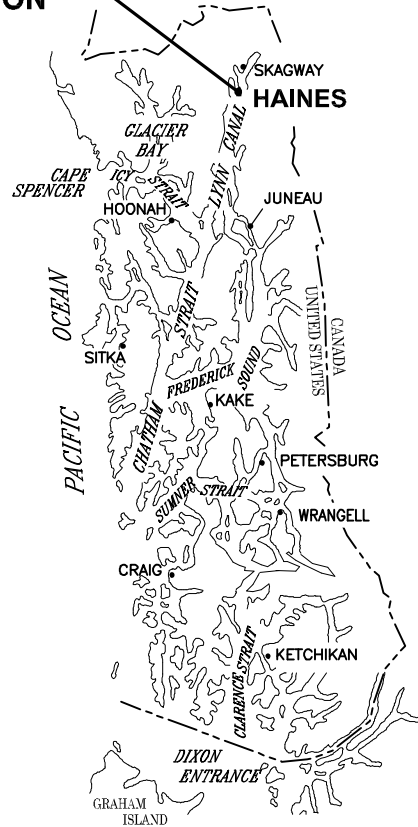


HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

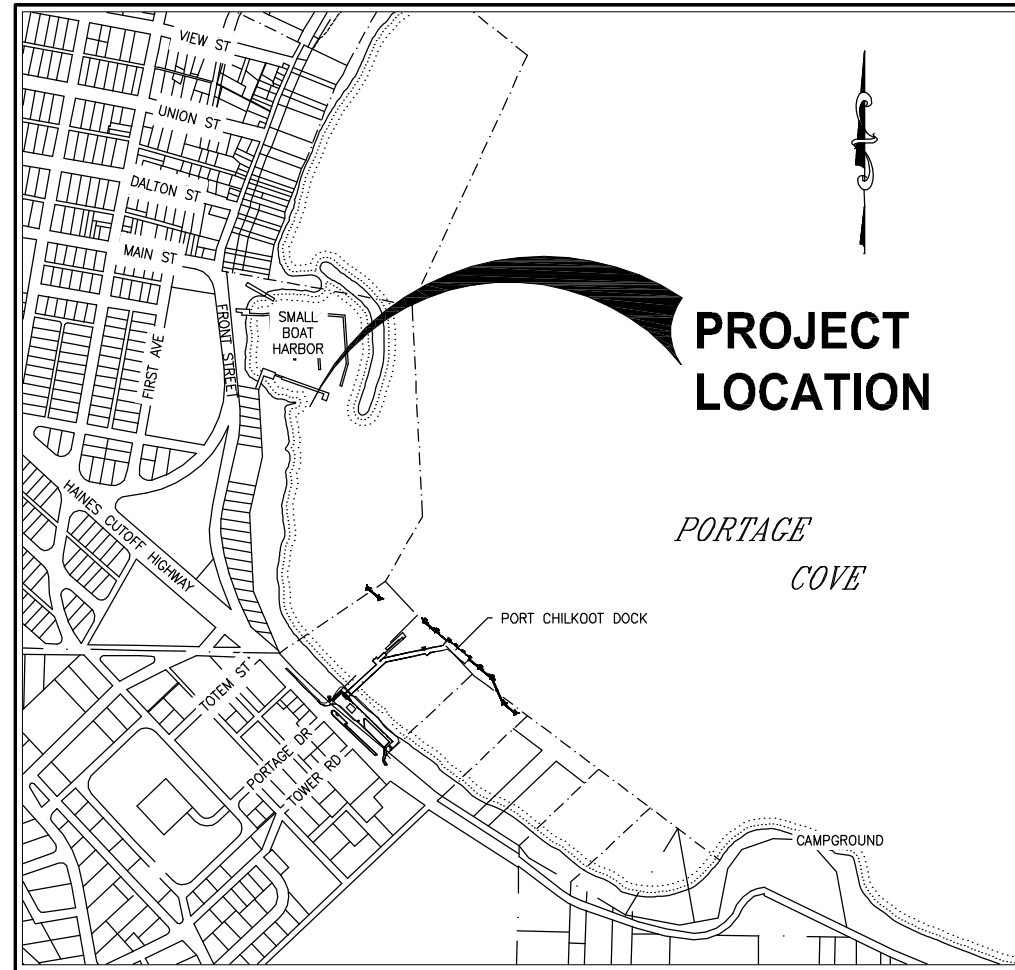


LOCATION MAP

PROJECT LOCATION



SOUTHEAST ALASKA



VICINITY MAP

MAP ADAPTED FROM:
HAINES BOROUGH GIS



DRAWING INDEX			
SHEET NO.	DWG. NO.		TITLE
GENERAL			
1	OF 29	1.01	COVER SHEET, VICINITY MAPS AND DRAWING INDEX
2	OF 29	1.02	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3	OF 29	1.03	EXISTING CONDITIONS, SURVEY CONTROL & BH LOCATIONS
4	OF 29	1.04	EXISTING CONDITIONS AND SITE PHOTOGRAPHS
5	OF 29	1.05	GENERAL SITE PLAN
6	OF 29	1.06	DEMOLITION, SALVAGE & DISPOSAL PLAN
7	OF 29	1.07	FLOAT PILE LAYOUT, SCHEDULE AND DETAILS
WASTEWATER OUTFALL			
8	OF 29	2.01	WASTEWATER OUTFALL PLAN & PROFILE
9	OF 29	2.02	WASTEWATER OUTFALL DETAILS
10	OF 29	2.03	WASTEWATER OUTFALL DIFFUSER DETAILS
DREDGING			
11	OF 29	3.01	DREDGING PLAN
12	OF 29	3.02	DREDGING SECTIONS
13	OF 29	3.03	DREDGING OFFSHORE DISPOSAL PLAN
UPLANDS			
14	OF 29	4.01	UPLAND GRADING AND DRAINAGE PLAN
15	OF 29	4.02	UPLAND SECTIONS AND LAYOUT TABLES
16	OF 29	4.03	STORM DRAIN DETAILS
WAVE BARRIER			
17	OF 29	5.01	WAVE BARRIER SITE PLAN
18	OF 29	5.02	WAVE BARRIER NORTH PARTIAL PLAN
19	OF 29	5.03	WAVE BARRIER SOUTH PARTIAL PLAN
20	OF 29	5.04	PARTIAL ELEVATION
21	OF 29	5.05	TYPICAL SECTIONS
22	OF 29	5.06	PILE SCHEDULE
23	OF 29	5.07	PILE SCHEDULE
24	OF 29	5.08	BEARING PILES AND WALERS
25	OF 29	5.09	BEARING PILE DETAILS
26	OF 29	5.10	BOX CAP DETAILS
27	OF 29	5.11	FENDER AND MARINE SIGNAL LIGHT
28	OF 29	5.12	LADDER
29	OF 29	5.13	PILE ANODES

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TIDAL DATA

HIGHEST OBSERVED WATER LEVEL (APPROX.) = 26.5 FEET
MEAN HIGHER HIGH WATER = 16.7 FEET
MEAN HIGH WATER = 15.7 FEET
MEAN LOWER WATER = 1.6 FEET
MEAN LOWER LOW WATER = 0 FEET
LOWEST OBSERVED WATER LEVEL (APPROX.) = -6.5 FEET

FROM: NOAA NOS/CO-OPS STATION ID: 9452400 SKAGWAY, ALASKA

PROJECT SCHEDULE

DESCRIPTION	SCHEDULE
1. SUBSTANTIAL COMPLETION	MAY 31, 2017
2. FINAL COMPLETION OF ALL WORK UNDER THIS CONTRACT.	JUNE 30, 2017

95% DESIGN REVIEW SUBMITTAL



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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DRAWN: PJD APPROVED: CRS

SCALE:
AS SHOWN

DATE: 8/7/15

HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION

SHEET TITLE:
**COVER SHEET, VICINITY MAPS
AND DRAWING INDEX**

1.01

SHEET
1 OF 29

PND PROJECT NO.: 102029

GENERAL NOTES

1. EROSION AND POLLUTION CONTROL PLANS

THE CONTRACTOR SHALL DEVELOP AND SUBMIT FOR ENGINEER AND 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 AS WELL AS ALL MATERIAL SITES, WASTE DISPOSAL SITES 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. 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:

- WATER AND WASTE MATERIAL (907) 766-2237 OR 766-2200
- POWER AND LIGHT (AP&T) (907) 766-2331
- CATV (907) 766-2137
- TELEPHONE (GTE) (907) 766-2311

4. PROPERTY DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ITS PRE-CONSTRUCTION CONDITION OR BETTER AT NO ADDITIONAL COST.

5. 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.

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

LEGEND

EXISTING	THIS PROJECT	
— OHE _x —	— OHE —	OVERHEAD ELECTRICAL
— FU _x —		BURIED FUEL LINE
— EU _x —	— E —	ELECTRICAL (UNDERGROUND)
— W _x —	— W —	WATER
— SS _x —	— SS —	SANITARY SEWER
	— SS _A —	SANITARY SEWER (ABANDONED)
— ROW —		RIGHT-OF-WAY
— CU _x —		COMMUNICATION (CABLE/TEL)
— FM _x —	— SD — OR — 12 —	STORM DRAIN FORCE MAIN
	— ? — ? —	INFERRED SOIL STRATUM CHANGE
	— - - -	PROPERTY LINE
	— · · · —	GRADE BREAK
	— x — x —	GEOTEXTILE FABRIC

LEGEND

EXISTING	THIS PROJECT	
		ARTWORK/ DISPLAYS
		GUY WIRE ANCHOR
		SURVEY CONTROL
		NAVIGATION AID
		UTILITY POLE
		BOLLARD
		CURB & GUTTER
		ELECTRICAL TRANSFORMER
		ELECTRICAL VAULT
		ELECTRICAL HANDHOLE
		FIRE HYDRANT
		LIGHT POLE
		TRAFFIC SIGNAL
		SANITARY SEWER MANHOLE STORM DRAIN MANHOLE
		STORM DRAIN INLET
		SIGN
		TREE/VEGETATION
		LAYOUT POINT LAYOUT RADIUS
		GUARDRAIL
		WATER VALVE
		SECTION OR DETAIL CALLOUT
		LOCATION OF DETAIL OR REFERENCE DRAWING

ABBREVIATIONS

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

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REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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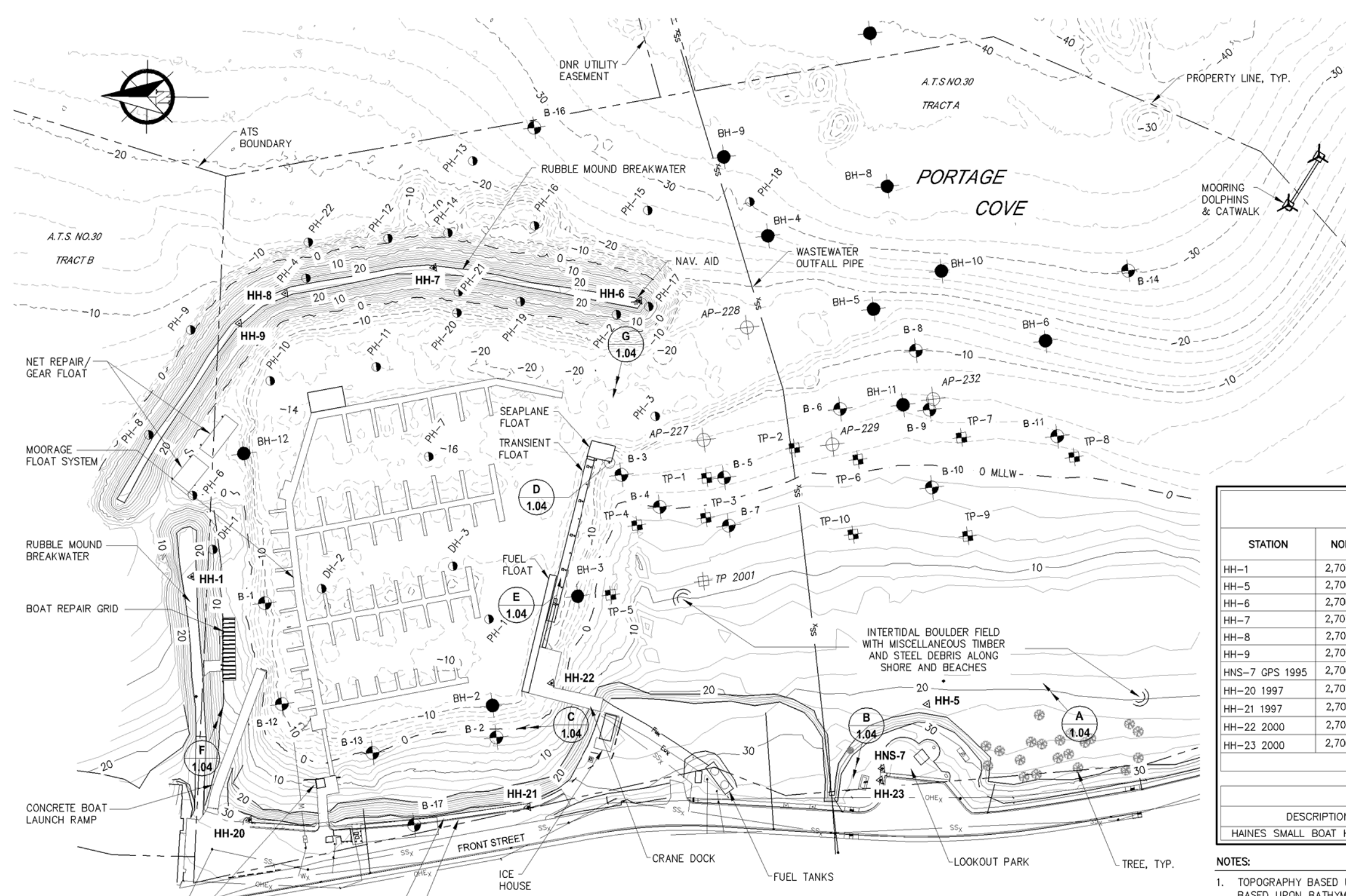
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

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

PND PROJECT NO.: 102029

1.02
SHEET
2 OF 29



LEGEND

B-1	PND ENGINEERS, INC.: BOREHOLE, (2014)	AP-232	U.S. ARMY CORPS OF ENGINEERS: BOREHOLE, (2004) LOCATION APPROXIMATE
BH-2	PND ENGINEERS, INC.: BOREHOLE, (2012)	TP 2001	U.S. ARMY CORPS OF ENGINEERS: TEST PIT, (2000) LOCATION APPROXIMATE
TP-8	PND ENGINEERS, INC.: TEST PIT, (2010)		
DH-1 PH-1	U.S. ARMY CORPS OF ENGINEERS: PROBE AND DRILLHOLES, (1957, 1973, 1975) LOCATION APPROXIMATE		

A
1.04 → SITE PHOTO ORIENTATION

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	ELEV (MLLW)	ELEV (NAVD88)	DESCRIPTION
HH-1	2,707,596.79	2,353,756.26	25.64	21.80	USACE SURVEY MARK SBC
HH-5	2,706,584.96	2,353,459.66	24.60	18.32	DESTROYED
HH-6	2,706,922.52	2,354,071.75	25.74	21.90	USACE SURVEY MARK SBC
HH-7	2,707,206.44	2,354,151.36	26.12	22.28	USACE SURVEY MARK SBC
HH-8	2,707,421.75	2,354,139.73	24.73	20.89	USACE SURVEY MARK SBC
HH-9	2,707,492.29	2,354,105.04	25.52	21.68	USACE SURVEY MARK SBC
HNS-7 GPS 1995	2,706,656.27	2,353,376.15	35.62	31.78	AKDOT 3.25" DOMED BRASS CAP
HH-20 1997	2,707,554.58	2,353,405.42	32.22	28.38	USACE 3.25" DOMED BRASS CAP
HH-21 1997	2,707,160.36	2,353,378.82	33.55	29.71	USACE 3.25" DOMED BRASS CAP
HH-22 2000	2,707,107.68	2,353,549.09	26.66	22.82	USACE 3.25" DOMED BRASS CAP
HH-23 2000	2,706,660.66	2,353,360.01	35.54	31.70	USACE 3.25" DOMED BRASS CAP

SEE NOTE 2 FOR CONTROL DATA DETAILS.

NAVIGATION AIDS		USCG No.	NORTHING	EASTING
DESCRIPTION				
HAINES SMALL BOAT HARBOR LIGHT 2		23910	2,706,927.5	2,354,070.8

- NOTES:**
- TOPOGRAPHY BASED UPON FIELD SURVEY BY PND CONDUCTED IN MAY 2013. BATHYMETRY BASED UPON BATHYMETRIC SURVEYS CONDUCTED WITH PND, CONCURRENT (MAY 2013) BY RICK BRAUN (LS 5485) AND DAVID EVANS ASSOCIATES.
 - HORIZONTAL AND VERTICAL CONTROL PROVIDED BY THE USACE "HAINES HARBOR CONDITION SURVEY" CONDUCTED IN JULY 2011. SEE ADDITIONAL NOTES FROM THIS SURVEY.
 - ALL EXISTING UTILITIES ARE SHOWN APPROXIMATE FROM SURVEYED INFORMATION AND ALSO AS-BUILT RECORDS PROVIDED BY THE HAINES BOROUGH.
 - BOREHOLE LOGS & ADDITIONAL GEOTECHNICAL INFORMATION AVAILABLE IN HAINES BOROUGH SOUTH PORTAGE COVE HARBOR EXPANSION GEOTECHNICAL ENGINEERING REPORT, MARCH 2015, PND ENGINEERS, INC.

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EXISTING CONDITIONS SITE PLAN

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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DRAWN: PJD APPROVED: CRS 0 80 160 FT.

DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
**EXISTING CONDITIONS, SURVEY
CONTROL & BH LOCATIONS**

1.03
SHEET
3 OF 29

PND PROJECT NO.: 102029





A INTERTIDAL BOULDERS W/ TIMBER, CONCRETE, STEEL DEBRIS AND ORGANICS



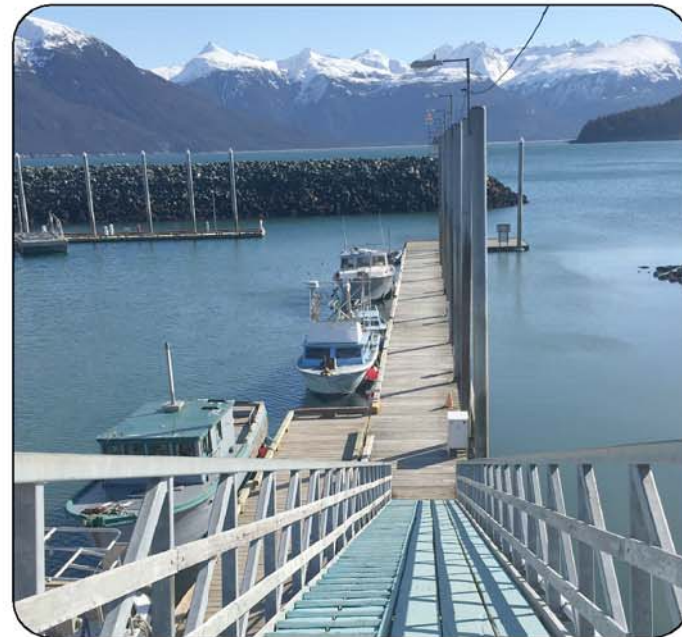
B ARTWORK/ DISPLAY TO BE RELOCATED



C DREDGE AREA (C) LOOKING NORTH



D SEAPLANE FLOAT PILE HOOPS TO BE REMOVED, SALVAGED AND REINSTALLED



E TRANSIENT FLOAT PILES TO BE REPLACED LIGHTS AND OVERHEAD ELECTRICAL LINES TO BE REMOVED AND REINSTALLED



F DREDGE AREA (D) LOOKING EAST



G DREDGE AREA (B) (LEFT) DREDGE AREA (C) (RIGHT) LOOKING WEST AT TRANSIENT FLOAT

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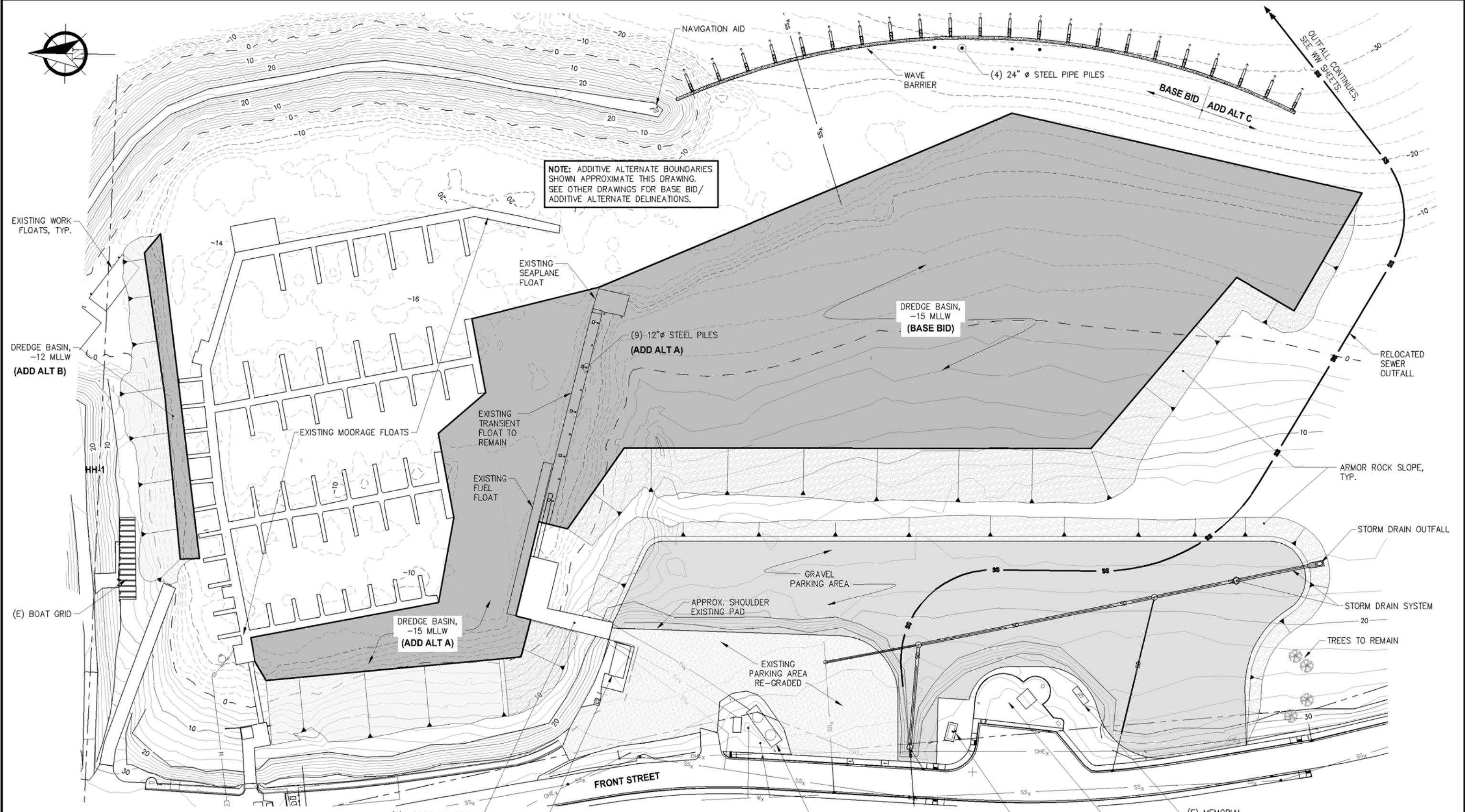
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**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
**EXISTING CONDITIONS AND
SITE PHOTOGRAPHS**

PND PROJECT NO.: 102029

1.04
SHEET
4 OF 29



NOTE: ADDITIVE ALTERNATE BOUNDARIES SHOWN APPROXIMATE THIS DRAWING. SEE OTHER DRAWINGS FOR BASE BID/ ADDITIVE ALTERNATE DELINEATIONS.

