

PLOTTED/REVISED: 1-NOV-2022

DISTRICT \*: Metro  
PLOT NAME: D-Layout  
FILENAME: Projects\DM\_FOS\0940000\Traffic\Signals\252.291\_21953\_CSAH19\WOODBURY DR S RAMP\_4013337\PENDING\T21953\wd\_sgl.dgn

INSTALL VIDEO DETECTORS (FURNISHED BY COUNTY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	6' EXT & MOUNTING HARDWARE	CAMERA MOUNTED AT	MOUNTING HEIGHT
V-1	NB CSAH 19	POLE 1	YES	ON MAST ARM	25'
V-2	EB 94 RAMP	POLE 2	YES	ON MAST ARM	25'
V-3	SB CSAH 19	POLE 3	YES	ON MAST ARM	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

© CABINET FOUNDATION  
334 SERIES CABINET (RTMC)



VIDEO DETECTION

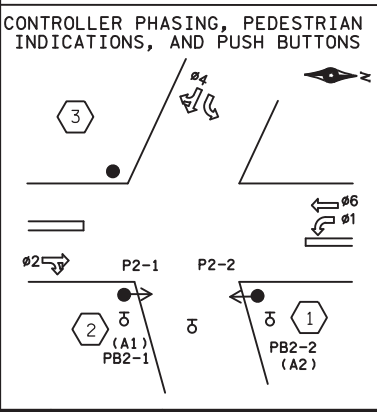
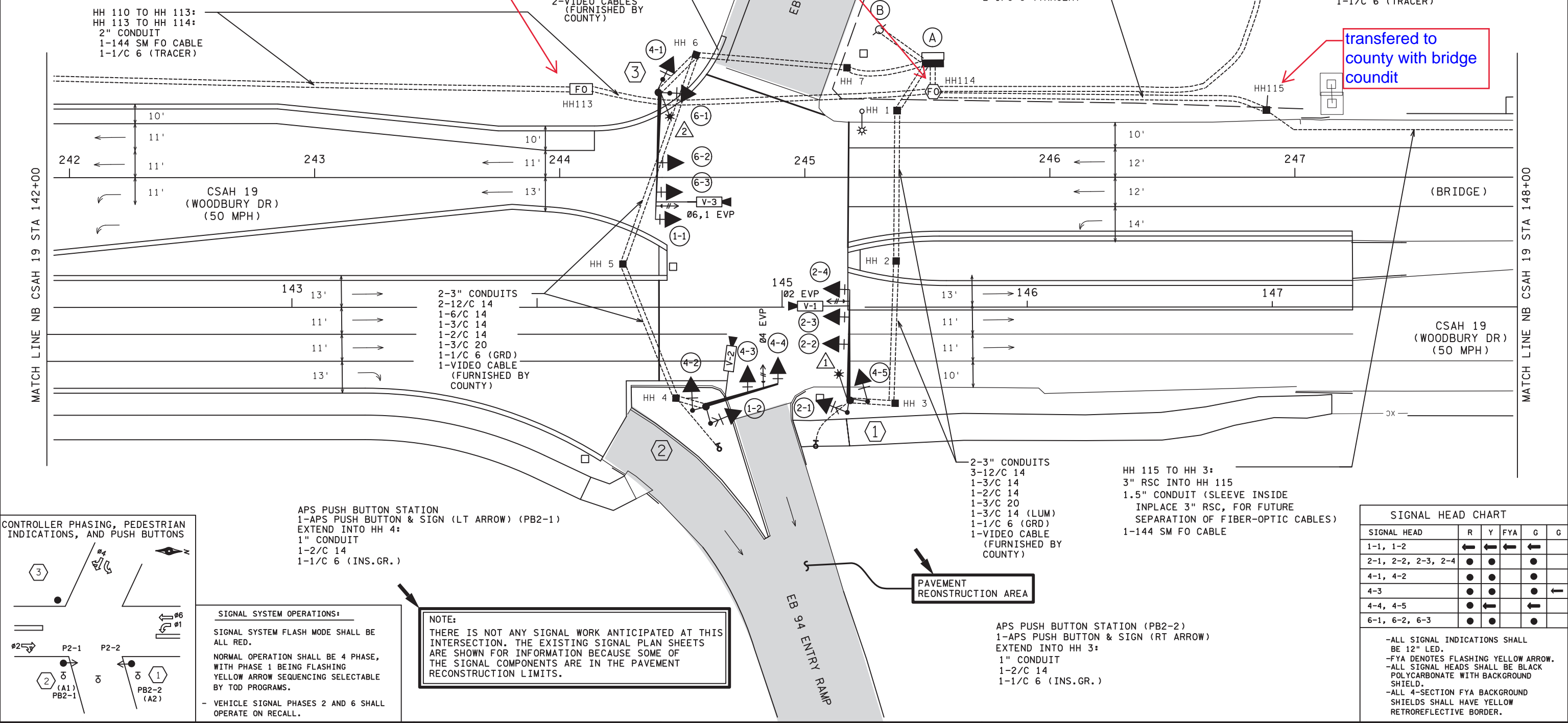
CAMERA NUMBER	DETECTION PHASES	APPROX. DETECTION DISTANCE FROM STOP BAR
V-1	2	400'
V-2	4	5', 20', 180'
V-3	6, 1	5', 20', 35', 50', 400'

remove from plan sheets. Fiber owned by county and located by them

conduit from cabinet to HH114 exists but 12sm fiber has been removed. 6sm is still installed (through HH114) and coiled in the cabinet

future project to reroute this conduit directly into cabinet pad. currently in place as shown

transferred to county with bridge conduit



SIGNAL SYSTEM OPERATIONS:

SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.

NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 1 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TOD PROGRAMS.

- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

NOTE:

THERE IS NOT ANY SIGNAL WORK ANTICIPATED AT THIS INTERSECTION. THE EXISTING SIGNAL PLAN SHEETS ARE SHOWN FOR INFORMATION BECAUSE SOME OF THE SIGNAL COMPONENTS ARE IN THE PAVEMENT RECONSTRUCTION LIMITS.

SIGNAL HEAD CHART

SIGNAL HEAD	R	Y	FYA	G	G
1-1, 1-2	←	←	←	←	
2-1, 2-2, 2-3, 2-4	●	●	●	●	
4-1, 4-2	●	●	●	●	
4-3	●	●	●	●	←
4-4, 4-5	●	←	←	←	
6-1, 6-2, 6-3	●	●	●	●	

-ALL SIGNAL INDICATIONS SHALL BE 12" LED.  
-FYA DENOTES FLASHING YELLOW ARROW.  
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELD.  
-ALL 4-SECTION FYA BACKGROUND SHIELDS SHALL HAVE YELLOW RETROREFLECTIVE BORDER.

