

**STATEMENT OF ESTIMATED QUANTITIES**

ITEM NO.	ITEM	UNIT	02-617-04 TOTAL ESTIMATED QUANTITIES	02-623-05 TOTAL ESTIMATED QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1	0
2031.503	FIELD OFFICE TYPE 'D'	EACH	1	0
2101.503	CLEARING	TREE	7	0
2101.507	GRUBBING	TREE	2	0
2104.501	REMOVE INTEGRANT CURB (BITUMINOUS)	LIN. FT.	1054	0
2104.501	REMOVE SEWER PIPE	LIN. FT.	136	0
2104.501	REMOVE CURB AND GUTTER	LIN. FT.	385	0
2104.505	REMOVE TRENCH PAVEMENT	SQ. YD.	0	56
2104.509	REMOVE MANHOLES OR CATCH BASINS	EACH	6	0
2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.	475	0
2104.523	SALVAGE R.C.P. APRONS	EACH	2	0
2104.523	SALVAGE CASTINGS	EACH	7	0
2105.501	COMMON EXCAVATION	CU. YD.	3197	224
2105.525	TOPSOIL BORROW (LV)	CU. YD.	317	106
2130.501	WATER	M. GAL.	25	0
2211.503	AGGREGATE BASE PLACED, CLASS #5	CU. YD.	1199	126
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	1012	138
2331.510	BINDER COURSE MIXTURE	TON	795	115
2331.512	LEVELING COURSE MIXTURE	TON	150	0
2331.514	BASE COURSE MIXTURE	TON	1173	172
2331.531	TEMPORARY LANE MARKING	RD. STA.	129	61
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	613	807
2341.508	WEARING COURSE MIXTURE	TON	988	1302
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	1036	789
2501.511	12" C.H. PIPE CULVERT	LIN. FT.	22	0
2501.515	12" C.H. PIPE APRONS	LIN. FT.	2	0
2503.541	12" R.C.P. SEWER DES. 3006	LIN. FT.	204	0
2503.541	12" R.C.P. SEWER CL. III DES. 3006	LIN. FT.	0	108
2503.541	15" R.C.P. SEWER DES. 3006	LIN. FT.	56	0
2503.573	INSTALL 12" R.C.P. APRON	EACH	2	0
2506.506	CONSTRUCT MANHOLES, DES. A OR F	LIN. FT.	6.5	0
2506.506	CONSTRUCT MANHOLES DES. C OR G	LIN. FT.	12.1	0
2506.507	CONSTRUCT CATCH BASINS, DES. C, G, OR H	LIN. FT.	27.1	5.4
2506.516	CASTING ASSEMBLIES	EACH	10	1
2506.521	INSTALL CASTINGS	EACH	2	0
2506.522	ADJUST FRAME AND RING CASTINGS	EACH	9	0
0504.602	RELOCATE HYDRANT	EACH	3	0
0504.602	ADJUST WATER GATE HOUSING	EACH	3	0
2521.501	4" CONCRETE WALK	SQ. FT.	3175	0
2531.501	CONCRETE CURB AND GUTTER, DES. B-612	LIN. FT.	890	0
2531.501	CONCRETE CURB AND GUTTER, DES. B-618	LIN. FT.	2320	0
2531.503	CONCRETE MEDIAN	SQ. YD.	256	1059
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIG. SYSTEM	0	1
2575.501	ROADSIDE SEEDING	ACRE	0	0.25
2575.502	SEED MIXTURE, NO. 3	POUND	0	10
2575.505	SODDING	SQ. YD.	3469	0
2575.511	MULCH MATERIAL, TYPE #1	TON	0	0.5
2575.517	DISC. ANCHORING	ACRE	0	0.25
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	TON	0	0.25

- (1) FOR REMOVAL OF PAVED BITUMINOUS LIP.
- (2) COMMON EXCAVATION QUANTITY INCLUDES ALL BITUMINOUS PAVEMENT MATERIAL TO BE REMOVED.
- (3) PROVIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
- (4) INCLUDES 49 CU. YD. FOR STREET APPROACHES AND 20 CU. YD. FOR ENTRANCES.
- (5) INCLUDES 40 TON FOR STREET APPROACHES.
- (6) INCLUDES 60 TON FOR STREET APPROACHES.
- (7) INCLUDES QUANTITY FOR WEARING COURSE.
- (8) INCLUDES 80 TON FOR STREET APPROACHES AND 60 TON FOR ENTRANCES.
- (9) FOR PAVING MEDIAN STA. 19+05 TO STA. 21+57 & RT. TURN ISLAND

**BASIS OF PLANNED QUANTITIES**

- 2331 PLANT MIXED LEVELING COURSE. BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 4.8% BY WEIGHT.
- 2331 PLANT MIXED BASE AND BINDER COURSE. BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 4.8% BY WEIGHT.
- 2341 PLANT MIXED WEARING COURSE. BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 6.2% BY WEIGHT.
- 2357 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER S.Y.
- 2575 COMMERCIAL FERTILIZER. ANALYSIS 10-10-10, 500#/AC. ON ALL SOD AND SEED AREAS.
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT PLUS 10% SEED MIXTURE NO. 3 @ 45 LBS. PER ACRE.
- 2575 MULCH MATERIAL, TYPE-1, 2 TONS PER ACRE.

ADJUST FRAME AND RING CASTING			
STATION	LOCATION	UTILITY	REMARKS
13+15	37' RT.	SAN. SEWER	
14+25	12' RT.	ST. SEWER	
15+42	38' RT.	SAN. SEWER	
16+97	13' RT.	ST SEWER	
19+26	13' LT.	SAN. SEWER	
19+66	26' RT.	BELL TELE.	ADJ. BY OTHERS
19+72	24' RT.	BELL TELE.	ADJ BY OTHERS
21+63	12' RT.	ST SEWER	
21+93	12' LT.	SAN. SEWER	
24+18	13' LT.	SAN. SEWER	
26+45	13' LT.	SAN. SEWER	
TOTAL			9

SAWING BITUMINOUS PAVEMENT		
LOCATION	LIN. FT.	
ENTRANCE LT. 13+95	24'	
EXISTING RT. TURN LN. LT. 17+00	155'	
N. EDGE C.S.A.H. 23 18+75	170'	
ROAD APPROACH LT 22+00	64'	
ENTRANCE LT. 26+54	24'	
END PROJECT 26+70	38'	
TOTAL		475'

REMOVE CURB AND GUTTER		
STATION	LOCATION	LIN. FT.
12+36	37' TO 57' RT.	20'
12+80	37' TO 57' RT.	20'
15+00	37' TO 67' RT.	30'
15+30	37' TO 67' RT.	30'
17+10-17+71	24' LT. TOTAL ISLAND	155'
18+99-19+50	24' RT. TOTAL ISLAND	130'
TOTAL		385'

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0004A	SPECIFICATION REFERENCE TO STANDARD PLATES (1983)
3000I	REINFORCED CONCRETE PIPE
3000E	GASKET JOINT FOR R.C. PIPE
3100F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
4000I	MANHOLE OR CATCH BASIN
4002E	MANHOLE OR CATCH BASIN
4005K	MANHOLE OR CATCH BASIN
4006K	MANHOLE OR CATCH BASIN
4010F	CONCRETE SHORT CONE AND ADJUSTING RING
4011D	PRECAST CONCRETE BASE
4101C	RING CASTING FOR MANHOLE OR CATCH BASIN
4110D	COVER CASTING FOR MANHOLE
4126E	CATCH BASIN FRAME CASTING
4140C	GRATE CASTING FOR CATCH BASIN
4161F	CURB BOX CASTING FOR CATCH BASIN
4180G	MANHOLE OR CATCH BASIN STEP
7035J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036C	PEDESTRIAN CURB RAMP
7100F	CONCRETE CURB AND GUTTERS
7110E	CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
7111F	INSTALLATION OF CATCH BASIN CASTINGS
8000I	STANDARD BARRICADES
8003B	BREAKAWAY SIGN SUPPORTS (PLASTIC)

CLEAR AND GRUBBING					
STATION	LOCATION	DESCRIPTION	CLEAR	GRUB	REMARKS
15+91	31' LT.	8" ELM	6	1	
26+10	31' RT.	16" OAK	1	1	
TOTALS			7	2	

REMOVE INTEGRANT CURB BITUMINOUS		
STATION	LOC.	LIN. FT.
12+32	16+60	22' LT. 428'
10+80	12+36	22' RT. 146'
12+85	15+00	22' RT. 215'
15+35	18+00	22' RT. 265'
TOTAL		1054'

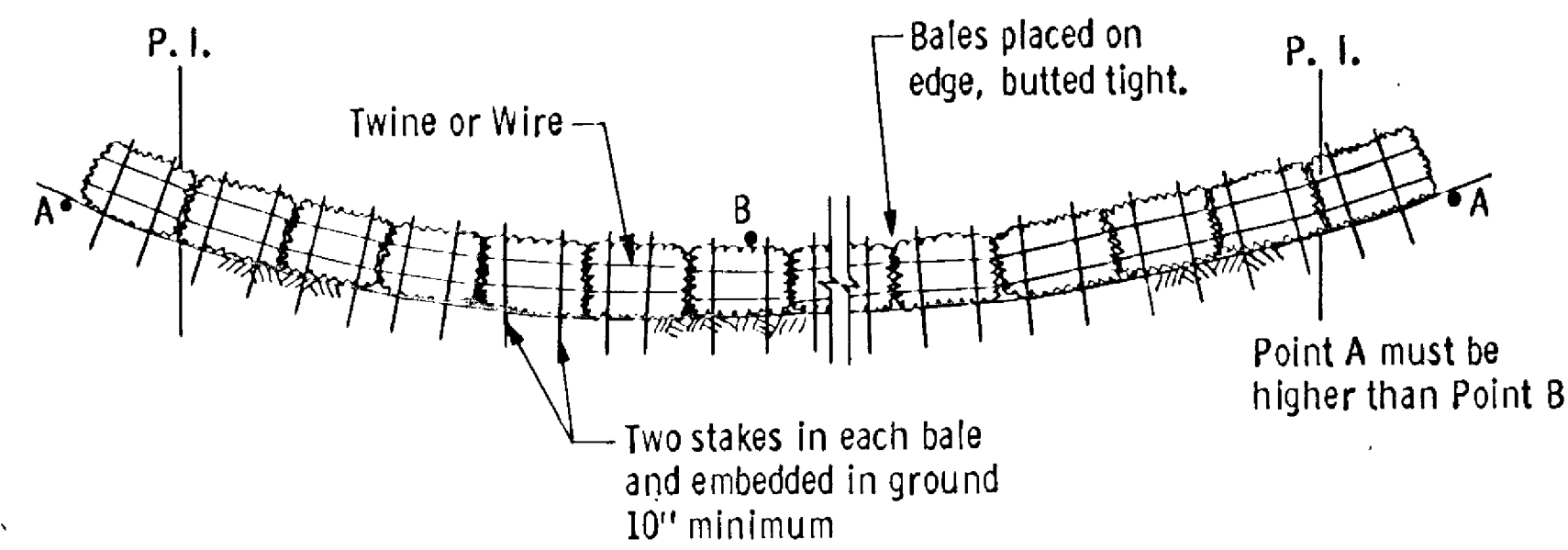
ADJUST WATER GATE HOUSING	
STATION	LOCATION
21+58	22' LT.
21+83	34' LT.
22+25	22' LT.

**SPECIAL DETAILS**

INPLACE TOPSOIL SHALL BE SALVAGED AND USED TO THE FULLEST EXTENT POSSIBLE, PRIOR TO THE USE OF TOPSOIL BORROW, ON AREAS DISTRIBUTED BY CONSTRUCTION OPERATIONS. SALVAGE OF INPLACE TOPSOIL FOR USE IN TURF ESTABLISHMENT SHALL BE CONSIDERED TO BE INCIDENTAL TO COMMON EXCAVATION AND NO DIRECT COMPENSATION WILL BE MADE THEREFORE. DISPOSAL OF ANY EXCESS EXCAVATED MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH THE PROVISIONS OF 2104.

