



NOTES:

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
- 2) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
- 3) ALL LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, AND OPERATIONAL, EXCEPT AS FOLLOWS: CONTRACTOR SHALL FURNISH AND INSTALL NEW LOOP DETECTORS FOR D1-2 AND D5-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THESE PLANS. LOOP DETECTOR WIRES FOR NEW LOOP DETECTORS SHALL BE CROSS-LINKED POLY-ETHYLENE (XLP) #12 AWG IN 3/4" NMC. SEE SPECIAL PROVISIONS.
- 4) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL REVISION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
- 5) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- 6) ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF REVISE SIGNAL SYSTEM "B" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
- 7) F & I = NEW, FURNISH AND INSTALL.  
S & I = INPLACE, SALVAGE AND INSTALL.
- 8) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- 9) SEE SPECIAL PROVISIONS REGARDING NEW TYPE C SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "REVISE SIGNAL SYSTEM B").
- 10) SEE SPECIAL PROVISIONS REGARDING COUNTY FURNISHED MATERIALS TO BE INSTALLED AND MADE OPERATIONAL BY CONTRACTOR.
- 11) CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAKING OPERATIONAL A NEW COUNTY FURNISHED CONTROLLER CABINET COMPLETE WITH NEW CONTROL EQUIPMENT ON THE INPLACE CABINET FOUNDATION & FOR SALVAGING THE EXISTING CONTROLLER AND CABINET TO THE COUNTY. SEE SPECIAL PROVISIONS (INCIDENTAL).
- 12) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) CONTRACTOR SHALL PAINT ENTIRE SIGNAL SYSTEM. SEE SPECIAL PROVISIONS (INCIDENTAL).

① INPLACE (MAINTAIN INPLACE) PA85 POLE FOUNDATION  
 TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-250 W HPS  
 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM (6-2))  
 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (6-1)  
 R6-1L SIGN PANEL-POLE MOUNTED 0 DEG  
 2-TYPE D SIGN PANELS-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (#6,1) EXTENDED INTO H.H.1;  
 3" R.S.C.  
 2-12/C#12  
 1-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0° (OLD 1-1)  
 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 8-5)  
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0° (NEW 1-1)  
 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 3-2)  
 RIO-X12 SIGN-ADJACENT TO 1-1

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-250 W HPS  
 2-ONE WAY SIGNALS-OVERHEAD (11' AND 23' FROM END OF MAST ARM (2-3, 2-2))  
 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (2-1)  
 R6-1L SIGN PANEL-POLE MOUNTED 0 DEG  
 2-TYPE D SIGN PANELS-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (#2,5) EXTENDED INTO H.H.B;  
 3" R.S.C.  
 2-12/C#12  
 1-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0° (OLD 5-1)  
 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 4-5)  
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0° (NEW 5-1)  
 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 7-2)  
 RIO-X12 SIGN-ADJACENT TO 5-1

② INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION  
 14" PEDESTAL POLE (INCLUDES BASE)  
 WIND COLLAR FOR PEDESTAL POLE  
 1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)  
 1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNT)  
 1-PEDESTRIAN PUSH BUTTON  
 R9-3c SIGN PANEL-FACING POLE 6 EXTENDED INTO H.H.1;  
 2" R.S.C.  
 1-12/C#12  
 1-3/C#12

⑤ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION  
 14" PEDESTAL POLE (INCLUDES BASE)  
 WIND COLLAR FOR PEDESTAL POLE  
 1-ONE WAY SIGNAL-POLE MOUNTED (ONE-WAY MOUNT)  
 1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED (ONE-WAY MOUNT)  
 1-PEDESTRIAN PUSH BUTTON  
 1-R9-3c SIGN PANEL-FACING POLE 6 EXTENDED INTO H.H.B;  
 3" R.S.C.  
 1-12/C#12  
 1-3/C#12

③ INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION  
 TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-250 W HPS  
 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM (8-3))  
 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (8-2)  
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED AT 45/225 DEG  
 2-PEDESTRIAN PUSH BUTTONS & SIGNS  
 2-TYPE D SIGN PANELS-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (#8) EXTENDED INTO H.H.3;  
 3" R.S.C.  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0° (OLD 8-4)  
 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 5-2)  
 RIO-12 SIGN PANEL-OVERHEAD (ADJACENT TO OLD 8-4)  
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0° (NEW 3-1)  
 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 5-2)  
 RIO-X12 SIGN-ADJACENT TO 3-1

