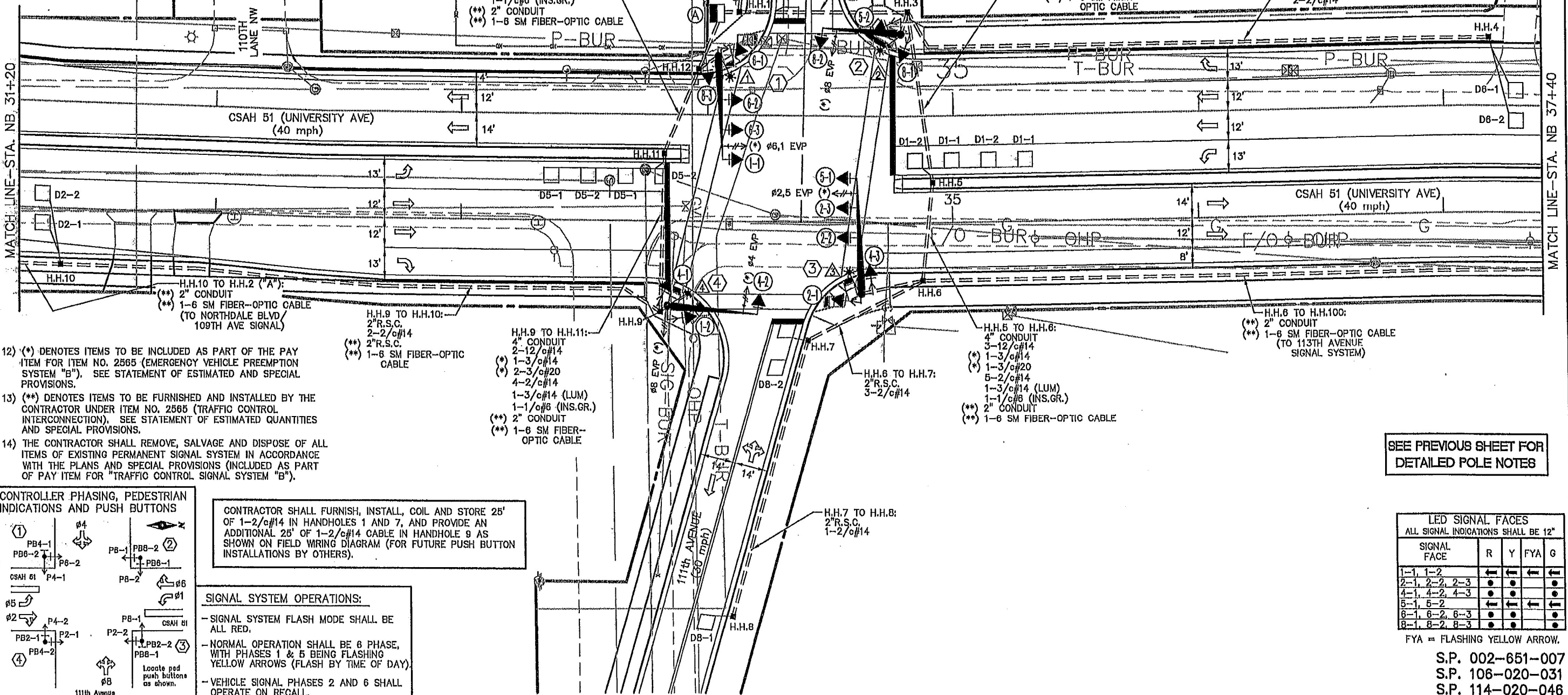


- NOTES:**
- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
 - 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 B").
 - 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
 - 8) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - 9) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - 10) 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).
 - 11) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.

F & N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	250'	1
D2-2	6x6	250'	1
D4-1	6x6	90'	3,8
D4-2	2-6x6	0' & 15'	7
D5-1	2-6x6	15' & 45'	1
D5-2	2-6x6	0' & 30'	1
D6-1	6x6	250'	1
D6-2	6x6	250'	1
D8-1	6x6	120'	3,8
D8-2	2-6x6	0' & 15'	7

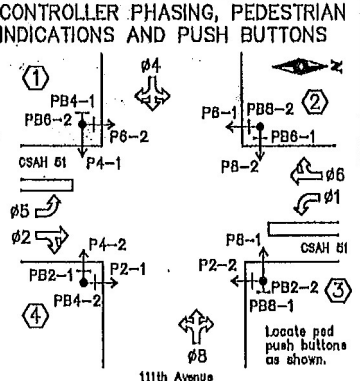
- LOOP DETECTORS FUNCTIONS:**
- 1) CALL AND EXTEND
 - 3) EXTEND ONLY
 - 7) DELAYED CALL, IMMEDIATE EXTEND
 - 8) CARRY OVER (STRETCH)

