

NOTES:

- LOCATION OF FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- LOOP DETECTOR WIRES (FOR NEW LOOP DETECTORS) SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- NEW HANDHOLES 8, 9, 19, AND 21 SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS, AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
- ALL MAST ARM POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS & SPECIAL PROVISIONS.
- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
- ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- (EVP) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- SEE DETAILS, SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SIGNS, CONCRETE WALK, PEDESTRIAN CURB RAMPS, AND STRIPING TO BE F & I BY CONTRACTOR.
- CONTRACTOR SHALL COIL AND STORE 25 FEET OF SPARE 1-2/c#14 CABLE IN HANDHOLES 1, 7, AND 15, AND 50 FEET OF SPARE 1-2/c#14 CABLE IN HANDHOLE 5 (FOR FUTURE APS SYSTEM INSTALLATION BY OTHERS) (INCIDENTAL).
- CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOND WIRES, CONDUIT BUSHINGS, AND LOOP DETECTOR SPLICE KITS IN EACH INPLACE AND NEW HANDHOLE AS REQUIRED (SEE SPECIAL PROVISIONS) (INCIDENTAL).

15) A PAY ITEM HAS BEEN ADDED FOR FURNISHING & INSTALLING NEW NMC LOOP DETECTORS (FOR THE EASTBOUND STOP BAR LOOP DETECTORS ONLY), IN THE EVENT THAT THE EXISTING LOOP DETECTORS ARE LOCATED AS CURRENTLY SHOWN ON THIS PLAN SHEET AND NOT CENTERED ON THE TRAFFIC LANES AS REQUIRED. IF THE EXISTING LOOP DETECTORS ARE FOUND TO BE INSTALLED IN THE PROPER LOCATIONS, THEN THIS PAY ITEM WILL NOT BE USED FOR THE PROJECT.

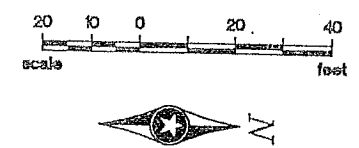
MATCH LINE "A" - SEE SHEET 11

N.M.C. LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	6x6	40'	1	INPLACE
D1-2	6x6	10'	1	INPLACE
D2-1	6x6	400'	1	INPLACE
D2-2	6x6	400'	1	INPLACE
D4-1	6x6	250'	3,8	F & I
D4-2	2-6x6	0' & 15'	7	***
D4-3	2-6x6	0' & 15'	7	***
D5-1	6x6	40'	1	INPLACE
D5-2	6x6	10'	1	INPLACE
D6-1	6x6	400'	1	INPLACE
D6-2	6x6	400'	1	INPLACE
DB-1	6x6	120'	3,8	INPLACE
DB-2	6x6	120'	3,8	INPLACE
DB-3	2-6x6	0' & 15'	7	INPLACE
DB-4	2-6x6	0' & 15'	7	INPLACE

- LOOP DETECTORS FUNCTIONS:
- CALL AND EXTEND
 - EXTEND ONLY
 - DELAYED CALL, IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

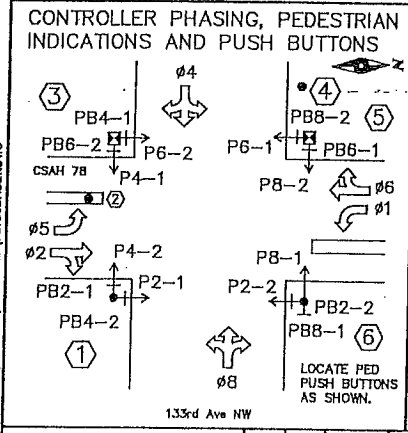
NOTE: *** = INPLACE LOOP DETECTORS- SEE NOTE 15 AT LEFT.



MATCH LINE - STATION 123 + 00 SEE SHEET 10

MATCH LINE - STATION 129 + 00 - SEE SHEET 10

- LOOP DETECTOR WIRE FROM ROADWAY TO HANDHOLE IS INPLACE, FOR ALL INPLACE LOOP DETECTORS. 2/c#14 CABLE IS NOT INPLACE, BUT SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AND CONNECTED TO INPLACE LOOP DETECTOR WIRE (USING NEW CONTRACTOR FURNISHED AND INSTALLED SPLICE KITS).
- EXTRA 6/c FIBER OPTIC CABLE HAS BEEN COILED AND STORED BY OTHERS IN HANDHOLES 1, 14, 15, AND 20, FOR USE BY THE CONTRACTOR IN CUTTING AND EXTENDING INTO THE NEW CONTROLLER CABINET, AND MAKING OPERATIONAL TO THE SATISFACTION OF THE ENGINEER (SEE SPECIAL PROVISIONS).



