

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H30	H40

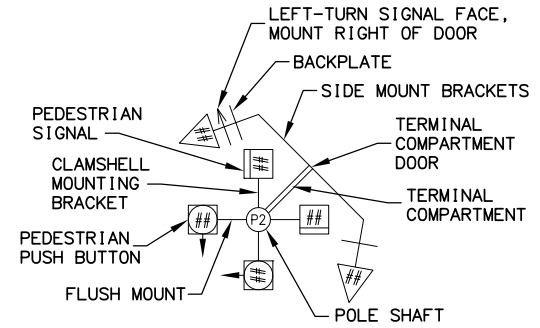
ABBREVIATIONS			
AWG	AMERICAN WIRE GAUGE	NB	NORTH BOUND
CAM	CAMERA	OMNI	OMNI DIRECTIONAL ANTENNA
EB	EAST BOUND	P#	TRAFFIC SIGNAL POLE #
GND	GROUND	PE	PHOTOELECTRIC CELL
HDPE	POLYETHYLENE CONDUIT	PED B ##	PEDESTRIAN PUSH BUTTON #
HEAD	VEHICULAR SIGNAL HEAD	PEDI	PEDESTRIAN SIGNAL HEAD
SIG	SIGNAL	PRE #	PREEMPTION #
I/C	INTERCONNECT	PRE CON #	PREEMPTION CONFIRMATION LIGHT #
INTX	INTERSECTION	RAD	RADAR
INTX L	INTERSECTION LIGHTING	RMC	RIGID METAL CONDUIT
LC	LOAD CENTER	SB	SOUTH BOUND
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT	TC	TRAFFIC CONTROLLER
LTG	LIGHTING	WB	WEST BOUND
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	YAGI	DIRECTIONAL ANTENNA

FOUNDATIONS NOTES:

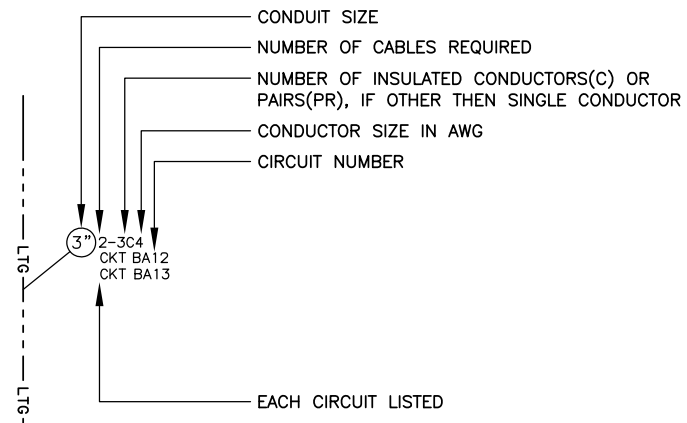
1. STATION & C.L. REFERENCE ARE TO THE CENTER OF THE STRUCTURE, EXCEPT ON LOOPS WHICH ARE TO THE CENTER OF THE TRAILING EDGE OF THE LOOP (EDGE NEAREST INTERSECTION).
2. JUNCTION BOX LOCATIONS APPROXIMATE. LOCATE J-BOXES SO THAT THEY ARE LOCATED OUT OF THE PATHWAY, SIDEWALK, CURB RAMPS, AND DRAINAGE COLLECTION AREAS.
3. INSTALL LOAD CENTER AND TRAFFIC CONTROLLER FOUNDATIONS WITHIN 1-DEGREE OF PLUMB.
4. INSTALL ANCHOR BOLTS IN CAST FOUNDATIONS TO BE WITHIN 1:40 OF PLUMB.
5. TOPSOIL AND SEED ANY DISTURBED AREAS.

SIGNAL SYSTEM NOTES:

1. FURNISH THE SIGNAL AND LUMINAIRE MASTARM LENGTHS AND DIMENSIONS SPECIFIED ON THE POLE ELEVATIONS.
2. INSTALL DEVICES SUCH THAT THE DIMENSIONS SHOWN TO THE BOTTOM OF THE DEVICES ON THE POLE ELEVATIONS ARE MINIMUMS. VERTICAL DIMENSIONS TO SIGNAL HEADS ARE TO BOTTOM OF THE BACK PLATE.
3. INSTALL MAST ARMS PERPENDICULAR TO THE ROADWAY CENTERLINE. ACCEPTABLE VARIANCE IS +/- 1-DEGREE.
4. SALVAGE SIGNAL POLE ASSEMBLIES, SIGNS, SIGNAL FACES, AND LUMINARIES AND DELIVER TO MAINTENANCE AND OPERATIONS WITHIN 48-HOURS OF DECOMMISSIONING. COMPONENTS DAMAGED WHILE IN THE CONTRACTORS CUSTODY MUST BE REPLACED AT THE CONTRACTORS EXPENSE. REMOVE AND DISPOSE OF FOUNDATIONS.
5. SALVAGE EXISTING CONTROLLER CABINET AFTER NEW CONTROLLER CABINET IS IN SERVICE AND DELIVER TO MAINTENANCE AND OPERATIONS WITHIN 48-HOURS OF DECOMMISSIONING.
6. REMOVE ABANDONED OR UNUSED TRAFFIC JUNCTION BOXES UNLESS OTHERWISE NOTED.
7. NEW SIGNAL HEADS THAT ARE MOUNTED BUT NOT IN OPERATION SHALL BE COVERED WITH A COMMERCIALY AVAILABLE SIGNAL-SHIRT. EACH SIGNAL SHIRT SHALL FEATURE ELASTICIZED OPENINGS THAT FIT OVER THE VISORS AND AT LEAST TWO STRAPS TO SECURE IT TO THE SIGNAL. PROVIDE SHIRTS WITH A LEGEND THAT READS "OUT OF SERVICE" AND A CENTER SECTION THAT ALLOWS AN OPERATOR TO SEE THE INDICATIONS DURING SYSTEM TESTS.
8. SIGNAL HEADS ARE TO BE LOCATED PER FIGURE 4D-100, TYPICAL SIGNAL HEAD LOCATIONS, PER THE ALASKA TRAFFIC MANUAL. ACCEPTABLE VARIANCE IS +/- 1-FOOT.
9. AIM SIGNALS PER TABLE 660-2, THROUGH-SIGNAL AIMING POINT, OF THE SPECIAL PROVISIONS. SIGNALS SHALL ALSO BE AIMED SO AS NOT TO BE VISIBLE FROM SIDE STREET TRAFFIC. ACCEPTABLE VARIANCE IS +/- 5 DEGREES.
10. EXISTING CIRCUITS LISTED ON THE LOAD CENTER SUMMARY AND PLAN SHEETS WERE OBTAINED FROM AS-BUILT INFORMATION AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO WORK INVOLVING THOSE CIRCUITS.



POLE SHAFT LEGEND



CIRCUIT LABELING LEGEND

CALL BEFORE YOU DIG!

CONTRACTOR SHALL CALL A MINIMUM OF 3 DAYS IN ADVANCE OF CONSTRUCTION

ALASKA DIGLINE...907-278-3121 OR 800-478-3121

CALL OR GO TO WWW.AKONECALL.COM/STATEWIDE.HTM
FOR MEMBER LIST OF WHO WILL BE NOTIFIED

PS&E REVIEW FEBRUARY 2019

R&M CONSULTANTS, INC.
9101 VANGUARD DRIVE
ANCHORAGE, AK 99507
(907) 522-1707
CERT. OF AUTH. NO. AECC111

EDC, INC.
213 WEST FIREWEED LANE
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

TRAFFIC LEGEND AND NOTES

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H31	H40

EQUIPMENT LEGEND/DESCRIPTION

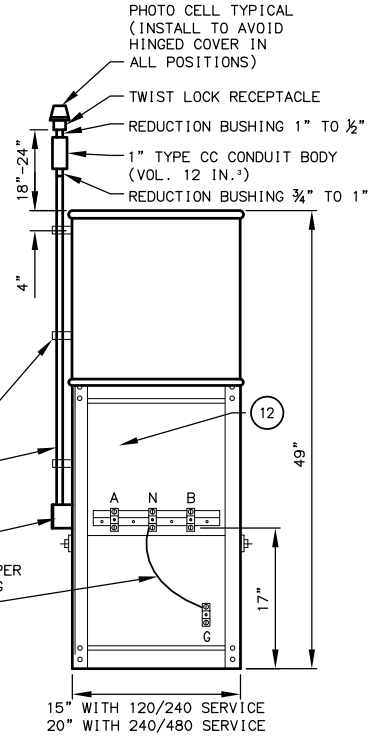
- METERING SECTION
- LOAD SECTION
- UTILITY CONNECTION SECTION
- METER READING WINDOW (8"x8")
- METER SOCKET W/
TEST-BYPASS/DISCONNECT BLOCK AND
SAFETY SOCKET FACILITIES
- HINGED METER SECTION COVER
- DEADFRONT
- STAINLESS STEEL PIN HINGE
- PADLOCKING PROVISIONS
- DISTRIBUTION PANEL
- ACCESSORY EQUIPMENT MOUNTING AREA
FOR CONTACTOR, SELECTOR SWITCHES,
TERMINAL STRIPS, ETC.
- SERVICE PULL SECTION
- SELECTOR SWITCH

GALVANIZED METAL FRAMING FOR
MAST SUPPORT W/ PIPE CLAMPS,
SPACED 36" MIN AS REQUIRED

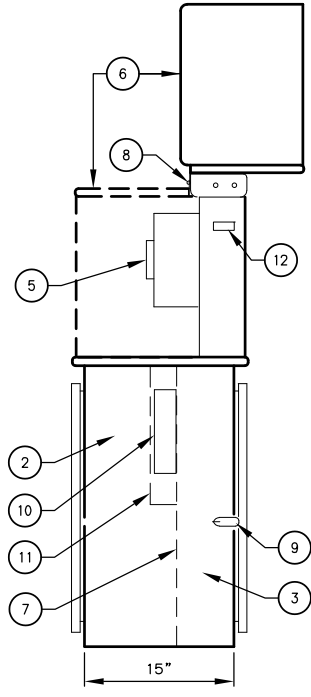
1/4" GALVANIZED
RIGID CONDUIT

TYPE LB
CONDUIT BODY

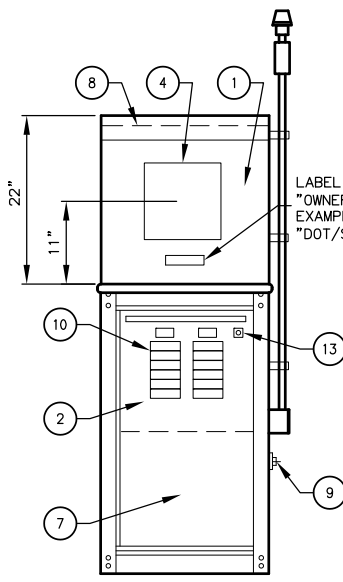
#6 BARE COPPER
MAIN BONDING
JUMPER



REAR VIEW
(W/ DOOR REMOVED)



RIGHT SIDE VIEW
(W/ METER SECTION OPEN)

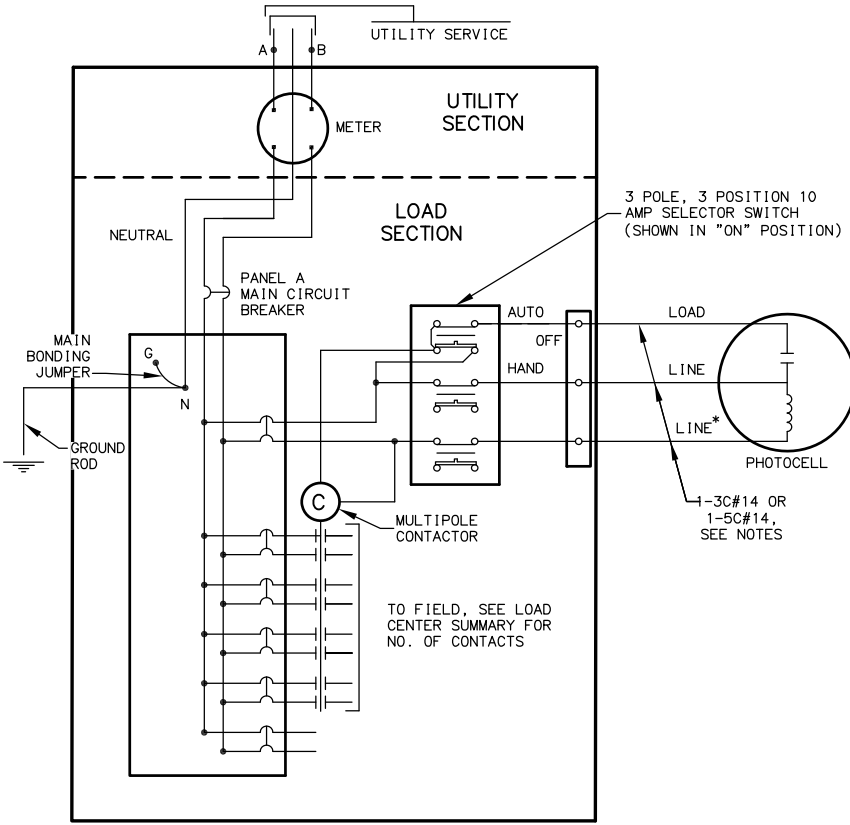


FRONT VIEW
(W/ DOOR REMOVED)

TYPE 1A CABINET DETAILS

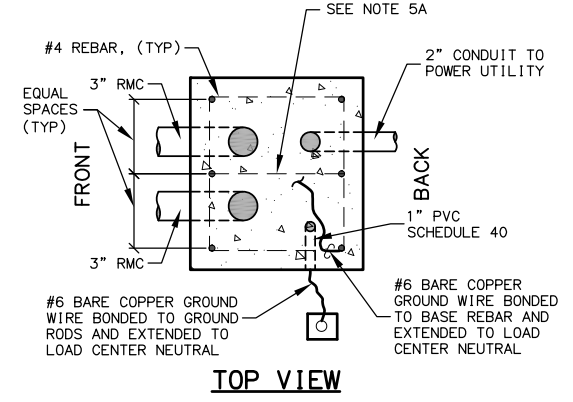
WIRING NOTES:

- FURNISH ALL EQUIPMENT NOTED IN THE LOAD CENTER SUMMARY, PLUS TWO 20-AMP 2-POLE SPARE CIRCUIT BREAKERS, AND SPACE FOR A MINIMUM OF TWO ADDITIONAL 2-POLE CIRCUIT BREAKERS IN EACH LOAD PANEL. SEE THE LOAD CENTER SUMMARIES FOR LOAD PANEL VOLTAGES, CURRENT RATINGS, AND THE NAME OF THE SERVING UTILITY.
- INSTALL GROUNDING HUBS THIRD PARTY CERTIFIED FOR WET LOCATIONS (MYERS TYPE), WHEN ATTACHING CONDUITS TO THE LOAD CENTER ENCLOSURE.
- LABEL ALL CIRCUIT BREAKERS AS TO FUNCTION AND POSITION. LABEL THE SELECTOR SWITCH "LIGHTING" AND ITS POSITIONS "ON-OFF-AUTO".
- METER BASES SHALL NOT BE MOUNTED ON MOVABLE PANELS OR DOORS.
- THE LENGTH AND TYPE OF SERVICE ENTRANCE CONDUIT INSTALLED BY THE CONTRACTOR VARIES BY UTILITY. REGARDLESS OF ITS LENGTH, INSTALL A PULL ROPE IN THE SERVICE CONDUIT AND A CAP ON THE BURIED END; MARK THE BURIED END WITH A 2"x 6" STAKE. SEE THE LOAD CENTER SUMMARIES FOR THE FOLLOWING INFORMATION.
 - STATION AND OFFSET OF THE LOAD CENTER AND POWER SOURCE.
 - WHERE THE CONTRACTOR TERMINATES THE SERVICE ENTRANCE CONDUIT.
 - THE TYPE OF SERVICE ENTRANCE CONDUIT (SUCH AS RIGID METAL CONDUIT OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT).
- STORE A SCHEMATIC DIAGRAM, A CIRCUIT DIRECTORY, AND A MATERIALS LIST THAT INCLUDES THE MANUFACTURER'S NAME AND PART/CATALOG NUMBERS, ALL LAMINATED IN PLASTIC, IN A METAL POCKET ATTACHED TO THE INSIDE OF THE LOAD CENTER. INSTALL THE POCKET ON THE LOAD CENTER DOOR, PROVIDING DRAIN HOLES TO PREVENT WATER ACCUMULATION.
- SIZE THE DISTRIBUTION PANEL TO ACCOMMODATE THE CIRCUITS SHOWN ON THE LOAD CENTER SUMMARIES AND SPARE CIRCUITS AS DEFINED IN NOTE 1.
- SEPARATE THE MAIN CIRCUIT BREAKER FROM THE DISTRIBUTION PANEL.
- MOUNT PHOTOCELL RECEPTACLE TO 1/2" CONDUIT WITH SILICONE SEALANT. INSTALL A 3C#14 CABLE FROM THE LOAD CENTER TO THE TYPE CC CONDUIT BODY WHERE THE SPLICE TO THE PHOTOCELL RECEPTACLE CABLE SHALL BE MADE. IF PLANS CALL TO MOUNT PHOTOCELL AWAY FROM LOAD CENTER USE A 5C#14 CABLE FROM LOAD CENTER TO RECEPTACLE.



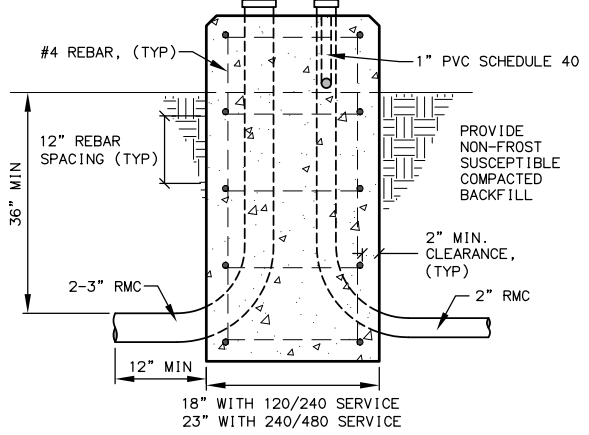
**LOAD CENTER ONE LINE DIAGRAM AND
SELECTOR SWITCH WIRING**

* GROUND NEUTRAL, IF SERVICE IS 240/480 VOLT SINGLE PHASE AND LINE, IF SERVICE IS 120/240 VOLT SINGLE PHASE.

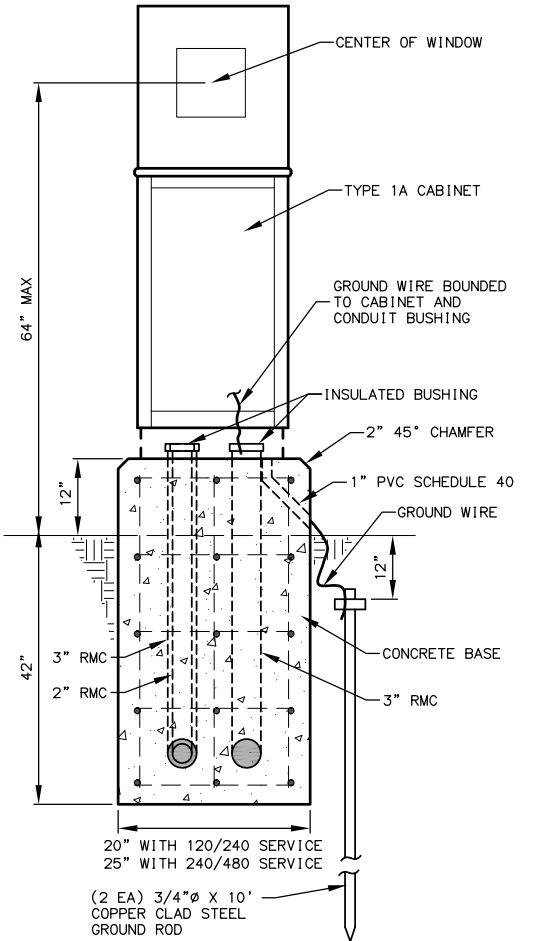


TOP VIEW

PROVIDE "J" ANCHOR BOLTS AS REQUIRED TO MOUNT LOAD CENTER CABINET IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS



RIGHT SIDE VIEW



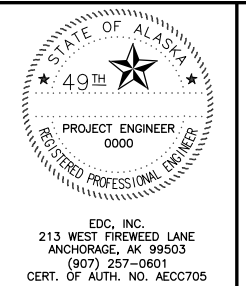
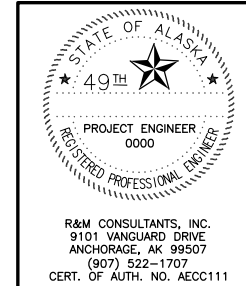
FRONT VIEW

FOUNDATION DETAILS

FOUNDATION NOTES:

- GRADE AWAY FROM THE BASE WITH A MINIMUM SLOPE OF 3%. USE A PRE-MOULDED BITUMINOUS JOINT BETWEEN THE BASE AND CONCRETE SIDEWALK OR PAVING, WHEN ADJACENT TO A SIDEWALK OR PATHWAY.
- PROVIDE ANCHOR BOLTS OR EXPANSION ANCHORS IN THE BASE FOR MOUNTING THE CABINET PER THE MANUFACTURER'S SHOP DRAWINGS. ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO EITHER ASTM A307 OR A449 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
- USE GRADE 60 REINFORCING STEEL CONFORMING TO ASTM 615 AND CLASS "A" CONCRETE CONFORMING TO SECTION 501 OF THE SPECIFICATIONS WHEN CASTING THE BASE.
- IF THE BASE IS PRECAST, INSTALL TWO 3/4" FERRULE LOOP INSERTS IN TWO SIDES OPPOSITE ONE ANOTHER FOR LIFTING.

