

- LED RETROFIT-SYSTEM "W" NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
  - 2) CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION FED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
  - 3) 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).
  - 4) 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.
  - 5) 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 INDICATION (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).

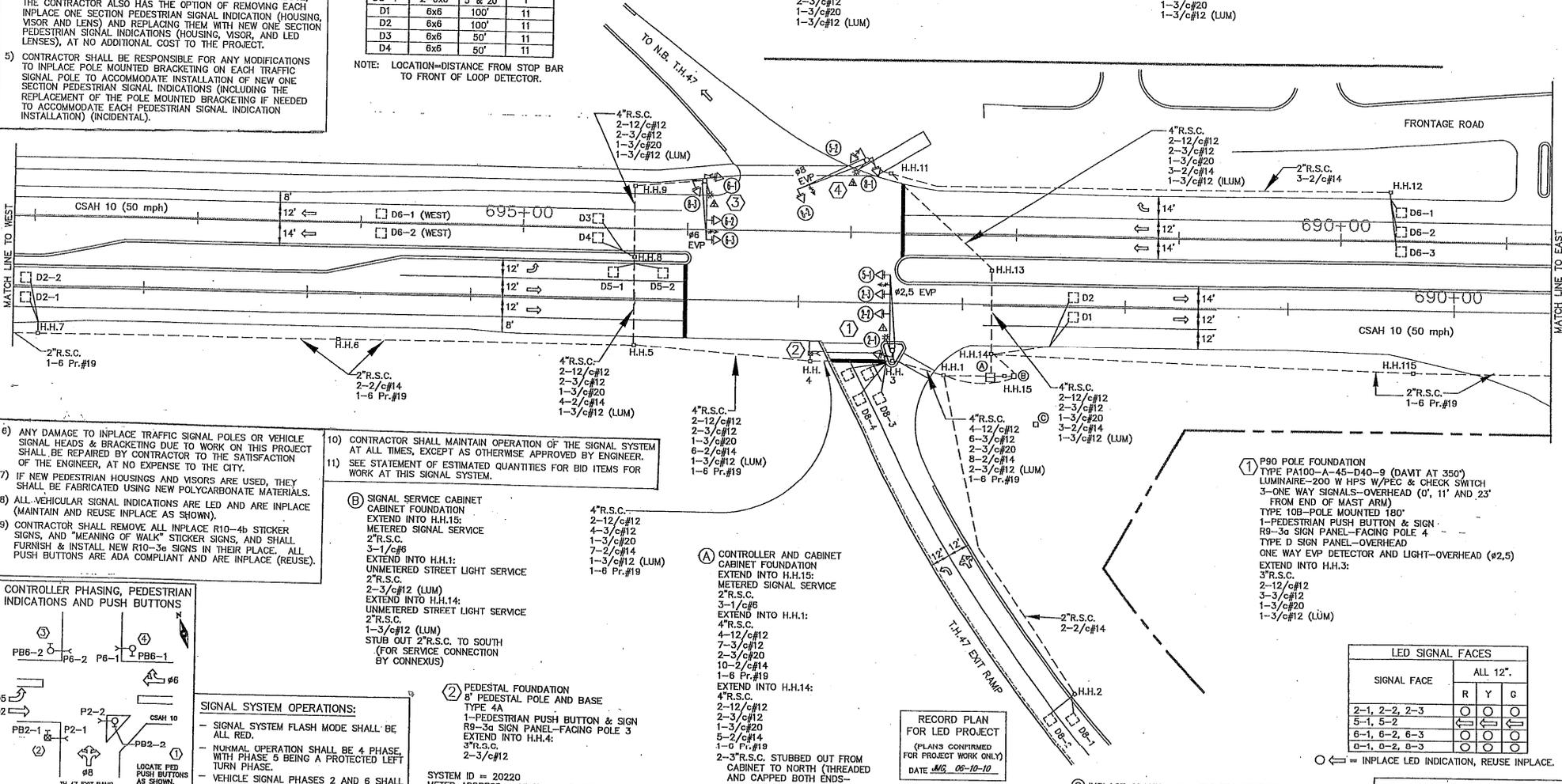
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D6-3	6x6	300'	1
D8-1	6x6	250'	3,8
D8-2	6x6	250'	3,8
D8-3	2-6x6	5' & 20'	1
D8-4	2-6x6	5' & 20'	1
D1	6x8	100'	11
D2	6x8	100'	11
D3	6x8	50'	11
D4	6x8	50'	11

