PUBLIC NOTICE

Alaska Department of Environmental Conservation (DEC)
Wastewater Discharge Authorization Program/§401 Certification
555 Cordova Street, Anchorage AK 99501-2617
Phone: 907-269-6285 | Email: DEC-401Cert@alaska.gov

Notice of Application for State Water Quality Certification

Public Notice (PN) Date: October 11, 2024
PN Expiration Date: October 27, 2024
PN Reference Number: POA-1985-00696 v1.0
Waterway: Port Frederick

Any applicant for a federal license or permit to conduct an activity that might result in a discharge into waters of the United States, in accordance with Section 401 of the Clean Water Act (CWA), must also apply for and obtain certification from the Alaska Department of Environmental Conservation that the discharge will comply with the CWA and the Alaska Water Quality Standards (18 AAC 70). The scope of certification is limited to the water quality-related impacts from the activity subject to the Federal license or permit (40 CFR 121.3, 18 AAC 15.180).

Notice is hereby given that a request for a CWA §401 Water Quality Certification of a Department of the Army Permit application, Corps of Engineers' PN Reference Number indicated above has been received[1] for the discharge of dredged and/or fill materials into waters of the United States (WOTUS), including wetlands, as described below, and shown on the project figures/drawings. The public notice and related project figures/drawings are accessible from the DEC website at https://dec.alaska.gov/water/wastewater/.

To comment on the project or request for a public hearing with respect to water quality, submit comments via email to the DEC email address: DEC-401Cert@alaska.gov with the subject line referencing Public Notice Reference Number: **POA-1985-00696 v1.0** or via DEC website https://dec.alaska.gov/commish/public-notices/ on or before the public notice expiration date listed above.

Applicant: City of Hoonah, Dennis Gray Jr, PO Box 360, Hoonah, AK 99829, (907) 945-3663; dgray@cityofhoonah.org

Project Name: Hoonah Marine Industrial Center Cargo Dock Project

Dates of the proposed activity is planned to begin and end: 08/15/2025 to 08/14/2026

Location: The proposed activity is located within Section 28, T. 43S, R. 61E, Copper River Meridian, in Hoonah Angoon Census Area, Alaska. Project Site (Latitude, Longitude): 58.115972, -135.45405.

Purpose: The purpose of the project is to construct a new cargo dock in Hoonah to enable barges to land, unload, and load during all weather conditions. The project is needed to allow for the safe, reliable, and economical transport of freight to and from Hoonah.

Description of Proposed Work: The City of Hoonah proposes to construct a sheet pile bulkhead cargo dock at the city-owned Hoonah Marine Industrial Center (HMIC) in Hoonah, Alaska. The HMIC is a phased approach to enhance the Hoonah waterfront and to provide infrastructure to support maritime industries in Hoonah. The proposed cargo dock is one component of the HMIC.

To construct a bulkhead cargo dock consisting of approximately 330 linear feet of sheet pile adjacent to and within the footprint of the existing gravel barge landing. Approximately 542 sheet piles would make up an "open cell" structure and 21,160 square feet (23,220 cubic yards [cy]) of armor rock, shot rock, surfacing course, and concrete fill would be placed to make up the cargo dock. The proposed project would also include the installation of a barge

[1] Reference submission number: HQ4-5KY9-5GBHH; Received: 6/6/2024 1:06:52 PM

Roll-on/Roll-off (RoRo) ramp on the cargo dock deck, five fender piles, and three breasting dolphins (one southeast of the proposed dock and two northwest of the proposed dock). Construction would begin in fall 2025 and continue for approximately four to five months. No blasting is proposed as part of this project.

Applicant Proposed Mitigation: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

a. Avoidance: Complete avoidance of waters of the United States is not possible in order to meet the project purpose and need. The project would be located within Port Frederick along a previously disturbed shoreline.

b. Minimization: The proposed project uses the most compact design practicable to minimize impacts to waters of the U.S. while meeting the project purpose and need.

- Fill would be placed inside sheet pile walls to minimize turbidity.
- A silt curtain will be employed during tension anchoring activities to contain drill spoils as much as possible to allow them to settle to the sea floor in the immediate area rather than increasing turbidity over a wider area.
- Temporary piles will be removed slowly to allow sediment to slough off near the mudline.

c. Mitigation: The total in-water fill for the proposed project would be minimal (approximately 0.4 acres below HTL) in comparison to the available waters in Port Frederick. The project footprint is within a previously developed area. The City of Hoonah will develop further mitigation measures if required by ADEC.

- Spill response equipment will be kept on-site during construction and operation.

After reviewing the application, the Department will evaluate whether the activity will comply with applicable water quality requirements (any limitation, standard, or other requirement under sections 301, 302, 306, and 307 of the CWA, any Federal and state laws or regulations implementing those sections, and any other water quality-related requirement of state law). The Department may certify (or certify with conditions) with reasonable assurance the activity and any discharge that might result will comply with water quality requirements. The Department also may deny or waive certification.

The permit application and associated documents are available for review. For inquires or to request copies of the documents, contact dec-401cert@alaska.gov, or call 907-269-6096.

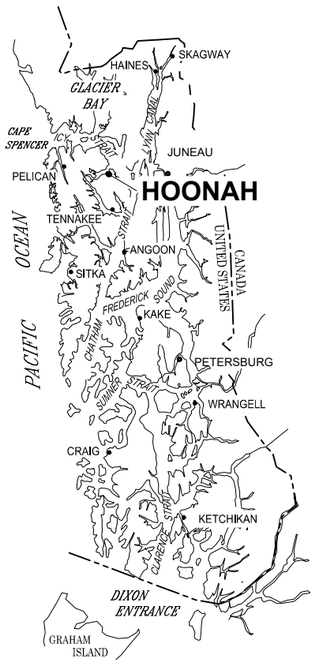
Disability Reasonable Accommodation Notice

The State of Alaska, Department of Environmental Conservation complies with Title II of the Americans with Disabilities Act (ADA) of 1990. If you are a person with a disability who may need special accommodation in order to participate in this public process, please contact ADA Coordinator Megan Kohler at 907-269-4198 or TDD Relay Service 1-800-770-8973/TTY or dial 711 prior to the expiration date of this public notice to ensure that any necessary accommodations can be provided.

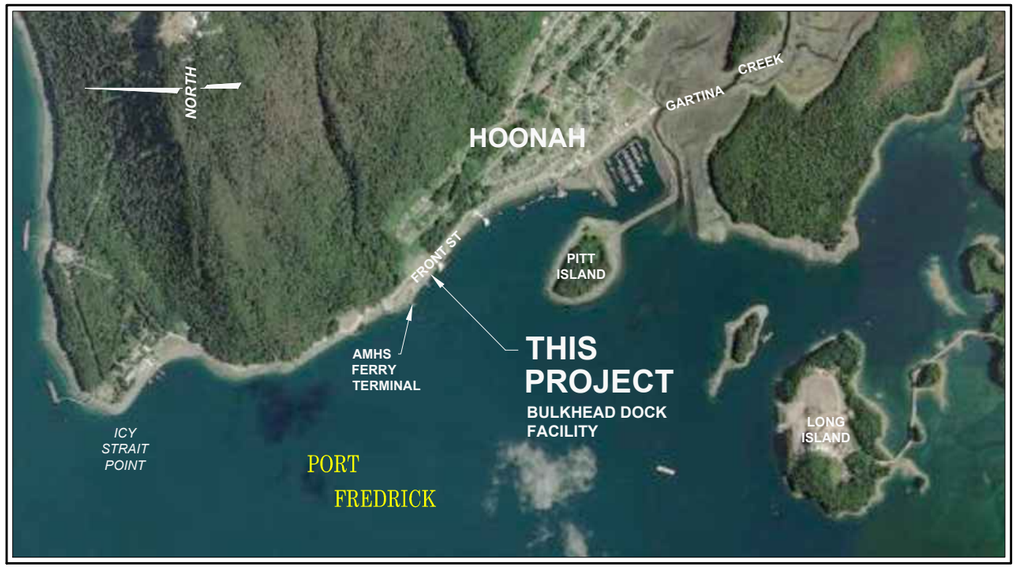
CITY OF HOONAH

SHEET PILE BULKHEAD DOCK

VICINITY



SOUTHEAST ALASKA



VICINITY MAP

SCALE IN MILES

0 ½ 1 2

HOONAH TIDAL DATA	
DESCRIPTION	ELEV. (FT.)
EXTREME HIGH WATER (EHW)	+20.0±
MEAN HIGHER HIGH WATER (MHHW)	+15.0
MEAN HIGH WATER (MHW)	+14.0
MEAN SEA LEVEL (MSL)	+7.9
MEAN TIDE LEVEL (MTL)	+7.8
MEAN LOW WATER (MLW)	+1.5
MEAN LOWER LOW WATER (MLLW)	0.0
EXTREME LOW WATER (ELW)	−6.0'±

TIDAL DATA FROM:
NOAA/NOS/CO-OPS
9452438 HOONAH, PORT FREDRICK, AK

DRAWING INDEX

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: MBH
DRAWN: PJD/KLL APPROVED: CRS
SCALE: AS SHOWN
DATE: 05/03/24

95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: TITLE SHEET, VICINITY MAP AND DRAWING INDEX

PND PROJECT NO.: 212049 C.A.N.: AECC250

G1.01

GENERAL NOTES

1. **EROSION AND POLLUTION CONTROL PLANS**

   DEVELOP AND SUBMIT FOR AGENCY REVIEW AND APPROVAL A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THIS PLAN SHALL INCLUDE AN EROSION AND SEDIMENT CONTROL PLAN BASED UPON THE CONTRACTOR'S SCHEDULING, EQUIPMENT AND WORK. TO THE GREATEST EXTENT POSSIBLE FOLLOW THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT/PF) ALASKA STORM WATER POLLUTION PREVENTION PLAN GUIDE (ASWPPPG). THE PLAN SHALL CONSIDER FIRST PREVENTING EROSION, THEN MINIMIZING AND TRAPPING SEDIMENT PRIOR TO ITS ENTERING THE WATERWAYS. THE PLAN MUST ADDRESS THE SITE-SPECIFIC CONTROLS AND MANAGEMENT FOR THE CONSTRUCTION SITE AND AFFECTED AREAS. THE PLAN MUST INCORPORATE ALL THE REQUIREMENTS OF THE PROJECT PERMITS. BEST MANAGEMENT PRACTICES AS LISTED IN THE ASWPPPG SHALL BE USED.

   THE CONTRACTOR SHALL PREPARE A HAZARDOUS MATERIAL CONTROL PLAN (HMCP) FOR THE HANDLING, STORAGE, CLEAN-UP AND DISPOSAL OF PETROLEUM AND OTHER HAZARDOUS SUBSTANCES. THE CONTRACTOR SHALL LIST AND GIVE LOCATIONS OF ALL HAZARDOUS MATERIALS, INCLUDING FIELD OFFICE MATERIALS, TO BE USED AND STORED ON-SITE AND THEIR ESTIMATED QUANTITIES. THE PLAN SHALL PROVIDE DETAILS FOR STORING THESE MATERIALS AS WELL AS DISPOSING WASTE PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS GENERATED BY THE PROJECT.

   IDENTIFY THE LOCATIONS WHERE HAZARDOUS MATERIAL STORAGE, FUELING AND MAINTENANCE ACTIVITIES WILL TAKE PLACE. IF ON-SITE, DESCRIBE THE MAINTENANCE ACTIVITIES AND LIST ALL CONTROLS TO PREVENT THE ACCIDENTAL SPILLAGE OF OIL, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS. DETAIL PROCEDURES FOR CONTAINMENT AND CLEANUP OF HAZARDOUS SUBSTANCES INCLUDING A LIST OF THE TYPES AND QUANTITIES OF EQUIPMENT AND MATERIALS AVAILABLE ON-SITE TO BE USED.

   THE PLAN SHALL PROVIDE DETAILS FOR PREVENTION, CONTAINMENT, CLEAN-UP AND DISPOSAL OF SOIL AND WATER CONTAMINATED BY ACCIDENTAL SPILLS AND FOR UNEXPECTED CONTAMINATED SOIL AND WATER ENCOUNTERED DURING CONSTRUCTION.

2. MATCH EXISTING GRADES AT PROJECT LIMITS AND WHERE REQUIRED TO MATCH ELEVATIONS AT EXISTING ROADS.

3. ALL REMOVED MATERIALS THAT ARE NOT SUITABLE FOR REUSE ON THE PROJECT SHALL BE PROPERLY DISPOSED OF OFF SITE.

4. THE LOCATIONS OF EXISTING FEATURES AND UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADDITIONAL UTILITIES MAY BE PRESENT HOWEVER ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS IN THE FIELD AS NECESSARY, PRIOR TO BEGINNING WORK. THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED IN THE FIELD SHALL BE RECORDED ON THE CONTRACTOR'S RECORD DRAWINGS. CONTACT LOCAL UTILITY COMPANIES PRIOR TO ANY/ ALL EXCAVATIONS AT THE FOLLOWING TELEPHONE NUMBERS:

DIAL BEFORE YOU DIG!
811
UNDERGROUND POWER, TELEPHONE, T.V., COMMUNICATIONS, WATER AND SEWER LINES ARE IN THE AREA. UTILITIES SHOWN ON THE PLANS DO NOT SUBSTITUTE FOR FIELD LOCATES.

5. PROPERTY DISTURBED DURING CONSTRUCTION OUTSIDE OF PROJECT LIMITS SHALL BE RESTORED TO ITS PRE-CONSTRUCTION CONDITION.

6. GRADING AND ALIGNMENT OF PIPE, STRUCTURES & FINAL SURFACING ARE SUBJECT TO MINOR REVISIONS BY THE ENGINEER TO FIT SITE CONDITIONS. GRADE ALL IMPROVEMENTS WITH POSITIVE DRAINAGE AWAY FROM STRUCTURES.

7. PROPERTY LINE LOCATIONS USED IN THESE PLANS ARE DERIVED FROM RECORD PLATS AND DO NOT REPRESENT A BOUNDARY SURVEY.

LEGEND

EXISTING	THIS PROJECT	
CP		SURVEY CONTROL
		BOLLARD
E EO		ELECTRIC PEDESTAL
		FIRE HYDRANT
		LIGHT POLE w/ LUMINAIRE
		METAL PILING
		POWER POLE
T		TELEPHONE PEDESTAL
SSMH		SANITARY SEWER MANHOLE
S/O		SANITARY SEWER CLEAN OUT
SDMH		STORM DRAIN MANHOLE
		STORM DRAIN CATCH BASIN
		WATER VALVE
		WOOD PILING
		BUILDING LINE
		CENTER OF CREEK
		CENTER LINE
		FENCELINE
		GEOTEXTILE REINFORCEMENT
		GRADE BREAK
UGE		OVERHEAD ELECTRIC
OHE		UNDERGROUND ELECTRIC
PL		PIPELINE
		PROPERTY LINE
SS_X		SANITARY SEWER
FM_X		SANITARY SEWER FORCE MAIN
SD_X		STORM DRAIN
W_X		WATER LINE
		CURB & GUTTER w/ TYPE
	5	LAYOUT POINT
		LAYOUT RADIUS
P-1 6		TEST HOLE
		CONCRETE/SIDEWALK
		CULVERT
		PAVEMENT/ACP

ABBREVIATIONS

A	
@	AT
AC	ASBESTOS CEMENT PIPE
ACP	ASPHALT CONCRETE PAVEMENT
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
APF	ASSOCIATED PILE AND FITTING CORP.
APPROX. or APPX.	APPROXIMATE
ATS	ALASKA TIDELANDS SURVEY
AV	AIR RELEASE VALVE
B	
BCC	BEGINNING OF CURB CUT
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BOP	BEGINNING OF PROJECT
BTM, BOT	BOTTOM
BTWN	BETWEEN
C	
C&G	CURB & GUTTER
CB	CATCH BASIN
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
℄	CENTER LINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
C.O.E.	CORPS OF ENGINEERS
COMM	COMMUNICATION
CONC.	CONCRETE
CONT	CONTINUOUS
CP	COMPLETE PENETRATION
CPEP/CPP	CORRUGATED POLYETHYLENE PIPE
COR	CORNER
CSC	COUNTERSINK
CTE	CONNECT TO EXISTING
CTR	CENTER
CY	CUBIC YARD
D	
DPC	DISSIMILAR PIPE COUPLING
D/DIA	DIAMETER
DBL	DOUBLE
DEMO	DEMOLITION
DFT	DRY FILM THICKNESS
DL	DEAD LOAD
DIP	DUCTILE IRON PIPE
DIM	DIMENSION
DN	DOWN
DTL	DETAIL
E	
E	EAST
EA.	EACH
EC	EDGE OF CONCRETE
ECC	END OF CURB CUT
EG	EXISTING GRADE
EJ	EXPANSION JOINT
EL/ELEV	ELEVATION
ELEL	ELECTRICAL
EOP	END OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
F	
FC	FACE OF CURB
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT, FLAT HEAD
FIN	FINISH (ED)
FM	FORCE MAIN SEWER
FND	FOUNDATION
FOC	FACE OF CURB
FT	FOOT
FT-LBS	FOOT POUNDS
FTG	FOOTING
FL	FLOWLINE OR FLANGE
G	
GALV	GALVANIZED
GB	GRADE BREAK
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
GV	GATE VALVE
H	
H&T	HUB & TACK
HD	HEAVY DUTY
HDG	HOT-DIPPED GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HSE	HOUSE
HT	HEIGHT
HWY.	HIGHWAY
I	
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
IP	IRON PIPE
INCL	INCLUDE (D) (ING)
INSUL	INSULATE (D) (ION)
INV	INVERT
J	
JB	JUNCTION BOX
L	
LBS	POUNDS
LF	LINEAR FEET
LL	LIVE LOAD
LOC	LOCATION
LS	LUMP SUM
M	
MAX	MAXIMUM
M.E.	MATCH EXISTING
MECH	MECHANICAL
MFR	MANUFACTURE (R)
MH	MANHOLE
MJ	MECHANICAL JOINT
MI	MALLEABLE IRON
MIN	MINIMUM
MLLW	MEAN LOWER LOW WATER
MSF	1000 SQUARE FEET
MSE	MECHANICALLY STABILIZED EARTH
MTL	MATERIAL (S)
N	
N	NORTH
NFS	NON FROST SUSCEPTIBLE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
O	
OBD	OVERBURDEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OG	ORIGINAL GOUND
OHE	OVERHEAD ELECTRICAL
OS	OWNER SUPPLIED
OWS	OIL-WATER SEPARATOR
OPP	OPPSITE
P	
P	PIPE
PC	POINT OF CURVATURE, PIECE
PCC	PRECAST CONCRATE
	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PED	PEDESTAL
PER	PERIMETER
PERF	PERFORATE (D)
PI	POINT OF INTERSECTION
PLWD	PLYWOOD
PL	PROPERTY LINE, PLATE
POC	POINT OF CURVE
PP	POLYPROPYLENE
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PRKG	PARKING
PRV	PRESSURE REDUCING VALVE
PSI	POUND PER SQUARE INCH
PT	POINT, PRESSURE TREATED, POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE, POLY-VINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
Q	
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QTY	QUANTITY
R	
RAD	RADIUS
RE	RIM ELEVATION
REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
RTW	RETAINING WALL
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	
S	SOUTH
SCHED/SCH	SCHEDULE
SD	STORM DRAIN
SDI	STORM DRAIN INLET STRUCTURE
SDO	STORM DRAIN OUTLET STRUCTURE
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FOOT
SHLDR	SHOULDER
SI	STREET INTERSECTION
SPEC	SPECIFICATION (S)
SQ	SQUARE
SRB	SHOT ROCK BORROW
SSC	SANITARY SEWER CONNECTION
SS	STAINLESS STEEL, SANITARY SEWER
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
STRG	STRONG
SW	SIDEWALK
SWR	SEWER
SY	SQUARE YARD
SYM	SYMMETRICAL
T	
t	THICK
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TBC	TOP BACK OF CURB
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCH MARK
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
TH	TEST HOLE
THK	THICK
TRANS	TRANSVERSE
TSM	THERMAL SPRAY METALIZE
TV	TELEVISION
TYP	TYPICAL
U	
UAMH	UTILITY ACCESS MANHOLE
UBC	UNIFORM BUILDING CODE
UE	UNDERGROUND ELECTRIC
UMC	UNIFORM MECHANICAL CODE
UHMW	ULTRA HIGH MOLECULAR WEIGHT
UON/UNO	UNLESS OTHERWISE NOTED
UPC	UNIFORM PLUMBING CODE
UV	ULTRAVIOLET
V	
VB	VALVE BOX
VERT	VERTICAL
VG	VALLEY GUTTER
W	
W	WEST
W/	WITH
WD	WOOD
WELDMT	WELDMENT
WL	WATERLINE
WQU	WATER QUALITY UNIT
WV	WATER VALVE
WW	WATER WATER
WWTP	WASTE WATER TREATMENT PLANT
W/O	WITHOUT
X	
XFMR	TRANSFORMER
<PT	ANGLE POINT

