

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS - ROADS
MIDWEST REGION

HIGHWAY 169 PEDESTRIAN CROSSING

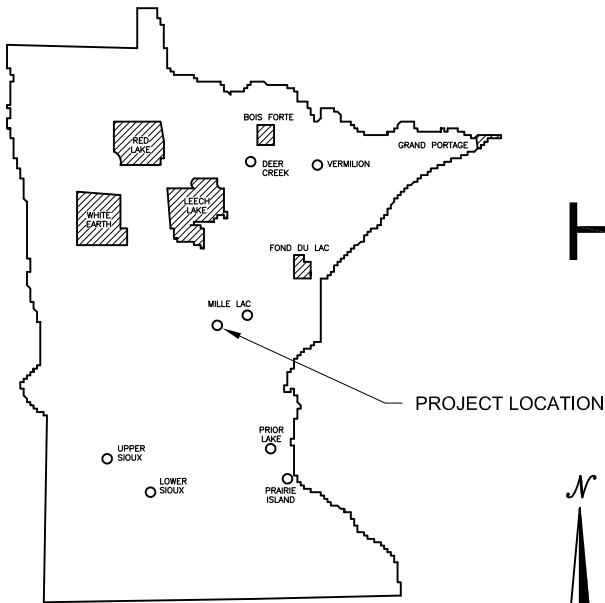
PROJECT I.D. NO. F53-41027
TTP ROUTE NO. 0035, 0050 & 0169

MILLE LACS BAND OF OJIBWE
MILLE LACS COUNTY, MINNESOTA

EXCAVATION, AGGREGATE BASE, DRAINAGE, CONCRETE
SIDEWALK, SIGNING

LEGEND OF SYMBOLS

PROPOSED CENTERLINE	
RIGHT OF WAY LINE	
TREE LINE	
EXISTING ROADWAY	
FENCELINE	
GATE VALVE	
POWER POLE	
GUY WIRE	
HYDRANT	
SIGN	
POWER BOX	
TELEPHONE PEDESTAL	
TV CABLE BOX	
IRON ROD	
IRON PIPE	
CONTROL POINT	
MANHOLE	
SINGLE TREE	



MILLE LACS COUNTY
STATE OF MINNESOTA



PROJECT LENGTH 432 FEET

DESIGN DATA

MINIMUM RADIUS OF CURVE	15.0 FEET
MAXIMUM GRADE	5.38 PERCENT
TOPOGRAPHY	FLAT

INDEX OF SHEETS

SHEET NO. 1	TITLE, LEGEND & LOCATION MAP
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SHEET NO. 5	TRAFFIC CONTROL
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SHEET NO. 11	EARTHWORK TABULATION
SHEET NO. SS1 - SS15	MnDOT CROSSING SIGNAL DESIGN

DESIGN IS IN ACCORDANCE WITH "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," 2004 (AASHTO). EXCEPT AS PROVIDED FOR IN THE SPECIAL PROVISIONS, ALL WORK SHALL BE ACCOMPLISHED ACCORDING TO THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS FP-03," AND STATE OF MINNESOTA, "STANDARD SPECIFICATIONS FOR CONSTRUCTION," 2018 EDITION, AND THE LATEST "SUPPLEMENTAL SPECIFICATONS" TO THE 2018 EDITION.

U.S. DEPARTMENT OF THE INTERIOR - BUREAU OF INDIAN AFFAIRS

MILLE LACS BAND OF OJIBWE

MIDWEST REGION

RECOMMENDED FOR APPROVAL:

APPROVED:

REGIONAL ENGINEER DATE

TRIBAL CHAIRPERSON DATE

REGIONAL DIRECTOR DATE

T43N, R27W, SECTION 28



CONTRACTOR SHALL VERIFY ALL PUBLIC UTILITIES PRIOR TO START OF CONSTRUCTION

LOCATION MAP
N.T.S.

SHEET NAME
TITLE, LEGEND & LOCATION MAP

RESERVATION
MILLE LACS

BIA REGION
MIDWEST

FED. ROAD REG. NO.
5

PROJECT I.D. NO.
F53-41027

SHEET NO.
1 of 11

GENERAL NOTES

1. ITEM WILL BE PAID AS PLAN QUANTITY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
2. THE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY, AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE UTILITY LOCATIONS WITH THE APPROPRIATE UTILITY COMPANIES, OR UTILITY ORGANIZATIONS, AND ARRANGE FOR REMOVAL, RELOCATION, OR SPECIAL PROTECTION OF ALL UTILITIES THAT ARE LOCATED WITHIN THE CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN TRAFFIC ON PUBLIC ROADWAYS AT ALL TIMES DURING CONSTRUCTION. ACCESS TO PRIVATE PROPERTIES SHALL ALSO BE MAINTAINED AT ALL TIMES. THE COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
4. THE CONTRACTOR SHALL REMOVE AND BANK MAIL BOXES AND REPLACE WHEN WORK IS COMPLETE. THE COST OF THE WORK SHALL BE CONSIDERED INCIDENTAL.
5. ALL CONTRACTORS, SUBCONTRACTORS AND UTILITY EMPLOYEES SHALL WEAR SAFETY EQUIPMENT IN ACCORDANCE WITH <u>OSHA</u> REGULATIONS.
6. ALL EXCESS EXCAVATION, DEBRIS, AND RUBBISH RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND ASSUME FULL RESPONSIBILITY FOR THE DISPOSAL OF THE MATERIALS AT A LOCATION WHICH IS PRE-APPROVED BY THE OWNER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
7. ALL EMBANKMENT QUANTITIES ARE CALCULATED AT 125% OF FINAL COMPACTED VOLUME.
8. LOADER HOURS SHALL BE USED AS DIRECTED BY THE ENGINEER.
9. BACKFILL FOR CULVERT SHALL BE COMPACTED IN ACCORDANCE WITH MNDOT SPEC. 2105.3F2, QUALITY COMPACTION METHOD.
10. GRADE DITCHES TO DRAIN PROPERLY AT CULVERT ENDS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CULVERT PIPE ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
11. PEDESTRIAN CURB RAMPS SHALL BE PAID FOR AS 5” CONCRETE SIDEWALK. SEE STANDARD PLANS 5–297.250.
12. CONTRACTOR SHALL CONDUCT TRAFFIC CONTROL OPERATIONS DURING ALL WORK ON OR NEAR HWY 169 IN ACCORDANCE WITH THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018.
13. ALL DISTURBED AREAS NOT OTHERWISE SURFACED SHALL BE TOPSOILED (4” MIN. DEPTH), SEEDED, FERTILIZED, AND MULCHED.
14. ANY WATER SHUT OFF VALVES OR OTHER UTILITY APPURTENANCES REQUIRING ADJUSTMENT SHALL BE ADJUSTED BY THE CONTRACTOR. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

BASIS OF ESTIMATED QUANTITIES

HMA PATCHING MIXTURE.....	112 lbs./S.Y./inch
AGGREGATE BASE (CV), CLASS 5.....	140 lbs./cu. foot

MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD PLATES & PLANS	
PLATE NO.	DESCRIPTION
3040 F	CORRUGATED METAL PIPE CULVERT
3123 J	METAL APRON FOR C.S. PIPE
7038 A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100 H	CONCRETE CURB AND GUTTER (DESIGN B AND V)
8000 J	CHANNELIZERS – TYPE A, B & C
PLAN NO.	DESCRIPTION
5–297.250	PEDESTRIAN CURB RAMP DETAILS
5–297.405	TEMPORARY SEDIMENT CONTROL – SILT FENCE (SHEET 6)

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	NOTES	MINNESOTA STATE SPECIFICATION ITEM	UNIT	ESTIMATED QUANTITY	FINAL QUANTITY
2011.601		AS BUILT	LS	1	
2021.501		MOBILIZATION	LS	1	
2104.502		REMOVE LIGHTING UNIT	EACH	1	
2104.502		REMOVE LIGHT FOUNDATION	EACH	1	
2104.503		SAWING CONCRETE PAVEMENT (FULL DEPTH)	LF	53	
2104.503		SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	158	
2104.503	6	REMOVE CURB AND GUTTER	LF	83	
2104.503		REMOVE CHAIN LINK FENCE	LF	325	
2104.503		REMOVE DIRECT BURIED LIGHTING CABLE	LF	215	
2104.518	6	REMOVE CONCRETE MEDIAN	SF	255	
2104.518	6	REMOVE BITUMINOUS PAVEMENT	SF	481	
2104.518	6	REMOVE CONCRETE WALK	SF	322	
2104.601		HAUL SALVAGED MATERIAL (MnDOT BAXTER LOCATION)	LS	1	
2105.507	6	COMMON EXCAVATION	CY	89	
2105.507	7	COMMON BORROW (CV)	CY	29	
2123.510	8	LOADER	HOUR	40	
2211.509		AGGREGATE BASE CLASS 5	TON	140	
2360.509		TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	4	
2501.502		24" CS PIPE APRON	EACH	2	
2501.503	9, 10	24" CS PIPE CULVERT	LF	21	
2511.504		GEOTEXTILE FILTER TYPE 3	SY	40	
2511.507		RANDOM RIPRAP CLASS II	CY	10	
2521.518	11	5" CONCRETE WALK	SF	2421	
2531.503		CONCRETE CURB AND GUTTER DESIGN B624	LF	82	
2531.618		TRUNCATED DOMES	SF	60	
2534.504		7" CONCRETE DRIVEWAY PAVEMENT	SY	81	
2557.603		ORNAMENTAL IRON FENCE	LF	325	
2563.601	12	TRAFFIC CONTROL	LS	1	
2564.518		SIGN PANELS TYPE C (HAWK SYSTEM)	SF	33	
2564.518		SIGN PANELS TYPE D (HAWK SYSTEM)	SF	52	
2565.501		TRAFFIC CONTROL INTERCONNECT	LS	1	
2565.516		TRAFFIC CONTROL SIGNAL SYSTEM	SYS	1	
2565.616		REVISE SIGNAL SYSTEM	SYS	1	
2573.503		SILT FENCE, TYPE PA	LF	100	
2575.501	13	TURF ESTABLISHMENT	LS	1	
2582.503		24" SOLID LINE PAINT	LF	76	
2582.518		CROSSWALK PAINT	SF	465	

WARNING
LOCATION OF UNDERGROUND UTILITIES
TO BE VERIFIED BY CONTRACTOR
CALL BEFORE DIGGING

REQUIRED BY LAW
GOPHER STATE ONE CALL
1-800-252-1166
TOLL FREE

www.gopherstateonecall.org

SURVEY INFORMATION

SYSTEM: MINNESOTA COUNTY COORDINATES
ZONE: MILLE LACS COUNTY
DATUM: NAD83
UNITS: U.S. SURVEY FEET

TRIBAL CONTACT

MIKE MOILANEN
PLANNING & PROJECT MANAGEMENT DIRECTOR
MILLE LACS BAND OF OJIBWE
PHONE: 320–532–7438

SHEET NAME
QUANTITIES, NOTES & UTILITIES

RESERVATION
MILLE LACS

BIA REGION
MIDWEST

FED. ROAD REG. NO.
5

PROJECT I.D. NO.
F53–41027

SHEET NO.
2 of 11

REMOVE CURB AND GUTTER		
LOCATION	LF	
PARKING LOT ENTRANCE	27	
HWY 169 MEDIAN	36	
HWY 169 EAST SIDE	20	
TOTAL	83	LF

REMOVE CHAIN LINK FENCE & INSTALL ORNAMENTAL IRON FENCE		
LOCATION	LF	
HWY 169 EAST SIDE	325	
TOTAL	325	LF

REMOVE CONCRETE MEDIAN		
LOCATION	SF	
HWY 169 MEDIAN	255	
TOTAL	255	SF

REMOVE BITUMINOUS PAVEMENT		
LOCATION	SF	
PARKING LOT ENTRANCE	400	
HWY 169 WEST SIDE	25	
HWY 169 MEDIAN	36	
HWY 169 EAST SIDE	20	
TOTAL	481	SF

REMOVE CONCRETE WALK		
LOCATION	SF	
PARKING LOT ENTRANCE	322	
TOTAL	322	SF

SAWING CONCRETE PAVEMENT (FULL DEPTH)		
LOCATION	LF	
PARKING LOT ENTRANCE	8	
HWY 169 MEDIAN	40	
HWY 169 EAST SIDE	5	
TOTAL	53	LF

SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		
LOCATION	LF	
PARKING LOT ENTRANCE	77	
HWY 169 WEST SIDE	19	
HWY 169 MEDIAN	40	
HWY 169 EAST SIDE	22	
TOTAL	158	LF

AGGREGATE BASE CLASS 5		
SIDEWALK BASE (7 FT WIDE, 6 INCH DEEP)	TON	
STA. 0+00 TO 3+15	90	
STA. 3+54 TO 3+73	10	
STA. 4+07 TO 4+32	10	
DRIVEWAY PAVEMENT BASE (6 INCH DEEP)		
PARKING LOT ENTRANCE	30	
TOTAL	140	TON

TYPE SP 12.5 BIT. MIXTURE FOR PATCHING		
LOCATION	TON	
ENTIRE PROJECT	4	
TOTAL	4	TON

24-INCH CORRUGATED STEEL CULVERT PIPE		
	END	
	LENGTH	SECTIONS
SIDEWALK CULVERT	LF	EACH
STA. 2+92	21	2
TOTAL	21	2

RIPRAP & GEOTEXTILE FILTER		
	GEOTEXTILE	
	RIPRAP	FILTER
SIDEWALK CULVERT	CY	SY
INLET	5	20
OUTLET	5	20
TOTAL	10 CY	40 SY

5-INCH CONCRETE SIDEWALK		
LOCATION	SF	
STA. 0+00 TO 3+15	1,981	
STA. 3+54 TO 3+73	252	
STA. 4+07 TO 4+32	188	
TOTAL	2,421	TON

CONCRETE CURB & GUTTER DESIGN B624		
LOCATION	LF	
STA. 0+00	28	
STA. 3+54	18	
STA. 3+73	18	
STA. 4+07	18	
TOTAL	82	LF

7-INCH CONCRETE DRIVEWAY PAVEMENT		
LOCATION	SY	
PARKING LOT ENTRANCE	81	
TOTAL	81	SY

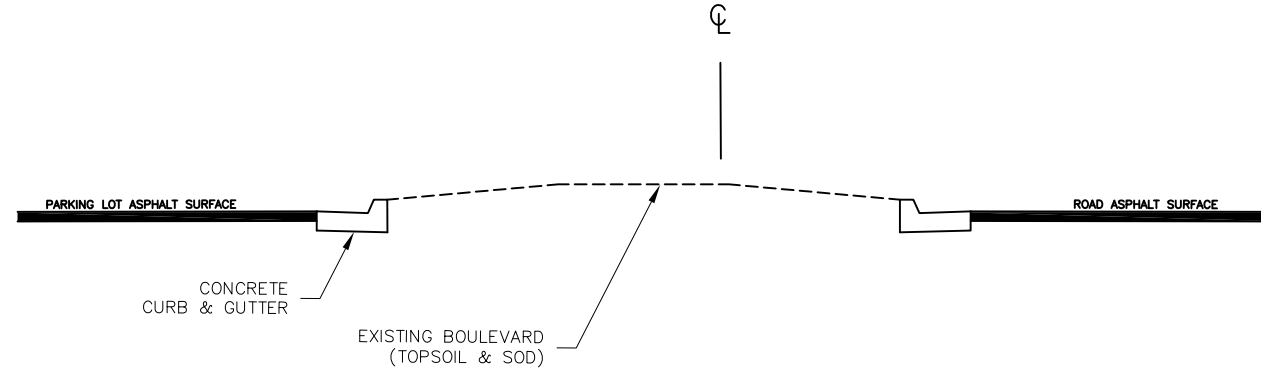
EARTHWORK				
	EXCAVATION	EMBANKMENT	EXCESS	
LOCATION	COMMON	25% COMPACTION	HAULED OUT	BORROW
	CY	CY	CY	CY
ENTIRE PROJECT	89	29	89	29
TOTAL	89	29	89	29
IT IS ASSUMED THAT EXCAVATED MATERIAL WILL CONSIST MOSTLY OF STRIPPED TOPSOIL AND WILL BE UNSUITABLE FOR USE AS EMBANKMENT. ALL EMBANKMENT SHALL BE ENGINEER-APPROVED CLEAN BORROW MATERIAL BROUGHT ONSITE FROM AN OUTSIDE SOURCE.				

