

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2021.501	MOBILIZATION	DUZE. SLM	1	
2031.501	FIELD OFFICE, TYPE D	EACH	1	
2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.	1,753	
2104.523	SALVAGE 24" CONCRETE APPROXS	EACH	3	
2105.501	COMMON EXCAVATION	CU. YD.	2,390	
2105.523	COMMON BORROW (E.V.)	CU. YD.	2,471	
2105.525	TOPSOIL BORROW (L.V.)	CU. YD.	316	
2211.501	AGGREGATE BASE CD-5	TON	30	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	222	
2331.510	BINDER COURSE MIXTURE	TON	1,475	
2331.514	BASE COURSE MIXTURE	TON	3,460	
2331.531	TEMPORARY LANE MARKING	RD. STA.	203	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	126	
2341.508	WEARING COURSE MIXTURE	TON	3,095	
2357.502	BITUMINOUS MATERIAL FOR JACK COAT	GALLON	3,750	
2501.511	24" R.C. PIPE CULVERT	LINEAL FT.	24	
2501.573	INSTALL 24" R.C. APPROXS	EACH	3	
2565.511	FULL-TRAFFIC-CONTROLLED TRAFFIC CONTROL SIGNAL SYSTEM - A	SIGNAL SYST	1	
2565.511	FULL-TRAFFIC-CONTROLLED TRAFFIC CONTROL SIGNAL SYSTEM - B	SIGNAL SYST	1	
2575.501	ROADSIDE SEEDING	ACRE	3.8(P)	
2575.502	SEED MIXTURE NO. 3	POUND	152	
2575.505	SODDING	SQ. YD.	2,717	
2575.511	MULCH MATERIAL, TYPE-1	TON	7.6(P)	
2575.512	DISC ANCHORING	ACRE	3.6(P)	
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	TON	1	

- ① INCLUDES 124 TON FOR APPROACHES & ENTRANCES.
- ② USE ON WEARING FOR 2' & 12' LANE MARKING PRIOR TO FINAL STRIPING.
- ③ FOR ENTRANCES & APPROACHES.

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

PLATE NO.	DESCRIPTION
9903 A	SPECIFICATION REFERENCE TO STANDARD PLATES
9000 I	REINFORCED CONCRETE PIPE
3145 C	CONCRETE PIPE TIES
5000 H	STANDARD REPAIRS
5100 C	SODDING AT PIPE CULVERT ENDS

SODDING		
STATION	LOC.	S.Y.
49+50 - 55+00	LT.	639
63+00 - 65+00	RT.	239
76+25 - 79+00	LT.	133
83+00 - 86+00	LT.	528
108+00 - 115+00	LT.	1,914
CULVERT APRONS		64
TOTAL =		2,717

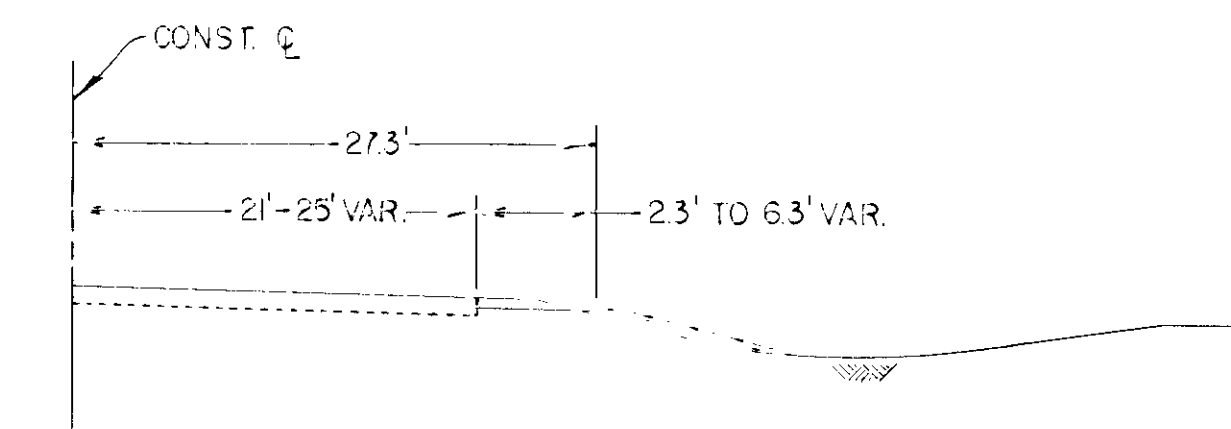
SPECIAL DETAILS

THE CONTRACTOR SHALL REMOVE TOPSOIL IN THE INSLOPE AREAS WHERE EMBANKMENTS WILL BE PLACED, STOCKPILE IF NECESSARY, AND USE IT AS TOPSOIL COVERING ON THE NEW SLOPES. THIS MATERIAL, ALONG WITH 816 C.Y. OF TOPSOIL BORROW WILL BE USED TO PROVIDE A MINIMUM COVER OF 3". SALVAGE TOPSOIL SHALL BE CONSIDERED AS INCIDENTAL TO COMMON EXCAVATION.
TOPSOIL BORROW MATERIAL ONLY SHALL BE USED FOR TOPSOIL DRESSING IN FRONT YARD AREAS TO BE SODDED.

BASIS OF PLANNED QUANTITIES

- 2331 PLANT MIXED BINDER & BASE COURSE
BITUMINOUS MIXTURE 10 LBS./SQ. YD. PER 1" THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WEIGHT
- 2341 PLANT MIXED WEARING COURSE
BITUMINOUS MIXTURE 10 LBS./SQ. YD. PER 1" THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 6% BY WEIGHT
- 2575 MULCH MATERIAL, TYPE-1
2 TONS ACRE
- 2575 SEED MIXTURE NO. 3
40 LBS. ACRE
- 2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10
500 LBS. ACRE
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT PLUS 10%

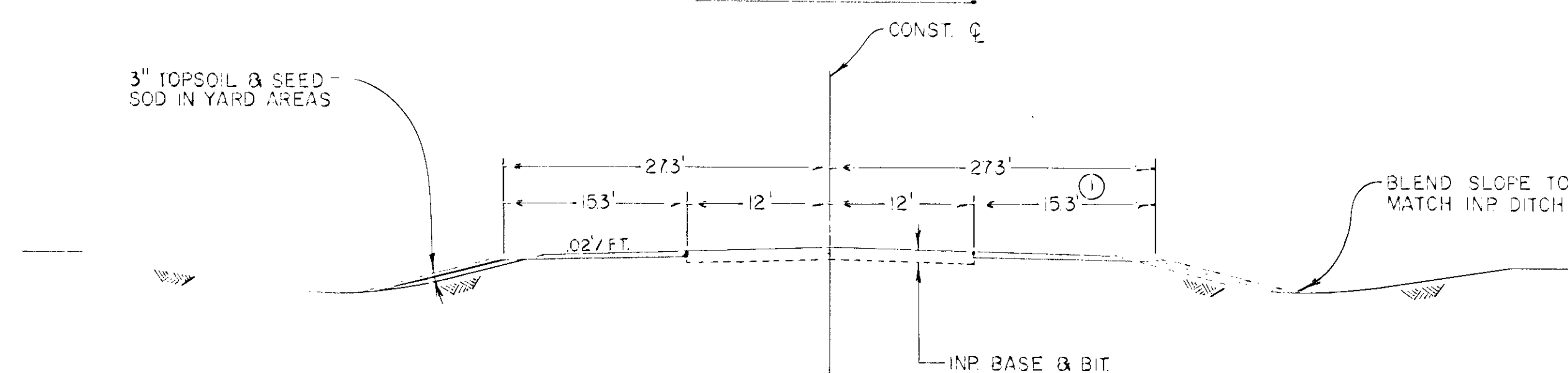
DETAIL "B"



LOCATIONS

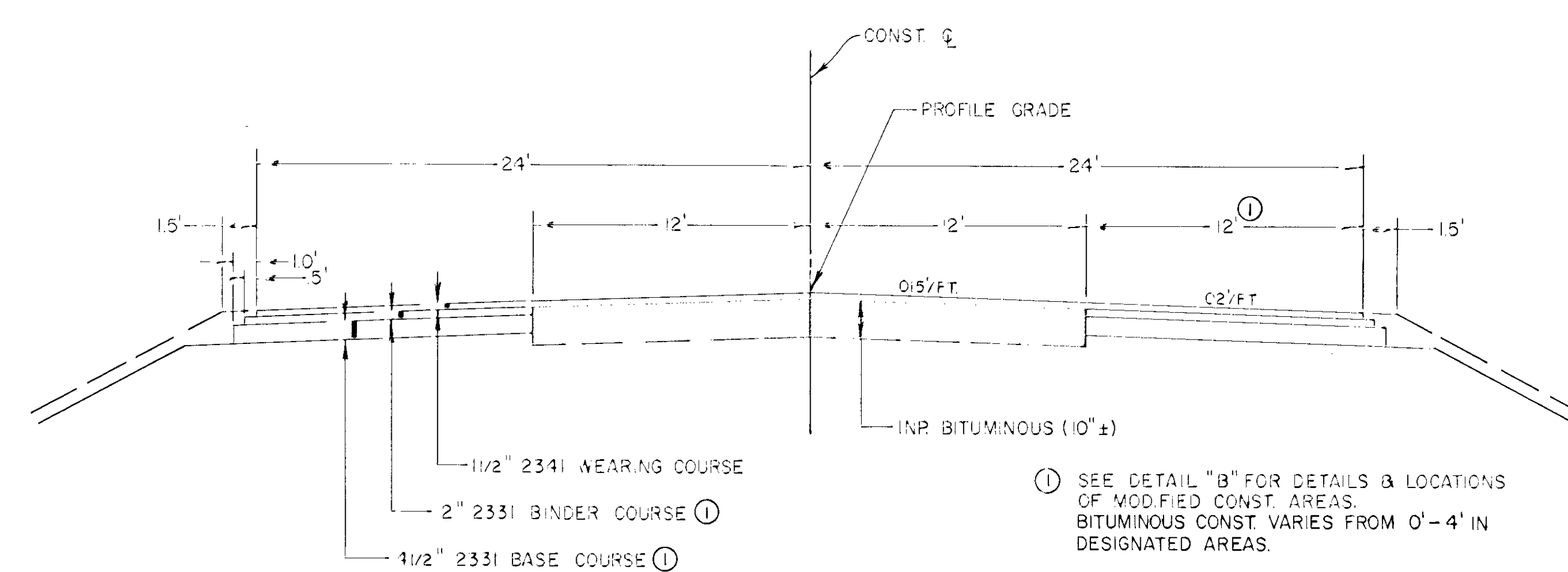
- STA. 57+72 - 59+50 RT.
- STA. 60+21 - 70+03 LT.
- STA. 63+11 - 68+20 RT.
- STA. 70+83 - 72+50 RT.
- STA. 78+00 - 80+76 LT.

GRADING SECTION





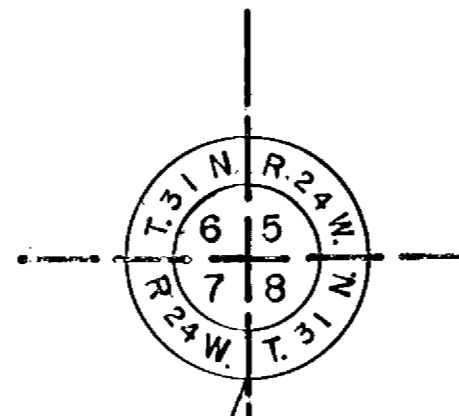
① SEE DETAIL "B" FOR MODIFIED CONSTRUCTION & LOCATIONS

BASE & BITUMINOUS SECTION



① SEE DETAIL "B" FOR DETAILS & LOCATIONS OF MODIFIED CONST. AREAS. BITUMINOUS CONST. VARIES FROM 0'-4" IN DESIGNATED AREAS.

 BITUMINOUS REMOVAL
 BASE & BINDER COURSE



P.I. 49+60.67
 $\Delta = 1^\circ 55' 00''$ LT.
 $D = 0^\circ 10'$
 $R = 34,377.46$
 $T = 578.05$
 $L = 1,150.00$

BEGIN PROJECT S AP 02-614-10
 STA 49+60.67

CAUTION BURIED GAS

CAUTION BURIED GAS

END BITUMINOUS WEARING COURSE CONSTRUCTION.

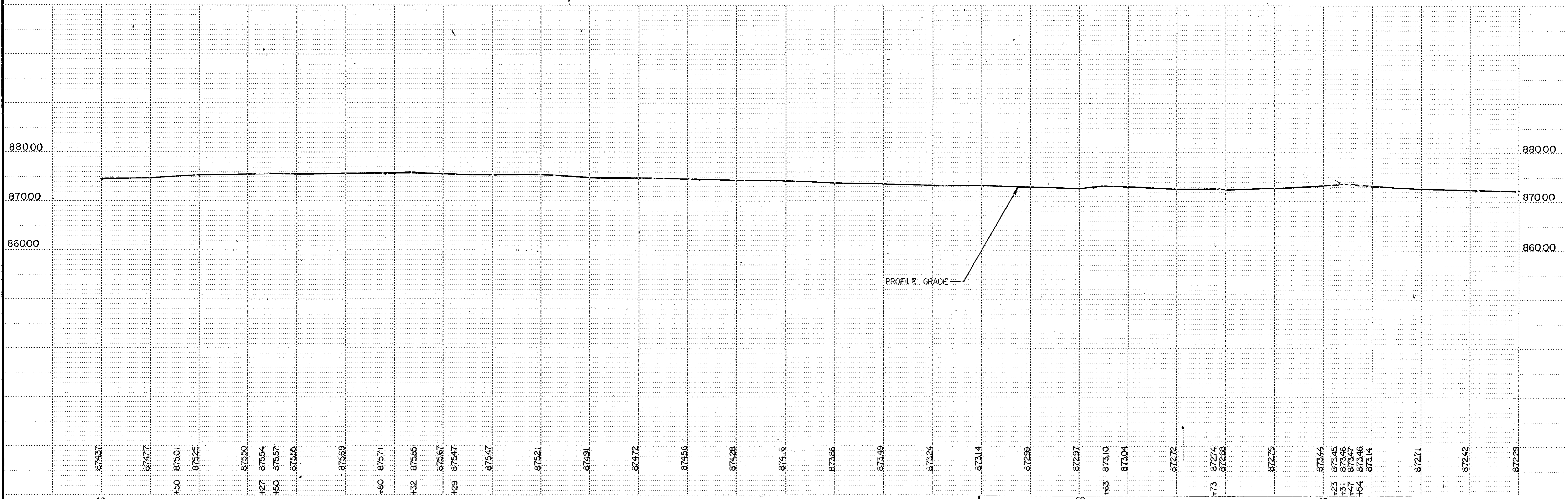
STA 60+63
 SAL 24" RCP APRONS (2)
 INSTALL 24" RCP APRONS (2)
 INSTALL 8" 24" RCP LT. & RT.

NOTE:
 SEE SHEET NO's 1A, 2A, 5A
 FOR SIGNAL CONST. DETAILS

B.M. 8 ELEV 878.20
 TOP N.E. FLANGE BOLT
 HYD. STA. 43+10 RT. 50'

B.M. 9 ELEV 878.73
 TOP N.E. FLANGE BOLT
 HYD. STA. 49+60 RT. 33'

B.M. 10 ELEV 873.76
 P/R SPIKE IN PP
 STA. 63+00 RT. 55'

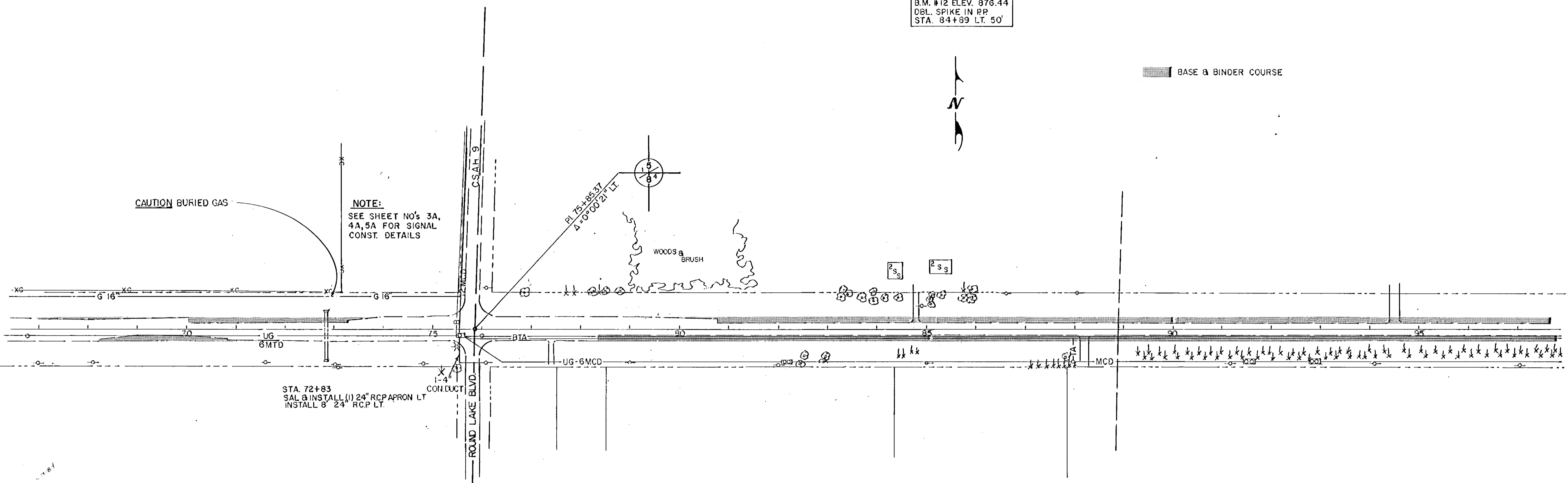
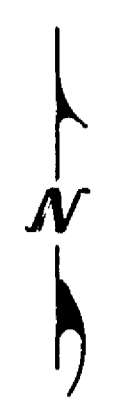


TELETYPE POST - SINGLE PLAN - PROFILE - 1024W

Rev. 2-5-15 8/11

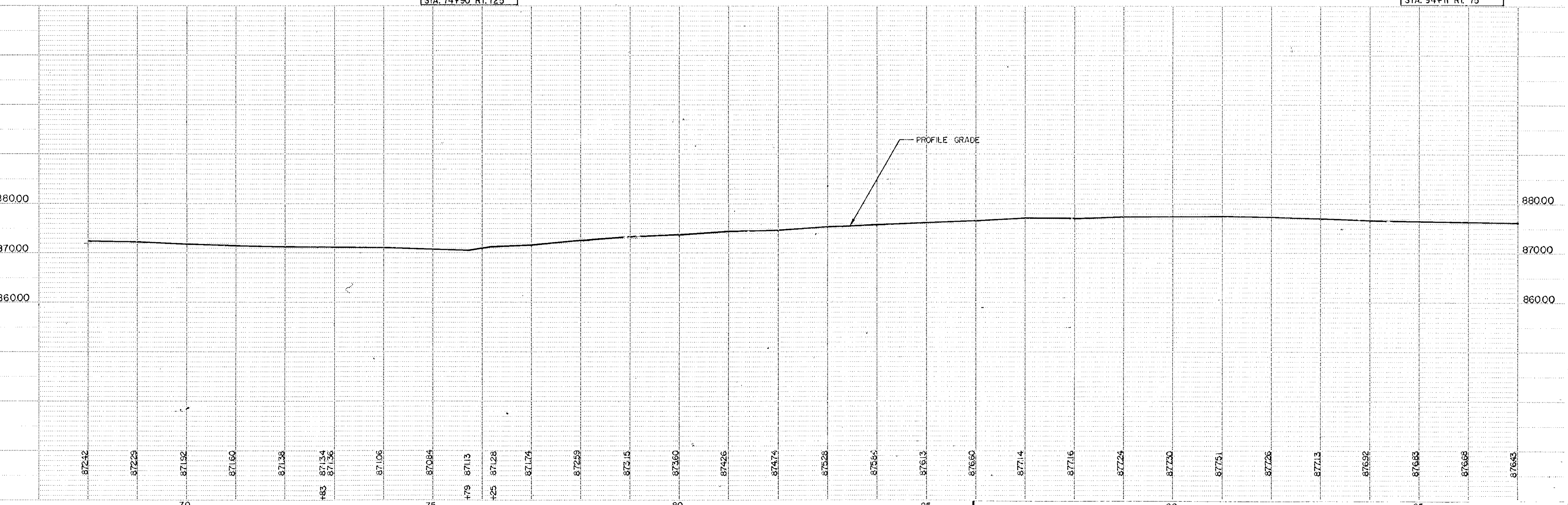
B.M. #12 ELEV. 876.44
 DBL. SPIKE IN R.P.
 STA. 84+89 LT. 50'

