

CONVENTIONAL SIGNS

STATE LINE	---
COUNTY LINE	---
TOWNSHIP OR RANGE LINE	---
SECTION LINE	---
QUARTER LINE	---
SIXTEENTH LINE	---
RIGHT-OF-WAY LINE	---
PRESENT RIGHT-OF-WAY LINE	---
CONTROL OF ACCESS LINE	---
PROPERTY LINE (EQUIV. TO CITY LIMITS)	---
TRUNK HIGHWAY CENTER LINE	---
SECTION MARK	---
RAILROAD	---
RAILROAD RIGHT-OF-WAY LINE	---
RIVER OR CREEK	---
DRY RUN	---
DRAINAGE DITCH	---
ELECTRIC POWER LINE	---
TELEPHONE OR TELEGRAPH LINE	---
JOINT TELEPHONE AND POWER	---
CONDUIT	---
TELEPHONE CABLE ALARM	---
TELEPHONE CABLE UNDERGROUND	---
POWER CABLE UNDERGROUND	---
GAS MAIN	---
COVERT	---
SHARP BENT	---
SURF DIRT	---
BARBED WIRE FENCE	---
WOODEN WIRE FENCE	---
CHAIN LINK FENCE	---
RAILROAD CROSSING SIGN	---
STEEL RAIL OR FENCE	---
WATER PIPE	---
SEWER PIPE	---
DRAIN TILE	---
URDINAL	---
MARK	---
TIMBER	---
BRUSH	---
MURDER	---
CATCH BASIN	---
MANHOLE	---
PIPE VENT	---
STREET LIGHT	---
RAILROAD CROSSING SIGN	---
RAILROAD CROSSING BELLS	---
ELECTRIC WARNING SIGN	---
CROSSING GATE	---
CATTLE GUARD	---
OVERPASS (Highway Over)	---
UNDERPASS (Highway Under)	---
BRIDGE	---
BUILDING (One Story Frame)	---
FRAMING	---
STONE	---
BRICK	---
IRON PIPE OR ROD	---
MONUMENT (STONE CONCRETE OR METAL)	---
WOODEN HILL	---
GRAVEL PIT	---
SAND PIT	---
BORROW PIT	---
PODOL QUARRY	---
MISCELLANEOUS	---

Fed. Proj. No. _____
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 CONSTRUCTION PLAN FOR GRADING, BASE, BITUMINOUS SURFACING & STORM SEWER

County State Aid Highway No. 9

Between T.H.10 And C.R.116

From A PT. 169.16' N. OF THE CENTER OF SEC. 5, T.31N., R.24W. To A PT. 66.97' N. OF THE CENTER OF SEC. 32, T.32N., R.24W.
Give proper reference to Sections, Township and Range

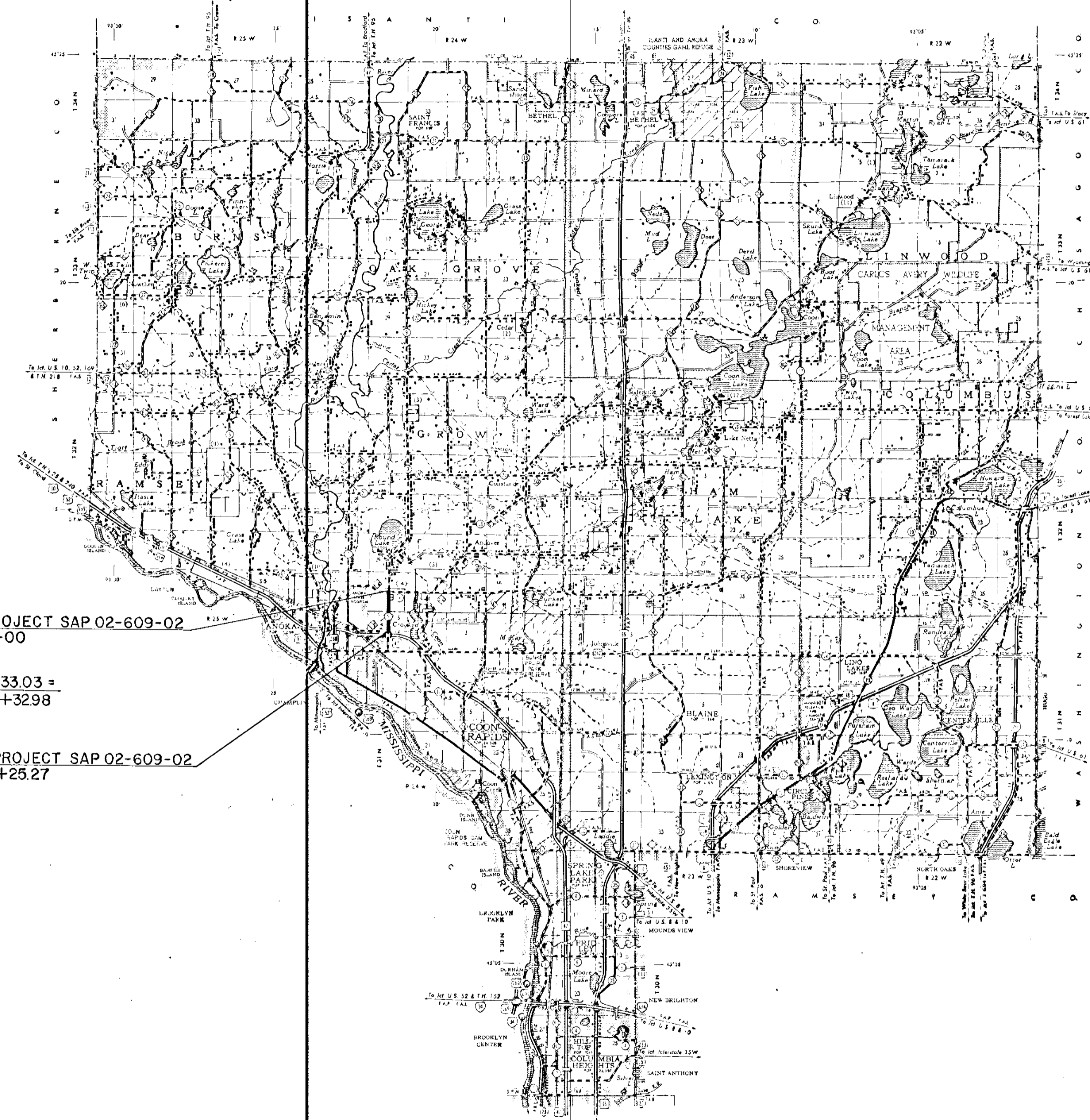
GROSS LENGTH	5,572.780	FEET	1.055	MILES
BRIDGES LENGTH	- 0 -	FEET	- 0 -	MILES
EXCEPTIONS LENGTH	- 0 -	FEET	- 0 -	MILES
NET LENGTH	5,572.780	FEET	1.055	MILES

INDEX OF SHEETS

Sheet No. 1	Title Sheet & Layout Map
No. 2-4	EST. QUAN. & TYPICAL SEC.
No. 5-6	PLAN & PROFILE
No. 7-9	DRAINAGE DETAIL SHEETS
No. 10-16	CROSS SECTIONS
No. 16	STORM SEWER OUTLET DETAIL

SCALE

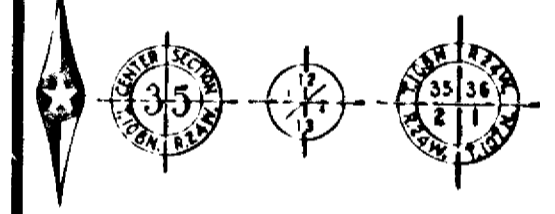
INDEX MAP	2 MI.
PLAN & PROFILE	100' HORIZ. 10' VERT.
DRAINAGE DETAILS	50' HORIZ. 5' VERT.
CROSS SECTIONS	10'



END PROJECT SAP 02-609-02
 STA. 81+00

OR P.I. 80 + 33.03 =
 P.O.T. 80 + 32.98

BEGIN PROJECT SAP 02-609-02
 STA. 28+25.27



DESIGN DESIGNATION

ADT (CURRENT YEAR) 8,516
 ADT (FUTURE YEAR) 15,000 (20 YR.)
 T (HEAVY COMMERCIAL) 600-1100
9 Ton Design Soil Factor A-3, 50%
 Design Speed 60 MPH
 Design Speed not achieved at:
 STA _____ TO STA _____ MPH
 STA _____ TO STA _____ MPH

SPECIFICATIONS

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", DATED JAN. 1, 1978, SHALL GOVERN.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Paul K. Kline
 COUNTY ENGINEER DATE 12/29/78

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL C.E. Wachobain 2/10 1979
 DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL Robert D. O'Connell 3-21 1979

APPROVED 3/23 1979 *William M. Young*
 STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
 State Proj. No. _____ S.A.P. 02-609-02

STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2031.503	FIELD LABORATORY TYPE-D	EACH	1	
2101.501	CLEARING	ACRE	1.35	
2101.502	CLEARING	TREE	87	
2101.506	GRUBBING	ACRE	1.35	
2101.507	GRUBBING	TREE	80	
2104.503	REMOVE CONC. WALK & STEPS	SQ. FT.	50	
2104.521	SALVAGE FENCE	LIN. FT.	229	
0557.604	INSTALL FENCE	LIN. FT.	79	
2105.501	COMMON EXCAVATION (P)	CU. YD.	13,552	
2105.525	TOPSOIL BORROW (LV)	CU. YD.	1,250	
2105.531	SALVAGED BITUMINOUS MIXTURE (EV)	CU. YD.	1769	
2130.501	WATER	M GAL	100	
2211.501	AGGREGATE BASE, CLASS 5	TON	6080	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	446	
2331.510	BINDER COURSE MIXTURE	TON	3630	
2331.514	BASE COURSE MIXTURE	TON	5465	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	145	
2341.508	WEARING COURSE MIXTURE	TON	2,233	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	4800	
2501.501	CULVERT EXCAVATION, CLASS U	CU. YD.	90	
2501.511	24" R.C. PIPE CULVERT CL. 2	LIN. FT.	82	
2501.515	24" R.C. PIPE APRONS	EACH	3	
2501.515	18" R.C. PIPE APRONS	EACH	1	
2503.511	12" R.C. PIPE SEWER CL. 3	LIN. FT.	634	
2503.511	15" R.C. PIPE SEWER CL. 3	LIN. FT.	781	
2503.511	18" R.C. PIPE SEWER CL. 3	LIN. FT.	1519	
2503.511	24" R.C. PIPE SEWER CL. 3	LIN. FT.	1109	
2506.506	CONSTRUCT MANHOLES, DESIGN A OR F	LIN. FT.	48.3	
2506.506	CONSTRUCT MANHOLES, DESIGN C OR G	LIN. FT.	19.4	
2506.507	CONSTRUCT CATCH BASINS, DESIGN A OR F	LIN. FT.	6.8	
2506.507	CONSTRUCT CATCH BASINS, DESIGN C OR G	LIN. FT.	28.2	
2506.507	CONSTRUCT CATCH BASINS, DESIGN #2	LIN. FT.	61.1	
2506.516	CASTING ASSEMBLIES	EACH	31	
2545.521	3" RIGID STEEL CONDUIT	LIN. FT.	218	
2545.553	PULL BOXES	EACH	2	
2575.501	ROADSIDE SEEDING	ACRE	3.5	
2575.502	SEED, MIXTURE #5	POUND	175	
2575.505	SODDING	SQ. YD.	8,600	
2575.511	MULCH MATERIAL, TYPE I	TON	7	
2575.519	DISC ANCHORING	ACRE	3.5	
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-0-10	TON	1.25	
ALTERNATE PIPE SEWER				
2501.515	36" R.C. PIPE APRONS	EACH	1	
2503.511	30" R.C. PIPE SEWER CL. 3	LIN. FT.	350	
2503.511	36" R.C. PIPE SEWER CL. 3	LIN. FT.	512	

- 1 FOR DUST CONTROL
- 2 INCLUDES 250 TON FOR STREET APPROACHES, 70 TON FOR ENTRANCES
- 3 INCLUDES 160 TON FOR STREET APPROACHES
- 4 INCLUDES 315 TON FOR STREET APPROACHES
- 5 INCLUDES 150 TON FOR STREET APPROACHES
- 6 FOR FUTURE SIGNAL SYSTEM

BASIS OF PLANNED QUANTITIES

- 2211 AGGREGATE BASE CLASS 5, 145 LBS. PER CU. FT. COMPACTED
- 2331 PLANT MIXED BASE COURSE BITUMINOUS MIXTURE 110 LBS. PER S.Y. PER INCH THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WT.
- 2331 PLANT MIXED BINDER COURSE BITUMINOUS MIXTURE 110 LBS. PER S.Y. PER INCH THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 5.5% BY WT.
- 2341 PLANT MIXED WEARING COURSE BITUMINOUS MIXTURE 110 LBS. PER S.Y. PER INCH THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 6.5% BY WT.
- 2357 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER S.Y.
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENTS PLUS 10%

