

- NOTES:**
- THE EXACT LOCATION OF HANDHOLES, FOUNDATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
  - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
  - 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").
  - EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
  - ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
  - SEE DETAILS, SPECIAL PROVISIONS, AND 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).
  - LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
  - (\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (OR COUNTY FURNISHED ITEMS TO BE INSTALLED BY CONTRACTOR) UNDER ITEM NO. 2565 ("EMERGENCY VEHICLE PREEMPTION SYSTEM"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - (F & I) = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.

- (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED (OR REMOVED) BY THE CONTRACTOR UNDER ITEM NO. 2565 ("TRAFFIC CONTROL INTERCONNECTION"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS REGARDING REMOVAL OF INPLACE PERMANENT SIGNAL SYSTEM (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
- CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS AND TEMPORARY SIGNAL SYSTEM PLANS.
- SALVAGING OF EXISTING DECORATIVE STREET LIGHT POLES NEAR NEW HANDHOLES 1 AND 3 WILL BE MEASURED AND PAID FOR SEPARATELY AS NOTED ELSEWHERE IN THE PLANS AND SPECIAL PROVISIONS.
- ALL NEW CABLES & CONDUCTORS, HANDHOLES, CONDUIT, AND LOOP DETECTORS SHALL BE FURNISHED & INSTALLED BY CONTRACTOR AS SHOWN.

- (B) INPLACE GROUND MOUNTED TRANSFORMER (SOP-CONNEXUS) EXTENDED INTO H.H.17B: 2" R.S.C.-INPLACE (POWER CABLES TO BE F & I BY CONNEXUS)
- (A) INPLACE DECORATIVE LIGHT POLE-SALVAGE TO CITY-SEE NOTE 16

- H.H.16 TO H.H.17: 4" CONDUIT 2-12/c#14 1-6/c#14 2-3/c#20 13-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD.) 1-1/c#6 (GRD.)
- H.H.17 TO H.H.16: 2" R.S.C. 1-6 SM FIBER-OPTIC CABLE
- H.H.17B: 2" R.S.C. 1-2/c#14

- H.H.13 TO H.H.16: 4" CONDUIT 2-12/c#14 1-6/c#14 2-3/c#20 11-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD.) 1-1/c#6 (GRD.)
- H.H.12 TO H.H.13: 3" R.S.C. 7-2/c#14 1-3/c#14 2-3/c#20 1-1/c#6 (GRD.)
- H.H.11 TO H.H.12: 4" CONDUIT 7-2/c#14
- H.H.12 TO H.H.20: 2" R.S.C. 1-3/c#14 1-1/c#6 (GRD.)