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE: NA
DATE: 05/03/24

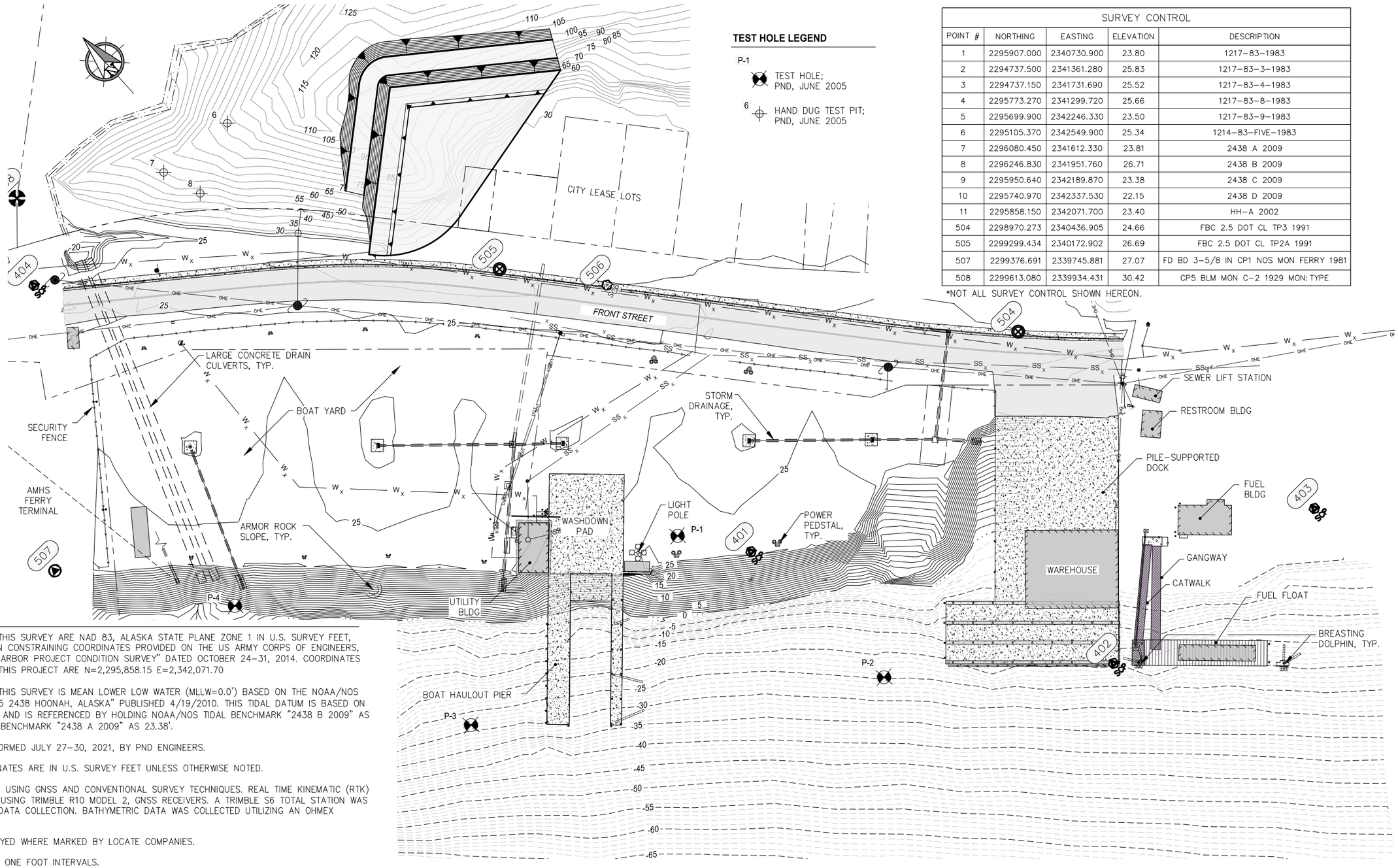
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **CIVIL GENERAL NOTES, LEGEND AND ABBREVIATIONS**

PND PROJECT NO.: 212049 C.A.N.: AECC250

G1.02



SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2295907.000	2340730.900	23.80	1217–83–1983
2	2294737.500	2341361.280	25.83	1217–83–3–1983
3	2294737.150	2341731.690	25.52	1217–83–4–1983
4	2295773.270	2341299.720	25.66	1217–83–8–1983
5	2295699.900	2342246.330	23.50	1217–83–9–1983
6	2295105.370	2342549.900	25.34	1214–83–FIVE–1983
7	2296080.450	2341612.330	23.81	2438 A 2009
8	2296246.830	2341951.760	26.71	2438 B 2009
9	2295950.640	2342189.870	23.38	2438 C 2009
10	2295740.970	2342337.530	22.15	2438 D 2009
11	2295858.150	2342071.700	23.40	HH–A 2002
504	2298970.273	2340436.905	24.66	FBC 2.5 DOT CL TP3 1991
505	2299299.434	2340172.902	26.69	FBC 2.5 DOT CL TP2A 1991
507	2299376.691	2339745.881	27.07	FD BD 3–5/8 IN CP1 NOS MON FERRY 1981
508	2299613.080	2339934.431	30.42	CP5 BLM MON C–2 1929 MON: TYPE

*NOT ALL SURVEY CONTROL SHOWN HEREON.

SURVEY NOTES:

1. BASIS OF COORDINATES FOR THIS SURVEY ARE NAD 83, ALASKA STATE PLANE ZONE 1 IN U.S. SURVEY FEET, DERIVED BY GPS OBSERVATION CONSTRAINING COORDINATES PROVIDED ON THE US ARMY CORPS OF ENGINEERS, ALASKA DISTRICT, "HOONAH HARBOR PROJECT CONDITION SURVEY" DATED OCTOBER 24–31, 2014. COORDINATES OF "HH–A 2002," HELD FOR THIS PROJECT ARE N=2,295,858.15 E=2,342,071.70
2. THE VERTICAL CONTROL FOR THIS SURVEY IS MEAN LOWER LOW WATER (MLLW=0.0') BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST; "945 2438 HOONAH, ALASKA" PUBLISHED 4/19/2010. THIS TIDAL DATUM IS BASED ON THE 1983–2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCHMARK "2438 B 2009" AS 26.71' AND NOAA/NOS TIDAL BENCHMARK "2438 A 2009" AS 23.38'.
3. THE FIELD SURVEY WAS PERFORMED JULY 27–30, 2021, BY PND ENGINEERS.
4. ALL DIMENSIONS AND COORDINATES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
5. THIS SURVEY WAS COMPLETED USING GNSS AND CONVENTIONAL SURVEY TECHNIQUES. REAL TIME KINEMATIC (RTK) OBSERVATIONS WERE STORED USING TRIMBLE R10 MODEL 2, GNSS RECEIVERS. A TRIMBLE S6 TOTAL STATION WAS UTILIZED FOR CONVENTIONAL DATA COLLECTION. BATHYMETRIC DATA WAS COLLECTED UTILIZING AN OHMEX SONARMITE.
6. UTILITY LOCATES WERE SURVEYED WHERE MARKED BY LOCATE COMPANIES.
7. CONTOURS ARE IN FEET, WITH ONE FOOT INTERVALS.
8. NO TITLE SEARCH WAS PREPARED FOR THIS SURVEY. EASEMENTS AND ENCUMBRANCES SHOWN HEREON ARE FROM PLATS OF RECORD. OTHER EASEMENTS AND ENCUMBRANCES MAY EXIST.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE: SCALE IN FEET 0 40 80 FT.

95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
EXISTING CONDITIONS, SURVEY CONTROL AND TEST HOLE LOCATIONS

PND PROJECT NO.: 212049 C.A.N.: AECC250

C1.01

GENERAL NOTES

1) ALL INDIVIDUAL MINING PLANS SHALL BE APPROVED, IN WRITING, BY THE OWNER PRIOR TO CLEARING OR EXCAVATION.

2) ALL OVERBURDEN SHALL BE REMOVED TO A MINIMUM DISTANCE OF 15' FROM THE FINISHED WORKING FACE.

3) THE CUTBANK OF THE OVERBURDEN SHALL BE SLOPED TO THE NATURAL ANGLE OF REPOSE, BUT SHALL BE NO STEEPER THAN 2H:1V.

4) ALL DEAD TREES AND SNAGS WHICH ARE SUFFICIENTLY TALL TO REACH THE WORK AREA SHALL BE FELLED.

5) ALL OVERBURDEN, CLEARING, MERCHANTABLE TIMBER AND GRUBBING DEBRIS SHALL BE DISPOSED OF OFF SITE OR AS DIRECTED BY THE ENGINEER.

6) THE QUARRY SHALL BE LEFT IN A NEAT, ORDERLY AND WELL DRAINED CONDITION. ALL OVERHANGS AND LOOSE ROCK SHALL BE REMOVED FROM FINISHED CUT SLOPES.

7) AFTER EXCAVATION IS COMPLETE, THE AREA SHALL BE CLEANED UP AND LEFT AS SHOWN ON THE QUARRY USAGE PLAN.

8) ALL MATERIALS LEAVING THE QUARRY LIMITS SHALL BE CONTAINED WITHIN THE HAULING VEHICLE.

9) ALL DEBRIS AND OTHER BY-PRODUCTS OF TOPSOIL SCREENING OPERATIONS SHALL BE DISPOSED OF OFF SITE, OR AS APPROVED BY THE OWNER.

10) APPROXIMATE LIMITS OF PROPOSED QUARRY DEVELOPMENT SPECIFIC TO THIS PROJECT WILL BE APPROVED IN ADVANCE BY THE CITY.

11) THE MATERIALS WITHIN THE QUARRY THAT ARE MADE AVAILABLE TO THE CONTRACTOR FOR THIS PROJECT, MAY NOT MEET ALL MATERIAL SPECIFICATIONS FOR THIS PROJECT. THIS QUARRY DOES NOT MEET MATERIAL QUALITY REQUIREMENTS FOR ARMOR ROCK, BASE COURSE OR CLASS A SHOT ROCK BORROW.

12) MATERIAL STOCKPILED OFF-SITE MUST HAVE PRIOR APPROVAL OF THE OWNER.

13) AREA SURVEYED JULY 2021.

INDIVIDUAL MINING PLAN

OPERATIONS SHALL NOT PROCEED UNTIL THE CONTRACTOR'S INDIVIDUAL MINING PLAN HAS BEEN APPROVED BY THE CITY.

ALL CONTRACTOR INDIVIDUAL MINING PLANS FOR REMOVAL OF MATERIAL FROM THE QUARRY SHALL BE PREPARED BY A REGISTERED CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF ALASKA.

NO MANAGEMENT FEES WILL BE ASSESSED TO CONTRACTORS OBTAINING MATERIAL FROM CITY QUARRY EXCLUSIVELY FOR THIS PROJECT.

THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE OWNER PRIOR TO BEGINNING ANY OPERATIONS WITHIN THE QUARRY LIMITS:

A) MINING PLAN – INCLUDE PLANNED TOTAL EXCAVATION QUANTITY, PLANNED SECTION (SEE SAMPLE CROSS SECTION A–A), EXCAVATION LIMITS, CLEARING AND GRUBBING LIMITS.

B) NOISE CONTROL PLAN.

C) STRIPPING / OVERBURDEN DISPOSAL PLAN.

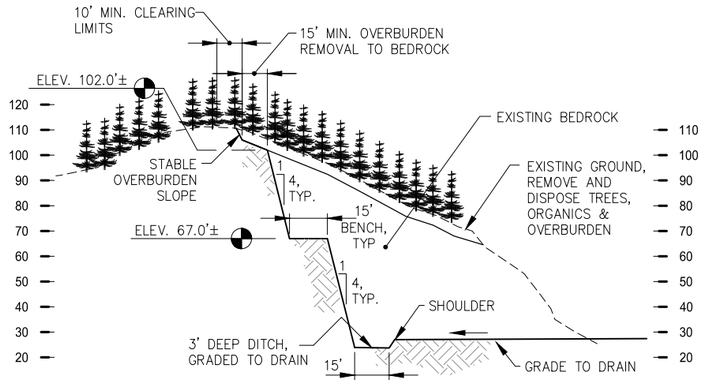
D) DRAINAGE AND POLLUTION PLAN.

E) EXISTING UTILITY PROTECTION PLAN.

F) RECLAMATION PLAN.

G) TRAFFIC CONTROL PLAN.

H) AKDOT&PF AUTHORIZATION FOR ROCK REMOVAL WITHIN R.O.W.



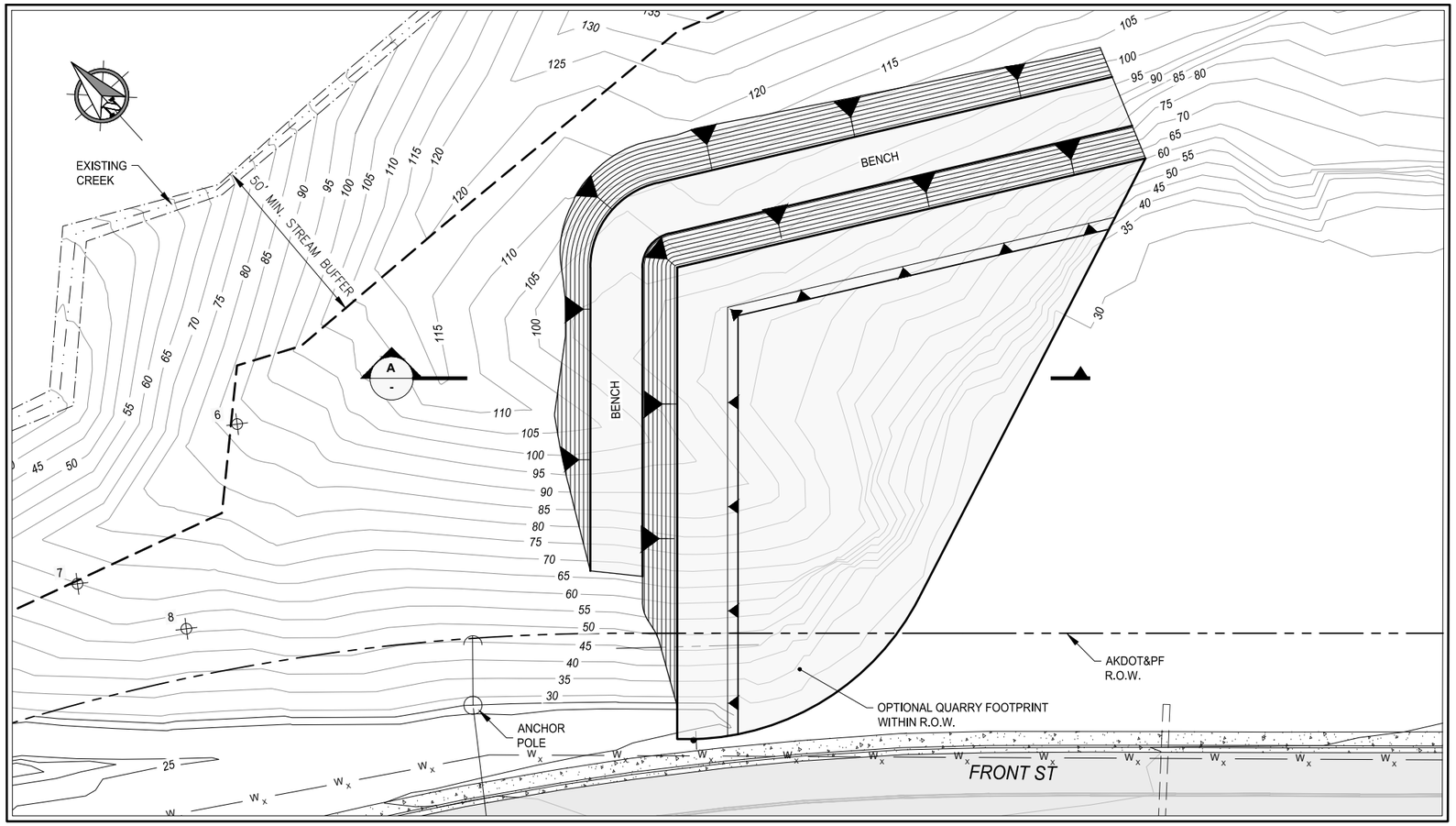
A **TYPICAL QUARRY SECTION**

TEST PIT LEGEND

6 ⊕ HAND DUG TEST PIT; PND, JUNE 2005

TEST PIT SUMMARY

TP#	DEPTH (FEET)	OBSERVATION & COMMENT
6 ⊕	0–0.2 0.2–1.0 1.0–2.0 2.0	ORGANICS BROWN, SANDY SOIL GRANULAR SOIL WITH GRAVEL BEDROCK
7 ⊕	0–0.2 0.2–1.0 1.0–2.1 2.1	ORGANICS BROWN, SANDY SOIL GRANULAR SOIL WITH GRAVEL BEDROCK
8 ⊕	0–0.2 0.2–0.6 0.6–1.5 1.5	ORGANICS BROWN, SANDY SOIL GRANULAR SOIL WITH GRAVEL BEDROCK



REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE:

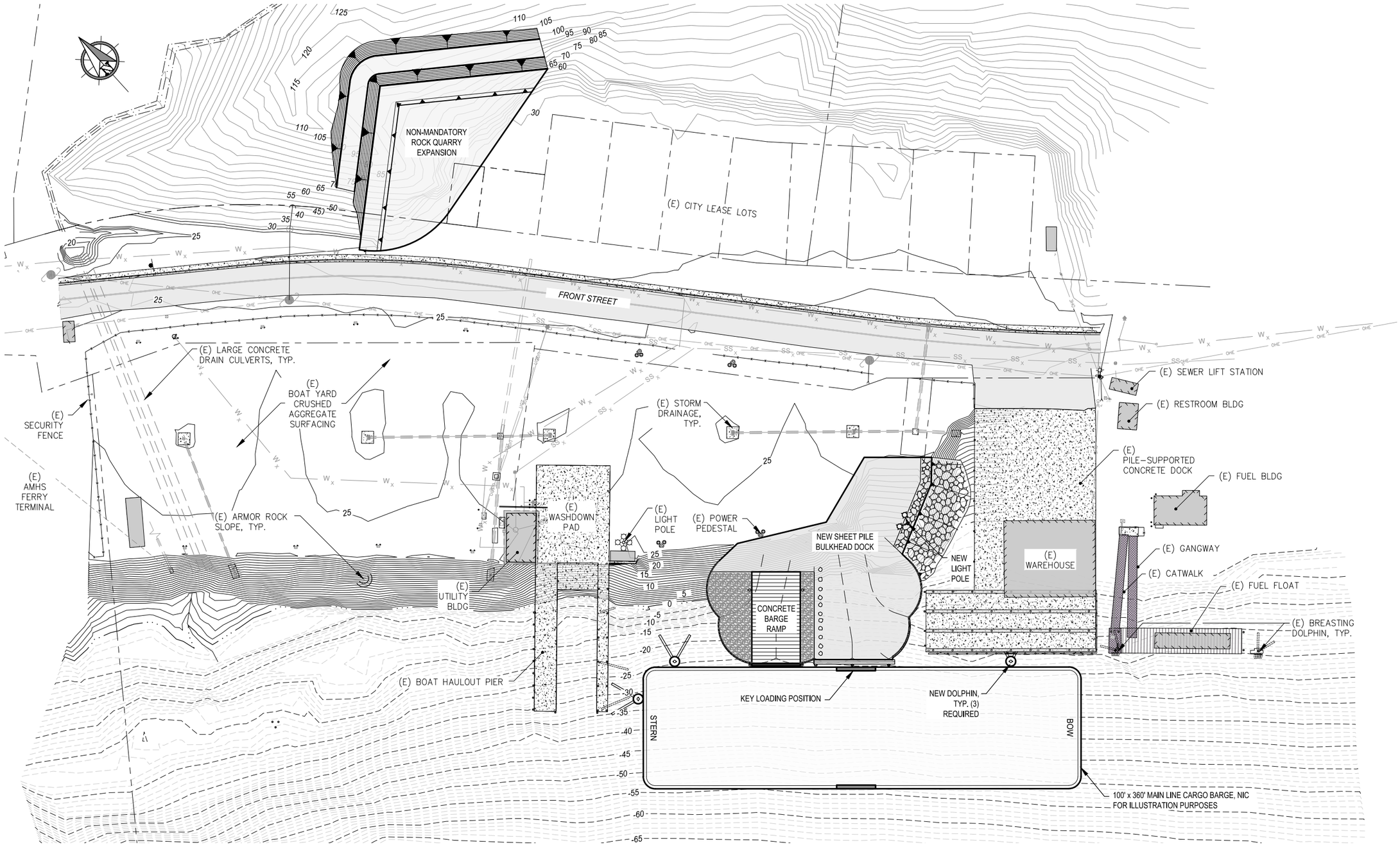
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **NON - MANDATORY ROCK QUARRY USAGE PLAN**

PND PROJECT NO.: 212049 C.A.N.: AECC250

C1.02



REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE: SCALE IN FEET 0 40 80 FT.
DATE: 05/03/24

