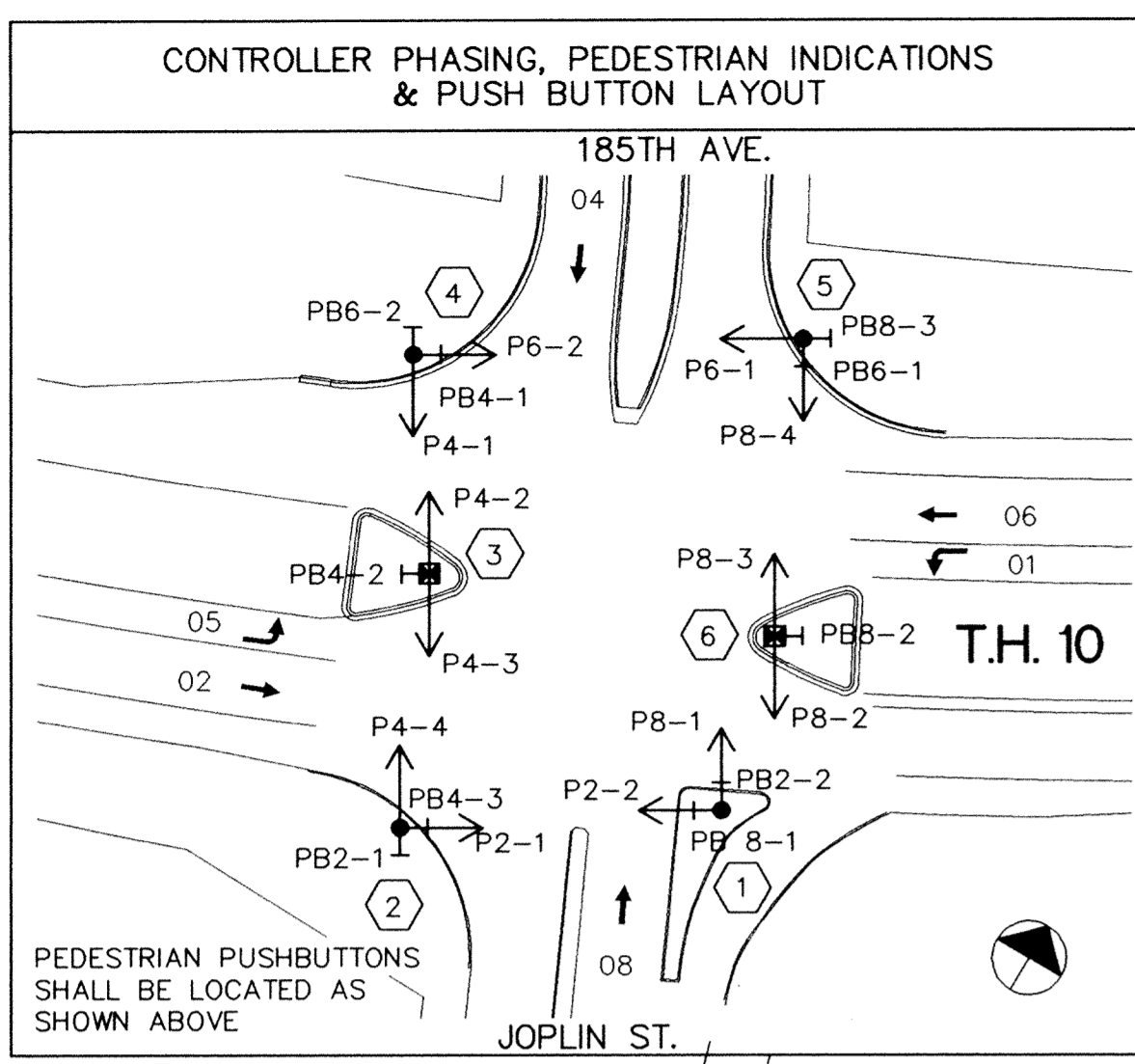


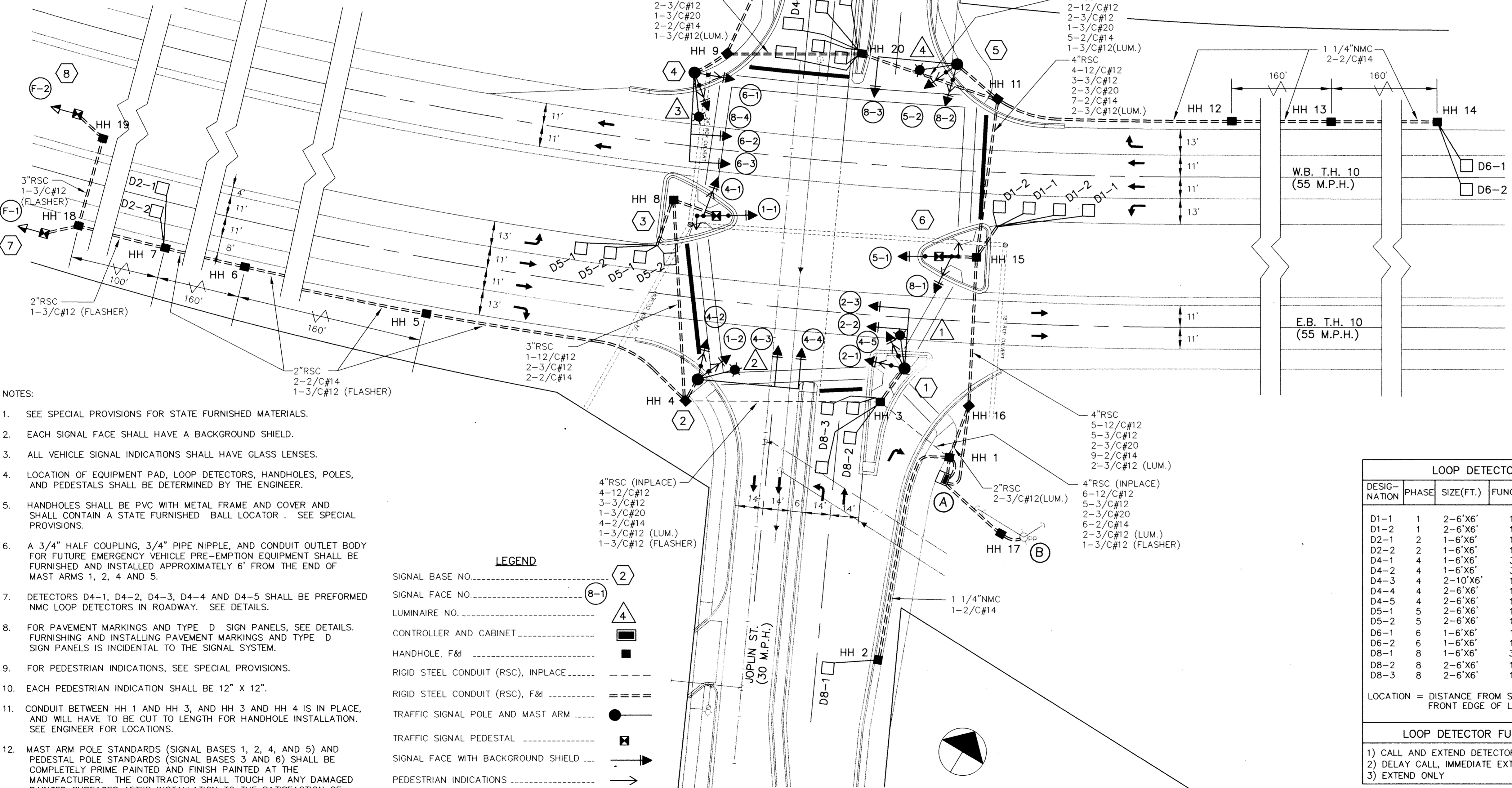
SAECO PRODUCTS • NEW HOPE, MINNESOTA
REVISION BY PART NUMBER 0303
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SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED
- NORMAL OPERATION IS 5 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES
- PHASES 2&6 SHALL BE ON VEHICLE RECALL