GENERAL SITE PLAN

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REVISIONS					
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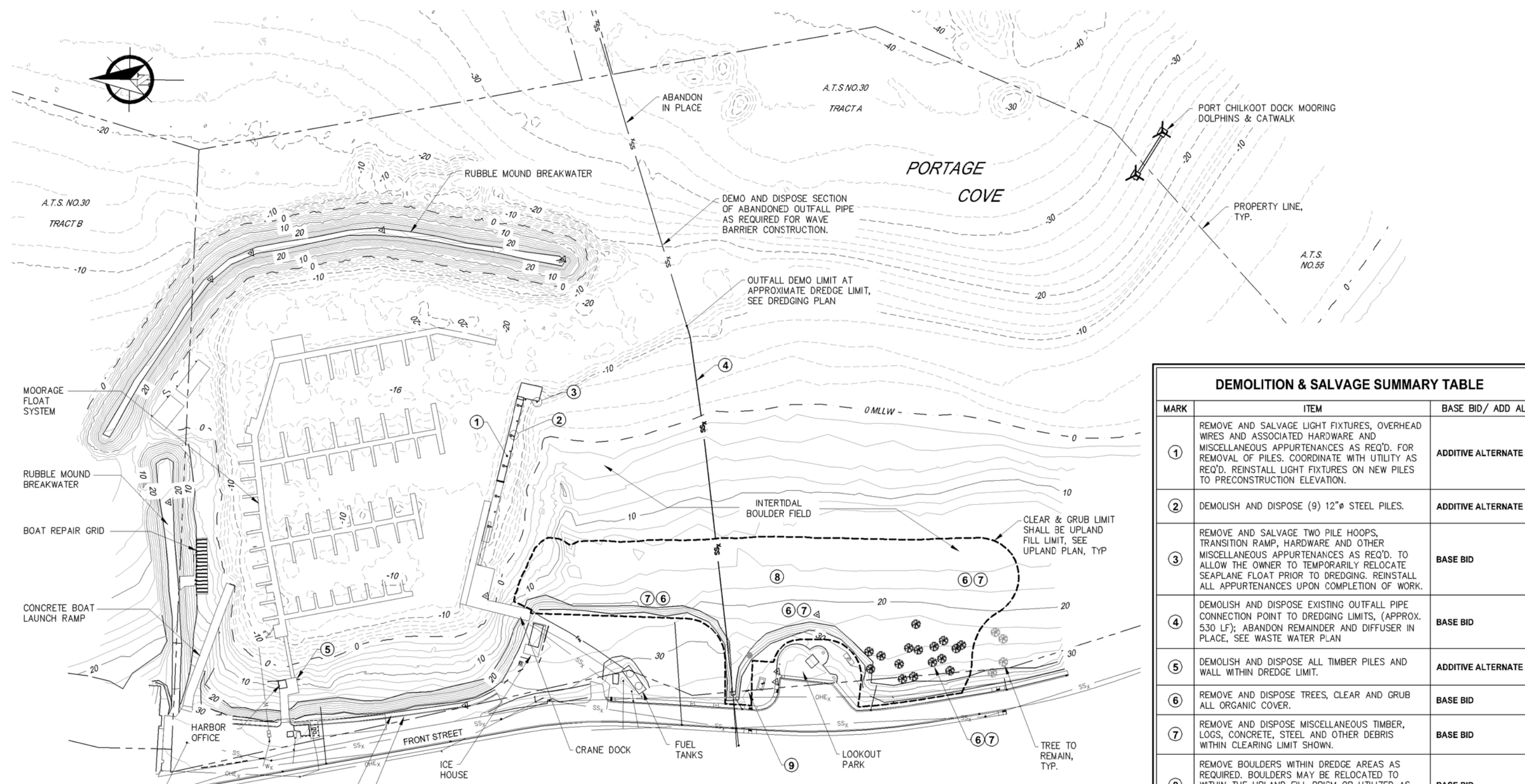
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**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

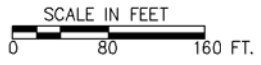
SHEET TITLE:
GENERAL SITE PLAN

PND PROJECT NO.: 102029

1.05
SHEET
5 OF 29



DEMOLITION & SALVAGE PLAN



DEMOLITION & SALVAGE SUMMARY TABLE		
MARK	ITEM	BASE BID/ ADD ALT
①	REMOVE AND SALVAGE LIGHT FIXTURES, OVERHEAD WIRES AND ASSOCIATED HARDWARE AND MISCELLANEOUS APPURTENANCES AS REQ'D. FOR REMOVAL OF PILES. COORDINATE WITH UTILITY AS REQ'D. REINSTALL LIGHT FIXTURES ON NEW PILES TO PRECONSTRUCTION ELEVATION.	ADDITIVE ALTERNATE A
②	DEMOLISH AND DISPOSE (9) 12"Ø STEEL PILES.	ADDITIVE ALTERNATE A
③	REMOVE AND SALVAGE TWO PILE HOOPS, TRANSITION RAMP, HARDWARE AND OTHER MISCELLANEOUS APPURTENANCES AS REQ'D. TO ALLOW THE OWNER TO TEMPORARILY RELOCATE SEAPLANE FLOAT PRIOR TO DREDGING. REINSTALL ALL APPURTENANCES UPON COMPLETION OF WORK.	BASE BID
④	DEMOLISH AND DISPOSE EXISTING OUTFALL PIPE CONNECTION POINT TO DREDGING LIMITS. (APPROX. 530 LF); ABANDON REMAINDER AND DIFFUSER IN PLACE, SEE WASTE WATER PLAN	BASE BID
⑤	DEMOLISH AND DISPOSE ALL TIMBER PILES AND WALL WITHIN DREDGE LIMIT.	ADDITIVE ALTERNATE A
⑥	REMOVE AND DISPOSE TREES, CLEAR AND GRUB ALL ORGANIC COVER.	BASE BID
⑦	REMOVE AND DISPOSE MISCELLANEOUS TIMBER, LOGS, CONCRETE, STEEL AND OTHER DEBRIS WITHIN CLEARING LIMIT SHOWN.	BASE BID
⑧	REMOVE BOULDERS WITHIN DREDGE AREAS AS REQUIRED. BOULDERS MAY BE RELOCATED TO WITHIN THE UPLAND FILL PRISM OR UTILIZED AS ARMOR ROCK IF WITHIN APPROPRIATE GRADATION LIMITS.	BASE BID
⑨	RELOCATE EXISTING ARTWORK/ DISPLAY (1 EA) TO NEARBY LOCATION PER OWNER DIRECTION. DO NOT DISTURB PRIOR TO OWNER COORDINATION.	BASE BID

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DATE: 8/7/15

HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

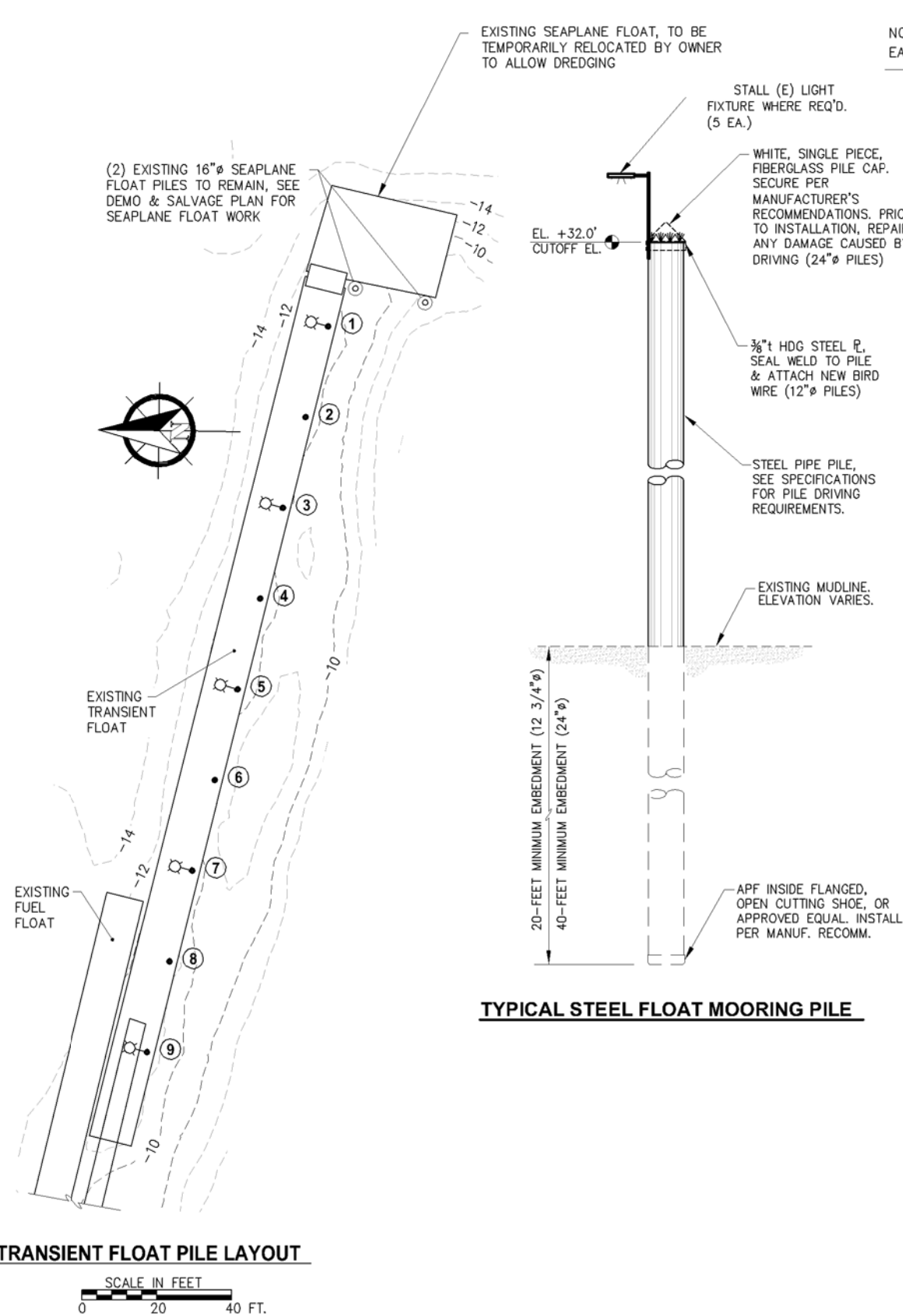
SHEET TITLE: **DEMOLITION, SALVAGE & DISPOSAL PLAN**

PND PROJECT NO.: 102029

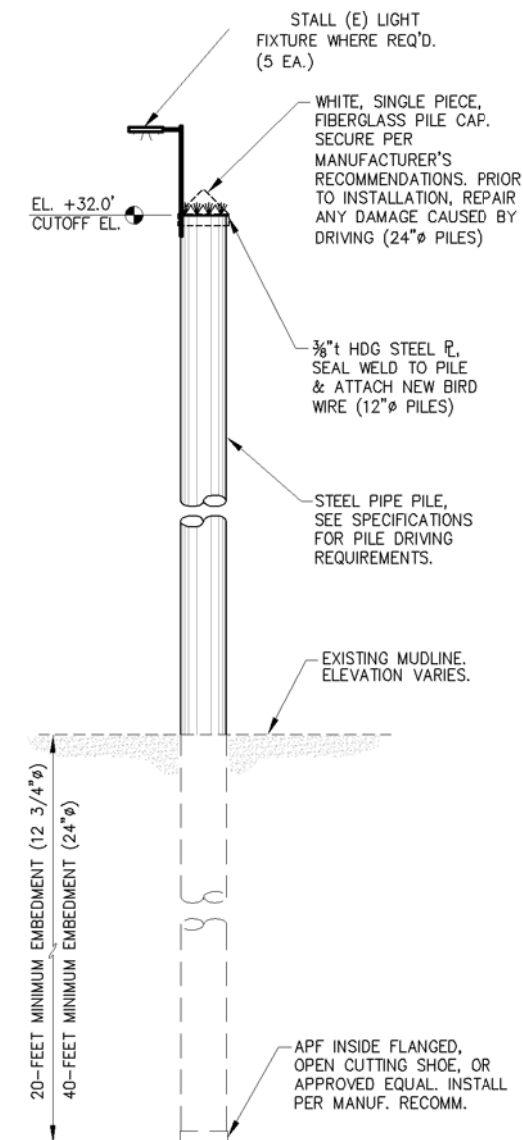
1.06
SHEET 6 OF 29

PILE SCHEDULE						
PILE #	PILE LENGTH (FT)	PILE SIZE	OWNER PROVIDED LENGTHS (FT)	ANTICIPATED CUTOFF (70')	NO. OF FIELD SPLICES REQ'D.	CUTTING SHOE INSTALL
①	70	12¾"ø x 0.500"t	58	13' ±	1	FIELD INSTALL
②	70	12¾"ø x 0.500"t	58 13 (CUTOFF FROM 1)	1' ±	1	FIELD INSTALL
③	70	12¾"ø x 0.500"t	55 34	19' ±	1	FIELD INSTALL
④	70	12¾"ø x 0.500"t	55 19 CUTOFF FROM 3	4' ±	1	FIELD INSTALL
⑤	70	12¾"ø x 0.500"t	55 55	40' ±	1	FIELD INSTALL
⑥	70	12¾"ø x 0.500"t	55 40 CUT OFF FROM 5	25' ±	1	FIELD INSTALL
⑦	70	12¾"ø x 0.500"t	55 25 CUTOFF FROM 6	10' ±	1	FIELD INSTALL
⑧	70	12¾"ø x 0.500"t	FURNISH FULL LENGTH w/ CUTTING SHOE		0	SHOP INSTALL
⑨	70	12¾"ø x 0.500"t	FURNISH FULL LENGTH w/ CUTTING SHOE		0	SHOP INSTALL
⑩	98	24"ø x 0.500"t	49 25 24	0	2	FIELD INSTALL
⑪	98	24"ø x 0.500"t	42 29 27	0	2	FIELD INSTALL
⑫	98	24"ø x 0.500"t	31 24 22 22	0	3	FIELD INSTALL
⑬	98	24"ø x 0.500"t	22 20 20 40 FURNISH w/ CUTTING SHOE	0	3	SHOP INSTALL

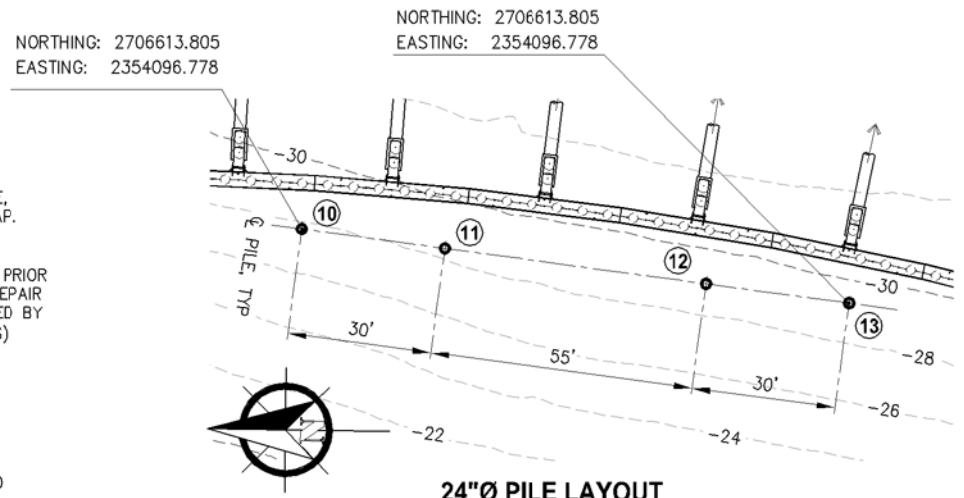
NOTE:
ANTICIPATED LENGTHS & CUTOFF LENGTHS ESTIMATED FOR REFERENCE ONLY, PILES SHALL MEET MIN. EMBEDMENT REQUIREMENTS.



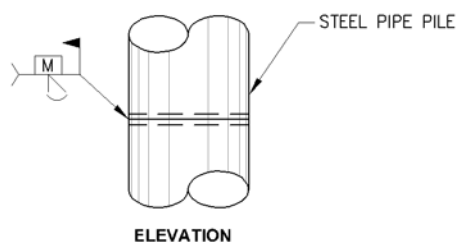
TRANSIENT FLOAT PILE LAYOUT
SCALE IN FEET
0 20 40 FT.



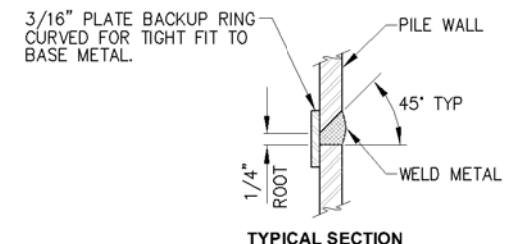
TYPICAL STEEL FLOAT MOORING PILE



24"ø PILE LAYOUT
SCALE IN FEET
0 20 40 FT.



ELEVATION



TYPICAL PILE SPLICE WELD
(TYPICAL FOR ALL PIPE PILE SPLICES)

- NOTE:
- 12¾"ø PILES AND ASSOCIATED WORK AT THE TRANSIENT FLOAT SHALL BE PERFORMED UNDER ADDITIVE ALTERNATE A AND SHALL BE COMPLETED PRIOR TO ADDITIVE ALTERNATE A DREDGING.
 - INSTALLATION OF 24"ø PILES SHALL BE PERFORMED UNDER THE BASE BID.
 - OWNER SHALL SUPPLY PIECES OF 12¾"ø HDG STEEL PIPE FOR PILES IN LENGTHS ADEQUATE TO CONSTRUCT (7) 70' STEEL PILES, CONTRACTOR SHALL FIELD SPLICE & INSTALL CUTTING SHOES AS REQ'D, (ADDITIVE ALTERNATE A).
 - OWNER SHALL SUPPLY PIECES OF 24"ø HDG STEEL PIPE FOR PILES IN LENGTHS ADEQUATE TO CONSTRUCT (3) 98' PILES & (1) 62' PIECE, CONTRACTOR SHALL FURNISH ADDITIONAL PILE LENGTH, FIELD SPLICE & FIELD INSTALL CUTTING SHOES AS REQ'D, (BASE BID).

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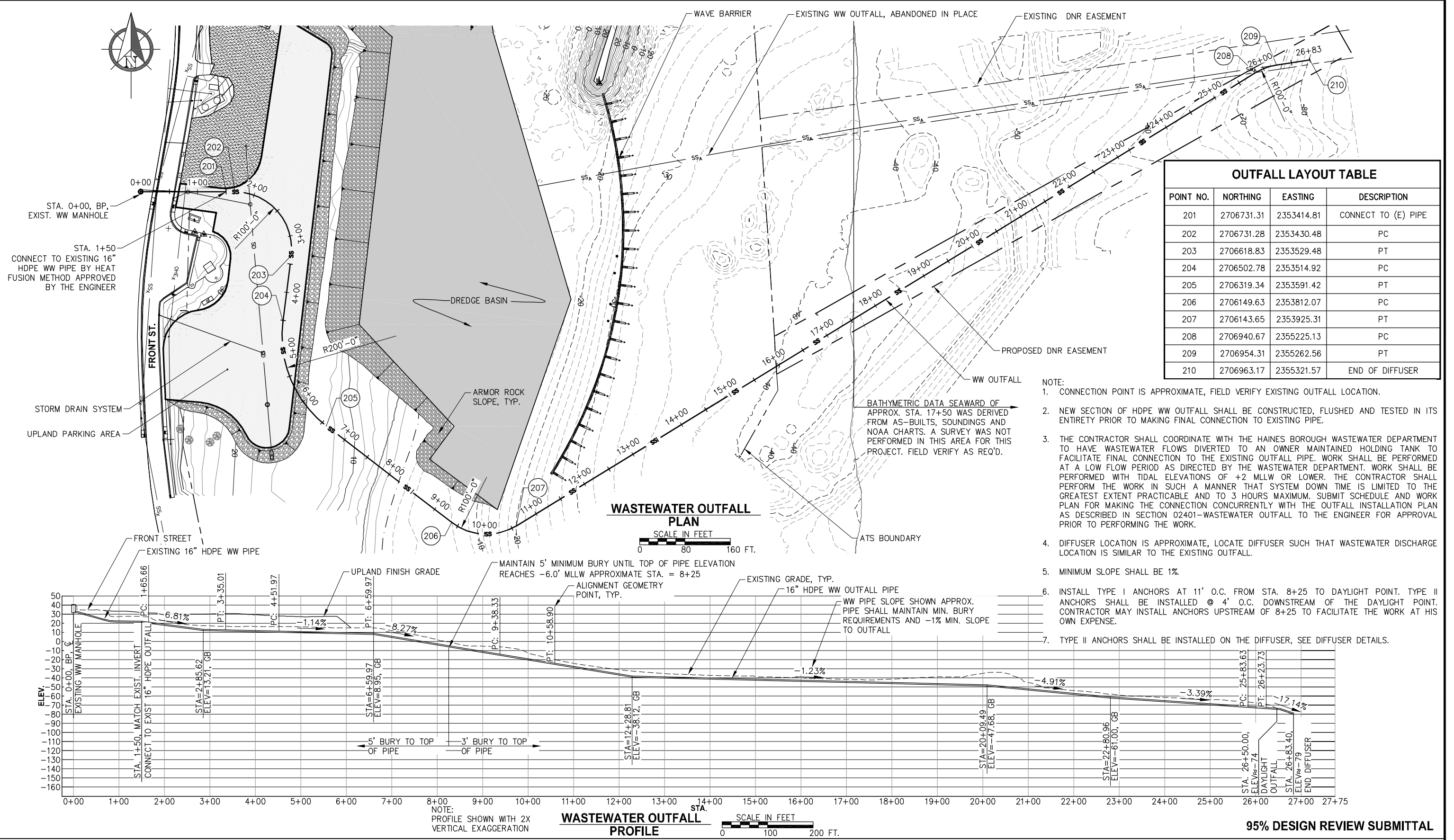
DATE: 8/7/15

HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

SHEET TITLE: **FLOAT PILE LAYOUT, SCHEDULE AND DETAILS**

PND PROJECT NO.: 102029

1.07
SHEET 7 OF 29



OUTFALL LAYOUT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
201	2706731.31	2353414.81	CONNECT TO (E) PIPE
202	2706731.28	2353430.48	PC
203	2706618.83	2353529.48	PT
204	2706502.78	2353514.92	PC
205	2706319.34	2353591.42	PT
206	2706149.63	2353812.07	PC
207	2706143.65	2353925.31	PT
208	2706940.67	2355225.13	PC
209	2706954.31	2355262.56	PT
210	2706963.17	2355321.57	END OF DIFFUSER

- NOTE:
1. CONNECTION POINT IS APPROXIMATE, FIELD VERIFY EXISTING OUTFALL LOCATION.
 2. NEW SECTION OF HDPE WW OUTFALL SHALL BE CONSTRUCTED, FLUSHED AND TESTED IN ITS ENTIRETY PRIOR TO MAKING FINAL CONNECTION TO EXISTING PIPE.
 3. THE CONTRACTOR SHALL COORDINATE WITH THE HAINES BOROUGH WASTEWATER DEPARTMENT TO HAVE WASTEWATER FLOWS DIVERTED TO AN OWNER MAINTAINED HOLDING TANK TO FACILITATE FINAL CONNECTION TO THE EXISTING OUTFALL PIPE. WORK SHALL BE PERFORMED AT A LOW FLOW PERIOD AS DIRECTED BY THE WASTEWATER DEPARTMENT. WORK SHALL BE PERFORMED WITH TIDAL ELEVATIONS OF +2 MLLW OR LOWER. THE CONTRACTOR SHALL PERFORM THE WORK IN SUCH A MANNER THAT SYSTEM DOWN TIME IS LIMITED TO THE GREATEST EXTENT PRACTICABLE AND TO 3 HOURS MAXIMUM. SUBMIT SCHEDULE AND WORK PLAN FOR MAKING THE CONNECTION CONCURRENTLY WITH THE OUTFALL INSTALLATION PLAN AS DESCRIBED IN SECTION 02401-WASTEWATER OUTFALL TO THE ENGINEER FOR APPROVAL PRIOR TO PERFORMING THE WORK.
 4. DIFFUSER LOCATION IS APPROXIMATE, LOCATE DIFFUSER SUCH THAT WASTEWATER DISCHARGE LOCATION IS SIMILAR TO THE EXISTING OUTFALL.
 5. MINIMUM SLOPE SHALL BE 1%.
 6. INSTALL TYPE I ANCHORS AT 11' O.C. FROM STA. 8+25 TO DAYLIGHT POINT. TYPE II ANCHORS SHALL BE INSTALLED @ 4' O.C. DOWNSTREAM OF THE DAYLIGHT POINT. CONTRACTOR MAY INSTALL ANCHORS UPSTREAM OF 8+25 TO FACILITATE THE WORK AT HIS OWN EXPENSE.
 7. TYPE II ANCHORS SHALL BE INSTALLED ON THE DIFFUSER, SEE DIFFUSER DETAILS.



