ATTACHMENT NO. 1

SEAPA 2026 Cleveland Helipad Installation Project
Assembly and Installation of Helipads

PROJECT MANUAL

SECTION 00851 – DRAWINGS INDEX

PART 1 – GENERAL

1.1 DRAWINGS BY TONGASS ENGINEERING

	NO. SHEETS
2026 Cleveland Helipad Installation Project	7

1.2 DRAWINGS BY PND ENGINEERS, INC.

	NO. SHEETS
2026 Cleveland Helipad Installation Project	5

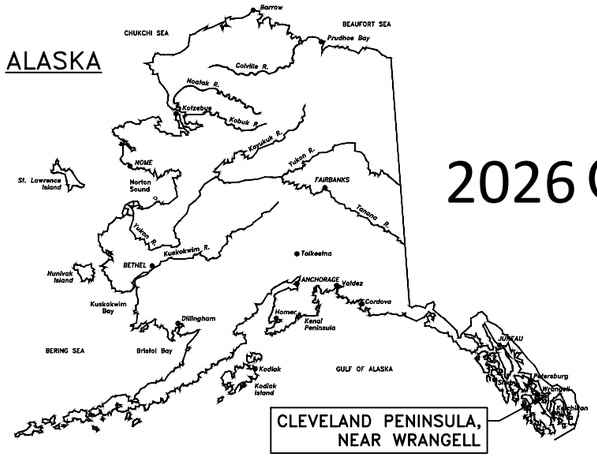
PART 2 – PRODUCTS (Not Used)

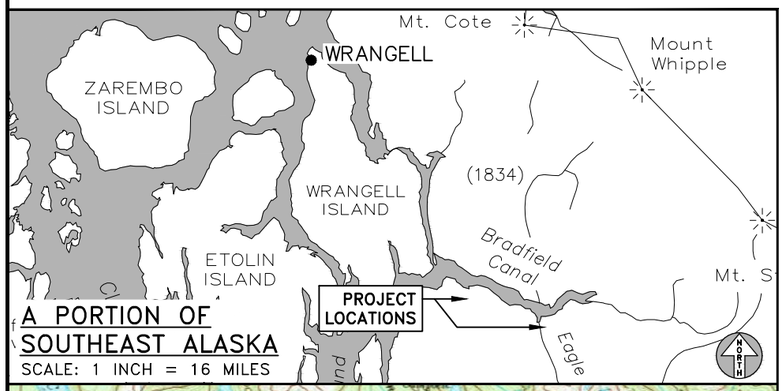
PART 3 – EXECUTION (Not Used)

END OF SECTION

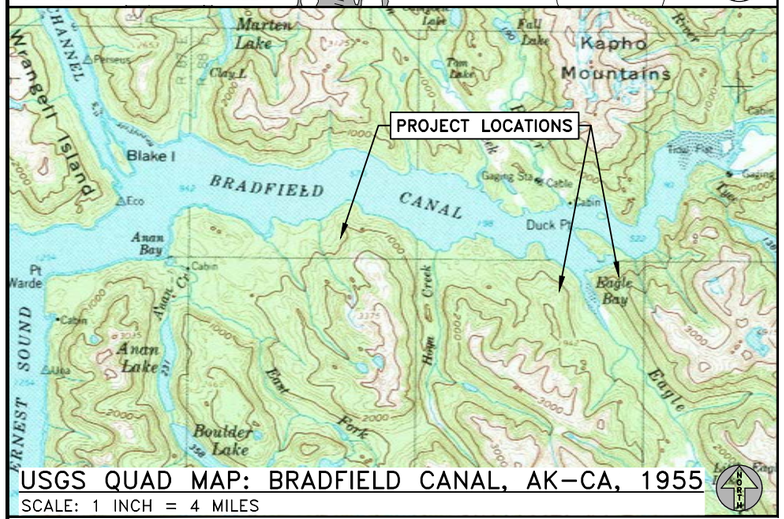
SOUTHEAST ALASKA POWER AGENCY
TYEE LINE CLEVELAND PENINSULA
2026 CLEVELAND HELIPAD INSTALLATION PROJECT

SEAPA
Southeast Alaska Power Agency





A PORTION OF SOUTHEAST ALASKA
SCALE: 1 INCH = 16 MILES



USGS QUAD MAP: BRADFIELD CANAL, AK–CA, 1955
SCALE: 1 INCH = 4 MILES

SUMMARY OF PROJECT SCOPE

DESCRIPTION

1. ASSEMBLE AND INSTALL Seven (7) ALUMINUM HELICOPTER LANDING PADS (HELIPADS), INCLUDING CONSTRUCTION OF REINFORCED CAST–IN–PLACE CONCRETE FOUNDATIONS, PLACEMENT OF MOLDED FIBERGLASS DECKING, AND INSTALLATION OF DECK ACCESS RAMPS; SOME ITEMS SUPPLIED BY OWNER, SEE DETAILS
2. EXISTING HELIPADS HAVE BEEN DEMOLISHED AND REMOVED BY OWNER.
3. BRUSH VEGETATION IN VICINITY OF NEW ALUMINUM HELIPAD

LOCATION

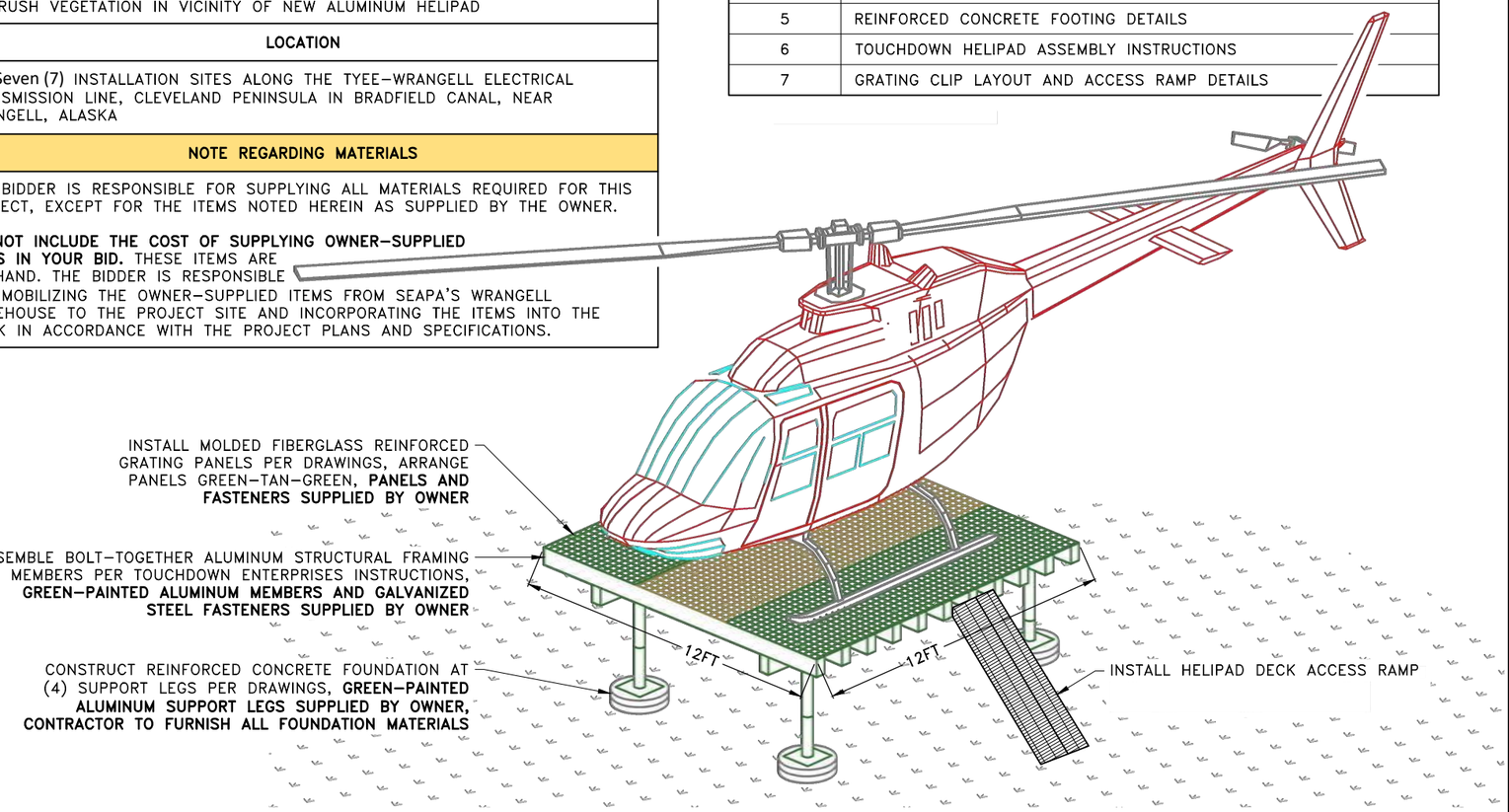
Seven (7) INSTALLATION SITES ALONG THE TYEE–WRANGELL ELECTRICAL TRANSMISSION LINE, CLEVELAND PENINSULA IN BRADFIELD CANAL, NEAR WRANGELL, ALASKA

NOTE REGARDING MATERIALS

THE BIDDER IS RESPONSIBLE FOR SUPPLYING ALL MATERIALS REQUIRED FOR THIS PROJECT, EXCEPT FOR THE ITEMS NOTED HEREIN AS SUPPLIED BY THE OWNER.

DO NOT INCLUDE THE COST OF SUPPLYING OWNER–SUPPLIED ITEMS IN YOUR BID. THESE ITEMS ARE ON HAND. THE BIDDER IS RESPONSIBLE FOR MOBILIZING THE OWNER–SUPPLIED ITEMS FROM SEAPA'S WRANGELL WAREHOUSE TO THE PROJECT SITE AND INCORPORATING THE ITEMS INTO THE WORK IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.

DRAWING INDEX



1 CONCEPTUAL HELIPAD – OBLIQUE VIEW
NOT TO SCALE – USE DIMENSIONS

REVISED BY SEAPA, 2026

TONGASS ENGINEERING
PO Box 5436 Ketchikan, Alaska 99901 | AECL1386
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STATE OF ALASKA 49TH Brett M. Serlin CE 12303 10/28/21 REGISTERED PROFESSIONAL ENGINEER

2026 CLEVELAND HELIPAD INSTALLATION PROJECT		TONG ENGR NO. 21206	DESIGN/DRAWN BMS / DATE 10–28–2021
PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 55 Don Finney Lane Ketchikan Alaska 99901	REVISIONS	COVER SHEET, LOCATION MAPS, DRAWING INDEX SHEET 1 OF 7

CONSTRUCTION NOTES AND SUPPLEMENTAL SPECIFICATIONS

1.0 GENERAL
DEVIATIONS FROM PLANS SHALL HAVE APPROVAL BY ENGINEER PRIOR TO WORK.

REPAIR, RESTORE, OR REPLACE ALL BUILDINGS, STRUCTURES, DRIVEWAYS, FENCES, LANDSCAPING, TREES, AND VEGETATION DESTROYED OR DAMAGED DURING COURSE OF WORK TO OWNER'S SATISFACTION, UNLESS SPECIFIED IN DRAWINGS. IF OWNER AGREES TO CHANGES TO FEATURES OR GRADING NOT IN DRAWINGS, ESTABLISH A WRITTEN AGREEMENT WITH OWNER REGARDING DESIRED WORK, PRICE, AND RELATED DETAILS.

REMOVE AND DISPOSE OF ALL WASTE MATERIALS, CONSTRUCTION DEBRIS, AND GARBAGE FROM ALL WORK SITES AND STAGING SITES PRIOR TO DEMOBILIZATION.

1.1 SPECIFICATIONS
THESE NOTES ARE IN ADDITION TO THE SPECIFICATIONS INCLUDED IN THE PROJECT MANUAL.

1.2 CODES
PERFORM WORK IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS, AND NOTES HEREIN. MINIMUM PROVISIONS OF 2012 INTERNATIONAL BUILDING CODE AND LOCAL AMENDMENTS APPLY WHERE DETAILS ARE NOT SHOWN OR DESCRIBED. ALL APPLICABLE OSHA AND STATE OF ALASKA LABOR REGULATIONS APPLY.

1.3 QUALITY CONTROL AND QUALITY ASSURANCE
CONTRACTOR SHALL MAINTAIN CONSTRUCTION AND DOCUMENTATION QUALITY CONTROL FOR REVIEW BY OWNER AND ENGINEER AS NECESSARY, INCLUDING A CURRENT DRAWING SET THAT REFLECTS MODIFICATIONS TO ORIGINAL DESIGN DRAWINGS. OWNER SHALL PROVIDE ENGINEERING REVIEW AND QUALITY ASSURANCE SERVICES AS NECESSARY FOR GENERAL COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.

1.3.1 SPECIAL INSPECTIONS *
SPECIAL INSPECTIONS AS FOLLOWS SHALL BE PERFORMED BY QUALIFIED PERSONNEL EMPLOYED BY OWNER OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS OWNER'S AGENT:

A. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS ON A CONTINUOUS BASIS PER 2012 IBC 1705.3

1.4 ALTERNATIVES, SUBSTITUTIONS, AND CHANGES
ALL ALTERNATIVES, SUBSTITUTIONS, AND "APPROVED EQUAL" CHANGES PROPOSED BY CONTRACTOR ARE SUBJECT TO APPROVAL BY ENGINEER. SUBMIT COMPLETE DOCUMENTATION REQUIRED TO EVALUATE PROPOSALS TO ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION OF SUBJECT WORK.

1.5 EXISTING CONDITIONS
EXISTING COMPONENT LOCATIONS, DEPTHS, SIZES, AND RELATED DETAILS ARE IN PART BASED ON RECORD DRAWINGS AND DOCUMENTATION BY OTHERS. THERE IS NO GUARANTEE TO THE ACCURACY OF THE INFORMATION, EITHER EXPRESSED OR IMPLIED.

VERIFY EXISTING CONDITIONS AS REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF EXISTING CONDITIONS CONFLICTING WITH DESIGN DOCUMENTS.

1.5.1 EXISTING UTILITIES
PROTECT ALL EXISTING UTILITIES. LOCATIONS OF EXISTING UTILITIES AS NOTED ON DRAWINGS ARE APPROXIMATE, AND NO ASSURANCE IS GIVEN THAT LOCATIONS ARE CORRECT OR COMPLETE. PRIOR TO BEGINNING WORK, CONTRACTOR SHALL VERIFY TRUE LOCATIONS TO AVOID DAMAGE AND DISRUPTION. DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT NO COST TO OWNER.

~ DIAL BEFORE YOU DIG! REQUEST UTILITY LOCATES PRIOR TO BEGINNING WORK.

2.0 EARTHWORK
RESTORE ALL TEMPORARY EXCAVATIONS AND FILLS TO PRE-CONSTRUCTION CONTOURS AND CONDITIONS. WITHOUT EXCEPTION, GRADE FINISHED GROUND TO PREVENT PONDING OF WATER.

* Contractor shall take photos of each foundation excavation and foundation steel to verify conformance with specifications, if owner's representative is not on site. Provide photos in digital format.

3.0 CONCRETE
CAST-IN-PLACE CONCRETE SHALL BE PLACED DIRECTLY ON CLEAN, COMPETENT, AND COMPACTED BASE COURSE OR SOUND BEDROCK, FREE OF LOOSE ROCK AND SOIL. REMOVE ALL STANDING WATER AND DEBRIS FROM WITHIN FORM PRIOR TO PLACEMENT. CONCRETE SHALL BE A DENSE WORKABLE MIX THAT CAN BE PLACED WITHOUT EXCESS SURFACE MOISTURE. MIXING, PLACEMENT, CONSOLIDATION, AND CURING SHALL CONFORM TO ACI 301 AND ACI 318. CONCRETE SHALL HAVE 5000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, 4 TO 7% ENTRAINED AIR, 4 INCH MAX SLUMP.

PREBLENDED CONCRETE MIX IS CONDITIONALLY APPROVED PENDING SUBMISSION, REVIEW, AND APPROVAL OF A HIGH-QUALITY PREBLENDED CONCRETE MIX PRODUCT WITH A 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI, MINIMUM, SUCH AS QUIKRETE, SAKRETE, OR APPROVED EQUAL. FOLLOW ALL MANUFACTURER'S WRITTEN DIRECTIONS FOR STORAGE, HANDLING, PREPARATION, AND USE.

3.1 CONCRETE REINFORCEMENT COVER
STEEL CONCRETE REINFORCEMENT SHALL BE WELL-SECURED AND SUPPORTED AT CORRECT HEIGHT ON STEEL OR PLASTIC REBAR CHAIRS, WELL-CURED CONCRETE BLOCKS, OR EQUAL PRIOR TO PLACING CONCRETE. SUPPORTS SHALL NOT DAMAGE OR PUNCTURE INSULATION, VAPOR BARRIER, OR OTHER UNDERLAYMENT. PROVIDE 3 INCHES COVER WHERE CONCRETE IS CAST AGAINST EARTH, 2 INCHES COVER AT ALL OTHER EDGES, UNLESS NOTED OTHERWISE ON DRAWINGS.

3.2 CONCRETE COMPACTION
COMPACT USING A VIBRATOR TO FILL FORMS COMPLETELY FULL WITHOUT ANY AIR POCKETS IN ONE SEQUENCE AS FOLLOWS:

A. INSERT VIBRATOR IN CLEAN VERTICAL MOTIONS CLEARING CONCRETE SURFACE BEFORE RE-PENETRATING INTO CONCRETE
B. VIBRATOR SHALL NOT BE DRAGGED THROUGH CONCRETE NOR USED TO FLOW OR SPREAD CONCRETE INTO PLACE AS VOIDS WILL DEVELOP
C. VIBRATOR SHALL NOT BE HELD FOR AN EXTENDED TIME IN ONE PLACE OR LEFT IN FORMS DURING DELAYS AS CONSTITUENT SEGREGATION AND FORMATION OF LAITANCE ON CONCRETE SURFACE WILL OCCUR
D. VIBRATOR SHALL NOT BE HELD AGAINST FORMS, REBAR, ANCHORS, OR OTHER EMBEDMENTS AS DAMAGE AND DISTORTION WILL OCCUR
E. VIBRATOR SHALL BE HIGH FREQUENCY INTERNAL UNIT OF PNEUMATIC, ELECTRIC, OR HYDRAULIC TYPE WITH MINIMUM FREQUENCY OF 5,000 CYCLES PER MINUTE, CAPABLE OF VISIBLY AFFECTING A PROPERLY DESIGNED MIXTURE WITH 1-INCH SLUMP FOR A DISTANCE OF AT LEAST 18 INCHES AWAY FROM VIBRATOR

3.3 CONCRETE CURING
APPLY CURING COMPOUND OR COVER CONCRETE SURFACE FOR 7 DAYS MINIMUM WITH WET BURLAP FREE OF CHEMICALS THAT COULD WEAKEN OR DISCOLOR CONCRETE. PLACE AND SECURE PLASTIC SHEETING TO LIMIT MOISTURE LOSS, SUSTAIN HYDRATION, AND PROTECT FROM RAIN DAMAGE, OR APPROVED EQUAL METHOD. CONCRETE SHALL CURE UNDISTURBED FOR FIRST 24 HOURS MINIMUM.

PROTECT FROM FREEZING PER ACI 306 FOR FIRST 72 HOURS MINIMUM. USE INSULATION, TARPS, AND HEATERS WHEN AMBIENT AIR TEMPERATURE IS BELOW 40°F TO ENSURE CONCRETE TEMPERATURE DOES NOT FALL BELOW 55°F. PROVIDE SUFFICIENT MOISTURE TO AVOID DRYING OF CONCRETE WHEN USING HEATERS FOR FREEZE PROTECTION.

DO NOT ENGAGE EMBEDMENTS, DRILL, OR PERFORM OTHER WORK OR APPLY STRESSES UNTIL CONCRETE HAS ATTAINED 3,000 PSI MINIMUM COMPRESSIVE STRENGTH OR 7 DAYS MINIMUM HAVE PASSED SINCE PLACEMENT.

4.0 EPOXY
HILTI HIT-HY 200A OR 200R OR BETTER INJECTABLE TWO-COMPONENT EPOXY OR OTHER APPROVED BY ENGINEER FOR ANCHORS POST-INSTALLED IN HARDENED CONCRETE. FOLLOW MANUFACTURER'S EXACT WRITTEN DIRECTIONS FOR PRODUCT USE, INCLUDING PREPARATION OF CONCRETE, ANCHOR INSTALLATION, AND TIGHTENING.
USE COMPRESSED AIR TO BLOW OUT ALL DRILL HOLES PRIOR TO EPOXY.
SUFFICIENT MATERIAL SHALL BE PLACED IN HOLE TO EJECT EXCESS ALL AROUND ANCHOR FOLLOWING ANCHOR INSTALLATION TO ENSURE THAT HOLE IS COMPLETELY FULL AND SEALED FROM WATER INTRUSION. CONTINUE TO SUPPORT MEMBERS SO THAT ANCHOR IS NOT ENGAGED UNTIL SPECIFIED CURE TIME HAS BEEN REACHED FOR ACTUAL WEATHER CONDITIONS AT SITE.

