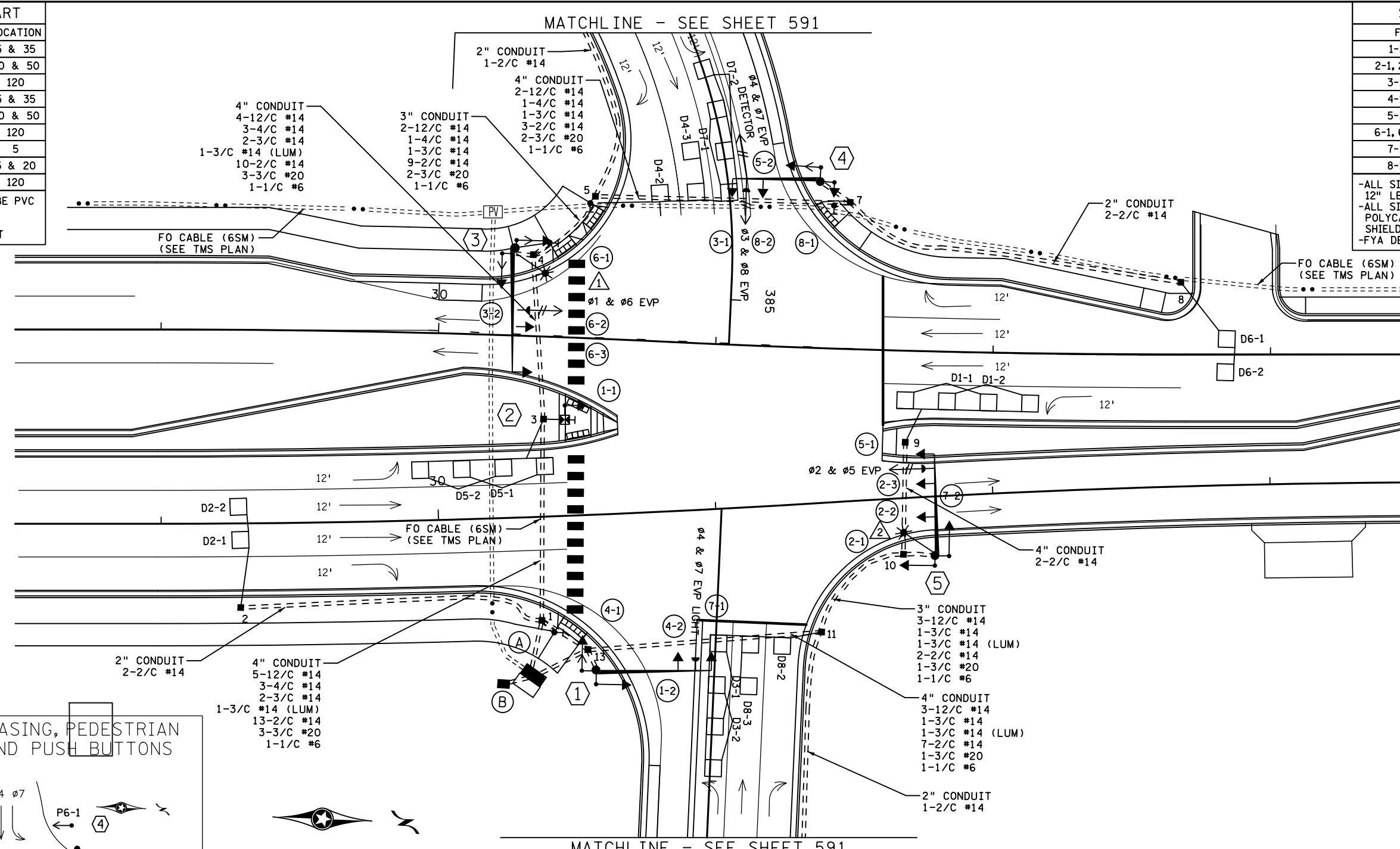


LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6x6	5 & 35
D1-2, D5-2	2-6x6	20 & 50
D2-1, D2-2	6x6	120
D3-1, D7-1	2-6x6	5 & 35
D3-2, D7-2	2-6x6	20 & 50
D4-1, D8-1	6x6	120
D4-2, D8-2	6x6	5
D4-3, D8-3	2-6x6	5 & 20
D6-1, D6-2	6x6	120