BY	DATE	REVISIONS	SYSTEM ID: 4013337	T.E.	S.A.P. NO.	DRAWN BY: CDB	CKD BY: CDB	DATE: 10/18/22
			METER ADDRESS: 102 WOODBURY DRIVE		CERTIFIED BY: <i>Gregory Kern</i>	LIC. NO. 26289	DATE: 10/19/22	
			OLD SYSTEM ID: 21953		STATE PROJ. NO. 8282-132 (T.H.94)			SHEET NO. SS16 OF SS31 SHEETS

NOTES:

- 1) LUMINAIRE EXTENSIONS ARE CITY STANDARD  
\*BENT STRAW\* EXTENSIONS, 30' HEIGHT (X30).
- 2) COUNTY FURNISHED VIDEO DETECTOR CAMERAS ARE INPLACE.

①

PA100 POLE FOUNDATION  
 TYPE PA100-A-45-X30-9 (DAVIT AT 350 DEG)  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8'  
 (FACING NB TRAFFIC) (V-1) (PHASE-2)  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12' AND 23'  
 FROM END OF MAST ARM  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG  
 AND 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD-POLE MOUNTED  
 180 DEG  
 1-R9-3 (NO PED XING) SIGN-FACING NE CORNER  
 1-TYPE D SIGN (D-19) (SEE SIGN DETAILS)  
 ONE WAY EVP DETECTOR (#2) AND CONFIRMATION LIGHT  
 AND EVP MOUNTING HARDWARE (#2)  
 EXTEND INTO HH 3:  
 3" CONDUIT  
 3-12/C 14  
 1-3/C 14  
 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/C 6 (INS.GR.)

②

PA90 POLE FOUNDATION  
 TYPE PA90-A-30  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8'  
 (FACING EB TRAFFIC) (V-2) ( 4)  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG  
 AND 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD-POLE MOUNTED 90 DEG  
 2-TYPE D SIGNS (D-20, 21) (SEE SIGN DETAILS)  
 1-R9-3 (NO PED XING) SIGN-FACING POLE 3  
 ONE WAY EVP LED CONFIRMATION LIGHT AND DETECTOR  
 AND EVP MOUNTING HARDWARE (#4)  
 EXTEND INTO HH 4:  
 3" CONDUIT  
 2-12/C 14  
 1-6/C 14  
 1-3/C 14  
 1-3/C 20  
 1-1/C 6 (INS.GR.)

③

PA100 POLE FOUNDATION  
 TYPE PA100-A-50-X30-9 (DAVIT AT 350 DEG)  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8'  
 (FACING SB TRAFFIC) (V-3) ( 6,1)  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12'  
 AND 24' FROM END OF MAST ARM  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 180 DEG  
 AND 270 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 1-1  
 2-R9-3 (NO PED XING) SIGNS-FACING NE CORNER AND POLE 2  
 1-TYPE D SIGN (D-22) (SEE SIGN DETAILS)  
 ONE WAY EVP LED CONFIRMATION LIGHT AND DETECTOR  
 AND EVP MOUNTING HARDWARE (#6,1)  
 EXTEND INTO HH 6:  
 3" CONDUIT  
 2-12/C 14  
 1-6/C 14  
 (\*) 1-3/C 14  
 (\*) 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/C 6 (INS.GR.)

batteries and inverter removed  
 by county as they were not  
 covered in the agreement

Ⓐ EQUIPMENT PAD FOUNDATION (SEE DETAILS)  
 INSTALL CONTROLLER AND CABINET  
 (FURNISHED BY STATE)  
 BBU SERVICE CABINET (SSB, WITH BATTERIES)  
 GROUND WIRE AND GROUND ROD-MIN 8'  
 FROM PAD  
 SERVICE CABINET TO HH 1:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO HH 7:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO SOP:  
 2" CONDUIT  
 3-1/C 2  
 SERVICE CABINET TO EXTERNAL GR.RD  
 1" CONDUIT  
 1-1/C 6 INS.GR.  
 CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6  
 STUB OUT 2-3" CONDUITS FROM  
 CONTROLLER CABINET (CAP BOTH  
 ENDS - FOR FUTURE USE)  
 STUB OUT 1-2" CONDUIT FROM  
 SERVICE CABINET (CAP BOTH  
 ENDS - FOR FUTURE USE)

CONTROLLER CABINET TO HH 1:  
 2-3" CONDUITS  
 3-12/C 14  
 1-3/C 14  
 1-2/C 14  
 1-3/C 20  
 1-1/C 6 (INS. GR.)  
 INSTALL 1-VIDEO CABLE  
 (FURNISHED BY COUNTY)  
 CONTROLLER CABINET TO HH 7:  
 2-3" CONDUITS  
 4-12/C 14  
 2-6/C 14  
 2-3/C 14  
 1-2/C 14  
 2-3/C 20  
 1-1/C 6 (INS. GR.)  
 INSTALL 2-VIDEO CABLES (FURNISHED BY COUNTY)  
 CONTROLLER CABINET TO FO VAULT (HH) 114:  
 2" CONDUIT  
 1-12 SM FIBER-OPTIC PIGTAIL (CSAH 19 SIGNALS)  
 1-6 SM FIBER-OPTIC PIGTAIL TO RTMC CABINET

removed by county

NOTE:  
 THERE IS NOT ANY SIGNAL WORK ANTICIPATED AT THIS  
 INTERSECTION. THE EXISTING SIGNAL PLAN SHEETS  
 ARE SHOWN FOR INFORMATION BECAUSE SOME OF  
 THE SIGNAL COMPONENTS ARE IN THE PAVEMENT  
 RECONSTRUCTION LIMITS.

