



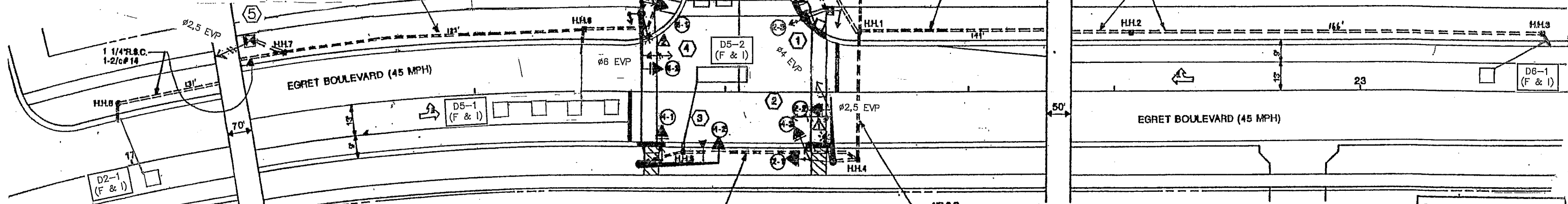
- LOOP DETECTOR REPLACEMENT NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING HANDHOLES IN THE VICINITY OF CONSTRUCTION, AND SHALL ADJUST HANDHOLES 1, 2, 3, 4, 5, 6, 7, AND 8 AS NECESSARY TO MATCH FINISHED SURROUNDING GRADE AFTER ROAD WORK HAS BEEN COMPLETED. SEE SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES.
 - 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC. NEW LOOP DETECTORS D2-1, D4-2, D4-3, D5-1, D5-2, AND D6-1 SHALL BE FURNISHED, INSTALLED AND MADE OPERATIONAL BY CONTRACTOR TO THE SATISFACTION OF ENGINEER AND THE ANOKA COUNTY HIGHWAY DEPARTMENT. SEE DETAILS AND SPECIAL PROVISIONS.
 - 4) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.) SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
 - 5) CONTRACTOR SHALL MAINTAIN OPERATION OF SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER AND THE COUNTY.
 - 6) SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.
 - 7) CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LOOP DETECTOR SPLICE KITS (FOR LOOP DETECTORS D2-1, D4-2, D4-3, D5-1, D5-2, AND D6-1), AND SHALL FURNISH & INSTALL NEW LOOP DETECTOR SPLICE KITS IN THE ADJACENT HANDHOLE AS CALLED FOR IN THE SPECIAL PROVISIONS.
 - 8) NEW LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR ARE BOXED IN AND DENOTED BY F & I (FURNISH AND INSTALL).
 - 9) NEW LOOP DETECTOR D5-1 SHALL HAVE 2 SEPARATE SPLICE KITS FURNISHED AND INSTALLED BY CONTRACTOR (SPLICE FIRST AND THIRD LOOPS TOGETHER, AND SPLICE SECOND AND FOURTH LOOPS TOGETHER; AND CONNECT ALL TO EXISTING 1-2/c#14 CABLE). SEE SPECIAL PROVISIONS.

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D2-1	6x6	250'	1	F & I
D4-1	6x6	120'	3,8	INPLACE
D4-2	2-6x6	0' & 15'	7	F & I
D4-3	2-6x6	0' & 15'	7	F & I
D5-1	4-6x6	5',20',35',50'	7,8,11	F & I
D5-2	6x20	30'	3,12	F & I
D6-1	6x6	300'	1	F & I

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

FUNCTIONS:

- 1 = CALL AND EXTEND
- 3 = EXTEND ONLY
- 7 = DELAYED CALL, IMMEDIATE EXTEND
- 8 = CARRY OVER (STRETCH)
- 11 = CALL DURING ϕ 2 CLEARANCE ONLY
- 12 = EXTEND DURING ϕ 5 ONLY



