

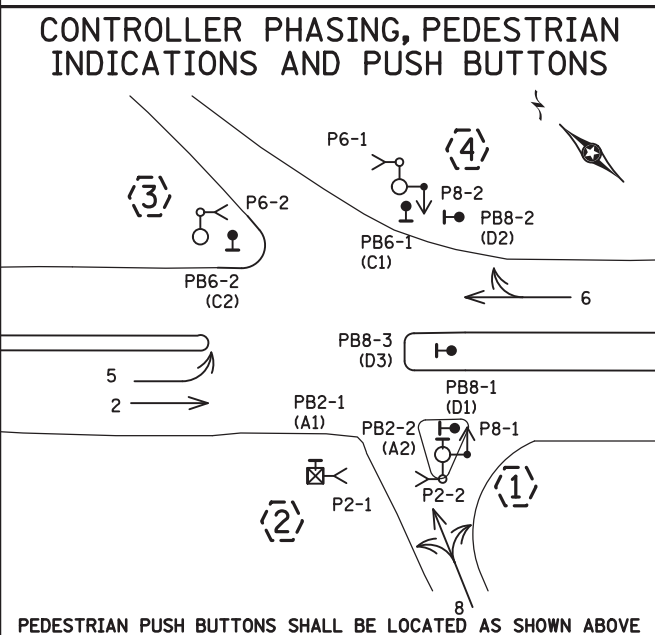
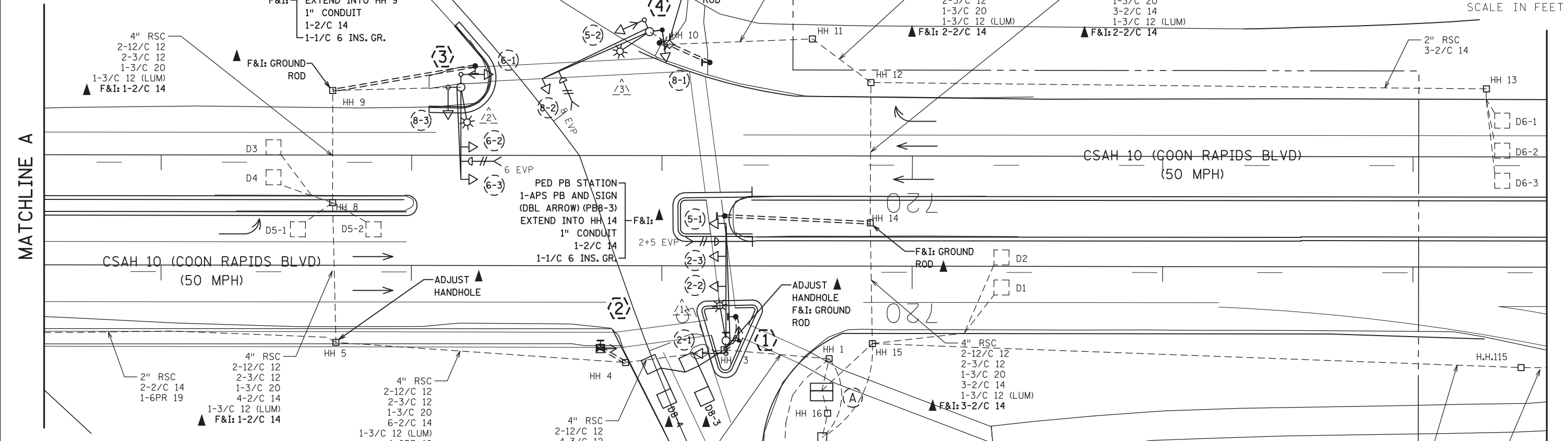
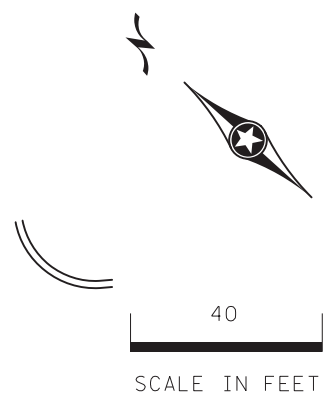
DISTRICT #: Metro
 I/PLOT NAME: T20220_sgl_systemB.L
 PATH & FILENAME: Projects\DM_R05\047\00007\Traffic\Signal\2.35 - 1735049 - MN47-10\COON RAPIDS - MN47-10\COON RAPIDS - BD ERVPENDING\T20220\SS9\EDM\SS9.DWG

LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	STATUS
D2-1, D2-2	6X6	400	INPLACE
D5-1	6X6	40	INPLACE
D5-2	6X6	10	INPLACE
D6-1, D6-2, D6-3	6X6	300	INPLACE
D8-1, D8-2	6X6	300	INPLACE
▲ D8-3, D8-4	2-6X6	5 & 20	F&I
D1, D2	6X6	100	INPLACE
D3, D4	6X6	50	INPLACE

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

SIGNAL HEAD CHART			
FACE	R	Y	G
2-1, 2-2, 2-3	○	○	○
5-1, 5-2	◀	◀	◀
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