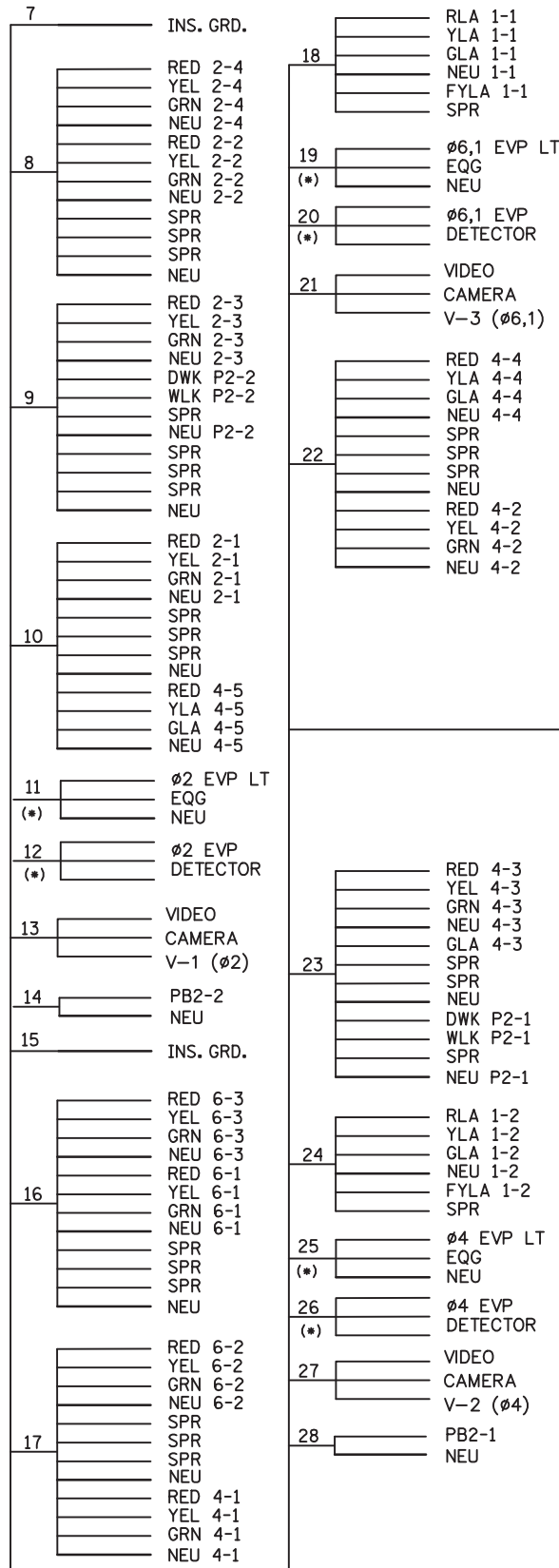
PLOTTED/REVISED: 1-NOV-2022

DISTRICT \*: Metro  
 PLOT NAME: D-Notes  
 FILENAME: Projects\DM\_FOS\0940000\Traffic\Signals\252.291\_21953\_CSAH19\WOODBURY DR S RAMP\_4013337\PENDING\T21953\wd\_sgl.dgn

BY	DATE	REVISIONS	SYSTEM ID: 4013337	T.E.	S.A.P. NO.	DRAWN BY: CDB	CKD BY: CDB	DATE: 10/18/22
			METER ADDRESS: 102 WOODBURY DRIVE		CERTIFIED BY <i>Gregory Kern</i>	LIC. NO. 26289	DATE: 10/19/22	
			OLD SYSTEM ID: 21953		STATE PROJ. NO. 8282-132 (T.H.94)		SHEET NO. SS17 OF SS31 SHEETS	

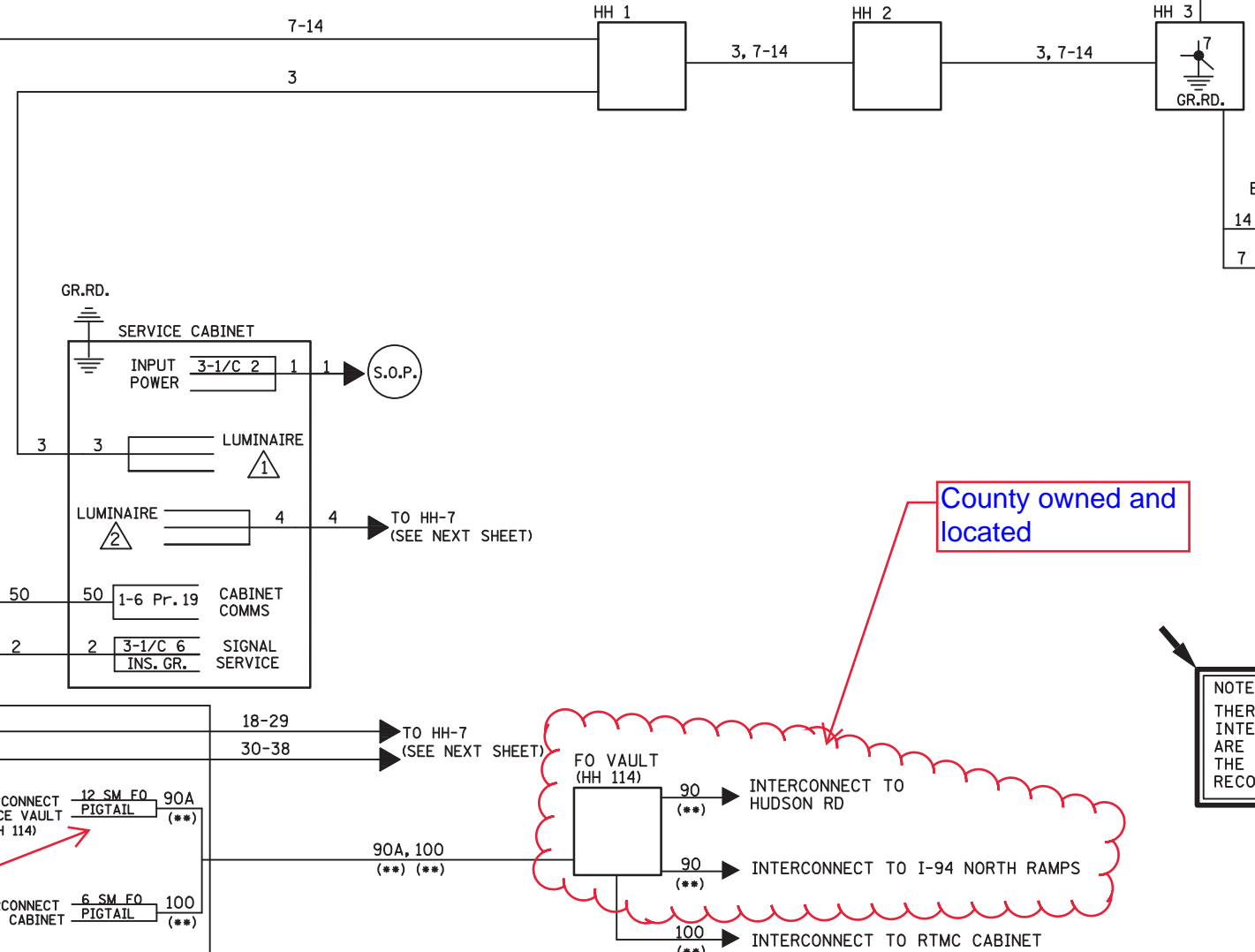
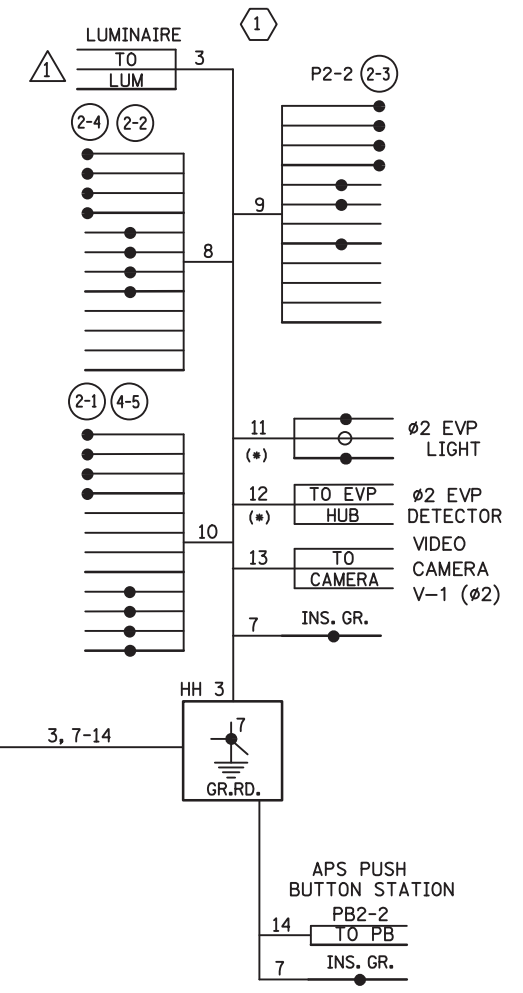
SYSTEM "D" - INTERSECTION NOTES  
 TH 94 AT CSAH 19 (WOODBURY DR) S RAMP  
 IN WOODBURY, WASHINGTON COUNTY