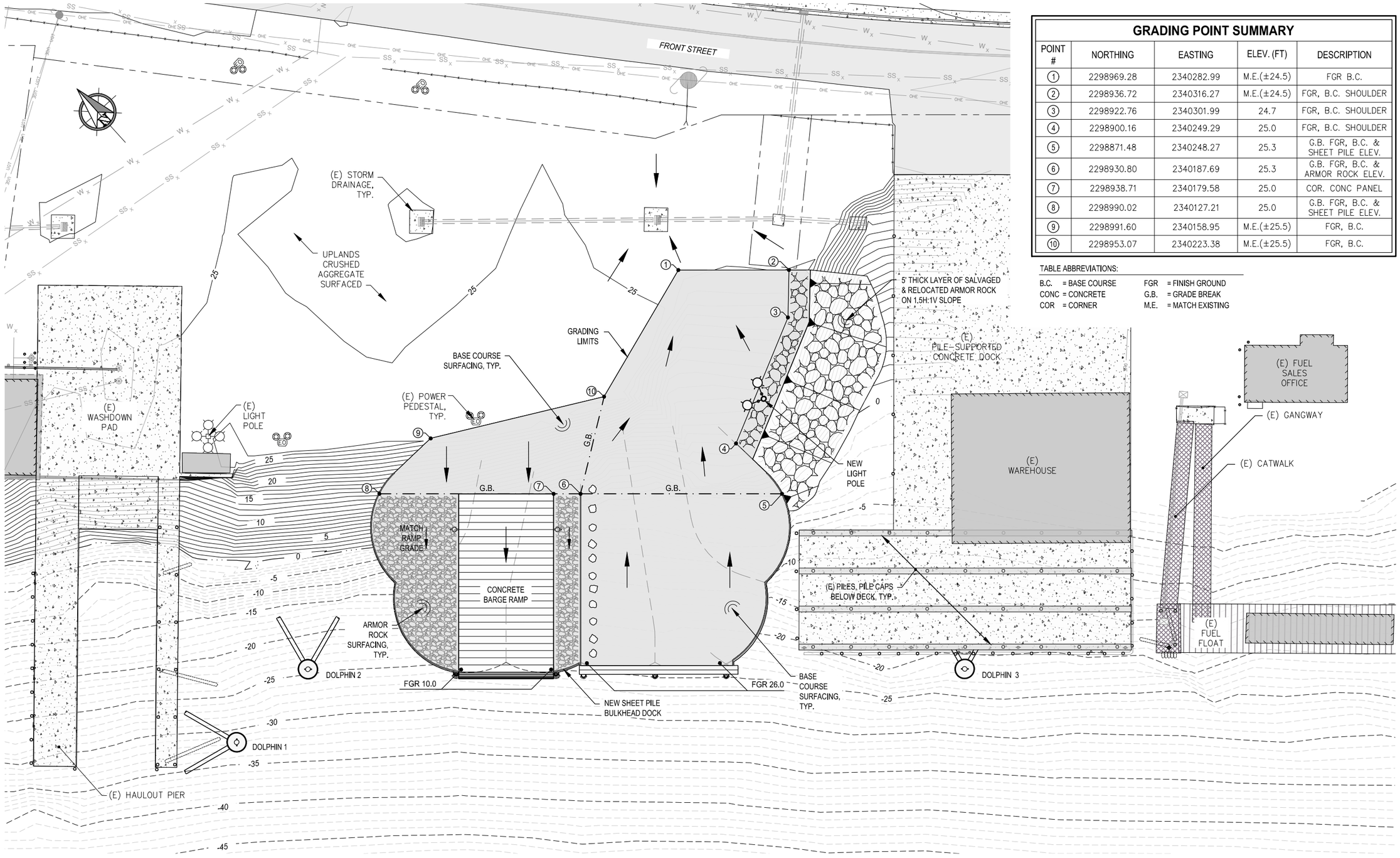
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: GENERAL SITE PLAN

PND PROJECT NO.: 212049 C.A.N.: AECC250

C1.03



GRADING POINT SUMMARY

POINT #	NORTHING	EASTING	ELEV. (FT)	DESCRIPTION
①	2298969.28	2340282.99	M.E.(±24.5)	FGR B.C.
②	2298936.72	2340316.27	M.E.(±24.5)	FGR, B.C. SHOULDER
③	2298922.76	2340301.99	24.7	FGR, B.C. SHOULDER
④	2298900.16	2340249.29	25.0	FGR, B.C. SHOULDER
⑤	2298871.48	2340248.27	25.3	G.B. FGR, B.C. & SHEET PILE ELEV.
⑥	2298930.80	2340187.69	25.3	G.B. FGR, B.C. & ARMOR ROCK ELEV.
⑦	2298938.71	2340179.58	25.0	COR. CONC PANEL
⑧	2298990.02	2340127.21	25.0	G.B. FGR, B.C. & SHEET PILE ELEV.
⑨	2298991.60	2340158.95	M.E.(±25.5)	FGR, B.C.
⑩	2298953.07	2340223.38	M.E.(±25.5)	FGR, B.C.

TABLE ABBREVIATIONS:

B.C.	= BASE COURSE	FGR	= FINISH GROUND
CONC	= CONCRETE	G.B.	= GRADE BREAK
COR	= CORNER	M.E.	= MATCH EXISTING

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: CRS CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE: SCALE IN FEET 0 20 40 FT.
DATE: 05/03/24

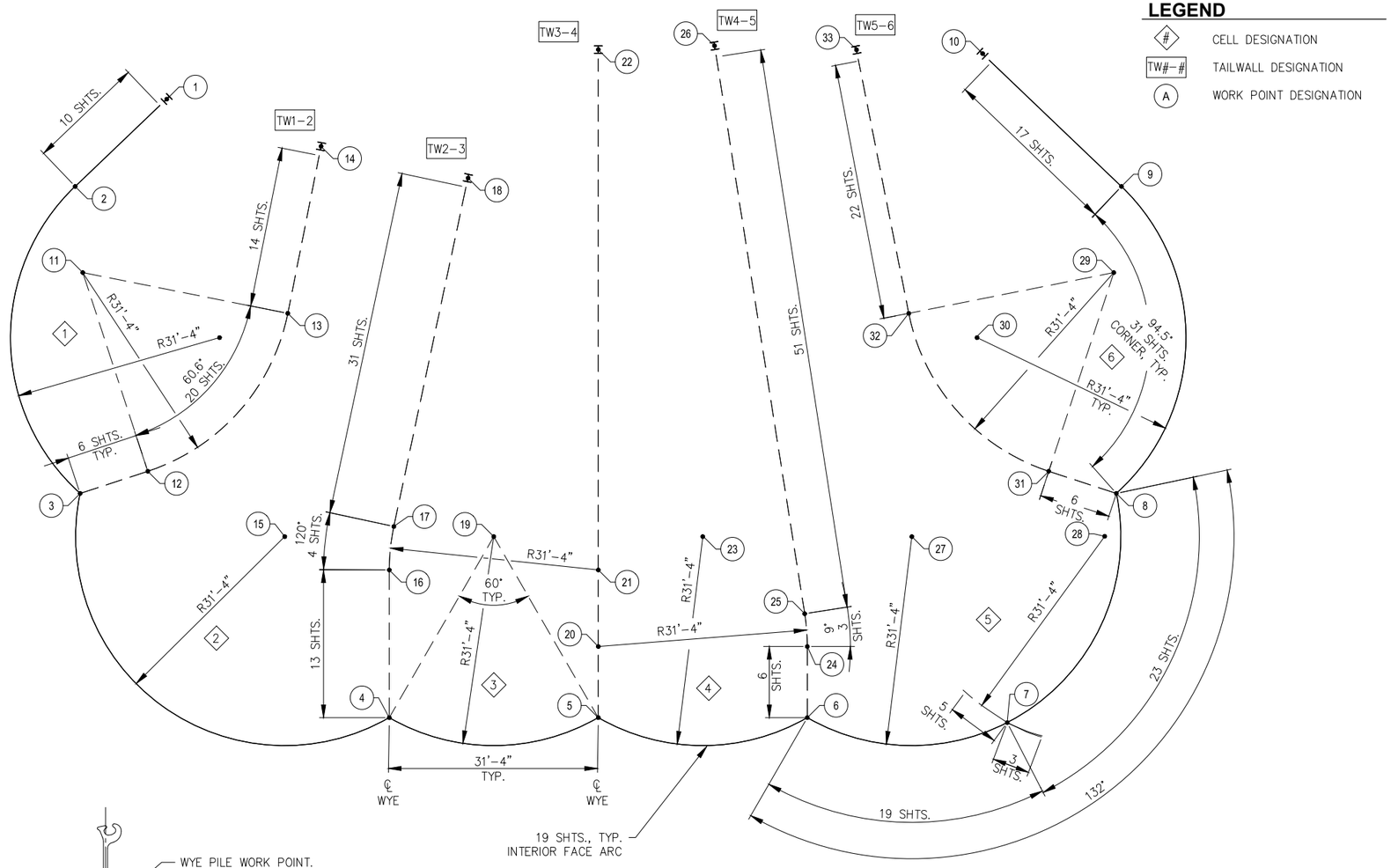
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: SITE LAYOUT & GRADING PLAN

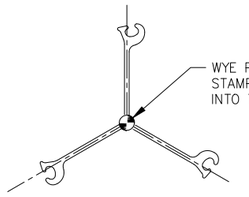
PND PROJECT NO.: 212049 C.A.N.: AECC250

C1.04



LEGEND

- ◇ # — CELL DESIGNATION
- TW#–# — TAILWALL DESIGNATION
- (A) — WORK POINT DESIGNATION



WYE PILE SURVEY POINT

SHEET PILE LAYOUT POINT SUMMARY TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
1	2298991.63	2340156.70	TAIL
2	2298991.88	2340137.74	PC
3	2298958.48	2340106.09	WYE
4	2298902.04	2340115.67	WYE
5	2298880.12	2340138.07	WYE
6	2298858.19	2340160.46	WYE
7	2298836.69	2340181.36	X
8	2298849.80	2340217.08	WYE
9	2298882.15	2340249.81	PC
10	2298910.93	2340248.88	TAIL
11	2298981.86	2340129.52	CR
12	2298953.76	2340115.65	PC
13	2298955.99	2340147.21	PC
14	2298970.39	2340168.28	TAIL
15	2298932.40	2340123.47	CR
16	2298917.86	2340131.16	PC
17	2298922.04	2340136.21	PC
18	2298951.57	2340180.71	TAIL
19	2298910.47	2340145.86	CR
20	2298887.74	2340145.52	CR
21	2298895.93	2340153.56	CR
22	2298951.67	2340208.13	TAIL
23	2298888.55	2340168.25	CR
24	2298865.81	2340167.91	PC
25	2298869.59	2340171.08	PC
26	2298939.88	2340220.98	TAIL
27	2298866.62	2340190.64	CR
28	2298846.43	2340211.33	CR
29	2298873.72	2340239.96	CR
30	2298881.10	2340218.49	CR
31	2298859.26	2340212.16	PC
32	2298890.86	2340213.72	PC
33	2298924.56	2340235.77	TAIL

TABLE ABBREVIATIONS:

CR	= CENTER OF RADIUS	TAIL	= CENTER OF TAIL PILE
PC	= POINT OF CURVATURE	X	= CENTER OF X-PILE
PT	= POINT OF TANGENCY	WYE	= CENTER OF WYE PILE

SHEET PILE LAYOUT PLAN

NOTE:

1. GEOMETRY OF TW5–6 SIMILAR TO TW1–2 EXCEPT NUMBER OF SHEET PILES AT END OF TAILWALL.
2. GEOMETRY OF END CELL 1 SIMILAR TO END CELL 6 EXCEPT NUMBER OF SHEETS NOTED AT END OF CELL.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

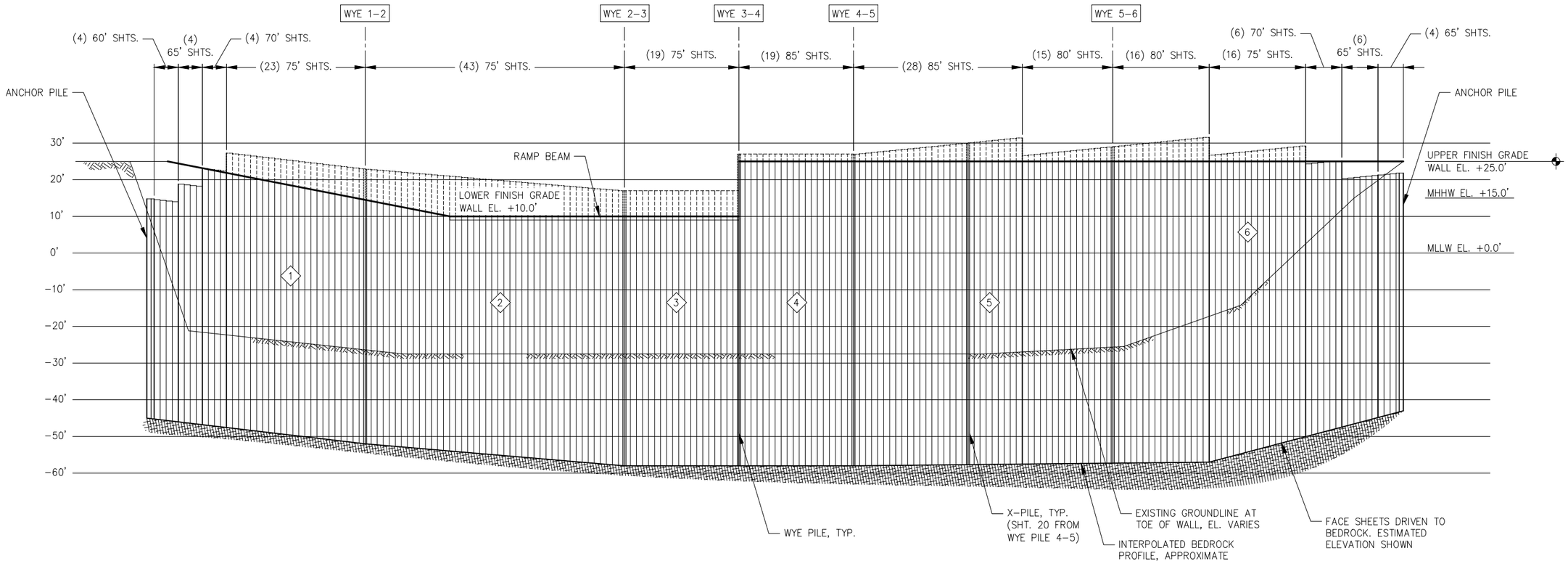
P N D ENGINEERS, INC.
9360 Glacier Highway Ste 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: RJ CHECKED: CRS
DRAWN: PJD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.

95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: SHEET PILE LAYOUT PLAN
PND PROJECT NO.: 212049 C.A.N.: AECC250
S2.01



SHEET PILE ROLL OUT ELEVATION

LEGEND

◇# CELL DESIGNATION

WYE #–# WYE DESIGNATION

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 15 30 FT.

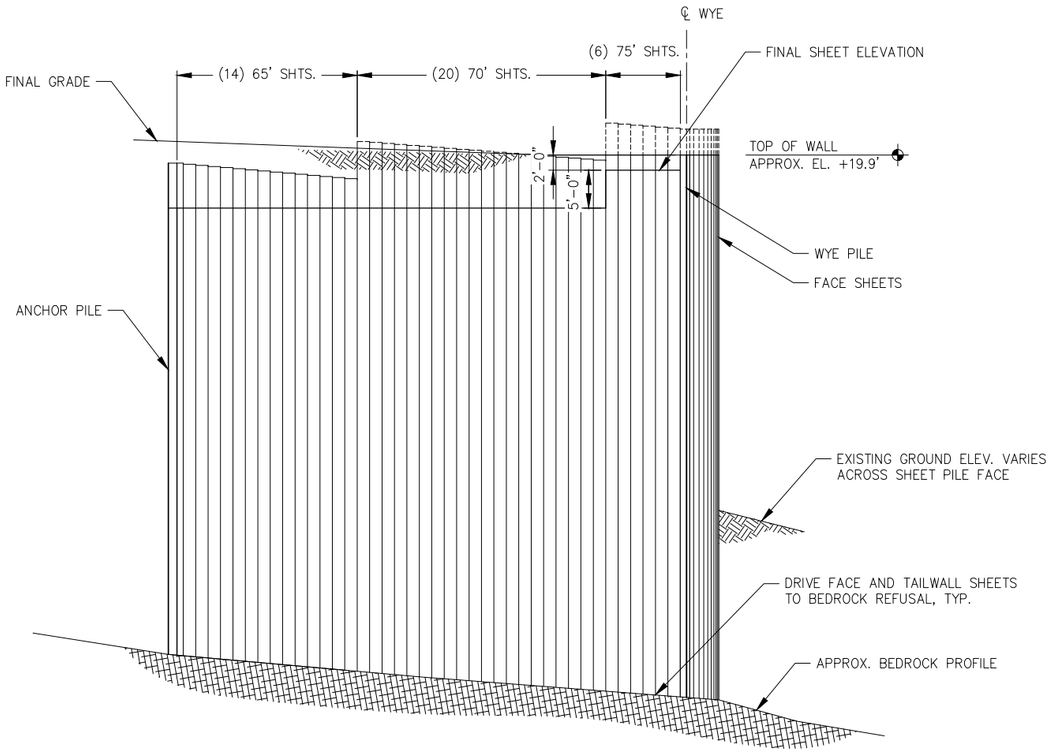
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: SHEET PILE ROLL OUT ELEVATION

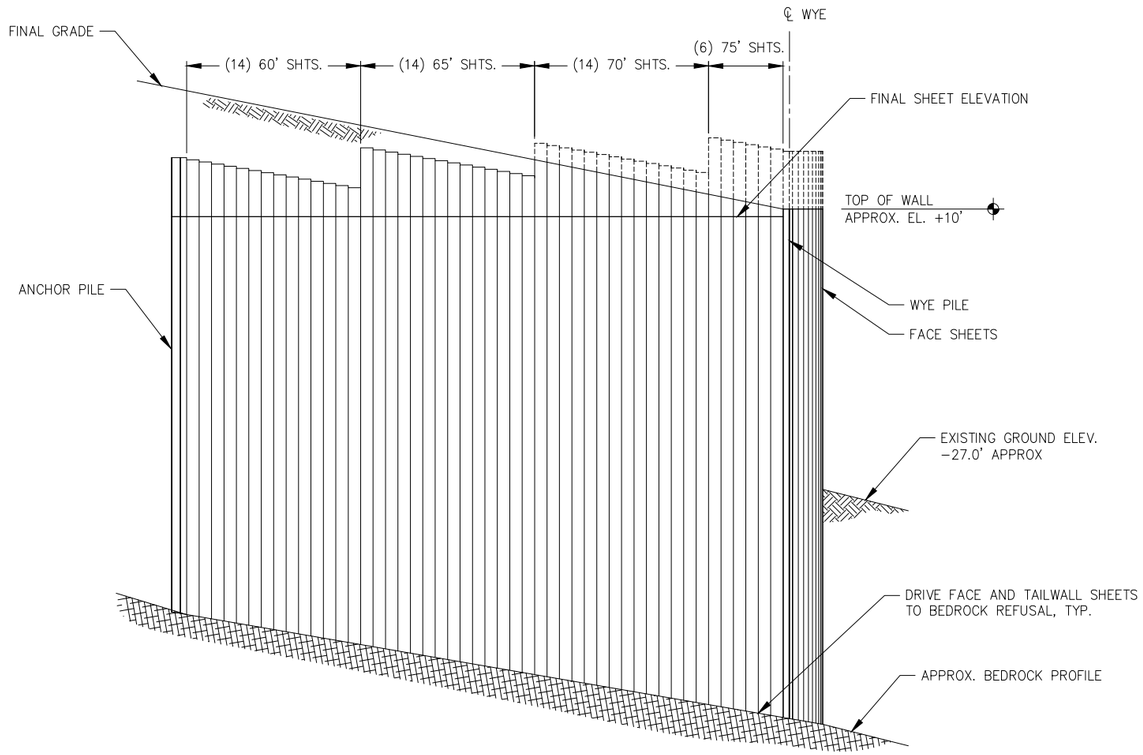
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.02



TAILWALL 1-2 SECTION

NOTES:
1. SHEET PILES SHOWN AT DRIVEN LENGTH. PILES EXTENSION ABOVE FINAL ELEVATION TO BE CUT-OFF.



TAILWALL 2-3 SECTION

NOTES:
1. SHEET PILES SHOWN AT DRIVEN LENGTH. PILES EXTENSION ABOVE FINAL ELEVATION TO BE CUT-OFF.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.

