

REV. NO.	DATE: / /	CERTIFIED BY <i>Michael P. Manning</i>	LIC. NO. 43957	SEP. 23, 2021	STATE PROJ. NO. 2771-117 (TH 610)	SHEET NO. 70	OF 70	SHEETS
REV. NO.	DATE: / /							

FIBER OPTIC CABLE MARKINGS @  
 SHELTER FIBER RACK \_\_\_\_\_  
 SHELTER ENTRY \_\_\_\_\_

TO 35W @ T.H.10 SHELTER

DISTRICT #: Metro  
 I/PLOT NAME: T22124\_sgl\_systemC.L  
 PATH & FILENAME: Projects\DM\_Ros\01000000\Traffic\Signals\22124(51) UNIV AVE NE S RAMP\PENDING\T22124\_sgl.dgn  
 PLOTTED/REVISED: 26-MAY-2020

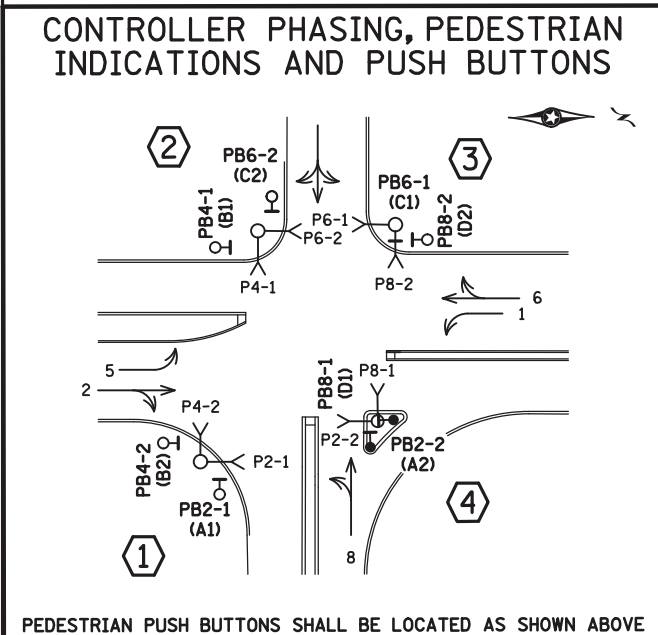
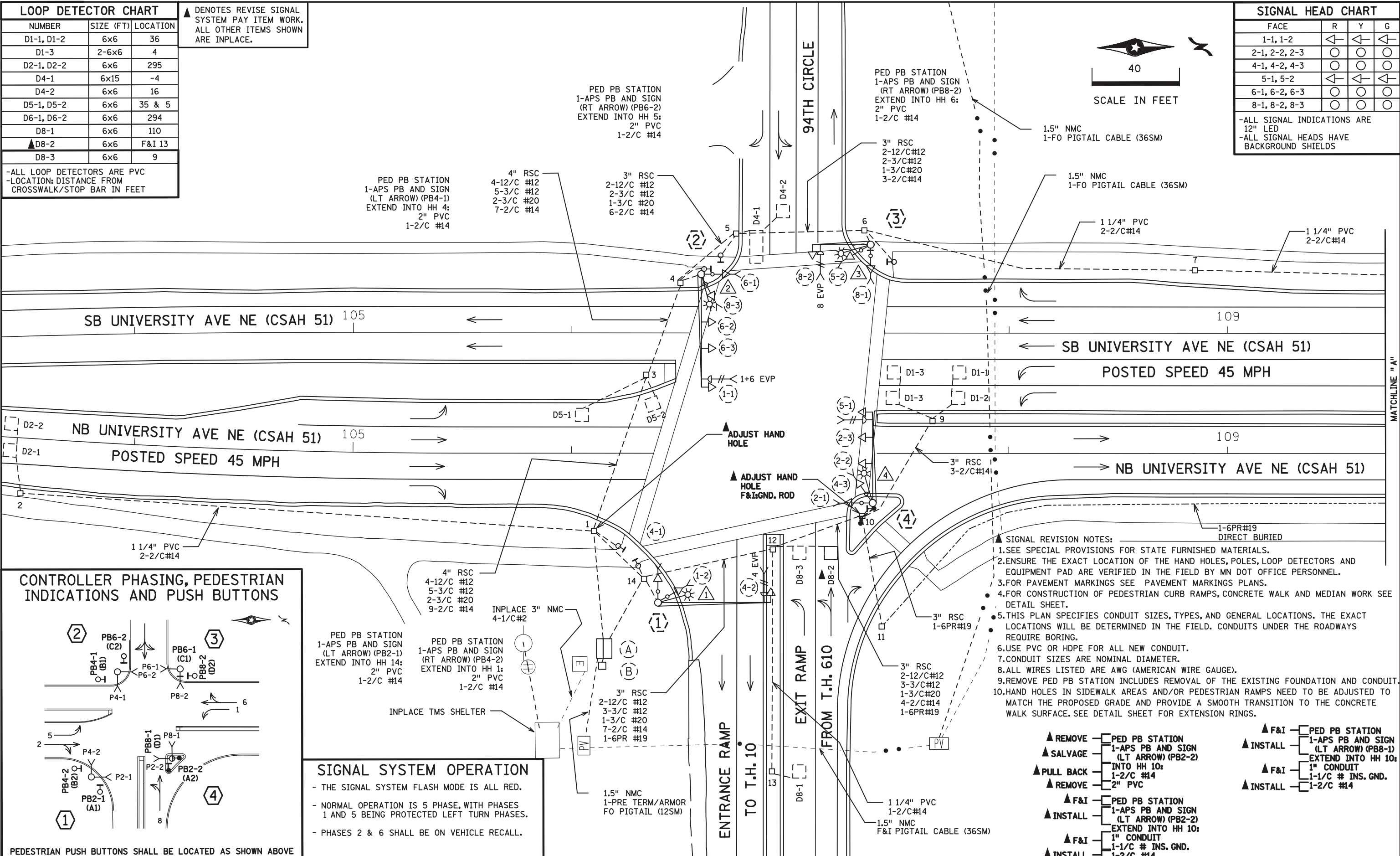
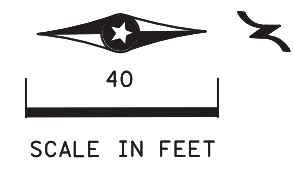
LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D1-2	6x6	36
D1-3	2-6x6	4
D2-1, D2-2	6x6	295
D4-1	6x15	-4
D4-2	6x6	16
D5-1, D5-2	6x6	35 & 5
D6-1, D6-2	6x6	294
D8-1	6x6	110
▲D8-2	6x6	F&I 13
D8-3	6x6	9

-ALL LOOP DETECTORS ARE PVC  
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE INPLACE.