# CONTROLLER CABINET



**NOTES:**  
 1) LUMINAIRES SHALL BE UNMETERED.  
 2) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP READY SSB SERVICE CABINET (WITH BATTERIES).

batteries and inverter removed by county as they were not covered in the agreement



County owned and located

**NOTE:**  
 THERE IS NOT ANY SIGNAL WORK ANTICIPATED AT THIS INTERSECTION. THE EXISTING SIGNAL PLAN SHEETS ARE SHOWN FOR INFORMATION BECAUSE SOME OF THE SIGNAL COMPONENTS ARE IN THE PAVEMENT RECONSTRUCTION LIMITS.

removed by county

SYSTEM ID = 4013337  
 TE # = 21204  
 METER ADDRESS = 102 WOODBURY DRIVE

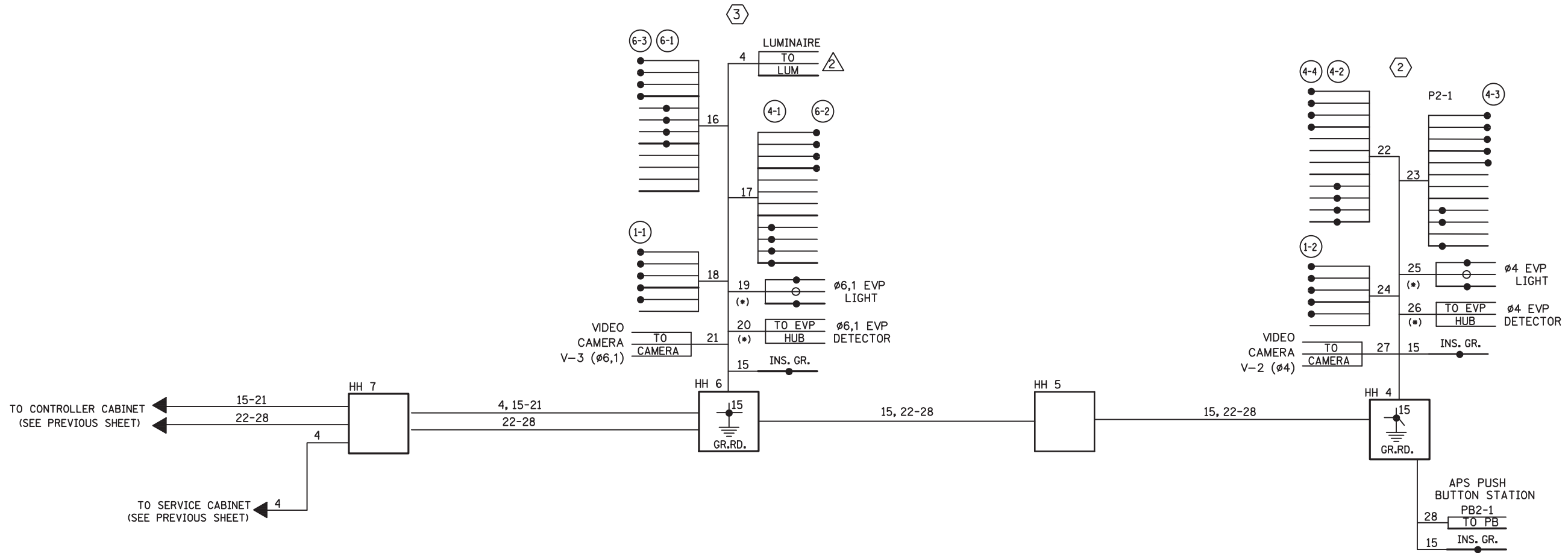
PLOTTED/REVISED: 1-NOV-2022  
 DISTRICT #: Metro  
 IPLOT NAME: D-Wire 1  
 FILENAME: Projects\DM\_FOS\0940000\Traffic\Signal\252\_291\_21953\_CSAH19\WOODBURY DR S RAMP\_4013337\PEINDING\T21953\wd\_sgl.dgn

BY	DATE	REVISIONS	SYSTEM ID: 4013337	T.E.	S.A.P. NO.	DRAWN BY: CDB	CKD BY: CDB	DATE: 10/18/22
			METER ADDRESS: 102 WOODBURY DRIVE		CERTIFIED BY: <i>Gregory Kern</i>			DATE: 10/19/22
			OLD SYSTEM ID: 21953		STATE PROJ. NO. 8282-132 (T.H.94)		SHEET NO. SS18 OF SS31 SHEETS	

SYSTEM "D" - FIELD WIRING DIAGRAM 1 OF 2  
 TH 94 AT CSAH 19 (WOODBURY DR) S RAMP  
 IN WOODBURY, WASHINGTON COUNTY

PLOTTED/REVISED: 1-NOV-2022

DISTRICT #: Metro  
PLOT NAME: D-Wire 2  
FILENAME: Projects\DM\_FOS\0940000\Traffic\Signal\252-291\_21953\_CSAH19\WOODBURY DR S RAMP 4013337\PENDING\T21953Jwd\_sgl.dgn



NOTES:  
 1) LUMINAIRES SHALL BE UNMETERED.  
 2) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP READY SSB SERVICE CABINET (WITH BATTERIES).

batteries and inverter removed by county as they were not covered in the agreement

NOTE:  
 THERE IS NOT ANY SIGNAL WORK ANTICIPATED AT THIS INTERSECTION. THE EXISTING SIGNAL PLAN SHEETS ARE SHOWN FOR INFORMATION BECAUSE SOME OF THE SIGNAL COMPONENTS ARE IN THE PAVEMENT RECONSTRUCTION LIMITS.