24" SOLID LINE PAINT		
PLACE APPROX. 80 FT BACK FROM CROSSWALK MARKINGS		
LOCATION	LF	
HWY 169 WEST LANE	38	
HWY 169 EAST LANE	38	
TOTAL	76	LF

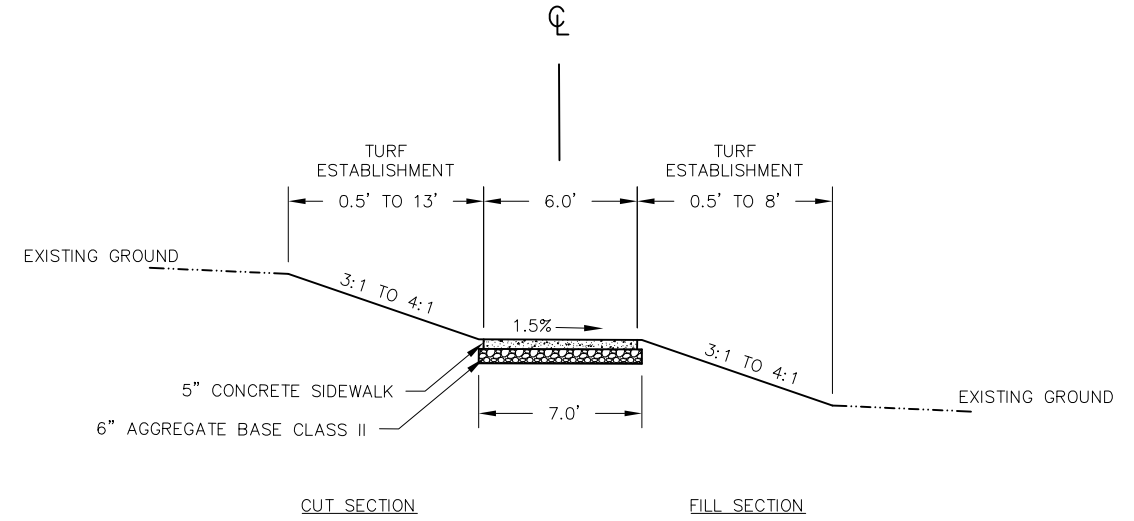
CROSSWALK PAINT		
31 HATCHES AT 2.5’ x 6’ EACH, WHITE		
LOCATION	SF	
HWY 169 LANES	225	
PARKING LOT ENTRANCE	90	
ATAAGE DRIVE	150	
TOTAL	465	SF

ABBREVIATIONS

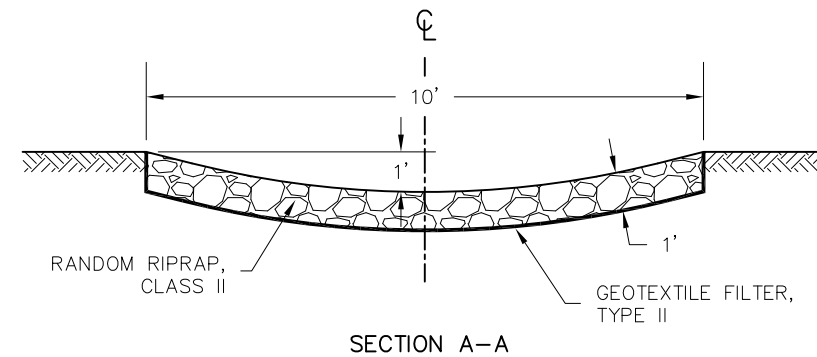
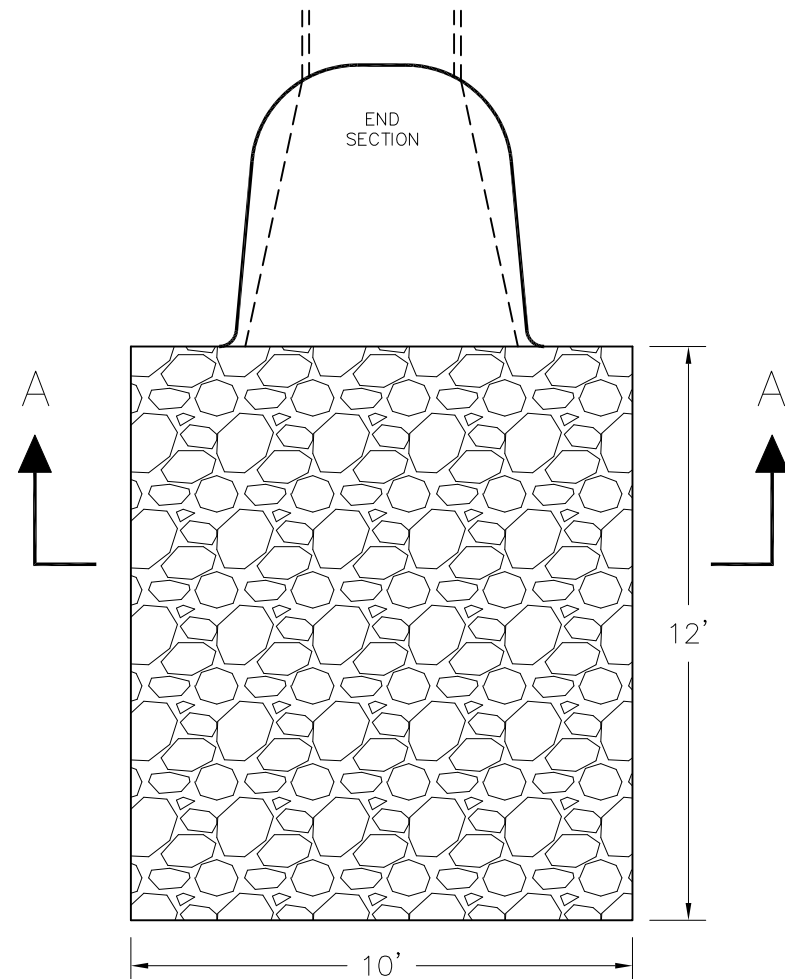
AGGR.	AGGREGATE
BM	BENCH MARK
B.O.P.	BEGINNING OF PROJECT
C.I.P.	COMPACTED IN PLACE
CL	CENTERLINE
CONC.	CONCRETE
CPRC	REINFORCED CONCRETE
	CULVERT PIPE
CSCP	CORRUGATED STEEL
	CULVERT PIPE
CSPA	CORRUGATED STEEL
	PIPE ARCH
E	EASTING
ELEV.	ELEVATION
EMB.	EMBANKMENT
E.O.P.	END OF PROJECT
EXC.	EXCAVATION
FERT.	FERTILIZER
FT.	FEET
F & I	FURNISH AND INSTALL
HWY.	HIGHWAY
K	RATE OF VERTICAL CURVE
L	LENGTH OF CURVE
LT.	LEFT
MAX.	MAXIMUM
MIN.	MINIMUM
M.P.H.	MILES PER HOUR
N	NORTHING
N.T.S.	NOT TO SCALE
P	PLAN QUANTITY
PC	POINT OF CURVATURE
P.E.	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
QTY.	QUANTITY
R	RADIUS
RCCP	REINFORCED CONCRETE
	CULVERT PIPE
RD.	ROAD
RT.	RIGHT
STA	STATION
TYP.	TYPICAL
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W/	WITH



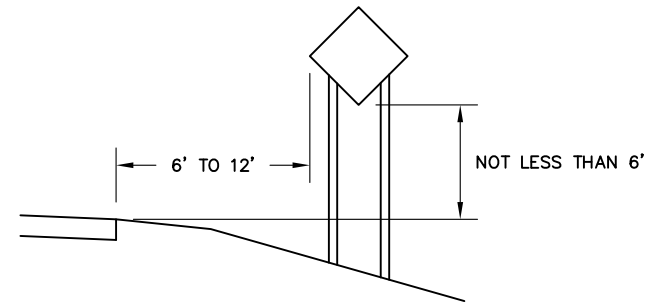
EXISTING TYPICAL SECTION
N.T.S



TYPICAL FINISHED SECTION
N.T.S
AATAGE ROAD & HWY 169 SIDEWALK
STA. 0+00 TO STA. 4+31.99



CENTERLINE CULVERT RIPRAP END TREATMENT DETAIL
N.T.S



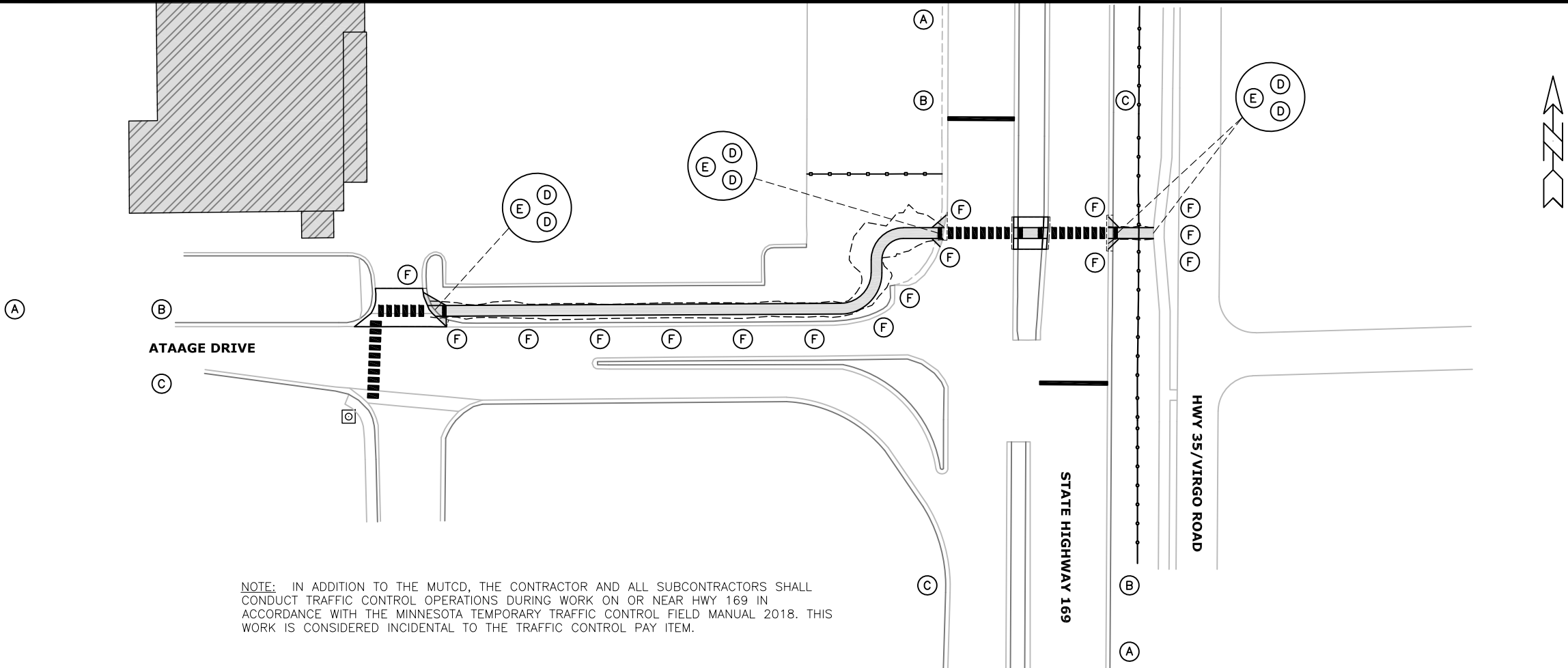
TYPICAL TEMPORARY SIGNING INSTALLATION

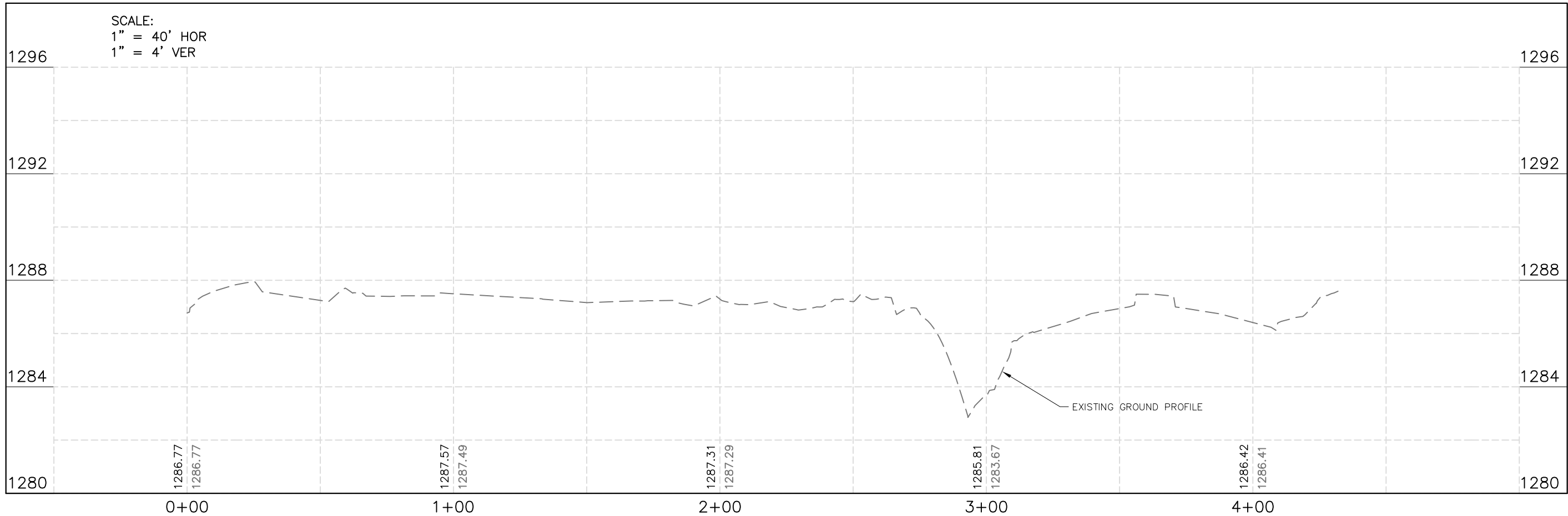
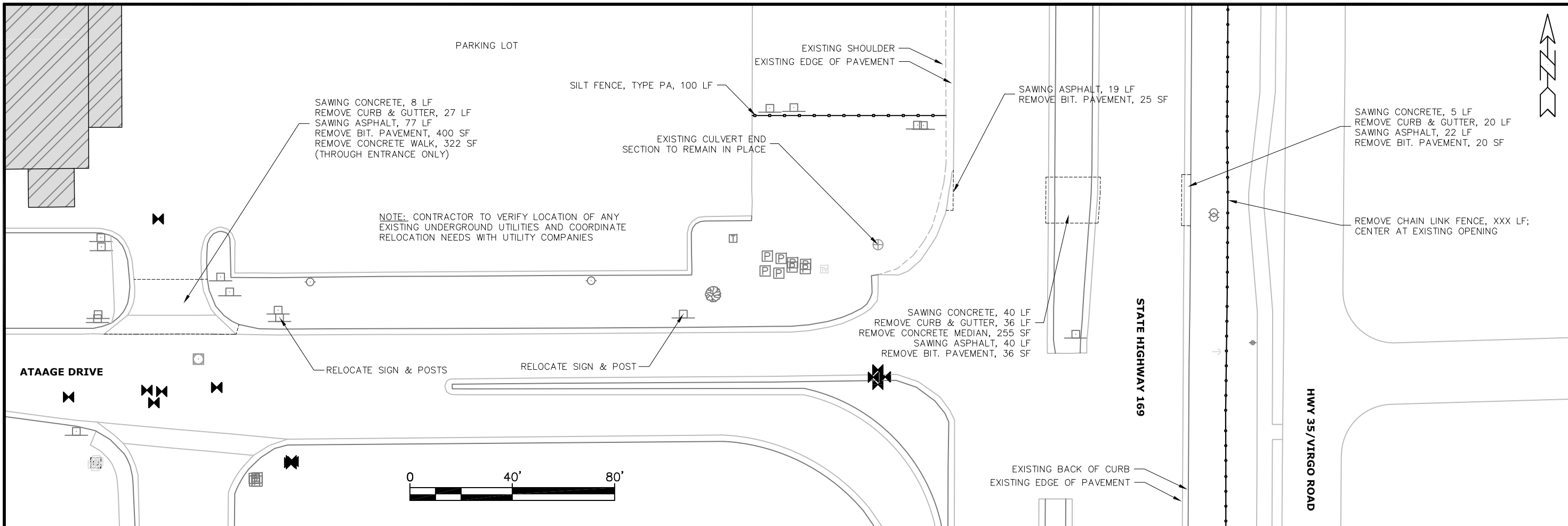
NOTE: IN ADDITION TO THE MUTCD, THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL CONDUCT TRAFFIC CONTROL OPERATIONS DURING WORK ON OR NEAR HWY 169 IN ACCORDANCE WITH THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL 2018. THIS WORK IS CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL PAY ITEM.

