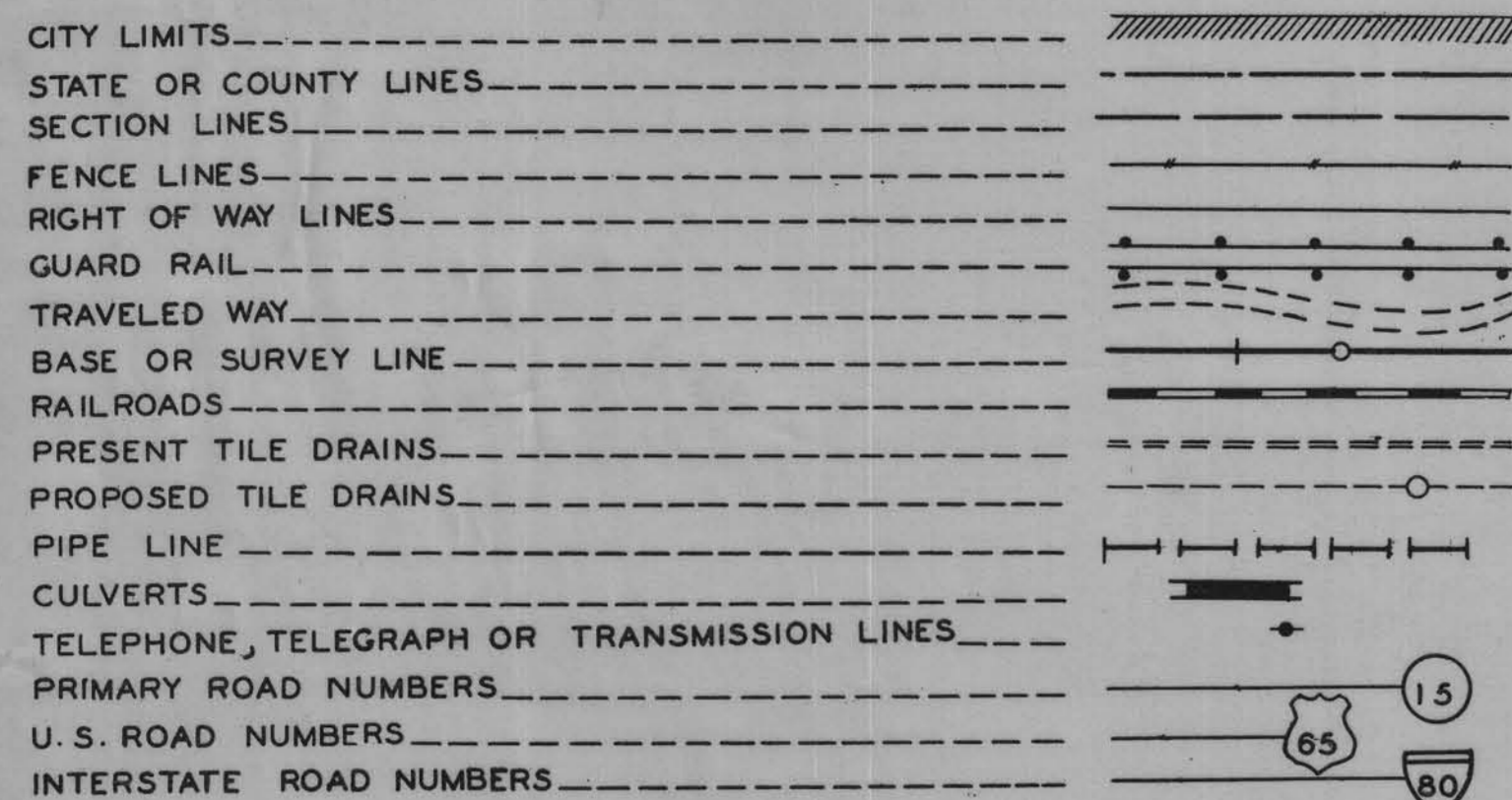


CONVENTIONAL SIGNS



STATE OF IOWA
STATE HIGHWAY COMMISSION
 PLAN & PROFILE OF PROPOSED IMPROVEMENT
 ON THE
FARM TO MARKET SYSTEM
CRAWFORD COUNTY

PROJECT NO. S-220(4)
 DESIGNS FOR REINFORCED CONCRETE BOX CULVERTS & 100'X28',
 125'X28', CONTINUOUS CONCRETE SLAB BRIDGES.

SCALES { PLAN 1 INCH=100 FT.
 PROFILE HOR. 1 INCH=100 FT.. VERT. 1 INCH=10 FT.

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS
 FOR CONSTRUCTION WORK, SERIES OF 1960, SHALL
 APPLY TO WORK ON THIS PROJECT PLUS
 CURRENT SUPPLEMENTAL SPECIFICATIONS
 AND SPECIAL PROVISIONS

FED. ROAD DIST. NO.	STATE	S. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IOWA	220(4)	1962	1	13

INDEX OF SHEETS

SHEET NO.
 1
 2-13

ITEM
 TITLE SHEET & ESTIMATE OF QUANTITIES
 DETAILS

PROJECT S-220(4) DESIGN 962 STA. 242+14
 SEC. 8-17 WASHINGTON TOWNSHIP

100' X 28' CONTINUOUS SLAB BRIDGE

DESCRIPTION	ABUTMENTS	SUPERSTRUCTURE	TOTALS
STRUCTURAL CONCRETE	35.0 C.Y.	165.7 C.Y.	200.7 C.Y.
REINFORCING STEEL	2784 LBS.	36,715 LBS.	39,499 LBS.
STRUCTURAL STEEL		5,332 LBS.	5,332 LBS.
CREOSOTED PILES 20 @ 35'	700 L.F.		700 L.F.
CONCRETE PILES 14 @ 50' P10A 16" TYPE III		700 L.F.	700 L.F.
EXCAV. CLASS 10 CHANNEL	108 C.Y.		108 C.Y.
EXCAV. CLASS 20	10 C.Y.		10 C.Y.
EXCAV. CLASS 24	56 C.Y.		56 C.Y.
REMOVAL OF OLD BRIDGE			LUMP SUM

BRIDGE SIGN ASSEMBLY NOTE:
 These bridges will require bridge sign assemblies
 (furnished and placed by others) in accordance with
 the Traffic and Highway Planning Instruction N^o 11,
 revised October 1, 1961.

