

F & I N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20', 50'	1
D1-2	2-6x6	5', 35'	1
D2-1, D2-2	6x6	475'	1
D3-1	2-6x6	20', 50'	1
D3-2	2-6x6	5', 35'	1
D4-1	6x6	120'	3, 8
D4-2	6x6	5'	7
D4-3	2-6x6	5', 120'	1
D5-1	2-6x6	20', 50'	1
D5-2	2-6x6	5', 35'	1
D6-1, D6-2	6x6	475'	1
D7-1	2-6x6	20', 50'	1
D7-2	2-6x6	5', 35'	1
D8-1	6x6	120'	3, 8
D8-2	2-6x6	5'	7
D8-3	2-6x6	5', 20'	1

LOOP DETECTORS FUNCTIONS:

- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

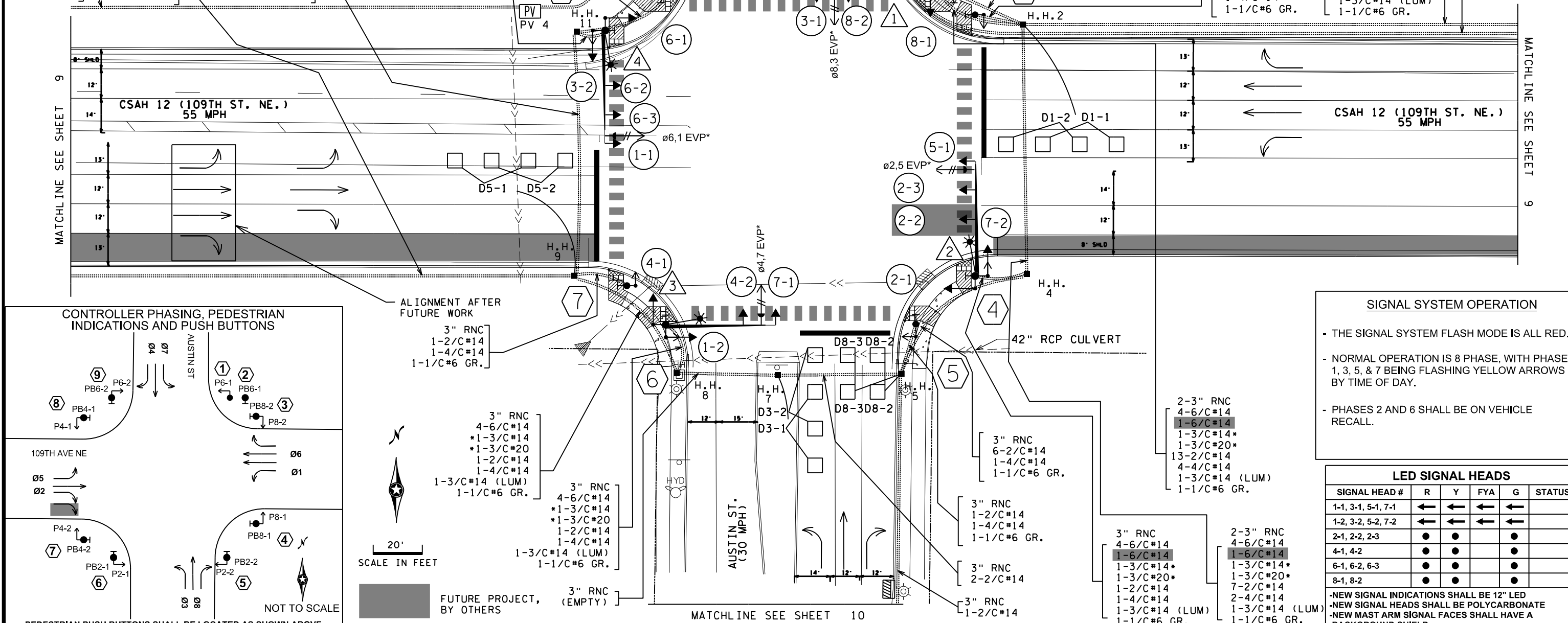
- 3" RNC
- 4-6/C#14
- *1-3/C#14
- *1-3/C#20
- 6-2/C#14
- 2-4/C#14
- 1-3/C#14 (LUM)
- 1-1/C#6 GR.

- 3" RNC
- 1-2/C#14
- *1-3/C#20
- *1-1/C#6
- 3-3" RNC
- 9-6/C#14
- *2-3/C#14
- *3-3/C#20
- 13-2/C#14
- 4-4/C#14
- 11-2/C#14
- 4-4/C#14
- 2-3/C#14 (LUM)
- 1-1/C#6 GR.

- 3-3" RNC
- 9-6/C#14
- *2-3/C#14
- *2-3/C#20
- 7-2/C#14
- 3-4/C#14
- 2-3/C#14 (LUM)
- 1-1/C#6 GR.

- 3" RNC
- 5-6/C#14
- *1-3/C#14
- *1-3/C#20
- 1-2/C#14
- 1-4/C#14
- 1-3/C#14 (LUM)
- 1-1/C#6 GR.

- 1.5" RNC
- 1-1/C#14
- 3" RNC
- 2-2/C#14
- 1-3/C#14 (LUM)
- 1-1/C#6 GR.



NOTES:

1. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY ANOKA COUNTY OFFICE PERSONNEL.
2. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
3. FOR SIGN PANELS ON SIGNAL SEE DETAIL SHEET. ALL SIGN PANELS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
4. FOR PAVEMENT MARKINGS SEE ROADWAY SHEETS.
5. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK, SEE DETAIL SHEET.
6. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
7. CONDUIT SIZES ARE NOMINAL DIAMETER, RIGID PVC SCHEDULE 80 NMC (RNC)
8. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
9. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
10. CONTRACTOR TO VERIFY AND PROVIDE MAST ARM FOUNDATION DESIGNS SUITABLE FOR IN SITU SOILS TO COUNTY PRIOR TO INSTALLATION.
11. SEE STANDARD PLATE 8123G FOR LUMINAIRE DETAILS.

