

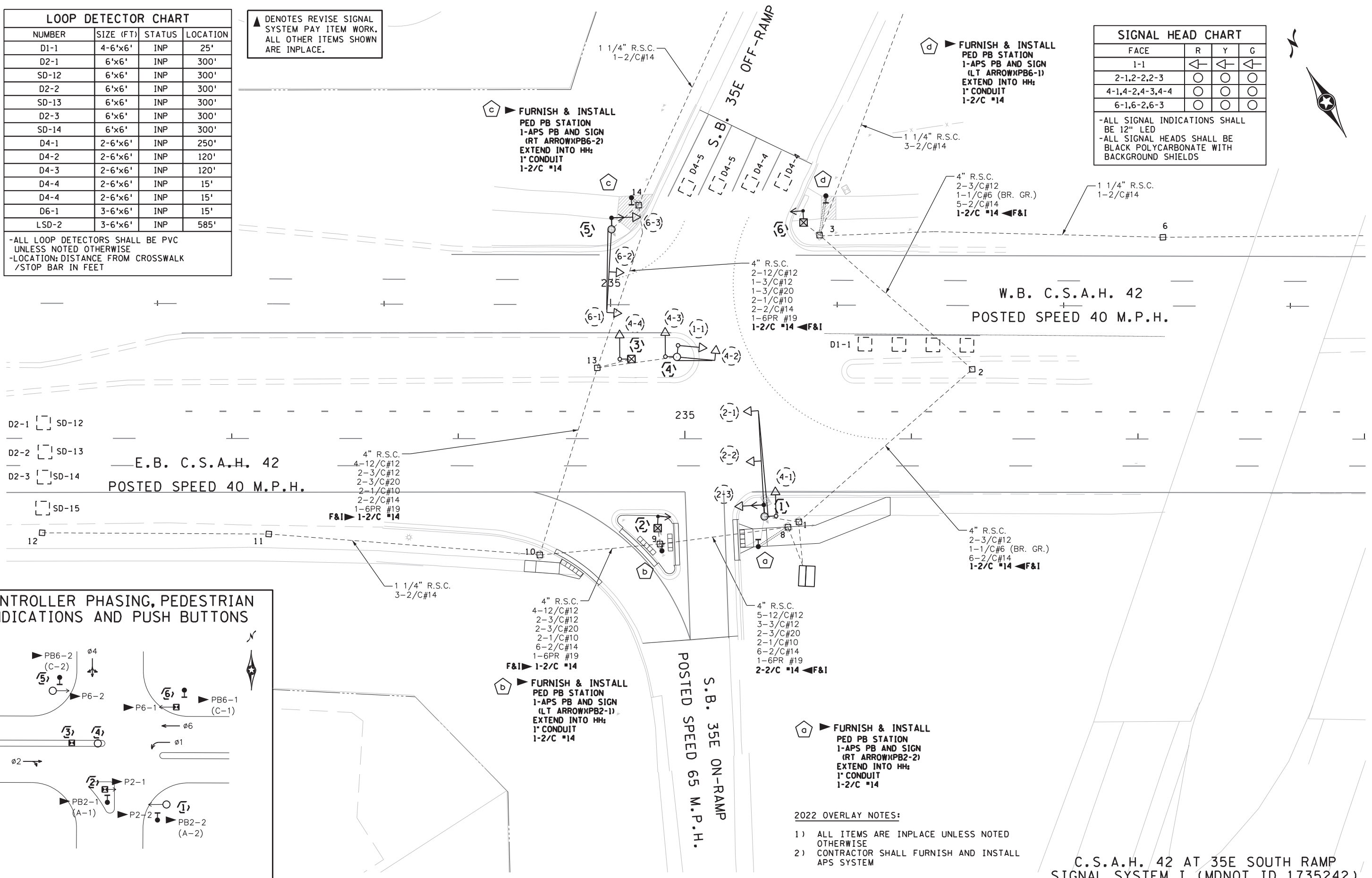
LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	STATUS	LOCATION
D1-1	4-6'x6'	INP	25'
D2-1	6'x6'	INP	300'
SD-12	6'x6'	INP	300'
D2-2	6'x6'	INP	300'
SD-13	6'x6'	INP	300'
D2-3	6'x6'	INP	300'
SD-14	6'x6'	INP	300'
D4-1	2-6'x6'	INP	250'
D4-2	2-6'x6'	INP	120'
D4-3	2-6'x6'	INP	120'
D4-4	2-6'x6'	INP	15'
D4-4	2-6'x6'	INP	15'
D6-1	3-6'x6'	INP	15'
LSD-2	3-6'x6'	INP	585'

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

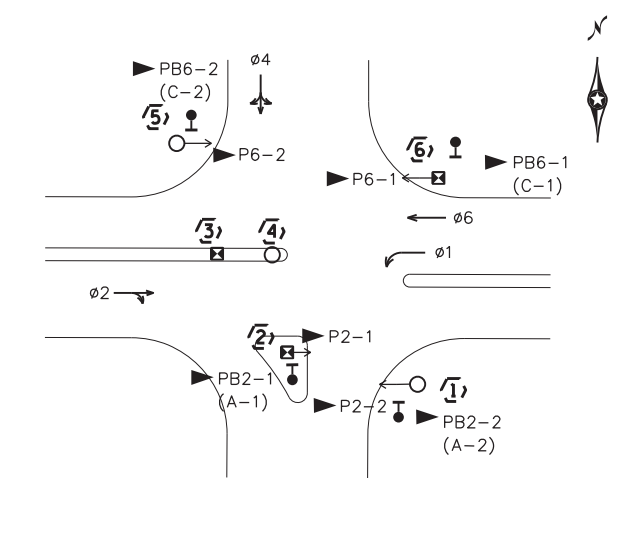
▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE INPLACE.

