

7170

- 1 TYPE PAB5 POLE FOUNDATION  
 TYPE PAB5-A-25  
 1 - ONE WAY SIGNAL OVERHEAD  
 2 - TYPE 10B POLE MOUNTED AT 90° & 180°  
 2 - PEDESTRIAN PUSHBUTTONS AND SIGNS  
 TYPE "D" SIGN PANEL OVERHEAD (D-1)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (#8) (4' FROM END OF MAST ARM)  
 EXTEND INTO HH 2:  
 3" RSC  
 2-12/C#12  
 2-3/C#12  
 1-3/C#20

- 2 TYPE PAB0 POLE FOUNDATION  
 TYPE PAB0-A-35-D40-9 (APPROX. 350')  
 LUMINAIRE 250 WATT H.P.S. WITH P.E.C.  
 2 - ONE WAY SIGNAL OVERHEAD (0° & 12° FROM END OF MAST ARM)  
 2 - TYPE 10B POLE MOUNTED AT 90° & 180°  
 2 - PEDESTRIAN PUSHBUTTONS AND SIGNS  
 TYPE "D" SIGN PANEL OVERHEAD  
 TYPE R10-12 (36"x48") SIGN NEXT TO SIGNAL FACE 2-3  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (#2 & #6) (4' FROM END OF MAST ARM)  
 EXTEND INTO HH 5:  
 3" RSC  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

- 4 TYPE PAB0 POLE FOUNDATION  
 TYPE PAB0-A-40-D40-9 (APPROX. 350')  
 LUMINAIRE 250 WATT H.P.S. WITH P.E.C.  
 2 - ONE WAY SIGNAL OVERHEAD (0° & 12° FROM END OF MAST ARM)  
 2 - TYPE 10B POLE MOUNTED AT 90° & 180°  
 2 - PEDESTRIAN PUSHBUTTONS AND SIGNS  
 TYPE "D" SIGN PANEL OVERHEAD  
 TYPE R10-12 (36"x48") SIGN NEXT TO SIGNAL FACE 6-3  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (#2 & #6) (4' FROM END OF MAST ARM)  
 EXTEND INTO HH 12:  
 3" RSC  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

- 3 TYPE PAB5 POLE FOUNDATION  
 TYPE PAB5-A-25  
 1 - ONE WAY SIGNAL OVERHEAD  
 2 - TYPE 10B POLE MOUNTED AT 90° & 180°  
 2 - PEDESTRIAN PUSHBUTTONS AND SIGNS  
 TYPE "D" SIGN PANEL OVERHEAD (D-1)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (#4) (4' FROM END OF MAST ARM)  
 EXTEND INTO HH 8:  
 3" RSC  
 2-12/C#12  
 2-3/C#12  
 1-3/C#20

- LED RETROFIT-SYSTEM "EE" NOTES
- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
  - CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
  - CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
  - IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LENS), AT NO ADDITIONAL COST TO THE PROJECT.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
  - ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.

