

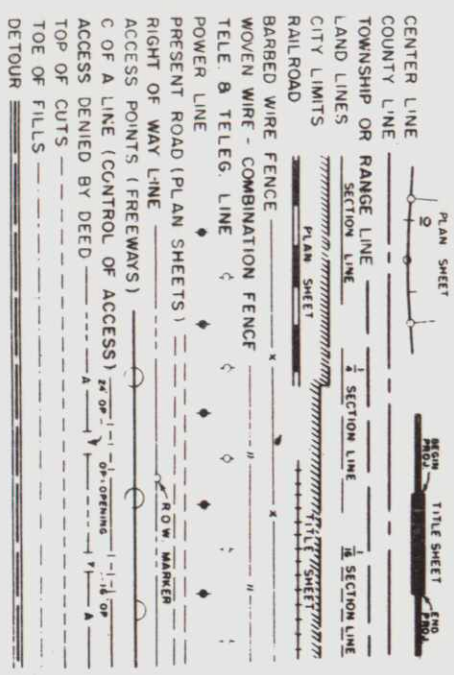
DEPARTMENT OF HIGHWAYS STATE OF COLORADO

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. US 0024(21) STATE HIGHWAY NO. 14 LOGAN COUNTY

ROW PURCHASED ON US 0024(16)

FEDERAL ROAD DISTRICT NO.	PROJECT NO.	SHEET NO.
9	US 0024(21)	1

CONVENTIONAL SIGNS



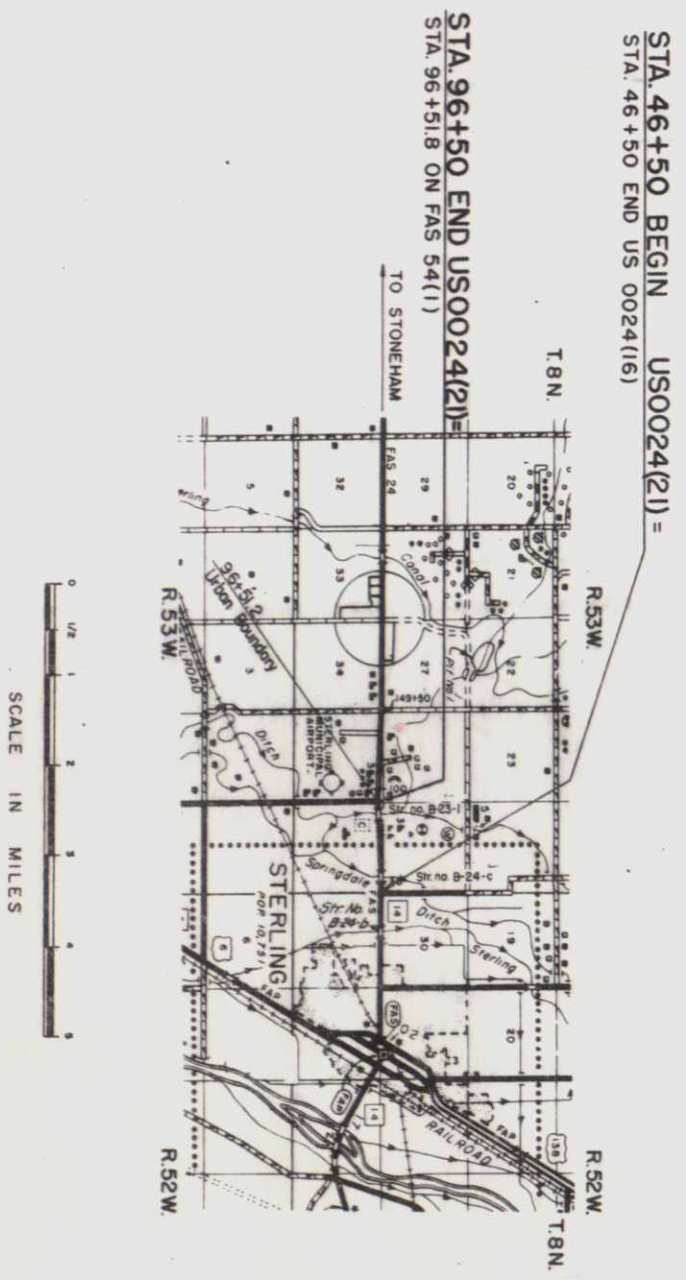
TABULATION OF LENGTH AND DESIGN DATA

STATION	ROADWAY		MAJOR STRUCTURE	
	LN. FT.	MILES	LN. FT.	MILES
46+50 BEGIN US 0024(21) = 46+50 END US 0024(16)	4,754.4			
94+04.4 } STR. NO. B-23-1 CBC 94+35.5 }	214.5		31.1	
TOTALS	4,968.9		31.1	
SUMMARY				
ROADWAY	4,968.9	0.941		
MAJOR STRUCTURE	31.1	0.006		
TOTAL NET & GROSS LENGTH	5,000.0	0.947		
DESIGN DATA				
MAXIMUM DEGREE OF CURVE		1° 00'		
MINIMUM S.S.D. HORIZONTAL		390'		
MINIMUM S.S.D. VERTICAL		435'		
MAXIMUM DESIGN SPEED		50 MPH		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	SKETCH MAP, TABULATION OF LENGTH AND DESIGN DATA.
2	TYPICAL SECTION, GENERAL NOTES, DETAILS OF STORAGE LANES AND MEDIAN OPENINGS.
3-4	SUMMARY OF APPROXIMATE QUANTITIES.
5	SURFACING PLAN, SUBBASE PLAN, CONCRETE COMBINATION CURB AND GUTTER, PIT LOCATION.
6	SUMMARY OF EARTHWORK QUANTITIES, FENCING, CURB CUTS AND ROW MARKERS.
7	STRUCTURE QUANTITIES.
8	DETAILS OF CONCRETE INLETS-STANDARD M-46-A (SPECIAL).
9	CHAIN LINK FENCE-STANDARD M-78-A (SPECIAL)
10	DETAILS OF SINGLE & DOUBLE CONCRETE BOX CULVERTS. STANDARD M-46-C (SPECIAL)
11	SPECIAL C.B.C. DETAILS.
12	DETAILS OF METAL PLATE GUARD RAIL.
13-17	ALIGNMENT PLAN AND PROFILE.
18-30	CROSS SECTIONS.

AS CONSTRUCTED PLANS
RETURN TO DIST. & DESIGN



SEE SPECIAL PROVISIONS FOR
NOTICE TO BIDDERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

APPROVED: *[Signature]* 12-18-64
CHIEF ENGINEER DATE

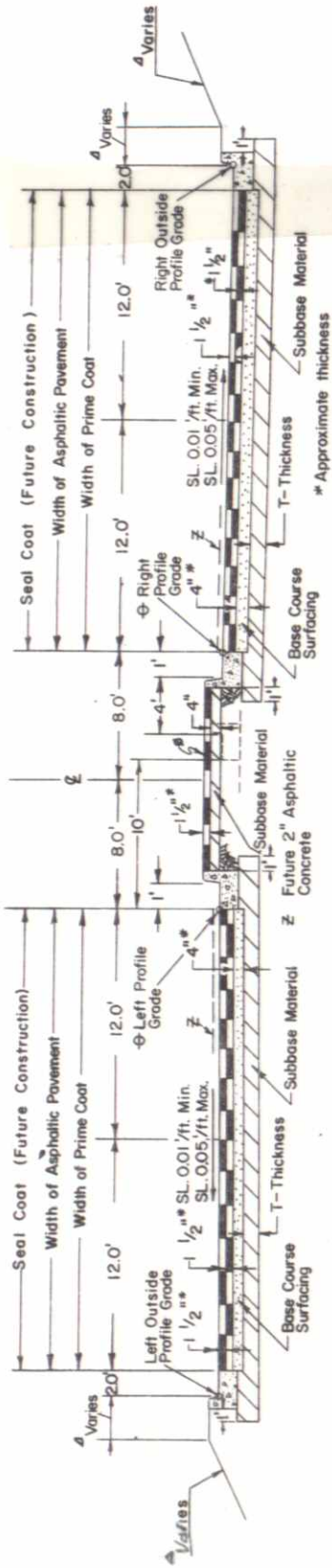
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED: _____ DATE _____
DIVISION ENGINEER

TYPICAL CROSS SECTIONS OF IMPROVEMENT

NOTE: SEE STANDARD M-2-A FOR DETAILS OF CUT SLOPE TREATMENT

SECTION A



APPROXIMATE COMPACTED THICKNESSES OF ASPHALTIC PAVEMENT AND BASE COURSE SURFACING SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING RATES IN TONS PER 100 LIN. FT. OF ROADWAY.

SECTION	BASE COURSE	ASPHALTIC PAVEMENT
A	100	40
		TOP LAYER 40'

NOTE

MATERIAL ABOVE THE SUBGRADE IS TO BE CONSTRUCTED OF SUB-BASE MATERIAL AT LOCATIONS DESIGNATED IN SUB-BASE MATERIAL TABULATION. ESTIMATED QUANTITIES INVOLVED IN THIS OPERATION AND THICKNESS OF MATERIAL REQUIRED ARE TABULATED IN THE SUB-BASE MATERIAL PLAN.

BOTTOM LAYER OF BITUMINOUS SURFACING SHALL BE COMPLETED FOR FULL WIDTH BEFORE TOP LAYER OF BITUMINOUS SURFACING IS PLACED. PAVING JOINTS IN TOP LAYER WILL OVERLAP MIN. 1 FT. OVER JOINTS IN BOTTOM LAYER.

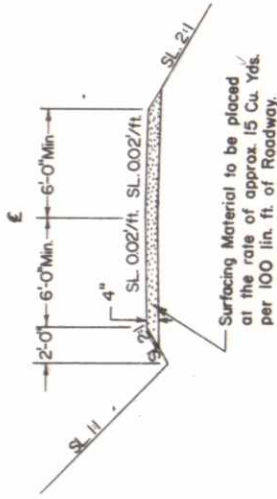
WHERE TURNING SLOTS ARE PROVIDED THE PROFILE GRADE POINT SHALL BE AT THE SAME DISTANCE FROM CENTER LINE AS IF THE TURN SLOT WERE NOT BEING PLACED.

SEE CROSS SECTIONS

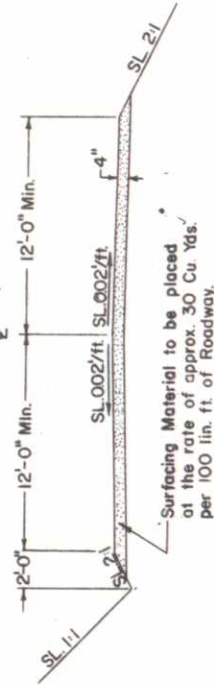
GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN CONFORMITY WITH THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS, ADOPTED JANUARY 1, 1958.
- ALL QUANTITIES ON PRELIMINARY PLANS ARE TO BE CONSIDERED APPROXIMATE ONLY.
- ALL POLES ENCROACHING ON CONSTRUCTION ARE TO BE MOVED BY THE OWNERS.
- FOR PRELIMINARY PLAN QUANTITIES OF ASPHALTIC ROAD MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
 PAVING ASPHALT (85-100 PENETRATION) 6% BY WEIGHT OF MIX
 EMULSIFIED ASPHALT (TYPE SS-1) 2% BY WEIGHT OF AGG.
 PRIME COAT MC 0.40 GALS. PER SQ. YD.
- RATE OF APPLICATION AND GRADE OF ASPHALTIC MATERIAL SHALL BE AS DETERMINED BY THE ENGINEER AT TIME OF APPLICATION.
- DURING CONSTRUCTION OF THIS PROJECT, TRAFFIC WILL USE THE PRESENT TRAVELED ROADWAY EXCEPT WHERE DETOURS ARE SHOWN ON PLANS.
- ROAD APPROACHES WHICH REQUIRE PLANT MIXED ASPHALTIC SURFACING IN THE "STRUCTURE LIST" SHALL BE PRIMED AND A 1 1/2" THICKNESS OF ASPHALTIC SURFACING PLACED AS FOLLOWS:
 PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE SURFACED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE R.O.W. LINE WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE SURFACED 4 FT. OUT FROM EDGE OF SHOULDER.
- APPLICATION METHODS, FOR LIQUID ASPHALTIC ROAD MATERIAL, WHICH RESULT IN THE DISCOLORATION OF CONCRETE PAVEMENT, CURBS OR GUTTERS WILL NOT BE PERMITTED.
- THICKNESS OF SUB-BASE SURFACING AND ASPHALTIC PAVEMENT MATERIALS AS SHOWN ON PLANS IS APPROXIMATE ONLY. THESE MATERIALS ARE TO BE PLACED ON THE BASIS OF TONNAGES SHOWN ON PLANS.
- CLASS "AX" CONCRETE AS DESCRIBED IN THE STANDARD SPECIFICATIONS, WILL BE PERMITTED ON THIS PROJECT.

