

PLOTTED/REVISED: 10/27/2022 2:13:42 PM

PATH & FILENAME: K:\1019869-000\Cad\Plan\1019869-000\_sl07.dgn

- NOTES:
1. REFER TO SHEETS FOR INPLACE SIGNAL COMPONENTS.
  2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY TRAFFIC OFFICE PERSONNEL.
  3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  4. FOR SIGN PANELS ON SIGNAL SEE DETAIL SHEET. ALL SIGN PANELS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
  5. ALL PAVEMENT MARKINGS ARE INCLUDED IN PAVEMENT MARKING PLAN.
  6. CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE PART OF THE CONSTRUCTION PLAN AND ARE NOT INCLUDED IN PAYMENT FOR THE SIGNAL SYSTEM.
  7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  8. USE PVC OR HDPE FOR ALL NEW CONDUIT.
  9. CONDUIT SIZES ARE NOMINAL DIAMETER.
  10. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  11. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.

**(A)**  
EQUIPMENT PAD (SEE DETAIL SHEET)  
SERVICE CABINET (SSB) BATTERY BACKUP SYSTEM (BATTERIES INCLUDED)  
CONTROLLER AND CABINET

3" CONDUIT TO INP HH 1:  
2-6/C 14  
4-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-1/C INS. GR.

3" CONDUIT TO HH 15:  
2-6/C 14  
5-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-1/C INS. GR.

1.5" CONDUIT  
12SM F/O  
TO 25TH AVE  
(SEE INTERCONNECT SHEET)

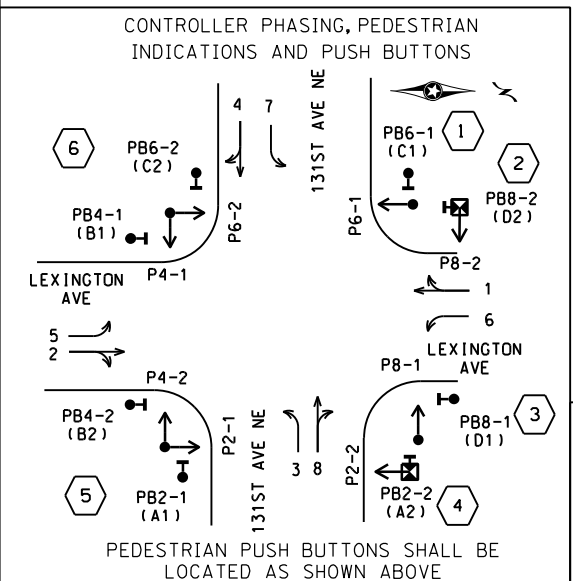
3" CONDUIT TO INP HH 1:  
2-6/C 14  
5-4/C 14  
7-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-1/C INS. GR.

3" CONDUIT TO HH 15:  
2-5/C 14  
4-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-1/C INS. GR.

1.5" CONDUIT  
12SM F/O

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)  
CABINET TO SERVICE CABINET:  
2" CONDUIT  
3-1/C 6  
SERVICE CABINET TO INP HH 1:  
2" CONDUIT  
2-3/C 14 (LUM)  
SERVICE CABINET TO HH 15:  
2" CONDUIT  
2-3/C 14 (LUM)  
SERVICE CABINET TO EXTERNAL GR. RD.  
1" CONDUIT  
1-1/C 6 INS. GR. (SEE EQUIPMENT PAD DETAIL)

**(B)** INP SOP (CONNEXUS)  
GROUND MOUNTED  
TRANSFORMER



**LOOP DETECTOR CHART**

NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6x6	20 & 50
D1-2, D5-2	2-6x6	5 & 35
D2-1, D2-2	6x6	475
D3-1, D7-1	2-6x6	20 & 50
D3-2, D7-2	2-6x6	5 & 35
D4-1, D8-1	6x6	120
D4-2	2-6x6	5 & 20
D6-1, D6-2	6x6	475
D8-2, D8-3	2-6x6	5 & 20

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE  
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

**SIGNAL SYSTEM OPERATION**

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

3" CONDUIT  
2-6/C 14  
5-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-3/C 14 (LUM)  
1-1/C INS. GR.

2" CONDUIT  
1-2/C 14

3" CONDUIT  
2-5/C 14  
4-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-3/C 14 (LUM)  
1-1/C INS. GR.

1.5" CONDUIT  
12SM F/O  
TO 25TH AVE  
(SEE INTERCONNECT SHEET)

INP:  
2-4" CONDUIT  
F&I:  
2-6/C 14  
4-4/C 14  
6-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-1/C INS. GR.