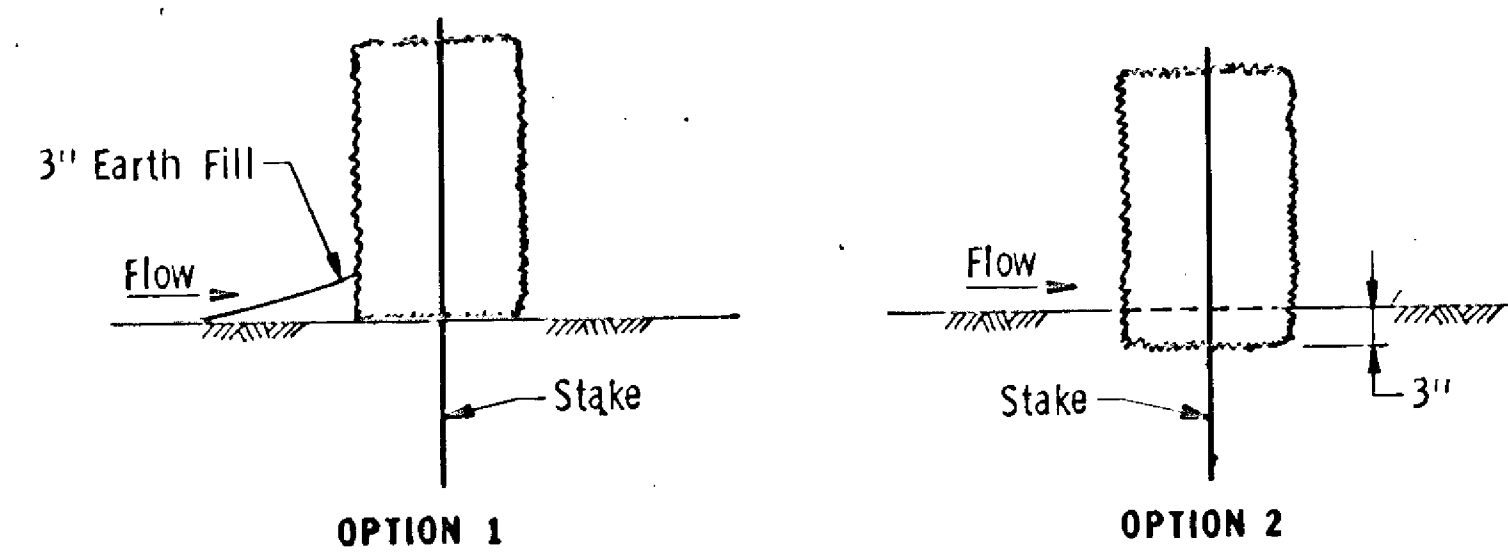
STORM SEWER SYSTEM

NO.	STATION	LOCATION	REMARKS	TYPE	DESIGN	LIN. FT.	REMOVE SEWER PIPE	TOP	OUTLET	F&I CASTING ASSEMBLY	DRAINS TO	F&I R.C.P. SEWER		
												12" I.I.	12" II	15" I.I.
1	14 + 25	34.9' RT.	INSTALL CASTING FROM # 2	C.B.	C,G,H	3.7	-----	907.85	904.00		M.H. 3	23'		
2	14 + 25	21' RT.	SALVAGE 12" RCP APRON SALVAGE CSTG. REMOVE C.B. STRUCT.	C.B.	----	----	19'	907.78	903.78		M.H. 3			
3	14 + 25	12' RT.	M.H. INPL. ADJ. FRAME & RING CASTING	M.H.	----	----	----		903.77		M.H. 6			
4	14 + 23	21' LT.	SALVAGE 12" RCP APRON SALVAGE CSTG. REMOVE C.B. STRUCT.	C.B.	----	----	18'	907.85	904.15		M.H. 3			
5	14 + 25	27.6' LT.	INSTALL 12" RCP APRON FROM # 4 INSTALL CSTG. FROM # 1	C.B.	C,G,H	3.5	-----	907.91	904.22		M.H. 3	26'		
6	16 + 97	13' RT.	ADJ. FRAME & RING CASTING	M.H.	----	----	----		901.23		18" RCP INPL.			
7	20 + 50	12' RT.	CONST. M.H. ON EXISTING 18" RCP	M.H.	A,F	6.5	----	909.51	903.06	A	M.H. 6			
8	20 + 50	34.9' RT.		C.B.	C,G	4.9	----	903.01	903.79	B	M.H. 7	23'		
9	20 + 50	34.9' LT.		C.B.	C,G	4.6	----	903.79	904.03	B	M.H. 7	47'		
10	21 + 63	12' RT.	ADJ. FRAME & RING CSTG.	M.H.	----	----	----		903.58		M.H. 7			
11	21 + 63	23.5' LT.	SALVAGE C.B. CSTG. F&I M.H. CSTG.	M.H.	----	----	----		903.64	A	M.H. 10			
12	21 + 63	56' LT.	C.B. TO REMAIN INPL.	C.B.	----	----	----				M.H. 11			
13	22 + 24	59' LT.	C.B. TO REMAIN INPL.	C.B.	----	----	----				C.B. 12			
14	24 + 71	30' RT.	CONST. M.H. ON EXISTING 15" RCP	M.H.	C,G	4.7	----	908.30	903.71	A	15" RCP INPL.			
15	24 + 71	16' RT.	SALVAGE CSTG. REMOVE C.B. STRUCT.	C.B.	----	----	14'		903.85		15" RCP INPL.			
16	24 + 77	21' LT.	SALVAGE CSTG. REMOVE C.B. STRUCT.	C.B.	----	----	33'		904.33		C.B. 15			
17	24 + 94	21.0' LT.		C.B.	C,G,H	3.5	----	907.68	903.99	B	M.H. 14		56'	
18	25 + 02	20.7' LT.		C.B.	C,G,H	3.4	----	907.67	904.07	B	C.B. 17	8'		
19	25 + 02	23.4' RT.		C.B.	C,G,H	3.5	----	907.59	903.87	B	M.H. 14	32'		
20	25 + 25	15.4' RT.	SALVAGE CSTG. REMOVE C.B. STRUCT. CONSTRUCT M.H. INSTALL 12" RCP APRON FROM # 2	M.H.	C,G	4.1	54'	907.96	903.99	A	C.B. 19	21' (INLET FROM DITCH) 21'		
21	25 + 25	17' LT.	SALVAGE CSTG. REMOVE C.B. STRUCT. CONST. M.H.	M.H.	C,G	3.3	----	907.94	904.78	A	M.H. 20			
22	84 + 92	12.9' LT.		C.B.	C,G	5.4	----	903.62	903.00	B	M.H. INPL.	108'		
TOTALS =								136'			11	204'	108'	56'



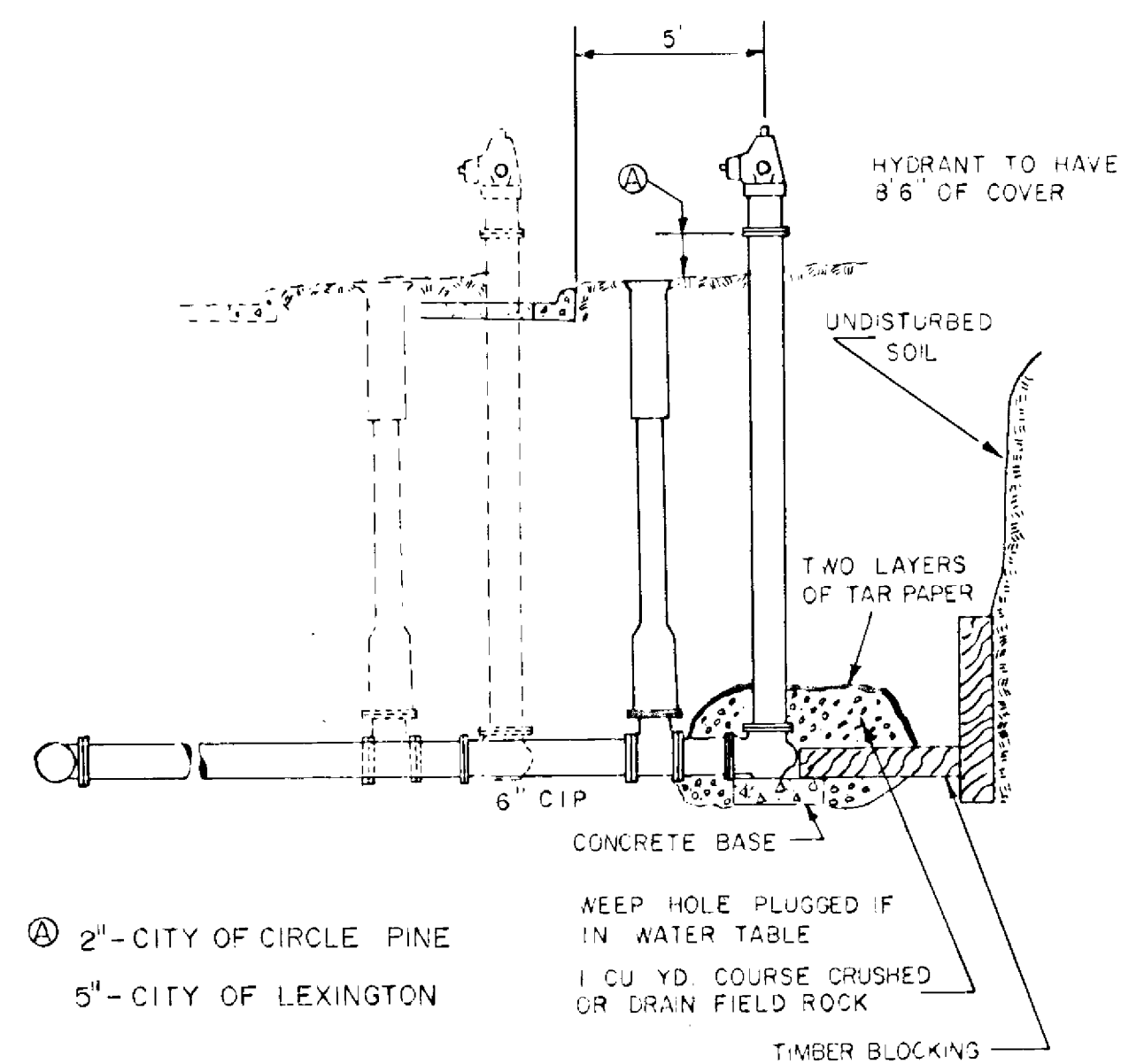
BALE HAY OR STRAW DITCH CHECK

NOTE: HAY BALES SHALL BE CONSIDERED AS INCIDENTAL TO DITCH CHECK CONST.



DITCH CHECK SECTIONS

HYDRANT & VALVE RELOCATION



STORM SEWER CASTING ASSEMBLIES			
ASSEMBLY	ITEM	CASTING NO.	QUANTITY
A	FRAME	700-7	5
	COVER	712	
B	FRAME	801	6
	COVER	810	
	CURB BOX	821 B	

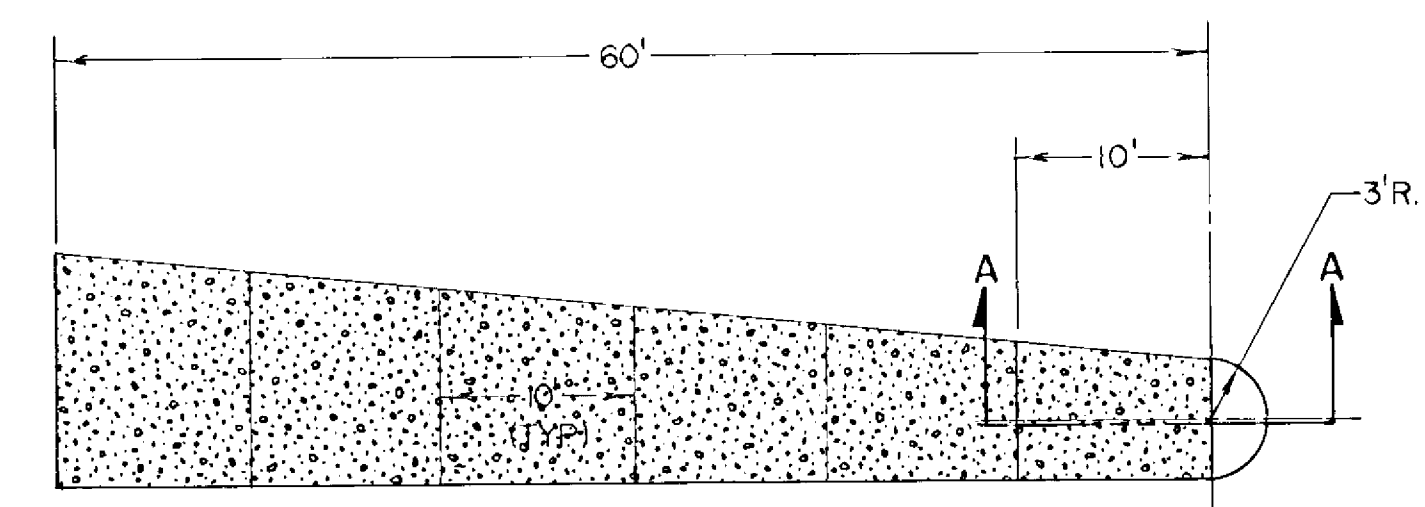
HYDRANT RELOCATION

EXISTING LOCATION	RELOCATION
1 15+00 29' LT.	11' WEST
2 15+53 33' RT.	9' EAST
3 21+57 48' LT.	6' SOUTH

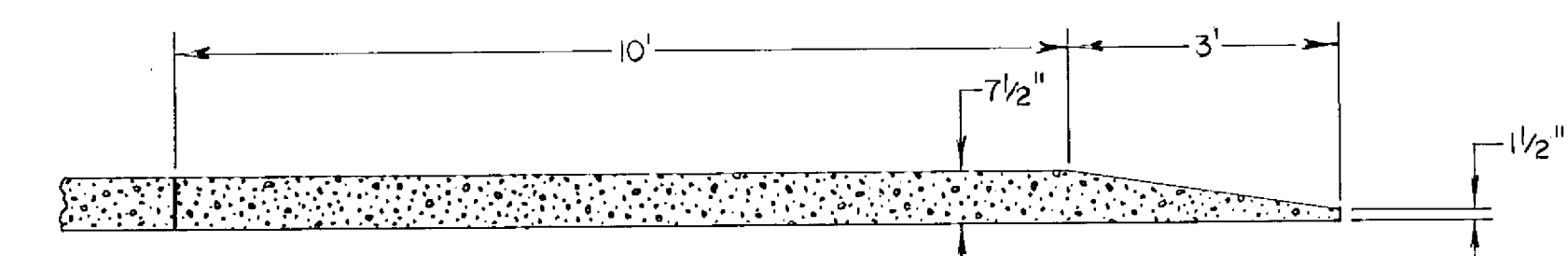
NOTE: ALL HYDRANT LEADS, TIE BARS, BRACING AND OTHER EQUIPMENT, WORK AND MATERIALS REQUIRED TO COMPLETE THE JOB AS SPECIFIED SHALL BE CONSIDERED AS INCIDENTAL TO RELOCATING HYDRANTS.

CONCRETE MEDIAN NOSE DETAIL

NO SCALE



SECTION A-A



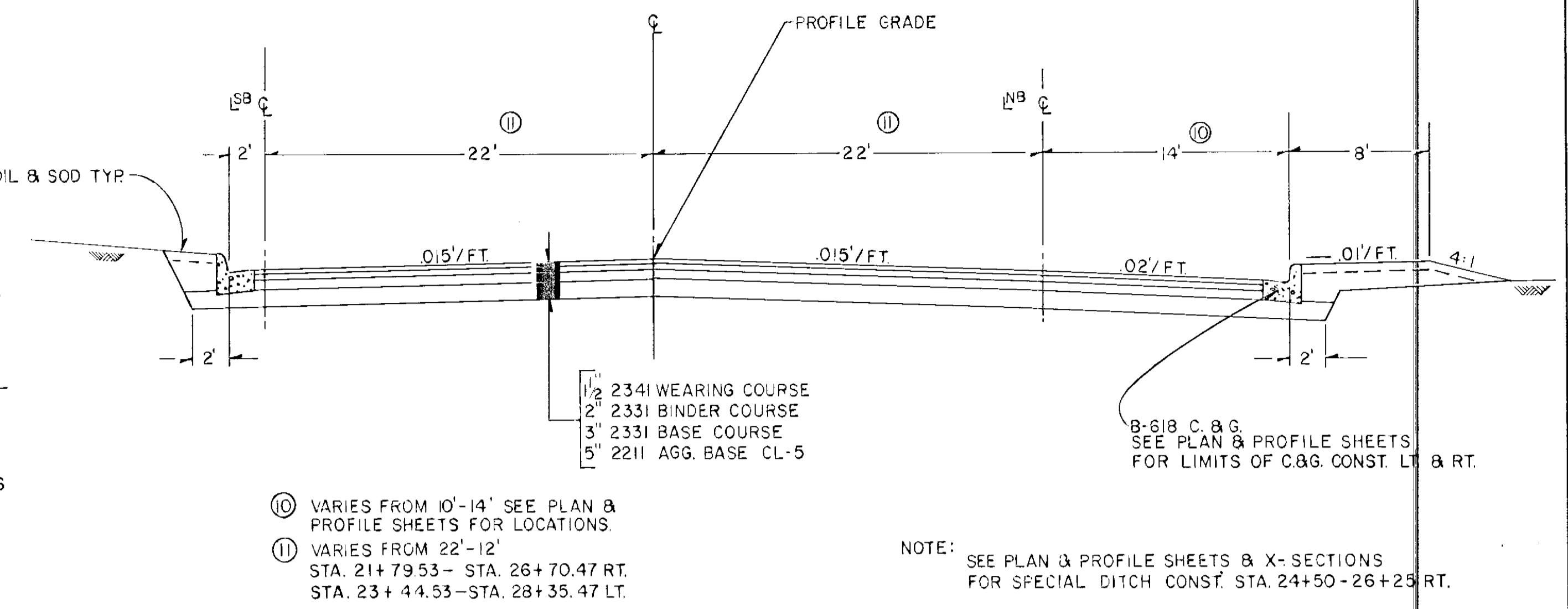
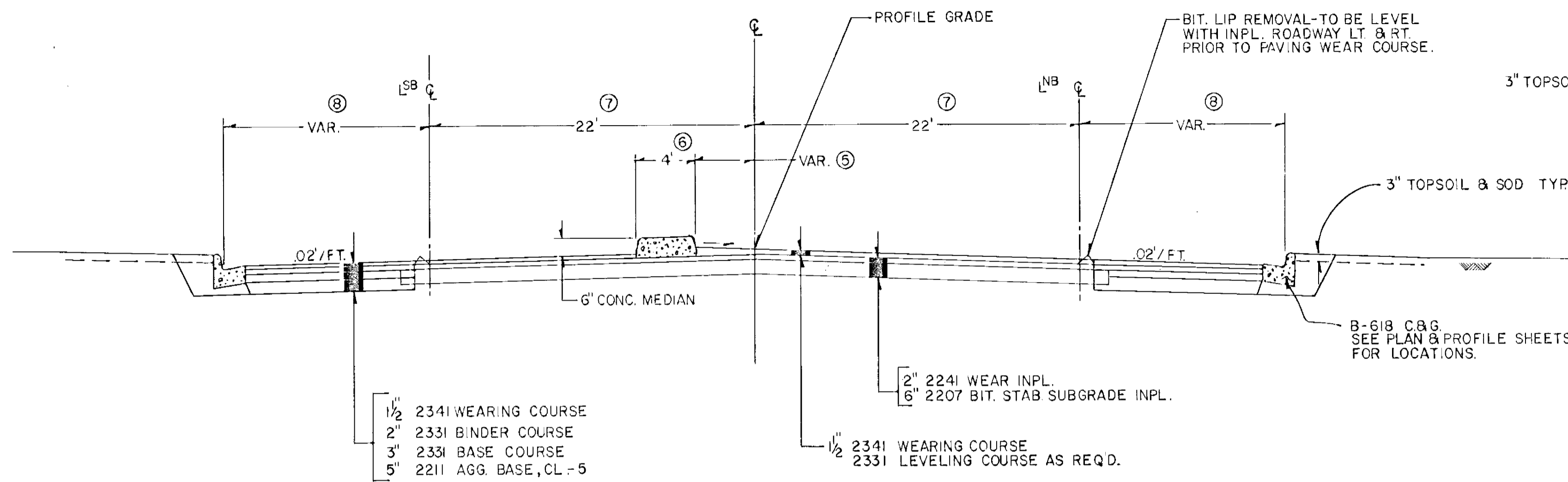