(B) INPLACE GROUND MOUNTED TRANSFORMER (S.O.P.-CONNEXUS ENERGY) EXTEND INTO H.H.21: 2"R.S.C. (FOR SERVICE CABLES BY CONNEXUS)

- SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES.
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SEE SHEET 10 FOR DETAILED POLE NOTES.

DRAWN BY:	JMG	
DESIGNER:	JMG	
CHECKED BY:	JMG	
DESIGN TEAM		
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.

John M. Gray
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ANOKA COUNTY,
MINNESOTA
ANDOVER AND COON RAPIDS

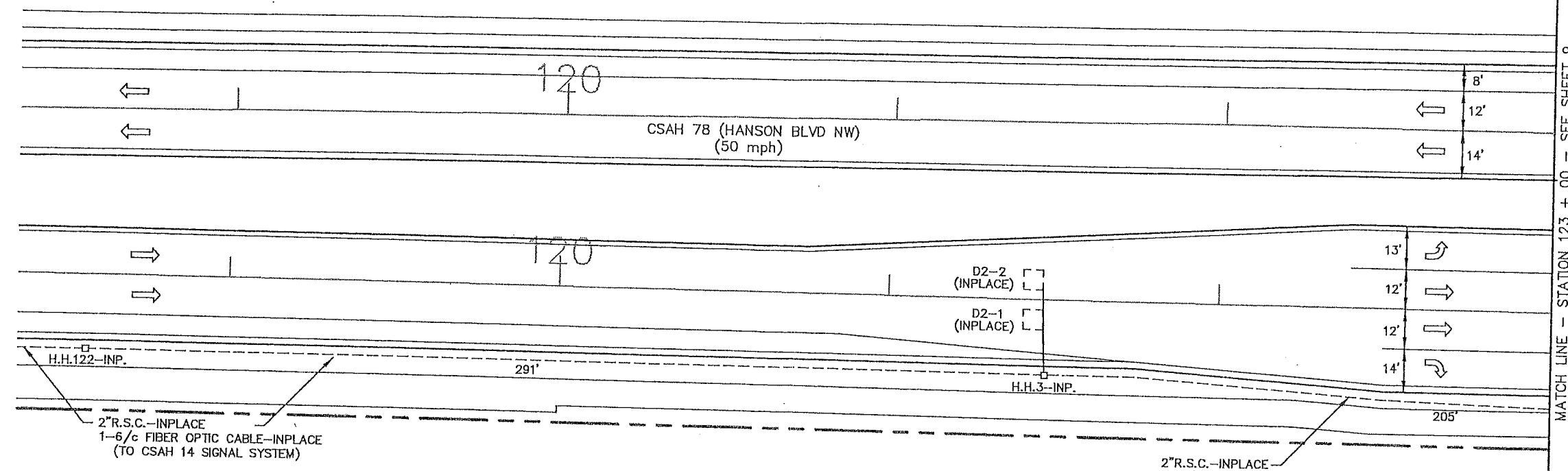
TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 78 (HANSON BLVD NW)
AT 133RD AVENUE NORTH

FILE NO.
ANOKC 107970
DATE
02/02/2010
9
15

S.A.P. 02-678-19
S.A.P. 114-112-012
S.A.P. 198-109-003
ANDOVER PROJ. 09-34
COON RAPIDS PROJ. 09-37

F & I LED SIGNAL FACES			
SIGNAL FACE	ALL SIGNAL FACES SHALL BE 12".		
	R	Y	G
1-1, 1-2	●	●	●
2-1, 2-2, 2-3	●	●	●
4-1, 4-2, 4-3	●	●	●
5-1, 5-2	●	●	●
6-1, 6-2, 6-3	●	●	●
8-1, 8-2, 8-3	●	●	●

