

DRAWING

PLAN HEAD CORPORATION
REGISTERED PROFESSIONAL ENGINEER
REGISTERED PROFESSIONAL SURVEYOR

DRAWING NUMBER
23-145

PLAN HEAD CORPORATION • IRVINE, CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
REGISTERED PROFESSIONAL SURVEYOR

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REGISTERED PROFESSIONAL ENGINEER
REGISTERED PROFESSIONAL SURVEYOR

CITY OF NEW BRIGHTON IN RAMSEY COUNTY

CONSTRUCTION PLAN FOR EMERGENCY VEHICLE PRE-EMPTION SYSTEMS

MINN. PROJ. NO. N/A

STATE PROJ. NO. N/A

ABBREVIATIONS

3-1(eg)	SIGNAL HEAD PHASE "3" - NO. "1"	PEC	PHOTOELECTRIC CELL
BL	BLUE	PED	PEDESTRIAN
BL/BLK	BLUE WITH BLACK TRACER	RED	REMOVE AND SALVAGE
BLK	BLACK	R&S	RED WITH BLACK TRACER
BLK/WH	BLACK WITH WHITE TRACER	R/BLK	RED LEFT TURN ARROW
BR. GR.	BARE GROUND	RLTA	RED LEFT TURN ARROW
CH. SW.	CHECK SWITCH	RRTA	RED RIGHT TURN ARROW
CLR	CLEAR	RSC	RIGID STEEL CONDUIT
D2-1(eg)	DETECTOR PHASE "2" - NO. "1"	SOP	SOURCE OF POWER
DNL	DOWNLIGHT	SPR	SPARE
DNK	DON'T WALK	ST LHT	STREET LIGHT
EQG	EQUIPMENT GROUND	STA	STATION
EVP	EMERGENCY VEHICLE PRE-EMPTION	SW	SWITCH
F&I	FURNISH AND INSTALL	SWD	SWITCHED
FL	FLASH/FLASHING	TOW	TELEPHONE DROP WIRE
G	GREEN	THRA	THRU AND RIGHT ARROW
G/BLK	GREEN WITH BLACK TRACER	WH	WHITE
GLTA	GREEN LEFT TURN ARROW	WH/BLK	WHITE WITH BLACK TRACER
GRN	GREEN	WLK	WALK
GR. R.	GROUND ROD	YEL	YELLOW
GRTA	GREEN RIGHT TURN ARROW	YLTA	YELLOW LEFT TURN ARROW
GTHA	GREEN THRU ARROW	YRTA	YELLOW RIGHT TURN ARROW
HH	HANDHOLE	YTHA	YELLOW THRU ARROW
HPS	HIGH PRESSURE SODIUM		
IMC	INTERMEDIATE METAL CONDUIT		
JB	JUNCTION BOX		
LUM	LUMINAIRE		
MV	MERCURY VAPOR		
NEU	NEUTRAL		
NMC	NONMETALLIC CONDUIT		
O	ORANGE		
O/BLK	ORANGE WITH BLACK TRACER		
P1-1(eg)	PEDESTRIAN INDICATIONS PHASE "1" - NO. "1"		
PB	PUSHBUTTON		
PB2-1(eg)	PUSHBUTTON PHASE "2" - NO. "1"		

SYMBOLS

○	EQG CONNECTION
→	EVP DETECTOR DIRECTION
③	LUMINAIRE NO.
②	SIGNAL BASE NO.
③	SIGNAL FACE NO. (Phase 2 - Face 3)
—	SPLICE

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

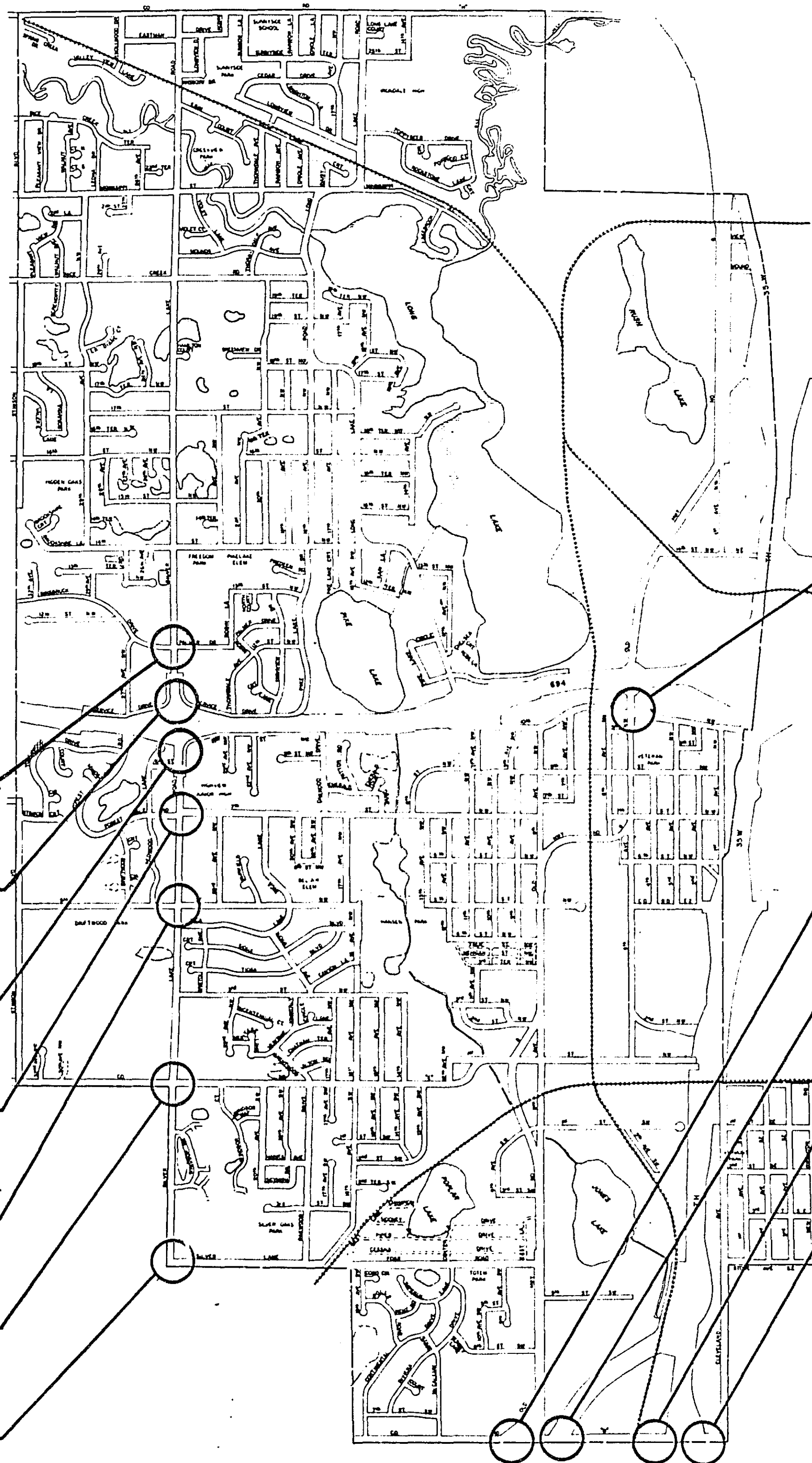
STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
7036 C	PEDESTRIAN CURB RAMP
8110 C	TRAFFIC SIGNAL BRACKETING
8111 B	TRAFFIC SIGNAL BRACKETING
8112 C	PEDESTAL FOUNDATION
8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
8115 C	PEDESTRIAN PUSHBUTTON INSTALLATION
8116 C	STEEL GUARD POST
8117 F	PRECAST CONCRETE HANDHOLE (OR PULLBOX)
8118 C	SERVICE EQUIPMENT & POLE
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 H	P-80 & P-90 POLE FOUNDATION
8121 B	TRANSFORMER BASE WITH POLE BASE PLATE
8122 C	PEDESTAL & PEDESTAL-BASE
8123 B	POLE & MAST ARM
8124 C	MAST ARM SIGNAL HEAD MOUNTS
0005 A	SPEC. REFERENCE TO STANDARD PLATES
8126 C	P-100 POLE FOUNDATION
8130 D	SAW CUT LOOP DETECTORS

STANDARD PLATES APPLICABLE TO THIS PROJECT: (NONE)

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



CITY PROJECT 88-17
STATE AID PROJECT NO'S:

147-020-11	SYSTEM A
147-020-11	SYSTEM B
147-020-11	SYSTEM C
147-020-11	SYSTEM F
147-020-11	SYSTEM G
147-020-11	SYSTEM I
147-020-11	SYSTEM J

147-020-11	SYSTEM L
147-103-09	SYSTEM D
147-112-03	SYSTEM E
147-116-05	SYSTEM H

SYSTEM "A" S.A.P. 147-020-11
5th STREET / OLD HWY 8 (C.S.A.H. 77) AT
10th STREET N.W. (C.S.A.H. 12)

SYSTEM "I" S.A.P. 147-020-11
COUNTY ROAD D (C.S.A.H. 19) AT
OLD HIGHWAY 8 (C.S.A.H. 77)

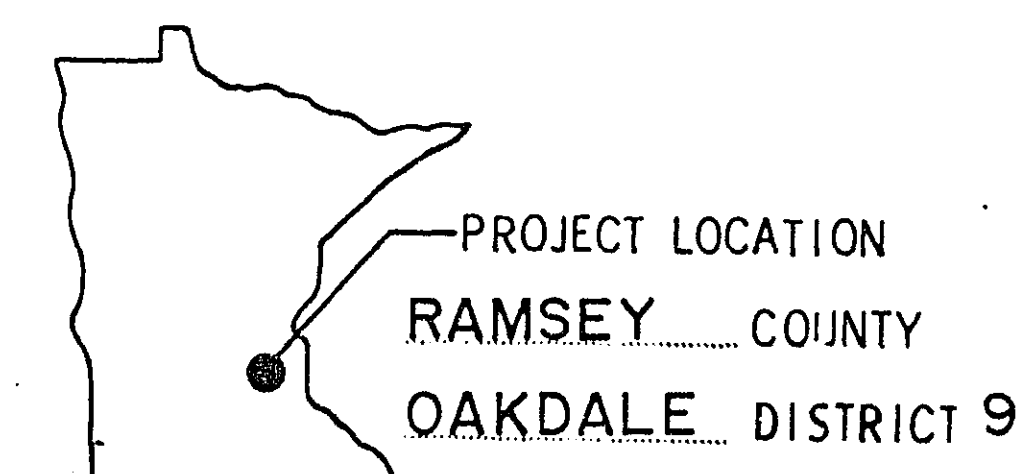
SYSTEM "J" S.A.P. 147-020-11
COUNTY ROAD D (C.S.A.H. 19) AT
TH 88

SYSTEM "K" S.A.P. 147-020-11
COUNTY ROAD D (C.S.A.H. 19) AT
I-35W EAST RAMP TERMINAL

SYSTEM "L" S.A.P. 147-020-11
COUNTY ROAD D (C.S.A.H. 19) AT
I-35W WEST RAMP TERMINAL

SCALES

PLAN	_____
PROFILE	NA
INDEX MAP	_____
GENERAL LAYOUT	_____



STATE PROJ. NO. _____ AREA _____ JOB _____

CITY PROJ. NO. 88-17
STATE AID PROJ. NO. 147-112-03, 147-116-05, 147-103-09, 147-020-11
SHEET NO. 1 OF 31 SHEETS

FED. PROJ. NO. N/A

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

- TITLE SHEET
- ESTIMATED QUANTITY
30. INTERSECTION LAYOUT AND WIRING DIAGRAMS
- DETAIL SHEET

THIS PLAN CONTAINS 31 SHEETS

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 12/15/88 REG. NO. 10106 ENGR. Robert J. Morast
DESIGN SQUAD W.K.N.

DATE 12/15/88 REG. NO. 18276 ELEC. ENGR. Paul Sely

Recommended for Approval Leslie Propper City Engineer 1/24/89
MUNICIPALITY TITLE

Recommended for Approval Thomas E. Wolfes County Engineer 1-22-89
COUNTY TITLE

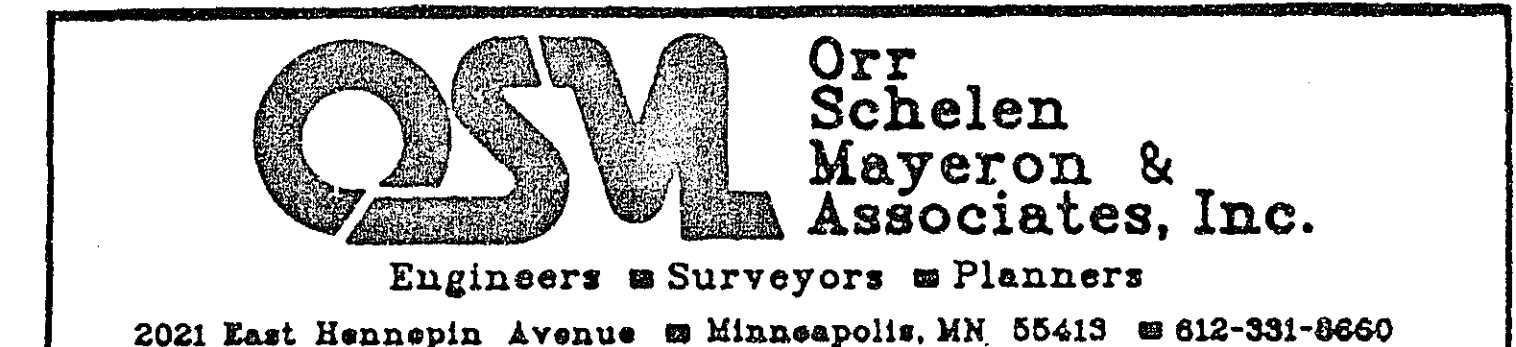
Recommended for Approval Robert H. Artford 2-3-1989
DISTRICT STATE AID ENGINEER

Recommended for Approval Andrew Skallman 2/17 1989
STATE AID PLANS ENGINEER

Recommended for Approval Leonard H. Eilts 2-15 1989
DIRECTOR, TRAFFIC ENGINEERING

Approved 2/17 1989 Andrew Skallman
STATE AID ENGINEER

N/A — NOT APPLICABLE

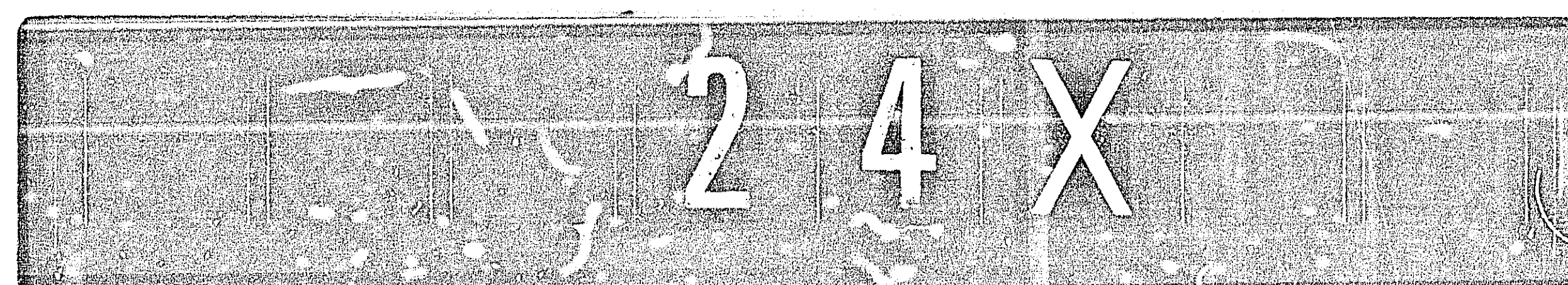


I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN
WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A
DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE
OF MINNESOTA.

DATE _____ REG. NO. _____

RAMSEY COUNTY COPY 12/01/89

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-09 1-31
147-020-11



OSM
Orr
Schelen
Mayron & Associates, Inc.
Engineers ■ Surveyors ■ Planners

2021 East Hennepin Avenue ■ Minneapolis, MN 55413 ■ 612-331-8660

ESTIMATED QUANTITIES

NEW BRIGHTON • MINNESOTA

THIS REPORT WAS PREPARED BY THE ENGINEER OR SURVEYOR NAMED HEREON AND FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS THE PROPERTY OF THE ENGINEER OR SURVEYOR NAMED HEREON AND IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE ENGINEER OR SURVEYOR NAMED HEREON.

DATE: 12/15/88 REG. NO.: 10106

PROJECT: *Robert J. Morast*

CHECKED BY: *COMANDY*

DESIGN BY: *R.J.M.*

SCALE: NO SCALE

INCHES PER FOOT: 1" = 40'

RECORD COPY BY: DATE

SHEET 2 OF 31 SHEETS

23-145

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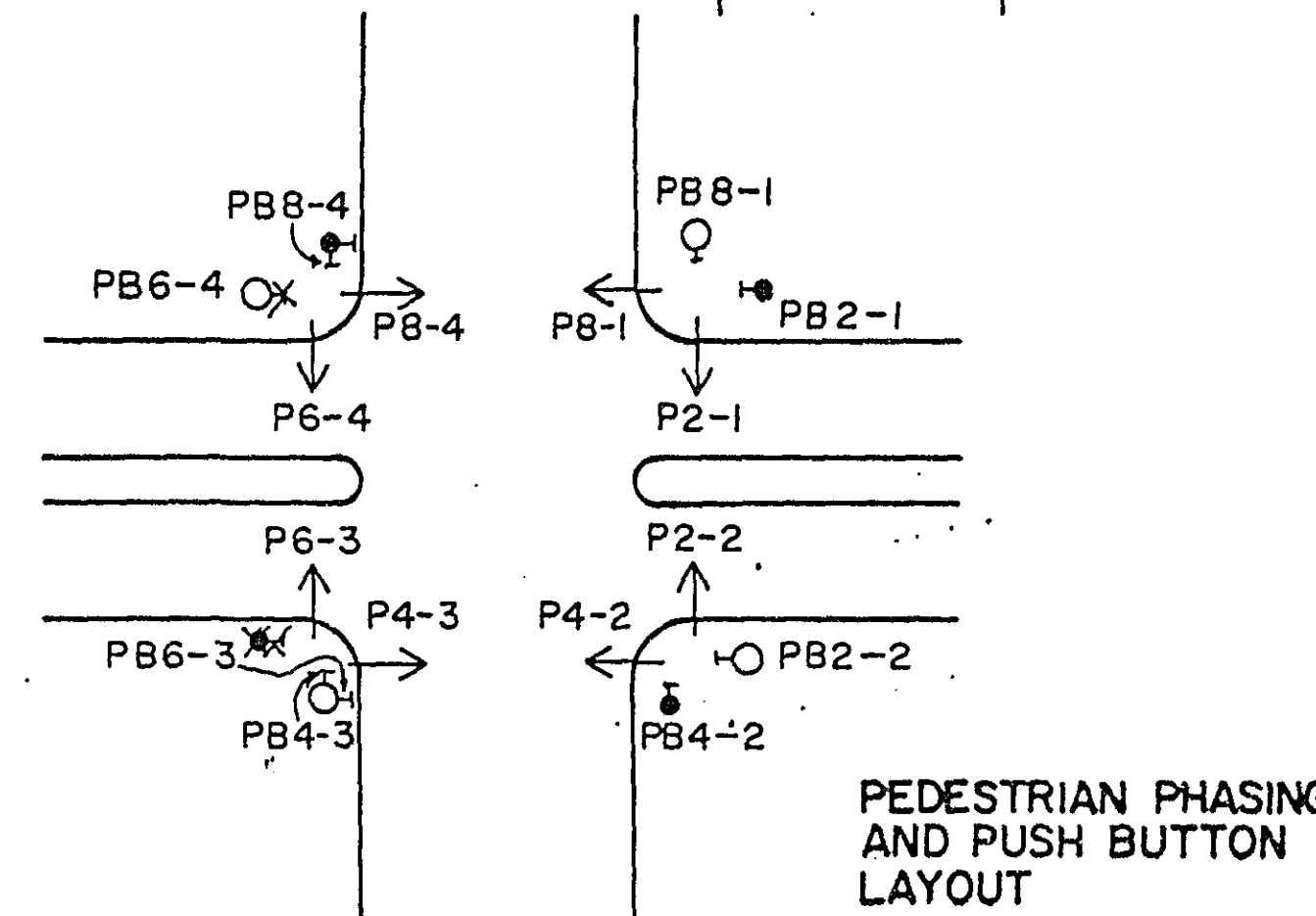
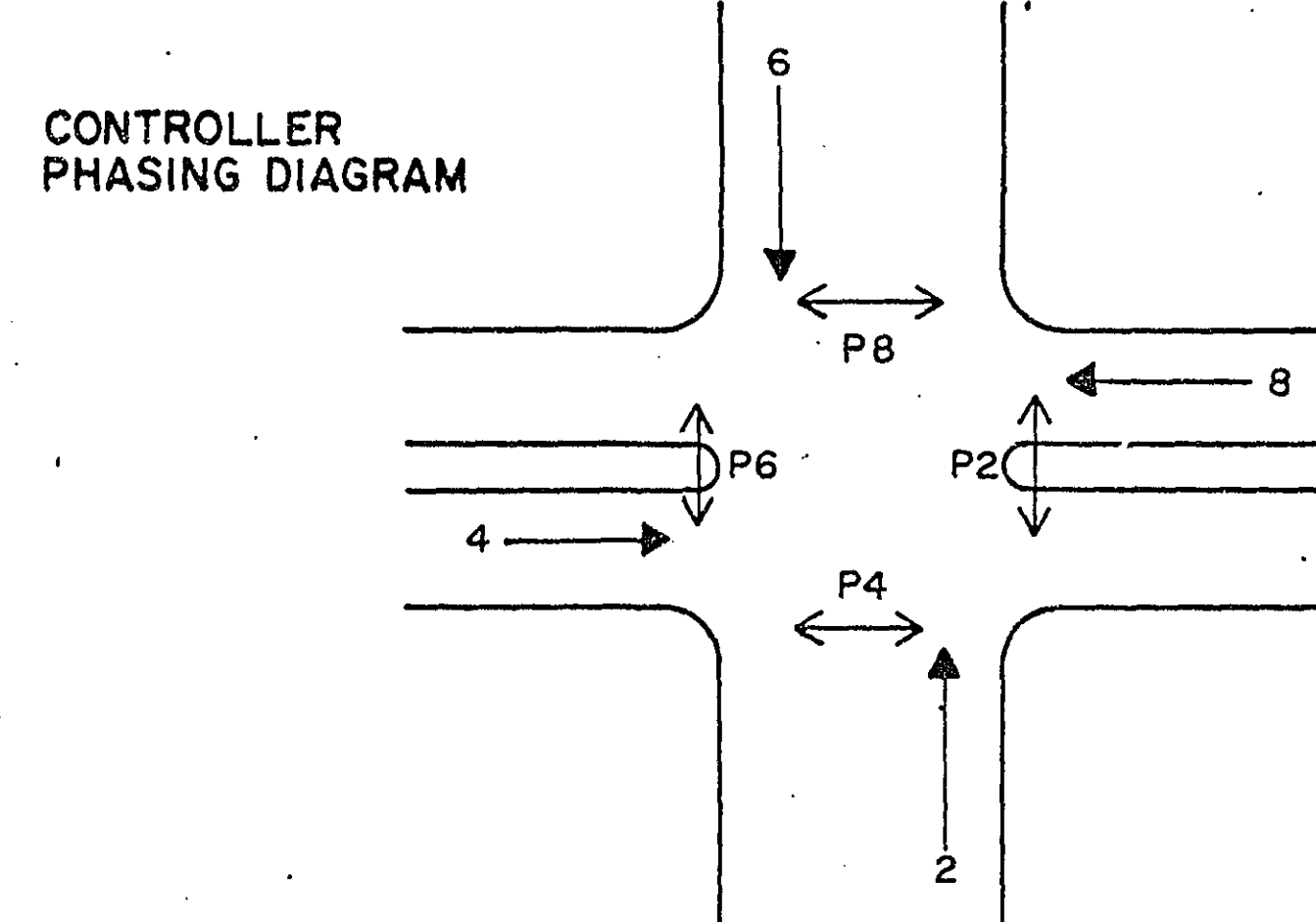
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CONTRACT

LEGEND OF SYMBOLS

SIGNAL BASE No.	5
SIGNAL FACE No.	2
CONTROLLER AND CABINET	
CONTROLLER AND CABINET-INPLACE	
HANDHOLE	
HANDHOLE-INPLACE	
RIGID STEEL CONDUIT (R.S.C.)	
RIGID STEEL CONDUIT (R.S.C.)-INPLACE	
SIGNAL FACE	
SIGNAL FACE WITH BACKGROUND SHIELD	
SIGNAL FACE - INPLACE	
PEDESTRIAN INDICATIONS	
PEDESTRIAN INDICATIONS - INPLACE	
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE	
PEDESTRIAN PUSH BUTTON STATION	
TRAFFIC SIGNAL PEDESTAL	
TRAFFIC SIGNAL PEDESTAL - INPLACE	
TRAFFIC SIGNAL POLE AND MAST ARM	
TRAFFIC SIGNAL POLE AND MAST ARM - INPLACE	
MAST ARM AND LUMINAIRE	
MAST ARM AND LUMINAIRE - INPLACE	
WOOD POLE	
WOOD POLE - INPLACE	
SOURCE OF POWER	
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION	

CONTROLLER
PHASING DIAGRAM

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
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"	—	—	—
6-1	6	R	12"	12"	12"	—	—	—
6-2	6	R	12"	12"	12"	—	—	—
6-3	6	R	12"	12"	12"	—	—	—
8-1	8	R	12"	12"	12"	—	—	—
8-2	8	R	12"	12"	12"	—	—	—
8-3	8	R	12"	12"	12"	—	—	—

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
D2-1	6'-6"	CALL & EXTEND
D2-2	6'-6"	CALL & EXTEND
D2-3	6' X 8'	CALL ONLY
D2-4	6' X 8'	CALL ONLY
D4-1	6' X 6'	CALL & EXTEND
D4-2	6' X 6'	CALL & EXTEND
D4-3	6' X 8'	CALL ONLY
D4-4	6' X 8'	CALL ONLY
D6-1	6' X 6'	CALL & EXTEND
D6-2	6' X 6'	CALL & EXTEND
D6-3	6' X 8'	CALL ONLY
D6-4	6' X 8'	CALL ONLY
D8-1	6' X 6'	CALL & EXTEND
D8-2	6' X 6'	CALL & EXTEND
D8-3	6' X 8'	CALL ONLY
D8-4	6' X 8'	CALL ONLY

AS-BUILT PLAN
CONFORMING TO
CONST. RECORDS

DATE: 8-24-81

**SYSTEM "A"
INTERSECTION LAYOUT
10th ST. N.W. & 5th AVE. N.W.**

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

SHEET NO. 3 OF 2 SHEETS

NOTE: INP. E.V.P. ITEMS

NOTES:

- SUFFICIENT 3/C # 20 TO REACH THE END OF THE MAST ARM SHALL BE INSTALLED IN POLES 1, 2, 3, AND 4.
- LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
- CONCRETE WALK FROM H.H. 10 TO 130' NORTH IS INPLACE. CONTRACTOR SHALL SAW CUT WALK AS DIRECTED BY ENGR. AND REPLACE IN KIND.
- 10 TH ST. N.W. IS UNDER CONTRACT FOR RECONSTRUCTION - SEE SHEETS 6 & 7 FOR INFORMATION. (CONSTRUCTION NEAR COMPLETION)
- THE CONTRACTOR SHALL CONSTRUCT 4" CONCRETE WALK (APPROX. 816 SQ. FT.) WHERE INDICATED IN THE PLANS AND IN ACCORDANCE WITH MN/DOT SPEC. 2521 (WALKS). PAYMENT SHALL BE CONSIDERED INCIDENTAL WORK TO ITEM 2565.501 (FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM.)

