



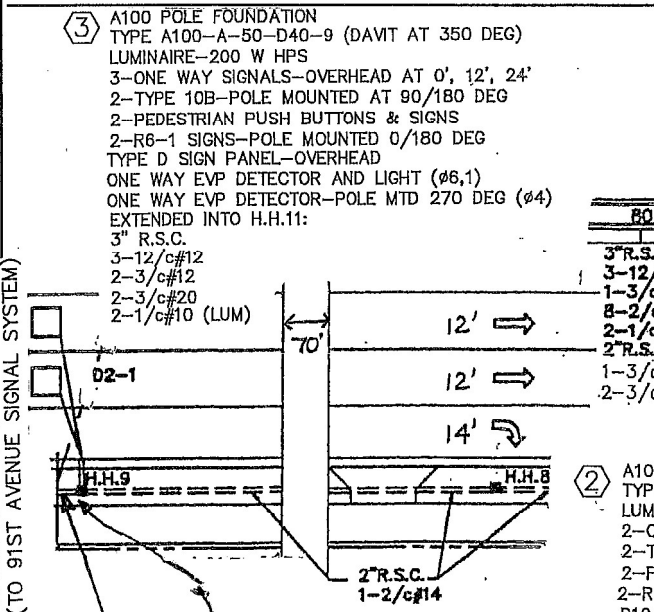
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "E"). SEE STATEMENT 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 BOTH (**) AND BY EITHER F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR) OR BY "REMOVE" (ITEMS TO BE REMOVED & DISPOSED OF BY CONTRACTOR).
- NEW HANDHOLES REQUIRED TO BE FURNISHED & INSTALLED BY THE CONTRACTOR AS PART OF PROJECT SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES (QUAZITE). SEE DETAILS/SPECIAL PROVISIONS.
- EXISTING CONCRETE HANDHOLES WITH CONCRETE OR TYPE LD COVERS IN BOULEVARD AREAS (USED WITH INTERCONNECT SYSTEM CABLES) SHALL BE ADJUSTED TO FINISHED SURROUNDING GRADE (TO BE MEASURED AND PAID FOR SEPARATELY-SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
- 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.
- SEPARATE PAY ITEMS ARE INCLUDED FOR NEW 1.5 INCH CONDUITS (BOTH FOR INSTALLATION IN BOULEVARD AREAS AND FOR BORING UNDER EXISTING DRIVEWAYS OR ROADWAYS), SHOULD EXISTING CONDUITS BE FOUND INCAPABLE OF HAVING NEW INTERCONNECT CABLES BE INSTALLED IN THESE CONDUITS. SEE SPECIAL PROVISIONS.
- 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.

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	AS SHOWN	1	INPLACE
D1-2	2-6x6	AS SHOWN	1	INPLACE
D2-1	2-6x6	300'	1	INPLACE
D3-1	2-6x6	40' & 55'	1	INPLACE
D4-1	2-6x6	180'	3,8	INPLACE
D4-2	2-6x6	0' & 15'	7	INPLACE
D4-3	2-6x6	0' & 15'	1	INPLACE
D5-1	2-6x6	AS SHOWN	1	INPLACE
D5-2	2-6x6	AS SHOWN	1	INPLACE
D6-1	2-6x6	300'	1	INPLACE
D7-1	2-6x6	15' & 45'	1	INPLACE
D7-2	2-6x6	0' & 30'	1	INPLACE
D8-1	2-6x6	180'	3,8	INPLACE
D8-2	2-6x6	AS SHOWN	7	INPLACE
D8-3	2-6x6	AS SHOWN	1	INPLACE
D8-4	2-6x6	AS SHOWN	1	INPLACE

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

LOOP DETECTOR FUNCTIONS:

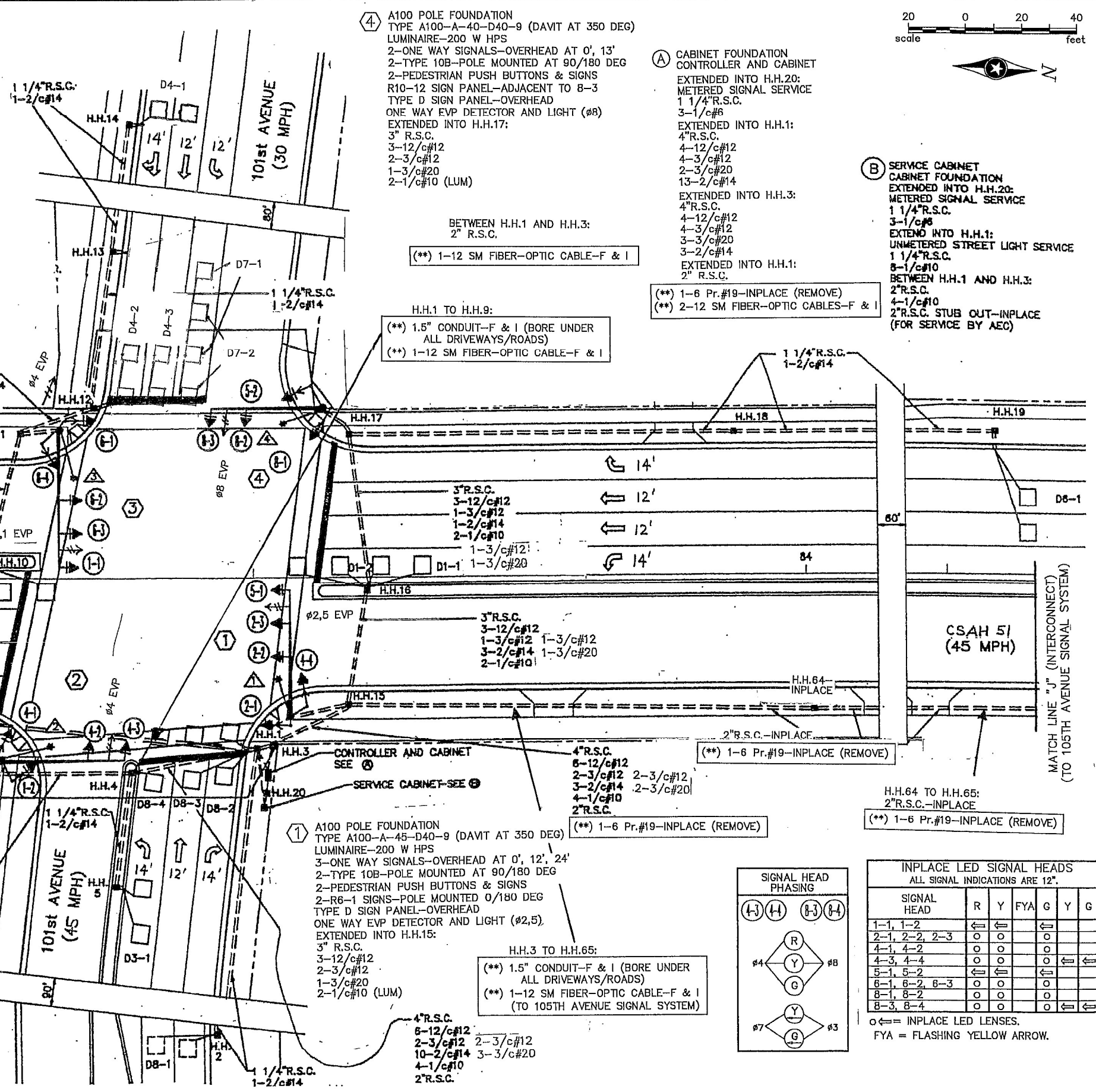
- CALL AND EXTEND
- CALL ONLY
- EXTEND ONLY
- DELAYED CALL-IMMEDIATE EXTEND
- CARRY OVER (STRETCH)