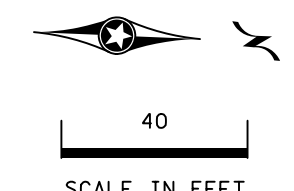
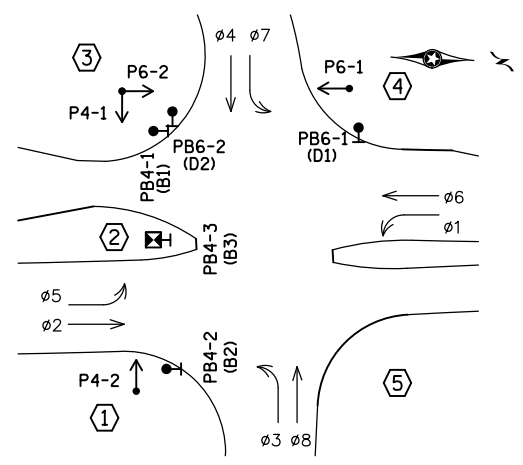
-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL FACE CHART				
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2, 2-3	●	●	●	●
3-1, 3-2	←	←	←	←
4-1, 4-2	●	●	●	●
5-1, 5-2	←	←	←	←
6-1, 6-2, 6-3	●	●	●	●
7-1, 7-2	←	←	←	←
8-1, 8-2	●	●	●	●

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



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

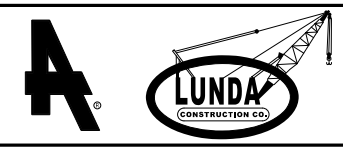
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

NO	DATE	BY	CKD	APPR	REVISION
0	02/07/14	KAS	RJG	KAS	INITIAL RELEASE FOR CONSTRUCTION - DP T-3
1	06/04/14	KAS	RJG	KAS	NDC 028
2	05/27/15	KS	RJG	KAS	NDC 036
3	03/22/16	NSM	TJJ	JWD	RECORD PLAN
4	12/7/18	JBA			BY MNDOT: ADDED TAMS SYSTEM ID*, TO OPERATIONS PLAN

DRAWING NO.: SGL70

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.

