

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR STORM SEWER BIT BASE & BIT SURFACING

County State Aid Highway No. 51

A PT. NORTH TOUCHDOWN POINT OF
Between INTERCHANGE T.H. NO. 10 CR. NO. 51 And A PT. 1,800 FT. NO. 109TH AVE.

From 748.5' NO. of E 1/4 COR. SEC. 36 T31N R24W to 1732.67' NO. of NE 1/4 COR. SEC. 24 T31N R24W

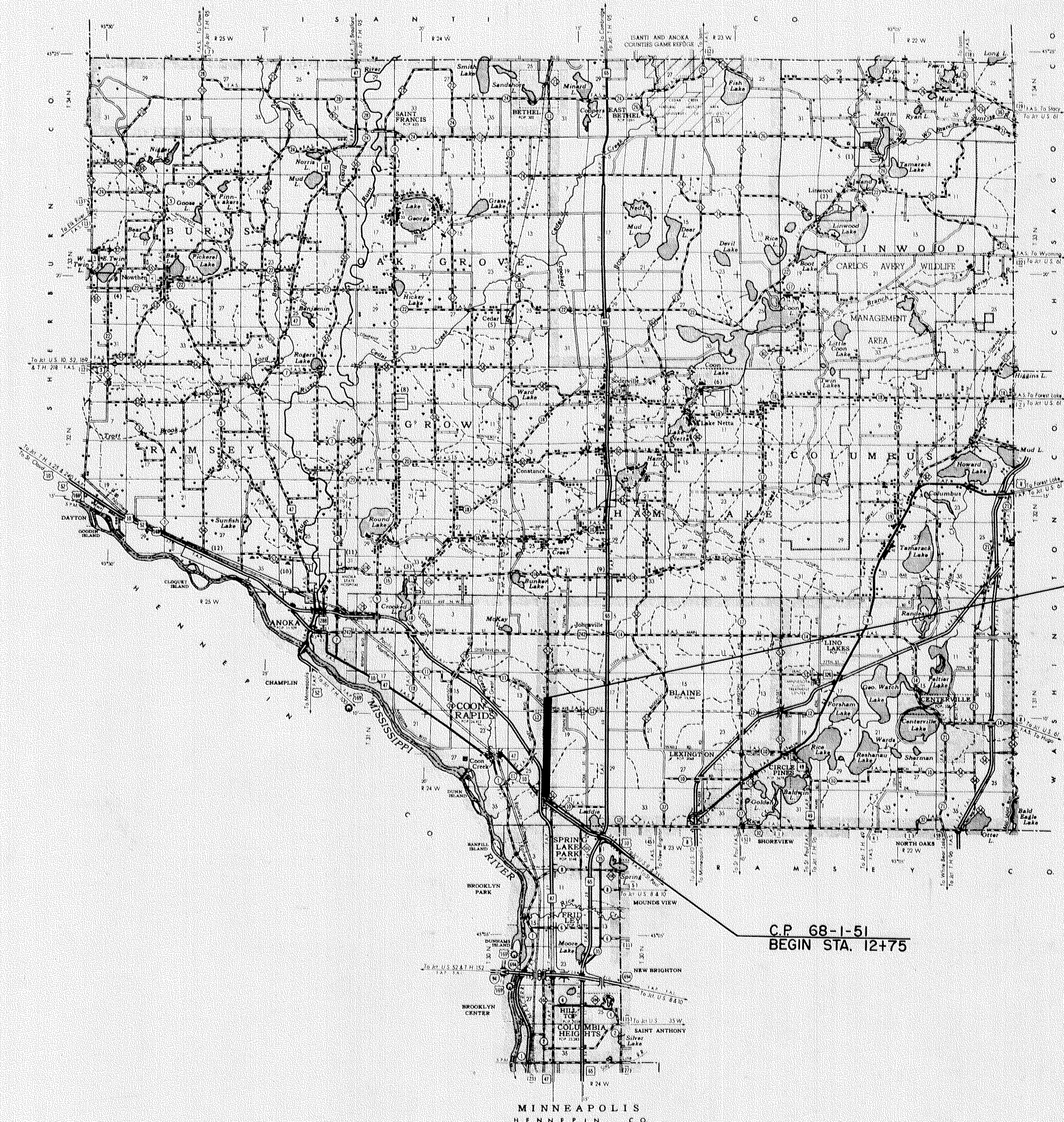
GROSS LENGTH 14,205.0 FEET 2.69 MILES
BRIDGES-LENGTH _____ FEET _____ MILES
EXCEPTIONS-LENGTH _____ FEET _____ MILES
NET LENGTH 14,205.0 FEET 2.69 MILES

INDEX OF SHEETS

- Sheet No. 1 Title Sheet & Layout Map
- " No. 2 Est. Quantities & Typical Sec.
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- " NO. 10 TO 20 CROSS SECTION

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 (Except Land Lines)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RETAINING WALL
- 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-AERIAL
- TELEPHONE CABLE-UNDERGROUND
- POWER CABLE-UNDERGROUND
- GAS MAIN
- CONDUIT
- SEWER INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SLOTTED FENCE
- STONE WALL OR FENCE
- HEDGE
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- STREET LIGHT
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING DATE
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME
- S-STONE
- B-BRICK
- ST-STUCCO
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- MEANER CORNER



C.P. 68-1-51
END STA. 154+80

C.P. 68-1-51
BEGIN STA. 12+75

DESIGN DESIGNATION

ADT (CURRENT YEAR) 7,290
ADT (FUTURE YEAR) 16,767
T (HEAVY COMMERCIAL) 300-600
9 Ton Design
Design Speed 50 MPH Locally Restricted
Design Speed not achieved at:
STA. _____ TO STA. _____ MPH _____
STA. _____ TO STA. _____ MPH _____

SPECIFICATIONS

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", DATED JAN. 1, 1968 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 DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Erling J. Lundeheim COUNTY ENGINEER DATE 4-19-68

ANOKA COUNTY REG. NO. 2551

RECOMMENDED FOR APPROVAL _____ 19 _____ DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL _____ 19 _____