SIGNAL HEAD CHART			
FACE	R	Y	G
1-1	←	←	←
2-1,2-2,2-3	○	○	○
4-1,4-2,4-3,4-4	○	○	○
6-1,6-2,6-3	○	○	○

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

- 2022 OVERLAY NOTES:**
- 1) ALL ITEMS ARE INPLACE UNLESS NOTED OTHERWISE
 - 2) CONTRACTOR SHALL FURNISH AND INSTALL APS SYSTEM

C.S.A.H. 42 AT 35E SOUTH RAMP
SIGNAL SYSTEM I (MDNOT ID 1735242)

denaki 10/27/2021 5:09:44 PM H:\DACC\NOT\4124226\CAD\MS\plans\Signal\cd124226_s1009.dgn



12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burns@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

JACOB J. BONGARD
LIC. NO. 52210 DATE 09-17-2021

DESIGNED
ABM
DRAWN
ABM
CHECKED
JUB

S.P. 019-642-063
C.S.A.H. 42 IMPROVEMENTS
SIGNAL REVISION PLAN

SHEET
150
OF
166

(A) CONTROLLER & CABINET
 EXTEND INTO H.H. 1
 4" R.S.C.
 2 - 12/c #12
 3 - 3/c #12
 1 - 1/c #6 (BR. GR.)
 1 - 3/c #20
 6 - 2/c #14
 1 - 6pr. #19
F&I ▶ 1-2/C #14
 EXTEND INTO H.H. 8
 4" R.S.C.
 5 - 12/c #12
 3 - 3/c #12
 2 - 3/c #20
 6 - 2/c #14
 1 - 6pr. #19
F&I ▶ 3-2/C #14

PAD MOUNTED SERVICE EQUIPMENT
 EXTEND INTO CONTROLLER CABINET
 2" R.S.C.
 2 - 1/c #6
 1 - 1/c #6 (BARE)
 EXTEND INTO H.H. 1
 2" R.S.C.
 2 - 1/c #10
 EXTEND INTO H.H. 8
 2" R.S.C.
 2 - 1/c #10
 EXTEND INTO S.O.P.
 DAKOTA ELECTRIC TRANSFORMER
 (See Detail Sheet No. 69)
 2" R.S.C.
 3 - 1/c #2

(1) TYPE A100-A45-D40-12 (MID MAST ARM MOUNT AT 21')
 A100 POLE FOUNDATION
 2 - ONE WAY SIGNALS (OVERHEAD)
 1 - TYPE 10B - POLE MOUNTED AT 0°
 1 - TYPE 10A - POLE MOUNTED AT 270°
 1 - PEDESTRIAN PUSH BUTTON & SIGN
 LUMINAIRE BY OTHERS (200 WATT H.P.S. AT 350' w/P.E.C.)
 ONE WAY E.V.P. DETECTOR & LIGHT
 EXTEND INTO H.H. 1
 3" R.S.C.
 2 - 12/c #12
 1 - 3/c #12
 1 - 3/c #20
 2 - 1/c #10
REMOVE ▶ 1 - POLE MOUNTED PEDESTRIAN INDICATION
F&I ▶ 1 - POLE MOUNTED C.D. PED HEAD AT 0 DEG

(2) TYPE 4B
 2 - PEDESTRIAN PUSH BUTTONS & SIGNS
 EXTEND INTO H.H. 9
 2" R.S.C.
 1 - 12/c #12
 1 - 3/c #12
REMOVE ▶ 1 - PEDESTRIAN PUSH BUTTON & SIGN
REMOVE ▶ 2 - POLE MOUNTED PEDESTRIAN INDICATIONS
F&I ▶ 1 - POLE MOUNTED C.D. PED HEADS AT 0 DEG

(3) TYPE 1D
 EXTEND INTO H.H. 13
 2" R.S.C.
 1 - 12/c #12
 2 - 3/c #12

(4) TYPE P80-A15
 P80 POLE FOUNDATION
 1 - ONE WAY SIGNAL (OVERHEAD)
 TYPE 20A - POLE MOUNTED AT 270°
 ONE WAY E.V.P. DETECTOR & LIGHT
 EXTEND INTO H.H. 13
 3" R.S.C.
 1 - 12/c #12
 1 - 3/c #12
 1 - 3/c #20
REMOVE ▶ 2 - POLE MOUNTED PEDESTRIAN INDICATIONS

(5) TYPE A100-A35-D40-12 (MID MAST ARM MOUNT AT 18')
 A100 POLE FOUNDATION
 2 - ONE WAY SIGNALS (OVERHEAD)
 TYPE 10C - POLE MOUNTED AT 270°
REMOVE ▶ 1 - PEDESTRIAN PUSH BUTTON & SIGN
 LUMINAIRE BY OTHERS (200 WATT H.P.S. AT 350' w/P.E.C.)
 ONE WAY E.V.P. DETECTOR & LIGHT
 EXTEND INTO H.H. 14
 3" R.S.C.
 2 - 12/c #12
 1 - 3/c #12
 1 - 3/c #20
 2 - 1/c #10
REMOVE ▶ 2 - POLE MOUNTED PEDESTRIAN INDICATIONS
F&I ▶ 1 - POLE MOUNTED C.D. PED HEAD AT 180 DEG

