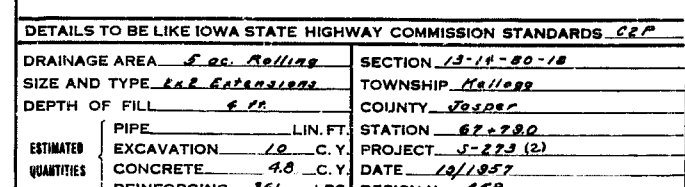
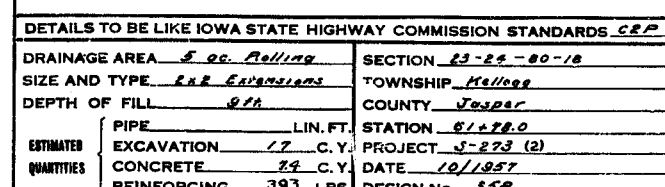
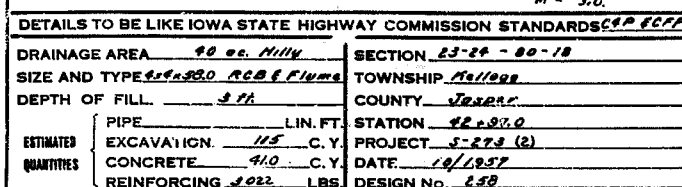
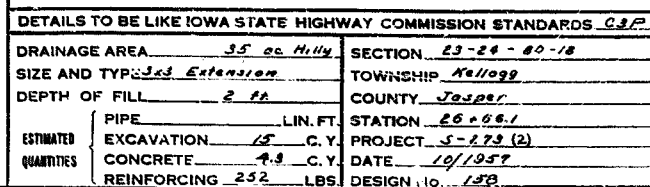
IN LETTING OF APRIL 29, 1958

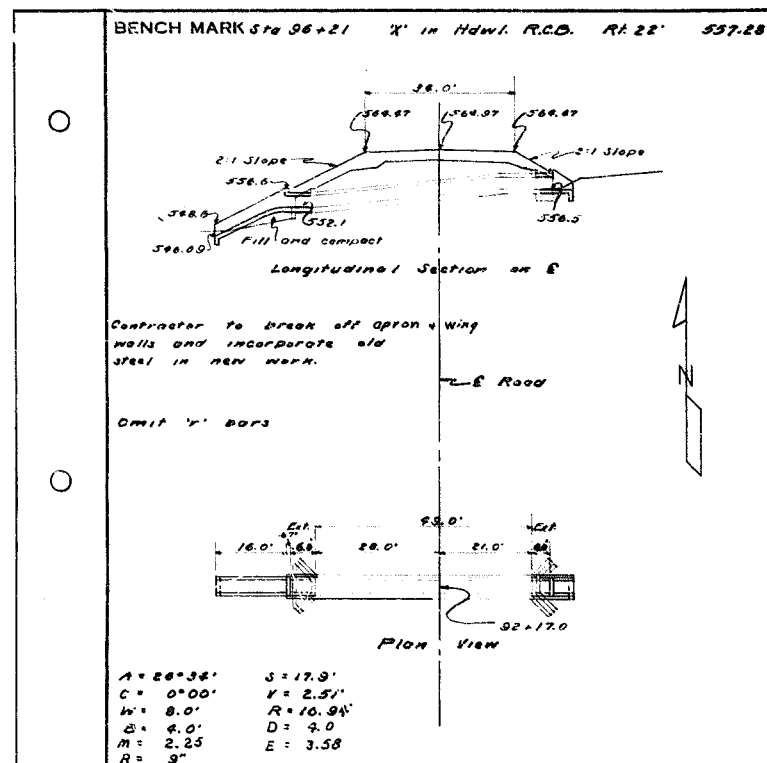
ESTIMATED CULVERT QUANTITIES									
DESIGN	LOCATION			DESCRIPTION SIZE & TYPE	CONC. CY	REINF. STEEL LB.	EXCAV. CL. 20 - CY	REMOVAL	
	SEC.	TWP.	STA.						
1 58	23-24	KELL	26+65.1	3X3 EXTENSION	4.3	212	15	Portions Present structure as per plan	
2 58	23-24	"	42+97.0	4X4X56 RCB & FLUME	41.0	3022	115	Present structure as per plan	
3 58	23-24	"	61+78.0	2X2 EXTENSIONS	7.4	393	17	Portions Present structure as per plan	
4 58	13-14	"	67+79.0	2X2 EXTENSIONS	4.8	261	10	" " " " " "	
5 58	13-14	"	74+09.0	3X3 EXTENSIONS	12.6	738	25	" " " " " "	
6 58	13-14	"	83+00.0	2X2 EXTENSIONS	6.5	349	17	" " " " " "	
7 58	13-14	"	87+33.0	2X2 EXTENSIONS	7.4	393	20	" " " " " "	
8 58	13-14	"	92+17.0	3X3 EXTENSION & FLUME	10.7	673	22	" " " " " "	
9 58	13-14	"	96+08.9	4X4 EXTENSION	9.7	787	10	" " " " " "	
10 58	13-14	"	108+03.0	2X2 EXTENSIONS	8.5	441	25	" " " " " "	
11 58	11-12	"	125+95.0	4X4X62.0 RCB	34.0	3042	12.0	Present structure as per plan	
12 58	11-12	"	131+55.0	4X4X41.0 RCB	24.7	2072	85	" " " " " "	
13 58	11-12	"	142+71.9	2X2 EXTENSIONS	6.8	368	13	Portions Present structure as per plan	
14 58	11-12	"	153+70.0	3X3X44.0 RCB	19.9	1128	80	Present R.C.B. Culvert as per plan	
15 58	11-12	"	155+60.0	4X4X38.0 RCB	21.4	1765	60	" " " " " "	
16 58	11-12	"	167+80.3	4X4 EXTENSIONS	19.2	1538	28	Portions Present structure as per plan	
17 58	1-2	"	177+38.0	2X2 EXTENSIONS	5.4	291	13	" " " " " "	
18 58	1-2	"	182+26.0	2X2 EXTENSIONS	6.8	360	20	" " " " " "	
19 58	1-2	"	200+25.8	3X3 EXTENSIONS	14.8	892	30	" " " " " "	
20 58	1-2	"	214+83.0	2X2 EXTENSIONS	7.1	378	17	" " " " " "	
21 58	1-2	"	225+45.7	6X6 EXTENSIONS	44.1	5006	33	" " " " " "	
22 58	35-36	MARI	251+66.0	5X5X54.0 RCB & FLUME	47.8	4203	130	Present R.C.B. Culvert as per plan	
23 58	35-36	"	273+34.0	10X7 & 10X9 EXTEN	76.5	9007	35	Portions Present structure as per plan	
24 58	25-26	"	297+51.0	2X2 EXTENSIONS	9.0	480	15	" " " " " "	
25 58	25-26	"	304+27.0	3X3 EXTENSIONS	15.6	908	19	" " " " " "	
26 58	25-26	"	318+29.0	2X2 EXTENSIONS	9.9	524	17	" " " " " "	
27 58	25-26	"	332+64.0	2X2 EXTENSIONS	7.1	378	12	" " " " " "	
28 58	23-24	"	346+94.0	2X2 EXTENSIONS	7.4	393	16	" " " " " "	
29 58	23-24	"	355+09.0	2X2 EXTENSION & FLUME	9.8	587	25	" " " " " "	
30 58	23-24	"	362+83.0	2X2 EXTENSIONS	6.5	349	14	" " " " " "	
31 58	23-24	"	365+44.5	4X4 EXTENSIONS	11.5	635	8	" " " " " "	
32 58	23-24	"	371+61.0	2X2 EXTENSIONS	7.1	378	10	" " " " " "	
33 58	23-24	"	376+88.0	3X3 EXTENSIONS	9.4	529	12	" " " " " "	
34 58	14-23	"	412+98.0	3X3 EXTENSIONS	9.0	509	12	" " " " " "	
TOTALS					543.7	43,030	1100		

NOTE:

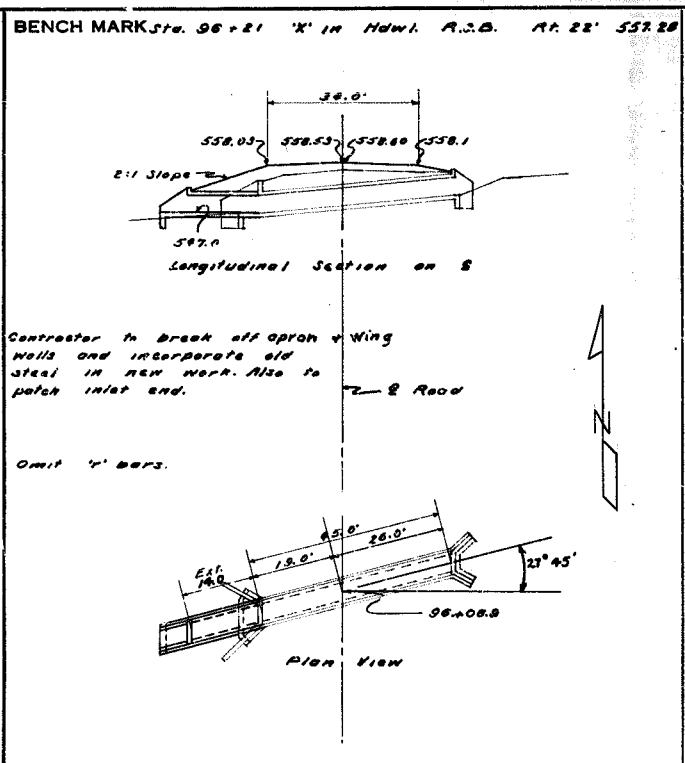
This bridge will require bridge sign assemblies (furnished & placed by others) as specified in S&T Instructions No. 11
Revised March 1, 1956.

APPROVED	APPROVED
	CHIEF ENGINEER DATE
	IOWA HIGHWAY COMMISSION
BOARD OF SUPERVISORS	DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS
DATE	APPROVED
	DISTRICT ENGINEER DATE

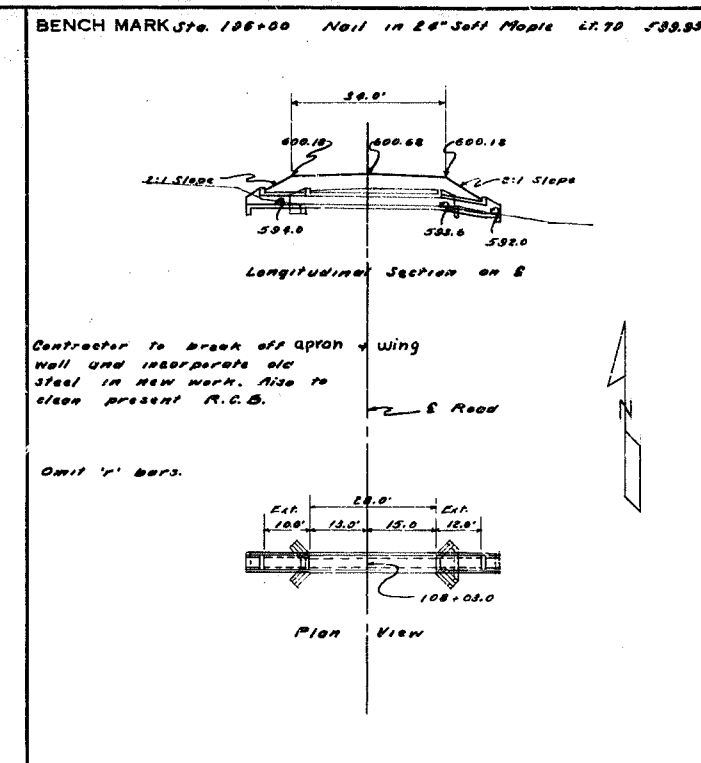




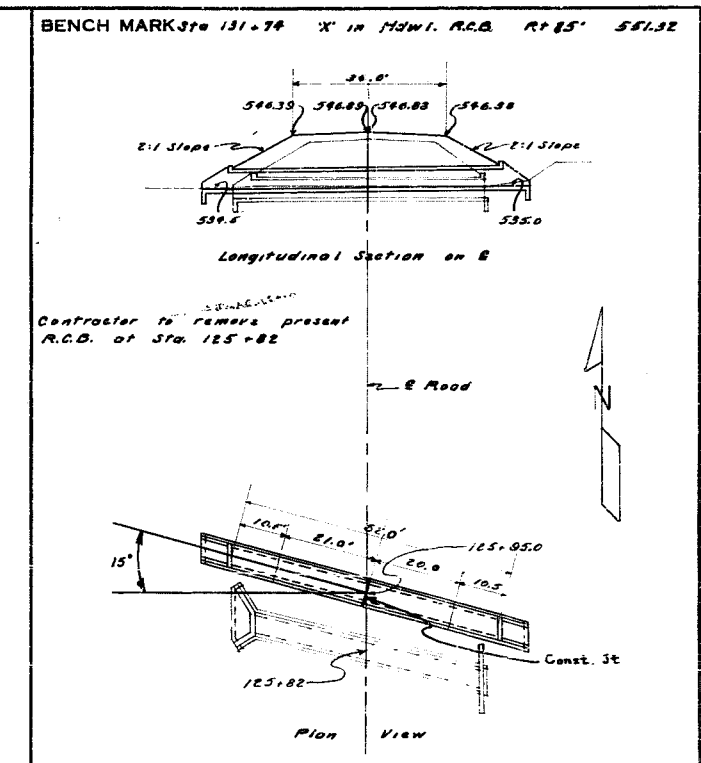
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	25 ac. Hilly	SECTION	13-16-80-18
SIZE AND TYPE	2x3 Ext. & Flume	TOWNSHIP	Hellsg
DEPTH OF FILL	7 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 96+17.0 EXCAVATION 22 C.Y. PROJECT S-273 (2) CONCRETE 19.7 C.Y. DATE 10/1957 REINFORCING 673 LBS. DESIGN NO. 856		



