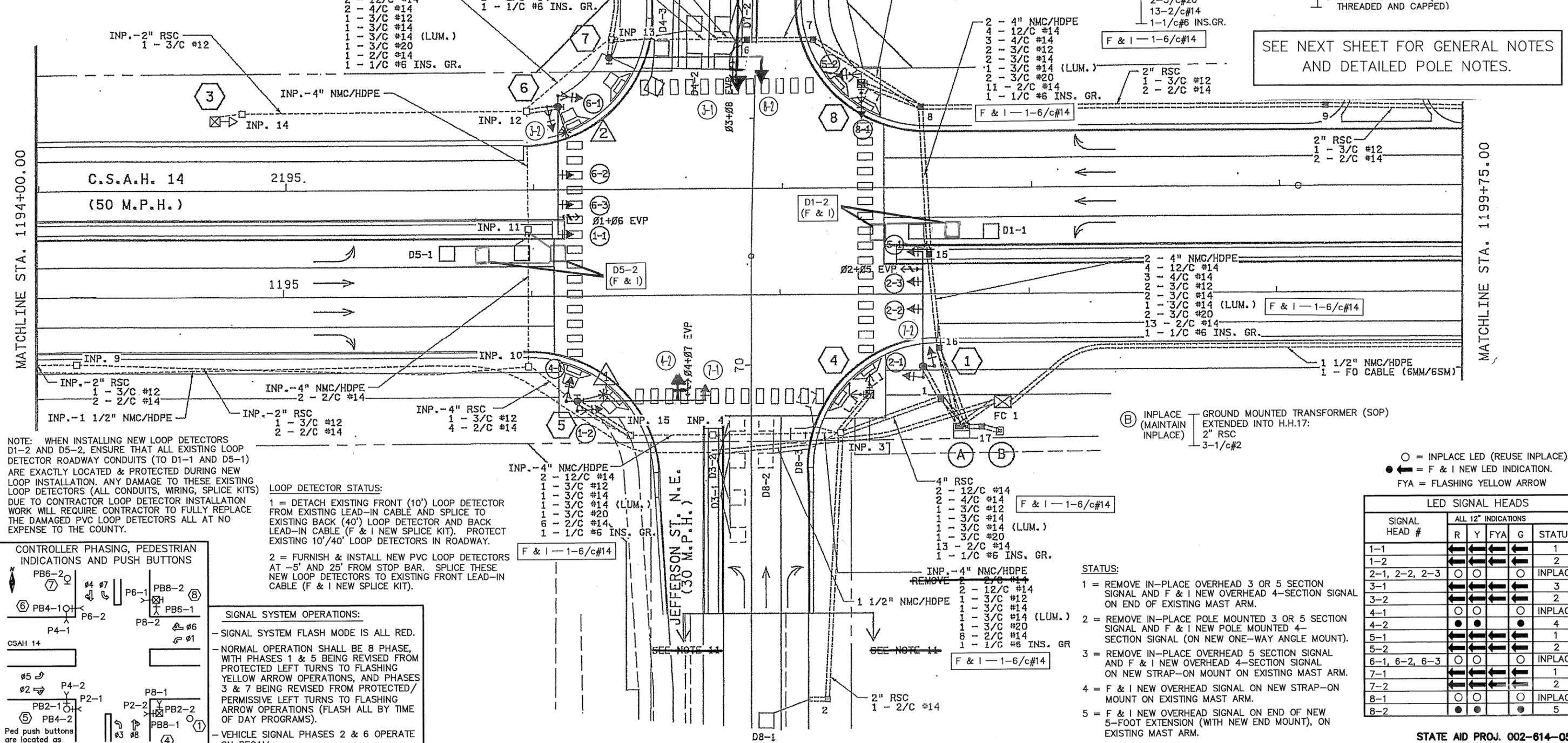


PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	10' & 40'	1	1
D1-2	2-6x6	-5' & 25'	1	2
D2-1, D2-2	6x6	400'	1	INPLACE
D3-1	2-6x6	15' & 45'	1	INPLACE
D3-2	2-6x6	0' & 30'	1	INPLACE
D4-1	6x6	250'	3	INPLACE
D4-2, D8-2	2-6x6	0' & 15'	1	INPLACE
D4-3, D8-3	2-6x6	-10' & 5'	7	INPLACE
D5-1	2-6x6	10' & 40'	1	1
D5-2	2-6x6	-5' & 25'	1	2
D6-1, D6-2	6x6	400'	1	INPLACE
D7-1	2-6x6	15' & 45'	1	INPLACE
D7-2	2-6x6	0' & 30'	1	INPLACE
D8-1	6x6	120'	3	INPLACE