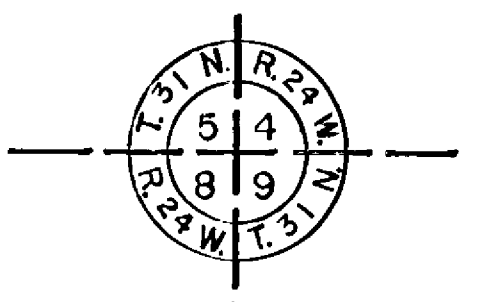
BASE & BINDER COURSE



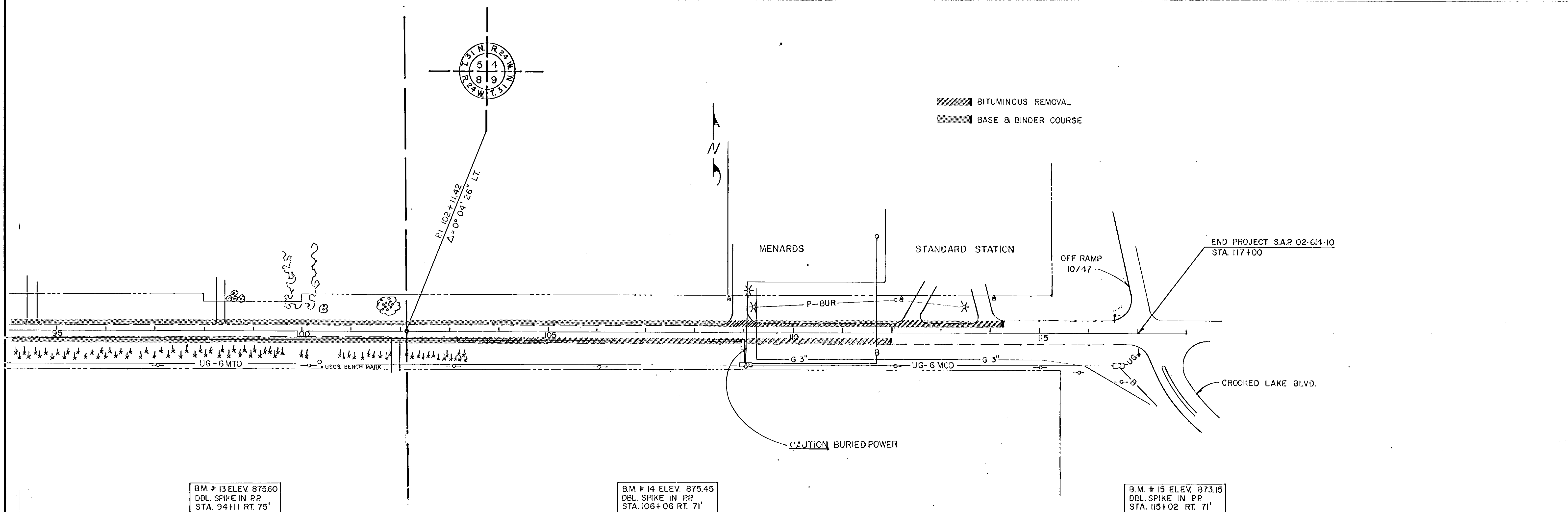
B.M. #11 ELEV. 867.99
 DBL. SPIKE IN 8" POP
 STA. 74+90 RT. 125'

B.M. #13 ELEV. 875.60
 DBL. SPIKE IN R.P.
 STA. 94+11 RT. 75'





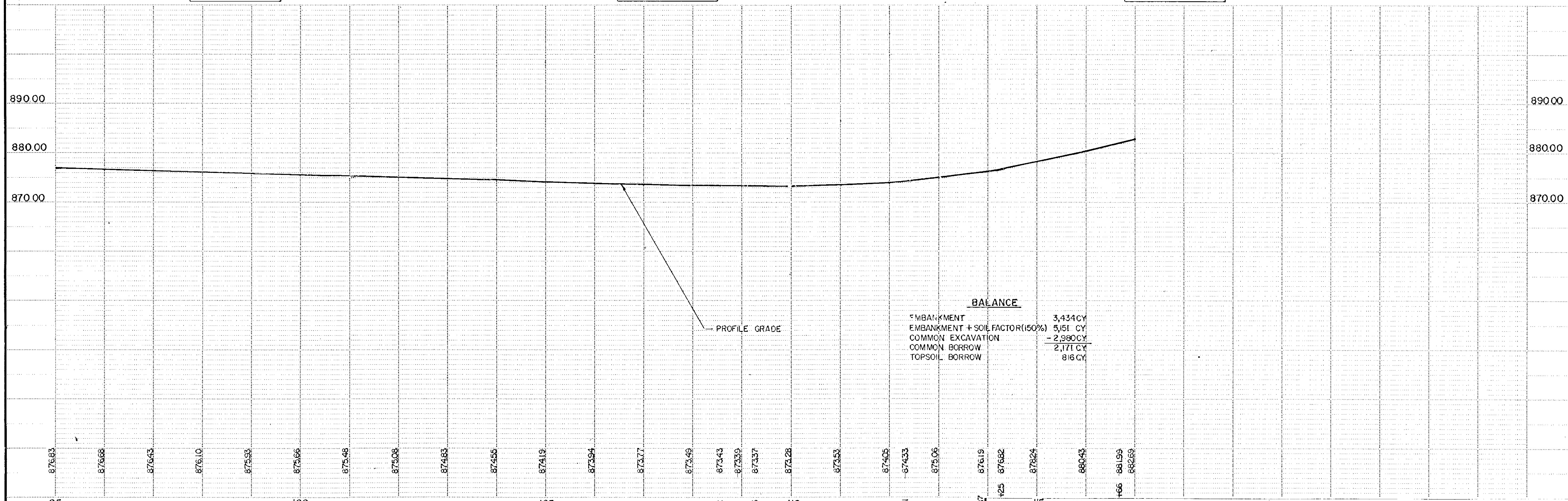
BITUMINOUS REMOVAL
 BASE & BINDER COURSE



B.M. # 13 ELEV. 875.60
 DBL. SPIKE IN PP.
 STA. 94+11 RT. 75'

B.M. # 14 ELEV. 875.45
 DBL. SPIKE IN PP.
 STA. 106+06 RT. 71'

B.M. # 15 ELEV. 873.15
 DBL. SPIKE IN PP.
 STA. 115+02 RT. 71'



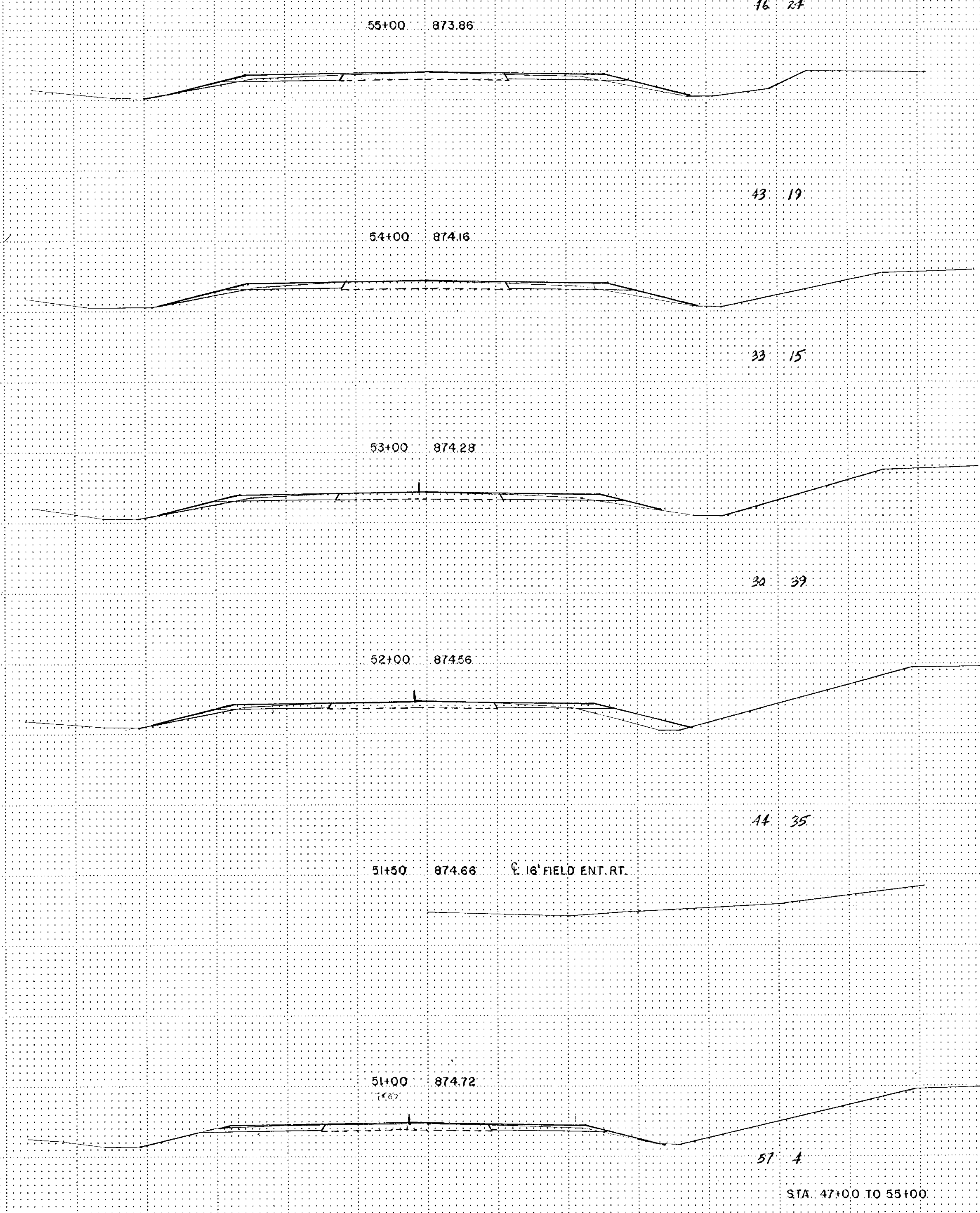
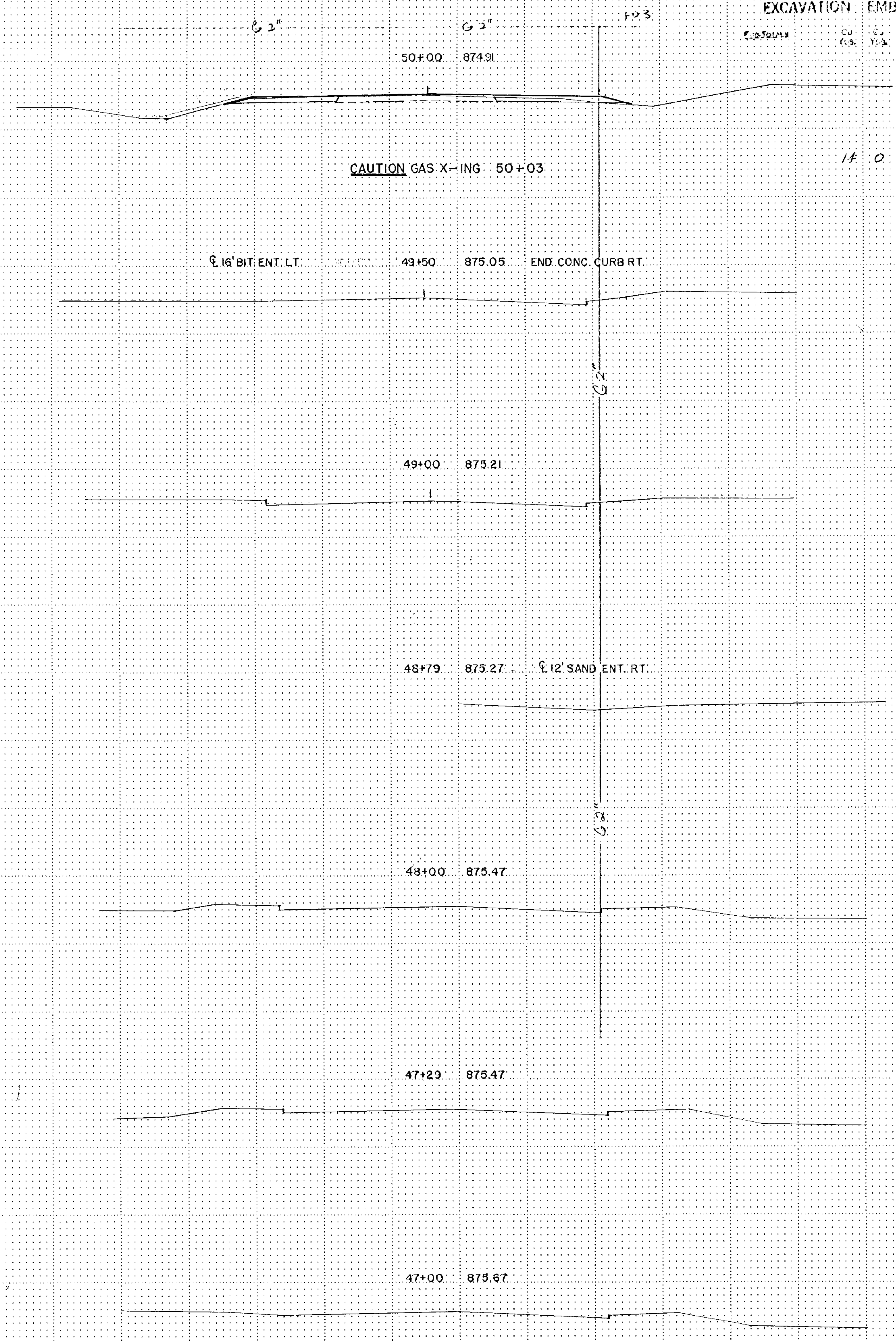
BALANCE

EMBANKMENT	3,434 CY
EMBANKMENT + SOIL FACTOR (150%)	5,151 CY
COMMON EXCAVATION	-2,980 CY
COMMON BORROW	2,171 CY
TOPSOIL BORROW	816 CY

TALLENTA P031 - SINGLE PLAN - PROFILE - 1024

EXCAVATION EMBANKMENT

EXCAVATION	EMBANKMENT
CU YDS	CU YDS



EXCAVATION	EMBANKMENT
CU YDS	CU YDS
16	24
13	19
33	15
30	39
14	35
57	4

STA. 47+00 TO 55+00

20' to 25' from
ground level

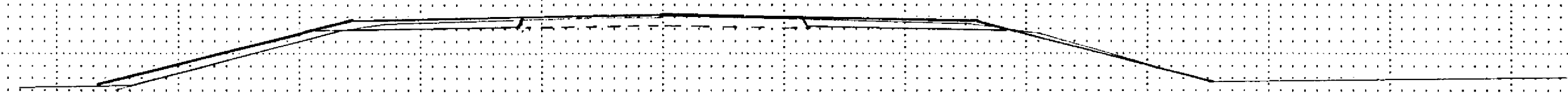
PLANETARY GRADE SECTION 087 IN 800'

EXCAVATION EMBANKMENT

Excavation Cu. Yds. Embankment Cu. Yds.

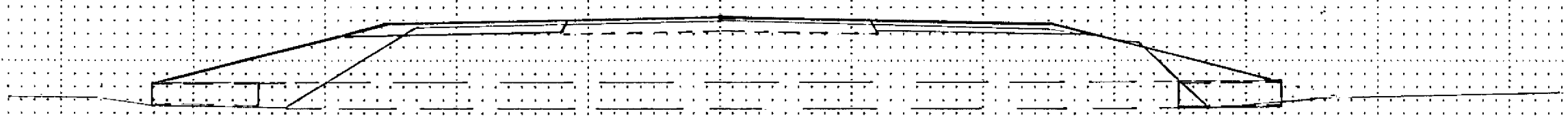
61+00 873.04

50 31



X-ING 24" X 70" RCP
60+63 873.10
EXTEND CULVERT 8' LT & RT

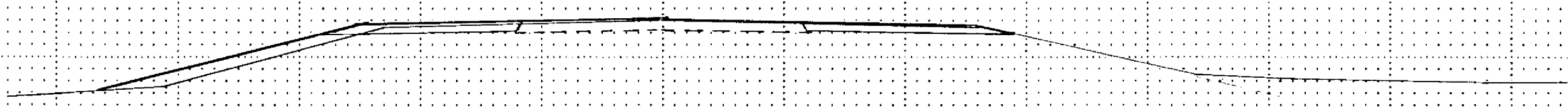
23 62



41

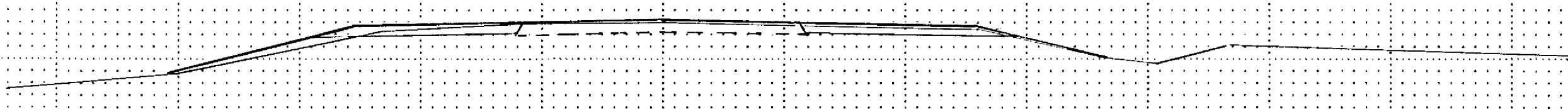
37 103

60+00 872.97



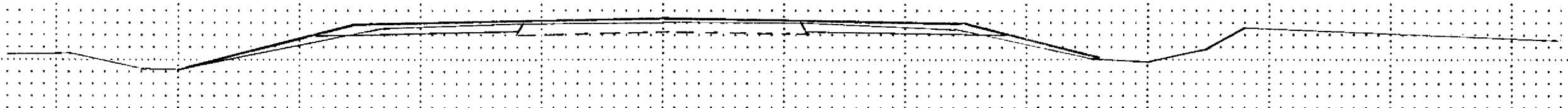
57 28

59+00 872.99



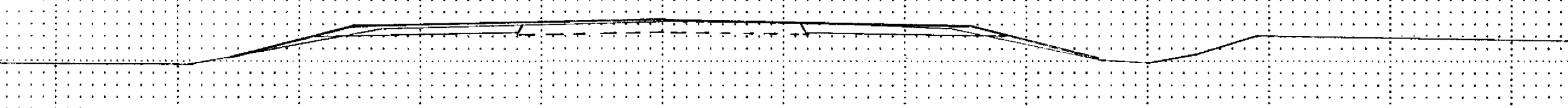
57 15

58+00 873.14



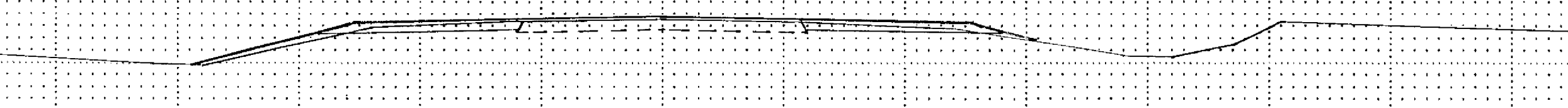
59 19

57+00 873.24



54 22

56+00 873.49



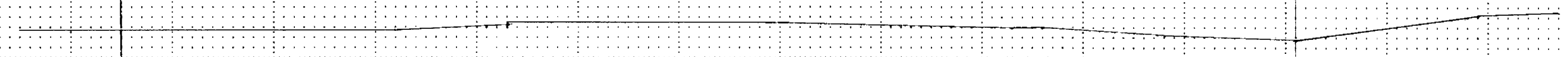
Fed. Proj. No.

EXCAVATION EMBANKMENT

Excavation Cu. Yds. Embankment Cu. Yds.

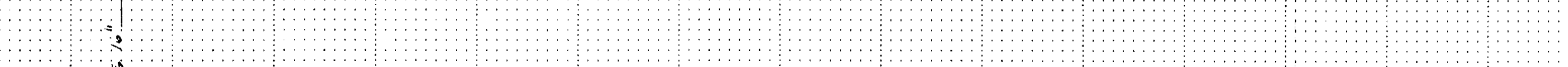
37 2

65+00 873.44



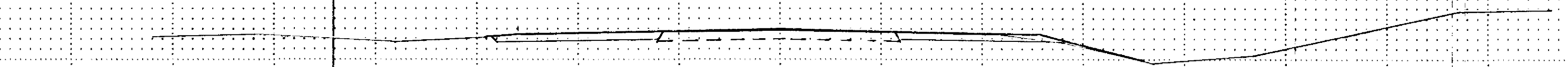
33 4

TRACK LT. ON RAIL 64+96 873.42



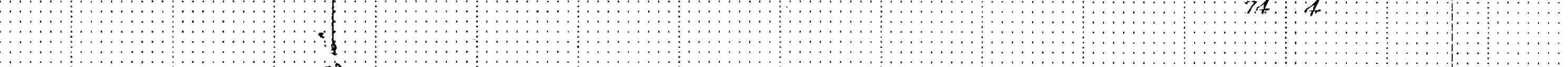
64+00 872.79

6' 16" HS



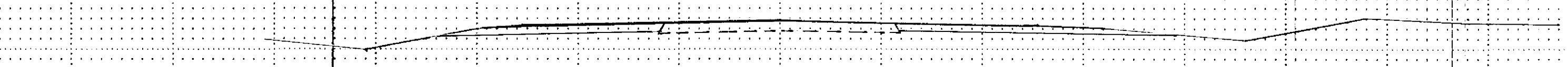
74 4

63+00 872.68



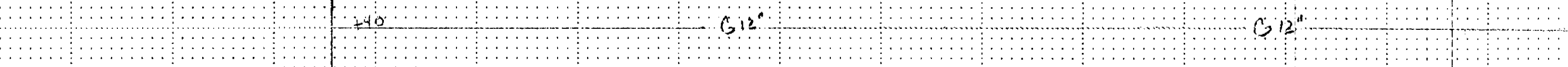
59 6

62+73 872.74 REISLING BLVD. RT.



