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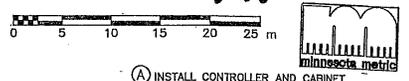
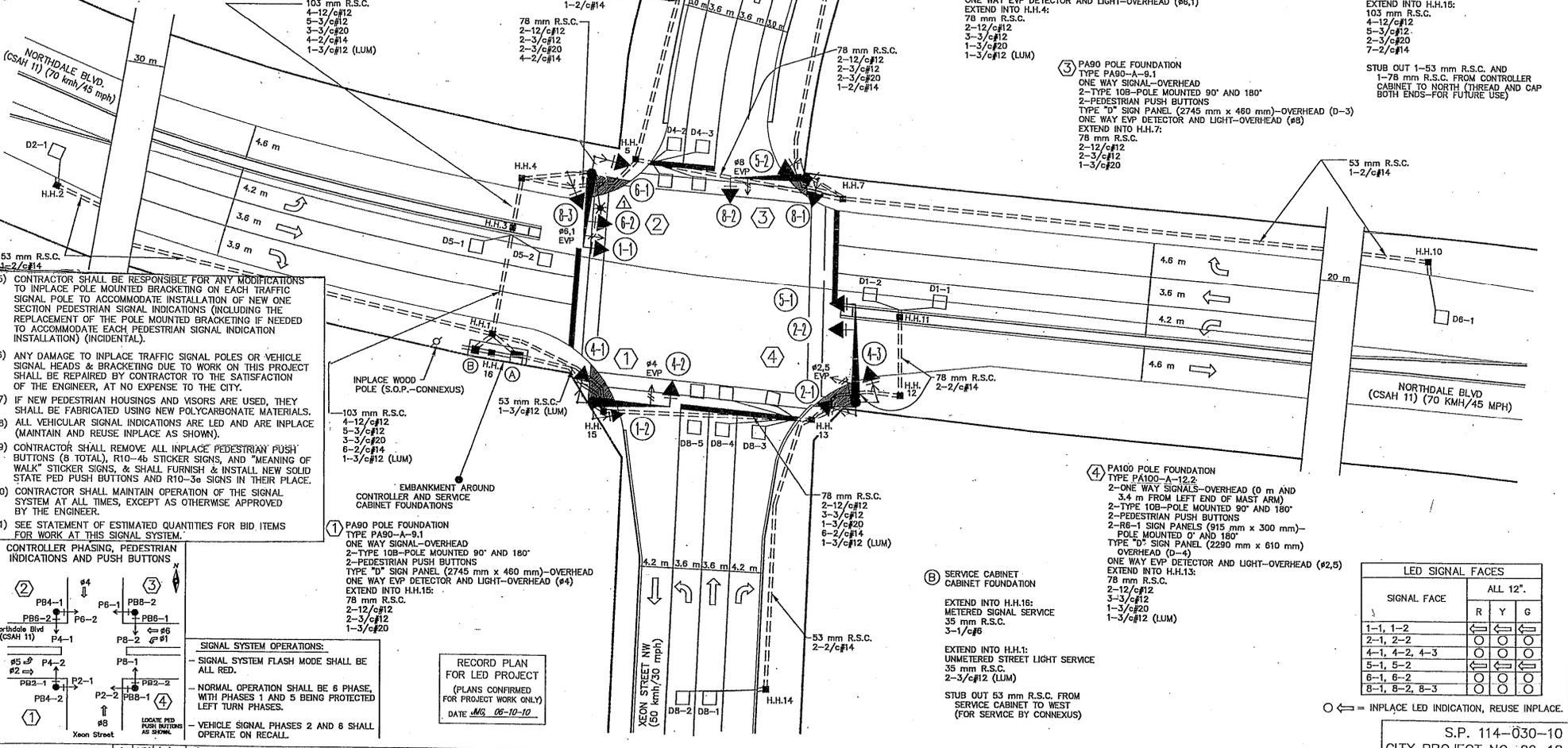
- LED RETROFIT-SYSTEM "DD" NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
  - 2) CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL 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.

**N.M.C. LOOP DETECTORS**

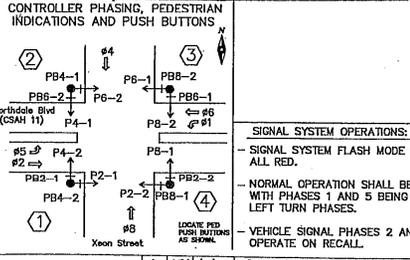
NUMBER	SIZE (m)	LOCATION	FUNCTION
D1-1	1.7 x 1.7	12 m	1
D1-2	1.7 x 1.7	3 m	1
D2-1	1.7 x 1.7	91 m	1
D4-1	1.7 x 1.7	30 m	3,8
D4-2	2-1.7 x 1.7	AS SHOWN	7
D4-3	2-1.7 x 1.7	AS SHOWN	7
D5-1	1.7 x 1.7	12 m	1
D5-2	1.7 x 1.7	3 m	1
D8-1	1.7 x 1.7	91 m	1
D8-2	1.7 x 1.7	37 m	3,8
D8-3	2-1.7 x 1.7	AS SHOWN	7
D8-4	2-1.7 x 1.7	AS SHOWN	7

- 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

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



- 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 INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
- 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 PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-46 STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-36 SIGNS IN THEIR PLACE.
- 10) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE 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 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

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

**LED SIGNAL FACES**

SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	○	○	○
2-1, 2-2	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1, 5-2	○	○	○
6-1, 6-2	○	○	○
8-1, 8-2, 8-3	○	○	○

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

NO. BY DATE REVISIONS

1 JMG 6/10 RECORD DRAWING FOR PROTECT

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.

