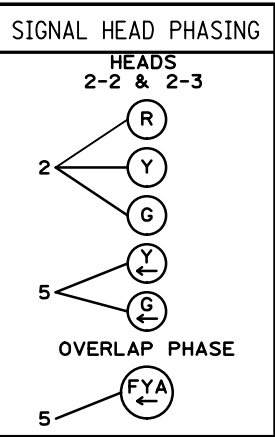


SIGNAL HEAD CHART							
FACE	R	Y	G	R	Y	FYA	G
1-1, 1-2				←	←	←	←
2-1	●	●	●				
2-2, 2-3	●	●	●	←	←	←	
3-1	●	●	●				
3-2	●	●	●				←
3-3, 3-4				←	←	←	
4-1	●	●	●				
4-2	●	●	●				←
4-3				←	←	←	
6-1, 6-2	●	●	●				



-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS  
 -FYA DENOTES FLASHING YELLOW ARROW  
 -FACES 2-2 & 2-3 SHALL BE 5 SECTION FYA CLUSTER HEAD.

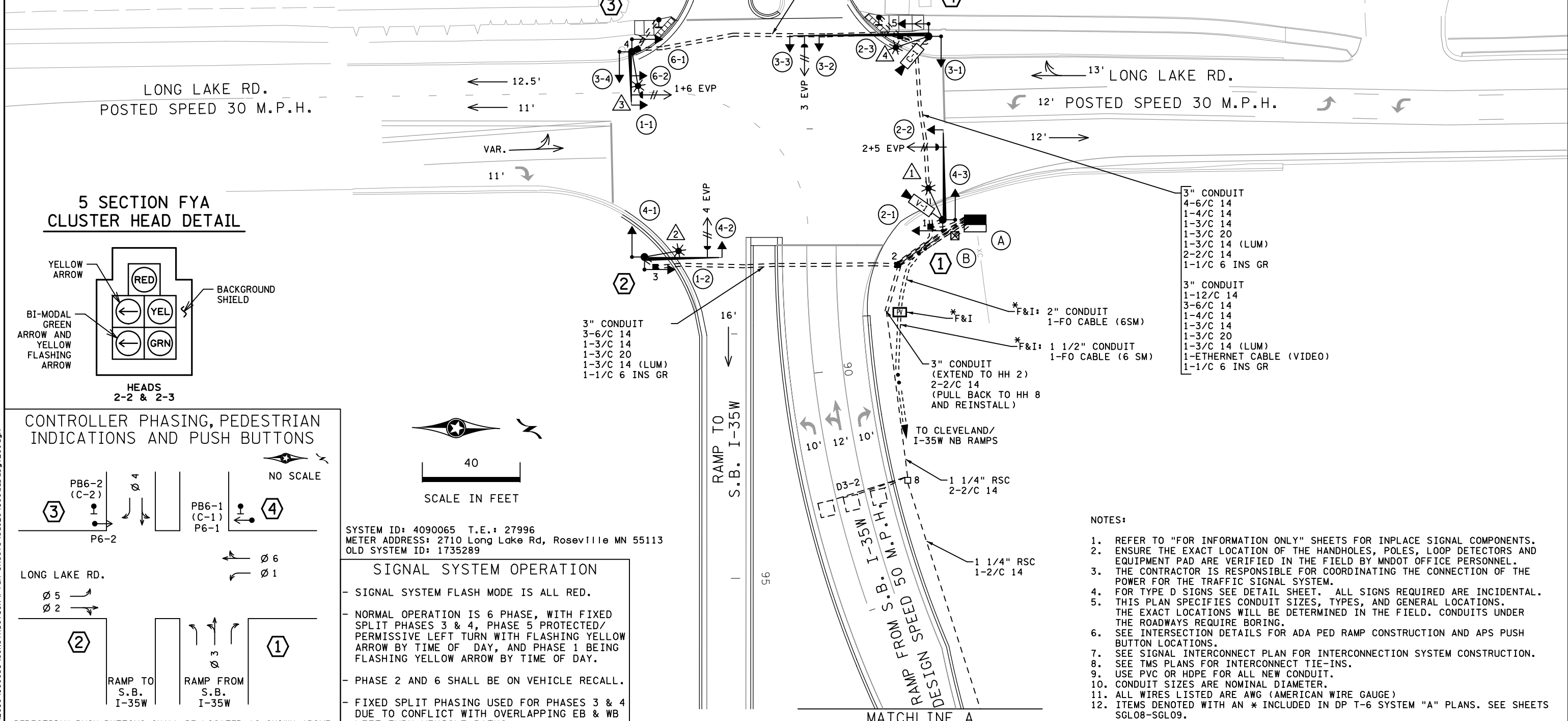
\* PED PB STATION  
 1-APS PB AND SIGN (RT ARROW) (PB6-2)  
 EXTEND INTO HH 5:  
 1" NOM. DIA. CONDUIT  
 1-2/C 14  
 1-1/C 6 INS. GR.

