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9/25/2025

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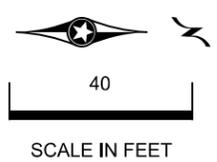
F & I APS PUSH BUTTON STATION (SEE DETAILS)  
1-APS PB AND SIGN (RT ARROW) (PB6-2)  
EXTEND INTO HH 6:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 (INS. GR.)

HH 2 TO HH 3:  
2" RSC INPLACE  
2-2/C 14 (MAINTAIN INPLACE)  
(\*\*) 1-6 Pr 19 INPLACE (REMOVE)  
2-2/C 14 F & I

HH 4 TO HH 5:  
4" RSC INPLACE (MAINTAIN INPLACE)  
3-12/C 12  
2-3/C 12  
1-3/C 20  
2-2/C 14  
1-3/C 14 (LUM)  
F & I 3-2/C 14

HH 5 TO HH 6:  
2" RSC - INPLACE  
2-2/C 14 - INPLACE  
F & I 2-2/C 14

F & I APS PUSH BUTTON STATION (SEE DETAILS)  
1-APS PB AND SIGN (RT ARROW) (PB8-2)  
EXTEND INTO HH 8:  
1" CONDUIT  
1-2/C 14  
1-1/C 6 (INS. GR.)



FO VAULT 106 TO FO VAULT 107:  
F & I (\*\*) 1.5" CONDUIT  
(\*\*) 1-12 SM FO CABLE

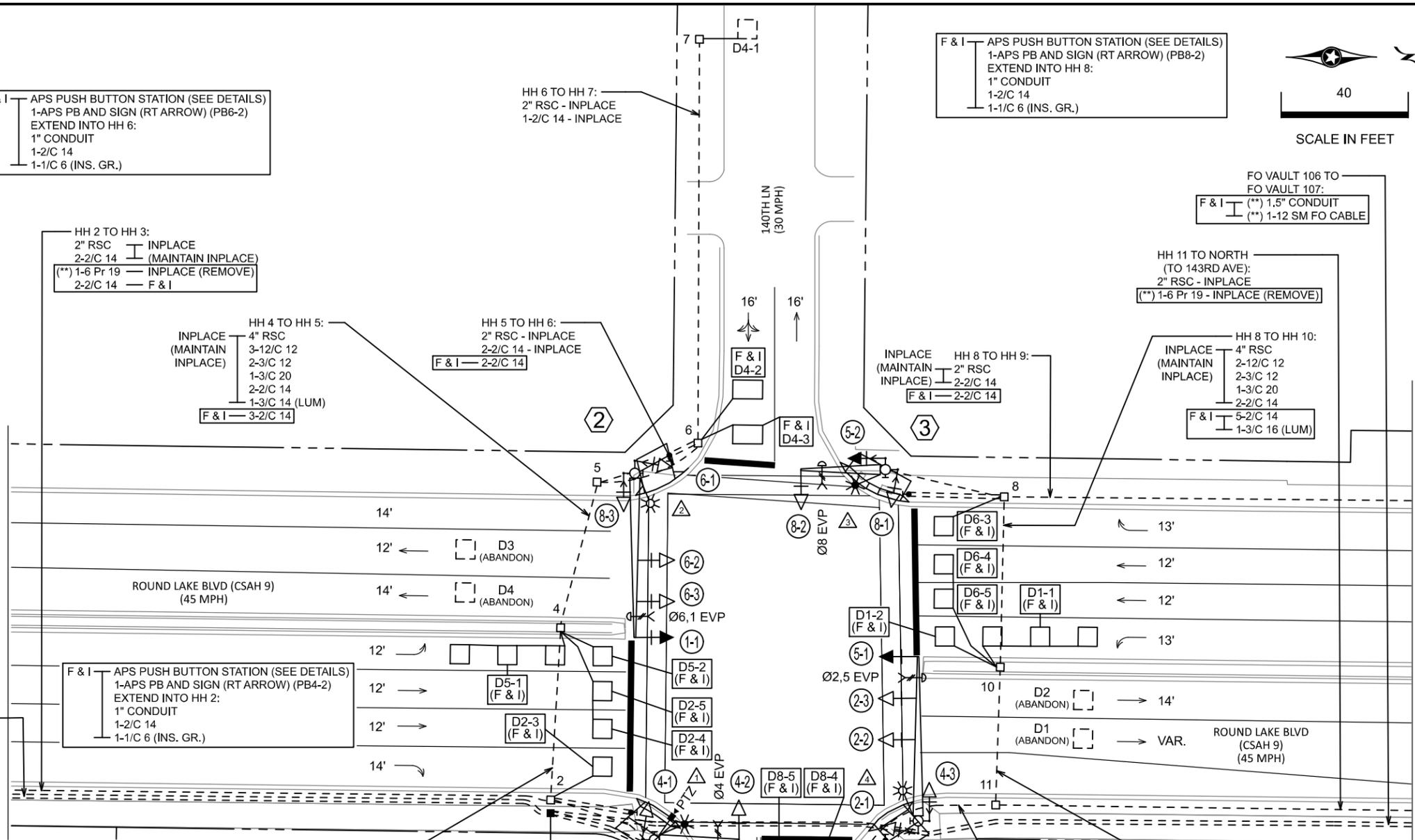
HH 11 TO NORTH (TO 143RD AVE):  
2" RSC - INPLACE  
(\*\*) 1-6 Pr 19 - INPLACE (REMOVE)

