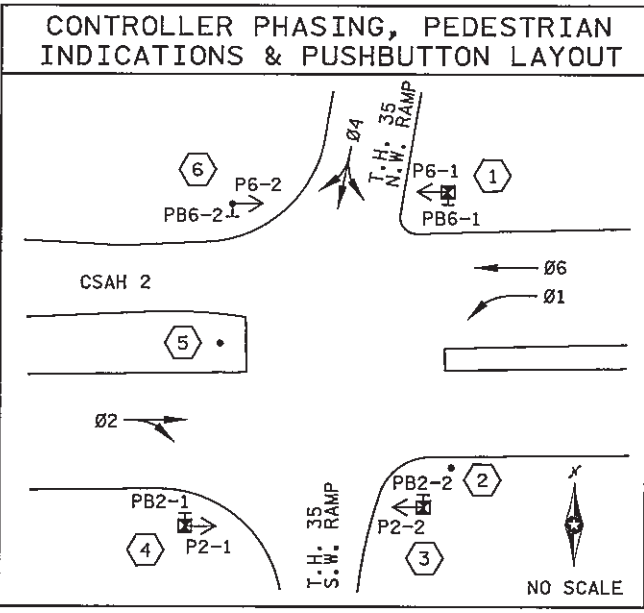


LED SIGNAL INDICATIONS							
FACE	R	Y	G	RTA	YTA	FYA	GTA
1-1,1-2,1-3				←	←	←	←
2-1,2-2,2-3	●	●	●				
2-4	●	●	↑				
4-1	●	●	●				
4-2	●	●	●				
4-3,4-4				←	←		
6-1,6-2,6-3	●	●	●				

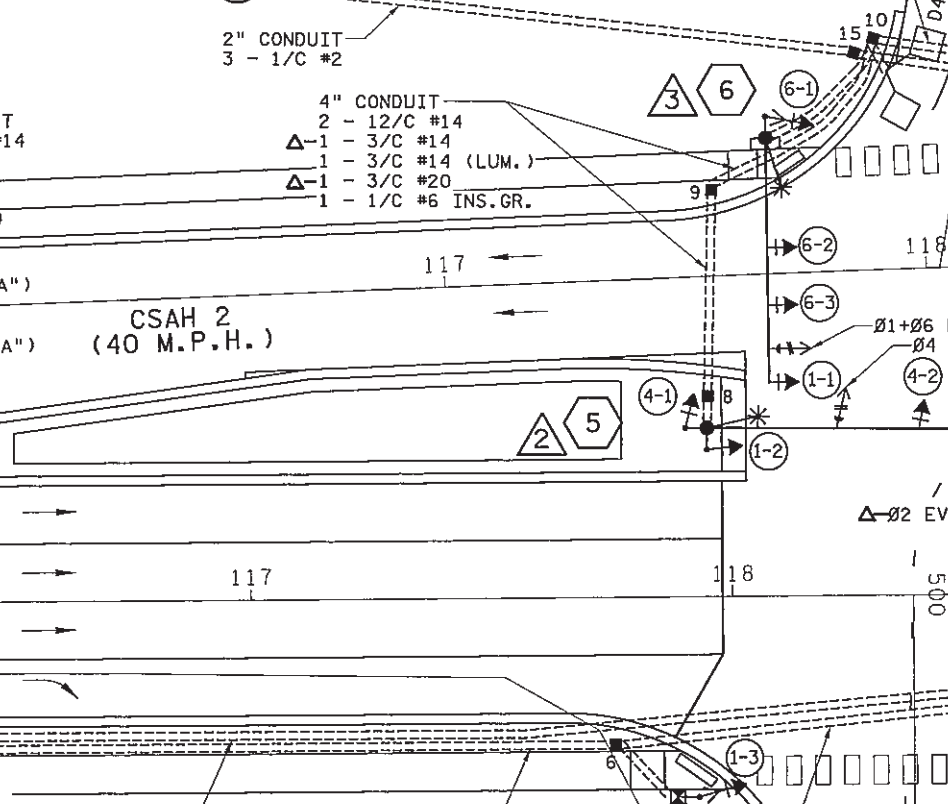
-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
 -EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD  
 -FYA = FLASHING YELLOW ARROW

