

PLOTTED/REVISED: 28-DEC-2023

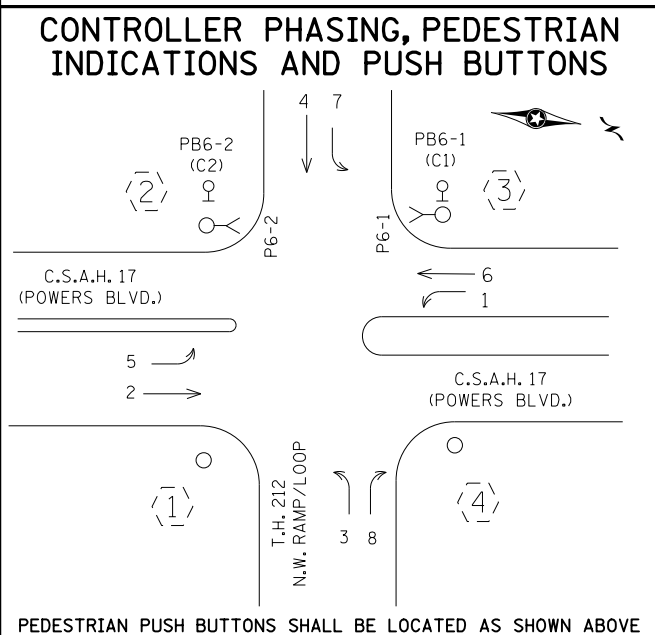
DISTRICT *: Metro
PLOT NAME: T1736526_sgl
FILENAME: Projects\DM_FROSA\21200007\Traffic\Signals\5191\T1736526\T1736526_sgl.dgn

SIGNAL HEAD CHART							
FACE	R	Y	G	RLTA	YLTA	GLTA	FYA
1-1, 1-2	←	←	←				←
2-1, 2-2, 2-3	○	○	○				
3-1, 3-2, 3-3	←	←	←				←
4-1	○	○	○				
4-2	○	○	○				
5-2, 5-3	←	←	←				←
6-1, 6-2, 6-3	○	○	○				
7-1, 7-2	←	←	←				←
8-1, 8-2	○	○	○				

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

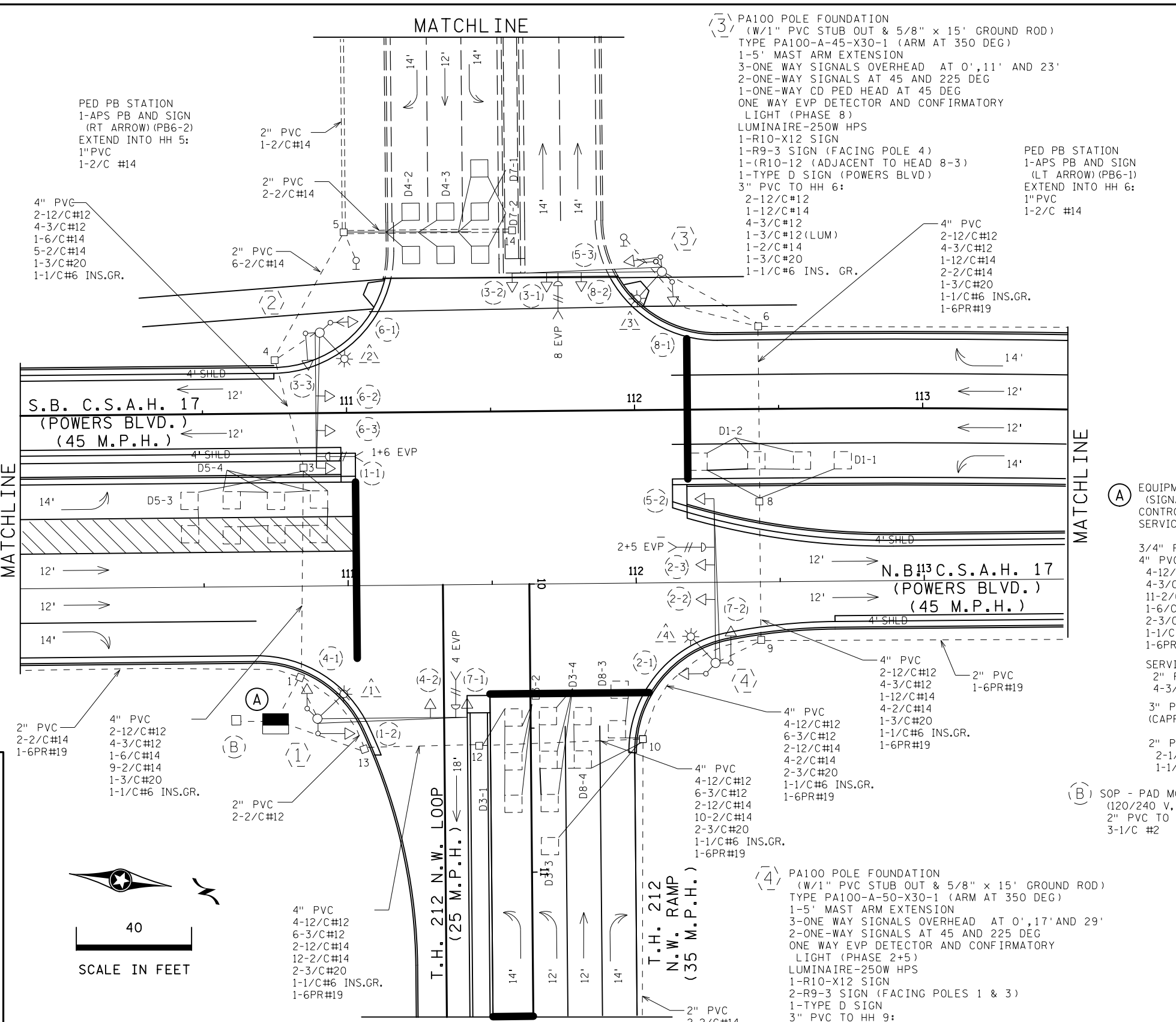
(2) PA100 POLE FOUNDATION
(W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-45-X30-1 (ARM AT 350 DEG)
3-ONE WAY SIGNALS OVERHEAD AT 0, 11, AND 23'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
1-ONE-WAY CD PED HEAD AT 45 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 1+6)
LUMINAIRE-250W HPS
1-R10-X12 SIGN
1-R9-3 SIGN (FACING POLE 1)
1-TYPE D SIGN
3" PVC TO HH 4:
2-12/C#12
3-3/C#12
1-3/C#12 (LUM)
1-2/C#14
1-6/C#14
1-3/C#20
1-1/C#6 INS. GR.