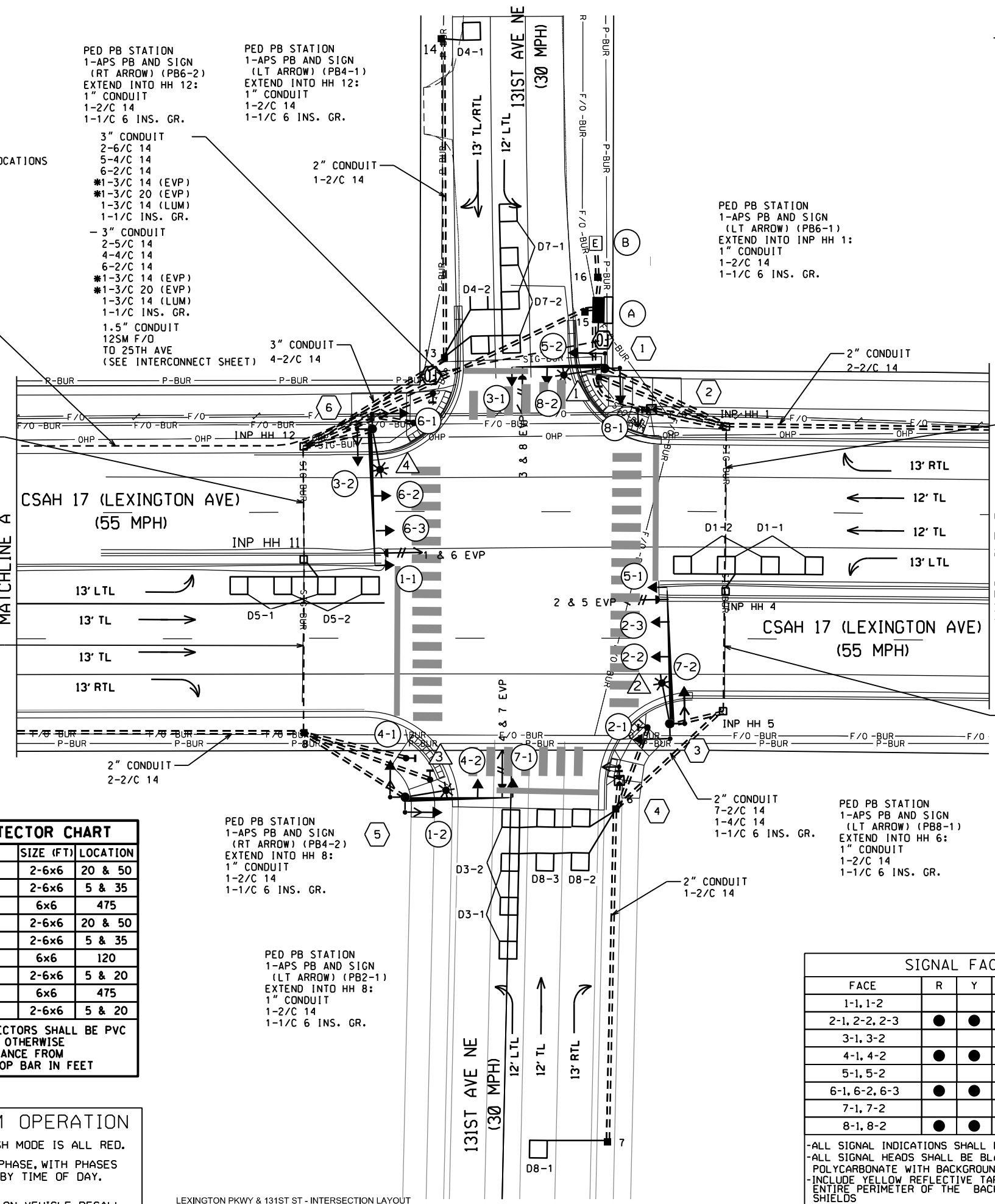
INP:  
2-4" CONDUIT  
F&I:  
2-6/C 14  
4-4/C 14  
2-2/C 14  
\*1-3/C 14 (EVP)  
\*1-3/C 20 (EVP)  
1-3/C 14 (LUM)  
1-1/C INS. GR.

1-APS PB AND SIGN (RT ARROW) (PB4-2)  
EXTEND INTO HH 8:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 INS. GR.

1-APS PB AND SIGN (LT ARROW) (PB2-1)  
EXTEND INTO HH 8:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 INS. GR.

1-APS PB AND SIGN (LT ARROW) (PB6-1)  
EXTEND INTO INP HH 1:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 INS. GR.

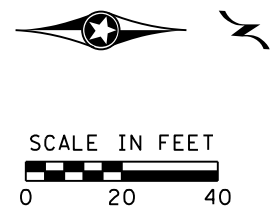
1-APS PB AND SIGN (LT ARROW) (PB8-1)  
EXTEND INTO HH 6:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 INS. GR.



**SIGNAL FACE CHART**

FACE	R	Y	G	RLA	YLA	FYA	GLA
1-1, 1-2				←	←	←	←
2-1, 2-2, 2-3	●	●	●				
3-1, 3-2				←	←	←	←
4-1, 4-2	●	●	●				
5-1, 5-2				←	←	←	←
6-1, 6-2, 6-3	●	●	●				
7-1, 7-2				←	←	←	←
8-1, 8-2	●	●	●				

-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
-ALL SIGNAL HEADS SHALL BE BLACK  
-POLYCARBONATE WITH BACKGROUND SHIELDS  
-INCLUDE YELLOW REFLECTIVE TAPE ON THE ENTIRE PERIMETER OF THE BACKGROUND SHIELDS  
-FYA DENOTES FLASHING YELLOW ARROW



**REVISIONS**

NO.	DATE	DESCRIPTION

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.

