

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D2-1	6x6	475'	1	INPLACE
D2-2	6x6	475'	1	INPLACE
D4-1	6x6	475'	3,8	INPLACE
D4-2	6x6	250'	1	INPLACE
D4-3	6x6	250'	1	INPLACE
D4-4	2-6x6	5' & 20'	7	INPLACE
D4-5	2-6x6	5' & 20'	7	INPLACE
D5-1	2-6x6	10' & 40'	1	1
D5-2	2-6x6	-5' & 25'	1	2
D6-1	6x6	475'	1	INPLACE
D6-2	6x6	475'	1	INPLACE

LOOP DETECTORS FUNCTIONS:

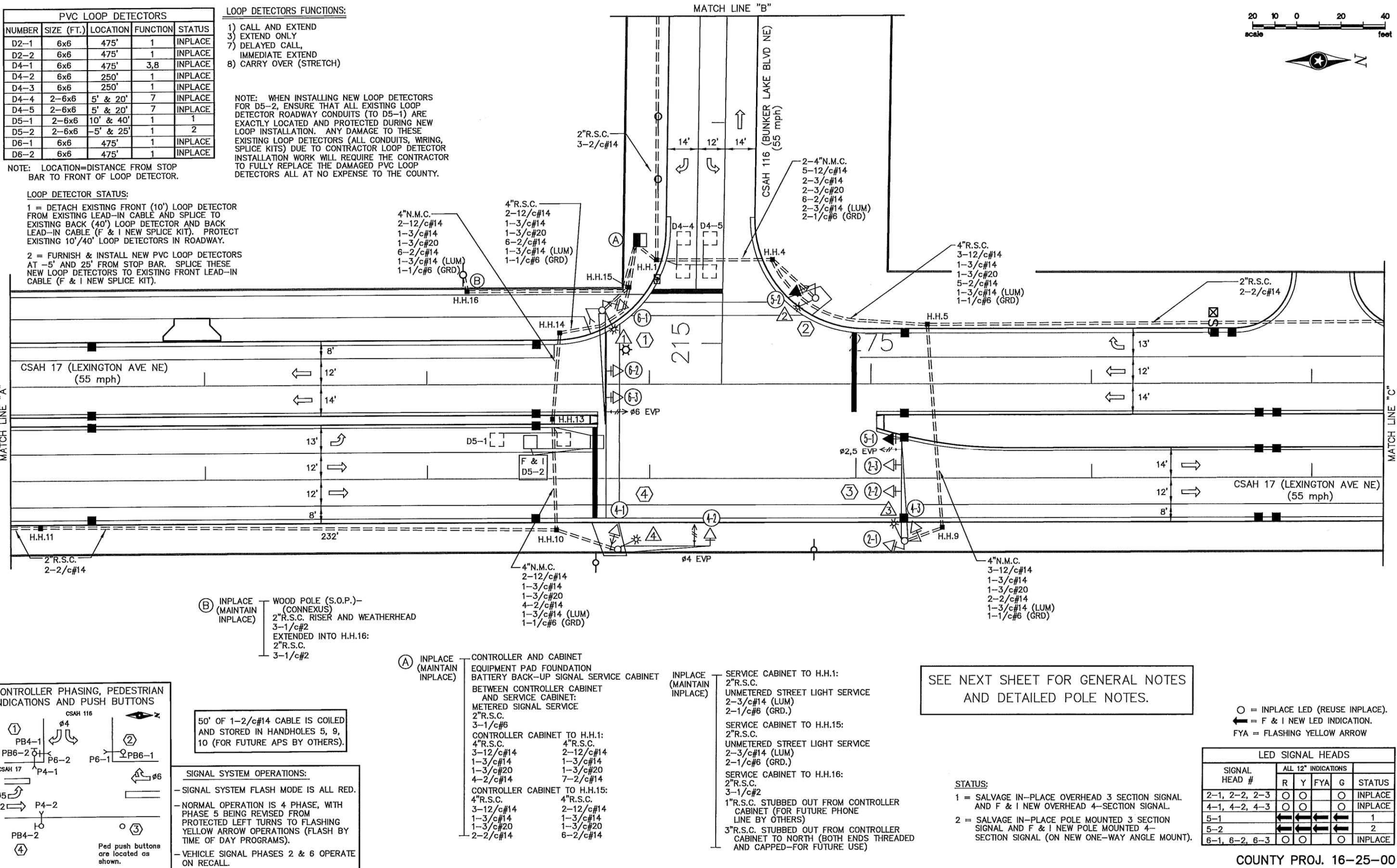
- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