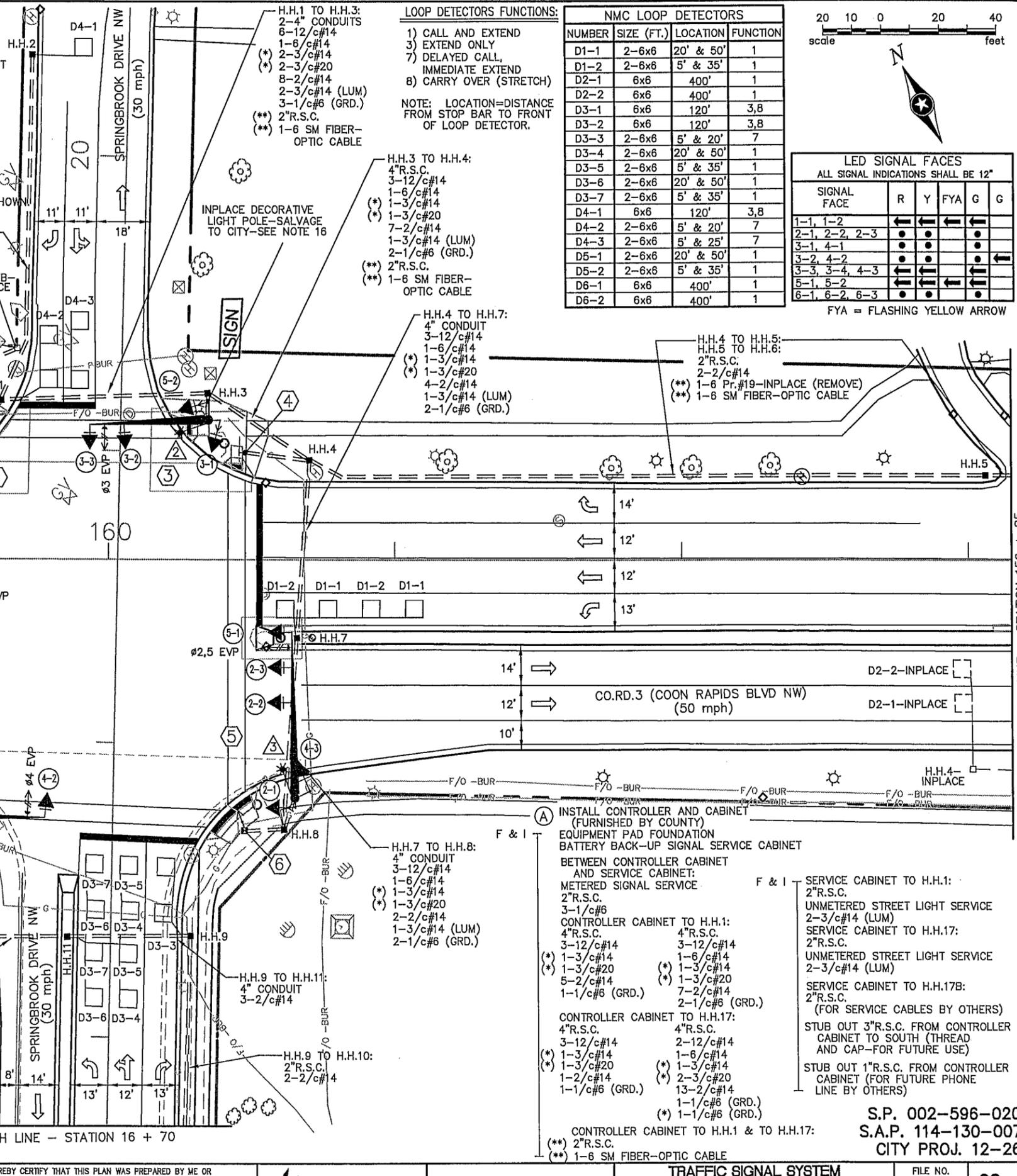
- H.H.7 TO H.H.8: 4" CONDUIT 3-12/c#14 1-6/c#14 1-3/c#14 1-3/c#20 2-2/c#14 1-3/c#14 (LUM) 2-1/c#6 (GRD.)
- H.H.9 TO H.H.11: 4" CONDUIT 3-2/c#14
- H.H.9 TO H.H.10: 2" R.S.C. 2-2/c#14

- H.H.13 TO H.H.14: 2" R.S.C. 2-2/c#14
- H.H.14 TO H.H.15: 2" R.S.C. 2-2/c#14
- H.H.13 TO H.H.16: 4" CONDUIT 2-12/c#14 1-6/c#14 2-3/c#20 11-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD.) 1-1/c#6 (GRD.)

- H.H.12 TO H.H.13: 3" R.S.C. 7-2/c#14 1-3/c#14 2-3/c#20 1-1/c#6 (GRD.)
- H.H.11 TO H.H.12: 4" CONDUIT 7-2/c#14
- H.H.12 TO H.H.20: 2" R.S.C. 1-3/c#14 1-1/c#6 (GRD.)