SIGNAL HEAD CHART			
FACE	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	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED  
-ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS



### SIGNAL SYSTEM OPERATION

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

- ### SIGNAL REVISION NOTES:
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
  - ENSURE THE EXACT LOCATION OF THE HAND HOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MN DOT OFFICE PERSONNEL.
  - FOR PAVEMENT MARKINGS SEE PAVEMENT MARKINGS PLANS.
  - FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
  - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  - USE PVC OR HDPE FOR ALL NEW CONDUIT.
  - CONDUIT SIZES ARE NOMINAL DIAMETER.
  - ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  - REMOVE PED PB STATION INCLUDES REMOVAL OF THE EXISTING FOUNDATION AND CONDUIT.
  - HAND HOLES IN SIDEWALK AREAS AND/OR PEDESTRIAN RAMPS NEED TO BE ADJUSTED TO MATCH THE PROPOSED GRADE AND PROVIDE A SMOOTH TRANSITION TO THE CONCRETE WALK SURFACE. SEE DETAIL SHEET FOR EXTENSION RINGS.

- ▲ REMOVE [ ] PED PB STATION
- ▲ SALVAGE [ ] 1-APS PB AND SIGN (LT ARROW) (PB2-2) INTO HH 10; 1-2/C #14
- ▲ PULL BACK [ ] 2" PVC
- ▲ REMOVE [ ] 2" PVC
- ▲ F&I [ ] PED PB STATION
- ▲ INSTALL [ ] 1-APS PB AND SIGN (LT ARROW) (PB2-2) EXTEND INTO HH 10; 1-1/C # INS. GND.
- ▲ F&I [ ] 1" CONDUIT
- ▲ INSTALL [ ] 1-2/C #14

BY	DATE	REVISIONS	SYSTEM ID: 1736078	T.E. 21502	S.A.P. NO.	DRAWN BY: JBA	CKD BY: JDC	DATE: 04/06/20
			METER ADDRESS: 9401 UNIVERSITY AVE. NE		CERTIFIED BY: <i>Michael P. Libinsky</i>		LIC. NO. 19863	DATE: 05/21/2020
			OLD SYSTEM ID: 22124		STATE PROJ. NO. 0214-48 (T.H.10)		SHEET NO. SS12 OF SS27 SHEETS	

INTERSECTION LAYOUT  
 REVISE TRAFFIC CONTROL SIGNAL SYSTEM C  
 T.H. 610/10 AT UNIVERSITY AVE. NE C.S.A.H. 51  
 SOUTH RAMP  
 IN BLAINE & COON RAPIDS, ANOKA COUNTY

DISTRICT: Metro  
 I/PLOT NAME: 22124A\_SGL  
 PATH & FILENAME: Projects\DM罗斯\01000000\Traffic\Signals\22124-151\UNIV AVE NE S RAMP\22124A\_SGL.dgn

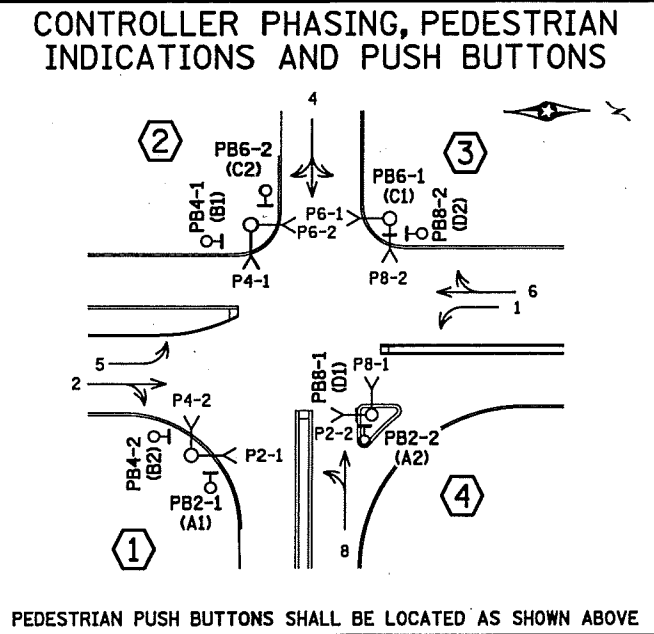
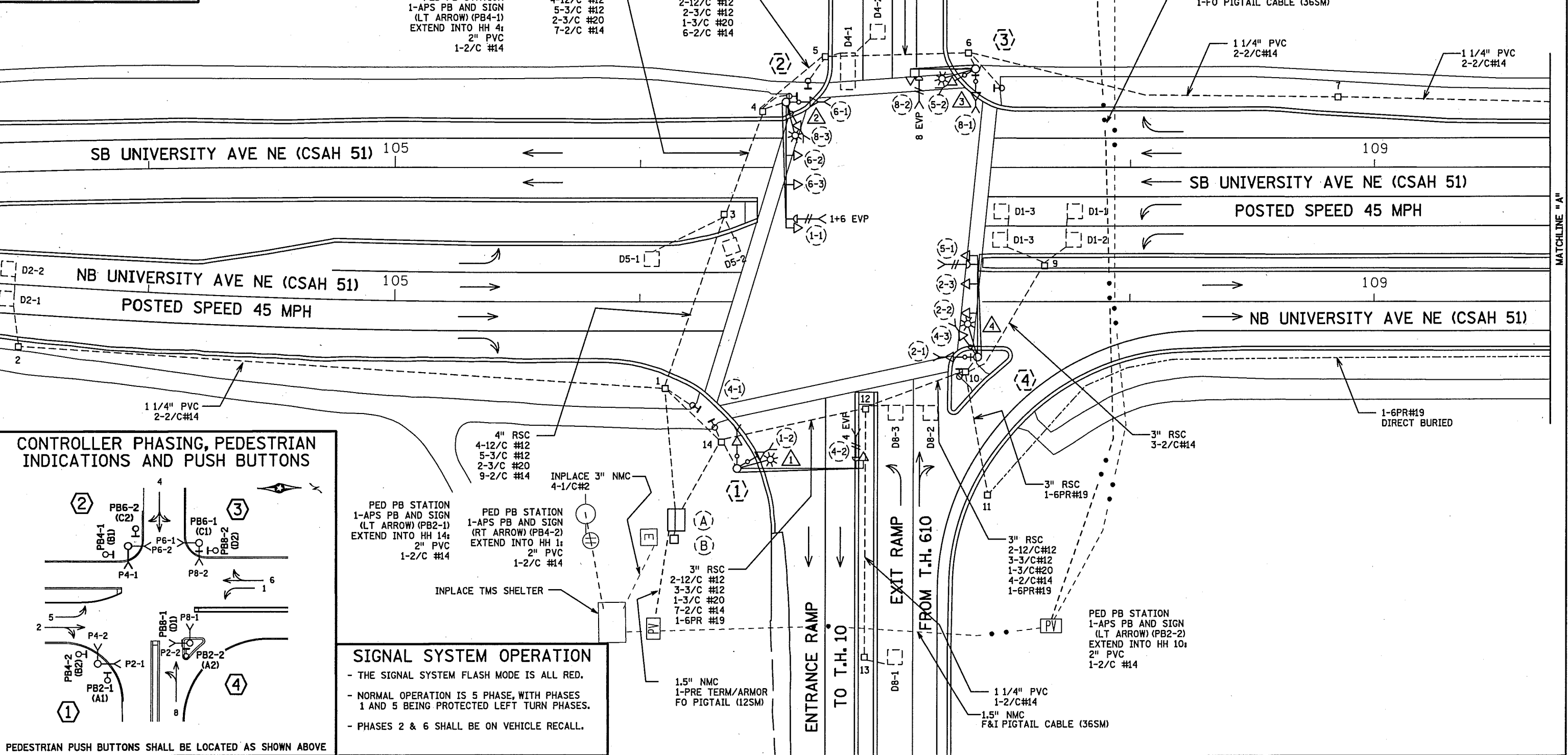
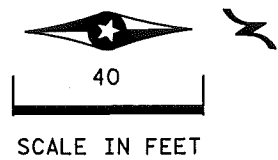
PLOTTED/REVISED: 13-FEB-2019

