

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING.

SIGNAL INDICATIONS					
ALL SIGNAL INDICATIONS SHALL BE 12" LED					
FACE	PHASE	R	Y	G	FYA
1-1	1	←	←	←	▲
1-2	1	←	←	←	▲
2-1	2	○	○	○	
2-2	2	○	○	○	
2-3	2	○	○	○	
4-1	4	○	○	○	
4-2	4	○	○	○	
4-3	4	○	○	○	
4-4	4	○	○	○	
5-1	5	←	←	←	▲
5-2	5	←	←	←	▲
6-1	6	○	○	○	
6-2	6	○	○	○	
6-3	6	○	○	○	
8-1	8	○	○	○	
8-2	8	○	○	○	
8-3	8	○	○	○	
8-4	8	○	○	○	

SERVICE CABINET TO:
 H.H.1 H.H.2 SIGNAL CABINET
 2" CONDUIT 2" CONDUIT 1 1/2" CONDUIT
 2-3/C#12 2-3/C#12 2-1/C#6
 1-1/C#6 INSULATED GROUND

CONTROLLER CABINET TO:
 H.H.1 H.H.2
 4" CONDUIT 4" CONDUIT
 4-12/C#12 4-12/C#12
 5-3/C#12 4-3/C#12
 4-2/C#14 10-2/C#14
 2-3/C#20 2-3/C#20
 1-1/C#6 INSUL. GRND.
 1-12PR#19
 1-12PR#19

▲ F&d 1-6/C#14

4 PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 3-ONE WAY SIGNALS OVERHEAD
 (0', 12' AND 24' FROM END OF MAST ARM)
 1-ONE WAY SIGNAL OVERHEAD AT 0' (HEAD 1-1)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0' (HEAD 1-1)
 1-TYPE 10A AT 0'
 1-TYPE 10B AT 180°
 LUMINAIRE-250W HPS
 1-SIGN(R9-3a)
 1-PEDESTRIAN PUSH BUTTON AND SIGN(R10-4b)
 ONEWAY EVP CONDUIT OUTLET BODY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 4" CONDUIT
 2-12/C#12
 3-3/C#12
 2-2/C#14
 1-3/C#20
 1-1/C#6 INSUL. GRND.
 1-12PR#19

▲ F&d 1-6/C#14

1 PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 2-ONE WAY SIGNALS OVERHEAD
 (0' AND 12' FROM END OF MAST ARM)
 1-ONE WAY SIGNAL AT 90 DEG (HEAD 5-2)
 1-ANGLE MOUNT SIGNAL AT 90 DEG (HEAD 5-2)
 LUMINAIRE-250W HPS
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS(R10-4b)
 ONEWAY EVP CONDUIT OUTLET BODY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H.1
 3" CONDUIT
 2-12/C#12
 4-3/C#12
 1-3/C#20
 2-1/C#6 INSULATED GROUND

