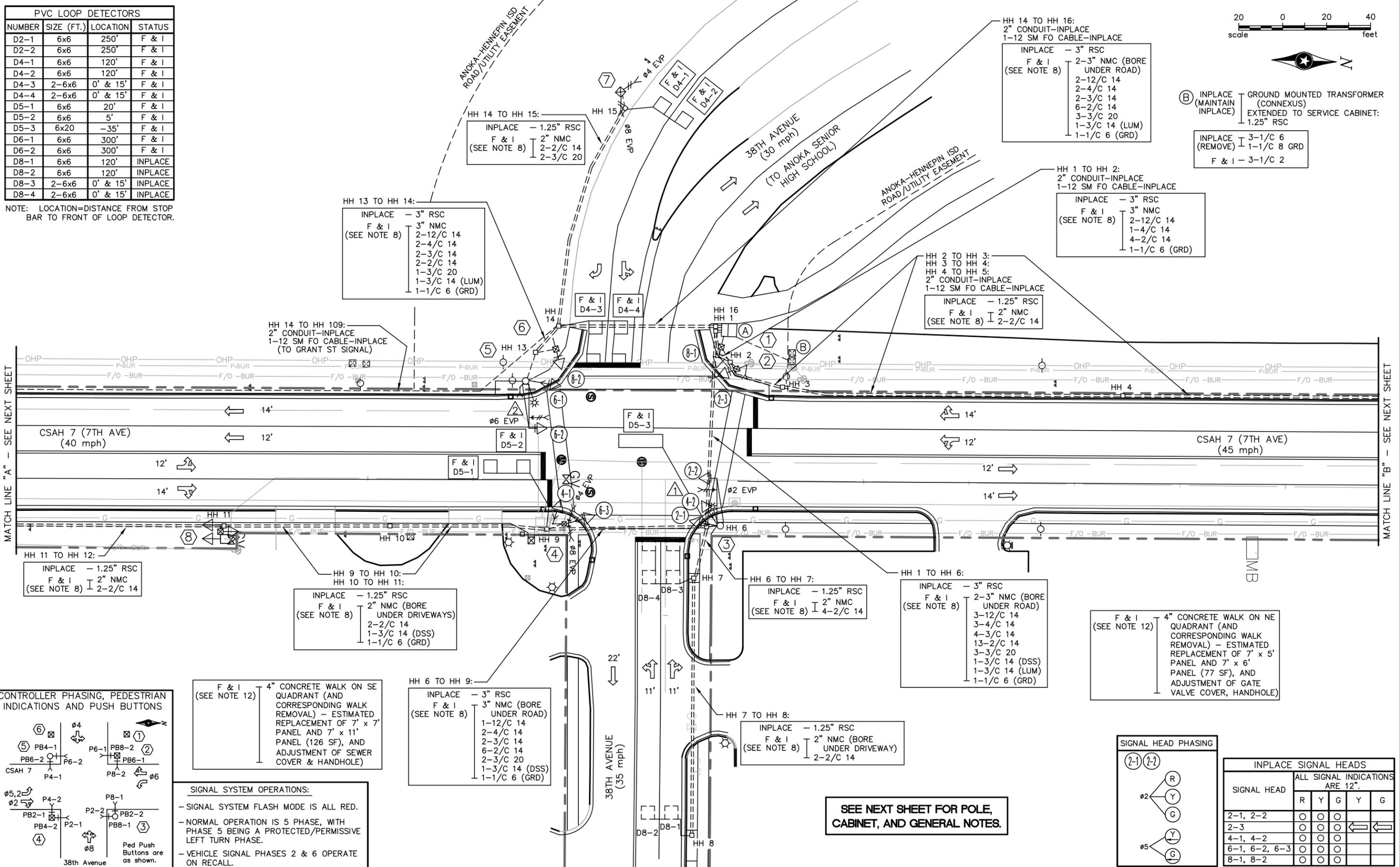


PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	STATUS
D2-1	6x6	250'	F & I
D2-2	6x6	250'	F & I
D4-1	6x6	120'	F & I
D4-2	6x6	120'	F & I
D4-3	2-6x6	0' & 15'	F & I
D4-4	2-6x6	0' & 15'	F & I
D5-1	6x6	20'	F & I
D5-2	6x6	5'	F & I
D5-3	6x20	-35'	F & I
D6-1	6x6	300'	F & I
D6-2	6x6	300'	F & I
D8-1	6x6	120'	INPLACE
D8-2	6x6	120'	INPLACE
D8-3	2-6x6	0' & 15'	INPLACE
D8-4	2-6x6	0' & 15'	INPLACE