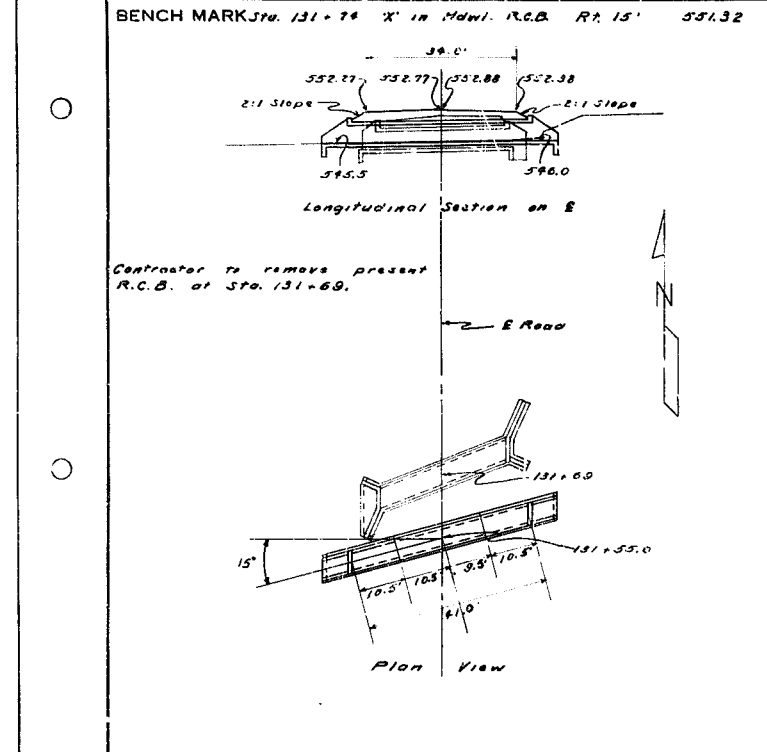
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	25 ac. Hilly	SECTION	13-16-80-18
SIZE AND TYPE	2x3 Ext. & Flume	TOWNSHIP	Hellsg
DEPTH OF FILL	5 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 96+20.0 EXCAVATION 10 C.Y. PROJECT S-273 (2) CONCRETE 9.7 C.Y. DATE 10/1957 REINFORCING 787 LBS. DESIGN NO. 858		



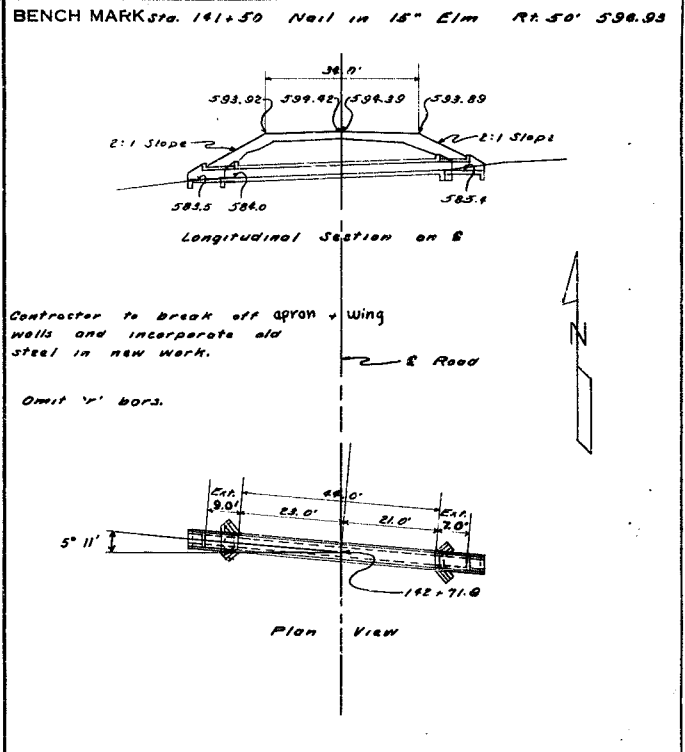
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	5 ac. Rolling	SECTION	13-16-80-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Hellsg
DEPTH OF FILL	6.5 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 108+03.0 EXCAVATION 25 C.Y. PROJECT S-273 (2) CONCRETE 8.5 C.Y. DATE 10/1957 REINFORCING 451 LBS. DESIGN NO. 1050		



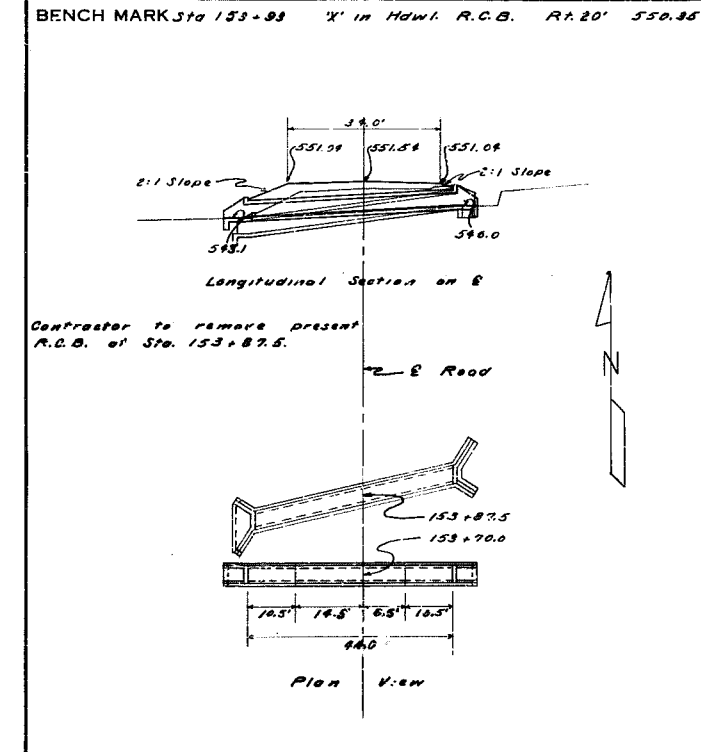
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	60 ac. Hilly	SECTION	11-12-80-18
SIZE AND TYPE	2x2x20 R.C.B.	TOWNSHIP	Hellsg
DEPTH OF FILL	8 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 125+85.0 EXCAVATION 120 C.Y. PROJECT S-273 (2) CONCRETE 36.0 C.Y. DATE 10/1957 REINFORCING 3042 LBS. DESIGN NO. 1150		



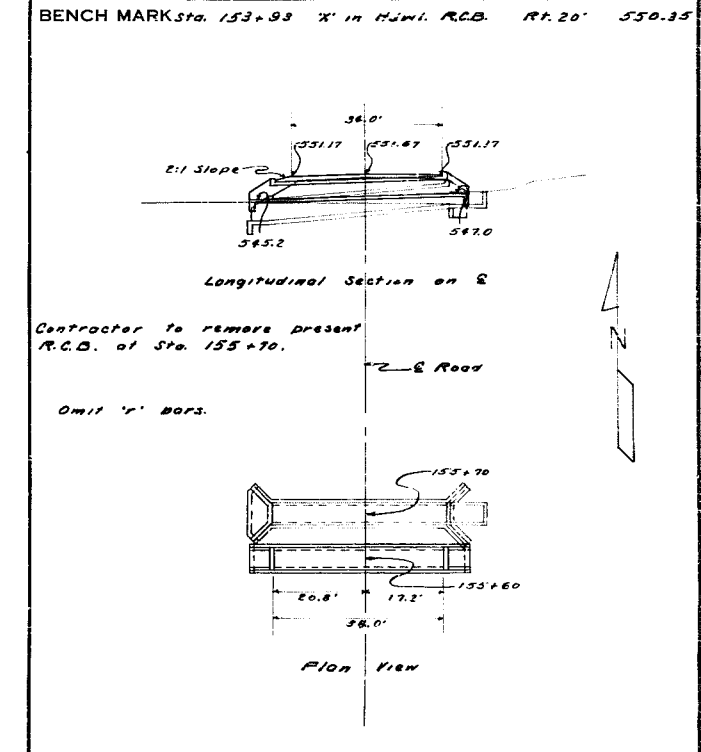
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	60 ac. Rolling	SECTION	11-12-80-18
SIZE AND TYPE	2x2x20 R.C.B.	TOWNSHIP	Hellsg
DEPTH OF FILL	2.5 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 131+55.0 EXCAVATION 65 C.Y. PROJECT S-273 (2) CONCRETE 26.7 C.Y. DATE 10/1957 REINFORCING 2072 LBS. DESIGN NO. 1250		



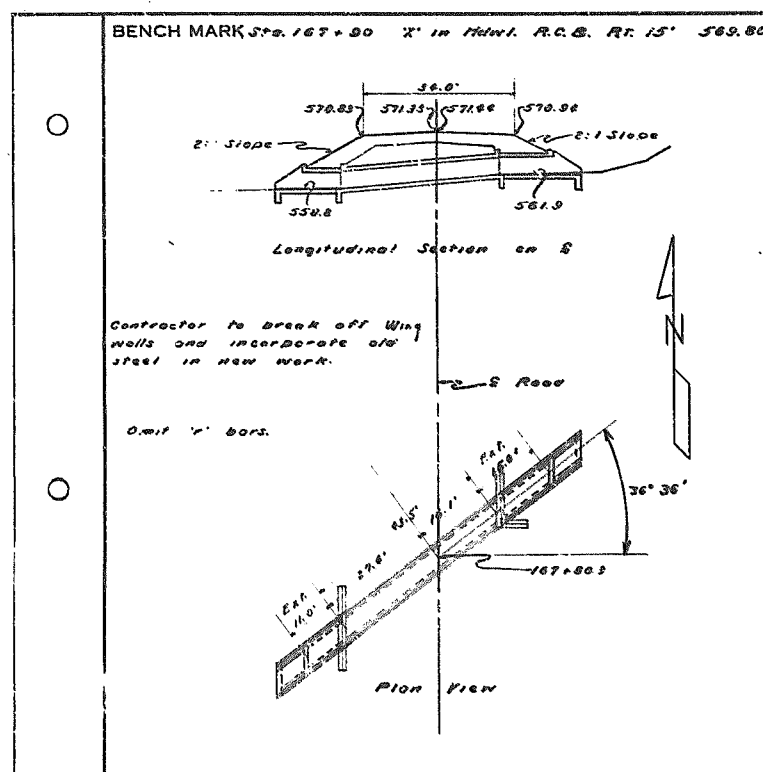
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	5 ac. Rolling	SECTION	11-12-80-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Hellsg
DEPTH OF FILL	7 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 141+70.0 EXCAVATION 13 C.Y. PROJECT S-273 (2) CONCRETE 6.8 C.Y. DATE 10/1957 REINFORCING 368 LBS. DESIGN NO. 1350		



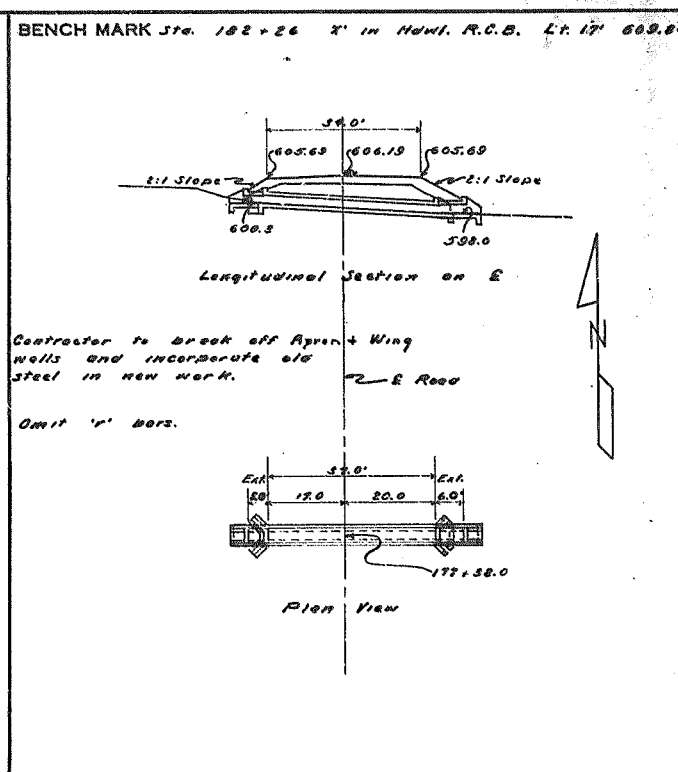
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	20 ac. Rolling	SECTION	11-12-80-18
SIZE AND TYPE	2x2x20 R.C.B.	TOWNSHIP	Hellsg
DEPTH OF FILL	3 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 153+70.0 EXCAVATION 20 C.Y. PROJECT S-273 (2) CONCRETE 10.9 C.Y. DATE 10/1957 REINFORCING 1128 LBS. DESIGN NO. 1450		