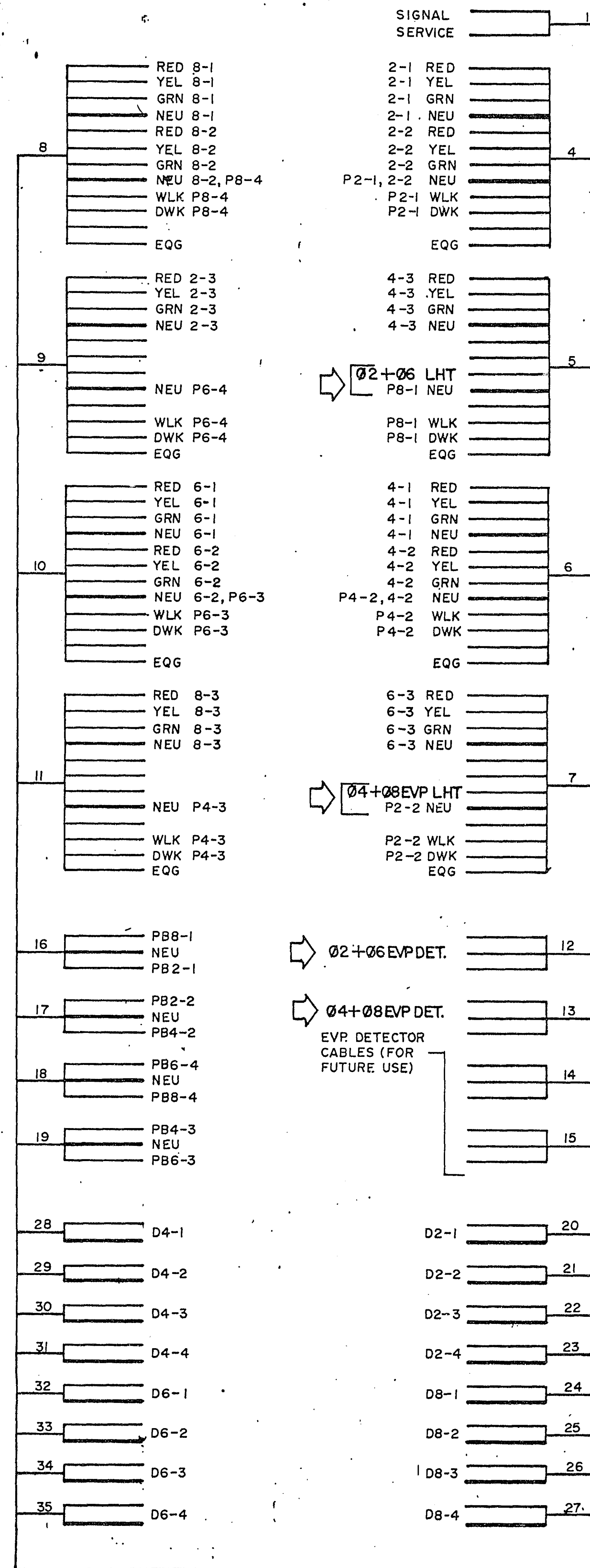
LOCATION CHART

STA.	LOC.	DESCRIPTION
24+40	LT. 219	H.H. 4
24+41	LT. 35	POLE # 4
24+58	LT. 44	PED. STA.
24+61	RT. 48	PED. STA.
24+73	RT. 52	POLE # 3
25+26	LT. 49	POLE # 1
25+37	RT. 38	PED. STA.
25+38	LT. 37	PED. STA.
25+42	LT. 65	EQUIP. PAD
25+50	RT. 35	POLE # 2
25+52	LT. 43	H.H. 1
25+56	RT. 215	H.H. 10
27+11	LT. 34	H.H. 8

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24X

CONTROLLER CABINET

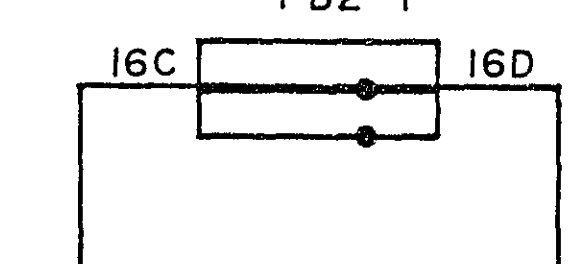


FROM SERVICE CABINET
SEE SHEET 5-4

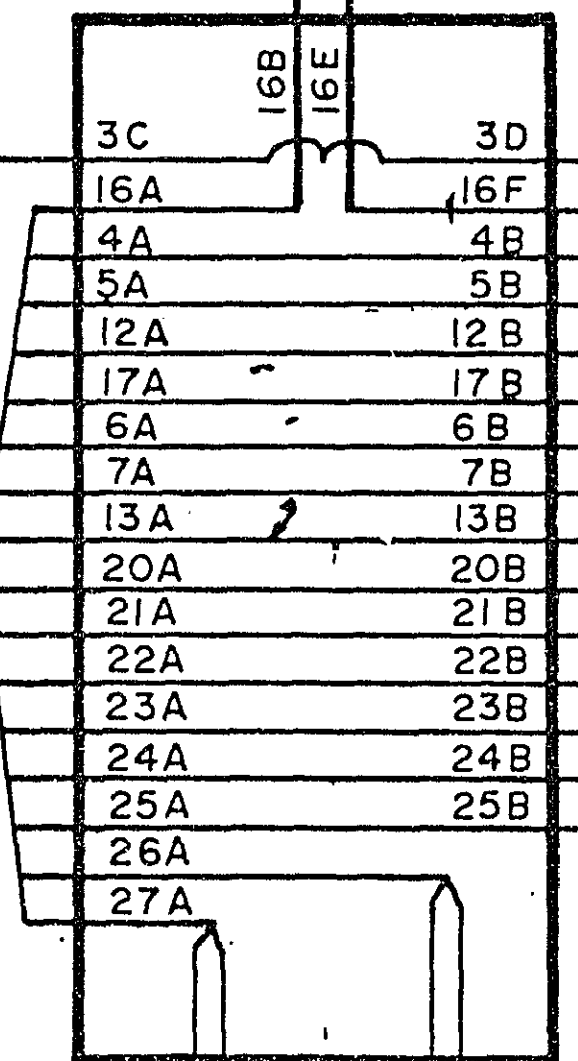
TO H.H. 2
SEE SHEET 5-4

FROM H.H. 2
SEE SHEET 5-4

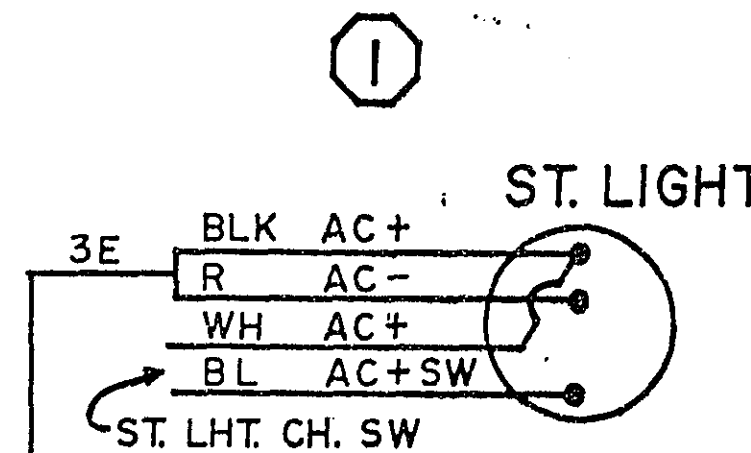
PED. PUSH BUTTON STA.
PB2-1



INP
H.H. 7



D8-4
D8-3
D8-2
D8-1



PB8-1

16G

P2-1 (2-2) (2-1)

4C

EVP LHT
02+06
P8-1 (4-3)

5C

02+06
EVP DET.

12C

EVP DETECTOR
(FUTURE)

02+06
EVP DET.

17E

PB4-2

17F

INP
H.H. 9

17C
6C
7C
13C
20C
21C
22C
23C

17D
6D
7D
13D
20D
21D
22D
23D

D2-4
D2-3

24C
25C

H.H. 8

D2-2
D2-1

20E
21E

H.H. 10

D2-2
D2-1

04+08
EVP DET.

13E

EVP DETECTOR
(FUTURE)

04+08
EVP DET.

6E

P4-2 (4-2) (4-1)

17J

PB2-2

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY *R. [Signature]*
DATE *8-24-81*

CITY PROJ. NO. 88-17

SYSTEM "A"
FIELD WIRING DIAGRAM
10th ST. N.W. & 5th AVE. N.W.

Sheet No 4 of 7 Sheets

CONDUCTOR COLOR CODING

R	BLK OR R
O	WH 2-1/2 #6
BL	WH 2-1/2 #10
WH	
R/BLK	R
O/BLK	WH 3/4 #12
BL/BLK	BLK
WH/BLK	
BLK	BLK
BLK/WH	BLK 2-1/2 #14
G/BLK	CLEAR
G	

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

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24X

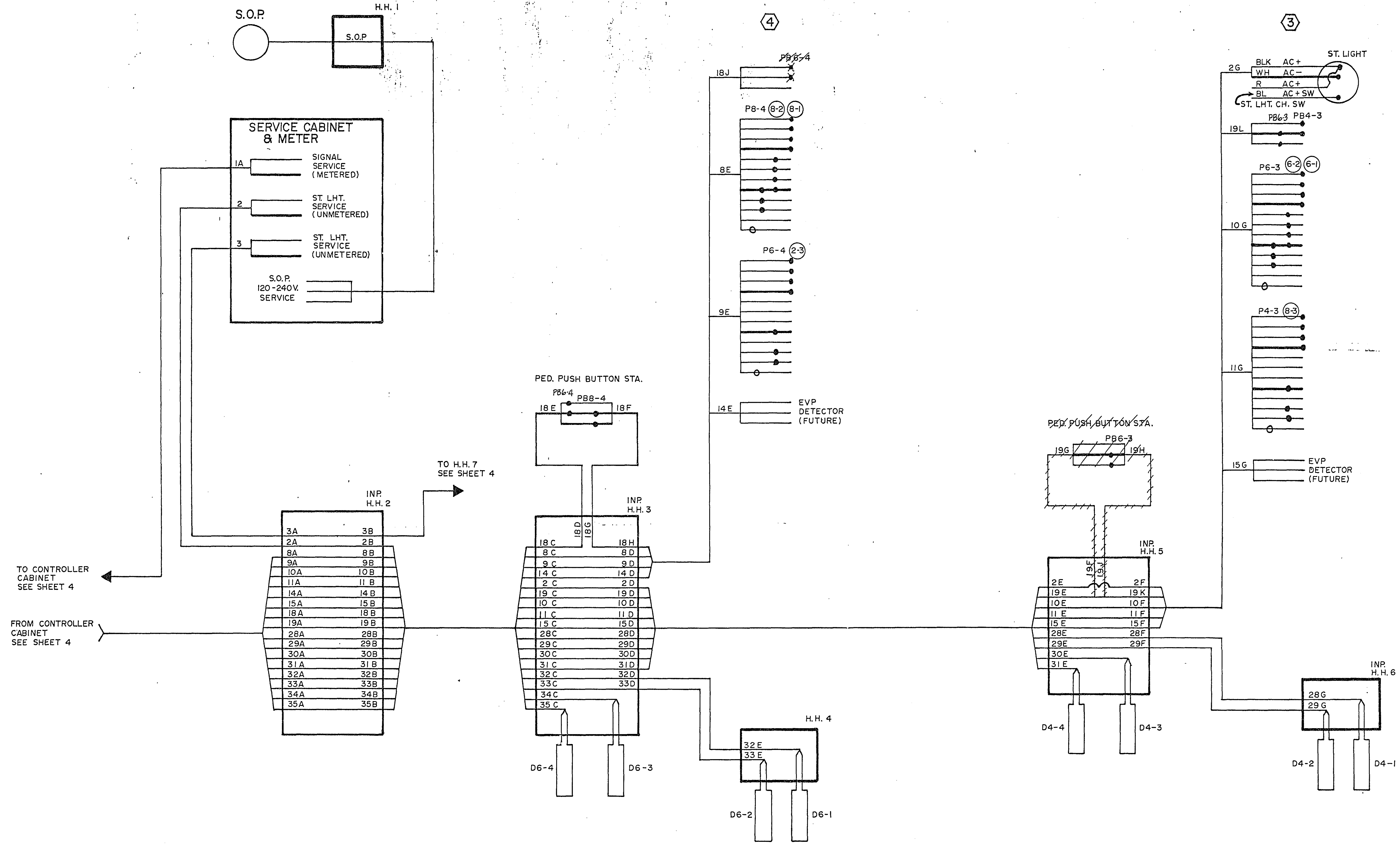
23-145 City Project 88-117
147-112-03 147-116-05 147-103-09 147-020-11

DRAWING
PLAN HOLD CORPORATION
REDACTED BY NIP

DRAWING NUMBER
23-145
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDACTED BY NUMBER OTHER

DRAWING NUMBER
23-145
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDACTED BY NUMBER OTHER

NUMBER
23-145
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDACTED BY NUMBER OTHER



SYSTEM "A"
FIELD WIRING DIAGRAM
10th ST. N.W. & 5th AVE. N.W.
— FOR INFORMATION ONLY —

R. L. L. L.
8-24-81

I hereby certify that this plan, specification, or report 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.
John J. L. L.
Date: 8-8-80 Reg. No. 12703

CITY PROJ. NO. 88-17
S.A.P. NO. 62-612-06 147-020-11

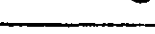
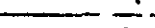
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Sheet No. 5 of 7 Sheets

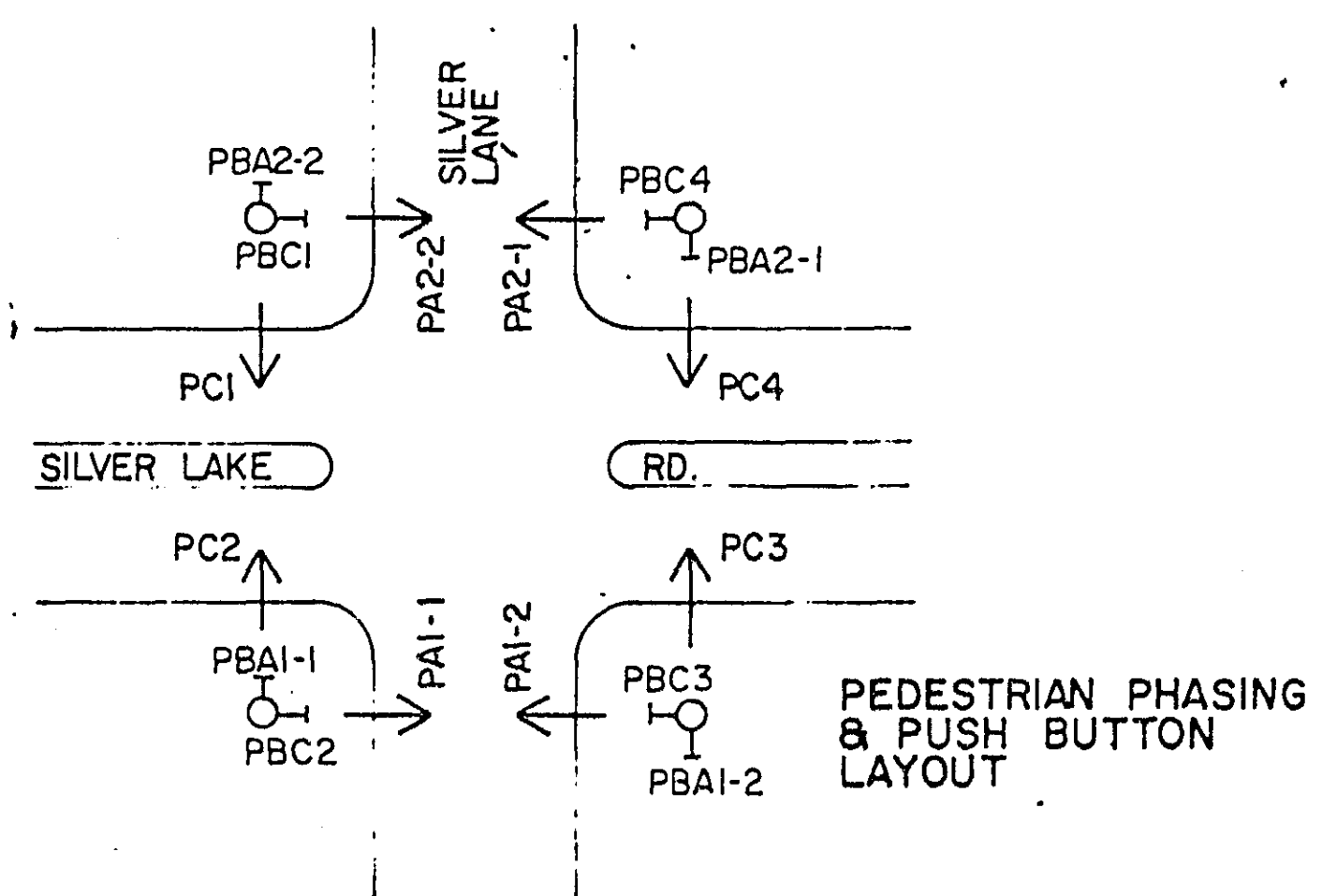
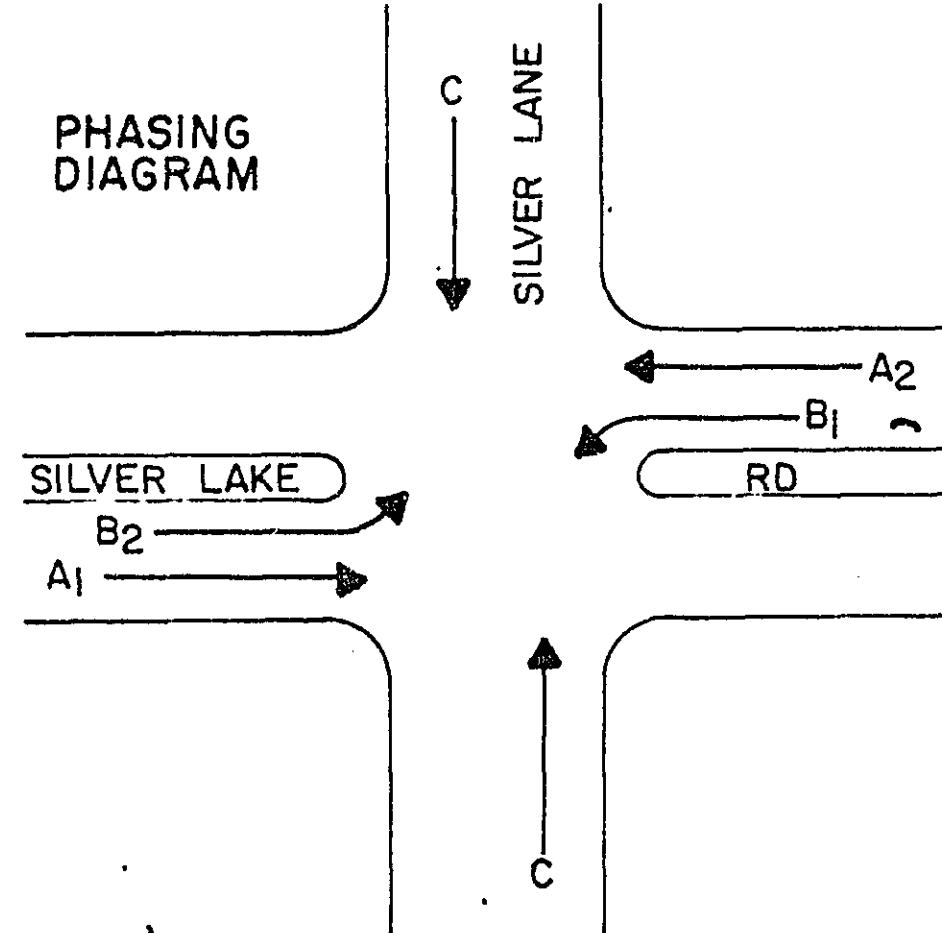
23-145

23-145 City Project 88-117
147-112-03 147-116-05 147-103-09 147-020-11
SAP

24X

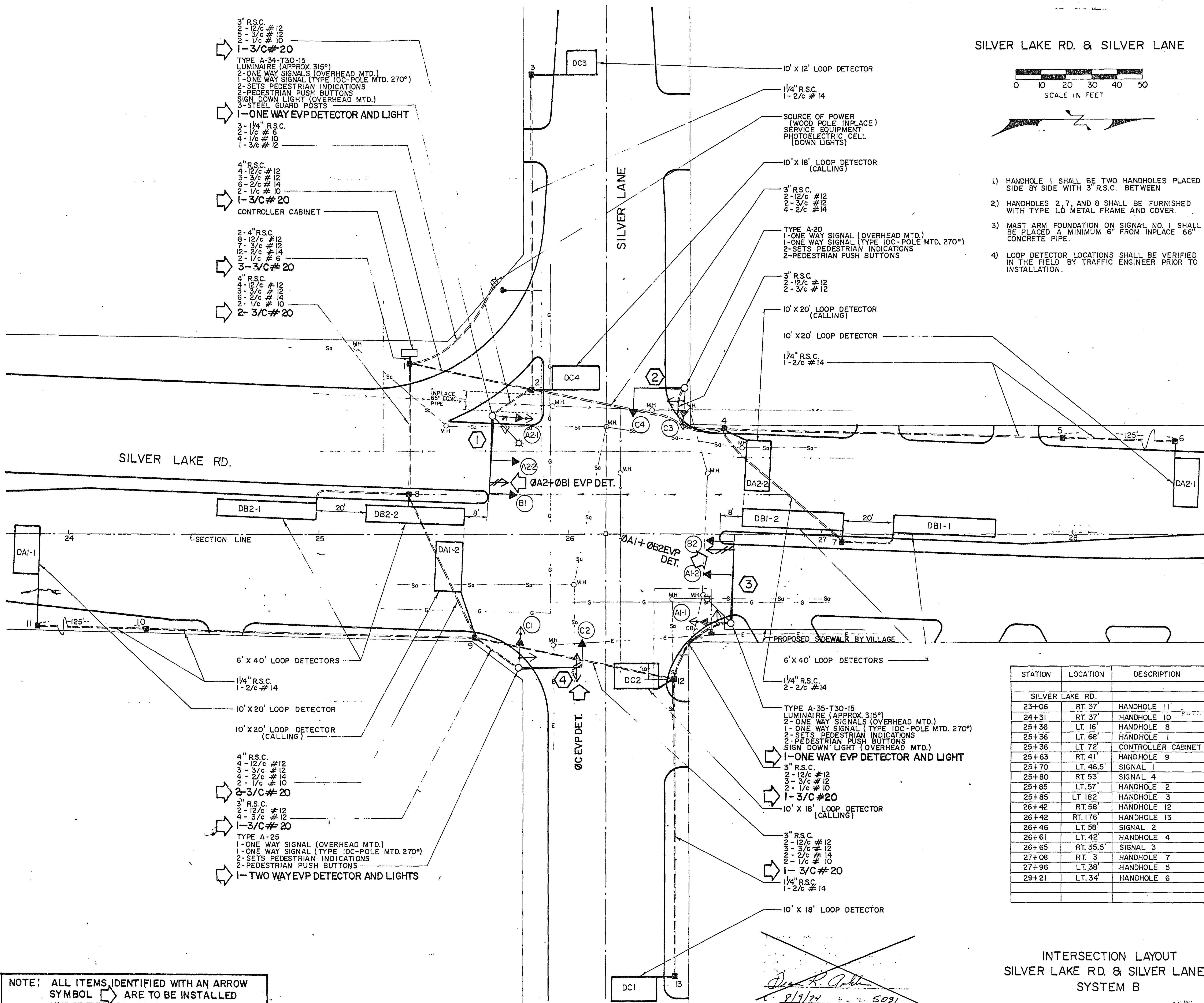
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LEGEND OF SYMBOLS	
	CONTROLLER
	PEDESTAL
	HANDHOLE (PULL BOX)
	RIGID STEEL CONDUIT (R.S.C.)
	MAST ARM & POLE
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	MAST ARM & LUMINAIRE
	PEDESTRIAN INDICATION
	SOURCE OF POWER (S.O.P.)

[illegible]

* SPECIAL SIGNAL FACE
(SEE SPECIAL PROVISIONS)

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL  ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE IN PLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.



STATION	LOCATION	DESCRIPTION
SILVER LAKE RD.		
23+06	RT. 37'	HANDHOLE 11
24+31	RT. 37'	HANDHOLE 10
25+36	LT. 16'	HANDHOLE 8
25+36	LT. 68'	HANDHOLE 1
25+36	LT. 72'	CONTROLLER CABINET
25+63	RT. 41'	HANDHOLE 9
25+70	LT. 46.5'	SIGNAL 1
25+80	RT. 53'	SIGNAL 4
25+85	LT. 57'	HANDHOLE 2
25+85	LT. 182'	HANDHOLE 3
26+42	RT. 58'	HANDHOLE 12
26+42	RT. 176'	HANDHOLE 13
26+46	LT. 58'	SIGNAL 2
26+61	LT. 42'	HANDHOLE 4
26+65	RT. 35.5'	SIGNAL 3
27+08	RT. 3'	HANDHOLE 7
27+96	LT. 38'	HANDHOLE 5
29+21	LT. 34'	HANDHOLE 6

INTERSECTION LAYOUT
SILVER LAKE RD. & SILVER LANE
SYSTEM B

CITY PROJ. NO. 88-17

S.A.P. NO. ~~62-644-07~~ 147-020-11

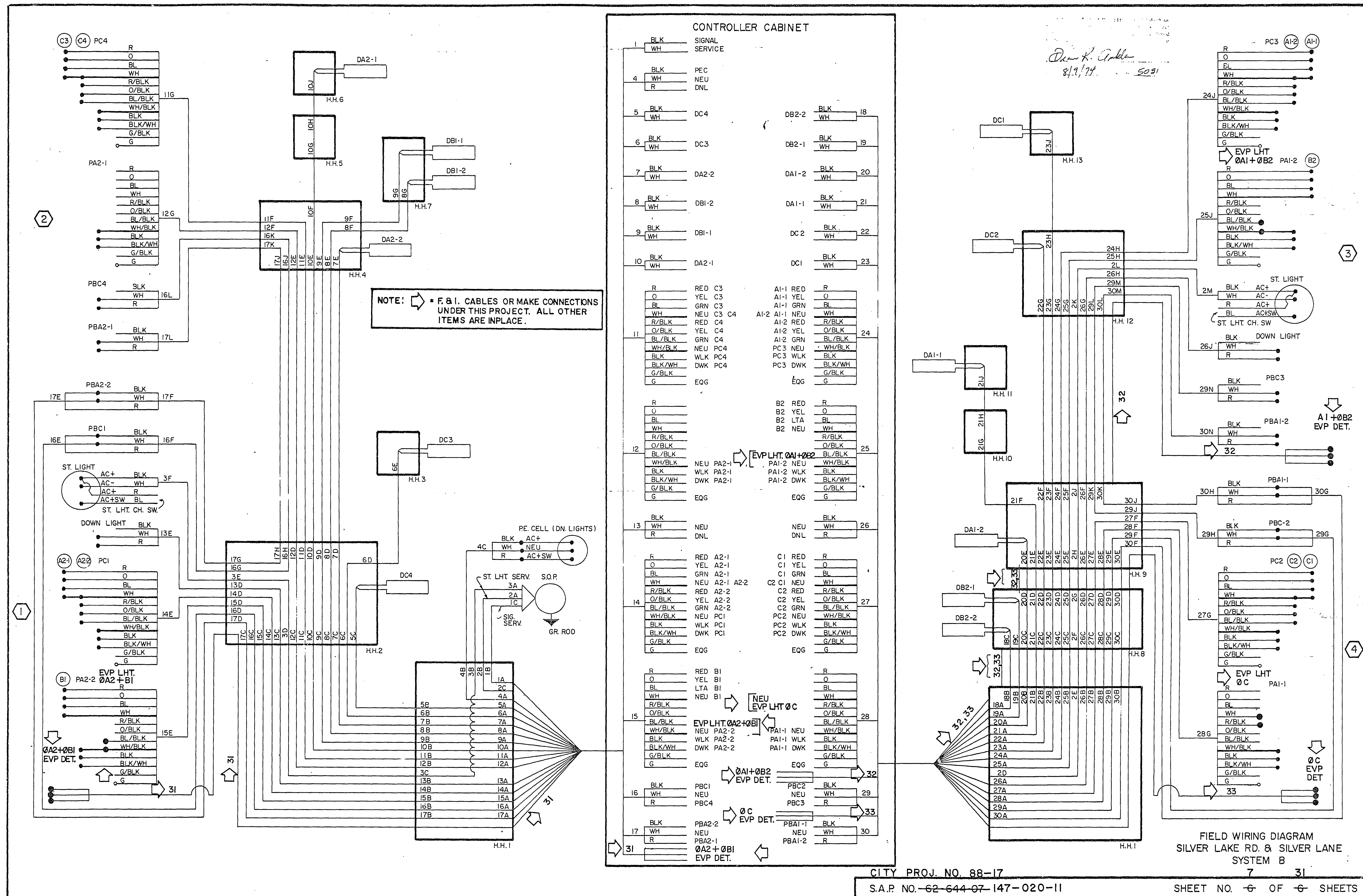
6 31

SHEET NO. ~~5~~ OF ~~6~~ SHEETS

23-145

2 4 X

23-145 City Project 88-117 1-31
147-112-03 147-116-05 147-103-09 147-020-11
SAD

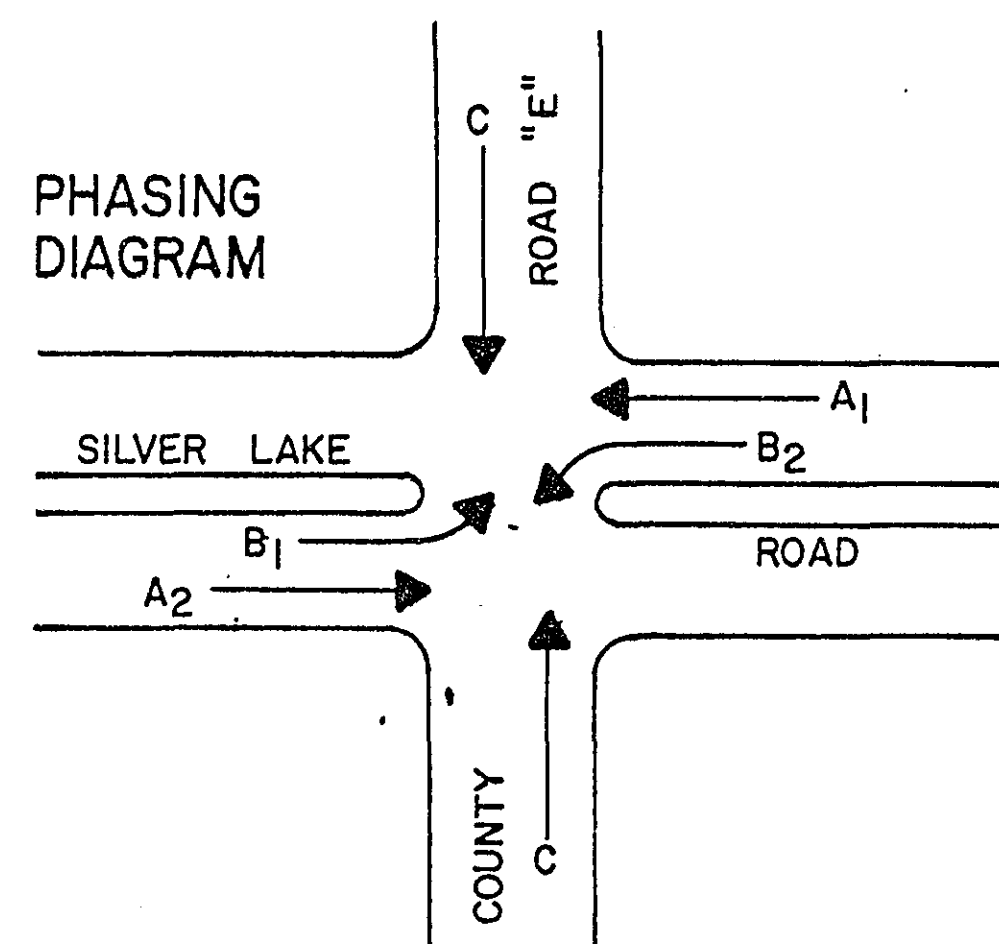


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23-145 City Project 88-117 1-31
SAP 147-112-03 147-116-05 147-103-09 147-020-11

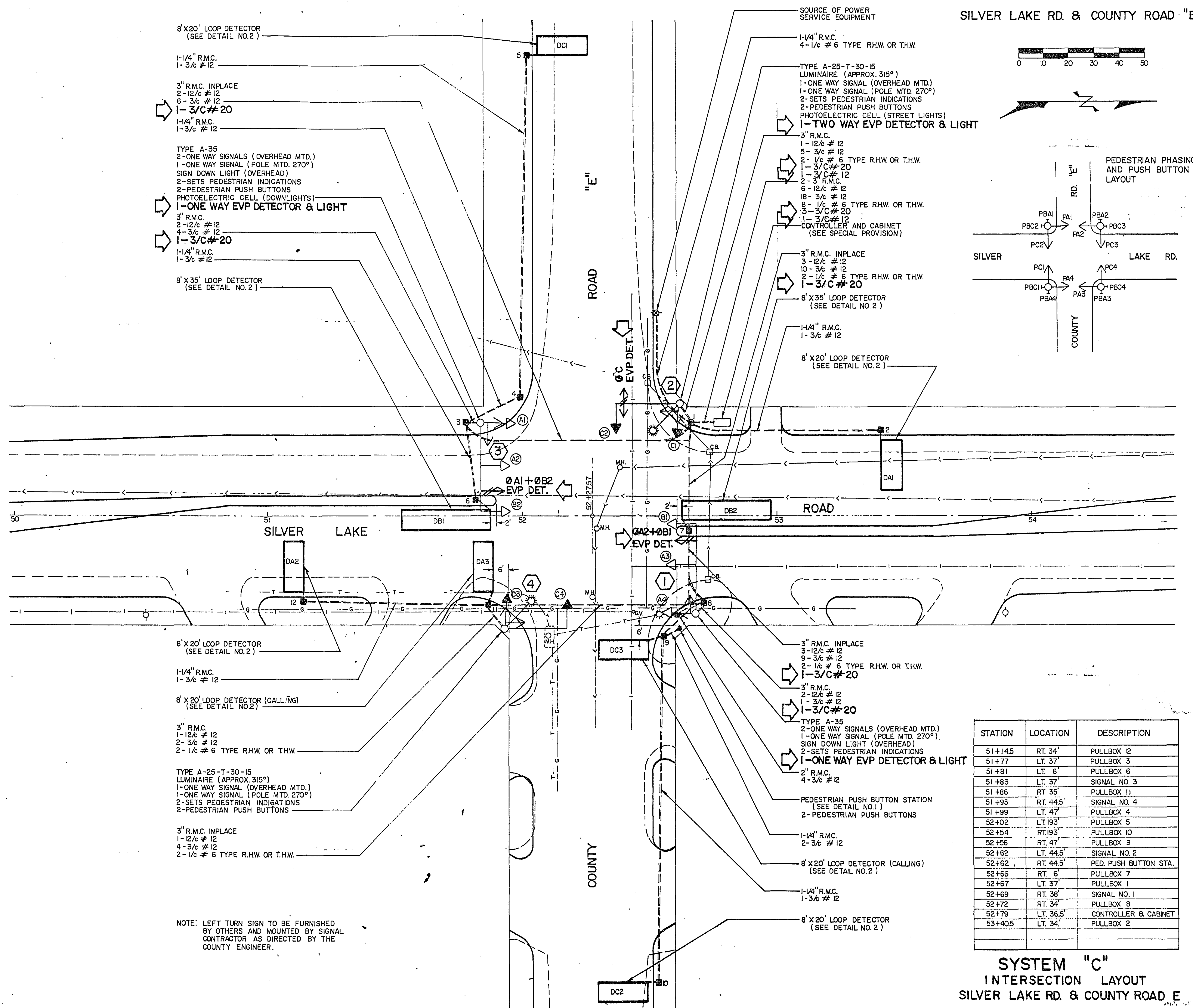
LEGEND OF SYMBOLS	
	CONTROLLER
	HANDHOLE (PULLBOX)
	RIGID METALLIC CONDUIT (R.M.C.)
	MAST ARM & POLE
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	MAST ARM & LUMINAIRE
	PEDESTRIAN INDICATION
	PEDESTRIAN PUSH BUTTON STATION
	SOURCE OF POWER (S.O.P.)
	RIGID METALLIC CONDUIT (R.M.C.) INPLACE

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.



FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
A1	A1	R	12"	12"	-	-	12"	12"
A2	A1	R	12"	12"	-	-	12"	12"
A3	A1	R	12"	12"	-	-	12"	12"
A4	A1	R	12"	12"	-	-	12"	12"
* B1	B1	R	12"	12"	-	12"	-	-
* B2	B2	R	12"	12"	-	12"	-	-
C1	C	R	12"	12"	12"	-	-	-
C2	C	R	12"	12"	12"	-	-	-
C3	C	R	12"	12"	12"	-	-	-
C4	C	R	12"	12"	12"	-	-	-

* SEE SPECIAL PROVISIONS - PAGE 8 (SPECIAL SIGNAL FACES)



CITY PROJ. NO. 88-17

CO. PROJ. NO. 68-44-15-S.A.P. NO. 147-020-11

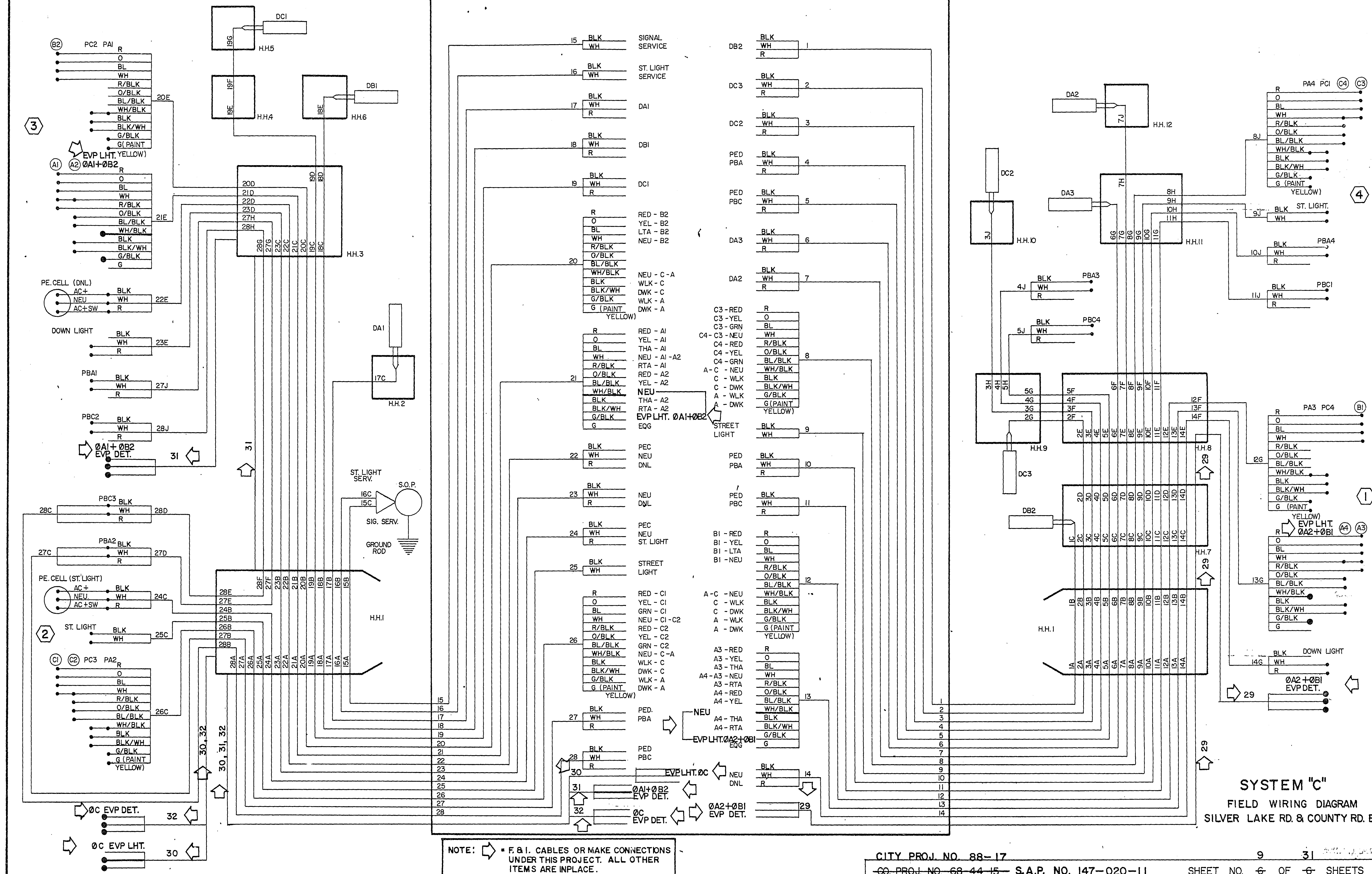
SHEET NO. 5 OF 6 SHEETS

DRAWING

DRAWING NUMBER
23-145

DRAWING NUMBER

NUMBER

PLAN HOLD CORPORATION
REGISTERED PROFESSIONAL ENGINEER
REGISTERED ELECTRICAL ENGINEERPLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
REGISTERED ELECTRICAL ENGINEERPLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
REGISTERED ELECTRICAL ENGINEERPLAN HOLD CORPORATION
REGISTERED PROFESSIONAL ENGINEER
REGISTERED ELECTRICAL ENGINEER

RAMSEY COUNTY COPY 12/01/89

24X

PLAN HOLD CORPORATION

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
ISSUED BY NUMBER 0704B

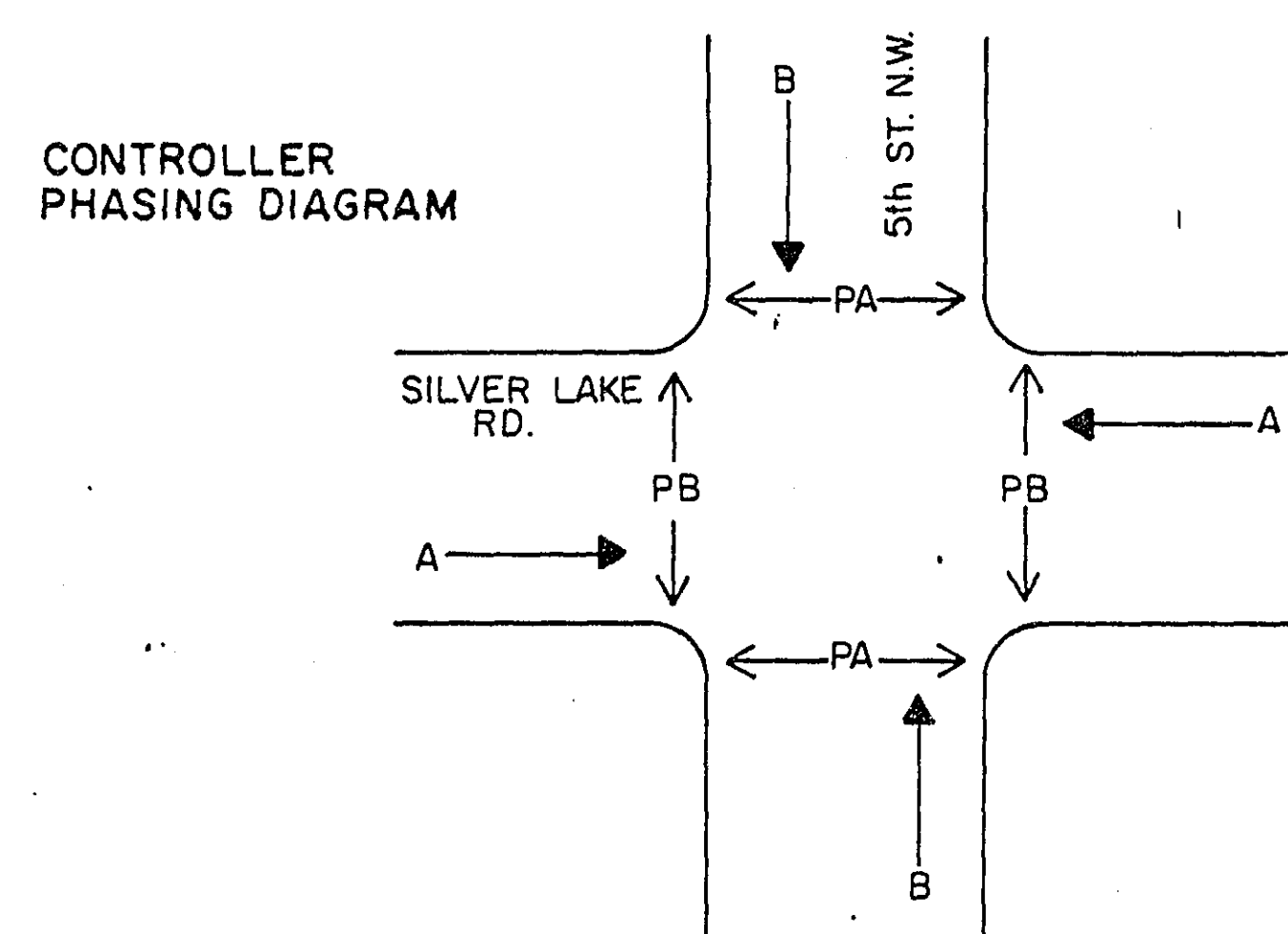
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REPRESENTING SUBSIDIARIES

• IRVINE, CALIFORNIA

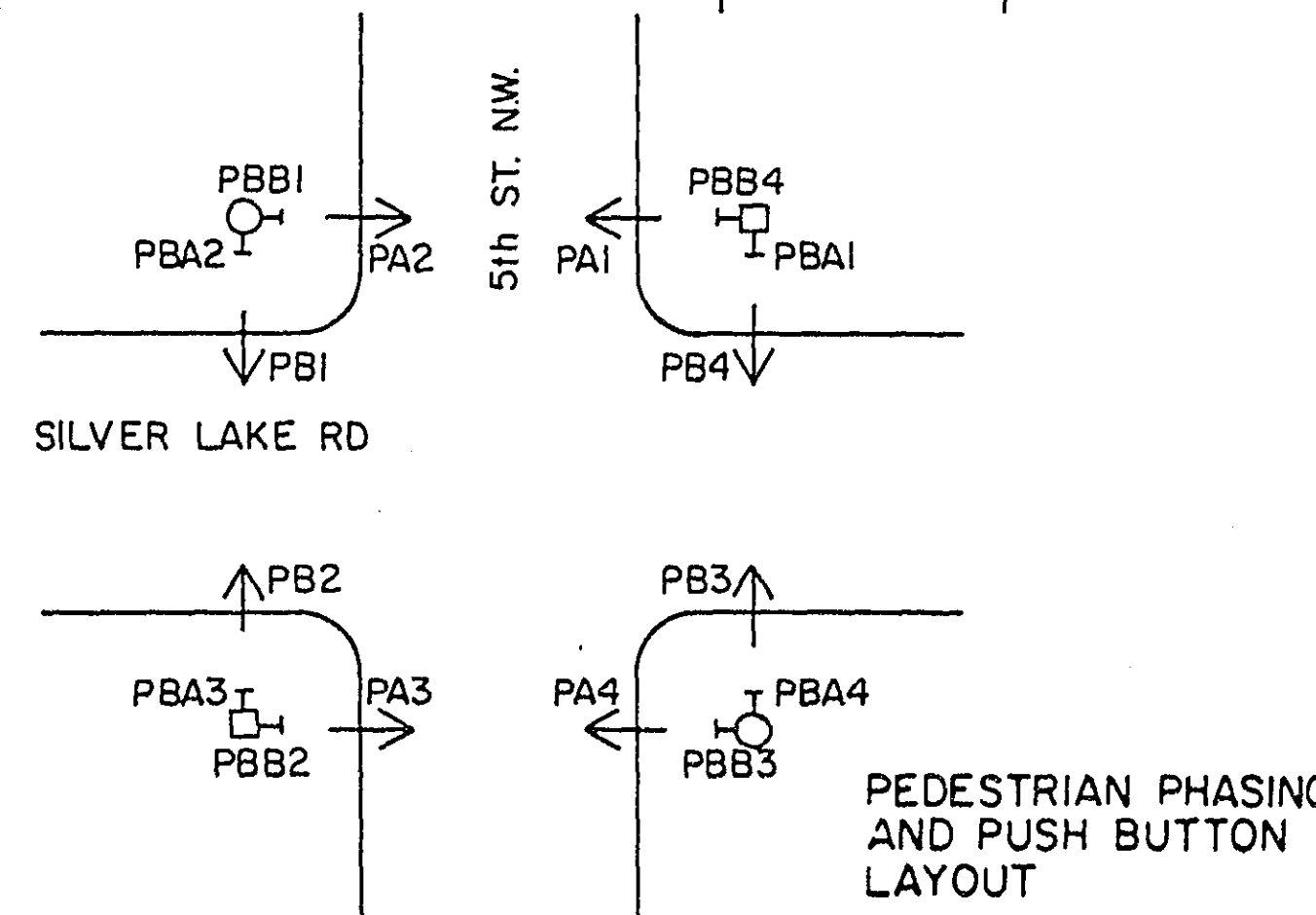
LEGEND OF SYMBOLS

SIGNAL BASE NO.		(5)		(A2)	
SIGNAL FACE NO.					
CONTROLLER AND CABINET					
CONTROLLER AND CABINET - INPLACE					
HANDHOLE					
HANDHOLE - INPLACE					
RIGID STEEL CONDUIT (R.S.C.)					
RIGID STEEL CONDUIT (R.S.C.) - INPLACE					
SIGNAL FACE					
SIGNAL FACE WITH BACKGROUND SHIELD					
SIGNAL FACE - INPLACE					
PEDESTRIAN INDICATIONS					
PEDESTRIAN INDICATIONS - INPLACE					
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE					
PEDESTRIAN PUSH BUTTON STATION					
TRAFFIC SIGNAL PEDESTAL					
TRAFFIC SIGNAL PEDESTAL - INPLACE					
TRAFFIC SIGNAL POLE AND MAST ARM					
TRAFFIC SIGNAL PUSH BUTTON AND MAST ARM - INPLACE					
MAST ARM AND LUMINAIRE					
MAST ARM AND LUMINAIRE - INPLACE					
WOOD POLE					
WOOD POLE - INPLACE					
SOURCE OF POWER					
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION					

CONTROLLER PHASING DIAGRAM



SILVER LAKE RD



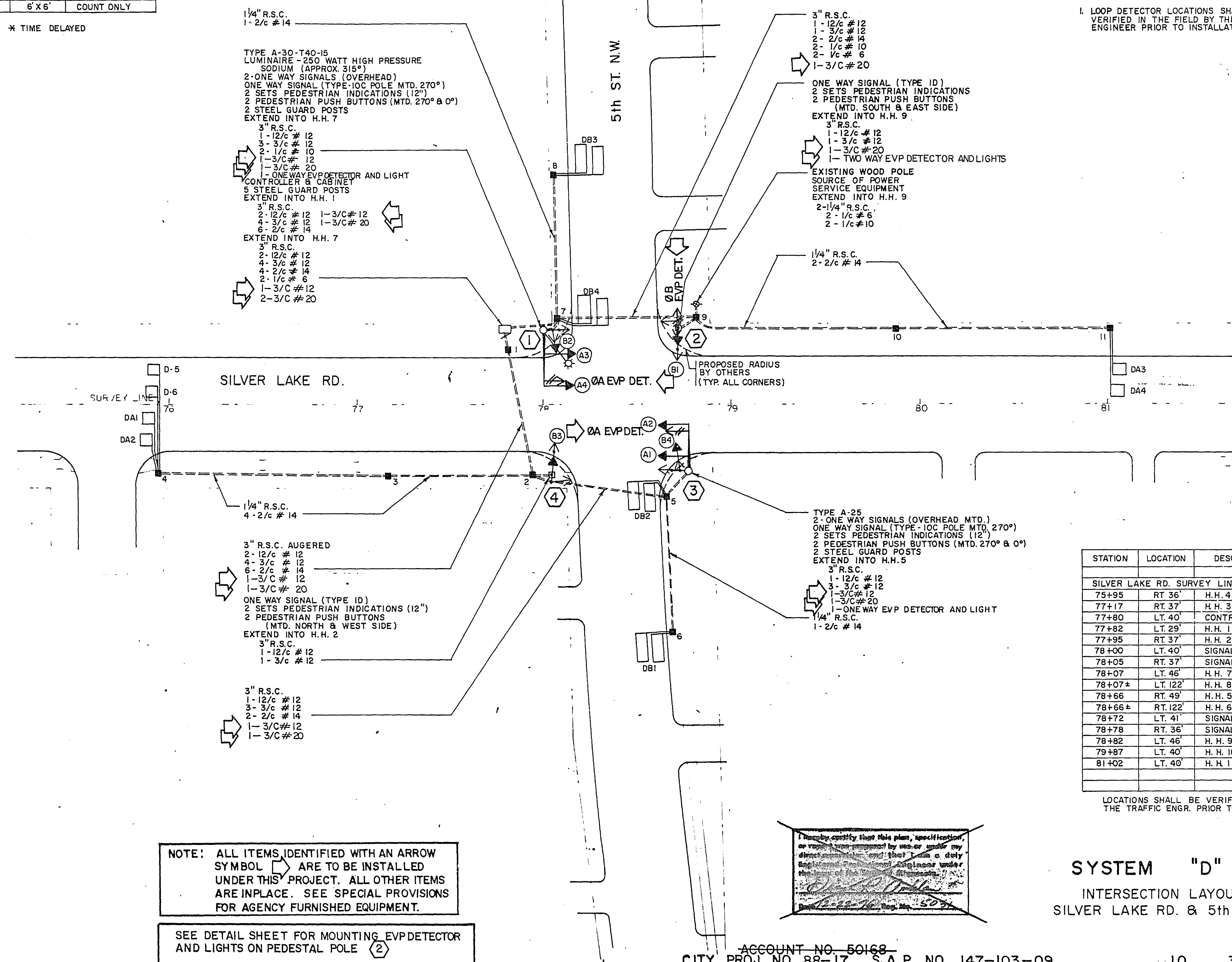
SIGNAL INDICATION CHART

[illegible]

VEHICLE DETECTION

NUMBER	SIZE	REMARKS
DA1	6' X 6'	CALL & EXTEND
DA2	6' X 6'	CALL & EXTEND
DA3	6' X 6'	CALL & EXTEND
DA4	6' X 6'	CALL & EXTEND
DB1	2-6' X 15'	CALL & EXTEND
DB2	2-6' X 15'	*CALL & EXTEND
DB3	2-6' X 15'	CALL & EXTEND
DB4	2-6' X 15'	*CALL & EXTEND
D-5	6' X 6'	COUNT ONLY
D-6	6' X 6'	COUNT ONLY

* TIME DELAYED



NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL  ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

SEE DETAIL SHEET FOR MOUNTING EVP DETECTOR
AND LIGHTS ON PEDESTAL POLE (2)

NOTES:

I. LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.

STATION	LOCATION	DESCRIPTION
SILVER LAKE RD. SURVEY LINE		
75+95	RT 36'	H. H. 4
77+17	RT 37'	H. H. 3
77+80	LT. 40'	CONTROLLER
77+82	LT. 29'	H. H. 1
77+95	RT 37'	H. H. 2
78+00	LT. 40'	SIGNAL 1
78+05	RT 37'	SIGNAL 4
78+07	LT. 46'	H. H. 7
78+07±	LT. 122'	H. H. 8
78+66	RT 49'	H. H. 5
78+66±	RT 122'	H. H. 6
78+72	LT. 41'	SIGNAL 2
78+78	RT 36'	SIGNAL 3
78+82	LT. 46'	H. H. 9
79+87	LT. 40'	H. H. 10
81+02	LT. 40'	H. H. 11

LOCATIONS SHALL BE VERIFIED BY
THE TRAFFIC ENGR. PRIOR TO INSTALLATION.

SYSTEM "D"
INTERSECTION LAYOUT
SILVER LAKE RD. & 5th ST. N.W.

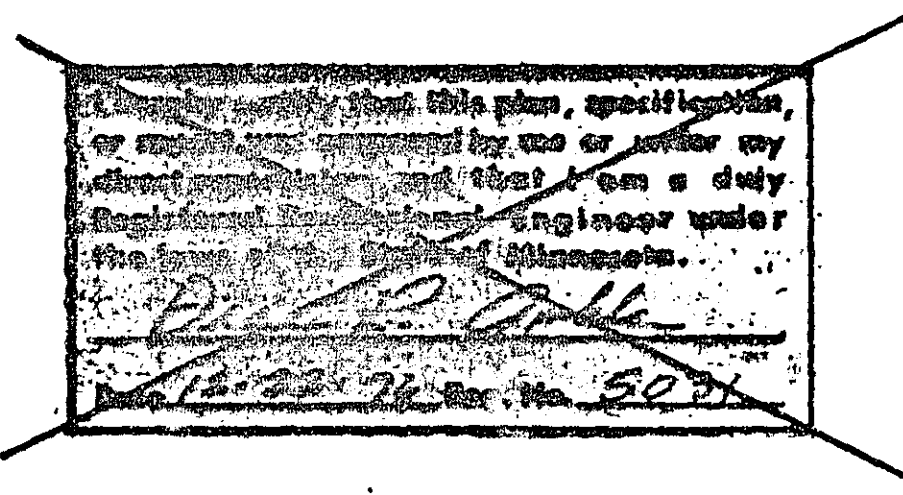
ACCOUNT NO. ~~50168~~
CITY PROJ. NO. ~~88-17~~ S.A.P. NO. ~~147-103-09~~ LO 31
~~S.A.P. NO. 62-644-07~~ ~~S.A.P. 147-103-07~~ SHEET NO. ~~3~~ OF ~~5~~ SHEETS

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2 4 X

23-145 ^{city Project 88-117}
147-112-03 147-116-05 147-103-09
147-020-11



SYSTEM "D"
FIELD WIRING DIAGRAM
SILVER LAKE RD & 5th ST. N.W.

~~ACCOUNT NO. 50168~~
CITY PROJ. NO. 88-17 S.A.P. NO. 147-103-09 11 31
~~S.A.P. NO. 62-644-09 S.A.P. 147-103-07~~ SHEET NO. 4 OF 5 SHEETS
23-H 145

23-145 city Project 88-117
147-113-03 147-116-05 147-103-09 1-31
147-020-11

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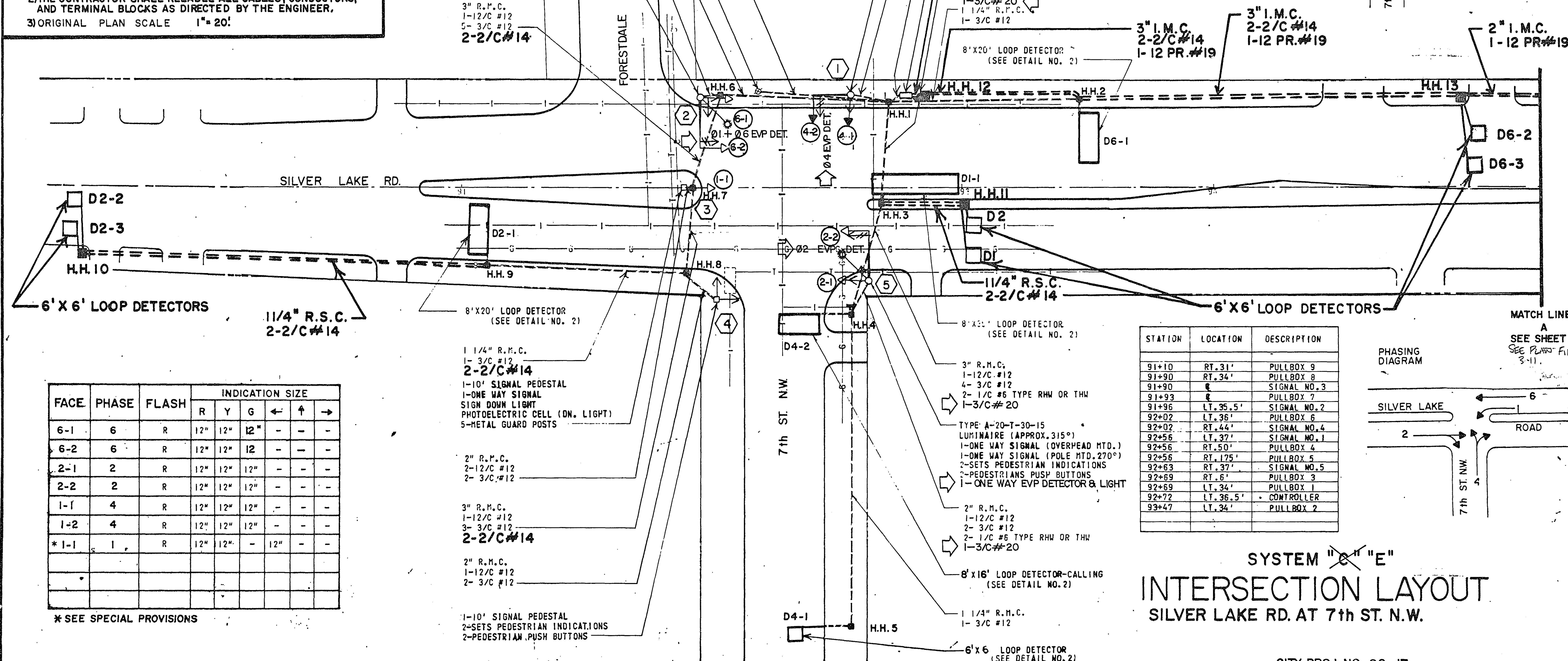
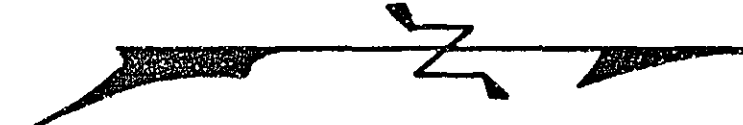
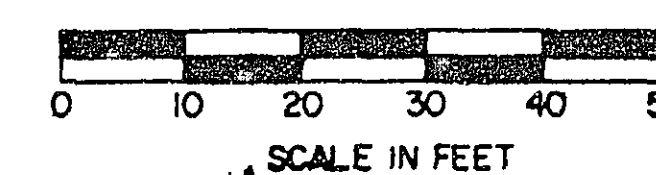
LEGEND OF SYMBOLS	
	CONTROLLER
	PEDESTAL
	HANDHOLE (PULLBOX)
	RIGID METALLIC CONDUIT (R.M.C.)
	MAST ARM & POLE
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	MAST ARM & LUMINAIRE
	PEDESTRIAN INDICATION
	SOURCE OF POWER (S.O.P.)