(B) SERVICE CABINET
 CABINET FOUNDATION
 STUB OUT 2\"/>

(A) CONTROLLER AND CABINET
 CABINET FOUNDATION
 EXTEND INTO H.H.12:
 METERED SIGNAL SERVICE
 1 1/4\"/>

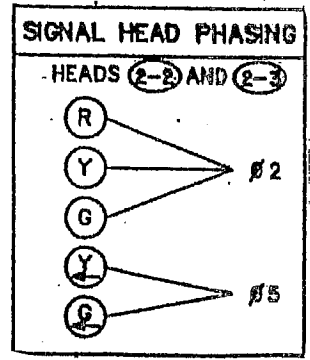
(1) PEDESTAL FOUNDATION
 PEDESTAL POLE AND BASE
 WIND COLLAR FOR PEDESTAL POLE
 TYPE 1D
 2-PEDESTRIAN PUSH BUTTONS & SIGNS
 EXTENDED INTO H.H.11:
 3\"/>

(4) P80 POLE FOUNDATION
 TYPE P80-A-20-D40-9 (DAVIT AT 350')
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH.
 1-ONE WAY SIGNAL-OVERHEAD
 TYPE 30A-POLE MOUNTED 90'
 TYPE 10B-POLE MOUNTED 180'
 2-PEDESTRIAN PUSH BUTTONS & SIGNS
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR & LIGHT (ϕ 6)
 EXTENDED INTO H.H.9:
 3\"/>

(3) P90 POLE FOUNDATION
 TYPE P90-A-30
 1-ONE WAY SIGNAL-OVERHEAD
 TYPE 10B-POLE MOUNTED 0'
 1-PEDESTRIAN PUSH BUTTON & SIGN
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP LIGHT ONLY-OVERHEAD (ϕ 4)
 EXTENDED INTO H.H.5:
 3\"/>

(2) P90 POLE FOUNDATION
 TYPE P90-A-25-D40-9 (DAVIT AT 350')
 LUMINAIRE-200 W HPS W/PEC & CHECK SWTCH
 1-ONE WAY SIGNAL-OVERHEAD
 TYPE 20B-POLE MOUNTED 270'
 1-PEDESTRIAN PUSH BUTTON & SIGN
 R10-12 SIGN PANEL-ADJACENT TO 2-2
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AT 2' (ϕ 4)
 ONE WAY EVP DETECTOR & LIGHT AT 4' (ϕ 2,5)
 EXTENDED INTO H.H.4:
 3\"/>

(5) SCREW-IN PEDESTAL FOUNDATION
 10' PEDESTAL POLE (INCLUDES BASE)
 WIND COLLAR FOR PEDESTAL POLE
 ONE WAY EVP DETECTOR-MOUNT ON TOP
 OF PEDESTAL POLE (ϕ 2,5)
 EXTEND INTO H.H.7:
 2\"/>

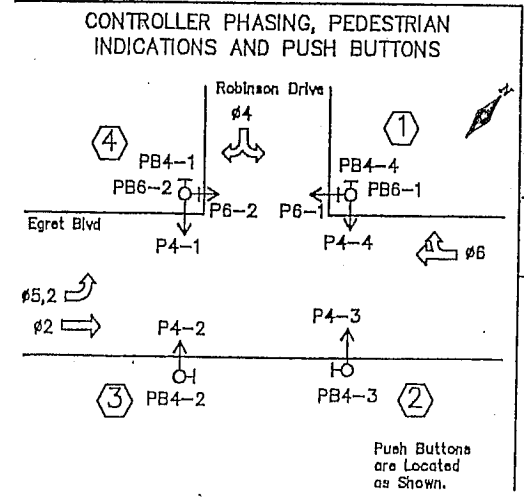


LED SIGNAL FACES

SIGNAL FACE	ALL 12"				
	R	Y	G	Y	G
2-1	○	○	○		
2-2, 2-3	○	○	○	←	←
4-1, 4-2, 4-3	○	○	○		
6-1, 6-2	○	○	○		

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 5 BEING A PROTECTED/PERMISSIVE LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.