- 3-3" RNC
- 13-2/C#14
- 8-6/C#14
- 1-1.5" RNC
- 1-6/C#14
- 4-4/C#14
- 2-3/C#14 * 2-3/C#14 (LUM)
- 2-3/C#20 * 1-1/C#6 GR.

- 3" RNC
- 4-6/C#14
- 1-3/C#14 *
- 1-3/C#20 *
- 1-4/C#14
- 1-3/C#14 (LUM)
- 1-1/C#6 GR.
- 3" RNC
- 2-2/C#14
- 1.5" RNC
- 1-12SM FO

- 3" RNC
- 1-2/C#14
- 1-1/C#6 GR.

- 3" RNC
- 1-2/C#14
- 1-4/C#14
- 1-1/C#6 GR.

- 3" RNC
- 1-2/C#14
- 1-4/C#14
- 1-1/C#6 GR.

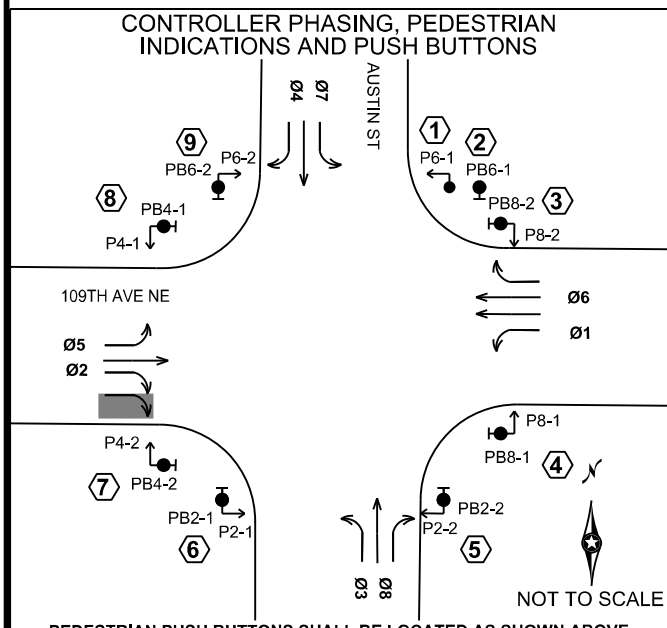
SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, & 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

