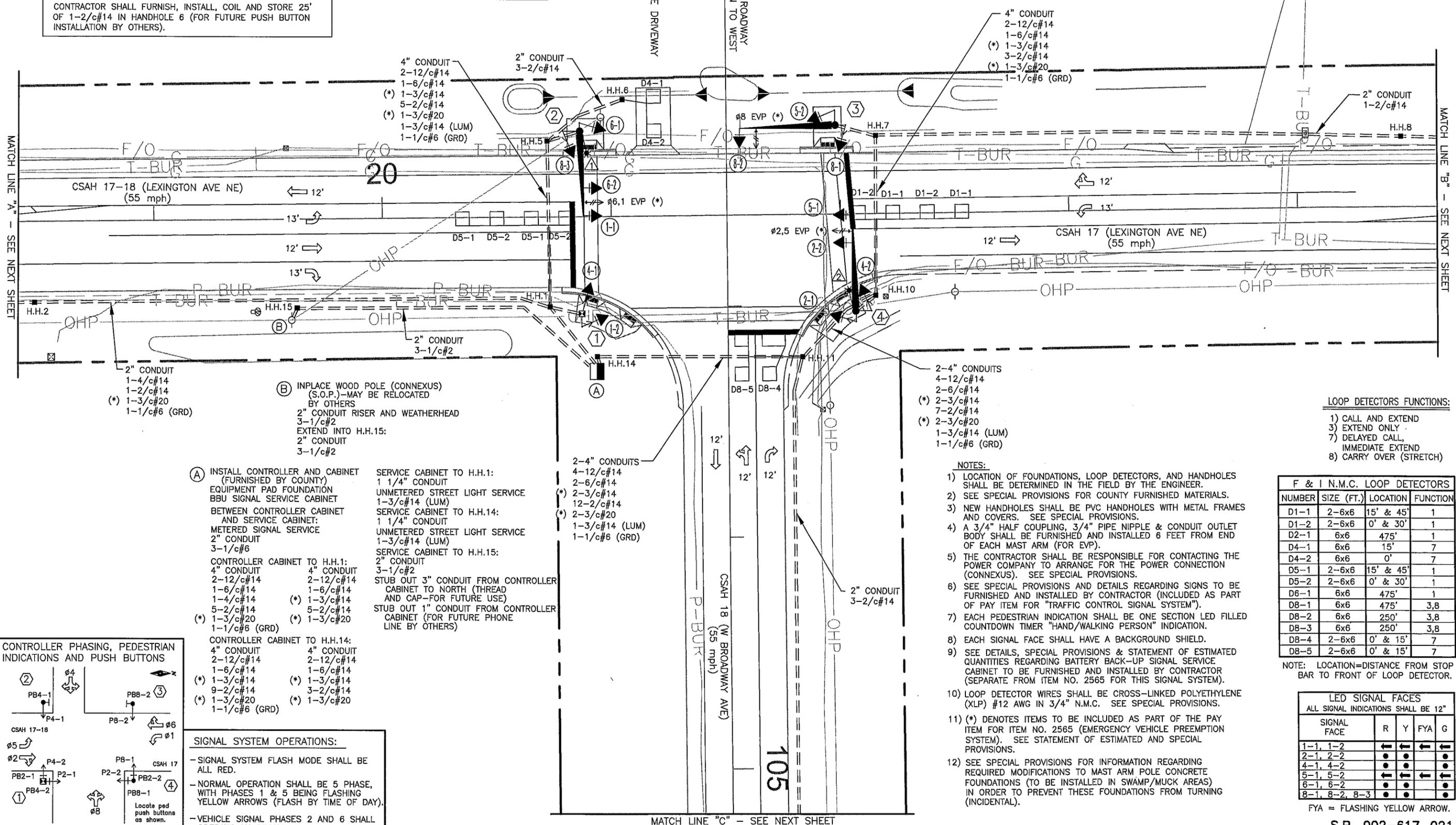


CONTRACTOR SHALL FURNISH, INSTALL, COIL AND STORE AN ADDITIONAL 25' OF CABLES 7-12 IN HANDHOLE 1 (FOR FUTURE EXTENSION OF CABLES BY OTHERS TO FUTURE MAST ARM POLE).