S:\A\COONR\COONR\SIG\PLANS\2013\LOOPS.DWG

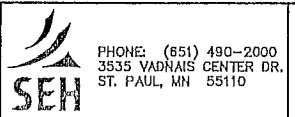
DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE
1	JMG	11/20/15

RECORD DRAWING

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
 Lc. No. 22457



COON RAPIDS, MINNESOTA

LOOP DETECTOR REPLACEMENT INTERSECTION LAYOUT
 EGRET BOULEVARD AT ROBINSON DRIVE

FILE NO. COONR 116823
 SIGNAL SHEET 4 OF 17

S.A.P. 114-104-018
 CITY PROJECT NO. 15-2

117



MATCH LINE - SEE BELOW RIGHT

ROBINSON DRIVE (30 mph)

105th LANE

ROBINSON DRIVE (30 mph)

CONCRETE APRON

105th LANE

MATCH LINE - SEE ABOVE LEFT

MATCH LINE FOR EVP - SEE PREVIOUS SHEET

F & I - H.H.52

Ø4 EVP

F & I - H.H.51

F & I 2"R.S.C.
▲ 1-3/c#20

⑥ F & I SCREW-IN PEDESTAL FOUNDATION
10' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
ONE WAY EVP DETECTOR-MOUNT ON TOP
OF PEDESTAL POLE (#4)
EXTEND INTO H.H.52:
2"R.S.C.
▲ 1-3/c#20

① INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
10' PEDESTAL POLE AND BASE
EXTENDED INTO H.H.11:
3"R.S.C.
1-12/c#12
2-3/c#12

INPLACE (REMOVE) TYPE 1D BRACKETING
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS & SIGN (R10-4c)
INPLACE - 1-ONE WAY SIGNAL-POLE MOUNTED (2-3) (S & I)
F & I TYPE 1D BRACKETING
WIND COLLAR FOR PEDESTAL POLE
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)

F & I - H.H.50

F & I 2"R.S.C.
▲ 1-3/c#20

③ INPLACE (MAINTAIN INPLACE) P90 POLE FOUNDATION
TYPE P90-A-30
1-ONE WAY SIGNAL-OVERHEAD (4-2)
TYPE D SIGN PANEL-OVERHEAD
EXTENDED INTO H.H.5:
3"R.S.C.
1-12/c#12
3-3/c#12

INPLACE (REMOVE) TYPE 10B BRACKETING-POLE MOUNTED 0'
1-SET PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4c)
INPLACE - 1-ONE WAY SIGNAL-POLE MOUNTED (4-1) (S & I)
F & I TYPE 10B BRACKETING-POLE MOUNTED 0'
1-SET PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
ONE WAY EVP INDICATOR LIGHT ONLY (#4)

② INPLACE (MAINTAIN INPLACE) P90 POLE FOUNDATION
TYPE P90-A-25-D40-9 (DAVT AT 350')
LUMINAIRE-200 W HPS W/PEC & CHK. SWITCH
1-ONE WAY SIGNAL-OVERHEAD (2-2)
R10-12 SIGN PANEL-OVERHEAD
TYPE D SIGN PANEL-OVERHEAD
EXTENDED INTO H.H.4:
3"R.S.C.
2-12/c#12
2-3/c#12
2-3/c#20
2-1/c#10 (LUM)

INPLACE (REMOVE) TYPE 20B BRACKETING-POLE MOUNTED 270'
1-SET PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4c)
INPLACE (S & I) - 2-ONE WAY SIGNALS-POLE MOUNTED (2-1, 4-3)
F & I TYPE 20B BRACKETING-POLE MOUNTED 270'
1-SET PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
ONE WAY EVP DETECTOR AND LIGHT-4' FROM END (#2,5)
ONE WAY EVP DETECTOR ONLY-2' FROM END (#4)

