



US Army Corps  
of Engineers  
Alaska District

# Public Notice of Application for Permit

JUNEAU FIELD OFFICE  
Regulatory Division (1145)  
CEPOA-RD  
Post Office Box 22270  
Juneau, Alaska, 99802-2270

**PUBLIC NOTICE DATE: September 20, 2024**

**EXPIRATION DATE: October 5, 2024**

**REFERENCE NUMBER: POA-1985-00696**

**WATERWAY: Port Frederick**

## **\*\*\*PUBLIC NOTICE REVISION\*\*\***

On September 20, 2024, the Alaska District U.S. Army Corps of Engineers published a public notice for Department of the Army (DA) permit number POA-1985-00696, Port Frederick for a DA permit application from the City of Hoonah, 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 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). The project site is located within Section 28, T. 43 S., R. 61 E., Copper River Meridian; USGS Quad Map Sitka A-5; Latitude 58.1154° N., Longitude 135.4547° W.; within the Hoonah Marine Industrial Center (HMIC), at 235 Cannery Road, in Hoonah, Alaska.

The notices and plans showed **October 4, 2024, as the expiration date.**

This change is necessary to refine the Public Notice to allow a full 15-day comment period and should instead read: **October 5, 2024 as the expiration date.**

All other information contained in the previous notice remains the same. Please bring this announcement to the attention of anyone you know who is or may be interested.

Please contact Delana Wilks at (907) 201-5021, or by email at [Delana.P.Wilks@usace.army.mil](mailto:Delana.P.Wilks@usace.army.mil) if further information is desired concerning this notice.

District Engineer  
U.S. Army, Corps of Engineers



US Army Corps  
of Engineers  
Alaska District

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<b>PUBLIC NOTICE DATE:</b>	<b>September 20, 2024</b>
<b>EXPIRATION DATE:</b>	<b>October <del>4</del>, 2024</b>
<b>REFERENCE NUMBER:</b>	<b>POA-1985-696</b>
<b>WATERWAY:</b>	<b>Port Frederick</b>

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Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this public notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the project manager's email as listed below or to [regpagemaster@usace.army.mil](mailto:regpagemaster@usace.army.mil). All comments should include the public notice reference number listed above.

All comments should reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Delana Wilks at (907) 201-5021, or by email at [Delana.P.Wilks@usace.army.mil](mailto:Delana.P.Wilks@usace.army.mil) if further information is desired concerning this public notice.

**APPLICANT:** City of Hoonah  
P.O. Box 360  
Hoonah, AK 99829

**AGENT:** Solstice Alaska Consulting, Inc  
2607 Fairbanks St, Suite B  
Anchorage, AK 99503

**LOCATION:** The project site is located within Section 28, T. 43 S., R. 61 E., Copper River Meridian; USGS Quad Map Sitka A-5; Latitude 58.1154° N., Longitude 135.4547° W.; within the Hoonah Marine Industrial Center (HMIC), at 235 Cannery Road, in Hoonah, Alaska.

PURPOSE: The applicant's stated purpose 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.

PROPOSED WORK: 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 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).

All work would be performed in accordance with the enclosed plan (sheets 1-7), dated March, 2024.

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 (U.S.) 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.

c. Compensatory 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 a wetlands mitigation plan to compensate for the unavoidable loss of wetlands.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRs) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are/are no cultural resources in the permit area or within the vicinity of the permit area. The permit area has been determined to be the footprint of the proposed project. Consultation of the AHRs constitutes the extent of cultural resource investigations by the U.S. Army Corps of Engineers (Corps) at this time, and we are otherwise unaware of the presence of such resources. The Corps has made a No Potential to Cause Effects determination for the

proposed project. Consultation with the State Historic Preservation Office (SHPO), Federally recognized Tribes, and other consulting parties is not required. However, any comments SHPO, Federally recognized Tribes, and other consulting parties may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

ENDANGERED SPECIES: The project area is within the known or historic range of the sperm whale (*Physeter macrocephalus*), Steller sea lion (*Eumetopias jubatus*), sunflower sea star (*Pycnopodia helianthoides*), and humpback whale (*Megaptera novaeangliae*).

We have determined the described activity may affect the humpback whale, Steller sea lion, and sunflower sea star. We have initiated the appropriate consultation procedures under section 7 of the Endangered Species Act with the National Marine Fisheries Service (NMFS). Any comments they may have concerning endangered or threatened wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

The project area is within mapped EFH for Chinook (*Oncorhynchus tshawytscha*), chum (*Oncorhynchus keta*), coho (*Oncorhynchus kisutch*), pink (*Oncorhynchus gorbuscha*) and sockeye salmon (*Oncorhynchus nerka*).

We have determined the described activity would not adversely affect EFH in the project area as there would be no dredging, the pile driving activity would be temporary, and the area has been previously disturbed.

TRIBAL CONSULTATION: The Corps fully supports tribal self-governance and government-to-government relations between Federally recognized Tribes and the Federal government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Corps, Alaska District, on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This public notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal rights or resources. Consultation may be initiated by the affected Tribe upon written request to the District Commander. If applicable this application will be coordinated with federally recognized tribes and other consulting parties. Any comments federal recognized tribes and other consulting parties may have concerning presently unknown archeological or historic data that may be lost or destroyed by the work under the requested permit will be considered in the Corps final assessment of the described work.

**PUBLIC HEARING:** Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

**EVALUATION:** The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

**AUTHORITY:** This permit will be issued or denied under the following authorities:

(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines

set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings are enclosed with this public notice.

District Commander  
U.S. Army, Corps

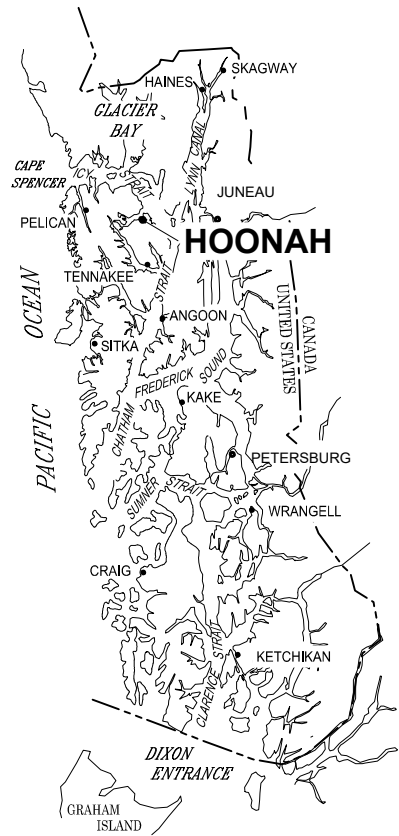
Enclosures

CITY OF HOONAH

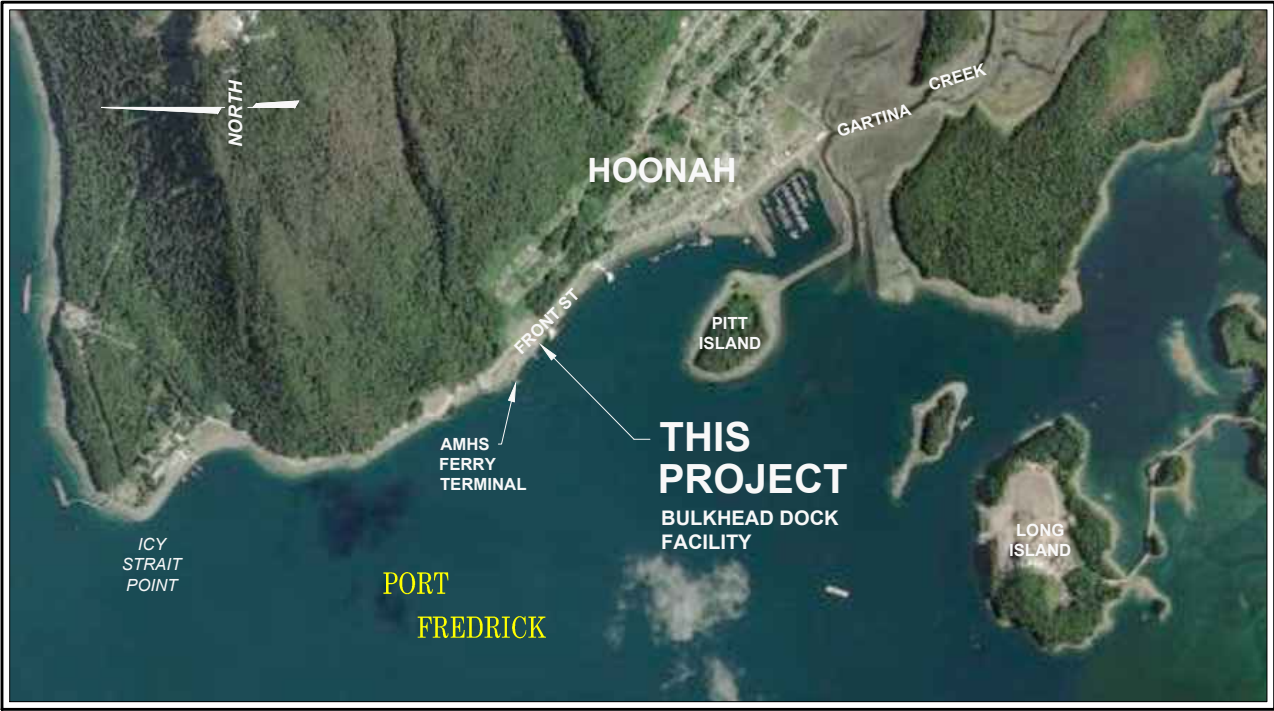
# SHEET PILE BULKHEAD DOCK



VICINITY



SOUTHEAST ALASKA



VICINITY MAP



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	
DWG. NO.	TITLE
GENERAL	
G1.01	TITLE SHEET, VICINITY MAP AND DRAWING INDEX
G1.02	CIVIL GENERAL NOTES, LEGEND AND ABBREVIATIONS
G1.03	STRUCTURAL GENERAL NOTES, LEGEND AND ABBREVIATIONS
CIVIL	
C1.01	EXISTING CONDITIONS, SURVEY CONTROL AND TEST HOLE LOCATIONS
C1.02	NON MANDATORY ROCK QUARRY USAGE PLAN
C1.03	GENERAL SITE PLAN
C1.04	SITE LAYOUT & GRADING PLAN
SHEET PILE BULKHEAD DOCK	
S2.01	OPEN CELL SHEET PILE LAYOUT PLAN
S2.02	SHEET PILE ROLL OUT ELEVATION
S2.03	TAILWALL SECTIONS
S2.04	TAILWALL SECTIONS
S2.05	TAILWALL SECTIONS
S2.06	SHEET PILE DETAILS
S2.07	SHEET PILE DETAILS
S2.08	VIBRACOMPACTION AND BACKFILL PLAN
S2.09	DOCK FINISHING PLAN
S2.10	GEOTEXTILE ELEVATION SECTION AND DETAILS
S2.11	RAMP LAYOUT PLAN AND DETAILS
S2.12	RAMP SECTIONS
S2.13	RAMP FACE BEAM PLAN AND DETAILS
S2.14	FENDER FACE BEAM
BREASTING DOLPHINS	
S3.01	DOLPHIN 1 & 2 SECTION AND DETAILS
S3.02	DOLPHIN 3 SECTION AND DETAILS
S3.03	ROCK ANCHOR DETAILS
ELECTRICAL	
E1.00	ELECTRICAL LEGEND AND NOTES
E1.01	ELECTRICAL SITE PLAN
E1.02	DETAILS
E1.03	DIAGRAMS



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



DESIGN: CRS  
DRAWN: PJD/KLL

CHECKED: MBH  
APPROVED: CRS

9360 Glacier Highway Ste 100  
Juneau, Alaska 99801  
Phone: 907-586-2093  
Fax: 907-586-2099  
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SCALE:  
AS SHOWN

95%  
DESIGN  
SUBMITTAL

DATE: 05/03/24

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
	SURVEY CONTROL
	BOLLARD
	ELECTRIC PEDESTAL
	FIRE HYDRANT
	LIGHT POLE w/ LUMINAIRE
	METAL PILING
	POWER POLE
	TELEPHONE PEDESTAL
	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEAN OUT
	STORM DRAIN MANHOLE
	STORM DRAIN CATCH BASIN
	WATER VALVE
	WOOD PILING
	BUILDING LINE
	CENTER OF CREEK
	CENTER LINE
	FENCELINE
	GEOTEXTILE REINFORCEMENT
	GRADE BREAK
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	PIPELINE
	PROPERTY LINE
	SANITARY SEWER
	SANITARY SEWER FORCE MAIN
	STORM DRAIN
	WATER LINE
	CURB & GUTTER w/ TYPE
	LAYOUT POINT
	LAYOUT RADIUS
	TEST HOLE
	CONCRETE/SIDEWALK
	CULVERT
	PAVEMENT/ACP

ABBREVIATIONS

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

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



9360 Glacier Highway Ste 100  
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Fax: 907-586-2099  
www.pndengineers.com

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

SCALE: NA

95%  
DESIGN  
SUBMITTAL

DATE: 05/03/24

CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

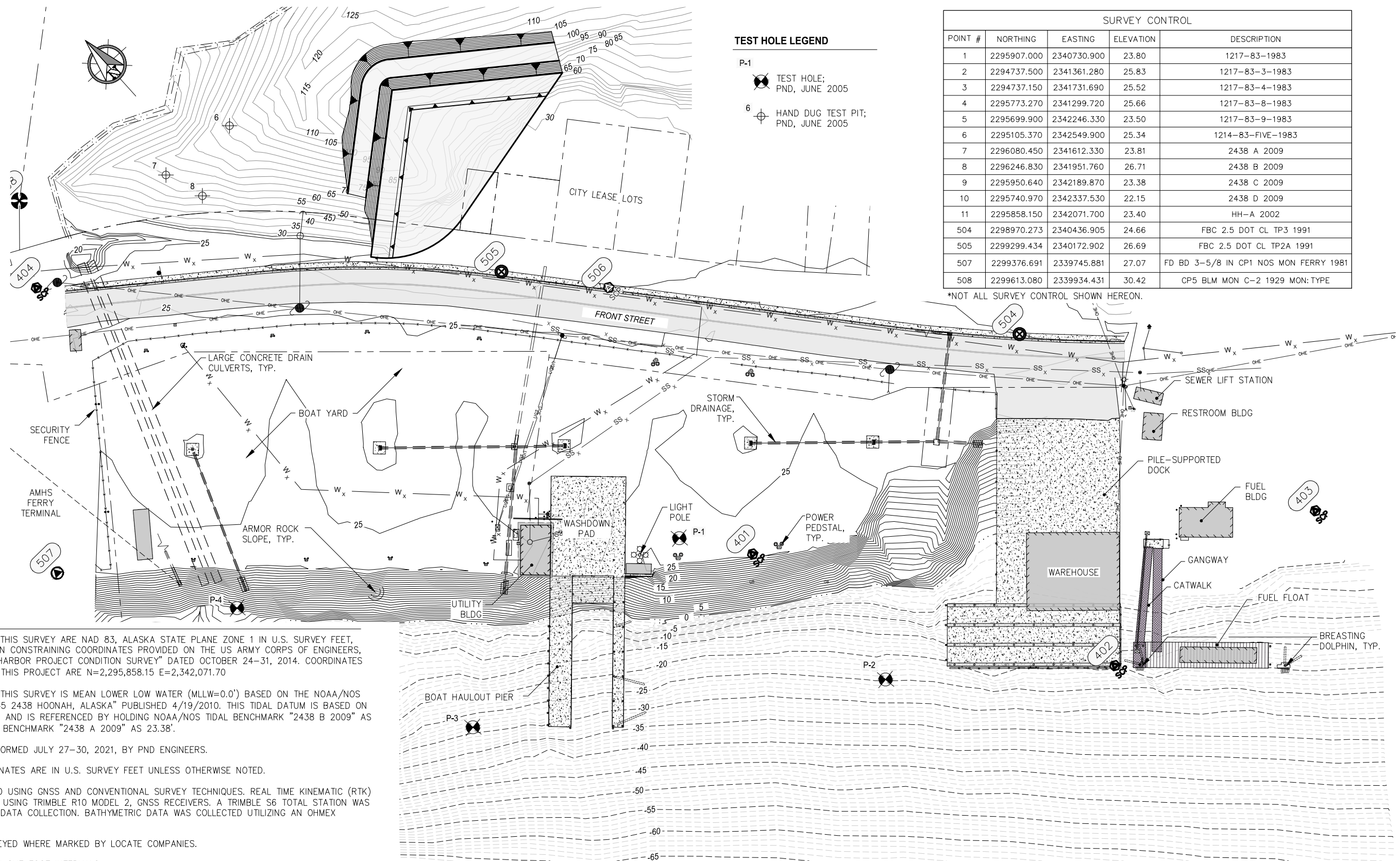
SHEET TITLE: CIVIL GENERAL NOTES,  
LEGEND AND ABBREVIATIONS

G1.02

PND PROJECT NO.: 212049

C.A.N.: AECC250





TEST HOLE LEGEND

- P-1  
TEST HOLE;  
PND, JUNE 2005
- 6  
HAND DUG TEST PIT;  
PND, JUNE 2005

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 SONARITE.
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					
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Fax: 907-586-2099  
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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

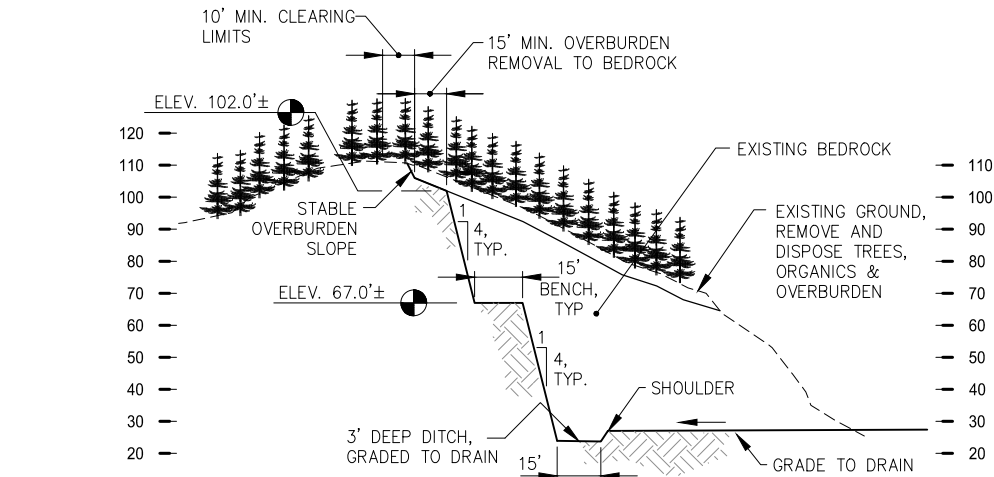
OPERATIONS SHALL NOT PROCEED UNTIL THE CONTRACTOR’S INDIVIDUAL MINING PLAN HAS BEEN APPROVED BY THE CITY.

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.