- H.H.13 TO H.H.16: 4" CONDUIT 2-12/c#14 1-6/c#14 2-3/c#20 11-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD.) 1-1/c#6 (GRD.)
- H.H.12 TO H.H.13: 3" R.S.C. 7-2/c#14 1-3/c#14 2-3/c#20 1-1/c#6 (GRD.)
- H.H.11 TO H.H.12: 4" CONDUIT 7-2/c#14
- H.H.12 TO H.H.20: 2" R.S.C. 1-3/c#14 1-1/c#6 (GRD.)

- H.H.13 TO H.H.14: 2" R.S.C. 2-2/c#14
- H.H.14 TO H.H.15: 2" R.S.C. 2-2/c#14
- H.H.13 TO H.H.16: 4" CONDUIT 2-12/c#14 1-6/c#14 2-3/c#20 11-2/c#14 1-3/c#14 (LUM) 1-1/c#6 (GRD.) 1-1/c#6 (GRD.)

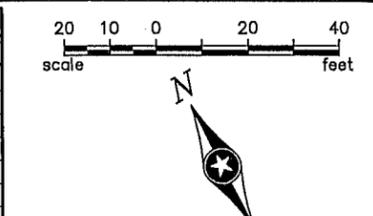


**LOOP DETECTORS FUNCTIONS:**

- CALL AND EXTEND
- EXTEND ONLY
- DELAYED CALL, IMMEDIATE EXTEND
- CARRY OVER (STRETCH)

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

NMC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D3-1	6x6	120'	3,8
D3-2	6x6	120'	3,8
D3-3	2-6x6	5' & 20'	7
D3-4	2-6x6	20' & 50'	1
D3-5	2-6x6	5' & 35'	1
D3-6	2-6x6	20' & 50'	1
D3-7	2-6x6	5' & 35'	1
D4-1	6x6	120'	3,8
D4-2	2-6x6	5' & 20'	7
D4-3	2-6x6	5' & 25'	7
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1



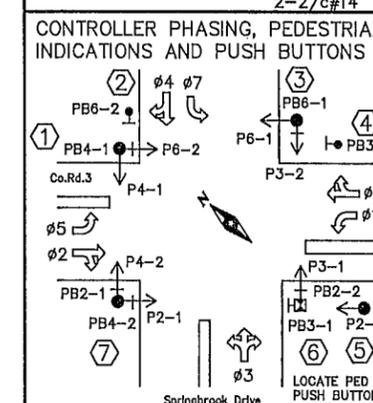
**LED SIGNAL FACES**  
ALL SIGNAL INDICATIONS SHALL BE 12"

SIGNAL FACE	R	Y	FYA	G	G
1-1, 1-2	←	←	←	←	
2-1, 2-2, 2-3	•	•	•	•	
3-1, 4-1	•	•	•	•	•
3-2, 4-2	•	•	•	•	•
3-3, 3-4, 4-3	←	←	←	←	
5-1, 5-2	←	←	←	←	
6-1, 6-2, 6-3	•	•	•	•	•

FYA = FLASHING YELLOW ARROW

MATCH LINE - STATION 162 + 90

MATCH LINE - STATION 156 + 85



**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING FLASHING YELLOW ARROW OPERATION (FLASH BY TIME OF DAY), AND PHASES 3 & 4 BEING SEQUENTIAL (SPLIT) PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE NOTES.

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.