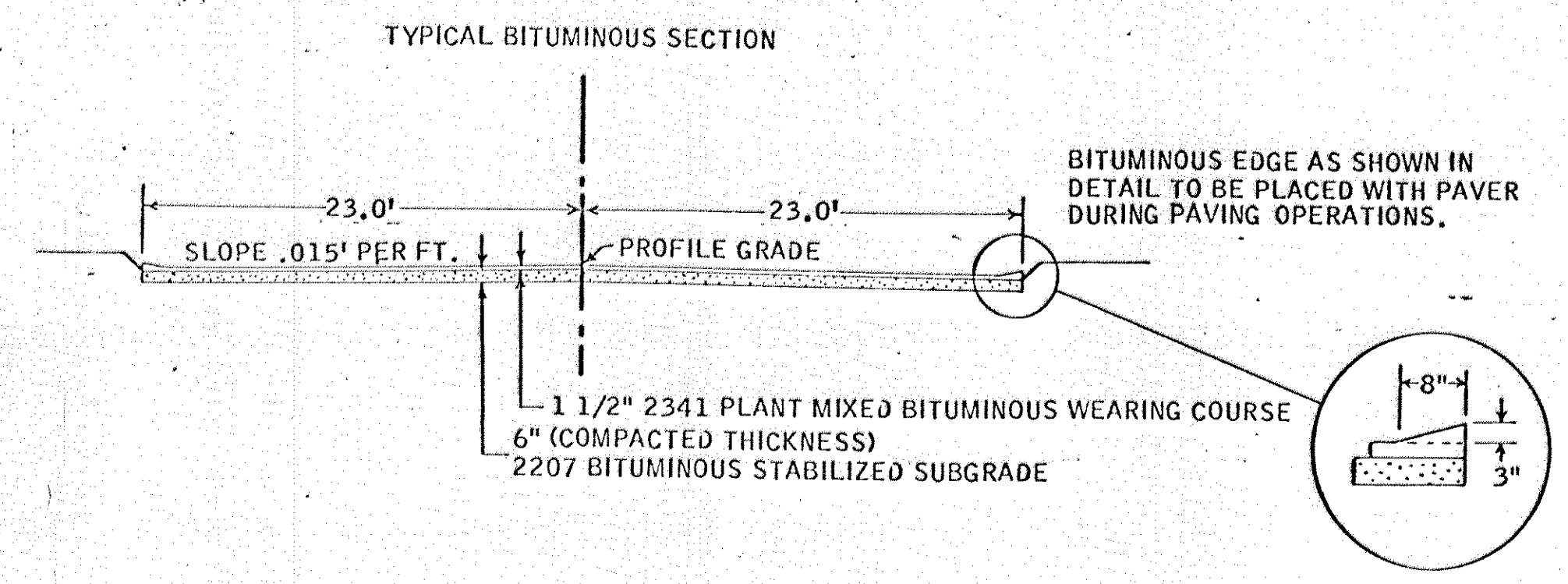
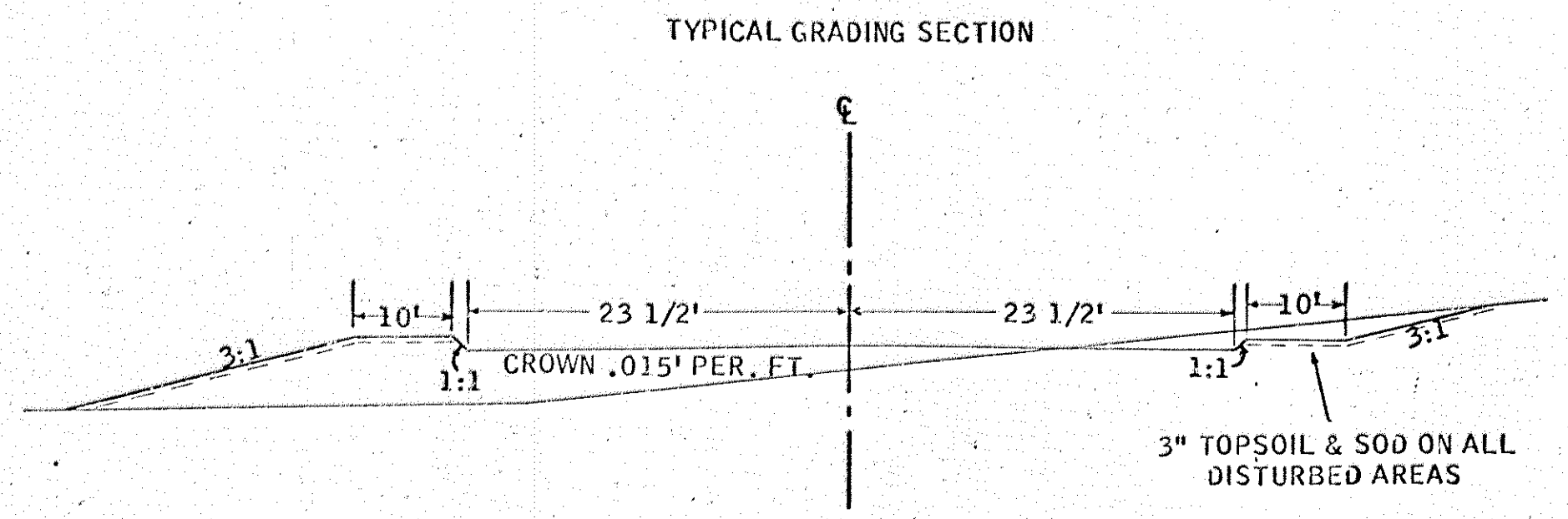
APPROVED _____ 19 _____ STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. 68-1-51
State Proj. No. _____ S.A.P. _____

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2031.501	FIELD OFFICE TYPE A	EACH	1
2101.502	CLEARING	TREE	66
2101.507	GRUBBING	TREE	66
2104.501	REMOVE PORT. CULV.	LIN. FT.	157
2104.502	REMOVE PAVEMENT	SQ. YD.	115.5
2104.510	REMOVE FENCE	LIN. FT.	1,071
557.621	RESET FENCE	LIN. FT.	1,071
2105.501	COMMON EXCAVATION	CU. YD.	13,201
2105.525	TOPSOIL BORROW	CU. YD. (V.M.)	3,000
2105.531	SALVAGE BIT. MIXTURE	CU. YD. (V.M.)	4,660
2123.506	1 1/4 CU. YD. DRAGLINE	hour	16
2123.509	DOZER	hour	8
2130.501	WATER	M-GAL.	172
2131.501	CALCIUM CHLORIDE TYPE 2	TON	75
2207.503	BITUMINOUS MATERIAL FOR MIX	GAL.	231,136
2207.512	BIT. STABL. SUBGRADE (6") THICK	SQ. YD.	74,560
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	341
2341.509	WEARING COURSE MIXTURE + FILLER	TON	6,202
2341.518	BITUMINOUS MIXTURE FOR DRIVE REPLM	TON	53
2357.502	BITUMINOUS MATERIAL FOR TACK	GAL.	3,728
463.502	MORTAR RUBBLE MASONRY	CU. YD.	71
2451.503	GRANULAR BACKFILL	CU. YD. (V.M.)	199
2501.503	STRUCTURE EXCAVATION CLASS U	CU. YD.	197
2501.511	15" METAL PIPE CULV.	LIN. FT.	56
2501.512	72" SPAN METAL PIPE ARCH CULV.	LIN. FT.	106
2501.532	15" METAL APRONS	APRON	4
2501.533	72" SPAN METAL APRON	APRON	2
2503.502	12" REINFORCED CONC. SEWER CL. 4	LIN. FT.	603
2503.502	15" REINFORCED CONC. SEWER CL. 4	LIN. FT.	5,525
2503.502	24" REINFORCED CONC. SEWER CL. 4	LIN. FT.	40
2501.536	12" CONC. APRONS	APRON	1
2501.536	15" CONC. APRONS	APRON	1
2501.536	24" CONC. APRONS	APRON	1
2506.506	CONSTRUCT MANHOLES C OR G	LIN. FT.	3.2
2506.507	CONSTRUCT CATCH BASINS C OR G	LIN. FT.	11.9
2506.516	CASTING ASSEMBLY	ASSEMBLY	32
2506.522	ADJUST FRAME & RING CASTING	ASSEMBLY	13
504.685	ADJUST WATER HOUSING	HOUSING	19
2575.501	ROADSIDE SEEDING	ACRE	3.9
2575.505	SODDING	SQ. YD.	16,773
2575.511	MULCH MATERIAL TYPE 5	TON	3
2506.506	CONSTRUCT MANHOLES A OR F	LIN. FT.	64.6
2506.507	CONSTRUCT CATCH BASIN A OR F	LIN. FT.	45.8