LOOP DETECTORS FUNCTIONS:

- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND

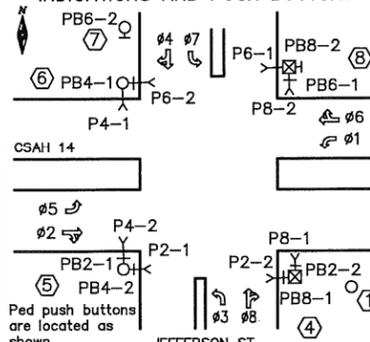
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR



NOTE: WHEN INSTALLING NEW LOOP DETECTORS D1-2 AND D5-2, ENSURE THAT ALL EXISTING LOOP DETECTOR ROADWAY CONDUITS (TO D1-1 AND D5-1) 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 CONTRACTOR TO FULLY REPLACE THE DAMAGED PVC LOOP DETECTORS ALL AT NO EXPENSE TO THE COUNTY.

- 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).

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 & 5 BEING REVISED FROM PROTECTED LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS, AND PHASES 3 & 7 BEING REVISED FROM PROTECTED/PERMISSIVE LEFT TURNS TO FLASHING ARROW OPERATIONS (FLASH ALL BY TIME OF DAY PROGRAMS).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

- (A) INPLACE (MAINTAIN INPLACE)**
- EQUIPMENT PAD FOUNDATION
 - CONTROLLER AND CABINET
 - SIGNAL SERVICE CABINET
 - CONTROLLER CABINET TO H.H.1:
 - 2-4" RSC
 - 4-12/c#14
 - 2-4/c#14
 - 2-3/c#14
 - 1-3/c#12 (FLASHER)
 - 2-3/c#20
 - 1-1/c#6 INS.GR.
- (B) INPLACE (MAINTAIN INPLACE)**
- CONTROLLER CABINET TO H.H.16:
 - 2-4" RSC
 - 4-12/c#14
 - 3-4/c#14
 - 2-3/c#14
 - 2-3/c#14 (FLASHER)
 - 2-3/c#20
 - 13-2/c#14
 - 1-1/c#6 INS.GR.
- (C) INPLACE (MAINTAIN INPLACE)**
- GROUND MOUNTED TRANSFORMER (SOP)
 - EXTENDED INTO H.H.17:
 - 2" RSC
 - 3-1/c#2



SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

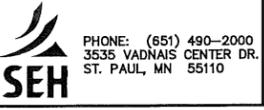
- = INPLACE LED (REUSE INPLACE).
- ← = F & I NEW LED INDICATION.
- FYA = FLASHING YELLOW ARROW

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

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

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



ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM 'B'
INTERSECTION LAYOUT
 CSAH 14 (125TH AVE) AT JEFFERSON STREET NE

FILE NO. ANOKC 153781	12
	55

STATE AID PROJ. 002-614-050

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 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.
- 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 "B" 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 (TO BE INCLUDED AS PART OF PAY ITEM FOR ITEM NO. 2565-REVISE SIGNAL SYSTEM B).