NOTE: WHEN INSTALLING NEW LOOP DETECTORS FOR D5-2, ENSURE THAT ALL EXISTING LOOP DETECTOR ROADWAY CONDUITS (TO D5-1) ARE EXACTLY LOCATED AND PROTECTED DURING NEW LOOP INSTALLATION. ANY DAMAGE TO THESE EXISTING LOOP DETECTORS (ALL CONDUITS, WIRING, SPLICE KITS) DUE TO CONTRACTOR LOOP DETECTOR INSTALLATION WORK WILL REQUIRE THE CONTRACTOR TO FULLY REPLACE THE DAMAGED PVC LOOP DETECTORS ALL AT NO EXPENSE TO THE COUNTY.

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

LOOP DETECTOR STATUS:

- 1 = DETACH EXISTING FRONT (10') LOOP DETECTOR FROM EXISTING LEAD-IN CABLE AND SPLICE TO EXISTING BACK (40') LOOP DETECTOR AND BACK LEAD-IN CABLE (F & I NEW SPLICE KIT). PROTECT EXISTING 10'/40' LOOP DETECTORS IN ROADWAY.
- 2 = FURNISH & INSTALL NEW PVC LOOP DETECTORS AT -5' AND 25' FROM STOP BAR. SPLICE THESE NEW LOOP DETECTORS TO EXISTING FRONT LEAD-IN CABLE (F & I NEW SPLICE KIT).



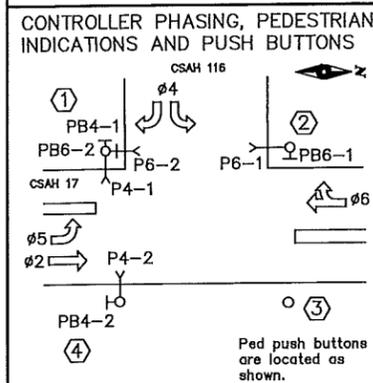
(B) INPLACE (MAINTAIN INPLACE) WOOD POLE (S.O.P.)-(CONNEXUS) 2"R.S.C. RISER AND WEATHERHEAD 3-1/c#2 EXTENDED INTO H.H.16: 2"R.S.C. 3-1/c#2

(A) INPLACE (MAINTAIN INPLACE) CONTROLLER AND CABINET EQUIPMENT PAD FOUNDATION BATTERY BACK-UP SIGNAL SERVICE CABINET BETWEEN CONTROLLER CABINET AND SERVICE CABINET: METERED SIGNAL SERVICE 2"R.S.C. 3-1/c#6 CONTROLLER CABINET TO H.H.1: 4"R.S.C. 3-12/c#14 1-3/c#14 1-3/c#20 4-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD) CONTROLLER CABINET TO H.H.15: 4"R.S.C. 3-12/c#14 1-3/c#14 1-3/c#20 4-2/c#14 CONTROLLER CABINET TO H.H.16: 4"R.S.C. 3-12/c#14 1-3/c#14 1-3/c#20 2-2/c#14

INPLACE (MAINTAIN INPLACE) SERVICE CABINET TO H.H.1: 2"R.S.C. UNMETERED STREET LIGHT SERVICE 2-3/c#14 (LUM) 2-1/c#6 (GRD.) SERVICE CABINET TO H.H.15: 2"R.S.C. UNMETERED STREET LIGHT SERVICE 2-3/c#14 (LUM) 2-1/c#6 (GRD.) SERVICE CABINET TO H.H.16: 2"R.S.C. 3-1/c#2 1"R.S.C. STUBBED OUT FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS) 3"R.S.C. STUBBED OUT FROM CONTROLLER CABINET TO NORTH (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)

SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

- = INPLACE LED (REUSE INPLACE).
- ◄ = F & I NEW LED INDICATION.
- FYA = FLASHING YELLOW ARROW



50' OF 1-2/c#14 CABLE IS COILED AND STORED IN HANDHOLES 5, 9, 10 (FOR FUTURE APS BY OTHERS).

