

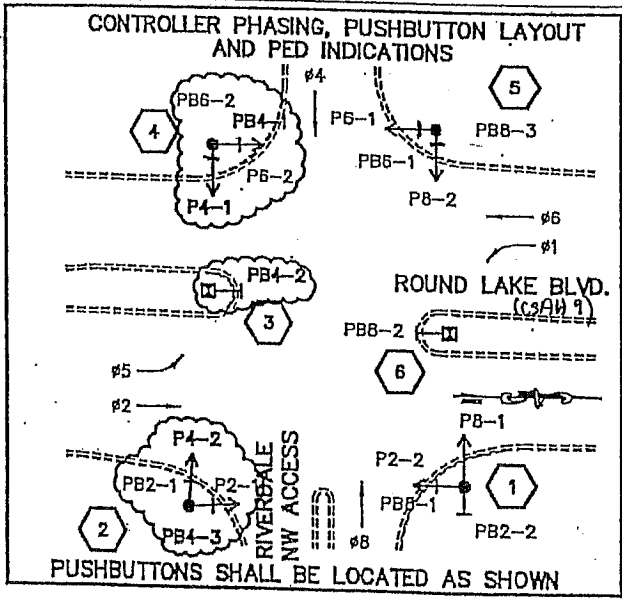
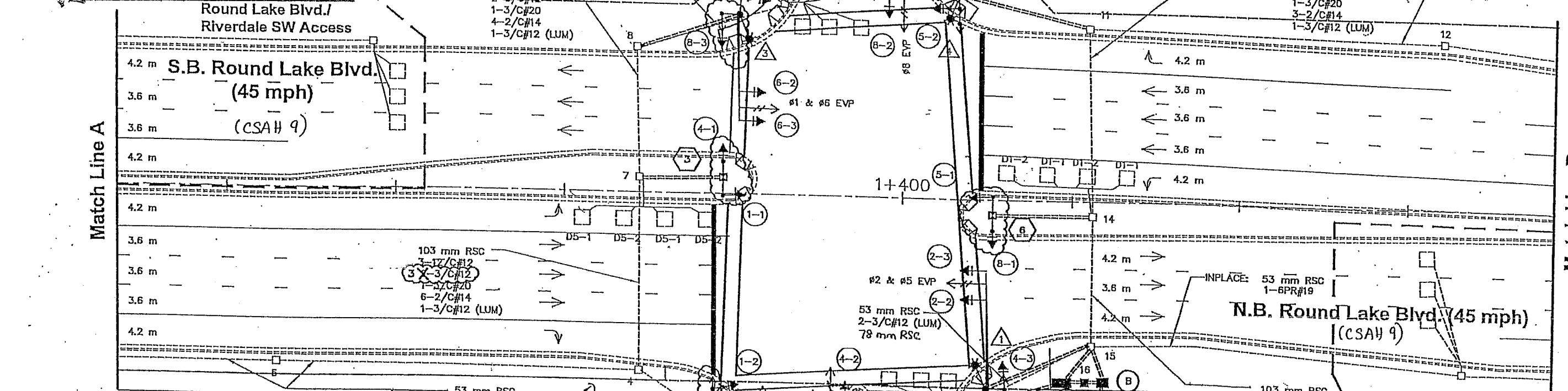
LED RETROFIT-SYSTEM "T" NOTES:

- 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).

- 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 INDICATION LENSES ARE LED AND SHALL BE MAINTAINED AND REUSED INPLACE.
- CONTRACTOR SHALL REMOVE ALL INPLACE PEDESTRIAN PUSH BUTTONS (10 TOTAL), R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3a SIGNS IN THEIR PLACE.
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
- SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