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



HH 14 TO HH 16:
2" CONDUIT-INPLACE
1-12 SM FO CABLE-INPLACE
INPLACE - 3" RSC
F & I (SEE NOTE 8)
2-3" NMC (BORE UNDER ROAD)
2-12/C 14
2-4/C 14
2-3/C 14
6-2/C 14
3-3/C 20
1-3/C 14 (LUM)
1-1/C 6 (GRD)

(B) INPLACE (MAINTAIN INPLACE) GROUND MOUNTED TRANSFORMER (CONNEXUS) EXTENDED TO SERVICE CABINET: 1.25" RSC

INPLACE (REMOVE) 3-1/C 6
1-1/C 8 GRD
F & I - 3-1/C 2

HH 1 TO HH 2:
2" CONDUIT-INPLACE
1-12 SM FO CABLE-INPLACE
INPLACE - 3" RSC
F & I (SEE NOTE 8)
3" NMC
2-12/C 14
1-4/C 14
4-2/C 14
1-1/C 6 (GRD)

HH 2 TO HH 3:
HH 3 TO HH 4:
HH 4 TO HH 5:
2" CONDUIT-INPLACE
1-12 SM FO CABLE-INPLACE
INPLACE - 1.25" RSC
F & I (SEE NOTE 8) 2" NMC
2-2/C 14

HH 13 TO HH 14:
INPLACE - 3" RSC
F & I (SEE NOTE 8)
3" NMC
2-12/C 14
2-4/C 14
2-3/C 14
2-2/C 14
1-3/C 20
1-3/C 14 (LUM)
1-1/C 6 (GRD)

HH 14 TO HH 109:
2" CONDUIT-INPLACE
1-12 SM FO CABLE-INPLACE
(TO GRANT ST SIGNAL)

HH 11 TO HH 12:
INPLACE - 1.25" RSC
F & I (SEE NOTE 8) 2" NMC
2-2/C 14

HH 9 TO HH 10:
HH 10 TO HH 11:
INPLACE - 1.25" RSC
F & I (SEE NOTE 8)
2" NMC (BORE UNDER DRIVEWAYS)
2-2/C 14
1-3/C 14 (DSS)
1-1/C 6 (GRD)

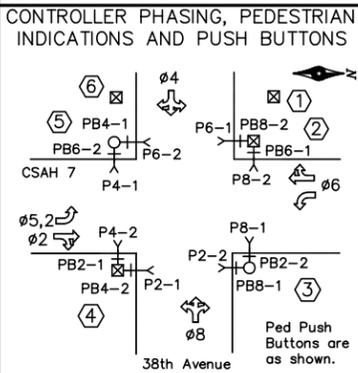
HH 6 TO HH 7:
INPLACE - 1.25" RSC
F & I (SEE NOTE 8) 2" NMC
4-2/C 14

HH 1 TO HH 6:
INPLACE - 3" RSC
F & I (SEE NOTE 8)
2-3" NMC (BORE UNDER ROAD)
3-12/C 14
3-4/C 14
4-3/C 14
13-2/C 14
3-3/C 20
1-3/C 14 (DSS)
1-3/C 14 (LUM)
1-1/C 6 (GRD)

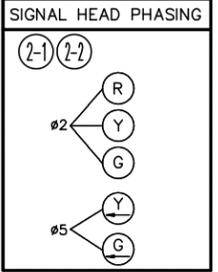
F & I (SEE NOTE 12) 4" CONCRETE WALK ON NE QUADRANT (AND CORRESPONDING WALK REMOVAL) - ESTIMATED REPLACEMENT OF 7' x 5' PANEL AND 7' x 6' PANEL (77 SF), AND ADJUSTMENT OF GATE VALVE COVER, HANDHOLE)

HH 6 TO HH 9:
INPLACE - 3" RSC
F & I (SEE NOTE 8)
3" NMC (BORE UNDER ROAD)
1-12/C 14
2-4/C 14
2-3/C 14
6-2/C 14
2-3/C 20
1-3/C 14 (DSS)
1-1/C 6 (GRD)

HH 7 TO HH 8:
INPLACE - 1.25" RSC
F & I (SEE NOTE 8) 2" NMC (BORE UNDER DRIVEWAY)
2-2/C 14



SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 5 PHASE, WITH PHASE 5 BEING A PROTECTED/PERMISSIVE LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.