TEMPORARY TRAFFIC CONTROL SCHEDULE

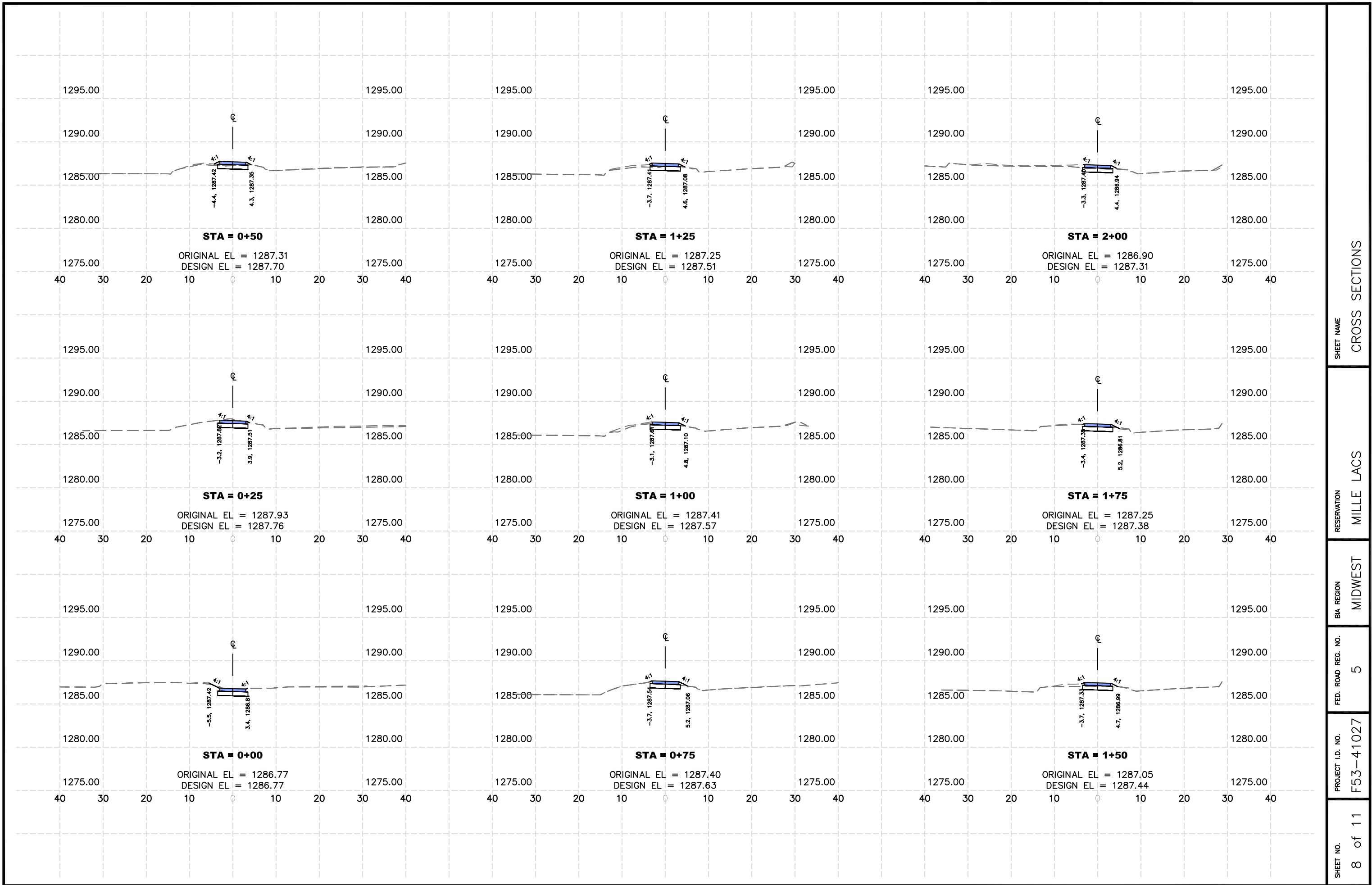
INSTALLATION CODE	(A)	(B)	(C)	(D)	(E)	(F)
QUANTITY	4	4	4	8	4	50
MUTCD REFERENCE	W20-1	W20-1	G20-2	TYPE III BARRICADE	R11-3	DRUM
SIZE	48" x 48"	48" x 48"	60" x 24"	8' WIDE	60" x 30"	
SIGN						
NOTES	PLACE 1000 FT FROM INTERSECTION	PLACE 500 FT FROM INTERSECTION	PLACE 500 FT FROM INTERSECTION	PLACE TWO AT EACH MAIN INTERSECTION	INSTALL ON 8' WIDE TYPE III BARRICADE AT EACH MAIN INTERSECTION	USE BARRELS WITH LIGHTS ALONG RABBIT RIDGE RD.

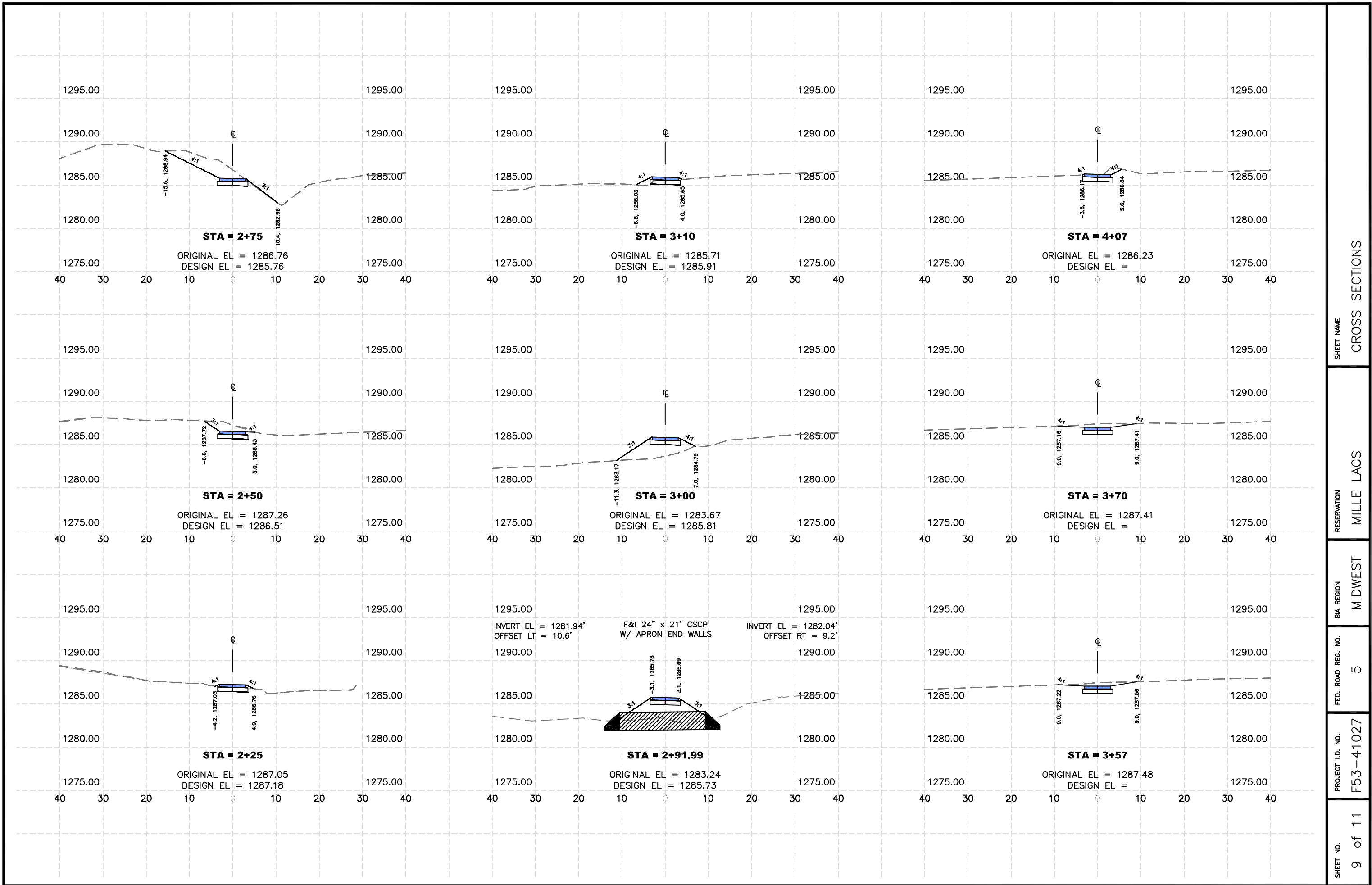
NOTE: ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. IN ADDITION TO THESE DEVICES, THE CONTRACTOR IS REQUIRED TO IDENTIFY HAZARDOUS WORK AREAS AND SIGN THEM IN ACCORDANCE WITH THE MUTCD. ANY ADDITIONAL SIGNING SHALL BE CONSIDERED INCIDENTAL.

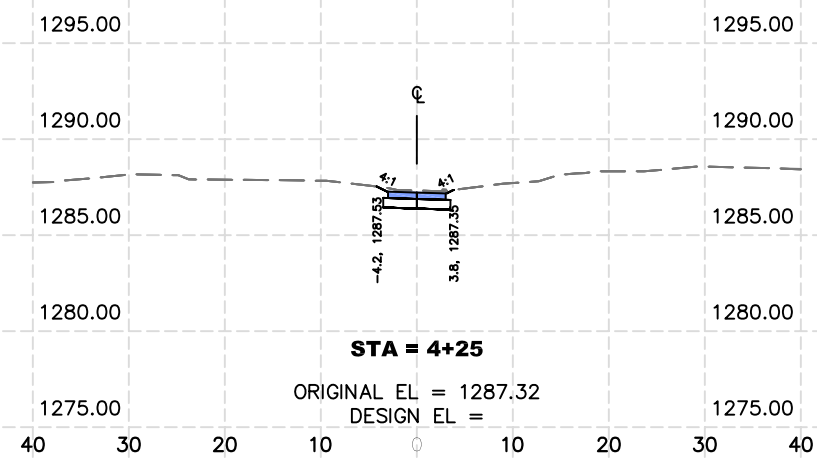
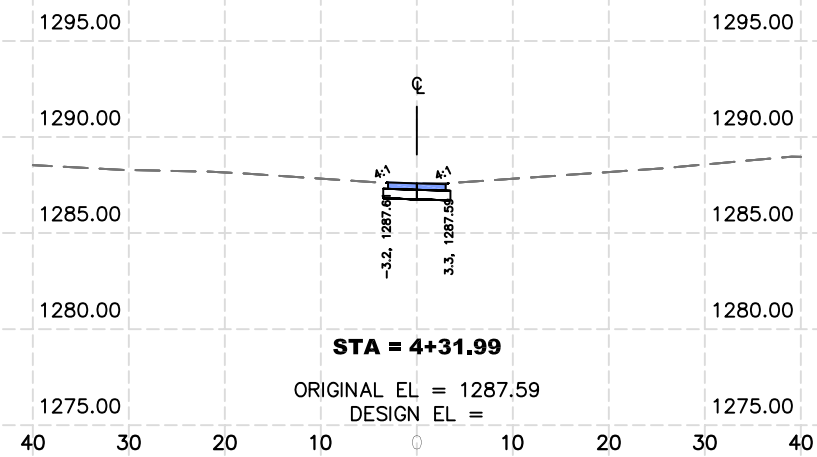




SHEET NO.	6 of 11		PROJECT I.D. NO.	F53-41027	FED. ROAD REG. NO.	5	BIA REGION	MIDWEST	RESERVATION	MILLE LACS	SHEET NAME	EXISTING CONDITIONS & REMOVALS
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SIDEWALK EARTHWORK

Station	Cut Volume (CY)	Fill Volume (CY)	Cumulative Cut Vol. (CY)	Cumulative Fill Vol. (CY)
0+00	0	0	0	0
0+25	5.77	0.00	5.77	0.00
0+50	4.34	0.21	10.11	0.22
0+75	3.38	0.36	13.49	0.58
1+00	4.00	0.27	17.49	0.85
1+25	3.71	0.33	21.20	1.17
1+50	3.07	0.44	24.26	1.61
1+75	3.66	0.27	27.93	1.88
2+00	3.60	0.26	31.52	2.14
2+25	3.38	0.31	34.91	2.45
2+50	7.93	0.11	42.84	2.56
2+75	18.34	0.30	61.18	2.86
2+91.99	11.17	10.91	72.35	13.77
3+00	0.00	9.25	72.35	23.02
3+10	0.71	5.24	73.06	28.26
3+16	0.70	0.22	73.76	28.48
3+53	1.69	0.21	75.45	28.69
3+57	0.77	0.02	76.22	28.72
3+70	4.95	0.00	81.17	28.72
3+74	0.80	0.00	81.96	28.72
4+06	0.36	0.06	82.32	28.78
4+07	0.14	0.00	82.46	28.78
4+25	4.75	0.00	87.21	28.78
4+31.99	1.63	0.00	88.84	28.78
Total			88.84	28.78

SHEET	ITEM NO.	ITEM	UNIT	S.P.4814-57 ESTIMATED QUANTITIES
SS5	2104.503	REMOVE DIRECT BURIED LIGHTING CABLE	LIN FEET	215
SS5	2104.502	REMOVE LIGHTING UNIT	EACH	1
SS5	2104.502	REMOVE LIGHT FOUNDATION	EACH	1
SS5	2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1
SS5	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM	SYS	1
SS2, SS5	2565.501	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1
SS2	2565.616	REVISE SIGNAL SYSTEM	SYS	1

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPT.OF
TRANSPORTATION AND THE FEDERAL HIGHWAY ADMINISTRATION
SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
8106D	EQUIPMENT PAD A
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8118D	SERVICE EQUIPMENT&POLE TRAFFIC CONTROL SIGNALS
8121H	TRANSFORMER BASE&POLE BASE PLATE(PA90&PA100)
8122F	PEDESTAL & PEDESTAL BASE
8123G	POLE&MAST ARM-LUMINARIES&TRAFFIC LIGHTS ASSEMBLY
8126L	POLE FOUNDATION(PA90&PA100)
8129A	SHIMS AND WASHERS (TRAFFIC CONTROL SIGNAL AND ROADWAY LIGHTING)

I HEREBY CERTIFY THAT SHEETS SS1 TO SS16
HAVE BEEN PREPARED BY ME OR UNDER MY
DIRECT SUPERVISION AND I AM A DULY
LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.


Robin Delage

DATE 03/26/2021 LIC. NO. 22762

SYSTEM A
HAWK PED CROSS WALK
U.S.T.H. 169/ATAAGE DRIVE
SYS ID: 2586898
T.E. 19792

LOOP DETECTORS		
NUMBER	SIZE	LOCATION
D2-1	6'X6'	475'
D2-2	6'X6'	475'
D4-1	6'X10'	72'
D4-2	2-6'X6'	5' & 20'
D4-3	2-6'X6'	5' & 20'
D5-1	2-6'X6'	20' & 50'
D5-2	2-6'X6'	5' & 35'
D6-1	6'X6'	475'
D6-2	6'X6'	475'
SD-1	6'X6'	45'
SD-2	6'X6'	45'
SD-3	6'X6'	25'
SD-4	6'X6'	25'
SD-5	6'X10'	FREE RT. SB

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

(A) CONTROLLER CABINET TO:
HH2
4' RSC
2-3/C#12
6-2/C#14
1-12/C#14
1-2/C#14
3' CAPPED STUB

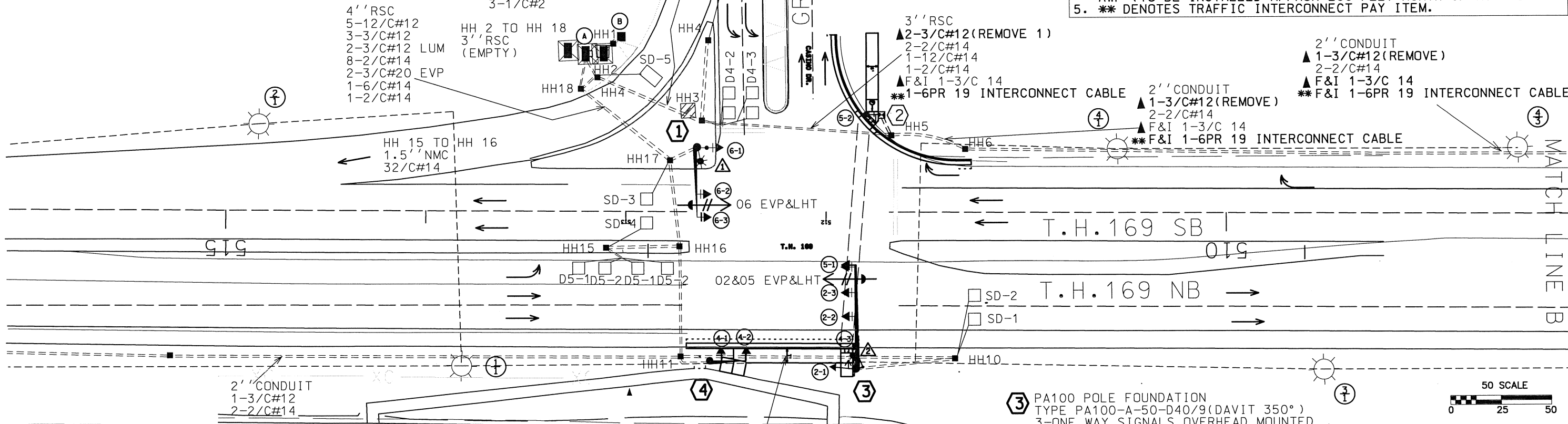
(B) SERVICE CABINET TO:
HH1
2' RSC
3-1/C#2
HH18
1.5' RSC
2-3/C#12 LUM
CONTROLLER CAB.
1.5' RSC
2-1/C#6
1-1/C#6 INS. GRD.