ALL DIMENSIONS NOMINAL

TYPICAL SECTIONS

C.S.A.H. 17  
STA. 8+94.55 - STA. 17+90±

C.S.A.H. 17  
STA. 21+55 - STA. 26+70.47



- 1/2" 2341 WEARING COURSE
- 2" 2331 BINDER COURSE
- 3" 2331 BASE COURSE
- 5" 2211 AGG. BASE, CL-5

- 2" 2241 WEAR INPL.
- 6" 2207 BIT. STAB. SUBGRADE INPL.
- 1/2" 2341 WEARING COURSE
- 2331 LEVELING COURSE AS REQD.

- 1/2" 2341 WEARING COURSE
- 2" 2331 BINDER COURSE
- 3" 2331 BASE COURSE
- 5" 2211 AGG. BASE CL-5

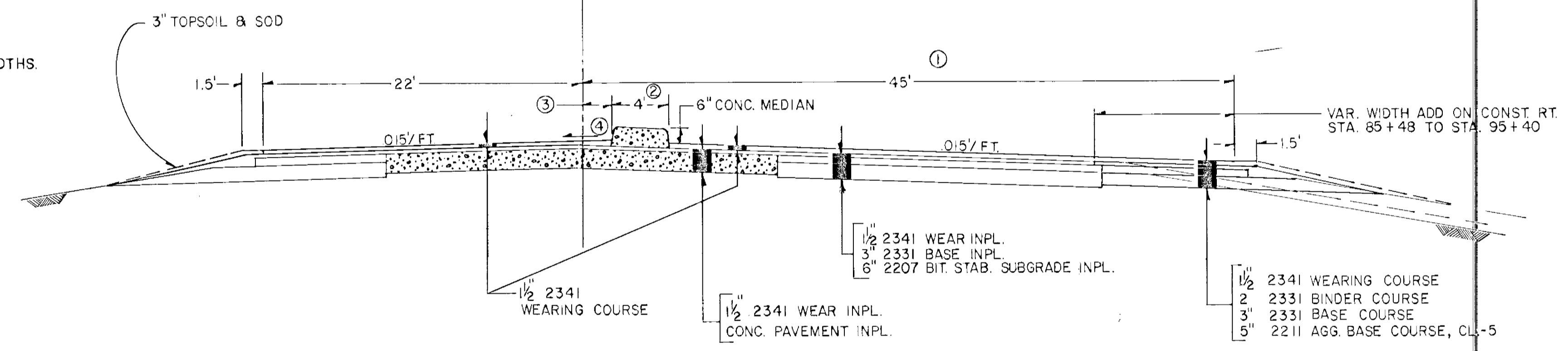
B-618 C.&G.  
SEE PLAN & PROFILE SHEETS  
FOR LIMITS OF C.&G. CONST. LT. & RT.

- ⑩ VARIES FROM 10'-14' SEE PLAN & PROFILE SHEETS FOR LOCATIONS.
- ⑪ VARIES FROM 22'-12' STA. 21+79.53 - STA. 26+70.47 RT. STA. 23+44.53 - STA. 28+35.47 LT.

NOTE: SEE PLAN & PROFILE SHEETS & X-SECTIONS FOR SPECIAL DITCH CONST. STA. 24+50 - 26+25 RT.

- ⑤ ISLAND LOCATION VARIES SEE PLAN & PROFILE SHEETS STA. 12+90 TO 17+64
- ⑥ SEE PLAN & PROFILE SHEETS FOR VAR. ISLAND CONST. WIDTH STA. 11+70 TO 12+30
- ⑦ VARIES FROM 12' TO 22' STA. 8+94.53 TO STA. 13+85.47
- ⑧ SEE PLAN & PROFILE SHEETS FOR WIDTHS.

C.S.A.H. 23

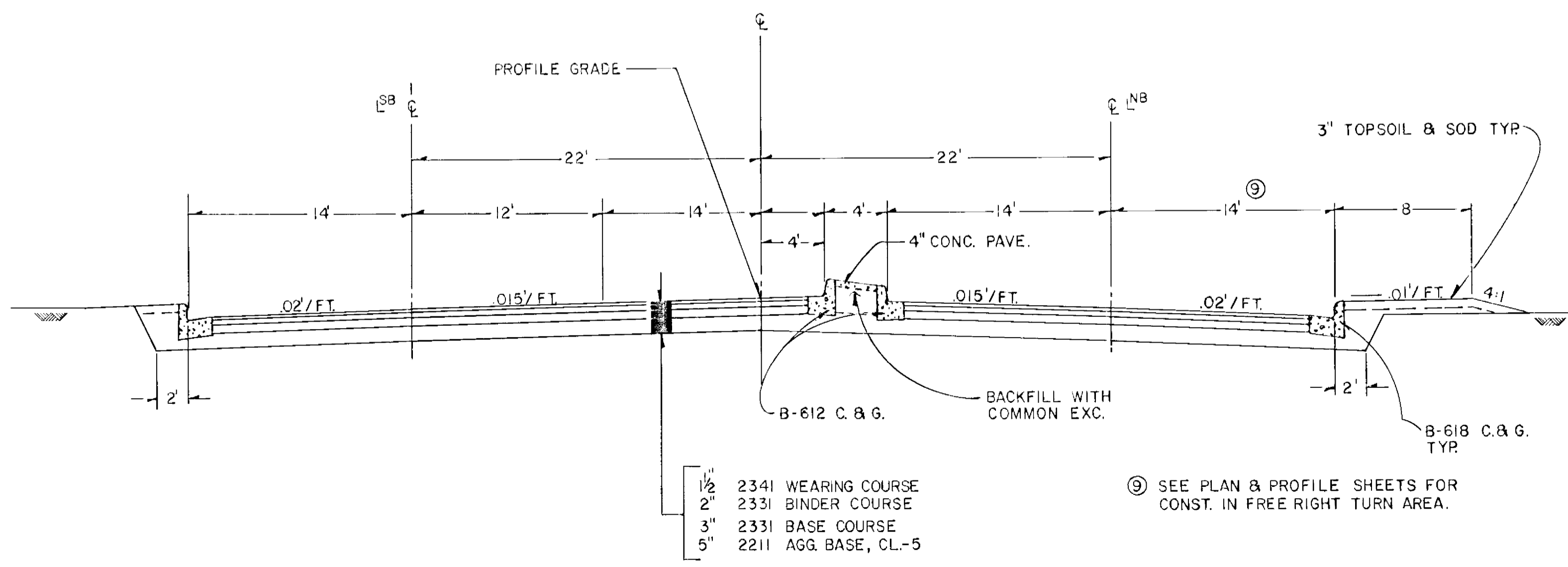


- 1/2" 2341 WEAR INPL.
- 3" 2331 BASE INPL.
- 6" 2207 BIT. STAB. SUBGRADE INPL.
- 1/2" 2341 WEARING COURSE
- 1/2" 2341 WEAR INPL.
- CONC. PAVEMENT INPL.

- 1/2" 2341 WEARING COURSE
- 2" 2331 BINDER COURSE
- 3" 2331 BASE COURSE
- 5" 2211 AGG. BASE COURSE, CL-5

- ① VARIES FROM 22'-45' MATCH INPL. ROADWAY.
- ② VARIES FROM 4'-16' SEE PLAN & PROFILE SHEETS FOR GEOMETRICS.
- ③ VARIES FROM 2'-14' SEE PLAN & PROFILE SHEETS FOR LOCATIONS & DISTANCES.
- ④ SLOPE TO MATCH INPL. ROADWAY. STA. 82+75 TO 86+75 STA. 89+65 TO 92+30

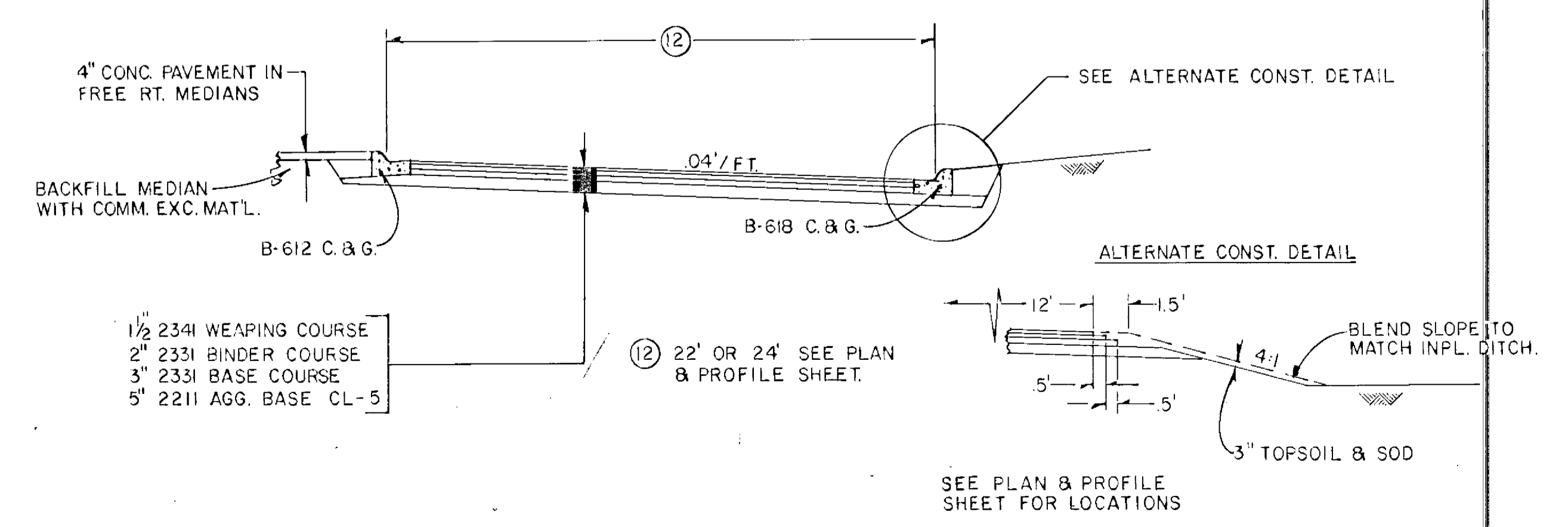
C.S.A.H. 17  
STA. 18+73 - STA. 21+55



- 1/2" 2341 WEARING COURSE
- 2" 2331 BINDER COURSE
- 3" 2331 BASE COURSE
- 5" 2211 AGG. BASE, CL-5

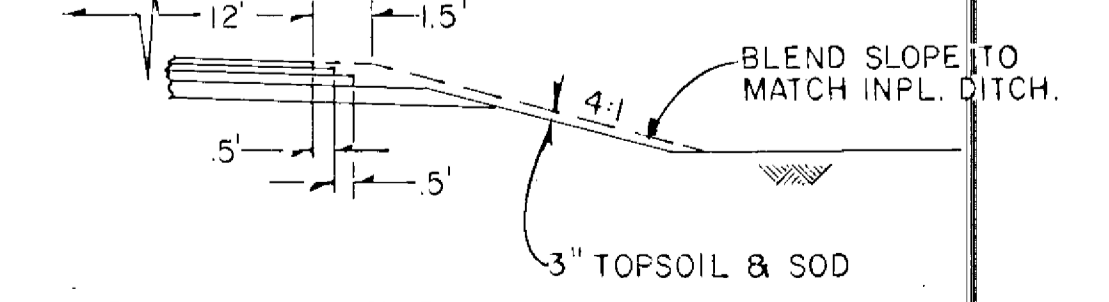
③ SEE PLAN & PROFILE SHEETS FOR CONST. IN FREE RIGHT TURN AREA.

FREE RIGHT TYPICAL

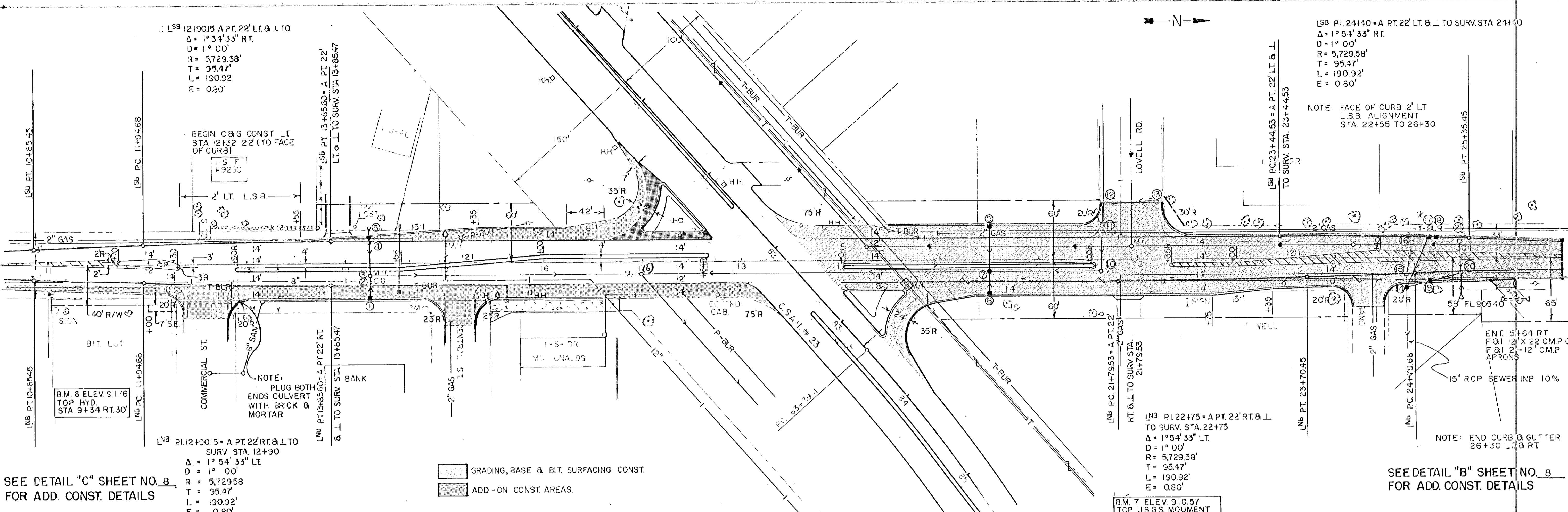


- 1/2" 2341 WEARING COURSE
- 2" 2331 BINDER COURSE
- 3" 2331 BASE COURSE
- 5" 2211 AGG. BASE CL-5

⑫ 22' OR 24' SEE PLAN & PROFILE SHEET.