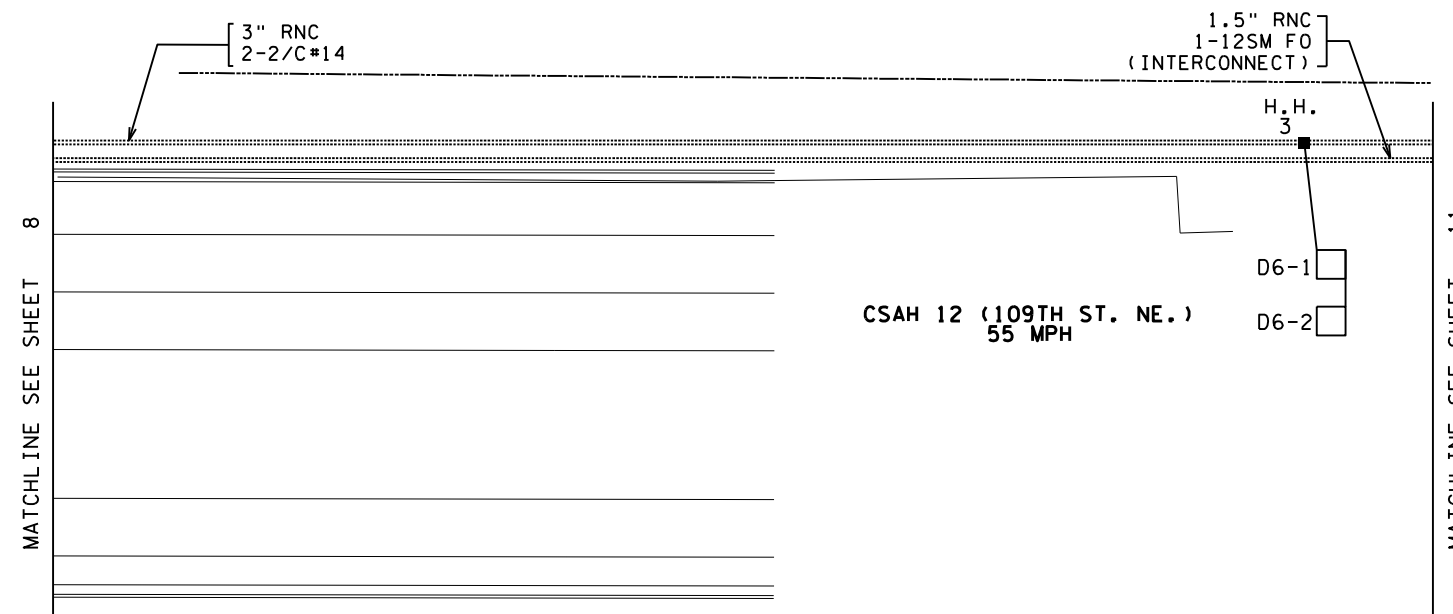
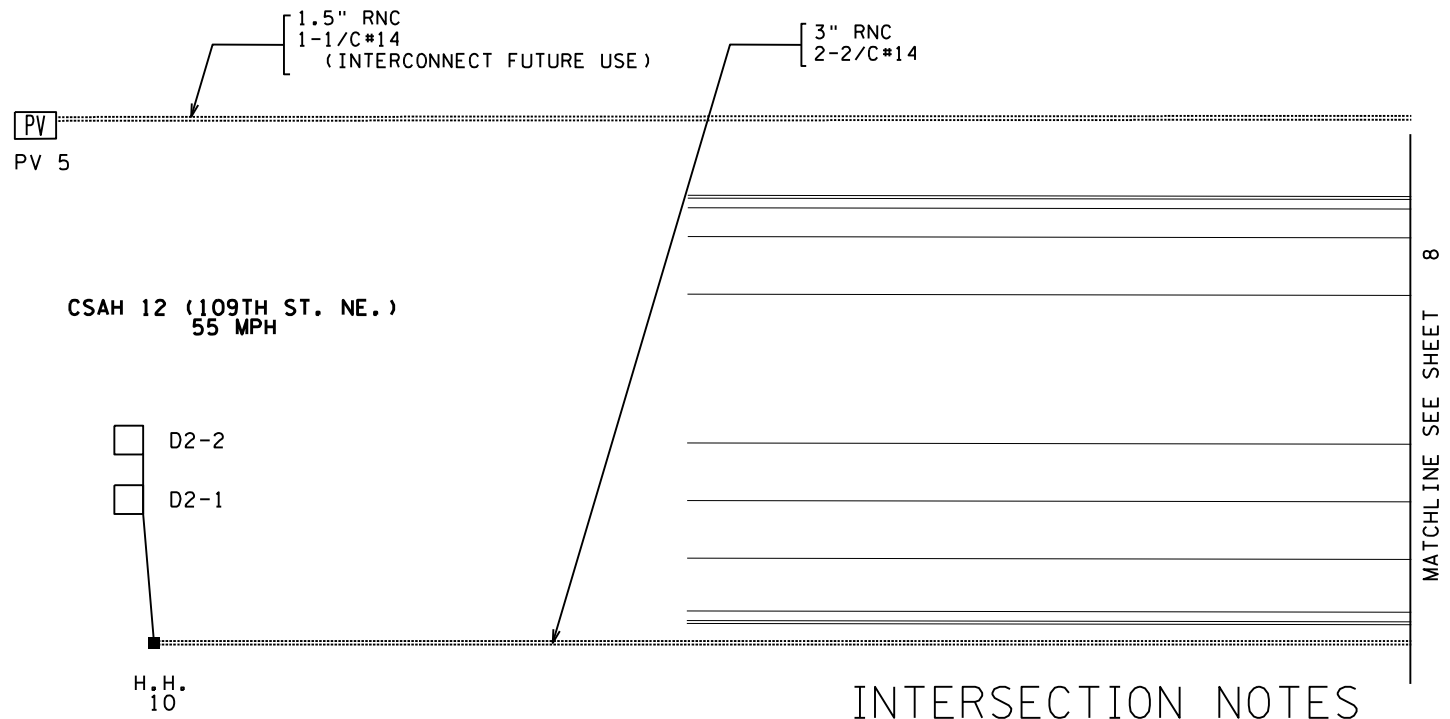
LED SIGNAL HEADS

SIGNAL HEAD #	R	Y	FYA	G	STATUS
1-1, 3-1, 5-1, 7-1	←	←	←	←	
1-2, 3-2, 5-2, 7-2	←	←	←	←	
2-1, 2-2, 2-3	●	●		●	
4-1, 4-2	●	●		●	
6-1, 6-2, 6-3	●	●		●	
8-1, 8-2	●	●		●	

- NEW SIGNAL INDICATIONS SHALL BE 12" LED
- NEW SIGNAL HEADS SHALL BE POLYCARBONATE
- NEW MAST ARM SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD



FUTURE PROJECT, BY OTHERS



INTERSECTION NOTES

A INSTALL CONTROLLER AND SERVICE CABINET (FURNISHED BY COUNTY) ON ONE EQUIPMENT PAD FOUNDATION BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
C METERED SIGNAL SERVICE
 3" RNC
 3-1/C#6

CONTROLLER CABINET TO H.H. 15: CONTROLLER CABINET TO H.H.1:
 3-3" RNC 3-3" RNC
 1-1.5" RNC 1-1.5" RNC
 9-6/C#14 8-6/C#14
 13-2/C#14 1-6/C#14
 4-4/C#14 13-2/C#14
 2-3/C#14 4-4/C#14
 3-3/C#20 2-3/C#14
 2-3/C#14 (LUM) 2-3/C#20
 1-1/C#G GR. 2-3/C#14 (LUM)
 1-1/C#6 GR.

B SOP-GROUND MOUNTED TRANSFORMER (XCEL ENERGY TO PROVIDE)
 3" RNC INTO SERVICE CABINET:
 3-1/C#2

1 PA100 POLE FOUNDATION
 SIGNAL BASE ELEV. 899.6' (1)
 TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE LED
 3-ONE WAY SIGNALS-OVERHEAD (0' AND 13.5' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 1-ANGLE MOUNT C.D. PED HEAD AT 90 DEG
 1-R10-X12 SIGN PANEL-ADJACENT TO 3-1
 1-R6-1L POLE MOUNTED 54"x18" SIGN PANEL FOR AUSTIN ST NB, EB TRAFFIC
 1-R6-1R POLE MOUNTED 54"x18" SIGN PANEL FOR AUSTIN ST NB, WB TRAFFIC
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (ø8,3)*
 3" RNC TO H.H. 1
 4-6/C#14
 1-3/C#14*
 1-3/C#20*
 1-4/C#14
 1-3/C#14 (LUM)
 1-1/C#6 GR.