SYSTEM ID = 4013337  
 TE # = 21204  
 METER ADDRESS = 102 WOODBURY DRIVE

BY	DATE	REVISIONS	SYSTEM ID: 4013337 T.E. METER ADDRESS: 102 WOODBURY DRIVE OLD SYSTEM ID: 21953	SYSTEM "D" - FIELD WIRING DIAGRAM 2 OF 2 TH 94 AT CSAH 19 (WOODBURY DR) S RAMP IN WOODBURY, WASHINGTON COUNTY	S.A.P. NO. CERTIFIED BY <i>Gregory Kern</i> LIC. NO. 26289 DATE: 10/19/22	DRAWN BY: CDB CKD BY: CDB DATE: 10/18/22
					STATE PROJ. NO. 8282-132 (T.H.94)	SHEET NO. SS19 OF SS31 SHEETS



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INSTALL VIDEO DETECTORS (FURNISHED BY COUNTY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	6" EXT & MOUNTING HARDWARE	CAMERA MOUNTED AT	MOUNTING HEIGHT
V-1	NB CSAH 19	POLE 1	YES	ON MAST ARM	25'
V-2	EB 94 RAMP	POLE 2	YES	ON MAST ARM	25'
V-3	SB CSAH 19	POLE 3	YES	ON MAST ARM	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

VIDEO DETECTION

CAMERA NUMBER	DETECTION PHASES	APPROX. DETECTION DISTANCE FROM STOP BAR
V-1	2	400'
V-2	4	5', 20', 180'
V-3	6, 1	5', 20', 35', 50', 400'

(C) INPLACE CABINET FOUNDATION (MAINTAIN INPLACE)  
 334 SERIES CABINET (RTMC)  
 INPLACE)  
 F&I (\*\*\*) 1.5" CONDUIT (INSTALL THROUGH INPLACE 3" NMC STUB OUT FROM HANDHOLE TO CABINET)  
 (\*\*\*) 1-1/2 6 (TRACER)  
 INSTALL (\*\*\*) 1-6 SM FO PIGTAIL (PROVIDED BY STATE)

(FO) (\*\*\*) FIBER OPTIC SPLICE VAULT (HH) 114  
 (\*\*\*) EXTEND INTO CONTROLLER CABINET:  
 (\*\*\*) 2" CONDUIT  
 (\*\*\*) 1-6 SM FO PIGTAIL (SPLICE ENCLOSURE)  
 (\*\*\*) SPLICE 6 SM FO PIGTAIL ONTO 144 SM FO BRANCH CABLE  
 (\*\*\*) INSTALL 1-6 SM FO PIGTAIL (PROVIDED BY STATE)



(A) = BURIED CABLE SIGN (SEE SHEET SGL7)  
 HH 114 TO INPLACE RTMC HANDHOLE:  
 (\*\*\*) F&I 1.5" CONDUIT  
 (\*\*\*) INSTALL - 1-6 SM FO PIGTAIL (PROVIDED BY STATE)  
 (\*\*\*) F&I - 1-1/2 6 (TRACER)

(B) INPLACE GRD. MTD TRANSFORMER (S.O.P.) (XCEL ENERGY)  
 F&I EXTEND INTO SERVICE CABINET:  
 2" CONDUIT  
 3-1/2 2

HH 114 TO HH 115:  
 (\*\*\*) 2-2" CONDUITS  
 (\*\*\*) 1-144 SM FO CABLE  
 (\*\*\*) 2-1/2 6 (TRACER)

HH 110 TO HH 113:  
 HH 113 TO HH 114:  
 (\*\*\*) 2" CONDUIT  
 (\*\*\*) 1-144 SM FO CABLE  
 (\*\*\*) 1-1/2 6 (TRACER)

(FO) (\*\*\*) FIBER OPTIC PULL VAULT (HH) 113

2-3" CONDUITS  
 4-12/C 14  
 2-6/C 14  
 (\* 2-3/C 14  
 1-2/C 14  
 (\* 2-3/C 20  
 1-3/C 14 (LUM)  
 1-1/2 6 (GRD)  
 2-VIDEO CABLES (FURNISHED BY COUNTY)