NOTE:

- 1) ALL ITEMS ARE IN-PLACE AND SHALL BE USED IN-PLACE UNLESS OTHERWISE SPECIFIED IN BOLD PRINT.
- 2) THE CONTRACTOR SHALL RELABEL ALL CABLES, CONDUCTORS, AND TERMINAL BLOCKS AS DIRECTED BY THE ENGINEER.
- 3) ORIGINAL PLAN SCALE 1"=20'

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE IN-PLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

SILVER LAKE RD. & 7th ST. NW.

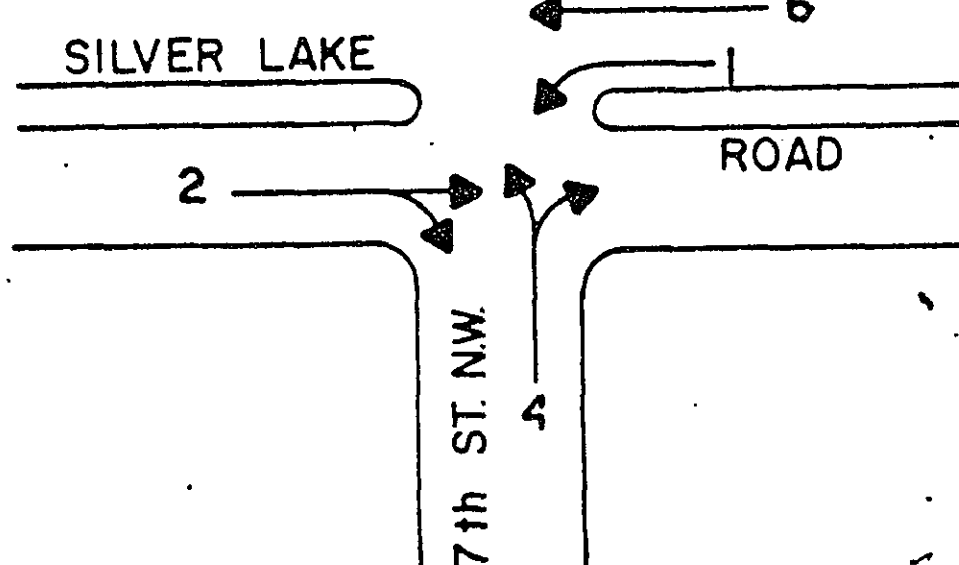


FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
6-1	6	R	12"	12"	12"	-	-	-
6-2	6	R	12"	12"	12"	-	-	-
2-1	2	R	12"	12"	12"	-	-	-
2-2	2	R	12"	12"	12"	-	-	-
1-1	4	R	12"	12"	12"	-	-	-
1-2	4	R	12"	12"	12"	-	-	-
* 1-1	1	R	12"	12"	-	12"	-	-

* SEE SPECIAL PROVISIONS

STATION	LOCATION	DESCRIPTION
91+10	RT. 31'	PULLBOX 9
91+90	RT. 34'	PULLBOX 8
91+90		SIGNAL NO. 3
91+93		PULLBOX 7
91+96	LT. 35.5'	SIGNAL NO. 2
92+02	LT. 36'	PULLBOX 6
92+02	RT. 44'	SIGNAL NO. 4
92+56	LT. 37'	SIGNAL NO. 1
92+56	RT. 50'	PULLBOX 4
92+56	RT. 175'	PULLBOX 5
92+63	RT. 37'	SIGNAL NO. 5
92+69	RT. 6'	PULLBOX 3
92+69	LT. 34'	PULLBOX 1
92+72	LT. 36.5'	CONTROLLER
93+47	LT. 34'	PULLBOX 2

PHASING DIAGRAM



SYSTEM "E"
INTERSECTION LAYOUT
SILVER LAKE RD. AT 7th ST. N.W.

S.A.P. 62-664-10

CITY PROJ. NO. 88-17

S.A.P. NO. 147-112-03

12

31

State Proj. No. 6285-90

Sheet No. 17 of 47 Sheets

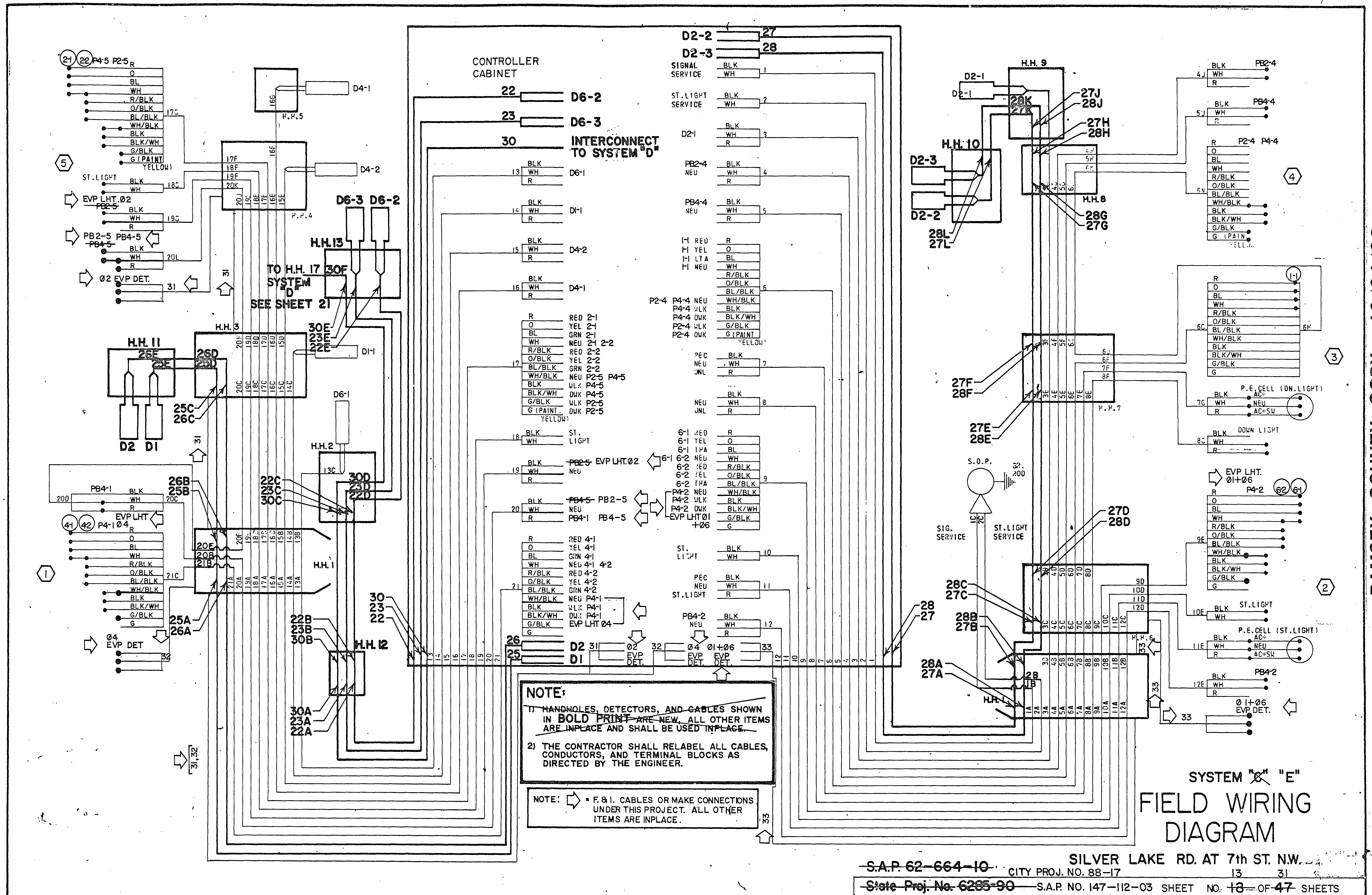
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23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-09

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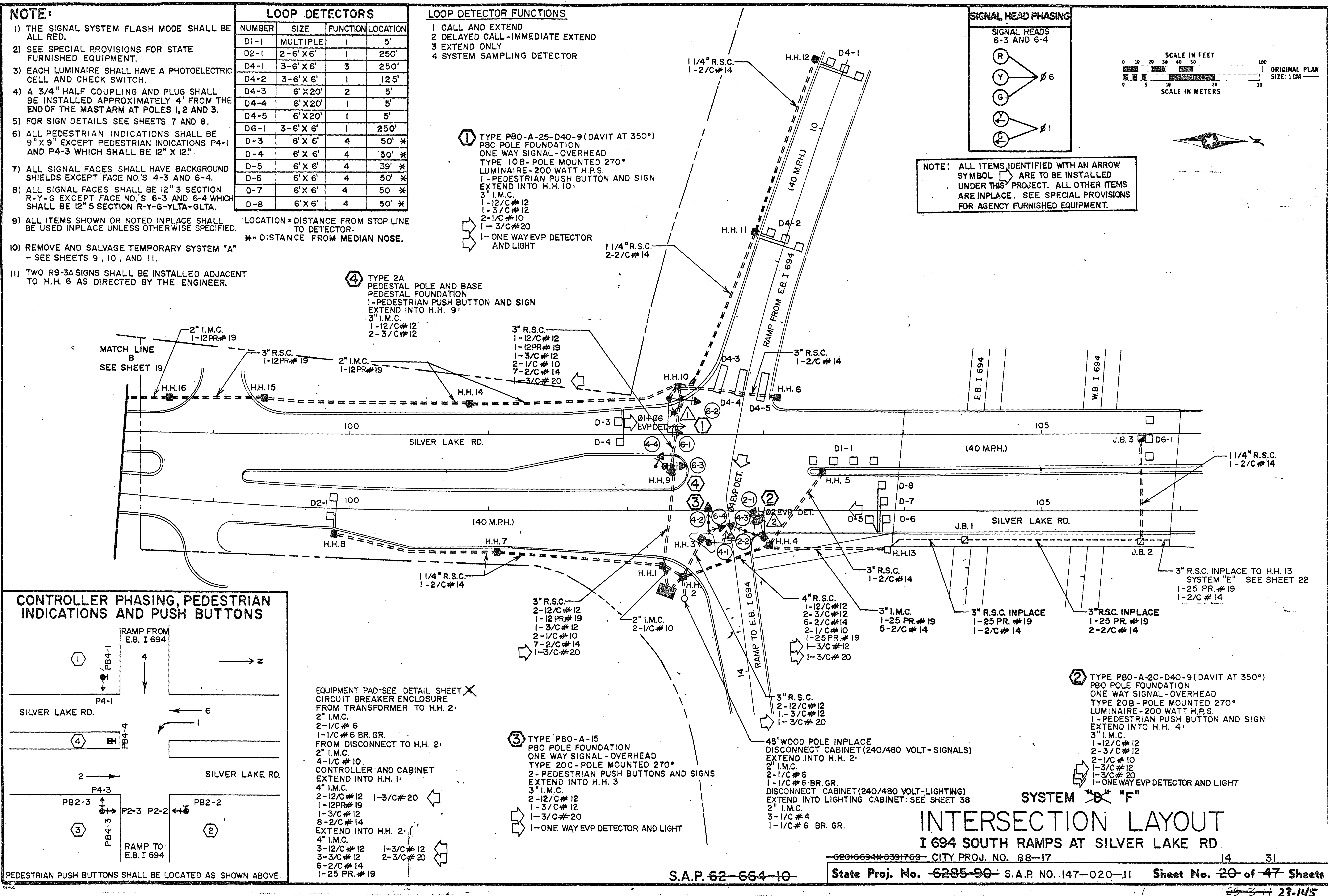
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23-145 Project 88-117
SAP 147-112-03 147-116-05 147-103-09
1-31 147-020-11

DRAWING

DRAWING NUMBER
23-145

DRAWING NUMBER

NUMBER

CONTROLLER CABINET

RED 2-1
YEL 2-1
GRN 2-1
NEU 2-1 2-2
RED 2-2
YEL 2-2
GRN 2-2
NEU 4-3
RED 4-3
YEL 4-3
GRN 4-3
EQG

P2-2 WLK
P2-2 NEU
P2-2 DWK

PB2-2
NEU
SPR

PB2-3
NEU
PB4-3

PB4-1 PB4-4
NEU
SPR

SIGNAL
SERVICE

D1-1
D2-1

D4-1
D4-2

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D4-4

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DRAWING

DRAWING NUMBER
23-145

DRAWING NUMBER

NUMBER

PLAN HOLD CORPORATION
REVISED BY N/A

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REVISED BY NUMBER 03/89

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REVISED BY NUMBER 03/89

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REVISED BY NUMBER 03/89

NOTE:

- 1) THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- 2) SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.
- 3) EACH LUMINAIRE SHALL HAVE A PHOTOELECTRIC CELL AND CHECK SWITCH.
- 4) A 3/4" HALF COUPLING AND PLUG SHALL BE INSTALLED APPROXIMATELY 4' FROM THE END OF THE MAST ARM AT POLES 1, 2 AND 4.
- 5) FOR SIGN DETAILS SEE SHEETS 7 AND 8.
- 6) ALL PEDESTRIAN INDICATIONS SHALL BE 9" X 9" EXCEPT PEDESTRIAN INDICATION P4-4 WHICH SHALL BE 12" X 12".
- 7) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT FACE NO.'S 2-4 AND 4-3.
- 8) ALL SIGNAL FACES SHALL BE 12" X 3 SECTION R-Y-G EXCEPT FACE NO.'S 2-3 AND 2-4 WHICH SHALL BE 12" X 5 SECTION R-Y-G-YLTA-GLTA.
- 9) ALL ITEMS SHOWN OR NOTED IN PLACE SHALL BE USED IN PLACE UNLESS OTHERWISE SPECIFIED.
- 10) A R9-3A SIGN SHALL BE INSTALLED ADJACENT TO POLES 1, 2, 3, AND 5 AS DIRECTED BY THE ENGINEER.
- 11) REMOVE AND SALVAGE TEMPORARY SYSTEM "B"- SEE SHEETS 13, 14 AND 15.

LOOP DETECTORS

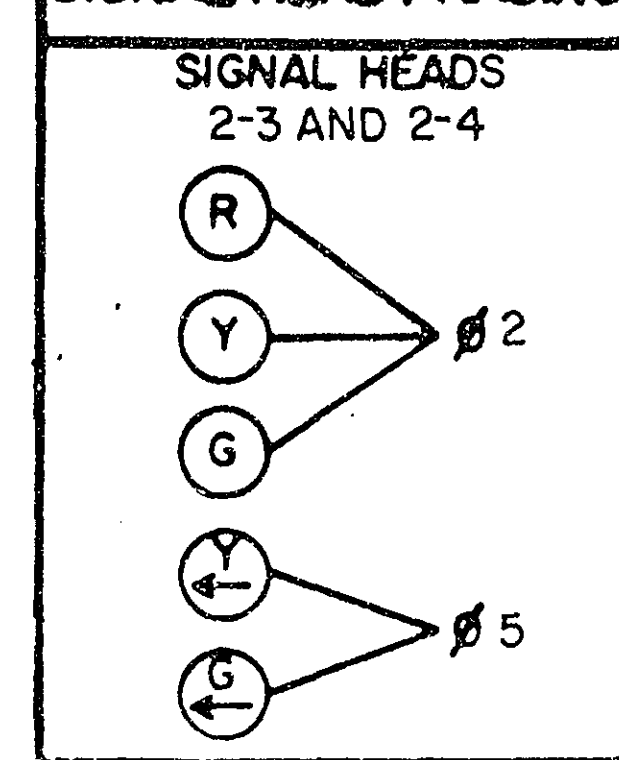
NUMBER	SIZE	FUNCTION	LOCATION
D2-1	3'-6" X 6'	1	250'
D4-1	3'-6" X 6'	3	250'
D4-2	3'-6" X 6'	1	120'
D4-3	6' X 20'	2	5'
D4-4	6' X 20'	1	5'
D4-5	6' X 20'	1	5'
D5-1	MULTIPLE	1	5'
D6-1	3'-6" X 6'	1	250'
D-9	6' X 6'	4	39'
D-10	6' X 6'	4	50'
D-11	6' X 6'	4	50'
D-12	6' X 6'	4	50'
D-13	6' X 6'	4	50'
D-14	6' X 6'	4	50'

LOCATION - DISTANCE FROM STOP LINE TO DETECTOR
* = DISTANCE FROM MEDIAN NOSE

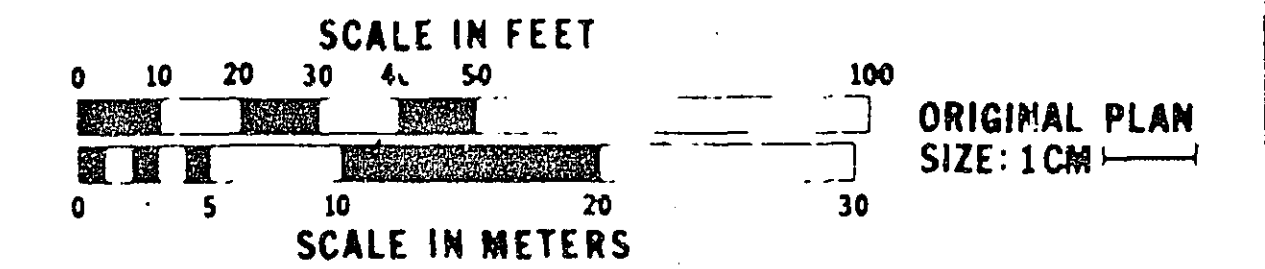
LOOP DETECTOR FUNCTIONS

- 1 CALL AND EXTEND
- 2 DELAYED CALL - IMMEDIATE EXTEND
- 3 EXTEND ONLY
- 4 SYSTEM SAMPLING DETECTOR

SIGNAL HEAD PHASING



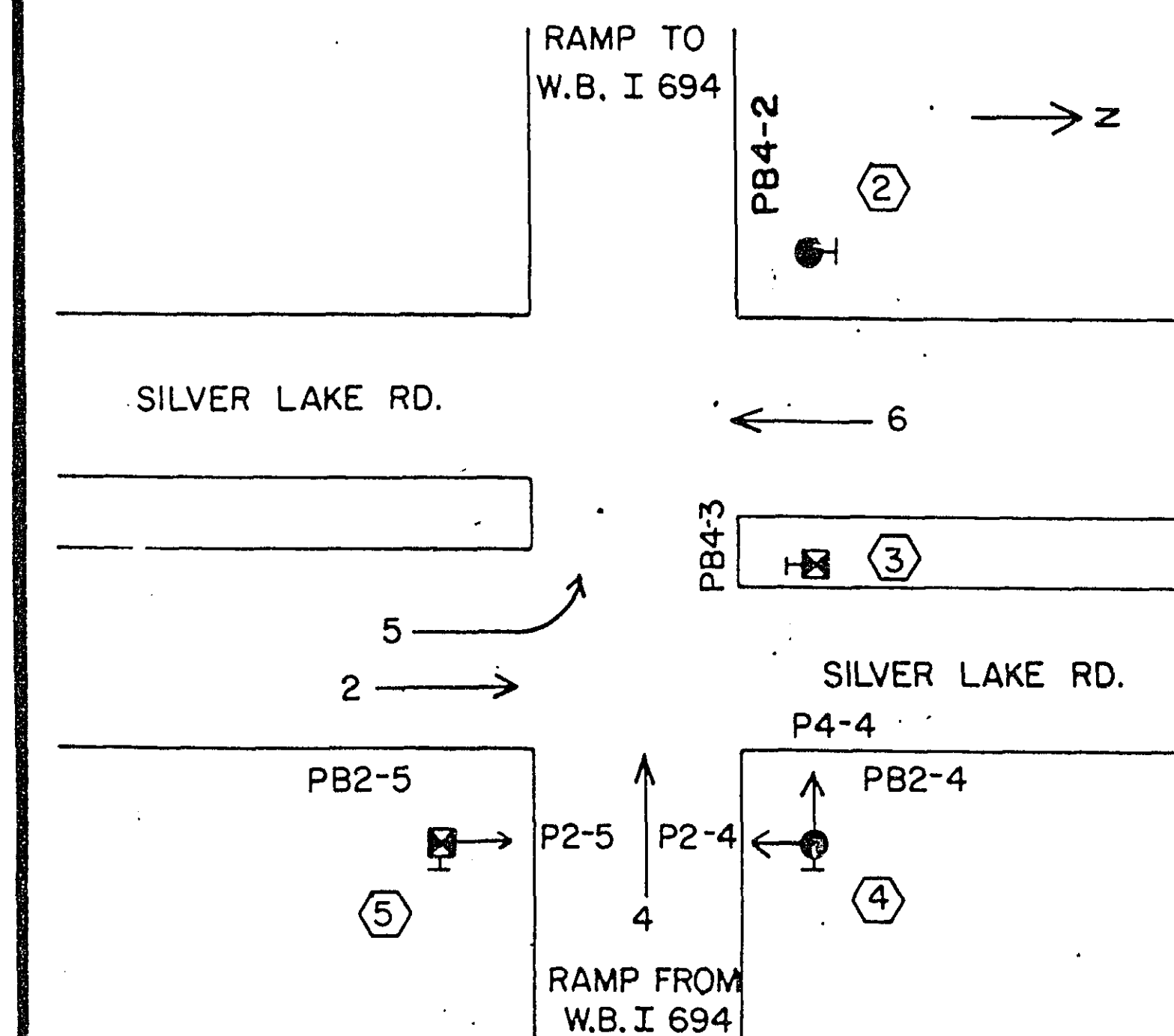
- 2) TYPE P80-A-15
P80 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 20A-POLE MOUNTED 270°
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO H.H. 4:
3" I.M.C.
2-12/C #12
1-3/C #12
1-3/C #20
1-ONE WAY EVP DETECTOR AND LIGHT



- 3) TYPE 2A
PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 2:
3" I.M.C.
1-12/C #12
2-3/C #12

MATCH LINE
C
SEE SHEET 24

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



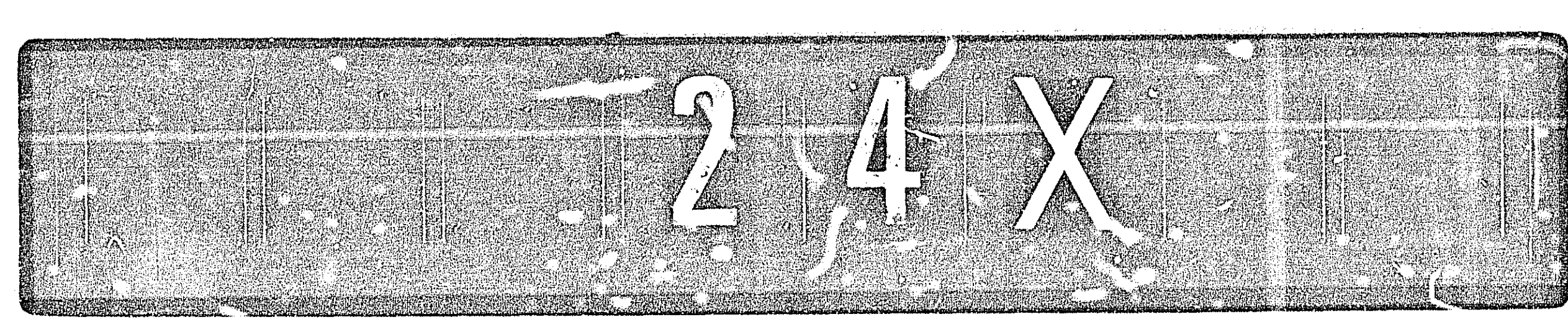
PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

- 5) TYPE 4A
PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO H.H. 10:
3" I.M.C.
1-12/C #12
1-3/C #12

SYSTEM "E" "G" INTERSECTION LAYOUT I 694 NORTH RAMPS AT SILVER LAKE RD.

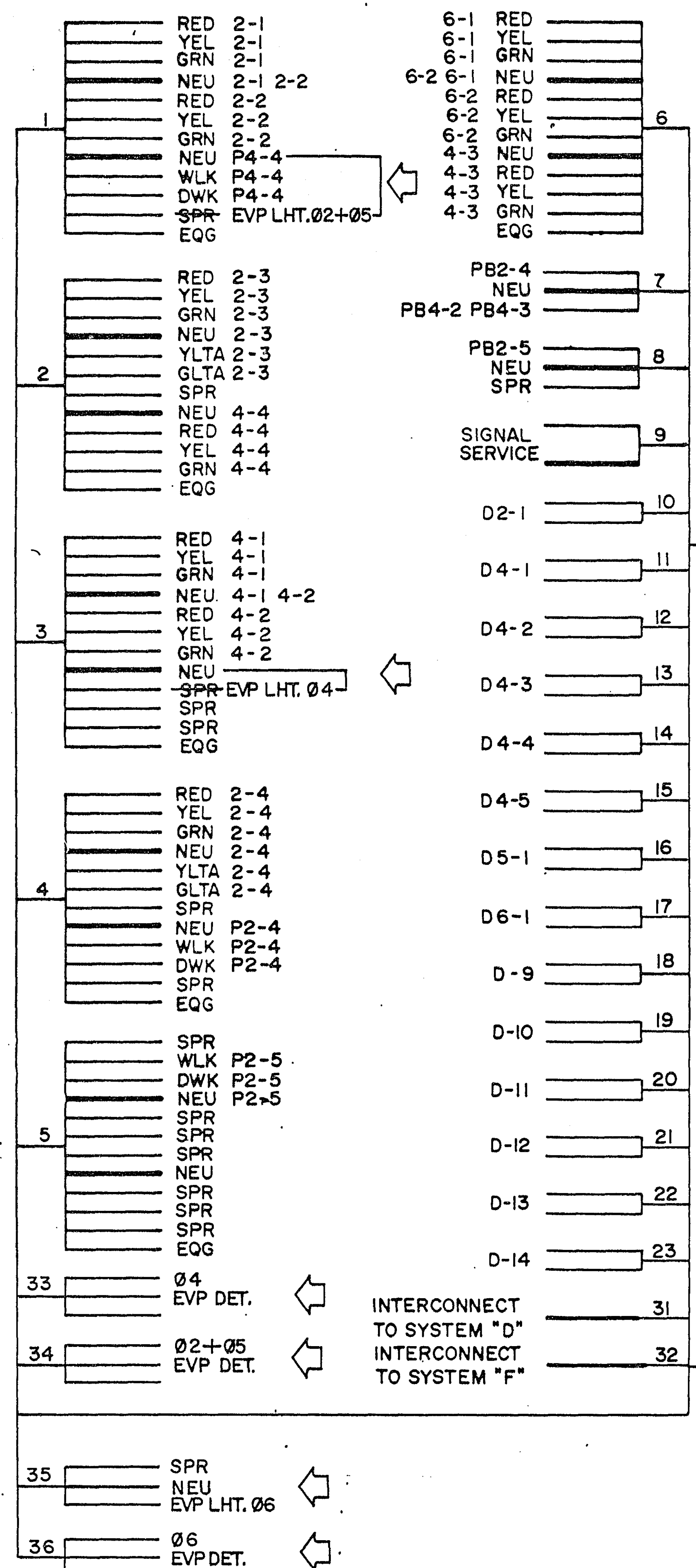
62010694 X 039176-N S.A.P. 62-664-10 CITY PROJ. NO. 88-17 16 31
State Proj. No. 6285-90 S.A.P. NO. 147-020-11 Sheet No. 22 of 47 Sheets

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-09 147-020-11

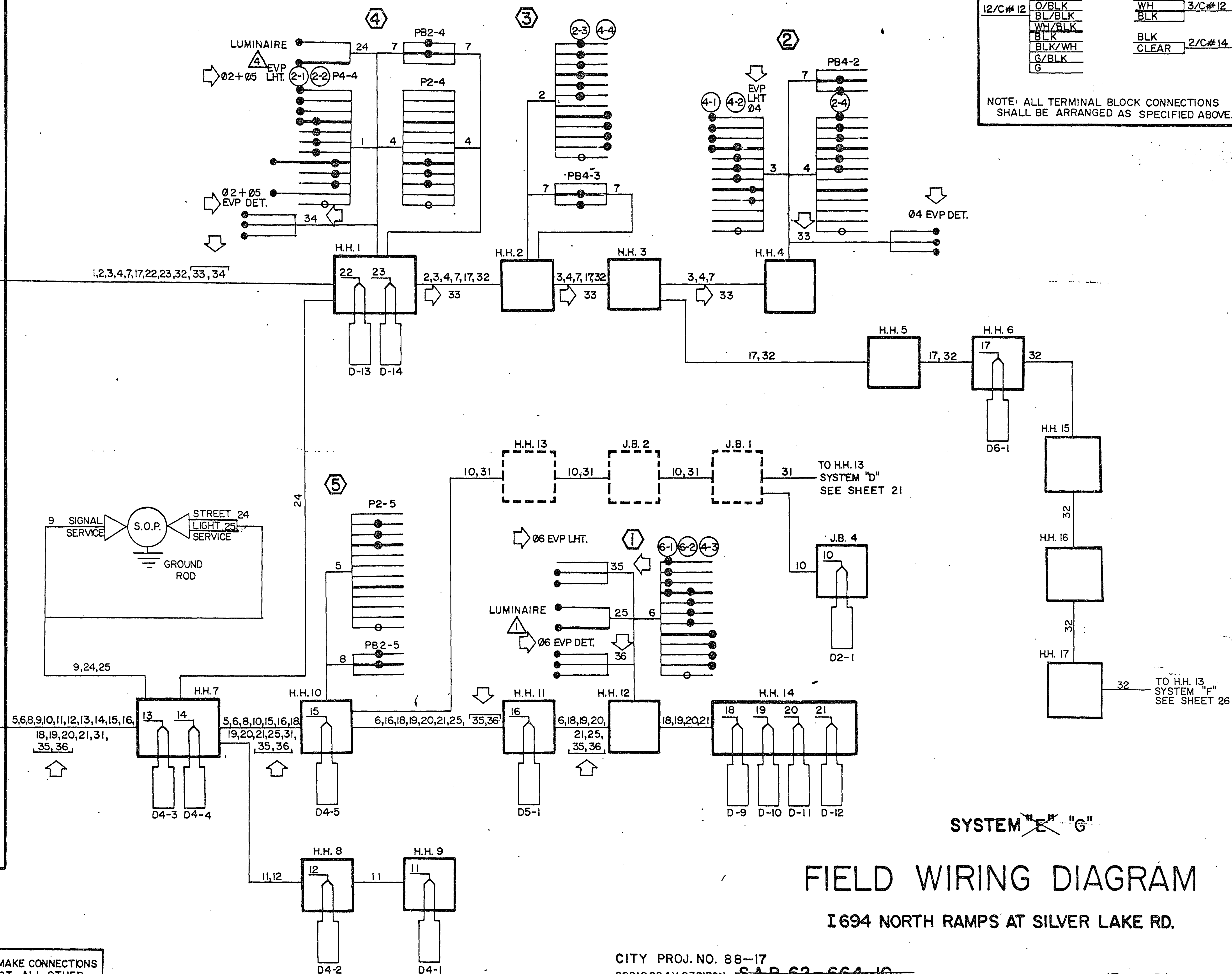


RAMSEY COUNTY COPY 12/01/89

CONTROLLER CABINET



NOTE: ➡ * F. & I. CABLES OR MAKE CONNECTIONS UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE.