5.0 GROUT
BASF SET 45, EUCLID CHEMICAL EUCO-SPEED RED LINE, JET SET COMPLETE REPAIR, OR OTHER HIGH-STRENGTH, NON-SHRINK GROUT APPROVED BY ENGINEER. FOLLOW MANUFACTURER'S WRITTEN DIRECTIONS FOR PREPARATION OF CONTACT SURFACES AND PRODUCT USE.

6.0 DRAIN PIPE
HIGH DENSITY CORRUGATED POLYETHYLENE PIPE (HDPE CPP) MANUFACTURED PER AASHTO M252/M294, TYPE S SPECIFICATION, AND CONFORM TO ASTM D3350, CELL CLASSIFICATION 324420C OR ASTM D1248, CLASS C, CATEGORY 4, GRADE P33.

7.0 THREADED RODS AND FASTENERS
FASTENERS CONFORMING TO STANDARDS AS NOTED BELOW AND HOT-DIP GALVANIZED PER ASTM F2329/A153 FOR CORROSION PROTECTION, UNLESS NOTED OTHERWISE. PROVIDE OWNER WITH MANUFACTURER'S CERTIFICATION TO ALL STANDARDS.

NUTS.....ASTM A563 GRADE A HEX, HDG
THREADED RODS.....ASTM A307 GRADE A OR F1554 GRADE 36, HDG
WASHERS.....ASTM F844 OR ASTM F436, HDG

8.0 HELICOPTER LANDING PAD (HELIPAD) COMPONENTS
- **HELIPAD STRUCTURES AND FASTENERS:** BOLT-TOGETHER ALUMINUM STRUCTURAL FRAMING MEMBERS FABRICATED BY TOUCHDOWN ENTERPRISES, PAINTED GREEN PER US FOREST SERVICE SPECIFICATION USING "RESEDA GREEN M404" INTERGARD 345 EPOXY COATING BY INTERNATIONAL PAINT LTD; **PROVIDED**
- **HELIPAD DECK GRATING**: UV-STABILIZED MOLDED FIBERGLASS REINFORCED GRATING PANEL WITH NON-SKID GRIT SURFACE; **PROVIDED**
- **HELIPAD DECK GRATING CLIPS:** GRATING "M-2" STAINLESS STEEL HOLDDOWN SADDLE CLIP; **PROVIDED**
- **HELIPAD DECK GRATING SCREWS:** ¼"-28 x 3" EPOXY-COATED STEEL SELF-DRILLING SCREW WITH ⅜" DRIVE HEX WASHER HEAD AND BONDED SEALING WASHER; **PROVIDED**
- **RAMPS:** ALUMINUM PLANKS AND STEEL HARDWARE PER SHEET 7; **PROVIDED**

ABBREVIATIONS AND ACRONYMS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
APPROX	APPROXIMATE
ASTM	ASTM INTERNATIONAL
CL or ℄	CENTERLINE
CONC	CONCRETE
CPP	CORRUGATED POLYETHYLENE PIPE
d or °	DEGREES
DIA or ø	DIAMETER
(E), EXIST	EXISTING
EA	EACH
EL	ELEVATION
EQ	EQUAL
f'c	CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS
FT or '	FOOT/FEET
GALV	GALVANIZED
HDG	HOT-DIP GALVANIZED
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IN or "	INCH/INCHES
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
(P)	PROPOSED
PERF	PERFORATED
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
SS	STAINLESS STEEL OR SANITARY SEWER, PER CONTEXT
STA	STATION
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
VERT	VERTICAL

REVISED BY SEAPA, 2024

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STATE OF ALASKA 49TH Brett Serlin Brett M. Serlin CE 12303 10/28/21 REGISTERED PROFESSIONAL ENGINEER

2024 CLEVELAND HELIPAD REPLACEMENT PROJECT			TONG ENGR NO. 21206	DESIGN/DRAWN BMS / DATE 10-28-2021
PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 1900 1ST AVE, STE 318 KETCHIKAN, AK 99901	REVISIONS	CONSTRUCTION NOTES AND SUPPLEMENTAL SPECS	
			SHEET 2 OF 7	

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STATE OF ALASKA 49 TH Brett M. Serlin CE 12303 10/28/21 REGISTERED PROFESSIONAL ENGINEER

2024 CLEVELAND HELIPAD REPLACEMENT PROJECT

TONG ENGR NO.	DESIGN/DRAWN	DATE
21206	BMS	10–28–2021

PROJECT LOCATION
CLEVELAND PENINSULA IN
BRADFIELD CANAL
NEAR WRANGELL, ALASKA

CLIENT INFORMATION
SOUTHEAST ALASKA POWER AGENCY
1900 1ST AVE, STE 318
KETCHIKAN, AK 99901

REVISIONS

AERIAL OVERVIEW, HELIPAD LOCATION SCHEDULE

SHEET 3 OF 7

EXISTING 10x10 WOOD HELIPAD WORK NOTES:
- GENERALLY COMPRISED OF (12) 6x6 PT POSTS EMBED IN GROUND OR ON PRECAST CONCRETE PIER BLOCKS, 2x8 PT BEAMS LAG BOLTED TO BOTH SIDES OF POSTS, AND 2x4 PT SLOTTED DECKING OFFSET BY 2x4 SPACERS
- DISMANTLE AND REMOVE ALL PARTS FOR OFF-SITE DISPOSAL PER SECTION 02060 – DEMOLITION AND DISPOSAL
- REMOVE VERTICAL POSTS FROM GROUND OR CUT FLUSH WITH GROUND SURFACE
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED; LOCATIONS PER SCHEDULE ON SHEET 3

1 TYPICAL EXISTING 10x10 WOOD HELIPAD
NOT TO SCALE – USE DIMENSIONS TYEE 05-01, P1110367

EXISTING 14x14 WOOD HELIPAD WORK NOTES:
- GENERALLY COMPRISED OF (8) 6x6 PT POSTS EMBED IN GROUND, (4) 4x8 PT BEAMS WITH 40" CANTILEVERS, AND 2x6 PT SLOTTED DECKING OFFSET BY 2x6 SPACERS
- DISMANTLE AND REMOVE ALL PARTS FOR OFF-SITE DISPOSAL PER SECTION 02060 – DEMOLITION AND DISPOSAL
- REMOVE VERTICAL POSTS FROM GROUND OR CUT FLUSH WITH GROUND SURFACE
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED; LOCATIONS PER SCHEDULE ON SHEET 3

2 TYPICAL EXISTING 14x14 WOOD HELIPAD
NOT TO SCALE – USE DIMENSIONS TYEE 06-02, P1110383

BRUSHING WORK NOTES:
- CUT TREES, VEGETATION, STUMPS, AND DEBRIS WITHIN 50 FEET OF EDGE OF HELIPAD TO GROUND SURFACE PER SECTION 02201 – CLEARING AND GRUBBING
- CUT TRAIL 24 INCHES WIDE BY 8 FEET ABOVE GROUND SURFACE FROM HELIPAD TO TRANSMISSION LINE TOWER PER SECTION 02201 – CLEARING AND GRUBBING
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED

3 TYPICAL CLEARING AND GRUBBING REQUIREMENTS
NOT TO SCALE – USE DIMENSIONS STI 73, P1070139

BRUSHING WORK NOTES:
- REMOVE OTHER TREES, VEGETATION, STUMPS, AND DEBRIS AS DIRECTED BY OWNER'S DESIGNATED REPRESENTATIVE TO PERMIT SAFE INGRESS/EGRESS ALONG FLIGHT PATH TO HELIPAD PER SECTION 02201 – CLEARING AND GRUBBING
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED

4 TYPICAL CLEARING AND GRUBBING REQUIREMENTS
NOT TO SCALE – USE DIMENSIONS STI 123, P1070079

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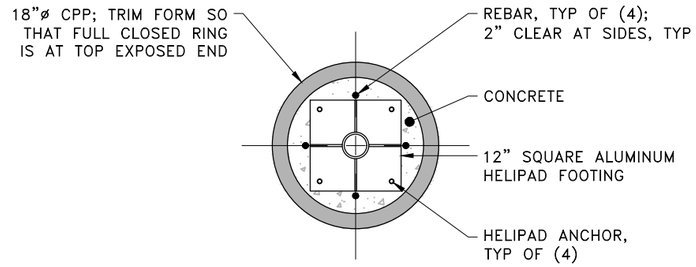
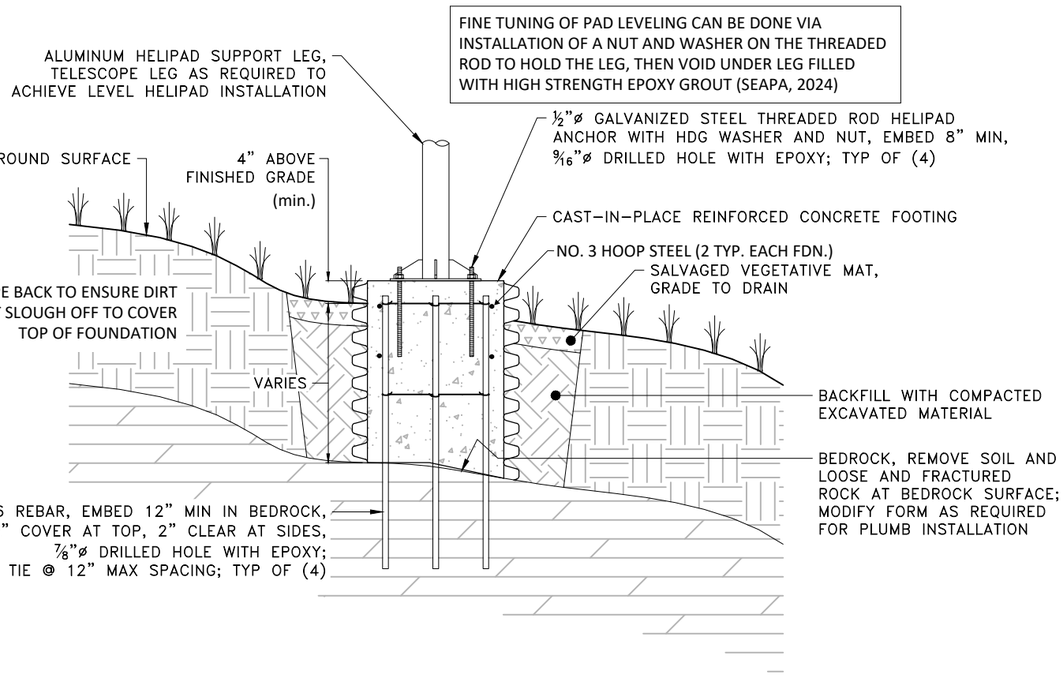
2024 CLEVELAND HELIPAD REPLACEMENT PROJECT

PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 1900 1ST AVE, STE 318 KETCHIKAN, AK 99901	REVISIONS	TONG ENGR NO. 21206	DESIGN/DRAWN BMS DATE 10-28-2021

DEMOLITION AND BRUSHING REQUIREMENTS

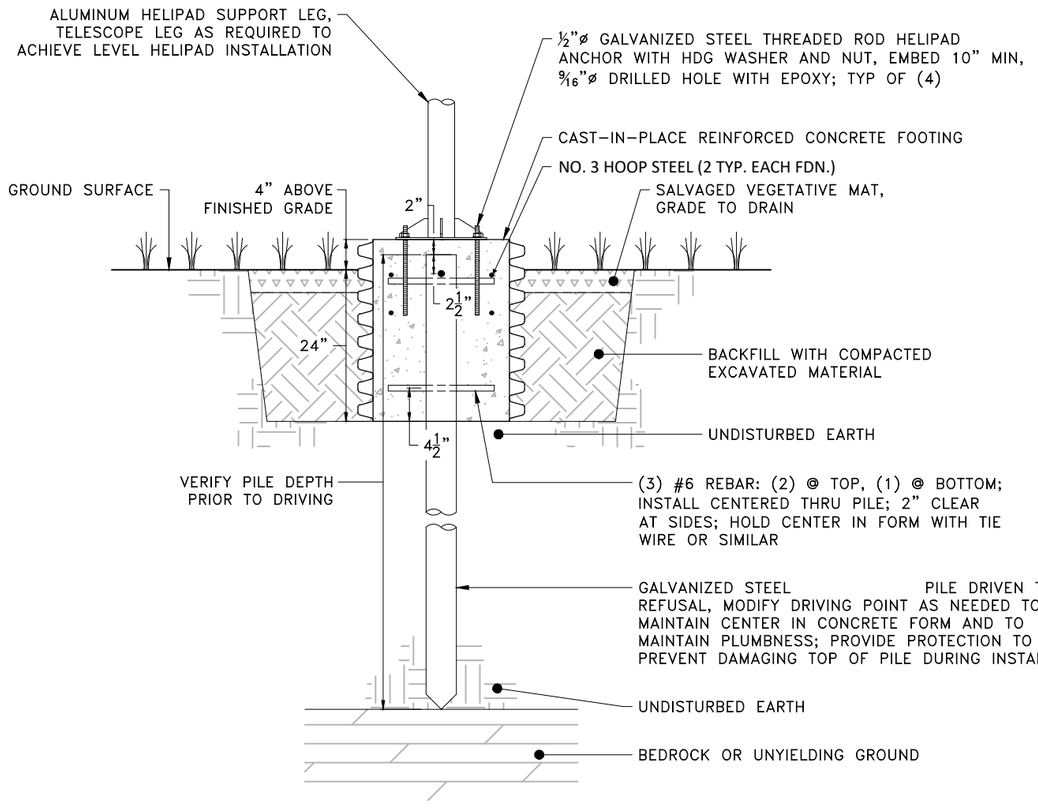


1 REINFORCED CONCRETE FOOTING – PLAN VIEW
NOT TO SCALE – USE DIMENSIONS



2 REINFORCED CONCRETE FOOTING – ELEVATION VIEW
NOT TO SCALE – USE DIMENSIONS

HOOP STEEL ADDED BY OWNER, NOT PART OF ENGINEER'S DESIGN, 2024



3 PILE–CONCRETE HYBRID FOOTING – ELEVATION VIEW
NOT TO SCALE – USE DIMENSIONS
NOTE: THIS FOOTING IS TO BE USED ON A CASE–BY–CASE BASIS WHERE BEDROCK IS NOT LOCATED WITH A REASONABLE EFFORT OF INVESTIGATION, AS APPROVED BY ENGINEER or Owner

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PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 1900 1ST AVE, STE 318 KETCHIKAN, AK 99901	REVISIONS	REINFORCED CONCRETTE FOOTING DETAILS SHEET 5 OF 7

TOUCHDOWN
Enterprises Ltd.
4130 Gartley Point Road, Courtenay, BC Canada V9N 9T3

TOUCHDOWN HELIPAD CONSTRUCTION
"LAND IN ANY DIRECTION" LOW SLOPE PAD

One Touchdown Low Slope "Land is any Direction" pad has the following hardware:

60	Hex Bolt 1/2" x 2" Bolts conform to ASTM A325	All Support beam to Cross beam connections	32	Hex Bolt ½"- X 1-1/2" ASTM A325	All Bracing Connections
40	1/2" galvanized beveled washers		32	½ Flat Washers conforms to ASTM F436	
40	1/2 " Lock washers		32	½ Lock Washers	
40	Hex Nut 1/2"		32	Hex Nut 1/2-13 UNC	
16	Hex Bolt 1/2-x 2"	All Support Beam to Leg Connections	8	Hex Bolt 1/2"-10 UNC x 5-1/2	Leg Connections
80	1/2"Flat galvanized Washers	Place flat washer on top of beveled washer, and one washer and lock washer on the underside, of cross beam mounting to main beam.	8	1/2"" Flat Washers	
16	1/2" Lock washers and 16 flat washers	Place flat washers on the underside of leg cap to cover the leg cap slots.	8	1/2" Lock Washers	
16	Hex Nut 1/2"-12 UNC	All nuts to conform with ASTM A563	8	Hex Nut 1/2" -10 UNC	

Take the Red painted leg (Left Hand Long leg Assembly), the Blue painted leg (Right Hand Short leg Assembly) and two neutral legs (one long and one short leg assembly) for each helipad. The Red painted leg will fit under the Red corner of the Support and Crossbeams and the Blue painted leg will fit under the Blue painted corner of the Support Beam and Cross beams (see Figure 1). One support beam will have a long Red dot leg and one neutral short leg, and the other support beam will have one long neutral leg and one short blue dot leg. The Red painted legs will ALWAYS FIT DIAGONALLY to the Blue painted leg.

Assembly

1. Take legs and support beams, and place them 10 ft apart, with the Red and Blue corners diagonal to each other, and brackets on the bottom of the legs facing in towards each other. Loosely bolt legs to the bearing beams, using hardware called out in table above.

2. Place the crossbeam with the Red Dot on the Red Dot on the main beam. Place the Blue Dot crossbeam on the Blue Dot on the other main beam and SQUARE THE PAD (measure corner to corner). Start the bolts, but DO NOT TIGHTEN as some "rocking" might be required to align other bolts (use longer bolts with washer and beveled washers on top, with another washer, and a locking washer on bottom). Place the other six crossbeams. Once the crossbeams have been placed, install long brace to long leg, short brace to short leg (using 1 ½" bolts with a flat washer and a lock washer). With the pad squared, all bolts can be tightened.

3. Bolts between Angle Braces and Gussets plates shall be tightened to a "SLIP CRITICAL" Condition. Remaining Bolts shall be tightened to a "SNUG TIGHT' Condition.

   Note:
   "SNUG TIGHT' Condition is defined as the tightness attained by a few impacts of an Impact wrench or the full effort of an ironworker using an ordinary spud wrench.

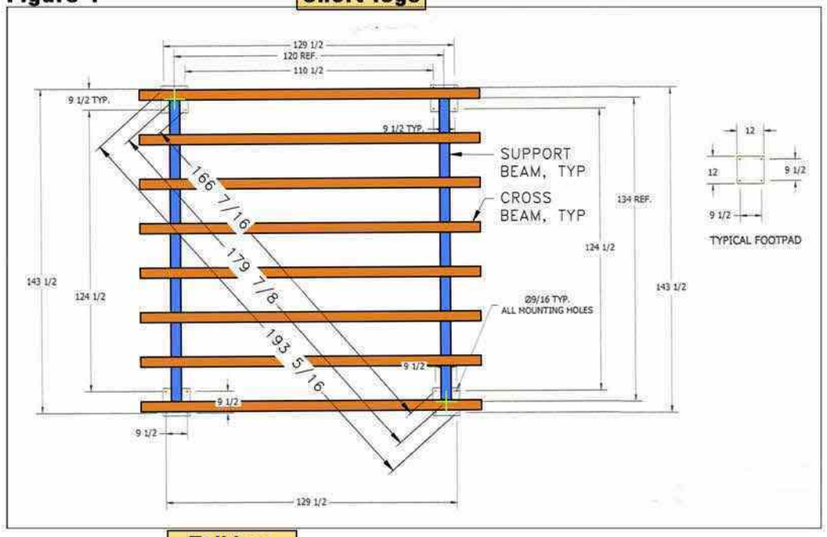
   "SLIP CRITICAL" Condition is defined as tightness attained by turning of the nut 1/3 of a turn past the "SNUG TIGHT" Condition.

Phone: (250) 703-0291 • Cell: (250) 203-0080 • Fax: (250) 703-0294
Email: touchdown@telus.net • www.touchdownpads.com

TOUCHDOWN
Enterprises Ltd.
4130 Gartley Point Road, Courtenay, BC Canada V9N 9T3

5. When placing pad the footprint (see Figure 2) should be level and on solid ground, with spikes or "Hilti" bolts placed through the holes in the foot pad.