- A100 POLE FOUNDATION TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG) LUMINAIRE-200 W HPS 3-ONE WAY SIGNALS-OVERHEAD AT 0', 12', 24' 2-TYPE 10B-POLE MOUNTED AT 90/180 DEG 2-PEDESTRIAN PUSH BUTTONS & SIGNS 2-R6-1 SIGNS-POLE MOUNTED 0/180 DEG TYPE D SIGN PANEL-OVERHEAD ONE WAY EVP DETECTOR AND LIGHT (#6,1) ONE WAY EVP DETECTOR-POLE MTD 270 DEG (#4) EXTENDED INTO H.H.11: 3" R.S.C. 3-12/c#12 2-3/c#12 2-3/c#20 2-1/c#10 (LUM)
- A100 POLE FOUNDATION TYPE A100-A-45-D40-9 (DAVIT AT 350 DEG) LUMINAIRE-200 W HPS 2-ONE WAY SIGNALS-OVERHEAD AT 0', 13' 2-TYPE 10B-POLE MOUNTED AT 90/180 DEG 2-PEDESTRIAN PUSH BUTTONS & SIGNS 2-R6-1 SIGNS-POLE MOUNTED 0/180 DEG R10-12 SIGN PANEL-ADJACENT TO 4-3 TYPE D SIGN PANEL-OVERHEAD ONE WAY EVP DETECTOR AND LIGHT (#4) EXTENDED INTO H.H.8: 3" R.S.C. 3-12/c#12 2-3/c#12 2-3/c#20 2-1/c#10 (LUM)

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON VEHICLE RECALL.



DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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.

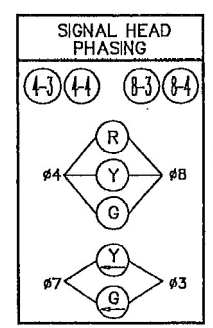
Date: July 6, 2018 Name: John M. Gray, PE Lic. No. 22457