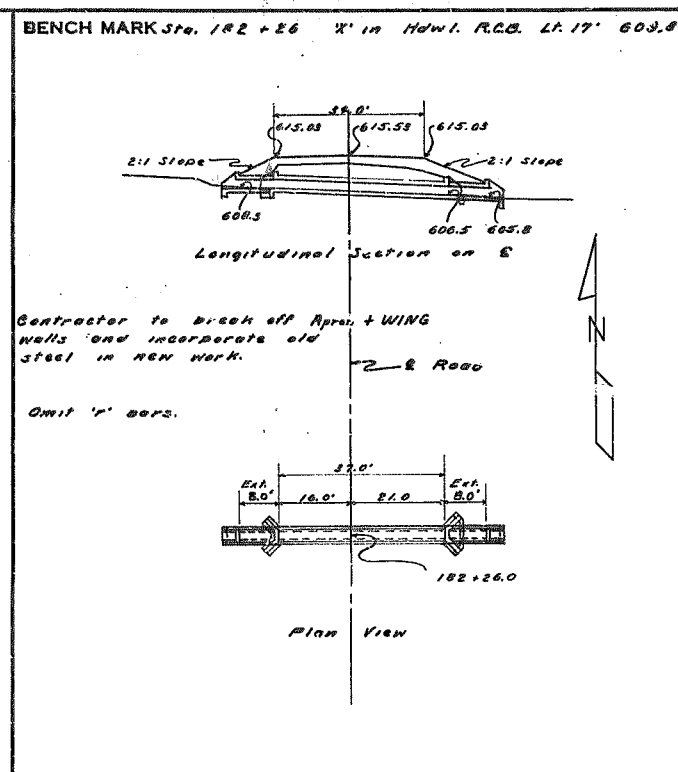
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	40 ac. Rolling	SECTION	11-12-80-18
SIZE AND TYPE	2x2x20 R.C.B.	TOWNSHIP	Hellsg
DEPTH OF FILL	1 ft	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE LIN. FT. STATION 155+60 EXCAVATION 60 C.Y. PROJECT S-273 (2) CONCRETE 21.6 C.Y. DATE 10/1957 REINFORCING 1265 LBS. DESIGN NO. 1550		



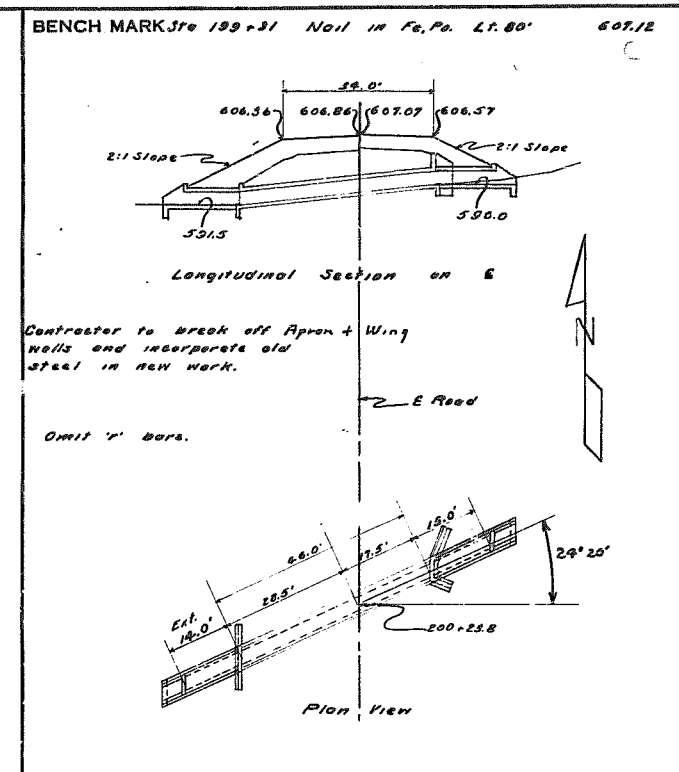
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 69 ac. Rolling	SECTION 11-12-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 6 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 167+80.3
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 22 C.Y.	DATE 10/1957
CONCRETE 19.2 C.Y.	DESIGN No. 1658
REINFORCING 1536 LBS	



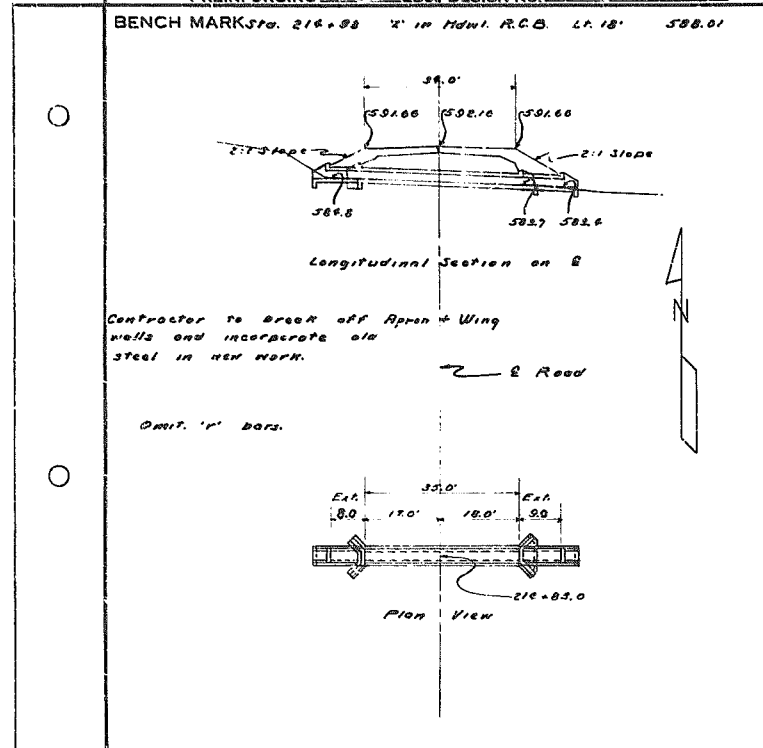
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 5 ac. Rolling	SECTION 1-2-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 5 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 177+38.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 13 C.Y.	DATE 10/1957
CONCRETE 54 C.Y.	DESIGN No. 1758
REINFORCING 291 LBS	



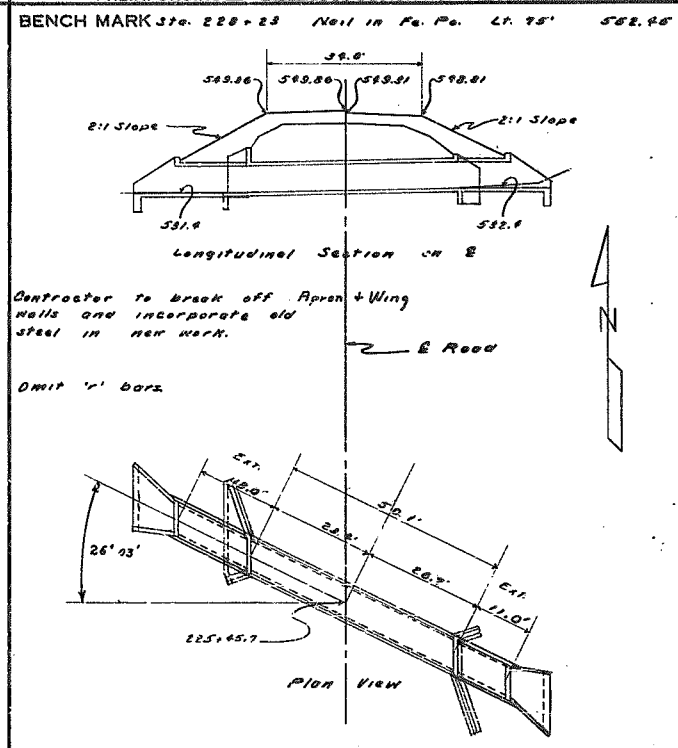
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 2.2 ac. Rolling	SECTION 1-2-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 5 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 182+26.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 20 C.Y.	DATE 10/1957
CONCRETE 68 C.Y.	DESIGN No. 1858
REINFORCING 360 LBS	



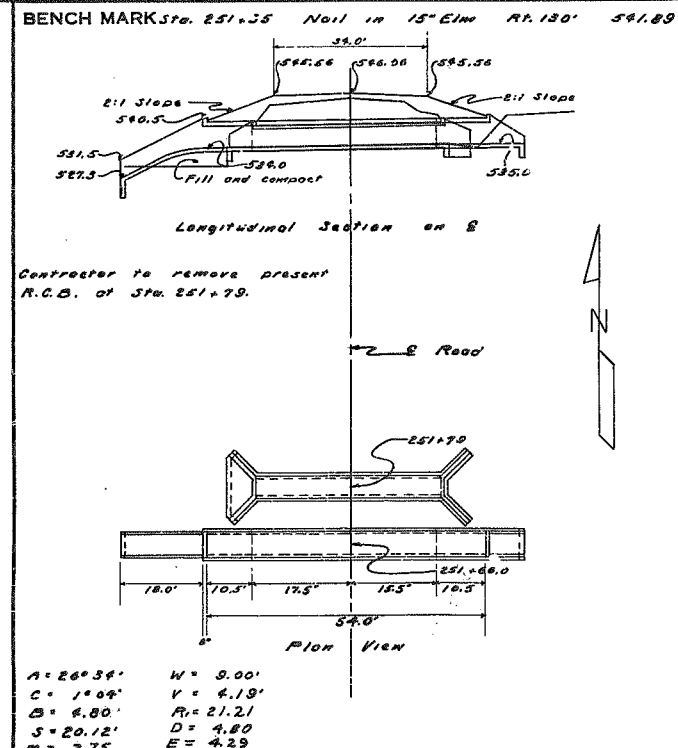
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 60 ac. Rolling	SECTION 1-2-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 9 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 200+25.8
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 30 C.Y.	DATE 10/1957
CONCRETE 148 C.Y.	DESIGN No. 1958
REINFORCING 892 LBS	



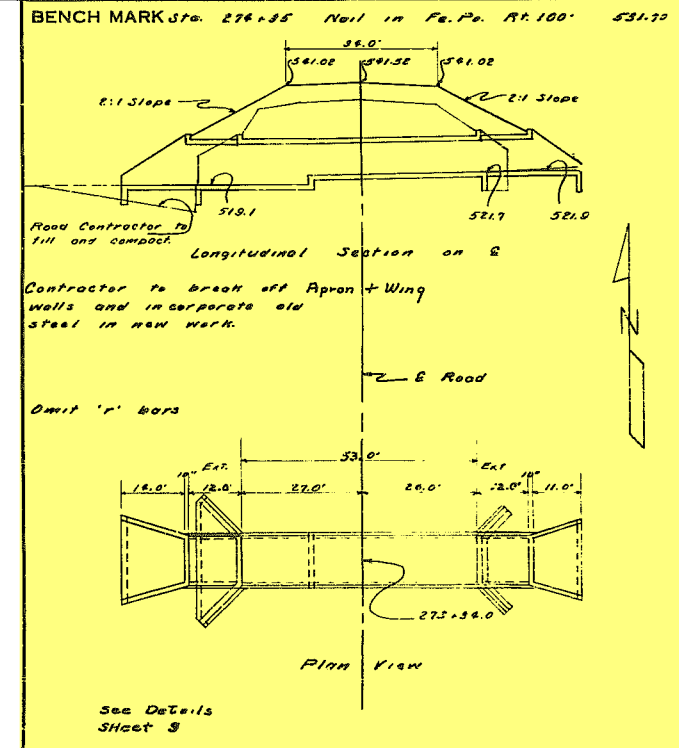
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DRAINAGE AREA 10 ac. Rolling	SECTION 1-2-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 5.5 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 214+83.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 17 C.Y.	DATE 10/1957
CONCRETE 21 C.Y.	DESIGN No. 2058
REINFORCING 478 LBS	



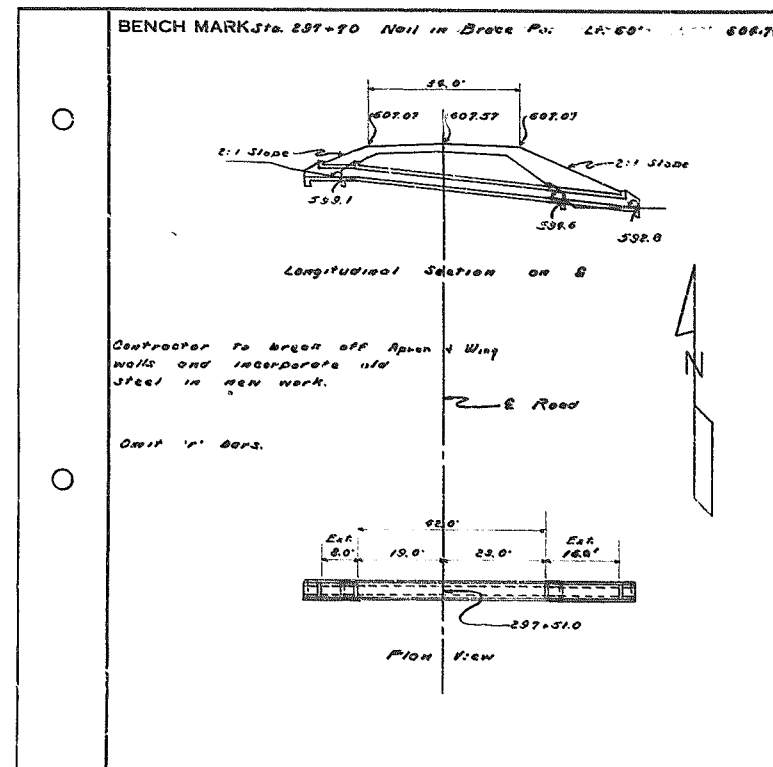
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 110 ac. Rolling-Hilly	SECTION 1-2-80-18
SIZE AND TYPE 6x6 Extensions	TOWNSHIP Helling
DEPTH OF FILL 11 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 228+23.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 39 C.Y.	DATE 10/1957
CONCRETE 441 C.Y.	DESIGN No. 2158
REINFORCING 5006 LBS	