(6) TYPE 4A
 EXTEND INTO H.H. 3
 2" R.S.C.
 2 - 3/c #12
 1 - 1/c #6 (BR. GR.)
REMOVE ▶ 1 - POLE MOUNTED PEDESTRIAN INDICATIONS
F&I ▶ 1 - POLE MOUNTED C.D. PED HEAD AT 0 DEG

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

C.S.A.H. 42 AT 35E SOUTH RAMP
 SIGNAL SYSTEM I (MDNOT ID 1735242)

denaki 10/27/2021 5:09:45 PM H:\DACC\NOT\4124226\CAD\MS\plans\Signal\cd124226_s1009a.dgn



BOLTON & MENK
 12224 NICOLLET AVENUE
 BURNSVILLE, MINNESOTA 55337
 Phone: (952) 890-0509
 Email: BurnsVille@bolton-menk.com
 www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

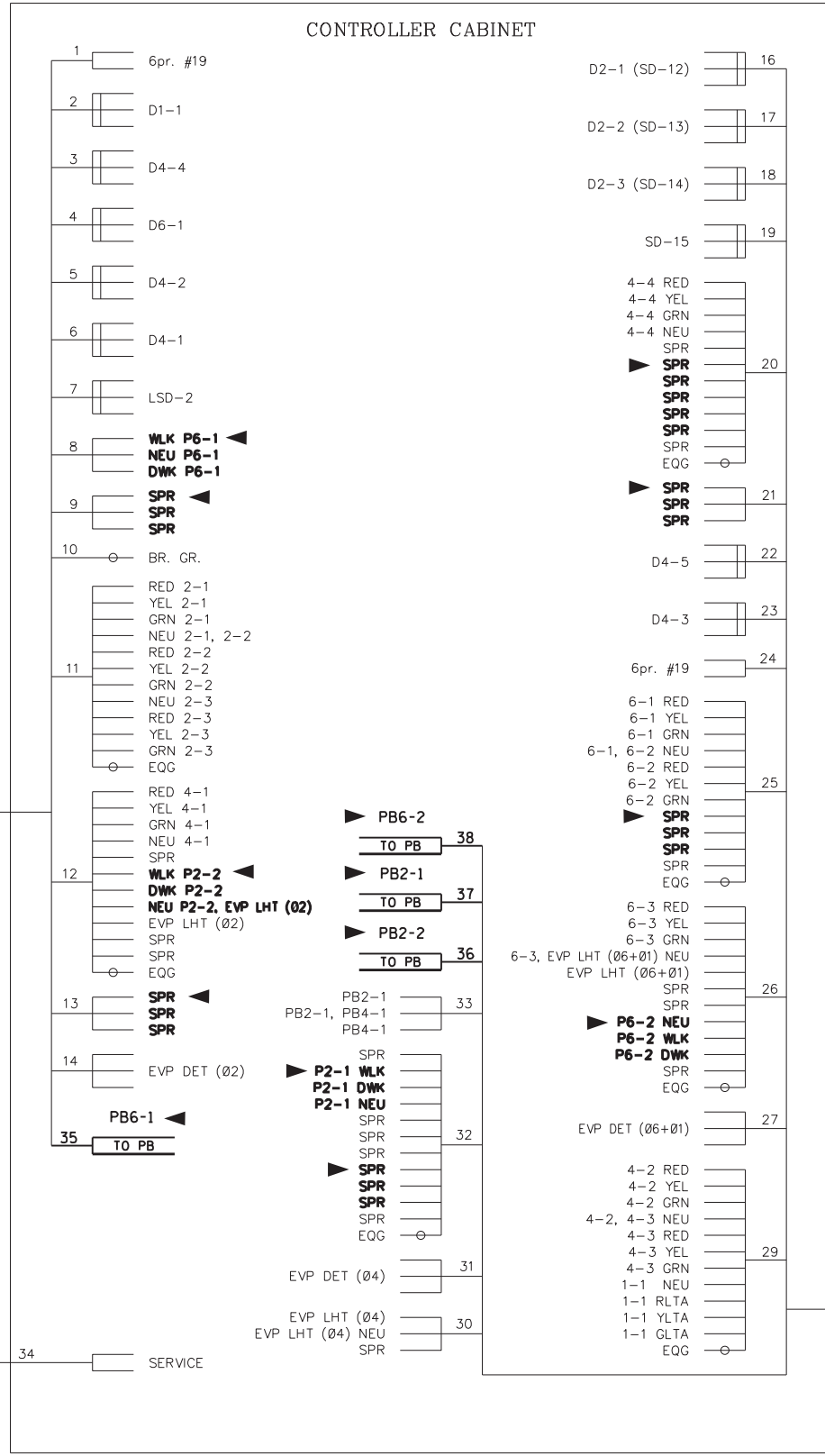
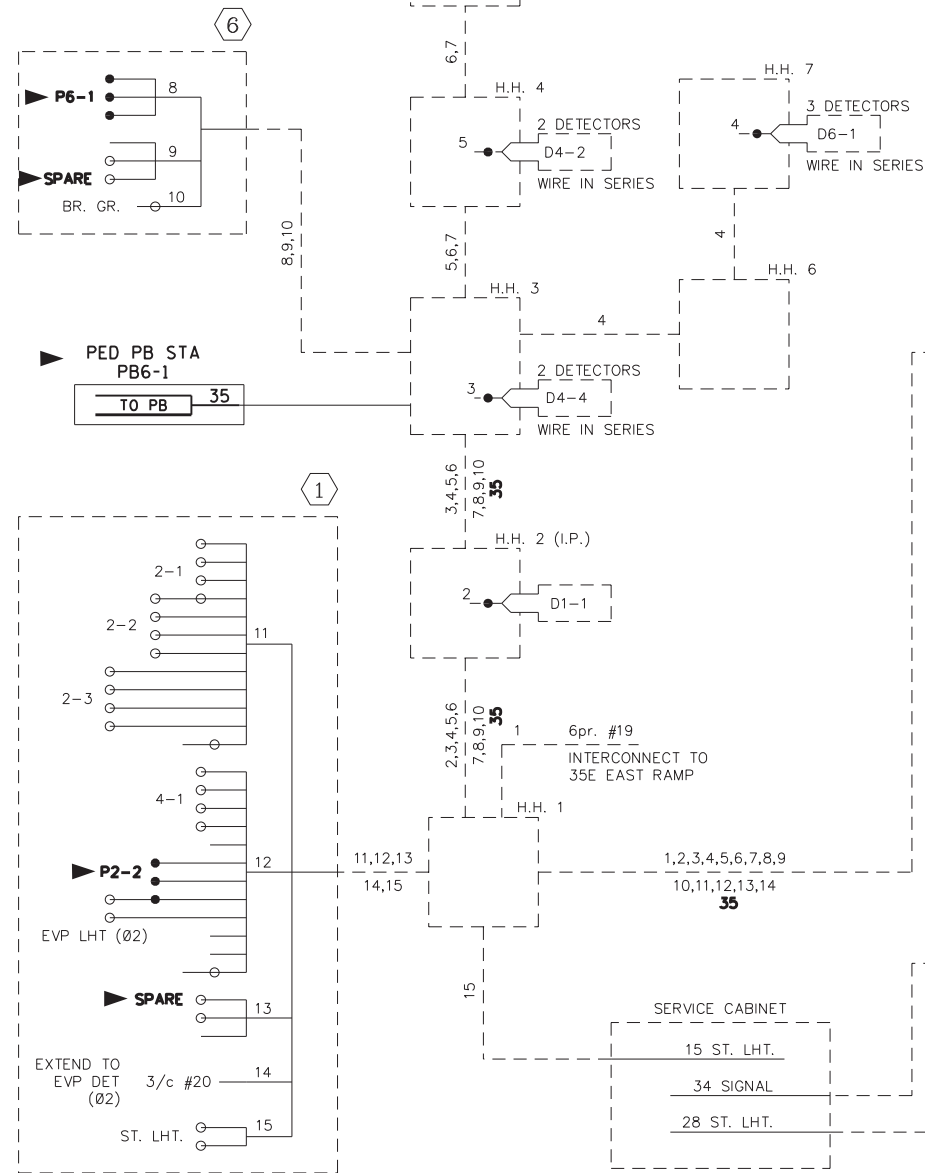
JACOB J. BONGARD
 LIC. NO. 52210 DATE 09-17-2021

