

NOTES:

- 1) LOCATION OF NEW LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION BY CONTRACTOR.
- 2) NEW LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 3) NEW HANDHOLES 9, 10, AND 18 SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR. REMOVE AND DISPOSE OF INPLACE HANDHOLES 9 AND 10. ADJUST INPLACE HANDHOLES 8 AND 13 TO FINISHED SURROUNDING GRADE AS REQUIRED.
- 4) EACH SIGNAL FACE HAS BACKGROUND SHIELD.
- 5) ALL VEHICLE AND PEDESTRIAN INDICATIONS ARE LED AND ARE INPLACE-REUSE AND MAINTAIN INPLACE.
- 6) SEE SPECIAL PROVISIONS, DETAILS, AND ESTIMATED QUANTITIES REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR.
- 7) CONTRACTOR SHALL MAINTAIN OPERATION OF TRAFFIC SIGNAL SYSTEM AT ALL TIMES, UNLESS OTHERWISE APPROVED BY ENGINEER AND COUNTY FOR SIGNAL SYSTEM TO BE TURNED OFF.
- 8) F & I = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
- 9) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF SEPARATE PROJECT.
- 10) CONDUIT, HANDHOLES, LOOP DETECTORS, CABLES, AND SIGNING TO BE FURNISHED & INSTALLED BY CONTRACTOR AS PART OF REVISED SIGNAL SYSTEM WORK AT THIS INTERSECTION WILL BE MEASURED AND PAID FOR AS NOTED IN PLANS AND IN SPECIAL PROVISIONS.
- 11) ALL ITEMS DENOTED AS INPLACE (MAINTAIN INPLACE) SHALL BE PROTECTED AND MAINTAINED INPLACE BY CONTRACTOR, AND SHALL BE MAINTAINED IN OPERATION TO THE SATISFACTION OF THE ENGINEER.

N.M.C. LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	6x6	40'	1	F & I
D1-2	6x6	10'	1	F & I
D2-1	6x6	400'	1	INPLACE
D4-1	6x6	180'	3,8	INPLACE
D4-2	2-6x6	0' & 10'	1	INPLACE
D5-1	2-6x6	10' & 40'	1	INPLACE
D6-1	6x6	400'	1	F & I
D8-1	6x6	250'	3,8	INPLACE
D8-2	6x6&6x6	0' & 10'	1	F & I

LOOP DETECTORS FUNCTIONS:

- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

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

MAKE 6X10 WE CAN ALWAYS ASK FOR IT TO BE SMALLER.