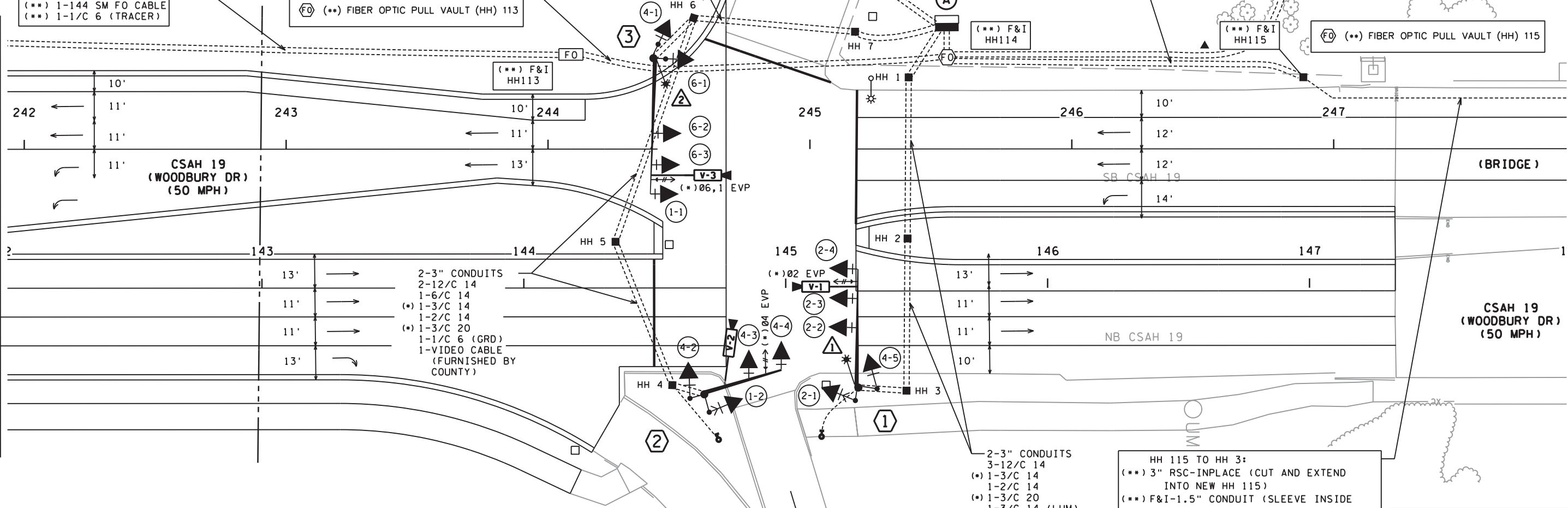
(\*\*\*) F&I HH114

(\*\*\*) F&I HH115

(FO) (\*\*\*) FIBER OPTIC PULL VAULT (HH) 115

MATCH LINE NB CSAH 19 STA 142+00 SEE SHEET 442

MATCH LINE NB CSAH 19 STA 148+00 SEE SHEET 447

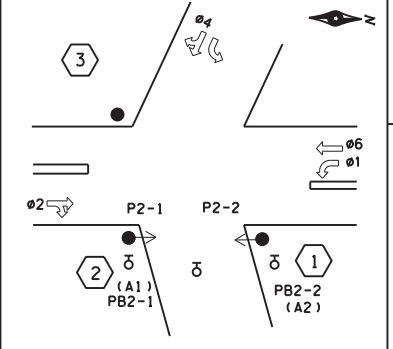


2-3" CONDUITS  
 2-12/C 14  
 1-6/C 14  
 (\* 1-3/C 14  
 1-2/C 14  
 (\* 1-3/C 20  
 1-1/2 6 (GRD)  
 1-VIDEO CABLE (FURNISHED BY COUNTY)

2-3" CONDUITS  
 3-12/C 14  
 (\* 1-3/C 14  
 1-2/C 14  
 (\* 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/2 6 (GRD)  
 1-VIDEO CABLE (FURNISHED BY COUNTY)

HH 115 TO HH 3:  
 (\*\*\*) 3" RSC-INPLACE (CUT AND EXTEND INTO NEW HH 115)  
 (\*\*\*) F&I-1.5" CONDUIT (SLEEVE INSIDE INPLACE 3" RSC, FOR FUTURE SEPARATION OF FIBER-OPTIC CABLES)  
 (\*\*\*) 1-144 SM FO CABLE

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSH BUTTONS



INPLACE APS PUSH BUTTON STATION (MAINTAIN INPLACE)  
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1)  
 EXTEND INTO HH 4:  
 INPLACE)

F&I 1" CONDUIT - INPLACE (CUT AND EXTEND INTO NEW HH 4)  
 1-2/C 14  
 1-1/2 6 (INS.GR.)

SIGNAL SYSTEM OPERATIONS:  
 SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.  
 NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 1 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TOD PROGRAMS.  
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SYSTEM ID = 4013337  
 TE # = 21204  
 METER ADDRESS = 102 WOODBURY DRIVE

INPLACE APS PUSH BUTTON STATION (PB2-2) (MAINTAIN INPLACE)  
 1-APS PUSH BUTTON & SIGN (RT ARROW)  
 EXTEND INTO HH 3:  
 INPLACE)

F&I 1" CONDUIT - INPLACE (CUT AND EXTEND INTO NEW HH 3)  
 1-2/C 14  
 1-1/2 6 (INS.GR.)

SIGNAL HEAD CHART

SIGNAL HEAD	R	Y	FYA	G	G
1-1, 1-2	←	←	←	←	
2-1, 2-2, 2-3, 2-4	●	●	●	●	
4-1, 4-2	●	●	●	●	
4-3	●	●	●	●	←
4-4, 4-5	●	←	←	←	
6-1, 6-2, 6-3	●	●	●	●	

-ALL SIGNAL INDICATIONS SHALL BE 12" LED.  
 -FYA DENOTES FLASHING YELLOW ARROW.  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELD.  
 -ALL 4-SECTION FYA BACKGROUND SHIELDS SHALL HAVE YELLOW RETROREFLECTIVE BORDER.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MB				
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: 12/12/2019



WASHINGTON COUNTY, MN.  
**C.S.A.H. 19**  
 S.A.P. 082-619-027, S.A.P. 192-020-027, S.A.P. 192-102-012,  
 S.A.P. 192-117-015, S.A.P. 192-124-001, S.A.P. 192-125-001

TRAFFIC SIGNAL SYSTEM 'D'  
 INTERSECTION LAYOUT  
 CSAH 19 (WOODBURY DR) AT I-94 SOUTH RAMPS

SEH FILE NO. WASHC142180  
**SGL33**  
 OF SGL70

443  
 492

NOTES:

- 1) THE EXACT LOCATION OF HANDHOLES, POLES, AND EQUIPMENT PAD WILL BE VERIFIED IN THE FIELD BY THE ENGINEER AND VIA COUNTY TRAFFIC PERSONNEL.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY AND STATE FURNISHED MATERIALS.
- 3) THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE NEW SIGNAL SYSTEM.
- 4) A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE LOCATED 6' FROM END OF EACH MAST ARM (FOR EVP).
- 5) THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS WILL REQUIRE BORING.
- 6) REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS (REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM IS INCIDENTAL TO "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM).
- 7) FOR TYPE D SIGNS, SEE DETAIL SHEET. ALL TYPE C AND TYPE D SIGNS REQUIRED FOR SIGNAL SYSTEM ARE INCIDENTAL.
- 8) FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS AND CONCRETE WALK, SEE DETAIL SHEETS.
- 9) USE PVC OR HDPE FOR ALL NEW CONDUIT. CONDUIT SIZES ARE NOMINAL DIAMETER.
- 10) ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
- 11) ITEMS DENOTED WITH AN (\*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
- 12) ITEMS DENOTED WITH AN (\*\*) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.
- 13) FOR PAVEMENT MARKINGS, SEE DETAIL SHEETS. PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR SEPARATELY.
- 14) ALL POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS.
- 15) EACH FIBER OPTIC SPLICE VAULT SHALL BE 30" x 48" (48" DEEP) OPEN BOTTOM WITH ONE PIECE HIGH STRENGTH POLYMER COVER PER MNDOT APPROVED/QUALIFIED PRODUCTS LIST & SPECIAL PROVISIONS.
- 16) EACH FIBER OPTIC PULL VAULT SHALL BE 24" x 36" (48" DEEP) OPEN BOTTOM WITH ONE PIECE HIGH STRENGTH POLYMER COVER PER MNDOT APPROVED/QUALIFIED PRODUCTS LIST & SPECIAL PROVISIONS.
- 17) LUMINAIRE EXTENSIONS SHALL BE CITY STANDARD "BENT STRAW" EXTENSIONS, 30' HEIGHT (X30).
- 18) COUNTY FURNISHED VIDEO DETECTOR CAMERAS SHALL FIRST BE INSTALLED BY CONTRACTOR FOR TEMPORARY SIGNAL SYSTEM D, THEN SALVAGED, REINSTALLED AND MADE OPERATIONAL BY CONTRACTOR ON NEW PERMANENT SIGNAL SYSTEM (INCIDENTAL).