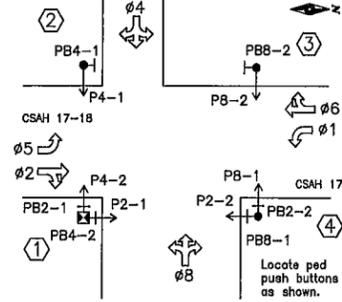
CONTRACTOR SHALL FURNISH, INSTALL, COIL AND STORE 25' OF 1-2/c#14 IN HANDHOLE 6 (FOR FUTURE PUSH BUTTON INSTALLATION BY OTHERS).

SEE NEXT SHEET FOR DETAILED POLE NOTES.



- (A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
EQUIPMENT PAD FOUNDATION
BBU SIGNAL SERVICE CABINET
BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
2" CONDUIT
3-1/c#6
- (B) INPLACE WOOD POLE (CONNEXUS) (S.O.P.)—MAY BE RELOCATED BY OTHERS
2" CONDUIT RISER AND WEATHERHEAD
3-1/c#2
EXTEND INTO H.H.15:
2" CONDUIT
3-1/c#2

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE, WITH PHASES 1 & 5 BEING FLASHING YELLOW ARROWS (FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

- 2-4" CONDUITS
4-12/c#14
2-6/c#14
(*) 2-3/c#14
7-2/c#14
(*) 2-3/c#20
1-3/c#14 (LUM)
1-1/c#6 (GRD)

NOTES:

- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM END OF EACH MAST ARM (FOR EVP).
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
- 6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
- 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- 8) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- 9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE STATEMENT OF ESTIMATED AND SPECIAL PROVISIONS.
- 12) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING REQUIRED MODIFICATIONS TO MAST ARM POLE CONCRETE FOUNDATIONS (TO BE INSTALLED IN SWAMP/MUCK AREAS) IN ORDER TO PREVENT THESE FOUNDATIONS FROM TURNING (INCIDENTAL).

LOOP DETECTORS FUNCTIONS:

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

F & I N.M.C. LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	
D1-1	2-6x6	15' & 45'	1	
D1-2	2-6x6	0' & 30'	1	
D2-1	6x6	475'	1	
D4-1	6x6	15'	7	
D4-2	6x6	0'	7	
D5-1	2-6x6	15' & 45'	1	
D5-2	2-6x6	0' & 30'	1	
D6-1	6x6	475'	1	
D8-1	6x6	475'	3,8	
D8-2	6x6	250'	3,8	
D8-3	6x6	250'	3,8	
D8-4	2-6x6	0' & 15'	7	
D8-5	2-6x6	0' & 15'	7	

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

LED SIGNAL FACES				
ALL SIGNAL INDICATIONS SHALL BE 12"				
SIGNAL FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	•	•	•	•
4-1, 4-2	•	•	•	•
5-1, 5-2	←	←	←	←
6-1, 6-2	•	•	•	•
8-1, 8-2, 8-3	•	•	•	•

FYA = FLASHING YELLOW ARROW.

S.P. 002-617-021

DRAWN BY: JMG	1	JMG	03/19	ADDED LOOP DETECTORS D8-2 AND D8-3 AT 250' FROM STOP BAR PER COUNTY
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.