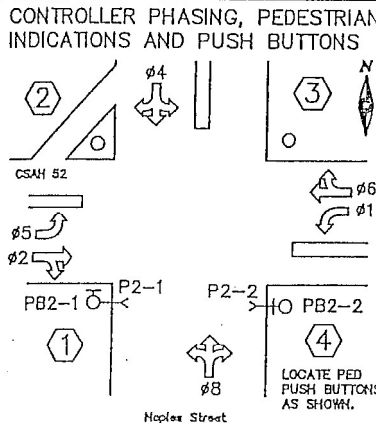
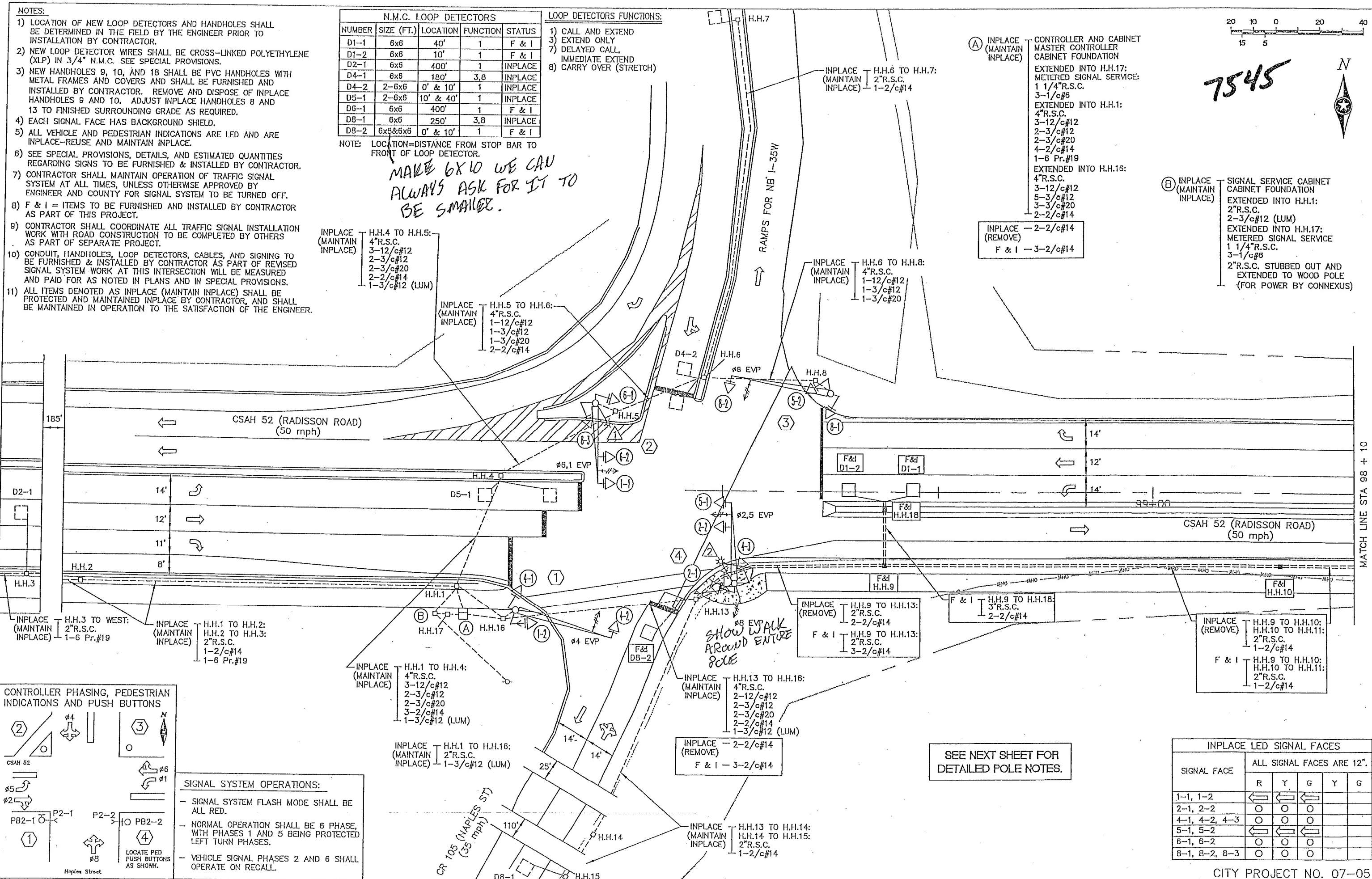
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(A) INPLACE (MAINTAIN INPLACE) CONTROLLER AND CABINET MASTER CONTROLLER CABINET FOUNDATION EXTENDED INTO H.H.17: METERED SIGNAL SERVICE: 1 1/4" R.S.C. 3-1/c#6 EXTENDED INTO H.H.1: 4" R.S.C. 3-12/c#12 2-3/c#12 2-3/c#20 4-2/c#14 1-6 Pr.#19 EXTENDED INTO H.H.16: 4" R.S.C. 3-12/c#12 5-3/c#12 3-3/c#20 2-2/c#14

INPLACE (REMOVE) 2-2/c#14 (F & I) 3-2/c#14

(B) INPLACE (MAINTAIN INPLACE) SIGNAL SERVICE CABINET CABINET FOUNDATION EXTENDED INTO H.H.1: 2" R.S.C. 2-3/c#12 (LUM) EXTENDED INTO H.H.17: METERED SIGNAL SERVICE 1 1/4" R.S.C. 3-1/c#6 2" R.S.C. STUBBED OUT AND EXTENDED TO WOOD POLE (FOR POWER BY CONNEXUS)



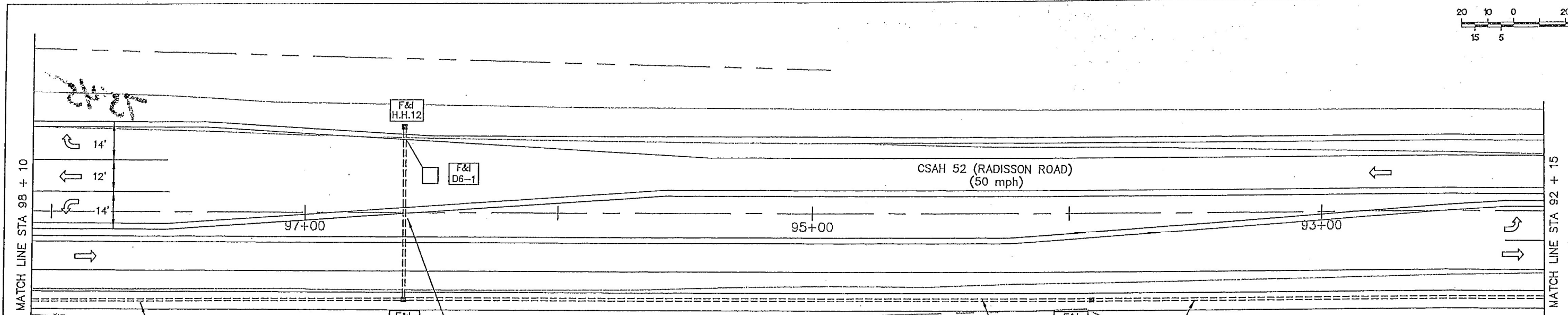
SIGNAL SYSTEM OPERATIONS:

- 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.