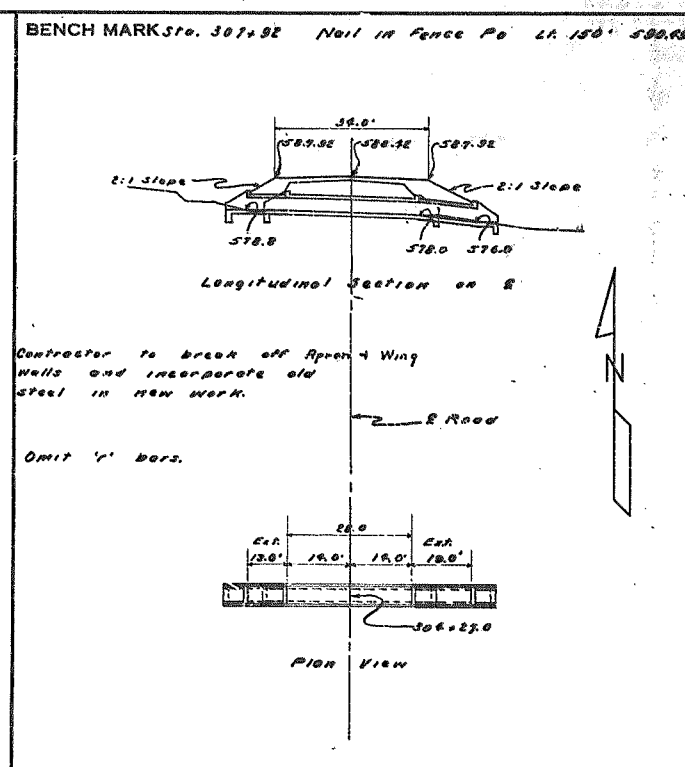
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P C&P	
DRAINAGE AREA 100 ac. Hilly	SECTION 35-35-81-18
SIZE AND TYPE 5x5x5' R.C.B. Flume	TOWNSHIP Merriam
DEPTH OF FILL 6 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 251+66.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 130 C.Y.	DATE 10/1957
CONCRETE 228 C.Y.	DESIGN No. 2258
REINFORCING 4203 LBS	



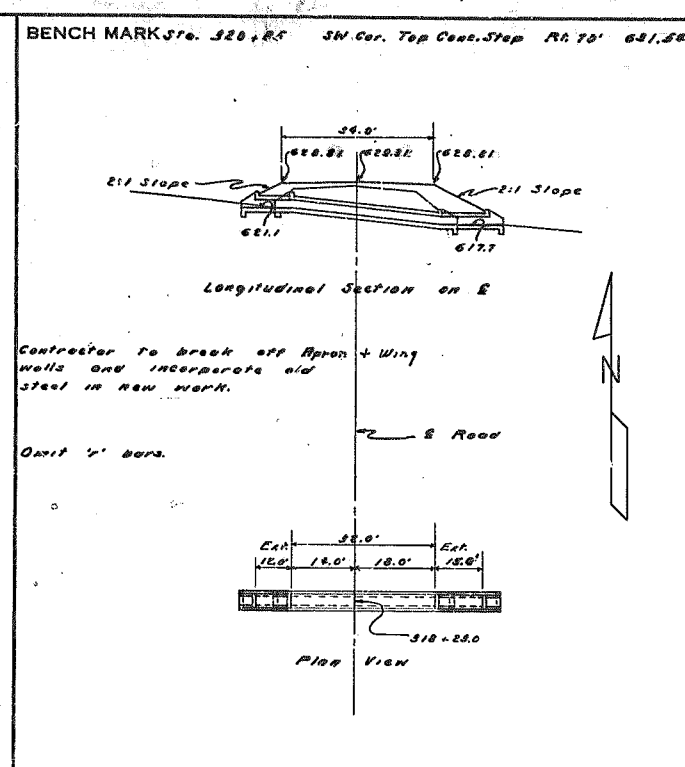
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C&P	
DRAINAGE AREA 2100 ac. Rolling-Hilly	SECTION 35-35-81-18
SIZE AND TYPE 12x12x12' Extensions	TOWNSHIP Merriam
DEPTH OF FILL 1.5 ft	COUNTY Jasper
ESTIMATED QUANTITIES	STATION 273+34.0
PIPE LIN. FT.	PROJECT S-273 (2)
EXCAVATION 35 C.Y.	DATE 10/1957
CONCRETE 26.5 C.Y.	DESIGN No. 2358
REINFORCING 9007 LBS	



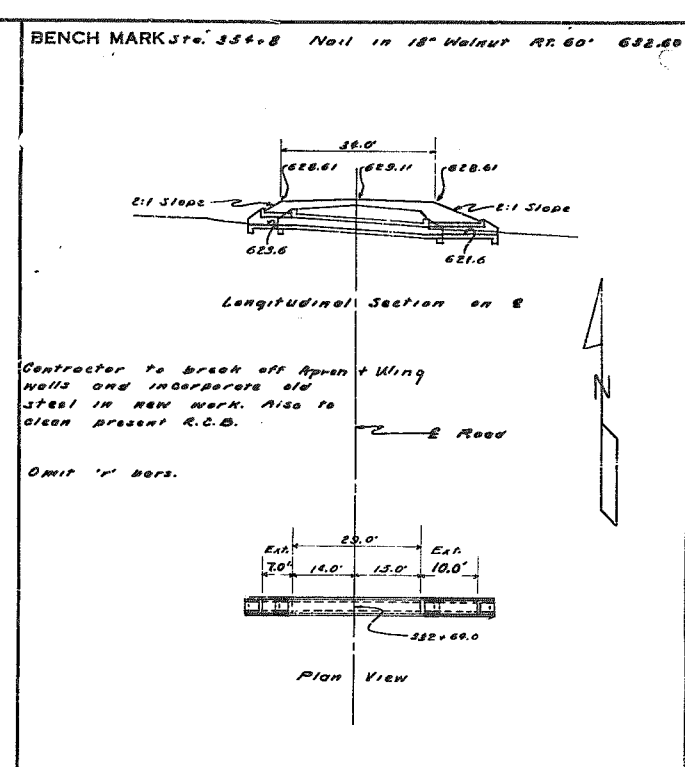
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	10 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	9 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 15 LIN. FT. STATION 297+51.0 EXCAVATION 15 C.Y. PROJECT 5-273 (2) CONCRETE 9.0 C.Y. DATE 10/1957 REINFORCING 480 LBS. DESIGN No. 2658		



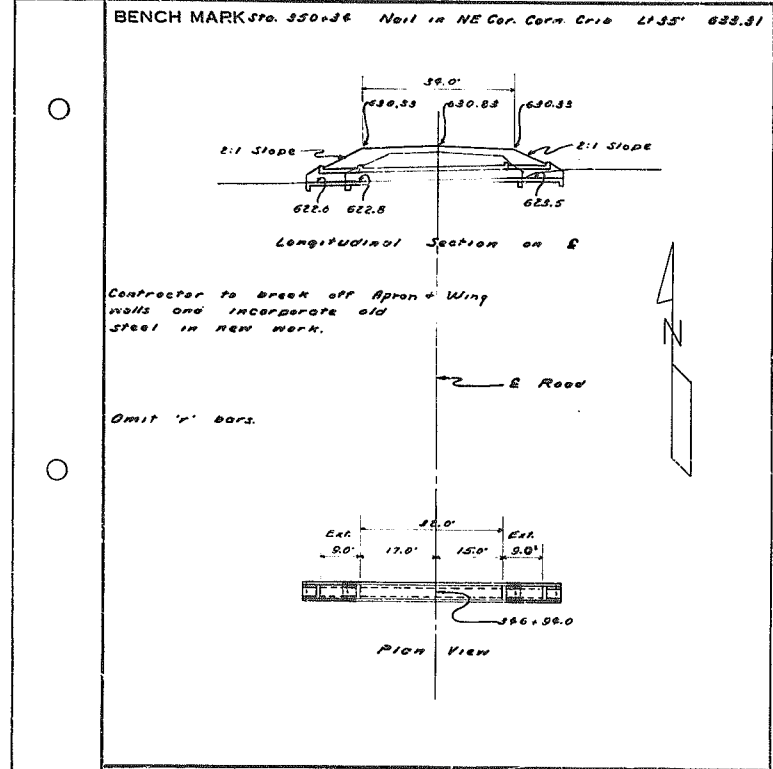
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	30 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	6.5 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 12 LIN. FT. STATION 301+70 EXCAVATION 12 C.Y. PROJECT 5-273 (2) CONCRETE 12.6 C.Y. DATE 10/1957 REINFORCING 900 LBS. DESIGN No. 2658		



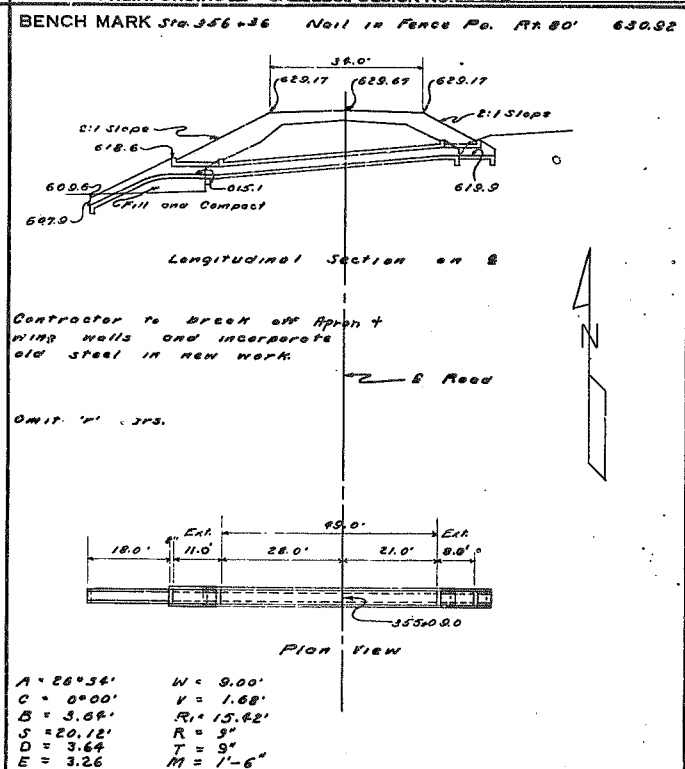
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	50 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	9 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 17 LIN. FT. STATION 318+29.0 EXCAVATION 17 C.Y. PROJECT 5-273 (2) CONCRETE 9.9 C.Y. DATE 10/1957 REINFORCING 524 LBS. DESIGN No. 2658		



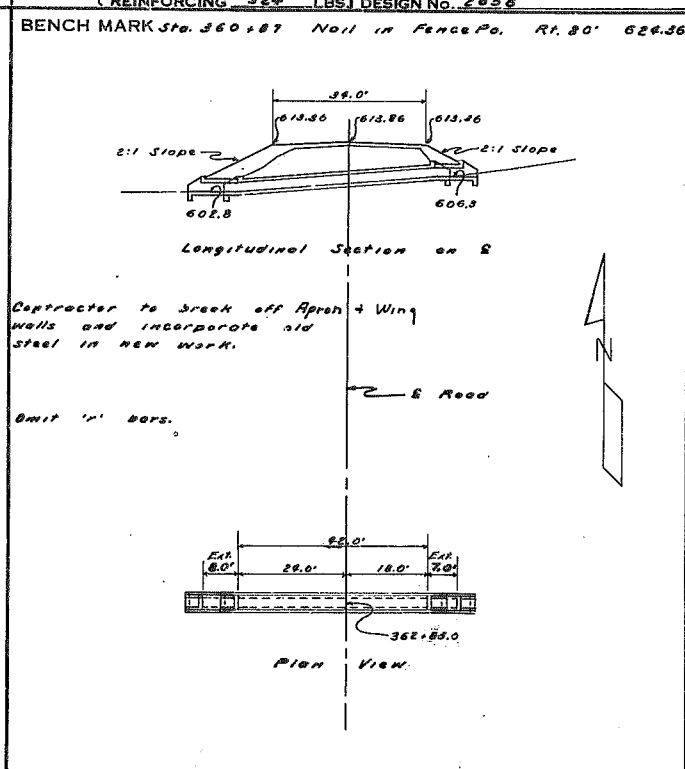
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	10 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	6.5 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 18 LIN. FT. STATION 352+69.0 EXCAVATION 18 C.Y. PROJECT 5-273 (2) CONCRETE 7.1 C.Y. DATE 10/1957 REINFORCING 378 LBS. DESIGN No. 2758		