⑥ INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION  
 TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)  
 LUMINAIRE-250 W HPS  
 1-ONE WAY SIGNAL-OVERHEAD (11' FROM END OF MAST ARM (4-3))  
 1-ONE WAY SIGNAL-POLE MOUNTED AT 225 DEG (4-2)  
 2-R9-3c SIGN PANELS-FACING POLES 2 AND 5  
 2-TYPE D SIGN PANELS-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (#4) EXTENDED INTO H.H.11;  
 3" R.S.C.  
 2-12/C#12  
 3-3/C#12  
 1-3/C#20  
 1-3/C#12 (LUM)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0° (OLD 4-4)  
 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 45 DEG (OLD 1-2)  
 RIO-12 SIGN PANEL-OVERHEAD (ADJACENT TO OLD 4-4)  
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0° (NEW 7-1)  
 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED AT 45 DEG (NEW 1-2)  
 RIO-X12 SIGN-ADJACENT TO 7-1

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 2/13/2018  
 (USERNAME)

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

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. 22457  
 Printed Name: JOHN M. GRAY, PE Date: 2/19/2017



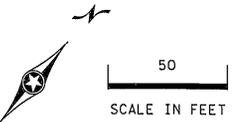
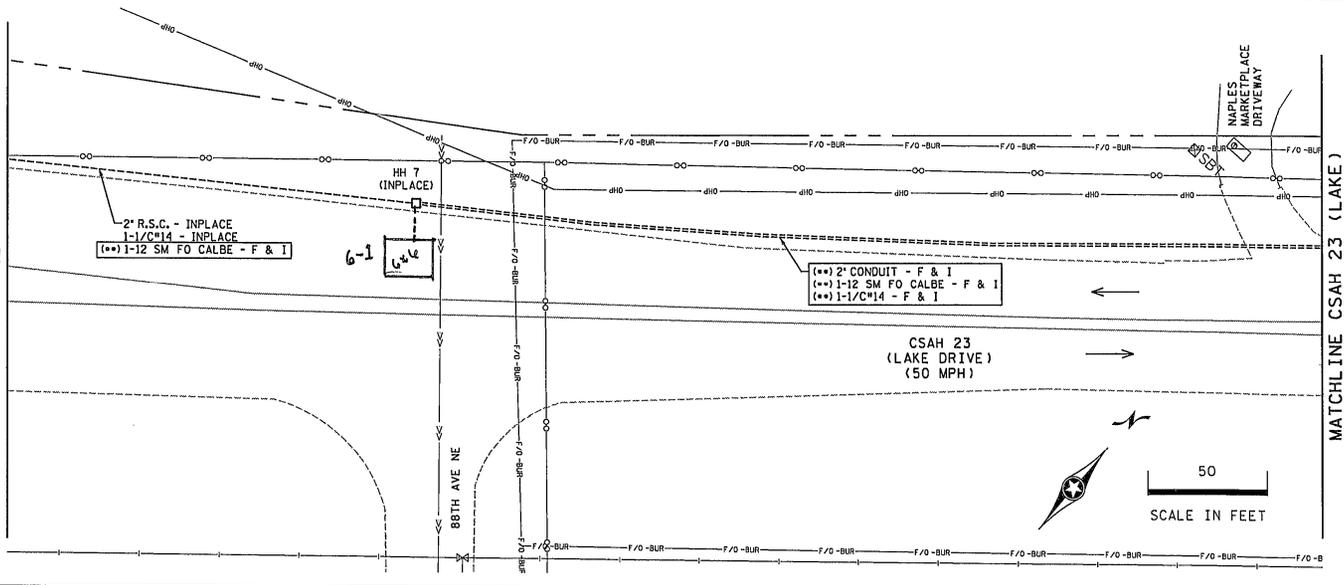
ANOKA COUNTY, MN  
 CSAH 23  
 S.A.P. 002-623-017, S.A.P. 244-020-002