PROJECT S-220(4) DESIGN 1062 STA. 251+10.0
 SEC. 8-17 WASHINGTON TOWNSHIP

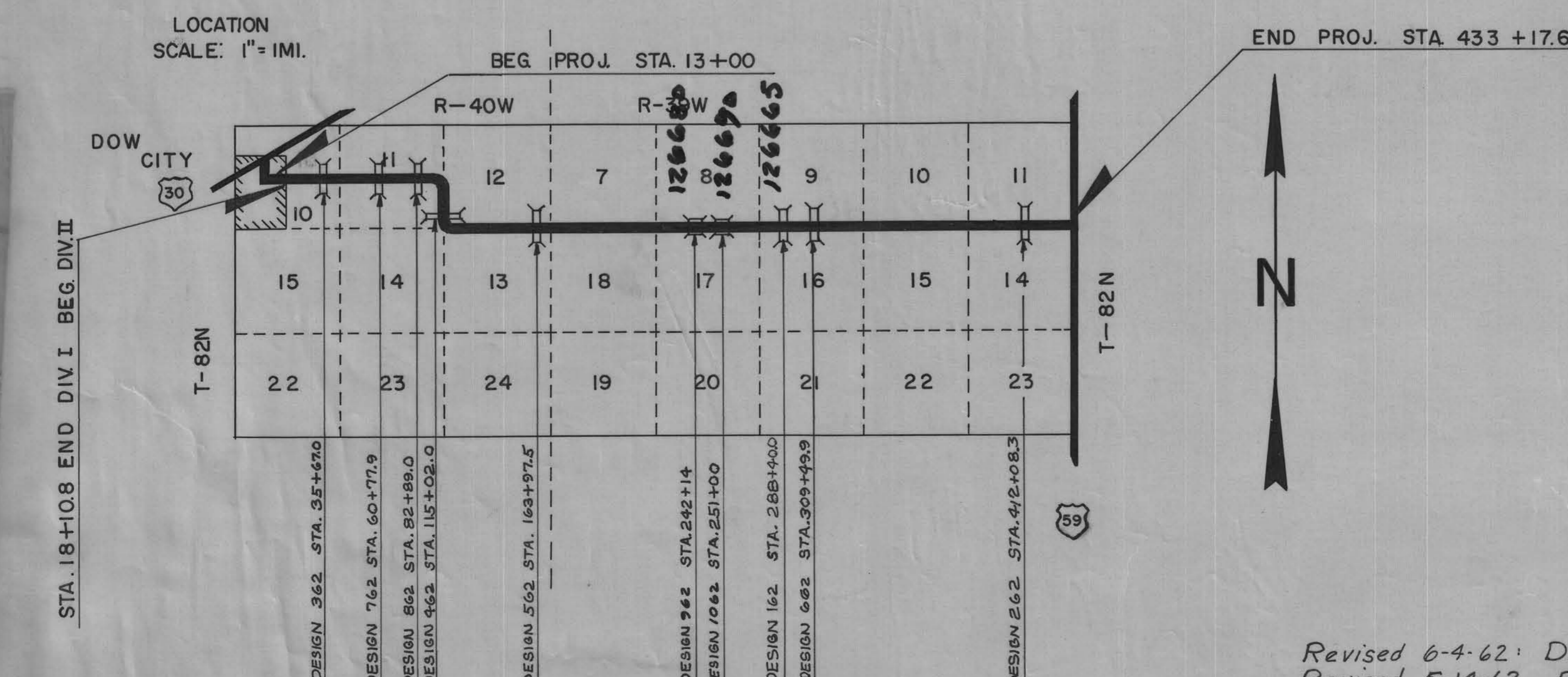
125' X 28' CONTINUOUS SLAB BRIDGE

DESCRIPTION	ABUTMENTS	SUPERSTRUCTURE	TOTALS
STRUCTURAL CONCRETE	35.6 C.Y.	250.9 C.Y.	286.5 C.Y.
REINFORCING STEEL	5,400 LBS.	55,081 LBS.	60,481 LBS. 57881
STRUCTURAL STEEL		6,533 LBS.	6,533 LBS.
CREOSOTED PILES 20 @ 40'	800 L.F.		800 L.F.
CONCRETE PILES 16 @ 50' P10A 16" TYPE III		800 L.F.	800 L.F.
EXCAV. CLASS 10 CHANNEL	385 C.Y.		385 C.Y.
EXCAV. CLASS 20	5 C.Y.		5 C.Y.
REMOVAL OF OLD BRIDGE			LUMP SUM

DESIGN	LOCATION			DESCRIPTION	ESTIMATE OF QUANTITIES									
	SEC.	TWP.	STATION		CONCRETE	REIN. STEEL	CLASS 10 EXCAV.	CLASS 20 EXCAV.	CLASS 24 EXCAV.	FILTER MATERIAL	COMPACTION BACKFILL	4" PERFORATED FIBER PIPE	1 1/2" Galv. Rail	REMOVALS
					CU. YDS.	LBS.	CU.YD.	CU.YD.	CU.YD.	TONS	C.Y.	Lin. Ft.	Lbs.	LUMP SUM
362	10	82-40	35+67.0	5'X5'X14-6" EXTENSION	12.71	1,040		7						As per plans
762	11	82-40	60+77.9	8'X10' EXTENSION WITH FLUME & DROP INLET	184.77	20,501		278		9.10	132	55	376	As per plans
862	11	82-40	82+89.0	10'X10' EXTENSION WITH FLUME & DROP INLET	154.59	17,070		70		9.50	247	52	356	As per plans
462	11-12	82-40	115+02.0	5'X5'X10' EXTENSION	10.15	835		12						As per plans
562	12-13	82-40	163+97.5	6'X8' EXTENSION & FLUME	64.92	7,295	56	33	23					As per plans
162	9-16	82-39	288+60.0	TWIN 10'X10'X93' 30° SKEW	359.96	50,732		1,228						As per plans
662	9-16	82-39	309+49.9	5'X5' EXTENSION LT & RT.	52.75	4,638		8	31					As per plans
262	11-14	82-39	412+08.3	10'X10'X64' R.C.B.C.	151.20	17,306		180						128x128 structural Plate Culvert
TOTAL					991.0	118,554	56	1716	54	18.6	379	107	732	Lump Sum

DETAIL PLANS
 REDUCED IN SIZE
 (DO NOT SCALE)

S-220(4) APRIL 24, 1962 LET.



Revised 6-4-62: Design 1062 - Abutment reinforcing steel corrected.
 Revised 5-14-62 Reinforcing Steel Quantity corrected on Design 162

