

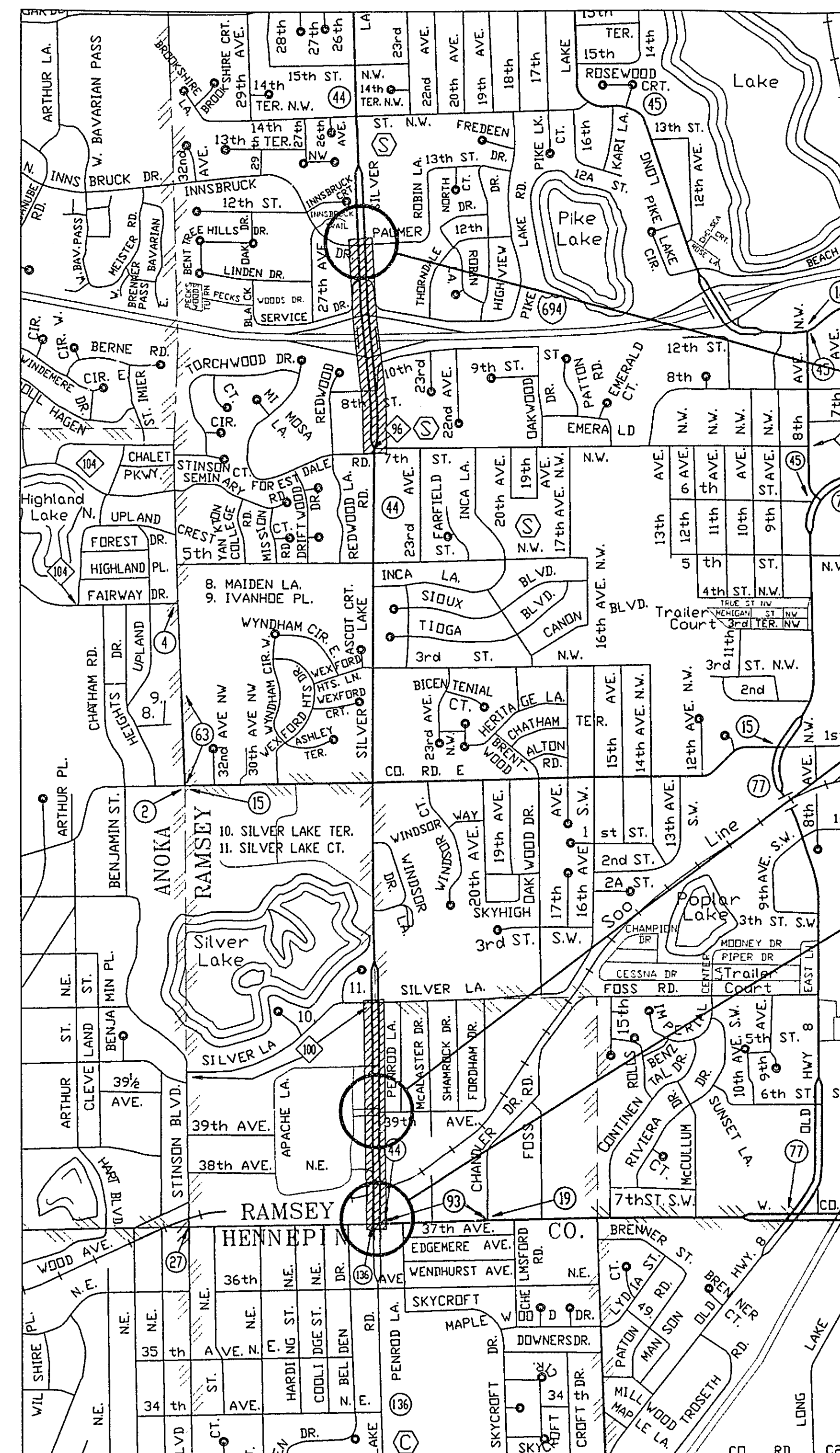
ABBREVIATIONS

3-1 (e.g.)	-SIGNAL HEAD, PHASE "3", NO. "1"
BL	-BLUE
BLK	-BLACK
BLK/WH	-BLACK WITH WHITE TRACER
BL/BLK	-BLUE WITH WHITE TRACER
BR. GR.	-BARE GROUND
CH. SW.	-CHECK SWITCH
CLR	-CLEAR
D2-1 (e.g.)	-DETECTOR, PHASE "2", NO. "1"
DNL	-DOWNLIGHT
DWK	-DON'T WALK
EQG	-EQUIPMENT GROUND
EVP	-EMERGENCY VEHICLE
	PRE-EMPTION
F&d	-FURNISH AND INSTALL
FL	-FLASH/FLASHING
G	-GREEN
GLTA	-GREEN LEFT TURN ARROW
GRN	-GREEN
GRTA	-GREEN RIGHT TURN ARROW
GR.R.	-GROUND ROD
GTHA	-GREEN THROUGH ARROW
G/BLK	-GREEN WITH BLACK TRACER
HPS	-HIGH PRESSURE SODIUM
H.H.	-HANDHOLE
IMC	-INTERMEDIATE METAL CONDUIT
J.B.	-JUNCTION BOX
LTA	-LEFT TURN ARROW
LUM	-LUMINAIRE
MV	-MERCURY VAPOR
NEU	-NEUTRAL
NMC	-NON-METALLIC CONDUIT
O	-ORANGE
O/BLK	-ORANGE WITH BLACK TRACER
P1-1 (e.g.)	-PEDESTRIAN INDICATION, PHASE "1", NO. "1"
PB	-PUSH BUTTON
PB2-1 (e.g.)	-PUSH BUTTON, PHASE "2", NO. "1"
PED	-PEDESTRIAN
P.E.C.	-PHOTOELECTRIC CELL
R	-RED
R&S	-REMOVE AND SALVAGE
RSC	-RIGID STEEL CONDUIT
RTA	-RIGHT TURN ARROW
R/BLK	-REN WITH BLACK TRACER
SPR	-SPARE
STA	-STATION
ST. LHT.	-STREET LIGHT
SW	-SWITCH
SWD	-SWITCHED
S.O.P.	-SOURCE OF POWER
TDW	-TELEPHONE DROP WIRE
WH	-WHITE
WH/BLK	-WHITE WITH BLACK TRACER
WLK	-WALK
YEL	-YELLOW
YLTA	-YELLOW LEFT TURN ARROW
YRTA	-YELLOW RIGHT TURN ARROW
YTHA	-YELLOW THROUGH ARROW

FOR PLANS AND UTILITIES SYMBOLS SEE
MN/DOT TECHNICAL MANUAL.

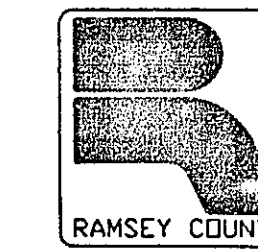
-GOVERNING SPECIFICATIONS-

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT
OF TRANSPORTATION "STANDARD SPECIFICATION
FOR CONSTRUCTION" AS AMENDED BY THE
"SUPPLEMENTAL SPECIFICATIONS" DATED MAY 2, 1994
SHALL APPLY.



DESIGN DESIGNATION

	SILVER LAKE ROAD (CSAH 44)		
	Co. Rd. D to Silver Lane	7th to 1694	1694 to Palmer Dr
PRESENT ADT (1995)	14,300	20,000	21,400
PROJECTED ADT (2015)	17,200	24,000	25,700
FUNCTIONAL CLASSIFICATION	HIGH DENSITY ARTERIAL	HIGH DENSITY ARTERIAL	HIGH DENSITY ARTERIAL
TRAFFIC LANES	4	4	4
PARKING LANES	0	0	0
DESIGN SPEED	35	40	40



RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM & INTERCONNECT

S.A.P. No. 62-644-18 SIGNAL SYSTEMS B,K
62-644-20 SIGNAL SYSTEM A

SILVER LAKE RD. & COUNTY RD. D (37th AVE).....SYSTEM A
SILVER LAKE RD. & 39th AVE N.E.....SYSTEM B
SILVER LAKE RD. & PALMER DR.
(N. INNSBRUCK DR.).....SYSTEM K

SYSTEM K
SILVER LAKE RD. & PALMER DR.
(N. INNSBRUCK DR.)

DENOTES INTERCONNECT

SYSTEM B
SILVER LAKE RD. & 39th AVE N.E.

SYSTEM A
SILVER LAKE RD & COUNTY RD D

INDEX

SHEET NO.	DESCRIPTION
1	TITLE
2-3	ESTIMATED QUANTITIES & DETAILS
4-6	SYSTEM A
4-11	SYSTEM B
12-16	SYSTEM K
17-21	INTERCONNECT
22	MAST ARM SIGNS
23-30	UTILITIES & CONSTRUCTION

DESIGN SQUAD R. Allen DATE 10/13/94
DRAWN BY _____ DATE _____
CHECKED BY _____ DATE _____

RAMSEY COUNTY

RECOMMENDED FOR APPROVAL R. Allen LKF DATE 10-13-94
CONST. ENGR.
RECOMMENDED FOR APPROVAL KMR DLR DATE 10/13/94
DESIGN ENGR.
RECOMMENDED FOR APPROVAL Terry Norman DATE 10-13-94
ENVR.
RECOMMENDED FOR APPROVAL Daniel G. Schacht DATE 10/13/94
MAINT. ENGR.
RECOMMENDED FOR APPROVAL T. M. M. M. DATE 10/13/94
PLANNED
RECOMMENDED FOR APPROVAL J. A. B. DATE 10/13/94
R.O.W. ENGR.
RECOMMENDED FOR APPROVAL D. E. S. DATE 10/13/94
TRAFFIC ENGR.
RECOMMENDED W. E. S. DATE 10-13-94
SPECIAL PROJECTS ENGR.
RECOMMENDED _____ DATE _____
PROGRAM ENGR.
RECOMMENDED _____ DATE _____
ASSISTANT COUNTY ENGR.

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.

Daniel E. Soler REG. NO. 20452 DATE 10/13/94

RECOMMENDED FOR APPROVAL R. Allen DATE 10/13/94
COUNTY ENGINEER
APPROVED Hal M. M. DATE 9/12/95
CHAIR OF THE RAMSEY COUNTY BOARD
APPROVED M. J. M. DATE 1/23/95
CITY OF ST. ANTHONY
APPROVED Leslie P. M. DATE 2-3-95
CITY OF NEW BRIGHTON
APPROVED _____ DATE _____
CITY OF _____
APPROVED James A. M. DATE 1/10/95
HENNEPIN COUNTY ENGINEER

PLAN REVISIONS		
DATE	SHEET NO. & DESCRIPTION	BY
10/13/94	STAFF REVIEW	R. Allen

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL _____ DATE _____
STATE AID PLANS & SPEC. ENGR.
RECOMMENDED FOR APPROVAL Wayne M. M. DATE 5/4/95
METRO DIVISION OF STATE AID
RECOMMENDED FOR APPROVAL Michael J. M. DATE 5/30/95
TRAFFIC ENGINEER

APPROVED Paul J. M. DATE 5/31/95
STATE AID ENGINEER

S.A.P. No. 147-116-07 & 147-020-21 28-176
S.A.P. No. 62-644-18, 62-644-20 Sheet No. 1 of 30 Sheets

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
* 7035 J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
* 7036 D	PEDESTRIAN CURB RAMP
* 7100 G	CONCRETE CURB AND GUTTERS (DESIGN B & DESIGN V)
7103 C	PRECAST CONCRETE CURB
* 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
* 8117 F	PRECAST CONCRETE HANDHOLE
8118 C	SERVICE EQUIPMENT & POLE, TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 J	POLE FOUNDATION (P80 & P90)
8121 C	TRANSFORMER BASE WITH POLE BASE PLATE
8222 C	PEDESTAL AND PEDESTAL BASE
* 8123 C	POLE AND MAST ARM (LUMINAIRE AND TRAFFIC LIGHTS)
* 8124 D	MAST ARM SIGNAL HEAD MOUNTS
8126 E	P-100 POLE FOUNDATION
* 8130 D	SAW CUT LOOP DETECTORS

* STANDARD PLATES APPLICABLE TO THIS PROJECT

NOTES:

AREA PROPERTY OWNERS, OWN AND MAINTAIN UNDERGROUND SPRINKLER SYSTEMS ADJACENT TO EXISTING ROADWAYS AND ENTRANCES. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO MINIMIZE DAMAGE THERETO AND SHALL INFORM PROPERTY OWNERS WHEN HIS OPERATIONS WILL AFFECT THEIR SPRINKLER SYSTEMS.

STATEMENT OF ESTIMATED QUANTITIES										
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION (%)						
				RAMSEY CO. 62-644-18	RAMSEY CO. 62-644-20	ST. ANTHONY XXX-XXX-XX		NEW BRIGHTON 147-116-07 147-020-21		
						LOCAL			LOCAL	
2564.531	F&I SIGN PANELS TYPE D	SQ. FT.	133	100	0	0	0	0	0	
0565.601	REVISE EMERGENCY VEHICLE PRE-EMPTION SYS K	L. SUM	1	0	0	0	0	25	50	
0565.601	TRAFFIC CONTROL INTERCONNECTION (TIMING)	L. SUM	1	100	0	0	0	0	0	
0565.601	TRAFFIC CONTROL INTERCONNECTION (EQUIPMENT)	L. SUM	1	100	0	0	0	0	0	
0565.602	HANDHOLE TYPE C (INTERCONNECT)	EACH	9	100	0	0	0	0	0	
0565.602	JUNCTION BOX (INTERCONNECT)	EACH	2	100	0	0	0	0	0	
0565.603	3" RIGID STEEL CONDUIT (BRIDGE MOUNTED) INTERCONNECT	L.F.	150	100	0	0	0	0	0	
0565.603	2" NON-METALLIC CONDUIT (INTERCONNECT)	L.F.	1750	100	0	0	0	0	0	
0565.603	6/C FIBER OPTIC CABLE (INTERCONNECT)	L.F.	6240	100	0	0	0	0	0	
0565.604	REVISE SIGNAL SYSTEM A	SYSTEM	1	0	100	0	0	0	0	
0565.604	REVISE SIGNAL SYSTEM B	SYSTEM	1	50	0	0	50	0	0	
0565.604	REVISE SIGNAL SYSTEM K	SYSTEM	1	50	0	0	0	25	0	

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.
Daniel E. Soler
Date 2/20/95 Reg. No. 20452

ESTIMATED QUANTITIES
& DETAILS

S.A.P. No. 147-116-07 & 147-020-21 28-176

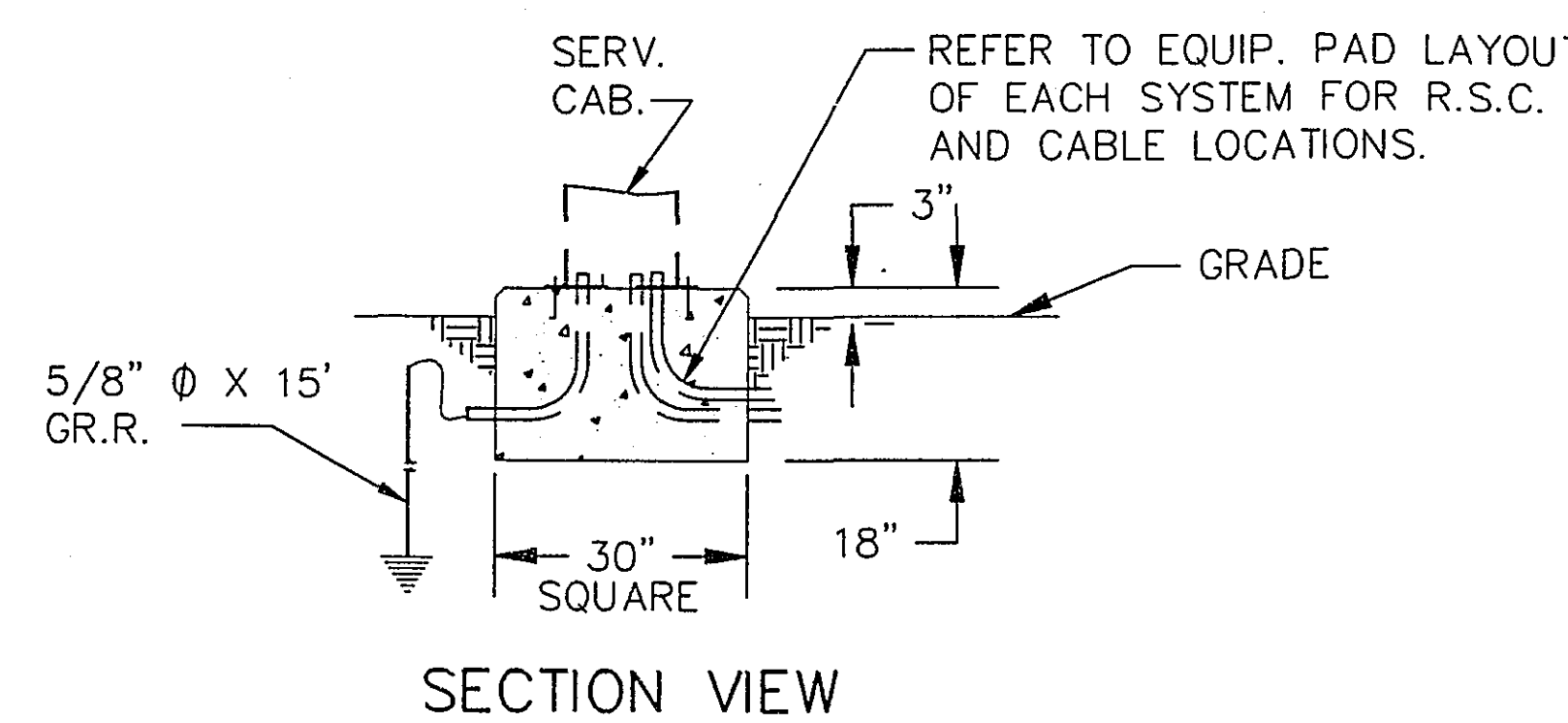
S.A.P. No. 62-644-18 ,62-644-20 Sheet No. 2 of 30 Sheets

SERVICE PAD FOUNDATION

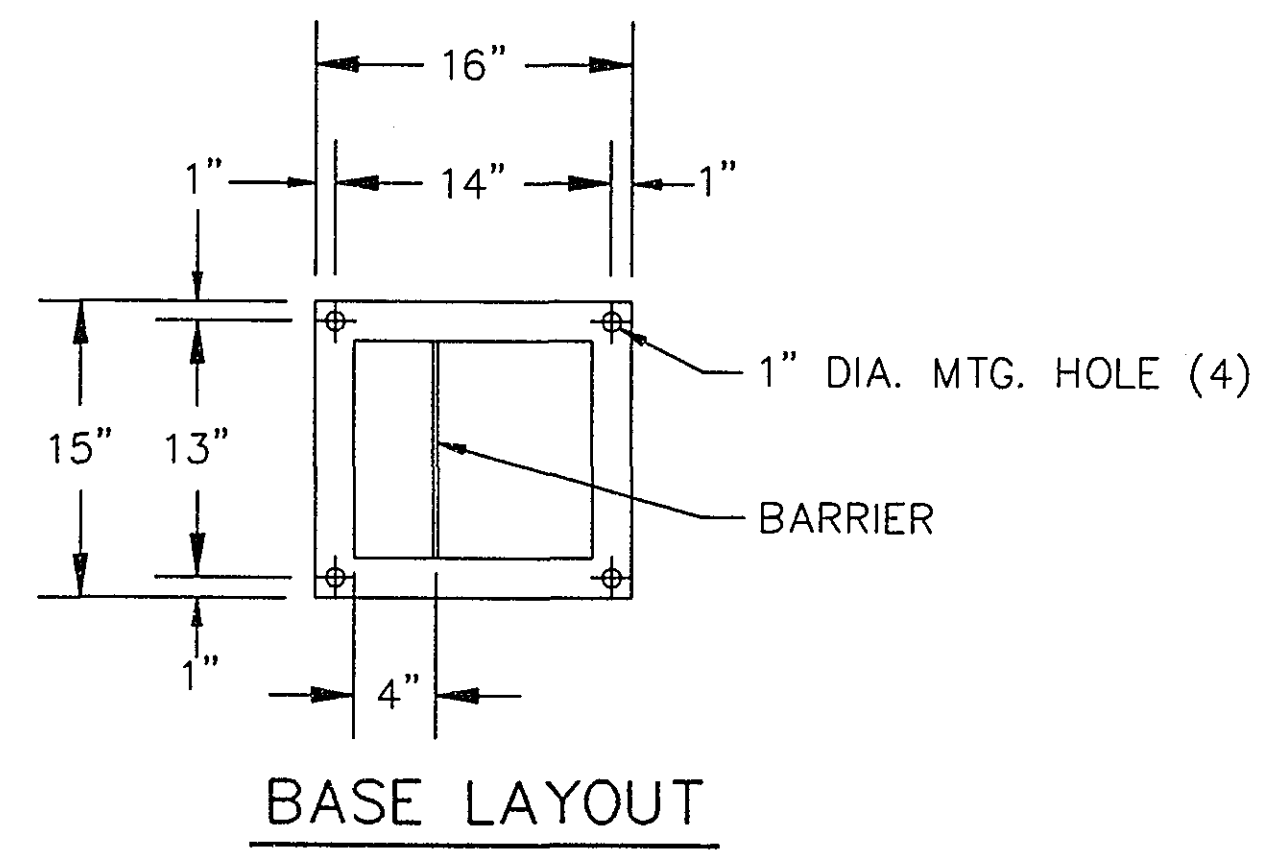
SERVICE PAD LAYOUTS

NOTES:

- 1. ANCHOR RODS, NUTS AND WASHERS PER MN/DOT 3385 OR APPROVED EQUAL SET AS RECOMMENDED BY CABINET MANUFACTURER (NUMBER, SIZE AND LENGTH OF ANCHOR RODS) SHALL BE AS REQUIRED BY THE CABINET (MANUFACTURER).
- 2. UPPER PART OF FOUNDATION SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER IN THE FIELD.
- 3. TOP OF CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED). CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER BUT SHALL NOT INTERFERE WITH CABINET FUNCTIONS.
- 4. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR FOUNDATION.
- 5. CONDUITS WHICH HAVE BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
- 6. EXACT LOCATIONS OF CONDUIT WITHIN THE PAD SHALL BE AS DETERMINED BY THE ENGINEER IN THE FIELD.
- 7. REFER TO EQUIPMENT PAD LAYOUT OF EACH SYSTEM FOR FOUNDATION SIZE, CONDUIT PLACEMENT AND EQUIPMENT TO BE INSTALLED.



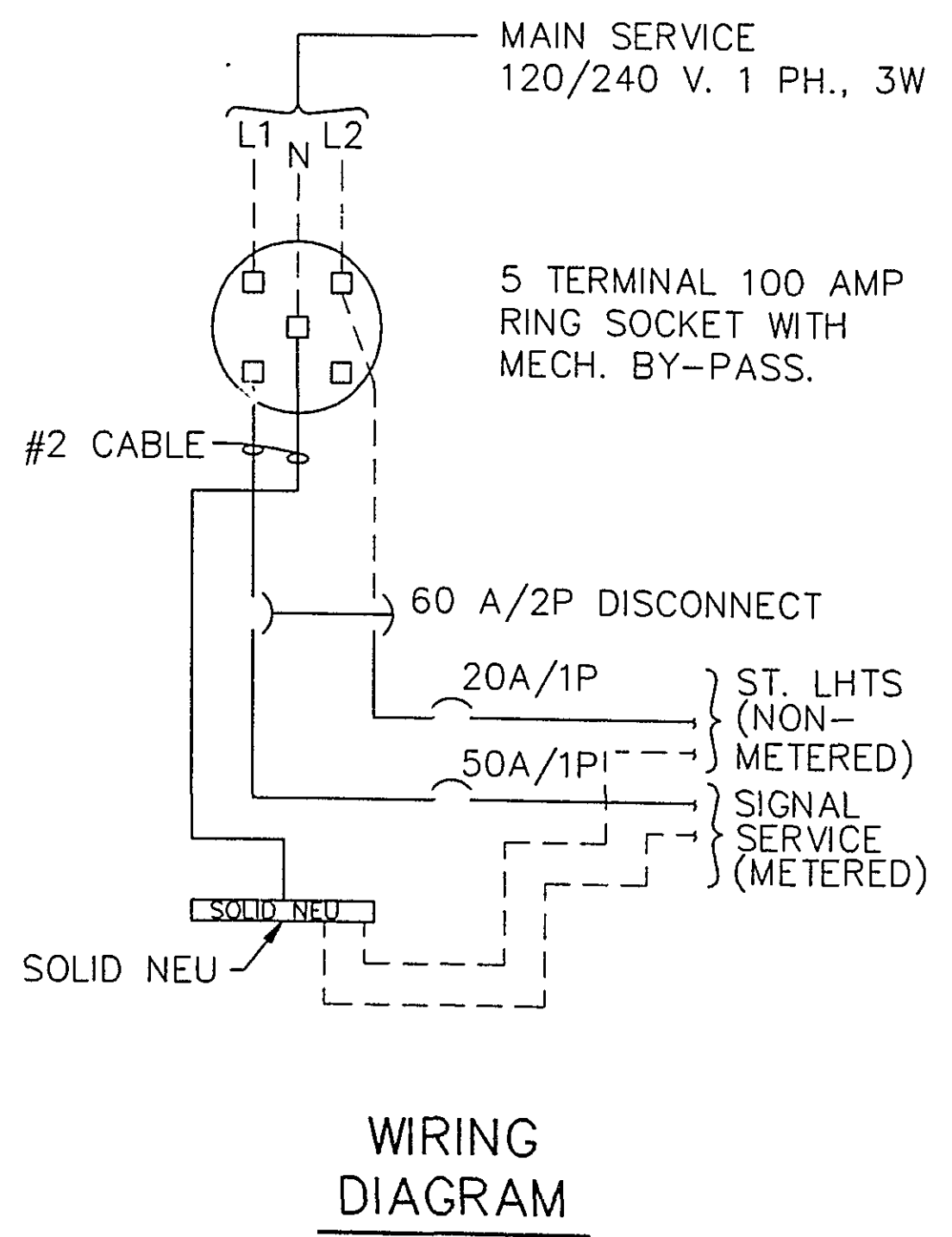
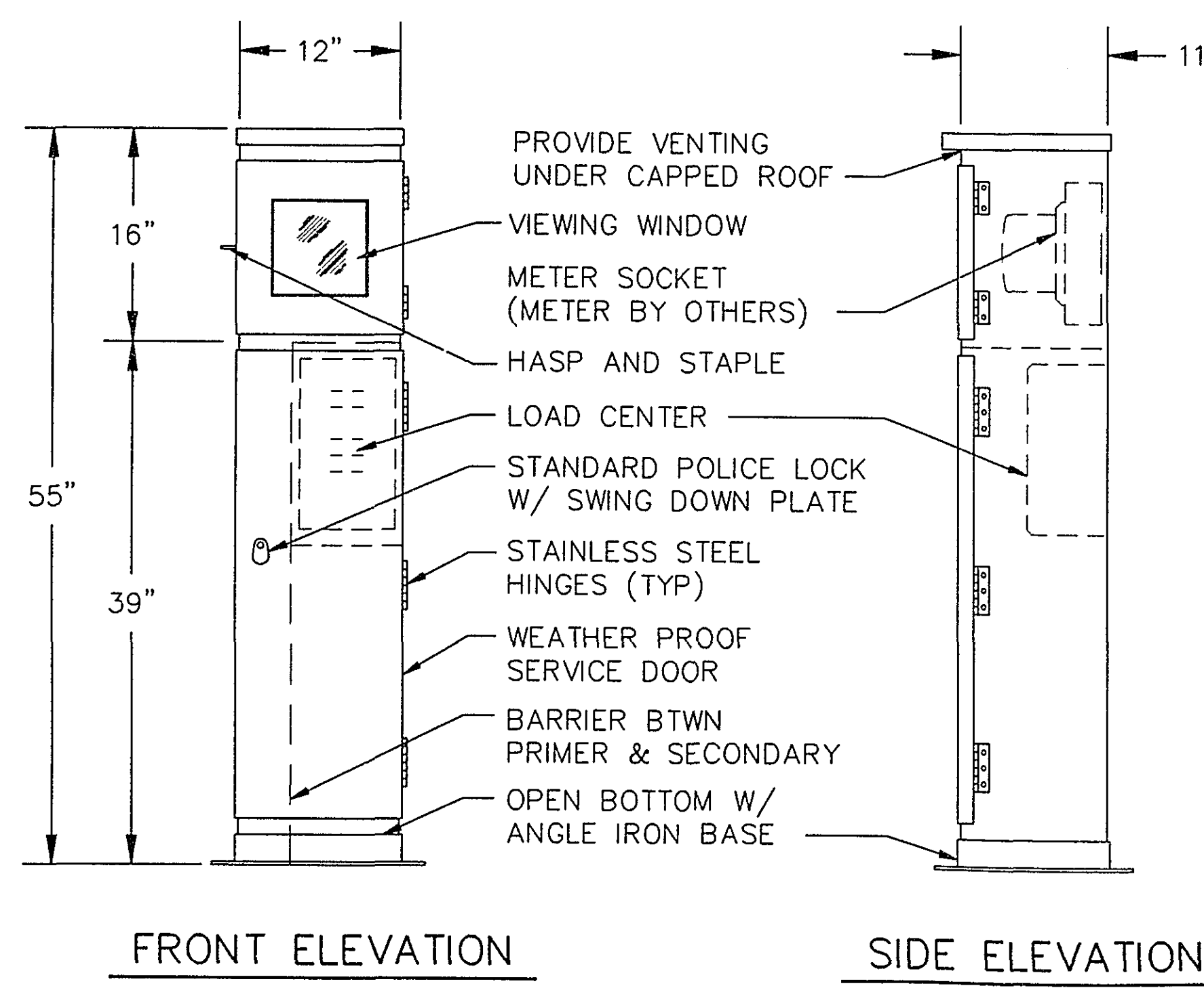
SERVICE CABINET DETAILS



