STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION &
PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT
PENDING/NFHwy00627
FAIRBANKS AREA PM2.5 PLUG-INS:
BIRCH HILL, CHENA LAKES, UAF
SITE ELECTRICAL

INDEX OF SHEETS

SHEET NO. DESCRIPTION
E1.0 SITE ELECTRICAL
E1.1 SITE ELECTRICAL - CHENA LAKE
E1.2 SITE ELECTRICAL - UAF U-PARK
E2.0 ONE-LINE DIAGRAM & FEEDER SCHEDULE - BIRCH MILL
E2.1 ONE-LINE DIAGRAM & FEEDER SCHEDULE - CHENA LAKE
E2.2 ONE-LINE DIAGRAM & FEEDER SCHEDULE - UAF U-PARK
E3.0 PANEL SCHEDULES - BIRCH MILL
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E4.0 CONTROL SCHEMATIC - BIRCH MILL
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E5-U-E-4 Electrical Details
0.0 SITE CONSTRUCTION
0.1 SITE CONSTRUCTION - BIRCH MILL
0.2 SITE CONSTRUCTION - CHENA LAKE
0.3 SITE CONSTRUCTION - UAF U-PARK
V1-X-X STANDARD PLANS

SHEET NUMBER SHEET TITLE
1 Preliminary Plans
### Preliminary Plans

**LUMP SUM QUANTITIES**

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### LUMP SUM QUANTITIES NOTES

1. Work and quantities listed up to 661 PAY ITEMS ARE SHOWN ABOVE FOR A COMPLETE LIST OF ALL WORK AND MATERIAL. SEE SPECIFICATION SECTION 601. SUBSEQUENT ITEMS WILL NOT BE MEASURED FOR PAYMENT.

2. Trenching, conduit, and cable quantities are based on conduit runs shown on plans, horizontally, from center to center of posts and junctions.
KEY NOTES:
1. PROVIDE ABOVE GROUND JUNCTION SEE SHEETS 1, 2, AND 5 ON SHEET 4.
2. J-HOLE SPACE AT PILE.
3. SALVAGE LIGHT FIXTURE AND REMOVE AND DISPOSE OF WOODEN PILE.
4. REMOVE CABLES AND ABANDON CONDUIT 24" AWAY BELOW GRADE.

SHEET NOTES:
1. REFER TO SHEET 6 FOR LAYOUT CONTROL AND CIVIL WORK.
2. REFER TO SHEET 7 FOR VERTICAL TRENCH SECTION.
3. REFER TO SHEET 8 FOR POWER ONE-LINE DIAGRAM AND REEDED/CIRCUIT SCHEDULE.
4. HOLE POST TAG LEGEND: XX = B 1 = Y 1, WHERE XX = POST NUMBER, B1 = LOAD CENTER PANELBOARD, AND Y1 = CIRCUIT NUMBER.
5. COORDINATE LOAD CENTER AND BOLLARD ARRANGEMENTS TO ENHANCE WORKING CLEARANCE OF 3' DEEP FOR THE FULL HEIGHT OF THE EQUIPMENT MOUNTING. ASSUME 20" ENCLOSURES DOORS TO FACE DIRECTION AS FOLLOW:
6. CORNER, EAST
### Preliminary Plans

#### PANEL SCHEDULES

**BIRCH HILL**

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**A1**

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**Notes:**

1. 
2. 

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**Diagram:**

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GENERAL NOTES:
1. WIRING LEGEND: WIRING INDICATED BY BOLTED LINE TYPE (---); SHIP FAN WIRING INDICATED BY SOLID LINE TYPE.
2. WIRING TERMINAL MOUNTED PANELS SHALL BE INSTALLED HORIZONTALLY IN COMPLIANCE WITH UL STANDARD 482. TERMINAL MOUNTED PANELS MOUNTED SIDEWAYS SHALL BE INSTALLED HORIZONTALLY.
3. WIRING TERMINAL MOUNTED PANELS MOUNTED IN WIRING TRENCHES SHALL BE INSTALLED HORIZONTALLY.