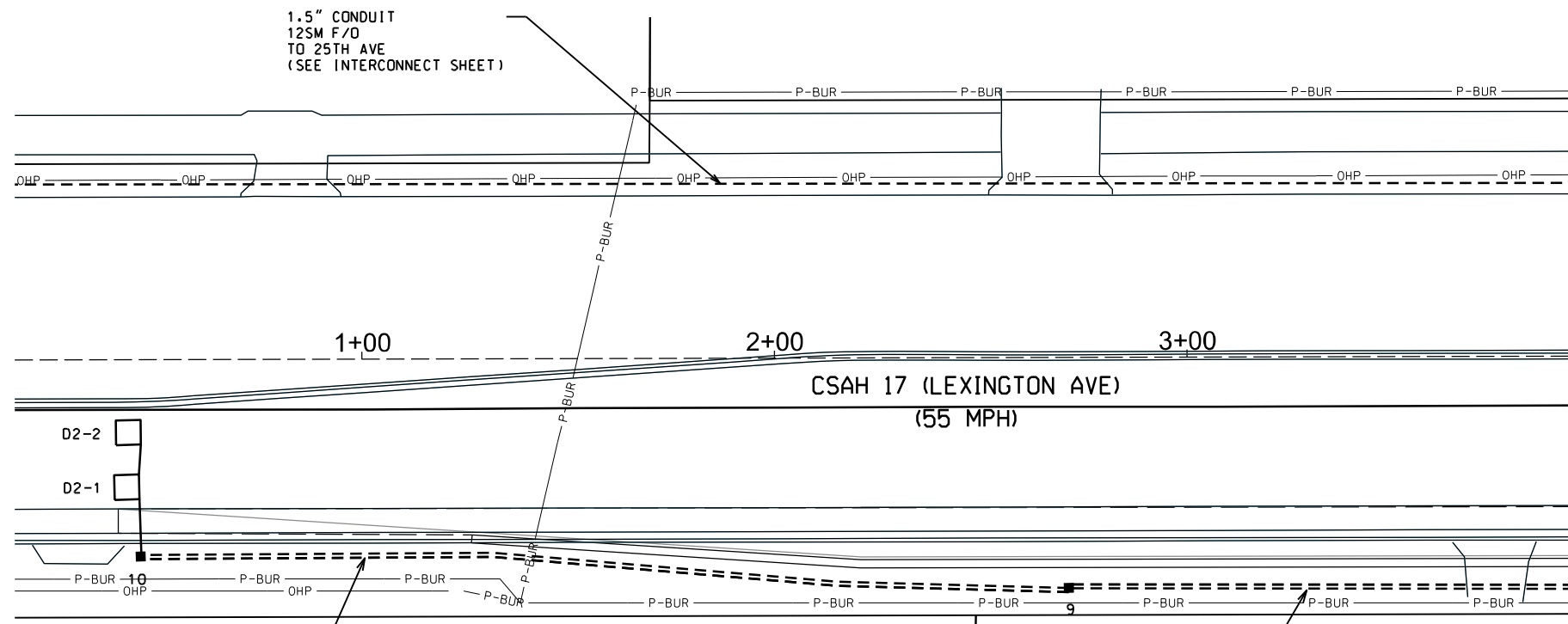
SEAN DELMORE, PE  
DATE: 10/27/2022 LIC. NO.: 40845

CITY OF BLAINE, MN  
**LEXINGTON AVENUE NE AT  
131ST AVENUE NE  
INTERSECTION IMPROVEMENTS**

**TRAFFIC CONTROL  
SIGNAL SYSTEM**

10/27/2022 2:13:42 PM

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**1** F&I:  
 PA90 POLE FOUNDATION  
 X=530605.1221 Y=150026.1606  
 TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG  
 1-ANGLE MOUNT C.D. PED IND AT 90 DEG  
 D SIGN (SEE DETAIL SHEET)  
 LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)  
 EXTEND INTO INP HH 1:  
 2-6/C 14  
 3-4/C 14  
 \*1-3/C 14 (EVP)  
 \*1-3/C 20 (EVP)  
 1-3/C 14 (LUM)  
 1-1/C INS. GR.  
 INSTALL:  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3 & 8) (ANOKA CO FURNISHED)

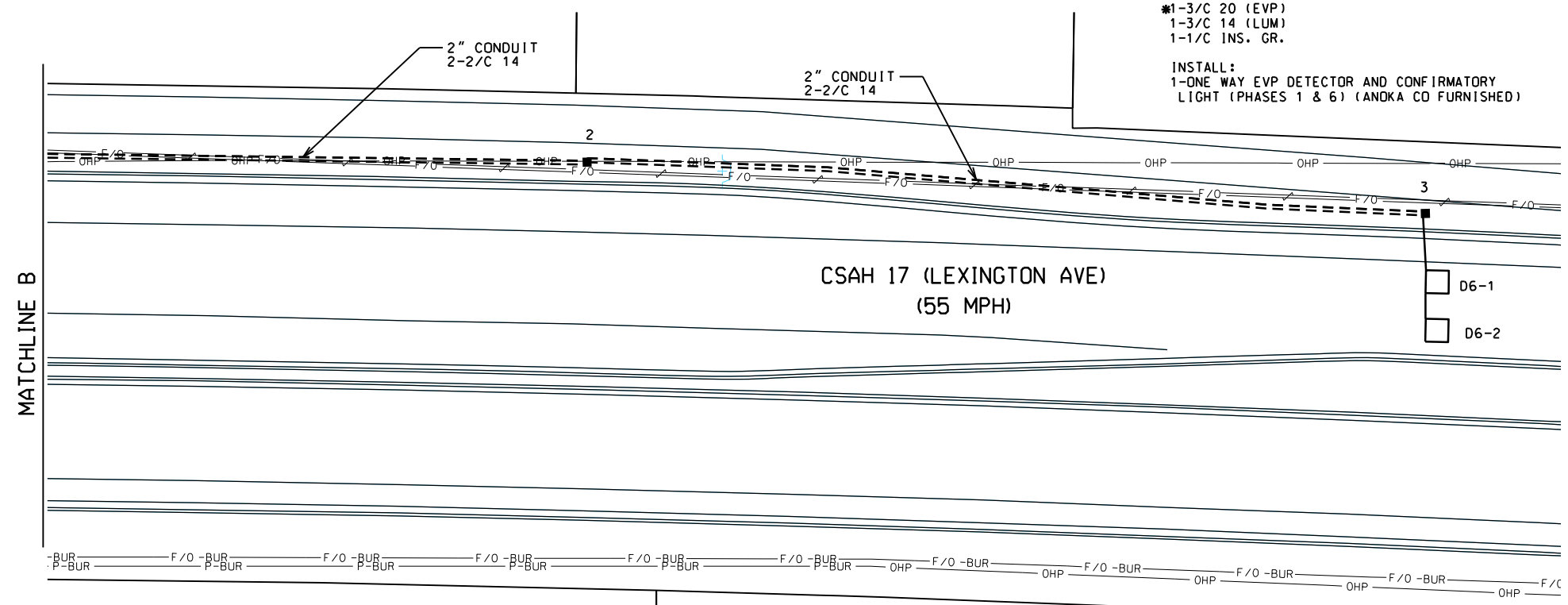
**2** F&I:  
 PEDESTAL FOUNDATION  
 1-10' SIGNAL PEDESTAL PLUS BASE  
 1-ANGLE MOUNT C.D. PED IND AT 180 DEG  
 1-APS PUSH BUTTON AND SIGN (RT ARROW) (PB8-2)  
 EXTEND INTO INP HH 1:  
 1-4/C 14  
 1-2/C 14  
 1-1/C INS. GR.

