

INTERCONNECT NOTES:

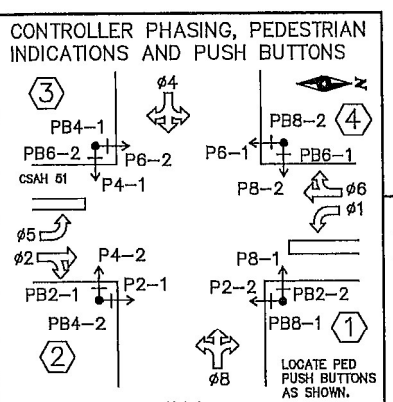
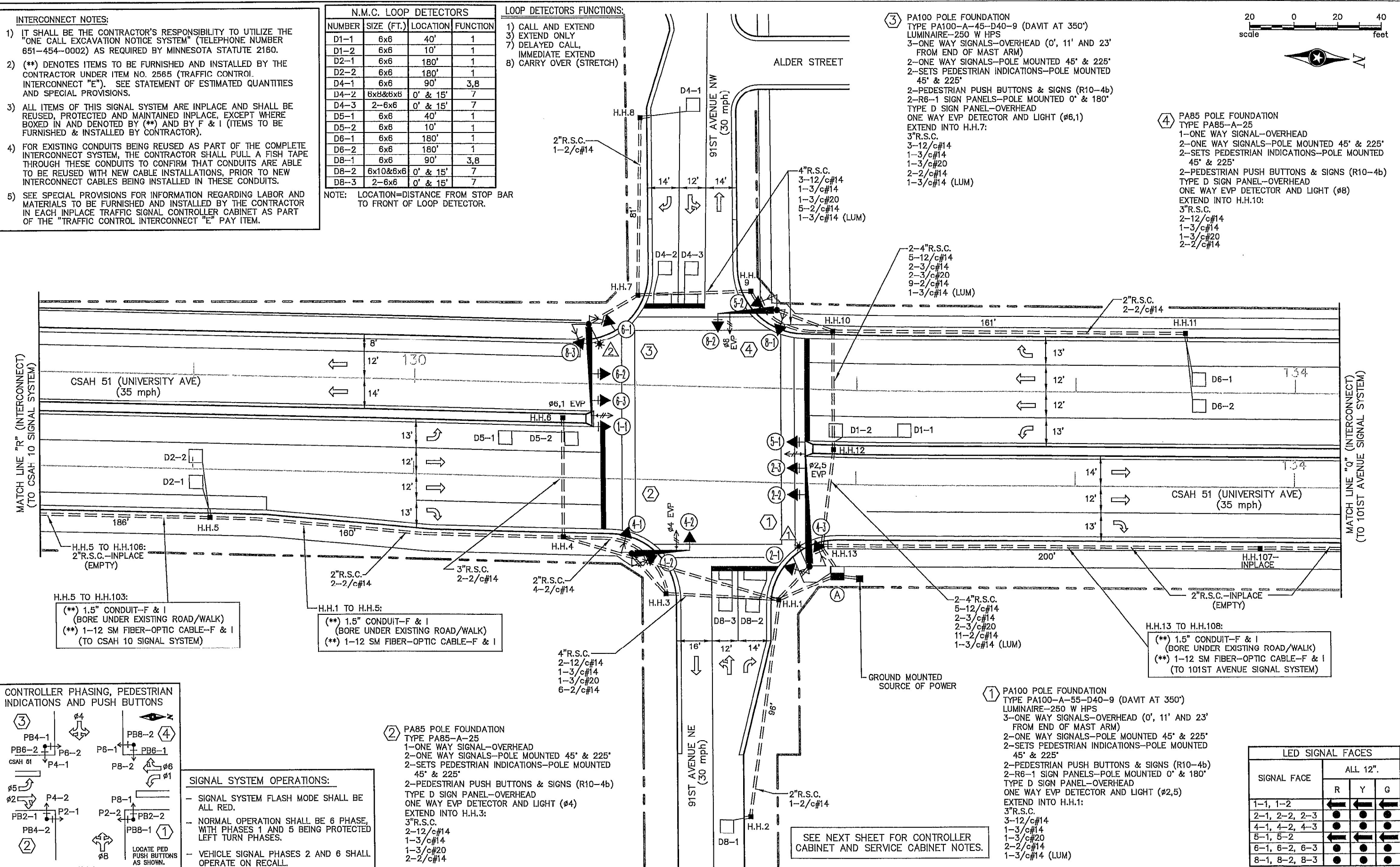
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "E"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY (**) AND BY F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR).
- FOR EXISTING CONDUITS BEING REUSED AS PART OF THE COMPLETE INTERCONNECT SYSTEM, THE CONTRACTOR SHALL PULL A FISH TAPE THROUGH THESE CONDUITS TO CONFIRM THAT CONDUITS ARE ABLE TO BE REUSED WITH NEW CABLE INSTALLATIONS, PRIOR TO NEW INTERCONNECT CABLES BEING INSTALLED IN THESE CONDUITS.
- SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LABOR AND MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN EACH INPLACE TRAFFIC SIGNAL CONTROLLER CABINET AS PART OF THE "TRAFFIC CONTROL INTERCONNECT "E" PAY ITEM.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	180'	1
D2-2	6x6	180'	1
D4-1	6x6	90'	3,8
D4-2	6x8&6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	7
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	180'	1
D6-2	6x6	180'	1
D8-1	6x6	90'	3,8
D8-2	6x10&6x6	0' & 15'	7
D8-3	2-6x6	0' & 15'	7