④ INPLACE (MAINTAIN INPLACE) P80 POLE FOUNDATION
TYPE P80-A-20-D40-9 (DAVT AT 350')
LUMINAIRE-200 W HPS W/PEC & CHK. SWITCH
1-ONE WAY SIGNAL-OVERHEAD (6-2)
TYPE D SIGN PANEL-OVERHEAD
EXTENDED INTO H.H.9:
3"R.S.C.
2-12/c#12
2-3/c#12
2-3/c#20
2-1/c#10 (LUM)

INPLACE (REMOVE) TYPE 30A BRACKETING-POLE MOUNTED 90'
TYPE 10B BRACKETING-POLE MOUNTED 180'
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4c)
INPLACE (S & I) - 1-ONE WAY SIGNAL-POLE MOUNTED (6-1)
F & I TYPE 30A BRACKETING-POLE MOUNTED 90' (P4-1)
TYPE 10B BRACKETING-POLE MOUNTED 180' (6-1, P6-2)
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
ONE WAY EVP DETECTOR AND LIGHT (#6)
(WITH 3/4" R.S.C. EXTENSION OVER SIGN)

EVP SYSTEM/REVISE SIGNAL SYSTEM

NOTES:
ALL COMPONENTS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE UNLESS OTHERWISE BOXED IN AND DENOTED AS WORK TO BE COMPLETED BY CONTRACTOR. SEE SPECIAL PROVISIONS.
SEE SPECIAL PROVISIONS FOR REQUIRED EVP EQUIPMENT IN CONTROLLER CABINET AND ADDITIONAL INFORMATION.
ALL ITEMS OF EVP SYSTEM & REVISE SIGNAL SYSTEM (INCLUDING CABLES, HUBS, BRACKETING AND HARDWARE NECESSARY FOR EVP SYSTEM AND REVISE SIGNAL SYSTEM OPERATION) SHALL BE F & I BY CONTRACTOR, UNLESS OTHERWISE NOTED IN SPECIAL PROVISIONS.

LEGEND:
▲ NEW CABLES TO BE F & I AS PART OF EVP SYSTEM.
▲▲ NEW CABLES TO BE F & I AS PART OF REVISE SIGNAL SYSTEM.
→ EVP INDICATOR LIGHT (ONE WAY) ONLY (NO DETECTOR).
→/→ EVP DETECTOR UNIT (ONE WAY) WITH INDICATOR LIGHT.
→/→ EVP DETECTOR UNIT (ONE WAY) ONLY (NO LIGHT).
Ø SIGNAL PHASE.
ALL MATERIALS TO BE FURNISHED AND/OR INSTALLED AS PART OF THIS PROJECT ARE LABELED F & I, BOXED IN, AND DENOTED BY →.

DRAWN BY:	JMG	1	JMG	11/06	RECORD DRAWING
DESIGNER:	JMG				
CHECKED BY:	JMG				

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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.
Home: John M. Gray, PE