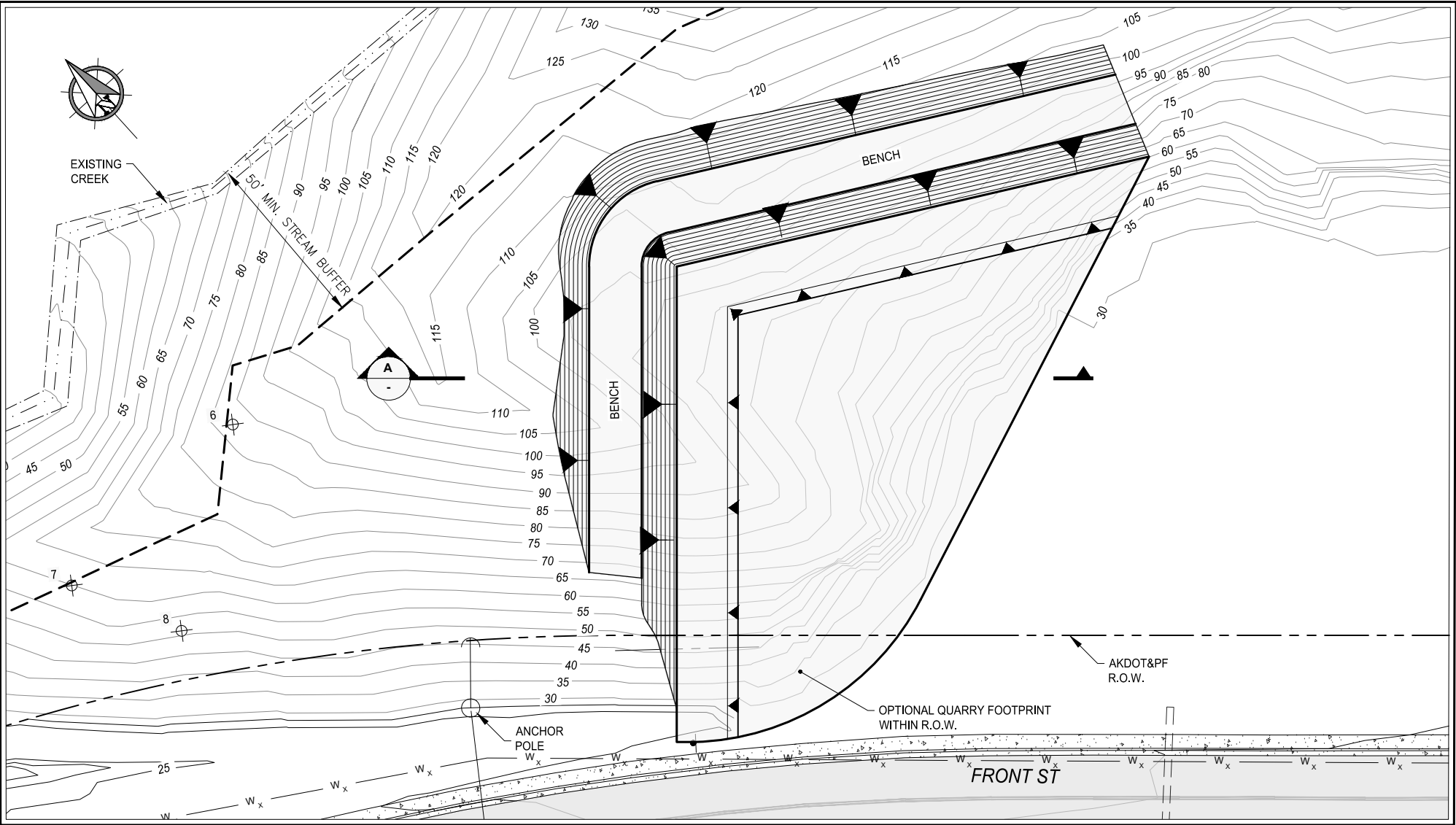


A TYPICAL QUARRY SECTION

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



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SCALE:

95%  
DESIGN  
SUBMITTAL

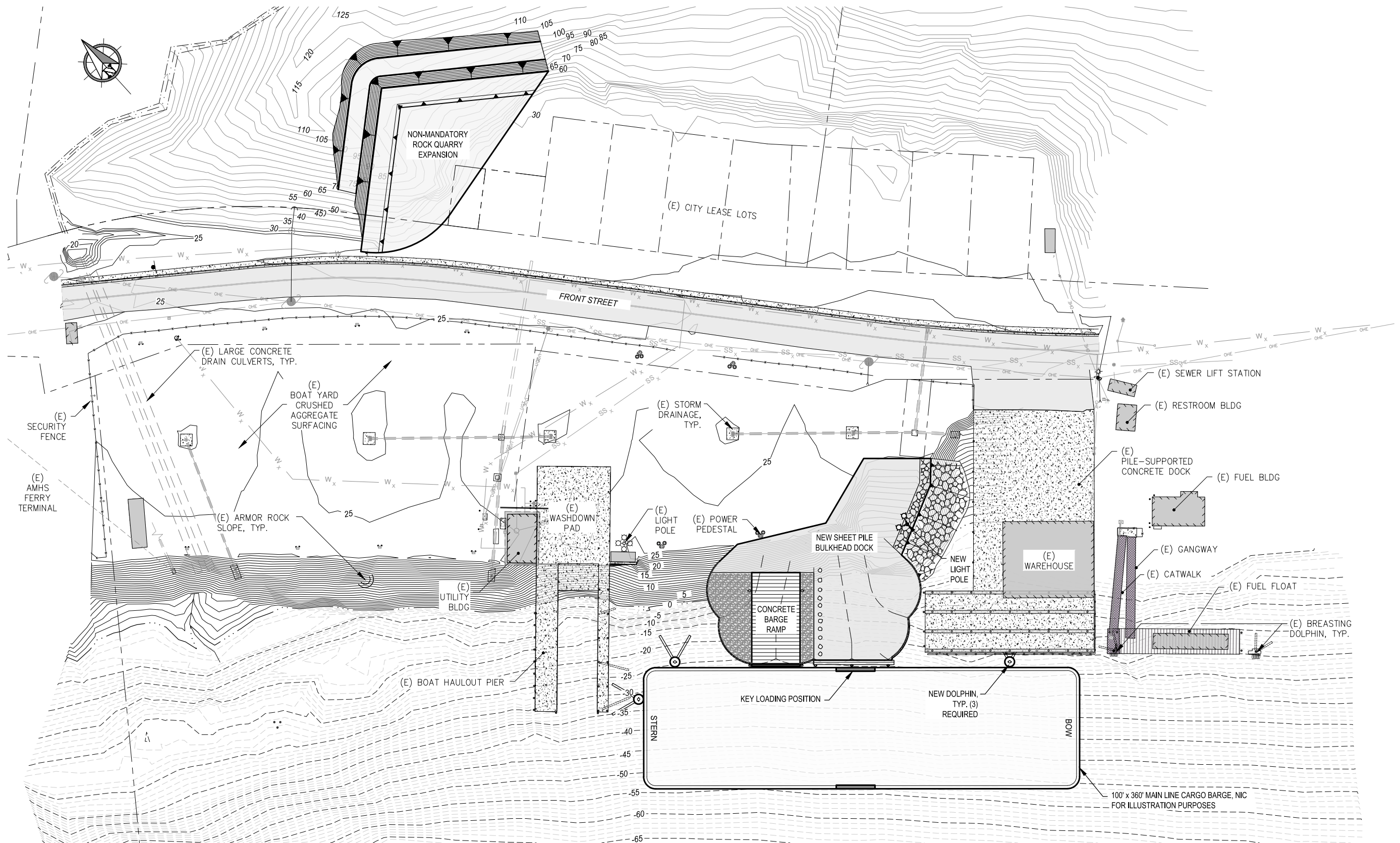
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CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

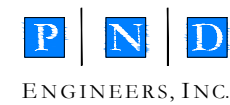
SHEET TITLE: NON - MANDATORY  
ROCK QUARRY USAGE PLAN

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

C1.02

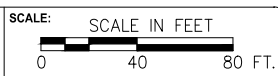


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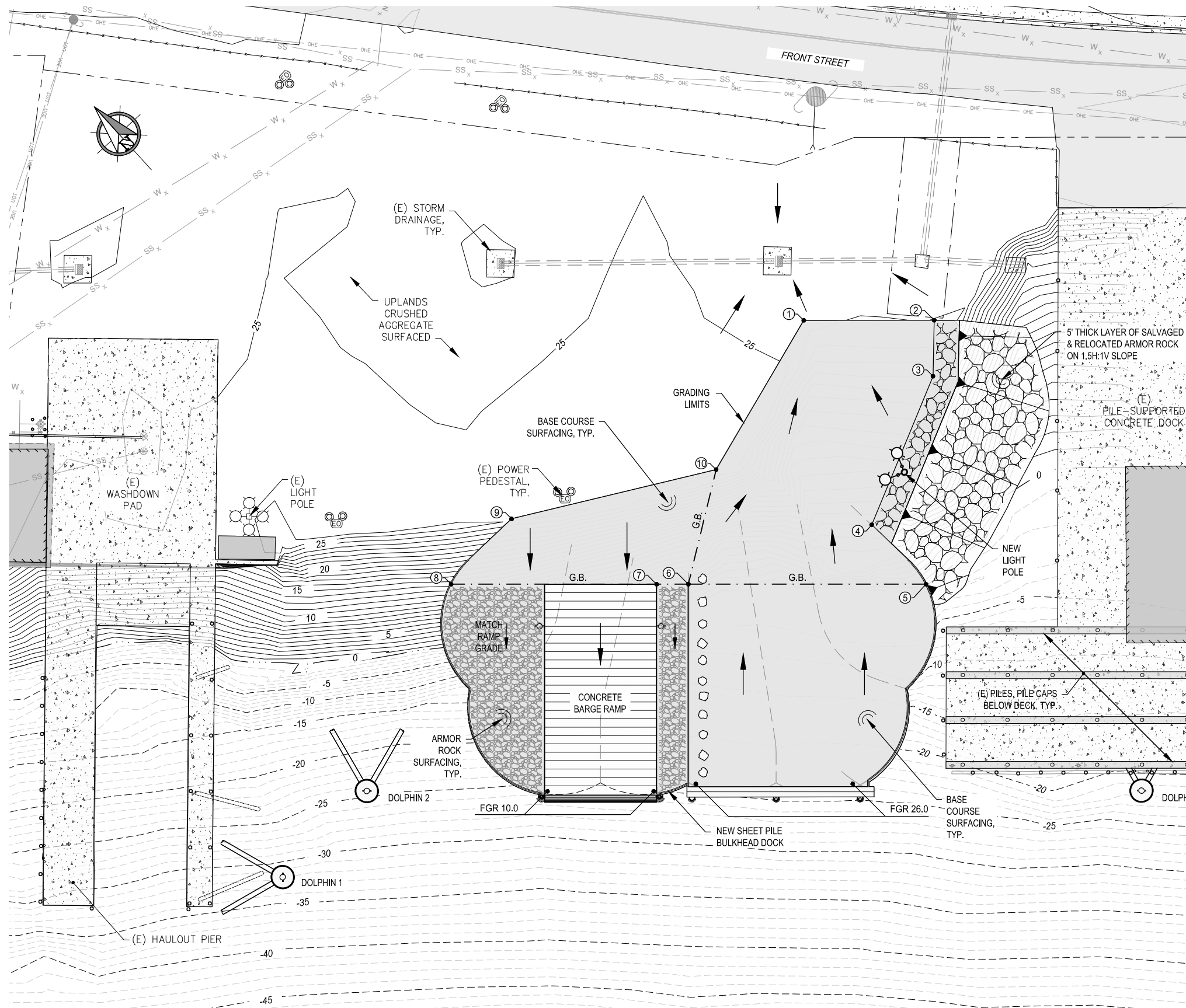


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SUBMITTAL**  
DATE: 05/03/24

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



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DRAWN: PJD

CHECKED: CRS  
APPROVED: CRS

SCALE: SCALE IN FEET  
0 20 40 FT.

95%  
DESIGN  
SUBMITTAL

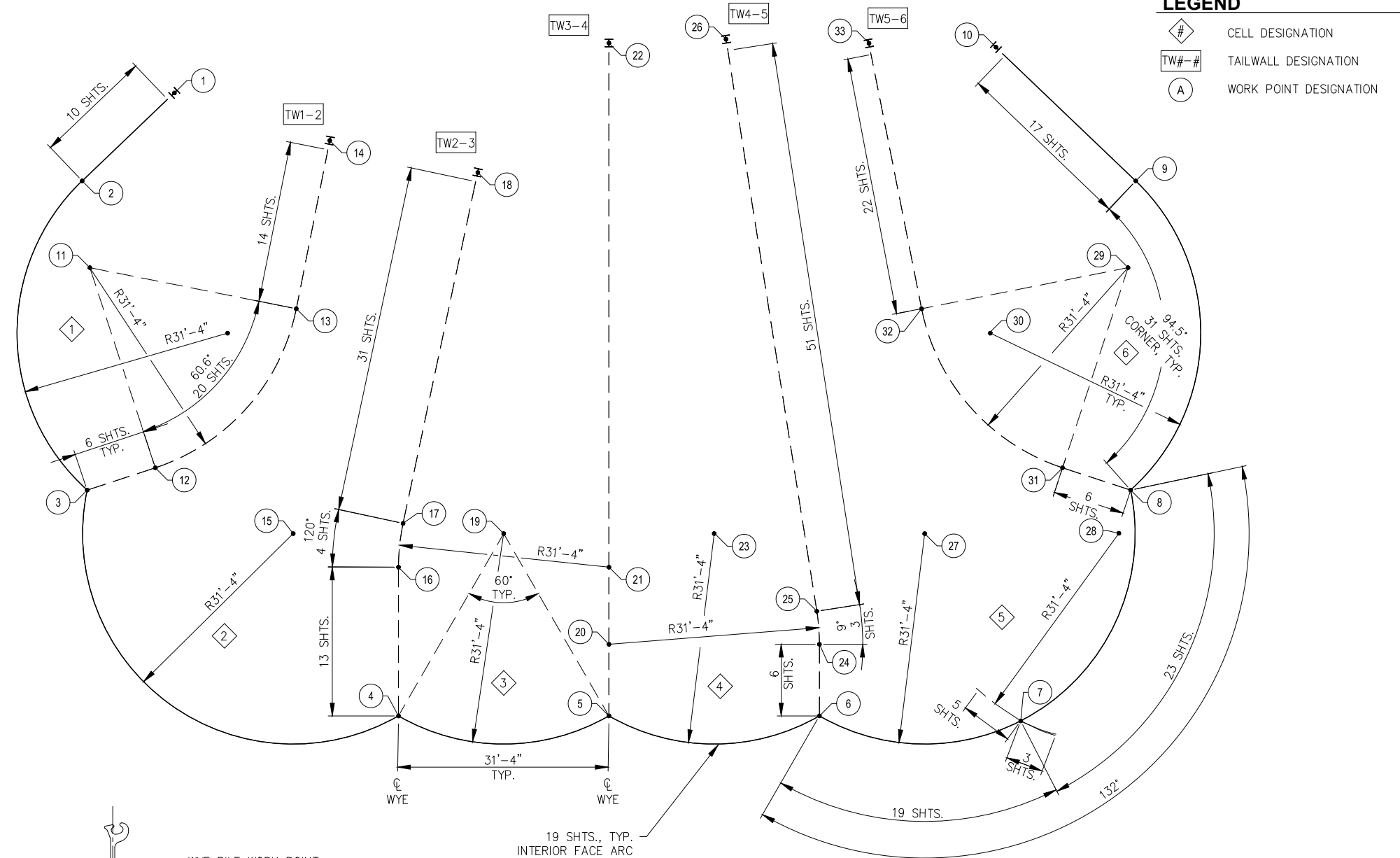
DATE: 05/03/24

CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

SHEET TITLE: SITE LAYOUT & GRADING PLAN

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

C1.04



**SHEET PILE LAYOUT PLAN**

**NOTE:**

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

**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:**

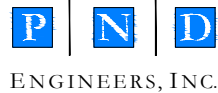
CR	= CENTER OF RADIUS	TAIL	= CENTER OF TAIL PILE
PC	= POINT OF CURVATURE	X	= CENTER OF X-PILE
PT	= POINT OF TANGENCY	WYE	= CENTER OF WYE PILE

**WYE PILE SURVEY POINT**



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SCALE: SCALE IN FEET  
0 10 20 FT.

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DESIGN  
SUBMITTAL**

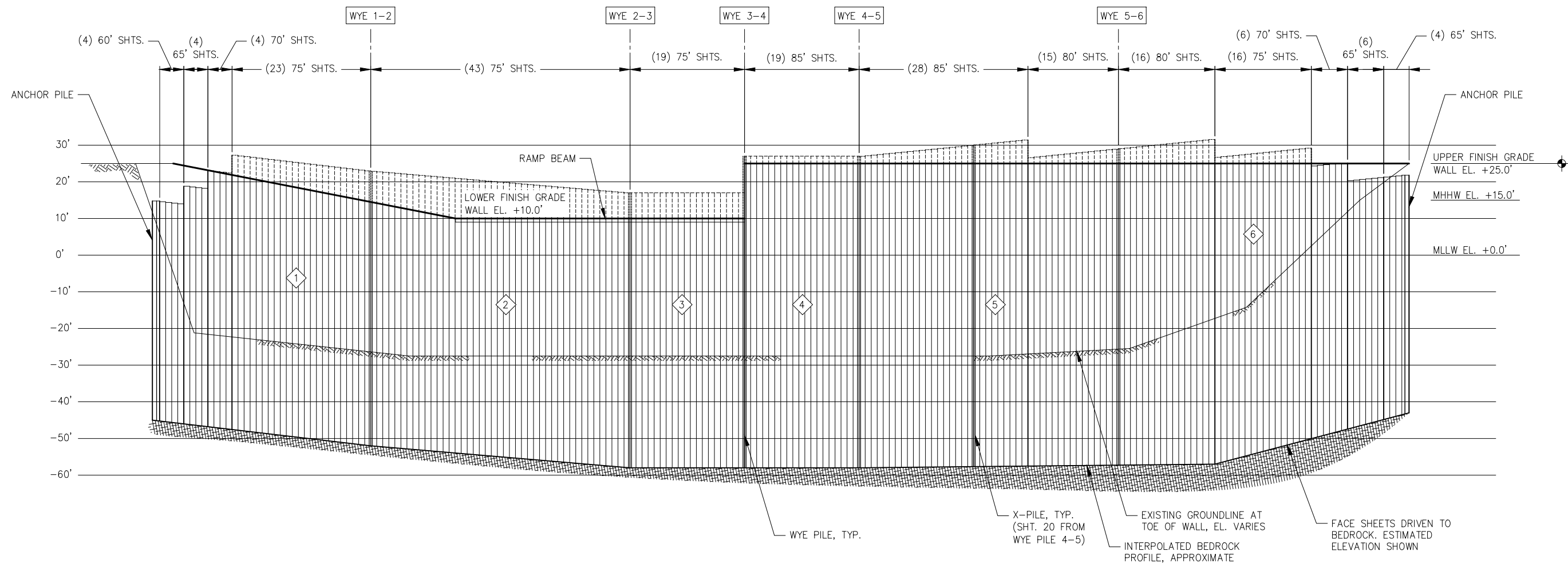
DATE: 05/03/24

**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



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SCALE: SCALE IN FEET

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DESIGN  
SUBMITTAL**

DATE: 05/03/24

**CITY OF HOONAH**

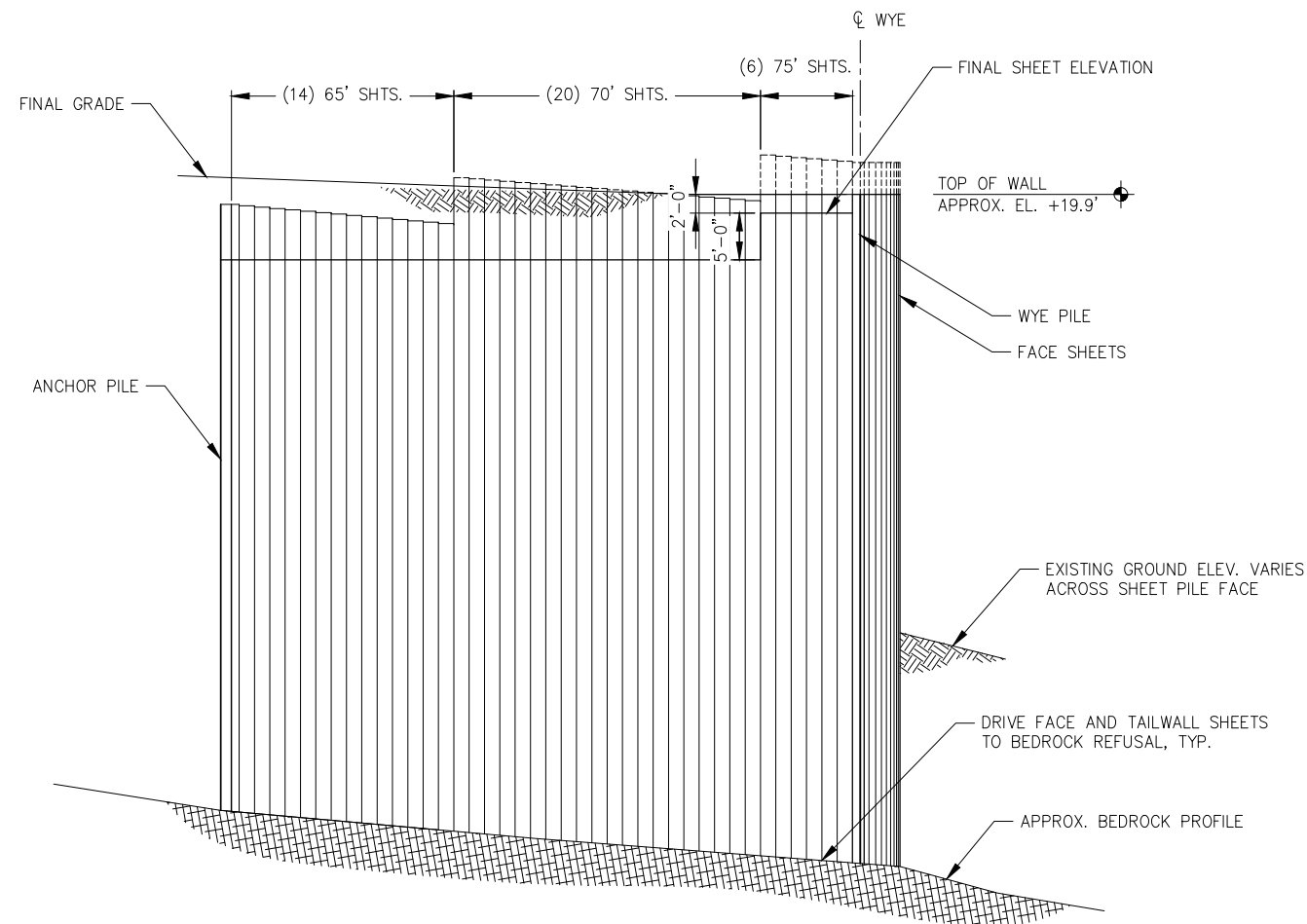
**SHEET PILE BULKHEAD DOCK**

SHEET TITLE:

**SHEET PILE ROLL OUT ELEVATION**

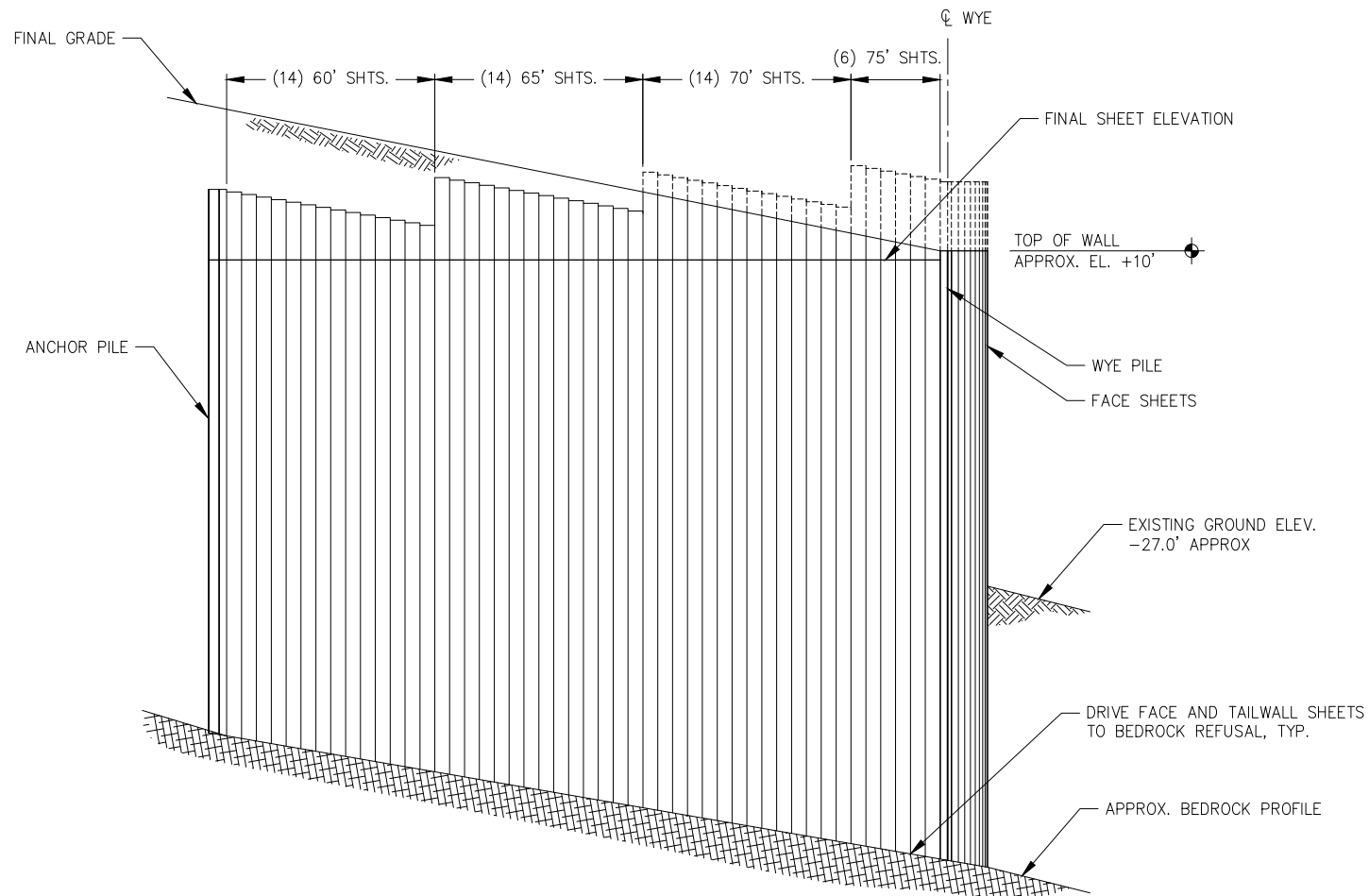
PND PROJECT NO.: 212049      C.A.N.: AECC250

**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.



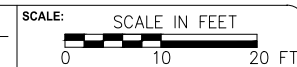
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### CITY OF HOONAH SHEET PILE BULKHEAD DOCK

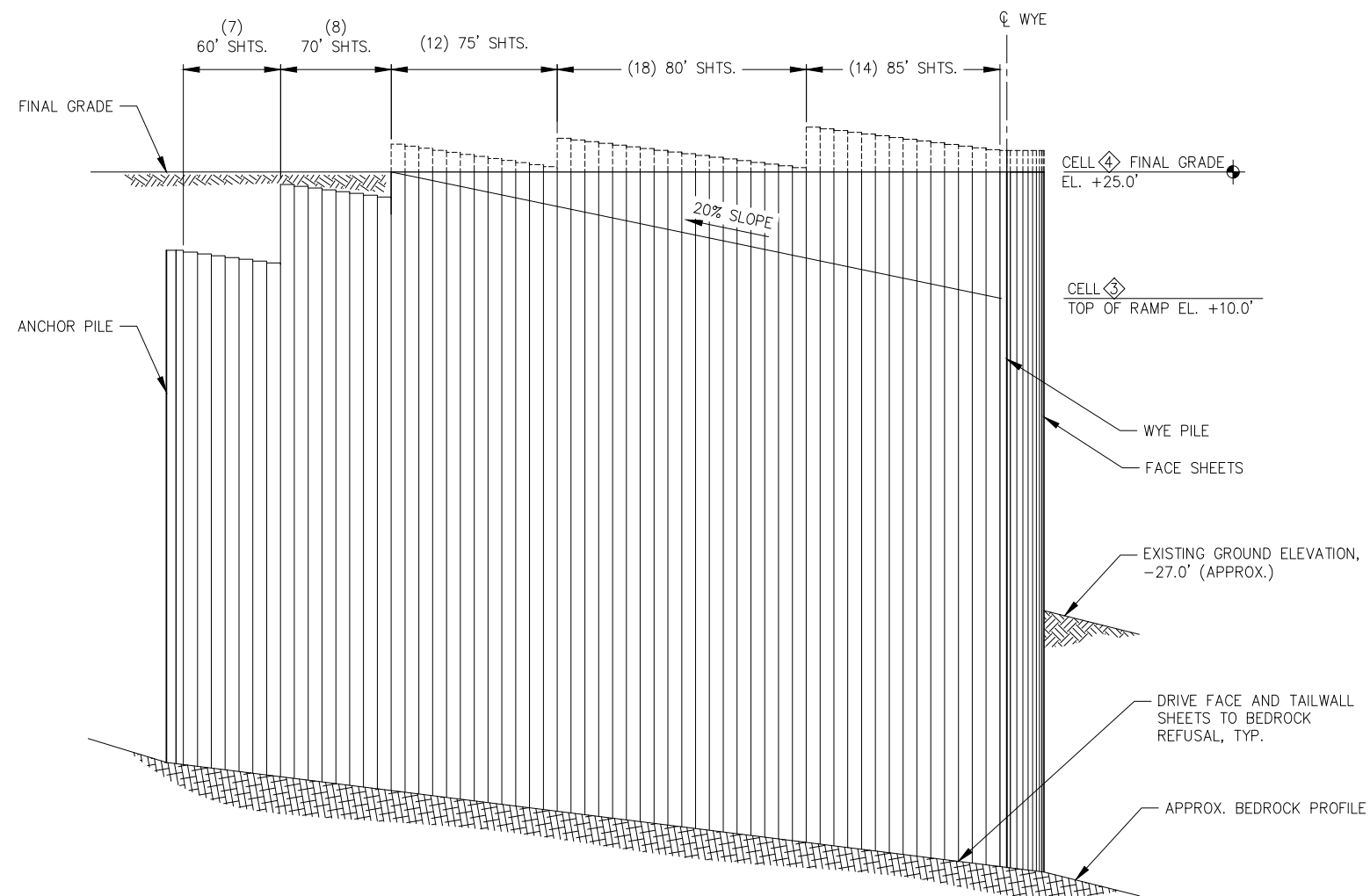
SHEET TITLE:

TAILWALL SECTIONS

PND PROJECT NO.: 212049

C.A.N.: AECC250

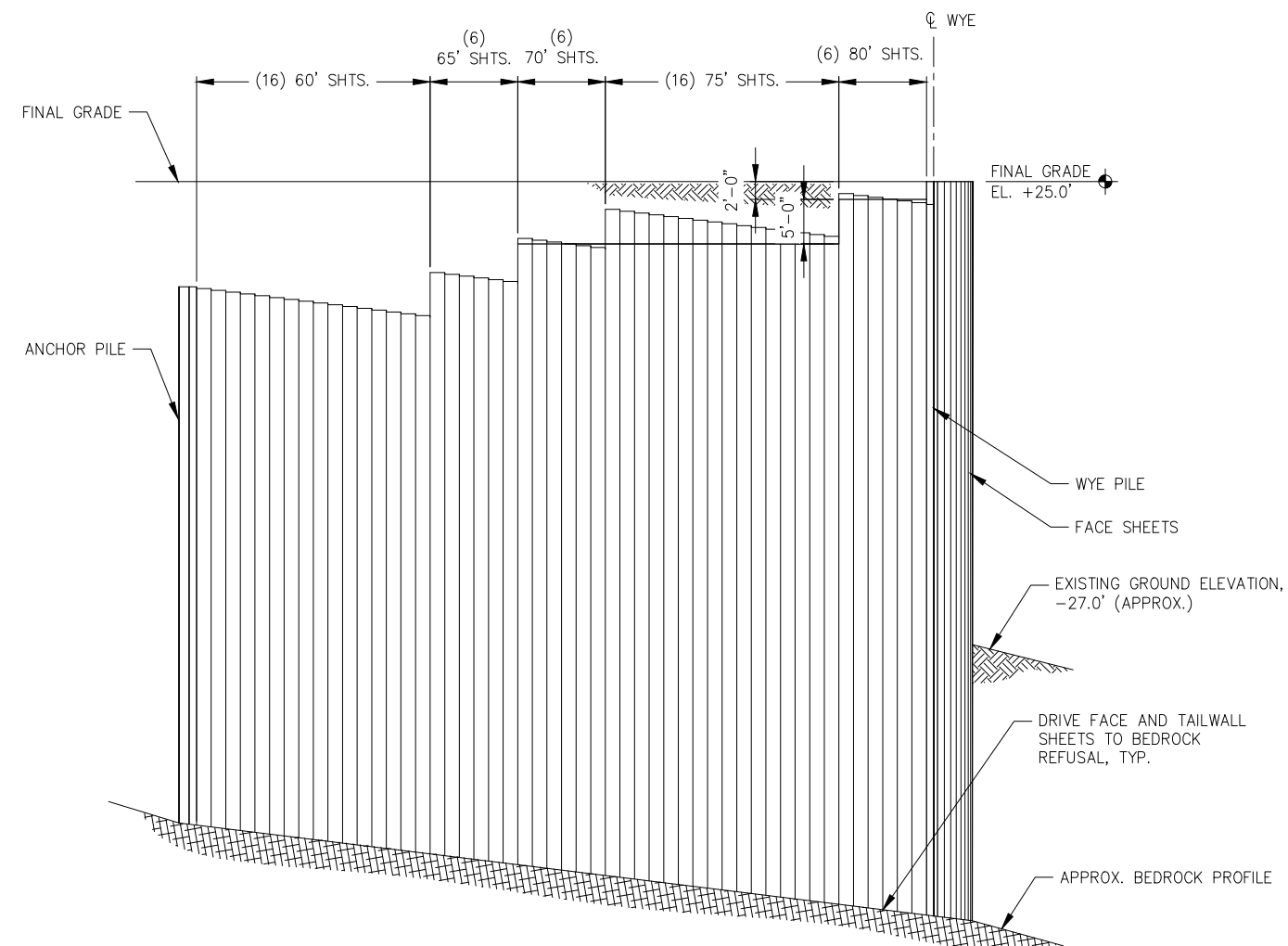
**S2.03**



### 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.



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SCALE: SCALE IN FEET  
0 10 20 FT.

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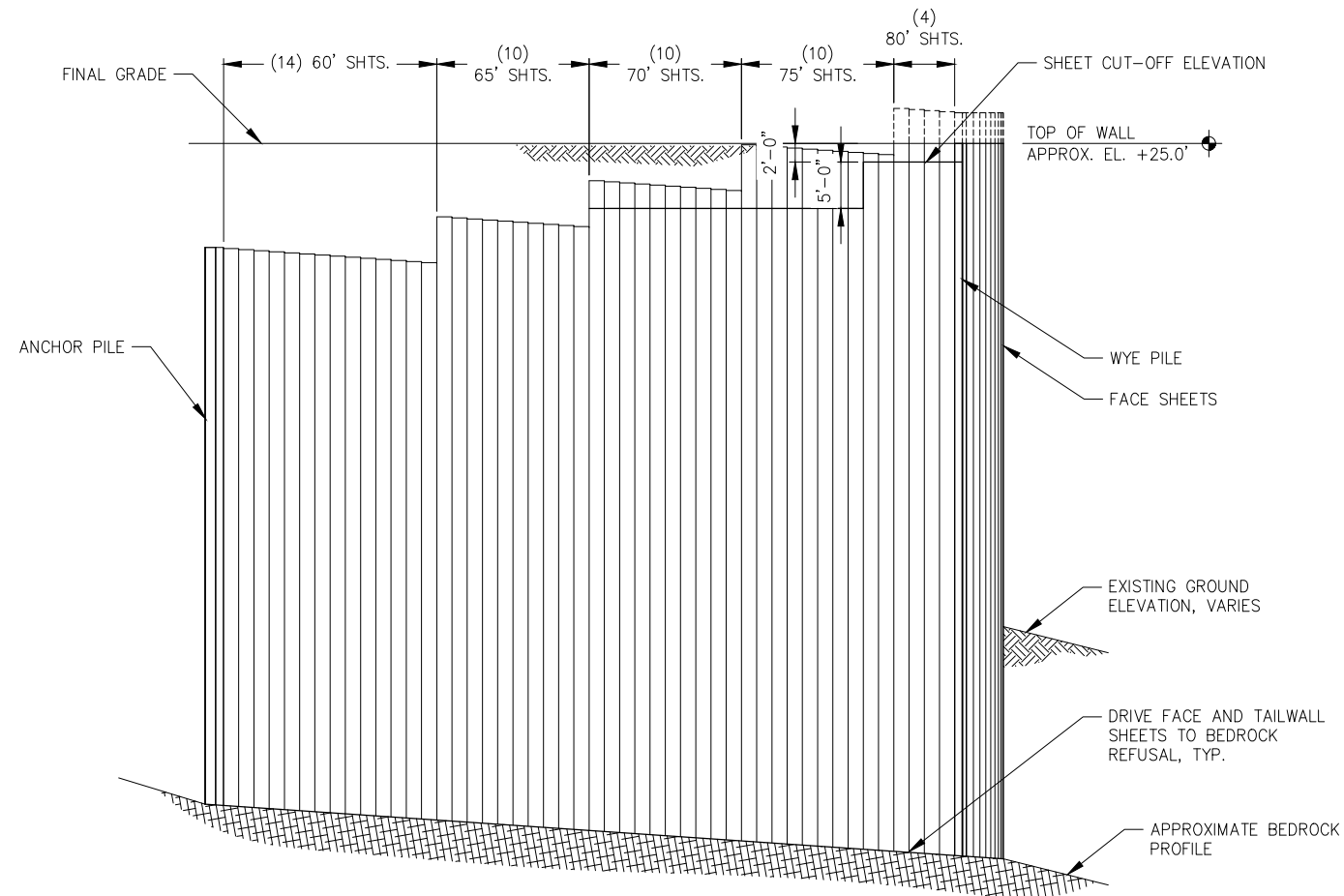
SHEET TITLE:

TAILWALL SECTIONS

PND PROJECT NO.: 212049

C.A.N.: AECC250

**S2.04**



**TAILWALL 5-6 SECTION**

**NOTES:**

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SCALE: SCALE IN FEET

0 10 20 FT.

95%  
DESIGN  
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CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