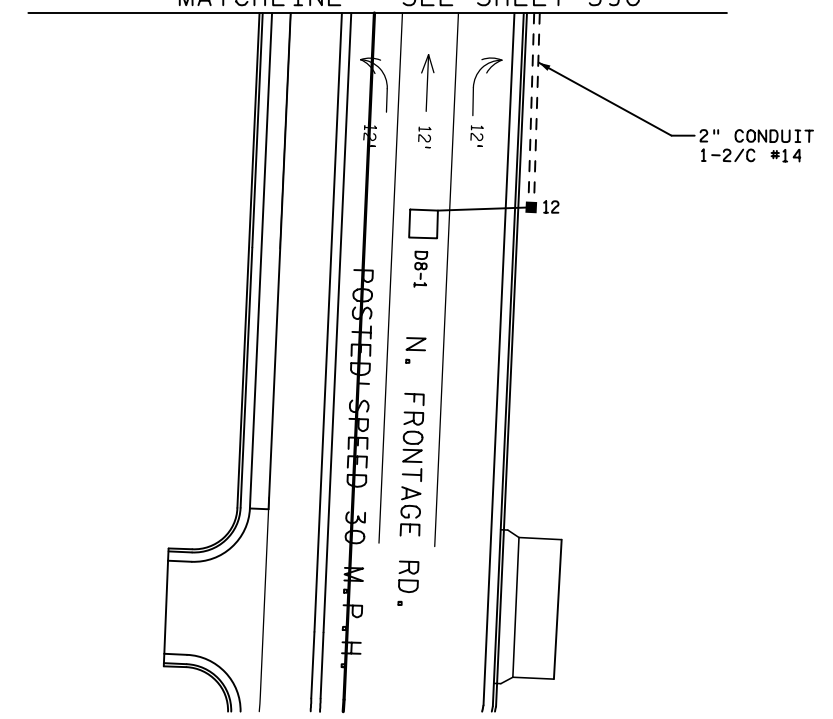
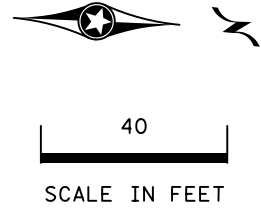
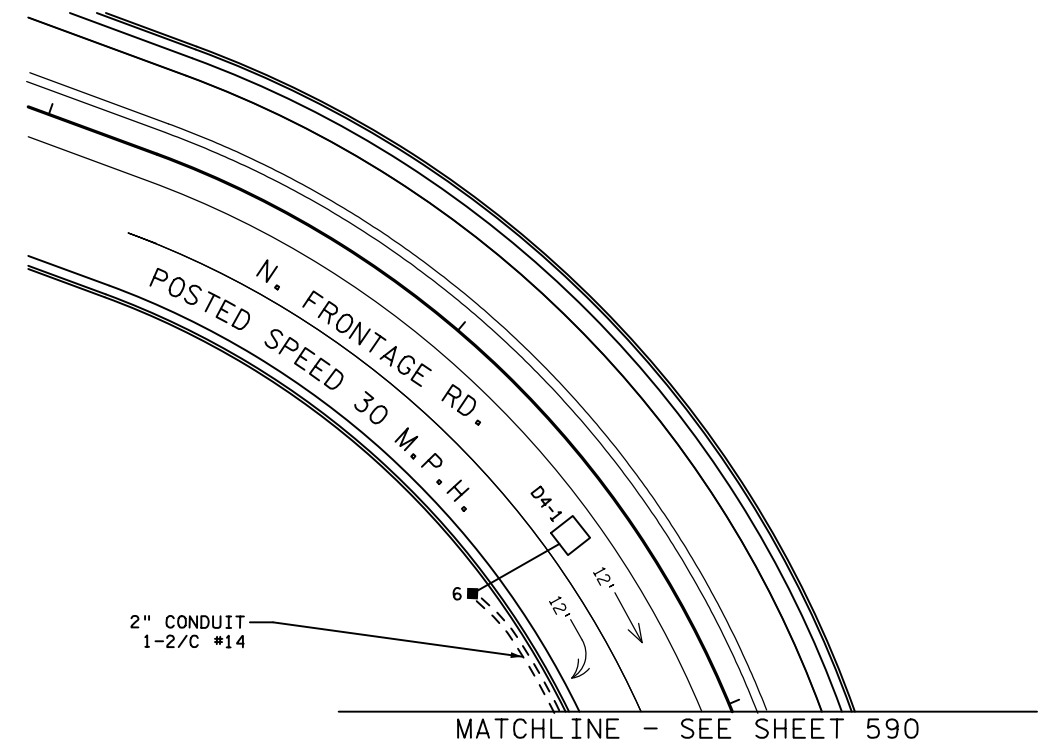


ST. CROIX MN APPROACHES (S.P. 8214-114) SHEET 590 OF 628
 TRAFFIC CONTROL SIGNAL SYSTEM C
 INTERSECTION LAYOUT
 T.H. 36 @ C.S.A.H. 66 (GREELEY ST) @ N FRONTAGE RD

1736876

METER ADDRESS:
 1975 S. GREELEY ST.
 SYSTEM ID: 39455
 T.E.: 5658

MATCHLINE - SEE SHEET 590



- ① X=503322.75
Y=206252.51
PA90 POLE FOUNDATION
TYPE PA90-A40
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 HEADS AT 180 DEG
1-ONE WAY EVP CONFIRMATORY LIGHT (PHASES 4+7)
1-R10-X12 SIGN ADJACENT TO HEAD (7-1)
2-TYPE D SIGNS (D-45 & D-46) (SEE SIGN DETAILS)
3" CONDUIT TO HH 13:
2-12/C #14
1-4/C #14
1-3/C #14
1-1/C #6