The following Standard Plates, approved by the Federal Highway Administration, shall apply on this project.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0003A	SPECIFICATION REFERENCE TO STANDARD PLATES (1978)
3000H	REINFORCED CONCRETE PIPE
3006C	GASKET JOINT FOR R.C. PIPE
3100F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
4000H	MANHOLE OR CATCH BASIN, DESIGN A
4002D	MANHOLE OR CATCH BASIN, DESIGN C
4005K	MANHOLE OR CATCH BASIN, DESIGN F
4006J	MANHOLE OR CATCH BASIN, DESIGN G
4010E	CONC. ADJUSTING RING
4101B	RING CASTING FOR MANHOLE OR CATCH BASIN
4110D	COVER CASTING FOR MANHOLE
4126E	CATCH BASIN FRAME CASTING
4149C	GRATE CASTING FOR CATCH BASIN
4161E	CURB BOX CASTING FOR CATCH BASIN
4180G	MANHOLE OR CATCH BASIN STEP
8000F	STANDARD BARRICADES
9000B	APPROACHES AND ENTRANCES
9102C	SODDING AT PIPE CULVERT ENDS
8117E	PRECAST CONCRETE HANDHOLE (OR PULLBOX)

SPECIAL DETAILS

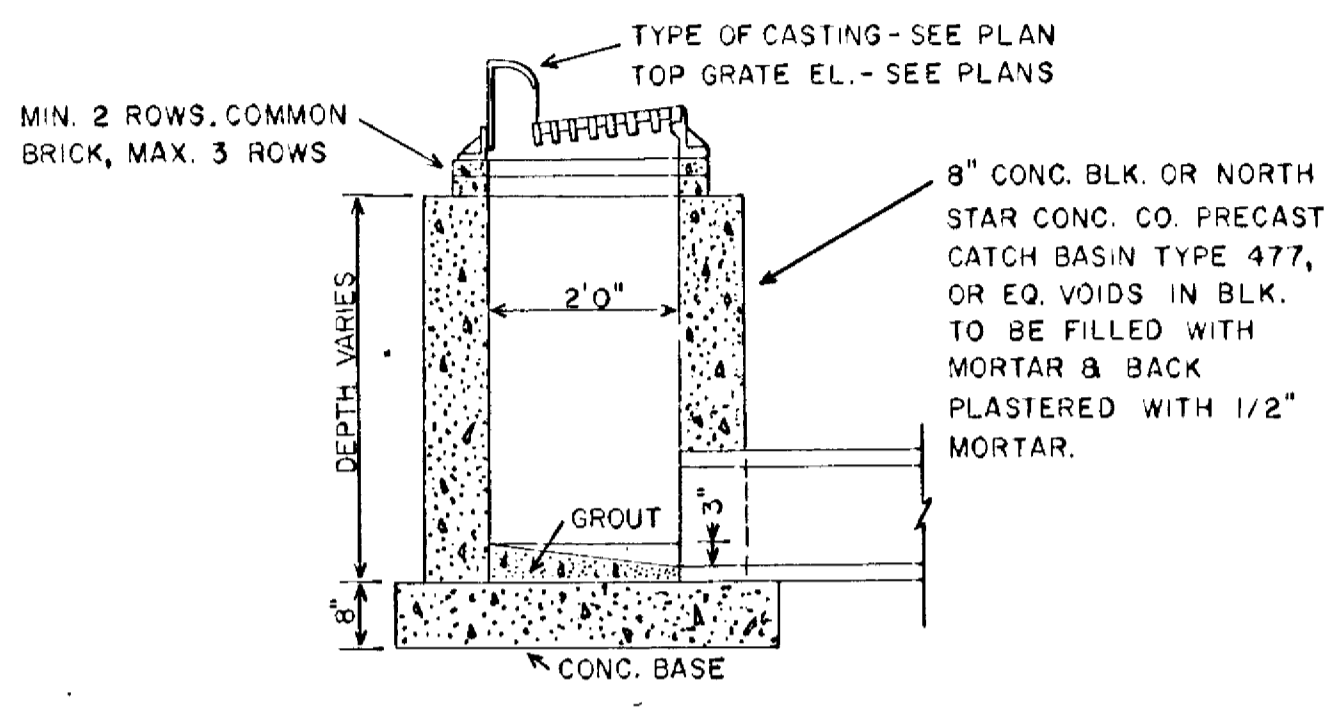
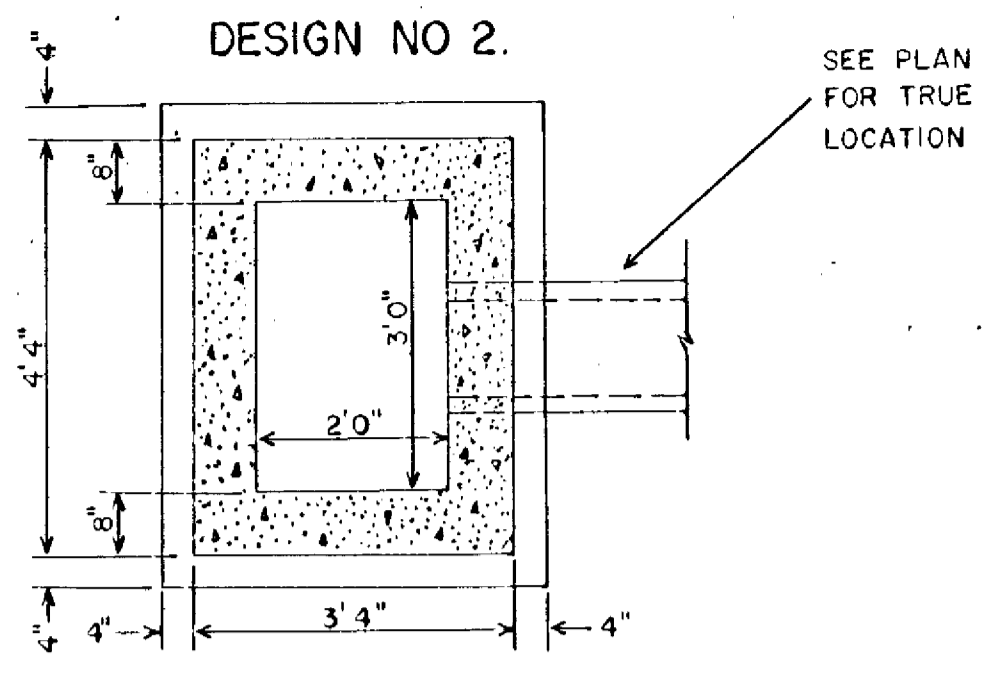
THE CONTRACTOR SHALL REMOVE SUFFICIENT TOPSOIL MATERIAL WITHIN THE EXCAVATION AREAS AND AREAS ON WHICH EMBANKMENT WILL BE PLACED, STOCKPILE IF NECESSARY, AND USE IT FOR TOPSOIL COVERING ON THE NEW SLOPES AND DITCH BOTTOMS. THIS WILL REQUIRE APPROXIMATELY 1,200 CU. YDS. TO PROVIDE A MINIMUM COVER OF 3". SALVAGING TOPSOIL SHALL BE CONSIDERED AS INCIDENTAL TO COMMON EXCAVATION.

TOPSOIL BORROW MATERIAL SHALL BE USED ONLY AT FRONT YARD AREAS AND ON SLOPES AND DITCH BOTTOMS ALONG C.R. 116 OR AS DIRECTED BY THE ENGINEER. APPROXIMATELY 2043 CU. YDS. OF THE EXCESS EXCAVATION MATERIAL SHALL BE USED AS FILL MATERIAL ON THE SOUTH SIDE OF C.R. 116 TO IMPROVE THE SHOULDERS, INSLOPES, DITCH BOTTOMS AND PROVIDE MORE COVER OVER PLANNED STORM SEWER PIPE.

SALVAGED BITUMINOUS MIXTURE QUANTITIES ARE COMPUTED AS THE VOLUME OF BITUMINOUS IN ITS ORIGINAL POSITION BASED ON AN AVERAGE DEPTH OF 0.33' AND AN AVERAGE WIDTH OF 24'.

