S P
3 CTH 6 1
63P

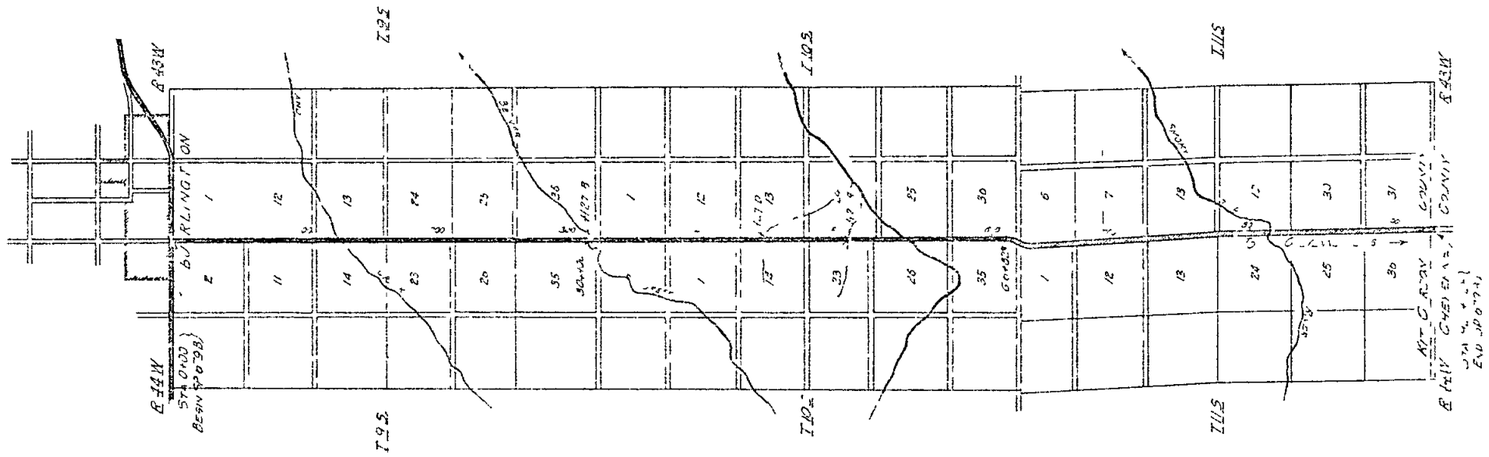
CONVENTIONAL SIGNS

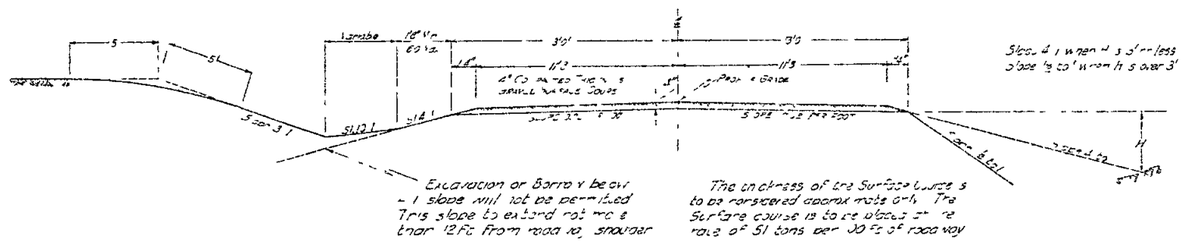
Center Lines of Survey
Right of Way Lines
Easement Lines
Section Lines
Barbed Wire Fence
Bridges in Place
Intersecting roads

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
S P No 6738
STATE HIGHWAY No 51
KIT CARSON COUNTY
1933

Sta 0+00 Begin Div #1
Grading and Surfacing
Sta 304+00 Begin Div #2
Grading, Surfacing Structures
Sta 616+82.6 Begin Div #3
Surfacing Only





TYPICAL ROAD SECTION

SP 6798

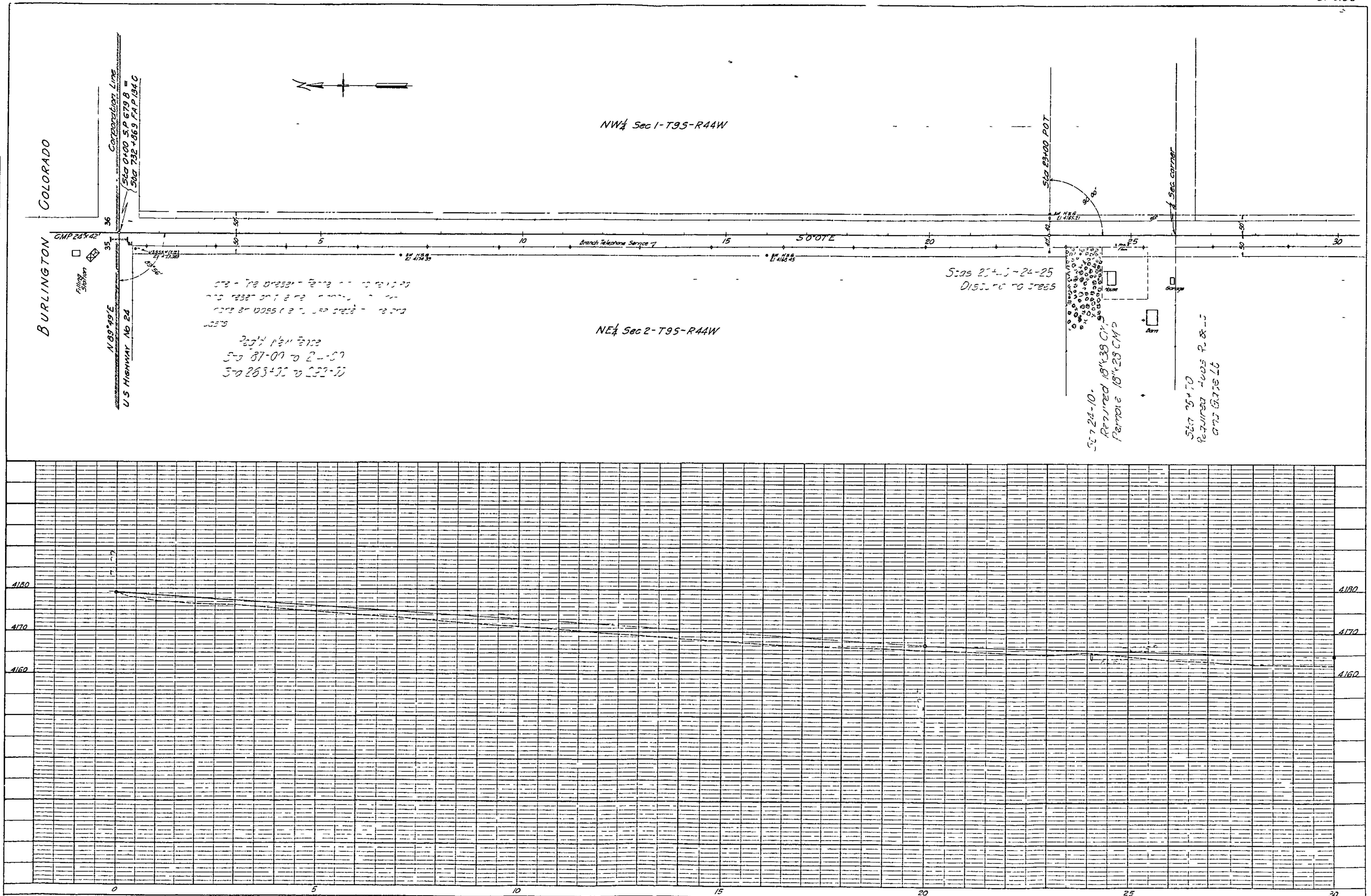
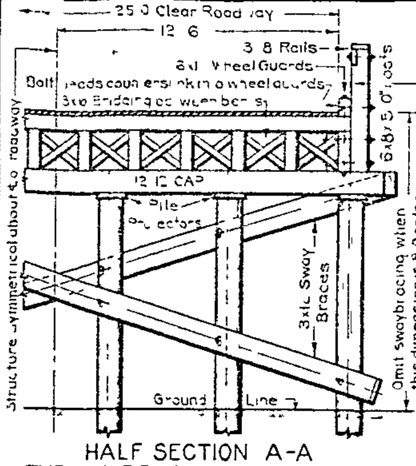
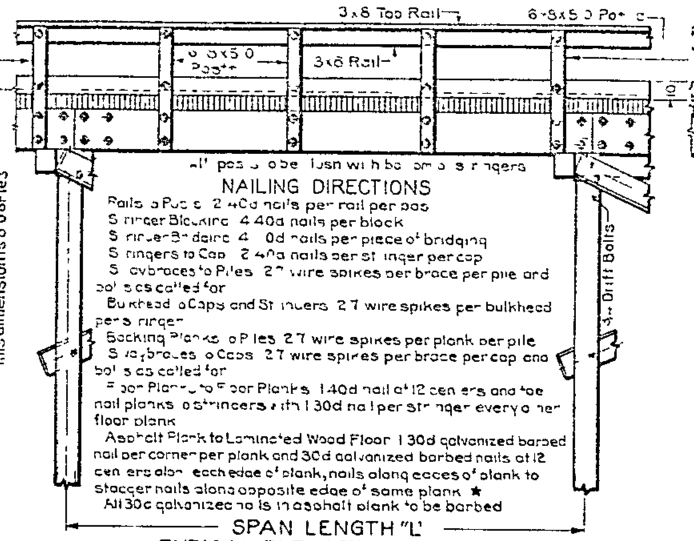


PLATE 1 PLAN PROFILE



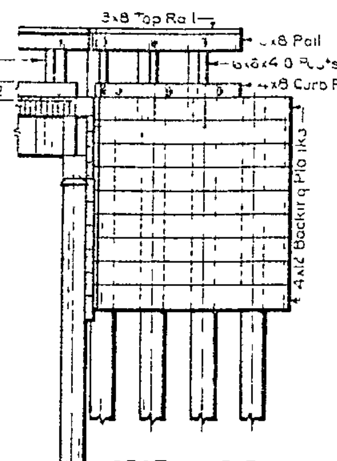
HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION



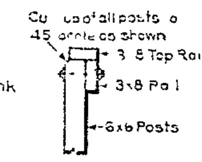
All posts to be flush with bottom of stringers

NAILING DIRECTIONS
Rails to Posts 2 40d nails per rail per post
Stringer Blocking 4 40d nails per block
Stringer Bridging 4 40d nails per piece of bridging
Stringers to Cap 2 40d nails per stringer per cap
Swaybraces to Piles 2 7 wire spikes per brace per pile and bolts as called for
Bulkhead to Caps and Stringers 2 7 wire spikes per bulkhead per stringer
Backing Planks to Piles 2 7 wire spikes per plank per pile
Swaybraces to Caps 2 7 wire spikes per brace per cap and bolts as called for
Floor Plank to Floor Planks 1 40d nail at 12 centers and toe nail planks to stringers with 1 30d nail per stringer every other floor plank
Asphalt Plank to Laminated Wood Floor 1 30d galvanized barbed nail per corner per plank and 30d galvanized barbed nails at 12 centers along each edge of plank, nails along edges of plank to stagger nails along opposite edge of same plank ★
All 30d galvanized nails in asphalt plank to be barbed

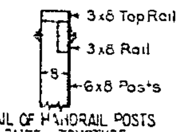
SPAN LENGTH "L"
TYPICAL ELEVATION OF SPAN
★ Based on 8x6 0 size planks



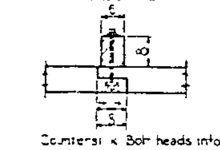
SECTION B-B
See bill of material for number of backing planks required

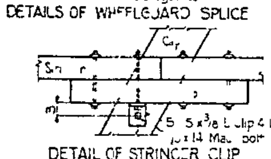


DETAIL OF HANDRAIL POSTS WINGS



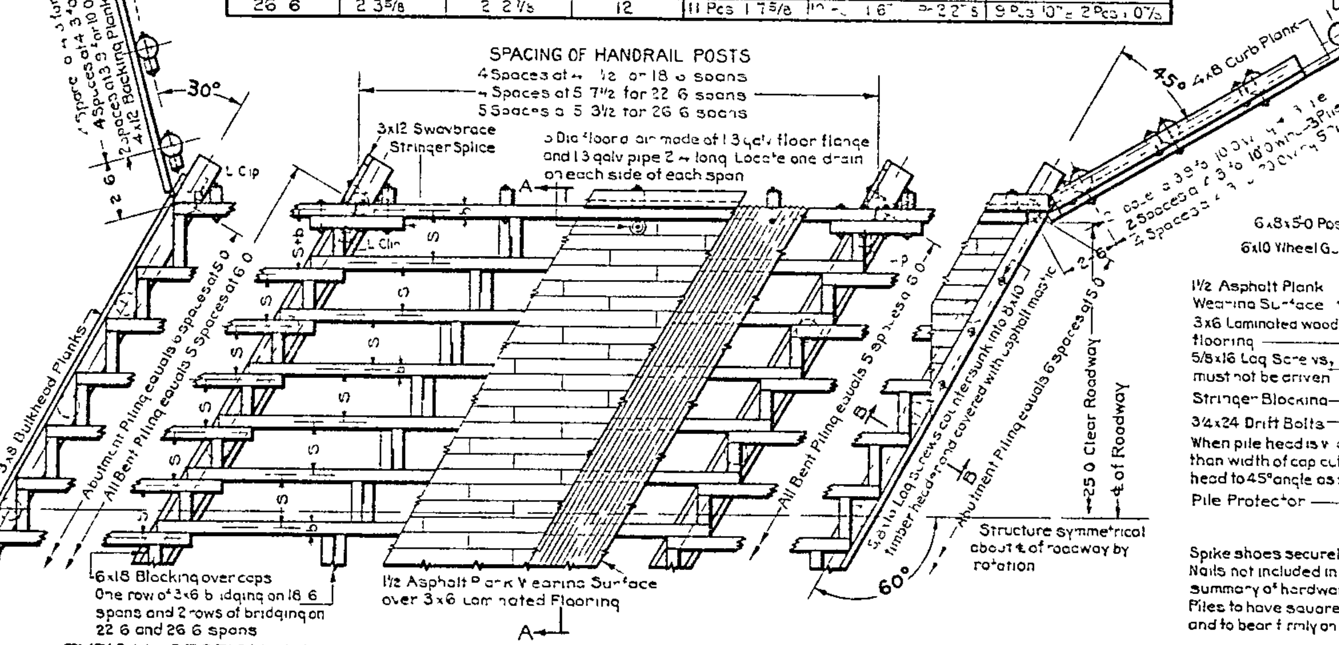
DETAIL OF HANDRAIL POSTS SUPERSTRUCTURE


Countersink Bolt heads into the guards
DETAILS OF WHEELGUARD SPLICE

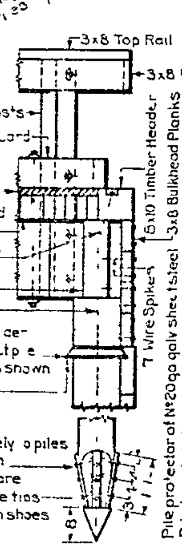

DETAIL OF STRINGER CLIP
(FOR ANGLE INCLUDED IN BOLTS)
CLIPS REQD

STRINGER SPACING				STRINGER BLOCKING		
L	S	S	NUMBER OF	ABUTMENTS		BENTS
SPAN LENGTH	SINGLE SPAN	MULTIPLE SPAN	STRINGERS	SINGLE SPAN	MULTIPLE SPAN	MULTIPLE SPAN
18 6	2 3 13/16	2 [illegible] 1/4	12	11 Pcs 1 9 13/16	[illegible]	11 Pcs 1 [illegible]
22 6	2 3 13/16	2 3 1/4	12	11 Pcs 1 9 13/16	10 Pcs 1 9 + 1 Pc 2 3 1/4	11 Pcs 1 3 1/4
26 6	2 3 5/8	2 2 7/8	12	11 Pcs 1 7 5/8	[illegible] 1 6 [illegible] 2 2 7/8	9 Pcs 10 7/8 2 Pcs 1 0 7/8

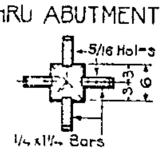
SPACING OF HANDRAIL POSTS
4 Spaces at 4 [illegible] 1/2 for 18 6 spans
4 Spaces at 5 7 1/2 for 22 6 spans
5 Spaces at 5 3 1/2 for 26 6 spans



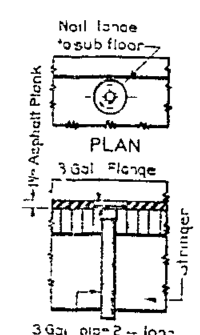
TYPICAL SECTIONAL HALF PLAN OF SPANS AND ABUTMENTS



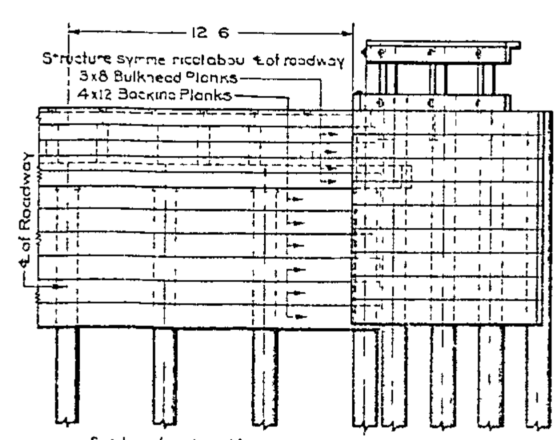
SECTION THRU ABUTMENT



PLAN OF PILE SHOE
CAST IRON



PLAN
ELEVATION
DETAIL OF FLOOR DRAIN



HALF END ELEVATION

Orig Tr[illegible] BY	HALF 19 29 38
CHECKED BY	W G S 19 30 38
[illegible] BY	HALF 19 30 38
CHECKED BY	W G S 19 30 38

STANDARD P 116 BH 60

GENERAL NOTES

All work shall be done according to the Standard Specifications of The Colorado State Highway Department Adopted June 1 1937
All timber and piling to be treated or untreated as shown in bills of material
All timber and piling shall be dense southern yellow pine or west coast douglas fir
All caps shall be edged to an even depth before treatment The ends of all stringers shall be dapped on one edge before treatment to obtain an even depth over caps
All cut surfaces or bored holes in treated timber or piles shall be thoroly saturated with hot creosote oil
All piling supporting caps shall be covered with galvanized pile protectors as specified all other piling tops shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt or tar
Joints in top handrail must be staggered with joints in side rail
All handrailing and posts above the wheelguards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified
All bolts more than 12 inches long must be threaded not less than 4 inches
Bolts in the finished structure shall not project more than one half inch beyond the nut
All bolts must have std C10G or Malleable Cast washers under each head and nut
Bolt lengths are calculated assuming std C10G washers will be used
The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of lumber and piling
The entire exposed surface of all untreated timber shall be painted one coat as specified immediately after the material is delivered to the project
Before placing handrailing the contact surfaces shall receive the second coat of paint
When contractor is permitted to drill holes for the pile driving these holes must be drilled so piling will stand in vertical position after final driving
Bid price for asphalt plank shall include galvanized barbed nails and necessary asphalt mop
All hardware to be galvanized Wherever hardware is shown drawn or unspecified [illegible] material
All necessary blocking for swaybracing shall be treated timber
All caps must be surfaced on vertical grain face

STANDARD P-116-B-H 60

Rev Nov 17 1936 [illegible] Angle Iron Clips on Outside Stringers
Revised 6 1 37 A G K Changed to 1937 Specifications

FED ROAD DIST Nº	STATE	STATE PROJ	SHEET Nº	TOTAL SHEETS
3	COLO	679-B	2	

Revised Oct 21 1935 A G K Changed to 1935 Specifications
Revised Dec 20 1935 A G K Changed handrail post bolt to 3/4 dia
Revised Nov 12 1936 [illegible] End H R Posts Flush with bottom of stringer

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	SIZE	18 6 SPAN NO	LENGTH	TOTAL	22 6 SPAN NO	LENGTH	TOTAL	26 6 SPAN NO	LENGTH	TOTAL
POSTS TO RAILS	5/8	6	10	7 0 LBS	6	10	7 0 LBS	8	10	9 0 LBS
POSTS TO WHEEL GUARDS	3/4	6	14	12 LBS	6	14	12 LBS	6	14	11 7 0 LBS
POSTS TO STRINGERS	3/4	12	16	23 3 LBS	12	16	28 3 LBS	16	18	[illegible] 0 LBS
WHEEL GUARDS TO STRINGERS	3/4	6	36	29 0 LBS	6	38	30 0 LBS	8	38	40 0 LBS
WASHERS STD C10G 5/8 & 3/4		[illegible]		69 0 LBS	[illegible] 48		69 0 LBS	[illegible]		93 0 LBS
TOTAL WEIGHT				[illegible] LBS			147 0 LBS			[illegible] LBS

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
ANGLE CLIP TO STRINGER & CAP	BOLTS	5/8	22	10/14	7 00 LBS	14 0 LBS
POSTS TO STRINGERS	BOLTS	3/4	4	18	2 60 LBS	10 4 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2 12 LBS	4 1 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	10 0 LBS
TIMBER HEADER TO STRINGERS	LAG SCREWS	5/8	12	16	1 36 LBS	16 3 LBS
					LBS	LBS
WASHERS STD C10G	WASHERS 5/8 3/4		20/16		0 75 / 1 25 LBS	35 0 LBS
CAP TO PILES	DRIFT BOLTS	3/4	7	24	3 00 LBS	21 0 LBS
TOTAL WEIGHT						[illegible]3 0 LBS

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	3	11	1 16 LBS	3 4 LBS
POSTS TO PILES	BOLTS	3/4	6	20	2 84 LBS	17 0 LBS
PILES TO CURB PLANK	BOLTS	5/8	3	18	1 74 LBS	5 2 LBS
					LBS	LBS
WASHERS STD C10G	WASHERS 5/8 3/4		12/12		0 75 / 1 25 LBS	24 4 LBS
TOTAL WEIGHT						50 0 LBS

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2 12 LBS	4 3 LBS
ANGLE CLIP TO CAP	BOLTS	5/8	2	14	5 50 LBS	11 0 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	10 0 LBS
POSTS TO STRINGERS TO SPLICES	BOLTS	3/4	4	24	3 32 LBS	13 5 LBS
SPLICES TO STRINGERS	BOLTS	5/8	12	16	1 57 LBS	18 9 LBS
	BOLTS				LBS	LBS
SWAYBRACES TO CAP	BOLTS	5/8	2	17	1 66 LBS	3 0 LBS
SWAYBRACES TO PILES	BOLTS	5/8	12	17	1 66 LBS	20 0 LBS
					LBS	LBS
WASHERS STD C10G TO SWAYS	WASHERS 5/8 3/4		28/16		0 75 / 1 25 LBS	41 0 LBS
WASHERS STD C10G WITH SWAYS	WASHERS 5/8 3/4		56/16		0 75 / 1 25 LBS	62 0 LBS
CAP TO PILES	DRIFT BOLTS	3/4	6	24	3 00 LBS	18 0 LBS
TOTAL WEIGHT WITHOUT SWAYBRACES						119 0 LBS
TOTAL WEIGHT WITH SWAYBRACES						[illegible] LBS

NAILS

LOCATION	ITEM	18 6 SPAN	22 6 SPAN	26 6 SPAN
ONE SPAN OF SUPERSTRUCTURE	30D COMMON	[illegible]0 LBS	25 LBS	[illegible] LBS
	30D GAL BARBED	[illegible] LBS	125 LBS	[illegible] LBS
	40D COMMON	[illegible] LBS	165 LBS	LBS
ONE ABUTMENT	40D COMMON	5 LBS	5 LBS	5 LBS
	7 WIRE SPIKES	LBS	28 LBS	LBS
ONE WING 10/20	40D COMMON	1 LB	1 LB	1 LB
	7 WIRE SPIKES	LBS	9/15 LBS	LBS
ONE BENT	40D COMMON	5 LBS	5 LBS	[illegible] LBS
	7 WIRE SPIKES	LBS	LBS	LBS