- ③ X=503173.30
Y=206218.61
PA100 POLE FOUNDATION
TYPE PA100-A45-D40-9 (DAVIT AT 350 DEG)
2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)
1-LUMINAIRE-LED
1-TYPE D SIGN (D-38) (SEE SIGN DETAILS)
3" CONDUIT TO HH 4:
2-12/C #14
2-4/C #14
1-3/C #14
1-3/C #14 (LUM)
1-3/C #20
1-1/C #6

- ⑤ X=503274.73
Y=206372.56
PA90 POLE FOUNDATION
TYPE PA90-A35-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)
1-LUMINAIRE-LED
1-R10-X12 SIGN ADJACENT TO HEAD (5-1)
1-TYPE D SIGN (D-38) (SEE SIGN DETAILS)
3" CONDUIT TO HH 10:
3-12/C #14
1-3/C #14
1-3/C #14 (LUM)
1-3/C #20
1-1/C #6

- Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
CONTROLLER AND CABINET (STATE FURNISHED)
4" CONDUIT TO HH 1:
5-12/C #14
3-4/C #14
2-3/C #14
16-2/C #14
3-3/C #20
1-1/C #6

4" CONDUIT TO HH 13:
5-12/C #14
1-4/C #14
2-3/C #14
7-2/C #14
1-3/C #20
1-1/C #6

2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
1-1/2" CONDUIT TO TMS VAULT (SEE TMS PLANS)
1-FO PIGTAIL (6SM) WITH PRE-TERMINATED CABLE END (SEE TMS PLANS)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
2-1/C #6
1-1/C #6 INS. GR.
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
1-6PR#19
SERVICE CABINET TO GROUND MOUNTED TRANSFORMER:
2" CONDUIT
3-1/C #2
SERVICE CABINET TO HH 13:
2" CONDUIT
2-3/C #14 (LUM)
HH 13 TO HH 1:
2" CONDUIT
1-3/C #14 (LUM)

- ② X=503233.30
Y=206229.84
SIGNAL PEDESTAL FOUNDATION
13' SIGNAL PEDESTAL POLE AND BASE
1-STRAIGHT MOUNT SIGNAL
1-APS PUSHBUTTON AND SIGN AT 0 DEG (DBL ARROW) (PB4-3)
1-R10-X12 SIGN ADJACENT TO HEAD (1-1)
3" CONDUIT TO HH 3:
1-12/C #14
2-1/C #6 INS. GR.

- ④ X=503143.57
Y=206326.09
PA85 POLE FOUNDATION
TYPE PA85-A30
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 90 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)
1-ONE WAY EVP DETECTOR (PHASES 4+7) (FACING WEST)
1-R10-X12 SIGN ADJACENT TO HEAD (3-1)
2-TYPE D SIGNS (D-45 & D-46) (SEE SIGN DETAILS)
3" CONDUIT TO HH 7:
2-12/C #14
1-4/C #14
1-3/C #14
2-3/C #20
1-1/C #6

ALL ITEMS SHOWN ARE INPLACE.

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

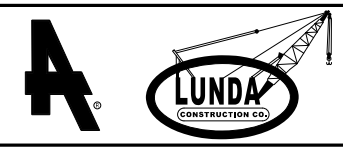
METER ADDRESS:
1975 S. GREELEY ST.
SYSTEM ID: 39455
T.E.: 5658

1736876

NO	DATE	BY	CHKD	APPR	REVISION
0	02/07/14	KAS	RJG	KAS	INITIAL RELEASE FOR CONSTRUCTION - DP T-3
1	06/04/14	KAS	RJG	KAS	NDC 028
2	03/22/16	NSM	TJJ	JWD	RECORD PLAN
4	12/7/18	JBA			BY MNDOT: ADDED TAMS SYSTEM ID*, TO OPERATIONS PLAN
NO	DATE	BY	CHKD	APPR	REVISION