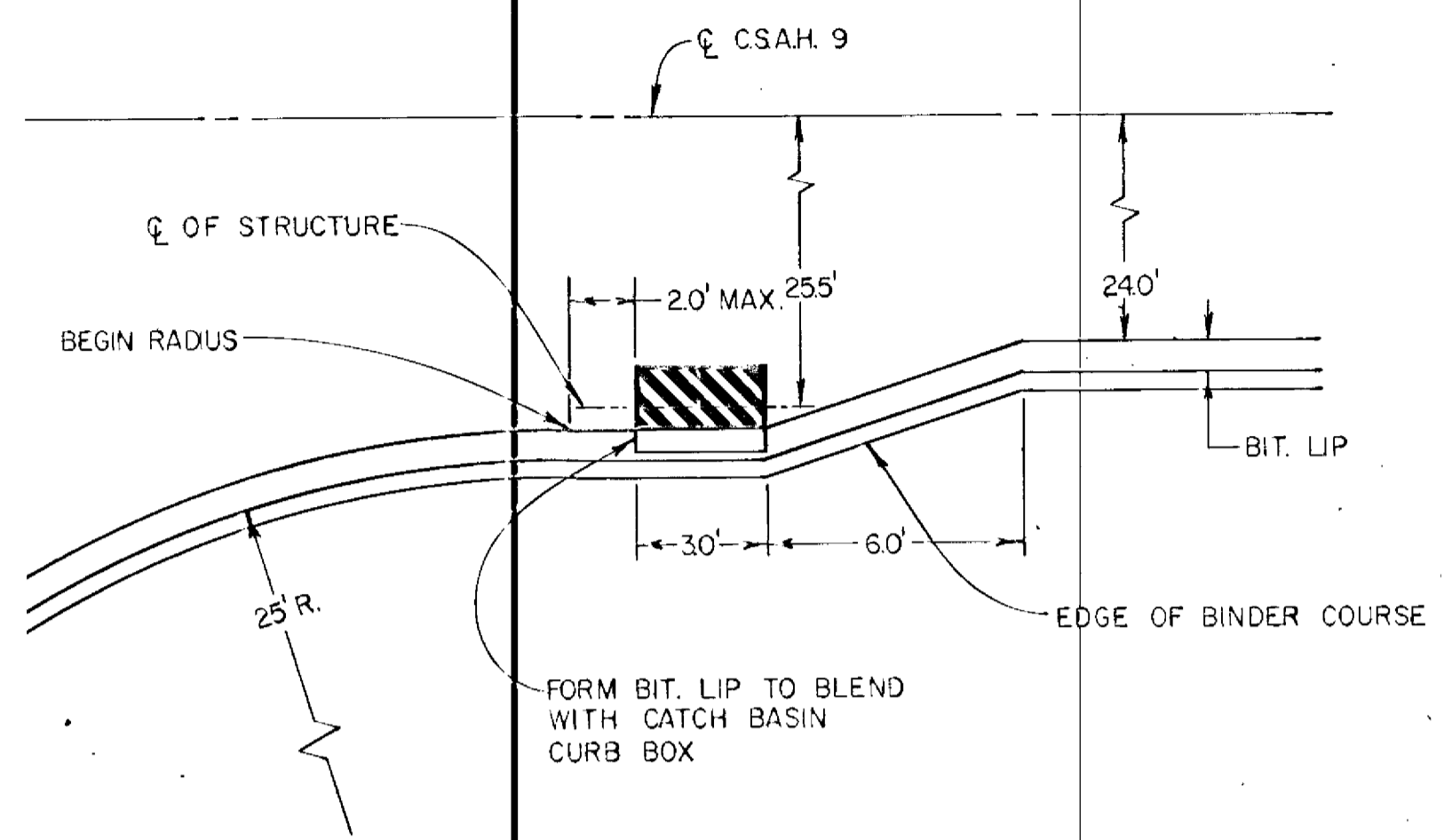
CLEARING AND GRUBBING

STATION (TO STATION)	LOC.	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
33+02	33' RT	1	----	1	----
35+02 - 36+56	33-40' RT	----	0.10	----	0.10
35+63	35' LT	1	----	1	----
36+68	30' LT	1	----	1	----
36+98	30' LT	4	----	1	----
37+11	34' RT	1	----	1	----
37+19	30' LT	2	----	1	----
37+42	34' RT	1	----	1	----
37+60	36' RT	2	----	1	----
38+06	34' RT	1	----	1	----
38+10	35' LT	1	----	1	----
38+38	35' RT	1	----	1	----
38+56	34' LT	1	----	1	----
38+69	33' RT	1	----	1	----
39+37 - 44+74	25-66' LT	----	0.50	----	0.50
39+46	31' RT	1	----	1	----
39+70	40' RT	2	----	1	----
40+46	34' RT	1	----	1	----
40+60	34' RT	1	----	1	----
40+74	34' RT	2	----	1	----
41+03	33' RT	1	----	1	----
41+31	32' RT	1	----	1	----
41+60	32' RT	3	----	1	----
42+76	33' RT	1	----	1	----
44+88	33' RT	6	----	1	----
45+24 - 46+68	31-37' RT	----	0.10	----	0.10
45+92 - 53+51	26-55' LT	----	0.65	----	0.65
48+93	35' RT	1	----	1	----
48+95	33' RT	----	----	1	----
48+95	38' RT	1	----	1	----
50+64	34' RT	5	----	1	----
LOR 53+89	35' RT	3	----	1	----
LOR 53+89	46' RT	1	----	1	----
LOR 54+12	32' LT	1	----	1	----
LOR 54+26	32' LT	1	----	1	----
LOR 54+28	35' RT	2	----	1	----
LOR 54+32	37' RT	1	----	1	----
LOR 54+85	30' LT	1	----	1	----
LOR 55+18	38' RT	1	----	1	----
LOR 55+53 - 55+98	25-26' LT	----	----	6	----
LOR 56+17 - 56+95	24-25' LT	----	----	7	----
LOR 57+26 - 57+94	24-25' LT	----	----	4	----
LOR 57+29	35' RT	3	----	1	----
LOR 58+04 - 58+88	23-25' LT	----	----	6	----
LOR 58+97	24' LT	4	----	1	----
LOR 66+84	22' LT	1	----	1	----
LOR 67+14	34' LT	4	----	1	----
LOR 68+12	29' LT	1	----	1	----
LNB 68+45	24' RT	1	----	1	----
LOR 69+18	28' LT	1	----	1	----
LOR 69+37	28' LT	2	----	1	----
LOR 69+62	27' LT	1	----	1	----
LOR 69+78	27' LT	1	----	1	----
LOR 69+96	30' LT	1	----	1	----
LSB 70+40	18' LT	1	----	1	----
LSB 70+63	20' LT	1	----	1	----
LSB 71+08	13' LT	1	----	1	----
LSB 71+31	14' LT	1	----	1	----
LSB 71+59	14' LT	1	----	1	----
LSB 71+92	15' LT	2	----	1	----
LSB 72+07	14' LT	1	----	1	----
LSB 74+99	10' LT	2	----	1	----
LSB 75+02	13' LT	2	----	1	----
LSB 78+21	9' LT	----	----	1	----
LSB 78+57	7' LT	----	----	1	----
LSB 79+08	14' LT	1	----	1	----
TOTAL		87	1.35	80	1.35

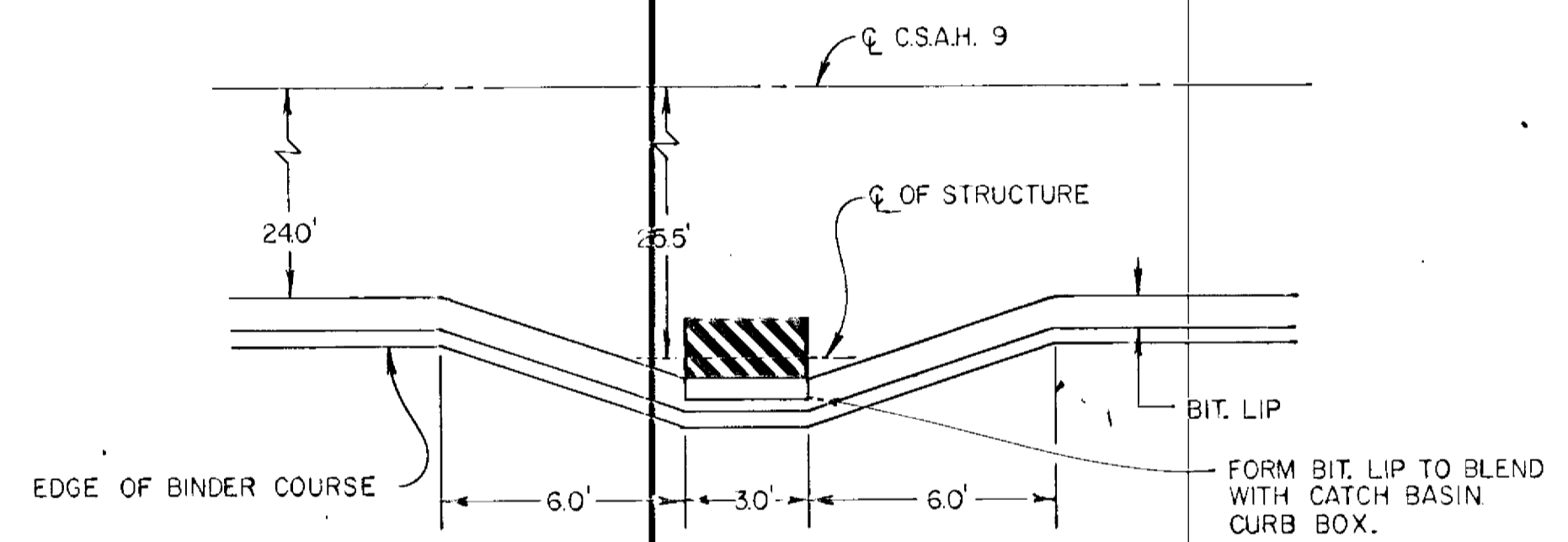


SPECIAL CATCH BASIN DETAIL
SCALE: 1/2" = 1'-0"

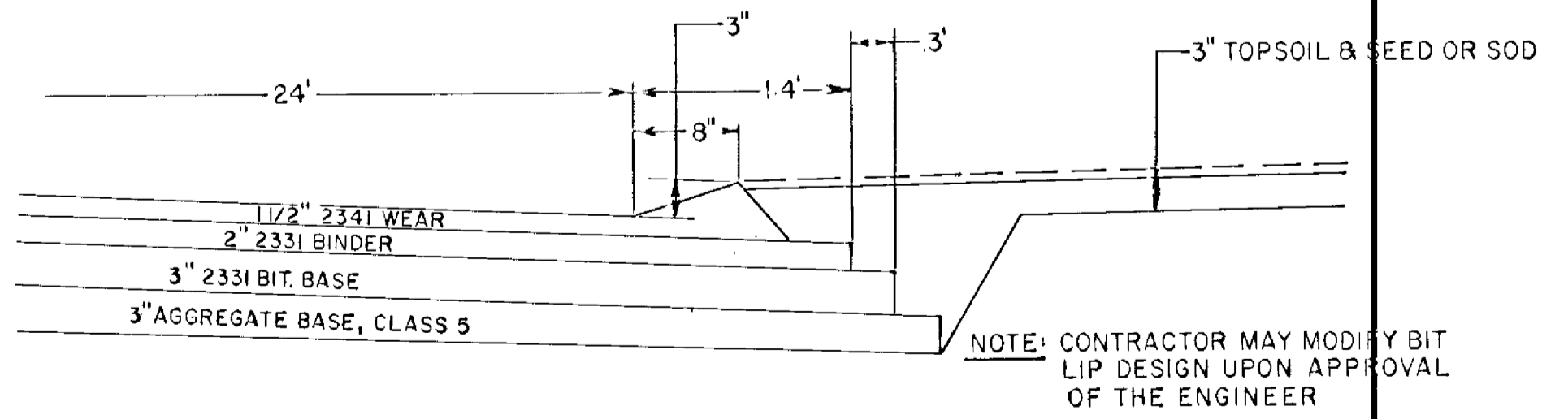
CATCH BASIN LOCATION DESIGN INTERSECTIONS



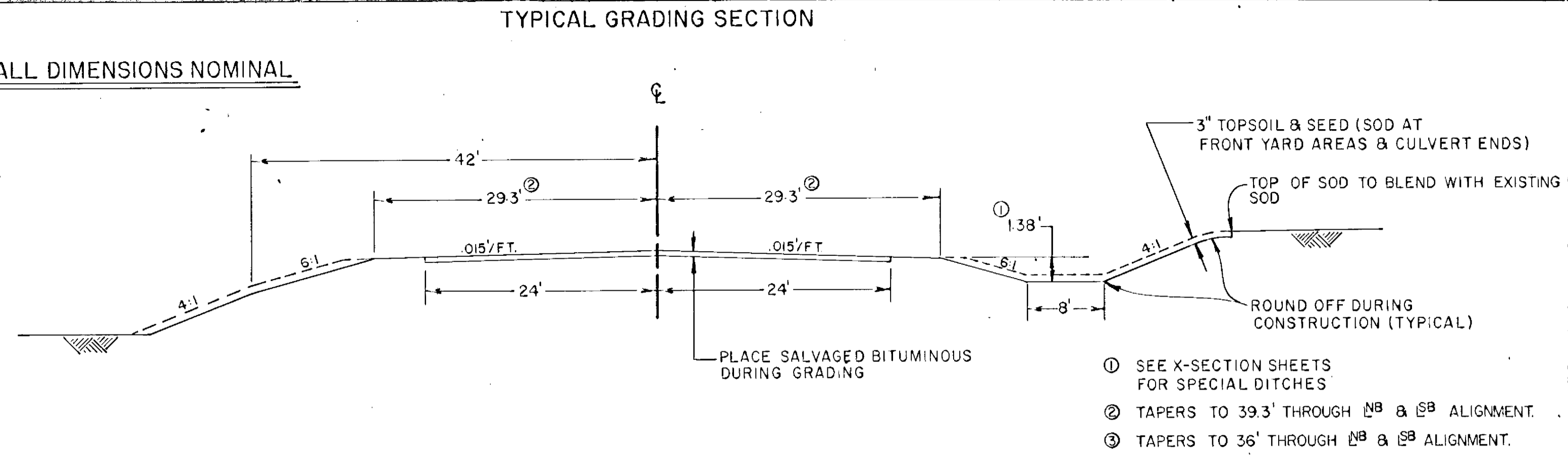
CATCH BASIN DESIGN LOW POINT



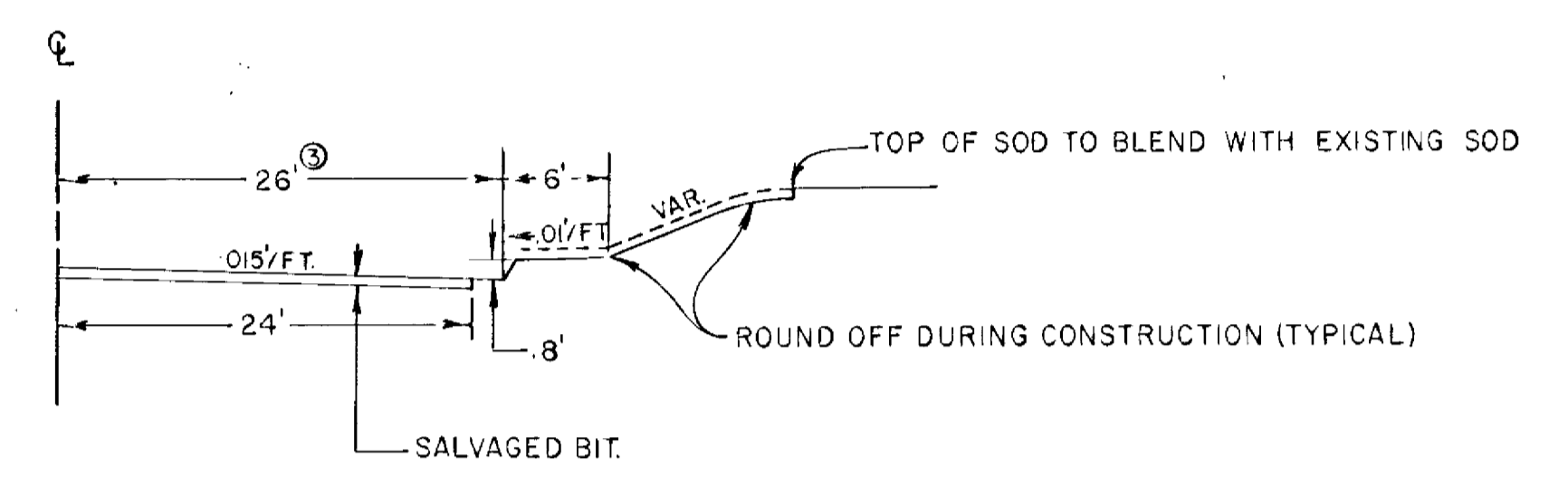
DETAIL "A"