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.



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

PA85 POLE FOUNDATION
 TYPE PA85-A-25
 1-ONE WAY SIGNAL-OVERHEAD
 2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225°
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225°
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#4)
 EXTEND INTO H.H.3:
 3"R.S.C.
 2-12/c#14
 1-3/c#14
 1-3/c#20
 2-2/c#14

PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 3-ONE WAY SIGNALS-OVERHEAD (0°, 11° AND 23° FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225°
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225°
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#2,5)
 EXTEND INTO H.H.1:
 3"R.S.C.
 3-12/c#14
 1-3/c#14
 1-3/c#20
 2-2/c#14
 1-3/c#14 (LUM)

LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	●	●	●
4-1, 4-2, 4-3	●	●	●
5-1, 5-2	←	←	←
6-1, 6-2, 6-3	●	●	●
8-1, 8-2, 8-3	●	●	●

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
 Name: John M. Gray, PE
 Date: July 6, 2018
 Lto. No. 22457

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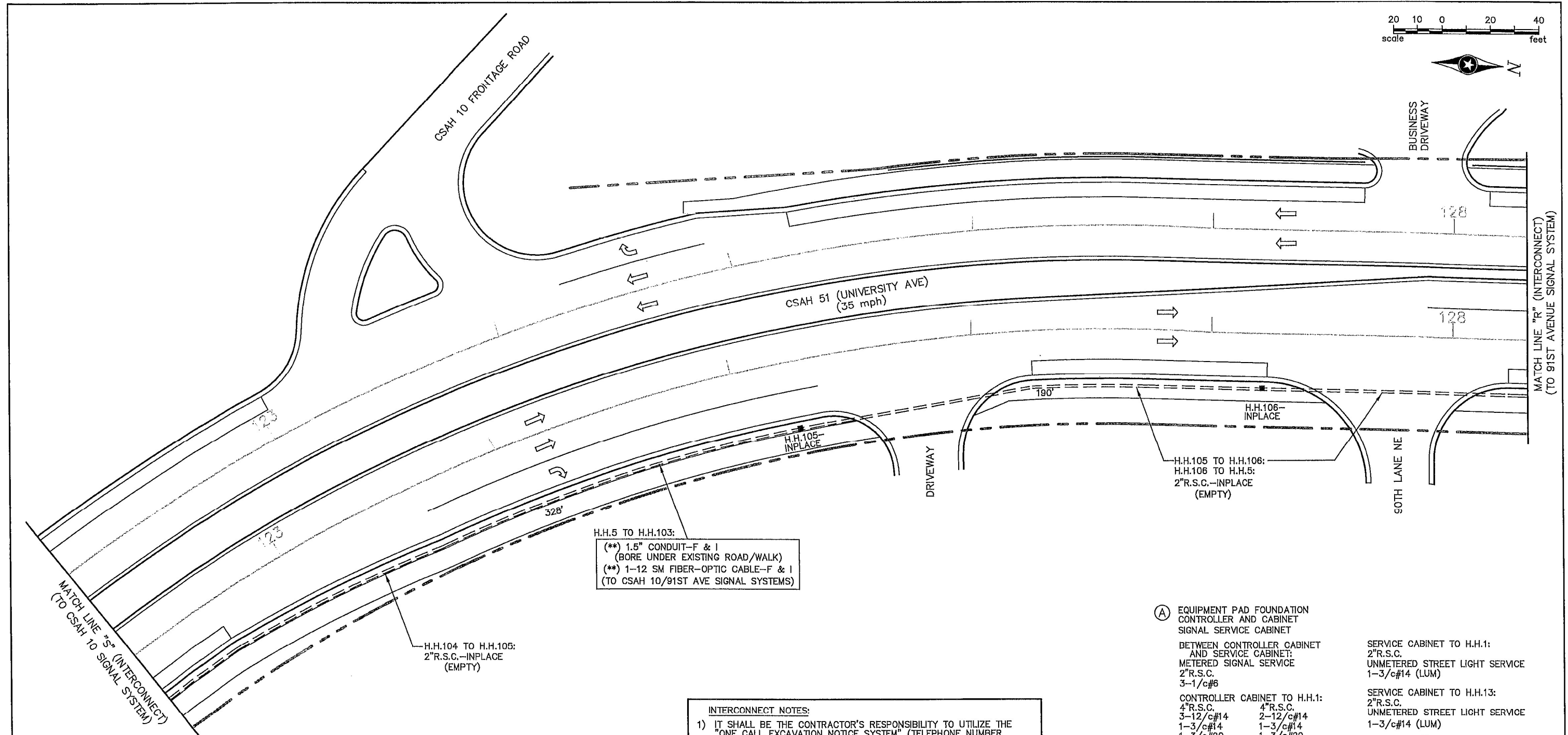
ANOKA COUNTY, MN
 CITIES OF BLAINE, COON RAPIDS
 SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "E"
 INTERSECTION LAYOUT
 CSAH 51 (UNIVERSITY AVENUE)
 AT 91ST AVENUE