3' RSC
▲ 2-3/C#12 (REMOVE 1)
5-2/C#14
1-12/C#14
1-2/C#14
▲ F&I 1-3/C 14
**F&I 1-6PR 19 INTERCONNECT CABLE

(2) PEDESTAL FOUNDATION
14' PEDESTAL AND BASE
TYPE 5B
1-STRAIGHT MOUNT SIGNAL HEAD
MOUNTED AT 0°
1-ANGLE MOUNT C.D. PED. IND.
MOUNTED AT 0°
1-APS PB AND SIGN (RT ARROW) (PB8-2)
EXTEND INTO HH 5
2' CONDUIT
1-12/C#14
1-2/C#14

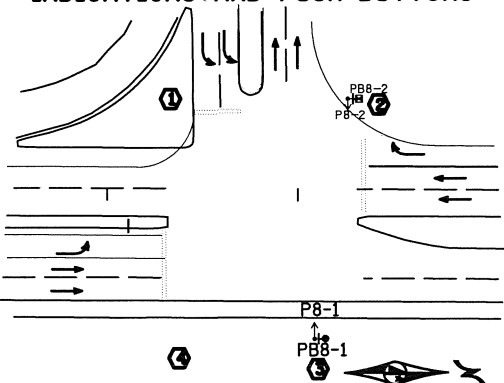
(1) PA90 POLE FOUNDATION
TYPE PA90-A-35'-D40/9 (DAVIT 350°)
2-ONE WAY SIGNALS OVERHEAD MOUNTED
AT 0° AND 12' FROM END OF MASTARM
1-ONE WAY EVP DETECTOR AND CONF. LHT.
PHASE 6
LUMINAIRE LED
1-TYPE 10A POLE MOUNTED AT 270°
EXTEND INTO HH 18
3' RSC
2-12/C#12
1-3/C#12 LUM
1-3/C#20 EVP

NOTE:
1. REMOVE INPLACE SOUTHBOUND AWF SIGN AND FOUNDATION
(SIGN TO BE DELIVERED TO ST. CLOUD MNDOT).
2. REMOVE 3/C 12 WIRE FOR EXISTING SOUTHBOUND AWF.
3. REMOVE HH 9, F&I HH 9 TO NEW LOCATION SOUTH OF SIDEWALK.
4. F&I SOUTHBOUND AWF FOUNDATION, POLE, ARMS, HEADS AND
SIGN, HH9A, 2" CONDUIT, 3/C 14 WIRE FOR NEW SOUTHBOUND
AWF (TO BE INSTALLED APPROX 200 FEET NORTH OF ATAAGE DR).
5. ** DENOTES TRAFFIC INTERCONNECT PAY ITEM.



50 SCALE
0 25 50

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE(S) 5 BEING A PROTECTED LEFT TURN PHASE(S).
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

HH 3 TO HH 17
3' RSC
(EMPTY)

HH 16 TO HH 17
4' RSC
3-12/C#12
2-3/C#12
1-3/C#12 LUM
7-2/C#14
1-3/C#20 EVP
1-6/C#14
1-2/C#14

HH 3 TO HH 4
1.5' RSC
1-2/C#14

HH 11 TO HH 16
3' RSC
3-12/C#12
2-3/C#12
1-3/C#12 LUM
4-2/C#14
1-3/C#20 EVP
1-6/C#14
1-2/C#14

(4) PA85 POLE FOUNDATION
TYPE PA85-A-15
2-ONE WAY SIGNALS OVERHEAD MOUNTED
AT 0° AND 12' FROM END OF MASTARM

EXTEND INTO HH 11
3' RSC
1-12/C#12

(3) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40/9 (DAVIT 350°)
3-ONE WAY SIGNALS OVERHEAD MOUNTED
AT 0°, 13 AND 25' FROM END OF MASTARM

TYPE 10A POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 270°
WITH C.D. PED. IND.
1-APS PB AND SIGN (LT ARROW) (PB8-1)
1-ONE WAY EVP DETECTOR AND CONF. LHT.
PHASE 2&5
LUMINAIRE LED
EXTEND INTO HH 10
3' RSC
2-12/C#12
1-3/C#12 LUM
1-3/C#20 EVP
1-6/C#14
1-2/C#14

SIGNAL HEAD INDICATIONS

FACE	R LED	Y LED	G LED	RLTA LED	YLTA LED	GLTA LED
2-1	●	●	●			
2-2	●	●	●			
2-3	●	●	●			
4-1	●				←	←
4-2	●				←	←
4-3	●				←	←
5-1					←	←
5-2					←	←
6-1	●	●	●			
6-2	●	●	●			
6-3	●	●	●			

▲ DENOTES REVISE SIGNAL
SYSTEM PAY ITEM WORK.
ALL OTHER ITEMS SHOWN
ARE INPLACE.

SYSTEM B
CASINO ENTRANCE
TH 169 GRAND AVE
SYS. ID. 22277 T.E. 19792

CERTIFIED BY

John F. DeLuz
LICENSED PROFESSIONAL ENGINEER

LIC. NO.

22762

State Proj. No. 4814-57 (T.H. 169)

Sheet No. SS2 of SS15 Sheets

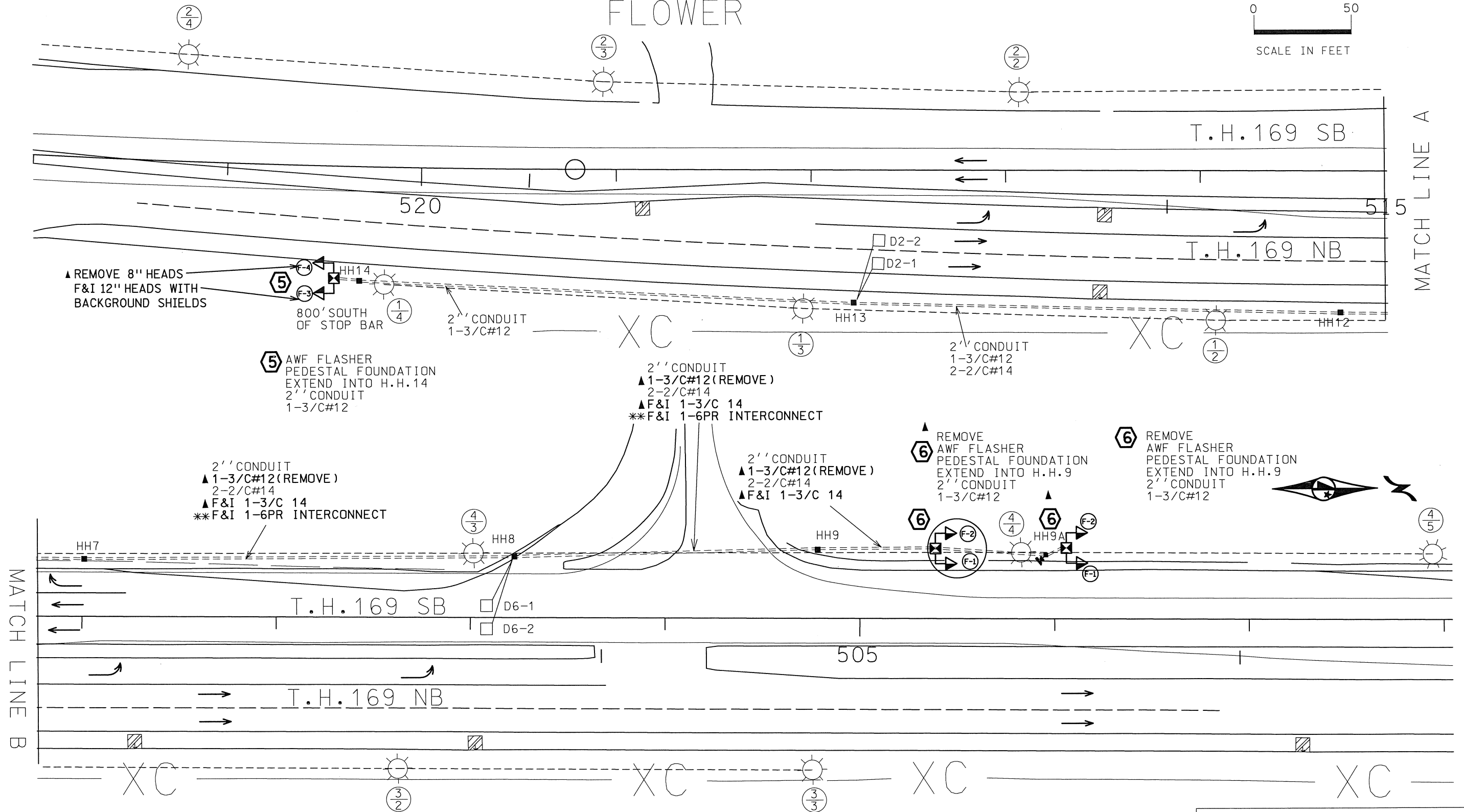
PLOTTED/REVISED: 26-MAR-2020

DISTRICT #: DISTRICT 3 - BAXTER, MN
PLOT NAME: Hawk System.dgn
PATH & FILENAME: Projects\TH169 VINELAND CASINO\Hawk System.dgn

LITTLE
FLOWER



0 50
SCALE IN FEET

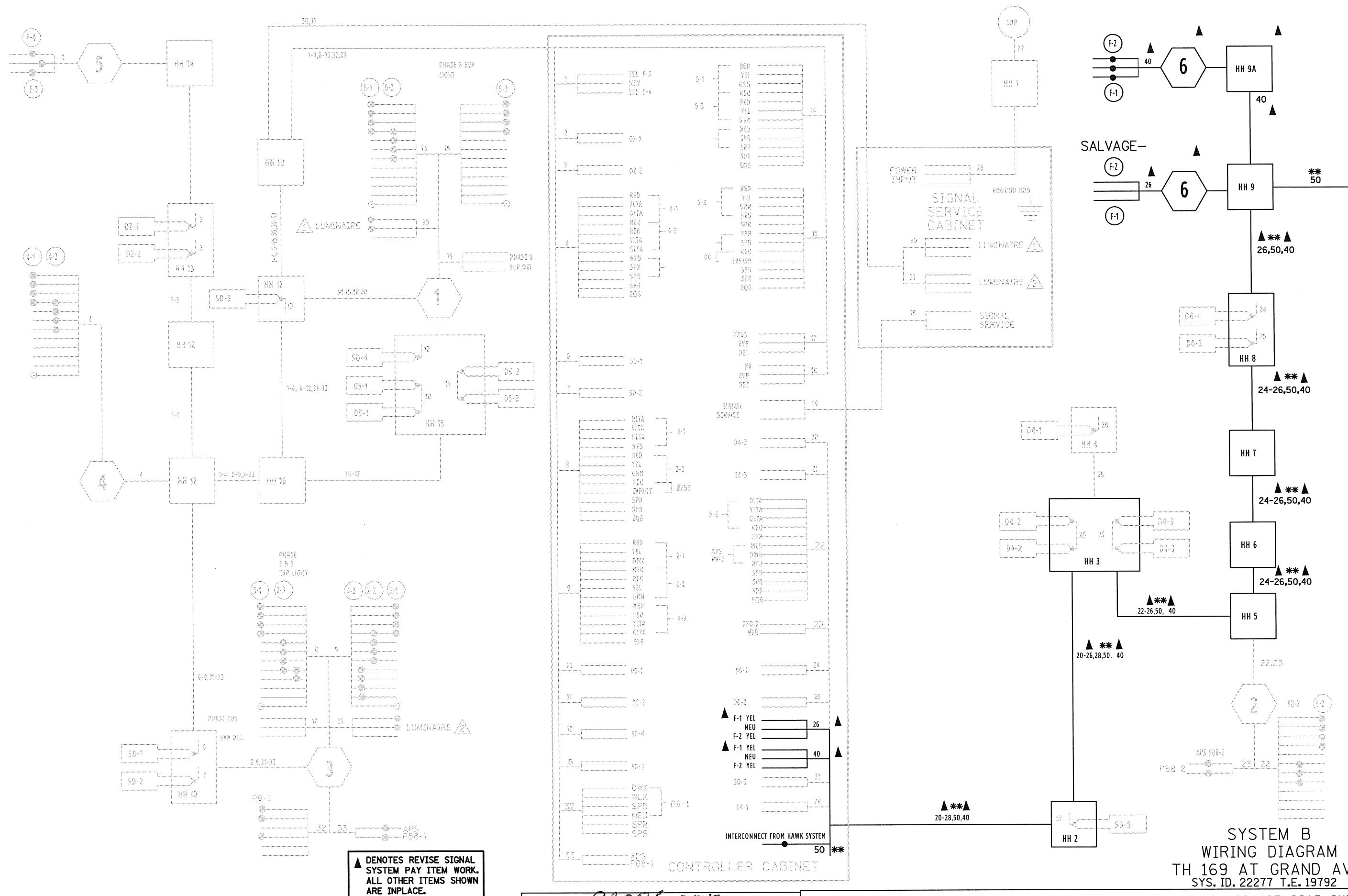


CASINO ENTRANCE
TH 169 GRAND AVE
SYS. ID. 22277 T.E. 6390

CERTIFIED BY: *[Signature]* REG. NO. 22762
LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. 4812-84(T.H.169)

SHEET NO. SS3 OF SS15 SHEETS



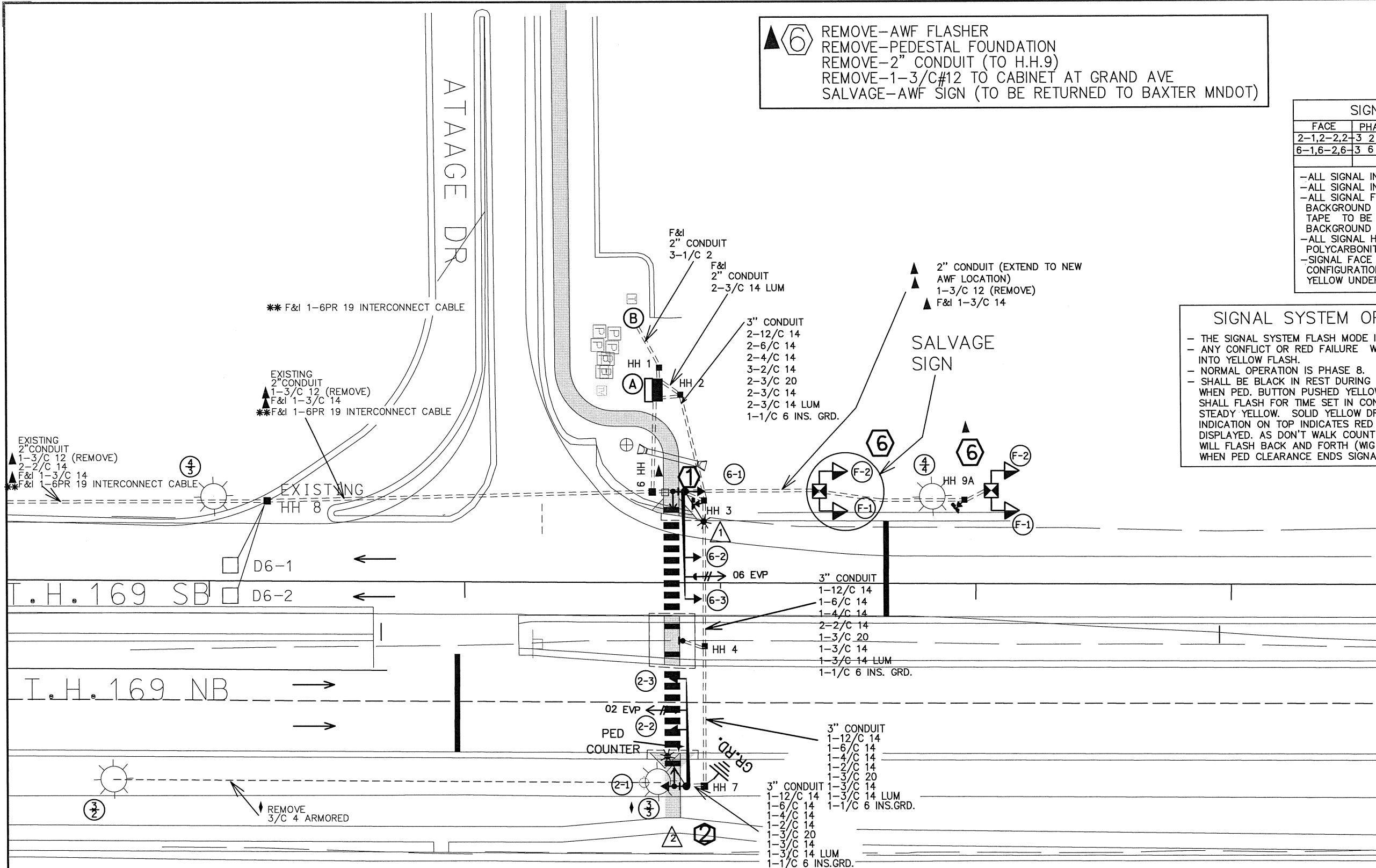
▲ 6 REMOVE-AWF FLASHER
 REMOVE-PEDESTAL FOUNDATION
 REMOVE-2" CONDUIT (TO H.H.9)
 REMOVE-1-3/C#12 TO CABINET AT GRAND AVE
 SALVAGE-AWF SIGN (TO BE RETURNED TO BAXTER MNDOT)

SIGNAL FACE CHART						
FACE	PHASE		R	R	Y	
2-1,2-2,2-3	2	Y	●	●	●	
6-1,6-2,6-3	6	Y	●	●	●	

-ALL SIGNAL INDICATIONS SHALL BE 12"
 -ALL SIGNAL INDICATIONS SHALL BE LED
 -ALL SIGNAL FACES SHALL HAVE A
 BACKGROUND SHIELD (2' YELLOW REFLECTIVE
 TAPE TO BE INSTALLED ON PERIMETER OF
 BACKGROUND SHIELD
 -ALL SIGNAL HEADS SHALL BE BLACK)
 POLYCARBONITE
 -SIGNAL FACE HAS UP SIDE DOWN DOG HOUSE
 CONFIGURATION. TWO REDS SIDE BY SIDE WITH
 YELLOW UNDERNEATH IN CENTER

SIGNAL SYSTEM OPERATION -

- THE SIGNAL SYSTEM FLASH MODE IS YELLOW FLASH.
- ANY CONFLICT OR RED FAILURE WILL PUT SYSTEM INTO YELLOW FLASH.
- NORMAL OPERATION IS PHASE 8.
- SHALL BE BLACK IN REST DURING PHASES 2 AND 6.
- WHEN PED. BUTTON PUSHED YELLOW SIGNAL INDICATION SHALL FLASH FOR TIME SET IN CONTROLLER AND THEN GO TO STEADY YELLOW. SOLID YELLOW DROPS AND DOUBLE SIGNAL INDICATION ON TOP INDICATES RED WHEN PED. WALK IS DISPLAYED. AS DON'T WALK COUNT DOWN COMES ON, THE REDS. WILL FLASH BACK AND FORTH (WIG WAG) DURING PED. CLEARANCE. WHEN PED CLEARANCE ENDS SIGNAL HEADS WILL BE BLACK AGAIN.