\* PED PB STATION  
 1-APS PB AND SIGN (LT ARROW) (PB6-1)  
 EXTEND INTO HH 6:  
 1" NOM. DIA. CONDUIT  
 1-2/C 14  
 1-1/C 6 INS. GR.

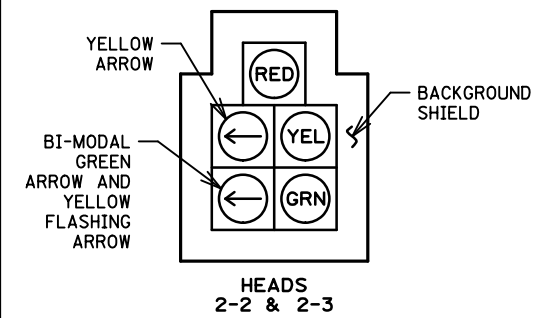
LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	STATUS
D3-1	2-6X6	250'	INPLACE
D3-2	3-6X6	120'	INPLACE

VIDEO DETECTOR CHART				
NUMBER	DETECTOR	MOUNT	LOCATION	
V1-1, V2-2	V-1	POLE	5,20,35,50	
V2-1, V6-1	V-1	POLE	120	
V3-1, V3-2	V-1	POLE	250	
V3-3, V3-4, V3-5, V4-1, V4-2	V-1	POLE	5	

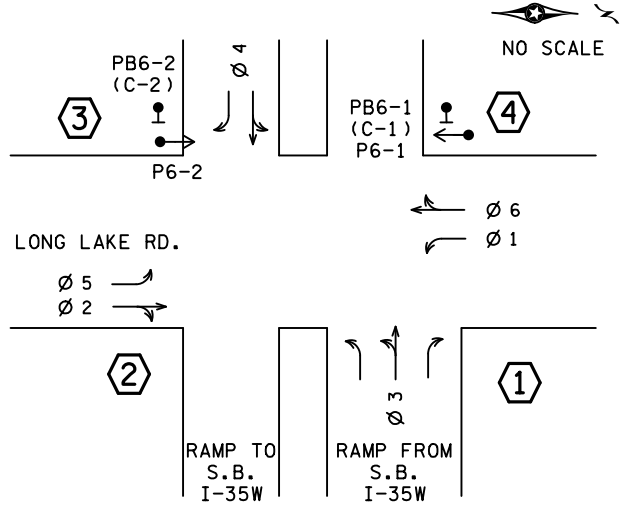
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET  
 -VIDEO DETECTOR SHALL BE GRIDSMART DETECTION UNIT



**5 SECTION FYA CLUSTER HEAD DETAIL**



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



SYSTEM ID: 4090065 T.E.: 27996  
 METER ADDRESS: 2710 Long Lake Rd, Roseville MN 55113  
 OLD SYSTEM ID: 1735289

**SIGNAL SYSTEM OPERATION**

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH FIXED SPLIT PHASES 3 & 4, PHASE 5 PROTECTED/PERMISSIVE LEFT TURN WITH FLASHING YELLOW ARROW BY TIME OF DAY, AND PHASE 1 BEING FLASHING YELLOW ARROW BY TIME OF DAY.
- PHASE 2 AND 6 SHALL BE ON VEHICLE RECALL.
- FIXED SPLIT PHASING USED FOR PHASES 3 & 4 DUE TO CONFLICT WITH OVERLAPPING EB & WB LEFT TURN VEHICLE PATHS.

