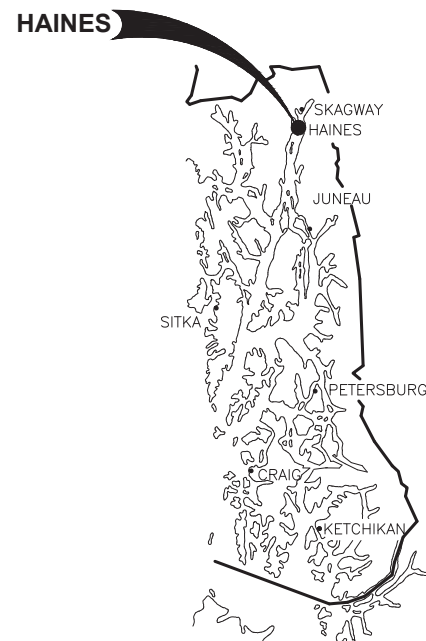


# HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS 65% DESIGN REVIEW SUBMITTAL

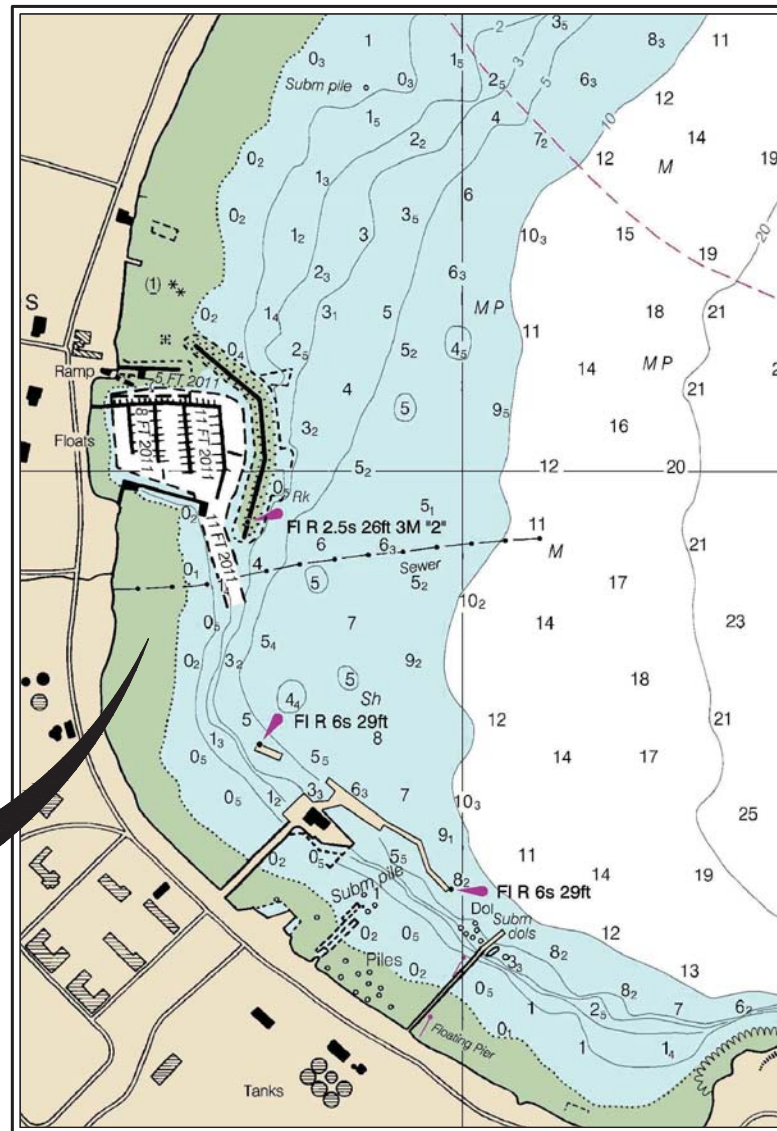


**LOCATION  
MAP**



**SOUTHEAST  
ALASKA**

**PROJECT  
LOCATION**



**VICINITY MAP**

NOTE: RECENT WAVE BARRIER, DREDGING AND UPLAND IMPROVEMENTS NOT SHOWN.

**PROJECT SCHEDULE**

DESCRIPTION	SCHEDULE
SUBSTANTIAL COMPLETION	OCTOBER 31, 2019
FINAL COMPLETION OF ALL WORK UNDER THIS CONTRACT	NOVEMBER 30, 2019

**DRAWING INDEX**

SHEET NO.	DWG. NO.	TITLE
<b>GENERAL</b>		
1	OF 28	1.01 COVER SHEET, VICINITY MAP AND DRAWING INDEX
2	OF 28	1.02 GENERAL NOTES, LEGEND AND ABBREVIATIONS
3	OF 28	1.03 EXISTING CONDITIONS
4	OF 28	1.04 EXISTING TYPICAL SECTIONS
5	OF 28	1.05 OVERALL SITE PLAN
<b>CIVIL</b>		
6	OF 28	2.01 UPLANDS SITE PLAN AND GRADING PLAN
7	OF 28	2.02 UTILITIES PLAN
8	OF 28	2.03 SIGNAGE AND STRIPING PLAN
9	OF 28	2.04 DRIVEWAY CROSSINGS
10	OF 28	2.05 TYPICAL SECTIONS
11	OF 28	2.06 CURB AND SIDEWALK DETAILS
11	OF 28	2.07 CONCRETE AND STORM DRAIN DETAILS
12	OF 28	2.08 SIGNAGE AND BOLLARD DETAILS
13	OF 28	2.09 WATER SERVICE DETAILS
<b>BOAT LAUNCH RAMP</b>		
14	OF 28	3.01 PLAN AND PROFILE
15	OF 28	3.02 TYPICAL SECTIONS
16	OF 28	3.03 PLANK AND SLEEPER DETAILS
17	OF 28	3.04 APRON, ABUTMENT AND PILE DETAILS
18	OF 28	3.05 APRON AND ABUTMENT DETAILS
19	OF 28	3.06 BOARDING FLOAT DETAILS
20	OF 28	3.07 BOARDING FLOAT DETAILS
21	OF 28	3.08 BOARDING FLOAT DETAILS
22	OF 28	3.09 BOARDING FLOAT DETAILS
<b>RETAINING WALL</b>		
23	OF 28	4.01 MSE WALL PLAN AND PROFILE
24	OF 28	4.02 MSE WALL TYPICAL SECTION
<b>HARBOR PARK</b>		
25	OF 28	5.01 HARBOR PARK PLAN AND SECTIONS
<b>COVERED SHELTER AND KIOSK</b>		
26	OF 28	6.01 COVERED SHELTER PLAN AND ELEVATION
27	OF 28	6.02 COVERED SHELTER DETAILS
28	OF 28	6.03 KIOSK PLAN AND DETAILS
<b>LANDSCAPING</b>		
1	OF 6	L100 KEY PLAN
2	OF 6	L101 SOILS PLAN
3	OF 6	L102 PLANTING PLAN
4	OF 6	L103 PLANTING PLAN
5	OF 6	L104 PLANTING PLAN
6	OF 6	L501 LANDSCAPE DETAILS
<b>ELECTRICAL</b>		
1	OF 11	E1 TITLE, LEGEND, INDEX & GENERAL NOTES
2	OF 11	E2 UPLANDS SITE PLAN – ELECTRICAL
3	OF 11	E3 RAMP PLAN AND PROFILE – ELECTRICAL
4	OF 11	E4 LIGHTING SCHEMATICS
5	OF 11	E5 LUMINAIRE SCHEDULE
6	OF 11	E6 UPLANDS LIGHT POLE DETAILS
7	OF 11	E7 UPLANDS LIGHT POLE DETAILS, HANDHOLE & TRENCH DETAIL
8	OF 11	E8 UPLANDS ELECTRICAL RACK ELEVATION
9	OF 11	E9 COVERED SHELTER PLANS AND ELEVATION – ELECTRICAL
10	OF 11	E10 CABLE ROUTING DETAILS
11	OF 11	E11 FLOAT LIGHT POLE DETAIL

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**HAINES BOROUGH  
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BOAT LAUNCH IMPROVEMENTS**

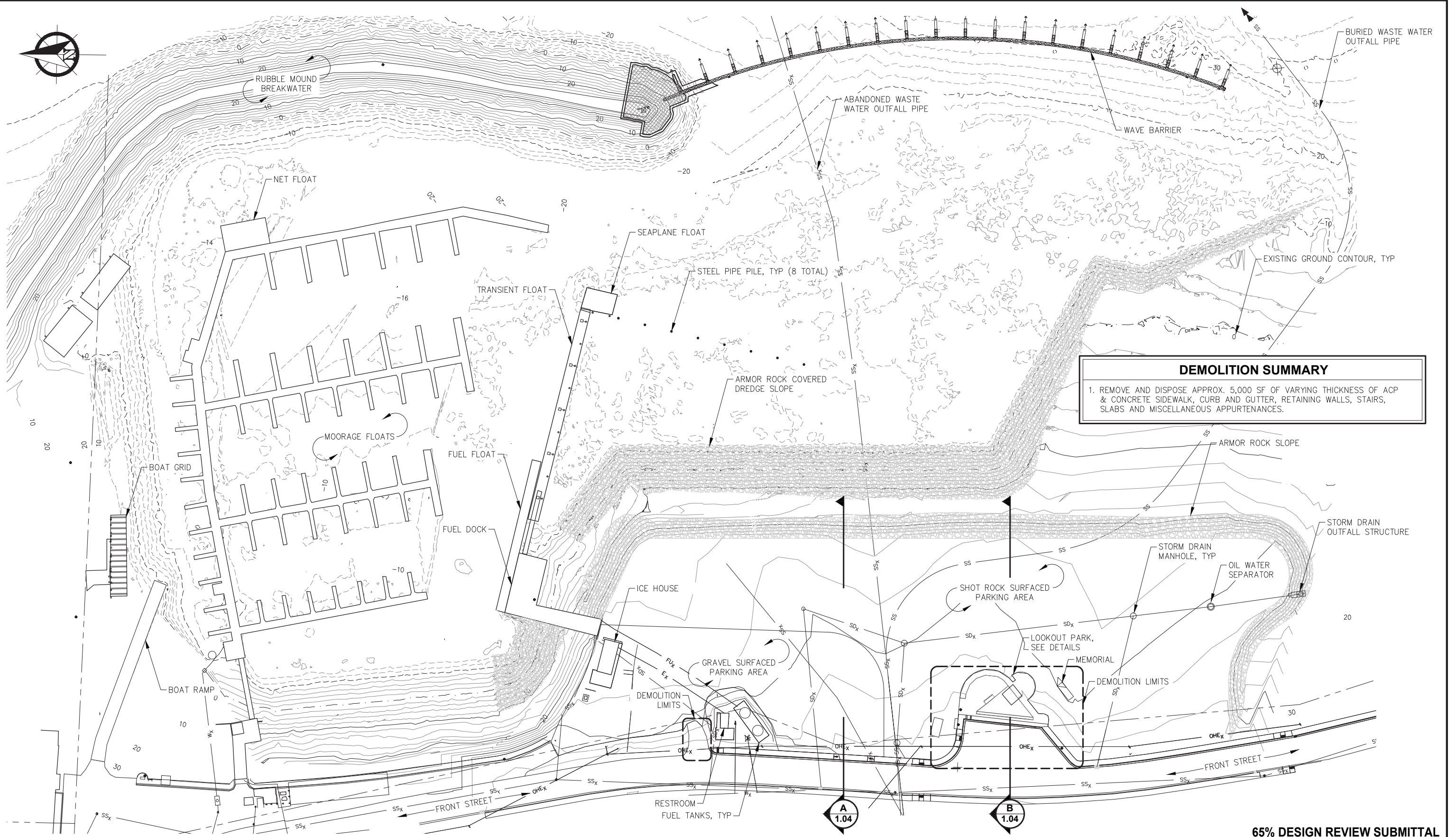
SHEET TITLE:  
**COVER SHEET, VICINITY MAP  
AND DRAWING INDEX**

PND PROJECT NO.: 172032

**1.01**

SHEET  
**1 OF 28**





**DEMOLITION SUMMARY**

1. REMOVE AND DISPOSE APPROX. 5,000 SF OF VARYING THICKNESS OF ACP & CONCRETE SIDEWALK, CURB AND GUTTER, RETAINING WALLS, STAIRS, SLABS AND MISCELLANEOUS APPURTENANCES.