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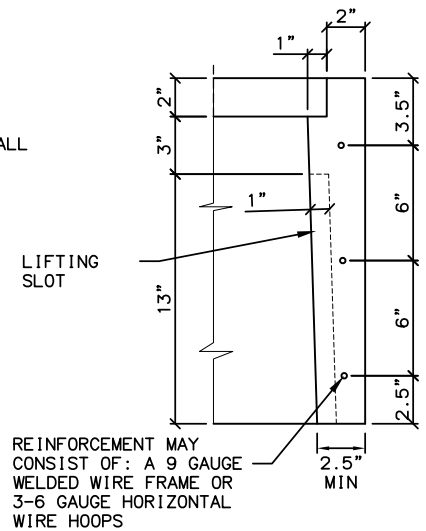
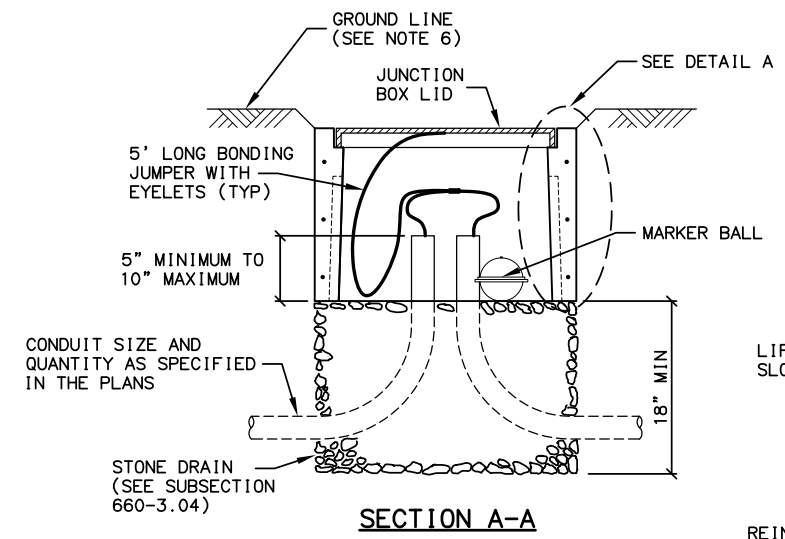
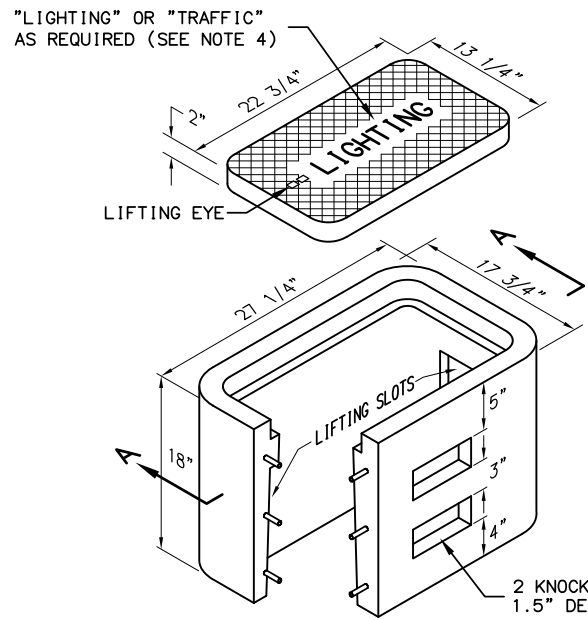
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

TYPE 1A LOAD CENTER

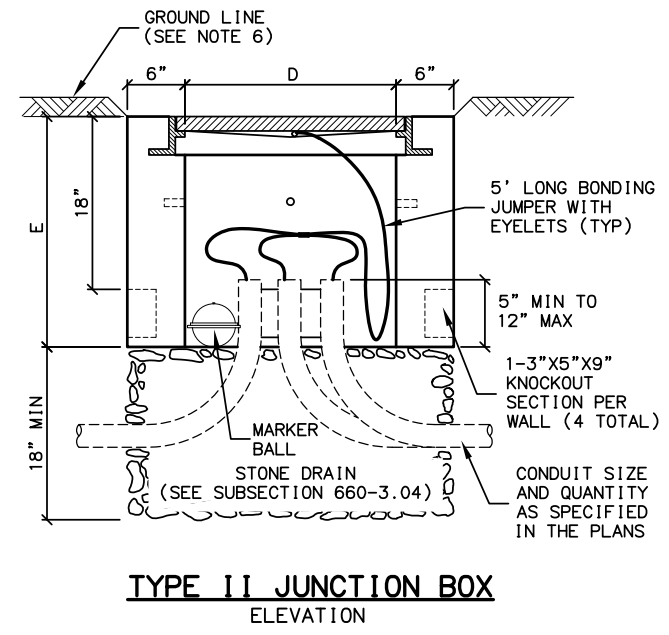
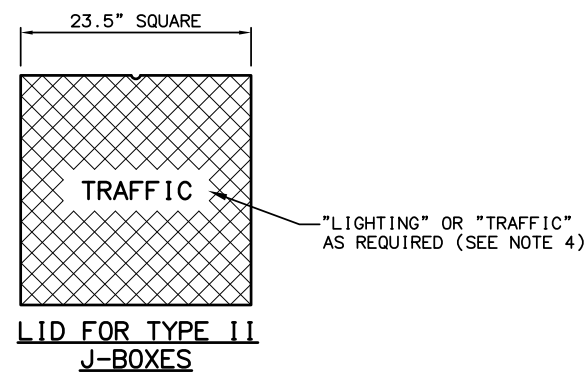
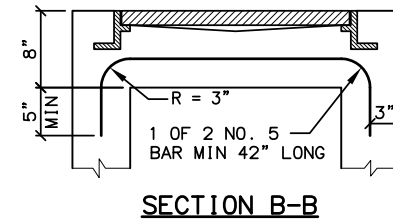
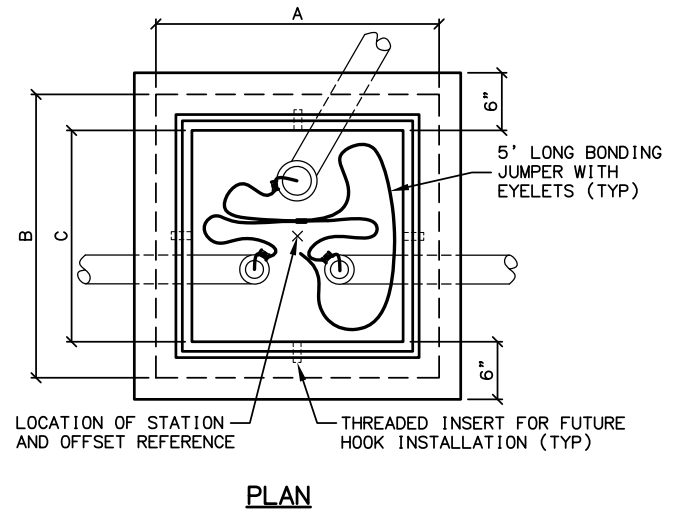
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 DATE/TIME 1/31/2019 7:51 PM LAYOUT H32
 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H32	H40



TYPE IA JUNCTION BOX



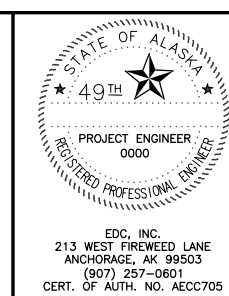
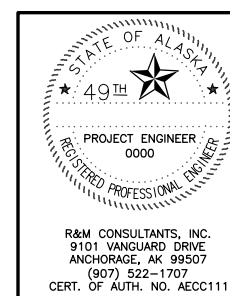
TYPE II JUNCTION BOX ELEVATION

NOTES:

1. AVOID INSTALLING TYPE IA JUNCTION BOXES IN DRIVEWAYS OR IN LOCATIONS SUBJECT TO USE BY HEAVY TRUCKS. INSTALL JUNCTION BOXES ONLY AT THE LATERAL LOCATIONS ALLOWED IN SUBSECTION 660-3.04.
2. FURNISH TYPE II JUNCTION BOXES WITH CAST IRON FRAMES AND LIDS THAT WEIGH A MINIMUM OF 210 POUNDS AND ARE RATED FOR HEAVY TRAFFIC LOADS IN COMPLIANCE WITH AASHTO M306. FURNISH TYPE IA JUNCTION BOXES WITH CAST IRON LIDS THAT WEIGH A MINIMUM OF 50 POUNDS.
3. CONSTRUCT JUNCTION BOXES ACCORDING TO SECTION 501 USING CLASS A CONCRETE. REINFORCE TYPE IA JUNCTION BOXES AS SHOWN. SYNTHETIC STRUCTURAL FIBER-REINFORCED CONCRETE THAT MEETS ASTM C 1116 AND CONTAINS FIBER IN PROPORTIONS AS RECOMMENDED BY THE FIBER MANUFACTURER MAY BE ADDED FOR STRENGTH.
4. FOR JUNCTION BOXES THAT CONTAIN ILLUMINATION CONDUCTORS EXCLUSIVELY, FURNISH LIDS WITH THE WORD "LIGHTING" INSCRIBED INTO THEM. FOR OTHER JUNCTION BOXES, FURNISH LIDS WITH THE WORD "TRAFFIC" INSCRIBED INTO THEM.
5. UNDER JUNCTION BOXES, INSTALL STONE DRAINS THAT CONSIST OF POROUS BACKFILL MATERIAL CONFORMING TO SUBSECTION 703-2.10.
6. SET THE TOPS OF JUNCTION BOXES WITH THE FOLLOWING DIMENSIONS BELOW THE FINISHED SURROUNDING SURFACE:
 - 1" IN PAVED MEDIANS AND ADJACENT TO PEDESTRIAN FACILITIES
 - 1/4" IN PEDESTRIAN FACILITIES
 - 2" IN ALL OTHER AREAS
7. BOND JUNCTION BOX LIDS TO THE SYSTEM OF EQUIPMENT GROUNDING CONDUCTORS ACCORDING TO SUBSECTION 660-3.06. ATTACH BONDING JUMPERS TO THE JUNCTION BOX LIDS WITH BRASS OR STAINLESS STEEL HARDWARE.
8. INSTALL LOOP DETECTOR TAILS THROUGH ONE OF THE KNOCKOUTS OF TYPE IA JUNCTION BOXES. AFTER SETTING THE BOXES TO GRADE, INSTALL GROUT IN THE GAPS THAT REMAIN IN THE KNOCKOUT.
9. INSTALL A 1/2" THICK PREFORMED BITUMINOUS JOINT MATERIAL AROUND JUNCTION BOXES INSTALLED IN PORTLAND CEMENT CONCRETE WALKWAYS.
10. INSTALL AN ELECTRONIC MARKER BALL IN ALL JUNCTION BOXES PER SUBSECTION 660-3.04.
11. PRIOR TO INSTALLATION MARK ALL JUNCTION BOX LOCATIONS WITH A WIRE STAFF VINYL FLAG. THE FLAG SHALL BE RED IN COLOR AND MINIMUM 4-INCHES TALL BY 5-INCHES WIDE. THE WIRE STAFF SHALL BE 21-INCHES IN LENGTH AND CONSTRUCTED OF MINIMUM 15.5 GAUGE STEEL.

J-BOX TYPE	DIMENSIONS				
	A (MAX.)	B (MAX.)	C (MIN.)	D (MIN.)	E (MIN.)
II	29 1/2"	29 1/2"	22"	22"	24"

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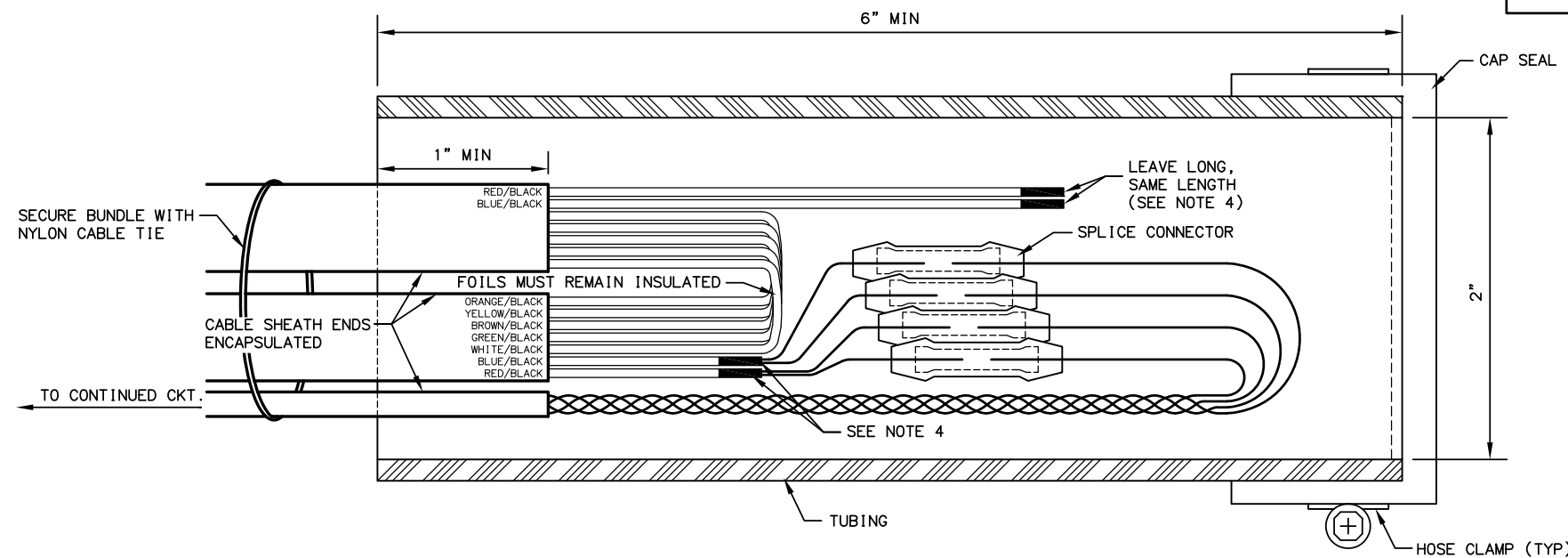
STATE OF ALASKA
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**SEWARD HWY: MP 100-105
 IMPROVEMENTS &
 HSIP: CR TRAFFIC SAFETY
 CORRIDOR LEFT TURN LANES**

JUNCTION BOX

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FILE [P:\PROJECTS\RAM SEWARD HIGHWAY 98-105\DWGS\ELEC\H33_SPLICE-DETAILS.DWG] DATE/TIME 1/31/2019 7:51 PM LAYOUT H33 DESIGNED CHECKED DRAFTED



LOOP LEAD-IN SPLICE

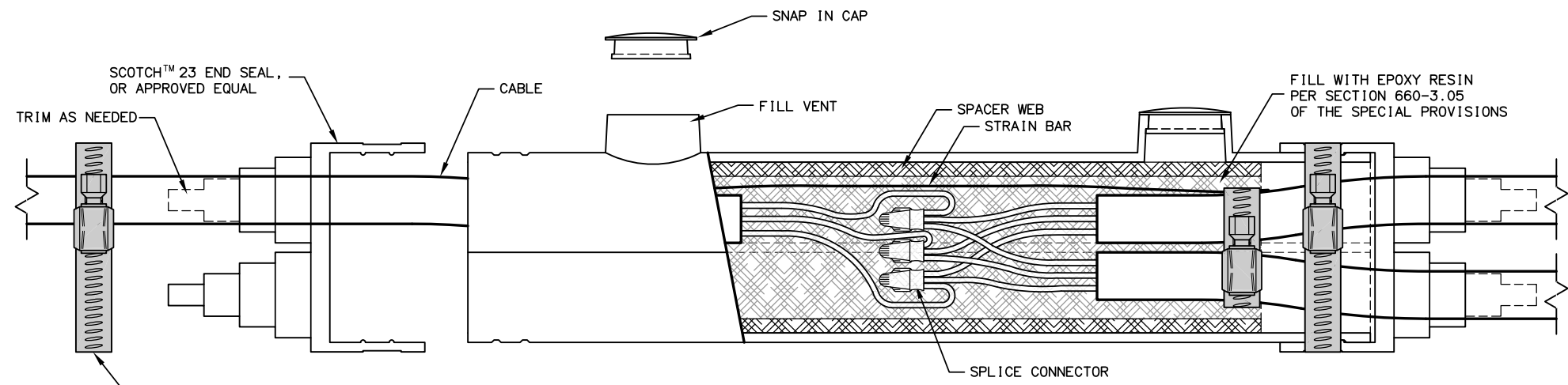
NOTES:

- LOOP LEAD-IN SPLICE**
1. FABRICATE LOOP LEAD-IN SPLICE IN THE FIELD AS SHOWN.
 2. CAP SEAL ONE END AND COMPLETELY FILL OPEN END WITH RE-ENTERABLE ENCAPSULATION COMPOUND TO EDGE OF TUBING.
 3. LEAVE A MINIMUM OF 1/2" CLEARANCE BETWEEN THE ENCLOSURE AND THE SPLICE AT BOTH ENDS OF THE TUBING.
 4. EXPOSE FOIL AND DRAIN WIRES, SEAL WITH HEAT SHRINK TUBING (TYP).
 5. INSTALL SPLICE CONNECTORS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

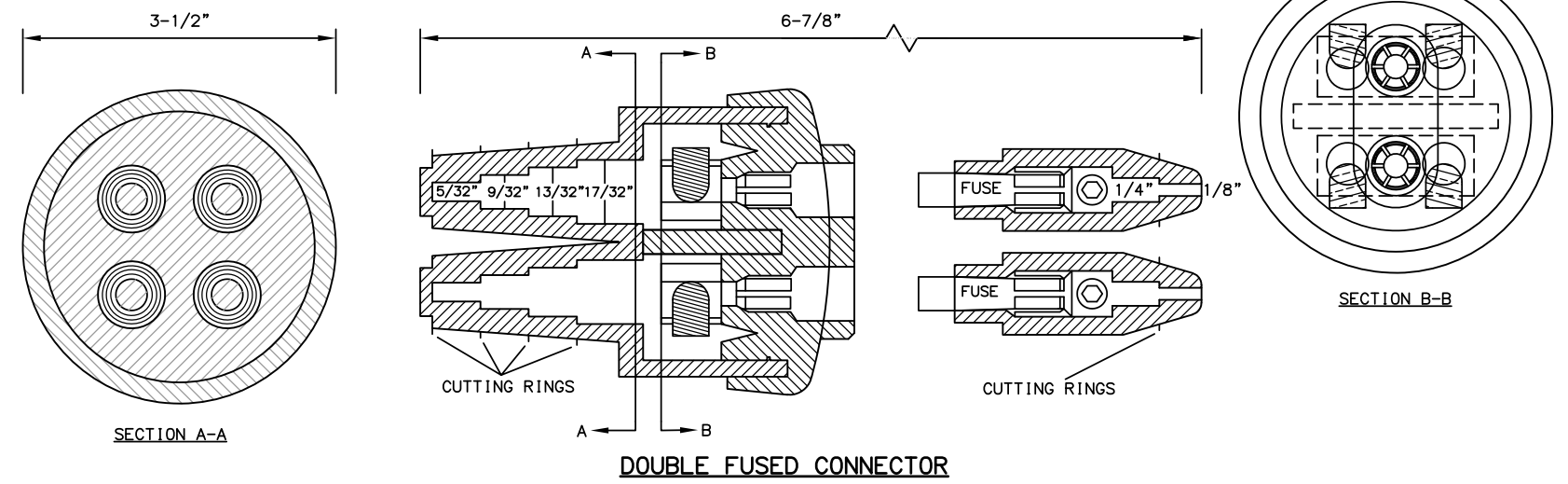
POWER CABLE SPLICE

6. SECURE CABLE/CONNECTOR BUNDLE WITH HOSE CLAMPS AS SHOWN.

MATERIAL PROPERTIES	
LOOP LEAD-IN SPLICE	
TUBING	PER SECTION 660-3.05
CAP SEAL	FERNCO QWIK CAP #QC-102, OR APPROVED EQUAL
HOSE CLAMP	STAINLESS STEEL
SPLICE CONNECTOR	ML56-16, OR APPROVED EQUAL
COMPOUND	RE-ENTERABLE ENCAPSULATION
POWER CABLE SPLICE	
SPLICE KIT	3M MODEL 78R, OR APPROVED EQUAL
SPLICE CONNECTOR	SCOTCHLOCK G, R, OR Y SPRING CONNECTOR, OR APPROVED EQUAL
HOSE CLAMP	(4)- STAINLESS STEEL
EPOXY RESIN	PER SECTION 660-3.05
DOUBLE FUSED CONNECTOR	
DOUBLE FUSED CONNECTOR	SEC-1791-DF-1, OR APPROVED EQUAL
FUSES	(2) - COMPATIBLE 10-AMP