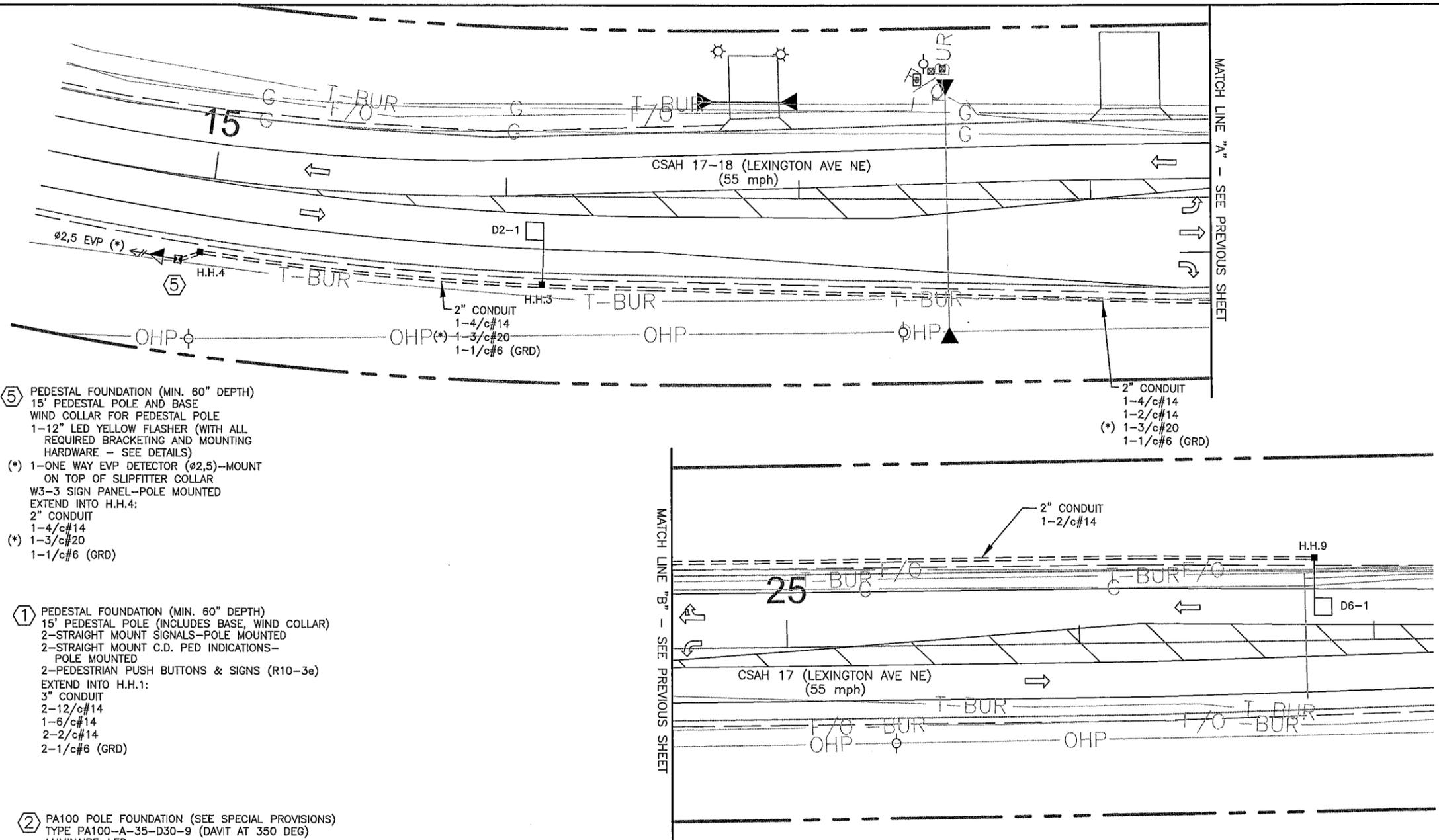
John M. Gray
Name: John M. Gray, PE
Lic. No. 22457
Date: August 14, 2018

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

ANOKA COUNTY
CITIES OF COLUMBUS
AND HAM LAKE

TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVE NE)
AT CSAH 18 (WEST BROADWAY AVE)