NOTES:

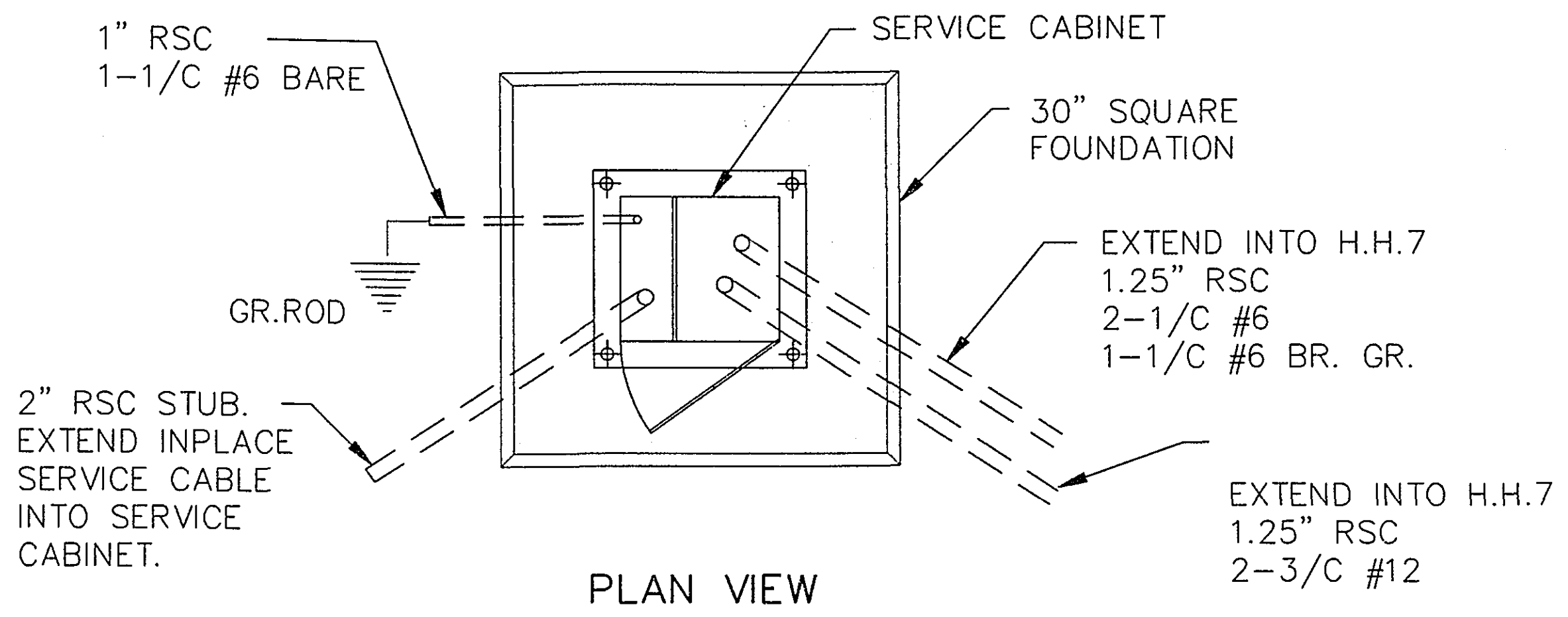
PEDESTAL SHALL BE FABRICATED FROM 0.125 INCH ALUMINUM WITH WELDED SEAMS FOR USE AS AN OUTDOOR WEATHER PROOF SERVICE.
DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKET.
ALL HINGES, HINGE PINS AND LOCKS SHALL BE MADE FROM NON-CORRODING MATERIALS.
THE VIEWING WINDOW SHALL BE LEXAN MATERIAL - 7" X 7" MIN.
THE PEDESTAL CABINET SHALL BE PROTECTED INSIDE AND OUT WITH A ANODIC COATING. SEE SPECIAL PROVISIONS.

ANCHOR RODS, NUTS & WASHERS - SEE SERVICE PAD FOUNDATION NOTE No. 1.



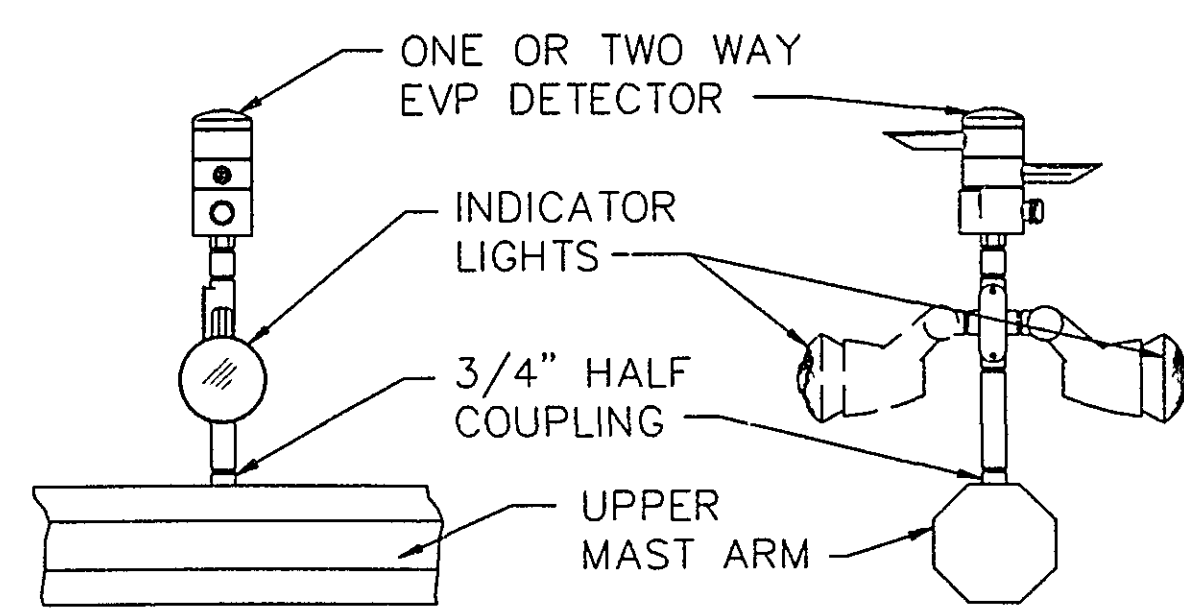
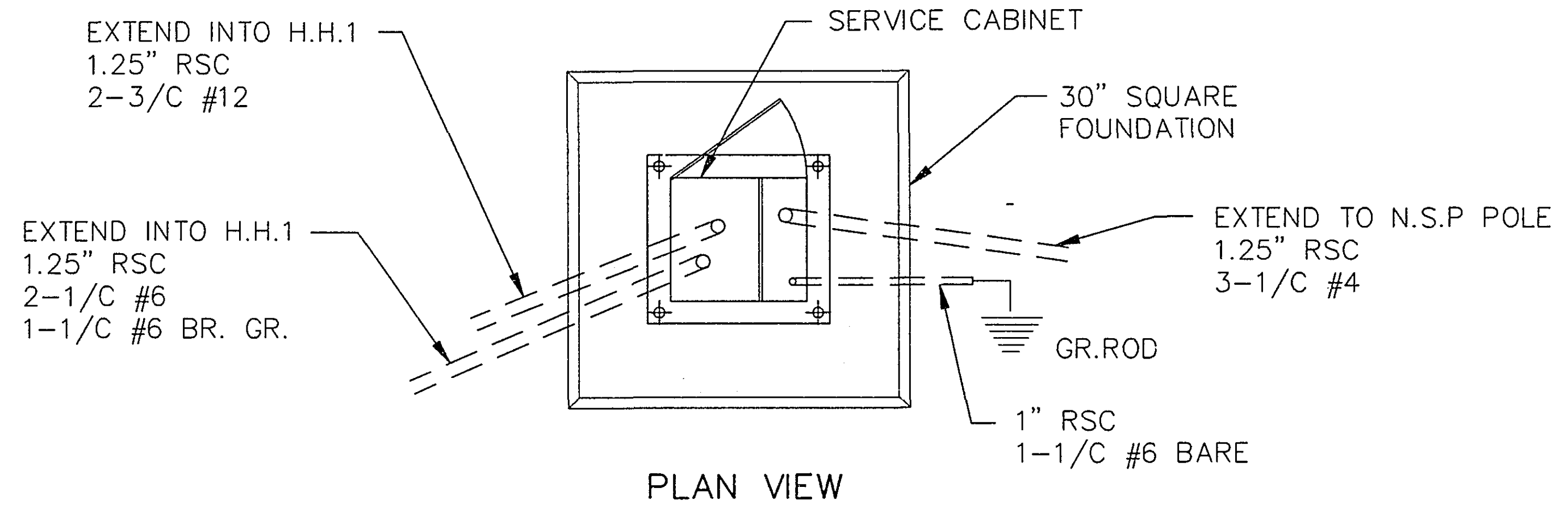
SYSTEM B

SILVER LAKE RD & 39th AVE N.E.



SYSTEM K

SILVER LAKE RD & PALMER DR. (N. INNSBRUCK DR.)

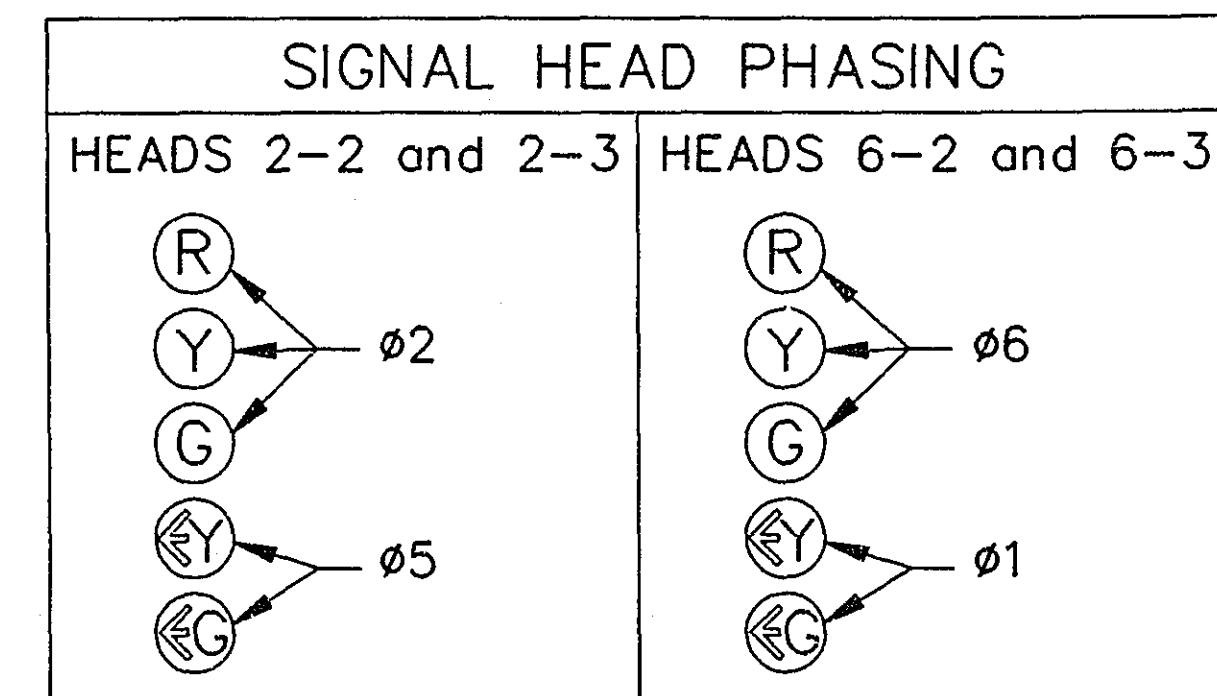


EVP DETECTOR & LIGHT MOUNTING DETAIL ON MAST ARM

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.
Daniel E. Sohn
Date 3/30/95 Reg. No. 20452

REVISED

SIGNAL INDICATION CHART						
FACE	PHASE	INDICATION SIZE				
2-1	2	12"	12"	12"	12"	12"
2-2	2 and 5	12"	12"	12"	12"	12"
2-3	2 and 5	12"	12"	12"	12"	12"
2-4	2	12"	12"	12"	12"	12"
3-1	3	12"	12"	12"	12"	12"
3-2	3	12"	12"	12"	12"	12"
3-3	3	12"	12"	12"	12"	12"
6-1	6	12"	12"	12"	12"	12"
6-2	1 and 6	12"	12"	12"	12"	12"
6-3	1 and 6	12"	12"	12"	12"	12"
6-4	6	12"	12"	12"	12"	12"
4-1	4	12"	12"	12"	12"	12"
4-2	4	12"	12"	12"	12"	12"
4-3	4	12"	12"	12"	12"	12"



SIGNING

▶ OVERHEAD TYPE D SIGNING IS INPLACE AND SHALL REMAIN INPLACE.

▶ R&S OVERHEAD TYPE R10-12 SIGNS ON MAST

▶ ARM POLES 1 & 3.

▶ R&S INPLACE PEDESTRIAN PUSH BUTTON SIGNS

▶ F&I NEW SIGNS TYPE R10-4b (6"x10")

▶ WITH SYMBOL MESSAGE.

REVISED

SIGNAL SYSTEM OPERATION

THE SIGNAL SYSTEM FLASH MODE IS ALL RED.

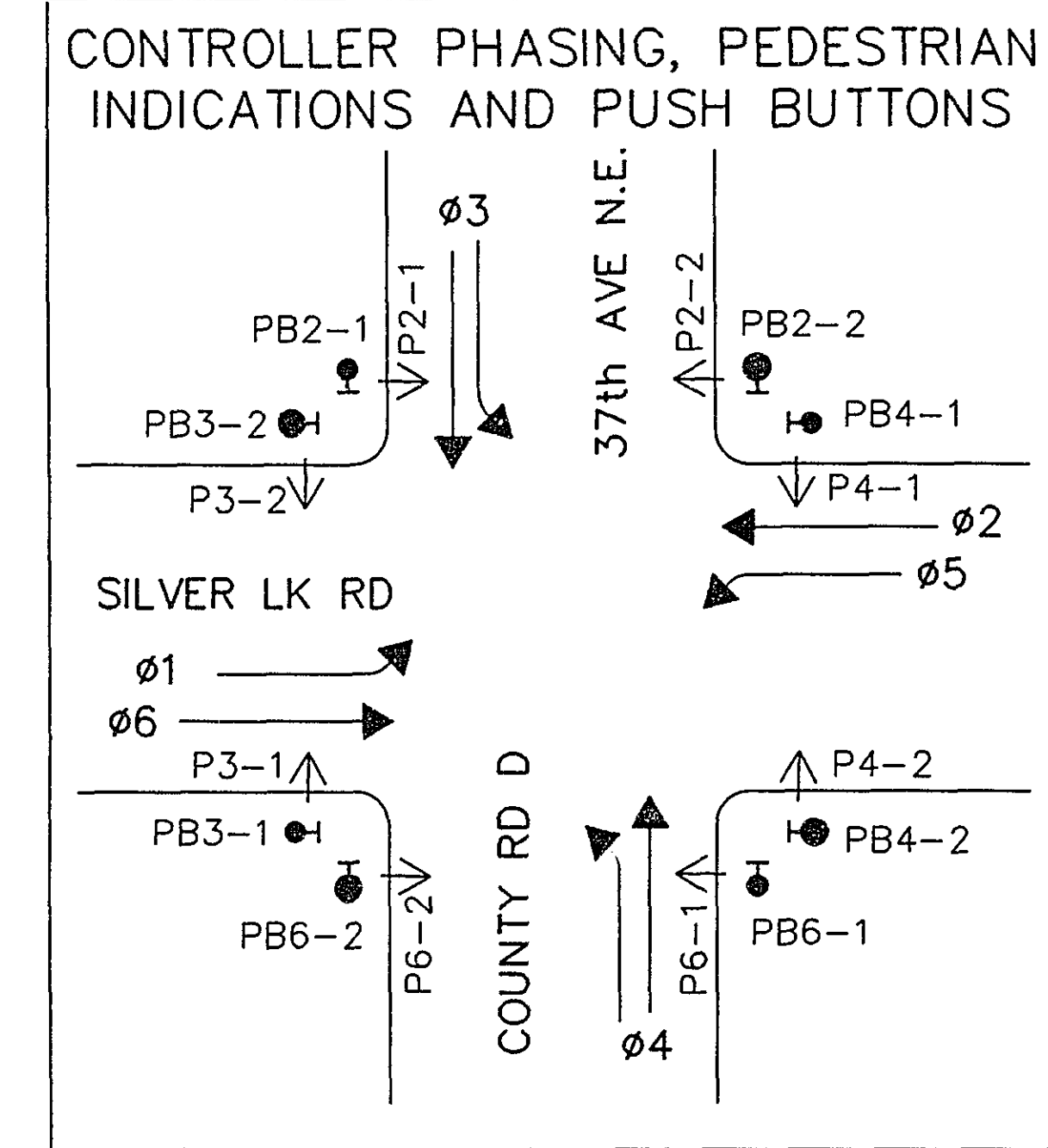
PHASES 1, AND 5 ARE PROTECTED/PERMISSIVE LEFT TURNS.

PHASES 1, AND 5 ARE NON-LOCK DETECTION

PHASES 2, 3, 4 AND 6 ARE LOCK DETECTION

PHASES 2 AND 6 ARE ON VEHICLE RECALL.

REVISED



REVISED

VEHICLE DETECTION			
NO.	SIZE	FUNCTION	LOCATION
D1-1	6'X20'	C&E (TD)	0'
D1-2	6'X20'	E	40'
D2-1	6'X6'	C&E	240'
D2-2	6'X6'	C&E	240'
D2-3	2-6'X10'	C	0'
D3-1	2-6'X6'	C&E	240'
D3-2	2-6'X6'	C&E	75'
D3-3	2-6'X10'	C&E	0'
D4-1	2-6'X6'	C&E	250'
D4-2	2-6'X6'	C&E	75'
D4-3	2-6'X10'	C&E	0'
D5-1	6'X40'	C&E (TD)	0'
D5-2	6'X25'	E	80'
D6-1	6'X6'	C&E	240'
D6-2	6'X6'	C&E	240'
D6-3	2-6'X10'	C	0'
D1	6'X6'	COUNT	SEE PLAN
D2	6'X6'	COUNT	SEE PLAN

C&E = CALL & EXTEND
C = CALL ONLY
E = EXTEND ONLY
(TD) = TIME DELAYED

2

P90-A-35-T30-10
LUMINAIRE-200 WATT HPS AT 350'
ONE WAY SIGNAL - OVERHEAD
▶ TYPE 20C - POLE MOUNTED 270'
▶ REVISE (4-3) 5-SEC TO 3-SEC
1-PEDESTRIAN PUSH BUTTON AT 270'
EXTEND INTO H.H. 7
3" RSC
2-12/C #12
4-3/C #12
1-3/C #20
2-1/C #10

HENNEPIN COUNTY
ST. ANTHONY

A

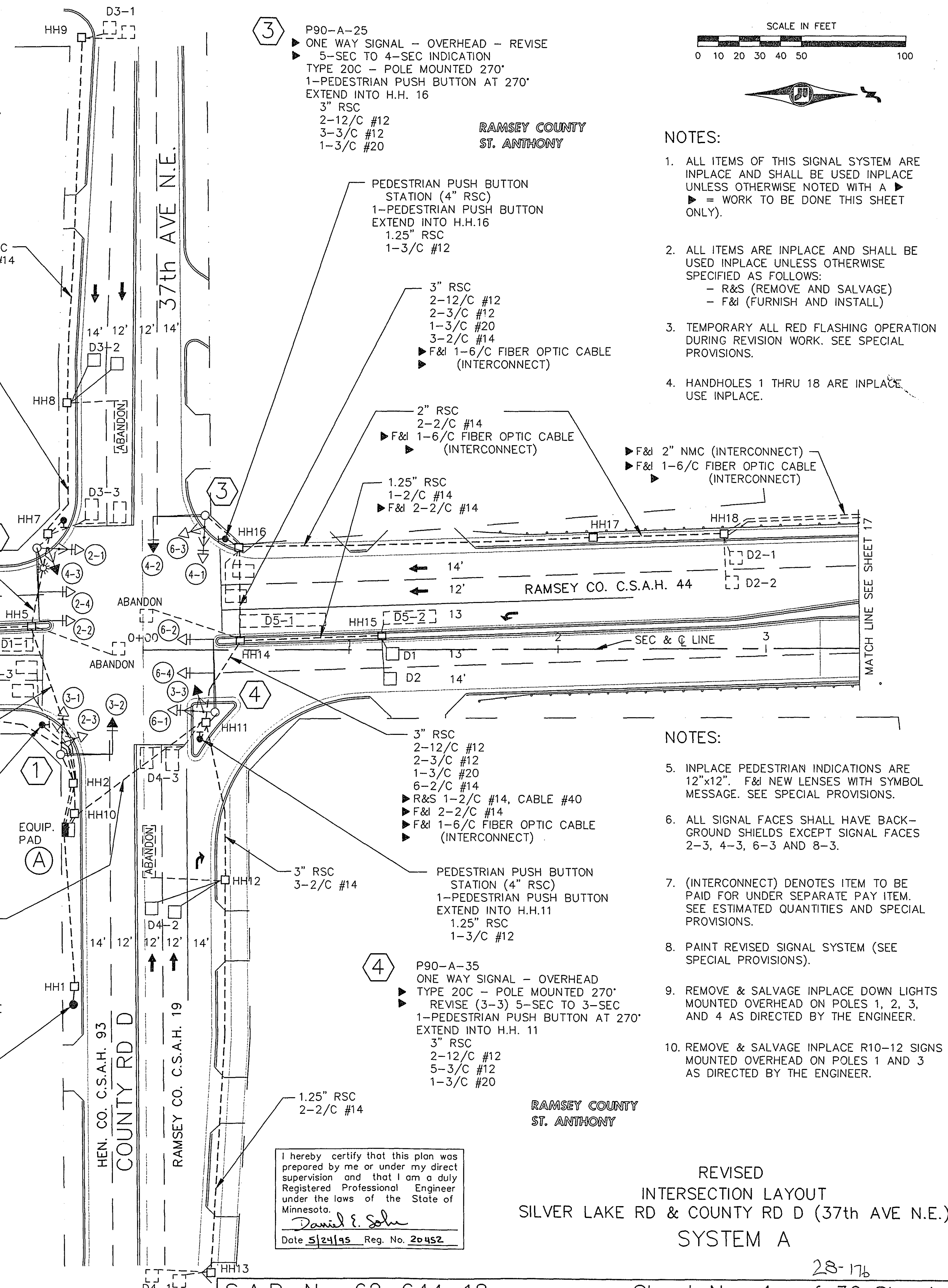
EQUIPMENT PAD
7-GUARD POSTS & FOUNDATIONS
SERVICE CABINET
EXTEND INTO H.H.1
1.25" RSC
3-1/C #6
EXTEND INTO H.H.2
1.25" RSC
2-1/C #10
CONTROLLER CABINET
EXTEND INTO H.H.2
4" RSC
4-12/C #12
5-3/C #12
2-3/C #20
10-2/C #14
EXTEND INTO H.H.10
4" RSC
4-12/C #12
4-3/C #12
2-3/C #20
10-2/C #14
▶ R&S 1-2/C #14 CABLE #40
▶ F&I 2-2/C #14
▶ F&I 1-6/C FIBER OPTIC CABLE (INTERCONNECT)
BETWEEN H.H.2 & H.H.10
3" RSC
BETWEEN SERVICE AND CONTROLLER CABINET
1.25" RSC
2-1/C #6
1-1/C #6 (BARE)

1

P90-A-25
▶ ONE WAY SIGNAL - OVERHEAD - REVISE
▶ 5-SEC TO 4-SEC INDICATION
▶ P.E.C. (DNL) INPLACE - R&S
TYPE 20C - POLE MOUNTED 270'
1-PEDESTRIAN PUSH BUTTON AT 270'
EXTEND INTO H.H. 2
3" RSC
2-12/C #12
5-3/C #12
1-3/C #20

S.O.P. - (POWER POLE INPLACE)
1.25" RSC RISER WITH WEATHER HEAD
EXTEND INTO H.H.1
1.25" RSC
3-1/C #6

HENNEPIN COUNTY
ST. ANTHONY



3

P90-A-25
▶ ONE WAY SIGNAL - OVERHEAD - REVISE
▶ 5-SEC TO 4-SEC INDICATION
TYPE 20C - POLE MOUNTED 270'
1-PEDESTRIAN PUSH BUTTON AT 270'
EXTEND INTO H.H. 16
3" RSC
2-12/C #12
3-3/C #12
1-3/C #20

RAMSEY COUNTY
ST. ANTHONY

PEDESTRIAN PUSH BUTTON
STATION (4" RSC)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.16
1.25" RSC
1-3/C #12

3" RSC
2-12/C #12
2-3/C #12
1-3/C #20
3-2/C #14
▶ F&I 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

2" RSC
2-2/C #14
▶ F&I 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

1.25" RSC
1-2/C #14
▶ F&I 2-2/C #14

▶ F&I 2" NMC (INTERCONNECT)
▶ F&I 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

3" RSC
2-12/C #12
2-3/C #12
1-3/C #20
6-2/C #14
▶ R&S 1-2/C #14, CABLE #40
▶ F&I 2-2/C #14
▶ F&I 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

PEDESTRIAN PUSH BUTTON
STATION (4" RSC)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.11
1.25" RSC
1-3/C #12

4

P90-A-35
▶ ONE WAY SIGNAL - OVERHEAD
▶ TYPE 20C - POLE MOUNTED 270'
▶ REVISE (3-3) 5-SEC TO 3-SEC
1-PEDESTRIAN PUSH BUTTON AT 270'
EXTEND INTO H.H. 11
3" RSC
2-12/C #12
5-3/C #12
1-3/C #20

RAMSEY COUNTY
ST. ANTHONY

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.
Daniel E. Solm
Date 5/24/95 Reg. No. 20452

NOTES:

1. ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH A ▶ = WORK TO BE DONE THIS SHEET ONLY).
2. ALL ITEMS ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE SPECIFIED AS FOLLOWS:
- R&S (REMOVE AND SALVAGE)
- F&I (FURNISH AND INSTALL)
3. TEMPORARY ALL RED FLASHING OPERATION DURING REVISION WORK. SEE SPECIAL PROVISIONS.
4. HANDHOLES 1 THRU 18 ARE INPLACE USE INPLACE.

