

I/PLOT NAME: T735867\_sgl\_N Ramp  
 PATH & FILENAME: Projects\DM\_ROMS\69400007TrafficSignals\390 TH694 @ (44) SILVER LAKE RD N RAMP T735867\PENDINDRAWING\T735867R1581\SET DR\T735867.dwg

**SIGNAL HEAD CHART**

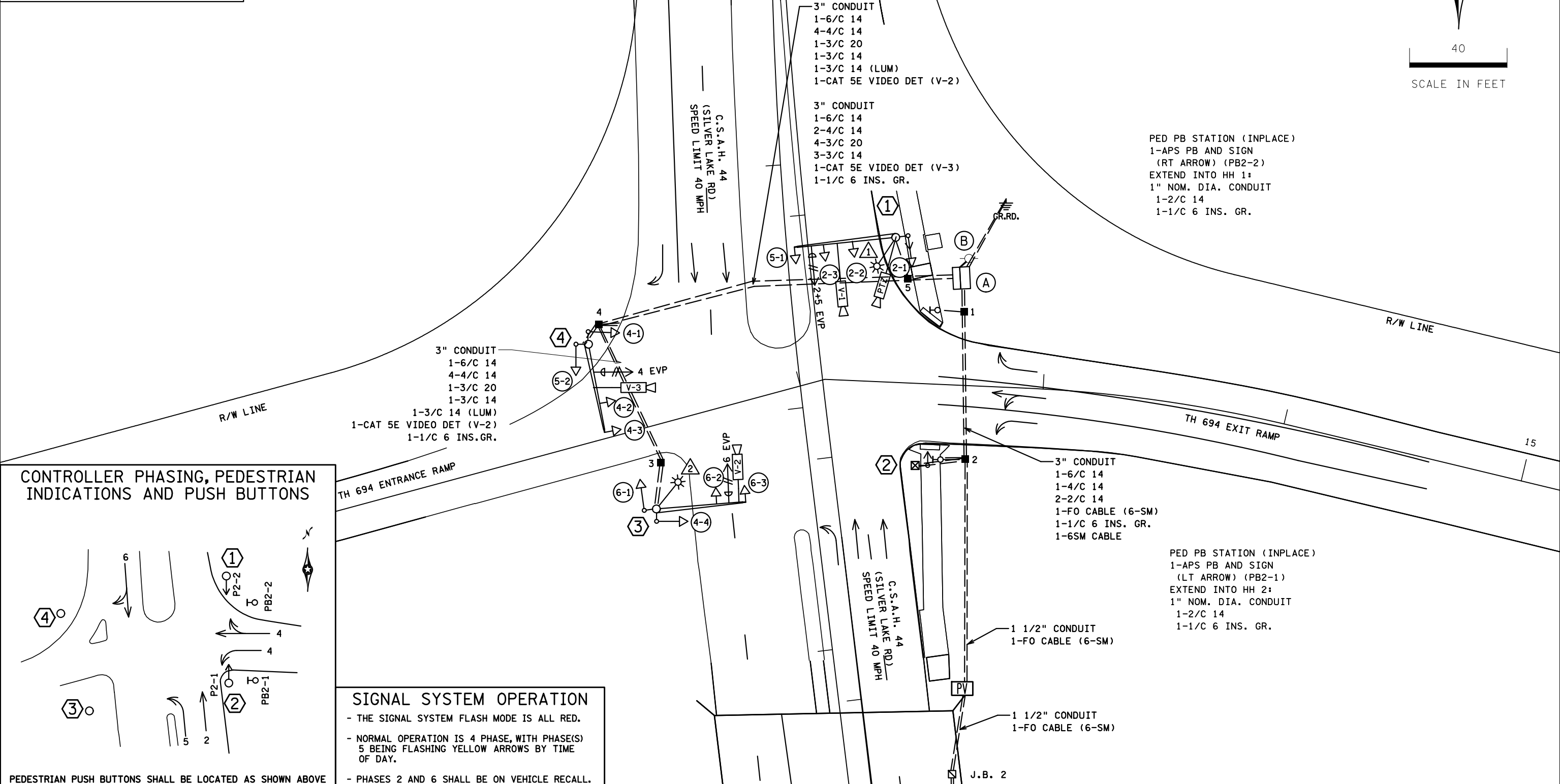
FACE	R	Y	FYA	G	GLA
2-1, 2-2, 2-3	●	●		●	
4-1	●	●		●	
4-2	●	●		●	←
4-3, 4-4	←	←			←
5-1, 5-2	←	←	←		←
6-1, 6-2, 6-3	●	●		●	