SIGNAL HEAD	INPLACE SIGNAL HEADS				
	ALL SIGNAL INDICATIONS ARE 12"				
	R	Y	G	Y	G
2-1, 2-2	○	○	○		
2-3	○	○	○	←	←
4-1, 4-2	○	○	○		
6-1, 6-2, 6-3	○	○	○		
8-1, 8-2	○	○	○		

SEE NEXT SHEET FOR POLE, CABINET, AND GENERAL NOTES.

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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.
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ANOKA COUNTY, MN
CITY OF ANOKA
SAP 002-607-026

REVISE SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 7 (7TH AVENUE NW) AT 38TH AVENUE/SCHOOL DRIVEWAY

FILE NO. ANOKC 122928
4
8

REVISE SIGNAL SYSTEM NOTES:

- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
- ALL NUMBERING OF VEHICLE AND PEDESTRIAN SIGNAL HEADS, PEDESTRIAN PUSH BUTTONS, EVP, POLES, LOOP DETECTORS, HANDHOLES, ETC. HAVE BEEN REVISED FROM EXISTING PLANS TO CONFORM TO CURRENT SIGNAL DESIGN STANDARDS, AND ALL LABELING OF TERMINAL BLOCKS AND LOOP DETECTORS SHALL BE REVISED BY CONTRACTOR TO MATCH THIS PLAN.
- CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING HANDHOLES IN THE VICINITY OF CONSTRUCTION, AND SHALL ADJUST HANDHOLES 6 AND 9 AS NECESSARY (REUSE EXISTING FRAME AND COVER) TO MATCH FINISHED SURROUNDING SIDEWALK GRADE (FOR WHERE SIDEWALK IS REMOVED TO ACCOMMODATE NEW CONDUIT BORING WORK) (INCIDENTAL).
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" NMC. NEW LOOP DETECTORS TO BE FURNISHED, INSTALLED, AND MADE OPERATIONAL BY CONTRACTOR SHALL BE TO THE SATISFACTION OF THE ENGINEER. SEE DETAILS AND SPECIAL PROVISIONS.
CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LOOP DETECTOR SPLICE KITS (FOR ALL LOOP DETECTORS) AND SHALL FURNISH AND INSTALL NEW LOOP DETECTOR SPLICE KITS IN THE ADJACENT HANDHOLE FOR EACH OF THESE LOOPS AS CALLED FOR IN THE SPECIAL PROVISIONS.
- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, HANDHOLES, SIGNAL POLES, ETC.) SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
- CONTRACTOR SHALL MAINTAIN OPERATION OF SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER AND THE COUNTY.
- THE BID ITEM FOR "REVISE SIGNAL SYSTEM" INCLUDES ALL ITEMS RELATED TO CABLE/CONDUIT REMOVAL AND INSTALLATION, LOOP DETECTOR REPLACEMENT, TRAFFIC CONTROL, AND ALL SITE RESTORATION WORK.
- SEPARATE BID ITEMS ARE INCLUDED FOR CONDUIT REPLACEMENT WORK. PRIOR TO BORING OR INSTALLING ANY NEW CONDUIT, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING WHETHER ALL EXISTING CONDUITS ARE FULLY CAPABLE OF HAVING EXISTING CABLES BE REMOVED AND NEW CABLES BE INSTALLED IN THESE CONDUITS. IF AN EXISTING CONDUIT IS FOUND TO BE ABLE TO BE REUSED, THEN AT SOME LOCATIONS NEW CONDUITS MAY NOT BE CALLED FOR TO BE INSTALLED WITH THIS PROJECT. NOTE THAT WHERE 2 NEW CONDUITS ARE CALLED FOR TO BE BORED UNDER AN EXISTING ROADWAY, AT LEAST ONE NEW CONDUIT WILL BE CALLED FOR TO BE FURNISHED AND INSTALLED WITH THIS PROJECT (2 CONDUITS IF EXISTING CONDUIT IS NOT ABLE TO BE REUSED AS PART OF THE REVISED SIGNAL SYSTEM).
UNUSED CONDUIT WILL BE ALLOWED TO BE ABANDONED INPLACE (CAP ENDS OF UNUSED CONDUIT IN EACH HANDHOLE IF THE CONDUIT IS CALLED FOR TO BE ABANDONED WITH THIS PROJECT).
- ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS, PUSH BUTTONS, SIGNS, LUMINAIRES, EVP DETECTORS/LIGHTS, SIGNAL POLES, AND HANDHOLES WILL BE REUSED AS PART OF THIS PROJECT AND SHALL BE MADE OPERATIONAL BY THE CONTRACTOR.
- ALL CABLES AND CONDUCTORS (INCLUDING THOSE FROM THE POLE BASES TO ALL POLE AND MAST ARM MOUNTED SIGNAL COMPONENTS) ARE REQUIRED TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR (EXCEPT FOR FIBER OPTIC CABLES) AND REPLACED WITH NEW CABLES AND CONDUCTORS AS SHOWN IN THE PLANS.
- INPLACE HANDHOLE 13 IS CURRENTLY FILLED TO TOP WITH DIRT - CONTRACTOR SHALL REMOVE ALL DIRT FROM THIS HANDHOLE IN ORDER TO ACCESS ALL CONDUITS AND CABLES IN THIS HANDHOLE (INCIDENTAL).
- CONCRETE SIDEWALK WILL BE REQUIRED TO BE REMOVED AND REPLACED ON THE NORTHEAST AND SOUTHEAST QUADRANTS TO ACCOMMODATE NEW CONDUIT BORING INTO HANDHOLES 6 AND 9. CONTRACTOR SHALL ONLY REMOVE CONCRETE SIDEWALK NEEDED TO COMPLETE BORING WORK (MAINTAIN ALL CURB RAMP/TRUNCATED DOME AREA CONCRETE) AND SHALL FURNISH AND INSTALL NEW 4-INCH CONCRETE WALK (PER MnDOT 2521) TO REPLACE REMOVED CONCRETE WALK.
ALL CONCRETE SIDEWALK REMOVAL AND INSTALLATION WORK (INCLUDING SAWING OF CONCRETE WALK; DISPOSAL OF REMOVED CONCRETE; ADJUSTING OF IMPACTED HANDHOLES, GATE VALVE COVERS, SEWER MANHOLE COVERS, AND OTHER UTILITY COVERS) WILL BE INCLUDED AS PART OF BID ITEMS FOR ITEM NO. 2104 (REMOVE CONCRETE WALK) AND ITEM NO. 2521 (4" CONCRETE WALK). ESTIMATED QUANTITIES OF IMPACTED SIDEWALK ON EACH QUADRANT ARE NOTED ON THE PLANS, WITH FINAL QUANTITIES FIELD MEASURED BY ENGINEER FOR FINAL PAYMENT.

① INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION 10' PEDESTAL POLE AND BASE TYPE 1A EXTENDED INTO HH 2: 2" RSC

INPLACE (REMOVE) 1-12/C 12 ALL CONDUCTORS FROM POLE BASE TO EACH HEAD
F & I 1-12/C 14 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD

② INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION 10' PEDESTAL POLE AND BASE TYPE 1D 2-PEDESTRIAN PUSH BUTTONS & R10-4b STICKER SIGNS EXTENDED INTO HH 2: 3" RSC

INPLACE (REMOVE) 2-12/C 12 8-3/C 12 ALL CONDUCTORS FROM POLE BASE TO EACH HEAD, PB
F & I 1-12/C 14 1-4/C 14 2-2/C 14 (PB) 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD, PB

③ INPLACE (MAINTAIN INPLACE) MAST ARM POLE FOUNDATION TYPE A-20-D40-12 (DAVIT AT 350 DEG) LUMINAIRE-250 W HPS W/PEC ONE WAY SIGNAL-OVERHEAD 2-TYPE 10B-POLE MOUNTED 0/270 DEG 2-PEDESTRIAN PUSH BUTTONS & R10-4b STICKER SIGNS "LEFT TURN ON GREEN MUST YIELD" SIGN PANEL-ADJACENT TO 2-2 ONE WAY EVP DETECTOR & LIGHT AT 2' (ø2) EXTENDED INTO HH 6: 3" RSC