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



- (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" R.S.C.
 3-1/c#6
- CONTROLLER CABINET TO H.H.1:**
 4" R.S.C.
 2-12/c#14
 (* 1-3/c#14
 (* 1-3/c#20
 7-2/c#14
 1-1/c#6 (INS.GR.)
- CONTROLLER CABINET TO H.H.12:**
 4" R.S.C.
 3-12/c#14
 (* 1-3/c#14
 (* 1-3/c#20
 1-1/c#6 (INS.GR.)
- CONTROLLER CABINET TO H.H.1:**
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 2-3/c#14 (LUM)
- SERVICE CABINET TO H.H.12:**
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 2-3/c#14 (LUM)
- STUB OUT 1-2" R.S.C. FROM SERVICE CABINET TO WEST (FOR POWER CABLES BY CONNEXUS)**
- STUB OUT 3" R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD AND CAP-FOR FUTURE USE)**
- STUB OUT 1" R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)**
- CONTROLLER CABINET TO H.H.1:**
 (** 2" R.S.C.
 (** 1-6 SM FIBER-OPTIC CABLE
- CONTROLLER CABINET TO H.H.12:**
 (** 2" R.S.C.
 (** 1-6 SM FIBER-OPTIC CABLE

- 12) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "B"). SEE STATEMENT OF ESTIMATED AND SPECIAL PROVISIONS.
- 13) (**) 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.
- 14) THE CONTRACTOR SHALL REMOVE, SALVAGE AND DISPOSE OF ALL ITEMS OF EXISTING PERMANENT SIGNAL SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIAL PROVISIONS (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "B").



CONTRACTOR SHALL FURNISH, INSTALL, COIL AND STORE 25' OF 1-2/c#14 IN HANDHOLES 1 AND 7, AND PROVIDE AN ADDITIONAL 25' OF 1-2/c#14 CABLE IN HANDHOLE 9 AS SHOWN ON FIELD WIRING DIAGRAM (FOR FUTURE PUSH BUTTON INSTALLATIONS BY OTHERS).

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

SEE PREVIOUS SHEET FOR DETAILED POLE NOTES

LED SIGNAL FACES
 ALL SIGNAL INDICATIONS SHALL BE 12"

SIGNAL FACE	R	Y	FYA	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	●	●	●	●

FYA = FLASHING YELLOW ARROW.

S.P. 002-651-007
 S.P. 106-020-031
 S.P. 114-020-046

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

REVISIONS			
NO.	BY	DATE	DESCRIPTION

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.