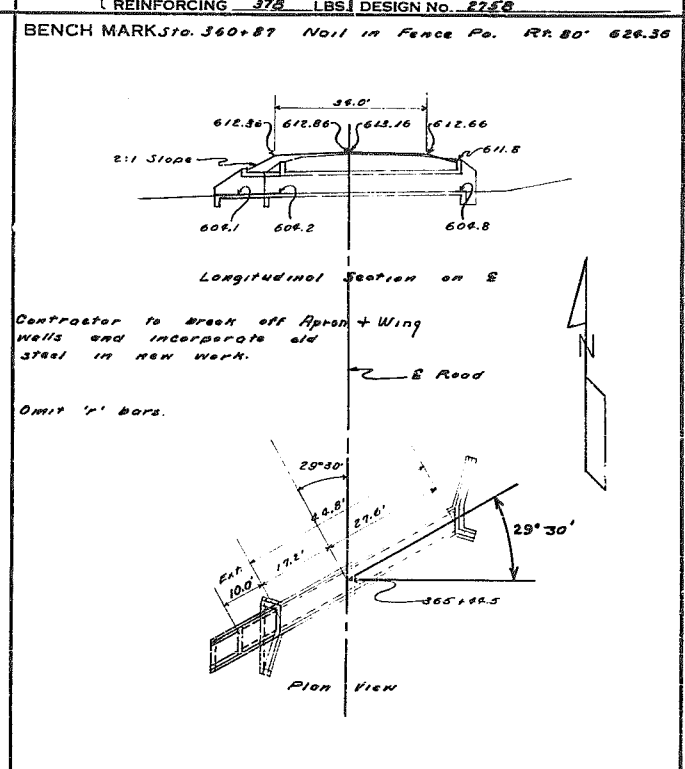
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	15 ac. Flat - Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	6.5 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 15 LIN. FT. STATION 348+86.0 EXCAVATION 15 C.Y. PROJECT 5-273 (2) CONCRETE 7.6 C.Y. DATE 10/1957 REINFORCING 393 LBS. DESIGN No. 2658		



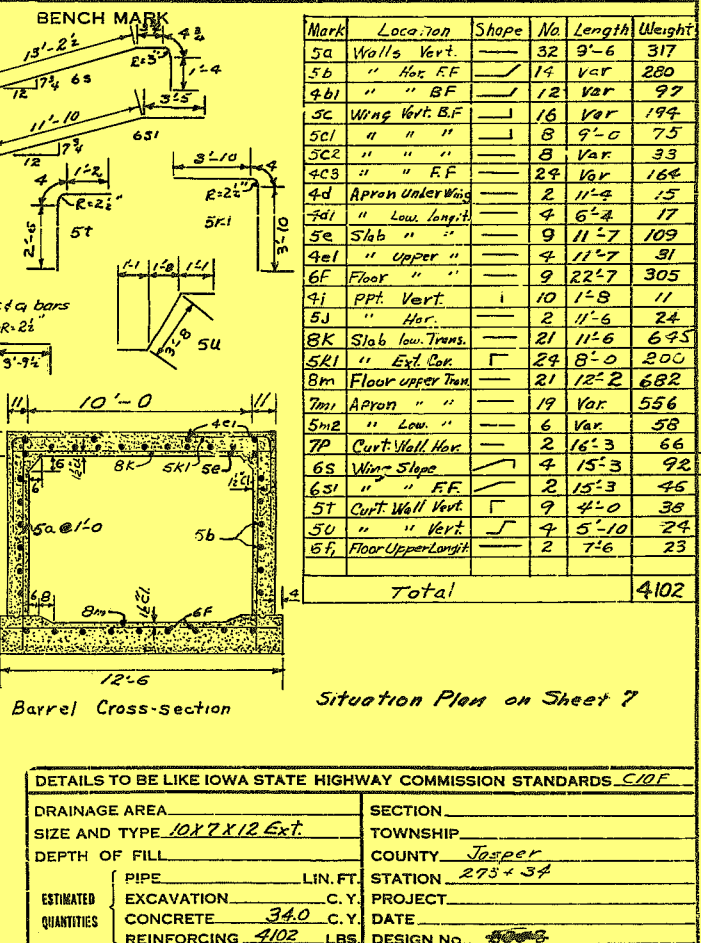
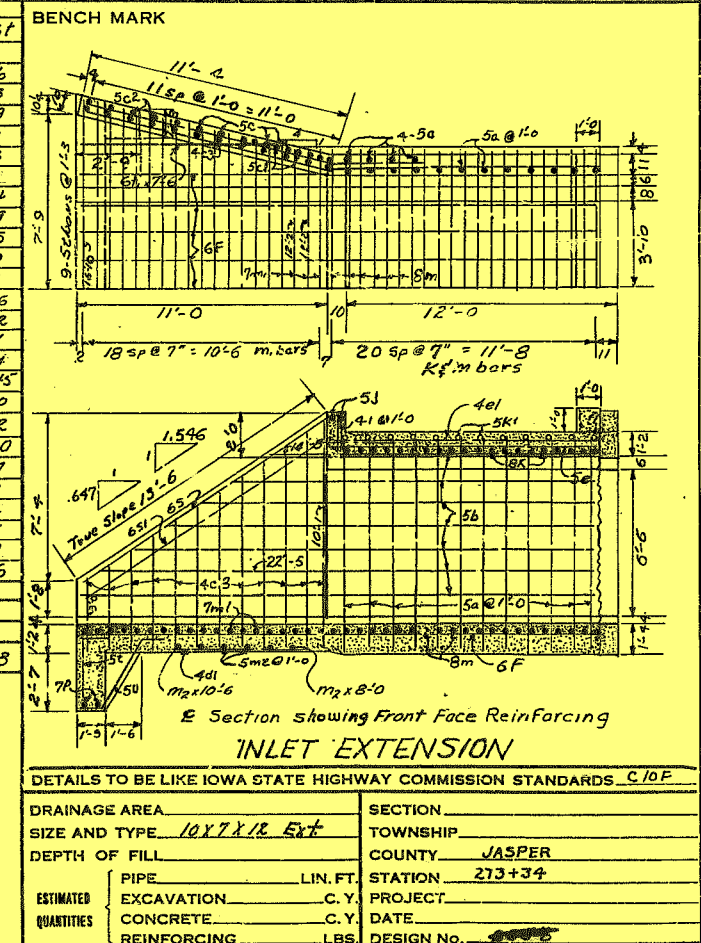
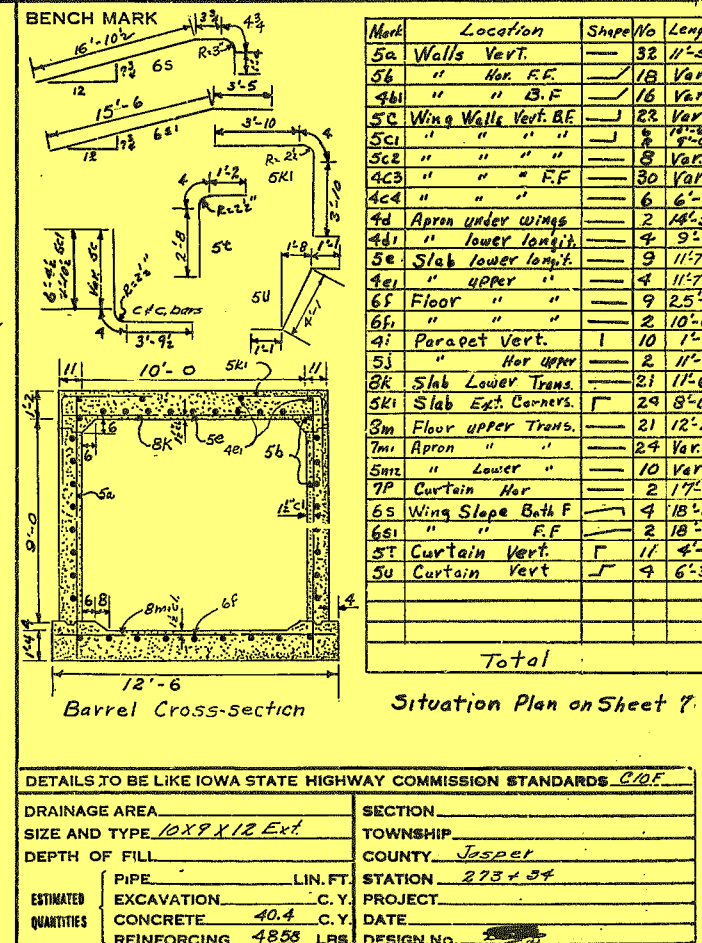
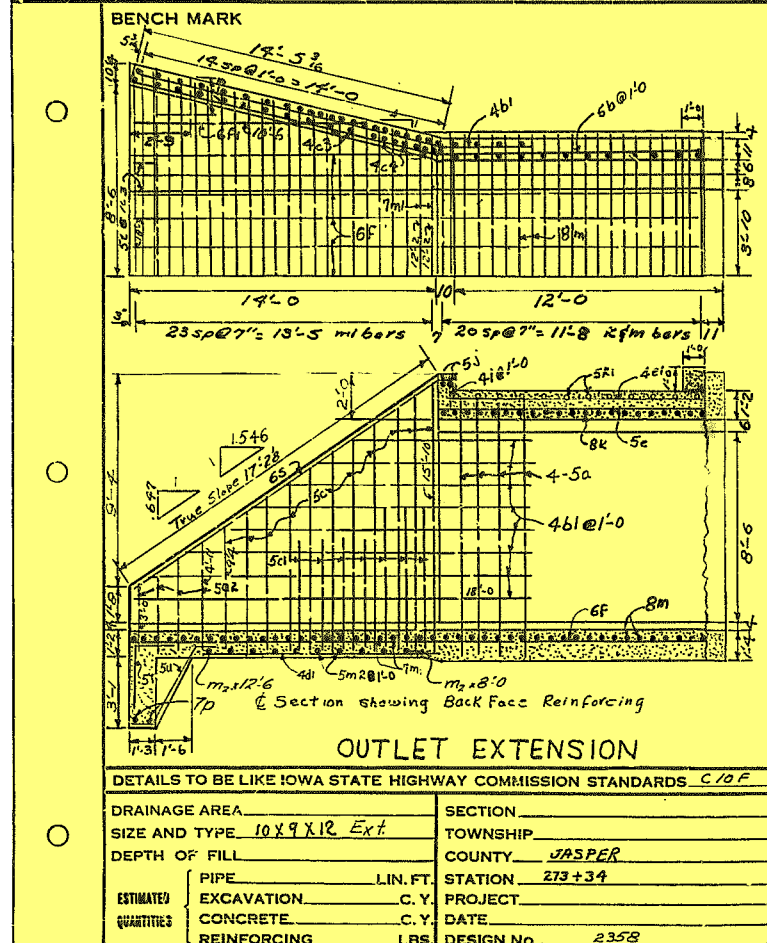
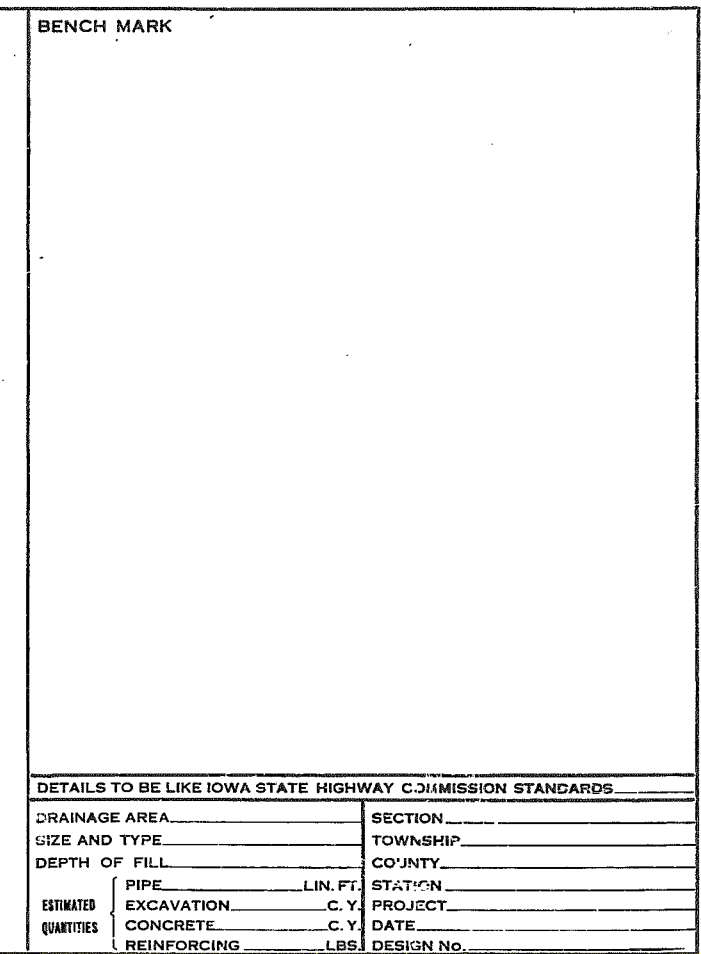
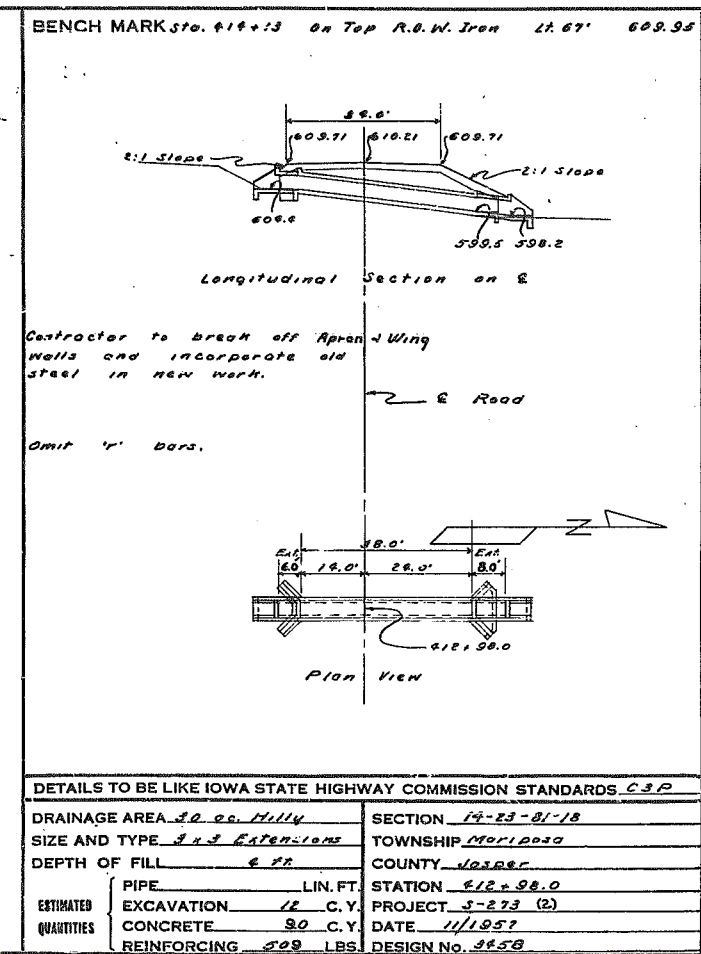
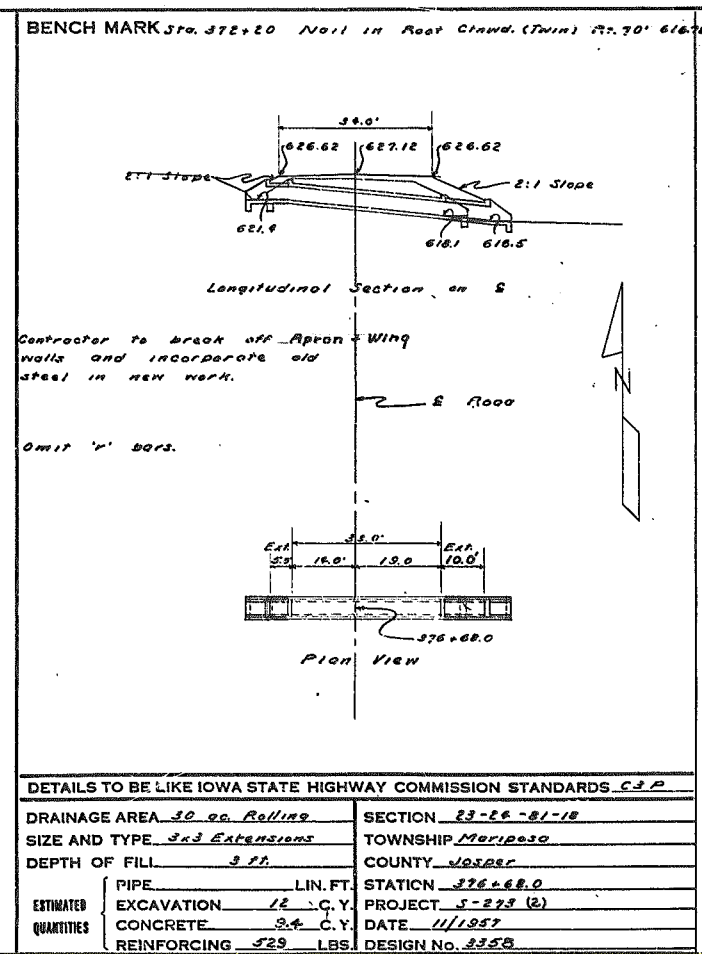
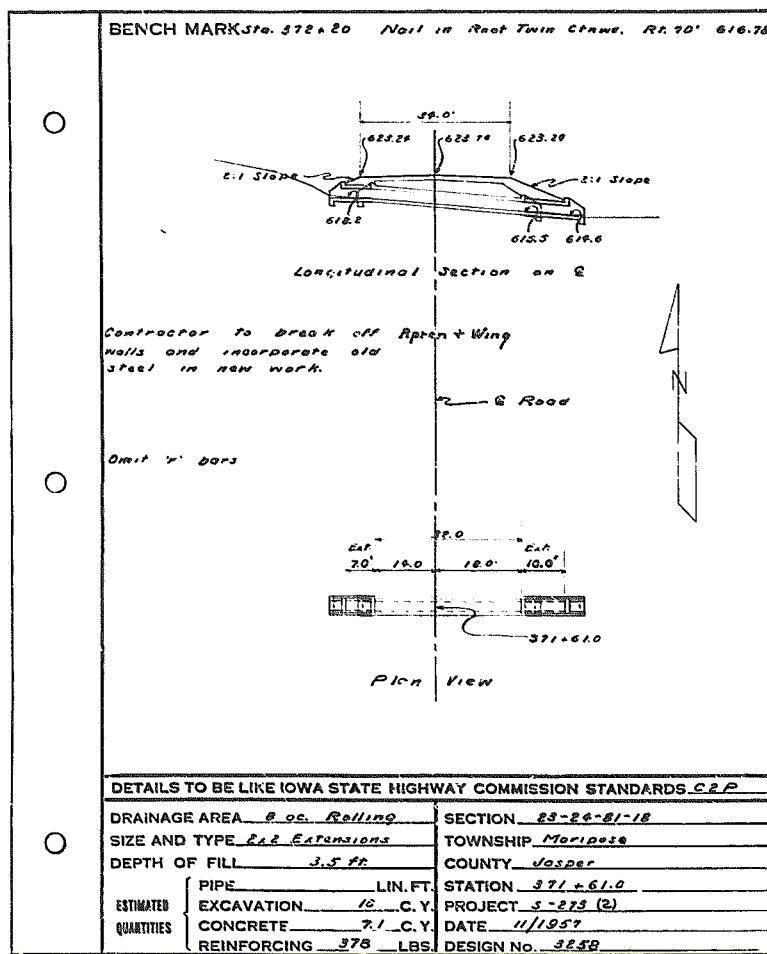
DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	15 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	9.5 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 25 LIN. FT. STATION 355+09.0 EXCAVATION 25 C.Y. PROJECT 5-273 (2) CONCRETE 9.8 C.Y. DATE 11/1957 REINFORCING 527 LBS. DESIGN No. 2658		