(1) PA100 POLE FOUNDATION
(W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-50-X30-1 (ARM AT 350 DEG)
2-ONE WAY SIGNAL OVERHEAD AT 0' AND 11'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
LUMINAIRE-250W HPS
1-R10-X12 SIGN
2-R9-3 SIGNS (FACING POLES 2 & 4)
1-(R10-12 (ADJACENT TO HEAD 4-2)
1-TYPE D SIGN (POWERS BLVD)
3" PVC TO HH 1:
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#6 INS. GR.



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

BY	DATE	REVISIONS
SJK	12/08/22	AS-BUILT PLAN SP 1017-106
SJK	12/28/23	OPERATION UPDATES



SIGNAL SYSTEM OPERATION
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5 & 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.

LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	
D1-1	6x6	55	
D1-2	3-6x6	10, 25 & 40	
D2-1, D2-2	6x6	300	
D3-1	2-6x6	20 & 35	
D3-2	6x6	5	
D3-3	6x6	50	
D3-4	3-6x6	5, 20 & 35	
D4-1	6x6	120	
D4-2, D4-3	2-6x6	5 & 20	
D5-3	6x6	55	
D5-4	3-6x6	10, 25 & 40	
D6-1, D6-2	6x6	300	
D7-1	2-6x6	20 & 50	
D7-2	6x6	5	
D8-1, D8-2	6x6	180	
D8-3	2-6x6	-5 & 10	
D8-4	2-6x6	5 & 20	

- ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
- LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

(A) EQUIPMENT PAD - TYPE 3 (SIGNAL, LIGHTING) CONTROLLER AND CABINET SERVICE CABINET
3/4" PVC FOR FUTURE PHONE DROP
4" PVC TO HH 1:
4-12/C#12
4-3/C#12
11-2/C#14
1-6/C#14
2-3/C#20
1-1/C#6 INS. GR.
1-6PR#19
SERVICE CABINET TO HH 13
2" PVC
4-3/C#12
3" PVC STUBBED OUT TO THE EAST (CAPPED BOTH ENDS)
2" PVC TO SERVICE CABINET
2-1/C#6
1-1/C#6 INS. GR.