INPLACE (REMOVE) 3-12/C 12 10-3/C 12 1-3/C 20 2-1/C 6 (LUM) ALL CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB, LUM
F & I 2-12/C 14 1-4/C 14 1-3/C 14 (EVP LT) 2-2/C 14 (PB) 1-3/C 20 (EVP DET) 2-3/C 14 (LUM, PEC) 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB, LUM

④ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION 10' PEDESTAL POLE, BASE, WIND COLLAR TYPE 2C 2-PEDESTRIAN PUSH BUTTONS & R10-4b STICKER SIGNS 2-ONE WAY EVP DETECTORS AND INDICATOR LIGHTS (ø4 & ø8)-MOUNTED ATOP PEDESTAL POLE EXTENDED INTO HH 9: 3" RSC

INPLACE (REMOVE) 1-12/C 12 5-3/C 12 1-3/C 20 ALL CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB
F & I 1-12/C 14 2-4/C 14 2-3/C 14 (EVP LT) 2-2/C 14 (PB) 2-3/C 20 (EVP DET) 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB

⑤ INPLACE (MAINTAIN INPLACE) MAST ARM POLE FOUNDATION TYPE A-20-D30-9 (DAVIT AT 350 DEG) LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH ONE WAY SIGNAL-OVERHEAD TYPE 30A-POLE MOUNTED 0 DEG TYPE 10B-POLE MOUNTED 270 DEG 2-PEDESTRIAN PUSH BUTTONS & R10-4b STICKER SIGNS ONE WAY EVP DETECTOR & LIGHT AT 4' (ø6) EXTENDED INTO HH 13: 3" RSC

INPLACE (REMOVE) 2-12/C 12 6-3/C 12 1-3/C 20 4-1/C 6 (LUM) ALL CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB, LUM
F & I 1-12/C 14 2-4/C 14 1-3/C 14 (EVP LT) 2-2/C 14 (PB) 1-3/C 20 (EVP DET) 2-3/C 14 (LUM, PEC) 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD, EVP, PB, LUM

⑥ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION 10' PEDESTAL POLE AND BASE TYPE 1A EXTENDED INTO HH 13: 2" RSC

INPLACE (REMOVE) 1-12/C 12 ALL CONDUCTORS FROM POLE BASE TO EACH HEAD
F & I 1-12/C 14 1-1/C 6 (INS GR) ALL NEW CONDUCTORS FROM POLE BASE TO EACH HEAD

⑦ INPLACE (MAINTAIN INPLACE) EQUIPMENT PAD FOUNDATION CONTROLLER AND CABINET SIGNAL SERVICE CABINET CONTROLLER CABINET TO HH 1 OR 16: 3" CONDUIT 2-12 SM FIBER-OPTIC CABLES CONTROLLER CABINET TO HH 1: 3" RSC CONTROLLER CABINET TO HH 16: 3" RSC