*John M. Gray*  
Name: John M. Gray, PE  
Lic. No. 22457  
Date: March 12, 2014

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

**SEH**

**ANOKA COUNTY**  
CITY OF COON RAPIDS

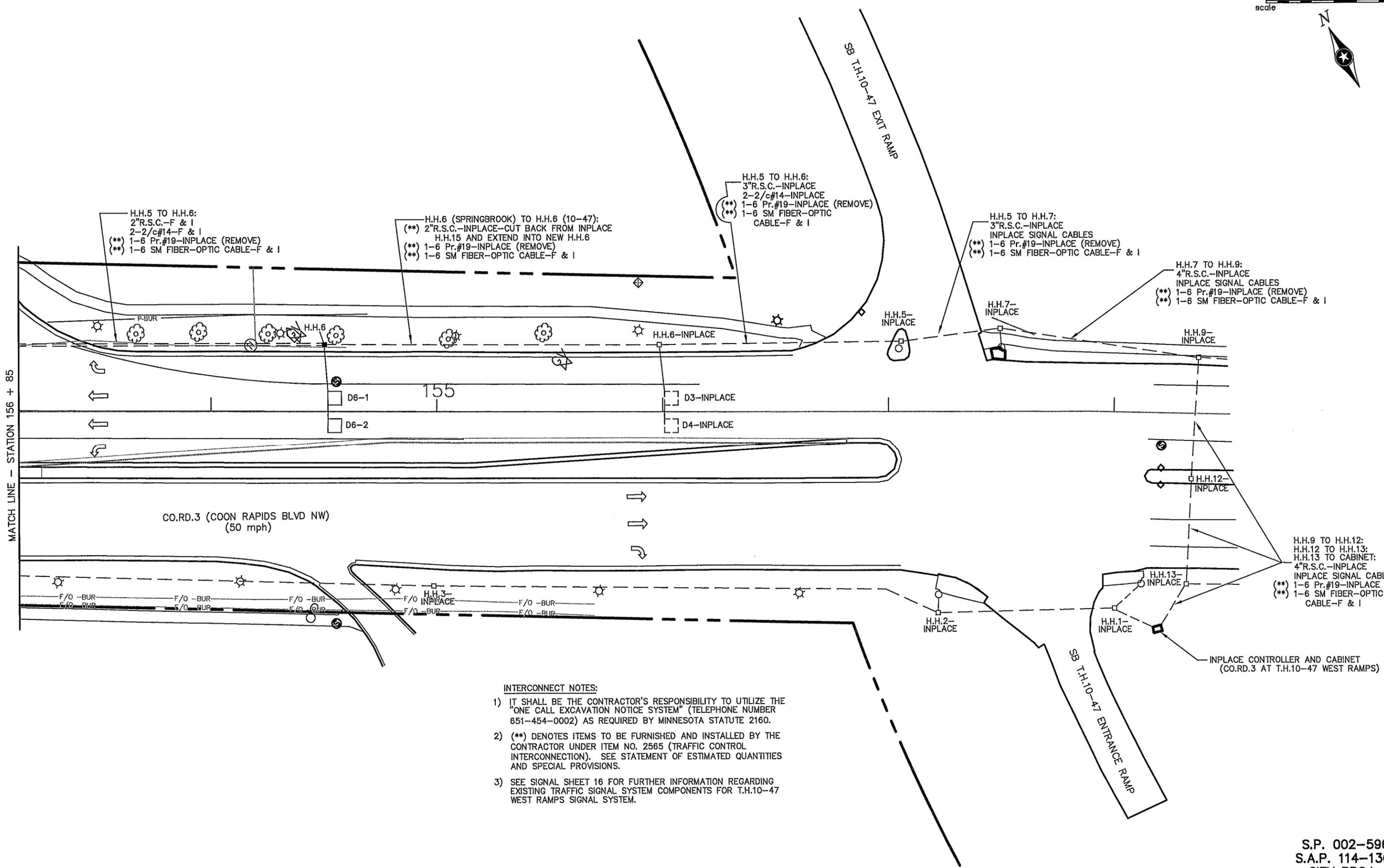
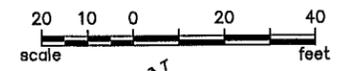
**TRAFFIC SIGNAL SYSTEM**  
INTERSECTION LAYOUT  
CO.RD. 3 (COON RAPIDS BLVD NW)  
AT SPRINGBROOK DRIVE NW

FILE NO. ANOKC 125787  
SIGNAL SHEET 11 OF 21

**68**  
**91**

S.P. 002-596-020  
S.A.P. 114-130-007  
CITY PROJ. 12-26





H.H.5 TO H.H.6:  
2"R.S.C.-F & I  
2-2/c#14-F & I  
(\*\*) 1-6 Pr.#19-INPLACE (REMOVE)  
(\*\*) 1-6 SM FIBER-OPTIC CABLE-F & I