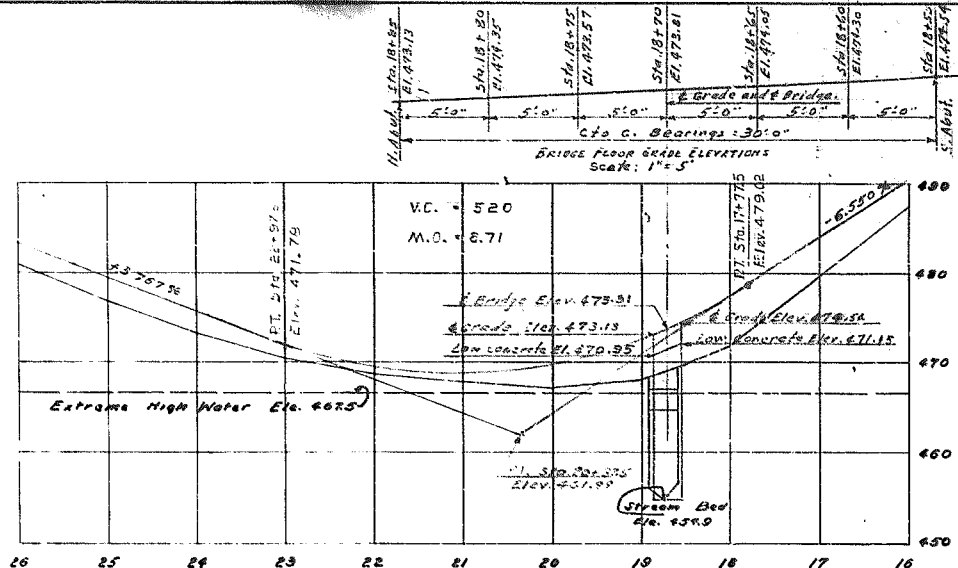


DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	15 ac. Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	6.5 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 18 LIN. FT. STATION 362+83.0 EXCAVATION 18 C.Y. PROJECT 5-273 (2) CONCRETE 6.5 C.Y. DATE 11/1957 REINFORCING 348 LBS. DESIGN No. 3058		



DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS C.E.P.			
DRAINAGE AREA	20 ac. Flat - Rolling	SECTION	25-26-81-18
SIZE AND TYPE	2x2 Extensions	TOWNSHIP	Mariposa
DEPTH OF FILL	6 ft.	COUNTY	Jasper
ESTIMATED QUANTITIES	PIPE 8 LIN. FT. STATION 365+44.5 EXCAVATION 8 C.Y. PROJECT 5-273 (2) CONCRETE 11.5 C.Y. DATE 11/1957 (2) REINFORCING 635 LBS. DESIGN No. 3158		

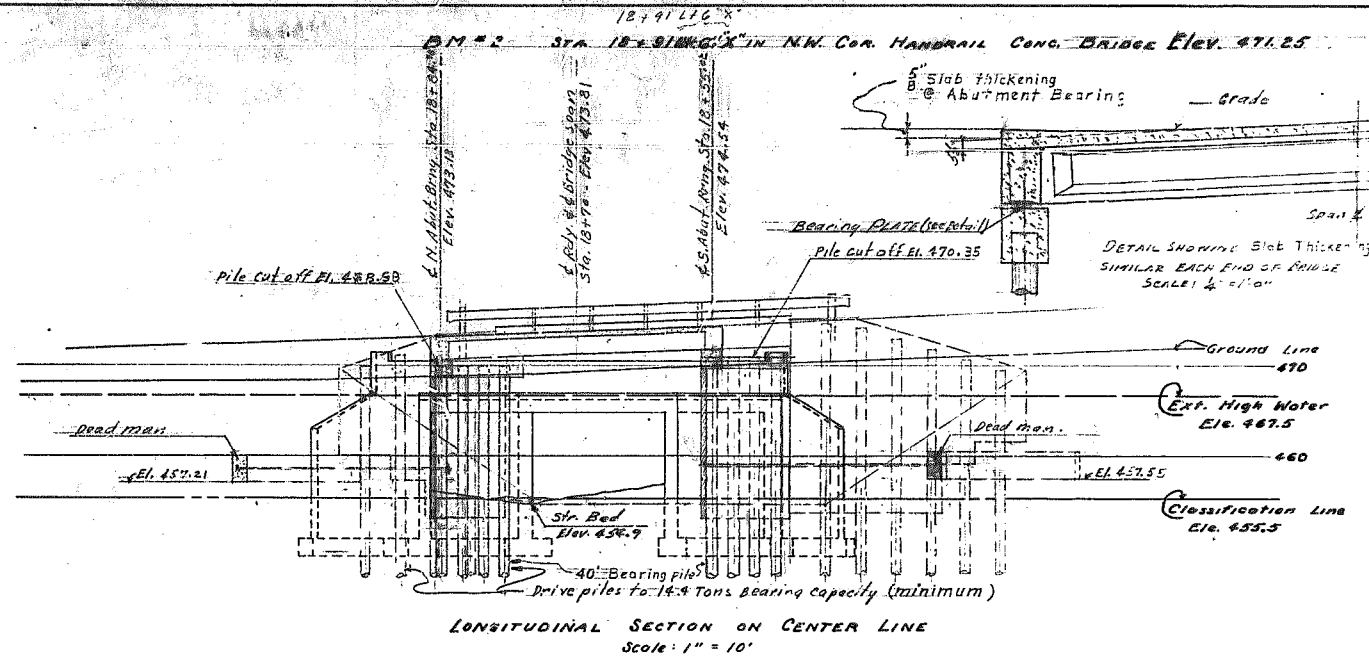




ESTIMATED BRIDGE QUANTITIES			
Item	Sub.	Super	Total
Prestressed Concrete Beams		6	6
Steel-Structural lbs.	6,371	620	6,991
Steel-Reinforcing lbs.	1,827	4,372	6,199
Concrete cy.	21.1	28.2	49.3
Steel Flex Beam Reinforcing	-	80	80
8" Creosoted Posts	-	4	4
Creosoted Lumber FBM	8828		8828
Creosoted Trestle Piling	14 @ 40'	-	
	10 @ 35'	-	
	6 @ 30'	-	
	5 @ 25'		
	Total		1215
Hardware lbs.	201	-	201
Class 10 Excavation cy.	209		209
Class 20 Excavation cy.	400		400
Class 21 Excavation cy.	20		20
Removal	26'x 20' Conc. Bridge		Lump Sum