**NOTES:**

1. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MNDOT OFFICE PERSONNEL.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
4. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
5. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
6. SEE INTERSECTION DETAILS FOR ADA PED RAMP CONSTRUCTION AND APS PUSH BUTTON LOCATIONS.
7. SEE SIGNAL INTERCONNECT PLAN FOR INTERCONNECTION SYSTEM CONSTRUCTION.
8. SEE TMS PLANS FOR INTERCONNECT TIE-INS.
9. USE PVC OR HDPE FOR ALL NEW CONDUIT.
10. CONDUIT SIZES ARE NOMINAL DIAMETER.
11. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE)
12. ITEMS DENOTED WITH AN \* INCLUDED IN DP T-6 SYSTEM "A" PLANS. SEE SHEETS SGL08-SGL09.

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1	12/03/21			RECORD DRAWING

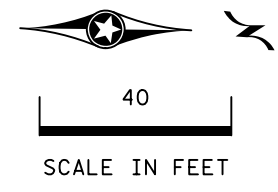
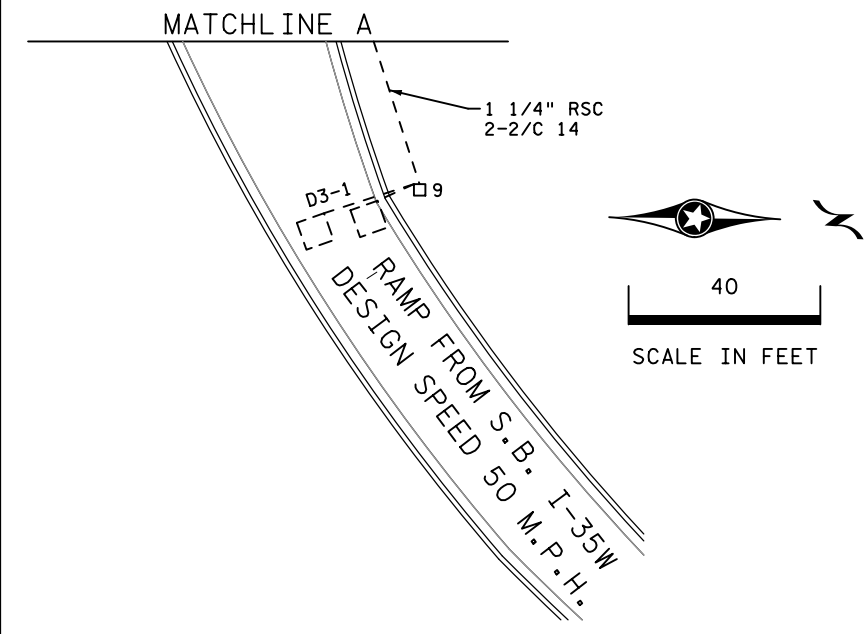


RECORD DRAWING NOTE: THESE RECORD DRAWINGS WERE DEVELOPED BASED ON THE PREVIOUS DRAWING REVISIONS AND INFORMATION TRANSMITTED FROM THE FIELD BY OTHERS. THE INFORMATION CONTAINED WITHIN THIS RECORD AS-BUILT PLAN REPRESENTS THE ACTUAL CONDITIONS FOR ALL CHANGES OF WHICH ALLIANT IS AWARE. FUTURE USERS OF THESE DRAWINGS SHOULD VERIFY AS-BUILT CONDITIONS IN THE FIELD IN ALL CIRCUMSTANCES.