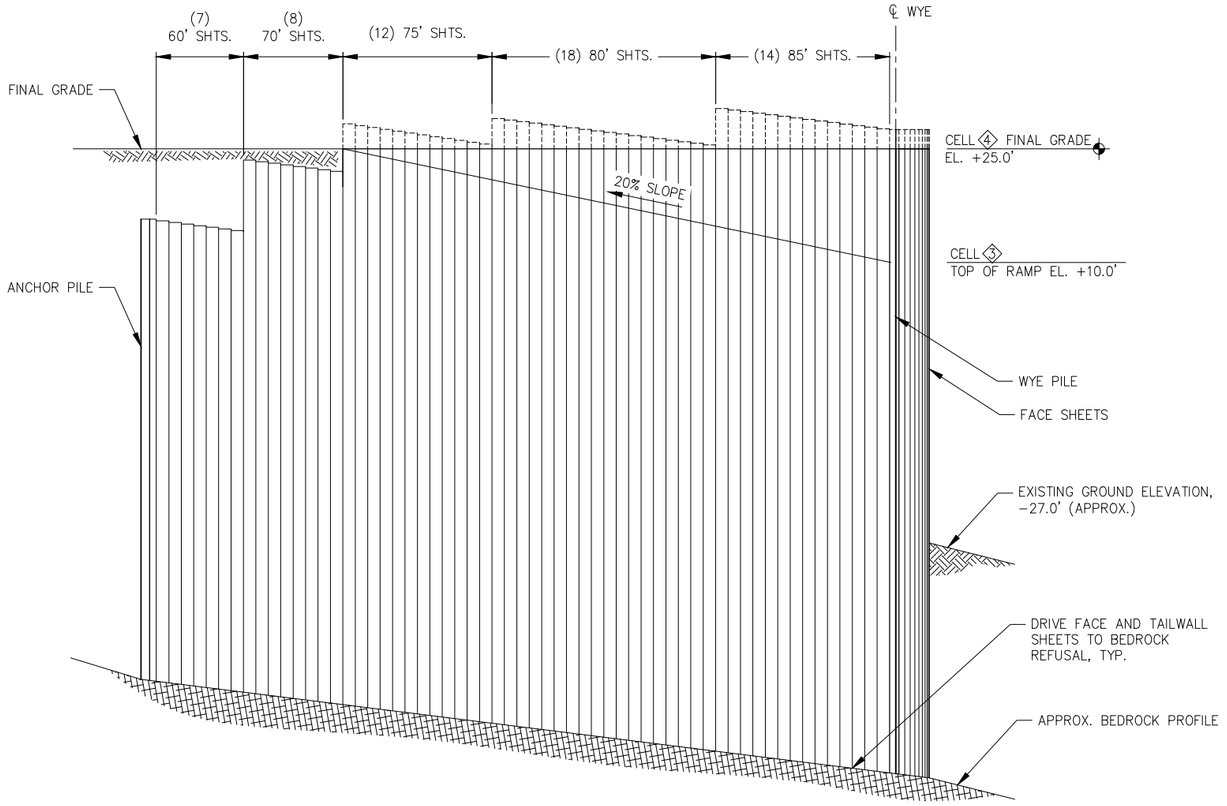
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
TAILWALL SECTIONS

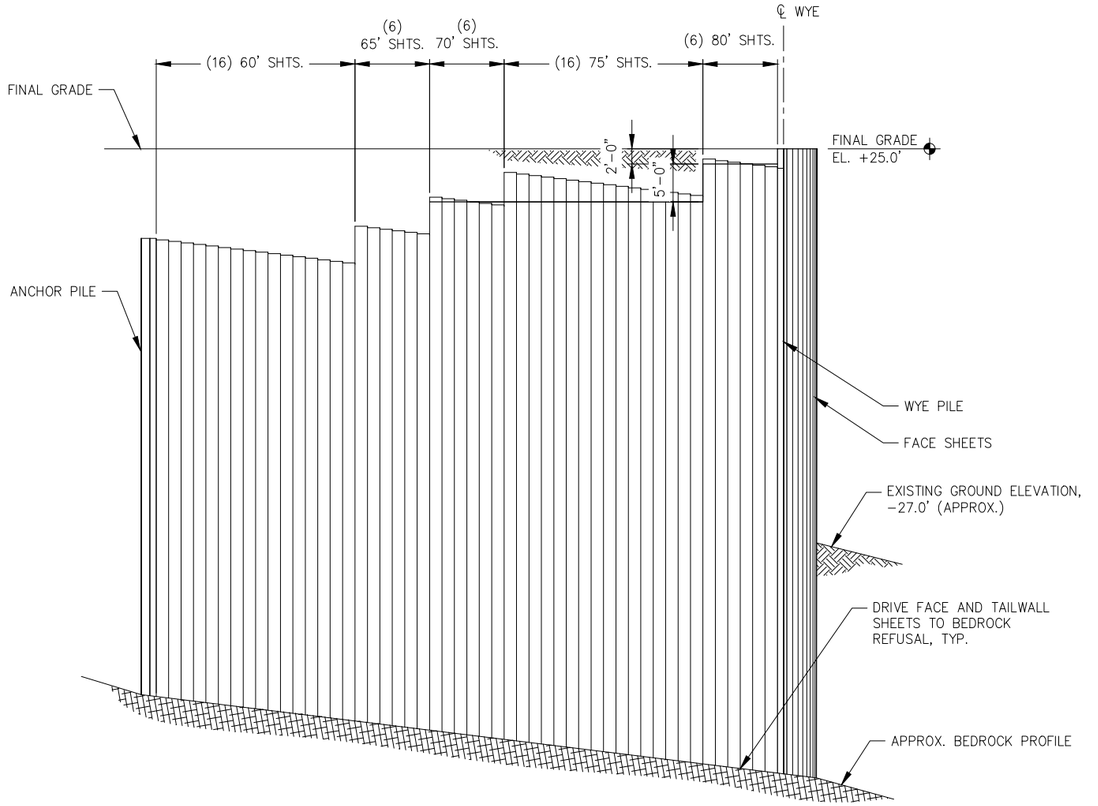
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.03



TAILWALL 3-4 SECTION

NOTES:
1. SHEET PILES SHOWN AT DRIVEN LENGTH. PILES EXTENSION ABOVE FINAL ELEVATION TO BE CUT-OFF.



TAILWALL 4-5 SECTION

NOTES:
1. SHEET PILES SHOWN AT DRIVEN LENGTH. PILES EXTENSION ABOVE FINAL ELEVATION TO BE CUT-OFF.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.

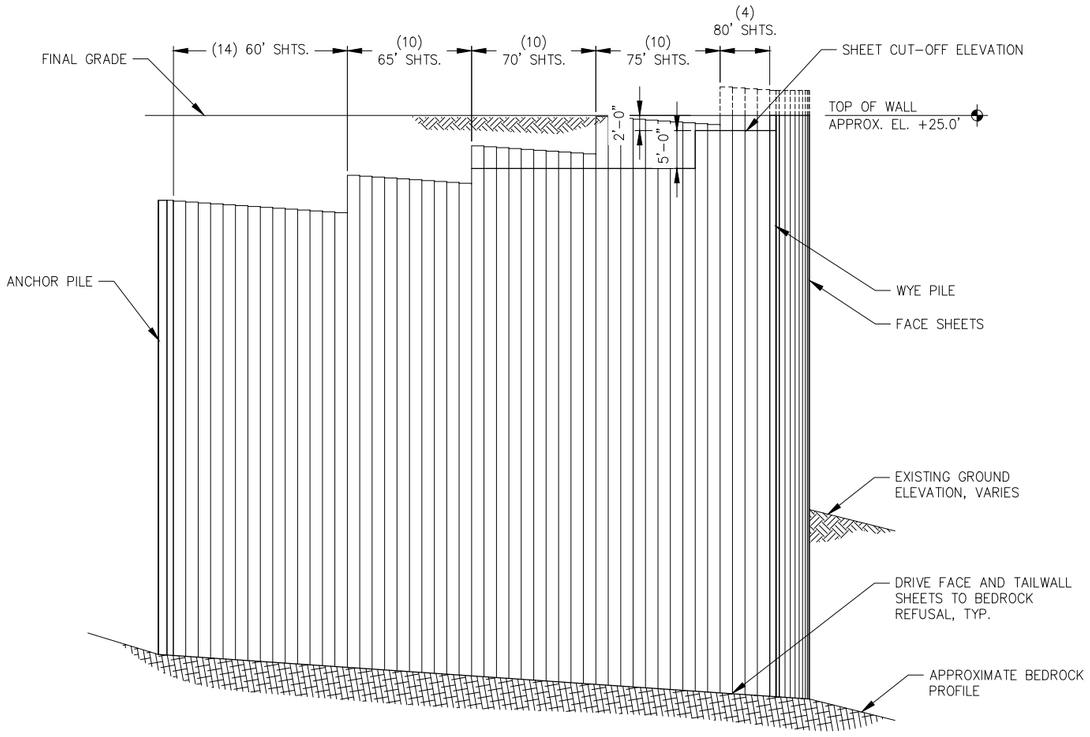
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: TAILWALL SECTIONS

PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.04



TAILWALL 5-6 SECTION

NOTES:
1. SHEET PILES SHOWN AT DRIVEN LENGTH. PILES EXTENSION ABOVE FINAL ELEVATION TO BE CUT-OFF.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.

95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

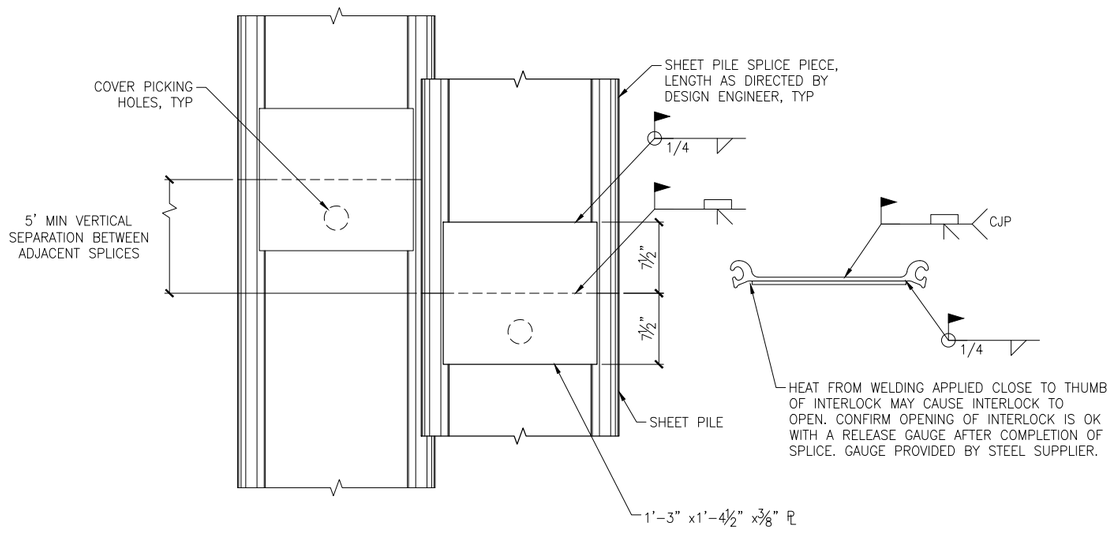
SHEET TITLE: TAILWALL SECTIONS
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.05

SHEET PILE MATERIAL TAKE OFF

MEMBER TYPE:		FACE SHEET – PS31						TAILWALL SHEET – PS27.5						WYE PILE (3/2 PS31)			X PILE (2 PS31)	ANCHOR PILE (1/2 PS31 + HP14x73)			
	SHEET LENGTH:	85	80	75	70	65	60	85	80	75	70	65	60	85	80	75	85	65	60	50	40
CELL OR TAILWALL DESIGNATION	1			23	4	4	4												1		
	1–2									6	20	14				1		1			
	2			43																	
	2–3									6	14	14	14			1		1			
	3			19																	
	3–4							14	18	12	4	4	7	1					1		
	4	19																			
	4–5								6	26	6	6	16	1					1		
	5	28	15														1				
	5–6								4	10	10	10	14		1				1		
	6		16	16	6	6	4		6									1			
	TOTAL QUANTITY	47	31	101	10	10	8	14	34	60	34	48	51	2	1	2		2	5	0	0

NOTES:
SHEET LENGTH TABULATED. IS FINAL SHEET LENGTH REQUIRED MAXIMUM SUPPLY LENGTH IS 70'. SHEETS GREATER THAN 70' WILL REQUIRE SPLICE PER DRIVEN SPLICE DETAIL AFTER FIRST SHEET SECTION HAS BEEN INSTALLED.



NOTES:
1. PILE SPLICES WILL BE AT LEAST 5' APART IN ELEVATION FROM ADJOINING PILE
2. ENDS OF PILE WILL BE SQUARE BEFORE SPLICING.
3. PILE INTERLOCKS WILL BE STRAIGHT AND FREE SLIDING
4. WELDERS WILL BE QUALIFIED ACCORDANCE TO AWS D1.1
5. SPLICES SHALL BE NO GREATER THAN 15' FROM THE TOP DESIGN ELEVATION.
6. PLATE WELDED ON ONE SIDE OF SHEET AND BUTT WELD ON THE OPPOSITE SIDE.
7. BUTT WELD WILL BE ON THE WEB ONLY, NO INTERLOCK WELDING.
8. REPAIR ALL COATING AS REQ'D

SHEET PILE SPLICE FOR DRIVEN SPLICES

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

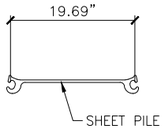
DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS
DATE: 05/03/24

95% DESIGN SUBMITTAL

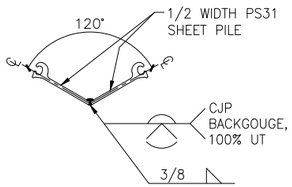
CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **SHEET PILE DETAILS**
PND PROJECT NO.: 212049 C.A.N.: AECC250

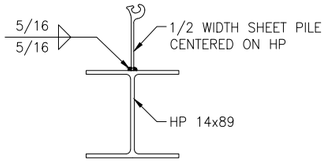
S2.06



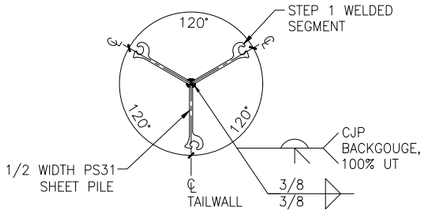
PS27.5/PS31
NTS



STEP 1

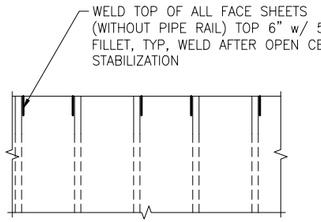


ANCHOR PILE SECTION
NTS

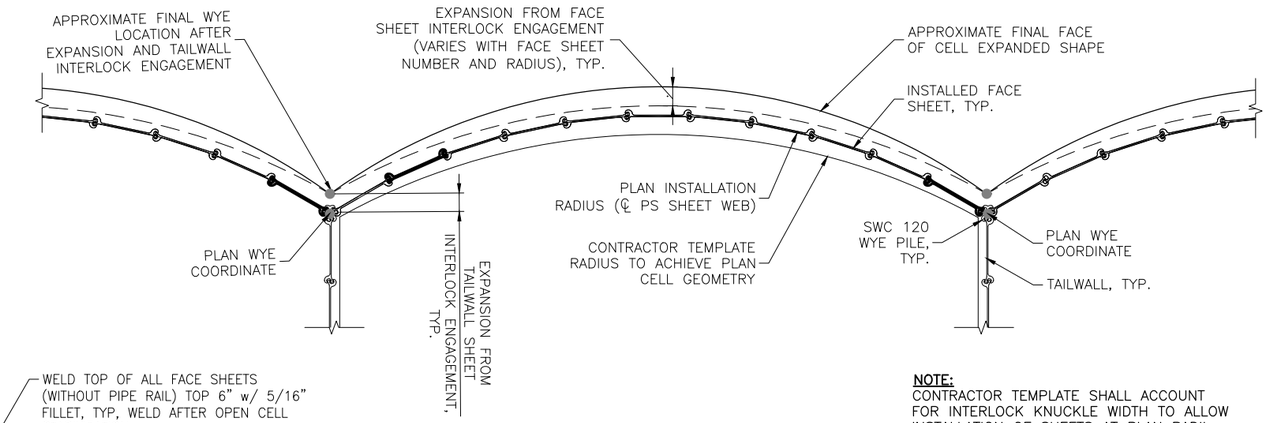


STEP 2

WELDED WYE FABRICATION
NTS



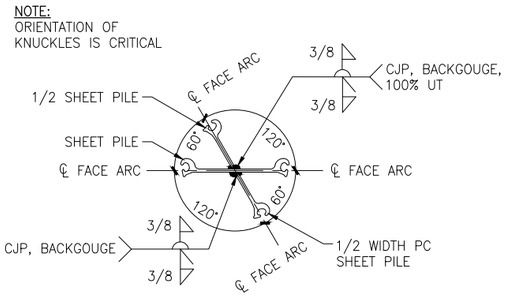
SHEET TOP WELD
NTS



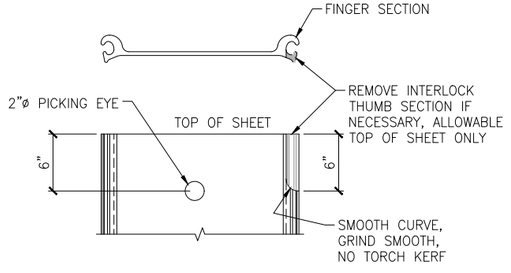
CELL DETAIL
NTS

NOTE:
CONTRACTOR TEMPLATE SHALL ACCOUNT FOR INTERLOCK KNUCKLE WIDTH TO ALLOW INSTALLATION OF SHEETS AT PLAN RADII AND AT PLAN WYE/ TAILWALL SPACING

NOTE:
ORIENTATION OF
KNUCKLES IS CRITICAL



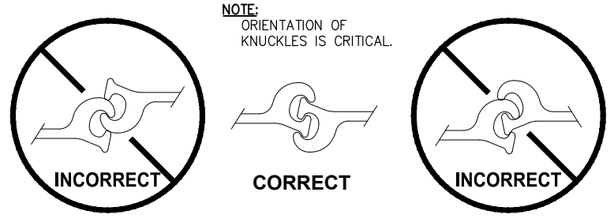
X- PILE SECTION
NTS



SHEET PICKING/SNIPE DETAIL
NTS

NOTE: CONTRACTOR TO SUPPLY ADDITION SHEET PILE LENGTH AS NEED TO ENSURE PICKING EYE IS REMOVED DURING SHEET CUT–OFF

NOTE:
ORIENTATION OF
KNUCKLES IS CRITICAL.



SHEET PILE INTERLOCK TYPICAL DETAIL
NTS

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS

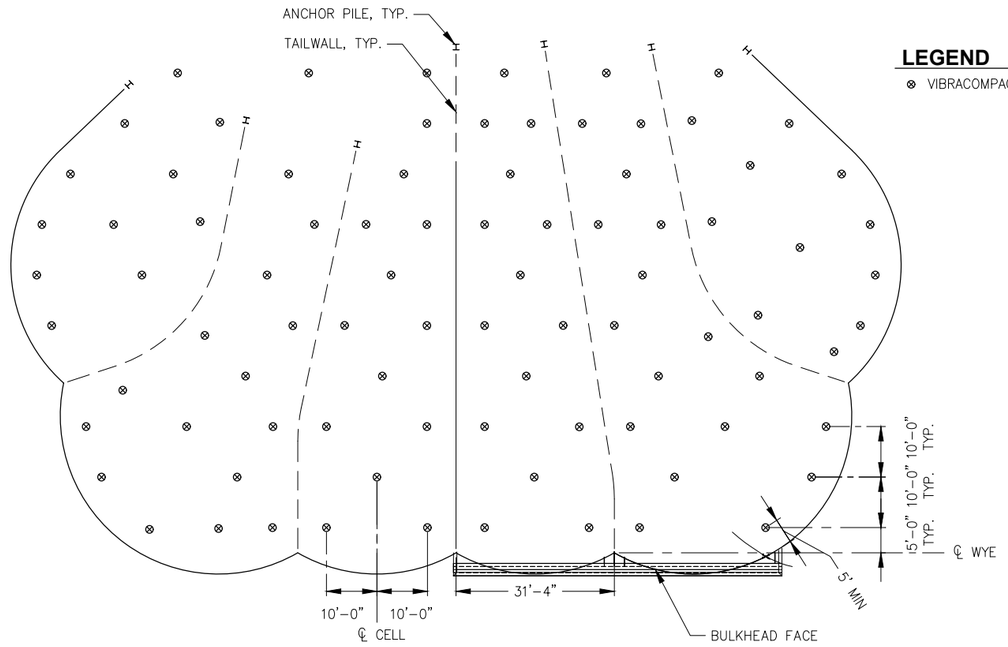
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
SHEET PILE DETAILS

PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.07

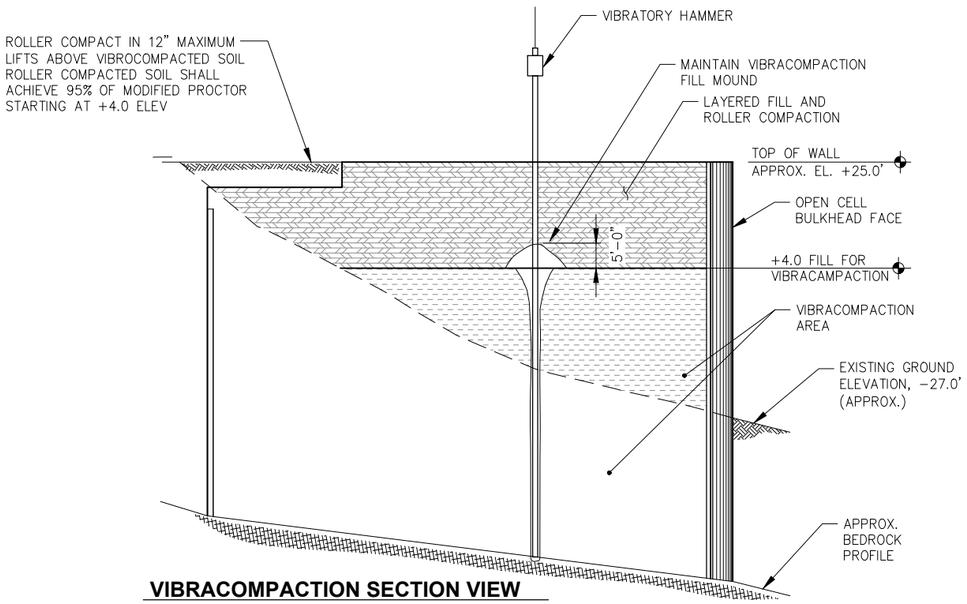


LEGEND

⊗ VIBRACOMPACTION LOCATION

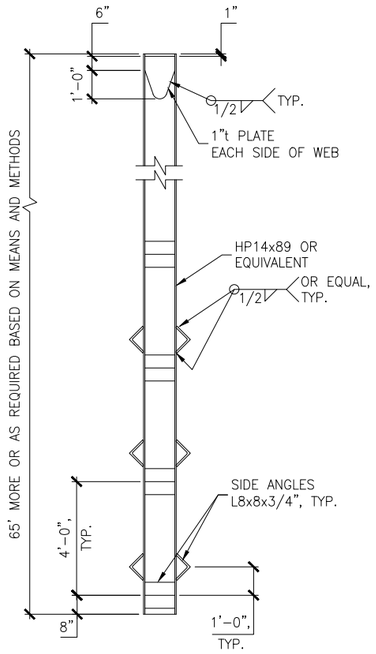
VIBRACOMPACTION PLAN

NOTE: PROBES SHALL LOCATED 5' MIN FROM FACE SHEETS AND 2½' MIN FROM TAILWALL SHEETS



VIBRACOMPACTION SECTION VIEW

NOT TO SCALE



VIBRACOMPACTION PROBE

NOT TO SCALE

FILL PLACEMENT & COMPACTION NOTES:

THE CONTRACTOR SHALL PROVIDE CONSISTENT FILLING AND COMPACTING PROCEDURES THAT MINIMIZE DIFFERENTIAL CELL MOVEMENT. AT A MINIMUM THE FOLLOWING REQUIREMENTS SHALL BE FOLLOWED.