-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS  
 -FYA DENOTES FLASHING YELLOW ARROW

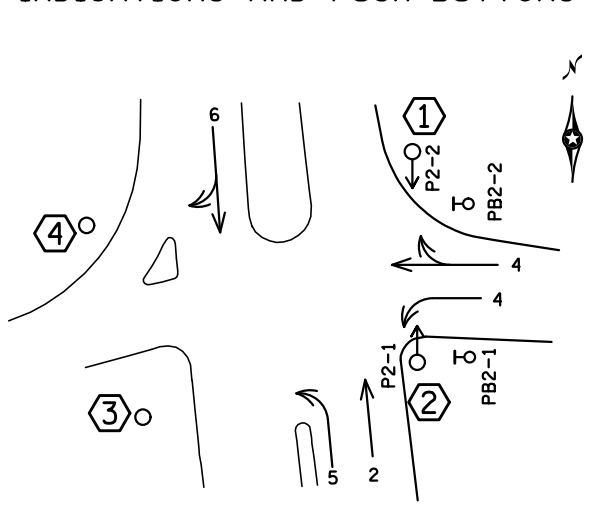
**VIDEO DETECTOR CHART**

CAMERA NO.	LOCATION	PHASE
V-1	POLE 1	2+5
V-2	POLE 3	6
V-3	POLE 4	4

-ALL VIDEO DETECTORS SHALL BE MAST ARM MOUNTED UNLESS NOTED OTHERWISE



**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE(S) 5 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

BY	DATE	REVISIONS	SYSTEM ID: 4174618	T.E. 33961	S.A.P. NO. 062-044-040, 147-020-045	DRAWN BY: RMV	CKD BY: MJB	DATE: 08/10/22
HJC	1/8/2024	6285-160 AS-BUILT	METER ADDRESS: 330 (RAMSEY CO)	OLD SYSTEM ID: 1735867	CERTIFIED BY _____	LIC. NO. _____	DATE: _____	
<b>INTERSECTION LAYOUT TRAFFIC CONTROL SIGNAL SYSTEM</b>					STATE PROJ. NO. 6285-160 (T.H.694) SHEET NO. SS1 OF SS3 SHEETS			
T.H. 694 AT SILVER LAKE RD (NORTH RAMP) IN NEW BRIGHTON, RAMSEY COUNTY								

I/PLOT NAME: T1735867\_sgl\_N Ramp  
 PATH & FILENAME: Projects\DM\_ROMS\69A0000\TrafficSignals\390 TH694 @ (44) SILVER LAKE RD N RAMP T1735867\PEND\IN\N&S\T1735867\SS2.DWG

④ X=542501.4757 Y=199963.3502  
 PA90 POLE FOUNDATION  
 TYPE PA90-A-35  
 ① (A 3/4" THREADED HALF COUPLING (FOR EVP MOUNTING), SHALL BE F&I 25' FROM THE END OF THE MAST ARM)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)  
 1-VIDEO DETECTION CAMERA (V-3) (STATE FURNISHED) MOUNTED ON 6' EXTENSION AT 18' FROM END OF MAST ARM  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 2-SIGNS (ONE WAY) R6-1R & R6-1L (SEE SIGN DETAILS)  
 2-TYPE R9-3 SIGN (NO PEDS) (SEE SIGN DETAILS)  
 2" CONDUIT TO HH 4:  
 1-3/C 14  
 1-3/C 20  
 2-4/C 14  
 3-6/C 14  
 1-CAT 5E VIDEO CABLE (V-3)  
 1-1/C 6 INS. GR.

③ X=542529.3472 Y=199895.7937  
 PA90 POLE FOUNDATION  
 TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6)  
 1-VIDEO DETECTION CAMERA (V-2) (STATE FURNISHED) MOUNTED ON 6' EXTENSION AT 18' FROM END OF MAST ARM  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 2-TYPE D SIGNS (D-6, D-7) (SEE SIGN DETAILS)  
 1-TYPE R9-3 SIGN (NO PEDS) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 3:  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 4-4/C 14  
 1-6/C 14  
 1-CAT 5E VIDEO CABLE (V-2)  
 1-1/C 6 INS. GR.