HH 8 TO HH 10:  
4" RSC INPLACE (MAINTAIN INPLACE)  
2-12/C 12  
2-3/C 12  
1-3/C 20  
2-2/C 14  
F & I 5-2/C 14  
1-3/C 16 (LUM)

HH 8 TO HH 9:  
2" RSC INPLACE  
2-2/C 14  
F & I 2-2/C 14

MATCHLINE M

MATCHLINE N

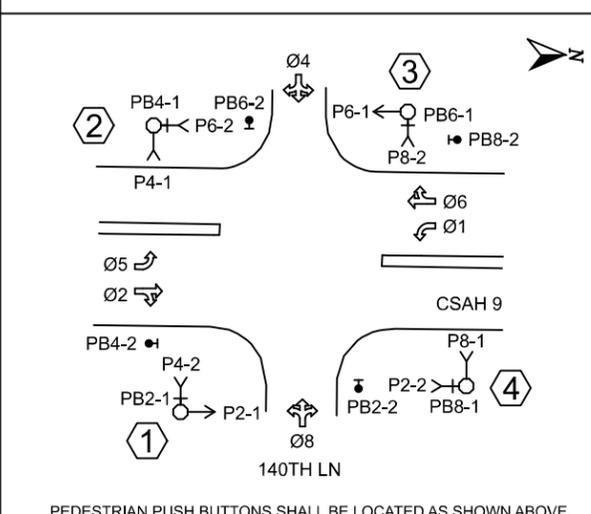


### PVC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1, D5-1	3-6X6	20', 35', 50'	1	1
D1-2, D5-2	6X6	5'	1	2
D2-1, D2-2	6X6	450'	1	3
D2-3	6X6	5'	11	3
D2-4, D2-5	6X6	5'	11	4
D4-1	6X6	120'	3,8	INPLACE
D4-2	6X10	20'	7	4
D4-3	6X10	5'	7	3
D6-1, D6-2	6X6	450'	1	3
D6-3	6X6	5'	11	3
D6-4, D6-5	6X6	5'	11	4
D8-1	6X6	120'	3,8	INPLACE
D8-2	6X6	20'	7	4
D8-3	6X6	20'	7	4
D8-4	6X10	5'	7	3
D8-5	6X6	5'	7	3

NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR  
LOOP DETECTOR FUNCTIONS:  
1) CALL AND EXTEND  
3) EXTEND ONLY  
7) DELAYED CALL-IMMEDIATE EXTEND  
8) CARRY OVER (STRETCH)  
11) SPECIAL DETECTOR (COUNTING)  
LOOP DETECTOR STATUS:  
1) DETACH EXISTING FRONT (10') AND BACK (40') LOOP DETECTORS FROM EXISTING LEAD-IN CABLES, FURNISH & INSTALL NEW PVC LOOP DETECTOR, AND SPLICE ALL 3 LOOP DETECTORS TO BACK LEAD-IN CABLE (F & I NEW SPLICE KIT).  
2) FURNISH & INSTALL NEW PVC LOOP DETECTOR AT 5' FROM STOP BAR. SPLICE THE NEW LOOP DETECTOR TO THE EXISTING FRONT LEAD-IN CABLE (F & I NEW SPLICE KIT).  
3) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND NEW LEAD-IN CABLE.  
4) FURNISH & INSTALL NEW PVC LOOP DETECTOR AND CONNECT TO INPLACE LEAD-IN CABLE (F & I NEW SPLICE KIT).

### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



HH 2 TO HH 4:  
4" RSC INPLACE (MAINTAIN INPLACE)  
3-12/C 12  
2-3/C 12  
1-3/C 20  
6-2/C 14  
1-3/C 14 (LUM)  
F & I 3-2/C 14

HH 1 TO HH 2:  
4" RSC INPLACE (MAINTAIN INPLACE)  
3-12/C 12  
2-3/C 12  
1-3/C 20  
8-2/C 14  
1-3/C 14 (LUM)  
INPLACE (REMOVE) (\*\*) 1-6 Pr 19  
F & I 7-2/C 14

HH 12 TO HH 13:  
2" RSC INPLACE (MAINTAIN INPLACE)  
1-2/C 14

HH 11 TO HH 12:  
4" RSC INPLACE (MAINTAIN INPLACE)  
5-12/C 12  
2-3/C 12  
1-3/C 20  
9-2/C 14  
1-3/C 14 (LUM)  
INPLACE (REMOVE) (\*\*) 1-6 Pr 19  
F & I 5-2/C 14  
1-3/C 16 (LUM)

HH 10 TO HH 11:  
4" RSC INPLACE (MAINTAIN INPLACE)  
2-12/C 12  
2-3/C 12  
1-3/C 20  
6-2/C 14  
F & I 5-2/C 14  
1-3/C 16 (LUM)

HH 12 TO HH 14:  
4" RSC INPLACE (MAINTAIN INPLACE)  
5-12/C 12  
4-3/C 12  
2-3/C 20  
9-2/C 14  
1-3/C 14 (LUM)  
INPLACE (REMOVE) (\*\*) 1-6 Pr 19  
F & I 3" CONDUIT (BORE)  
9-2/C 14  
1-3/C 16 (LUM)

**SIGNAL SYSTEM OPERATIONS:**  
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.  
- NORMAL OPERATION SHALL BE 6 PHASE FULLY ACTUATED WITH PHASES 1 AND 5 BEING REVISED FROM PROTECTED LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY PROGRAMS).  
- VEHICLE PHASES 2 AND 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE AND CONTROLLER CABINET NOTES.

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

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.  
  
 Printed Name: JOHN M. GRAY  
 Lic. No. 22457 Date: 09/23/2025

ANOKA COUNTY, MN  
 CSAH 9  
 SAP 002-609-023  
 CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13  
 CITY OF ANOKA SAP 103-020-020