DESIGNED ABM	S.P. 019-642-063	SHEET 151 OF 166
DRAWN ABM	C.S.A.H. 42 IMPROVEMENTS	
CHECKED JJB	SIGNAL REVISION PLAN	

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

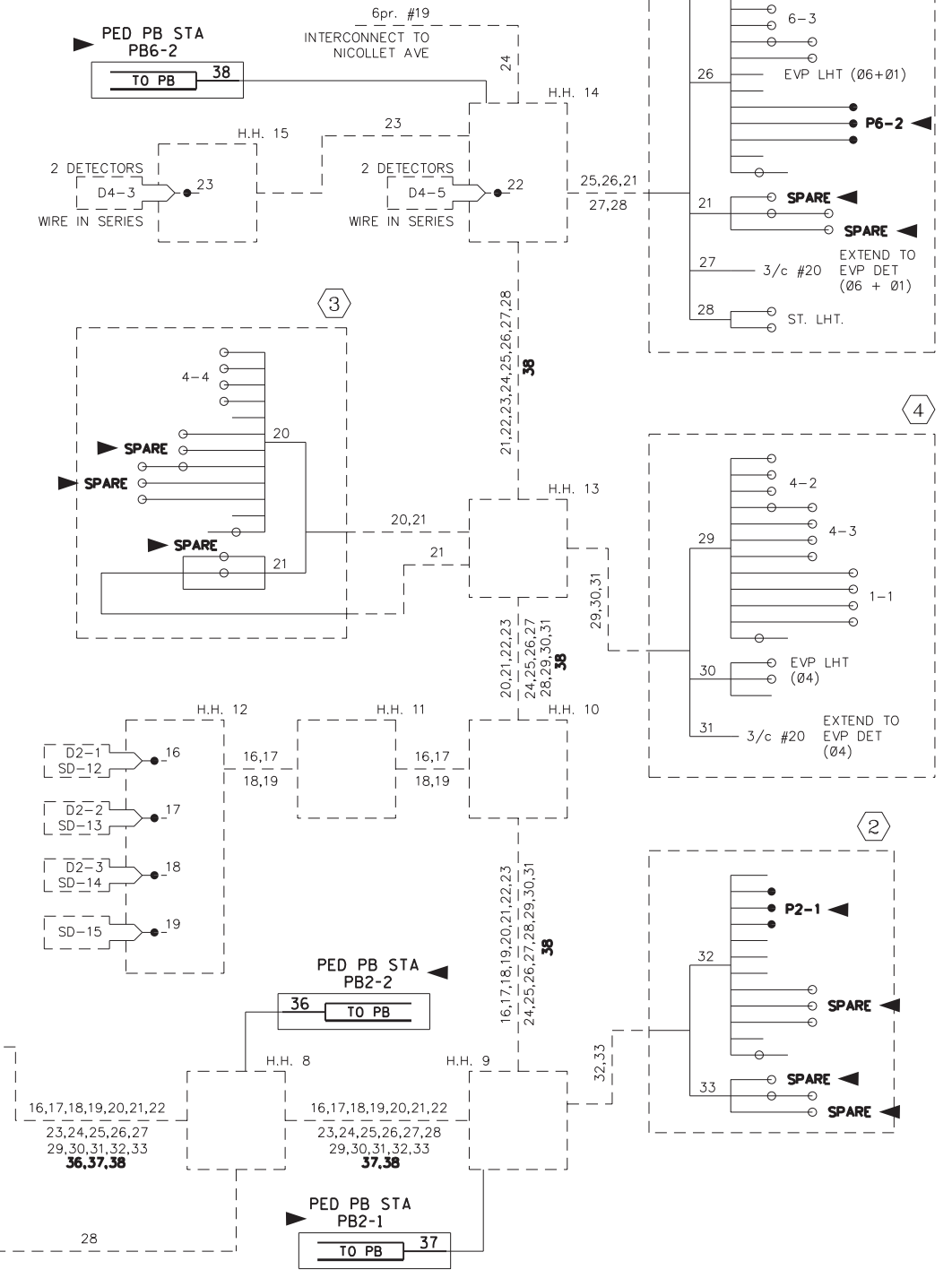
2022 OVERLAY NOTES:

- 1) CONTRACTOR SHALL CAREFULLY REMOVE OLD SPLICES OF THE EXISTING 3/C#12 PUSH BUTTON WIRES
- 2) CONTRACTOR SHALL USE BLACK AND WHITE CONDUCTORS OF THE EXISTING 3/C#12 TO CONNECT NEW APS PB'S
- 3) ALL NEW SPlicing WILL BE DONE BY WIRE NUTS. SEE SPECIAL PROVISIONS
- 4) CONTRACTOR SHALL INSTALL NEW, SIZE 16", 'HAND/MAN + COUNTDOWN' (CD) PEDESTRIAN INSERTS INTO THE EXISTING PEDESTRIAN HOUSINGS.



CONDUCTOR COLOR CODING

R	BLK or R	2-1/c #4
O	WH	#6 or #10
BL	WH	3/c #12
WH	BLK	3/c #20
R/BLK		
O/BLK		
BL/BLK		2/c #14
WH/BLK		
BLK		
BLK/WH		
C/BLK		2 pr #22
G		



C.S.A.H. 42 AT 35E SOUTH RAMP SIGNAL SYSTEM I (MDNOT ID 1735242)

denaki 10/27/2021 5:09:46 PM H:\DACC\NOT\124226\CAD\MS\plans\Signal\cd124226_wd009.dgn

BOLTON & MENK
 12224 NICOLLET AVENUE
 BURNSVILLE, MINNESOTA 55337
 Phone: (952) 890-0509
 Email: Burns@bolton-menk.com
 www.bolton-menk.com

REV. BY DATE
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
 JACOB J. BONGARD
 LIC. NO. 52210 DATE 09-17-2021

DESIGNED ABM	S.P. 019-642-063	SHEET 152 OF 166
DRAWN ABM	C.S.A.H. 42 IMPROVEMENTS	
CHECKED JJB	SIGNAL REVISION PLAN	

PLOTTED/REVISED: 5/20/2015

DETECTION CHART				
DET. NO.	PHASE	SIZE	FUNCTION (2)	LOCATION (3)
D1-1	1	4-6'X 6'	1	25'
D2-1	2	6'X 6'	1	300'
SD-12	2	6'X 6'	1	300'
D2-2	2	6'X 6'	1	300'
SD-13	2	6'X 6'	1	300'
D2-3	2	6'X 6'	1	300'
SD-14	2	6'X 6'	1	300'
SD-15	-	6'X 6'	1	300'
D4-1	4	2-6'X 6'	2	250'
D4-2	4	2-6'X 6'	1	120'
D4-3	4	2-6'X 6'	1	120'
D4-4	4	2-6'X 6'	1	15'
D4-5	4	2-6'X 6'	1	15'
D6-1	6	3-6'X 6'	1	305'
LSO-2	4	3-6'X 6'	3	585'

SIGNAL INDICATION CHART									
FACE NO.	PHASE	FLASH	RED	YEL	GRN	RLTA	YLTA	GLTA	
1-1	1		RED			12"	12"	12"	
2-1	2		RED	12"	12"	12"			
2-2	2		RED	12"	12"	12"			
2-3	2		RED	12"	12"	12"			
4-1	4		RED	12"	12"	12"			
4-2	4		RED	12"	12"	12"			
4-3	4		RED	12"	12"	12"			
4-4	4		RED	12"	12"	12"			
6-1	6		RED	12"	12"	12"			
6-2	6		RED	12"	12"	12"			
6-3	6		RED	12"	12"	12"			