① X=542627.5029 Y=200007.1766  
 PA100 POLE FOUNDATION  
 TYPE PA100-A-40-X6-350/CAM (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'  
 1-ANGLE MOUNT SIGNAL AT 180 DEGREES  
 1-ANGLE MOUNT C.D. PED HEAD AT 180 DEG (P2-1)  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)  
 1-VIDEO DETECTION CAMERA (V-1) (STATE FURNISHED) MOUNTED ON 6' EXTENSION AT 17' FROM END OF MAST ARM  
 1-PTZ VIDEO CAMERA (STATE FURNISHED) MOUNTED ON MAST ARM POLE  
 1-LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-R10-X12 SIGN ADJACENT TO HEAD (5-1)  
 1-TYPE D SIGN (D-5) (SEE SIGN DETAILS)  
 1-TYPE R9-3 SIGN (NO PEDS) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 5:  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 4-3/C 14  
 2-6/C 14  
 1-CAT 5E VIDEO DET (V-1)  
 1-CAT 5E PTZ CAMERA  
 1-7/16" GROUND BRAID TO GROUND ROD  
 1-1/C 6 INS. GR.

② X=542635.4855 Y=199913.6313  
 PEDESTAL FOUNDATION (DESIGN 8127-LIGHT FOUNDATION DESIGN E)  
 PEDESTAL POLE WITH BASE  
 1-ANGLE MOUNT C.D. PED HEAD AT 90 DEG (P2-1)  
 2" CONDUIT TO HH 2:  
 1-4/C 14  
 1-6/C 14  
 1-1/C 6 INS. GR.

① MAST ARMS FOR POLE NO. 4 HAS A NON-STANDARD EVP MOUNTING LOCATION DUE TO CONFLICTS WITH RAMP ALIGNMENT.

(A) EQUIPMENT PAD (SEE DETAIL SHEET)  
 SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES  
 CONTROLLER AND CABINET (STATE FURNISHED)

2" CONDUIT TO HH 1:  
 2-2/C 14  
 1-4/C 14  
 1-6/C 14  
 1-1/C 6 INS. GR.  
 1-6-SM FO CABLE

3" CONDUIT TO HH 5:  
 1-3/C 14  
 1-3/C 20  
 6-4/C 14  
 3-6/C 14  
 1-CAT 5E VIDEO DET (V-1)  
 1-CAT 5E PTZ CAMERA

3" CONDUIT TO HH 4:  
 2-3/C 14  
 2-3/C 20  
 4-4/C 14  
 4-6/C 14  
 2-CAT 5E VIDEO DET (V-2, V-3)  
 1-1/C 6 INS. GR.

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
 2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)

1-1/2" CONDUIT TO PULL VAULT:  
 1-FO PIGTAIL (6-SM) (SEE INTERCONNECT LAYOUT)

CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6

CONTROLLER CABINET TO SERVICE CABINET (COMMS):  
 2" CONDUIT  
 1-6PR 19

SERVICE CABINET TO POLE MOUNTED TRANSFORMER:  
 2" CONDUIT  
 3-1/C 2

SERVICE CABINET TO HH 5:  
 2" CONDUIT  
 2-3/C 14 (LUM)

SERVICE CABINET TO EXTERNAL GR. RD.:  
 1" CONDUIT  
 1-1/C 6 INS. GR.  
 (SEE EQUIPMENT PAD LAYOUT)