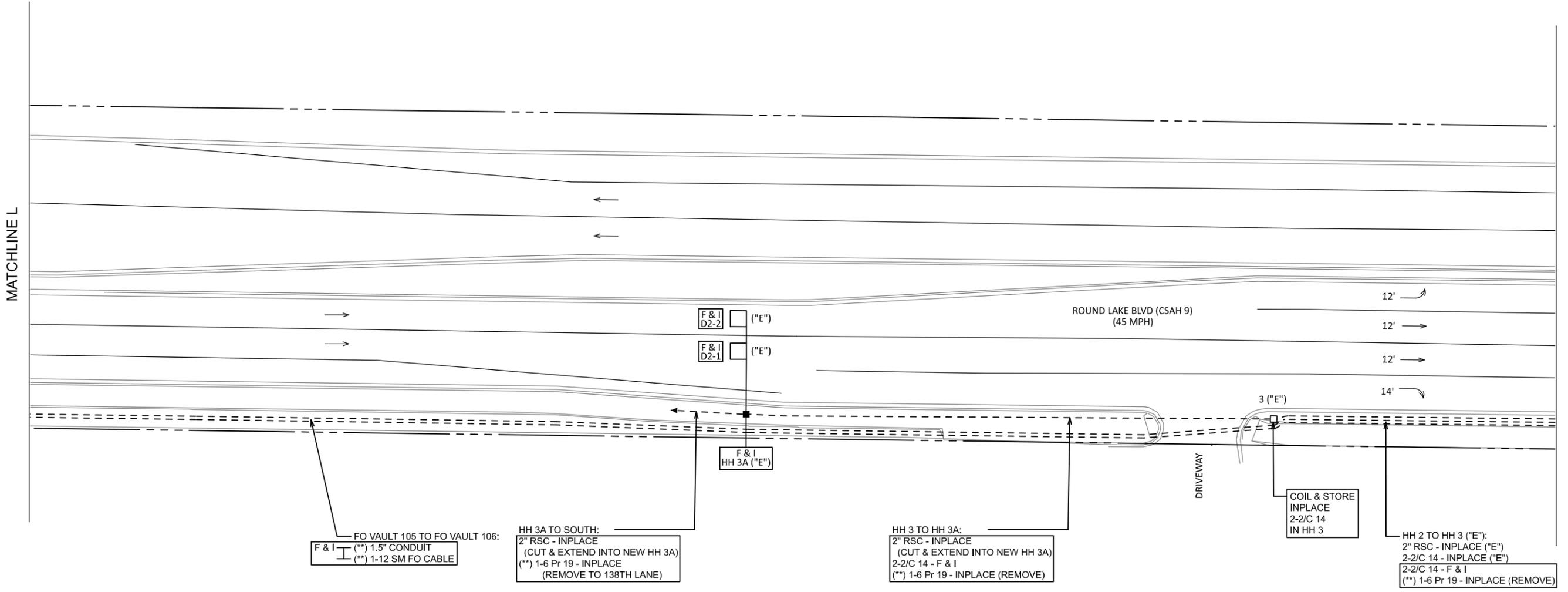
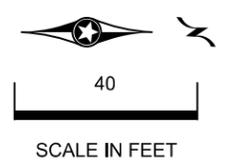
REVISE SIGNAL SYSTEM "E"  
 INTERSECTION LAYOUT  
 CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

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9/25/2025

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- 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 NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
  - 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) ITEMS DENOTED BY "E" SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "E").
  - 5) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
  - 6) ALL NEW INTERCONNECT CONDUIT INSTALLATIONS (UNDER ROADWAYS, SIDEWALKS, AND IN BOULEVARD AREAS) SHALL BE DIRECTIONALLY BORED UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD (DURING CONSTRUCTION) FOR A CONDUIT SECTION TO BE TRENCHED-IN DUE TO UTILITY OR OTHER CONFLICTS THAT WILL NOT ALLOW FOR A CONDUIT SECTION TO BE BORED. TURF ESTABLISHMENT (INCLUDING GRADING AND RESTORATION) SHALL ALSO BE PROVIDED FOR ALL CONDUIT INSTALLATION AREAS IN THE BOULEVARDS (INCIDENTAL).



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DESIGNER: MRB				
CHECKED BY: JMG				

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*John M. Gray*  
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 License No. 22457 Date: 09/23/2025



ANOKA COUNTY, MN  
**CSAH 9**  
 SAP 002-609-023  
 CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13  
 CITY OF ANOKA SAP 103-020-020

**REVISE SIGNAL SYSTEM "E"**  
 INTERSECTION LAYOUT AND INTERCONNECT  
 CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