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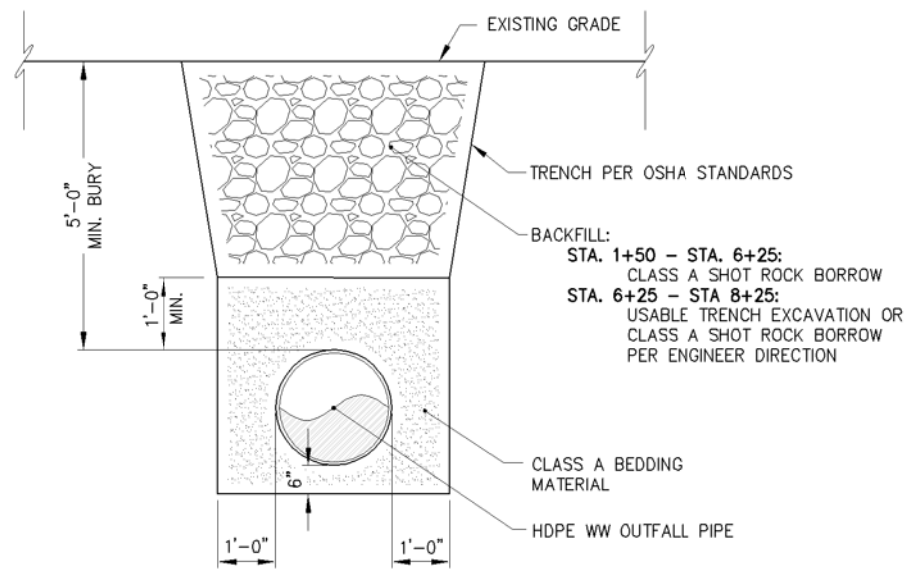
**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
**WASTEWATER OUTFALL
PLAN & PROFILE**

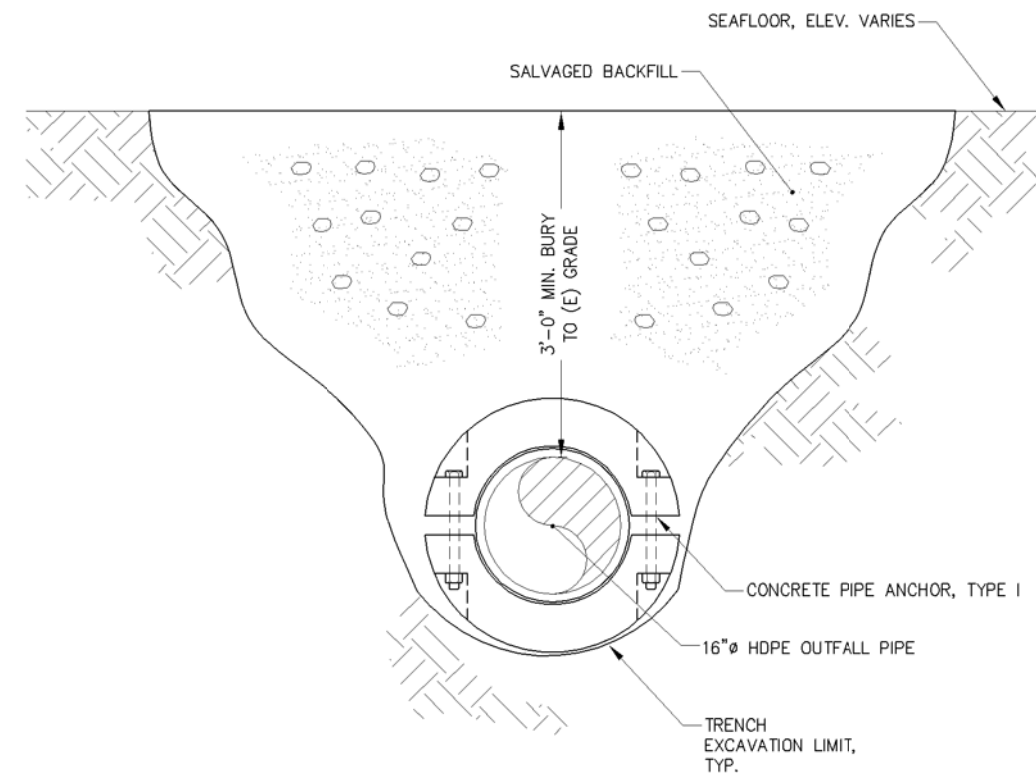
PND PROJECT NO.: 102029

2.01
SHEET
8 OF 29

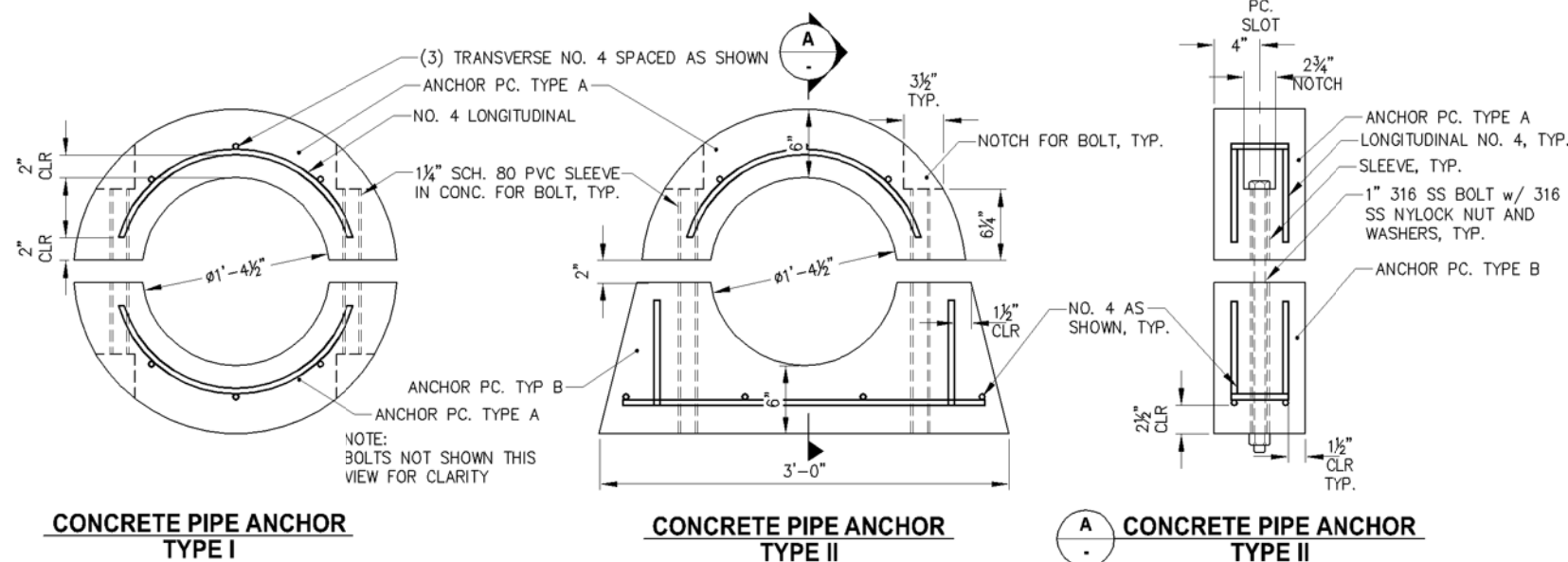
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OUTFALL PIPE TRENCH STA. 1+50 TO STA. 8+25 SECTION



OUTFALL PIPE TRENCH STA. 8+25 TO DAYLIGHT SECTION



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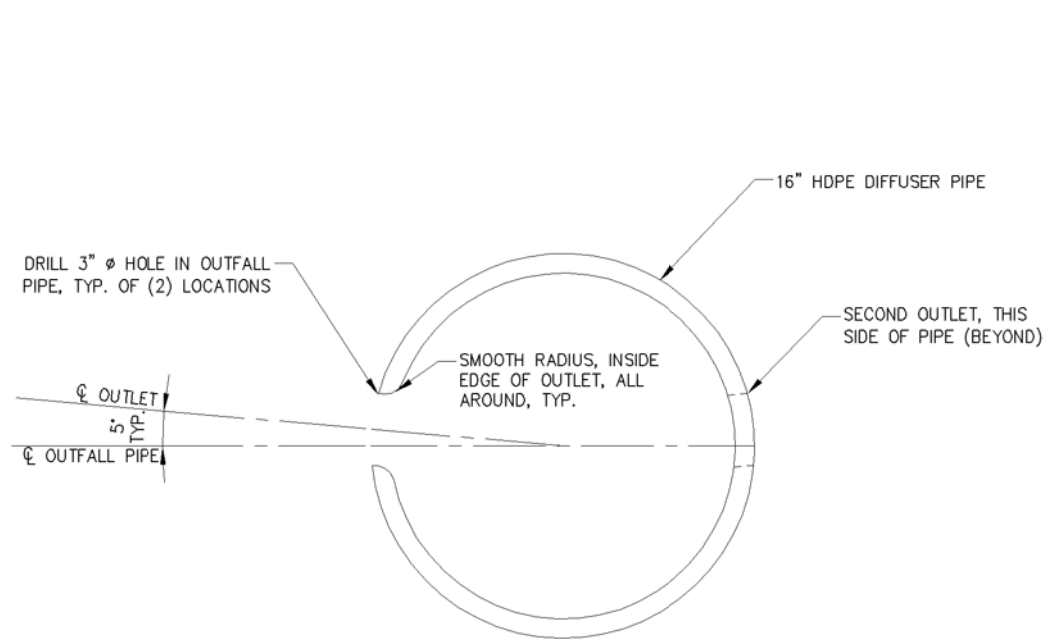
HAINES BOROUGH
 PORTAGE COVE
 HARBOR EXPANSION

SHEET TITLE: WASTEWATER
 OUTFALL DETAILS

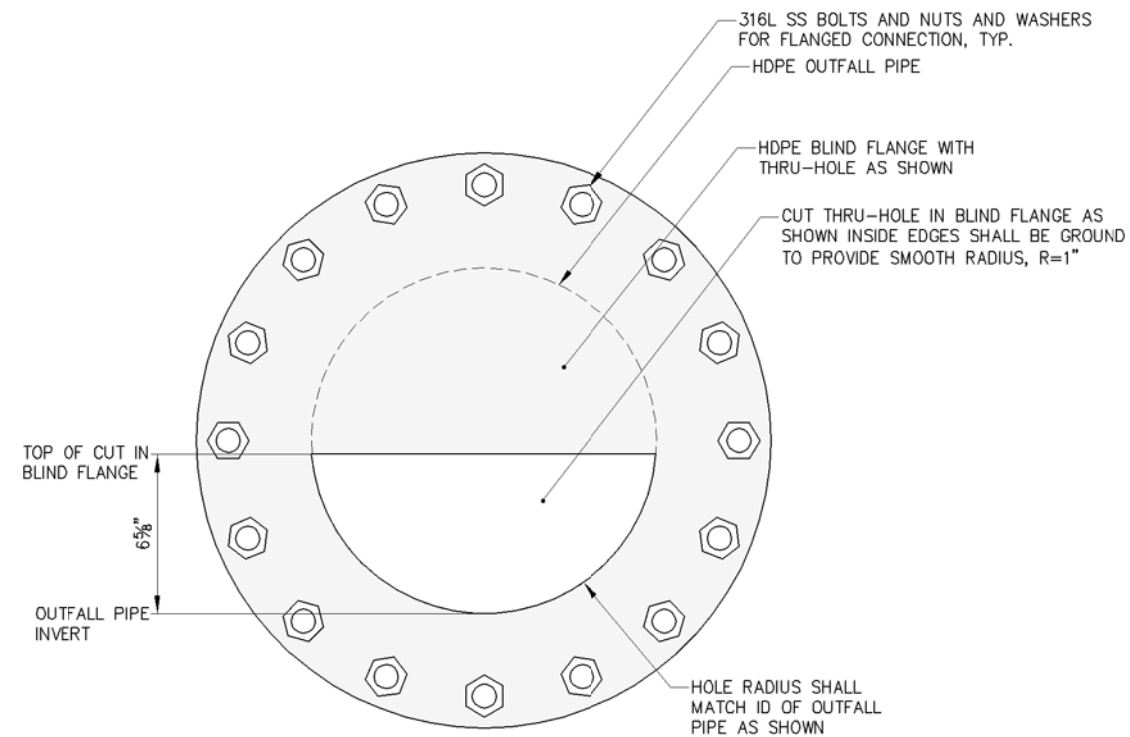
2.02

SHEET
 9 OF 29

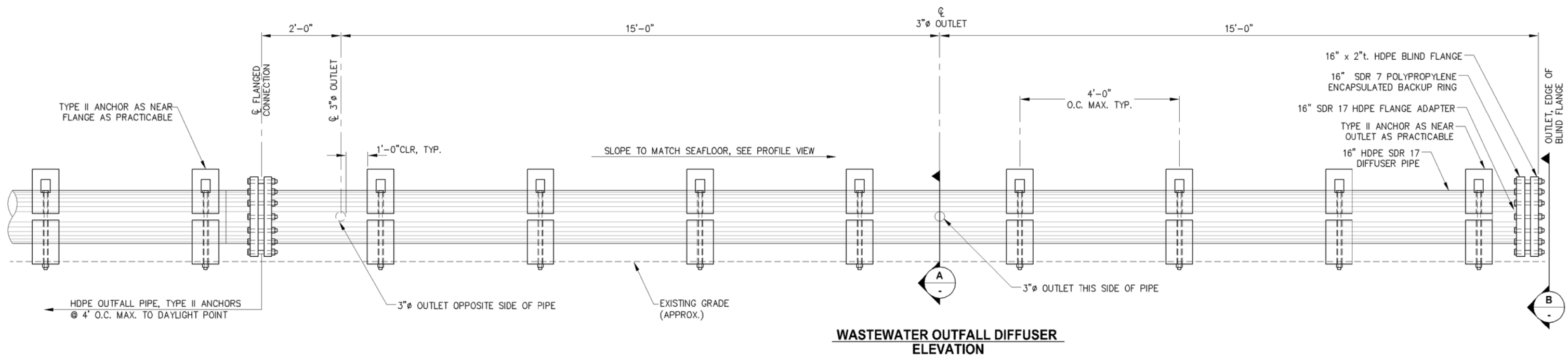
PND PROJECT NO.: 102029



A DIFFUSER OUTLET
TYPICAL SECTION



B DIFFUSER END
ELEVATION



**WASTEWATER OUTFALL DIFFUSER
ELEVATION**

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HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION

SHEET TITLE:
**WASTEWATER OUTFALL
DIFFUSER DETAILS**

2.03

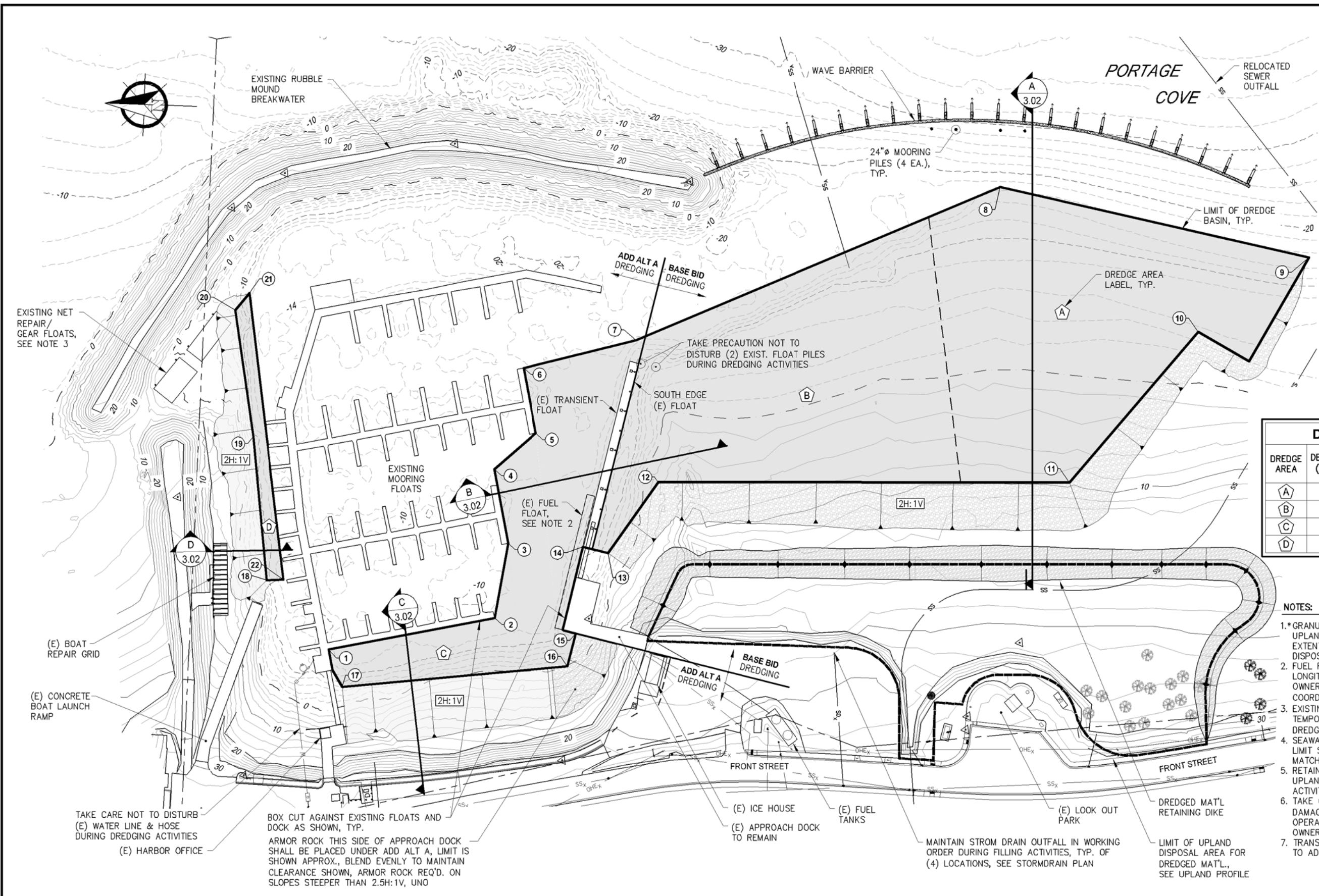
SHEET
10 OF 29

PND PROJECT NO.: 102029

DREDGE LAYOUT TABLE		
POINT #	NORTHING	EASTING
1	2707432.156	2353548.002
2	2707224.058	2353562.987
3	2707197.021	2353652.937
4	2707203.643	2353745.856
5	2707147.145	2353784.293
6	2707153.113	2353866.043
7	2707011.127	2353884.311
8	2706542.069	2354021.629
9	2706172.460	2353891.725
10	2706260.733	2353772.602
11	2706318.953	2353815.743
12	2706497.944	2353648.894
13	2707003.661	2353706.936
14	2707075.108	2353626.825
15	2707105.298	2353637.955
16	2707141.089	2353493.607
17	2707420.698	2353499.944
18	2707420.698	2353499.944
19	2707499.074	2353641.858
20	2707495.270	2353820.003
21	2707479.901	2353996.644
22	2707478.154	2353640.161

DREDGE SUMMARY TABLE				
DREDGE AREA	DEPTH ELEV. (FT MLLW)	BACKSLOPE	DISPOSAL	BASE BID/ADD ALT
A	-15	ARMORED	UPLAND*	BASE BID
B	-15	ARMORED	OFFSHORE	BASE BID
C	-15	AS SHOWN	OFFSHORE	ADD ALT A
D	-12	ARMORED	OFFSHORE	ADD ALT B

- NOTES:**
- 1.* GRANULAR DREDGE MATERIAL SHALL BE USED TO FILL UPLAND PARKING AREA PER TYPICAL SECTION TO EXTENT REQUIRED. REMAINING MATERIAL SHALL BE DISPOSED OFFSHORE.
 2. FUEL FLOAT SHALL BE TEMPORARILY MOVED LONGITUDINALLY ALONG THE TRANSIENT FLOAT BY OWNER TO FACILITATE ADDITIVE ALTERNATE A DREDGING, COORDINATE WITH OWNER AS REQ'D.
 3. EXISTING NET REPAIR/ GEAR FLOATS CAN BE TEMPORARILY RELOCATED BY OWNER TO FACILITATE DREDGING, COORDINATE WITH OWNER AS REQ'D.
 4. SEAWARD LIMIT OF DREDGE BASIN SHOWN APPROXIMATE, LIMIT SHALL BE LOCATED SUCH THAT EXISTING GRADE MATCHES BASIN DEPTH LIMIT.
 5. RETAINING DIKE DETAILS & LAYOUT SHALL BE PER UPLANDS DETAILS, CONSTRUCT PRIOR TO DREDGING ACTIVITIES.
 6. TAKE CARE NOT TO UNDERMINE EXISTING FACILITIES, DAMAGE INCURRED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT NO COST TO THE OWNER.
 7. TRANSIENT FLOAT WORK SHALL BE COMPLETED PRIOR TO ADD ALT A DREDGING, SEE TRANSIENT FLOAT PLAN.



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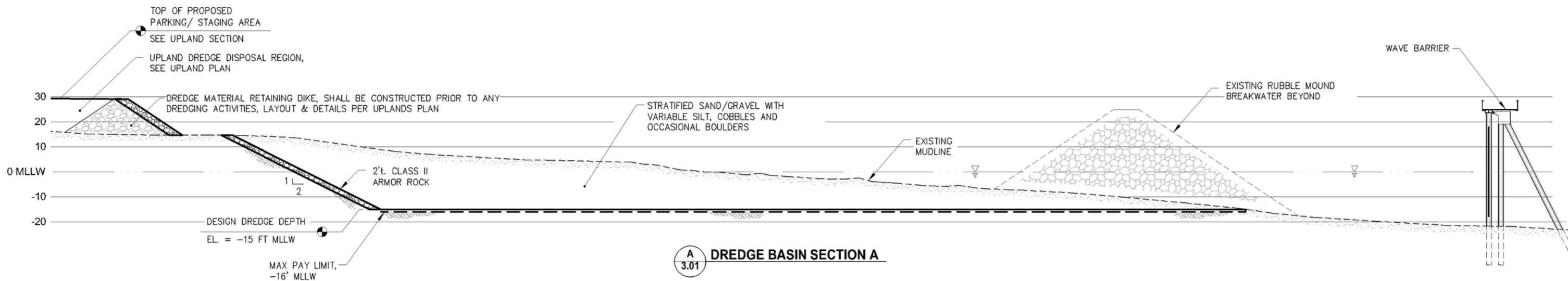
HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

SHEET TITLE: **DREDGING PLAN**

PND PROJECT NO.: 102029

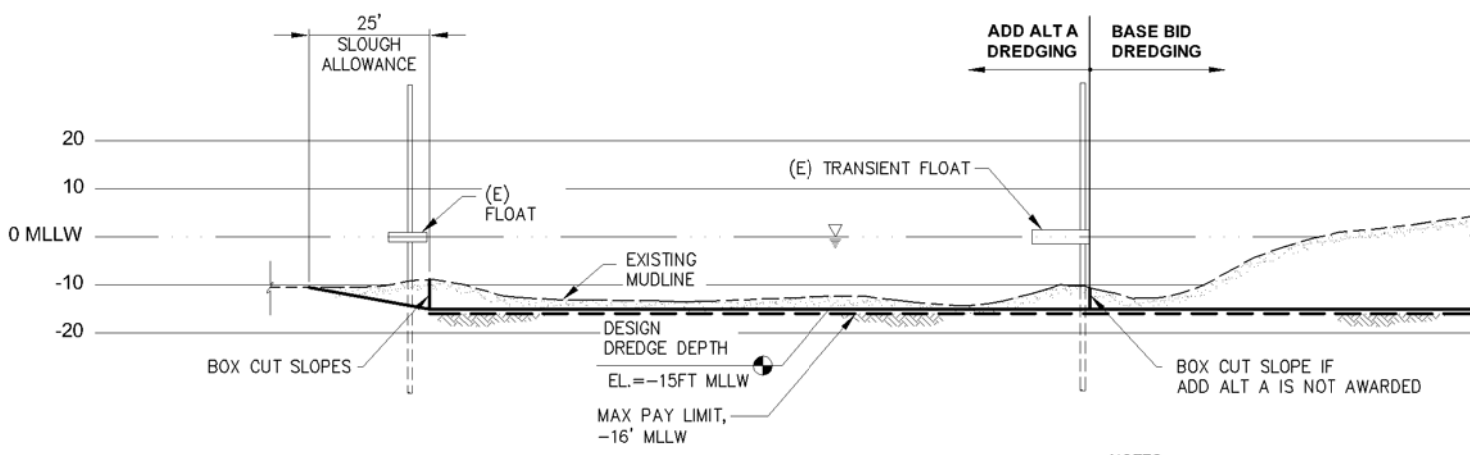
3.01

SHEET 11 OF 29



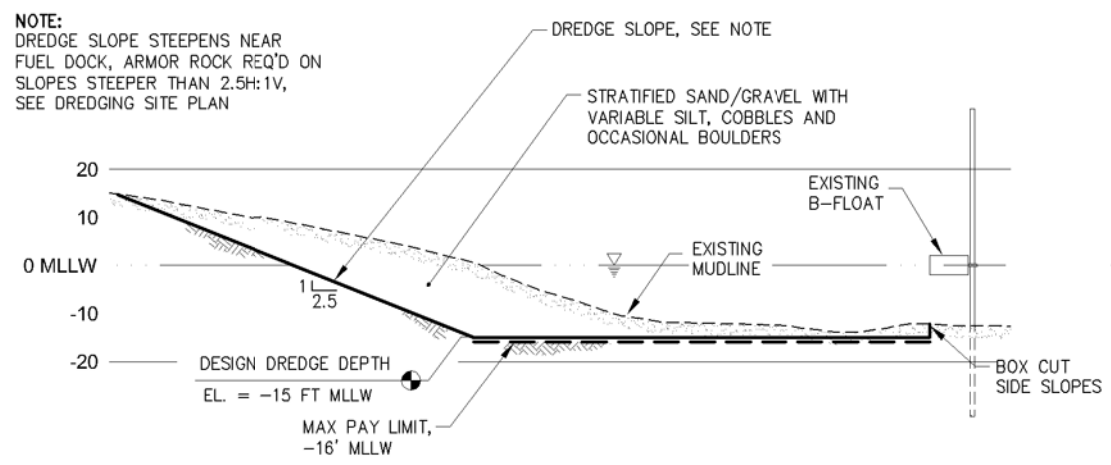
A
3.01
DREDGE BASIN SECTION A

NOTE:
SEE GEOTECHNICAL REPORT: (HAINES BOROUGH SOUTH PORTAGE COVE HARBOR EXPANSION GEOTECHNICAL ENGINEERING REPORT MARCH, 2015) FOR DETAILED SOIL DESCRIPTIONS WITHIN DREDGE AREAS

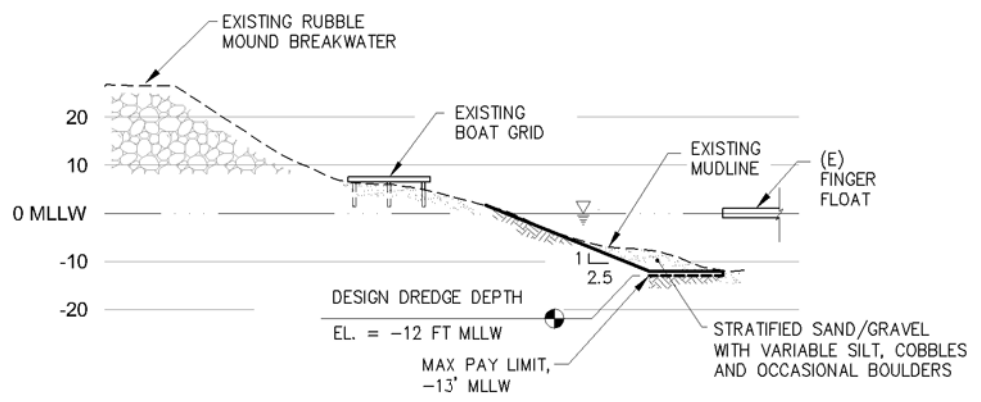


B
3.01
DREDGE BASIN SECTION B

NOTES:
1. BID SCHEDULE VOLUMES ARE APPROXIMATE, FINAL PAY QUANTITIES SHALL BE DETERMINED BY THE PRE AND POST DREDGE SURVEYS.
2. PRE & POST DREDGE SURVEYS SHALL INCLUDE 25' AREA BEYOND BOX CUTS TO DETERMINE SLOUGH.
3. SLOUGH ALLOWANCE IS TYPICAL ALL BOX CUTS.