APPROVED _____ DATE _____

CHAIRMAN _____

DEPUTY CHIEF ENGINEER _____ DATE _____

IOWA HIGHWAY COMMISSION

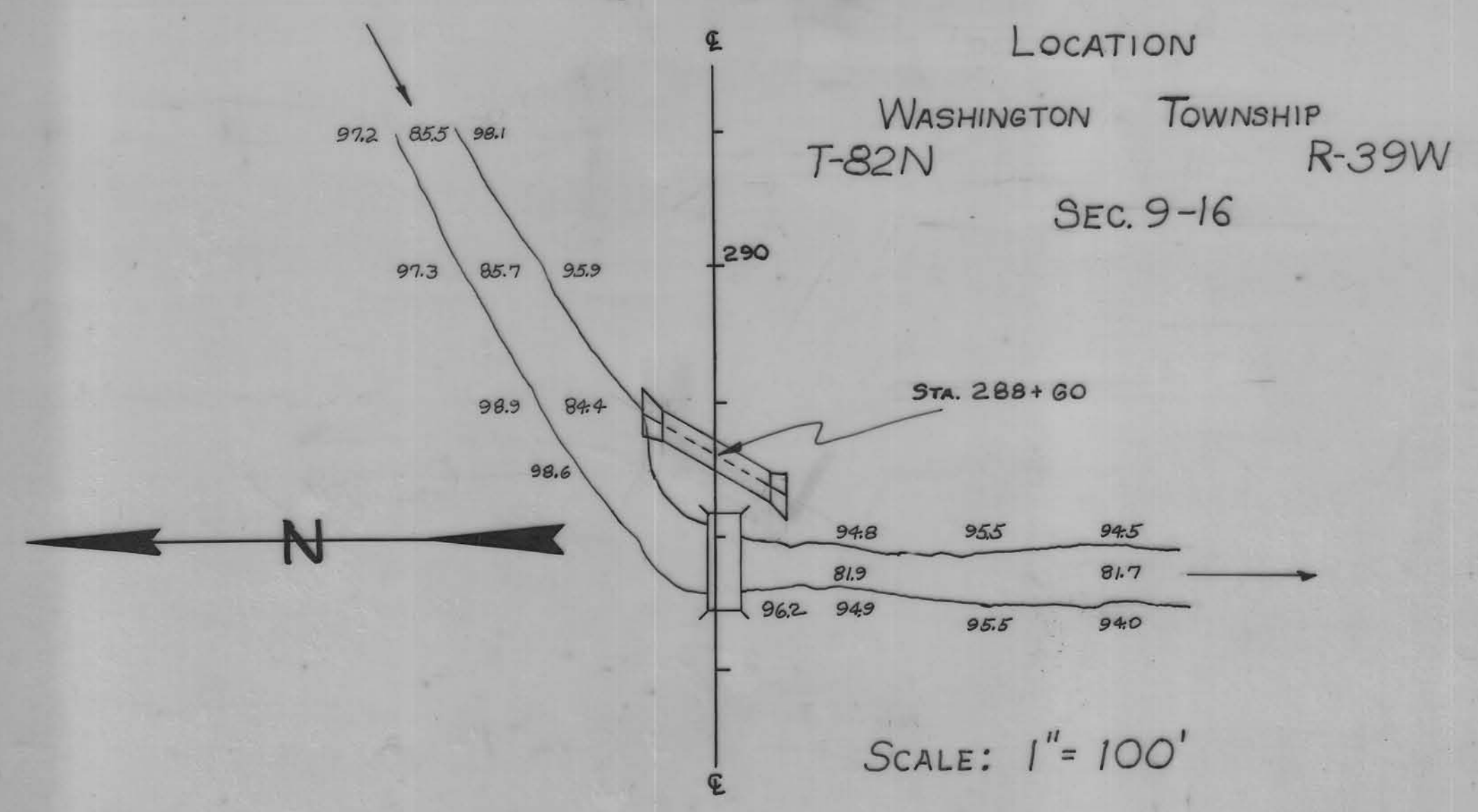
DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS

APPROVED _____

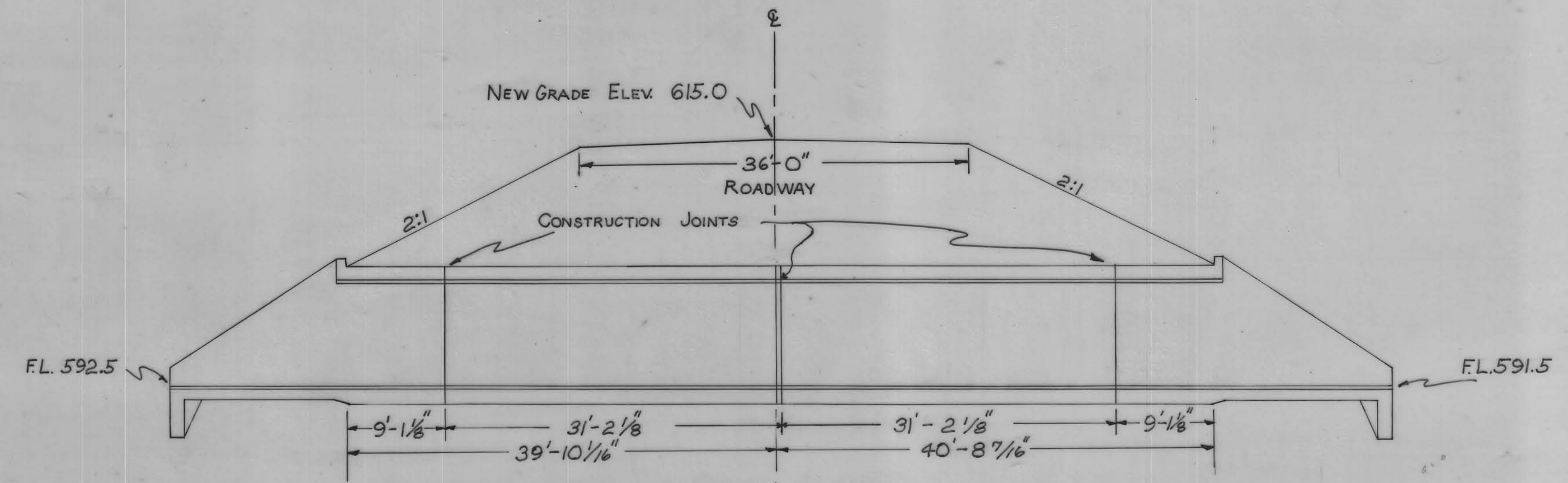
DIVISION _____ ENGINEER _____ DATE _____

BOARD OF SUPERVISORS

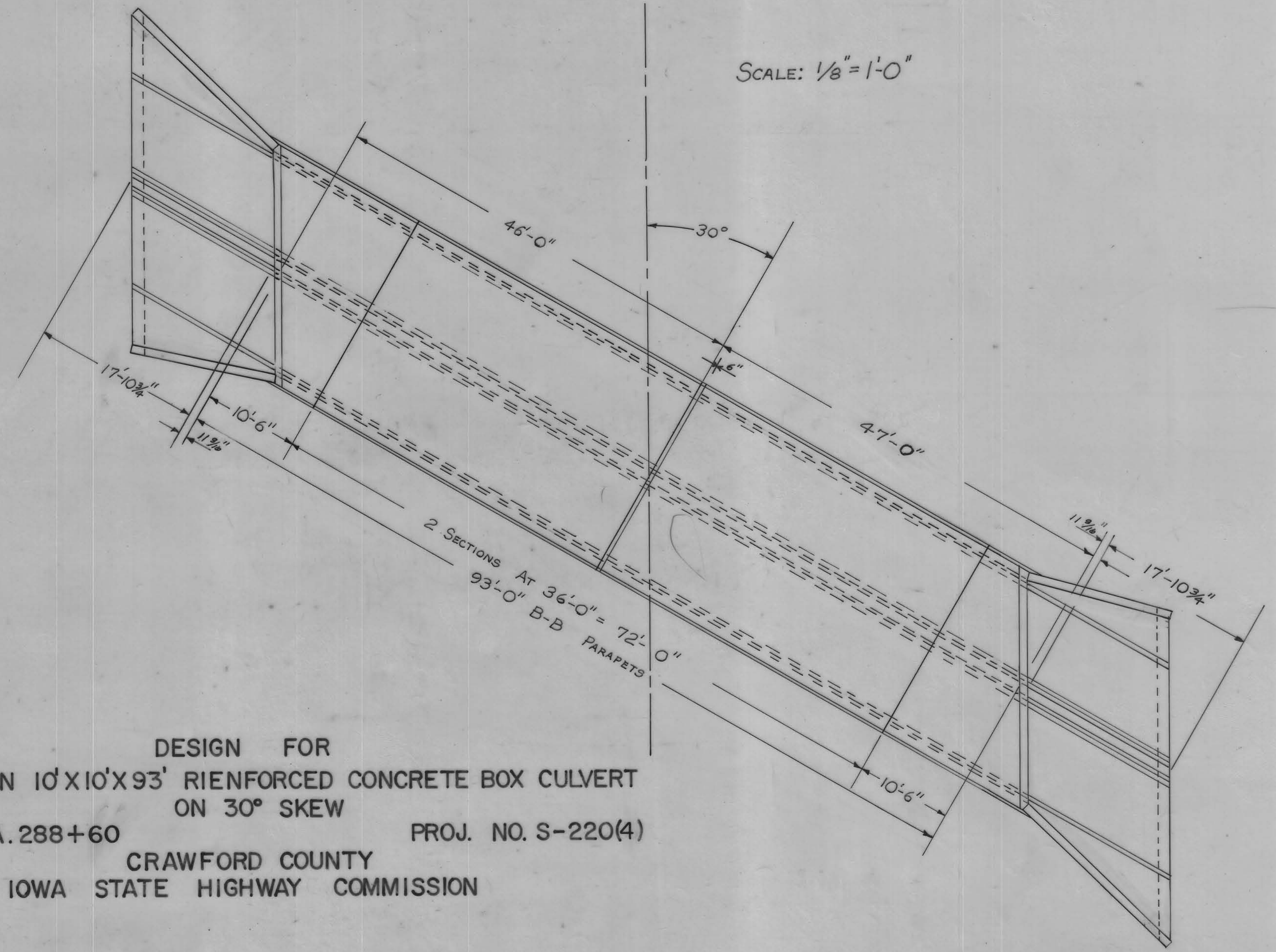
BM 34 STA. 287+32 SPK. REA POLE 29' LT. EL. 600.05