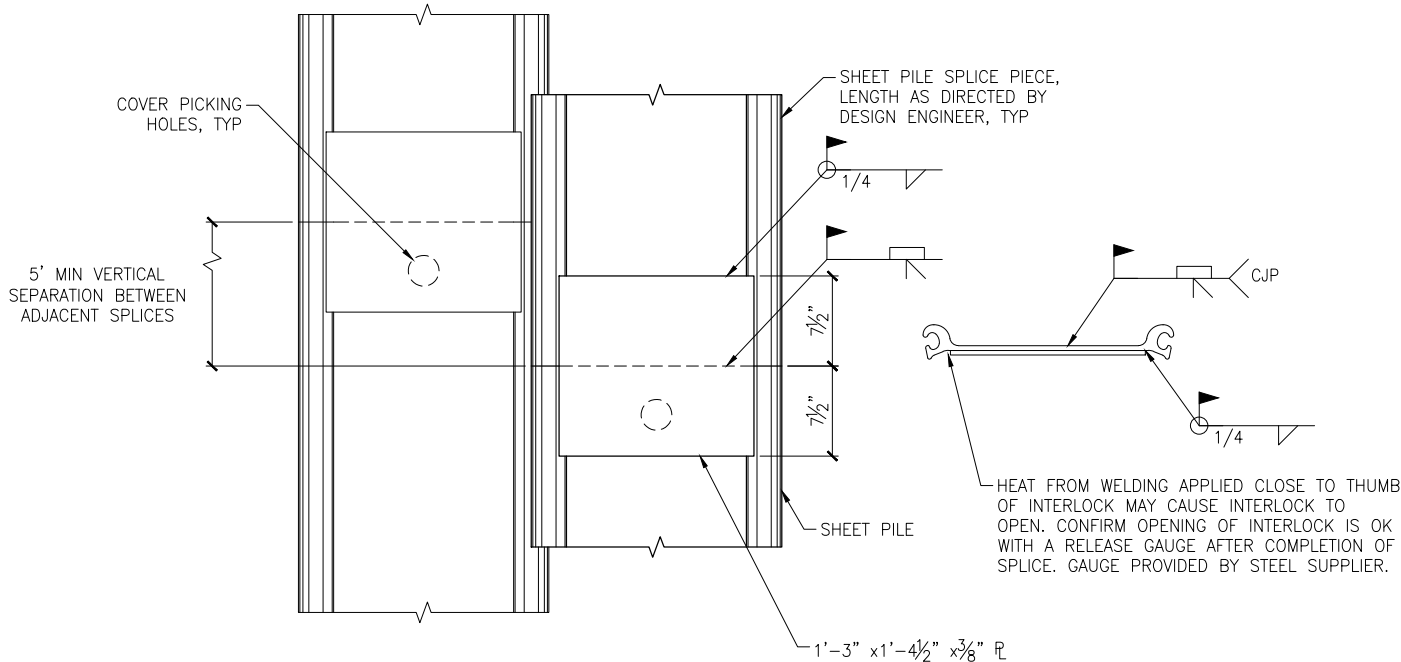
SHEET TITLE: TAILWALL SECTIONS

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

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**



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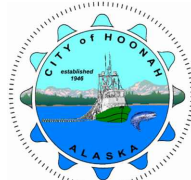
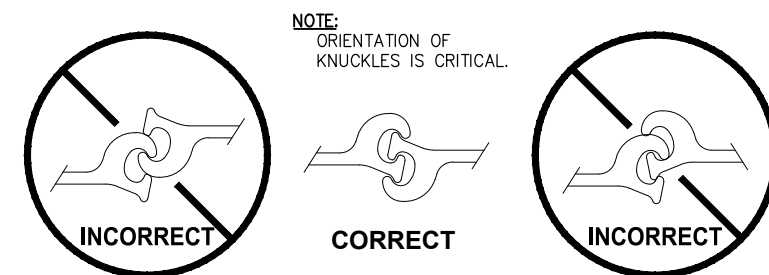
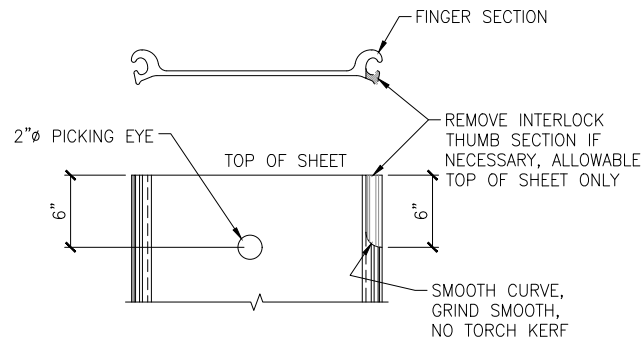
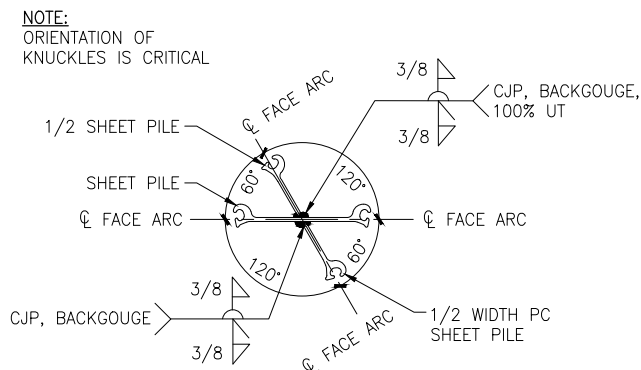
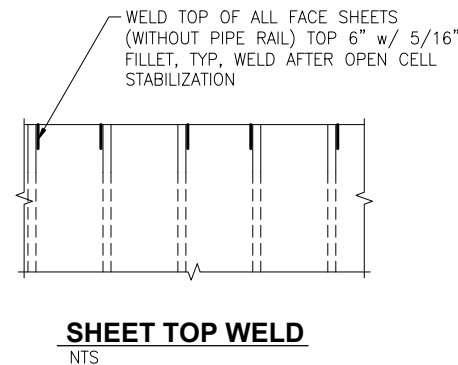
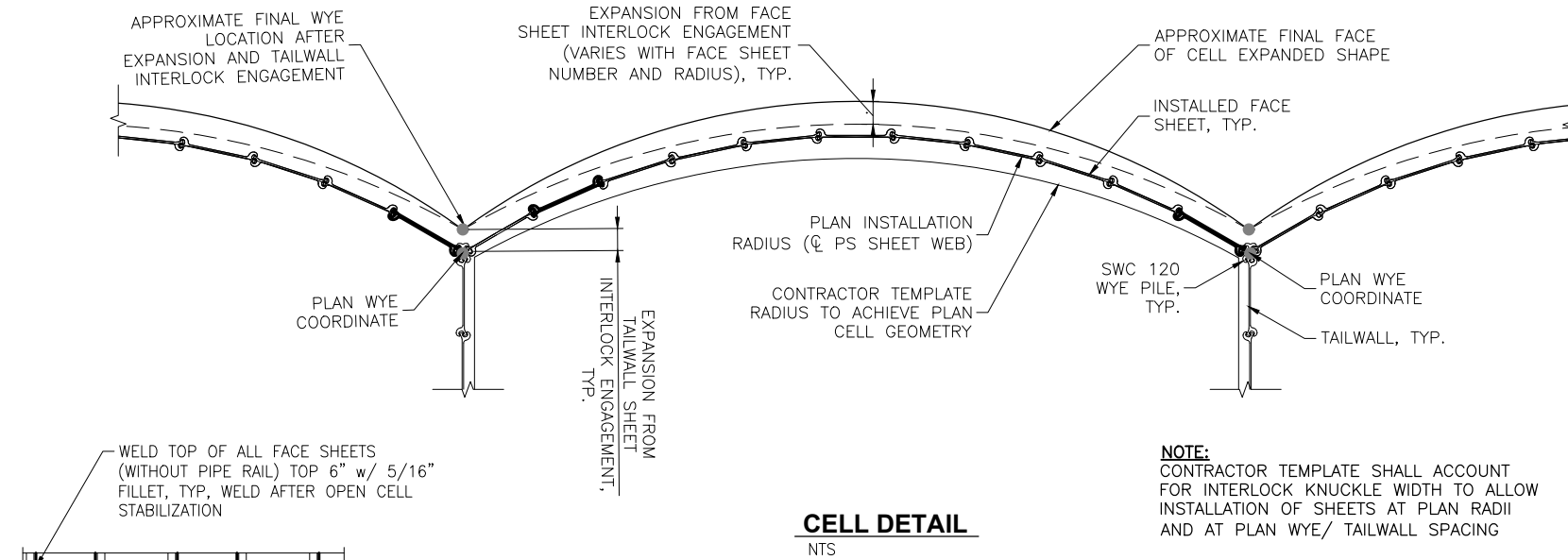
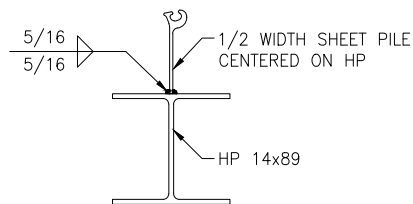
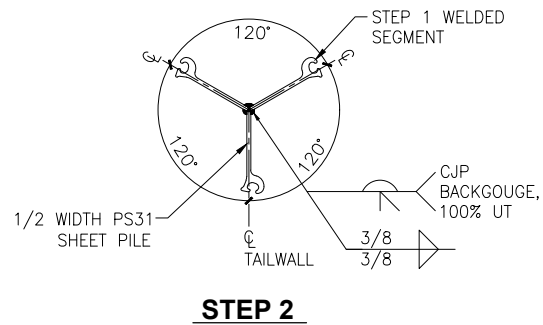
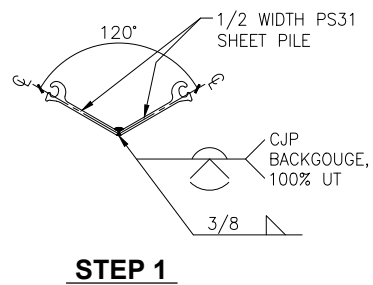
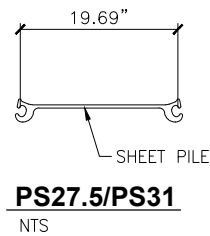
DATE: 05/03/24

CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

SHEET TITLE:  
SHEET PILE DETAILS

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

S2.06



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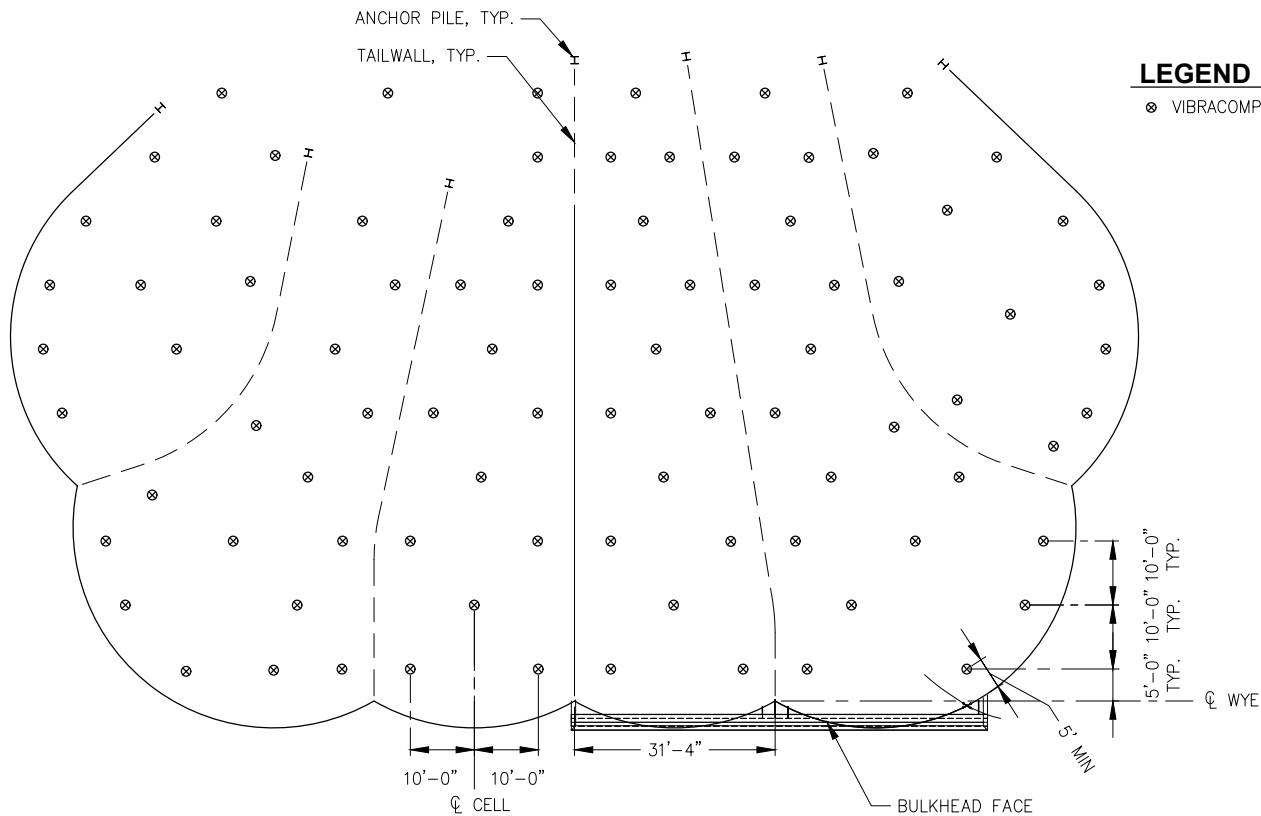
CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

SHEET TITLE:  
SHEET PILE DETAILS

PND PROJECT NO.: 212049

C.A.N.: AECC250

S2.07

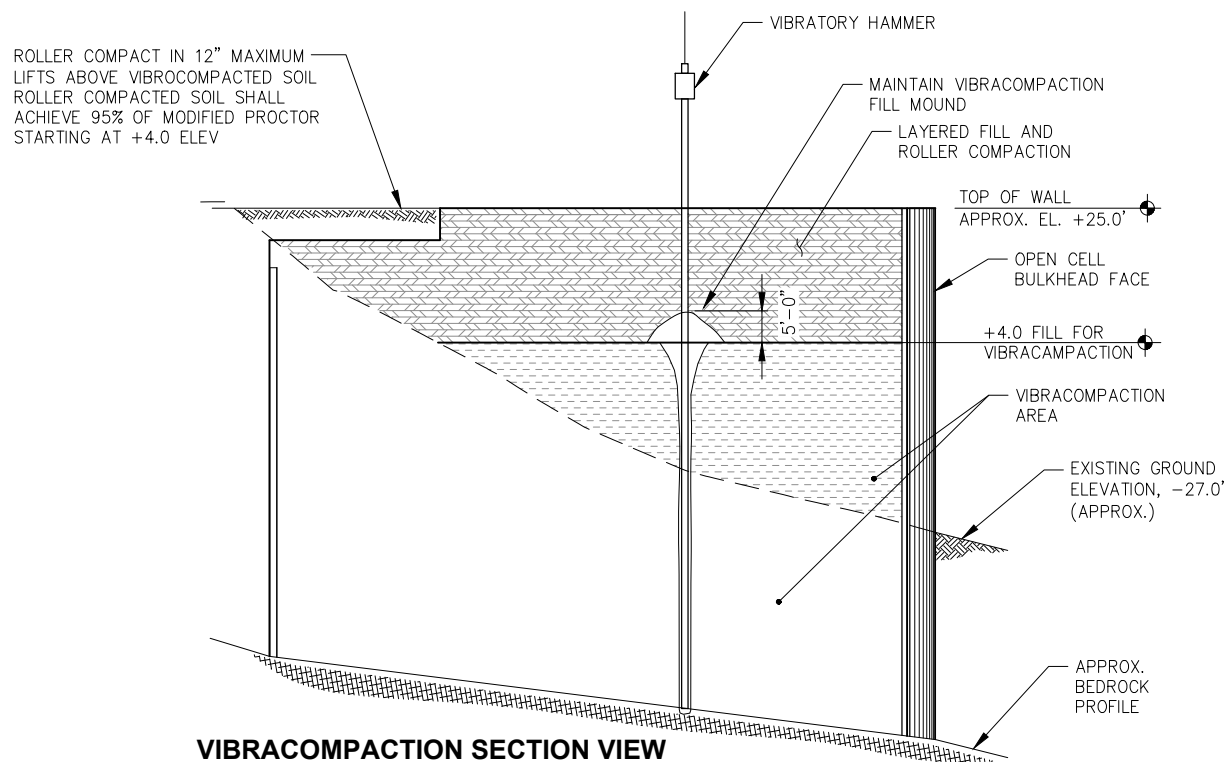


**LEGEND**

⊗ VIBRACOMPACTION LOCATION

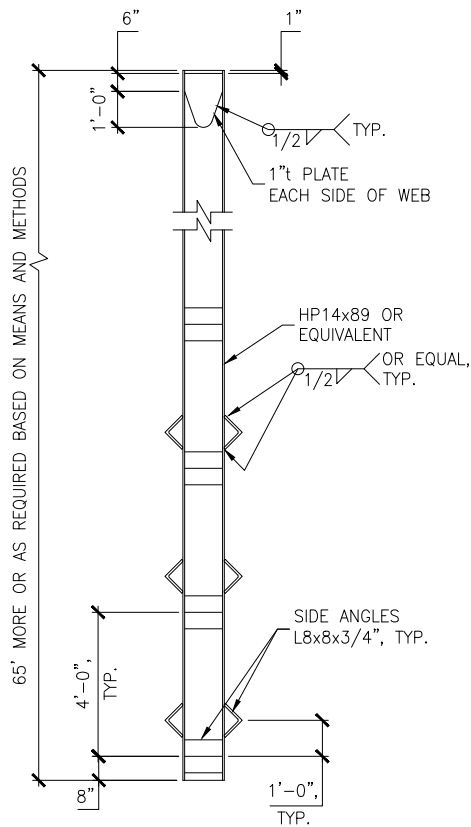
**VIBRACOMPACTION PLAN**

**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.

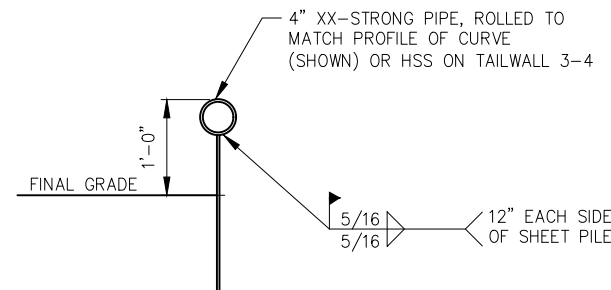
**VIBRACOMPACTION PROCEDURE:**

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.



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CHECKED: CRS  
APPROVED: CRS

SCALE: SCALE IN FEET  
0 15 30 FT.

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DESIGN  
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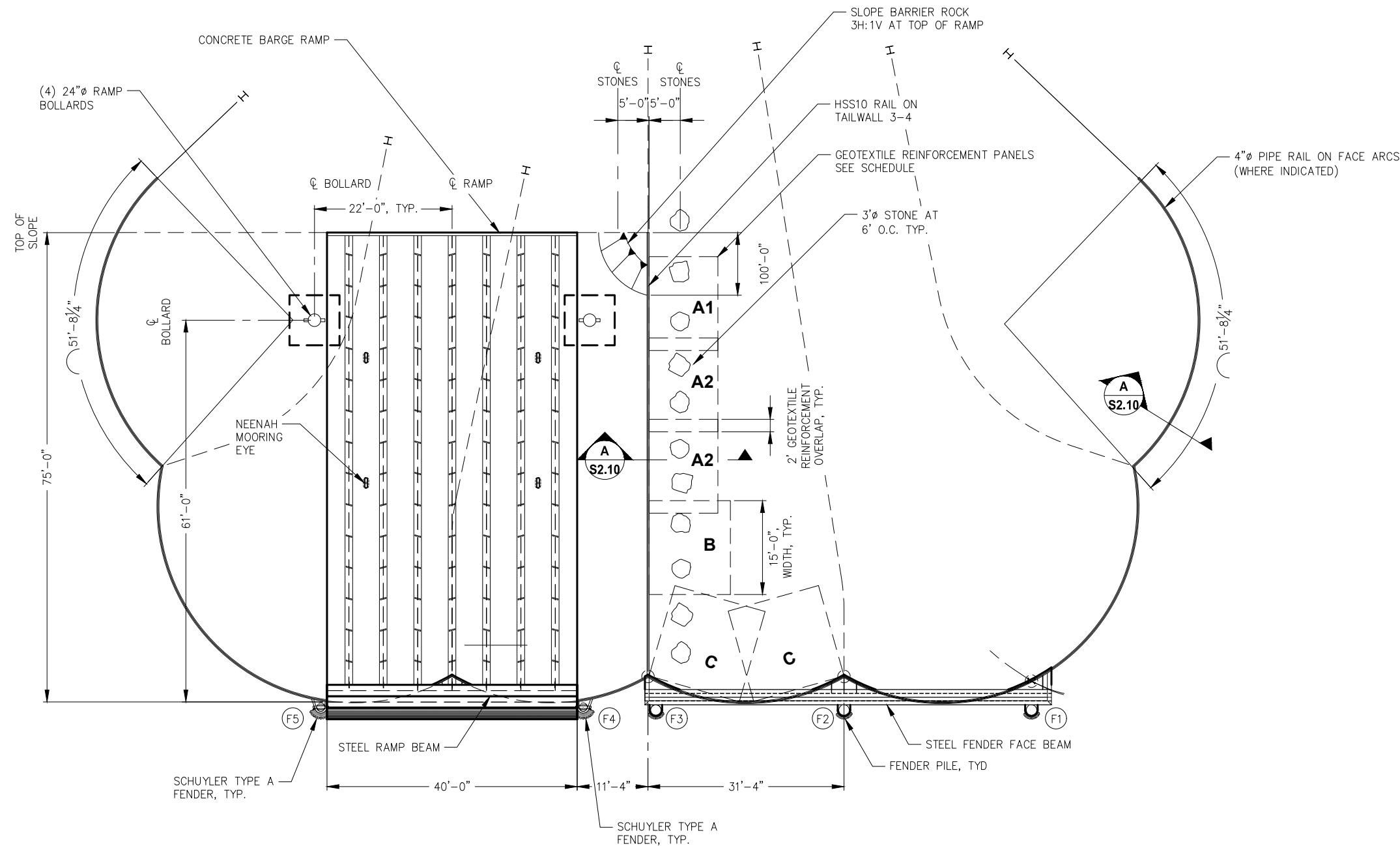
DATE: 05/03/24

**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

SHEET TITLE:  
**VIBRACOMPACTION AND BACKFILL PLAN**

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

**\$2.08**



**DOCK FINISHING PLAN**  
**NOTE:** SEE CIVIL FOR GRADING PLAN

**NOTES:**  
 (F1) FENDER PILE DESIGNATION



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SCALE: SCALE IN FEET  
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SUBMITTAL**

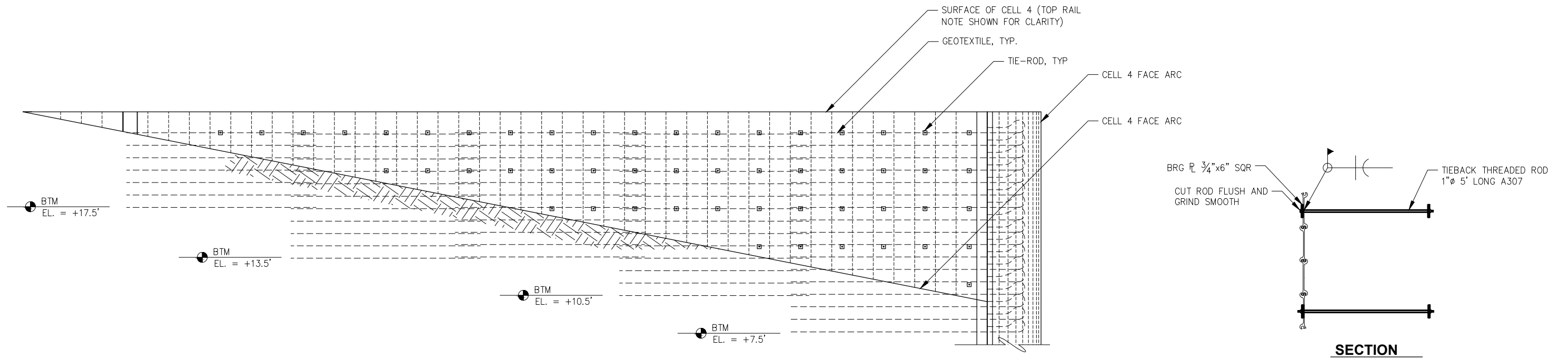
DATE: 05/03/24

**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

SHEET TITLE:  
**DOCK FINISHING PLAN**

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

**S2.09**



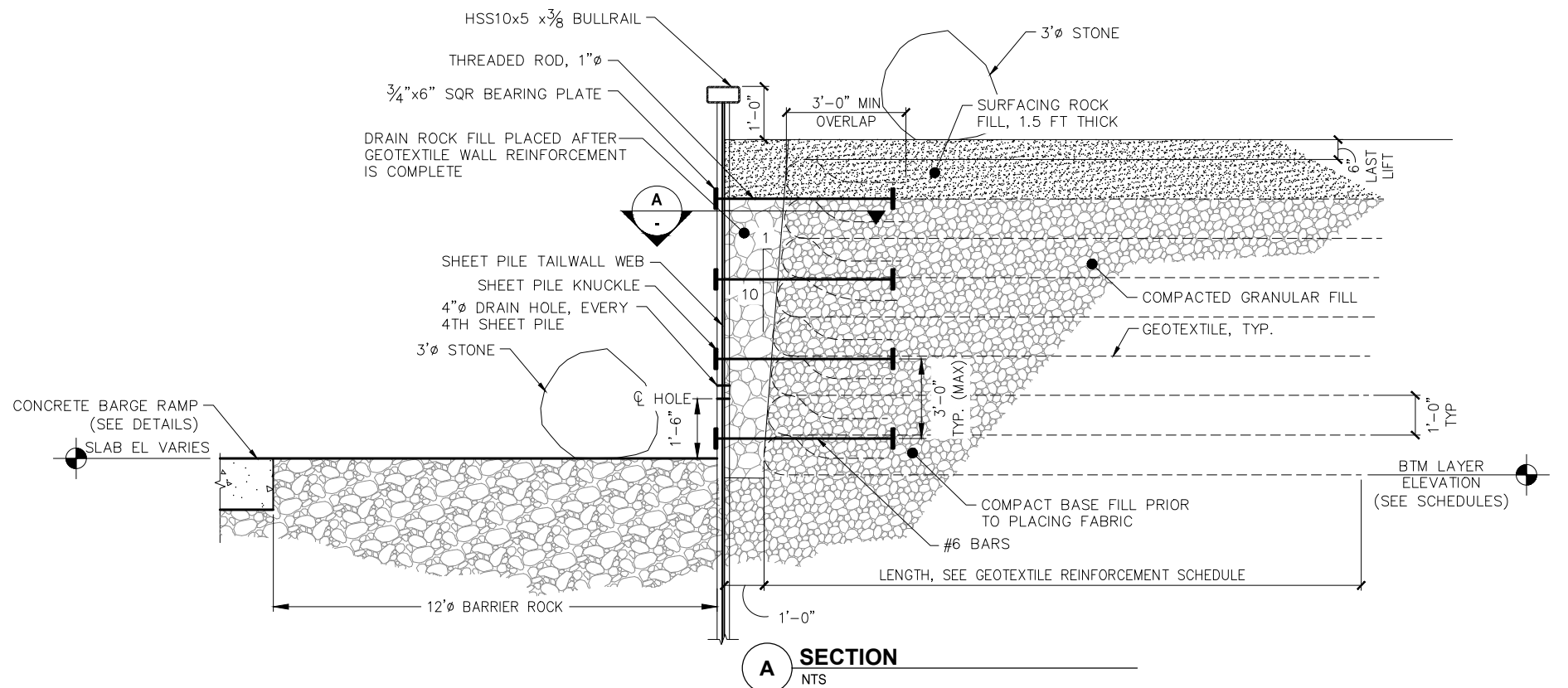
**GEOTEXTILE ELEVATION**

**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.



**SECTION A-A**  
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DRAWN: DRD APPROVED: CRS

SCALE: SCALE IN FEET  
0 10 20 FT.