CAUTION GAS X-ING STA. 62+40

62+00 872.72



STA. 56+00 TO 65+00

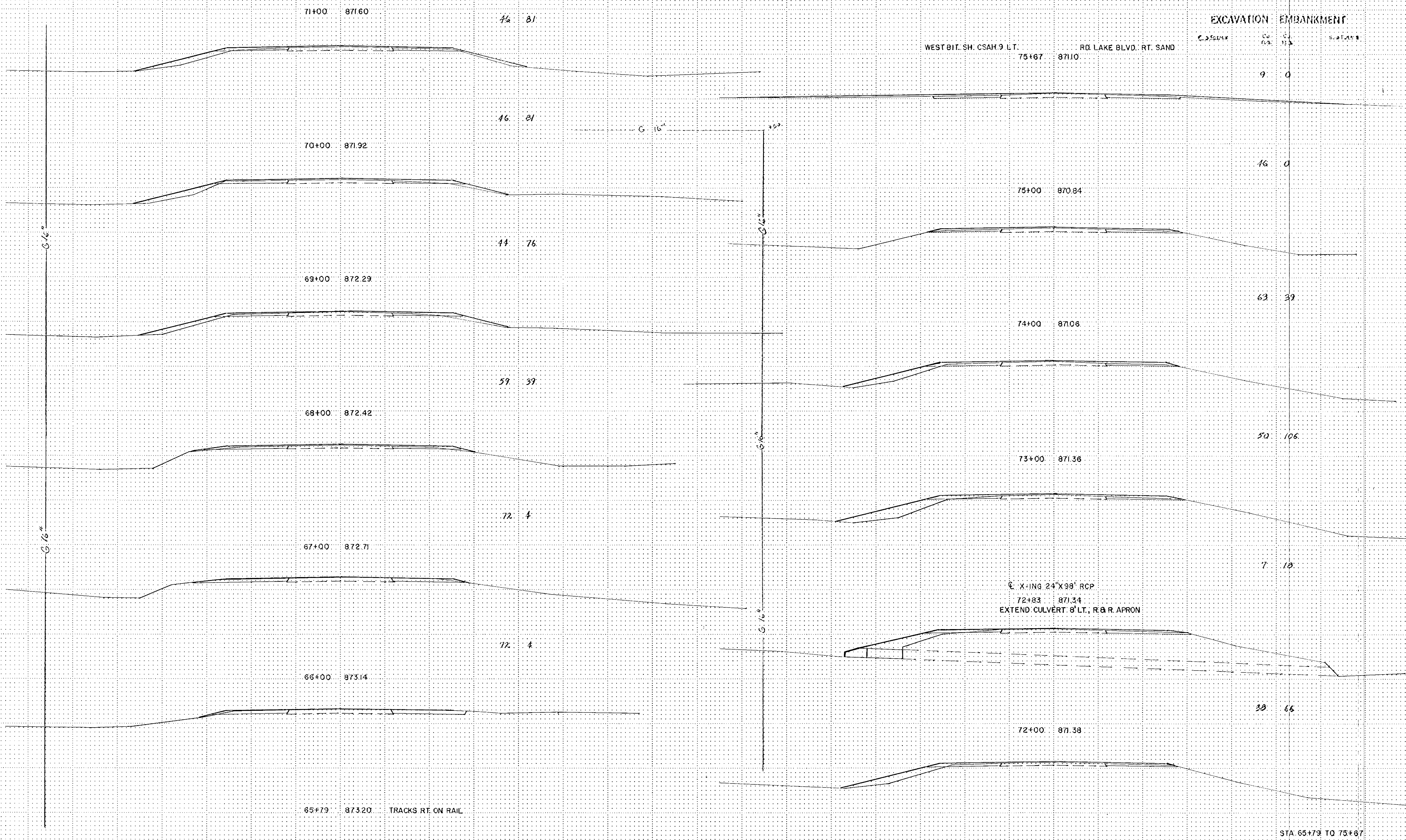
REPRODUCED FROM ORIGINAL DRAWING

EXCAVATION EMBANKMENT

Fed. Proj. No.

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT



WEST BIT. SH. CSAH. 9 LT. RD. LAKE BLVD. RT. SAND

X-ING 24" X 98" RCP
72+83 871.34
EXTEND CULVERT 8' LT. R & R APRON

TRACKS RT. ON RAIL

STA 65+79 TO 75+67

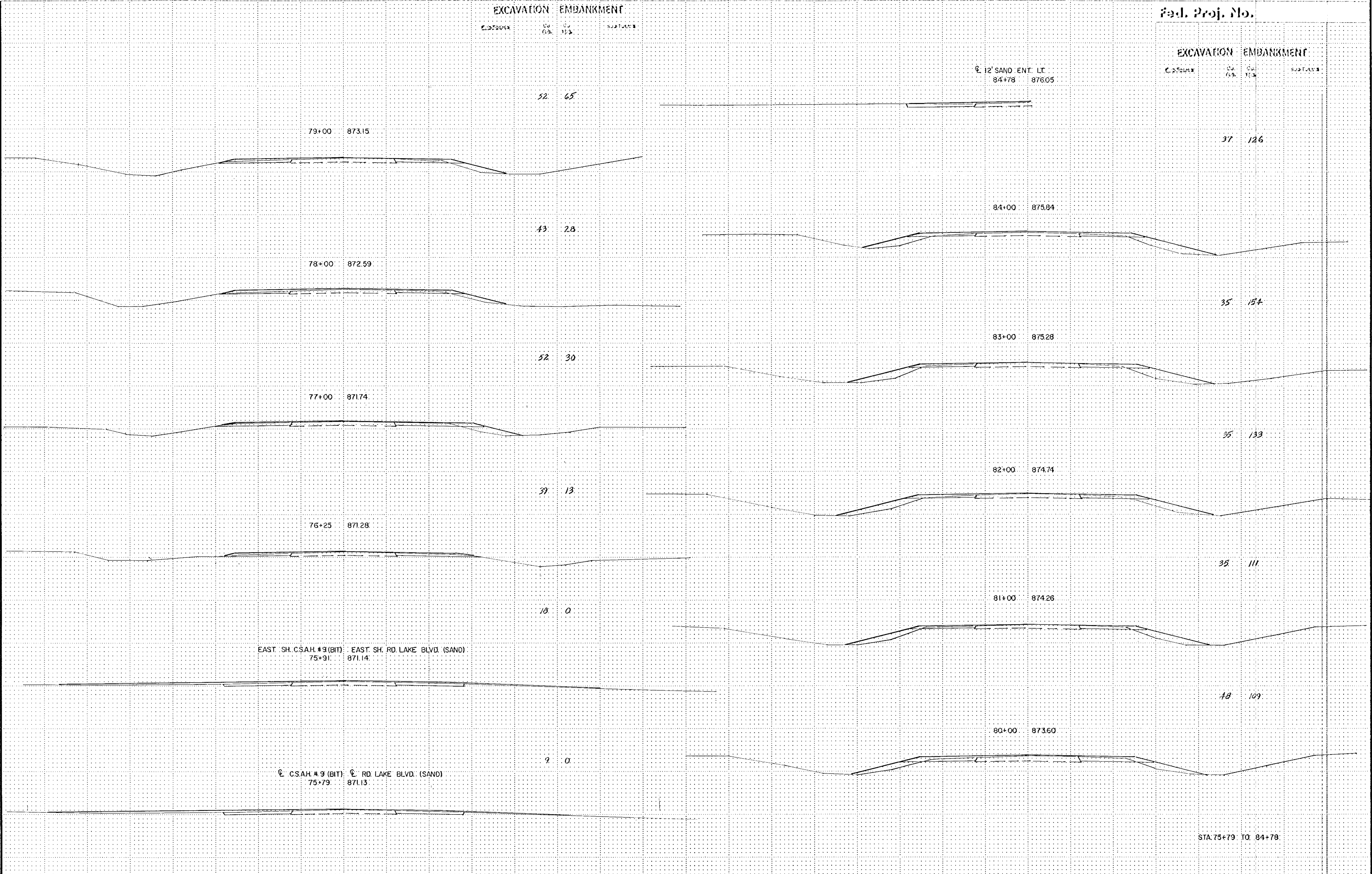
ILLINOIS ROAD CROSS SECTION - 1987

EXCAVATION		EMBANKMENT	
Station	Depth	Station	Height
79+00	65		
78+00	28		
77+00	30		
76+25	13		
75+91	0		
75+79	0		

Fed. Proj. No.

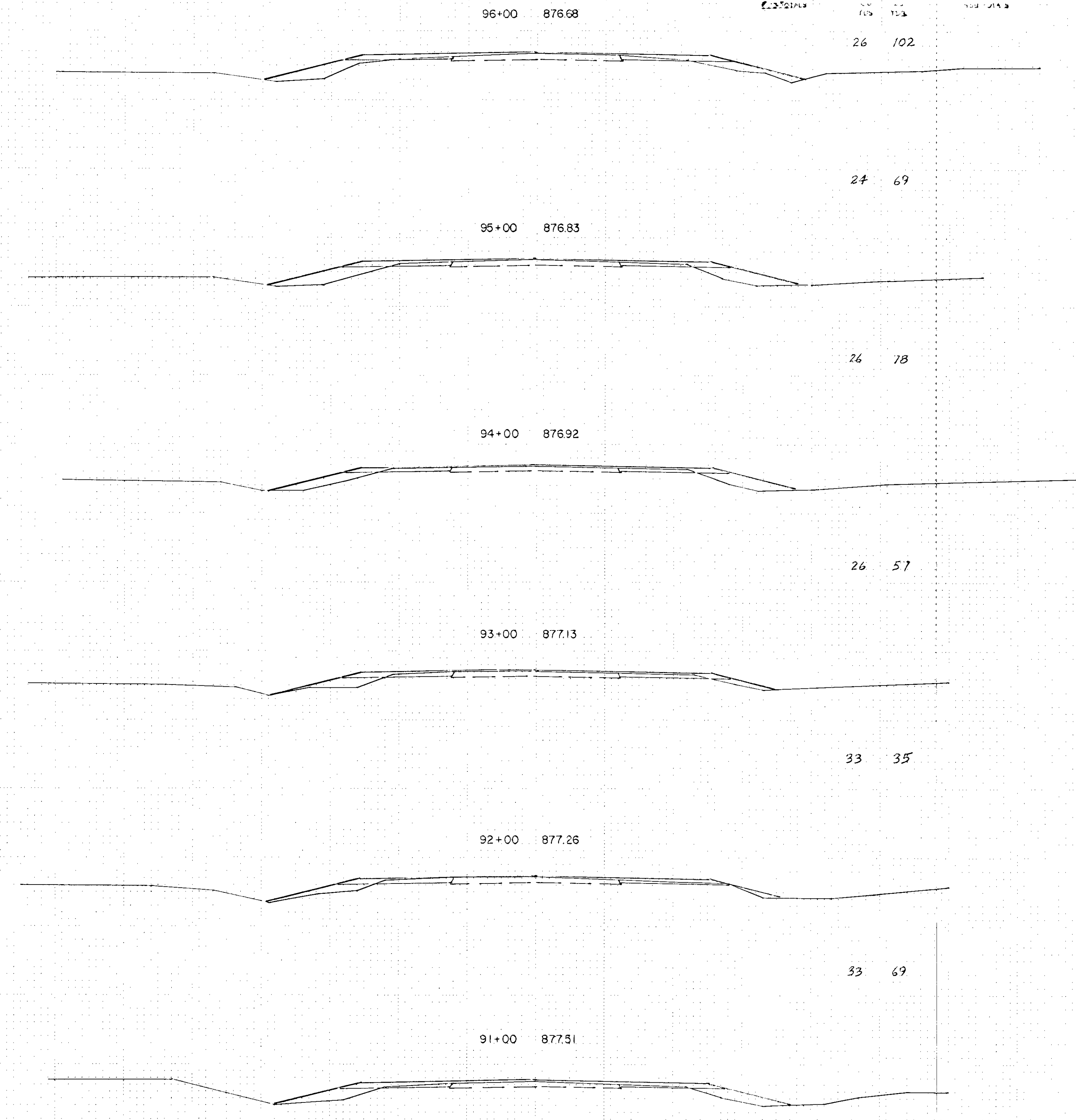
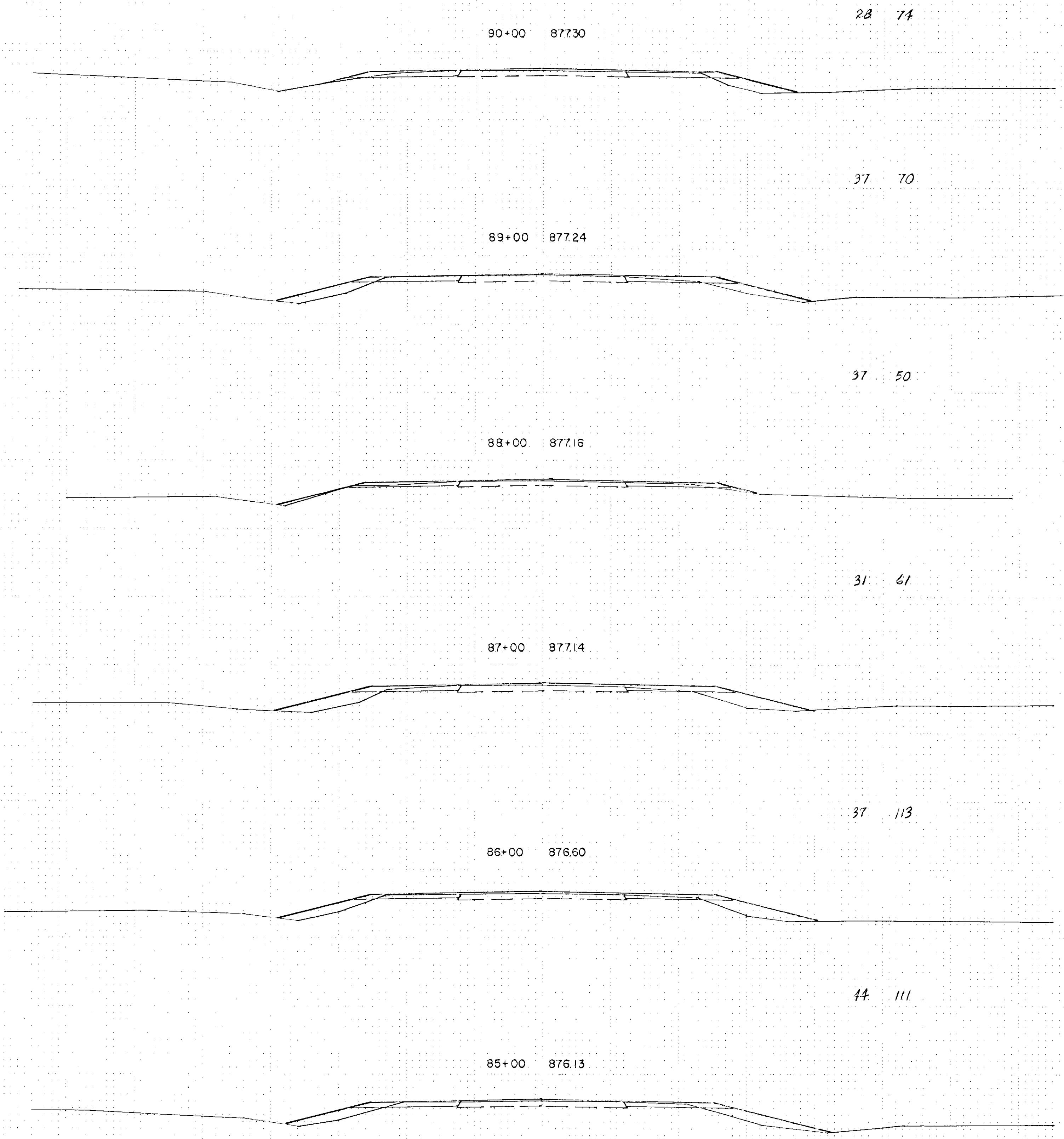
EXCAVATION		EMBANKMENT	
Station	Depth	Station	Height
84+78	126		
84+00	126		
83+00	154		
82+00	133		
81+00	111		
80+00	109		

12' SAND ENT. LT.
84+78 876.05



EXCAVATION
 ELEVATION
 DISTANCE

Fed. Proj. No.
 EXCAVATION ELEVATION
 DISTANCE



STA. 85+00 TO 96+00

EXCAVATION EMBANKMENT

Fed. Proj. No.

103+00 87483

108+52 87343

EXCAVATION EMBANKMENT

Excavation Embankment

45 7

30 93

102+00 87508

37 11

30 78

108+00 87349

101+00 87548

67 28

30 67

107+00 87377

100+00 87566

56 17

30 78

106+00 87394

99+00 87593

52 15

30 74

105+00 87419

98+00 87610

39 76

30 94

104+00 87455

97+00 87643

28 117

STA 97+00 TO 108+52

State Proj. No.

S.A.P. 02-614-10 C.T.B. Sheet No. 11 of 12 Sheets

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

Fed. Proj. No.

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

116+66 881.99

BALANCE
 EMBANKMENT 3,234 CY
 EMB. + SOIL FACTOR (50%) 5,151 CY
 COMMON EXCAVATION - 2,980 CY
 COMMON BORROW 2,171 CY
 TOPSOIL BORROW 816 CY

20 0

116+00 880.43

74 0

115+00 878.24

44 0

114+25 876.82

53 21

32' BIT ENT. LT.
 113+87 876.19

113+00 875.06

32' BIT ENT. LT.
 112+31 874.33

112+00 874.05

111+00 873.53

110+00 873.28

109+23 873.37

30' BIT ENT. LT.
 108+91 873.39

43 24

44 11

39 15

15 4

CAUTION BURIED POWER STA. 109+05

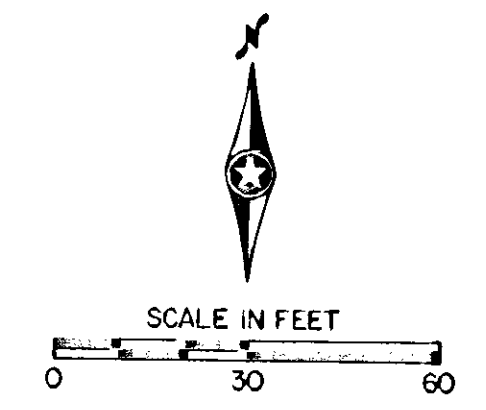
STA 108+91 TO 116+66

1 TYPE 1D
 PEDESTAL FOUNDATION
 2 - PEDESTRIAN PUSH BUTTONS
 3 - METAL GUARD POSTS
 EXTEND INTO H.H. 1
 3" R.S.C.
 1 - 12/C #12
 2 - 3/C #12