SEE PLAN & PROFILE SHEET FOR LOCATIONS



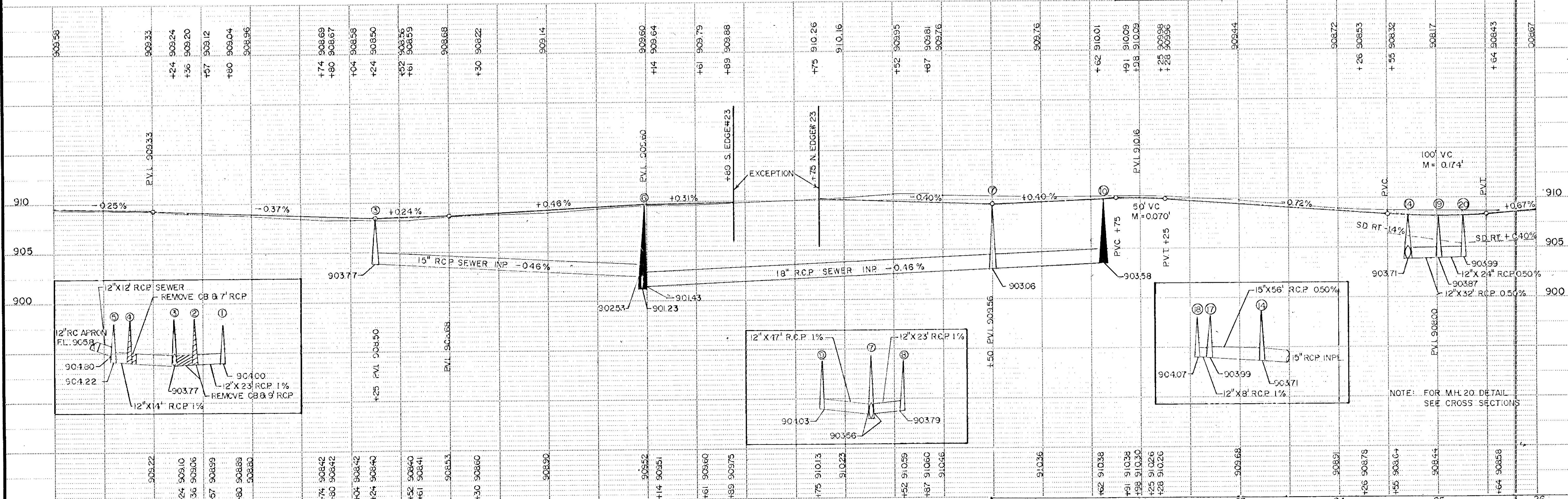
SEE DETAIL "C" SHEET NO. 8 FOR ADD. CONST. DETAILS

L&Sb PI 12+9015 = APT. 22' RT. & LT. TO SURV. STA. 12+90  
 $\Delta = 1^\circ 54' 33''$  LT.  
 $D = 1^\circ 00'$   
 $R = 5,729.58'$   
 $T = 95.47'$   
 $L = 190.92'$   
 $E = 0.80'$

GRADING, BASE & BIT. SURFACING CONST.  
 ADD-ON CONST. AREAS

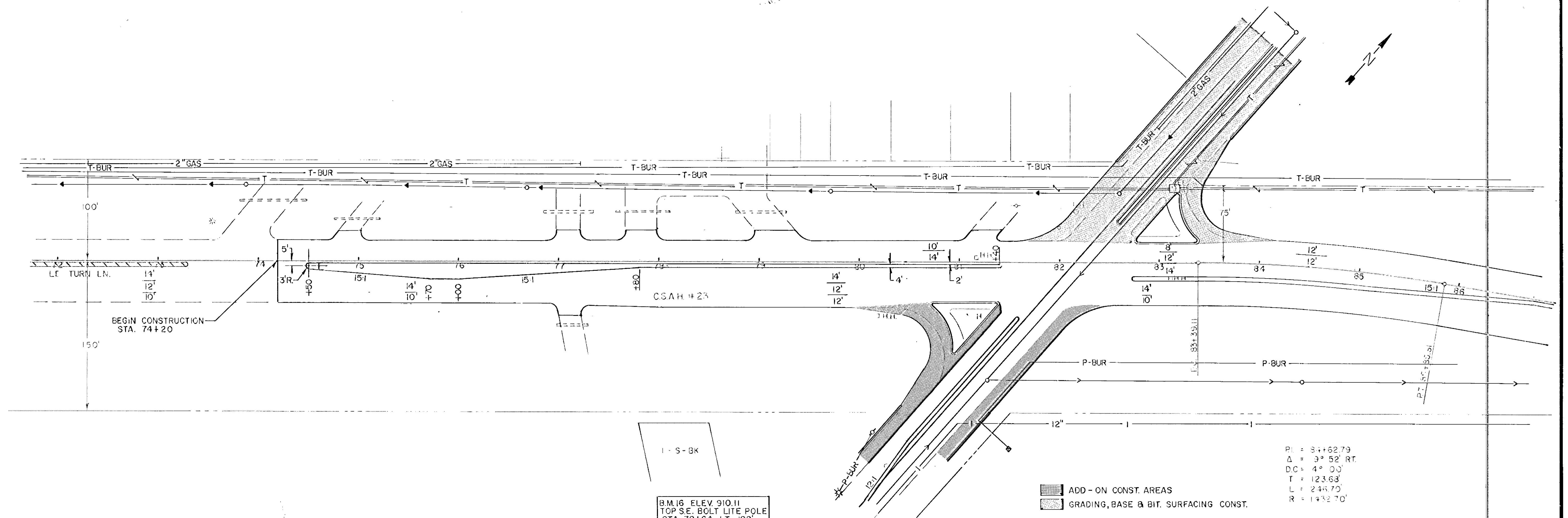
B.M. 7 ELEV. 910.57  
 TOP U.S.G.S. MONUMENT  
 200' NO. INTERSECT. 17

SEE DETAIL "B" SHEET NO. 8 FOR ADD. CONST. DETAILS



TELETYPE POST - SINGLE PLAN - PROFILE - 102/4

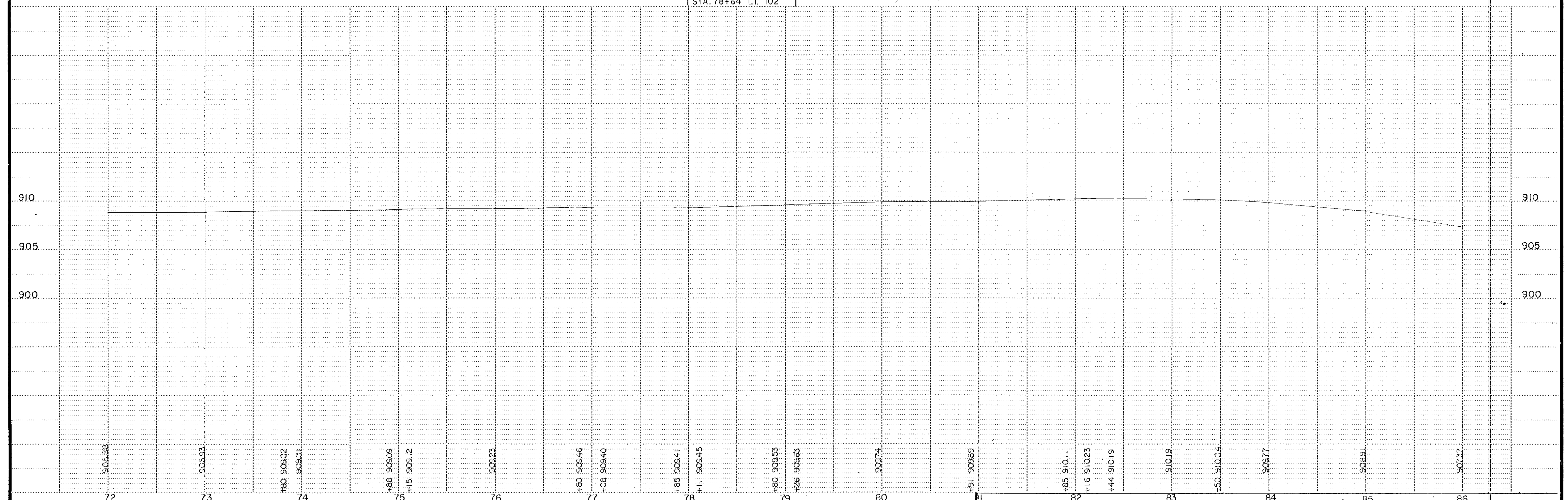




PI = 31+62.73  
 Δ = 3° 52' RT.  
 DC = 4° 00'  
 T = 123.63  
 L = 245.75  
 R = 1432.70

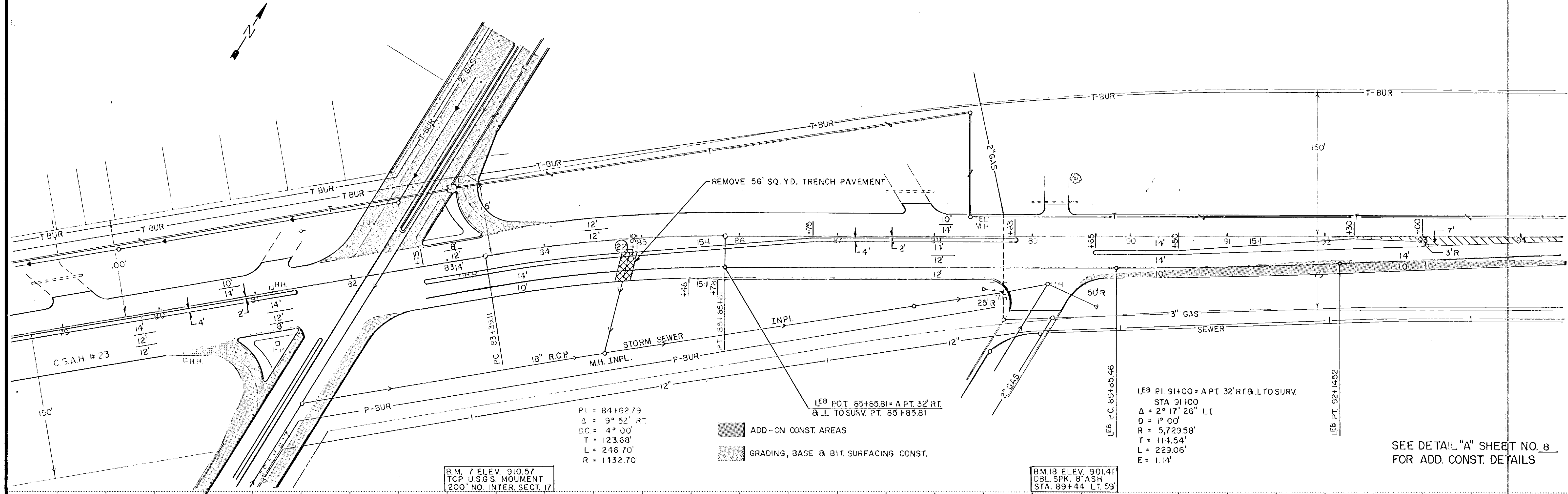
B.M. 16 ELEV. 910.11  
 TOP SE. BOLT LITE POLE  
 STA. 78+64 LT. 102'

ADD-ON CONST. AREAS  
 GRADING, BASE & BIT. SURFACING CONST.



TELEPHONE POST - SINGLE PLAN - MOBILE - 1/2\"/>





PI = 84+62.79  
 $\Delta = 9^\circ 52' \text{ RT.}$   
 DC =  $4^\circ 00'$   
 T = 123.68'  
 L = 246.70'  
 R = 1432.70'

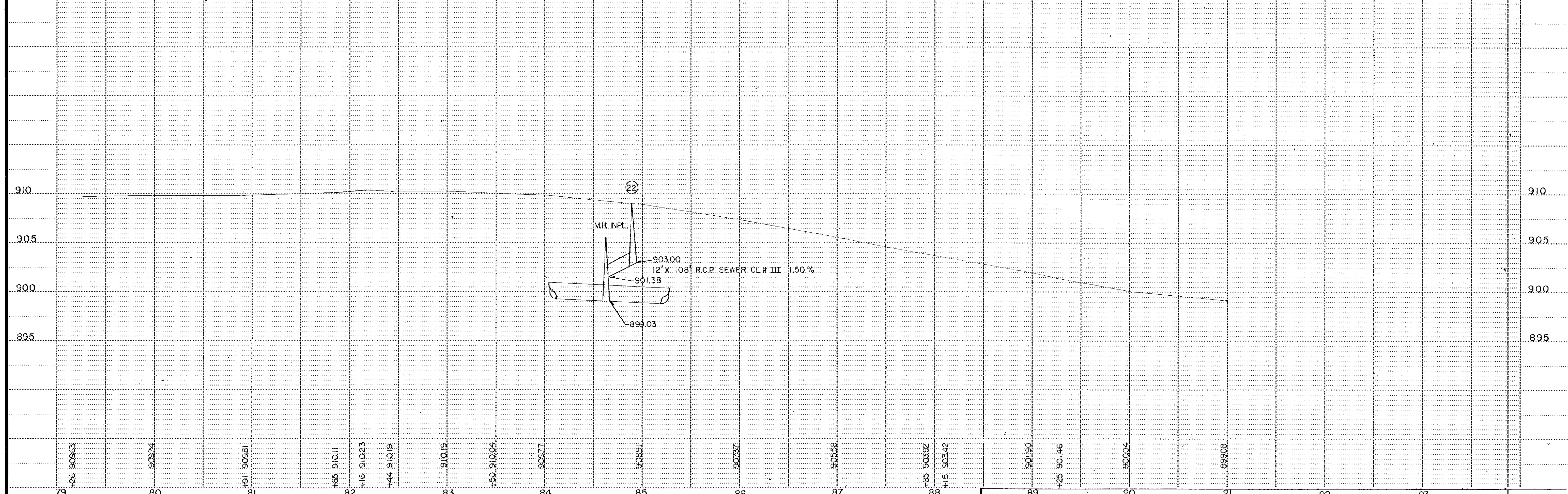
ADD-ON CONST. AREAS  
 GRADING, BASE & BIT. SURFACING CONST.