**3** F&I:  
 PA100 POLE FOUNDATION  
 X=530616.0176 Y=149935.0448  
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12' & 24'  
 2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG  
 1-ANGLE MOUNT C.D. PED IND AT 90 DEG  
 D SIGN (SEE DETAIL SHEET)  
 2-R6-1 SIGN PANELS - POLE MOUNTED 0 AND 180 DEG  
 LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)  
 EXTEND INTO INP HH 5:  
 2-6/C 14  
 4-4/C 14  
 \*1-3/C 14 (EVP)  
 \*1-3/C 20 (EVP)  
 1-3/C 14 (LUM)  
 1-1/C INS. GR.  
 INSTALL:  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5) (ANOKA CO FURNISHED)

**4** F&I:  
 PEDESTAL FOUNDATION  
 1-10' SIGNAL PEDESTAL PLUS BASE  
 1-ANGLE MOUNT C.D. PED IND AT 180 DEG  
 1-APS PUSH BUTTON AND SIGN (RT ARROW) (PB2-2)  
 EXTEND INTO HH 6:  
 1-4/C 14  
 1-2/C 14  
 1-1/C INS. GR.

**5** F&I:  
 PA90 POLE FOUNDATION  
 X=530501.8090 Y=149926.8684  
 TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG  
 2-ANGLE MOUNT C.D. PED INDS AT 90 & 180 AND DEG D SIGN (SEE DETAIL SHEET)  
 LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)  
 EXTEND INTO HH 8:  
 2-6/C 14  
 4-4/C 14  
 \*1-3/C 14 (EVP)  
 \*1-3/C 20 (EVP)  
 1-3/C 14 (LUM)  
 1-1/C INS. GR.  
 INSTALL:  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4 & 7) (ANOKA CO FURNISHED)

**6** F&I:  
 PA100 POLE FOUNDATION  
 X=526668.0246 Y=162896.1544  
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' & 24'  
 2-ANGLE MOUNT SIGNAL AT 90 & 180 DEG  
 2-ANGLE MOUNT C.D. PED INDS AT 90 & 180 AND DEG D SIGN (SEE DETAIL SHEET)  
 2-R6-1 SIGN PANELS - POLE MOUNTED 0 AND 180 DEG  
 LED LUMINAIRE (FOR 40' MOUNTING HEIGHT)  
 EXTEND INTO INP HH 12:  
 2-6/C 14  
 5-4/C 14  
 \*1-3/C 14 (EVP)  
 \*1-3/C 20 (EVP)  
 1-3/C 14 (LUM)  
 1-1/C INS. GR.  
 INSTALL:  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1 & 6) (ANOKA CO FURNISHED)



WSB PROJECT NO.: 019869-000

SCALE: DESIGN BY:  
AS SHOWN  
PLAN BY: CHECK BY:

NO.	DATE	DESCRIPTION
1	10/24/22	POLE 3, MAST ARM 16 48' NOT 30'
2	10/26/22	POLE 3, PA100 POLE & PA100 FOUNDATION

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.