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

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

TRAFFIC SIGNAL INTERCONNECT "E"
 INTERSECTION LAYOUT
 CSAH 51 (UNIVERSITY AVENUE)
 AT 101ST AVENUE

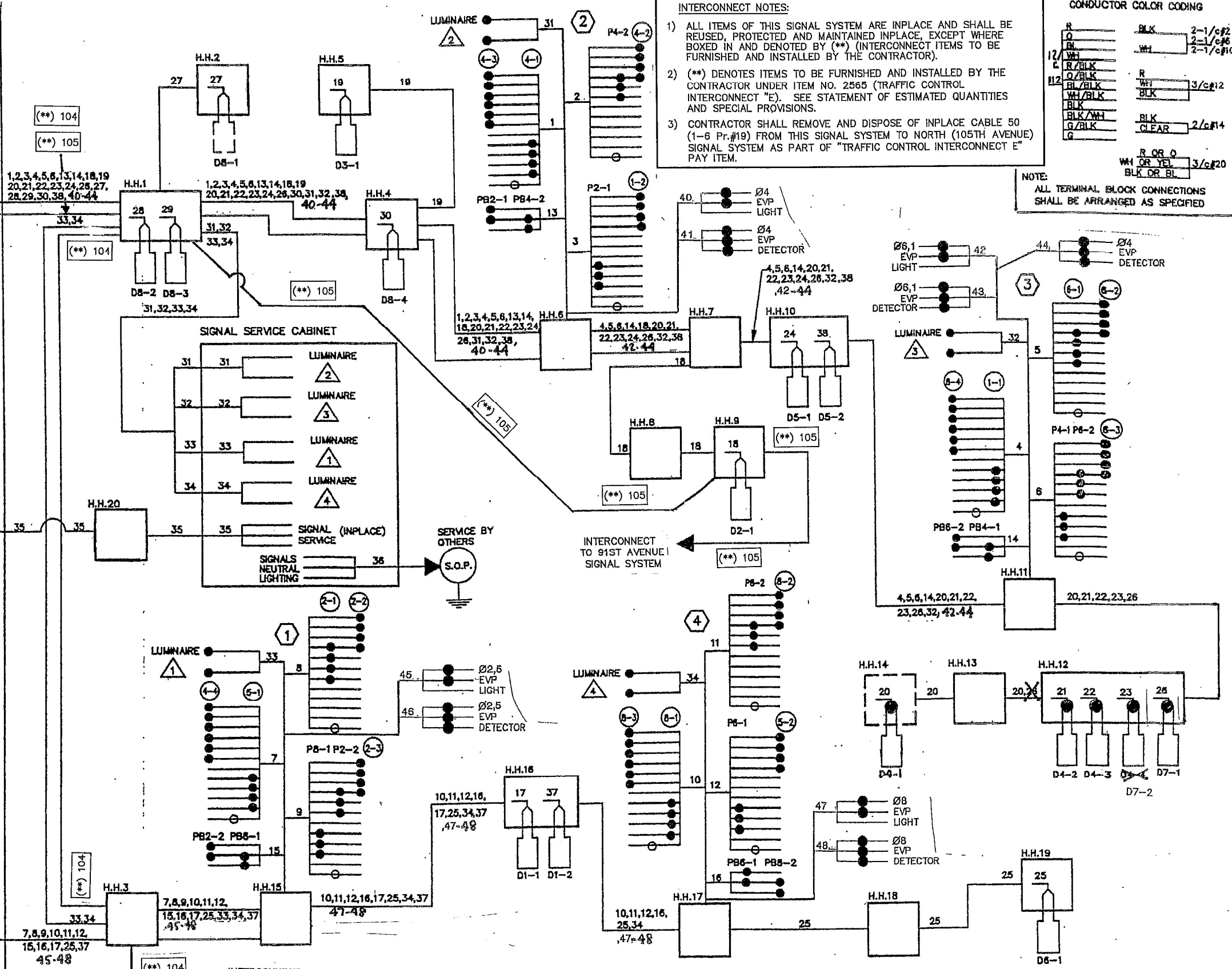
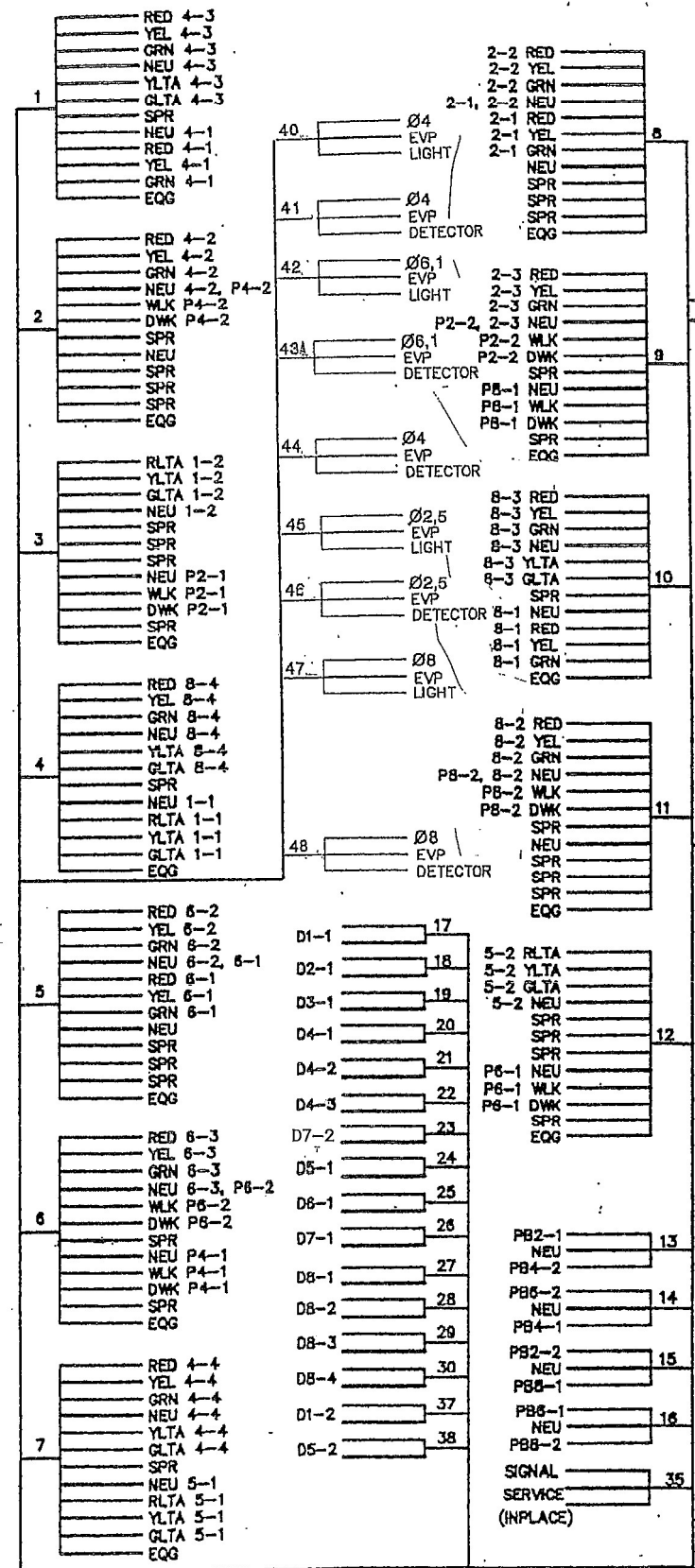
FILE NO.
 ANOKC 142312
 82
 115



