

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ALL DIMENSIONS SHALL BE AS SHOWN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.

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

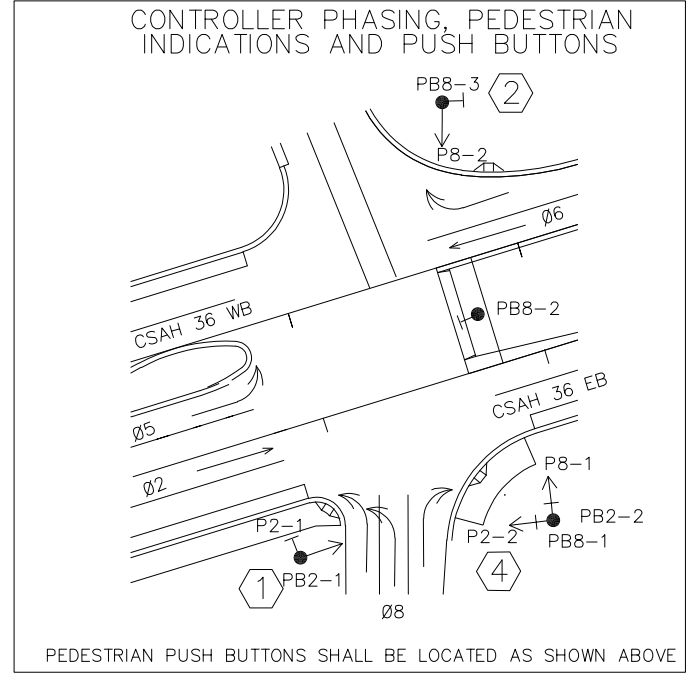
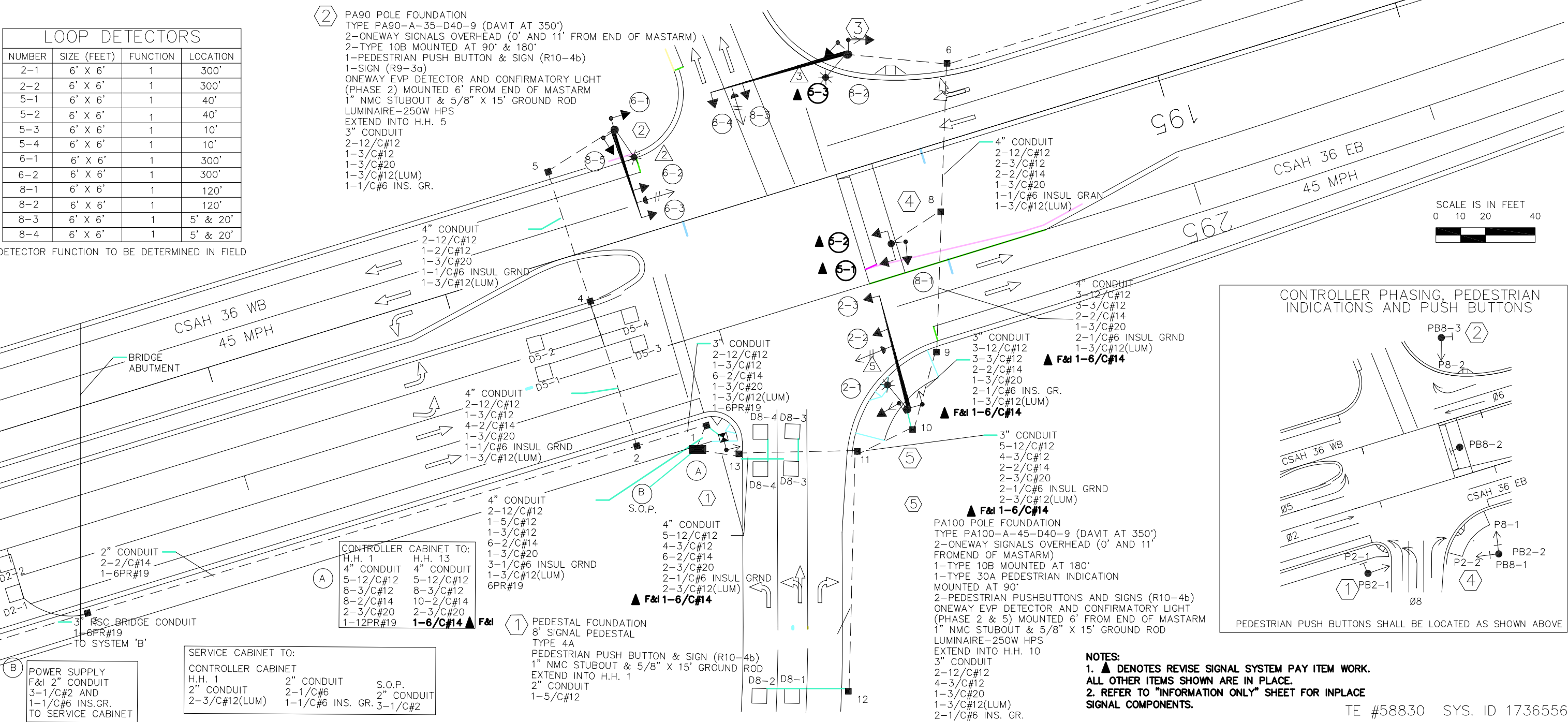
LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	LOCATION
2-1	6' X 6'	1	300'
2-2	6' X 6'	1	300'
5-1	6' X 6'	1	40'
5-2	6' X 6'	1	40'
5-3	6' X 6'	1	10'
5-4	6' X 6'	1	10'
6-1	6' X 6'	1	300'
6-2	6' X 6'	1	300'
8-1	6' X 6'	1	120'
8-2	6' X 6'	1	120'
8-3	6' X 6'	1	5' & 20'
8-4	6' X 6'	1	5' & 20'