LEB PI. 91+00 = A PT. 32' RT. & LT. TO SURV.  
 STA 91+00  
 $\Delta = 2^\circ 17' 26'' \text{ LT.}$   
 D =  $1^\circ 00'$   
 R = 5,729.58'  
 T = 114.54'  
 L = 229.06'  
 E = 1.14'

B.M. 7 ELEV. 910.57  
 TOP U.S.G.S. MONUMENT  
 200' NO. INTER. SECT. 17

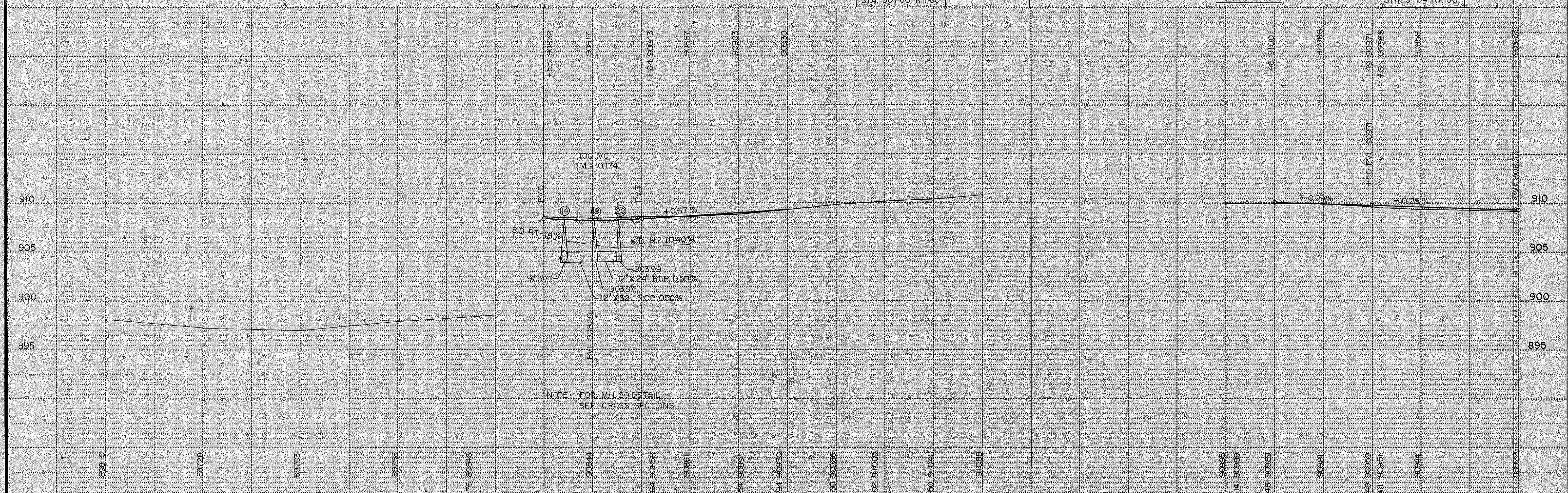
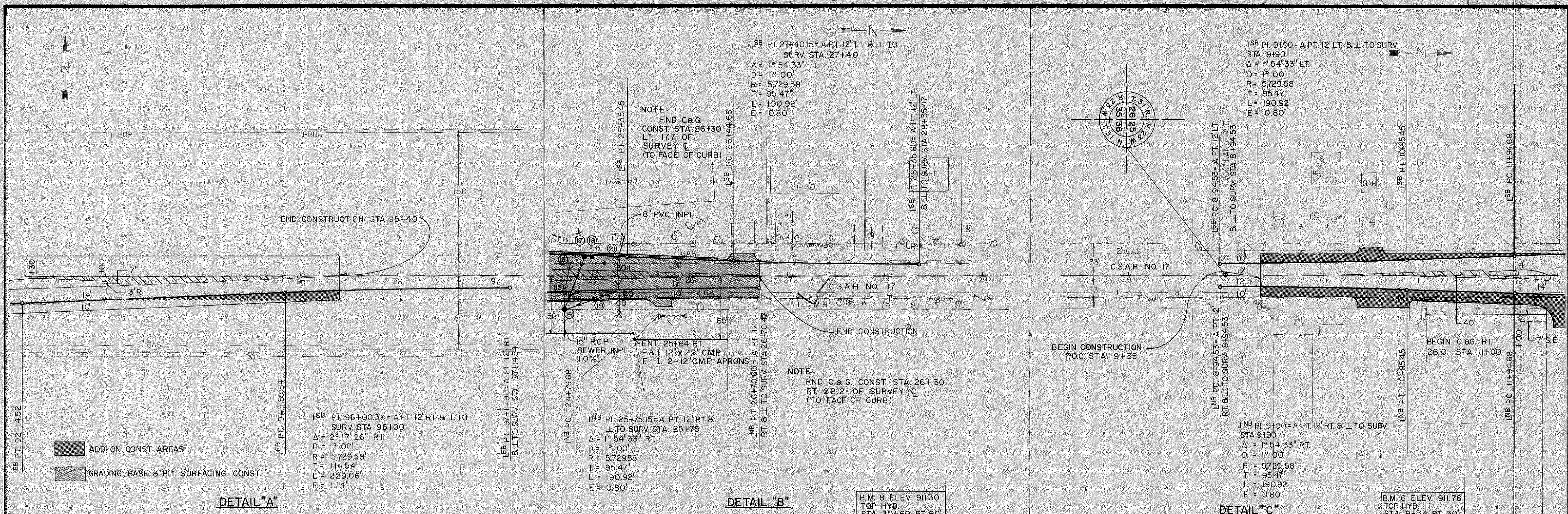
B.M. 18 ELEV. 901.41  
 DBL. SPK. 8" ASH  
 STA. 89+44 LT. 59'

SEE DETAIL "A" SHEET NO. 8 FOR ADD. CONST. DETAILS



TELEPHONE POST - SINGLE PLAN - PROFILE - 1/2" = 1' = 1/2" = 1'





TELEPHONE POST - SINGLE PLAN - PROFILE - 107M



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

10+49 909.59  
Q 24' GRAVEL ENT. LT.  
1 1/2" BIT OVERLAY

10+00 909.81  
1 1/2" BIT OVERLAY

9+46 909.89  
1 1/2" BIT OVERLAY

BEGIN PROJECT 9+35

9+14 909.99  
NO. EDGE WOODLAND AVE.

9+00 909.95  
Q WOODLAND AVE.

8+89 909.96  
SO. EDGE WOODLAND AVE.

12+57 908.93  
Q 12' GRAVEL ENT. (LT.) Q COMMERCIAL ST. (RT.)

12+36 909.06  
SO. GUTTER COMMERCIAL ST. (RT.)

12+24 909.10

12+00 909.22

11+00 909.44

10+61 909.51  
Q 54' BIT ENT. RT.

15 25  
G.T.S.

3 5  
2 T.S.

3 2  
1 T.S.

3 1  
1 T.S.

13 4  
2 T.S.  
1 18  
18

9 11  
47

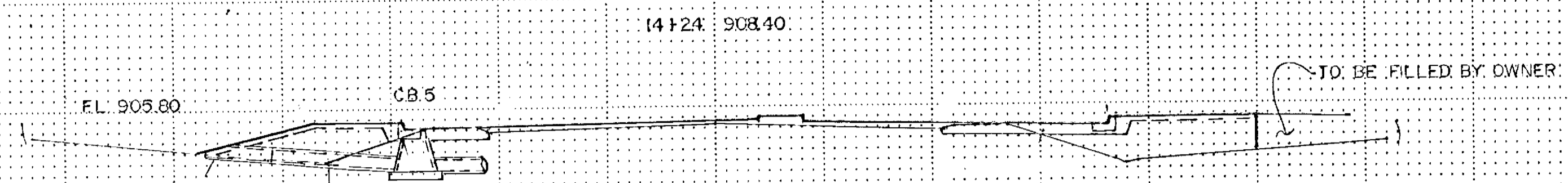
STA. 8+89 TO 12+57

CSA.H.#17



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT



14+24 908.40

EL. 905.60

C.B.S.

TO BE FILLED BY OWNER

13 37  
11 T.S.

17+00 90952

43 33  
20 T.S.

14+04 908.42  
NO GUTTER BIT ENT. LT.

8 27  
14 T.S.

16+00 90890

76 32  
20 T.S.

13+80 908.42  
SO. GUTTER BIT. ENT. LT.

8 2  
2 T.S.

15+30 90860  
NO GUTTER CENTRAL ST. (RT.)

53 13  
10 T.S.

13+74 908.42

3 3  
1 T.S.

15+00 90853  
SO. GUTTER CENTRAL ST. (RT.)

12 16  
18 T.S.

15  
10

15  
10  
15  
10  
15  
10  
15  
10

13+00 908.80

45 74  
11 T.S.

14+61 90841

23 50  
10 T.S.

TO BE FILLED BY OWNER

12+80 908.89  
NO GUTTER COMMERCIAL ST. (RT.)

14+52 908.42

6 16  
3 T.S. TO BE FILLED BY OWNER

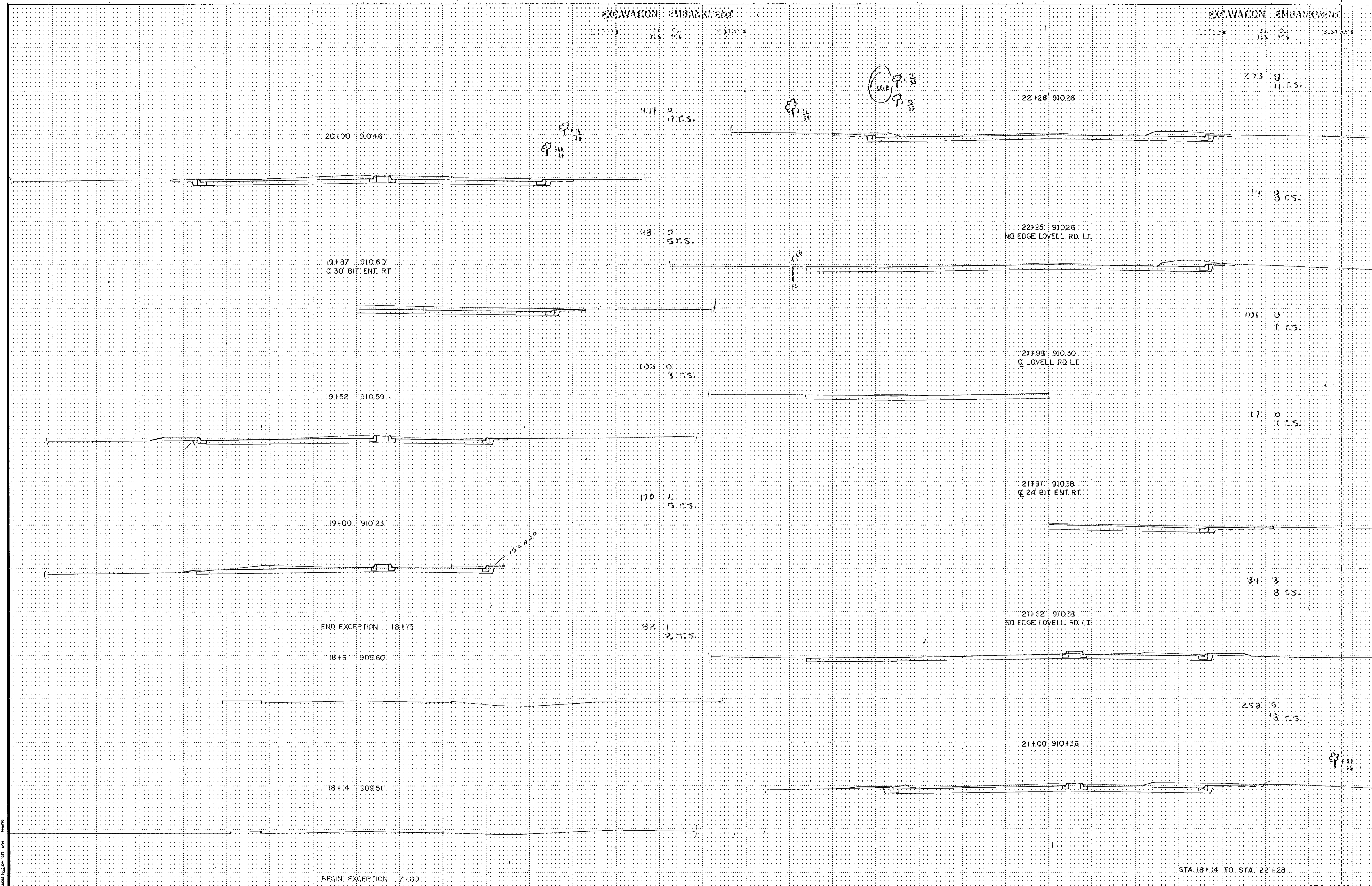
STA. 12+80 TO STA. 17+00

C.S.A.H. # 17



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT



STA. 18+14 TO STA. 22+28

CSA.H. #17



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

27+92 910.09  
6' 12" SAND ENT. LT.

25+84 908.58  
6' 14" GRAVEL ENT. RT.

27+74 910.00  
6' 10" BIT ENT. LT.

25+25 908.55

M.H. 20

INV. 903.99

FL. @ S.D. 905.40

25+00 908.44

6) 12  
3 T.S.

27+50 909.86

24+55 908.64

10) 23  
13 T.S.

26+94 909.30  
6' 18" BIT-CONC ENT. LT.

16) 16  
6 T.S.

24+26 908.78  
6' 33" SAND ENT. RT.

END PROJECT 26+70

26+54 908.91  
6' 24" BIT ENT. LT.

24+00 908.91

12) 6  
1 T.S.

26+00 908.61

13) 31  
14 T.S.

23+00 909.68

3) 11  
9 T.S.

S.D. 905.70

16) 37  
25 T.S.

STA. 23+00 TO STA. 27+92

CSA.H. #17



EXCAVATION EMBANKMENT

Excavation Yes No Embankment Yes No

82+44  
C CSAH #17 TAKEN ON RA.

81+85  
WEST GUTTER CSAH # 17 TAKEN ON RA.

80+91

80+00

79+26  
Q 30' BIT. ENT. LT.

78+80

87+00

26 13  
9 T.S.

86+00

24 13  
7 T.S.

85+00

13 8  
4 T.S.  
Beg Taper 85+48

84+00

83+50

83+00

STA. 78+80 TO STA. 87+00

K. S. ...  
CSAH # 23



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

PROJECT TOTALS		
CSAH #17	2906	525
CSAH #23	224	205
TOTAL (CSAH #17)	291	291
GRAND TOTAL	3421	730

3421  
 $1.55\% \times 730 = -112$   
 2289 C.Y.  
 EXCESS  
 $1.25\% \times 338 = 423$  C.Y.  
 TOPSOIL

CSAH #17 31% C.C. Topsoil  
 CSAH #23 10% C.C. Topsoil

31 39  
 13 F.S.

28 30  
 11 F.S.

10 3  
 3 F.S.

14 7  
 5 F.S.

4 9  
 4 F.S.

12 20  
 9 F.S.

24 23  
 9 F.S.

23 35  
 11 F.S.

91+00

90+00

89+25  
 @ 24' BIT. ENT. LT.

89+00  
 @ COMMERCIAL ST. TAKEN ON RA.

88+15

87+85  
 @ 30' BIT. ENT. LT.