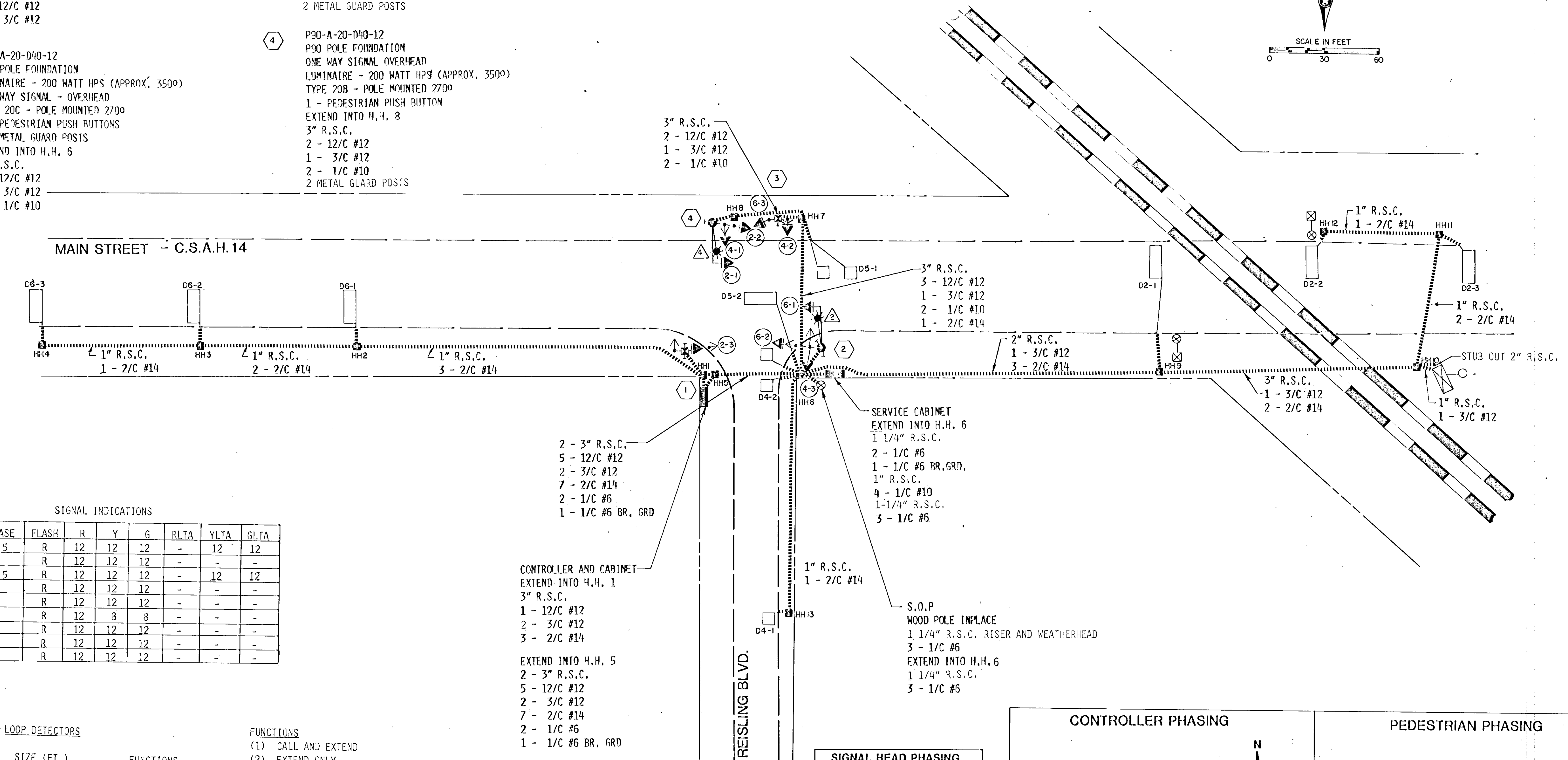
2 P90-A-20-D40-12
 P90 POLE FOUNDATION
 LUMINAIRE - 200 WATT HPS (APPROX. 3500)
 ONE WAY SIGNAL - OVERHEAD
 TYPE 20C - POLE MOUNTED 2700
 2 - PEDESTRIAN PUSH BUTTONS
 2 - METAL GUARD POSTS
 EXTEND INTO H.H. 6
 3" R.S.C.
 2 - 12/C #12
 2 - 3/C #12
 2 - 1/C #10

3 TYPE 2B
 PEDESTAL FOUNDATION
 1 - PEDESTRIAN PUSH BUTTON
 EXTEND INTO H.H. 7
 3" R.S.C.
 3 - 12/C #12
 2 - 3/C #12
 2 METAL GUARD POSTS

4 P90-A-20-D40-12
 P90 POLE FOUNDATION
 ONE WAY SIGNAL OVERHEAD
 LUMINAIRE - 200 WATT HPS (APPROX. 3500)
 TYPE 20B - POLE MOUNTED 2700
 1 - PEDESTRIAN PUSH BUTTON
 EXTEND INTO H.H. 8
 3" R.S.C.
 2 - 12/C #12
 1 - 3/C #12
 2 - 1/C #10
 2 METAL GUARD POSTS



MAIN STREET - C.S.A.H.14



SIGNAL INDICATIONS

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

LOOP DETECTORS

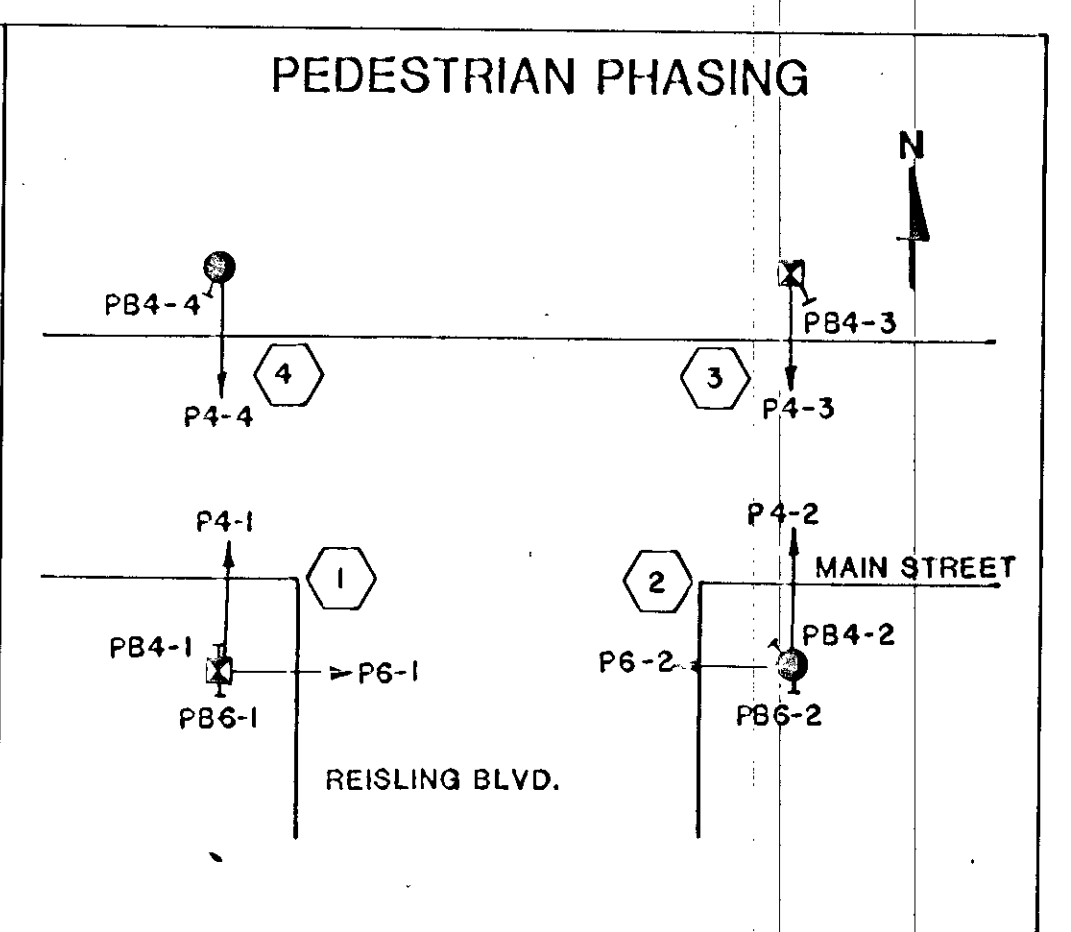
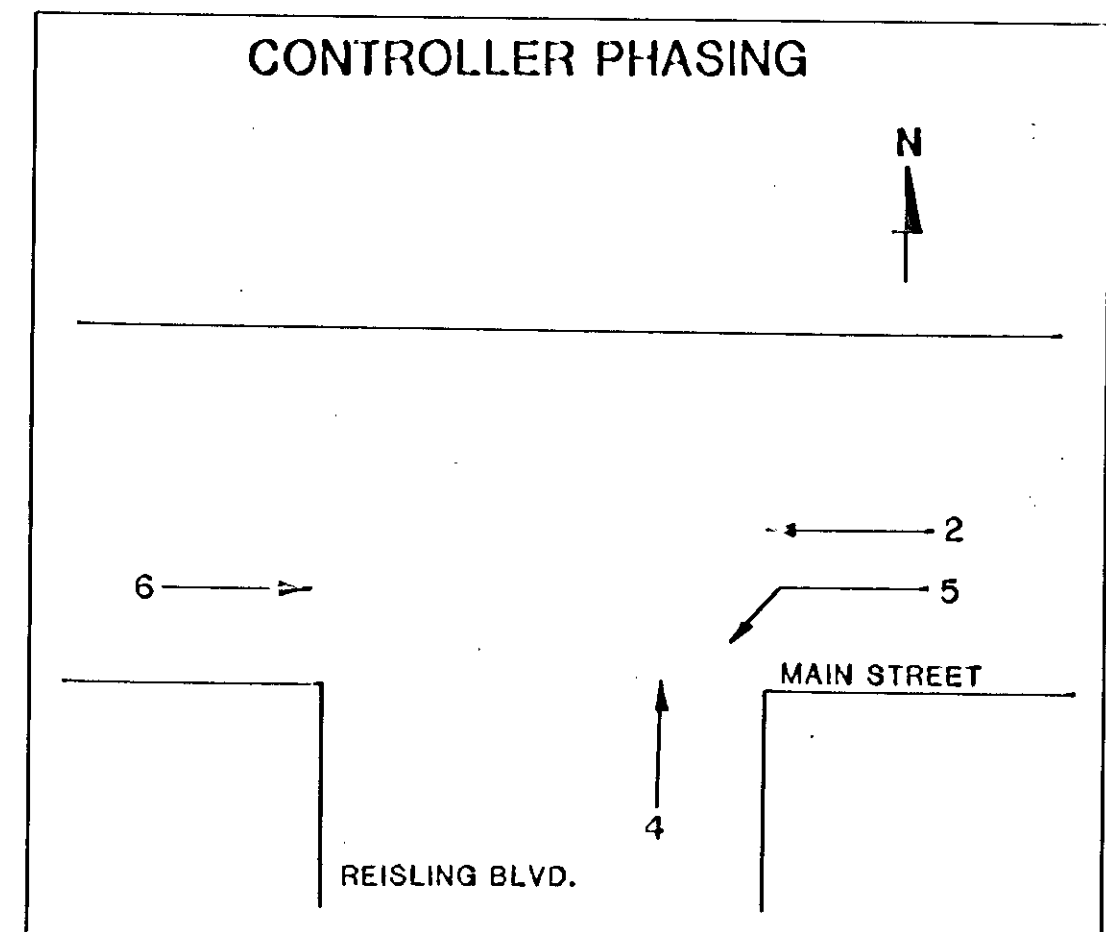
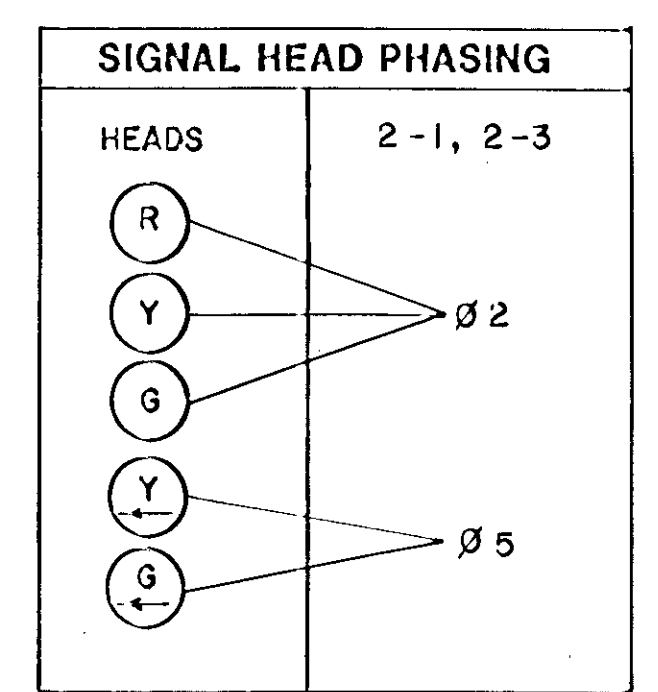
NUMBER	SIZE (FT.)	FUNCTIONS
D2-1	6 x 18	(2)
D2-2	6 x 18	(2)
D2-3	6 x 18	(1)
D4-1	6 x 6	(2)(8)
D4-2	6 x 6 (2)	(4)
D5-1	6 x 6 (2)	(5)(6)(8)
D5-2	6 x 18	(2)(7)
D6-1	6 x 18	(2)
D6-2	6 x 18	(2)
D6-3	6 x 18	(1)

FUNCTIONS
 (1) CALL AND EXTEND
 (2) EXTEND ONLY
 (3) CALL ONLY
 (4) CALL AFTER DELAY, EXTEND IMMEDIATELY
 (5) CALL AFTER DELAY ONLY
 (6) OPERATE DURING PHASE 2 CLEARANCE ONLY
 (7) OPERATE DURING PHASE 5 ONLY
 (8) "EXTENDING" DETECTOR (STRECH)
 (4) HANDHOLES 9 AND 10 ARE SPECIAL HAND HOLES. SEE SPECIAL PROVISIONS

CONTROLLER AND CABINET
 EXTEND INTO H.H. 1
 3" R.S.C.
 1 - 12/C #12
 2 - 3/C #12
 3 - 2/C #14
 EXTEND INTO H.H. 5
 2 - 3" R.S.C.
 5 - 12/C #12
 2 - 3/C #12
 7 - 2/C #14
 2 - 1/C #6
 1 - 1/C #6 BR. GRD

LOOP DETECTOR CONDUCTORS SHALL BE CROSS LINKED POLYETHYLENE (XLPE) SEE SPECIAL PROVISIONS.

NOTES:
 1) ALL LOOP DETECTORS ARE IN 1" N.M.C. SEE DETAIL SHEET
 2) SEE SPECIAL PROVISIONS FOR INSTALLING GUARD POSTS
 3) SEE UTILITY SHEET FOR UTILITY INFORMATION AND SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATIONS.



SURVEY: CO.	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: G.V.W.	B.K.	1	8/28	MINOR REVISIONS PER Mn/DOT
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.
 DATE: 4/27/84 REG. NO. 9089

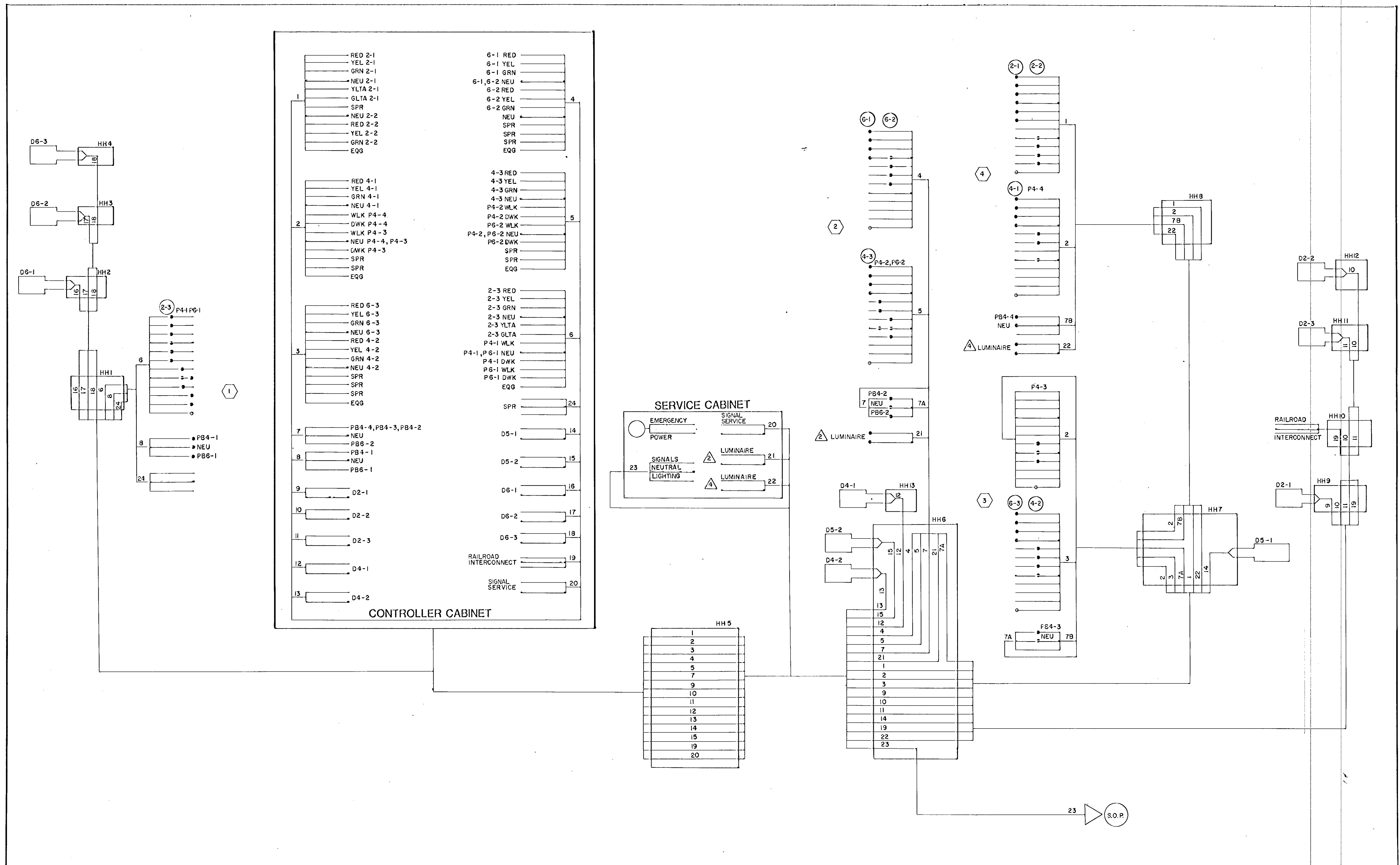


SHORT-ELLIOTT-HENDRICKSON, INC.
 Saint Paul, Minnesota • Chippewa Falls, Wisconsin

SIGNAL SYSTEM - A INTERSECTION LAYOUT

S.A.P. 02 - 614 - 10 C.T.B.

FILE NO.: 84135
 DATE: 4/27/84
 1A
 5A



SURVEY: CO.	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: G.V.W.	B.K.	1	8/28	MINOR REVISIONS PER Mn/DOT
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.

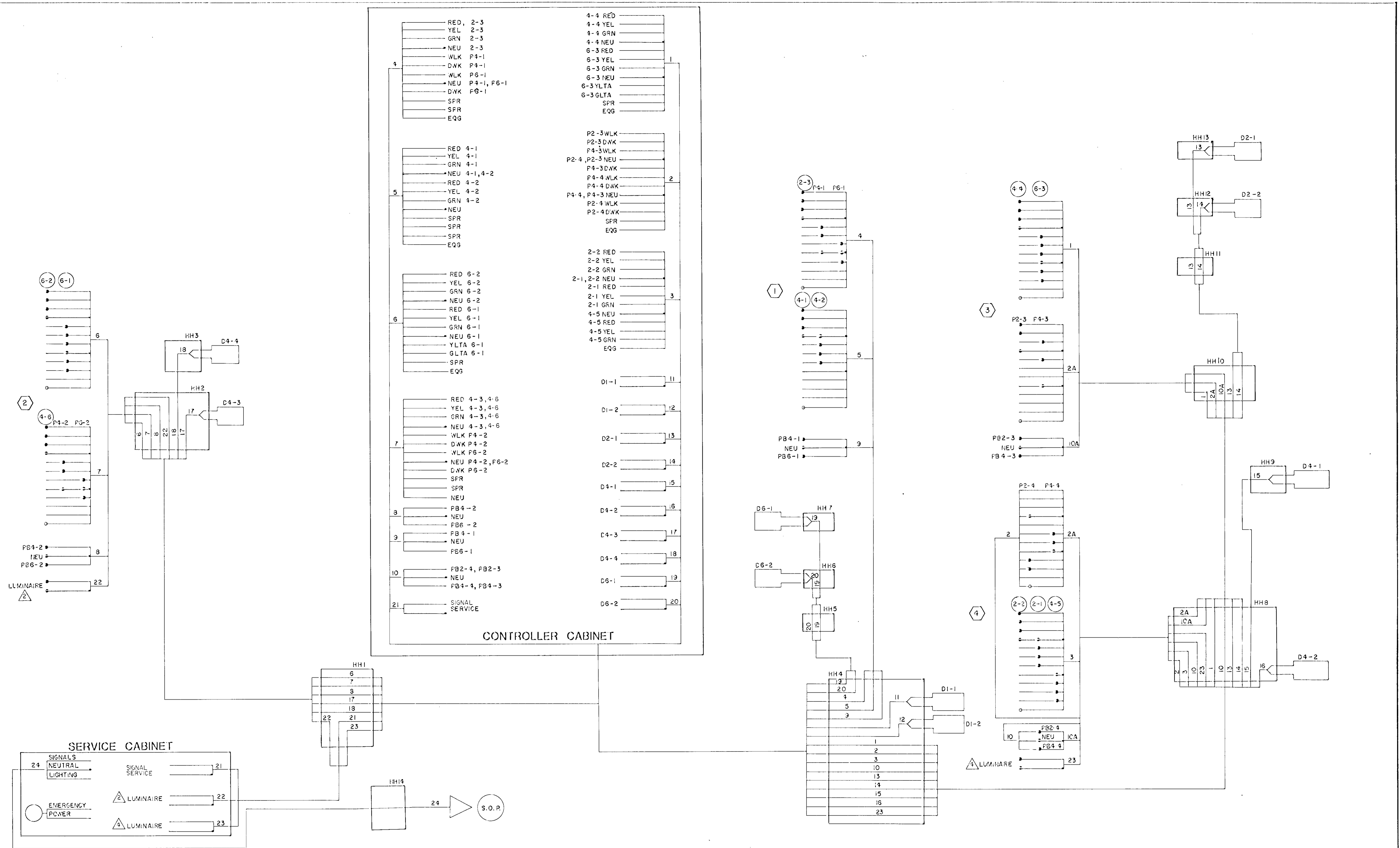
DATE: 4/27/84 REG. NO. 9089

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

SIGNAL SYSTEM - A
WIRING DIAGRAM

S.A.P. 02 - 614 - 10 C.T.B.