SUMMARY OF HARDWARE

BOLTS AND WASHERS				
4 SPANS	AT	147	LBS PER SPAN	588 LBS
2 ABUTMENTS	AT	113	LBS PER ABUTMENT	226 LBS
2/2 WINGS	AT	50	LBS PER WING	200 LBS
3 BENTS WITHOUT SWAYBRACES	AT	119	LBS PER BENT	357 LBS
BENTS WITH SWAYBRACES	AT		LBS PER BENT	LBS
TOTAL WEIGHT				1371 LBS

NAILS LOCATION	UNIT	30D COMMON EACH	30D COMMON TOTAL	30D GAL/BARBED EACH	30D GAL/BARBED TOTAL	40D COMMON EACH	40D COMMON TOTAL	7 WIRE SPIKES EACH	7 WIRE SPIKES TOTAL
4 SPANS	LBS	25	100	125	500	165	660	—	—
2 ABUTMENTS	LBS	—	—	—	—	5	10	28	56
2/2 WINGS	LBS	—	—	—	—	1	4	9/15	48
3 BENTS	LBS	—	—	—	—	5	15		
TOTAL WEIGHT	LBS		100		500		689		104

SUMMARY OF QUANTITIES

STRUCTURAL EXCAVATION				
ITEM 14a DRY ROCK				CU YDS
ITEM 14b DRY COMMON				60 CU YDS
ITEM 14c WET ROCK				CU YDS
ITEM 14d WET COMMON				60 CU YDS
ITEM 42a UNTREATED BRIDGE TIMBER				
4 SPANS	AT	312 BD FT EACH	=	1248 BD FT
2 ABUTMENTS	AT	40 BD FT EACH	=	80 BD FT
2/2 WINGS	AT	76/84 BD FT EACH	=	320 BD FT
3 BENTS	AT	40 BD FT EACH	=	120 BD FT
		TOTAL	=	1768 BD FT
ITEM 42b TREATED BRIDGE TIMBER				
2 SPANS	AT	7317 BD FT EACH	=	14,634 BD FT
2 SPANS	AT	7308 BD FT EACH	=	14,616 BD FT
2 ABUTMENTS	AT	1958 BD FT EACH	=	3 916 BD FT
2/2 WINGS	AT	427/832 BD FT EACH	=	2518 BD FT
3 BENTS	AT	624 BD FT EACH	=	1872 BD FT
		TOTAL	=	37,556 BD FT
ITEM 43 ASPHALT PLANK WEARING SURFACE				
4 SPANS	AT	563 SQ FT EACH		2252 SQ FT
Item Nº42 bx Creosote Oil				*5 Gal*
" " 42 Px White Paint				*5 Gal*
ITEM 50a PILING TREATED				
2 ABUTMENTS	AT	112 LIN FT EACH	=	224 LIN FT
2/2 WINGS	AT	60/100 LIN FT EACH	=	320 LIN FT
3 BENTS	AT	96 LIN FT EACH	=	288 LIN FT
		TOTAL	=	832 LIN FT
ITEM 50e METAL PILE SHOES				
SHOES	AT	35 LBS EACH	=	SHOES
ITEM 89b DRAIN PIPE				
2 PIECES 3 DIA GALV PIPE 2 LONG WITH ONE 3 GALV FLANGE ON EACH PIPE				
4 SPANS	AT	2 COMPLETE PER SPAN	=	8 PIECES
Item V-42 Py 3/6 k Paint				*2 Gal*
" " 43 Bz Asphalt for Pile Tabs				*4 Gal*
" Cof Metal Pile Protectors				*30 Pieces*
" 100 + Hardware				*2264 lb*

ONE SPAN OF SUPERSTRUCTURE

UNTREATED TIMBER DESCRIPTION	SIZE	18 6 SPAN NO	LENGTH	TOTAL	22 6 SPAN NO	LENGTH	TOTAL	26 6 SPAN NO	LENGTH	TOTAL
HANDRAILS S4S	3x8	4	20 0	160 BD FT	4	24 0	192 BD FT	4	28 0	224 BD FT
HANDRAIL POSTS S4S	6x8	6	5 0	120 BD FT	6	5 0	120 BD FT	8	5 0	160 BD FT
TOTAL UNTREATED TIMBER				[illegible] BD FT			312 BD FT			BD FT
TREATED TIMBER										
FLOORING S4S	3x6	75	30 0	3375 BD FT	90	30 0	4050 BD FT	106	30 0	4770 BD FT
BRIDGING	3x6	4	14 0	84 BD FT	8	14 0	168 BD FT	8	14 0	168 BD FT
WHEEL GUARDS	6x10	2	20 0	200 BD FT	2	24 0	240 BD FT	2	28 0	280 BD FT
STRINGERS OUTSIDE	6x18	2	18 6	333 BD FT						
	6x20				2	22 6	450 BD FT			
INTERMEDIATE SPAN	8x20							2	26 6	707 BD FT
STRINGERS OUTSIDE END SPANS	6x18	2	18 11	341 BD FT						
	6x20				2	22 11	459 BD FT			
	8x20							2	26 10	716 BD FT
STRINGERS INSIDE INTERMEDIATE AND END SPANS	6x18	10	20 0	1800 BD FT						
	6x20				10	24 0	2400 BD FT			
	8x20							10	28 0	3734 BD FT
STRINGERS SINGLE SPAN	6x18	12	19 4	2088 BD FT						
	6x20				12	23 4	2800 BD FT			
	8x20							12	27 [illegible]	[illegible] BD FT
TOTAL TREATED TIMBER SINGLE SPAN				BD FT			7258 BD FT			BD FT
TOTAL TREATED TIMBER END SPAN				BD FT			7317 BD FT			BD FT
TOTAL TREATED TIMBER INTER SPAN				BD FT			7308 BD FT			BD FT
ASPHALT PLANK WEARING SURFACE				SQ FT			563 SQ FT			SQ FT

ONE ABUTMENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	2 PCS	6x8x5 0	40 BD FT
TOTAL UNTREATED TIMBER			40 BD FT
TREATED TIMBER			
TIMBER HEADER	1 PC	8x10x30 0 FINISH TO 7x9	200 BD FT
CAP	1 PC	12x12x34 0	408 BD FT
BULKHEAD PLANKS	4 PCS	3x8x32 0	256 BD FT
BACKING PLANKS	7 PCS	4x12x32 0	896 BD FT
STRINGER BLOCKING (Treated Timber) FOR 22 6 SPANS	1 PC	6x18 22 0	198 BD FT
FOR 26 6 SPANS	1 PC	6x18x20 0	BD FT
TOTAL TREATED TIMBER			1958 BD FT
PILING TREATED	7 PIECES AT 16 LINEAL FT EACH		112 LIN FT

ONE WING

UNTREATED TIMBER DESCRIPTION	SIZE	10 0 WING NO	LENGTH	TOTAL	6 0 WING NO	LENGTH	TOTAL	20 0 WING NO	LENGTH	TOTAL
HANDRAILS S4S	3x8	1	10 0	20 BD FT	1	12 0	24 BD FT	1	12 0	24 BD FT
	3x8	1	10 0	20 BD FT	1	12 0	24 BD FT	1	12 0	24 BD FT
HANDRAIL POSTS S4S	6x6	[illegible]	4 0	36 BD FT	3	4 0	36 BD FT	3	4 0	36 BD FT
TOTAL UNTREATED TIMBER				76 BD FT			84 BD FT			84 BD FT
TREATED TIMBER										
CURB PLANK	4x8	1	10 0	27 BD FT	1	12 0	32 BD FT	1	12 0	32 BD FT
BACKING PLANKS	4x12	10	10 0	400 BD FT	[illegible]	16 0	BD FT	10	20 0	800 BD FT
TOTAL TREATED TIMBER				427 BD FT			BD FT			832 BD FT
PILING TREATED		NO LENGTH		TOTAL	NO LENGTH		TOTAL	NO LENGTH		TOTAL
		3 20-0		60 LIN FT	4		LIN FT	5 20 0		100 LIN FT

ONE BENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	2 PCS	6x8x5 0	40 BD FT
TOTAL UNTREATED TIMBER			40 BD FT
TREATED TIMBER			
STRINGER SPLICES	2 PCS	6x18x4 0	72 BD FT
CAP	1 PC	12x12x34 0	408 BD FT
SWAYBRACES	2 PCS	3x12x	BD FT
STRINGER BLOCKING (Treated Timber) FOR 22 6 SPANS	1 PC	6x18x16 0	144 BD FT
FOR 26 6 SPANS	1 PC	6x18x12 0	BD FT
SHIMS	1 PCS	2x6x1 0	BD FT
			BD FT
TOTAL TREATED TIMBER			624 BD FT
PILING TREATED	6 PIECES AT 16 LINEAL FT EACH		96 LIN FT

Materials only FOB Burlington 7. Ernest Montgomery

** Includes nails except 30d Galv for Asphalt Plank*

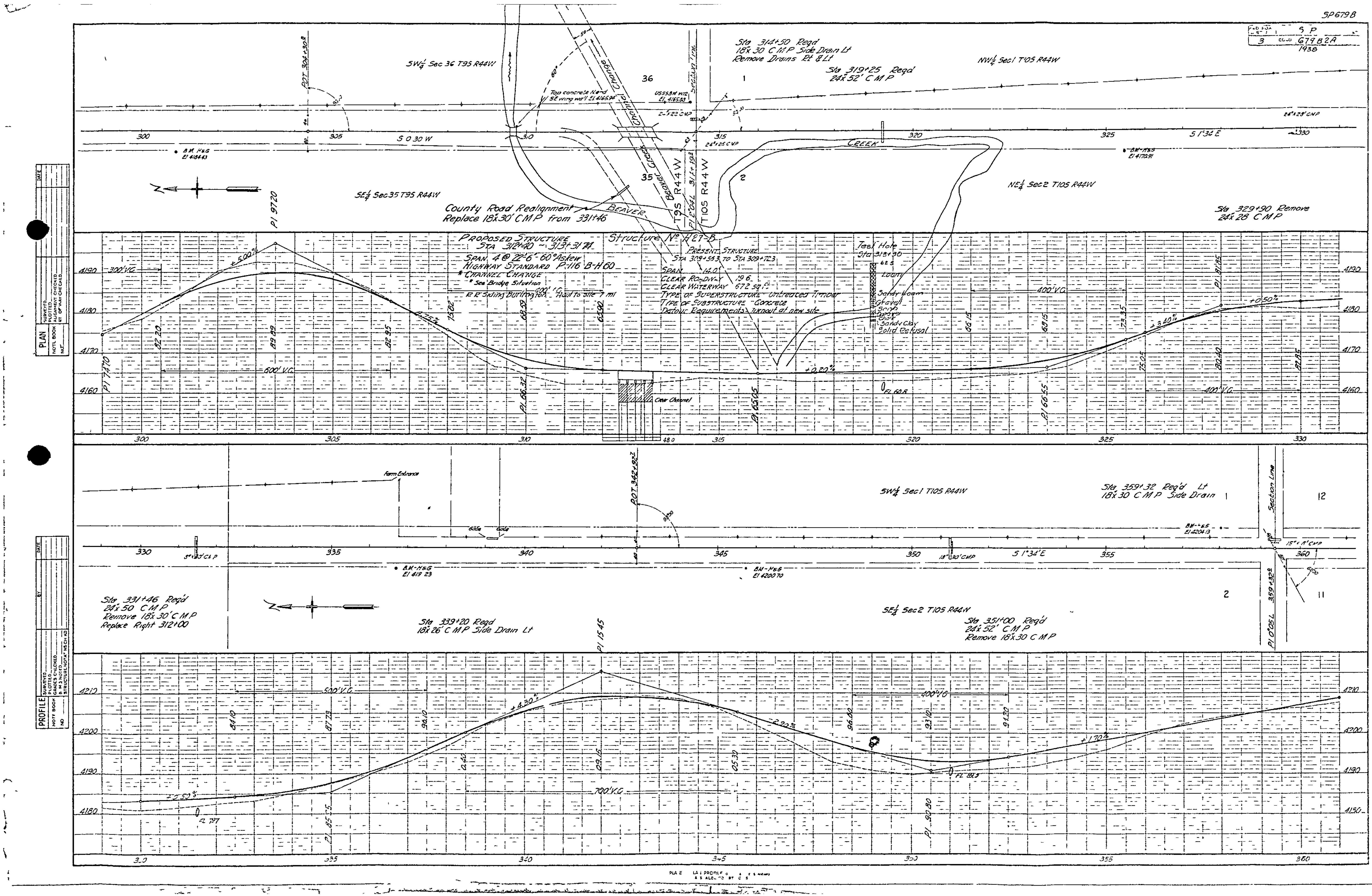
STRUCTURES REQUIRED
4 SPANS AT 22-6"
SPANS AT

LOADING DATA
LIVE LOAD AASHO 1935 CLASS A (H 15)
DEAD LOAD Assumes 25 lbs per sq ft additional wearing surface this includes 1½ asphalt plank wearing surface

COLORADO
STATE HIGHWAY DEPARTMENT
TREATED TIMBER PILE TRESTLE
WITH 3 LAMINATED FLOOR AND 1½
ASPHALT PLANK WEARING SURFACE
25 FT CLEAR ROADWAY
Across BEAVER CREEK
Sta 312+40 To 313+31 732
Near BURLINGTON Sec 35 T 9S R 44W 36

Designed by AGK	Approved by *P d Bailey*
Made by AGK	Bridge Engineer
Check Design HSD	
Check Det HSD	Date Mar 29th 1935

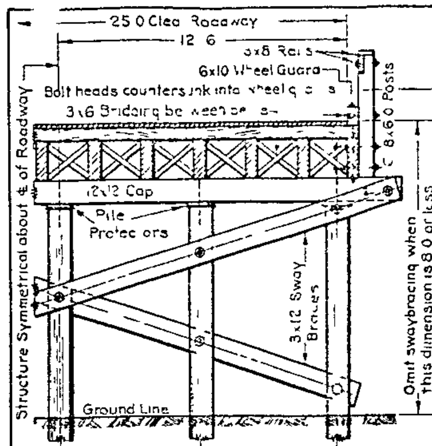
STRUCTURE NO H-27-B


SP679B
S P
3
679B2A
1938
Sta 314+50 Reqd
18x30 C M P Side Drain Lt
Remove Drains Rt & Lt
Sta 319+25 Reqd
24x52' C M P
SW¼ Sec 36 T9S R44W
NW¼ Sec1 T10S R44W
Channel Change
Beaver Creek
Creek
Beaver
S 0 30 W
S 1°34 E
SE¼ Sec35 T9S R44W
NE¼ Sec2 T10S R44W
T9S R44W
T10S R44W
County Road Realignment
Replace 18x30' C M P from 331+46
Sta 329+90 Remove
24x28 C M P
PI 97.20
Proposed Structure
Sta 312+40 ~ 313+31.74
Span 4 @ 22'-6"-60° Askew
Highway Standard P-116 B-H 60
Channel Change
Structure No H-27-B
Present Structure
Span 14.0'
Clear Roadway 19.6
Clear Waterway 672 sq ft
Type of Superstructure Untreated Timber
Type of Substructure Concrete
Test Hole
Sta 313+90
Loam
Sandy Loam
Gravel
Sandy Clay
Solid Refusal
300' V.C.
600' V.C.
400' V.C.
+0.50%
+3.40%
+0.20%
Clear Channel
PLAN
PROFILE
SW¼ Sec1 T10S R44W
Sta 359+32 Req'd Lt
18x30 C M P Side Drain
Section Line
Farm Entrance
Sta 331+46 Req'd
24x50 C M P
Remove 18x30' C M P
Replace Right 312+00
Sta 339+20 Reqd
18x26 C M P Side Drain Lt
SE¼ Sec2 T10S R44W
Sta 351+00 Req'd
24x52' C M P
Remove 18x30 C M P
PI 15.45
500' V.C.
400' V.C.
700' V.C.
+4.30%
-2.90%
+1.70%
+2.52%
PI 90.80

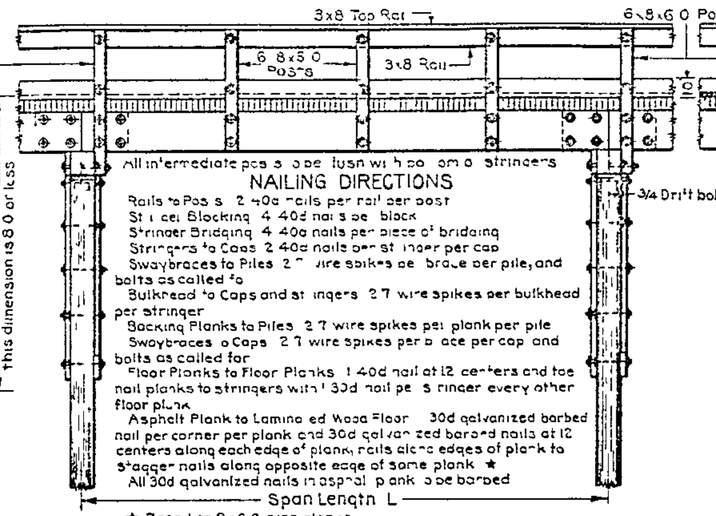
STANDARD P-116 B-H

FED ROAD DIST NO	STATE	STATE PROJ	SHEET NO	TOTAL SHEETS
3	COLO	679-B 1938	3	

Revised October 21 1935 A G K Changed to 1935 Specifications
Revised Dec 20 1935 A G K Changed handrail post bolts to 3/4 dia
Revised [illegible] 37 A G K Changed to 1937 Specifications



HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION

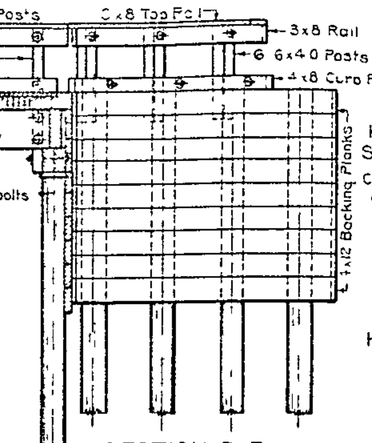


All intermediate posts to be flush with bottom of stringers

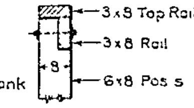
NAILING DIRECTIONS
Rails to Posts 2 40d nails per rail per post
Stringer Blocking 4 40d nails per block
Stringer Bridging 4 40d nails per piece of bridging
Stringers to Caps 2 40d nails per stringer per cap
Swaybraces to Piles 2 7 wire spikes per brace per pile, and bolts as called for
Bulkhead to Caps and stringers 2 7 wire spikes per bulkhead per stringer
Backing Planks to Piles 2 7 wire spikes per plank per pile
Swaybraces to Caps 2 7 wire spikes per brace per cap and bolts as called for
Floor Planks to Floor Planks 1 40d nail at 12 centers and toe nail planks to stringers with 1 30d nail per stringer every other floor plank
Asphalt Plank to Laminated Wood Floor 30d galvanized barbed nail per corner per plank and 30d galvanized barbed nails at 12 centers along each edge of plank, nails along edges of plank to stagger nails along opposite edge of same plank ★
All 30d galvanized nails in asphalt plank to be barbed

Span Length L
★ Based on 8x6 0 size planks

TYPICAL ELEVATION OF SPAN

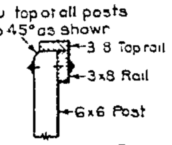


SECTION B-B
See bill of material for number of backing planks required

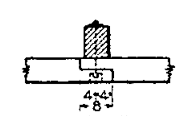


DETAIL OF HANDRAIL POSTS SUPERSTRUCTURE

Cut top of all posts to 45° as shown

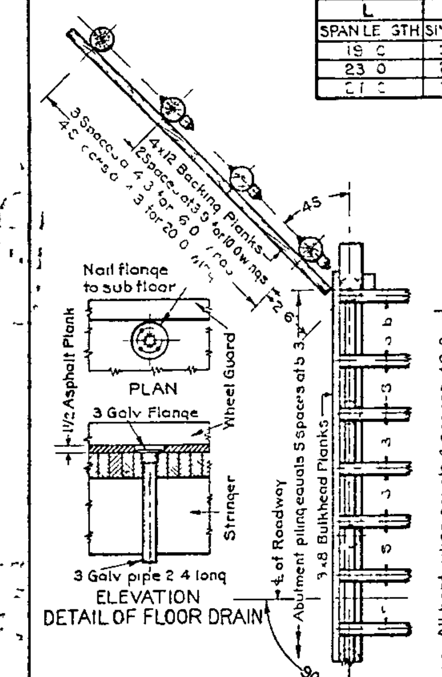


DETAIL OF HANDRAIL POSTS WINGS



Countersink bolt heads into wheel guards
PLAN VIEW
DETAILS OF WHEEL GUARD SPLICE

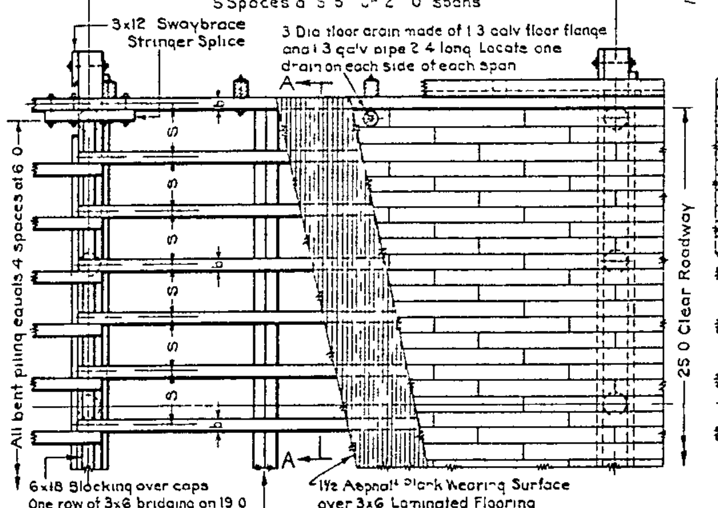
STRINGER SPACING				STRINGER BLOCKING		
L	S	S	NUMBER OF	ABUTMENTS		BENTS
SPAN LENGTH	SINGLE SPAN	MULTIPLE SPAN	STRINGERS	SINGLE SPAN	MULTIPLE SPAN	MULTIPLE SPAN
19 0	[illegible]	2 3 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23 0	2 3 3/16	[illegible]	12	11 Pcs 1 9 13/16	[illegible]	11 Pcs [illegible]
27 0	2 3 [illegible]	[illegible]	12	[illegible] Pcs [illegible] 5	[illegible] 2 5/8	9 Pcs 10 /8 2 Pcs 1 9 7/8



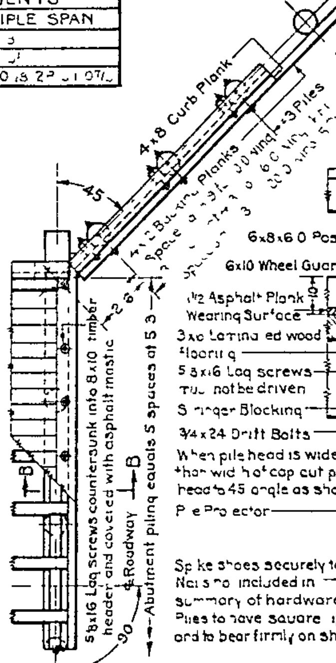
DETAIL OF FLOOR DRAIN

SECTIONAL HALF PLAN OF ABUTMENT

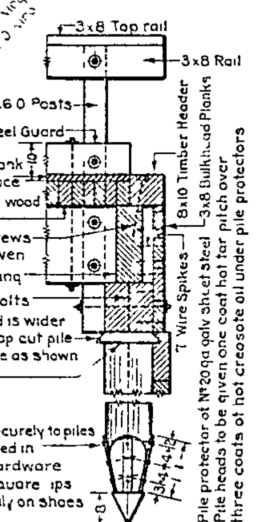
SPACING OF HANDRAIL POSTS
4 Spaces at [illegible] for 19 0 spans
4 Spaces at 5 9 for 23 0 spans
5 Spaces at 5 5 for 27 0 spans



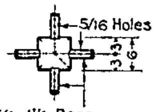
TYPICAL SECTIONAL HALF PLAN OF SPANS



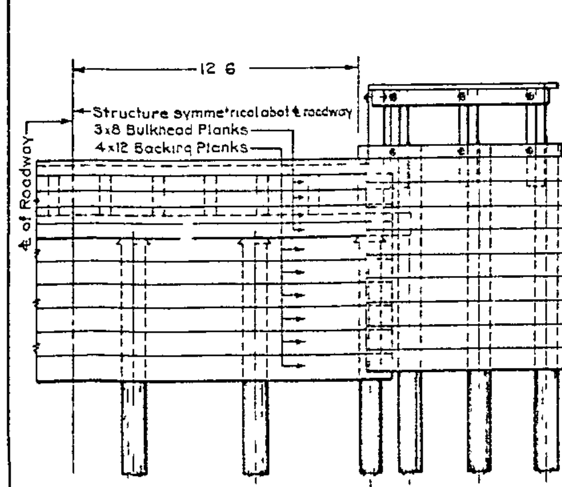
HALF PLAN OF ABUTMENT



SECTION THRU ABUTMENT



Cast into pile shoe
PLAN OF PILE SHOE
CAST IRON



HALF END ELEVATION
See bill of material for number of backing planks required

	INITIAL	DATE
ORIGINAL BY	HALF	9 29 38
CHECKED BY	W G S	9 30 38
TRACED BY	HALF	9 30 38
CHECKED BY	W G S	10 22 38

STANDARD P 116 B H

GENERAL NOTES

All work shall be done according to the Standard Specifications of The Colorado State Highway Department Adopted June 1 1937

All timber and piling to be treated or untreated as shown in bills of material

All timber and piling shall be dense southern yellow pine or west coast douglas fir

All caps shall be edged to an even depth before treatment The ends of all stringers shall be dapped on one edge before treatment to obtain an even depth over caps

All cut surfaces or bored holes in treated timber or piles shall be thoroly saturated with hot creosote oil

All piling supporting caps shall be covered with galvanized pile protectors as specified all other piling tops shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt or tar

Joints in top handrail must be staggered with joints in side rail

All handrailing and posts above the wheel guards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified

All bolts more than 12 long must be threaded not less than 4 inches

Bolts in the finished structure shall not project more than one half inch beyond the nut

All bolts must have Std C I O G or Malleable Cast Washers under each head and nut

Bolt lengths are calculated assuming Std C I O G washers will be used

The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of lumber and piling

The entire exposed surface of all untreated timber shall be painted one coat as specified immediately after the material is delivered to the project

Before placing handrailing the contact surfacing shall receive the second coat of paint

When contractor is permitted to drill holes to drill the pile or wing these holes must be drilled so piling will be and in vertical position after final driving

Bid price for asphalt plank shall include galvanized barbed nails and necessary asphalt mop.