SCALE: 1" = 100'



SCALE: 1/8" = 1'-0"



CLASS 20 EXCAVATION	1,128	CU. YDS.
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CONCRETE IN PARTS			
CU. YDS.			
LOCATION	FOOTING	ABOVE FOOTING	TOTAL
BARREL SECTION	100.97	174.83	275.80
HEADWALLS	58.26	25.90	84.16
TOTAL	159.23	200.73	359.96

REINFORCING STEEL	50,732	LBS.
REMOVAL OF BRIDGE	49,863	LUMP SUM

CURTAIN WALLS TO BE FORMED

DESIGN FOR
TWIN 10'X10'X93' REINFORCED CONCRETE BOX CULVERT
ON 30° SKEW
STA. 288+60 PROJ. NO. S-220(4)
CRAWFORD COUNTY
IOWA STATE HIGHWAY COMMISSION

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR CONSTRUCTION WORK, SERIES 1960, SHALL APPLY TO WORK ON THIS PROJECT, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

Revised 5-14-62: Reinforcing steel quantity corrected.

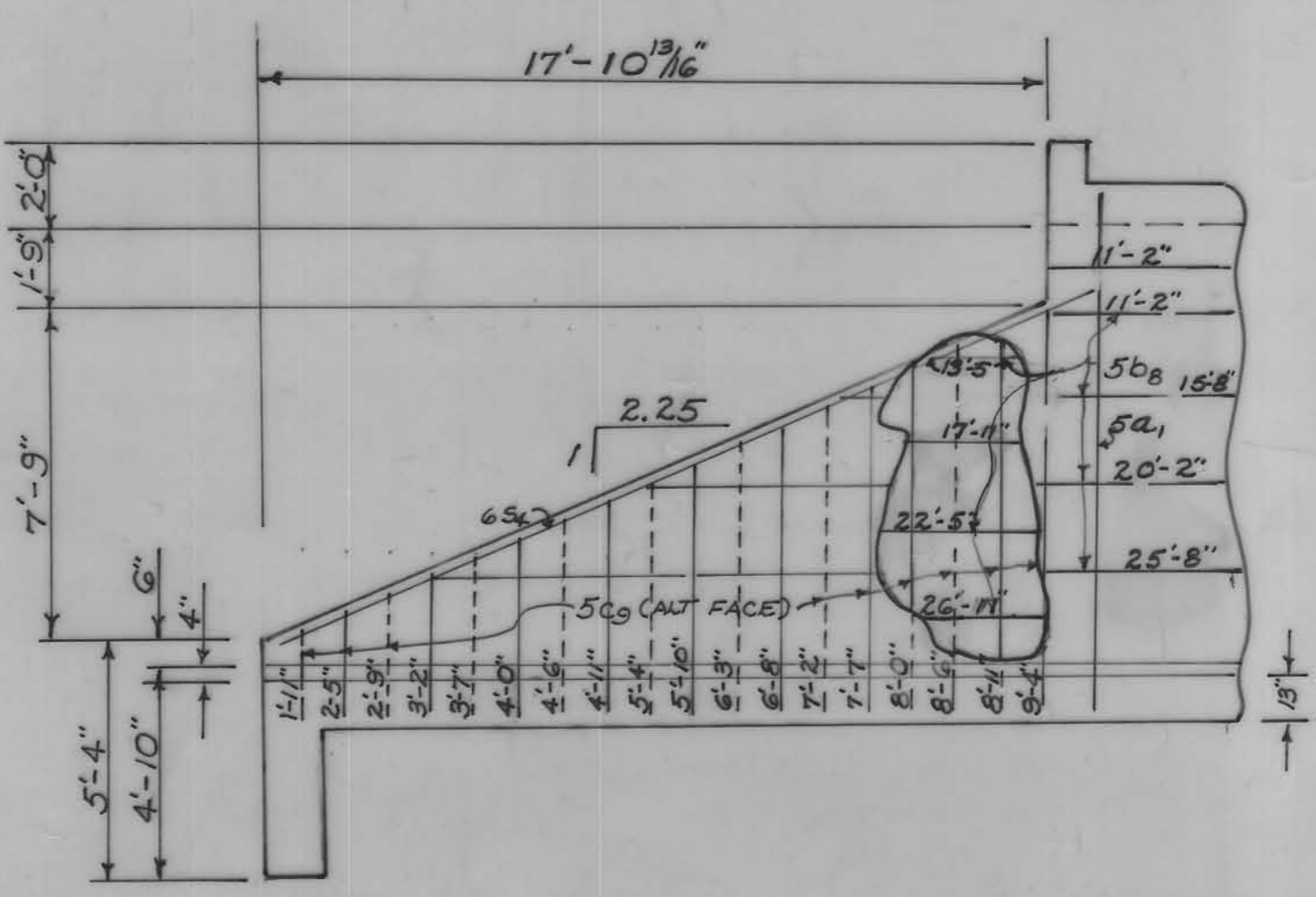
126665

REINFORCING STEEL							
MARK	LOCATION	SHAPE	SIZE	NO	SPACE	LENGTH	WEIGHT
5A ₁	WALLS - VERT - F.F. CENTER WALL BOTH FACES	—	5	190	2'-0" WALL 1'-0" ALT. C.W.	12'-6"	2478
4A ₂	WALLS - VERT - B.F. (EXTERIOR)	—	4	250	0'-9"	8'-9"	1463
4B ₁	WALLS - HORIZ - WING - B.F.	—	4	18	1'-0"	VAR.	218
4B ₂	" " S.WING "	—	4	18	1'-0"	"	186
* 5B ₃	WALLS - HORIZ - EXT WALLS - B.F. F.F.	—	5	36	1'-0" ALT. FACE	36'-5"	1367
* 5B ₄	" " - END SECT - B.F. F.F.	—	5	18	"	14'-2"	266
4D ₅	" " L.WING F.F.	—	4	18	1'-0"	VAR.	218
5B ₆	" " S.WING "	—	6	18	"	"	186
* 5D ₇	CENTER WALL - CTR SECT B.F. F.F.	—	5	18	1'-0" ALT. FACE	36'-5"	694
5D ₈	" " - END SECT B.F. F.F.	—	5	9	1'-0" ALT. FACE	VAR.	249
5C	WINGS - VERT - L.WING B.F.	—	5	32	1'-0"	VAR.	444
5C ₁	" " " " " "	—	5	12	"	"	52
5C ₂	" " BOTH WING B.F.	—	5	18	"	9'-0"	169
5C ₃	" " S.WING "	—	5	22	"	VAR.	305
5C ₄	" " " " " "	—	5	10	"	VAR.	46
4C ₅	" " " " " F.F.	—	4	32	"	"	166
5C ₆	" " BOTH WINGS B.F.	—	5	18	"	10'-6"	197
4C ₇	" " L.WING F.F.	—	4	44	"	VAR.	236
4C ₈	" " BOTH WINGS F.F.	—	4	16	"	6'-0"	45
5C ₉	CENTER WALL - VERT - BOTH	—	5	36	1'-0" ALT. FACE	VAR.	210