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SUBMITTAL**

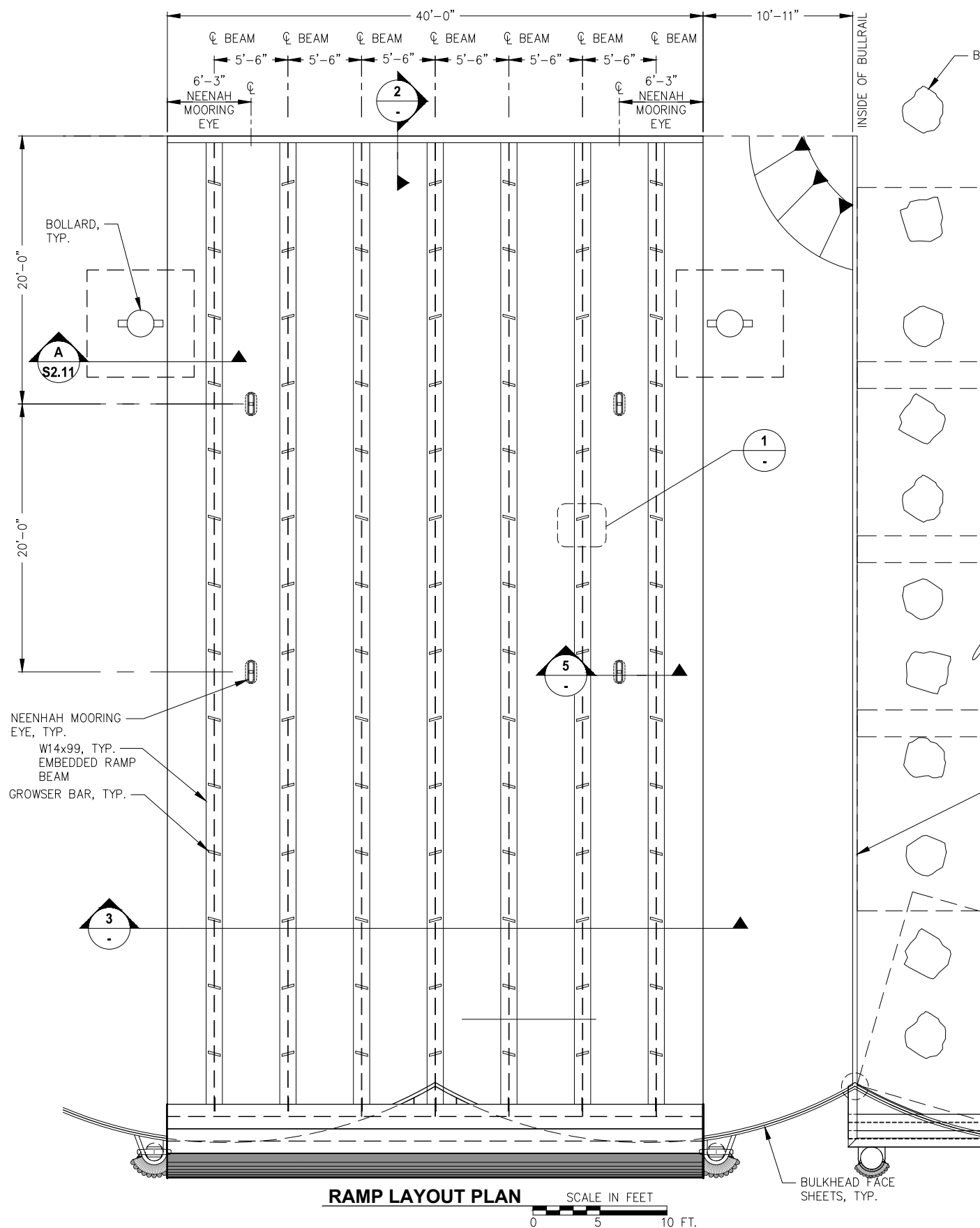
DATE: 05/03/24

**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

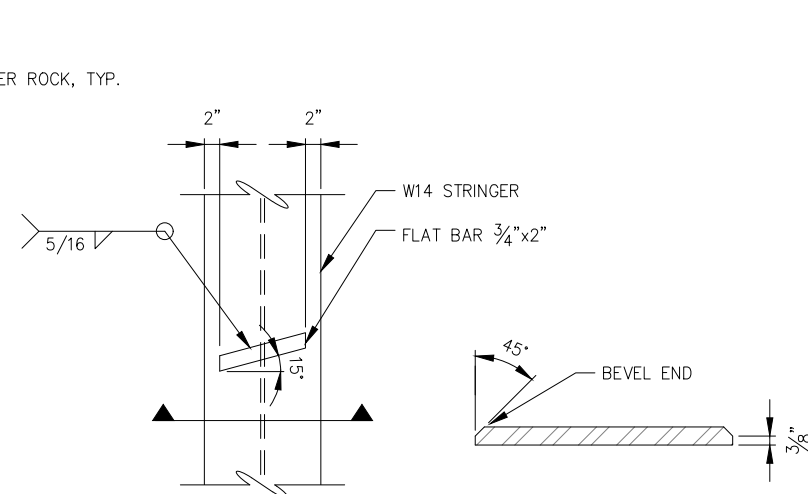
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SECTION AND DETAILS**

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

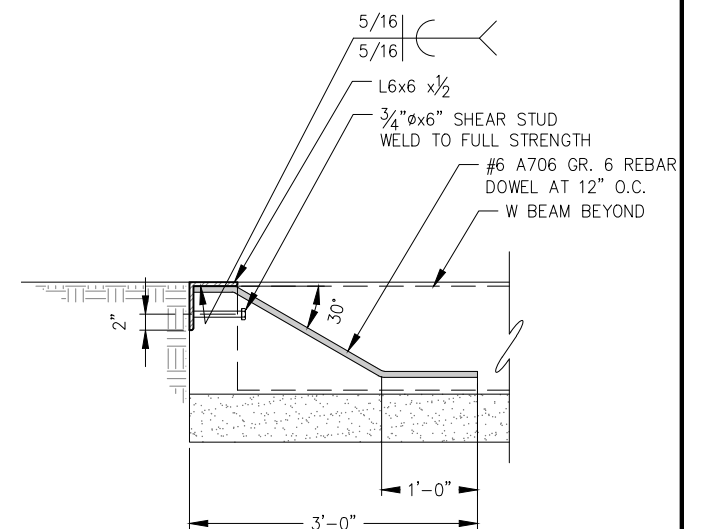
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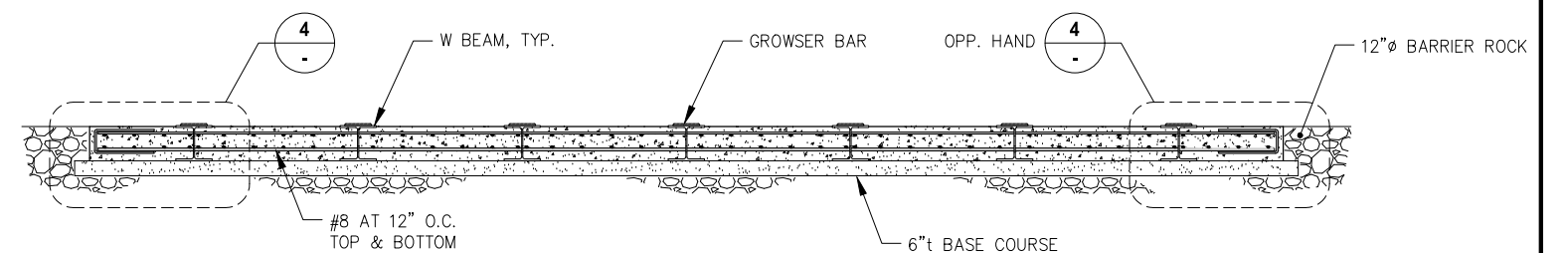
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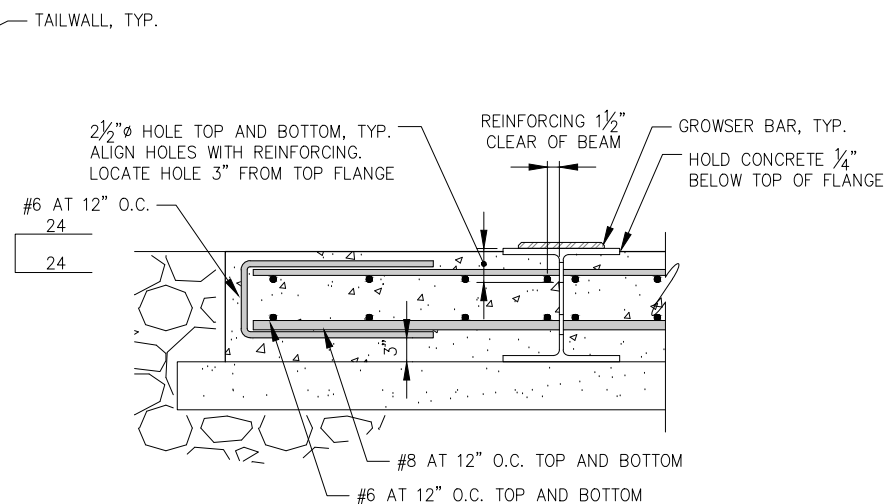
**1 GROWSER BAR TYPICAL DETAIL**



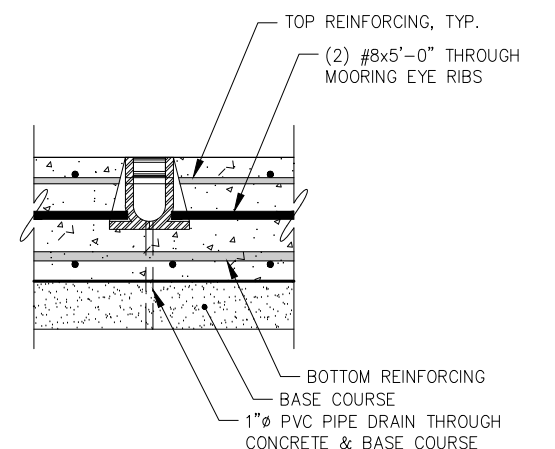
**2 EMBED ANGLE, TYPICAL DETAIL**  
**NOTE:** REINFORCING NOT SHOWN FOR CLARITY. SEE 4/S2.09 FOR DETAILS



**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**



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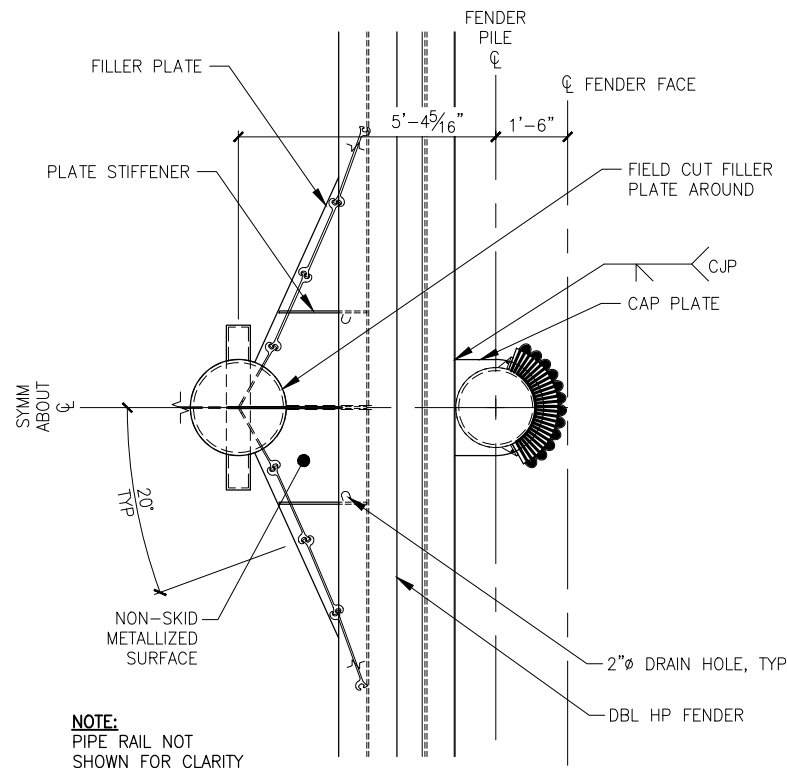
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**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

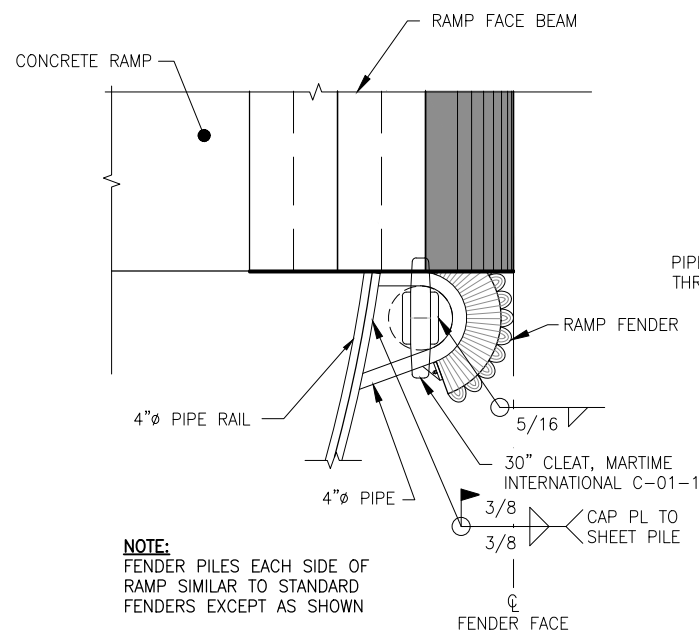
SHEET TITLE:  
**RAMP LAYOUT PLAN AND DETAILS**