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-45
PA100 SWING-AWAY HINGES
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (2-1)
TYPE D SIGN PANEL-OVERHEAD AT 30'
ONE WAY EVP DETECTOR AND LIGHT AT 6' (#2,5)
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
EXTENDED INTO H.H.1:
3" RSC
2-12/c#14
1-3/c#14
1-3/c#20
1-1/c#6 (GRD)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 5-1)
ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 4-3)
F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 7-2)
R10-X12 SIGN PANEL-ADJACENT TO 5-1

⑤ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (4-1)
2-SETS CD PED SIGNALS (ANGLE MOUNTED) AT 90/180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6' (#4,7)
TYPE D SIGN PANEL-OVERHEAD AT 16'
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
EXTENDED INTO H.H.15:
3" RSC
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 (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD (OLD 4-2, 5-SECTION)
ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 1-2)
R10-12 SIGN PANEL-OVERHEAD
F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 7-1)
1-ONE WAY SIGNAL AND STRAP-ON MID-MAST ARM MOUNT AT 10' FROM END OF MAST ARM (NEW 4-2)
1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 1-2)
R10-X12 SIGN PANEL-ADJACENT TO 7-1
1-6/c#14

⑦ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)
TYPE D SIGN PANEL-OVERHEAD AT 30'
1-R6-1 SIGN PANEL-POLE MOUNTED 270 DEG
EXTENDED INTO H.H.13:
3" RSC
1-12/c#14
1-3/c#14
1-3/c#20
1-2/c#14
1-1/c#6 (GRD)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD (OLD 8-2, 5-SECTION)
R10-12 SIGN PANEL-OVERHEAD
INPLACE ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6' (#8,3)
(S & I)
F & I 5-FOOT MAST ARM EXTENSION
1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT END OF EXTENSION (NEW 8-2)
1-ONE WAY SIGNAL AND STRAP-ON MID-MAST ARM MOUNT-OVERHEAD AT 5' FROM END OF MAST ARM (NEW 3-1)
3/4" RSC EXTENSION FOR EVP DETECTOR AND LIGHT (NEAR HEAD 3-1)
R10-X12 SIGN PANEL-ADJACENT TO 3-1

② INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
3-12" YELLOW LED FLASHING BEACONS
DYNAMIC SPEED SIGN (YOUR SPEED)
SCHOOL SPEED LIMIT 30 SIGN
EXTENDED INTO H.H.8:
2" RSC
1-3/c#12

③ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
3-12" YELLOW LED FLASHING BEACONS
DYNAMIC SPEED SIGN (YOUR SPEED)
SCHOOL SPEED LIMIT 30 SIGN
EXTENDED INTO H.H.14:
2" RSC
1-3/c#12

④ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
14' PEDESTAL POLE AND BASE
2-SETS CD PED SIGNALS-STRAIGHT MOUNTED
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
EXTENDED INTO H.H.3:
3" RSC
2-4/c#14
2-2/c#14
1-1/c#6 (GRD)

⑥ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
PA100 SWING-AWAY HINGES
LUMINAIRE-250 W HPS
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG (6-1)
2-SETS CD PED SIGNALS (ANGLE MOUNTED) AT 90/180 DEG
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)
TYPE D SIGN PANEL-OVERHEAD AT 32'
ONE WAY EVP DETECTOR AND LIGHT AT 6' (#6,1)
1-R6-1 SIGN PANEL-POLE MOUNTED 0 DEG
EXTENDED INTO H.H.12:
3" RSC
2-12/c#14
2-4/c#14
1-3/c#14
1-3/c#20
1-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (GRD)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 1-1)
ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 8-3)
F & I 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NFW 1-1)
1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 3-2)
R10-X12 SIGN PANEL-ADJACENT TO 1-1

⑧ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
14' PEDESTAL POLE AND BASE
1-STRAIGHT MOUNT SIGNAL (8-1)
2-SETS CD PED SIGNALS-STRAIGHT MOUNTED
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
2-R6-1 SIGN PANELS (EAST/WEST SIDES OF POLE)
EXTENDED INTO H.H.8:
3" RSC
1-12/c#14
1-4/c#14
2-2/c#14
1-1/c#6 (GRD)

INPLACE (REMOVE) ONE WAY SIGNAL AND MOUNT (OLD 5-2)
F & I 1-ONE WAY SIGNAL AND STRAIGHT MOUNT (NEW 5-2)
1-6/c#14

2020FYA-BASE.DWG

DRAWN BY: JMG
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.
John M. Gray
Name: John M. Gray, PE
Lic. No. 22457
Date: August 21, 2020