C
3.01
DREDGE BASIN SECTION C



D
3.01
DREDGE BASIN SECTION D

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**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
DREDGING SECTIONS

DATE: 8/7/15

PND PROJECT NO.: 102029

3.02
SHEET
12 OF 29

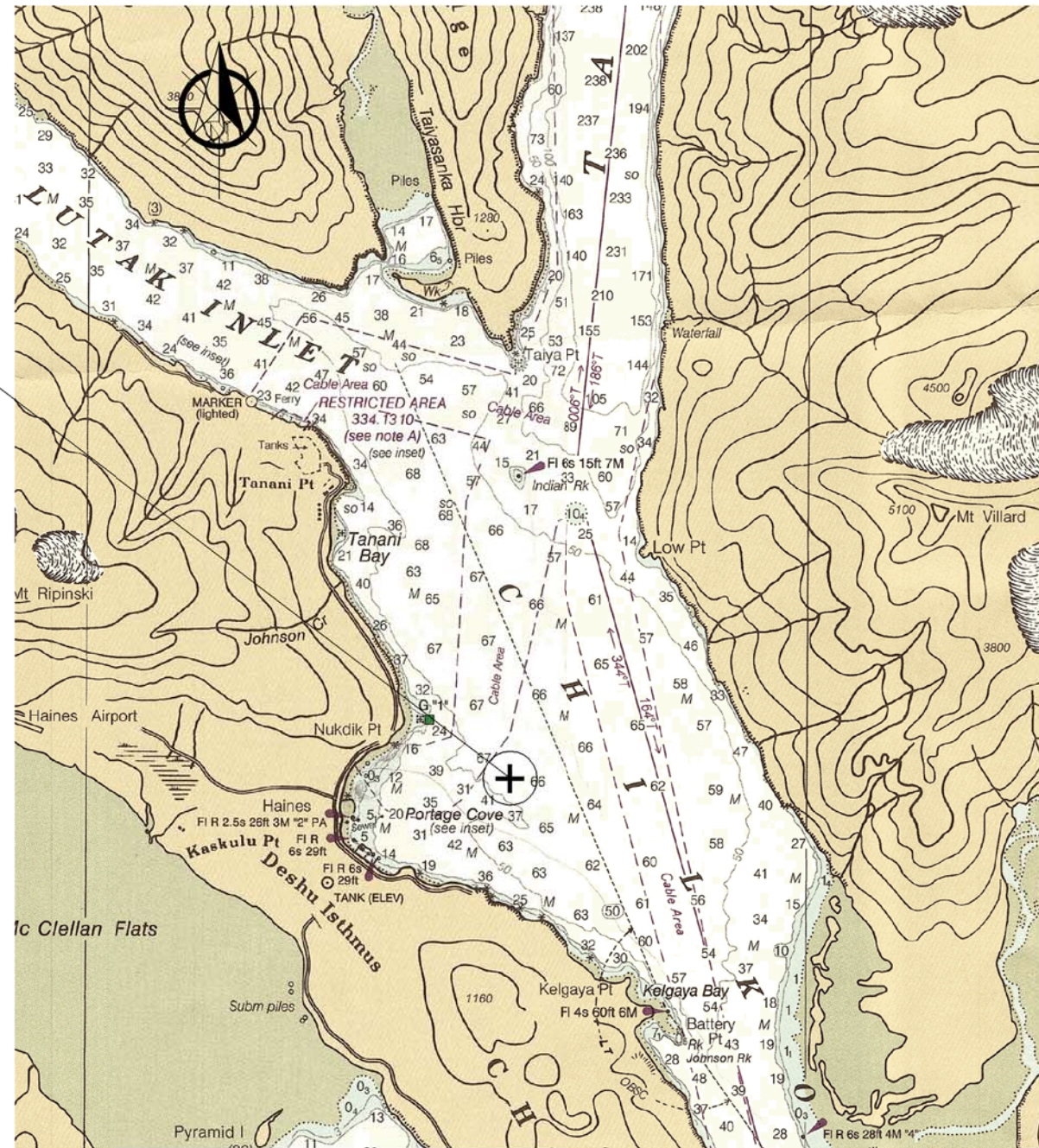
OFFSHORE DISPOSAL SITE
± 50 ACRES

OFFSHORE
DISPOSAL SITE CENTER:

LAT: N 59°14'18"

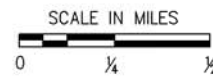
LONG: W 135°24'12"

NOTE:
CENTER LOCATION APPROXIMATE



BATHYMETRY FROM: NOAA 17317
LYNN CANAL - SHERMAN POINT TO SKAGWAY

DISPOSAL SITE PLAN



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**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE: **DREDGING OFFSHORE
DISPOSAL PLAN**

DATE: 8/7/15

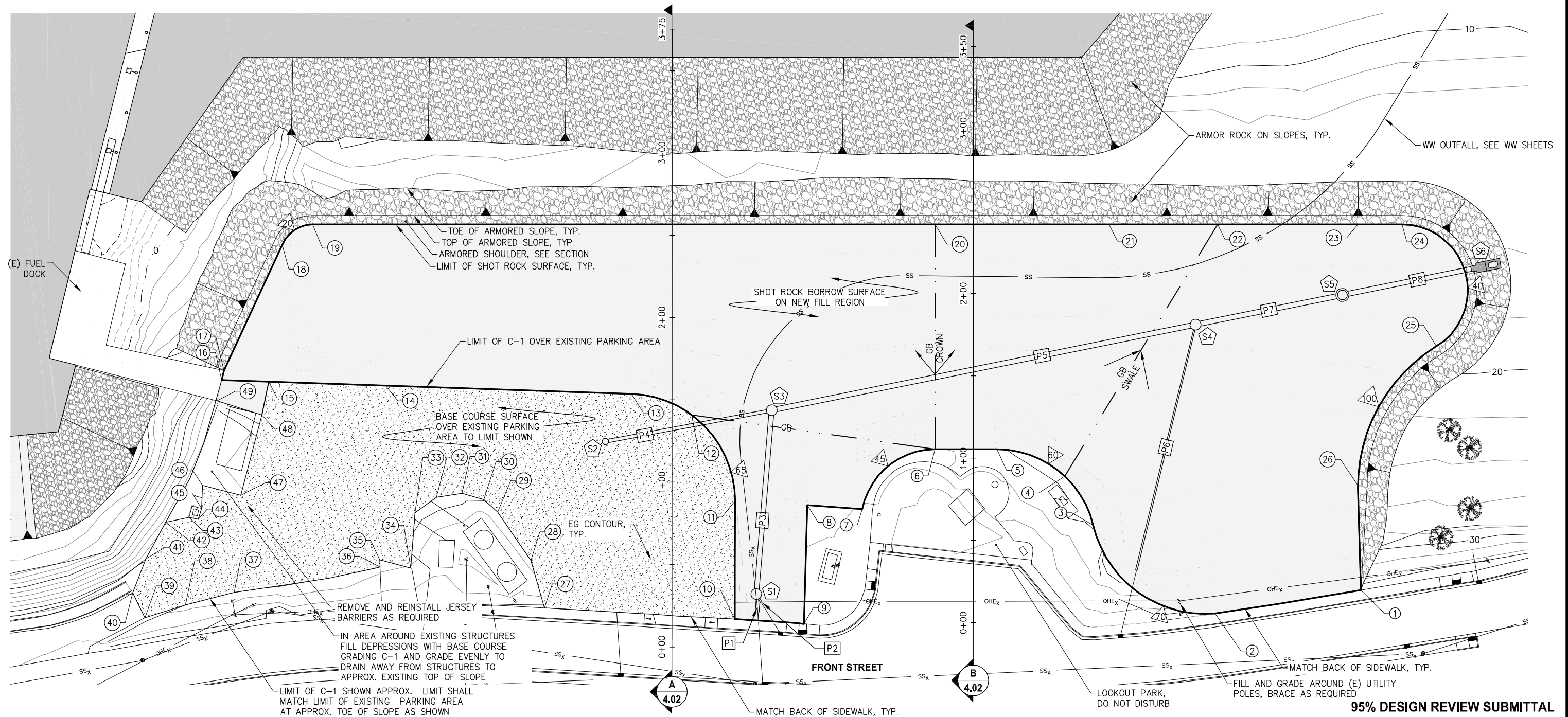
PND PROJECT NO.: 102029

3.03
SHEET
13 OF 29

STORM DRAIN STRUCTURES				
STRUCTURE DESIGNATION	NORTHING	EASTING	RIM ELEVATION	TYPE
S1	2706731.29	2353347.67	33.52	TYPE I MANHOLE
S2	2706811.80	2353450.12	29.75	TYPE II MANHOLE
S3	2706709.26	2353457.46	30.81	TYPE I MANHOLE
S4	2706447.67	2353479.88	28.12	TYPE I MANHOLE
S5	2706357.03	2353487.65	29.74	OIL WATER SEPARATOR
S6	2706264.05	2353495.56	22.22	SD OUTFALL

STORM DRAIN PIPE						
PIPE DESIGNATION	NOMINAL DIA.	LENGTH	FROM	IE	TO	IE
P1	24" CPEP	8	COUPLE	27.50	S1	27.00
P2	12" CPEP	8	COUPLE	29.30	S1	28.70
P3	36" CPEP	113	S1	26.80	S3	26.00
P4	24" CPEP	103	S2		S3	
P5	36" CPEP	263	S3	25.90	S4	23.93
P6	12" CPEP	154	COUPLE		S4	
P7	36" CPEP	91	S4	23.83	S5	23.14
P8	36" CPEP	95	S5	23.14	S6	22.40

- NOTE:
- DISSIMILAR PIPES SHALL BE COUPLED AS SHOWN IN THE CONCRETE ENCASUREMENT DETAIL. ENCASEMENTS SHALL BE 4 FEET LONG.
 - WATER OR WASTEWATER PIPES, INCLUDING THE 16" WASTEWATER OUTFALL SHALL BE INSULATED WITH BOARD INSULATION PER SPECIFICATIONS AT ALL LOCATIONS WHERE THE DISTANCE BETWEEN THE WW PIPE AND A STORM DRAIN PIPE OR STRUCTURE IS LESS THAN 5' PER ENGINEER DIRECTION.



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 0 30 60 FT.

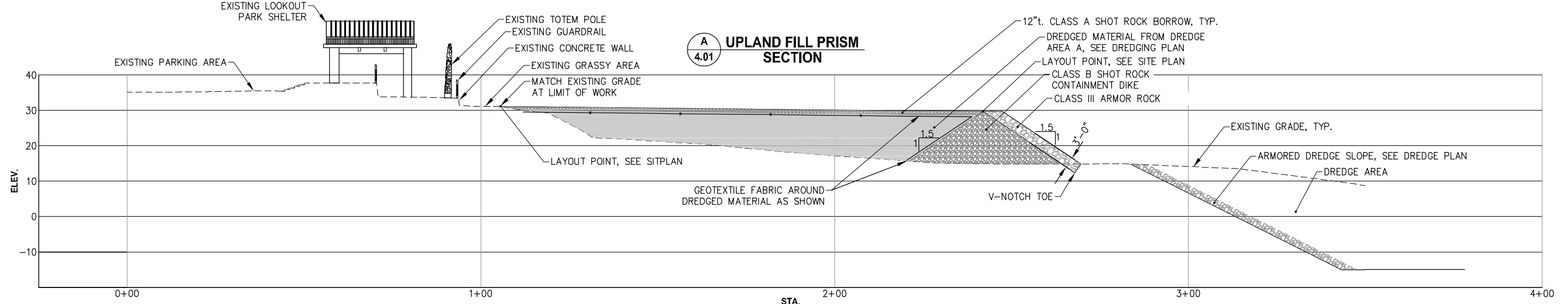
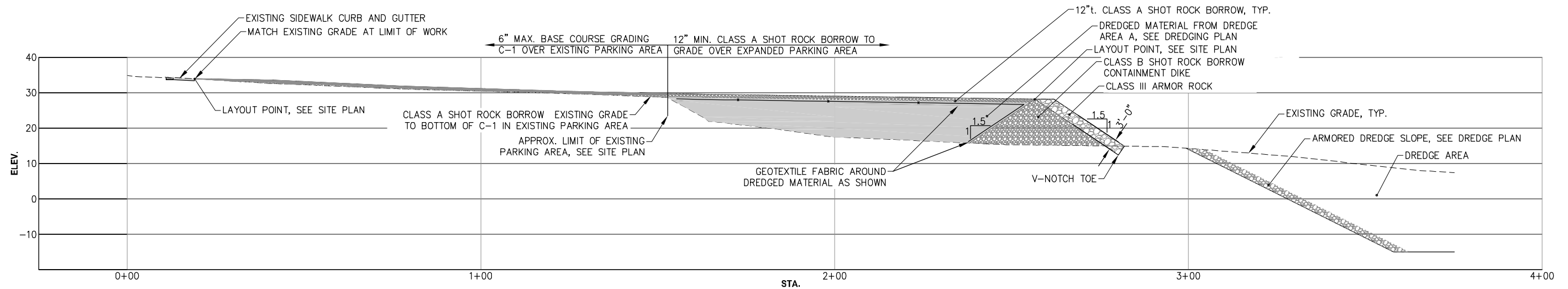
DATE: 8/7/15

HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

SHEET TITLE: **UPLAND GRADING AND DRAINAGE PLAN**

PND PROJECT NO.: 102029

4.01
 SHEET 14 OF 29



LAYOUT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2706366.24	2353308.30	35.30	EGRVL, ME
2	2706455.93	2353304.23	35.08	EGRVL, PC, ME
3	2706523.24	2353365.87	29.94	EGRVL, PRC, ME
4	2706537.02	2353397.51	29.20	POC, GB, ME
5	2706576.01	2353418.36	30.38	EGRVL, PT, ME
6	2706613.43	2353422.64	32.34	EGRVL, PC, GB, ME
7	2706661.43	2353391.55	34.46	EGRVL, PT, ME
8	2706694.45	2353397.70	32.19	EGRVL, ME
9	2706704.46	2353326.36	34.39	EGRVL, ME
10	2706745.97	2353334.01	34.10	EGRVL, ME
11	2706737.69	2353405.25	32.13	LIMIT C-1, PC
12	2706757.86	2353460.22	30.30	LIMIT C-1, POC, GB
13	2706792.72	2353477.05	29.13	LIMIT C-1, PT

LAYOUT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
14	2706940.42	2353498.95	27.18	LIMIT C-1, GB
15	2707010.78	2353509.39	27.37	LIMIT C-1, GB
16	2707038.93	2353513.56	27.11	EGRVL, ME
17	2707036.90	2353519.20	27.28	EGRVL, ME
18	2706993.06	2353590.95	25.62	EGRVL, PC
19	2706973.49	2353601.30	25.26	EGRVL, PT, GB
20	2706597.91	2353558.35	30.27	EGRVL, GB
21	2706493.09	2353546.37	27.63	EGRVL
22	2706427.47	2353538.87	26.64	EGRVL, GB
23	2706342.72	2353529.18	28.63	EGRVL, GB
24	2706316.26	2353526.15	29.16	EGRVL, PC
25	2706303.85	2353450.18	31.39	EGRVL, PRC
26	2706360.73	2353371.61	33.55	EGRVL, PT

LAYOUT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
27	2706860.08	2353353.87	34.33	LIMIT C-1, ME
28	2706864.89	2353383.38	31.20	LIMIT C-1, ME
29	2706881.68	2353414.86	30.51	LIMIT C-1, ME
30	2706889.17	2353423.39	29.87	LIMIT C-1, ME
31	2706901.73	2353428.67	28.78	LIMIT C-1, ME
32	2706917.49	2353428.00	28.50	LIMIT C-1, GB, ME
33	2706931.50	2353420.27	28.84	LIMIT C-1, ME
34	2706937.86	2353387.15	32.26	LIMIT C-1, ME
35	2706956.07	2353394.29	30.72	LIMIT C-1, ME
36	2706956.40	2353389.80	31.47	LIMIT C-1, ME
37	2707046.08	2353384.71	30.30	LIMIT C-1, ME
38	2707076.31	2353380.41	31.28	LIMIT C-1, ME
39	2707101.78	2353375.47	32.84	LIMIT C-1, ME

LAYOUT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
40	2707107.39	2353391.54	31.94	LIMIT C-1, ME
41	2707096.94	2353411.00	29.70	LIMIT C-1
42	2707082.62	2353431.61	27.02	LIMIT C-1
43	2707068.16	2353433.09	28.03	ME
44	2707062.69	2353431.14	27.96	ME
45	2707060.07	2353437.62	27.98	ME
46	2707057.85	2353451.35	27.55	ME
47	2707035.47	2353442.81	27.75	ME
48	2707017.25	2353489.81	27.47	GB
49	2707043.30	2353501.43	26.75	LIMIT C-1, ME

TABLE ABBREVIATIONS:
 EGRVL EDGE OF CLASS A SRB
 GB GRADE BREAK
 ME MATCH EXISTING
 PC POINT OF CURVATURE
 POC POINT ON CURVE
 PRC POINT OF REVERSE CURVATURE
 PT POINT OF TANGENCY

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DESIGN: TCB CHECKED: CRS SCALE: SCALE IN FEET
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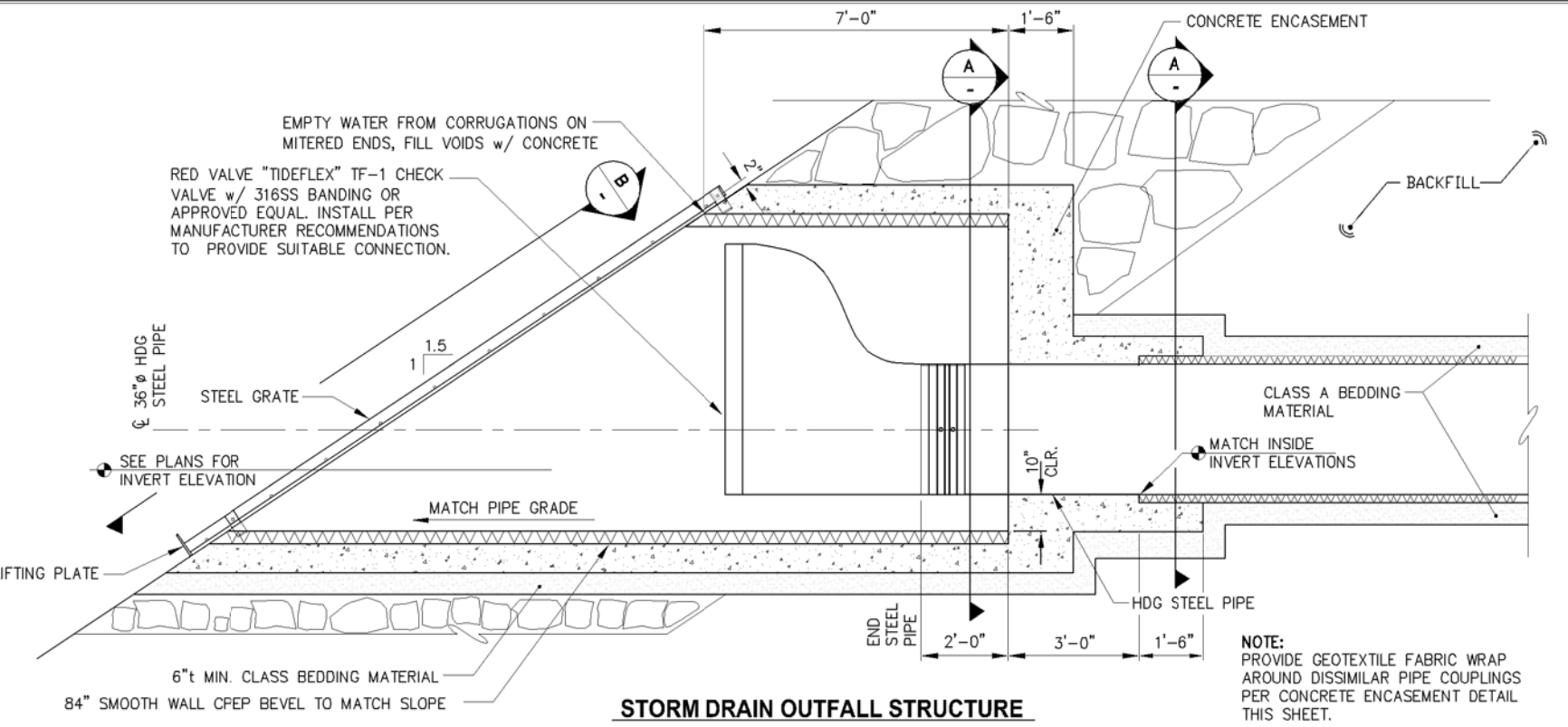
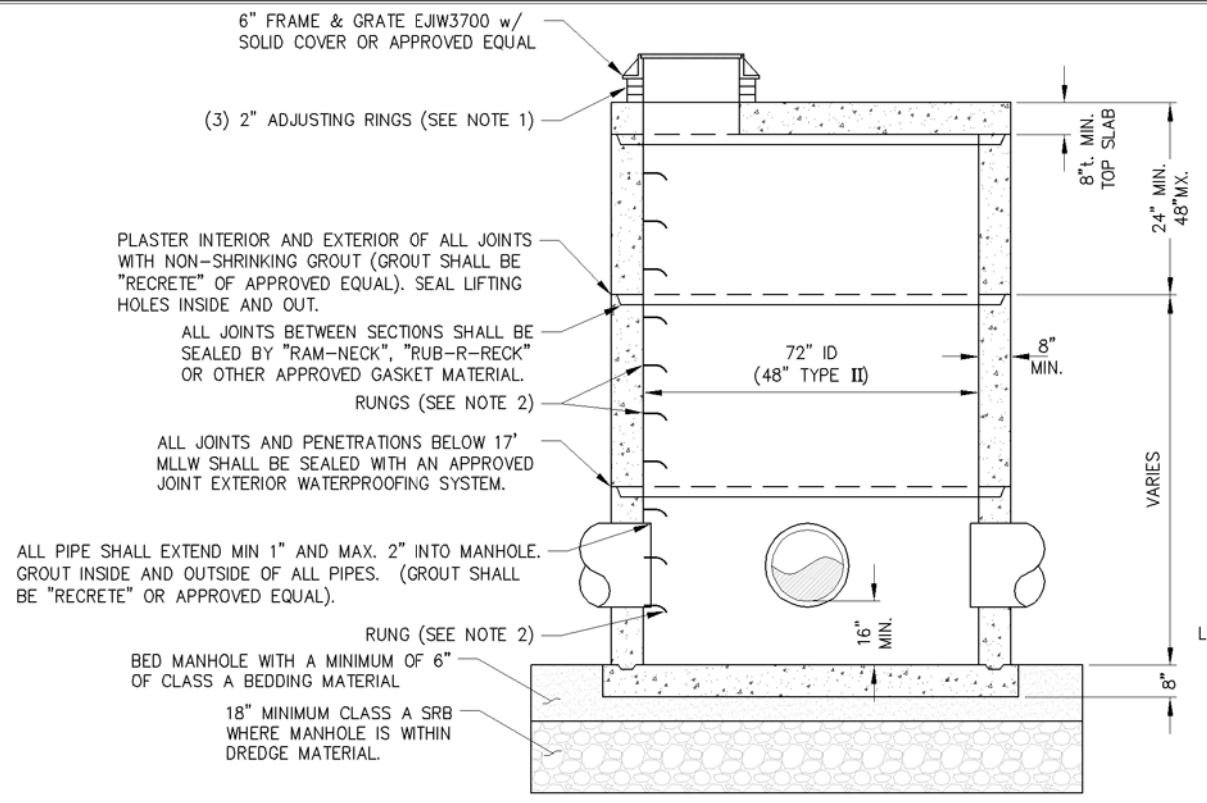
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE: **UPLAND SECTIONS
AND LAYOUT TABLES**