CONDUCTOR COLOR CODING

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

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

FIELD WIRING DIAGRAM

I 694 NORTH RAMPS AT SILVER LAKE RD.

CITY PROJ. NO. 88-17

~~62010694X039176N~~ ~~S.A.P. 62-664-10~~

~~State Proj. No. 6285-90~~ S.A.P. NO. 147-020-11

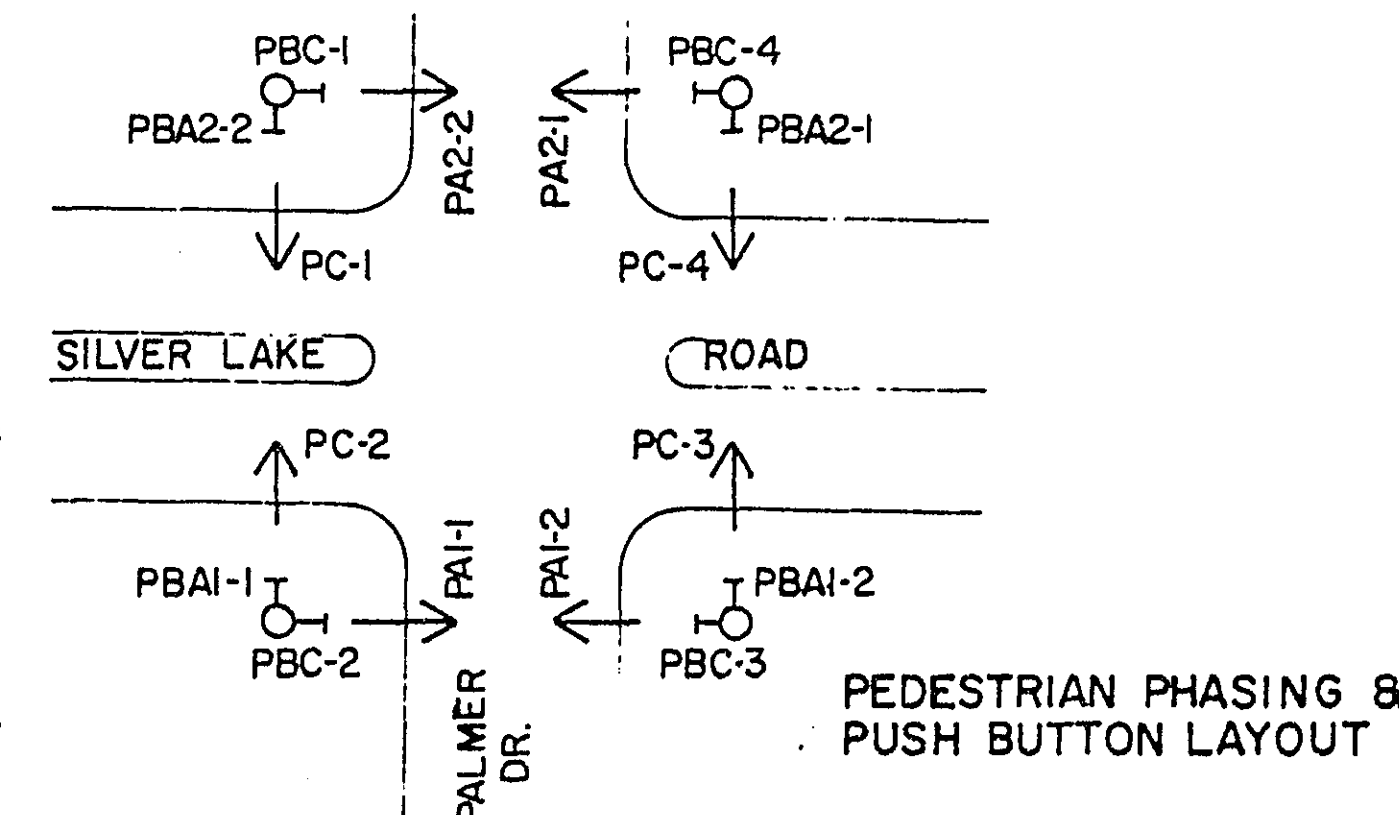
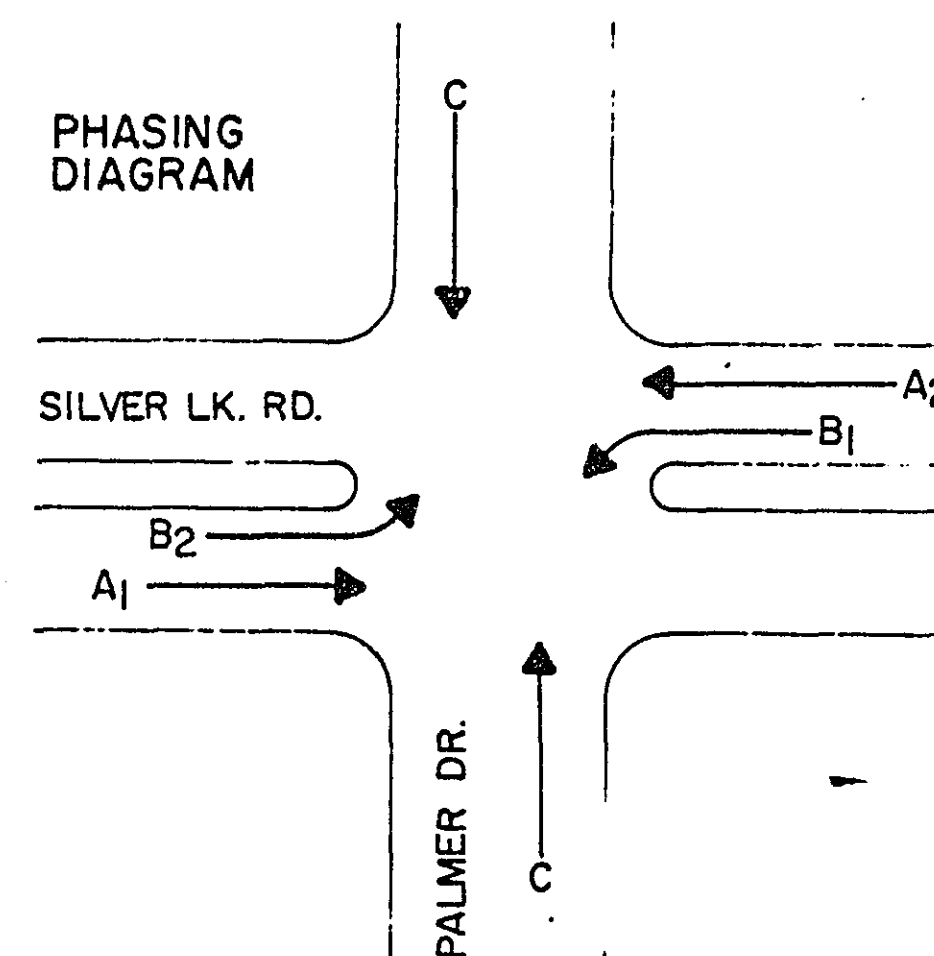
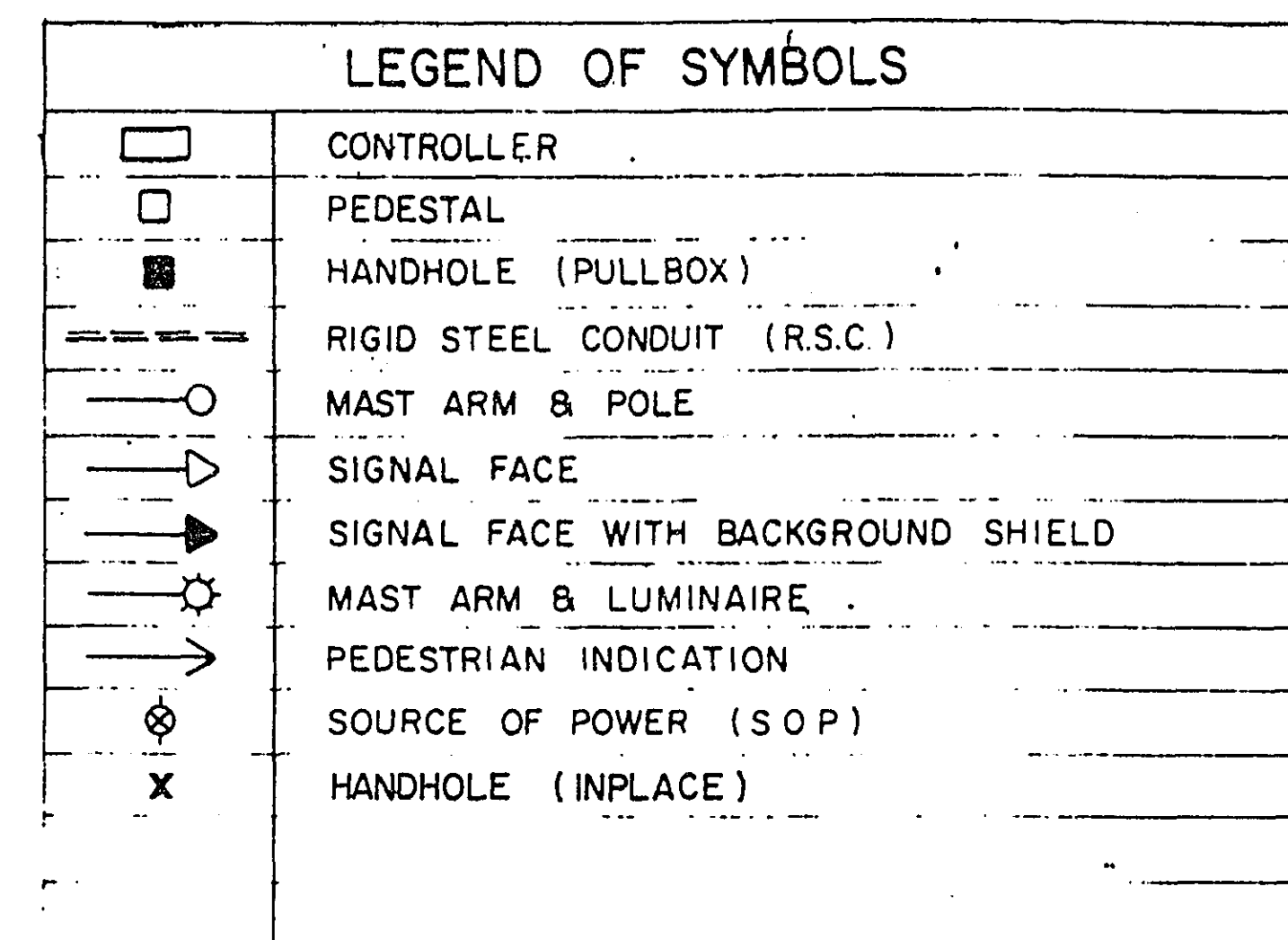
Sheet No. ~~23~~ of ~~47~~ Sheets

~~23-3-11~~ 23-145

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-09

1-31
147-070-11

2 4 X

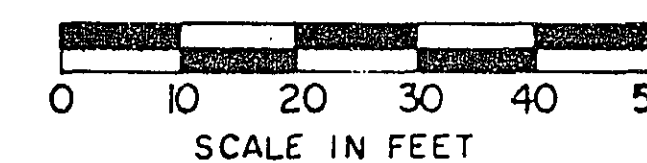


FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	→	
AI-1	A1	Y	12"	12"	12"	-	-	-
* AI-2	A1	Y	12"	12"	12"	-	-	-
A2-1	A2	Y	12"	12"	12"	-	+	-
* A2-2	A2	Y	12"	12"	12"	-	-	-
* BI-1	B1	R	12"	12"	-	12"	-	-
* B2-1	B2	R	12"	12"	-	12"	-	-
C1	C	R	12"	12"	12"	-	-	-
C2	C	R	12"	12"	12"	-	-	-
C3	C	R	12"	12"	12"	-	-	-
C4	C	R	12"	12"	12"	-	-	-

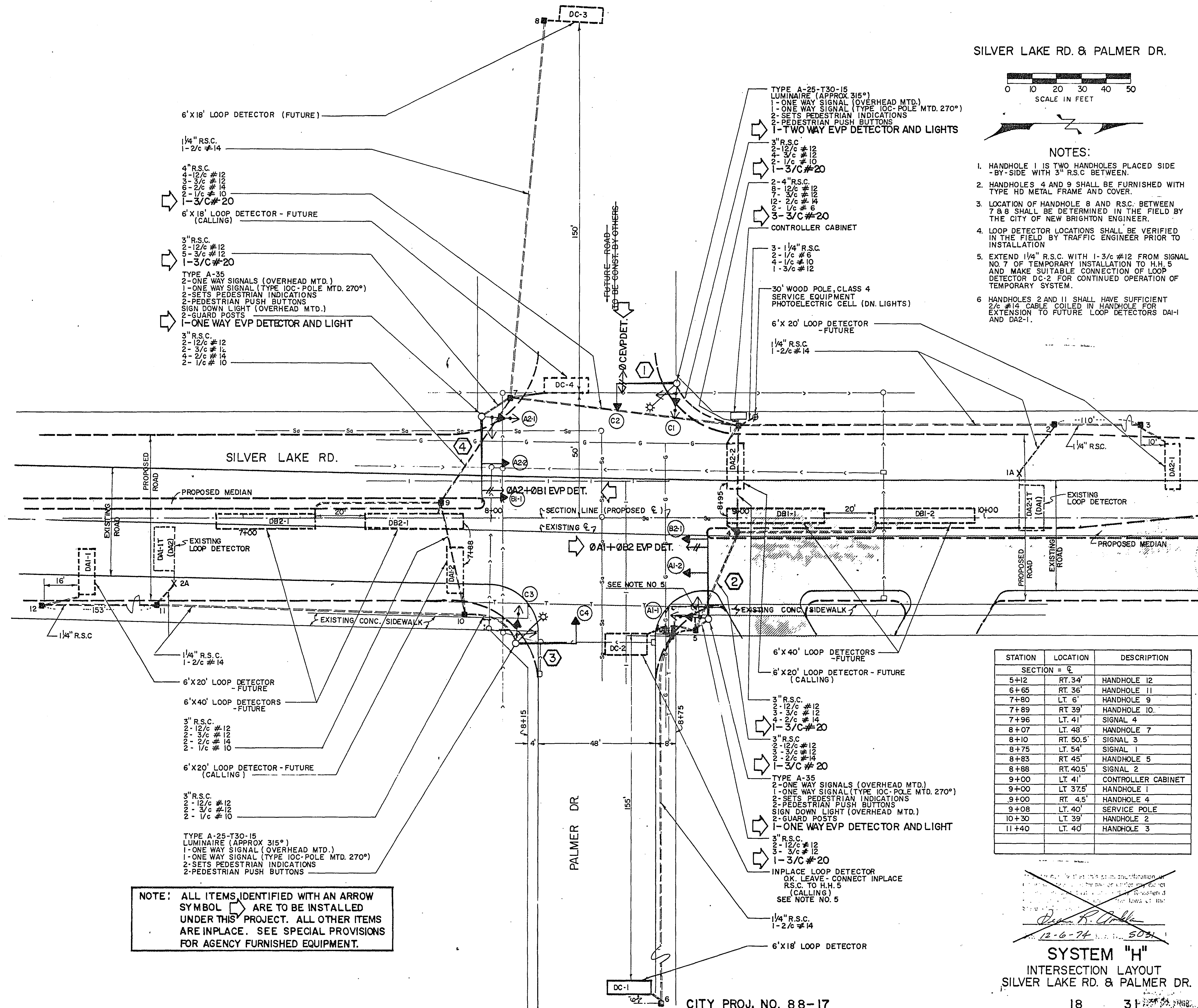
* SPECIAL SIGNAL FACES
(SEE SPECIAL PROVISIONS)

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

SILVER LAKE RD. & PALMER DR.

**NOTES:**

- HANDHOLE 1 IS TWO HANDHOLES PLACED SIDE-BY-SIDE WITH 3" R.S.C. BETWEEN.
- HANDHOLES 4 AND 9 SHALL BE FURNISHED WITH TYPE HD METAL FRAME AND COVER.
- LOCATION OF HANDHOLE 8 AND R.S.C. BETWEEN 7 & 8 SHALL BE DETERMINED IN THE FIELD BY THE CITY OF NEW BRIGHTON ENGINEER.
- LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY TRAFFIC ENGINEER PRIOR TO INSTALLATION.
- EXTEND 1/4" R.S.C. WITH 1-3/8" #12 FROM SIGNAL NO. 7 OF TEMPORARY INSTALLATION TO H.H. 5 AND MAKE SUITABLE CONNECTION OF LOOP DETECTOR DC-2 FOR CONTINUED OPERATION OF TEMPORARY SYSTEM.
- HANDHOLES 2 AND 11 SHALL HAVE SUFFICIENT 2" #14 CABLE COILED IN HANDHOLE FOR EXTENSION TO FUTURE LOOP DETECTORS DAI-1 AND DA2-1.



STATION	LOCATION	DESCRIPTION
SECTION = C		
5+12	RT. 34'	HANDHOLE 12
6+65	RT. 36'	HANDHOLE 11
7+80	LT. 6'	HANDHOLE 9
7+89	RT. 39'	HANDHOLE 10
7+96	LT. 41'	SIGNAL 4
8+07	LT. 43'	HANDHOLE 7
8+10	RT. 50.5'	SIGNAL 3
8+75	LT. 54'	SIGNAL 1
8+83	RT. 45'	HANDHOLE 5
8+88	RT. 40.5'	SIGNAL 2
9+00	LT. 41'	CONTROLLER CABINET
9+00	LT. 37.5'	HANDHOLE 1
9+00	RT. 4.5'	HANDHOLE 4
9+08	LT. 40'	SERVICE POLE
10+30	LT. 39'	HANDHOLE 2
11+40	LT. 40'	HANDHOLE 3

SYSTEM "H"

INTERSECTION LAYOUT
SILVER LAKE RD. & PALMER DR.

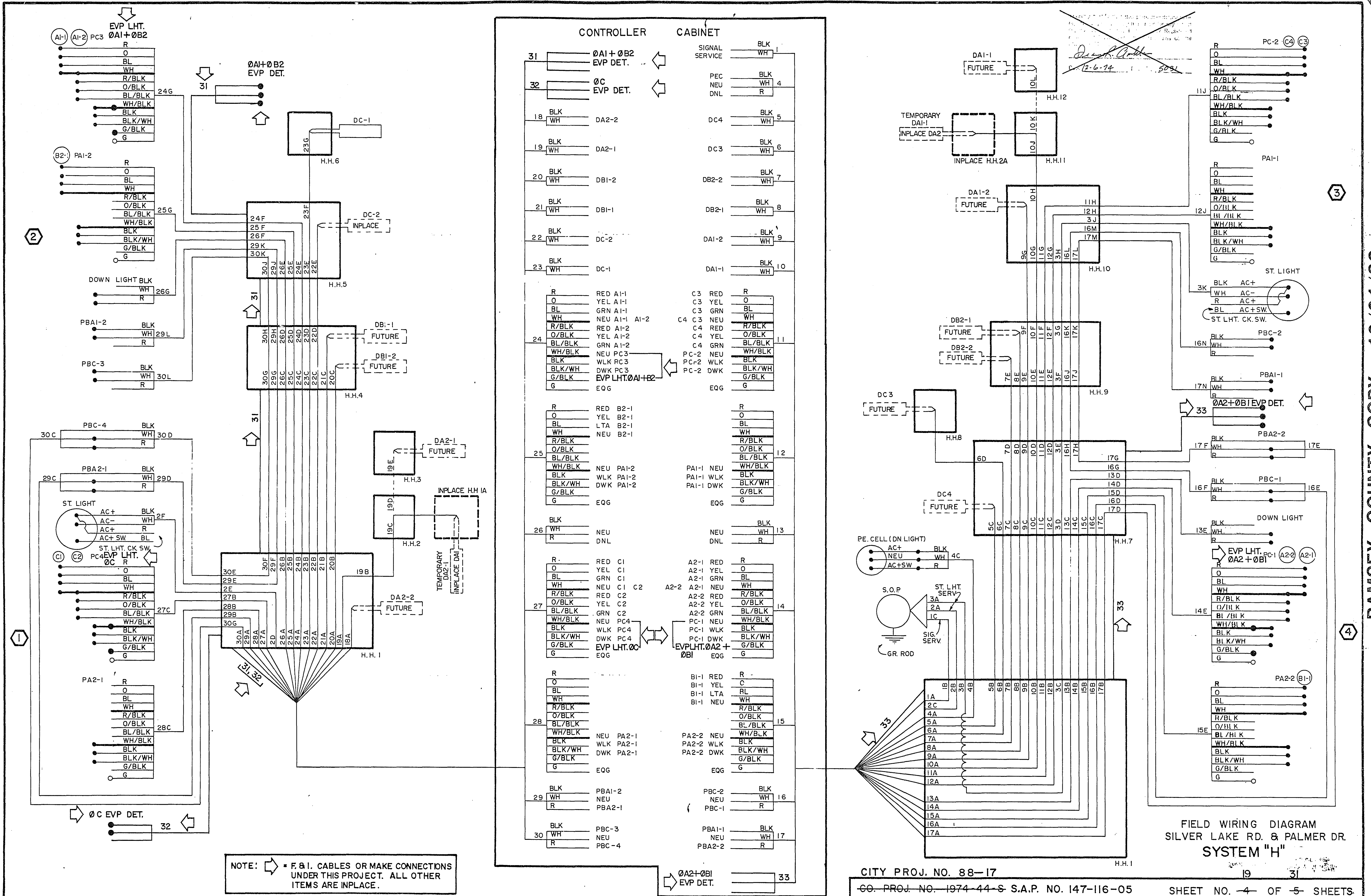
CITY PROJ. NO. 88-17

CO. PROJ. NO. 1974-44-S S.A.P. NO. 147-116-05

SHEET NO. 3 OF 5 SHEETS

23-145

24X

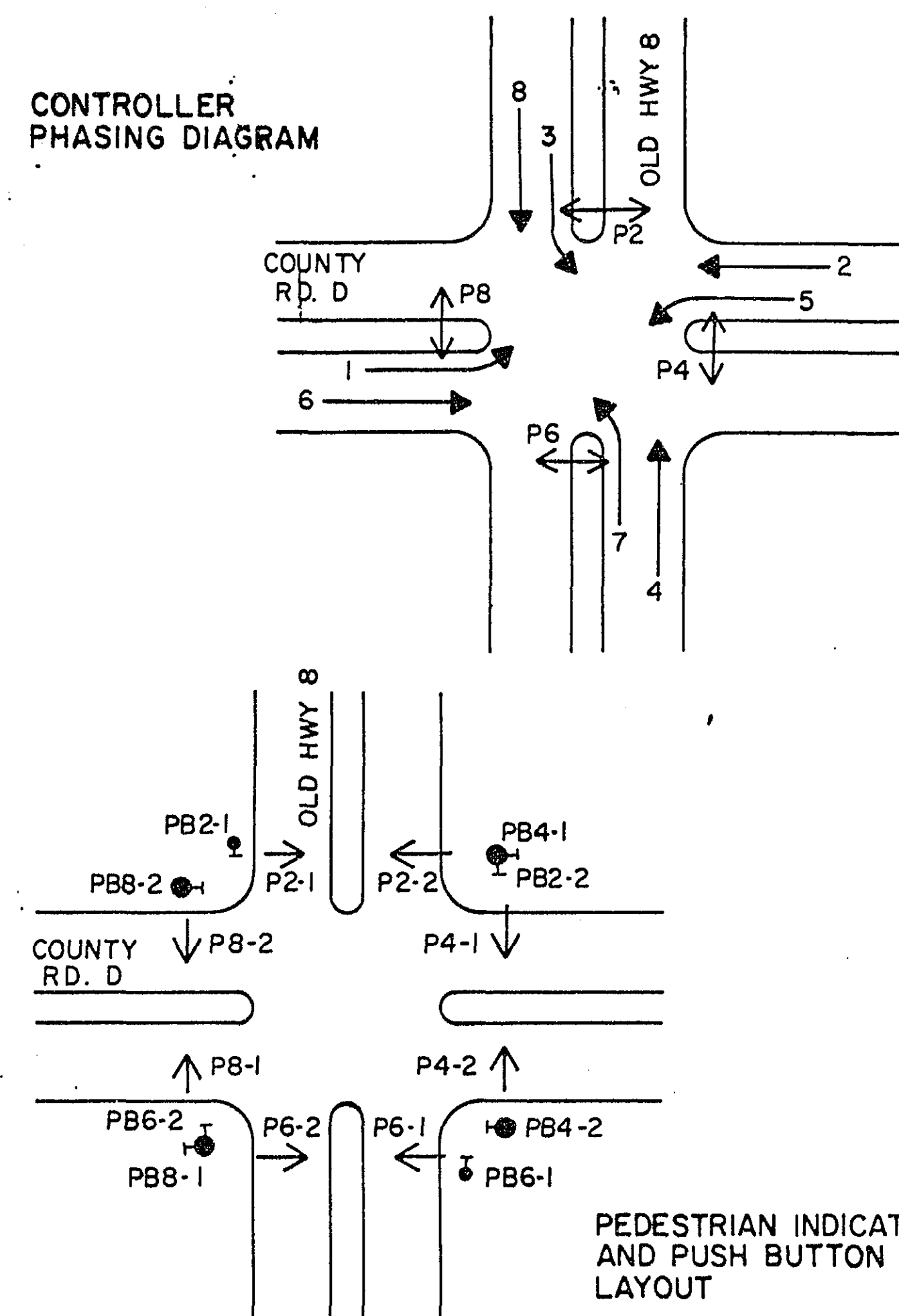


23-145

LEGEND OF SYMBOLS

SIGNAL BASE NO.	
SIGNAL FACE NO.	
CONTROLLER AND CABINET	
CONTROLLER AND CABINET-INPLACE	
HANDHOLE	
HANDHOLE-INPLACE	
RIGID STEEL CONDUIT (R.S.C.)	
RIGID STEEL CONDUIT (R.S.C.)-INPLACE	
SIGNAL FACE WITH BACKGROUND SHIELD	
SIGNAL FACE - INPLACE	
PEDESTRIAN INDICATIONS	
PEDESTRIAN INDICATIONS - INPLACE	
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE	
PEDESTRIAN PUSH BUTTON - INPLACE	
TRAFFIC SIGNAL PEDESTAL	
TRAFFIC SIGNAL PEDESTAL - INPLACE	
TRAFFIC SIGNAL POLE AND MAST ARM	
TRAFFIC SIGNAL POLE AND MAST ARM - INPLACE	
MAST ARM AND LUMINAIRE	
MAST ARM AND LUMINAIRE - INPLACE	
WOOD POLE	
WOOD POLE - INPLACE	
SOURCE OF POWER	
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION	

CONTROLLER PHASING DIAGRAM



SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE			
2-1	2	R	12"	12"	12"	-
2-2	2 and 5	R	12"	12"	12"	12"
* 2-3	2 and 5	R	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	-
4-1	4	R	12"	12"	12"	-
4-2	4 and 7	R	12"	12"	12"	12"
4-3	4 and 7	R	12"	12"	12"	12"
4-4	4	R	12"	12"	12"	-
6-1	6	R	12"	12"	12"	-
6-2	6 and 1	R	12"	12"	12"	12"
* 6-3	6 and 1	R	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	-
8-1	8	R	12"	12"	12"	-
8-2	8 and 3	R	12"	12"	12"	12"
8-3	8 and 3	R	12"	12"	12"	12"
8-4	8	R	12"	12"	12"	-

* OPTICALLY PROGRAMMED VEHICLE SIGNAL FACES
(SPECIAL SIGNAL FACE)

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
D1-1	6'X40'	C. & E. (TD)
D1-2	6'X25'	E. ONLY
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D3-1	6'X40'	C. & E. (TD)
D3-2	6'X25'	E. ONLY
D4-1	2-6'X6'	C. & E.
D4-3	2-6'X10'	C. ONLY
D5-1	6'X40'	C. & E. (TD)
D5-2	6'X25'	E. ONLY
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.
D7-1	6'X40'	C. & E. (TD)
D7-2	6'X25'	E. ONLY
D8-1	6'X6'	C. & E.
D8-2	6'X6'	C. & E.
D-1	6'X6'	COUNT
D-2	6'X6'	COUNT
D-3	6'X6'	COUNT
D-4	6'X6'	COUNT
D-5	6'X6'	COUNT
D-6	6'X6'	COUNT
D-7	6'X6'	COUNT
D-8	6'X6'	COUNT

C = CALL
E = EXTEND

(TD) = TIME DELAYED

SIGNAL HEAD PHASING

HEADS 2-2 and 2-3	HEADS 6-2 and 6-3
(R) 0 2	(R) 0 6
(Y) 0 2	(Y) 0 6
(G) 0 5	(G) 0 1
(C) 0 5	(C) 0 1
HEADS 4-2 and 4-3	HEADS 8-2 and 8-3
(R) 0 4	(R) 0 8
(Y) 0 4	(Y) 0 8
(G) 0 7	(G) 0 3
(C) 0 7	(C) 0 3

EQUIPMENT PAD - TYPE X (SEE DETAIL)

7 GUARD POSTS
SERVICE CABINET
EXTEND INTO H.H. 1
1/4" R.S.C.
3-1/2" #6
EXTEND INTO H.H. 2
1/4" R.S.C.
2-1/2" #10
EXTEND INTO H.H. 10
1/4" R.S.C.
2-1/2" #10
CONTROLLER & CABINET
EXTEND INTO H.H. 2
1/4" R.S.C.
4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
EXTEND INTO H.H. 10
2-3/4" R.S.C.
4-12" #12
6-3/4" #12
2-3/4" #20
14-2/4" #14
1-12PR #19 (INTERCONNECT)

PEDESTRIAN PUSH BUTTON STA. (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 10
1/4" R.S.C.
1-3/4" #12

S.O.P. (N.S.P. POLE)
1/4" R.S.C. RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
1/4" R.S.C.
3-1/2" #6

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

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1-2/4" #14

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1-2/4" #14

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1-2/4" #14

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1-2/4" #14

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1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

1/4" R.S.C.
1-2/4" #14

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW
SYMBOL ARE TO BE INSTALLED
UNDER THIS PROJECT. ALL OTHER ITEMS
ARE INPLACE. SEE SPECIAL PROVISIONS
FOR AGENCY FURNISHED EQUIPMENT.