All hardware to be galvanized Weights of hardware as shown are for ungalvanized material

All necessary blocking for swaybracing shall be treated timber

All caps must be surfaced on vertical grain face

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	SIZE	19 0 SPAN NO	LENGTH	TOTAL	23 0 SPAN NO	LENGTH	TOTAL	27 0 SPAN NO	LENGTH	TOTAL
POSTS TO RAILS	5/8	6	10	[illegible] 0 LBS	6	10	7 [illegible] LBS	8	10	9 0 LBS
POSTS TO WHEEL GUARDS	3/4	6	14	12 7 LBS	6	14	12 7 LBS	8	1[illegible]	17 0 LBS
POSTS TO STRINGERS	3/4	12	16	28 3 LBS	12	16	28 3 LBS	16	18	42 0 LBS
WHEEL GUARDS TO STRINGERS	3 4	6	36	29 0 LBS	6	[illegible]8	[illegible]0 0 LBS	8	38	40 0 LBS
WASHERS STD C I O G 5/8 & 3/4	12/48			163 0 LBS	12/48		169 0 LBS	[illegible]/6[illegible]		192 0 LBS
TOTAL WEIGHT				LBS			147 0 LBS			[illegible] LBS

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
POST TO BULKHEAD TO CAP	BOLTS	5/8	2	23	2 15 LBS	4 3 LBS
POSTS TO STRINGERS	BOLTS	3 4	4	18	2 60 LBS	10 4 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2 12 LBS	4 3 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	10 0 LBS
TIMBER HEADER TO STRINGERS	LAG SCREWS	5 8	12	16	1 3[illegible] LBS	16 3 LBS
					LBS	LBS
WASHERS STD C I O G	WASHERS 5/8 3/4	20/16		0 75 / 1 25 LBS		34 5 LBS
CAP TO PILES	DRIFT BOLTS	3/4	6	24	3 0[illegible] LBS	18 0 LBS
TOTAL WEIGHT						[illegible]00 0 LBS

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	3	11	1 16 LBS	3 4 LBS
POSTS TO PILES	BOLTS	3/4	6	20	2 84 LBS	17 0 LBS
PILES TO CURB PLANK	BOLTS	5/8	3	18	1 [illegible]4 LBS	5 2 LBS
					LBS	LBS
WASHERS STD C I O G	WASHERS 5/8 3/4	12/12		0 75 / 1 25 LBS		24 4 LBS
TOTAL WEIGHT						50 0 LBS

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2 12 LBS	4 3 LBS
POSTS TO CAP WITHOUT SWAYS	BOLTS	5/8	2	20	1 9[illegible] LBS	3 8 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	[illegible]0 0 LBS
POSTS TO STRINGERS TO SPLICES	BOLTS	3/4	4	24	3 3[illegible] LBS	13 3 LBS
SPLICES TO STRINGERS	BOLTS	5/8	12	16	1 57 LBS	18 9 LBS
POSTS TO CAP TO SWAYBRACES	BOLTS	5/8	2	23	2 15 LBS	4 3 LBS
SWAYBRACES TO CAP	BOLTS	5/8	2	17	1 66 LBS	3 3 LBS
SWAYBRACES TO PILES	BOLTS	5/8	8	17	1 66 LBS	13 3 LBS
SWAYBRACE TO PILE TO SWAYBRACE	BOLTS	5/8	1	20	1 90 LBS	1 9 LBS
					LBS	LBS
WASHERS STD C I O G NO SWAYS	WASHERS 5/8 3/4	[illegible]2/6		0 75 / 1 25 LBS		4 5 LBS
WASHERS STD C I O G WITH SWAYS	WASHERS 5/8 3/4	54/6		0 75 / 1 25 LBS		60 5 LBS
CAPS TO PILES	DRIFT BOLTS	3/4	5	24	LBS	5 0 LBS
TOTAL WEIGHT WITHOUT SWAYBRACES						[illegible]2 0 LBS
TOTAL WEIGHT WITH SWAYBRACES						147 0 LBS

NAILS

LOCATION	ITEM	19 0 SPAN	23 0 SPAN	27 0 SPAN
ONE SPAN OF SUPERSTRUCTURE	30D COMMON	[illegible] LBS	30 LBS	LBS
	30D GALV BARBED	LBS	130 LBS	LBS
	40D COMMON	[illegible] LBS	165 LBS	LBS
ONE ABUTMENT	40D COMMON	[illegible] LBS	5 LBS	[illegible] LBS
	7 WIRE SPIKES	LBS	24 LBS	LBS
ONE WING	40D COMMON	LB	1 LB	LB
	7 WIRE SPIKES	LBS	8 LBS	LBS
ONE BENT	40D COMMON	LBS	5 LBS	LBS
	7 WIRE SPIKES	LBS	[illegible] LBS	LBS

SUMMARY OF HARDWARE

BOLTS AND WASHERS	1 SPANS	AT	147 LBS PER SPAN	147 LBS
	2 ABUTMENTS	AT	100 LBS PER ABUTMENT	200 LBS
	4 WINGS	AT	50 LBS PER WING	200 LBS
	BENTS WITHOUT SWAYBRACES	AT	112 LBS PER BENT	LBS
	BENTS WITH SWAYBRACES	AT	147 LBS PER BENT	LBS
	TOTAL WEIGHT			547 LBS

NAILS	LOCATION	UNIT	30D COMMON EACH	30D COMMON TOTAL	30D GALV BARBED EACH	30D GALV BARBED TOTAL	40D COMMON EACH	40D COMMON TOTAL	7 WIRE SPIKES EACH	7 WIRE SPIKES TOTAL
	1 SPANS	LBS	30	30	130	130	165	165	—	—
	2 ABUTMENTS	LBS	—	—	—	—	5	10	24	48
	4 WINGS	LBS	—	—	—	—	1	4	8	32
	BENTS	LBS	—	—	—	—	5			
	TOTAL WEIGHT	LBS		30		130		179		80

SUMMARY OF QUANTITIES

STRUCTURAL EXCAVATION				
ITEM 14a DRY ROCK				CU YDS
ITEM 14b DRY COMMON				60 CU YDS
ITEM 14c WET ROCK				CU YDS
ITEM 14d WET COMMON				26 CU YDS
ITEM 42a UNTREATED BRIDGE TIMBER				
1	SPANS	AT	312 BD FT EACH =	312 BD FT
2	ABUTMENTS	AT	48 BD FT EACH =	96 BD FT
4	WINGS	AT	76 BD FT EACH =	304 BD FT
	BENTS	AT	48 BD FT EACH =	BD FT
			TOTAL =	712 BD FT
ITEM 42b TREATED BRIDGE TIMBER				
1	SPANS	AT	7422 BD FT EACH =	7422 BD FT
	SPANS	AT	BD FT EACH =	BD FT
2	ABUTMENTS	AT	1628 BD FT EACH =	3256 BD FT
4	WINGS	AT	387 BD FT EACH =	1548 BD FT
	BENTS	AT	BD FT EACH =	BD FT
			TOTAL =	12,226 BD FT
ITEM 43 ASPHALT PLANK WEARING SURFACE				
1	SPANS	AT	575 SQ FT EACH =	575 SQ FT
Item Nº 42 bz Creosote oil				*5 Gal*
" " 42 Px White Paint				*2 Gal*
ITEM 60a PILING - TREATED				
2	ABUTMENTS	AT	*120* LIN FT EACH =	*240* LIN FT
4	WINGS	AT	72 LIN FT EACH =	*288* LIN FT
	BENTS	AT	LIN FT EACH =	LIN FT
			TOTAL =	*528* LIN FT
ITEM 60e METAL PILE SHOES				
	SHOES	AT	35 LBS EACH =	SHOES
ITEM 89b DRAIN PIPE				
2 PIECES 3 DIA GALV PIPE 2 4 LONG WITH ONE 3 GALV FLANGE ON EACH PIPE				
1	SPANS	AT	2 COMPLETE PER SPAN =	2 PIECES
Item Nº 42 Py Black Paint				*1 Gal*
" 43 bz Asphalt for Pile Tops				*2 Gal*
60f Metal Pile Protectors				*12 Pieces*
400 hardware				*83[illegible] lb*

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	19 0 SPAN NO	LENGTH	TOTAL	23 0 SPAN NO	LENGTH	TOTAL	27 0 SPAN NO	LENGTH	TOTAL
UNTREATED TIMBER										
HANDRAILS S4S	3x8	4	20 0	1[illegible]0 BD FT	4	24 0	192 BD FT	4	28 0	22[illegible] BD FT
HANDRAIL POSTS S4S	6 8	6	5 0	[illegible]2 BD FT	6	5 0	[illegible]0 BD FT	8	5 0	[illegible] BD FT
TOTAL UNTREATED TIMBER				[illegible] FT			312 BD FT			BD FT
TREATED TIMBER										
FLOORING S4S	3 6	87	26 0	[illegible] BD FT	106	26 0	4134 BD FT	124	26 0	4836 BD FT
BRIDGING	3x6	4	14 0	[illegible] BD FT	8	14 0	168 BD FT	8	14 0	168 BD FT
WHEEL GUARDS	6x10	2	20 0	200 BD FT	2	24 0	240 BD FT	2	28 0	28[illegible] BD FT
STRINGERS	6x18	12	19 0	3[illegible]2 BD FT						
OUTSIDE	6x20				2	23 0	460 BD FT			
INTERMEDIATE SPAN	8 20							2	27 0	[illegible] BD FT
STRINGERS	6 18	2	9 6	351 BD FT						
OUTSIDE	6 20				2	23 6	470 BD FT			
END SPANS	8x20							2	27 6	[illegible] BD FT
STRINGERS	6x18	10	20 0	[illegible] BD FT						
INSIDE INTERMEDIATE	6x20				10	24 0	[illegible]400 BD FT			
AND END SPANS	8x20							10	28 0	3[illegible] BD FT
STRINGERS	6x18	12	20 0	[illegible] BD FT						
SINGLE SPAN	6x20				12	24 0	2880 BD FT			
	8x20							12	28 0	[illegible] BD FT
TOTAL TREATED TIMBER SINGLE SPAN				BD FT			7422 BD FT			BD FT
TOTAL TREATED TIMBER END SPAN				BD FT			7412 BD FT			BD FT
TOTAL TREATED TIMBER INTER SPAN				BD FT			7402 BD FT			BD FT
ASPHALT PLANK WEARING SURFACE				SQ FT			575 SQ FT			SQ FT

ONE ABUTMENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	2 PCS	6x8x6 0	48 BD FT
TOTAL UNTREATED TIMBER			48 BD FT
TREATED TIMBER			
TIMBER HEADER	1 PC	8x10x26 0 FINISH TO 7x9	1[illegible] BD FT
CAP	1 PC	12x12x30 0	360 BD FT
BULKHEAD PLANKS	4 PCS	3x8x28 0	2[illegible] BD FT
BACKING PLANKS	6 PCS	4x12x28 0	672 BD FT
STRINGER BLOCKING 3 SPANS	1 PC	6x18x22 0	[illegible] BD FT
Cut before treatment SPANS		6x18x20 0	BD FT
TOTAL TREATED TIMBER			1628 BD FT
PILING TREATED	6 PIECES AT	*20* LINEAL FT EACH	*120* LIN FT

ONE WING

DESCRIPTION	SIZE	10 0 WING NO	LENGTH	TOTAL	16 0 WING NO	LENGTH	TOTAL	20 0 WING NO	LENGTH	TOTAL
UNTREATED TIMBER										
HANDRAILS S4S	3x8	1	10 0	20 BD FT	1	12 0	24 BD FT	1	12 0	24 BD FT
	3 8	1	10 0	20 BD FT	1	12 0	24 BD FT	1	12 0	[illegible] BD FT
HANDRAIL POSTS S4S	6x6	3	4 0	36 BD FT	3	4 0	36 BD FT	3	4 0	[illegible] BD FT
TOTAL UNTREATED TIMBER				76 BD FT			[illegible] BD FT			BD FT
TREATED TIMBER										
CURB PLANK	4x8	1	10 0	[illegible] BD FT	1	12 0	32 BD FT	1	12 0	[illegible] BD FT
BACKING PLANKS	4x12	9	10 0	360 BD FT		16 0	BD FT		20 0	BD FT
TOTAL TREATED TIMBER				387 BD FT			BD FT			BD FT
PILING TREATED		3	24 0	72 LIN FT			LIN FT			LIN FT

ONE BENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	[illegible] PCS	6x8x6 0	48 BD FT
TOTAL UNTREATED TIMBER			48 BD FT
TREATED TIMBER			
STRINGER SPLICES	[illegible] PCS	6x18x4 0	[illegible] BD FT
CAP	1 PC	12x12x30 0	360 BD FT
SWAYBRACES	2 PCS	3 12 x	BD FT
STRINGER BLOCKING [illegible] 3 SPANS	1 PC	6 18x16 0	[illegible] BD FT
Cut before treatment SPANS		6x18x12 0	BD FT
SHIMS	[illegible] PCS	2x6x1-0	BD FT
			BD FT
TOTAL TREATED TIMBER			BD FT
PILING TREATED	5 PIECES AT	LINEAL FT EACH	LIN FT

Materials only FCB Burlington % Ernest Montgomery

X Includes nails except 30d Galv for Asphalt Plank

STRUCTURES REQUIRED
1 SPANS AT 23-0'
SPANS AT

LOADING DATA
LIVE LOAD A A S H O 1935 CLASS A (H 15)
DEAD LOAD Assumes 25 lbs per sq ft additional wearing surface This includes 1 1/2 asphalt plank wearing surface

COLORADO
STATE HIGHWAY DEPARTMENT
TREATED TIMBER PILE TRESTLE
WITH 6 LAMINATED FLOOR AND 1 1/2
ASPHALT PLANK WEARING SURFACE
25 FT CLEAR ROADWAY
Across DRY WASH
Sta 449+40 To 449+64 5
Near BURLINGTON Sec 13/14 T 10S R 44W

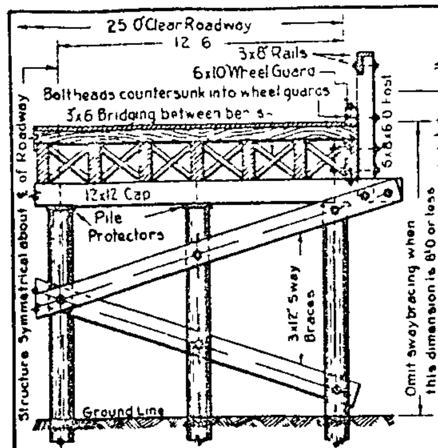
Designed by A G K	Approved by *R J Bailey*
Made by A G K	Bridge Engineer
Check Design G H D	Date *Jan 16th* 1935
Check Detail G H D	

STRUCTURE NO H-27-D

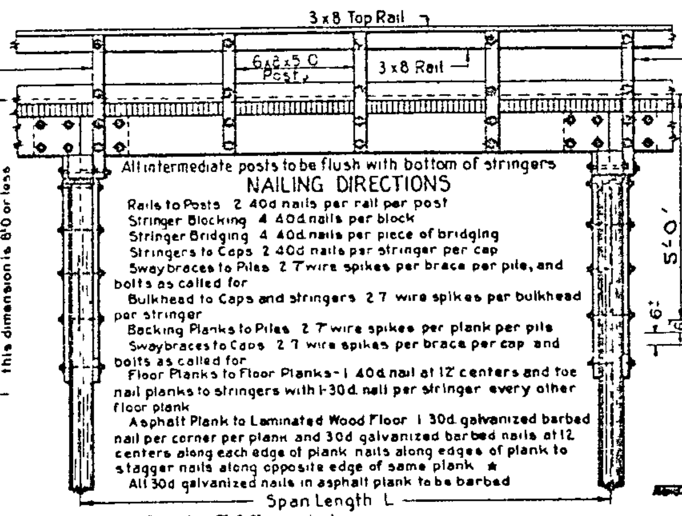
STANDARD P-116 BH-D

FED ROAD DIST NO	STATE	STATE PROJ	SHEET NO	TOTAL SHEETS
3	COLO	679-B 1938	4	

Revised 6-1-37 A.G.K. Changed to 1937 Specifications



HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION



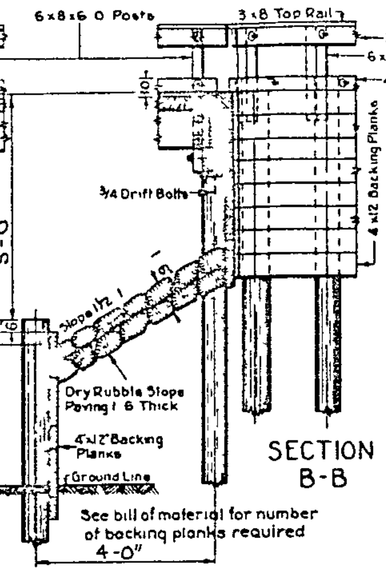
All intermediate posts to be flush with bottom of stringers

NAILING DIRECTIONS

Rails to Posts 2 40d nails per rail per post
Stringer Blocking 4 40d nails per block
Stringer Bridging 4 40d nails per piece of bridging
Stringers to Caps 2 40d nails per stringer per cap
Swaybraces to Piles 2 7 wire spikes per brace per pile, and bolts as called for
Bulkhead to Caps and stringers 2 7 wire spikes per bulkhead per stringer
Backing Planks to Piles 2 7 wire spikes per plank per pile
Swaybraces to Caps 2 7 wire spikes per brace per cap and bolts as called for
Floor Planks to Floor Planks 1 40d nail at 12 centers and toe nail planks to stringers with 1 30d nail per stringer every other floor plank
Asphalt Plank to Laminated Wood Floor 1 30d galvanized barbed nail per corner per plank and 30d galvanized barbed nails at 12 centers along each edge of plank nails along edges of plank to stagger nails along opposite edge of same plank ★
All 30d galvanized nails in asphalt plank to be barbed

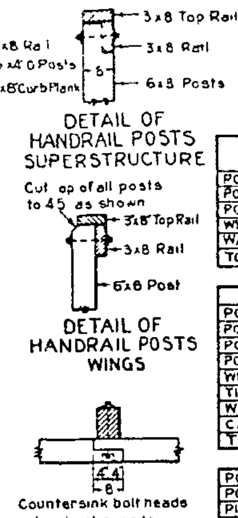
★ Based on 8x6 0 size planks

TYPICAL ELEVATION OF SPAN



See bill of material for number of backing planks required

SECTION B-B



DETAIL OF HANDRAIL POSTS SUPERSTRUCTURE

Cut top of all posts to 45 as shown

DETAIL OF HANDRAIL POSTS WINGS

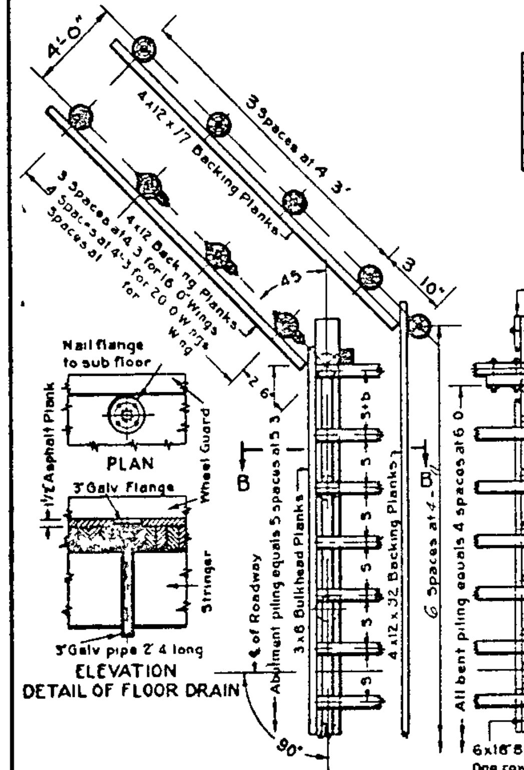
Countersink bolt heads into wheel guards

PLAN VIEW DETAILS OF WHEEL GUARD SPLICE

STRINGER SPACING			STRINGER BLOCKING	
L	S	NUMBER OF	ABUTMENTS	BENTS
SPAN LENGTH	MULTIPLE SPAN	STRINGERS	MULTIPLE SPAN	MULTIPLE SPAN
19-0	2 2 1/4	12	10 Pcs 1-9 1/4 1 Pc 2 3 1/4	11 Pcs 1 3 1/4
23 0	2 3 /4	12	[illegible]	11 Pcs 1 [illegible]
27 0	2 2 7/8	12	[illegible] Pcs 1-6 [illegible] 1 Pc 2 2 7/8	9 Pcs 1 0 7/8 2 Pcs 1 0 7/8