FILE NO.
 ANOK 142312

89
115

7252



H.H.5 TO H.H.103:
(**) 1.5" CONDUIT-F & I
(BORE UNDER EXISTING ROAD/WALK)
(**) 1-12 SM FIBER-OPTIC CABLE-F & I
(TO CSAH 10/91ST AVE SIGNAL SYSTEMS)

H.H.104 TO H.H.105:
2"R.S.C.-INPLACE
(EMPTY)

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2) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "E"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
3) FOR EXISTING CONDUITS BEING REUSED AS PART OF THE COMPLETE INTERCONNECT SYSTEM, THE CONTRACTOR SHALL PULL A FISH TAPE THROUGH THESE CONDUITS TO CONFIRM THAT CONDUITS ARE ABLE TO BE REUSED WITH NEW CABLE INSTALLATIONS, PRIOR TO NEW INTERCONNECT CABLES BEING INSTALLED IN THESE CONDUITS.
4) NEW 1.5" CONDUIT IS NOT REQUIRED TO BE INSTALLED THROUGH INPLACE HANDHOLES 105 AND 106.

**(A) EQUIPMENT PAD FOUNDATION
CONTROLLER AND CABINET
SIGNAL SERVICE CABINET**
BETWEEN CONTROLLER CABINET
AND SERVICE CABINET:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
CONTROLLER CABINET TO H.H.1:
4"R.S.C. 4"R.S.C.
3-12/c#14 2-12/c#14
1-3/c#14 1-3/c#14
1-3/c#20 1-3/c#20
5-2/c#14 6-2/c#14
() 1-12 SM FIBER-OPTIC CABLE-F & I**
CONTROLLER CABINET TO H.H.13:
4"R.S.C. 4"R.S.C.
3-12/c#14 2-12/c#14
1-3/c#14 1-3/c#14
1-3/c#20 1-3/c#20
5-2/c#14 6-2/c#14
() 1-12 SM FIBER-OPTIC CABLE-F & I**
STUB OUT 2-3"R.S.C. FROM
CONTROLLER CABINET TO WEST
(THREAD & CAP-FOR FUTURE USE)
STUB OUT 1"N.M.C. FROM
CONTROLLER CABINET (FOR FUTURE
PHONE LINE BY OTHERS)

SERVICE CABINET TO H.H.1:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)
SERVICE CABINET TO H.H.13:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)
STUB OUT 2"R.S.C. FROM
SERVICE CABINET TO NORTH
(FOR POWER BY CONNEXUS)