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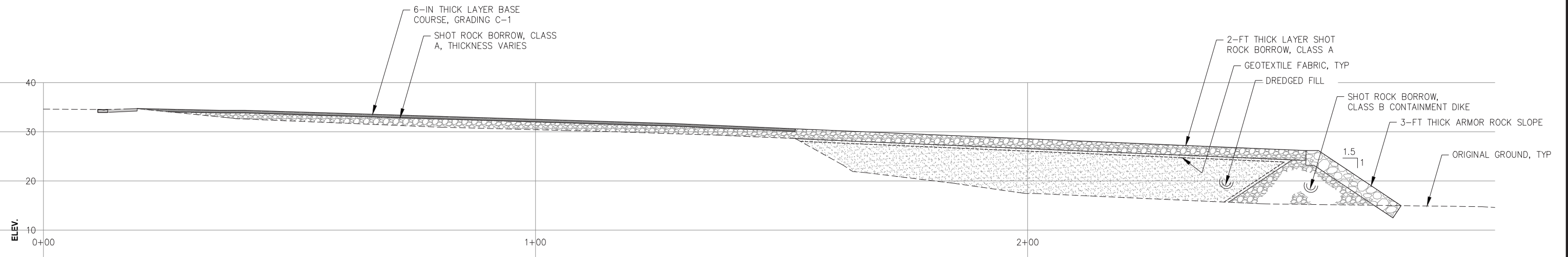
DATE: JULY 20, 2018

**HAINES BOROUGH  
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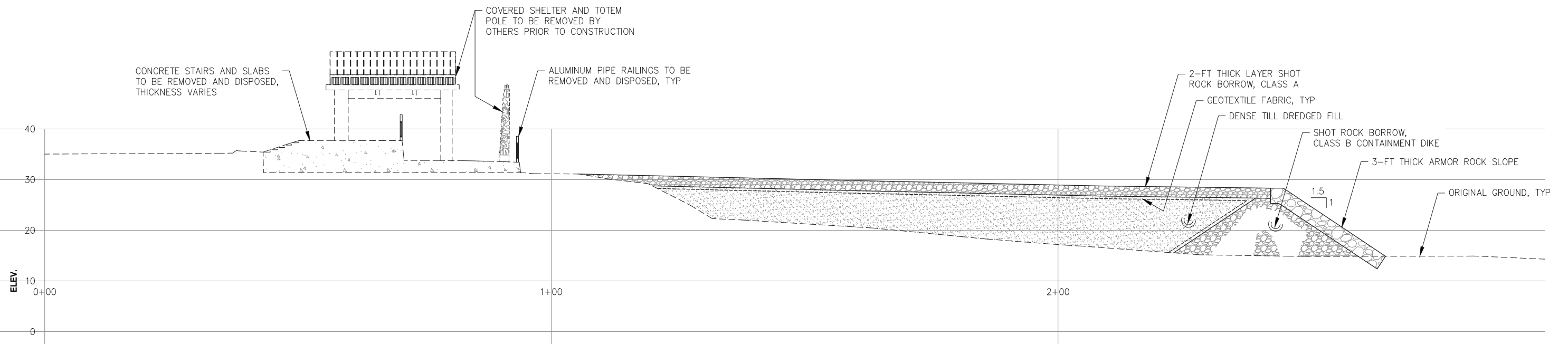
SHEET TITLE:  
**EXISTING CONDITIONS, DEMOLITION  
PLAN AND SURVEY CONTROL**

PND PROJECT NO.: 172032

**1.03**  
SHEET  
3 OF 28



**A**  
1.03  
**TYPICAL SECTION - EXISTING**



**B**  
1.03  
**TYPICAL SECTION - EXISTING**

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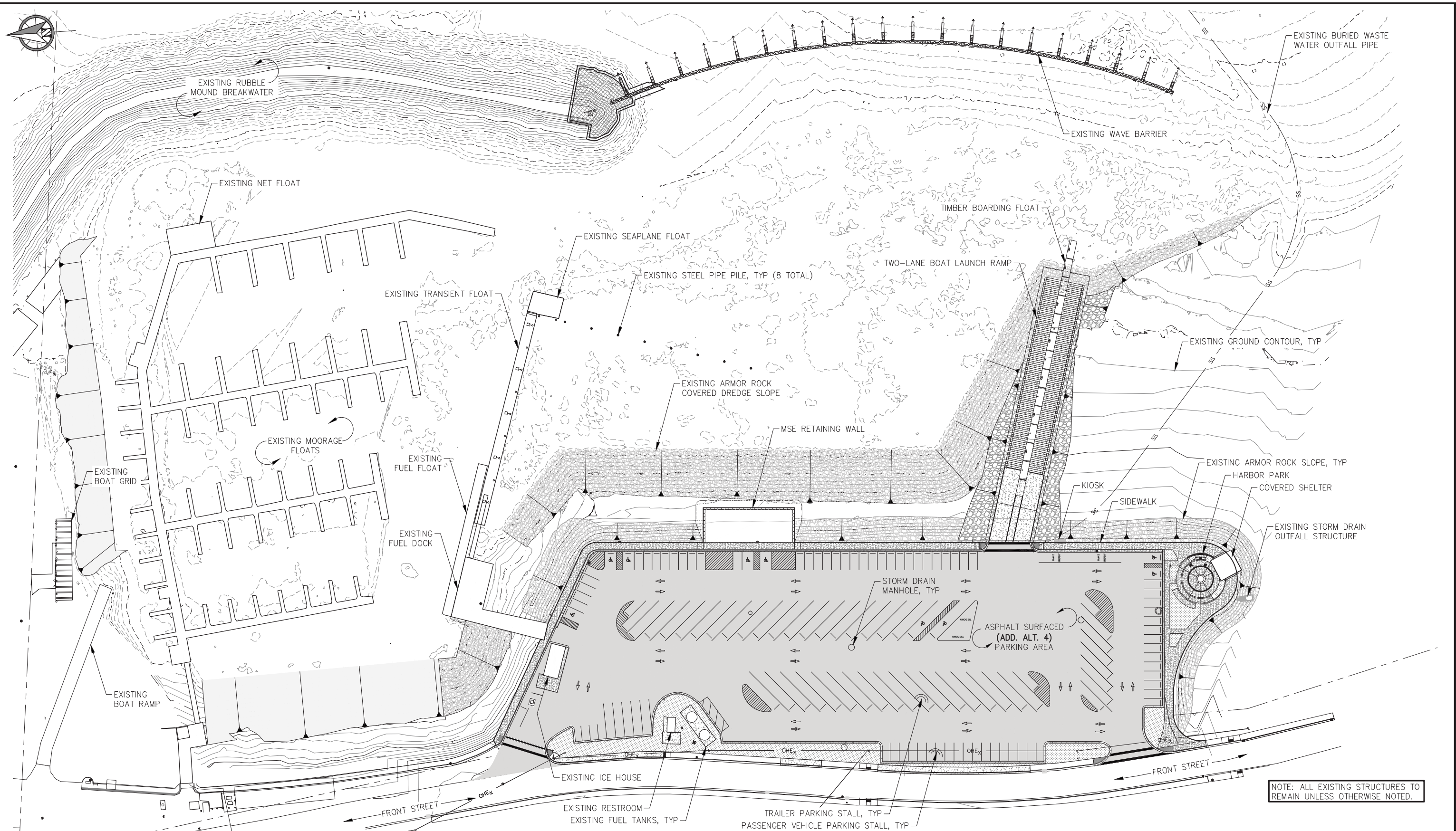
DATE: JULY 20, 2018

**HAINES BOROUGH  
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BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**EXISTING TYPICAL SECTIONS**

PND PROJECT NO.: 172032

**1.04**  
SHEET  
4 OF 28



NOTE: ALL EXISTING STRUCTURES TO REMAIN UNLESS OTHERWISE NOTED.

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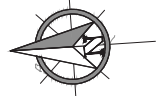
DATE: JULY 20, 2018

**HAINES BOROUGH  
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 BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**OVERALL SITE PLAN**

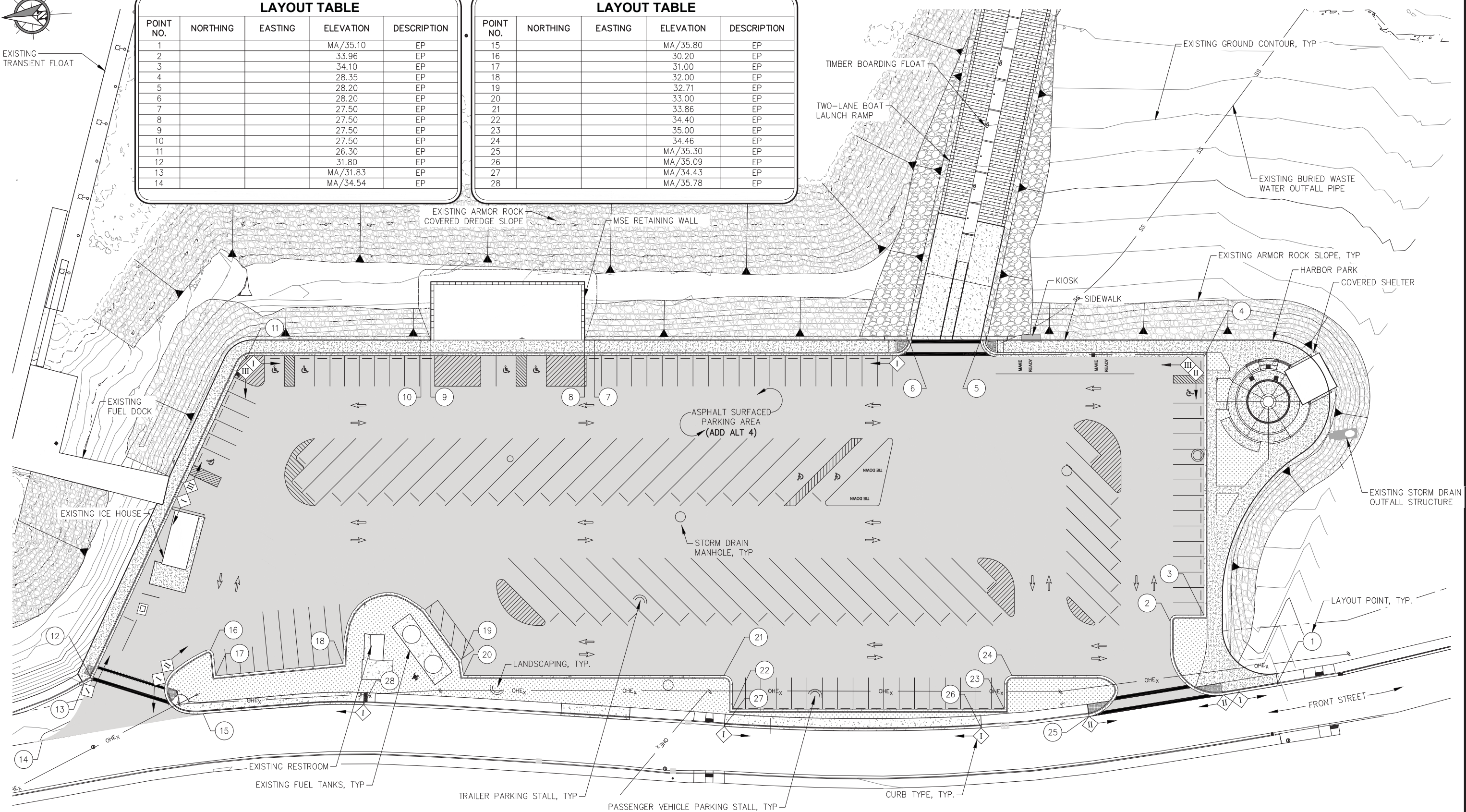
PND PROJECT NO.: 172032

**1.05**  
 SHEET  
 5 OF 28

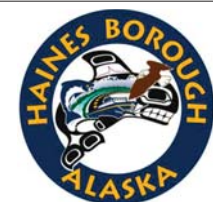


LAYOUT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1			MA/35.10	EP
2			33.96	EP
3			34.10	EP
4			28.35	EP
5			28.20	EP
6			28.20	EP
7			27.50	EP
8			27.50	EP
9			27.50	EP
10			27.50	EP
11			26.30	EP
12			31.80	EP
13			MA/31.83	EP
14			MA/34.54	EP

LAYOUT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
15			MA/35.80	EP
16			30.20	EP
17			31.00	EP
18			32.00	EP
19			32.71	EP
20			33.00	EP
21			33.86	EP
22			34.40	EP
23			35.00	EP
24			34.46	EP
25			MA/35.30	EP
26			MA/35.09	EP
27			MA/34.43	EP
28			MA/35.78	EP



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SCALE: SCALE IN FEET  
0    30    60 FT.