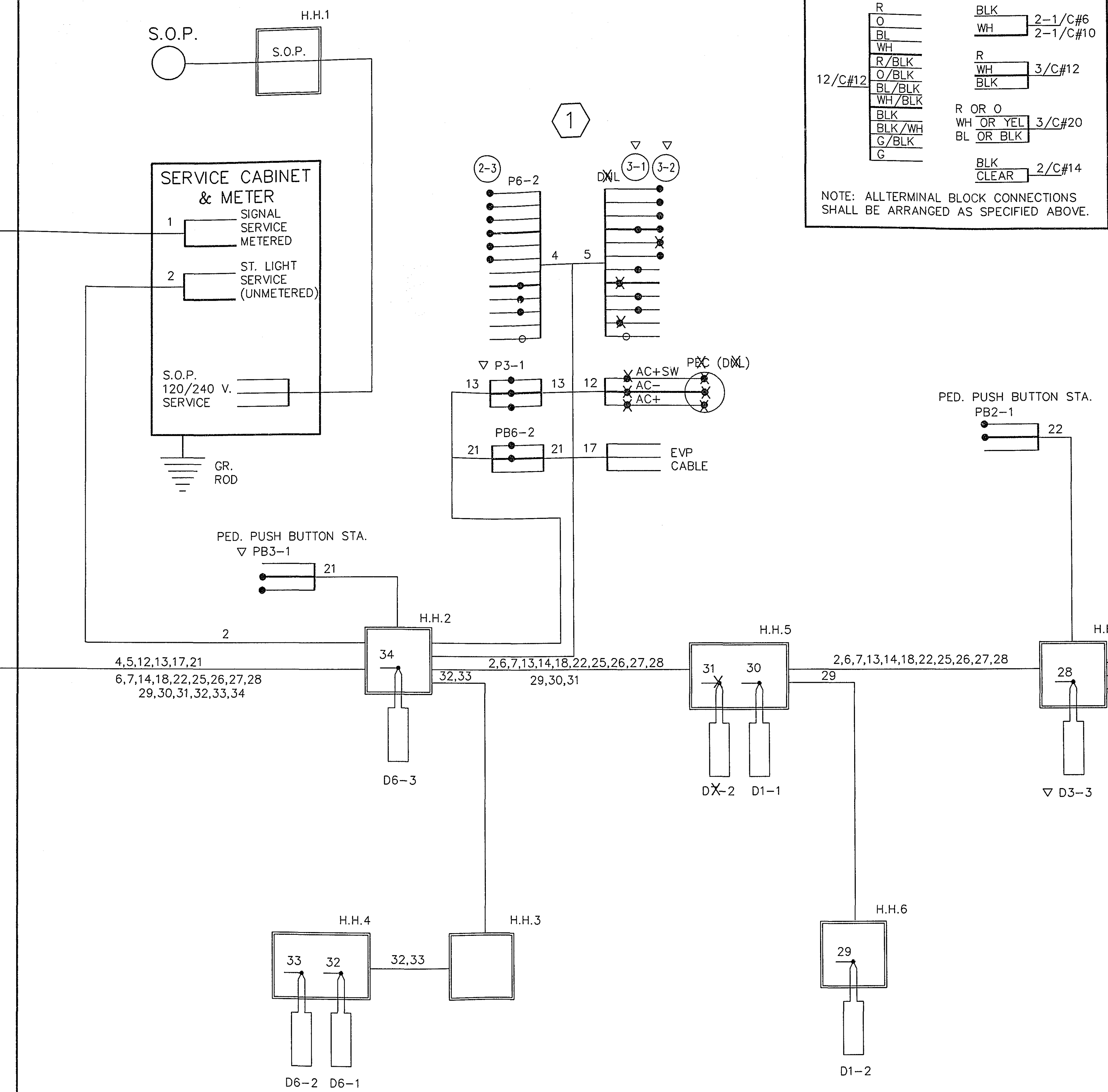
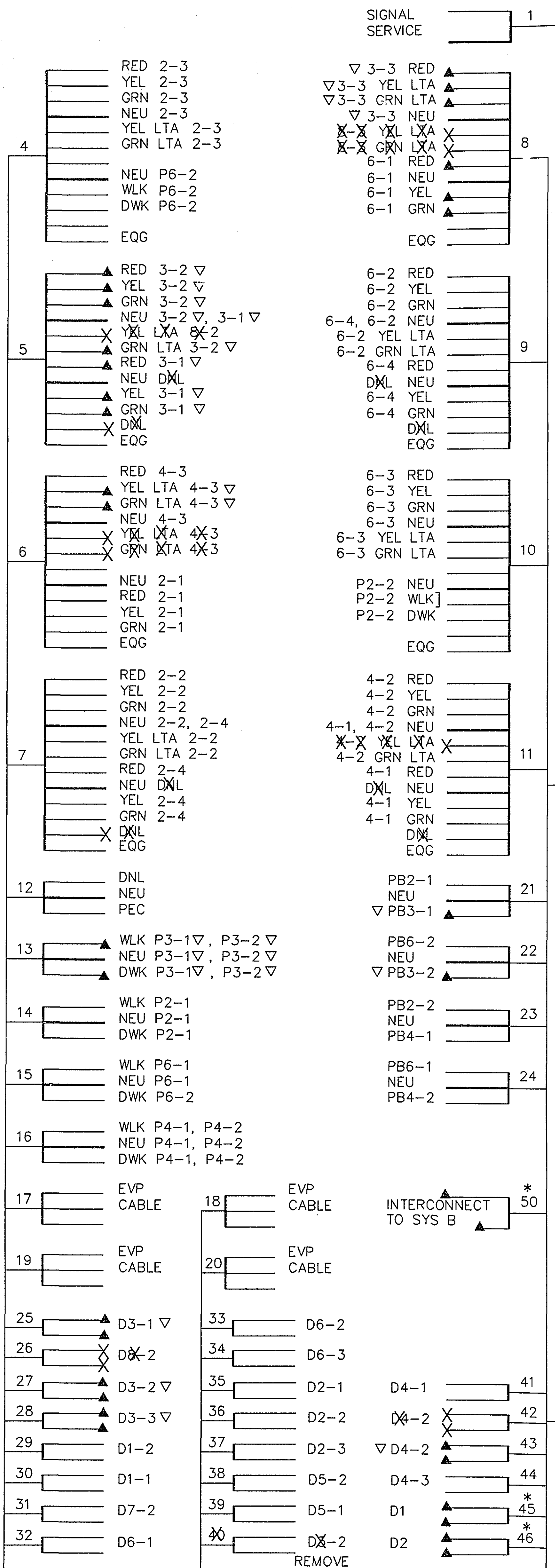
NOTES:

5. INPLACE PEDESTRIAN INDICATIONS ARE 12"x12". F&I NEW LENSES WITH SYMBOL MESSAGE. SEE SPECIAL PROVISIONS.
6. ALL SIGNAL FACES SHALL HAVE BACK-GROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
7. (INTERCONNECT) DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
8. PAINT REVISED SIGNAL SYSTEM (SEE SPECIAL PROVISIONS).
9. REMOVE & SALVAGE INPLACE DOWN LIGHTS MOUNTED OVERHEAD ON POLES 1, 2, 3, AND 4 AS DIRECTED BY THE ENGINEER.
10. REMOVE & SALVAGE INPLACE R10-12 SIGNS MOUNTED OVERHEAD ON POLES 1 AND 3 AS DIRECTED BY THE ENGINEER.

REVISED
INTERSECTION LAYOUT
SILVER LAKE RD & COUNTY RD D (37th AVE N.E.)
SYSTEM A

28-176

CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

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

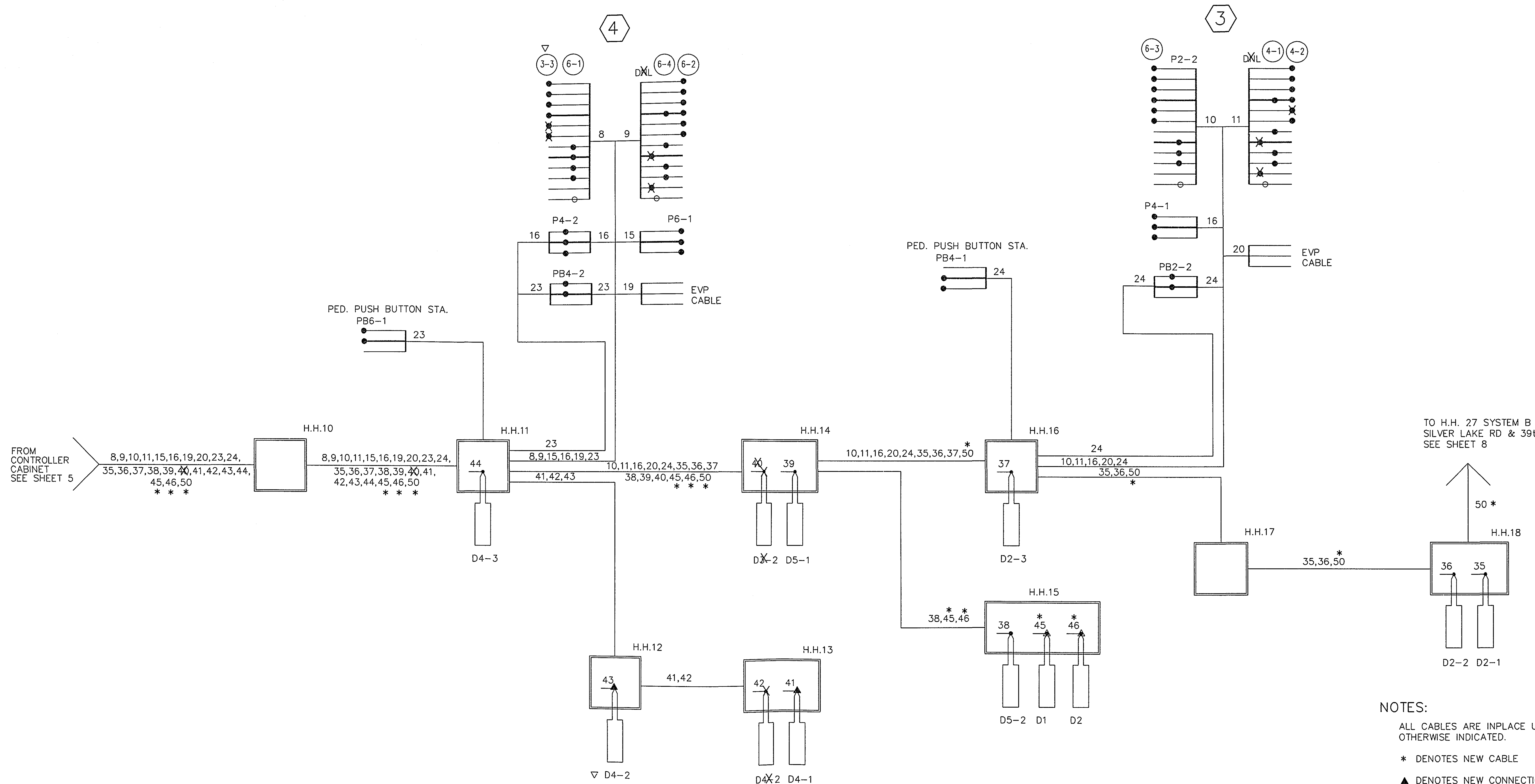
NOTES:

- ALL CABLES ARE IN PLACE UNLESS OTHERWISE INDICATED.
- * DENOTES NEW CABLE
- ▲ DENOTES NEW CONNECTION
- ▽ RELABEL AS DIRECTED
- X REMOVE CONNECTION

REVISED
FIELD WIRING DIAGRAM
SILVER LAKE RD. & COUNTY ROAD D (37th AVE N.E.)
SYSTEM A

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.

Daniel E. Selu
Date 5/24/95 Reg. No. 20452



NOTES:

ALL CABLES ARE INPLACE UNLESS OTHERWISE INDICATED.

* DENOTES NEW CABLE

▲ DENOTES NEW CONNECTION

▽ RELABEL AS DIRECTED

X REMOVE CONNECTION

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.

Daniel F. Solu

Date 5/24/95 Reg. No. 20452

REVISED
FIELD WIRING DIAGRAM
SILVER LAKE RD. & COUNTY ROAD D (37th AVE N.E.)
SYSTEM A

28-17b

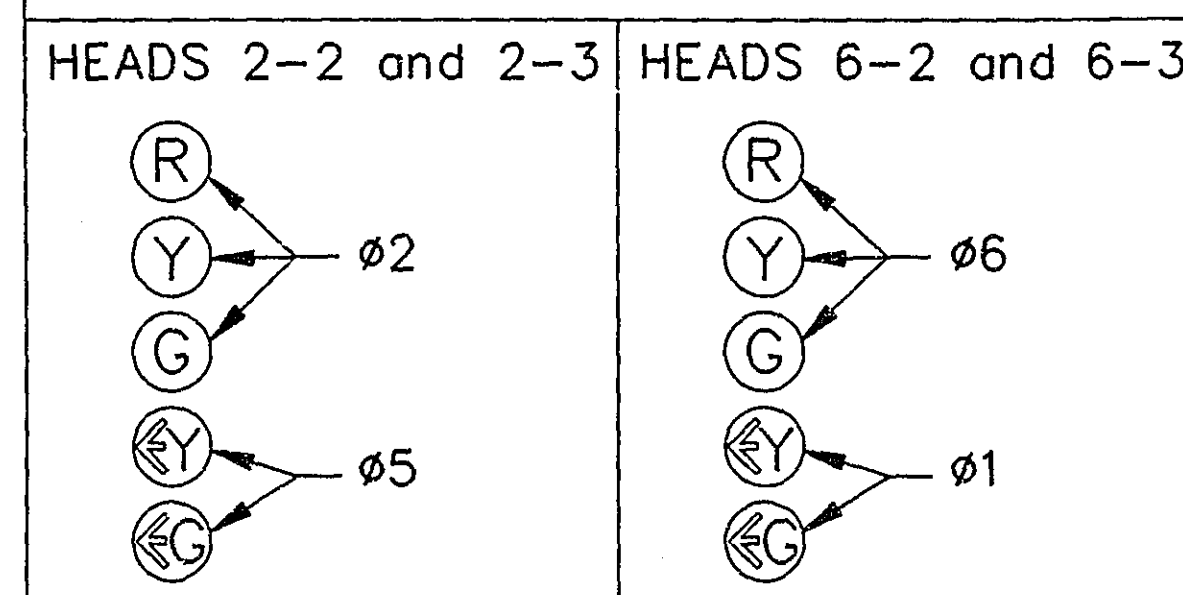
REVISED

SIGNAL INDICATION CHART

FACE	PHASE	INDICATION SIZE					
		R	Y	G	Y	G	G
2-1	2	12"	12"	12"			
2-2	2 and 5	12"	12"	12"	12"	12"	
2-3	2 and 5	12"	12"	12"	12"	12"	
2-4	2	12"	12"	12"			
4-1	4	12"	12"	12"			
4-2	4	12"	12"	12"			
4-3	4	12"	12"	12"			
6-1	6	12"	12"	12"			
6-2	1 and 6	12"	12"	12"	12"	12"	
6-3	1 and 6	12"	12"	12"	12"	12"	
6-4	6	12"	12"	12"			
8-1	8	12"	12"	12"			
8-2	8	12"	12"	12"			
8-3	8	12"	12"	12"			

REVISED

SIGNAL HEAD PHASING



SIGNING

- ▶ R&S ALL INPLACE OVERHEAD SIGNING ON MAST
- ▶ ARM POLES 1 & 3.
- ▶ F&D OVERHEAD TYPE D SIGNS, SEE SHEET 22. (SEPARATE PAY ITEM)
- ▶ F&D OVERHEAD TYPE R10-12 (36" X 48") SIGNS
- ▶ ON MAST ARM POLES 1 & 3.
- ▶ R&S INPLACE PEDESTRIAN PUSH BUTTON SIGNS
- ▶ F&D NEW SIGNS TYPE R10-4d (16"x10")
- ▶ WITH SYMBOL MESSAGE.

REVISED

SIGNAL SYSTEM OPERATION

THE SIGNAL SYSTEM FLASH MODE IS ALL RED.

PHASES 1, AND 5 ARE PROTECTED/PERMISSIVE LEFT TURNS.

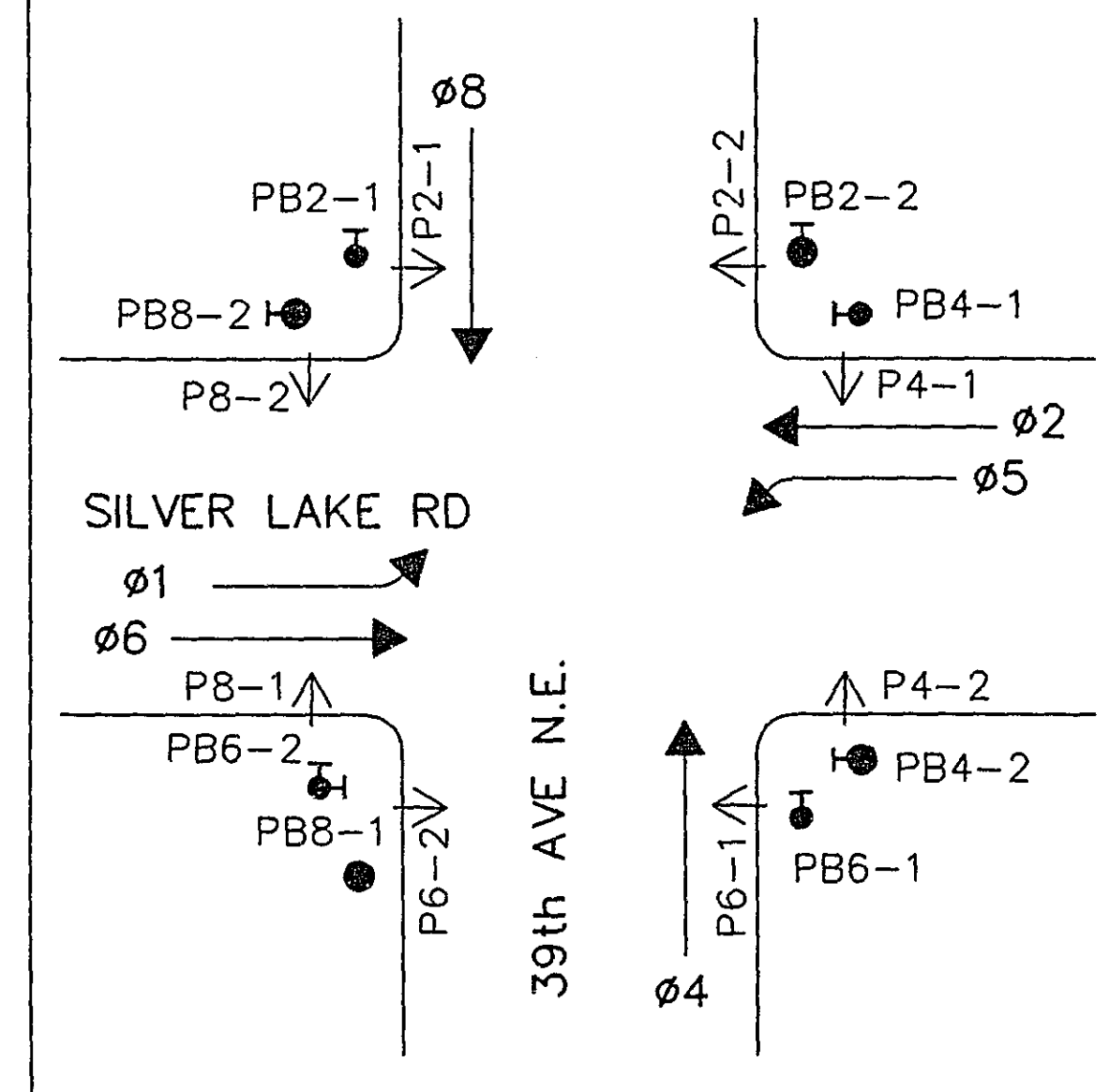
PHASES 1, 4, 5 & 8 ARE NON-LOCK DETECTION.

PHASES 2 & 6 ARE LOCK DETECTION.

PHASES 2 AND 6 ARE ON VEHICLE RECALL.

REVISED

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



REVISED

VEHICLE DETECTION

NO.	SIZE	FUNCTION	LOCATION
F&D D1-1	2-6'x15'	C&E (TD)	0'
F&D D1-2	6'x6'	C&E	80'
F&D D2-1	6'x6'	C&E	210'
F&D D2-2	6'x6'	C&E	210'
F&D D4-1	2-6'x6'	C&E	155'
F&D D4-2	2-6'x6'	C&E	70'
F&D D4-3	2-6'x15'	C&E	0'
F&D D5-1	2-6'x15'	(TD)	0'
F&D D5-2	6'x6'	C&E	80'
F&D D6-1	6'x6'	C&E	210'
F&D D6-2	6'x6'	C&E	210'
F&D D8-1	6'x6'	C&E	120'
F&D D8-2	6'x6'	C&E	50'
F&D D8-3	2-6'x15'	C&E	0'
F&D D1	6'x6'	COUNT	SEE PLAN
F&D D2	6'x6'	COUNT	SEE PLAN
F&D D3	6'x6'	COUNT	SEE PLAN
F&D D4	6'x6'	COUNT	SEE PLAN
F&D D5	6'x6'	COUNT	SEE PLAN

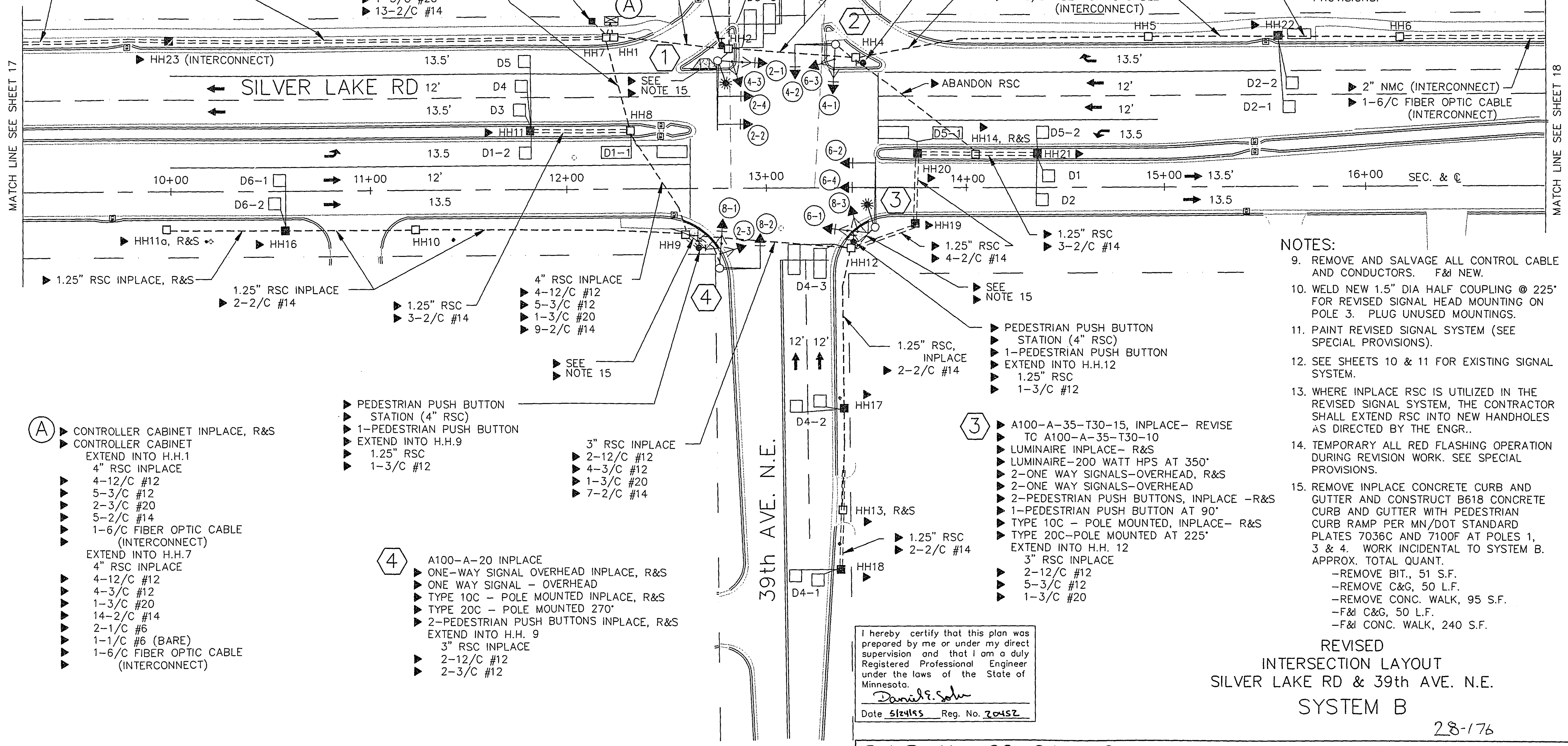
C&E = CALL & EXTEND
C = CALL ONLY
E = EXTEND ONLY
(TD) = TIME DELAYED

S.O.P. - (SERVICE EQUIP. INPLACE), R&S
F&D SERVICE CABINET (SEE DETAILS)
EXTEND INTO H.H.7
2-1.25" RSC
2-1/C #6
1-1/C #6 BR.GR.
2-3/C #12

4" RSC INPLACE
4-12/C #12
5-3/C #12
1-3/C #20
13-2/C #14

PEDESTRIAN PUSH BUTTON
STATION (4" RSC)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.2
1.25" RSC
1-3/C #12

4" RSC INPLACE
4-12/C #12
6-3/C #12
2-3/C #20
5-2/C #14
1-6/C FIBER OPTIC
(INTERCONNECT)



PEDESTRIAN PUSH BUTTON
STATION (4" RSC)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.9
1.25" RSC
1-3/C #12

3" RSC INPLACE
2-12/C #12
4-3/C #12
1-3/C #20
7-2/C #14

A100-A-20 INPLACE
ONE-WAY SIGNAL OVERHEAD INPLACE, R&S
ONE WAY SIGNAL - OVERHEAD
TYPE 10C - POLE MOUNTED INPLACE, R&S
TYPE 20C - POLE MOUNTED 270'
2-PEDESTRIAN PUSH BUTTONS INPLACE, R&S
EXTEND INTO H.H. 9
3" RSC INPLACE
2-12/C #12
2-3/C #12

A100-A-35-T30-15, INPLACE- REVISE
TO A100-A-35-T40-10
LUMINAIRE INPLACE- R&S
LUMINAIRE-200 WATT HPS AT 350'
2-ONE WAY SIGNALS-OVERHEAD, R&S
2-ONE WAY SIGNALS-OVERHEAD
2-PEDESTRIAN PUSH BUTTONS, INPLACE -R&S
1-PEDESTRIAN PUSH BUTTON AT 90'
TYPE 10C - POLE MOUNTED, INPLACE- R&S
TYPE 20C-POLE MOUNTED AT 225'
EXTEND INTO H.H. 12
3" RSC INPLACE
2-12/C #12
5-3/C #12
1-3/C #20

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.
Daniel E. Selva
Date 5/24/95 Reg. No. 20452

NOTES:

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH A ▶ = WORK TO BE DONE THIS SHEET ONLY).
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12" WITH SYMBOL MESSAGE. SEE SPECIAL PROVISIONS.
- ALL SIGNAL FACES SHALL HAVE BACK-GROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
- HANDHOLES 1 THRU 13 ARE INPLACE. HANDHOLES 2,4,8,13 & 14 HAVE METAL FRAME & COVERS. R&S HANDHOLES 11a, 13 & 14 AND RSC AS DIRECTED. F&D HANDHOLES 11,15,16,17,18,19,20,21 & 22.
- REMOVE AND SALVAGE INPLACE DOWN LIGHTS MOUNTED OVERHEAD ON POLES 1 & 3 (2 TOTAL).
- ADJUST HANDHOLES 9 & 12 TO MATCH BLVD. GRADE AS DIRECTED BY THE ENGINEER.
- (INTERCONNECT) DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

NOTES:

- REMOVE AND SALVAGE ALL CONTROL CABLE AND CONDUCTORS. F&D NEW.
- WELD NEW 1.5" DIA HALF COUPLING @ 225' FOR REVISED SIGNAL HEAD MOUNTING ON POLE 3. PLUG UNUSED MOUNTINGS.
- PAINT REVISED SIGNAL SYSTEM (SEE SPECIAL PROVISIONS).
- SEE SHEETS 10 & 11 FOR EXISTING SIGNAL SYSTEM.
- WHERE INPLACE RSC IS UTILIZED IN THE REVISED SIGNAL SYSTEM, THE CONTRACTOR SHALL EXTEND RSC INTO NEW HANDHOLES AS DIRECTED BY THE ENGR.
- TEMPORARY ALL RED FLASHING OPERATION DURING REVISION WORK. SEE SPECIAL PROVISIONS.
- REMOVE INPLACE CONCRETE CURB AND GUTTER AND CONSTRUCT B618 CONCRETE CURB AND GUTTER WITH PEDESTRIAN CURB RAMP PER MN/DOT STANDARD PLATES 7036C AND 7100F AT POLES 1, 3 & 4. WORK INCIDENTAL TO SYSTEM B. APPROX. TOTAL QUANT.
-REMOVE BIT, 51 S.F.
-REMOVE C&G, 50 L.F.
-REMOVE CONC. WALK, 95 S.F.
-F&D C&G, 50 L.F.
-F&D CONC. WALK, 240 S.F.