(B) INPLACE SOP-GROUND MOUNTED TRANSFORMER (XCEL ENERGY)  
 2" CONDUIT INTO SERVICE CABINET:  
 3-1/C 2

BY	DATE	REVISIONS
HJC	1/8/2024	6285-160 AS-BUILT

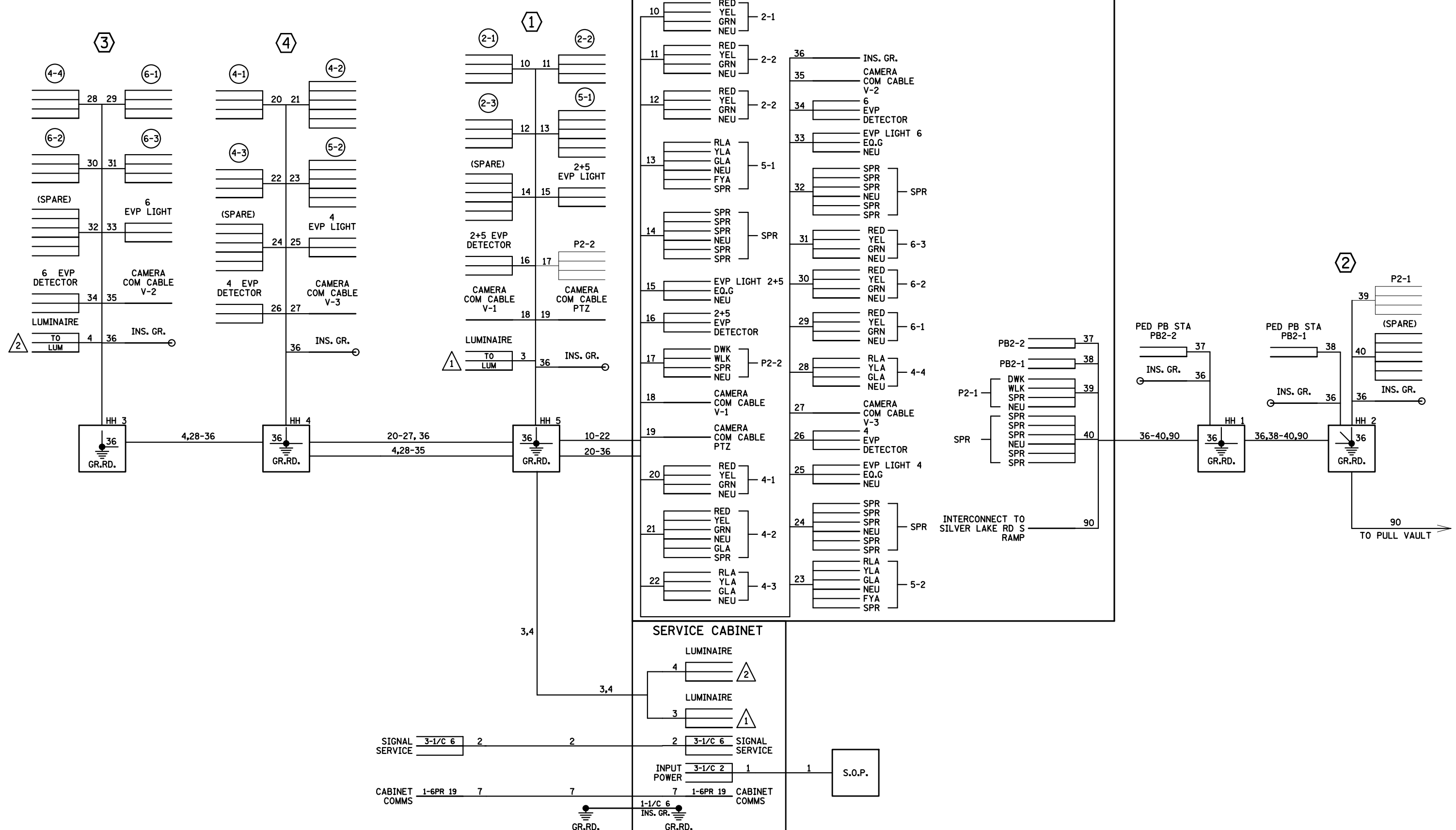
SYSTEM ID: 4174618	T.E. 33961
METER ADDRESS: 330 (RAMSEY CO)	
OLD SYSTEM ID: 1735867	

**INTERSECTION LAYOUT NOTES**  
**TRAFFIC CONTROL SIGNAL SYSTEM**  
**T.H. 694 AT SILVER LAKE RD (NORTH RAMP)**  
**IN NEW BRIGHTON, RAMSEY COUNTY**

S.A.P. NO. 062-644-040, 147-020-045	DRAWN BY: RMV	CKD BY: MJB	DATE: 08/10/22
CERTIFIED BY _____	LIC. NO. _____	DATE: _____	
STATE PROJ. NO. 6285-160 (T.H. 694) SHEET NO. SS2 OF SS3 SHEETS			

I/PLOT NAME: T1735867\_sgl\_N Ramp  
 PATH & FILENAME: Projects\DM\_ROMS\69A00007\TrafficSignals\390 TH694 @ (44) SILVER LAKE RD N RAMP T1735867\PE\END\IN\8&D\T1735867Rsig\SS3\DR\dm\hwy2024