FILE NO.: 84135	2A
DATE: 4/27/84	5A



SURVEY: CO.	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: G.V.W.	B.K.	1	8/28	MINOR REVISIONS PER Mn/DOT
DRAWN: G.N.				

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

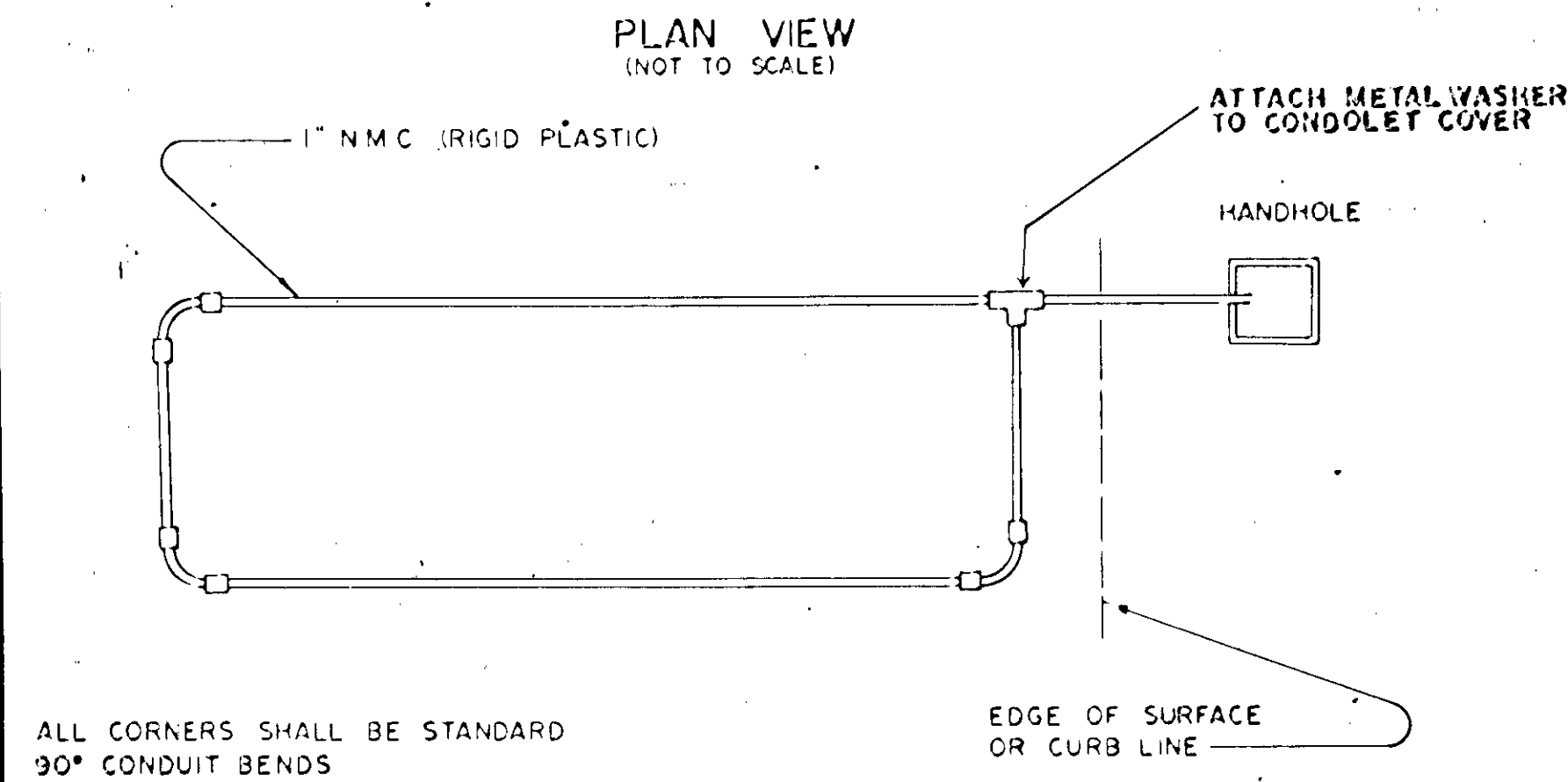
SEH SHORT - ELLIOTT - HENDRICKSON, INC.
 Saint Paul, Minnesota • Chippewa Falls, Wisconsin

SIGNAL SYSTEM - B
WIRING DIAGRAM

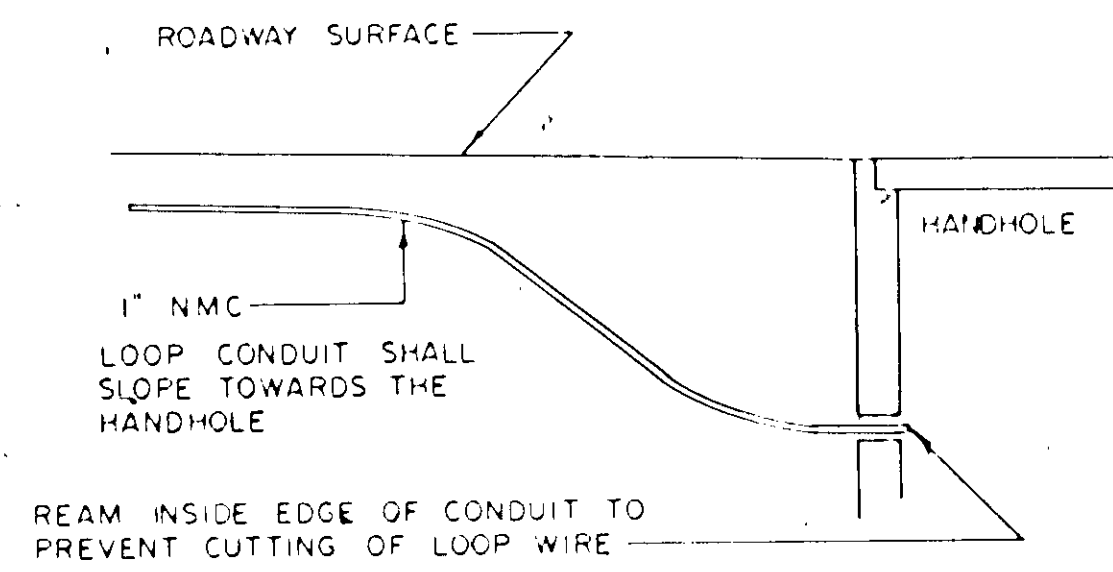
FILE NO.: 84135	4A
DATE: 4/27/84	5A

S.A.P. 02 - 614 - 10 C.T.B.

LOOP DETECTOR DETAIL "A"

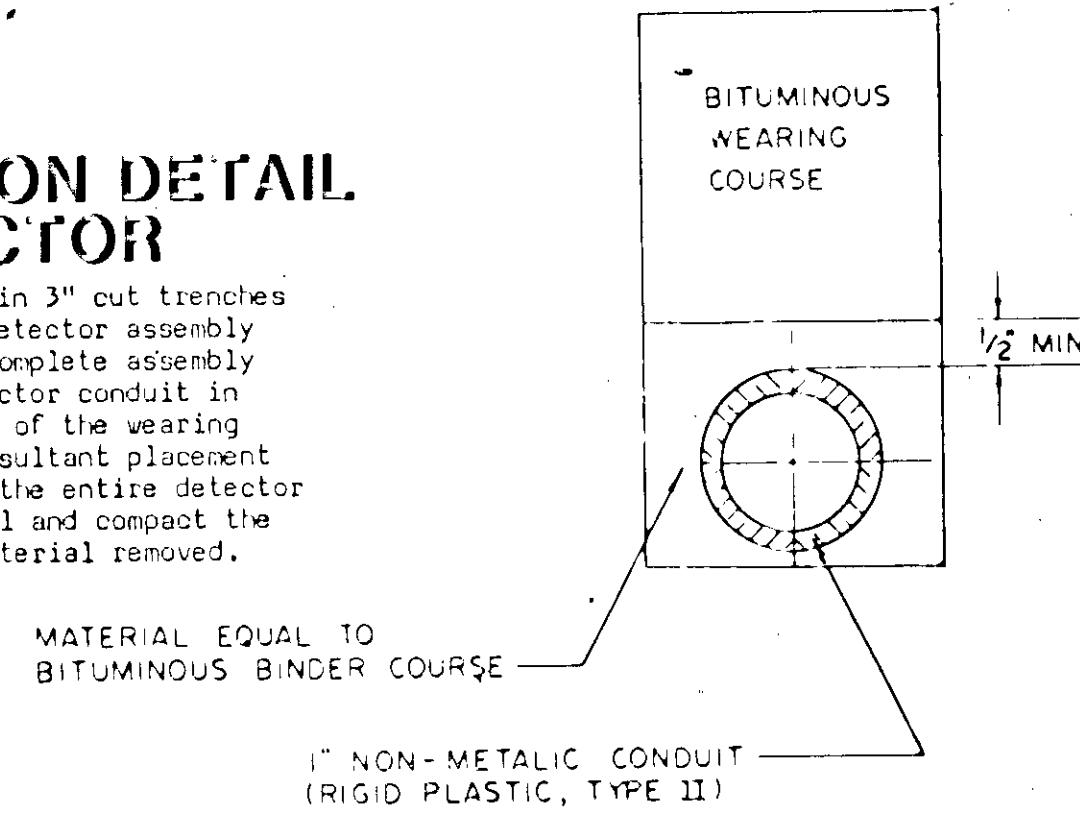


DRAINAGE DETAILS

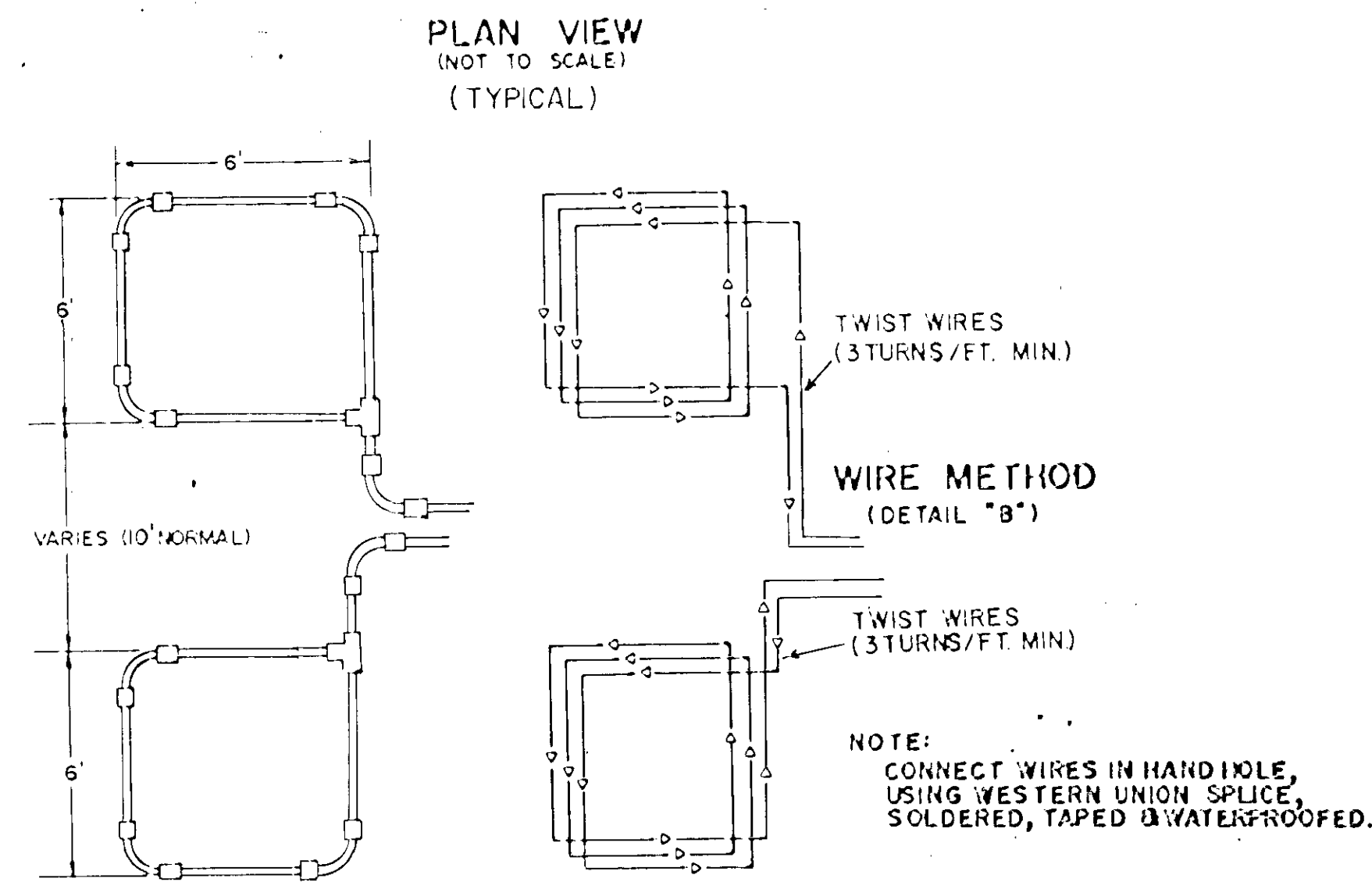


CONDUIT INSTALLATION DETAIL FOR LOOP DETECTOR

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.



LOOP DETECTOR DETAIL "B"



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	BLK	2/C#14
WH/BLK	CLEAR	
BLK	R OR O	
BLK/WH	WH OR YEL	3/C#20
G/BLK	BLK OR B	
G		

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

ABBREVIATIONS

EQUIPMENT AND INDICATIONS

- RED - RED
- YEL - YELLOW
- GRN - GREEN
- NLK - NALK
- NEU - NEUTRAL
- DWK - DON'T WALK
- LUM - LUMINAIRE
- DNL - DOWNLIGHT
- H H - HANDHOLE
- EQG - EQUIPMENT GROUND
- RSC - RIGID STEEL CONDUIT
- GLTA - GREEN LEFT TURN ARROW
- YRTA - YELLOW RIGHT TURN ARROW
- D2-1(eg) - DETECTOR - PHASE "2"
- GR R - GROUND ROD
- SER - SERVICE
- PAI - PEDESTRAIN INDICATIONS
- Z-1(eg) - SIGNAL HEADS - PHASE "2"
- SPR - SPARE CONDUCTORS
- N M C - NON METALLIC CONDUIT
- EVP - EMERGENCY VEHICLE PRE-EMPTION
- J B - JUNCTION BOX
- W/P - WOOD POLE
- PEC - PHOTOELECTRIC CELL
- BR GRD - BARE GROUND

CONDUCTOR COLOR CODE

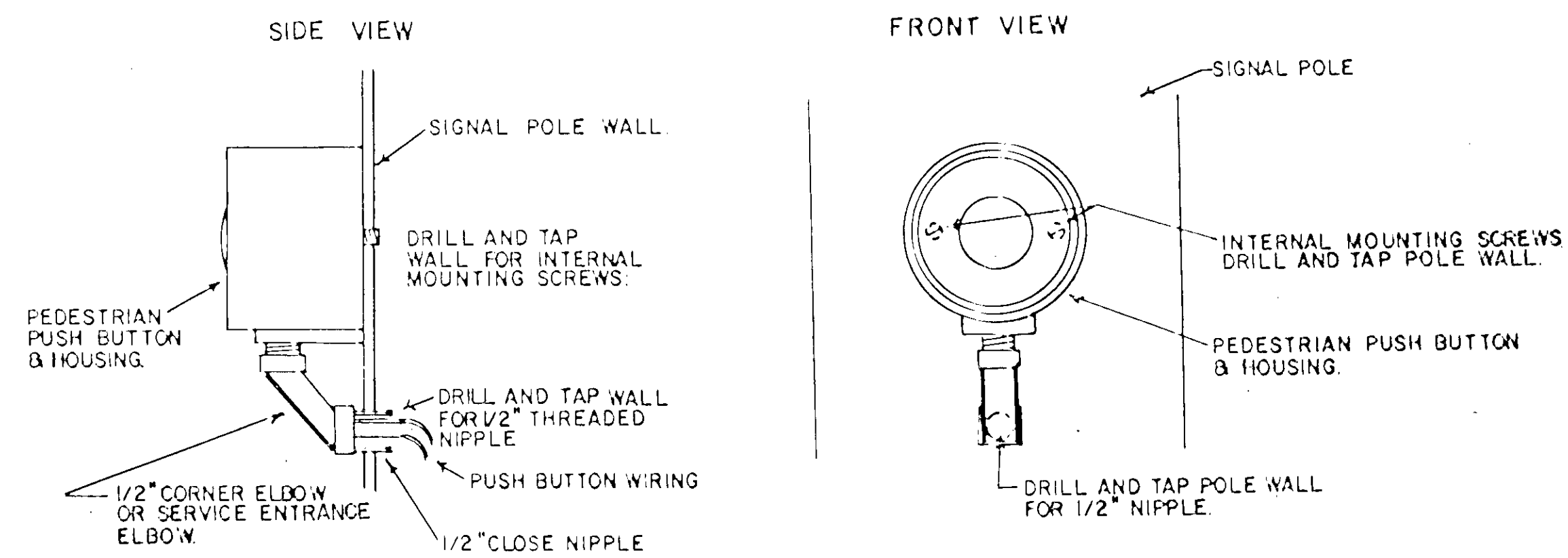
- R - RED
- O - ORANGE
- BL - BLUE
- WH - WHITE
- R/BLK - RED WITH BLACK TRACER
- O/BLK - ORANGE WITH BLACK TRACER
- BL/BLK - BLUE WITH BLACK TRACER
- WH/BLK - WHITE WITH BLACK TRACER
- BLK - BLACK
- BLK/WH - BLACK WITH WHITE TRACER
- G - GREEN

LEGEND OF SYMBOLS

- SIGNAL BASE NO. --- (1)
- SIGNAL FACE NO. --- (2)
- LUMINAIRE NO. --- (3)
- CONTROLLER AND CABINET --- (4)
- CONTROLLER AND CABINET-IN PLACE --- (5)
- HANDHOLE --- (6)
- HANDHOLE - IN PLACE --- (7)
- RIGID STEEL CONDUIT (R.S.C.) --- (8)
- RIGID STEEL CONDUIT (R.S.C.)-IN PLACE --- (9)
- SIGNAL FACE WITH BACKGROUND SHIELD --- (10)
- SIGNAL FACE - IN PLACE --- (11)
- SIGNAL FACE - IN PLACE --- (12)
- PEDESTRIAN INDICATIONS --- (13)
- PEDESTRIAN INDICATIONS - IN PLACE --- (14)
- PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE --- (15)
- PEDESTRIAN PUSH BUTTON STATION --- (16)
- TRAFFIC SIGNAL PEDESTAL --- (17)
- TRAFFIC SIGNAL PEDESTAL - IN PLACE --- (18)
- TRAFFIC SIGNAL POLE AND MAST ARM --- (19)
- TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE --- (20)
- STREET LIGHT POLE AND LUMINAIRE --- (21)
- STREET LIGHT POLE AND LUMINAIRE - IN PLACE --- (22)
- MAST ARM AND LUMINAIRE --- (23)
- MAST ARM AND LUMINAIRE - IN PLACE --- (24)
- WOOD POLE --- (25)
- WOOD POLE - IN PLACE --- (26)
- SOURCE OF POWER --- (27)
- RAILROAD SIGNAL - IN PLACE --- (28)
- RIGHT OF WAY LINE --- (29)
- CENTER LINE --- (30)
- EDGE OF ROADWAY --- (31)
- SHOULDER LINE --- (32)
- CURB LINE --- (33)
- STOP BAR --- (34)

THESE APPLY TO SHEETS 1A THRU 5A

PEDESTRIAN PUSH BUTTON MOUNTING DETAIL



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	POLE FOUNDATION
* 8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 B	POLE AND MAST ARM
* 8124 C	SIGNAL HEAD MOUNTS
8125 A	SWING AWAY HINGE
* 8130 D	SAW CUT LOOP DETECTORS
* 8121 B	TRANSFORMER BASE
8126 C	P 100 POLE FOUNDATION

* THESE STANDARD PLATES APPLY TO THIS PLAN

SURVEY: -	CHECKED BY: B.K.	NO. 1	DATE 8/28	REVISIONS	MINOR REVISIONS PER Mr/DCT
DESIGN: G.V.W.					
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.

DATE: _____ REG. NO. 9089

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

SIGNAL SYSTEMS
DETAIL SHEET

S.A.P. 02 - 614 - 10 C.T.B.