- (A) EQUIPMENT PAD - SEE DETAIL CONTROLLER & CABINET SERVICE CABINET**
- 1 - FIBER-OPTIC TELEMETRY INTERFACE PANEL WITH HARNESS
  - 1 - FIBER-OPTIC MODEM
- EXTEND 4" CONDUIT INTO HH-1 WITH:
- 2 - 12/C #14
  - 1 - 6/C #14
  - 1 - 3/C #14
  - 2 - 4/C #14
  - 1 - 3/C #20
  - 11 - 2/C #14
  - 1 - 1/C #6 INS.GR.
- EXTEND 4" CONDUIT INTO HH-13 WITH:
- 4 - 12/C #14
  - 1 - 4/C #14
  - 2 - 3/C #14
  - 7 - 2/C #14
  - 2 - 3/C #20
  - 1 - 1/C #6 INS.GR.
- EXTEND 3" CONDUIT INTO SV-2 WITH:
- 1 - FO PIGTAIL (6SM)
  - 1 - 1/C #14 (TRACER)
- 3" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
- 2" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
- 3/4" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
- CONTROLLER TO SERVICE CABINET
- EXTEND 2" CONDUIT WITH:
- 2 - 1/C #6 AND 1 - 1/C #6 INS.GR.
- SERVICE CABINET TO HH-13
- EXTEND 2" CONDUIT WITH:
- 3 - 3/C #14 (LUM.)
- SERVICE CABINET TO HH-14:
- EXTEND 2" CONDUIT WITH:
- 3 - 1/C #2
- 2" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)

- (B) SOURCE OF POWER**
- INPLACE GROUND MOUNTED TRANSFORMER (APPROXIMATE LOCATION)
- EXTEND 2" CONDUIT INTO HH-16 WITH:
- 3 - 1/C #2



- (6) PA100 POLE FOUNDATION**  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
  - 2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 15' & 27'
  - 1 - ANGLE MOUNT SIGNAL AT 180°
  - 1 - ANGLE MOUNT C.D. PED IND AT 180°
  - 1 - APS PUSH BUTTON AND SIGN (RT ARROW)
- ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 1+6) MOUNTED 27' FROM END OF MAST ARM
- LUMINAIRE - 250 WATT H.P.S.
- TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS
- 1 - R9-3a SIGN (18"x18") FACING POLE 5
- EXTEND INTO HH-10:
- 3" CONDUIT
- 2 - 12/C #14
  - 1 - 3/C #14
  - 1 - 3/C #14 (LUM.)
  - 1 - 2/C #14
  - 2 - 3/C #20
  - 1 - 1/C #6 INS.GR.
- 4" CONDUIT
- 4 - 12/C #14
  - 2 - 3/C #14
  - 2 - 3/C #14 (LUM.)
  - 2 - 2/C #14
  - 2 - 3/C #20
  - 1 - 1/C #6 INS.GR.