SEE NEXT SHEET FOR DETAILED POLE NOTES.

INPLACE LED SIGNAL FACES					
SIGNAL FACE	ALL SIGNAL FACES ARE 12".				
	R	Y	G	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	○	○	○		

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INPLACE (REMOVE) H.H.10 TO H.H.11:
 2"R.S.C.
 1-2/c#14
 F & I H.H.10 TO H.H.11:
 2"R.S.C.
 1-2/c#14

INPLACE (REMOVE) H.H.11 TO H.H.12:
 3"R.S.C.
 1-2/c#14
 F & I H.H.11 TO H.H.12:
 3"R.S.C.
 1-2/c#14

F & I H.H.11 TO H.H.20:
 H.H.20 TO H.H.21:
 2"R.S.C.
 (FOR FUTURE INTERCONNECT)

① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-45
 ONE WAY SIGNAL-OVERHEAD
 TYPE 10B-POLE MOUNTED 90'
 TYPE 10A-POLE MOUNTED 180'
 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 LIGHT (#4)
 EXTENDED INTO H.H.16:
 3"R.S.C.
 1-12/c#12
 3-3/c#12
 1-3/c#20

② INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVT AT 350')
 LUMINAIRE-200 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0', 12' FROM END OF MAST ARM)
 2-TYPE 10A-POLE MOUNTED 90' & 180'
 2-R9-3a SIGN PANELS-FACING POLES 1 AND 3
 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'
 3-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#6,1)
 EXTENDED INTO H.H.5:
 3"R.S.C.
 2-12/c#12
 1-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

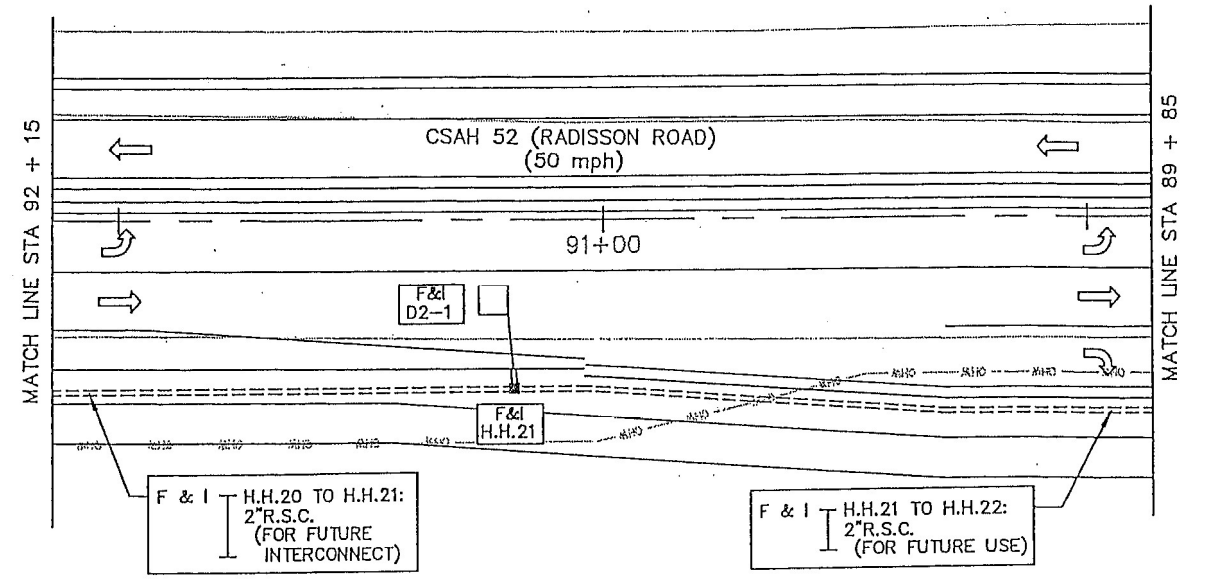
③ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-45
 ONE WAY SIGNAL-OVERHEAD
 2-TYPE 10A-POLE MOUNTED 90' & 180'
 2-R9-3a SIGN PANELS-FACING POLES 2 AND 4
 R6-1L SIGN PANEL-POLE MOUNTED 0'
 3-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#8)
 EXTENDED INTO H.H.8:
 3"R.S.C.
 1-12/c#12
 1-3/c#12
 1-3/c#20

④ INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVT AT 350')
 LUMINAIRE-200 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0', 12' FROM END OF MAST ARM)
 TYPE 10A-POLE MOUNTED 90'
 TYPE 10B-POLE MOUNTED 180'
 1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
 R9-3a SIGN PANEL-FACING POLE 3
 2-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#2,5)
 ONE WAY EVP DETECTOR-POLE MOUNTED 180' (#8)
 EXTENDED INTO H.H.13:
 3"R.S.C.
 2-12/c#12
 2-3/c#12
 2-3/c#20
 1-3/c#12 (LUM)