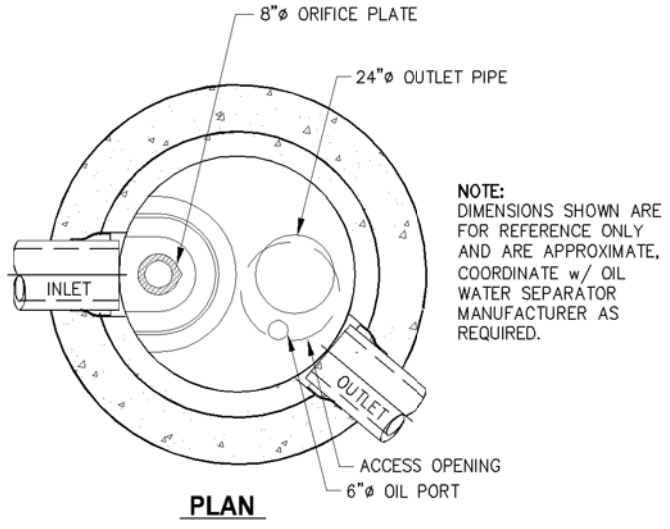
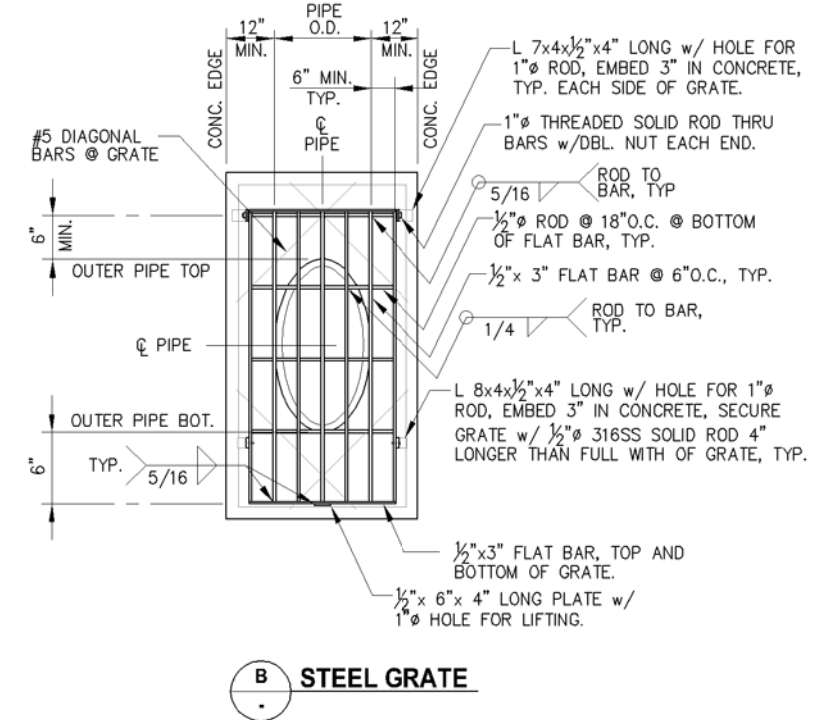
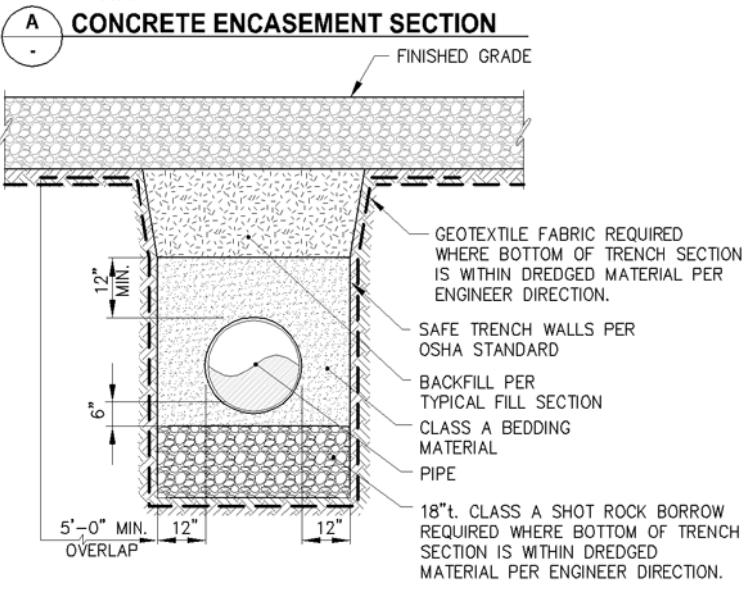
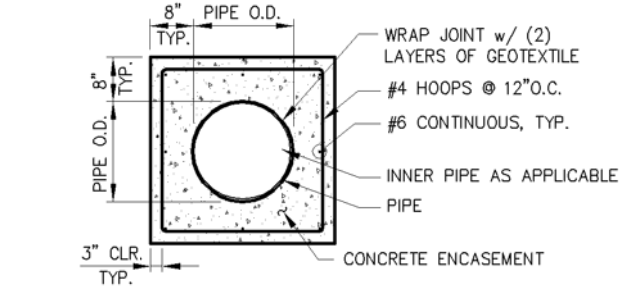
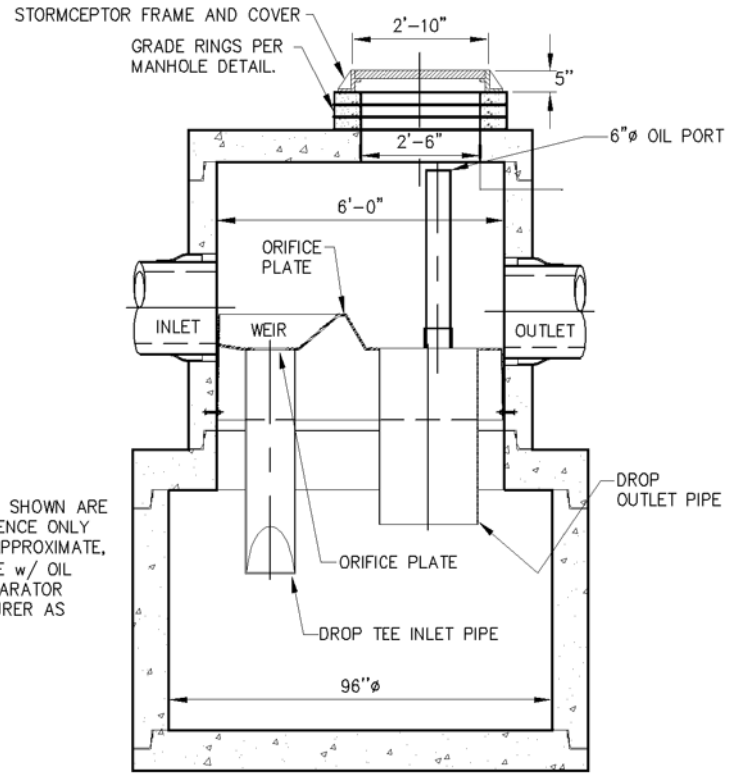
PND PROJECT NO.: 102029

4.02
SHEET
15 OF 29



- NOTES:**
- ADJUSTING RINGS SHALL BE EJIW INFRA RISER OR APPROVED EQUAL.
 - RUNGS TO BE PLACED 12" O.C. ON OBSTRUCTED SIDE OF MANHOLE. LAST RUNG SHALL BE 18" MAXIMUM FROM BOTTOM OF MANHOLE, AND TOP RUNG SHALL BE 6" MAXIMUM FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, LAST RUNG SHALL BE PLACED 6" OVER SMALLEST PIPE. REFER TO ASTM C-478.
 - BLOCKOUTS MUST BE FORMED.
 - COVER SHALL BE STENCILED "DRAIN".
 - TYPE II MANHOLES SHALL HAVE INTEGRAL BASE.

STORM DRAIN MANHOLE - TYPE I (AS SHOWN)



OIL WATER SEPARATOR

NOTE: DIMENSIONS SHOWN ARE FOR REFERENCE ONLY AND ARE APPROXIMATE. COORDINATE w/ OIL WATER SEPARATOR MANUFACTURER AS REQUIRED.

SECTION THROUGH CHAMBER

TYPICAL STORM DRAIN PIPE BEDDING SECTION

STEEL GRATE

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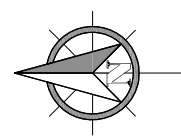
HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

SHEET TITLE: **STORM DRAIN DETAILS**

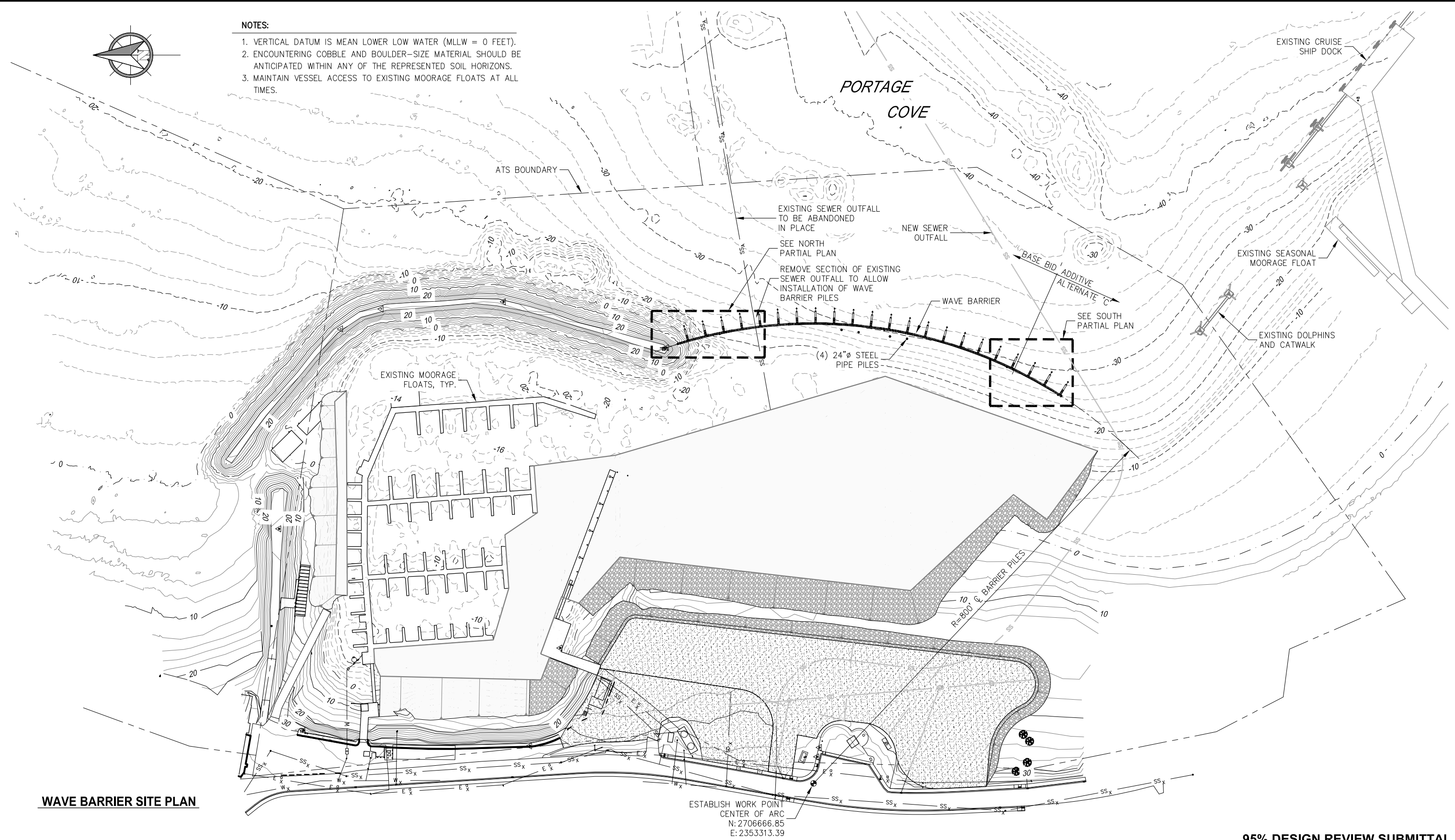
PND PROJECT NO.: 102029

4.03

SHEET 16 OF 29



- NOTES:**
1. VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW = 0 FEET).
 2. ENCOUNTERING COBBLE AND BOULDER-SIZE MATERIAL SHOULD BE ANTICIPATED WITHIN ANY OF THE REPRESENTED SOIL HORIZONS.
 3. MAINTAIN VESSEL ACCESS TO EXISTING MOORAGE FLOATS AT ALL TIMES.



WAVE BARRIER SITE PLAN

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DESIGN: JDO CHECKED: CRS
DRAWN: DRH APPROVED: CRS

SCALE: SCALE IN FEET
0 40 80 160 FT.

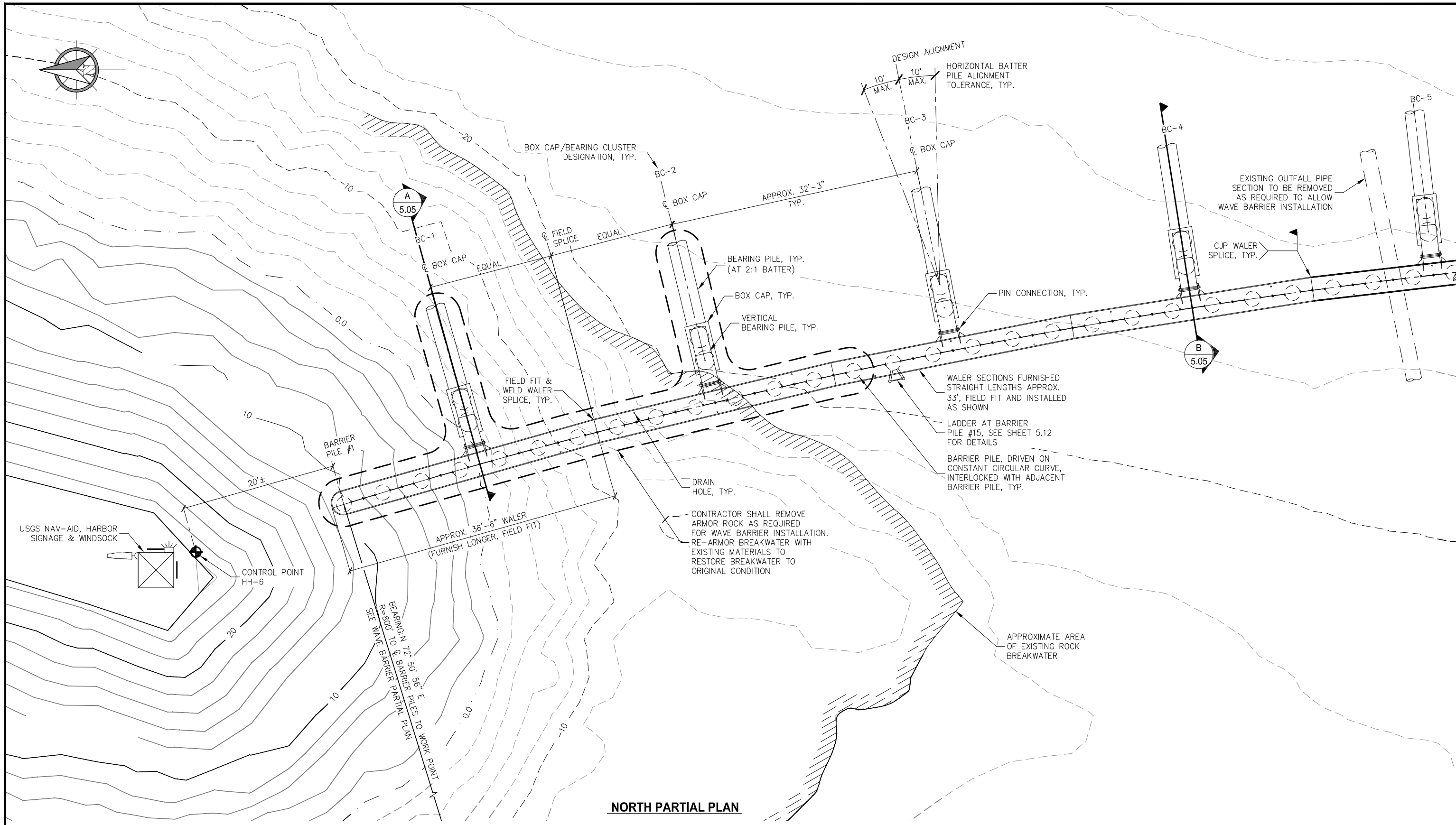
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
WAVE BARRIER SITE PLAN

PN&D PROJECT NO.: 102029.10

5.01
SHEET
17 OF 29



NORTH PARTIAL PLAN

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DESIGN: JDO CHECKED: CRS
DRAWN: DRH APPROVED: CRS

SCALE: SCALE IN FEET
0 6 12 FT.

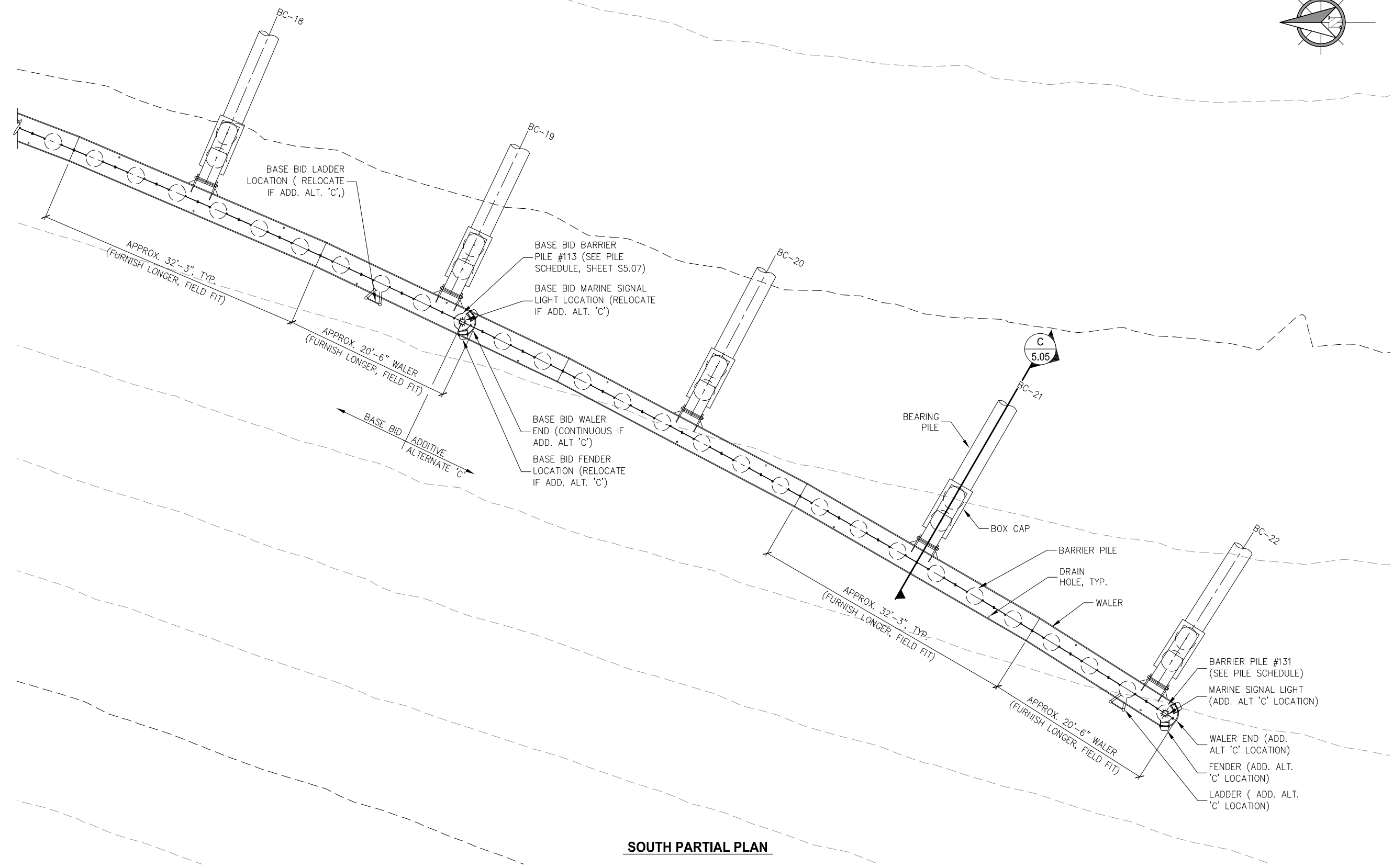
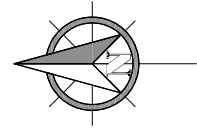
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
**WAVE BARRIER NORTH
PARTIAL PLAN**

5.02
SHEET
18 OF 29

PN&D PROJECT NO.: 102029.10



SOUTH PARTIAL PLAN

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DESIGN: JDO CHECKED: CRS
DRAWN: DRH APPROVED: CRS

SCALE: SCALE IN FEET
0 6 12 FT.

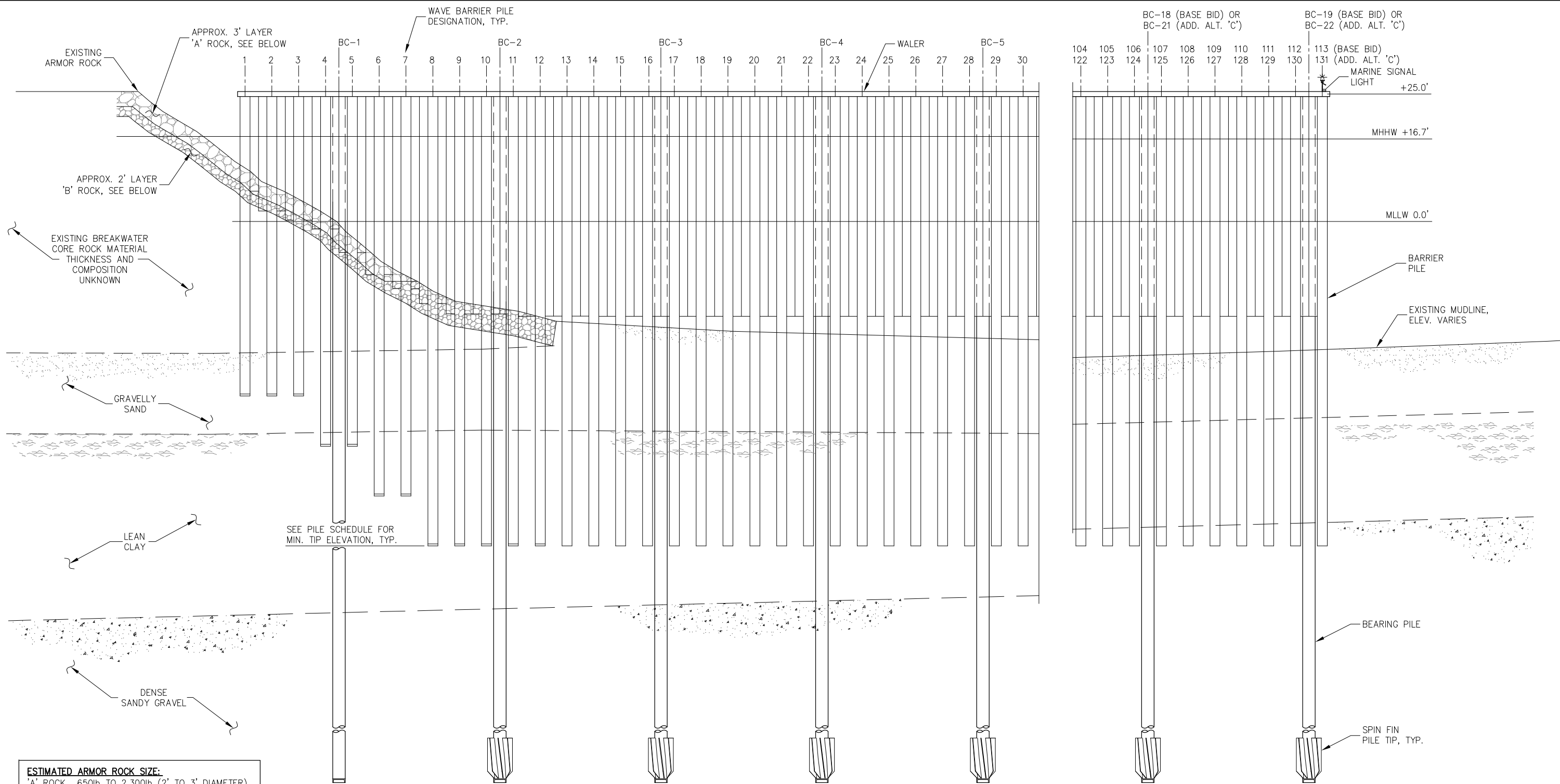
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
**WAVE BARRIER SOUTH
PARTIAL PLAN**

PN&D PROJECT NO.: 102029.10

5.03
SHEET
19 OF 29



ESTIMATED ARMOR ROCK SIZE:
 'A' ROCK 650lb TO 2,300lb (2' TO 3' DIAMETER)
 'B' ROCK 65lb TO 650lb (1' TO 2' DIAMETER)

NOTE:
 1. SOIL INFORMATION SHOWN IS APPROXIMATE AND FOR GENERAL ILLUSTRATION PURPOSES ONLY. SEE GEOTECHNICAL REPORT FOR SPECIFIC SOILS INFORMATION.
 2. SEE PILE SCHEDULE FOR DETAILS NOT SHOWN AND INSTALLATION CRITERIA.