FRONTAGE ROAD

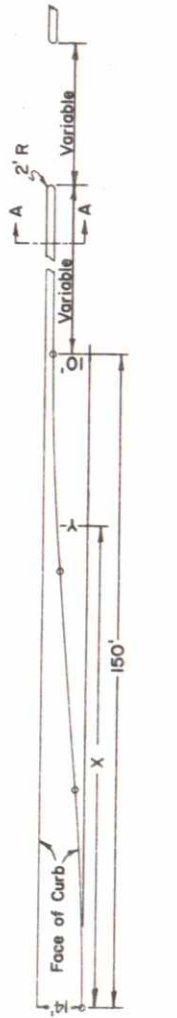


DETOUR



DETAILS OF STORAGE LANES AND MEDIAN OPENINGS

OFFSET	X	Y	DISTANCE
	12.5	0.00	
	25.0	0.16	
	37.5	0.62	
	50.0	1.41	
	75.0	2.50	
	100.0	5.00	
	112.5	7.50	
	137.5	8.59	
	150.0	9.84	
		10.00	



SECTION A-A

SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	COLORADO	U 500 24(21)	3	

SPECIFICATION ITEM NO.	ITEM	UNIT	ROADWAY	STR. NO. B-23-1 STA. 94+	PROJECT TOTALS
10	Clearing and Grubbing Entire Project	L.S. Each	1		1
11	Removal of Bridges	Each	10		10
11	Removal of Structures	Each	7		7
11	Reset Mailbox Structures	Each	1		1
12	Reset Irrigation Structures Removing Fence	Lin. Ft.	2,800		2,800
13	Unclassified Excavation	Cu. Yd.	14,200	300	15,000
13	Unclassified Ditch Excavation	Cu. Yd.	100		100
13	Stripping	Cu. Yd.	2,000		2,000
14	Unclassified Structural Excavation - Miscellaneous	Cu. Yd.	110	230	340
16	Structure Backfill (Class K)	Cu. Yd.	100	110	210
17	Compaction (Modified)	Cu. Yd.	29,000		29,000
17	Wetting	M. Gal.	980		980
17	Water (Diluted Emulsified Asphalt)	M. Gal.	110		110
18	Ton Mile Overhaul	Ton Mile	66,700		66,700
23	Subbase Material (Class E)	Ton	11,000		11,000
26	Gravel or Crushed Rock Surfacing (Gr. D) with Emulsion	Ton	6,300		6,300
26	Detour Surfacing	Cu. Yd.	350		350
29	Asphalt (85-100 Penetration)	Ton	340		340
30	Asphaltic Road Material M.C. (Prime)	Gal.	13,100		13,100
30	Asphaltic Road Material (Emulsified Asphalt)	Gal.	29,200		29,200
32	Plant Mixed Asphaltic Surfacing	Ton	5,140		5,140
37	Concrete Pavement (6" Thick)	Sq. Yd.	140		140
46	Class "X" Concrete	Cu. Yd.	154		154
47	Reinforcing Steel	Lb.	15,430	309	43,170
48	Structural Steel (Galvanized)	Lb.	700	1,200	58,600
53	Transport & Piece 24" Corrugated Metal Culvert Pipe	Lin. Ft.	120	108	180
75	Metal Plate Guard Rail (Beam Type)	Lin. Ft.	50		158
76	Combination Wire Fence with Metal Posts	Lin. Ft.	800		800
76	End Posts	Each	2		2
76	Corner & Line Brace Posts	Each	2		2
76	Chain Link Wire Mesh Fence (3 Foot 6 inch)	Lin. Ft.	4,910		1,910
78	Double Driveway Gates (16 Foot)	Each	2		2
78	Double Driveway Gates (20 Foot)	Each	2		2
81	Right of Way Markers	Each	2		2
84	Concrete Curb (Type I)	Lin. Ft.	32		32
84	Concrete Gutter (4-foot)	Lin. Ft.	152		152
84	Concrete Combination Curb & Gutter (Type I)	Lin. Ft.	8,284		8,284
84	Concrete Combination Curb & Gutter (Type II)	Lin. Ft.	9,930		9,930
132	15" Reinforced Concrete Pipe Sewer (Class II)	Lin. Ft.	356		356
132	21" Reinforced Concrete Pipe Sewer (Class II)	Lin. Ft.	34		34

It is Estimated that Material for Sub-Base or Gravel Surfacing for the Project is Available in the Vicinity of the Pit Indicated in the following Tabulation. Estimated Quantities Involved in this Operation are Shown Below
 Alteration of the Sub-Base or Surfacing Plan, as here Outlined, will be allowed only on Written permission from the Department.

SURFACING PLAN

MATERIAL TO BE PLACED	SOURCE	TONS		TON MILE OVERHAUL	
		3 INCH PLANT MIX	1 1/2 INCH PLANT MIX	3 INCH PLANT MIX	1 1/2 INCH PLANT MIX
46+50 ~ 50+50		376		1284	
50+50 ~ 96+50	Pit No 1	3680	40	10,816	120
From List of Structures			40		120
Median Surfacing			272		812
Median Openings		259		773	961
Storage Lanes		268		800	997
Approach to Project		240		588	735
Est for Curb Cuts					150
TOTALS		4,823	312	14,261	3,922

SUBBASE PLAN

MATERIAL TO BE PLACED	SOURCE	THICKNESS T-INCHES	QUANTITY TONS CLASS 2	TON MILE OVERHAUL
46+50 ~ 50+50		7	1040	3550
50+50 ~ 57+00		7	1,560	5,169
57+00 ~ 96+50	Pit No 1	4	5,530	15,915
Approach to Project			420	1,028
Median Subbase			718	2,176
Median Openings			262	794
Storage Lanes			470	1,425
Est for Irregularities			1,000	3,030
TOTALS			11,000	33,087

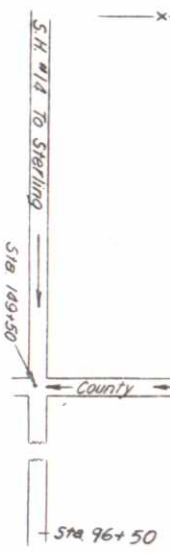
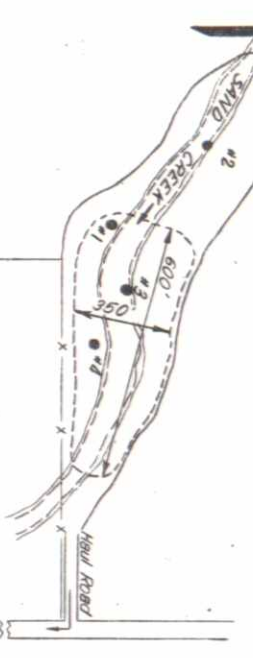
Based on Curve "D"

CONCRETE COMBINATION CURB AND GUTTER

STATION	SIDE	CONC. CURB & GUTTER TYPE I LIN. FT.	CONC. CURB TYPE I LIN. FT.	CONC. GUTTER 4 FT. LIN. FT.	CONC. PAVE. 6 INCH SQ. YD.
46+30 ~ 54+74	Lt.	956		26	11.6
54+76 ~ 55+02	Lt.				
55+04 ~ 56+84	Lt.	192		26	11.6
56+84 ~ 57+00	Lt.		16		
57+00 ~ 58+41	Lt.	153		26	11.6
58+43 ~ 58+69	Lt.				
58+71 ~ 73+98	Lt.	1550		26	23.2
74+00 ~ 74+20	Lt.				
74+22 ~ 96+35	Lt.	2236		20	11.6
96+30 ~ 96+15	Lt.	797		31	11.6
54+17 ~ 54+48	Rt.				
54+50 ~ 56+84	Rt.	246		31	11.6
56+84 ~ 57+00	Rt.		16		
57+00 ~ 62+80	Rt.	592		28	11.6
62+82 ~ 63+10	Rt.				
63+12 ~ 89+99	Rt.	2710		26	23.2
90+01 ~ 96+15	Rt.	598			11.6
96+21 ~ 53+90	Median	1544			
53+30 ~ 58+16	Median	378			
58+16 ~ 62+50	Median	719			
63+50 ~ 70+60	Median	1426			
71+40 ~ 73+70	Median	466			
74+50 ~ 76+34	Median	379			
77+14 ~ 80+50	Median	683			
81+30 ~ 83+75	Median	501			
84+55 ~ 86+56	Median	413			
87+36 ~ 89+74	Median	487			
90+54 ~ 95+95	Median	1088			
TOTALS		9204	9930	32	157

**PIT NO. 1
 SUB-BASE, SURFACING &
 AGGREGATE FOR PLANT MIX.**

LOCATION: SW 1/4 OF SE 1/4 & S 1/2 OF SW 1/4, SEC. 22, T. 8 N. R. 53 W.
 OWNER: CITY OF STERLING.
 QUANTITY AVAILABLE: 30,000 CU. YDS.
 HAUL DISTANCE: 2.5 MILES TO STA. 96+90.
 STRIPPING: 2,100 CU. YDS.