4d	FLOOR - L.WING	—	4	2	2' DOWN	22'-0"	29
4d	" " S.WING	—	4	2	"	16'-0"	21
4d ₂	APRON - BOTTOM	—	4	14	"	VAR.	118
* 5e ₁	SLAB - LONG - CENTER - BOTTOM	—	5	36	1'-3"	36'-5"	1367
5e ₂	" " - ENDS "	—	5	36	1'-3"	VAR.	418
* 4e ₃	" " - CENTER - TOP	—	4	16	2'-4"	36'-5"	389
4e ₄	" " - ENDS - "	—	4	16	"	VAR.	119
* 5f ₁	FLOOR " - CENTER - "	—	5	36	1'-3"	36'-5"	1367
5f ₂	" " - ENDS - "	—	5	36	1'-3"	VAR.	418
* 4f ₃	" " - CENTER - BOTTOM	—	4	16	2'-4"	36'-5"	389
4f ₅	" " - ENDS - "	—	4	16	"	VAR.	119
4f	PARAPET - VERT	—	4	48	1'-0"	1'-8"	53
5J	PARAPET - HORIZ	—	5	4	"	25'-11"	108
8K	SLAB - BOTTOM - TRANS - CNTR	—	8	126	0'-7 1/2"	22'-5"	7541
8K ₂	SLAB & FLOOR CORNERS	—	6	500	0'-9"	8'-0"	6010
9K ₃	SLAB - TOP - TRANS	—	9	125	0'-9"	8'-0"	3380
8m	FLOOR - " " CENTER	—	8	126	0'-7 1/2"	22'-11"	7710
8K ₄	SLAB - BOTTOM - TRANS - ENDS	—	8	36	0'-7 1/2"	VAR.	1125
9m ₂	FLOOR - BOTTOM - CENTER	—	9	125	0'-9"	8'-0"	3380
5m ₃	" " - ENDS	—	5	20	1'-0"	VAR.	527
8m ₄	" " TOP - ENDS	—	8	74	0'-8"	VAR.	4464
7p	CURTAIN - TOP & BOTTOM	—	7	8	"	35'-5"	579
6S	WING SLOPE - B&F L.WING	—	6	4	"	25'-6"	153
6S ₁	" " F.F. " "	—	6	2	"	25'-6"	77
6S ₂	" " - B&F S.WING	—	6	4	"	21'-1"	127
6S ₃	" " - F.F. - " "	—	6	2	"	21'-1"	63
6S ₄	" " CENTER - F&B	—	6	4	"	21'-4"	128
5T	CURTAIN	—	5	52	1'-3"	4'-6"	244
5U	"	—	5	12	"	6'-6"	81
5V	SLAB DOWELS	—	5	69	1'-0"	2'-6"	180
						TOTAL	57,865
							50,732
* INCLUDES 20 DIAM LAP							

CONCRETE IN PARTS - C.Y.			
SECTION	FOOT.	ABOVE FOOT.	TOTAL
BARREL	78.17	135.35	213.52
2 ENDS	22.80	39.48	62.28
2 HEADWALLS.	58.26	25.90	84.16
			TOTAL 359.96 C.Y.

QUANTITIES PER FOOT OF BARREL		
CONCRETE		STEEL
ABOVE KEY	BELOW KEY	
1.8798 c/y _{ft}	1.0857 c/y _{ft}	451.96 lbs/ft.

QUANTITIES PER HEADWAL		
CONCRETE		STEEL
ABOVE KEY	BELOW KEY	
12.35 c.y.	29.13 c.y.	7640 lbs.



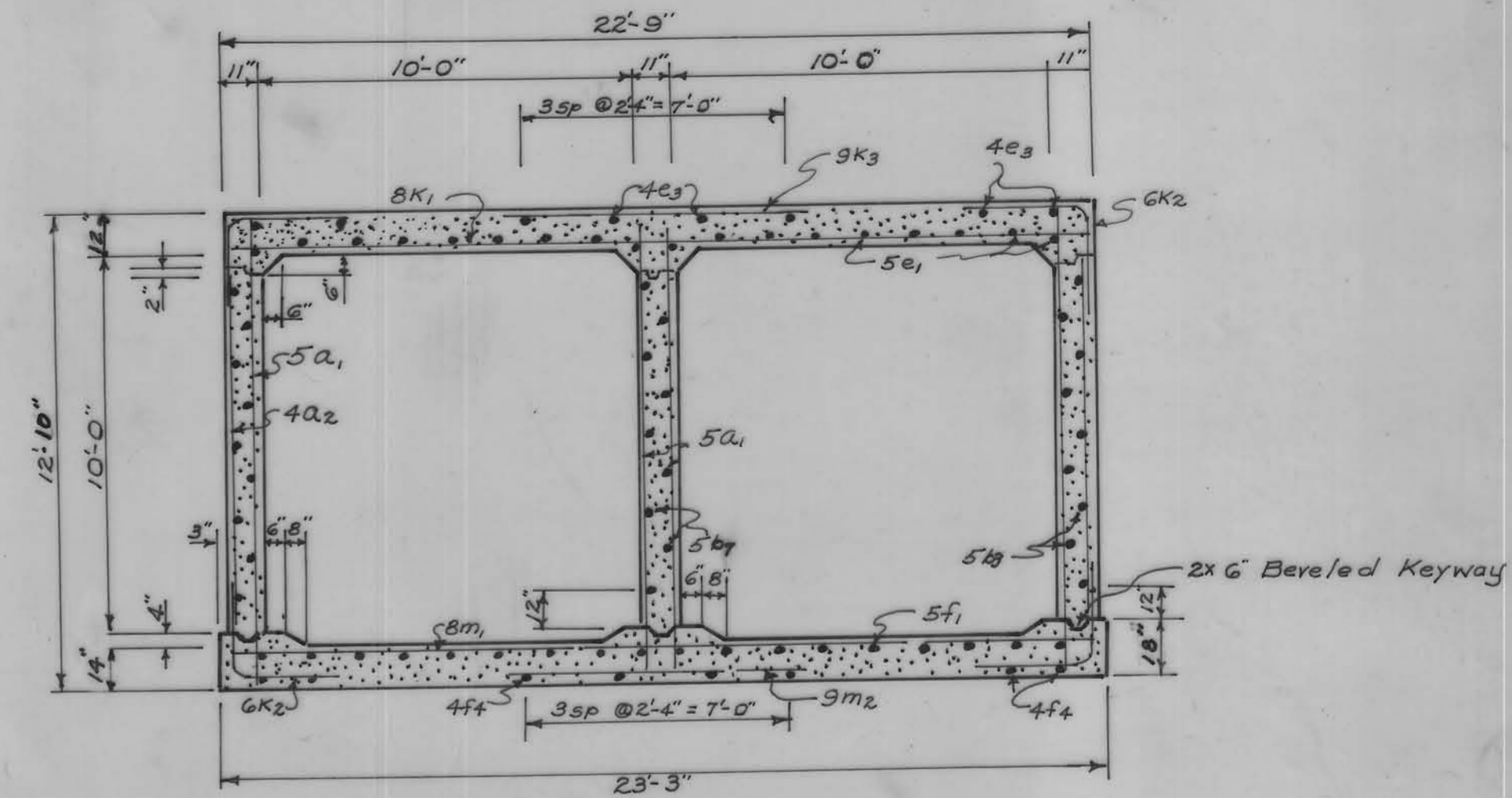
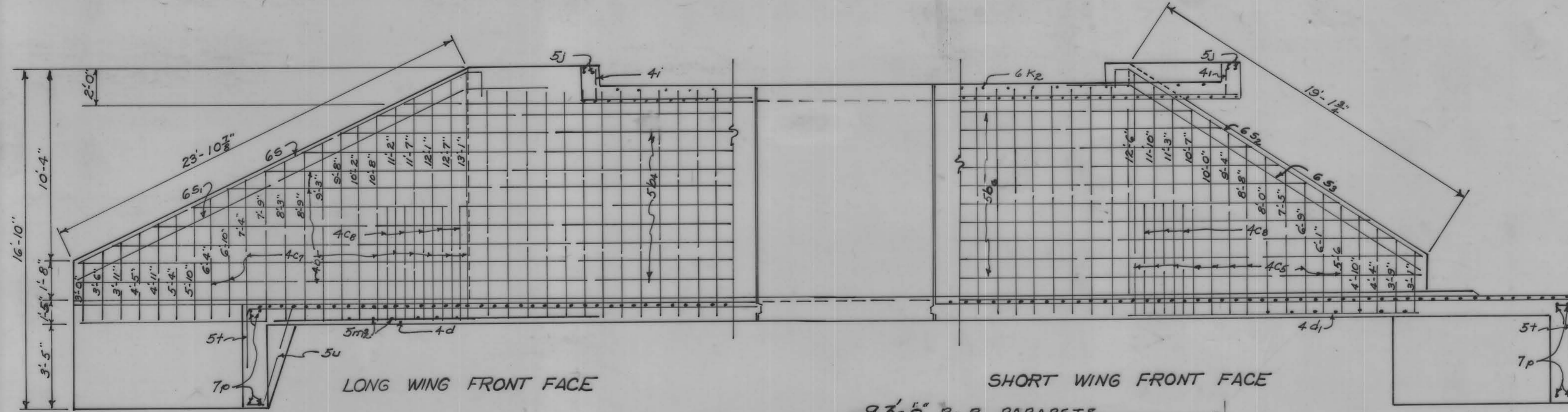
DIVIDER WALL - FRONT & BACK FACE