DETECTOR FUNCTION TO BE DETERMINED IN FIELD

② PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350')
 2-ONEWAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MASTARM)
 2-TYPE 10B MOUNTED AT 90° & 180°
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 1-SIGN (R9-3a)
 ONEWAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2) MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 LUMINAIRE-250W HPS
 EXTEND INTO H.H. 5
 3" CONDUIT
 2-12/C#12
 1-3/C#12
 1-3/C#20
 1-3/C#12(LUM)
 1-1/C#6 INS. GR.

③ REMOVE F&I
 PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350')
 2-ONEWAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MASTARM)
 1-TYPE 10A MOUNTED AT 90°
 1-ONE WAY SIGNAL AT 90 DEG (HEAD 5-3)
 1-ANGLE MOUNT SIGNAL AT 90 DEG (HEAD 5-3)
 1- TYPE 10B MOUNTED AT 180°.
 1 - SIGN (R9-3a)
 ONEWAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8) MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 LUMINAIRE-250W HPS
 EXTEND INTO H.H. 6
 3" CONDUIT
 2-12/C#12
 2-3/C#12
 1-3/C#20
 1-3/C#12(LUM)
 1-1/C#6 INS. GR.

④ REMOVE F&I
 PA85 POLE FOUNDATION
 TYPE PA85-AHST-6/6-203
 2-ONE WAY SIGNALS (OVERHEAD) END MOUNTED
 2-ANGLE MOUNT SIGNALS OVERHEAD (HEADS 5-1 & 5-2)
 1-TYPE 10A MOUNTED 90°
 1-R10-X12 SIGN ADJACENT TO HEADS
 1-PEDESTRIAN PUSHBUTTON & SIGN (R10-4b)
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H. 8
 3" CONDUIT
 1-12/C#12
 1-3/C#12
 2-1/C#6 INS. GR.
 1-6/C#14



CONTROLLER CABINET TO:
 H.H. 1 H.H. 13
 4" CONDUIT 4" CONDUIT
 5-12/C#12 5-12/C#12
 8-3/C#12 8-3/C#12
 8-2/C#14 10-2/C#14
 2-3/C#20 2-3/C#20
 1-12PR#19 1-6PR#14 F&I

SERVICE CABINET TO:
 CONTROLLER CABINET
 H.H. 1 2" CONDUIT S.O.P.
 2" CONDUIT 2-1/C#6 2" CONDUIT
 2-3/C#12(LUM) 1-1/C#6 INS. GR. 3-1/C#2

POWER SUPPLY
 F&I 2" CONDUIT
 3-1/C#2 AND
 1-1/C#6 INS. GR.
 TO SERVICE CABINET

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.

TE #58830 SYS. ID 1736556

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

1800 Pioneer Creek Center
 Maple Plain, MN 55439
 www.stantec.com

SP 8608-35 (TH 101=187)