Thereby certify that this plan, specification,
or report 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 California.
Date: 12-1-84
Signature: [Signature]

CITY PROJ. NO. 88-17

S.A.P. NO. 147-020-11

S.P. NO. 62-619-04, S.P. NO. 27-693-01

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: [Signature]

DATE: 12-1-84

NOTES:

1. INPLACE HANDHOLES AND R.S.C. SHALL BE SALVAGED AS DIRECTED BY THE ENGINEER. SEE SHEET 34
2. HANDHOLES 8, 10 AND 13 ARE INPLACE. USE INPLACE HANDHOLES.
3. SUFFICIENT 3/4" #20 AND 2-1/4" #14 TO REACH THE END OF THE MAST ARM SHALL BE INSTALLED AND LOOPED IN THE CONDUIT OUT-LET BODY ON POLES 1, 2, 3 AND 4.
4. PAYMENT FOR ITEMS DESIGNATED IN THE PLANS (INTERCONNECT) SHALL BE MADE AS INDICATED IN SPECIAL PROVISIONS AND SHALL NOT BE CONSIDERED AS PART OF SYSTEM B.

NOTE INP EVP ITEMS

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

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10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

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10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

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2-1/4" #10
1-12PR #19 (INTERCONNECT)

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2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
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2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

4-12" #12
5-3/4" #12
2-3/4" #20
10-2/4" #14
2-1/4" #10
1-12PR #19 (INTERCONNECT)

INTERSECTION LAYOUT
COUNTY ROAD D & OLD HWY. 8

SYSTEM "I"

20 31

Sheet No. 47 of 46 Sheets

23-145

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-09

1-31
147-020-11

24X

DRAWING

DRAWING NUMBER

23-145

DRAWING NUMBER

NUMBER

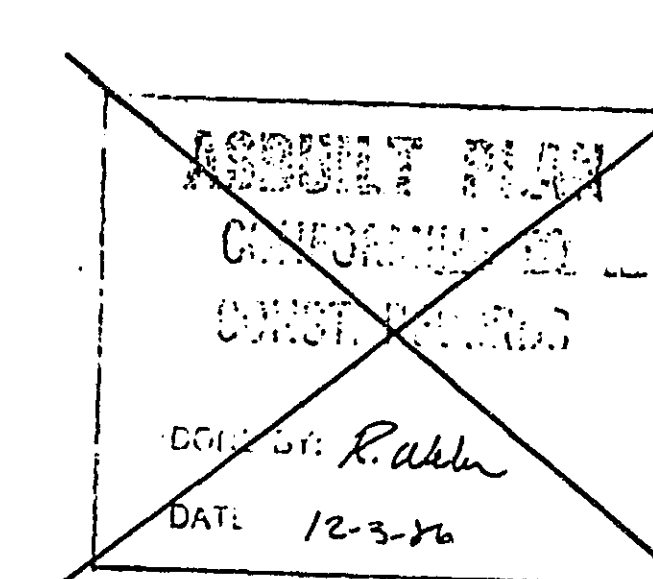
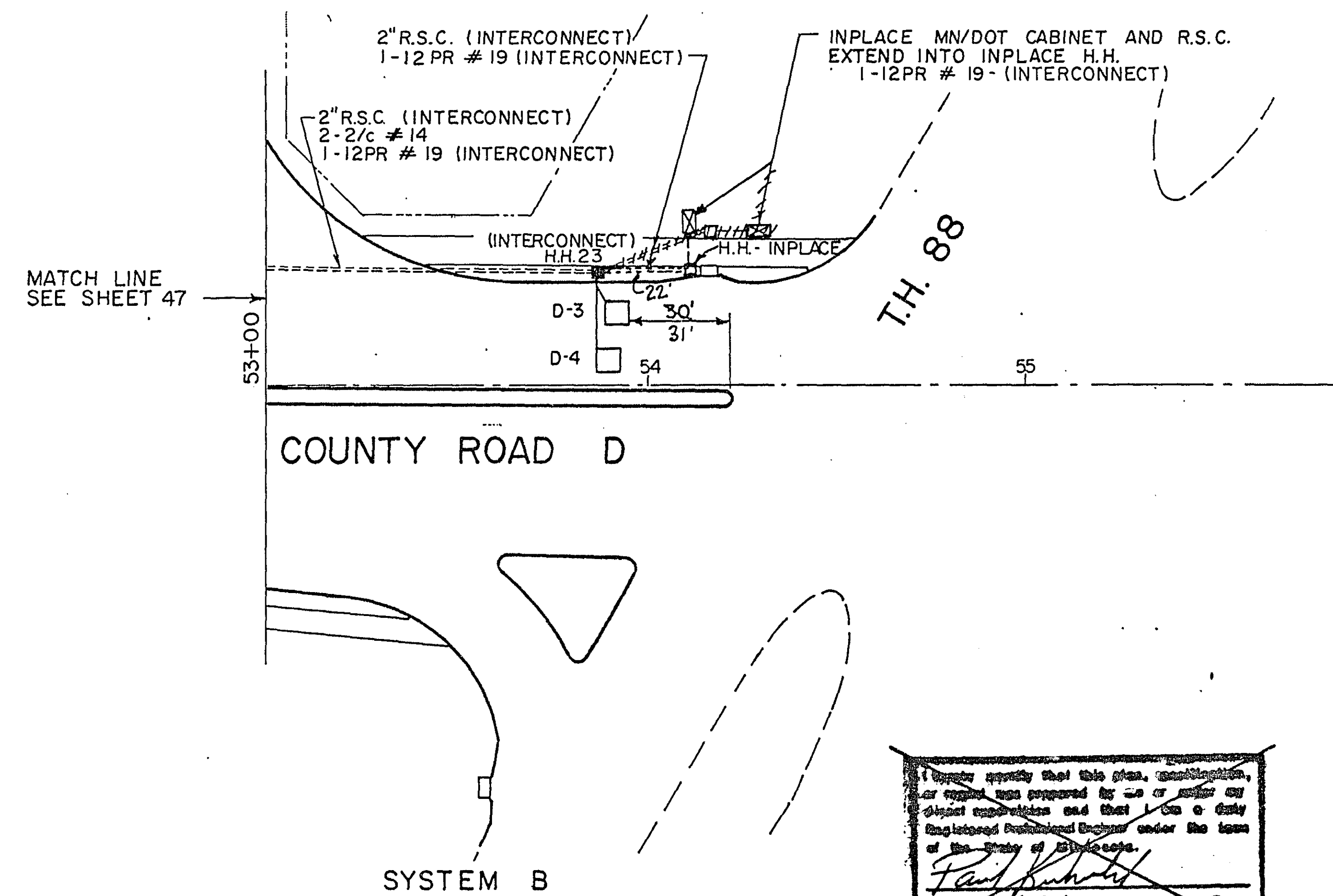
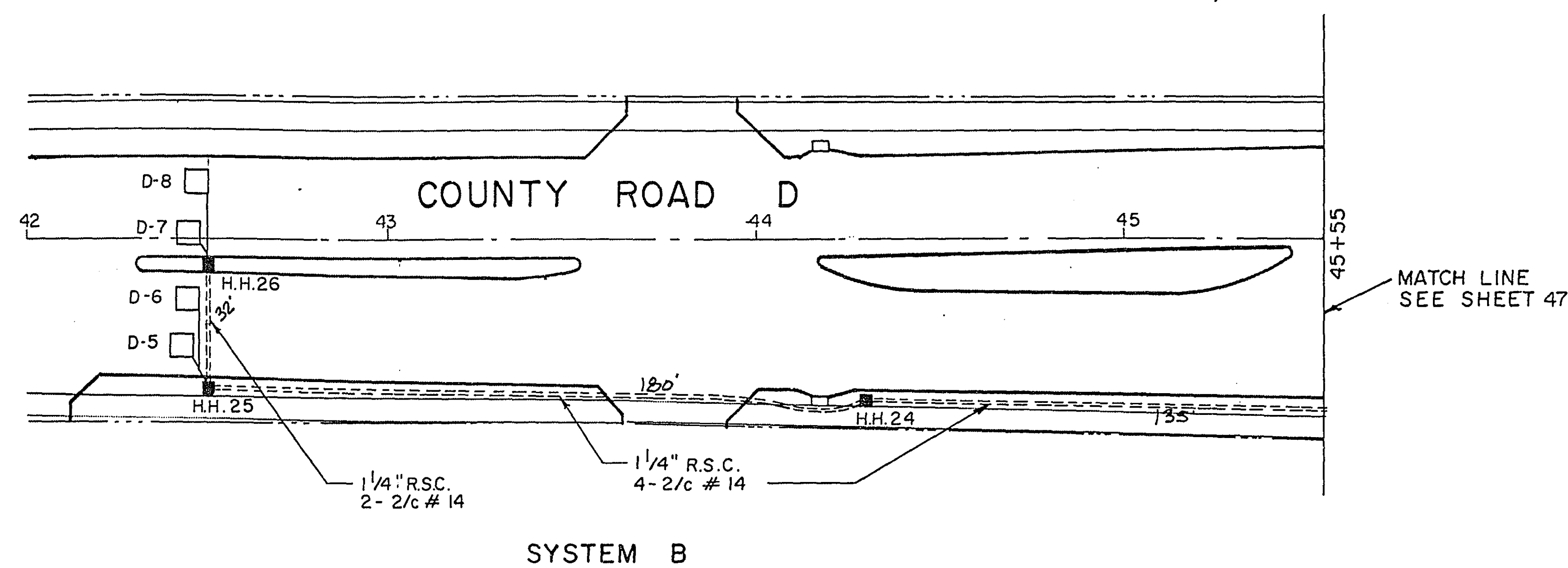
LEGEND OF SYMBOLS

SIGNAL BASE NO.	5
SIGNAL FACE NO.	4-2
CONTROLLER AND CABINET	
CONTROLLER AND CABINET-INPLACE	
HANDHOLE	
HANDHOLE-INPLACE	
RIGID STEEL CONDUIT (R.S.C.)	
RIGID STEEL CONDUIT (R.S.C.)-INPLACE	
SIGNAL FACE	
SIGNAL FACE WITH BACKGROUND SHIELD	
SIGNAL FACE-INPLACE	
PEDESTRIAN INDICATIONS	
PEDESTRIAN INDICATIONS-INPLACE	
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE	
PEDESTRIAN PUSH BUTTON STATION	
TRAFFIC SIGNAL PEDESTAL	
TRAFFIC SIGNAL PEDESTAL-INPLACE	
TRAFFIC SIGNAL POLE AND MAST ARM	
TRAFFIC SIGNAL POLE AND MAST ARM-INPLACE	
MAST ARM AND LUMINAIRE	
MAST ARM AND LUMINAIRE-INPLACE	
WOOD POLE	
WOOD POLE-INPLACE	
SOURCE OF POWER	
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION	

SCALE IN FEET
0 10 20 30 40 50 100

NOTES:

- HANDHOLES, R.S.C., CABLES AND LOOPS SHOWN ARE INCLUDED IN ITEM 2565.511 SYSTEM B UNLESS OTHERWISE INDICATED
- PAYMENT FOR ITEMS DESIGNATED IN THE PLANS (INTERCONNECT) SHALL BE MADE AS INDICATED IN SPECIAL PROVISION AND SHALL NOT BE CONSIDERED AS PART OF SYSTEM B.

INTERSECTION & INTERCONNECT LAYOUT
COUNTY ROAD D & OLD HWY. 8SYSTEM ~~B~~ "I"

FOR INFORMATION ONLY

CITY PROJ. NO. 88-17 S.A.P. NO. 147-020-11

S.P. NO. 62-619-04, S.P. NO. 27-693-01

Sheet No. 48 of 116 Sheets

23-145

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-091-31
147-020-11

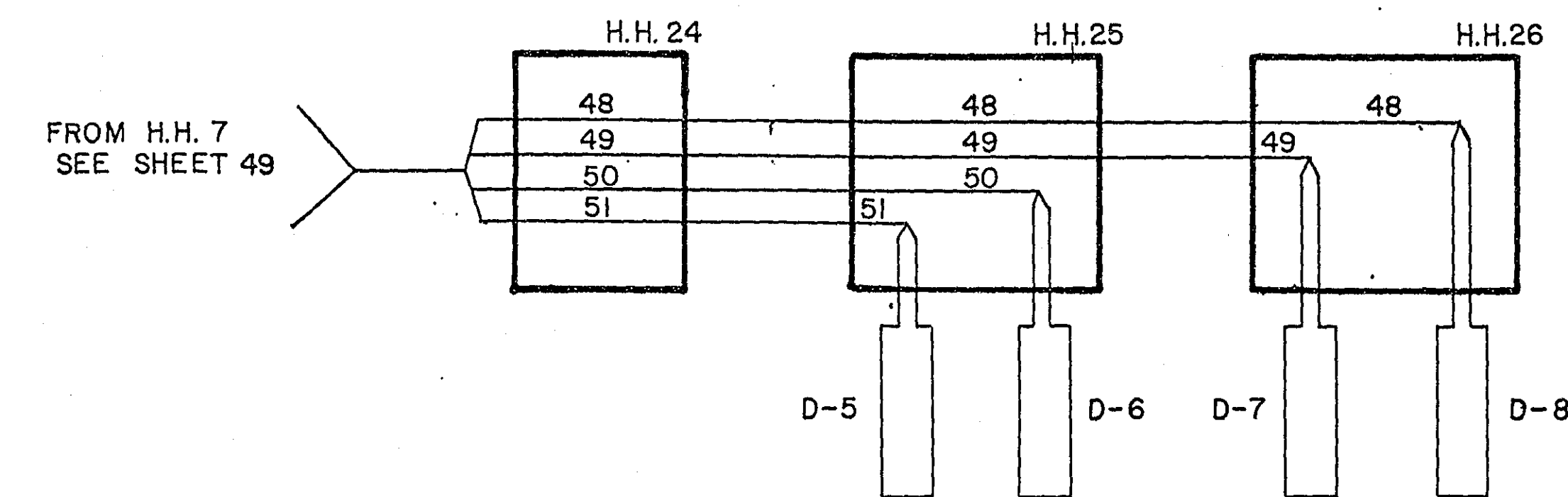
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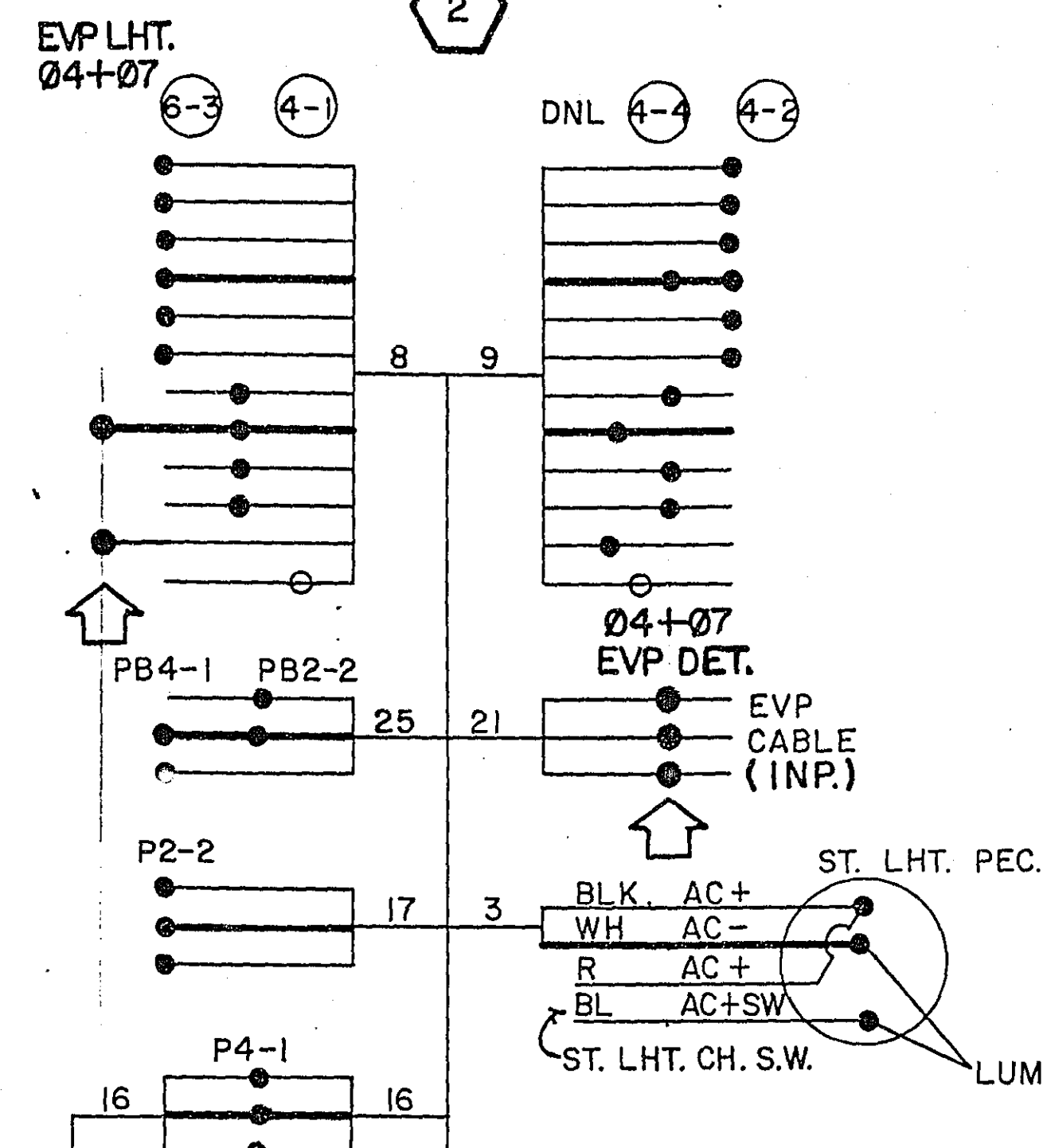
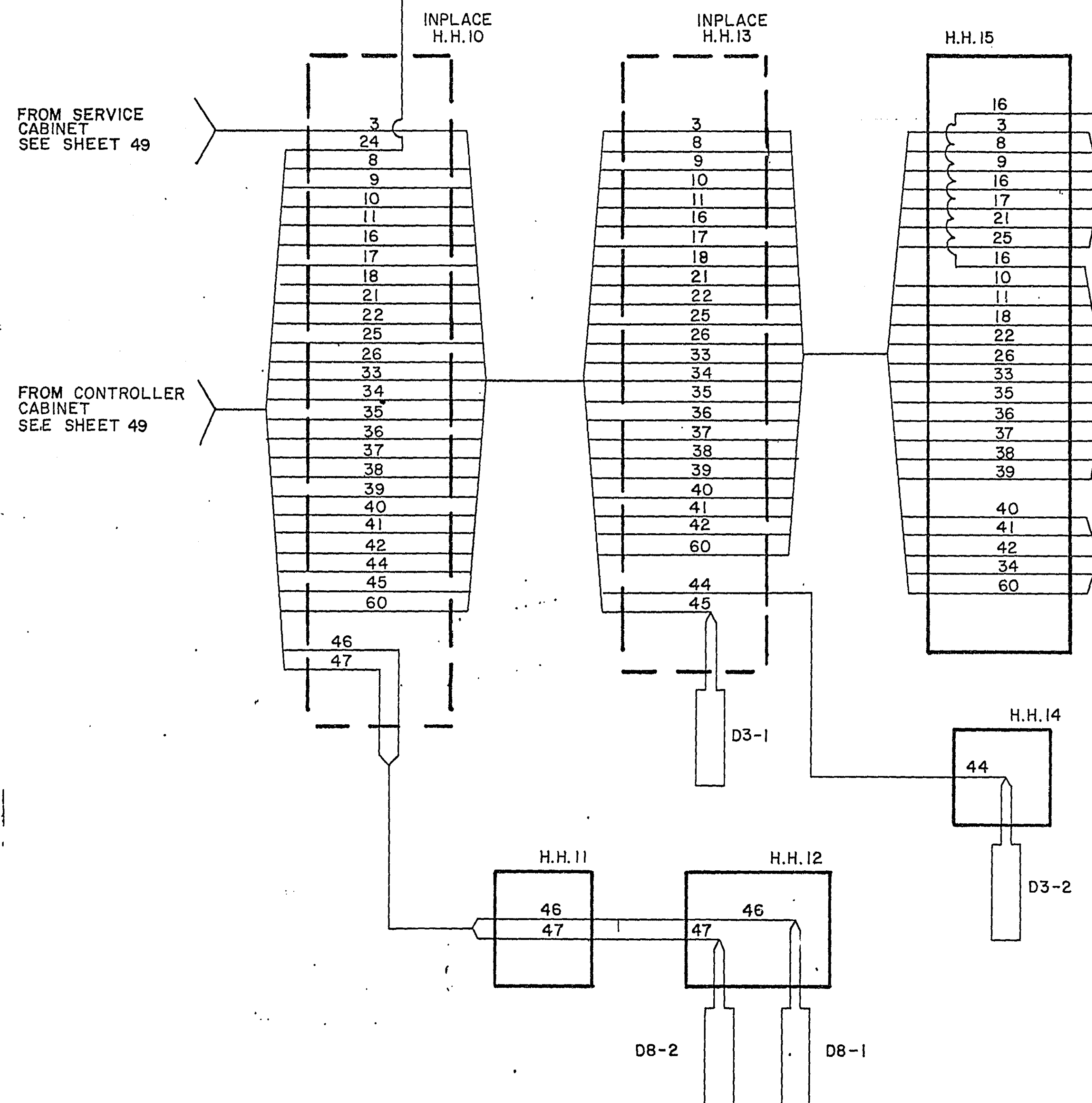
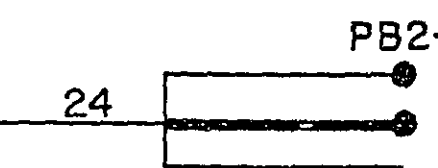
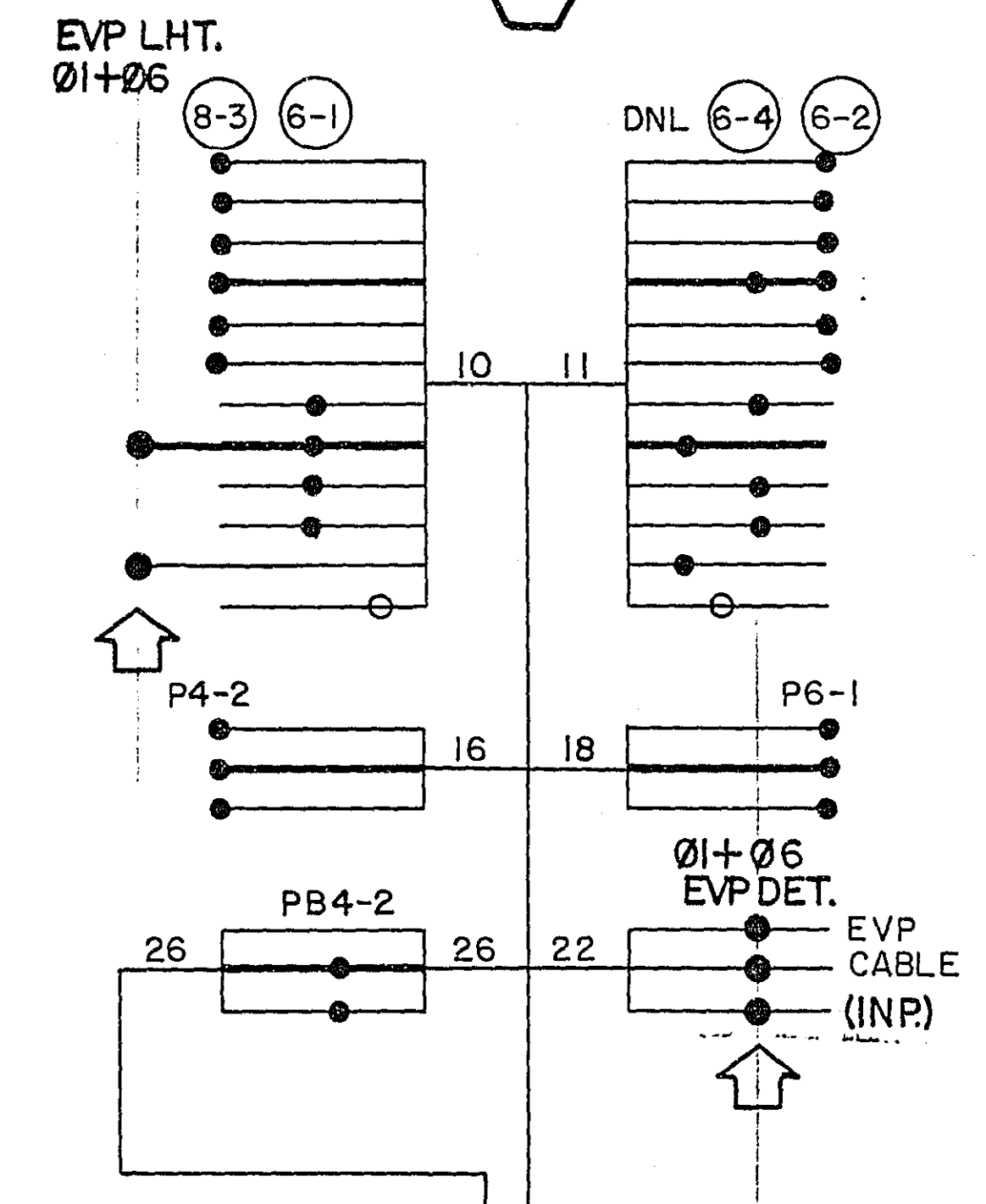
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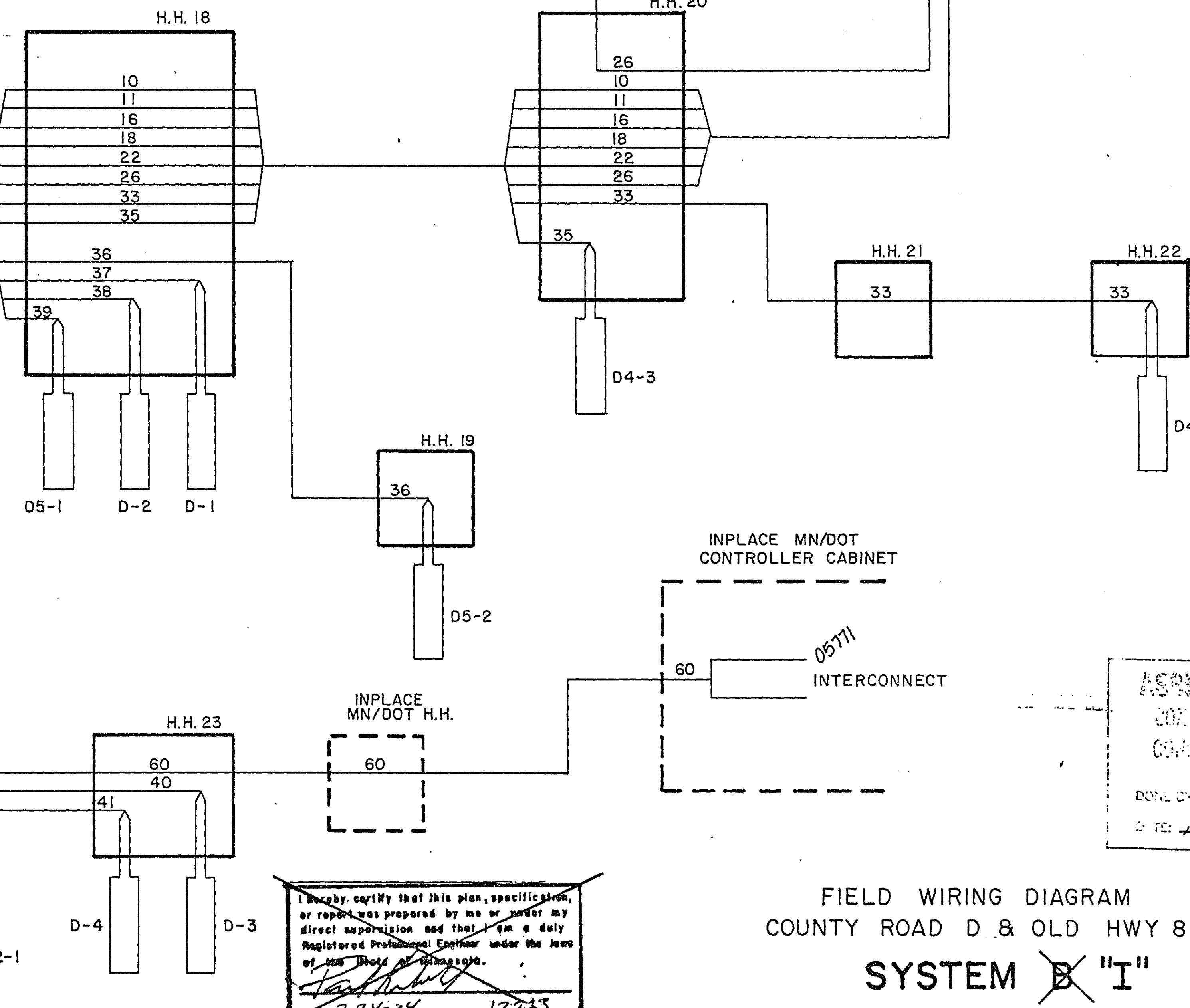
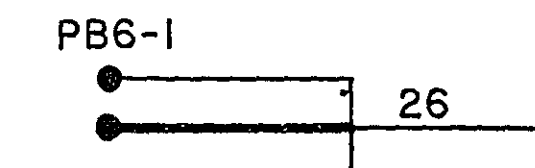
NUMBER

PLAN HOLD CORPORATION
REGISTERED BY N.J.PLAN HOLD CORPORATION
REGISTERED BY N.J.PLAN HOLD CORPORATION
REGISTERED BY N.J.PLAN HOLD CORPORATION
REGISTERED BY N.J.