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

ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM "B"
POLE AND GENERAL NOTES
CSAH 14 (125TH AVE) AT JEFFERSON STREET NE

FILE NO.
ANOKC 153781

2020FYA-BASE.DWG

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CHECKED BY: JMG
DESIGN TEAM

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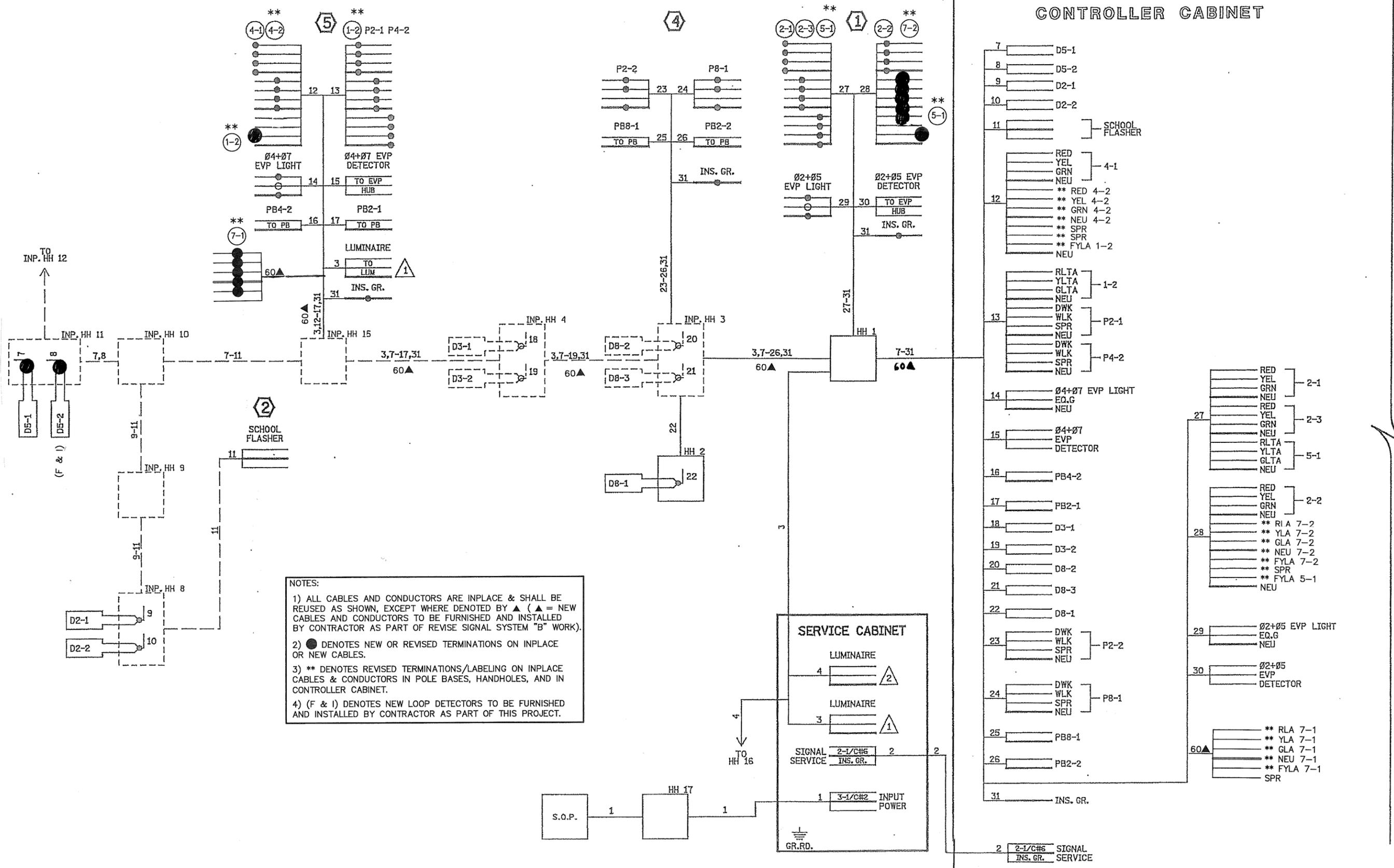
ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM 'B'
FIELD WIRING DIAGRAM
CSAH 14 (125TH AVE) AT JEFFERSON STREET NE