**SIGNAL SYSTEM "A" LAYOUT**  
 T.H. 35W SB RAMPS & LONG LAKE RD

**I-35W NORTH MNPASS DB (S.P. 6284-180)**  
 SHEET NO. SGL12 OF SGL45 SHEETS

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① PA90 POLE FOUNDATION  
 TYPE PA90-A-35-D40-9 (DAVIT AT 350°)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2)  
 1-GRIDSART VIDEO DETECTION UNIT POLE MOUNTED (STATE FURNISHED)  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-1)(SEE SIGN DETAILS)  
 1-R10-X12 SIGN ADJACENT TO HEAD 2-2  
 1-R9-3 SIGN FACING POLE 4 (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 2:  
 1-12/C 12  
 2-6/C 14  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 1-ETHERNET CABLE (VIDEO)  
 1-1/C 6 INS GR

② PA90 POLE FOUNDATION  
 TYPE PA90-A-30-D40-9 (DAVIT AT 350°)  
 1-ANGLE MOUNT SIGNAL WITH CLUSTER ADAPTER OVERHEAD AT 0'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 2-TYPE D SIGNS (D-2 & D-4)(SEE SIGN DETAILS)  
 1-R9-3 SIGN FACING POLE 3 (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 3:  
 3-6/C 14  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 1-1/C 6 INS GR

③ PA85 POLE FOUNDATION  
 TYPE PA85-A-20-D40-9 (DAVIT AT 350°)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD AT 180 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1&6)  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-R10-X12 SIGN ADJACENT TO HEAD (1-1)  
 1-TYPE D SIGN (D-3)(SEE SIGN DETAILS)  
 3" CONDUIT TO HH 4:  
 4-6/C 14  
 1-4/C 14  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 1-1/C 6 INS GR

④ PA100 POLE FOUNDATION  
 TYPE PA100-A-55-X6-350/CAM 400 EXTENSION  
 (MOUNTED AT 350 DEG)  
 (INCLUDES LIGHTNING ROD, 7/16" GROUND BRAID AND GROUND ROD)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'  
 1-ANGLE MOUNT SIGNAL WITH CLUSTER ADAPTER AT 90 DEG  
 1-ANGLE MOUNT SIGNAL AT 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD AT 90 DEG  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 3)  
 1-TRAFFIC MANAGEMENT CAMERA NO. C30226 (STATE FURNISHED) WITH MOUNT  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-5)(SEE SIGN DETAILS)  
 3" CONDUIT TO HH 5:  
 1-12/C 12  
 3-6/C 14  
 1-4/C 14  
 1-3/C 14  
 1-3/C 14 (LUM)  
 1-3/C 20  
 1-CAT 5E (VIDEO)  
 1-1/C 6 INS GR

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

3" CONDUIT TO HH 1:	3" CONDUIT TO HH 1:
4-6/C 14	1-12/C 14
1-4/C 14	3-6/C 14
1-3/C 14	1-4/C 14
1-3/C 20	1-3/C 14
2-2/C 14	1-3/C 20
1-1/C 6 INS GR	1-CAT 5E (VIDEO)
	1-1/C 6 INS GR

3" CONDUIT TO HH 2:	3" CONDUIT TO HH 2:
1-12/C 14	3-6/C 14
2-6/C 14	1-3/C 14
1-3/C 14	1-3/C 14
1-3/C 20	2-2/C 14
1-ETHERNET CABLE (VIDEO)	1-3/C 20
1-1/C 6 INS GR	1-1/C INS GR

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
 2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)  
 2" CONDUIT TO PV:  
 1-FO CABLE (6 SM)  
 CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6  
 CONTROLLER CABINET TO SERVICE CABINET (COMMS):  
 2" CONDUIT  
 1-6 PR 19

SERVICE CABINET TO HH 2:  
 2" CONDUIT  
 4-3/C 14 (LUM)  
 SERVICE CABINET TO EXTERNAL GR. RD:  
 1" CONDUIT  
 1-1/C 6 INS. GR.  
 (SEE EQUIPMENT PAD LAYOUT)  
 HH 2 TO HH 1:  
 2" CONDUIT  
 2-3/C 14 (LUM)