PARTIAL ELEVATION
 NOTE: LADDERS NOT SHOWN FOR CLARITY

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DESIGN: JDO CHECKED: CRS
 DRAWN: DRH APPROVED: CRS
 SCALE: SCALE IN FEET
 0 10 20 FT.

DATE: 8/7/15

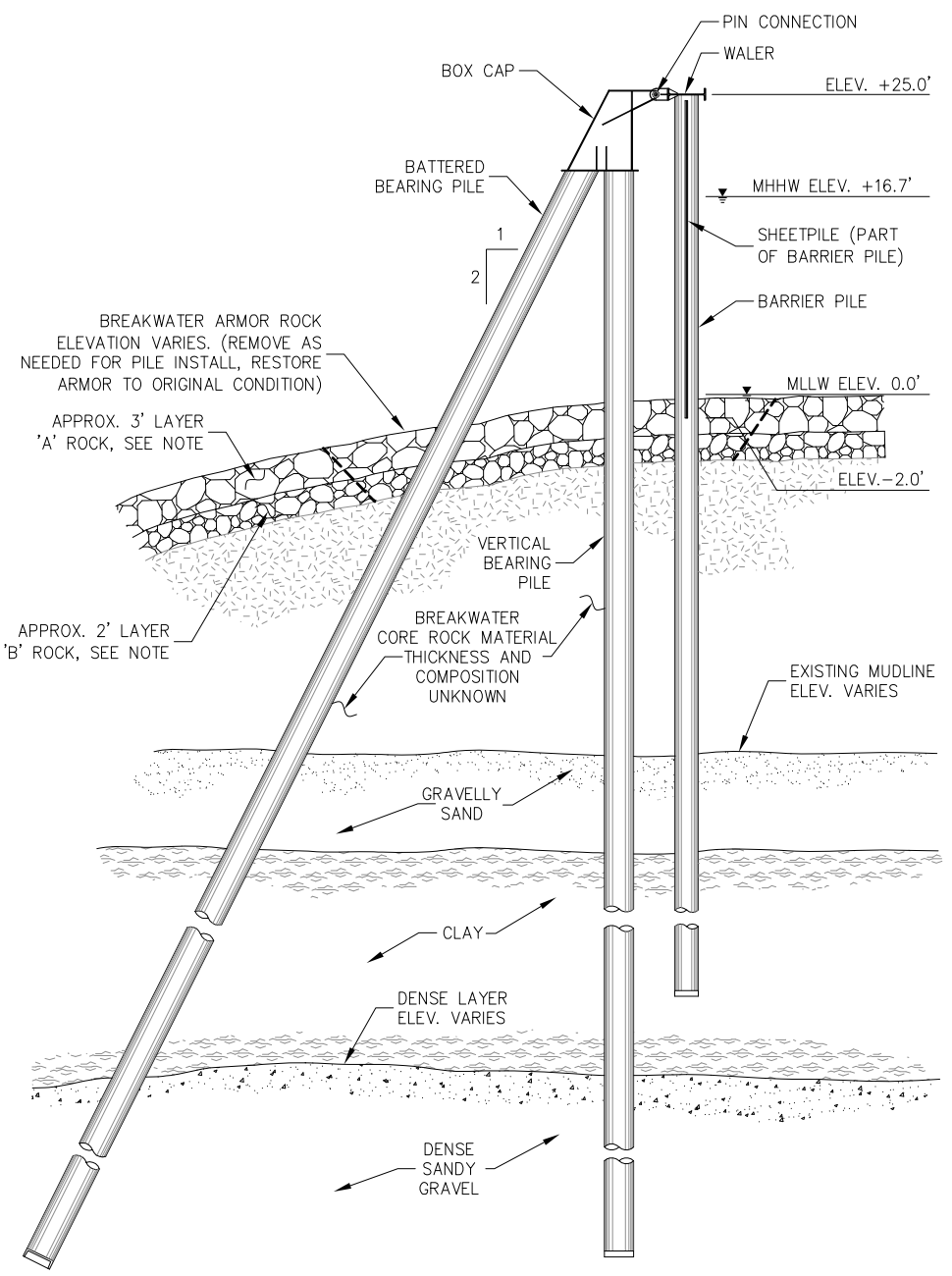
HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

SHEET TITLE: **PARTIAL ELEVATION**

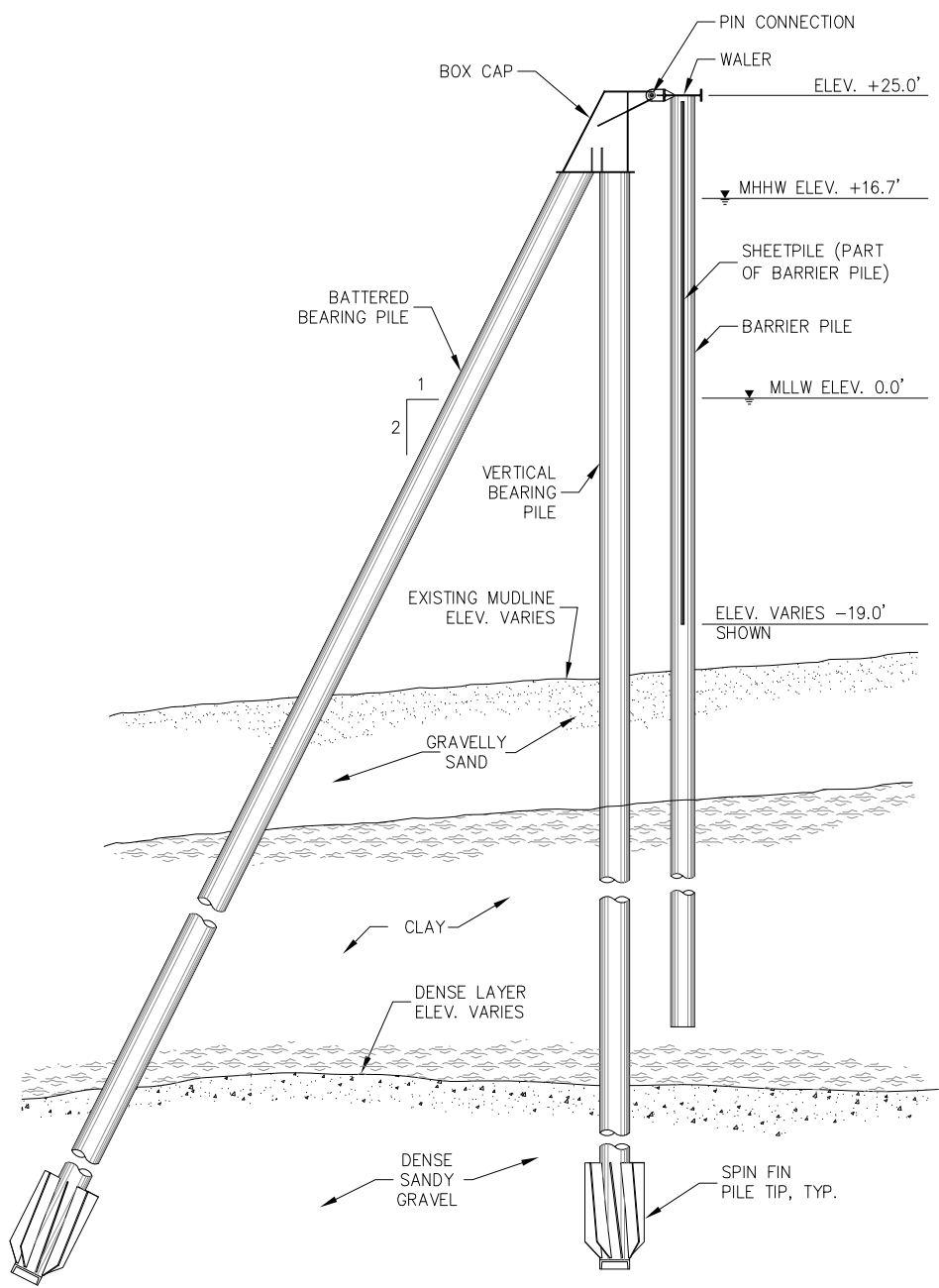
PN&D PROJECT NO.: 102029.10

5.04
 SHEET 20 OF 29

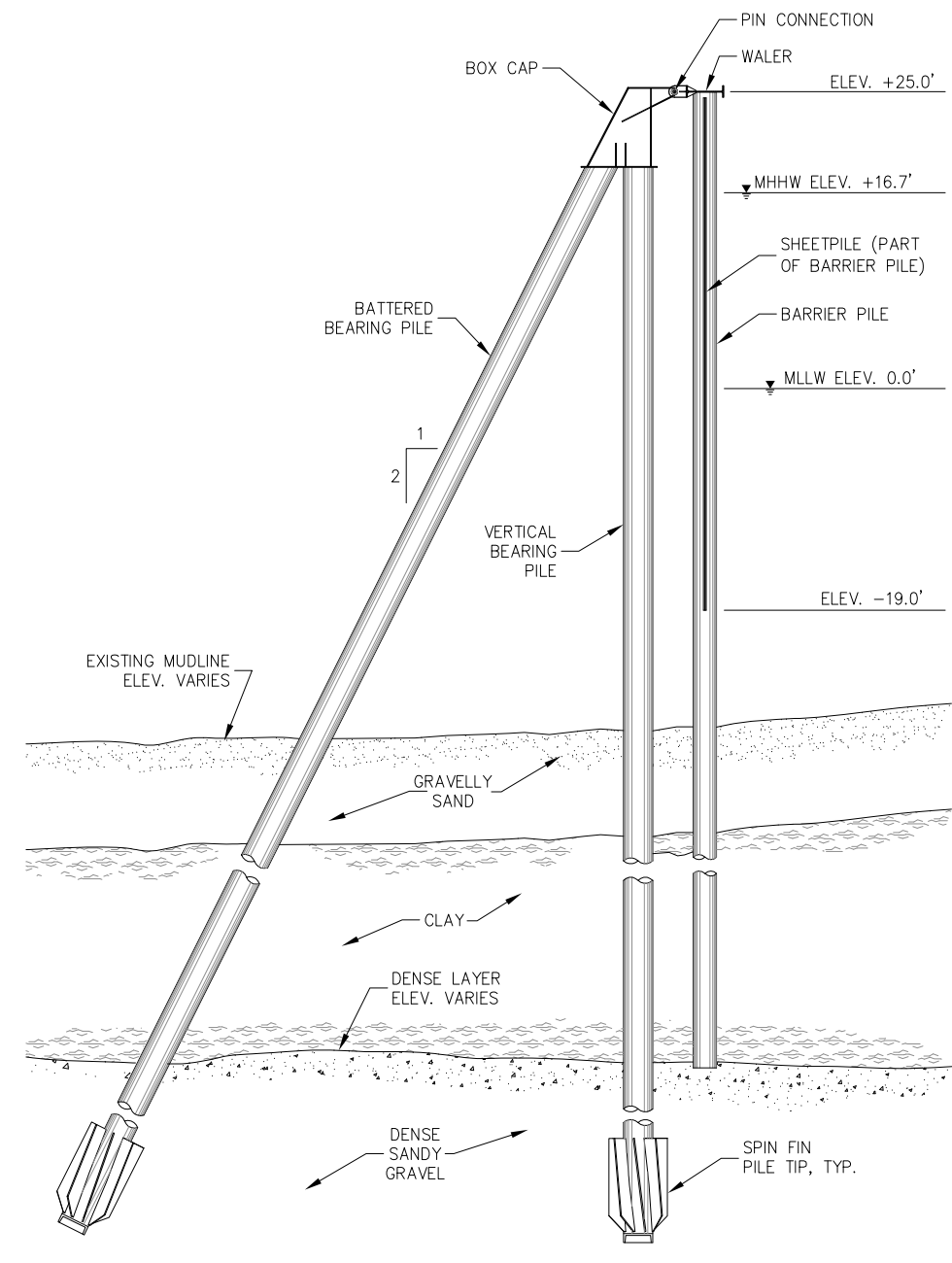
ESTIMATED ARMOR ROCK SIZE:
 'A' ROCK 650lb TO 2,300lb (2' TO 3' DIAMETER)
 'B' ROCK 65lb TO 650lb (1' TO 2' DIAMETER)



A TYPICAL SECTION
5.02



B TYPICAL SECTION
5.02



C TYPICAL SECTION
5.03

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 DRAWN: DRH APPROVED: CRS

SCALE: SCALE IN FEET
 0 8 16 FT.

DATE: 8/7/15

**HAINES BOROUGH
 PORTAGE COVE
 HARBOR EXPANSION**

SHEET TITLE:
TYPICAL SECTIONS

PN&D PROJECT NO.: 102029.10

5.05
 SHEET
 21 OF 29

WAVE BARRIER PILE SCHEDULE								
Pile Location	Pile Size Diameter x Wall	Supply Length (ft)	Max. Length of Bare Pile (ft)	Length of Sheetpile (ft)	Tip Type	Pile Tip Elevation (ft)	Design Compression Capacity	Comments
							(Allowable/Ultimate) (kips)	
1	24"dia x 0.500"t	60	20	20	Cutting Shoe	-35	--	PS31 one side of pile only*
2	24"dia x 0.500"t	60	20	23	Cutting Shoe	-35	--	PS31 both sides
3	24"dia x 0.500"t	60	20	25	Cutting Shoe	-35	--	PS31 both sides
4	24"dia x 0.500"t	70	20	27	Cutting Shoe	-45	--	PS31 both sides
5	24"dia x 0.500"t	70	20	32	Cutting Shoe	-45	--	PS31 both sides
6	24"dia x 0.500"t	80	40	36	Cutting Shoe	-55	--	PS31 both sides
7	24"dia x 0.500"t	80	40	40	Cutting Shoe	-55	--	PS31 both sides
8	24"dia x 0.500"t	90	40	42	Cutting Shoe	-65	--	PS31 both sides
9	24"dia x 0.500"t	90	40	44	Cutting Shoe	-65	--	PS31 both sides
10	24"dia x 0.500"t	90	40	44	Cutting Shoe	-65	--	PS31 both sides
11	24"dia x 0.500"t	90	40	44	Cutting Shoe	-65	--	PS31 both sides
12	24"dia x 0.500"t	90	40	44	Cutting Shoe	-65	--	PS31 both sides
13	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
14	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
15	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
16	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
17	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
18	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
19	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
20	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
21	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
22	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
23	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
24	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
25	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
26	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
27	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
28	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
29	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
30	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
31	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
32	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
33	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
34	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
35	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
36	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
37	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
38	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
39	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
40	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
41	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
42	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
43	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
44	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
45	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
46	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
47	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
48	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
49	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
50	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides

* PAY PARTICULAR ATTENTION TO INTERLOCK ORIENTATION

WAVE BARRIER PILE SCHEDULE (Cont.)								
Pile Location	Pile Size Diameter x Wall	Supply Length (ft)	Max. Length of Bare Pile (ft)	Length of Sheetpile (ft)	Tip Type	Pile Tip Elevation (ft)	Design Compression Capacity	Comments
							(Allowable/Ultimate) (kips)	
51	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
52	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
53	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
54	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
55	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
56	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
57	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
58	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
59	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
60	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
61	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
62	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
63	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
64	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
65	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
66	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
67	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
68	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
69	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
70	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
71	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
72	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
73	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
74	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
75	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
76	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
77	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
78	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
79	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
80	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
81	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
82	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
83	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
84	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
85	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
86	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
87	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
88	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
89	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
90	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
91	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
92	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
93	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
94	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
95	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
96	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
97	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
98	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
99	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
100	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides

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SCALE: _____

DATE: 8/7/15

HAINES BOROUGH PORTAGE COVE HARBOR EXPANSION

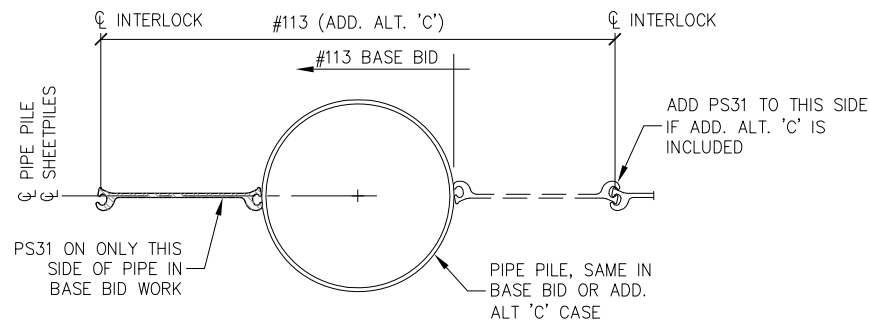
SHEET TITLE: **PILE SCHEDULE**

PN&D PROJECT NO.: 102029.10

5.06
SHEET 22 OF 29

WAVE BARRIER PILE SCHEDULE (Cont.)								
Pile Location	Pile Size Diameter x Wall	Supply Length (ft)	Max. Length of Bare Pile (ft)	Length of Sheetpile (ft)	Tip Type	Pile Tip Elevation (ft)	Design Compression Capacity	Comments
							(Allowable/Ultimate) (kips)	
101	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
102	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
103	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
104	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
105	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
106	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
107	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
108	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
109	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
110	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
111	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
112	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
113	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 one side of pile only (see detail below)
ADDITIVE ALTERNATE 'C'								
113	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides of pile (see detail below)
114	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
115	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
116	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
117	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
118	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
119	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
120	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
121	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
122	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
123	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
124	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
125	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
126	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
127	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
128	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
129	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
130	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 both sides
131	24"dia x 0.500"t	90	40	44	None	-65	--	PS31 one side of pile only*

* PAY PARTICULAR ATTENTION TO INTERLOCK ORIENTATION



BARRIER PILE #113
(USE APPROPRIATE PILE FOR BASE BID OR ADD. ALT. 'C')

BEARING PILE SCHEDULE								
Pile Location	Pile Batter	Pile Size Diameter x Wall	Supply Length (ft)	Length of Bare Pile (ft)	Tip Type	Capacity (Allowable/Ultimate) (kips)		Minimum Tip Elevation
						Compression	Tension	
BC-1	Vertical	30"dia x 0.75"t	160	80	Cutting Shoe Only	300/680	290/650	-135'
	2:1	30"dia x 0.750"t	200	100	Cutting Shoe Only	335/750	325/730	-155'
BC-2	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-3	Vertical**	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1**	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-4	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-5	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-6	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-7	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-8	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-9	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-10	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-11	Vertical**	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1**	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-12	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-13	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-14	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-15	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-16	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-17	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-18	Vertical	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-19	Vertical**	30"dia x 0.750"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1**	30"dia x 0.750"t	200	100	SPIN FIN	600/1350	575/1300	-155'
ADDITIVE ALTERNATE 'C'								
BC-20	Vertical	30"dia x 0.75"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.75"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-21	Vertical	30"dia x 0.75"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.75"t	200	100	SPIN FIN	600/1350	575/1300	-155'
BC-22	Vertical	30"dia x 0.75"t	160	80	SPIN FIN	550/1240	525/1180	-135'
	2:1	30"dia x 0.75"t	200	100	SPIN FIN	600/1350	575/1300	-155'

** INDICATES PDA REQUIRED (SEE SPECIFICATION 02896)



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DRAWN: DRH APPROVED: CRS

SCALE:

DATE: 8/7/15

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HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION

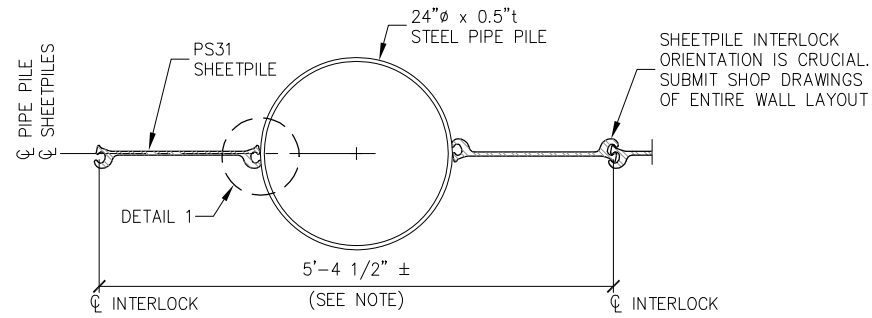
SHEET TITLE:

PILE SCHEDULE

PND PROJECT NO.: 102029.10

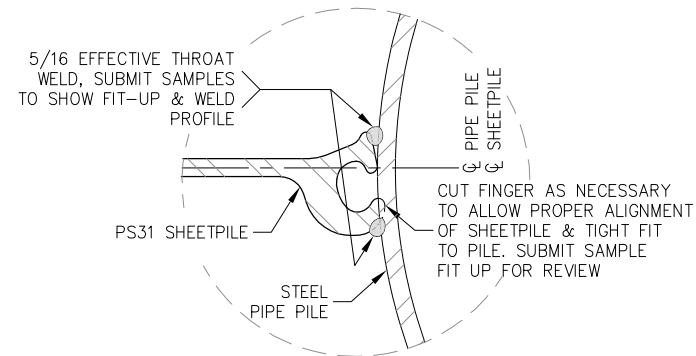
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SHEET 23 OF 29

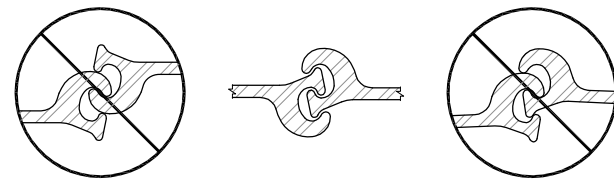


TYPICAL BARRIER PILE

NOTE:
IF DIMENSION VARIES SUBSTANTIALLY FROM THIS ESTIMATE DUE TO FIT-UP OF PROPOSED SHEETPILE, ADDITIONAL BARRIER PILES AND SHEETPILE MAY BE REQUIRED TO OBTAIN OVERALL DESIRED LENGTH OF WAVE BARRIER SHOWN.