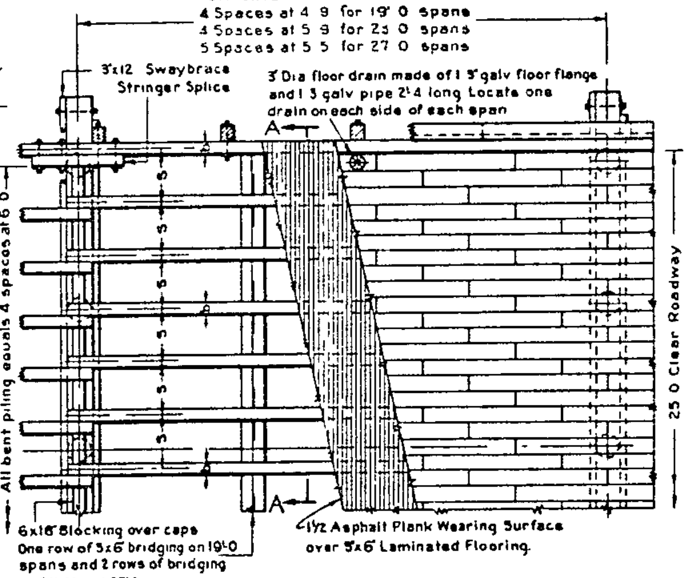
SPACING OF HANDRAIL POSTS

4 Spaces at 4 9 for 19 0 spans
4 Spaces at 5 9 for 23 0 spans
5 Spaces at 5 5 for 27 0 spans

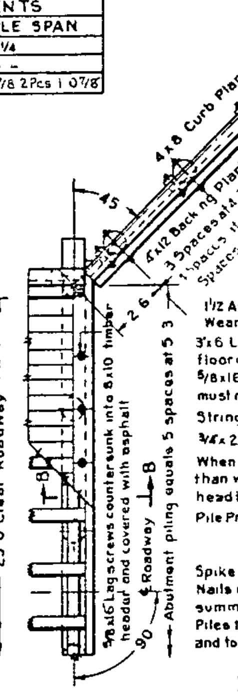


DETAIL OF FLOOR DRAIN

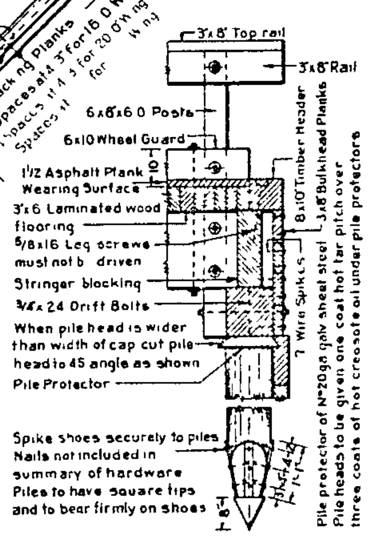
SECTIONAL HALF PLAN OF ABUTMENT



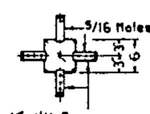
TYPICAL SECTIONAL HALF PLAN OF SPANS



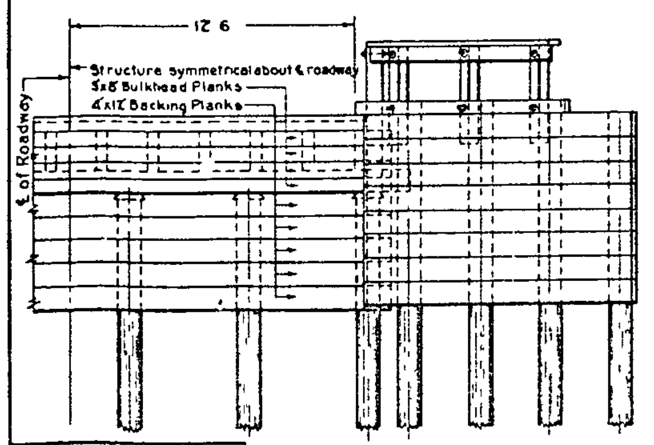
HALF PLAN OF ABUTMENT



SECTION THRU ABUTMENT



PLAN OF PILE SHOE CAST IRON



HALF END ELEVATION
See bill of material for number of backing planks required

	INITIAL	DATE
ORIGINAL BY	H A L F	9 29 39
CHECKED BY	W G S	9 30 36
VANDYKE BY	H A L F	9 30 36
CHECKED BY	W G S	10 1 36

STANDARD P 116 BH D

GENERAL NOTES

All work shall be done according to the Standard Specifications of The Colorado State Highway Department Adopted June 1 1937

All timber and piling to be treated or untreated as shown in bills of material

All timber and piling shall be dense southern yellow pine or west coast douglas fir

All caps shall be edged to an even depth before treatment The ends of all stringers shall be dapped on one edge before treatment to obtain an even depth over caps

All cut surfaces or bored holes in treated timber or piles shall be thoroly saturated with hot creosote oil

All piling supporting caps shall be covered with galvanized pile protectors as specified all other piling tops shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt or tar

Joints in top handrail must be staggered with joints in side rail

All handrailing and posts above the wheel guards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified

All bolts more than 12 long must be threaded not less than 4 inches

Bolts in the finished structure shall not project more than one half inch beyond the nut

All bolts must have Std C.I.O.G. o Malleable Cast Washers under each head and nut

Bolt lengths are calculated assuming Std C I O G washers will be used

The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of timber and piling

The entire exposed surface of all untreated timber shall be painted one coat as specified imediately after the material is delivered to the project

Before placing handrailing the contact surfacing shall receive the second coat of

When contractor is permitted to drill holes to facilitate pile driving these holes drilled so piling will stand in vertical position after final driving

Bid price for asphalt plank shall include galvanized barbed nails and necessary asphalt mop

All hardware to be galvanized Weights of hardware as shown are for ungalvanized material

All necessary blocking for swaybracing shall be treated timber

All caps must be surfaced on vertical grain face

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	SIZE	19 0 SPAN			23 0 SPAN			27 0 SPAN		
		NO	LENGTH	TOTAL	NO	LENGTH	TOTAL	NO	LENGTH	TOTAL
POSTS TO RAILS	5/8	6	10	7 0 LBS	6	10	7 0 LBS	8	10	9 0 LBS
POSTS TO WHEEL GUARDS	3/4	6	14	12 7 LBS	6	14	12 7 LBS	8	14	17.0 LBS
POSTS TO STRINGERS	3/4	12	16	28 3 LBS	12	16	28 3 LBS	16	18	42 0 LBS
WHEEL GUARDS TO STRINGERS	3/4	6	36	29 0 LBS	6	38	30 0 LBS	8	38	40 0 LBS
WASHERS STD C I O G 5/8 & 3/4		12/48		63 0 LBS	12/48		69 0 LBS	16/64		92 0 LBS
TOTAL WEIGHT				146 0 LBS			[illegible] LBS			[illegible] 0 LBS

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
POST TO BULKHEAD TO CAP	BOLTS	5/8	2	23	2 15 LBS	4 3 LBS
POSTS TO STRINGERS	BOLTS	3/4	4	18	2 60 LBS	10 4 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2 17 LBS	4 3 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	10 0 LBS
TIMBER HEADER TO STRINGERS	LAG SCREWS	5/8	12	16	1 36 LBS	16 3 LBS
WASHERS STD C I O G	WASHERS 5/8 3/4	20/16		0 75	1 25 LBS	34.5 LBS
CAP TO PILES	DRIFT BOLTS	3/4	6	24	3 00 LBS	18 0 LBS
TOTAL WEIGHT						100 0 LBS

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	3	11	1 16 LBS	3 4 LBS
POSTS TO PILES	BOLTS	3/4	6	20	2.84 LBS	17.0 LBS
PILES TO CURB PLANK	BOLTS	5/8	3	18	1 71 LBS	5.2 LBS
WASHERS STD C I O G	WASHERS 5/8 3/4	12/12		0 75/1 25 LBS		24.4 LBS
TOTAL WEIGHT						50 0 LBS

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8	2	10	1 08 LBS	2 2 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4	2	14	2.12 LBS	4 3 LBS
POSTS TO CAP WITHOUT SWAYS	BOLTS	5/8	2	20	1 90 LBS	3 8 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4	2	38	5 00 LBS	10 0 LBS
POSTS TO STRINGERS TO SPLICES	BOLTS	3/4	4	24	3 32 LBS	13 3 LBS
SPLICES TO STRINGERS	BOLTS	5/8	12	16	1 57 LBS	18 9 LBS
POSTS TO CAP TO SWAYBRACES	BOLTS	5/8	2	23	2 15 LBS	4.3 LBS
SWAYBRACES TO CAP	BOLTS	5/8	2	17	1 66 LBS	3.3 LBS
SWAYBRACES TO PILES	BOLTS	5/8	8	17	1 66 LBS	13 3 LBS
SWAYBRACE TO PILE TO SWAYBRACE	BOLTS	5/8	1	20	1 90 LBS	1 9 LBS
WASHERS STD C I O G NO SWAYS	WASHERS 5/8 3/4	32/16		0 75/1 25 LBS		44 5 LBS
WASHERS STD C I O G WITH SWAYS	WASHERS 5/8 3/4	54/16		0 75/1 25 LBS		60.5 LBS
CAPS TO PILES	DRIFT BOLTS 3/4		5	24	LBS	15 0 LBS
TOTAL WEIGHT WITHOUT SWAY BRACES						112 0 LBS
TOTAL WEIGHT WITH SWAYBRACES						147 0 LBS

NAILS

LOCATION	ITEM	19 0 SPAN	23 0 SPAN	27 0 SPAN
ONE SPAN OF SUPERSTRUCTURE	30D COMMON	25 LBS	[illegible] LBS	[illegible] LBS
	30D GALV BARBED	105 LBS	[illegible] LBS	[illegible] LBS
	40D COMMON	135 LBS	[illegible] LBS	[illegible] LBS
ONE ABUTMENT	40D COMMON	5 LBS	[illegible] LBS	LBS
	7 WIRE SPIKES	17 LBS	LBS	LBS
ONE WING	40D COMMON	1 LB	[illegible] LB	LB
	7 WIRE SPIKES	6 LBS	LBS	LBS
ONE SUB ABUTMENT & WINGS	7 WIRE SPIKES	26 LBS	LBS	LBS
ONE BENT	40D COMMON	[illegible] LBS	[illegible] LBS	[illegible] LBS
	7 WIRE SPIKES	3 LBS	LBS	LBS

SUMMARY OF HARDWARE

BOLTS AND WASHERS	2 SPANS	AT	146 LBS PER SPAN	292 LBS
	2 ABUTMENTS	AT	100 LBS PER ABUTMENT	200 LBS
	4 WINGS	AT	50 LBS PER WING	200 LBS
	BENTS WITHOUT SWAYBRACES	AT	112 LBS PER BENT	LBS
	1 BENTS WITH SWAYBRACES	AT	147 LBS PER BENT	147 LBS
	TOTAL WEIGHT			839 LBS

	LOCATION	UNIT	30D COMMON EACH	30D COMMON TOTAL	30D GALV BARBED EACH	30D GALV BARBED TOTAL	40D COMMON EACH	40D COMMON TOTAL	7 WIRE SPIKES EACH	7 WIRE SPIKES TOTAL
NAILS	2 SPANS	LBS	25	50	105	210	135	270	—	—
	2 ABUTMENTS	LBS	—	—	—	—	5	10	17	34
	4 WINGS	LBS	—	—	—	—	1	4	6	24
	2 SUB ABUTS	LBS	—	—	—	—			26	52
	1 BENTS	LBS	—	—	—	—	5	5	3	3
	TOTAL WEIGHT	LBS		50		210		289		113

SUMMARY OF QUANTITIES

STRUCTURAL EXCAVATION				
ITEM 14a DRY ROCK				CU YDS
ITEM 14b DRY COMMON				100 CU YDS
ITEM 14c WET ROCK				CU YDS
ITEM 14d WET COMMON				85 CU YDS
ITEM 42a UNTREATED BRIDGE TIMBER				
2	SPANS	AT	280 BD FT EACH =	560 BD FT
2	ABUTMENTS	AT	48 BD FT EACH =	96 BD FT
4	WINGS	AT	84 BD FT EACH =	336 BD FT
1	BENTS	AT	48 BD FT EACH =	48 BD FT
			TOTAL =	1040 BD FT
ITEM 42b TREATED BRIDGE TIMBER				
2	SPANS	AT	5828 BD FT EACH =	11,656 BD FT
	SPANS	AT	BD FT EACH =	BD FT
2	ABUTMENTS	AT	1180 BD FT EACH =	2360 BD FT
4	WINGS	AT	352 BD FT EACH =	1108 BD FT
2	SUB-ABUTMENTS	AT	1584 BD FT EACH =	3168 BD FT
1	BENTS	AT	756 BD FT EACH =	756 BD FT
			TOTAL =	19,348 BD FT
ITEM 43 ASPHALT PLANK WEARING SURFACE				
2	SPANS	AT	475 SQ FT EACH =	950 SQ FT
ITEM 60a PILING-TREATED				
2	ABUTMENTS	AT	120 LIN FT EACH =	240 LIN FT
4	WINGS	AT	96 LIN FT EACH =	384 LIN FT
2	SUB-ABUTMENTS	AT	270 LIN FT EACH =	540 LIN FT
1	BENTS	AT	100 LIN FT EACH =	100 LIN FT
			TOTAL =	1264 LIN FT
ITEM 60B METAL PILE SHOES				
	SHOES	AT	35 LBS EACH =	SHOES
ITEM 65 DRY RUBBLE SLOPE PAVING 1 6 THICK				
				41 SQ YDS
ITEM 595 DRAIN PIPE				
2 PIECES 3 DIA GALV PIPE 2 4 LONG WITH ONE 3 GALV FLANGE ON EACH PIPE				
2	SPANS	AT	2 COMPLETE PER SPAN =	4 PIECES

SUM OF QUANT CON'T		
126 gal	Creosote Oil	5
42 [illegible]	White Paint	3
10 [illegible]	Black Paint	1
430 [illegible]	Asphalt for pile tops	2
60 [illegible] Ea	[illegible] Pile Protectors	17
100 [illegible] lb	Hardware	1291

* Includes nails except gal[v] for asphalt plank

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	19 0 SPAN NO	LENGTH	TOTAL	23 0 SPAN NO	LENGTH	TOTAL	27 0 SPAN NO	LENGTH	TOTAL
UNTREATED TIMBER										
HANDRAILS S4S	3x8	4	20 0	160 BD FT	[illegible]	24 0	192 BD FT	[illegible]	28 0	224 BD FT
HANDRAIL POSTS S4S	6x8	6	5 0	120 BD FT	6	5 0	120 BD FT	8	5 0	16[illegible] BD FT
TOTAL UNTREATED TIMBER				280 BD FT			BD FT			BD FT
TREATED TIMBER										
FLOORING S4S	3 6	87	26 0	3[illegible] BD FT	10[illegible]	26 0	4134 BD FT	124	26 0	4[illegible] BD FT
BRIDGING	3 6	4	14 0	84 BD FT	8	14 0	168 BD FT	8	14 0	168 BD FT
WHEEL GUARDS	6x10	2	20 0	200 BD FT	2	24 0	240 BD FT	2	28 0	280 BD FT
STRINGERS	6x18	2	19 0	342 BD FT						
OUTSIDE	6x20				2	23 0	460 BD FT			
INTERMEDIATE SPAN	8x20							2	27 0	720 BD FT
STRINGERS	6 18	2	19 6	351 BD FT						
OUTSIDE	6x20				2	23 6	470 BD FT			
END SPANS	8 20							2	27 6	734 BD FT
STRINGERS	6 [illegible]	10	20 0	1800 BD FT						
INSIDE INTERMEDIATE	6 20				10	24 0	2400 BD FT			
AND END SPANS	8 20							10	28 0	[illegible] BD FT
TOTAL TREATED TIMBER END SPAN				5828 BD FT						BD FT
TOTAL TREATED TIMBER INTER SPAN				5[illegible] BD FT						BD FT
ASPHALT PLANK WEARING SURFACE				475 SQ FT						SQ FT

ONE ABUTMENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	2 PCS	6x8x6 0	[illegible] BD FT
TOTAL UNTREATED TIMBER			[illegible] BD FT
TREATED TIMBER			
TIMBER HEADER	1 PC	8x10x26 0 FINISH TO 7x9	17[illegible] BD FT
CAP	1 PC	12x12x30 0	360 BD FT
BULKHEAD PLANKS	4 PCS	3x8x28 0	22[illegible] BD FT
BACKING PLANKS	2 PCS	4x12x28 0	224 BD FT
STRINGER BLOCKING 19 SPANS (Cut before treatment)	1 PC	6x18x22 0	195 BD FT
STRINGER BLOCKING SPANS (Cut before treatment)	PC	6x18x20 0	FT
TOTAL TREATED TIMBER			1180 BD FT
PILING TREATED	6 PIECES AT 20 LINEAL FT EACH =		120 LIN FT

ONE WING

DESCRIPTION	SIZE	16 0 WING NO	LENGTH	TOTAL	20 0 WING NO	LENGTH	TOTAL	WING NO	LENGTH	TOTAL
UNTREATED TIMBER										
HANDRAILS S4S	3x8	1	12 0	24 BD FT	1	12 0	24 BD FT	1	12 0	24 BD FT
	3x8	1	12 0	24 BD FT	1	12 0	24 BD FT	1	12 0	24 BD FT
HANDRAIL POSTS S4S	6 6	3	4 0	36 BD FT	3	4 0	36 BD FT	3	4 0	36 BD FT
TOTAL UNTREATED TIMBER				84 BD FT			BD FT			BD FT
TREATED TIMBER										
CURB PLANK	4x8	1	12 0	32 BD FT	1	12 0	32 BD FT	1	12 0	32 BD FT
BACKING PLANKS	4 12	5	16 0	320 BD FT		20 0	BD FT			BD FT
TOTAL TREATED TIMBER				352 BD FT			BD FT			BD FT
PILING TREATED		4	24 0	96 LIN FT			LIN FT			LIN FT

ONE SUB-ABUTMENT AND WINGS

TREATED TIMBER			
BACKING PLANKS	6 PCS	4x12x32-0	768 BD FT
BACKING PLANKS	12 PCS	4x12x17-0	816 BD FT
BACKING PLANKS	PCS	4x12x	BD FT
BACKING PLANKS	PCS	4x12x	BD FT
TOTAL TREATED TIMBER			1584 BD FT
PILING-TREATED	15 PIECES AT 18 LINEAL FT EACH =		270 LIN FT

ONE BENT

UNTREATED TIMBER			
HANDRAIL POSTS S4S	2 PCS	6x8x6 0	48 BD FT
TOTAL UNTREATED TIMBER			48 BD FT
TREATED TIMBER			
STRINGER SPLICES	2 PCS	6x18x4 0	72 BD FT
CAP	1 PC	12x12x30 0	360 BD FT
SWAYBRACES	2 PCS	3x12x30 0	1[illegible] BD FT
STRINGER BLOCKING 19 SPANS (Cut before treatment)	1 PC	6x18x16 0	[illegible] BD FT
STRINGER BLOCKING SPANS (Cut before treatment)	PC	6x18x12 0	BD FT
SHIMS	PCS	2x6x1-0	BD FT
			BD FT
TOTAL TREATED TIMBER			756 BD FT
PILING TREATED	5 PIECES AT 20 LINEAL FT EACH =		100 LIN FT

Note In order to facilitate pile driving holes not more than 1 in diameter larger than the small diameter of the pile may be drilled in such a way that the holes when finished will allow the piling to stand accurately in the position indicated on the plans

Materials only FOB Burlington % Ernest Montgomery

STRUCTURES REQUIRED
2 SPANS AT 19-0
SPANS AT

LOADING DATA
LIVE LOAD A A S H O 1935 CLASS A H-15
DEAD LOAD-ASSUMES 25 LBS PER SQ FT ADDITIONAL WEARING SURFACE THIS INCLUDES THE 1 1/2 ASPHALT PLANK WEARING SURFACE

STRUCTURE NO H-27-A

COLORADO
STATE HIGHWAY DEPARTMENT
TREATED TIMBER PILE TRESTLE WITH 6 LAMINATED FLOOR AND 1 1/2 ASPHALT PLANK WEARING SURFACE DOUBLE ABUTMENTS 25FT ROADWAY
Across DRY WASH
Sta 507+22 To 507+61.5
Near BURLINGTON Sec 24/23 T 10S R 44W

Designed by
Made by J.D.B.
Check Design A.G.K.
Check Detail A.G.K.

