

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	10' & 40'	1	INPLACE
D1-2	2-6x6	-5' & 25'	1	1
D2-1, D2-2	6x6	300'	1	INPLACE
D3-1, D3-2	2-6x6	10' & 40'	1	INPLACE
D3-3, D3-4	2-6x6	-5' & 25'	1	1
D4-1	6x6	300'	3,8	INPLACE
D4-2	2-6x6	5' & 20'	1	INPLACE
D5-1, D5-2	2-6x6	10' & 40'	1	INPLACE
D5-3, D5-4	2-6x6	-5' & 25'	1	1
D6-1, D6-2	6x6	475'	1	INPLACE
D7-1	2-6x6	10' & 40'	1	INPLACE
D7-2	2-6x6	-5' & 25'	1	1
D8-1	6x6	120'	3,8	INPLACE
D8-2	6x12&6x6	5' & 20'	1	INPLACE

LOOP DETECTORS FUNCTIONS:
 1) CALL AND EXTEND
 3) EXTEND ONLY
 8) CARRY OVER (STRETCH)

LOOP DETECTOR STATUS:
 1 = FURNISH & INSTALL NEW PVC LOOP DETECTOR WITH NEW LEAD-IN CABLE AND NEW SPLICE KIT. PROTECT EXISTING LOOP DETECTORS IN ROADWAY.

LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR.

NOTE: WHEN INSTALLING NEW LOOP DETECTORS D1-2, D3-3, D3-4, D5-3, D5-4, AND D7-2, ENSURE THAT ALL EXISTING LOOP DETECTOR ROADWAY CONDUITS (TO D1-1, D3-1, D3-2, D5-1, D5-2, AND D7-1) ARE EXACTLY LOCATED & 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.

Coon Creek Blvd. MATCH LINE "A" (INTERCONNECT) (TO 131ST AVENUE SIGNAL SYSTEM)

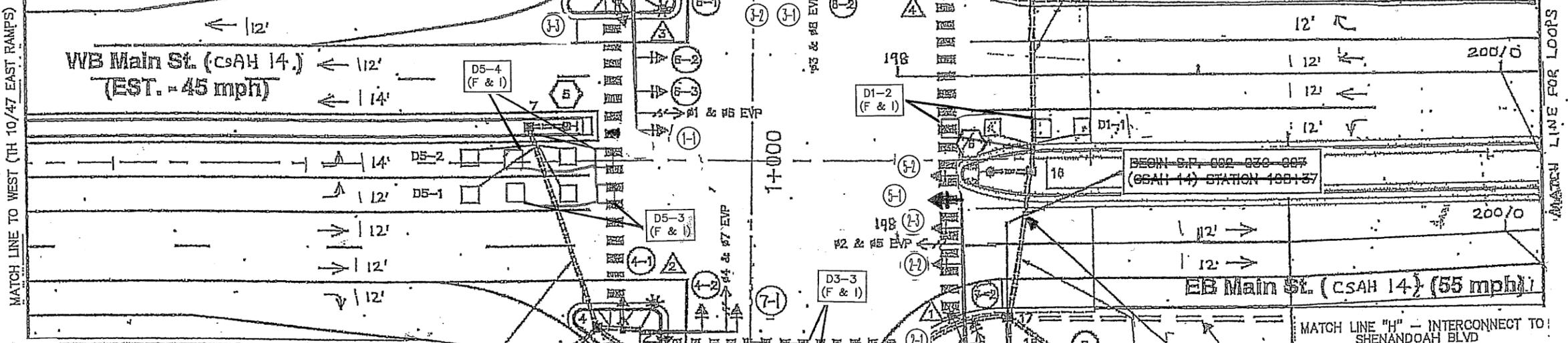
(CSAH 18)
(45 mph)

WB Main St. (CSAH 14)
(EST. = 45 mph)