## CONTROLLER CABINET



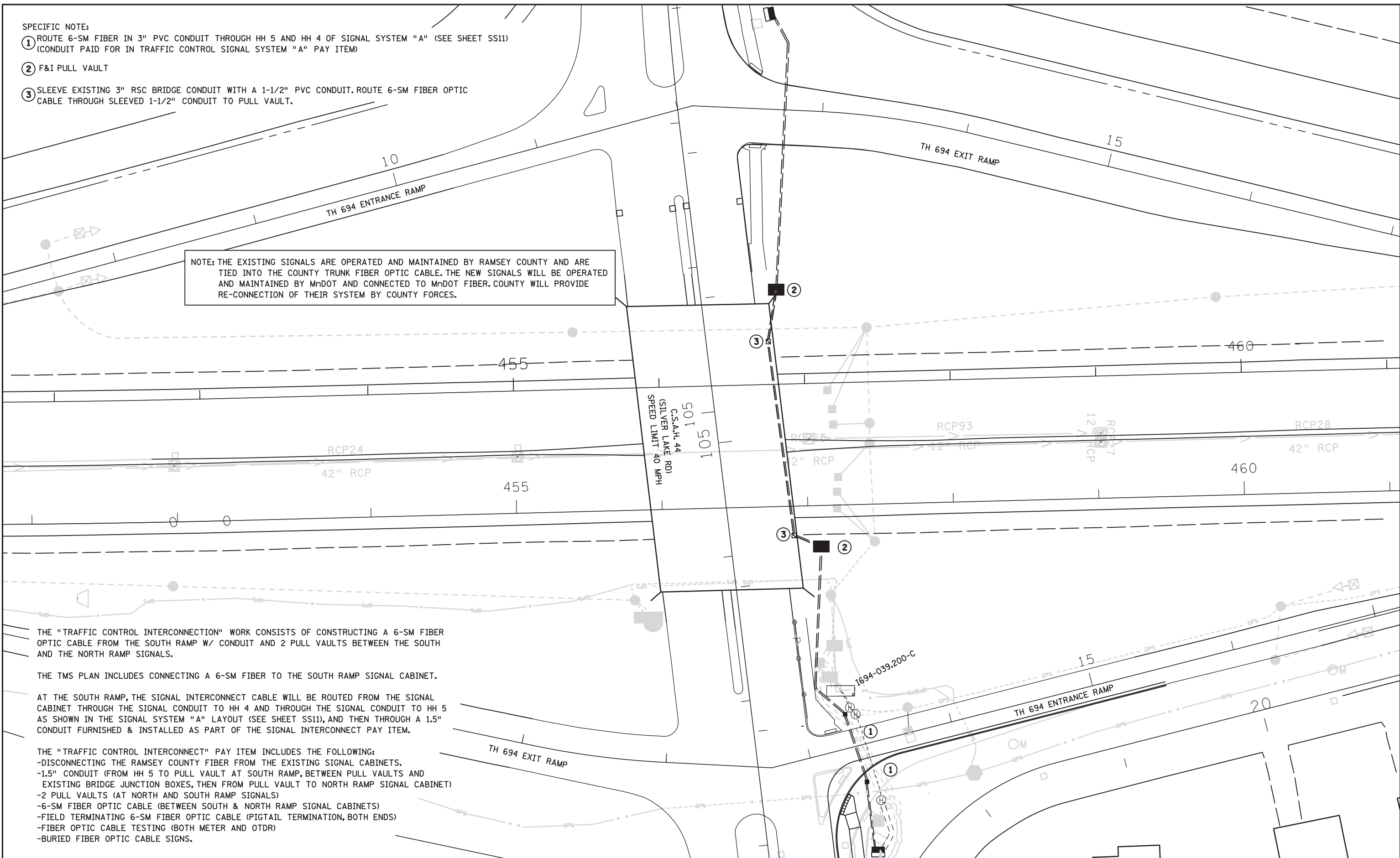
BY	DATE	REVISIONS	SYSTEM ID: 4174618 T.E. 33961	S.A.P. NO. 062-644-040, 147-020-045
HJC	1/8/2024	6285-160 AS-BUILT	METER ADDRESS: 330 (RAMSEY CO)	DRAWN BY: RMV CKD BY: MJB DATE: 11/15/21
			OLD SYSTEM ID: 1735867	CERTIFIED BY: _____ LIC. NO. _____ DATE: _____
<b>WIRING DIAGRAM</b> <b>TRAFFIC CONTROL SIGNAL SYSTEM</b> <b>T.H. 694 AT SILVER LAKE RD. (NORTH RAMP)</b> <b>IN NEW BRIGHTON, RAMSEY COUNTY</b>				STATE PROJ. NO. 6285-160 (T.H. 694) SHEET NO. SS3 OF SS3 SHEETS