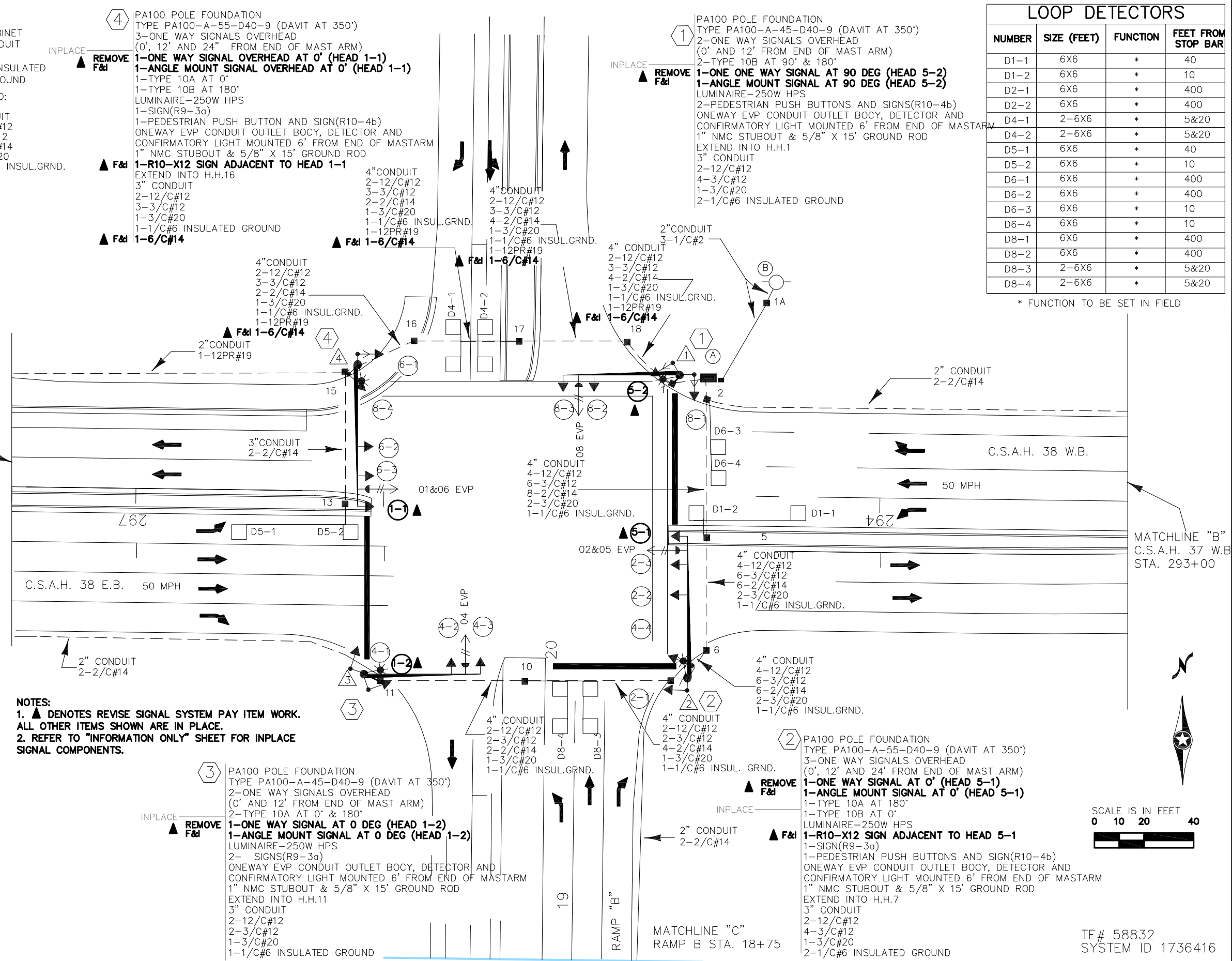
▲ F&d 1-6/C#14

LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	FEET FROM STOP BAR
D1-1	6X6	*	40
D1-2	6X6	*	10
D2-1	6X6	*	400
D2-2	6X6	*	400
D4-1	2-6X6	*	5&20
D4-2	2-6X6	*	5&20
D5-1	6X6	*	40
D5-2	6X6	*	10
D6-1	6X6	*	400
D6-2	6X6	*	400
D6-3	6X6	*	10
D6-4	6X6	*	10
D8-1	6X6	*	400
D8-2	6X6	*	400
D8-3	2-6X6	*	5&20
D8-4	2-6X6	*	5&20

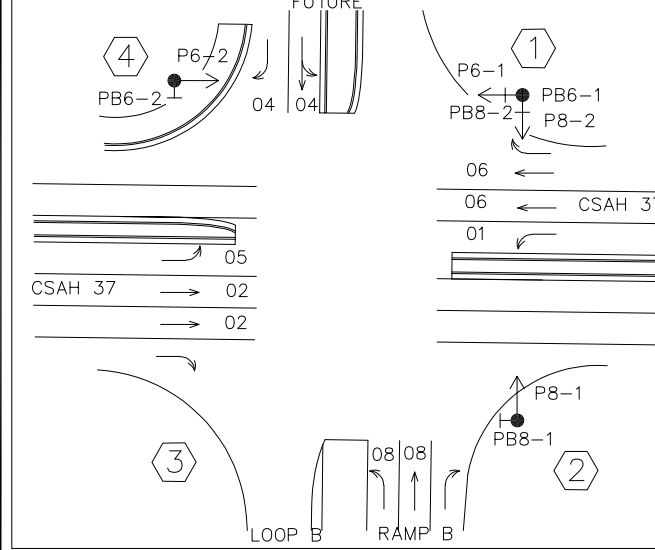
* FUNCTION TO BE SET IN FIELD

MATCHLINE "A"
 C.S.A.H. 37 W.B.
 STA. 297+50

MATCHLINE "B"
 C.S.A.H. 37 W.B.
 STA. 293+00



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



NOTES:
 1. ▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK.
 ALL OTHER ITEMS SHOWN ARE IN PLACE.
 2. REFER TO "INFORMATION ONLY" SHEET FOR INPLACE SIGNAL COMPONENTS.