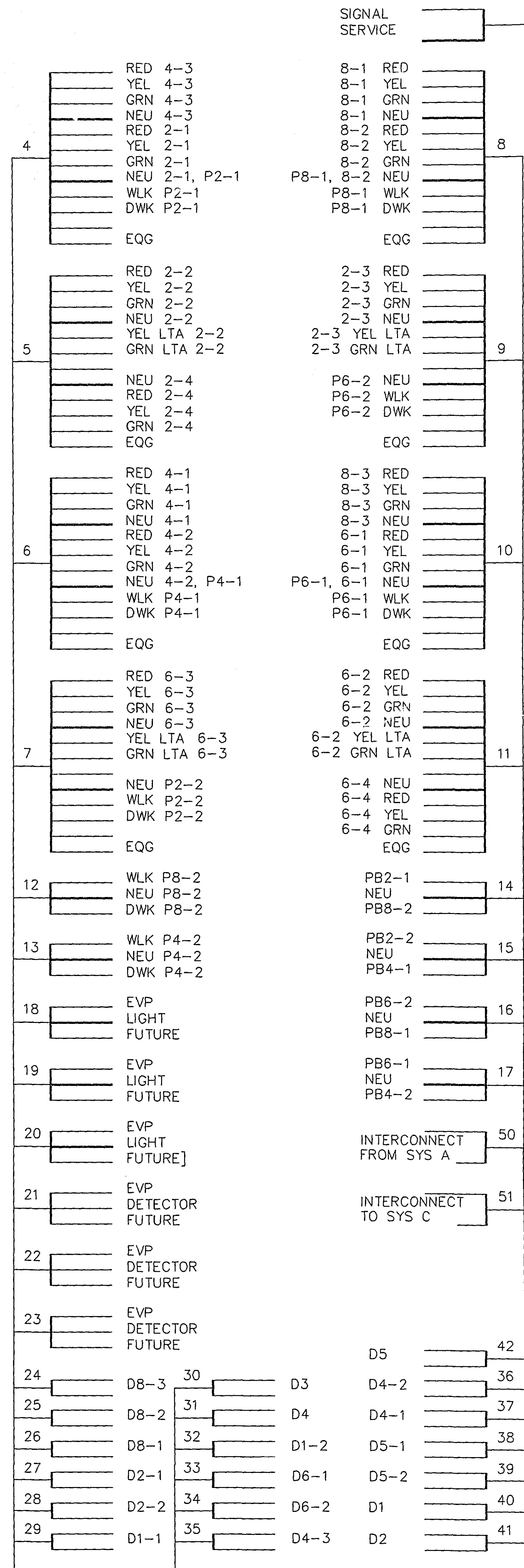
REVISED
INTERSECTION LAYOUT
SILVER LAKE RD & 39th AVE. N.E.
SYSTEM B

28-176

S.A.P. No. 62-644-18

Sheet No. 7 of 30 Sheets

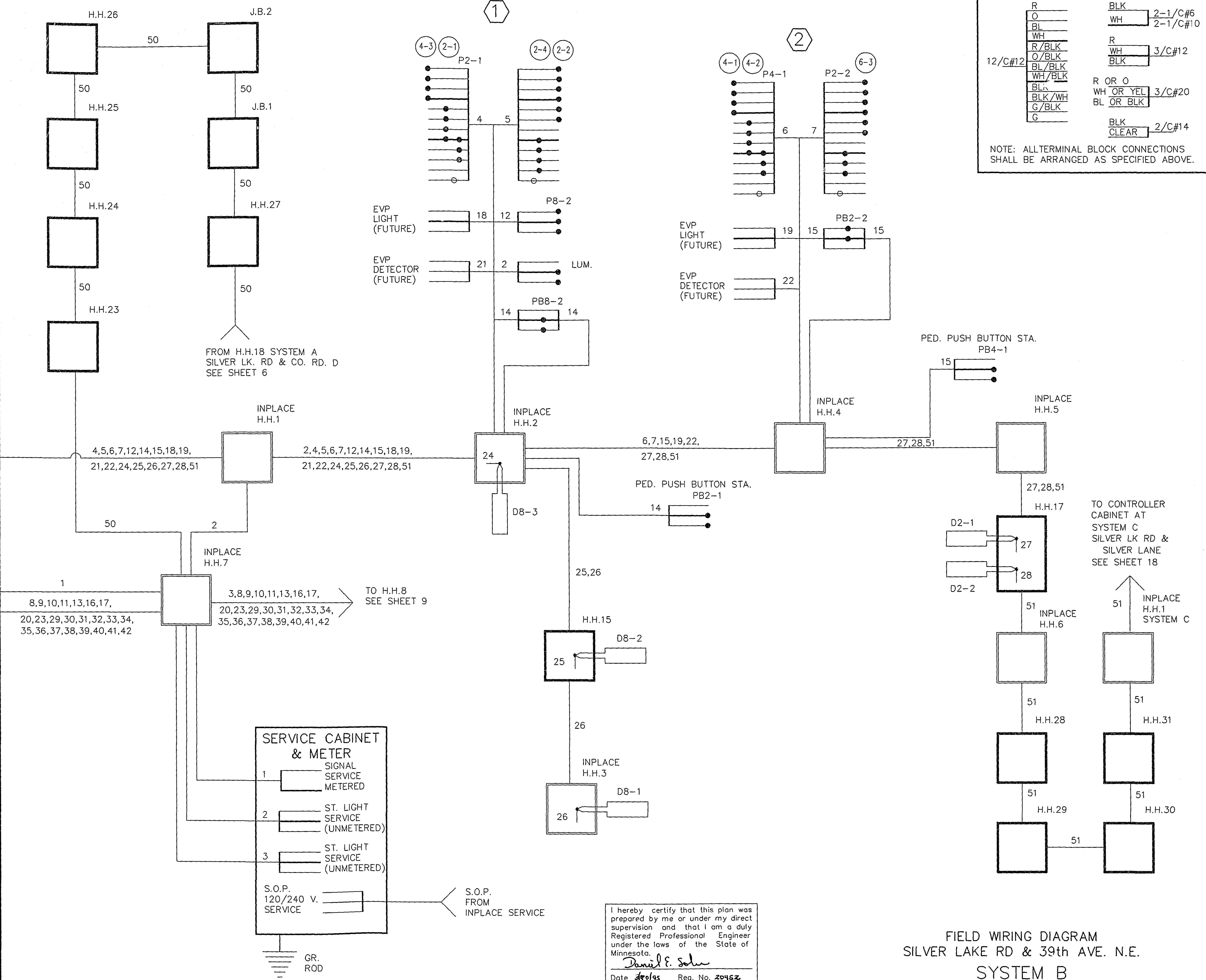
CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

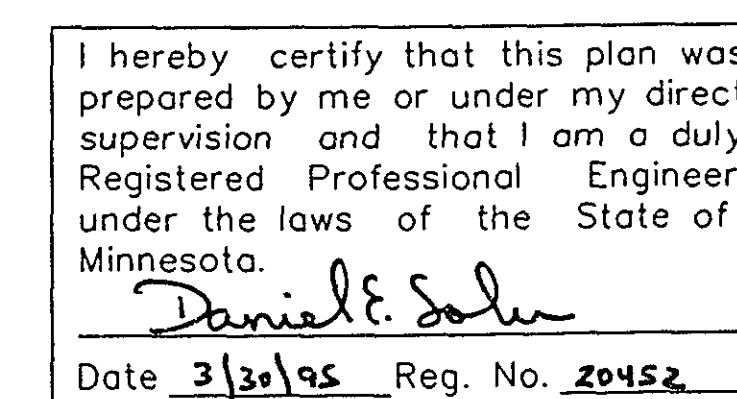
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



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.
 Daniel F. Selzer
 Date 4/20/95 Reg. No. 20452

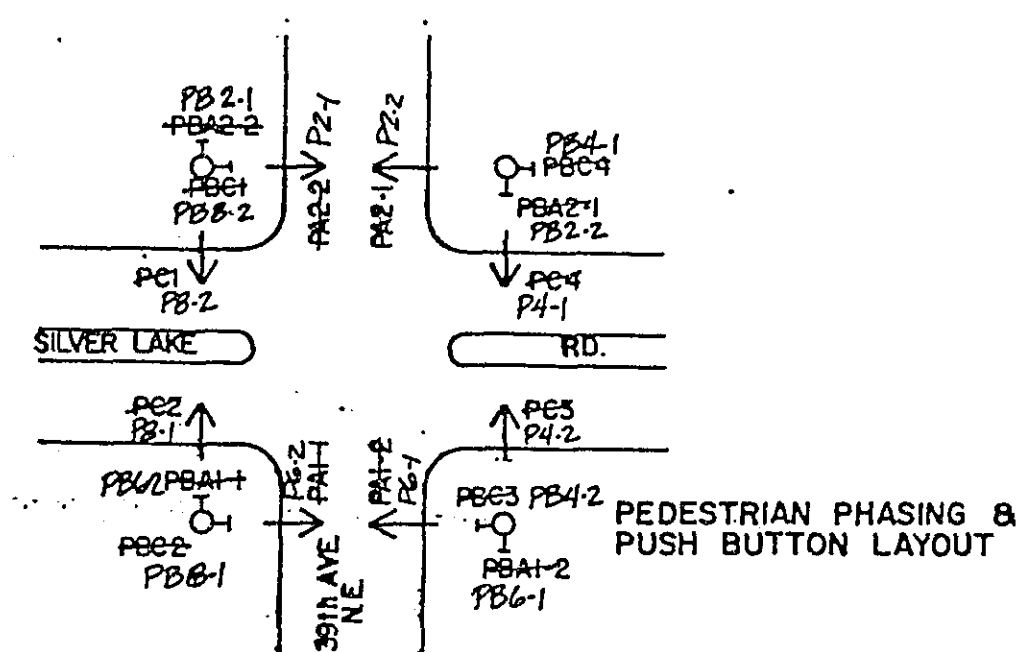
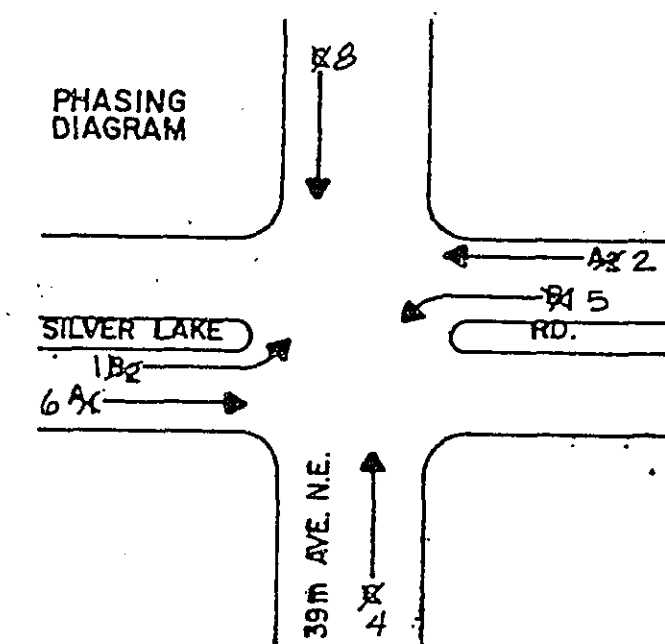
FIELD WIRING DIAGRAM
 SILVER LAKE RD & 39th AVE. N.E.
 SYSTEM B

28-176



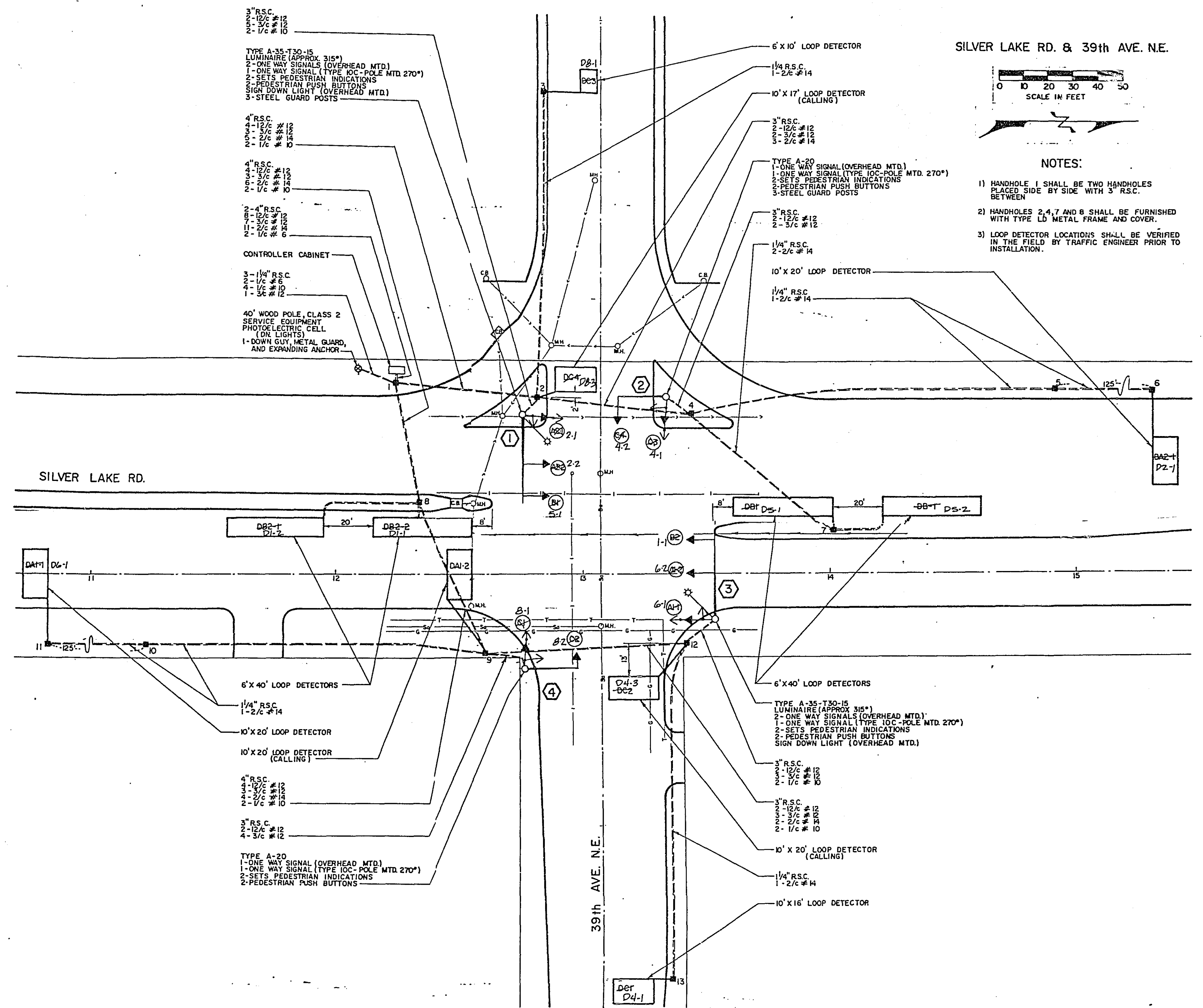
28-176

LEGEND OF SYMBOLS	
	CONTROLLER
	PEDESTAL
	HANDHOLE (PULLBOX)
	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.)

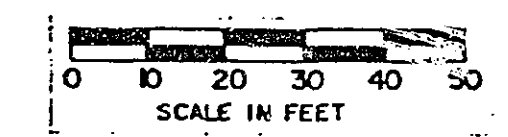


FACE	PHASE	FLASH	INDICATION SIZE		
			R	Y	G
A1-1	A1	Y	12"	12"	12"
* A1-2	A1	Y	12"	12"	12"
A2-1	A2	Y	12"	12"	12"
* A2-2	A2	Y	12"	12"	12"
* B1	B1	R	12"	12"	12"
* B2	B2	R	12"	12"	12"
C1	C	R	12"	12"	12"
C2	C	R	12"	12"	12"
C3	C	R	12"	12"	12"
C4	C	R	12"	12"	12"

* SPECIAL SIGNAL FACES
(SEE SPECIAL PROVISIONS)



SILVER LAKE RD. & 39th AVE. NE.



NOTES:

- HANDHOLE 1 SHALL BE TWO HANDHOLES PLACED SIDE BY SIDE WITH 3" R.S.C. BETWEEN.
- HANDHOLES 2, 4, 7 AND 8 SHALL BE FURNISHED WITH TYPE 1D METAL FRAME AND COVER.
- LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY TRAFFIC ENGINEER PRIOR TO INSTALLATION.

INPLACE
INTERSECTION LAYOUT
SILVER LAKE RD & 39th AVE NE
SYSTEM B

28-176

FOR INFORMATION ONLY

S.A.P. No. 62-644-18

Sheet No. 10 of 30 Sheets



S.A.P. No. 62-644-18

Sheet No. 11 of 30 Sheets

REVISED

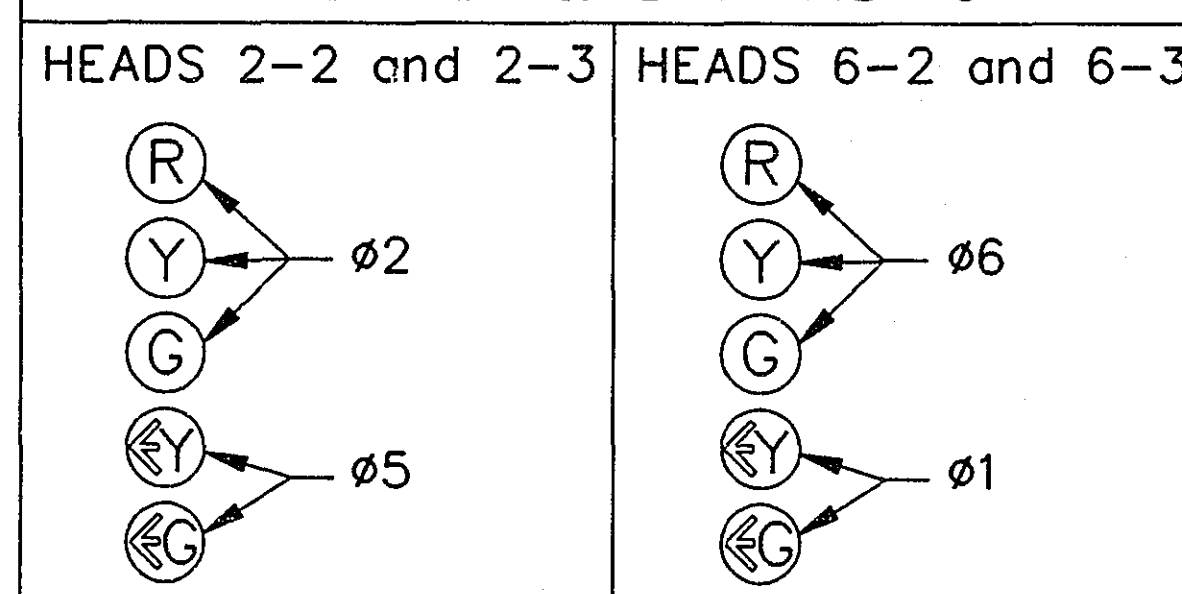
REVISED

SIGNAL INDICATION CHART

FACE	PHASE	INDICATION SIZE				
		R	Y	G	Y	G
2-1	2	12"	12"	12"		
2-2	2 and 5	12"	12"	12"	12"	12"
2-3	2 and 5	12"	12"	12"	12"	12"
2-4	2	12"	12"	12"		
3-1	3	12"	12"	12"		
3-2	3	12"	12"	12"		12"
3-3	3	12"			12"	12"
6-1	6	12"	12"	12"		
6-2	1 and 6	12"	12"	12"	12"	12"
6-3	1 and 6	12"	12"	12"	12"	12"
6-4	6	12"	12"	12"		
4-1	4	12"	12"	12"		
4-2	4	12"	12"	12"		12"
4-3	4	12"			12"	12"

REVISED

SIGNAL HEAD PHASING



SIGNING

- R&S ALL OVERHEAD SIGNING ON POLES
- 1,2,3 & 4 AS DIRECTED BY ENGR.
- F&I NEW OVERHEAD TYPE D SIGNS ON POLES
- 1,2,3 & 4. SEE SHEET 22. (SEPARATE PAY ITEM)
- F&I OVERHEAD TYPE R10-12 (36" X 48") SIGNS
- ON MAST ARM POLES 2 & 4.
- R&S INPLACE PEDESTRIAN PUSH BUTTON SIGNS
- F&I NEW SIGNS TYPE R10-4d (6" X 10")
- WITH SYMBOL MESSAGE.

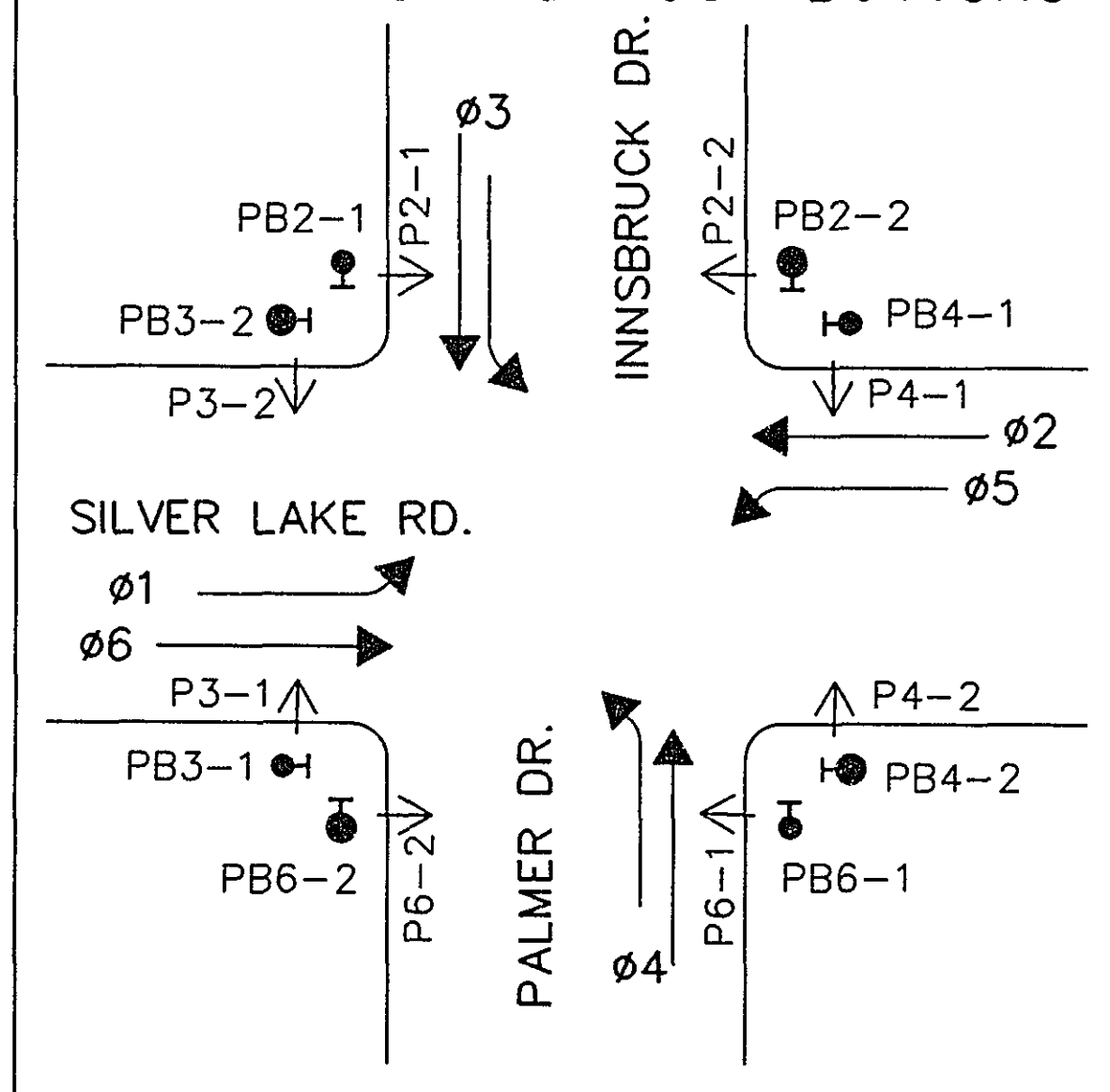
REVISED

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1 AND 5 ARE PROTECTED/PERMISSIVE LEFT TURNS.
- PHASES 1 AND 5 ARE NON-LOCK DETECTION
- PHASES 2, 3, 4 AND 6 ARE LOCK DETECTION
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

REVISED

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



VEHICLE DETECTION

NO.	SIZE	FUNCTION	LOCATION
F&I D1-1	2-6'X15'	C&E (TD)	0'
F&I D1-2	6'X6'	C&E	80'
F&I D2-1	6'X6'	C&E	280'
F&I D2-2	6'X6'	C&E	280'
F&I D3-1	2-6'X6'	C&E	155'
F&I D3-2	2-6'X6'	C&E	70'
F&I D3-3	2-6'X15'	C&E (TD)	0'
F&I D4-1	2-6'X6'	C&E	155'
F&I D4-2	2-6'X6'	C&E	70'
F&I D4-3	2-6'X15'	C&E (TD)	0'
F&I D5-1	2-6'X15'	C&E (TD)	0'
F&I D5-2	6'X6'	C&E	80'
F&I D6-1	6'X6'	C&E	260'
F&I D6-2	6'X6'	C&E	260'
F&I D1	6'X6'	COUNT	SEE PLAN
F&I D2	6'X6'	COUNT	SEE PLAN
F&I D3	6'X6'	COUNT	SEE PLAN
F&I D4	6'X6'	COUNT	SEE PLAN

C&E = CALL & EXTEND
C = CALL ONLY
E = EXTEND ONLY
(TD) = TIME DELAYED

4

- A100-A-35 INPLACE
- 2-ONE-WAY SIGNALS OVERHEAD INPLACE, R&S
- 2-ONE WAY SIGNALS - OVERHEAD
- TYPE 10C - POLE MOUNTED INPLACE, R&S
- TYPE 20C - POLE MOUNTED 225'
- 2-PEDESTRIAN PUSH BUTTONS INPLACE, R&S
- 1-PEDESTRIAN PUSH BUTTON AT 270'
- ONE WAY EVP DETECTOR & LIGHT INPLACE,
- RELOCATE TO HUB AT 1'
- 1 GUARD POST FOUNDATION INPLACE, R&S
- EXTEND INTO H.H. 8
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20