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE 5 BEING REVISED FROM PROTECTED LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY PROGRAMS).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

STATUS:

- 1 = SALVAGE IN-PLACE OVERHEAD 3 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL.
- 2 = SALVAGE IN-PLACE POLE MOUNTED 3 SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW ONE-WAY ANGLE MOUNT).

LED SIGNAL HEADS					
SIGNAL HEAD #	ALL 12" INDICATIONS				STATUS
	R	Y	FYA	G	
2-1, 2-2, 2-3	○	○		○	INPLACE
4-1, 4-2, 4-3	○	○		○	INPLACE
5-1	◄	◄	◄	◄	1
5-2	◄	◄	◄	◄	2
6-1, 6-2, 6-3	○	○		○	INPLACE

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

Date: September 23, 2016 Name: John M. Gray, PE Lic. No. 22457

SEH PHONE: (651) 490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110

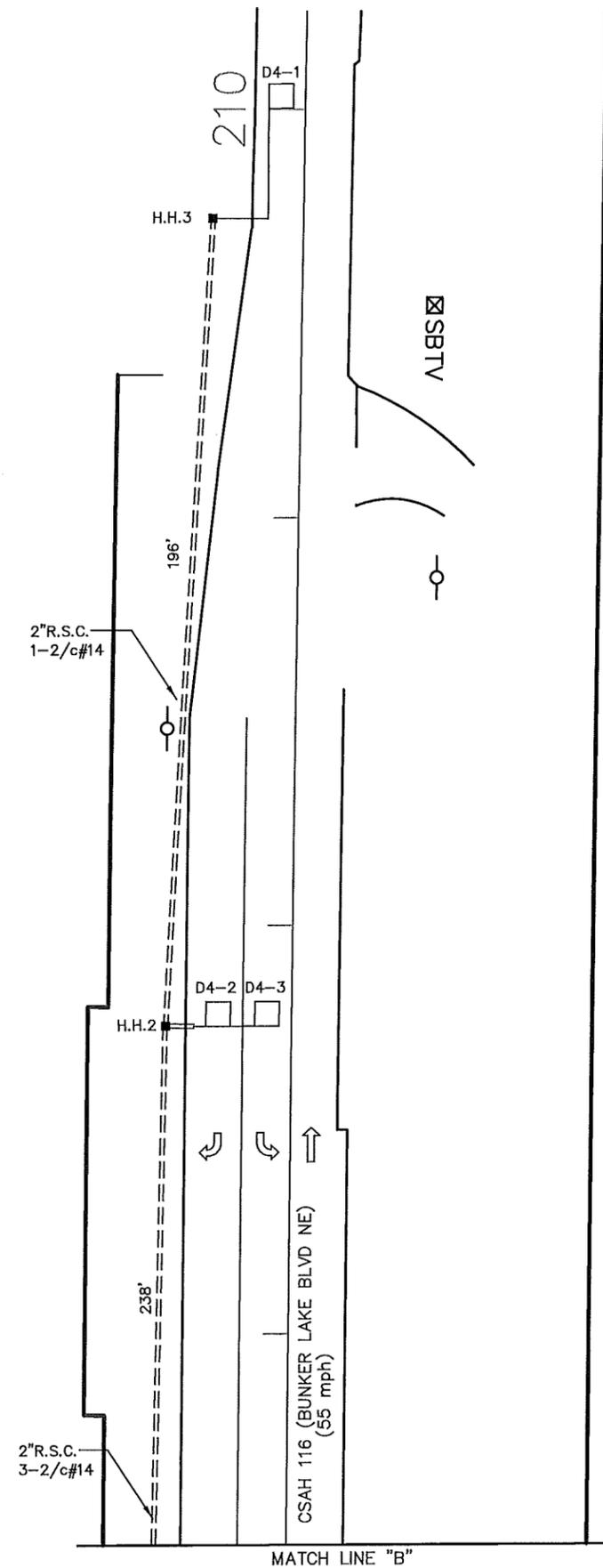
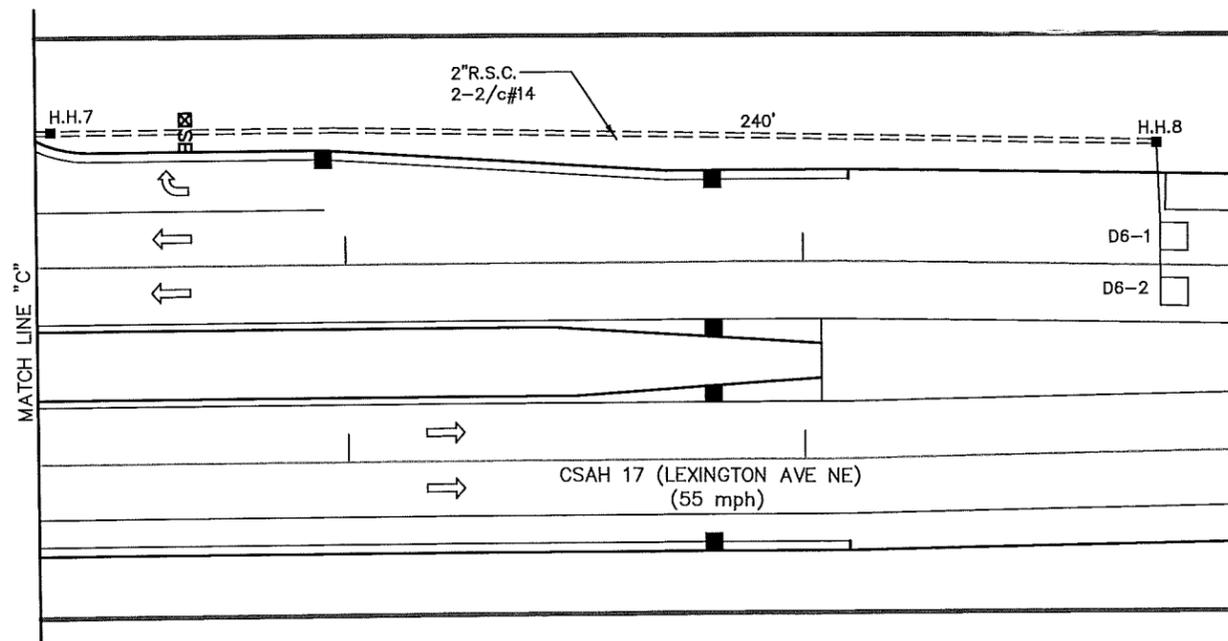
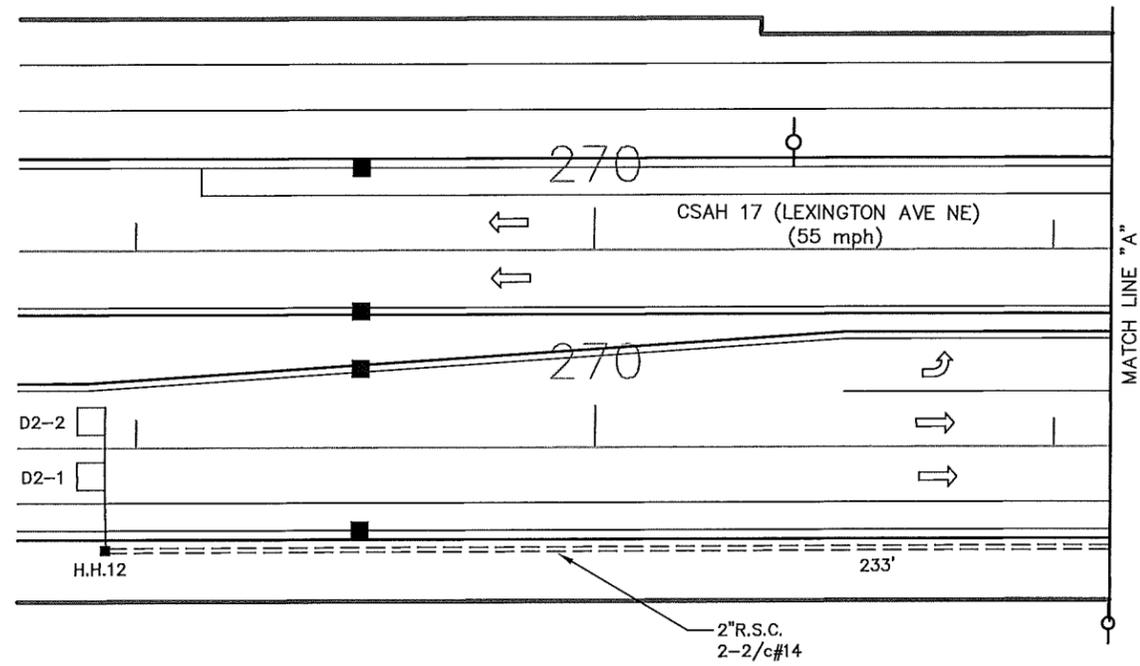
ANOKA COUNTY CITY OF HAM LAKE, MN