LOOP DETECTORS				
NUMBER	SIZE (m)	LOCATION (m)	FUNCTION	STATUS
D1-1	2-1.7 X 1.7	6 & 16	1	INPLACE
D1-2	2-1.7 X 1.7	1.5 & 11	1	INPLACE
D2-1, D2-2, D2-3	1.7 X 1.7	101	1	INPLACE
D4-1, D4-2	1.7 X 1.7	29	3	INPLACE
D4-3	3-1.7 X 1.7	AS SHOWN	7	INPLACE
D4-4	2-1.7 X 1.7	AS SHOWN	1	INPLACE
D5-1	2-1.7 X 1.7	6 & 16	1	INPLACE
D5-2	2-1.7 X 1.7	1.5 & 11	1	INPLACE
D6-1, D6-2, D6-3	1.7 X 1.7	103	1	INPLACE
DB-1	2-1.7 X 1.7	37	3	FUTURE
DB-2	3-1.7 X 1.7	AS SHOWN	7	INPLACE
DB-3	2-1.7 X 1.7	AS SHOWN	1	INPLACE

NOTES: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR
 LOOP DETECTOR FUNCTIONS:
 (1) - CALL AND EXTEND
 (3) - EXTEND ONLY
 (7) - DELAY CALL, IMMEDIATE EXTEND



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 5 PHASE WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

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

LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
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	JMG	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.
 Date: May 18, 2009
 Name: John M. Gray, PE
 Lic. No. 22457

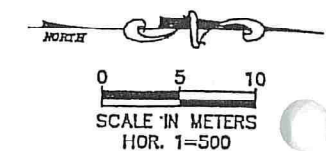
SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "T"
 INTERSECTION LAYOUT
 CSAH 9 AT RIVERDALE NW ACCESS

FILE NO. 107418
 DATE 105/18/2009
 45
 131

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



- 1 TYPE PA100 POLE FOUNDATION
TYPE PA100-A-13.7-X9.1
LUMINAIRE ARM AT 350°
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
2 - ONE WAY SIGNALS OVERHEAD (0 m AND 3.3 m FROM END OF MAST ARM)
1 - TYPE 10B POLE MOUNTED AT 90°
1 - TYPE 10B POLE MOUNTED AT 270°
2 - PEDESTRIAN PUSHBUTTONS
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#2 & #5)
(1.2 m FROM END OF MAST ARM)

- 2 TYPE PA100 POLE FOUNDATION
TYPE PA100-A-15.2-X9.1
LUMINAIRE ARM AT 350°
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
1 - ONE WAY SIGNAL OVERHEAD (0 m FROM LEFT END OF MAST ARM)
2 - PEDESTRIAN PUSHBUTTONS
TYPE D SIGN PANEL OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#4)
(1.2 m FROM END OF MAST ARM)
1 - TYPE 10C POLE MOUNTED AT 270°

- 4 TYPE PA100 POLE FOUNDATION
TYPE PA100-A-12.2-X9.1
LUMINAIRE ARM AT 350°
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
2 - ONE WAY SIGNALS OVERHEAD (0 m AND 3.3 m FROM END OF MAST ARM)
2 X - TYPE 10B POLE MOUNTED AT 180° & 90°
2 X - PEDESTRIAN PUSHBUTTON
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#1 & #6)
(1.2 m FROM END OF MAST ARM)