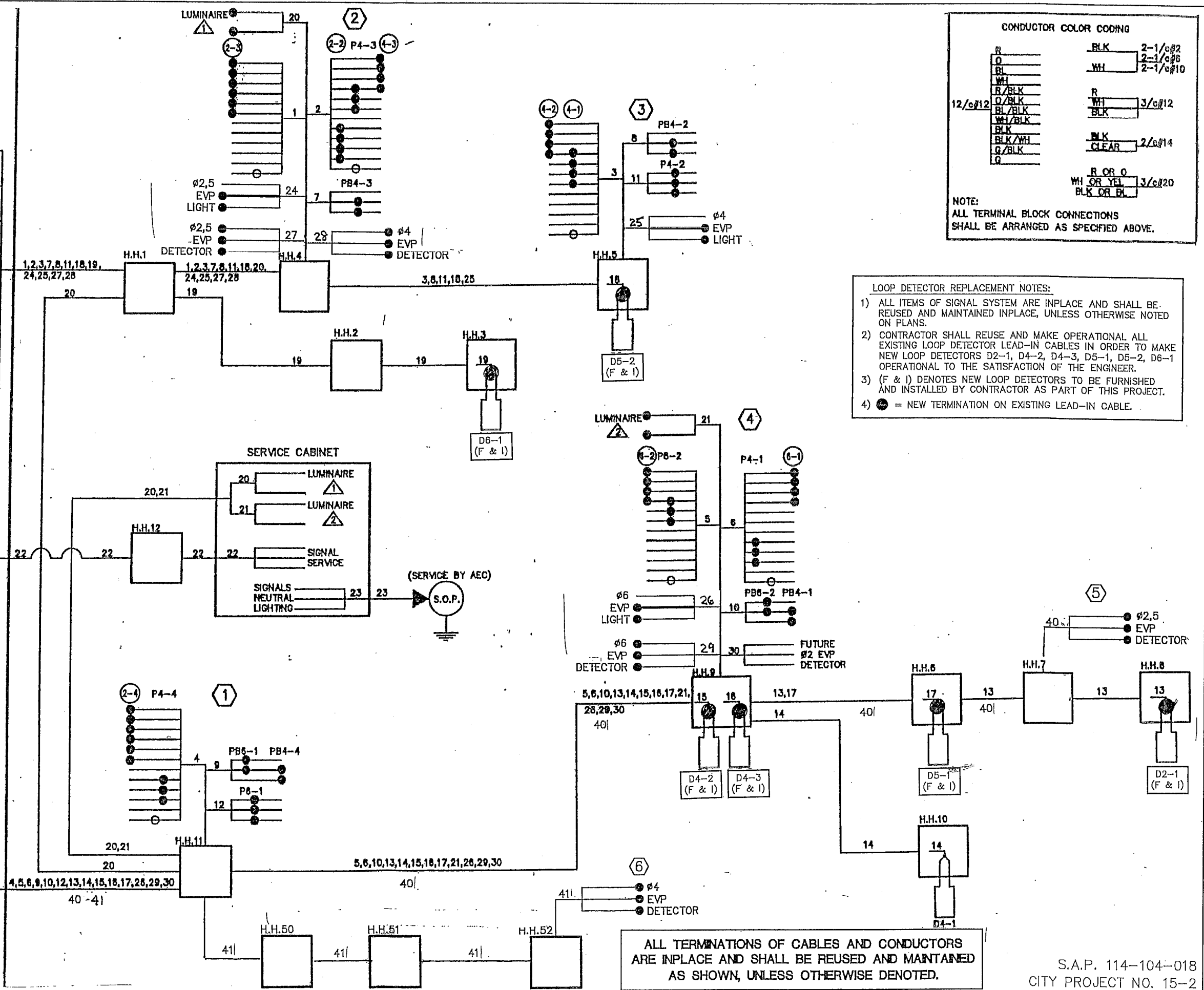
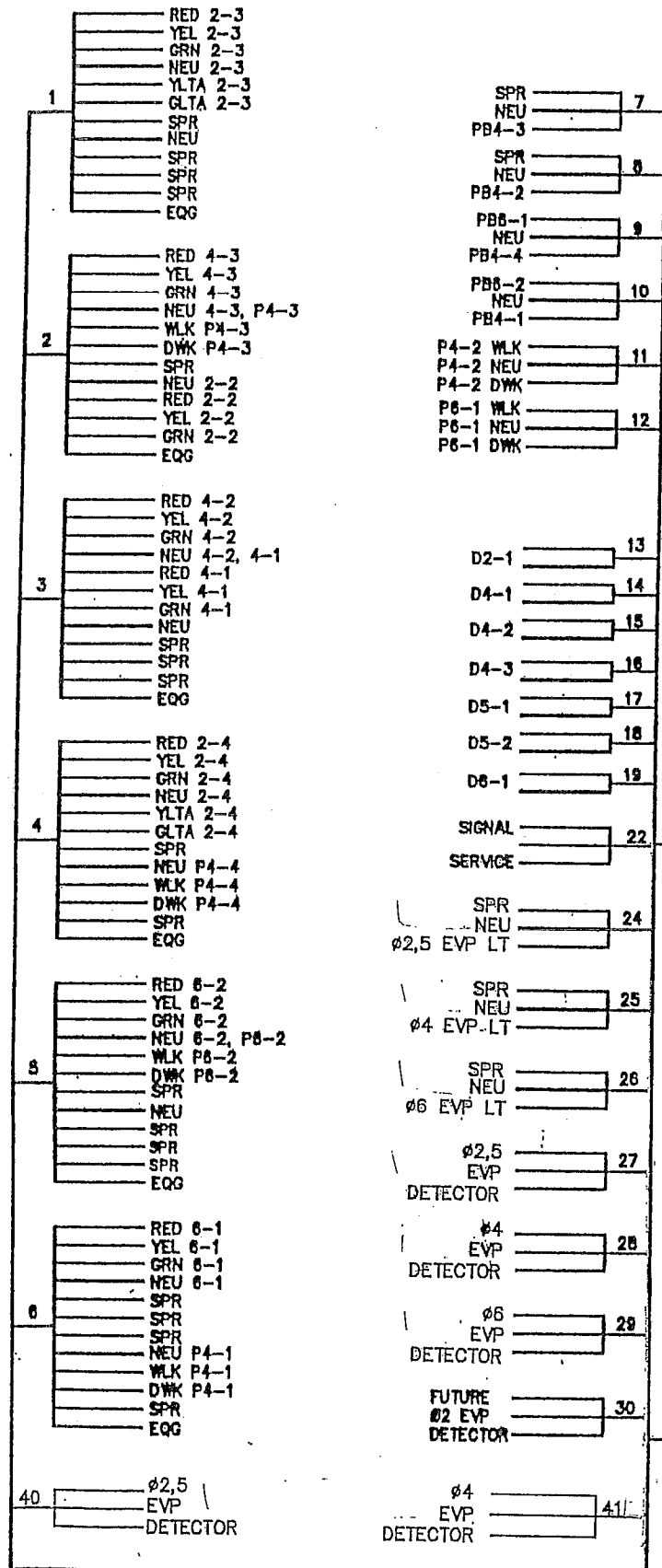
CFH PHONE: (651) 498-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