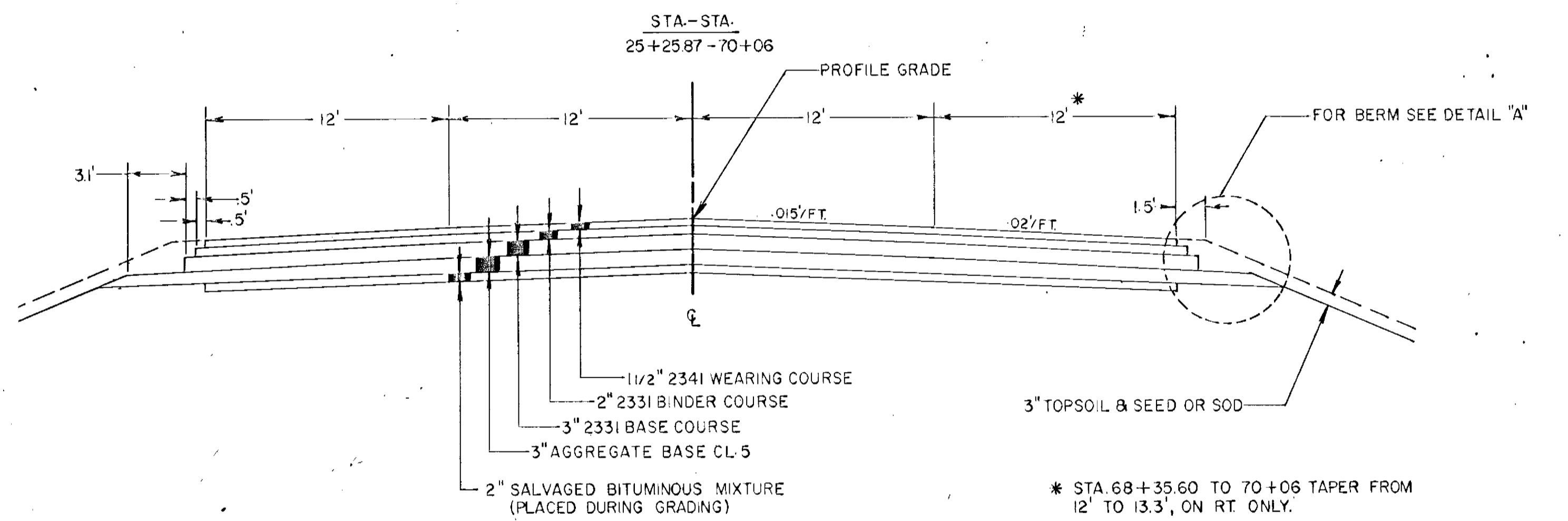
ALL DIMENSIONS NOMINAL



BERM AREAS

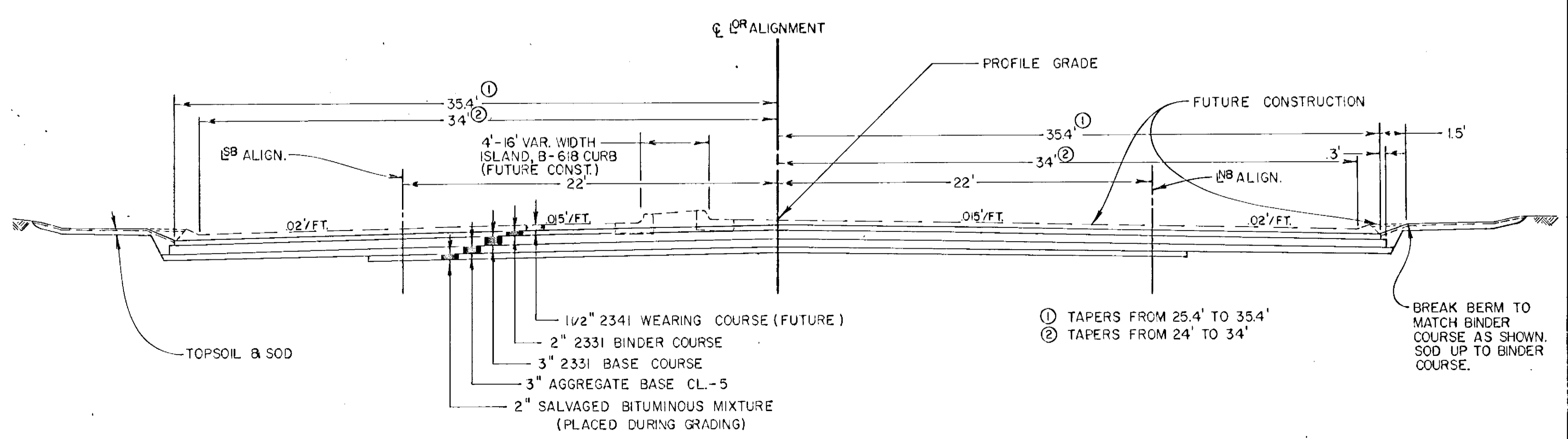


TYPICAL BASE & SURFACING SECTION



TYPICAL BASE & SURFACING SECTION

LOCATION
FULL WIDTH STA. 78+00.79 - 81+00
TAPER LT. STA. 70+06 - 78+00.79
TAPER RT. STA. 70+06 - 76+20.57



STORM SEWER SYSTEM

NO.	STATION	LOCATION	REMARKS	TYPE	DESIGN	LIN. FT.	REMOVE SEWER PIPE	TOP	OUTLET	F&I CASTING ASSEMBLY	DRAINS TO	F&I R.C. PIPE SEWER									
												12"	15"	18"	24"	30"	36"				
1	53+63	42' LT	F&I 18" RCP APRON	MH	A or F	7.5'		874.0	866.58	A	POND										
2	54+23	12' LT		MH	A or F	6.0'		872.88	866.98	A	MH #1										
3	54+28	25.5' LT		CB	#2	3.8'		872.58	869.0	C	MH #2	15'									
4	54+28	25.5' RT		CB	#2	5.0'		872.58	867.88	C	MH #2	38'									
5	57+00	12' LT		MH	A or F	6.3'		874.29	868.03	A	MH #2								277'		
6	59+80	12' LT		MH	C or G	5.1'		874.13	869.09	A	MH #5								280'		
7	59+86	25.5' LT		CB	#2	4.9'		873.81	869.17	C	MH #6								15'		
8	59+86	25.5' RT		CB	#2	4.3'		873.81	869.73	C	MH #6	38'									
9	61+61	25.5' LT		CB	#2	5.0'		874.81	870.08	C	CB #7								175'		
10	61+61	25.5' RT		CB	#2	4.2'		874.81	870.84	C	CB #9	51'									
11	65+03	25.5' LT		CB	#2	5.2'		876.06	871.11	C	CB #9								342'		
12	65+03	25.5' RT		CB	#2	4.4'		876.06	871.87	C	CB #11	51'									
13	67+00	25.5' LT		CB	#2	3.8'		875.28	871.70	C	CB #11								197'		
14	67+00	25.5' RT		CB	#2	3.3'		875.28	872.21	C	CB #13	51'									
15	72+45	LSB 13.5' LT		CB	#2	4.4'		875.59	871.45	C	CB #21	90'									
16	72+45	LNB 13.5' RT		CB	#2	4.2'		875.54	871.64	C	MH #19	75'									
17	72+75	LNB 42' RT		CB	C or G	3.6'		875.38	871.61	B	CB #18	30'									
18	73+05	LNB 42' RT		CB	C or G	3.7'		875.38	871.46	B	MH #19	40'									
19	73+20	LNB 6' RT		MH	C or G	4.2'		875.36	871.26	A	CB #21								52'		
20	73+35	LNB 13.5' RT		CB	#2	4.0'		875.14	871.41	C	MH #19	15'									
21	73+35	LSB 13.5' LT		CB	#2	4.6'		875.21	870.86	C	CB #22								165'		
22	75+00	LSB 12.9' LT		CB	C or G	5.4'		875.93	870.37	B	CB #26								195'		
23	76+35	LNB 42' RT		CB	C or G	4.8'		876.68	871.65	B	CB #24	30'									
24	76+65	LNB 42' RT		CB	C or G	5.1'		876.68	871.35	B	CB #25	40'									
25	76+95	LNB 12.9' RT		CB	C or G	5.6'		876.78	870.95	B	CB #26	70'									
26	76+95	LSB 12.9' LT		CB	A or F	6.8'		876.79	869.79	B	MH #27								295'		
27	79+90	LSB 28' LT		MH	A or F	9.5'		877.87	868.41	A	MH #29								247'		
28	80+80	26' LT	F&I 18"x8" RCP STUB & MORTAR END	MH	A or F	9.6'		878.74	869.21	A	MH #27								103'		
29	126+00	40' RT		MH	A or F	9.4'		876.60	867.32	A	MH #30								350' ^⓪		
30	122+50	40' RT	SOUTH SIDE CR #116	MH	C or G	5.6'		871.30	865.82	A	MH #31								250' ^⓪		
31	120+00	40' RT	F&I 24" RCP APRON	MH	C or G	4.5'		869.20	864.74	A	POND								262' ^⓪		
TOTALS =												634'	781'	1,519'	1,109'	350'	512'				

NOTE:

⓪ FOR ALTERNATE PIPE SEWER
F&I 36" R.C. APRON FOR 36" OUTLET

SODDING		
STATION	LOCATION	S.Y.
32+90 - 34+90	RT. 25' - 49'	416
33+00 - 38+10	LT. 25' - 31'	340
34+90 - 37+05	RT. 25' - 31'	143
37+05 - 39+85	RT. 25' - 43'	472
38+10 - 41+50	LT. 25' - 44'	531
41+50 - 42+00	LT. 25' - 31'	33
39+85 - 41+50	RT. 25' - 31'	110
41+50 - 42+75	RT. 25' - 54'	228
43+00 - 45+00	DIT. BOTTOM LT.	344
43+00 - 45+00	DIT. BOTTOM RT.	400
53+70 - 58+45	LT. 25' - 42'	733
53+85 - 58+82	RT. 25' - 43'	861
58+45 - 69+00	LT. 25' - 31'	666
58+82 - 59+95	RT. 25' - 31'	79
59+95 - 65+20	RT. 25' - 51'	821
65+20 - 65+85	RT. 25' - 31'	43
65+85 - 67+45	RT. 25' - 40'	189
67+45 - 69+18	RT. 25' - 31'	115
69+00 - 71+00	LT. 25' - 40'	197
69+50 - 80+08	RT. 25' - 51'	1,296
71+00 - 80+08	LT. 25' - 40'	583
TOTAL =		8,600

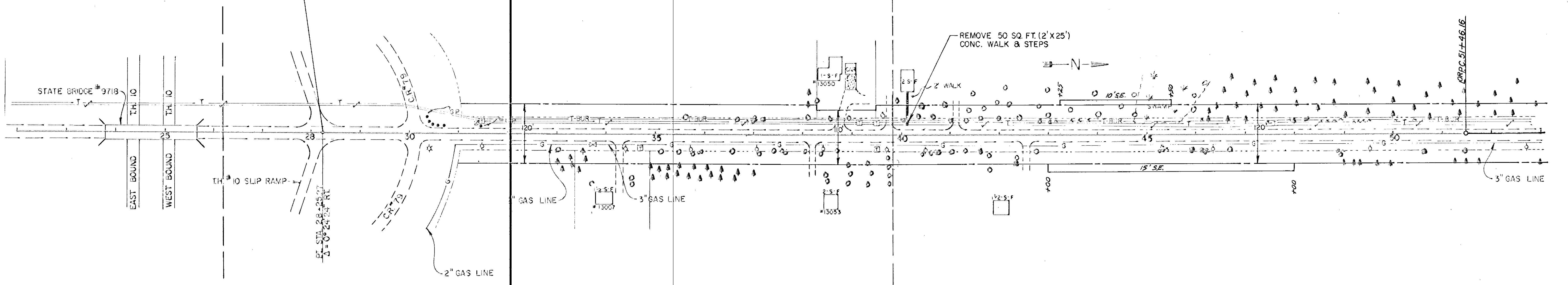
SALVAGE & INSTALL FENCE				
STATION	LOC.	SALVAGE	INSTALL	REMARKS
LOR 54+10-55+02	29' LT	92'		WOOD FENCE
LOR 54+10	28-48' LT	20'		WOOD LINE FENCE
LNB 70+19	27-46' RT	19'		CHAIN LINK LINE FENCE
LNB 70+19-70+98	26-27' RT	79'	79'	INSTALL CHAIN LINK FENCE ON RAW LINE
LNB 70+98	26-45' RT	19'		CHAIN LINK LINE FENCE
TOTALS		229'	79'	