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**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**UPLANDS SITE PLAN AND  
GRADING PLAN**

PND PROJECT NO.: 172032

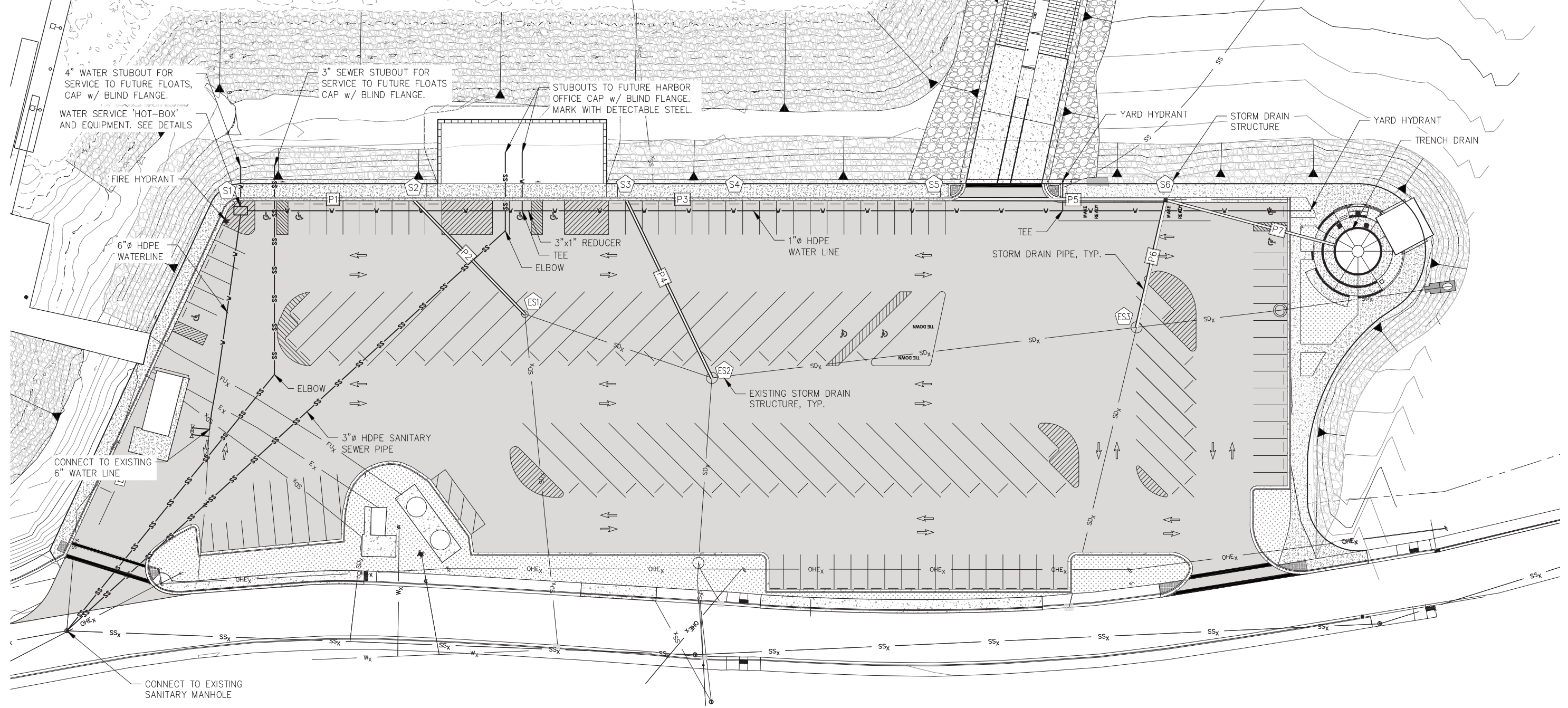
**2.01**  
SHEET  
6 OF 28



STORM DRAIN STRUCTURES				
STRUCTURE DESIGNATION	NORTHING	EASTING	RIM ELEVATION	TYPE
S1	-	-	26.30	TYPE IV CB, SCI
S2	-	-	27.50	TYPE IV CB, SCI
S3	-	-	27.50	TYPE IV CB, SCI
S4	-	-	28.40	TYPE IV CB, SCI
S5	-	-	28.20	TYPE IV CB, SCI
S6	-	-	27.65	TYPE IV CB, RCI
S7	-	-	-	TRENCH DRAIN, SEE DTL

STORM DRAIN PIPING						
PIPE DESIGNATION	NOMINAL Ø	LENGTH	FROM	IE	TO	IE
P1	18" CPEP	90	S1	-	S2	-
P2	18" CPEP	105	S2	-	ES1	-
P3	18" CPEP	90	S3	-	S3	-
P4	18" CPEP	115	S4	-	ES2	-
P5	18" CPEP	120	S7	-	S6	-
P6	18" CPEP	70	S8	-	ES3	-
P7	6" CPEP	110	S9	-	S6	-

- CB = CATCH BASIN
- MH = MANHOLE
- SCI = STANDARD CURB INLET IAW CBJ STD 308
- RCI = ROLL CURB INLET, EAST JORDAN IRON WORKS 7711 OR APPROVED EQUAL
- \* = INVERT ELEVATION



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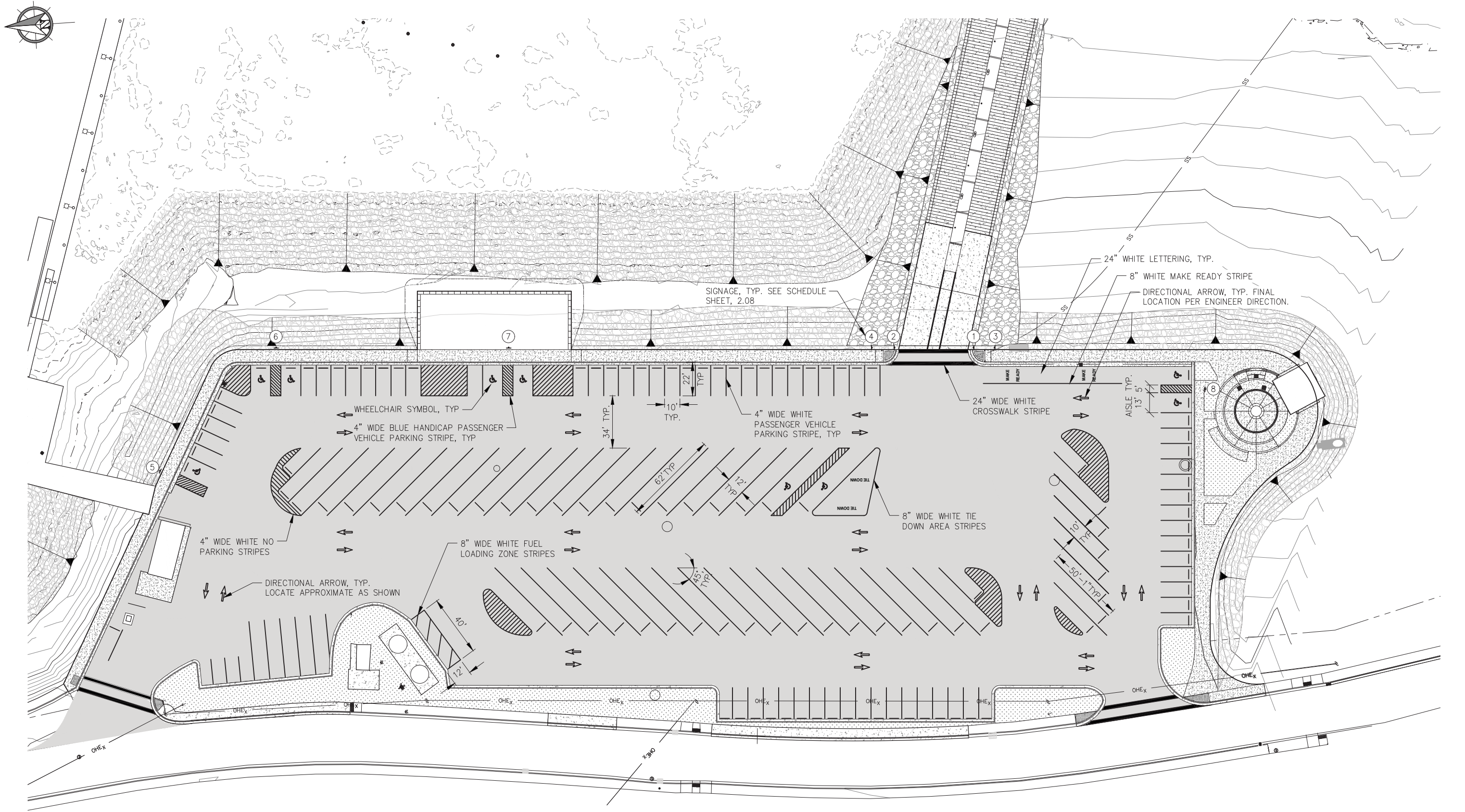
DATE: JULY 20, 2018

**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**UTILITIES PLAN**

PND PROJECT NO.: 172032

**2.02**  
SHEET  
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DATE: JULY 20, 2018

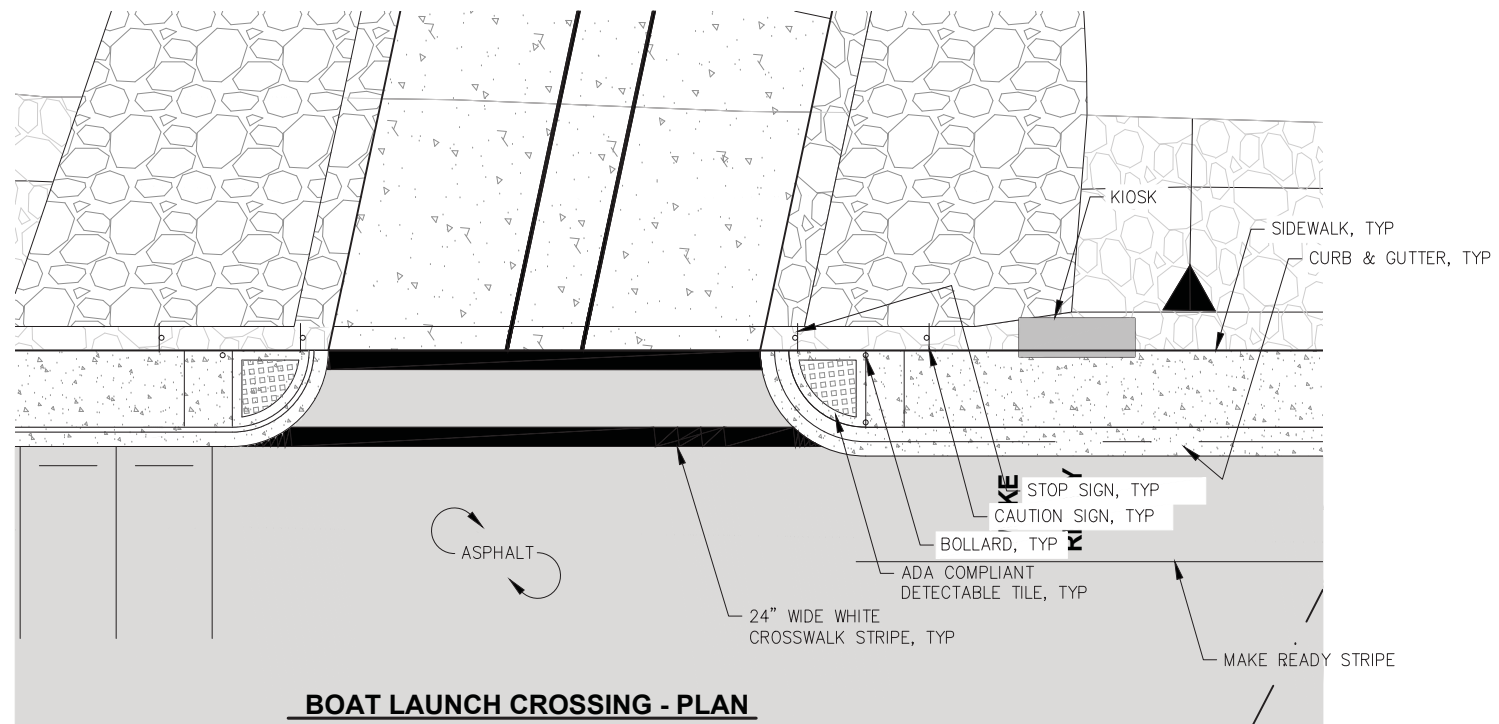
**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**SIGNAGE AND STRIPING PLAN**