F & I - 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'

NOTES:

- IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- DISTANCE OFF SHOULDER OR CURB FOR ALL NEW CONDUIT SHALL BE 1-2 FEET (MINIMUM).
- LOCATION OF NEW LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN FIELD BY ENGINEER PRIOR TO INSTALLATION.
- NEW LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- NEW HANDHOLES 11, 12, 20, AND 21 SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR. REMOVE & DISPOSE OF INPLACE HANDHOLES 11, AND 12.
- CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE INTERCONNECT/SIGNAL SYSTEM IN HANDHOLES 11, 20, AND 21.
- CONTRACTOR SHALL COIL LOOP DETECTOR CONDUCTORS FOR D2-1 IN ADJACENT HANDHOLE 21, TAPE ENDS (TO PREVENT ENTRANCE OF MOISTURE, TIE WIRES NEAR TOP OF HANDHOLE, AND LABEL WIRE AS TO WHICH LOOP DETECTOR THE CONDUCTOR CORRESPONDS TO.
- LOOP DETECTOR CONDUCTORS IN HANDHOLE 21 SHALL HAVE SUFFICIENT LENGTH (5' MINIMUM) LEFT IN HANDHOLE, FOR FUTURE SPLICING BY OTHERS.
- 2/C#14 CABLES ARE NOT REQUIRED TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR FUTURE SIGNAL SYSTEM.
- F & I = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
- CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF SEPARATE PROJECT.
- CONDUIT, HANDHOLES, LOOP DETECTORS, CABLES, AND SIGNING TO BE FURNISHED & INSTALLED BY CONTRACTOR AS PART OF TRAFFIC SIGNAL SYSTEM WORK SHOWN ON THIS PLAN SHEET WILL BE MEASURED AND PAID FOR AS NOTED IN PLANS AND IN SPECIAL PROVISIONS.



F & I H.H.20 TO H.H.21:
 2"R.S.C.
 (FOR FUTURE INTERCONNECT)

F & I H.H.21 TO H.H.22:
 2"R.S.C.
 (FOR FUTURE USE)

07/14/2008
 J:\COMMON\52-BUSINESS_DRIVEWAY\52SIGBASE.DWG

DRAWN BY: JMG

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BLAINE.