CASTING ASSEMBLIES

ASSEMBLY	ITEM	CASTING NO.	QUANTITIES
A	FRAME	700-7	10
	COVER	711	
B	FRAME	801	7
	GRATE	810	
	CURB BOX	821B	
C	NEENAH R-3067 WITH DIAGONAL GRATE OR EQUAL		14

B.M. 6, ELEV. 877.85
 TOP SE. COR. BOT. STEP
 HOUSE NO. 13050, STA. 38 +50
 LT. 120'

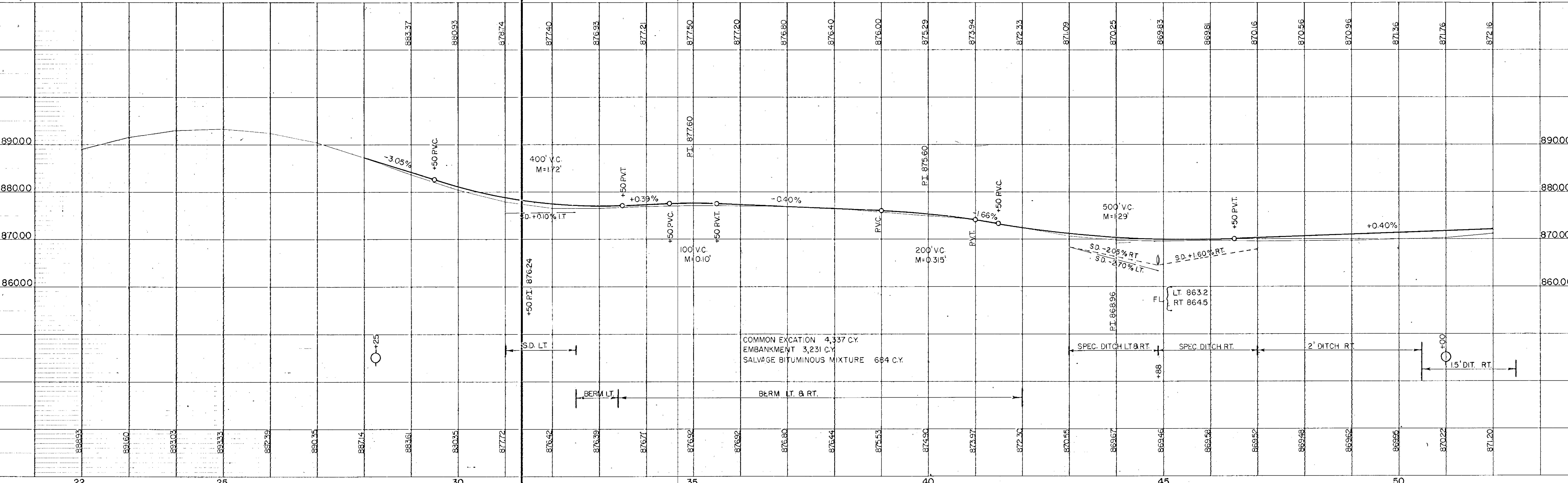
BEGIN PROJECT
 STA. 28 +25.27



B.M. 4, ELEV. 893.35
 M.H.D. OVERPASS NO. 9718, SE
 WINGWALL STA. 24 +80 RT. 21'

B.M. 5, ELEV. 879.22
 TOP N.W. COR. BOT. STEP
 HOUSE #13007, STA. 33 +80
 RT. 45'

44+88 @ CROSS CULV.
 F&I. 24" X 82" R.C.P. CULV. CL.-2
 F&I. 2-24" RCP APRONS



COMMON EXCAVATION 4,337 C.Y.
 EMBANKMENT 3,231 C.Y.
 SALVAGE BITUMINOUS MIXTURE 684 C.Y.

$ICR\ PI. 53+13.09$
 $\Delta = 1^{\circ}40'09" LT.$
 $D = 0^{\circ}30'$
 $T = 166.93'$
 $L = 333.83'$
 $R = 11,459.16'$

$ICR\ PI. 54+79.99$

$PI. 51+35.94$
 $\Delta = 0^{\circ}06'57" LT.$

$ICR\ PC. 60+89.11$

$ICR\ PI. 62+00.00$
 $\Delta = 0^{\circ}33'16" RT.$
 $D = 0^{\circ}15'$
 $T = 110.89'$
 $L = 221.78'$
 $R = 22,918.31'$

$ICR\ PT. 63+10.89$

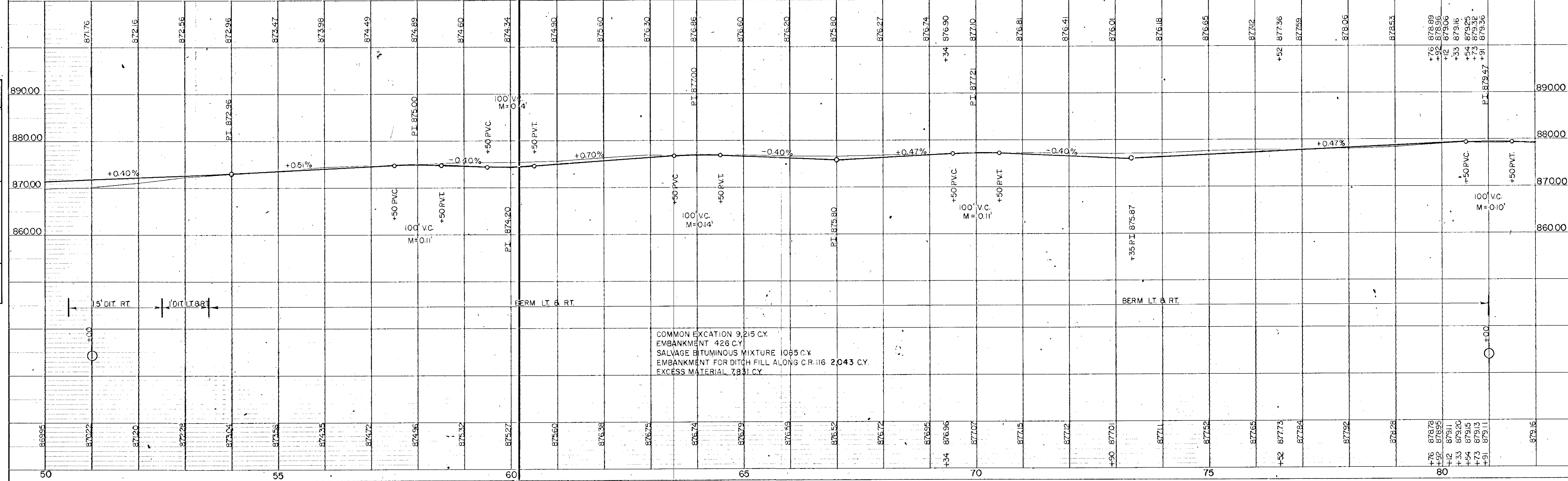
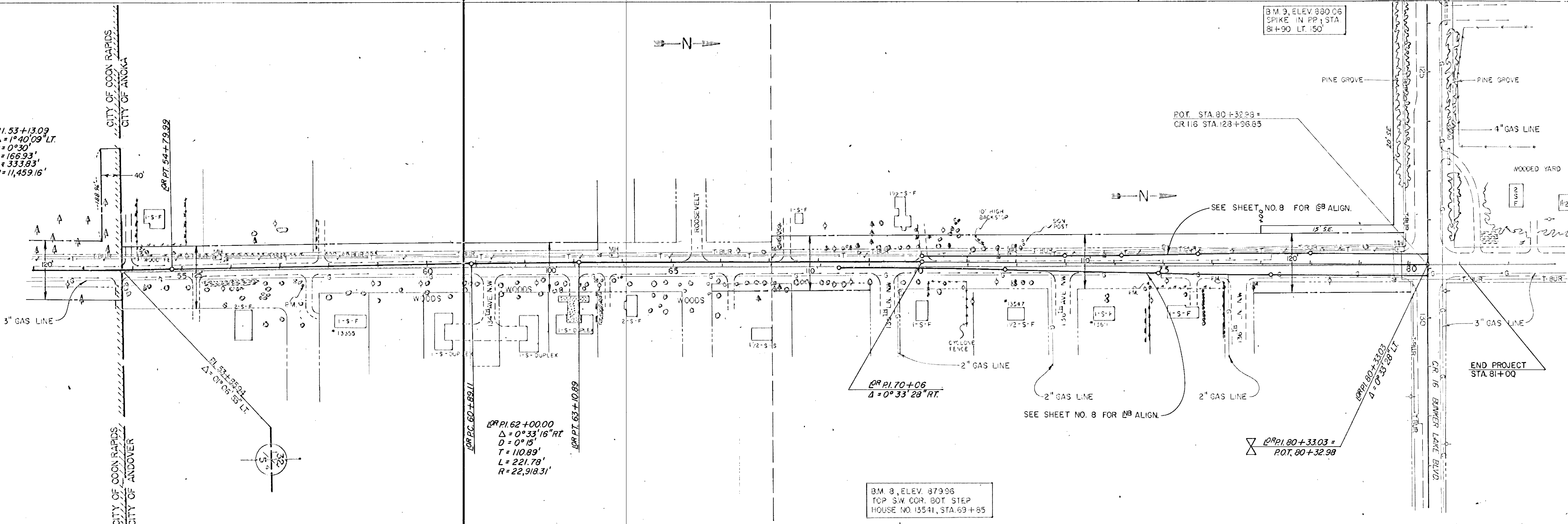
$ICR\ PI. 70+06$
 $\Delta = 0^{\circ}33'28" RT.$

B.M. 9, ELEV. 830.06
 SPIKE IN PP, STA. 81+90
 LT. 150

POT. STA. 80+32.98 =
 CR 116 STA. 128+96.65

$ICR\ PI. 80+33.03 =$
 POT. 80+32.98

B.M. 8, ELEV. 879.96
 TOP S.W. COR. BOT. STEP
 HOUSE NO. 13541, STA. 69+85

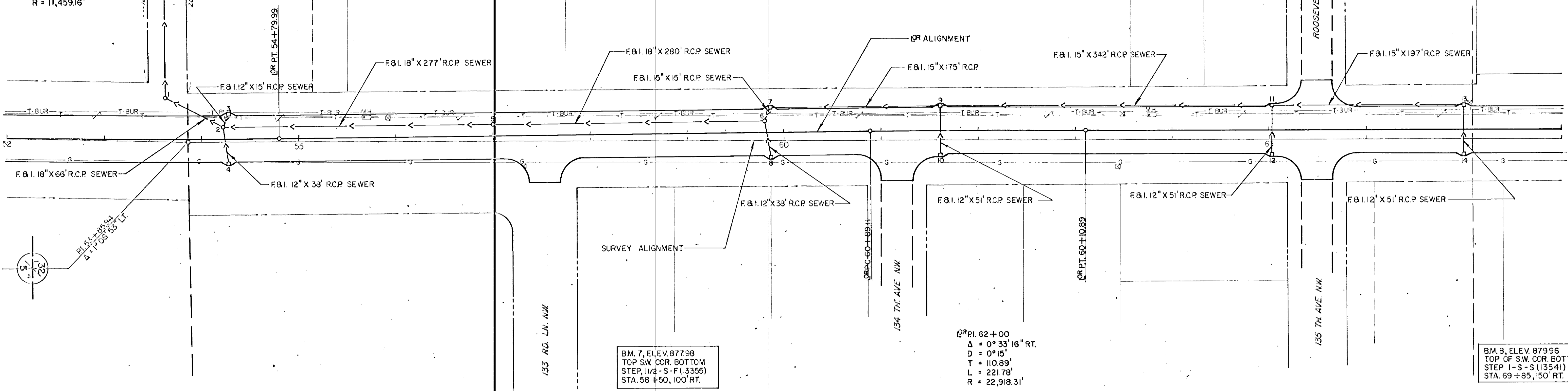


STORM SEWER DETAIL



OR PI. 53+13.09
 $\Delta = 1^\circ 40' 09''$ LT.
 $D = 0^\circ 30'$
 $T = 166.93'$
 $L = 333.93'$
 $R = 11,459.16'$