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



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

SIGNAL SYSTEM OPERATION

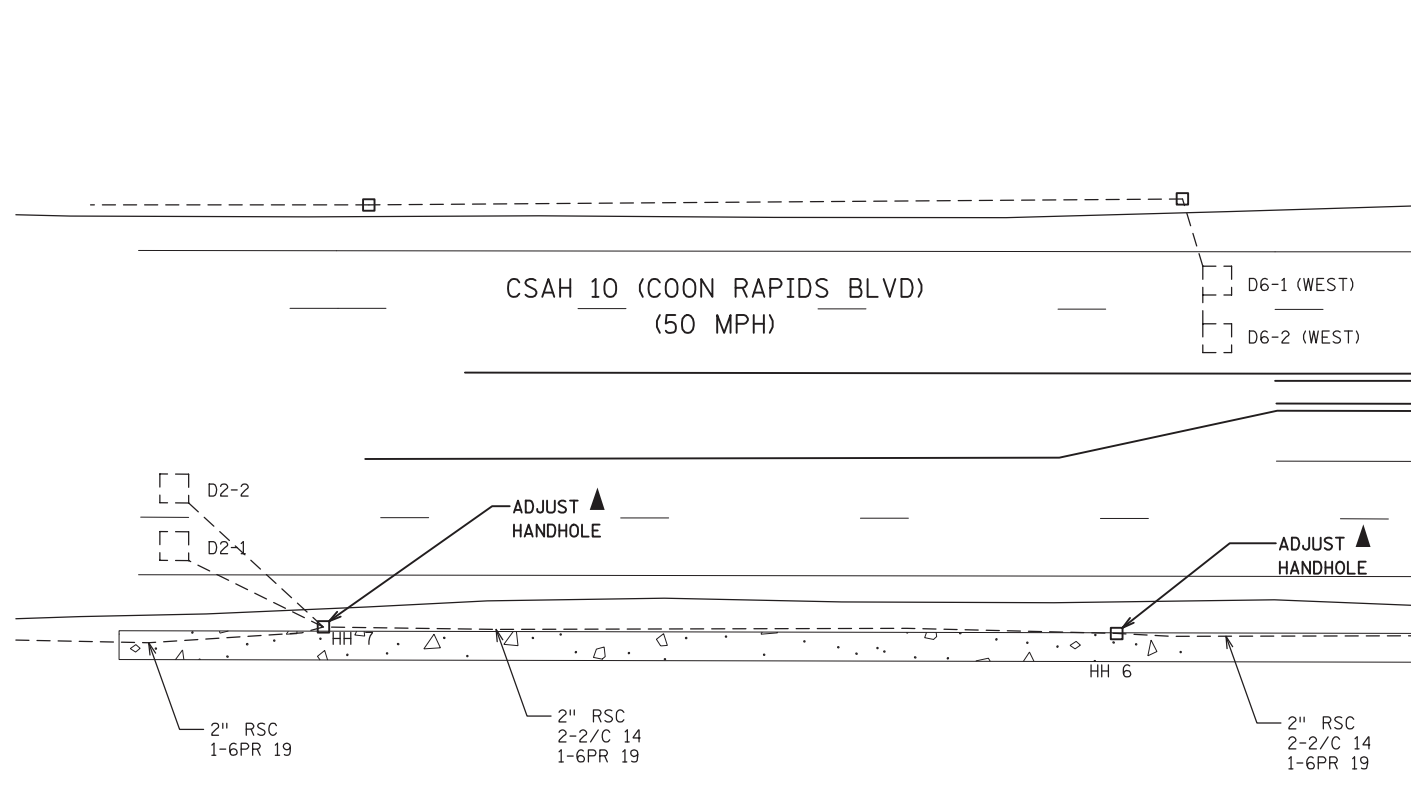
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE(S) 5 BEING A PROTECTED LEFT TURN PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- ### ▲ SIGNAL REVISION NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 2. ENSURE THE EXACT LOCATION OF THE HAND HOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MN DOT OFFICE PERSONNEL.
 3. FOR PAVEMENT MARKINGS SEE PAVEMENT MARKINGS PLANS.
 4. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
 5. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
 6. USE PVC OR HDPE FOR ALL NEW CONDUIT.
 7. CONDUIT SIZES ARE NOMINAL DIAMETER.
 8. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
 9. HAND HOLES IN SIDEWALK AREAS AND/OR PEDESTRIAN RAMPS NEED TO BE ADJUSTED TO MATCH THE PROPOSED GRADE AND PROVIDE A SMOOTH TRANSITION TO THE CONCRETE WALK SURFACE. SEE DETAIL SHEET FOR EXTENSION RINGS.

BY	DATE	REVISIONS	SYSTEM ID: 1735049	T.E. 21501	S.A.P. NO.	DRAWN BY: JBA	CKD BY: JDC	DATE: 04/06/20
			METER ADDRESS: TH 47 AND CSAH 10		CERTIFIED BY: <i>Michael P. Libinsky</i>		LIC. NO. 19863	DATE: 04/07/2020
			OLD SYSTEM ID: 20220		STATE PROJ. NO. 0214-48 (T.H. 10) SHEET NO. SS9 OF SS27 SHEETS			

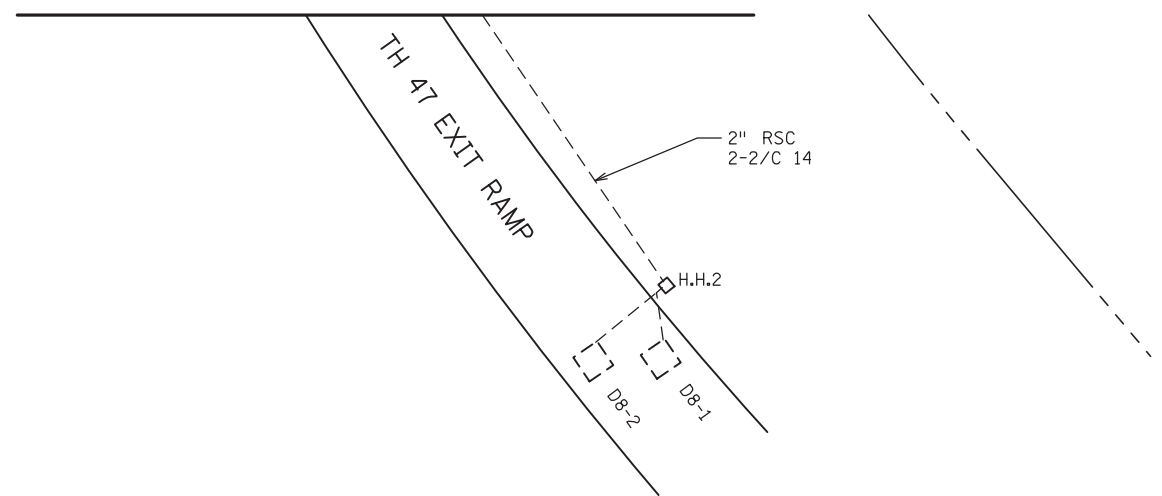
INTERSECTION LAYOUT
REVISE TRAFFIC CONTROL SIGNAL SYSTEM B
T.H. 47 EAST RAMP AT C.S.A.H. 10
COON RAPIDS, ANOKA COUNTY