REVISE SIGNAL SYSTEM A LAYOUT
 CSAH 36/TH 101 NORTHBOUND RAMPS

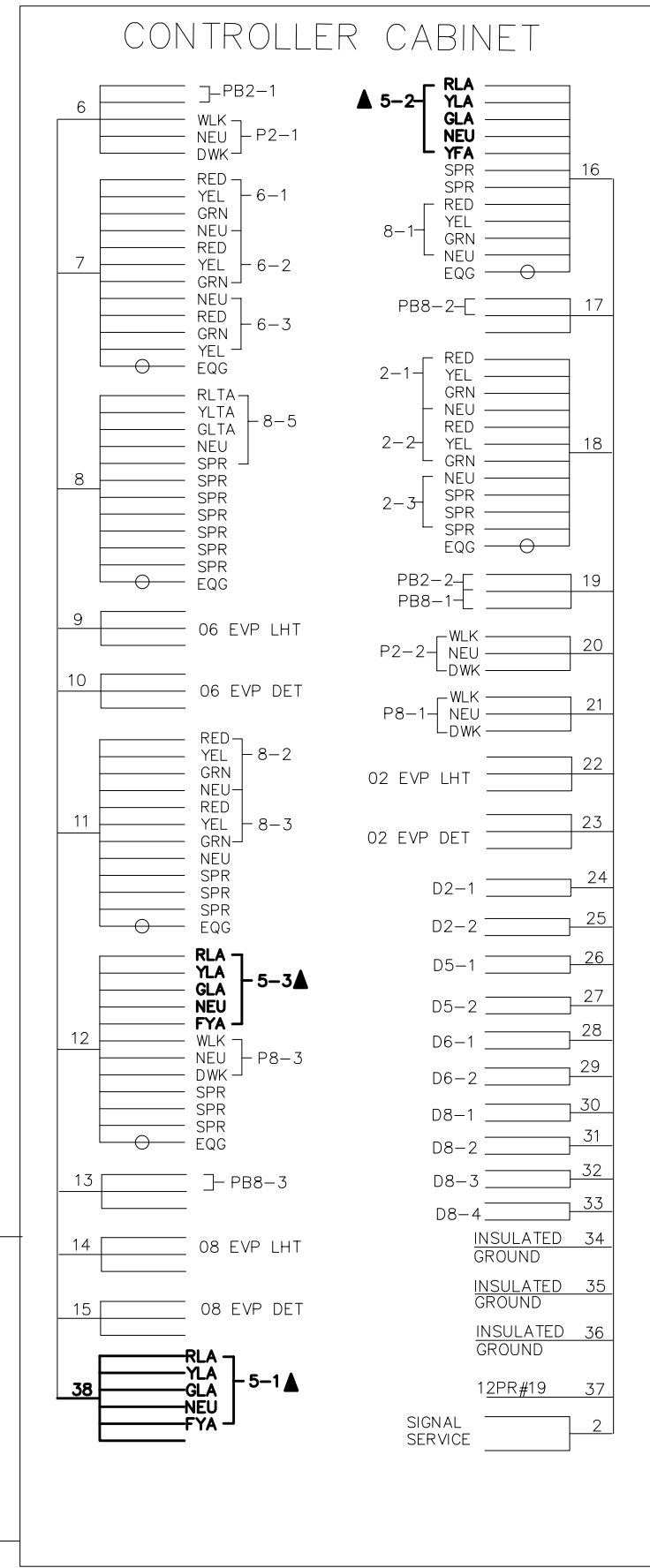
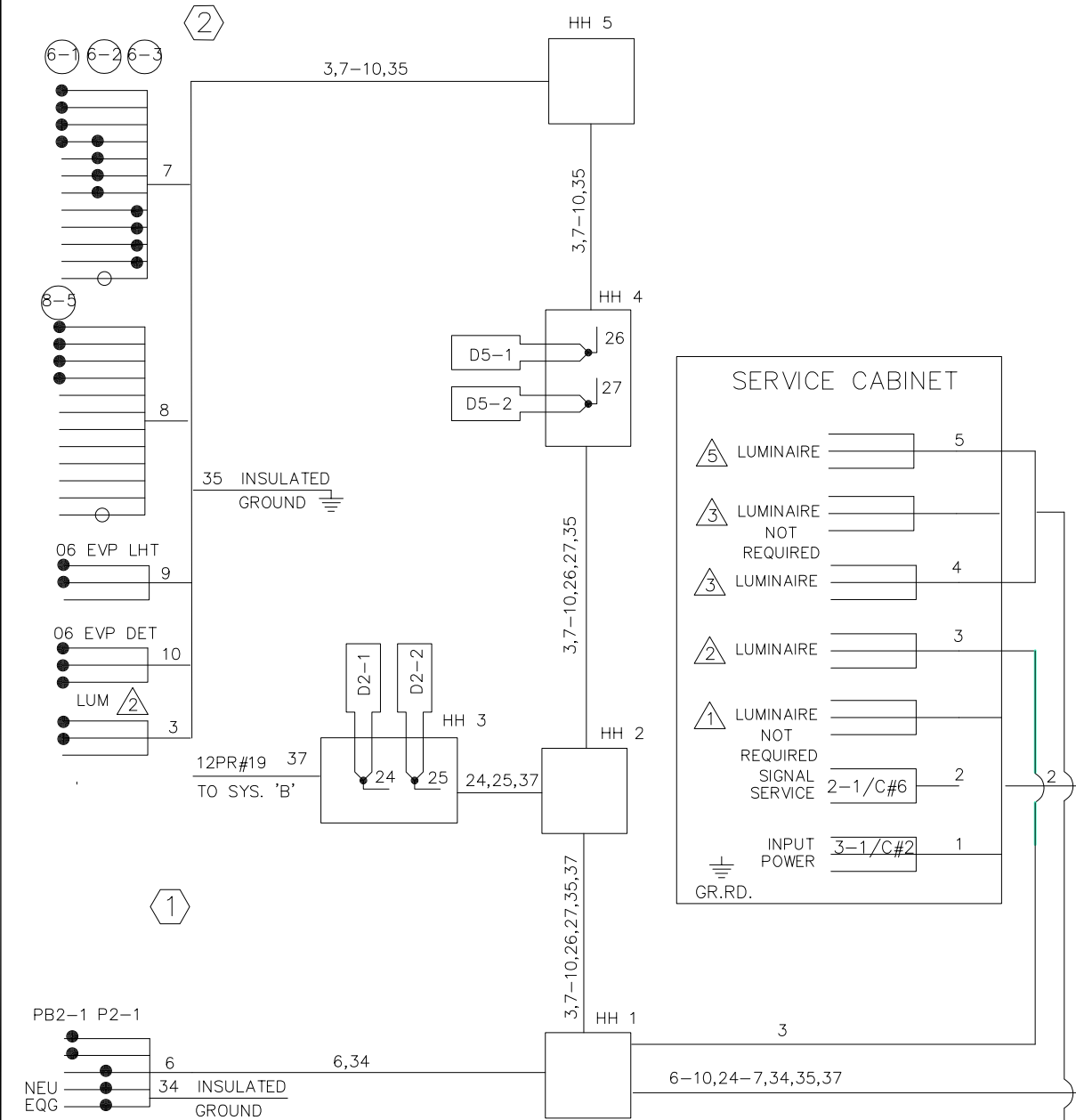
SHEET
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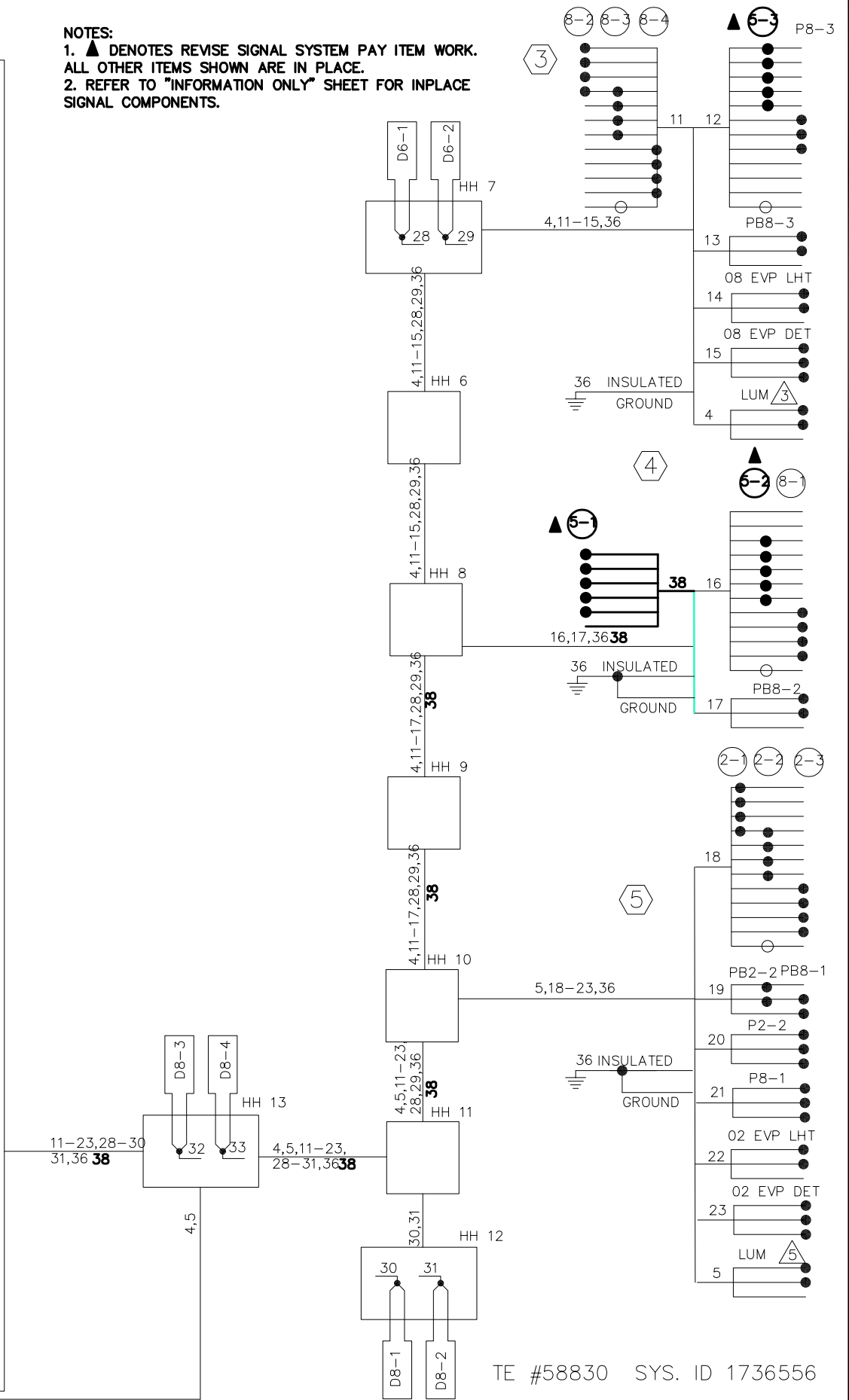
CONDUCTOR COLOR CODE	
TO SIGNAL CABINET	TO DEVICE
3/C#20 R OR O WH OR YEL BLK OR BL	12/C#12 R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH G/BLK
2/C#14 BLK CLR	5/C#14 R O BL WH G
2-1/C BLK WH	4/C#14 R O BL WH BLK
12PR#19	3/C#12 R WH BLK