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

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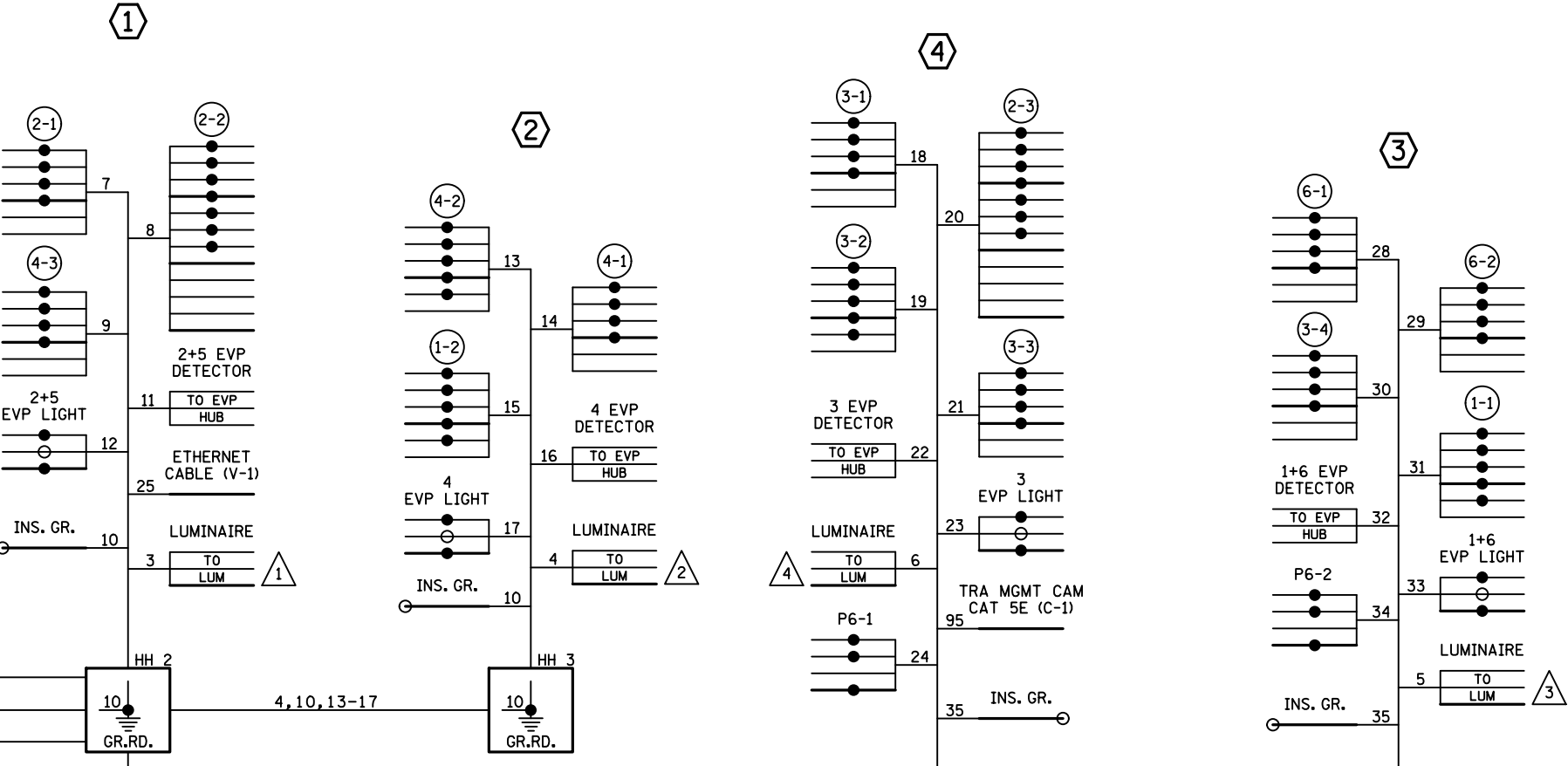