DETAIL 1



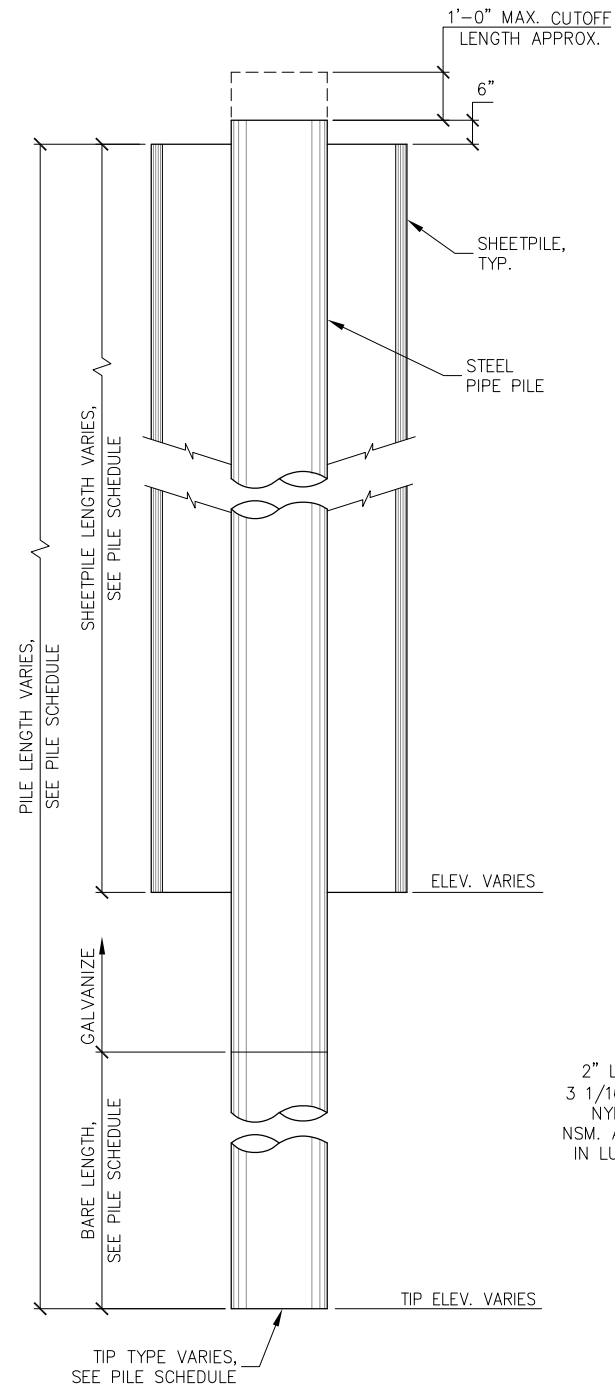
INCORRECT

CORRECT

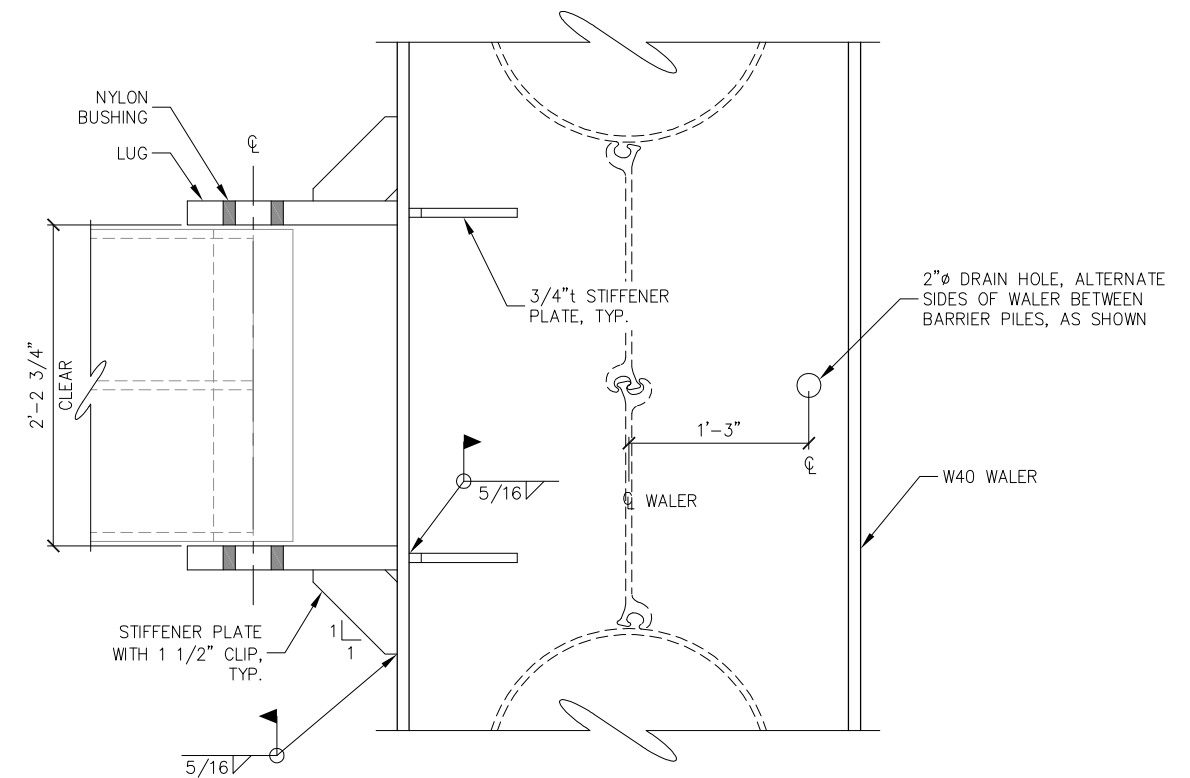
INCORRECT

SHEETPILE INTERLOCK DETAILS

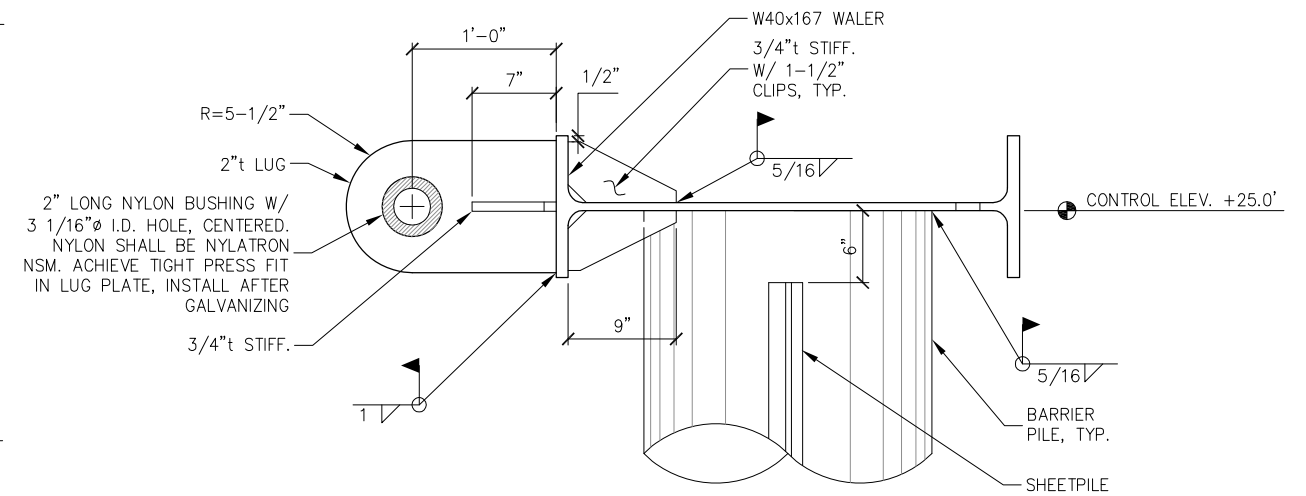
NOTE: ORIENTATION OF INTERLOCKS IS CRUCIAL, VIEW SHOWN FROM TOP.



TYPICAL WAVE BARRIER PILE



PLAN



ELEVATION

WALER DETAILS

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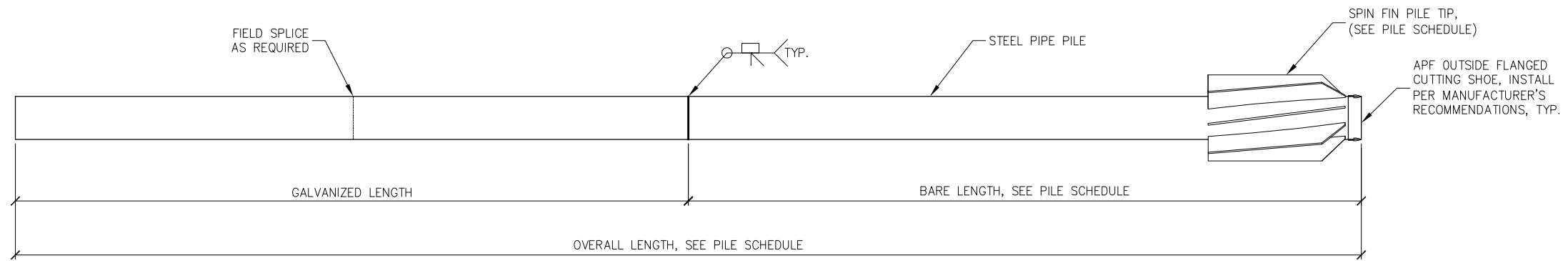
**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE:
BARRIER PILES AND WALERS

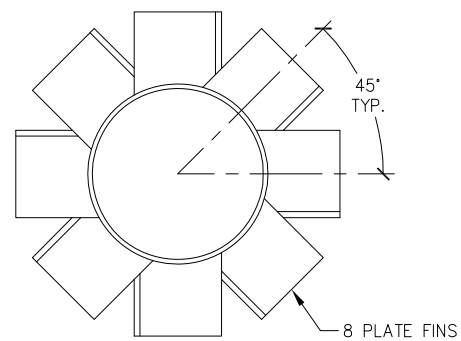
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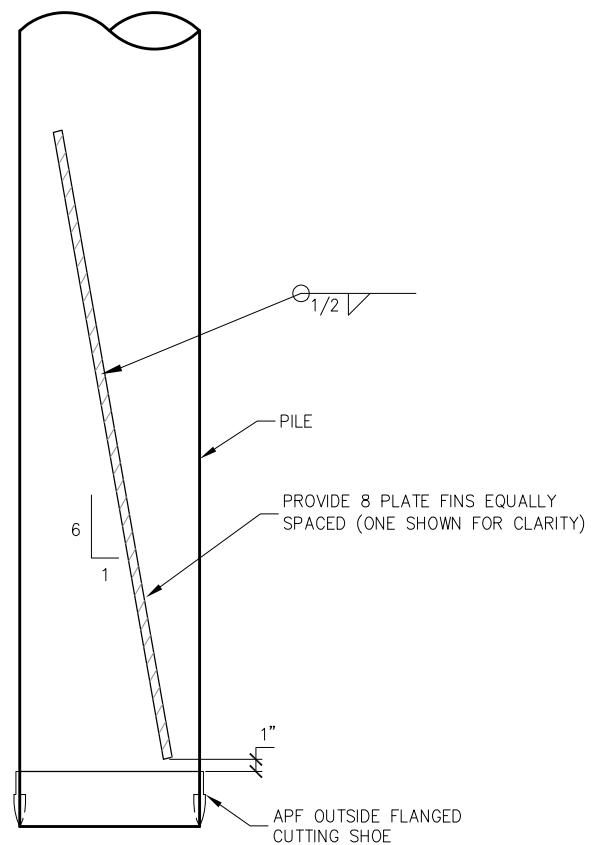


BEARING PILE
NTS



PLAN

SPIN FIN PILE TIP
NTS



ELEVATION

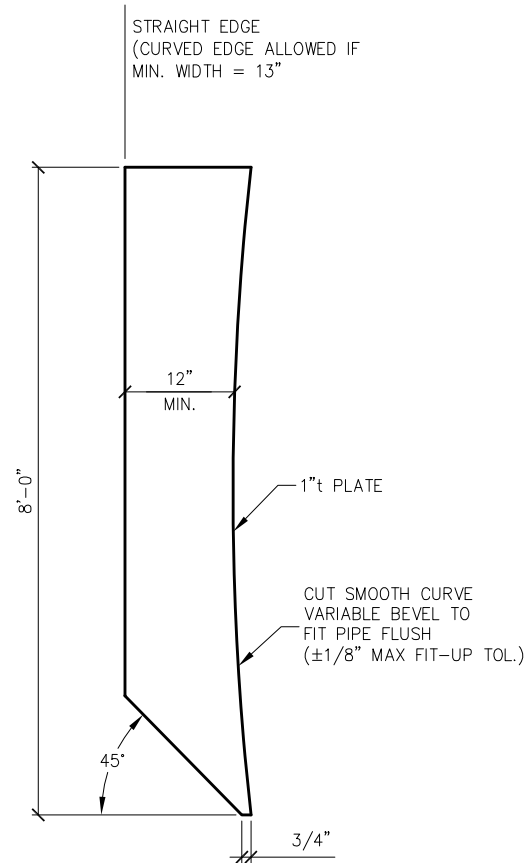
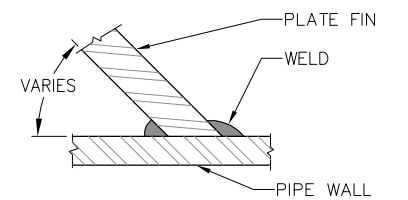
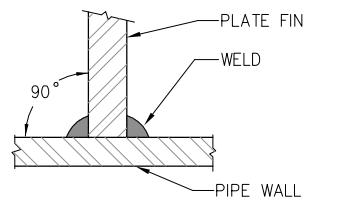


PLATE FIN
NTS



PILE/FIN SECTION
NTS



PILE/FIN SECTION AT CENTERLINE OF PLATE
NTS

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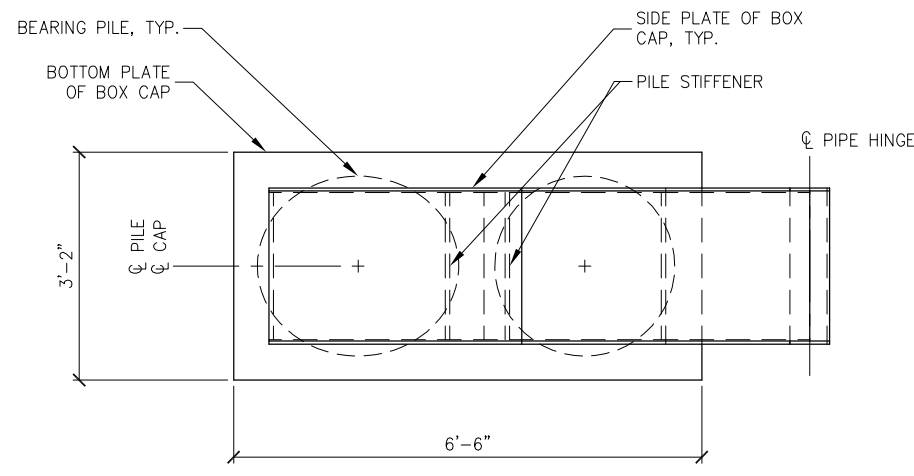
HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION

SHEET TITLE:
BEARING PILE DETAILS

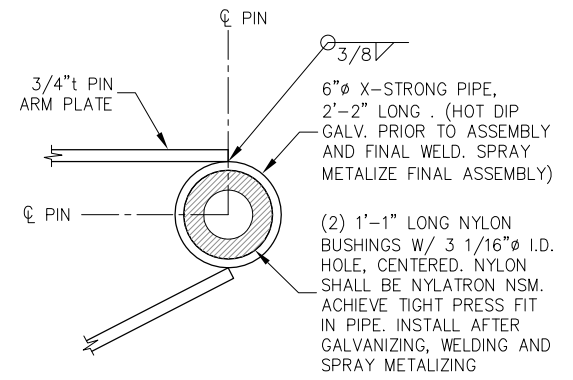
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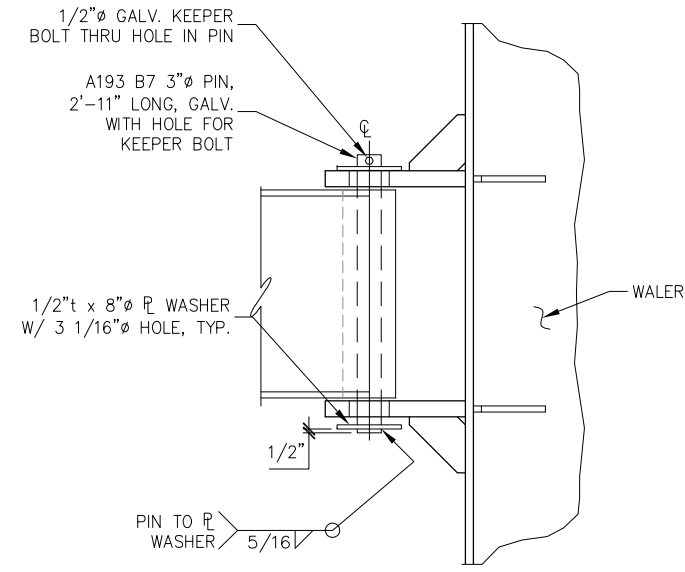
SHEET
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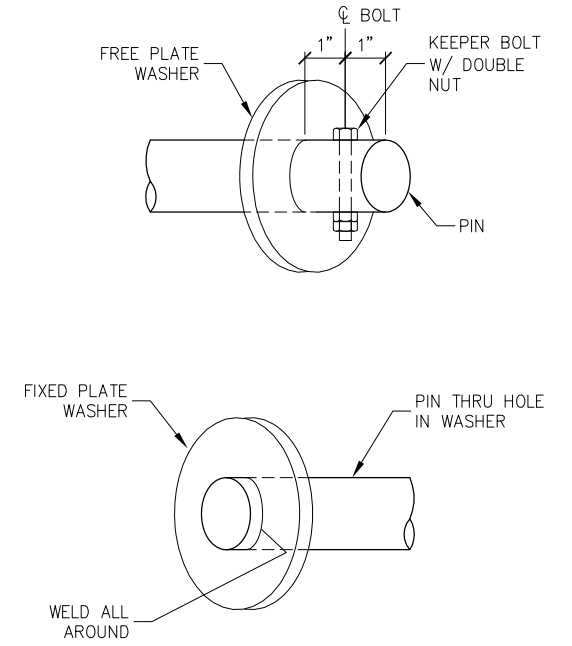
PLAN



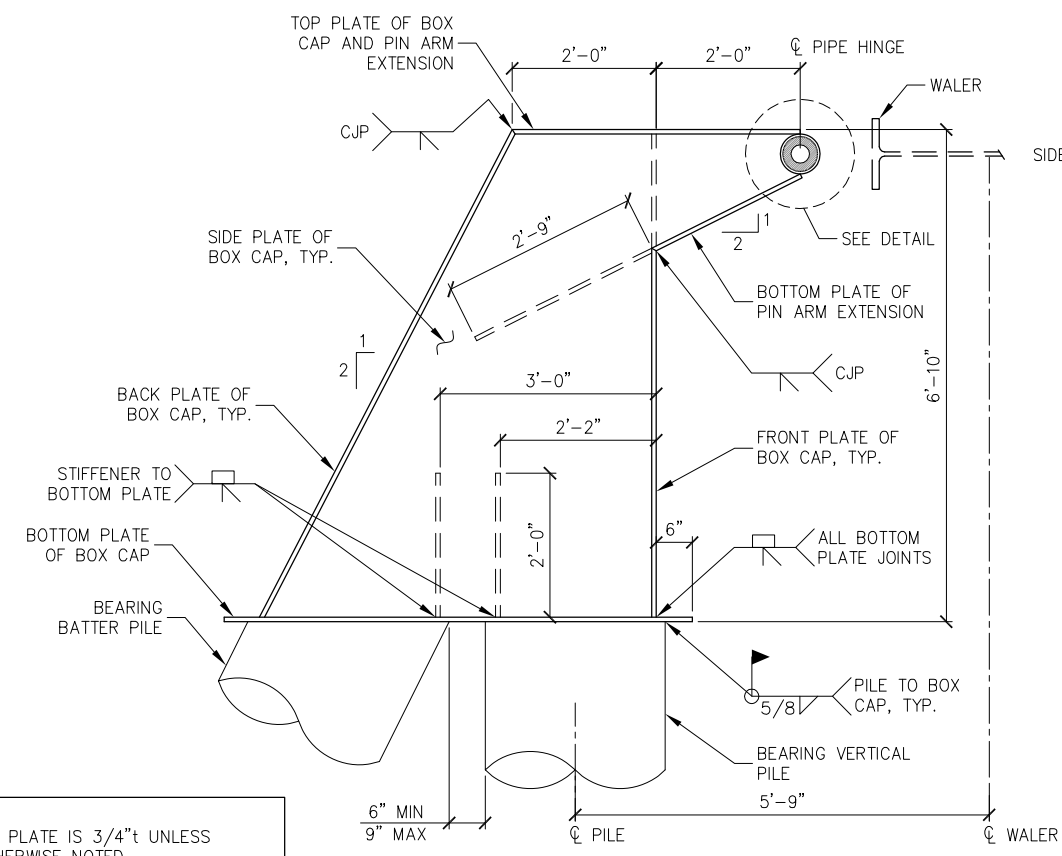
DETAIL



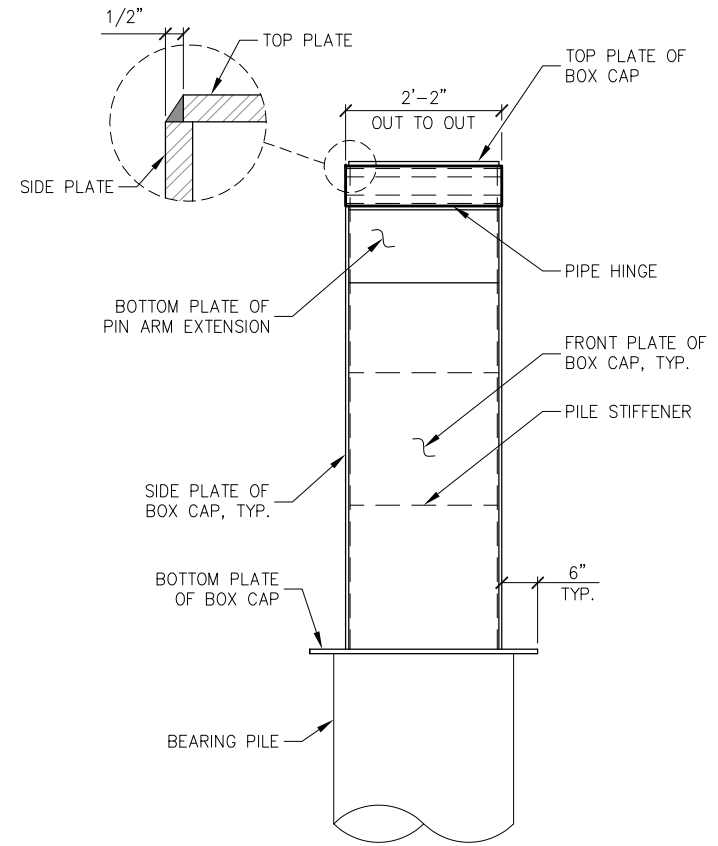
PIN CONNECTION PLAN



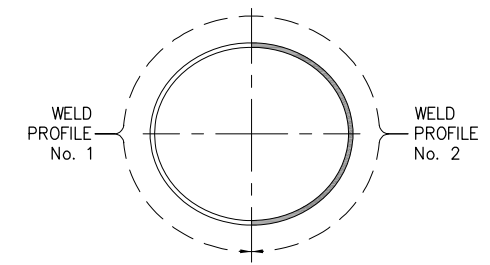
PIN CONNECTION DETAILS



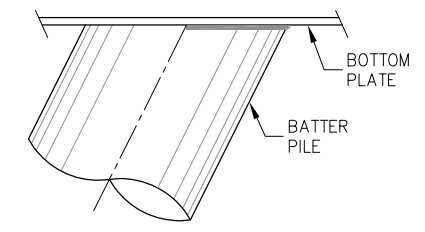
SIDE ELEVATION



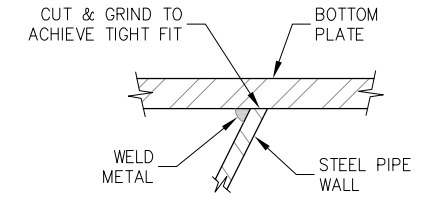
FRONT ELEVATION



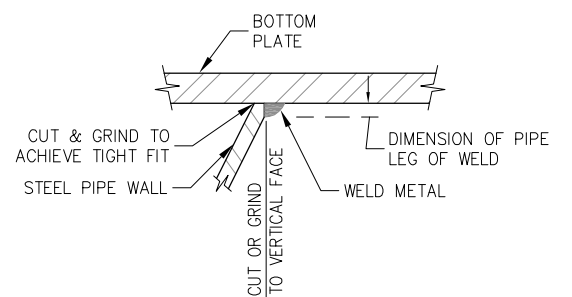
PLAN



SIDE VIEW



No 1 WELD PROFILE



No 2 WELD PROFILE

- NOTES:**
1. ALL PLATE IS 3/4"t UNLESS OTHERWISE NOTED.
 2. ALL OTHER WELDS ON BOX CAP NOT SHOWN SHALL BE 1/2" FILLET OR EQUIVALENT BEVEL, ALL AROUND.
 3. SPRAY METALIZE BOX CAP AFTER FINAL SHOP ASSEMBLY OF STEEL COMPONENTS

BATTER PILE WELD
(ALL BATTER PILES)

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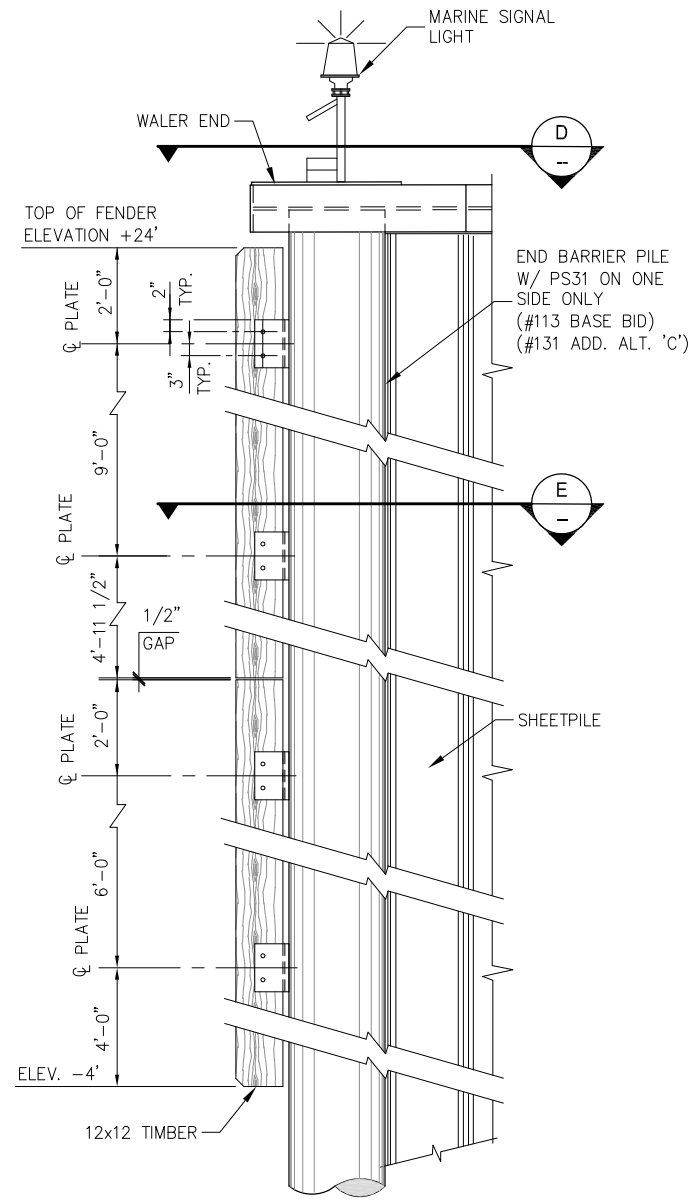
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