3 PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 2-ONE WAY SIGNALS OVERHEAD
 (0' AND 12' FROM END OF MAST ARM)
 2-TYPE 10A AT 0' & 180°
 LUMINAIRE-250W HPS
 2-SIGNS(R9-3a)
 ONEWAY EVP CONDUIT OUTLET BODY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H.11
 3" CONDUIT
 2-12/C#12
 2-3/C#12
 1-3/C#20
 1-1/C#6 INSULATED GROUND

▲ F&d 1-6/C#14

2 PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 3-ONE WAY SIGNALS OVERHEAD
 (0', 12' AND 24' FROM END OF MAST ARM)
 1-ONE WAY SIGNAL AT 0' (HEAD 5-1)
 1-ANGLE MOUNT SIGNAL AT 0' (HEAD 5-1)
 1-TYPE 10A AT 180°
 1-TYPE 10B AT 0°
 LUMINAIRE-250W HPS
 1-SIGN(R9-3a)
 1-PEDESTRIAN PUSH BUTTONS AND SIGN(R10-4b)
 ONEWAY EVP CONDUIT OUTLET BODY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H.7
 3" CONDUIT
 2-12/C#12
 4-3/C#12
 1-3/C#20
 2-1/C#6 INSULATED GROUND

▲ F&d 1-6/C#14



TE# 58832
 SYSTEM ID 1736416

NO	DATE	APPR	REVISION

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.

PRINT NAME: EDWARD F. TERHAAR
 SIGNATURE: *Edward F. Terhaar*
 DATE: June 17, 2022 LIC. NO. 24441

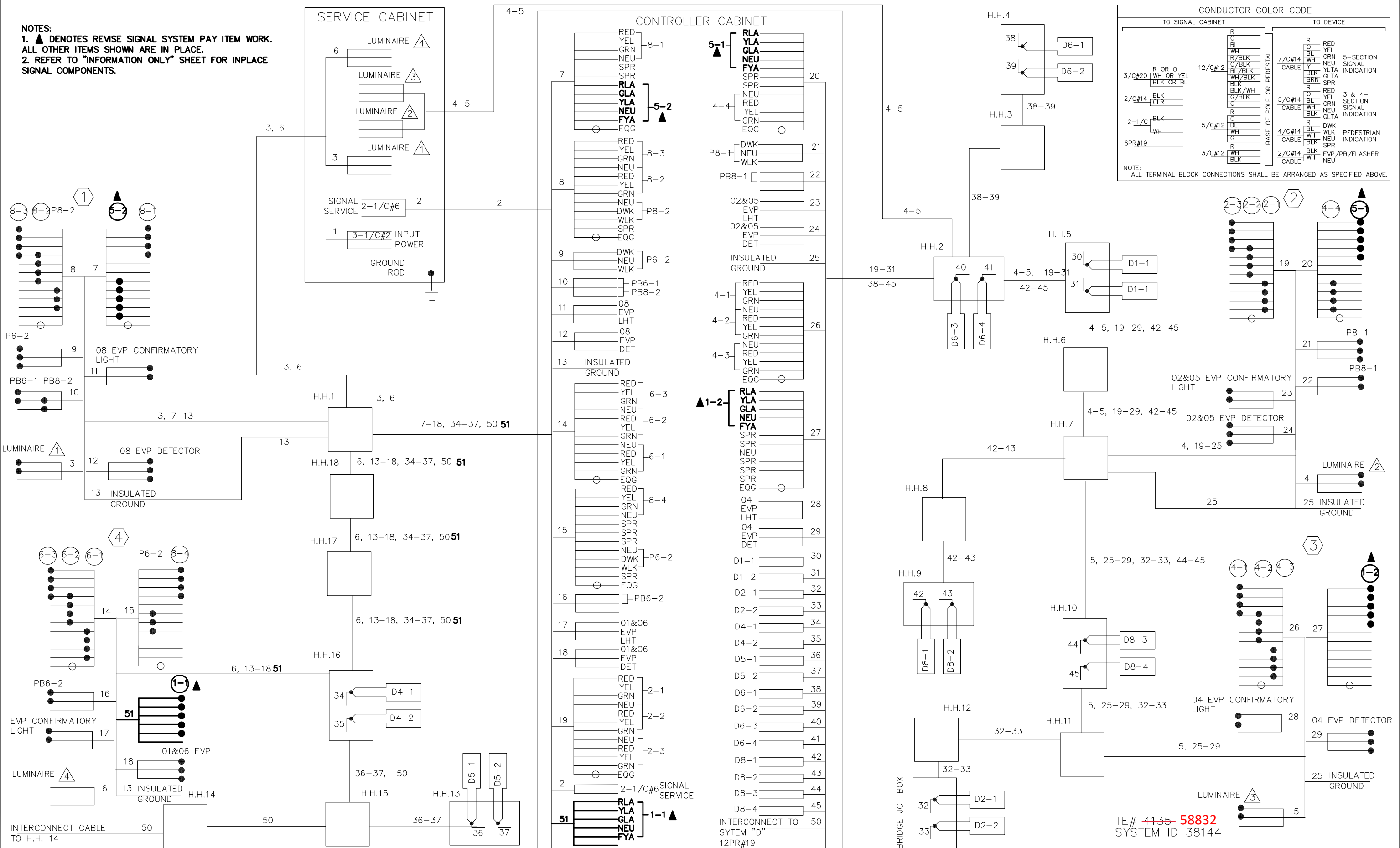


SP 8608-35 (TH 101=187)

REVISE SIGNAL SYSTEM C LAYOUT
 CSAH 38/TH 101 NORTHBOUND RAMP/72nd ST

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND DRAWINGS ARE THE PROPERTY OF STANTEC. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

NOTES:
 1. ▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE IN PLACE.
 2. REFER TO "INFORMATION ONLY" SHEET FOR INPLACE SIGNAL COMPONENTS.