H.H.6 (SPRINGBROOK) TO H.H.6 (10-47):  
(\*\*) 2"R.S.C.-INPLACE-CUT BACK FROM INPLACE  
H.H.15 AND EXTEND INTO NEW H.H.6  
(\*\*) 1-6 Pr.#19-INPLACE (REMOVE)  
(\*\*) 1-6 SM FIBER-OPTIC CABLE-F & I

H.H.5 TO H.H.6:  
3"R.S.C.-INPLACE  
2-2/c#14-INPLACE  
1-6 Pr.#19-INPLACE (REMOVE)  
1-6 SM FIBER-OPTIC CABLE-F & I

H.H.5 TO H.H.7:  
3"R.S.C.-INPLACE  
INPLACE SIGNAL CABLES  
1-6 Pr.#19-INPLACE (REMOVE)  
1-6 SM FIBER-OPTIC CABLE-F & I

H.H.7 TO H.H.9:  
4"R.S.C.-INPLACE  
INPLACE SIGNAL CABLES  
(\*\*) 1-6 Pr.#19-INPLACE (REMOVE)  
(\*\*) 1-6 SM FIBER-OPTIC CABLE-F & I

H.H.9 TO H.H.12:  
H.H.12 TO H.H.13:  
H.H.13 TO CABINET:  
4"R.S.C.-INPLACE  
INPLACE SIGNAL CABLES  
(\*\*) 1-6 Pr.#19-INPLACE (REMOVE)  
(\*\*) 1-6 SM FIBER-OPTIC CABLE-F & I

- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 3) SEE SIGNAL SHEET 16 FOR FURTHER INFORMATION REGARDING EXISTING TRAFFIC SIGNAL SYSTEM COMPONENTS FOR T.H.10-47 WEST RAMPS SIGNAL SYSTEM.

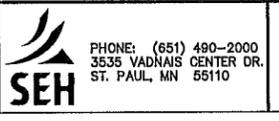
INPLACE CONTROLLER AND CABINET  
(CO.RD.3 AT T.H.10-47 WEST RAMPS)