(A) CONTROLLER & CABINET
EXTEND INTO H.H. 1
4" R.S.C.
2 - 12/c #12
3 - 3/c #12
1 - 1/c #6 (BR. GR.)
2" R.S.C.
1 - 3/c #20
6 - 2/c #14
1 - 6pr. #19
EXTEND INTO H.H. 8
4" R.S.C.
5 - 12/c #12
3 - 3/c #12
2 - 3/c #20
6 - 2/c #14
1 - 6pr. #19

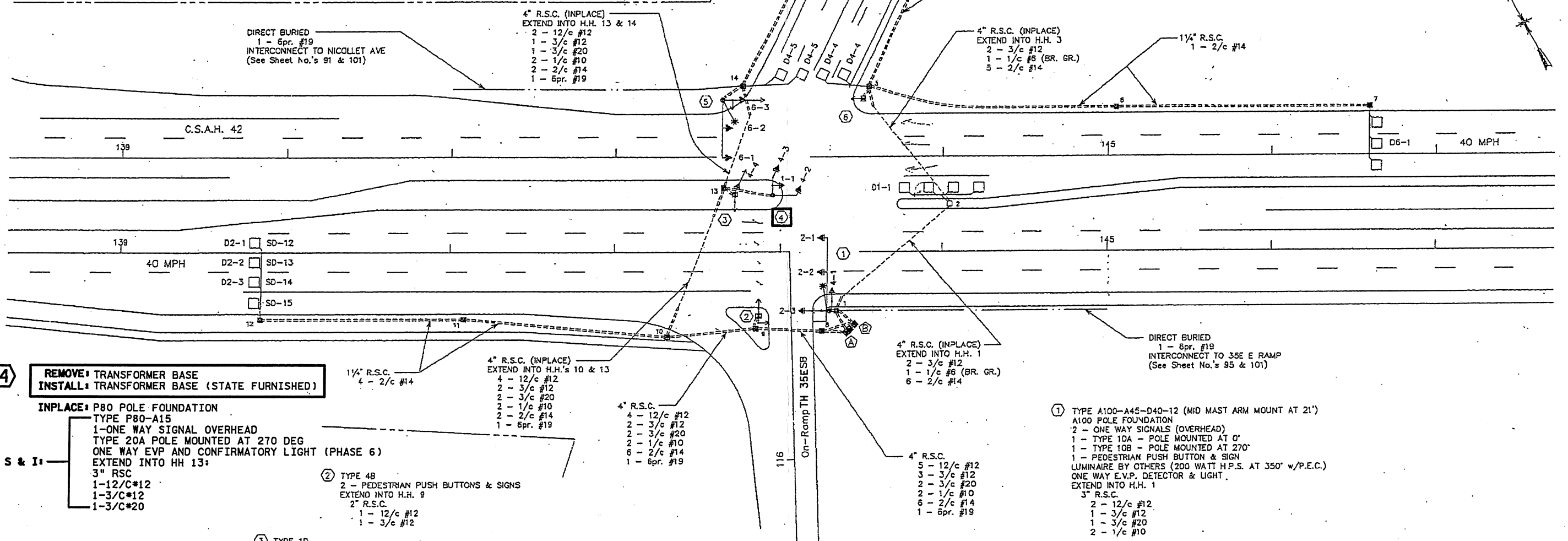
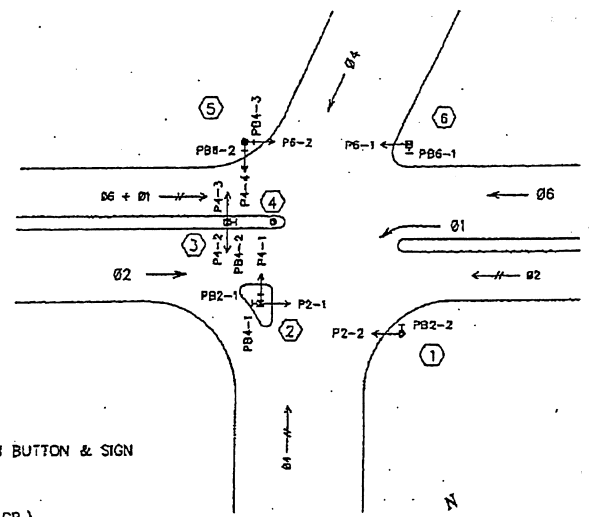
(B) PAD MOUNTED SERVICE EQUIPMENT
EXTEND INTO CONTROLLER CABINET
2" R.S.C.
2 - 1/c #6
1 - 1/c #6 (BARE)
EXTEND INTO H.H. 1
2" R.S.C.
2 - 1/c #10
EXTEND INTO H.H. 8
2" R.S.C.
2 - 1/c #10
EXTEND INTO S.O.P.
DAKOTA ELECTRIC TRANSFORMER
(See Detail Sheet No. 69)
2" R.S.C.
3 - 1/c #2

- (1) MULTIPLE LOOP DETECTOR
(2) LOOP DETECTOR FUNCTIONS:
1 - CALL AND EXTEND
2 - EXTEND ONLY
3 - LOCAL SPLIT DEMAND
(3) LOCATION: DISTANCE FROM STOP BAR TO DETECTOR

- (5) TYPE A100-A35-D40-12 (MID MAST ARM MOUNT AT 18')
A100 POLE FOUNDATION
2 - ONE WAY SIGNALS (OVERHEAD)
TYPE 10C - POLE MOUNTED AT 270'
2 - PEDESTRIAN PUSH BUTTONS & SIGNS
LUMINAIRE BY OTHERS (200 WATT H.P.S. AT 350' w/P.E.C.)
ONE WAY E.V.P. DETECTOR & LIGHT
EXTEND INTO H.H. 14
3" R.S.C.
2 - 12/c #12
1 - 3/c #12
1 - 3/c #20
2 - 1/c #10

- (B) TYPE 4A
1 - PEDESTRIAN PUSH BUTTON & SIGN
EXTEND INTO H.H. 3
2" R.S.C.
2 - 3/c #12
1 - 1/c #6 (BR. GR.)