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D1-2	6x6	36
D1-3	2-6x6	4
D2-1, D2-2	6x6	295
D4-1	6x15	-4
D4-2	6x6	16
D5-1, D5-2	6x6	35 & 5
D6-1, D6-2	6x6	294
D8-1	6x6	110
D8-2, D8-3	6x6	12 & 9

-ALL LOOP DETECTORS ARE PVC  
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL HEAD CHART			
FACE	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	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED  
 -ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS



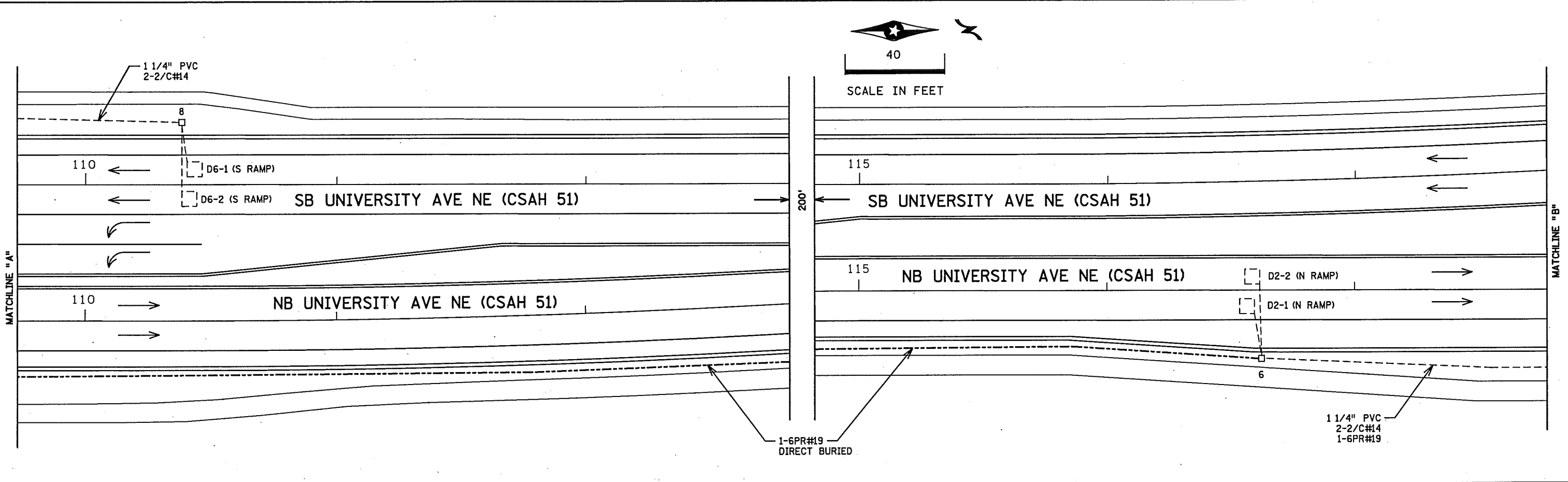
**SIGNAL SYSTEM OPERATION**

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

BY: JBA	DATE: 1/23/19	REVISIONS: GENERAL DRAWING CLEAN UP	SYSTEM ID: 1736078	T.E. 2669	METER ADDRESS: 9401 UNIVERSITY AVE. NE	OLD SYSTEM ID: 22124	INTERSECTION LAYOUT TRAFFIC CONTROL SIGNAL SYSTEM T.H. 610/10 AT UNIVERSITY AVE. NE (C.S.A.H. 51) SOUTH RAMP IN BLAINE & COON RAPIDS, ANOKA COUNTY	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 6-19-17
						CERTIFIED BY: _____ LIC. NO. 19863 DATE: 6-23-17		STATE PROJ. NO. 0205-101 (T.H. 47) SHEET NO. _____ OF _____ SHEETS			

PLOTTED/REVISED: 13-FEB-2019

DISTRICT: Metro  
I/PLOT NAME: 22124A\_SGL  
PATH & FILENAME: Projects\DM\_R05\01000000\Traffic\Signals\22124-15\UNIV AVE NE S RAMP\22124A\_SGL.dgn



② PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 3-ONE WAY SIGNALS OVERHEAD  
 (0', 17' AND 29' FROM END OF MAST ARM)  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASES 1+6)  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 3" RSC TO HH 4:  
 2-12/C #12  
 3-3/C #12  
 1-3/C #20

① PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 ONE WAY SIGNAL OVERHEAD  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASE 4)  
 3" RSC TO HH 14:  
 2-12/C #12  
 2-3/C #12  
 1-3/C #20

③ PA90 POLE FOUNDATION  
 TYPE PA90-A-25-D40-9 (DAVIT AT 350 DEG)  
 ONE WAY SIGNAL OVERHEAD  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASE 8)  
 1-APS PB AND SIGN (LT ARROW) (PB6-1)  
 3" RSC TO HH 6:  
 2-12/C #12  
 2-3/C #12  
 1-3/C #20

④ PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)  
 3-ONE WAY SIGNALS OVERHEAD  
 (0', 11' AND 23' FROM END OF MAST ARM)  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 TYPE 10B WITH C.D. PED IND AT 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASES 2+5)  
 1-APS PB AND SIGN (LT ARROW) (PB8-1)  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 3" RSC TO HH 10:  
 2-12/C #12  
 3-3/C #12  
 1-3/C #20

Ⓐ EQUIPMENT PAD  
 SERVICE CABINET  
 MASTER CONTROLLER, CONTROLLER AND CABINET  
 4" RSC TO HH 14: 4" RSC TO HH 1:  
 4-12/C #12 4-12/C #12  
 3-3/C #12 3-3/C #12  
 8-2/C #14 12-2/C #14  
 2-3/C #20 2-3/C #20  
 1-6PR #19

3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)  
 SERVICE CABINET TO CONTROLLER CABINET:  
 2" RSC  
 2-1/C #6  
 1-1/C #6 INS. GR.  
 SERVICE CABINET TO HH 1:  
 2" RSC  
 4-3/C #12  
 SERVICE CABINET TO TRANSFORMER:  
 2" RSC  
 3-1/C #2  
 HH 1 TO HH 14:  
 2" RSC  
 2-3/C #12  
 CONTROLLER CABINET TO PULL VAULT  
 1-1.5" NMC (IN SPARE 3")  
 1-PRE TERMINATED ARMORED FO PIGTAIL (12SM)