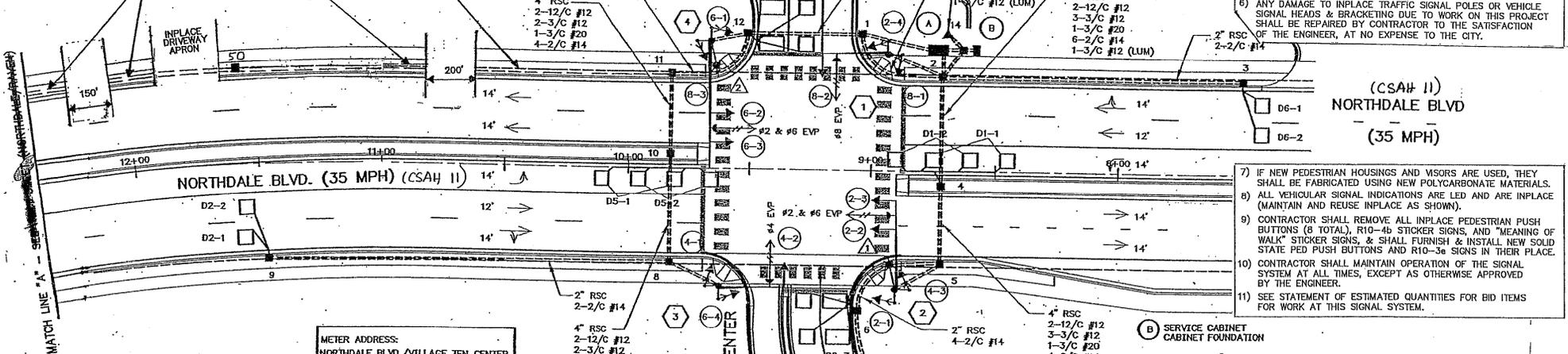
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 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (#4) (4' FROM END OF MAST ARM)  
 EXTEND INTO HH 8:  
 3" RSC  
 2-12/C#12  
 2-3/C#12  
 1-3/C#20

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

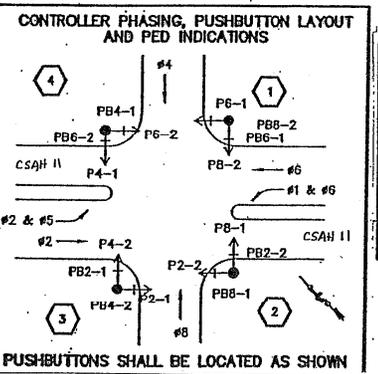
- 4" RSC  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 4-2/C#14  
 1-3/C#12 (LUM)

- 4" RSC  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 6-2/C#14  
 1-3/C#12 (LUM)

- IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
- CONTRACTOR SHALL REMOVE ALL INPLACE PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3a SIGNS IN THEIR PLACE.
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
- SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.



(CSAH II)  
 NORTHDAL BLVD  
 (35 MPH)



METER ADDRESS:  
 NORTHDAL BLVD/VILLAGE TEN CENTER  
 NORTHEAST QUADRANT

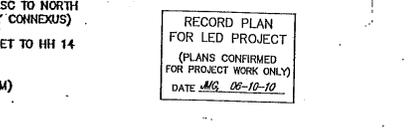
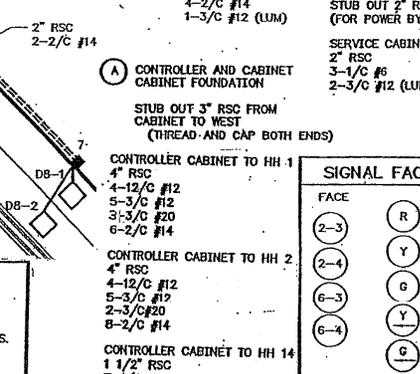
NMC LOOP DETECTORS				
INSTALLATION	NUMBER	SIZE (ft)	LOCATION	FUNCTION
NEW BIT.	D1-1	2'-6" x 6'	10' & 40'	1
NEW BIT.	D1-2	2'-6" x 6'	-5' & 25'	1
NEW BIT.	D2-1, D2-2	6' x 6'	180'	1
NEW BIT.	D4-1	2'-6" x 10'	0' & 15'	7
NEW BIT.	D4-2	2'-6" x 6'	0' & 15'	7
NEW BIT.	D5-1	2'-6" x 6'	10' & 40'	1
NEW BIT.	D5-2	2'-6" x 6'	-5' & 25'	1
NEW BIT.	D6-1, D6-2	6' x 6'	140'	1
NEW BIT. MILL	D8-1, D8-2	1'-6" x 6'	100'	3 & 8
NEW BIT.	D8-3	2'-6" x 10'	0' & 15'	7
NEW BIT.	D8-4	2'-6" x 6'	0' & 15'	7