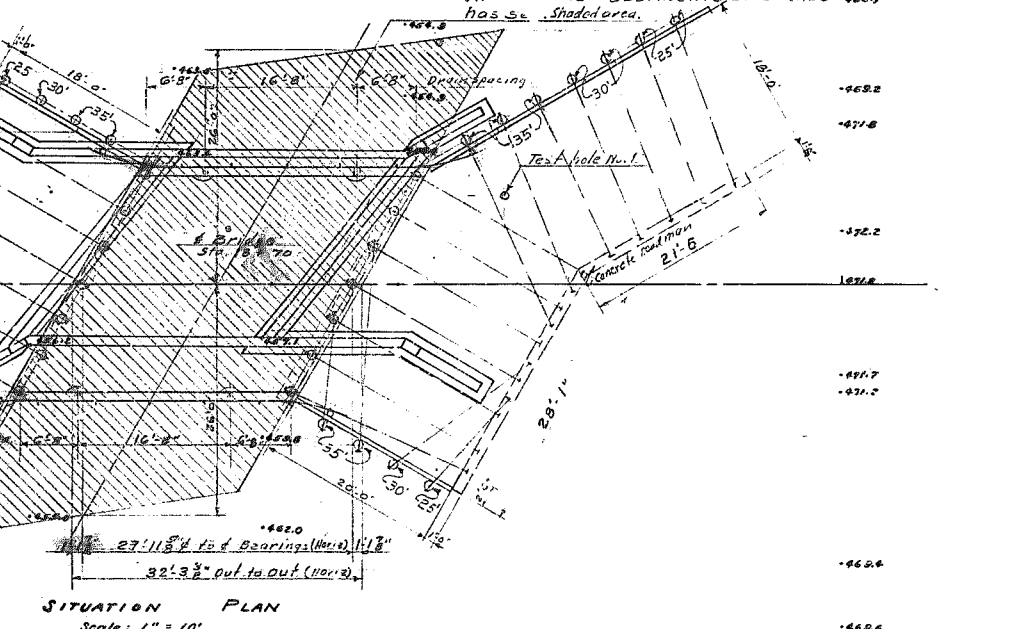
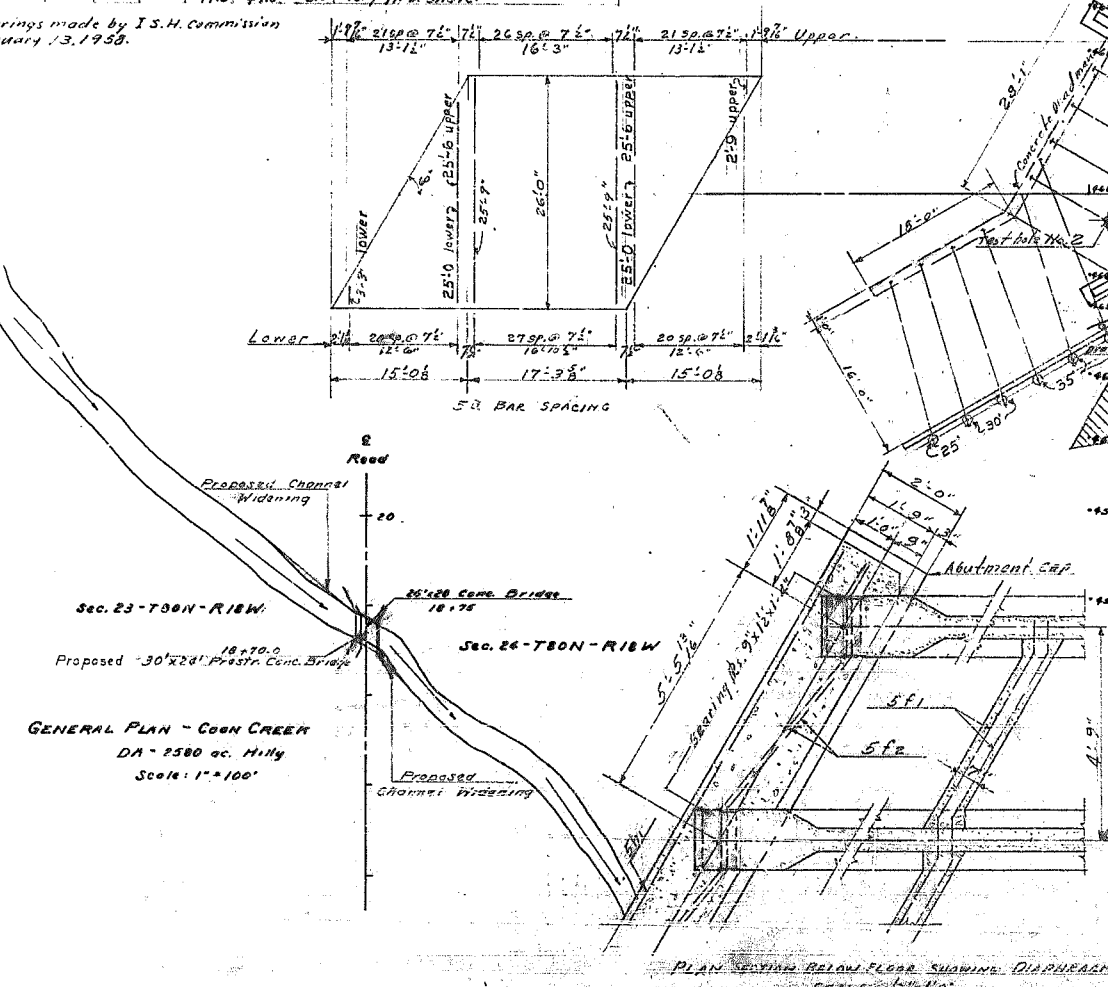
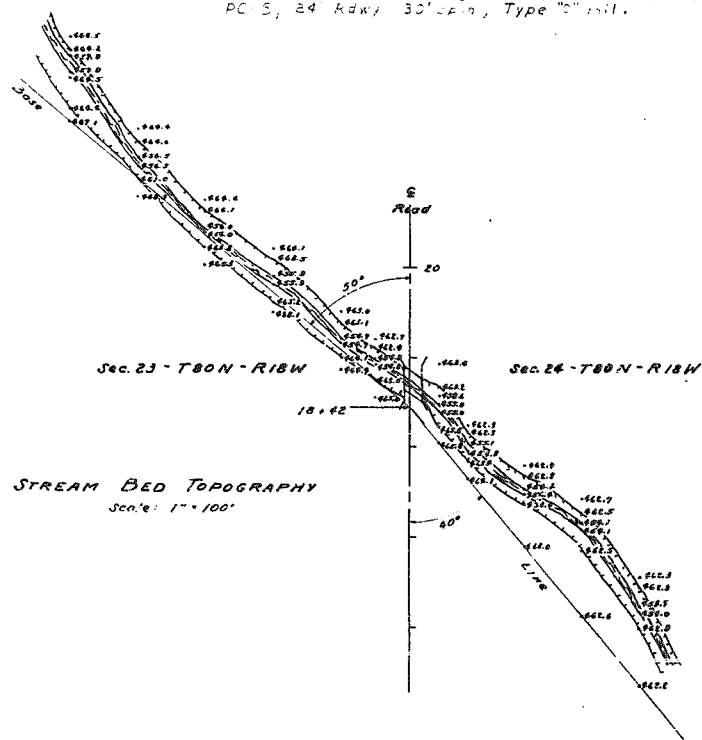
*Minimum Diameter 3" from butt is to be 14"

Station	From Surface	Depth	Loc of Hole	Description of Material
1	18+38	13.4	0.0	Very firm glacial clay fill.
			3.0	Firm clay fill.
			9.5	Soft sandy silty clay.
			15.0	Sand.
			18.0	Firm to very firm glacial clay.
			23.0	Very firm glacial clay-occ. boulder.
			41.8	Very firm shale.
2	18+98	11.5	0.0	Very firm glacial clay fill.
			3.0	Firm clay fill.
			9.5	Soft very sandy silty clay.
			12.0	Sand.
			17.5	Firm to very firm glacial clay.
			23.5	Firm to very firm glacial clay.
			28.5	Very firm glacial clay-occ. boulder.
			39.5	Firm shale.
			41.5	Very firm shale.

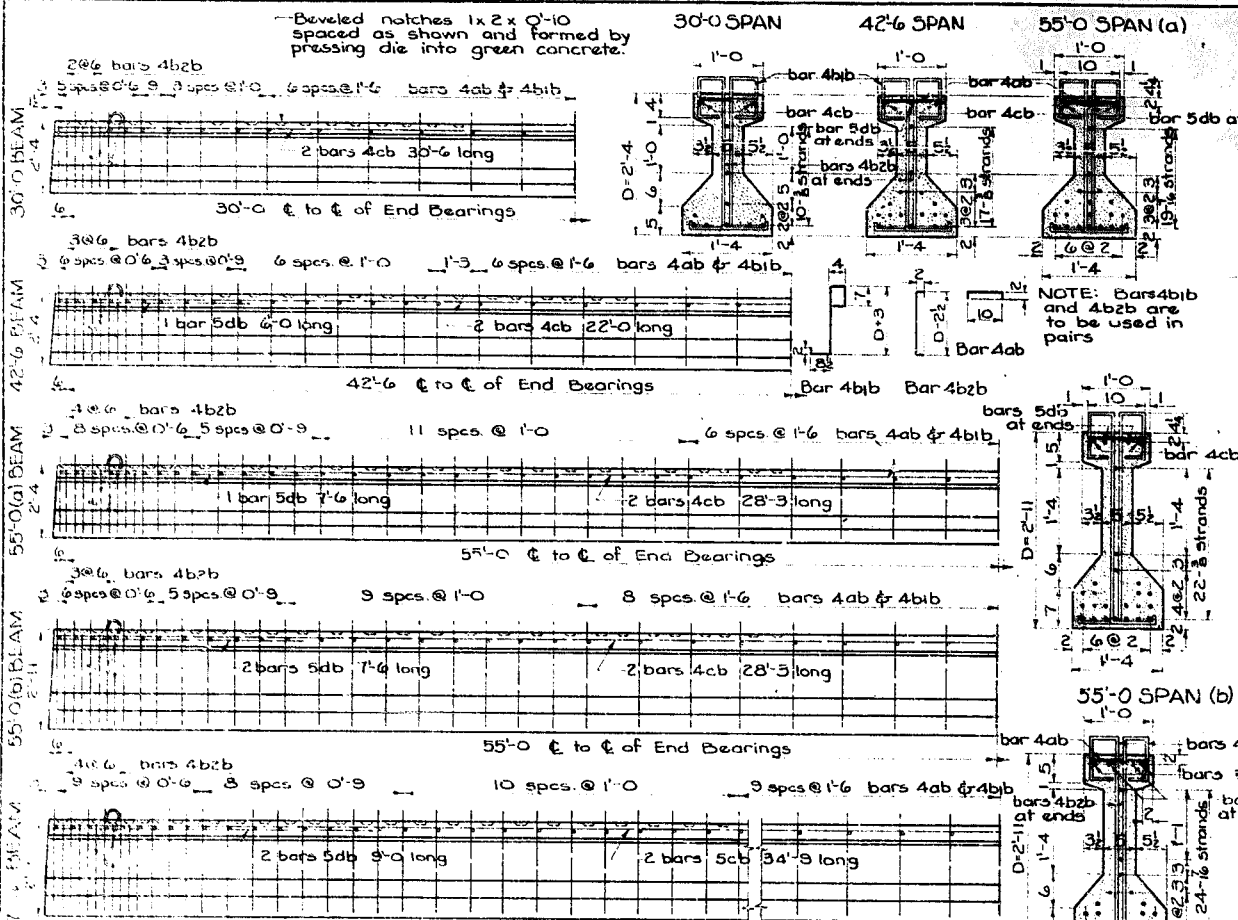


Bridge contractor to remove 26'x20' concrete bridge at Sta. 18+75. Piling and concrete substructure to be cut off one (1) foot below stream bed, or as noted in article 240.03 of the I.M.C. Specification Series 1956.

Reference: I.M.C. Standard Substructure 412 & 413 (13' for H. Abutment and 20' for S. Abutment).
Superstructure: The main slab will require thickening over the abutments to compensate for the natural number of the pre-stressed beams.
Foundation: No need to be taken after the beams are in place, but before the slab is poured, and a new grade should be set for the bridge. This will make the grade a finished grade. An allowance should be made for the deflection of the beam due to the weight of the floor slab (approximately 1/2" at 20' span).
Specifications: For construction refer to I.M.C. Standard Series of 1956 and current local provisions.
Superstructure details to be as shown on Sheet 4 PC 5, 24 Adm. 30' span, Type "B" mill.



DESIGN #3558 FOR 30° SKEW
30'x24' PRE-STRESSED CONCRETE BRIDGE
WOOD SUBSTRUCTURE ~ CONCRETE FLOOR
JASPER COUNTY
STATION 18+70.0 ~ PROJECT S-273(2)
JANUARY 1958 ~ SCALES AS NOTED



DETAILS OF BEAMS

Scale: 1/4" = 1'-0"

TYPE "C" RAIL

TYPE "A" RAIL

NOTE: Sections of floor over piers and pier diaphragms shown cross-hatched are to be placed last. Coils may be placed continuously.

MULTIPLE SPAN COMBINATIONS		End Brngs		X	M	N	bars b2
30'-0"	30'-0"	30'-0"	30'-0"	4'	14'	12@7-8	4b2
30'-0"	42'-6"	30'-0"	42'-6"	4'	16'	13@8-0	4b2
30'-0"	55'-0"	30'-0"	55'-0"	4'	20'	16@8-1	4b2
42'-6"	42'-6"	42'-6"	42'-6"	7'	22'	18@7-11	5b2
42'-6"	55'-0"	42'-6"	55'-0"	8'	26'	21@7-11	5b2
55'-0"	55'-0"	55'-0"	55'-0"	9'	28'	23@7-11	5b2
67'-6"	67'-6"	67'-6"	67'-6"	9'	32'	26@7-11	6b2

NOTES ON PRESTRESSED BEAMS:

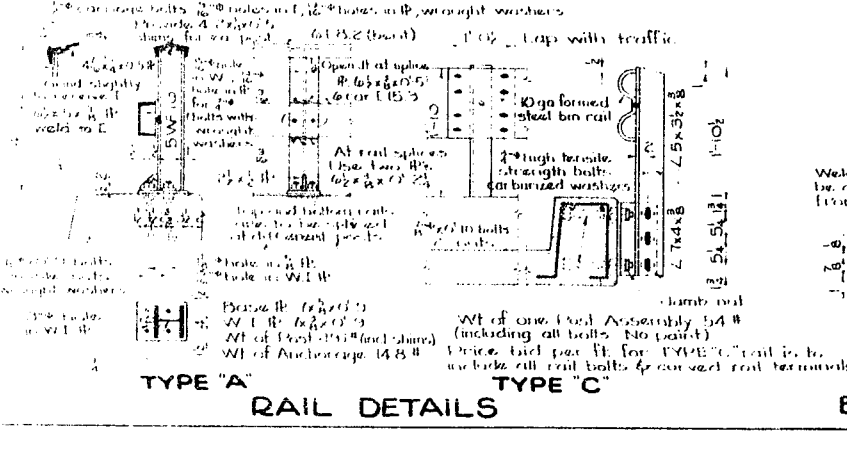
Concrete in beams shall have a 28 day crushing strength of 5000 psi and a minimum of 4500 psi when stress is released. It shall contain 1" max. V aggregate. The maximum size of coarse aggregate shall be 1". Prestressing tendons shall be 7 wire strands of high strength uncoated wire, stress relieved after stranding with a modulus of elasticity of not less than 27,000,000. Ultimate breaking strength of 27,000 lbs for 1/2 strands and 55,000 lbs for 1 strand. Yield strength (0.2% offset) of 85% of the ultimate and minimum elongation in 10" of 4%. Strands are to be initially stressed to 60% of the ultimate. Release for 1/2 and 14,000 for 1. Stress is to be determined by the mentioned elongation and checked by gauges on calibrated jacks.