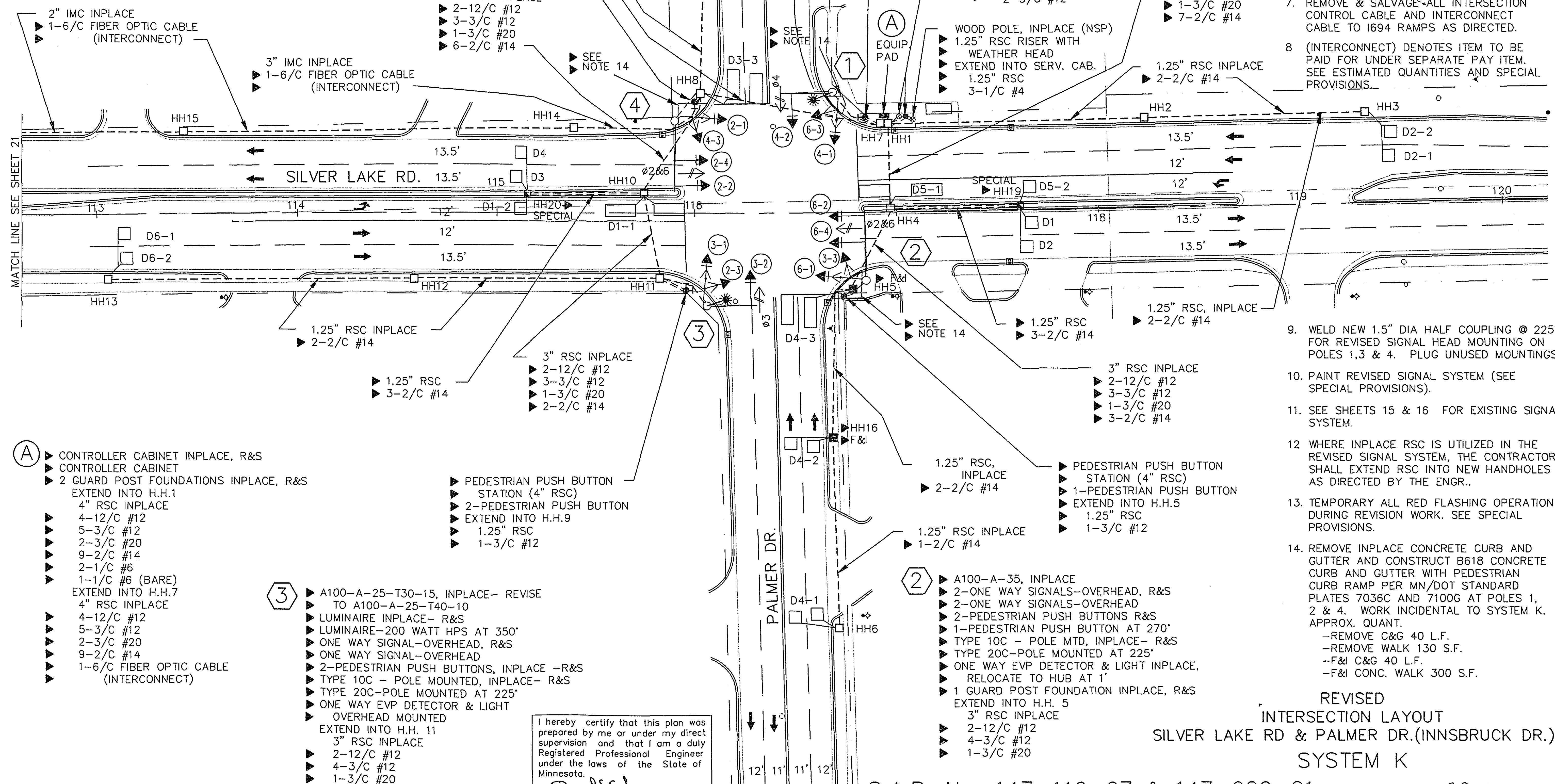
- 4" RSC INPLACE
- 4-12/C #12
- 6-3/C #12
- 2-3/C #20
- 9-2/C #14
- 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.2
- 1.25" RSC
- 1-3/C #12

- 3" RSC INPLACE
- 2-12/C #12
- 3-3/C #12
- 1-3/C #20
- 6-2/C #14

SEE NOTE 14

- 3" IMC INPLACE
- 1-6/C FIBER OPTIC CABLE (INTERCONNECT)



A

- CONTROLLER CABINET INPLACE, R&S
- CONTROLLER CABINET
- 2 GUARD POST FOUNDATIONS INPLACE, R&S
- EXTEND INTO H.H.1
- 4" RSC INPLACE
- 4-12/C #12
- 5-3/C #12
- 2-3/C #20
- 9-2/C #14
- 2-1/C #6
- 1-1/C #6 (BARE)
- EXTEND INTO H.H.7
- 4" RSC INPLACE
- 4-12/C #12
- 5-3/C #12
- 2-3/C #20
- 9-2/C #14
- 1-6/C FIBER OPTIC CABLE (INTERCONNECT)

3

- A100-A-25-T30-15, INPLACE- REVISE
- TO A100-A-25-T40-10
- LUMINAIRE INPLACE- R&S
- LUMINAIRE-200 WATT HPS AT 350'
- ONE WAY SIGNAL-OVERHEAD, R&S
- 2-PEDESTRIAN PUSH BUTTONS, INPLACE -R&S
- TYPE 10C - POLE MOUNTED, INPLACE- R&S
- TYPE 20C-POLE MOUNTED AT 225'
- ONE WAY EVP DETECTOR & LIGHT
- OVERHEAD MOUNTED
- EXTEND INTO H.H. 11
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20

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.

David E. Selva

Date 5/24/95 Reg. No. 20452

1

- A100-A-25-T30-15, INPLACE- REVISE
- TO A100-A-25-T40-10
- LUMINAIRE INPLACE- R&S
- LUMINAIRE-200 WATT HPS AT 350'
- ONE WAY SIGNAL-OVERHEAD, R&S
- ONE WAY SIGNAL-OVERHEAD
- 2-PEDESTRIAN PUSH BUTTONS, INPLACE -R&S
- 1-PEDESTRIAN PUSH BUTTON AT 270'
- TYPE 10C - POLE MOUNTED, INPLACE- R&S
- TYPE 20C-POLE MOUNTED AT 225'
- 1 GUARD POST FOUNDATION INPLACE, R&S
- TWO-WAY EVP DETECTOR & LIGHT INPLACE
- MTD OVERHEAD, REVISE TO ONE-WAY
- EXTEND INTO H.H. 7
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20

- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.4
- 1.25" RSC
- 1-3/C #12

- WOOD POLE & SERVICE EQUIP. INPLACE, R&S
- F&I SERVICE CABINET (SEE DETAILS)
- EXTEND INTO H.H.1
- 2-1.25" RSC
- 2-1/C #6
- 1-1/C #6 BR.GR.
- 2-3/C #12

- WOOD POLE, INPLACE (NSP)
- 1.25" RSC RISER WITH WEATHER HEAD
- EXTEND INTO SERV. CAB.
- 1.25" RSC
- 3-1/C #4

- 3" RSC INPLACE
- 2-12/C #12
- 3-3/C #12
- 1-3/C #20
- 7-2/C #14

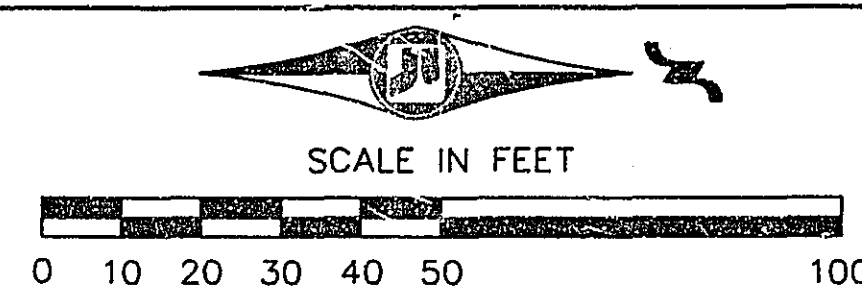
- 1.25" RSC INPLACE
- 2-2/C #14

- 1.25" RSC INPLACE
- 2-2/C #14
- 3" RSC INPLACE
- 2-12/C #12
- 3-3/C #12
- 1-3/C #20
- 3-2/C #14

2

- 1.25" RSC, INPLACE
- 2-2/C #14
- 1.25" RSC INPLACE
- 1-2/C #14
- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.5
- 1.25" RSC
- 1-3/C #12

- A100-A-35, INPLACE
- 2-ONE WAY SIGNALS-OVERHEAD, R&S
- 2-ONE WAY SIGNALS-OVERHEAD
- 2-PEDESTRIAN PUSH BUTTONS R&S
- 1-PEDESTRIAN PUSH BUTTON AT 270'
- TYPE 10C - POLE MTD, INPLACE- R&S
- TYPE 20C-POLE MOUNTED AT 225'
- ONE WAY EVP DETECTOR & LIGHT INPLACE,
- RELOCATE TO HUB AT 1'
- 1 GUARD POST FOUNDATION INPLACE, R&S
- EXTEND INTO H.H. 5
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20



NOTES:

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH A ► = WORK TO BE DONE THIS SHEET ONLY).
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12" WITH SYMBOL MESSAGE. SEE SPECIAL PROVISIONS.
- ALL SIGNAL FACES SHALL HAVE BACK-GROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
- HANDHOLES 1 THRU 13 ARE INPLACE. HANDHOLES 4 & 10 HAVE METAL FRAME & COVERS INPLACE; R&S HANDHOLE 5 & 13; F&I HANDHOLES 5, 16 & 18; F&I SPECIAL HANDHOLES 19 & 20 (SEE SPECIAL PROVISIONS).
- REMOVE AND SALVAGE INPLACE DOWN LIGHTS MOUNTED OVERHEAD ON POLES 2 & 4 (2 TOTAL).
- REMOVE & SALVAGE-ALL INTERSECTION CONTROL CABLE AND INTERCONNECT CABLE TO 1694 RAMPS AS DIRECTED.
- (INTERCONNECT) DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- WELD NEW 1.5" DIA HALF COUPLING @ 225' FOR REVISED SIGNAL HEAD MOUNTING ON POLES 1,3 & 4. PLUG UNUSED MOUNTINGS.
- PAINT REVISED SIGNAL SYSTEM (SEE SPECIAL PROVISIONS).
- SEE SHEETS 15 & 16 FOR EXISTING SIGNAL SYSTEM.
- WHERE INPLACE RSC IS UTILIZED IN THE REVISED SIGNAL SYSTEM, THE CONTRACTOR SHALL EXTEND RSC INTO NEW HANDHOLES AS DIRECTED BY THE ENGR.
- TEMPORARY ALL RED FLASHING OPERATION DURING REVISION WORK. SEE SPECIAL PROVISIONS.
- REMOVE INPLACE CONCRETE CURB AND GUTTER AND CONSTRUCT B618 CONCRETE CURB AND GUTTER WITH PEDESTRIAN CURB RAMP PER MN/DOT STANDARD PLATES 7036C AND 7100G AT POLES 1, 2 & 4. WORK INCIDENTAL TO SYSTEM K. APPROX. QUANT.
-REMOVE C&G 40 L.F.
-REMOVE WALK 130 S.F.
-F&I C&G 40 L.F.
-F&I CONC. WALK 300 S.F.

REVISED
INTERSECTION LAYOUT
SILVER LAKE RD & PALMER DR.(INNSBRUCK DR.)
SYSTEM K

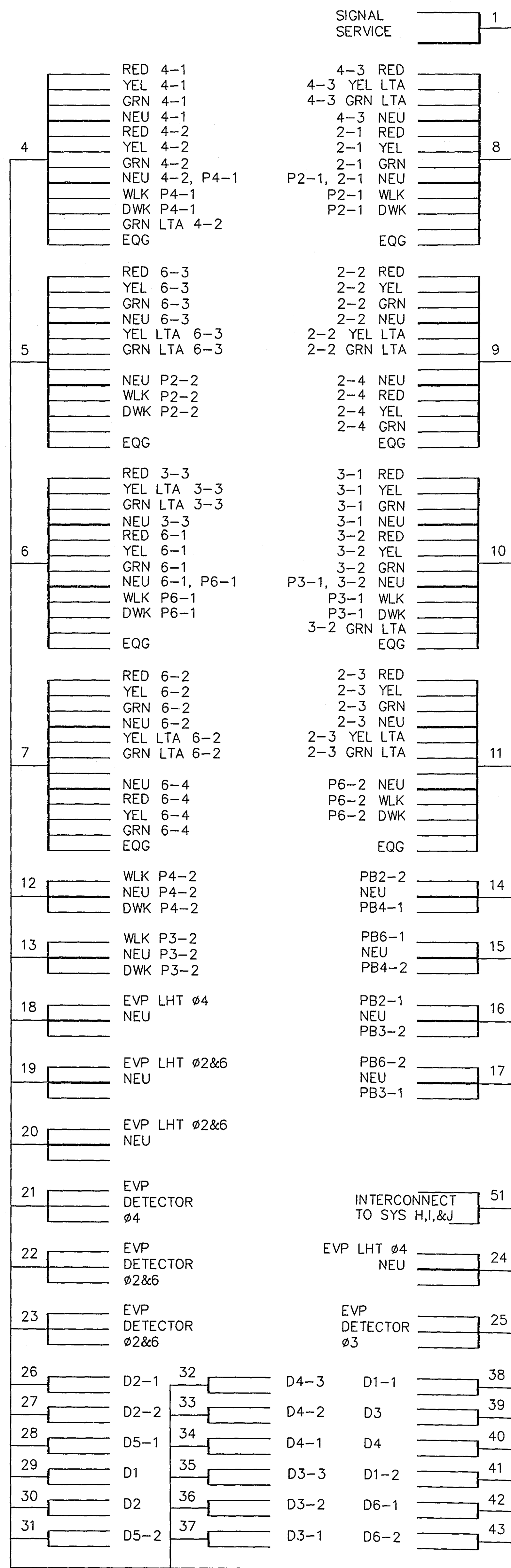
S.A.P. No. 147-116-07 & 147-020-21

28-176

S.A.P. No. 62-644-18

Sheet No. 12 of 30 Sheets

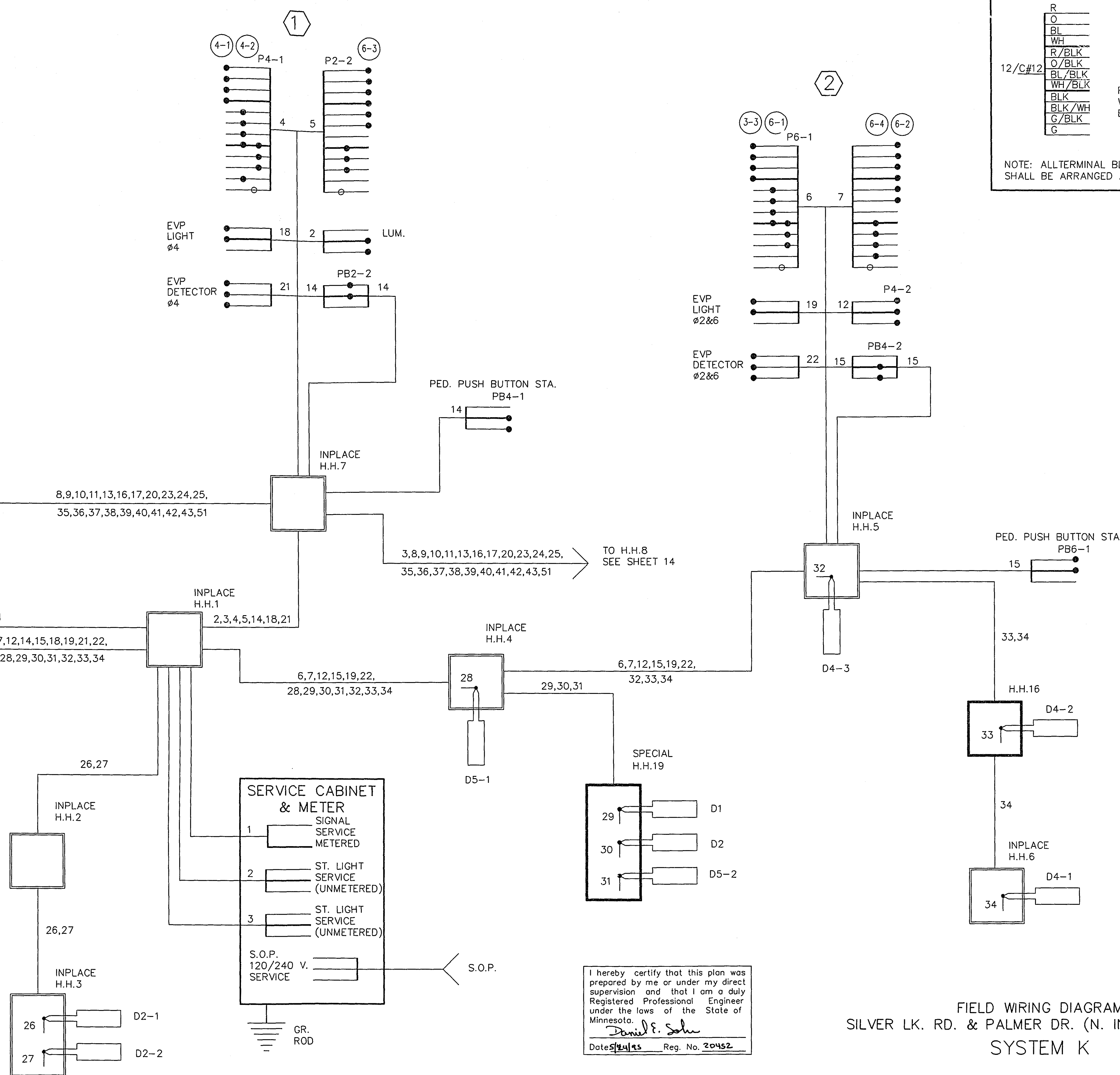
CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

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



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.

Daniel E. Schu

Date 5/24/95 Reg. No. 20452

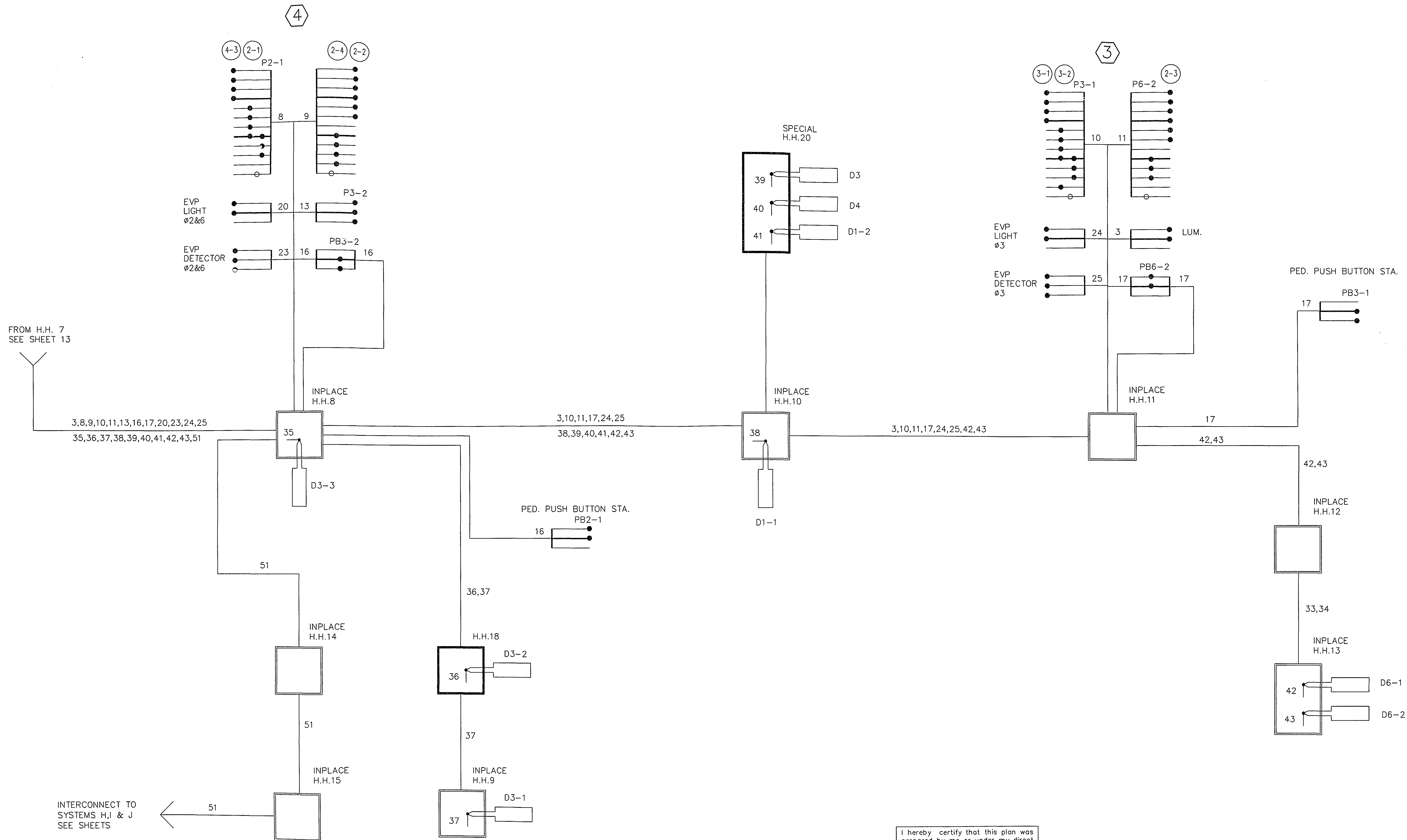
FIELD WIRING DIAGRAM
SILVER LK. RD. & PALMER DR. (N. INNSBRUCK DR.)
SYSTEM K

S.A.P. No. 147-116-07 & 147-020-21

28-176

S.A.P. No. 62-644-18

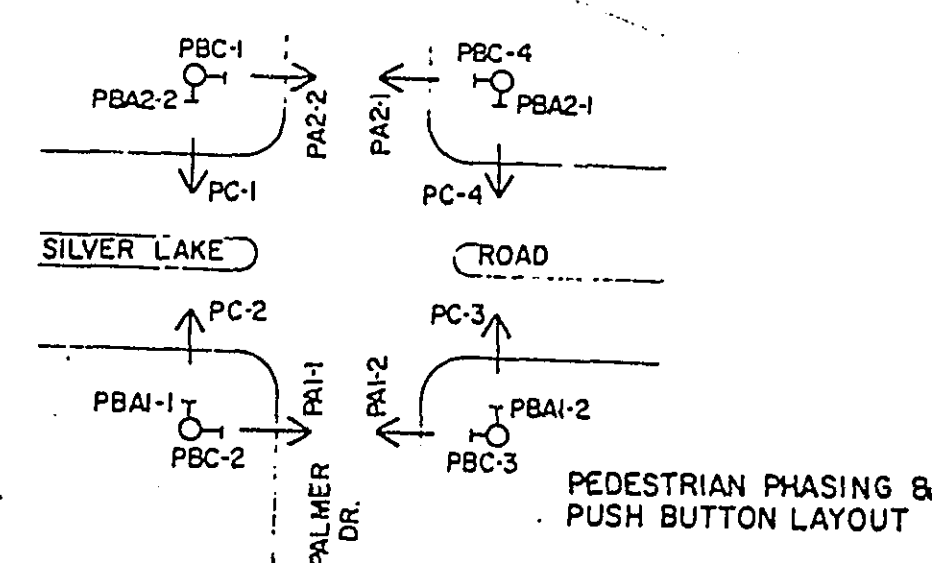
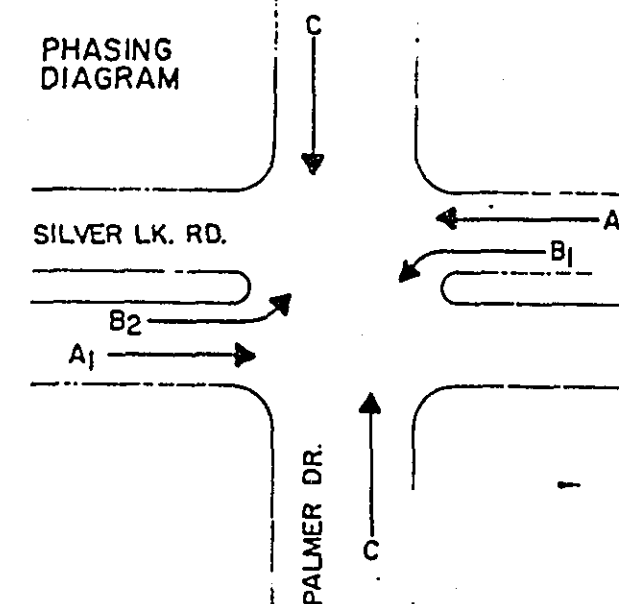
Sheet No. 13 of 30 Sheets



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.
Daniel E. Soler
 Date 3/20/95 Reg. No. 20152

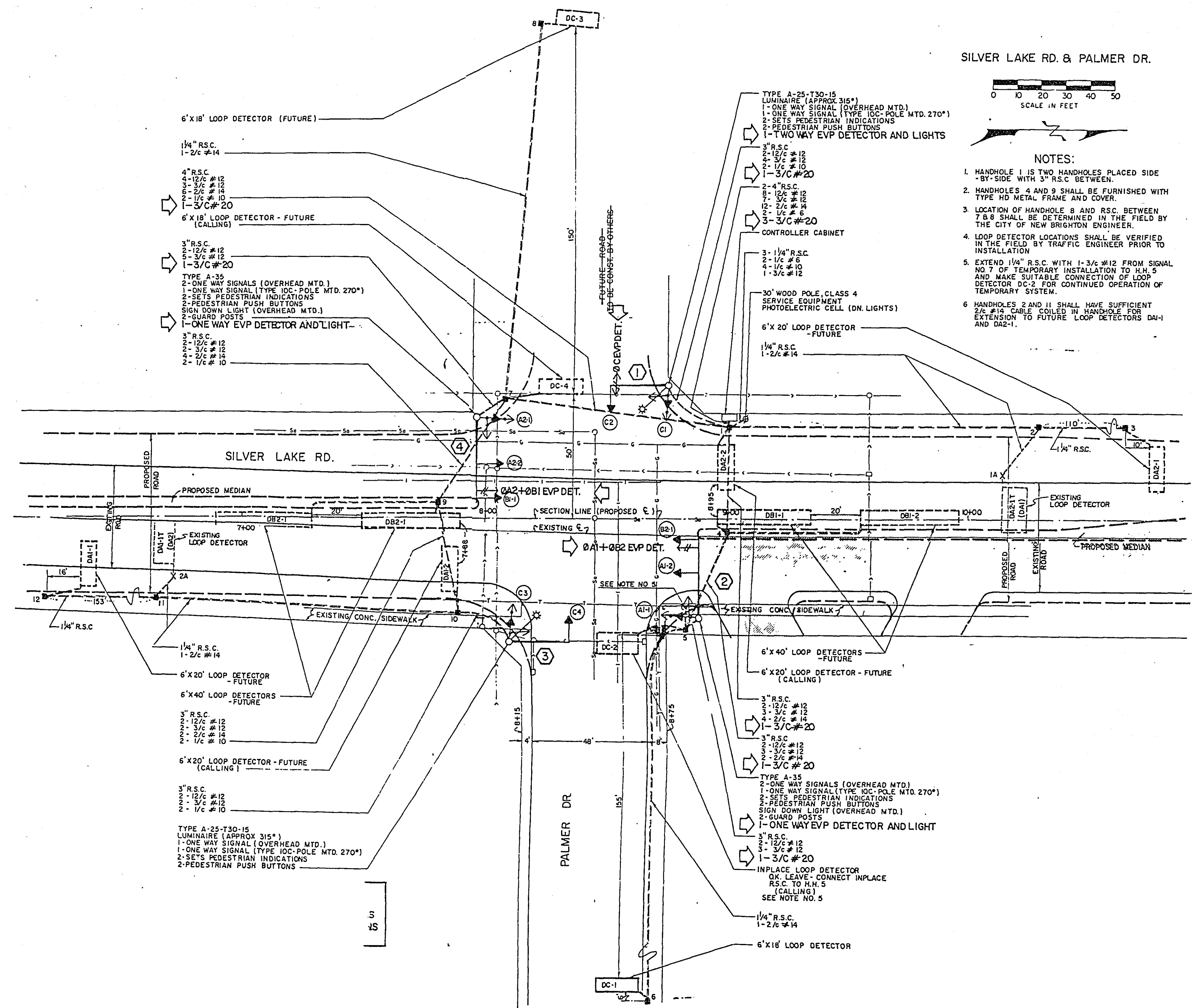
FIELD WIRING DIAGRAM
 SILVER LK. RD. & PALMER DR. (N. INNSBRUCK DR.)
 SYSTEM K

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 (SOP)
	HANDHOLE (INPLACE)