DA = 1200 H
 C = $\frac{205.0}{203.9} = 1.0$

DESIGN FOR
 TWIN 10'x10'x93.0' BOX CULVERT-SKEW 30°
 REINFORCED CONCRETE
 Station 288+60.0 Project S-220(4)
 CRAWFORD COUNTY
 Scale: 1" = 4'-0"

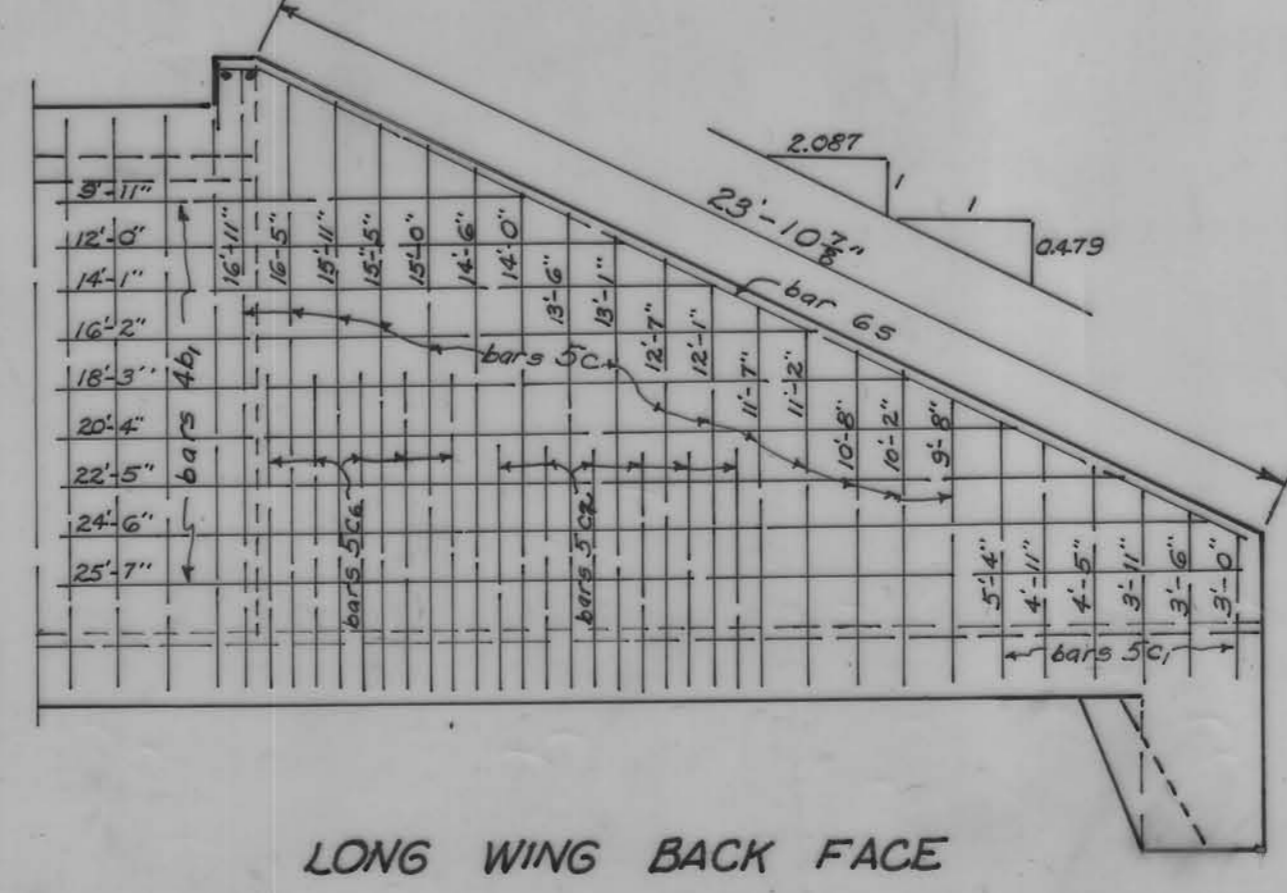