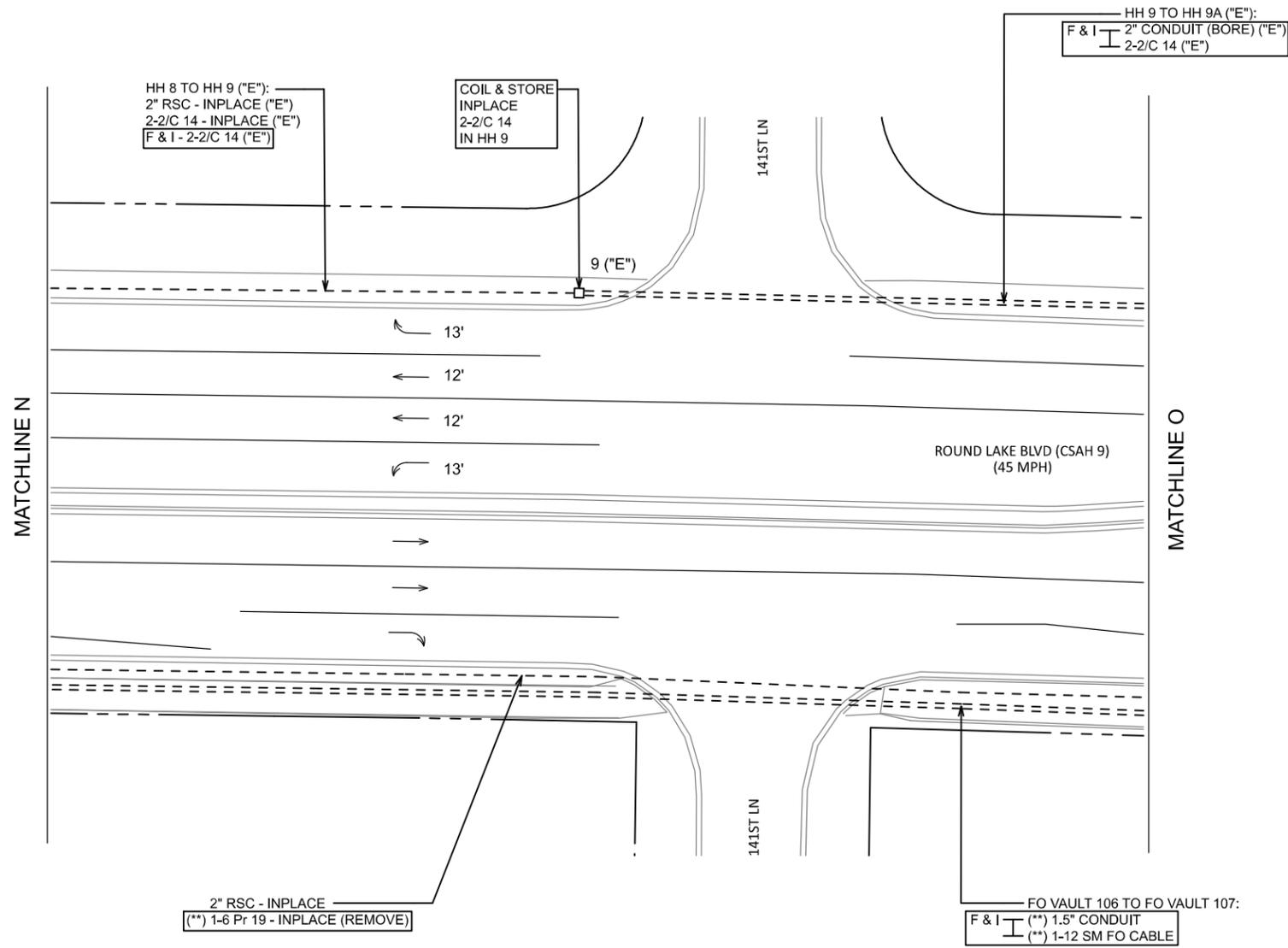
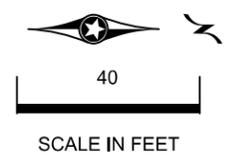
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9/25/2025

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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 NEW INTERCONNECT CONDUIT SHALL BE 1-2 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
- 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.
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CHECKED BY: JMG				

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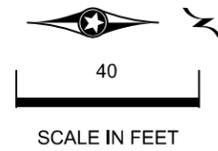
ANOKA COUNTY, MN  
CSAH 9  
SAP 002-609-023  
CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13  
CITY OF ANOKA SAP 103-020-020