NOTE: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

LOOP DETECTOR FUNCTIONS:  
 (1) - CALL AND EXTEND  
 (3) - EXTEND ONLY  
 (7) - DELAY CALL, IMMEDIATE EXTEND  
 (8) - STRETCH

SIGNAL SYSTEM OPERATION

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



LED SIGNAL FACES

SIGNAL FACE	ALL 12"				
	R	Y	G	Y	G
2-1, 2-2	○	○	○	○	○
2-3, 2-4	○	○	○	○	○
4-1, 4-2, 4-3	○	○	○	○	○
6-1, 6-2	○	○	○	○	○
6-3, 6-4	○	○	○	○	○
8-1, 8-2, 8-3	○	○	○	○	○

○ ← = INPLACE LED INDICATION, REUSE INPLACE.

PUSHBUTTONS SHALL BE LOCATED AS SHOWN

DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG  
 DESIGN TEAM

NO.	BY	DATE	REVISIONS
1	JMG	6/10	RECORD DRAWING FOR PROJECT

I HEREBY CERTIFY THAT THIS PLAN 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.

John M. Gray, PE  
 Date: May 15, 2009  
 License No. 22457

COON RAPIDS, MINNESOTA

PHONE: (651) 480-2000  
 3535 VADNARS CENTER DR.  
 ST. PAUL, MN 55110

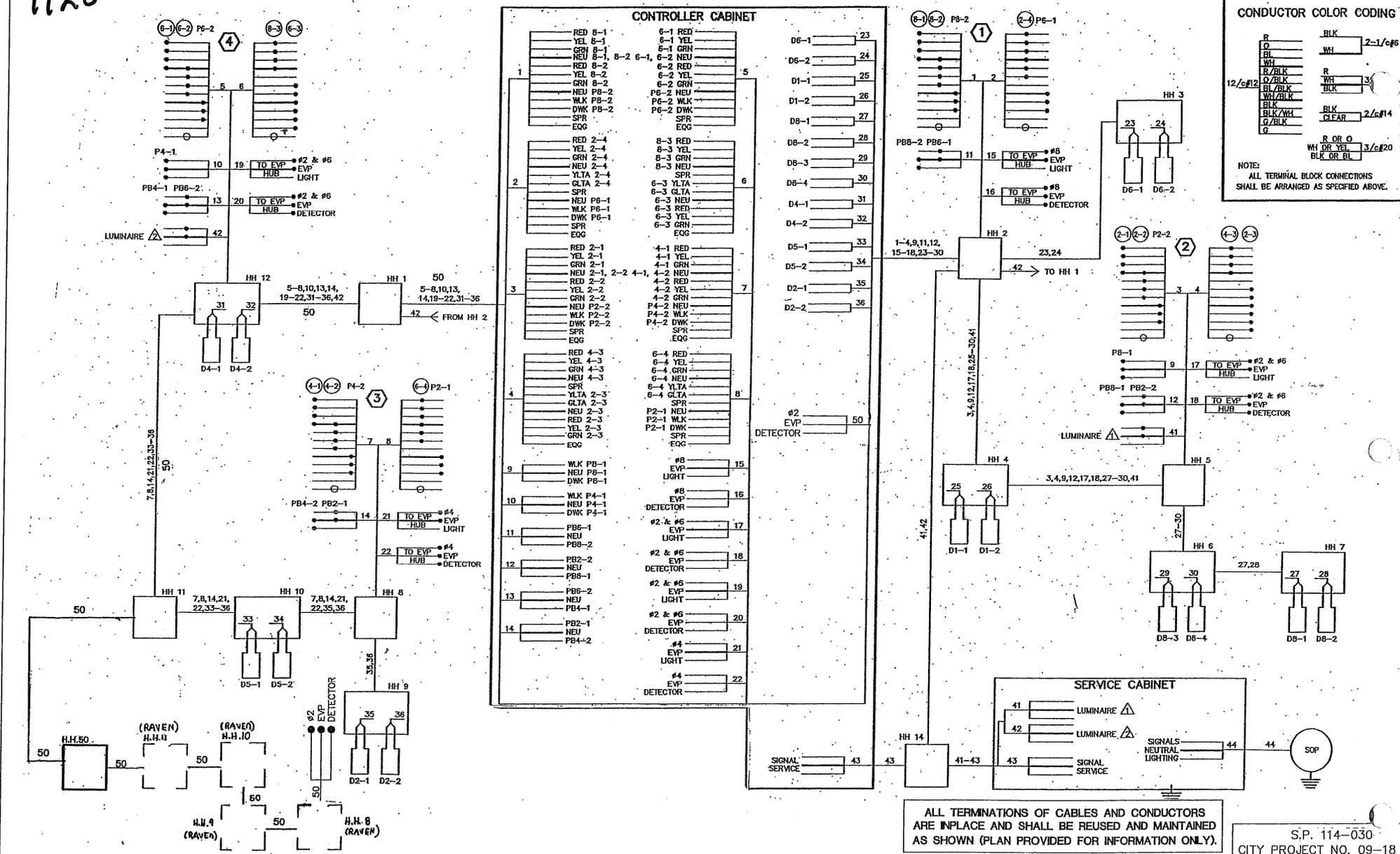
LED RETROFIT-SYSTEM "EE" INTERSECTION LAYOUT  
 CSAH 11 AT VILLAGE 10 CENTER

FILE NO. 107418  
 DATE 05/19/2009

70  
 131



7126



CONDUCTOR COLOR CODING

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

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

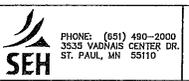
ALL TERMINATIONS OF CABLES AND CONDUCTORS  
ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED  
AS SHOWN (PLAN PROVIDED FOR INFORMATION ONLY).

S.P. 114-030  
CITY PROJECT NO. 09-18

DRAWN BY:	JMG			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN 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.

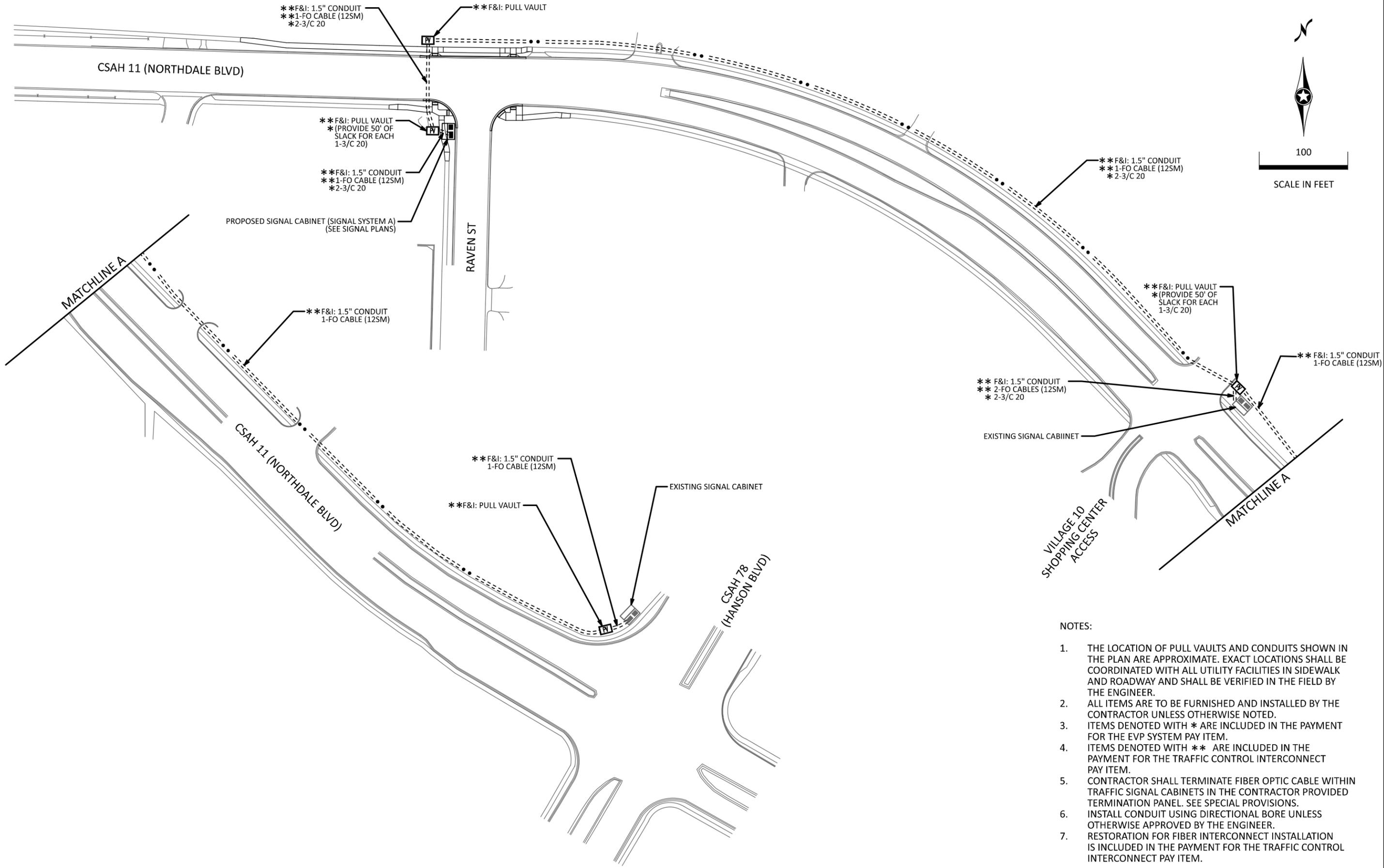
*John M. Gray*  
Name: John M. Gray, PE  
Date: May 18, 2009  
Lic. No. 22457