(B) SOP-WOOD POLE(MILLE LACS ENERGY)
 2" CONDUIT, RISER AND WEATHERHEAD
 CONDUIT TO SERVICE CABINET
 3-1/C 2

H.H. 1 SERVICE CABINET TO:
 2" CONDUIT SIGNAL CABINET
 2-3/C 14(LUM) 2" CONDUIT
 1-1/C 6 INS GRD. 2-1/C 6
 1-1/C 6 INS GRD.

SIGNAL CABINET TO: (A)
 H.H. 1
 3" CONDUIT
 2-12/C 14
 2-6/C 14
 2-4/C 14
 2-2/C 14
 2-3/C 20
 2-3/C 14
 1-1/C 6 INS GRD.

REMOVE LUMINAIRE 3/3,
 CONCRETE BASE AND ELECTRIC
 CABLE BACK TO LUMINAIRE 3/2

▲ DENOTES REVISE SIGNAL
 SYSTEM PAY ITEM WORK.
 ALL OTHER ITEMS SHOWN
 ARE INPLACE.

SCALE
 0 20 40

SYSTEM A
 HAWK PED CROSS WALK
 U.S.T.H. 169/ATAAGE DRIVE
 SYS ID: 2586898
 T.E. 19792

CERTIFIED BY *RE: F. DeLuz* DATE 3-26-20 LIC. NO. 22762

State Proj. No. 4814-57 (T.H. 169) Sheet No. SS5 of SS15 Sheets

1 PA 90 POLE FOUNDATION
TYPE PA90-A40-D40-9 (DAVIT AT 350)
1-ONEWAY CLUSTER SIGNAL (OVERHEAD) END MOUNTED
1-ONEWAY CLUSTER SIGNAL (OVERHEAD) MID MASTARM
MOUNTED 12' FROM END OF MASTARM
1-ONEWAY CLUSTER SIGNAL MOUNTED AT 270°
1-ONEWAY C.D. PED INDICATION
MOUNTED AT 90°
1-ONEWAY EVP DETECTOR, CONFIRMATORY
LIGHT AND CONDUIT OUTLET BODY FOR PHASE 2
MOUNTED 6' FROM THE END OF MASTARM
1-APS PB AND SIGN, MOUNTED AT 270° (RT ARROW) WITH EXTENSION BRACKET
LUMINAIRE-40' LED
EXTEND INTO HH 3
3" CONDUIT
1-12/C 14
1-6/C 14
1-4/C 14
1-2/C 14
1-3/C 20
1-3/C 14
1-3/C 14 LUM
1-1/C 6 INS.GRD.

2 PA 90 POLE FOUNDATION
TYPE PA90-A40-D40-9 (DAVIT AT 350)
1-ONEWAY CLUSTER SIGNAL (OVERHEAD) END MOUNTED
1-ONEWAY CLUSTER SIGNAL (OVERHEAD) MID MASTARM
MOUNTED 12' FROM END OF MASTARM
1-ONEWAY CLUSTER SIGNAL MOUNTED AT 270°
1-ONEWAY C.D. PED INDICATION
MOUNTED AT 90°
CITXIR PEDESTRIAN COUNTER MOUNTED AT 0'
1-ONEWAY EVP DETECTOR, CONFIRMATORY
LIGHT AND CONDUIT OUTLET BODY FOR PHASE 2
MOUNTED 6' FROM THE END OF MASTARM
1-APS PB AND SIGN, MOUNTED AT 270° (LT ARROW) WITH EXTENSION BRACKET
LUMINAIRE-40' LED
EXTEND INTO HH 7
3" CONDUIT
1-12/C 14
1-6/C 14
1-4/C 14
1-2/C 14
1-3/C 20
1-3/C 14
1-3/C 14 LUM
1-1/C 6 INS.GRD.

STANDARD PLATES
8106D-EQUIPMENT PAD A
8110E-TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8118D-SERVICE EQUIPMENT&POLE TRAFFIC CONTROL SIGNALS
8119C-GROUND MOUNTED CABINET FOUNDATION
8121H-TRANSFORMER BASE&POLE BASE PLATE(PA90&PA100)
8122F-PEDESTAL & PEDESTAL BASE
8123G-POLE&MAST ARM-LUMINARIES&TRAFFIC LIGHTS ASSEMBLY
8126L-POLE FOUNDATION(PA90&PA100)
8129A-SHIMS AND WASHERS (TRAFFIC CONTROL SIGNAL AND ROADWAY LIGHTING)

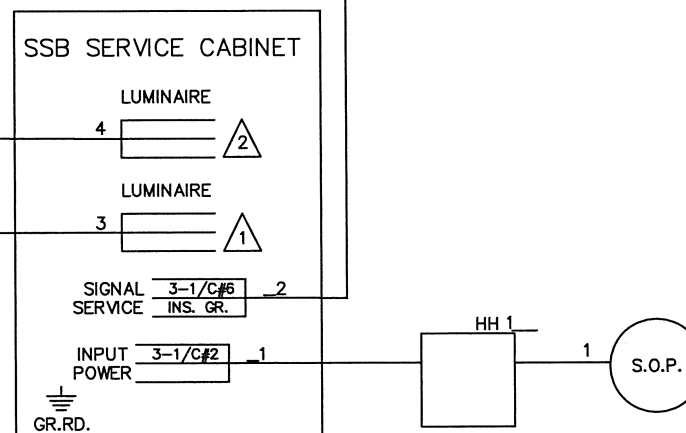
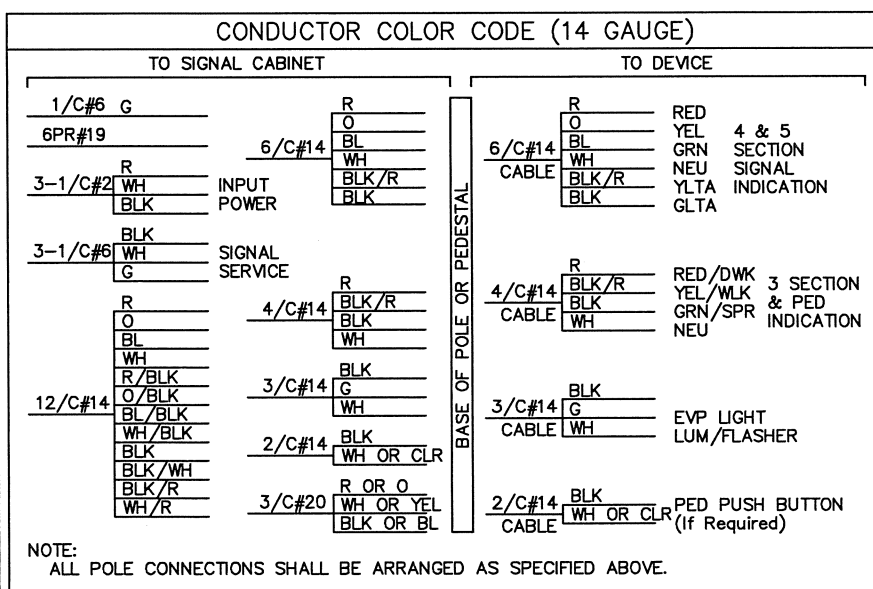
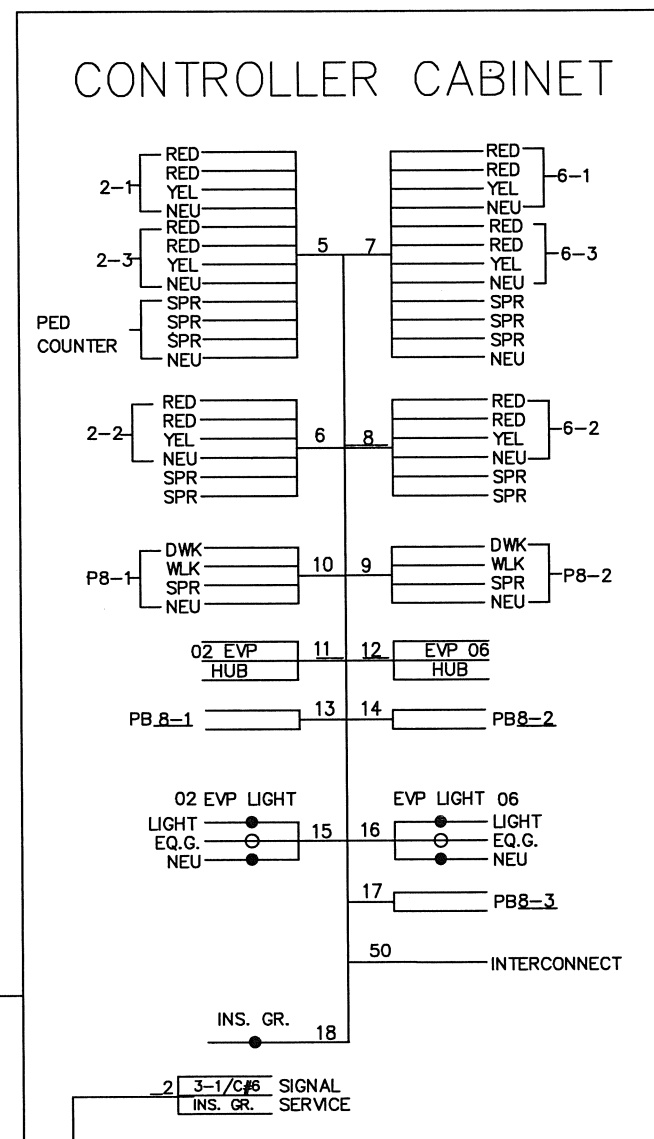
- NOTES:
1. THE CONTRACTOR MUST FURNISH ALL SIGNAL MATERIALS ON THIS SYSTEM, SUCH AS POLES, MAST ARMS, DAVITS, LED PEDESTRIAN INDICATIONS. SEE SPECIAL PROVISIONS FOR STATE FURNISHED ITEMS.
 2. THE EXACT LOCATION OF HANDHOLES, POLES AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
 3. A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT WITH LED LIGHT SHALL BE F & I 6' FROM THE END OF EACH MAST ARM.
 4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
 5. THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
 6. SIGNALS SHALL BE GALVINIZED STEEL SEE SPECIAL PROVISIONS FOR SIGNAL SPECIFICATIONS.
 7. LUMINAIRE 3/8 POLE AND BASE TO BE REMOVED, DIRECT BURIED WIRE TO POLE 1/2 TO BE REMOVED
 8. HAND HOLE #9 TO BE RELOCATED TO SOUTH SIDE OF SIDEWALK (F&I NEW HH).
 9. 3/C 12 CABLE DISCONNECTED FROM SALVAGED AWF #6 TO BE REMOVED BACK TO GRAND AVE SIGNAL CABINET.
 10. NEW 3/C 14 TO BE INSTALLED FROM GRAND AVE SIGNAL CABINET TO NEW LOCATION OF AWF #6.
 11. 6PR 19 INTERCONNECT CABLE TO BE BE INSTALLED FROM ATAAGE DR SIGNAL CABINET, THROUGH HH9, TO GRAND AVE SIGNAL CABINET. (SHOWN ON PLAN WITH **)
 12. NEED 7 LOCATOR BALLS TO BE PLACED IN HHs ON 3/4" PVC PIPE (LOCATOR BALLS TO BE SUPPLIED BY MNDOT).

B SOP-WOOD POLE (MILLE LACS ENERGY)
2" CONDUIT, RISER AND WEATHERHEAD
CONDUIT TO SERVICE CABINET
3-1/C 2

SERVICE CABINET TO:
H.H. 2 SIGNAL CABINET
2" CONDUIT 2" CONDUIT
2-3/C 14(LUM) 2-1/C 6
1-1/C 6 INS GRD.

SIGNAL CABINET TO: A
H.H. 2
3" CONDUIT
2-12/C 14
2-6/C 14
2-4/C 14
2-2/C 14
2-3/C 20
2-3/C 14
1-1/C 6 INS GRD.

SYSTEM A
HAWK PED CROSS WALK
U.S.T.H. 169/ATAAGE DRIVE
SYS ID: 2586898
T.E. 19792



CERTIFIED BY Robt. F. DeJoy DATE 3-7-20 LIC. NO. 22762
LICENSED PROFESSIONAL ENGINEER

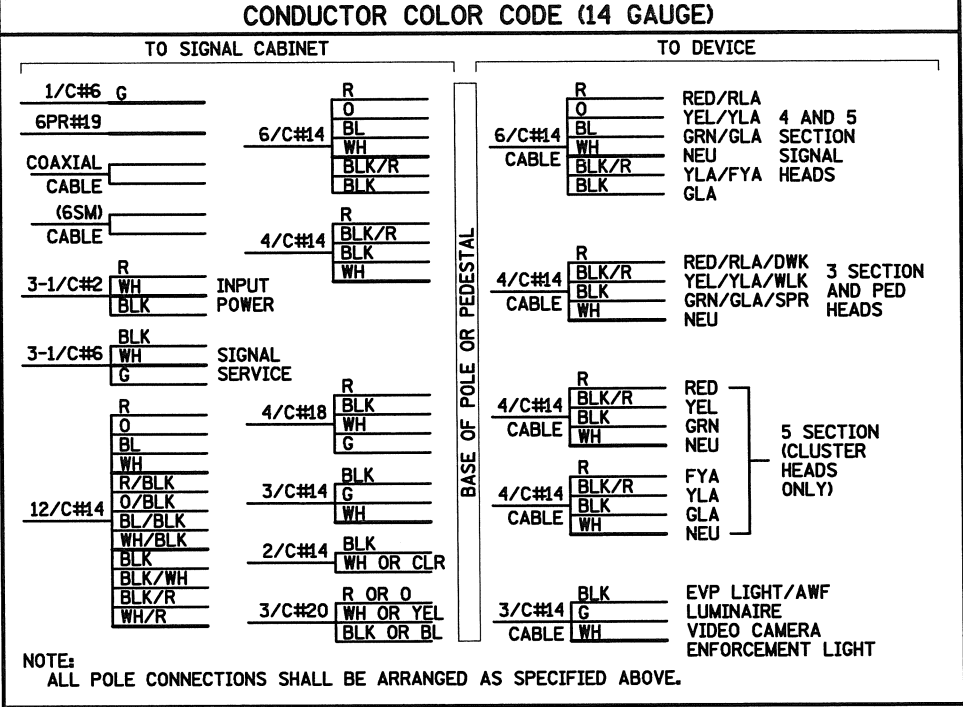
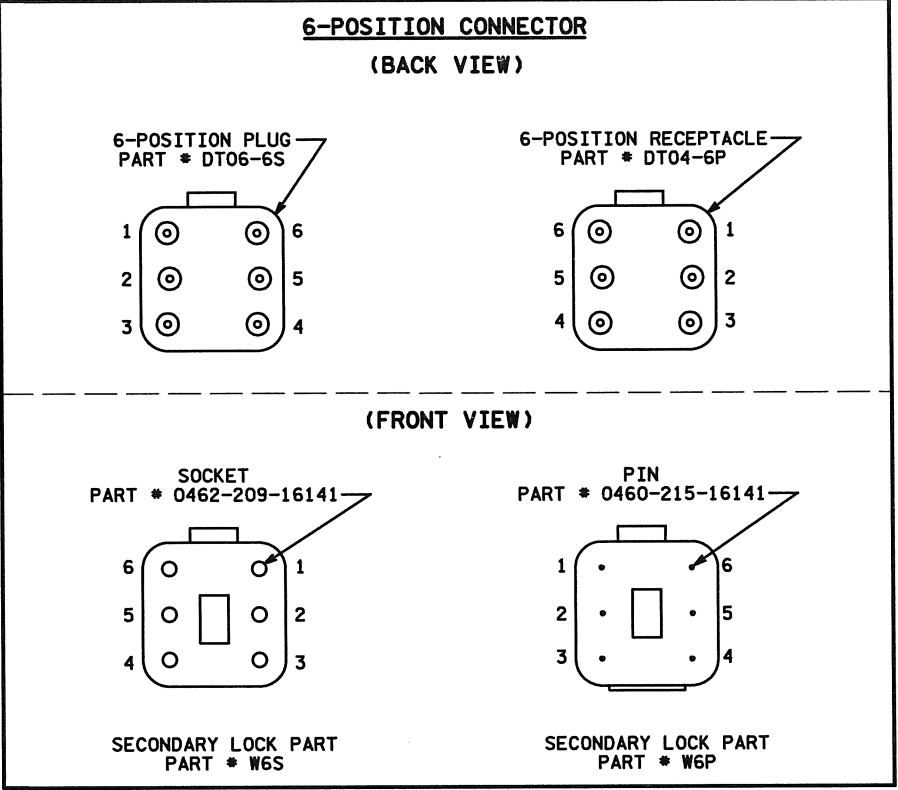
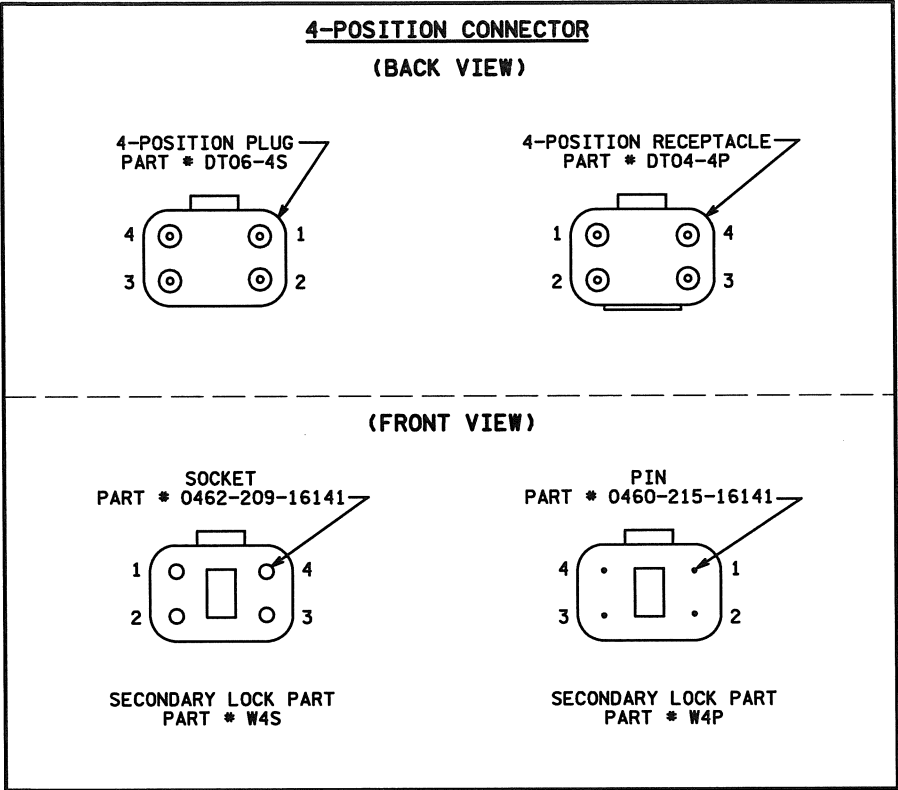
SYSTEM A
HAWK PED CROSS WALK
U.S.T.H. 169/ATAAGE DRIVE
SYS ID: 2586898
T.E. 19792