PED. PUSH BUTTON STA.

NOTE:  = MAKE CONNECTIONS UNDER THIS PROJECT.
ALL OTHER ITEMS ARE INPLACE.

PED. PUSH BUTTON STA.



I hereby certify that this plan, specification,
or report 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 New Jersey.

[Signature]
Date 2-24-74 Exp. No. 12723

FIELD WIRING DIAGRAM
COUNTY ROAD D & OLD HWY 8SYSTEM ~~X~~ "I"

CITY PROJ. NO. 88-17 S.A.P. NO. 147-020-11

23 31

S.P. NO. 62-619-04; S.P. NO. 27-693-01 27-100 Sheet No. 50 of 116 Sheets

23-145

RAMSEY COUNTY COPY 12/01/89

23-145 City Project 88-117
SAP 147-112-03 147-116-05 147-103-091-31
147-020-11

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NUMBER

NOTE:

- 1) THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- 2) SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.
- 3) EACH LUMINAIRE SHALL HAVE A PHOTOELECTRIC CELL AND CHECK SWITCH.
- 4) FOR SIGN DETAILS SEE SHEETS 5 AND 6.
- 5) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
- 6) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- 7) REMOVE AND SALVAGE TEMPORARY SIGNAL SYSTEM, "A" STAGE 2. SEE SHEET 8.
- 8) ALL ITEMS SHOWN OR NOTED INPLACE SHALL BE USED INPLACE UNLESS OTHERWISE SPECIFIED.
- 9) A MID-MAST ARM MOUNT SHALL BE LOCATED 12' FROM THE END OF THE MAST ARM AT POLES 1 AND 4, AND 16' FROM THE END OF THE MAST ARMS AT POLES 2 AND 5.
- 10) ALL SIGNAL FACES SHALL BE 12" 3 SECTION R-Y-G EXCEPT FACE NO.'S 1-1, 3-1, 5-1 AND 7-1 WHICH SHALL BE 12" 3 SECTION RLTA-YLTA-GLTA.
- 11) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 4' FROM THE END OF THE MAST ARMS AT POLES 1, 2, 4 AND 5. SUFFICIENT 3/C #20 AND 2-1/C #14 TO REACH THE END OF THE MAST ARM SHALL BE INSTALLED AND LOOPED IN THE CONDUIT OUTLET BODY ON POLES 1, 2, 4 AND 5.
- 12) H.H. 23, LOOP DETECTORS D-3 AND D-4, 2/C #14 TO H.H. 23, AND THE 12 PR #19 TO THE CONTROLLER CABINET ARE INSTALLED BY OTHERS.

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	MULTIPLE	I	5'
D2-1	2-6' X 6'	I	250'
D3-1	INPLACE	I	5'
D4-1	INPLACE	I	475'
D5-1	MULTIPLE	I	5'
D6-1	2-6' X 6'	I	250'
D7-1	INPLACE	I	5'
D8-1	INPLACE	I	475'

LOCATION - DISTANCE FROM STOP LINE TO DETECTOR

CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1'
4" I.M.C.
5-12/C #12
3-3/C #12
2-1/C #6
1-1/C #6 BR.GR.
3-2/C #14
3-2/C #20
2-2/C #14 INPLACE
EXTEND INTO H.H. 21'
4" I.M.C.
2-12/C #12
1-3/C #12
3-2/C #14
1-3/C #20
1-12 PR #19 BY OTHERS
BETWEEN H.H. 1 AND H.H. 21'
2" I.M.C.
1-12/C #12
2-1/C #10

LOOP DETECTOR FUNCTIONS

1 CALL AND EXTEND

2 TYPE P90-A-35-D30-9 (DAVIT AT 350°)
P90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 10C-POLE MOUNTED 270°
LUMINAIRE-150 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 1'
3" I.M.C.
3-12/C #12
2-3/C #12
4-1/C #10
1-3/C #20
1-ONE WAY EVP DETECTOR AND LIGHT

3 TYPE 2A
PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO H.H. 6'
3" I.M.C.
1-12/C #12
3-3/C #12

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

4" R.S.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
1-2/C #14 INPLACE

4" I.M.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
2-2/C #14 INPLACE

45' WOOD POLE INPLACE
SERVICE EQUIPMENT
EXTEND INTO H.H. 1'
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

H.H. 23 H.H. 21
D-3 D-4 H.H. 20
D5-1
D2-1
H.H. 19
1 1/4" R.S.C. INPLACE
1-2/C #14
2" R.S.C. BY OTHERS
2-2/C #14 BY OTHERS
1-12 PR #19 BY OTHERS

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

1 TYPE P90-A-35-D30-9 (DAVIT AT 350°)
P90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 10C-POLE MOUNTED 270°
LUMINAIRE-150 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 17'
3" I.M.C.
4-12/C #12
2-3/C #12
2-1/C #10
1-3/C #20
1-ONE WAY EVP DETECTOR AND LIGHT

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

4" R.S.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
1-2/C #14 INPLACE

4" I.M.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
2-2/C #14 INPLACE

45' WOOD POLE INPLACE
SERVICE EQUIPMENT
EXTEND INTO H.H. 1'
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

H.H. 23 H.H. 21
D-3 D-4 H.H. 20
D5-1
D2-1
H.H. 19
1 1/4" R.S.C. INPLACE
1-2/C #14
2" R.S.C. BY OTHERS
2-2/C #14 BY OTHERS
1-12 PR #19 BY OTHERS

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

1 TYPE P90-A-35-D30-9 (DAVIT AT 350°)
P90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 10C-POLE MOUNTED 270°
LUMINAIRE-150 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 16'
3" I.M.C.
1-12/C #12
3-3/C #12

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

4" R.S.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
1-2/C #14 INPLACE

4" I.M.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
2-2/C #14 INPLACE

45' WOOD POLE INPLACE
SERVICE EQUIPMENT
EXTEND INTO H.H. 1'
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

H.H. 23 H.H. 21
D-3 D-4 H.H. 20
D5-1
D2-1
H.H. 19
1 1/4" R.S.C. INPLACE
1-2/C #14
2" R.S.C. BY OTHERS
2-2/C #14 BY OTHERS
1-12 PR #19 BY OTHERS

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
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1-3/C #12
2-2/C #14
2-1/C #10
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3" R.S.C. INPLACE
3-12/C #12
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2-1/C #10
1-3/C #20

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2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
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2-2/C #14
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1-3/C #20

1 TYPE P90-A-35-D30-9 (DAVIT AT 350°)
P90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 10C-POLE MOUNTED 270°
LUMINAIRE-150 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 7'
3" I.M.C.
3-12/C #12
4-3/C #12
4-1/C #10
1-3/C #20
1-ONE WAY EVP DETECTOR AND LIGHT

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

4" R.S.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
1-2/C #14 INPLACE

4" I.M.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
2-2/C #14 INPLACE

45' WOOD POLE INPLACE
SERVICE EQUIPMENT
EXTEND INTO H.H. 1'
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

H.H. 23 H.H. 21
D-3 D-4 H.H. 20
D5-1
D2-1
H.H. 19
1 1/4" R.S.C. INPLACE
1-2/C #14
2" R.S.C. BY OTHERS
2-2/C #14 BY OTHERS
1-12 PR #19 BY OTHERS

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
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2-2/C #14
2-1/C #10
1-3/C #20

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2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

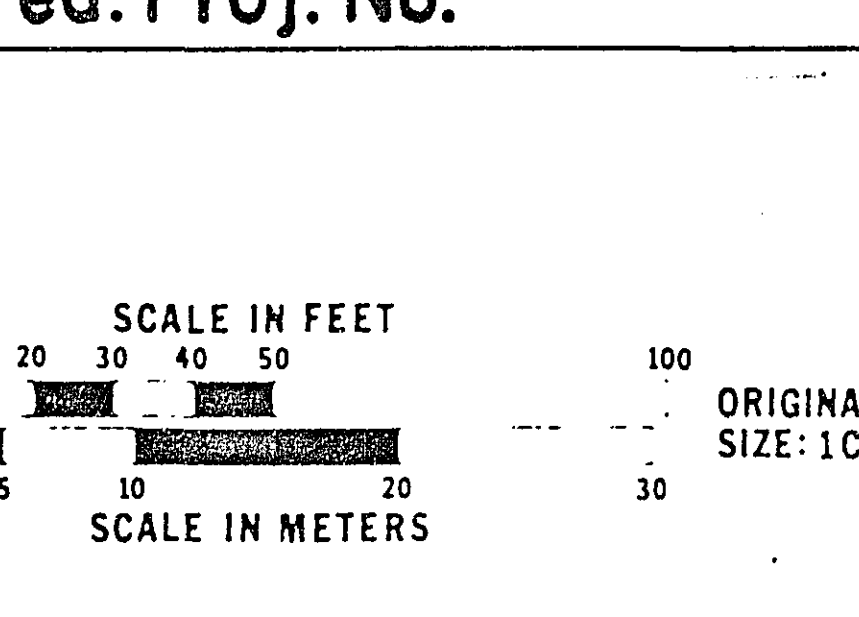
3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

Fed. Proj. No.



SCALE IN FEET
SCALE IN METERS
ORIGINAL PLAN
SIZE: 1CM

TYPE P90-A-35-D30-9 (DAVIT AT 350°)
P90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 10C-POLE MOUNTED 270°
LUMINAIRE-150 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 7'
3" I.M.C.
3-12/C #12
4-3/C #12
4-1/C #10
1-3/C #20
1-ONE WAY EVP DETECTOR AND LIGHT

1 1/4" R.S.C. INPLACE
1-2/C #14 INPLACE

4" R.S.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
1-2/C #14 INPLACE

4" I.M.C. INPLACE
4-12/C #12
2-3/C #12
3-2/C #14
2-1/C #10
2-3/C #20
2-2/C #14 INPLACE

45' WOOD POLE INPLACE
SERVICE EQUIPMENT
EXTEND INTO H.H. 1'
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

H.H. 23 H.H. 21
D-3 D-4 H.H. 20
D5-1
D2-1
H.H. 19
1 1/4" R.S.C. INPLACE
1-2/C #14
2" R.S.C. BY OTHERS
2-2/C #14 BY OTHERS
1-12 PR #19 BY OTHERS

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

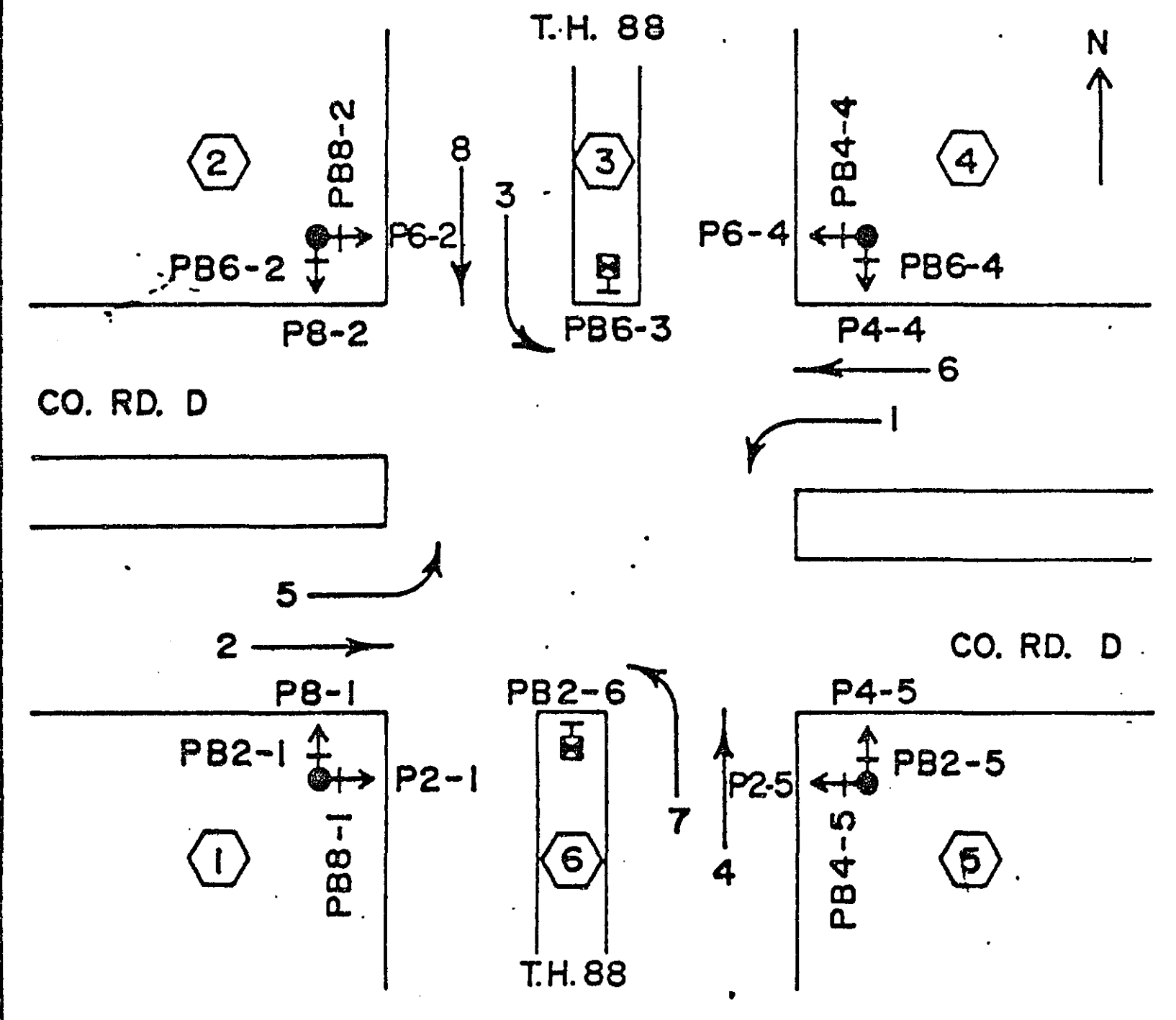
3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

3" R.S.C. INPLACE
3-12/C #12
1-3/C #12
2-2/C #14
2-1/C #10
1-3/C #20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

CO. RD. D

T.H. 88

CO. RD. D

T.H. 88

CO. RD. D

T.H. 88

CO. RD. D

T.H. 88

SYSTEM "A" "J"
INTERSECTION LAYOUT

T.H. 88 AT CO. RD. D

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DRAWING

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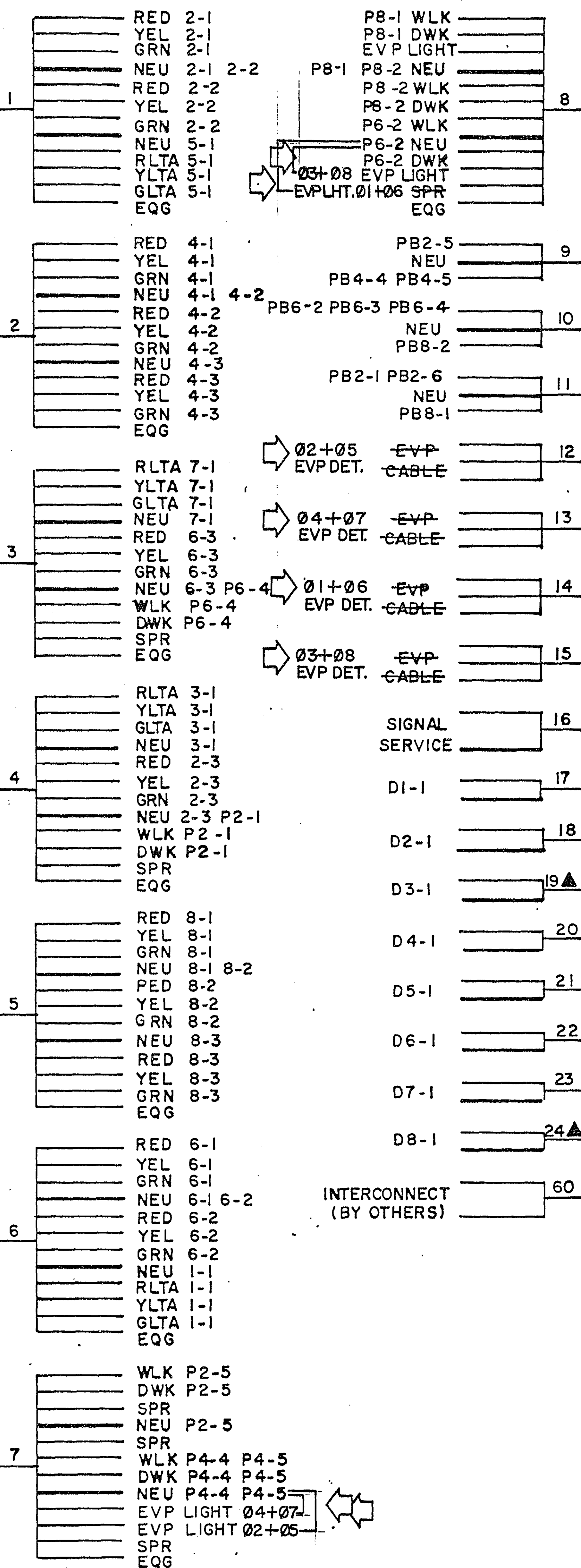
23-145

DRAWING NUMBER

NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
 REVISION BY NAME/DATE
 1-31 147-020-11

CONTROLLER CABINET



NOTE

▲ = INPLACE CABLES, ALL OTHER CABLES ARE NEW.

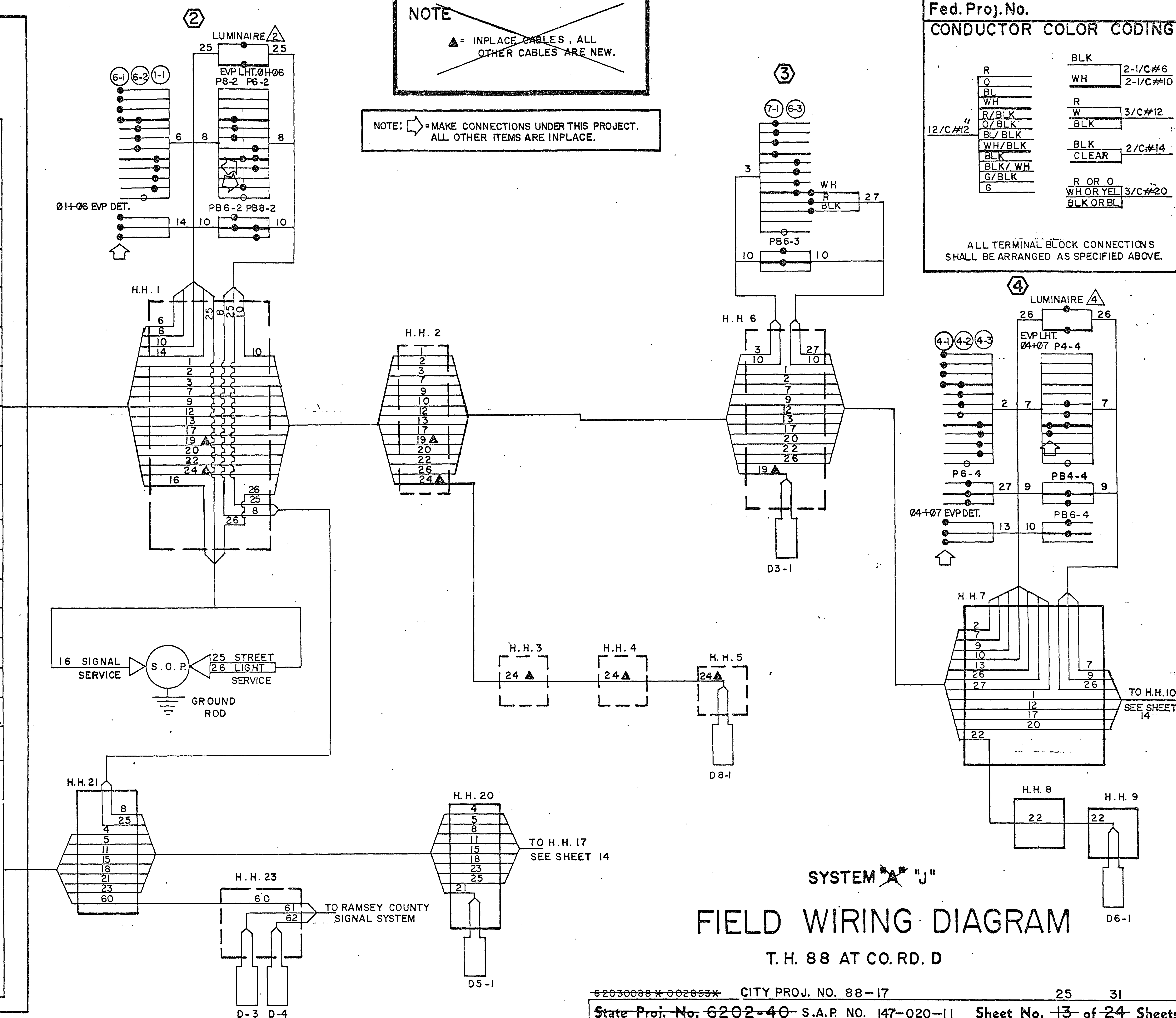
NOTE: ➡ = MAKE CONNECTIONS UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE.

Fed. Proj. No.

CONDUCTOR COLOR CODING

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

ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



SYSTEM "J"
 FIELD WIRING DIAGRAM

T.H. 88 AT CO. RD. D

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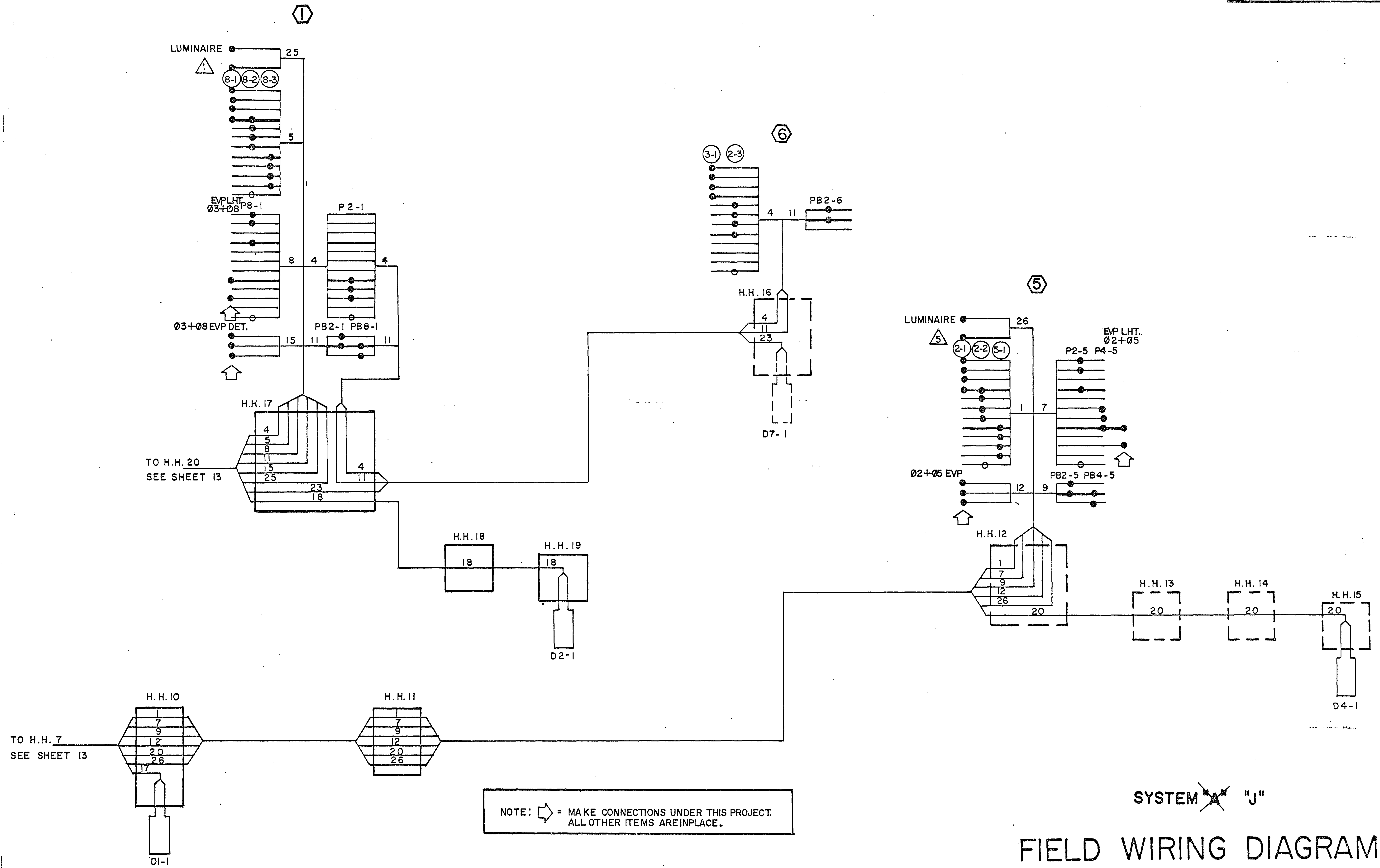
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DRAWING NUMBER

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DRAWING NUMBER

NUMBER



SYSTEM "J"
FIELD WIRING DIAGRAM

T.H. 88 AT CO. RD. D

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24X

NOTE:

- 1) ALL SIGNAL FACES SHALL BE 12" 3 SECTION R-Y-G EXCEPT FACE NO. 5 2-1, 2-4, 6-1 AND 6-4 WHICH SHALL BE 12" 5 SECTION R-Y-G - YLTA - GLTA. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT FOR FACE NO. 5 2-4, 4-3, 6-4 AND 8-3.
- 2) SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.
- 3) EACH LUMINAIRE SHALL HAVE A PHOTOELECTRIC CELL AND CHECK SWITCH.
- 4) THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- 5) ALL PEDESTRIAN INDICATIONS SHALL BE 9" X 9".
- 6) ALL ITEMS SHOWN OR NOTED IN PLACE SHALL BE USED IN PLACE UNLESS OTHERWISE SPECIFIED.
- 7) A MID-MAST ARM MOUNT SHALL BE LOCATED 12' FROM THE END OF THE MAST ARM AT POLES 2 AND 4.
- 8) REMOVE AND SALVAGE EXISTING SIGNAL SYSTEM. SEE SHEET 20.
- 9) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CAPPED CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 4' FROM THE END OF THE MAST ARMS AT POLES 2, 3 AND 4. SUFFICIENT 3/4" #20 AND 2-1/4" #14 TO REACH THE END OF THE MAST ARM SHALL BE INSTALLED AND LOOPED IN THE CONDUIT OUTLET BODY ON POLES 2, 3, AND 4.
- 10) SEE SHEETS 5 AND 6 FOR SIGN DETAILS.
- 11) HANDHOLES 8 AND 9 ARE SPECIAL HANDHOLES - SEE SPECIAL PROVISIONS.