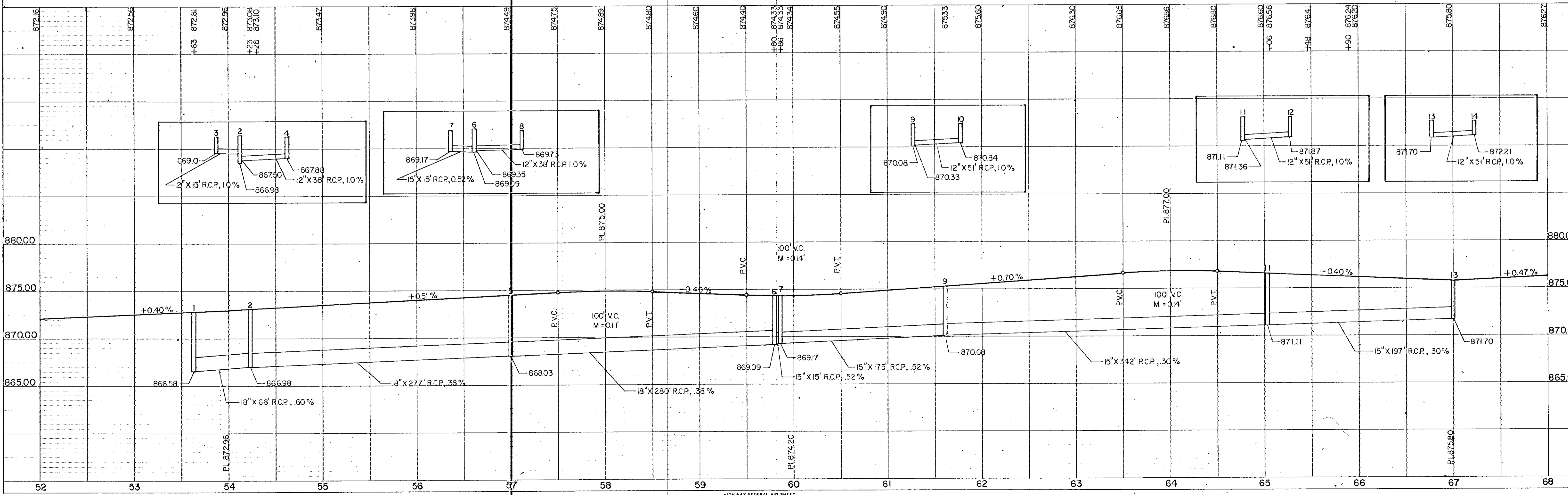
F&I. 18" X 138' RCP SEWER, .60%
 F&I. 18" RCP APRON
 FL. 865.72
 SEE SHEET NO. 16 FOR DETAILS



BM. 7, ELEV. 877.98
 TOP SW. COR. BOTTOM
 STEP, 1/2-S-S (13355)
 STA. 58+50, 100' RT.

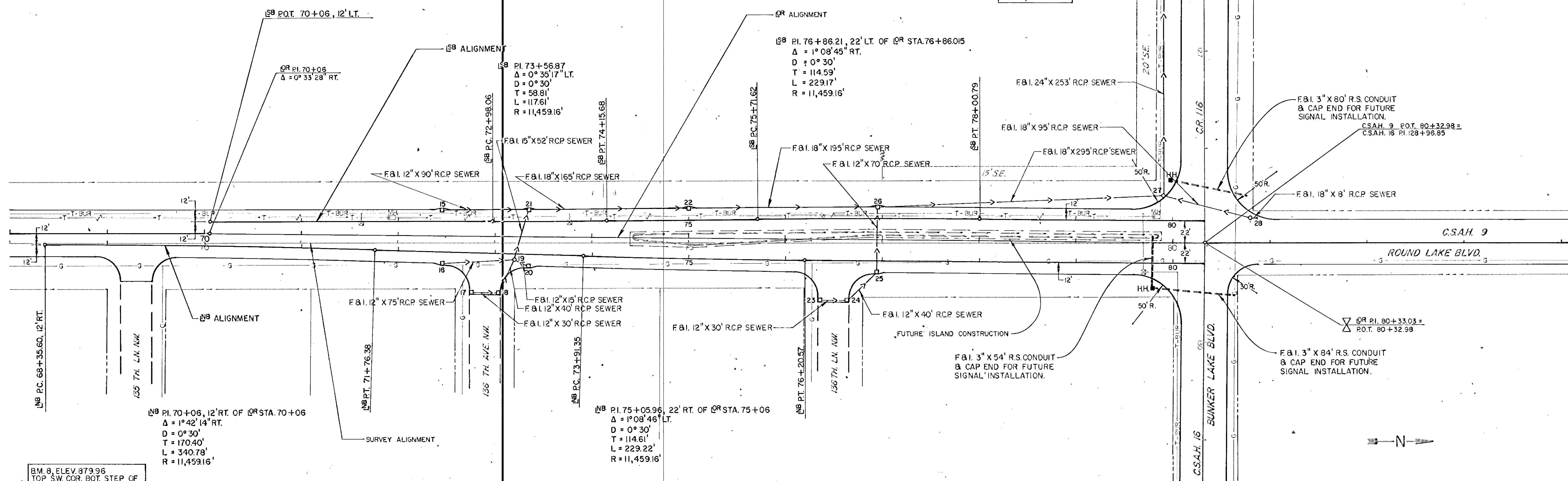
OR PI. 62+00
 $\Delta = 0^\circ 33' 16''$ RT.
 $D = 0^\circ 15'$
 $T = 110.89'$
 $L = 221.78'$
 $R = 22,918.31'$

BM. 8, ELEV. 879.96
 TOP OF S.W. COR. BOTTOM
 STEP 1-S-S (13541)
 STA. 69+85, 150' RT.



STORM SEWER DETAIL

BM 9, ELEV. 880.06
SPIKE IN PP, STA. 81+90, LT. 150



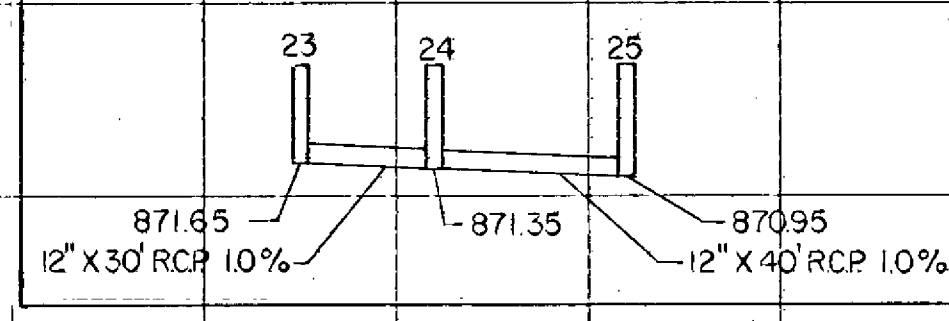
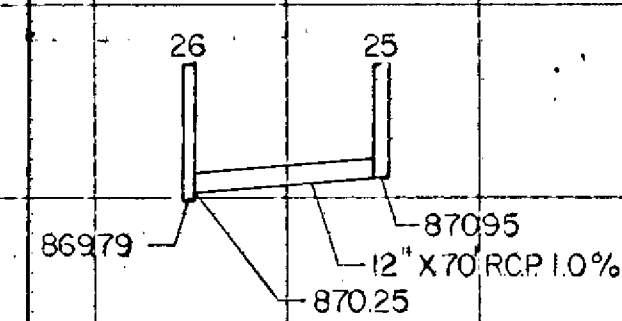
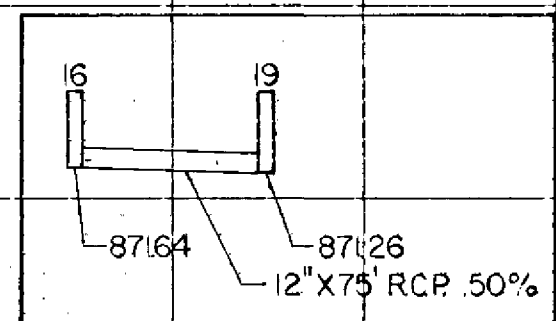
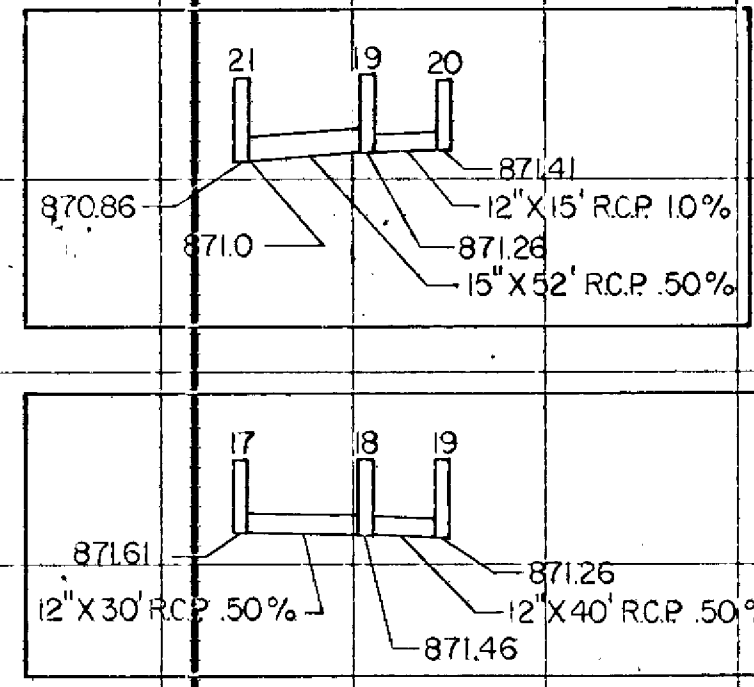
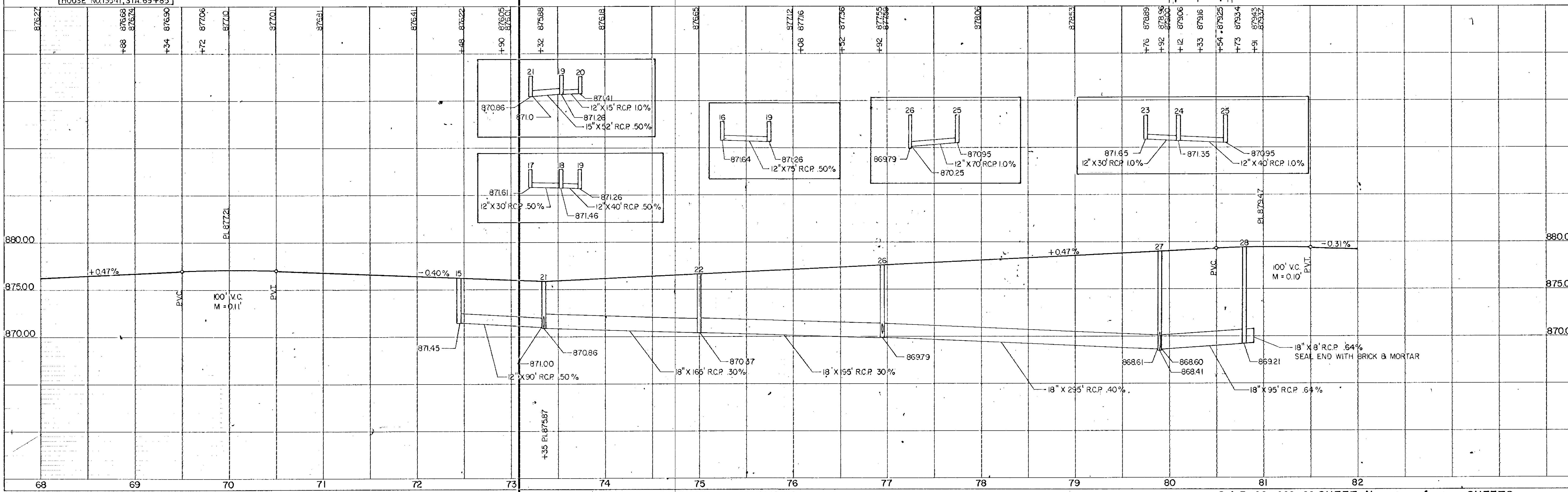
SB POT. 70+06, 12' LT.
OR PI. 70+06
 $\Delta = 0^\circ 33' 28''$ RT.
SB PI. 73+56.87
 $\Delta = 0^\circ 35' 17''$ LT.
D = $0^\circ 30'$
T = 58.81'
L = 117.61'
R = 11,459.16'

OR ALIGNMENT
SB PI. 76+86.21, 22' LT. OF OR STA. 76+86.015
 $\Delta = 1^\circ 08' 45''$ RT.
D = $0^\circ 30'$
T = 114.59'
L = 229.17'
R = 11,459.16'

NB PI. 70+06, 12' RT. OF OR STA. 70+06
 $\Delta = 1^\circ 42' 14''$ RT.
D = $0^\circ 30'$
T = 170.40'
L = 340.78'
R = 11,459.16'

NB PI. 75+05.96, 22' RT. OF OR STA. 75+06
 $\Delta = 1^\circ 08' 46''$ LT.
D = $0^\circ 30'$
T = 114.61'
L = 229.22'
R = 11,459.16'