**S2.11**

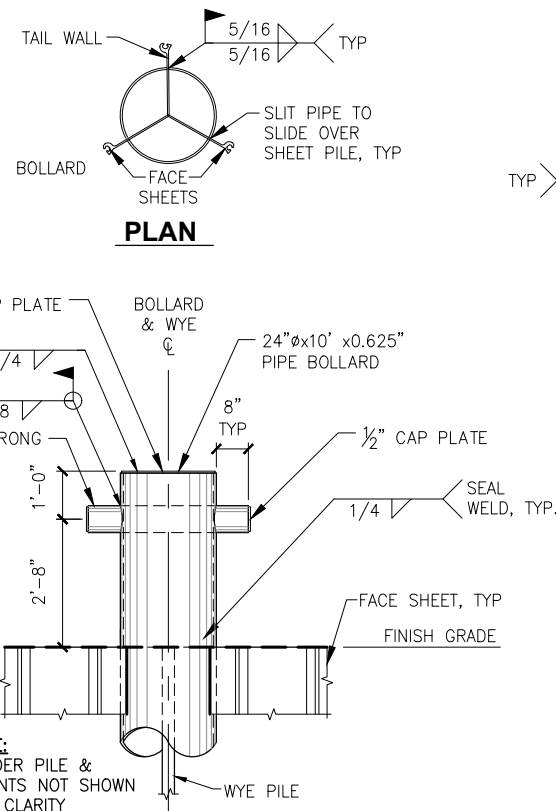
PND PROJECT NO.: 212049 C.A.N.: AECC250



**STANDARD FENDER DETAIL PLAN**

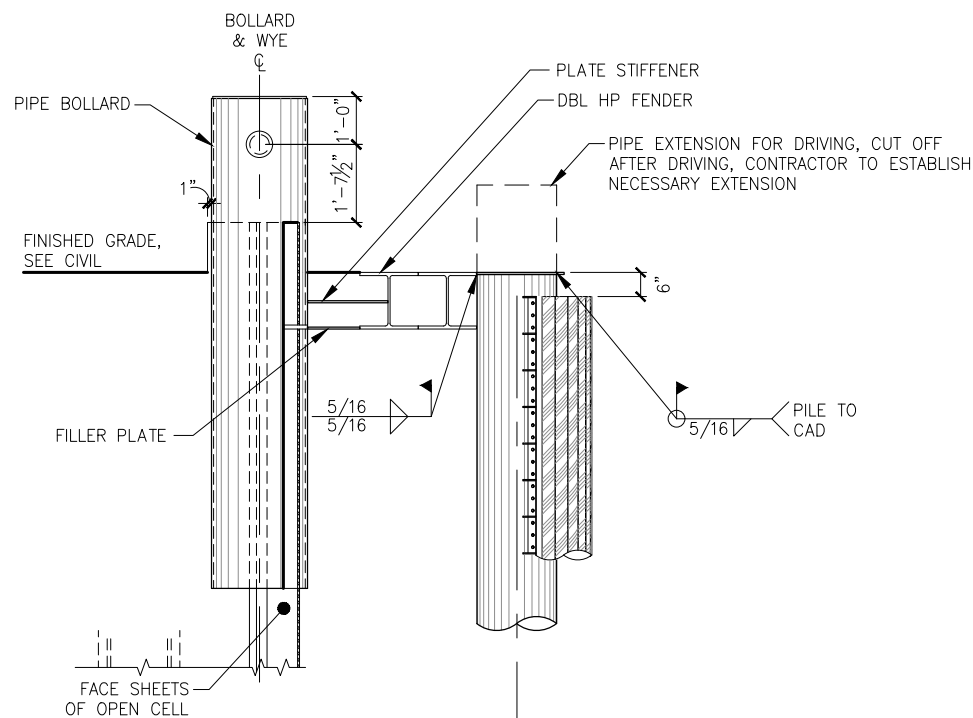


**RAMP FENDER PLAN**

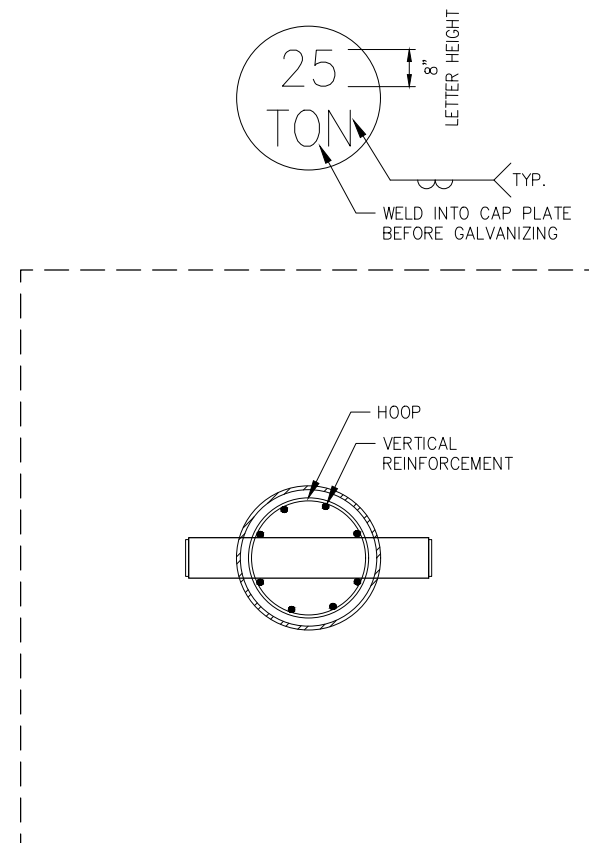


**BOLLARD ELEVATION**

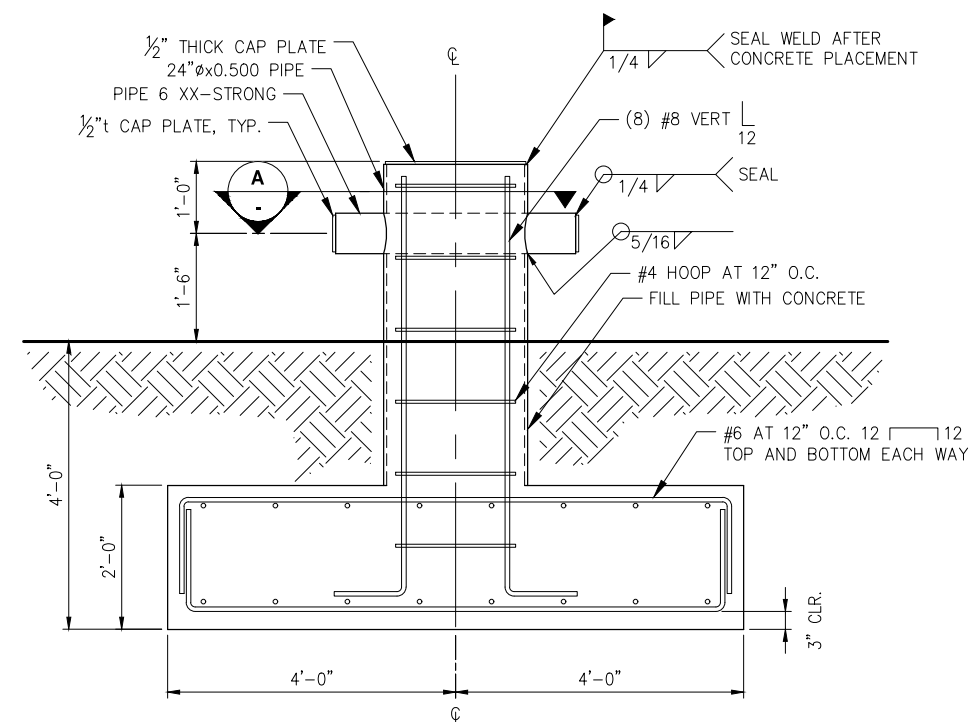
NOTE: FACE BEAM NOT SHOWN FOR CLARITY



**FENDER ELEVATION**



**SECTION**

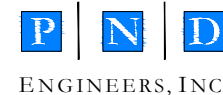


**25-TON RAMP BOLLARD**



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SCALE: NTS

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DATE: 05/03/24

**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

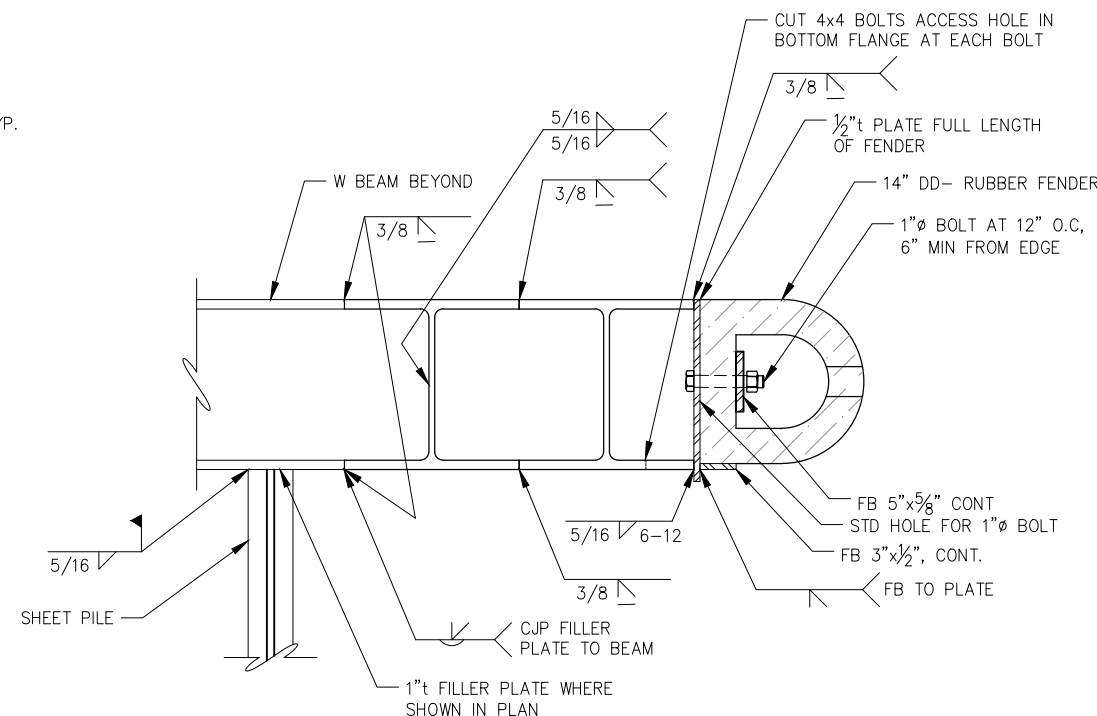
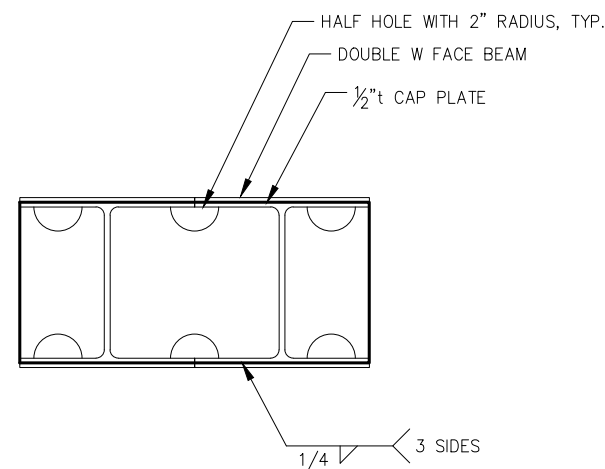
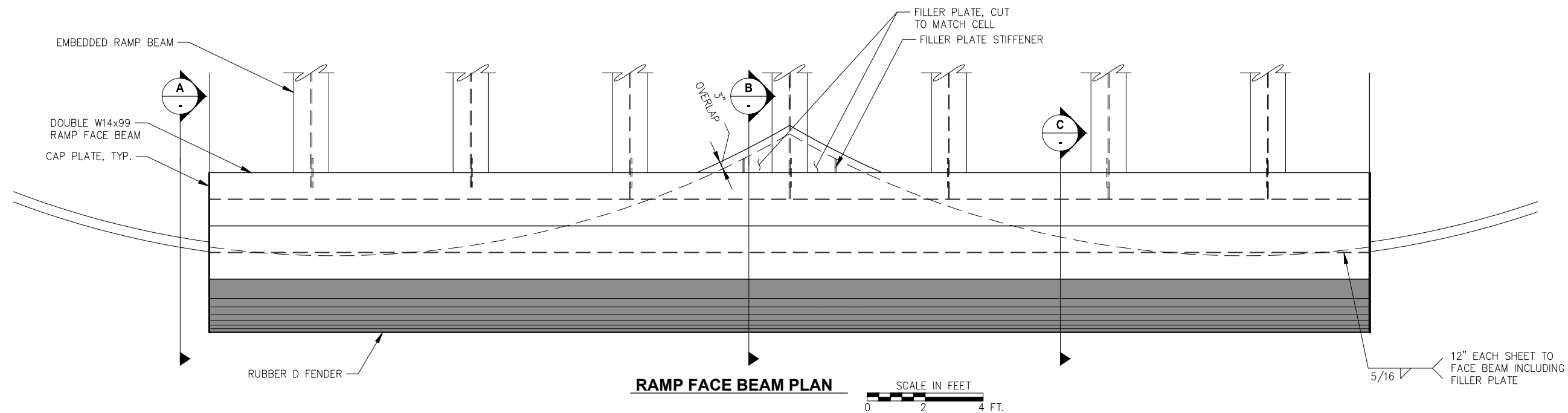
SHEET TITLE:

**RAMP SECTIONS**

**S2.12**

PND PROJECT NO.: 212049

C.A.N.: AECC250



**A FACE BEAM END CAP DETAIL**  
 NOTE: RAMP BEAMS & D-RING FENDER NOT SHOWN FOR CLARITY  
 SCALE IN INCHES  
 0 6 12 IN

**B TYPICAL FACE BEAM SECTION**  
 SCALE IN INCHES  
 0 6 12 IN



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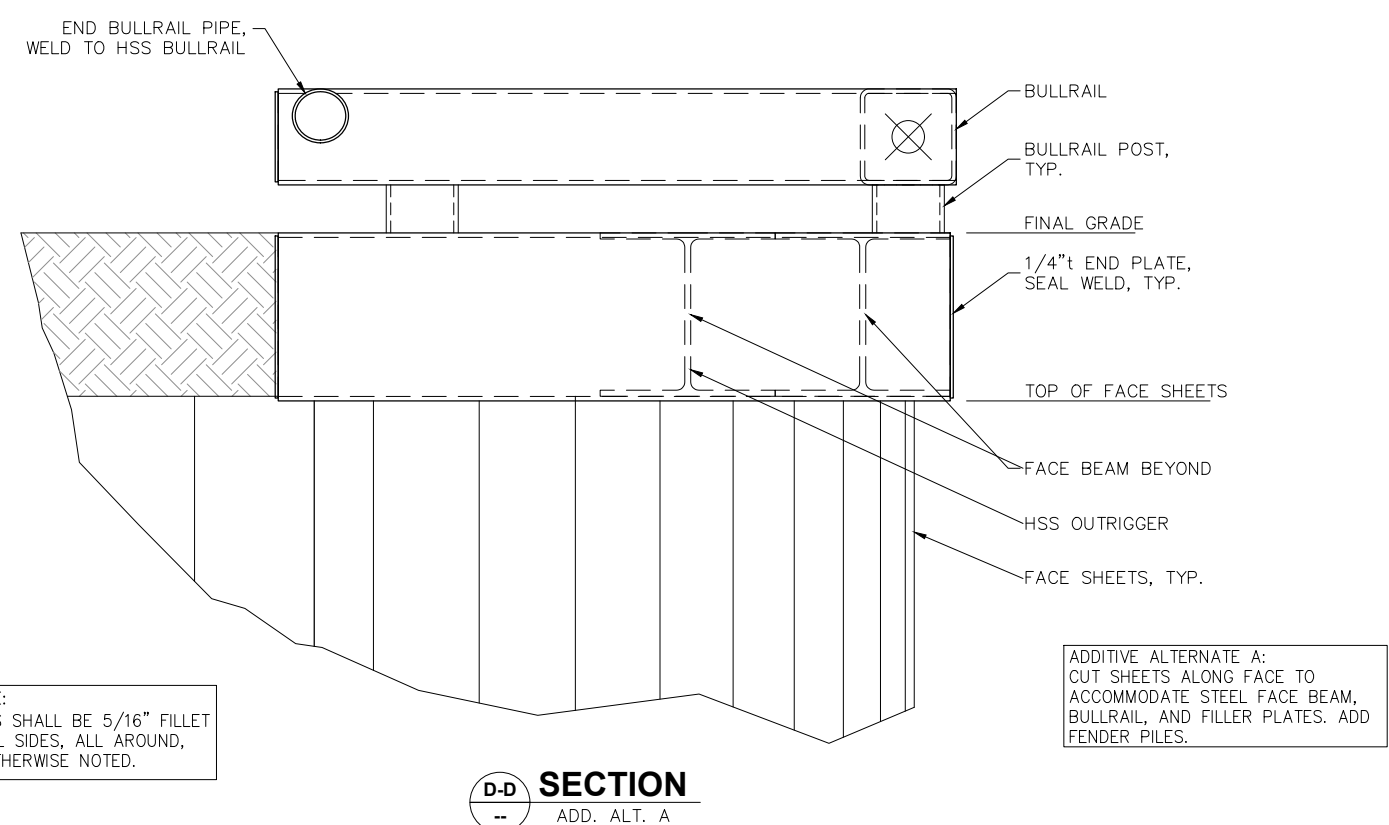
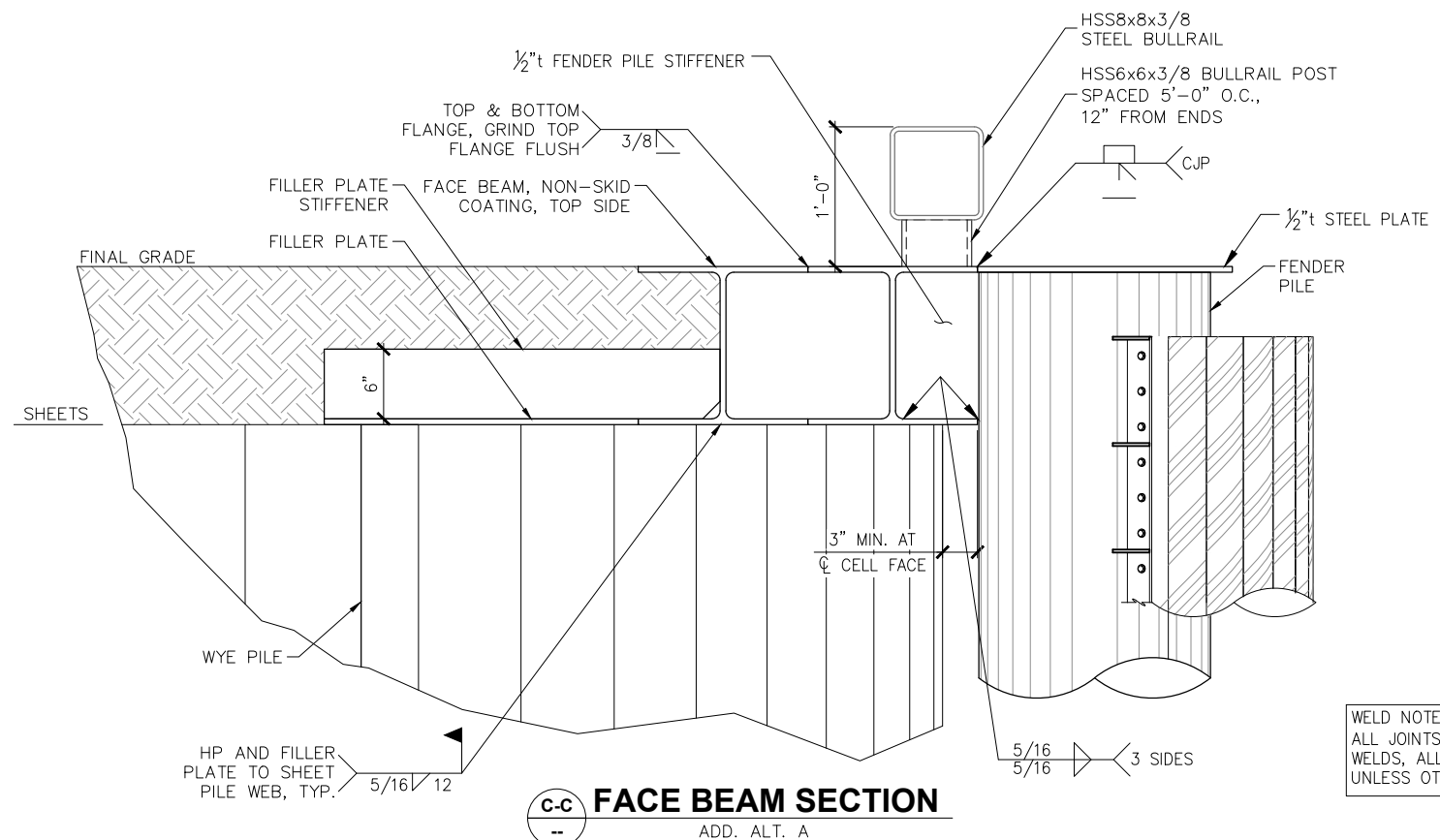
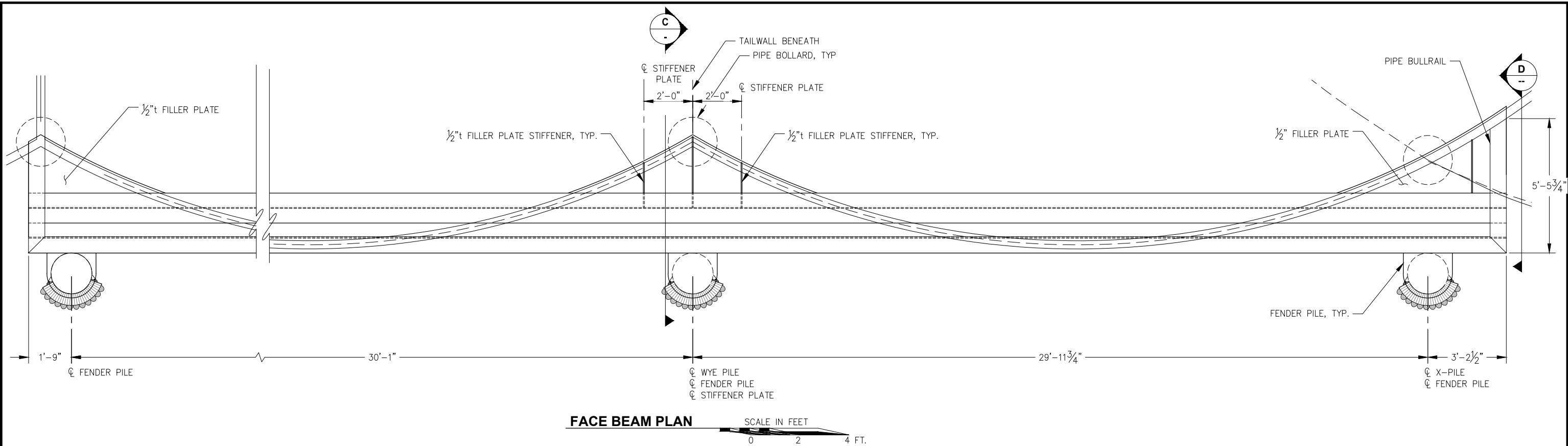
DATE: 05/03/24

**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**



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



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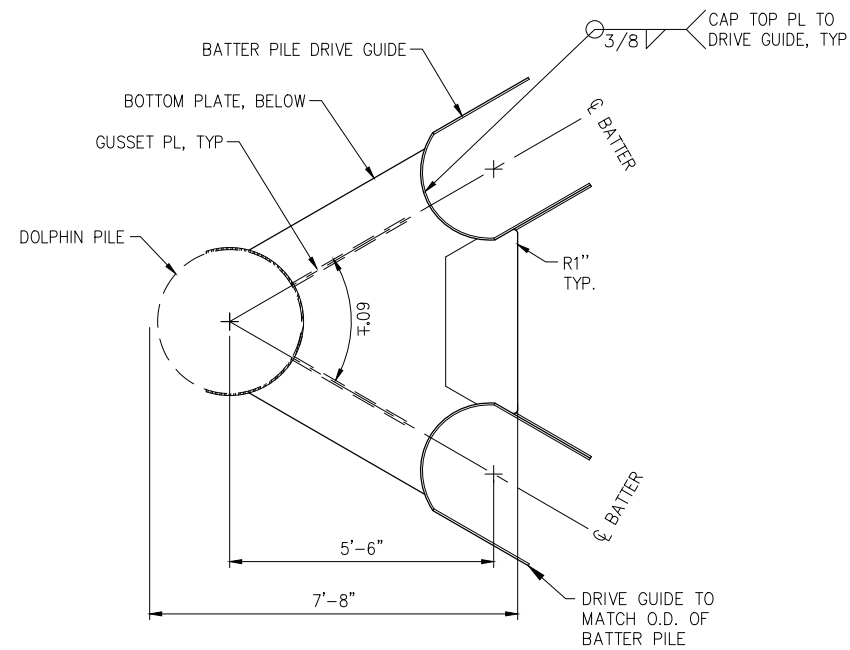
DATE: 05/03/24

**CITY OF HOONAH  
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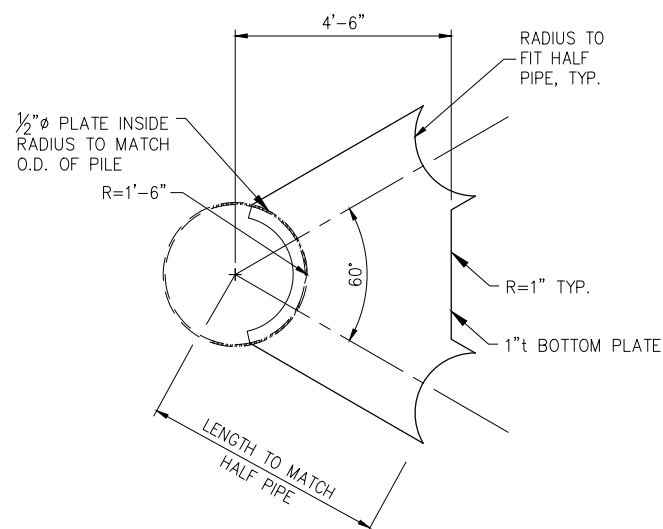
SHEET TITLE:  
**FENDER FACE BEAM PLAN AND DETAILS**