95+76

93+00

94+00

93+00

92+00

87+85 Beg. Section

End Section 87+88

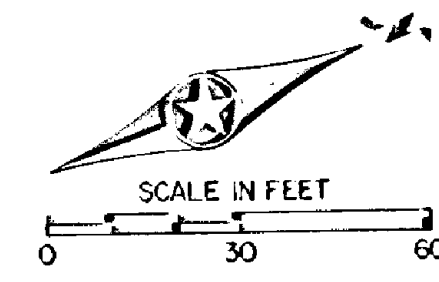
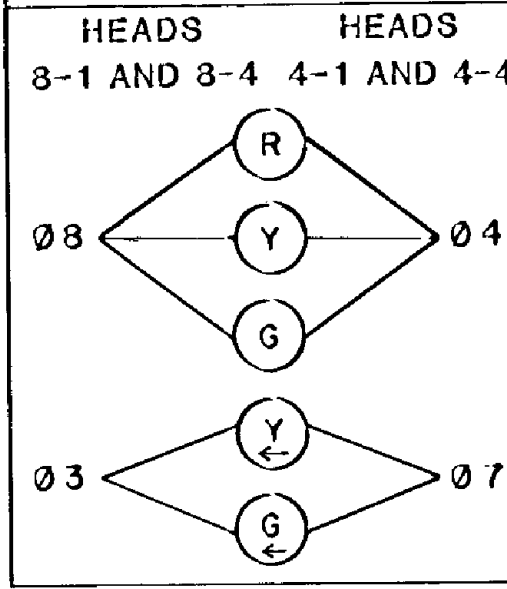
STA 87+85 TO STA 91+00 X-SECT. EXCAV. DIM. SHOWN

CSAH #23

**NOTES**

- 1) ALL LOOP DETECTORS ARE IN 1" N.M.C. (SEE DETAILS).
- 2) SEE SPECIAL PROVISIONS FOR THE INSTALLATION OF METAL GUARD POSTS.
- 3) SEE SPECIAL PROVISIONS FOR THE CONTRACTORS RESPONSIBILITY FOR THE LOCATION OF UTILITIES.
- 4) LOOP DETECTORS/CONDUCTORS SHALL BE CROSS LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 5) WOOD POLE (S.O.P.) TO BE RELOCATED DURING COUNTY CONSTRUCTION PROJECT.

**SIGNAL HEAD PHASING**



**SIGNAL INDICATIONS**

FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA
1-1	1	R				12	12	12
2-1	2	R	12	12	12			
2-2	2	R	12	12	12			
2-3	2	R	12	12	12			
4-1	4B7	R	12	12	12		12	12
4-2	4	R	12	12	12			
4-3	4	R	12	12	12			
4-4	4B7	R	12	12	12		12	12
4-5	4	R	12	12	12			
5-1	5	R				12	12	12
6-1	6	R	12	12	12			
6-2	6	R	12	12	12			
6-3	6	R	12	12	12			
8-1	8B3	R	12	12	12		12	12
8-2	8	R	12	12	12			
8-3	8	R	12	12	12			
8-4	8B3	R	12	12	12		12	12
8-5	8	R	12	12	12			

④ P100-A-35-D40-9  
 P100 POLE FOUNDATION  
 LUMINAIRE-200 WATT H.P.S. (APPROX. 315')  
 2-ONE WAY SIGNALS-OVERHEAD  
 TYPE 20B-POLE MOUNTED 180°  
 TYPE 10B-POLE MOUNTED 90°  
 TWO PEDESTRIAN PUSH BUTTONS  
 3 METAL GUARD POSTS  
 EXTEND INTO H.H. 9  
 3" R.S.C.  
 3-12/c#12  
 1-3/c#12  
 2-1/c#10  
 2-2/c#14

③ P100-B-35-D40-9  
 P100 POLE FOUNDATION  
 LUMINAIRE-200 WATT H.P.S. (APPROX. 270')  
 2-ONE WAY SIGNALS-OVERHEAD  
 TYPE 20B-POLE MOUNTED 180°  
 TYPE 30A-POLE MOUNTED 90°  
 2 PEDESTRIAN PUSH BUTTONS  
 3 METAL GUARD POSTS  
 EXTEND INTO H.H. 15  
 3" R.S.C.  
 2-12/c#12  
 2-3/c#12  
 2-1/c#10  
 3-2/c#14

① P100-B-35-D40-9  
 P100 POLE FOUNDATION  
 LUMINAIRE-200 WATT H.P.S. (APPROX. 270')  
 2-ONE WAY SIGNALS-OVERHEAD  
 TYPE 20B-POLE MOUNTED 180°  
 TYPE 30A-POLE MOUNTED 90°  
 2 PEDESTRIAN PUSH BUTTONS  
 3 METAL GUARD POSTS  
 EXTEND INTO H.H. 4  
 3" R.S.C.  
 2-12/c#12  
 1-3/c#12  
 4-1/c#10

⑤ SERVICE CABINET  
 METERED SIGNAL POWER  
 EXTEND INTO H.H. 1  
 1 1/4" R.S.C.  
 3-1/c#8  
 1-1/c#8 Br. Gr.  
 UNMETERED STREET LIGHTING  
 SERVICE  
 EXTEND INTO H.H. 1  
 1" R.S.C.  
 4-1/c#10  
 EXTEND INTO H.H. 20  
 1 1/4" R.S.C.  
 2-1/c#8  
 1-1/c#8 Br. Gr.

⑥ CONTROLLER AND CABINET  
 CABINET FOUNDATION  
 EXTEND INTO H.H. 1  
 4" R.S.C.  
 5-12/c#12  
 3-3/c#12  
 7-2/c#14  
 3-1/c#8  
 1-1/c#8 Br. Gr.  
 EXTEND INTO H.H. 2  
 4" R.S.C.  
 5-12/c#12  
 3-3/c#12  
 7-2/c#14  
 BETWEEN H.H. 1 AND H.H. 2  
 2" R.S.C.  
 2-1/c#10

⑦ WOOD POLE  
 1 1/4" R.S.C. AND WEATHERHEAD  
 2-1/c#8  
 1-1/c#8 Br. Gr.  
 EXTEND INTO H.H. 20  
 2-1/c#8  
 1-1/c#8 Br. Gr.  
 SEE NOTE 5

**LOOP DETECTORS**

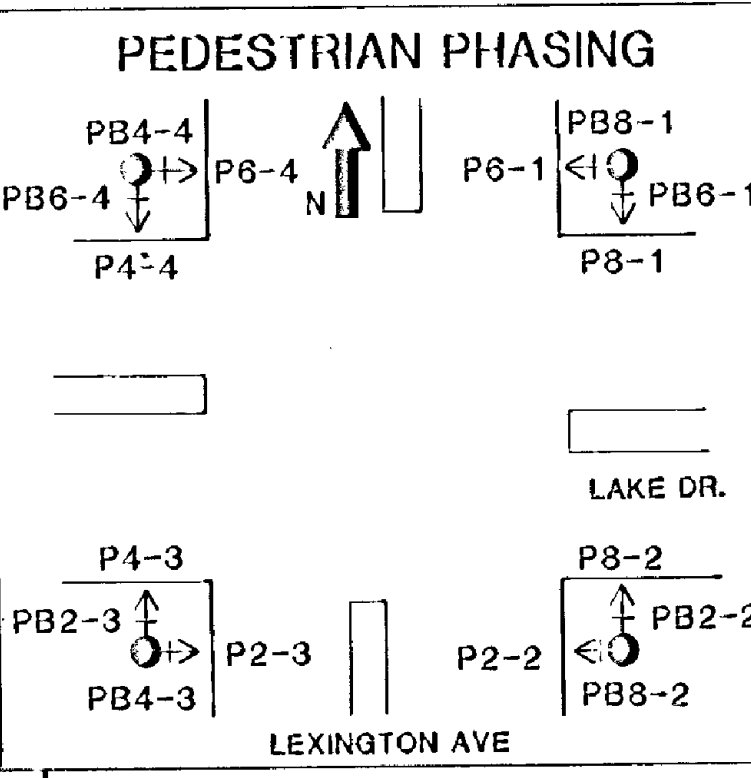
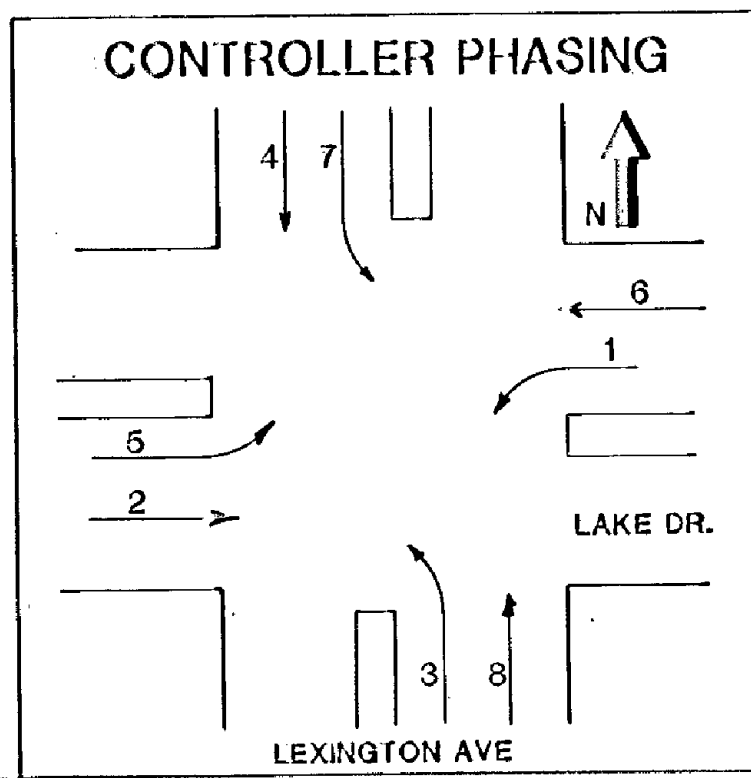
NUMBER	SIZE	FUNCTION	DISTANCE
D1-1	4-6'x6'	1	-
D2-1	1-6'x6'	1	280'
D2-2	1-6'x20'	4	-
D3-1	4-6'x6'	1	-
D4-1	1-6'x15'	3	-
D4-2	1-6'x20'	1	240'
D4-3	1-6'x20'	2	-
D5-1	4-6'x6'	1	-
D6-1	1-6'x6'	1	280'
D6-2	1-6'x20'	4	-
D7-1	4-6'x6'	1	-
D8-1	1-6'x15'	3	240'
D8-2	1-6'x20'	1	-
D8-3	1-6'x20'	2	-

**FUNCTIONS**

- 1 CALL AND EXTEND
- 2 DELAYED CALL, IMMEDIATE EXTEND
- 3 "EXTENDING" DETECTOR (STRETCH)
- 4 CALL ONLY

**"ELECTRICAL ENGINEER CERTIFICATION"**  
 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.  
*[Signature]*  
 Date: 7/24/85 Reg. No. 4713

② P100-A-35-D40-9  
 P100 POLE FOUNDATION  
 LUMINAIRE-200 WATT H.P.S. (APPROX. 315')  
 2-ONE WAY SIGNALS-OVERHEAD  
 TYPE 20B-POLE MOUNTED 180°  
 TYPE 10B-POLE MOUNTED 90°  
 2 PEDESTRIAN PUSH BUTTONS  
 3 METAL GUARD POSTS  
 EXTEND INTO H.H. 1  
 3" R.S.C.  
 3-12/c#12  
 1-3/c#12  
 4-1/c#10



SURVEY: CO.	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: G.W.	M.K.	1	8/15	Per Anoka County Review
DRAWN: G.N.				

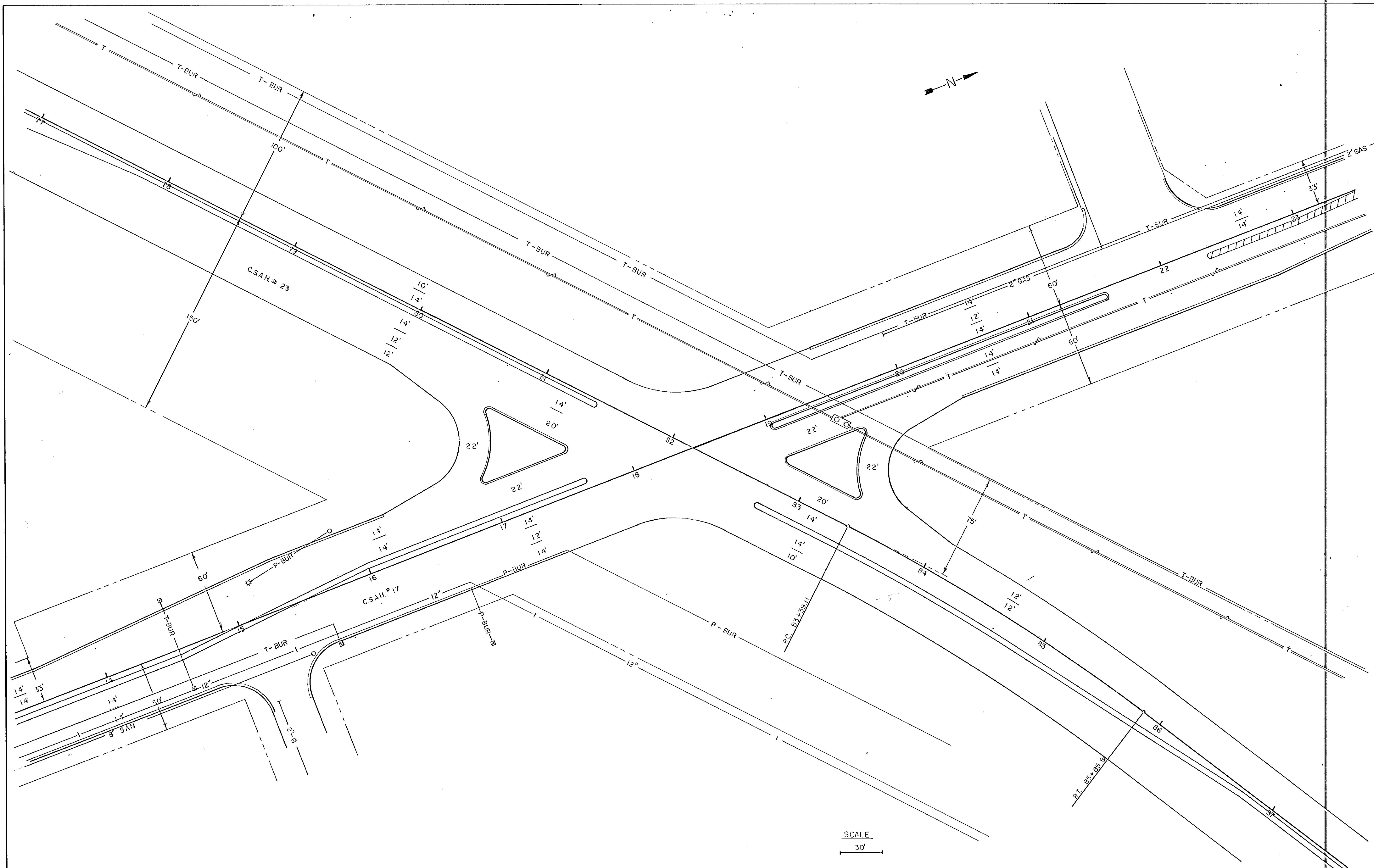
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
*[Signature]*  
 DATE: 7/24/85 REG. NO. 9089