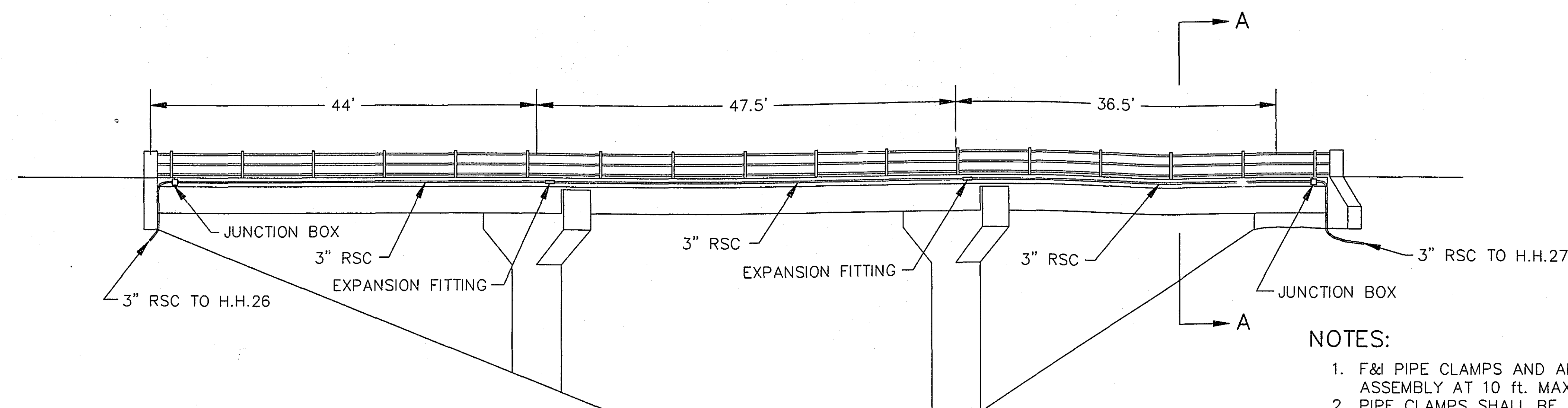
FACE	PHASE	FLASH	INDICATION SIZE				
			R	Y	G	←	→
A1-1	A1	Y	12"	12"	12"	-	-
* A1-2	A1	Y	12"	12"	12"	-	-
A2-1	A2	Y	12"	12"	12"	-	-
* A2-2	A2	Y	12"	12"	12"	-	-
* B1-1	B1	R	12"	12"	12"	-	-
* B2-1	B2	R	12"	12"	12"	-	-
C1	C	R	12"	12"	12"	-	-
C2	C	R	12"	12"	12"	-	-
C3	C	R	12"	12"	12"	-	-
C4	C	R	12"	12"	12"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

* SPECIAL SIGNAL FACES
(SEE SPECIAL PROVISIONS)



INPLACE
INTERSECTION LAYOUT
SILVER LAKE RD & PALMER DR (N INNSBRUCK DR)
SYSTEM K

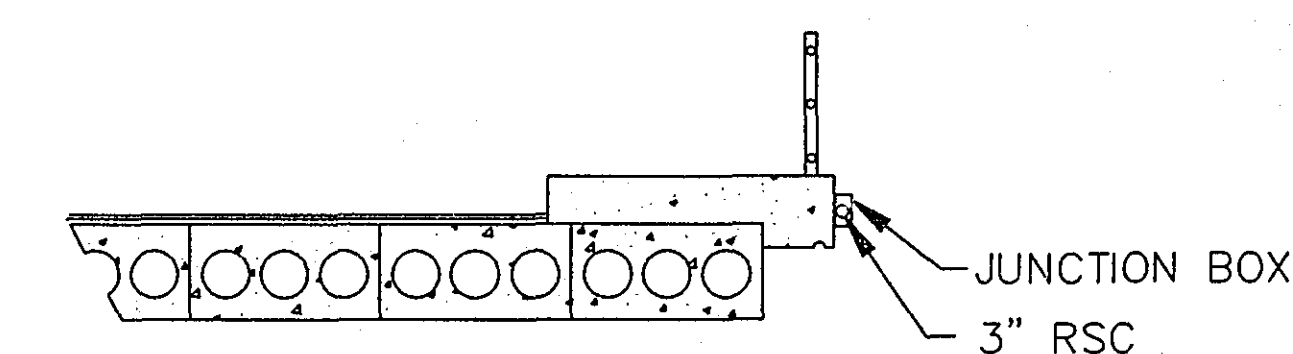
FOR INFORMATION ONLY



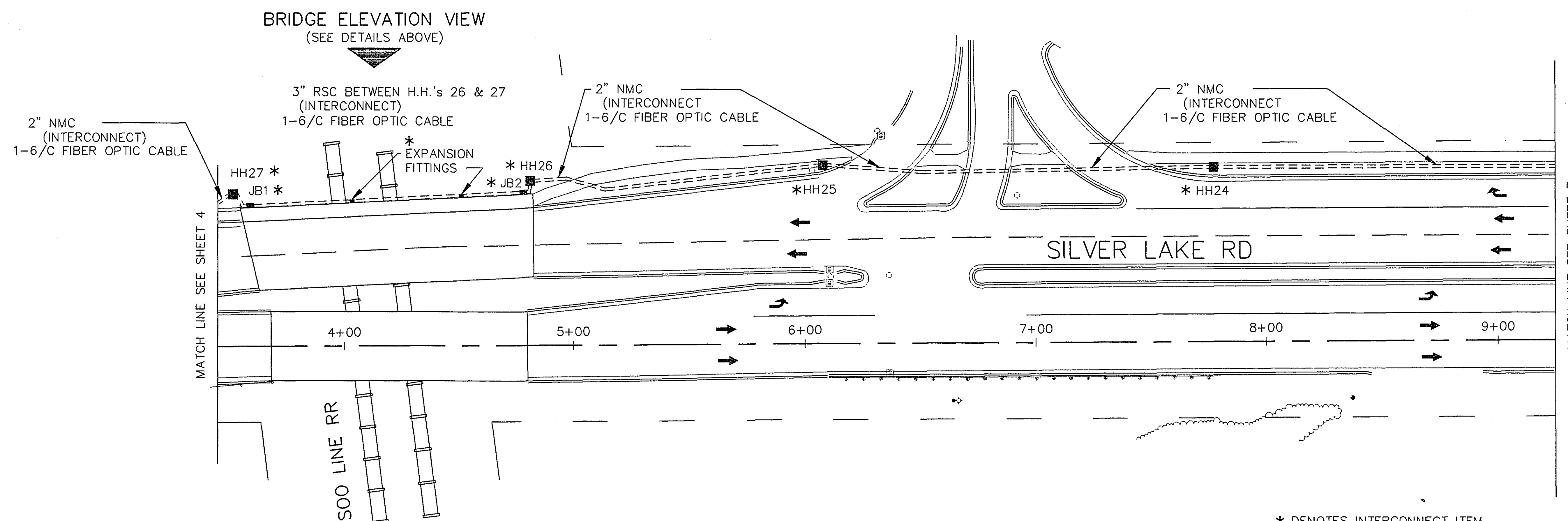
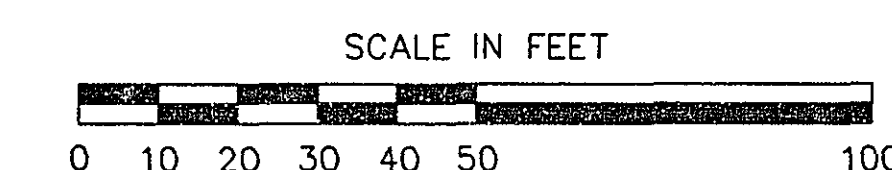
BRIDGE ELEVATION
WEST SIDE

NOTES:

1. F&I PIPE CLAMPS AND ANCHORAGE ASSEMBLY AT 10 ft. MAXIMUM SPACING.
2. PIPE CLAMPS SHALL BE A ONE-HOLE TYPE AND ALLOWS FOR EXPANSION WITHOUT BINDING.
3. BOLT ANCHORAGE SHALL BE A TWO-UNIT THREADED TYPE TO PERMIT REMOVAL OF NUT.
4. BOLT ANCHOR AND PIPE CLAMPS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.



SECTION A-A

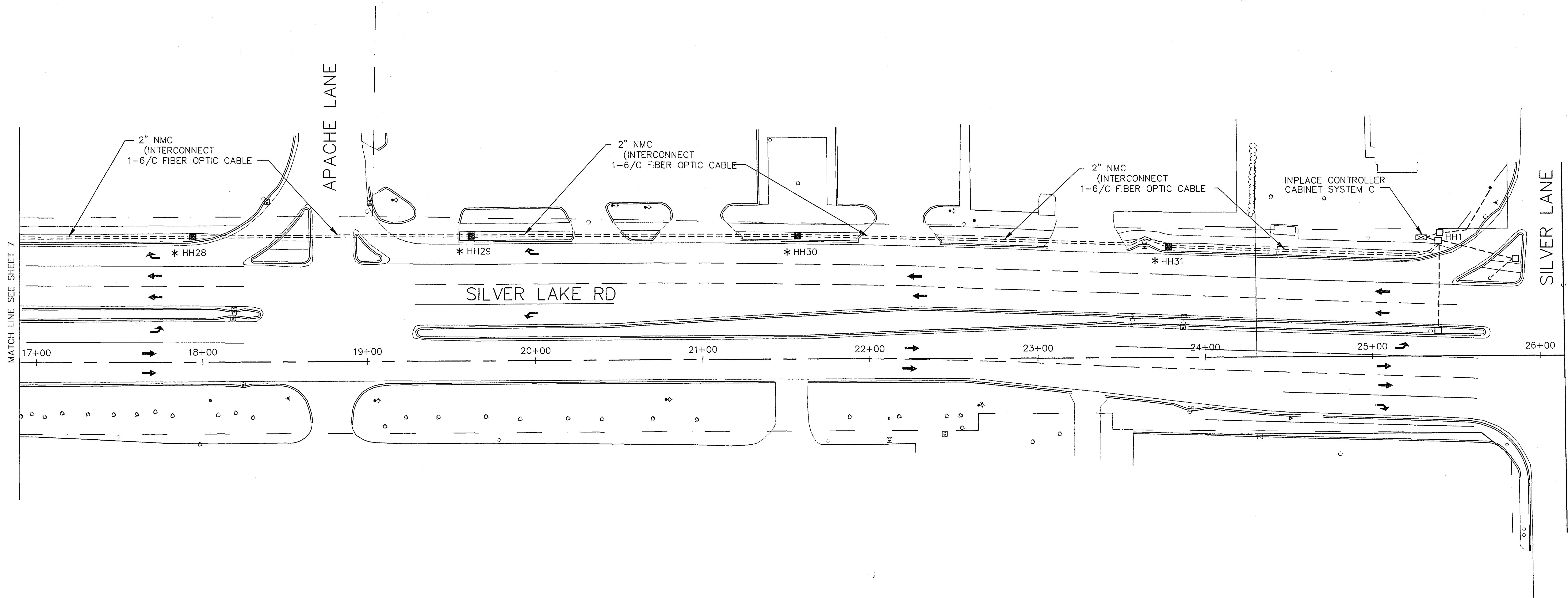
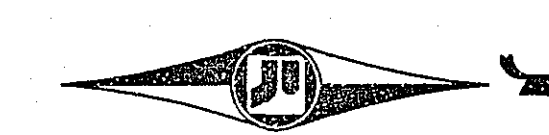
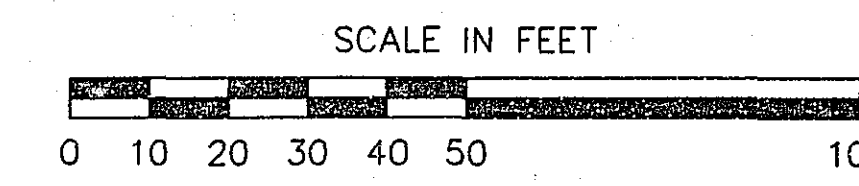


* DENOTES INTERCONNECT ITEM.

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.
Daniel E. Soler
Date 3/30/95 Reg. No. 20452

INTERCONNECT
SILVER LAKE RD
BETWEEN COUNTY RD D & 39th AVE N.E.

28-176



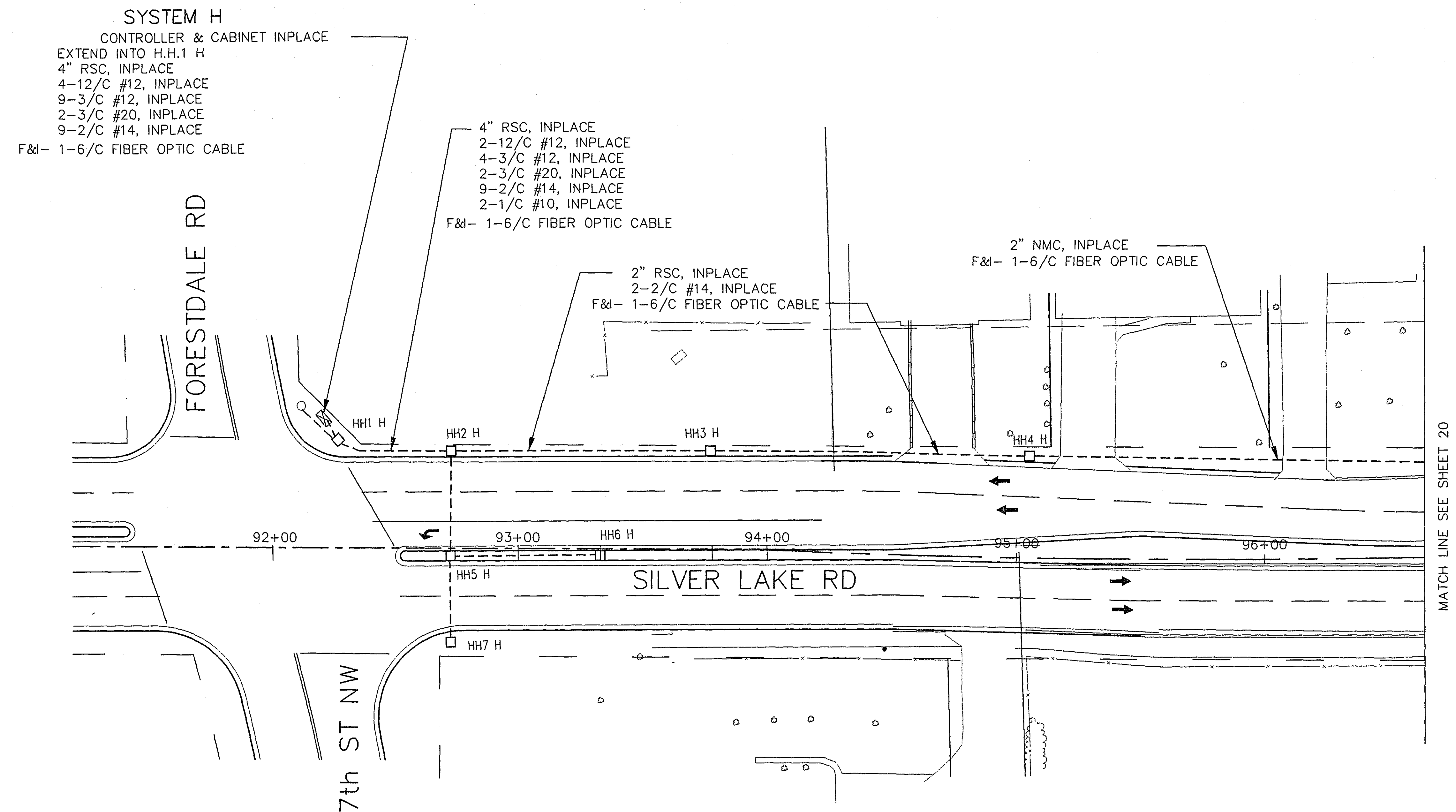
MATCH LINE SEE SHEET 7

* DENOTES INTERCONNECT ITEM.

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.
Daniel E. Soler
Date 3/20/95 Reg. No. 20452

INTERCONNECT
SILVER LAKE RD
BETWEEN 39th AVE N.E. & SILVER LANE

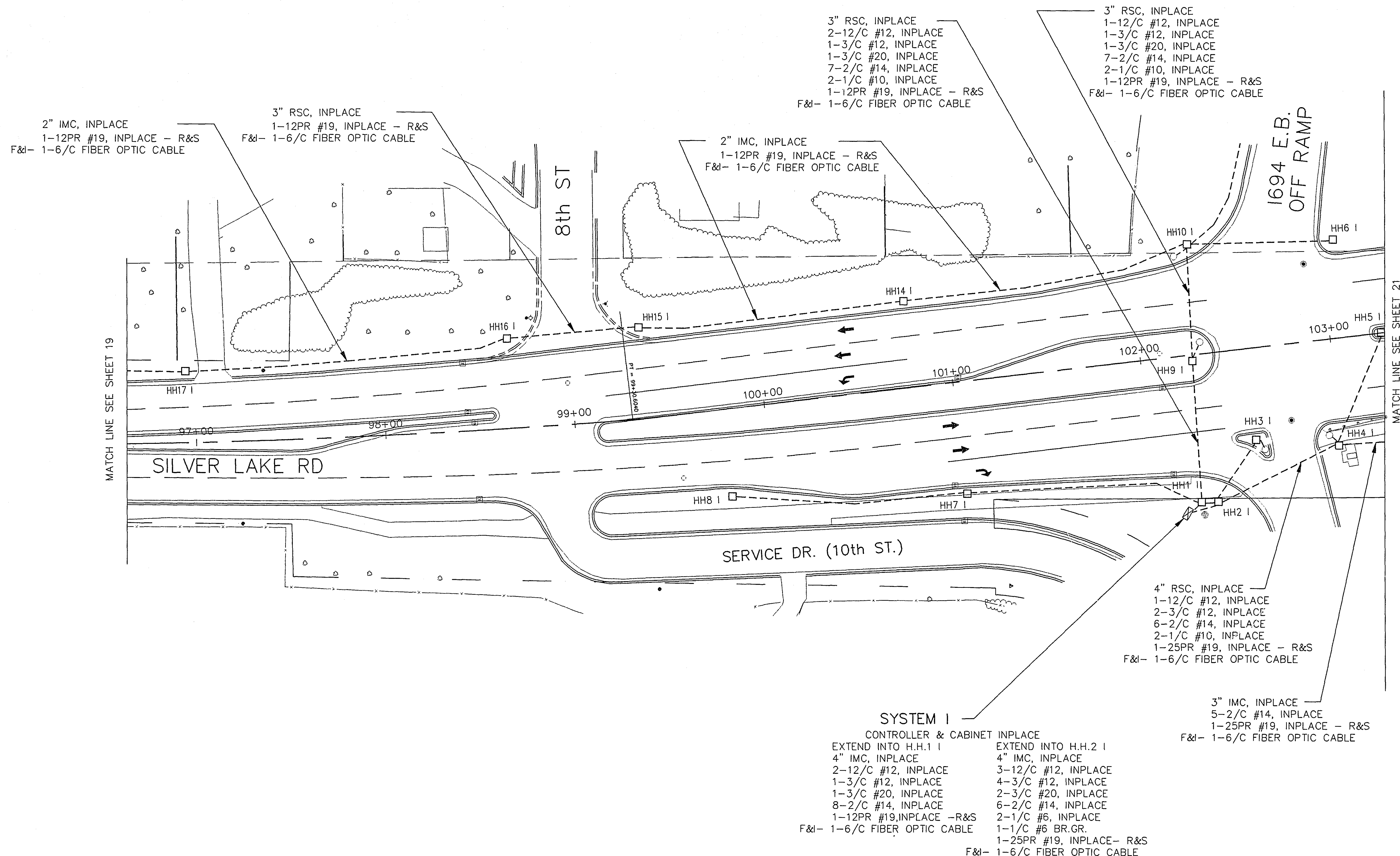
28-176



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.
Daniel E. Soler
Date 3/20/15 Reg. No. 20462

INTERCONNECT
SILVER LAKE RD.
BETWEEN 7th ST. N.W. & PALMER DR.

28-176



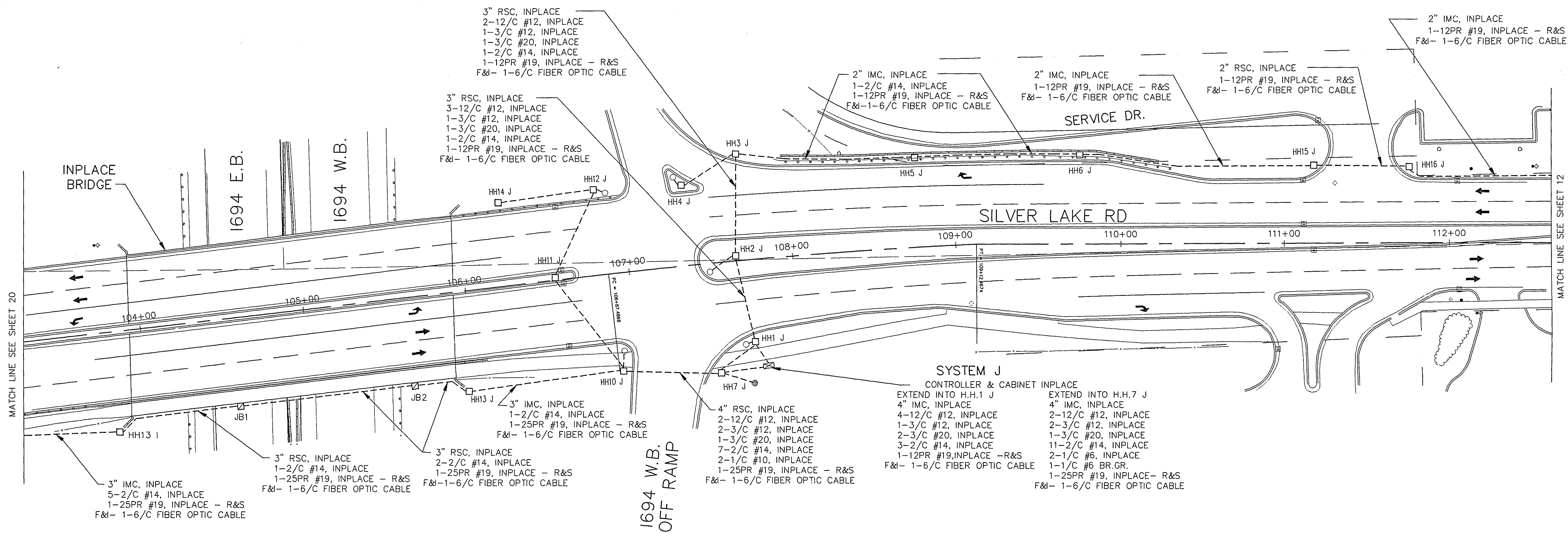
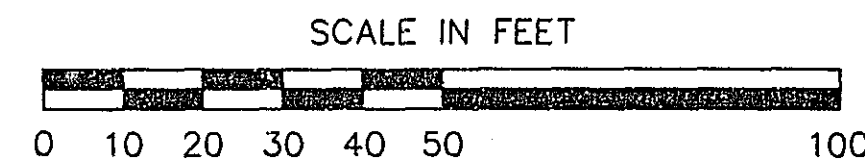
SYSTEM I
CONTROLLER & CABINET INPLACE
EXTEND INTO H.H.1 I
4" IMC, INPLACE
2-12/C #12, INPLACE
1-3/C #12, INPLACE
1-3/C #20, INPLACE
8-2/C #14, INPLACE
1-12PR #19, INPLACE - R&S
F&d- 1-6/C FIBER OPTIC CABLE

EXTEND INTO H.H.2 I
4" IMC, INPLACE
3-12/C #12, INPLACE
4-3/C #12, INPLACE
2-3/C #20, INPLACE
6-2/C #14, INPLACE
2-1/C #6, INPLACE
1-1/C #6 BR.GR.
1-25PR #19, INPLACE- R&S
F&d- 1-6/C FIBER OPTIC CABLE

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.
Daniel F. Sohn
Date 3/30/95 Reg. No. 20452

INTERCONNECT
SILVER LAKE RD.
BETWEEN 7th ST. N.W. & PALMER DR.

28-176



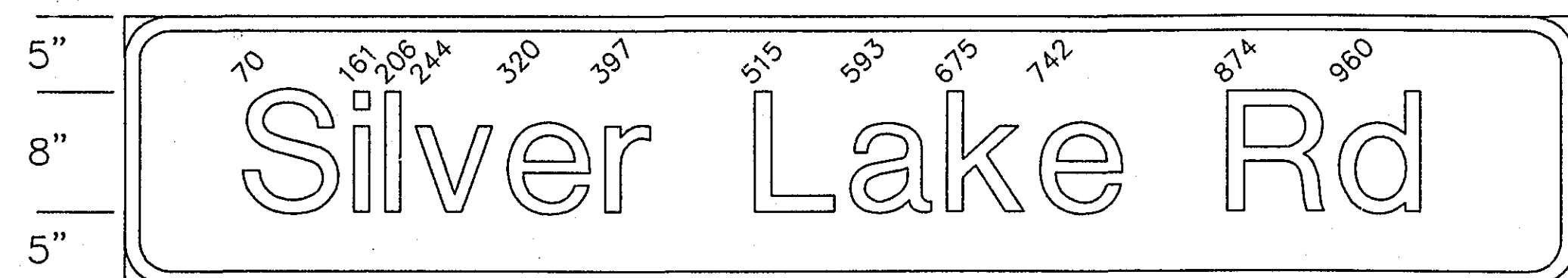
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Daniel F. Soler

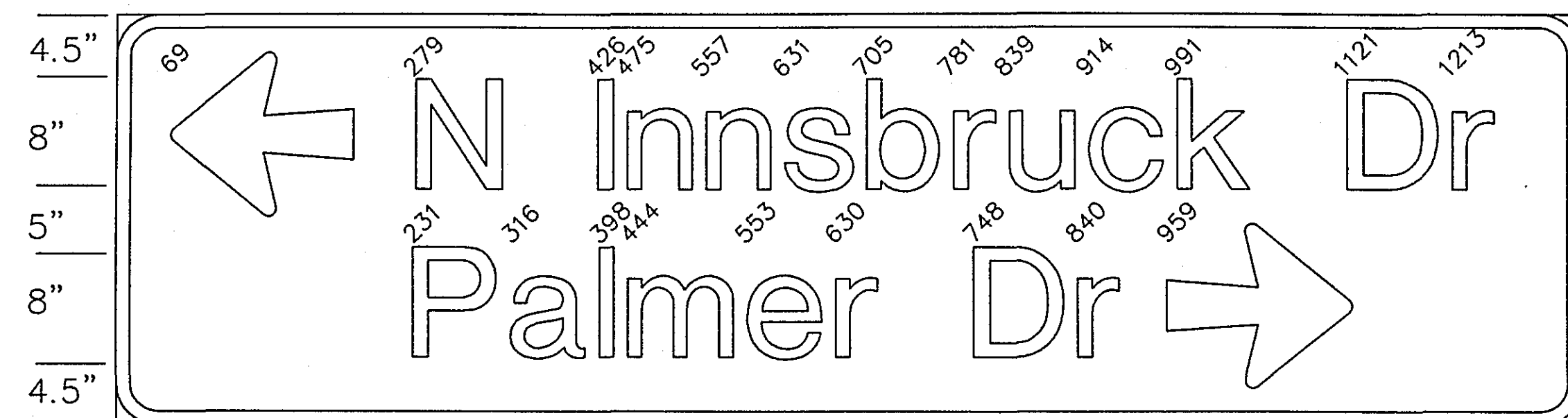
Date 3/26/15 Reg. No. 20452

INTERCONNECT
SILVER LAKE RD.
BETWEEN 7th ST. N.W. & PALMER DR.