REVISE SIGNAL SYSTEM "B"  
 INTERSECTION LAYOUT  
 CSAH 23 (LAKE DRIVE) AT NAPLES ST

|                         |    |
|-------------------------|----|
| FILE NO.<br>ANOKC141617 | 88 |
| SCL13<br>OF SCL19       | 94 |

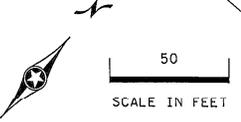
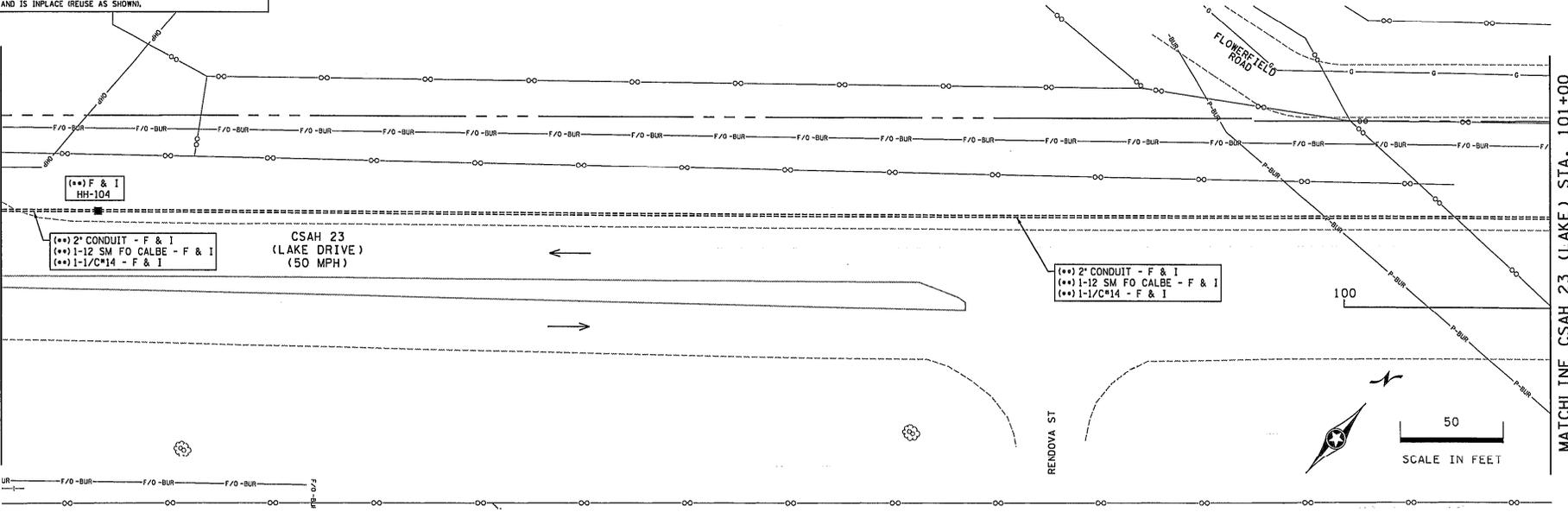
- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
  - 3) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 4) NEW HANDHOLE 104 TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE A PVC HANDHOLE WITH METAL FRAME AND COVER. SEE SPECIAL PROVISIONS.
  - 5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
  - 6) HANDHOLE 7 IS A PVC HANDHOLE WITH METAL FRAME AND COVER AND IS INPLACE (REUSE AS SHOWN).

MATCH LINE "B" - SEE CSAH 23/NAPLE STREET INTERSECTION LAYOUT SEE SHEET 89



MATCHLINE CSAH 23 (LAKE) SEE BELOW

MATCHLINE CSAH 23 (LAKE) SEE ABOVE



MATCHLINE CSAH 23 (LAKE) STA. 101+00 SEE SHEET 87

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| DESIGN TEAM |     |      |           |
|-------------|-----|------|-----------|
| DRAWN BY:   | SAS |      |           |
| DESIGNER:   | JMG |      |           |
| CHECKED BY: | JMG |      |           |
| 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.  
 Certified By: *[Signature]* Lic. No. 22457  
 Printed Name: JOHN M. GRAY, PE Date: 9/19/2017