**SHORT-ELLIOTT-HENDRICKSON, INC.**  
 Saint Paul, Minnesota • Chippewa Falls, Wisconsin

**SIGNAL SYSTEM INTERSECTION LAYOUT**

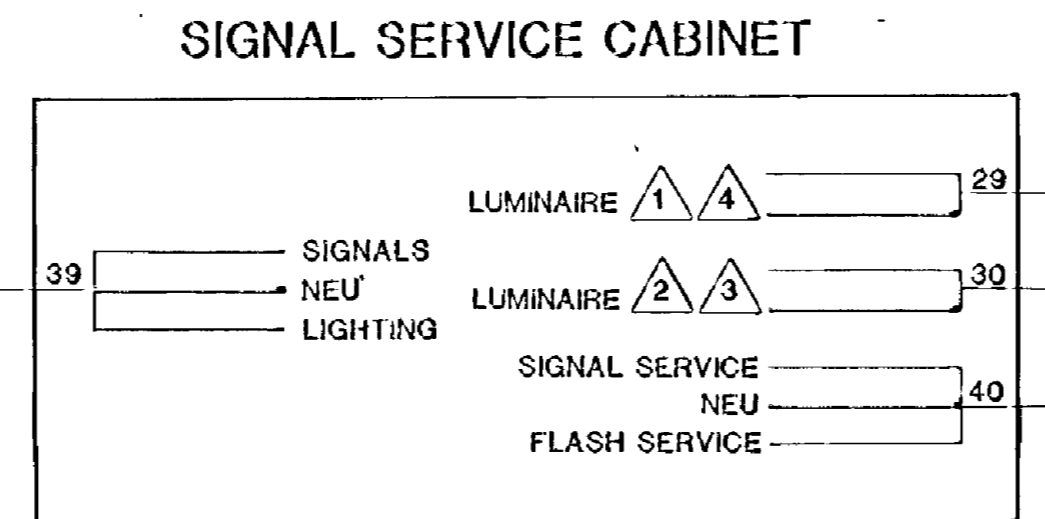
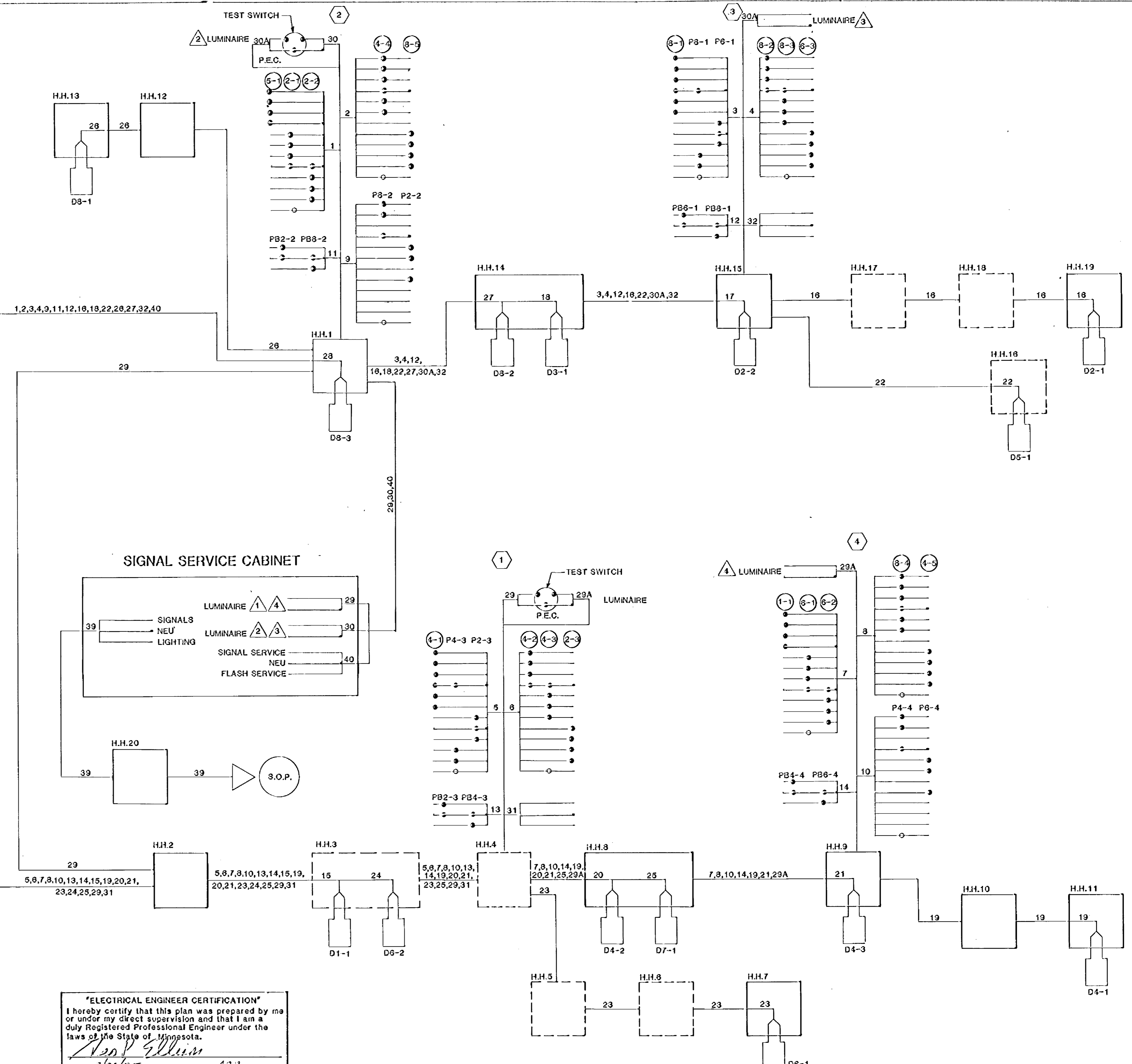
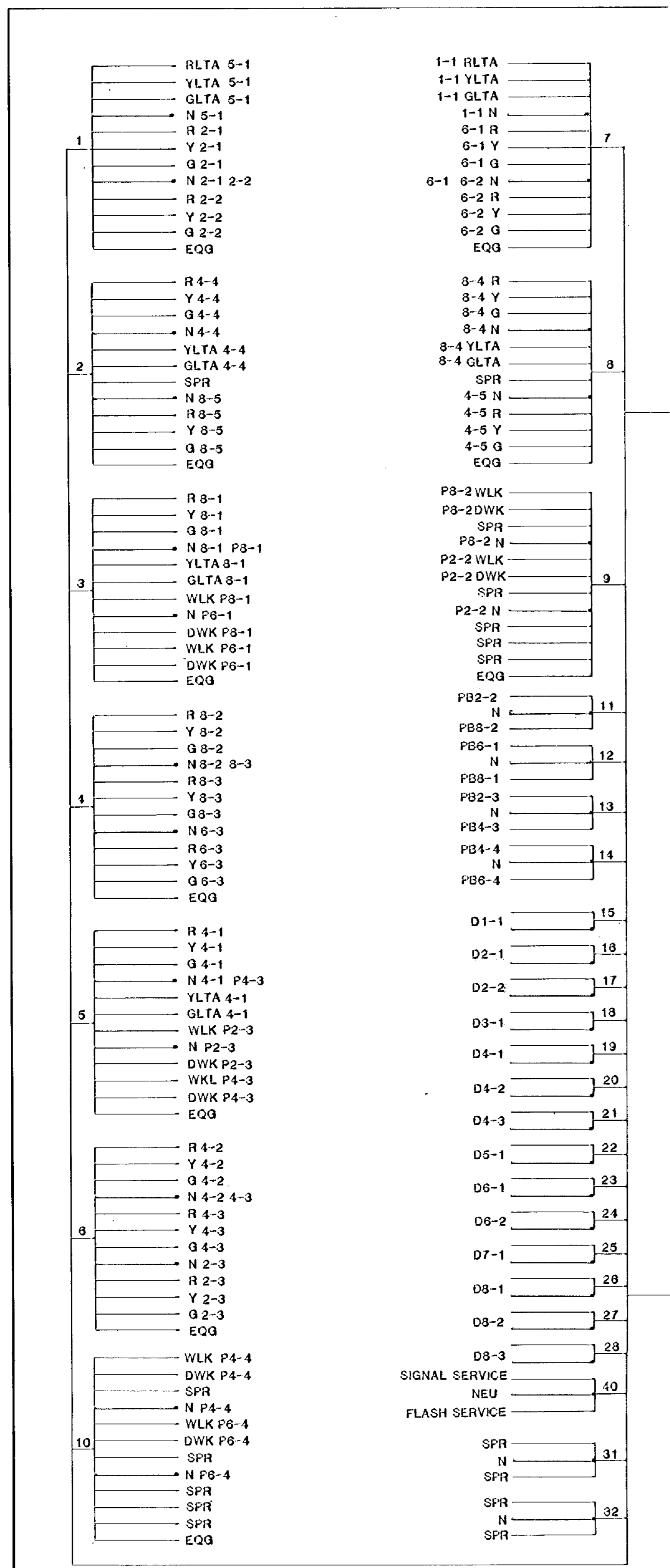
**ANOKA COUNTY**  
 C.S.A.H. 17 AND C.S.A.H. 23







# CONTROLLER CABINET



**"ELECTRICAL ENGINEER CERTIFICATION"**  
 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.  
*Robert P. Elliott*  
 Date: 1/24/05 Reg. No. 4713

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: M.K.	G.V.W.	1	3/18	Per Anoka County Review
DRAWN: G.N.				

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.  
*Robert P. Elliott*  
 DATE: 1/24/05 REG. NO. 4713

**SHORT - ELLIOTT - HENDRICKSON, INC.**  
 Saint Paul, Minnesota • Chippewa Falls, Wisconsin

**SIGNAL SYSTEM**  
**FIELD WIRING DIAGRAM**

**ANOKA COUNTY**  
 C.S.A.H. 17 AND C.S.A.H. 23

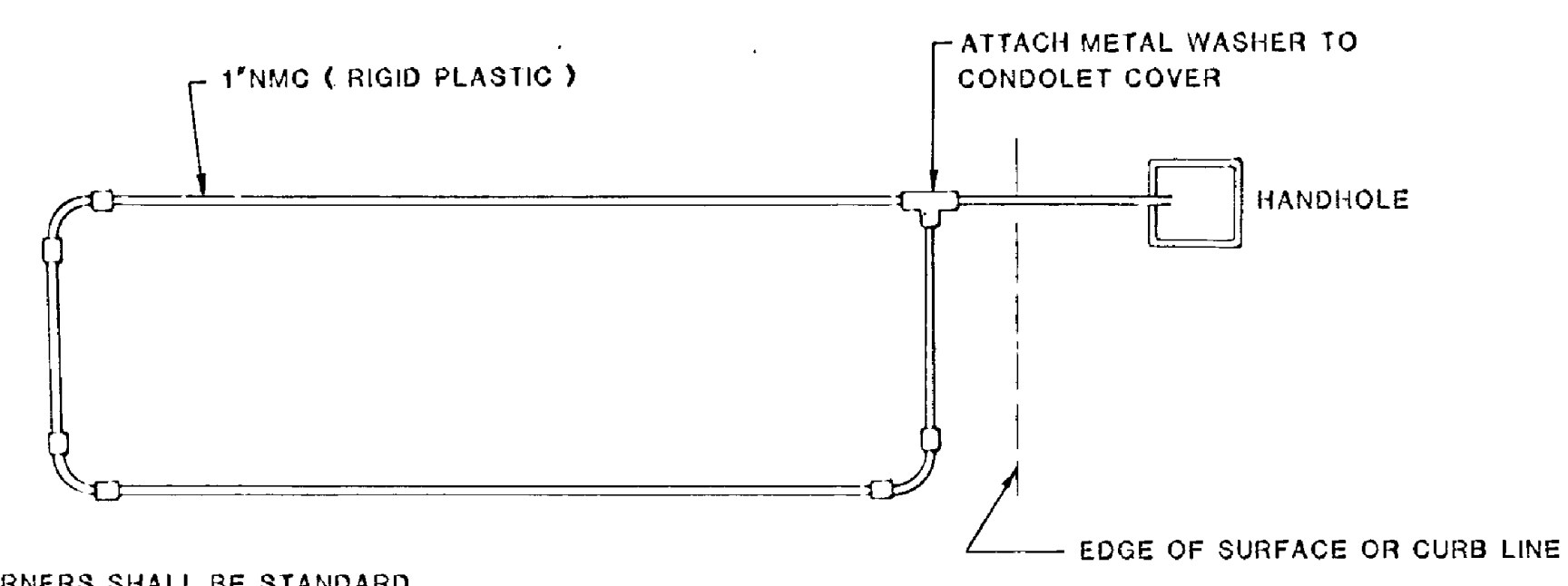
FILE NO.:	85139
DATE:	7/24/85



" LEGEND OF SYMBOLS "

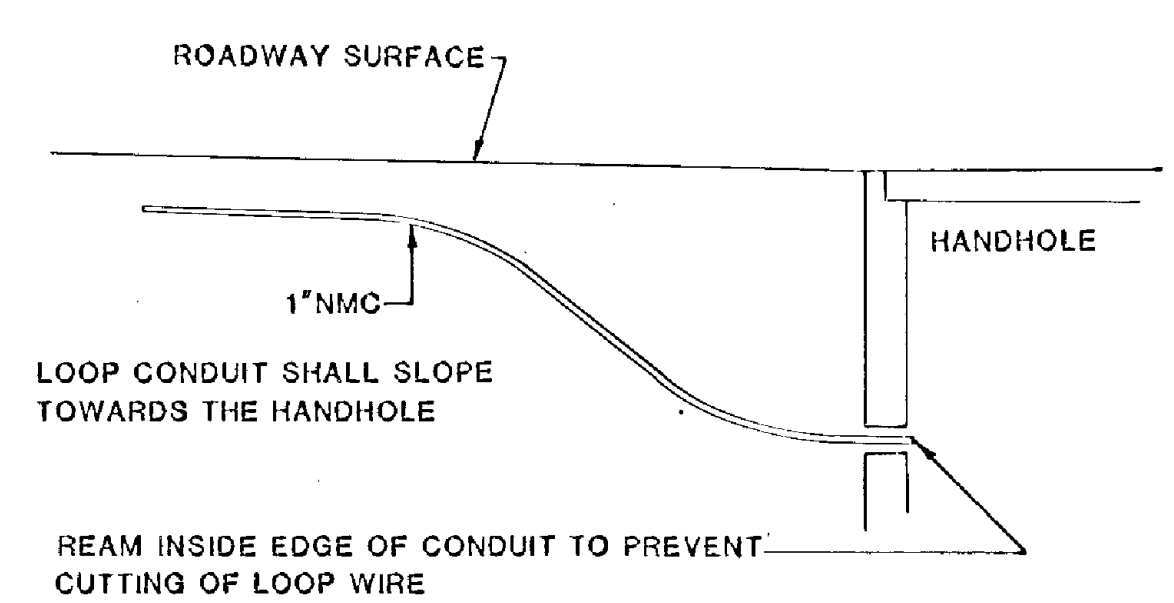
LOOP DETECTOR DETAIL "A"

PLAN VIEW  
( NOT TO SCALE )