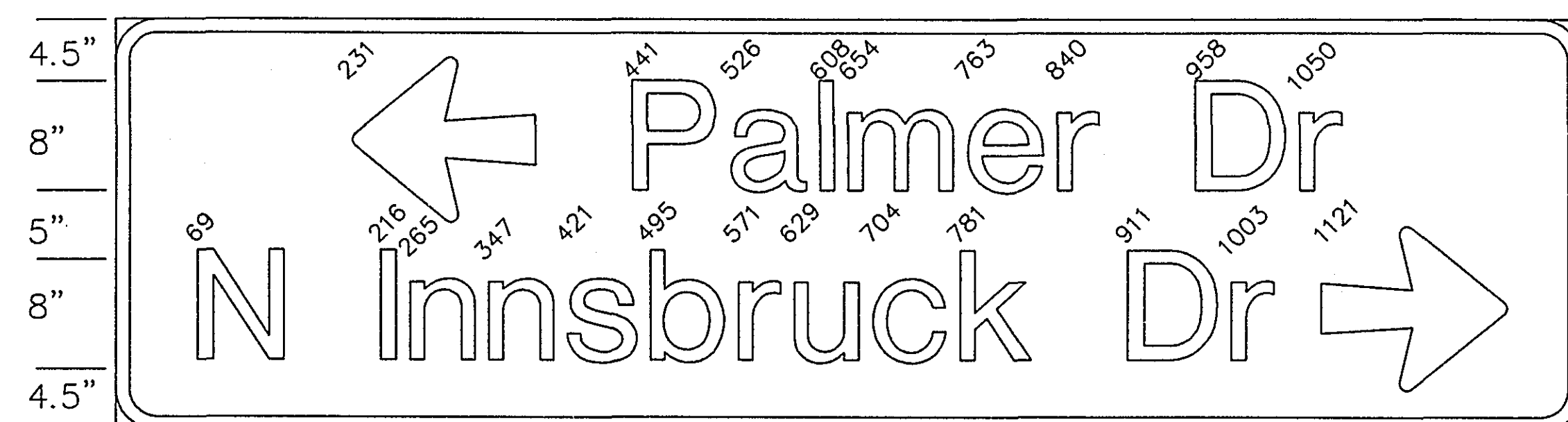
28-176



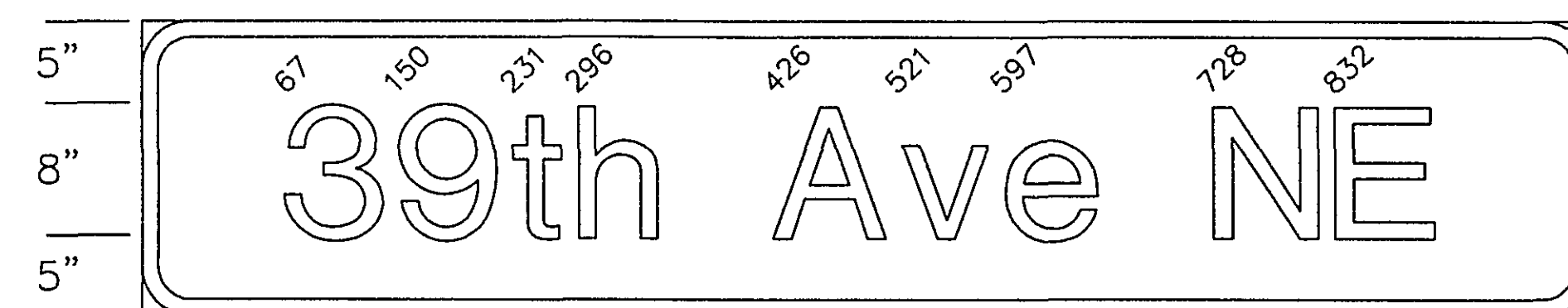
D-1 108" X 18", 3.0 R. 1.0 B
LINE 1 = 94.11" : 8"-6" "E" MOD.



D-2 132" X 30", 3.0 R. 1.0 B
LINE 1 = 118.21" : 5-13 ARROW - 180, 8"-6" "E" MOD.
LINE 2 = 85.73" : 8"-6" "E" MOD., 5-13 ARROW - 0



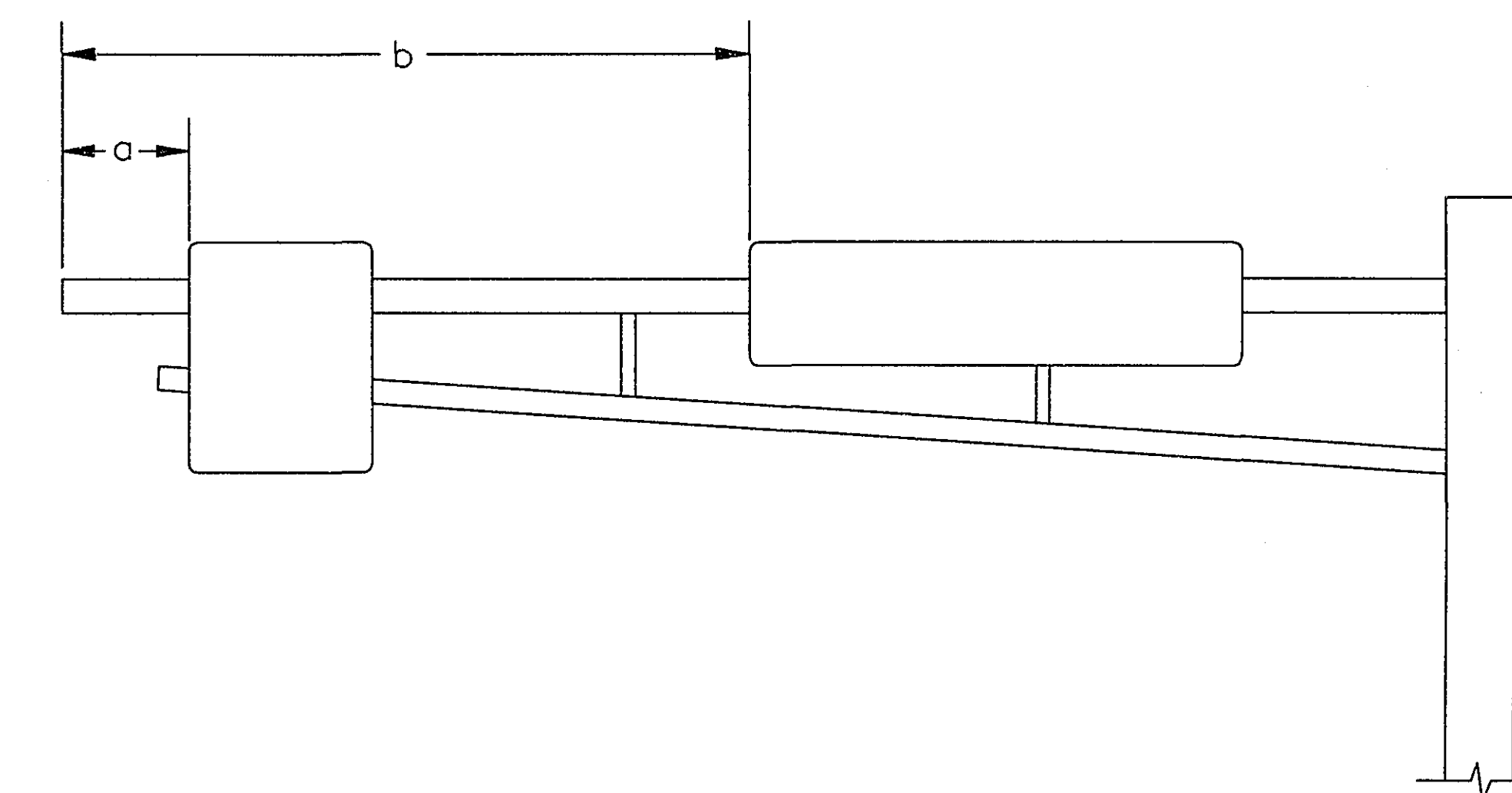
D-3 132" X 30", 3.0 R. 1.0 B
LINE 1 = 85.73" : 5-13 ARROW - 180, 8"-6" "E" MOD.
LINE 2 = 118.21" : 8"-6" "E" MOD., 5-13 ARROW - 0



D-4 96" X 18", 3.0 R. 1.0 B
LINE 1 = 82.63" : 8"-6" "E" MOD.

TYPE "D" SIGNS - SIGNALS								
SIGN PANEL	SIZE	QUANTITY REQUIRED	BRACKETS PER SIGN	BRACKET SPACING	SQUARE FT. PER SIGN	a	b	MAST ARM POLE NUMBER
D-1	108" X 18"	4	3	39"	13.5		7'	(B)(2)(4) (K)(1)(3)
D-2	132" X 30"	1	3	48"	27.5		17'	(K)(2)
D-3	132" X 30"	1	3	48"	27.5		17'	(K)(4)
D-4	96" X 18"	2	2	54"	12		20'	(B)(1)(3)

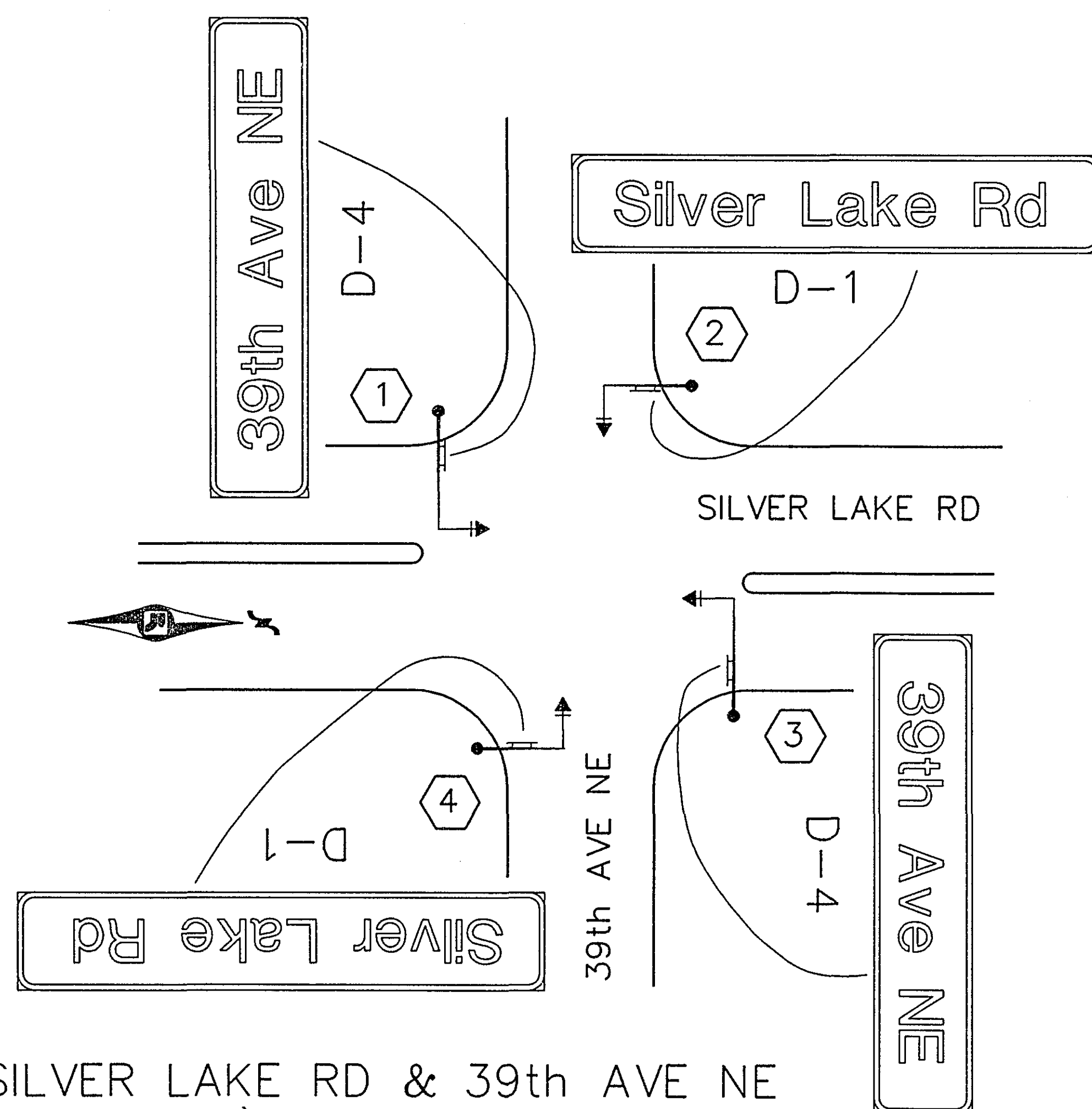
(B) - SYSTEM B
(K) - SYSTEM K



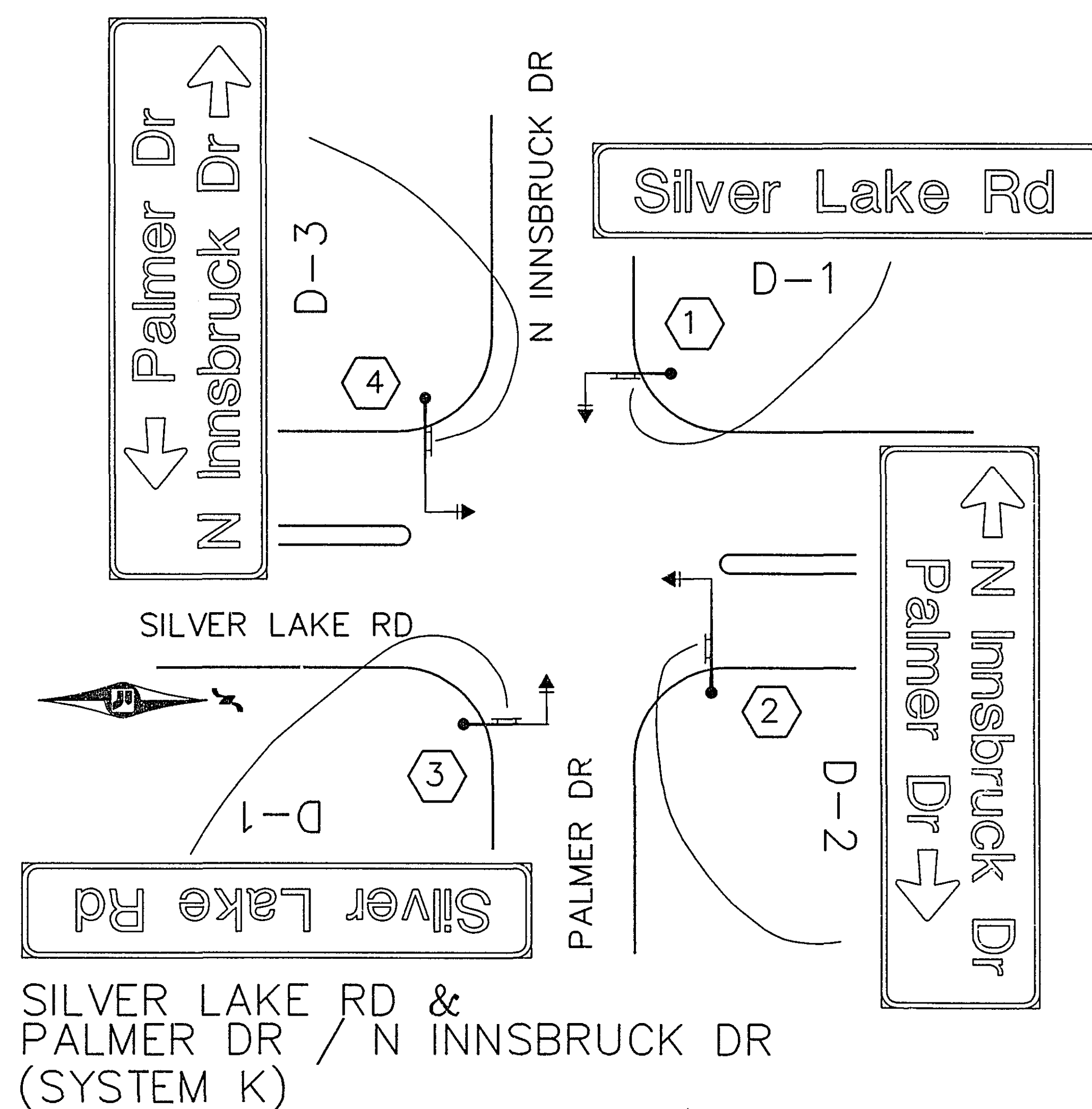
MAST ARM SIGN DIMENSIONING DETAIL

NOTES:

- COLOR - HIGH INTENSITY WHITE LEGEND AND BOARDER ON HIGH INTENSITY GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BOARDER SHALL NOT BE TRIMMED.
- BOARDERS SHALL BE 1".
- SEE STANDARD SIGN MANUAL FOR ARROW DETAILS
- FOR STRUCTURAL DETAILS, TYPE "D" SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105.
- FOR TYPE "D" STRINGER AND PANEL - JOINT DETAIL, SEE STANDARD SIGNS MANUAL, PAGE 105.
- LETTERING STYLE SHALL BE HIGHWAY GOTHIC CONFORMING TO MN/DOT STANDARDS.



SILVER LAKE RD & 39th AVE NE
(SYSTEM B)



SILVER LAKE RD &
PALMER DR / N INNSBRUCK DR
(SYSTEM K)

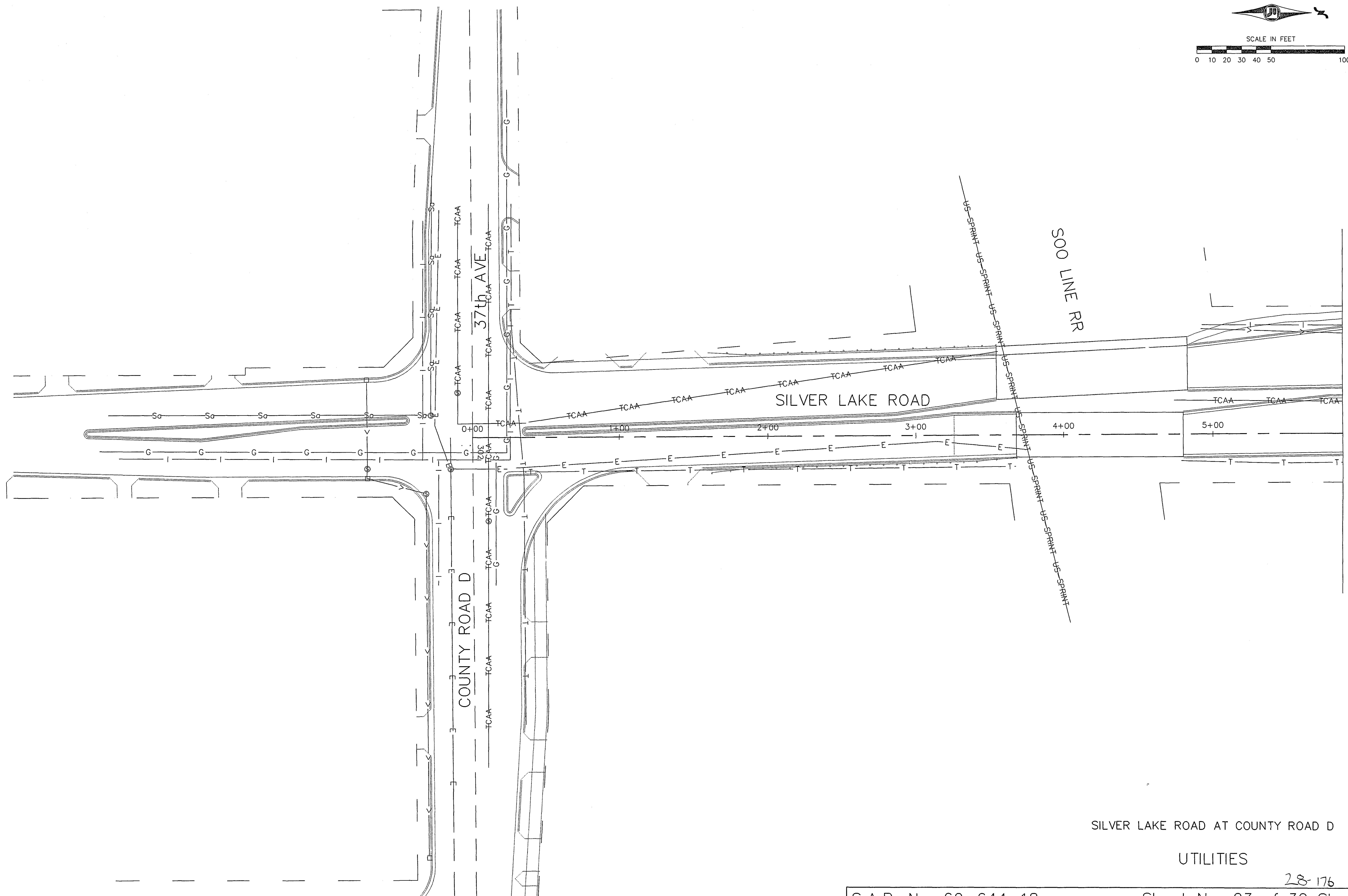
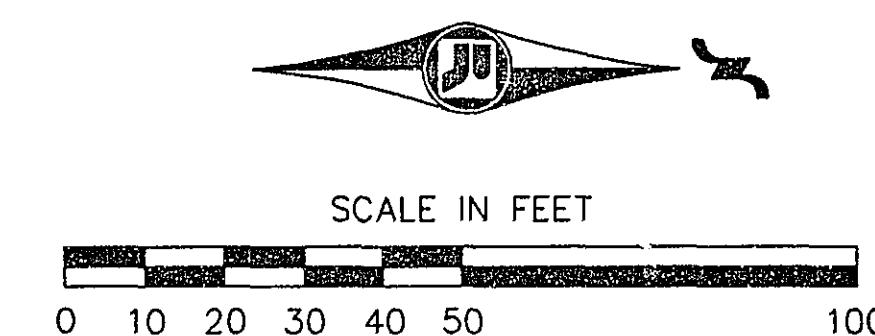
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Sch
Date 2/26/95 Reg. No. 20452

MAST ARM SIGNS

28-17b

S.A.P. No. 62-644-18

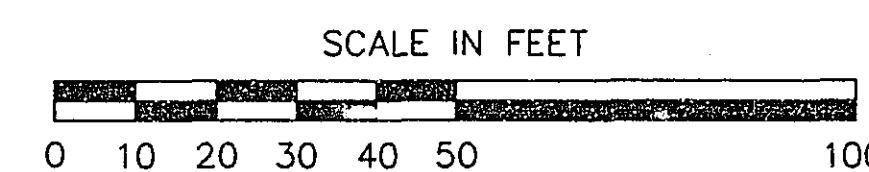
Sheet No. 22 of 30 Sheets



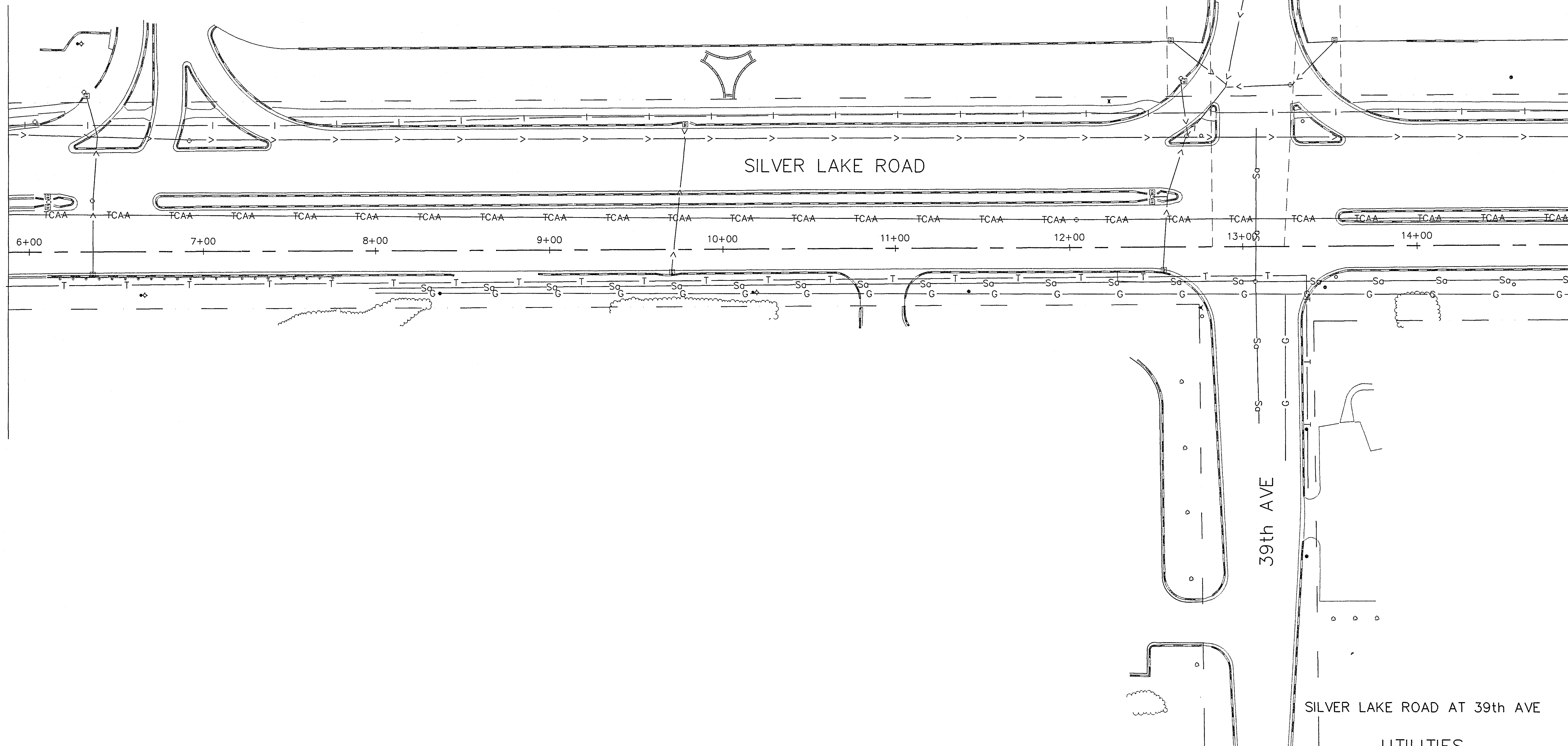
SILVER LAKE ROAD AT COUNTY ROAD D

UTILITIES

28-176



MATCH LINE A SEE SHEET 23



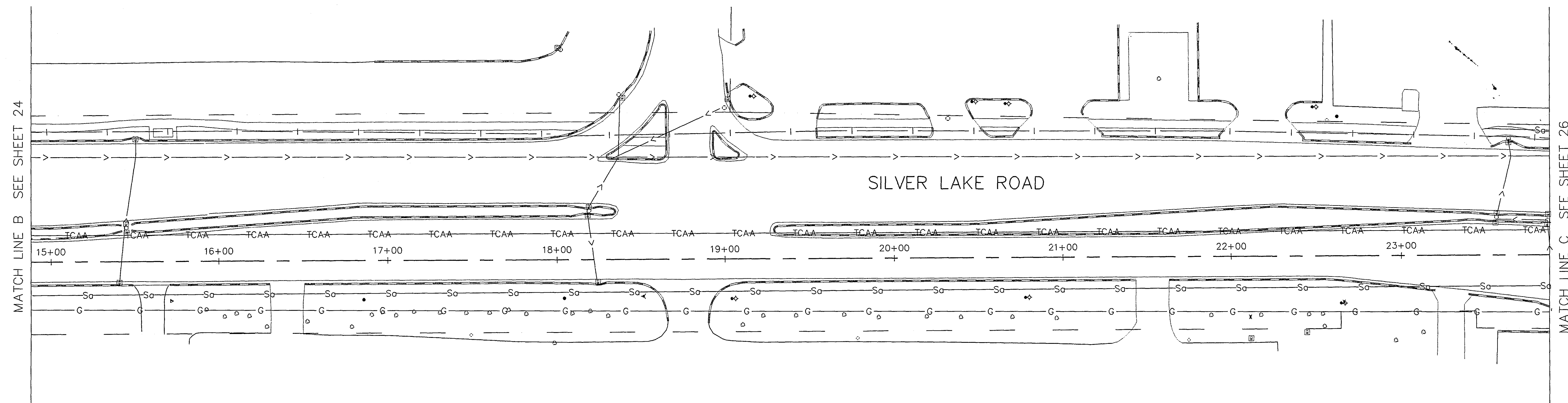
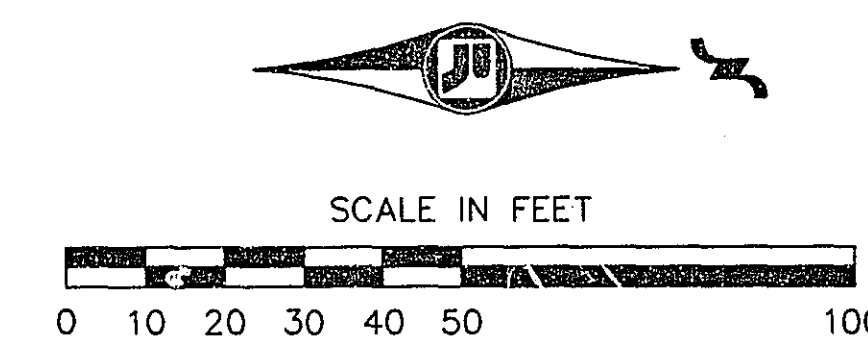
MATCH LINE B SEE SHEET 25