*Sean Delmore*  
 SEAN DELMORE, PE  
 LICENSE NO. 40845

DATE: 10/27/2022 LIC. NO.: 40845

CITY OF BLAINE, MN  
 LEXINGTON AVENUE NE AT  
 131ST AVENUE NE  
 INTERSECTION IMPROVEMENTS

TRAFFIC CONTROL  
 SIGNAL SYSTEM

LEXINGTON PKWY & 131ST ST - MATCHLINES

SHEET  
 43R2  
 OF  
 53  
 SHEETS

REVISIONS		
NO.	DATE	DESCRIPTION
1	10/27/22	CORRECT WIRING DIAGRAM

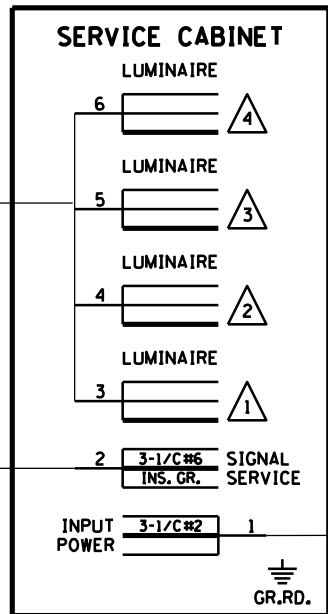
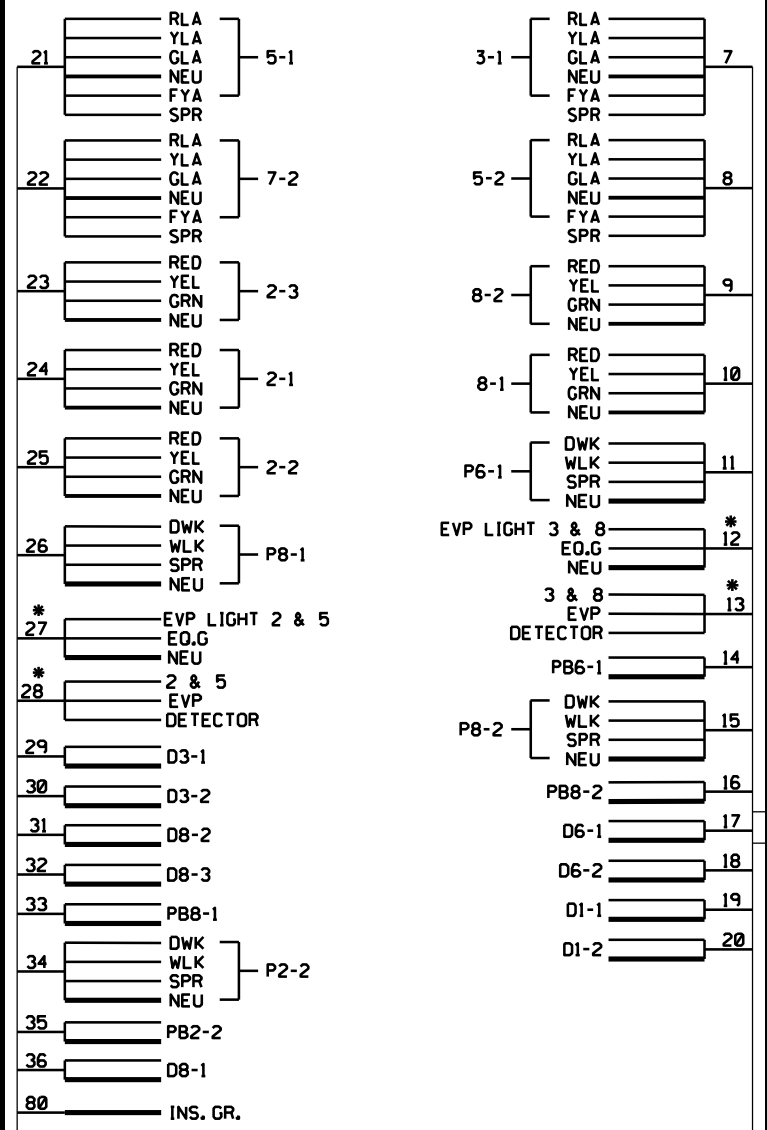
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*Sean Delmore*  
SEAN DELMORE, PE  
DATE: 10/27/2022 LIC. NO.: 40845

