

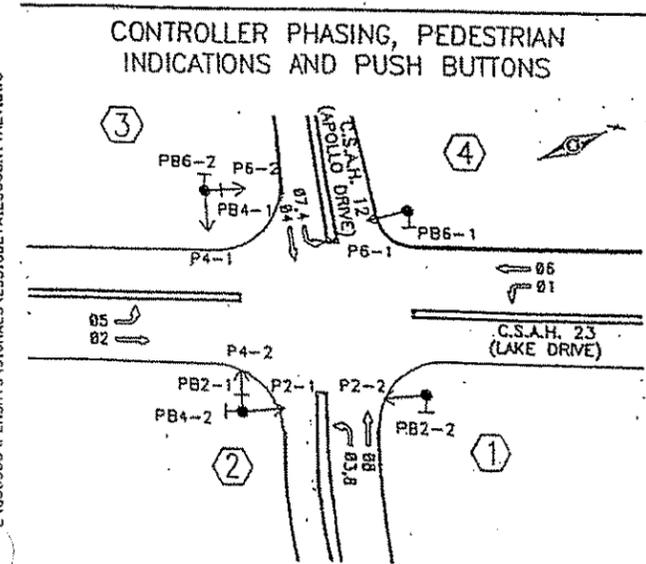
LOOP DETECTORS			
NUMBER	SIZE (FT.)	FUNCTION	LOCATION
D1-1	6x6	1	40
D1-2	6x6	1	10
D2-1	6x6	1	300
D2-2	6x6	1	300
D3-1	2-6x6	1	4 & 34
D3-2	2-6x6	1	-5 & 19
D4-1	6x6	3,8	180
D4-2	6x6, 6x10	7	AS SHOWN
D5-1	6x6	1	40
D5-2	6x6	1	10
D6-1	6x6	1	400
D6-2	6x6	1	400
D7-1	2-6x6	1	4 & 34
D7-2	2-6x6	1	-5 & 19
D8-1	6x6	3,8	120
D8-2	6x6, 6x10	7	AS SHOWN
D8-3	2-6x6	1	5

- LOOP DETECTOR FUNCTIONS**
- 1) CALL AND EXTEND
 - 3) EXTEND ONLY
 - 7) DELAY CALL/IMMEDIATE EXTEND
 - 8) CARRY OVER (STRETCH)
- LOCATION = DISTANCE FROM STOP LINE TO DETECTOR IN FEET

** = NEW NMC LOOP DETECTOR TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT (REVISE SIGNAL SYSTEM "D").

INPLACE LOOPS D5-1/D5-2-ABANDON INPLACE ("D")
F & I NEW LOOPS D5-1/D5-2 ("D")