2 PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
 1-STRAIGHT MOUNT C.D. PED HEAD AT 90 DEG.
 1-APS PB AND SIGN (LT ARROW) (PB6-1) AND APS PB MOUNTING SPACERS
 3" RNC TO H.H. 2
 1-2/C#14
 1-1/C#6 GR.

3 PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
 1-STRAIGHT MOUNT C.D. PED HEAD AT 90 DEG.
 1-APS PB AND SIGN (RT ARROW) (PB8-2) AND APS PB MOUNTING SPACERS
 3" RNC TO H.H. 2
 1-4/C#14
 1-2/C#14
 1-1/C#6 GR.

4 PA100 POLE FOUNDATION
 SIGNAL BASE ELEV. 900.2' (1)
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE LED
 2-ONE WAY SIGNALS-OVERHEAD (0', 11', & 24' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 1-ONE ANGLE MOUNT C.D. PED HEAD AT 90 DEG
 1-PEDESTRIAN PUSHBUTTON & SIGN (R10-3B) (LT ARROW)(PB8-1)
 1-R10-X12 SIGN PANEL-ADJACENT TO 5-1
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (ø2,5)*
 3" RNC TO H.H.4:
 4-6/C#14
 1-6/C#14
 1-4/C#14
 1-3/C#14*
 1-3/C#20*
 1-2/C#14
 1-3/C#14 (LUM)
 1-1/C#6 GR.

5 PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
 1-STRAIGHT MOUNT C.D. PED HEAD AT 90 DEG.
 1-APS PB AND SIGN (RT ARROW) (PB2-2) AND APS PB MOUNTING SPACERS
 3" RNC TO H.H.5:
 1-4/C#14
 1-2/C#14
 1-1/C#6 GR.

6 PA100 POLE FOUNDATION
 SIGNAL BASE ELEV. 901.0' (1)
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE LED
 3-ONE WAY SIGNALS-OVERHEAD (0' AND 14' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 1-ONE ANGLE MOUNT C.D. PED HEAD AT 90 DEG
 1-PEDESTRIAN PUSHBUTTON & SIGN (R10-3B) (LT ARROW)(PB2-1)
 1-R10-X12 SIGN PANEL ADJACENT TO 7-1
 1-R6-1L POLE MOUNTED 54"x18" SIGN PANEL FOR AUSTIN ST SB, WB TRAFFIC
 1-R6-1R POLE MOUNTED 54"x18" SIGN PANEL FOR AUSTIN ST SB, EB TRAFFIC
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (ø4,7)*
 3" RNC TO H.H.8:
 4-6/C#14
 1-4/C#14
 1-3/C#14*
 1-3/C#20*
 1-2/C#14
 1-3/C#14 (LUM)
 1-1/C#6 GR.

7 PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
 1-STRAIGHT MOUNT C.D. PED HEAD AT 90 DEG.
 1-APS PB AND SIGN (RT ARROW) (PB4-2) AND APS PB MOUNTING SPACERS
 3" RNC TO H.H.9
 1-4/C#14
 1-2/C#14
 1-1/C#6 GR.

8 PA100 POLE FOUNDATION
 SIGNAL BASE ELEV. 900.1' (1)
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE LED
 2-ONE WAY SIGNALS-OVERHEAD (0', 12', & 24' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 1-ANGLE MOUNT C.D. PED HEAD AT 90 DEG
 1-PEDESTRIAN APS PUSHBUTTON & SIGN (R10-3B) (LT ARROW)(PB4-1)
 1-R10-X12 SIGN PANEL-ADJACENT TO 1-1
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (ø6,1)*
 3" RNC TO H.H.11:
 5-6/C#14
 1-4/C#14
 1-3/C#14*
 1-3/C#20*
 1-2/C#14
 1-3/C#14 (LUM)
 1-1/C#6 GR.