DRAWING NO.: SGL71

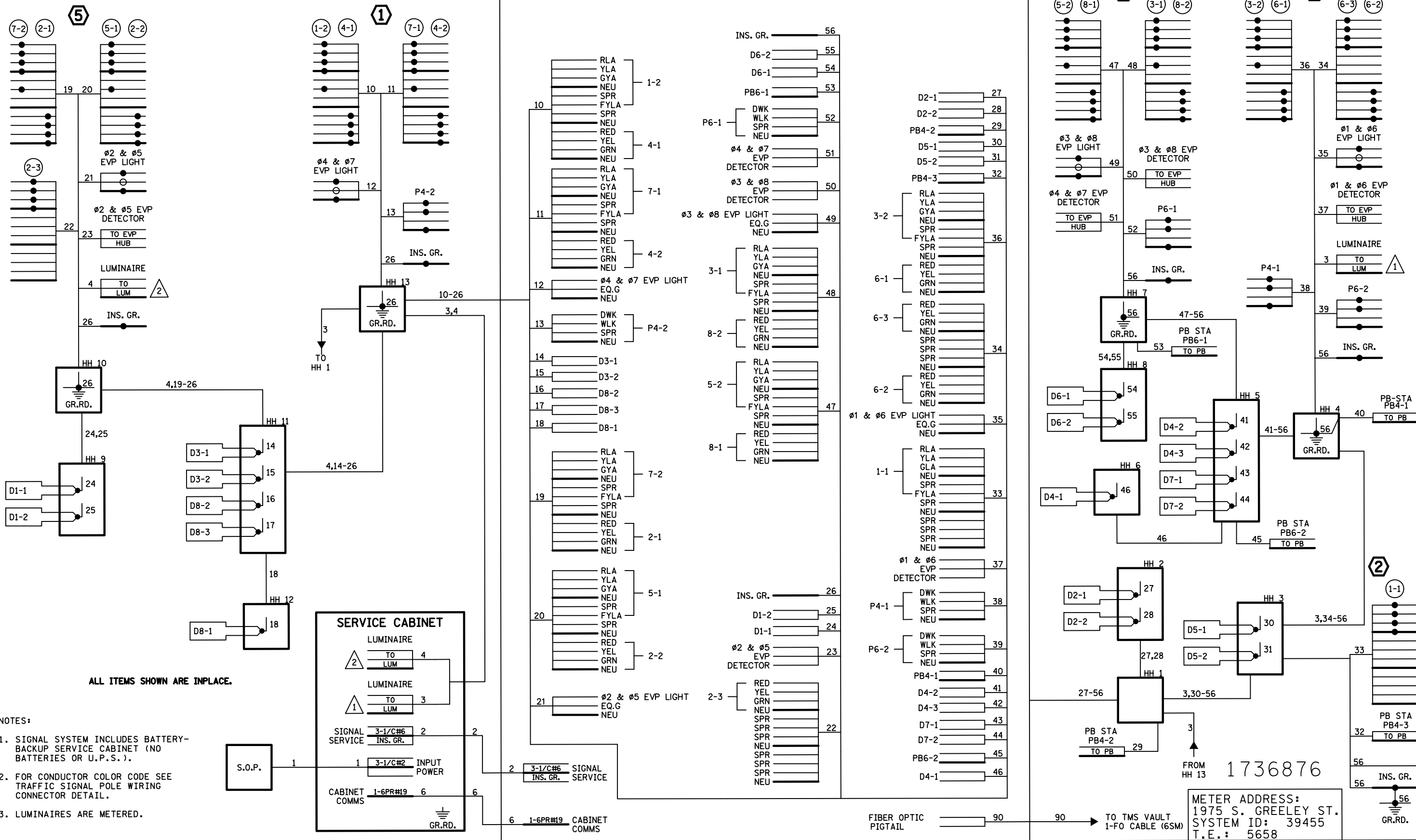
RECORD DRAWING NOTE
THESE RECORD DRAWINGS WERE DEVELOPED BASED ON THE PREVIOUS DRAWING REVISIONS AND INFORMATION TRANSMITTED FROM THE FIELD BY OTHERS. THE INFORMATION CONTAINED WITHIN THIS RECORD AS-BUILT PLAN REPRESENTS THE ACTUAL CONDITIONS FOR ALL CHANGES OF WHICH ALLIANT IS AWARE. FUTURE USERS OF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