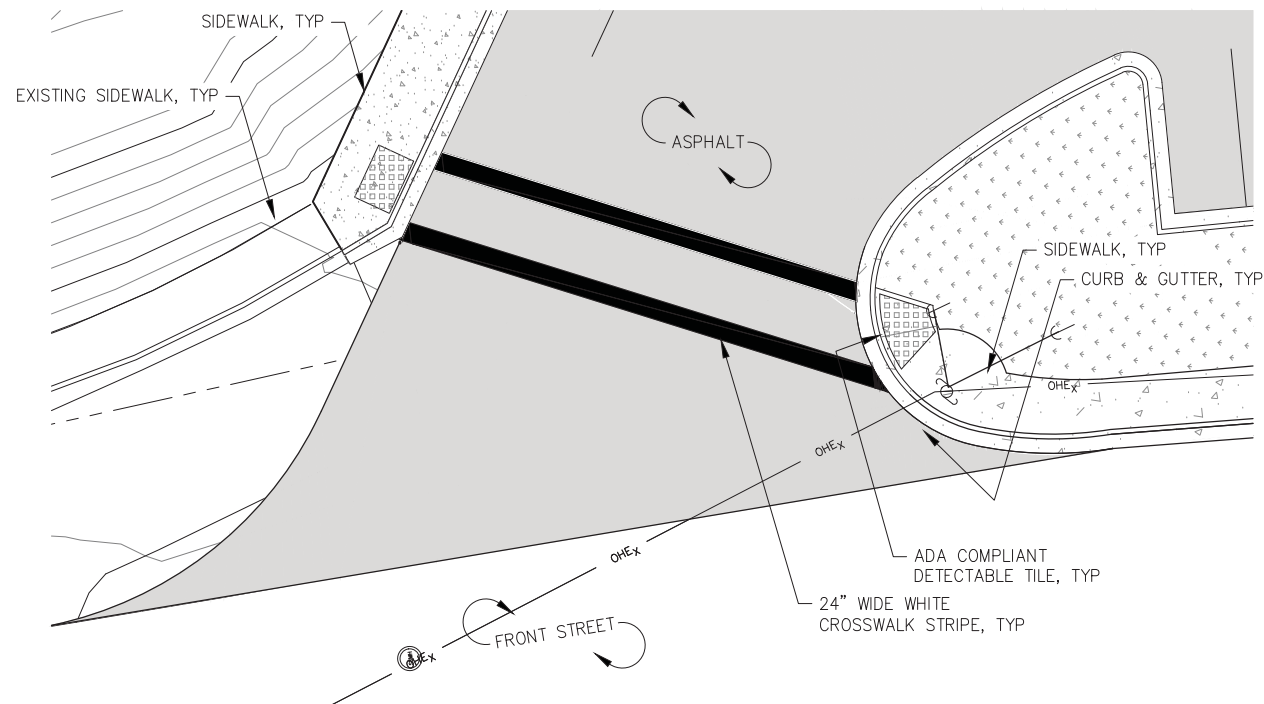
PND PROJECT NO.: 172032

**2.03**  
SHEET  
8 OF 28

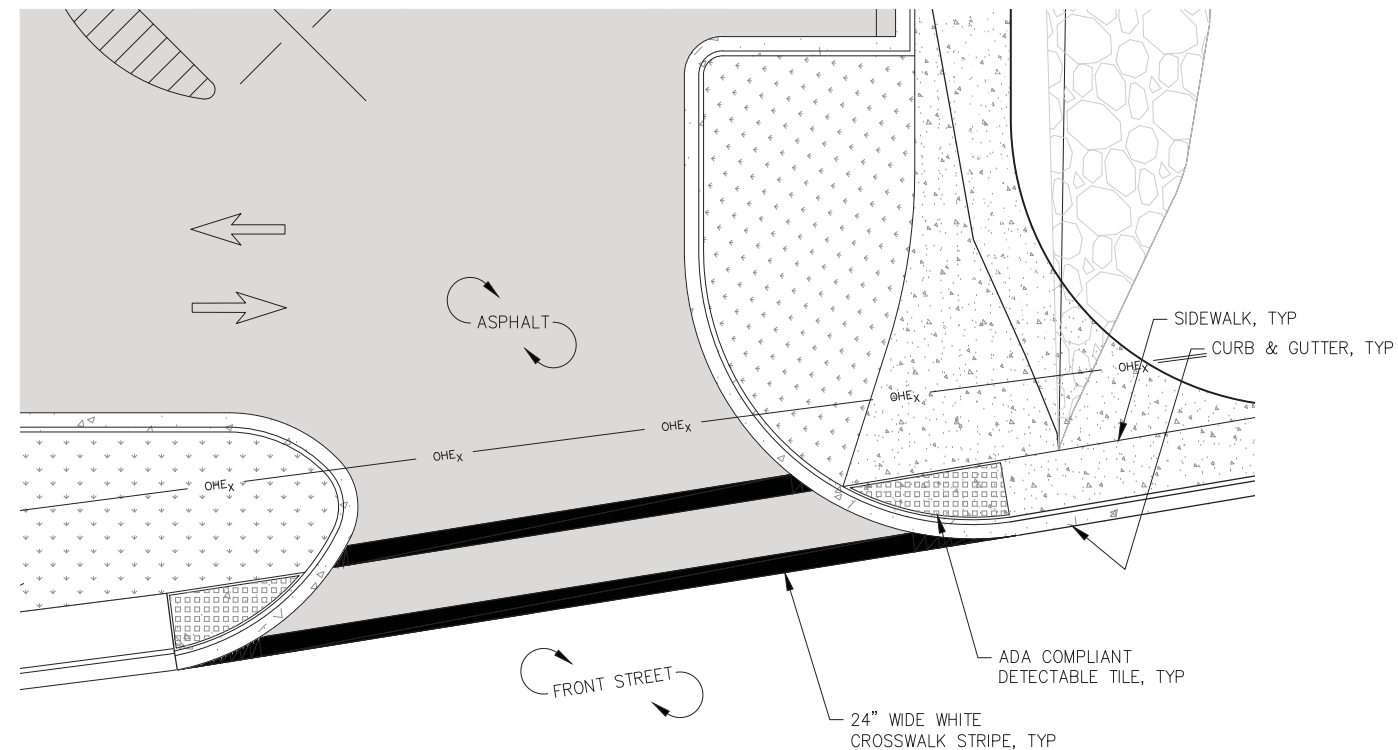




**BOAT LAUNCH CROSSING - PLAN**



**SOUTH DRIVEWAY CROSSING - PLAN**



**NORTH DRIVEWAY CROSSING - PLAN**

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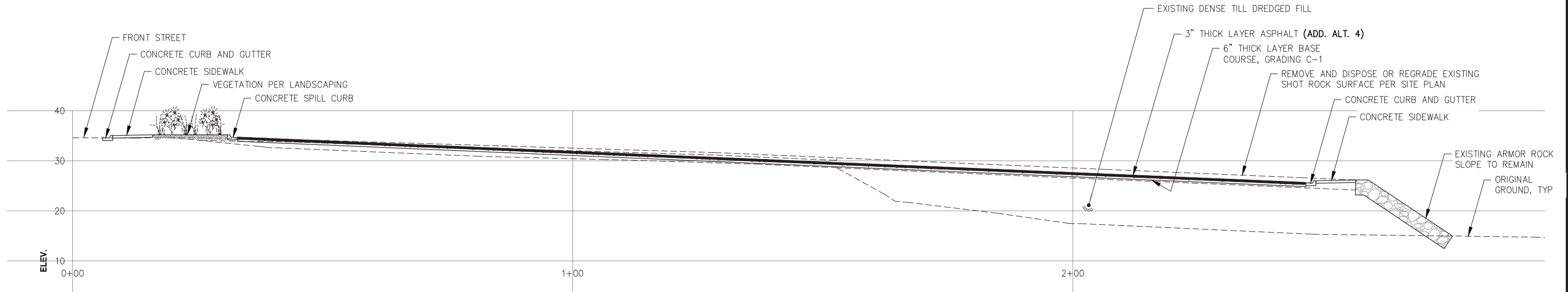
DATE: JULY 20, 2018

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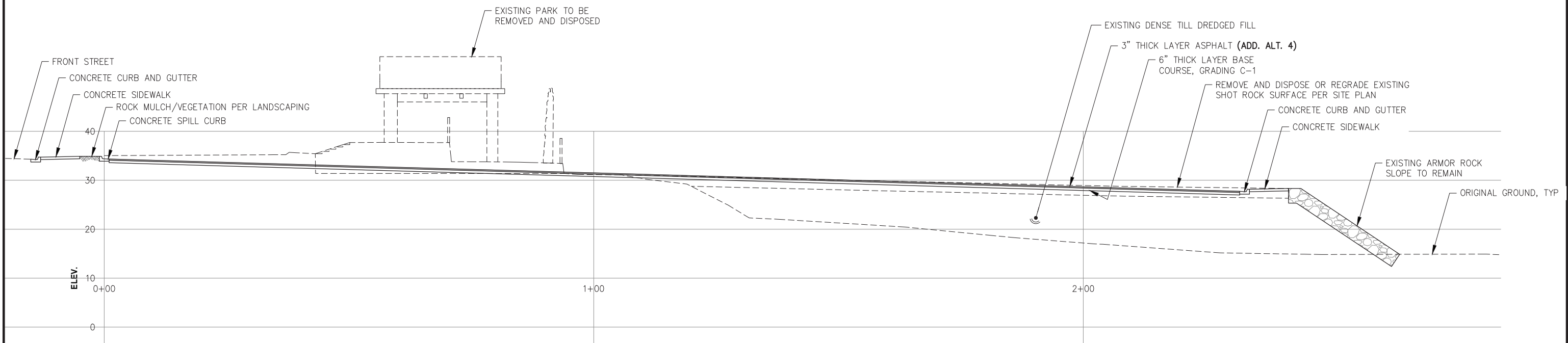
SHEET TITLE:  
**DRIVEWAY CROSSINGS**

PND PROJECT NO.: 172032

**2.04**  
SHEET  
9 OF 28



**A**  
2.01  
**TYPICAL SECTION**



**B**  
2.01  
**TYPICAL SECTION**

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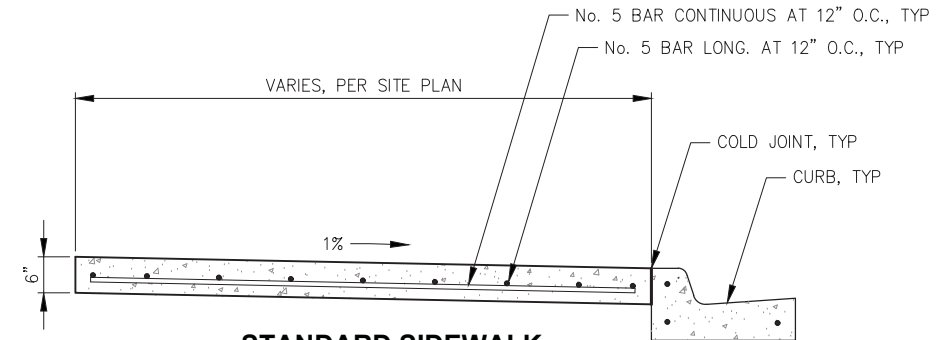
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**HAINES BOROUGH  
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BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**TYPICAL SECTIONS**