LOG OF PIT — SAMPLE NO. 2705

TEST NO.	DEPTH IN FEET	DESCRIPTION OF TEST HOLE MATERIAL
1-A	0.0' ~ 9.0'	Overburden Sand & Gravel Water at 10'
2	0.0' ~ 8.0'	Sand & Gravel, Similar #3 Sandy Clay Water at 3'
3	0.0' ~ 13.0'	Sand & Gravel Sandy Clay Water at 11'
4-A	0.0' ~ 17.0'	Overburden, Similar #1 Sand & Gravel, Similar #3 Water at 13'
4-A	17.0' ~ 21.0'	Sand & Gravel, Similar #3 Water at 19'

NOTE: TEST #2 & #3 TAKEN IN CREEK BOTTOM
 TEST #1 & #4 TAKEN IN CREEK BANK

CURB CUT

STATION	SIDE	SIZE
		FEET
64+25	Lt	15
65+45	Lt	15
68+85	Lt	15
92+30	Lt	15
94+60	Lt	15
70+75	Rt	20
71+20	Rt	20
76+30	Rt	15
79+00	Rt	20
80+90	Rt	30
84+15	Rt	30
86+96	Rt	30
88+40	Rt	20
93+95	Rt	15

FENCING TABULATION

STATION	SIDE	BUILD CHAIN LINK FENCE	REMOVE FENCE	BUILD COMB. WIRE FENCE	DOUBLE DRIVEWAY GATES
		LN. FT.	LN. FT.	LN. FT.	20 FT. 16 FT.
45+77 to 54+12	Rt	835	870		2
54+32	Rt		40		
54+52 to 63+16	Rt	867	840		
62+96	Rt		40		2
63+20 to 70+94 89+98 to 90+38 95+50 to 96+50	Rt Rt Rt		820 40 100	785	
TOTALS		1702	2750	785	2 2

Corner and Line Brace Posts = 2
End Posts = 2

ROW MARKERS

STATION	SIDE	NUMBER	REMOVE
60+59	Lt & Rt	2	
50+85	Rt		1
65+33	Rt		1
TOTALS		2	2

^ACost to be included in the lump sum price for 'Clearing and Grubbing Entire Project'

SUMMARY OF EARTHWORK

UNCLASSIFIED EXCAVATION	<u>CU. Yd</u>
* Roadway-From Cross Sections	11,877
* Structure Quantities as Excavation	870
* Structure Quantities as Embankment	1,680
Est. for Cut Slope Treatment	43
TOTAL	<u>14,470</u>
UNCLASSIFIED EXCAVATION	<u>CU. Yd</u>
Roadway-From Cross Sections	11,877
# Minus Excess Excavation	2,476
TOTAL	<u>9,401</u>
EMBANKMENT	<u>CU. Yd</u>
Roadway-From Cross Sections	6,962
EMBANKMENT x FACTOR	9,401
COMPACTION	<u>CU. Yd</u>
Base of Cuts and Fills	16,922
* Unclassified Excavation (Less Excess Excavation)	11,951
TOTAL	<u>28,873</u>
UNCLASSIFIED DITCH EXCAVATION	<u>CU. Yd</u>
From List of Structures	5

¹ Excess Excavation to Become Property of the Contractor and Disposed of by Him.

STRUCTURE QUANTITIES

LOCATION	MISCELLANEOUS	REMOVAL OF STRUCTURES NO.	EXCAVATION CUBIC YARDS		UNCLASSIFIED STRUCTURAL EXCAVATION CUBIC YARDS	DETOUR SURFACING CU. YDS.	STRUCTURE BACKFILL CUBIC YARDS	NO. 12 INLET GRATING FRAME E.A.	GRAVEL OR CRUSHED ROCK SURFACING TONS	ASPHALTIC SURFACING TONS	CONCRETE CUBIC YARDS	REINFORCING STEEL LBS.	CULVERT PIPE LINEAR FEET					
			UNCL.	EMB.									UNCL. DITCH	MISC.	CL. X	15"	21"	24"
45+	1- Remove and Reset Flashing Yellow Unit (State Forces) 1- Identification Sign (State Forces)																	
46+50																		
46+30 46+32 54+89		1	10	10	2		1	1	15	5	1.8	284						
55+ to 59+	50 Lin. Ft. Transport & Place 24" C.M.P.		330	450		120			15	5	14.59	411						
56+ 92 57+00 to 60+00 58+56	1- Removal of Bridges (690 Lbs. Structural Steel (galvanized)) 50 Lin. Ft. Metal Plate Guard Rail (Beam Type)		100	10	90		90		15	5	14.56	152				300		
60+00 60+00 to 63+55 63+00			10		4		2	2	15	5	2.7	356			38			
63+55 63+85 64+10 64+30		1			2		1	1		1.0	152							
65+50 67+70 68+80		1																
71+00 74+10 74+		1	10						15	5								
90+10 95+ 74+55 92+10 96+ 93+57	70 Lin. Ft. Transport & Place 24" C.M.P.		430	480	4	75	1	1	15	5	0.7	100			12			
94+20 94+30			10	550	2	120	1	1	15	5	1.0	152			14			
95+50 96+ 96+	1- Reset Irrigation Structures 1- Identification Sign (State Forces)								30	10								
96+50 to 100+50	7- Reset Mailbox Structures		200															
TOTALS		10	870	1,680	5	315	97	7	120	40	159.9	1,542.4	356	34	38	300		

Included in Surfacing Plan

STANDARD M-46-A

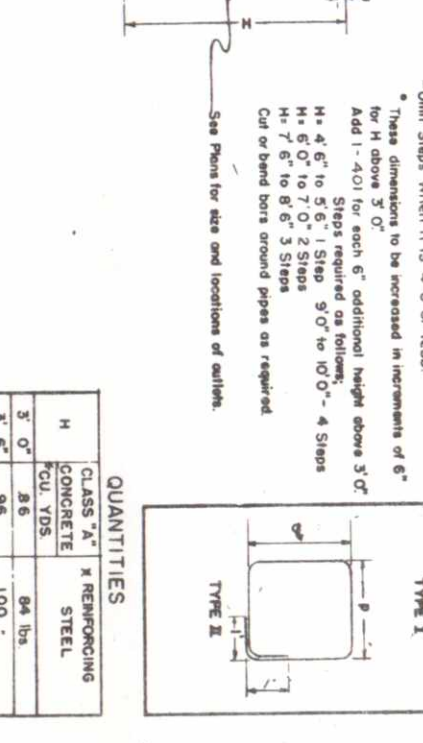
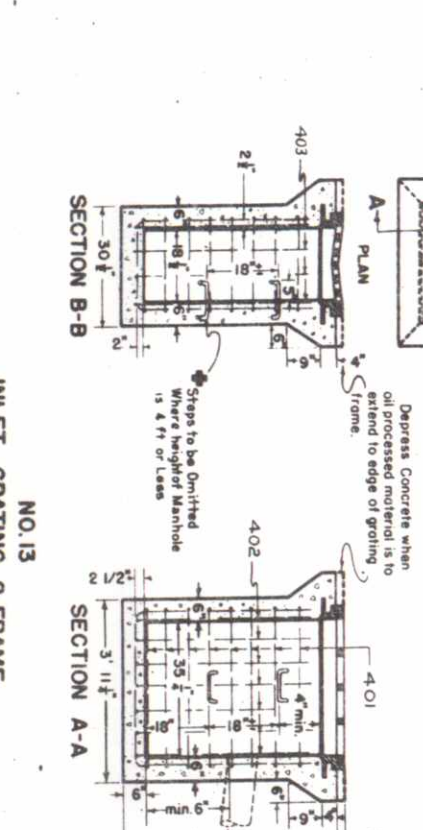
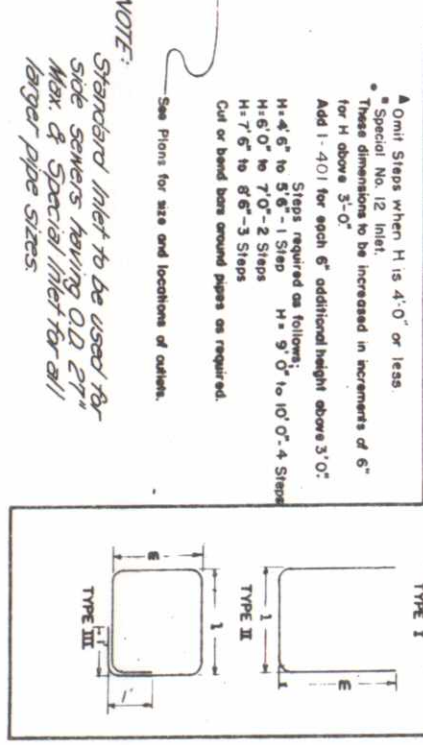
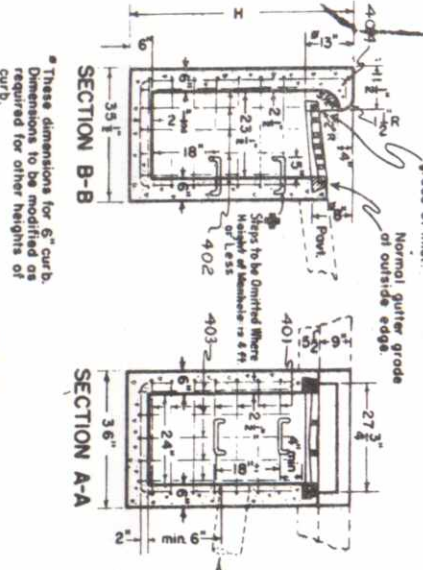
(MAY 1, 1962)
(SPECIAL)
NO. 13 CONCRETE INLET

REG. ROAD NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.	U.S. 00 24 (21)	8

NO. 12 CONCRETE INLET

BAR LIST FOR H = 3' 0"

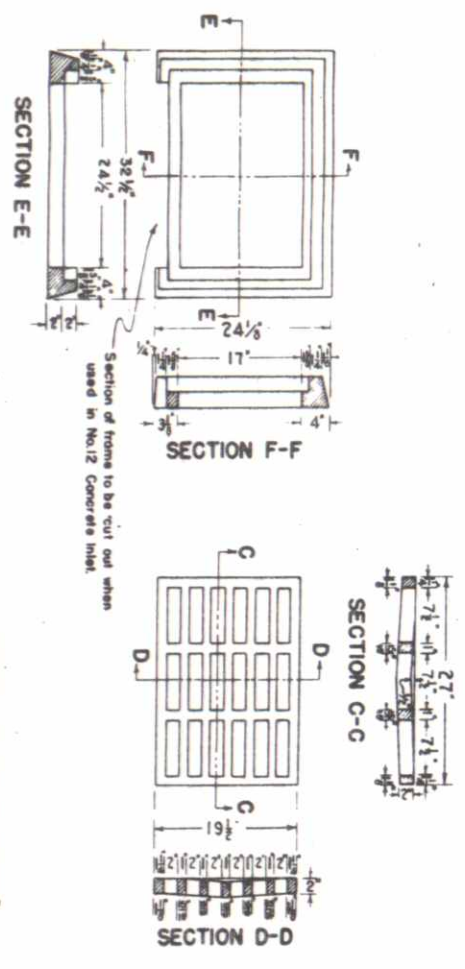
MARK	SIZE	REQD.	NO.	LENGTH	TYPE	DIMENSIONS	BENDING DIAGRAM
							ALL DIMENSIONS ARE OUT TO OUT OF BAR
401	1/2"	Note A	3	11'-10"	III	2'-6" x 2'-6"	
402	1/2"		5	5'-6"	I	2'-5" x 1'-7"	
403	1/2"		5	7'-7"	I	2'-7" x 1'-0"	
404	1/2"		2	2'-7"	STR		
401*	1/2"		3	13'-10"	III	2'-6" x 3'-6"	
402*	1/2"		7	5'-6"	II	2'-5" x 1'-7"	
403*	1/2"		5	9'-1"	I	2'-7" x 1'-8"	
404*	1/2"		4	2'-7"	STR		



BAR LIST FOR H = 3' 0"