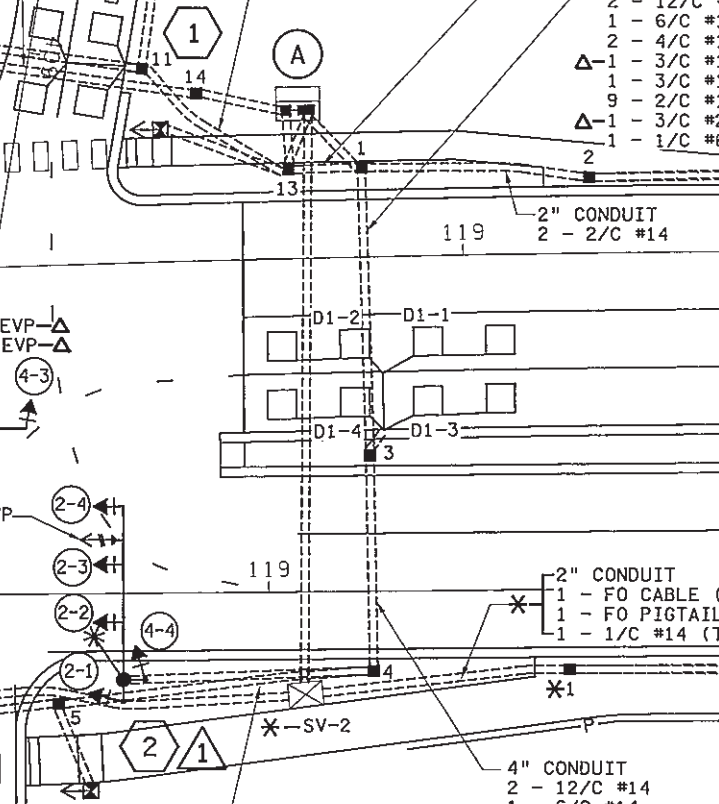


- (5) PA100 POLE FOUNDATION**  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
  - 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 10'
  - 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
- ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4) MOUNTED 27' FROM END OF MAST ARM
- LUMINAIRE - 250 WATT H.P.S.
- TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS
- 2 - R9-3a SIGNS (18"x18") FACING POLE 4 & 6
- EXTEND INTO HH-8:
- 3" CONDUIT
- 2 - 12/C #14
  - 1 - 3/C #14
  - 1 - 3/C #14 (LUM.)
  - 1 - 3/C #20
  - 1 - 1/C #6 INS.GR.

**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 4 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø1 SHALL BE PROTECTED/PERMISSIVE LEFT TURN WITH FLASHING YELLOW LEFT TURN ARROW
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

- (3) PEDESTAL FOUNDATION**  
 9' PEDESTAL POLE & BASE (8' POLE PLUS BASE)
- 1 - ANGLE MOUNT C.D. PED IND
  - 1 - APS PUSH BUTTON AND SIGN (LT ARROW)
  - 1 - R6-1L SIGN (36"x12") ONE WAY
  - 1 - R6-1R SIGN (36"x12") ONE WAY
  - 1 - R9-3a SIGN (18"x18") FACING POLE 2
- EXTEND INTO HH-13:
- 3" CONDUIT
- 1 - 4/C #14
  - 1 - 2/C #14
  - 1 - 1/C #6 INS.GR.
- 4" CONDUIT
- 2 - 12/C #14
  - 1 - 6/C #14
  - 2 - 4/C #14
  - 1 - 3/C #14
  - 1 - 3/C #14 (LUM.)
  - 9 - 2/C #14
  - 1 - 3/C #20
  - 1 - 1/C #6 INS.GR.



- (2) PA90 POLE FOUNDATION**  
 TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
  - 2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 11' & 23'
  - 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
- ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2) MOUNTED 27' FROM END OF MAST ARM
- LUMINAIRE - 250 WATT H.P.S.
- TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS
- 1 - R9-3a SIGN (18"x18") FACING PEDESTAL 1
- EXTEND INTO HH-4:
- 3" CONDUIT
- 2 - 12/C #14
  - 1 - 3/C #14
  - 1 - 3/C #14 (LUM.)
  - 1 - 3/C #20
  - 1 - 1/C #6 INS.GR.