- LOOP DETECTOR FUNCTIONS:**
- 1) CALL AND EXTEND
  - 2) CALL ONLY
  - 3) EXTEND ONLY
  - 4) CALL ONLY DENSITY
  - 5) DELAYED CALL ONLY
  - 6) DELAYED CALL ONLY DENSITY
  - 7) DELAYED CALL-IMMEDIATE EXTEND
  - 8) CARRY OVER (STRETCH)
  - 9) ADVISORY DETECTOR
  - 10) SAMPLING DETECTOR
  - 11) SPECIAL DETECTOR (COUNTING)

- ③ PA90 POLE FOUNDATION  
 TYPE PA90-A-35-D40-9 (DAVT AT 350')  
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH  
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)  
 TYPE 10A-POLE MOUNTED 90'  
 TYPE 10B-POLE MOUNTED 180'  
 1-PEDESTRIAN PUSH BUTTON & SIGN  
 R9-3a SIGN PANEL-FACING POLE 2  
 2-TYPE D SIGN PANELS-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6)  
 EXTEND INTO H.H.9:  
 3'R.S.C.  
 2-12/c#12  
 2-3/c#12  
 1-3/c#20  
 1-3/c#12 (LUM)

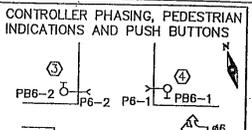
- ④ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVT AT 350')  
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH  
 ONE WAY SIGNAL-OVERHEAD  
 TYPE 10B-POLE MOUNTED 90'  
 TYPE 10A-POLE MOUNTED 180'  
 1-PEDESTRIAN PUSH BUTTON & SIGN  
 R9-3a SIGN PANEL-FACING POLE 1  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#8)  
 EXTEND INTO H.H.11:  
 3'R.S.C.  
 2-12/c#12  
 2-3/c#12  
 1-3/c#20  
 1-3/c#12 (LUM)

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



- 6) 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.
- 7) IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- 8) ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
- 9) CONTRACTOR SHALL REMOVE ALL INPLACE R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, AND SHALL FURNISH & INSTALL NEW R10-3b SIGNS IN THEIR PLACE. ALL PUSH BUTTONS ARE ADA COMPLIANT AND ARE INPLACE (REUSE).

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



- 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 PA  
 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

- ① CONTROLLER AND CABINET FOUNDATION  
 CABINET FOUNDATION  
 EXTEND INTO H.H.15:  
 METERED SIGNAL SERVICE  
 2'R.S.C.  
 3-1/c#6  
 EXTEND INTO H.H.1:  
 UNMETERED STREET LIGHT SERVICE  
 2'R.S.C.  
 2-3/c#12 (LUM)  
 EXTEND INTO H.H.14:  
 UNMETERED STREET LIGHT SERVICE  
 2'R.S.C.  
 1-3/c#12 (LUM)  
 STUB OUT 2'R.S.C. TO SOUTH (FOR SERVICE CONNECTION BY CONNEXUS)

RECORD PLAN FOR LED PROJECT  
 (PLANS CONFIRMED FOR PROJECT WORK ONLY)  
 DATE AUG. 08-10-10

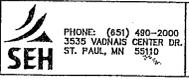
LED SIGNAL FACES				
SIGNAL FACE	ALL 12"			
	R	Y	G	
2-1, 2-2, 2-3	○	○	○	○
5-1, 5-2	○	○	○	○
6-1, 6-2, 6-3	○	○	○	○
8-1, 8-2, 8-3	○	○	○	○

○ = INPLACE LED INDICATION, REUSE INPLACE.

DRAWN BY: JMG				DESIGNER: JMG				CHECKED BY: JMG			
DESIGN TEAM				NO. BY DATE				REVISIONS			
1				166				6/10			
RECORD DRAWING FOR PROJECT											

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, PE*  
 Date: May 15, 2009  
 Home: John M. Gray, PE  
 Lic. No. 22457



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	54
DATE 05/18/2009	131