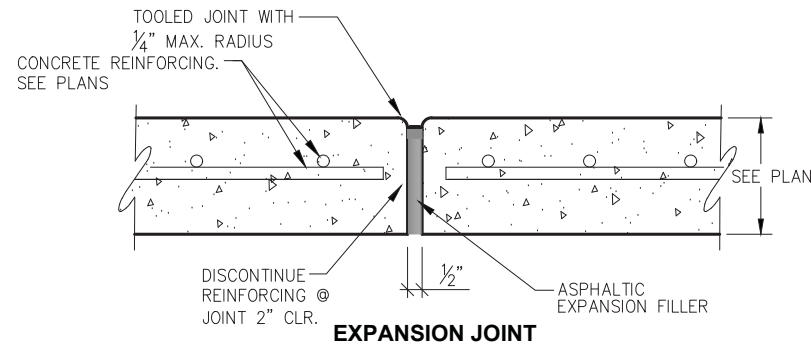
PND PROJECT NO.: 172032

**2.05**  
SHEET  
10 OF 28



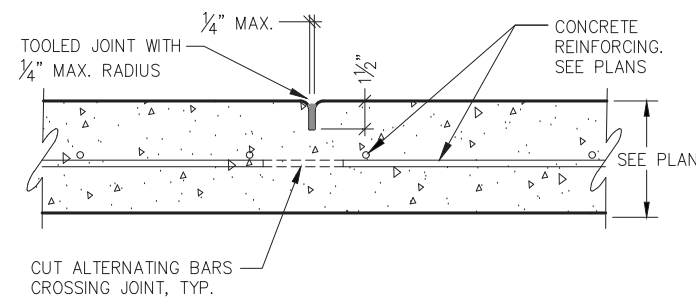
**STANDARD SIDEWALK**

- NOTES:**
1. ALL STEEL MUST HAVE A MINIMUM OF 2" OF CONCRETE COVER. FIBER REINFORCING SHALL BE ALLOWED PER ENGINEER OF PLANS.
  2. ALL JOINTS AND SEAMS SHALL BE EDGED.
  3. EXPANSION JOINTS SHALL BE MAX 1/2", MIN 1/4", WITH NO GAPS FOR WATER INTRUSION.
  4. STEEL TROWELING FINISH REQUIRED PRIOR TO BROOM FINISHING ON ALL SURFACES.
  5. CONCRETE INTERNATIONAL CORPORATION ASHFORD FORMULA OR APPROVED EQUAL SHALL BE APPLIED AS A CURING COMPOUND. APPLICATION SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATIONS.



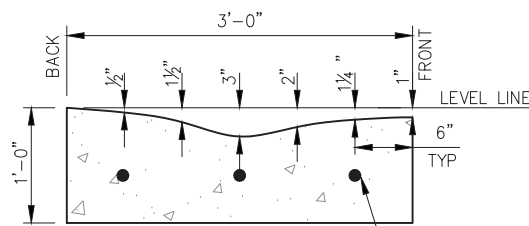
**EXPANSION JOINT**

NOTE: EXPANSION JOINTS IN CURB & GUTTER PLACED MAX. EVERY 30'-0" O.C.



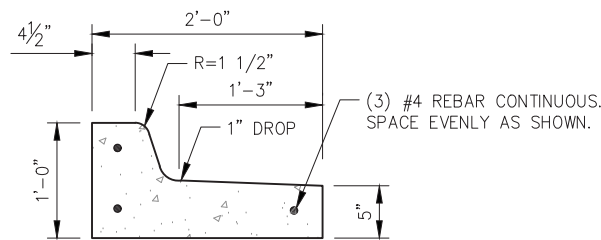
**CONTROL JOINT**

NOTE: CONTROL JOINTS IN CURB & GUTTER PLACED MAX. EVERY 10'-0" O.C. CONTROL JOINTS IN SIDEWALK EQUAL TO WIDTH.



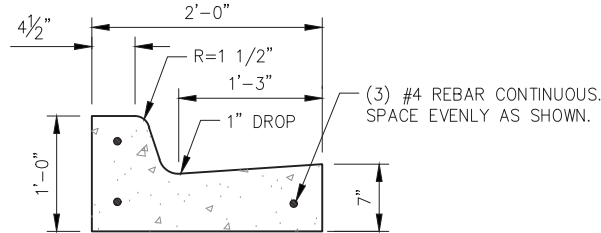
**ROLLED CURB**

NOTE: BED w/ MIN 6" BASE COURSE, D-1 GRADING. (3) #4 REBAR CONTINUOUS, SPACE EVENLY AS SHOWN



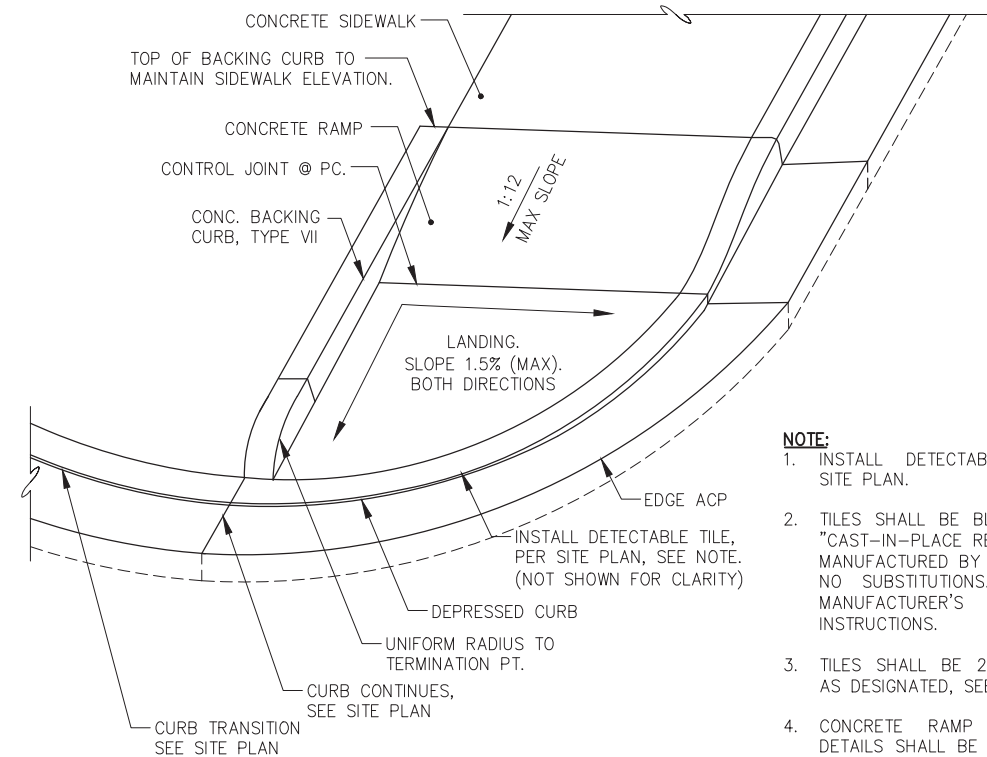
**SPILL CURB**

NOTE: BED w/ MIN 6" BASE COURSE, D-1 GRADING. (3) #4 REBAR CONTINUOUS, SPACE EVENLY AS SHOWN.



**STANDARD CURB**

NOTE: BED w/ MIN 6" BASE COURSE, D-1 GRADING. (3) #4 REBAR CONTINUOUS, SPACE EVENLY AS SHOWN.



**DRIVEWAY CURB CUT**

- NOTE:**
1. INSTALL DETECTABLE TILES PER SITE PLAN.
  2. TILES SHALL BE BLACK IN COLOR, "CAST-IN-PLACE REPLACEABLE" AS MANUFACTURED BY ADA SOLUTIONS, NO SUBSTITUTIONS. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  3. TILES SHALL BE 2'x4' OR RADIUS AS DESIGNATED, SEE SITE PLAN.
  4. CONCRETE RAMP AND LANDING DETAILS SHALL BE SIMILAR TO THE SEAWALK, SEE SERIES 6.

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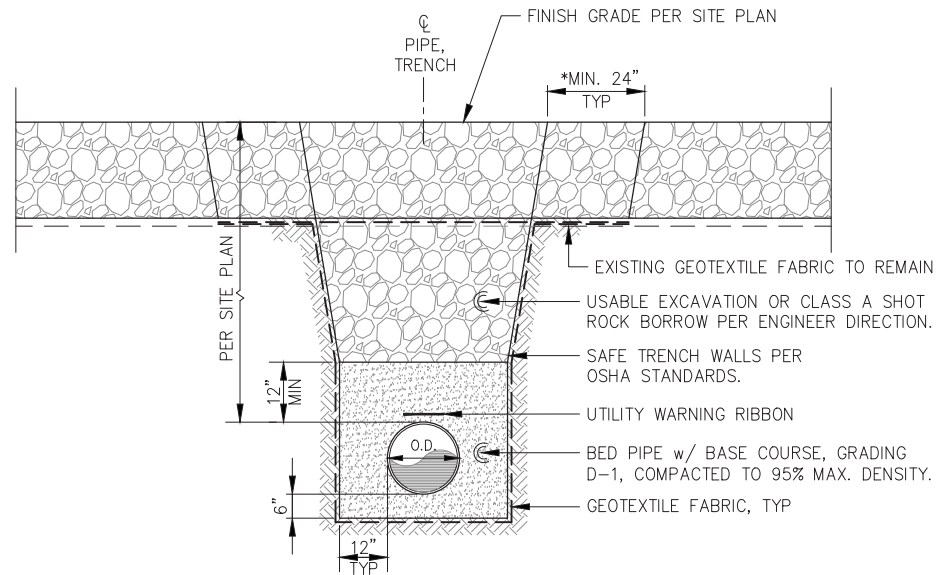
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**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

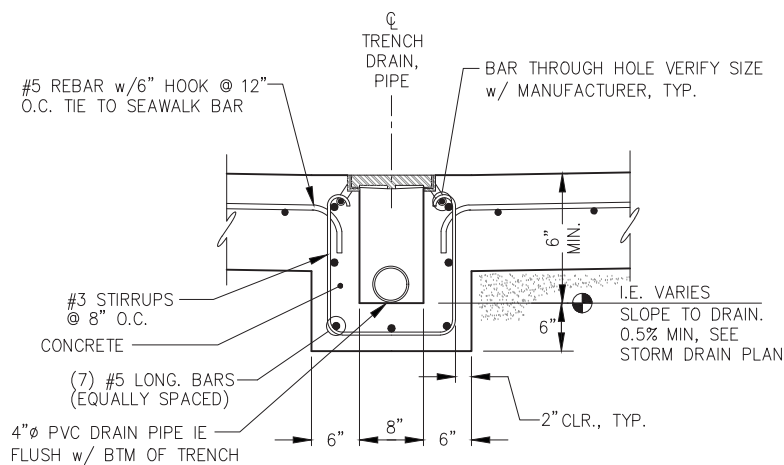
SHEET TITLE:  
**CURB AND SIDEWALK DETAILS**