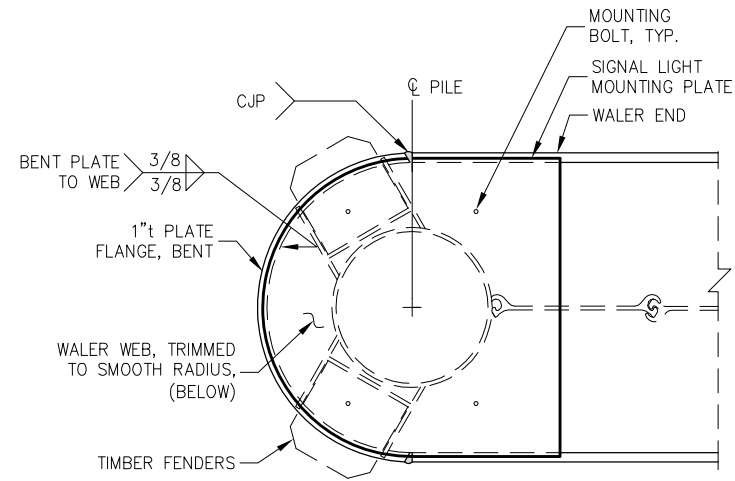
SHEET TITLE:
BOX CAP DETAILS

PN&D PROJECT NO.: 102029.10

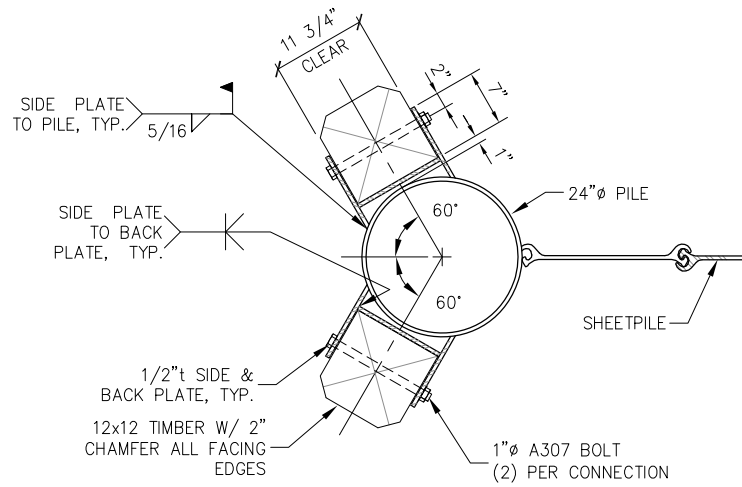
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SHEET
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PARTIAL ELEVATION

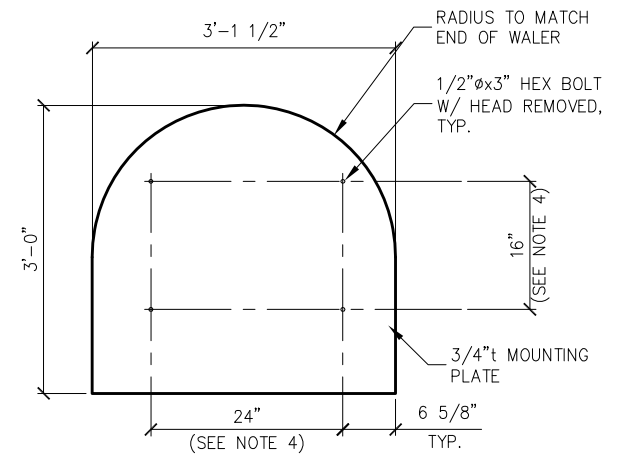


D VIEW

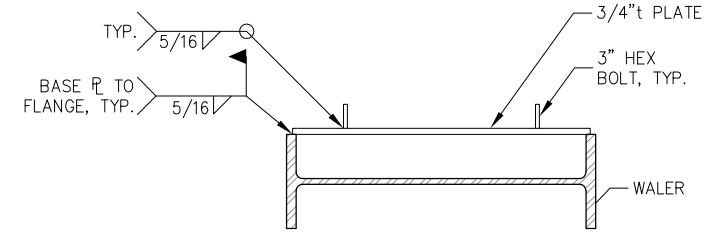


E VIEW

FENDER



PLAN



SECTION

SIGNAL LIGHT MOUNTING PLATE



MARINE SIGNAL LIGHT

SIGNAL LIGHT NOTES:

- 1) ALL METALS AND HARDWARE SHALL BE HOT DIP GALVANIZED PER ASTM A123 OR A153 AS APPROPRIATE.
- 2) BOLTS SHALL BE ASTM A325. STEEL PLATE SHALL BE A MINIMUM ASTM A36.
- 3) TIDELAND SIGNAL CORP. SOLA-CHAN MARINE SIGNAL LIGHT. ML-155 ON 4' PEDESTAL WITH 10W SOLAR MODULE OR APPROVED EQUAL, INCLUDING ON 12V SECONDARY ENERGY CELL AND MAXIFALO-60 LED FLASHER SET AT 0.4 SEC. "ON" AND 3.6 SEC. "OFF" (15 FLASHES/MINUTE) VISIBLE FOR MIN. 2 NM. COLOR AND FLASH PATTERN PER US COAST GUARD PERMIT REQUIREMENTS.
- 4) CENTER MARINE SIGNAL LIGHT ON BASE PLATE. CONTRACTOR TO VERIFY BOLT PATTERN AND SPACING ON LIGHT BASE.
- 5) ORIENT SOLAR PANEL FACING SOUTH.

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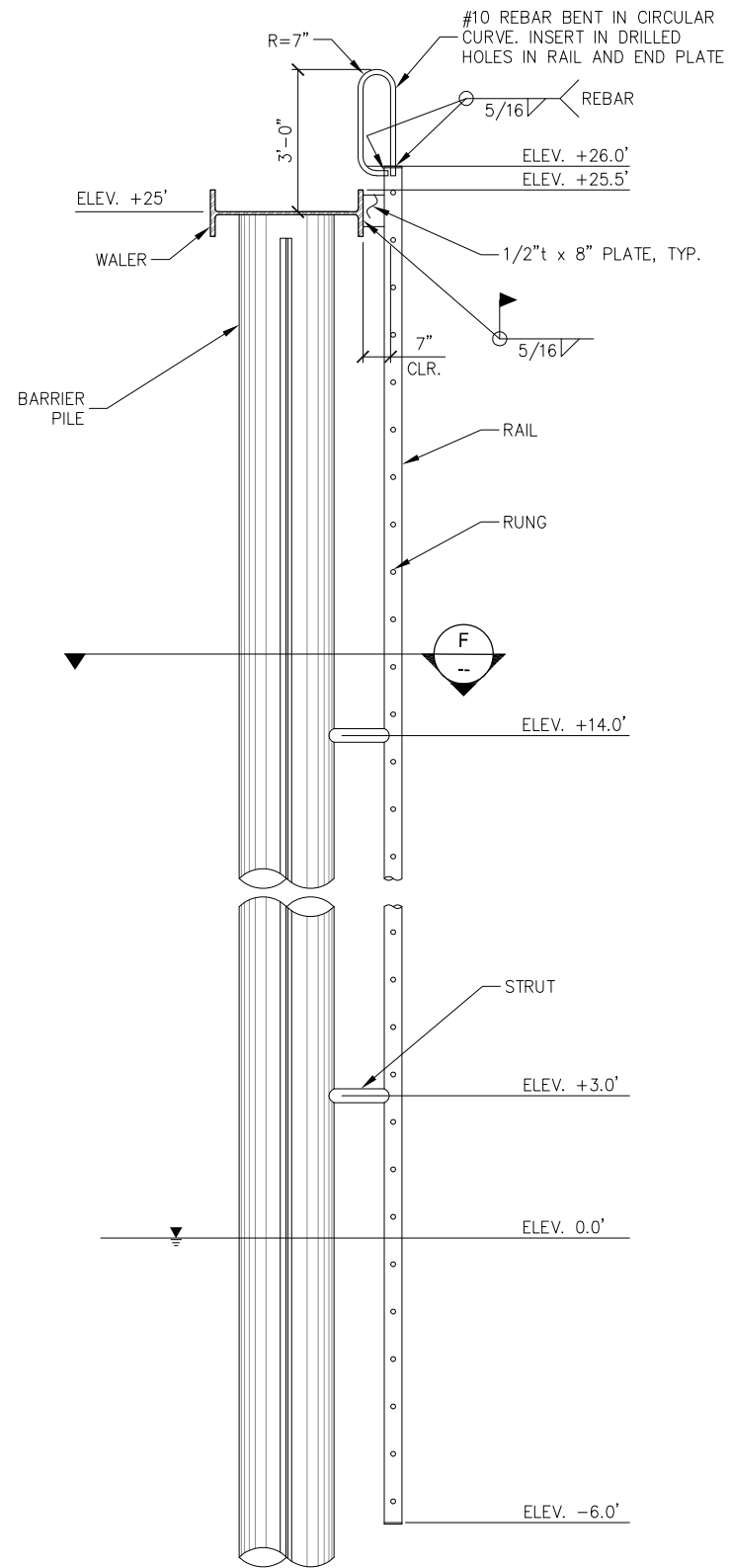
DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

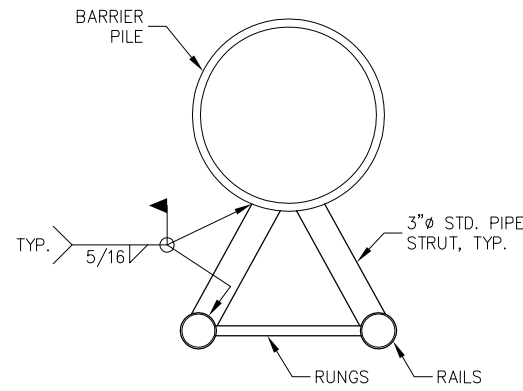
SHEET TITLE: **FENDER AND MARINE
SIGNAL LIGHT**

PN&D PROJECT NO.: 102029.10

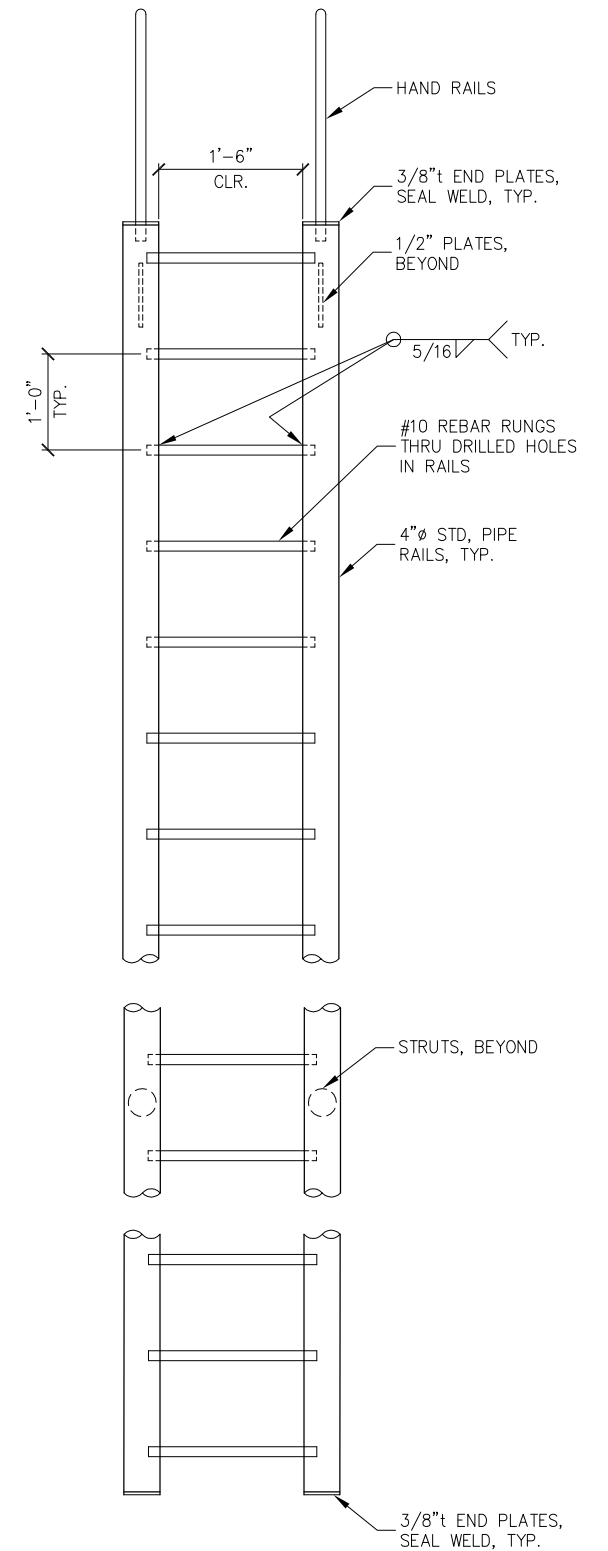
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SHEET
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PROFILE



SECTION F



ELEVATION

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**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

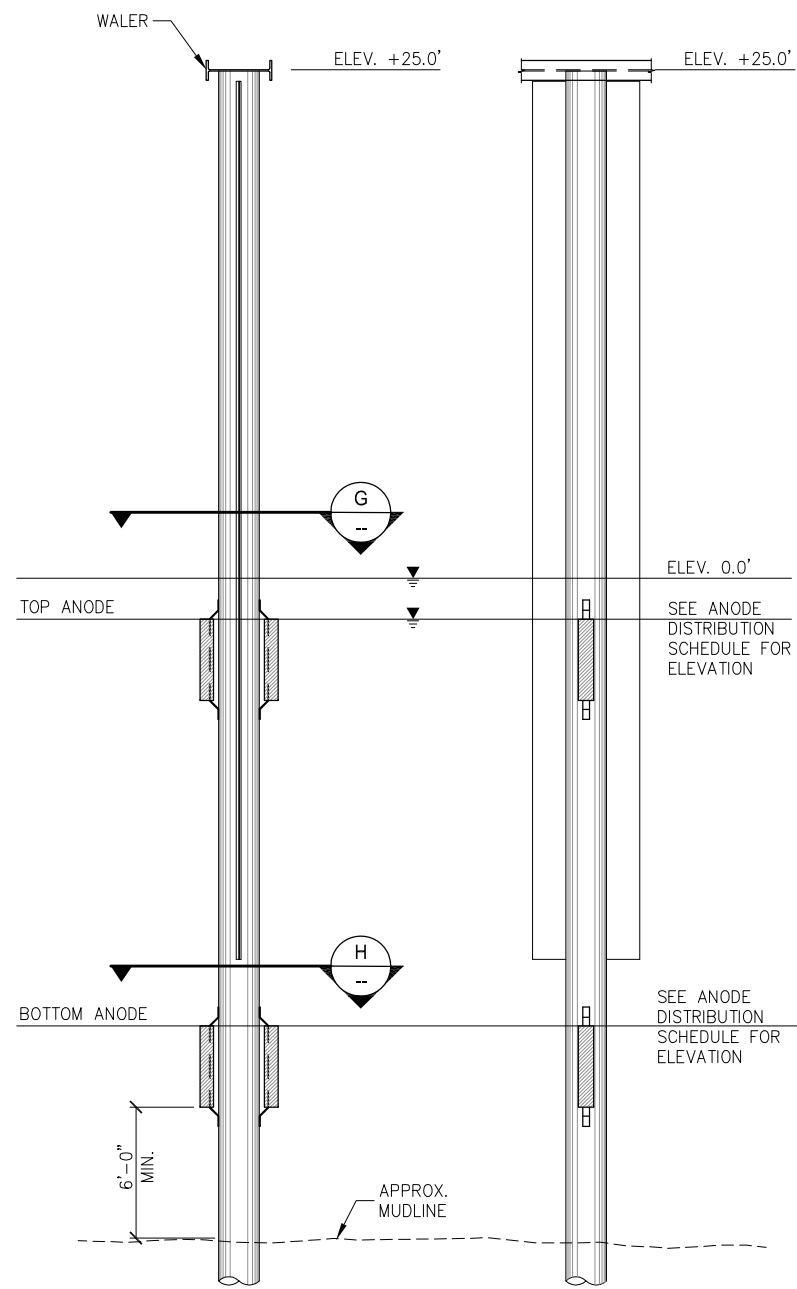
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LADDER

PN&D PROJECT NO.: 102029.10

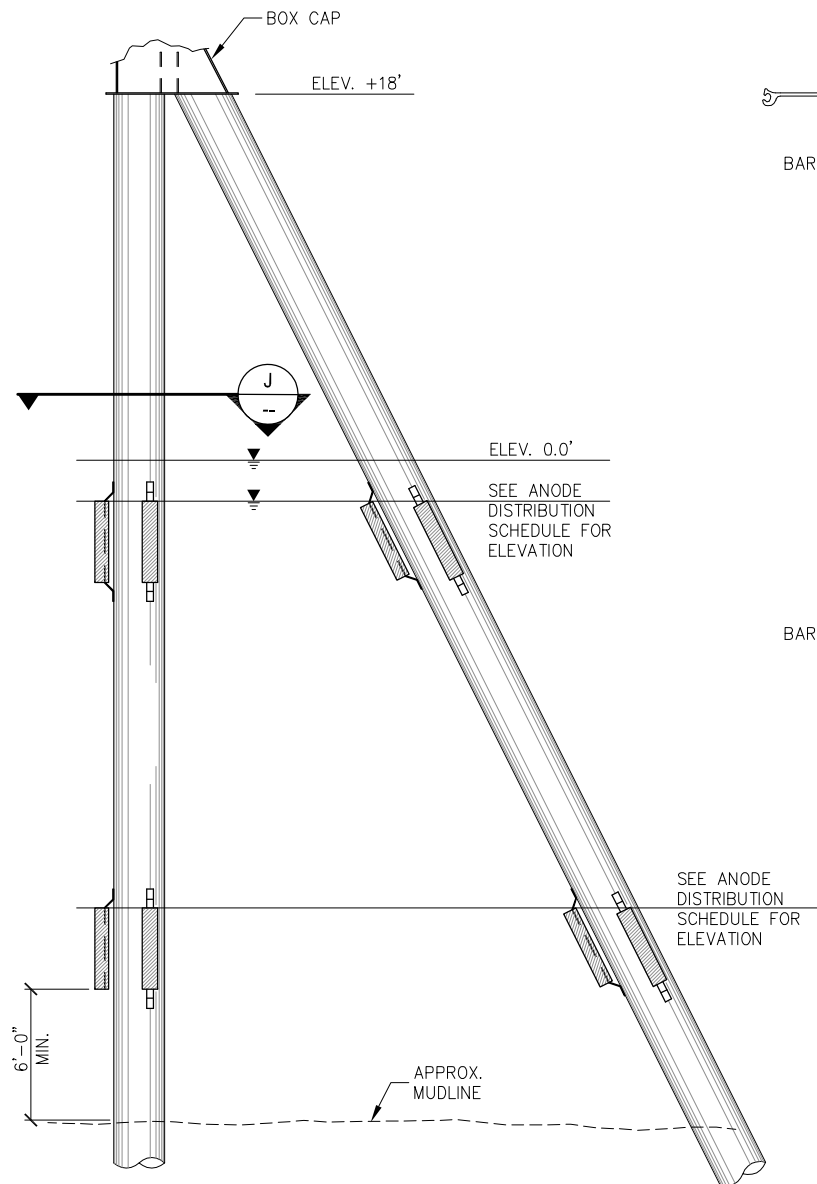
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SHEET
28 OF 29

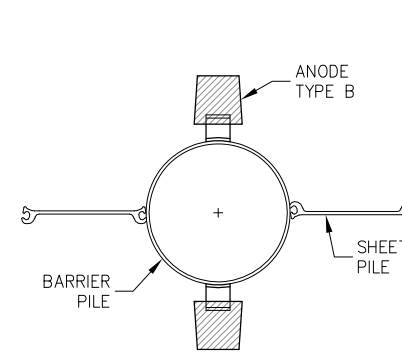


PROFILE **ELEVATION**

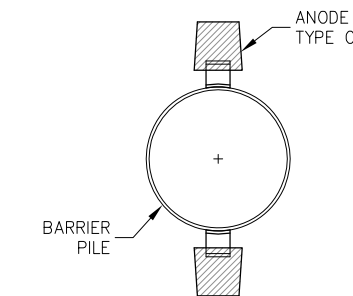
BARRIER PILE ANODES



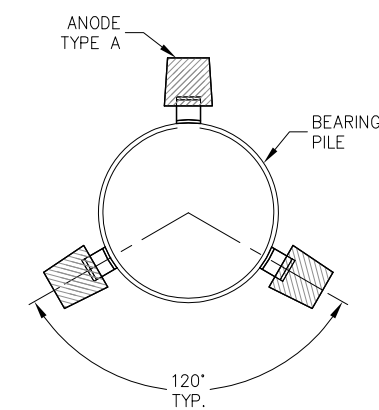
BEARING PILE CLUSTER ANODES



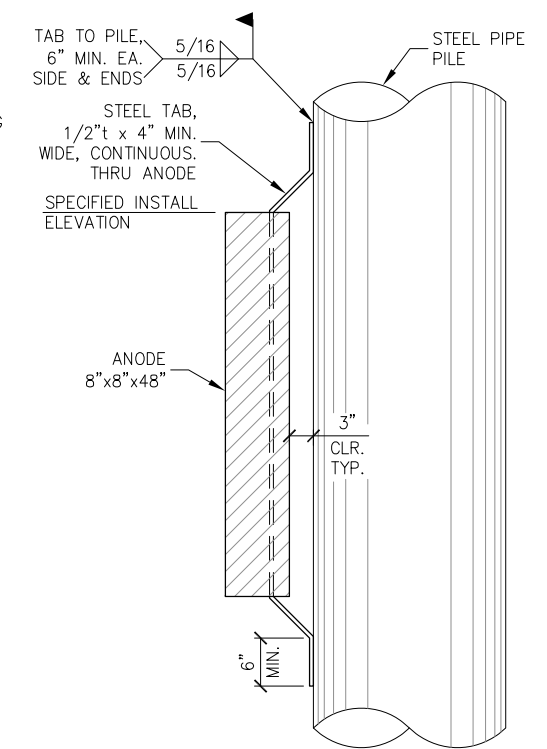
G SECTION



H SECTION



J SECTION



ANODE DETAIL

PILE DESIGNATION	TOP ANODES	BOTTOM ANODES
	ELEV.	ELEV.
BARRIER PILES 1 TO 5	NA	NA
BARRIER PILES 6 TO 32 (EVEN ONLY)	-2.0'	NA
BARRIER PILES 34 TO 40 (EVEN ONLY)	-2.0'	-15.0'
BARRIER PILES 42 TO 46 (EVEN ONLY)	-2.0'	-16.0'
BARRIER PILES 48 TO 122 (EVEN ONLY)	-2.0'	-17.0'
BARRIER PILES 124	-2.0'	-16.0'
BARRIER PILES 126 TO 130 (EVEN ONLY)	-2.0'	-15.0'
BEARING PILE CLUSTER BC-1	NA	NA
BEARING PILE CLUSTERS BC-2 TO BC-5	-2.0'	NA
BEARING PILE CLUSTERS BC-6 TO BC-7	-2.0'	-15.0'
BEARING PIPE CLUSTERS BC-8 TO BC-20	-2.0'	-17.0'
BEARING PILE CLUSTERS BC-21 TO BC-22	-2.0'	-15.0'

NOTE:
ANODES SHOWN ON TYPICAL SECTION VIEWS OF BARRIER PILE AND BEARING PILES FOR GENERAL ILLUSTRATION. QUANTITIES AND PLACEMENT ELEVATIONS VARY ALONG WALL. REFER TO ANODE DISTRIBUTION SCHEDULE FOR SPECIFICS.

95% DESIGN REVIEW SUBMITTAL



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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DESIGN: JDO CHECKED: CRS
DRAWN: DRH APPROVED: CRS

SCALE:

DATE: 8/7/15

**HAINES BOROUGH
PORTAGE COVE
HARBOR EXPANSION**

SHEET TITLE: **PILE ANODES
ADDITIVE ALTERNATE 'D'**

PN&D PROJECT NO.: 102029.10

5.13

SHEET
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