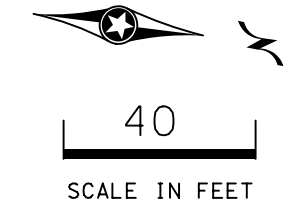
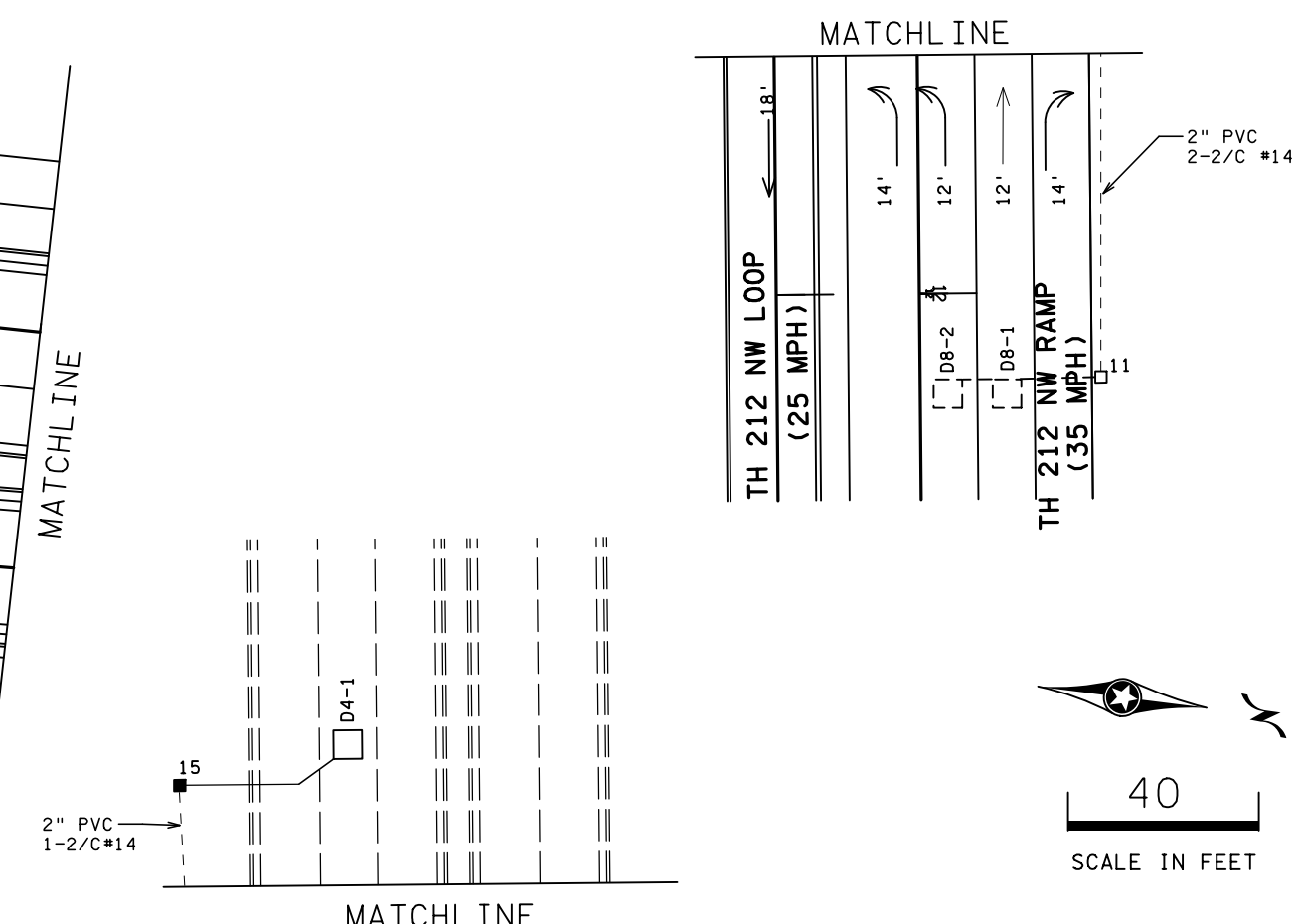
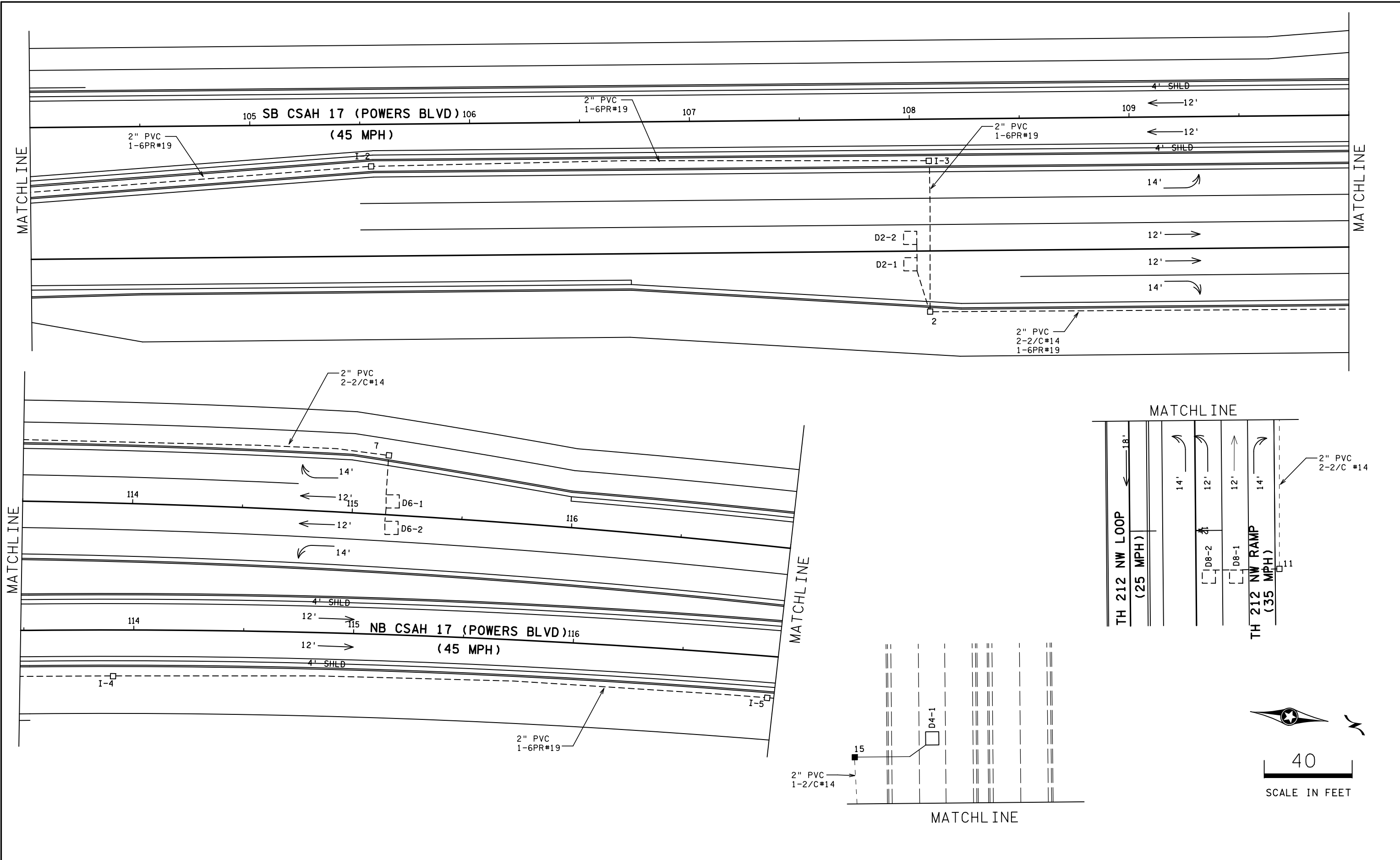
(B) SOP - PAD MOUNTED TRANSFORMER (BY XCEL ENERGY) (120/240 V, SINGLE PHASE, 50 KVA)
2" PVC TO SERVICE CABINET
3-1/C #2

SYSTEM ID: 1736526 T.E.		S.A.P. NO.		DRAWN BY:	CKD BY:	DATE:
METER ADDRESS: 9200 POWERS BLVD		CERTIFIED BY _____		LIC. NO. _____ DATE: _____		
OLD SYSTEM ID: 38512		STATE PROJ. NO. 1017-106 (T.H.212)		SHEET NO. 1 OF 3 SHEETS		

**INTERSECTION LAYOUT
TH 212 AT POWERS BLVD NORTH RAMP
IN CHANHASSEN, CARVER COUNTY**

PLOTTED/REVISED: 28-DEC-2023

DISTRICT *: Metro
 PLOT NAME: T1736526.sgl
 FILENAME: Projects\DM_FROSA\212\0000\Traffic\Signals\5191\IT1\POWERS BLVD N R-IT-36526\T1736526.sgl.dgn