Figure 1 **Short legs**



Tall legs

Figure 2

Phone: (250) 703-0291 • Cell: (250) 203-0080 • Fax: (250) 703-0294
Email: touchdown@telus.net • www.touchdownpads.com

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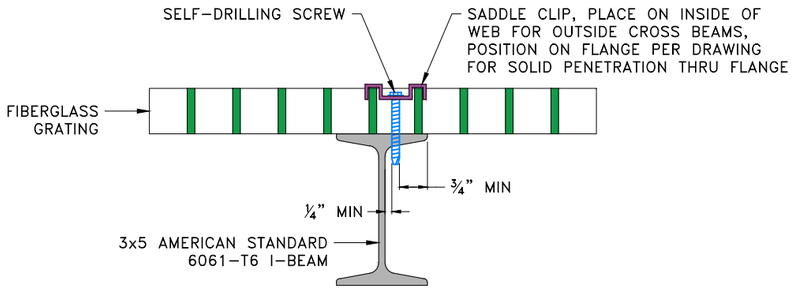
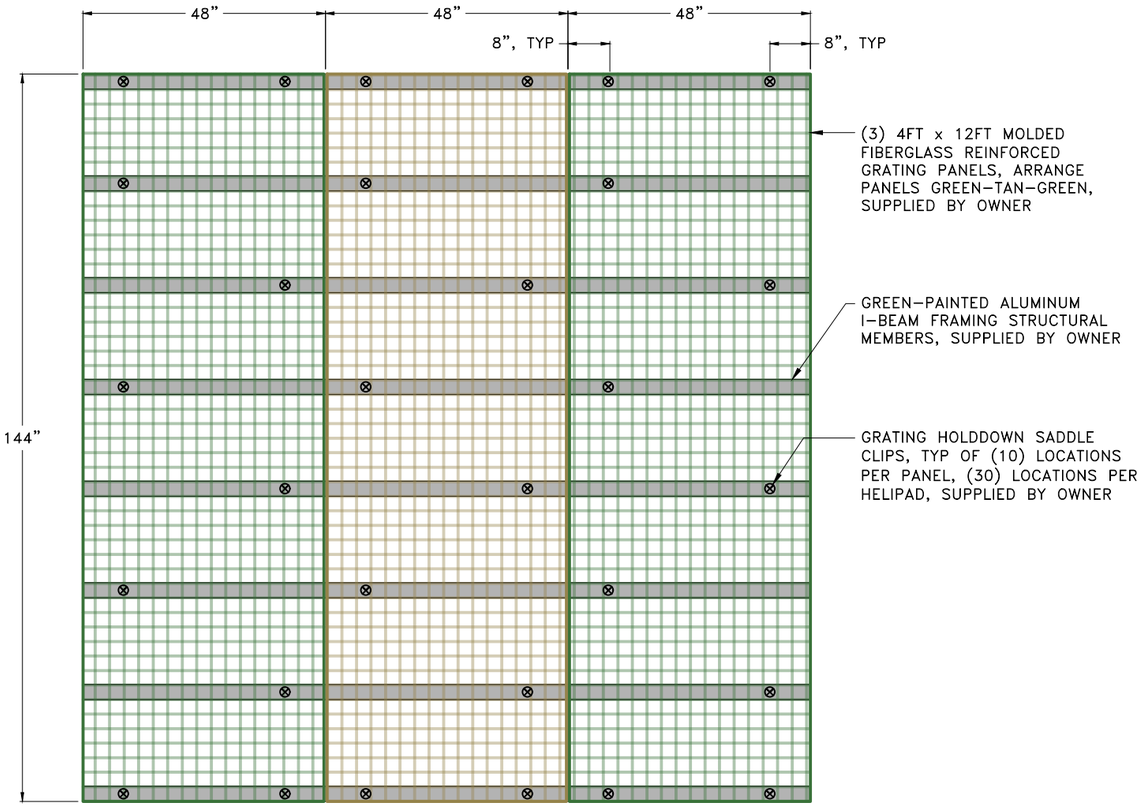
TONGASS ENGINEERING
PO Box 5436 Ketchikan, Alaska 99901 | AECL1386
(907) 617-8982 | www.tongassengineering.com

STATE OF ALASKA 49TH Brett M. Serlin CE 12303 10/28/21 REGISTERED PROFESSIONAL ENGINEER

2024 CLEVELAND HELIPAD REPLACEMENT PROJECT			TONG ENGR NO. 21206	DESIGN/DRAWN BMS / DATE 10-28-2021
PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 1900 1ST AVE, STE 318 KETCHIKAN, AK 99901	REVISIONS	TOUCHDOWN HELIPAD ASSEMBLY INSTRUCTIONS	
			SHEET 6 OF 7	



1 GRATING CLIP INSTALLATION
NOT TO SCALE – USE DIMENSIONS



2 GRATING CLIP LAYOUT
NOT TO SCALE – USE DIMENSIONS

3 HELIPAD DECK ACCESS RAMP
NOT TO SCALE – USE DIMENSIONS SNET 40–3, P1070563

ACCESS RAMP WORK NOTES:

- GRIP STRUT PLANK, ALUMINUM ALLOY 5052–H32, 0.10" THICK (10 GAUGE), 2" CHANNEL DEPTH, SERRATED SURFACE
- ONE 3–DIAMOND (7" WIDTH) PLANK AND ONE 4–DIAMOND (9–1/2" WIDTH) PLANK, CLEARANCE BETWEEN CROSS BEAMS IS APPROX 17.1"
- 12FT STANDARD LENGTH, CUT AS REQUIRED
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED

4 HELIPAD DECK ACCESS RAMP CONNECTION
NOT TO SCALE – USE DIMENSIONS SNET 40–3, P1070564

RAMP CONNECTION WORK NOTES:

- LOCATION SUBJECT TO APPROVAL BY ENGINEER
- SUPPORT PLANKS ON ¾"ø ROUND BAR BETWEEN CROSS BEAMS, ⅞"ø HOLE IN MIDDLE OF WEB, ℄ HOLE SET BACK 2" FROM EDGE OF BEAM
- SS WASHER (NOT SHOWN) AND SS HAIRPIN COTTER PIN, BOTH ENDS
- TYPICAL AT EACH LOCATION WHERE NEW ALUMINUM HELIPAD TO BE INSTALLED

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PO Box 5436 Ketchikan, Alaska 99901 | AECL1386
(907) 617-8982 | www.tongassengineering.com

STATE OF ALASKA 49TH Brett M. Serlin CE 12303 10/28/21 REGISTERED PROFESSIONAL ENGINEER

2024 CLEVELAND HELIPAD REPLACEMENT PROJECT

PROJECT LOCATION CLEVELAND PENINSULA IN BRADFIELD CANAL NEAR WRANGELL, ALASKA	CLIENT INFORMATION SOUTHEAST ALASKA POWER AGENCY 1900 1ST AVE, STE 318 KETCHIKAN, AK 99901	REVISIONS 1 11.12.21 PAINTING OF ACCESS RAMP	TONG ENGR NO. 21206	DESIGN/DRAWN BMS	DATE 10–28–2021

GRATING CLIP LAYOUT AND ACCESS RAMP DETAILS

SHEET 7 OF 7

STRUCTURAL GENERAL NOTES

CODE:

CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE INTERNATIONAL BUILDING CODE (IBC), 2021 EDITION AS AMENDED BY THE STATE OF ALASKA.

LOAD CRITERIA:

HELICOPTER WEIGHT:	5,225 LBS (FULLY LOADED)
LIVE LOAD:	60 PSF
SNOW LOAD:	100 PSF WITH HELICOPTER 250 PSF WITHOUT HELICOPTER
WIND:	115 MPH, EXPOSURE C, I_W=1.0
SEISMIC:	S_1=0.225g, S_S=0.22g, S_{D1}=0.330g, S_{DS}=0.235g, I_E=1.0, SITE CLASS D R=1.25, C_S=0.188g BASE SHEAR V=1547 LBS

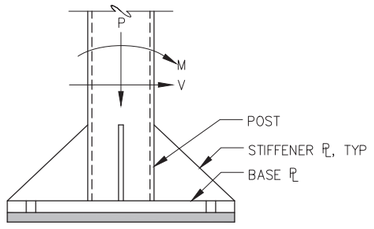
WIND LOAD ON THE HELICOPTER WAS NOT INCLUDED AS IT IS ASSUMED THAT A HELICOPTER WILL NOT LAND ON THE HELIPAD DURING HIGH WINDS. HELICOPTER WAS NOT INCLUDED IN THE SEISMIC WEIGHT OF THE HELIPAD. THE HELIPAD WAS NOT DESIGNED FOR AVALANCHES OR LANDSLIDES/ROCKSLIDES. HELIPAD WAS NOT DESIGNED FOR STORAGE LOADS OR LANDING/LOADING PAD FOR HELICOPTER SLING OPERATIONS.

FOUNDATION:

FOUNDATION DESIGN IS NOT INCLUDED. FOUNDATION SHALL BE DESIGNED FOR THE POST REACTIONS SHOWN ON DETAIL 2/S100. ANCHOR BOLTS HAVE ONLY BEEN DESIGNED FOR SHEAR AND TENSION IN THE BOLT. EMBEDMENT IN CONCRETE OR ROCK SHALL BE DESIGNED BY FOUNDATION ENGINEER.

GRATING:

GRATING SHALL BE 1½" DEEP SERIES I5015 FIBERGRATE MANUFACTURED BY "FIBERGRATE COMPOSITE STRUCTURES" OR APPROVED EQUAL. ATTACH GRATING TO ALUMINUM BEAMS WITH TYPE 316 STAINLESS STEEL G-2 CLIP ASSEMBLIES.



ALUMINUM:

ALUMINUM SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION 2020 DESIGN MANUAL. SUBMIT FABRICATION SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO COMMENCING FABRICATION. ALUMINUM SHALL CONFORM TO ASTM B308 AND B221 FOR 6061-T6 ALUMINUM ALLOY.

ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.2 "STRUCTURAL WELDING CODE-ALUMINUM". ALL WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED IN ACCORDANCE WITH AWS D1.2.

PROVIDE WATER RESISTANT GREASE BETWEEN ADJUSTABLE POSTS TO ENABLE POST ADJUSTMENT IN THE FIELD.

BOLTS:

ALL BOLTS SHALL CONFORM WITH ASTM A325. NUTS SHALL CONFORM WITH ASTM A563, GRADE DH. WASHERS SHALL CONFORM WITH ASTM F436

BOLT ASSEMBLIES SHALL BE HOT DIP GALVANIZED PER ASTM A153.

BOLTS BETWEEN ANGLE BRACES AND GUSSET PLATES SHALL BE TIGHTENED TO A "SLIP CRITICAL" CONDITION. REMAINING BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION.

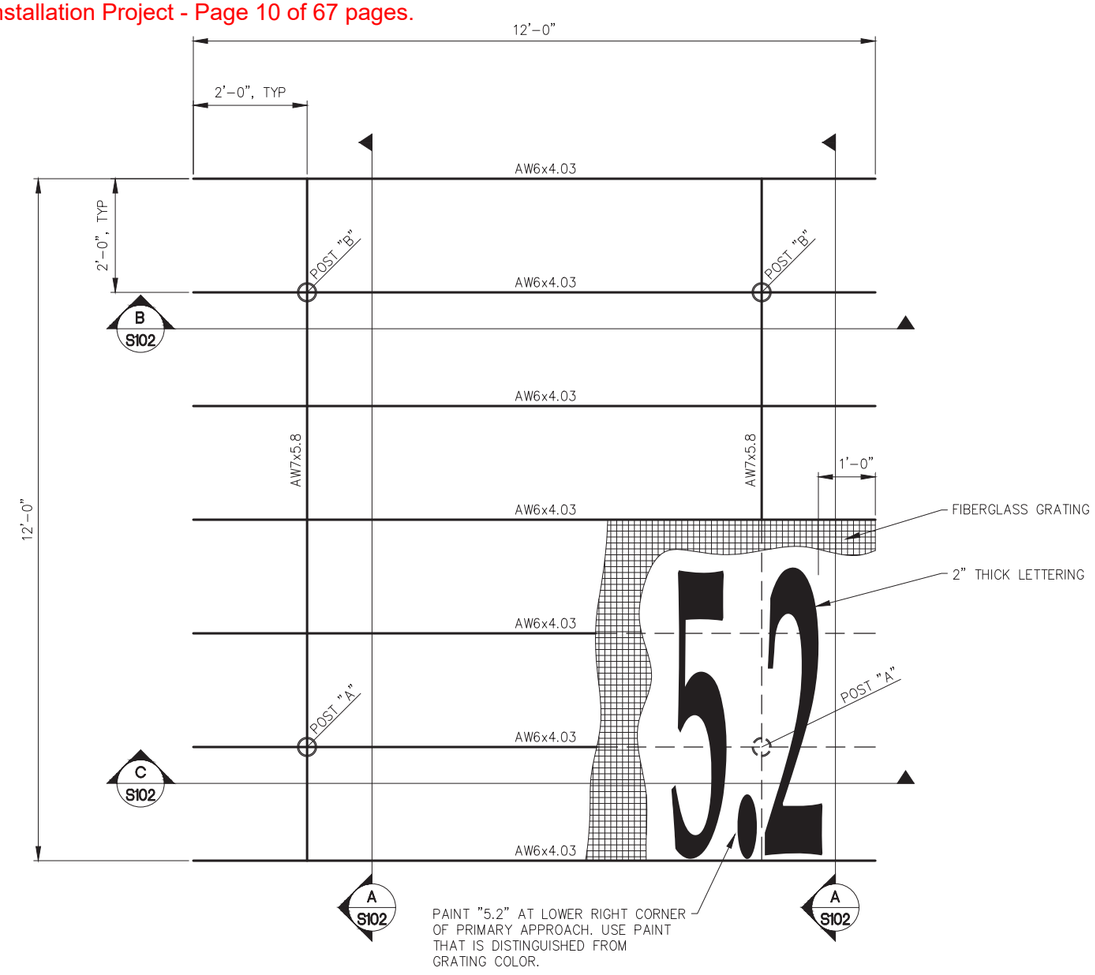
A "SNUG TIGHT" CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH. A "SLIP CRITICAL" CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY TURNING THE NUT ⅓ OF TURN PAST THE "SNUG TIGHT" CONDITION.

PINS:

ALL PINS SHALL CONFORM WITH ASTM A108, GRADE 1117 (MIN F_Y=50 KSI). PIN ASSEMBLIES SHALL BE HOT DIP GALVANIZED PER ASTM A153.

DELEGATED DESIGN

ACCESS STAIRS/RAMP TO/FROM HELIPAD BY OTHERS



LOAD COMBINATION	LOAD DESCRIPTION	P_D	P_L	P_S	P_E	V_E	M_E
1	SEISMIC	285 LBS	–	–	+/- 362 LBS	+/- 387.5 LBS	+/- 1162.5 LBS-FT
2	SNOW W/O HELICOPTER	285 LBS	–	9000 LBS	–	–	–
3	SNOW W/ HELICOPTER	285 LBS	2160 LBS	3600 LBS	–	–	–
4	SNOW W/ HELICOPTER 3-KIP POINT LOAD	285 LBS	3750 LBS	3600 LBS	--		–
5	SNOW W/ HELICOPTER 2 POINTS AT 0.75 (GWT)	285 LBS	7350 LBS	–	–	–	–

2 POST REACTIONS

SCALE: 0 3" 6" 12"

NOTES:
1) DETAIL ONLY REFERENCES POST REACTIONS FOR FOUNDATION AND ANCHOR BOLT DESIGN. SEE D/S102 FOR INFO NOT CALLED OUT.
2) ALL REACTIONS ARE UNFACTORED.
3) D=DEAD LOAD, L=LIVE LOAD, S=SNOW LOAD, E=SEISMIC LOAD
4) LOADS ARE TO BE CONSIDERED IN BOTH PLAN NORTH-SOUTH & EAST-WEST

SCHEDULE OF COMPONENT WEIGHTS	
COMPONENT	APP. WEIGHT
AW6x4.03 BEAMS	343 LBS
AW7x5.8 BEAMS	140 LBS
3½"ø POTS	32 LBS
3"ø POSTS	38 LBS
L2½x2½ x3/16 BRACES	25 LBS
GRATING (BY OTHERS)	548 LBS

3 SCHEDULE OF COMPONENT WEIGHTS

NOTES:
1) APPROXIMATE WEIGHT IS FOR EACH HELIPAD.
2) SCHEDULE DOES NOT INCLUDE CONNECTOR PLATES, GUSSET PLATES, BASE PLATES, OR FASTENERS.

1 HELIPAD FRAMING PLAN

SCALE: 0 6" 1' 2' 4'

NOTES:
1) POSTS "A" AND "B" ARE ADJUSTABLE PIPE POSTS, SEE S103 FOR DETAILS.

PLAN NORTH

PERMIT DRAWINGS - NOT FOR CONSTRUCTION

SEAPA
1900 FIRST AVENUE, SUITE 318 KETCHIKAN, ALASKA 99901

REVISIONS

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PND ENGINEERS, INC.
9360 Glacier Highway Ste 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: MBH CHECKED: BCN
DRAWN: DRD APPROVED: BCN
SCALE:

STATE OF ALASKA 49 TH
Brian C. Nielsen
SE-13703
REGISTERED PROFESSIONAL ENGINEER
DATE: 3/8/2023

SEAPA HELIPADS
BRADFIELD CANAL

SHEET TITLE:
GENERAL NOTES AND FRAMING PLAN

PND PROJECT NO.: 222102 C.A.N. NO.: AECC250

S100
SHEET 1 OF 5

LOCATION ID	LATITUDE	LONGITUDE	ELEVATION
HLP8	56.176388	−131.576954	1620
HLP9	56.174703	−131.589707	1265
HLP10	56.173770	−131.592193	1270
HLP11	56.169682	−131.268870	1650
HLP12	56.170273	−131.637576	1635
HLP13	56.170368	−131.639359	1610
HLP14	56.170982	−131.640553	1535
HLP21	56.187146	−131.744957	1675
HLP23	56.189134	−131.764441	1510
HLP26	56.186887	−131.789935	810
HLP28	56.187126	−131.804459	275

LOCATION AND ELEVATIONS FROM GOOGLE EARTH,
SOME VARIANCE TO ELEVATION AND LOCATIONS EXPECTED

1 LOCATION AERIAL OVERVIEW

NOTE:
LOCATION OF HELIPADS APPROXIMATE

PLAN NORTH

PERMIT DRAWINGS - NOT FOR CONSTRUCTION

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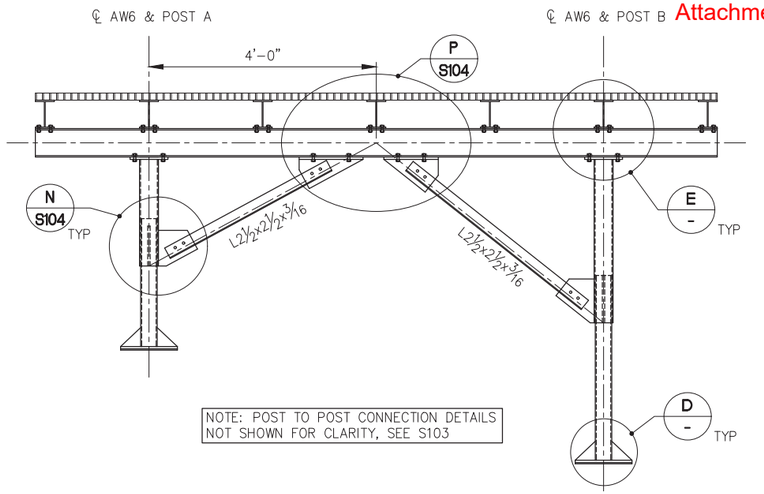
SEAPA HELIPADS
BRADFIELD CANAL

SHEET TITLE:
LOCATION AERIAL OVERVIEW

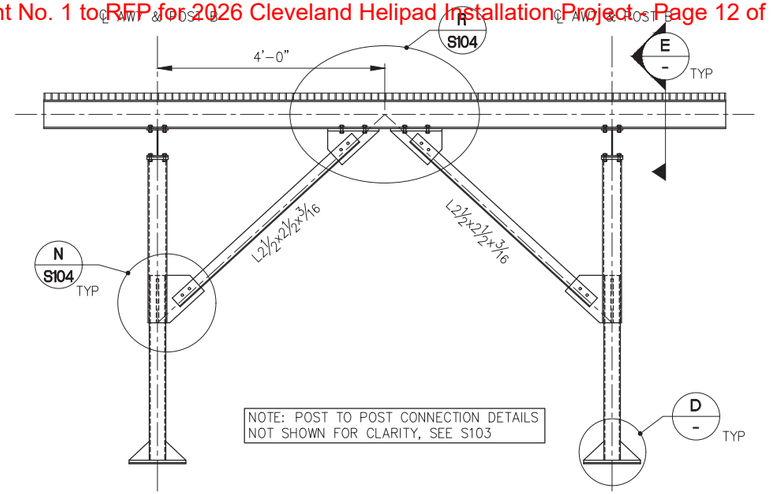
PND PROJECT NO.: 222102 C.A.N. NO.: AECC250