FILE NO.: 84135
DATE: 4/27/84
5A

- ① P90-A-20
P90 POLE FOUNDATION
ONE-WAY SIGNAL (OVERHEAD)
TYPE 20C - POLE MOUNTED 270°
2 PEDESTRIAN PUSH BUTTONS
2 METAL GUARD POSTS
EXTEND INTO H.H. 4
3" R.S.C.
2 - 12/C #12
1 - 3/C #12

- ② P90-A-20-D30-9
P90 POLE FOUNDATION
LUMINAIRE - 200 WATT HPS (APPROX 350°)
ONE-WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
TYPE 10A - POLE MOUNTED 180°
2 PEDESTRIAN PUSH BUTTONS
2 METAL GUARD POSTS
EXTEND INTO H.H. 2
3" R.S.C.
2 - 12/C #12
1 - 3/C #12
2 - 1/C #10

- ③ TYPE 2C
PEDESTAL FOUNDATION
2 PEDESTRIAN PUSH BUTTONS
3 METAL GUARD POSTS
EXTEND INTO H.H. 10
3" RSC
2 - 12/C #12
1 - 3/C #12

- ④ P90-A-20-D40-12
P90 POLE FOUNDATION
LUMINAIRE - 200 WATT HPS (APPROX. 350°)
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
2 PEDESTRIAN PUSH BUTTONS
2 METAL GUARD POSTS
EXTEND INTO H.H. 8
3" RSC
3 - 12/C #12
2 - 3/C #12
2 - 1/C #10

SIGNAL INDICATIONS

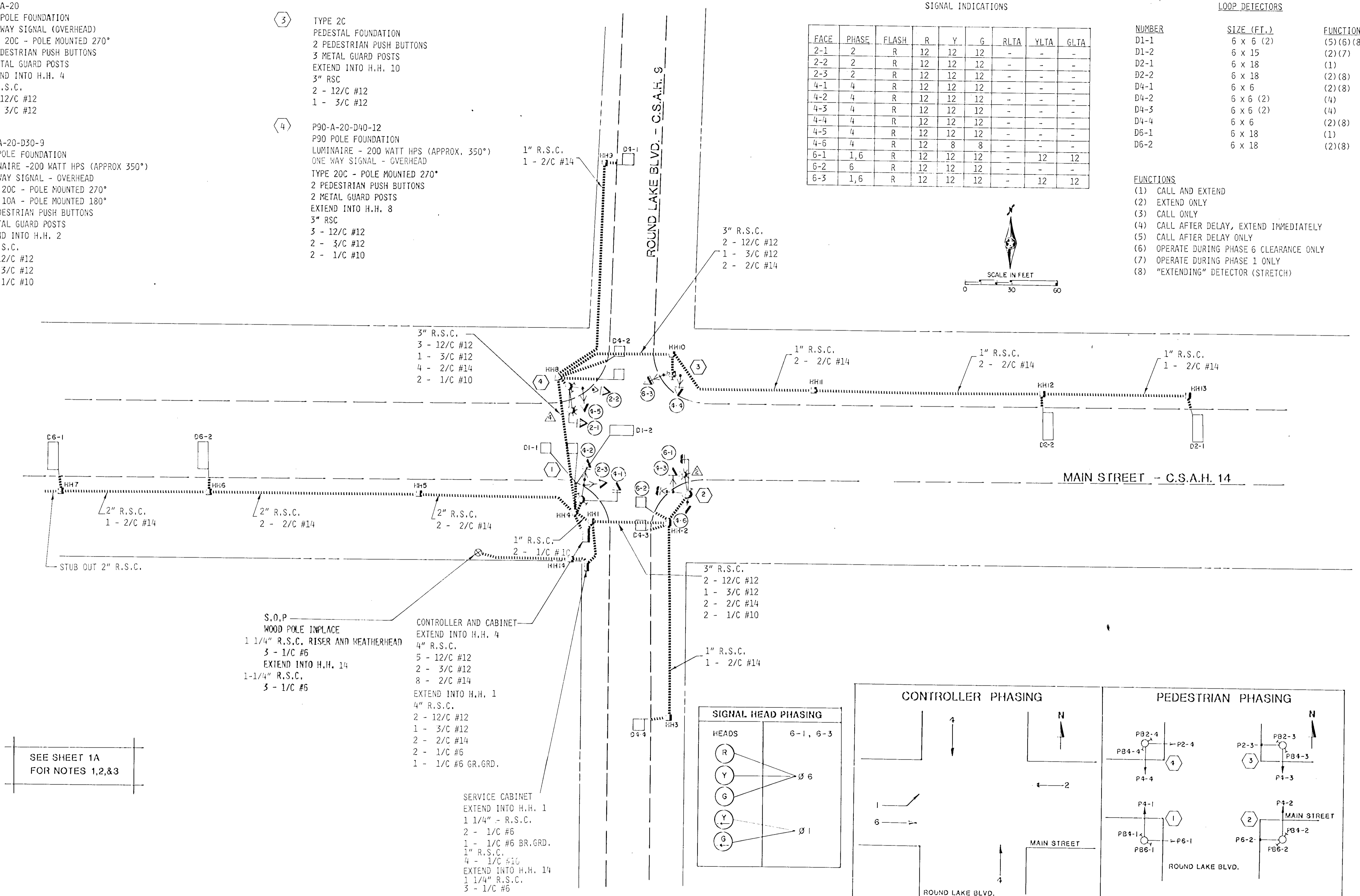
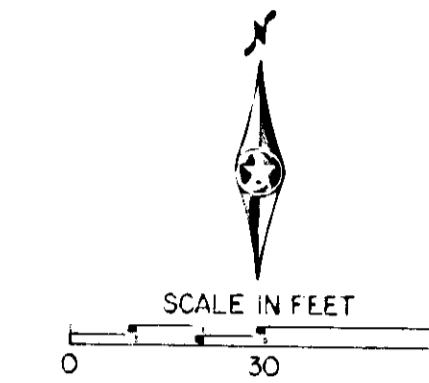
FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA
2-1	2	R	12	12	12	-	-	-
2-2	2	R	12	12	12	-	-	-
2-3	2	R	12	12	12	-	-	-
4-1	4	R	12	12	12	-	-	-
4-2	4	R	12	12	12	-	-	-
4-3	4	R	12	12	12	-	-	-
4-4	4	R	12	12	12	-	-	-
4-5	4	R	12	12	12	-	-	-
4-6	4	R	12	8	8	-	-	-
6-1	1,6	R	12	12	12	-	12	12
6-2	6	R	12	12	12	-	-	-
6-3	1,6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

LOOP DETECTORS

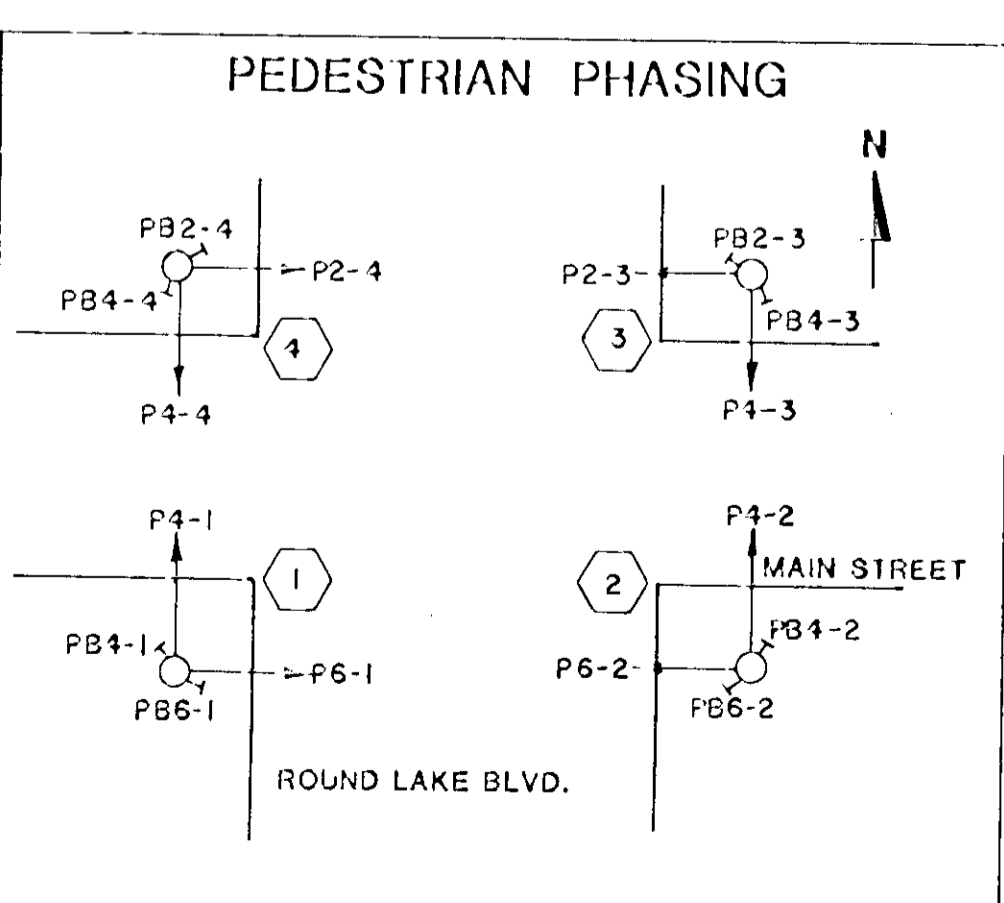
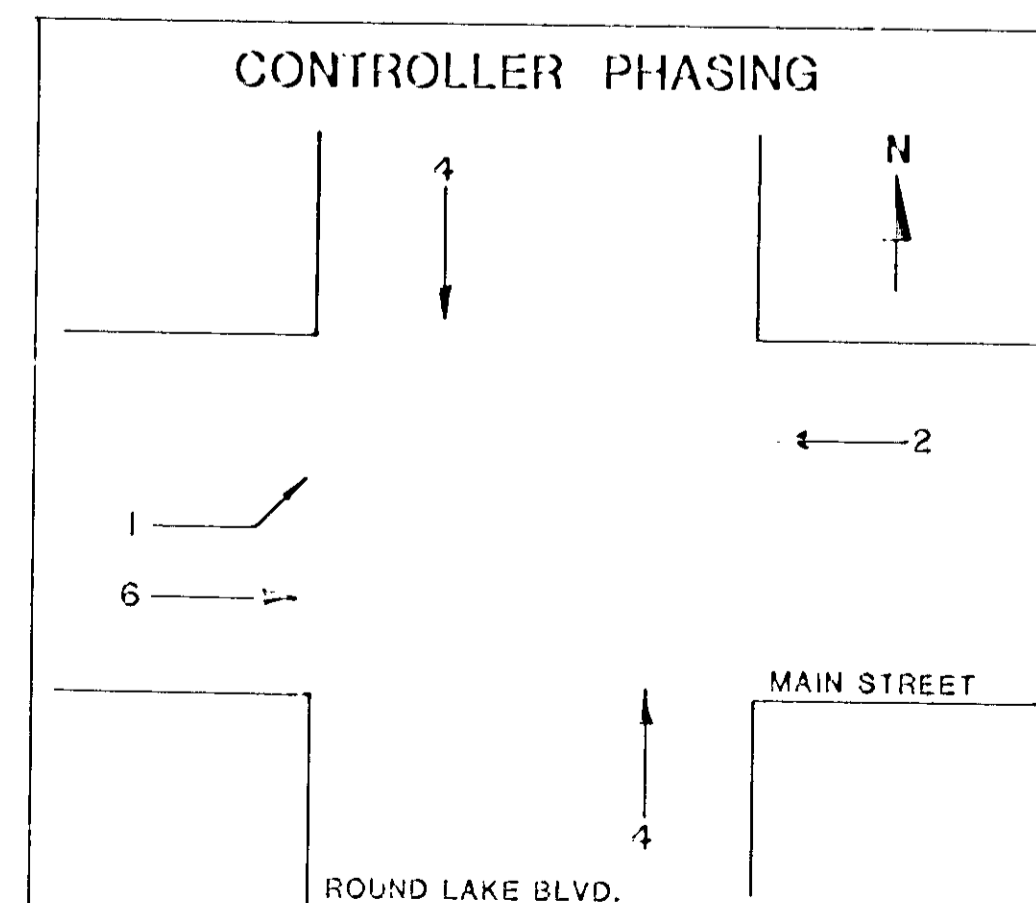
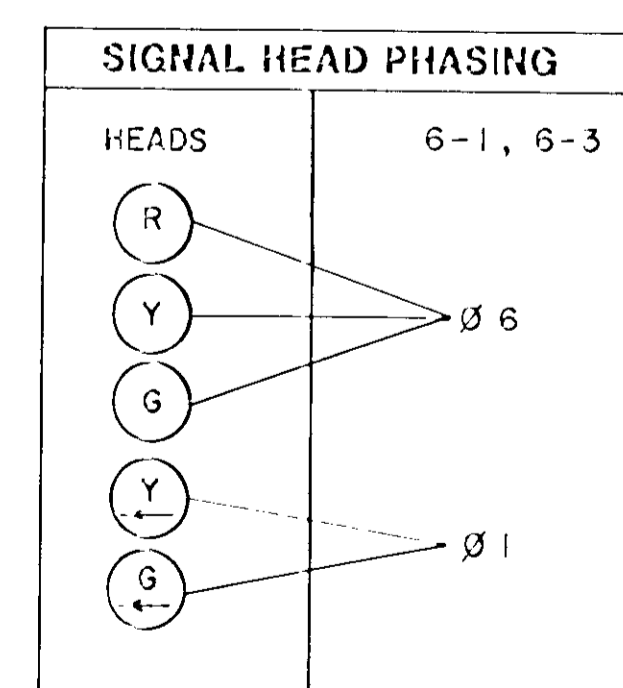
NUMBER	SIZE (FT.)	FUNCTIONS
D1-1	6 x 6 (2)	(5)(6)(8)
D1-2	6 x 15	(2)(7)
D2-1	6 x 18	(1)
D2-2	6 x 18	(2)(8)
D4-1	6 x 6	(2)(8)
D4-2	6 x 6 (2)	(4)
D4-3	6 x 6 (2)	(4)
D4-4	6 x 6	(2)(8)
D6-1	6 x 18	(1)
D6-2	6 x 18	(2)(8)

FUNCTIONS

- (1) CALL AND EXTEND
(2) EXTEND ONLY
(3) CALL ONLY
(4) CALL AFTER DELAY, EXTEND IMMEDIATELY
(5) CALL AFTER DELAY ONLY
(6) OPERATE DURING PHASE 6 CLEARANCE ONLY
(7) OPERATE DURING PHASE 1 ONLY
(8) "EXTENDING" DETECTOR (STRETCH)



SEE SHEET 1A
FOR NOTES 1,2,&3



- S.O.P.
WOOD POLE INPLACE
1 1/4" R.S.C. RISER AND WEATHERHEAD
3 - 1/C #6
EXTEND INTO H.H. 14
1-1/4" R.S.C.
3 - 1/C #5

- CONTROLLER AND CABINET
EXTEND INTO H.H. 4
4" R.S.C.
5 - 12/C #12
2 - 3/C #12
8 - 2/C #14
EXTEND INTO H.H. 1
4" R.S.C.
2 - 12/C #12
1 - 3/C #12
2 - 2/C #14
2 - 1/C #6
1 - 1/C #6 GR.GRD.

- SERVICE CABINET
EXTEND INTO H.H. 1
1 1/4" - R.S.C.
2 - 1/C #6
1 - 1/C #6 BR.GRD.
1" R.S.C.
4 - 1/C #10
EXTEND INTO H.H. 14
1 1/4" R.S.C.
3 - 1/C #6

CONTROLLER INTERFACE PANEL

NEMA 12L CONFLICT MONITOR CMI CM2

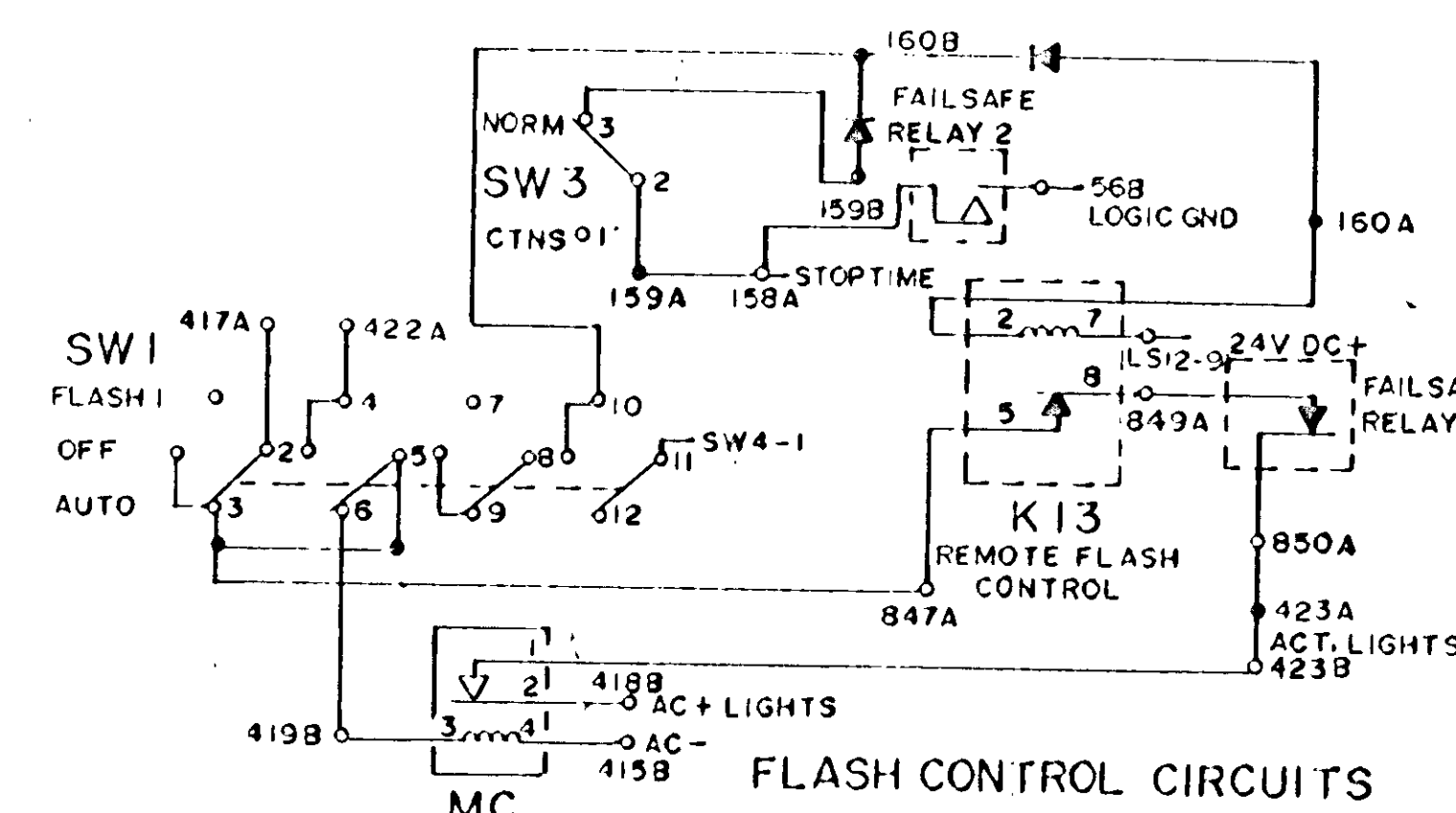
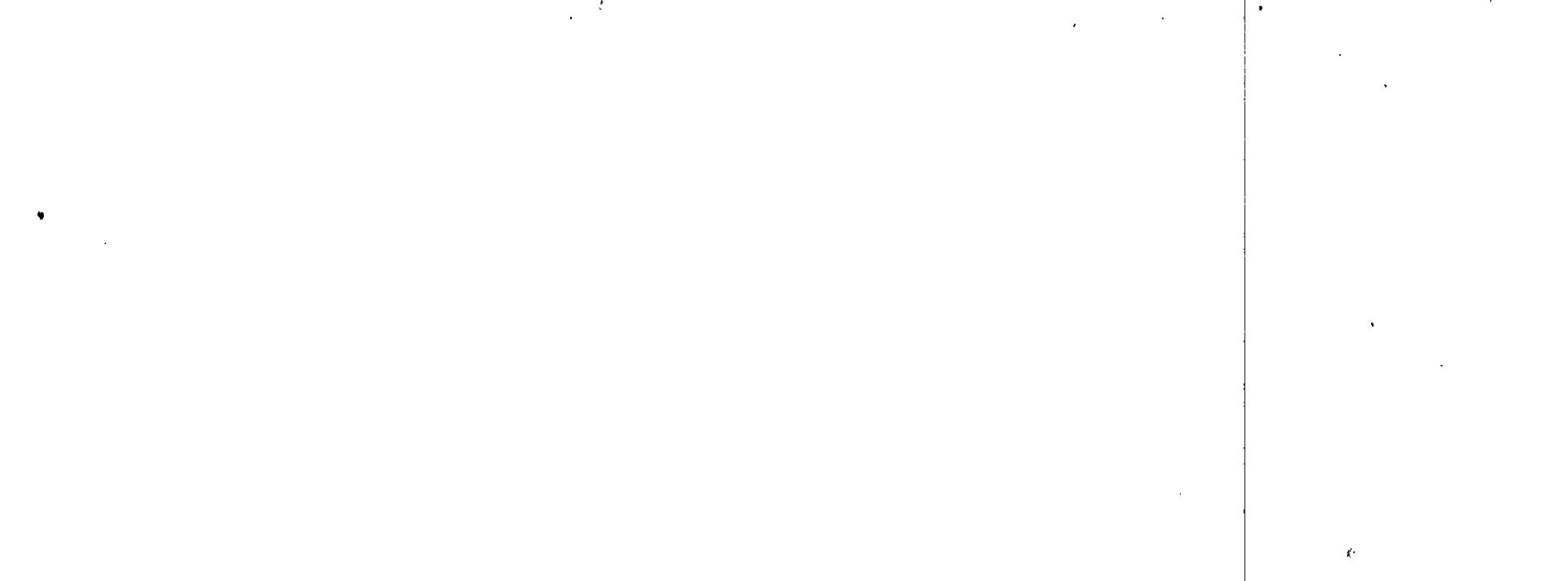
CONFLICT MONITOR MATRIX PROGRAMMING INSTRUCTIONS

Terminal lists for P1, P2, P3, P4, and CMI CM2. Each list includes terminal numbers and their corresponding functions, such as 'SHELL GROUND', 'RESV.', '24V DC+', 'VOLTAGE MONITOR', etc.