(A) F&I EQUIPMENT PAD FOUNDATION (SEE DETAILS)  
 INSTALL CONTROLLER AND CABINET (FURNISHED BY STATE)  
 BBU SERVICE CABINET (SSB, WITH BATTERIES)  
 GROUND WIRE AND GROUND ROD-MIN 8' FROM PAD  
 SERVICE CABINET TO HH 1:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO HH 7:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO SOP:  
 2" CONDUIT  
 3-1/C 2  
 SERVICE CABINET TO EXTERNAL GR.RD  
 1" CONDUIT  
 1-1/C 6 INS.GR.  
 CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6  
 STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET (CAP BOTH ENDS - FOR FUTURE USE)  
 STUB OUT 1-2" CONDUIT FROM SERVICE CABINET (CAP BOTH ENDS - FOR FUTURE USE)

F&I CONTROLLER CABINET TO HH 1:  
 2-3" CONDUITS  
 3-12/C 14  
 (\*) 1-3/C 14  
 1-2/C 14  
 (\*) 1-3/C 20  
 1-1/C 6 (INS. GR.)  
 INSTALL 1-VIDEO CABLE (FURNISHED BY COUNTY)  
 CONTROLLER CABINET TO HH 7:  
 2-3" CONDUITS  
 4-12/C 14  
 2-6/C 14  
 (\*) 2-3/C 14  
 1-2/C 14  
 (\*) 2-3/C 20  
 1-1/C 6 (INS. GR.)  
 INSTALL 2-VIDEO CABLES (FURNISHED BY COUNTY)  
 CONTROLLER CABINET TO FO VAULT (HH) 114:  
 (\*\*\*) 2" CONDUIT  
 (\*\*\*) 1-6 SM FIBER-OPTIC PIGTAIL (CSAH 19 SIGNALS)

INSTALL (\*\*\*) 1-6 SM FIBER-OPTIC PIGTAIL (PROVIDED BY STATE) (TO RTMC CABINET)

(1) F&I PA100 POLE FOUNDATION  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12' AND 23' FROM END OF MAST ARM  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD-POLE MOUNTED 180 DEG  
 1-R9-3 (NO PED XING) SIGN-FACING NE CORNER  
 1-TYPE D SIGN (D-19) (SEE SIGN DETAILS)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#2)  
 MAST ARM EXTENSION AND MOUNTING HARDWARE FOR VIDEO DETECTOR  
 EXTEND INTO HH 3:  
 3" CONDUIT  
 3-12/C 14  
 (\*) 1-3/C 14  
 (\*) 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/C 6 (INS.GR.)  
 INSTALL (FURNISHED BY COUNTY) TYPE PA100-A-45-X30-9 (DAVIT AT 350 DEG)  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8' (FACING NB TRAFFIC) (V-1) (#2)  
 VIDEO CAMERA FOR CAMERA

(2) F&I PA90 POLE FOUNDATION  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG  
 1-ANGLE MOUNT C.D. PED HEAD-POLE MOUNTED 90 DEG  
 2-TYPE D SIGNS (D-20, 21) (SEE SIGN DETAILS)  
 1-R9-3 (NO PED XING) SIGN-FACING POLE 3  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#4)  
 MAST ARM EXTENSION AND MOUNTING HARDWARE FOR VIDEO DETECTOR  
 EXTEND INTO HH 4:  
 3" CONDUIT  
 2-12/C 14  
 1-6/C 14  
 (\*) 1-3/C 14  
 (\*) 1-3/C 20  
 1-1/C 6 (INS.GR.)  
 INSTALL (FURNISHED BY COUNTY) TYPE PA90-A-30  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8' (FACING EB TRAFFIC) (V-2) (#4)  
 VIDEO CABLE FOR CAMERA

(3) F&I PA100 POLE FOUNDATION  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 12' AND 24' FROM END OF MAST ARM  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 180 DEG AND 270 DEG  
 R10-X12 SIGN PANEL-ADJACENT TO 1-1  
 2-R9-3 (NO PED XING) SIGNS-FACING NE CORNER AND POLE 2  
 1-TYPE D SIGN (D-22) (SEE SIGN DETAILS)  
 (\*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#6,1)  
 MAST ARM EXTENSION AND MOUNTING HARDWARE FOR VIDEO DETECTOR  
 EXTEND INTO HH 6:  
 3" CONDUIT  
 2-12/C 14  
 1-6/C 14  
 (\*) 1-3/C 14  
 (\*) 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/C 6 (INS.GR.)  
 INSTALL (FURNISHED BY COUNTY) TYPE PA100-A-50-X30-9 (DAVIT AT 350 DEG)  
 VIDEO DETECTOR-MAST ARM MOUNTED AT 8' (FACING SB TRAFFIC) (V-3) (#6,1)  
 VIDEO CABLE FOR CAMERA

SYSTEM ID = 4013337  
 TE # = 21204  
 METER ADDRESS = 102 WOODBURY DRIVE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MB				
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: 12/12/2019



WASHINGTON COUNTY, MN.  
**C.S.A.H. 19**  
 S.A.P. 082-619-027, S.A.P. 192-020-027, S.A.P. 192-102-012,  
 S.A.P. 192-117-015, S.A.P. 192-124-001, S.A.P. 192-125-001