S101
SHEET 2 OF 5



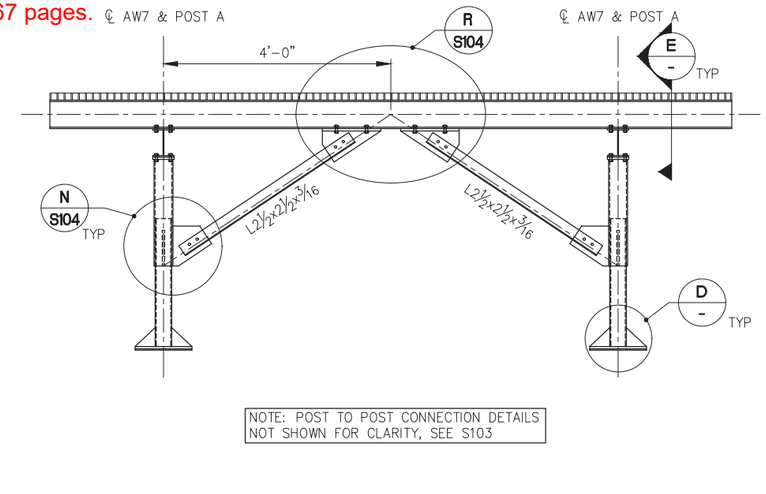
A **HELIPAD ELEVATION**

SCALE: 0 6" 1' 2' 4'



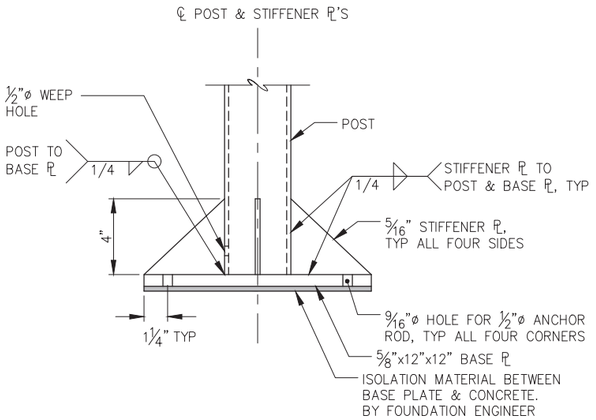
B **HELIPAD ELEVATION**

SCALE: 0 6" 1' 2' 4'



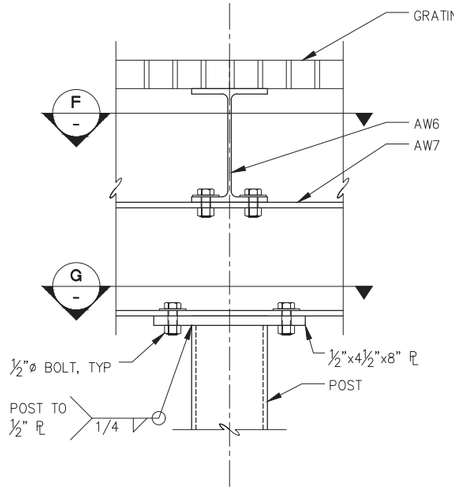
C **HELIPAD ELEVATION**

SCALE: 0 6" 1' 2' 4'



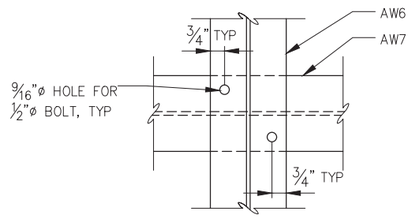
D **POST BASE DETAIL**

SCALE: 0 3" 6" 12"



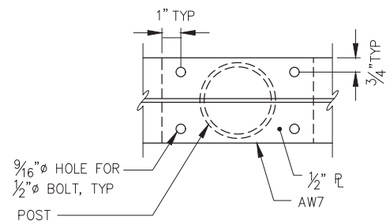
E **CONNECTION DETAIL**

SCALE: 0 3" 6" 12"



F **CONNECTION DETAIL**

SCALE: 0 3" 6" 12"



G **CONNECTION DETAIL**

SCALE: 0 3" 6" 12"

PERMIT DRAWINGS - NOT FOR CONSTRUCTION

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Brian C. Nielsen
SE-13703
REGISTERED PROFESSIONAL ENGINEER
DATE: 3/8/2023

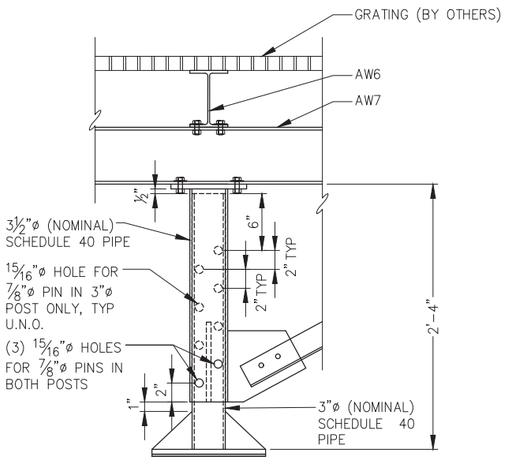
SEAPA HELIPADS
BRADFIELD CANAL

SHEET TITLE:
ELEVATIONS AND DETAILS

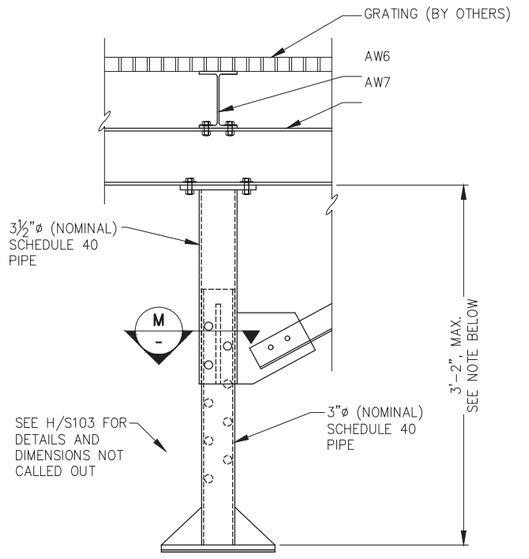
PND PROJECT NO.: 222102 C.A.N. NO.: AECC250

S102
SHEET 3 OF 5

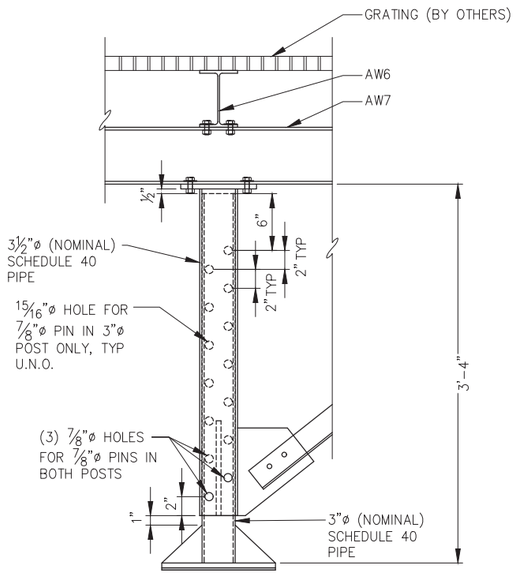
NOTE: TYPICAL CONNECTION DETAILS NOT CALLED OUT FOR CLARITY, SEE S101



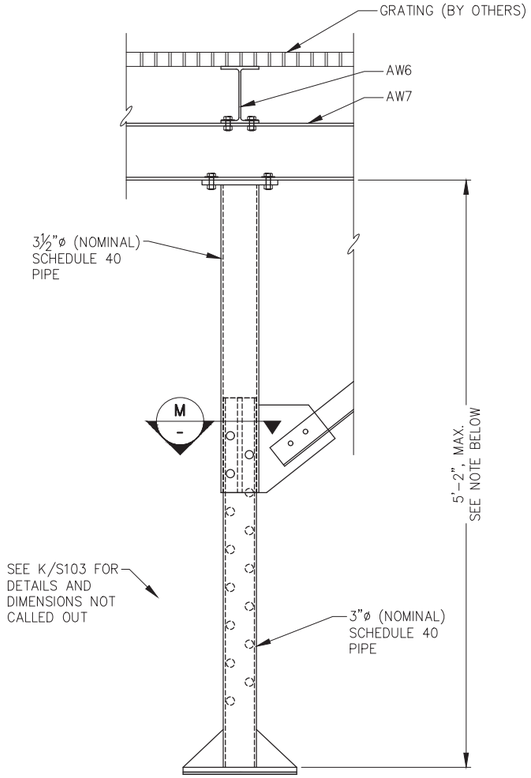
H **ADJUSTABLE POST "A" ELEVATION** SCALE: 0 6" 1' 2'



J **ADJUSTABLE POST "A" ELEVATION** SCALE: 0 6" 1' 2'

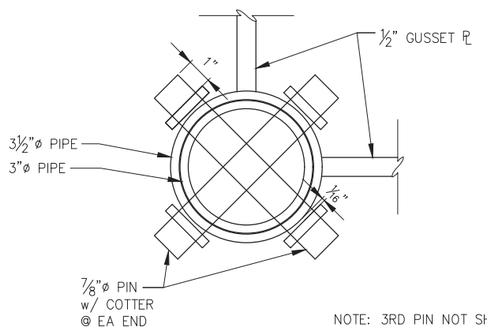


K **ADJUSTABLE POST "B" ELEVATION** SCALE: 0 6" 1' 2'



L **ADJUSTABLE POST "B" ELEVATION** SCALE: 0 6" 1' 2'

MAXIMUM ADJUSTABLE POST EXTENSIONS SHOWN IN DETAILS J AND L SHALL NOT BE EXCEEDED. SHOULD SITE CONDITIONS VARY MORE THAN 2'-0" BETWEEN POST LOCATIONS, IT IS THE RESPONSIBILITY OF THE FOUNDATION ENGINEER TO ENSURE ADJUSTABLE POSTS DO NOT EXCEED MAXIMUM EXTENSIONS.



NOTE: 3RD PIN NOT SHOWN.

M **CONNECTION DETAIL** SCALE: 0 3" 6"

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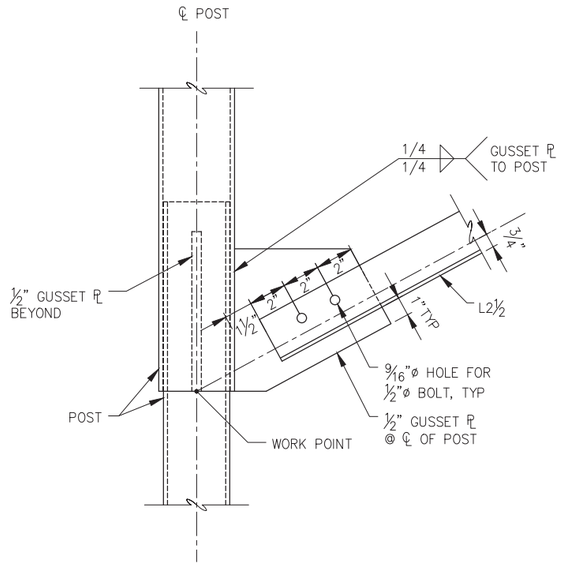
STATE OF ALASKA 49TH Brian C. Nielsen SE-13703 REGISTERED PROFESSIONAL ENGINEER
DATE: 3/8/2023

SEAPA HELIPADS
BRADFIELD CANAL

SHEET TITLE: **ELEVATIONS AND DETAILS**

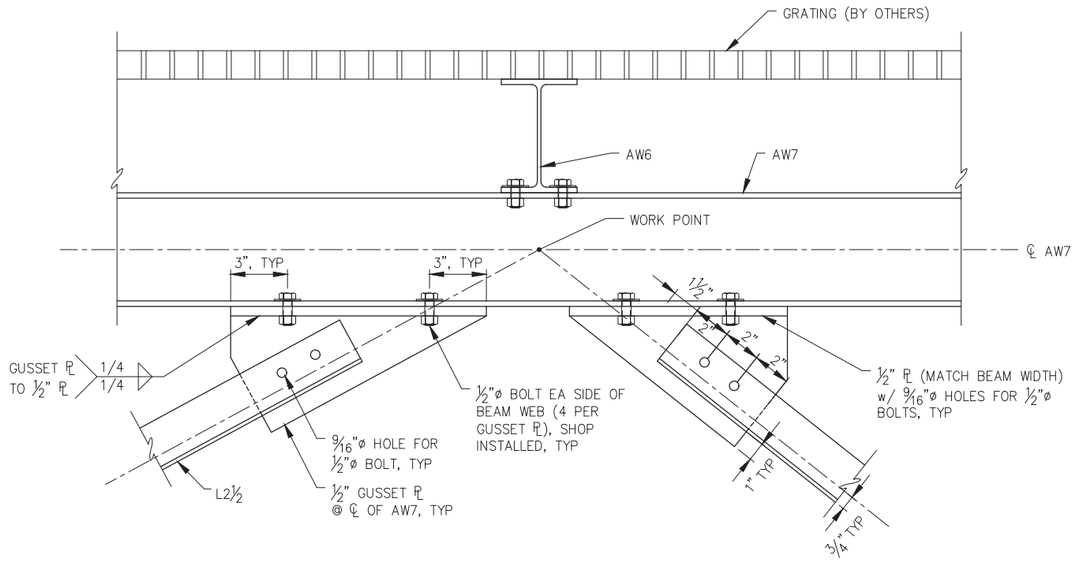
PND PROJECT NO.: 222102 C.A.N. NO.: AECC250

S103 SHEET 4 OF 5



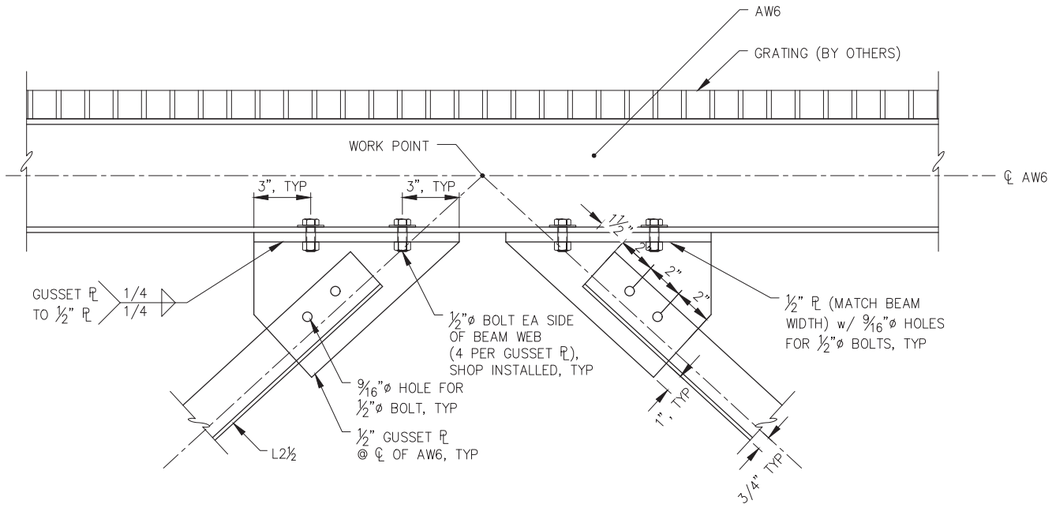
N TYPICAL CONNECTION DETAIL

SCALE: 0 3" 6" 12"



P TYPICAL CONNECTION DETAIL

SCALE: 0 3" 6" 12"



R TYPICAL CONNECTION DETAIL

SCALE: 0 3" 6" 12"

PERMIT DRAWINGS - NOT FOR CONSTRUCTION

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STATE OF ALASKA 49 TH
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SEAPA HELIPADS
BRADFIELD CANAL

SHEET TITLE: **DETAILS**

PND PROJECT NO.: 222102 C.A.N. NO.: AECC250

S104
SHEET 5 OF 5

SECTION 00852 – PERMITS

PART 1 – GENERAL

1.1 INDEX OF PERMITS

A. The Contractor shall comply with all parts of the SEAPA Cleveland Helipad Installation Project *Work Plan,* as applicable, as approved by the US Forest Service (see Pdf pages 17-19 of this Project Manual).

B. The Contractor shall comply with all parts of the SEAPA Cleveland Helipad Installation Project *Fire Control Plan,* as approved by the US Forest Service (see Pdf pages 20-26 of this Project Manual).

C. The Contractor shall comply with all parts of the SEAPA Cleveland Helipad Installation Project *Camping Plan, as applicable,* as approved by the US Forest Service (see Pdf pages 27-28 of this Project Manual).

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

Southeast Alaska Power Agency
Tyee Line Cleveland Peninsula
2026 CLEVELAND HELIPAD INSTALLATION PROJECT

WORK PLAN

Date: October 1, 2025

Section 1.0 Background

The Southeast Alaska Power Agency (SEAPA) proposes to replace existing helicopter landing pads (helipads) with new aluminum helipads along the Tyee Lake Power Transmission Line on National Forest System (NFS) lands on Cleveland Peninsula in Bradfield Canal, near Wrangell, Alaska, to safely access existing electrical transmission towers for inspection, operation, and maintenance. Helipad installation is anticipated in 2026, subject to weather and logistics.

Section 2.0 Purpose

This WORK PLAN covers the anticipated procedure for installation of the helipads. SEAPA will submit an updated WORK PLAN for US Forest Service (USFS) review when changes to the WORK PLAN may affect NFS lands. A contractor has not yet been selected to perform the work; a condition for the contract will be for the contractor to sign on to and comply with this WORK PLAN.

Section 3.0 Impact

Construction and installation of the new helipads will comply with the US Department of Agriculture Forest Service Special Use Permit, Authorization ID: WRG31. All helipads are painted per USFS specifications to minimize the visual impact. No long-term storage of equipment will occur on NFS lands. Equipment storage and staging areas will be the Tyee Lake Hydroelectric Facility, SEAPA's Wrangell warehouse, or a floating camp in Bradfield Canal; not on NFS lands.

Section 4.0 Erosion and Sediment Control Best Management Practices (BMPs)

The following Best Management Practices (BMPs) will be taken to minimize the loss of soil and the contamination of waterbodies: placing excavated material away from natural drainage channels with sufficient separation to permit material suspended due to rainfall to be filtered and captured in natural vegetation, covering excavations and material stockpiles when exposed for extended periods during significant rain events, replacing as much of the excavated material as possible during backfilling of the constructed foundations, and salvaging the natural ground cover during excavation for reuse as covering of disturbed areas to promote faster revegetation and limit loss of soil.

Section 5.0 Procedure

The following procedure summarizes the work associated with the helipad installation:

1. SEAPA is permitted by the USFS to begin work on removing the existing helipads and constructing the new helipads.
2. A contractor (to be determined) is awarded a contract and given a Notice to Proceed to begin the work.

3. The contractor orders & mobilizes all materials, supplies, tools, equipment & manufactured articles to Wrangell & Bradfield Canal, except for helipads which are at Tyee.
4. The contractor mobilizes a work crew of 4 to 8 people and personal supplies to Bradfield Canal via boat or aircraft.
5. The contractor mobilizes materials, supplies, and manufactured articles from Bradfield Canal to each helipad site via helicopter.
6. The contractor mobilizes crews, tools, and equipment to each helipad site via helicopter to perform the work. No blasting of surface material, rock, or any other material will occur. Work will continue through completion at each site using helicopters for transportation.
7. The work crew resides on a chartered vessel in Bradfield Canal and at temporary field camps at each helipad installation site for the duration of the work. The work is estimated to take approximately 3 to 4 days per helipad.
8. The contractor removes refuse from each helipad site and demobilizes from Bradfield Canal.

Section 6.0 Inspections

SEAPA or its designated representative will conduct construction and environmental inspections during the work. A final inspection will be performed at the completion of each helipad to confirm compliance with this WORK PLAN and the contract documents. The attached report form will be used and submitted to the Forest Service to document the construction activities. A summary report will be provided to the USFS at the conclusion of the construction season documenting the work completed, all instances of non-compliance, and remedies for non-compliance situations.

Section 7.0 Acknowledgement

This WORK PLAN will be posted in a conspicuous location so that SEAPA, its designated representative, and the contractor will be aware of its provisions and their responsibilities.