NO	DATE	APPR	REVISION

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.
 PRINT NAME: EDWARD F. TERHAAR
 SIGNATURE: *Edward F. Terhaar*
 DATE: June 17, 2022 LIC. NO. 24441



SP 8608-35 (TH 101=187)

REVISE SIGNAL SYSTEM C
 WIRING DIAGRAM
 CSAH 38/TH 101 NORTHBOUND RAMP/72nd ST

PLOTTED/REVISED: 6/14/2016

DISTRICT #: METRO
IPLOT NAME: T38144_sgl
PATH & FILENAME: IP_PWP-d078297\T38144_sgl.dgn

FACE	R	Y	FYA	G
1-1,1-2	←	←		←
2-1,2-2,2-3	○	○		○
3-1,3-2	←	←	←	←
4-1,4-2	○	○		○
5-1,5-2	←	←		←
6-1,6-2,6-3	○	○		○
7-1,7-2	←	←	←	←
8-1,8-2	○	○		○

④ PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 3-ONE WAY SIGNALS OVERHEAD
 (0', 12' AND 24" FROM END OF MAST ARM)
 1-TYPE 10A AT 0°
 1-TYPE 10B AT 180°
 LUMINAIRE-250W HPS
 1-SIGN(R9-3a)
 1-PEDESTRIAN PUSH BUTTON AND SIGN(R10-4b)
 ONEWAY EVP PVC OUTLET BOCY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" PVC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H.16
 3" PVC
 2-12/C#12
 3-3/C#12
 1-3/C#20
 1-1/C#6 INSULATED GROUND

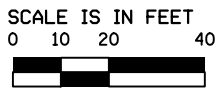
SERVICE CABINET (W/ BATTERIES & UPS) TO:			
2" PVC 3-1/C#2	H.H.1 2" PVC 2-3/C#12	H.H.2 2" PVC 2-3/C#12	SIGNAL CABINET 1 1/2" PVC 2-1/C#6 1-1/C#6 INSULATED GROUND

CONTROLLER CABINET TO:	
H.H.1 4" PVC 4-12/C#12 5-3/C#12 6-2/C#14 2-3/C#20 1-1/C#6 INSUL.GRND. 1-12PR#19	H.H.2 4" PVC 4-12/C#12 4-3/C#12 10-2/C#14 2-3/C#20 1-1/C#6 INSUL.GRND.

① PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 5' MAST ARM EXTENSION (STRAP-ON MOUNT)
 2-ONE WAY SIGNALS OVERHEAD
 (0' AND 13' FROM END OF MAST ARM EXTENSION)
 2-TYPE 10B AT 90° & 180°
 LUMINAIRE-250W HPS
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS(R10-4b)
 ONEWAY EVP PVC OUTLET BOCY, DETECTOR AND
 CONFIRMATORY LIGHT MOUNTED 6' FROM END OF MASTARM
 1" PVC STUBOUT & 5/8" X 15' GROUND ROD
 1-R10-X12 SIGN (36" X 42") (LEFT TURN YIELD ON FLASHING
 YELLOW ARROW)
 EXTEND INTO H.H.1
 3" PVC
 2-12/C#12
 4-3/C#12
 1-3/C#20
 2-1/C#6 INSULATED GROUND

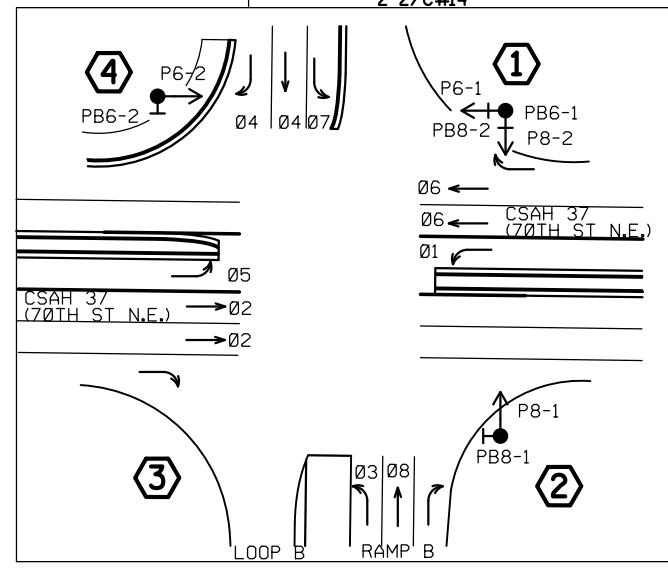
LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	FEET FROM STOP BAR
D1-1	6X6	*	40
D1-2	6X6	*	10
D2-1	6X6	*	400
D2-2	6X6	*	400
D4-1	2-6X6	*	5&20
D4-2	2-6X6	*	5&20
D5-1	6X6	*	40
D5-2	6X6	*	10
D6-1	6X6	*	400
D6-2	6X6	*	400
D6-3	6X6	*	10
D6-4	6X6	*	10
D8-1	6X6	*	400
D8-2	6X6	*	400
D8-3	2-6X6	*	5&20
D3-1	2-6X6		5&20
D7-2	2-6X6		5&35
D7-1	2-6X6		20&50