DISTRICT #: Metro
 I/PLOT NAME: T20220_sgl_systemB_M
 PATH & FILENAME: Projects\DM罗斯\047\00007\Traffic\Signals\2.35 - 1735049 - MN47-10\COON RAPIDS BD ERVPENDING\T20220\SS10\SS10.DWG (REVISED: 7-APR-2020)



MATCHLINE A

MATCHLINE B



- (3) PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM
 END OF MAST ARM)
 TYPE 10A-POLE MOUNTED AT 90 DEG
 TYPE 10B-POLE MOUNTED AT 180 DEG
 ▲ REMOVE: 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 R9-3a SIGN PANEL-FACING POLE 2
 2-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6)
 EXTEND INTO HH 9:
 3" RSC
 2-12/C 12
 2-3/C 12
 1-3/C 20
 1-3/C 12 (LUM)

- (4) PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 1-ONE WAY SIGNAL-OVERHEAD
 TYPE 10B-POLE MOUNTED AT 90 DEG
 TYPE 10A-POLE MOUNTED AT 180 DEG
 ▲ REMOVE: 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 R9-3a SIGN PANEL-FACING POLE 1
 ▲ F&I: 1-C.D. PED HEAD (TYPE 10B) AT 180 DEG
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8)
 EXTEND INTO HH 10:
 3" RSC
 2-12/C 12
 2-3/C 12
 1-3/C 20
 1-3/C 12 (LUM)

- (2) ▲ REMOVE: PEDESTAL FOUNDATION
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 ▲ F&I: PEDESTAL FOUNDATION
 8' PEDESTAL POLE AND BASE
 ▲ S&I: TYPE 4A
 R9-3a SIGN PANEL-FACING POLE 3
 ▲ F&I: 1-APS PB AND SIGN (LT ARROW) (PB2-1)
 EXTEND INTO HH 4:
 3" RSC
 ▲ REMOVE: 2-3/C 12
 ▲ PULL BACK TO HH 4: 2-3/C 12
 ▲ INSTALL: 3" CONDUIT
 2-3/C 12
 ▲ F&I: 1-2/C 14

- (1) P90 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23'
 FROM END OF MAST ARM)
 TYPE 10B-POLE MOUNTED AT 180 DEG
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 R9-3a SIGN PANEL-FACING POLE 4
 ▲ REMOVE: 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 R9-3a SIGN PANEL-FACING POLE 4
 ▲ F&I: 1-C.D. PED HEAD (TYPE 30A) AT 270 DEG
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (PHASES 2+5)
 EXTEND INTO HH 3:
 3" RSC
 2-12/C 12
 3-3/C 12
 1-3/C 20
 1-3/C 12 (LUM)

- (A) CONTROLLER AND CABINET
 CABINET FOUNDATION
 EXTEND INTO HH 16:
 2" RSC
 3-1/C 6
 EXTEND INTO HH 1: 4" RSC
 4-12/C 12
 7-3/C 12
 2-3/C 20
 10-2/C 14
 1-6 PR 19
 ▲ F&I: 4-2/C 14
 EXTEND INTO HH 15:
 4" RSC
 2-12/C 12
 2-3/C 12
 1-3/C 20
 5-2/C 14
 1-6 PR 19
 ▲ F&I: 3-2/C 14
 2-3" R.S.C. STUBBED OUT FROM
 CABINET TO NORTH (THREADED
 AND CAPPED BOTH ENDS-
 FOR FUTURE USE)