X THE PROVISIONS OF 1903 SHALL NOT APPLY TO THESE ITEMS
 A EQUIP. RENTAL TO BE USED FOR DITCH CLEANOUT LT. STA. 43+75
 B SEED & FERTILIZER SHALL BE FURNISHED BY THE COUNTY.



ADJ. MANHOLES	ADJ. WATER HOUSING
20+22 16' RT.	91 AVE. RT. 2
23+51 17' RT.	91 LANE RT. 2
101+90 30' RT.	97 AVE. RT. 2
104+32 29' RT.	66+53 RT. 1
104+40 24' LT.	97 AVE. LT. 2
106+87 29' RT.	99 AVE. RT. 2
	99 AVE. LT. 2
	101 LANE LT. 1
	105 AVE. LT. 1
	105 AVE. RT. 1
	105 LANE LT. 1
	109 AVE. RT. 1
	111 AVE. RT. 1

NOTE: THE EMBANKMENT SHALL BE COMPACTED BY THE ORDINARY COMPACTION AS PROVIDED IN 2110.302, EXCEPT THAT THE COMPACTION SHALL BE ACCOMPLISHED BY AN APPROVED VIBERATING COMPACTOR. THE COMPACTOR SHALL HAVE AN EMPTY WEIGHT OF NOT LESS THAN 3 TONS AND A DRUM OF NOT LESS THAN 30 INCHES IN DIAMETER NOR LESS THAN 40 INCHES IN LENGTH.

NOTE: THE UPPER 1.0' OF NATURAL SOIL IS CONSIDERED UNSUITABLE FOR USE IN THE UPPER 1.0' OF ROADWAY. THIS PORTION SHALL BE PLACED BELOW THE UPPER 1.0' OF EMBANKMENT DURING CONSTRUCTION.

STORM SEWER SYSTEM

NO.	STATION	LOCATION	TYPE	DESIGN	LIN. FT.	TOP CAST.	OUTLET	CAST ASSEM.	DRAIN TO	15" R.C.P. SEWER CL. 4	12" R.C.P. SEWER CL. 4	24" R.C.P. SEWER CL. 4
1	13+00	40' LT.	M.H.	C OR G	3.18	891.70	888.60	B	OPEN DITCH			
2	18+46	23.9' LT.	M.H.	A OR F	7.88	897.50	889.69	B	M.H.#1	546'		
3	22+50	23.9' LT.	C.B.	A OR F	5.70	896.00	890.50	A	M.H.#2	404'		
4	22+50	23.9' RT.	C.B.	A OR F	4.67	896.00	891.13	A	C.B.#3		48'	
5	72+80	23.9' LT.	C.B.	C OR G	3.0	906.20	903.00	A	M.H.#7		44'	
6	72+80	23.9' RT.	C.B.	C OR G	3.0	906.20	903.00	A	M.H.#7		12'	
7	73+00	17.5' RT.	M.H.	A OR F	5.96	906.35	900.48	B	M.H.#10	420'		
8	77+00	23.9' LT.	C.B.	C OR G	3.0	904.92	901.72	A	M.H.#10		44'	
9	77+00	23.9' RT.	C.B.	C OR G	3.0	904.92	901.72	A	M.H.#10		12'	
10	77+20	17.5' RT.	M.H.	A OR F	5.54	905.07	899.64	B	M.H.#13	600		
11	83+09	23.9' LT.	C.B.	C OR G	3.0	903.62	901.42	A	M.H.#13		44'	
12	83+09	23.9' RT.	C.B.	C OR G	3.0	903.62	901.42	A	M.H.#13		12'	
13	83+20	17.5' RT.	M.H.	A OR F	5.42	903.77	898.44	B	C.B.#16	350		
14	86+15	23.9' LT.	C.B.	C OR G	3.0	904.98	901.78	A	M.H.#15		55'	
15	86+70	23.9' LT.	M.H.	A OR F	8.08	905.63	897.64	B	C.B.#18	900'		
16	86+70	17.5' RT.	M.H.	A OR F	7.57	905.22	897.74	B	C.B.#15	40'		
17	95+70	23.9' RT.	C.B.	C OR G	3.0	901.47	898.27	A	C.B.#18		48'	
18	95+70	23.9' LT.	C.B.	A OR F	5.43	901.47	895.84	A	C.B.#19	80'		
19	96+50	23.9' LT.	C.B.	A OR F	5.62	901.50	895.68	A	C.B.#20	520'		
20	101+70	23.9' LT.	C.B.	A OR F	7.66	902.50	894.64	A	C.B.#21	48'		
21	101+70	23.9' RT.	C.B.	A OR F	7.76	902.50	894.54	A	C.B.#22	22'		
22	101+90	32' RT.	C.B.	INP.		902.81	894.50		EXISTING			
23	142+50	23.9' RT.	C.B.	C OR G	3.0	906.23	903.03	A	C.B.#24		48'	
24	142+50	23.9' LT.	C.B.	A OR F	4.83	906.23	901.20	A	M.H.#25	175'		
25	144+25	23.9' LT.	M.H.	A OR F	7.25	908.01	900.85	B	M.H.#27	535'		
26	144+25	40' LT.	APRON	APRON					M.H.#25		10' + 1 APRON	
27	149+60	23.9' LT.	M.H.	A OR F	8.79	908.40	899.78	B	M.H.#28	120'		
28	150+70	25' RT.	M.H.	A OR F	8.10	907.57	899.54	B	#29	430' + 1 APRON		
29	155+00	25' RT.	APRON	APRON			898.68		OPEN DITCH			
30	121+10	23.9' LT.	C.B.	C OR G	4.0	905.40	901.20	A	C.B.#31		48'	
31	121+10	23.9' RT.	C.B.	A OR F	4.13	905.40	901.07	A	C.B.#32	335'		
32	121+10	335' RT.	C.B.	INP.					INP.			
33	110+85	23.9' RT.	C.B.	C OR G	3.87	903.00	898.93	A	C.B.#37		60'	
34	110+85	23.9' LT.	C.B.	C OR G	3.67	903.00	899.13	A	C.B.#33		48'	
35	111+45	23.9' LT.	C.B.	C OR G	3.0	903.00	899.80	A	C.B.#36		48'	
36	111+45	23.9' RT.	C.B.	C OR G	3.40	903.00	899.40	A	M.H.#37		22'	
37	111+25	34' RT.	M.H.	INF.			895.64		EXISTING			