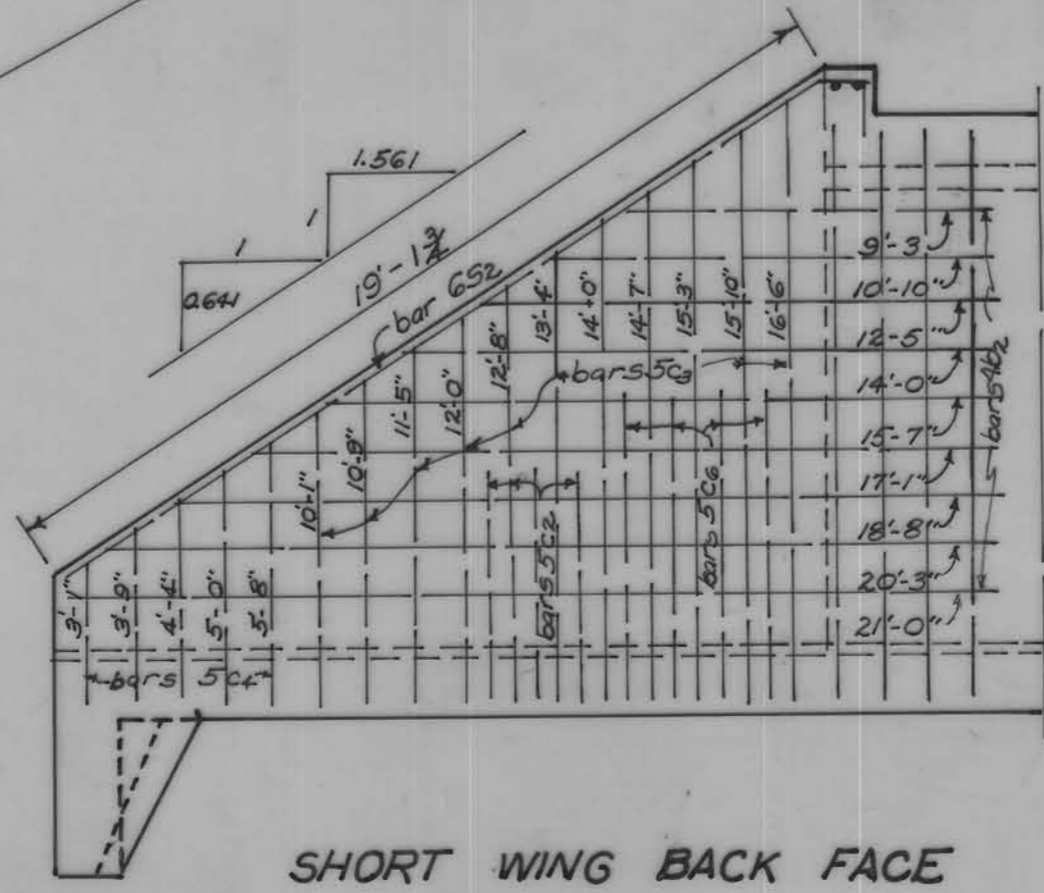
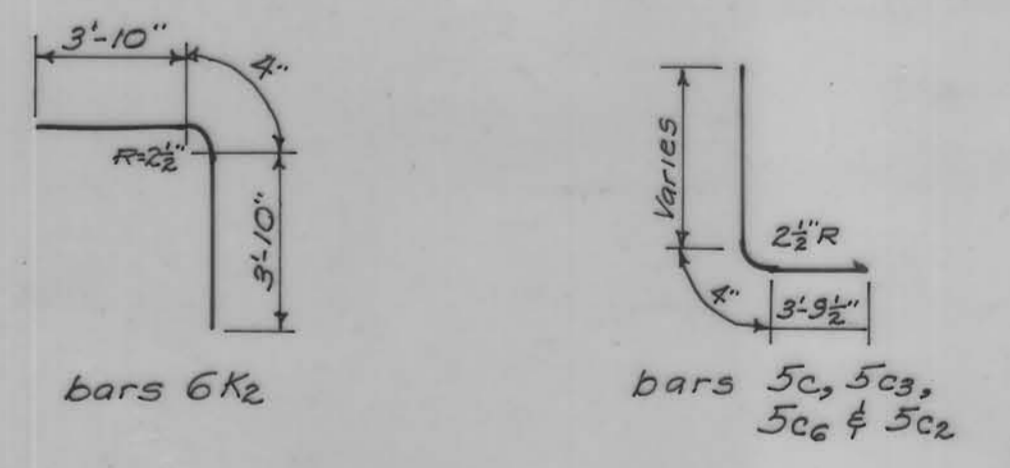
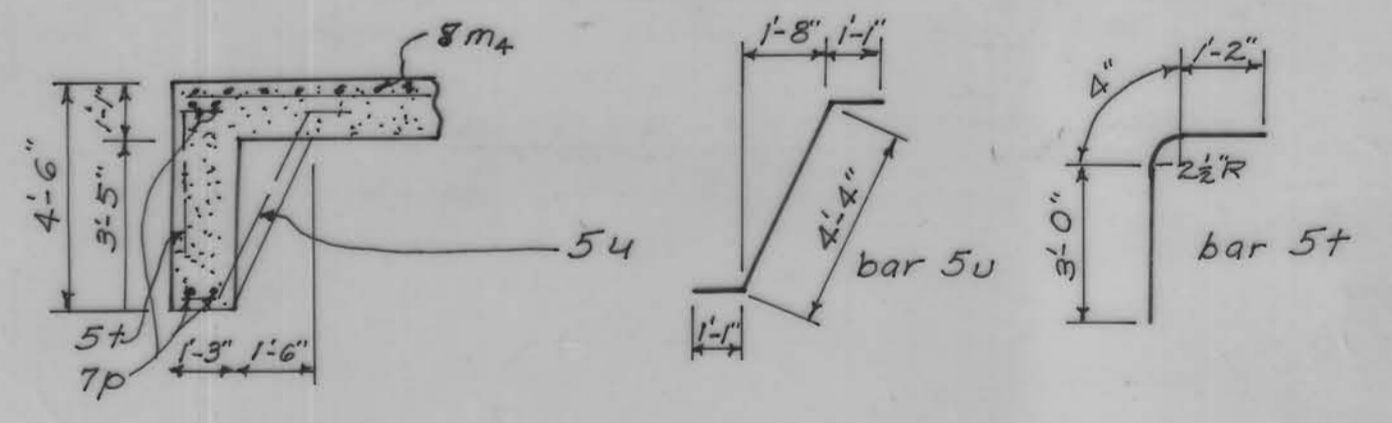
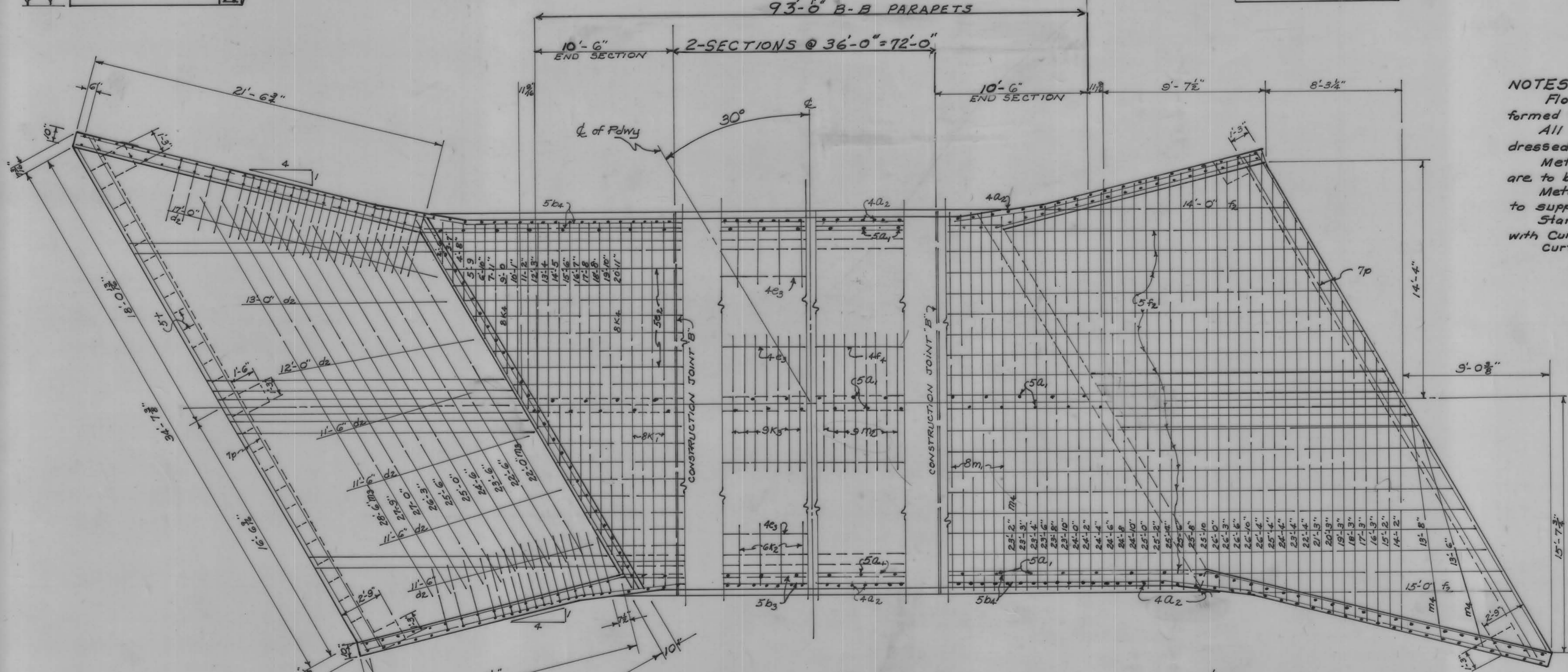
Revised 5-14-62: Reinforcing steel quantity corrected.