1. FILL SHALL ONLY BE PLACED IN A CELL AFTER ALL SHEET PILES WITHIN A CELL HAVE BEEN INSTALLED TO TIP ELEVATION.
2. FILL ELEVATION BETWEEN ADJACENT CELLS SHALL NOT DIFFER BY MORE THAN 5 FEET AT ANY TIME DURING CONSTRUCTION.
3. FILL PLACEMENT SHALL BE PERFORMED UTILIZING MEANS & METHODS THAT MAINTAIN SAFE STABLE SUPPORT CONDITIONS FOR EQUIPMENT AND FIELD PERSONNEL.
4. WITHIN INTERTIDAL ZONE, DO NOT PLACE MORE MATERIAL THAN CAN BE COMPACTED WITHIN A TIDE CYCLE. MATERIAL MAY BE REINCORPORATED INTO WORK ONCE MOISTURE LEVELS RETURN TO LIMITS NECESSARY FOR EFFECTIVE COMPACTION.

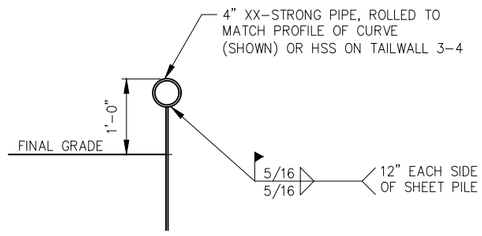
VIBRACOMPACTION PROCEDURE:

1. MOUND VIBRACOMPACTION FILL OVER PROBE AT EACH LOCATION AND MAINTAIN 5 FOOT HIGH MOUND OVER THE GRADE. VIBRACOMPACTION FILL IS ESTIMATED TO BE 5 CUBIC YARDS PER HOLE.
2. ADVANCE PROBE AT RESONANT FREQUENCY (APPROXIMATELY 15 Hz) TO FULL PROBE LENGTH OR REFUSAL. RESONANT FREQUENCY SHALL BE CONFIRMED BASED ON VISUAL OBSERVATION OF GROUND MOTION BY THE CONTRACTOR AND ENGINEER. REFUSAL SHALL BE CONSIDERED WHEN PROBE SLOWS TO 30 SECONDS PER FOOT FOR THE LAST FOOT.
3. RETRACT PROBE TO THE SURFACE.
4. ALLOW SOIL TO 'REST' FOR 2 MINUTES.
5. ADVANCE PROBE AS IN 2.
6. RETRACT PROBE TO ONE-HALF THE DISTANCE TO THE SURFACE.
7. ADVANCE PROBE AS IN 2.
8. REMOVE PROBE, FILL DEPRESSIONS WITH GRANULAR FILL AND PROOF ROLL SURFACE WITH A 10 TON MINIMUM VIBRATORY ROLLER.
9. REMOVE EXCESS VIBRACOMPACTION FILL AND RELOCATE MATERIAL TO NEXT PROBE.
10. LAYER COMPACT FILL ABOVE VIBRACOMPACTED FILLS.

THE VIBRATORY HAMMER UTILIZED FOR VIBRACOMPACTION SHALL HAVE A MINIMUM ECCENTRIC MOMENT OF 4,400 lb-in AND A MINIMUM SUSPENDED WEIGHT OF 13,600 LBS, SUCH AS ON APE 200, OR ENGINEER APPROVED EQUAL. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING VIBRATORY HAMMER FOR ACHIEVING REQUIRED PENETRATION. PROBE SHALL BE CLEARLY NUMBERED IN 5-FOOT INCREMENTS, TO ENABLE MEASUREMENT OF PENETRATION. EQUIPMENT SHALL PROVIDE VIBRATOR FREQUENCY AND ENERGY MONITORING GAUGES. PROBING LOCATIONS SHALL BE MARKED IN FIELD, TO THE NEAREST 2-FEET, AS SHOWN IN DIAGRAM.

LAYER PLACEMENT & COMPACTION PROCEDURE

1. LAYER PLACEMENT
   - A. PLACE FILL SUCH THAT THE LANDING EDGE AND SIDE SLOPES ARE WITHIN STABLE LIMITS UNDER THAT ANTICIPATED FILL AND EQUIPMENT LOADS.
   - B. DISTRIBUTE & GRADE FILL MATERIALS EVENLY IN LIFTS BEGINNING AT THE ANCHOR PILES.
   - C. FILL WITHIN & ABOVE INTERTIDAL ZONE SHALL BE PLACED IN LEVEL LIFTS NOT EXCEEDING 12 INCHES. MAXIMUM THICKNESS.
   - D. DO NOT IMPART EQUIPMENT LOADS INTO THE FACE SHEET PILES DURING FILL PLACEMENT.
2. LAYER COMPACTION
   - A. LAYER COMPACTION WILL BE REQUIRED AT +4 FOOT, MLLW.
   - B. COMPACTOR SHALL HAVE A MINIMUM 10 TON STATIC WEIGHT AND MINIMUM OF 6 PASSES PER LIFT TO A MINIMUM DENSITY OF 90 PERCENT PER A MODIFIED PROCTOR (ASTM D1557)
   - C. COMPACT LAYER FROM THE ANCHOR PILE AND WORK TOWARDS THE FACE.



A PIPE BULLRAIL SECTION

NTS

NOTE:
1. FIELD MEASURE PROFILE TO BULKHEAD, PRIOR TO ROLLING 4" XX-STRONG PIPE BULLRAIL.
2. LOCATE SPLICES OVER SUPPORTS, SPLICES SHALL BE COMPLETE JOINT PENETRATION WELDS.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 15 30 FT.

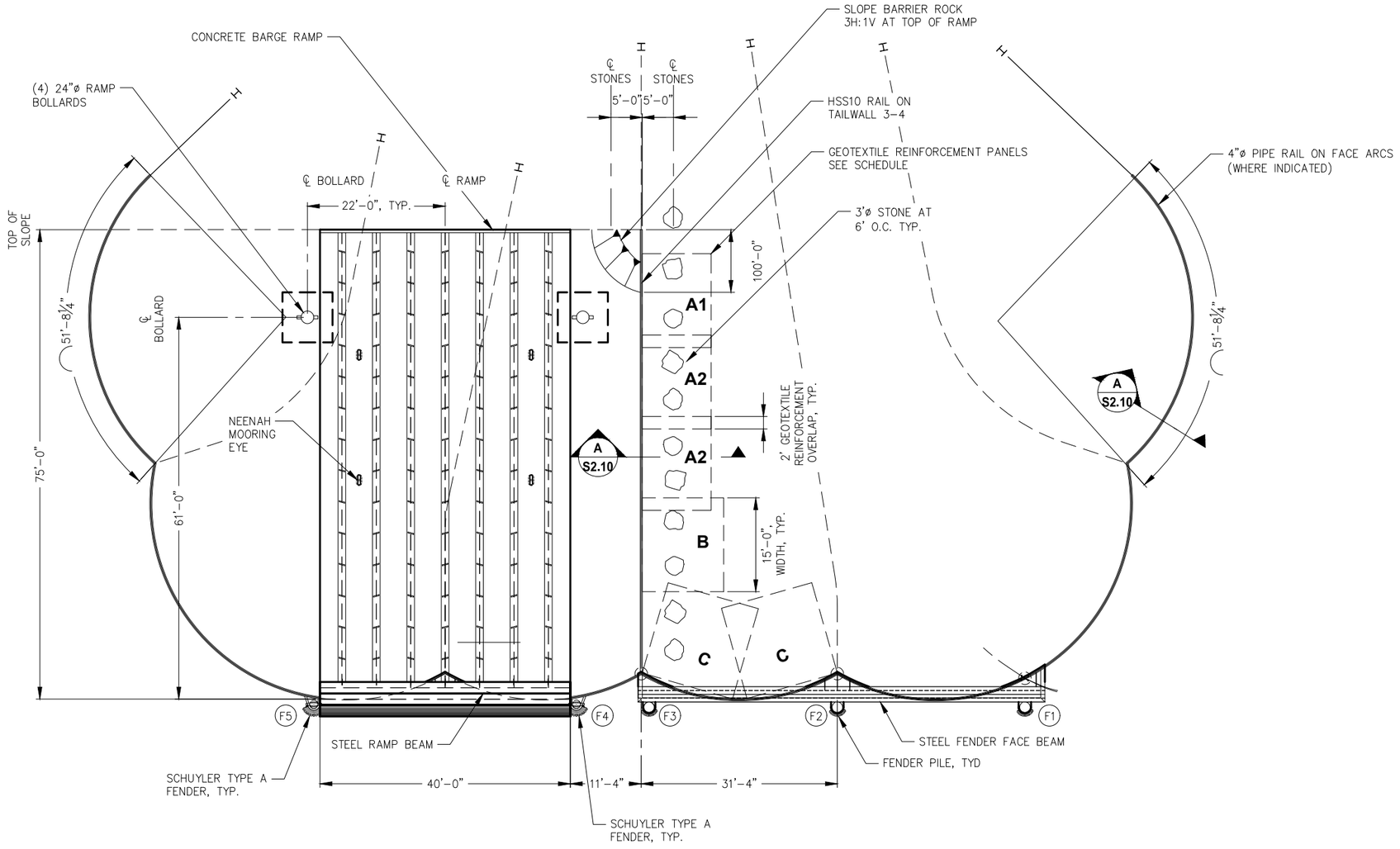
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: VIBRACOMPACTION AND BACKFILL PLAN

PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.08



DOCK FINISHING PLAN

NOTE: SEE CIVIL FOR GRADING PLAN

NOTES:

(F1) FENDER PILE DESIGNATION

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.
DATE: 05/03/24

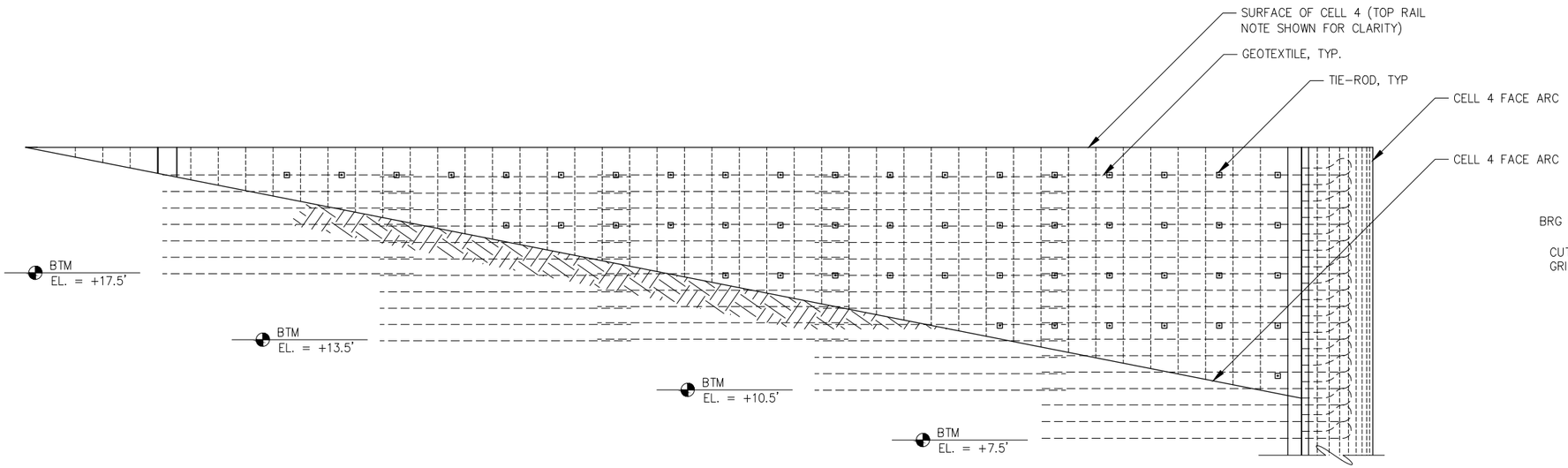
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

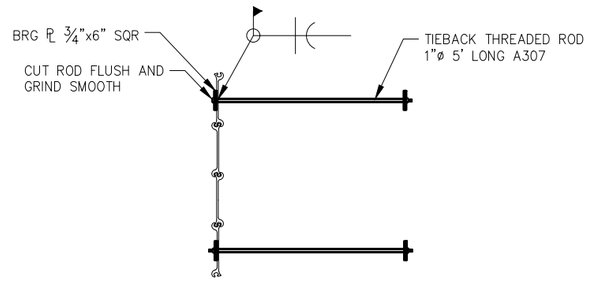
SHEET TITLE: DOCK FINISHING PLAN

PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.09



GEOTEXTILE ELEVATION

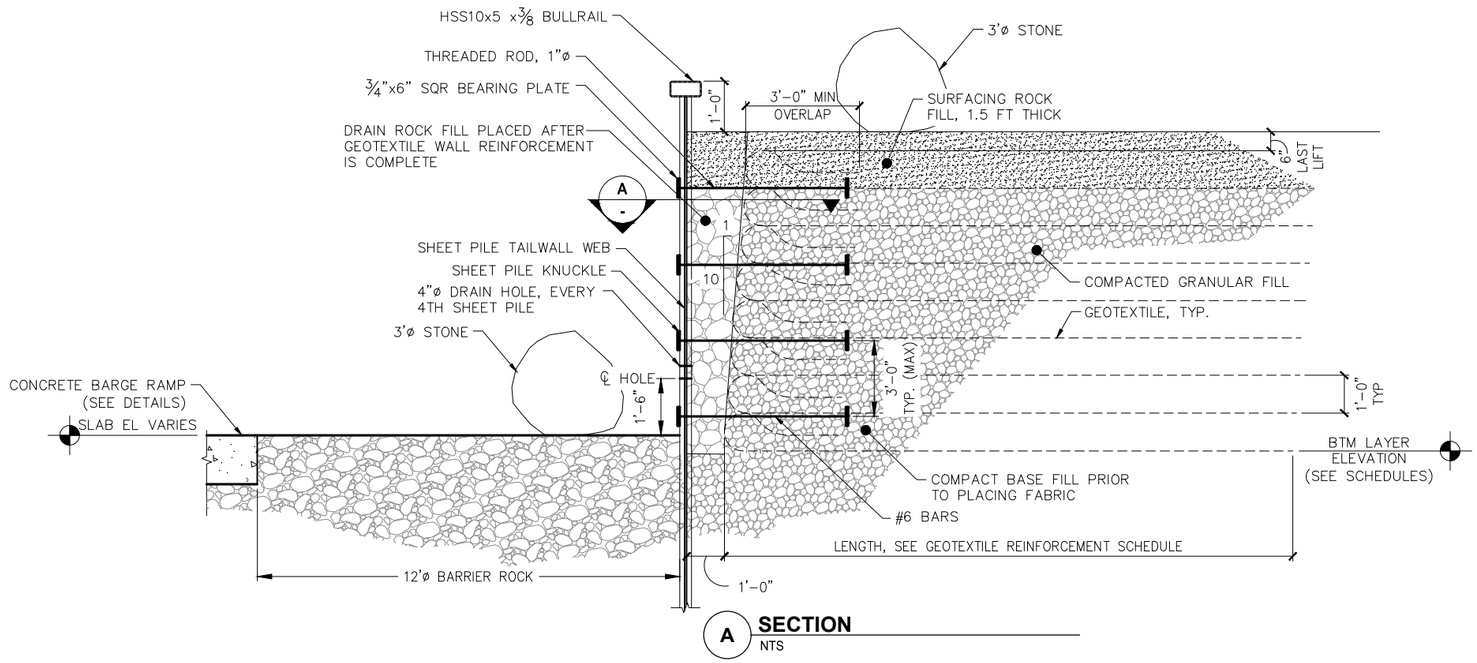


SECTION

GEOTEXTILE REINFORCEMENT SCHEDULE		
SECTION	LENGTH x 15' WIDE	BTM LAYER EL.
A 1/2	11'	+16.5'
A	11'	+13.5'
B	13'	+10.5'
C	15'	+7.5'

NOTE:

1. PLACE GEOTEXTILE IN CONTINUOUS LONGITUDINAL STRIPS IN THE DIRECTION PERPENDICULAR TO THE REINFORCED FACE. LAP EDGES 12" EACH SIDE.
2. PULL GEOTEXTILE TIGHT UNTIL SMOOTH & TAUT. ENSURE GEOTEXTILE IS FREE OF FOLDS OR WRINKLES.
3. PLACE & COMPACT TO ONE-HALF LIFT HEIGHT.
4. PLACE HEAD OF FILL NEAR REINFORCED FACE SLIGHTLY GREATER THAN LIFT HEIGHT.
5. FOLD GEOTEXTILE OVER HEAD, PULL GEOTEXTILE UNTIL TIGHT AND FREE OF FOLDS. AND WRINKLES.
6. PLACE AND COMPACT FILL TO FULL LIFT HEIGHT. PLACE FILL FROM RESTRAINED FACE AWAY.
7. PLACE TIE ROD BETWEEN GEOTEXTILE LAYERS.
8. REPEAT GEOTEXTILE INSTALLATION ABOVE TIE ROD.
9. PLACE A MINIMUM OF 3 GEOTEXTILE LAYERS WITH 3' OF COMPACTED GRANULAR FILL ABOVE TIE ROD
10. PLACE DRAIN ROCK BELOW TIE ROD UP TO TIE ROD ELEVATION.
11. REPEAT STEPS 1-10 UNTIL WALL IS COMPLETE.
12. INSTALL HSS BULLRAIL
13. PLACE SURFACING FILL AND COMPACT.



A SECTION

NTS

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: SCALE IN FEET 0 10 20 FT.

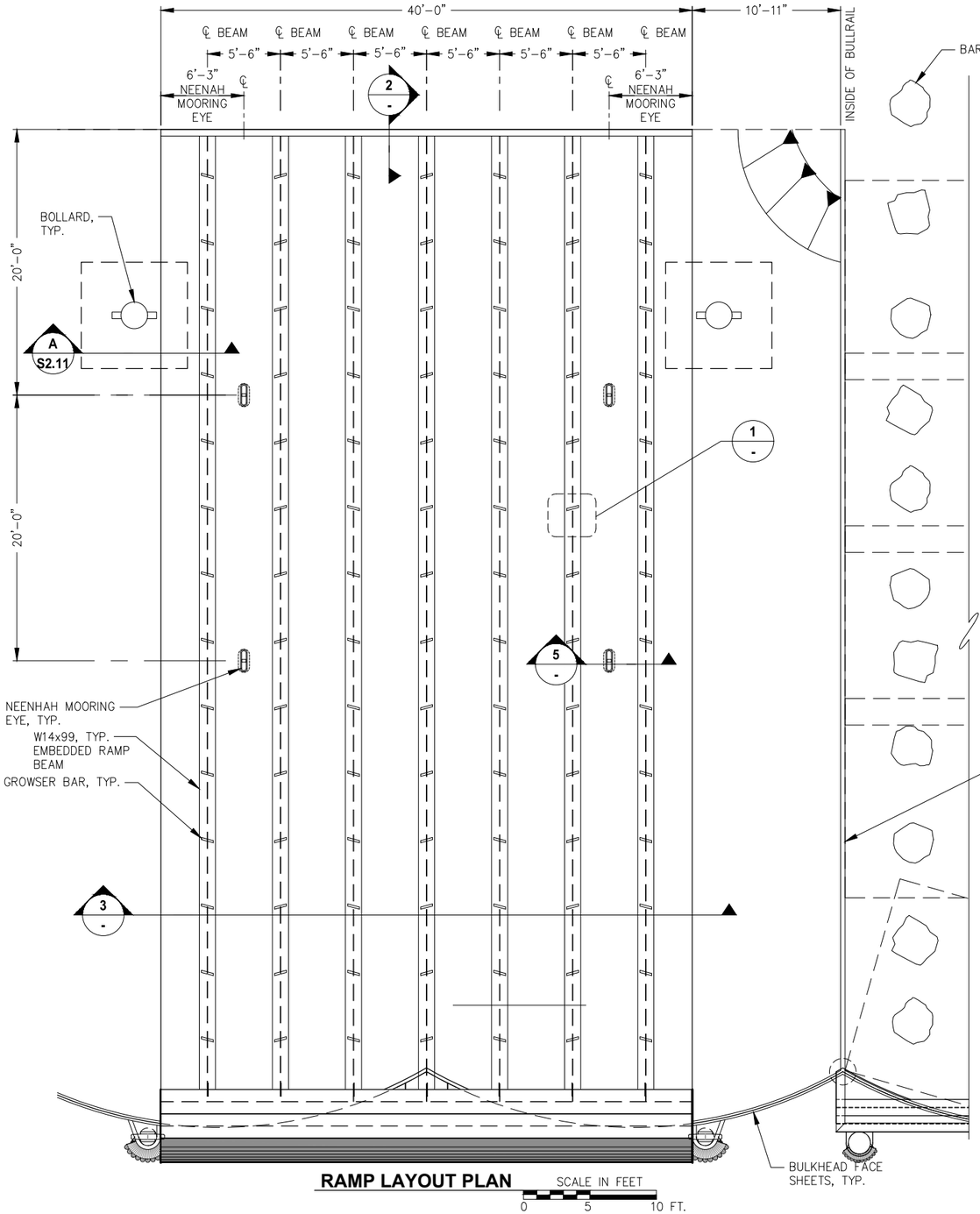
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: GEOTEXTILE ELEVATION SECTION AND DETAILS

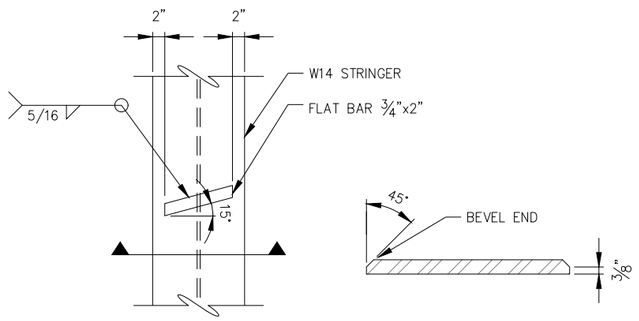
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.10

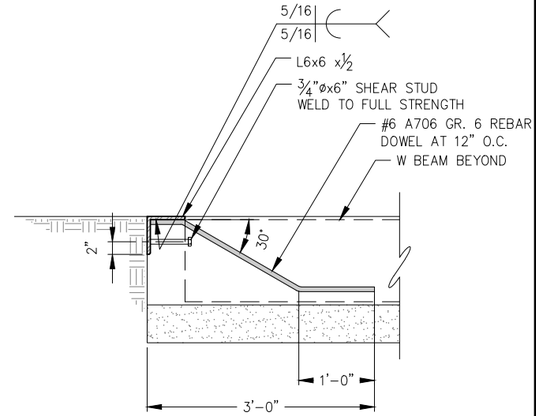


RAMP LAYOUT PLAN

SCALE IN FEET
0 5 10 FT.