SIGNAL PHASING, PEDESTRIAN INDICATIONS,
PUSH BUTTONS, AND E.V.P. LAYOUT



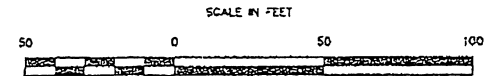
(4) REMOVE TRANSFORMER BASE
INSTALL TRANSFORMER BASE (STATE FURNISHED)

INPLACE: P80 POLE FOUNDATION
TYPE P80-A15
1-ONE WAY SIGNAL OVERHEAD
TYPE 20A POLE MOUNTED AT 270 DEG
ONE WAY EVP AND CONFIRMATORY LIGHT (PHASE 6)
EXTEND INTO HH 13:
3" RSC
1-12/C#12
1-3/C#12
1-3/C#20

- (2) TYPE 4B
2 - PEDESTRIAN PUSH BUTTONS & SIGNS
EXTEND INTO H.H. 9
2" R.S.C.
1 - 12/c #12
1 - 3/c #12

- (3) TYPE 1D
1 - PEDESTRIAN PUSH BUTTON & SIGN
EXTEND INTO H.H. 13
2" R.S.C.
1 - 12/c #12
2 - 3/c #12

REVISE SIGNAL SYSTEM NOTES:
REPLACE TRANSFORMER BASE FOR POLE NO. 4.
1. REMOVE TRANSFORMER BASE (P80) AND INSTALL NEW BASE (STATE FURNISHED).
2. SALVAGE POLE AND ALL EQUIPMENT AND INSTALL WITH THE NEW BASE.
3. ALL ITEMS ARE INPLACE UNLESS OTHERWISE NOTED.

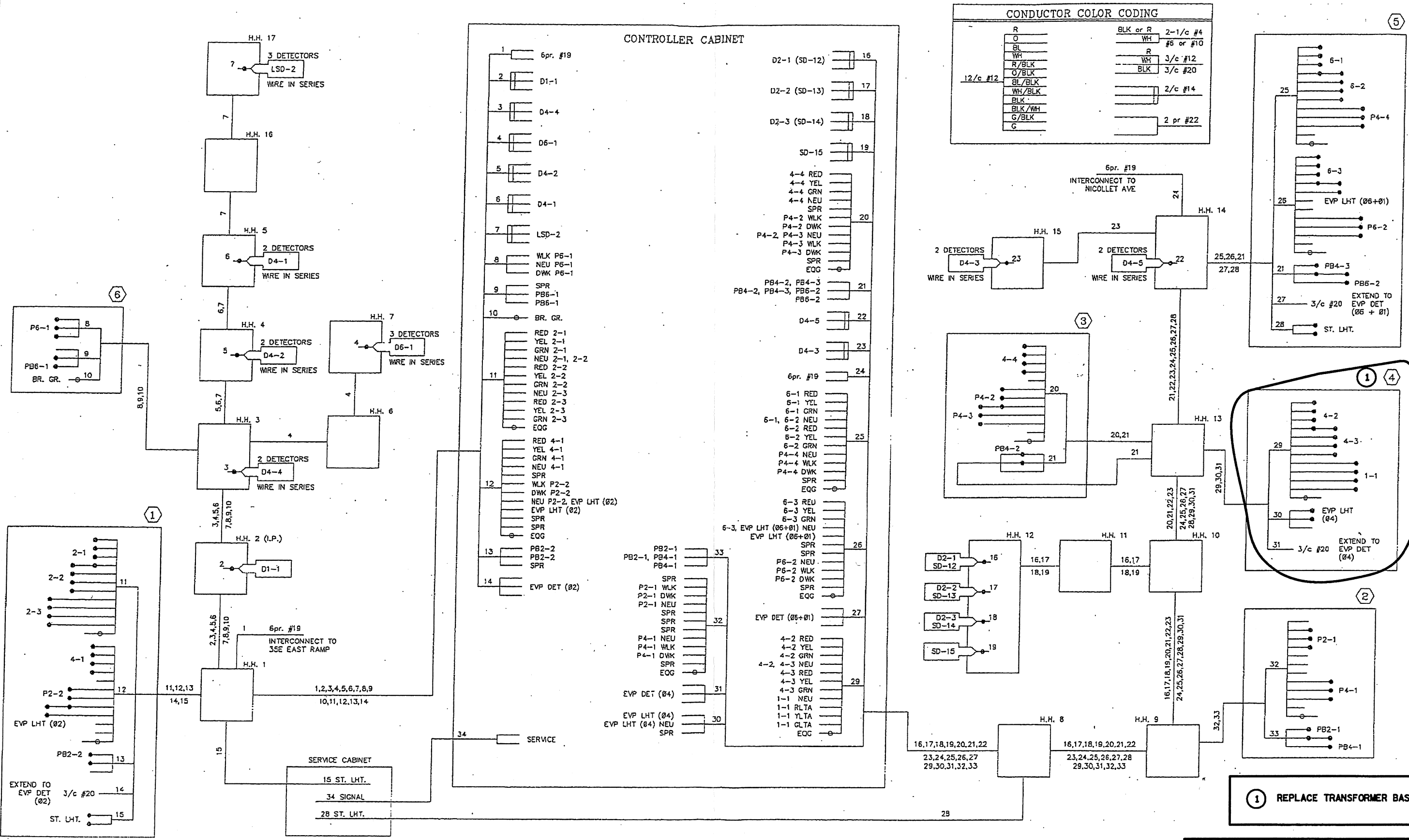


DISTRICT: METRO
PLOT NAME: layout el
PATH & FILENAME: IP_PWP-d1693982V 20530A_SGL.dgn