INPLACE LED SIGNAL HEADS						
ALL SIGNAL INDICATIONS ARE 12".						
SIGNAL HEAD	R	Y	FYA	G	Y	G
1-1, 1-2	o	o	o	o	o	o
2-1, 2-2, 2-3	o	o	o	o	o	o
4-1, 4-2	o	o	o	o	o	o
4-3, 4-4	o	o	o	o	o	o
5-1, 5-2	o	o	o	o	o	o
6-1, 6-2, 6-3	o	o	o	o	o	o
8-1, 8-2	o	o	o	o	o	o
8-3, 8-4	o	o	o	o	o	o

o = INPLACE LED LENSES.
 FYA = FLASHING YELLOW ARROW.

CONTROLLER CABINET



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.
- 3) CONTRACTOR SHALL REMOVE AND DISPOSE OF INPLACE CABLE 50 (1-6 Pr.#19) FROM THIS SIGNAL SYSTEM TO NORTH (105TH AVENUE) SIGNAL SYSTEM AS PART OF "TRAFFIC CONTROL INTERCONNECT E" PAY ITEM.

CONDUCTOR COLOR CODING

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

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED

S:\NEVA\ANOKA\COMMON\SIG\ANOKA\SIGNALS\2017_INTERCONNECT\2017INTERCONNECT.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

INTERCONNECT TO 105TH AVENUE SIGNAL SYSTEM

INTERCONNECT TO 91ST AVENUE SIGNAL SYSTEM

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
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Lic. No. 22457