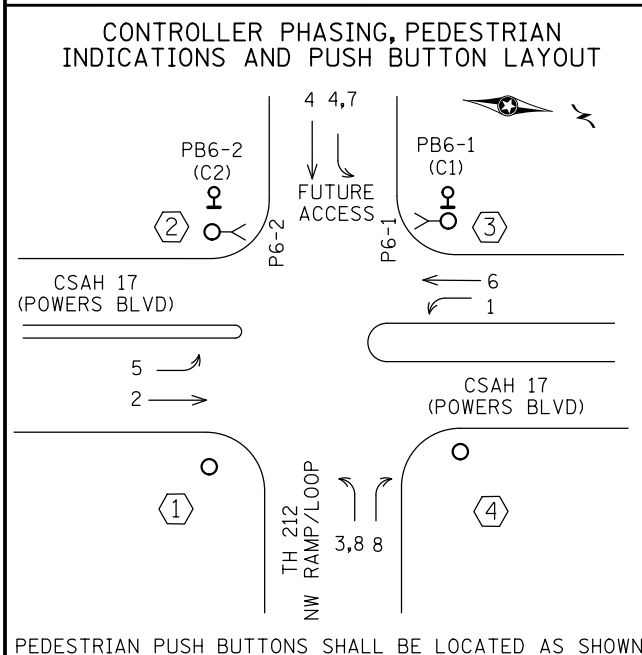
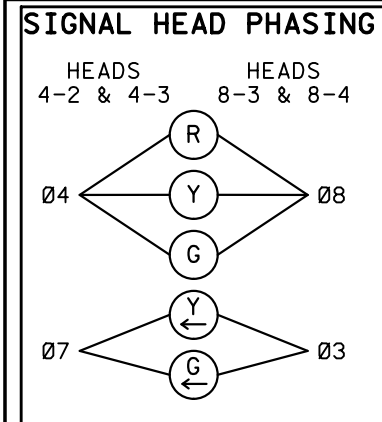
BY		DATE		REVISIONS		SYSTEM ID: 1736526		T.E.		S.A.P. NO.		DRAWN BY:		CKD BY:		DATE:	
SJK		12/08/22		AS-BUILT PLAN SP 1017-106		METER ADDRESS: 9200 POWERS BLVD		TH 212 AT POWERS BLVD NORTH RAMP		CERTIFIED BY _____		LIC. NO. _____		DATE: _____		STATE PROJ.NO. 1017-106 (T.H.212)	
SJK		12/28/23		OPERATION UPDATES		OLD SYSTEM ID: 38512		IN CHANHASSEN, CARVER COUNTY		LICENSED PROFESSIONAL ENGINEER						SHEET NO. 2 OF 3 SHEETS	

PLOTTED/REVISED: 2/3/2015

DISTRICT #: METRO
IPLOT NAME: T38436.LAY
PATH & FILENAME: IP_PWP-d0784994T38436_SGL2.dgn

SIGNAL HEAD CHART						
FACE	R	Y	G	RLTA	YLTA	GLTA
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, 8-4	○	○	○	←	←	←

-ALL SIGNAL INDICATIONS ARE 12"LEDS
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD
-ALL SIGNAL HEADS ARE BLACK POLYCARBONATE



② PA100 POLE FOUNDATION (W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-45-X30-1 (ARM AT 350 DEG)
3-ONE WAY SIGNALS OVERHEAD AT 0, 11, AND 23'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
1-ONE-WAY CD PED HEAD AT 45 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6 & 1)
LUMINAIRE-250W HPS
1-R9-3 SIGN (FACING POLE 1)
2-TYPE D SIGNS
3" PVC TO HH 4:
2-12/C#12
3-3/C#12
1-3/C#12(LUM)
1-2/C#14
1-3/C#20
1-1/C#6 INS. GR.

PED PB STATION
1-APS PB AND SIGN (RT ARROW) (PB6-2)
EXTEND INTO HH 5:
1" PVC
1-2/C #14

① PA100 POLE FOUNDATION (W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-50-X30-1 (ARM AT 350 DEG)
ONE WAY SIGNAL OVERHEAD AT 0'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
LUMINAIRE-250W HPS
2-R9-3 SIGNS (FACING POLES 2 & 4)
1-(R10-12 (ADJACENT TO HEAD 4-2)
2-TYPE D SIGNS
3" PVC TO HH 1:
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#6 INS. GR.

4" PVC
4-12/C#12
6-3/C#12
11-2/C#14
2-3/C#20
1-1/C#6 INS. GR.
1-6PR#19

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES, AND PHASE 3 AND 7 BEING PROTECTED/PERMISSIVE.

MATCHLINE J4

MATCHLINE J1

FUTURE ACCESS

TH 212 NW LOOP (25 MPH)

TH 212 NW RAMP (35 MPH)

MATCHLINE J3

FUTURE TURN LANE

③ PA100 POLE FOUNDATION (W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-45-X30-1 (ARM AT 350 DEG)
2-ONE WAY SIGNALS OVERHEAD AT 0' AND 11'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
1-ONE-WAY CD PED HEAD AT 45 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8)
LUMINAIRE-250W HPS
1-R9-3 SIGN (FACING POLE 4)
1-(R10-12 (ADJACENT TO HEAD 8-3)
2-TYPE D SIGNS
3" PVC TO HH 6:
2-12/C#12
4-3/C#12
1-3/C#12(LUM)
1-2/C#14
1-3/C#20
1-1/C#6 INS. GR.

PED PB STATION
1-APS PB AND SIGN (LT ARROW) (PB6-1)
EXTEND INTO HH 6:
1" PVC
1-2/C #14

④ PA100 POLE FOUNDATION (W/1" PVC STUB OUT & 5/8" x 15' GROUND ROD)
TYPE PA100-A-50-X30-1 (ARM AT 350 DEG)
3-ONE WAY SIGNALS OVERHEAD AT 0', 17' AND 29'
2-ONE-WAY SIGNALS AT 45 AND 225 DEG
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2 & 5)
LUMINAIRE-250W HPS
2-R9-3 SIGN (FACING POLES 1 & 3)
2-TYPE D SIGNS
3" PVC TO HH 9:
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C #6 INS. GR.

NOTES:
1. SIGNAL IS DESIGNED FOR FUTURE 4 AND 7 ACCESS
2. PHASE 8 IS LEFT AND RIGHT TURN ONLY.