BY	DATE	REVISIONS	SYSTEM ID: 20530	T.E. 6368	INTERSECTION LAYOUT REVISE SIGNAL SYSTEM E T.H. 35E WEST RAMP AT 150TH ST. (42) IN BURNSVILLE, DAKOTA COUNTY	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 05-13-15
			METER ADDRESS:			CERTIFIED BY: <i>Michael P. Libinsky</i>	LIC. NO. 19863	DATE: 05-13-15	
			MASTER ID:	T.E.		STATE PROJ. NO. 8825-528		SHEET NO. 18 OF 47 SHEETS	

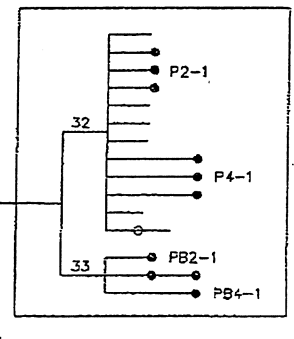
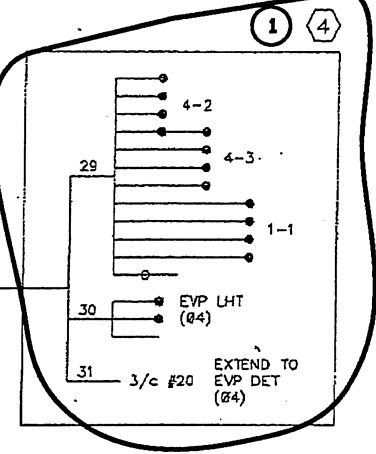
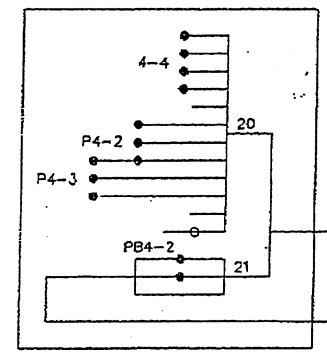
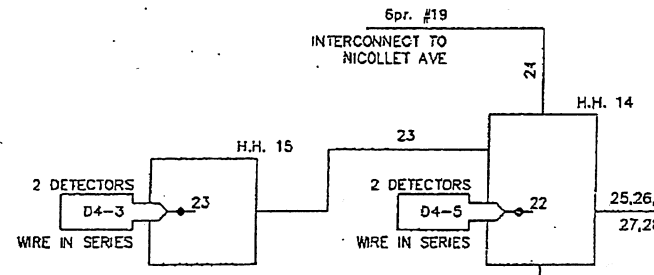
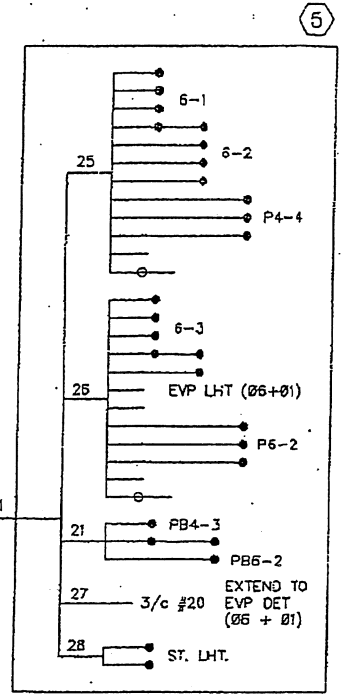
PLOTTED/REVISED: 5/15/2015

DISTRICT #: METRO
I/PLOT NAME: T20530A_SGL
PATH & FILENAME: IP_PWP-d1693982VT20530A_SGL.dgn



CONDUCTOR COLOR CODING

R	BLK or R	2-1/c #4
BL	WH	#6 or #10
WH	R	3/c #12
R/BLK	BLK	3/c #20
O/BLK		
BL/BLK		2/c #14
WH/BLK		
BLK		
BLK/WH		
G/BLK		2 pr #22
G		



① REPLACE TRANSFORMER BASE.

ALL ITEMS ARE INPLACE UNLESS OTHERWISE NOTED.

BY	DATE	REVISIONS	SYSTEM ID: 20530	T.E. 6368	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 05-13-15
			METER ADDRESS:		CERTIFIED BY: <i>Michael P. Gubinsky</i>	LIC. NO. 19863	DATE: 05-13-15	
			MASTER ID:	T.E.	STATE PROJ. NO. 8825-528		SHEET NO. 19 OF 47 SHEETS	

FEILD WIRING DIAGRAM
REVISE SIGNAL SYSTEM E
T.H. 35E WEST RAMP AT 150TH ST. (42)
IN BURNSVILLE, DAKOTA COUNTY