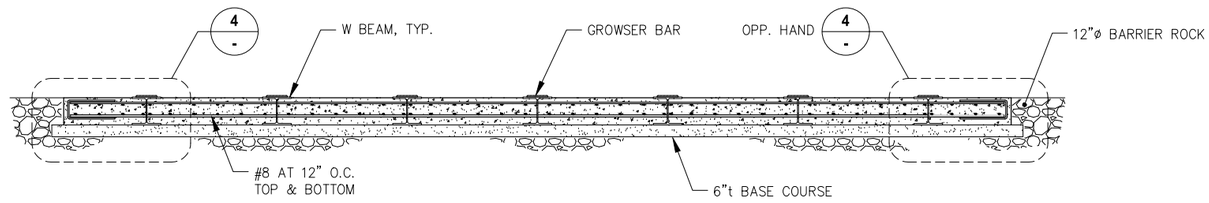


1 GROWSER BAR TYPICAL DETAIL

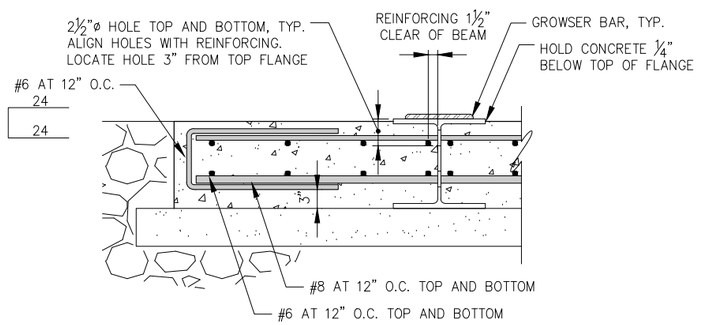


2 EMBED ANGLE, TYPICAL DETAIL

NOTE: REINFORCING NOT SHOWN FOR CLARITY. SEE 4/S2.09 FOR DETAILS

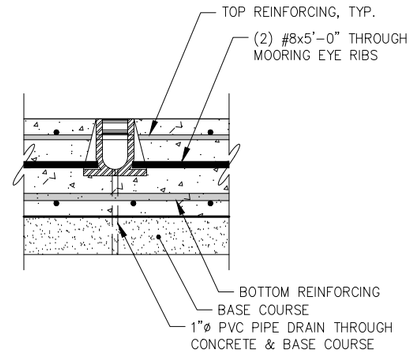


3 RAMP SECTION



4 TYPICAL RAMP EDGE

NOTE: ANGLE NOT SHOWN FOR TOP EDGE. SEE 2/S2.09 FOR DETAILS. OPPOSITE HAND SIMILAR.



5 NEENAH MOORING EYE DETAIL

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

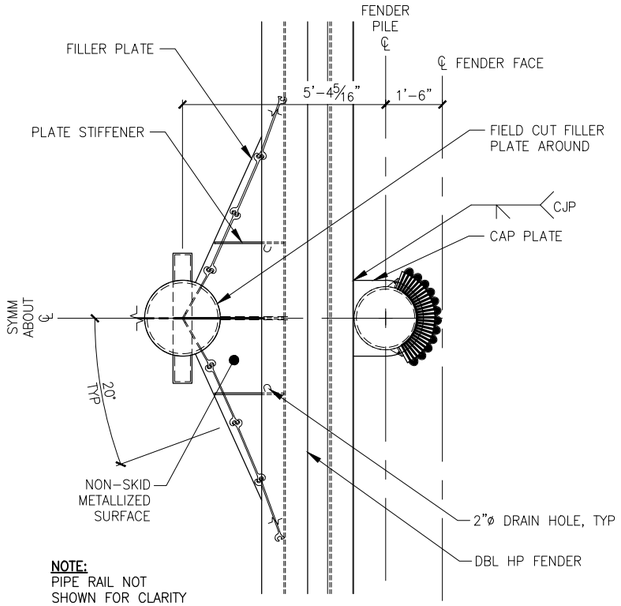
PND ENGINEERS, INC.
9360 Glacier Highway Ste 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: AS SHOWN

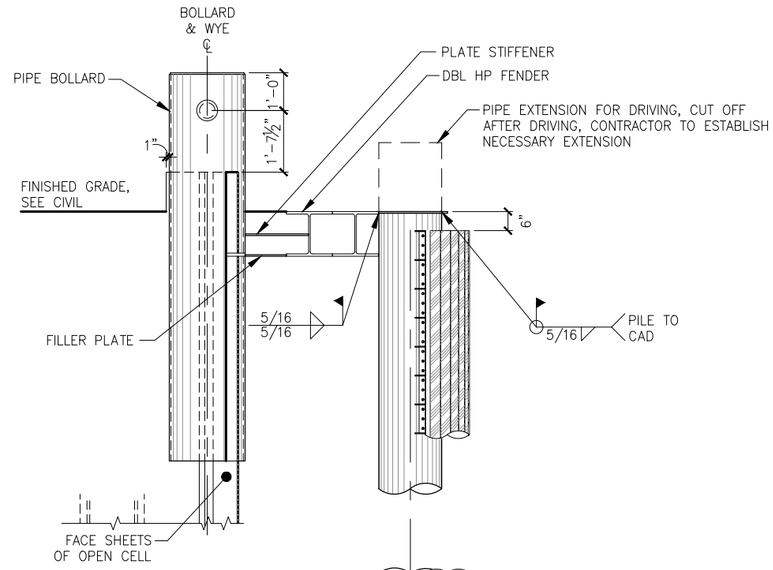
95% DESIGN SUBMITTAL
DATE: 05/03/24

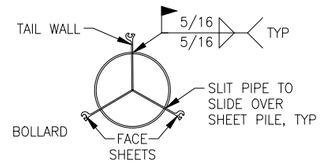
CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: RAMP LAYOUT PLAN AND DETAILS
PND PROJECT NO.: 212049 C.A.N.: AECC250
S2.11

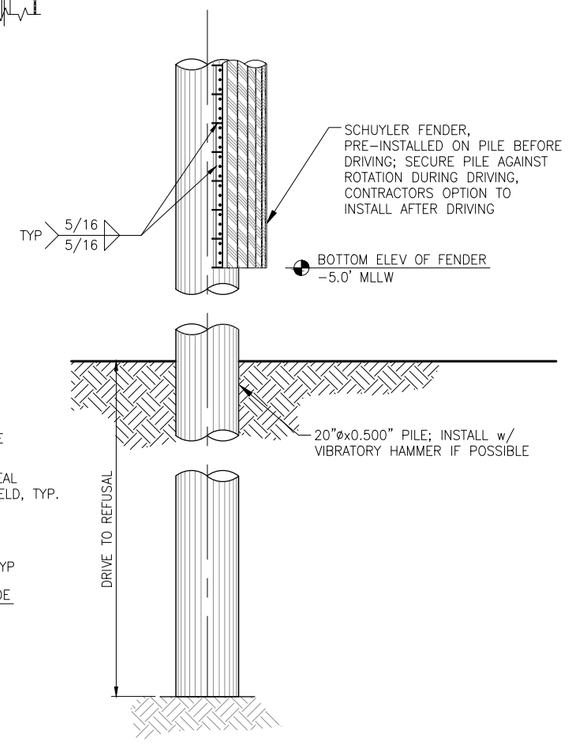


STANDARD FENDER DETAIL PLAN

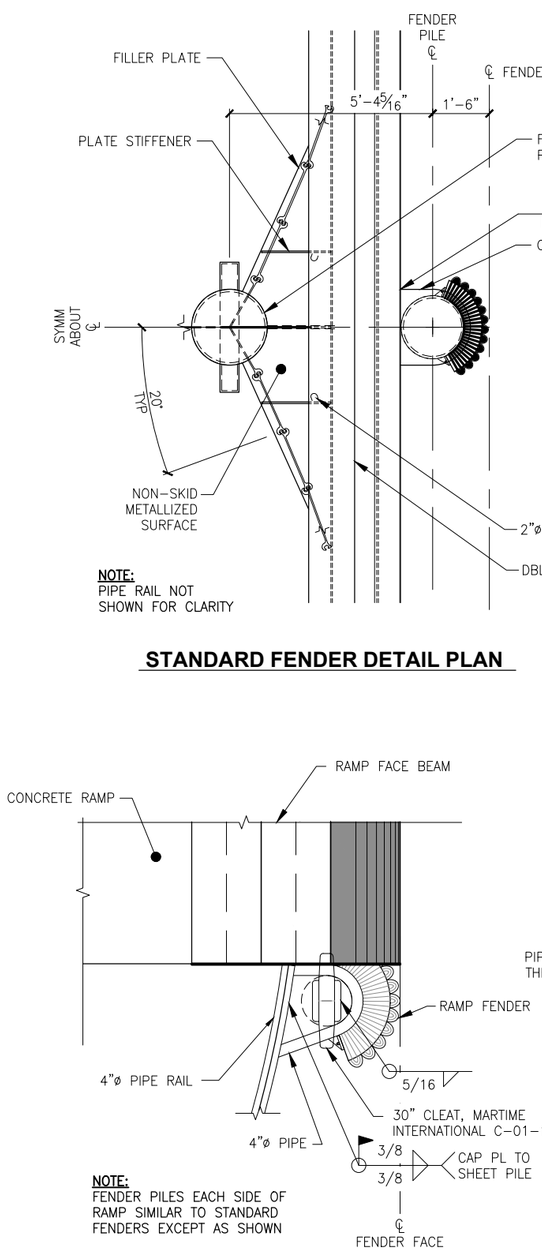




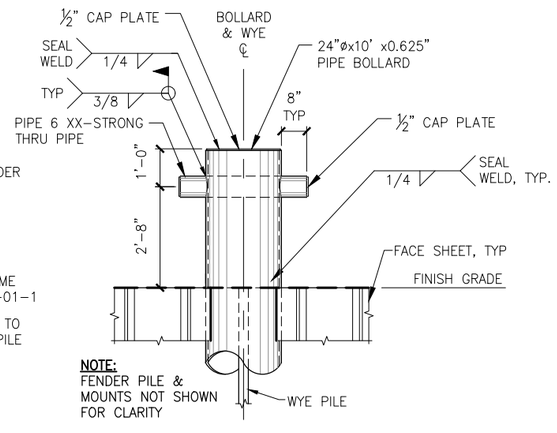
PLAN



FENDER ELEVATION

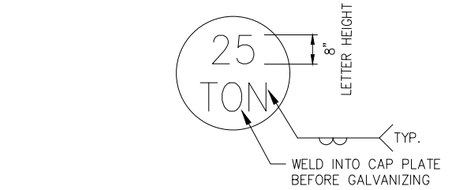


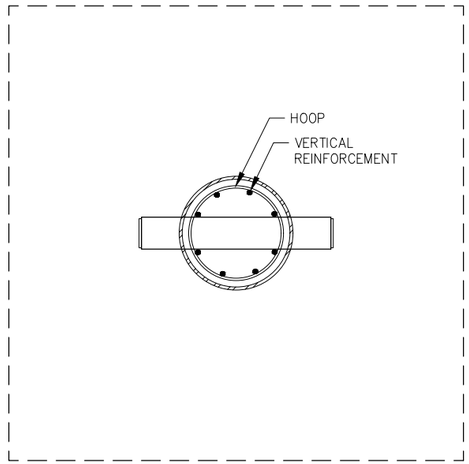
RAMP FENDER PLAN



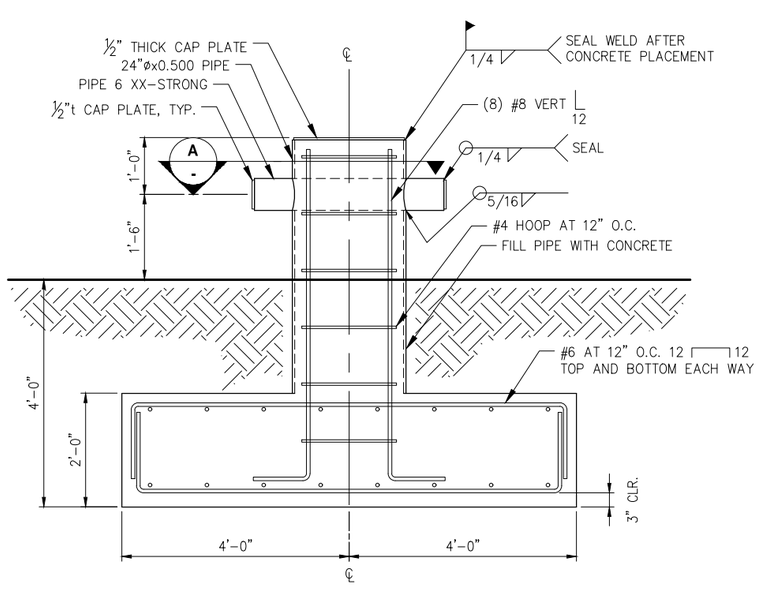
BOLLARD ELEVATION

NOTE: FACE BEAM NOT SHOWN FOR CLARITY





SECTION



A S2.09 25-TON RAMP BOLLARD

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS
DATE: 05/03/24

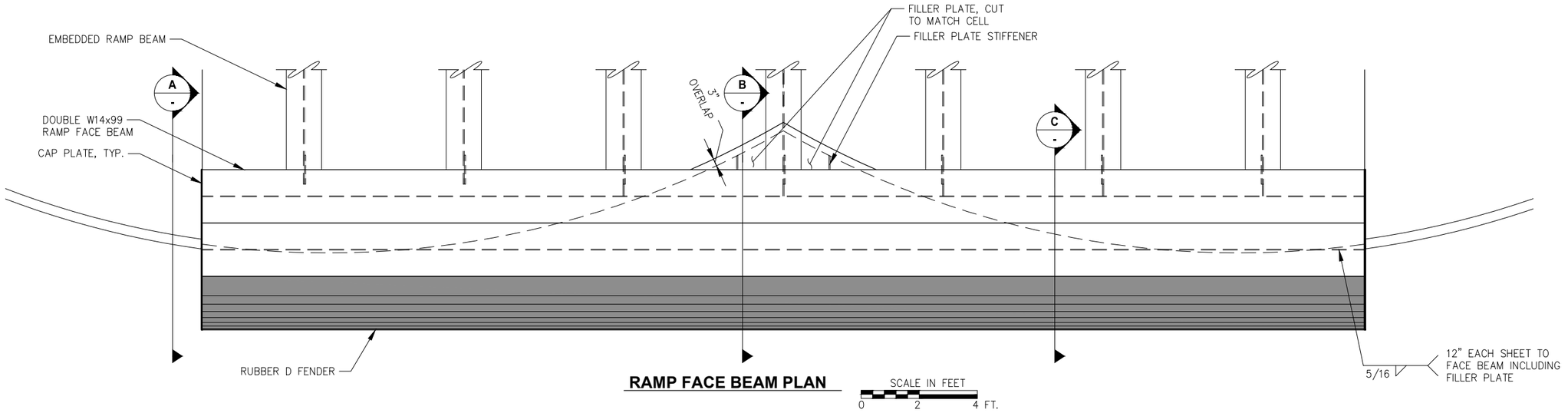
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: RAMP SECTIONS

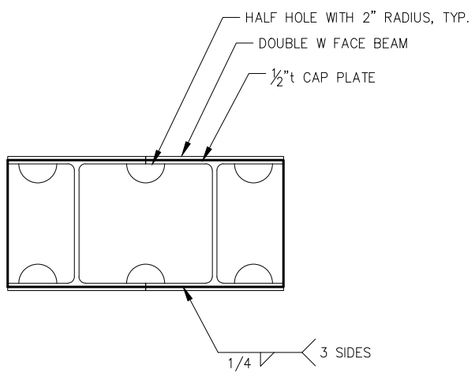
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.12



RAMP FACE BEAM PLAN

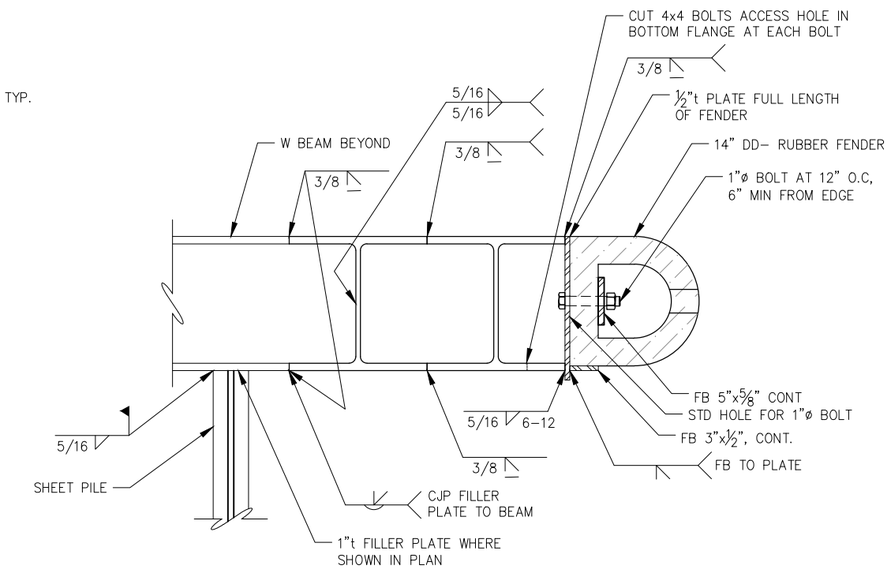
SCALE IN FEET
0 2 4 FT.