I hereby acknowledge that I understand the contents of this WORK PLAN, and I agree to implement the provisions herein:

Name	Title	Signature	Date
	Wrangell District Ranger, US Forest Service		
	CEO (Owner), Southeast Alaska Power Agency		
	Owner's Designated Representative,		
	Contractor,		

Attachment: *Construction Inspection Report* sample

Southeast Alaska Power Agency
55 Don Finney Lane, Ketchikan, AK 99901
(907) 228-2281 | www.seapahydro.org

CONSTRUCTION INSPECTION REPORT

Project and Location:	SEAPA 2026 Cleveland Helipad Installation Project, Tyee Line, Cleveland Pen.		
Inspection Date:		**Inspector Name:**	
Client:	Southeast Alaska Power Agency	**Hours on Site:**	
Owner:	Southeast Alaska Power Agency	**Report Number:**	
Contractor:		**Reporting Date:**	
Engineer of Record:		**Tongass Engr No:**	

SITE CONDITIONS

Weather at Site:		**Wind**		High	**Humid**		Humid
				Moderate			Moderate
Ambient Air Temp:				Calm			Dry

CONTRACTOR FIELD FORCE DURING INSPECTION

Contractor (Subcontractors)	Non-Manual	Manual	Equipment Used

Section 1. Status of Construction

1.1

Section 2. Inspection Activities

2.1

2.1.1

2.2

2.2.1

2.3

2.3.1

Section 3. Visitors to Project Site

3.1

Section 4. Attachments

4.1

Tyee Lake Hydroelectric Project 2026 Cleveland Helipad Installation Project
Fire Control Plan

This Fire Control Plan (Plan) details the holder's fire control responsibilities and tasks on the permit area. This Plan also addresses fire risk associated with operation and maintenance activities on the permit area.

The designated Fire Precautionary Period for the permit area is May 1 to September 30.

Section 1 - Emergency Fire Precautions. The holder's operations will be restricted following the Emergency Fire Precautions Schedule and the accompanying sections in this Plan.

The authorized officer will provide the predicted Multi-Agency Coordination (M.A.C.) Fire Precautions Class to the holder. If predictions made after 6 p.m. are significantly different than originally predicted, the Forest Service will inform the holder by phone when changes in restrictions or fire precautions are indicated.

Emergency Fire Precautions Schedule

The Forest Service may change the fire danger values to other essentially equivalent values when the Fire Danger Rating System is revised. In this event a new Fire Control Plan will be prepared including the new Emergency Fire Precaution Schedule.

Fire Precaution Class	Fire Precautions
M.A.C. I & M.A.C. II	Normal fire precautions only. Spark arresters installed, 100 gallons of water and necessary fire tools and equipment available at Wrangell Switchyard and the Tyee Lake Hydroelectric Power Generation sites. Communications available.
M.A.C. III	All prior fire precautions required. No warming or lunch fires allowed. Spark arresters/mufflers, fire extinguishers on equipment required. Power saw operators required to carry fire extinguishers. Smoking materials allowed only in designated areas. On third consecutive day of M.A.C. III the Forest Service may suspend operations including the use of power saws, from 12 noon until 6 p.m. Firepersons services required for this and all higher classes.
M.A.C. IV	All prior fire precautions required. Shutdown all power saws from 12 noon until 8 p.m. Other work may continue with Forest Service approval.
M.A.C. V	Shutdown all operations. Previously active work areas patrolled from 12 noon until 8 p.m.

Section 2 - Designated Firepersons. A fireperson, designated by the holder, will perform the services listed below on the permit area. The person will be physically capable, alert, and have adequate experience and training necessary to perform the duties assigned. The fireperson will be capable of operating the holder's firefighting equipment specified in this exhibit, excluding helicopters, and of directing the holder's and holder's contractor's activities. The fireperson will be provided adequate transportation and firefighting equipment. When communications are required on operating sites, and such system consists of telephone, radios or radio telephones, the holder will provide the fireperson with such communications.

Fireperson services described are needed for at least three hours, or until 8:00 p.m., whichever is later, from the time equipment for maintenance and brush cutting is shut down. For this provision, personnel and service vehicles are excluded as equipment.

Fireperson services consist of moving throughout the permit area with the fireperson constantly on the lookout for fires and taking suppression action on any fires detected. In helicopter operations, the fireperson, where possible, should observe inaccessible portions of the permit area from vantage points within or adjacent to the permit area.

On the third consecutive day of M.A.C. III, or at other times as the authorized officer requires, the holder will provide fireperson services to power saw operations, including right-of-way vegetation management activities.

If vehicle travel time with available transportation exceeds ten minutes from any area requiring fireperson services to any other area requiring such service, the Forest Service may require a second fireperson.

Name	Title, Organization	Work Phone	Mobile Phone
Clay Hammer	Operations Mgr. SEAPA	907-228-2281 Ketchikan 907-874-3834 Wrangell	907-660-7880

Section 3 - Communications. During the Fire Precautionary Period, a satisfactory radio or telephone system (with a commercial network), will be provided in a serviceable condition by the holder.

Section 4 - Fire Tools. Fire tools to equip all personnel employed or contracted in holder's operations will be provided by the holder. The holder's tools are to be kept in serviceable condition and in one or more weather tight fire toolboxes. The fire toolboxes must be painted red, marked "Tools for Fire Only" with letters at least 3 inches high, and kept sealed. The holder will post a list of the contents inside each fire toolbox, so it is protected and visible when opened. The sharpened edges of tools will be maintained by the holder and protected from rusting.

The fire toolboxes must contain numbers and kinds of tools as follows:

Kind of Tool	Number of Personnel Working in Area			
	1-4	5-9	10-15	16-20
Axe, 2x bit., chopping, 32" min. handle	1	1	2	3
Shovels, L.H., R.P. #0 or larger	1	3	6	7
Pulaski, 32" min. handle	2	3	7	10
File, 10" mil bastard	1	1	1	2
Pumps, backpack cans, 5 gallons, filled with water	1	2	2	3

The holder will locate the backpack cans inside or immediately adjacent to the tool box in a safe, readily available area.

The fire toolboxes will be placed at the Wrangell Switchyard and the Tyee Lake Hydroelectric Power Generation sites.

A minimum of 100 gallons of water will be available at the Wrangell Switchyard and the Tyee Lake Hydroelectric Power Generation sites.

Section 5 - Spark Arresters and Mufflers. Each internal combustion engine must be equipped with a spark arrester qualified and rated under USDA – Forest Service, Standard 5100-1. Available online at https://www.fs.fed.us/t-d/programs/fire/documents/FS5100-1D.pdf and https://www.fs.fed.us/eng/pubs/html/03511304/03511304.htm unless it is:

a. Equipped with a turbine-driven exhaust supercharger such as the turbocharger. An exhaust bypass will not be allowed.

b. A multi-position engine, such as on chainsaws, which is equipped with a screen arrester, as described in Forest Service Spark Arrester Guide (available online at: https://www.fs.fed.us/t-d/programs/fire/spark_arrester_guides/.)

   A spark arrester, which does not meet the requirements in this Guide, may be approved upon submission of acceptable proof that the arrester is at least 80 percent efficient in retention, attrition, or destruction of carbon particles. Such arrester may be required to meet higher standards as improvements in design and efficiency are discovered.

c. A passenger-carrying vehicle or light truck intended primarily for use on roads and equipped with a factory designed muffler and exhaust system.

d. A heavy-duty truck, or other vehicle used for commercial hauling, used only on roads and equipped with a factory designed muffler and with a vertical stack exhaust system extending above the cab.

Exhaust equipment described in this subsection, including spark arresters and mufflers, must be properly installed and consequently maintained in serviceable condition.

Section 6 - Fire Extinguishers and Equipment. Each internal combustion truck and OHV must be provided with chemical fire extinguishers meeting one of the following specifications:

1 each 2-1/2-pound size or larger extinguisher of dry chemical type, or 1 each 4-pound size or larger extinguisher of the carbon dioxide type.

The holder must test or check each extinguisher for proper functioning prior to the beginning of Fire Precautionary Period. Each truck must have one serviceable round-pointed shovel. Extinguishers and shovels must be so mounted as to be readily available.

Each gasoline power saw will be provided with 1 chemical-pressurized fire extinguisher of not less than 8-ounce capacity by weight. The extinguisher must always be maintained in good working order.

During periods of critical fire danger, additional precautionary measures, such as a round-pointed shovel, may be required when such saws are used. Any fueling of a power saw will be done in an area which has first been cleared of material which will carry fire; such power saw must be moved at least 10 feet from the place of fueling before starting.

One refill for each type, or one extra extinguisher sufficient to replace each size extinguisher except for those on a helicopter, must be safely stored in the fire toolbox or other agreed upon place at the Wrangell Switchyard and the Tyee Lake Hydroelectric Power Generation sites that is protected and readily available.

At each site on the National Forest where helicopters are being serviced or supplied, a carbon dioxide fire extinguisher with a UL rating of at least 10 B.C. will be provided and placed where they are available for immediate use.

Section 7 - Smoking and Lunch Fire Restrictions. During M.A.C. III, the holder will prohibit smoking and building of any fires within the permit area.

Section 8 - Posting. - A copy of this Fire Control Plan is to be posted in conspicuous location(s) so that the holder's employees and contractors are aware of its provisions and their responsibilities.

Section 9 - Key Personnel. The following personnel can be contacted in a fire emergency, during operations, and evenings or weekends. This Plan will be updated to ensure the accuracy of contact information for key personnel and designated fire persons.

Name	Organization, Title	Work Phone	Home Phone	Mobile Phone
	Forest Service Permit Administrator	907-874-7566		NA
VACANT	Forest Service Fire Management Officer	907-789-6210		
Eric Morgan	Forest Service Acting Assistant Fire Management Officer	907-789-6210		208-290-6062
	Forest Service Fire Module Leader-Wrangell	907-874-7567		
Wrangell District Ranger	Forest Service Wrangell	907-874-7500		
Petersburg Acting District Ranger	Forest Service Petersburg	907-772-5900		
Clay Hammer	SEAPA Operations & Vegetation Mana	907-228-2281 Ketchikan 907-874-3834 Wrangell		907-660-7880

Other Contact Numbers

Name	Location	Phone Number
District Office	Forest Service, Wrangell	907-874-2323
District Office	Forest Service, Petersburg	907-772-3871
Dispatch	Forest Service, Petersburg	907-772-5899
Tyee Lake Facilities	SEAPA Operations	907-228-3712

Holder	Forest Service
Initials	**Initials**
Date	**Date**

CAMPING PLAN

The Camping Plan will be posted in a conspicuous location at each camp site.

Topic		Rules
Camp	Structures	Each camp and structure must meet minimum standards as outlined in US Department of Labor Standards §1910.142 (Temporary Labor Camps). Locate camps in as level of a location as possible, as near to the work site as possible, and to minimize ground disturbance.
	Camp Gear	Camp must be adequately provisioned with heating, sleeping, cooking, and sanitary accommodations. Food must be stored in bear-proof food storage containers and camp must be outfitted to completely support entire crew for extended periods in remote field locations.
	Camping Period	Camp must be established until work is complete, subject to progress of work and weather. No extended storage of equipment or camps will occur at any location on National Forest System lands.
	Water	Water may be rain catchment and treatment, surface catchment and treatment, or transported to the work site in containers.
Leave No Trace Principles	Campsite	Set up camp on durable surfaces near the work site and keep at least 100 feet from lakes and streams as practicable.
		Each campsite must be vacated in the same or cleaner condition than upon arrival. All garbage and construction debris must be hauled away from each site within 10 working days of completion of the work at that site.
Wildlife	Food and Trash Storage Restrictions	Possessing, storing, or leaving any food, refuse or bear attractants unattended is prohibited unless it is properly stored in a bear-resistant container, or suspended at least 10' clear of the ground at all points, suspended at least 4' horizontally from the supporting tree, and suspended at least 4' from any other tree adjacent to the supporting pole or tree.
	Disposal	Discarding or abandoning any food, refuse, or bear attractant is prohibited unless it is disposed of in a bear-resistant trash receptacle.
		Burning or burying foods, refuse, or bear attractants is prohibited.
	Other Restrictions	Feeding of wildlife is strictly prohibited.
Sanitation	Garbage	Possessing or leaving refuse, debris, or litter in an exposed or unsanitary condition is prohibited.
		All garbage including any papers, cans, bottles, sewage, or rubbish must be disposed of by removal from the area.
	Gray Water and Black Water	Grey water may be disposed of in a location 200' or more from any active fish stream or lake. Black water must be stored in an appropriate container and disposed of in an approved sanitary waste facility.
	Pollution	Placing gray or black water in or near a stream, lake, or other water, or any other substance which does or may pollute a stream, lake, or other water, is prohibited
	Solid Human Waste Body Waste	Solid human waste must be disposed of in receptacles and removed from the site. The disturbance from the number of catholes that would result from a multi person crew at a site for multiple days or weeks is not acceptable. A pit latrine or outhouse, operated to DOL sanitation standards, and properly located away from streams or lakes, would be acceptable. The pit would be filled in as part of the camp removal.
First Aid	Basic First Aid supplies must be kept onsite and under the charge of a person trained to administer First Aid. First Aid Kits shall meet OSHA Standard §1910.266 App A.	

Alcohol/Drugs	**No use or possession of alcohol or non-prescription drugs are permitted on any of SEAPA's projects and worksites.**	
Fireworks **Fires** **Firearms**	Fireworks	Possessing, discharging, or using any kind of fireworks or other pyrotechnic device is prohibited, unless permitted otherwise
		Carelessly or negligently throwing or placing any ignited substance or other substance that may cause a fire is prohibited
	Fires/Campfires	Causing timber, trees, slash, brush or grass to burn except as authorized by permit is prohibited
		Leaving a fire without completely extinguishing it is prohibited
		Causing and failing to maintain control of a fire that damages National Forest System land is prohibited
		Building, attending, maintaining, or using a campfire without removing all flammable material from around the campfire adequate to prevent its escape is prohibited
		Campfires must be inside fire rings approved by the Forest Service. The area will be cleared down to soil for one (1) foot outside the ring or fireplace and will not have any overhanging material.
		Fire Rings will be dismantled and removed before vacating camp site.
		Fires are prohibited during burn ban conditions. Obey any special restrictions that have been issued or posted.
	Firearms	Firing any tracer bullet or incendiary ammunition is prohibited, except for Bear deterrents which may be used if necessary.
		Discharging a firearm or any other implement capable of taking a human life, causing injury, or damage property is prohibited in or within 150 yards of a residence, building, campsite, developed recreation site or occupied area, across or on a National Forest System road or a body of water adjacent thereto, or in any manner or place whereby any person or property is exposed to injury to damage as a result of such discharge, or into or within any cave, unless it is in defense of a human life. Hunting activities by the work crew are prohibited while they are staying at the camp or other project related transportation. Each member of the work crew will be informed of the laws restricting the use of aircraft, especially helicopters, for hunting and harassment of wildlife.
WORK TOOLS AND EQUIPMENT **HAZARDOUS MATERIALS**	Fuel Storage	All fuel and oil shall be stored in UL approved containers and be located at least 50 feet from any ignition source.
	Fueling Equipment	Handling or filling equipment with gas or oil must be exercised with great care so as not to cause a spill that will pollute the grounds.
	Spill Response	An onsite Spill Response Kit-must be present at the worksite. The Kit shall consist of approved oil absorbent pads and appropriate disposal containers.
RESOURCE PROTECTION	Plants/Foliage	Damaging or removing any plant that is classified as threatened, endangered, sensitive, rare, or a unique species is prohibited
	Maintenance	All camp sites must be maintained in a safe, neat, and orderly fashion with care taken to minimize visual and environmental impact.
	Historic Preservation, etc.	Digging in, excavating, disturbing, destroying, removing, or in any way damaging any prehistoric, historic, or archeological resource, structure, site, artifact, or property is strictly prohibited
	Caves	Excavating, damaging, or removing any resource from a cave is prohibited

SECTION 01010 – SUMMARY OF WORK

PART 1 – GENERAL

1.1 GENERAL

A. The Work to be performed under this Contract consists of providing all labor, materials, supplies, tools, equipment, manufactured articles, transportation, and services, including all fuel, power, water, and communications, necessary for the assembly and installation of seven (7) aluminum helicopter landing pads (helipads) in strict accordance with these Specifications (a part of the Contract Documents) and all Contract Documents.

B. All Work shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be provided by the Contractor as though originally so indicated, at no increase in cost to the Owner.

1.2 PROJECT SUMMARY

A. Project Name: SEAPA 2026 Cleveland Helipad Installation Project
Installation of Helipads

B. Project Location: Seven (7) installation sites along the Tyee-Wrangell electrical transmission line, Cleveland Peninsula in Bradfield Canal, near Wrangell, Alaska, in central Southeast Alaska, as specified in the project drawings.

C. Owner: Southeast Alaska Power Agency (SEAPA)
55 Don Finney Lane
Ketchikan, Alaska 99901
Ph. (907) 228-2281
Email: contadmin@seapahydro.org

D. SEAPA's Designated Representative and Engineer: Mark Hilson, P.E.
55 Don Finney Lane
Ketchikan, Alaska 99901
Ph. (907) 228-2017
Email: MHilson@seapahydro.org

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work generally consists of mobilization, clearing and grubbing, brushing, construction surveying, excavation, rock chipping and drilling, reinforced concrete foundations, field assembly and installation of aluminum bolt-together structural frames and fiberglass decking, and associated work to construct seven (7) helipads with 12-foot x 12-foot decking at sites along the Tyee-Wrangell electrical transmission line. Each site is accessible primarily by helicopter. Some sites may be accessible by hiking through steep woods and heavy brush, but these sites will also require helicopter support for mobilizing equipment and materials.

B. The helipads are engineered for efficient installation during this project at remote sites in rugged, mountainous terrain of central Southeast Alaska ranging in elevation from 280 to 1,670 feet above sea level, on slopes varying from approximately 5 to 45 degrees. All sites will require helicopter support, made a part of the Contractor's responsibilities. Various terrain conditions are shown in the photographs below:

			
1.3.B.1 IMG_9268	Helipad installed at shallow slope site	1.3.B.2 IMG_9269	Zoom-in of site shown in photograph 1.3.B.1
			
1.3.B.3 IMG_9406	Helipad installed at moderate slope site	1.3.B.4 IMG_9407	Zoom in of site shown in photograph 1.3.B.3
			
1.3.B.5 IMG_9294	Helipad installed at steep slope site	1.3.B.6 IMG_9362	Zoom in of site shown in photograph 1.3.B.5

C. The Owner will supply all seven complete helipad kits, including framing members, grating panels, and their associated fasteners, to the Contractor in a disassembled state and packaged ready for external load transportation to each helipad installation site by helicopter. Other than the steep slope helipad kit, they do not include access ramps; the Contractor shall install the one ramp on the steep slope helipad kit. The Contractor may repackage each kit or assemble any kits at Tyee prior to transport. Final adjustments to helipad locations shall be made considering existing obstructions, tower locations, guys, terrain and depth to bedrock. All locations must consider pilot feedback and shall be approved by the Owner's representative which shall not be unreasonably withheld.

D. Helipad kits shall be available to the Contractor at SEAPA's Tyee facility located at the head of Bradfield Canal. SEAPA personnel will assist with the slinging of the pads by moving the kits to a convenient location at the camp per the Contractor's direction.

1.4 CONTRACT METHOD

A. The Work shall be constructed under a Unit Price contract.

1.5 CONTRACTOR'S USE OF THE PROJECT SITE

A. The Work takes place at some of the support towers along the Tyee-Wrangell electrical transmission line: an active, high-voltage electrical transmission line that will remain continuously in service during this Work. The Contractor shall exercise extreme care while working near the transmission line. The Contractor's use of the project site along the transmission line shall include construction operations and camping, adhering to the requirements of these specifications and the *Work Plan, Fire Control Plan,* and *Camping Plan* per Section 00852. The Contractor may also use the Owner's facilities at Tyee Lake to the extent necessary for overnight stays and for staging equipment, materials, tools, and other items directly associated with the subject project. All areas used by the Contractor shall be maintained in a clean condition.

1.6 OWNER'S USE OF THE PROJECT SITE

A. The Owner will continue to occupy and operate its facilities at Tyee Lake throughout the course of this project. Additionally, the transmission line will remain energized for normal operations and may only be de-energized at SEAPA's sole discretion per written request from the Contractor for specific, documented work with at least seven (7) days' prior notice. The Contractor shall cooperate and coordinate with the Owner to facilitate the Owner's operations and to minimize disruptions and interference with both parties' operations.

1.7 WORK BY OTHERS AT THE PROJECT SITE

A. Absent an unforeseen circumstance, SEAPA has no intent of having other contractors working on the transmission line during this project. It is likely that there will be contractors working at Tyee and there may be personnel staying at the bunkhouse or Forest Service Cabins.