FILE NAME: Projects\DJ BAX\Non_Project\Traffic\SIGNALS\169\TH169 VINELAND CASINO\Hawk System26g1MAR-2020

STATE PROJ. NO. 4814-57 (T.H. 169) SHEET NO. SS7 OF SS15 SHEETS

DISTRICT #: DISTRICT 3 - BAXTER, MN
IPLOT NAME: Hawk System.dgn
PATH & FILENAME: Projects\03_BAXTER\ProjectTrafficSignals\695TH\69 VINELAND CASINO\Hawk System.dgn

PLOTTED/REVISED: 26-MAR-2020



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

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

4 Position DT Connectors (Use Two Connectors for 5 Section FYA Cluster Heads)			
12 Conductor Wire to Control Cabinet	Connector pin #	4 Conductor to Signal Indication	Signal Indication
R	1	R	RED
O	2	BLK/R	YEL
BL	3	BLK	GRN
WH	4	WH	NEU
R/BLK	1	R	FYA
O/BLK	2	BLK/R	YLA
BL/BLK	3	BLK	GLA
WH/BLK	4	WH	NEU

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

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

WIRE SPECIFICATION CHART		
Type	Name	Specification Number
1/C#2	Power Conductors	3815.2B.1
1/C#6	Power Conductors	3815.2B.1
1/C#6 INS.GR.	Grounding Conductors	3815.2B.5
2/C#14	Loop Detector Lead-In Cable	3815.2C.4
3/C#14	Signal Control Cable	3815.2C.3
4/C#14	Signal Control Cable	3815.2C.3
6/C#14	Signal Control Cable	3815.2C.3
12/C#14	Signal Control Cable	3815.2C.3
6PR#19	Telephone Cables Outdoor	3815.2C.6.b
3/C#20	EVP Detector Cable	3815.2C.5

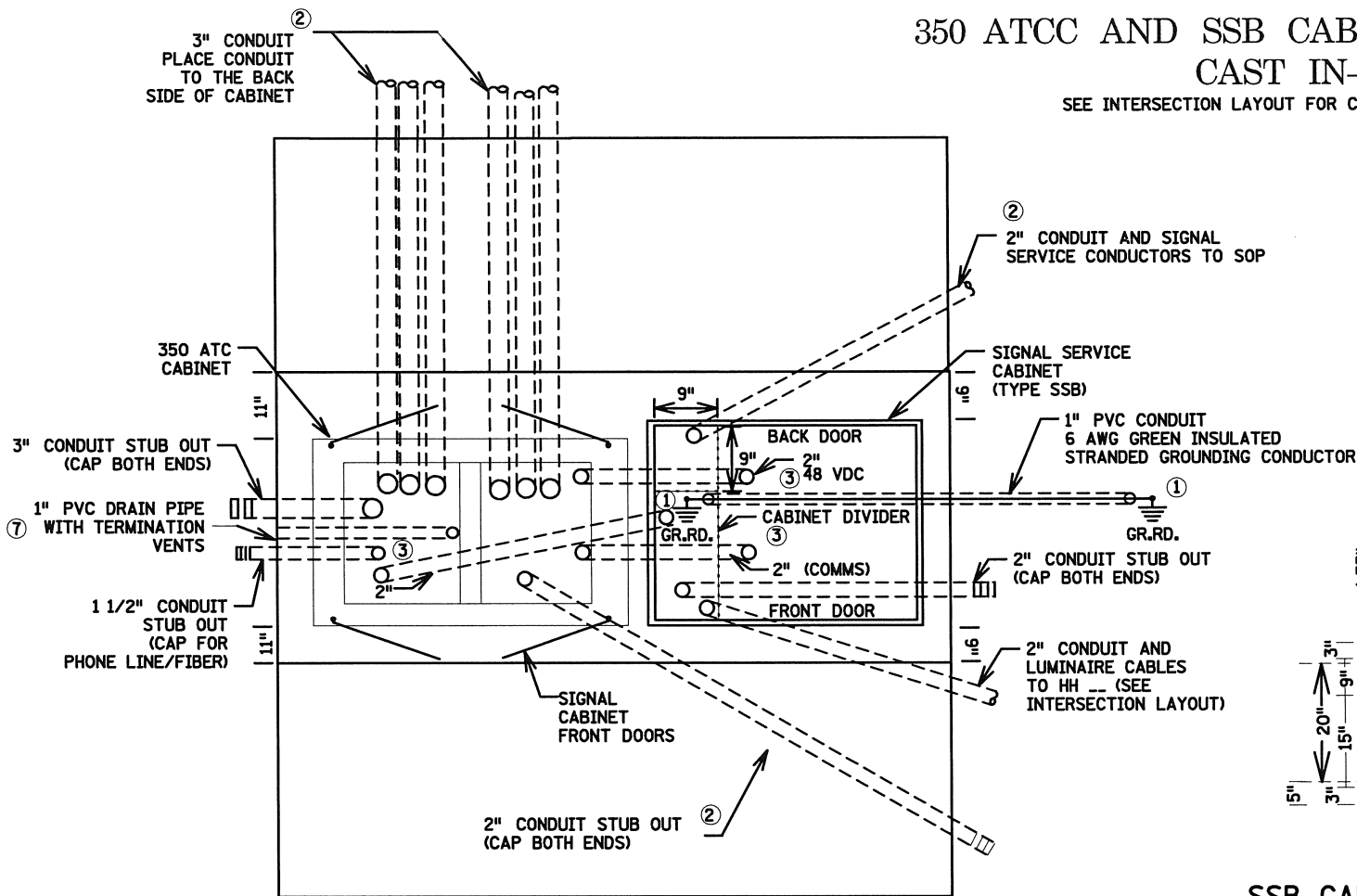
- NOTES:**
- DT04-4P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
 - DT06-6S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
 - THERE SHALL BE A MINIMUM OF 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 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.

BY	DATE	REVISIONS	SYSTEM ID:	T.E.	TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL	CERTIFIED BY: <i>Robt. F. De Sage</i>	LIC. NO. 27762	DATE: 3-26-20
			METER ADDRESS:			LICENSED PROFESSIONAL ENGINEER		
			MASTER ID:	T.E.		STATE PROJ.NO. 4814-57 (T.H.169)	SHEET NO. SS8 OF SS15 SHEETS	

DISTRICT 3 - BAXTER, MN
IPLT NAME: Hawk System.dgn
PATH & FILENAME: Project\Traffic\Signals\69TH\69 VINELAND CASINO\Hawk System.dgn
PLOT DATE: 26-MAR-2020

350 ATCC AND SSB CABINET EQUIPMENT PAD
CAST IN-PLACE

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)



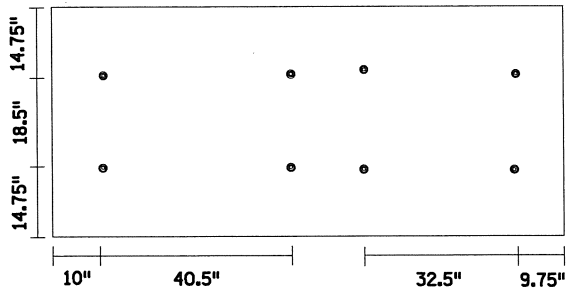
PLAN VIEW

NOTES:

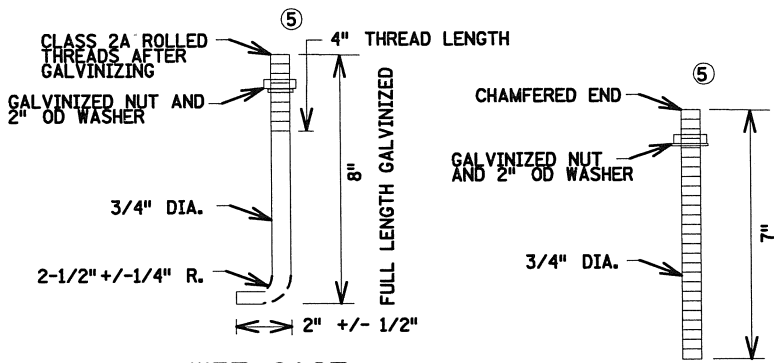
FOR THE EQUIPMENT PAD USE CONCRETE MIX 3G52 WITH APPROVED NON-METALLIC FIBERS FOR REINFORCEMENT LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST UNDER CONCRETE "NONMETALLIC FIBERS". ADD FIBERS TO THE CONCRETE MIX IN ACCORDANCE WITH THE NON-METALLIC FIBERS MANUFACTURERS INSTRUCTIONS AND CONTRACT DOCUMENTS.

FOR CONCRETE WALK USE CONCRETE MIX 3G52. 3G52 CONCRETE MIX WITH NON-METALLIC FIBERS MAY BE USED FOR THE CONCRETE WALK AND POLE FOUNDATIONS. DO NOT USE NON-METALLIC FIBERS AS A SUBSTITUTE FOR THE REQUIRED REINFORCEMENT IN ACCORDANCE WITH THE POLE FOUNDATION STANDARD PLATES.

- PLACE A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH THE GROUNDING ELECTRODE SYSTEM DETAIL ON SHEET 3 OF STANDARD PLATE NUMBER 8106 EXCEPT FURNISH AND INSTALL 10 FOOT LONG GROUND ROD ELECTRODES, 6 AWG GREEN INSULATED COPPER CONDUCTOR AND EXOTHERMIC WELDED CONNECTIONS.
- CONDUIT SIZE, QUANTITY AND DIRECTION MAY VARY. FURNISH AND INSTALL CONDUITS AS SPECIFIED ON THE INTERSECTION LAYOUT PLAN SHEET.
- ENSURE THE CONDUITS FULLY ENCASED IN CONCRETE FROM ONE CABINET TO THE OTHER ARE PLACED AT THE CORRECT DEPTH AND LOCATION TO AVOID INTERFERENCE WITH THE INSTALLATION OF THE ANCHOR RODS.
- USE TEMPLATES WITH THE DIMENSIONS SHOWN INCLUDING OPENINGS, DIVIDERS, ANCHOR ROD HOLES AS A GUIDE TO ENSURE PROPER PLACEMENT OF THE CABINETS, CONDUITS AND ANCHOR RODS. 350 BASE OPENINGS FOR TEMPLATE ARE SMALLER THAN THE ACTUAL BASE OPENINGS.
- PLACE ANCHORS 1 3/4 INCHES - 2 1/4 INCHES ANCHOR ROD PROJECTION ABOVE THE CONCRETE PAD. FURNISH AND INSTALL ANCHOR RODS SHOWN IN THE ANCHOR ROD DETAIL FOR WET CASTING ANCHORS IN WET CONCRETE. FURNISH AND INSTALL ANCHOR RODS SHOWN IN THE ANCHOR ROD DETAIL FOR EPOXY ADHESIVE IF USING ADHESIVE ANCHORS. INSERT ANCHOR RODS IN 7/8 INCH DIAMETER DRILLED HOLES, 5 INCHES DEEP WITH AN APPROVED EPOXY ADHESIVE LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST (ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON BASE ADHESIVE ANCHORING). DO NOT USE MECHANICAL OR CONCRETE WEDGE ANCHORS.
- IF THE SITE CONDITIONS REQUIRE THE PAD TO BE PLACED WITHIN A SLOPE, INCREASE THE THICKNESS OF THE PAD BY 6 INCHES. SHAPE THE TERRAIN AROUND THE PAD FOR POSITIVE DRAINAGE.
- FURNISH AND INSTALL A DRAIN IN THE PAD USING 1 INCH PVC SCH. 40 PIPE FOR PLUMBING. PLACE PVC TERMINATION VENT SCREEN DESIGNED FOR PVC PIPE AT EACH END OF THE PIPE. PROVIDE PVC TERMINATION VENTS WITH A STAINLESS STEEL SCREEN. ENSURE THE TERMINATION VENT SCREEN AND PIPE ARE FLUSH WITH THE TOP AND SIDE OF THE PAD AND PROTECT FROM CONCRETE INTRUSION BEFORE CONCRETE PLACEMENT OPERATIONS.



ANCHOR ROD LOCATION DETAIL

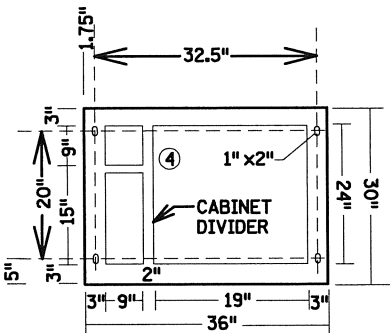


WET CAST ANCHOR ROD DETAIL

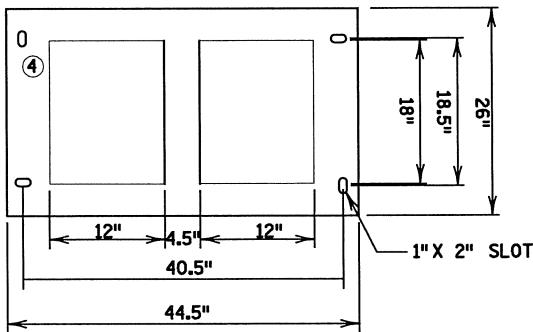
(SPEC. 3385 TYPE A OR TYPE B AND GALVANIZED IN ACCORDANCE WITH SPEC. 3392)

EPOXY ADHESIVE ANCHOR ROD DETAIL

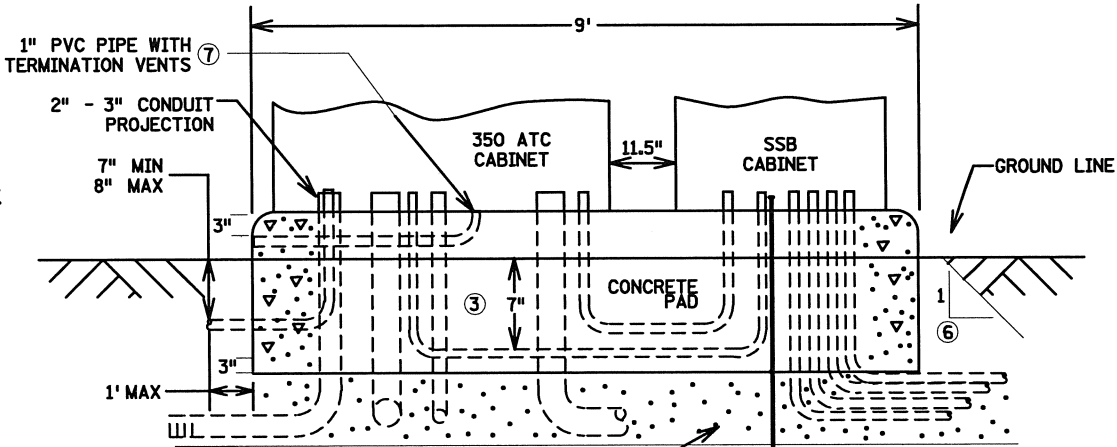
(SPEC. 3385 TYPE A OR TYPE B AND GALVANIZED IN ACCORDANCE WITH SPEC. 3392)