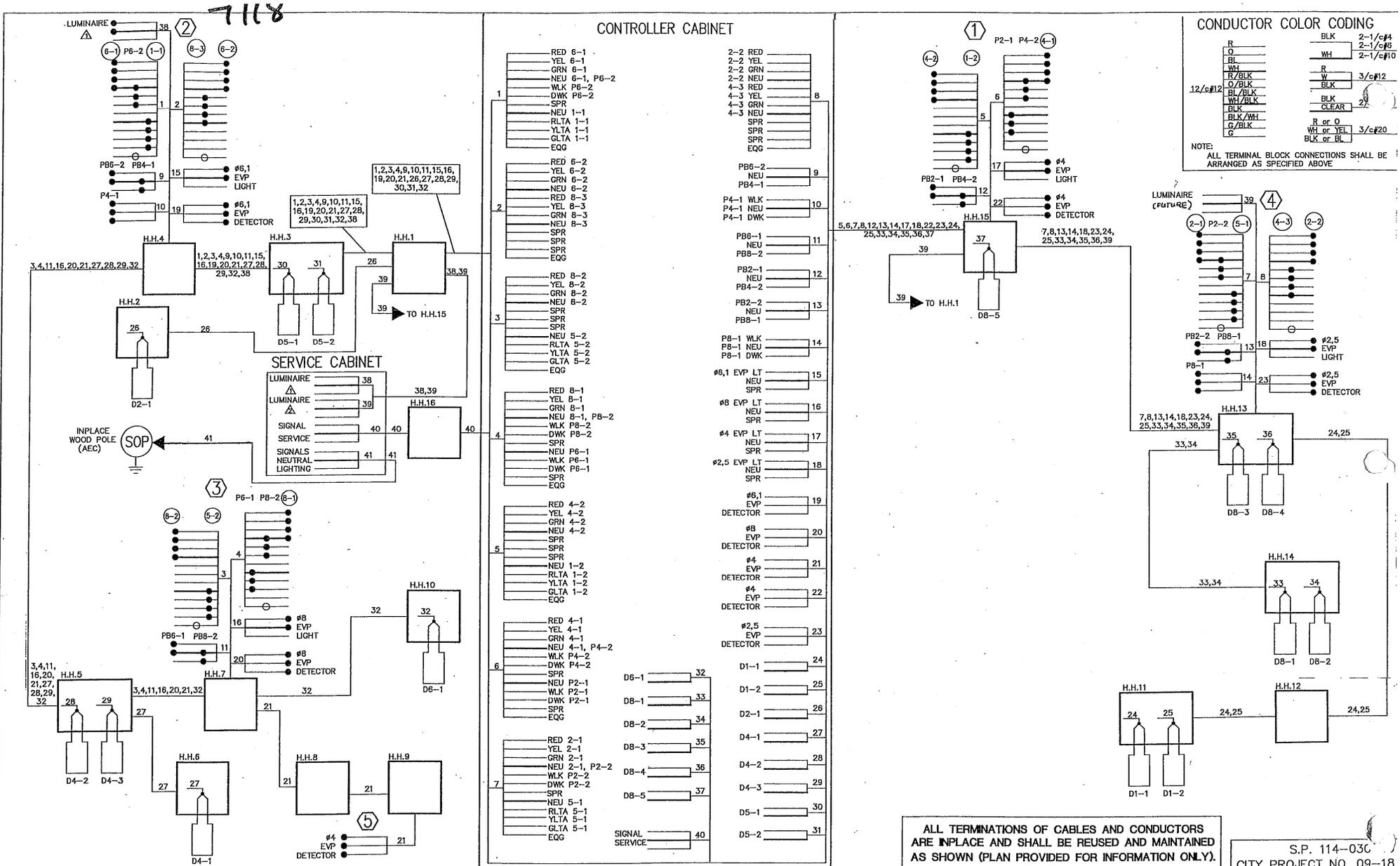
Date: May 16, 2009 Name: John M. Gray, PE Lic. No.: 22457

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

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "DD" INTERSECTION LAYOUT CSAH 11 AT XEON STREET

FILE NO. 107418 '68 DATE 05/18/2009 131



S.P. 114-03C CONDUCTOR TERMINALS - LED LIGHTING SYSTEM

DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG

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*  
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 ST. PAUL, MN 55110

**COON RAPIDS, MINNESOTA**

**LED RETROFIT-SYSTEM "DD"**  
 FIELD WIRING DIAGRAM  
 CSAH 11 AT XEON STREET

FILE NO. 107418  
 DATE 05/19/2009  
**69**  
**131**