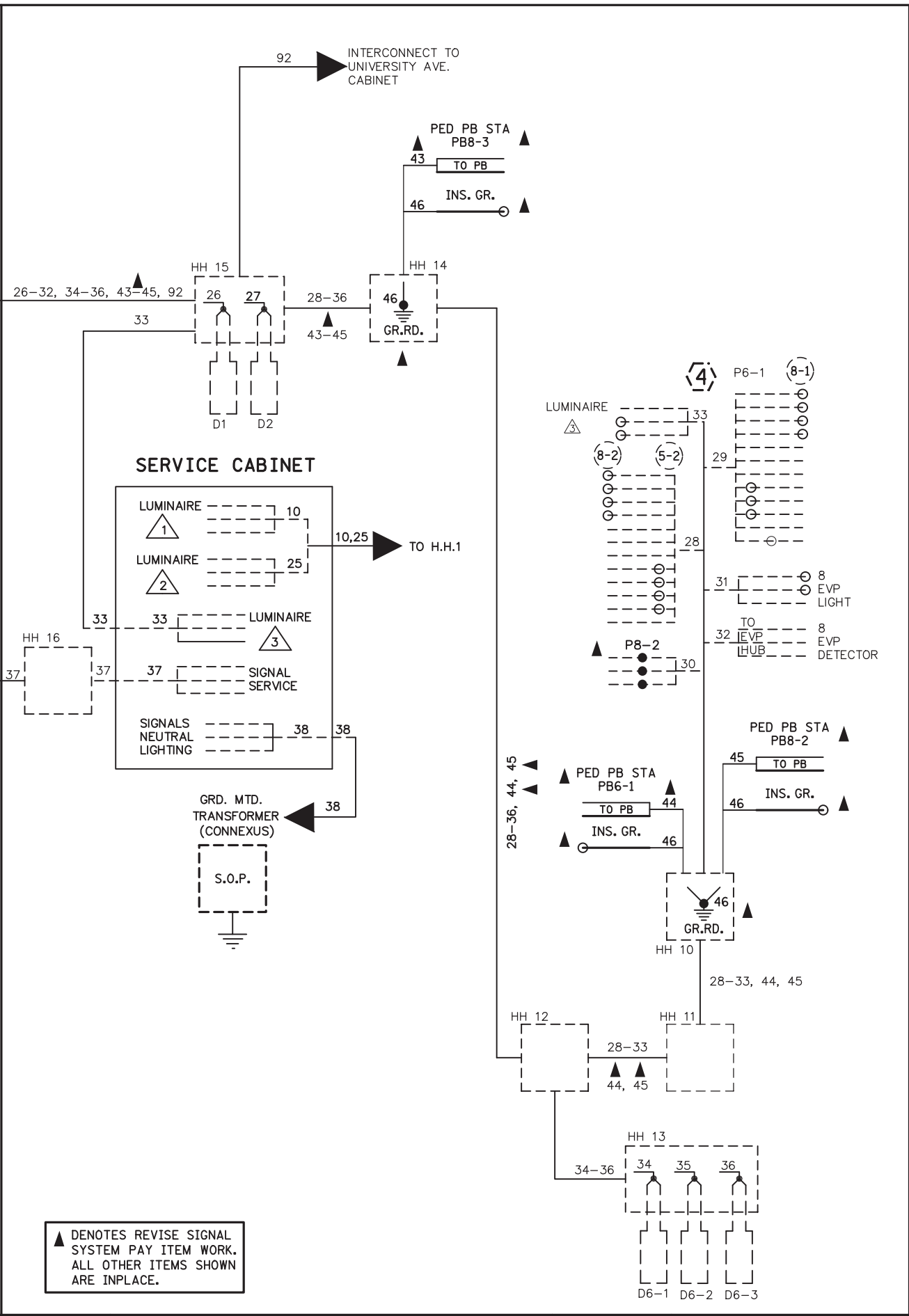
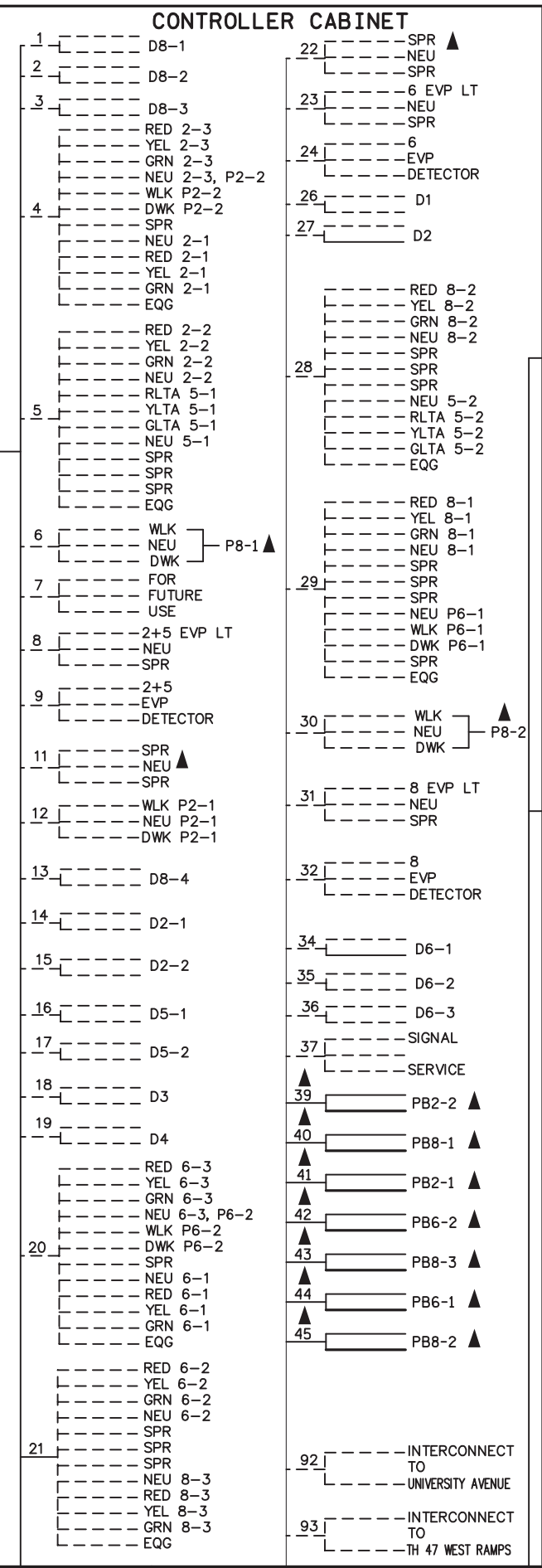
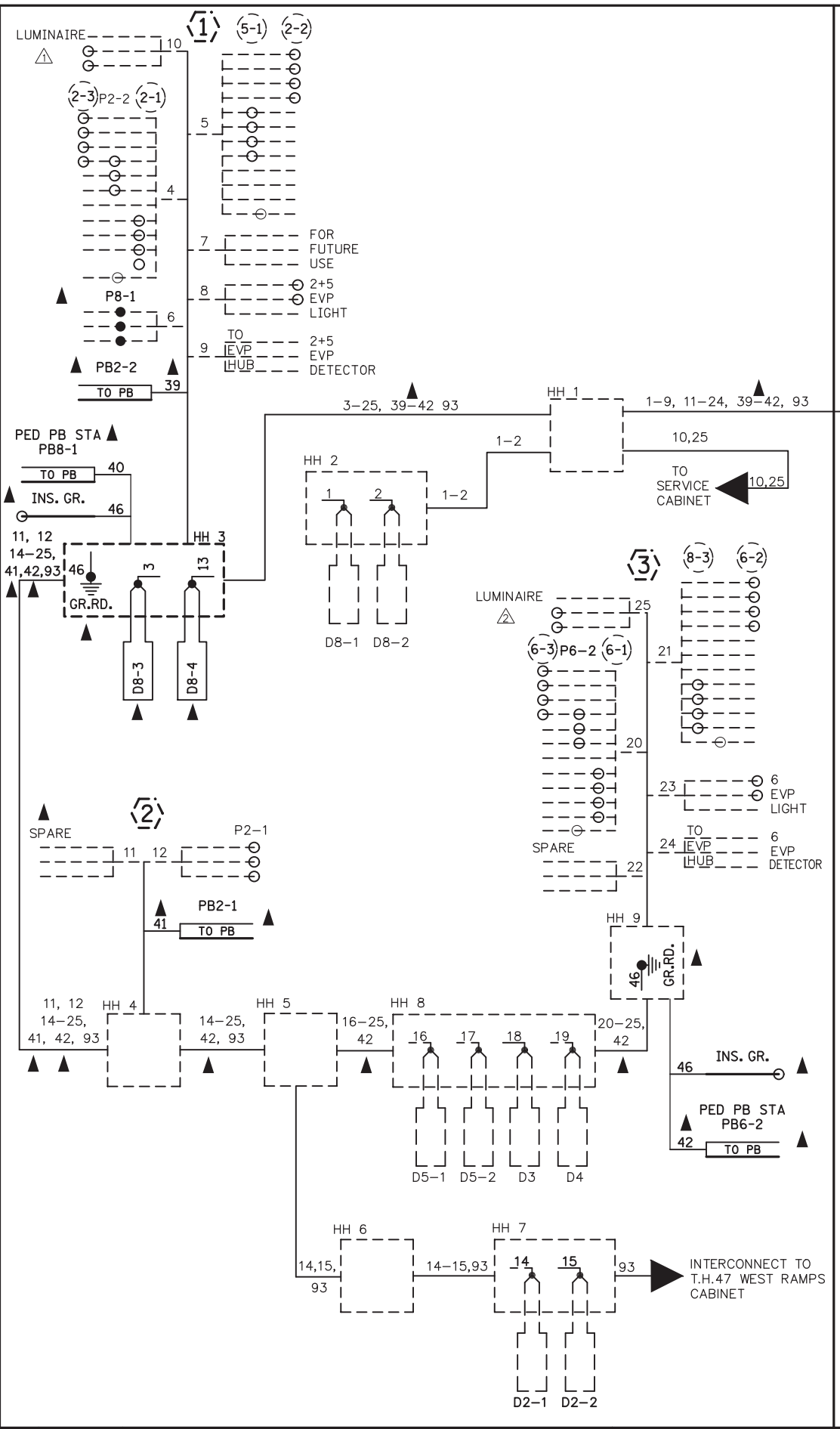
- (B) SIGNAL SERVICE CABINET (METERED)
 CABINET FOUNDATION
 EXTEND INTO HH 16:
 2" RSC
 3-1/C 6
 EXTEND INTO HH 1:
 UNMETERED STREET LIGHT SERVICE
 2" RSC
 2-3/C 12 (LUM)
 EXTEND INTO HH 15:
 UNMETERED STREET LIGHT SERVICE
 2" RSC
 1-3/C 12 (LUM)
 2" RSC TO GROUND MOUNTED TRANSFORMER
 (CONNEXUS)
 3-1/C 2