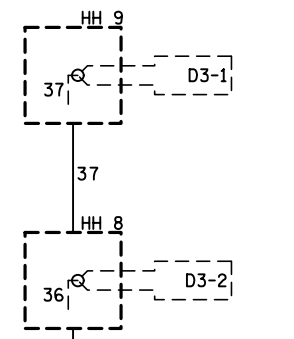
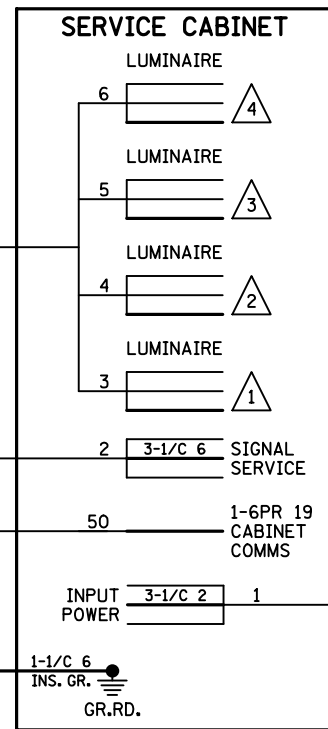
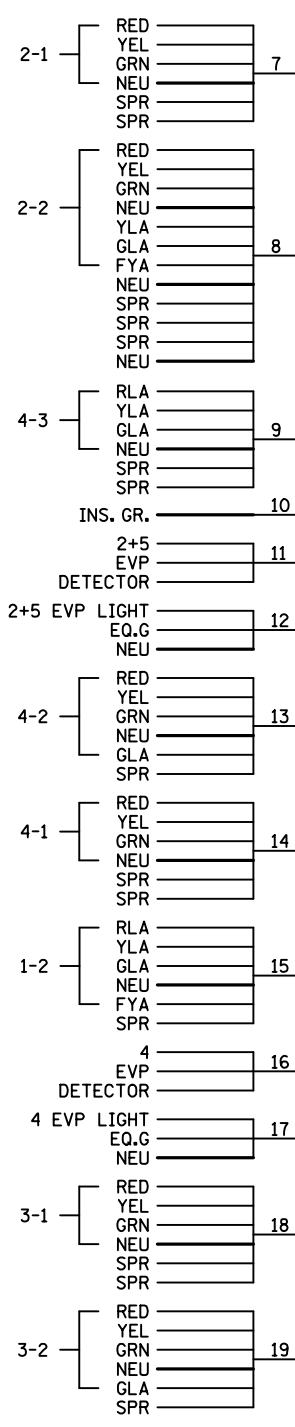
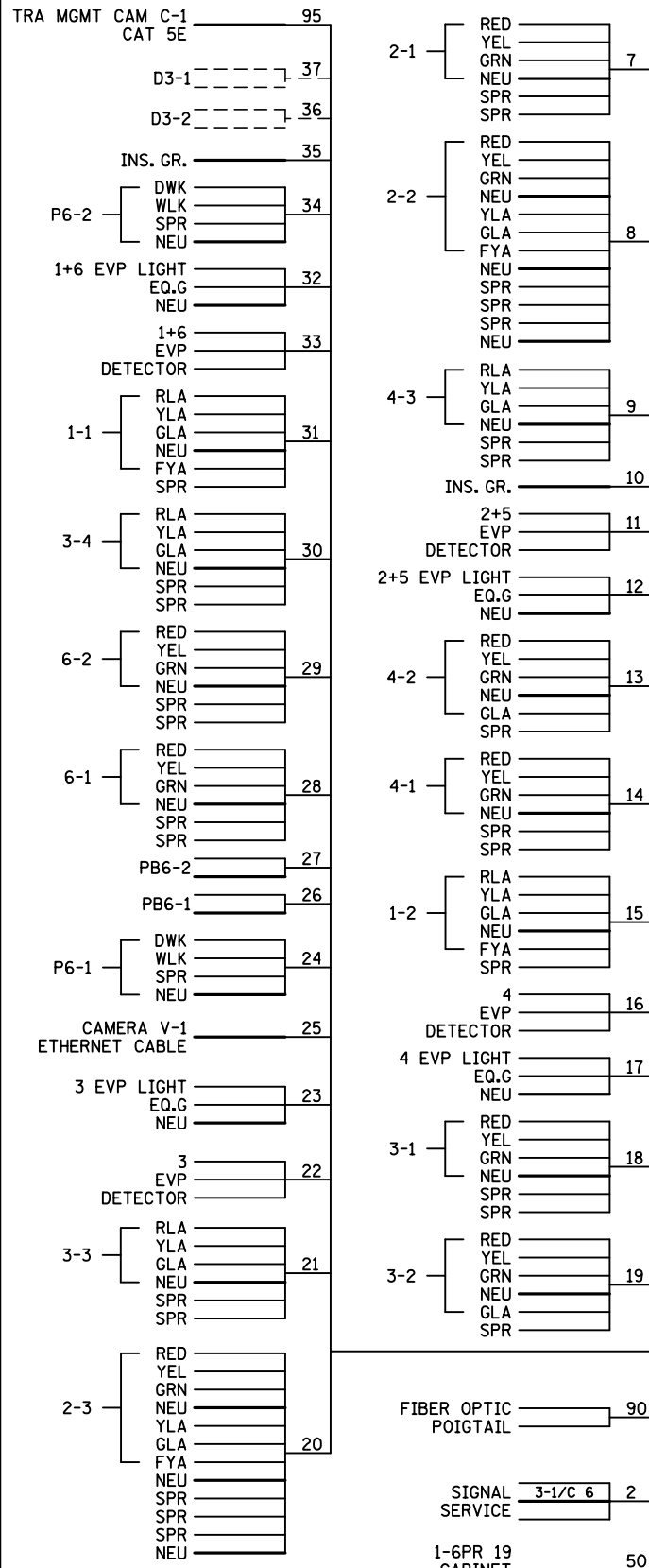