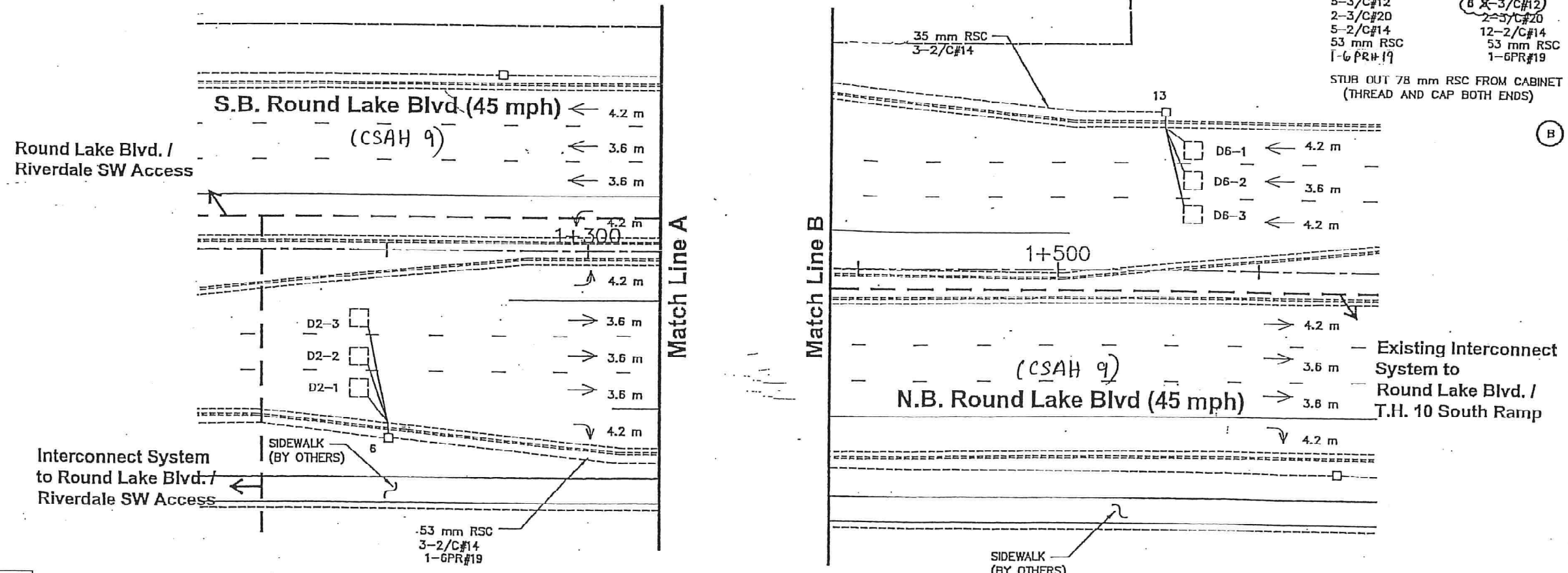
- 5 TYPE PAB5 POLE FOUNDATION
TYPE PAB5-A-7.6-X9.1
LUMINAIRE ARM AT 350°
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
1 - ONE WAY SIGNAL OVERHEAD (0 m FROM END OF MAST ARM)
1 - TYPE 10C POLE MOUNTED AT 270°
2 - PEDESTRIAN PUSHBUTTONS
TYPE D SIGN PANEL OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#8)
(1.2 m FROM END OF MAST ARM)

- 3 PEDESTAL FOUNDATION
PEDESTAL POLE & BASE
1 - TYPE 2A PEDESTAL MOUNTED
1 - PEDESTRIAN PUSHBUTTON

- 6 PEDESTAL FOUNDATION
PEDESTAL POLE & BASE
1 - TYPE 2A PEDESTAL MOUNTED
1 - PEDESTRIAN PUSHBUTTON

- A INSTALL CONTROLLER AND CABINET
(FURNISHED BY ANOKA COUNTY)
CABINET FOUNDATION

- B SERVICE CABINET
CABINET FOUNDATION

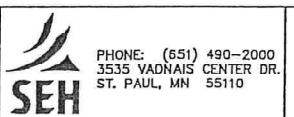


RECORD PLAN
FOR LED PROJECT
(PLANS CONFIRMED
FOR PROJECT WORK ONLY)
DATE JMG, 05-10-10

DRAWN BY: JMG	DESIGNER: JMG	CHECKED BY: JMG	DESIGN TEAM	NO.	BY	DATE	REVISIONS
1 JMG GAD 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.

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



COON RAPIDS,
MINNESOTA

LED RETROFIT-SYSTEM 'T'
INTERSECTION LAYOUT
CSAH 9 AT RIVERDALE NW ACCESS

FILE NO. 107418	46
DATE 05/18/2009	131

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