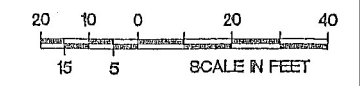
REVISE SIGNAL SYSTEM/FUTURE PROVISIONS
 INTERSECTION LAYOUT

FILE NO.
 103070

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CITY PROJECT NO. 07-05

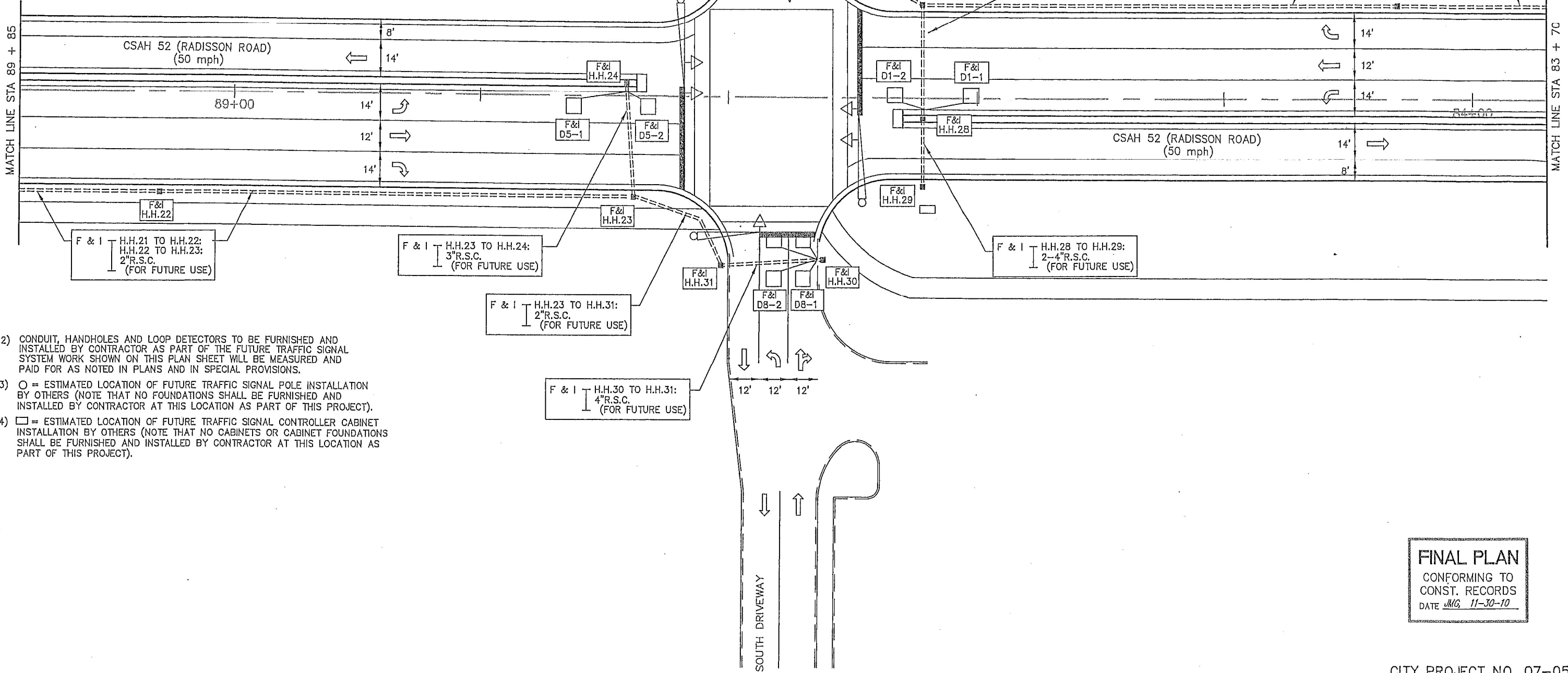
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- NOTES:
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 - 5) ALL NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
 - 6) CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE INTERCONNECT/SIGNAL SYSTEM IN EACH NEW HANDHOLE.
 - 7) CONTRACTOR SHALL COIL LOOP DETECTOR CONDUCTORS FOR ALL NEW LOOP DETECTORS IN AN ADJACENT HANDHOLE, TAPE ENDS (TO PREVENT ENTRANCE OF MOISTURE, TIE WIRES NEAR TOP OF HANDHOLE, AND LABEL WIRE AS TO WHICH LOOP DETECTOR THE CONDUCTOR CORRESPONDS TO (I.E. D1-1, D4-2 BACK, ETC.).
 - 8) LOOP DETECTOR CONDUCTORS IN HANDHOLES SHALL HAVE SUFFICIENT LENGTH (5' MINIMUM) LEFT IN HANDHOLE, FOR FUTURE SPLICING BY OTHERS.
 - 9) 2/C#14 CABLES ARE NOT REQUIRED TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR FUTURE SIGNAL SYSTEM.
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F & I N.M.C. LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	6x6	40'
D1-2	6x6	10'
D2-1	6x6	400'
D4-1	2-6x6	0' & 15'
D4-2	2-6x6	0' & 15'
D5-1	6x6	40'
D5-2	6x6	10'
D6-1	6x6	400'
D8-1	2-6x6	0' & 15'
D8-2	2-6x6	0' & 15'

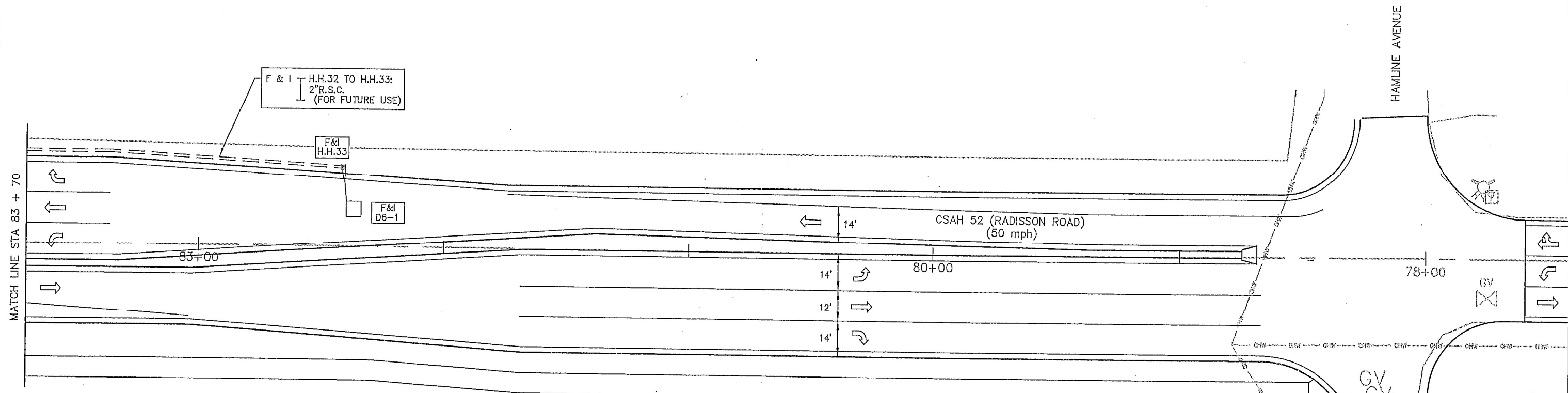
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- 12) CONDUIT, HANDHOLES AND LOOP DETECTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THE FUTURE TRAFFIC SIGNAL SYSTEM WORK SHOWN ON THIS PLAN SHEET WILL BE MEASURED AND PAID FOR AS NOTED IN PLANS AND IN SPECIAL PROVISIONS.
- 13) ○ = ESTIMATED LOCATION OF FUTURE TRAFFIC SIGNAL POLE INSTALLATION BY OTHERS (NOTE THAT NO FOUNDATIONS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT THIS LOCATION AS PART OF THIS PROJECT).
- 14) □ = ESTIMATED LOCATION OF FUTURE TRAFFIC SIGNAL CONTROLLER CABINET INSTALLATION BY OTHERS (NOTE THAT NO CABINETS OR CABINET FOUNDATIONS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT THIS LOCATION AS PART OF THIS PROJECT).

FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE JMG, 11-30-10

CITY PROJECT NO. 07-05



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- 7) CONTRACTOR SHALL COIL LOOP DETECTOR CONDUCTORS FOR ALL NEW LOOP DETECTORS IN AN ADJACENT HANDHOLE, TAPE ENDS (TO PREVENT ENTRANCE OF MOISTURE, TIE WIRES NEAR TOP OF HANDHOLE, AND LABEL WIRE AS TO WHICH LOOP DETECTOR THE CONDUCTOR CORRESPONDS TO (I.E. D1-1, D4-2 BACK, ETC.).
- 8) LOOP DETECTOR CONDUCTORS IN HANDHOLES SHALL HAVE SUFFICIENT LENGTH (5' MINIMUM) LEFT IN HANDHOLE, FOR FUTURE SPLICING BY OTHERS.
- 9) 2/C#14 CABLES ARE NOT REQUIRED TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR FUTURE SIGNAL SYSTEM.
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FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE *JMG, 11-30-10*


V:\BLAINE\COMMON\52-BUSINESS_DRIVEWAY\5250BASE-REC.DWG

DRAWN BY: JMG
 DESIGNER: JMG

1	JMG	11/10

RECORD DRAWING

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.

 PHONE: (651) 490-2000

BLAINE,

FUTURE TRAFFIC SIGNAL PROVISIONS
 INTERSECTION LAYOUT

FILE NO.
103070

56

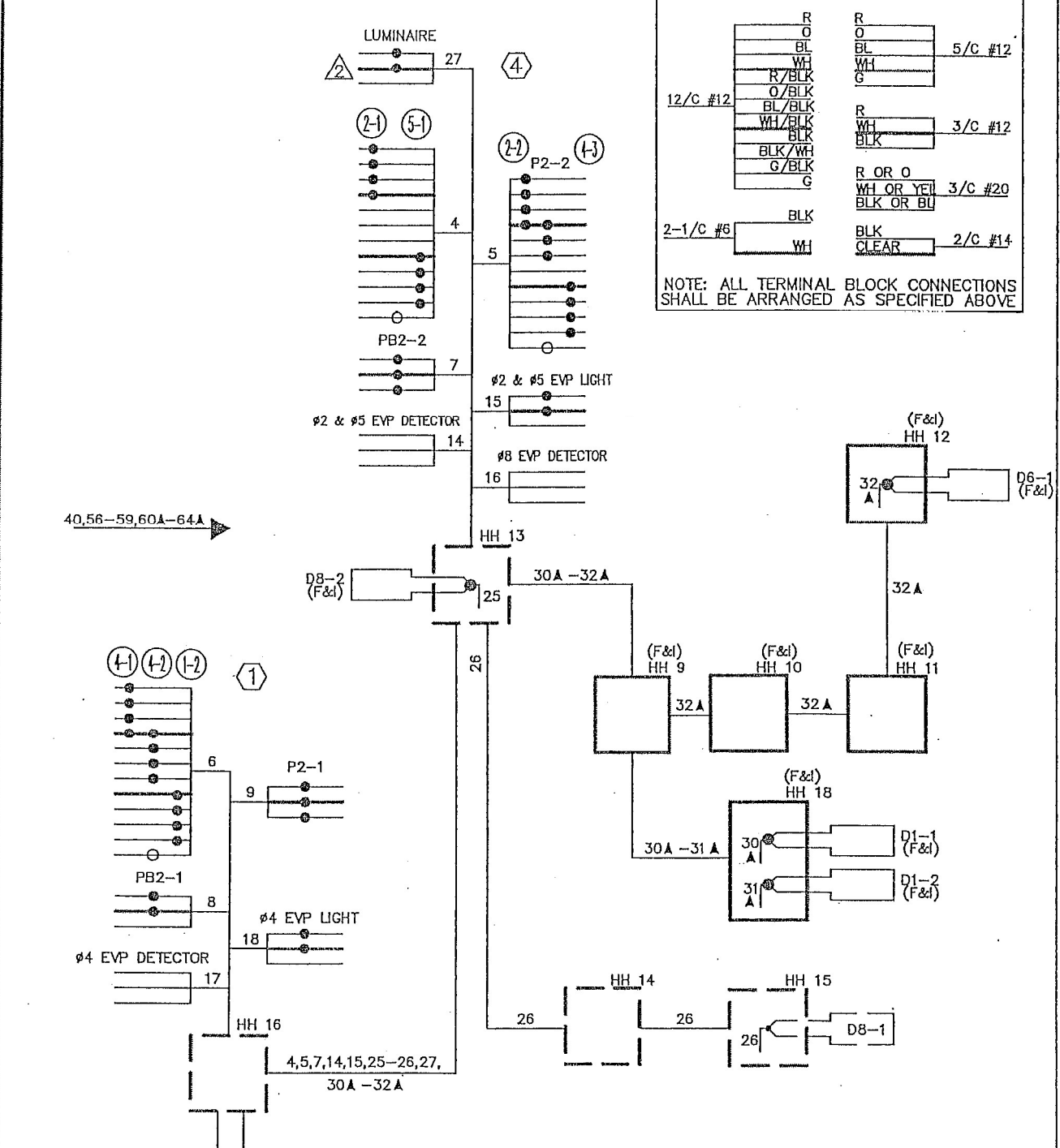
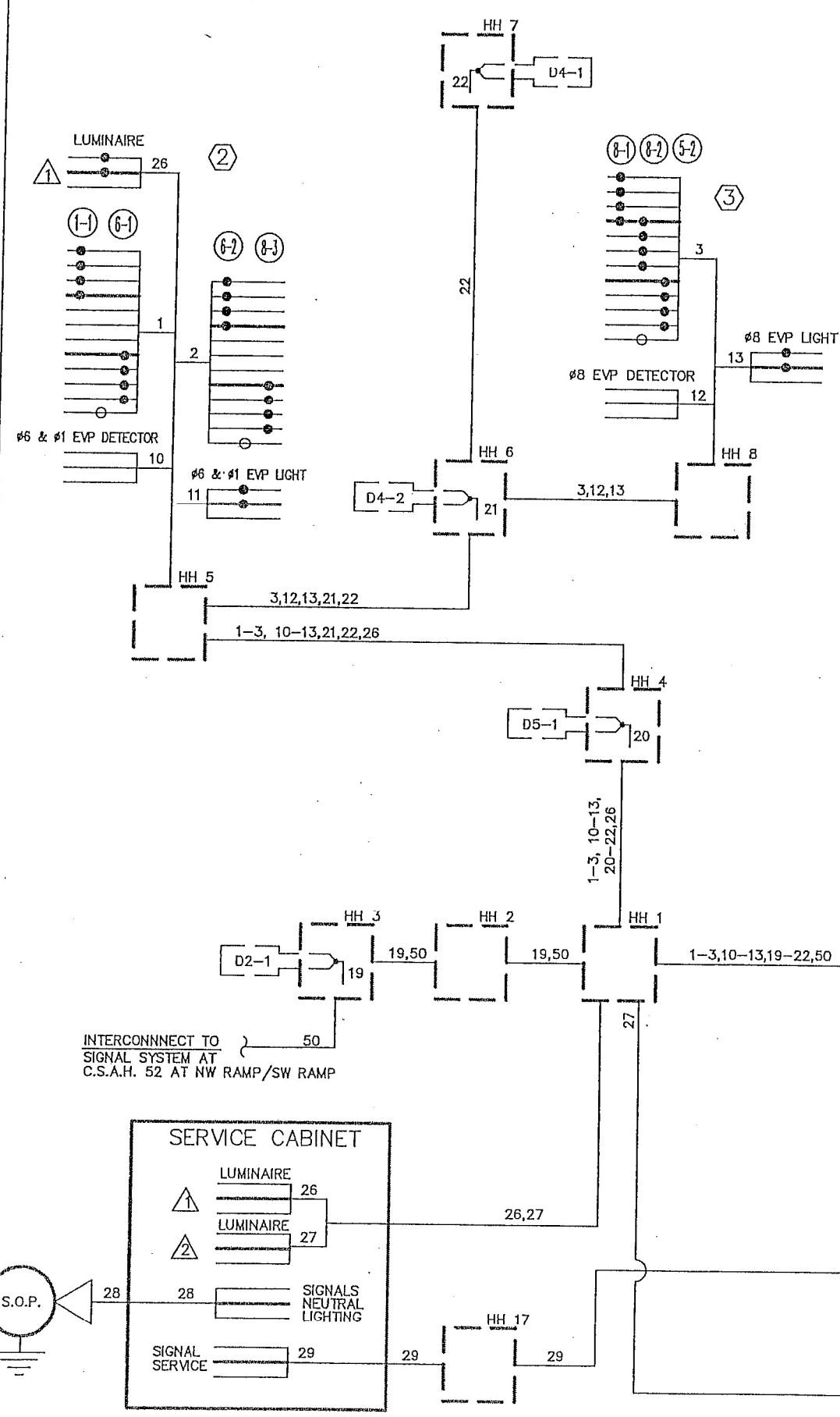
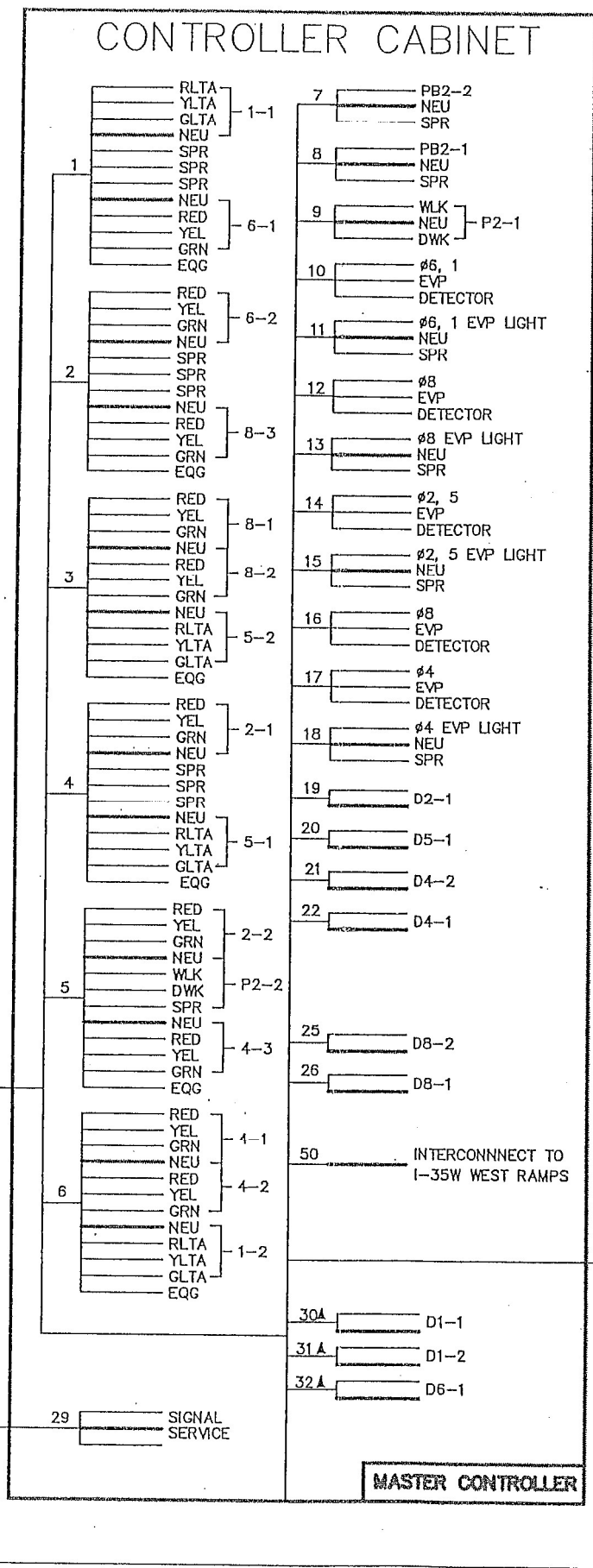
CITY PROJECT NO. 07-05