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

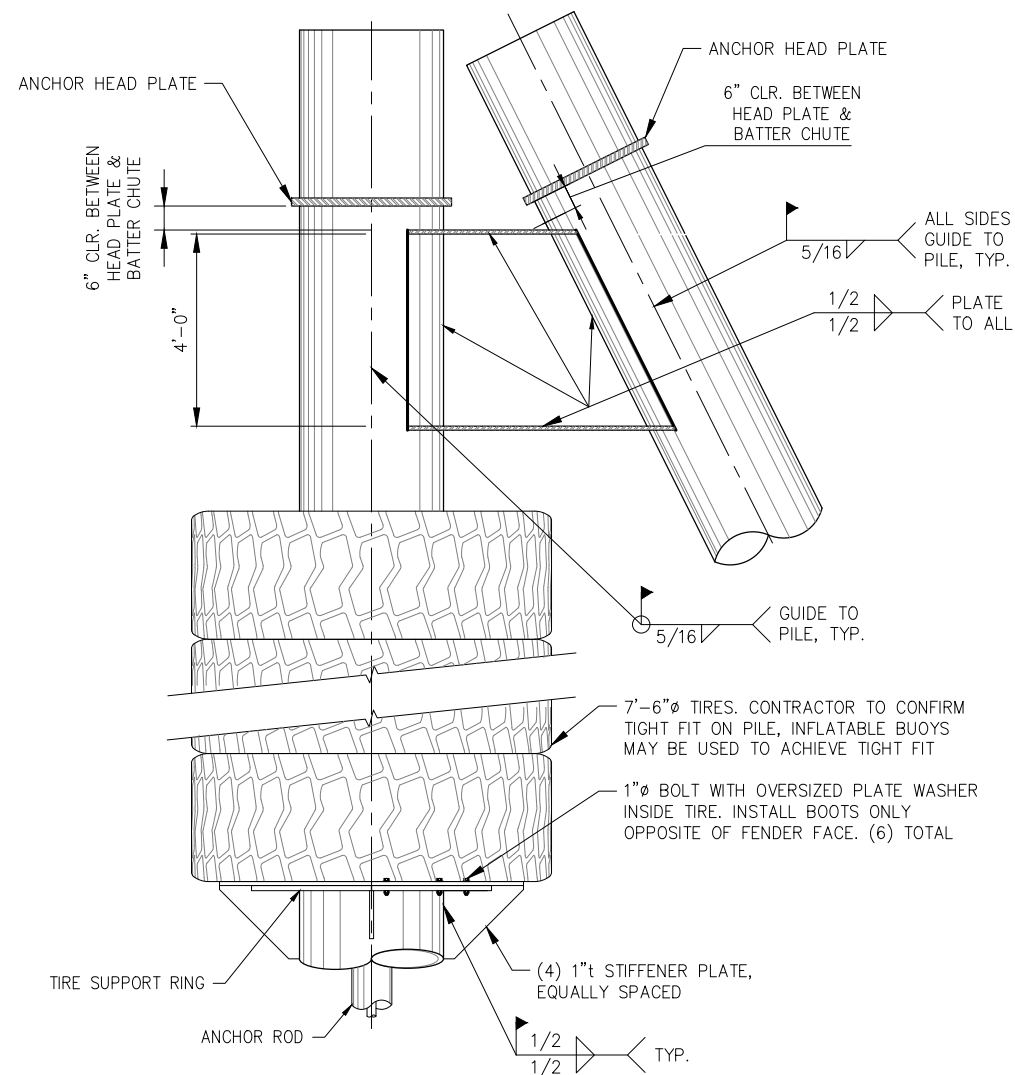
**S2.14**



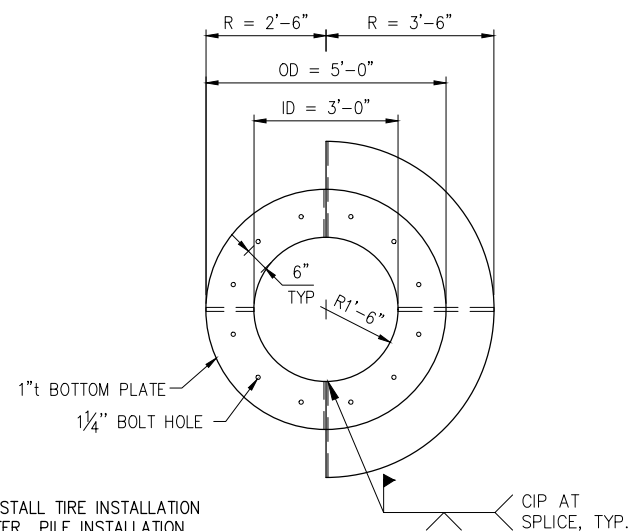
**PREFAB. DOLPHIN CAP PLAN VIEW**  
NTS



**DOLPHIN CAP BOTTOM PLATE PLAN VIEW**  
NTS

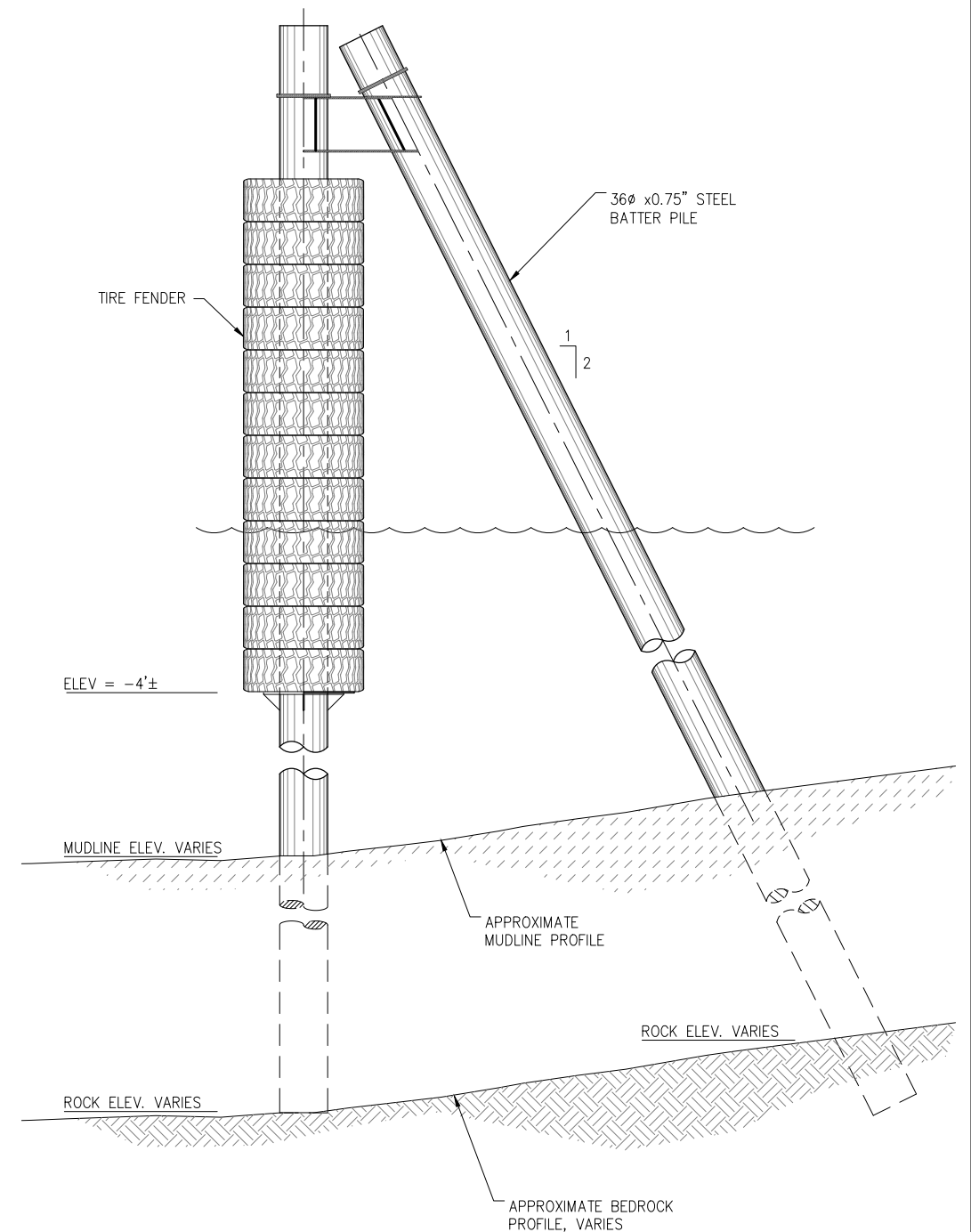


**DOLPHIN DETAIL**  
NTS



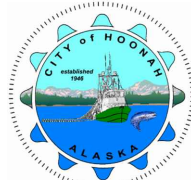
**NOTE:** INSTALL TIRE INSTALLATION RING AFTER PILE INSTALLATION

**TIRE SUPPORT RING**  
NTS



**DOLPHIN ELEVATION**  
NTS

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



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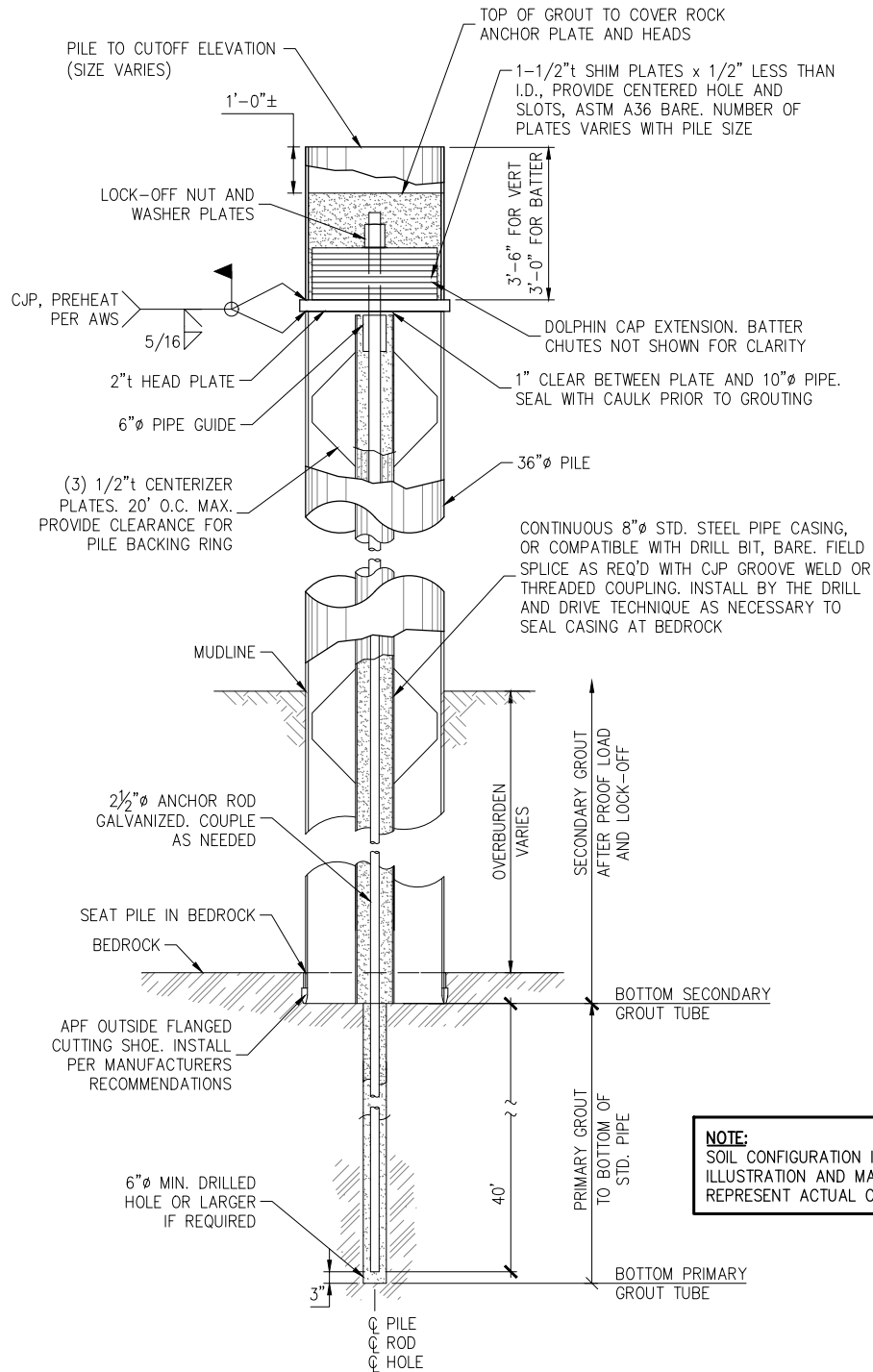
SHEET TITLE:  
**DOLPHIN 1 & 2 SECTION AND DETAILS**

**S3.01**

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

ROCK ANCHOR NOTES:

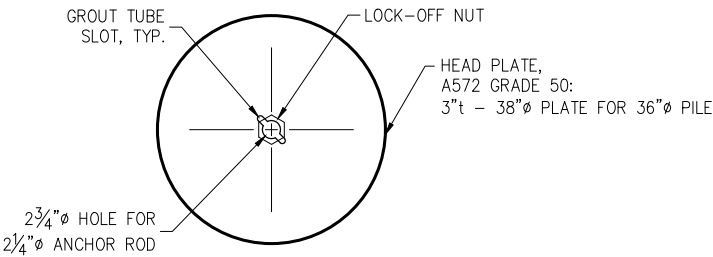
1. THE INTENT OF THE ROCK ANCHOR IS TO PROVIDE TENSION AND SHEAR CAPACITY TO A PILE WHERE THERE IS INSUFFICIENT OVERBURDEN TO ATTAIN THE PILE TENSION AND SHEAR CAPACITY LISTED.
2. GROUT CEMENT SHALL BE TYPE II AND HAVE A MINIMUM 28-DAY UNCONFINED COMPRESSION STRENGTH OF 6,000 PSI. GROUT MAY BE NEAT OR 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.



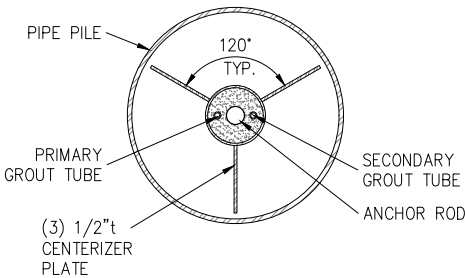
ROCK ANCHOR DETAIL

GROUT TUBES NOT SHOWN FOR CLARITY  
PILE SHOWN VERTICAL FOR CLARITY

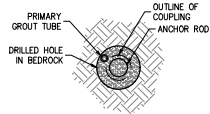
NOTE:  
SOIL CONFIGURATION IS FOR ILLUSTRATION AND MAY NOT REPRESENT ACTUAL CONDITIONS.



HEAD PLATE



SECTION A-A



SECTION B-B

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"Øx0.75"	OPEN / RA	620	545	-35	-65	120	-	-
	1A BATT	30"Øx0.75"	OPEN	-	-	-32	-62	140	-	-
	1B BATT	30"Øx0.75"	OPEN	-	-	-38	-72	140	-	-
DOLPHIN 2	2 VERT	36"Øx0.75"	OPEN / RA	620	545	-26	-56	110	-	-
	2A BATT	30"Øx0.75"	OPEN / RA	620	545	-20	-50	120	-	-
	2B BATT	30"Øx0.75"	OPEN / RA	620	545	-20	-50	120	-	-
DOLPHIN 3	3 VERT	36"Øx0.75"	OPEN / RA	620	545	-24	-54	110	-	-
	3A BATT	30"Øx0.75"	OPEN / RA	620	545	-18	-48	120	-	-
	3B BATT	30"Øx0.75"	OPEN / RA	620	545	-18	-48	120	-	-
FENDER	1F	20"Øx0.500"	OPEN	-	-	-20	-57	100	-	-
	2F	20"Øx0.500"	OPEN	-	-	-27	-57	100	-	-
	3F	20"Øx0.500"	OPEN	-	-	-27	-57	100	-	-
	4F	16"Øx0.500"	OPEN	-	-	-27	-57	100	-	-
	5F	16"Øx10.500"	OPEN	-	-	-27	-57	100	-	-



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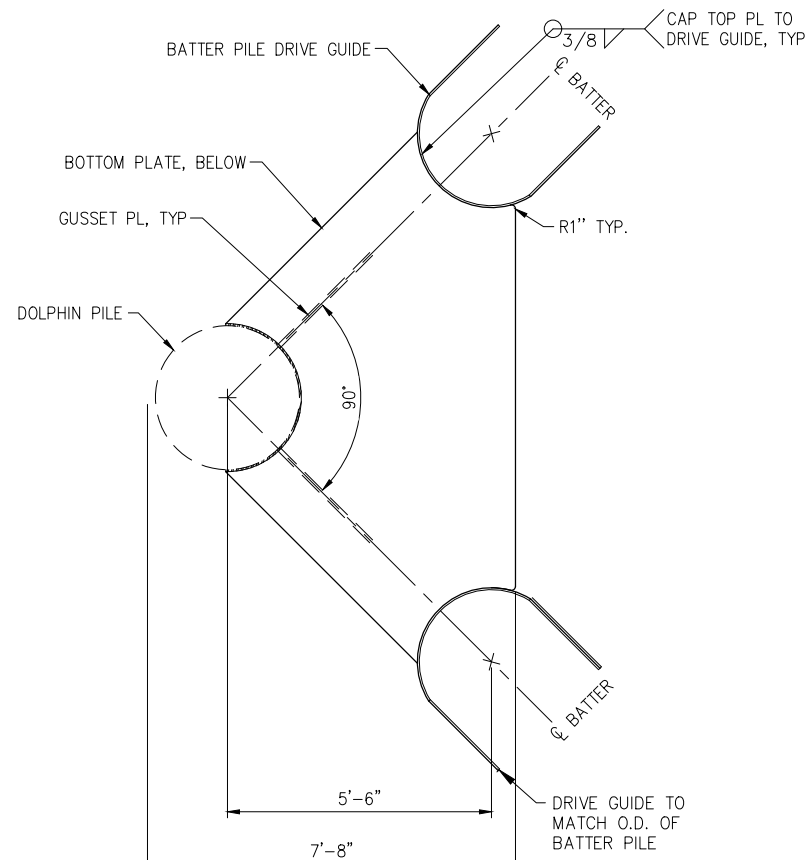
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CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