LOOP DETECTORS

DESIGNATION	NO. OF LOOPS	LOCATION
D1-1	1	40
D1-2	1	10
D2-1, D2-2	1	300
D3-1	2	20 & 50
D3-2	2	5 & 35
D4-1*	1	120
D4-2*, D4-3*	2	5 & 20
D5-1, D5-2	1	40
D5-3, D5-4	1	10
D6-1, D6-2	1	300
D7-1*	2	20 & 50
D7-2*	2	5 & 35
D8-1, D8-2	1	180
D8-3	2	-5 & 10
D8-4, D8-5	2	5 & 20

-ALL LOOP DETECTORS ARE 6' X 6' PVC
-LOCATION: DISTANCE FROM CROSSWALK/ STOP LINE IN FEET
* D4-1, D4-2, D4-3, D7-1 & D7-2 (FUTURE LOOPS-LEAD-INS COILED IN HH'S)

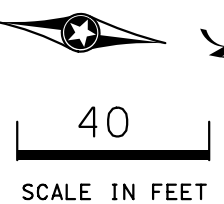
① EQUIPMENT PAD - TYPE 3 (SIGNAL, LIGHTING) CONTROLLER AND CABINET SERVICE CABINET 3/4" PVC FOR FUTURE PHONE DROP 4" PVC TO HH 1:
4-12/C#12 4" PVC TO HH 13:
4-3/C#12 4-12/C#12