- (C) INPLACE GROUND MOUNTED TRANSFORMER
 (S.O.P.) (CONNEXUS)

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

BY	DATE	REVISIONS	SYSTEM ID: 1735049	T.E. 21501	S.A.P. NO.	DRAWN BY: JBA	CKD BY: JDC	DATE: 04/06/20
			METER ADDRESS: TH 47 AND CSAH 10		CERTIFIED BY: <i>Michael P. Libinsky</i>	LIC. NO. 19863		DATE: 04/07/2020
			OLD SYSTEM ID: 20220		STATE PROJ. NO. 0214-48 (T.H. 10) SHEET NO. SS10 OF SS27 SHEETS			

DISTRICT *: Metro
 I/PLOT NAME: T20220_sgl_systemB_W
 PATH & FILENAME: Projects\DM ROS\47\000007TrafficSignals\2.35 - 1735049 - MN47-10) COON RAPIDS BD ERVPENDINGT2022055EDM\REVISED: 7-APR-2020



BY	DATE	REVISIONS

SYSTEM ID: 1735049 T.E. 21501
 METER ADDRESS: HIGHWAY 47 AT CSAH 10
 OLD SYSTEM ID: 20220

FIELD WIRING DIAGRAM
REVISE TRAFFIC CONTROL SIGNAL SYSTEM B
T.H. 47 EAST RAMP AT C.S.A.H. 10
IN COON RAPIDS, ANOKA COUNTY

S.A.P. NO. _____ DRAWN BY: JBA CKD BY: JDC DATE: 04/06/20
 CERTIFIED BY: *Michael P. Lubinsky* LIC. NO. 19863 DATE: 04/07/2020
 STATE PROJ. NO. 0214-48 (T.H. 10) SHEET NO. SS11 OF SS27 SHEETS

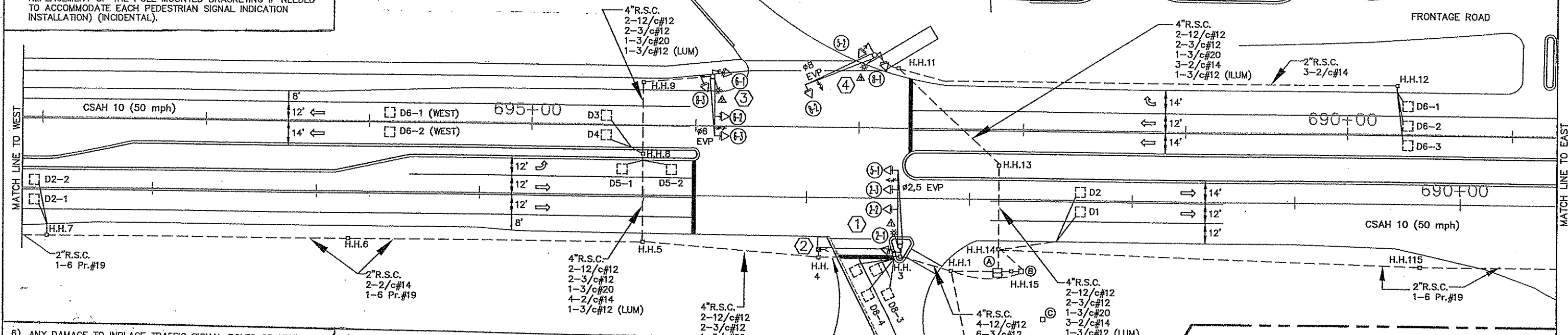
▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE INPLACE.