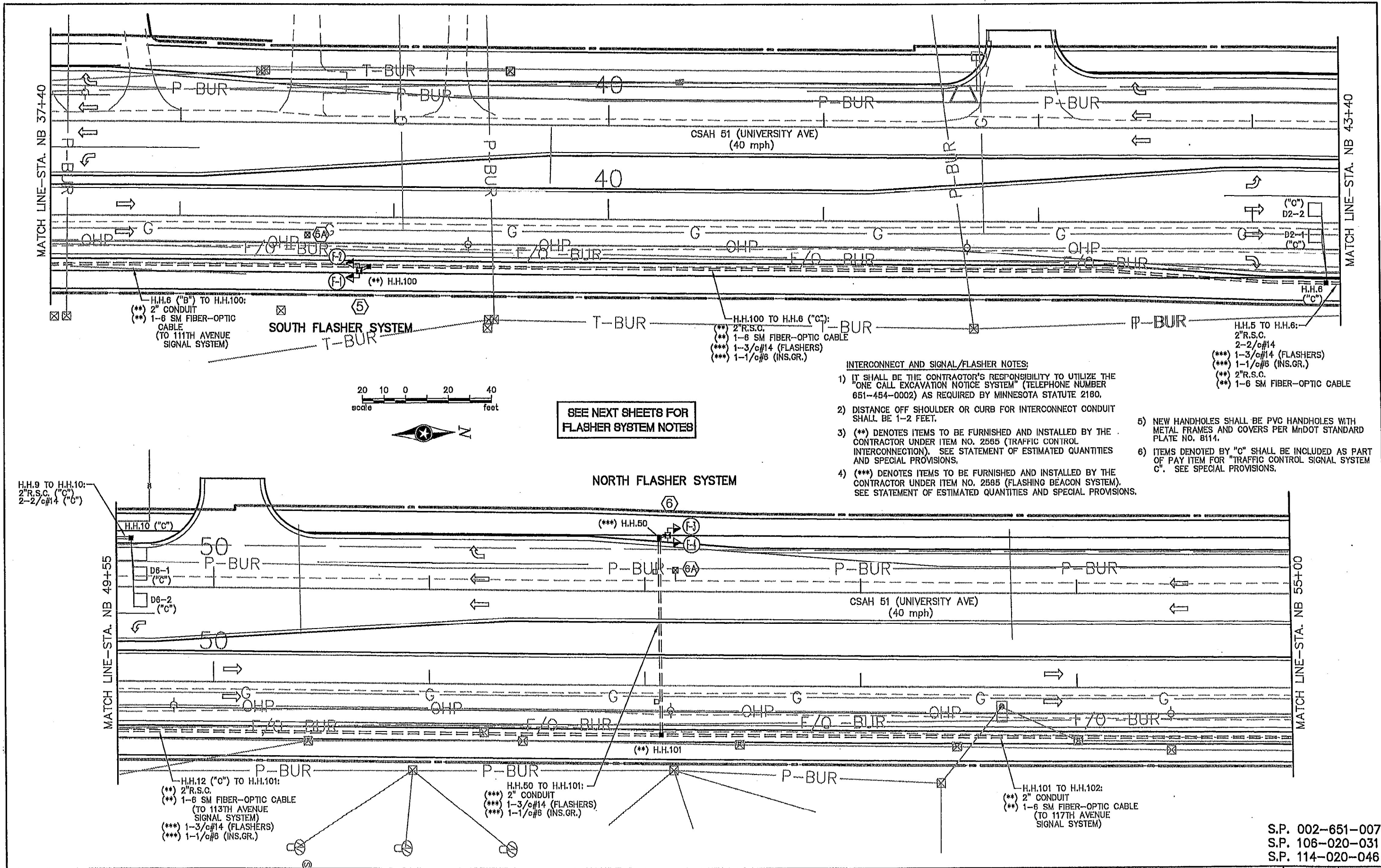
Date: April 23, 2014 Name: John M. Gray, PE Ltr. No. 22457

SEH
 PHONE: (651) 490-2000
 3935 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY
 CITIES OF BLAINE AND COON RAPIDS