39th AVE

SILVER LAKE ROAD AT 39th AVE

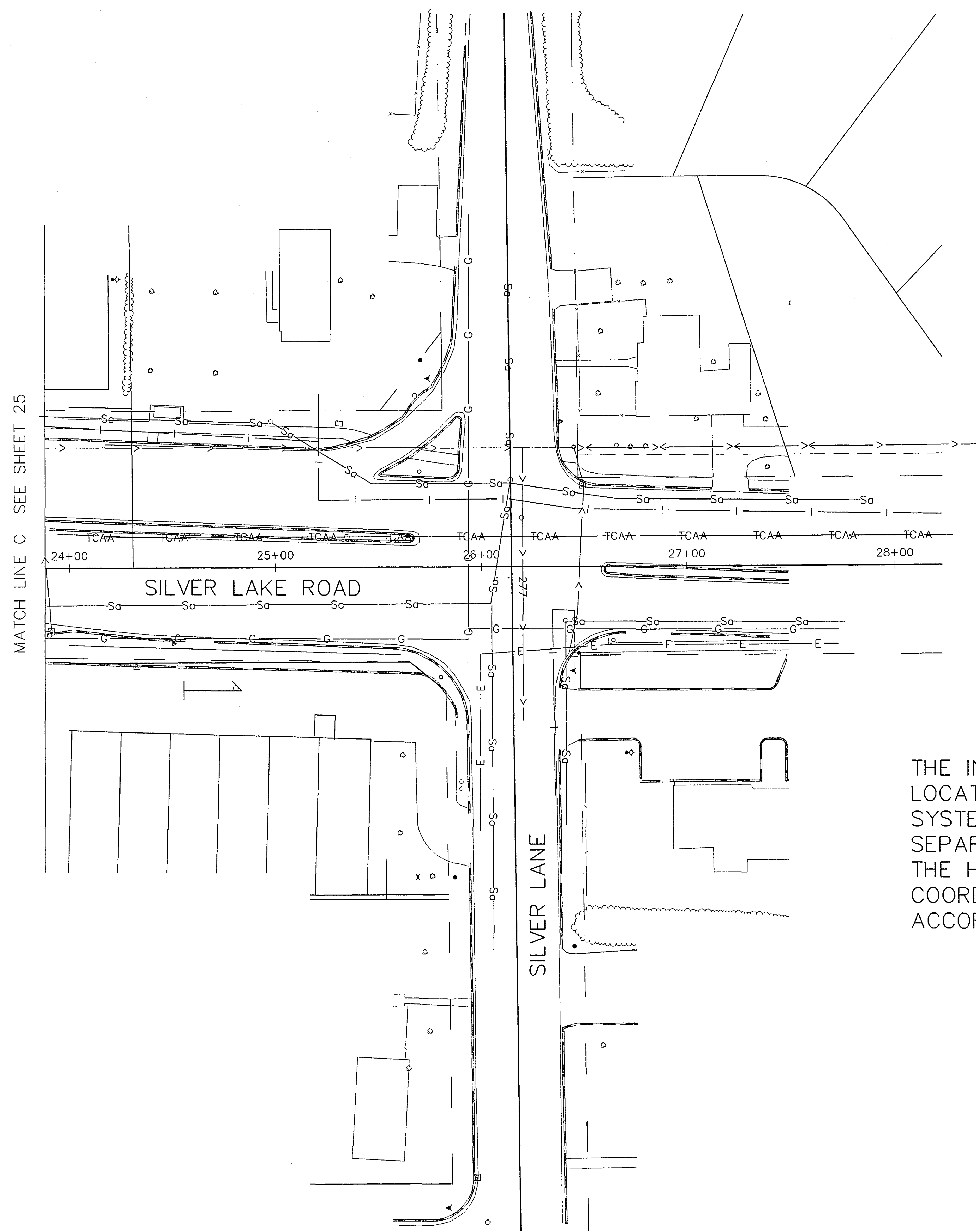
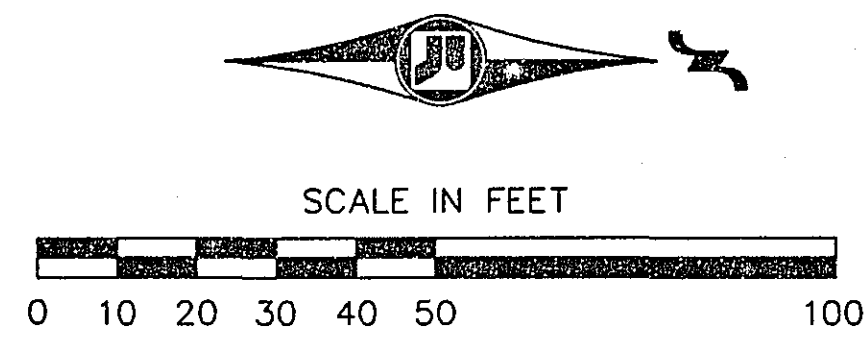
UTILITIES

28-176



SILVER LAKE ROAD
BETWEEN 39th AVE & SILVER LANE
UTILITIES

28-176

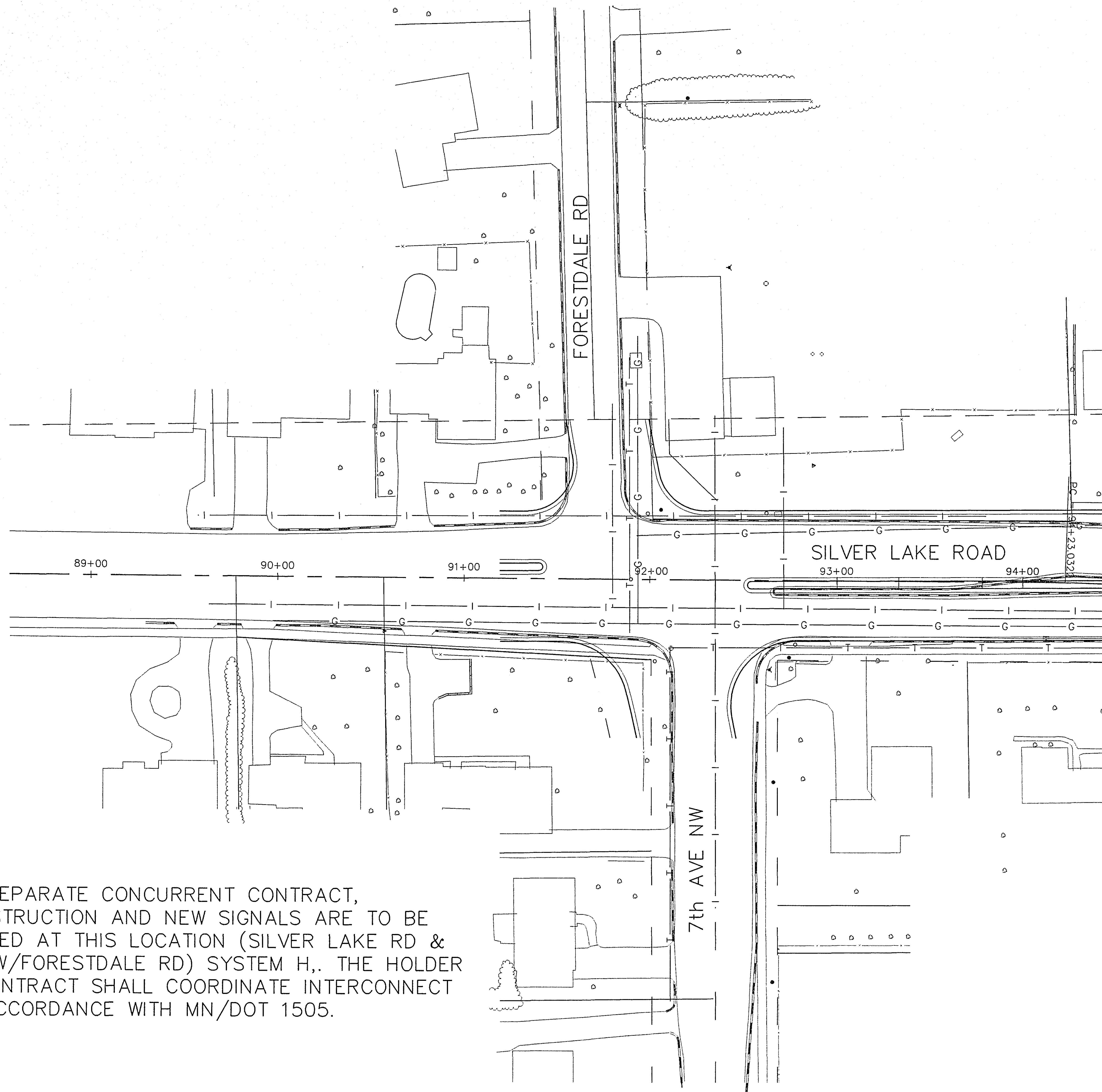
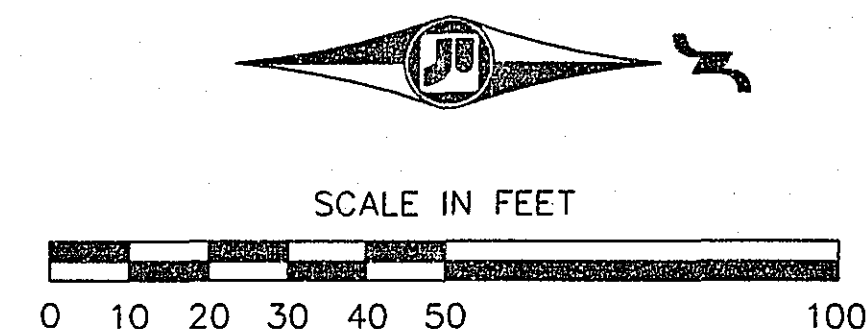


THE INPLACE SIGNAL SYSTEM AT THIS LOCATION (SILVER LAKE RD & SILVER LANE) SYSTEM C, IS TO BE REVISED UNDER A SEPARATE CONCURRENT CONTRACT. THE HOLDER OF THIS CONTRACT SHALL COORDINATE INTERCONNECT WORK IN ACCORDANCE WITH MN/DOT 1505.

SILVER LAKE ROAD AT SILVER LANE

UTILITIES

28-176

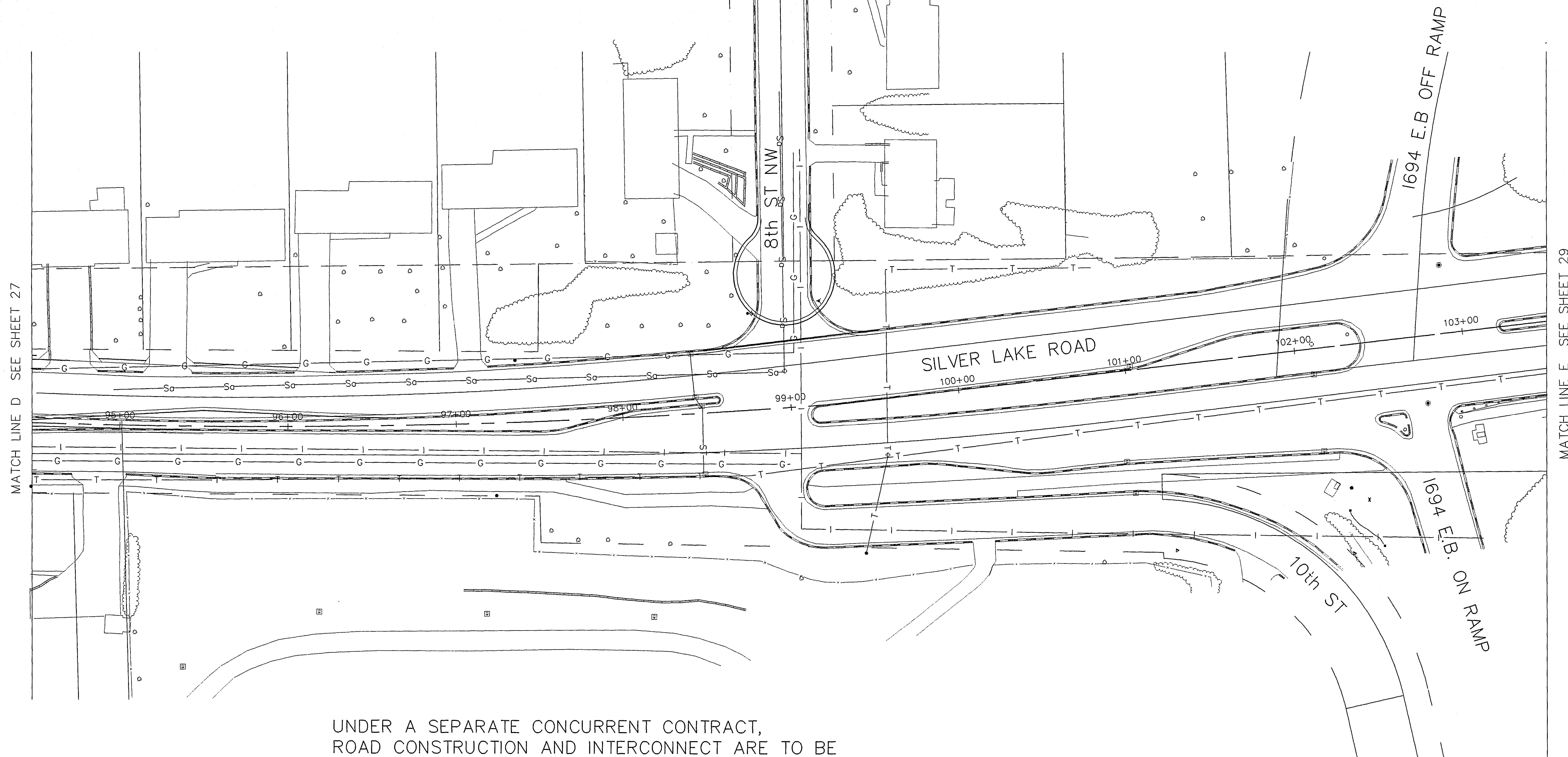
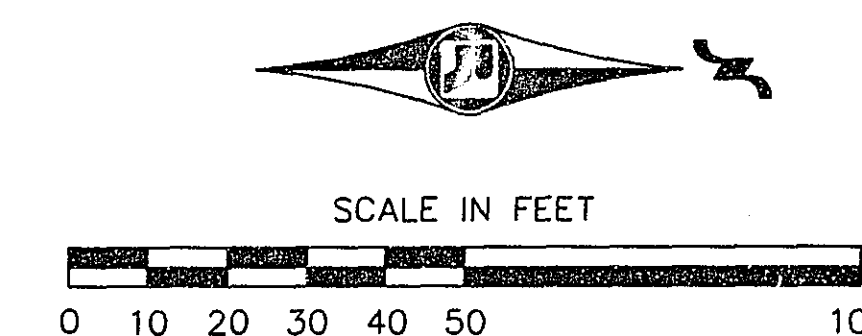


UNDER A SEPARATE CONCURRENT CONTRACT, ROAD CONSTRUCTION AND NEW SIGNALS ARE TO BE CONSTRUCTED AT THIS LOCATION (SILVER LAKE RD & 7th AVE NW/FORESTDALE RD) SYSTEM H,. THE HOLDER OF THIS CONTRACT SHALL COORDINATE INTERCONNECT WORK IN ACCORDANCE WITH MN/DOT 1505.

SILVER LAKE ROAD AT 7th AVE NW/FORESTDALE RD

UTILITIES & CONSTRUCTION

28-176

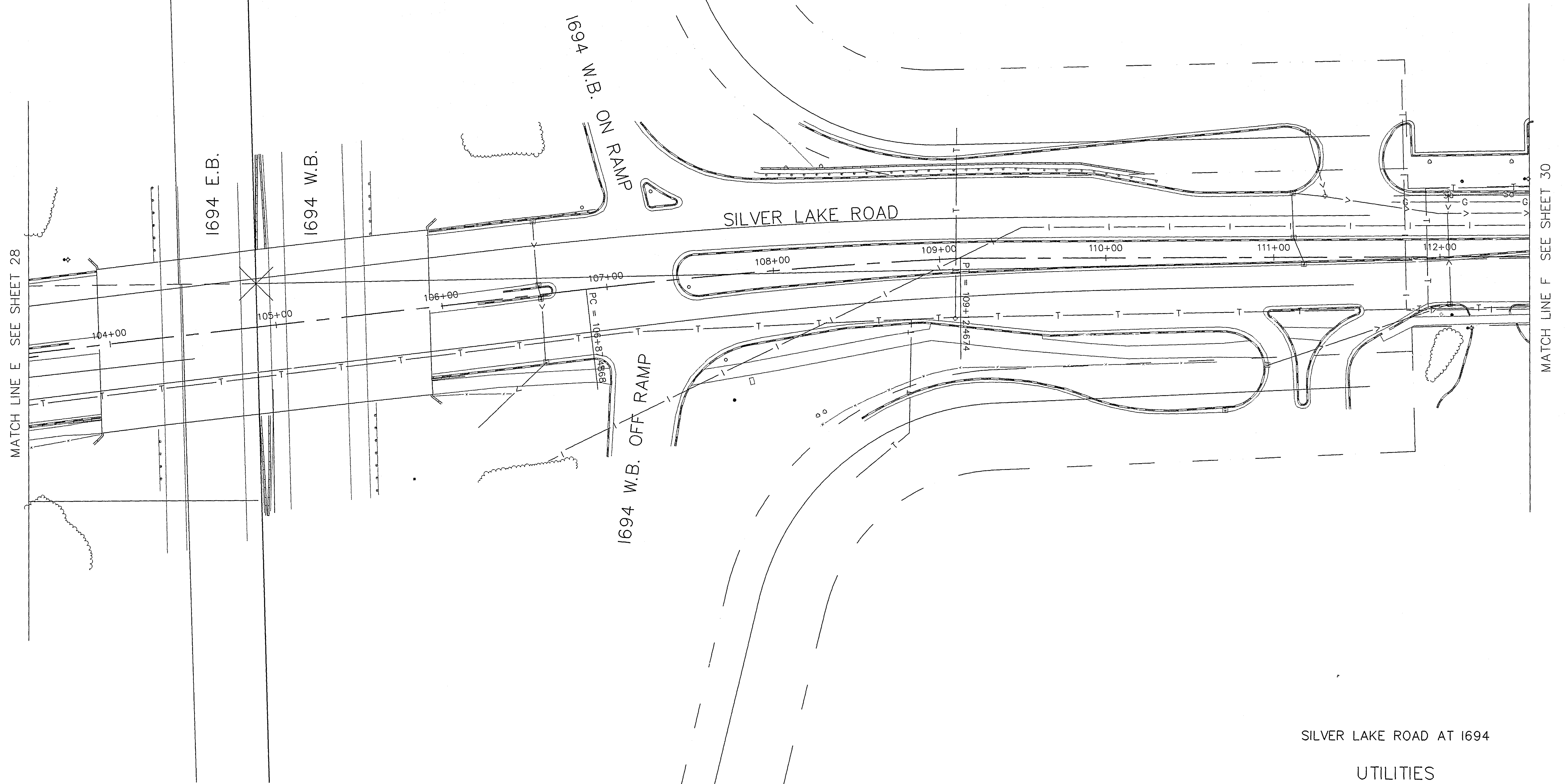
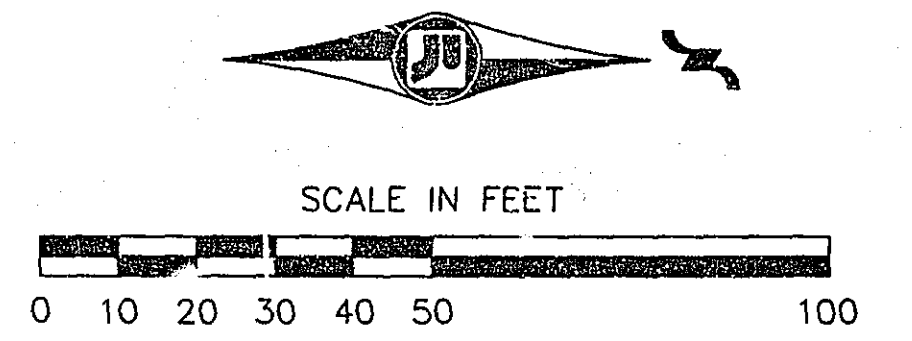


UNDER A SEPARATE CONCURRENT CONTRACT,
ROAD CONSTRUCTION AND INTERCONNECT ARE TO BE
CONSTRUCTED ALONG SILVER LAKE ROAD BETWEEN
7th AVE NW/FORESTDALE RD AND 8th ST NW. THE HOLDER
OF THIS CONTRACT SHALL COORDINATE INTERCONNECT
WORK IN ACCORDANCE WITH MN/DOT 1505.

SILVER LAKE ROAD
BETWEEN 7th AVE NW/ FORESTDALE RD & 1694

UTILITIES & CONSTRUCTION

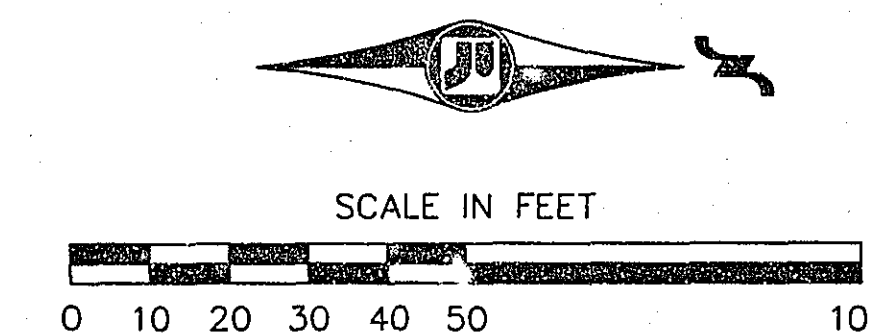
28-176



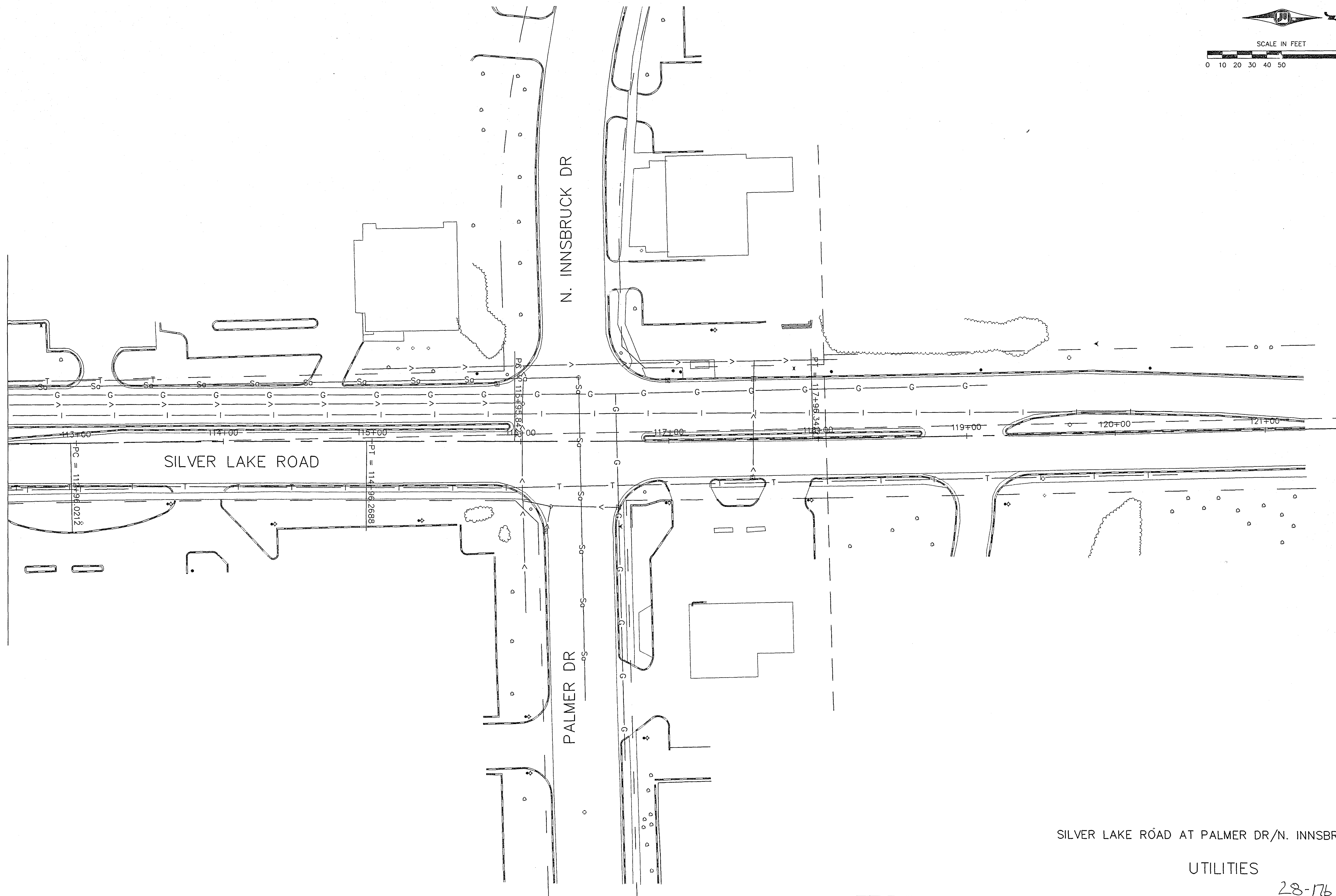
SILVER LAKE ROAD AT 1694

UTILITIES

28-176



MATCH LINE F SEE SHEET 29



SILVER LAKE ROAD AT PALMER DR/N. INNSBRUCK DR

UTILITIES

28-176