1	PA90 POLE FOUNDATION TYPE PA90-A-30-D40-9 (DAVIT AT 350') 2-ONE WAY SIGNALS OVERHEAD 0' AND 12' FROM END OF MAST ARM TYPE 10B AT 0' TYPE 10B AT 270' 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (R10-4B) LUMINAIRE-200W HPS WITH PEC AND CK SW TYPE D SIGN PANEL (90" X 36") - OVERHEAD (D-2) 3" RSC TO HH 3 WITH 2-12/C#12 3-3/C#12 1-3/C#20	4	PA100 POLE FOUNDATION TYPE PA100-A-45-D40-9 (DAVIT AT 350') 2-ONE WAY SIGNALS OVERHEAD 0' AND 12' FROM END OF MAST ARM TYPE 10B AT 0' TYPE 10B AT 270' 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (R10-4B) LUMINAIRE-200W HPS WITH PEC AND CK SW TYPE D SIGN PANEL (90" X 36") - OVERHEAD (D-3) 3" RSC TO HH 9 WITH 2-12/C#12 3-3/C#12 1-3/C#20	7	PEDESTAL FOUNDATION FLASHER (SEE DETAIL) LOCATE 550' FROM STOP BAR INSTALL PEDESTAL POLE AND BASE 2" RSC TO HH 18 WITH 2-3/C#12
2	PA100 POLE FOUNDATION TYPE PA100-A-50-D40-9 (DAVIT AT 350') 2-ONE WAY SIGNALS OVERHEAD 0' AND 12' FROM END OF MAST ARM TYPE 10B AT 0' TYPE 10B AT 270' 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (R10-4B) LUMINAIRE-200W HPS WITH PEC AND CK SW TYPE D SIGN PANEL (36" X 48") - OVERHEAD (D-1) 3" RSC TO HH 4 WITH 3-12/C#12 2-3/C#12 1-3/C#20	5	PA90 POLE FOUNDATION TYPE PA90-A-40-D40-9 (DAVIT AT 350') 1-ONE WAY SIGNAL OVERHEAD TYPE 10B AT 0' TYPE 10B AT 270' 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (R10-4B) LUMINAIRE-200W HPS WITH PEC AND CK SW TYPE D SIGN PANEL (36" X 48") - OVERHEAD (D-1) 3" RSC TO HH 11 WITH 2-12/C#12 2-3/C#12 1-3/C#20	8	PEDESTAL FOUNDATION FLASHER (SEE DETAIL) LOCATE 550' FROM STOP BAR INSTALL PEDESTAL POLE AND BASE 2" RSC TO HH 19 WITH 1-3/C#12
3	PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 2D 1-PEDESTRIAN PUSHBUTTON AND SIGN (R10-4B) 3" RSC TO HH 8 WITH 1-12/C#12 2-3/C#12	6	PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 2D 1-PEDESTRIAN PUSHBUTTON AND SIGN (R10-4B) 3" RSC TO HH 15 WITH 1-12/C#12 2-3/C#12		



(A) EQUIPMENT PAD (SEE DETAIL)
CONTROLLER AND CABINET
SERVICE EQUIPMENT (PAD MOUNTED)
CONTROLLER CABINET TO HH 1:
4" RSC
6-12/C#12
5-3/C#12
2-3/C#20
7-2/C#14

CONTROLLER CABINET TO HH 16:
4" RSC
5-12/C#12
5-3/C#12
2-3/C#20
9-2/C#14

LOAD CENTER TO HH1:
2" RSC
4-3/C#12 (LUM.)
1-3/C#12 (FLASHER)

LOAD CENTER TO CABINET:
1 1/4" RSC
2-1/C#6
1-1/C#6 BR GR

METER TO HH 17:
2" RSC
3-1/C#2

STUB OUT 1-2" RSC AND 1-3" RSC FROM CONTROLLER CABINET (THREAD AND CAP BOTH ENDS - FOR FUTURE USE)

(B) S.O.P. WOOD POLE (INPLACE)
2" RSC RISER AND WEATHERHEAD
3-1/C#2
2" RSC TO HH 17
3-1/C#2

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - ALL VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES.
 - LOCATION OF EQUIPMENT PAD, LOOP DETECTORS, HANDHOLES, POLES, AND PEDESTALS SHALL BE DETERMINED BY THE ENGINEER.
 - HANDHOLES SHALL BE PVC WITH METAL FRAME AND COVER AND SHALL CONTAIN A STATE FURNISHED BALL LOCATOR. SEE SPECIAL PROVISIONS.
 - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 6' FROM THE END OF MAST ARMS 1, 2, 4 AND 5.
 - DETECTORS D4-1, D4-2, D4-3, D4-4 AND D4-5 SHALL BE PREFORMED NMC LOOP DETECTORS IN ROADWAY. SEE DETAILS.
 - FOR PAVEMENT MARKINGS AND TYPE D SIGN PANELS, SEE DETAILS. FURNISHING AND INSTALLING PAVEMENT MARKINGS AND TYPE D SIGN PANELS IS INCIDENTAL TO THE SIGNAL SYSTEM.
 - FOR PEDESTRIAN INDICATIONS, SEE SPECIAL PROVISIONS.
 - EACH PEDESTRIAN INDICATION SHALL BE 12" X 12".
 - CONDUIT BETWEEN HH 1 AND HH 3, AND HH 3 AND HH 4 IS IN PLACE, AND WILL HAVE TO BE CUT TO LENGTH FOR HANDHOLE INSTALLATION. SEE ENGINEER FOR LOCATIONS.
 - MAST ARM POLE STANDARDS (SIGNAL BASES 1, 2, 4, AND 5) AND PEDESTAL POLE STANDARDS (SIGNAL BASES 3 AND 6) SHALL BE COMPLETELY PRIME PAINTED AND FINISH PAINTED AT THE MANUFACTURER. THE CONTRACTOR SHALL TOUCH UP ANY DAMAGED PAINTED SURFACES AFTER INSTALLATION TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL USE TOUCH UP PAINT AS SUPPLIED BY THE POLE MANUFACTURER. FIELD PAINTING OF MAST ARM POLE AND LIGHTING STANDARDS, OTHER THAN TOUCH UP PAINTING, IS NOT PERMITTED.