1.8 WORK RESTRICTIONS

A. There are no day or hourly work restrictions associated with this project. The Contractor must comply with all labor laws and regulations, as well as the requirements of the *Work Plan, Fire Control Plan,* and *Camping Plan* per Section 00852 and as included in Section 01560 – *Temporary Environmental Controls.*

1.9 JURISDICTIONAL OVERSIGHT

A. The Contractor shall comply with all applicable federal, state, local, and project-specific regulations, including the following, as applicable, to accomplish all aspects of the Work:

1. Occupational Safety & Health Administration (OSHA) regulations
2. SEAPA 2026 Cleveland Helipad Installation Project *Work Plan* per Section 00852
3. SEAPA 2026 Cleveland Helipad Installation Project *Fire Control Plan* per Section 00852
4. SEAPA 2026 Cleveland Helipad Installation Project *Camping Plan* per Section 00852

1.10 PROJECT MEETINGS

A. Pre-Construction Conference

1. Prior to the commencement of Work at the site, a pre-construction conference will be held at a mutually agreed upon time and place or electronically for the purpose of designating responsible personnel and establishing a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. Attendees shall be as follows:

    a. Contractor or employee authorized to make decisions on their behalf
    b. Contractor's on-site Superintendent
    c. Subcontractors, as the Contractor deems appropriate
    d. Owner's Designated Representative
    e. Others as requested by the Contractor or Owner

2. The complete agenda will be furnished to the Contractor prior to the meeting date.

3. The Contractor shall provide the following items via e-mail at least one week prior to the pre-construction conference:
    a. Plan of Operation
    b. Project Schedule to accomplish all aspects of the Work
    c. Critical work sequencing for each installation site
    d. Shop drawings, substitutes, and "Or Equal" submittal schedule

4. In addition to reviewing the drawings, specifications, and permit requirements per Section 00852, the Contractor shall be prepared to discuss or provide the following:

    a. Name, office phone number, cell phone number, mailing address, physical address, and e-mail address of Contractor's employee authorized to make decisions.

b. Contractor's assignments for field communications, safety, and first aid
c. Transmittal, review, and distribution of Contractor's submittals
d. Maintaining record documents
e. Processing applications for payment
f. Field decisions and Change Orders
g. Intended use of Tyee or project site for materials staging and mobilization, fabrication, field office, security, housekeeping
h. Expectations of the Owner

B. Progress Meetings

1. The Contractor shall schedule and hold regular progress meetings on-site or electronically, occurring at times as requested by the Owner's Designated Representative, or as required by progress of the Work, for the purpose of reviewing the progress of the Work, maintaining coordination of efforts, discussing changes in scheduling, and resolving any problems that develop. Attendees shall be as follows:

a. Contractor's Project Manager
b. Subcontractors and representatives of Contractor's Suppliers and Manufacturers, as the Contractor deems appropriate
c. Owner's Designated Representative

2. During each meeting, the Contractor is required to present any issues that may impact the Work, with a view to resolve these issues expeditiously.

1.11 SUBMITTALS

A. All submittals shall be transmitted electronically to the Owner's Designated Representative in .pdf format using direct computerized conversion to .pdf files. To preserve legibility in reproduction, printing and rescanning shall only be used for the signing of documents or similar occurrences and only with the original document. All submittals shall be clear and legible for further reproduction by the Owner or the Owner's Designated Representative. Scanned copies of original signatures will be treated in all aspects as having the same effect as an original signature.

B. All documentation, including all submittals, shall be kept on file for no less than five (5) years by the Contractor. These shall be available for review upon request during this period.

C. The Contractor shall submit the following items to the Owner's Designated Representative prior to commencement of Work, unless explicitly noted otherwise in these Specifications:

1. Refinement of the Contractor's Plan of Operation submitted with the original response to the *Bid Requirements* section of the Request for Proposals.
2. Construction schedule per Section 01010 Paragraph 1.10.A.3.
3. SEAPA 2026 Cleveland Helipad Installation Project *Work Plan* per Section 00852.
4. SEAPA 2026 Cleveland Helipad Installation Project *Fire Control Plan* per Section 00852.
5. SEAPA 2026 Cleveland Helipad Installation Project *Camping Plan* per Section 00852.

6. Mobilization breakdown per Section 01505 Paragraph 1.5.C *Payment*.
7. Concrete reinforcing steel certification per Section 03301 Paragraph 2.7.A *Reinforcing Steel.*
8. Threaded rod certification per Section 05141 Paragraph 2.2.A *Foundations.*
9. Fastener certification per Section 05141 Paragraph 2.2.A *Foundations.*

1.12 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS – The following words have the meaning defined in the Technical Portions of the Work:

A. Furnish: Means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and start-up.

B. Indicated: Is a word used to direct the Contractor to information contained on the drawings or in the Specifications; terms such as “shown,” “noted,” “scheduled,” and “specified” also may be used to assist in locating information but no limitation of location is implied or intended.

C. Install: Defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the Owner’s use.

D. Installer: A person or firm engaged by the Contractor or its subcontract or any Subcontractor for the performance of installation, erection, or application work at the site; installers must be expert in the operations they are engaged to perform.

E. Provide: Is defined as furnish and install, ready for the intended use.

1.13 REQUESTS FOR INFORMATION

A. Throughout the course of the Work, the Contractor shall submit all requests for information in writing by e-mail to the Owner’s Designated Representative.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01025 – MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all materials, supplies, tools, equipment, manufactured articles, transportation, and services, and for all labor, operations, and incidentals required to perform all Work, or other operations required for the fulfillment of the contract, necessary to accomplish the Work in accordance with the Contract Documents and all requirements specified therein.

B. Bid Schedule prices shall include costs for bonds, insurance, overhead, and profit. It shall also include all costs for permits and compliance with the regulations of public agencies having jurisdiction, including the *Work Plan, Fire Control Plan,* and *Camping Plan*, all as approved by the US Forest Service, and safety and health requirements of the US Department of Labor Occupational Safety and Health Administration (OSHA) and the State of Alaska Department of Labor, Division of Labor Standards and Safety.

C. The Owner reserves the right to add or eliminate helipads at the unit prices provided in the Bid Schedule. The Owner shall provide reasonable compensation to the Contractor if more than two helipads, total for the entire project, are eliminated.

D. Any Work shown on the drawings or described in the Contract Documents that is not specifically listed in the Bid Schedule shall be considered incidental to other items of Work and shall not be specifically measured for payment. All costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of Work. In addition to other incidental items of Work listed within this Section and elsewhere in the Contract Documents, the following items shall also be considered as incidental to the Work:

1. All protections needed to prevent damaging parts of the electrical transmission line infrastructure, including towers, tower guy wires, and transmission lines.

2. Compliance with the *Work Plan, Fire Control Plan,* and *Camping Plan* per Section 00852.

3. Erosion and sediment control in accordance with local, state, and federal standards.

4. Minor grading of fill materials as required to match existing grades and maintain positive surface drainage.

5. Elective repackaging of helipad kits for the Contractor to mobilize to each installation site. The Owner will provide kits to the Contractor in a disassembled state, bundled in a configuration that is secure, tight, convenient, and ready for external load transportation to each installation site by helicopter.

6. Camping equipment and supplies required to support the construction crew and comply with all camping regulations as set forth in the *Camping Plan.*

7. Field communication equipment and subscriptions.

8. Final clean-up and site restoration at all installation sites and material staging areas.

1.2 MOBILIZATION and DEMOBILIZATION (Pay Item Nos. 1 and 9) PRICE BASED ON LUMP SUM

Pay Item No.	Pay Item	Pay Item No.	Pay Item	Pay Unit
1	Mobilization	9	Demobilization	LS

A. Mobilization and Demobilization shall be measured based upon the percentage completion of the Pay Items, all in accordance with the requirements of the Contract Documents.

B. Payment for Mobilization and Demobilization will be made at the amount shown on the Bid Schedule under Pay Item Nos. 1 and 9, which payment shall constitute full compensation for all Work described in Section 01505 – Mobilization and Demobilization, as noted in the Contract Documents and as directed by the Owner's Designated Representative.

1.3 Demolition: By Owner

1.4 HELICOPTER LANDING PAD ASSEMBLY AND INSTALLATION (Pay Item Nos. 2-8) PRICE BASED ON QUANTITY, EACH

Pay Item Nos.	Pay Item	Pay Unit
2-8	Helicopter Landing Pad Assembly and Installation	Each

A. Helicopter Landing Pad Assembly and Installation shall be measured per each, complete in place, including all construction surveying, erosion and sediment control, clearing and grubbing, excavation, rock preparation (chipping and leveling), rock drilling, foundation preparation, formwork construction, concrete placement and curing, foundation backfilling, grout placement, helipad assembly, reinforced fiberglass grating decking installation, connection to foundation system, access ramp installation (where indicated), and all other materials, equipment, etc. needed to complete the Work, all in accordance with the requirements of the Contract Documents.

B. Work under this Pay Item includes providing all materials required to construct cast-in-place concrete foundations, including, but not limited to, gravel, concrete, rebar, water, grout, threaded rods with washers and nuts, and epoxy. The Owner will provide the aluminum helipads and fiberglass grating at Tyee Hydroelectric Facility for the Contractor's mobilization and use.

C. Payment for Helicopter Landing Pad Assembly and Installation will be made at the Unit Price named in the Bid Schedule which payment shall constitute full compensation for all Work described in Section 05141 – Helicopter Landing Pad Assembly and Installation, as noted in the Contract Documents and as directed by the Owner's Designated Representative. Each bid shall include $20,000 of Engineer Directed Work (EDW), which shall cover additional work which may become necessary.

PART 2 – PRODUCTS (Not Used)
PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01400 – QUALITY CONTROL

[Section Not Applicable]

[Section Not Applicable]

SECTION 01505 – MOBILIZATION and DEMOBILIZATION

PART 1 – GENERAL

1.1 GENERAL

A. Mobilization shall include obtaining all permits necessary to support mobilization that have not already been obtained (Owner is not aware of any); moving all labor, materials, supplies, tools, equipment, and camping items onto each site, between sites, resupplying sites, and out of sites; furnishing and erecting plants, temporary buildings, and other construction and camping facilities; and implementing security requirements; all as required for the proper performance and completion of the Work. Mobilization shall include the following principal items:

1. Providing and maintaining required bonds and insurance.
2. Moving all Contractor's equipment required for operations onto the site.
3. Providing all on- and off-site communication facilities, as described further herein.
4. Obtaining all required permits other than those already obtained.
5. Having all OSHA-required notices and establishment of safety programs.
6. Submitting initial submittals.
7. Demobilization from all sites and staging areas.
8. Providing As-built drawings of foundations, Pictures of foundations before concrete placement, Pictures of completed pad, and coordinates of center of Helipad

1.2 COMMUNICATION FACILITIES

A. The Contractor shall provide on-site communication facilities. The Contractor shall maintain StarLink communications or equivalent. These devices shall be made available to the Owner and Owner's Designated Representative while conducting site visits. Cellular phones are not considered an acceptable method, as coverage in the work area is inconsistent and inadequate. Other emergency health and safety communication devices are highly recommended, such as the Garmin inReach Satellite Communicator or similar. The Contractor shall always maintain a sufficient supply of batteries or method for charging communication equipment while in the field.

1.3 CAMPING AND OVERNIGHT ACCOMMODATIONS

A. No matter the Contractor's preferred method for overnight accommodations of the construction crew, the field crew shall always be prepared for spending up to three nights in the field without helicopter support if weather or other factors beyond the Owner's control strand the crew in the field. Required provisions include, but are not limited to, adequate supplies of food, water, shelter, batteries, and personal equipment. These materials shall be stored in bear-proof containers when left unattended. All requirements of the *Camping Plan* shall always be complied with.

B. The Contractor may use the Owner's facilities at Tyee Lake to the extent necessary for overnight stays directly associated with the subject project. These facilities include a

bunkhouse, complete with full kitchens and bathrooms and the Forest Service Cabins. Exclusive use by the Contractor is not guaranteed as work at the Tyee Plant will be ongoing. Food, toiletries, and cleaning are the responsibility of the Contractor. All areas used shall be cleaned prior to departing.

C. Contractor housing in Ketchikan and/or Wrangell is the responsibility of the Contractor.

D. The Contractor shall make space available in the Contractor's overnight accommodations for one person as the Owner's Designated Representative in kind to that of the construction crew for cooking, eating, bathing, and sleeping.

1.4 RESPONSIBILITIES

A. In addition to mobilizing all materials and supplies required to be furnished by the Contractor, the Contractor shall also be responsible to mobilize the helipad kits provided by the Owner in a disassembled state and packaged ready for external load transportation to each installation site by helicopter. The Contractor may repackage each kit or assemble each kit prior to mobilization if desired; this Work shall be considered incidental. Helipad kits shall be made available to the Contractor according to the details and schedule provided in Section 01010. Each kit includes the following items:

1. Painted aluminum structural framing members, including beams, support legs, and braces – approximately 650 pounds total per helipad site

2. Fiberglass grating panels – approximately 540 pounds total per helipad site

3. All associated fasteners for the aluminum structural framing members and the fiberglass grating panels – approximately 60 pounds total per helipad site

4. The steep slope helipad includes a ramp

B. The Contractor shall provide all equipment, materials, and personnel necessary to protect and prevent damaging, distorting, marring, or soiling the materials during the handling, transporting, and delivery of the helipad kits. This shall include all rigging and other materials of sufficient capacity and integrity that are necessary. The packaging shall be secure and tight but shall not damage, distort, or mar the materials or coatings. Materials and coatings damaged due to abrasion, cracking, chipping, twisting, and other damage and deformation shall be repaired or replaced as directed by the Owner.

C. After contract award the Owner will indicate the proposed field location on the ground for each installation site. Each site is approximately located at the coordinates specified in the project drawings. Each installation location is subject to change, and the exact location can be adjusted in the field by the Contractor by mutual consent of the Owner as described elsewhere in the specifications.

1.5 PAYMENT FOR MOBILIZATION

A. The Contractor shall include all mobilization and transportation costs within the appropriate Pay Item of the Bid Schedule.

B. Owner will pay for Mobilization/Demobilization as the work item progresses on a pro rata basis commensurate with progress. Item 8 of item 1.1 is valued at $10,000.

C. As soon as practicable after receipt of the Notice to Proceed, the Contractor shall submit a breakdown to the Owner's Designated Representative for approval, which shall show the estimated value of each major component of Mobilization. When approved by the Owner's Designated Representative, the breakdown will be the basis for initial progress payments in which Mobilization is included.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01530 – PROTECTION AND RESTORATION OF EXISTING FACILITIES

PART 1 – GENERAL

1.1 GENERAL

A. The Contractor shall protect all existing structures, utilities, and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with the requirements of the Contract Documents.

B. No underground utilities exist near the Work limits. Underground tower and guy line foundation structures may exist near the Work limits.

1.2 RIGHTS-OF-WAY

A. The Contractor shall not do any Work that would affect any electrical transmission or communications infrastructure, fences, or other structures, nor shall the Contractor enter upon the rights-of-way involved until notified by the Owner's Designated Representative that the Owner has secured authority from the proper party, after which time the Contractor shall remove, shore, support to otherwise protect such transmission and communications line, ditch, fence, or structure or replace the same.

1.3 PROTECTION OF SURVEY MONUMENTS AND MARKERS

A. The Contractor shall not destroy, remove, or otherwise disturb any existing survey monuments or other markers without proper authorization. No excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction have been properly referenced. All survey monuments, markers or points disturbed by the Contractor shall be accurately re-established, at the Contractor's expense unless provided for elsewhere in the Contract Documents, after sitework has been completed. Re-establishment of all survey monuments shall be by a Registered Alaskan Land Surveyor.

1.4 PROTECTION OF EXISTING UTILITIES, STRUCTURES, AND IMPROVEMENTS

A. General. The Contractor shall protect all existing electrical transmission and communication infrastructure. The Contractor shall immediately notify the Owner of all damage resulting to towers, lines, guy wires, etc. due to construction operations, including transportation. The Owner shall have discretion regarding the repair of any damage. The costs of repairs shall be at the expense of the Contractor. It is recommended that the Contractor document the existing conditions at each site in advance to initiating Work and upon completion.

B. Utilities to be Moved. No utilities shall be moved in conjunction with this Work. In the unforeseen event of a conflict, the Work of this contract shall be resituated.

C. Owner's Right of Access. The right is reserved to the Owner and to the owners of public utilities and franchises to enter at any time upon any right-of-way or easement for the purpose of making changes in their property made necessary by the Work of this contract.

D. Underground Utilities Not Indicated. In the event the Contractor damages any existing utility lines or structures that are not indicated or the locations of which are not made known to the Contractor prior to excavation, a written report thereof shall be made immediately to the Owner. If directed by the Owner, repairs or relocation shall be made by the Contractor under separate negotiations.

E. Approval of Repairs. All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other Work.

F. Maintaining in Service. All overhead electric transmission and communications lines, towers, and guy wires encountered along the line of the Work shall remain continuously in service during all the operations under the contract, unless other arrangements satisfactory to the Owner are made. The Contractor shall be responsible for all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling. The Owner shall have discretion regarding the repair of all damage. **The Contractor shall exercise extreme care while working near the transmission line.**

1.5 TREES WITHIN RIGHTS-OF-WAY AND PROJECT LIMITS

A. General. The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees, bushes, or shrubs, other than those as required under Section 02201 – Clearing and Grubbing. All existing trees damaged during construction shall be trimmed by the Contractor or a licensed landscaping company under permit from the jurisdictional agency and/or the Owner. Tree trimming shall be accomplished as follows:

1. Trimming. Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01560 – TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.1 GENERAL

A. This Section is supplemented by the requirements of the *Camping Plan.*

B. During the Work, all field crew members shall strictly adhere to *Leave No Trace* principles.

1.2 CAMP SITING

A. Temporary camping structures shall be placed on the most durable surface as near to the work area as possible to minimize ground disturbance and at least 200 feet from lakes and streams, as practical.

1.3 RUBBISH CONTROL

A. The Contractor shall keep the site of the Work and other areas used in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Work site and shall establish regular intervals of collection and disposal of such materials and waste. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local, state, and federal ordinances, codes, and regulations governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the requirements of Part 1926 of the OSHA Safety and Health Standards for Construction. Cleaned and dried surplus fasteners shall be delivered to the Owner's Tyee Facility or to the Ketchikan Office.

1.4 SANITATION

A. Solid human waste shall be deposited in six-to-eight-inch deep, unique holes to reduce the concentration, located at least 200 feet from any waterbody, the camp, and trails. Holes will be concealed and disguised by replacing salvaged ground cover when done.

1.5 FOOD CONTAINMENT

A. All food and other attractants shall be stored and secured in bear-proof containers. No food, rubbish, or attractants shall be left out, unattended. Feeding of wildlife is strictly prohibited.

1.6 FUELS AND CHEMICALS

A. All fuels and chemicals shall be used and disposed of in strict accordance with local, state, and federal codes and regulations or the printed product instructions of the manufacturer.

1.7 CULTURAL RESOURCES

A. The Contractor's attention is directed to the National Historic Preservation Act of 1966 (16 USC 470) and 36 CFR 800, which provides for the preservation of potential historical architectural, archaeological, or cultural resources, hereinafter called "cultural resources".

B. The Contractor shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, stop Work immediately and notify the Owner's Designated Representative.

1.8 US FOREST SERVICE EASEMENT MITIGATION MEASURES

A. EAGLE NESTING TREES –Eagle nesting trees are known to exist in the Project vicinity although none are known to exist in the immediate vicinity of the Project site. The Contractor is responsible for adhering to the Bald Eagle Protection Act (16 USC 668-668d), which prohibits molesting or disturbing bald eagles, their nests, eggs, and young.

1. The Contractor shall maintain a 330-foot forested radius around any bald eagle nest identified within the Project Area. Between March 1 and August 31, the Contractor shall restrict controlled blasting on all sites within 0.5-mile radius of a bald eagle nest site, and shall restrict all helicopter flight paths within 0.25 miles of a nest. These restrictions may be lifted after June 1 if the nest is found to be unoccupied.

2. Guidelines for compliance to the Bald Eagle Protection Act are supervised by the US Department of the Interior, Fish and Wildlife Service, Raptor Management Studies, 3000 Vintage Blvd, Suite 201, Juneau, Alaska 99801, phone (907) 586-7333 or (907) 586-7243. The Contractor shall contact the Fish and Wildlife Service for guidelines of the Bald Eagle Protection Act.

B. WOLF DENS –If a wolf den site is found in the right-of-way, the Contractor shall restrict clearing construction within 0.5 miles during wolf mating, denning, and rearing periods, from February 1 to July 30. Timing restrictions may be lifted after April 30 if the den is determined to be unoccupied.

C. HUNTING AND HARRASSMENT –Hunting activities by construction crew personnel are prohibited while using project housing, vehicles, or other project-related transportation. The Contractor shall inform all construction crew personnel of the laws restricting the use of aircraft, especially helicopters, for hunting and harassment of wildlife.

D. BEARS AND FOOD –The Contractor shall use bear-proof storage containers for food, rubbish, and other attractants. Feeding of wildlife is strictly prohibited.