- (A) EQUIPMENT PAD FOUNDATION INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
BBU SIGNAL SERVICE CABINET BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
CONTROLLER CABINET TO H.H.1:
4"R.S.C.
5-12/c#14
2-3/c#14 (EVP)
3-3/c#20 (EVP)
12-2/c#14
CONTROLLER CABINET TO H.H.20:
4"R.S.C.
5-12/c#14
2-3/c#14 (EVP)
3-3/c#20 (EVP)
11-2/c#14
2-6/c FIBER OPTIC CABLES (S & I)
- SERVICE CABINET TO H.H.1:
2"R.S.C.
4-1/c#6 (GRD)
UNMETERED STREET LIGHT SERVICE
2-3/c#14 (LUM)
SERVICE CABINET TO H.H.20:
2"R.S.C.
2-1/c#6 (GRD)
UNMETERED STREET LIGHT SERVICE
2-3/c#14 (LUM)
STUB OUT 2-3"R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD & CAP BOTH ENDS-FOR FUTURE USE)
STUB OUT 1"N.M.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)



MATCH LINE - STATION 123 + 00 - SEE SHEET 9

- ① PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180'
 2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
 POLE MOUNTED 90° & 180'
 2-PEDESTRIAN PUSH BUTTONS
 TYPE D SIGN PANEL-OVERHEAD (D-1)
 ONE WAY EVP DETECTOR & LIGHT (#4) (EVP)
 EXTEND INTO H.H.20:
 3\"/>

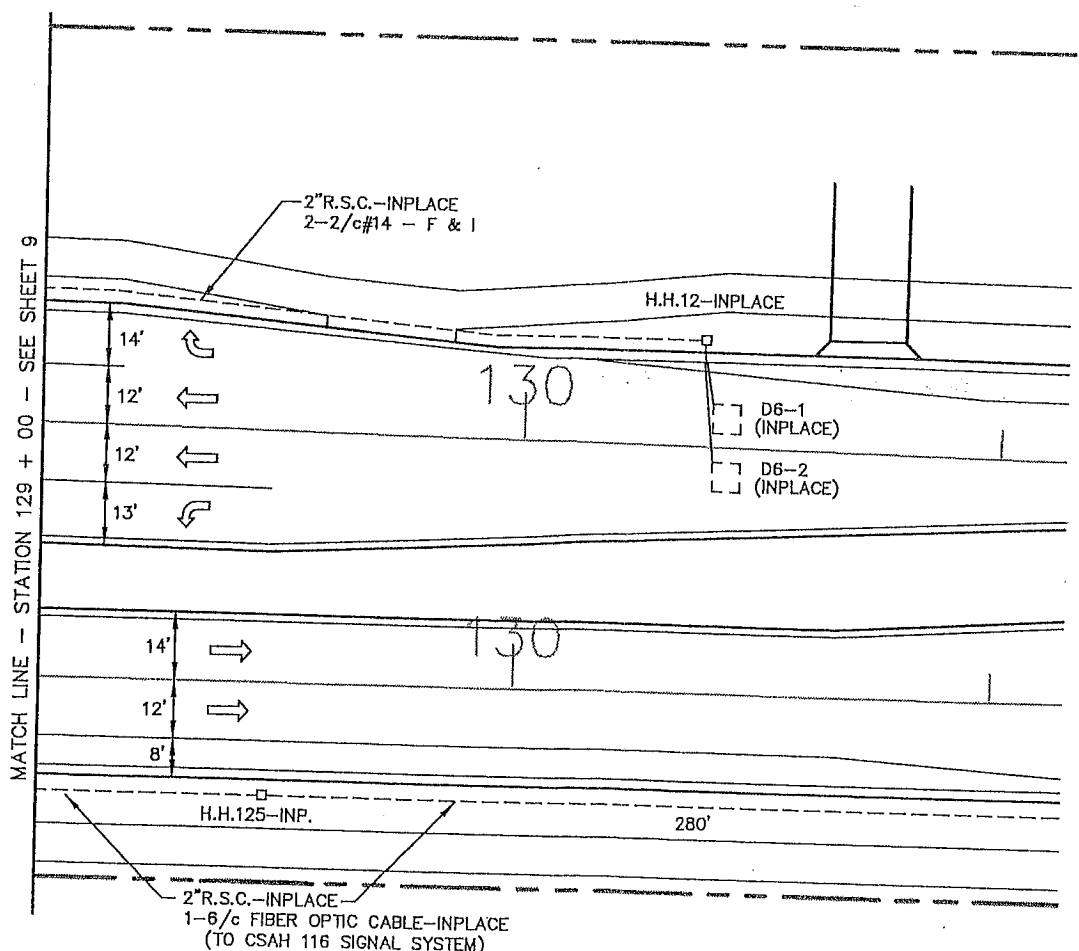
- ② PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 10')
 LUMINAIRE-250 W HPS
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 90'
 TYPE D SIGN PANEL-OVERHEAD (D-2)
 R4-7 AND X4-2 SIGN PANELS-INPLACE (SALVAGE FROM
 MEDIAN SIGN POST AND INSTALL ON 90° SIDE OF POLE)
 ONE WAY EVP DETECTOR & LIGHT (#6,1) (EVP)
 EXTEND INTO H.H.4:
 3\"/>