REVISE SIGNAL SYSTEM "E"  
INTERSECTION LAYOUT AND INTERCONNECT  
CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

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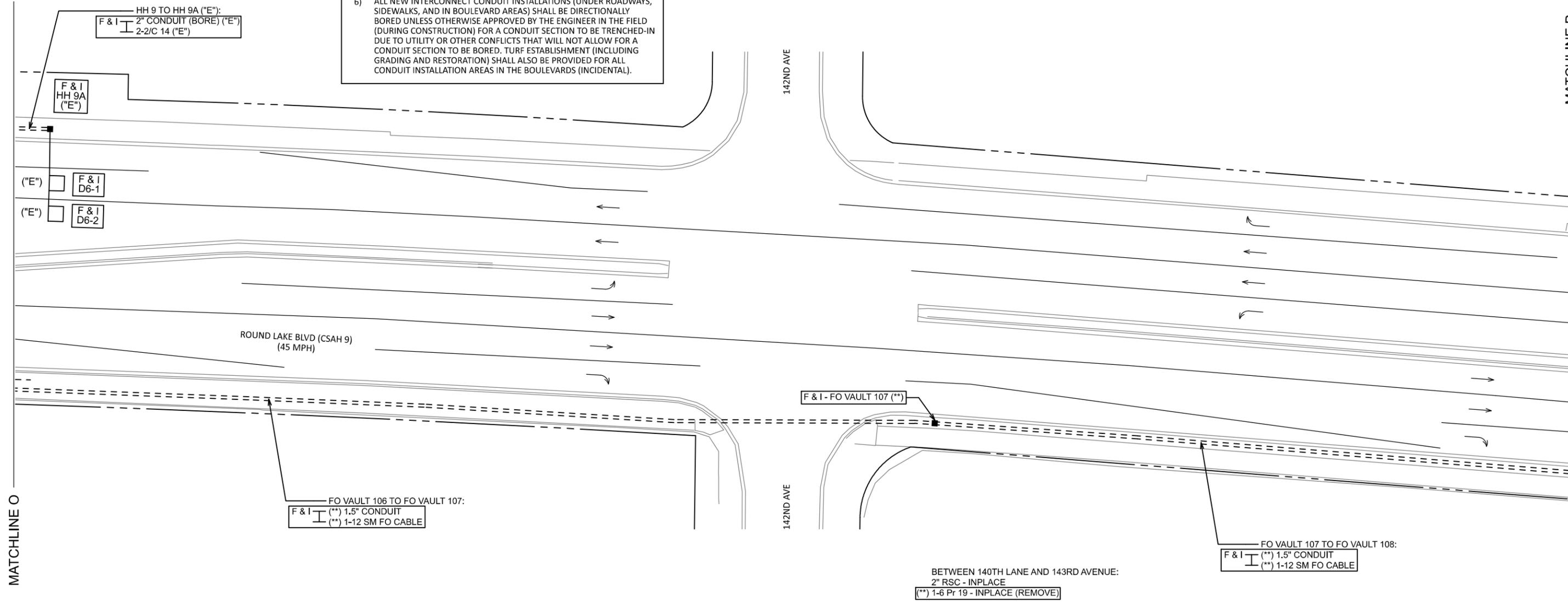
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**INTERCONNECT NOTES:**

- 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.
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MATCHLINE O

MATCHLINE P

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DESIGNER: MRB				
CHECKED BY: JMG				

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 Printed Name: JOHN M. GRAY  
 License No. 22457 Date: 09/23/2025



ANOKA COUNTY, MN  
 CSAH 9  
 SAP 002-609-023  
 CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13  
 CITY OF ANOKA SAP 103-020-020