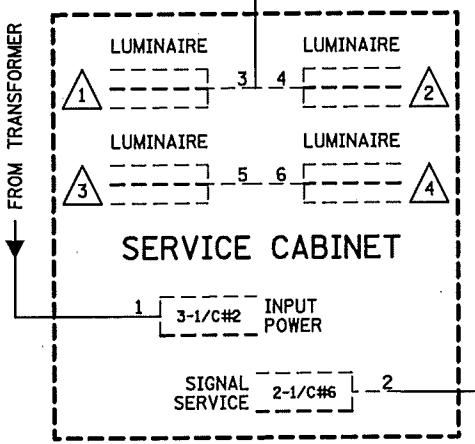
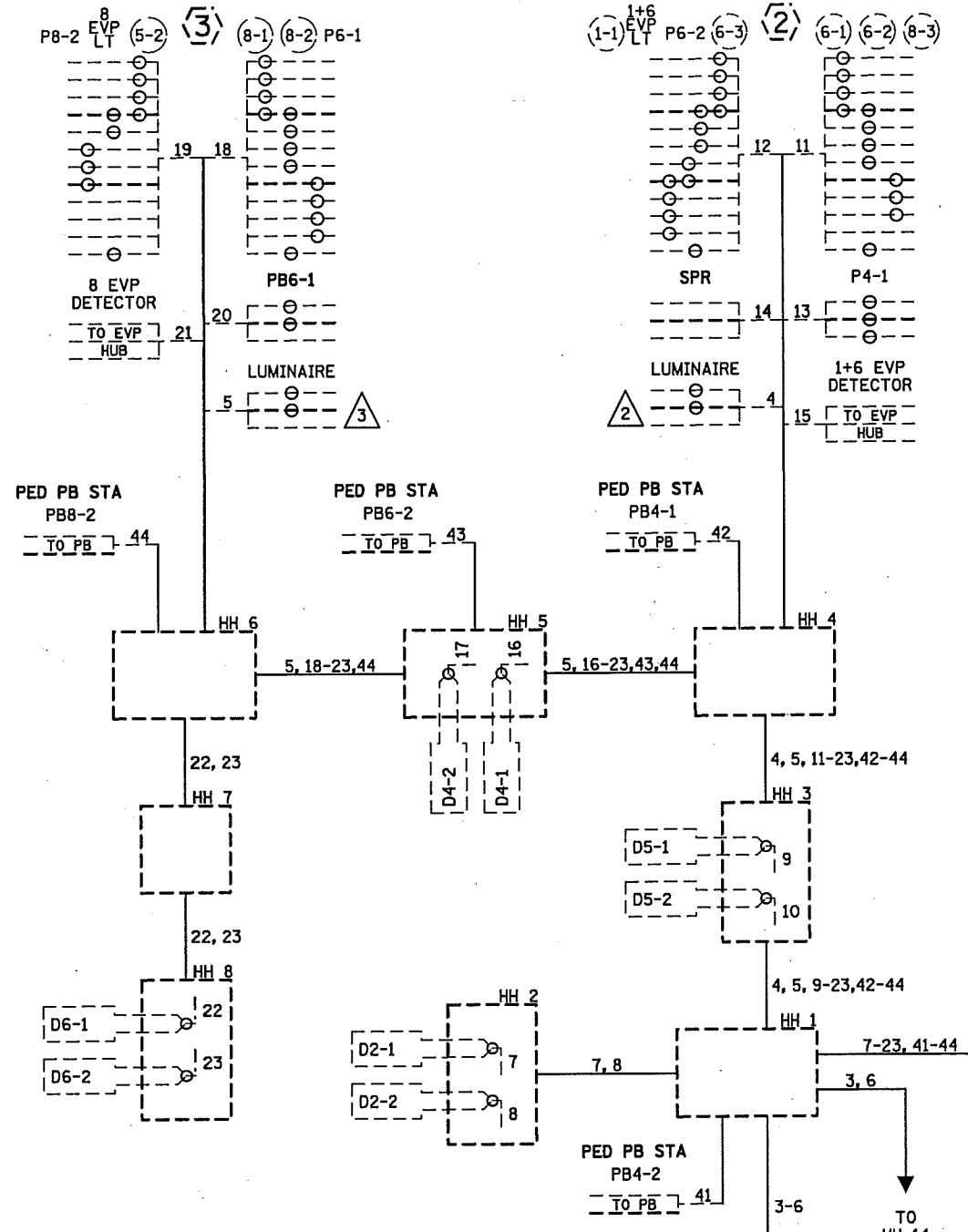
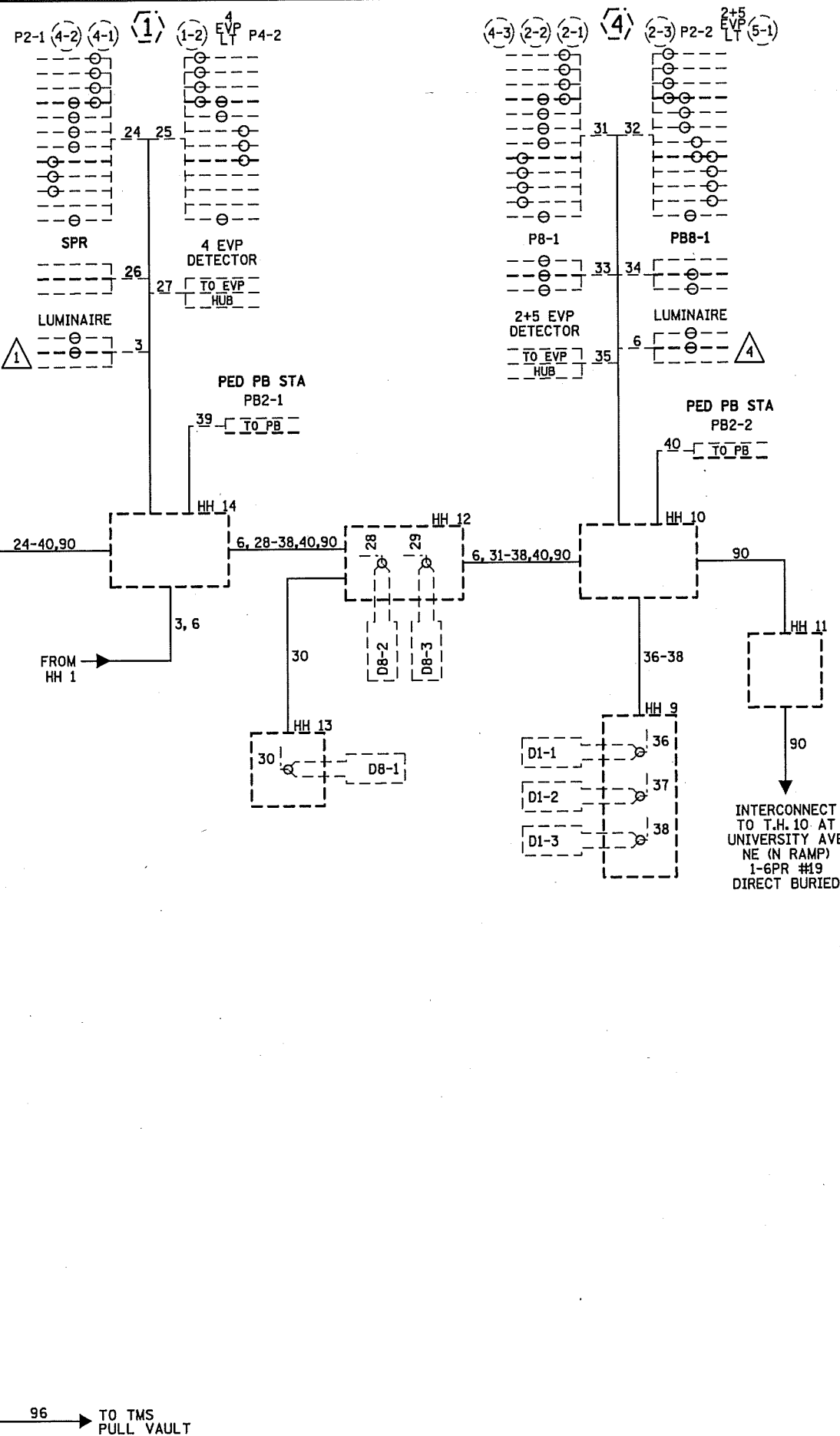
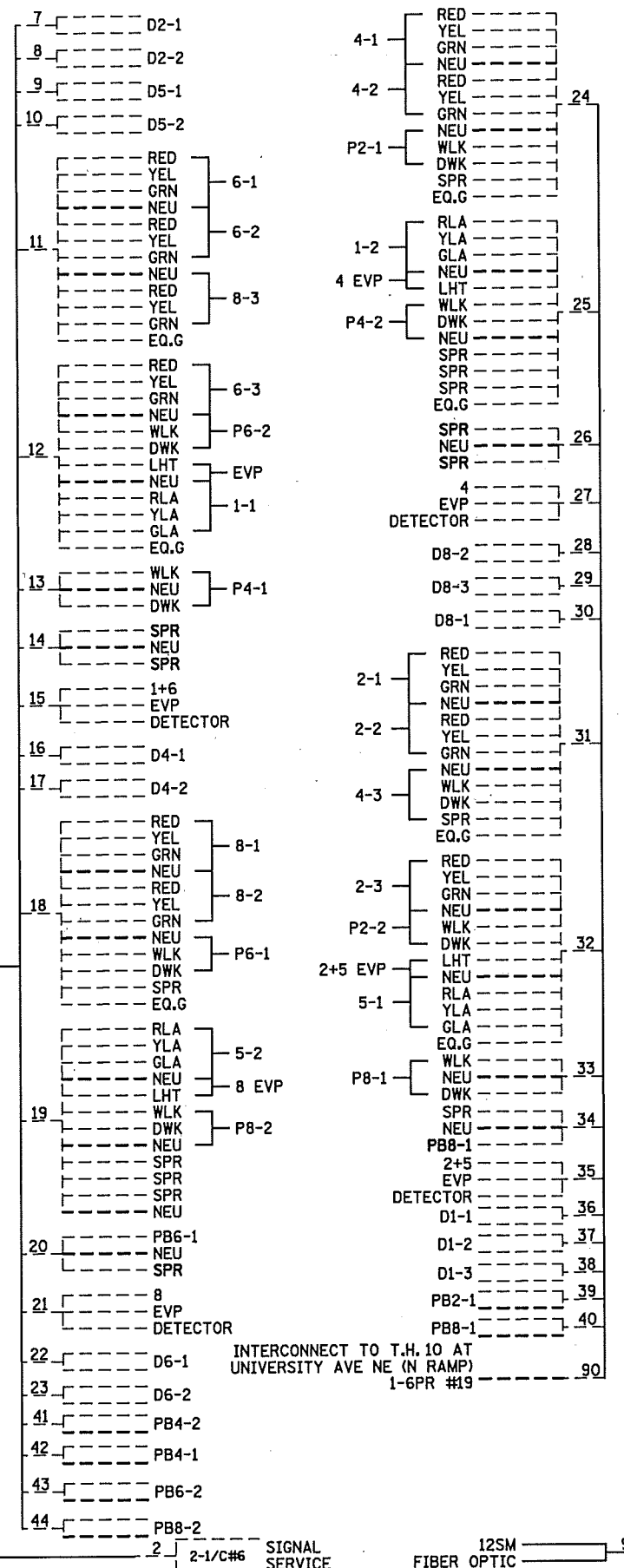
Ⓑ GROUND MOUNT TRANSFORMER  
 2" RSC TO SERVICE CABINET:  
 3-1/C #2