PND PROJECT NO.: 172032

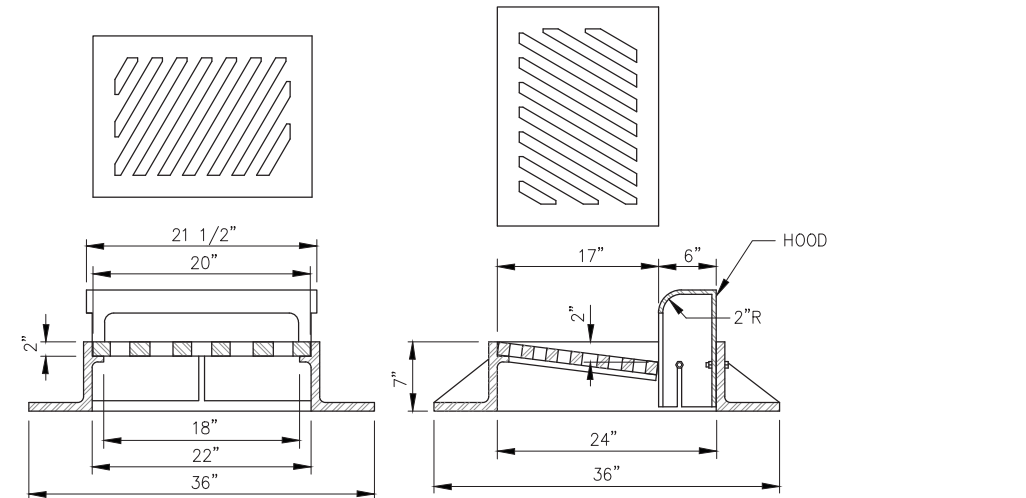
**2.06**  
SHEET  
11 OF 28



**PIPE TRENCH - TYPICAL SECTION**

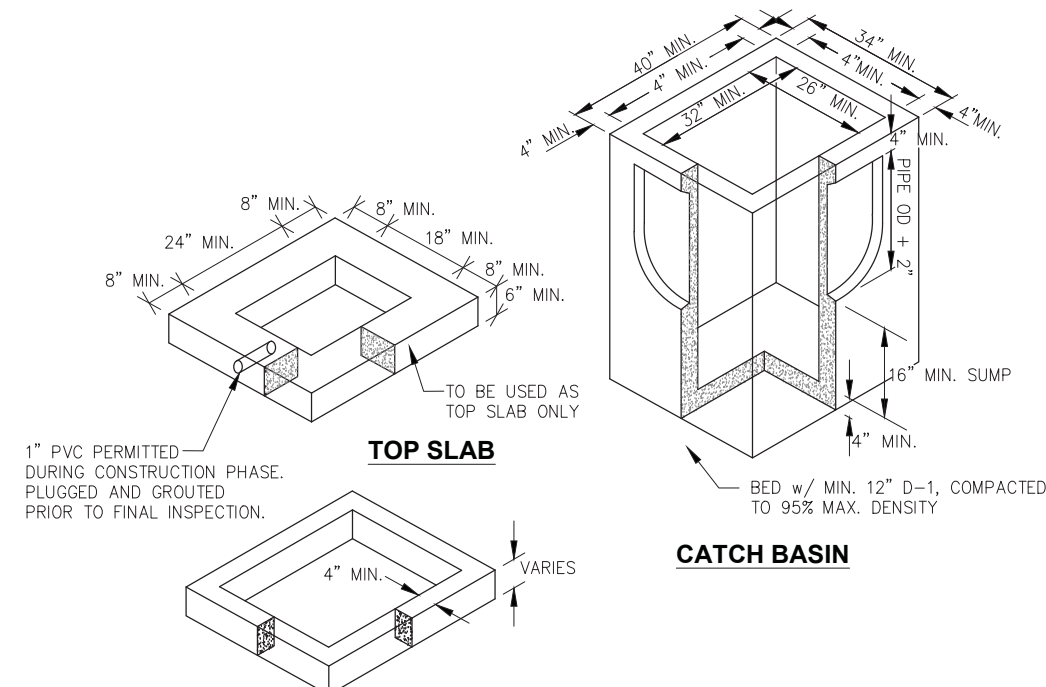


**TRENCH DRAIN DETAIL**



**FRAME AND GRATE**

NOTE:



**TOP SLAB**

**CATCH BASIN**

**ADJUSTING RING**

NOTES

1. ALL JOINTS BETWEEN SECTIONS AND BETWEEN FRAME AND CONCRETE SECTIONS SHALL BE GROUTED INSIDE AND OUTSIDE.
2. ENTIRE KNOCKOUT IS TO BE REMOVED AND SEALED SHUT AROUND PIPE. ALL PIPES ARE TO EXTEND MIN. 1" AND MAX. 2" INTO CATCH BASIN.
3. FRAME AND GRATE SHALL BE DUCTILE IRON. FRAME MAY BE CAST INTO THE TOP UNIT OF PLACED OVER THE OPENING AS APPROVED BY THE ENGINEER. FRAME AND GRATE MUST BE OF A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC.
4. CATCH BASIN SHALL MEET HIGHWAY STANDARD-20 LOAD REQUIREMENTS.
5. MINIMUM STEEL REQUIRED AS PER ASTM C-478-69.
6. MINIMUM SUMP DEPTH SHALL BE 16".
7. ADJUSTING RING SHALL BE THE SAME SIZE AS THE CATCH BASIN.
8. NO BRICKS, WOOD, OR OTHER MATERIALS PERMITTED FOR ADJUSTING GRADE, SOLID RISER OR FORMED TYPE II ONLY.
9. FRAME AND GRATE SHALL MATCH CURB TYPE. SEE PLAN FOR CURB TYPES AND STRUCTURE LOCATIONS.

**65% DESIGN REVIEW SUBMITTAL**



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DATE: JULY 20, 2018

**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **CONCRETE AND  
STORM DRAIN DETAILS**

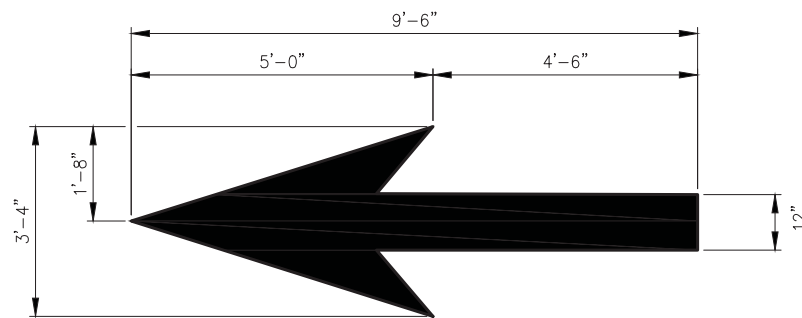
PND PROJECT NO.: 172032

**2.07**  
SHEET  
11 OF 28

SIGNAGE SCHEDULE						
SIGN NO.	MUTCD CODE NO.	DESCRIPTION	SIGN SIZE (INCH)	POST SIZE (INCH)	NORTHING	EASTING
1	-	STOP SIGN	18 x 18	2 1/4" SQUARE PERFORATED TUBE		
2	-	STOP SIGN	18 x 18	2 1/4" SQUARE PERFORATED TUBE		
3	-	CAUTION	18 x 24	2 1/4" SQUARE PERFORATED TUBE		
4	-	CAUTION	18 x 24	2 1/4" SQUARE PERFORATED TUBE		
5	R7-8	RESERVED PARKING	12 x 18	2 1/4" SQUARE PERFORATED TUBE		
	R7-8p	VAN ACCESSIBLE	18 x 9	2 1/4" SQUARE PERFORATED TUBE		
6	R7-8	RESERVED PARKING	12 x 18	2 1/4" SQUARE PERFORATED TUBE		
	R7-8p	VAN ACCESSIBLE	18 x 9	2 1/4" SQUARE PERFORATED TUBE		
7	R7-8	RESERVED PARKING	12 x 18	2 1/4" SQUARE PERFORATED TUBE		
	R7-8p	VAN ACCESSIBLE	18 x 9	2 1/4" SQUARE PERFORATED TUBE		
8	R7-8	RESERVED PARKING	12 x 18	2 1/4" SQUARE PERFORATED TUBE		
	R7-8p	VAN ACCESSIBLE	18 x 9	2 1/4" SQUARE PERFORATED TUBE		

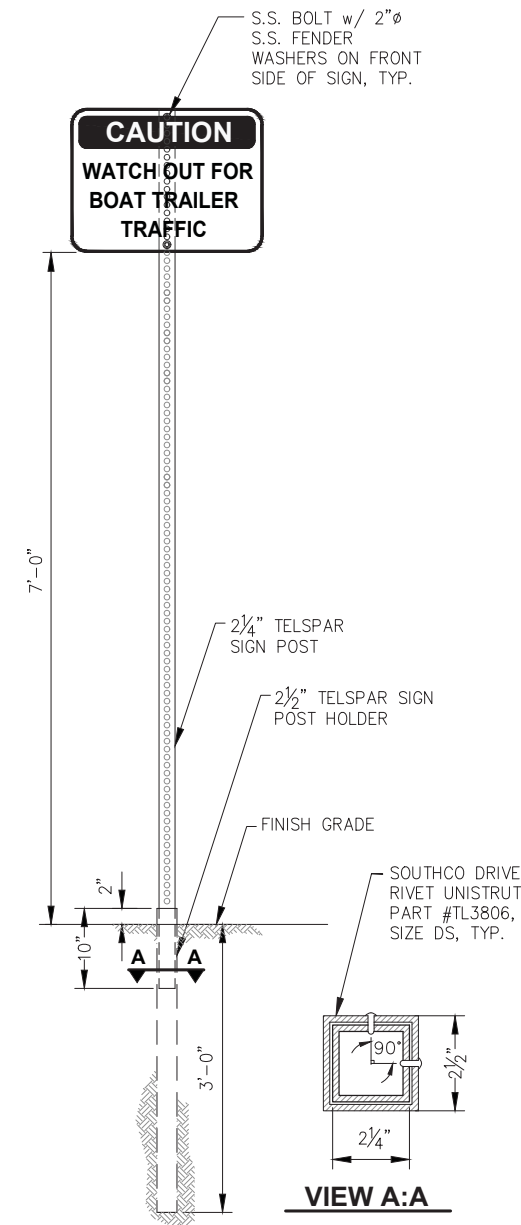
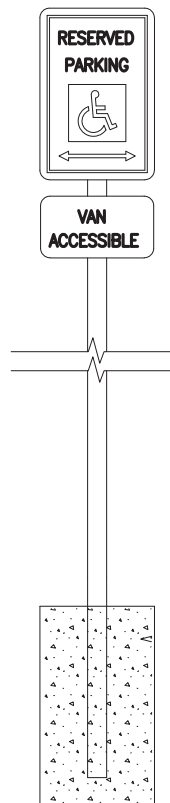
**NOTES:**

- MUTCD CODE NO. FROM U.S. DOT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2009
- SIGNS AND SIGN POSTS SHALL BE PROVIDED & INSTALLED AS SHOWN ON THE PLANS.
- SEE ACCESSIBLE PARKING DTL. SHT. 5.19
- CHANNELIZING TUBULAR MARKERS SHALL BE PROVIDED IN ACCORDANCE w/ MUTCD 3h.01 AND 6f.65



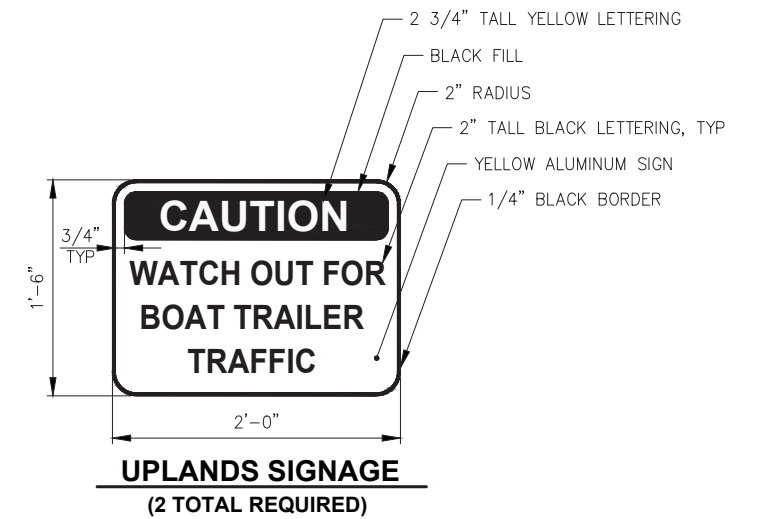
**THROUGH LANE-USE ARROW**

**NOTE:**  
ARROWS TO BE LOCATED AT APPROXIMATE LOCATION SHOWN ON SIGNING AND STRIPING PLAN. EXACT LOCATION TO BE DETERMINED IN FIELD AS INSTRUCTED BY ENGINEER.

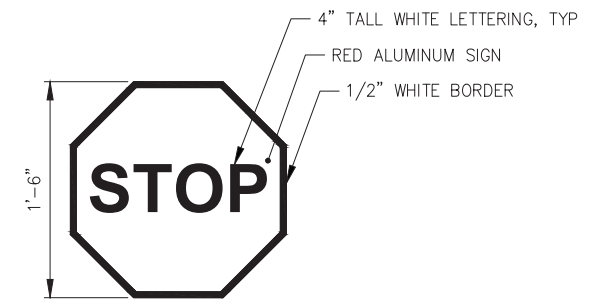


**SIGNAGE MOUNT - ELEVATION**

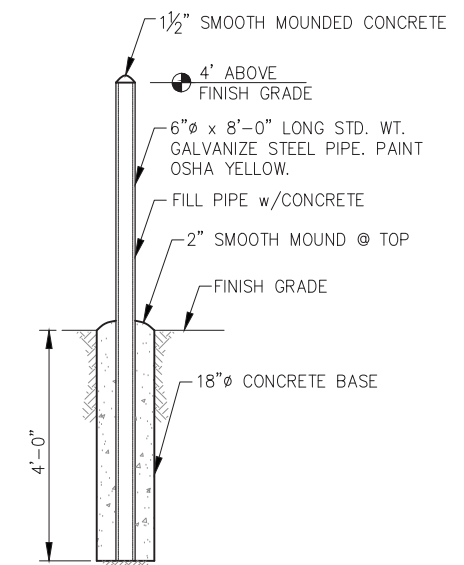
NOTE: FINAL LOCATION PER ENGINEER DIRECTION.