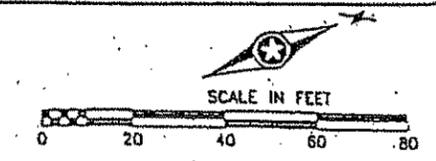
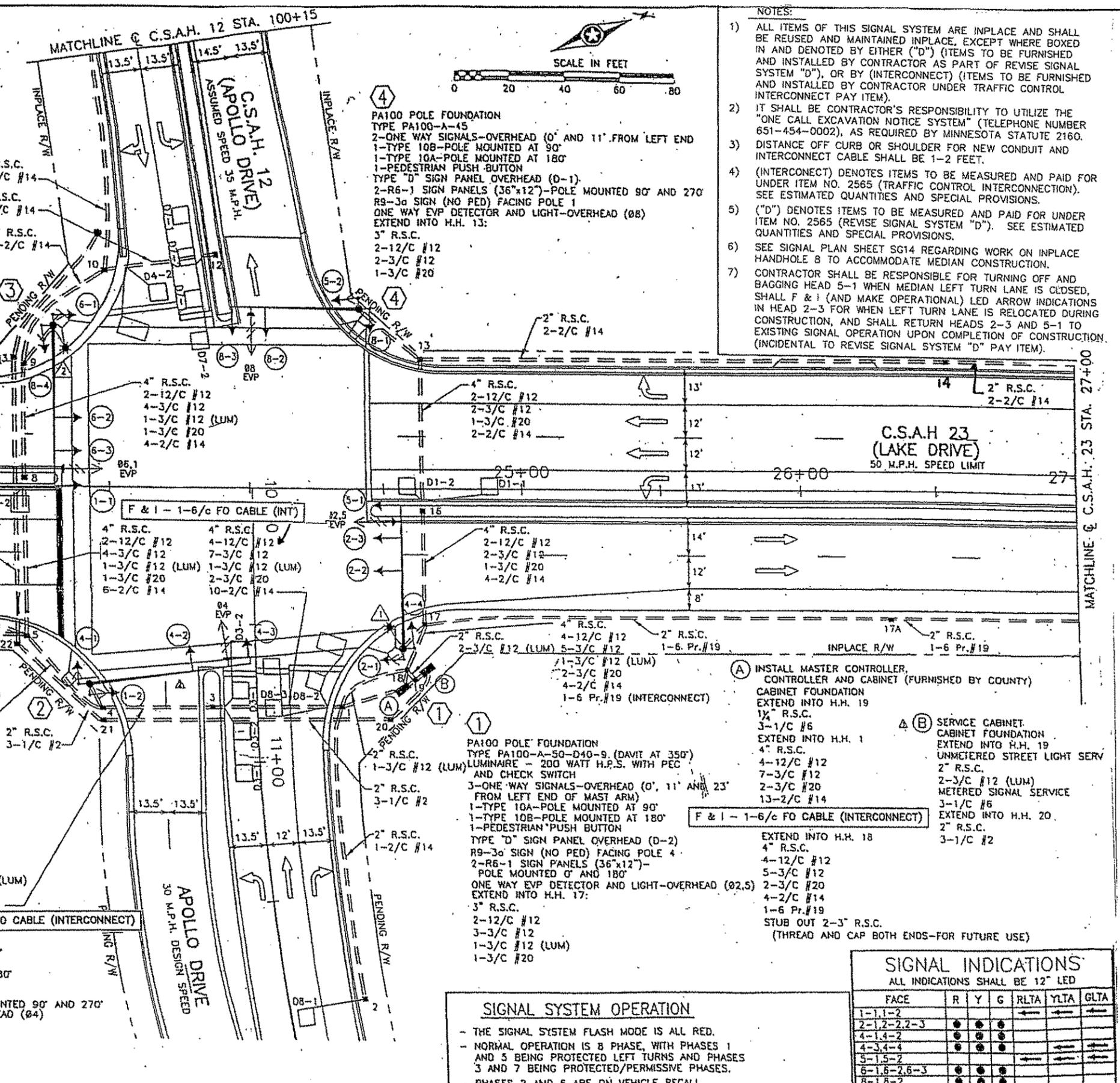
H.H.5 TO H.H.6B:
F & I - 2" R.S.C. ("D")
2-2/c#14-INPLACE (SALVAGE AND INSTALL) ("D")
F & I - 1-6/c FO CABLE (INTERCONNECT)



③

PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVT AT 350')
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
3-ONE WAY SIGNALS OVERHEAD (0', 11' AND 23' FROM LEFT END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED AT 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL OVERHEAD (D-2)
2-R6-1 SIGN PANELS (36"x12")-POLE MOUNTED 0° AND 180°
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø6.1)
EXTEND INTO H.H. 9:
3" R.S.C.
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20

SOP
INPLACE: POLE MOUNTED TRANSFORMER
F&I: 2" R.S.C. RISER WITH WEATHERHEAD
UP INPLACE UTILITY POLE
EXTEND INTO H.H. 23
2" R.S.C.
3-1/C #2



- NOTES:**
- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY EITHER ("D") (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "D"), OR BY (INTERCONNECT) (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER TRAFFIC CONTROL INTERCONNECT PAY ITEM).
 - 2) 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.
 - 3) DISTANCE OFF CURB OR SHOULDER FOR NEW CONDUIT AND INTERCONNECT CABLE SHALL BE 1-2 FEET.
 - 4) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 5) ("D") DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565 (REVISE SIGNAL SYSTEM "D"). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 6) SEE SIGNAL PLAN SHEET SG14 REGARDING WORK ON INPLACE HANDHOLE 8 TO ACCOMMODATE MEDIAN CONSTRUCTION.
 - 7) CONTRACTOR SHALL BE RESPONSIBLE FOR TURNING OFF AND BAGGING HEAD 5-1 WHEN MEDIAN LEFT TURN LANE IS CLOSED, SHALL F & I (AND MAKE OPERATIONAL) LED ARROW INDICATIONS IN HEAD 2-3 FOR WHEN LEFT TURN LANE IS RELOCATED DURING CONSTRUCTION, AND SHALL RETURN HEADS 2-3 AND 5-1 TO EXISTING SIGNAL OPERATION UPON COMPLETION OF CONSTRUCTION. (INCIDENTAL TO REVISE SIGNAL SYSTEM "D" PAY ITEM).