**NOTES:**

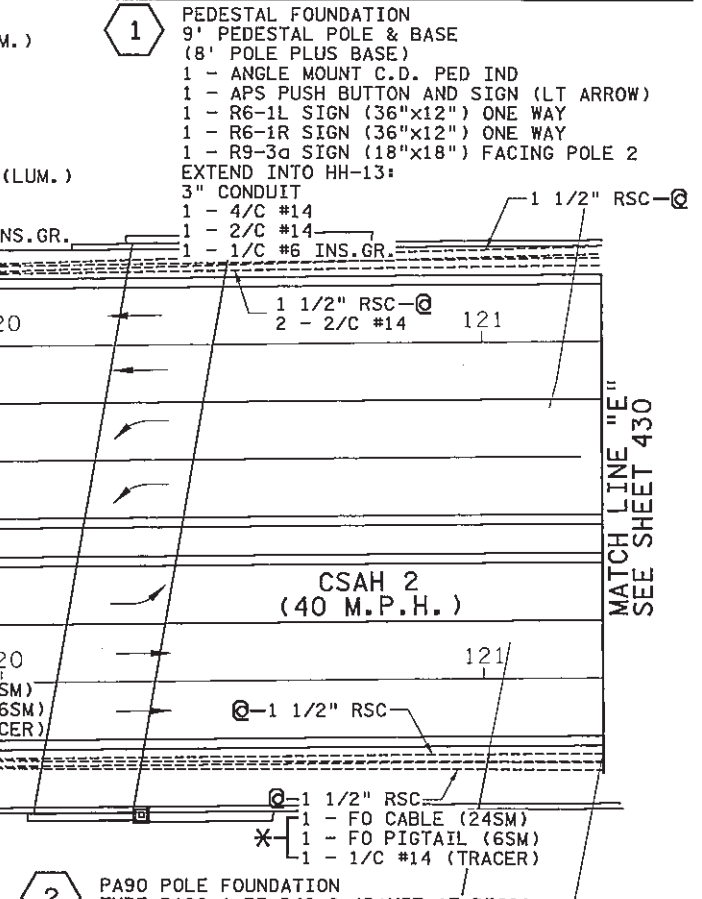
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, PEDESTRIAN CURB RAMPS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND VERIFIED BY WASHINGTON COUNTY AND MN/DOT TRAFFIC OFFICE PERSONNEL.
- SIGNING IS INCLUDED IN THE SIGNAL PAY ITEM. FOR TYPE "D" SIGNS, SEE DETAILS.
- FOR PAVEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
- ITEMS DENOTED WITH AN \* ARE INCLUDED IN THE INTERCONNECT PAY ITEM.
- ITEMS DENOTED WITH AN Δ ARE INCLUDED IN THE EVP SYSTEM PAY ITEM.
- ITEMS DENOTED WITH AN @ ARE INCLUDED IN THE BRIDGE PAY ITEMS.
- ALL NEW CONDUIT SHALL BE NMC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C #6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN ON THE PLAN.
- THE CONTRACTOR SHALL COORDINATE WITH CONNEXUS ENERGY THE SOURCE OF POWER CONNECTION AND LOCATION OF NEW GROUND MOUNTED TRANSFORMER.
- THIS PLAN SPECIFIES CONDUIT SIZES, TYPES AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.

SIGNAL SYSTEM ID#: 402  
 METER ADDRESS:  
 1823 BROADWAY AVE.  
 FOREST LAKE, MN 55025

MN DOT SYS ID:  
 21864

PVC LOOP DETECTORS		
DESIGNATION	NO. & SIZE/FT.	LOCATION
D1-1,D1-3	2-6'X6'	20',50'
D1-2,D1-4	2-6'X6'	5',35'
D2-1,D2-2,D2-3	1-6'X6'	250'
D4-1,D4-2	1-6'X6'	250'
D4-3,D4-4,D4-5	2-6'X6'	5',20'
D6-1@,D6-2@	1-6'X6'	250'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



NO	DATE	BY	CKD	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: BRIAN D. HOLT  
 Date: 11-29-10 License #: 21428

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: SCOTT C. POSKA  
 Date: 11-29-10 License #: 47068

STATE PROJECT NO. 82-602-14 & 82-602-15  
 STATE PROJECT NO. 8280-44 (T.H. 35)  
 STATE PROJECT NO. 214-020-002  
 COUNTY PROJECT NO. 11-200210