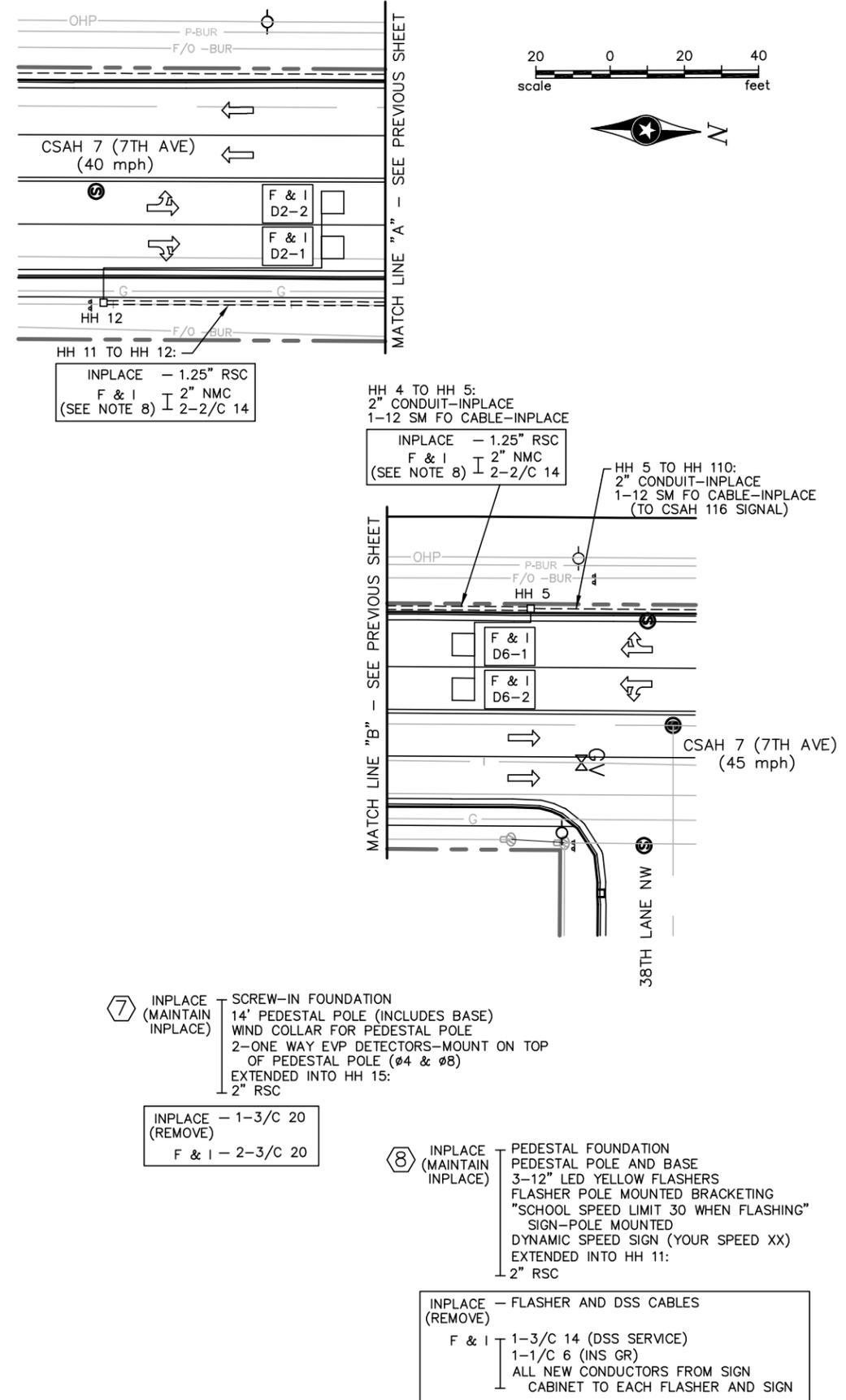
INPLACE (REMOVE) ALL CABLES FROM CABINET TO HH 1/16
F & I CORE 2-3" NMC FROM HH 1/16 INTO CONTROLLER CABINET AND EQUIPMENT PAD 7-12/C 14 6-4/C 14 6-3/C 14 23-2/C 14 6-3/C 20 2-1/C 6 (INS GR)

INPLACE (MAINTAIN INPLACE) BETWEEN CONTROLLER CABINET AND SERVICE CABINET: METERED SIGNAL SERVICE 1.25" RSC

INPLACE (REMOVE) 3-1/C 6
F & I 3-1/C 6

INPLACE (MAINTAIN INPLACE) SERVICE CABINET TO HH 1/16: 1.25" RSC

INPLACE (REMOVE) 2-1/C 6 (LUM) 1-DSS CABLE
F & I 2-3/C 14 (LUM) 1-3/C 14 (DSS)