CONTROL SEQUENCE — UAF U-PARK LOT B — HBO CONTROL SYSTEM:
- PARKING LOT HBO PLUG-IN'S ARE CONTROLLED BY THE EXISTING CONTROL PANEL.
Preliminary Plans

GENERAL NOTE:
1. Secondary Conductor Riser Details shown on this sheet are based on GSA Standards with Clarifications for this Project. Provide the utility service installation (at contractor) as per drawings, in accordance with the Service Utility Standards.

SECONDARY RISER BUILD PROVISIONS

3. ALL 5/0 AWG
   - Contractor shall install from 50 feet of feeder primary conductor to OPE. Contractor shall ensure sufficient amount of conductor wire to reach the power transformer, as well as standoff brackets, pipe clamps, ground clamps, lug type, and hardware kits.
   - Contractor shall provide service conductors and installation to the designated Overhead ground, leaving sufficient wire for future transformer connections, plus 10 feet at base of pole.
   - OPE will install remainder of service and wire.

4. 6/0 AWG ANDinka
   - OPE will pull wire with contractor assistance. Contractor shall provide service conductors. OPE shall provide pulling equipment to include pulling barrels, large center barrel, and drag truck. Contractor shall install 50 feet of feeder primary wire from the pole.
   - Contractor shall ensure sufficient amount of conductor wire to reach the power transformer, as well as standoff brackets, pipe clamps, ground clamps, lug type, and hardware kits.
   - If wire is more than 75 feet, contractor shall provide wire on normal reel and reel basis.

NOTES:
1. 3" minimum distance from pole to transformer. Conductor installation with less than 3" clearance will not be accepted. Only one set of standoff brackets will be allowed. A pole must meet OPE's construction criteria for information about holding service to a pole with existing wires.
2. Minimum standoff bracket shall be 15" standoff bracket details number 1 through 4 shows the maximum number of conductors and conductor sizes allowed at 10" standoff bracket.
3. The final section of conductor shall be approved before that there is not less than 10" between the two conductors. As specified in NEC 217.15(B).
4. If the number of conductors is to a pole exceeds that shown in detail, the contractor must ensure an existing pole mounted transformer has enough wire to reach a new pole mounted transformer, if not, the pole mounted transformer will be re-worked from the pad mounted transformer. The minimum wire mounted transformer for the stated transformer capacity is 71000.
5. Details on this sheet are to be furnished and installed by the contractor, unless otherwise noted.
6. Conductor size to be determined. Ground wires shall be 12 AWG. Conductor size and 4" shall have the right to right stick installed for inspection. Conductors where are not allows will not be accepted.

ELECTRICAL DETAILS
Preliminary Plans

CONTROL MONUMENTS

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SEE PROJECT CONTROL DRAWING FOR MORE EXACT SURVEY INFORMATION. INCLUDING BACKS & COORDINATES.

SIGNING SUMMARY

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TAP: 3.00

ENTRY NOTES:

1. FURNISH AND INSTALL STANDARD "STOP"
2. REMOVE AND RELOCATE EXISTING "STOP".

LOAD CENTER FOUNDATION

CONTROL POINTS

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NOTE: POINT PROVIDED IS TO THE CENTER OF THE LOAD CENTER FOUNDATION. WHEN THE LOAD CENTER FOUNDATION IS COMPLETE, THE FOLLOWING POINTS SHALL BE PLACED:

SOUTH LOT:

BIRCH HILL:

CIVIL PLAN – BIRCH HILL

BIRCH HILL 50 CENTER

PERSHING/NORTHWEST 2020

PRELIMINARY PLAN

SHEET NOTES:

1. SEE SHEET FOR ELECTRICAL PLANS AND DETAILS. COORDINATE CAN BE USED WITH ELECTRICAL WORK.
2. EXISTING PARKING LOT SURFACE MATERIAL IS STUDY. USE NAME IDENTIFYING PARKING SPACES ARE MANDATORY AND ADMINISTERED TO CONFORM TO INTEGRITY OF DESIGN.
3. REMOVE EXISTING SIGN. SEE DETAIL 1/02-1 FOR INSTALLATION OF NEW SIGN AND NEW FOUNDATION. SEE DETAIL 1/02-1 FOR EXISTING FOUNDATION.
4. RESTORE SURFACE MATERIAL REPLACED BY WORK, PER SURFACE RESTORATION DETAILS 2/02-1.
5. SEE DETAIL 1/02-1 FOR INSTALLATION OF NEW SIGN AND NEW FOUNDATION. SEE DETAIL 1/02-1 FOR EXISTING FOUNDATION.
1. See E sheets for electrical plans and details. Coordinate civil work with electrical work.
2. Existing parking lot surfacing materials are gravel. Level, reinforcing parking spaces are imaginary and shown for convenience of reference only.
3. Remove existing sign, salvage existing sign panel and install on new post and new foundation per detail 1/2/1, see specification section 615 for additional requirements.
4. Remove chain fence panel and reconstructed fence using salvaged materials. See specification section 617 for additional requirements.
5. Sawcut and remove existing pavement as needed to complete work.
6. Restore surfacing material displaced by work per surface restoration details 2/02.3.

Key Notes:

(1) Remove and relocate existing "No" sign panel.

(2) Remove and relocate existing "Van Accessible Only" sign panel co-locate with (1).

(3) Remove and relocate existing "Park Staff Parking Only" sign panel. See sheet note 3.

(4) Remove and relocate existing sign assembly.
Preliminary Plans

CIVIL PLAN – UAF U-PARK

SITE LAYOUT KEY NOTES:
1. Place HBD guardrail parallel to building face, offset distance shown for double-sided guardrail is from face of guardrail to center of HBD guardrail post.
2. Offset distance shown for single-sided guardrail is from center of W-beam guardrail post to center of guardrail post.
3. Use existing welding existing chain link fence at layout for single-sided guardrail offset distance from electrical centerline of center of W-beam guardrail post and from fence panel to center of W-beam guardrail post.
4. Use existing fence and center of guardrail post location to layout end center guardrail post.
5. Measurements for light pole layout are from center of light pole foundation to center of guardrail post next center of light pole foundation with guardrail post.

SHRIFT NOTES:
1. See E sheets for electrical plans and details, coordinate civil work with electrical work.
2. Existing parking lot surface material is built.
3. Lines designating parking spaces are imaginary and shown for convenience of reference only.
4. Remove existing sign assembly, salvage existing sign panels and install back to back on new post and new foundation per detail 1/02/11. Face sign direction as shown. See specification section 010 for additional requirements.
5. Salvage existing sign panels and install on new light pole using 2 ea saddle mounts per sign panel (4 ea total).
6. Furnish and install guardrail flexible delineator on the begin and end posts of each row, total of 6 ea.
7. Furnish and install standard W-beam end section on the begin and end of rows, total of 6 ea.
8. Restore surface material displaced by work per surface restoration details 2/02/11.
AC PAVEMENT CUT AND MATCH SECTION

BOLLARD DETAIL

6" OR 12"-6" PRECAST CONCRETE BARRIER

Preliminary Plans

CIVIL DETAILS 1 OF 2
CONSTRUCTION NOTES:
1. Work is planned for phases consistent with recreational activities. Access to public areas, parking, and access to the facility shall be provided. Activities are planned to be limited to the early morning and evening hours to minimize disturbance to users.
2. Access to the facility shall be provided at all times. Access to the facility shall be maintained throughout the construction period.
3. Access to the facility shall be provided at all times. Access to the facility shall be maintained throughout the construction period.
4. Access to the facility shall be provided at all times. Access to the facility shall be maintained throughout the construction period.

KEY NOTES:
1. Phase work to maintain access to the facility at all times.
2. Phase work to maintain access to the facility at all times.
3. Phase work to maintain access to the facility at all times.
4. Phase work to maintain access to the facility at all times.
5. Phase work to maintain access to the facility at all times.