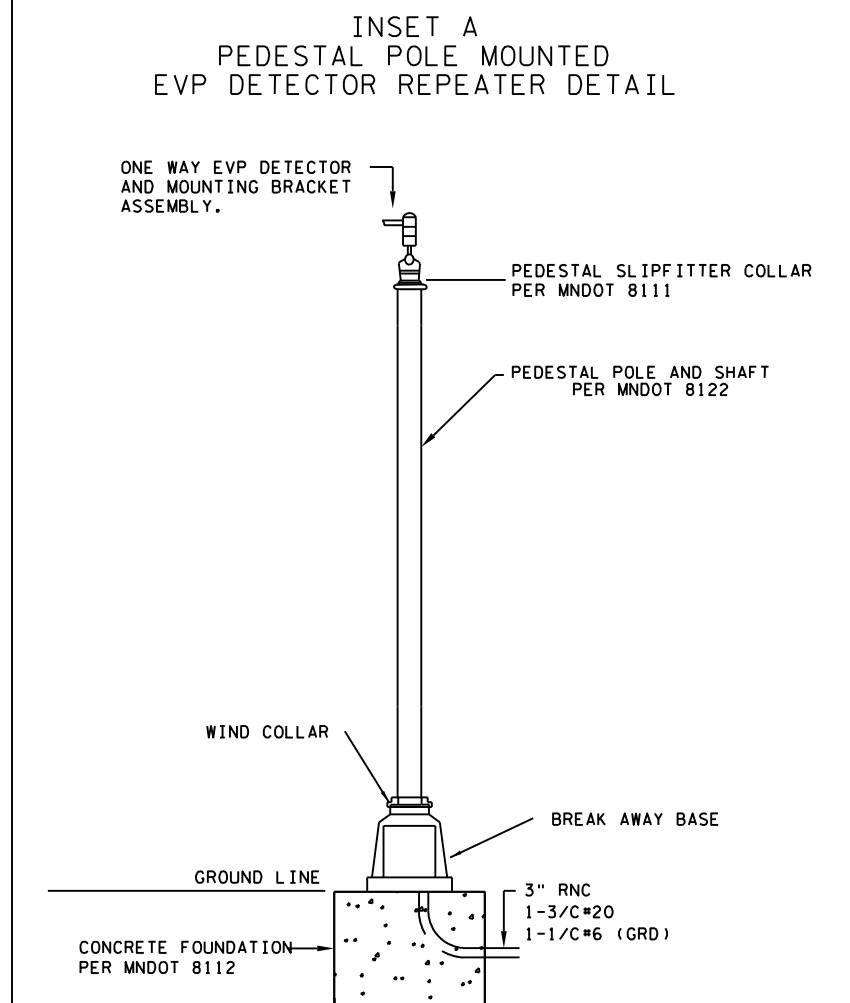
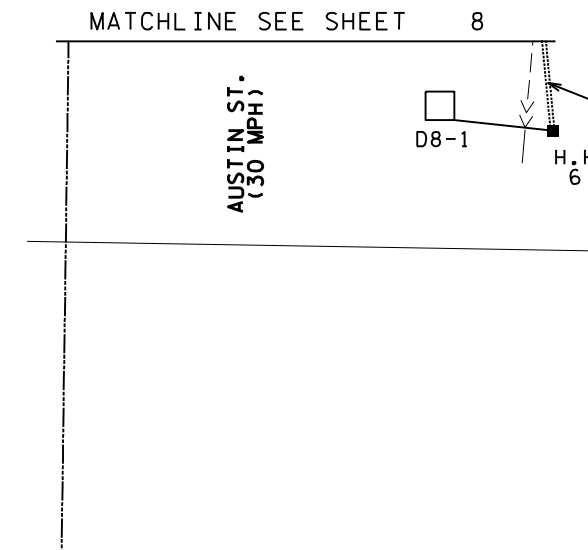
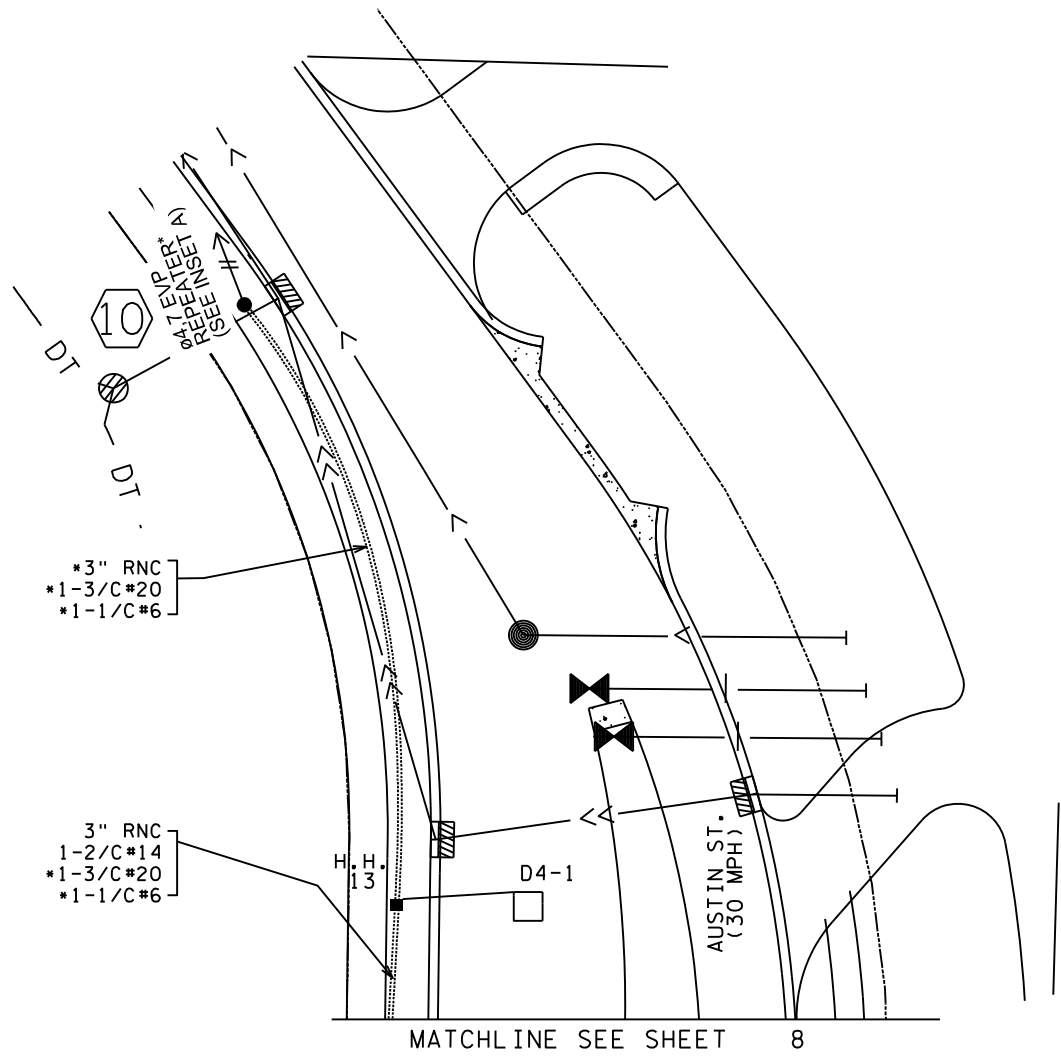
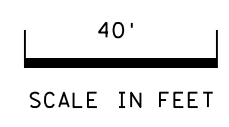
9 PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
 1-STRAIGHT MOUNT C.D. PED HEAD AT 90 DEG.
 1-APS PB AND SIGN (RT ARROW) (PB6-2) AND APS PB MOUNTING SPACERS
 3" RNC TO H.H. 12
 1-4/C#14
 1-2/C#14
 1-1/C#6 GR.