**UPLANDS SIGNAGE (2 TOTAL REQUIRED)**



**UPLANDS SIGNAGE (2 TOTAL REQUIRED)**



**BOLLARD - ELEVATION**

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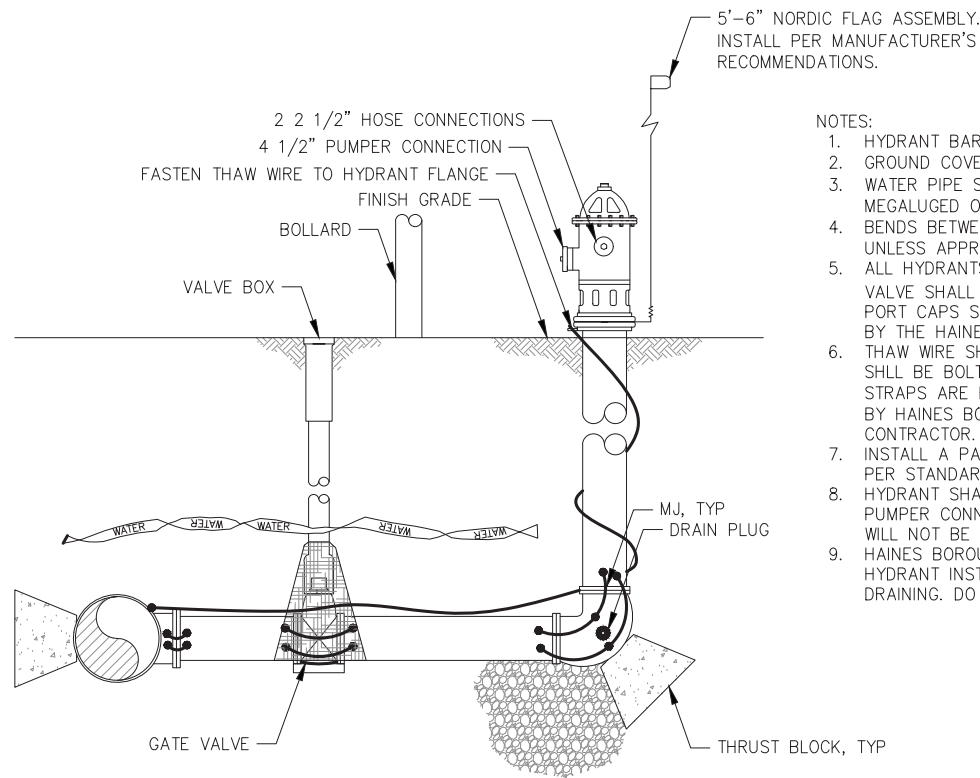
HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS

SHEET TITLE:  
**SIGNAGE AND BOLLARD DETAILS**

2.08

SHEET  
12 OF 28

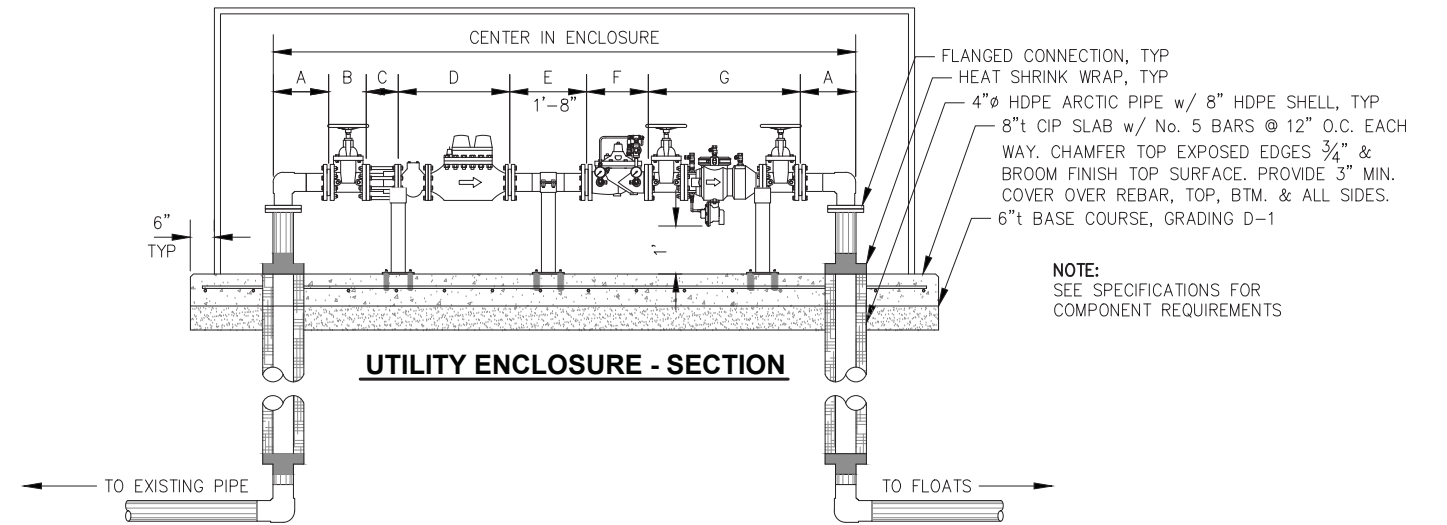
PND PROJECT NO.: 172032



- NOTES:
1. HYDRANT BARREL AND VALVE BOX SHALL BE PLUMB.
  2. GROUND COVER SHALL BE 6' MINIMUM.
  3. WATER PIPE SHALL BE 6" MIN. D.I.P. AND ALL CONNECTIONS SHALL BE MEGALUGED OR CONNECTED WITH LOCKING FIELD GASKETS.
  4. BENDS BETWEEN THE HYDRANT AND THE MAIN SHALL NOT EXCEED 11 1/4' UNLESS APPROVED BY THE ENGINEER.
  5. ALL HYDRANTS SHALL BE PAINTED RED, AND THE NUMBER OF FEET TO VALVE SHALL BE PRINTED IN BLACK 1/2" LETTERS JUST BELOW TOP BONNET. PORT CAPS SHALL BE COLOR CODED PER NFPA STANDARD 291 AS DIRECTED BY THE HAINES BOROUGH WATER UTILITIES DEPARTMENT.
  6. THAW WIRE SHALL BE #2 COPPER WITH TYPE THHW INSULATION. THAW WIRE SHALL BE BOLTED OR CAD WELDED TO THE TEE AT THE MAIN. CONTINUITY STRAPS ARE REQ'D ON 6" DIP. CONTINUITY AND ARRANGEMENT FOR TESTING BY HAINES BOROUGH WATER UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
  7. INSTALL A PAVED HYDRANT PAD PER STANDARD 405 AND GUARD POSTS PER STANDARD 404.
  8. HYDRANT SHALL BE MUELLER CENTURION 200 OR 250 WITH INTEGRAL STORZ PUMPER CONNECTION OR APPROVED EQUAL. CLOW F2500 SERIES HYDRANTS WILL NOT BE ACCEPTED.
  9. HAINES BOROUGH WATER UTILITIES DEPARTMENT SHALL DETERMINE FOR EACH HYDRANT INSTALLATION IF HYDRANT PLUGS SHALL BE REMOVED FOR SELF DRAINING. DO NOT BLOCK PLUG WITH THE THRUST BLOCK.

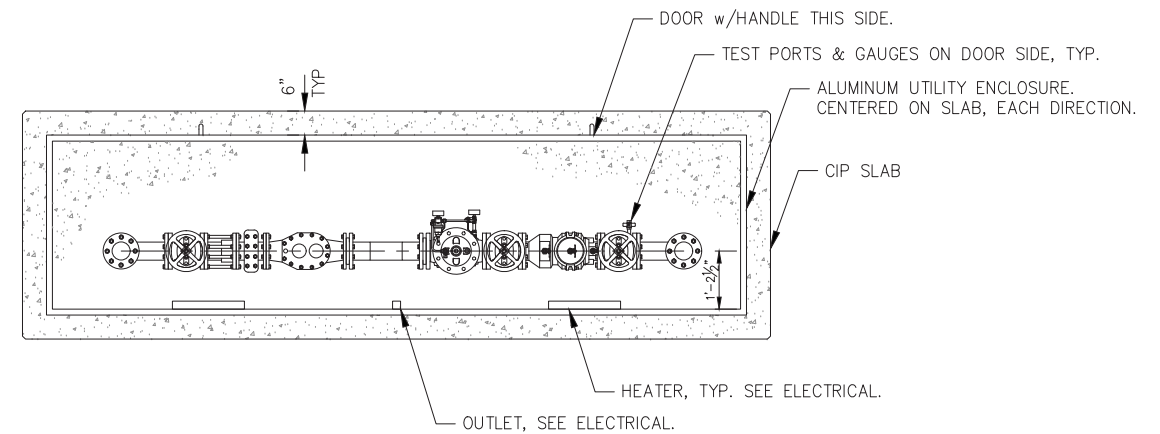
**FIRE HYDRANT**

(1) TOTAL



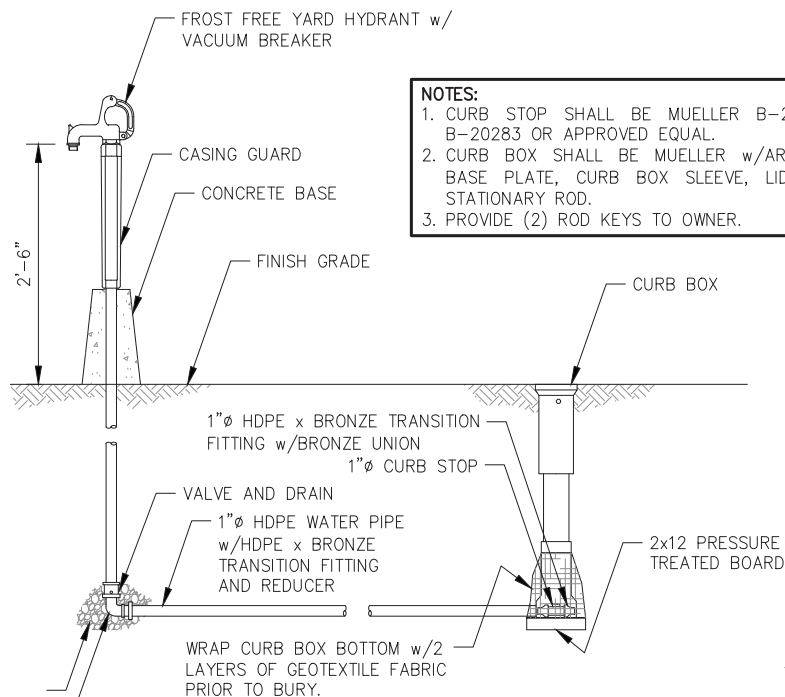
**UTILITY ENCLOSURE - SECTION**

NOTE:  
SEE SPECIFICATIONS FOR COMPONENT REQUIREMENTS

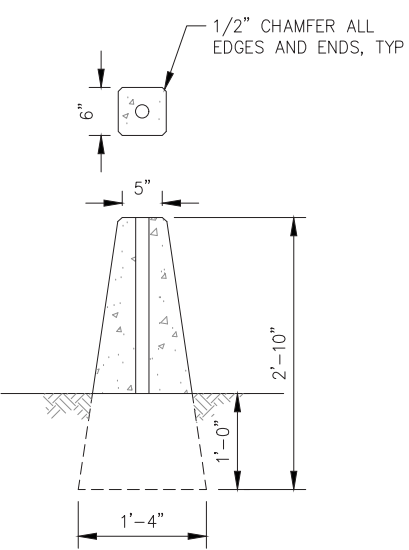


**UTILITY ENCLOSURE - PLAN**

DESIGNATION	COMPONENT DESCRIPTION
A	4" HDPE 90° ELBOW w/ FLANGE ADAPTERS & HDG BACKUP RING
B	4" NRS GATE VALVE
C	4" DISMANTLING JOINT, SET TO 8" ±
D	4" METER w/ STRAINER
E	4" HDPE PIPE SPOOL
F	4" AUTOMATIC CONTROL VALVE
G	4" REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTOR



- NOTES:
1. CURB STOP SHALL BE MUELLER B-20276 OR B-20283 OR APPROVED EQUAL.
  2. CURB BOX SHALL BE MUELLER w/ARCH BASE, BASE PLATE, CURB BOX SLEEVE, LID w/PLUG STATIONARY ROD.
  3. PROVIDE (2) ROD KEYS TO OWNER.