INPLACE (SALVAGE) CONTROLLER AND CABINET
 INSTALL (FURNISHED BY COUNTY) CONTROLLER AND CABINET

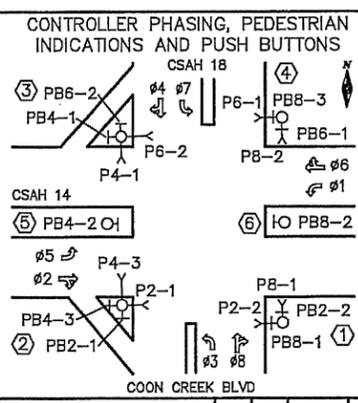
INPLACE (MAINTAIN INPLACE) CABINET FOUNDATION EXTENDED INTO H.H.18: METERED SIGNAL SERVICE
 2" RSC
 3-1/c#6
 CONTROLLER CABINET TO H.H.1:

INPLACE (MAINTAIN INPLACE) CONTROLLER CABINET TO H.H.17:
 4" RSC
 5-12/c#12
 8-3/c#12
 2-3/c#20
 6-2/c#14
 1-6 SM FO CABLE
 1-12 SM FO CABLE



INPLACE (MAINTAIN INPLACE) CABINET FOUNDATION SIGNAL SERVICE CABINET EXTENDED INTO H.H.18: METERED SIGNAL SERVICE
 1.5" RSC
 3-1/c#6
 SERVICE CABINET TO H.H.17: UNMETERED STREET LIGHT SERVICE
 2" RSC
 4-3/c#12 (LUM)
 SERVICE CABINET TO SOP:
 2" RSC
 (SEE C NOTES)

INPLACE (MAINTAIN INPLACE) GROUND MOUNTED TRANSFORMER (SOP) EXTENDED INTO SERVICE CABINET:
 2" RSC
 3-1/c#2



SIGNAL SYSTEM OPERATIONS:
 - SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5 & 7 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.

SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

- STATUS:**
- 1 = REMOVE IN-PLACE OVERHEAD 3 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL ON END OF EXISTING OR NEW MAST ARM.
 - 2 = REMOVE IN-PLACE POLE MOUNTED 3 SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL (ON NEW TYPE 10B BRACKETING).
 - 3 = REMOVE IN-PLACE OVERHEAD 3 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL ON NEW STRAP-ON MOUNT ON EXISTING MAST ARM.
 - 4 = ELIMINATE NEAR SIDE OVERHEAD LEFT TURN SIGNAL AND MOVE LEFT TURN SIGNAL TO FAR SIDE ARM.
 - 5 = F & I NEW OVERHEAD SIGNAL ON NEW MOUNT ON NEW MAST ARM.
 - 6 = SALVAGE IN-PLACE OVERHEAD 3 SECTION SIGNAL AND REINSTALL ON NEW MOUNT ON EXISTING (STRAP ON) OR NEW MAST ARM (NEW MOUNT).

LED SIGNAL HEADS					
SIGNAL HEAD #	ALL 12" INDICATIONS				STATUS
	R	Y	FYA	G	
1-1	←	←	←	←	1
1-2	←	←	←	←	2
2-1	○	○	○	○	INPLACE
2-2, 2-3	○	○	○	○	6
3-1	←	←	←	←	5
3-2	←	←	←	←	1
3-3	←	←	←	←	2
4-1, 4-2	○	○	○	○	INPLACE
5-1	←	←	←	←	3, 4
5-2	←	←	←	←	1
5-3	←	←	←	←	2
6-1, 6-2, 6-3	○	○	○	○	INPLACE
7-1	←	←	←	←	1
7-2	←	←	←	←	2
8-1	○	○	○	○	INPLACE
8-2	○	○	○	○	6

DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

DESIGN TEAM	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.