BY	DATE	REVISIONS	SYSTEM ID: 1736078	T.E. 2669	WIRING DIAGRAM	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 6-19-17
JBA	1/23/19	GENERAL DRAWING CLEAN UP	METER ADDRESS: 9401 UNIVERSITY AVE. NE		TRAFFIC CONTROL SIGNAL SYSTEM	CERTIFIED BY _____	LIC. NO. 19863		DATE: 6-23-17
			OLD SYSTEM ID: 22124		T.H. 610/10 AT UNIVERSITY AVE. NE (C.S.A.H. 51)	LICENSED PROFESSIONAL ENGINEER			
					IN BLAINE & COON RAPIDS, ANOKA COUNTY	STATE PROJ. NO. 0205-101 (T.H. 47)	SHEET NO.	OF	SHEETS

PLOTTED/REVISED: 13-FEB-2019

DISTRICT #: Metro  
IPLOT NAME: 22124A\_SGL  
PATH & FILENAME: Projects\DM\_ROS\010\0000V\Traffic\Signals\22124(5)\UNIV AVE NE S RAMP\22124A\_SGL.dgn

### CONTROLLER CABINET



#### CONDUCTOR COLOR CODE

12/C#12	R	3/C#12	R
	O		WH
	BL		BLK
	WH	2/C#14	BLK
	R/BLK		CLR
	O/BLK	3/C#20	R
	BL/BLK		WH
	WH/BLK		BLK
	BLK	2-1/C#4	BLK
	BLK/WH		WH
	G/BLK	2-1/C#6	WH
	G		
5/C#12	R		
	O		
	BL		
	WH		
	G		

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED

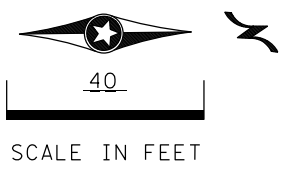


LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D1-2	6x6	36
D1-3	2-6x6	4
D2-1, D2-2	6x6	295
D4-1	6x15	-4
D4-2	6x6	16
D5-1, D5-2	6x6	35 & 5
D6-1, D6-2	6x6	294
D8-1	6x6	110
D8-2, D8-3	6x6	12 & 9

-ALL LOOP DETECTORS ARE PVC  
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

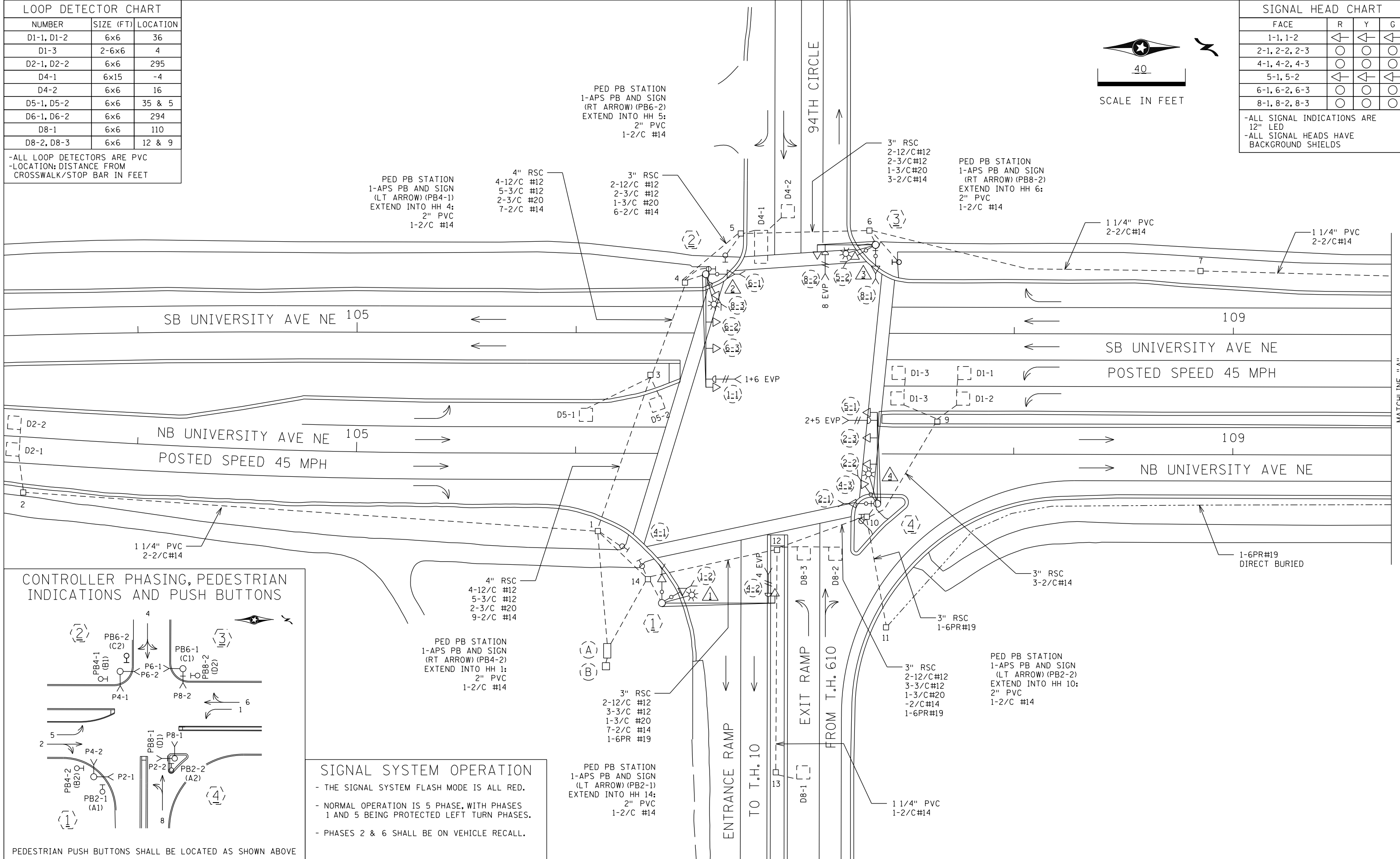
SIGNAL HEAD CHART			
FACE	R	Y	G
1-1, 1-2	◀	◀	◀
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1, 5-2	◀	◀	◀
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED  
-ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS

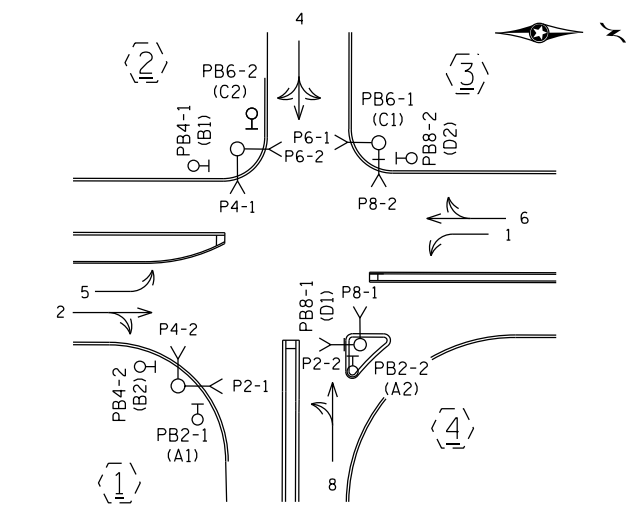


PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

DISTRICT #: \$\$\$@DISTRICT@\$\$  
PLOT NAME: \$\$\$@PLOT\$NAME@\$\$  
PATH & FILENAME: \$\$\$@PATH\$FILENAME@\$\$\$



**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL SYSTEM OPERATION**

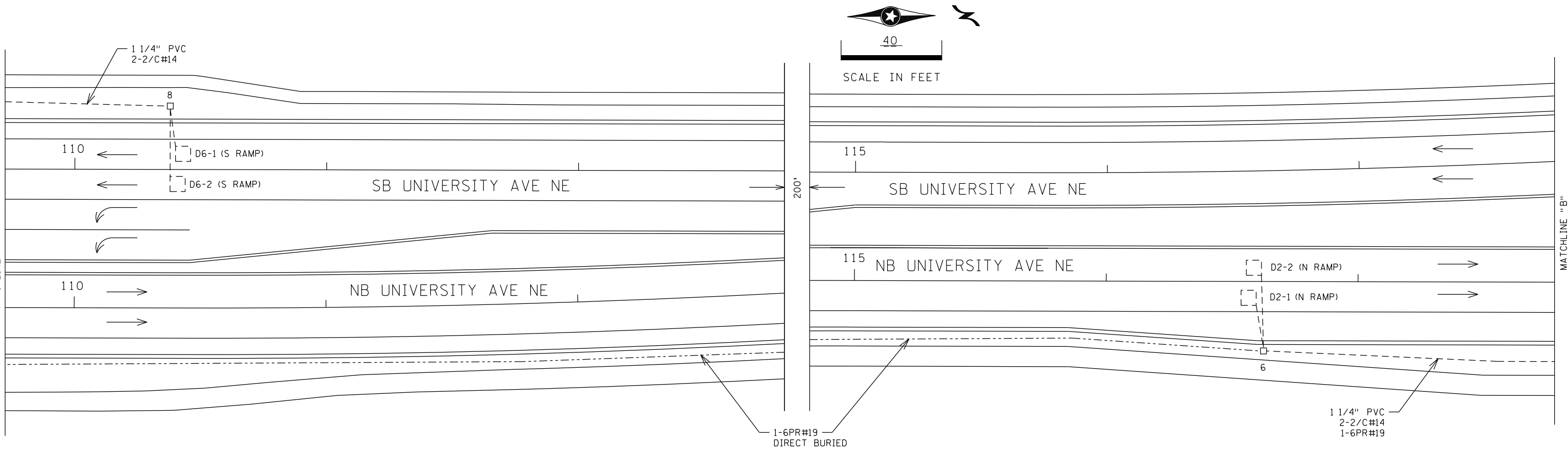
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 5 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 & 6 SHALL BE ON VEHICLE RECALL.

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

BY: EJA	DATE: 07-22-15	AS-BUILT OF SP 8825-393 APS ADDED	SYSTEM ID: 22124	T.E.	INTERSECTION LAYOUT	S.A.P. NO.	DRAWN BY: GDS	CKD BY: BIJ	DATE: 4-21-11
			METER ADDRESS: 9401 UNIVERSITY AVE NE		TH 10/610 AT CSAH 51 (UNIVERSITY AVE NE) SOUTH RAMP	CERTIFIED BY:	LICENSED PROFESSIONAL ENGINEER	LIC. NO.:	DATE:
			MASTER ID: 21225	T.E.	IN BLAINE AND COON RAPIDS, ANOKA COUNTY	STATE PROJ. NO.:	SHEET NO. 1 OF 3 SHEETS		

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

DISTRICT #: \$\$\$@DISTRICT@\$  
PLOT NAME: \$\$\$@PLOT\$NAME@\$\$  
PATH & FILENAME: \$\$\$@PATH\$FILENAME@\$\$\$



(2) PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 3-ONE WAY SIGNALS OVERHEAD  
 (0', 17' AND 29' FROM END OF MAST ARM)  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASES 1+6)  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 3" RSC TO HH 4:  
 2-12/C #12  
 3-3/C #12  
 1-3/C #20

(1) PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 ONE WAY SIGNAL OVERHEAD  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASE 4)  
 3" RSC TO HH 14:  
 2-12/C #12  
 2-3/C #12  
 1-3/C #20

(3) PA90 POLE FOUNDATION  
 TYPE PA90-A-25-D40-9 (DAVIT AT 350 DEG)  
 ONE WAY SIGNAL OVERHEAD  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASE 8)  
 1-APS PB AND SIGN (LT ARROW) (PB6-1)  
 3" RSC TO HH 6:  
 2-12/C #12  
 2-3/C #12  
 1-3/C #20

(4) PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)  
 3-ONE WAY SIGNALS OVERHEAD  
 (0', 11' AND 23' FROM END OF MAST ARM)  
 2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
 TYPE 10B WITH C.D. PED IND AT 270 DEG  
 LUMINAIRE-200W HPS  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (4' FROM END OF MAST ARM) (PHASES 2+5)  
 1-APS PB AND SIGN (LT ARROW) (PB8-1)  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 3" RSC TO HH 10:  
 2-12/C #12  
 3-3/C #12  
 1-3/C #20

(A) EQUIPMENT PAD  
 SERVICE CABINET  
 MASTER CONTROLLER, CONTROLLER AND CABINET  
 4" RSC TO HH 14: 4" RSC TO HH 1:  
 4-12/C #12 4-12/C #12  
 3-3/C #12 3-3/C #12  
 8-2/C #14 12-2/C #14  
 2-3/C #20 2-3/C #20  
 1-6PR #19  
 3" RSC STUBBED OUT (THREADED  
 AND CAPPED BOTH ENDS)  
 SERVICE CABINET TO CONTROLLER CABINET:  
 2" RSC  
 2-1/C #6  
 1-1/C #6 INS. GR.  
 SERVICE CABINET TO HH 1:  
 2" RSC  
 4-3/C #12  
 SERVICE CABINET TO TRANSFORMER:  
 2" RSC  
 3-1/C #2  
 HH 1 TO HH 14:  
 2" RSC  
 2-3/C #12