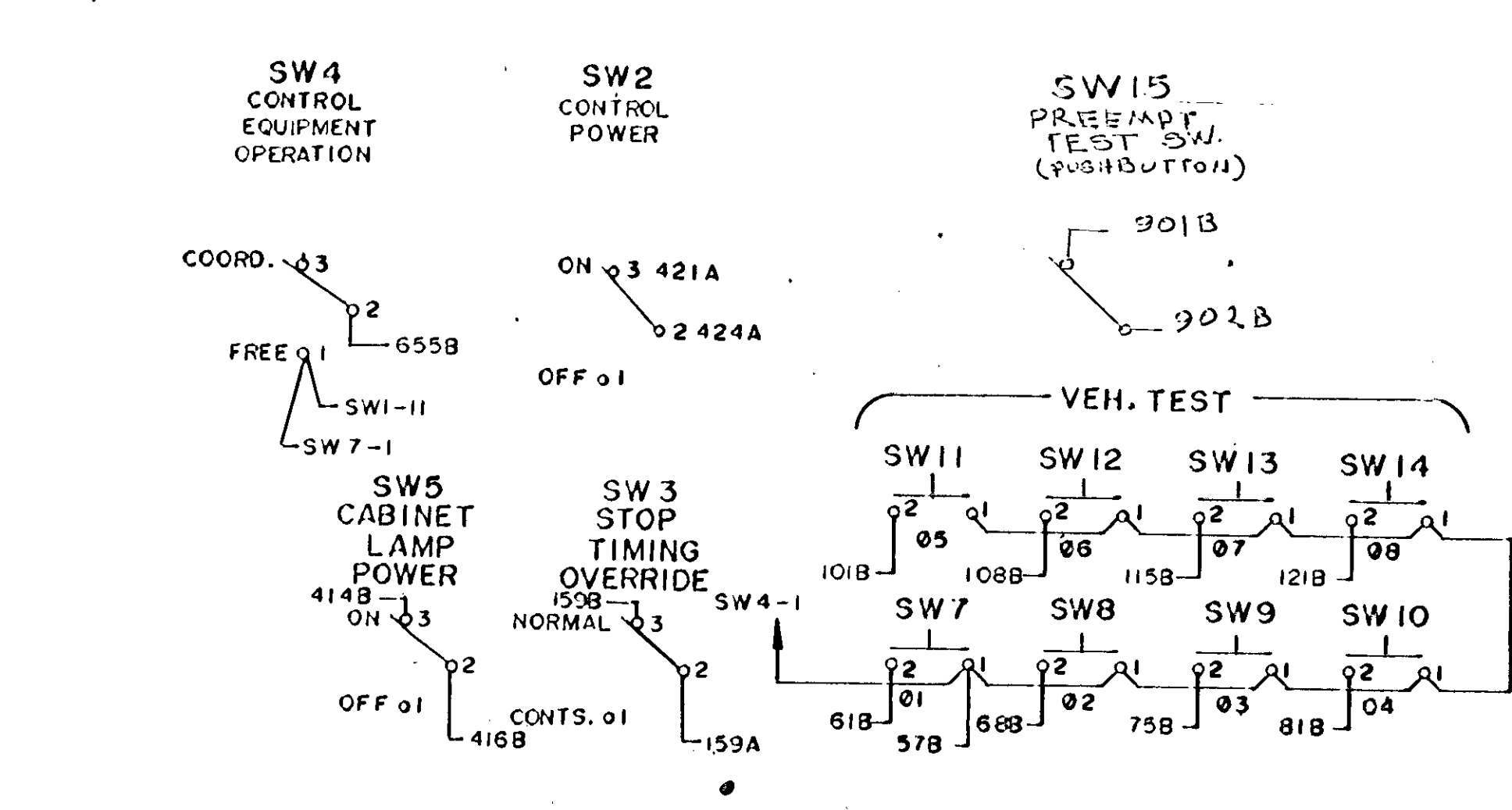
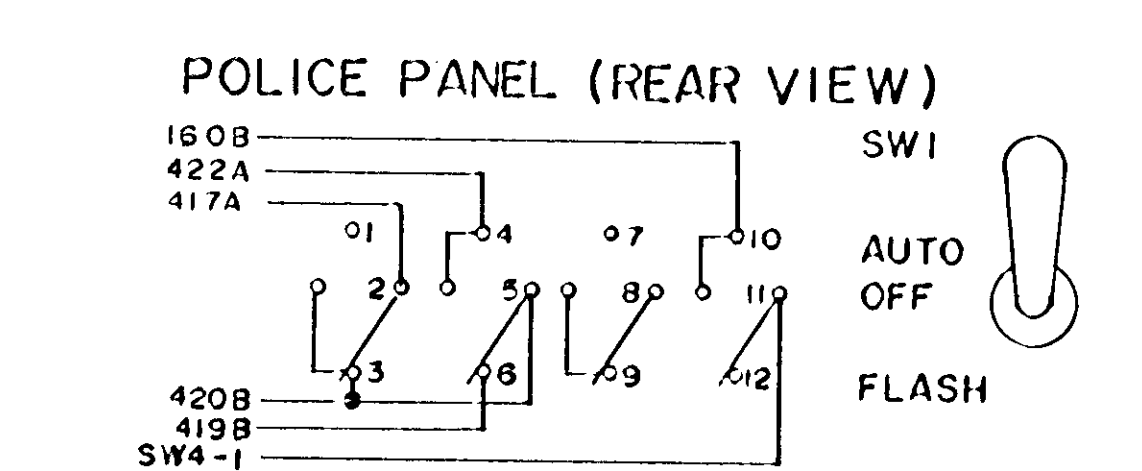
Terminal lists for P4 and CMI CM2. Functions include 'SPLIT (B) IN', 'SYNC IN', 'CALL DET A', 'CALL DET B', 'CALL DET C', etc.

Terminal lists for CMI CM2. Functions include 'SHELL GROUND', 'AC+', 'RELAY 1 NO', 'RELAY 2 NC', 'CH I GRN', etc.

CONFLICT MONITOR MATRIX PROGRAMMING INSTRUCTIONS. A grid showing channel combinations (CH 1-12) and their corresponding matrix jumper settings.



CABINET WIRING FUNCTIONAL COLOR CODES table. Lists colors (BLACK, WHITE, GREEN, RED, BLUE, YELLOW, ORANGE, PURPLE) and their functional purposes (AC+, AC NEUTRAL, EARTH GROUND, CONFLICT MONITOR WIRING, INTERCONNECT, CALLING DETECTOR).

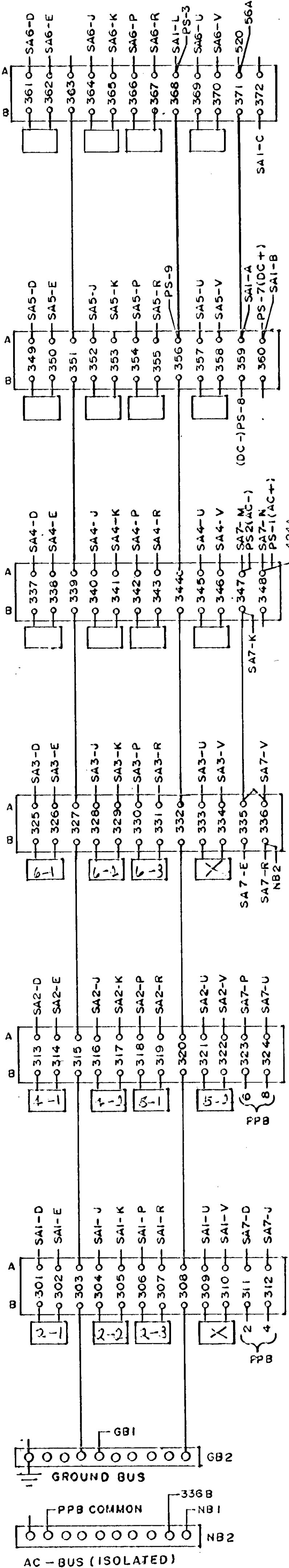


VEHICLE SIGNALS and VEH DETECTORS tables. Grids for mapping signals to terminals G, Y, R and detectors to terminals.

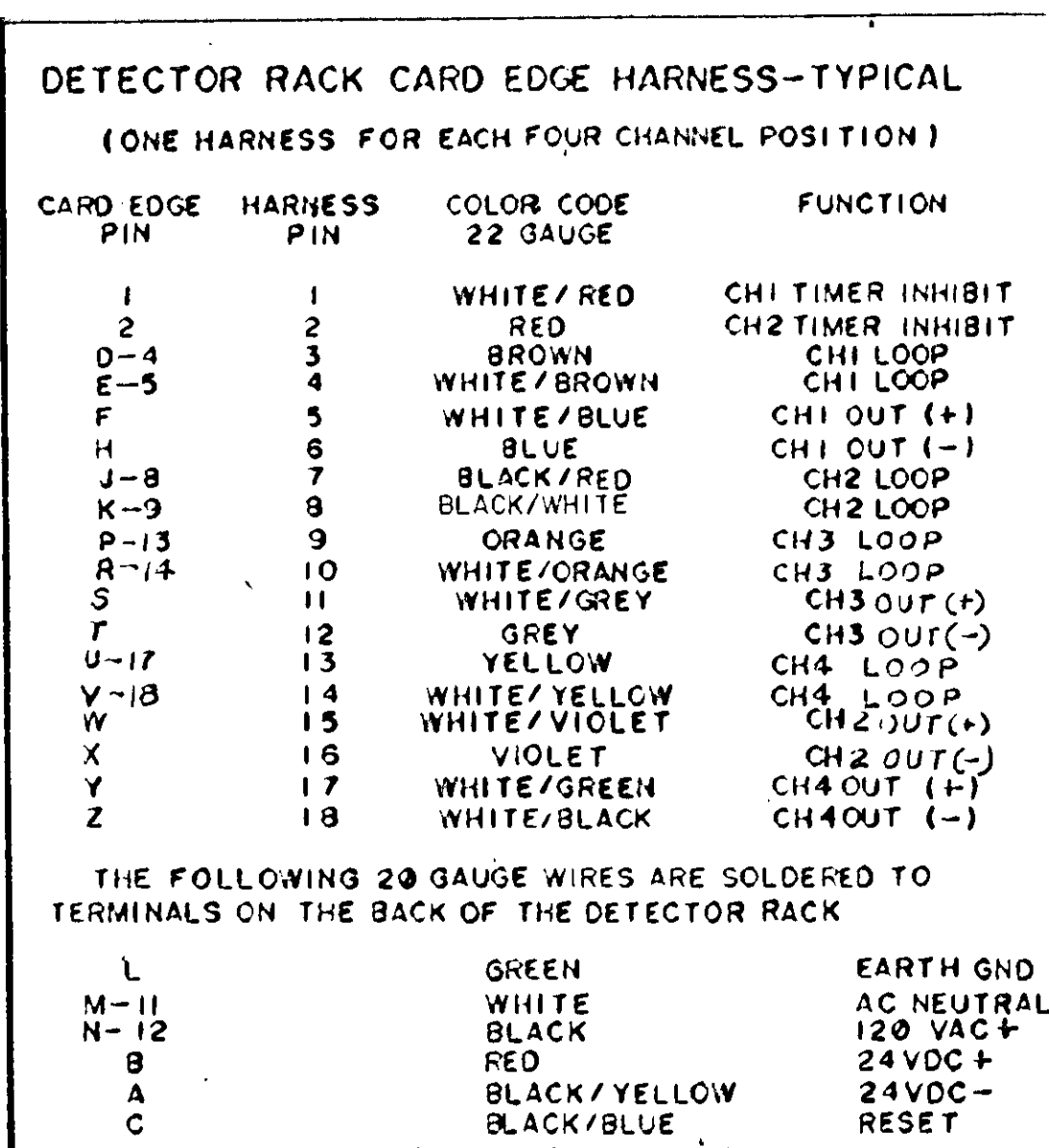
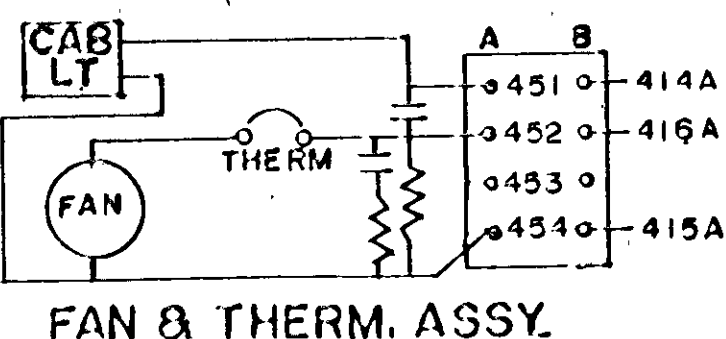
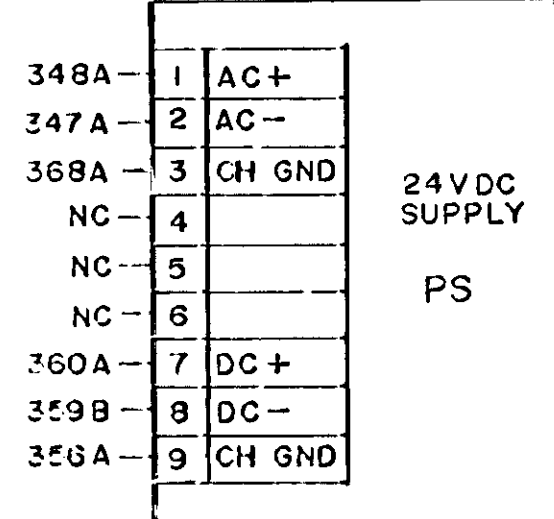
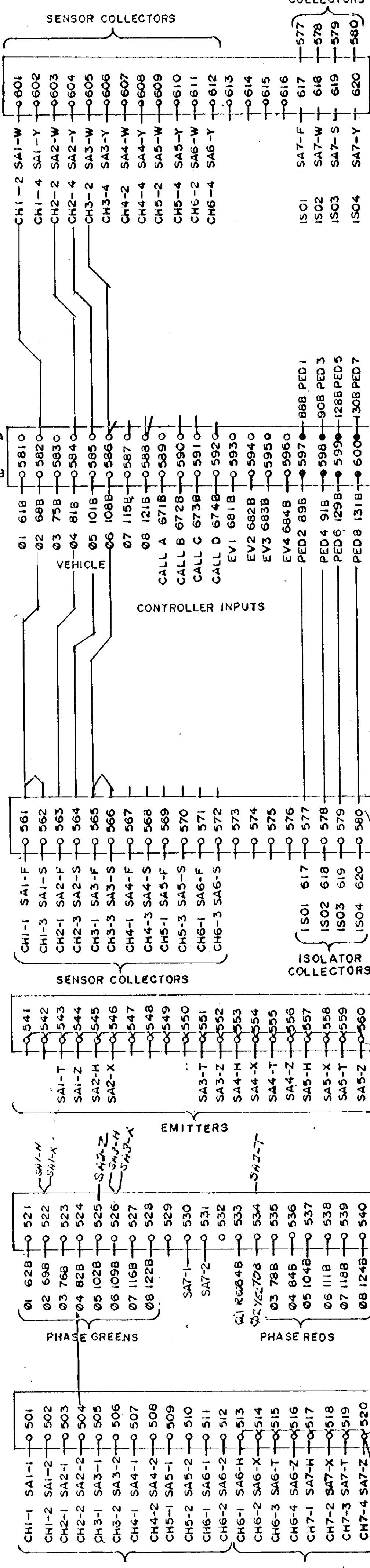
PED SIGNALS and PED PUSHBUTTONS tables. Grids for mapping pedestrian signals to terminals WK, DW and pushbuttons to terminals.

MINNESOTA DEPARTMENT OF TRANSPORTATION 80 CABINET FACILITY FOR MINNESOTA MICROTRONICS. Includes project details, dates, and revision information.