BASE OF POLE OR PEDESTAL	
7/C#14 CABLE	R RED O YEL BL YEL WH GRN Y NEU BLK GLTA BRN GLTA SPR
5/C#14 CABLE	R RED O YEL BL GRN WH NEU BLK GLTA
4/C#14 CABLE	R DWK O WLK BL WH WH NEU BLK SPR
2/C#14 CABLE	BLK EVP/PB/FLASHER WH NEU

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



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.



Plot Date: 01/19/2022 - 10:28am
Drawing Name: U:\2277046\3\CAD\Sheeting.dwg

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

Stantec
 1800 Pioneer Creek Center
 Maple Plain, MN 55439
 www.stantec.com

SP 8608-35 (TH 101=187)

REVISE SIGNAL SYSTEM A
 WIRING DIAGRAM
 CSAH 36/TH 101 NORTHBOUND RAMPS

SHEET
 6
 OF
 28

TE #58830 SYS. ID 1736556

SIGNAL INDICATIONS									
DIMENSIONS ARE SHOWN IN INCHES									
FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA	
2-1	2	R	●	●	●				
2-2	2	R	●	●	●				
5-1	5	R				←	←	←	
5-2	5	R				←	←	←	
5-3	5	R				←	←	←	
6-1	6	R	●	●	●				
6-2	6	R	●	●	●				
8-1	8	R	●	●	●				
8-2	8	R	●	●	●				
8-3	8	R	●	●	●				
8-4	8	R				←	←	←	
8-5	8	R				←	←	←	