- ③ PEDESTAL FOUNDATION
 14' PEDESTAL POLE, (INCLUDES BASE)
 WIND COLLAR FOR PEDESTAL POLE
 2-ONE WAY SIGNALS-POLE MOUNTED
 2-SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS
 2-R6-1 SIGN PANELS (EAST/WEST SIDES OF POLE)
 EXTEND INTO H.H.5:
 3\"/>

- ④ PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 270'
 TYPE D SIGN PANEL-OVERHEAD (D-3)
 ONE WAY EVP DETECTOR & LIGHT (#8) (EVP)
 EXTEND INTO H.H.7:
 3\"/>

- ⑤ PEDESTAL FOUNDATION
 14' PEDESTAL POLE, (INCLUDES BASE)
 WIND COLLAR FOR PEDESTAL POLE
 1-ONE WAY SIGNAL-POLE MOUNTED
 2-SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H.7:
 3\"/>

- ⑥ PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180'
 2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
 POLE MOUNTED 90° & 180'
 2-PEDESTRIAN PUSH BUTTONS
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180'
 TYPE D SIGN PANEL-OVERHEAD (D-4)
 ONE WAY EVP DETECTOR & LIGHT (#2,5) (EVP)
 EXTEND INTO H.H.14:
 3\"/>



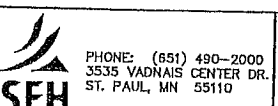
MATCH LINE - STATION 129 + 00 - SEE SHEET 9

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DRAWN BY:	JMG
DESIGNER:	JMG
CHECKED BY:	JMG
DESIGN TEAM	

NO.	BY	DATE	REVISIONS

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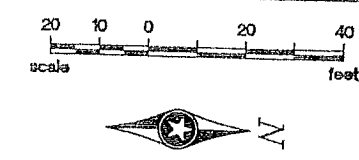


ANOKA COUNTY, MINNESOTA
 ANDOVER AND COON RAPIDS

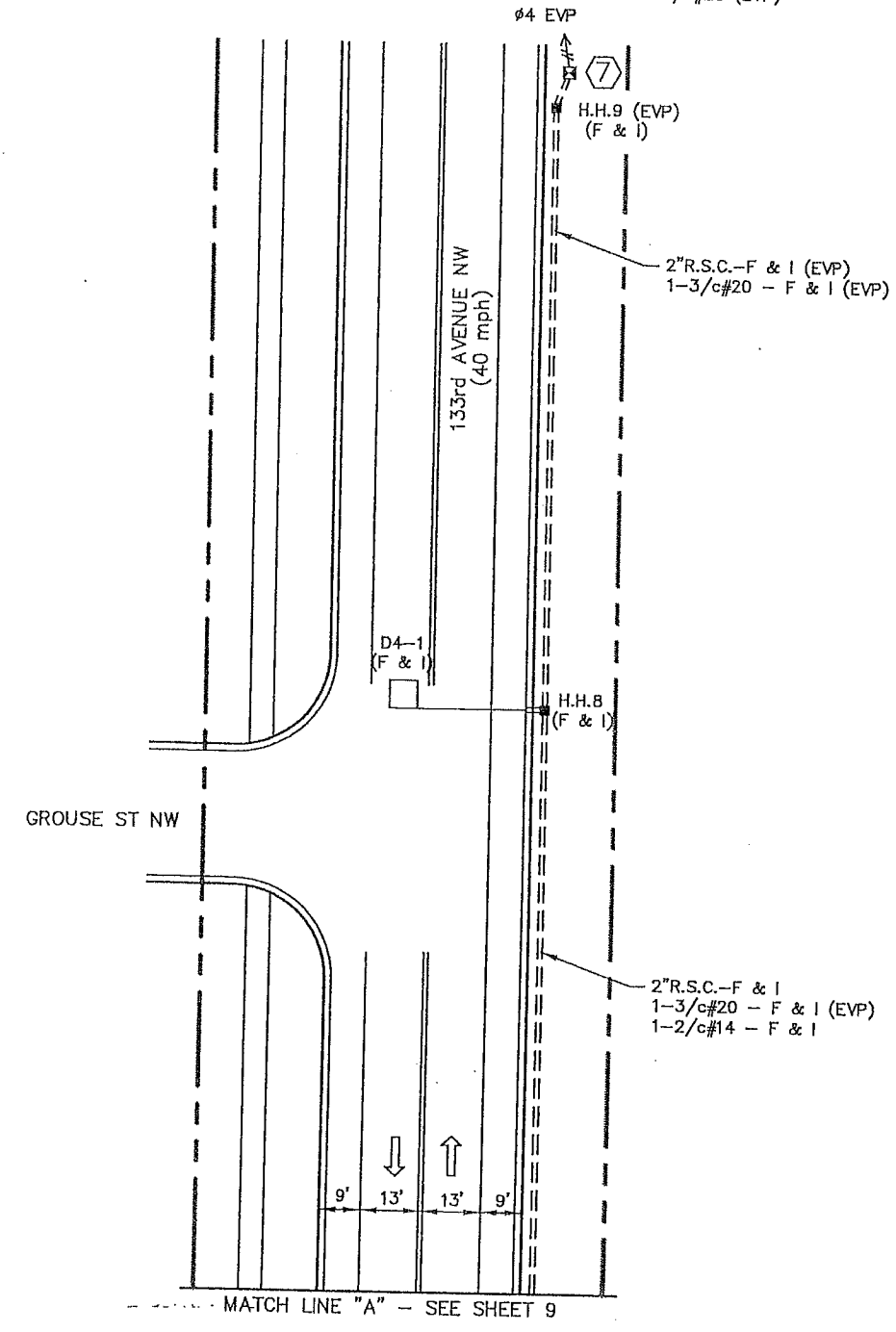
TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
 CSAH 78 (HANSON BLVD NW)