Approved by [signature]
Bridge Engineer
Date May 19 1936

TRIM LINE

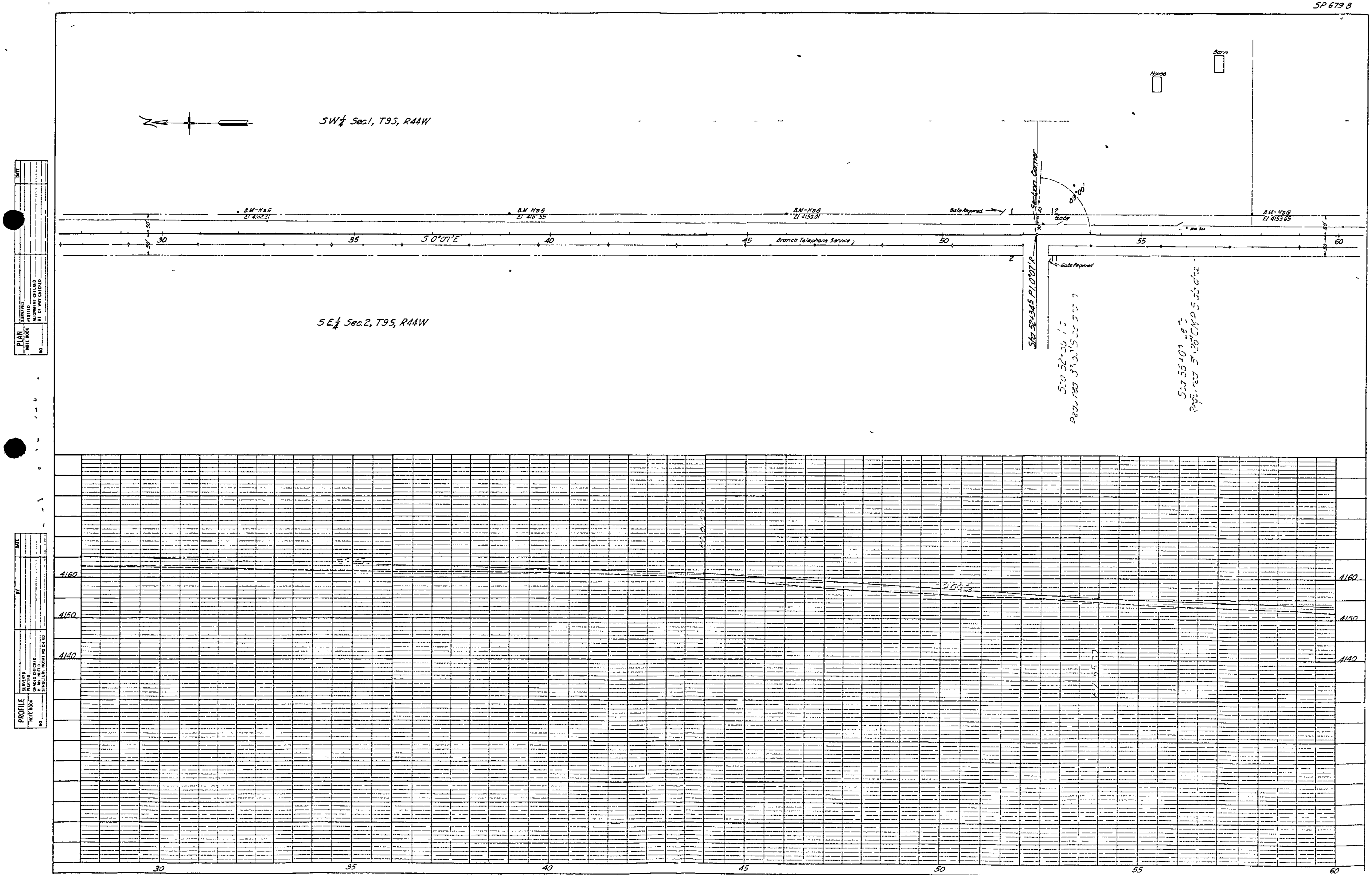


PLATE 1 PLAN PROFILE

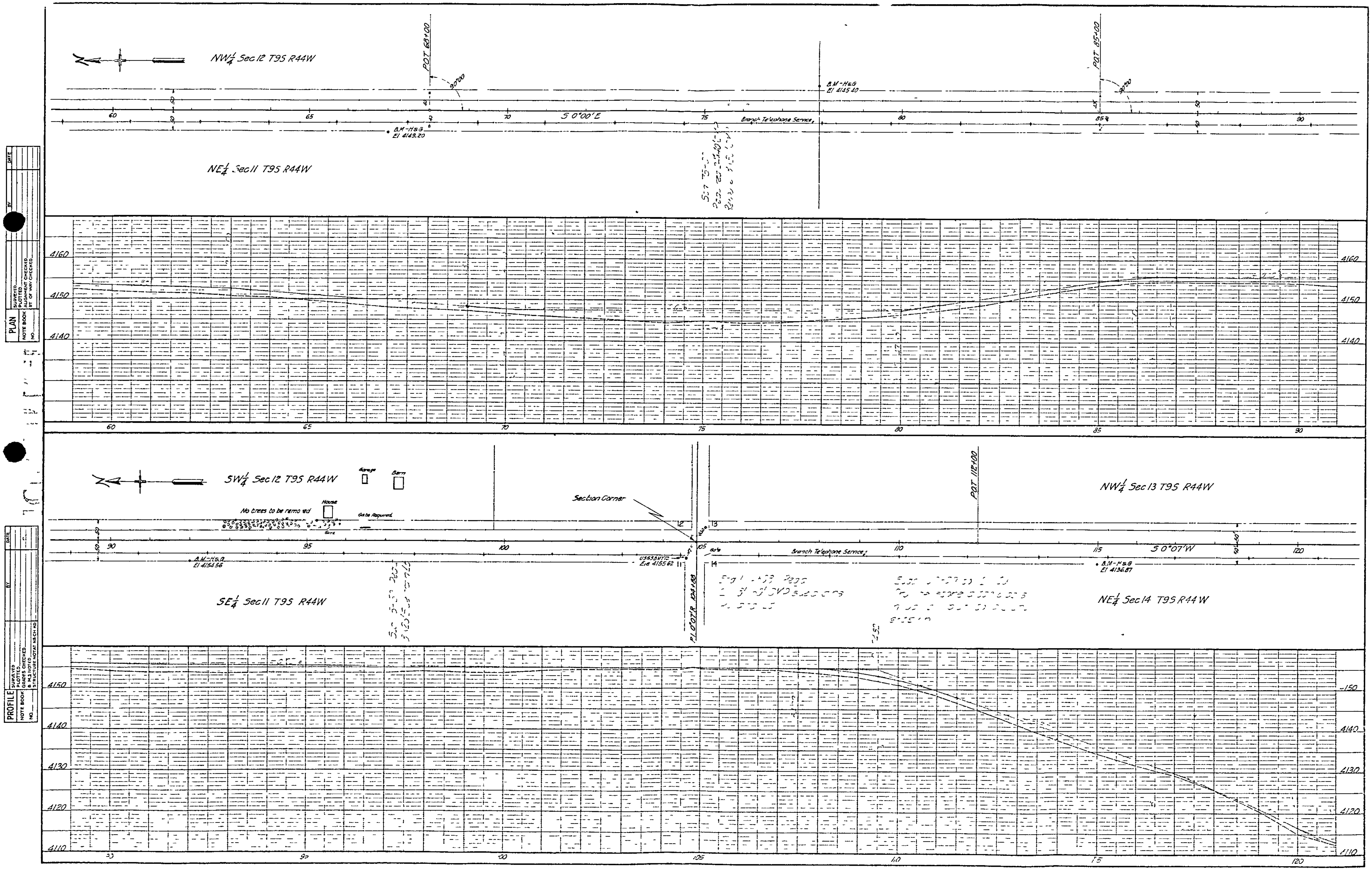
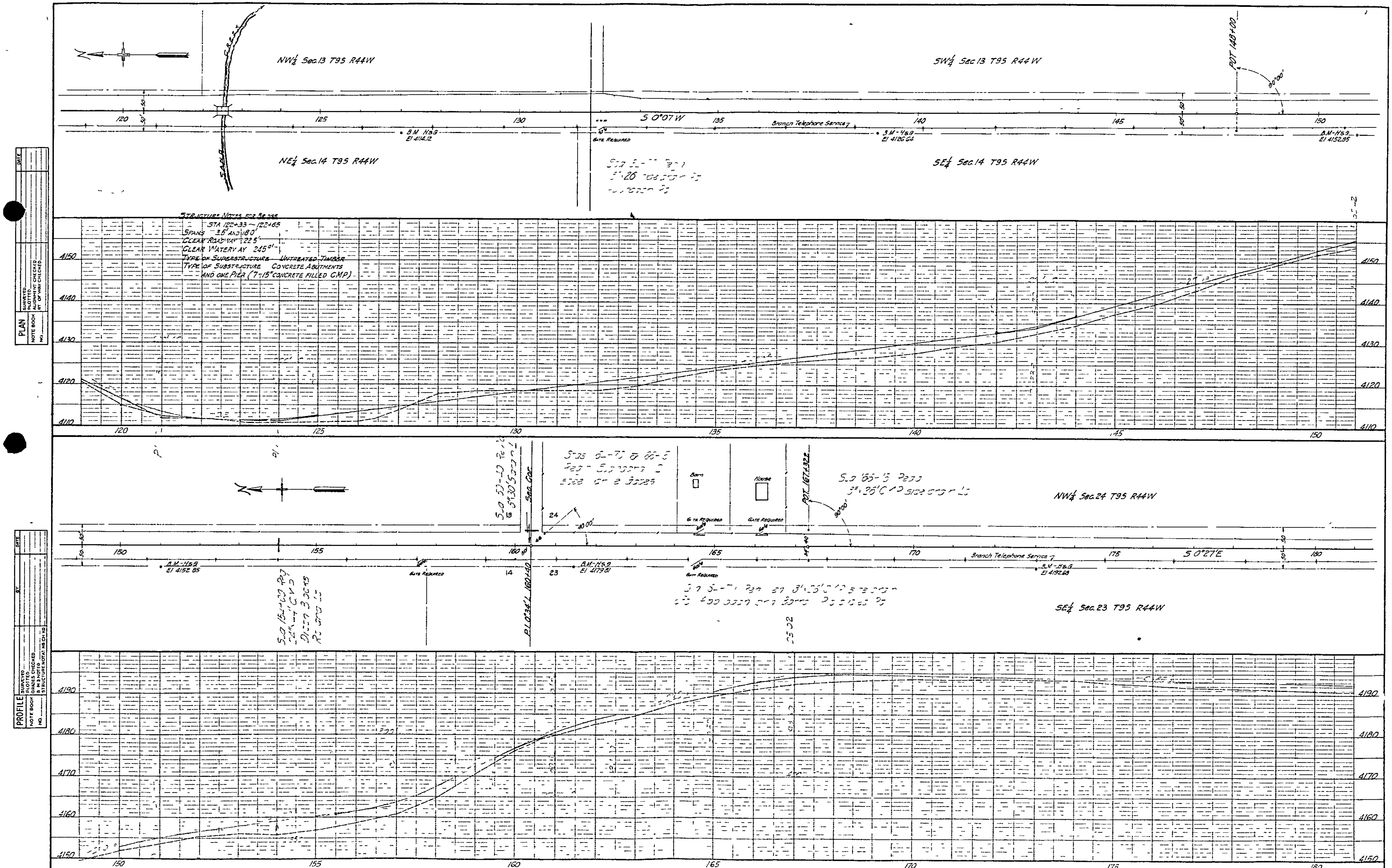
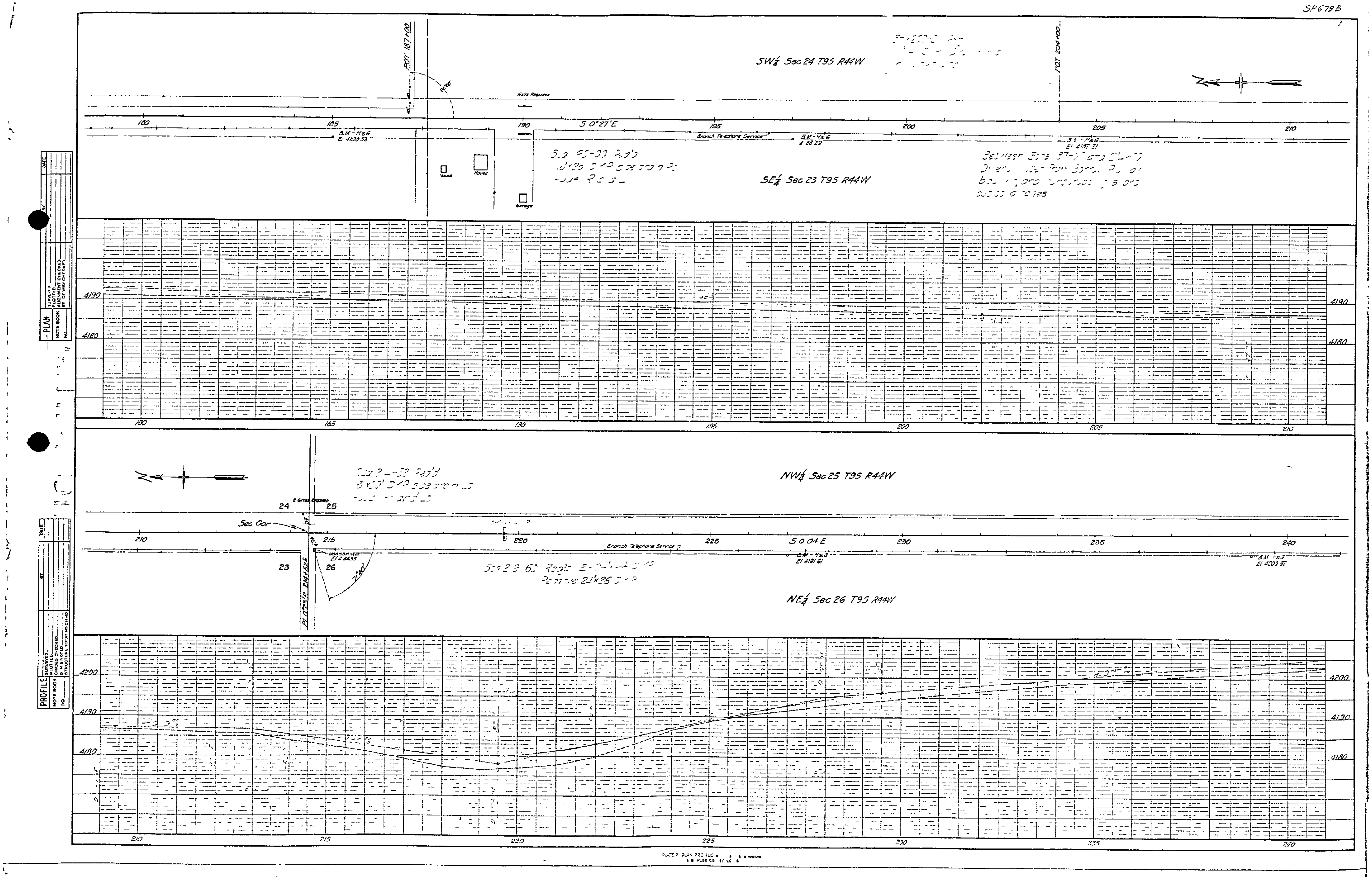
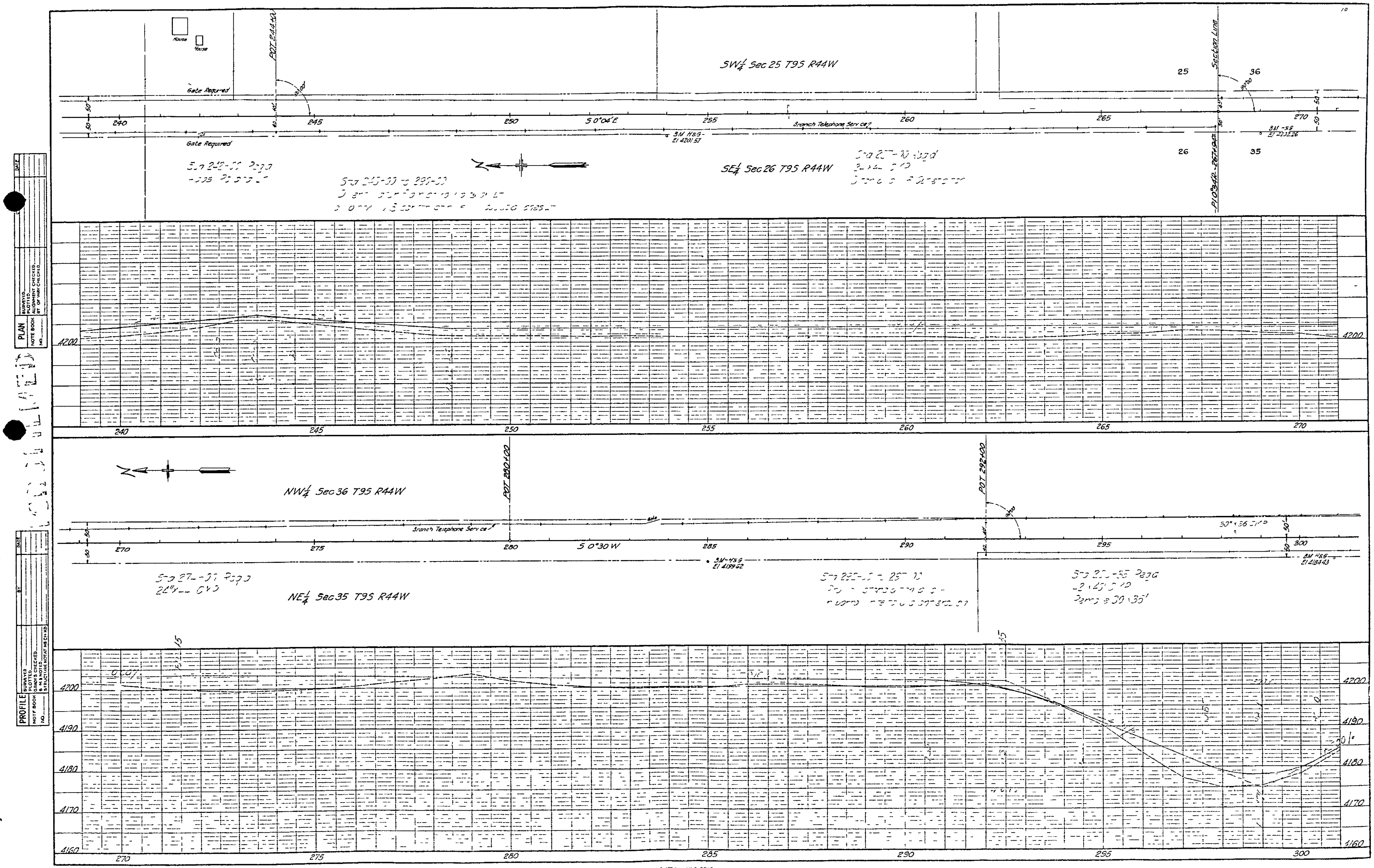

NW¼ Sec 12 T9S R44W
POT 68+00
POT 85+00
B.M.-H&G El 4145.40
B.M.-H&G El 4149.20
S 0°00' E
Branch Telephone Service
NE¼ Sec 11 T9S R44W
4160
4150
4140
60
65
70
75
80
85
90
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT OF WAY CHECKED
BY
DATE
SW¼ Sec 12 T9S R44W
Garage
Barn
House
No trees to be removed
Gate
Gate Required
Section Corner
POT 112+00
NW¼ Sec 13 T9S R44W
B.M.-H&G El 4154.56
USGS BM El 4155.62
P.I. 0°07' R 104+88
Branch Telephone Service
S 0°07' W
B.M.-H&G El 4136.87
SE¼ Sec 11 T9S R44W
NE¼ Sec 14 T9S R44W
95
100
105
110
115
120
4130
4120
4110
PROFILE
GRADES CHECKED
STRUCTURE NOTATIONS CH. NO.

PLATE 2




SP679B
POT 187+00
POT 204+00
SW¼ Sec 24 T9S R44W
Gate Required
S 0°27'E
Branch Telephone Service
B.M.-H&G
El 4190.53
B.M.-H&G
El 4197.21
House
House
Garage
SE¼ Sec 23 T9S R44W
180
185
190
195
200
205
210
4190
4180
NW¼ Sec 25 T9S R44W
2 Gates Required
24
25
23
26
Sec Cor
S 0 04 E
Branch Telephone Service
B.M.-H&G
El 4181.61
B.M.-H&G
El 4200.67
NE¼ Sec 26 T9S R44W
215
220
225
230
235
240
4200
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT OF WAY CHECKED
BY
DATE
PROFILE
GRADES CHECKED
STRUCTURES NOTAT'NS CH'KD



House
House
POT 244+00
SW¼ Sec 25 T9S R44W
Section Line
25
36
Gate Required
240
245
250
S 0°04'E
255
Branch Telephone Service
260
265
270
BM HSG
El 4201.57
Gate Required
26
35
SE¼ Sec 26 T9S R44W
PI 0°34'R - 267+94
4200
240
245
250
255
260
265
270
POT 280+00
POT 292+00
NW¼ Sec 36 T9S R44W
Branch Telephone Service
270
275
280
S 0°30'W
285
290
295
300
BM HSG
El 4199.62
BM HSG
El 4184.43
NE¼ Sec 35 T9S R44W
4200
4190
4180
4170
4160
270
275
280
285
290
295
300
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT OF WAY CHECKED
DATE
PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.S NOTED
STRUCTURES NOTED
BY
DATE

DATA REQUIRED TO ACCOMPANY SITUATION PLAN

I GENERAL REMARKS
Fill out all blanks with care giving information on all points listed and supplementary remarks on features not listed High water and foundation conditions are especially important and should be thoroughly investigated

II PROFILE
Plot profile of centerline of roadway Use natural scale preferably 1 =10 or multiple of 10
At proper locations show section of test pits noting material encountered if available at time of survey
Show present and if possible proposed finished grade noting elevations and gradients

III MAP
Show present and proposed alignment of bridge and all approaches as far as affected Extend Cross sections at least 100-ft each side of C L giving location and elevation of points so that at least 2-foot contours may be accurately plotted Show edge of water islands shoals other obstructions and direction of current at high water and at low water Plot location of test pits position and pointing of camera for each photo all buildings fences and other features affected Establish bench marks and give location of same Reference C L and show North point Give a C L profile of stream-bed for 500 feet up-stream and 500 feet down-stream from center line of survey Plot proposed structure in soft pencil only Do not ink

IV REPORT OF EXAMINATION OF BRIDGE-SITE

Div 5 County Kit Carson Route # 51 Sec ____ Sta ____
Date of survey 8-18-38 To be built by County

1 Bridge Site ____
Location ____
Sec 35-36 Twp 9 S Range 44 W Local name ____
Over ____ River Creek Beaver
Distance from nearest shipping point 7 Miles

2 Source of materials ____
Sand ____ Length of haul to site ____ miles
Gravel ____ " " " " ____ "
Stone ____ " " " " ____ "
Falsework Timber ____ " " " " ____ "
Piling ____ " " " " ____ "

3 Cost Data —
Cost of following materials at site ____
Portland Cement ____ Per Bbl
Sand coarse and clean ____ " Cu Yd
Gravel ____ " " "
Stone ____ " " "
Falsework Timber ____ Ft B M
Piling ____ " Lin Ft.
Cost per ton-mile for hauling ____

4 Waterway —
Drainage area in Sq Miles (approximate) 6.9° Miles
Character of watershed Pasture Adjoining 2°mi. Cultivated 4.9
Elevation of Highest water 4165.5 Date 5-26-35
Source of information on water elevation Survey P.C. Thurmond
Elevation of ordinary high water 62.0
Elevation of low water Dry
Elevation of permanent ground-water ____
Is stream ever dry? Yes ~~During what months?~~ Exceptional Storms
Will all flood water pass through recommended structure? Yes
Can channel be cleaned to afford more waterway? Yes
Is stream-bed cutting or silting up? No
Is stream stable in its banks? No Depth of scour? ____
Does stream carry light, medium, or heavy drift? ____
What clearance above high water should be allowed? ____
Is channel change necessary? Yes 50' Bottom 1½ I Back Slopes
If channel change is necessary, illustrate location on sketch map

5 Foundation Data —
Character of material ____
Distance from stream-bed to solid foundation ____
Recommended depth of footings ____
Should piles be used? Yes What length? Not to exceed 20' Pile Shoes? No

6 Old Bridge —
If there is no bridge at the present location include here data on nearest bridge over same stream If possible show location of such bridge or bridges on the map Photographs if available.
Type Concrete Deck Roadway Width 19.5' Number and length of spans 1 @ 14 clear
Area of waterway provided under old structure 70 Sq Ft Elev of Underclearance ____
Has this area proved sufficient at flood times? No Skew Angle ____
Is it too large? ____ Disposition of Existing Structure ____

7 Give foundation data on bridges in vicinity When possible get pile driving data logs of borings, etc , for adjoining structures and where considered advantageous procure plans
Sketch profile of Rail Road Crossing if within 1000 ft of Highway (Show X section of entire waterway)
Elevation of base of Rail ____ Elevation of Rail Road Undercleareance ____
Remarks ____

8 Recommendations for New Structure —
Type P1168H80 Width curb to curb 25 Number and length of spans 5 @ 22'-6"
What is the least clear span permissible? 90'
Are sidewalks desired? No Lighting conduit? — Light standards? —
Angle of Skew recommended 60° Right
Will approaches be desired or will same be filled? ____
Approximate cost per Cu Yd of approach-filling at bridge site? ____
Is it necessary to maintain traffic alongside old structure? Yes
If so, how shall it be done? Turn out @ New Sight
R R Siding Burlington, Haul to Bridge Site 7 Mi
Remarks ____