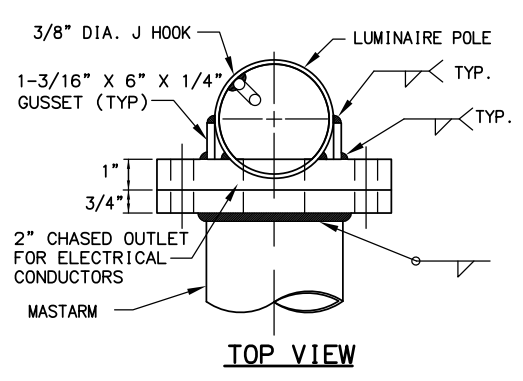
POWER CABLE SPLICE



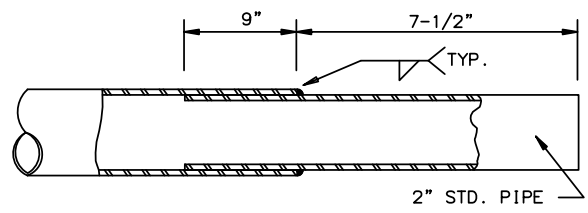
DOUBLE FUSED CONNECTOR

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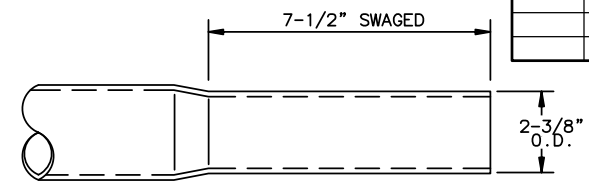
<p>R&M CONSULTANTS, INC. 9101 VANGUARD DRIVE ANCHORAGE, AK 99507 (907) 522-1707 CERT. OF AUTH. NO. AECC111</p>	<p>EDC, INC. 213 WEST FIREWEED LANE ANCHORAGE, AK 99503 (907) 257-0601 CERT. OF AUTH. NO. AECC705</p>	<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES</p> <p>SEWARD HWY: MP 100-105 IMPROVEMENTS & HSIP: CR TRAFFIC SAFETY CORRIDOR LEFT TURN LANES</p> <p>SPLICE DETAILS</p>
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TOP VIEW

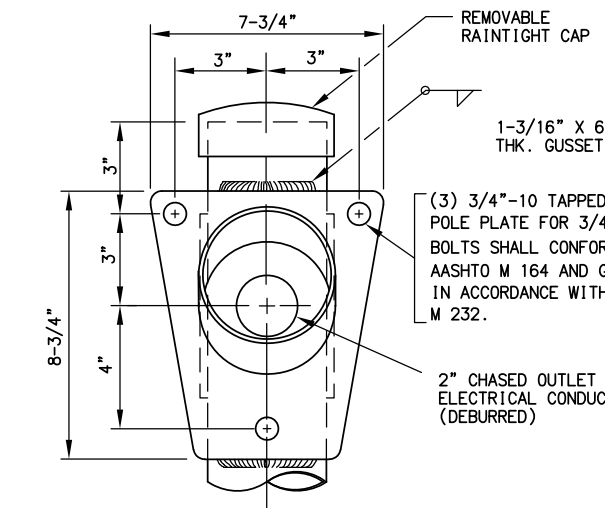


TENON

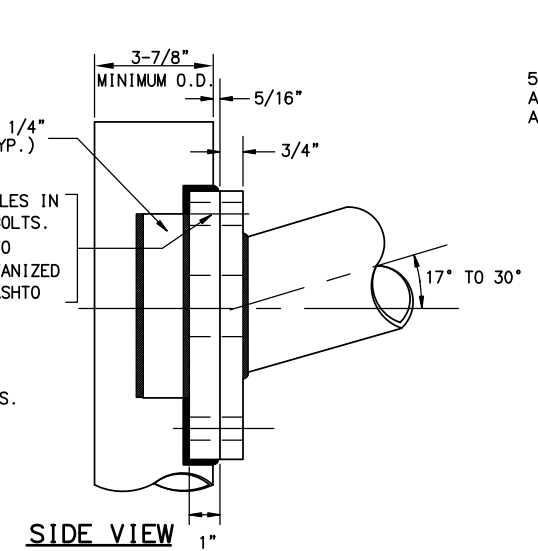


OPTIONAL SWAGED TENON

END OF MASTARM DETAIL

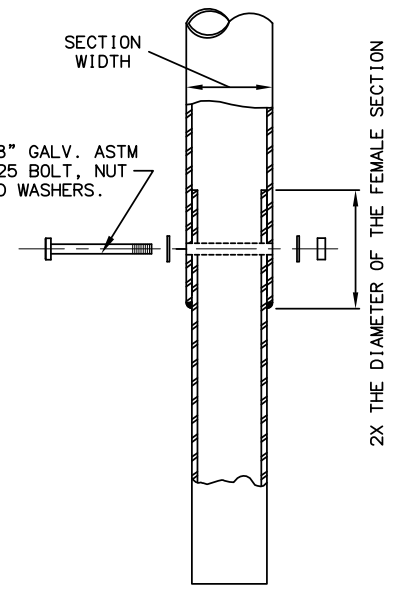


FRONT VIEW

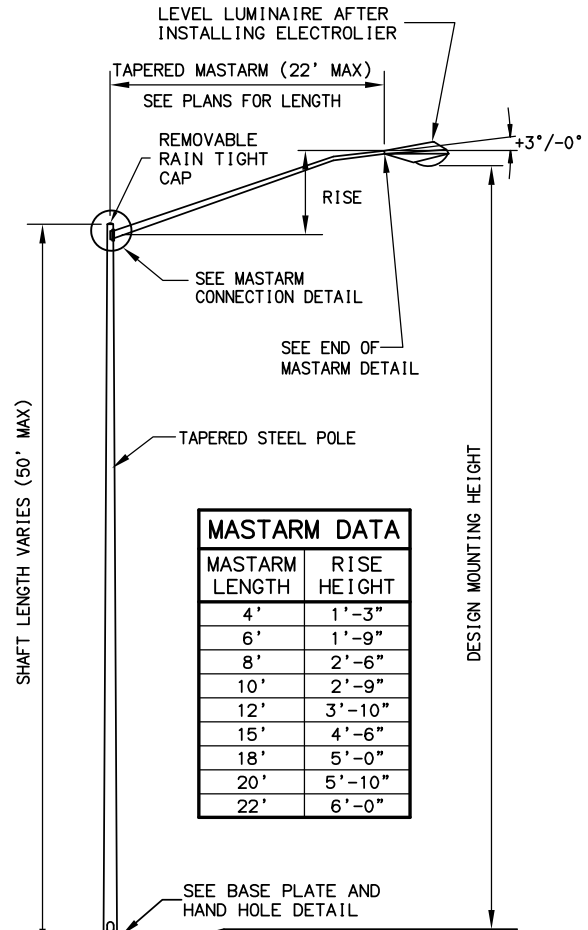


SIDE VIEW

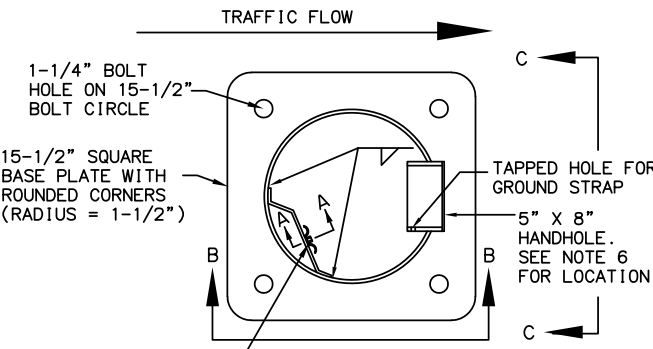
MASTARM CONNECTION DETAIL



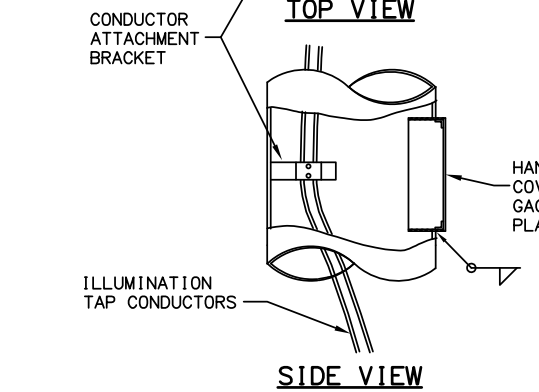
POLE CONNECTION DETAIL



MASTARM DATA	
MASTARM LENGTH	RISE HEIGHT
4'	1'-3"
6'	1'-9"
8'	2'-6"
10'	2'-9"
12'	3'-10"
15'	4'-6"
18'	5'-0"
20'	5'-10"
22'	6'-0"

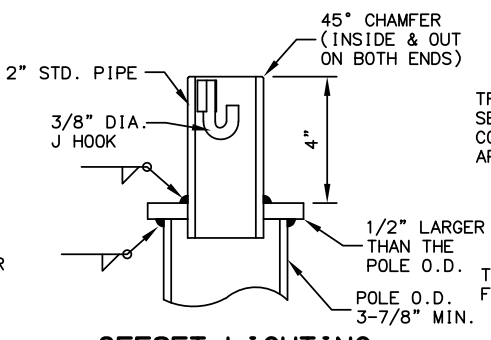


TOP VIEW

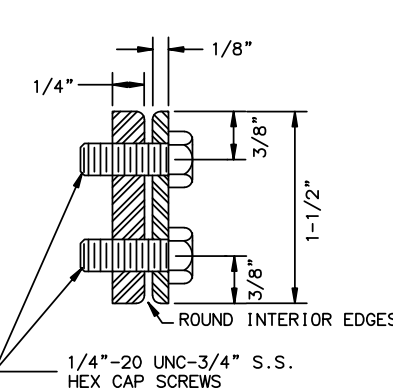


SIDE VIEW

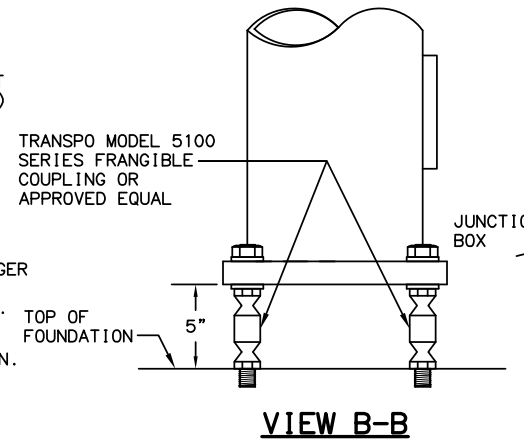
BASE PLATE AND HANDHOLE DETAIL



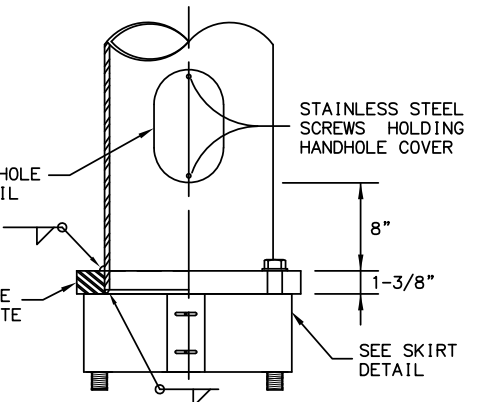
OFFSET LIGHTING STANDARD POLE TOP DETAIL (CUTAWAY FOR CLARITY)



SECTION A-A

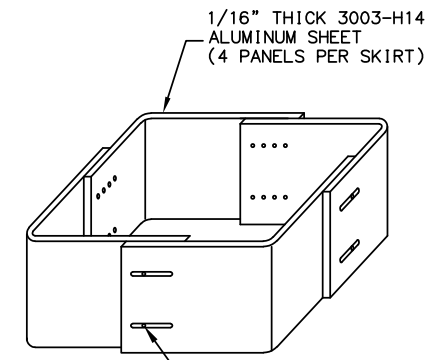


VIEW B-B



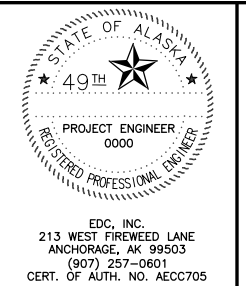
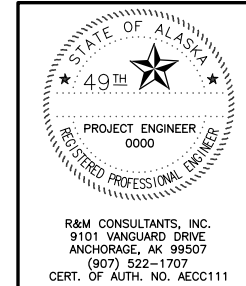
VIEW C-C

- NOTES:**
- DESIGN AND FABRICATE ALL SHAFTS TO SUPPORT A MASTARM 22 FEET LONG WITH LUMINAIRE. ASSUME EACH LUMINAIRE WEIGHS 55 POUNDS AND HAS AN EFFECTIVE PROJECTED AREA OF 1.2 SQUARE FEET. WITH THIS DEAD LOAD, LIMIT THE ANGULAR ROTATION TO THE POLE TOP 1°40'0" MAXIMUM.
 - WELD SIZE TO BE DETERMINED BY THE MANUFACTURER.
 - MOUNTING HEIGHT, IF SPECIFIED IN THE PLANS, REFERS TO THE HEIGHT OF LUMINAIRE ABOVE THE ROADWAY. ADJUST EACH POLE'S SHAFT LENGTH TO MAINTAIN THIS DIFFERENCE IN ELEVATION WHENEVER SLOPE AND/OR OFFSET VARIES.
 - MINIMUM OUTSIDE DIAMETER AT THE TOP OF POLE EQUALS 3-7/8". POLE DIAMETER SHALL TAPER UNIFORMLY FROM THE TOP OF THE POLE TO THE BASE PLATE, WITH A MAXIMUM TAPER RATE OF 0.14" PER FOOT.
 - APPLY AN ANTI-SEIZING COMPOUND TO ALL THREADED SURFACES, INCLUDING THOSE IN THE ANCHOR PLATE AND ON THE COUPLINGS.
 - MASTARM RISE MAY VARY ±0.5' FROM THE VALUES LISTED IN THE TABLE.
 - LOCATE THE HANDHOLE AT 90 DEGREES TO THE MASTARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.
 - FURNISH ALL POLES WITH A J-HOOK TO SUPPORT THE ILLUMINATION TAP CONDUCTORS. FURNISH ALL MASTARM POLES WITH A REMOVABLE RAIN TIGHT CAP.
 - MOUNT LIGHTING STANDARDS UPON TRANSPO MODEL NO. 5100 FRANGIBLE COUPLINGS AND TRANSPO TYPE B FEMALE ANCHORS, OR APPROVED EQUAL.
 - INSTALL ALL COMPONENTS OF THE BREAKAWAY SUPPORT SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - FABRICATE THE SKIRT FROM FOUR PIECES OF 1/16" THICK 3003 H-14 ALUMINUM SHEET. BEND EACH PLATE TO PROVIDE CORNERS WITH A 3/4" RADIUS. ASSEMBLE THE SKIRT WITH #10 X 3/8" SELF TAPPING STAINLESS SCREWS OR POP RIVETS. THE ASSEMBLED SKIRT MEASURES ABOUT 12-3/4" SQUARE.
 - A JUNCTION BOX IS REQUIRED AT EACH NEW ELECTROLIER. INSTALL THE JUNCTION BOX IMMEDIATELY BEHIND THE FOUNDATION APPROXIMATELY 7' FROM POLE UNLESS OTHERWISE SPECIFIED IN THE PLANS.



SKIRT DETAIL

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

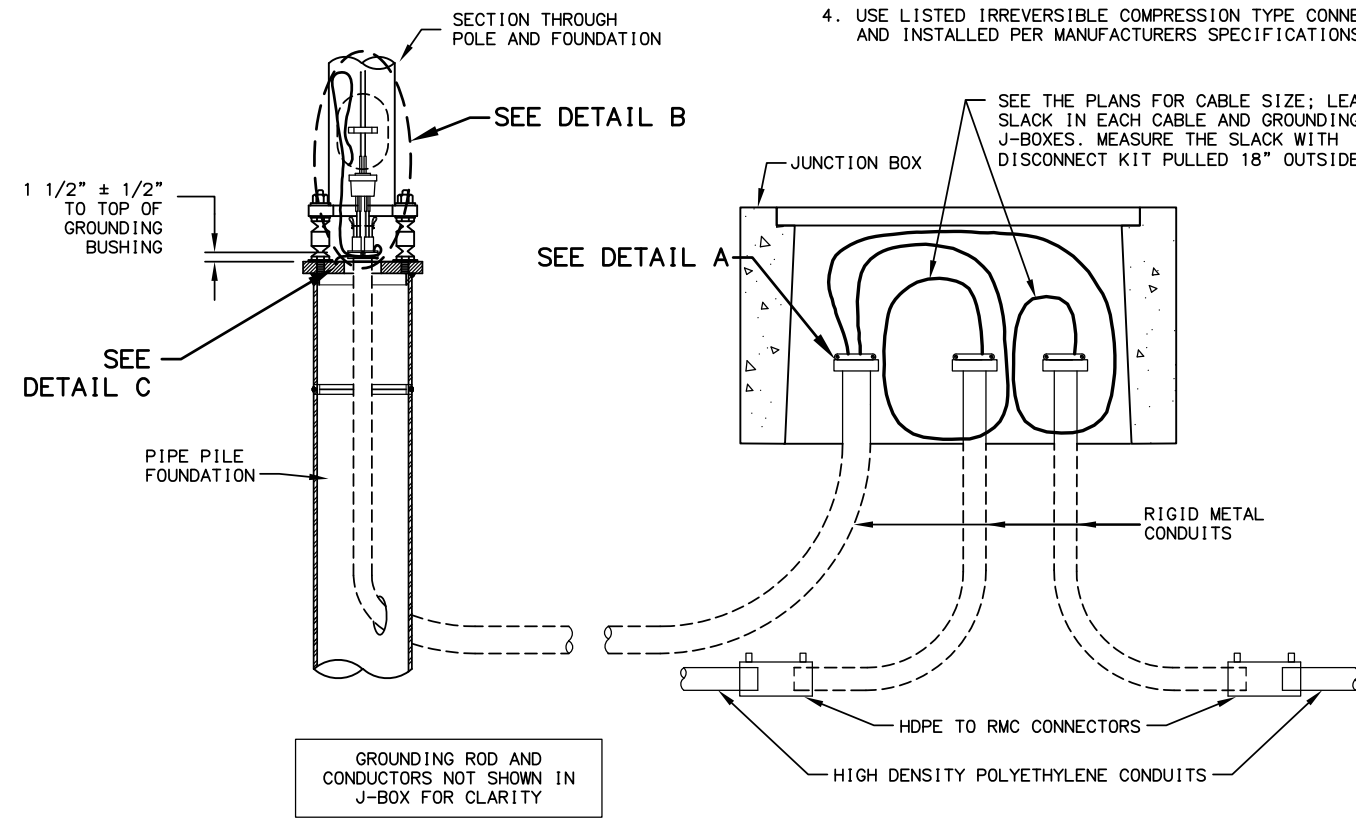
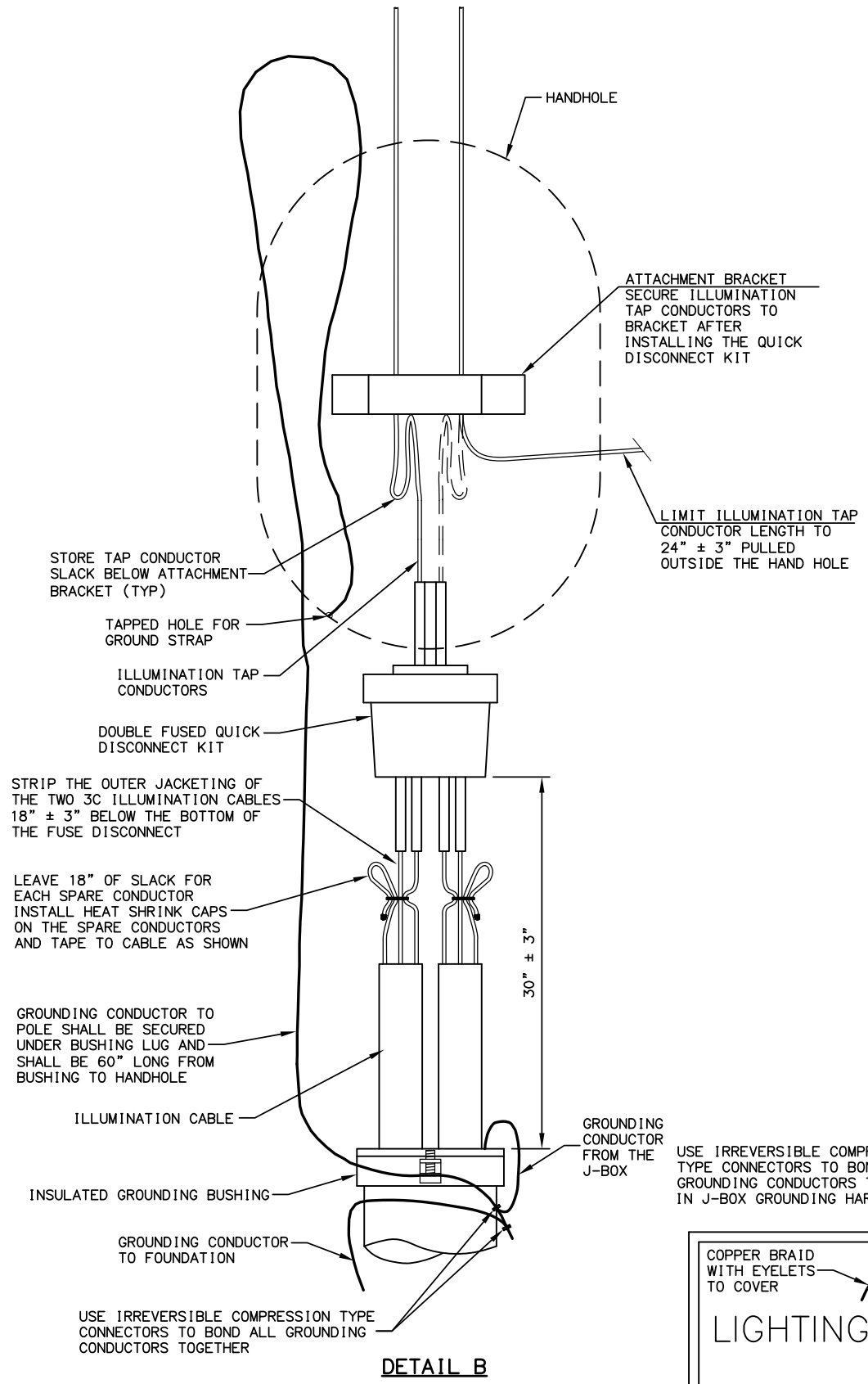
**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