DISTRICT #: Metro  
 PLOT NAME: Fiber 1  
 PATH & FILENAME: Projects\DM罗斯69400000\Traffic\Signal\39.0 TH694 @ (44) SILVER LAKE RD N RAMP (735867-PENDING)\SHEET\REVISED\4-OCT-2021

**SPECIFIC NOTE:**

- ① ROUTE 6-SM FIBER IN 3" PVC CONDUIT THROUGH HH 5 AND HH 4 OF SIGNAL SYSTEM "A" (SEE SHEET SS11) (CONDUIT PAID FOR IN TRAFFIC CONTROL SIGNAL SYSTEM "A" PAY ITEM)
- ② F&I PULL VAULT
- ③ SLEEVE EXISTING 3" RSC BRIDGE CONDUIT WITH A 1-1/2" PVC CONDUIT. ROUTE 6-SM FIBER OPTIC CABLE THROUGH SLEEVED 1-1/2" CONDUIT TO PULL VAULT.

NOTE: THE EXISTING SIGNALS ARE OPERATED AND MAINTAINED BY RAMSEY COUNTY AND ARE TIED INTO THE COUNTY TRUNK FIBER OPTIC CABLE. THE NEW SIGNALS WILL BE OPERATED AND MAINTAINED BY MnDOT AND CONNECTED TO MnDOT FIBER. COUNTY WILL PROVIDE RE-CONNECTION OF THEIR SYSTEM BY COUNTY FORCES.



THE "TRAFFIC CONTROL INTERCONNECTION" WORK CONSISTS OF CONSTRUCTING A 6-SM FIBER OPTIC CABLE FROM THE SOUTH RAMP W/ CONDUIT AND 2 PULL VAULTS BETWEEN THE SOUTH AND THE NORTH RAMP SIGNALS.

THE TMS PLAN INCLUDES CONNECTING A 6-SM FIBER TO THE SOUTH RAMP SIGNAL CABINET.

AT THE SOUTH RAMP, THE SIGNAL INTERCONNECT CABLE WILL BE ROUTED FROM THE SIGNAL CABINET THROUGH THE SIGNAL CONDUIT TO HH 4 AND THROUGH THE SIGNAL CONDUIT TO HH 5 AS SHOWN IN THE SIGNAL SYSTEM "A" LAYOUT (SEE SHEET SS11), AND THEN THROUGH A 1.5" CONDUIT FURNISHED & INSTALLED AS PART OF THE SIGNAL INTERCONNECT PAY ITEM.

- THE "TRAFFIC CONTROL INTERCONNECT" PAY ITEM INCLUDES THE FOLLOWING:
- DISCONNECTING THE RAMSEY COUNTY FIBER FROM THE EXISTING SIGNAL CABINETS.
  - 1.5" CONDUIT (FROM HH 5 TO PULL VAULT AT SOUTH RAMP, BETWEEN PULL VAULTS AND EXISTING BRIDGE JUNCTION BOXES, THEN FROM PULL VAULT TO NORTH RAMP SIGNAL CABINET)
  - 2 PULL VAULTS (AT NORTH AND SOUTH RAMP SIGNALS)
  - 6-SM FIBER OPTIC CABLE (BETWEEN SOUTH & NORTH RAMP SIGNAL CABINETS)
  - FIELD TERMINATING 6-SM FIBER OPTIC CABLE (PIGTAIL TERMINATION, BOTH ENDS)
  - FIBER OPTIC CABLE TESTING (BOTH METER AND OTDR)
  - BURIED FIBER OPTIC CABLE SIGNS.