	GRATE	FRAME	USE
A	810	801	E.B.
B	711	700-7	M.H.

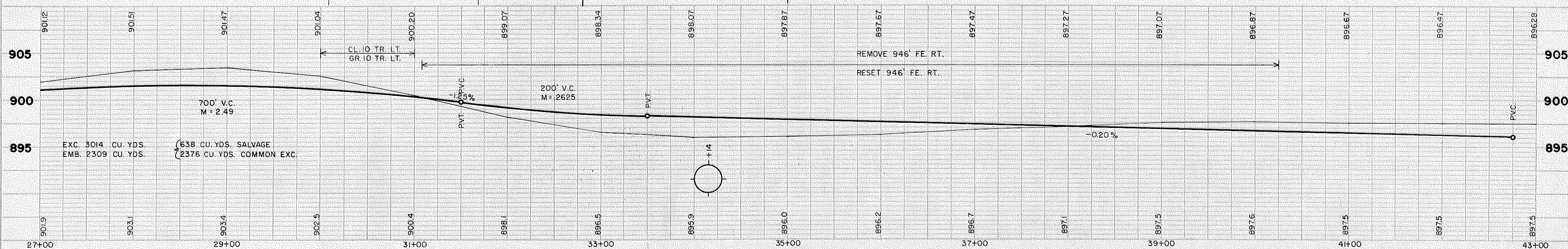
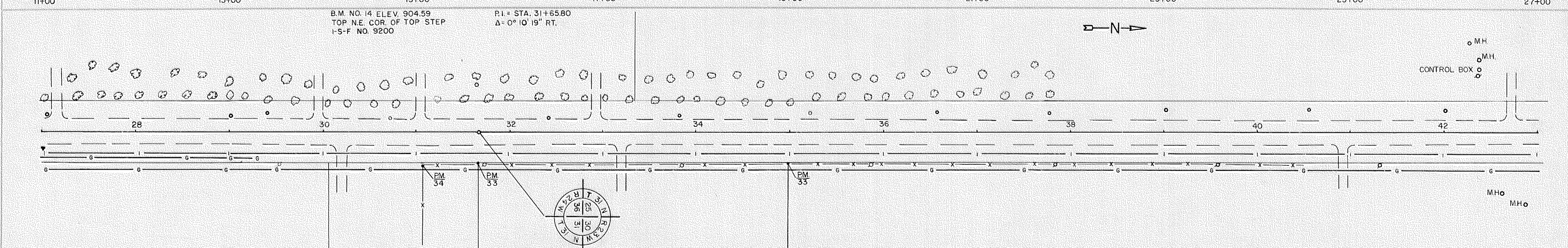
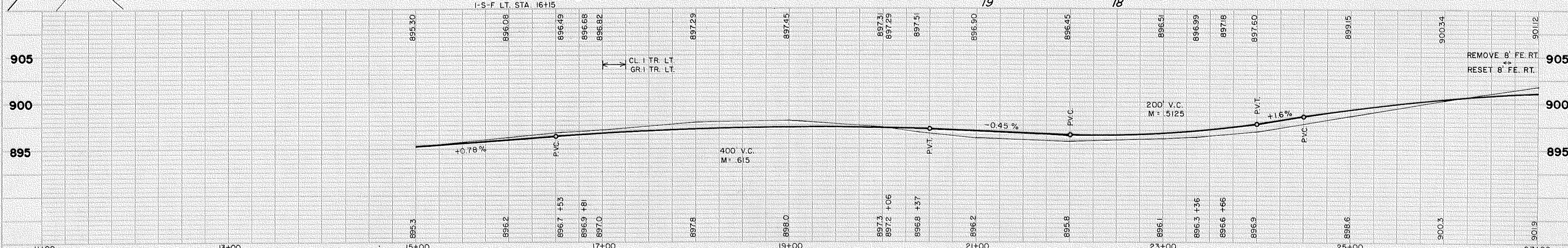
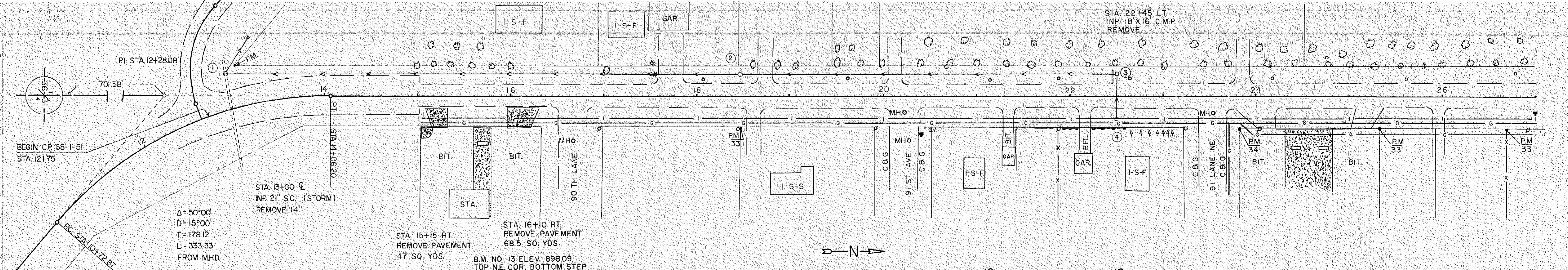
BASIS OF PLANNED QUANTITIES