LIGHTING STANDARD

FILE IP: \PROJECTS\RAM SEWARD HIGHWAY 98-105\DWGS\ELEC\H34_LIGHTING-STANDARD.DWG DATE/TIME 1/31/2019 7:51 PM LAYOUT H34 CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H35	H40

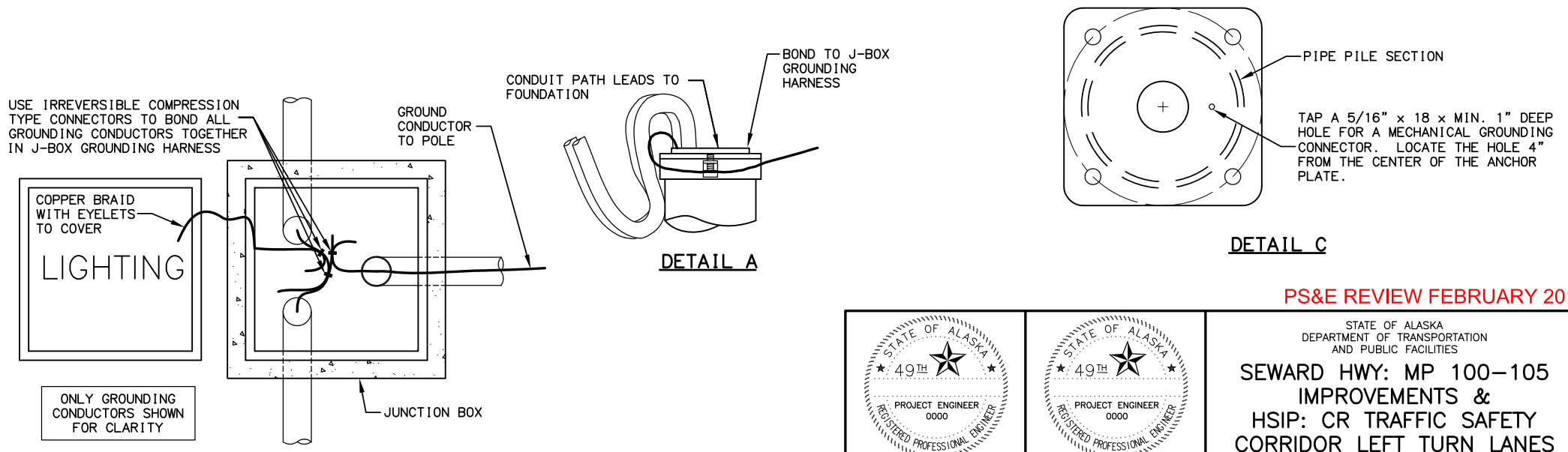
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 DATE/TIME 1/31/2019 7:51 PM LAYOUT H35
 DESIGNED CHECKED DRAFTED



NOTES:

1. APPLICATION FOR SLIP BASE IS THE SAME EXCEPT FOR BONDING. SEE SUBSECTION 660-3.06 FOR BONDING.
2. LABEL ALL CABLES AND CONDUCTORS IN POLE BASE AND J-BOX. SEE SUBSECTION 660-3.05.
3. MAKE ALL GROUNDING AND BONDING WIRE #8 AWG, EXCEPT IN THOSE CONDUITS THAT CONTAIN CIRCUIT CONDUCTORS LARGER THAN #8 AWG. IN THIS CASE USE WIRE EQUAL IN SIZE TO THE LARGEST CONDUCTOR. THE GROUNDING CONDUCTOR TO THE FOUNDATION SHALL BE #4 AWG.
4. USE LISTED IRREVERSIBLE COMPRESSION TYPE CONNECTORS SIZED FOR EACH APPLICATION AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.

LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS

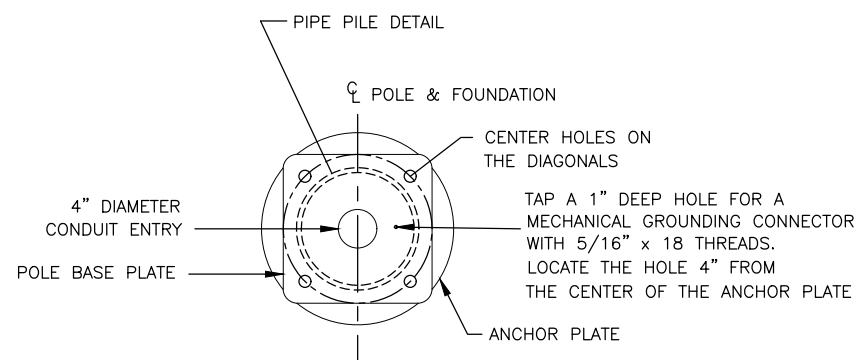


GROUNDING CONDUCTOR BONDING CONNECTIONS

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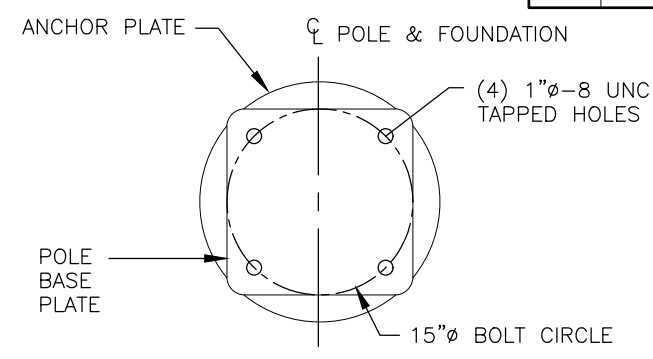
<p>R&M CONSULTANTS, INC. 9101 VANGUARD DRIVE ANCHORAGE, AK 99507 (907) 522-1707 CERT. OF AUTH. NO. AECC111</p>	<p>EDC, INC. 213 WEST FIREWEED LANE ANCHORAGE, AK 99503 (907) 257-0601 CERT. OF AUTH. NO. AECC705</p>	<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES</p> <p>SEWARD HWY: MP 100-105 IMPROVEMENTS & HSIP: CR TRAFFIC SAFETY CORRIDOR LEFT TURN LANES PIPE PILE POLE WIRING AND GROUNDING</p>
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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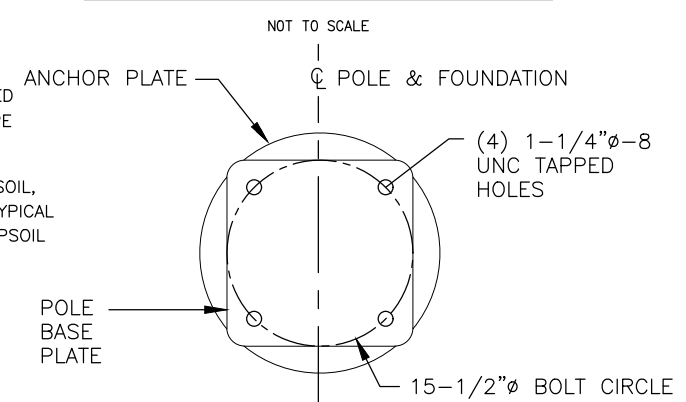


SET THE TOP OF ANCHOR PLATE AT THE INTERSECTION OF FINISHED SLOPE AND ϕ OF FOUNDATION

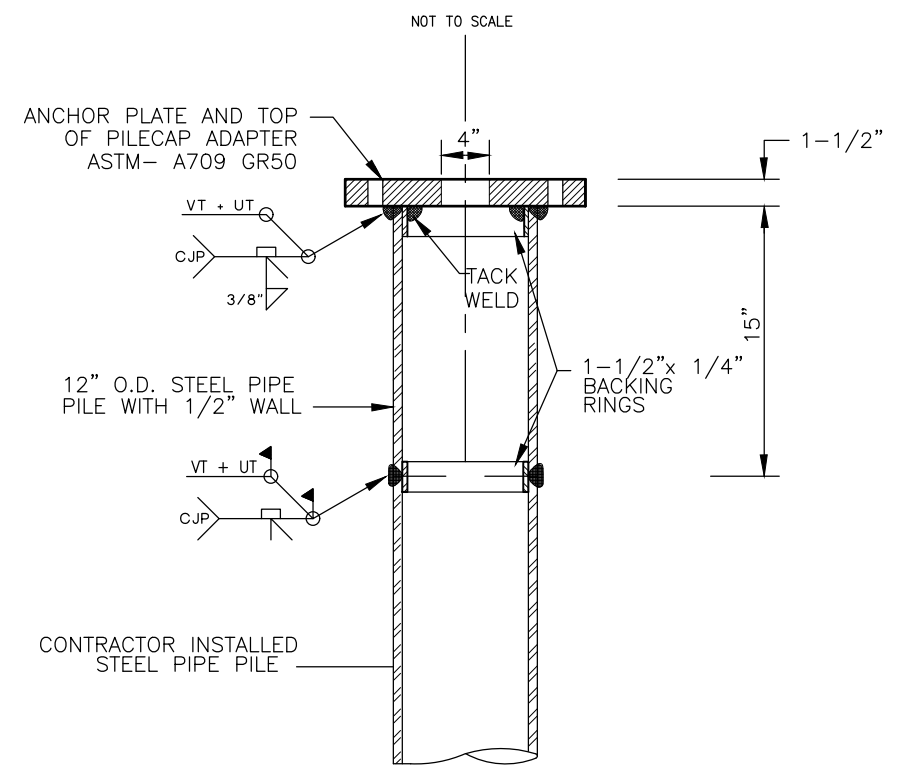
PLAN VIEW



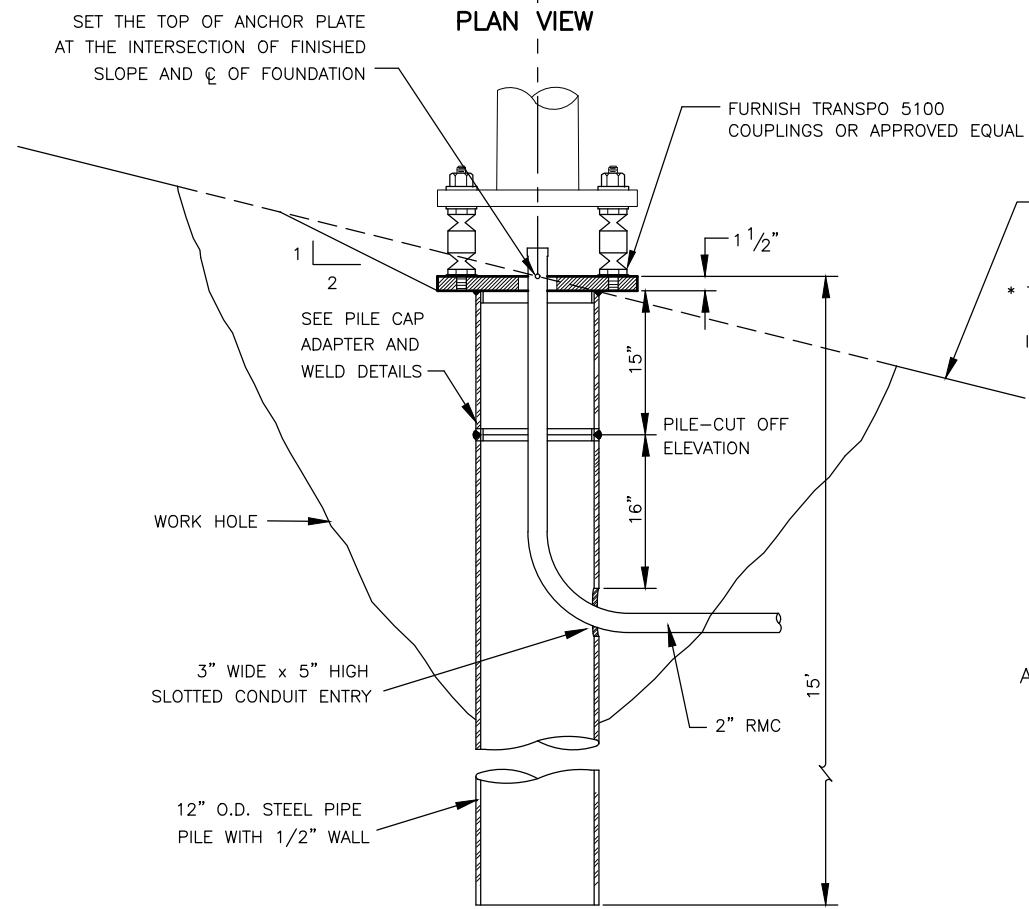
TILT-DOWN ANCHOR PLATE



ELECTROLIER ANCHOR PLATE



PILECAP ADAPTER AND WELD DETAILS



PIPE PILE FOUNDATION

(SHOWN WITH FRANGIBLE COUPLINGS)

DESIGN NOTES:

1. DESIGN STANDARD: 2013 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS WITH 2006 INTERIM.
2. GALVANIZATION OF PILE IS NOT REQUIRED. UNLESS THE GROUND WATER TABLE IS FOUND TO BE, ABOVE 5 FEET, THEN GALVANIZE PILE ACCORDING TO SECTION 505.
3. CHARPY TEST FOR ELECTROLIER POLE PILE FOUNDATIONS ARE NOT REQUIRED.

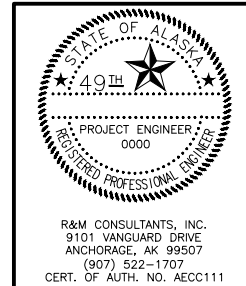
MATERIAL REQUIREMENTS

STRUCTURAL STEEL PLATE	ASTM A572 GRADE 50	Fy = 50 ksi
STEEL PIPE PILE	ASTM A709, GRADE 50 T3 API 5L GRADE X42	Fy = 50 ksi Fy = 42 ksi

NOTES:

1. FURNISH STEEL PIPE PILES THAT CONFORM TO THE MATERIAL REQUIREMENTS AND SECTION 660, 715 AND 740 OF THE SPECIFICATIONS. NO SPLICES ARE ALLOWED BELOW THE PILECAP ADAPTER.
2. DRIVE PILES OPEN ENDED. COMPLETE PILE WORK ACCORDING TO SECTIONS 505, 660 AND 715 OF THE SPECIFICATIONS. REMOVE AND REINSTALL PILES OUT OF PLUMB MORE THAN 1:40.
3. FRESH HEAD THE TOP OF PILES IN A LEVEL PLANE AND CUT THE CONDUIT ENTRANCE HOLE AFTER DRIVING THE PILE. NOTE; ONLY MECHANICAL OR PLASMA CUTTER MEANS ARE PERMITTED. OXY-FUEL CUTTING IS PROHIBITED.
4. FURNISH ONLY SHOP FABRICATED PILECAP ADAPTERS. INCLUDE STAMPED ENGINEERING CALCULATIONS, DRAWINGS, MILL CERTIFICATIONS AND WELDING PLANS FOR PILECAP ADAPTERS AND THE PILECAP ADAPTER TO PILE WELD. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE AWS D1.1, STRUCTURAL WELDING CODE-STEEL AND THE SPECIFICATIONS.
5. WAIT AT LEAST 3 DAYS AFTER BACKFILLING THE WORK HOLE BEFORE ERECTING THE LUMINAIRE POLE.
6. TERMINATE CONDUIT(S) 3" ABOVE THE TOP OF THE ANCHOR PLATE. INSTALL A GROUNDING BUSHING ON THE END OF THE RIGID METAL CONDUIT AND ESTABLISH A BOND WITH THE ANCHOR PLATE.
7. ORIENT POLE SO THAT TILT OPERATION DOES NOT INTERFERE WITH TRAVELED WAY.