H.H.5 TO H.H.6:
2" R.S.C.-INPLACE (REMOVE) ("D")
2-2/c#14-INPLACE (SALVAGE BACK TO H.H.5, AND REINSTALL TO NEW H.H.6B) ("D")

PA100 POLE FOUNDATION
TYPE PA100-A-55
2-ONE WAY SIGNALS-OVERHEAD (0° AND 20° FROM LEFT END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED AT 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL OVERHEAD (D-1)
2-R6-1 SIGN PANELS (36"x12")-POLE MOUNTED 90° AND 270°
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø4)
EXTEND INTO H.H. 4:
3" R.S.C.
2-12/C #12
3-3/C #12
1-3/C #20

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURNS AND PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

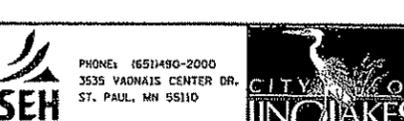
A INSTALL MASTER CONTROLLER, CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H. 19
1 1/2" R.S.C.
3-1/C #6
EXTEND INTO H.H. 1

B SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 19
UNMETERED STREET LIGHT SERV
2" R.S.C.
2-3/C #12 (LUM)
METERED SIGNAL SERVICE
3-1/C #6
EXTEND INTO H.H. 20.
2" R.S.C.
3-1/C #2

SIGNAL INDICATIONS						
ALL INDICATIONS SHALL BE 12" LED						
FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2						
2-1,2-2,2-3	●	●	●			
4-1,4-2	●	●	●			
4-3,4-4	●	●	●			
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2	●	●	●			
8-3,8-4	●	●	●			

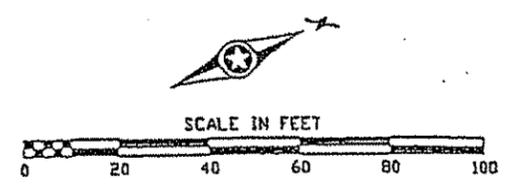
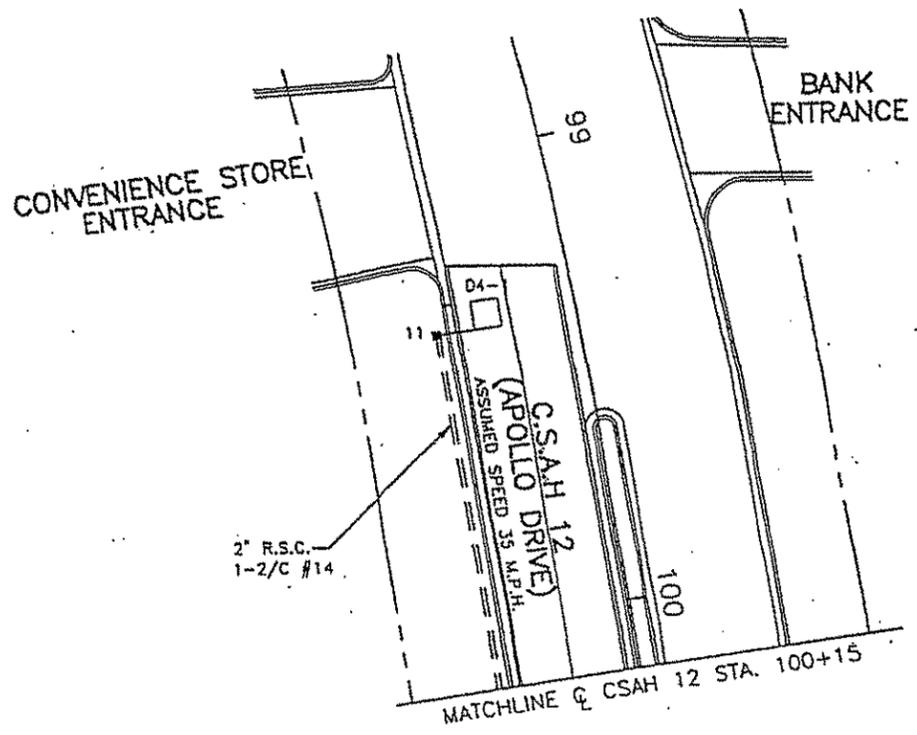
DESIGN TEAM	NO.	BY	DATE	REVISIONS	COUNTY COMMENTS
DRAWN BY: JMG	1	JMG	1/09/07		
DESIGNER: JMG					
CHECKED BY: JMG					

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.
Certified By: *John M. Gray* Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 3/26/2007