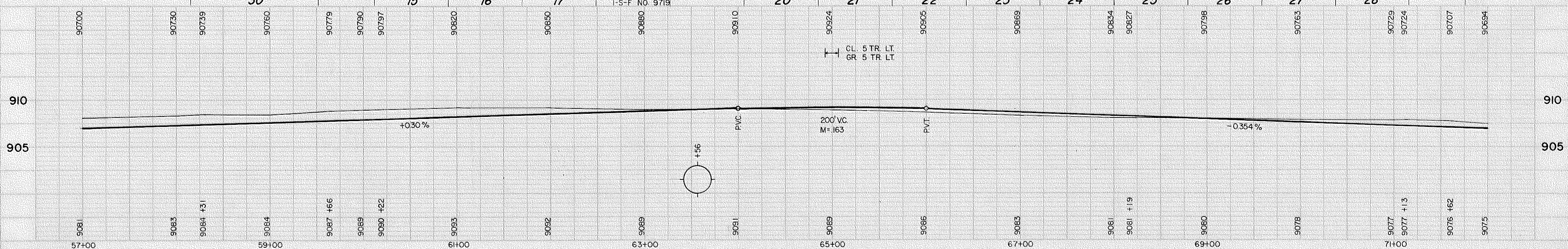
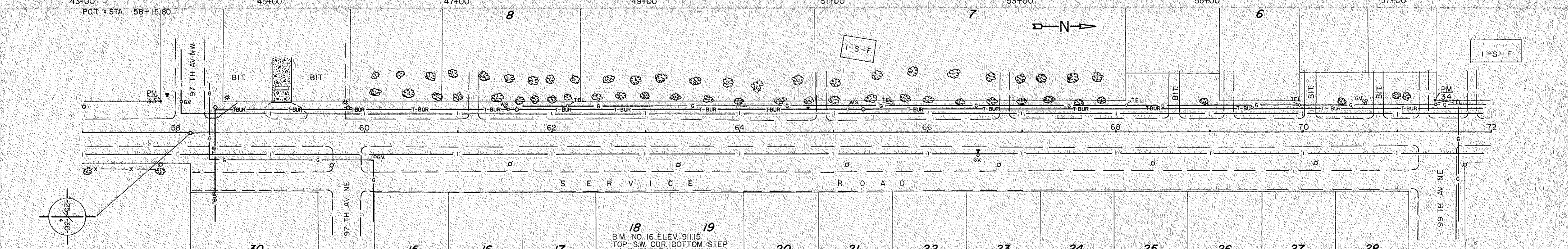
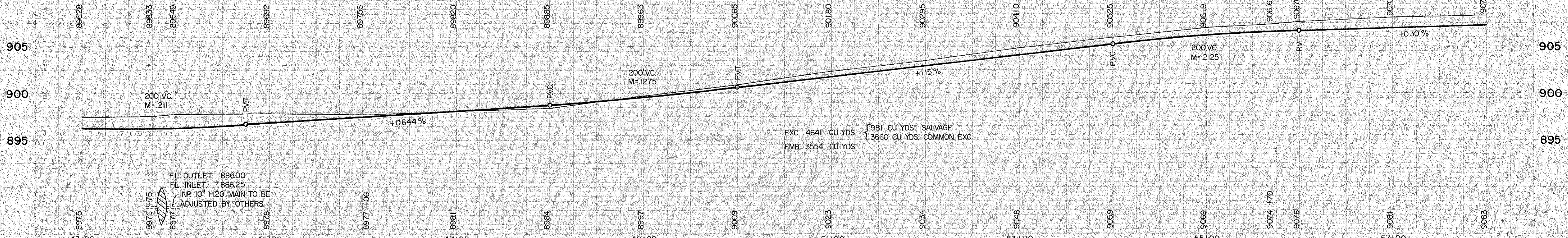
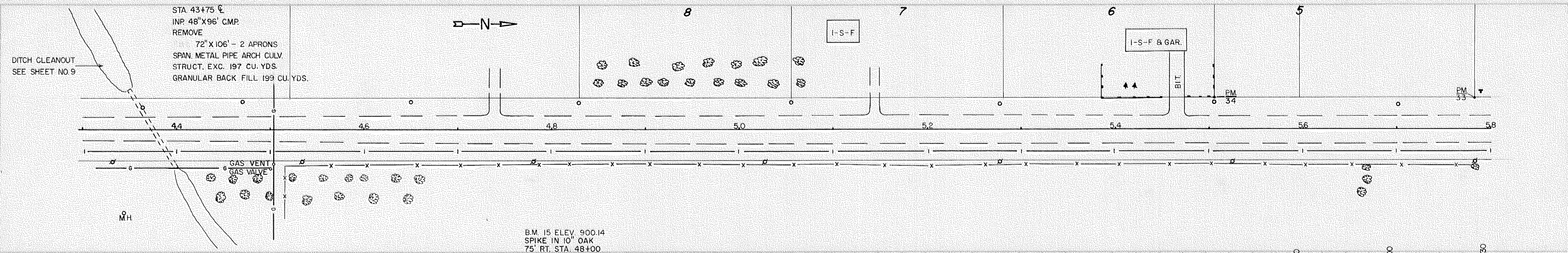
2207 BITUMINOUS STABILIZED SUBGRADE
 BITUMINOUS MATERIAL FOR MIX 0.5 GAL. PER SQ. YD. PER INCH THICKNESS
 BITUMINOUS MATERIAL FOR FOG 0.10 GAL. PER SQ. YD.
 2341 PLANT MIXED BITUMINOUS WEARING COURSE
 BITUMINOUS MIXTURE 165 LBS. PER SQ. YD.
 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER SQ. YD.
 BITUMINOUS MATERIAL 5.5% OF MIXTURE BY WT.