**TRAFFIC SIGNAL SYSTEM "D"  
 POLE AND CABINET NOTES**  
 CSAH 19 (WOODBURY DR) AT I-94 SOUTH RAMPS

SEH FILE NO. WASHC142180  
**444**  
 SGL34 OF SGL70  
**492**





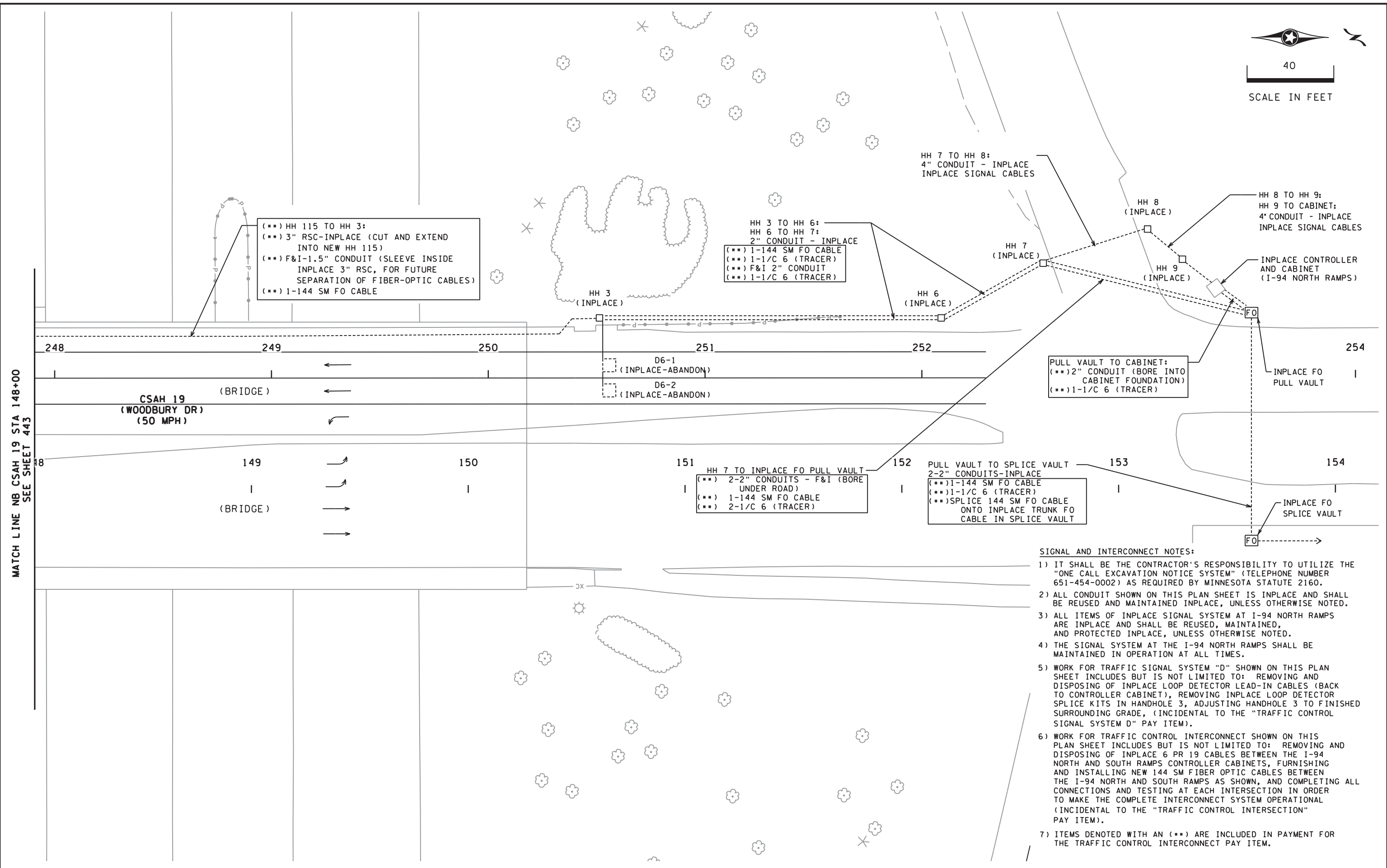
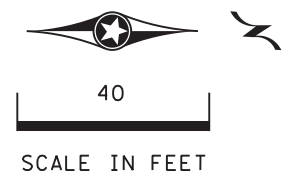


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- SIGNAL AND INTERCONNECT NOTES:**
- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
  - 2) ALL CONDUIT SHOWN ON THIS PLAN SHEET IS INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED.
  - 3) ALL ITEMS OF INPLACE SIGNAL SYSTEM AT I-94 NORTH RAMPS ARE INPLACE AND SHALL BE REUSED, MAINTAINED, AND PROTECTED INPLACE, UNLESS OTHERWISE NOTED.
  - 4) THE SIGNAL SYSTEM AT THE I-94 NORTH RAMPS SHALL BE MAINTAINED IN OPERATION AT ALL TIMES.
  - 5) WORK FOR TRAFFIC SIGNAL SYSTEM "D" SHOWN ON THIS PLAN SHEET INCLUDES BUT IS NOT LIMITED TO: REMOVING AND DISPOSING OF INPLACE LOOP DETECTOR LEAD-IN CABLES (BACK TO CONTROLLER CABINET), REMOVING INPLACE LOOP DETECTOR SPLICE KITS IN HANDHOLE 3, ADJUSTING HANDHOLE 3 TO FINISHED SURROUNDING GRADE, (INCIDENTAL TO THE "TRAFFIC CONTROL SIGNAL SYSTEM D" PAY ITEM).
  - 6) WORK FOR TRAFFIC CONTROL INTERCONNECT SHOWN ON THIS PLAN SHEET INCLUDES BUT IS NOT LIMITED TO: REMOVING AND DISPOSING OF INPLACE 6 PR 19 CABLES BETWEEN THE I-94 NORTH AND SOUTH RAMPS CONTROLLER CABINETS, FURNISHING AND INSTALLING NEW 144 SM FIBER OPTIC CABLES BETWEEN THE I-94 NORTH AND SOUTH RAMPS AS SHOWN, AND COMPLETING ALL CONNECTIONS AND TESTING AT EACH INTERSECTION IN ORDER TO MAKE THE COMPLETE INTERCONNECT SYSTEM OPERATIONAL (INCIDENTAL TO THE "TRAFFIC CONTROL INTERSECTION" PAY ITEM).
  - 7) ITEMS DENOTED WITH AN (\*\*) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MB				
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: 12/12/2019



WASHINGTON COUNTY, MN.  
**C.S.A.H. 19**  
S.A.P. 082-619-027, S.A.P. 192-020-027, S.A.P. 192-102-012,  
S.A.P. 192-117-015, S.A.P. 192-124-001, S.A.P. 192-125-001

**INTERCONNECT AND TRAFFIC SIGNAL SYSTEM "D"**  
CSAH 19 AT I-94 RAMPS

SEH FILE NO. WASHC142180  
SGL37 OF SGL70

447  
492