S.P. 002-596-020  
S.A.P. 114-130-007  
CITY PROJ. 12-26

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

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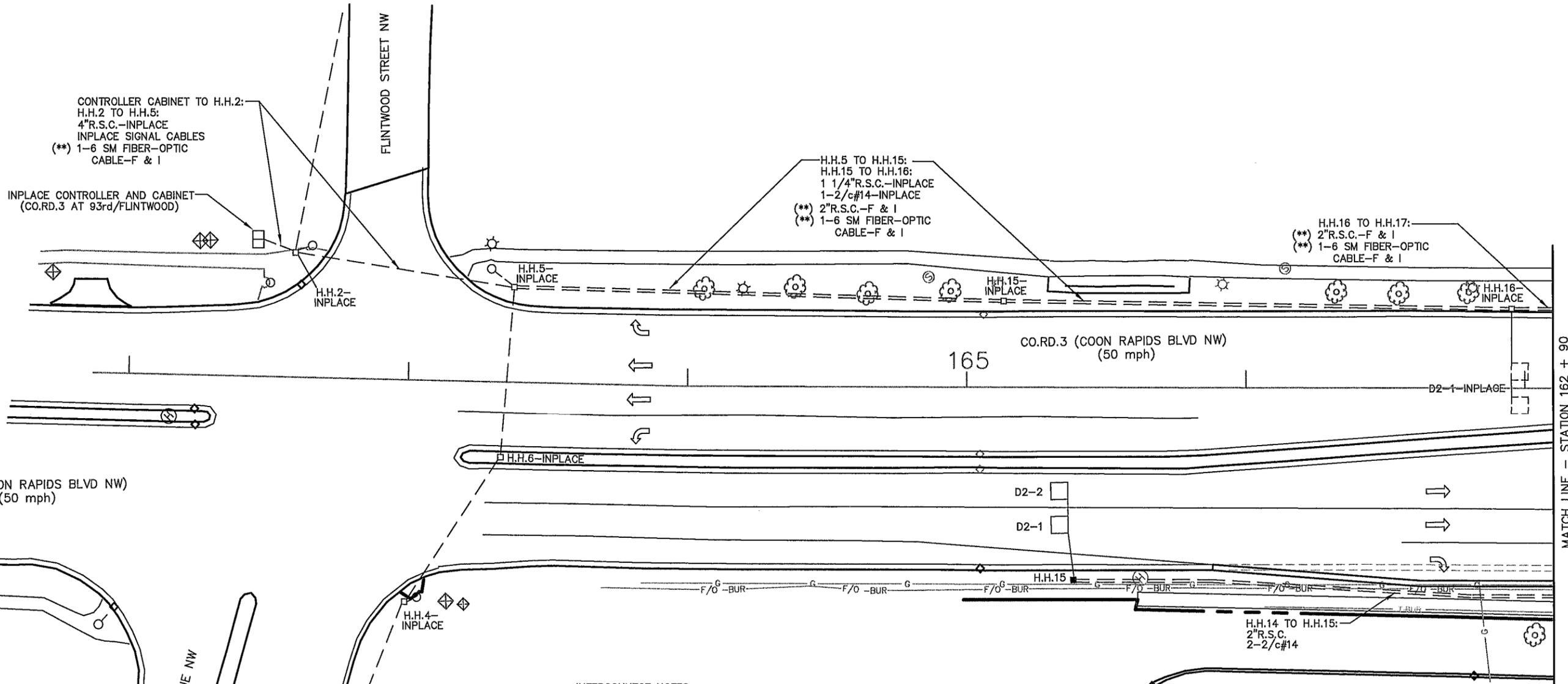
Date: January 13, 2014  
Name: John M. Gray, PE  
Lic. No.: 22457



**ANOKA COUNTY**  
CITY OF COON RAPIDS

**TRAFFIC CONTROL INTERCONNECTION**  
INTERSECTION LAYOUT  
CO.RD. 3 (COON RAPIDS BLVD NW)  
(SPRINGBROOK TO TH 10-47 WEST RAMPS)

FILE NO.	69
ANOKC 125787	
SIGNAL SHEET	91
12 OF 21	



- INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
  - 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 4) SEE SIGNAL SHEET 18 FOR FURTHER INFORMATION REGARDING EXISTING TRAFFIC SIGNAL SYSTEM COMPONENTS FOR 93RD AVENUE/FLINTWOOD STREET SIGNAL SYSTEM.