* FUNCTION TO BE SET IN FIELD



MATCHLINE "A"
 C.S.A.H. 37 W.B.
 STA. 297+50

MATCHLINE "B"
 C.S.A.H. 37 W.B.
 STA. 293+00



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 FYA BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

BY	DATE	REVISIONS
EJA	10-25-12	AS-BUILT UPDATE: BATTERIES & UPS
BAM	12-2-15	AS-BUILT MAST ARM EXTENSION

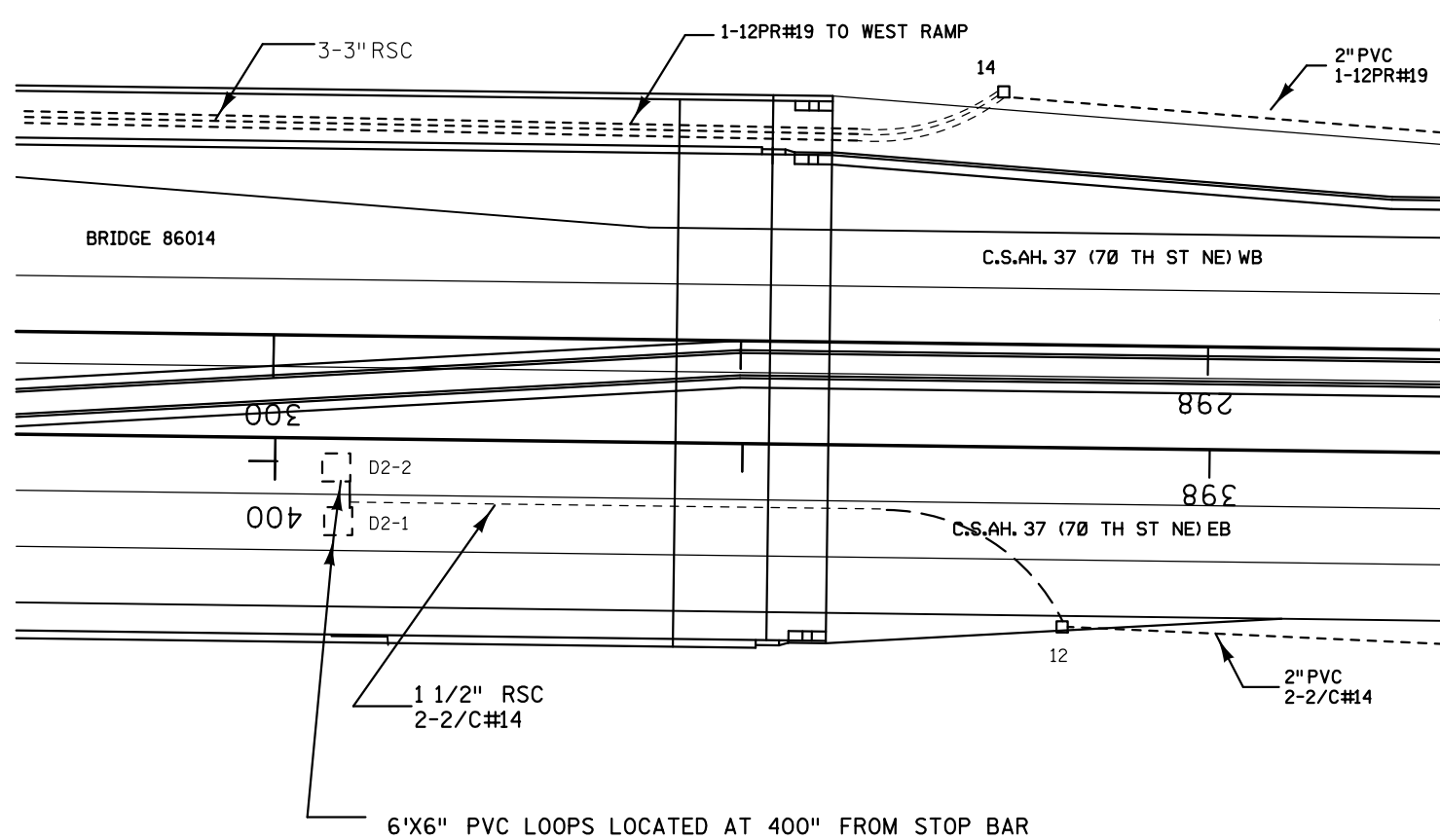
SYSTEM ID: 38144
 T.E.
 METER ADDRESS:
 MASTER ID:
 T.E.