10 PEDESTAL FOUNDATION*
 PEDESTAL POLE PLUS BASE*
 ONE WAY EVP DETECTOR (ø4,7)*
 3" RNC TO H.H.13
 1-3/C#20*
 1-1/C#6 GR.

NOTES:
 (1) THE ELEVATION DESIGNATED AT EACH SIGNAL BASE SHOULD BE VERIFIED IN THE FIELD.
 (2) EMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM

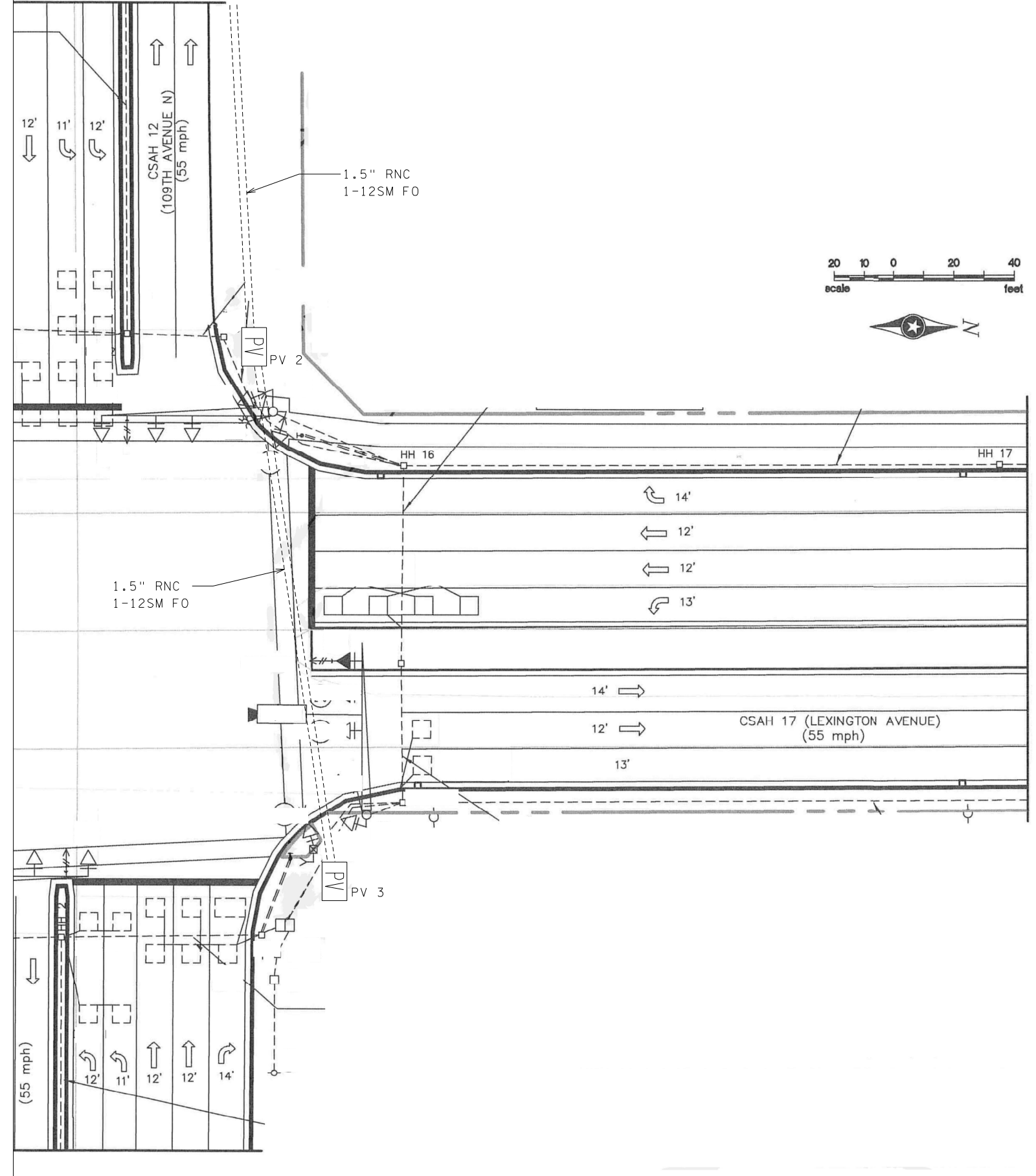
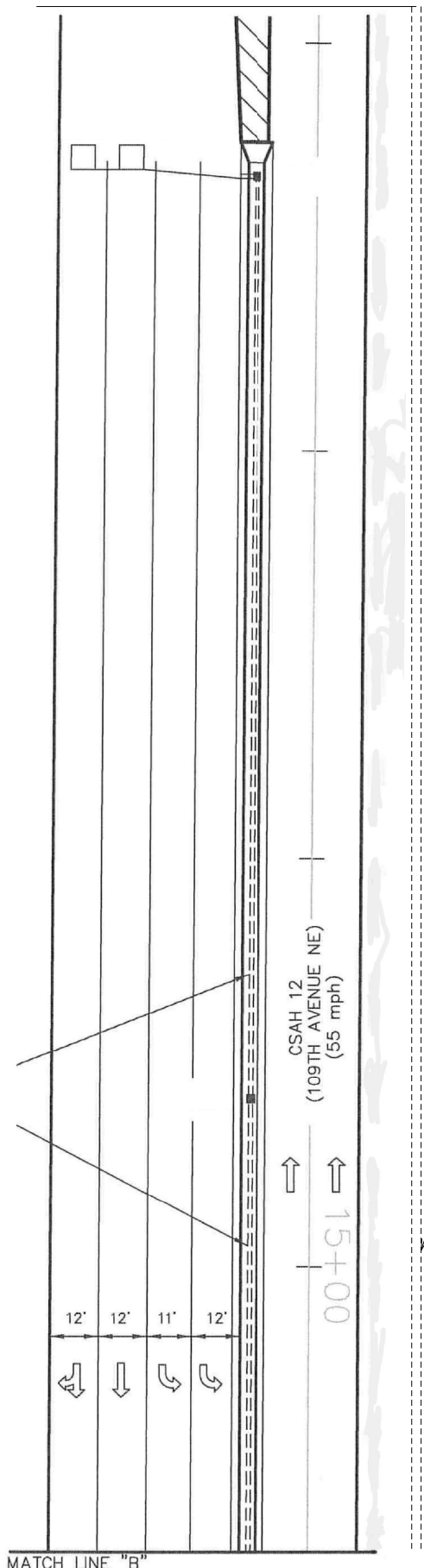
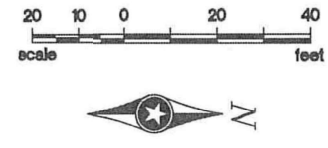
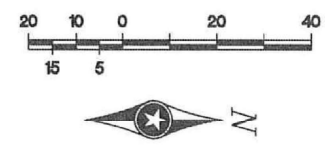
■ FUTURE PROJECT, BY OTHERS