REVISE SIGNAL SYSTEM 'E' INTERSECTION LAYOUT CSAH 17 (LEXINGTON AVE) AT CSAH 116 (BUNKER LAKE BLVD)

FILE NO. ANOKC 138132 DATE 09/23/2016

34 60

COUNTY PROJ. 16-25-00



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

COUNTY PROJ. 16-25-00

2016FYA-BASE.DWG

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ANOKA COUNTY
 CITY OF HAM LAKE, MN

INPLACE SIGNAL SYSTEM 'E'
 'FOR INFORMATION ONLY'
 CSAH 17 (LEXINGTON AVE) AT
 CSAH 116 (BUNKER LAKE BLVD)

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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 PEDESTRIAN SIGNAL HEADS ARE ONE-SECTION LED "HAND/WALKING PERSON" COUNTDOWN TIMER INDICATIONS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
- 4) 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 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) IN 3/4" NMC. SEE SPECIAL PROVISIONS.
- 5) 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.
- 6) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- 7) 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).
- 8) F & I = NEW, FURNISH AND INSTALL.
S & I = INPLACE, SALVAGE AND INSTALL.
- 9) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- 10) 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 E").

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-COBRAHEAD LED
 END OF MAST ARM CAPPED-FOR FUTURE USE
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG & 180 DEG
 2-PEDESTRIAN PUSH BUTTONS & SIGNS
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LED LIGHT AT 6' (ø6)
 EXTENDED INTO H.H.15:
 3"R.S.C.
 3-12/c#14
 1-3/c#14
 1-3/c#20
 2-2/c#14
 1-3/c#14 (LUM)
 1-1/c#6 (GRD.)

② INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-D40-9 MAST ARM POLE (DAVIT AT 350 DEG)
 LUMINAIRE-COBRAHEAD LED
 1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG
 1-PEDESTRIAN PUSH BUTTON & SIGN
 1-R9-3a SIGN PANEL-FACING POLE 3
 EXTENDED INTO H.H.4:
 3"R.S.C.
 2-12/c#14
 1-3/c#14 } 75' COILED & STORED
 1-3/c#20 } IN BASE OF POLE 2
 2-2/c#14
 1-3/c#14 (LUM)
 1-1/c#6 (GRD.)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 5-2)
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 5-2)

③ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-COBRAHEAD LED
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG/180 DEG
 1-R9-3a SIGN PANEL-FACING POLE 2
 1-R6-1L SIGN PANEL-POLE MOUNTED 0 DEG
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LED LIGHT AT 6' (ø2.5)
 EXTENDED INTO H.H.9:
 3"R.S.C.
 3-12/c#14
 1-3/c#14
 1-3/c#20
 2-2/c#14
 1-3/c#14 (LUM)
 1-1/c#6 (GRD.)

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-COBRAHEAD LED
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 180 DEG
 1-PEDESTRIAN PUSH BUTTON & SIGN
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LED LIGHT AT 6' (ø4)
 EXTENDED INTO H.H.10:
 3"R.S.C.
 2-12/c#14
 1-3/c#14
 1-3/c#20
 2-2/c#14
 1-3/c#14 (LUM)
 1-1/c#6 (GRD.)

INPLACE (SALVAGE) 1-ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
 F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
 R10-X12 SIGN-ADJACENT TO 5-1

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