CONSTRUCTION PHASING
PLAN – BIRCH HILL
CONSTRUCTION NOTES:

1. Maintain safe access to the facility entrances during construction and coordinate with UAF through the engineer to obtain a current schedule of events planned at the site.

2. At all times during construction, access for emergency vehicles must be provided.

3. At all times during construction access to the facility must be provided to UAF staff.

4. Prepare and implement a traffic control plan and construction phasing plan for the work to be performed at UAF U-PARK. Traffic control plans and construction phasing plans should consider pedestrian, vehicle and construction complexity. Cater to the needs of truck, pedestrian, and other stakeholders. Review the pertinent portions of the Construction Subcontractor Safety Handbook, work traffic TEE Specification Section 643 for additional requirements.

KEY NOTES:

1. Phase work at all times during construction to maintain vehicular access in both directions on high school access road.

2. Phase work at all times during construction to maintain access and full use of the parking lot on the south west and north west sides of the building.

CONSTRUCTION PHASING PLAN - UAF U-PARK
**Preliminary Plans**

**GENERAL NOTES:**

1. All covers hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designations given when possible in parenthesis.

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### STANDARD HEX BOLTS

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### STANDARD STEEL WASHERS

For Bolt Size 5/8":
- 7/8" Dia. Bolt - 1/4"
- 7/8" Dia. Bolt - 1/8"
- 7/8" Dia. Bolt - 3/32"
- 7/8" Dia. Bolt - 5/64"

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### EYE BOLT

1" Dia. Rod w/welded or forged eye

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### SQUARE STEEL WASHER

7/8" Dia. Bolt

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### FLAT PLATE WASHER

1 1/4" Dia. Bolt

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### RECTANGULAR POST BOLT WASHER

7/8" x 7/8" Hole

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### SQUARE STEEL WASHER

3/8" x 3/4" Hole

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**State of Alaska DOT&PF**

**ALASKA STANDARD PLAN**

**STANDARD GUARDRAIL HARDWARE (NUTS, BOLTS & WASHERS)**

Adopted as an Alaska Standard Plan by:

Carolyne Winehouse

Consulting Engineer

Adoption Date: 7/17/2013

Last Code and Standards Review Date: 7/9/2020

**G-00.05**

**STANDARD PLANS 1 OF 5**
State of Alaska DOT&PF
ALASKA STANDARD PLAN
STANDARD GUARDRAIL HARDWARE
(RAILS AND SPLICECS)

Adopted on an Alaska Standard Plan by
Carolyn McDonald, P.E.
Chief Engineer

Adoption Date: 7/17/2020
Last Code and Title Review
No Action Date: 7/9/2020
Next Code and Standards Review Date: 7/9/2020

Preliminary Plans
GENERAL NOTES:

1. W-Beam and THRUBEAM Terminal Connectors shall conform to AASHTO M 180, Grade B,
   Type II.

2. W-Beams and Sections shall conform to AASHTO M 180, Grade A, Type II.

3. All coated hardware shall comply with the State of Alaska DOT&PF - Design Guidelines, when possible.
CONSTRUCTION NOTES

1. Install guardrail flexible delineators where shown on the plans.
2. Install guardrail flexible delineators at 50 foot spacing, unless otherwise noted on the plans. Install not less than 2 delineators per guardrail run.
3. Use 3" x 5" white/yellow/red retroreflective sheeting as required per Standard Plan 1-06. Install retroreflective sheeting on both sides of delineator on two-way roads.
4. Attach 4" x 1" flexible delineator to the top of new guardrail posts, on the trailing side of the posts relative to the adjacent lane's direction of travel.
5. Use 2 each 1/4" dia. x 1-1/2" long galvanized lag screws for attaching to wood posts and 3 each 1/4" dia. x 3/4" long galvanized self-drilling fasteners for steel posts. Install a galvanized washer between the fastener head and the flexible delineator.