- LED RETROFIT-SYSTEM "W" NOTES:**
- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
 - IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LED LENSES), AT NO ADDITIONAL COST TO THE PROJECT.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).

INPLACE NMC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D6-3	6x6	300'	1
D8-1	6x6	250'	3,8
D8-2	6x6	250'	3,8
D8-3	2-6x6	5' & 20'	1
D8-4	2-6x6	5' & 20'	1
D1	6x6	100'	11
D2	6x6	100'	11
D3	6x6	50'	11
D4	6x6	50'	11

- LOOP DETECTORS FUNCTIONS:**
- CALL AND EXTEND
 - CALL ONLY
 - EXTEND ONLY
 - CALL ONLY DENSITY
 - DELAYED CALL ONLY
 - DELAYED CALL ONLY DENSITY
 - DELAYED CALL- IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)
 - ADVISORY DETECTOR
 - SAMPLING DETECTOR
 - SPECIAL DETECTOR (COUNTING)

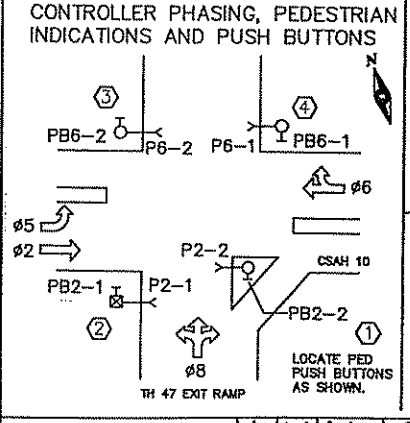
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
- IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
- CONTRACTOR SHALL REMOVE ALL INPLACE R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, AND SHALL FURNISH & INSTALL NEW R10-3e SIGNS IN THEIR PLACE. ALL PUSH BUTTONS ARE ADA COMPLIANT AND ARE INPLACE (REUSE).

- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

- (B) SIGNAL SERVICE CABINET CABINET FOUNDATION**
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2" R.S.C.
 3-1/c#6
 7-2/c#14
 1-3/c#12 (LUM)
 1-6 Pr.#19
- (A) CONTROLLER AND CABINET CABINET FOUNDATION**
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2" R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 4" R.S.C.
 4-12/c#12
 7-3/c#12
 2-3/c#20
 10-2/c#14
 1-6 Pr.#19
 EXTEND INTO H.H.14:
 4" R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-6 Pr.#19
 EXTEND INTO H.H.14:
 4" R.S.C.
 4-12/c#12
 7-3/c#12
 2-3/c#20
 10-2/c#14
 1-6 Pr.#19
 EXTEND INTO H.H.14:
 4" R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-6 Pr.#19
 2-3" R.S.C. STUBBED OUT FROM CABINET TO NORTH (THREADED AND CAPPED BOTH ENDS- FOR FUTURE USE)



- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE.
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

- (2) PEDESTAL FOUNDATION**
 8' PEDESTAL POLE AND BASE
 TYPE 4A
 1-PEDESTRIAN PUSH BUTTON & SIGN
 R9-3a SIGN PANEL-FACING POLE 3
 EXTEND INTO H.H.4:
 3" R.S.C.
 2-3/c#12
- SYSTEM ID = 20220
 METER ADDRESS = HIGHWAY 10 AND HIGHWAY 47

DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG
 DESIGN TEAM

RECORD DRAWING FOR PROJECT			
NO.	BY	DATE	REVISIONS
1	JMG	6/10	

I HEREBY CERTIFY THAT THIS PLAN 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.

John M. Gray
 Name: John M. Gray, PE
 Lic. No. 22457
 Date: May 18, 2009

SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "W" INTERSECTION LAYOUT
 CSAH 10 AT TH 47 EAST RAMPS

S.P. 114-030-10
 CITY PROJECT NO. 09-18;