126665



CROSS SECTION
12'- FILL

NOTES:
 Floor of barrel to be finished smooth. Sides of footing are to be formed to insure correct line and grade.
 All exposed corners 90° or sharper are to be filleted with 3/4" dressed bevelled strip
 Metal bar chairs spaced not over 3' centers in either direction are to be used to support the lower layer of the top slab bars.
 Metal bar high chairs spaced not over 3' centers are to be used to support the a_3 bars in the top slab.
 Standard Specifications, Series 1960, of Iowa Highway Commission with Current Special Provisions will apply
 Curtain Walls shall be Formed & Forms shall be left in place.

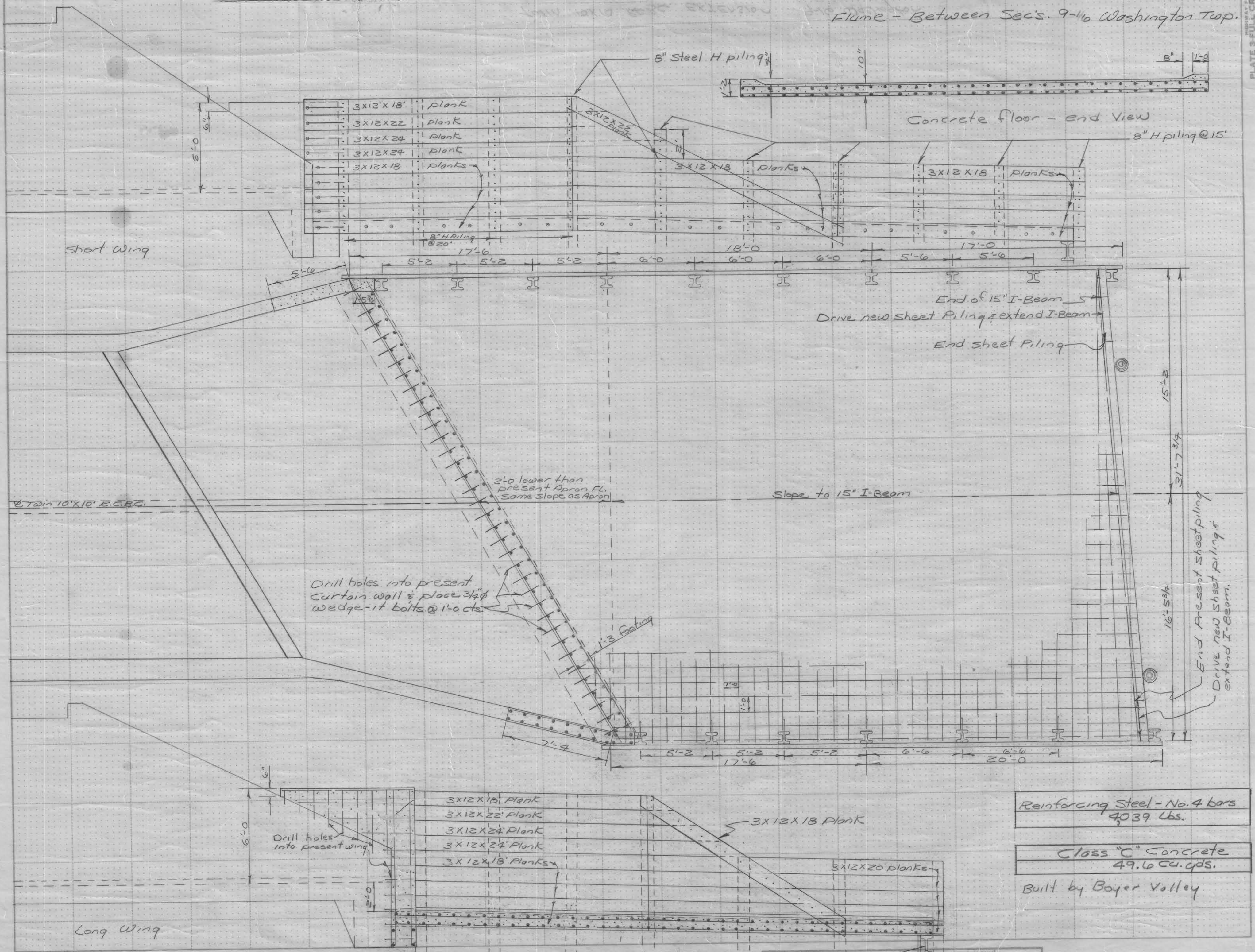


DESIGN FOR
 TWIN 10'x10'x93'-0" BOX CULVERT - SKEW 30°
 REINFORCED CONCRETE
 Station 288+60 Project S-220 (4)
 CRAWFORD COUNTY
 Scale: 1" = 4'-0"

3/3

126665

Flume - Between Sec's. 9-16 Washington Twp.



2'-0" lower than present Apron Fl. Same slope as Apron

Drill holes into present curtain wall & place 3/4" wedge-it bolts @ 1'-0" cts.

1'-3" Footing

Reinforcing Steel - No. 4 bars 4039 lbs.
Class "C" Concrete 49.6 cu. yds.
Built by Boyer Volley

Crawford County project No.

Concrete & Wood Flume extension To a Twin 10'x10' R.C. BC. (30° Skew) Between Sec's. 9 & 16 Washington Township Oct. 1978

DATE	BY

FINAL SURVEY
PLOTTED
TEMPERATURE
NOTE BOOK
AREAS CHECKED

ORIGINAL SURVEY
FLOTTED
TEMPERATURE
NOTE BOOK
AREAS CHECKED

Stream bed

15" I-Beam & sheet piling in place. cut sheet piling to grade.

8" H.Piling @ 20'

8" H.Piling @ 15'

15' piling