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

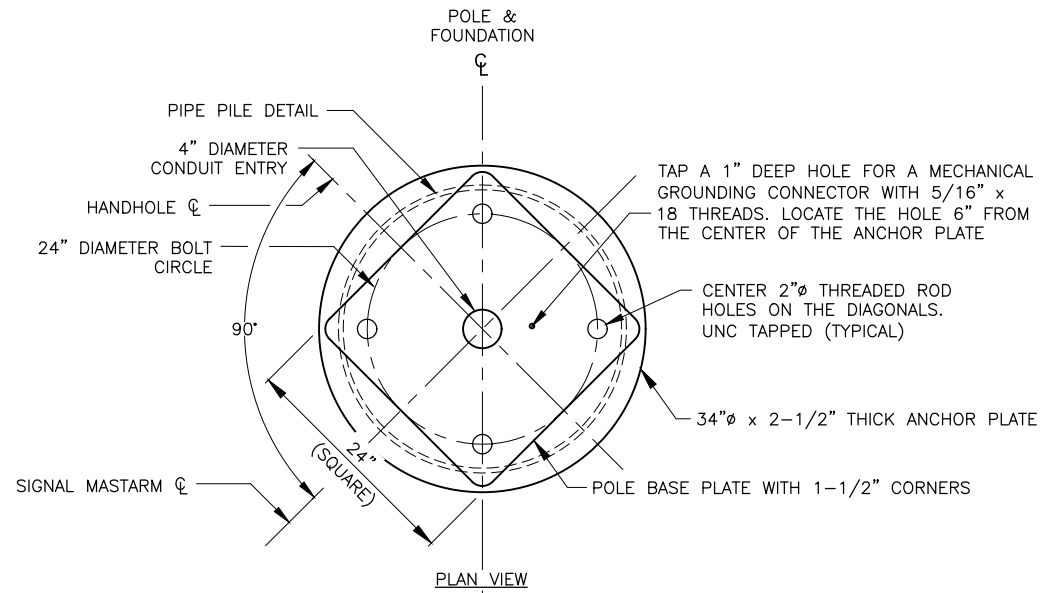
**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES
ELECTROLIER AND TILT POLE
PIPE PILE FOUNDATION AND
BREAKAWAY SUPPORT DETAILS**

R&M CONSULTANTS, INC.
9101 VANGUARD DRIVE
ANCHORAGE, AK 99507
(907) 522-1707
CERT. OF AUTH. NO. AECC111

FILE Z:\PROJECT\2129.00 DOT_C SEWARD HWY MP 99 105\CIVIL\ACAD\SEWARD HWY 2129.01-H37.DWG
 DATE/TIME 2/3/2019 2:42 PM LAYOUT H36
 DESIGNED
 CHECKED
 DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H37	H40

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 DATE/TIME 2/3/2019 2:42 PM LAYOUT H37 DESIGNED CHECKED DRAFTED



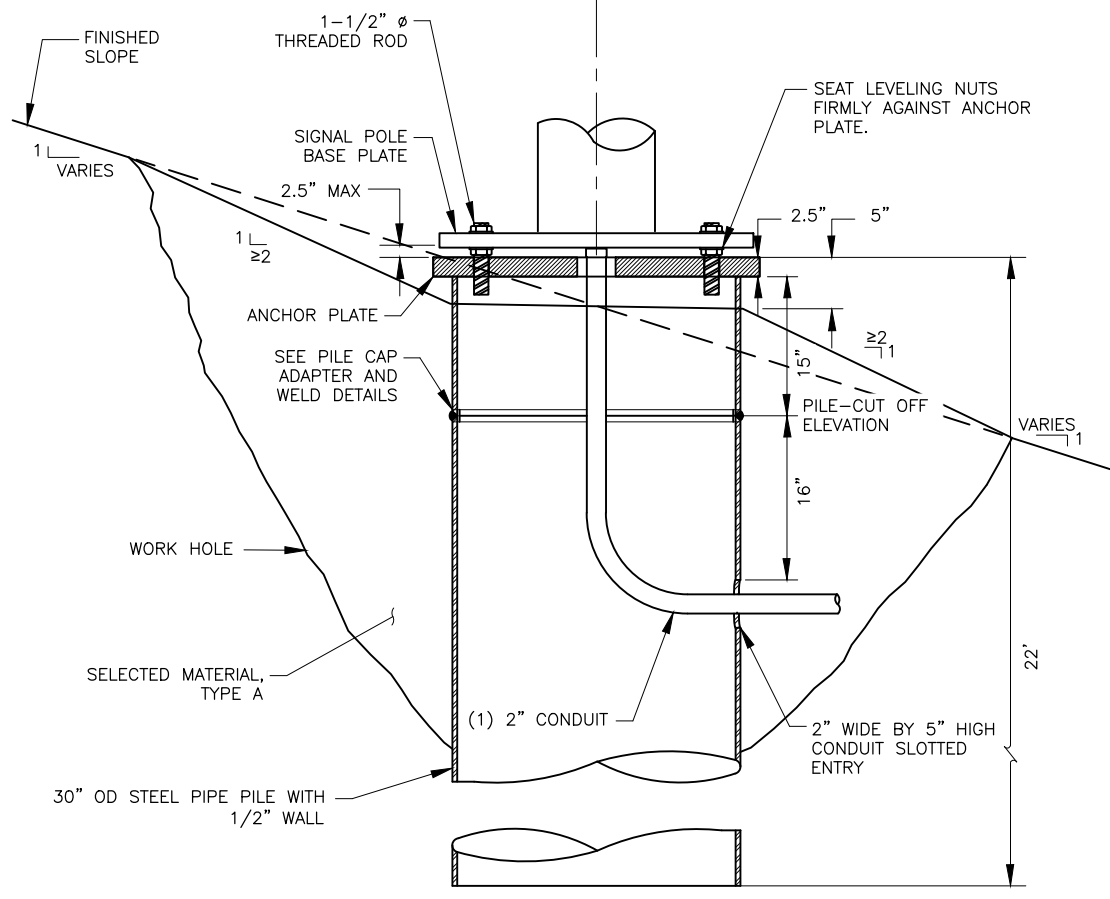
DESIGN NOTES:

- DESIGN STANDARD: 2013 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH 2006 INTERIM.
- GALVANIZE PILE AND PILE CAP ADAPTER ACCORDING TO SECTION 505.
- CONSTRUCTION STANDARD: STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2017 ENGLISH EDITION WITH SPECIAL PROVISIONS.
- FABRICATION OF THE PILE CAP ADAPTER, ANCHOR PLATE AND THREADED ROD ASSEMBLY SHALL BE PERFORMED BY AN AISC CERTIFIED FABRICATOR.

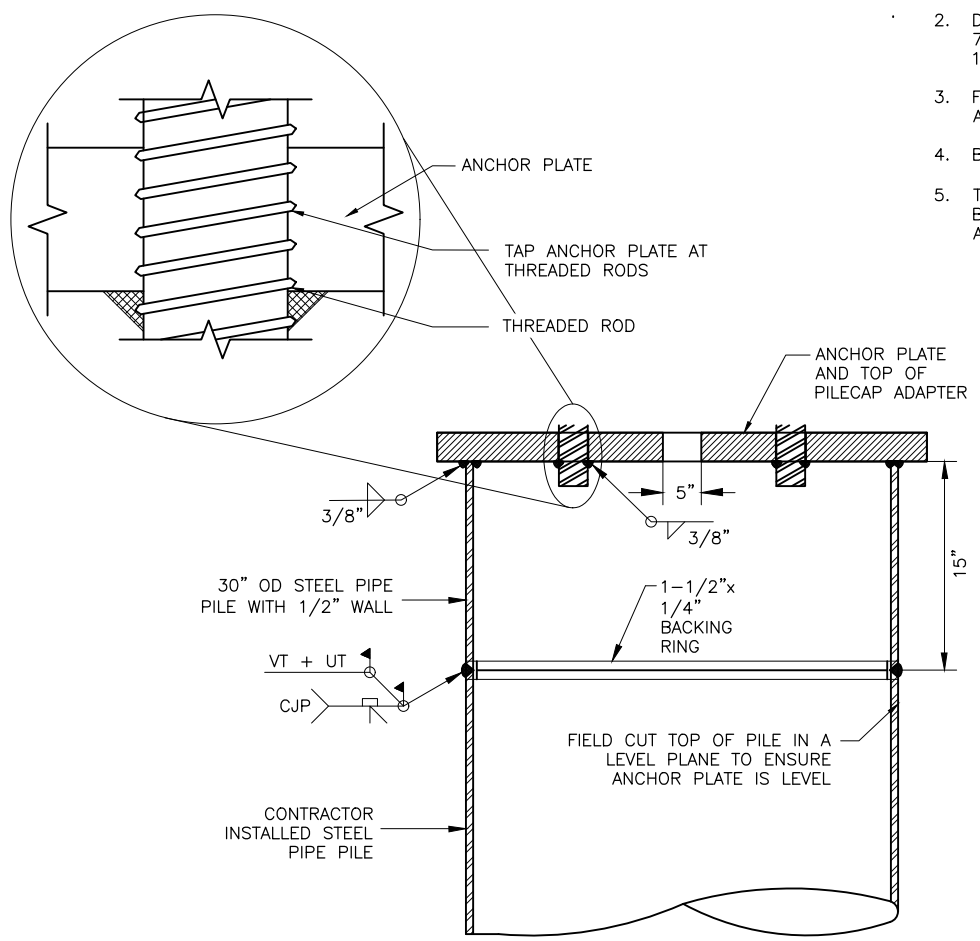
MATERIAL REQUIREMENTS		
STRUCTURAL STEEL PLATE	ASTM A572 GRADE 50	Fy = 50 KSI
STEEL PIPE PILE	ASTM A709 GRADE 50 T3	Fy = 50 KSI
	API 5L GRADE X42	Fy = 42 KSI
THREADED ROD	ASTM A572 GRADE 50	Fy = 50 KSI

NOTES:

- FURNISH STEEL PIPE PILES THAT CONFORM TO THE MATERIAL REQUIREMENTS AND SECTION 660, 715 AND 740 OF THE SPECIFICATIONS.
- DRIVE PILES OPEN ENDED. COMPLETE PILE WORK ACCORDING TO SECTIONS 505, 660 AND 715 OF THE SPECIFICATIONS. REMOVE AND REINSTALL PILES OUT OF PLUMB MORE THAN 1:40.
- FRESH HEAD THE TOP OF PILES IN A LEVEL PLANE AND CUT THE CONDUIT ENTRANCE HOLE AFTER DRIVING THE PILE.
- BACKFILL AND COMPACT THE WORK HOLE BEFORE ERECTING THE RWIS POLE.
- TERMINATE CONDUIT(S) 3" ABOVE THE TOP OF THE ANCHOR PLATE. INSTALL A GROUNDING BUSHING ON THE END OF THE RIGID METAL CONDUIT AND ESTABLISH A BOND WITH THE ANCHOR PLATE.

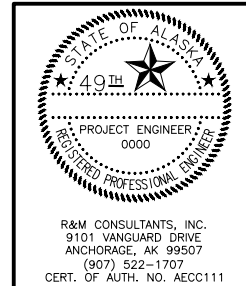


PIPE PILE FOUNDATION



PILECAP ADAPTER AND WELD DETAIL

PS&E REVIEW FEBRUARY 2019



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES
SIGNAL POLE PIPE PILE
FOUNDATION**

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 DATE/TIME 1/31/2019 7:52 PM LAYOUT H38
 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H38	H40

FOUNDATION SCHEDULE				
#	STATION	OFFSET	SHEET	NOTES
LC "A"	1429+07.3	214.3' RT	H39	TYPE 1A LOAD CENTER
LC "B"	1551+77.0	521.0' RT	H40	TYPE 1A LOAD CENTER
1	1428+47.1	48.4' LT	H39	OVERHEAD BEACON

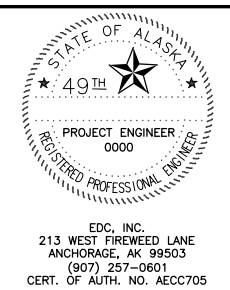
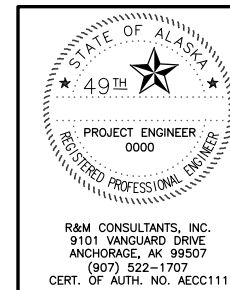
JUNCTION BOX SCHEDULE				
JBOX	STATION	OFFSET	SHEET	TYPE
0A	1429+07.3	208.7' RT	H39	2
0B	1551+71.3	521.9' RT	H40	2
1	1428+47.1	53.5' LT	H39	1A
1A	1429+29.0	41.2' LT	H39	1A
2	1429+34.3	51.6' RT	H39	1A
3	1549+93.7	34.0' LT	H40	1A
3A	1550+94.8	34.0' LT	H40	1A
4	1550+98.4	54.6' RT	H40	1A
4A	1551+65.3	480.2' RT	H40	1A
4B	1551+32.2	476.3' RT	H40	1A
4C	1551+02.9	275.6' RT	H40	1A
4D	1550+71.6	76.2' RT	H40	1A

ELECTROLIER SCHEDULE									
POLE NO.	STATION	OFFSET	DISTRIBUTION TYPE	LAMP WATTS	DRIVER VOLTAGE	MOUNTING HEIGHT	MASTARM LENGTH	SHEET	REMARKS
2	1429+34.4	48.6' RT	ASYMETRIC WIDE	134	240	40'	22'	H39	
3	1549+96.7	34.0' LT	ASYMETRIC WIDE	134	240	40'	22'	H39	LUMINAIRE ON BEACON POLE
4	1550+95.4	54.4' RT	ASYMETRIC WIDE	134	240	40'	22'	H40	

LUMINAIRE PERFORMANCE CRITERIA	
POLE TYPE	MAST ARM
LUMINAIRE TYPE	ASYMMETRIC WIDE
LAMP	LED
LUMENS	15,100
ARM LENGTH	22'
AIMING ANGLE	0°
NUMBER OF LANES	4
LANE WIDTH	12'
MEDIAN WIDTH	0'
MOUNTING HEIGHT	40.0'
SPACING	180'
SETBACK	22'
LIGHT LOSS FACTOR	0.85
AVERAGE LUMINANCE	0.50cd/m ²
UNIFORMITY (AVE/MIN)	1.85:1
UNIFORMITY (MAX/MIN)	3.19:1
VEILING LUMINANCE	0.16

LUMINAIRE SCHEDULE	
MANUFACTURER	GE OR APPROVED EQUAL
MODEL	ERS2 OR APPROVED EQUAL
WATTAGE	132
LIGHT SOURCE	LED
INITIAL LUMENS	15,100
VOLTAGE	240
DRIVER	1,000MA
MOUNTING	ADJUSTABLE TENON
PE CONTROL	NONE
COLOR TEMP	3,000K
IES DISTRIBUTION TYPE	ASYMETRIC FORWARD
UL LISTED	YES

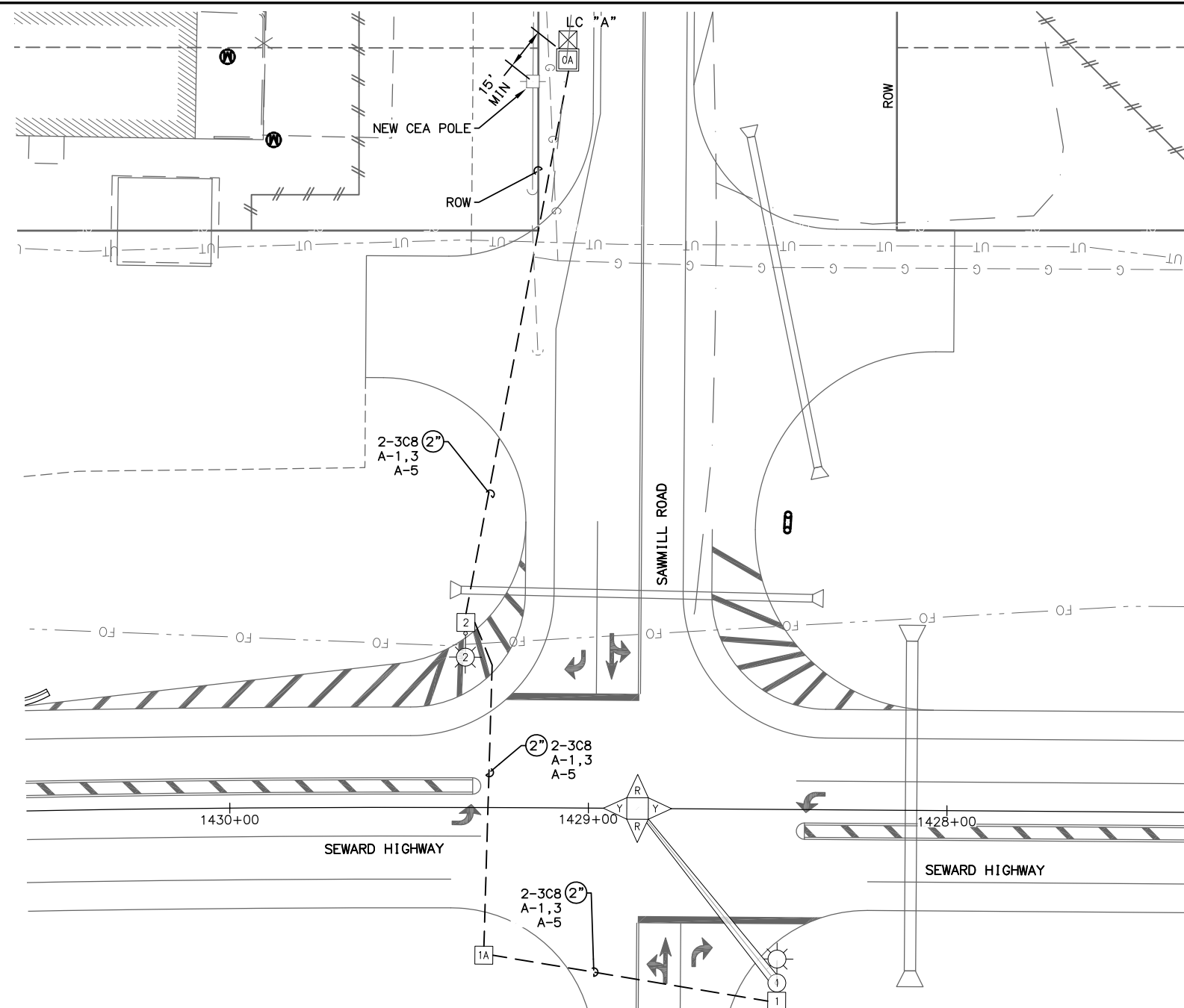
PS&E REVIEW FEBRUARY 2019



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
 IMPROVEMENTS &
 HSIP: CR TRAFFIC SAFETY
 CORRIDOR LEFT TURN LANES**
 ILLUMINATION SUMMARY

FILE: P:\PROJECTS\RAM\SEWARD HIGHWAY 99-105\DWGS\ELEC\H42-45_ILLUMINATION-PLAN.DWG DATE/TIME 1/31/2019 7:52 PM LAYOUT H39 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H39	H40



NOTES:

- INSTALL 12-INCH TRAFFIC SIGNAL HEADS ON MASTARM. INSTALL A 6-POSITION TERMINAL BLOCK IN EACH SIGNAL HEAD.
- WIRE RED SIGNAL HEADS WITH A SINGLE 1-3C#14 AND YELLOW SIGNAL HEADS WITH A SECOND 1-3C#14. RED SIGNAL HEADS SHALL BE WIRED INTO ONE CIRCUIT AND YELLOW SIGNAL HEADS INTO THE SECOND CIRCUIT OF DUAL CIRCUIT "MUSHROOM" FLASHER.
- INSTALL A DUAL CIRCUIT "MUSHROOM" FLASHER IN BOTTOM OF 4-WAY SIGNAL HEAD FRAME ASSEMBLY HOUSING. CONNECT TO LOAD CENTER USING 1-3C#8 AS SHOWN.
- SEE LUMINAIRE PERFORMANCE CRITERIA AND LUMINAIRE SCHEDULE ON H40.
- FIELD VERIFY NEW CEA UTILITY POLE AND PLACE NEW LOAD CENTER NOT CLOSER THAN 15' FROM POLE.
- PROVIDE A LUMINAIRE FOR OVERHEAD BEACON MATCHING LUMINAIRE PERFORMANCE CRITERIA AND LUMINAIRE SCHEDULE ON H38.