COON RAPIDS,  
MINNESOTA

LED RETROFIT-SYSTEM "EE"  
FIELD WIRING DIAGRAM  
CSAH 11 AT VILLAGE 10 CENTER

FILE NO. 107418	71
DATE 05/18/2009	131



- NOTES:
1. THE LOCATION OF PULL VAULTS AND CONDUITS SHOWN IN THE PLAN ARE APPROXIMATE. EXACT LOCATIONS SHALL BE COORDINATED WITH ALL UTILITY FACILITIES IN SIDEWALK AND ROADWAY AND SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER.
  2. ALL ITEMS ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
  3. ITEMS DENOTED WITH \* ARE INCLUDED IN THE PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  4. ITEMS DENOTED WITH \*\* ARE INCLUDED IN THE PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.
  5. CONTRACTOR SHALL TERMINATE FIBER OPTIC CABLE WITHIN TRAFFIC SIGNAL CABINETS IN THE CONTRACTOR PROVIDED TERMINATION PANEL. SEE SPECIAL PROVISIONS.
  6. INSTALL CONDUIT USING DIRECTIONAL BORE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
  7. RESTORATION FOR FIBER INTERCONNECT INSTALLATION IS INCLUDED IN THE PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.

CSAH11\_sgn123.dgn  
 11:03:42 AM  
 12/3/2025

NO.	DATE	DWN	CKD	REVISIONS

DESIGNED BY: **MBG**  
 DRAWN BY: **MMD**  
 CHECKED BY: **BKV**

I HEREBY CERTIFY THAT THIS PLAN 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.  
 CERTIFIED BY: *[Signature]* LIC NO: 56080  
 PRINTED NAME: BRIAN K. VILJA, P.E. DATE: 12/03/2025



**TRAFFIC SIGNAL PLANS**  
**INTERCONNECT PLAN**

SAP 002-611-042  
 SAP 114-020-068

SHEET NO. **59**  
 TOTAL SHEETS **59**