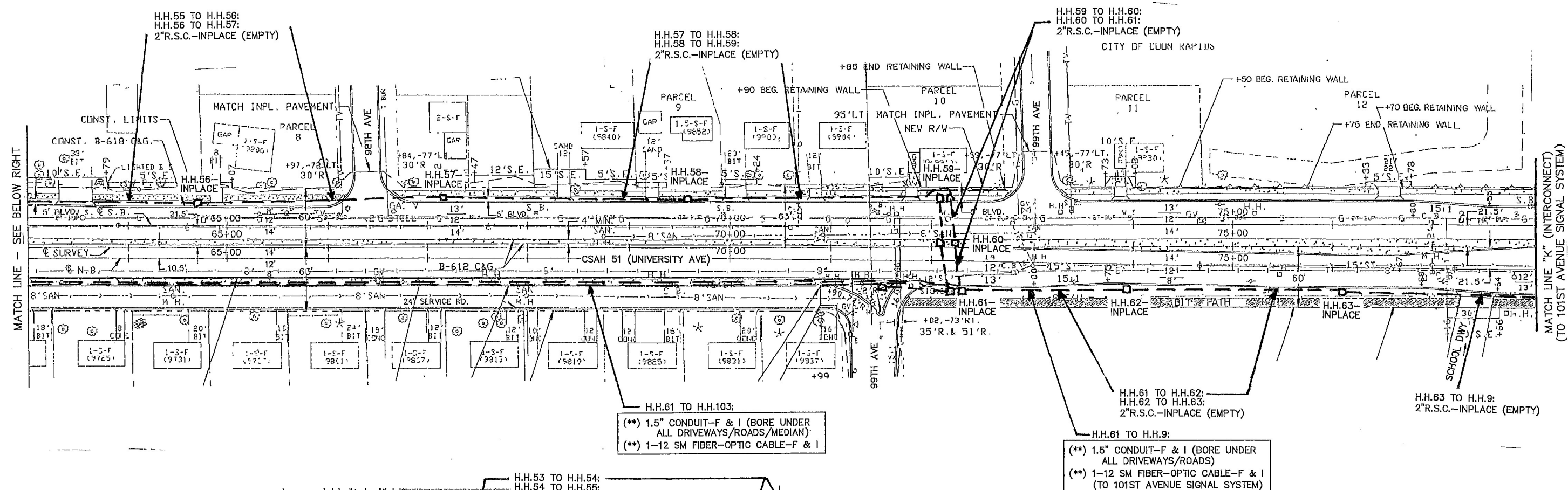
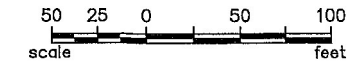
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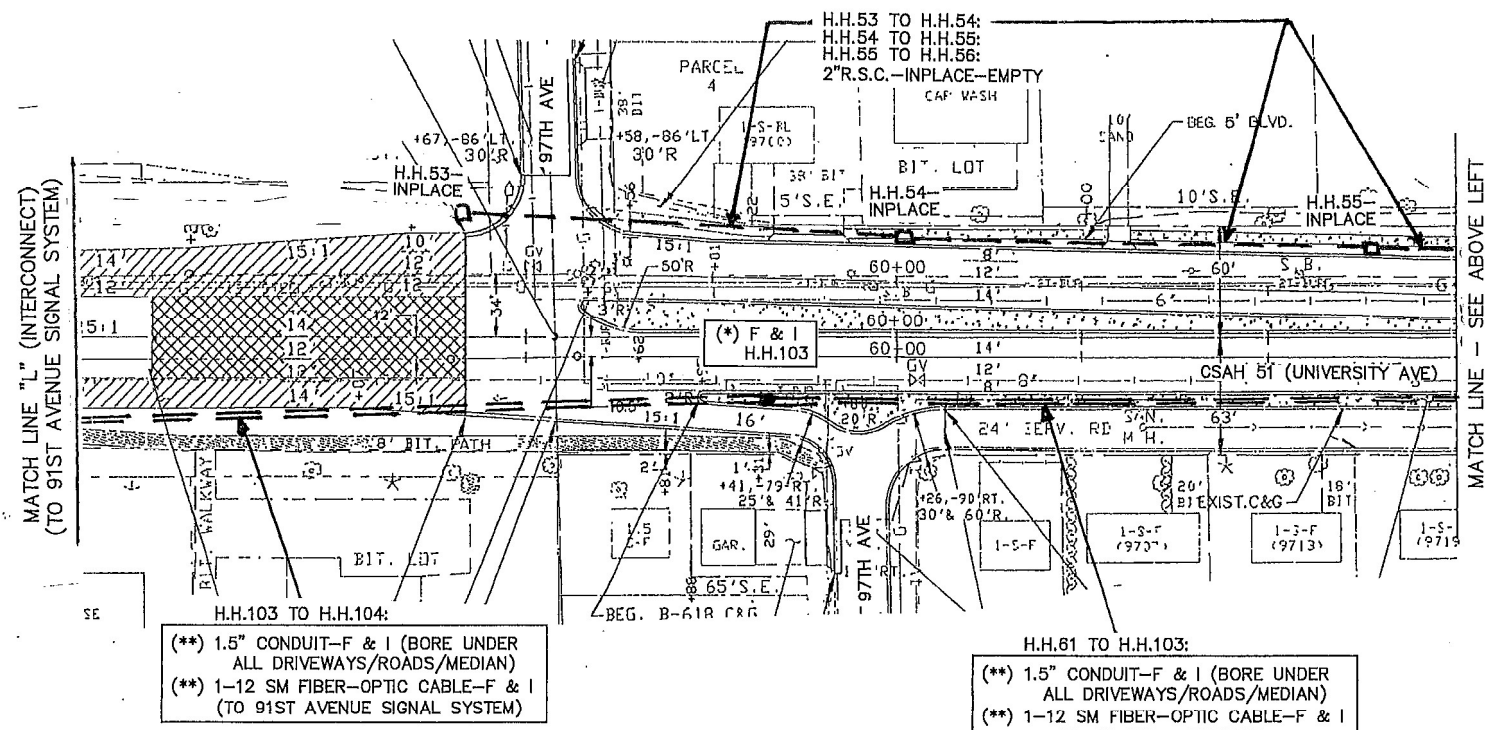
TRAFFIC SIGNAL INTERCONNECT "E"
FIELD WIRING DIAGRAM
CSAH 51 (UNIVERSITY AVENUE)
AT 101ST AVENUE