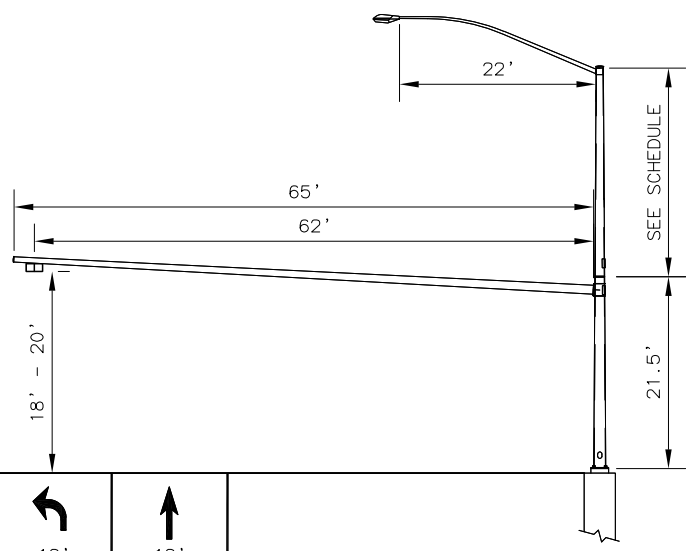
SUMMARY OF LOAD CENTER LC "A"

LOAD CENTER TYPE:	1A (SOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	SEWARD HIGHWAY AND SAWMILL ROAD
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	1 PHASE, 3 WIRE, 120/240V WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	YES
MAIN BREAKER A:	240 VOLT, 2-POLE, 100 AMPERES
CONTACTOR:	600V, 6-POLE
AIC RATING:	10,000A

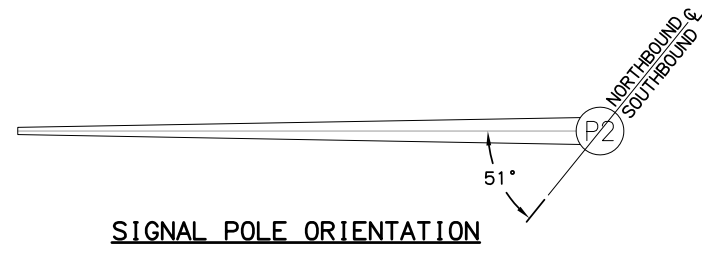
PANEL A

POLE	AMP TRIP	DESCRIPTION	POLE KVA	AØ	BØ	POLE KVA	DESCRIPTION	AMP TRIP	POLE	
1	20/2	LIGHTING	0.1	0.2	0.1	0.1	PHOTOCELL	15/2	2	
3			0.1		0.2	0.1			4	
5	20/1	BEACON	0.1	0.1	0.0	0.0			6	
7			0.0		0.0	0.0			8	
9	20/2	SPARE	0.0	0.0	0.0	0.0			10	
11			0.0		0.0	0.0			12	
13	20/2	SPARE	0.0	0.0	0.0	0.0			14	
15			0.0		0.0	0.0			16	
17			0.0	0.0	0.0	0.0			18	
* CIRCUIT THROUGH CONTACTOR			0.3	0.2			TOTAL KVA	0.5		
							AMPS	2.1		

ILLUMINATION PLAN - STA 1427+25 TO 1430+50



SIGNAL POLE P2
EAST ELEVATION

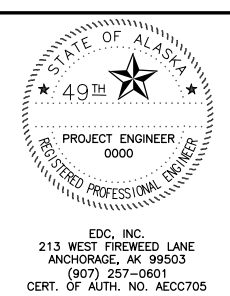
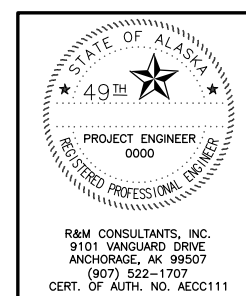


SIGNAL POLE ORIENTATION

SHORT CIRCUIT CALCULATION - LC "A"

240V AC IN A 1-PH, 2W CONFIGURATION WITH A POWER-FACTOR OF 1.00.	
TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
LET-THRU SHORT CIRCUIT CURRENT	8,681A
LENGTH TO FAULT	55'
SERVICE CONDUCTOR SIZE	1/0 AWG ALUMINUM
SERVICE CONDUIT	NON-MAGNETIC
MAX FAULT CURRENT	6,084A
MINIMUM EQUIPMENT RATING	10,000A
CALCULATION DATE	DEC 28, 2018

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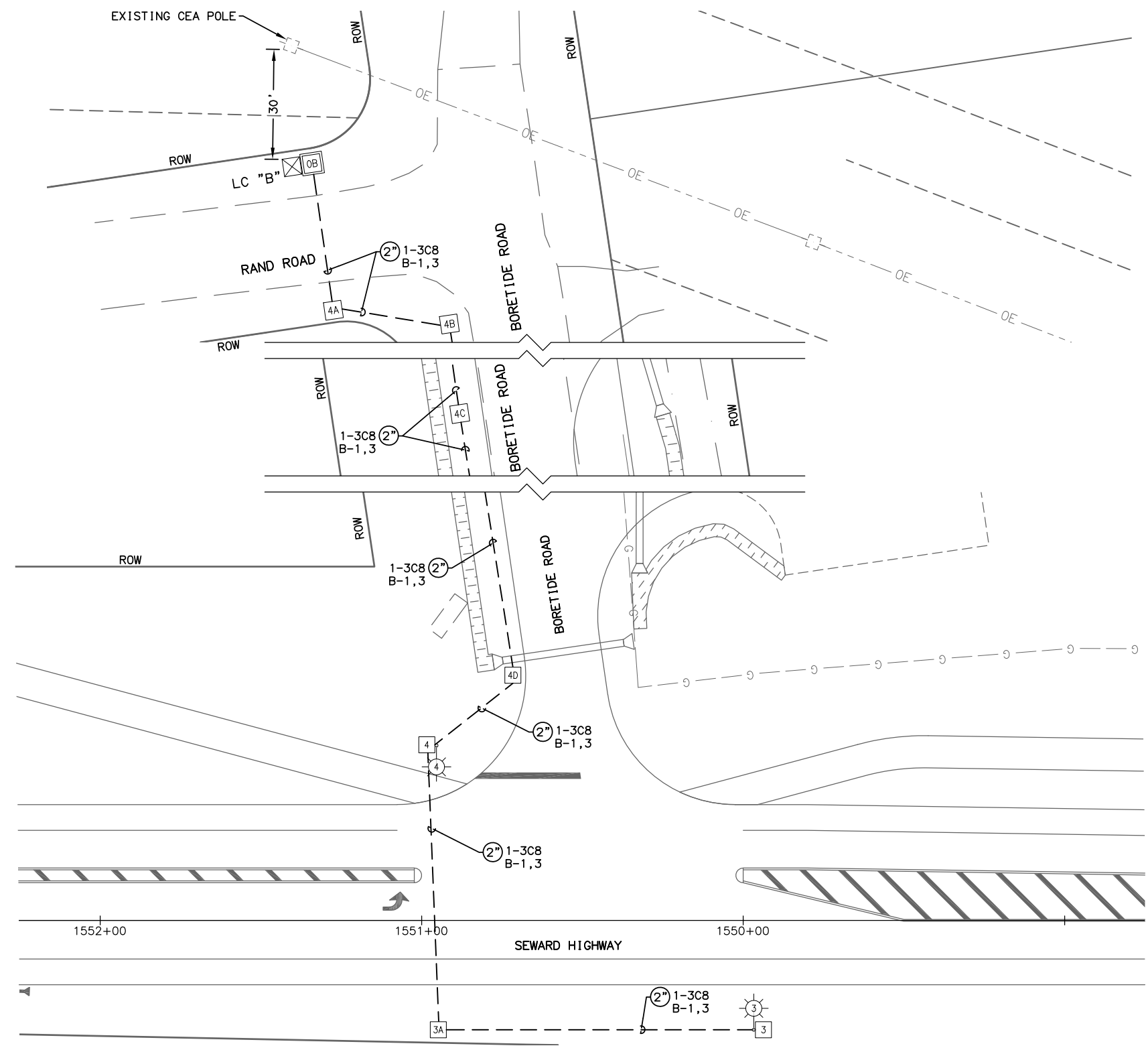
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

**SEWARD HIGHWAY AND SAWMILL
ROAD SIGNAL PLAN**

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	H40	H40

FILE: P:\PROJECTS\RAM\SEWARD HIGHWAY 99-105\DWGS\ELEC\H42-45_ILLUMINATION-PLAN.DWG
 DATE/TIME 1/31/2019 7:52 PM [LAYOUT] H40 [DESIGNED] [CHECKED] [DRAFTED]



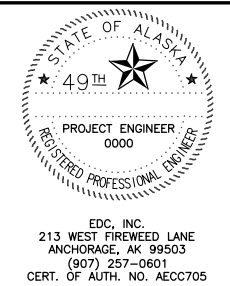
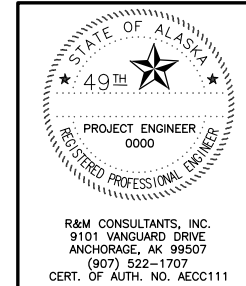
ILLUMINATION PLAN - STA 1548+75 TO 1552+25

SUMMARY OF LOAD CENTER LC "B"									
LOAD CENTER TYPE:		1A (SOA)							
SERVING UTILITY:		CHUGACH ELECTRIC ASSOCIATION							
SERVICE CONDUIT TYPE:		RIGID METAL CONDUIT							
LOCATION DATA									
LOAD CENTER:		SEWARD HIGHWAY AND BORETIDE ROAD							
POWER SOURCE:		NEW LINE EXTENSION							
PHOTOELECTRIC CONTROL:		AT LOAD CENTER							
SERVICE VOLTAGE:		1 PHASE, 3 WIRE, 120/240V WITH GROUNDED NEUTRAL							
PROVIDE METER SOCKET:		YES							
MAIN BREAKER A:		240 VOLT, 2-POLE, 100 AMPERES							
CONTACTOR:		600V, 6-POLE							
AIC RATING:		10,000A							
PANEL A									
POLE	AMP TRIP	DESCRIPTION	POLE KVA	AØ	BØ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1			0.1	0.2		0.1			2
3	20/2	LIGHTING	0.1		0.2	0.1	PHOTOCELL	15/2	4
5			0.0	0.0		0.0			6
7	20/2	SPARE	0.0		0.0	0.0			8
9			0.0	0.0		0.0			10
11	20/2	SPARE	0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* CIRCUIT THROUGH CONTACTOR			0.2	0.2			TOTAL KVA	0.4	
							AMPS	1.7	

SHORT CIRCUIT CALCULATION - LC "B"	
240V AC IN A 1-PH, 2W CONFIGURATION WITH A POWER-FACTOR OF 1.00.	
TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
LET-THRU SHORT CIRCUIT CURRENT	8,681A
LENGTH TO FAULT	70'
SERVICE CONDUCTOR SIZE	1/0 AWG ALUMINUM
SERVICE CONDUIT	NON-MAGNETIC
MAX FAULT CURRENT	5,625A
MINIMUM EQUIPMENT RATING	10,000A
CALCULATION DATE	DEC 28, 2018

VOLTAGE DROP CALCULATION - LC "B"							
1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC. TEMPERATURE RATING 75°C.							
CKT #	CONDUCTOR SIZE (AWG)	LENGTH	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	%VD
BA13	8	710'	240	0.90	0.2	0.8	0.36

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

**SEWARD HIGHWAY AND BORETIDE
ROAD ILLUMINATION PLAN**

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K1	K6

SYMBOL LEGEND

EXISTING	PROPOSED	
		LOAD CENTER
		TRAFFIC CONTROLLER
		TYPE 1A JUNCTION BOX
		TYPE II JUNCTION BOX
		LOOP DETECTOR
-----	-----	LOOP DETECTOR CONDUIT
-----	-----	SIGNAL CONDUIT
-----	-----	LIGHTING CONDUIT
		GROUND TEMPERATURE PROBE (TG) SURFACE TEMPERATURE PROBE (TP)
		AMBIENT AIR PROBE (TA)
.....	-----	PIEZO SENSOR

ABBREVIATIONS

SIG - SERVICE TO CONTROLLER
 INTX - INTERSECTION
 LTG - LIGHTING
 PRE 2 - PREEMPTION #
 PRE CON 2 - PREEMPTION CONTROLLER #
 LC - LOAD CENTER
 TC - TRAFFIC CONTROLLER
 P1 - TRAFFIC SIGNAL POLE #
 PEC - PHOTOELECTRIC CELL
 YAGI - DIRECTIONAL ANTENNA
 OMNI - OMNI DIRECTIONAL ANTENNA
 HEAD - VEHICULAR SIGNAL HEAD
 PED B 28 - PEDESTRIAN PUSH BUTTON #
 PEDI - PEDESTRIAN SIGNAL HEAD
 RMC - RIGID METAL CONDUIT
 IMC - INTERMEDIATE METAL CONDUIT
 PE - POLYETHYLENE CONDUIT
 LFNC - LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
 INTX L - INTERSECTION LIGHTING
 NB - NORTH BOUND
 EB - EAST BOUND
 SB - SOUTH BOUND
 WB - WEST BOUND
 ATR - AUTOMATIC TRAFFIC RECORDER
 NID - NETWORK INTERFACE DEVICE

LABELS

ALL CABLES SHALL BE LABELED AT BOTH ENDS AND AT EVERY JUNCTION BOX THROUGH WHICH THE CABLES PASS, PER SPECIFICATION SECTION 660-3.05.
 ALL WIRE PAIRS SHALL BE LABELED AT THE TERMINAL BLOCK AND AT ANY LOOSE ENDS.
 THE FOLLOWING CONVENTIONS SHALL APPLY TO DESIGNATING AND LABELING CABLES AND WIRE PAIRS:
 LANES: TRAFFIC LANES AND THEIR RESPECTIVE LOOPS AND SENSORS SHALL BE LABELED FROM THE OUTSIDE EDGE OF THE ROAD TOWARD THE CENTER AS FOLLOWS:



TERMINAL BLOCKS: WIRES FROM SENSORS PLACED IN LANES WHICH ARE CLOSEST TO THE CONTROL BOX SHALL BE PLACED AT THE LEFT OR AT THE TOP OF THE TERMINAL BLOCK, DEPENDING ON ORIENTATION.

WIRES FOR INDUCTIVE LOOPS, SENSORS AND RESERVES ARE LABELED AS FOLLOWS:

PnDLc

WHERE:

- P IS THE PREFIX:
- H VEHICLE CLASSIFICATION / SPEED LOOP
- GL AUTOMATIC VEHICLE CLASSIFICATION (AVC) SENSOR
- Ga AUTOMATIC VEHICLE CLASSIFICATION PIEZO
- n NUMBER SUFFIX FOR MULTIPLE LOOPS IN THE SAME LANE
- D DIRECTION (N, S, E, W, NE, SE, SW, NW)
- L IS THE PREFIX FOR ROAD DESIGNATION
- L LANE*
- c IS THE SUFFIX FOR LANE DESIGNATION (A, B, C, D)

GENERAL NOTES

1. INSTALLATION OF EQUIPMENT AND MATERIALS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE, ALASKA DOT&PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, AND LOCAL AMENDMENTS.
2. EVERY EFFORT HAS BEEN MADE TO MAKE THE INFORMATION CONTAINED IN THESE DOCUMENTS COMPLETE AND ACCURATE, HOWEVER, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS AND DIMENSIONS.
3. PVC FROM JUNCTION BOXES TO TRAFFIC LOOPS IS NOT ALLOWED. USE ONLY RMC OR IMC.
4. ALL PVC CONDUIT AND FITTINGS SHALL BE 1 INCH SCHEDULE 80.
5. JUNCTION BOX LOCATIONS APPROXIMATE. LOCATE J-BOXES SO THAT THEY ARE LOCATED OUT OF THE PATHWAY, SIDEWALK, CURB RAMPS, AND DRAINAGE COLLECTION AREAS.
6. INSTALL LOAD CENTER FOUNDATIONS WITHIN 1-DEGREE OF PLUMB.
7. CONTRACTOR SHALL INSTALL A NEW NID BOX SERVICE WHEN INDICATED IN THE PLANS. SERVICE INSTALLATION INCLUDES INSTALLING A 6-INCH BY 6-INCH WOODEN POST, TO A DEPTH OF 3 FEET BELOW GRADE AND AT A HEIGHT OF 5 FEET ABOVE GRADE. LOCATE THE WOODEN POST UP TO 15 FEET FROM THE CABINET, OUTSIDE OF THE CLEAR ZONE, AS INDICATED IN THE PLANS OR APPROVED BY THE ENGINEER. PROVIDE A MINIMUM 1/2-INCH RMC LEADING FROM THE CABINET TO THE FUTURE NID BOX. NOTIFY THE LOCAL TELEPHONE UTILITY COMPANY WHEN THE SERVICE INSTALLATION IS COMPLETE. TELEPHONE COMPANY TO FURNISH AND INSTALL A NID BOX.

REFERENCE SPECIFICATIONS

ALL WIRING IN THIS SECTION SHALL BE CONSTRUCTED PER SPECIFICATION SECTION 660 SIGNALS AND LIGHTING, EXCEPT WHERE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS. IN PARTICULAR, ALL CONSTRUCTION SHALL CONFORM TO SPECIFICATION SECTIONS 660-3.03 CONDUIT, 660-3.04 JUNCTION BOXES, 660-3.05 WIRING, 660-3.06 BONDING AND GROUNDING, AND 660-3.01.7 FIELD TESTS, EXCEPT AS MODIFIED BY SECTION 669 AUTOMATED TRAFFIC RECORDERS.

INDUCTIVE LOOPS

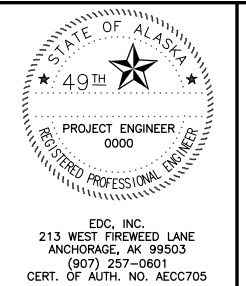
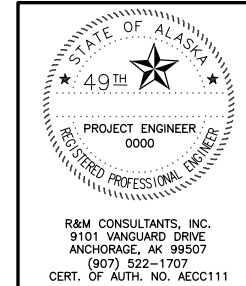
ALL INDUCTIVE LOOPS SHALL BE WOUND IN THE SAME DIRECTION WITH THE STARTING LEAD MARKED "S" PER SECTION 660-3.05.13.

LEAD-IN WIRES FOR EACH LOOP SHALL BE IN SEPARATE CONDUITS TO THE FIRST JUNCTION BOX. THESE CONDUITS SHALL BE SEPARATED FROM OTHER LOOPS BY A MINIMUM OF 12 INCHES.

INDUCTIVE LOOPS SHALL BE INSTALLED IMMEDIATELY PRIOR TO PAVING THIS SECTION OF ROADWAY. FINAL LIFT ASPHALT PAVEMENT SHALL BE SMOOTH OVER ALL INDUCTIVE LOOPS AND WITHOUT TRANSVERSE SEAMS, JOINTS, OR ROUGHNESS WITHIN 50 FEET OF THE LOOPS.