LEGEND

SIGNAL BASE NO.	2
SIGNAL FACE NO.	8-1
LUMINAIRE NO.	4
CONTROLLER AND CABINET	[Symbol]
HANDHOLE, F&I	[Symbol]
RIGID STEEL CONDUIT (RSC), INPLACE	[Symbol]
RIGID STEEL CONDUIT (RSC), F&I	[Symbol]
TRAFFIC SIGNAL POLE AND MAST ARM	[Symbol]
TRAFFIC SIGNAL PEDESTAL	[Symbol]
SIGNAL FACE WITH BACKGROUND SHIELD	[Symbol]
PEDESTRIAN INDICATIONS	[Symbol]
MAST ARM AND LUMINAIRE	[Symbol]
PEDESTRIAN PUSH BUTTON ON POLE	[Symbol]

LOOP DETECTORS

DESIG-NATION	PHASE	SIZE(FT.)	FUNCTION	LOCATION
D1-1	1	2-6'X6'	1	20' AND 50'
D1-2	1	2-6'X6'	1	5' AND 35'
D2-1	2	1-6'X6'	1	450'
D2-2	2	1-6'X6'	1	450'
D4-1	4	1-6'X6'	3	140'
D4-2	4	1-6'X6'	3	140'
D4-3	4	2-10'X6'	1	5' AND 20'
D4-4	4	2-6'X6'	1	10' AND 30'
D4-5	4	2-6'X6'	1	5' AND 35'
D5-1	5	2-6'X6'	1	20' AND 50'
D5-2	5	2-6'X6'	1	5' AND 35'
D6-1	6	1-6'X6'	1	450'
D6-2	6	1-6'X6'	1	450'
D8-1	8	1-6'X6'	3	140'
D8-2	8	2-6'X6'	1	5' AND 20'
D8-3	8	2-6'X6'	1	5' AND 35'

LOCATION = DISTANCE FROM STOP BAR TO FRONT EDGE OF LOOP DETECTOR

LOOP DETECTOR FUNCTIONS

- 1) CALL AND EXTEND DETECTOR
- 2) DELAY CALL, IMMEDIATE EXTEND
- 3) EXTEND ONLY

SIGNAL INDICATION CHART

FACE	FLASH	ALL SIGNAL INDICATIONS SHALL BE 12"					
		R	Y	G	R	Y	G
1-1	R				←	←	←
1-2	R				←	←	←
2-1	R	●	●	●			
2-2	R	●	●	●			
2-3	R	●	●	●			
4-1	R	●	●	●			
4-2	R	●	●	●			
4-3	R	●	●	●			
4-4	R	●	●	●			
5-1	R				←	←	←
5-2	R				←	←	←
6-1	R	●	●	●			
6-2	R	●	●	●			
6-3	R	●	●	●			
8-1	R	●	●	●			
8-2	R	●	●	●			
8-3	R	●	●	●			
8-4	R	●	●	●			

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.

George M. Stuenkel
DATE 12/15/95 REG NO. 21849



1326 ENERGY PARK DRIVE
ST. PAUL, MINNESOTA 55108
(612) 644-4389

5075 WAYZATA BLVD, SUITE #225
MINNEAPOLIS, MINNESOTA 55416
(612) 546-0432

REVISIONS

DATE	DESCRIPTION	DESIGNED - GMS	CHECKED	DRAWN - JL
12-14-95	ADDED D1-2, D5-2 DETECTORS STOP BARS, HH DIMENSIONS.			

GRAPHIC SCALE
0 30
0 VERT. N/A

CITY OF ELK RIVER
TRAFFIC CONTROL SIGNAL SYSTEM
INTERSECTION LAYOUT
T.H. 10 AT JOPLIN AVE./185TH AVE.

DATE SEPT 1995 SHEET 32 OF 41 SHEETS PROJECT NO. 230-277