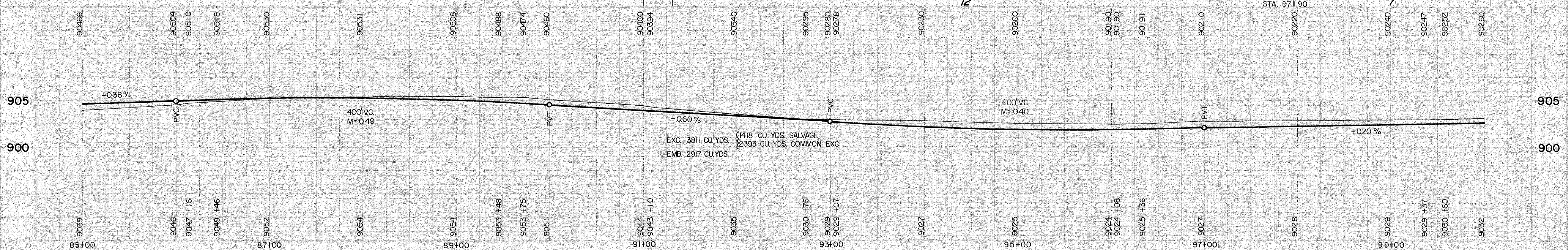
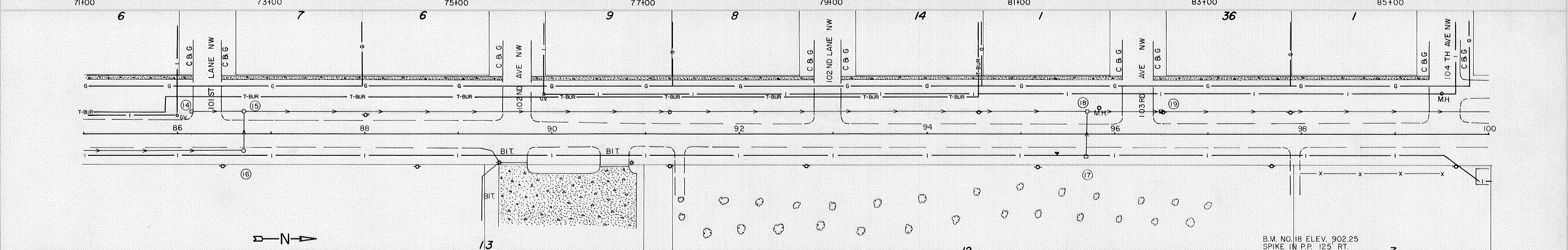
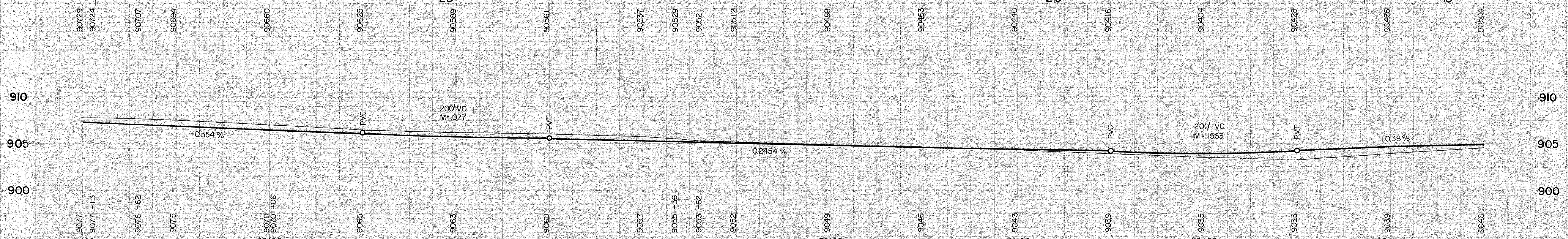
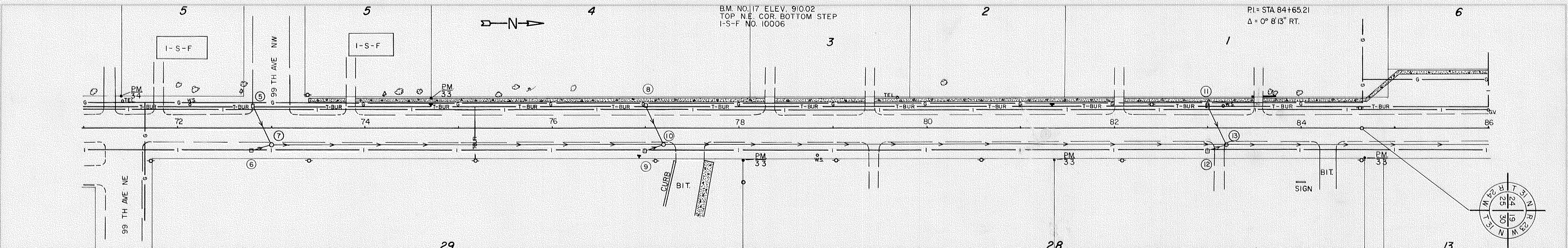
MORTAR RUBBLE MASONRY	STA.	CU. YDS.
	115+10 TO 115+50 LT.	7.5
	115+75 TO 116+10 LT.	3.5
	145+75 TO 149+80 RT.	60.0

The following Standard Detail plates, approved by the Bureau of Public Roads, shall apply on this project.

STANDARD DETAIL PLATES	
PLATE NO.	DESCRIPTION
3000 F	REINFORCED CONCRETE PIPE.
3100 E	CONCRETE APRON FOR REINFORCED CONCRETE PIPE.
4002 D 4006 E	MAN HOLE OR CATCH BASIN.
4101 B	RING CASTING FOR MAN HOLE OR CATCH BASIN.
4110 D	COVER CASTING FOR MAN HOLE.
4126 D	CATCH BASIN FRAME CASTING.
4149 C	GRATE CASTING FOR CATCH BASIN.
8000 C - 8002 B	STANDARD SIGNS & BARRICADES.
8008 C	