S.A.P. 02-678-19
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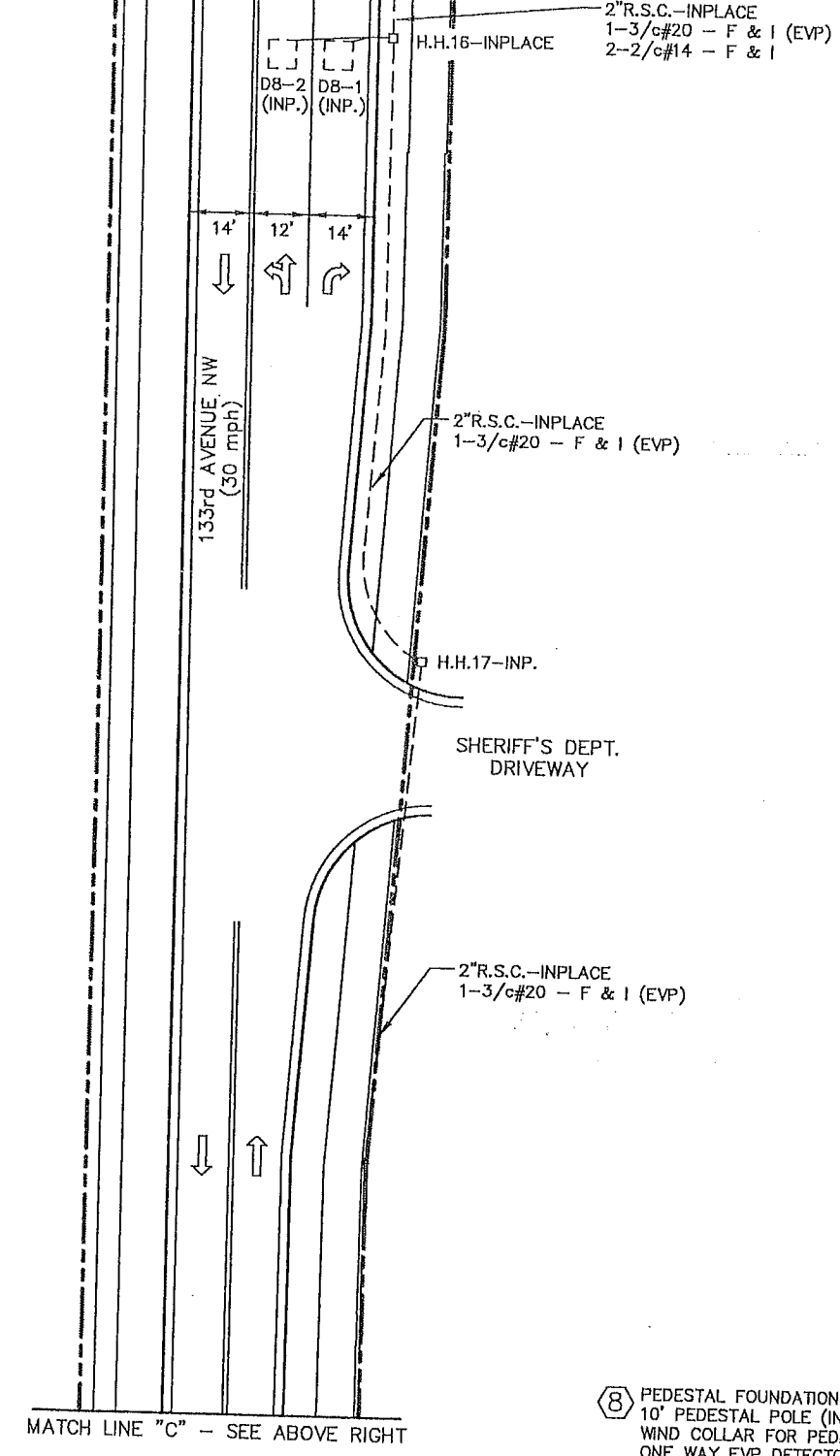
FILE NO.	ANOKC 107970
DATE	10/15