Submitted by ____
Engineer

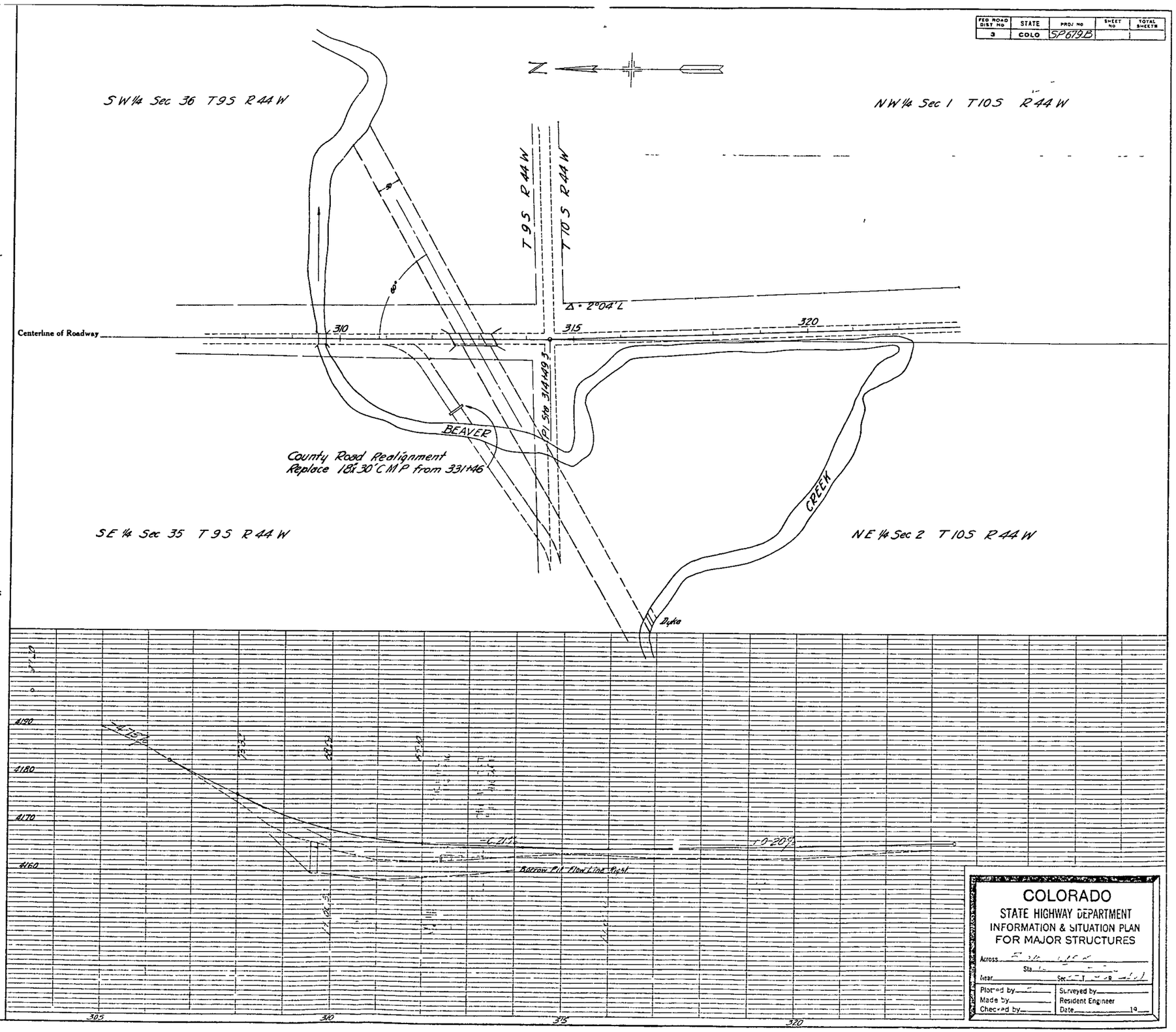
NOTE —When bridge is recommended to be left in place complete structural details shall be procured from the bridge itself or from existing plans of the structure When possible these plans shall be forwarded with the plans of the project

1000 5-19 38

SHEET DATA — NOTE BOOK No ____ PAGE ____ No ____ PAGE ____

	DATE	BY
FIELD: Survey Soundings Plotted		
FIELD: Layout B P R Approval Detail Sheets		
OFFICE		

FED ROAD DIST NO	STATE	PROJ NO	SHEET NO	TOTAL SHEETS
3	COLO	SP679B		

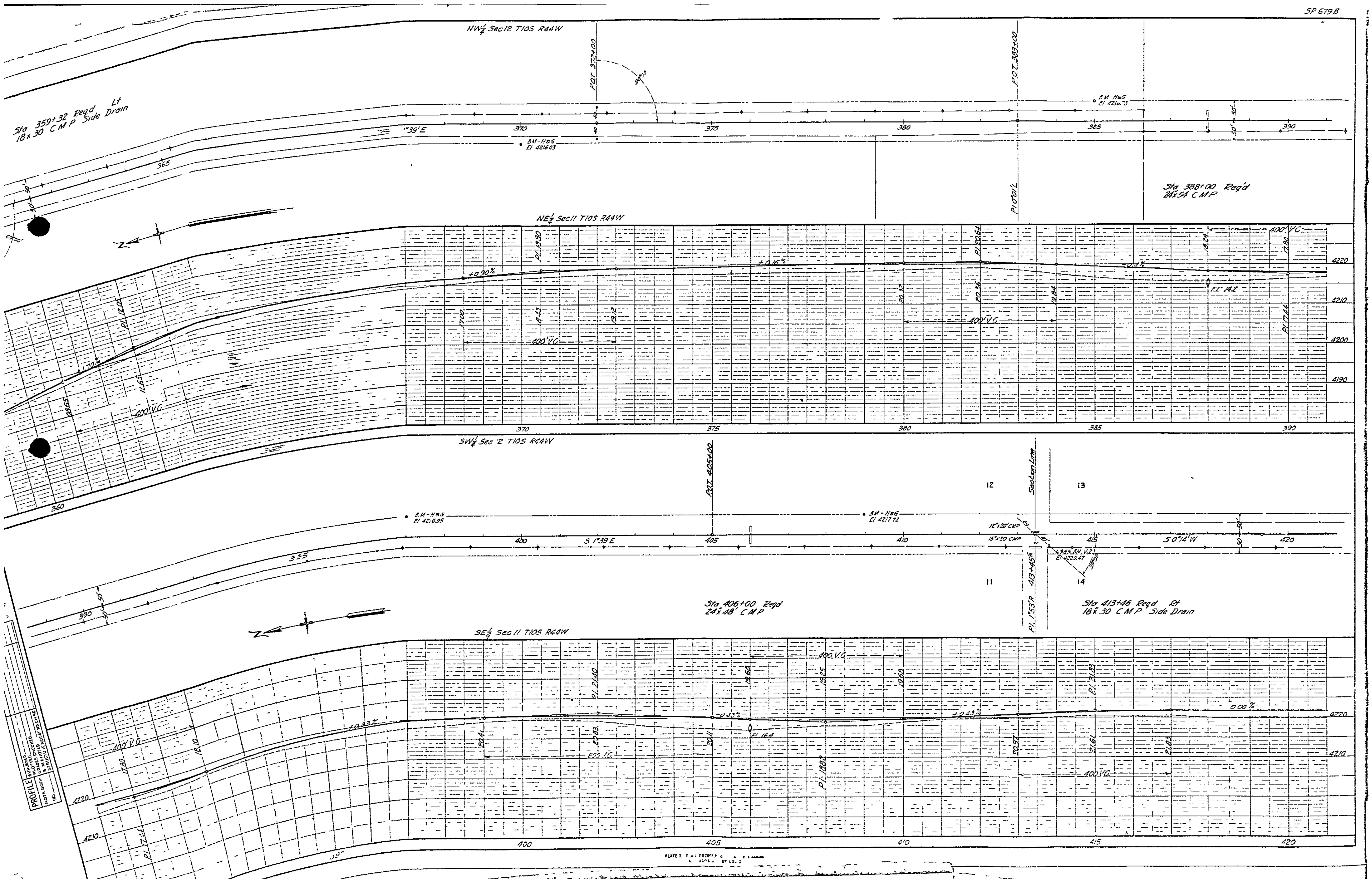


COLORADO
STATE HIGHWAY DEPARTMENT
INFORMATION & SITUATION PLAN
FOR MAJOR STRUCTURES

Across ____
Sta ____
Near ____ Sec ____ T ____ R ____

Plotted by ____ Surveyed by ____
Made by ____ Resident Engineer
Checked by ____ Date ____ 19__

STRUCTURE NO ____


NW¼ Sec 12 T10S R44W
POT 372+00
POT 383+00
Sta 359+32 Req'd Lt
18 x 30 C M P Side Drain
1°39' E
BM-H&G
El 4216.03
Sta 388+00 Req'd
24 x 54 C M P
NE¼ Sec 11 T10S R44W
400' V.C.
+0.90%
+0.16%
-0.4%
F.L. 14.2
+1.70%
SW¼ Sec 12 T10S R44W
POT 405+00
Section Line
BM-H&G
El 4216.95
BM-H&G
El 4217.72
S 1°39' E
S 0°14' W
12"x20" CMP
15"x20 CMP
Sta 406+00 Req'd
24 x 48 C M P
Sta 413+46 Req'd Rt
18 x 30 C M P Side Drain
SE¼ Sec 11 T10S R44W
-0.23%
+0.43%
0.00%
400' V.C.
F.L. 16.4
PROFILE
PLATE 2

FED ROAD DIST NO	STATE	PROJ NO	SHEET NO	TOTAL SHEETS
3	COLO	S-1775 3		

DATA REQUIRED TO ACCOMPANY SITUATION PLAN

I GENERAL REMARKS

Fill out all blanks with care giving information on all points listed and supplementary remarks on features not listed High water and foundation conditions are especially important and should be thoroughly investigated

II PROFILE

Plot profile of centerline of roadway Use natural scale preferably 1 =10 or multiple of 10

At proper locations show section of test pits noting material encountered if available at time of survey

Show present, and if possible proposed finished grade noting elevations and gradients.

III MAP

Show present and proposed alignment of bridge and all approaches as far as affected Extend Cross sections at least 100-ft each side of C L , giving location and elevation of points so that at least 2-foot contours may be accurately plotted Show edge of water, islands shoals other obstructions and direction of current at high water and at low water Plot location of test pits position and pointing of camera for each photo, all buildings fences, and other features affected Establish bench marks and give location of same Reference C L and show North point Give a C L -profile or stream-bed for 500 feet up-stream and 500 feet down-stream from center line of survey Plot proposed structure in soft pencil only Do not ink

IV REPORT OF EXAMINATION OF BRIDGE-SITE

Div _____ County _____ Route _____ Sec _____ Sta _____

Date of survey _____ To be built by _____

1 Bridge Site _____

Location _____

Sec _____ Twp _____ Range _____ Local name _____

Over _____ River Creek _____

Distance from nearest shipping point _____

2 Source of materials _____

Sand _____ Length of haul to site _____ miles

Gravel _____ " " " " _____ " "

Stone _____ " " " " _____ " "

Falsework Timber _____ " " " " _____ " "

Piling _____ " " " " _____ " "

3 Cost Data —

Cost of following materials at site _____

Portland Cement _____ Per Bbl

Sand, coarse and clean _____ " Cu Yd

Gravel _____ " " "

Stone _____ " " "

Falsework Timber _____ " Ft B M

Piling _____ " Lin Ft

Cost per ton-mile for hauling _____

4 Waterway —

Drainage area in Sq Miles (approximate) _____

Character of watershed _____

Elevation of Highest water _____ Date _____

Source of information on water elevation _____

Elevation of ordinary high water _____

Elevation of low water _____

Elevation of permanent ground-water _____

Is stream ever dry? _____ During what months? _____

Will all flood water pass through recommended structure? _____

Can channel be cleaned to afford more waterway? _____

Is stream-bed cutting or silting up? _____

Is stream stable in its banks? _____ Depth of scour? _____

Does stream carry light, medium or heavy drift? _____

What clearance above high water should be allowed? _____

Is channel change necessary? _____

If channel change is necessary illustrate location on sketch map

5 Foundation Data —

Character of material _____

Distance from stream-bed to solid foundation _____

Recommended depth of footings _____

Should piles be used? _____ What length? _____ Pile Shoes? _____

6 Old Bridge —

If there is no bridge at the present location include here data on nearest bridge over same stream If possible show location of such bridge or bridges on the map Photographs if available.

Type _____ Roadway Width _____ Number and length of spans _____

Area of waterway provided under old structure _____ Sq Ft , Elev of Underclearance _____

Has this area proved sufficient at flood times? _____ Skew Angle _____

Is it too large? _____ Disposition of Existing Structure _____

7 Give foundation data on bridges in vicinity When possible get pile driving data logs of borings, etc for adjoining structures and where considered advantageous procure plans

Sketch profile of Rail Road Crossing if within 1000 ft of Highway (Show X section of entire waterway)

Elevation of base of Rail _____ Elevation of Rail Road Underclearance _____

Remarks _____

8 Recommendations for New Structure —

Type _____ Width curb to curb _____ Number and length of spans _____

What is the least clear span permissible? _____

Are sidewalks desired? _____ Lighting conduit? _____ Light standards? _____

Angle of Skew recommended _____

Will approaches be desired, or will same be filled? _____

Approximate cost per Cu Yd of approach-filling at bridge site? _____

Is it necessary to maintain traffic alongside old structure? _____

If so how shall it be done? _____

R R. Siding _____ Haul to Bridge Site _____ Mi

Remarks _____

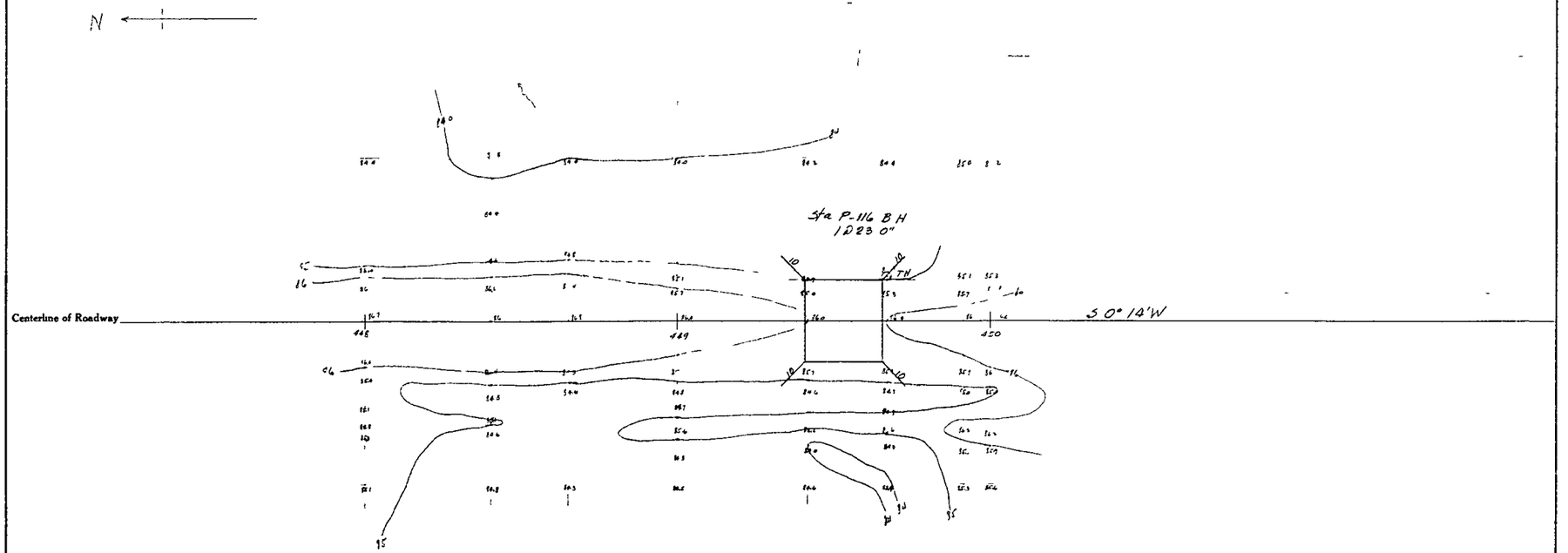
Submitted by _____

Engineer

NOTE —When bridge is recommended to be left in place complete structural details shall be procured from the bridge itself or from existing plans of the structure When possible these plans shall be forwarded with the plans of the project

1000 8 19 36

SHEET DATA	Note Book	Survey	By	Date
	No ____ Page ____	Soundings		
	No ____ Page ____	Plotting		
		Layout		
		B P R Approved		
		Detail Sheets		
		Office		
		Field		