SENSOR FIELD PANEL



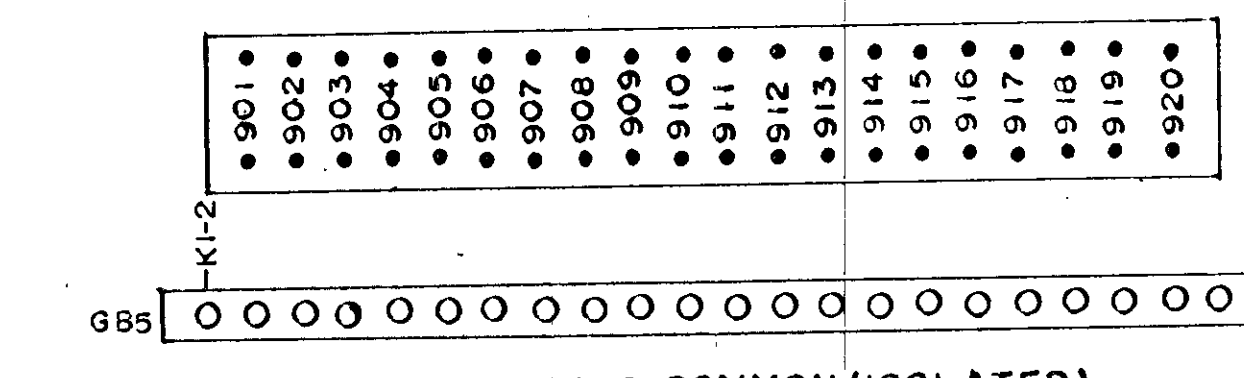
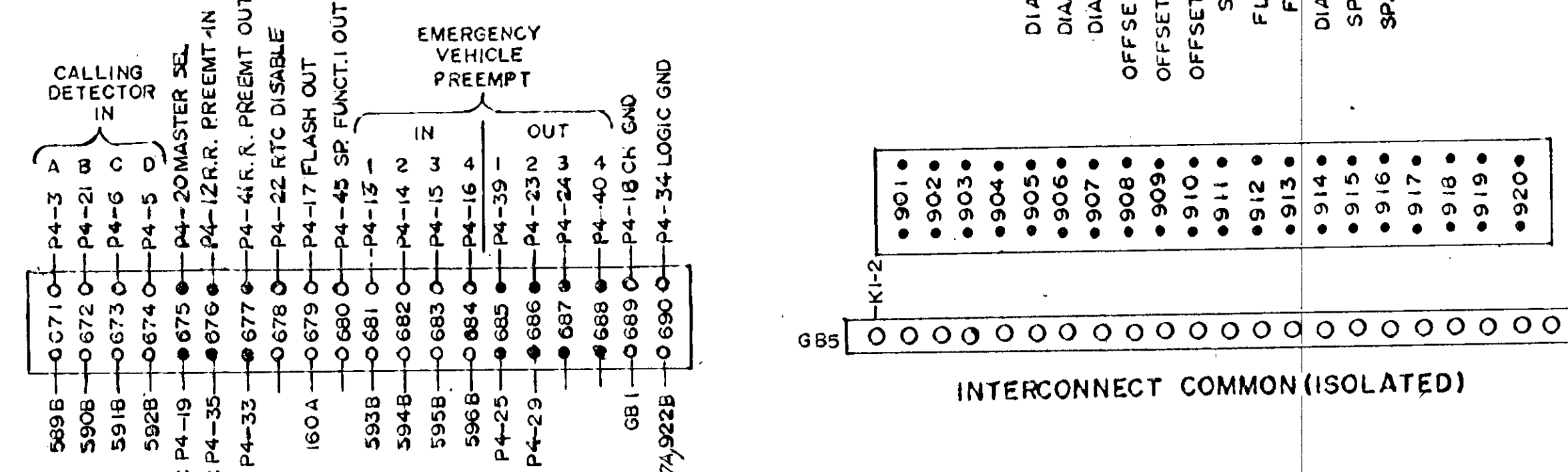
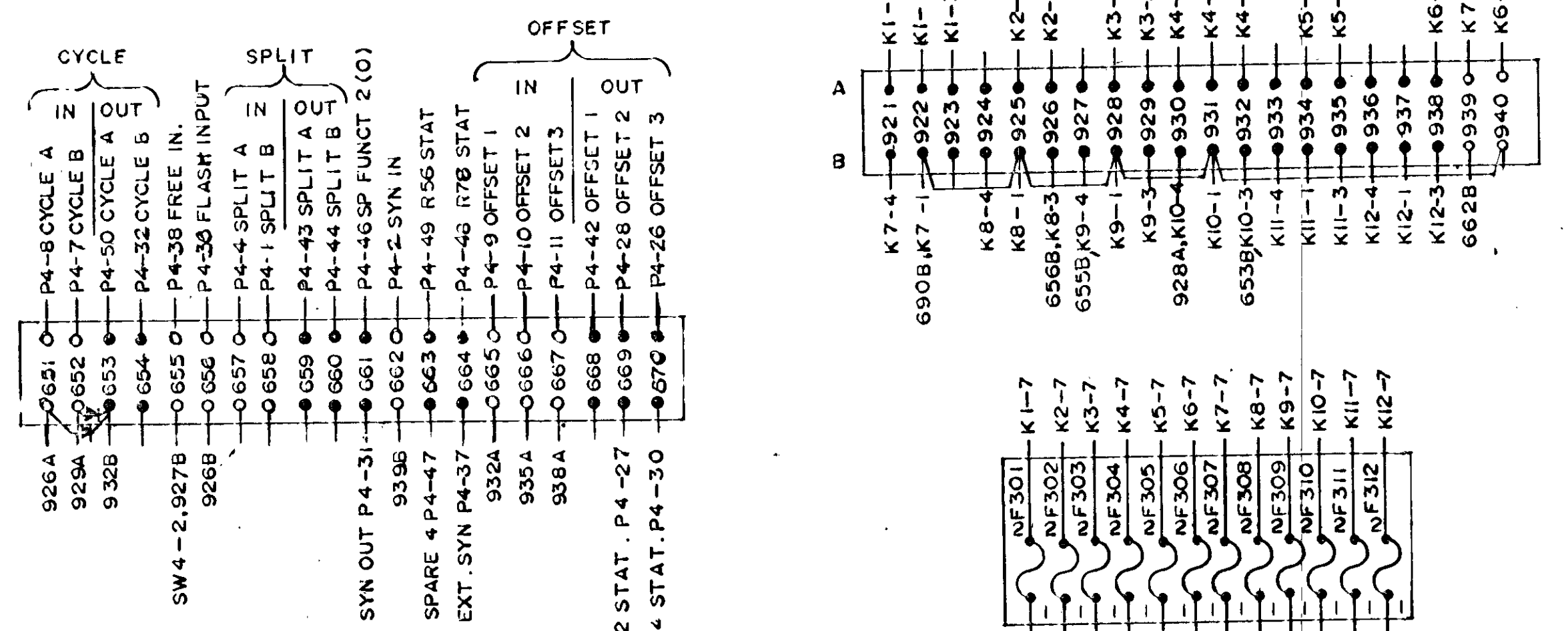
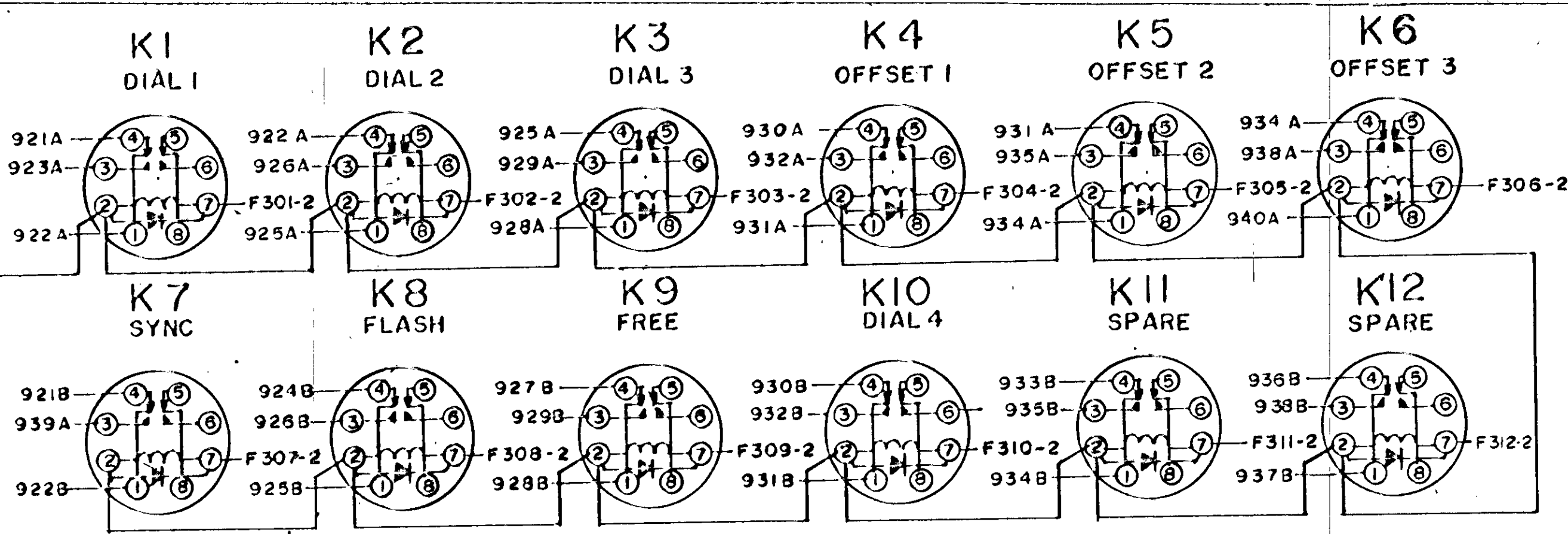
SENSOR PROGRAM PANEL

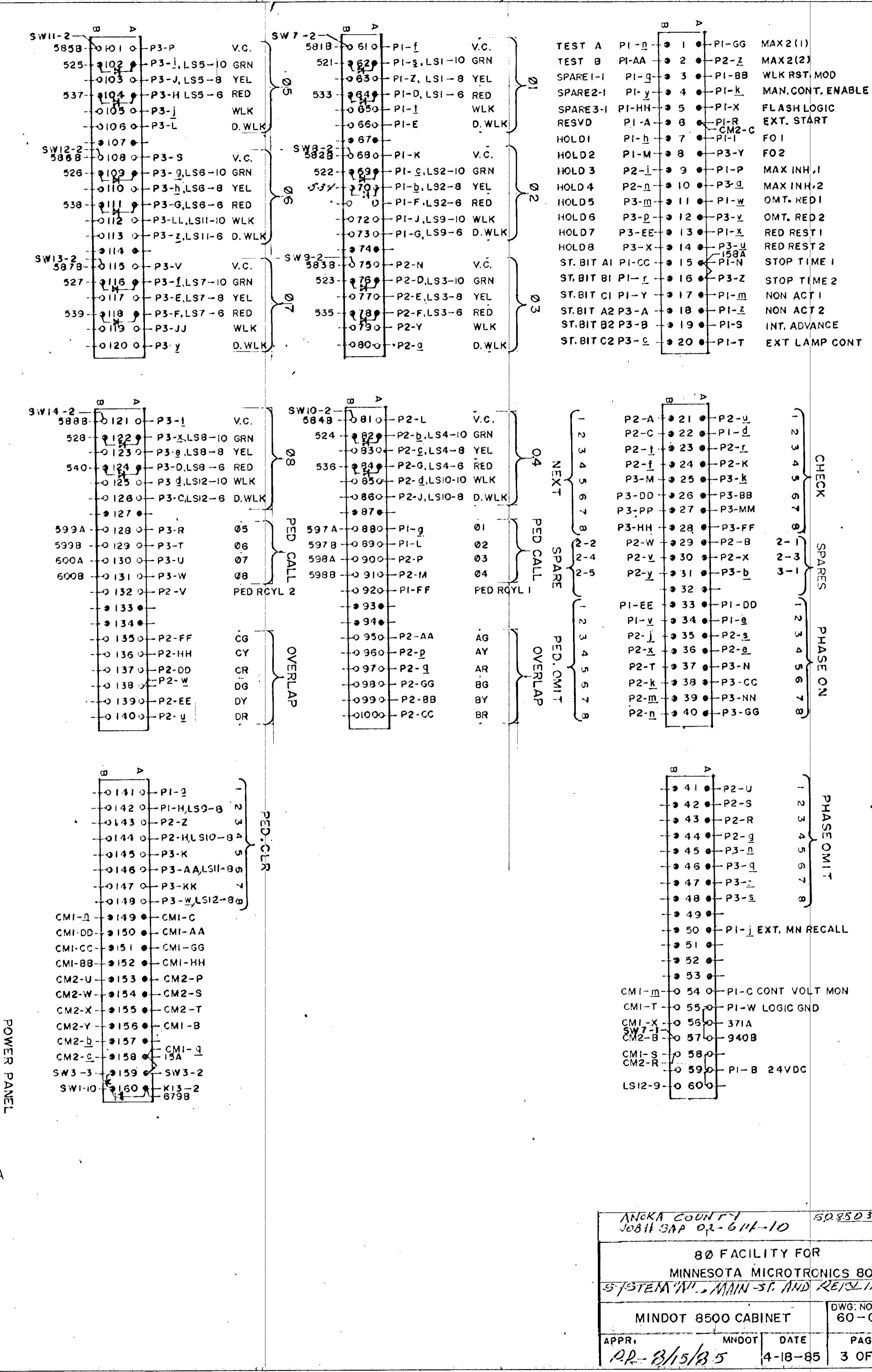
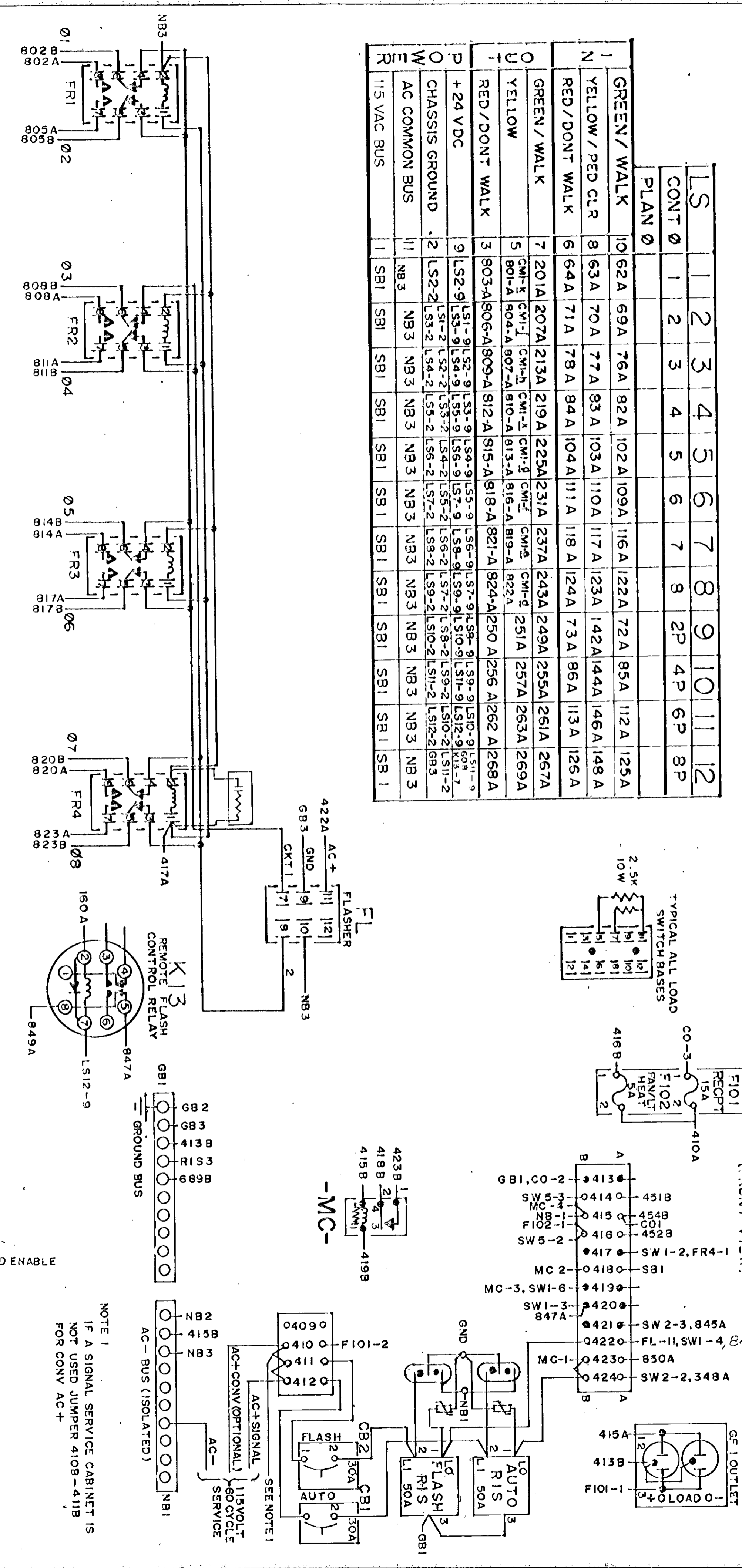
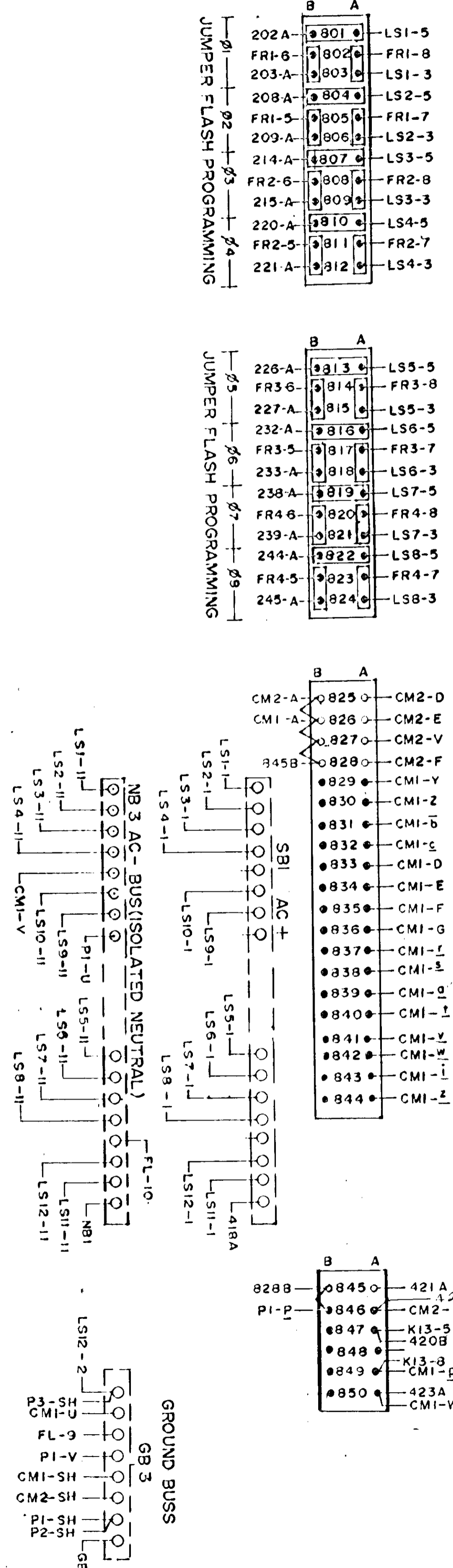
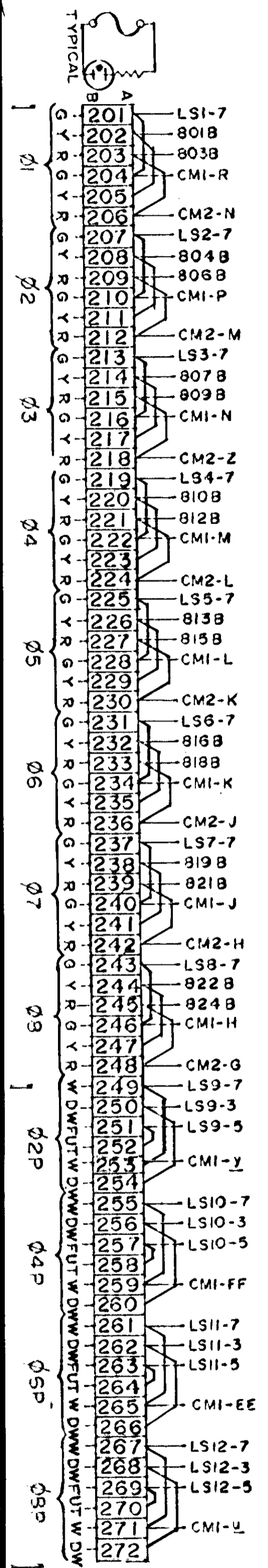


- FUNCTIONS:**
- 1-CALL AND EXTEND
 - 2-CALL ONLY
 - 3-EXTEND ONLY
 - 4-CALL ONLY DENS
 - 5-DLY CALL ONLY
 - 6-DLY CALL ONLY DENSITY
 - 7-DLY CALL IMMED EXTEND
 - 8-CARRY OVER
 - 9-ADVISORY
 - 10-SAMPLING
 - 11-SPECIAL-SEE NOTE

DETECTORS AND PPB ISOLATION

PIN	TRACK HARNESS	SAI							SA7	PPB ISOLATION PHASE
		PHASE FUNC	PHASE FUNC	PHASE FUNC	PHASE FUNC	PHASE FUNC	PHASE FUNC	PHASE FUNC		
A	DC GROUND	359-A							NC	SPARE
B	24V DC+	360A							NC	SPARE
C	REMOTE RESET	372B							NC	SPARE
D-4	CHI LOOP	301A	313A	325A	337A	349A	361A	311A	335B	INPUT CHI
E-5	CHI LOOP	302A	314A	326A	338A	350A	362A	312A	336B	INPUT COMMON
F	CHI OUTPUT (+)	561	563	565	567	569	571	517	519	OUTPUT CHI (+)
G	CHI OUTPUT (-)	541	545	549	553	557	513	517	519	OUTPUT CHI (-)
H	CHI LOOP	304A	316A	328A	340A	352A	364A	312A	336B	INPUT CH2
J-8	CH2 LOOP	305A	317A	329A	341A	353A	365A	347B		INPUT COMMON
K-9	CH2 LOOP	305A	317A	329A	341A	353A	365A	347B		INPUT COMMON
L	CHASSIS GROUND	368A								CHASSIS GROUND
M	SPARE	NC	NC	NC	NC	SA6/SA5	SA5/SA7	347A		AC-
N	SPARE	NC	NC	NC	NC	SA6/SA5	SA5/SA7	348A		115V AC+
P-13	CH3 LOOP	308A	318A	330A	342A	354A	366A	323A	336B	INPUT CH3
R-14	CH3 LOOP	307A	319A	331A	343A	355A	367A	336B	336B	INPUT COMMON
S	CH3 OUTPUT (+)	562	564	566	568	570	572	619	619	OUTPUT CH3 (+)
T	CH3 OUTPUT (-)	543	547	551	555	559	515	519	519	OUTPUT CH3 (-)
U-17	CH4 LOOP	309A	321A	333A	345A	357A	369A	324A		INPUT CH4
V-18	CH4 LOOP	310A	322A	334A	346A	358A	370A	336A		INPUT COMMON
W	CH2 OUTPUT (+)	601	603	605	607	609	611	618	618	OUTPUT CH2 (+)
X	CH2 OUTPUT (-)	542	546	550	554	558	514	518	518	OUTPUT CH2 (-)
Y	CH4 OUTPUT (+)	602	604	606	608	610	612	620	620	OUTPUT CH4 (+)
Z	CH4 OUTPUT (-)	544	548	552	556	560	516	520	520	OUTPUT CH4 (-)
1	CHI GREEN	501	503	505	507	509	511	530		NOT USED
2	CH2 GREEN	502	504	506	508	510	512	531		NOT USED
3	CH3 GREEN									SPARE
10	CH4 GREEN									SPARE





ANKA COUNTY
JOB# 3AP 02-611-10 60850316

80 FACILITY FOR
MINNESOTA MICROTRONICS 800
SYSTEM W. MAIN ST. AND REISLING

MINDOT 8500 CABINET

APPR. MNDOT DATE PAGE
PR-8/15/85 4-18-85 3 OF 3

DWG. NO. 60-088