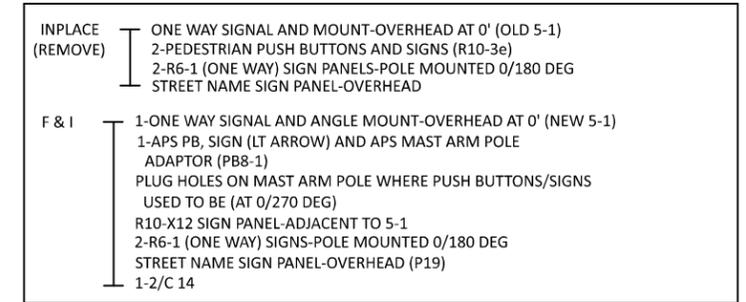
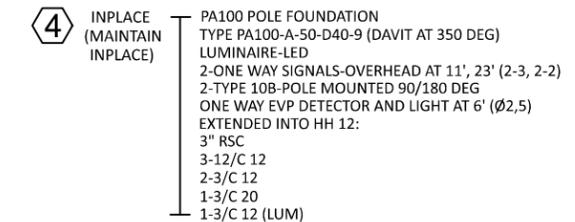
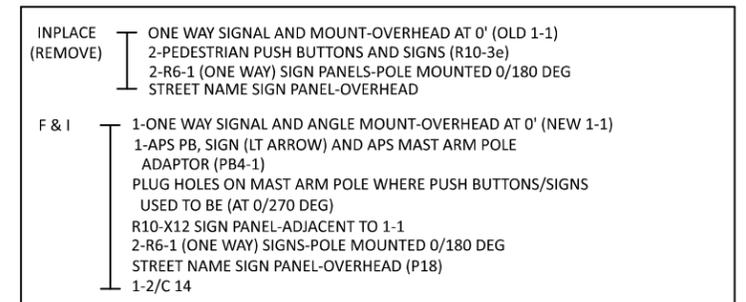
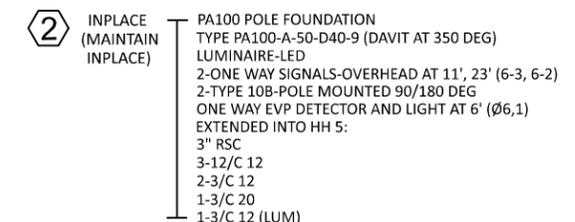
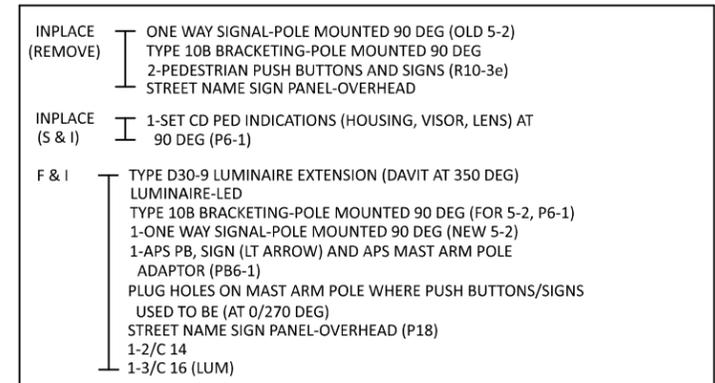
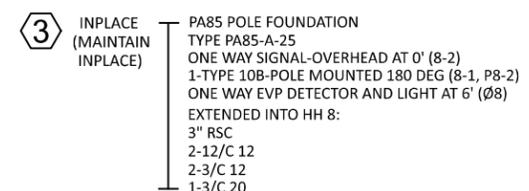
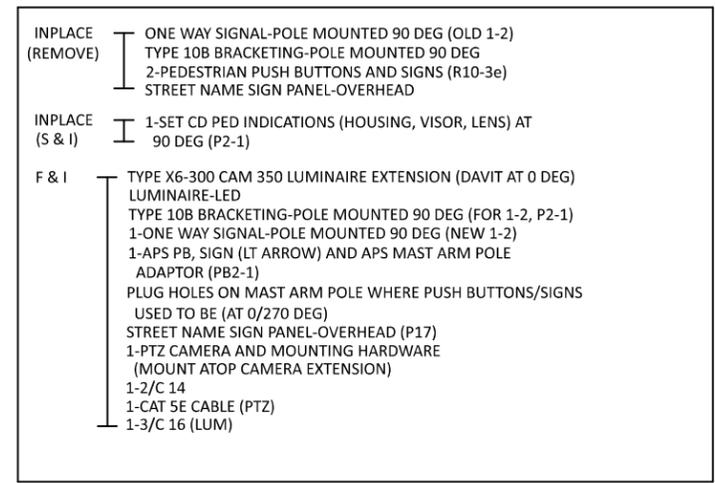
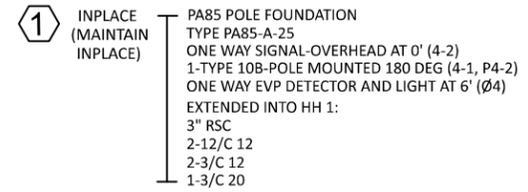
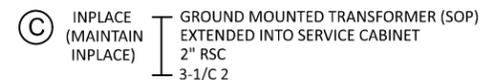
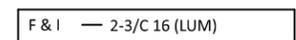
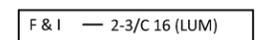
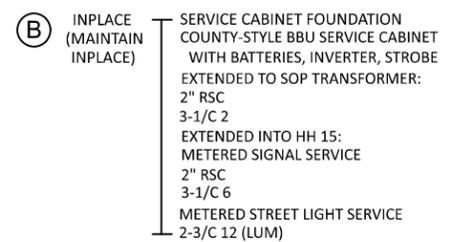
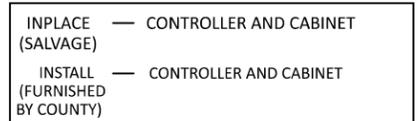
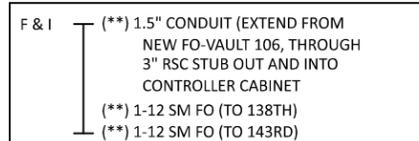
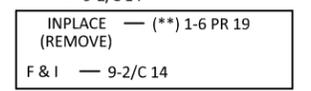
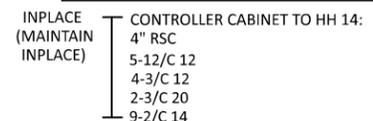
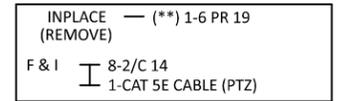
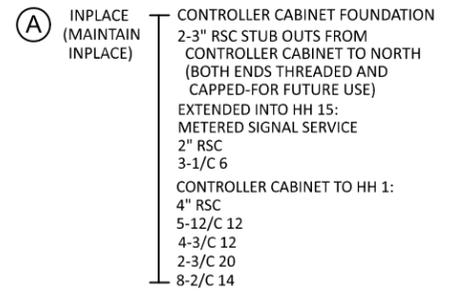
**TRAFFIC SIGNAL INTERCONNECT**  
 INTERCONNECT  
 CSAH 9 (ROUND LAKE BOULEVARD) BETWEEN 140TH LANE AND 143RD AVENUE