S.P. 002-596-020  
S.A.P. 114-130-007  
CITY PROJ. 12-26

DRAWN BY:	JMG
DESIGNER:	JMG
CHECKED BY:	JMG
DESIGN TEAM	

NO.	BY	DATE	REVISIONS

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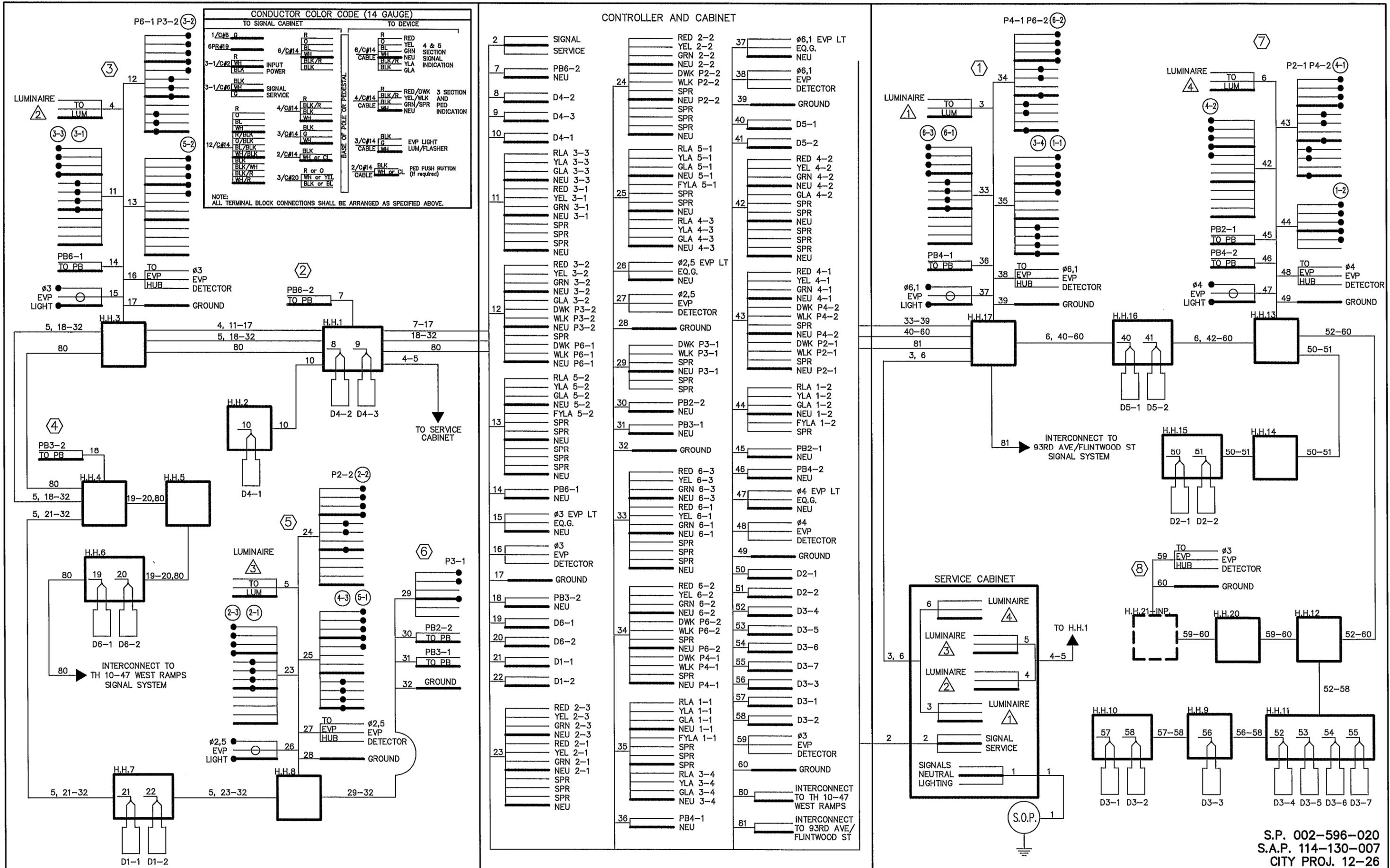
*John M. Gray*  
Name: John M. Gray, PE  
Date: January 13, 2014  
Lic. No. 22457

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**ANOKA COUNTY**  
CITY OF COON RAPIDS

**TRAFFIC CONTROL INTERCONNECTION**  
**INTERSECTION LAYOUT**  
CO. RD. 3 (COON RAPIDS BLVD NW)  
(93RD-FLINTWOOD TO SPRINGBROOK)

FILE NO.	72
ANOKA 125787	
SIGNAL SHEET	91
15 OF 21	



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.  
 Date: January 13, 2014  
 Name: John M. Gray, PE  
 Lic. No. 22457

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ANOKA COUNTY  
 CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
 FIELD WIRING DIAGRAM  
 CO.RD. 3 (COON RAPIDS BLVD NW)  
 AT SPRINGBROOK DRIVE NW

S.P. 002-596-020  
 S.A.P. 114-130-007  
 CITY PROJ. 12-26  
 FILE NO. ANOKC 125787  
 SIGNAL SHEET 14 OF 21  
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 91