- NOTES:
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, PAINTING OF SIGNAL SYSTEM, "LED" SIGNAL AND PEDESTRIAN INDICATIONS.
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - A 3/4 "HALF COUPLING, 3/4 " NIPPLE AND CONDUIT OUTLET BODY FOR EVP DETECTION SHALL BE INSTALLED 6' FROM THE END OF THE MASTARM. A 3/C#20 SHALL BE WIRED DIRECT TO THE CONDUIT OUTLET BODY. 2-1/C#14 FROM TERMINAL BLOCK IN SIGNAL BASE TO THE CONDUIT OUTLET BODY.
 - ALL HANDHOLES SHALL BE PVC WITH METAL RINGS AND COVERS.
 - SEE SIGNAL INDICATION BOX FOR SIGNAL HEAD CONFIGURATION.
 - SEE SPECIAL PROVISIONS FOR CONDUIT SPECIFICATIONS.
 - NMC LOOPS D2-1, D2-2 SHALL BE PLACED IN THE BRIDGE DECK. SEE SPECIAL PROVISIONS.
 - SEE SPECIAL PROVISIONS FOR F&I OF WOVEN WIRE CLOTH.

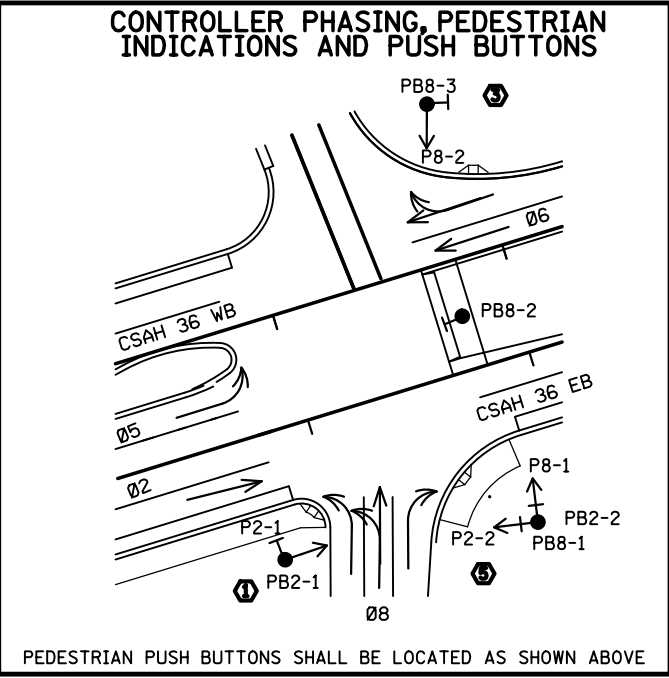
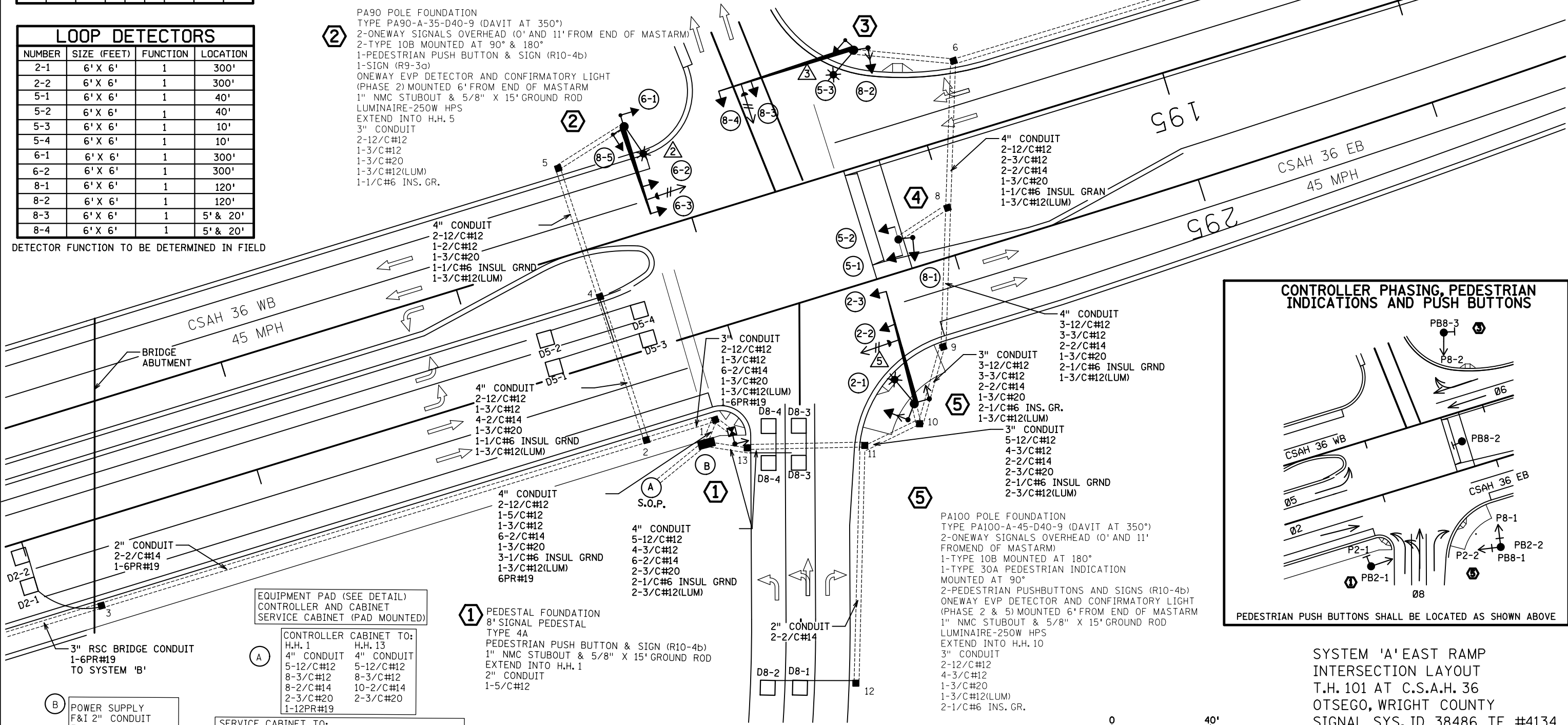
- ③ PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 2-ONEWAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MASTARM)
 1-TYPE 10A MOUNTED AT 90°.
 1- TYPE 10B MOUNTED AT 180°.
 1 - SIGN (R9-3a)
 ONEWAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8) MOUNTED 6' FROM END OF MASTARM
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 LUMINAIRE-250W HPS
 EXTEND INTO H.H. 6
 3" CONDUIT
 2-12/C#12
 2-3/C#12
 1-3/C#20
 1-3/C#12(LUM)
 1-1/C#6 INS. GR.