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9/25/2025

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MODEL: sgl28

- NOTES:**
- LOCATION OF NEW LOOP DETECTORS AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
  - SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON THE PLANS.
  - ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE), EXCEPT AS FOLLOWS:  
- ADJUST HANDHOLE FRAME, RING, AND COVER FOR HANDHOLES 1, 2, 6, 8, 11, AND 12 TO FINISHED SURROUNDING GRADE AFTER ALL CURB RAMP WORK IS COMPLETED (TO BE MEASURED AND PAID FOR SEPARATELY FROM "REVISE SIGNAL SYSTEM E" PAY ITEM).  
- FURNISH AND INSTALL NEW HANDHOLES 3A AND 9A (SEE SPECIAL PROVISIONS - INCIDENTAL TO "REVISE SIGNAL SYSTEM E" PAY ITEM).
  - ALL PEDESTRIAN SIGNAL HEADS ARE ONE-SECTION LED "HAND/WALKING PERSON" COUNTDOWN TIMER INDICATIONS AND SHALL REMAIN AND BE REUSED INPLACE AS SHOWN IN THE PLANS.
  - ALL LOOP DETECTORS SHALL BE NEW LOOP DETECTORS IN PVC (EXCEPT FOR LOOP DETECTORS D4-1 AND D8-1) PER DETAILS INCLUDED ELSEWHERE IN THE PLANS. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLY-ETHYLENE (XLP) #12 AWG IN 3/4-INCH PVC. SEE SPECIAL PROVISIONS.
  - 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.
  - CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
  - 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 "E" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
  - SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "REVISE SIGNAL SYSTEM E" PAY ITEM).
  - F & I = NEW, FURNISH AND INSTALL.  
S & I = INPLACE, SALVAGE AND INSTALL.
  - (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
  - CONTRACTOR SHALL PROVIDE, INSTALL, AND MAKE OPERATIONAL ALL COMPONENTS RELATED TO THE COMPLETE PTZ CAMERA INSTALLATION (TO BE MEASURED AND PAID FOR SEPARATELY FROM THE "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM). SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES.



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 CITY OF ANDOVER SAP 198-020-042, CITY PROJECT 25-13  
 CITY OF ANOKA SAP 103-020-020



**REVISE SIGNAL SYSTEM "E"**  
 POLE & CABINET NOTES  
 CSAH 9 (ROUND LAKE BOULEVARD) AT 140TH LANE