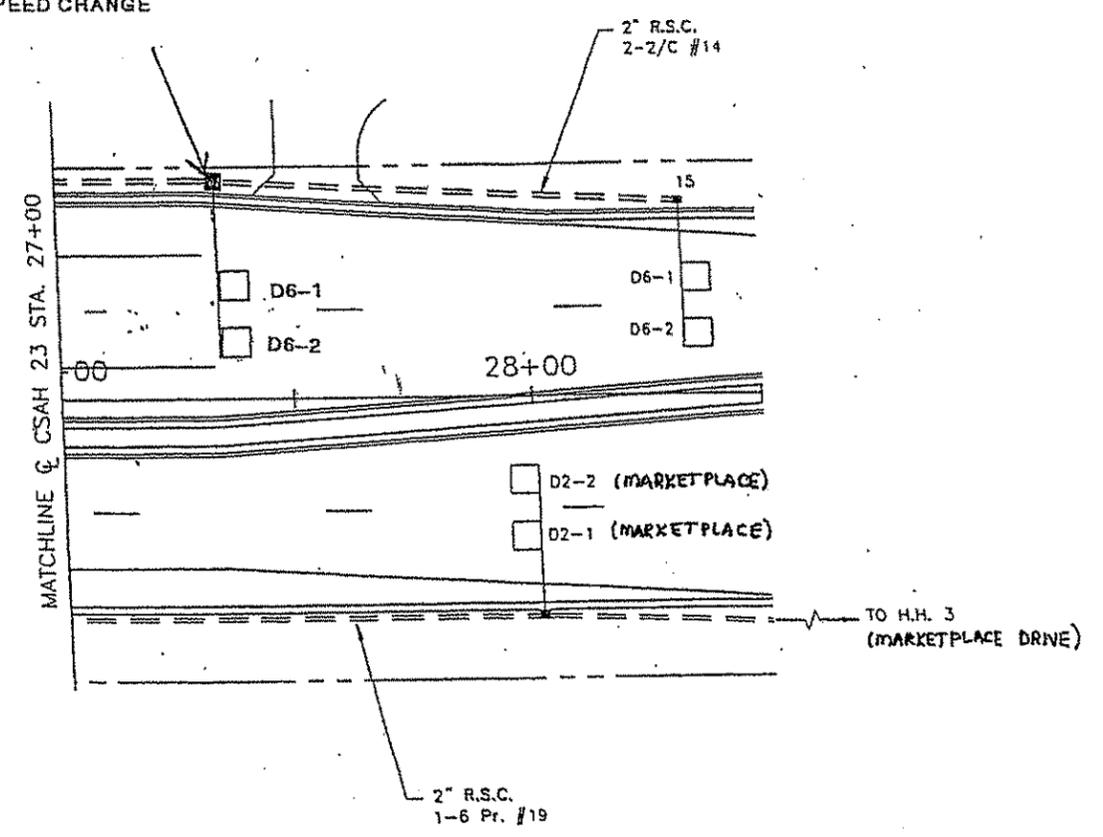
MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE PROJ. NO. 0280-55 (TH 35W)
STATE AID PROJ. NO. 02-623-13 & 210-020-04
C.S.A.H. 23 (LAKE DRIVE)

REVISE SYSTEM "D"/INTERCONNECT
INTERSECTION LAYOUT
LAKE DRIVE (CSAH 23) AT APOLLO DRIVE
FILE NO. 139
ALR0505.00
SG16
OF SG18
198



NOTES:
 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE ON THIS PLAN SHEET (PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY).

NEW LOOPS FOR SPEED CHANGE



JL:\050500\FLASHES\SIGNALS\23SIGDETAIL\SCOUNTYREV.DWG

DESIGN TEAM			
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.
 Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY Date: 3/26/2007