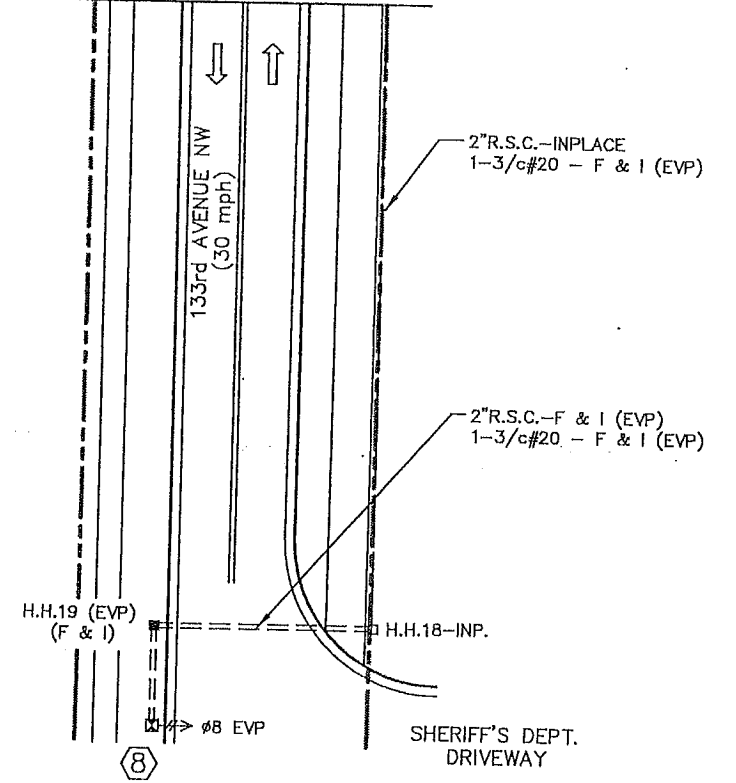
⑦ PEDESTAL FOUNDATION (EVP)
 10' PEDESTAL POLE (INCLUDES BASE) (EVP)
 WIND COLLAR FOR PEDESTAL POLE (EVP)
 ONE WAY EVP DETECTOR-MOUNT
 ON TOP OF PEDESTAL POLE) (#4) (EVP)
 EXTEND INTO H.H.9:
 2"R.S.C. (EVP)
 1-3/c#20 (EVP)



MATCH LINE "B" - SEE SHEET 9



MATCH LINE "C" - SEE BELOW LEFT



⑧ PEDESTAL FOUNDATION (EVP)
 10' PEDESTAL POLE (INCLUDES BASE) (EVP)
 WIND COLLAR FOR PEDESTAL POLE (EVP)
 ONE WAY EVP DETECTOR-MOUNT
 ON TOP OF PEDESTAL POLE) (#8) (EVP)
 EXTEND INTO H.H.19:
 2"R.S.C. (EVP)
 1-3/c#20 (EVP)

S.A.P. 02-678-19
 S.A.P. 114-112-012
 S.A.P. 198-109-003
 ANDOVER PROJ. 09-34
 COON RAPIDS PROJ. 09-37

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ANOKA COUNTY, MINNESOTA
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TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
 CSAH 78 (HANSON BLVD NW)

FILE NO. ANOK 107970	11
DATE	15