FILE NO.
ANOKC 153781

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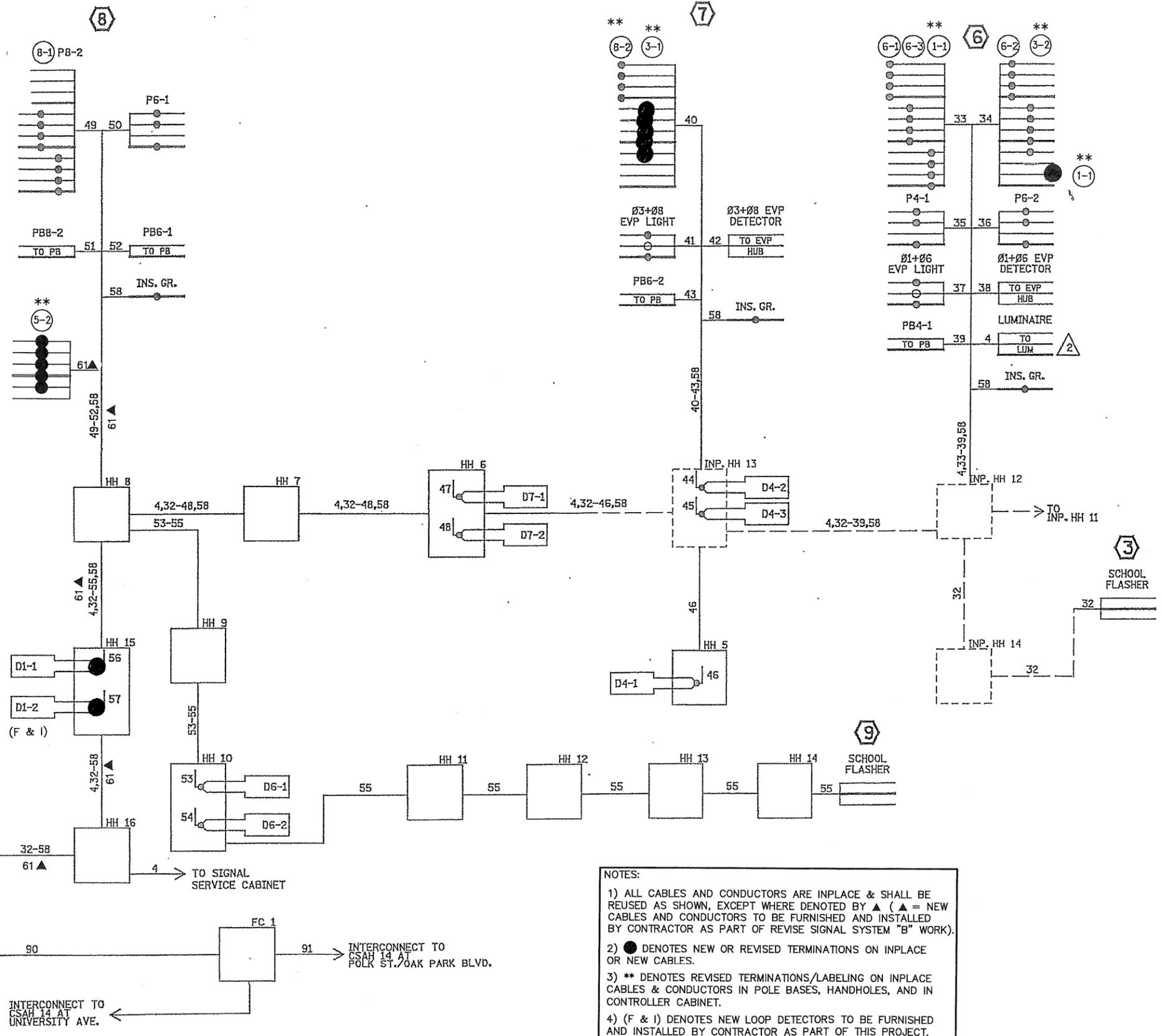
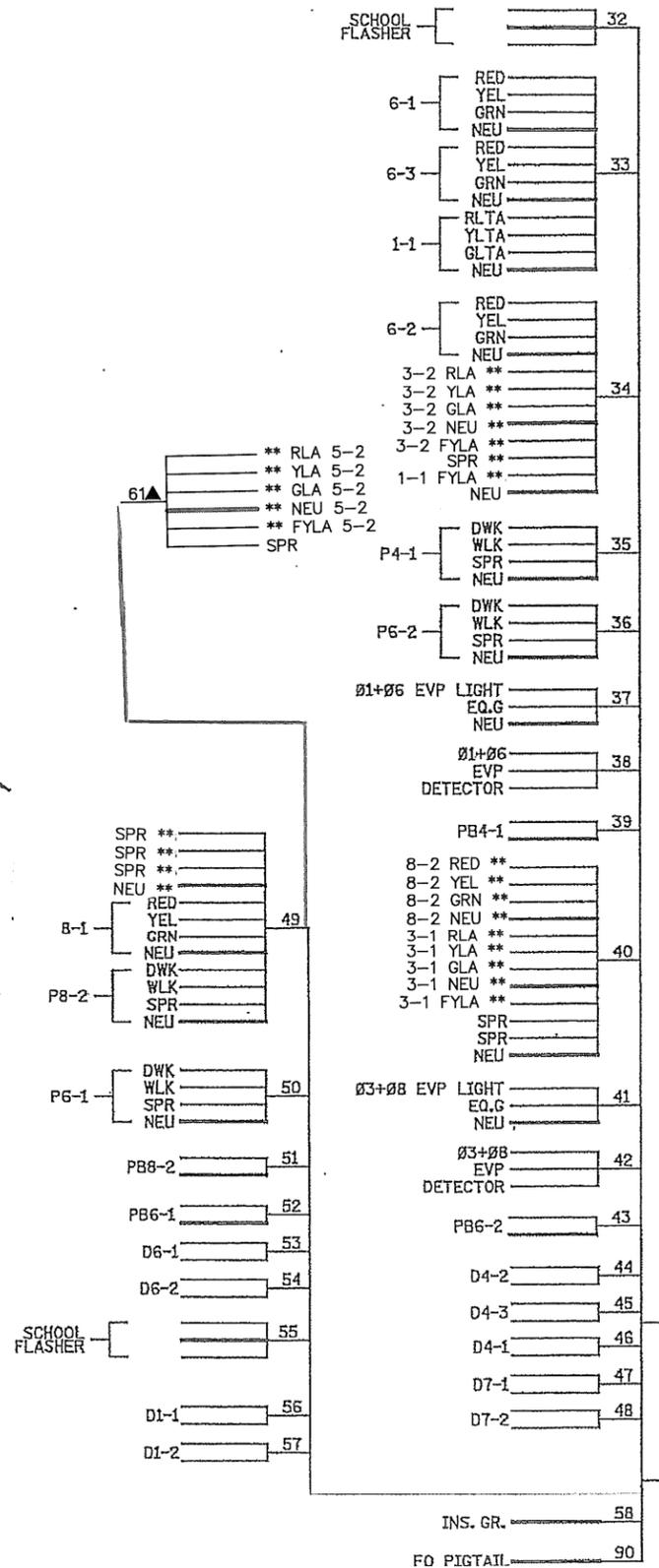
STATE AID PROJ. 002-614-050



CONTROLLER CABINET MATCHLINE

CONTROLLER CABINET

CONTROLLER CABINET MATCHLINE



- 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 "B" 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.

2020FA-BASE.DWG

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 DESIGNER: JMG
 CHECKED BY: JMG

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ANOKA COUNTY
CITY OF BLAINE

REVISE SIGNAL SYSTEM "B"
FIELD WIRING DIAGRAM
 CSAH 14 (125TH AVE) AT JEFFERSON STREET NE

FILE NO. ANOKC 153781

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55