ANOKA COUNTY, MN  
**CSAH 23**  
 S.A.P. 002-623-017

**TRAFFIC CONTROL INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 23 (LAKE) FROM NAPLES STREET TO STA 101+00

|                        |    |
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| FILE NO.<br>ANOKC14817 | 88 |
| SGL11<br>OF SGL19      | 96 |

6/29/22 PM

12/4/2017

(USERNAME)

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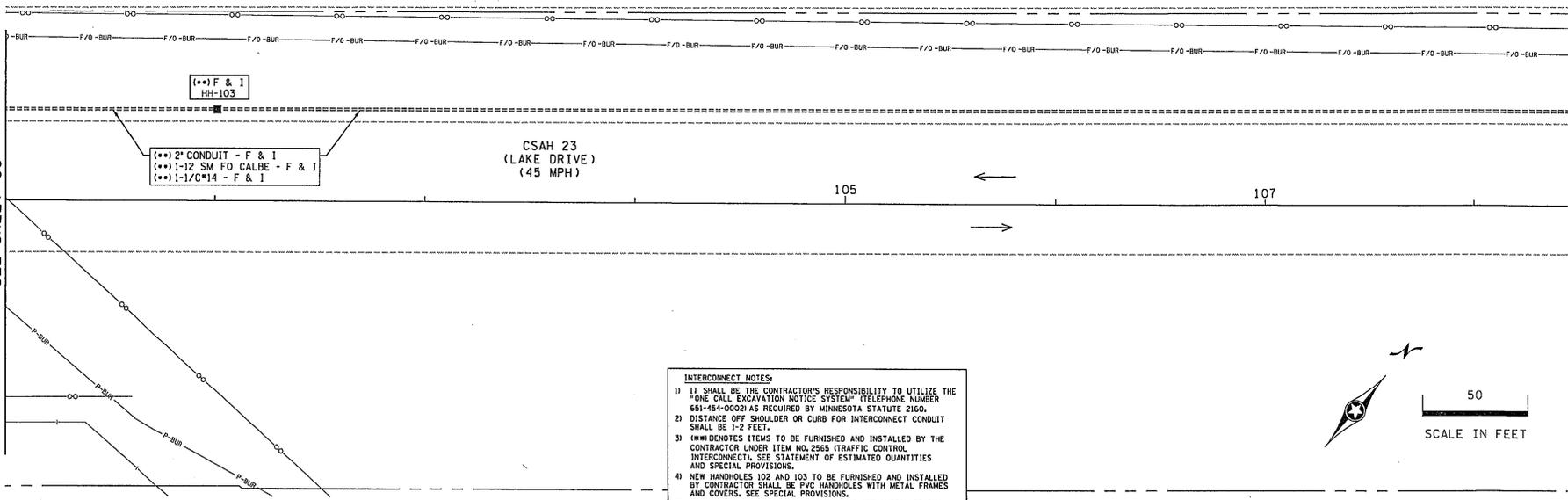
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MATCHLINE CSAH 23 (LAKE) STA. 101+00  
SEE SHEET 88