- ④ PA85 POLE FOUNDATION
 TYPE PA85-AHST-6/6-203
 2-ONE WAY SIGNALS (OVERHEAD) END MOUNTED
 1-TYPE 10A MOUNTED 90°
 1-PEDESTRIAN PUSHBUTTON & SIGN (R10-4b)
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H. 8
 3" CONDUIT
 1-12/C#12
 1-3/C#12
 2-1/C#6 INS. GR.

LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	LOCATION
2-1	6' X 6'	1	300'
2-2	6' X 6'	1	300'
5-1	6' X 6'	1	40'
5-2	6' X 6'	1	40'
5-3	6' X 6'	1	10'
5-4	6' X 6'	1	10'
6-1	6' X 6'	1	300'
6-2	6' X 6'	1	300'
8-1	6' X 6'	1	120'
8-2	6' X 6'	1	120'
8-3	6' X 6'	1	5' & 20'
8-4	6' X 6'	1	5' & 20'

- ② PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
 2-ONEWAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MASTARM)
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 EXTEND INTO H.H. 5
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 2-12/C#12
 1-3/C#12
 1-3/C#20
 1-3/C#12(LUM)
 1-1/C#6 INS. GR.

DETECTOR FUNCTION TO BE DETERMINED IN FIELD



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

EQUIPMENT PAD (SEE DETAIL)
 CONTROLLER AND CABINET
 SERVICE CABINET (PAD MOUNTED)

CONTROLLER CABINET TO:		
H.H. 1	H.H. 13	
4" CONDUIT	4" CONDUIT	
5-12/C#12	5-12/C#12	
8-3/C#12	8-3/C#12	
8-2/C#14	10-2/C#14	
2-3/C#20	2-3/C#20	
1-12PR#19		

SERVICE CABINET TO:		
H.H. 1	2" CONDUIT	S.O.P.
2" CONDUIT	2-1/C#6	2" CONDUIT
2-3/C#12(LUM)	1-1/C#6 INS. GR.	3-1/C#2

- ① PEDESTAL FOUNDATION
 8' SIGNAL PEDESTAL
 TYPE 4A
 PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 1" NMC STUBOUT & 5/8" X 15' GROUND ROD
 EXTEND INTO H.H. 1
 2" CONDUIT
 1-5/C#12

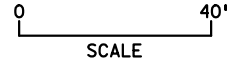
NOTE: SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET W/BATTERIES.

CERTIFIED BY _____ LIC. NO. 13296
 LICENSED PROFESSIONAL ENGINEER

FILE NAME: *****FILENAME*****

STATE PROJ. NO. 8608-21 (T.H. 101)