MATCHLINE SEE SHEET 9

MATCH LINE "B"



MATCH LINE "B"

1.5" RNC 1-12SM FO

1.5" RNC 1-12SM FO

1.5" RNC 1-12SM FO



3340-A Annapolis Lane North
 Plymouth, MN 55447
 Phone: (763) 551-3699
 www.hzunit.com

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

Print Name: VERNON SWING
 Signature: *[Signature]*
 Date: 4/4/2023 License #: 41417

Drawn: MLL
 Designed: GNG
 Date: 4/4/2023

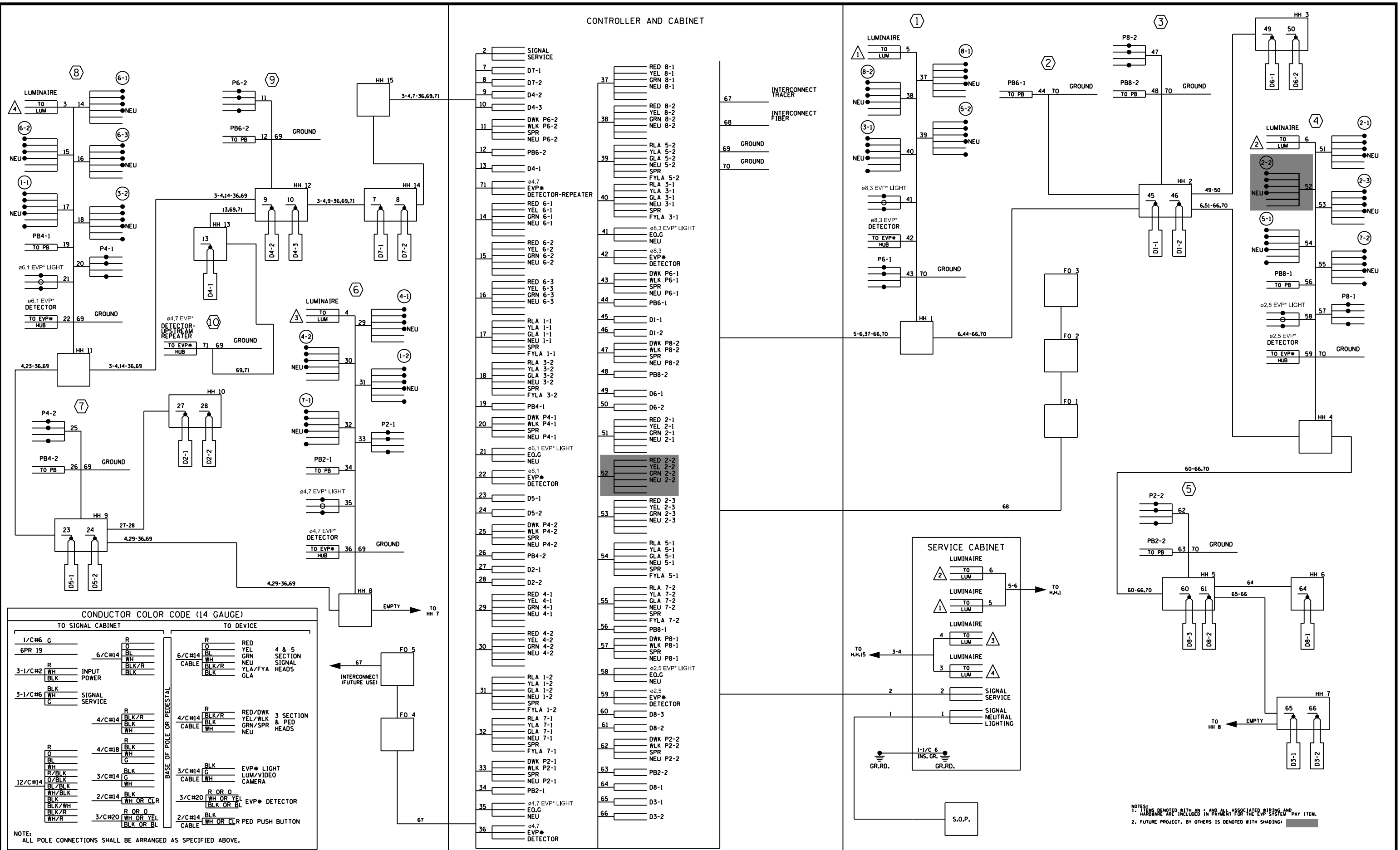
Revisions:

WELLINGTON MANAGEMENT, INC.
 1625 Energy Park Drive, #100
 St. Paul, MN 55108

NORTH MEADOWS
 Blaine, Minnesota

TRAFFIC SIGNAL SYSTEM "A"
 INTERSECTION LAYOUT
 MATCHLINE 9

11 of 13



CONTROLLER AND CABINET

- 2 SIGNAL SERVICE
- 7 D7-1
- 8 D7-2
- 9 D4-2
- 10 D4-3
- 11 DWK P6-2
- 12 WLK P6-2
- 13 SPR P6-2
- 14 NEU P6-2
- 15 PB6-2
- 16 D4-1
- 71 ø4.7 EVP* DETECTOR-REPEATER
- 14 RED 6-1
- 14 YEL 6-1
- 14 GRN 6-1
- 14 NEU 6-1
- 15 RED 6-2
- 15 YEL 6-2
- 15 GRN 6-2
- 15 NEU 6-2
- 16 RED 6-3
- 16 YEL 6-3
- 16 GRN 6-3
- 16 NEU 6-3
- 17 RLA 1-1
- 17 YLA 1-1
- 17 GLA 1-1
- 17 NEU 1-1
- 17 SPR FYLA 1-1
- 18 RLA 3-2
- 18 YLA 3-2
- 18 GLA 3-2
- 18 NEU 3-2
- 18 SPR FYLA 3-2
- 19 PB4-1
- 20 DWK P4-1
- 20 WLK P4-1
- 20 SPR P4-1
- 20 NEU P4-1
- 21 ø6.1 EVP* LIGHT
- 21 E.O.G
- 21 NEU
- 22 ø6.1 EVP* DETECTOR
- 23 D5-1
- 24 D5-2
- 25 DWK P4-2
- 25 WLK P4-2
- 25 SPR P4-2
- 25 NEU P4-2
- 26 PB4-2
- 27 D2-1
- 28 D2-2
- 29 RED 4-1
- 29 YEL 4-1
- 29 GRN 4-1
- 29 NEU 4-1
- 30 RED 4-2
- 30 YEL 4-2
- 30 GRN 4-2
- 30 NEU 4-2
- 31 RLA 1-2
- 31 YLA 1-2
- 31 GLA 1-2
- 31 NEU 1-2
- 31 SPR FYLA 1-2
- 32 RLA 7-1
- 32 YLA 7-1
- 32 GLA 7-1
- 32 NEU 7-1
- 32 SPR FYLA 7-1
- 33 DWK P2-1
- 33 WLK P2-1
- 33 SPR P2-1
- 33 NEU P2-1
- 34 PB2-1
- 35 ø4.7 EVP* LIGHT
- 35 E.O.G
- 35 NEU
- 36 ø4.7 EVP* DETECTOR
- 37 RED 8-1
- 37 YEL 8-1
- 37 GRN 8-1
- 37 NEU 8-1
- 38 RED 8-2
- 38 YEL 8-2
- 38 GRN 8-2
- 38 NEU 8-2
- 39 RLA 5-2
- 39 YLA 5-2
- 39 GLA 5-2
- 39 NEU 5-2
- 39 SPR FYLA 5-2
- 40 RLA 3-1
- 40 YLA 3-1
- 40 GLA 3-1
- 40 NEU 3-1
- 40 SPR FYLA 3-1
- 41 ø8.3 EVP* LIGHT
- 41 E.O.G
- 41 NEU
- 42 ø8.3 EVP* DETECTOR
- 43 DWK P6-1
- 43 WLK P6-1
- 43 SPR P6-1
- 43 NEU P6-1
- 44 PB6-1
- 45 D1-1
- 46 D1-2
- 47 DWK P8-2
- 47 WLK P8-2
- 47 SPR P8-2
- 47 NEU P8-2
- 48 PB8-2
- 49 D6-1
- 50 D6-2
- 51 RED 2-1
- 51 YEL 2-1
- 51 GRN 2-1
- 51 NEU 2-1
- 52 RED 2-2
- 52 YEL 2-2
- 52 GRN 2-2
- 52 NEU 2-2
- 53 RED 2-3
- 53 YEL 2-3
- 53 GRN 2-3
- 53 NEU 2-3
- 54 RLA 5-1
- 54 YLA 5-1
- 54 GLA 5-1
- 54 NEU 5-1
- 54 SPR FYLA 5-1
- 55 RLA 7-2
- 55 YLA 7-2
- 55 GLA 7-2
- 55 NEU 7-2
- 55 SPR FYLA 7-2
- 56 PB8-1
- 57 DWK P8-1
- 57 WLK P8-1
- 57 SPR P8-1
- 57 NEU P8-1
- 58 ø2.5 EVP* LIGHT
- 58 E.O.G
- 58 NEU
- 59 ø2.5 EVP* DETECTOR
- 60 D8-3
- 61 D8-2
- 62 DWK P2-2
- 62 WLK P2-2
- 62 SPR P2-2
- 62 NEU P2-2
- 63 PB2-2
- 64 D8-1
- 65 D3-1
- 66 D3-2