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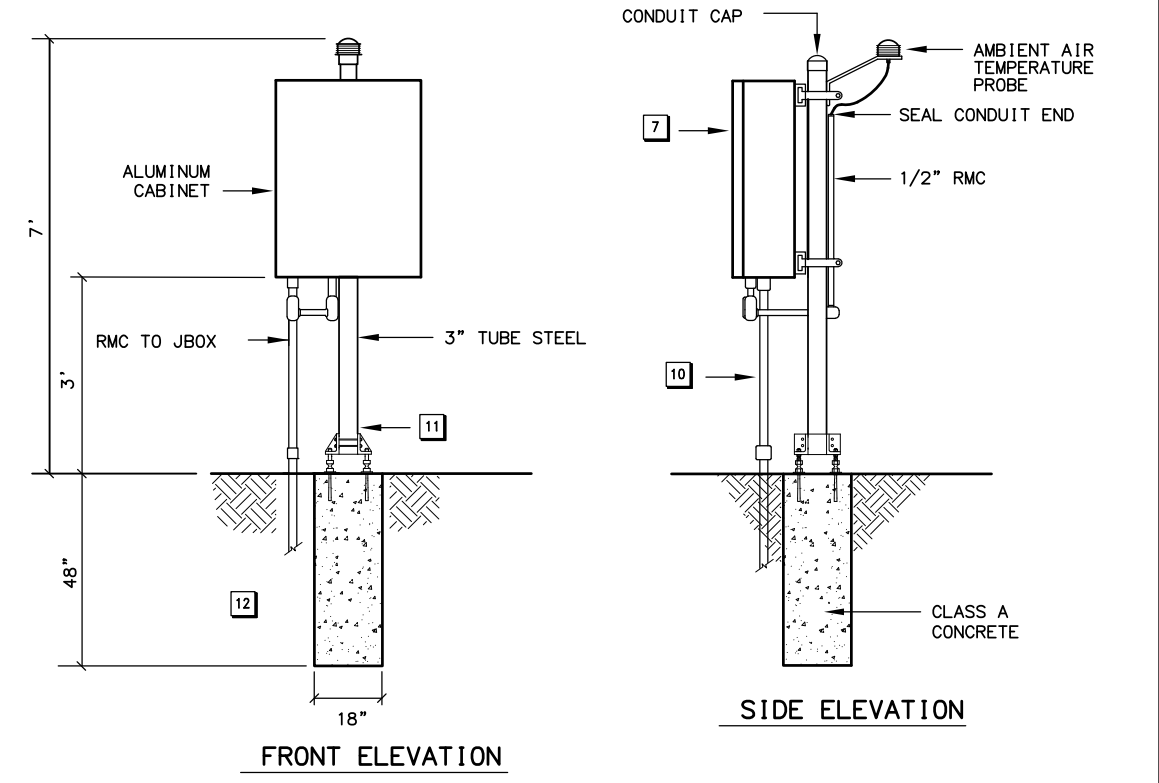
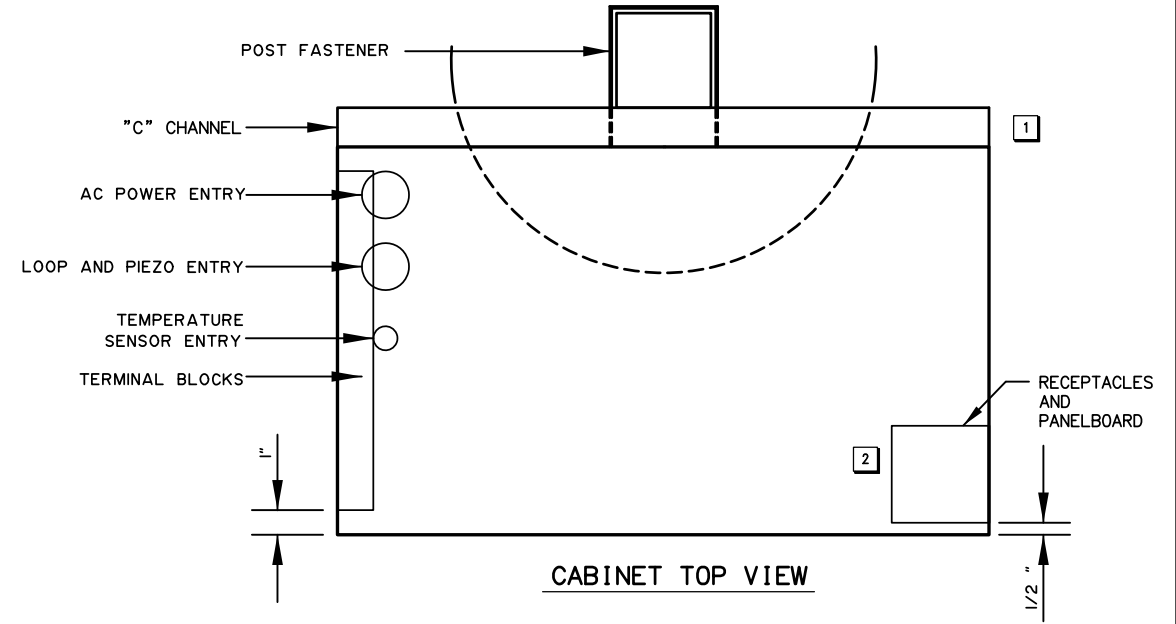
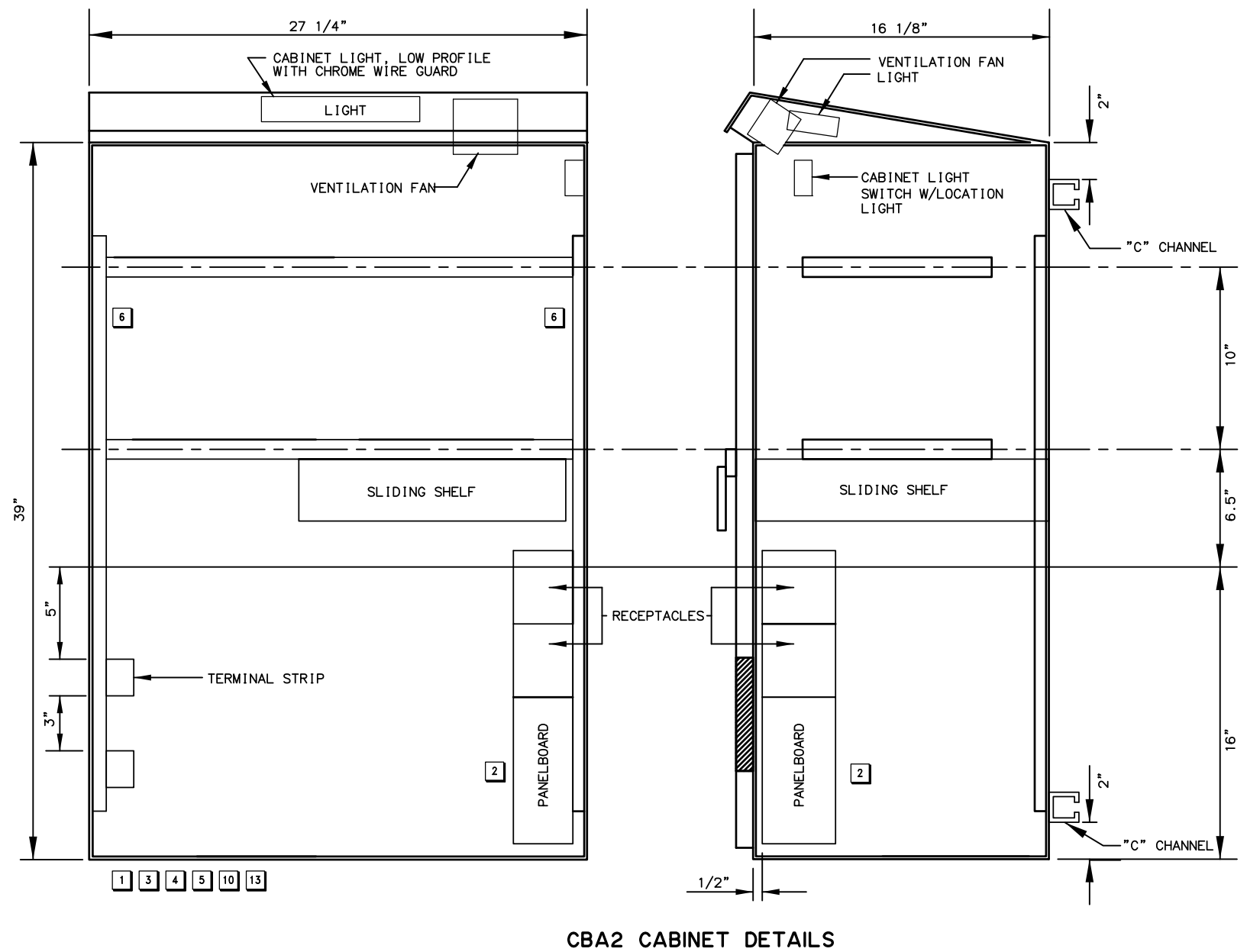
CALL BEFORE YOU DIG!
 CONTRACTOR SHALL CALL A MINIMUM OF 3 DAYS IN ADVANCE OF CONSTRUCTION
 ALASKA DIGLINE...907-278-3121 OR 800-478-3121
 CALL OR GO TO WWW.AKONECALL.COM/STATEWIDE.HTM
 FOR MEMBER LIST OF WHO WILL BE NOTIFIED



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
 IMPROVEMENTS &
 HSIP: CR TRAFFIC SAFETY
 CORRIDOR LEFT TURN LANES**
 ATR LEGEND AND NOTES

FILE: P:\PROJECTS\RAM SEWARD HIGHWAY 99-105\DWGS\ELEC\K2_CBA2_CABINET.DWG
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 DESIGNED
 K2
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 1/31/2019 7:52 PM
 DATE/TIME

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K2	K6

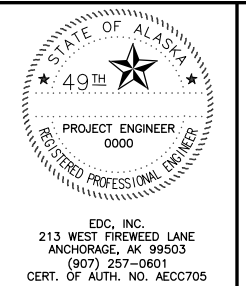
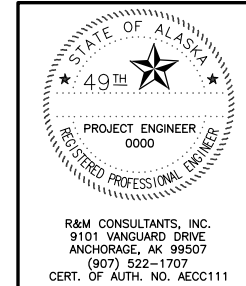


CABINET TYPE CBA2

NOTES

- 1 USE CONDUIT HUBS IN BOTTOM OF CABINET, MYERS OR EQUAL. USE HUBS WITH NEOPRENE SEAL AND INSULATED THROAT FOR NON-POWER CONDUITS WITH DETECTOR LEAD-IN CABLES AND TELEPHONE SERVICE. USE HUBS FOR SERVICE ENTRANCE CONDUIT AND CONNECT FLEXIBLE METAL CONDUIT TO PANELBOARD INSIDE CABINET.
- 2 PROVIDE VOLTAGE SURGE PROTECTION IN PANELBOARD.
- 3 ALL 120V WIRING, INCLUDING THAT FOR PANELBOARD, LIGHT, FAN, AND THERMOSTATS TO BE IN FLEXIBLE METAL CONDUIT WITH EXCEPTION OF CORD CONNECTED ELECTRONIC EQUIPMENT.
- 4 CABINET TO BE CERTIFIED BY NATIONALLY RECOGNIZED INDEPENDENT THIRD PARTY TESTING AGENCY (UL, CSA, FM, ETC.).
- 5 ALL EQUIPMENT INSIDE CABINET TO BE FASTENED TO RAILS WITH NO SCREW PENETRATIONS OF THE CABINET SURFACE.
- 6 SIDE RAILS TO BE INSTALLED TO PERMIT HORIZONTAL ADJUSTMENT OF VERTICAL RAILS.
- 7 CABINET DOORS TO OPEN AWAY FROM ROADWAY.
- 8 USE FACTORY 90° ELBOWS TO/FROM J-BOXES ON ALL CONDUITS LARGER THAN 1".
- 9 ALL CONDUIT SHALL BE RMC UNLESS NOTED OTHERWISE. SEE SCHEDULE FOR SIZE.
- 10 NOT ALL CONDUITS SHOWN IN DETAIL. ADD OTHERS AS REQUIRED.
- 11 PROVIDE FLANGE, FRANGIBLE COUPLING AND FOUNDATION PER DOT STANDARD DETAIL S-31.01.
- 12 INSTALL FOUNDATION IN SELECTED MATERIAL, TYPE A. THE CONTRACTOR SHALL EXCAVATE AND BACKFILL WITH GRAVEL 2 FEET BELOW AND SURROUNDING THE FOUNDATION.
- 13 LOCKS SHALL BE CORBIN NO. 2, AND SHALL BE COMPATIBLE WITH EXISTING LOCKS.

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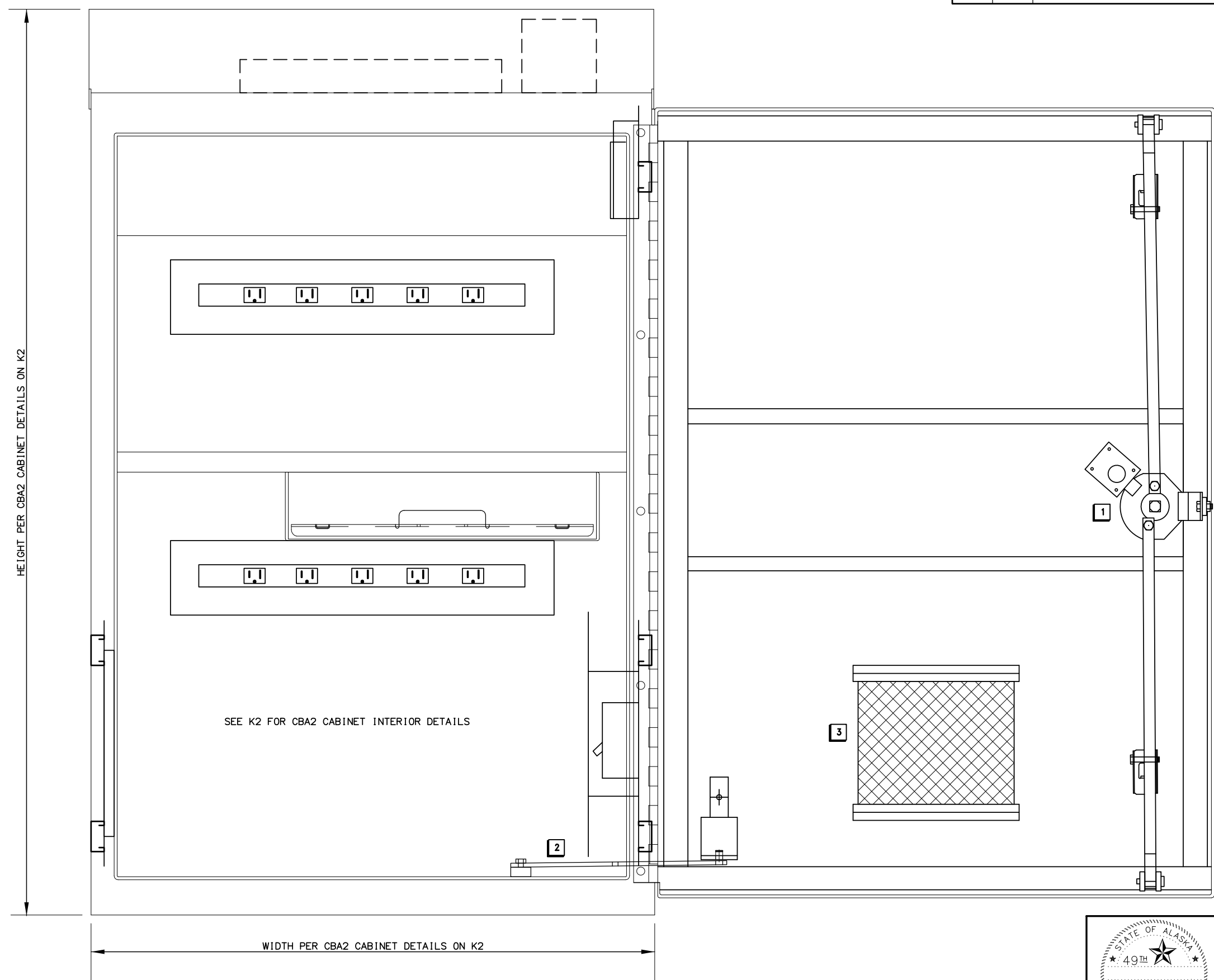
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

CBA2 CABINET DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K3	K6

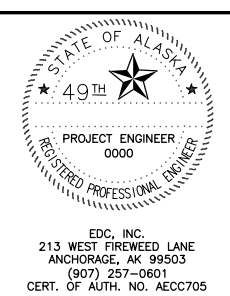
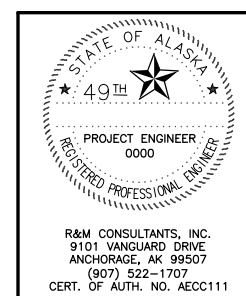
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NOTES

- 1 3 POINT DRAW ROLLER TYPE LATCHING MECHANISM
- 2 DOOR CATCH MECHANISM
- 3 AIR FILTER MOUNTED TO DOOR INTERIOR

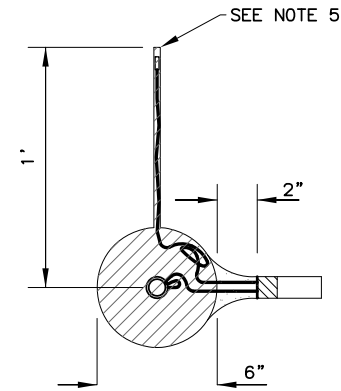
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STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
 IMPROVEMENTS &
 HSIP: CR TRAFFIC SAFETY
 CORRIDOR LEFT TURN LANES**
CBA2 CABINET DOOR DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K4	K6

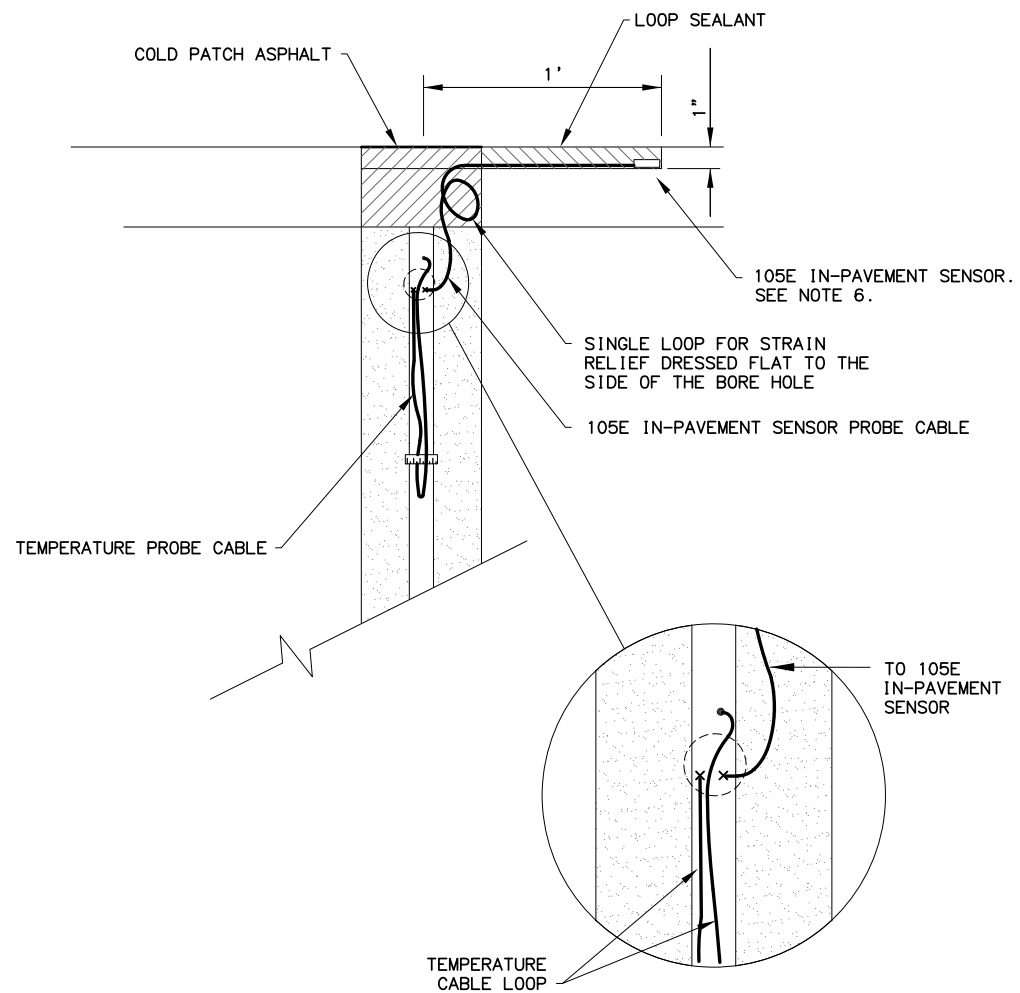
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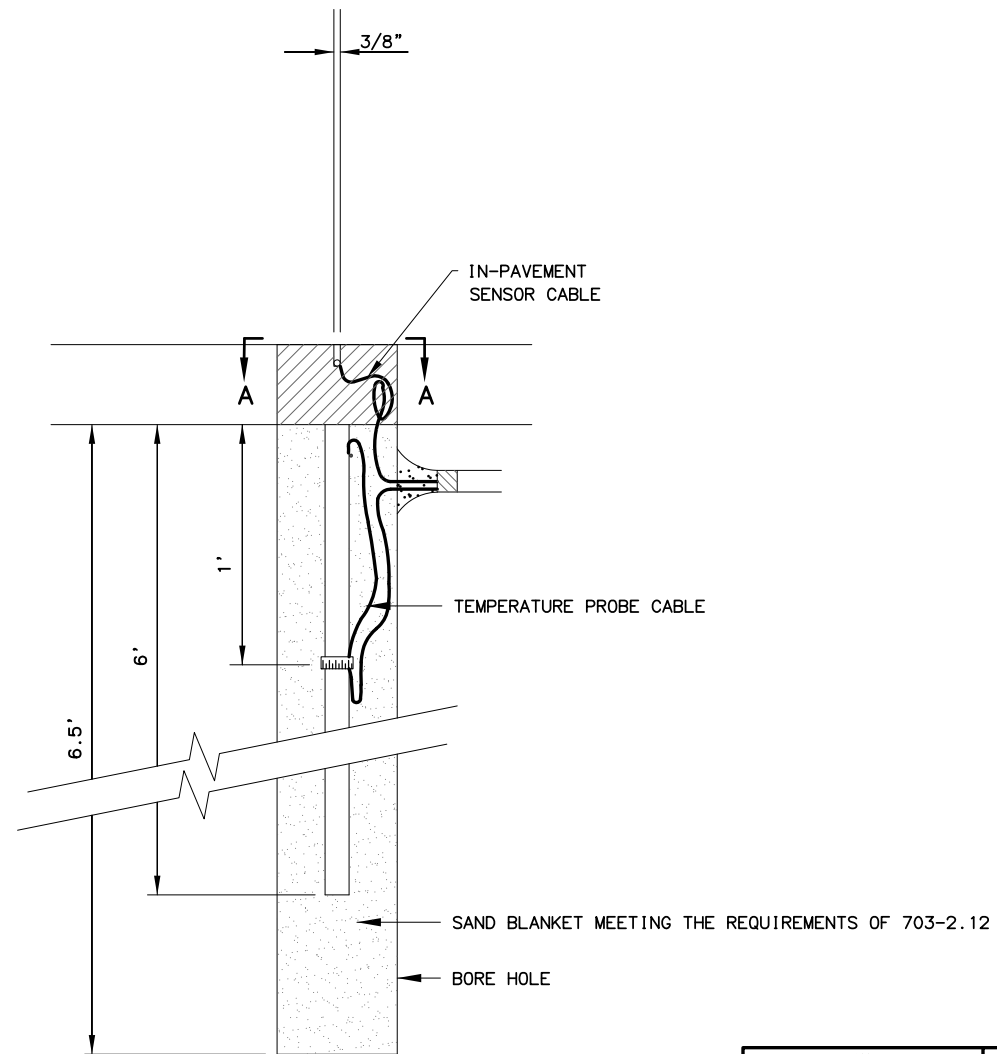
SECTION A-A

NOTES

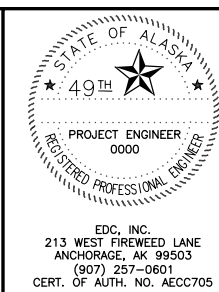
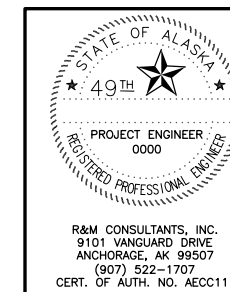
1. SLOT FOR IN-PAVEMENT SENSORS SHALL BE PARALLEL TO THE DIRECTION OF TRAVELED WAY.