John M. Gray, PE
 August 21, 2020 Lic. No. 22457

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

ANOKA COUNTY
 CITY OF COON RAPIDS

REVISE SIGNAL SYSTEM 'H'
 INTERSECTION LAYOUT
 CSAH 14 (MAIN STREET) AT CSAH 18/COON CREEK BLVD

STATE AID PROJ. 002-614-050
 FILE NO. ANOKC 153783
 46
 55

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 D1-2, D3-3, D3-4, D5-3, D5-4, AND D7-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THE PLANS. LOOP DETECTOR WIRES FOR NEW LOOP DETECTORS SHALL BE CROSS-LINKED POLY-ETHYLENE (XLP) #12 AWG 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 "H" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
- 8) LOCATION OF NEW LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 9) F & I = NEW, FURNISH AND INSTALL.
S & I = INPLACE, SALVAGE AND INSTALL.
- 10) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS TO BE INSTALLED AND MADE OPERATIONAL BY CONTRACTOR.
- 11) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- 12) SEE SPECIAL PROVISIONS & DETAILS REGARDING NEW TYPE C SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND INPLACE TYPE D SIGN PANELS TO BE SALVAGED AND REINSTALLED BY CONTRACTOR (ALL INCLUDED AS PART OF PAY ITEM FOR ITEM NO. 2565-REVISE SIGNAL SYSTEM H).

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-65-X30-3 (DAVIT AT 0 DEG)
 LUMINAIRE (NON-LED) W/PEC & CHECK SWITCH
 TYPE 10B-POLE MOUNTED 180 DEG (2-1, P2-2)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 1-TYPE D SIGN PANEL-OVERHEAD AT 40'
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø2,5)
 EXTENDED INTO H.H.1:
 3" RSC
 2-12/c#12
 4-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
 TYPE 10B BRACKETING AT 90 DEG
 ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 7-2)

INPLACE (S & I) 2-ONE WAY SIGNALS-OVERHEAD (RELOCATE FROM 16'/28' FROM END OF MAST ARM TO 19'/31' FROM END OF MAST ARM (2-3, 2-2)
 1-SET CD PED SIGNALS-POLE MOUNTED 90 DEG (P8-1)

F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-2)
 1-ONE WAY SIGNAL AND STRAP-ON MID-MAST ARM MOUNT-OVERHEAD AT 9' FROM END OF MAST ARM (NEW 5-1)
 2-STRAP-ON MID-MAST ARM MOUNTS-OVERHEAD AT 19' AND 31' FROM END OF MAST ARM (FOR RELOCATED 2-3 AND 2-2)
 CAP MAST ARM MOUNTS AT 16' AND 28'
 TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 7-2, P8-1)
 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 7-2)
 R10-X12 SIGN PANEL-ADJACENT TO 5-2
 1-6/c#14

③ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-45-X30-3 (DAVIT AT 0 DEG)
 LUMINAIRE (NON-LED) W/PEC & CHECK SWITCH
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12' & 24' (6-3, 6-2)
 TYPE 10B-POLE MOUNTED 180 DEG (6-1, P6-2)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 1-TYPE D SIGN PANEL-OVERHEAD AT 30'
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø6,1)
 EXTENDED INTO H.H.8:
 3" RSC
 3-12/c#12
 3-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

INPLACE (REMOVE) 2-ONE WAY SIGNALS AND TWO-WAY MOUNT-OVERHEAD (OLD 1-1, 5-3)
 TYPE 10B BRACKETING AT 90 DEG
 ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 3-2)

INPLACE (S & I) 1-SET CD PED SIGNALS-POLE MOUNTED 90 DEG (P4-1)

F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 1-1)
 TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 3-3, P4-1)
 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 3-3)
 R10-X12 SIGN PANEL-ADJACENT TO 1-1

⑤ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
 5' PEDESTAL POLE AND BASE
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 EXTENDED INTO H.H.7:
 2" RSC
 1-3/c#12

⑥ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
 5' PEDESTAL POLE AND BASE
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 EXTENDED INTO H.H.16:
 2" RSC
 1-3/c#12

② INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION
 TYPE PA90-A-30-X30-3 (DAVIT AT 0 DEG)
 LUMINAIRE (NON-LED) W/PEC & CHECK SWITCH
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11' (4-2)
 TYPE 10B-POLE MOUNTED 180 DEG (4-1, P4-3)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 TYPE D SIGN PANEL-OVERHEAD AT 18'
 ONE WAY EVP DETECTOR AND LIGHT AT 6' (Ø4,7)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 EXTENDED INTO H.H.4:
 3" RSC
 2-12/c#12
 4-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 7-1)
 TYPE 10B BRACKETING AT 90 DEG
 ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 1-2)

INPLACE (S & I) 1-SET CD PED SIGNALS-POLE MOUNTED 90 DEG (P2-1)

F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 7-1)
 TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 1-2, P2-1)
 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 1-2)
 R10-X12 SIGN PANEL-ADJACENT TO 7-1

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-X30-3 MAST ARM POLE (DAVIT AT 0 DEG)
 LUMINAIRE (NON-LED) W/PEC & CHECK SWITCH
 TYPE 10B-POLE MOUNTED 180 DEG (8-1, P8-2)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 EXTENDED INTO H.H.12:
 3" RSC
 2-12/c#12
 4-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

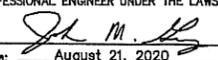
INPLACE (REMOVE) 50-FOOT MAST ARM
 ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 3-1)
 TYPE 10B BRACKETING AT 90 DEG
 ONE WAY SIGNAL-POLE MOUNTED 90 DEG (OLD 5-2)

INPLACE (S & I) 1-ONE WAY SIGNAL-OVERHEAD AT 23' FROM END OF NEW MAST ARM (8-2)
 1-SET CD PED SIGNALS-POLE MOUNTED 90 DEG (P6-1)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6' (Ø8,3)
 TYPE D SIGN PANEL-OVERHEAD AT 32' (D-6)

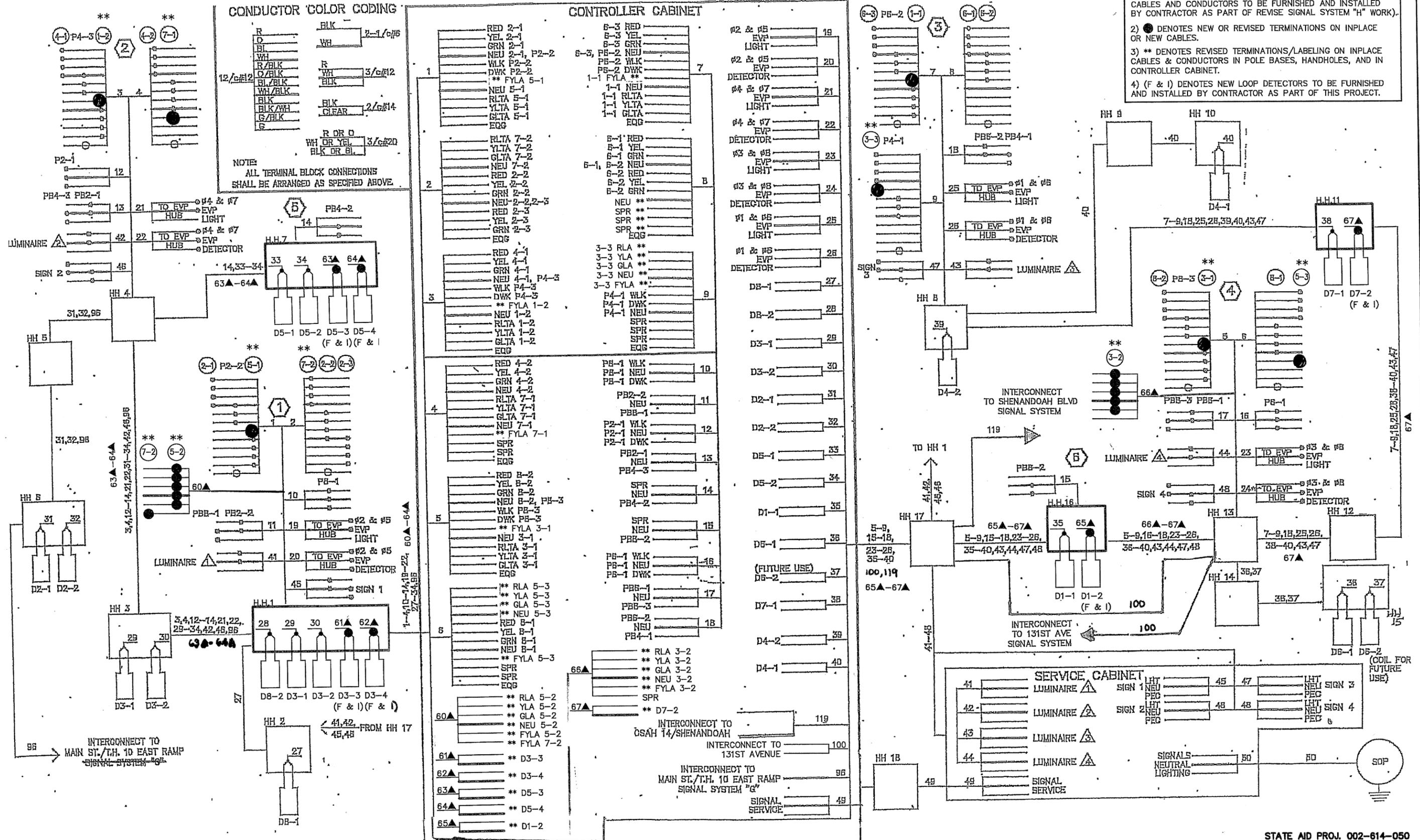
INSTALL 55-FOOT MAST ARM (WITH MID-MOUNTS AT 11' AND 23' FROM END OF MAST ARM) - FURNISHED BY COUNTY