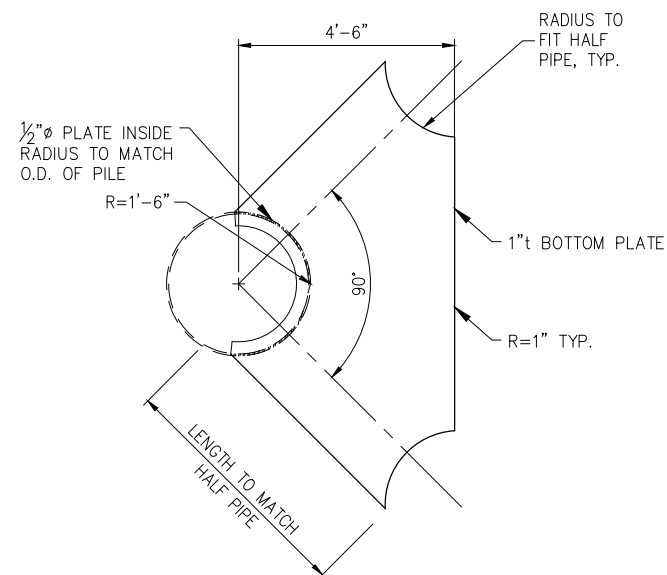
SHEET TITLE:  
ROCK ANCHOR DETAILS

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

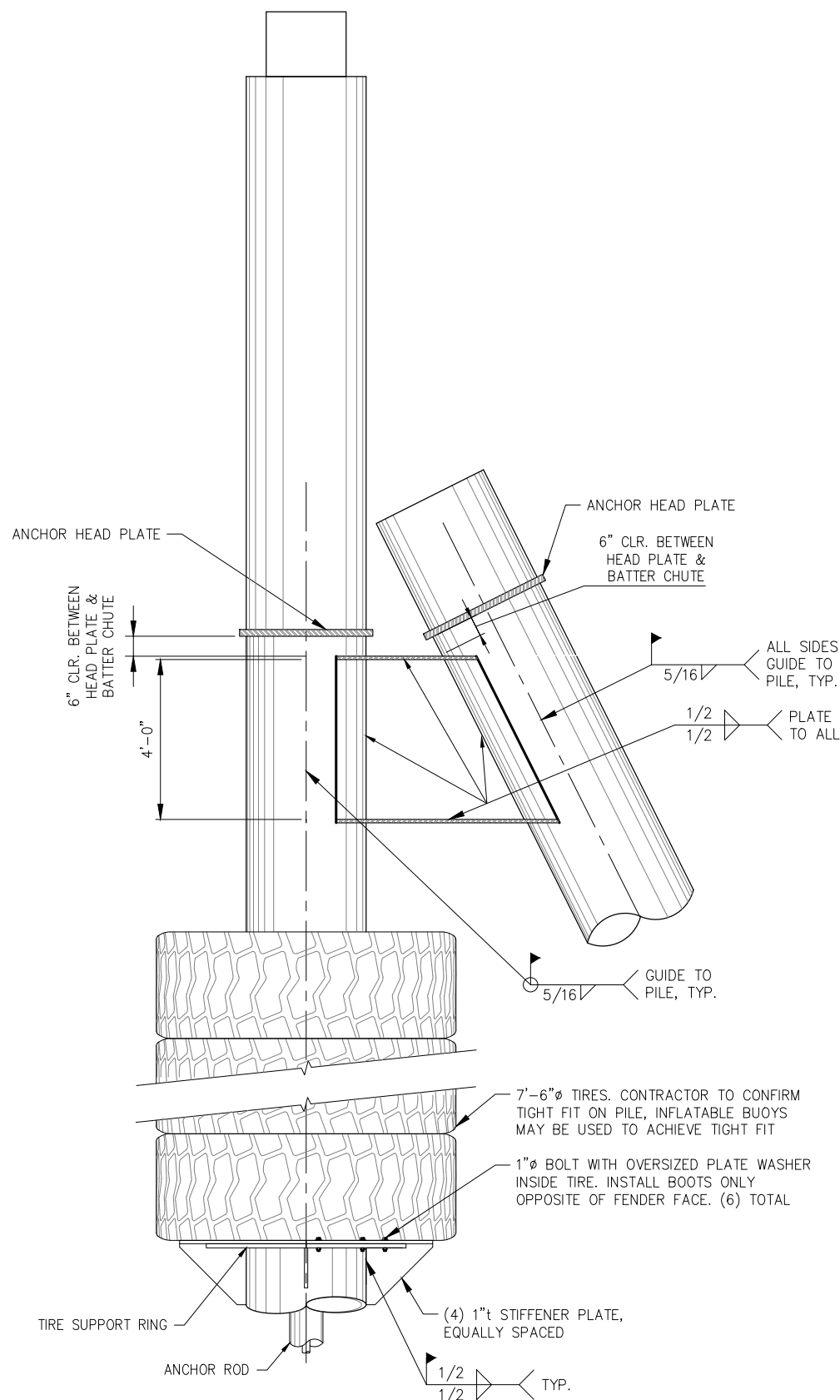
S3.03



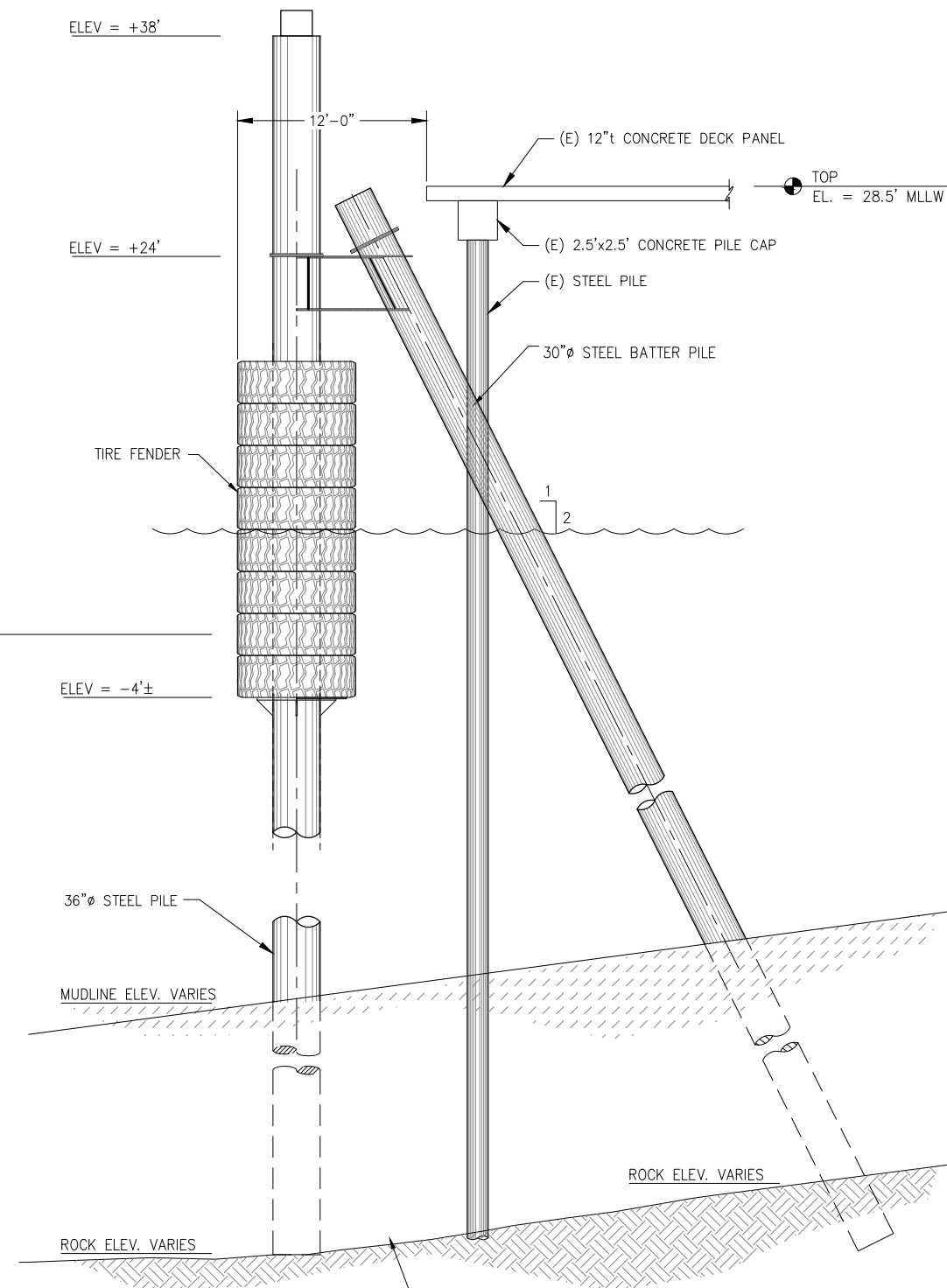
**PREFAB. DOLPHIN CAP PLAN VIEW**  
NTS



**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



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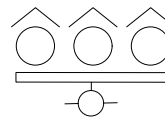
**CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK**

SHEET TITLE:  
**DOLPHIN SECTION AND DETAILS**


**S3.02**

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


LEGEND




HIGH MAST LUMINAIRES



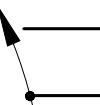
HANDHOLE




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




GROUND ROD




HOME RUN




CONDUIT: 1/2" UON



UNGROUND ED CONDUCTORS



NEUTRAL: #10 WITH DOT  
#12 OTHERWISE



GROUND CONDUCTOR

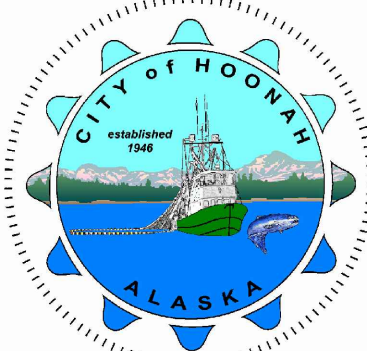
CONDUCTORS NOT SHOWN WHERE ONLY  
#12 NEUTRAL AND UNDERGROUND  
CONDUCTOR ARE REQUIRED

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.



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AECC163270

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DRAWN:	JLC	APPROVED:	BCH

SCALE:  
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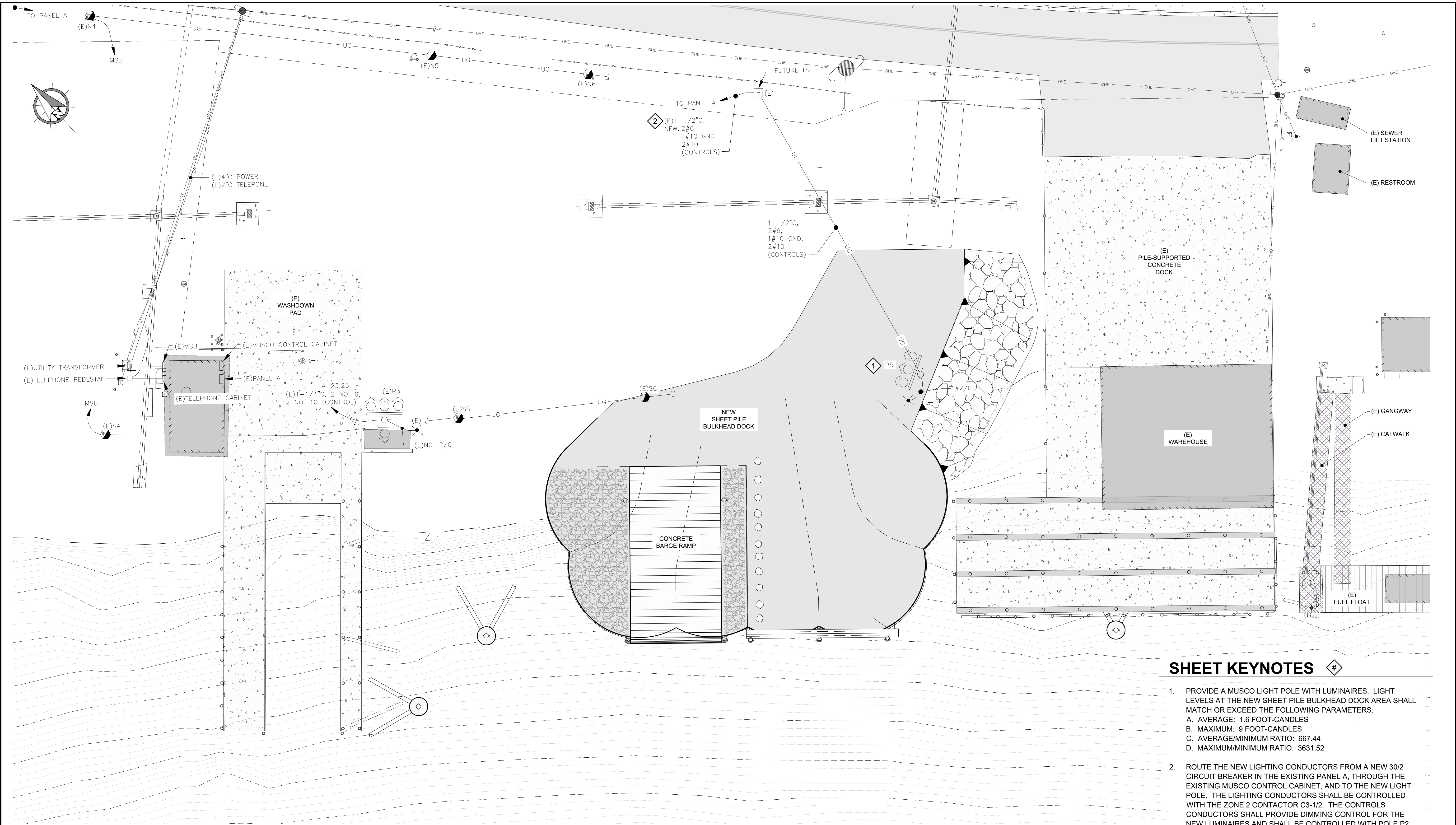
DATE: 05/02/2024

CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

SHEET TITLE:  
ELECTRICAL LEGEND AND NOTES

E1.00

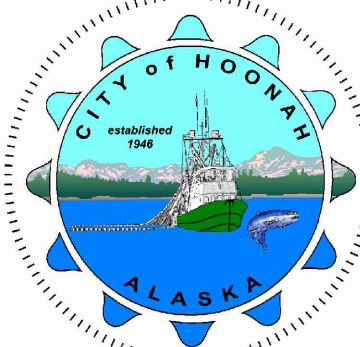
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- SHEET KEYNOTES #
1.

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.



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DRAWN: JLC    APPROVED: BCH

SCALE: SCALE IN FEET  
0 20 40 FT.

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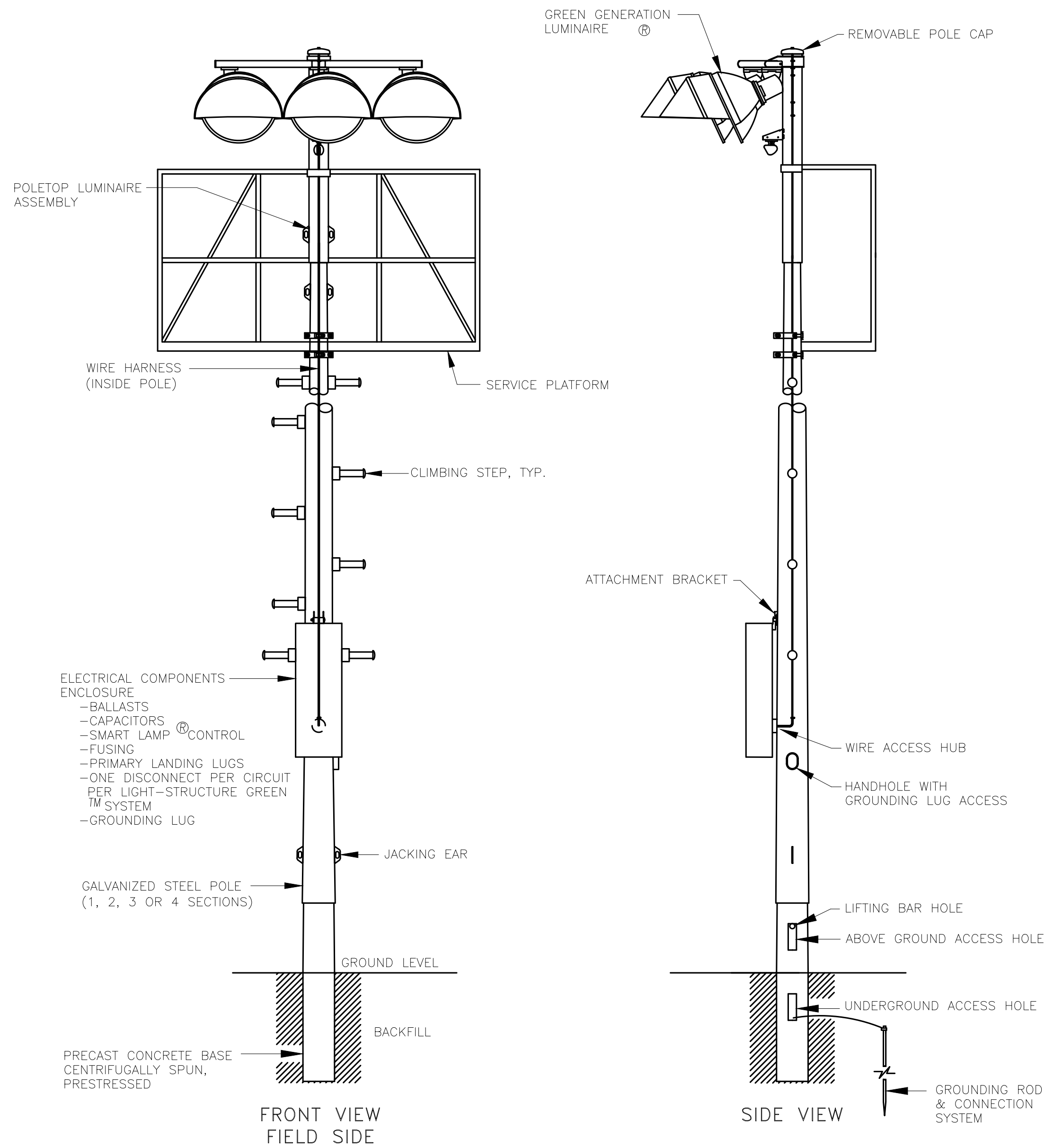
DATE: 05/02/2024

CITY OF HOONAH  
SHEET PILE BULKHEAD DOCK

SHEET TITLE:  
ELECTRICAL SITE PLAN

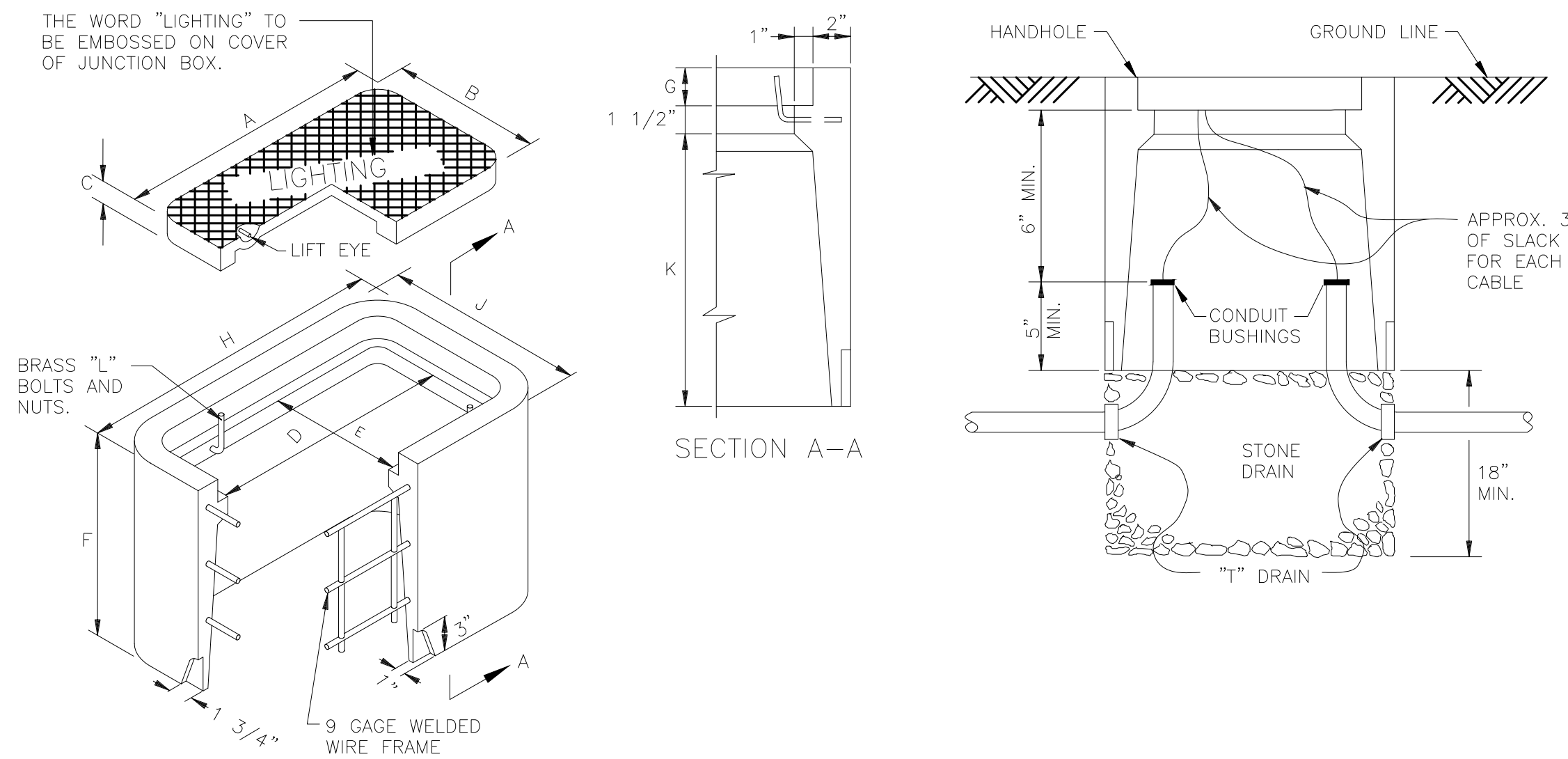
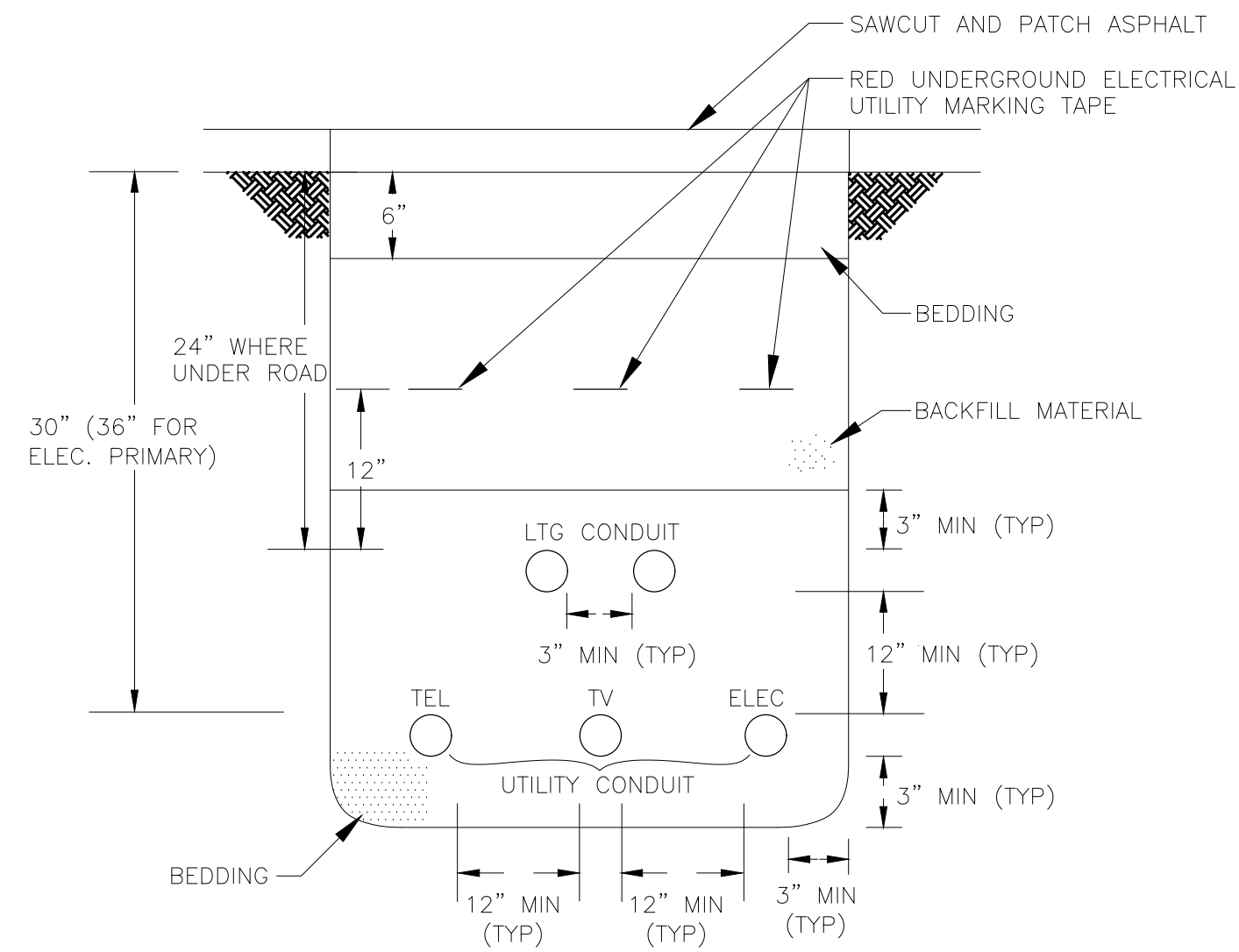
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E1.01



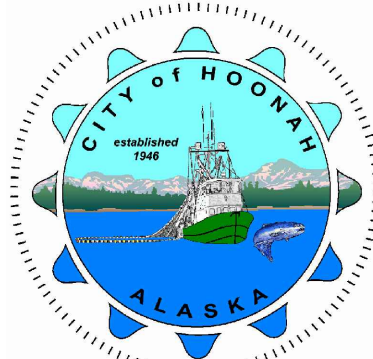
**1** **DETAIL - HIGH MAST LIGHT POLE**  
E1.02 SCALE: NOT TO SCALE

**2** **DETAIL - TRENCH**  
E1.02 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** **DETAIL - HANDHOLE**  
E1.02 SCALE: NOT TO SCALE



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SHEET TITLE: **DETAILS**

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

**E1.02**