EVP SYSTEM 'E'
REVISE SIGNAL SYSTEM 'E'
INTERSECTION LAYOUT

CITY PROJ. NO. 06-03
S.A.P. 114-030-09
FILE NO. ACOONR0604
DATE 15

CONTROLLER CABINET



CONDUCTOR COLOR CODING

R	BLK	2-1/c#2
O	WH	2-1/c#6
BL	WH	2-1/c#10
WH		
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
WH/BLK		
BLK	BLK	2/c#14
BLK/WH	CLEAR	
G/BLK		
	R OR O	
	WH OR YEL	3/c#20
	BLK OR BL	

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

- LOOP DETECTOR REPLACEMENT NOTES:
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL REUSE AND MAKE OPERATIONAL ALL EXISTING LOOP DETECTOR LEAD-IN CABLES IN ORDER TO MAKE NEW LOOP DETECTORS D2-1, D4-2, D4-3, D5-1, D5-2, D6-1 OPERATIONAL TO THE SATISFACTION OF THE ENGINEER.
 - 3) (F & I) DENOTES NEW LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
 - 4) ● = NEW TERMINATION ON EXISTING LEAD-IN CABLE.

ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED AS SHOWN, UNLESS OTHERWISE DENOTED.

S.A.P. 114-104-018
CITY PROJECT NO. 15-2

S:\REV\CONTR\CONR\15\104\1018\15-2\PLANS\2013\LOOPS.DWG

Record Drawing

DESIGNED BY:	JMG	1	Jmb	11/2015
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.

Name: John M. Gray, PE
Date: February 12, 2015
Lic. No. 22457

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

COON RAPIDS, MINNESOTA

LOOP DETECTOR REPLACEMENT
FIELD WIRING DIAGRAM
EGRET BOULEVARD AT ROBINSON DRIVE

FILE NO.
COONR 116823
SIGNAL SHEET
5 OF 17