After release of strands beams are to be supported at all times near ends and handled by means of lifting loops near ends of beams.

2" x 4" x 1/2" holes in 1/2" bars in 1/2" weight washers

2" x 4" x 1/2" holes in 1/2" bars in 1/2" weight washers

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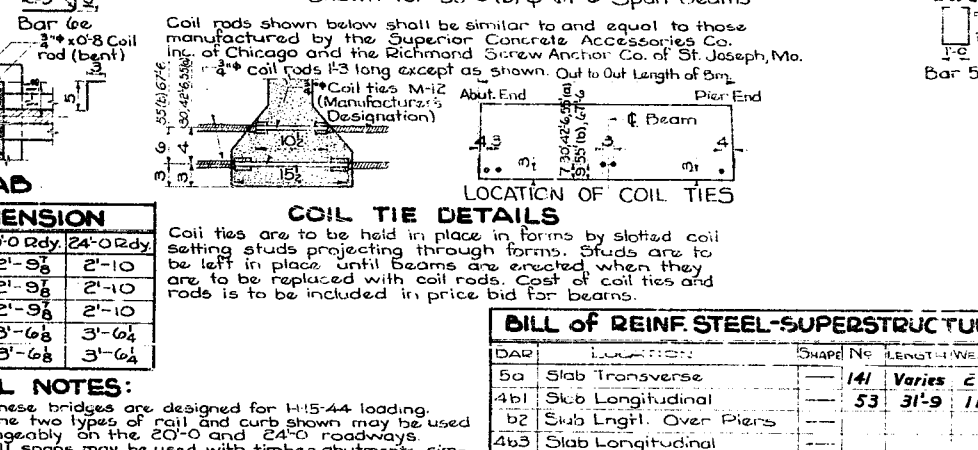
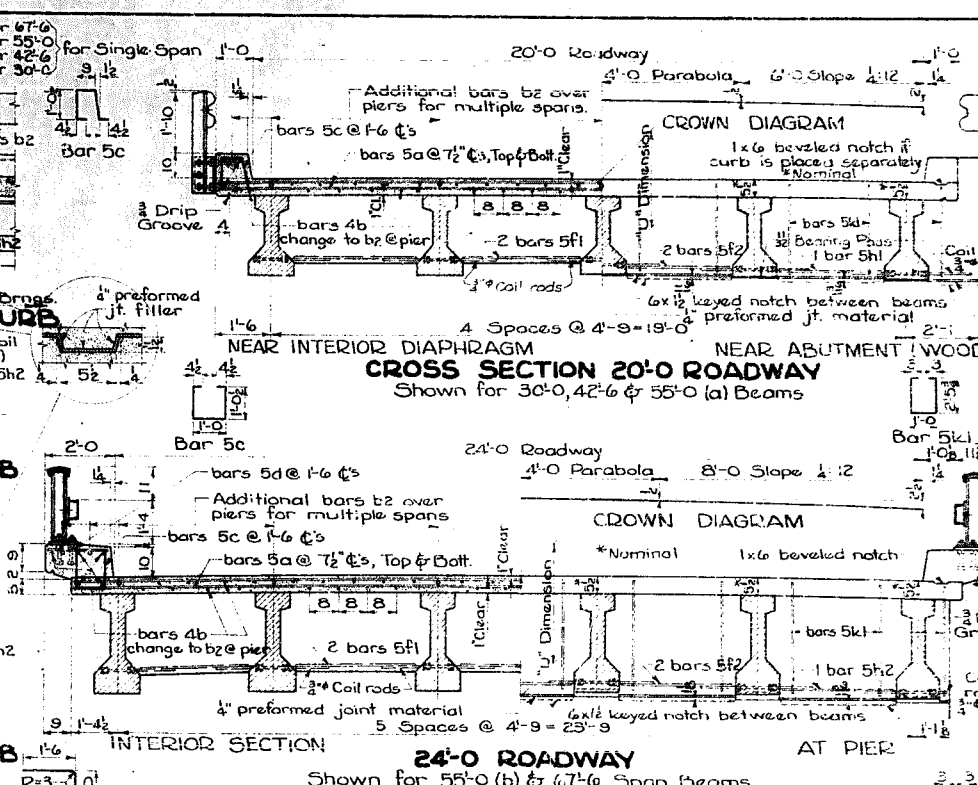
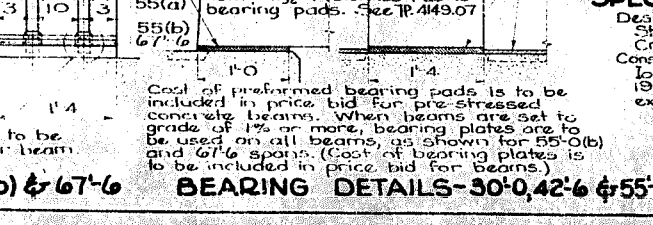
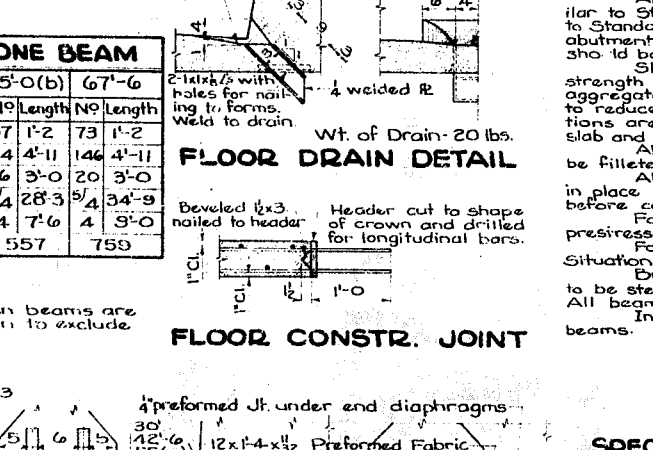
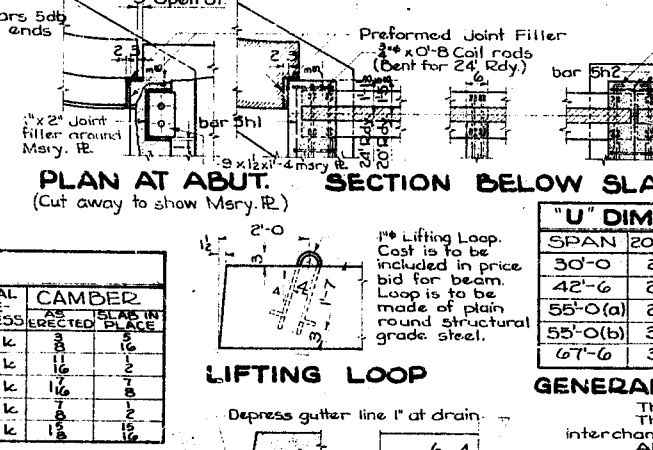
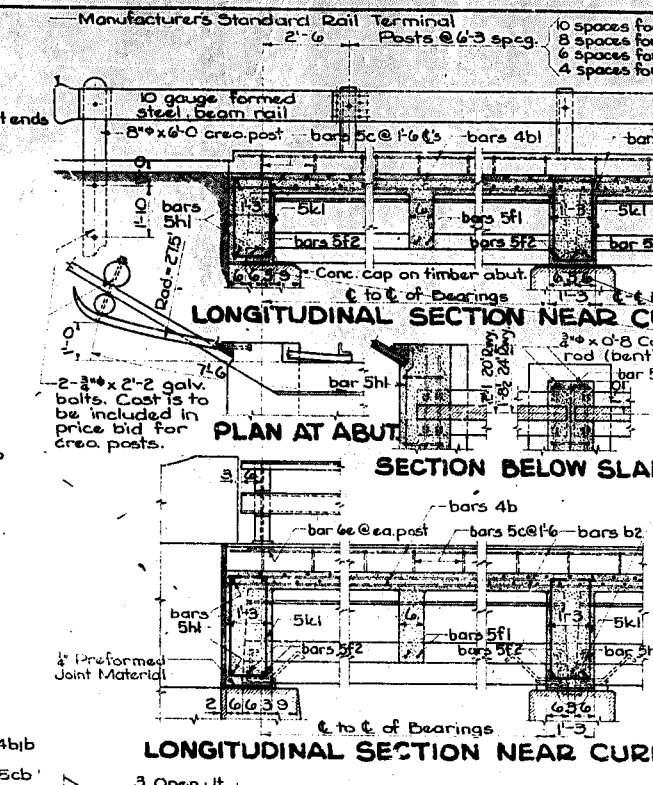
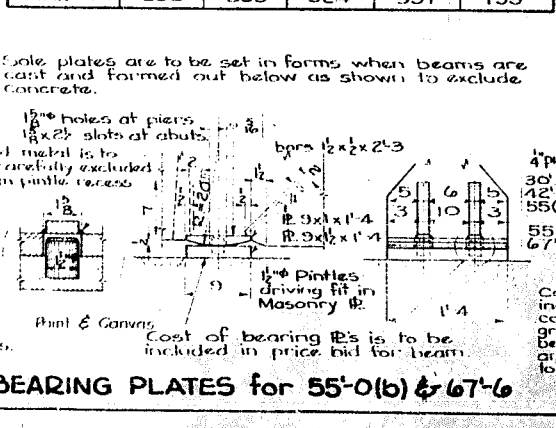


BEAM DATA

SPAN	DEPTH	STRANDS	CONC. CY	DEIN. STEEL	INITIAL PRE-STRESS	CAMBER
30'-0"	2'-4"	10-3/8	2.06	262	217	140 L
42'-6"	2'-4"	17-3/8	2.90	393	217	238 L
55'-0"	2'-4"	19-1/8	3.73	524	217	360 L
55'-0"	2'-11"	22-3/8	4.66	557	217	308 L
67'-6"	2'-11"	24-3/8	5.70	759	217	453 L

BILL OF REINF. STEEL for ONE BEAM

BAR	SHAPE	30'-0"	42'-6"	55'-0"	55'-0"	67'-6"
4cb		31	1-2	45	1-2	61
4b1b		62	4-4	90	4-4	122
4b2b		12	2-5	16	2-5	20
cb		4	2	6	2	8
5db		—	—	—	—	—
TOTAL WT		262	393	524	557	759



COIL TIE DETAILS

Coil ties are to be held in place in forms by slotted coil setting studs projecting through forms. Studs are to be left in place until beams are erected when they are to be replaced with coil rods. Cost of coil ties and rods is to be included in price bid for beams.

GENERAL NOTES:

These bridges are designed for H-15-44 loading. The two types of rail curb shown may be used interchangeably on the 20'-0" and 24'-0" roadways. All spans may be used with timber abutments similar to Standard HIO-2 concrete slab abutments similar to Standard HIO-3, or other types of rigid concrete abutments. When used in multiples as shown they shall be set on flexible type piers. Slab concrete is to have a 28 day crushing strength of 3500 psi and is to contain no Class "V" aggregate. It is to be placed as dry as practicable to reduce shrinkage to a minimum and special precautions are to be taken to secure complete bond between slab and beams. All exposed corners of 90° or sharper are to be filleted. All reinforcing bars are to be securely wired in place and adequately supported on bar chairs before concrete is placed. Forms for slab are to be supported by the prestressed beams. For number and spacing of floor drains, see Situation Plan. Bridge seats of both abutments end piers are to be stepped as shown due to crown of roadway. All beams are to be set vertical. Intermediate diaphragms are located at 1/2 of beams.

BILL OF REINF. STEEL-SUPERSTRUCTURE

BAR	SHAPE	SPACING	NO.	LENGTH	WT.
5a	Slab Transverse	14"	Varies	27-42	
4b1	Slab Longitudinal	53"	31-9	1124	
4b2	Slab Long. Over Piers				
4b3	Slab Longitudinal	42"	3-3	142	
5c	Curb Dowels				
5d	Curb Transv. (Type "A" Rail)				
6a	Rail Post Anchor (Type "A" Rail)				
5f1	Intermediate Diaphragm	10	4-4	45	
5f2	Abut. & Pier Diaphragm Short	20	3-10	80	
5h1	Abutment Diaphragm Long	4	31-0	83	
5h2	Pier Diaphragm Long				
5k1	Abutment & Pier Hoops	24	6-2	154	

ESTIMATED QUANTITIES-SUPERSTRUCTURE

ITEM	UNIT	QUANTITY
Concrete	cuyd	28.2
Reinforcing Steel	lbs.	4372
Structural Steel	lbs.	620
Pre-stressed Conc. Beams	30'-0"	6
Pre-stressed Conc. Beams	Beam	6
Formed Steel Beam Rail	L.F.	80
Crescoted Wood Rail Posts 8"x6"x0 Post		4