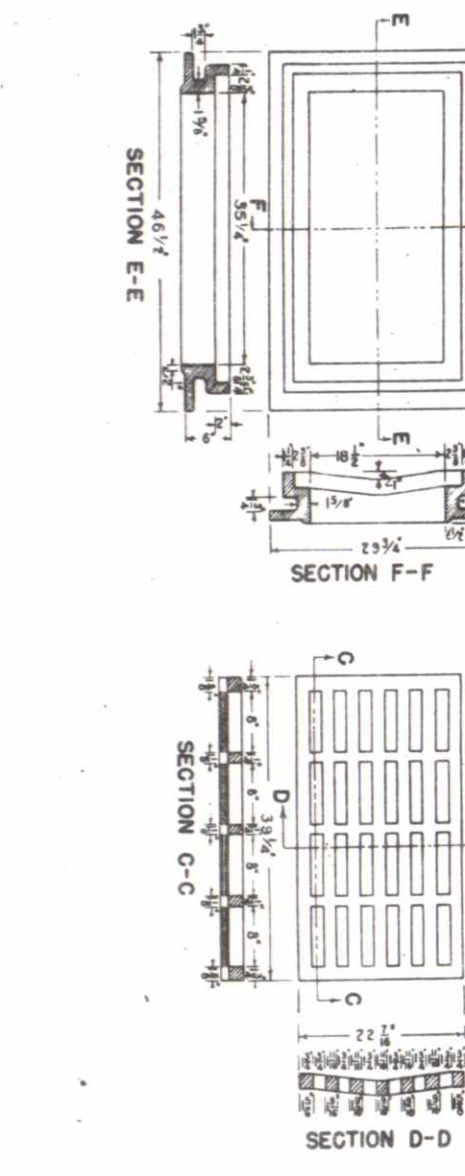
MARK	SIZE	REQD.	NO.	LENGTH	TYPE	DIMENSIONS	BENDING DIAGRAM
							ALL DIMENSIONS ARE OUT TO OUT OF BAR
401	1/2"	Note A	4	12'-10"	III	3'-5" x 2'-11"	
402	1/2"		7	6'-1"	I	2'-0" x 2'-1"	
403	1/2"		4	7'-5"	I	3'-4" x 2'-1"	

NO. 12 INLET GRATING & FRAME



QUANTITIES

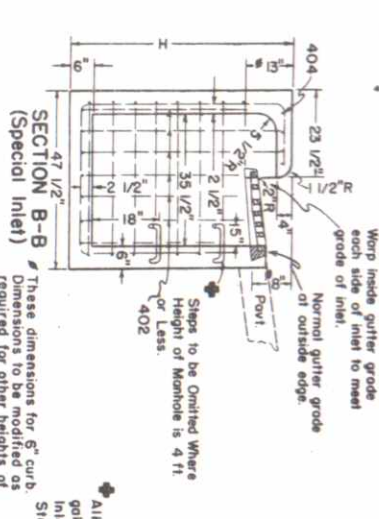
H	CLASS "A" CONCRETE	SPECIAL CONCRETE	REINFORCING STEEL	SPECIAL
	CU. YDS.	CU. YDS.	STANDARD LBS.	LBS.
3'-0"	0.54	0.69	70	92
3'-6"	0.63	0.80	85	110
4'-0"	0.72	0.91	100	127
4'-6"	0.81	1.02	119	150
5'-0"	0.90	1.13	137	168
5'-6"	0.99	1.25	152	185
6'-0"	1.08	1.36	166	208
6'-6"	1.17	1.47	185	226
7'-0"	1.27	1.58	200	243
7'-6"	1.36	1.69	215	266
8'-0"	1.45	1.80	233	284
8'-6"	1.54	1.91	248	301
9'-0"	1.63	2.02	263	324
9'-6"	1.73	2.13	282	341
10'-0"	1.82	2.25	297	359



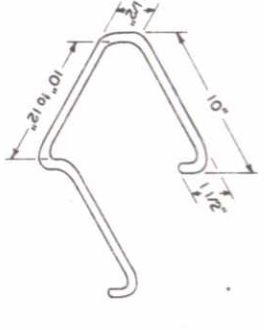
QUANTITIES

H	CLASS "A" CONCRETE	SPECIAL CONCRETE	REINFORCING STEEL	SPECIAL
	CU. YDS.	CU. YDS.	STANDARD LBS.	LBS.
3'-0"	0.6	0.6	84	100
3'-6"	0.6	0.6	100	116
4'-0"	0.6	0.6	116	136
4'-6"	0.6	0.6	136	156
5'-0"	0.6	0.6	156	172
5'-6"	0.6	0.6	172	192
6'-0"	0.6	0.6	192	208
6'-6"	0.6	0.6	208	225
7'-0"	0.6	0.6	225	245
7'-6"	0.6	0.6	245	261
8'-0"	0.6	0.6	261	277
8'-6"	0.6	0.6	277	297
9'-0"	0.6	0.6	297	313
9'-6"	0.6	0.6	313	329
10'-0"	0.6	0.6	329	

SPECIAL MODIFICATION



DETAIL OF INLET STEP



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to this Project.
All concrete shall be class "A".
All concrete walls shall be formed on both sides.
All exposed concrete corners shall be dressed to a 1" face.
All reinforcing bars shall be deformed, of intermediate grade, and shall be tagged with bar designation and station number.
ALL DIMENSIONS NOT SHOWN AS CLEAR ARE TO FACE OF BAR.

REVISIONS

NO.	DATE	REVISION	BY
4-19-63		Rev. Steps	LEO
7-2-63		Rev. Step Dimension	LEO
11-64		Special this project only	DWA

DESIGNED BY A.B.G.
CHECKED BY A.Z.
DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
NO. 12 AND NO. 13
CONCRETE INLETS

APPROVED BY
C. H. BRIDGES
ENGINEER

DATE: MAY 1, 1962

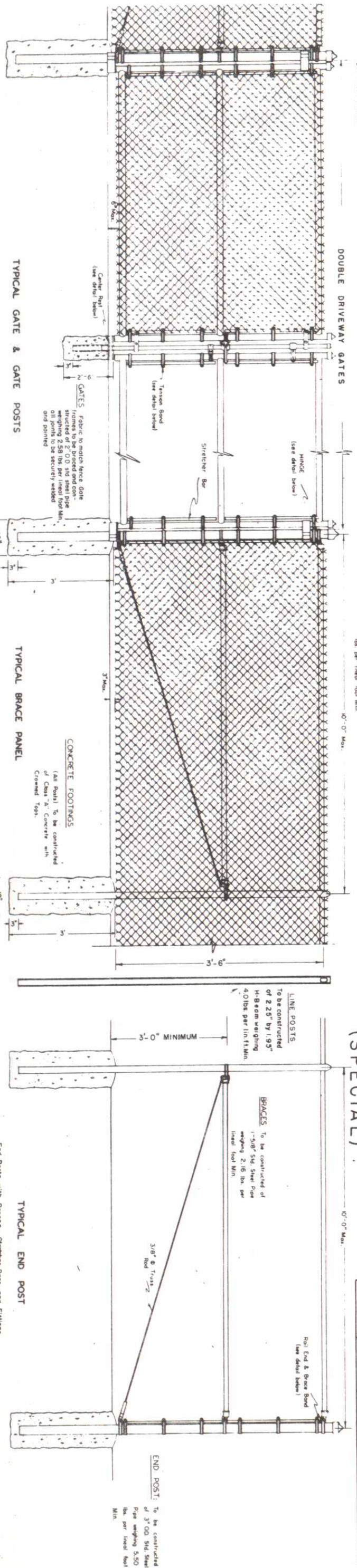
STANDARD M-78-A

(MAY 1, 1962)
(SPECIAL)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	US 0024(121)	9

TOP RAIL: To be constructed of 1-5/8" O.D. Std. Steel Pipe weighing 2.16 lbs. per linear foot Min.

GATE POSTS: To be constructed of 3" O.D. Std. Steel Pipe weighing 5.50 lbs. per linear foot Min.



SPECIFICATION NUMBERS

ITEM NO.	ITEM	UNIT
78	Chain Link Wire Mesh Fence Lin. Ft.	
78	Double Driveway Gates	Each

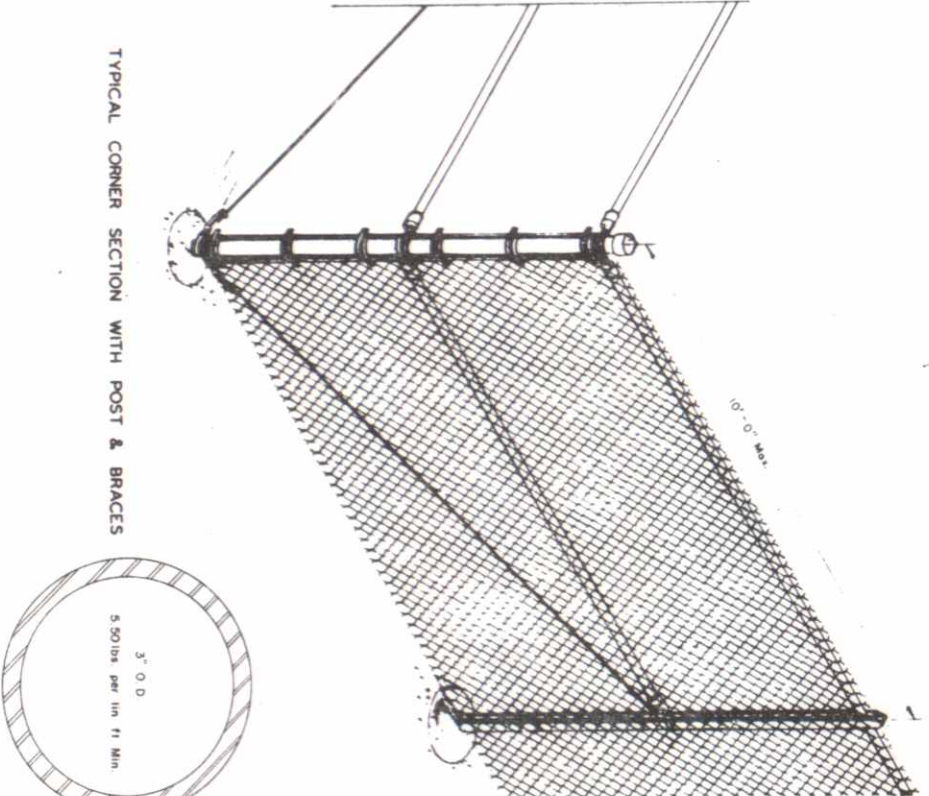
TYPICAL LINE POST
(See alternate below)

End Posts with Braces, Stretcher Bars and Fittings, corresponding to details shown hereon for Typical Corner Section with End Posts and Braces, are to be used in fence of intervals of not more than four hundred (400) feet.

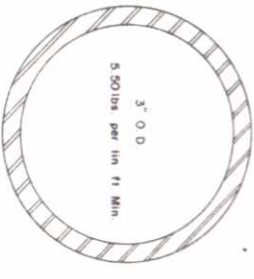
REVISIONS

NO.	DATE	DEPT. NAME	MR. H.
2-14-64			
11-64		SPECIAL THIS PROJECT ONLY	D. W. D.