MATCHLINE CSAH 23 (LAKE) STA. 108+50  
SEE ABOVE

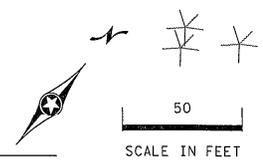
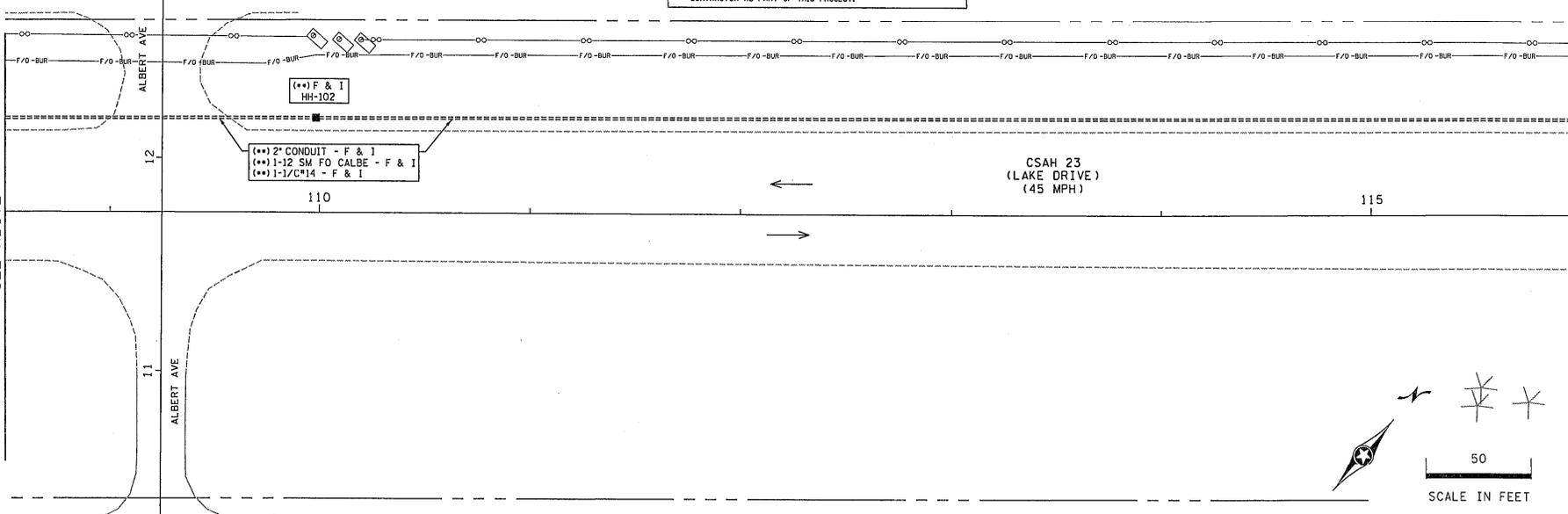
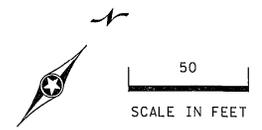
MATCHLINE CSAH 23 (LAKE) STA. 108+50  
SEE BELOW

MATCHLINE CSAH 23 (LAKE) STA. 116+00  
SEE SHEET 86



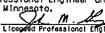
**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1'-2 FEET.
- 3) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTS). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES 102 AND 103 TO BE FURNISHED AND INSTALLED BY CONTRACTOR SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.



| DESIGN TEAM |     |      |           |
|-------------|-----|------|-----------|
| DRAWN BY:   | SAS |      |           |
| DESIGNER:   | JMG |      |           |
| CHECKED BY: | JMG |      |           |
| 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.

Certified By:  Licensure No. 22457  
 Printed Name: JOHN M. GRAY, PE Date: 2/12/2017