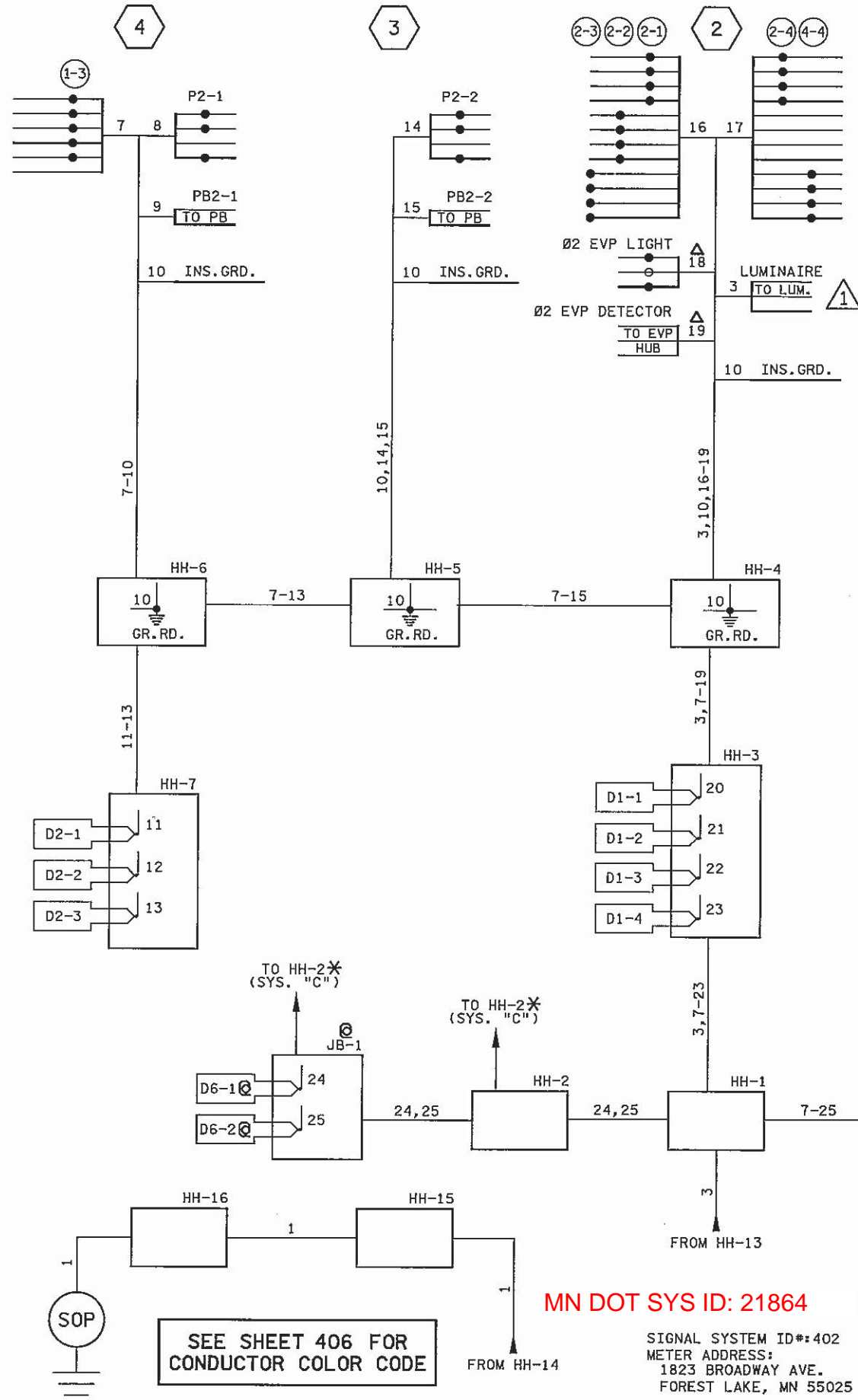
DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY S. POSKA  
 COMM. NO. 0096733



WASHINGTON COUNTY  
 TRAFFIC SIGNAL PLANS  
 S.P. 82-602-14, 82-602-15 CSAH 2  
 INTERSECTION LAYOUT  
 CSAH 2 AND TH 35 WEST RAMPS (SYSTEM "B")