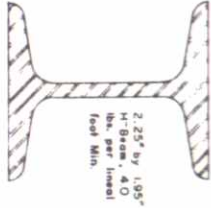
TYPICAL CORNER SECTION WITH POST & BRACES



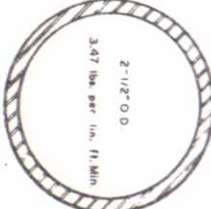
TERMINAL POSTS



H-BEAM LINE POST



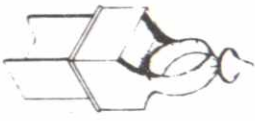
ALTERNATE LINE POST



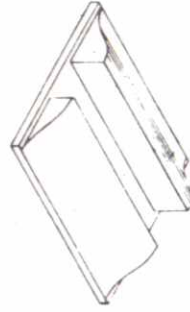
BRACE RAIL & TOP RAIL



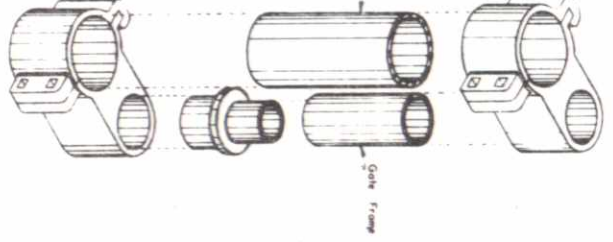
LINE POST TOP
(In Top of post and 6' post posts)



CENTER REST



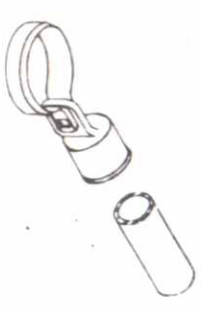
HINGE ASSEMBLY



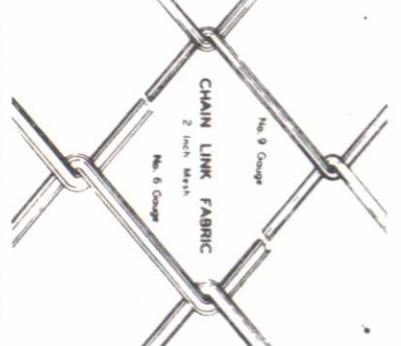
TENSION BAND



BRACE BAND & RAIL END



All Fabric shall be No. 9 Gauge with a barbed top on the top and bottom selvage unless otherwise specified a shall meet ASTM 392-59T, Class 1.



GENERAL NOTES

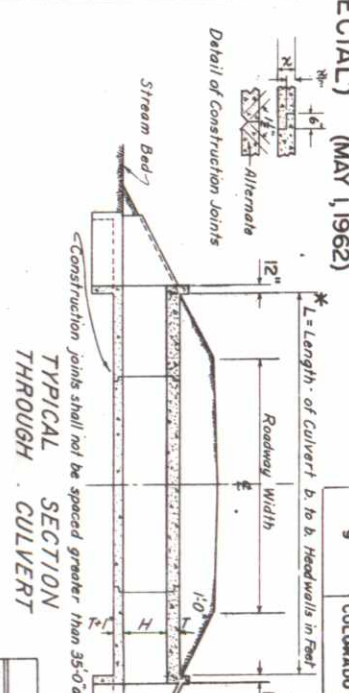
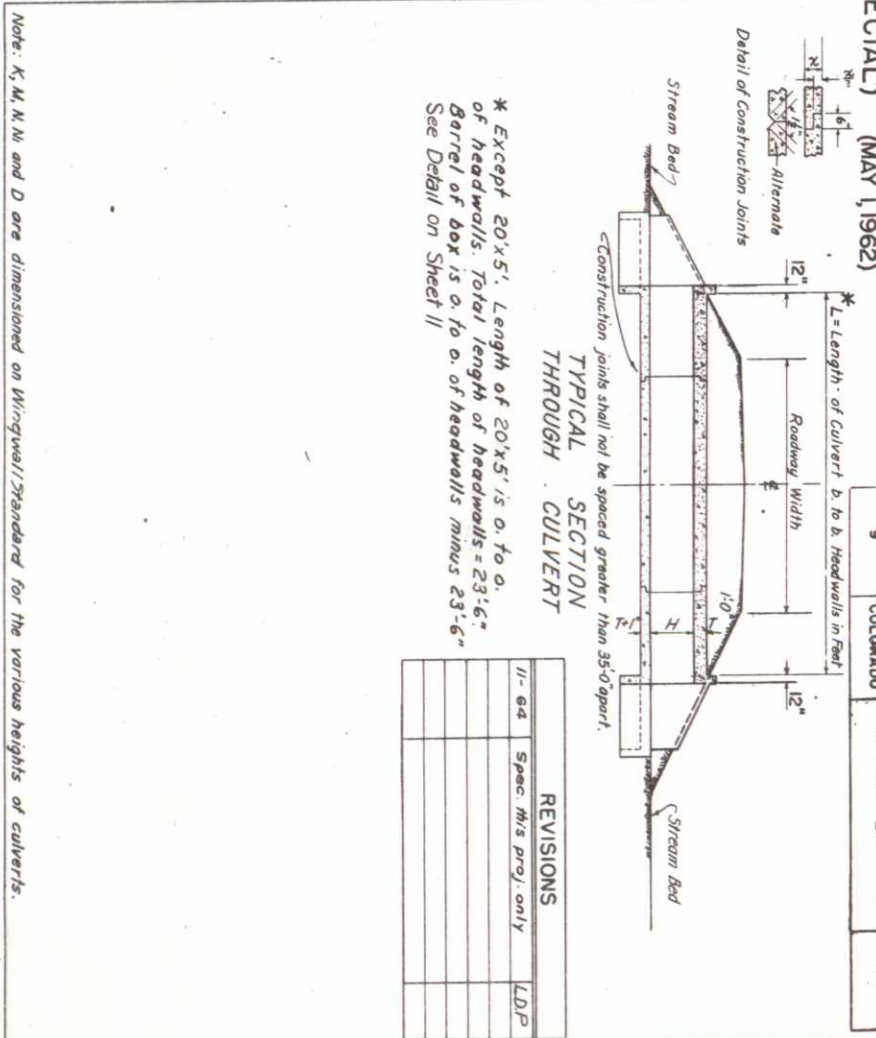
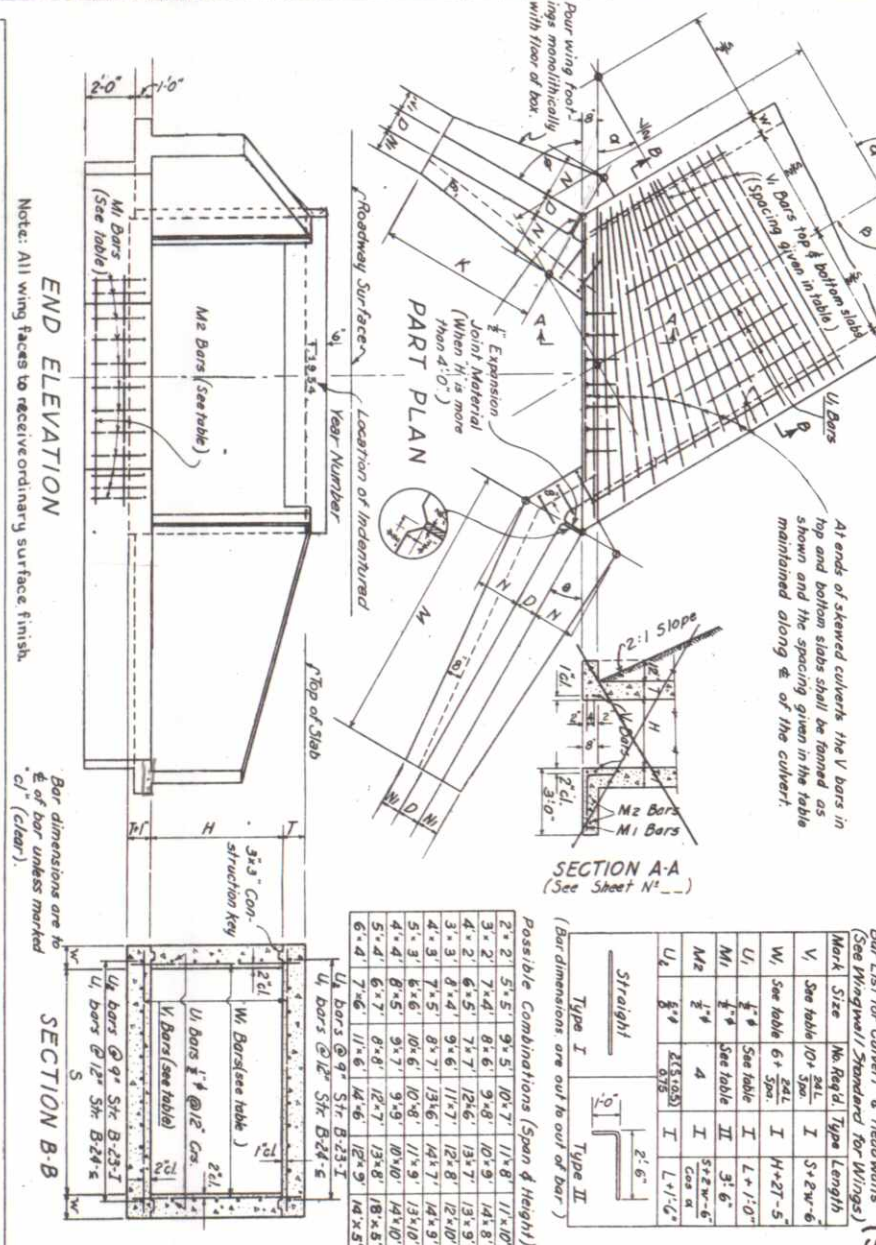
All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department applicable to this project.
Weights of Pipe as shown on the maximum allowed for the Number Gauge specified.
Alternate Standard Fittings, Gate Posts and Braces of other materials may be used if approved by the Engineer's approval.
See Plan Sheets for Location and Number of Gates and Length of Fence required.
Mesh fabric shall be securely fastened to all Line Posts, Holes and Braces with No. 7 (888) Gauge Aluminum end or No. 12-1/2 (984) Horizontal or 1" Per Foot Vertical Galvanized Steel Wire and spaced at a minimum of 6" per 10 feet.
Fence shall be installed in accordance with the Standard Specifications for Chain Link Fence, End Posts, Braces and Stretcher Bars.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
CHAIN LINK FENCE

Designed by: V.L.A. Approved by: [Signature]
Made by: E.L.H. Design Engineer
Checked by: [Signature] Date: 9-1-56

FED. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	US 0024(21)	10

SINGLE CONCRETE BOX CULVERT



REVISIONS

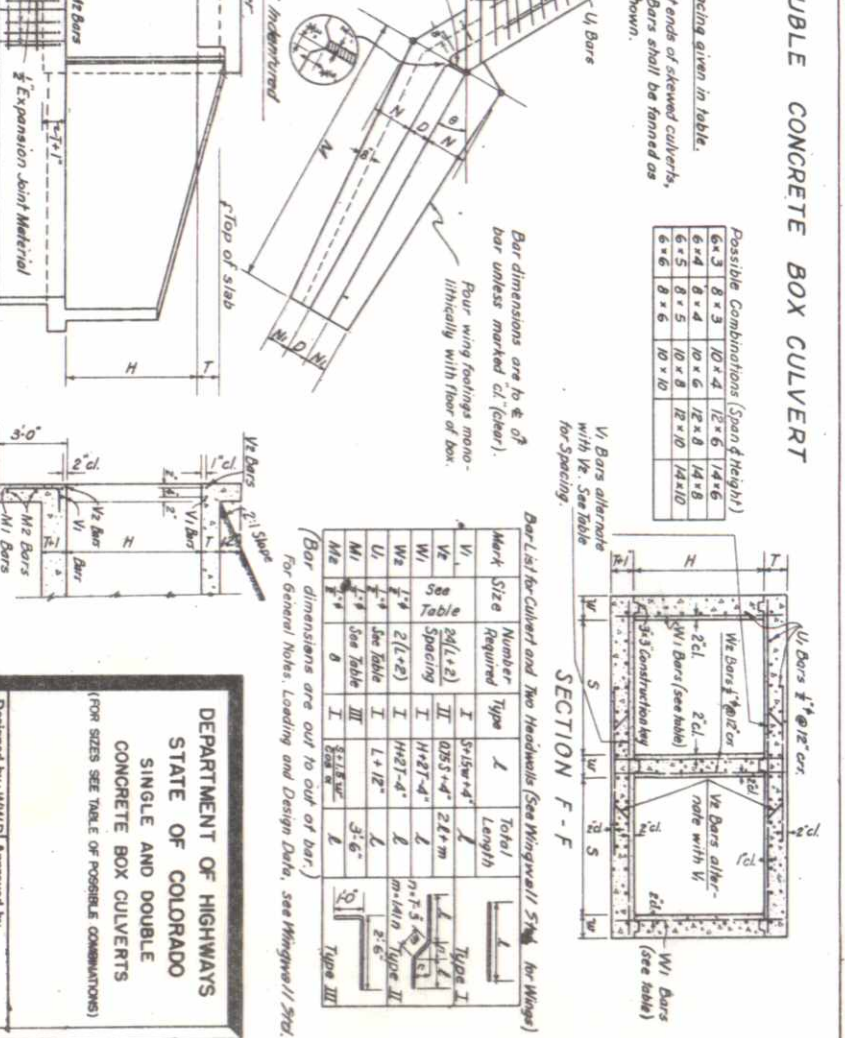
11-64	Spec. Mts. Proj. only	LDP
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Dimensions & Quantities (See Wingwall Standard for Wings)