BM 8, ELEV. 879.96
TOP SW COR. BOT. STEP OF
HOUSE NO. 13541, STA. 69+85



STORM SEWER CONST. - CR.116

INTERSECTION: C.S.A.H.#9 ROUND LAKE BLVD. &
C.R.#116 BUNKER LAKE BLVD.
SCALE 1" = 100'

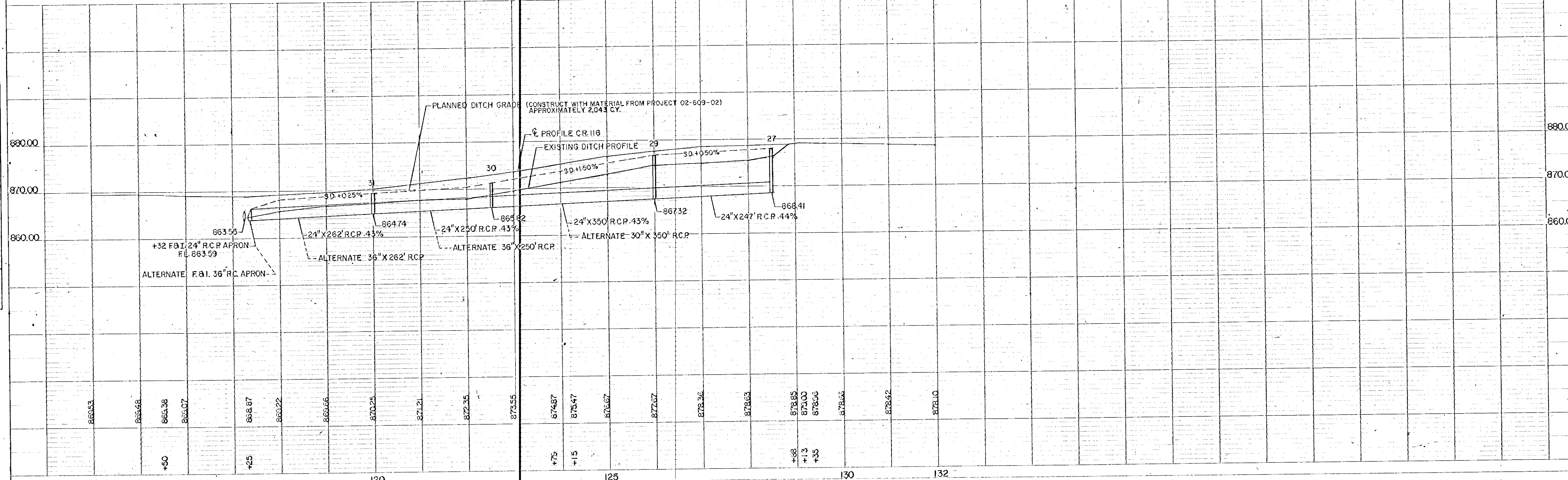
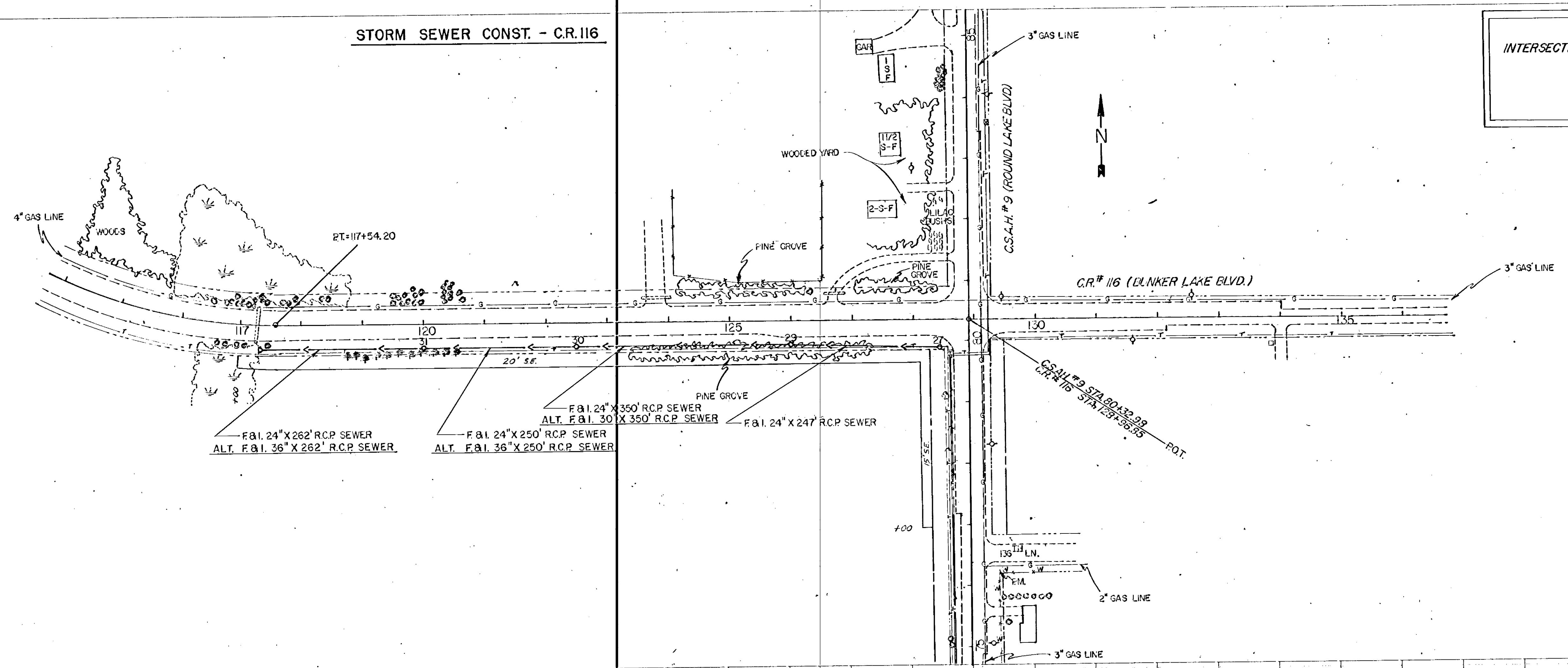


PLATE 1 - SINGLE PLAN AND PROFILE LINE & FOOT

EXCAVATION EMBANKMENT

Exc. Notes C.U. C.C. Sub. Locals
102 103 104

131 220

29+00 883.6

28+00 887.1

27+00 890.3

26+00 892.3

25+00 893.3

24+00 893.0

23+00 891.6

30+00 876.9

35+00 876.9

34+00 876.6

33+00 876.3

32+00 876.4

31+00 877.7

30+00 880.3

140 Beg. Pack

185 0

12T SAND ENT

107 56

2'DIT.

57 163

+4 END S.D. +0.10% 87567

508(560)

+00 BEG. S.D. +0.10% 87550

35 252

144 144

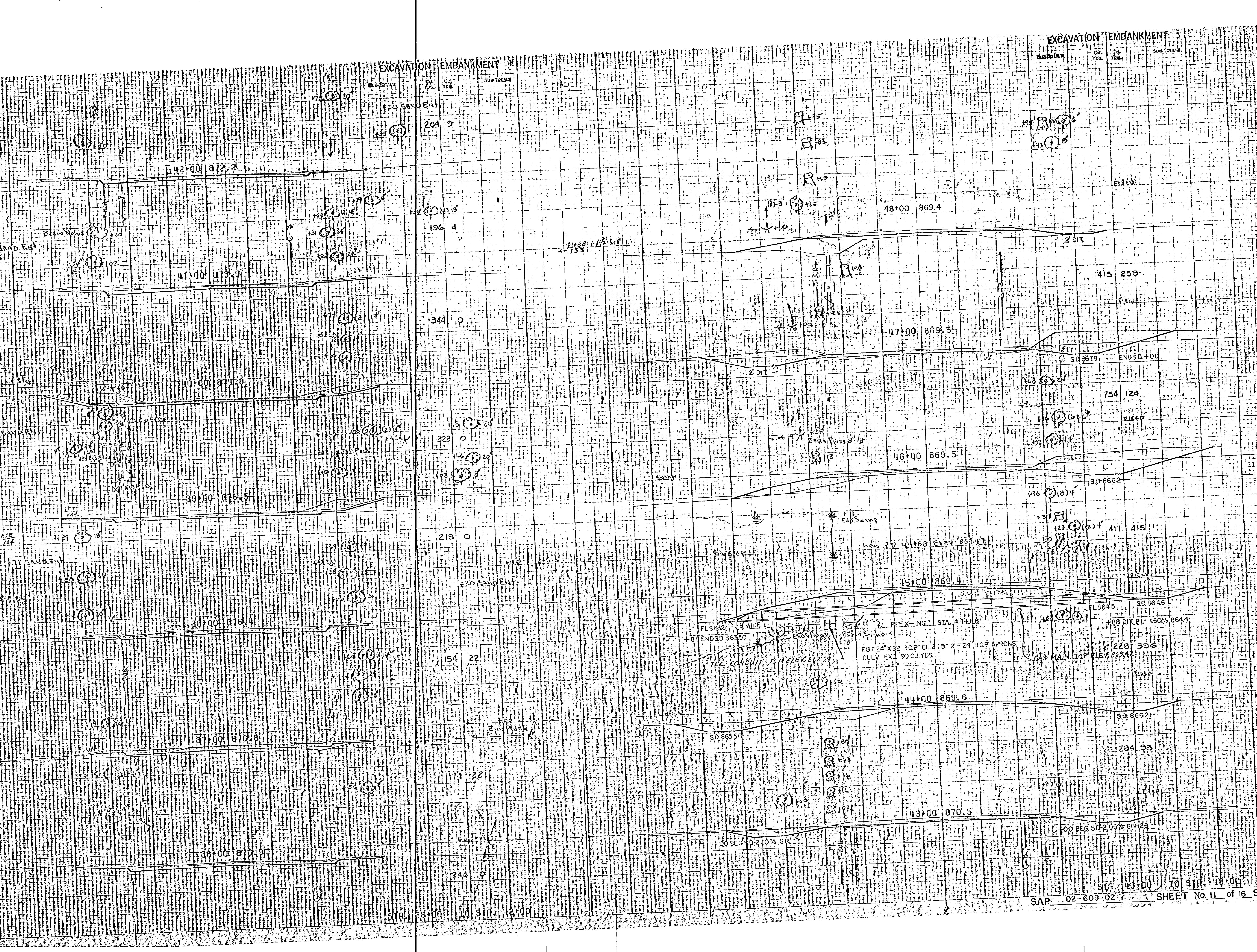
129 TH. AVE. NW

E. CR. 79

Sta. 23+00 TO Sta. 29+00

Sta. 30+00 TO Sta. 35+00

SAP 02-609-02 SHEET No. 10 of 16 SHE



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

42+00 872.2

41+00 873.9

40+00 874.8

39+00 875.5

38+00 876.4

37+00 876.8

36+00 876.9

48+00 869.4

47+00 869.5

46+00 869.5

45+00 869.1

44+00 869.6

43+00 870.5

415 259

754 124

417 415

228 356

294 93

FL 8632 8' WIDE

+88' ENDS D 863.50

PPEX-ING STA. 43+88'

24" RCP CL 2' & 24" RCP APRONS

CULV. EXC. 90 CUYDS.