RECORD DRAWING NOTE: THESE RECORD DRAWINGS WERE DEVELOPED BASED ON THE PREVIOUS DRAWING REVISIONS AND INFORMATION TRANSMITTED FROM THE FIELD BY OTHERS. THE INFORMATION CONTAINED WITHIN THIS RECORD AS-BUILT PLAN REPRESENTS THE ACTUAL CONDITIONS FOR ALL CHANGES OF WHICH ALLIANT IS AWARE. FUTURE USERS OF THESE DRAWINGS SHOULD VERIFY AS-BUILT CONDITIONS IN THE FIELD IN ALL CIRCUMSTANCES.

SIGNAL SYSTEM "A" POLE NOTES  
 T.H. 35W SB RAMPS & LONG LAKE RD

I-35W NORTH MNPASS DB (S.P. 6284-180)  
 SHEET NO. SGL13 OF SGL45 SHEETS

**CONTROLLER CABINET**



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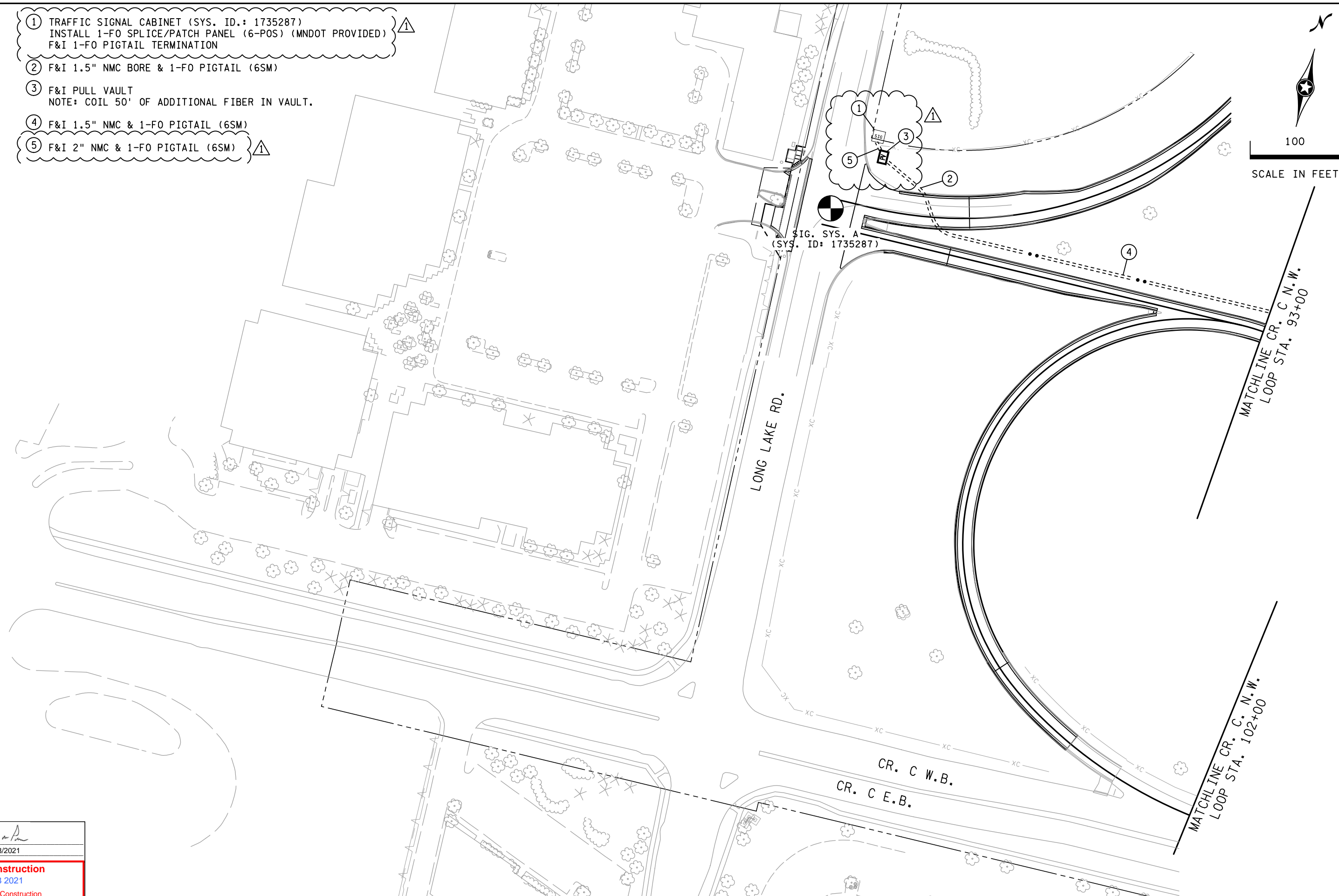
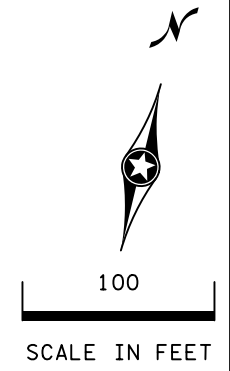


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**SIGNAL SYSTEM "A" WIRING DIAGRAM**  
 T.H. 35W SB RAMPS & LONG LAKE RD