INTERSECTION LAYOUT
 T.H. 101 AT C.S.A.H. 37 (70TH ST N.E.) E RAMP
 OTSEGO, WRIGHT COUNTY

S.A.P. NO. _____ DRAWN BY: _____ CKD BY: _____ DATE: _____
 CERTIFIED BY _____ LIC. NO. _____ DATE: _____
 STATE PROJ. NO. (T.H. 101) SHEET NO. 1 OF 3 SHEETS

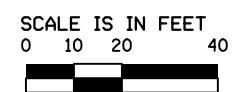
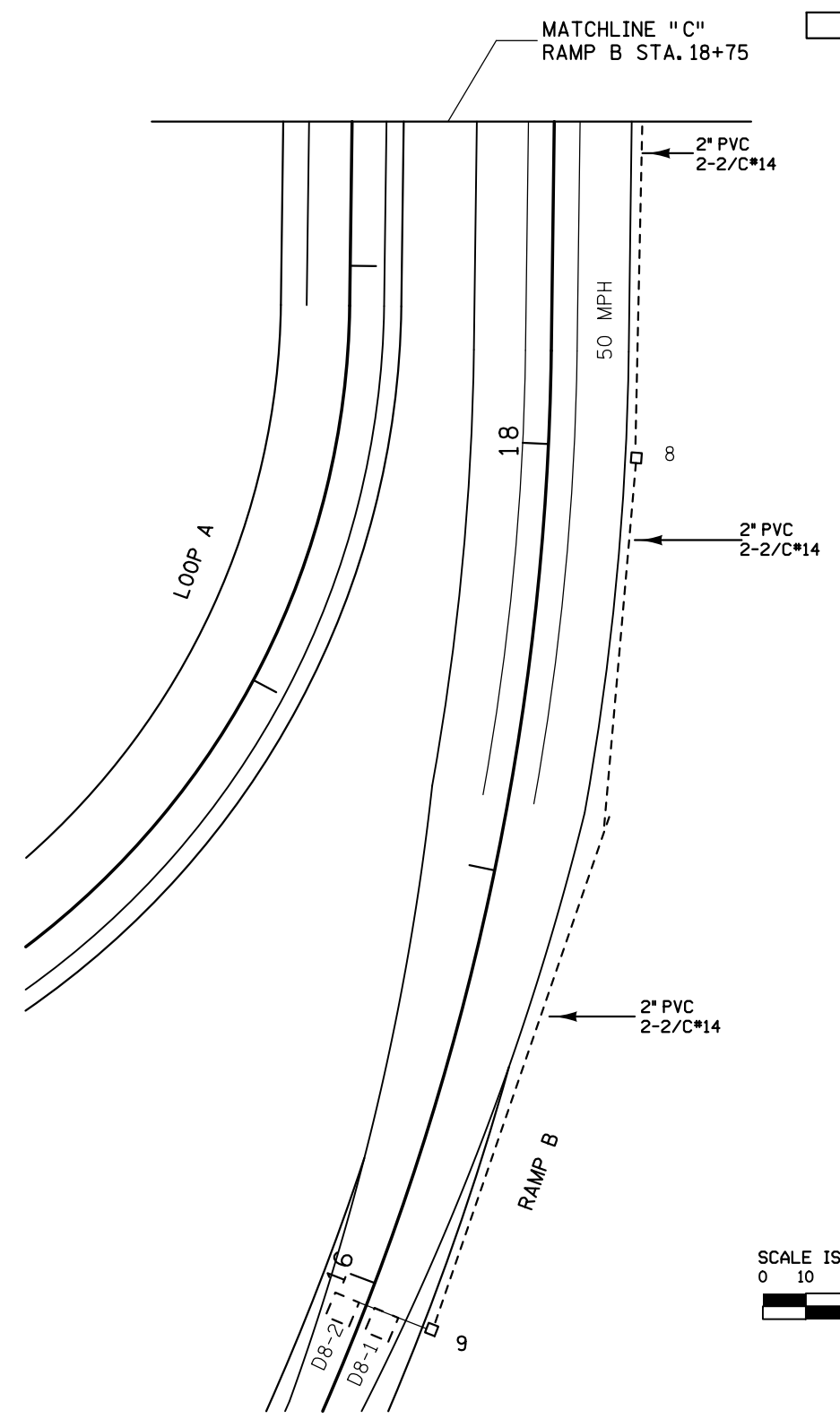
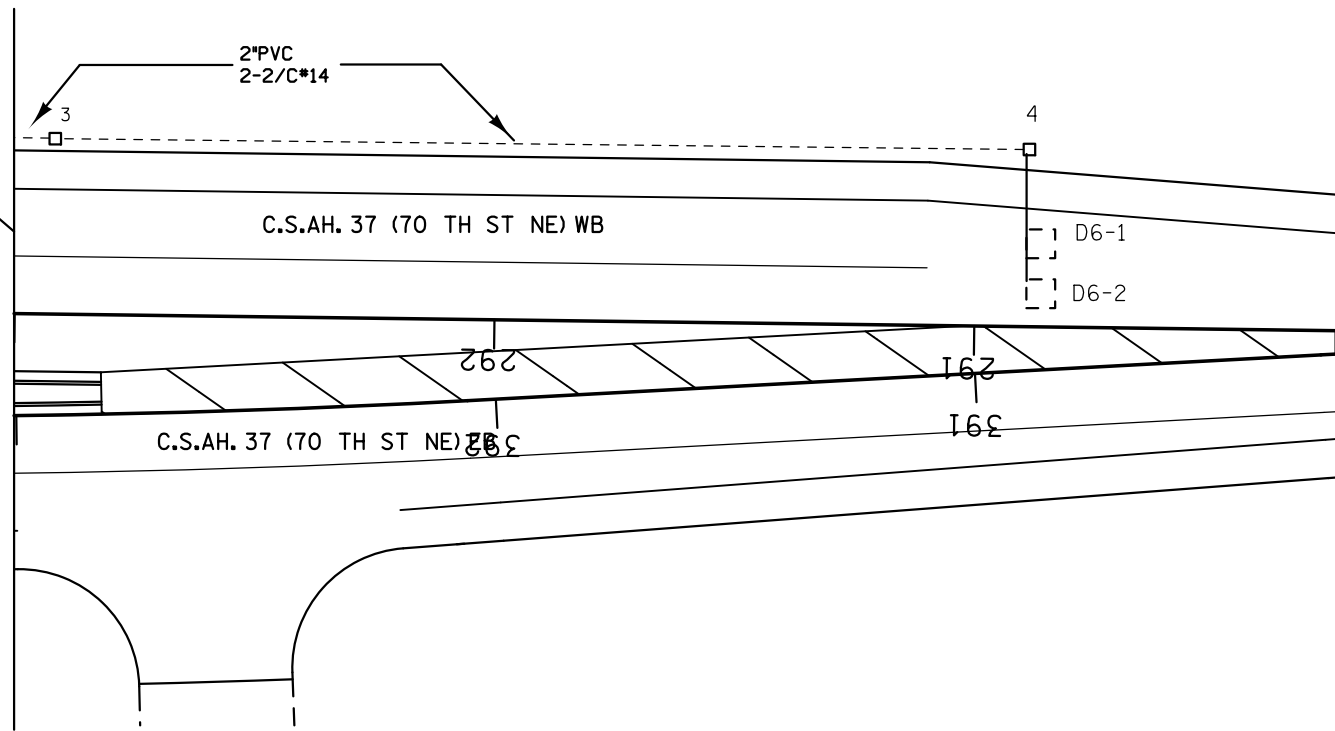
PLOTTED/REVISED: 6/14/2016