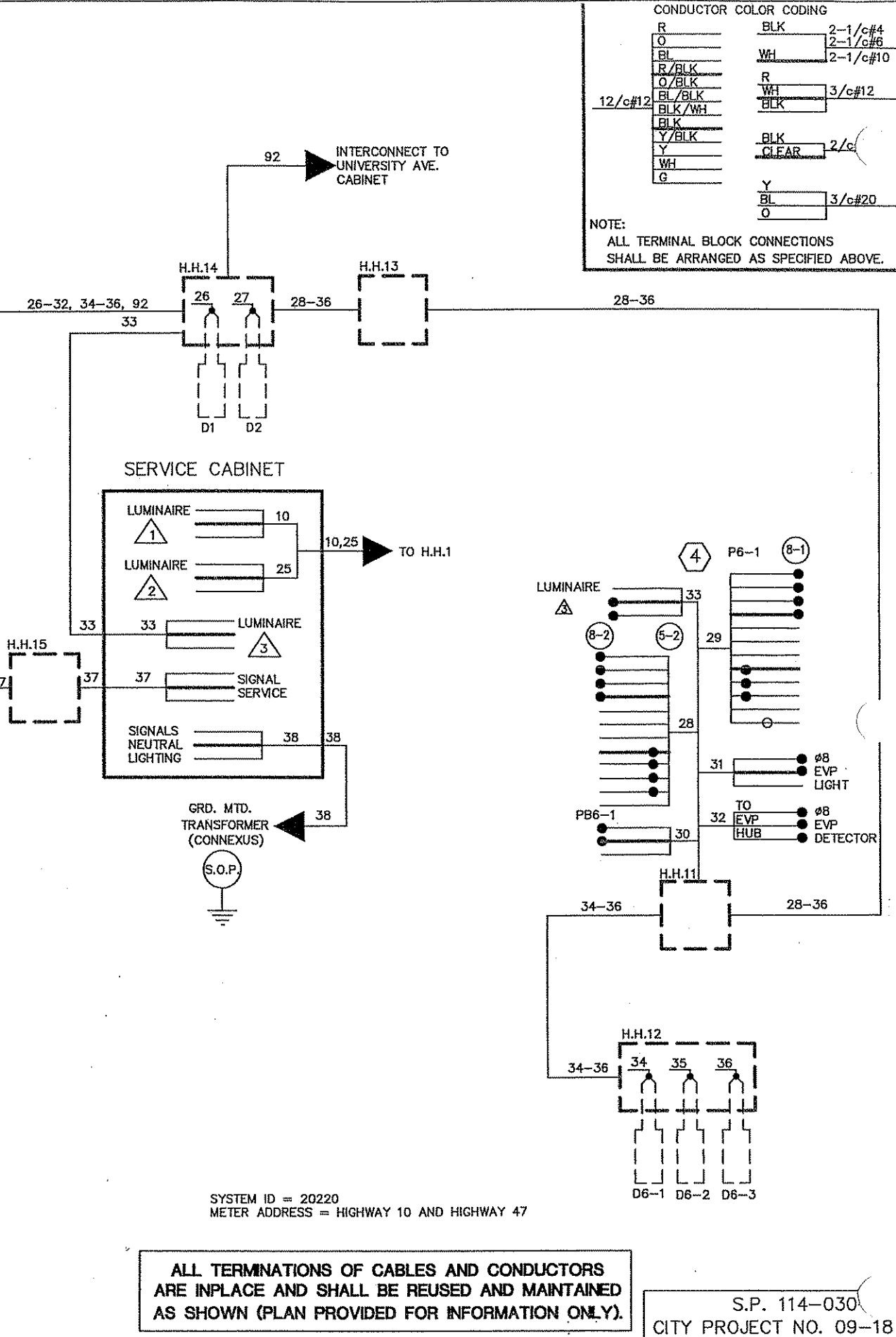
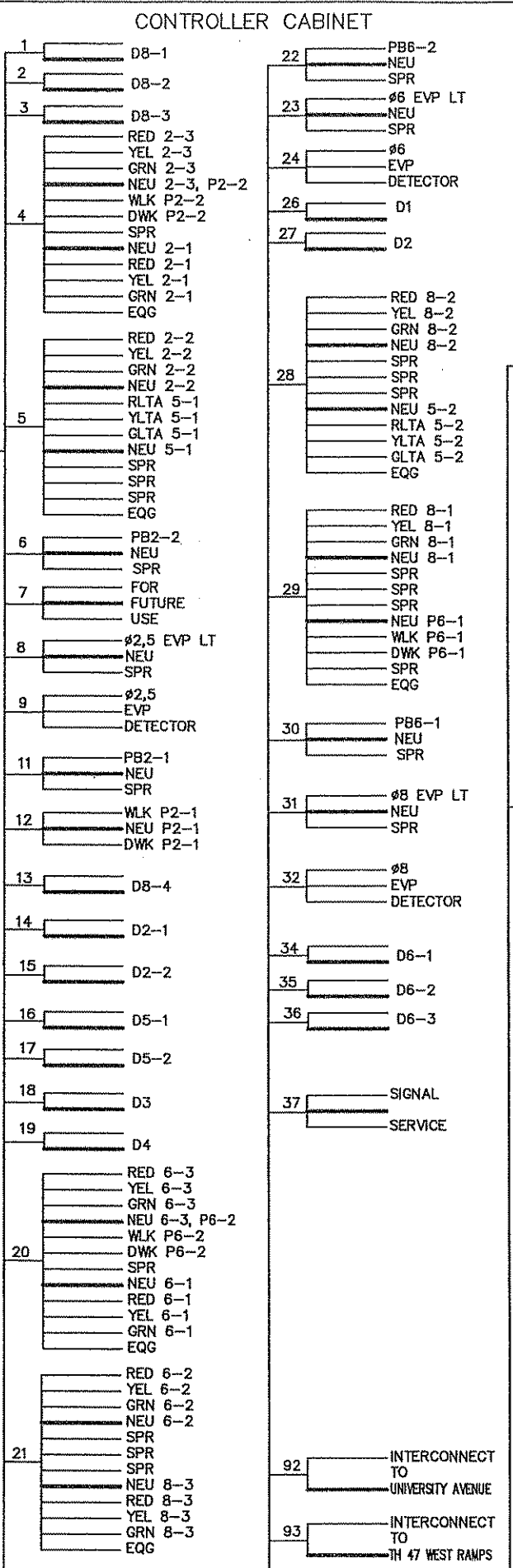
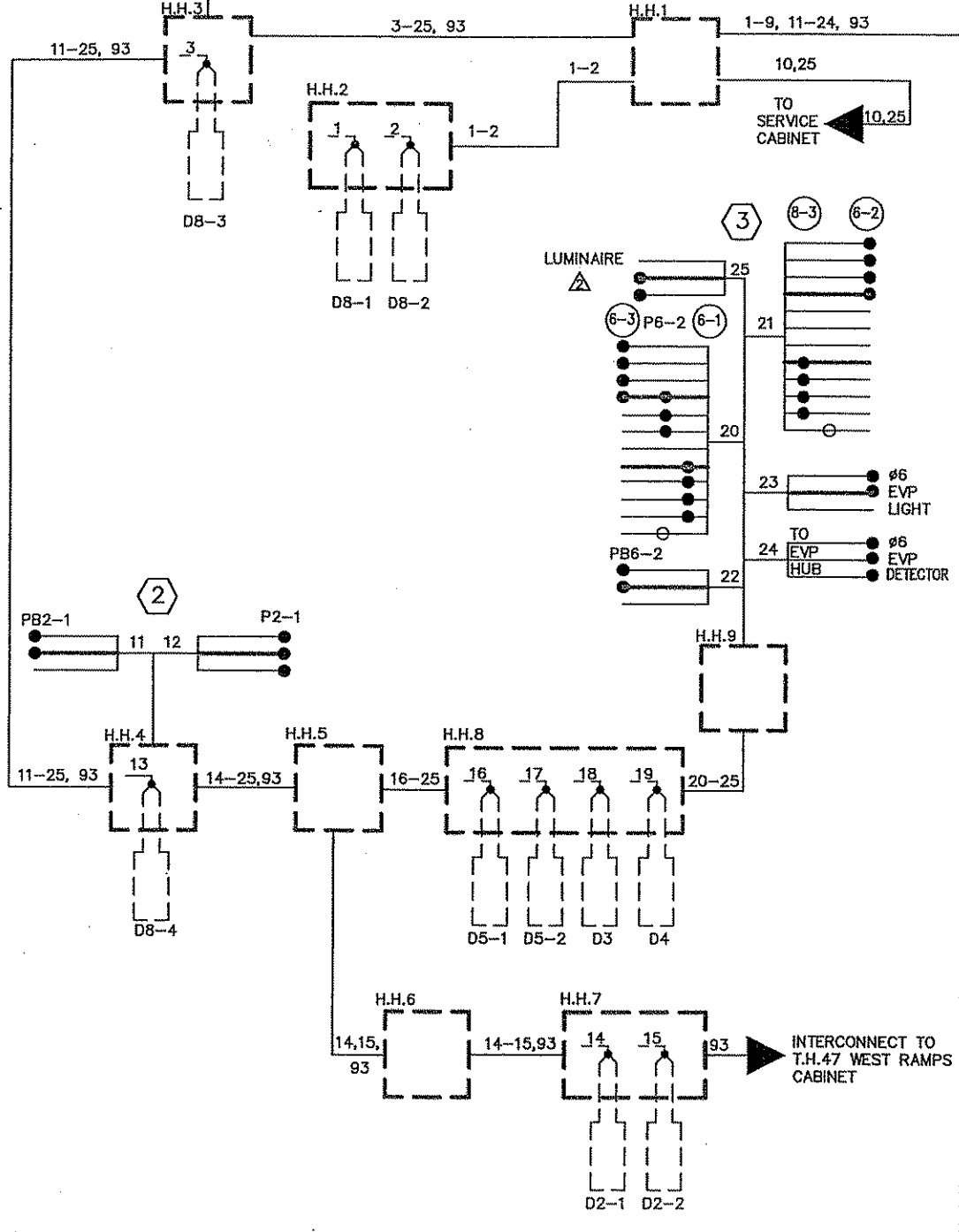
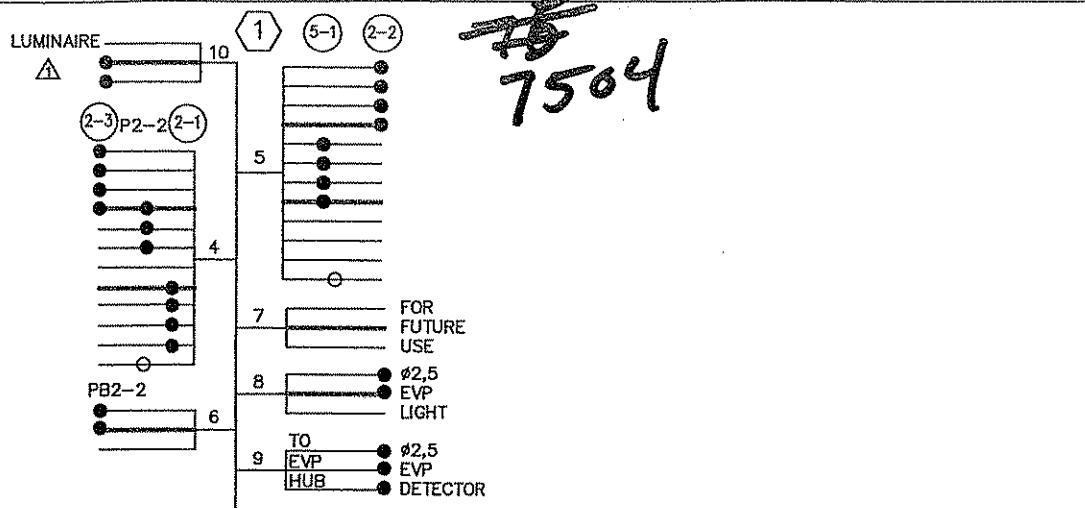
FILE NO. 107418
 DATE 05/18/2009
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 131

LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
2-1, 2-2, 2-3	○	○	○
5-1, 5-2	◀	◀	◀
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

○ ◀ = INPLACE LED INDICATION, REUSE INPLACE.

RECORD PLAN FOR LED PROJECT
 (PLANS CONFIRMED FOR PROJECT WORK ONLY)
 DATE JMG 06-10-10

(C) INPLACE GROUND MOUNTED TRANSFORMER (S.O.P.) (CONNEXUS)



CONDUCTOR COLOR CODING

R	BLK	2-1/c#4
O	WH	2-1/c#6
BL	WH	2-1/c#10
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
BLK/WH	BLK	
BLK	BLK	
Y/BLK	BLK	2/c
Y	CLEAR	
WH		
G	Y	3/c#20
	BL	
	O	

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

ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED AS SHOWN (PLAN PROVIDED FOR INFORMATION ONLY).

SYSTEM ID = 20220
 METER ADDRESS = HIGHWAY 10 AND HIGHWAY 47

S.P. 114-030
 CITY PROJECT NO. 09-18

DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN 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.

JMG
 Name: John M. Gray, PE
 Lic. No. 22457
 Date: May 18, 2009

SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

COON RAPIDS,
 MINNESOTA

LED RETROFIT-SYSTEM "W"
 FIELD WIRING DIAGRAM
 CSAH 10 AT TH 47 EAST RAMPS

FILE NO. 107418
 DATE 05/18/2009
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