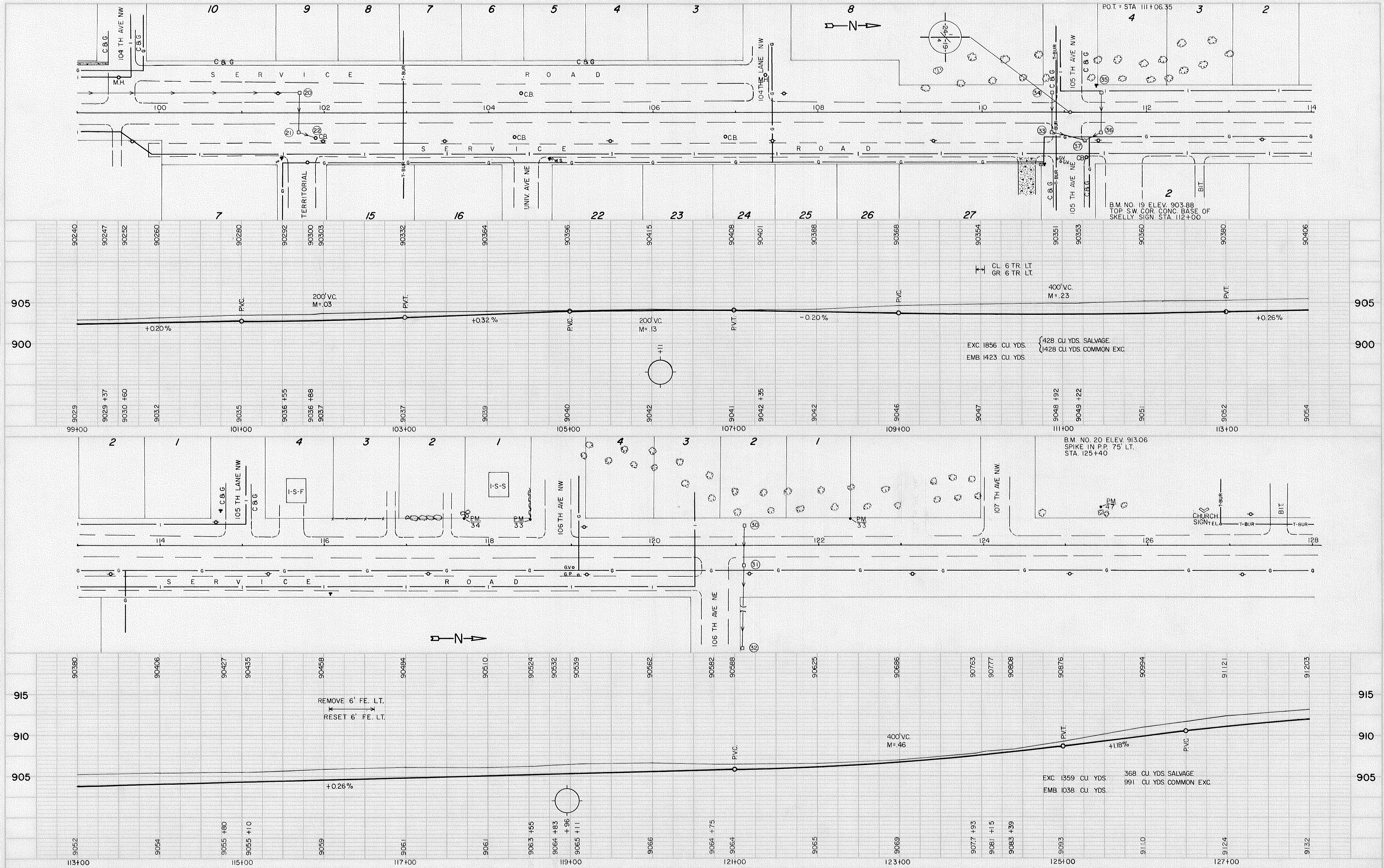


B.M. NO. 17 ELEV. 910.02
TOP N.E. COR. BOTTOM STEP
I-S-F NO. 10006

PI = STA 84+65.21
 $\Delta = 0^\circ 8' 13''$ RT.

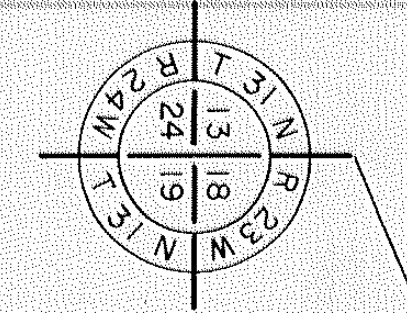
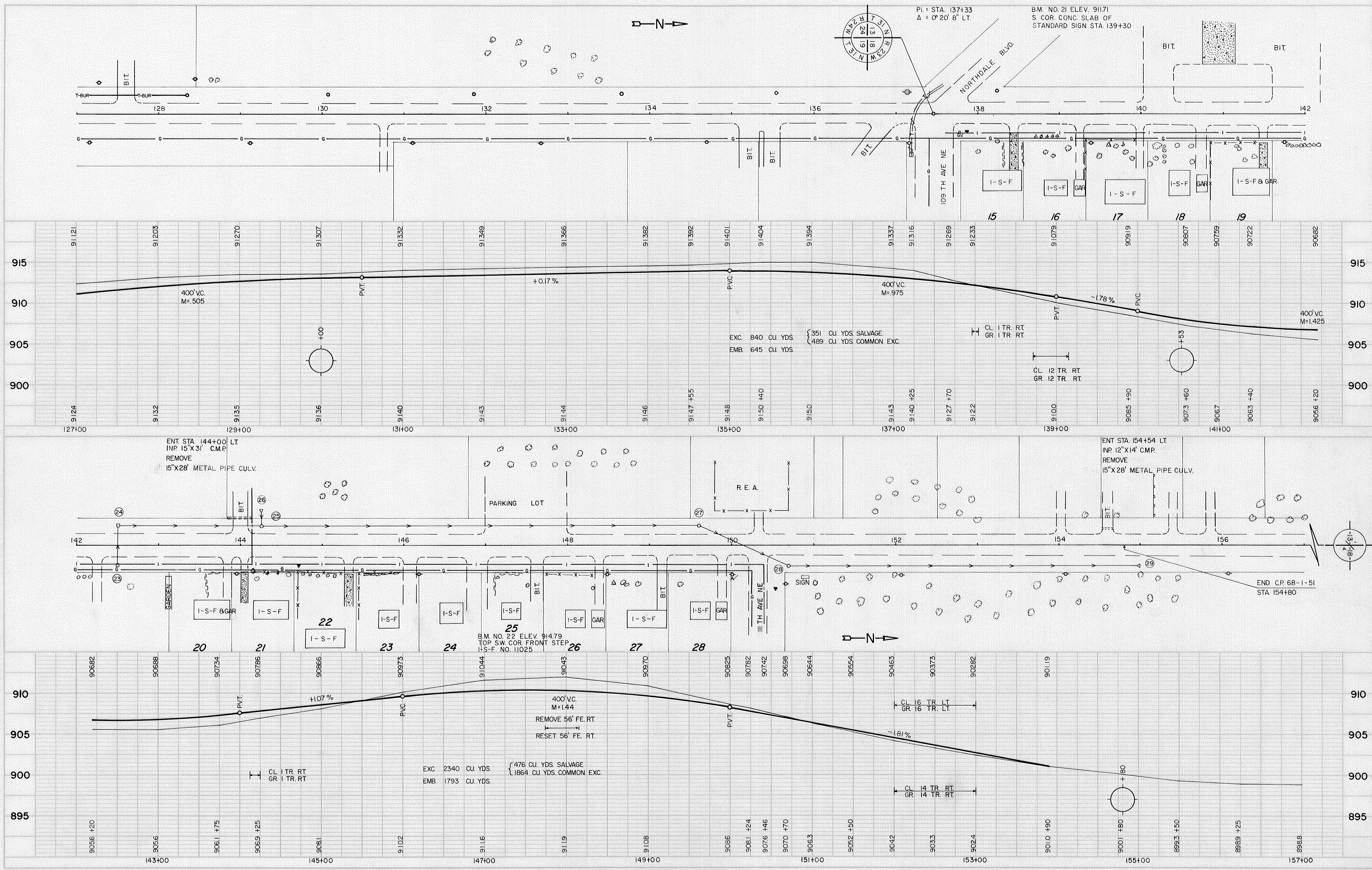
B.M. NO. 18 ELEV. 902.25
SPIKE IN P.P. 125' RT.
STA. 97+90

K&S ENGINEERS
PLAYE & PLAN PROFILE
KUYEL & FISKE CO.



PLAN
 DATE: 11/11/11
 PROJECT: CP 68-1-51
 SHEET: 6 OF 20

PROFILE
 DATE: 11/11/11
 PROJECT: CP 68-1-51
 SHEET: 6 OF 20



PI = STA. 137+33
 Δ = 0° 20' 8" LT.