Height of Fill Allowed	Type	Span	Sub Wall	Bar Size & Spacing	Required	Concrete	Steel	Formwork
35'-0"	2A	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3A	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4A	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5A	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6A	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7A	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8A	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9A	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2B	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3B	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4B	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5B	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6B	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7B	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8B	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9B	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2C	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3C	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4C	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5C	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6C	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7C	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8C	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9C	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2D	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3D	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4D	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5D	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6D	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7D	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8D	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9D	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2

Dimensions & Quantities (See Wingwall Standard for Wings)

Height of Fill Allowed	Type	Span	Sub Wall	Bar Size & Spacing	Required	Concrete	Steel	Formwork
35'-0"	2A	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3A	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4A	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5A	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6A	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7A	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8A	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9A	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2B	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3B	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4B	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5B	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6B	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7B	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8B	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9B	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2C	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3C	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4C	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5C	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6C	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7C	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8C	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9C	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2
35'-0"	2D	3'-0"	8"	8" @ 12"	10	0.235	2.81	11.2
30'-0"	3D	3'-0"	8"	8" @ 12"	10	0.352	3.61	14.2
20'-0"	4D	4'-0"	8"	8" @ 12"	10	0.470	4.41	17.2
16'-0"	5D	5'-0"	8"	8" @ 12"	10	0.587	5.21	20.2
12'-0"	6D	6'-0"	8"	8" @ 12"	10	0.705	6.01	23.2
8'-0"	7D	7'-0"	8"	8" @ 12"	10	0.822	6.81	26.2
4'-0"	8D	8'-0"	8"	8" @ 12"	10	0.940	7.61	29.2
0'-0"	9D	9'-0"	8"	8" @ 12"	10	1.057	8.41	32.2



Quantities for one culvert shall be given for one lin. ft. of box times L, plus quantities for two head walls, plus quantities for four wings.

Note: Special this project only

Note: This design not to be used when height of fill exceeds the allowed amount tabulated.

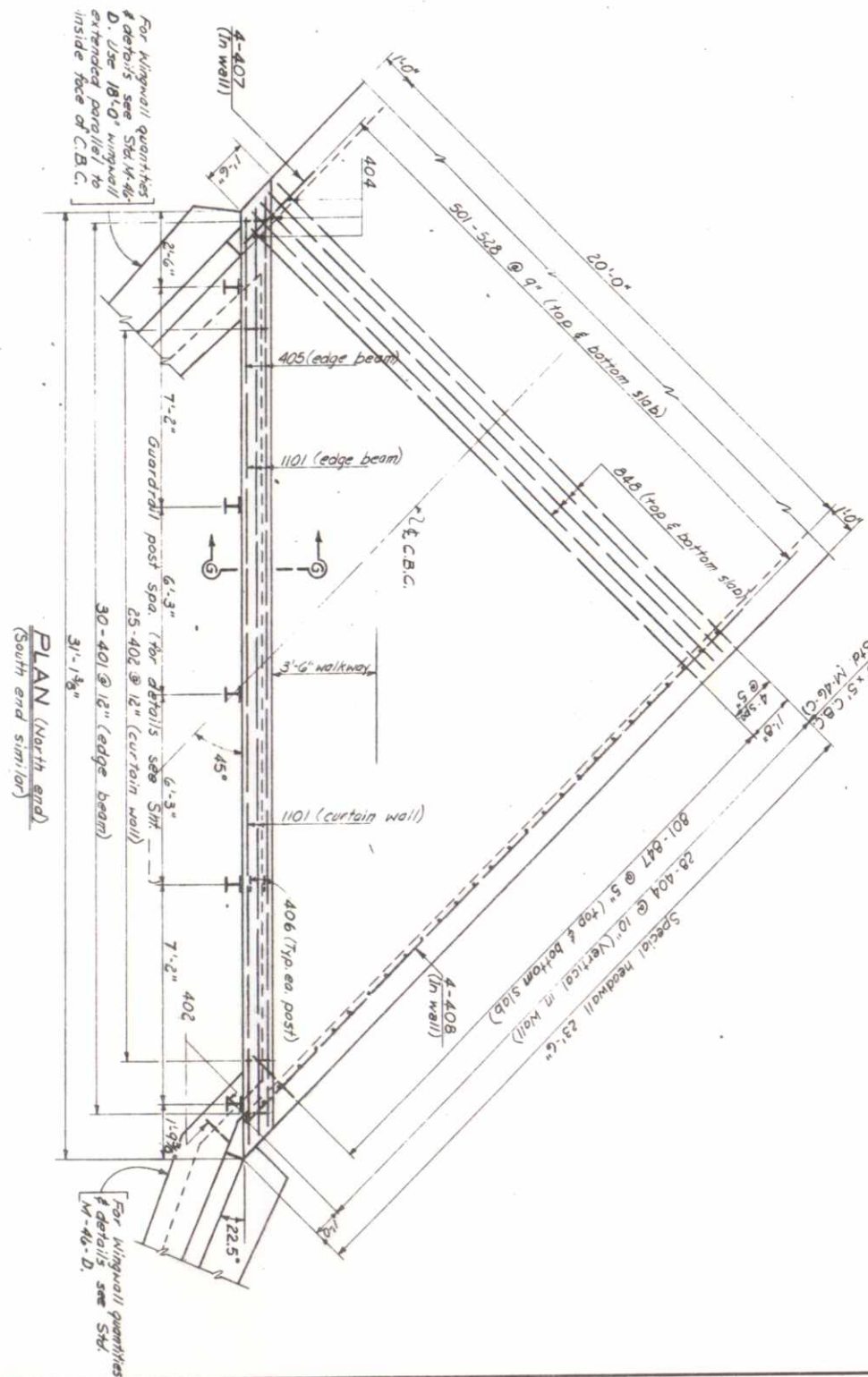
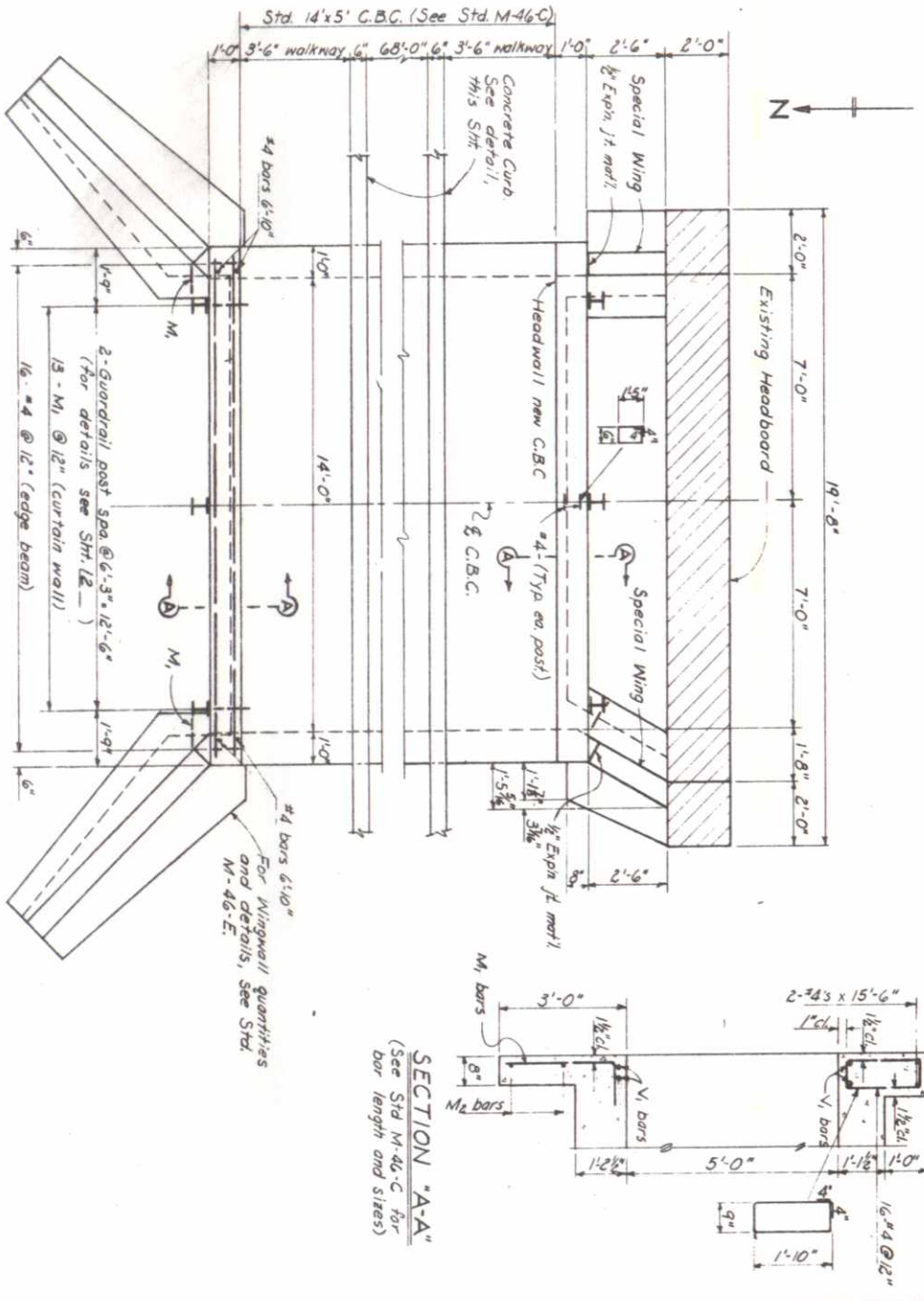
Note: All wing faces to receive ordinary surface finish.

Note: K, M, N, H and D are dimensioned on Wingwall Standard for the various heights of culverts.