FILE NO. ANOKC 142312
83
115



H.H.61 TO H.H.103:
 (**) 1.5" CONDUIT-F & I (BORE UNDER ALL DRIVEWAYS/ROADS/MEDIAN)
 (**) 1-12 SM FIBER-OPTIC CABLE-F & I

H.H.61 TO H.H.62:
 H.H.62 TO H.H.63:
 2" R.S.C.-INPLACE (EMPTY)
 H.H.61 TO H.H.9:
 (**) 1.5" CONDUIT-F & I (BORE UNDER ALL DRIVEWAYS/ROADS)
 (**) 1-12 SM FIBER-OPTIC CABLE-F & I (TO 101ST AVENUE SIGNAL SYSTEM)



H.H.103 TO H.H.104:
 (**) 1.5" CONDUIT-F & I (BORE UNDER ALL DRIVEWAYS/ROADS/MEDIAN)
 (**) 1-12 SM FIBER-OPTIC CABLE-F & I (TO 91ST AVENUE SIGNAL SYSTEM)

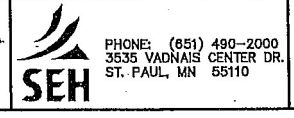
H.H.61 TO H.H.103:
 (**) 1.5" CONDUIT-F & I (BORE UNDER ALL DRIVEWAYS/ROADS/MEDIAN)
 (**) 1-12 SM FIBER-OPTIC CABLE-F & I

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 - 3) ALL ITEMS OF THE EXISTING INTERCONNECT SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY BOTH (**) AND BY EITHER F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR) OR BY "REMOVE" (ITEMS TO BE REMOVED & DISPOSED OF BY CONTRACTOR).
 - 4) NEW HANDHOLE 103 REQUIRED TO BE FURNISHED & INSTALLED BY CONTRACTOR AS PART OF PROJECT SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURE (QUAZITE). SEE DETAILS/SPECIAL PROVISIONS.
 - 5) EXISTING CONCRETE HANDHOLES WITH CONCRETE OR TYPE LD COVERS IN BOULEVARD AREAS (USED WITH INTERCONNECT SYSTEM CABLES) SHALL BE ADJUSTED TO FINISHED SURROUNDING GRADE (TO BE MEASURED AND PAID FOR SEPARATELY-SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
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TRAFFIC SIGNAL INTERCONNECT 'E'
 INTERSECTION LAYOUT
 CSAH 51 (UNIVERSITY AVENUE)
 (101ST AVENUE TO 91ST AVENUE)

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