CITY OF BLAINE, MN  
**LEXINGTON AVENUE NE AT  
131ST AVENUE NE  
INTERSECTION IMPROVEMENTS**

**TRAFFIC CONTROL  
SIGNAL SYSTEM**

**CABINET CONTROLLER**

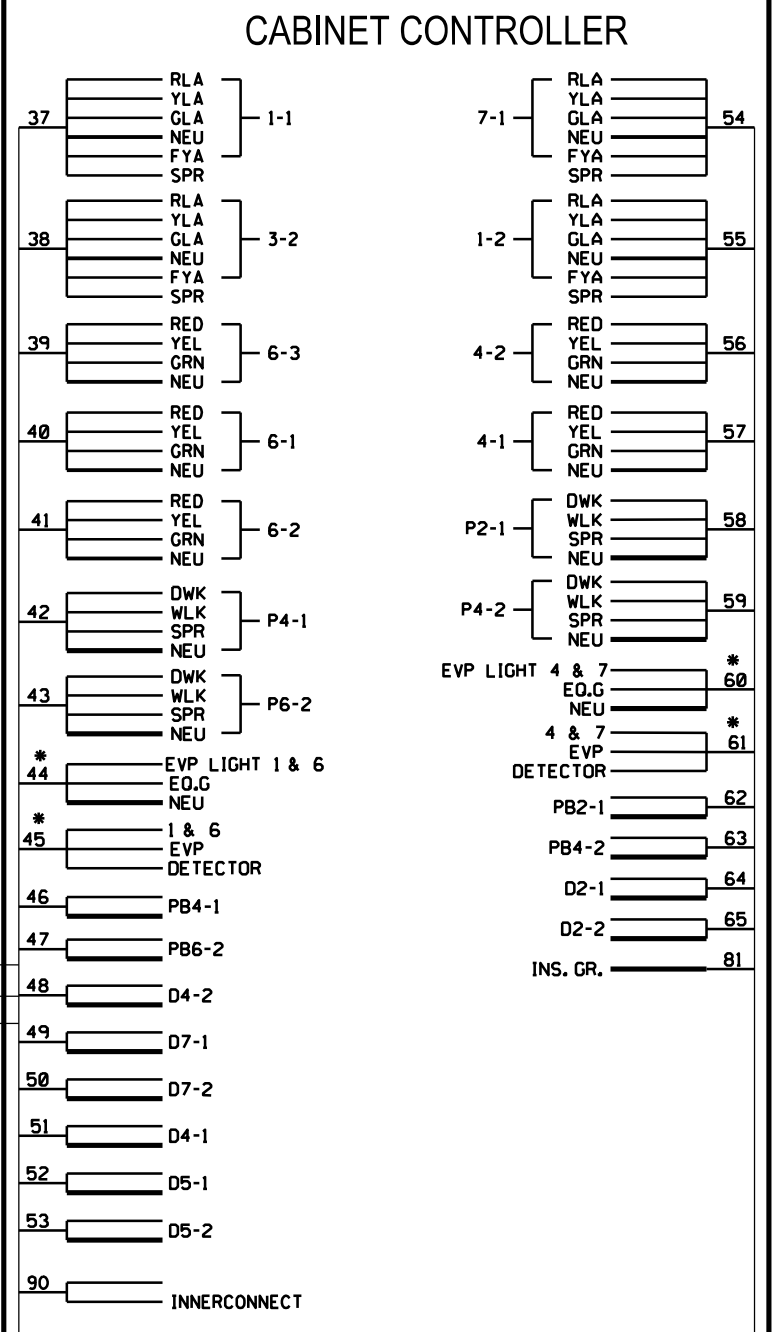
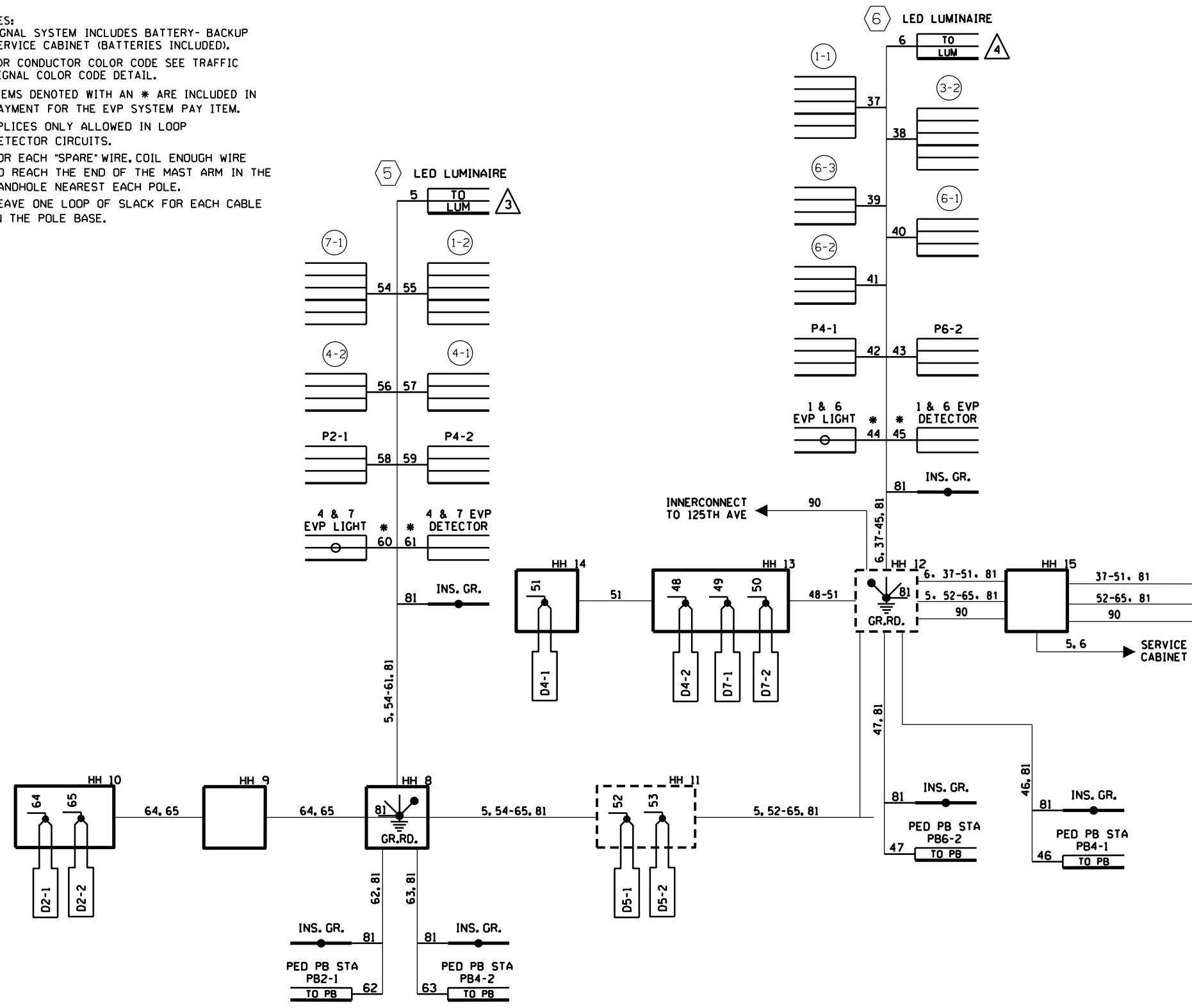


- NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (BATTERIES INCLUDED).
  2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL COLOR CODE DETAIL.
  3. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  4. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
  5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE NEAREST EACH POLE.
  6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.

PLOTTED/REVISED: 10/27/2022 2:13:43 PM

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- NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (BATTERIES INCLUDED).
  2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL COLOR CODE DETAIL.
  3. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  4. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
  5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE NEAREST EACH POLE.
  6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.