DISTRICT #: METRO
 IPLOT NAME: T38144_sgl
 PATH & FILENAME: IP_PWP-d078297\T38144_sgl.dgn



MATCHLINE "A"
 C.S.A.H. 37 E.B.
 STA. 297+50

MATCHLINE "B"
 C.S.A.H. 37 W.B.
 STA. 293+00



BY	DATE	REVISIONS	SYSTEM ID: 38144	T.E.	S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
EJA	10-25-12	AS-BUILT UPDATE: BATTERIES AND UPS	METER ADDRESS:		CERTIFIED BY _____	LIC. NO. _____	DATE: _____	
			MASTER ID:	T.E.	LICENSED PROFESSIONAL ENGINEER STATE PROJ. NO. (T.H. 101) SHEET NO. 2 OF 3 SHEETS			

MATCH LINE LAYOUT
 T.H. 101 AT C.S.A.H. 37 (70TH ST N.E.) E RAMP
 OTSEGO, WRIGHT COUNTY

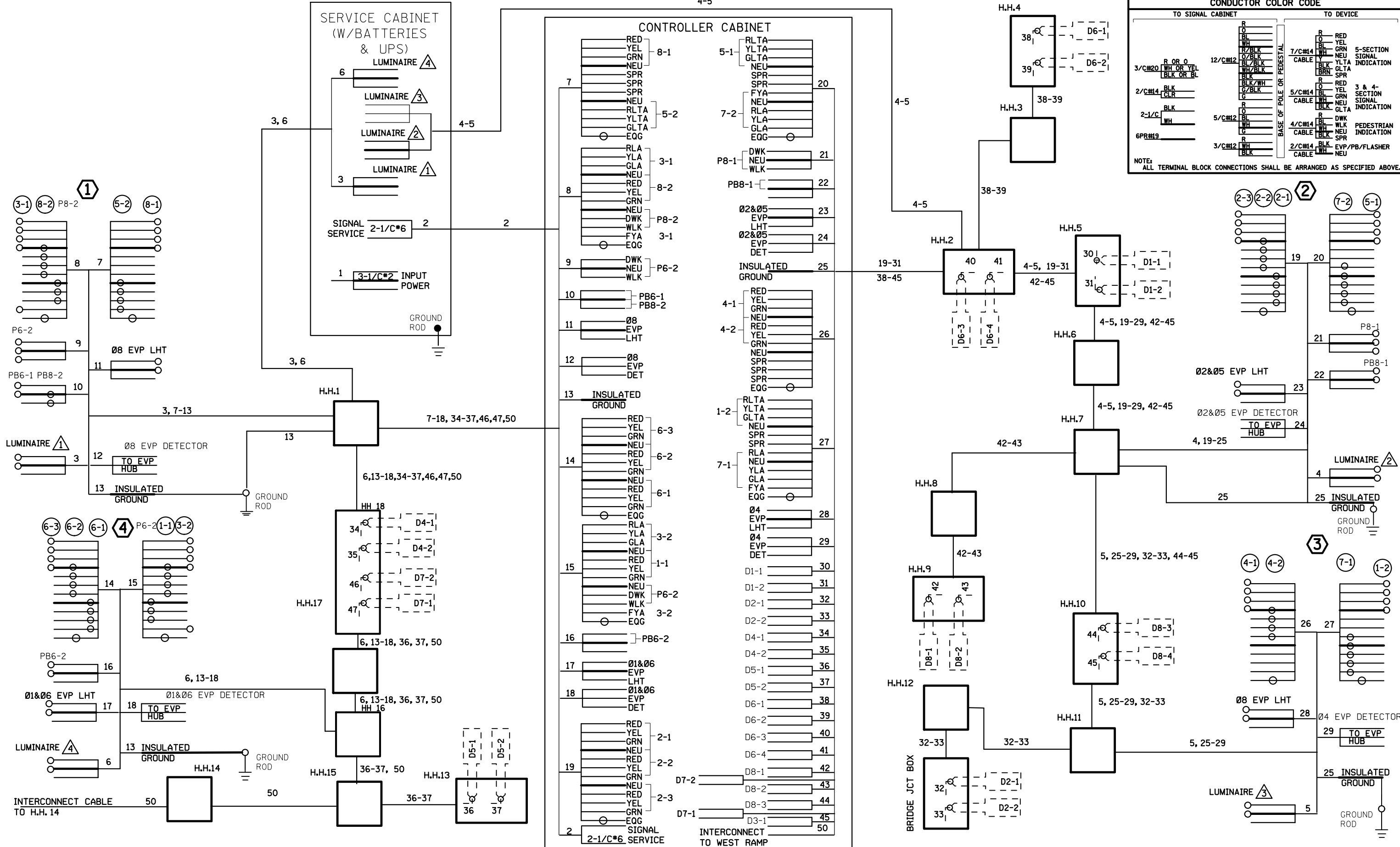
SERVICE CABINET (W/BATTERIES & UPS)

CONTROLLER CABINET

CONDUCTOR COLOR CODE

TO SIGNAL CABINET	TO DEVICE
R	RED
Y	YEL
BL	BLK
WH	WH
R/BLK	GRN
O/BLK	NEU
BL/BLK	YLTA
BLK/BLK	GLTA
BLK/WH	SPR
G/BLK	R
R	RED
O	YEL
BL	BLK
WH	WH
R	GRN
BL	NEU
WH	YLTA
BLK	GLTA
BLK	SPR
R	RED
BL	BLK
WH	WH
R	GRN
BL	NEU
WH	YLTA
BLK	GLTA
BLK	SPR
R	RED
BL	BLK
WH	WH
R	GRN
BL	NEU
WH	YLTA
BLK	GLTA
BLK	SPR

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



DISTRICT #: METRO
IPLOT NAME: T38144_sgl2
PATH & FILENAME: IP_PWP-d078297\T38144_sgl.dgn

BY	DATE	REVISIONS
EJA	10-25-12	AS-BUILT UPDATE: BATTERIES & UPS

SYSTEM ID: 38144
METER ADDRESS:
MASTER ID:

T.E.
T.E.

WIRING DIAGRAM
T.H. 101 AT C.S.A.H. 37 (70TH ST N.E.) E RAMP
OTSEGO, WRIGHT COUNTY

S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
CERTIFIED BY _____	LIC. NO. _____	DATE: _____	
STATE PROJ. NO.		(T.H. 101) SHEET NO.	3 OF 3 SHEETS