**I-35W NORTH MNPASS DB (S.P. 6284-180)**  
 SHEET NO. SGL14 OF SGL45 SHEETS

- ① TRAFFIC SIGNAL CABINET (SYS. ID.: 1735287)  
INSTALL 1-FO SPLICE/PATCH PANEL (6-POS) (MNDOT PROVIDED)  
F&I 1-FO PIGTAIL TERMINATION
- ② F&I 1.5" NMC BORE & 1-FO PIGTAIL (6SM)
- ③ F&I PULL VAULT  
NOTE: COIL 50' OF ADDITIONAL FIBER IN VAULT.
- ④ F&I 1.5" NMC & 1-FO PIGTAIL (6SM)
- ⑤ F&I 2" NMC & 1-FO PIGTAIL (6SM)



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MNDOT ACCEPTANCE

*[Signature]*

01/28/2021

**Ames Construction**  
Jan 28 2021  
Released for Construction

NO	DATE	DWN	CKD	REVISIONS
0	12/18/19	DSN	MPM	RFC DP T-5
1	01/20/21	DSN	MPM	NDC 049



I HEREBY CERTIFY THAT THIS SHEET 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.

PRINT NAME: DEREK NIEVEEN  
SIGNATURE: *[Signature]*  
DATE: 01/20/21 LICENSE #: 52242

SIGNAL INTERCONNECT PLAN  
CR. C AT LONG LAKE RD.