E. MOUNTAIN GOATS AND FLIGHT CONTROLS – The Contractor shall establish aircraft flight routes using lower elevations as much as possible for all helicopter activity to minimize disturbance and potential impacts to mountain goats, particularly from June 15 through October 31. The Contractor shall restrict helicopter and construction activity within 0.25 miles

of identified goat habitat between May 15 and July 1. The Contractor shall prohibit intentional helicopter approaches to mountain goats to avoid harassment.

F. MARINE MAMMALS –The Contractor shall limit project related boat traffic and aircraft flights if humpback whales or Steller sea lions are observed migrating through or near the Project Area. Humpback whales should not be approached within 100 yards by boats less than 100 feet in length or within 0.25 miles by boats over 100 feet in length. Avoid aircraft flights below 500 feet in the vicinity of whales. Hauled out marine mammals should not be approached by boat within 100 yards. Sightings of humpback whales or Steller sea lions should be reported to the Forest Service.

G. GOSHAWKS –If a goshawk nest is discovered, the Contractor shall report it to the Forest Service, and current direction will be followed (25 acres of protection around the nest tree and 75 acres around the nest stand).

H. CULTURAL RESOURCES –The Contractor shall report to the Forest Service exposure of previously unknown cultural properties during construction.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01570 – EROSION CONTROL

PART 1 – GENERAL

1.1 REQUIREMENTS

A. The Contractor shall provide for erosion control during construction. All sedimentation from on-site drainage shall be caught and retained on-site.

B. The Work under this Section includes providing all labor, materials, tools, and equipment necessary to construct and maintain erosion control works, including, but not limited to, silt fences, settling ponds, check dams, ditches, tarping, etc.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Materials shall be suitable for the intended use and perform effectively to control silt and surface erosion. All materials shall remain the property of the Contractor and shall be removed from each Work area when no longer necessary.

PART 3 – EXECUTION

3.1 GENERAL

A. In accordance with the SEAPA Cleveland Helipad Installation Project *Work Plan,* as approved by the US Forest Service, the following Best Management Practices (BMPs) shall be taken to minimize the loss of soil and the contamination of waterbodies:

1. Placing excavated material away from natural drainage channels with sufficient separation to permit material suspended due to rainfall to be filtered and captured in natural vegetation;

2. Covering excavations and material stockpiles when exposed for extended periods during significant rain events;

3. Replacing as much of the excavated material as possible during backfilling of the constructed foundations; and

4. Salvaging the natural ground cover during excavation for reuse as covering of disturbed areas to promote faster revegetation and limit loss of soil.

B. The Contractor shall install temporary erosion control structures using sandbags, straw wattles, hay bales, tarps, etc. as necessary to prevent surface runoff from entering work site and to prevent erosion and sediment transport. They shall be maintained in effective operating condition at all times. Settling ponds and silt fences shall be cleaned whenever they have become half-filled with silt or debris, and other items shall be cleaned, repaired, or replaced as necessary.

C. Temporary erosion control structures shall remain in place until no longer necessary or until the owner approves of their removal.

D. All temporary erosion control Work shall be incidental to the other items in the Contract. The Contractor shall be responsible for all permits required near streams and water bodies and, therefore, shall be responsible for the quality of the runoff water from the Project site and for any fine and penalties resulting from the construction operation.

END OF SECTION

SECTION 01700 – PROJECT CLOSE-OUT

PART 1 – GENERAL

1.1 FINAL CLEAN-UP

A. The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the Owner will be withheld until the Contractor has satisfactorily complied with the specified requirements for final clean-up of all of the project sites, staging areas, and other locations used by the Contractor.

1.2 FINAL SUBMITTALS

A. The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Owner:

1. Written guarantees, where required.
2. Surplus fasteners, maintenance stock items, spare parts, and special tools, where required; all shall be delivered to the Owner in a clean and dry condition.
3. Releases from all parties who are entitled to claims against the subject Project, property, or improvement pursuant to the provisions of law.
4. Completed *Certificate of Compliance and Release Form*, included at the end of this Section, for all contractors involved in the Work.
5. Items described under Mobilization/Demobilization.

1.3 MAINTENANCE AND GUARANTEE

A. The Contractor shall comply with the maintenance and guarantee requirements contained in the Contract Documents.

B. The Contractor shall make all repairs and replacements promptly upon receipt of written order from the Owner. If the Contractor fails to make such repairs or replacements promptly, the Owner reserves the right to do the Work, and the Contractor and his surety shall be liable to the Owner for the cost thereof.

1.4 WARRANTIES

A. The Contractor warrants to the Owner that the construction to be provided under the Contract shall be fit for the purpose specified when operated in accordance with generally accepted operating practices; shall be new and free from any defects in material, workmanship, and title; shall meet all specifications, including those relating to performance, contained or incorporated by reference in the Contract; and that the technical direction of installation will be performed in a competent, diligent manner in accordance with generally accepted professional standards.

B. The foregoing warranties (except as to title) shall apply to defects or deficiencies occurring within the period specified in the Contract Documents from final acceptance of the Project by the Owner. If, however, during the warranty period the construction is not available for operation due to a failure to meet such warranties, such time of unavailability shall not be counted as part of the warranty period. The conditions of any field tests shall be mutually agreed upon, and the Contractor shall be notified of and may be represented at all tests that may be made.

C. If the construction furnished does not meet the warranties specified above, assuming normal and proper use and maintenance, the Owner shall promptly notify the Contractor and make the construction available for correction. The Contractor shall thereupon correct all defects, including nonconformance with the engineering specifications, at its expense, either by repairing or replacing any defective or damaged parts of the construction furnished under the Contract. All of the costs of labor, materials, and equipment associated with such repair or replacement of the construction, including removal, loading and unloading, transportation to and from the repair site, and reinstallation, shall be borne by the Contractor.

D. Any repaired or replacement construction furnished under the aforesaid warranty shall also carry warranties for the period specified in the Contract Documents on the same terms as set forth above from the date of its repair or replacement.

E. The Contractor shall obtain written warranties from its Subcontractors and suppliers of material and equipment where such warranties are specifically required by the Special Conditions and shall deliver the original warranties to the Owner.

F. Neither the final payment, nor any other provision of the Contract, nor partial or entire use of the construction by the Owner shall relieve the Contractor of liability with respect to the warranties referred to in the Contract or any other warranties express or implied.

G. In the event the Contractor fails to accomplish the warranty work as required herein, the Owner may proceed to accomplish the same and the Contractor, and its Surety, shall be jointly and severally liable to the Owner for all costs and expenses in relation thereto.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

CERTIFICATE OF COMPLIANCE AND RELEASE FORM

Project: SEAPA 2026 Cleveland Helipad Installation Project

Contract No.: _____

The Contractor must complete and submit this form to the Owner with respect to the entire contract upon completion of the Project. All requirements and submittals must be met before final payment will be made to the Contractor.

The Contractor shall return the completed form to: Southeast Alaska Power Agency, Attn: Contracts Administrator, 55 Don Finney Lane, Ketchikan, Alaska 99901.

I certify that the following and any referenced attachments are true:

- All Work has been performed, materials supplied, and requirements met in accordance with the applicable Drawings, Specifications, and Contract Documents.

- All Suppliers and Subcontractors have been paid in full with no claims for labor, materials, or other services outstanding. If all Suppliers and Subcontractors are not paid in full, an explanation for the reason is detailed on a separate sheet attached to this form.

- The attached list of Subcontractors is complete (required from Contractor). The Owner was advised of and approved all Subcontractors before Work was performed and has approved any substitutions of Subcontractors.

I understand it is unlawful to misrepresent information in order to receive a payment, which would otherwise be withheld if these conditions were not met. I am an authorized agent of this firm and sign this freely and voluntarily. The foregoing statements are true and apply to the following project Contractor.

_____	Contractor
Firm Name	*Capacity*

_____	_____	_____
Signed	*Printed Name and Title*	*Date*

END OF SECTION

SECTION 01704 – FINAL CLEAN-UP AND SITE RESTORATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Work under this Section includes providing all supervision, equipment, materials, tools, supplies, labor, and services necessary for final clean-up and restoration of all areas disturbed by construction activities to a condition equal to, or better than, the state prior to commencement of construction. This does not include clean-up or restoration incidental to, or directly provided for by, other construction items.

PART 2 – PRODUCTS

2.1 MATERIALS

A. All materials required shall conform to the appropriate section of these specifications.

PART 3 – EXECUTION

3.1 CONSTRUCTION

A. The Contractor shall promptly clean up all sites disturbed during construction of the project, including removal of all construction equipment, disposal of all excess materials, disposal of all rubbish and debris, removal of all temporary structures, and grading of each site to match pre-construction contours and so that no standing water is evident. The Contractor shall deliver all surplus fasteners, in a clean and dry condition to the Owner's Tyee Facility or Ketchikan Office.

END OF SECTION

SECTION 02060 – DEMOLITION AND DISPOSAL

PART 1 – GENERAL

1.1 The owner has completed demolition and disposal.

END OF SECTION

SECTION 02201 – CLEARING AND GRUBBING

PART 1 – GENERAL

1.1 GENERAL

A. The Work under this Section includes providing all labor, materials, tools, and equipment necessary for clearing, grubbing, removing, and disposing of all vegetation and debris (including earthen materials incidentally removed with vegetation and debris), within the limits described herein or shown on the drawings or designated by the Owner's Designated Representative, except such objects as are designated to remain in place or are to be removed in accordance with other sections of these Specifications. The Work shall also include the preservation from injury or defacement of all vegetation and objects designated to remain and not disturbing any wetlands or working outside of the USFS easement issued to SEAPA.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 GENERAL

A. The Contractor shall protect and preserve all items designated to remain. No trees, shrubs, or other plantings outside of the clearing area shall be disturbed or otherwise damaged, unless shown on the drawings or directed by the Owner's Designated Representative.

B. All trees, vegetation, stumps, and debris within 50 feet from the edge of the new helipad in all directions shall be cut off at the ground surface by the Contractor and disposed of by piling the material at a single location at each helipad site a minimum distance of 50 feet away on the downhill side from the edge of the new aluminum helipad, outside of the logical walking route between the new helipad and the existing transmission line tower.

C. Remove other trees, vegetation, stumps, and debris as directed by the Owner's Designated Representative to permit safe ingress/egress along the flight path to the helipad.

D. Clear a trail from the new helipad to the existing transmission line tower. Trail shall be 24 inches wide by 8 feet above ground surface, minimum dimensions. All vegetation within trail shall be cut off at the ground surface by the Contractor and disposed of outside of the trail and the helipad clearing limits.

E. The Contractor shall salvage the natural ground cover during excavation, to the maximum extent practical, for reuse as covering of disturbed areas to promote faster revegetation and limit loss of soil in accordance with the erosion control Best Management Practices (BMPs). Earthen material shall be reused as non-structural backfill to the maximum extent possible.

END OF SECTION

SECTION 02202 – EXCAVATION AND EMBANKMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Work under this Section includes providing all labor, materials, tools, and equipment necessary for excavation and embankment construction to the lines, grades, and cross sections indicated in the drawings.

PART 2 – PRODUCTS

2.1 EXCAVATION

A. All excavation shall be unclassified excavation and shall consist of excavation and disposal or use of all materials, of whatever character, encountered in the Work.

PART 3 – EXECUTION

3.1 EXCAVATION

A. Clearing and grubbing in excavation areas must be completed prior to beginning excavation operations.

B. Excavations shall be reasonably smooth and uniform to the lines, grades, and cross sections shown in the drawings or as directed by the Engineer. Excavations shall be conducted to ensure that material outside of excavation limits remains undisturbed.

C. Excavations shall be protected from erosion and maintained to drain freely at all times.

D. Where excavation to the limits indicated on the drawings encounters unsuitable underlying material, including clay, organics, wood debris, or other deleterious matters, the Owner may require the Contractor to remove the unsuitable material and backfill with approved material. The Contractor shall allow time to take the necessary cross section measurements before backfill is placed.

E. The Contractor is responsible for securing waste disposal sites. The Contractor shall obtain the written permission of the Landowner for use of all disposal sites, and shall either obtain any required permits or assure that others have obtained them. If requested by the Owner, the Contractor shall furnish the permit numbers of all required permits for the disposal sites. The cost of securing such sites shall be borne by the Contractor.

F. If the Contractor fails to comply with the provisions of any permit pertaining to waste disposal or disposal sites, the Owner shall have the right, after giving 30 days written notice, to bring the disposal sites into compliance and collect the cost of the work from the Contractor, either directly or by withholding monies otherwise due under the Contract.

G. Temporary storage of useable or suitable excavation is the responsibility of the Contractor, and no additional payment will be made.

H. The Contractor shall conduct all operations to prevent contaminating useable excavation with unsuitable material.

I. The Contractor shall salvage the natural ground cover during excavation, to the maximum extent practical, for reuse as covering of disturbed areas to promote faster revegetation and limit loss of soil in accordance with the erosion control Best Management Practices (BMPs).

J. When frozen material is excavated and meets all other requirements for embankment material, it shall be allowed to thaw and drain prior to placing in the embankment. This material will be considered useable excavation and no additional payment will be made.

K. The Contractor shall provide added care including bracing and shoring as required when excavating adjacent to existing structures. Damage caused to existing structures by the Contractor shall be repaired at the Contractor's expense.

3.2 EMBANKMENT

A. Embankments shall be constructed to a reasonably smooth and uniform shape conforming to the lines, grades, and cross sections indicated on the drawings or as directed by the Engineer.

B. The underlying ground shall be properly prepared and graded prior to placing embankment material. Clearing and grubbing in embankment areas must be completed prior to embankment operations. Debris shall be removed, and surface depressions or holes shall be filled with suitable material to a level uniform surface and compacted before the embankment is constructed.

C. The compacted, finish subgrade surface shall be level with variations no greater than 1 inch when tested using a straightedge. Compaction shall be as indicated in the drawings and specifications.

END OF SECTION

SECTION 02204 – BASE COURSE

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Work under this Section includes providing all labor, materials, tools, and equipment necessary for furnishing and placing one or more layers of aggregate base or leveling course on a prepared surface to the lines and grades shown on the drawings.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Aggregate base course shall consist of crushed stone or crushed gravel consisting of sound, tough, durable pebbles or rock fragments of uniform quality conforming to Alaska Department of Transportation & Public Facilities gradation base course C-1 or D-1:

SIEVE	GRADATION (percent passing by weight)	
	BASE COURSE	
	C-1	D-1
1-1/2 in.	100	
1 in.	70-100	100
3/4 in.	60-90	70-100
3/8 in.	45-75	50-80
No. 4	30-60	35-65
No. 8	22-52	20-50
No. 50	8-30	8-30
No. 200	0-6	0-6

B. Aggregate shall be free from lumps, balls of clay, or other objectionable matter.

C. Aggregate shall be weed free.

PART 3 – EXECUTION

3.1 CONSTRUCTION

A. Prior to placement of the base course, the underlying surface shall be prepared by dressing, shaping, wetting or drying, and compacting of the underlying material as indicated in the drawings and specifications. Surfaces shall be cleaned of all foreign substances and debris.

B. Any ruts or soft yielding spots that may appear shall be corrected by loosening and removing unsatisfactory material and adding approved material as required, reshaping, and recompacting the affected areas to the lines and grades indicated on the drawings. If required by the Owner**,** the Contractor shall proof load questionable areas with a piece of equipment approved by the Engineer or SEAPA's Designated Representative.

C. Base course material shall be deposited and spread in a uniform layer to the required grades, and to such loose depth that when compacted to the density required, the thickness will be as indicated on the drawings. Portions of the layer that segregate shall be removed and replaced with a satisfactory mixture or shall be remixed to the required gradation.

D. The maximum compacted thickness of any one layer shall not exceed six (6) inches. If the required compacted depth exceeds six (6) inches, the base shall be constructed in two (2) or more layers of approximately equal thickness. Each layer shall be shaped and compacted before the succeeding layer is placed.

E. Compaction shall be as indicated in the drawings and specifications.

F. Blading, rolling, and tamping shall continue until the surface is smooth and free from waves and irregularities. If at any time the mixture is excessively moistened, it shall be aerated by means of blade graders, harrows, or other approved equipment, until the moisture content is such that the surface can be recompacted and finished as above.

G. The finished surface of the base course, when tested using a straightedge, shall not show any deviation in excess of 3/8-inch between two contact points. The finish surface shall not vary more than 1/2-inch from established grade.

END OF SECTION

SECTION 02702 – CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Work under this Section includes providing all labor, materials, tools, and equipment necessary to perform all surveying and staking necessary for the completion of the project in conformance with the drawings and specifications, including all calculations required to accomplish the work.

B. The Work under this Section is incidental to other bid items.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 CONSTRUCTION

A. The Contractor shall use competent, qualified personnel and suitable equipment for work layout and shall furnish all stakes, templates, straightedges, and other devices necessary for establishing, checking, and maintaining the required points, lines, and grades.

B. The Contractor shall perform all staking necessary to delineate clearing and/or grubbing limits; all cross sections necessary for determination of excavation, embankment, including preliminary, intermediate and/or re-measure cross sections as may be required; all slope staking; and all staking necessary to complete the project.

C. The Engineer may randomly spot-check the Contractor's surveys, staking, and computations at the Engineer's discretion. The Contractor shall provide the Engineer with the appropriate data as required to allow for such random spot-checking. The Owner and Engineer assume no responsibility for the accuracy of the work.

D. The Engineer may make minor adjustments in grades and locations of improvements based on the staking information provided by the Contractor. The Contractor shall adjust the grade stakes as required to accommodate minor changes at no additional cost to the Owner.

D. The Owner will indicate the field location on the ground for each installation site using a brightly colored indicator or other means to sufficiently identify the installation location. Each site is approximately located at the coordinates specified in the project drawings. Each installation location is subject to change, and the exact location can be adjusted in the field by the Contractor within 20 feet, and no greater, of the original field-designated location where more ideal geology or conditions are identified. Location adjustments greater than 20 feet from the original field-designated location require prior approval by the Owner.

END OF SECTION

SECTION 03301 – STRUCTURAL CONCRETE

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Work under this Section includes providing all labor, materials, tools, and equipment necessary for furnishing and installing Portland cement concrete for structures in conformance with the drawings and Specifications.

PART 2 – PRODUCTS

2.1 PORTLAND CEMENT

A. Portland cement shall conform to the requirements of AASHTO M85. Unless otherwise permitted by the Engineer, the product from only one mill and one brand and type of Portland cement shall be used on the Project.

2.2 AGGREGATE

A. Aggregate shall be clean, durable, uniformly graded sand and gravel, or crushed stone, 100% passing a 1-½ inch sieve and containing not more than 5% passing a US No. 200 sieve.

2.3 JOINT FILLERS

A. There shall be no joints in any of the concrete structures called for in the Work. All concrete placement for each form shall be completed during one continuous operation until the form is filled and compaction completed.

2.4 CURING MATERIAL

A. Curing material shall conform to the following requirements as specified:

1. Burlap cloth made from Jute Kenaf AASHTO M182.
2. Sheet material for curing concrete AASHTO M171.
3. Liquid membrane-forming compounds AASHTO M148 for curing concrete, Type I, except that compounds utilizing linseed oil shall not be used.

2.5 AIR ENTRAINING AGENTS

A. Air-entraining admixtures shall conform to the requirements of AASHTO M154.

2.6 MIXING WATER

A. Water used for mixing concrete shall be obtained from a municipal potable water system or may be obtained locally from a freshwater source with turbidity less than 5.0 NTU. Seawater, brackish water, and water containing high sediment shall not be used.

2.7 REINFORCING STEEL

A. Vertical reinforcement and ties shall be ASTM A767 deformed bar, grade 60, hot-dip galvanized; ASTM A615 deformed bar, grade 60; or as specified on the drawings or in the Specifications. Submit material certifications for all reinforcing steel.

2.8 SHIPPING AND STORAGE OF CEMENT OR PREMIXED PACKAGED CONCRETE

A. Cement or concrete shall be shipped from a pre-approved source. Cement or concrete damaged by moisture or which fails to meet any of the specified requirements shall be rejected and removed from the Work.

B. Cement stored by the Contractor for a period longer than 60 days in other than sealed bins or silos shall be retested before being used. Cement or concrete of different brands, types, or from different mills shall be stored separately.

2.9 COMPOSITION OF CONCRETE

A. All Portland cement concrete shall be ready-mix, provided by an approved plant regularly engaged in the production of concrete, unless otherwise authorized in writing by the Owner. Ready-mix concrete shall conform to the requirements of AASHTO M157.

B. Premixed packaged concrete shall conform to the requirements of ASTM C387 Standard Specifications for Packaged, Dry, Combined Materials for Mortar and Concrete. If premixed bags are used, then it shall be high strength (4000 psi minimum), and the contractor shall add one quart of Portland Cement to each 80 lb. bag.