STATE PAYS WASHINGTON COUNTY TO OPERATE & MAINTAIN

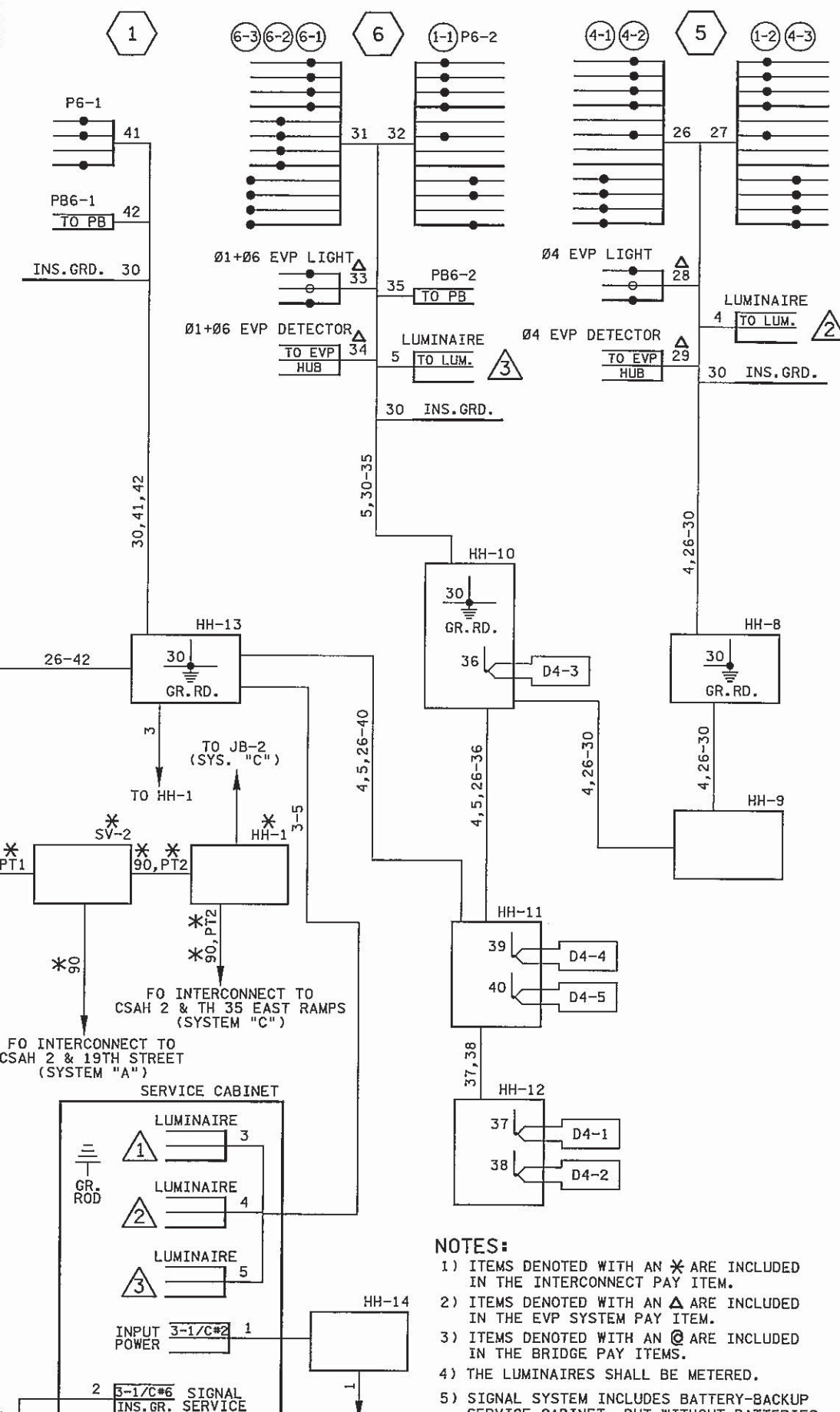
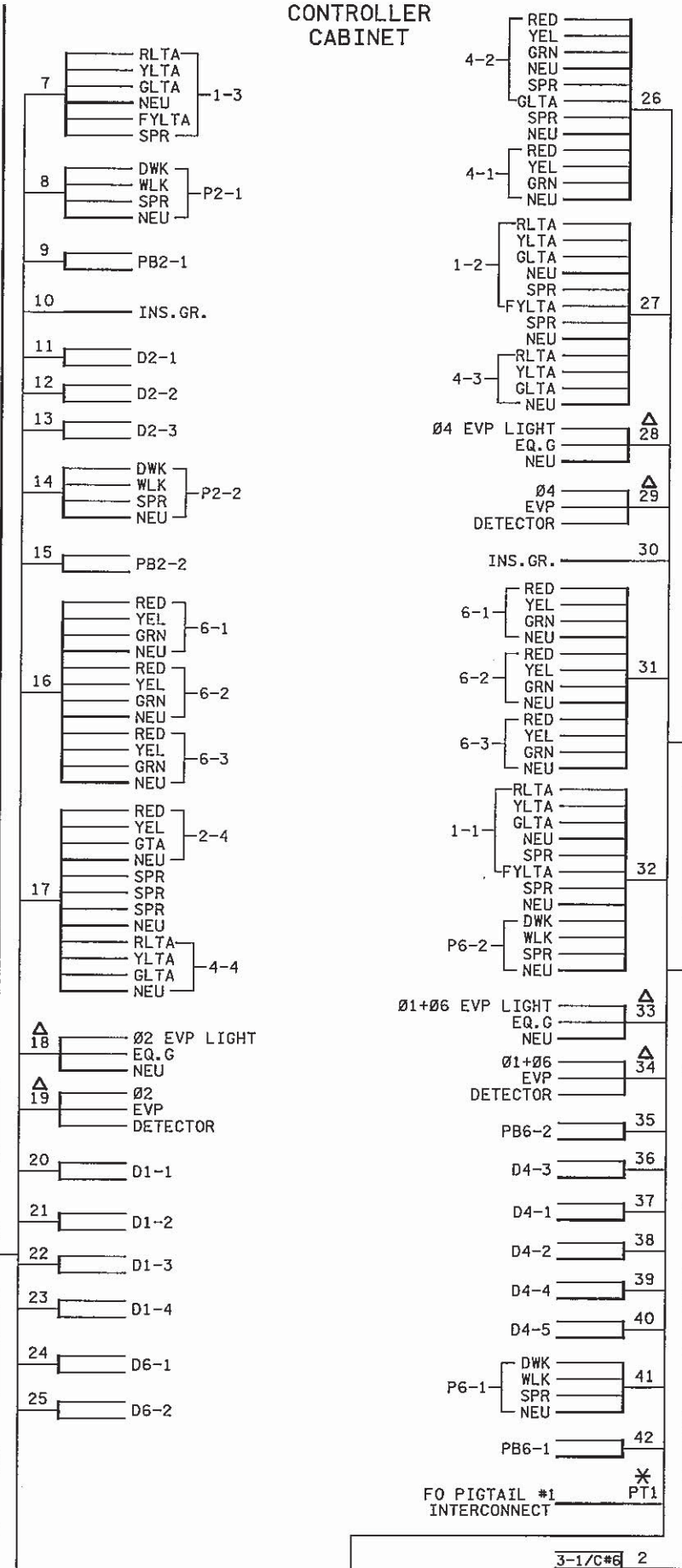