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

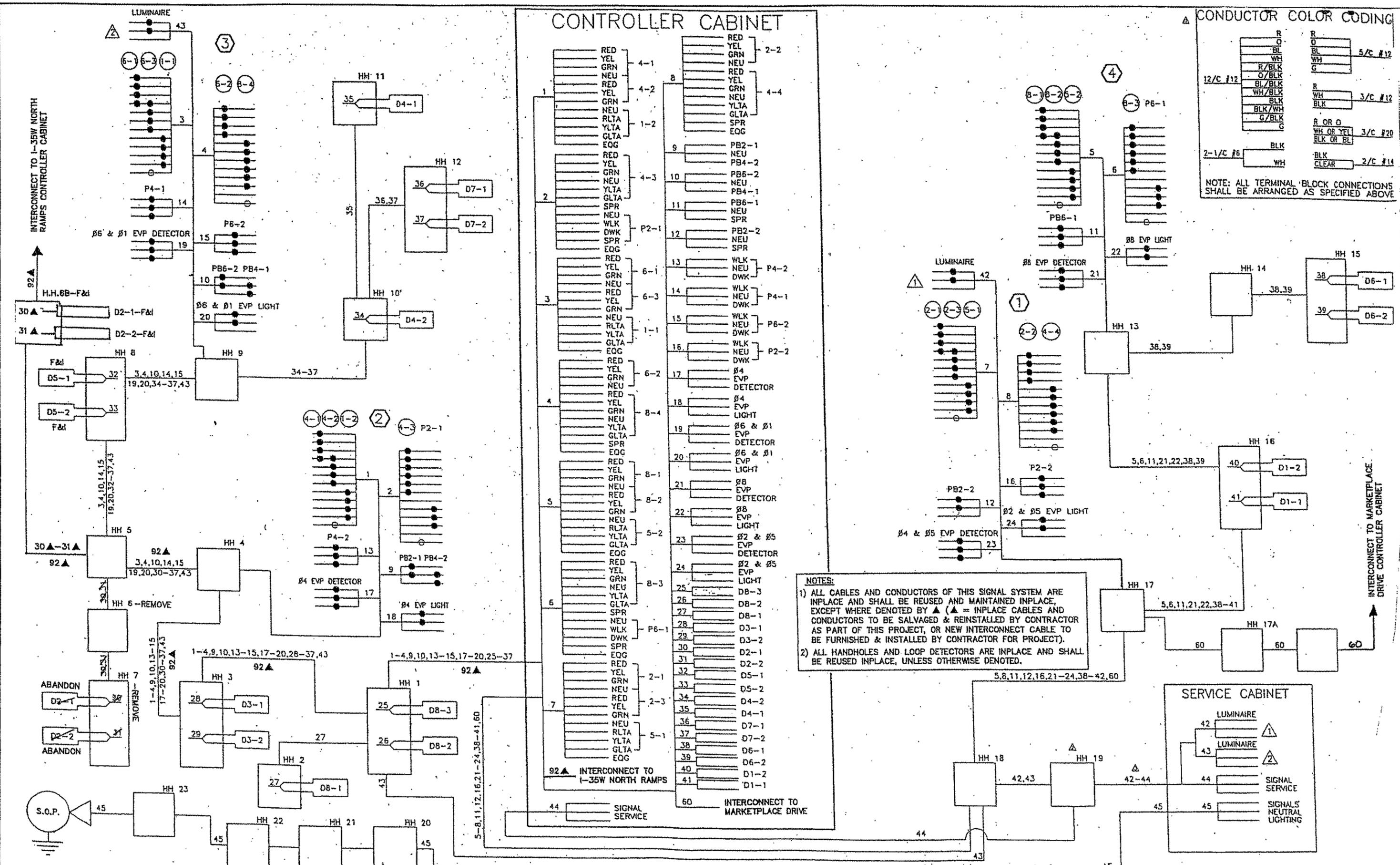


MINNESOTA DEPARTMENT OF TRANSPORTATION
 STATE PROJ. NO. 0280-55 (TH 35W)
 STATE AID PROJ. NO. 02-623-13 & 210-020-04
 C.S.A.H. 23 (LAKE DRIVE)

SIGNAL SYSTEM "D" MATCH LINES
 "FOR INFORMATION ONLY"
 LAKE DRIVE (CSAH 23) AT APOLLO DRIVE

F.I.E. NO.	140
ALNOL0505.00	
SG17	198
OF 5018	

\\G:\050500\PLNS\HTS\SIGNALS\23516\DETAIL\COUNTYREV.DWG



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

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

NOTES:

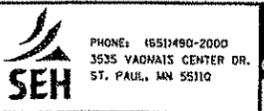
- 1) ALL CABLES AND CONDUCTORS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = INPLACE CABLES AND CONDUCTORS TO BE SALVAGED & REINSTALLED BY CONTRACTOR AS PART OF THIS PROJECT, OR NEW INTERCONNECT CABLE TO BE FURNISHED & INSTALLED BY CONTRACTOR FOR PROJECT).
- 2) ALL HANDHOLES AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED INPLACE, UNLESS OTHERWISE DENOTED.

DESIGN TEAM

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY Date: 3/26/2007



MINNESOTA DEPARTMENT OF TRANSPORTATION
 STATE PROJ. NO. 0280-55 (TH 35W)
 STATE AID PROJ. NO. 02-623-13 & 210-020-04
 C.S.A.H. 23 (LAKE DRIVE)

REVISE SYSTEM "D"/INTERCONNECT
 FIELD WIRING DIAGRAM
 LAKE DRIVE (CSAH 23) AT APOLLO DRIVE

FILE NO.	141
ALNOL0505.00	
SG18	198
OF 508	