COLOPADO
STATE HIGHWAY DEPARTMENT
INFORMATION & SITUATION PLAN
FOR MAJOR STRUCTURES

Across _____

Sta _____

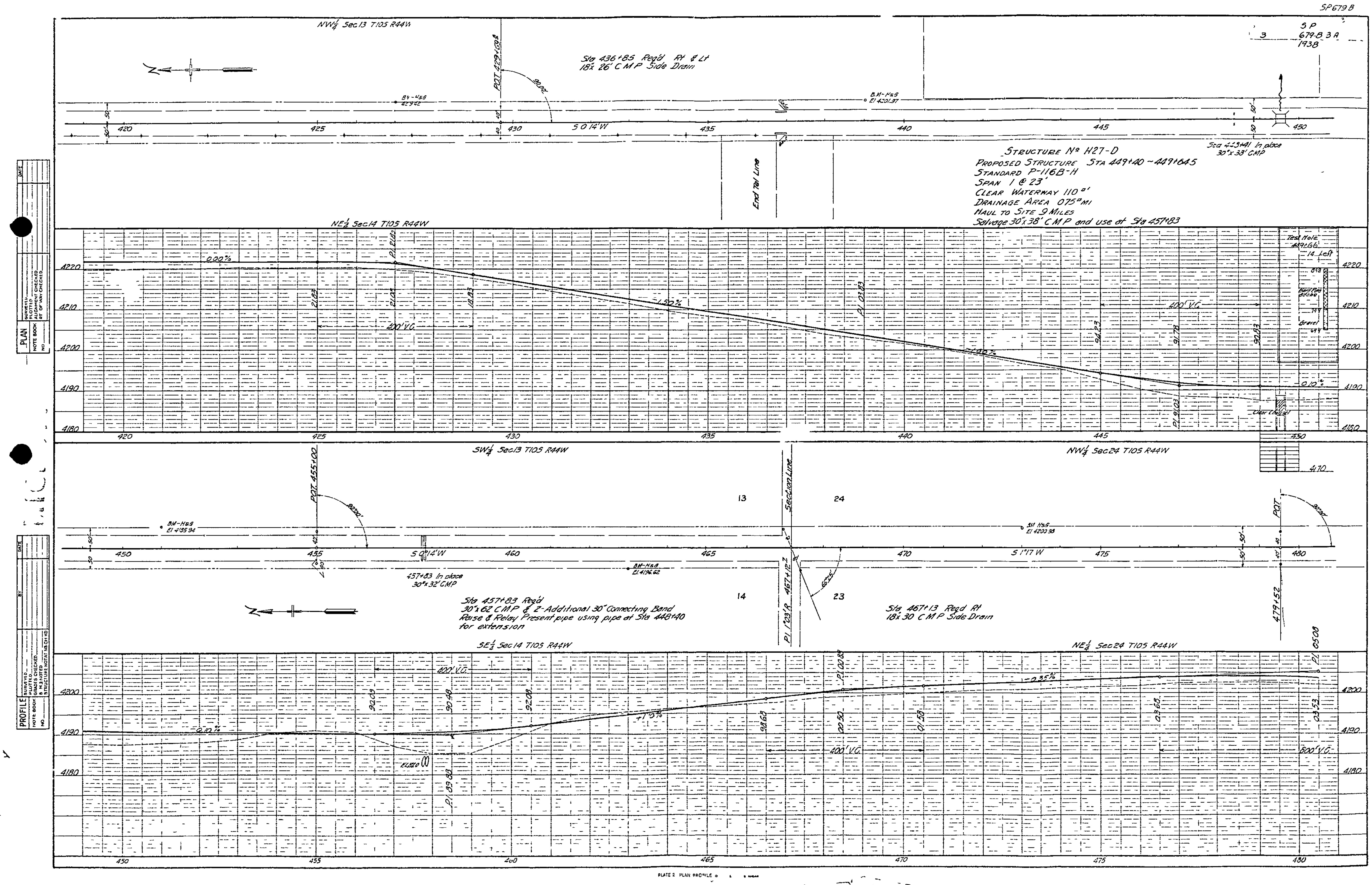
Near _____ Sec _____ T _____ R _____

Plotted by _____ | Surveyed by _____

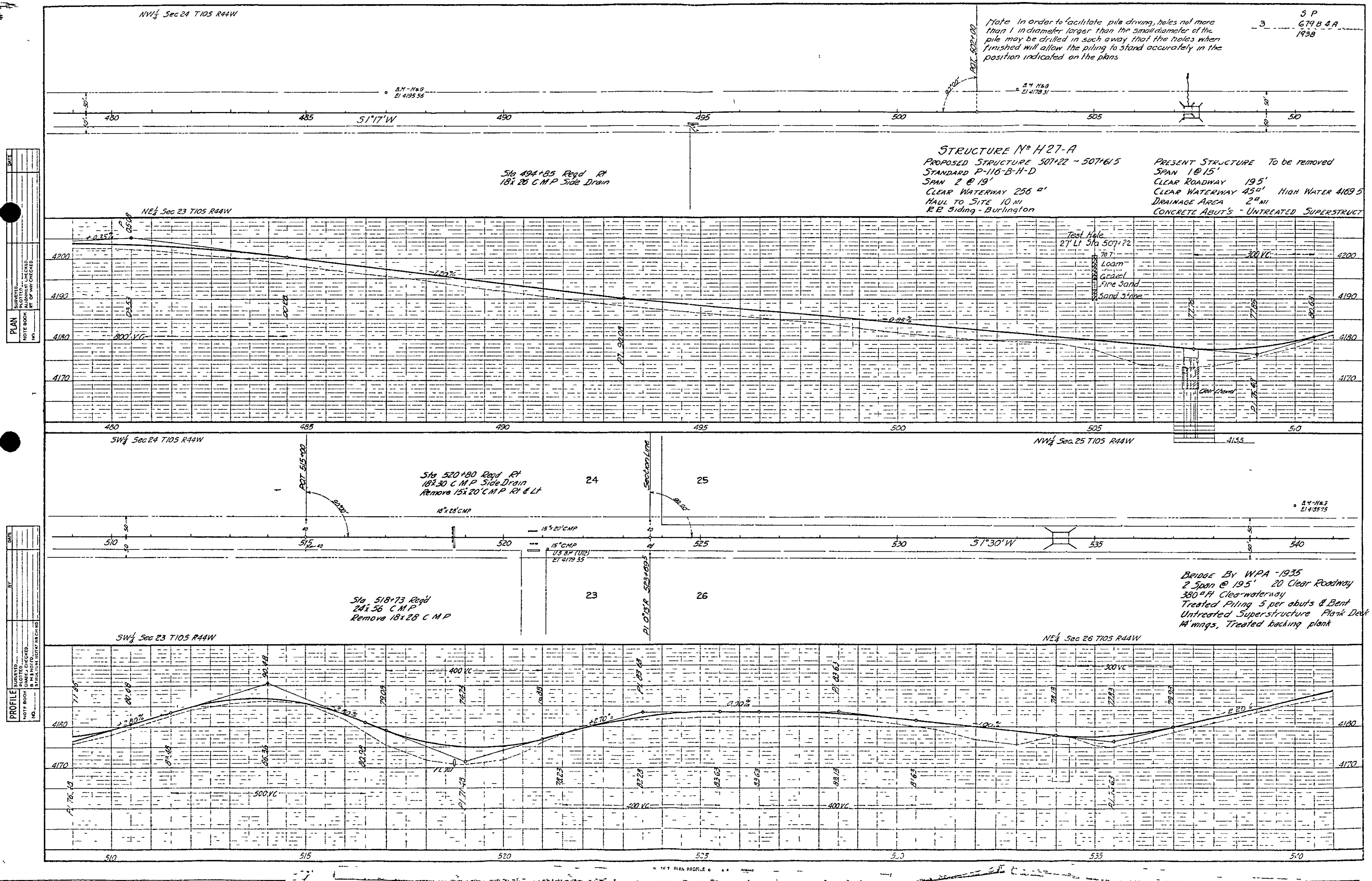
Made by _____ | Resident Engineer

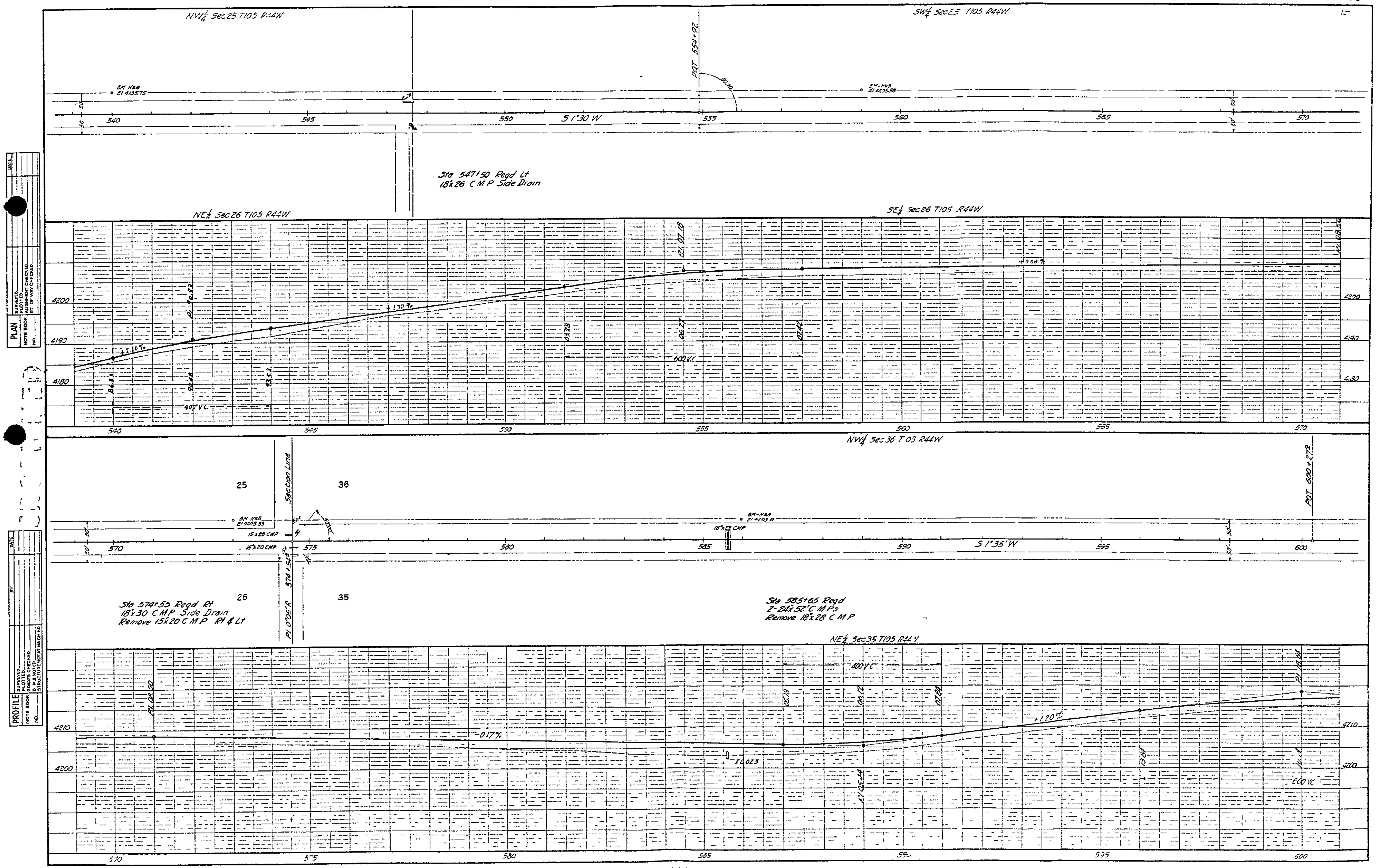
Checked by _____ | Date _____ 19__

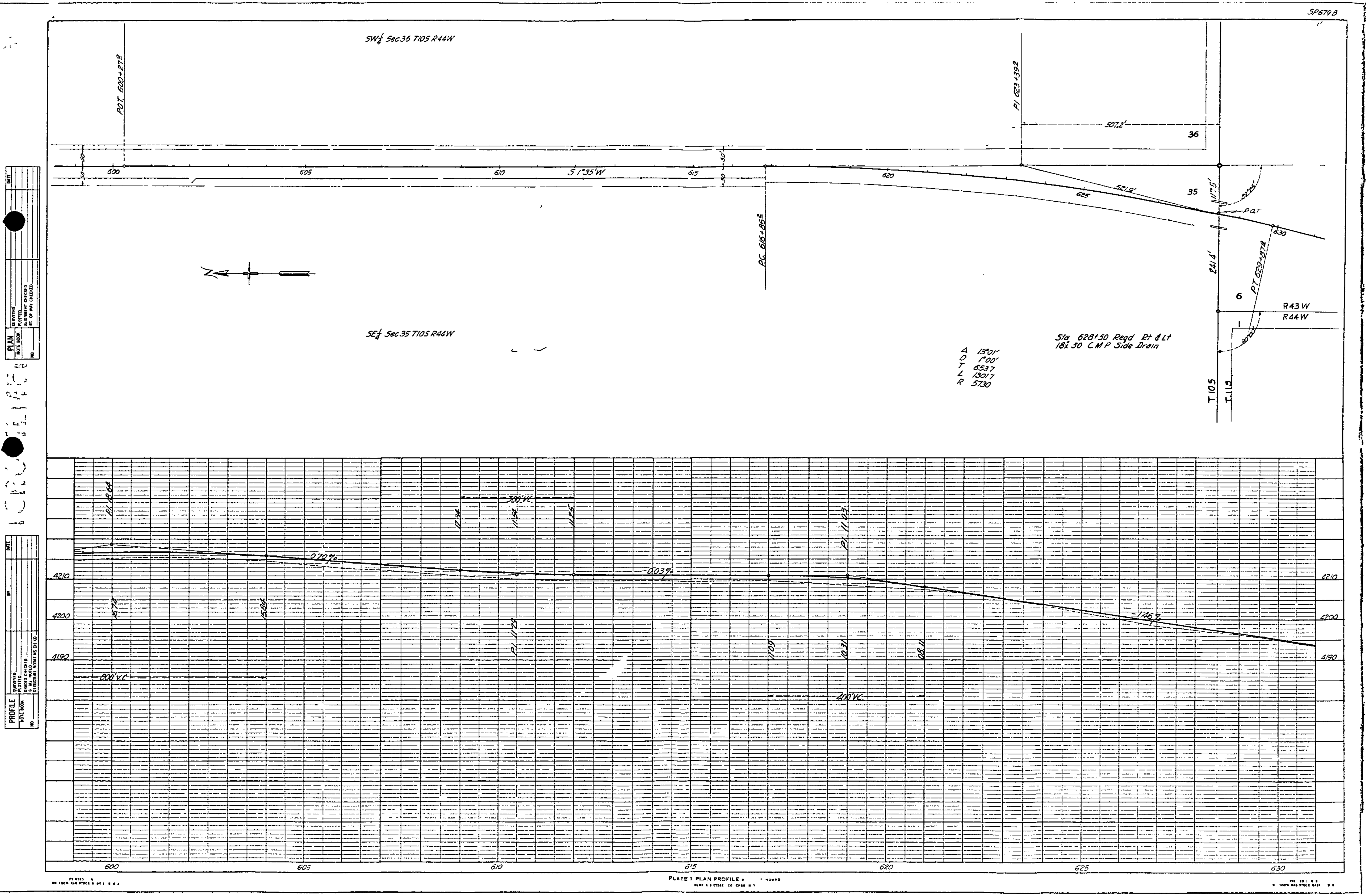
STRUCTURE NO _____

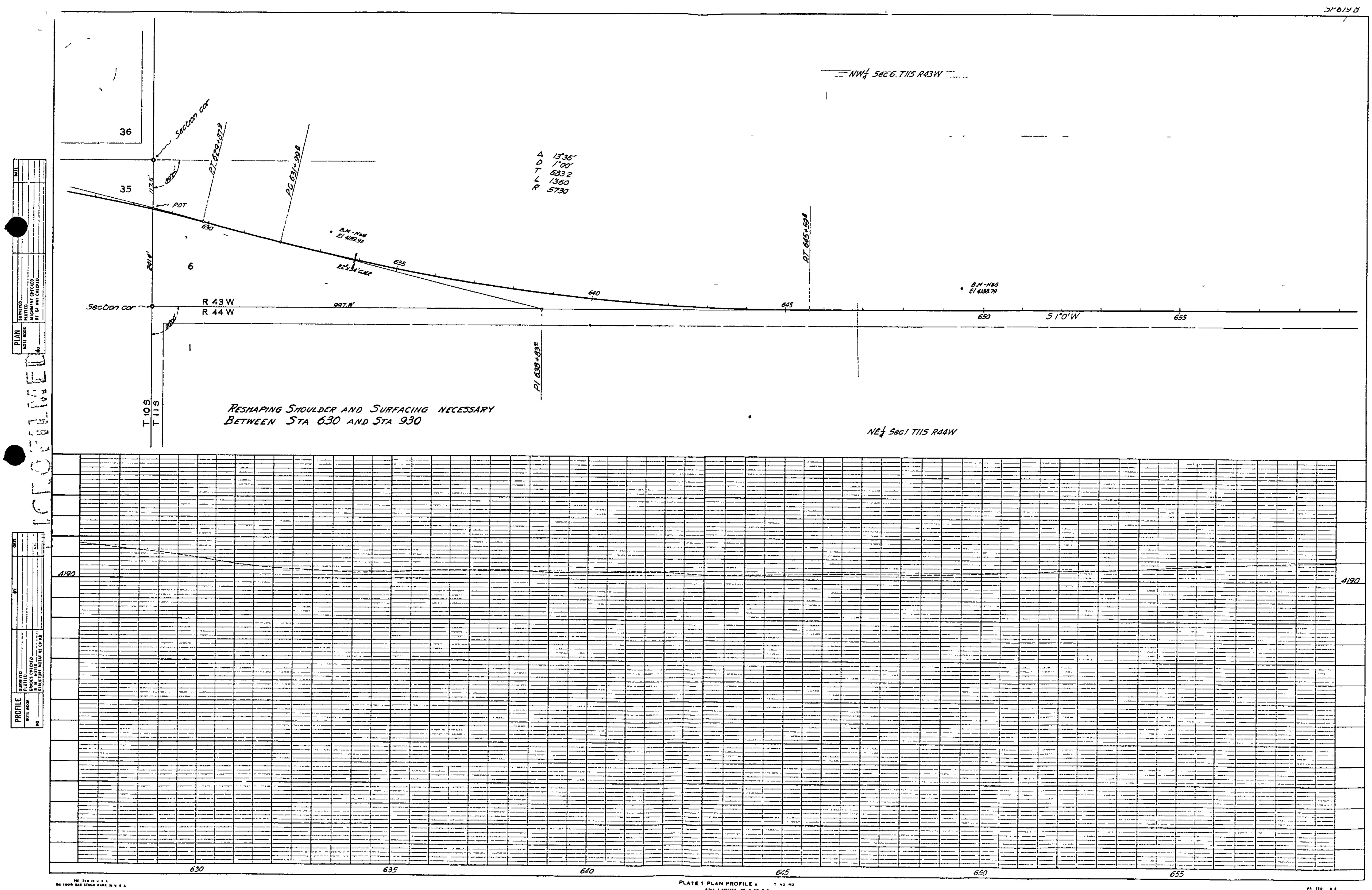


SP679B
SP 679-B 3A 1938
NW¼ Sec13 T10S R44W
Sta 436+85 Req'd Rt & Lt
18x 26' CMP Side Drain
POT 429+13.8
S 0°14' W
End Tel Line
Sta 443+41 In place
30"x 33' CMP
Structure Nº H27-D
Proposed Structure Sta 449+40 ~ 449+64.5
Standard P-116B-H
Span 1 @ 23'
Clear Waterway 110 ☐'
Drainage Area 0.75 ☐ mi
Haul to Site 9 Miles
Salvage 30"x 38' CMP and use at Sta 457+83
NE¼ Sec14 T10S R44W
0.00%
-1.50%
400' V.C.
Test Hole
0.10%
SW¼ Sec13 T10S R44W
NW¼ Sec24 T10S R44W
POT 455+00
Section Line
13
24
14
23
S 1°17' W
457+83 In place
30"x32' CMP
Sta 457+83 Req'd
30"x 62' CMP & 2-Additional 30" Connecting Band
Raise & Relay Present pipe using pipe at Sta 448+40
for extension
Sta 467+13 Req'd Rt
18x 30' CMP Side Drain
SE¼ Sec14 T10S R44W
NE¼ Sec24 T10S R44W
400' V.C.
800' V.C.
+1.0%
-0.35%
PLAN
PROFILE
PLATE 2 PLAN PROFILE


NW1/4 Sec 24 T10S R44W
Note In order to facilitate pile driving, holes not more than 1 in diameter larger than the small diameter of the pile may be drilled in such a way that the holes when finished will allow the piling to stand accurately in the position indicated on the plans
3
S P
679 B & A
1938
POT 502+00
B.M.-H&G
El 4195 56
B.M. H&G
El 4178 31
480
485
S1°17'W
490
495
500
505
510
Sta 494+85 Reqd Rt
18x26 CMP Side Drain
STRUCTURE No H27-A
PROPOSED STRUCTURE 507+22 ~ 507+61.5
STANDARD P-116-B-H-D
SPAN 2 @ 19'
CLEAR WATERWAY 256 □'
HAUL TO SITE 10 MI
RR Siding - Burlington
PRESENT STRUCTURE To be removed
SPAN 1 @ 15'
CLEAR ROADWAY 19.5'
CLEAR WATERWAY 45□'
HIGH WATER 4169.5
DRAINAGE AREA 2□MI
CONCRETE ABUT'S - UNTREATED SUPERSTRUCT
NE1/4 Sec 23 T10S R44W
Test Hole
27' Lt Sta 507+22
Loam
Gravel
Fine Sand
Sand Stone
300 VC
800' VC
Clear Creek
4200
4190
4180
4170
SW1/4 Sec 24 T10S R44W
NW1/4 Sec 25 T10S R44W
POT 515+00
Sta 520+80 Reqd Rt
18x30 CMP Side Drain
Remove 15x20 CMP Rt & Lt
18"x28"CMP
15"x20"CMP
15"CMP
US BP (TIC)
El 4179 35
Section Line
24
25
23
26
S1°30'W
515
520
525
530
535
540
B.M. H&G
El 4135 75
Sta 518+73 Reqd
24x56 CMP
Remove 18x28 CMP
PI 0°13'R 523+69.5
BRIDGE BY WPA - 1935
2 Span @ 19.5' 20 Clear Roadway
380□Ft Clear waterway
Treated Piling 5 per abuts & Bent
Untreated Superstructure Plank Deck
14' wings, Treated backing plank
SW1/4 Sec 23 T10S R44W
NE1/4 Sec 26 T10S R44W
400 VC
300 VC
500 VC
400 VC
400 VC
PLAN
NOTE BOOK
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT OF WAY CHECKED
PROFILE
GRADES CHECKED
B.M. & NOTES
STRUCTURES NOTATIONS CHECKED


NW¼ Sec25 T10S R44W
SW¼ Sec25 T10S R44W
POT 554+92
BM H&S El 4185.75
BM H&S El 4205.58
540
545
550
S 1°30' W
555
560
565
570
Sta 547+50 Regd Lt
18x26 C M P Side Drain
NE¼ Sec26 T10S R44W
SE¼ Sec26 T10S R44W
4200
4190
4180
+2.09%
+1.30%
+0.08%
400 VC
600 VC
PLAN
PROFILE
NW¼ Sec36 T 0S R44W
Section Line
25
36
26
35
BM H&S El 4205.83
BM H&S El 4203.9
15x20 CMP
18x28 CMP
574+55
PI 0°05' R
S 1°35' W
575
580
585
590
595
600
POT 600+27.8
Sta 574+55 Regd Rt
18x30 C M P Side Drain
Remove 15x20 C M P Rt & Lt
Sta 585+65 Regd
2-24x52 C M Ps
Remove 18x28 C M P
NE¼ Sec35 T10S R44W
4210
-0.17%
+1.20%
FL 02.3
400 VC
600 VC


SP679B
SW¼ Sec 36 T10S R44W
POT 600+27.2
PI 623+39.8
507.2'
36
600
605
610
S 1°35'W
615
620
625
521.9'
35
1175'
P.O.T.
630
PC 616+86.8
241.4'
PT 629+87.2
6
R43 W
R44 W
SE¼ Sec 35 T10S R44W
Sta 628+50 Reqd Rt & Lt
18x 30 C.M.P Side Drain
Δ 13°01'
D 1°00'
T 653.7
L 1301.7
R 5730
T 10S
T 11S
PLAN
PROFILE
300' V.C.
PI 18.64
12.34
11.34
11.25
0.70%
-0.03%
PI 11.03
4210
4200
4190
-1.46%
800' V.C.
PI 11.29
400' V.C.
PLATE 1 PLAN PROFILE


SP619 B
NW¼ Sec 6. T11S R43W
36
35
Section cor
P.T. 629+87.9
P.C. 631+99.8
Δ 13°36'
D 1°00'
T 683.2
L 1360
R 5730
POT
630
B.M.-N&G El 4189.92
635
22°43¼' C.R.E.
P.T. 645+59.8
640
645
B.M.-N&G El 4188.79
650
S 1°0'W
655
6
Section cor
R 43 W
R 44 W
997.8'
1
P.I. 638+83.2
T 10 S
T 11 S
RESHAPING SHOULDER AND SURFACING NECESSARY
BETWEEN STA 630 AND STA 930
NE¼ Sec1 T11S R44W
PLAN
PROFILE
4190
4190
630
635
640
645
650
655
PLATE 1 PLAN PROFILE