MN DOT SYS ID: 21864

SIGNAL SYSTEM ID#: 402  
 METER ADDRESS:  
 1823 BROADWAY AVE.  
 FOREST LAKE, MN 55025

SEE SHEET 406 FOR  
 CONDUCTOR COLOR CODE



- NOTES:**
- 1) ITEMS DENOTED WITH AN \* ARE INCLUDED IN THE INTERCONNECT PAY ITEM.
  - 2) ITEMS DENOTED WITH AN Δ ARE INCLUDED IN THE EVP SYSTEM PAY ITEM.
  - 3) ITEMS DENOTED WITH AN @ ARE INCLUDED IN THE BRIDGE PAY ITEMS.
  - 4) THE LUMINAIRES SHALL BE METERED.
  - 5) SIGNAL SYSTEM INCLUDES BATTERY-BACKUP SERVICE CABINET, BUT WITHOUT BATTERIES.

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NO	DATE	BY	CHKD	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: **BRIAN D. HOLT**  
*Brian D. Holt*  
 Date: 11-29-10 License #: 21428

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: **SCOTT C. POSKA**  
*Scott C. Poska*  
 Date: 11-29-10 License #: 47068

STATE PROJECT NO. 82-602-14 & 82-602-15  
 STATE PROJECT NO. 8280-44 (T.H. 35)  
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 COUNTY PROJECT NO. 11-200210  
 DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY S. POSKA  
 COMM. NO. 0096733



WASHINGTON COUNTY  
 TRAFFIC SIGNAL PLANS  
 S.P. 82-602-14, 82-602-15 CSAH 2  
 FIELD WIRING DIAGRAM  
 CSAH 2 AND TH 35 WEST RAMPS (SYSTEM "B")

STATE PAYS WASHINGTON COUNTY TO OPERATE & MAINTAIN

2 OF 2