11-2/C#14 4-3/C#12
2-3/C#20 11-2/C#14
1-1/C#6 INS. GR. 2-3/C#20
1-6PR#19 1-1/C#6 INS. GR.
1-6PR#19

SERVICE CABINET TO HH 13
2" PVC
4-3/C#12

3" PVC STUBBED OUT TO THE EAST (CAPPED BOTH ENDS)

2" PVC TO SERVICE CABINET
2-1/C#6
1-1/C#6 INS. GR.

② SOP - PAD MOUNTED TRANSFORMER (BY XCEL ENERGY) (120/240 V, SINGLE PHASE, 50 KVA)
2" PVC TO SERVICE CABINET
3-1/C #2



BY	DATE	REVISIONS
EJA	02-03-15	AS-BUILT OF SP 8825-473 APS & CD PEDS

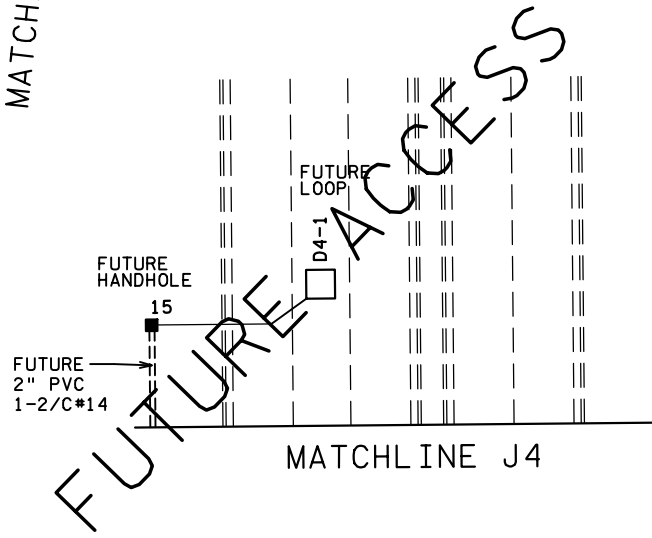
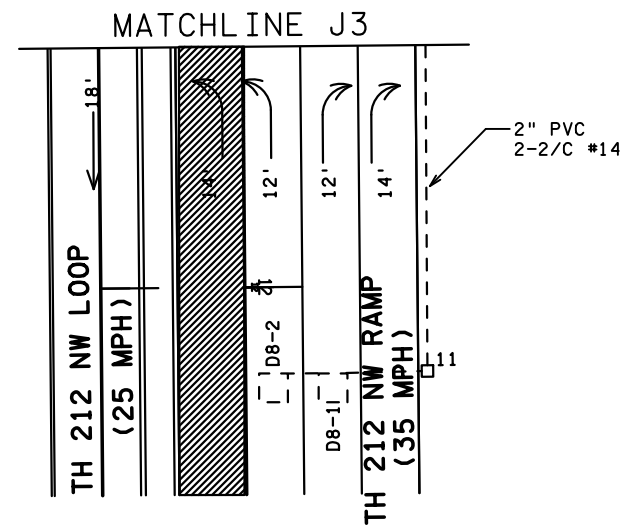
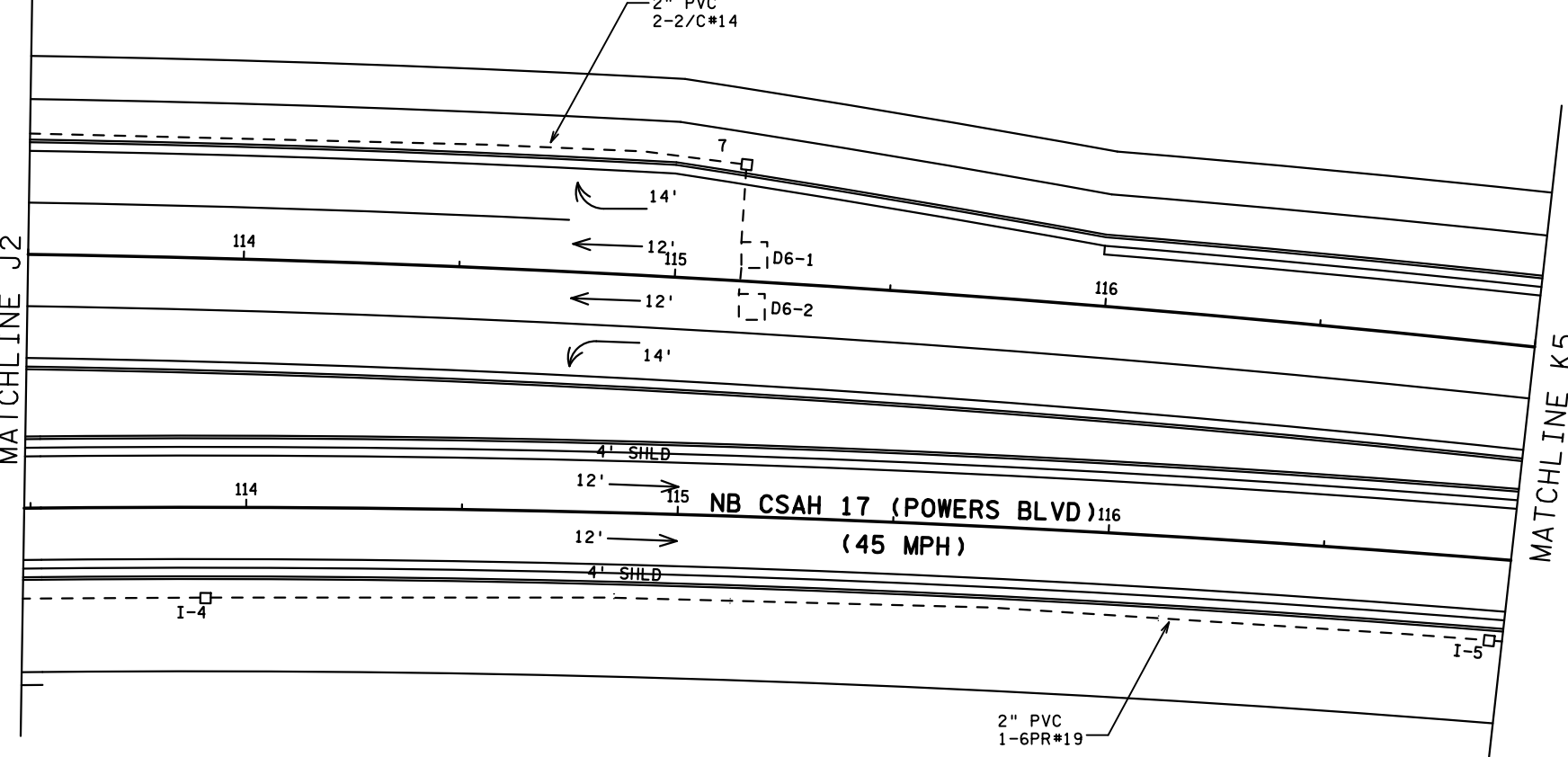
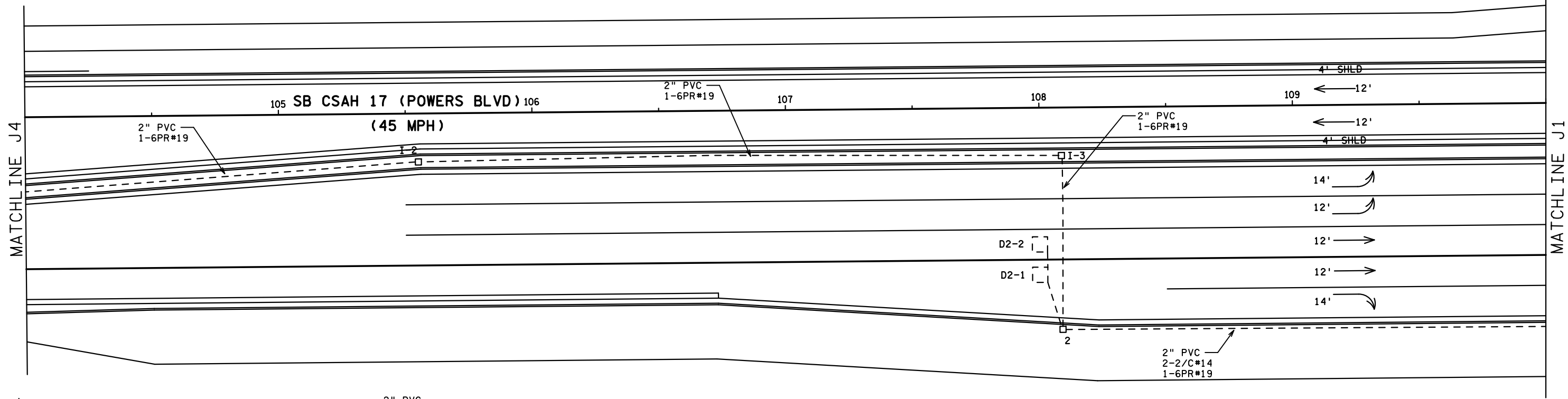
SYSTEM ID: 38436	T.E.
METER ADDRESS: 9200 POWERS BLVD	
MASTER ID: 38512	T.E.