7545

CONDUCTOR COLOR CODING

R	R
O	O
BL	BL
WH	WH
R/BLK	5/C #12
O/BLK	
BL/BLK	
WH/BLK	
BLK	R
BLK/WH	3/C #12
G/BLK	
G	R OR O
	WH OR YEL
	3/C #20
	BLK OR BL
	BLK
	2/C #14
	WH
	BLK CLEAR

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



- NOTES:
- 1) ALL CABLES AND CONDUCTORS ARE IN PLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ (▲ = CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR).
 - 2) F & I = LOOP DETECTOR/HANDHOLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
 - 3) IN PLACE CABLE 25 (1-2/C#14) SHALL BE REUSED AND MADE OPERATIONAL BY CONTRACTOR FOR NEW LOOP DETECTOR D8-2 IN IN PLACE HANDHOLE 13, TO THE SATISFACTION OF THE ENGINEER.
 - 4) IN PLACE CABLES 23 AND 24 (1-2/C#14) SHALL BE REMOVED BY THE CONTRACTOR ALL THE WAY FROM IN PLACE HANDHOLES 9 AND 12 BACK TO THE CONTROLLER CABINET AND SHALL BE DISPOSED OF BY THE CONTRACTOR.

07/14/2008

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 DESIGNER: JMG
 CHECKED BY: JMG

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PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55119

BLAINE, MINNESOTA

SIGNAL SYSTEM I.D.: 22496 CITY PROJECT NO. 07-05

REVISE SIGNAL SYSTEM
 FIELD WIRING DIAGRAM

FILE NO. 103070
 DATE