SD 8645

+88' DIT. PI 160% 8644

228 356

MAIN TOP ELEV. 863.42

SD 86621

294 93

SD 86626

200 BEG SD 2.05% 86626

SD 86656

200 BEG SD 2.10% GR

SD 86626

SD 86626

SD 86626

SD 86626

SD 86626

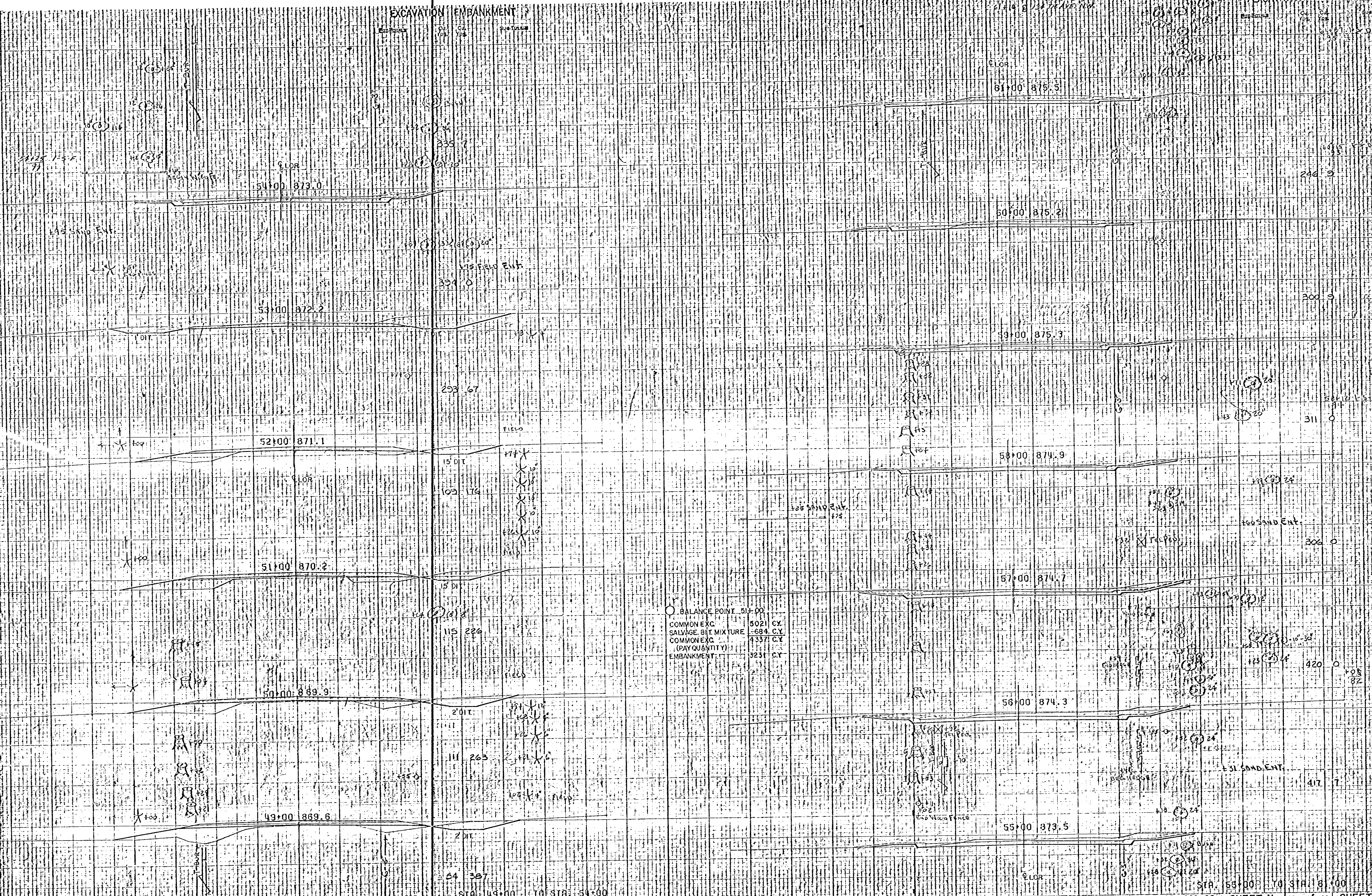
SD 86626

STA. 43+00 TO STA. 48+00

SAP 02-609-02 SHEET No. 11 of 16

EXCAVATION EMBANKMENT

21+14 23+17 45' NW
 EXCAVATION EMBANKMENT



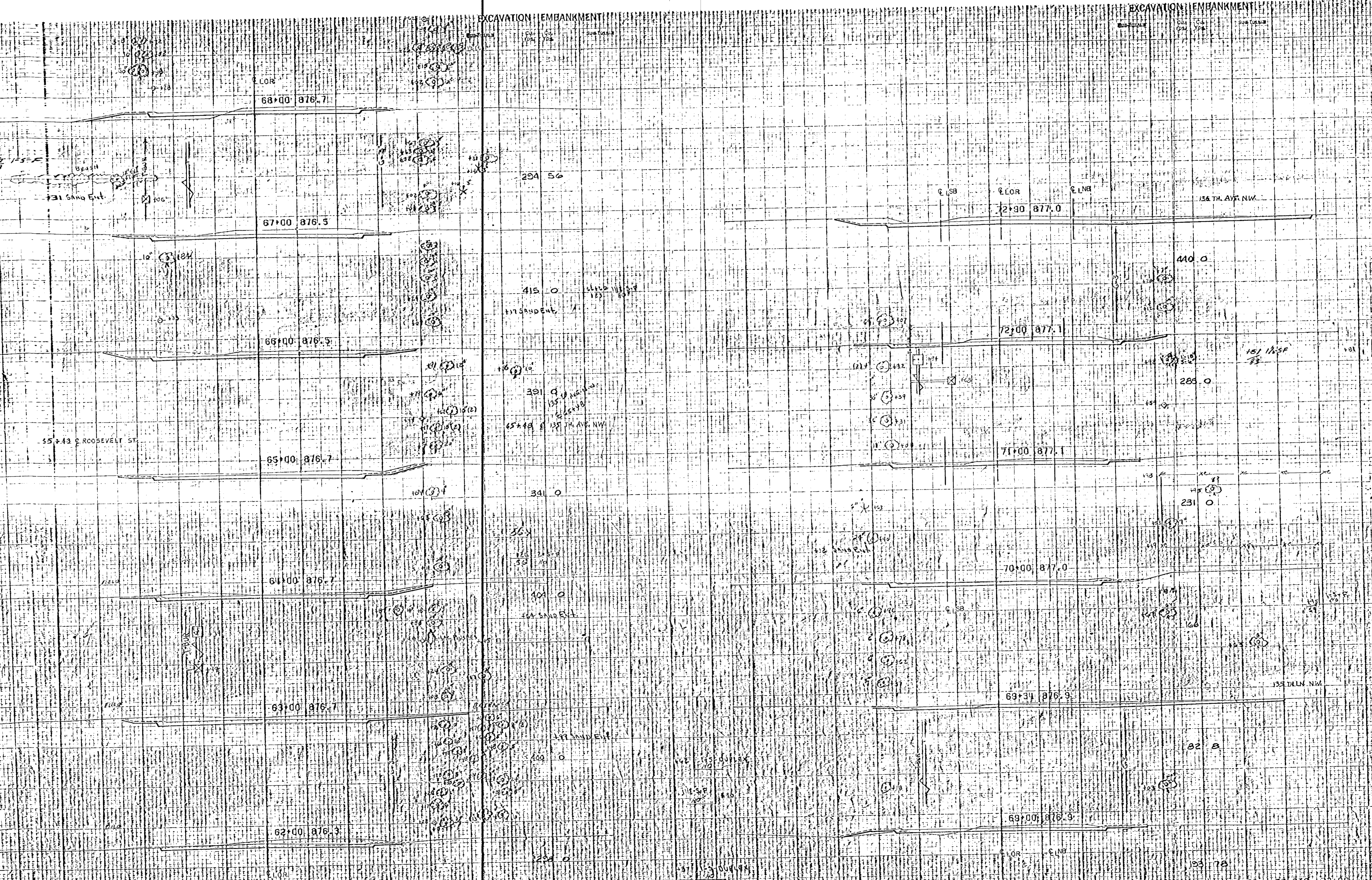
○ BALANCE POINT	51+00
COMMON EXC.	5021 C.Y.
SALVAGE BIT MIXTURE	-684 C.Y.
COMMON EXC. (PAY QUANTITY)	4337 C.Y.
EMBANKMENT	3231 C.Y.

STA. 49+00 TO STA. 54+00

STA. 55+00 TO STA. 61+00

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT



67+00 876.5

66+00 876.9

65+00 876.7

64+00 876.7

63+00 876.7

62+00 876.3

72+90 877.0

72+00 877.1

71+00 877.1

70+00 877.0

69+34 876.9

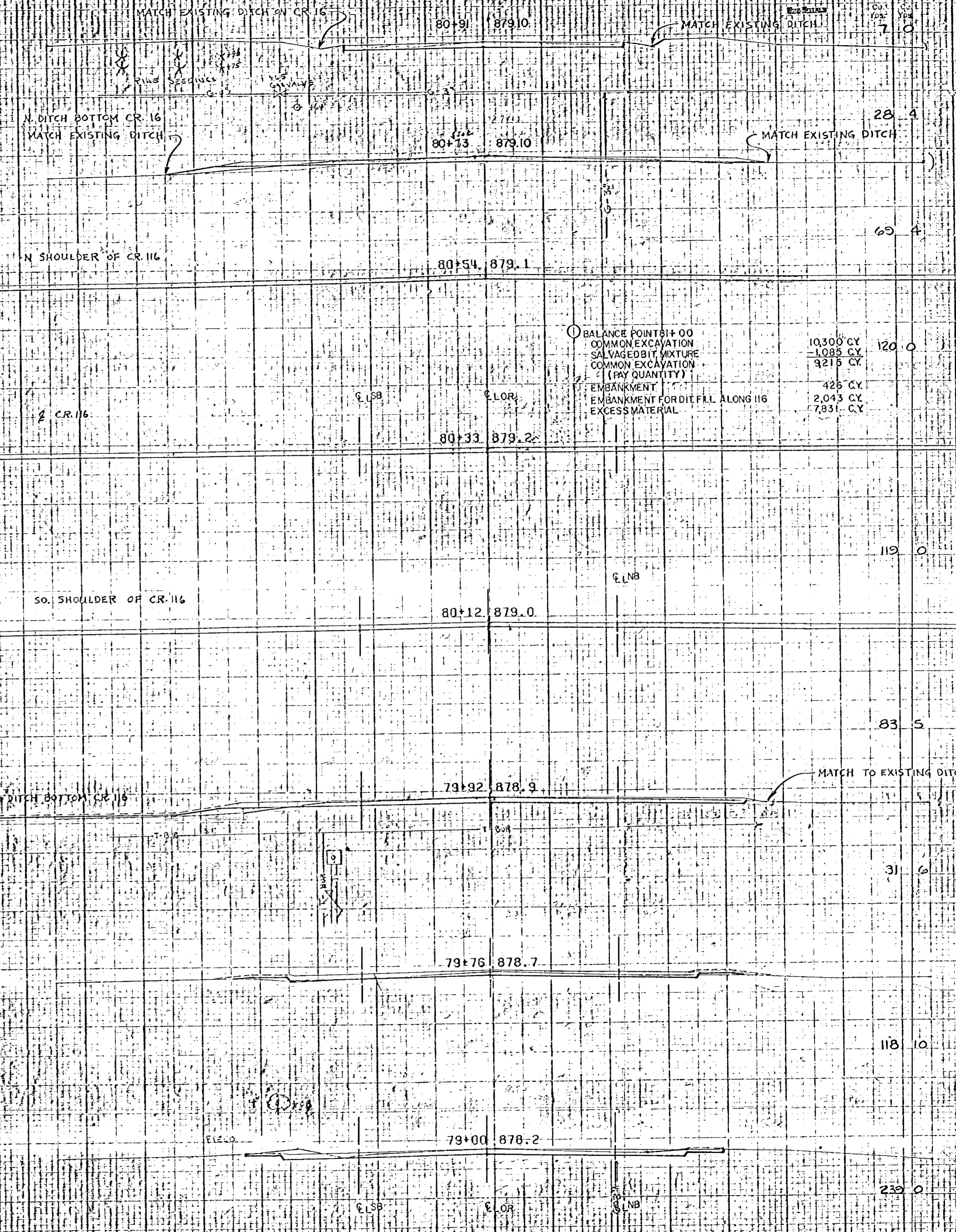
69+00 876.9

STN. 62+00 TO STN. 69+00

STN. 69+00 TO STN. 72+90

EXCAVATION EMBANKMENT

Excavation	Emb. Soil	Emb. Yds.	Excav. Yds.	Sub. Yards



BALANCE POINTS ± 00

COMMON EXCAVATION	10,300 CY	120 0
SALVAGED BIT MIXTURE	-1,085 CY	
COMMON EXCAVATION (PAY QUANTITY)	9,215 CY	
EMBANKMENT	426 CY	
EMBANKMENT FOR DIT. FILL ALONG 116	2,043 CY	
EXCESS MATERIAL	7,831 CY	

STA. 74+00 TO STA. 78+00

STA. 79+00 TO STA. 80+54

STORM SEWER CONST. - CR.116

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

Excavation Embankment

Excavation Embankment

120+00 870.36

SD. 867.50

0 111

125+00 876.84

SD. 874.05

0 163

119+00 869.78

SD. 867.25

0 102

124+00 875.44

SD. 872.55

0 123

118+00 869.31

SD. 867.00

0 41

123+00 873.70

0 133

117+26 868.96

FL. 864.05

36" X 62" CMP

FL. 863.55

122+00 872.50

0 161

117+00 868.90

121+00 871.33

0 123

116+00 869.07

STORM SEWER CONST. - C.R. 116

EXCAVATION		EMBANKMENT	
Excavation	Emb.	Excavation	Emb.
Station	Station	Station	Station

1513 C.Y. TOTAL x 135% (SHRINKAGE FACTOR) = 2,043 C.Y.