INTERSECTION LAYOUT
TH 212 AT
CSAH 17 (POWERS BLVD) NORTH RAMPS
IN CHANHASSEN, CARVER COUNTY

S.A.P. NO.	DRAWN BY: CDB	CKD BY: CDB	DATE: 10-28-13
CERTIFIED BY _____	LIC. NO. _____	DATE: 2/11/14	
STATE PROJ. NO. (TH 212)	SHEET NO. 1 OF 3 SHEETS		

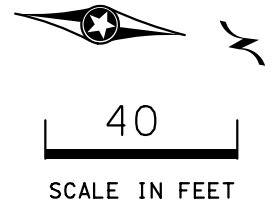
PLOTTED/REVISED: 2/3/2015

DISTRICT #: METRO
IPLOT NAME: T38436.JML
PATH & FILENAME: IP_PWP-d0784994T38436_SGL2.dgn



NOTES:

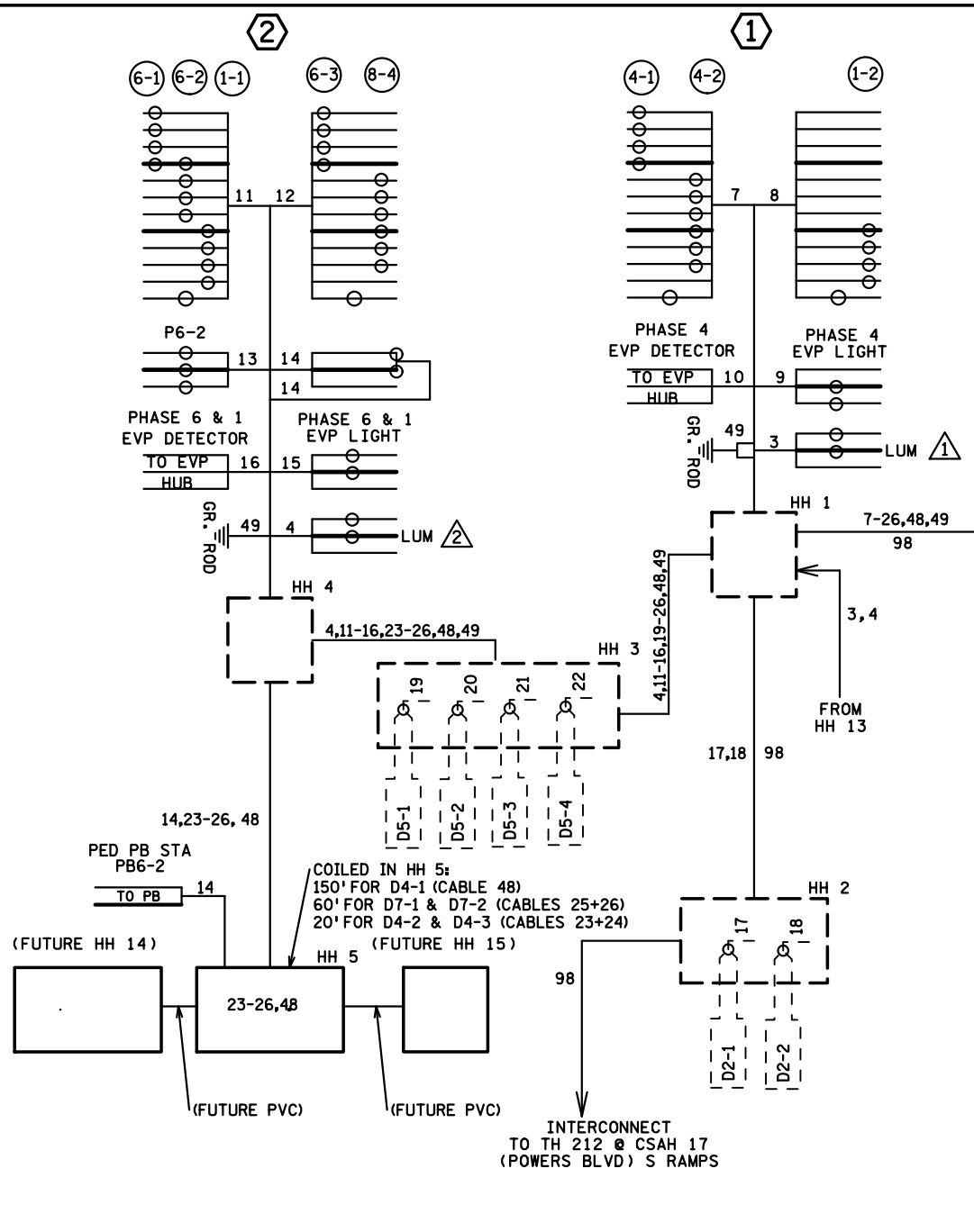
- 1. SIGNAL IS DESIGNED FOR FUTURE 4 AND 7 ACCESS
- 2. PHASE 8 IS LEFT AND RIGHT TURN ONLY.



BY	DATE	REVISIONS	SYSTEM ID: 38436	T.E.	MATCHLINE LAYOUT TH 212 AT CSAH 17 (POWERS BLVD) NORTH RAMPS IN CHANHASSEN, CARVER COUNTY	S.A.P. NO.	DRAWN BY: CDB	CKD BY: CDB	DATE: 10-28-13
EJA	02-03-15	AS-BUILT OF SP 8825-473 APS & CD PEDS	METER ADDRESS: 9200 POWERS BLVD			CERTIFIED BY _____	LIC. NO. _____	DATE: 2/11/14	
			MASTER ID: 38512	T.E.		LICENSED PROFESSIONAL ENGINEER			
						STATE PROJ. NO. (TH 212)	SHEET NO. 2 OF 3 SHEETS		