TRAFFIC SIGNAL SYSTEM "B"
 INTERSECTION LAYOUT
 CSAH 51 (UNIVERSITY AVE) AT 11TH AVENUE

FILE NO. ANOKC 125467	229
SIGNAL SHEET 12 OF 39	381



SEE NEXT SHEETS FOR
FLASHER SYSTEM NOTES

S.P. 002-651-007
 S.P. 106-020-031
 S.P. 114-020-046

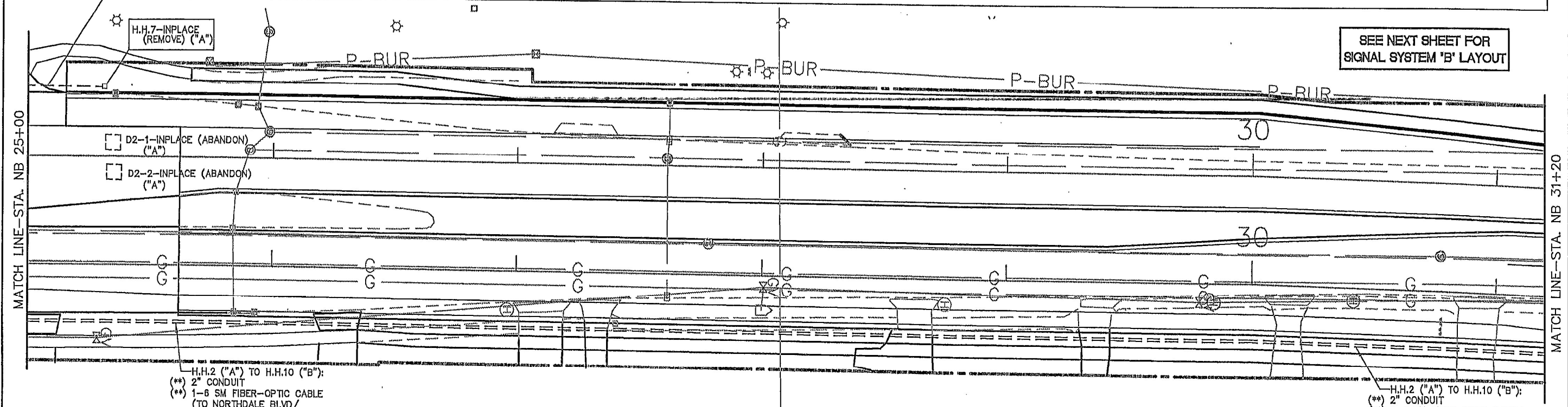
SIGNAL SYSTEM "B" POLE NOTES

- ① PA100 POLE FOUNDATION
TYPE PA100-A-40-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED SHOEBOX
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0 DEG & 180 DEG
R10-X12 SIGN PANEL-ADJACENT TO 1-1
TYPE D SIGN PANEL-OVERHEAD (D-1)
(* INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) (#6,1)
(* ONE WAY EVP LED CONFIRMATION LIGHT AND MOUNTING BRACKET (#6,1)
EXTEND INTO H.H.12:
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)
1-1/c#6 (INS.GR.)
- ② PA90 POLE FOUNDATION
TYPE PA90-A-30-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED SHOEBOX
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
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
TYPE D SIGN PANEL-OVERHEAD (D-2)
(* INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) (#8)
(* ONE WAY EVP LED CONFIRMATION LIGHT AND MOUNTING BRACKET (#8)
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
1-3/c#14 (LUM)
1-1/c#6 (INS.GR.)
- ③ PA100 POLE FOUNDATION
TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED SHOEBOX
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
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
2-R6-1 SIGN PANELS-POLE MOUNTED 0 DEG & 180 DEG
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL-OVERHEAD (D-3)
(* INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) (#2,5)
(* ONE WAY EVP LED CONFIRMATION LIGHT AND MOUNTING BRACKET (#2,5)
EXTEND INTO H.H.6:
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)
1-1/c#6 (INS.GR.)
- ④ PA90 POLE FOUNDATION
TYPE PA90-A-35-D30-9 (DAVIT AT 350 DEG)
LUMINAIRE-LED SHOEBOX
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
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
TYPE D SIGN PANEL-OVERHEAD (D-4)
(* INSTALL 2-ONE WAY EVP DETECTORS (FURNISHED BY COUNTY) (#4-OVERHEAD, AND #8-POLE MOUNTED)
(* ONE WAY EVP LED CONFIRMATION LIGHT AND MOUNTING BRACKET (#4)
(* ONE WAY EVP POLE MOUNTING HARDWARE AT 90 DEG (#8)
EXTEND INTO H.H.9:
3"R.S.C.
2-12/c#14
(* 1-3/c#14
(* 2-3/c#20
2-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (INS.GR.)

H.H.6 TO H.H.7 ("A"):
1 1/4"R.S.C.-INPLACE (REMOVE) ("A")
2-2/c#14-INPLACE (SALVAGE BACK TO H.H.6 AND REINSTALL TO NEW H.H.7A) ("A")

H.H.7-INPLACE (REMOVE) ("A")

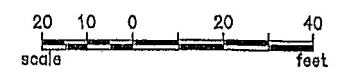
SEE NEXT SHEET FOR SIGNAL SYSTEM "B" LAYOUT



H.H.2 ("A") TO H.H.10 ("B"):
(**) 2" CONDUIT
(**) 1-6 SM FIBER-OPTIC CABLE (TO NORTHDAL BLVD/109TH AVE SIGNAL)

H.H.2 ("A") TO H.H.10 ("B"):
(**) 2" CONDUIT
(**) 1-6 SM FIBER-OPTIC CABLE (TO 111TH AVENUE SIGNAL SYSTEM)

- 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) ITEMS DENOTED BY "A" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "REVISE SIGNAL SYSTEM "A".
 - 5) ITEMS LISTED UNDER "SIGNAL SYSTEM "B" POLE NOTES" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "B".



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

REVISIONS		
NO.	BY	DATE

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: April 23, 2014
Lic. No. 22457

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ANOKA COUNTY
CITIES OF BLAINE
AND COON RAPIDS

SYSTEMS "A-B"/INTERCONNECT
INTERSECTION LAYOUT
CSAH 61 (UNIVERSITY AVE)
(NORTHDAL-109TH AVE TO 11TH AVE)

FILE NO. ANOKC 125457	228
SIGNAL SHEET 11 OF 39	

S.P. 002-651-007
S.P. 106-020-031
S.P. 114-020-046