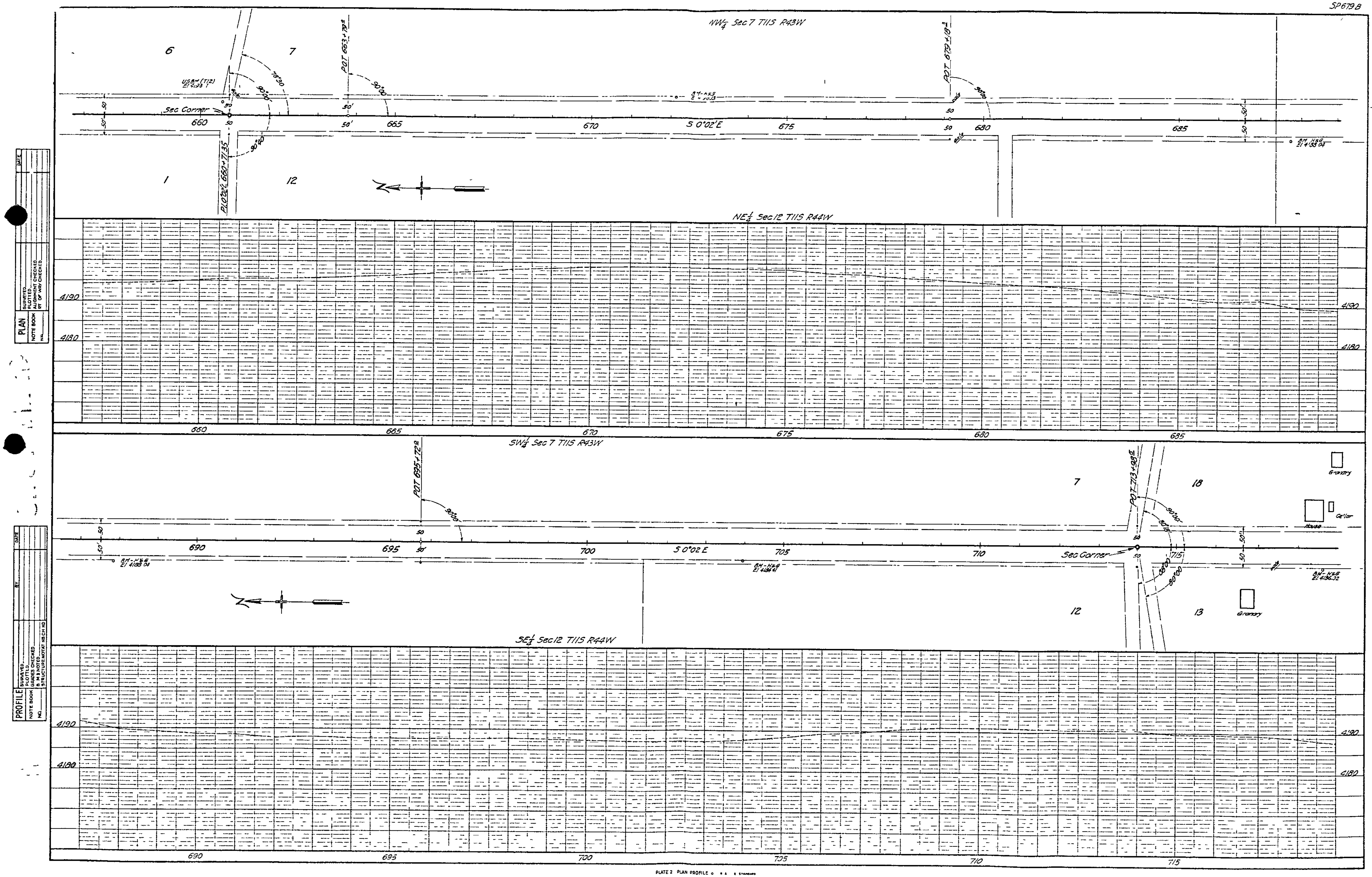


PLATE 2 PLAN PROFILE

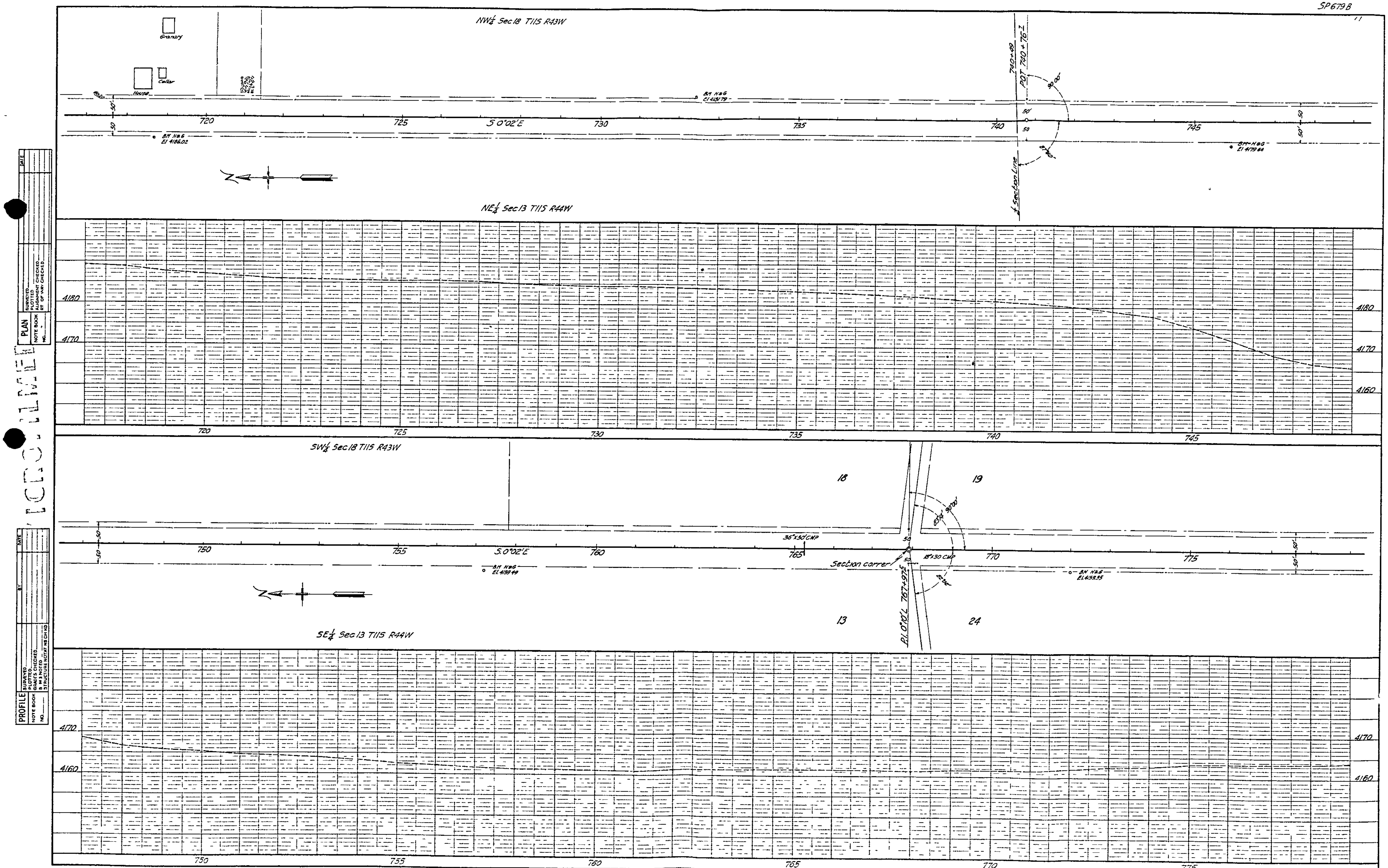
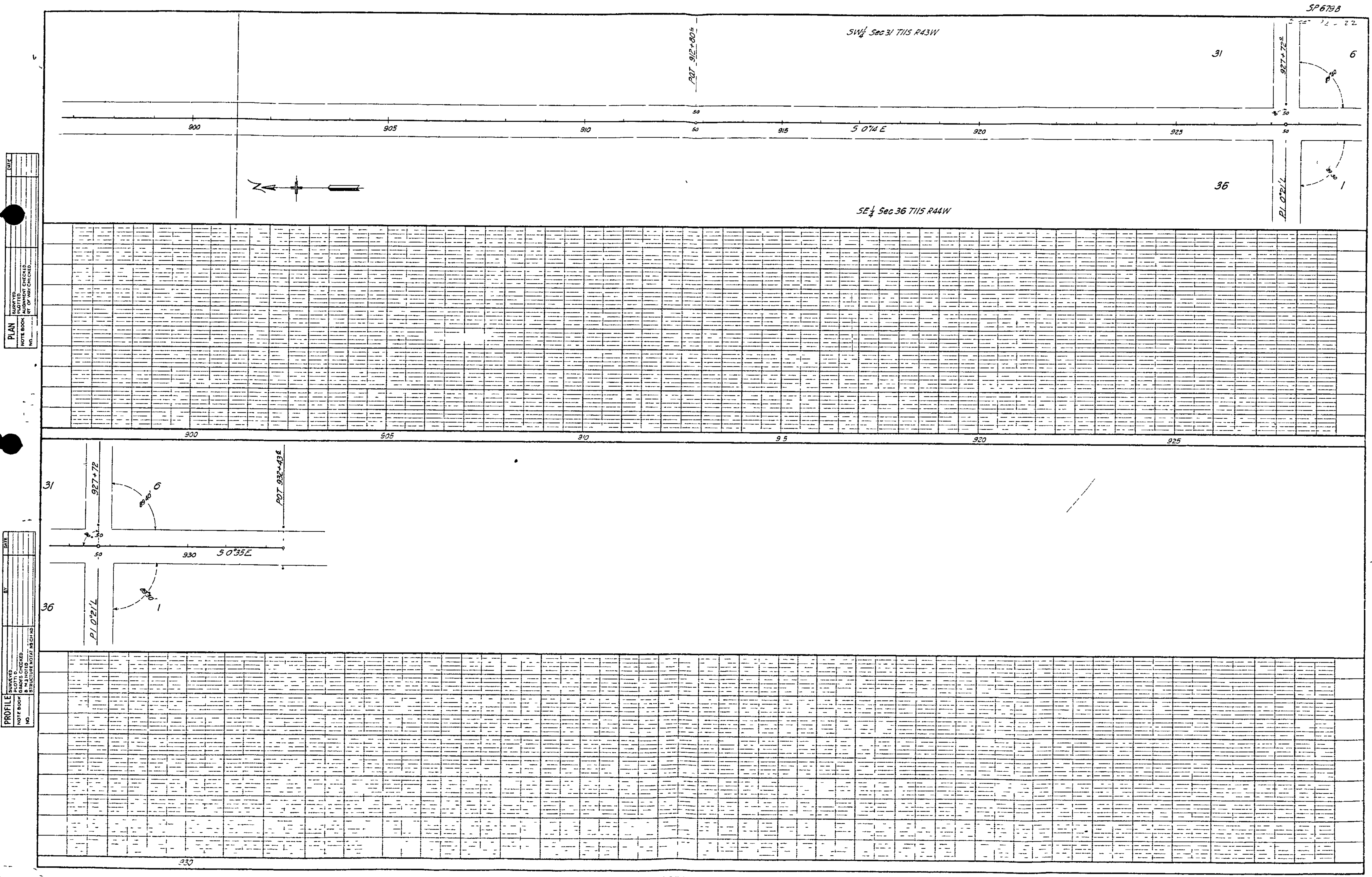


PLATE 2 PLAN PROFILE



SP 6798
SW¼ Sec 31 T11S R43W
POT 912+80±
31
6
927+72
50
900
905
910
915
S 0°14' E
920
925
36
1
PI 0°21'L
SE¼ Sec 36 T11S R44W
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT OF WAY CHECKED
DATE
900
905
910
915
920
925
31
927+72
POT 932+43.6
6
89°40'
50
930
S 0°35'E
89°30'
36
PI 0°21'L
1
PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
STRUCTURE NOTATIONS CH KD
BY
DATE
930
PLATE 2 PLAN PROFILE

NW¼ Sec30 T11S R43W

POT 841+72.8

SW¼ Sec30 T11S R43W

POT 855+71.2

840 845 850 855 860 865

S 0°06'E

NE¼ Sec25 T11S R44W

SE¼ Sec25 T11S R44W

840 845 850 855 860 865

NW¼ Sec31 T11S R43W

POT 883+94.8

30 31

874+56.8

Section Cor

870 875 880 885 890 895

S 0°14 E

25 36

PLOTTED

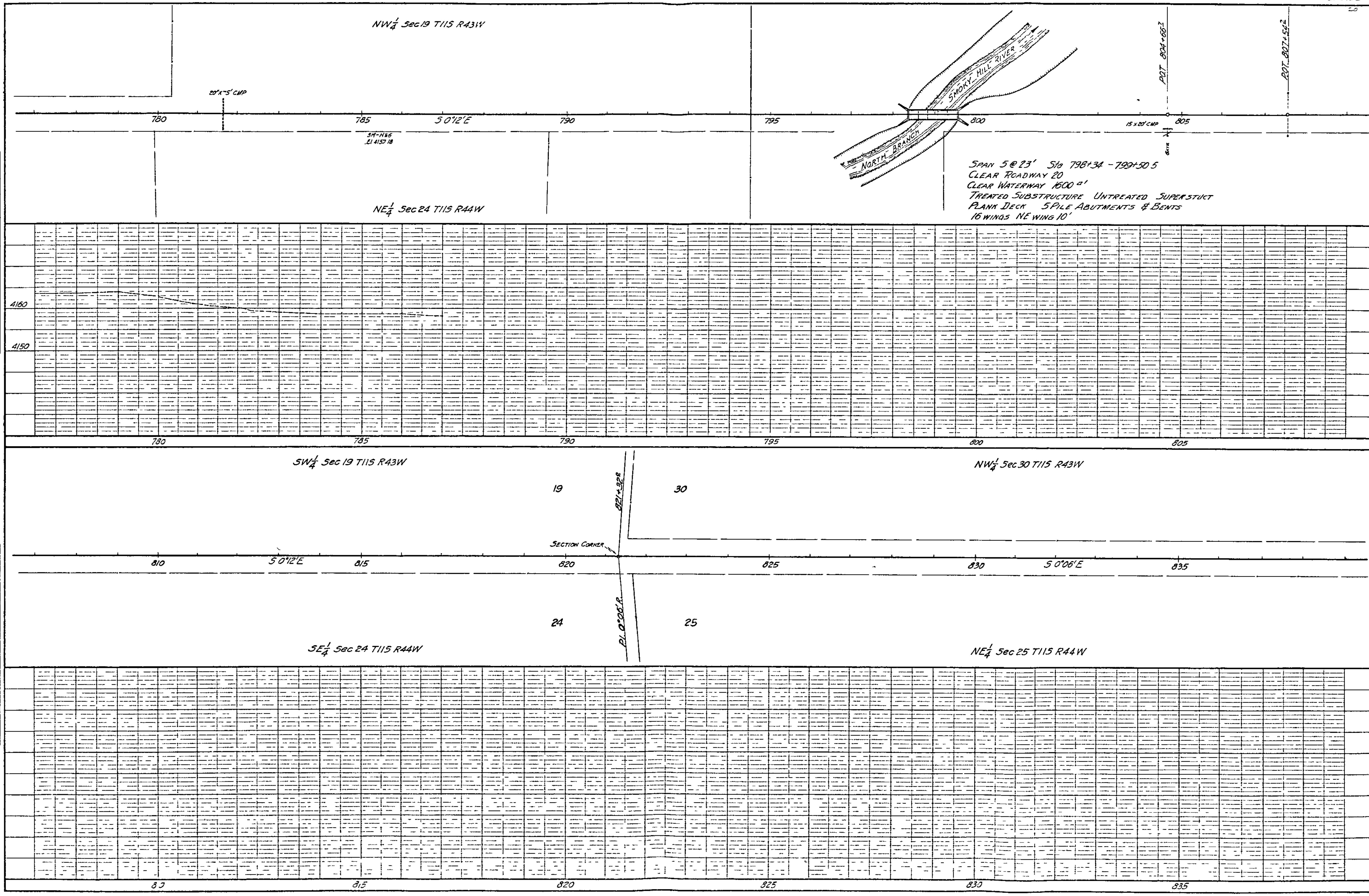
NE¼ Sec36 T11S R44W

870 875 880 885 890 895

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
PT OF VAR CHECKED
DATE
BY

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
GRADES CHECKED
PT OF VAR CHECKED
STRUCTURE NO
DATE
BY

PLATE 2 PLAN-PROFILE



PLAN — NOTE BOOK NO. — SURVEYED — PLOTTED — ALIGNMENT CHECKED — RT OF WAY CHECKED — DATE

PROFILE — NOTE BOOK NO. — SURVEYED — PLOTTED — GRADES CHECKED — B M NOTED — STRUCTURE NOTATIONS CHECKED — BY — DATE

S P
3 679 B 1
1938

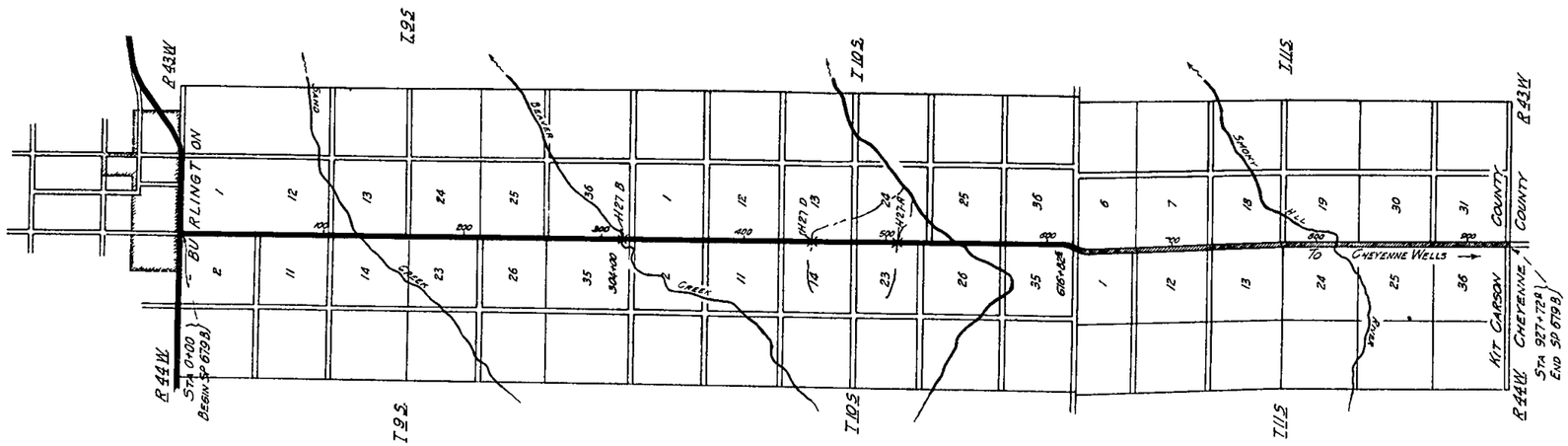
COLORADO
STATE HIGHWAY DEPARTMENT

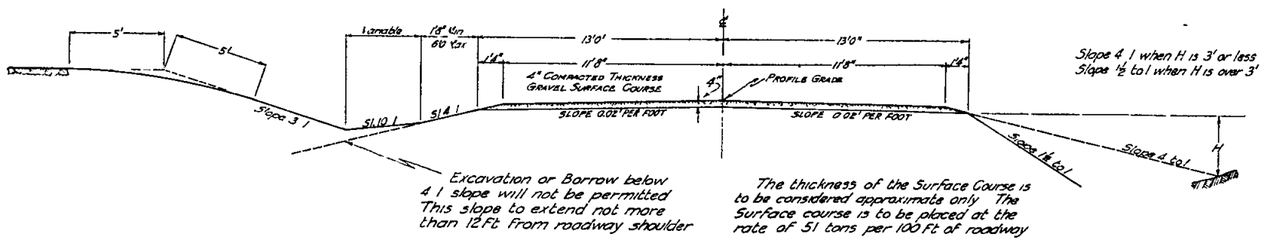
PLAN AND PROFILE OF PROPOSED
S P No 679 B
STATE HIGHWAY No 51
KIT CARSON COUNTY
1938

CONVENTIONAL SIGNS

- Center Line of Survey
- Right of Way Lines
- Easement Lines
- Section Lines
- Barbed wire Fence
- Bridges in Place
- Intersecting roads

Sta 0+00 Begin Div #1
Grading and Surfacing
Sta 304+00 Begin Div #2
Grading, Surfacing, Structures
Sta 616+82.6 Begin Div #3
Surfacing Only





TYPICAL ROAD SECTION

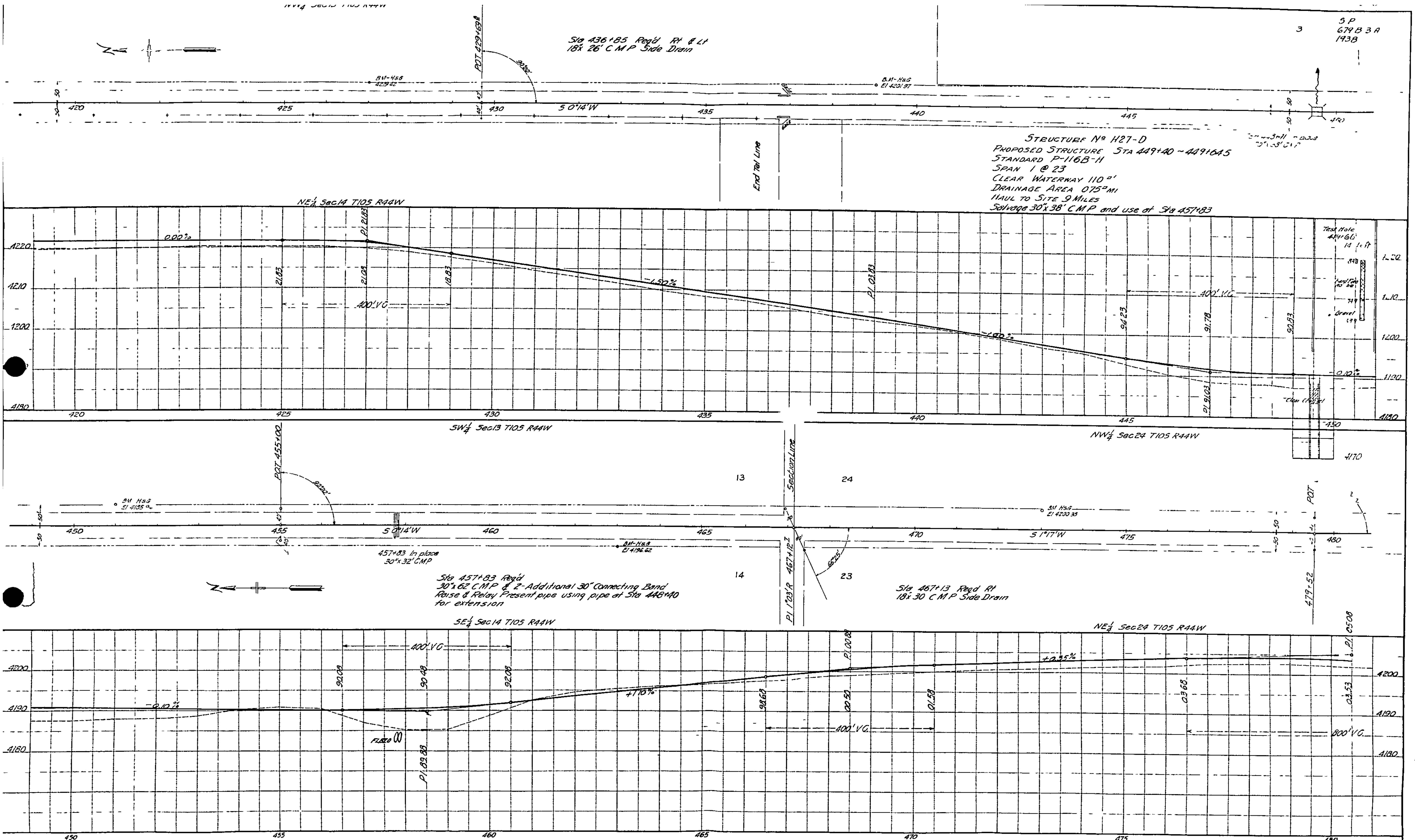
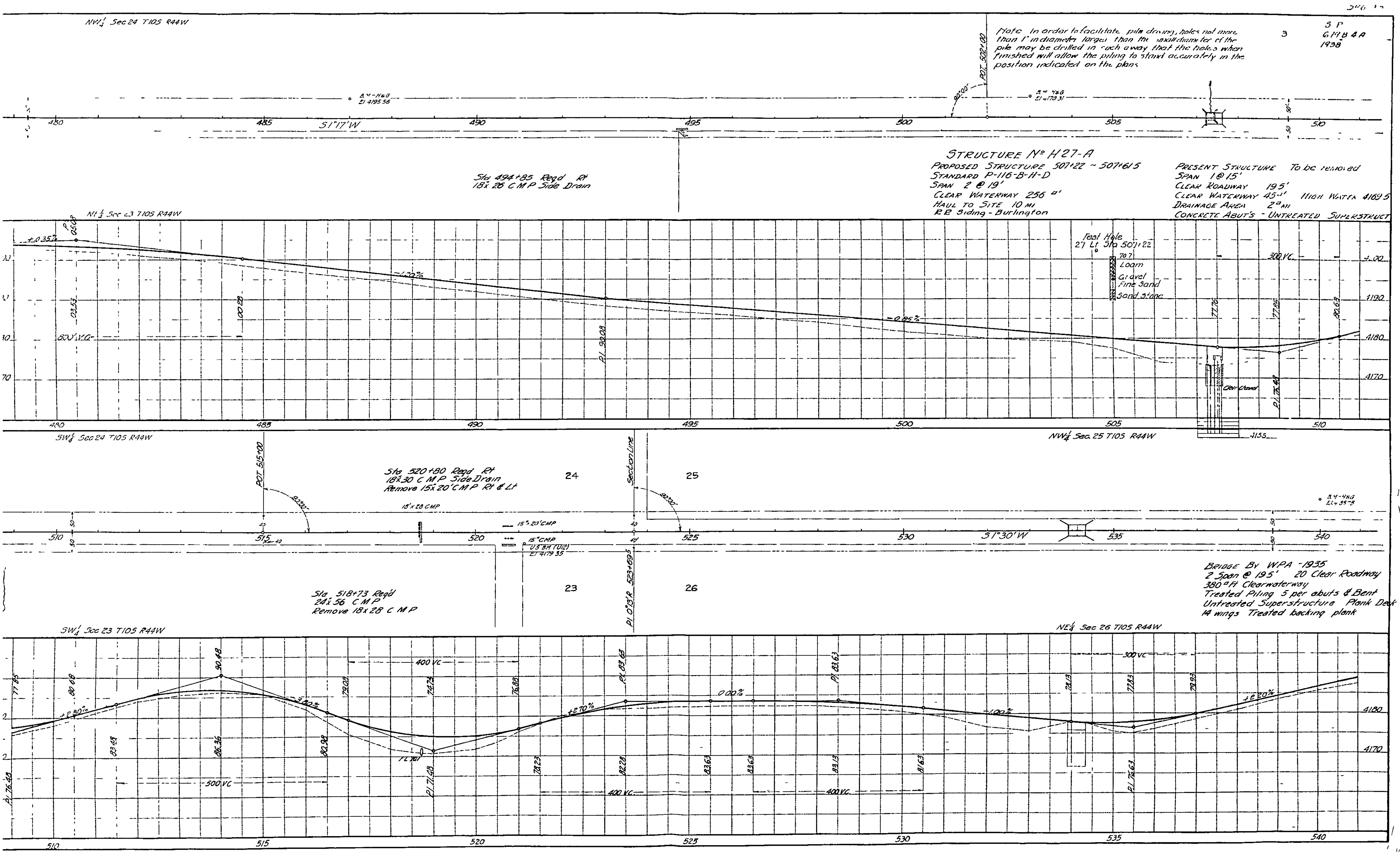


PLATE 2 - PLAN PROFILE



NW¼ Sec 24 T10S R44W
Note In order to facilitate pile driving, holes not more than 1" in diameter larger than the small diameter of the pile may be drilled in such a way that the holes when finished will allow the piling to stand accurately in the position indicated on the plans
3
S P
619 B 4 A
1938
POT 502+00
S1°17'W
Sta 494+85 Reqd Rt
18x 26 C M P Side Drain
STRUCTURE Nº H27-A
PROPOSED STRUCTURE 507+22 ~ 507+61.5
STANDARD P-116-B-H-D
SPAN 2 @ 19'
CLEAR WATERWAY 256 □'
HAUL TO SITE 10 MI
R R Siding - Burlington
PRESENT STRUCTURE To be removed
SPAN 1 @ 15'
CLEAR ROADWAY 19.5'
CLEAR WATERWAY 45□'
HIGH WATER 4169.5
DRAINAGE AREA 2□MI
CONCRETE ABUT'S - UNTREATED SUPERSTRUCT
NE¼ Sec 23 T10S R44W
Test Hole
27 Lt Sta 507+22
Loam
Gravel
Fine Sand
Sand Stone
SW¼ Sec 24 T10S R44W
NW¼ Sec 25 T10S R44W
POT 515+00
Section Line
Sta 520+80 Reqd Rt
18x30 C M P Side Drain
Remove 15x 20 C M P Rt & Lt
S1°30'W
Sta 518+73 Reqd
24x 56 C M P
Remove 18x 28 C M P
PI 0°13'R 523+69.5
Bridge By WPA - 1935
2 Span @ 19.5' 20 Clear Roadway
380□Ft Clearwaterway
Treated Piling 5 per abuts & Bent
Untreated Superstructure Plank Deck
14 wings Treated backing plank
SW¼ Sec 23 T10S R44W
NE¼ Sec 26 T10S R44W