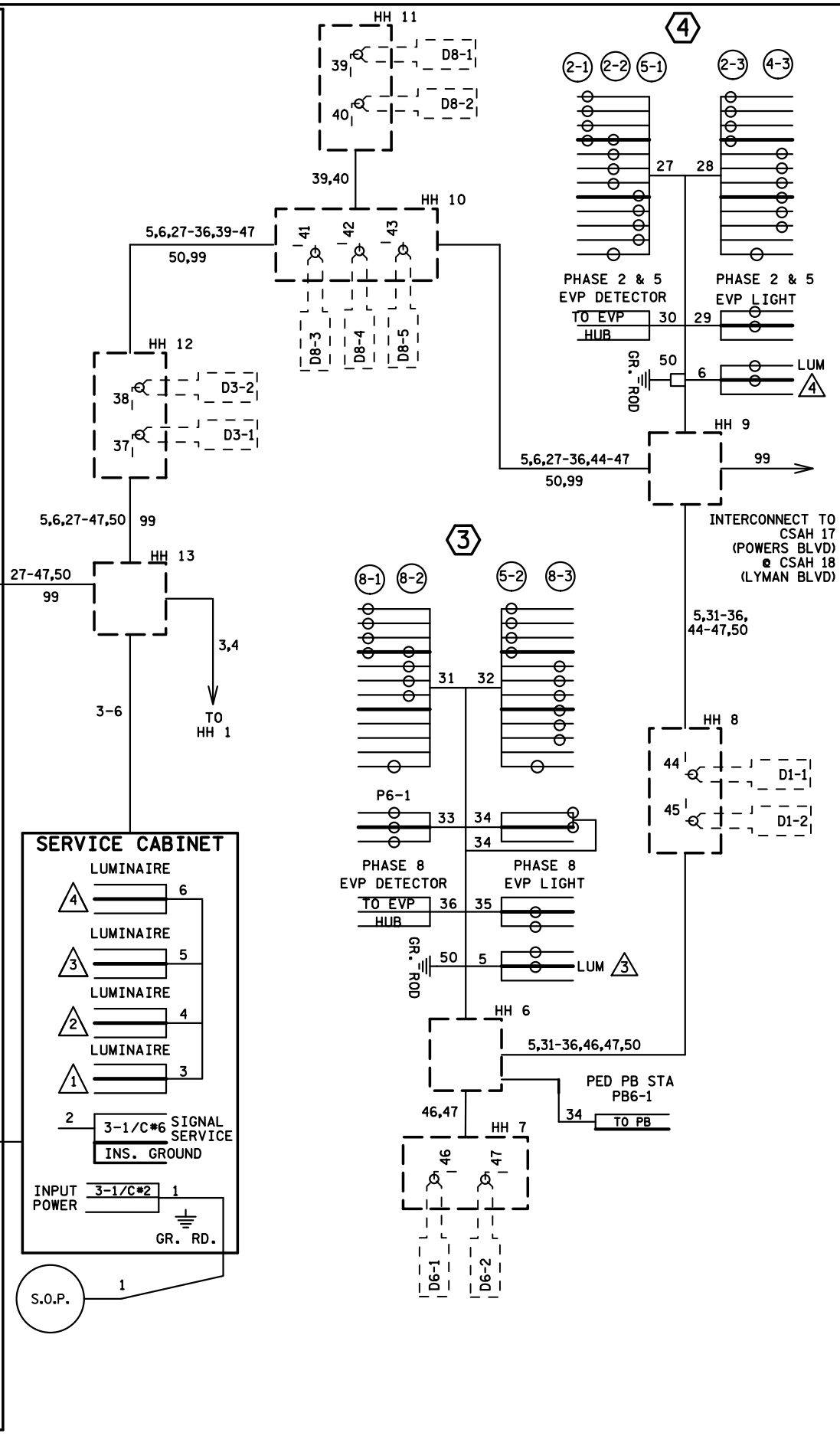
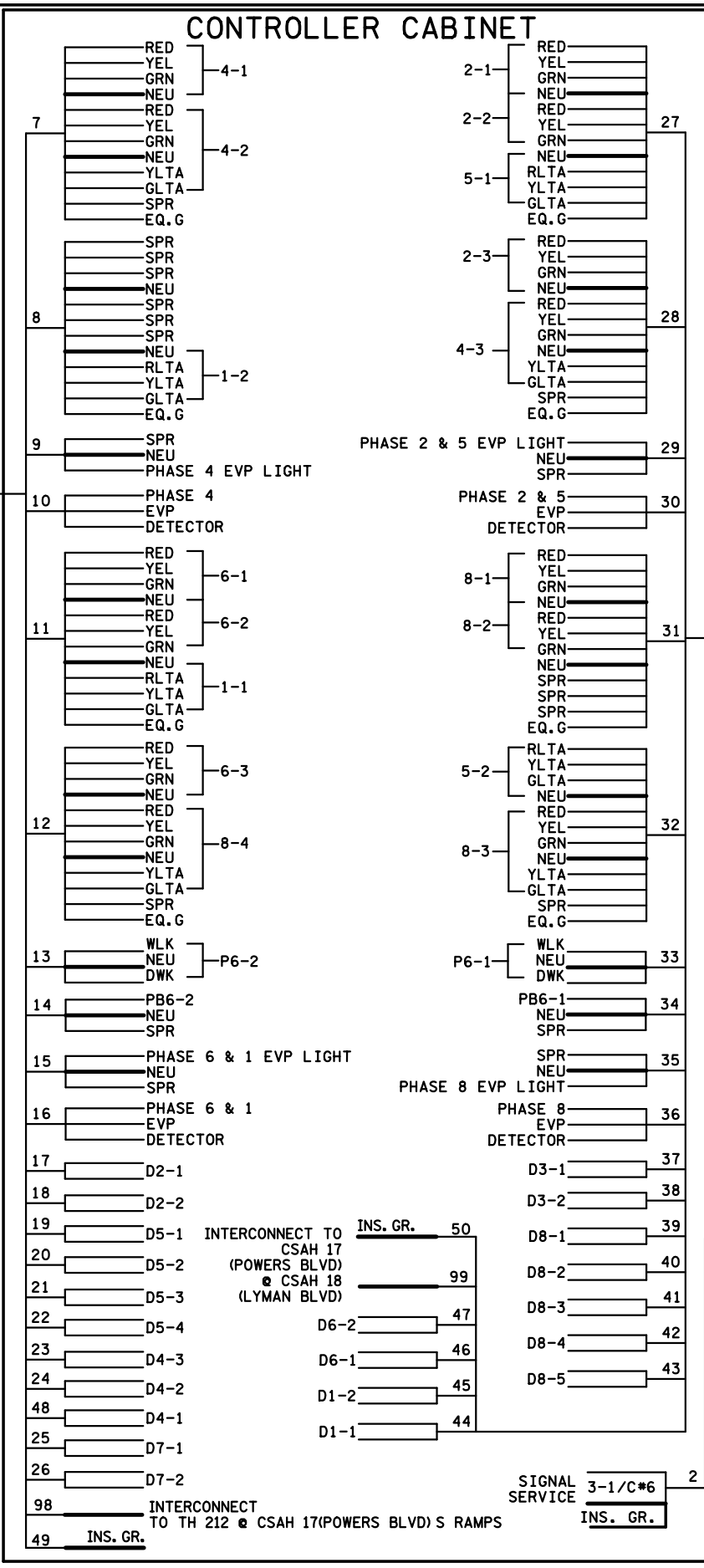
PLOTTED/REVISED: 2/3/2015

DISTRICT #: METRO
IPLOT NAME: T38436_WIR
PATH & FILENAME: IP_PWP-d078499A-T38436_SGL2.dgn



CONDUCTOR COLOR CODE	
TO SIGNAL CABINET	TO DEVICE
3/C#20 R OR O WH OR YEL BLK OR BL	12/C#12 R O BL WH R/BLK O/BLK BLK/WH BLK/BLK BLK BLK/WH G/BLK
2/C#14 BLK CLR	BASE OF POLE OR PEDESTAL
2-1/C BLK WH	5/C#14 R O BL WH G
6PR#19	4/C#14 R BL WH G
1-1/C #6 INS. GR. GREEN	3/C#12 R WH BLK
	7/C#14 CABLE Y WH BLK BRN
	5-SECTION SIGNAL INDICATION
	3 & 4-SECTION SIGNAL INDICATION
	4/C#14 CABLE R BL WH BLK
	PEDESTRIAN INDICATION
	2/C#14 CABLE BLK WH
	EVP/PB/FLASHER
	NEU

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



BY	DATE	REVISIONS
EJA	02-03-15	AS-BUILT OF SP 8825-473 APS & CD PEDS

SYSTEM ID: 38436 T.E.
 METER ADDRESS: 9200 POWERS BLVD
 MASTER ID: 38512 T.E.

WIRING DIAGRAM
 TH 212 AT
 CSAH 17 (POWERS BLVD) NORTH RAMPS
 IN CHANHASSEN, CARVER COUNTY

S.A.P. NO. _____
 DRAWN BY: CDB CKD BY: CDB DATE: 10-28-13
 CERTIFIED BY _____ LIC. NO. _____ DATE: 2/11/14
 LICENSED PROFESSIONAL ENGINEER
 STATE PROJ. NO. (TH 212) SHEET NO. 3 OF 3 SHEETS