ST. CROIX MN APPROACHES (S.P. 8214-114) SHEET
TRAFFIC CONTROL SIGNAL SYSTEM C 591
MATCHLINE LAYOUT AND POLE NOTES OF
T.H. 36 @ C.S.A.H. 66 (GREELEY ST) @ N FRONTAGE RD 628
IN STILLWATER, WASHINGTON COUNTY

DATE
DATE
DATE

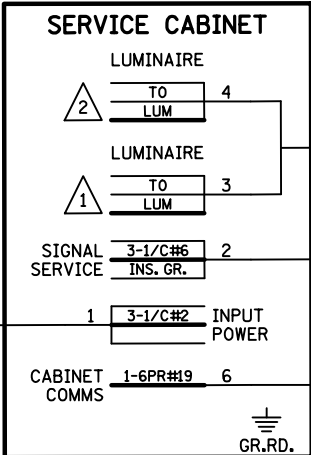
CONTROLLER CABINET



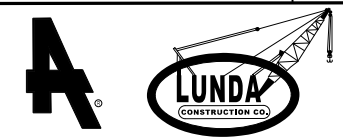
ALL ITEMS SHOWN ARE INPLACE.

- NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY-BACKUP SERVICE CABINET (NO BATTERIES OR U.P.S.).
 2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
 3. LUMINAIRES ARE METERED.

S.O.P.



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.



ST. CROIX MN APPROACHES (S.P. 8214-114) SHEET 592
 TRAFFIC CONTROL SIGNAL SYSTEM C
 FIELD WIRING DIAGRAM OF 628
 T.H. 36 @ C.S.A.H. 66 (GREELEY ST) @ N FRONTAGE RD
 IN STILLWATER, WASHINGTON COUNTY

NO	DATE	BY	CKD	APPR	REVISION
0	02/07/14	KAS	RJG	KAS	INITIAL RELEASE FOR CONSTRUCTION - DP T-3
1	05/27/15	KS	RJG	KAS	NDC 036
2	03/22/16	NSM	TJJ	JWD	RECORD PLAN
3	12/7/18	JBA			BY MNDOT: ADDED TAMS SYSTEM ID*, TO OPERATIONS PLAN