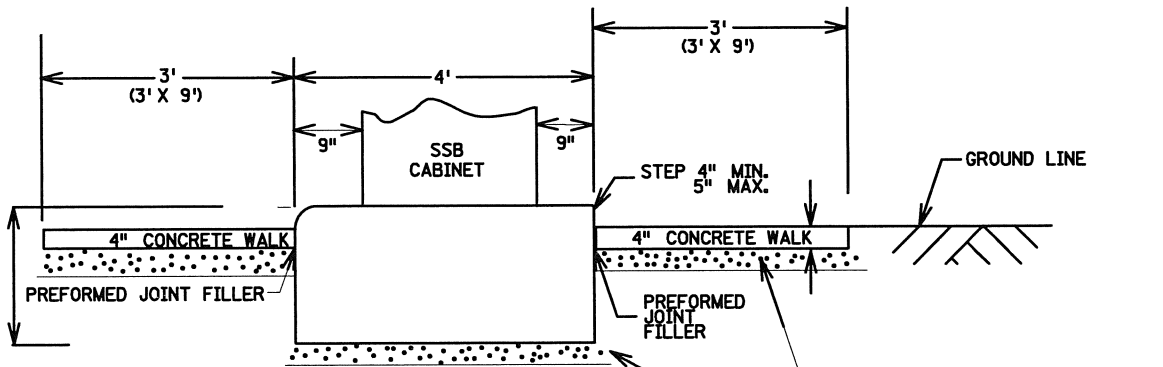
SSB CABINET BASE TEMPLATE



350 CABINET BASE TEMPLATE

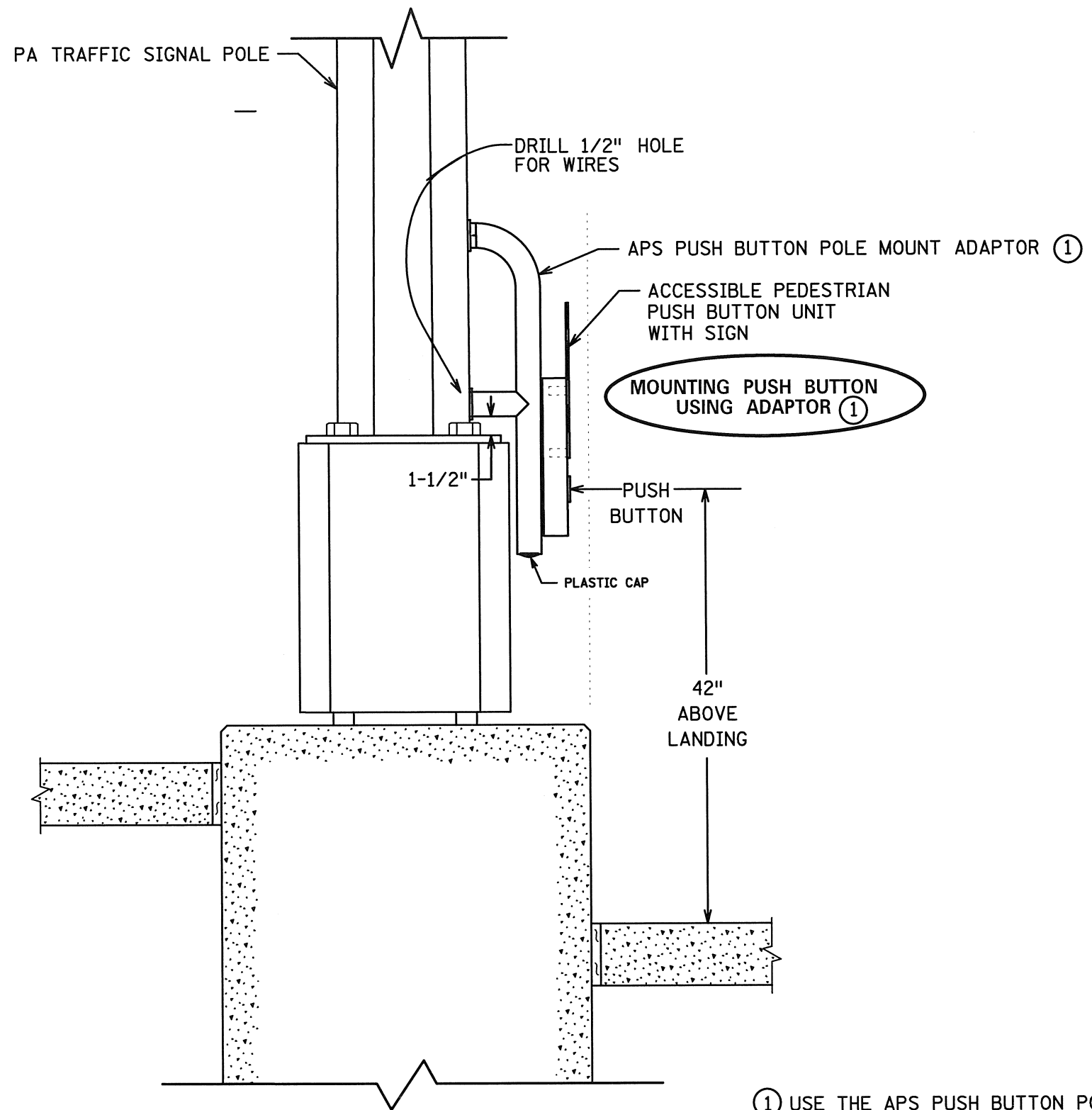


FRONT VIEW



SIDE VIEW

BY	DATE	REVISIONS	SYSTEM ID:	T.E.	350 ATCC EQUIPMENT PAD LAYOUT (TYPE SSB SERVICE CABINET)	CERTIFIED BY: <i>Reli Z De Foy</i> LIC. NO. 22762	CKD BY:	DATE: 11-25-19
			METER ADDRESS:					DATE: 3-26-20
			OLD SYSTEM ID:			STATE PROJ. NO. 4814-57(T.H.169)		SHEET NO. SS9 OF SS15 SHEETS



**PEDESTRIAN BUTTON POLE STATION
(WITH OR WITHOUT POLE MOUNTING ADAPTOR)**

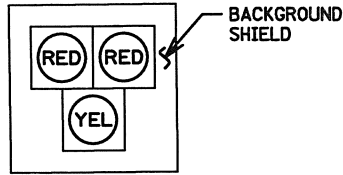
NOT TO SCALE

NOTE: SEE THE SPECIAL PROVISIONS FOR ADDITIONAL MOUNTING INSTRUCTIONS AND REQUIREMENTS.

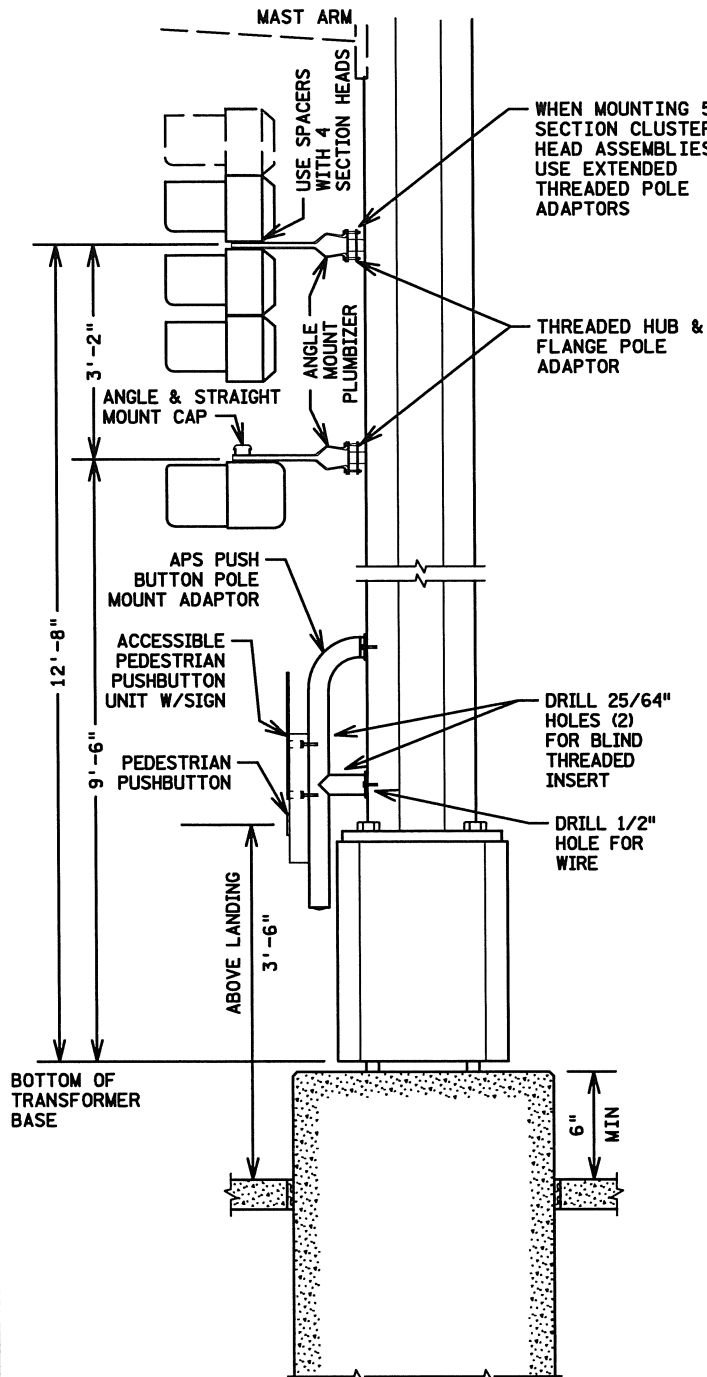
- ① USE THE APS PUSH BUTTON POLE MOUNTING ADAPTOR:
- WHEN THE SIGNAL POLE FOUNDATION IS TOO HIGH TO ALLOW THE APS PUSH BUTTON TO BE PLACED ON THE POLE AT THE PROPER HEIGHT.
 - WHEN THE "FLAT" OF THE POLE ISN'T PARALLEL TO THE CROSS WALK.
 - TO REDUCE THE REACH DISTANCE FROM THE EDGE OF THE SIGNAL POLE FOUNDATION TO THE BUTTON.

DISTRICT #: DISTRICT 3 - BAXTER.MN
IPLLOT NAME: Hawk System.dgn
PATH & FILENAME: Projects\TrafficSignals\69TH\169 VINELAND CASINO\Hawk System.dgn

PLOTTED/REVISED: 26-MAR-2020

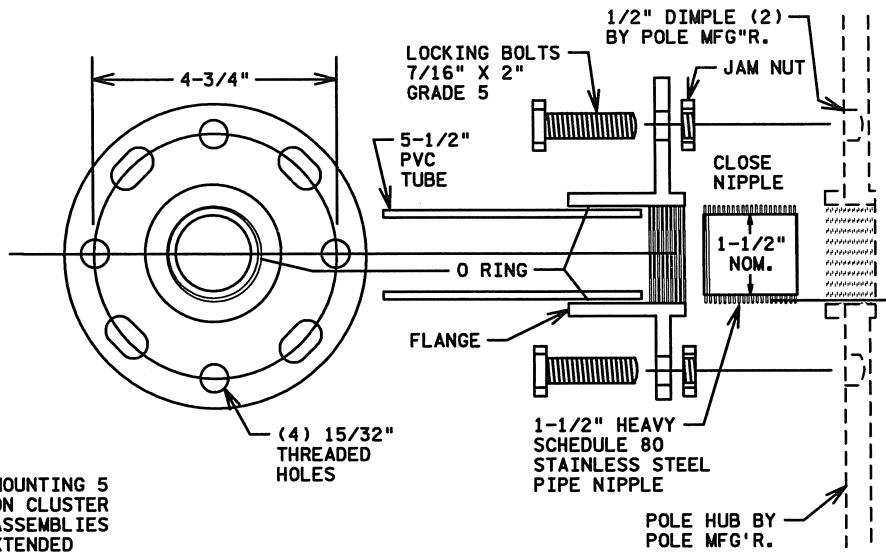


3 SECTION HAWK
CLUSTER HEAD DETAIL

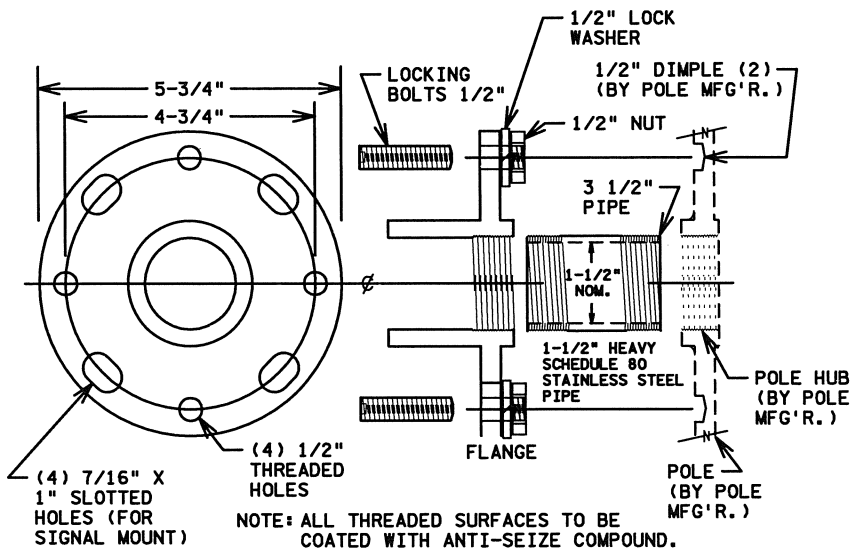
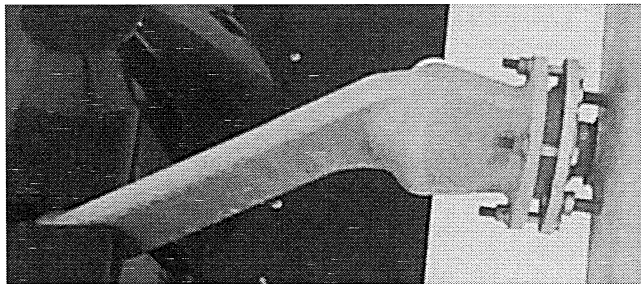


TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

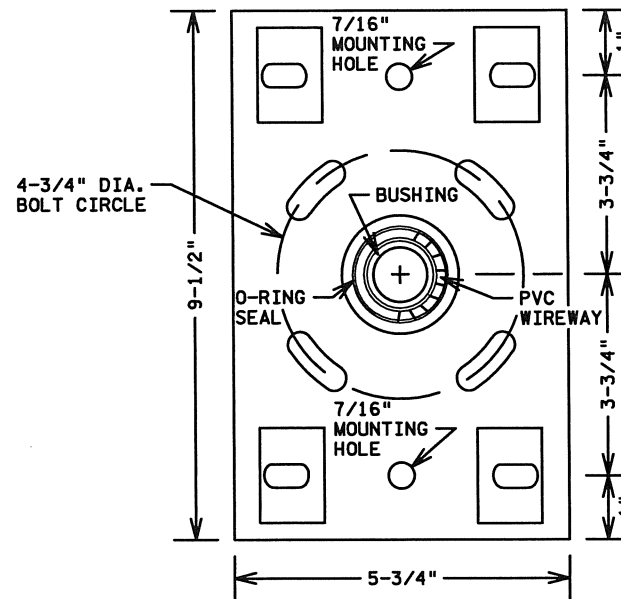


THREADED HUB AND FLANGE POLE ADAPTOR

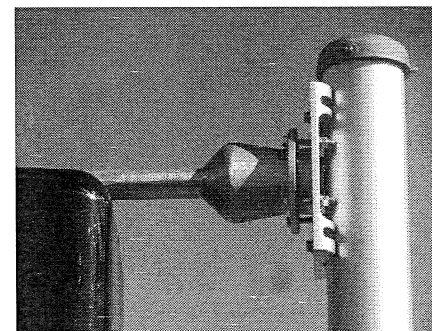
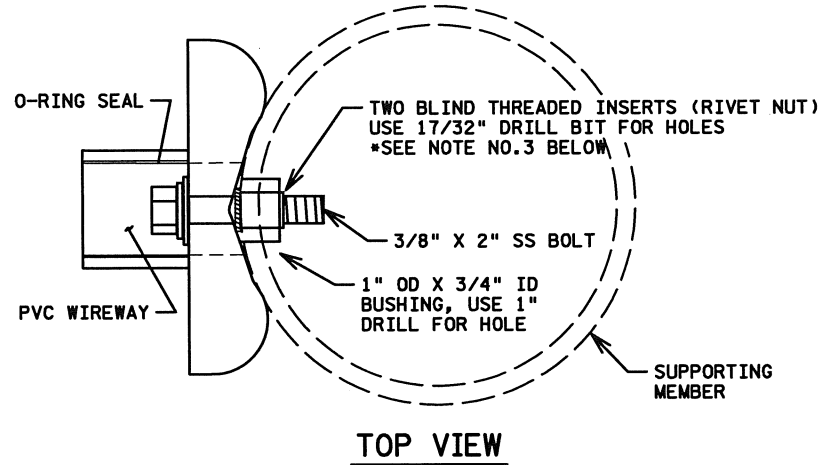


EXTENDED THREADED POLE ADAPTER

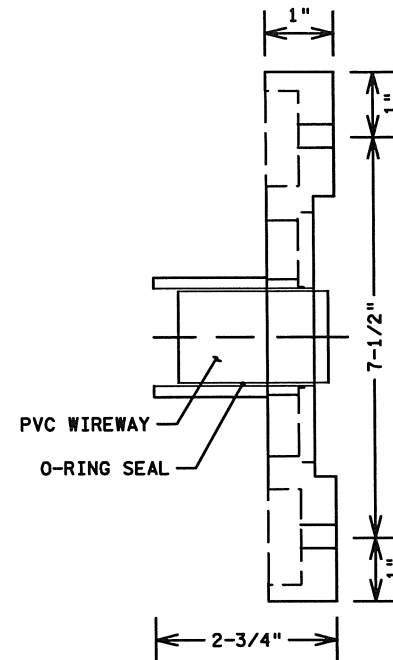
- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
 3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
 4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