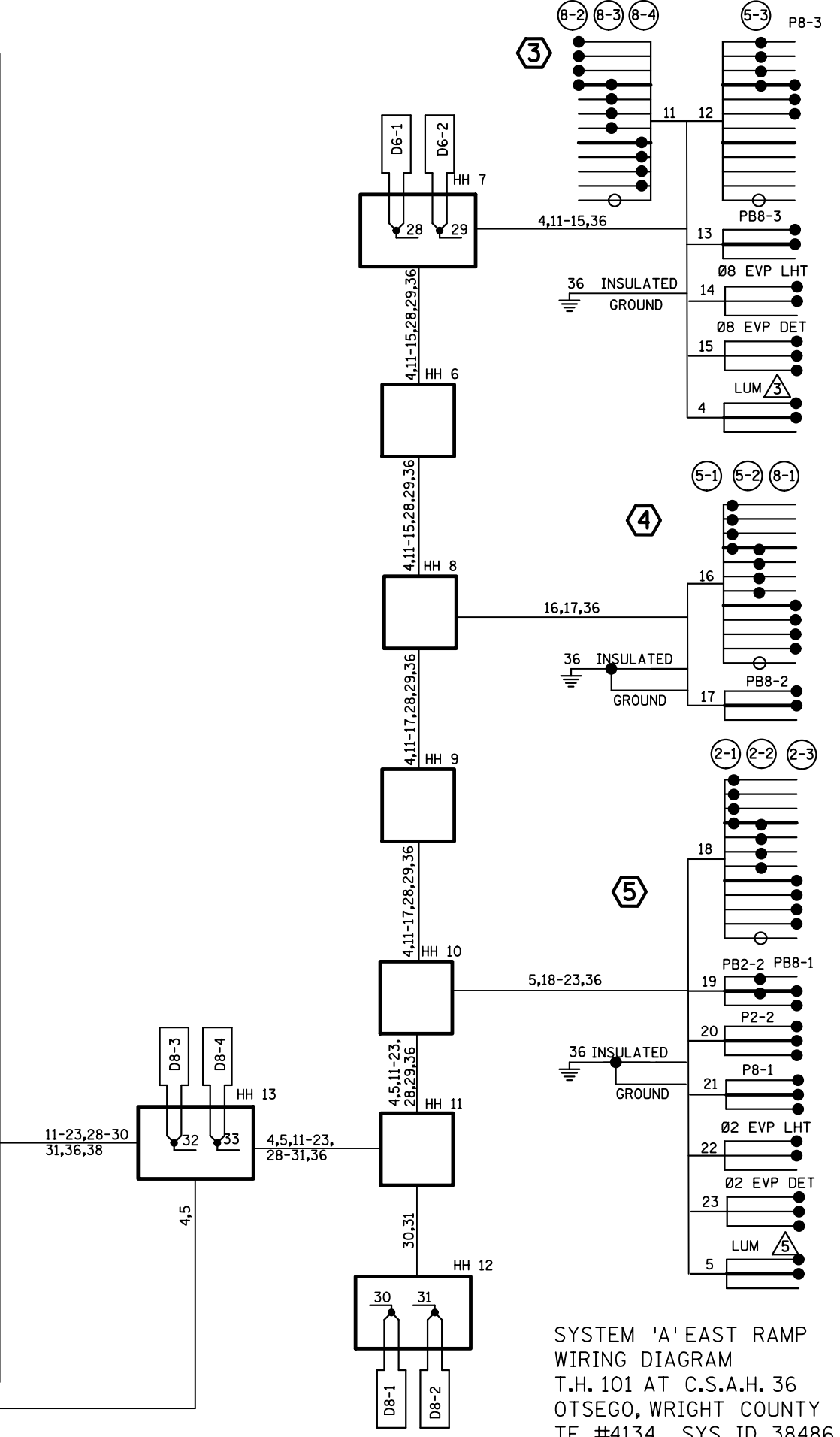
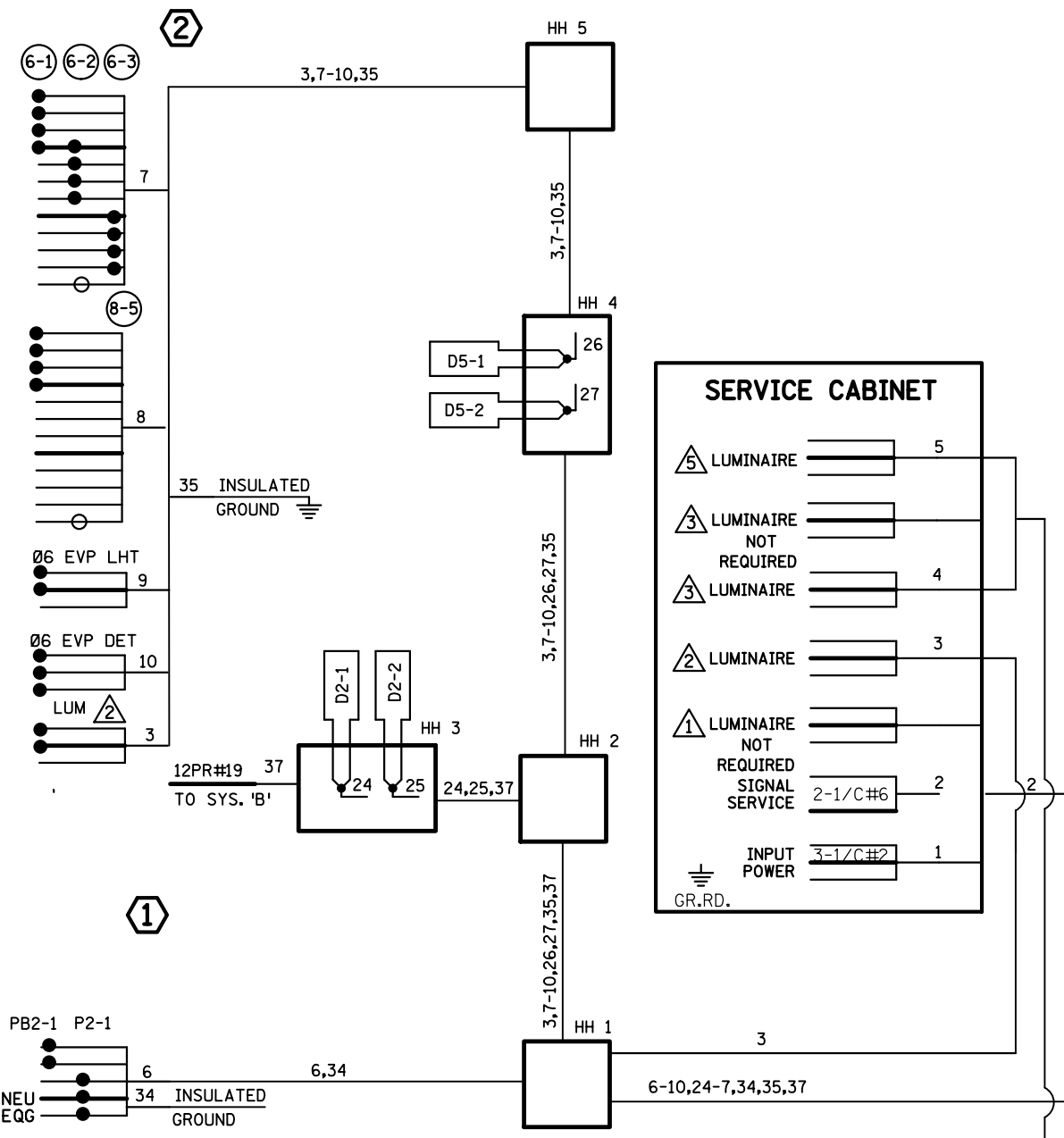
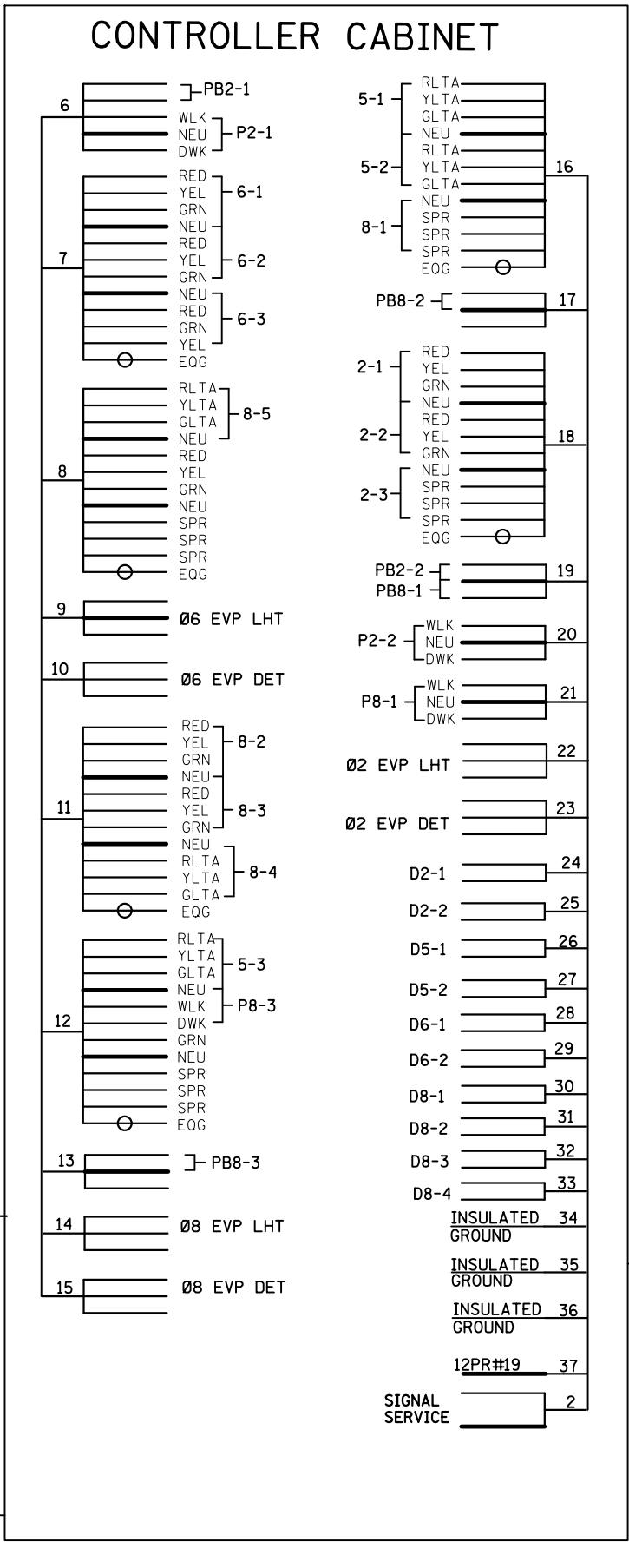
SHEET NO. 653 OF 741 SHEETS



SYSTEM 'A' EAST RAMP
 INTERSECTION LAYOUT
 T.H. 101 AT C.S.A.H. 36
 OTSEGO, WRIGHT COUNTY
 SIGNAL SYS. ID 38486 TE #4134
 MASTER ID 38487 TE #4536

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 BL/BLK WH/BLK BLK BLK/WH G/BLK G R O BL WH WH G R O BL WH WH G R O BL WH WH G R O BL WH WH G	7/C#14 CABLE R O BL WH Y R O BL WH BLK BRN 4/C#14 CABLE R O BL WH BLK 2/C#14 CABLE R O BL WH BLK WH	RED YEL GRN NEU YLTA GLTA SPR 3 & 4- SECTION SIGNAL INDICATION PEDESTRIAN INDICATION EVP/PB/FLASHER NEU

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



SYSTEM 'A' EAST RAMP
WIRING DIAGRAM
T.H. 101 AT C.S.A.H. 36
OTSEGO, WRIGHT COUNTY
TE #4134 SYS. ID 38486