ALL CORNERS SHALL BE STANDARD 90° CONDUIT BENDS

DRAINAGE DETAILS



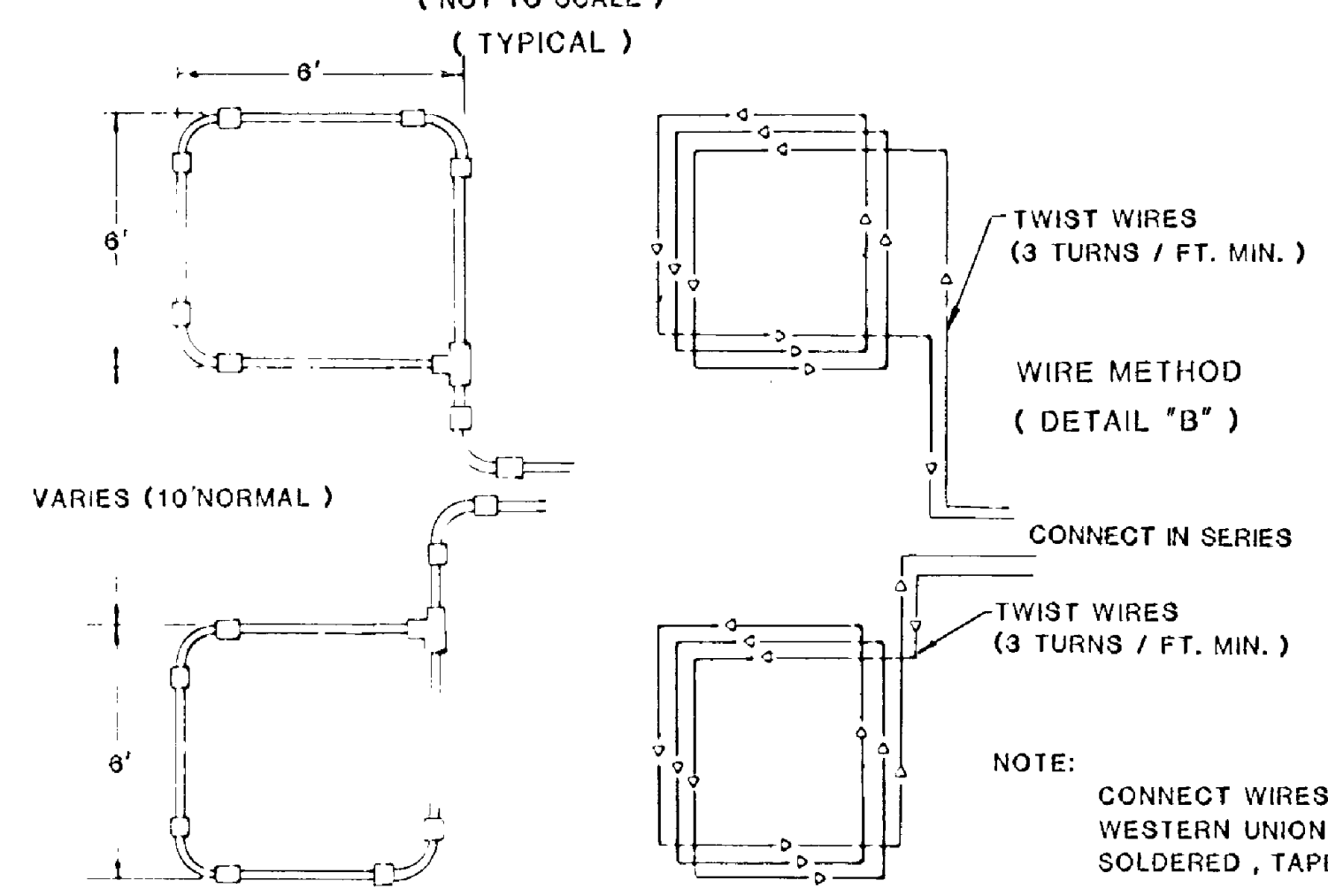
ABBREVIATIONS

- EQUIPMENT AND INDICATIONS
- RED-RED
  - YEL-YELLOW
  - GRN-GREEN
  - WLK-WALK
  - NEU-NEUTRAL
  - DWK-DON'T WALK
  - LUM-LUMINAIRE
  - DNL-DOWNLIGHT
  - H.H.-HANDHOLE
  - EQG-EQUIPMENT GROUND
  - R.S.C.-RIGID STEEL CONDUIT
  - GLTA-GREEN LEFT TURN ARROW
  - YRTA-YELLOW RIGHT TURN ARROW
  - D2-1(eg)-DETECTOR-PHASE\*2\*
  - G.R.R.-GROUND ROD
  - SER.-SERVICE
  - PAI-PEDESTRAIN INDICATIONS
  - 2-1(eg)-SIGNAL HEADS-PHASE\*2\*
  - SPR.-SPARE CONDUCTORS
  - N.M.C.-NON METALLIC CONDUIT
  - E.V.P.-EMERGENCY VEHICLE PRE-EMPTION
  - J.B.-JUNCTION BOX
  - W.P.-WOOD POLE
  - P.E.C.-PHOTOELECTRIC CELL

- SIGNAL BASE NO. --- (1)
- SIGNAL FACE NO. --- (2)
- LUMINAIRE NO. --- (A)
- CONTROLLER AND CABINET --- [Symbol]
- CONTROLLER AND CABINET-IN PLACE --- [Symbol]
- HANDHOLE --- [Symbol]
- HANDHOLE-IN PLACE --- [Symbol]
- RIGID STEEL CONDUIT (R.S.C.) --- [Symbol]
- RIGID STEEL CONDUIT (R.S.C.)-IN PLACE --- [Symbol]
- SIGNAL FACE WITH BACKGROUND SHIELD --- [Symbol]
- SIGNAL FACE W/O BACKGROUND SHIELD --- [Symbol]
- SIGNAL FACE-IN PLACE --- [Symbol]
- PEDESTRIAN INDICATIONS --- [Symbol]
- PEDESTRIAN INDICATIONS-IN PLACE --- [Symbol]
- PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE --- [Symbol]
- PEDESTRIAN PUSH BUTTON STATION --- [Symbol]
- TRAFFIC SIGNAL PEDESTAL --- [Symbol]
- TRAFFIC SIGNAL PEDESTAL-IN PLACE --- [Symbol]
- TRAFFIC SIGNAL POLE AND MAST ARM --- [Symbol]
- TRAFFIC SIGNAL POLE AND MAST ARM-IN PLACE --- [Symbol]
- STREET LIGHT POLE AND LUMINAIRE --- [Symbol]
- STREET LIGHT POLE AND LUMINAIRE-IN PLACE --- [Symbol]
- MAST ARM AND LUMINAIRE --- [Symbol]
- MAST ARM AND LUMINAIRE-IN PLACE --- [Symbol]
- WOOD POLE --- [Symbol]
- WOOD POLE-IN PLACE --- [Symbol]
- SOURCE OF POWER --- [Symbol]
- RAILROAD SIGNAL-IN PLACE --- [Symbol]
- RIGHT OF WAY LINE --- [Symbol]
- CENTER LINE --- [Symbol]
- EDGE OF ROADWAY --- [Symbol]
- SHOULDER LINE --- [Symbol]
- CURB LINE --- [Symbol]
- STOP BAR --- [Symbol]
- CROSSWALK --- [Symbol]

LOOP DETECTOR DETAIL "B"

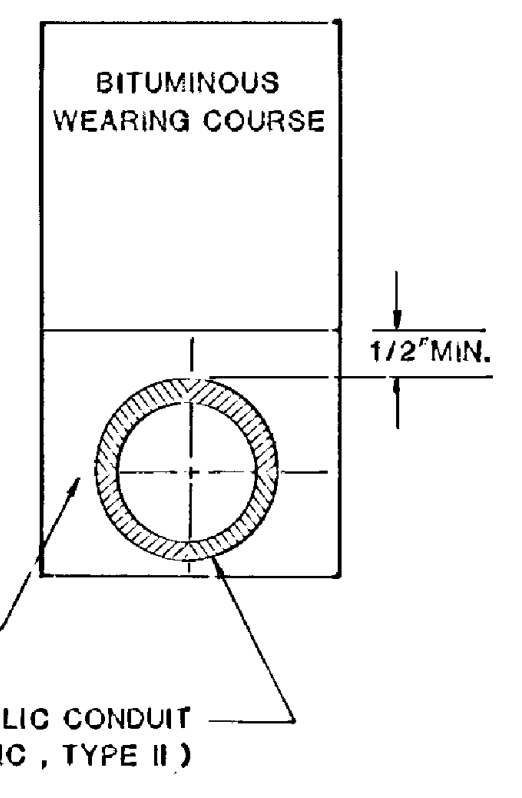
PLAN VIEW  
( NOT TO SCALE )



CONDUITS MAY BE PLACED IN COMMON TRENCH.

NOTE: LOOP DETECTOR CONDUCTORS SHALL BE CROSS-LINKED POLYETHYLENE (XLP) SEE SPECIAL PROVISIONS.

NOTE: CONNECT WIRES IN HANDHOLE USING WESTERN UNION SPLICE, SOLDERED, TAPED & WATERPROOFED.

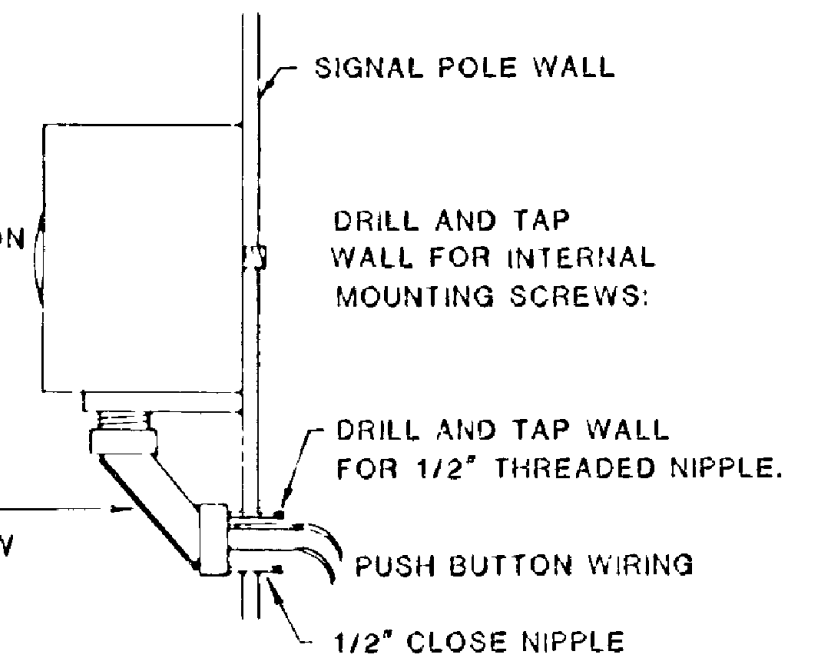


CONDUCTOR COLOR CODE

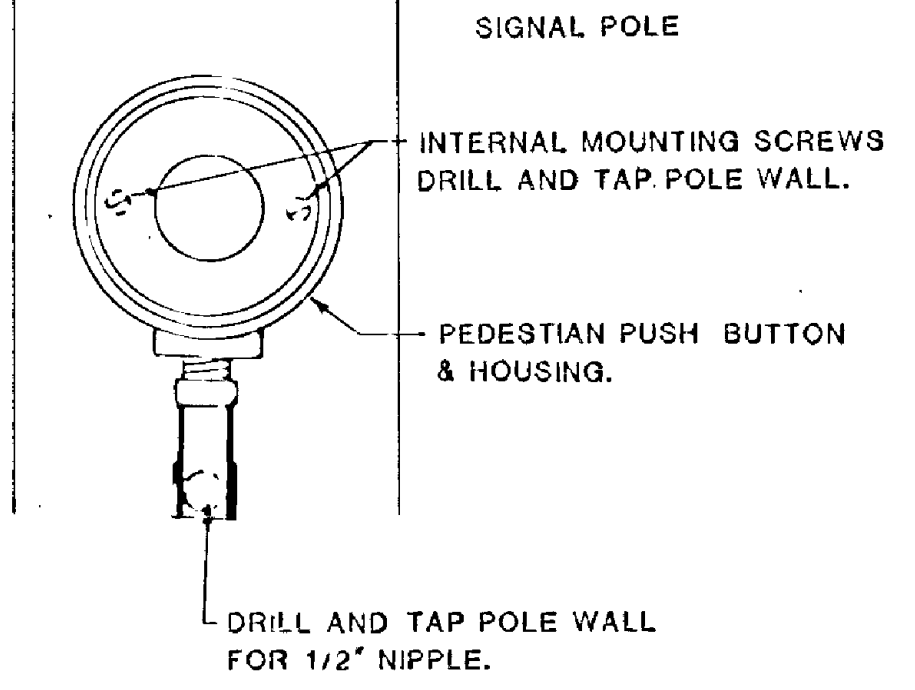
- R-RED
- O-ORANGE
- BL-BLUE
- WH-WHITE
- G-GREEN
- BLK-BLACK
- R/BLK-RED WITH BLACK TRACER
- O/BLK-ORANGE WITH BLACK TRACER
- BL/BLK-BLUE WITH BLACK TRACER
- WH/BLK-WHITE WITH BLACK TRACER
- BLK/WH-BLACK WITH WHITE TRACER

PEDESTRIAN PUSH BUTTON MOUNTING DETAIL

SIDE VIEW



FRONT VIEW



CONDUIT INSTALLATION DETAIL FOR LOOP DETECTOR

LOOP DETECTOR CONDUITS ARE TO BE INSTALLED IN 3" CUT TRENCHES AS SHOWN ON PLANS. INSTALL EACH COMPLETE DETECTOR ASSEMBLY WITH THE DETECTOR WIRE PULLED THROUGH THE COMPLETE ASSEMBLY TO HANDHOLE. WHERE APPROPRIATE, PLACE DETECTOR CONDUIT IN BITUMINOUS BINDER COURSE PRIOR TO PLACEMENT OF THE WEARING COURSE. THE DEPTH OF THE TRENCH AND THE RESULTANT PLACEMENT OF THE DETECTOR CONDUIT SHALL BE SUCH THAT THE ENTIRE DETECTOR ASSEMBLY DRAINS INTO THE HANDHOLE. BACKFILL AND COMPACT THE TRENCHES WITH MATERIAL EQUIVALENT TO THE MATERIAL REMOVED.

CONDUCTOR COLOR CODING

R	BLK	2-1/C#6
O	WH	2-1/C#10
BL	R	
WH	W	3/C#12
R/BLK	BLK	
O/BLK	BLK	
BL/BLK	CLEAR	2/C#14
WH/BLK	R OR O	
BLK	WH OR YEL	3/C#20
BLK/WH	BLK OR BL	
G/BLK		
G		

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

STANDARD PLATES

PLATE NO.	DESCRIPTION
* 8110 C	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* 8111 B	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
* 8116 C	STEEL GUARD POST
* 8117 F	PRECAST CONCRETE HANDHOLE
8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 H	P80 AND P90 POLE FOUNDATION
* 8121 B	TRANSFORMER BASE WITH POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 B	POLE AND MAST ARM
* 8124 B	SIGNAL HEAD MOUNTS
* 8126 C	P100 POLE FOUNDATION
* 8130 D	SAW CUT LOOP DETECTORS

\* THESE STANDARD PLATES APPLY TO THIS SIGNAL PLAN FOR ADDITIONAL STANDARD PLATES, SEE SHEET #2

NO.	DATE	REVISIONS

SURVEY: DESIGN: G.W.W. DRAWN: G.N. CHECKED BY: M.K.

ELECTRICAL ENGINEER CERTIFICATION  
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.  
Date: 7/27/85 Reg. No. 2713

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.  
Date: 11/24/85 Reg. No. 9089



SHORT-ELLIOTT-HENDRICKSON, INC.  
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

SIGNAL SYSTEM  
DETAIL SHEET

ANOKA COUNTY  
C.S.A.H. 17 AND C.S.A.H. 23

FILE NO.: 85139  
DATE: 7/24/85  
17 17