TEMPERATURE SENSOR DETAILS
N.T.S.



PS&E REVIEW FEBRUARY 2019



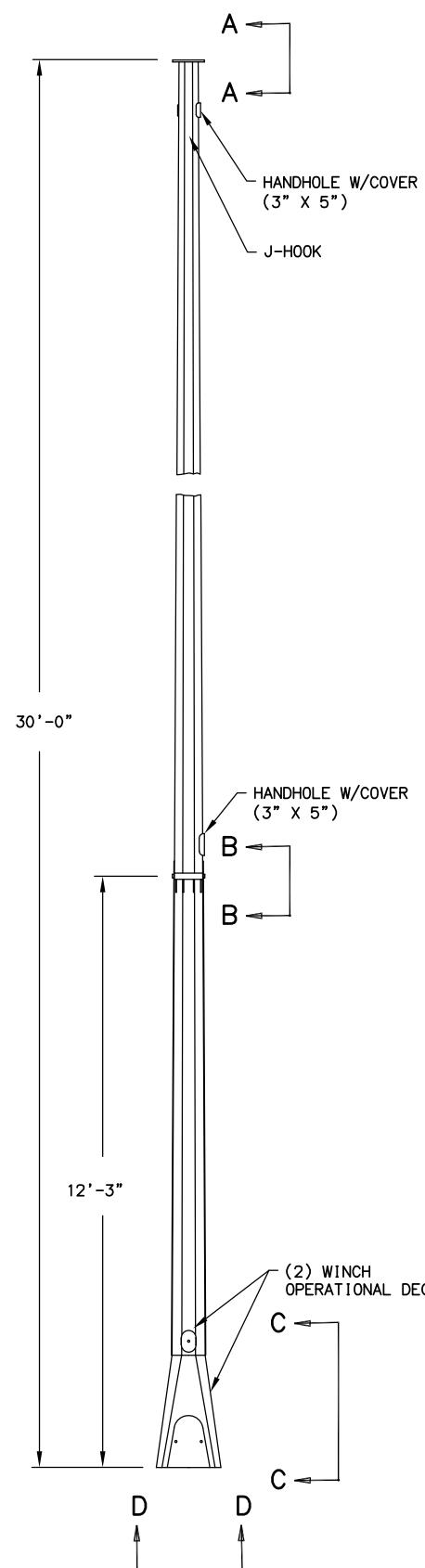
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**

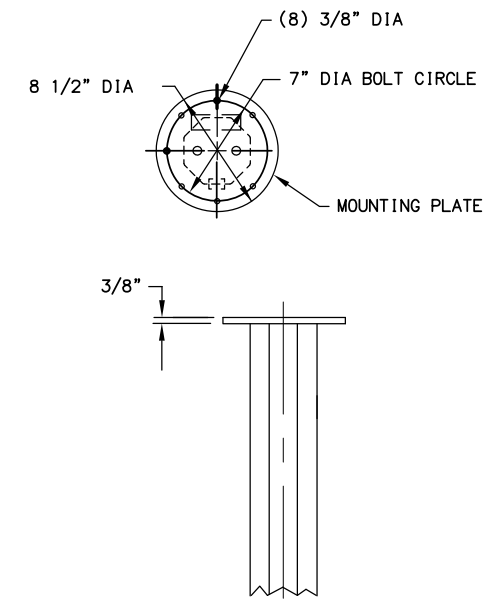
**TEMPERATURE SENSOR
INSTALLATION DETAILS**

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K5	K6

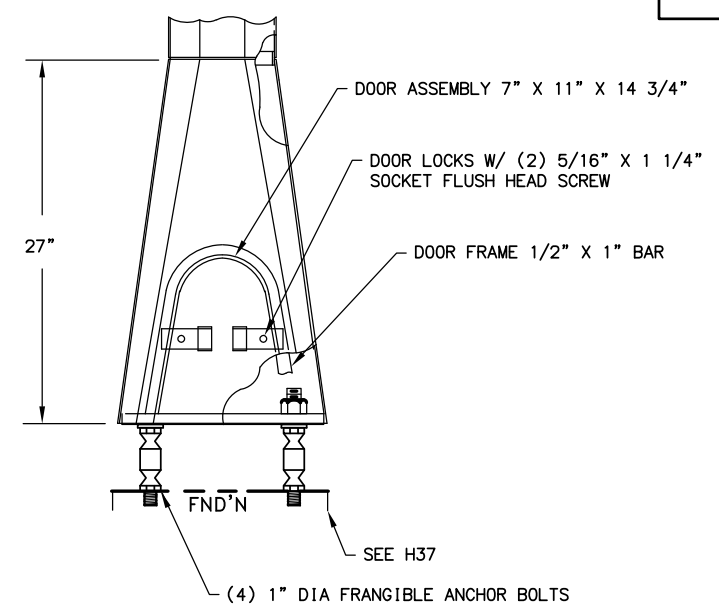
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TILT POLE SIDE VIEW

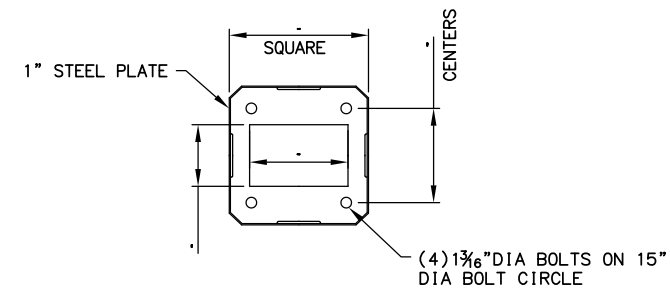


**A-A
POLE TOP DETAIL**

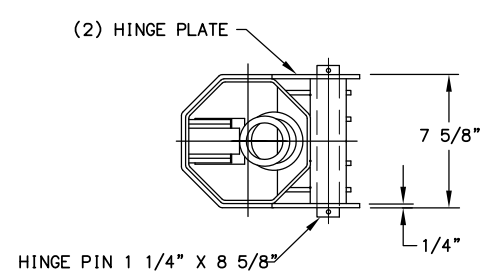


TILT POLE

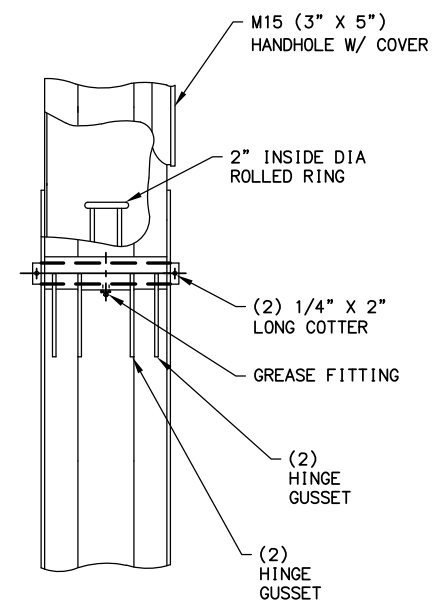
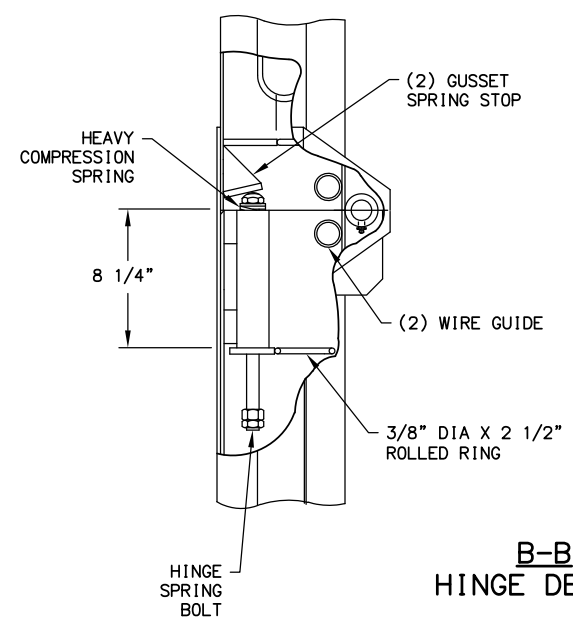
1. MATERIAL - HIGH STRENGTH LOW ALLOY STEEL 50,000 (334738 KPA) PSI MIN YIELD PER ASTM A572 OR A607 (A588 OR A606 IF SELF WEATHERING) BASE PLATE MATERIAL 36,000 (248211 KPA) PSI MIN YIELD PER ASTM A36 (A588 IF SELF WEATHERING).
2. DO NOT GROUT BETWEEN THE BASE PLATE AND FOUNDATION. AIR MUST BE ALLOWED TO FLOW THROUGH THE POLE TO PREVENT MOISTURE INSIDE THE POLE.
3. FINISH - GALVANIZED.



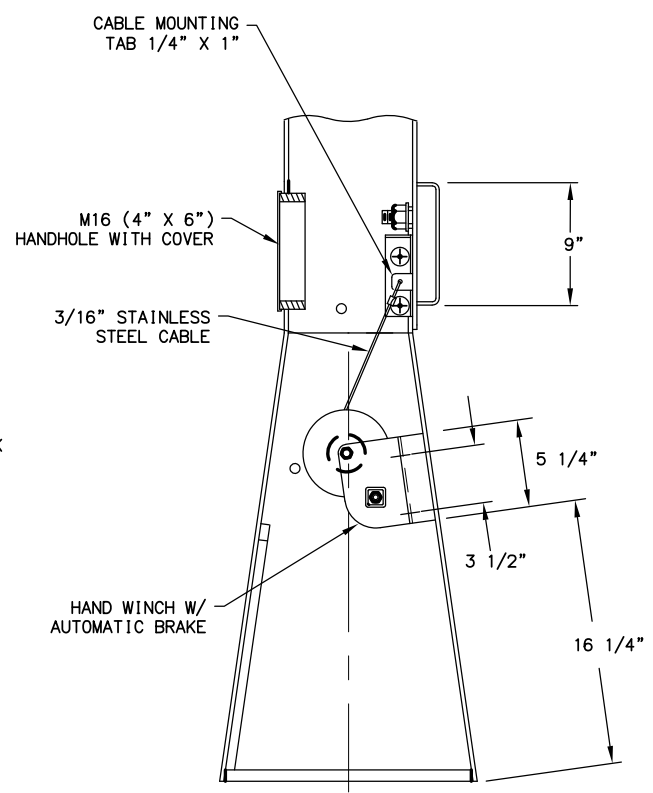
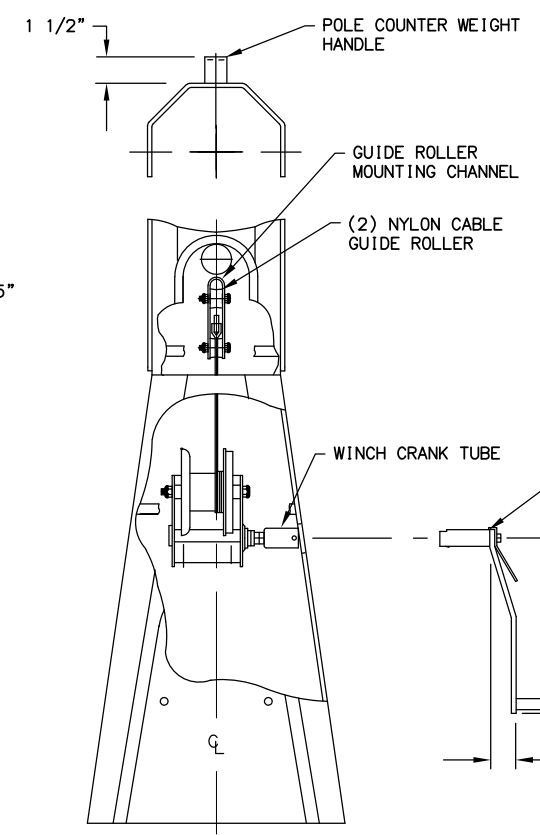
**D-D
POLE BASE DETAIL**



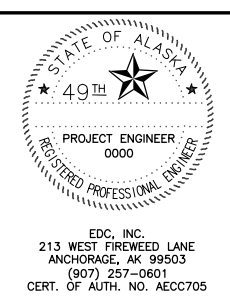
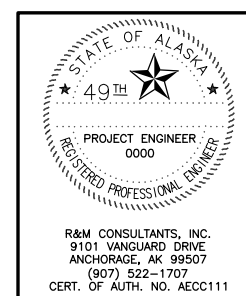
**B-B
HINGE DETAIL**



**C-C
WINCH DETAIL**



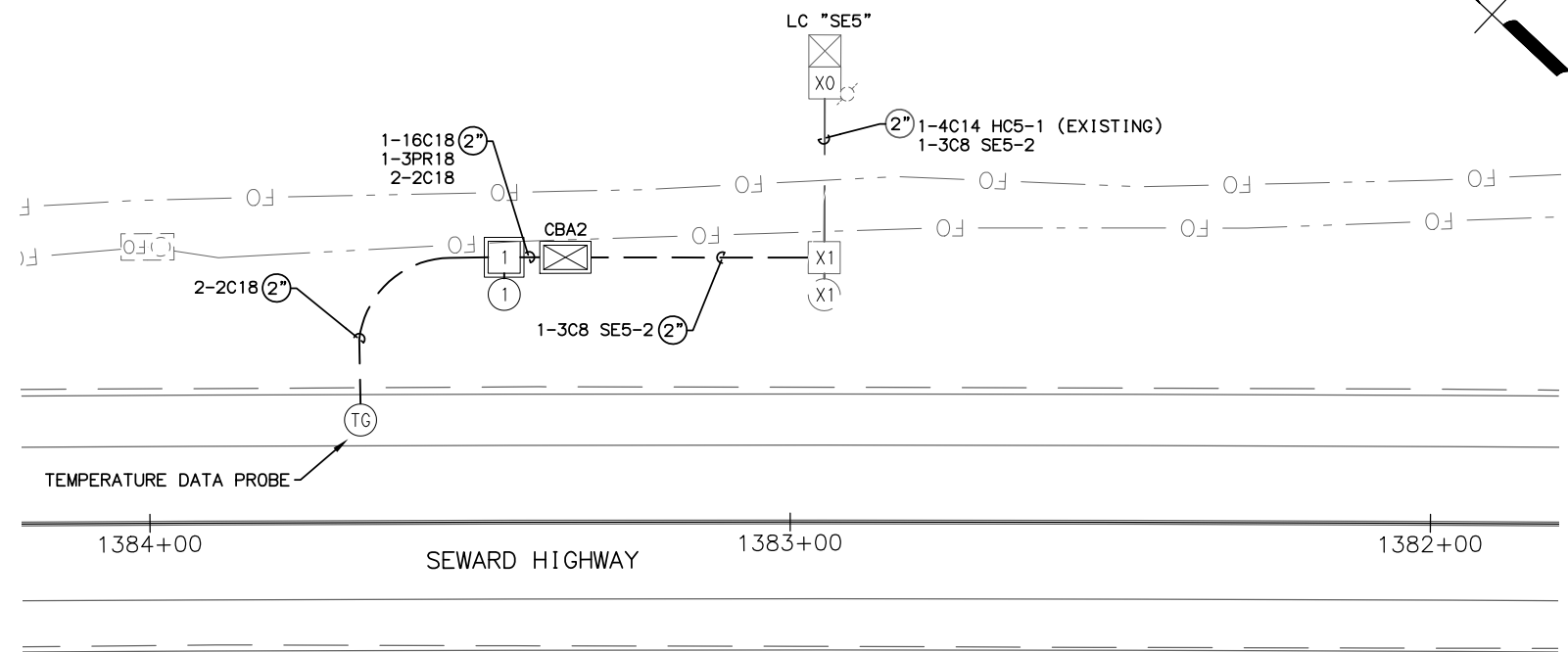
PS&E REVIEW FEBRUARY 2019



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
IMPROVEMENTS &
HSIP: CR TRAFFIC SAFETY
CORRIDOR LEFT TURN LANES**
TILE POLE DETAIL

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0A31056/CFHWY00011 0001497/Z570880000	2019	K6	K6

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NOTES:

1. ROW IS OUTSIDE OF VIEW.
2. INSTALL TILT POLE SUCH THAT POLE LOWERS PARALLEL TO THE ROAD AND AWAY FROM VARIABLE MESSAGE SIGN.
3. INSTALL THE FOLLOWING COMPONENTS AT TILT POLE:
 - a. RADAR TRAFFIC COUNTER
 - b. TEMPERATURE DATA PROBE
 - c. WEATHER AND PRECIPITATION SENSORS

NEW TILT PLAN - STA 1384+20 TO 1381+80

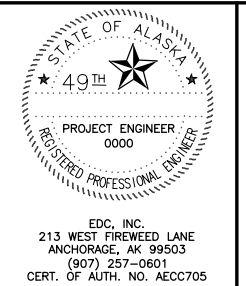
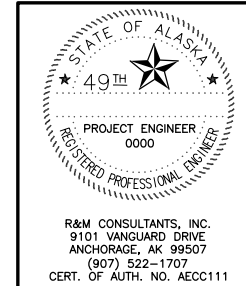
FOUNDATION SCHEDULE				
#	STATION	OFFSET	SHEET	NOTES
CBA2	1383+35.0	41.4' RT	K6	CBA2 CABINET
1	1383+44.6	35.6' RT	K6	TILT POLE

JUNCTION BOX SCHEDULE				
JBOX	STATION	OFFSET	SHEET	TYPE
1	1383+44.6	41.4' RT	K6	2

SENSOR SCHEDULE			
#	STATION	OFFSET	SHEET
TG	1383+67.0	16.0' RT	K6

SUMMARY OF EXISTING LOAD CENTER LC "SE5"										
LOAD CENTER TYPE:		2, DUAL POST (SOA)								
SERVING UTILITY:		CHUGACH ELECTRIC ASSOCIATION								
SERVICE CONDUIT TYPE:		EXISTING RIGID METAL CONDUIT								
LOCATION DATA										
LOAD CENTER:		SEWARD HIGHWAY, NEAR M.P. 100								
POWER SOURCE:		EXISTING								
PHOTOELECTRIC CONTROL:		NONE								
SERVICE VOLTAGE:		1 PHASE, 3 WIRE, 120/240V WITH GROUNDED NEUTRAL								
PROVIDE METER SOCKET:		EXISTING								
MAIN BREAKER A:		240 VOLT, 2-POLE, 100 AMPERES								
CONTACTOR:		NONE								
AIC RATING:		10,000A								
PANEL A										
POLE	AMP TRIP	DESCRIPTION	POLE KVA	AØ	BØ	POLE KVA	DESCRIPTION	AMP TRIP	POLE	
1	15/1	HC5-1 VMS	0.2	0.2		0.0	HC5-2 SPARE	20/2	2	
3	20/2	TRAFFIC COUNTER	0.5		0.5	0.0		4		
5			0.5	0.5	0.0	6				
7			0.0		0.0	0.0			8	
9			0.0	0.0		0.0			10	
11			0.0		0.0	0.0			12	
13			0.0	0.0		0.0			14	
15			0.0		0.0	0.0			16	
17			0.0	0.0		0.0			18	
<i>ITALICS</i> = EXISTING CIRCUIT			0.7	0.5			TOTAL KVA	1.2		
							AMPS	5.0		

PS&E REVIEW FEBRUARY 2019



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**SEWARD HWY: MP 100-105
 IMPROVEMENTS &
 HSIP: CR TRAFFIC SAFETY
 CORRIDOR LEFT TURN LANES**
 SEWARD HIGHWAY M.P. 100