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL  ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE IN PLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

LOOP DETECTORS

NUMBER	SIZE	FUNCTION	LOCATION
D1-1	6'X20'	3	20'
D1-2	6'X20'	4	—
D2-1	3-6'X6'	1	240'
D4-1	3-6'X6'	1	180'
D4-2	6'X20'	1	5'
D4-3	6'X20'	1	5'
D4-4	6'X20'	2	5'
D5-1	6'X20'	3	20'
D5-2	6'X20'	4	—
D6-1	2-6'X6'	1	240'
D8-1	6'X20'	1	5'
D8-2	6'X20'	2	5'

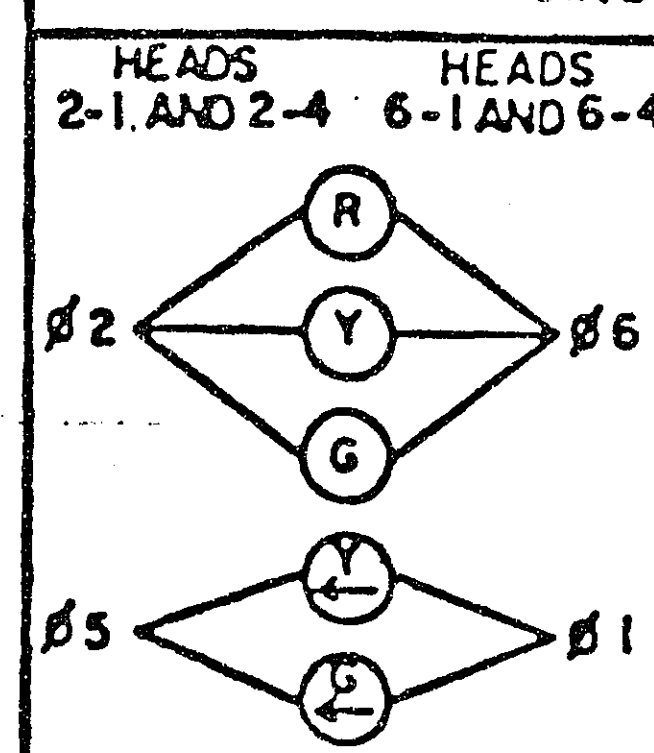
LOCATION - DISTANCE FROM STOP LINE TO DETECTOR

NOTE: IN PLACE ITEMS

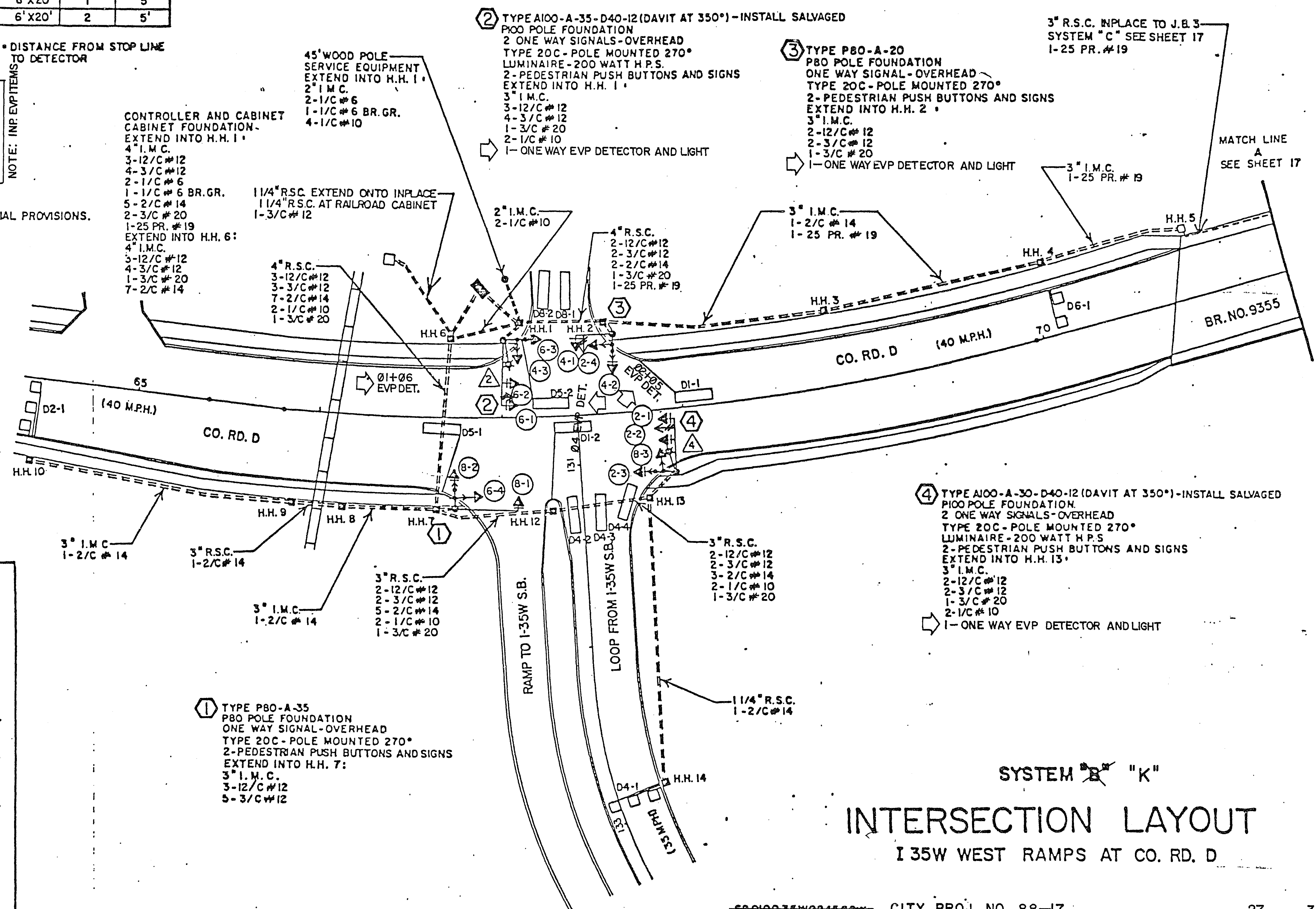
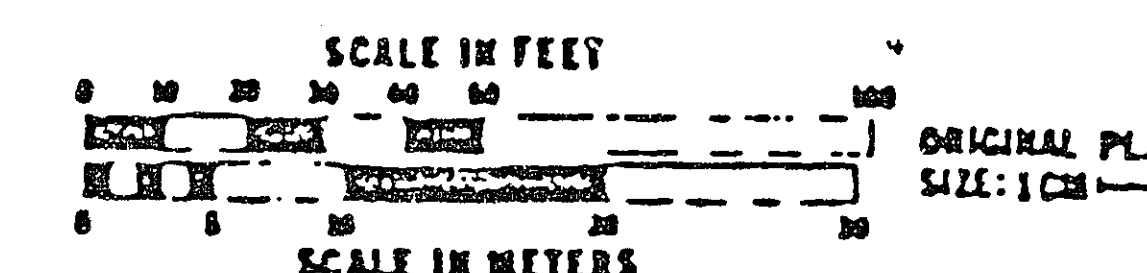
LOOP DETECTOR FUNCTIONS

- 1 CALL AND EXTEND
- 2 DELAYED CALL - IMMEDIATE EXTEND
- 3 DELAYED CALL ONLY
- 4 EXTEND ONLY

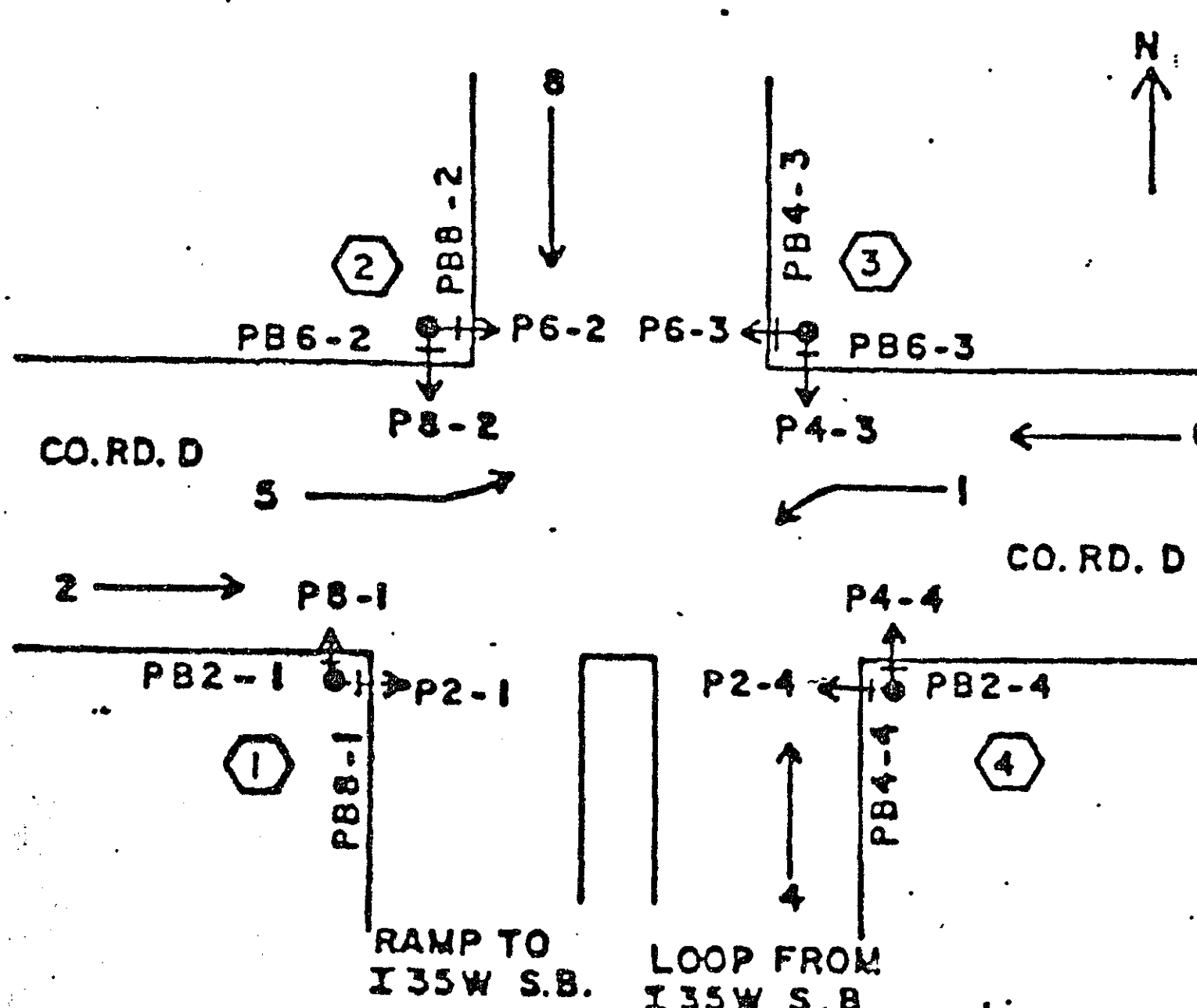
SIGNAL HEAD PHASING



Fed. Proj. No.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SYSTEM "K"

INTERSECTION LAYOUT

I 35W WEST RAMPS AT CO. RD. D

62010035W024500 CITY PROJ. NO. 88-17

State Proj. No. 6284-101

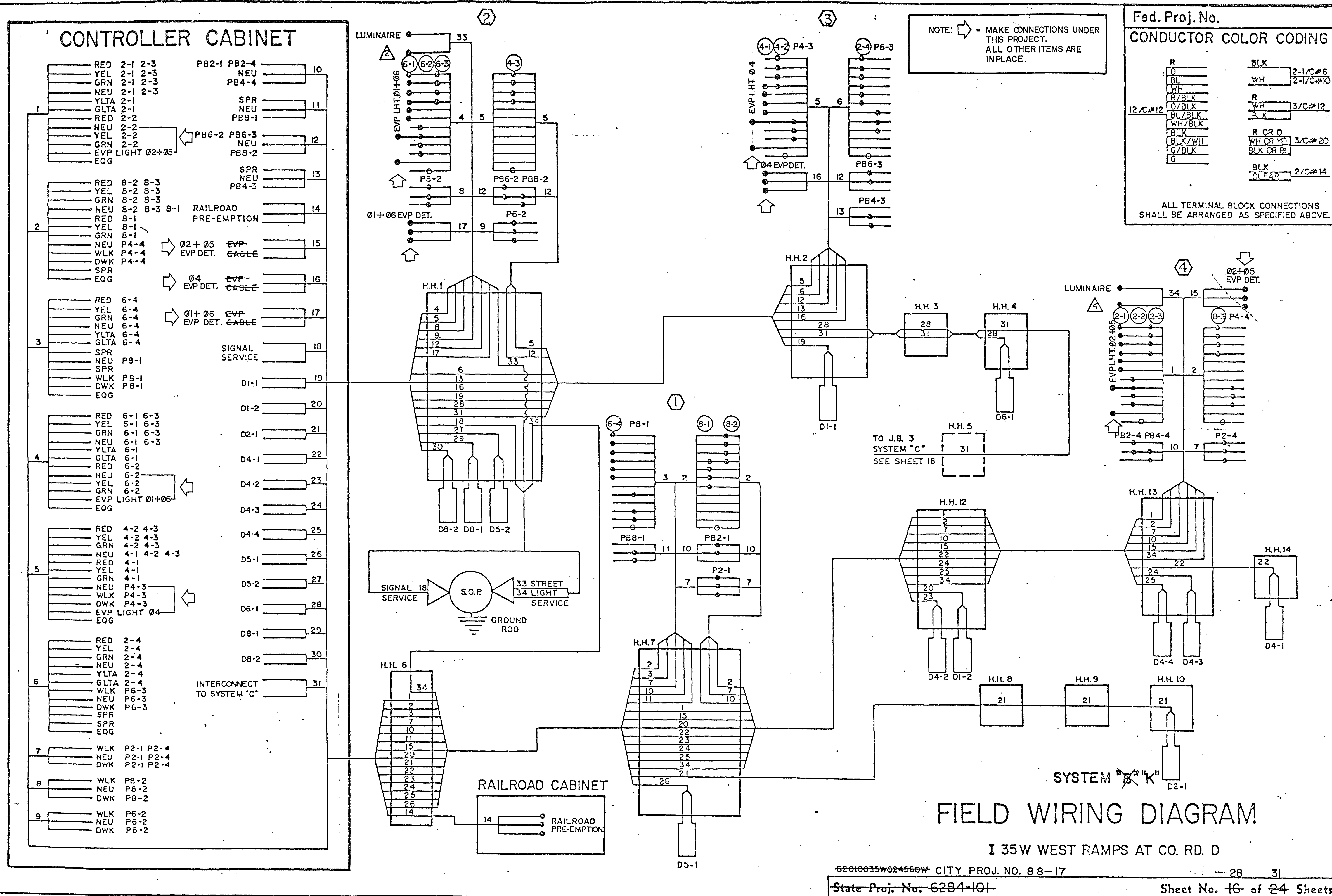
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24X



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2 4 X

NOTES:

- (1) ALL SIGNAL FACES SHALL BE 12" X 3 SECTION R-Y-G EXCEPT FACE NO'S 2-1 AND 2-4 WHICH SHALL BE 12" X 5 SECTION R-Y-G-YLTA-GLTA. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT FACES NO'S 2-4 AND 4-3.
- (2) THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- (3) ALL PEDESTRIAN INDICATIONS SHALL BE 9" X 9".
- (4) EACH LUMINAIRE SHALL HAVE A PHOTOELECTRIC CELL AND CHECK SWITCH.
- (5) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CAPPED CONDUIT OUTLET BODY FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 4' FROM THE END OF THE MAST ARM AT POLES 2,3 AND 4. SUFFICIENT 3/C #20 AND 2-1/C #14 TO REACH THE END OF THE MAST ARM SHALL BE INSTALLED AND LOOPED IN THE CONDUIT OUTLET BODY ON POLES 2,3 AND 4.
- (6) SEE SHEETS 5 AND 6 FOR SIGN DETAILS.
- (7) SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.
- (8) A MID MAST ARM MOUNT SHALL BE LOCATED 12' FROM THE END OF THE MAST ARM AT POLE 4.
- (9) REMOVE AND SALVAGE EXISTING SIGNAL SYSTEM. SEE SHEET 21.
- (10) ALL ITEMS SHOWN OR NOTED IN PLACE SHALL BE USED IN PLACE UNLESS OTHERWISE SPECIFIED.

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D2-1	2-8' X 6'	1	240'
D4-1	6' X 15'	4	240'
D4-2	6' X 15'	1	120'
D4-3	2-6' X 20'	1	5'
D4-4	6' X 20'	2	5'
D5-1	6' X 20'	3	20'
D5-2	6' X 20'	4	-
D6-1	2-6' X 6'	1	240'

LOCATION & DISTANCE FROM STOP LINE TO DETECTOR

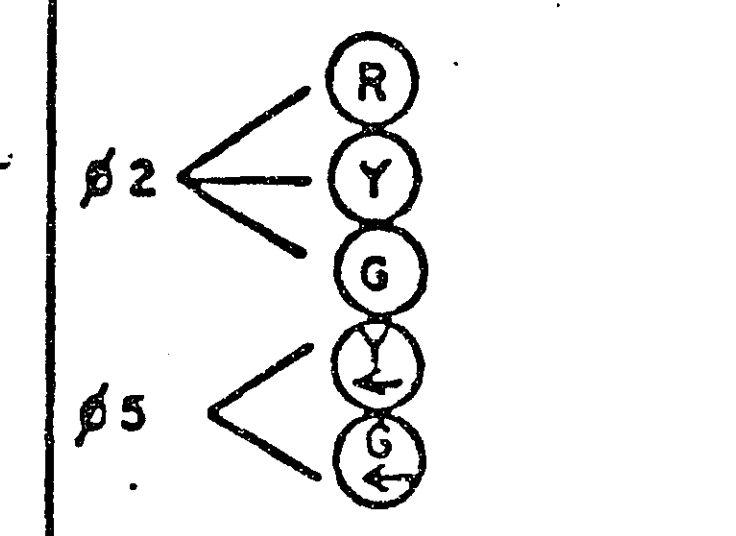
NOTE: INP. EQUIP.

LOOP DETECTOR FUNCTIONS

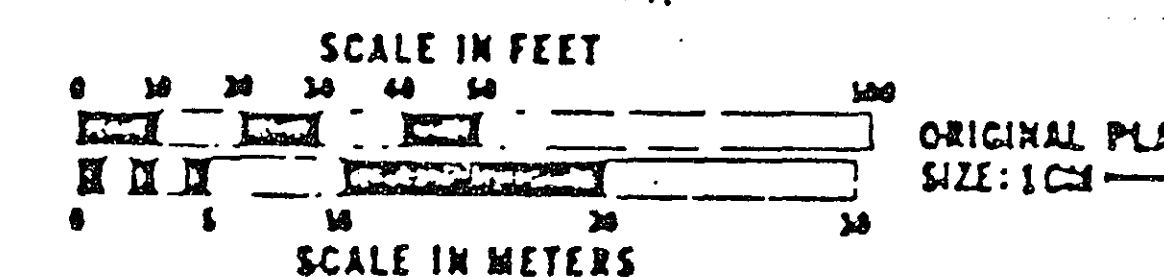
- 1 CALL AND EXTEND
- 2 DELAYED CALL - IMMEDIATE EXTEND
- 3 DELAYED CALL ONLY
- 4 EXTEND ONLY

SIGNAL HEAD PHASING

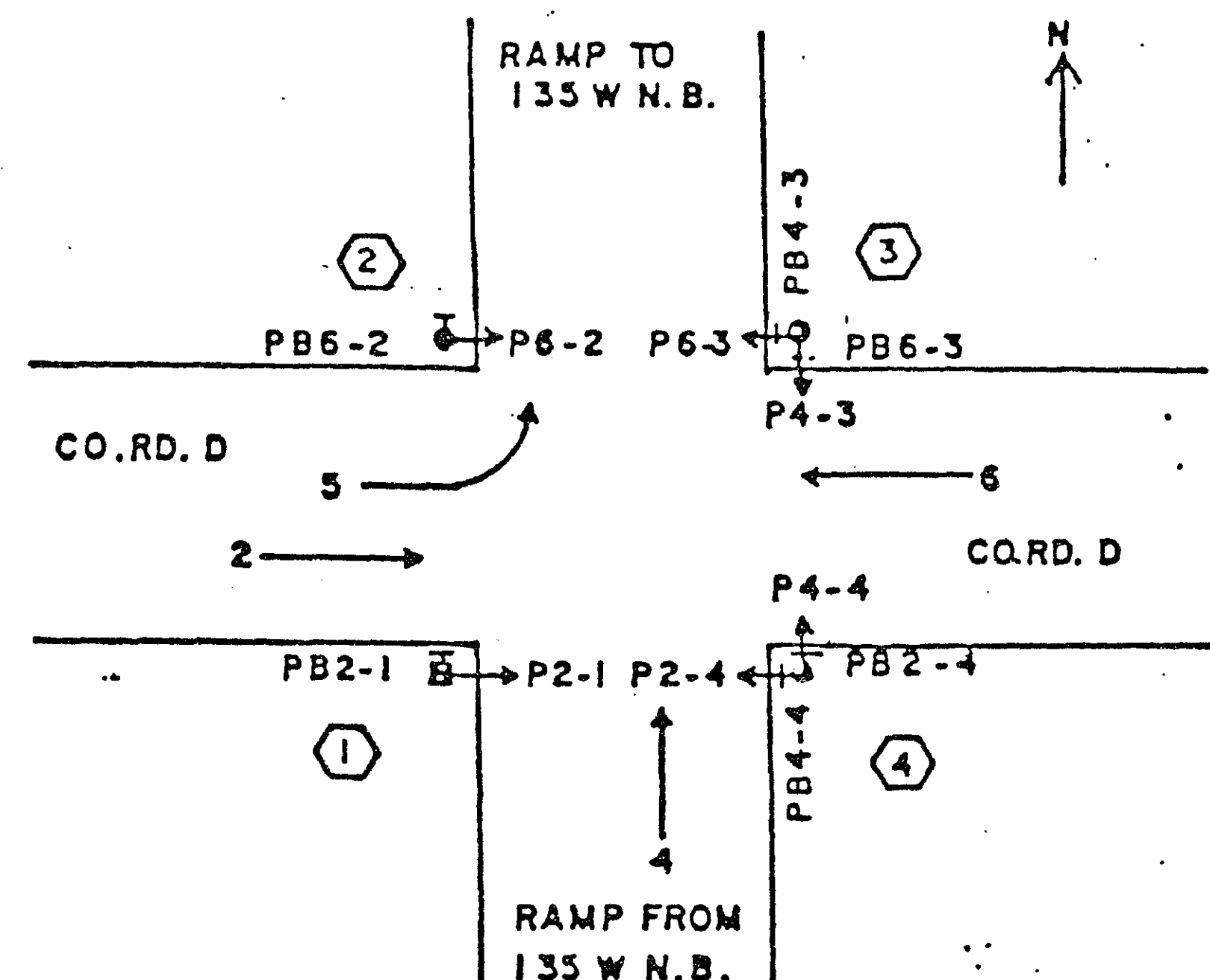
SIGNAL HEADS 2-1 AND 2-4



Fed. Proj. No.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

- ① TYPE 4A PEDESTAL POLE AND BASE PEDESTAL FOUNDATION 1-PEDESTRIAN PUSH BUTTON AND SIGN EXTEND INTO H.H. 11: 3" I.M.C. 1-12/C #12 1-3/C #12

NOTE: ALL ITEMS IDENTIFIED WITH AN ARROW SYMBOL ARE TO BE INSTALLED UNDER THIS PROJECT. ALL OTHER ITEMS ARE IN PLACE. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED EQUIPMENT.

SYSTEM "L" INTERSECTION LAYOUT

I 35 W EAST RAMPS AT CO. RD. D

62810035W02+560E CITY PROJ. NO. 88-17

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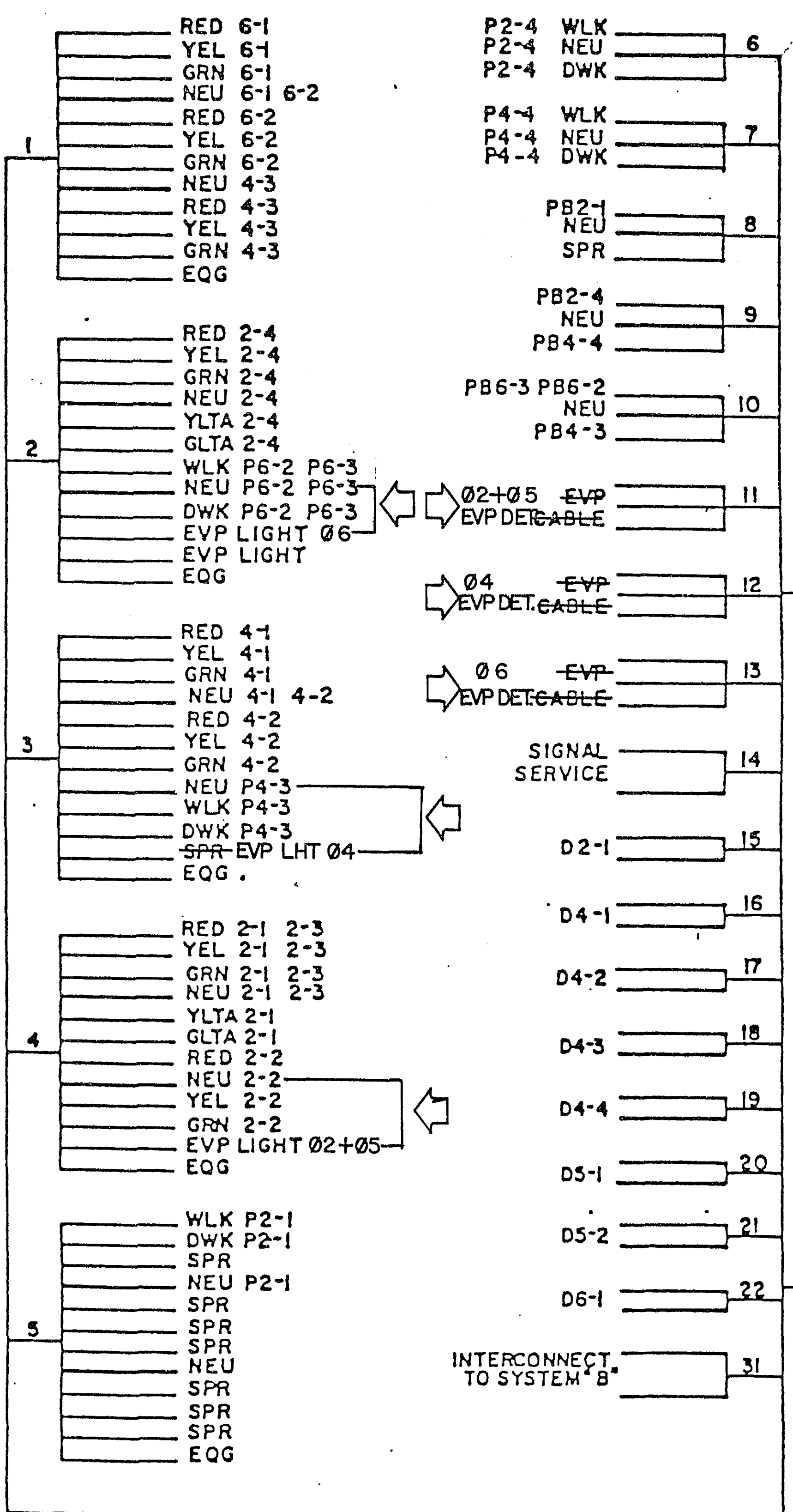
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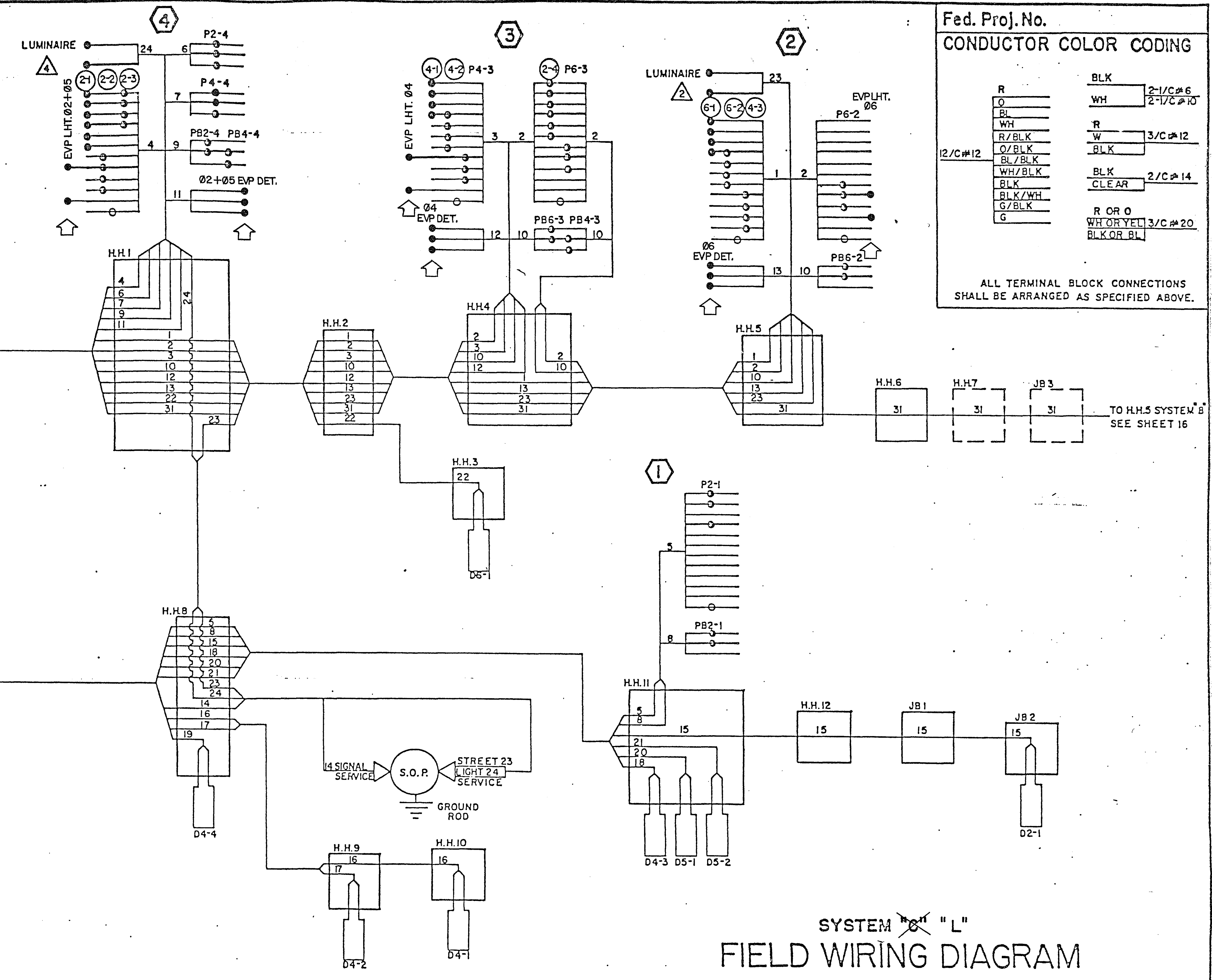
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NUMBER

CONTROLLER CABINET



NOTE: = MAKE CONNECTIONS UNDER THIS PROJECT. ALL OTHER ITEMS ARE INPLACE.



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2 4 V