(B) GROUND MOUNT TRANSFORMER  
 2" RSC TO SERVICE CABINET:  
 3-1/C #2

BY	DATE	REVISIONS
EJA	07-22-15	AS-BUILT OF SP 8825-393 APS ADDED

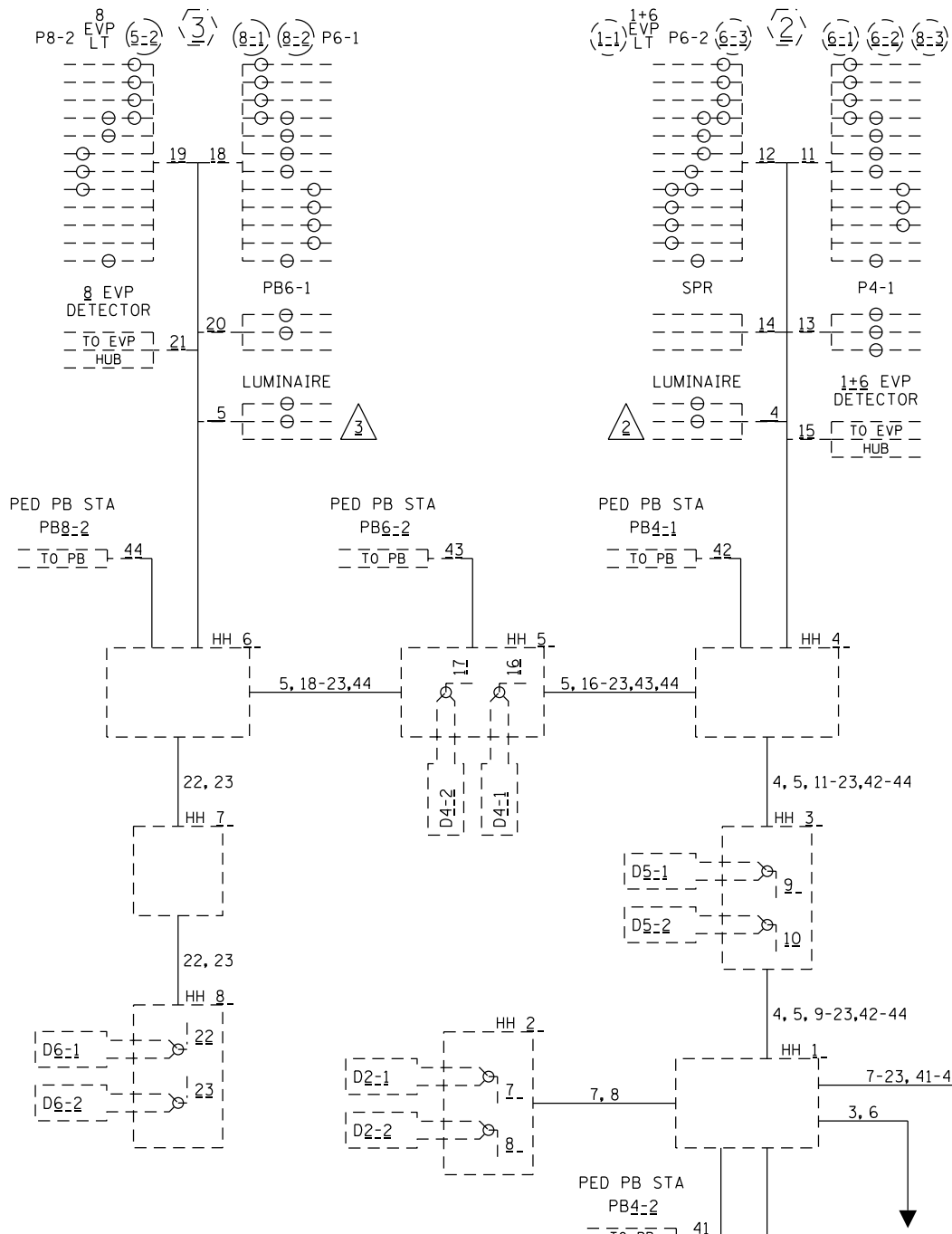
SYSTEM ID: 22124 \_\_\_\_\_ T.E. \_\_\_\_\_  
 METER ADDRESS: 9401-UNIVERSITY AVE NE \_\_\_\_\_  
 MASTER ID: 21225 \_\_\_\_\_ T.E. \_\_\_\_\_

MATCH LINE LAYOUTS AND NOTES  
 TH 10/610 AT CSAH 51 (UNIVERSITY AVE NE)  
 SOUTH RAMP  
 IN BLAINE AND COON RAPIDS, ANOKA COUNTY

S.A.P. NO. \_\_\_\_\_ DRAWN BY: GDS CKD BY: BIJ DATE: 4-21-11  
 CERTIFIED BY \_\_\_\_\_ LIC. NO. \_\_\_\_\_ DATE: \_\_\_\_\_  
 LICENSED PROFESSIONAL ENGINEER  
 STATE PROJ. NO. \_\_\_\_\_ SHEET NO. 2 OF 3 SHEETS

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

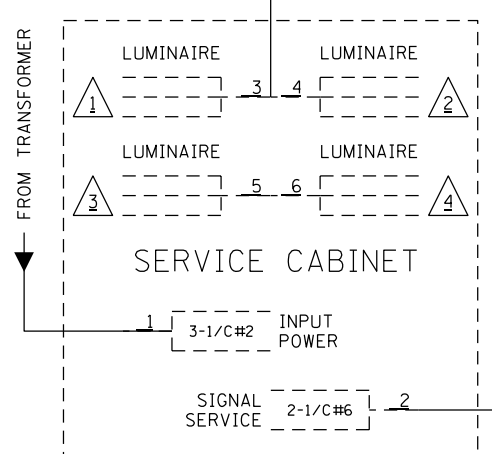
DISTRICT #: \$@DISTRICT@\$  
 PLOT NAME: \$\$\$@PLOT\$NAME@\$  
 PATH & FILENAME: \$\$\$@PATH\$FILENAME@\$\$\$



**CONDUCTOR COLOR CODE**

R	R
O	3/C#12 WH
BL	BLK
WH	
R/BLK	2/C#14 BLK
O/BLK	CLR
BL/BLK	
WH/BLK	3/C#20 R
BLK	WH
BLK/WH	BLK
G/BLK	
G	2-1/C#4 BLK
	2-1/C#6 WH
5/C#12 R	
O	
BL	
WH	
G	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED



**CONTROLLER CABINET**