 3535 VAONAS CENTER DR.  
ST. PAUL, MN 55110

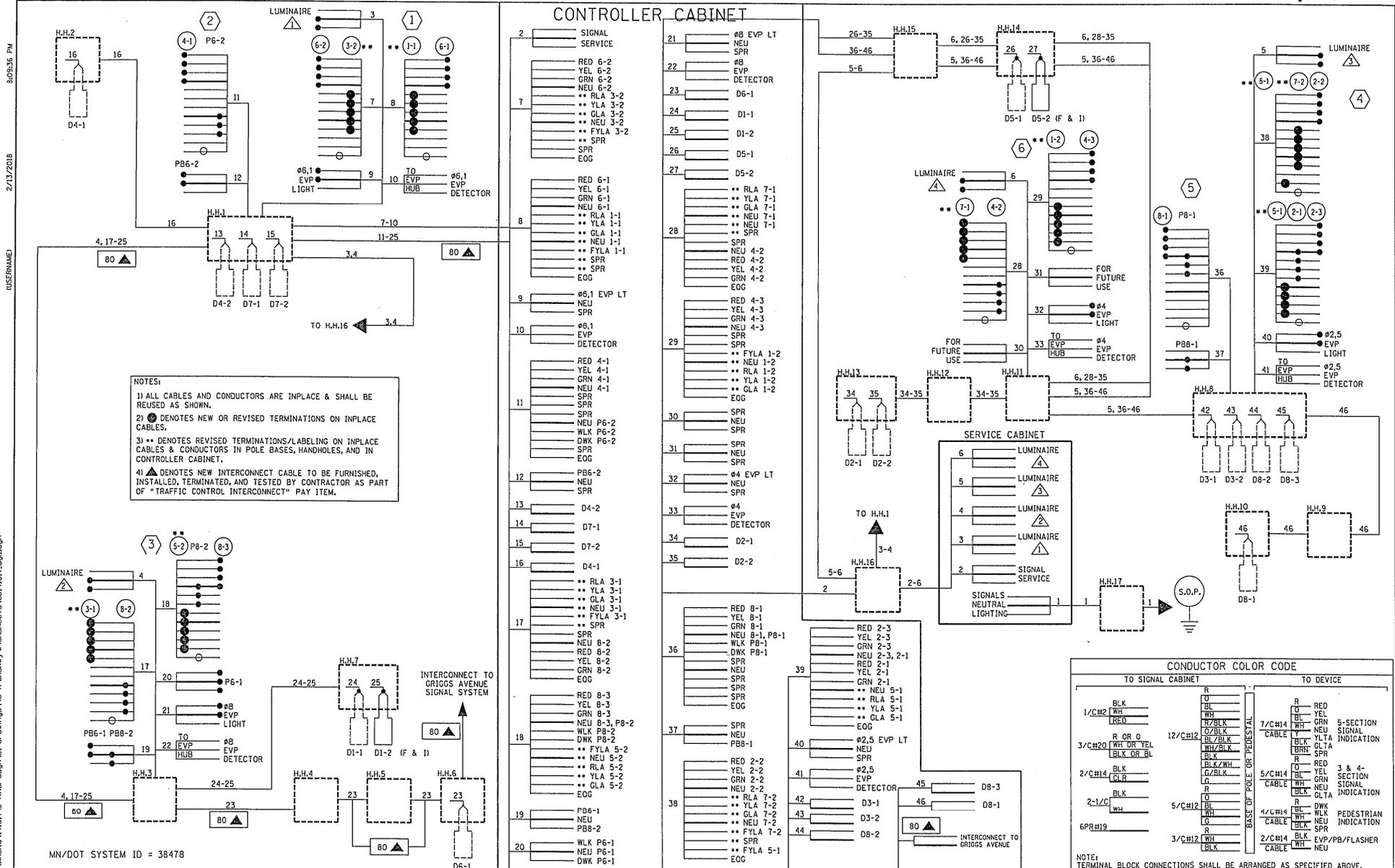
ANOKA COUNTY, MN  
 CSAH 23  
 S. A. P. 002-623-017

TRAFFIC CONTROL INTERCONNECT  
 INTERSECTION LAYOUT  
 CSAH 23 (LAKE) FROM STA 101+00 TO 116+00

|                         |    |
|-------------------------|----|
| FILE NO.<br>ANOKCI41617 | 87 |
| SGL10<br>OF 50L19       | 96 |



7190



**NOTES:**

1) ALL CABLES AND CONDUCTORS ARE IN PLACE & SHALL BE REUSED AS SHOWN.

2) ● DENOTES NEW OR REVISED TERMINATIONS ON INPLACE CABLES.

3) + DENOTES REVISED TERMINATIONS/LABELING ON INPLACE CABLES & CONDUCTORS IN POLE BASES, HANDHOLES, AND IN CONTROLLER CABINET.

4) ▲ DENOTES NEW INTERCONNECT CABLE TO BE FURNISHED, INSTALLED, TERMINATED, AND TESTED BY CONTRACTOR AS PART OF "TRAFFIC CONTROL INTERCONNECT" PAY ITEM.

**CONDUCTOR COLOR CODE**

| TO SIGNAL CABINET |       | TO DEVICE |                  |
|-------------------|-------|-----------|------------------|
| 1/C#12            | BLK   | R         | RED              |
|                   | WH    | Y         | YEL              |
|                   | RED   | GRN       | GRN              |
|                   | H/BLK | NEU       | 5-SECTION        |
|                   |       | BLK       | YLT A INDICATION |
|                   |       | BLK       | GLTA             |
|                   |       | SPR       |                  |
|                   |       | BLK       | RED              |
|                   |       | BLK/WH    | YEL              |
|                   |       | LG/BLK    | GRN              |
|                   |       | LG        | NEU              |
|                   |       | R         | 3 & 4-           |
|                   |       | CO        | SECTION          |
|                   |       | CO        | INDICATION       |
|                   |       | BLK/WH    | BLK              |
|                   |       | WH        | DWK              |
|                   |       | WH        | WLK              |
|                   |       | WH        | PEDESTRIAN       |
|                   |       | LG        | NEU              |
|                   |       | R         | SIGNAL           |
|                   |       | BLK       | GLTA             |
|                   |       | WH        | EVP/PB/FLASHER   |
|                   |       | BLK       | NEU              |