C. If other than premixed bags are used, then the Contractor shall submit the mix design to the Engineer for approval. The mix design shall be suitable for its intended use. Concrete shall be designed using an absolute volume analysis. The Contractor shall be responsible for having each mix design tested at a laboratory. Prior to the start of production of any mix design, the Contractor shall submit test results and certifications for all materials, detailed mix design data, and results of laboratory tests to the Engineer for approval. Approval by the Engineer will be based on apparent conformity to these Specifications. It shall remain the Contractor's responsibility during production to produce concrete conforming to the mix design and the minimum acceptance criteria in the contract. When requested by the Engineer, the Contractor shall submit samples of all materials for verification testing. Production shall not commence until the mix design is approved by the Engineer.

D. Unless otherwise specified, the design mix shall meet the following:

Minimum cement content	6-½ sacks (611 lb.) per CY
Maximum water/cement ratio	5.75 gal/sack (0.51 #/#)
28-day compressive strength, f'c	As indicated on drawings
Slump per AASHTO T119	As indicated on drawings
Entrained air per AASHTO T152	As indicated on drawings
Coarse aggregate	AASHTO M43, Gradation No. 67

Cement factors are based on 94-pound sacks

E. The Contractor shall be responsible for producing and placing specification concrete with a cement content within a tolerance of two percent.

F. The use of superplasticizers in the concrete mix to improve the workability of mixes with low water cement ratios will require prior written approval by the Engineer.

G. The Contractor may, subject to prior approval in writing, use alternative sizes of coarse aggregate as shown in Table 1 of AASHTO M43. If the use of an alternative size of coarse aggregate produces concrete that exceeds the permissible water-cement ratio above, thereby requiring additional cement above that specified, no compensation will be made to the Contractor for the additional cement.

2.10 SAMPLING AND TESTING

A. Field tests of all materials will be made by the Engineer, at the Owner's expense, when deemed necessary, in accordance with the applicable Specifications; at the re-start of any field construction season; and at any significant change in equipment, materials, or procedure. When the results of the field tests indicate the material does not conform to the requirements of the Specifications, the re-tests required by the Engineer shall be at the Contractor's expense.

B. Materials that fail to meet contract requirements, as indicated by laboratory tests, shall not be used in the Work. The Contractor shall remove all defective materials from the site.

C. Types and sizes of concrete specimens shall be in accordance with ASTM C31. Additional slump tests and/or test cylinders may be required at the discretion of the Engineer. Should the analysis of any test cylinder not meet the preceding requirements of Section 03301 Paragraph 2.9 *Composition of Concrete* its representative concrete shall be removed and replaced at the Contractor's expense.

2.11 COLD WEATHER CONCRETE

A. Concrete shall not be placed when the descending air temperature in the shade, away from artificial heat, falls below 40°F. Placement of concrete shall not resume before the ascending air temperature reaches 35°F, without specific written authorization. When the air temperature falls below 40°F, or is, in the opinion of the Engineer, likely to do so within a 24 hour period after placing concrete, the Contractor shall have ready on the job materials and equipment required to heat mixing water and aggregate and to protect freshly placed concrete from freezing.

B. Concrete placed at air temperatures below 40°F shall have a temperature not less than 50°F nor greater than 70°F when placed in the forms. These temperatures shall be obtained by heating the mixing water (to no more than 160°F) and/or aggregate.

C. Binned aggregates containing ice or in a frozen condition will not be permitted, nor will aggregates which have been heated directly by gas or oil flame or heated on sheet metal over an open fire. When aggregates are heated in bins, only steam-coil or water-coil heating will

be permitted, except that other methods, when approved, may be used. If live steam is used to thaw frozen aggregate piles, drainage times comparable to those applicable for washed aggregates shall apply.

D. When the water or aggregate temperature exceeds 100°F, they shall be mixed together so that the temperature of the mix does not exceed 80°F at the time the cement is added.

E. Any additives must have prior approval of the Engineer before being used.

F. The use of calcium chloride is prohibited.

G. When placing concrete in cold weather, the following precautions shall be taken in addition to the above requirements:

1. Heat shall be applied to forms and reinforcing steel before placing concrete as required to remove all frost, ice, and snow from all surfaces that will be in contact with fresh concrete.

2. When fresh concrete is to be placed in contact with hardened concrete, the surface of the previous pour shall be warmed to at least 35°F, thoroughly wet, and free water removed before fresh concrete is placed.

3. When Type I or II cement is used, freshly placed concrete shall be maintained at a temperature of not less than 70°F for three days or not less than 50°F for five days. When Type III cement is used, freshly placed concrete shall be maintained at a temperature of not less than 70°F for two days or not less than 50°F for three days.

4. The above requirements are not intended to apply during the normal summer construction season when air temperatures of 40°F or higher can reasonably be anticipated during the two-week period immediately following concrete placement, or until the concrete is no longer in danger from freezing.

H. When temperatures below 20°F are not expected during the curing period and, in the opinion of the Engineer, no other adverse conditions, such as high winds, are expected, concrete temperatures may be maintained in thick concrete sections by retention of heat of hydration by means of adequately insulated forms.

I. When, in the opinion of the Engineer, greater protection is required to maintain the specified temperature, the fresh concrete shall be completely enclosed and an adequate heat source provided. Such enclosure and heat source shall be so designed that evaporation of moisture from the concrete during curing is prevented. Precautions shall be taken to protect the structure from overheating and fire.

J. At the end of the required curing period protection may be removed, but in such a manner that the drop in temperature of any portion of the concrete will be gradual and not exceed 30°F in the first 24 hours.

K. The Contractor shall be wholly responsible for the protection of the concrete during cold weather operations. Any concrete injured by frost action or overheating shall be removed and replaced at the Contractor's expense.

2.12 FORMS

A. The Contractor may cast concrete directly against earth without the use of forms so long as the following conditions are met:

1. The walls of the casting are built uniform with no bulges or large voids;
2. The material comprising the walls are of sufficient integrity so that placement and compaction do not impose loads resulting in adverse deflections or distortions;
3. Placement and compaction is not compromised due to loose, uncontrolled flow;
4. No sticks, roots, rocks, or other materials penetrate the concrete mass; and
5. Reinforcement cover as shown on the drawings is provided.

B. Forms shall be so designed and constructed that they may be removed without injuring the concrete. Forms constructed of durable materials that will maintain full integrity for 10 years or greater, such as HDPE culvert sections, may be left in place, undisturbed. All forms proposed to be left in place shall be dark brown or black in color with a non-glossy finish or shall be painted as such. All forms shall be mortar tight, free of bulge and warp, and shall be cleaned thoroughly before reuse.

C. Forms shall be so designed that placement, compaction, and finishing of the concrete will not impose loads on the structure resulting in adverse deflections or distortions.

D. Forms shall be inspected immediately prior to the placing of concrete. Dimensions shall be checked carefully and any bulging or warping shall be remedied and all debris and standing water within the forms shall be removed. Special attention shall be paid to ties and bracing, and where forms appear to be braced insufficiently or built unsatisfactorily, either before or during placing of the concrete, the Work shall be stopped and the defects corrected.

E. All forms shall be installed in accordance with approved fabrication and erection drawings.

F. All porous forms shall be treated with non-staining form oil or saturated with water immediately before placing concrete.

G. Concrete shall cure undisturbed for a full 24 hours, minimum. Forms and falsework shall not be removed until concrete has attained a compressive strength of 2,500 psi or greater, or at least 7 days have passed since placement. The Contractor maintains responsibility for the safety of the Work. Blocks and bracing shall be removed at the time the forms are removed. In no case shall wood forms be left in the concrete.

PART 3 – EXECUTION

3.1 GENERAL

A. All concrete shall be placed before it has taken its initial set and, in all cases, within 30 minutes after mixing. Concrete shall be placed in such a manner as to avoid segregation of coarse or fine portions of the mixture, and shall be spread in horizontal layers when practicable. Special care shall be exercised to assure the working of the concrete around nests of reinforcing steel, so as to eliminate rock pockets or air bubbles. Enough rods, spades, tampers, and vibrators shall be provided to compact each batch before the succeeding one is dumped and to prevent the formation of joints between batches.

B. Extra vibrating shall be done along all faces to obtain smooth surfaces. Care shall be taken to prevent mortar from splattering on forms and reinforcing steel and from drying ahead of the final covering with concrete.

C. Concrete shall not be placed when precipitation is occurring or when in the opinion of the Engineer precipitation is likely before completion of the finishing, unless the Contractor shall have ready on the job all materials and equipment necessary to protect the concrete and allow finishing operations to be completed without diminishing the quality of the concrete. Forms shall be covered with tarps to prevent filling with precipitation.

D. Troughs, pipes, or short chutes used as aids in placing concrete shall be arranged and used in such a manner that the ingredients of the concrete do not become separated. Where steep slopes are required, troughs and chutes shall be equipped with baffle boards or shall be in short lengths that reverse the direction of movement. All chutes, troughs, and pipe shall be kept clean and free of hardened concrete by flushing thoroughly with water after each run. Water used for flushing shall be discharged clear of the concrete in place. Troughs and chutes shall be steel, plastic, or lined with steel or plastic and shall extend as nearly as possible to the point of deposit; aluminum shall not be used. When discharge must be intermittent, a hopper or other device for regulating the discharge shall be provided.

E. Dropping the concrete a distance of more than five (5) feet or depositing a large quantity at any point and running or working it along the forms will not be permitted. The placing of concrete shall be so regulated that the pressures caused by wet concrete shall not exceed those used in the design of the forms.

F. High frequency internal vibrators of either the pneumatic, electrical, or hydraulic type shall be used for compacting concrete in all structures. The number of vibrators used shall be ample to consolidate the fresh concrete within 15 minutes of placing in the forms. In all cases, the Contractor shall provide at least two concrete vibrators for each individual placement operation (one may be a standby), which shall conform to the requirements of these Specifications. Prior to the placement of any concrete, the Contractor shall demonstrate that the two vibrators are in good working order and ready for use.

G. The vibrators shall be an approved type, with a minimum frequency of 5,000 cycles per minute and shall be capable of visibly affecting a properly designed mixture with a one-inch slump for a distance of at least 18 inches from the vibrator.

H. Vibrators shall not be held against forms or reinforcing steel, nor shall they be used for flowing the concrete or spreading it into place. Vibrators shall be so manipulated as to produce concrete that is free of voids, is of proper texture on exposed faces, and of maximum

consolidation. Vibrators shall not be held so long in one place as to result in segregation of concrete or formation of laitance on the surface.

I. Concrete shall be placed during one continuous operation through each form until the form is filled with no joints. If, in any emergency, it is necessary to stop placing concrete before a section is completed, the resulting joint shall be treated as a construction joint.

J. The presence of areas of excessive honeycomb may be considered sufficient cause for rejection. Upon written notice that a given structure has been rejected, the rejected Work shall be removed and rebuilt, in part or wholly as specified, at the Contractor's expense.

3.2 EXPANSION JOINTS

A. Concrete shall be placed during one continuous operation through each form until the form is filled with no joints.

3.3 ANCHOR BOLTS

A. Anchor bolt assemblies conforming to the details shown shall be accurately secured in the forms in the positions shown on the drawings, before any concrete is placed in the forms. The positions shall be checked and any adjustments made as soon as the concrete has been placed. Engaging anchor bolts, threaded rod, drilling, and other work and stresses shall not take place until the concrete has attained a compressive strength of 3,000 psi minimum or at least 7 days have passed since placement.

3.4 CURING CONCRETE

A. Water Curing:

1. All concrete surfaces shall be kept wet for at least seven (7) days after placement if Type I or II cement has been used or for three days if Type III cement has been used. Concrete shall be covered with wet burlap, cotton mats, or other materials meeting the requirements of AASHTO M171 immediately after final finishing of the surface. These materials shall remain in place for the full curing period or they may be removed when the concrete has hardened sufficiently to prevent marring. The surface shall immediately be covered with sand, earth, straw, or similar materials.

2. In either case the materials shall be kept thoroughly wet for the entire curing period. All other surfaces, if not protected by forms, shall be kept thoroughly wet, either by sprinkling or by the use of wet burlap, cotton mats, or other suitable fabric, until the end of the curing period. Wood forms allowed to remain in place during the curing period shall be kept moist at all times to prevent opening at joints.

END OF SECTION

SECTION 05141 – HELICOPTER LANDING PAD ASSEMBLY AND INSTALLATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Contractor shall assemble and install bolt-together helicopter landing pads (helipads) with painted structural framing members fabricated of Aluminum Alloy 6061 and decking manufactured of colored molded fiberglass reinforced grating. The framing members, grating, and their associated fasteners will be supplied by the Owner in a disassembled state according to the details and schedule provided in Section 01010 Paragraph 1.3.C and 1.3.D. The Contractor shall notify the Owner's Designated Representative immediately if any framing members, grating panels, or fasteners are known to be missing.

PART 2 – PRODUCTS

2.1 HELICOPTER LANDING PAD

A. Each helipad has a maximum design load capacity of 8,000 pounds gross weight and consists of the following components, to be supplied by the Owner except as noted:

1. Aluminum structural framing members painted green, including cross beams, support beams, four adjustable support leg assemblies, and bracing – approximately 650 pounds total

2. Three molded fiberglass reinforced grating panels with two green in color and one tan in color, each with an area of 4 feet by 12 feet (total combined area of 12 feet by 12 feet) – approximately 540 pounds total

3. Associated fasteners of stainless steel, hot-dip galvanized steel, or epoxy-coated steel for the aluminum structural framing members and the fiberglass grating panels – approximately 60 pounds total

4. Aluminum plank access ramp for the steep slope helipad only including hot-dip galvanized and stainless steel hardware as specified in the design drawings. The manufacturer’s symbol and grade markings must appear on all bolts, nuts, washers, and pins. Access ramp weight is not accounted for above.

5. The weight of foundation components, to be furnished by the Contractor, is not accounted for above.

B. Materials shall be stored and staged above ground on pallets, platforms, or other supports in a manner that permits safe access for inspection and identification. Materials shall be kept clean, free from dirt, grease, or other foreign matter, and set to properly drain.

C. The Contractor shall protect all materials and coatings from damage, distortion, corrosion, and deterioration during handling, storing, staging, and transporting. Materials and coatings subject to deterioration shall be covered with impervious sheet covering, and ventilation shall

be provided to avoid condensation. Materials and coatings damaged due to abrasion, cracking, chipping, twisting, and other damage and deformation shall be replaced.

D. The Contractor shall avoid packaging, storing, and transporting materials or assembled structures in a manner that might cause damage, distortion, or marring to any components, supporting structures, and coatings. The Contractor shall repair or replace damaged materials, structures, and coatings as directed by the Owner.

E. The helipad aluminum structural framing members supplied by the Owner are painted using a premium quality paint designed for aluminum in accordance with the US Forest Service approval. The Contractor shall repair all paint damage resulting from packaging, transporting, handling, and installing the helipads. Prior to any painting, the surfaces shall be prepared in accordance with "Surface Preparation Specification No. 1: Solvent Cleaning" by The Society for Protective Coatings (SSPC-SP 1). Supply of equipment and materials for painting are the responsibility of the Contractor; the paint shall be Intergard 345 Epoxy coating by International Paint Ltd, color "Reseda Green M404" or approved equal.

F. All excess fasteners following complete assembly and installation that were originally provided by the Owner shall remain the property of the Owner.

2.2 FOUNDATION

A. The Contractor shall supply all hot-dip galvanized threaded rod and associated hot-dip galvanized washers and nuts as specified in the design drawings. The Contractor shall submit certification from the manufacturer that manufactured threaded rod and fasteners meet or exceed the specified requirements for material and design capacity. The manufacturer's symbol and grade markings must appear on all bolts, nuts, washers, and pins.

PART 3 – EXECUTION

3.1 ASSEMBLY AND INSTALLATION

A. The Contractor shall assemble and install each helipad as shown and described on the drawings and specifications, the assembly instructions, these Project Specifications, and all Contract Documents, and/or to the highest industry standards if not fully shown on the drawings or other documents. The contractor shall have a torque wrench on site and verify all fasteners are torqued to spec.

B. Subject to negotiation with the Owner, the Contractor may elect to pre-assemble helipads at a convenient staging area prior to transporting to each site for final installation.

C. The Contractor shall be responsible for protecting the existing electrical infrastructure while in the field. The Contractor shall immediately report any damage resulting to the towers, lines, guys, etc. due to the Contractor's work. The Owner shall have discretion regarding the repair of any damage. The costs of repairs shall be at the expense of the Contractor. It is recommended that the Contractor document the existing conditions at each site in advance to initiating installation and upon completion.

D. The Contractor shall install each helipad on sound, stable, and suitable anchor points according to the attached foundation design drawings by Tongass Engineering. All foundation materials necessary for construction are the responsibility of the Contractor.

E. Helipad assembly is bolt-together. The Contractor shall make all fastener locations and tighten each bolt to spec with a torque wrench. All tools and equipment necessary to conduct the Work are the responsibility of the Contractor.

F. All required welding for the helipads has been completed. While no new welding is anticipated, in the event that the Contractor must perform welding, it shall be completed in accordance with AWS D1.2. The Work and payment will be negotiated with the Contractor.

G. The Contractor shall ensure that the finished helipad installation is level in all directions. Grout pads comprised of rapid-set, high-strength grout mixed, placed, and loaded in accordance with the manufacturer's specifications shall be used to achieve fine leveling for up to 2 inches, maximum. The Contractor shall adjust the foundations to satisfy leveling adjustments in excess of 2 inches.

H. The Contractor shall install the molded fiberglass reinforced grating panels, using Owner-supplied saddle clips and self-drilling screws, in the following color order on the assembled helipad in accordance with the US Forest Service approval: green – tan – green.

I. The Contractor shall install the helipad access ramp from the helipad cross beams to the ground level, in the logical walking route between the new helipad and the existing transmission line tower. The final ramp location is subject to approval by the Engineer, with respect toward safety, ingress/egress, and other factors.

J. The Contractor shall document installation at every site with photographs. Indication in the photographs of the installation site number corresponding to the tower structure number (as posted in the field at the top of each tower). At a minimum, multiple photographs shall be taken at every installation site at the following stages:

1. Initial determination of installation site prior to any clearing or construction work;
2. Following clearing as required per Section 02201 – Clearing and Grubbing;
3. Finished excavation per construction drawings, immediately prior to concrete placement;
4. Placement and installation of all four foundation systems per helipad per construction drawings;
5. Connection of each helipad support leg to each foundation system per construction drawings; and
6. Placement, leveling, and final assembly of the helipad structure complete with grating panels installed.

K. At final assembly and installation, the surfaces of all materials shall be clean and free from irregularities, contamination, dust, dirt, grease, and other foreign matter.

L. Construction methods and products not specifically mentioned in these Contract Documents shall be utilized using reasonable care and the highest quality construction practices. Final inspection and acceptance of all Work and products not specifically mentioned in these Contract Documents shall be made by the Owner and/or the Owner's Designated Representative. Approval shall be based upon conformance to the Contract Documents, quality of workmanship, applicable industry standards, and applicable manufacturer's recommendations.

3.2 QUALITY ASSURANCE

A. The Owner and/or the Owner's Designated Representative may conduct one or more site visits and inspections to all sites and facilities where Work under this Contract takes place to evaluate the conformance to the design documents and these Specifications, assess the quality of materials and workmanship provided by the Contractor, and to consider other factors that may affect the Owner's future use of the materials and/or long-term service life.

B. Inspections made by any party do not absolve the Contractor from the responsibility of producing a quality product, in complete conformance with the design drawings, specifications, and all other Contract Documents, and to document and correct all non-conformances. All documentation, including submittals, shall be kept on file for no less than five years by the Contractor. These shall be available for review upon request. Furthermore, periodic inspections, and any others, do not classify as final inspection and acceptance by the Owner, which will only occur by the Owner as explained in Paragraph 3.2.D.

C. After final assembly and installation in accordance with the design drawings, specifications, and all other Contract Documents, the Owner and/or Owner's Designated Representative will conduct an inspection to establish Owner acceptance of the Work based on the Contractor's full conformance to the Contract Documents and installation free of marring and other damage. All instances of non-conformance to the Contract Documents shall be expressed by the Owner to the Contractor in writing within one week of the inspection.

D. Final Acceptance: The Owner will express final acceptance to the Contractor in writing, only, after completion of all Work and after the Contractor's addressing of all instances of non-conformance to the satisfaction of the Owner.

E. All inspections by the Owner and/or the Owner's Designated Representative shall be at the Owner's expense, although the Owner considers that there shall be a reasonable expectation for cooperation and sharing transportation when corresponding schedules are similar and space is available.

END OF SECTION