A FACE BEAM END CAP DETAIL

SCALE IN INCHES
0 6 12 IN

NOTE: RAMP BEAMS & D-RING FENDER NOT SHOWN FOR CLARITY



B TYPICAL FACE BEAM SECTION

SCALE IN INCHES
0 6 12 IN

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: AS SHOWN
DATE: 05/03/24

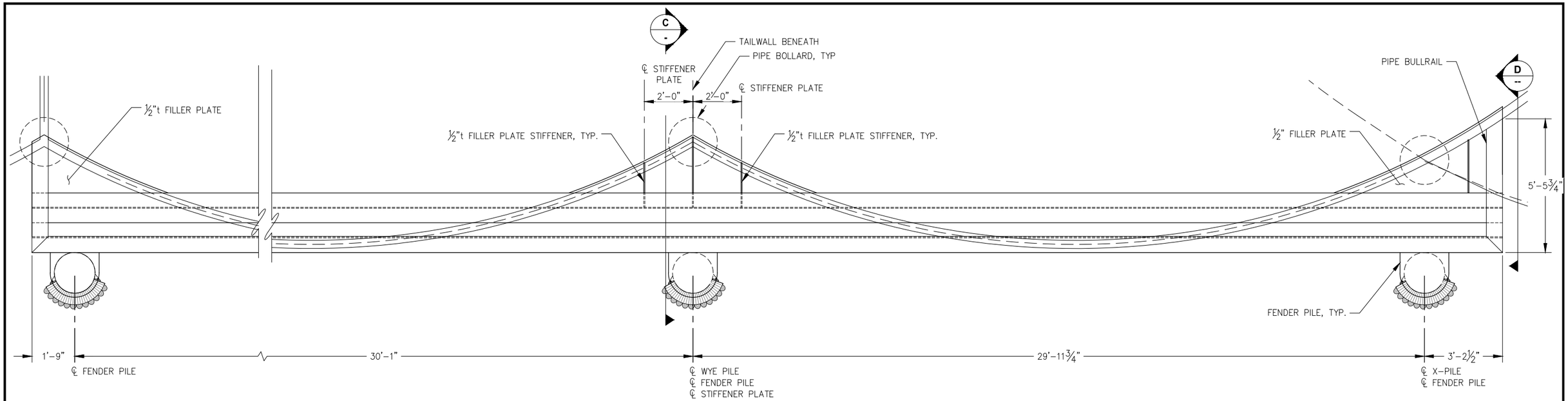
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
RAMP FACE BEAM PLAN AND DETAILS

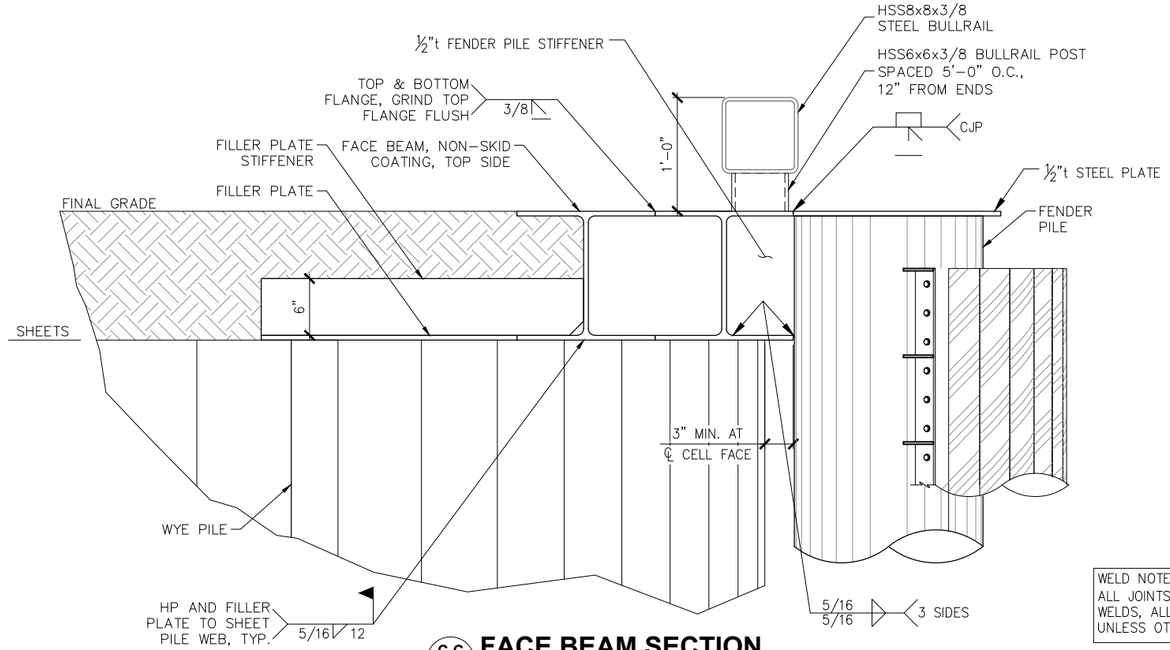
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.13



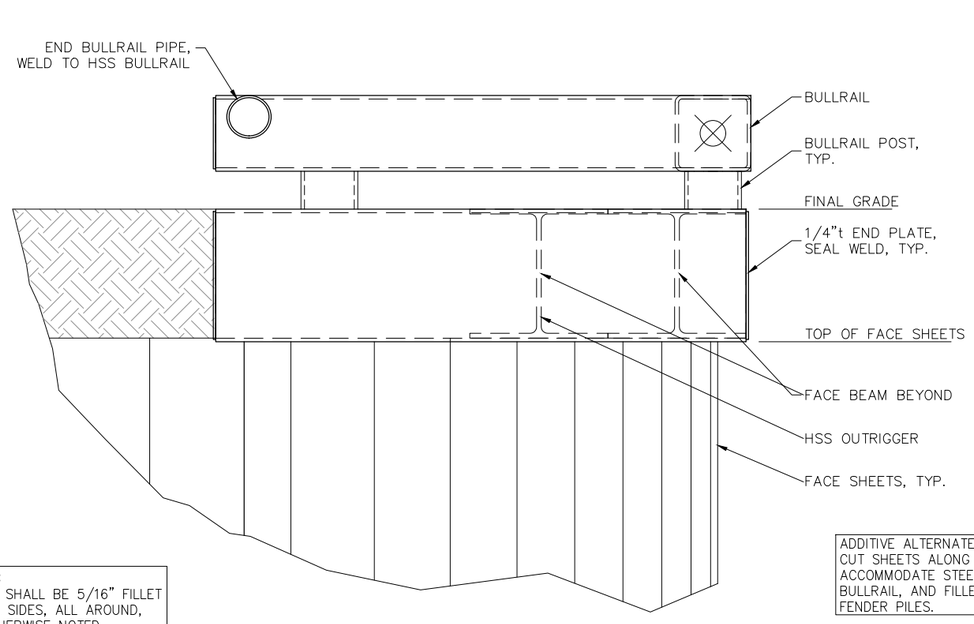
FACE BEAM PLAN

SCALE IN FEET
0 2 4 FT.



C-C
--
FACE BEAM SECTION
ADD. ALT. A

WELD NOTE:
ALL JOINTS SHALL BE 5/16" FILLET WELDS, ALL SIDES, ALL AROUND, UNLESS OTHERWISE NOTED.



D-D
--
SECTION
ADD. ALT. A

ADDITIVE ALTERNATE A:
CUT SHEETS ALONG FACE TO ACCOMMODATE STEEL FACE BEAM, BULLRAIL, AND FILLER PLATES. ADD FENDER PILES.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: AS SHOWN
DATE: 05/03/24

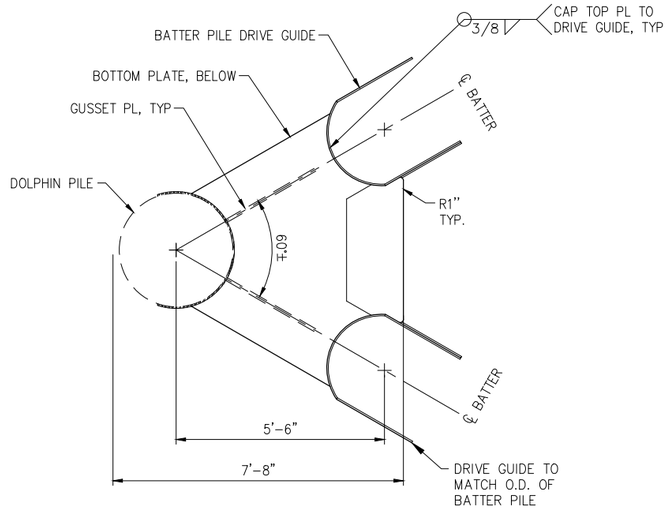
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
FENDER FACE BEAM PLAN AND DETAILS

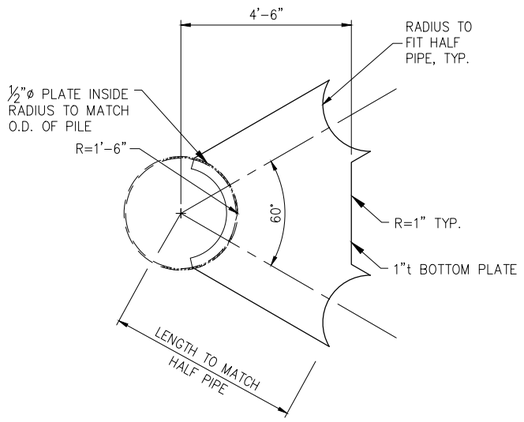
PND PROJECT NO.: 212049 C.A.N.: AECC250

S2.14



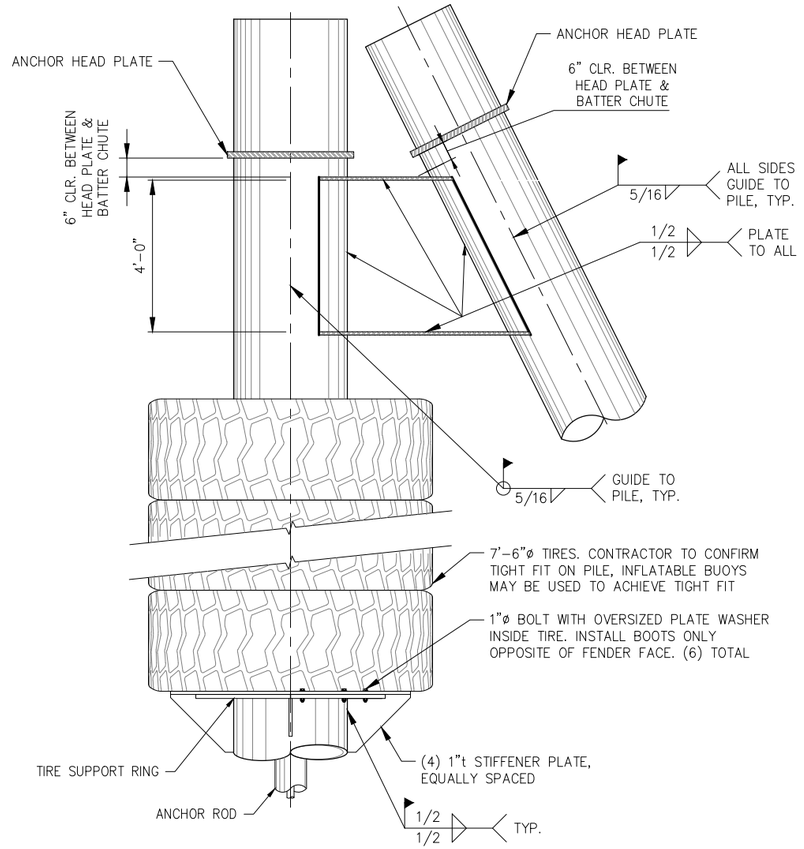
PREFAB. DOLPHIN CAP PLAN VIEW

NTS



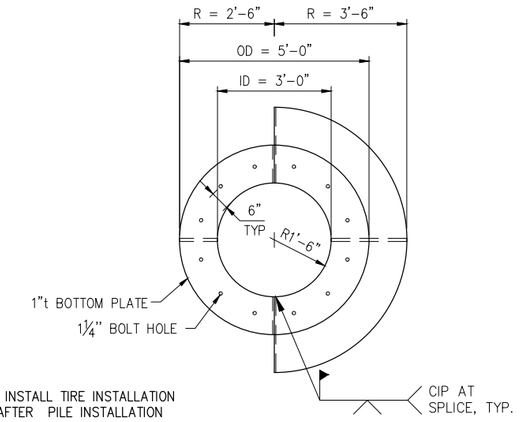
DOLPHIN CAP BOTTOM PLATE PLAN VIEW

NTS



DOLPHIN DETAIL

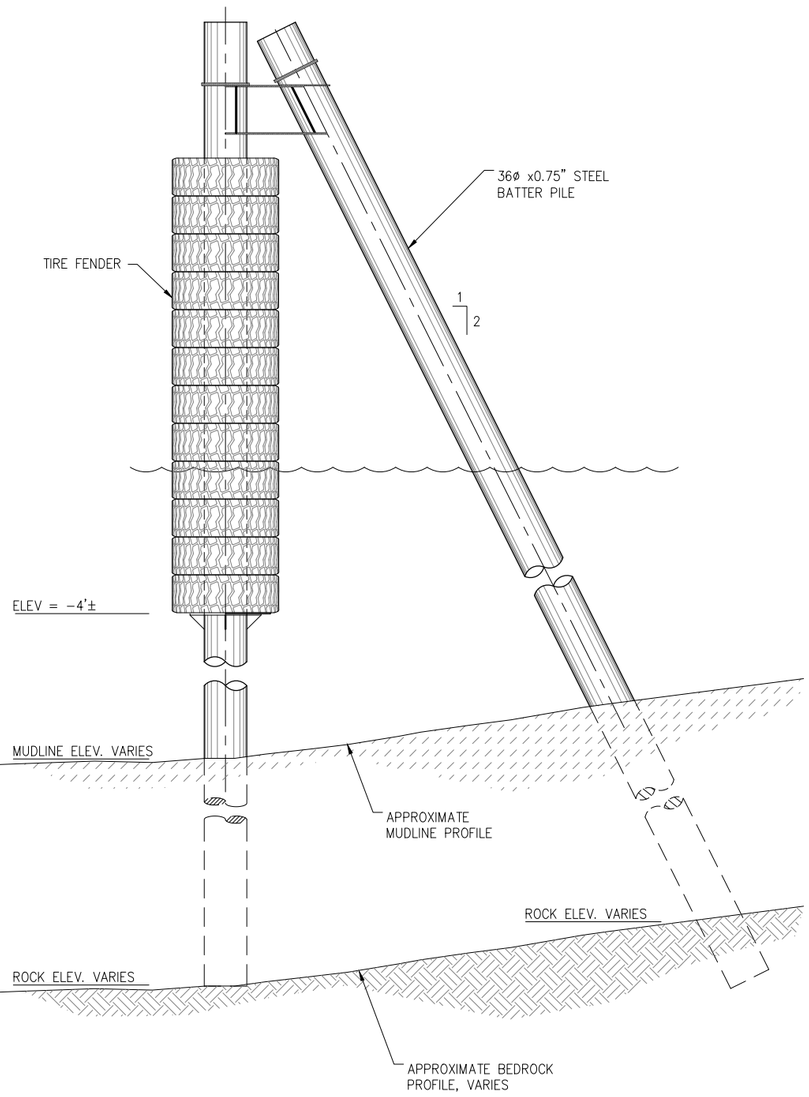
NTS



NOTE: INSTALL TIRE INSTALLATION RING AFTER PILE INSTALLATION

TIRE SUPPORT RING

NTS



DOLPHIN ELEVATION

NTS

NOTE: ROCK ANCHORS NOT SHOWN FOR CLARITY. SEE ROCK ANCHOR TABLE & DETAILS

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS
DATE: 05/03/24

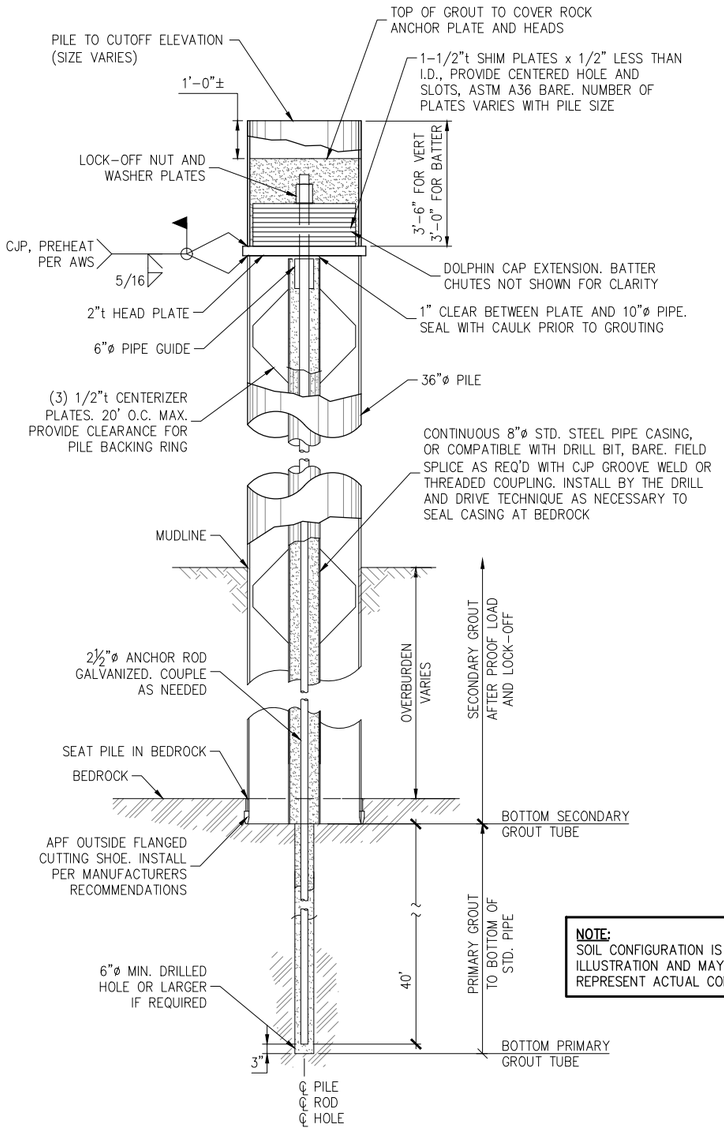
95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
DOLPHIN 1 & 2 SECTION AND DETAILS

PND PROJECT NO.: 212049 C.A.N.: AECC250

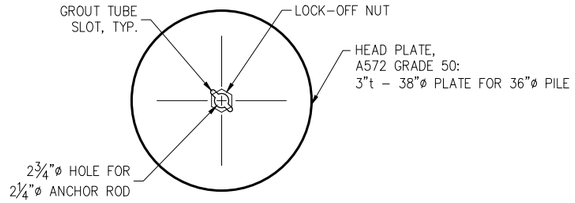
S3.01



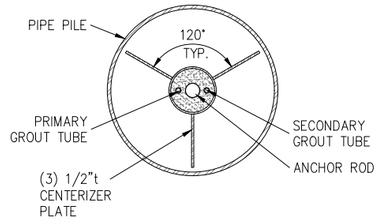
ROCK ANCHOR DETAIL

GROUT TUBES NOT SHOWN FOR CLARITY
PILE SHOWN VERTICAL FOR CLARITY

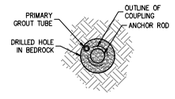
NOTE:
SOIL CONFIGURATION IS FOR ILLUSTRATION AND MAY NOT REPRESENT ACTUAL CONDITIONS.



HEAD PLATE



SECTION A-A



SECTION B-B

ROCK ANCHOR NOTES:

1. THE INTENT OF THE ROCK ANCHOR IS TO PROVIDE TENSION AND SHEAR CAPACITY TO A PILE WHERE THERE IS INSUFFICIENT OVERBURDEN TO ATTAIN THE PILE TENSION AND SHEAR CAPACITY LISTED.
2. GROUT CEMENT SHALL BE TYPE II AND HAVE A MINIMUM 28-DAY UNCONFINED COMPRESSION STRENGTH OF 6,000 PSI. GROUT MAY BE NEAT OR HAVE AGGREGATE.
3. PRIMARY GROUT SHALL HAVE REQUIRED COMPRESSIVE CAPACITY OF 3,000 PSI MIN. PRIOR TO STRESSING ANCHOR ROD.
4. PRIOR TO SECONDARY GROUT PLACEMENT THE 2½"Ø ANCHOR ROD SHALL BE PROOF LOADED TO 600 KIPS AND HELD ONE HOUR. REMOVE LOAD. RELOAD TO 545 KIPS AND LOCK OFF. PLACE SECONDARY GROUT.
5. ALL HEAD PLATES SHALL BE 100% UT TESTED BY STRAIGHT METHOD PER AWS D1.1. ANY DISCONTINUITY FOUND SHALL BE CONSIDERED REJECTABLE AND THAT PORTION OF PLATE SHALL NOT BE USED IN HEAD PLATES.
6. NUMBER AND DIMENSION OF SHIM PLATES SHALL BE AS FOLLOWS:
   36"ø PILES: (9) 34"ø
7. HEAD PLATES MAY BE BARE AND HOT-STICK GALVANIZED OR SPRAY-METALIZED AFTER INSTALLATION.
8. WITH ENGINEERS APPROVAL CONTRACTOR MAY PROVIDE ALTERNATE METHOD FOR CENTRALIZING PIPE CASING.