LEXINGTON PKWY & 131ST ST - WIRING DIAGRAM

NO.	DATE	DESCRIPTION
1	10/27/22	CORRECT WIRING DIAGRAM

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.

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SEAN DELMORE, PE  
DATE: 10/27/2022 LIC. NO.: 40845

**CITY OF BLAINE, MN**

**LEXINGTON AVENUE NE AT  
131ST AVENUE NE  
INTERSECTION IMPROVEMENTS**

**TRAFFIC CONTROL  
SIGNAL  
SYSTEM**

PLOTTED/REVISED: 10/27/2022 10:12:50 AM

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WSB PROJECT NO.: 019869-000

SCALE: AS SHOWN  
DESIGN BY:  
PLAN BY: CHECK BY:

NO.	DATE	DESCRIPTION

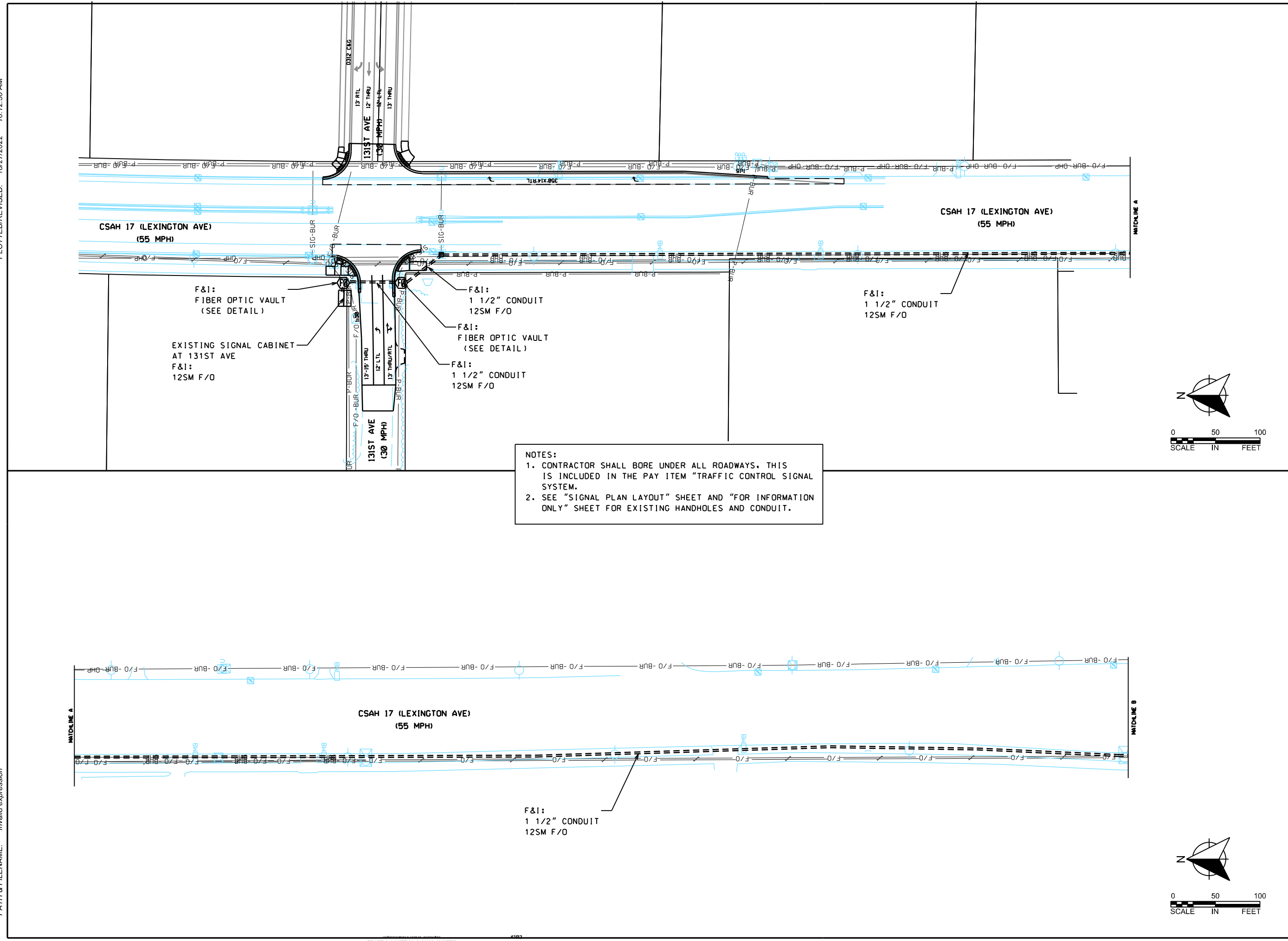
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CITY OF BLAINE, MN  
**LEXINGTON AVENUE NE AT  
131ST AVENUE NE  
INTERSECTION IMPROVEMENTS**