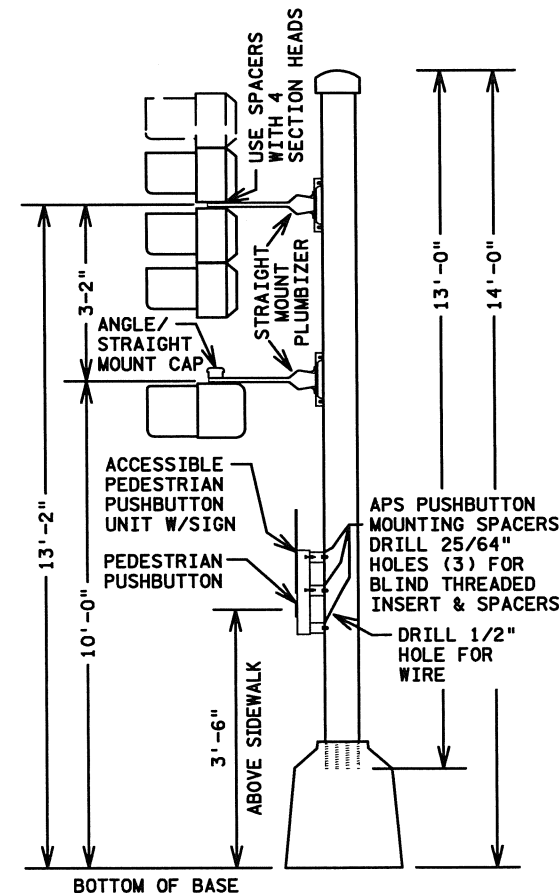
BOLT ON HUB & FLANGE



- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
 3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
 4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



SIDE VIEW



TYPICAL PEDESTAL MOUNTING

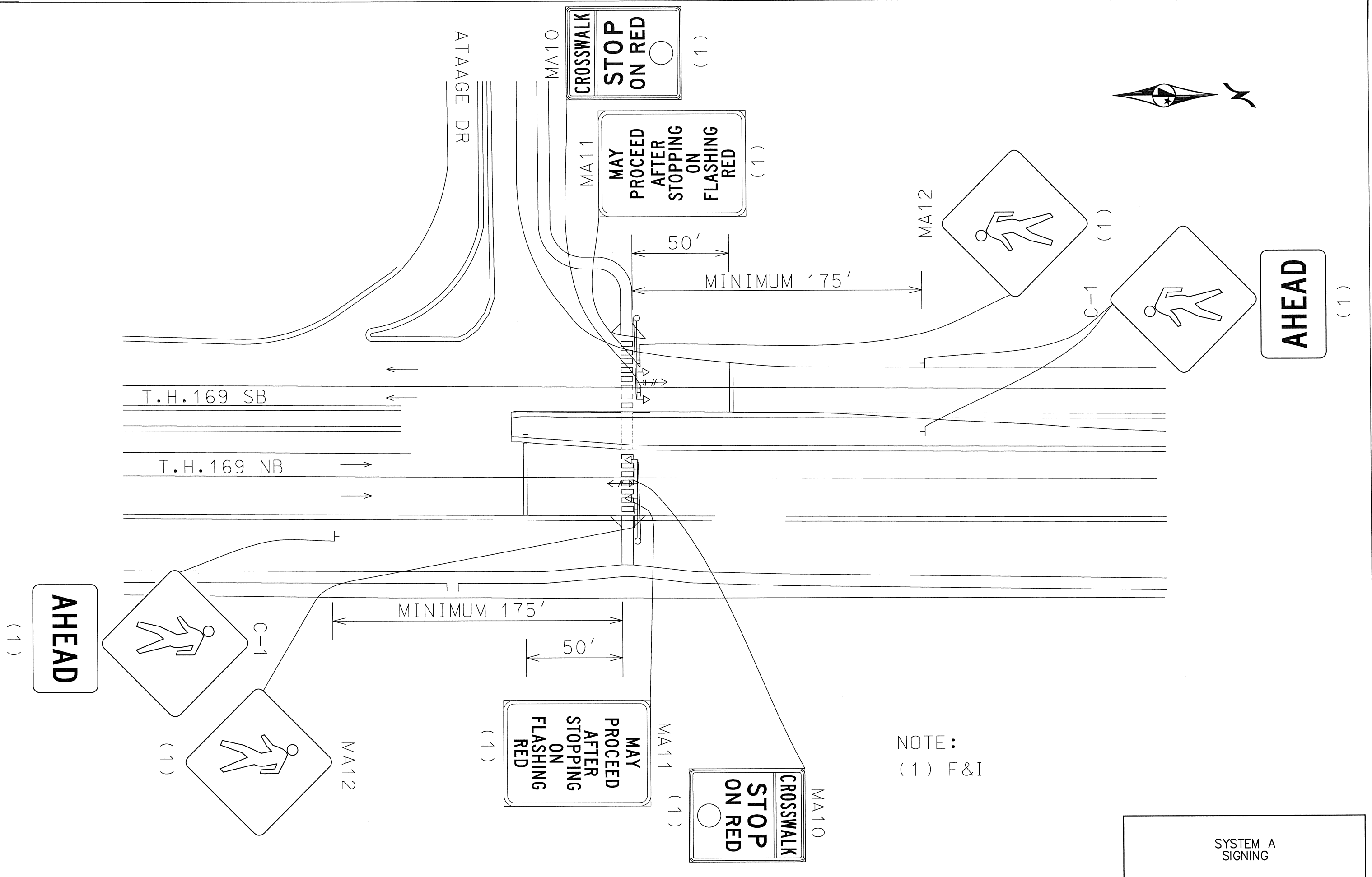
NOT TO SCALE

BY	DATE	REVISIONS

SYSTEM ID:	T.E.
METER ADDRESS:	
MASTER ID:	T.E.

POLE MOUNT DETAIL

CERTIFIED BY <i>Adri F. De Jure</i>	LIC. NO. 22762	DATE: 3-26-20
STATE PROJ.NO. 4814-57 (T.H.169) SHEET NO. SS11 OF SS15 SHEETS		



(1)

(1)

(1)

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(1)

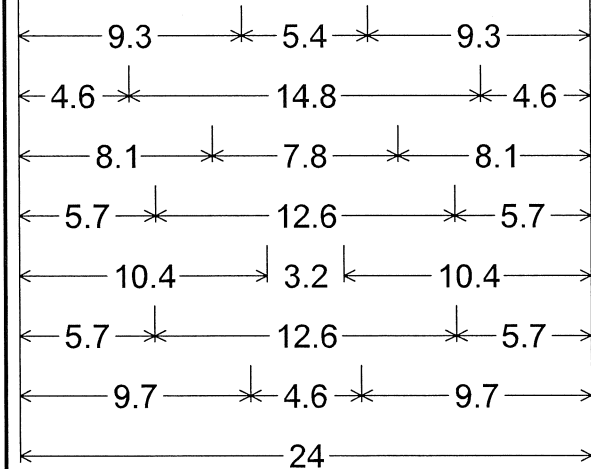
(1)

(1)

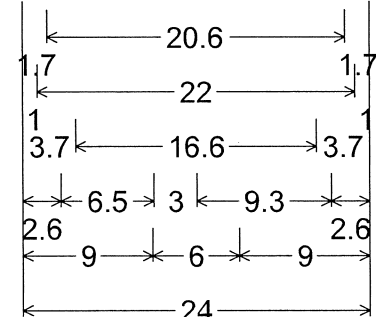
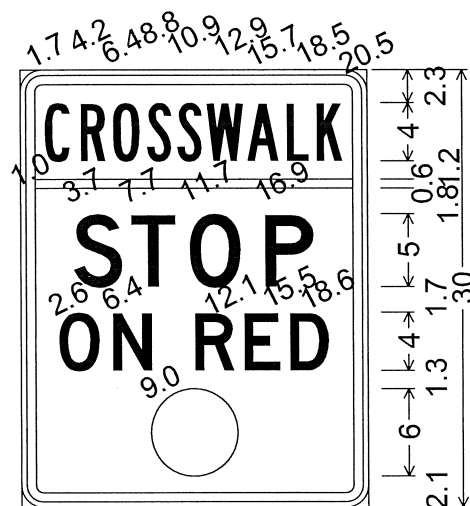
(1)

NOTE:
(1) F&I

SYSTEM A
SIGNING



MA-2;
3.0" Radius, 0.5" Border, Black on, White;
"MAY", B 2K;
"PROCEED", C 2K;
"AFTER", B 2K;
"STOPPING", B 2K;
"ON", B 2K; "FLASHING", B 2K;
"RED", B 2K;

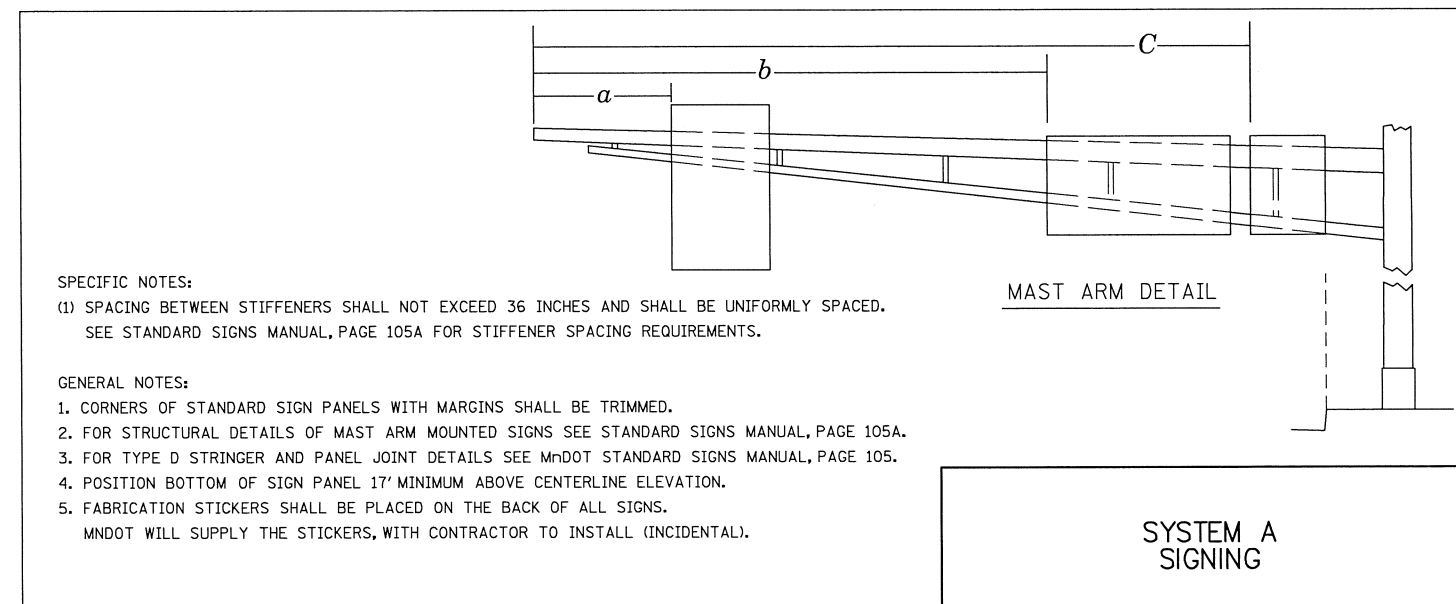


MA-10,R10-23_24x30;
1.5" Radius, 0.6" Border, 0.4" Indent, Black on, White;
"CROSSWALK", B 2K specified length;
"STOP", D 2K specified length;
"ON", D 2K specified length;
"RED", D 2K specified length;

Sign Panels Type D (Mast Arm Mounted)														ST
Sign No.	Signal System	Pole No.	Qty	a	b	C	Panel			Mounting		Panel Legend And Code		
				Size	Area	Total Area	Number	Spacing						
				Feet	Feet	Feet			Inch	Sq Ft	Sq Ft	(1)		
MA10	A	1	1	3.5			24	X	30	5.00	5.00	2	21	CROSSWALK STOP ON RED(R10-23)
MA10	A	2	1	3.5			24	X	30	5.00	5.00	2	21	CROSSWALK STOP ON RED(R10-23)
MA11	A	1	1		13		24	X	30	5.0	5.00	2	21	MAY PROCEED AFTER STOPPING ON FLASHING RED
MA11	A	2	1		13		24	X	30	5.0	5.00	2	21	MAY PROCEED AFTER STOPPING ON FLASHING RED
MA12	A	1	1			18	48	X	48	16.00	16.00			PEDESTRIAN CROSSING (W11-2)
MA12	A	2	1			18	48	X	48	16.00	16.00			PEDESTRIAN CROSSING (W11-2)
											52.00			

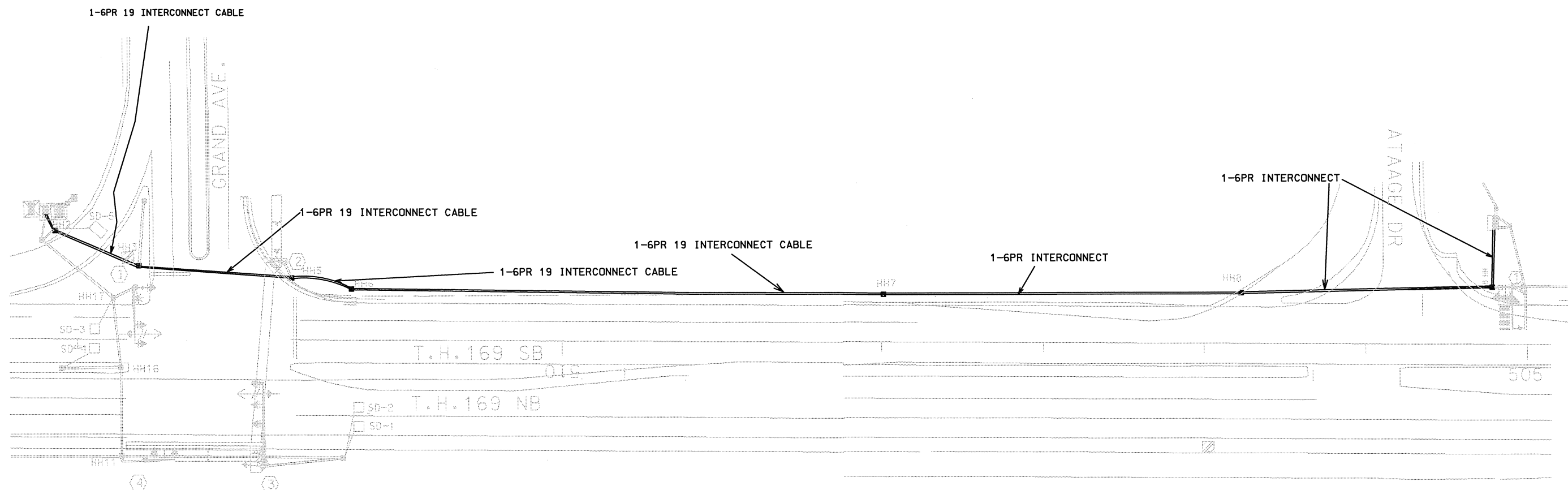
FURNISH & INSTALL SIGN TYPE C										ST-C
SIGN NO	SIGNS QTY EACH	PANEL LEGEND	PANEL		MTG HT (1)	NEW POSTS/MOUNTING				SURFACE TYPE
			SIZE	AREA		NUMBER OF POSTS	POST TYPE (2)	POST SPACING	RISER POST SIZE	
			INCH	SQ FT	FEET				INCHES	
			C-1	2	PEDESTRIAN CROSSING (W11-2) AHEAD (W16-9P)				36 x 36 24 x 12	
C-2	1	PEDESTRIAN CROSSING (W11-2) AHEAD (W16-9P)	36 x 36 24 x 12	9.00 2.00	7	1	SQ	2 1/2	CONCRETE	
TOTAL	4				33.00					

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE)
(2) POST TYPE ABBREVIATIONS (SQ = SQUARE TUBE, R = ROUND POST, U = U CHANNEL).



SPECIFIC NOTES:
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED.
SEE STANDARD SIGNS MANUAL, PAGE 105A FOR STIFFENER SPACING REQUIREMENTS.

GENERAL NOTES:
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. FOR STRUCTURAL DETAILS OF MAST MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
3. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE MNDOT STANDARD SIGNS MANUAL, PAGE 105.
4. POSITION BOTTOM OF SIGN PANEL 17' MINIMUM ABOVE CENTERLINE ELEVATION.
5. FABRICATION STICKERS SHALL BE PLACED ON THE BACK OF ALL SIGNS.
MNDOT WILL SUPPLY THE STICKERS, WITH CONTRACTOR TO INSTALL (INCIDENTAL).



SIGNAL SYSTEM INTERCONNECTION
LAYOUT BETWEEN GRAND AVENUE
AND ATAAGE DRIVE

CERTIFIED BY *John F. DeLong*
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 22762

State Proj. No. 4814-57 (T.H. 169)

Sheet No. SS15 of SS15 Sheets