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

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**ANOKA COUNTY, MN
CITIES OF BLAINE, COON RAPIDS**
SAP 002-030-010

**TRAFFIC SIGNAL INTERCONNECT 'E'
INTERSECTION LAYOUT
CSAH 51 (UNIVERSITY AVENUE)
(91ST AVENUE TO UNIVERSITY AVE)**

FILE NO.
ANOK 142312
90
115

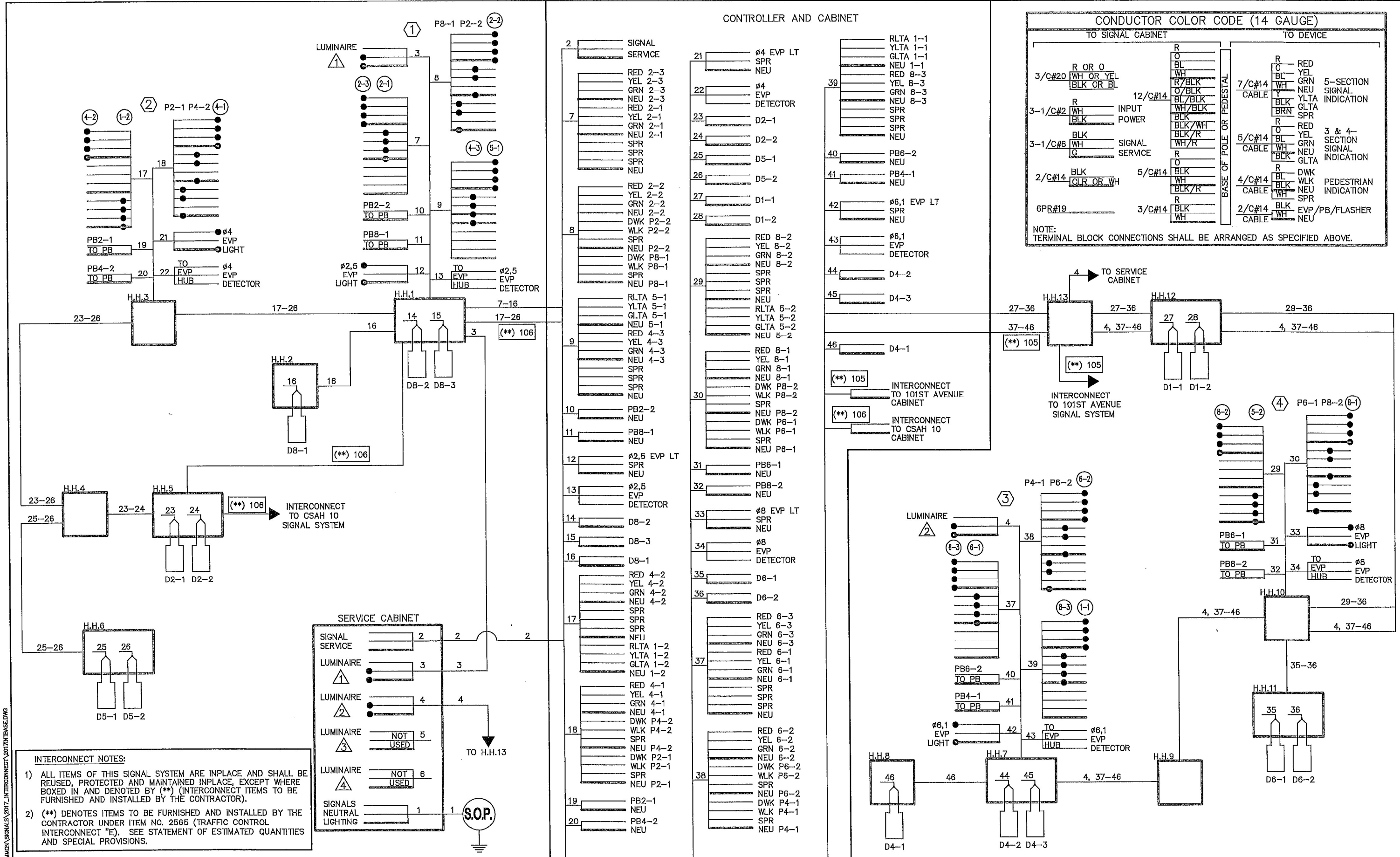
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CONTROLLER AND CABINET

CONDUCTOR COLOR CODE (14 GAUGE)