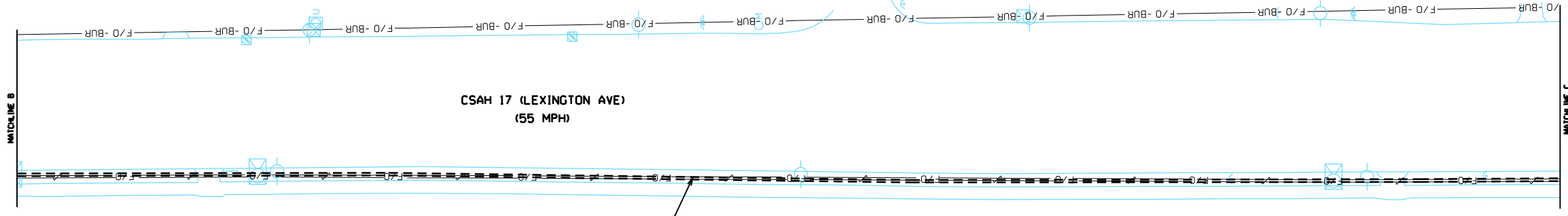
**TRAFFIC CONTROL  
SIGNAL  
SYSTEM**

SHEET  
46  
OF  
53  
SHEETS



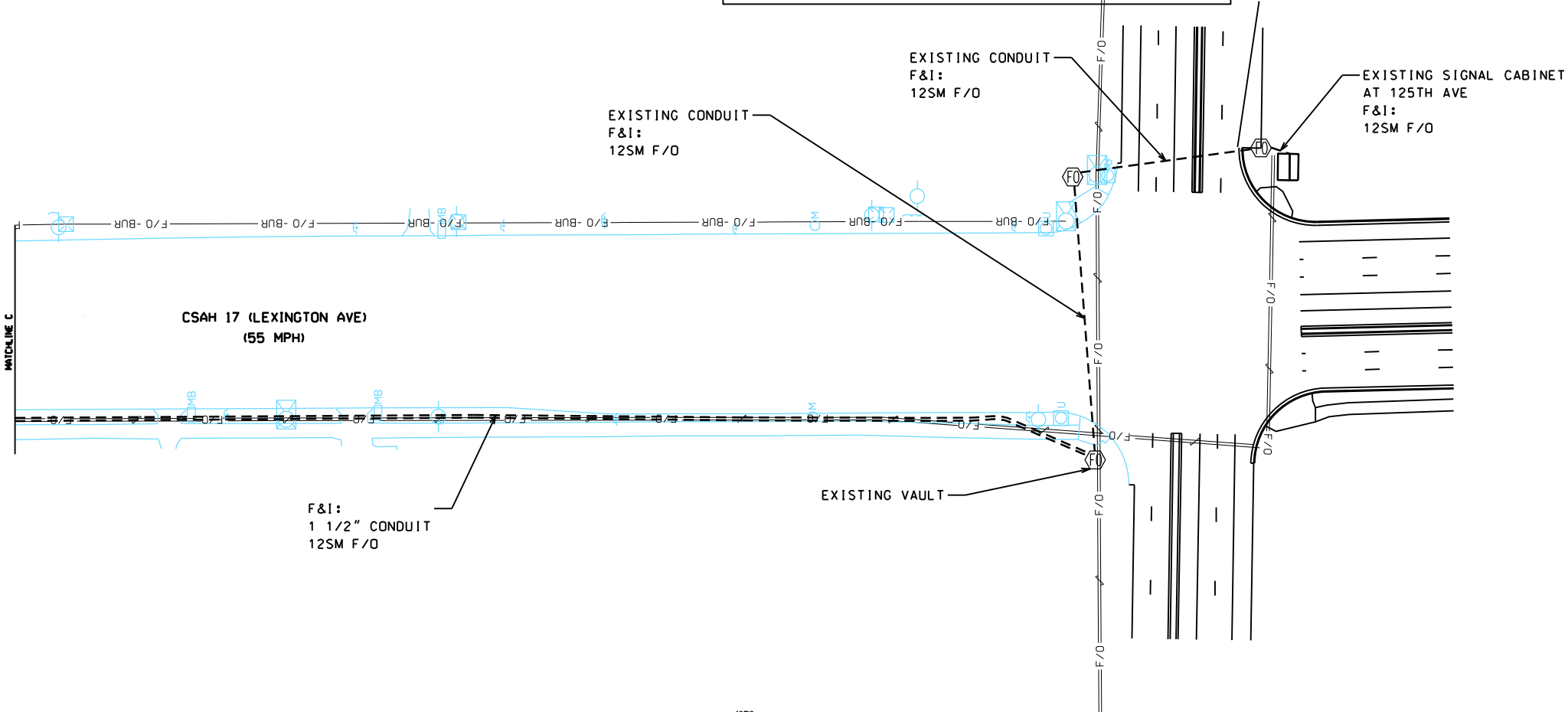
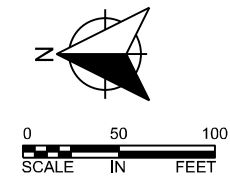
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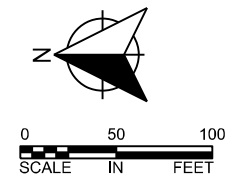


F&I:  
1 1/2" CONDUIT  
12SM F/O

**NOTES:**  
 1. CONTRACTOR SHALL BORE UNDER ALL ROADWAYS. THIS IS INCLUDED IN THE PAY ITEM "TRAFFIC CONTROL SIGNAL SYSTEM."  
 2. SEE "SIGNAL PLAN LAYOUT" SHEET AND "FOR INFORMATION ONLY" SHEET FOR EXISTING HANDHOLES AND CONDUIT.



F&I:  
1 1/2" CONDUIT  
12SM F/O



WSB PROJECT NO.:  
019869-000

SCALE: AS SHOWN DESIGN BY:

PLAN BY: CHECK BY:

REVISIONS	
NO.	DESCRIPTION

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CITY OF BLAINE, MN  
**LEXINGTON AVENUE NE AT  
 131ST AVENUE NE  
 INTERSECTION IMPROVEMENTS**

**TRAFFIC CONTROL  
 SIGNAL SYSTEM**

SHEET  
**47**  
 OF  
**53**  
 SHEETS