FILE NO. ANOKC 146389
SIGNAL SHEET 6 OF 8
73
86



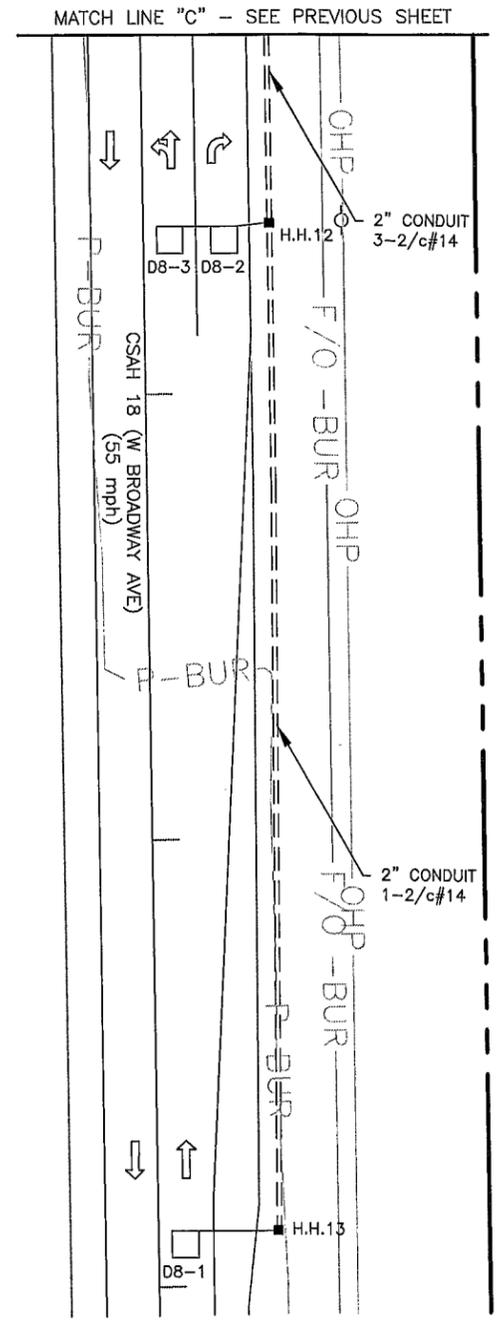
- ⑤ PEDESTAL FOUNDATION (MIN. 60" DEPTH)
15' PEDESTAL POLE AND BASE
WIND COLLAR FOR PEDESTAL POLE
1-12" LED YELLOW FLASHER (WITH ALL REQUIRED BRACKETING AND MOUNTING HARDWARE - SEE DETAILS)
- (*) 1-ONE WAY EVP DETECTOR (Ø2.5)-MOUNT ON TOP OF SLIPFITTER COLLAR
W3-3 SIGN PANEL-POLE MOUNTED
EXTEND INTO H.H.4:
2" CONDUIT
1-4/c#14
1-3/c#20
1-1/c#6 (GRD)

- ① PEDESTAL FOUNDATION (MIN. 60" DEPTH)
15' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
2-STRAIGHT MOUNT SIGNALS-POLE MOUNTED
2-STRAIGHT MOUNT C.D. PED INDICATIONS-POLE MOUNTED
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
EXTEND INTO H.H.1:
3" CONDUIT
2-12/c#14
1-6/c#14
2-2/c#14
2-1/c#6 (GRD)

- ② PA100 POLE FOUNDATION (SEE SPECIAL PROVISIONS)
TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 1-1
TYPE D SIGN PANEL-OVERHEAD (D-1)
- (*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (Ø6,1))
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.5:
3" CONDUIT
2-12/c#14
1-6/c#14
- (*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 (GRD)

- ③ PA100 POLE FOUNDATION (SEE SPECIAL PROVISIONS)
TYPE PA100-A-40
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 180 DEG
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)
TYPE D SIGN PANEL-OVERHEAD (D-2)
- (*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (Ø8))
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.7:
3" CONDUIT
2-12/c#14
1-6/c#14
- (*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-1/c#6 (GRD)

- ④ PA100 POLE FOUNDATION (SEE SPECIAL PROVISIONS)
TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL-OVERHEAD (D-3)
- (*) INSTALL ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (FURNISHED BY COUNTY (Ø2,5))
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.10:
3" CONDUIT
2-12/c#14
1-6/c#14
- (*) 1-3/c#14
2-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 (GRD)



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