DESIGNED BY: WWD
 CHECKED BY: JLM
 DATE: 6-5-64

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO
 SINGLE AND DOUBLE
 CONCRETE BOX CULVERTS
 (FOR SIZES SEE TABLE OF POSSIBLE COMBINATIONS)

REV. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	US-0024 (2)	11		



REV. NO.	DATE	BY	CHKD BY
1	11/54	DWT	
2	11/54		

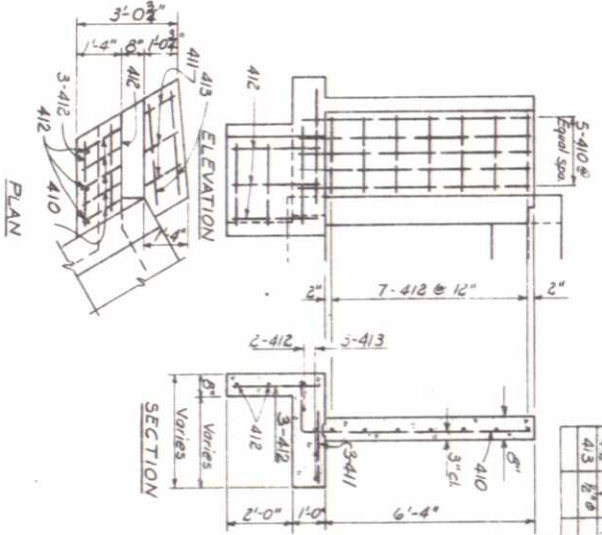
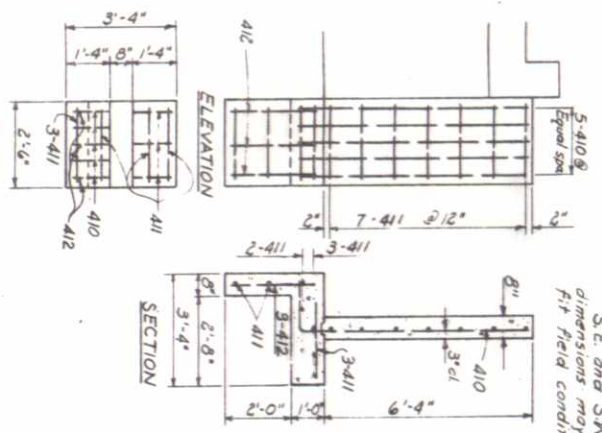
PLAN

BAR LIST FOR 2-SPECIAL WINGWALLS

Mark	Size	Req'd	Type	Length
410	1/2" x 8"	20	sfr	6'-4"
412	1/2" x 8"	17	sfr	6'-6"
413	1/2" x 8"	3	sfr	3'-0"

Summary: Conc = 185 cu ft
 Reinf. Steel = 177 lb.
 Struct. Steel (GWH) = 690 lb.
 Metal R Guardrail = 50.0 ft

Note: SE and SW wingwall dimensions may vary to fit field conditions.

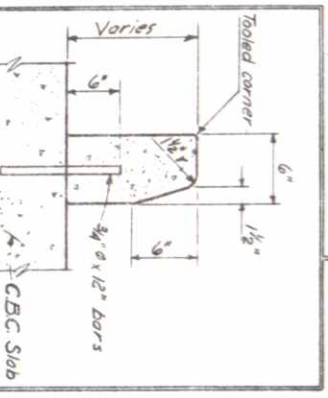


DETAILS OF S.E. WING

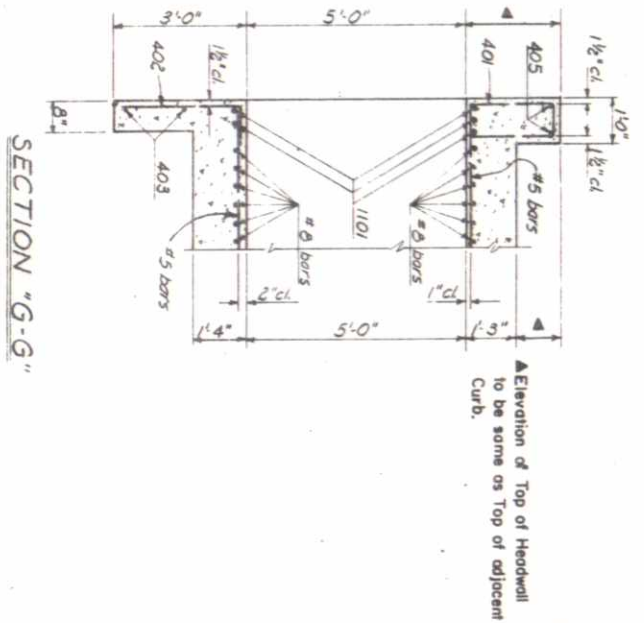
DETAILS OF S.W. WING

SPECIAL 14' x 5' C.B.C. HEADWALL - STR. B-24-C

* Sta. 56+92.00



CONCRETE CURB



SECTION 'G-G'

SPECIAL 20' x 5' C.B.C. HEADWALL - STR. B-23-I

* Sta. 94+20.00

BAR LIST FOR 2-SPECIAL HEADWALLS

Mark	Size	Req'd	Type	Length
401	1/2" x 8"	60	II	3'-6"
402	1/2" x 8"	4	II	27'-6"
403	1/2" x 8"	4	II	27'-6"
404	1/2" x 8"	6	II	7'-11"
405	1/2" x 8"	4	II	30'-6"
406	1/2" x 8"	20	II	4'-6"
407	1/2" x 8"	8	II	3'-5"
408	1/2" x 8"	8	II	23'-6"
501	3/8" x 4 ea.	4 ea.	sfr	3'-3"
528	3/8" x 4 ea.	4 ea.	sfr	23'-6"
B01	1" x 4 ea.	4 ea.	sfr	1'-11"
B47	1" x 4 ea.	4 ea.	sfr	21'-6"
B48	1" x 4 ea.	4 ea.	sfr	21'-6"

See Std M-46-C, sht 10, for summary of headwall & C.B.C. Total Galv. structural steel = 1151 lb. Metal R Guardrail = 108 ft

COLORADO
 DEPARTMENT OF HIGHWAYS
 SPECIAL C.B.C.
 DETAILS

Across Fourness & Springdale Ditches
 Sht. * Sec. 25-36 T. 21 N. R. 53 E.
 Near Sterling
 Designed by LDP
 Made by LDP
 Checked by LDP
 Date: Nov. 30, 1962

STRUCTURE NO. B-23-I

B-24-C

PROFILE	DATE
DESIGNED	
PLOTTED	
CHECKED	
NO. 24766	STRUCTURE NO. 17 AT US CH 40

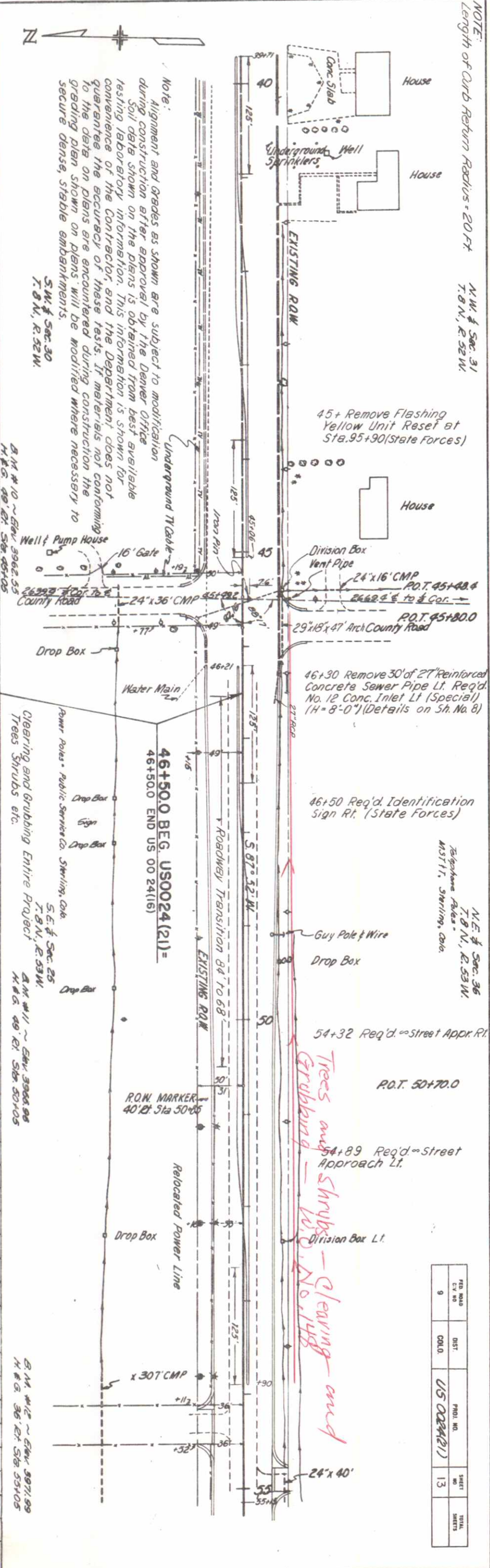
PLAN	DATE
SURVEYED	
PLOTTED	
CHECKED	
NO. 24766	PT. OF WAY CHECKED

NOTE: Length of Curb Return Radius = 20 FT

N.W. § Sec. 31
T. 8 N., R. 52 W.

N.E. § Sec. 36
T. 8 N., R. 53 W.

FED. ROAD DIST. NO.	DIST. NO.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COUL.	US 0024(21)	13	



Note:
Alignment and Grades as shown are subject to modification during construction after approval by the Denver Office. Soil data shown on the plans is obtained from best available testing laboratory information. This information is shown for convenience of the Contractor, and the Department does not guarantee the accuracy of these tests. If materials not conforming to the data on plans are encountered during construction the grading plan shown on plans will be modified where necessary to secure dense, stable embankments.

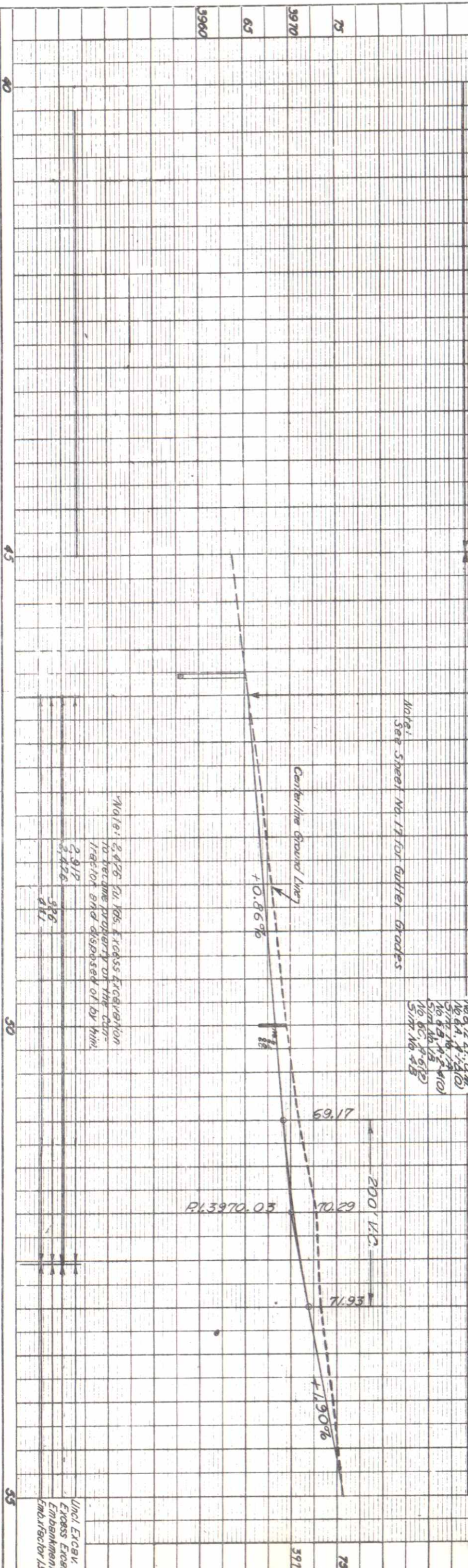
S.W. § Sec. 30
T. 8 N., R. 52 W.