BY	DATE	REVISIONS

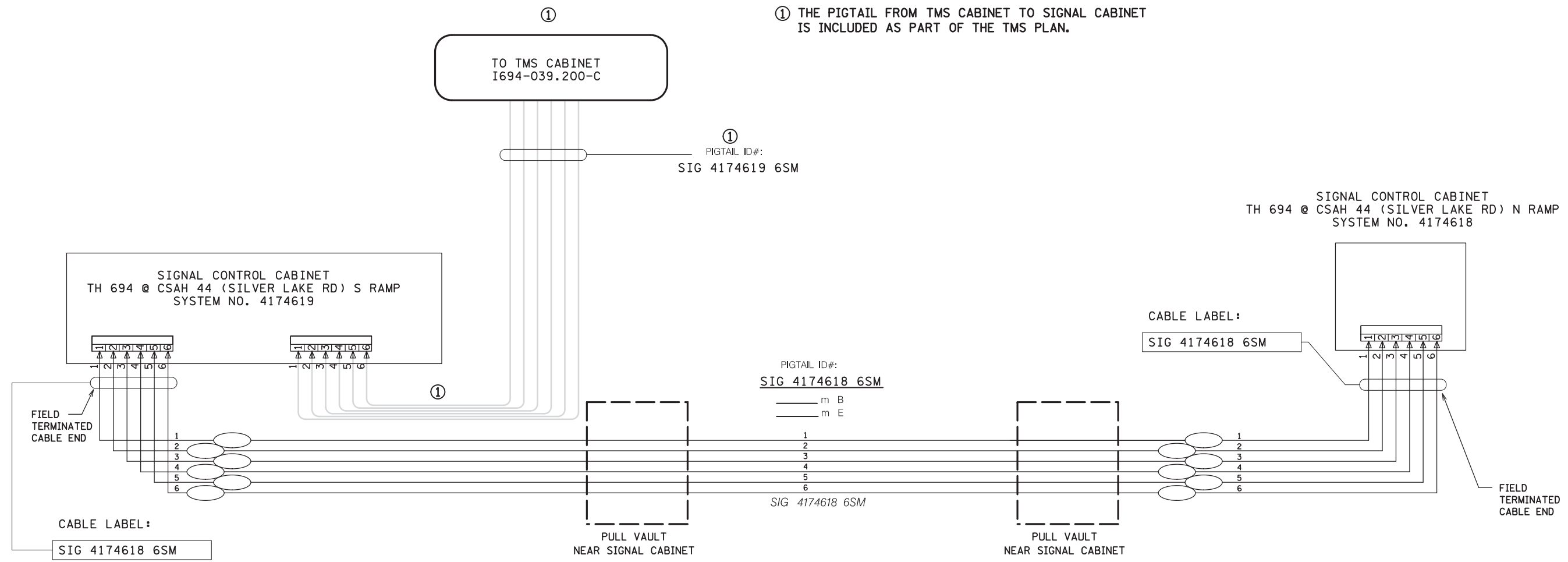
SYSTEM ID: 4174618, 4174619 T.E.  
 METER ADDRESS:  
 MASTER ID: T.E.

**TRAFFIC CONTROL INTERCONNECT**

S.A.P. NO. 062-644-040, 147-020-045  
 DRAWN BY: MJB CKD BY: DATE: 5/12/21  
 CERTIFIED BY: *Gregory Kim* LIC. NO. 26829 DATE: 10/1/21  
 STATE PROJ. NO. 6285-160 (T.H.694) SHEET NO. SS23 OF SS27 SHEETS

# FIBER OPTIC SCHEMATIC

(FOR SIGNAL COMMUNICATIONS)



NOTES:  
FURNISHING, INSTALLING, SPLICING AND TESTING OF THE 6SM FIBER OPTIC CABLE IS INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

DISTRICT #: Metro  
PLOT NAME: Fiber 2  
PATH & FILENAME: Projects\DM\_POS\6940000\Traffic\Signal\390 TH694 @ (44) SILVER LAKE RD N RAMP (735867\PEND\N390211\ED\Fiber\560: 4-OCT-2021

BY	DATE	REVISIONS	SYSTEM ID: 4174618, 4174619 T.E.	<b>FIBER OPTIC SCHEMATIC</b> <b>TRAFFIC CONTROL SIGNAL SYSTEM</b> <b>TH 694 @ SILVER LAKE RD S &amp; N RAMPS</b> <b>IN NEW BRIGHTON, RAMSEY COUNTY</b>	S.A.P. NO. 062-644-040, 147-020-045	DRAWN BY: MJB	CKD BY:	DATE: 5/12/21
			METER ADDRESS:		CERTIFIED BY: <i>Gregory Ken</i>	LIC. NO. 26829	DATE: 10/1/21	
			MASTER ID: T.E.		STATE PROJ. NO. 6285-160 (T.H.694) SHEET NO. SS24 OF SS27 SHEETS			