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

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
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ANOKA COUNTY, MN
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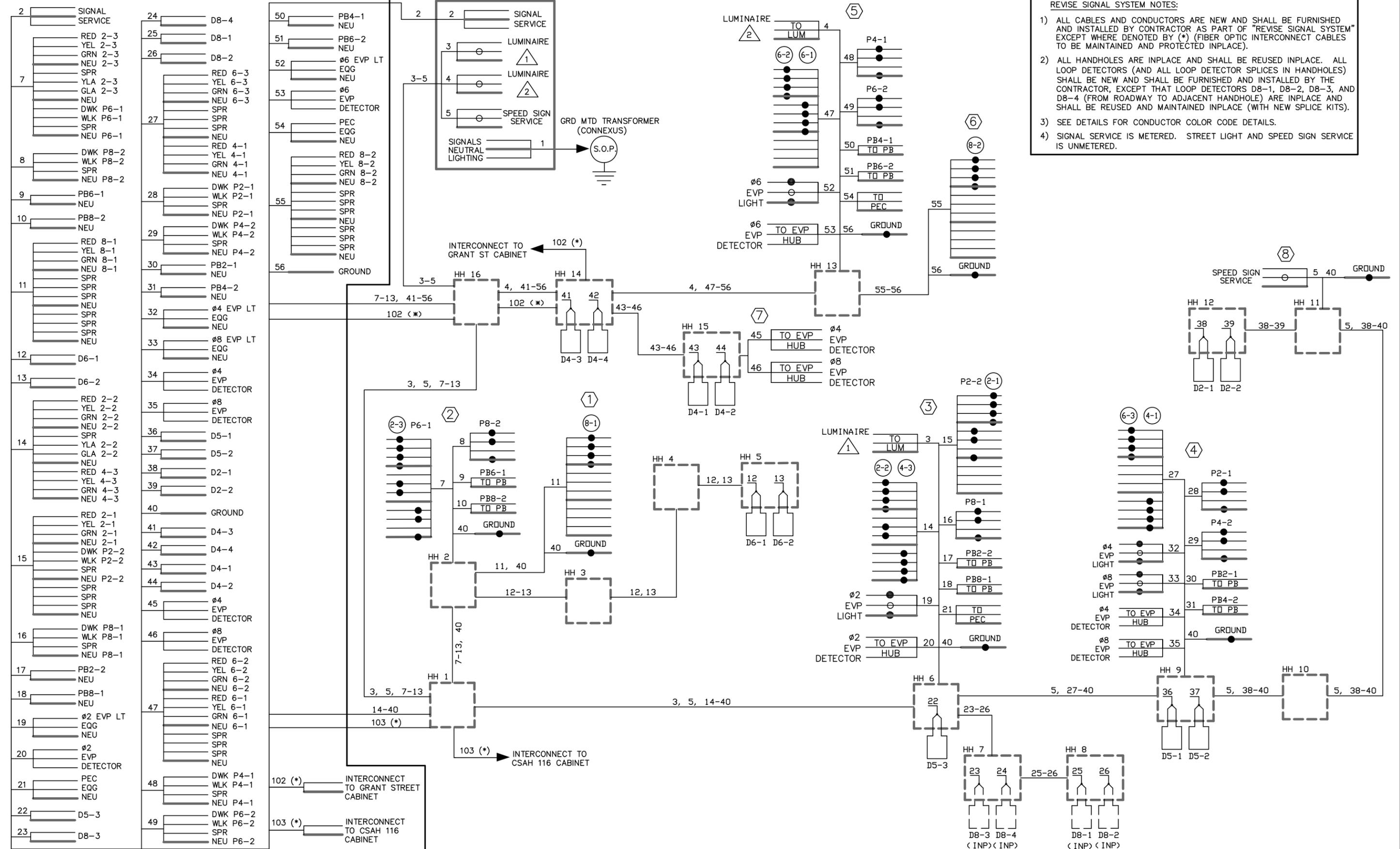
REVISE SIGNAL SYSTEM
SIGNAL SYSTEM NOTES
CSAH 7 (7TH AVENUE NW)
AT 38TH AVENUE/SCHOOL DRIVEWAY

FILE NO. ANOKC 122928
5
8

CONTROLLER AND CABINET

SERVICE CABINET

- REVISE SIGNAL SYSTEM NOTES:
- 1) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF "REVISE SIGNAL SYSTEM" EXCEPT WHERE DENOTED BY (*) (FIBER OPTIC INTERCONNECT CABLES TO BE MAINTAINED AND PROTECTED INPLACE).
 - 2) ALL HANDHOLES ARE INPLACE AND SHALL BE REUSED INPLACE. ALL LOOP DETECTORS (AND ALL LOOP DETECTOR SPLICES IN HANDHOLES) SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR, EXCEPT THAT LOOP DETECTORS D8-1, D8-2, D8-3, AND D8-4 (FROM ROADWAY TO ADJACENT HANDHOLE) ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE (WITH NEW SPLICE KITS).
 - 3) SEE DETAILS FOR CONDUCTOR COLOR CODE DETAILS.
 - 4) SIGNAL SERVICE IS METERED. STREET LIGHT AND SPEED SIGN SERVICE IS UNMETERED.



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DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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ANOKA COUNTY, MN
 CITY OF ANOKA
 SAP 002-607-026

REVISE SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CSAH 7 (7TH AVENUE NW)
 AT 38TH AVENUE/SCHOOL DRIVEWAY

FILE NO. ANOKC 122928
 6
 8