F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 3-2)
 1-ONE WAY SIGNAL AND STRAIGHT MOUNT-OVERHEAD AT 11' (NEW 3-1)
 1-STRAIGHT MOUNT-OVERHEAD AT 23' (FOR 8-2)
 TYPE 10B BRACKETING-POLE MOUNTED 90 DEG (FOR 5-3, P6-1)
 1-ONE WAY SIGNAL-POLE MOUNTED 90 DEG (NEW 5-3)
 R10-X12 SIGN PANEL-ADJACENT TO 3-2
 1-6/c#14

STATE AID PROJ. 002-614-050

DRAWN BY: JMG	DESIGNER: JMG	CHECKED BY: JMG	DESIGN TEAM	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.  Name: John M. Gray, PE Lic. No. 22457	 PHONE: (651) 490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	ANOKA COUNTY CITY OF COON RAPIDS	REVISE SIGNAL SYSTEM "H" POLE AND GENERAL NOTES CSAH 14 (MAIN STREET) AT CSAH 18/COON CREEK BLVD	FILE NO. ANOKC 153783	47 55

NOTES:
 1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ (▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "H" WORK).
 2) ● DENOTES NEW OR REVISED TERMINATIONS ON INPLACE OR NEW CABLES.
 3) ** DENOTES REVISED TERMINATIONS/LABELING ON INPLACE CABLES & CONDUCTORS IN POLE BASES, HANDHOLES, AND IN CONTROLLER CABINET.
 4) (F & I) DENOTES NEW LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.



2020FVA-BASE.DWG
 DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG
 DESIGN TEAM

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.
 Name: John M. Gray, PE
 Ltc. No. 22457
 Date: August 21, 2020

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 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
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ANOKA COUNTY
 CITY OF COON RAPIDS

REVISE SIGNAL SYSTEM "H"
 FIELD WIRING DIAGRAM
 CSAH 14 (MAIN STREET) AT CSAH 16/COON CREEK BLVD

FILE NO. ANOKC 153783
 48
 55

STATE AID PROJ. 002-614-050