DRAWING NO.: SGL72

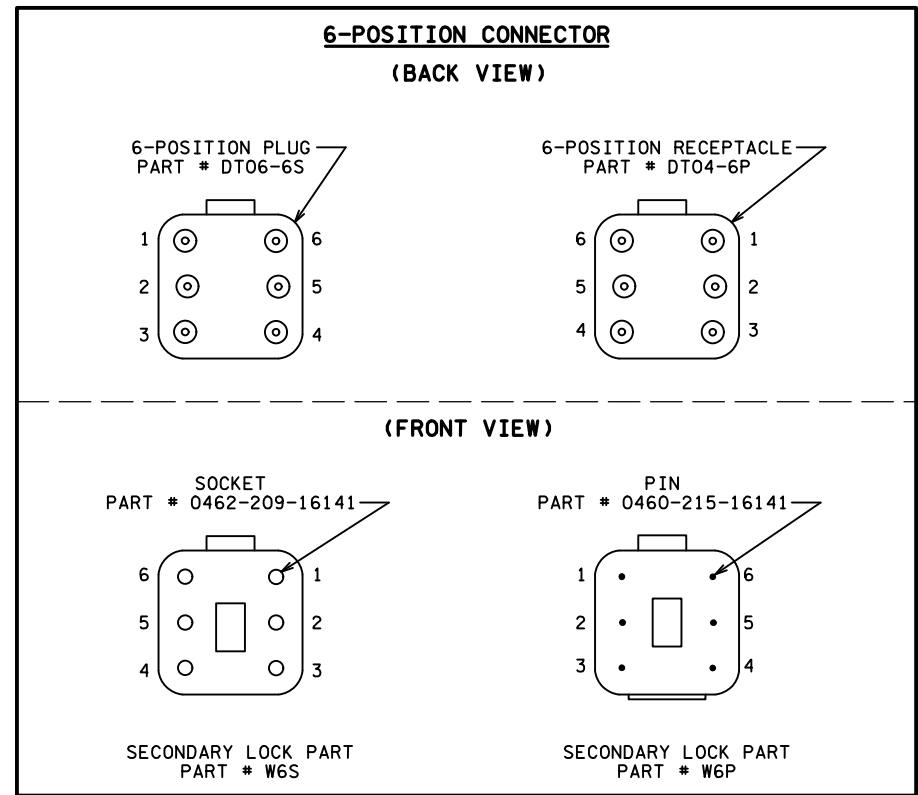
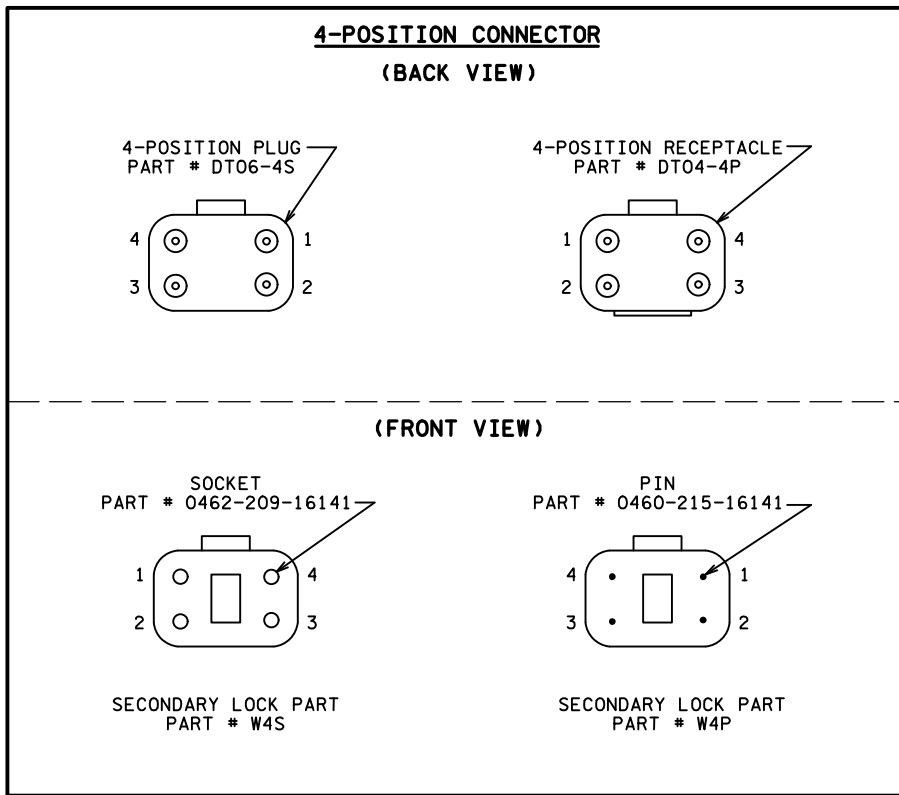
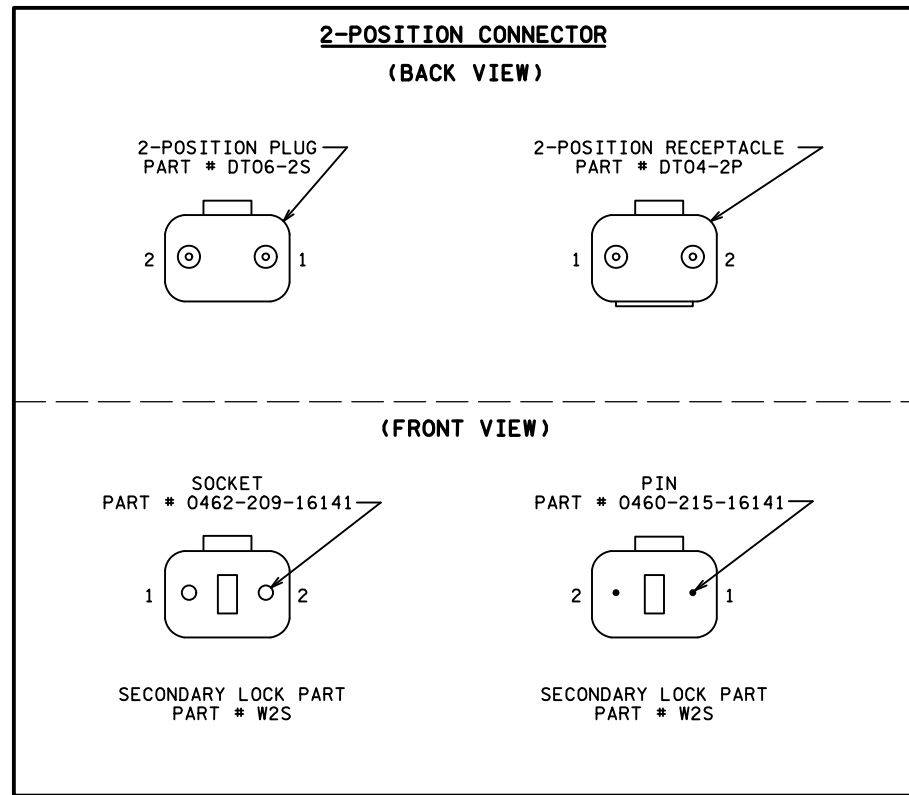