B.M. # 10 ~ Elev. 3962.55
H.C.G. 49' E.T. Sta. 45+05

Note:
See Sheet No. 17 for gutter Grades

S.E. § Sec. 25
T. 8 N., R. 53 W.
B.M. # 11 ~ Elev. 3968.98
H.C.G. 49' E.T. Sta. 50+05

B.M. # 12 ~ Elev. 3971.99
H.C.G. 36' E.T. Sta. 53+05

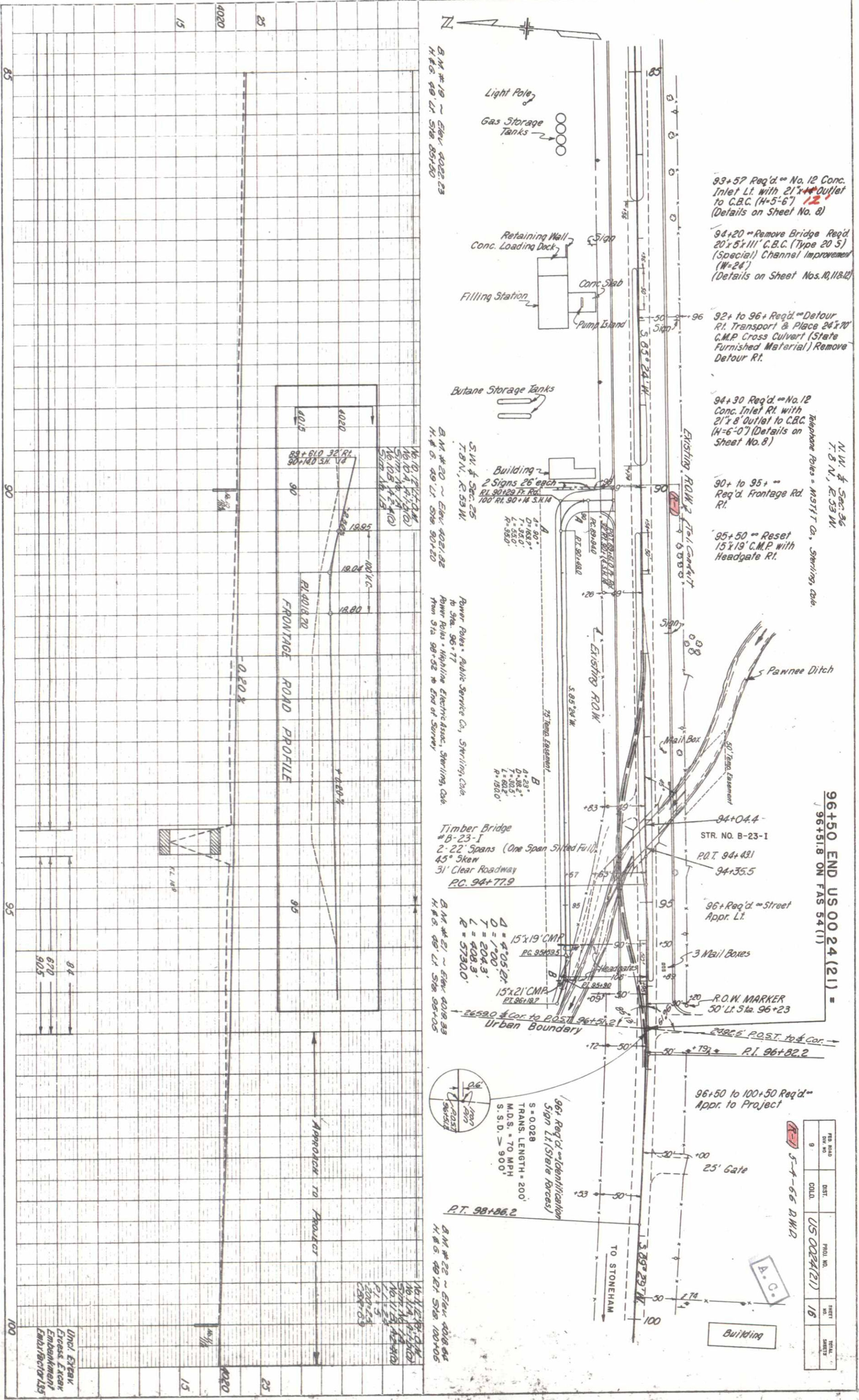


Note: 2,476 Sta. 105.4 excess & recognition to become property of the contractor and disposed of by him.

Lineal EXCISE
EXCESS EXCISE
Embankment
Emb. Factor 1.35

PROFILE	DATE
2/27/46	

PLAN	DATE
2/27/46	



B.M. #19 ~ Elev. 4022.23
H. & G. 49' LT. Sta. 85+50

B.M. #20 ~ Elev. 4021.82
H. & G. 49' LT. Sta. 90+20

B.M. #21 ~ Elev. 4019.33
H. & G. 49' LT. Sta. 95+05

B.M. #22 ~ Elev. 4018.64
H. & G. 49' LT. Sta. 100+05

S.W. 1/4 Sec. 25
T.8N., R.53W.

Power Poles - Public Service Co., Sterling, Cal.
to Sta. 96+77
Power Poles - Highline Electric Assoc., Sterling, Cal.
from Sta. 98+52 to End of Survey

Timber Bridge
#B-23-I
2-22' Spans (One Span Slight Full)
45° Skew
31' Clear Roadway
P.C. 94+77.9

15'x19' C.M.P.
P.C. 94+95.5
15'x21' C.M.P.
P.T. 96+18.7

96+ Req'd. - Identification
Sign Lt. (State Forces)
S = 0.028
M.D.S. = 70 MPH
TRANS. LENGTH = 200'
S.S.D. > 900'

96+50 to 100+50 Req'd. -
Appr. to Project

96+50 END US 0024 (21) =
96+51.8 ON FAS 54 (1)

Light Pole
Gas Storage Tanks

Retaining Wall
Conc. Loading Dock
Filling Station
Conc. Slab
Pump Island

Butane Storage Tanks

Building
2 Signs 26' each
R.I. 90+29 Ft. Rd.
100' R.I. 90+14 S.H. 14

25' Temp. Easement
D = 80.0'
T = 183.0'
L = 350.0'
P = 150.0'

25' Temp. Easement
D = 23.0'
T = 38.2'
L = 30.5'
P = 150.0'

15'x19' C.M.P.
P.C. 94+95.5
15'x21' C.M.P.
P.T. 96+18.7

96+ Req'd. - Identification
Sign Lt. (State Forces)
S = 0.028
M.D.S. = 70 MPH
TRANS. LENGTH = 200'
S.S.D. > 900'

96+50 to 100+50 Req'd. -
Appr. to Project

96+50 END US 0024 (21) =
96+51.8 ON FAS 54 (1)

93+57 Req'd. - No. 12 Conc.
Inlet Lt. with 21'x4' Outlet
to C.B.C. (H=5-6') 12'
(Details on Sheet No. 8)

94+20 - Remove Bridge Req'd.
20'x5'x11' C.B.C. (Type 20 S)
(Special) Channel Improvement
(W=24')
(Details on Sheet Nos. 10, 11 & 12)

92+ to 96+ Req'd. - Detour
Rt. Transport & Place 24'x70'
C.M.P. Cross Culvert (State
Furnished Material) Remove
Detour Rt.

94+30 Req'd. - No. 12
Conc. Inlet Rt. with
21'x8' Outlet to C.B.C.
(H=6-0') (Details on
Sheet No. 8)

90+ to 95+ -
Req'd. Frontage Rd.
Rt.

95+50 - Reset
15'x19' C.M.P. with
Headgate Rt.

Telephone Poles = M.S.T. Co., Sterling, Cal.

Pawnee Ditch

Mail Box

3 Mail Boxes

R.O.W. MARKER
50' Lt. Sta. 96+23

2659.0 Cor. to P.O.S.T. 96+51.2
Urban Boundary

292.5 P.O.S.T. to Cor.
P.I. 96+82.2

25' Gate

TO STONEHAM

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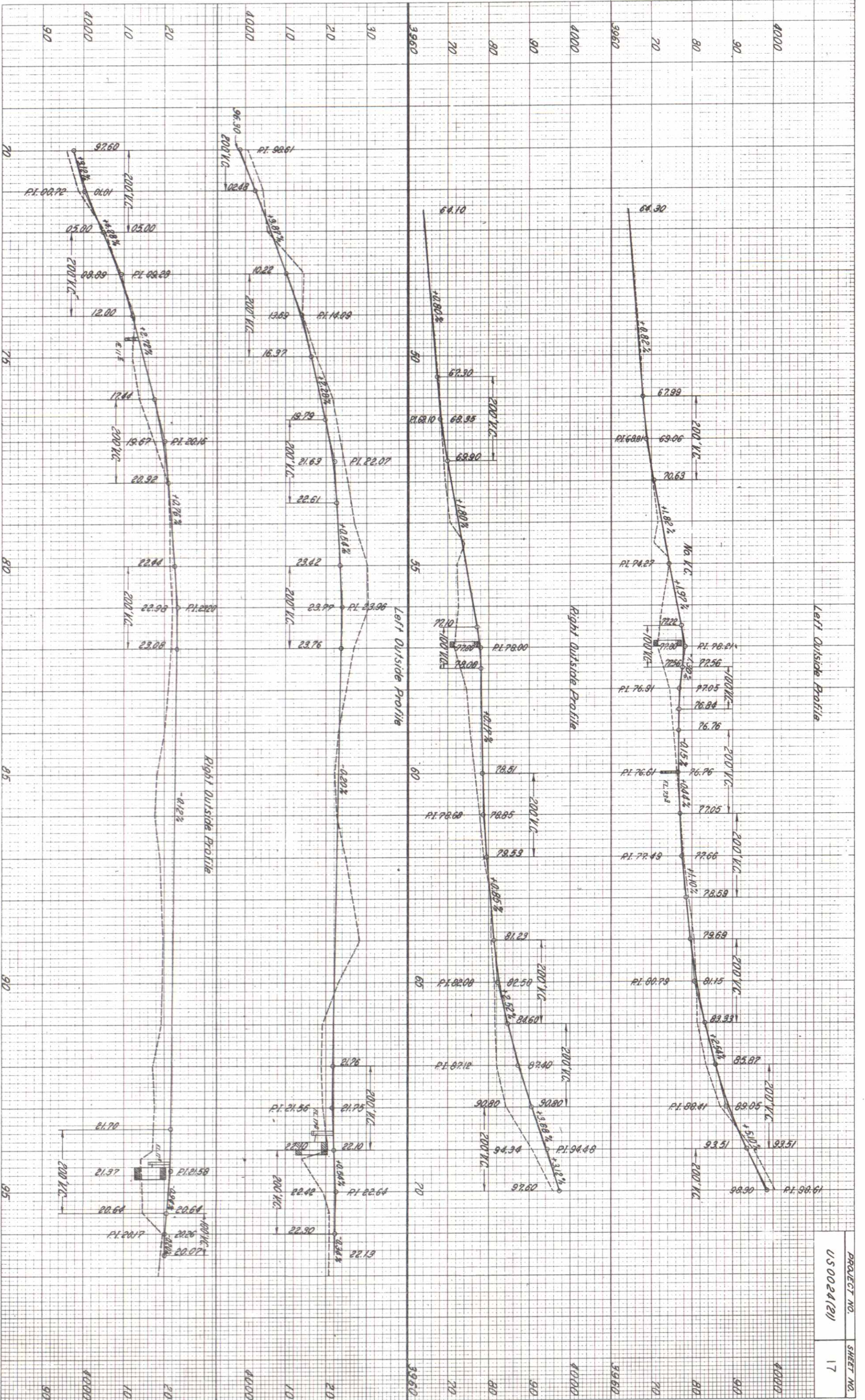


PLATE 3 CROSS SECTION OF R.R. & T. STANDARD
M. & E. CO. No. 3483 2ND EDITION 1933