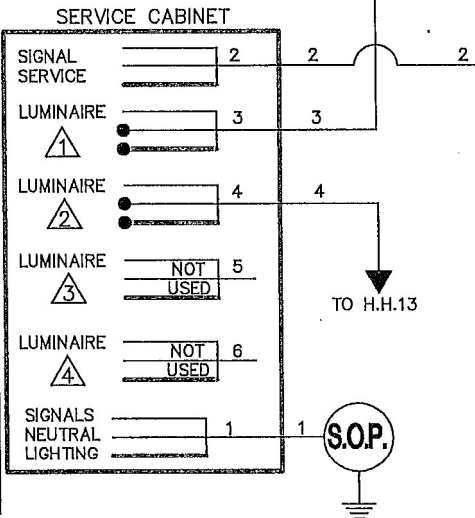
TO SIGNAL CABINET		TO DEVICE	
3/C#20	R OR O	R	RED
	WH OR YEL	O	YEL
	BLK OR BL	BL	GRN
		WH	NEU
		R/BLK	5-SECTION SIGNAL INDICATION
		O/BLK	Y
		BL/BLK	BLK
		WH/BLK	YELT
		BLK	GLTA
		BLK/WH	SPR
		WH/R	R
		BLK/R	RED
		WH/R	O
		R	YEL
		BLK	GRN
		WH	NEU
		BLK	GLTA
		WH	3 & 4-SECTION SIGNAL INDICATION
		BLK	R
		WH	BLK
		BLK/R	DLK
		WH/R	WLK
		BLK	PEDESTRIAN INDICATION
		WH	BLK
		BLK	NEU
		WH	SPR
		BLK	GLTA
		WH	BLK
		WH	EVP/PB/FLASHER
		WH	NEU

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



INTERCONNECT NOTES:

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY (**). (INTERCONNECT ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR).
- 2) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "E"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



- 2 SIGNAL SERVICE
- RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1
- SPR
- SPR
- SPR
- NEU
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2
- DLK P2-2
- WLK P2-2
- SPR
- NEU P2-2
- DLK P8-1
- WLK P8-1
- SPR
- NEU P8-1
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- NEU 5-1
- RED 4-3
- YEL 4-3
- GRN 4-3
- NEU 4-3
- SPR
- SPR
- SPR
- NEU
- PB2-2
- NEU
- PB8-1
- NEU
- #2,5 EVP LT
- SPR
- NEU
- #2,5 EVP DETECTOR
- D8-2
- D8-3
- D8-1
- RED 4-2
- YEL 4-2
- GRN 4-2
- NEU 4-2
- SPR
- SPR
- SPR
- NEU
- DLK P4-2
- WLK P4-2
- SPR
- NEU P4-2
- DLK P2-1
- WLK P2-1
- SPR
- NEU P2-1
- PB2-1
- NEU
- PB4-2
- NEU

- 21 #4 EVP LT
- SPR
- NEU
- 22 #4 DETECTOR
- D2-1
- D2-2
- D5-1
- D5-2
- D1-1
- D1-2
- RED 8-2
- YEL 8-2
- GRN 8-2
- NEU 8-2
- SPR
- SPR
- SPR
- NEU
- RED 8-1
- YEL 8-1
- GRN 8-1
- NEU 8-1
- DLK P8-2
- WLK P8-2
- SPR
- NEU P8-2
- DLK P6-1
- WLK P6-1
- SPR
- NEU P6-1
- PB6-1
- NEU
- PB8-2
- NEU
- #8 EVP LT
- SPR
- NEU
- #8 EVP DETECTOR
- D6-1
- D6-2
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1
- SPR
- SPR
- SPR
- NEU
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2
- DLK P6-2
- WLK P6-2
- SPR
- NEU P6-2
- PB6-2
- NEU
- PB4-1
- NEU
- DLK P4-1
- WLK P4-1
- SPR
- NEU P4-1

- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- NEU 1-1
- RED 8-3
- YEL 8-3
- GRN 8-3
- NEU 8-3
- SPR
- SPR
- SPR
- NEU
- PB6-2
- NEU
- PB4-1
- NEU
- #6,1 EVP LT
- SPR
- NEU
- #6,1 EVP DETECTOR
- D4-2
- D4-3
- D4-1
- INTERCONNECT TO 101ST AVENUE CABINET (** 105)
- INTERCONNECT TO CSAH 10 CABINET (** 106)
- LUMINAIRE
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1
- SPR
- SPR
- SPR
- NEU
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2
- DLK P6-2
- WLK P6-2
- SPR
- NEU P6-2
- PB6-2
- NEU
- PB4-1
- NEU
- DLK P4-1
- WLK P4-1
- SPR
- NEU P4-1
- #6,1 EVP LIGHT
- #6,1 EVP DETECTOR
- D4-1
- D4-2
- D4-3

DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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TRAFFIC SIGNAL INTERCONNECT "E"
 FIELD WIRING DIAGRAM
 CSAH 51 (UNIVERSITY AVENUE)
 AT 91ST AVENUE

FILE NO. ANOK 142312
 91
 115