PILE SCHEDULE

LOCATION		SIZE	PILE TIP	TEST LOAD	LOCK OFF LOAD	MUDLINE ELEV. MLLW (FT)	ESTIMATE ROCK ELEV. MLLW (FT)	SUPPLY LENGTH (FT)	COMPRESSION TENSION (KIP)	PILE LOAD (KIP)
DOLPHIN 1	1 VERT	36"ø x 0.75"	OPEN / RA	620	545	-35	-65	120	–	–
	1A BATT	30"ø x 0.75"	OPEN	–	–	-32	-62	140	–	–
	1B BATT	30"ø x 0.75"	OPEN	–	–	-38	-72	140	–	–
DOLPHIN 2	2 VERT	36"ø x 0.75"	OPEN / RA	620	545	-26	-56	110	–	–
	2A BATT	30"ø x 0.75"	OPEN / RA	620	545	-20	-50	120	–	–
	2B BATT	30"ø x 0.75"	OPEN / RA	620	545	-20	-50	120	–	–
DOLPHIN 3	3 VERT	36"ø x 0.75"	OPEN / RA	620	545	-24	-54	110	–	–
	3A BATT	30"ø x 0.75"	OPEN / RA	620	545	-18	-48	120	–	–
	3B BATT	30"ø x 0.75"	OPEN / RA	620	545	-18	-48	120	–	–
FENDER	1F	20"ø x 0.500"	OPEN	–	–	-20	-57	100	–	–
	2F	20"ø x 0.500"	OPEN	–	–	-27	-57	100	–	–
	3F	20"ø x 0.500"	OPEN	–	–	-27	-57	100	–	–
	4F	16"ø x 0.500"	OPEN	–	–	-27	-57	100	–	–
	5F	16"ø x 10.500"	OPEN	–	–	-27	-57	100	–	–

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS

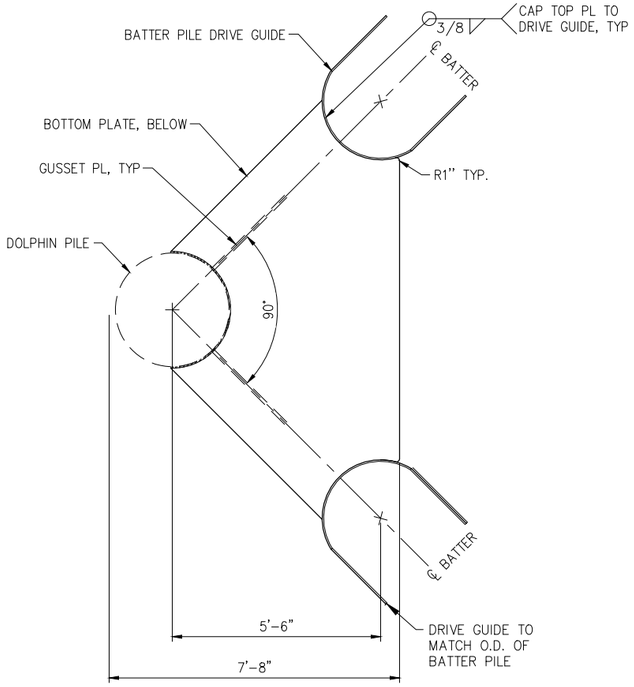
95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **ROCK ANCHOR DETAILS**

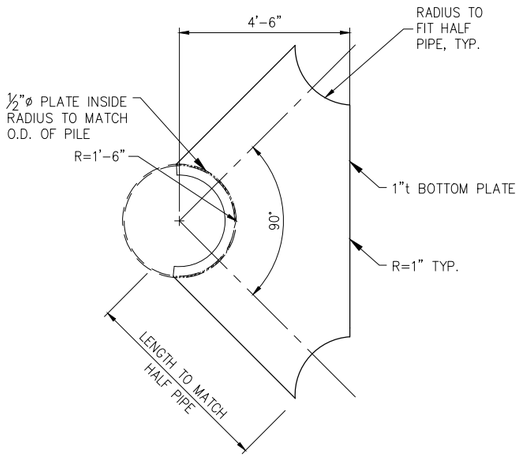
PND PROJECT NO.: 212049 C.A.N.: AECC250

S3.03



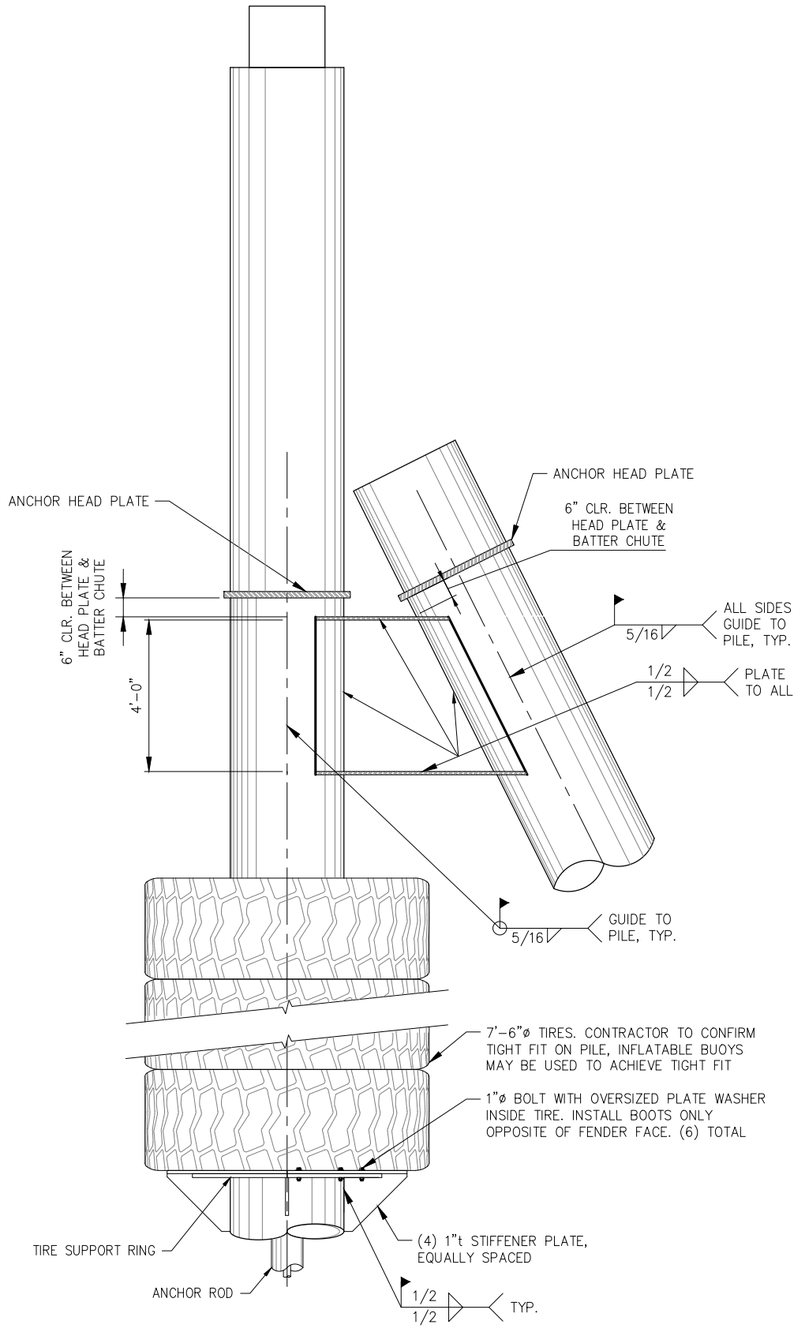
PREFAB. DOLPHIN CAP PLAN VIEW

NTS



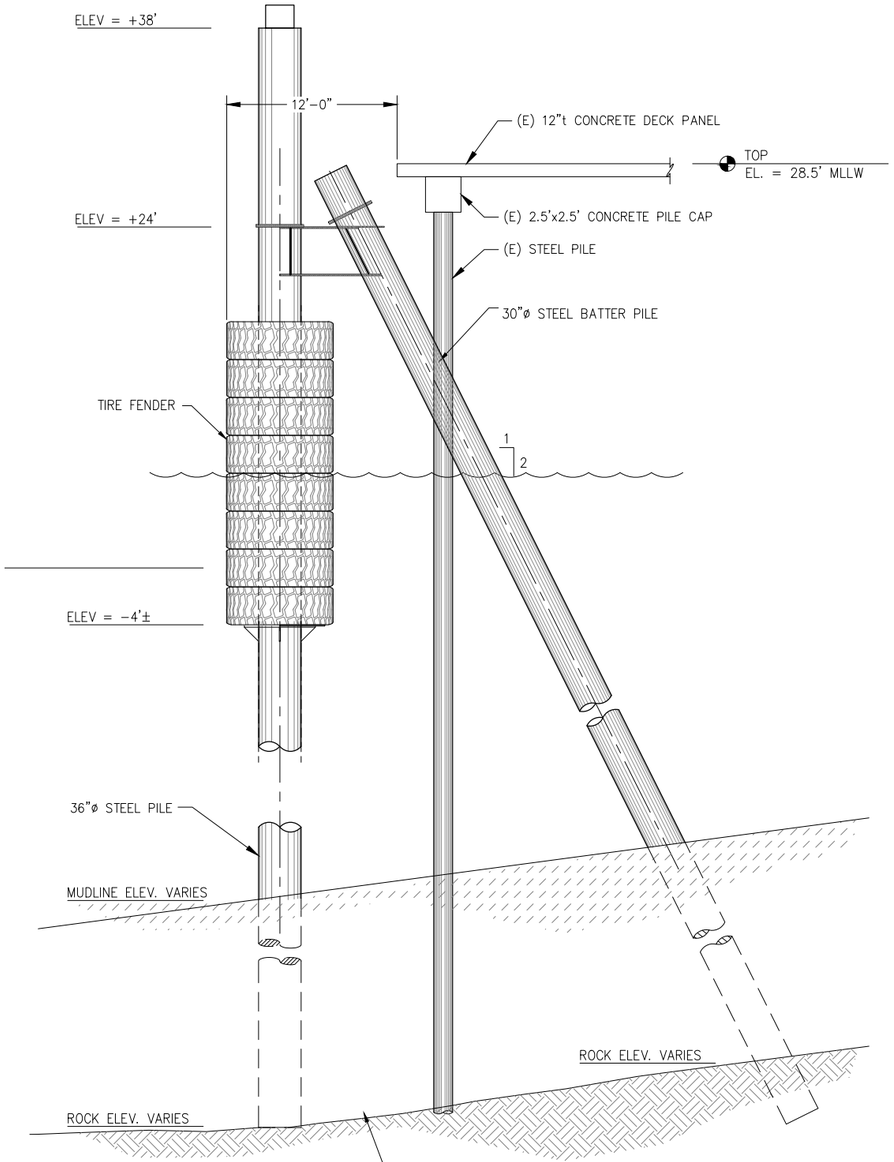
DOLPHIN CAP BOTTOM PLATE PLAN VIEW

NTS



DOLPHIN DETAIL

NTS



DOLPHIN ELEVATION

NTS

NOTE: ROCK ANCHORS NOT SHOWN FOR CLARITY. SEE ROCK ANCHOR TABLE & DETAILS

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: RJ CHECKED: CRS
DRAWN: DRD APPROVED: CRS
SCALE: NTS

95% DESIGN SUBMITTAL
DATE: 05/03/24

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: DOLPHIN SECTION AND DETAILS

PND PROJECT NO.: 212049 C.A.N.: AECC250

S3.02

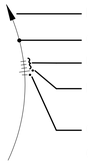
LEGEND

HIGH MAST LUMINAIRES

HANDHOLE

PEDESTAL WITH
(2) 50A, 208V, 3PH RECEPTACLES
(2) 30A, 120V, 1PH RECEPTACLES

GROUND ROD



CONDUCTORS NOT SHOWN WHERE ONLY
#12 NEUTRAL AND UNDERGROUND
CONDUCTOR ARE REQUIRED

ABBREVIATIONS

AFG	ABOVE FINISHED GRADE
UG	UNDERGROUND
WP	WEATHERPROOF

SCOPE OF WORK

1. PROVIDE A NEW MUSCO LIGHT POLE WITH LED LUMINAIRES.
2. PROVIDE UNDERGROUND CONDUCTORS AND CONDUITS AS DESIGNED TO FEED THE NEW LIGHT POLE FROM THE EXISTING PANEL A AND TO INTEGRATE THE NEW LIGHT POLE WITH THE EXISTING LIGHTING CONTROLS.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

RESPEC
Juneau, AK
9109 Mendenhall Mall Rd, Ste 4
Juneau, AK 99801
Phone: 907.780.6060
www.respec.com
AECC163270

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

DESIGN: KHD CHECKED: BCH
DRAWN: JLC APPROVED: BCH
SCALE: AS NOTED

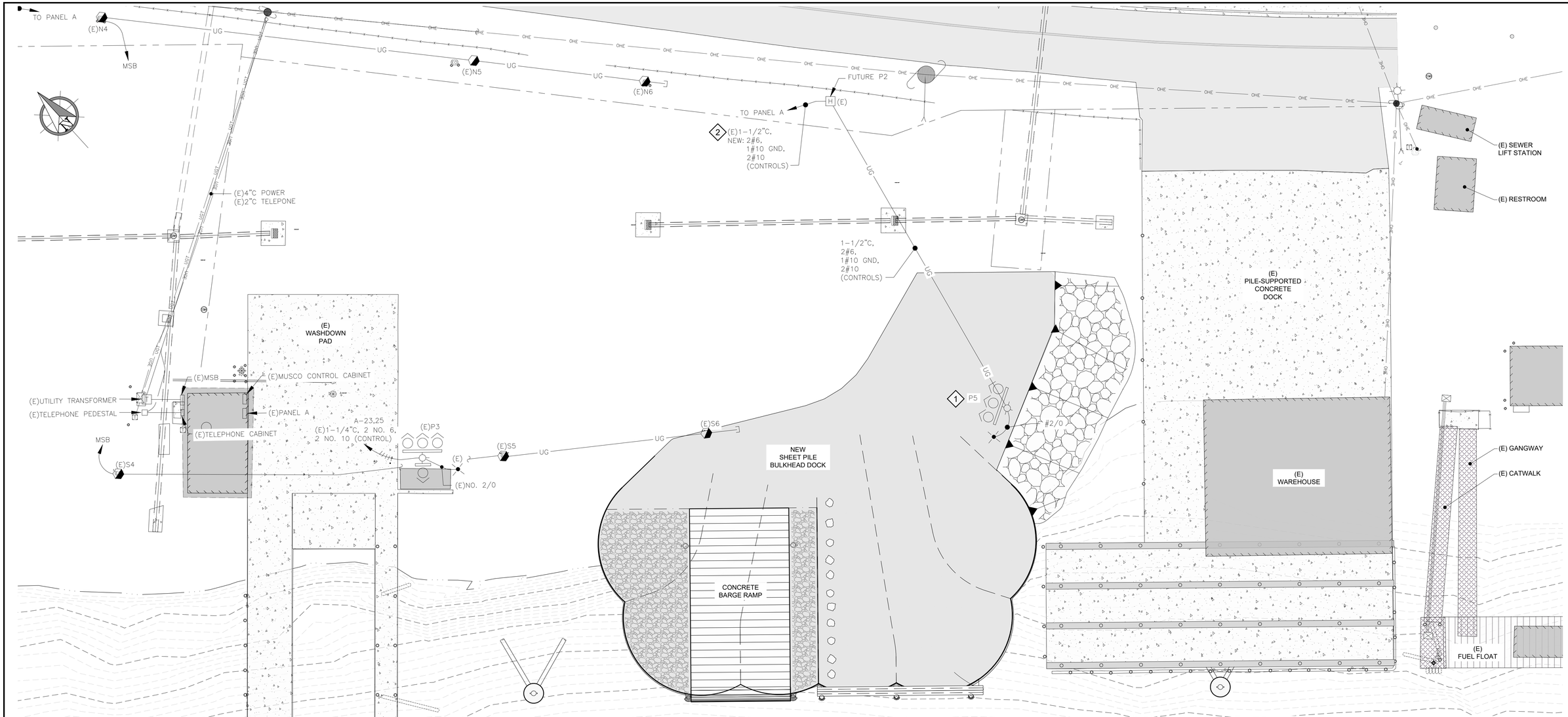
95% DESIGN SUBMITTAL
DATE: 05/02/2024

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE:
ELECTRICAL LEGEND AND NOTES

PND PROJECT NO.: 212049 C.A.N.: AECC250

E1.00



SHEET KEYNOTES

1. PROVIDE A MUSCO LIGHT POLE WITH LUMINAIRES. LIGHT LEVELS AT THE NEW SHEET PILE BULKHEAD DOCK AREA SHALL MATCH OR EXCEED THE FOLLOWING PARAMETERS:
   A. AVERAGE: 1.6 FOOT-CANDLES
   B. MAXIMUM: 9 FOOT-CANDLES
   C. AVERAGE/MINIMUM RATIO: 667.44
   D. MAXIMUM/MINIMUM RATIO: 3631.52

2. ROUTE THE NEW LIGHTING CONDUCTORS FROM A NEW 30/2 CIRCUIT BREAKER IN THE EXISTING PANEL A, THROUGH THE EXISTING MUSCO CONTROL CABINET, AND TO THE NEW LIGHT POLE. THE LIGHTING CONDUCTORS SHALL BE CONTROLLED WITH THE ZONE 2 CONTACTOR C3-1/2. THE CONTROLS CONDUCTORS SHALL PROVIDE DIMMING CONTROL FOR THE NEW LUMINAIRES AND SHALL BE CONTROLLED WITH POLE P2 DIMMING CONTACTOR.

RESPEC
Juneau, AK
9109 Mendenhall Mall Rd, Ste 4
Juneau, AK 99801
Phone: 907.780.6060
www.respec.com
AECC163270

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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

DESIGN: KHD CHECKED: BCH
DRAWN: JLC APPROVED: BCH
SCALE: SCALE IN FEET 0 20 40 FT.

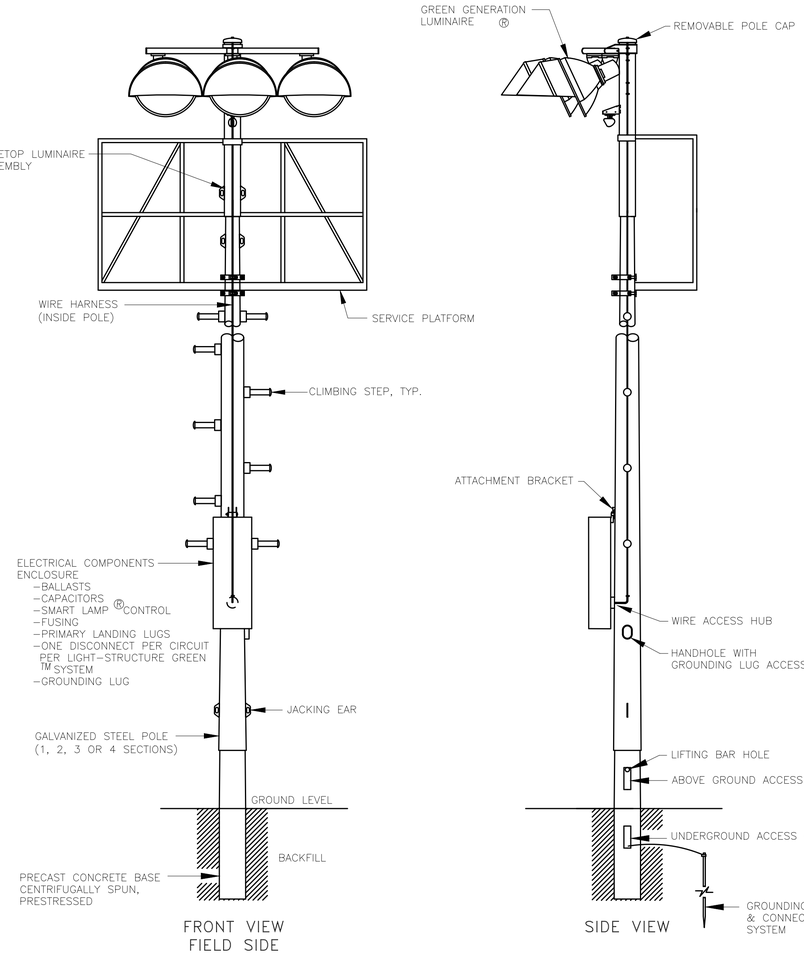
95% DESIGN SUBMITTAL
DATE: 05/02/2024

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **ELECTRICAL SITE PLAN**

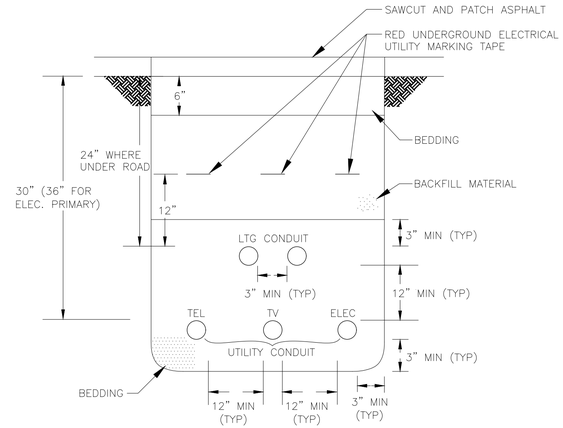
PND PROJECT NO.: 212049 C.A.N.: AECC250

E1.01



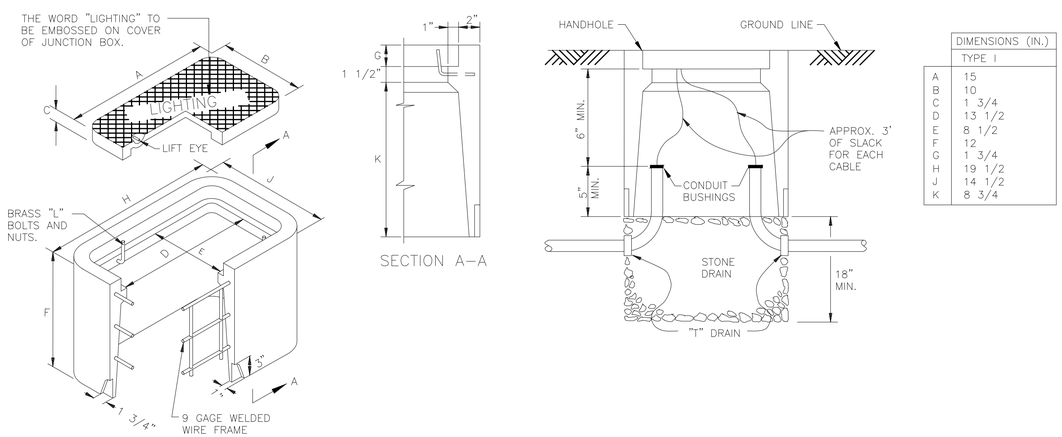
1 E1.02 DETAIL - HIGH MAST LIGHT POLE

SCALE: NOT TO SCALE



2 E1.02 DETAIL - TRENCH

SCALE: NOT TO SCALE



	DIMENSIONS (IN.)
	TYPE I
A	15
B	10
C	1 3/4
D	13 1/2
E	8 1/2
F	12
G	1 3/4
H	19 1/2
J	14 1/2
K	8 3/4

3 E1.02 DETAIL - HANDHOLE

SCALE: NOT TO SCALE

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

RESPEC
Juneau, AK
9109 Mendenhall Mall Rd, Ste 4
Juneau, AK 99801
Phone: 907.780.6060
www.respec.com
AECC163270

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

DESIGN: KHD CHECKED: BCH
DRAWN: JLC APPROVED: BCH
SCALE: AS NOTED
DATE: 05/02/2024

95% DESIGN SUBMITTAL

CITY OF HOONAH
SHEET PILE BULKHEAD DOCK

SHEET TITLE: **DETAILS**

PND PROJECT NO.: 212049 C.A.N.: AECC250

E1.02