B.M. NO. 21 ELEV. 911.71
 S. COR. CONC. SLAB OF
 STANDARD SIGN STA. 139+30

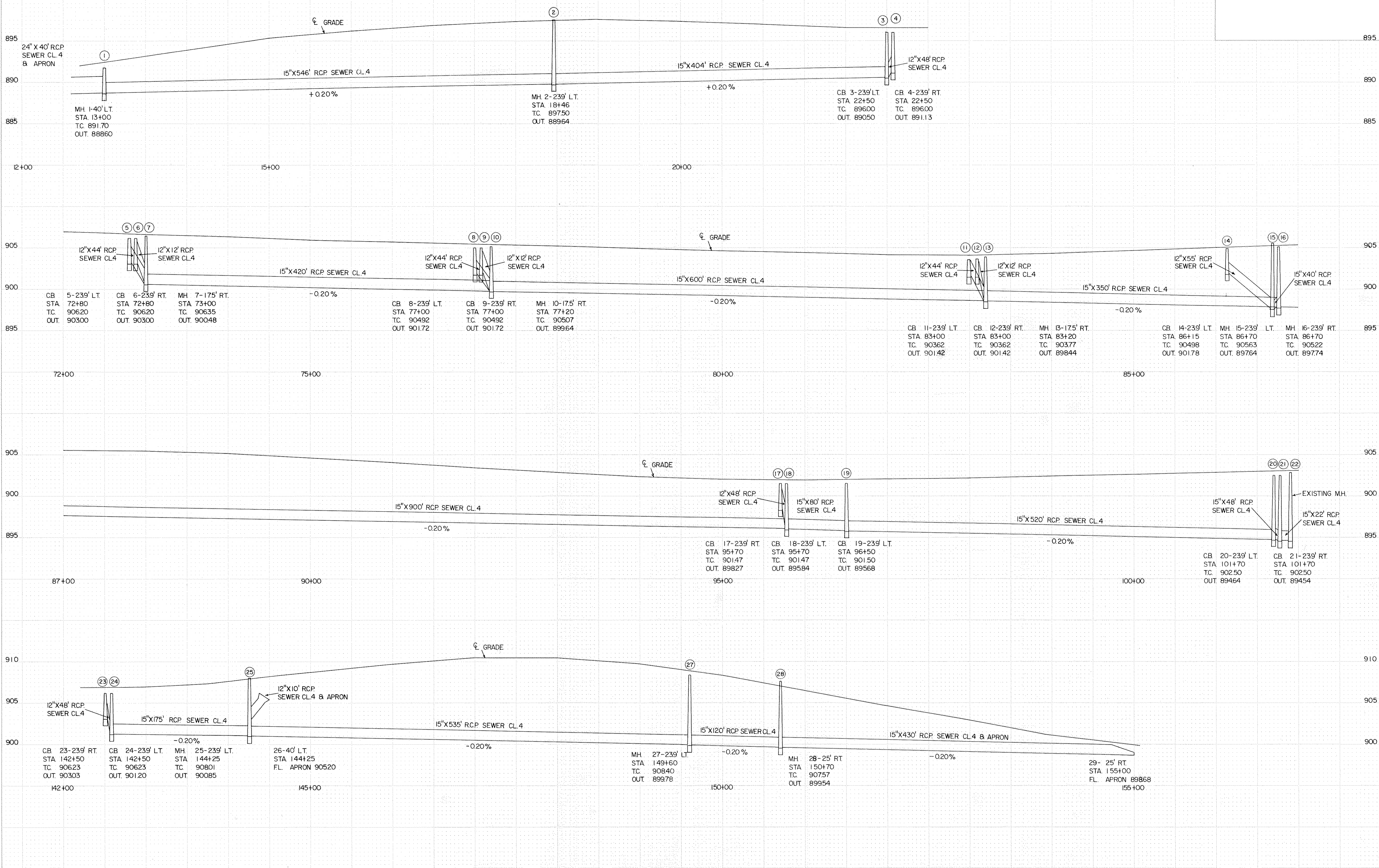
ENT. STA. 144+00 LT
 INP. 15'x31' C.M.P.
 REMOVE
 15'x28' METAL PIPE CULV.

ENT. STA. 154+54 LT
 INP. 12'x14' C.M.P.
 REMOVE
 15'x28' METAL PIPE CULV.

B.M. NO. 22 ELEV. 914.79
 TOP SW. COR. FRONT STEP
 I-S-F NO. 11025

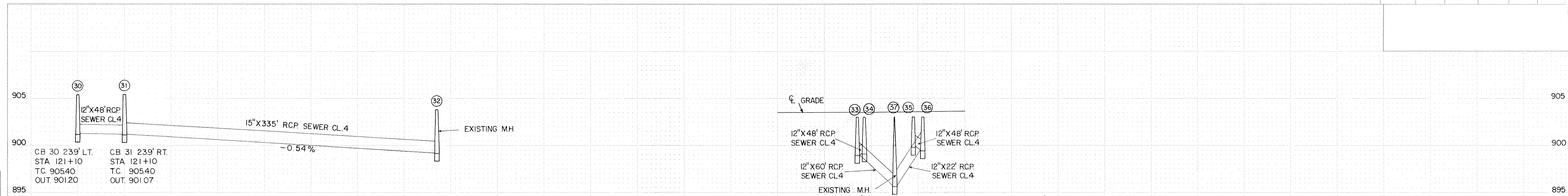
EXC. 840 CU. YDS. { 351 CU. YDS. SALVAGE
 EMB. 645 CU. YDS. { 489 CU. YDS. COMMON EXC.

EXC. 2340 CU. YDS. { 476 CU. YDS. SALVAGE
 EMB. 1793 CU. YDS. { 1864 CU. YDS. COMMON EXC.



DATE: _____
 BY: _____
 SURVEYED: _____
 PLOTTED: _____
 CHECKED: _____
 NO. _____

DATE: _____
 BY: _____
 SURVEYED: _____
 PLOTTED: _____
 CHECKED: _____
 NO. _____



CB 30 239' LT. STA 121+10 TC 90540 OUT 90120	CB 31 239' RT. STA 121+10 TC 90540 OUT 90107	EXISTING MH	CB 33 239 RT. STA 110+85 TC 90300 OUT 89893	EXISTING M.H. CB 34 239' LT. STA 110+85 TC 90300 OUT 89913	CB 35 239 LT. STA 111+45 TC 90300 OUT 89980	CB 36 239' RT. STA 111+45 TC 90300 OUT 89940
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DATE	
BY	
SURVEYED	
PLANNED	
DESIGNED	
CONSTRUCTED	
NOTED BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLANNED	
DESIGNED	
CONSTRUCTED	
NOTED BOOK	
AREAS CHECKED	
NO.	