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

**CONTROLLER CABINET**

- 2 SIGNAL SERVICE
- 7 RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2
- RLA 3-2
- YLA 3-2
- GLA 3-2
- NEU 3-2
- FYLA 3-2
- SPR
- SPR
- EOG
- 8 RED 6-1
- NEU 6-1
- GRN 6-1
- RLA 1-1
- YLA 1-1
- GLA 1-1
- NEU 1-1
- FYLA 1-1
- SPR
- SPR
- EOG
- 9 #8,1 EVP LT
- NEU
- SPR
- 10 #8,1 EVP DETECTOR
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1
- SPR
- SPR
- 11 SPR
- NEU PB-2
- WLK PB-2
- DWK PB-2
- SPR
- EOG
- 12 PB6-2
- NEU
- SPR
- 13 D4-2
- 14 D7-1
- 15 D7-2
- 16 D4-1
- 17 RLA 3-1
- YLA 3-1
- GLA 3-1
- NEU 3-1
- FYLA 3-1
- SPR
- SPR
- 18 RED 8-2
- YEL 8-2
- GRN 8-2
- NEU 8-2
- WLK PB-2
- DWK PB-2
- FYLA 5-2
- NEU 5-2
- RLA 5-2
- YLA 5-2
- GLA 5-2
- EOG
- 19 PB6-1
- NEU
- PB8-2
- WLK PB-1
- NEU PB-1
- DWK PB-1
- 20

**SERVICE CABINET**

- 21 #8 EVP LT
- NEU
- SPR
- 22 #8 EVP DETECTOR
- 23 D6-1
- 24 D1-1
- 25 D1-2
- 26 D5-1
- 27 D5-2
- 28 RLA 7-1
- YLA 7-1
- GLA 7-1
- NEU 7-1
- RLA 7-1
- YLA 7-1
- GLA 7-1
- NEU 7-1
- SPR
- 29 SPR
- NEU 4-2
- RED 4-2
- YEL 4-2
- GRN 4-2
- EOG
- 30 SPR
- FYLA 1-2
- NEU 1-2
- RLA 1-2
- YLA 1-2
- GLA 1-2
- EOG
- 31 SPR
- NEU
- SPR
- 32 #4 EVP LT
- NEU
- SPR
- 33 #4 EVP DETECTOR
- 34 D2-1
- 35 D2-2
- 36 RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3, 2-1
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 5-1
- RLA 5-1
- YLA 5-1
- GLA 5-1
- EOG
- 37 SPR
- NEU
- PB8-1
- 38 RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2
- RLA 7-2
- YLA 7-2
- GLA 7-2
- NEU 7-2
- FYLA 7-2
- SPR
- SPR
- EOG
- 39
- 40 #2,5 EVP LT
- NEU
- SPR
- 41 #2,5 EVP DETECTOR
- 42 D3-1
- 43 D3-2
- 44 D8-2
- 45 D8-3
- 46 D8-1

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DESIGN TEAM

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| DESIGNER:   | JMG |
| CHECKED BY: | JMG |

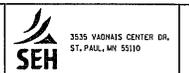
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| NO. | BY | DATE | REVISIONS |
|-----|----|------|-----------|
|     |    |      |           |

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.

Certified By: *[Signature]* Lic. No. 22457

Printed Name: JOHN M. GRAY, PE Date: 2/13/2011



ANOKA COUNTY, MN  
 CSAH 23  
 S.A.P. 002-623-017, S.A.P. 244-020-002

REVISE SIGNAL SYSTEM "B"  
 FIELD WIRING DIAGRAM  
 CSAH 23 (LAKE DRIVE) AT NAPLES ST

FILE NO. ANOKC141617  
 SGL14  
 OF SGL20

89  
 94