TABLE 1 2 Position DT Connector (As Needed)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	PB (If Required)
WH or CL	2	WH or CL	NEU

TABLE 2a 4 Position DT Connector (3 Section Head/DWK/WLK)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

TABLE 3 6 Position DT Connector (4 and 5 Section Heads)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	R	RED
6PR#19	O	O	YEL
COAXIAL CABLE (6SM)	6/C#14 BLK/WH	6/C#14 BLK/WH	4 & 5 SECTION SIGNAL INDICATION
CABLE	4/C#14 BLK/WH	4/C#14 BLK/WH	3 SECTION & PED INDICATION
3-1/C#2 R	3/C#14 BLK/WH	3/C#14 BLK/WH	EVP LIGHT LUM/FLASHER
INPUT POWER	2/C#14 BLK/WH OR CLR	2/C#14 BLK/WH OR CLR	PED PUSH BUTTON (If Required)
3-1/C#6 BLK	3/C#20 R OR O	3/C#20 R OR O	
SIGNAL SERVICE	WH OR YEL	WH OR YEL	
G	BLK OR BL	BLK OR BL	

NOTE: ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

TABLE 2b 4 Position DT Connector (Used with 3 Conductor Cable Only) (EVP LHT/LUM/Flasher)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

- NOTES:**
- DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
 - DT06-S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
 - THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
 - STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
 - STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
 - CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
 - WIRES MUST BE TERMINATED AS DETAILED IN TABLES 1 THRU 3 DEPENDING ON WIRE COUNT.
 - ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
 - LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

Wire Color Code Key

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

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NO	DATE	BY	CKD	APPR	REVISION
0	08/08/13	KS	RJG	KAS	INITIAL RELEASE FOR CONSTRUCTION - DP T-2
1	07/31/15	NSM	TJJ	JWD	RECORD PLAN

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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: KATIE A. SCHMIDT
Katie Schmidt
 DATE: 08/08/13 LICENSE #: 47147

MNDOT ACCEPTANCE

SIGNATURE _____
 DATE _____



ST. CROIX MN APPROACHES (S.P. 8214-114) SHEET
 SIGNAL SYSTEM DETAILS 578
 POLE BASE CONNECTOR DETAIL OF
 628