**CONCRETE BASE**

**YARD HYDRANT**

3/4 CY CRUSHED AGGREGATE DRAIN ROCK  
3/4" BRASS STREET ELBOW

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DATE: JULY 20, 2018

HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS

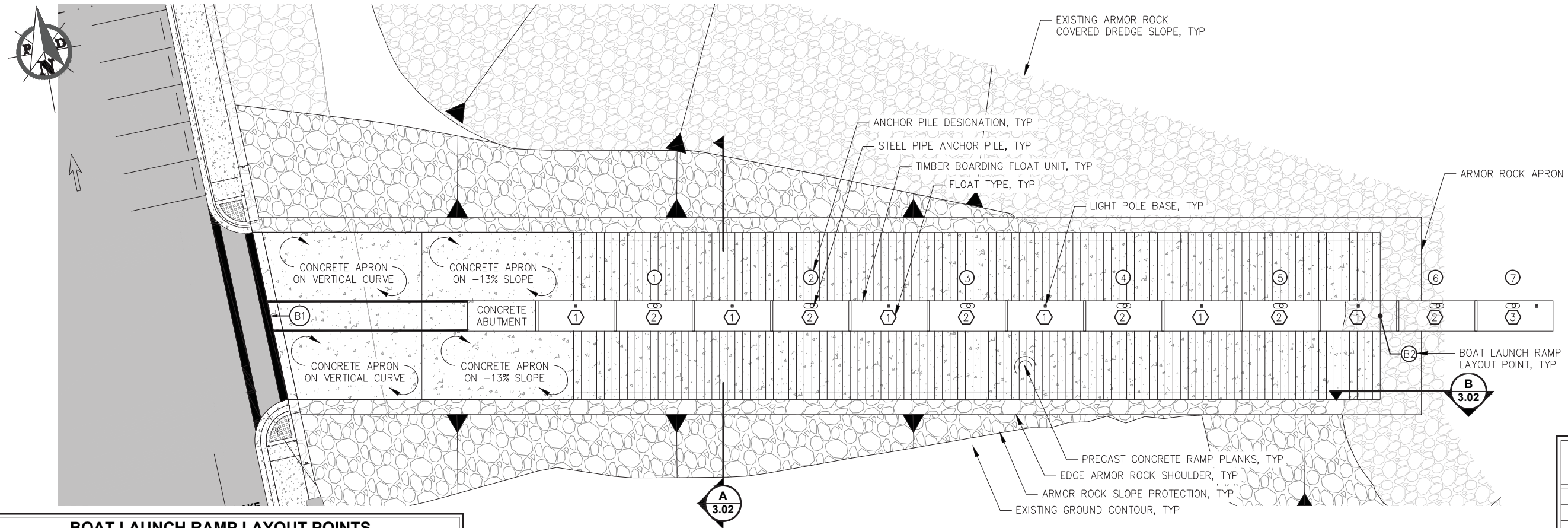
SHEET TITLE:

**WATER SERVICE DETAILS**

PND PROJECT NO.: 172032

2.09

SHEET 13 OF 28



**BOAT LAUNCH RAMP LAYOUT POINTS**

WORK PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
B1	XX	XX	29.20'	STA 0+00 C. BEGIN C.I.P. ABUTMENT
B2	XX	XX	-6.70'	STA 2+93.08 C. END RAMP PLANK

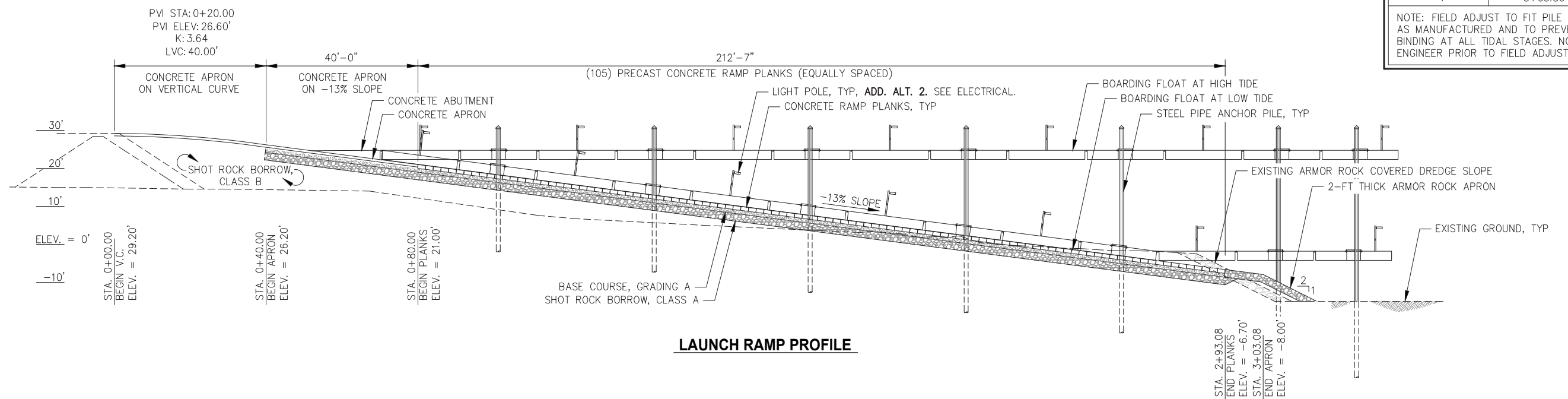
**LAUNCH RAMP PLAN**

NOTE: SEE ELECTRICAL FOR DETAILS NOT SHOWN THIS SHEET.

**PRELIMINARY ANCHOR PILE SCHEDULE**

PILE NO.	STATION
1	0+58.6
2	0+99.68
3	1+40.76
4	1+81.84
5	2+22.77
6	2+64.06
7	3+05.30

NOTE: FIELD ADJUST TO FIT PILE HOOPS AS MANUFACTURED AND TO PREVENT BINDING AT ALL TIDAL STAGES. NOTIFY ENGINEER PRIOR TO FIELD ADJUSTMENT.



**LAUNCH RAMP PROFILE**

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SCALE: SCALE IN FEET  
 0 15 30 FT.

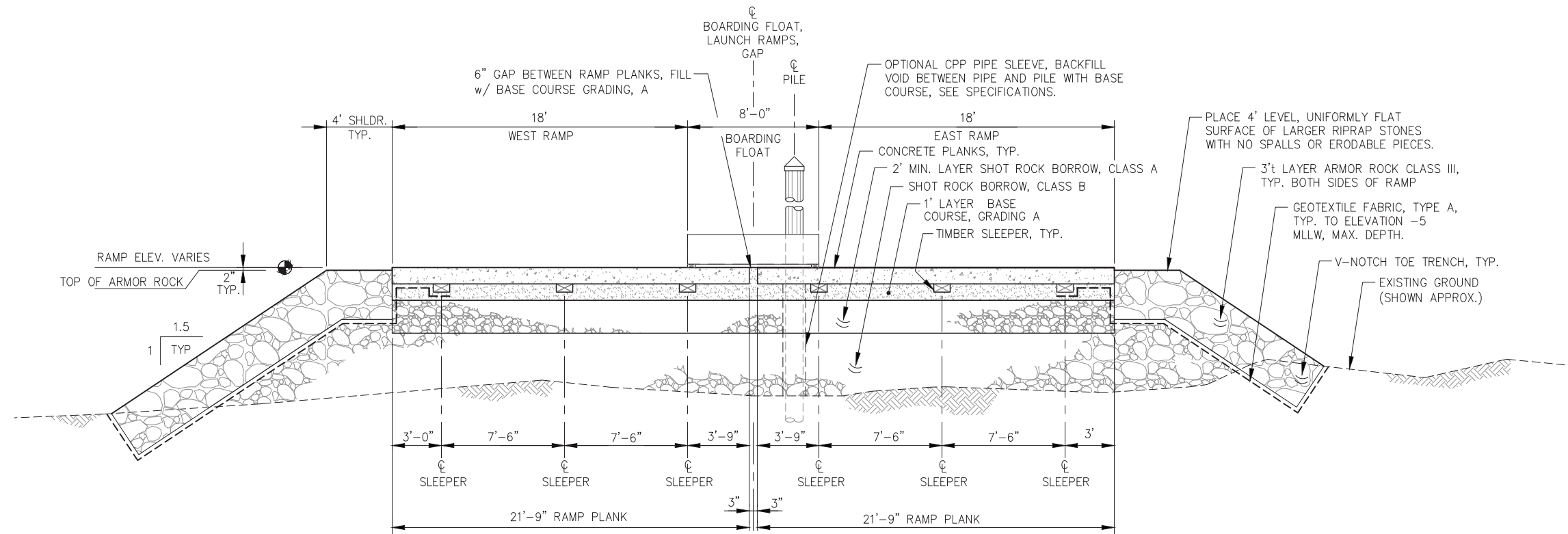
DATE: JULY 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

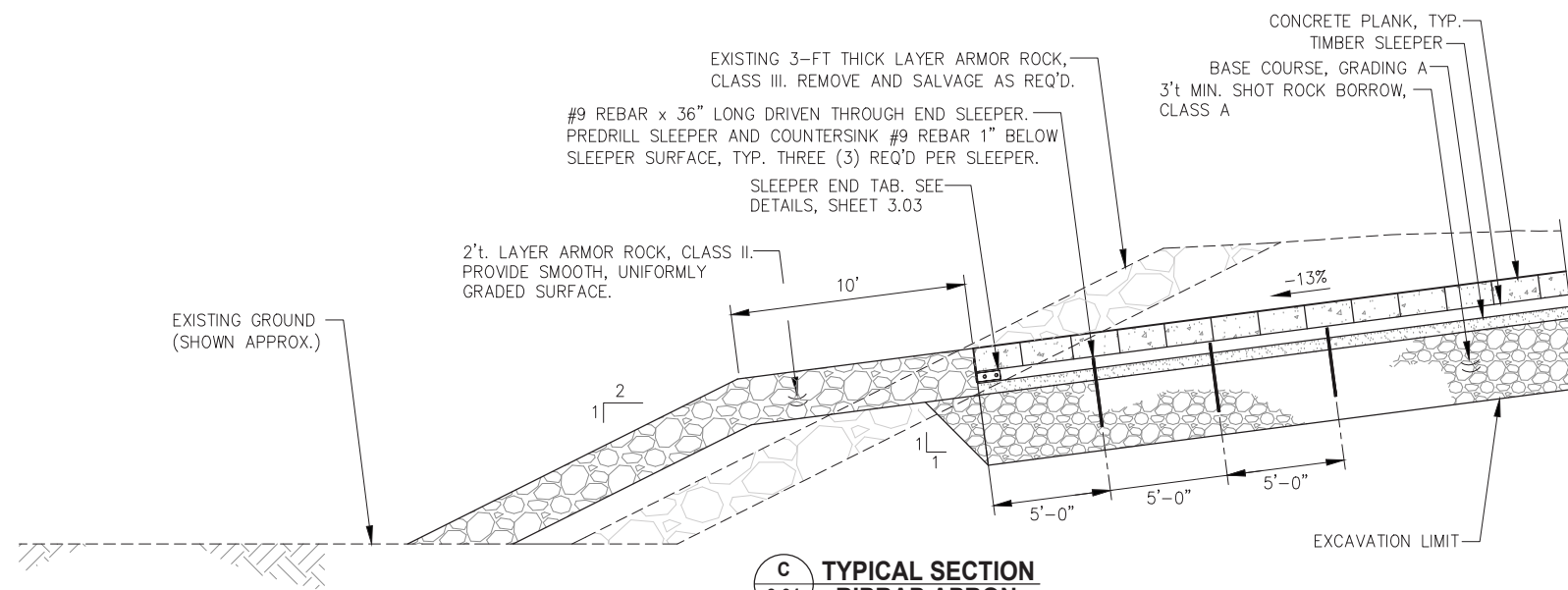
SHEET TITLE: **PLAN AND PROFILE**

PND PROJECT NO.: 172032

**3.01**  
 SHEET 14 OF 28



**A**  
3.01 **TYPICAL SECTION  
BOAT LAUNCH RAMP**



**C**  
3.01 **TYPICAL SECTION  
RIPRAP APRON**

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DATE: JULY 20, 2018

**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:

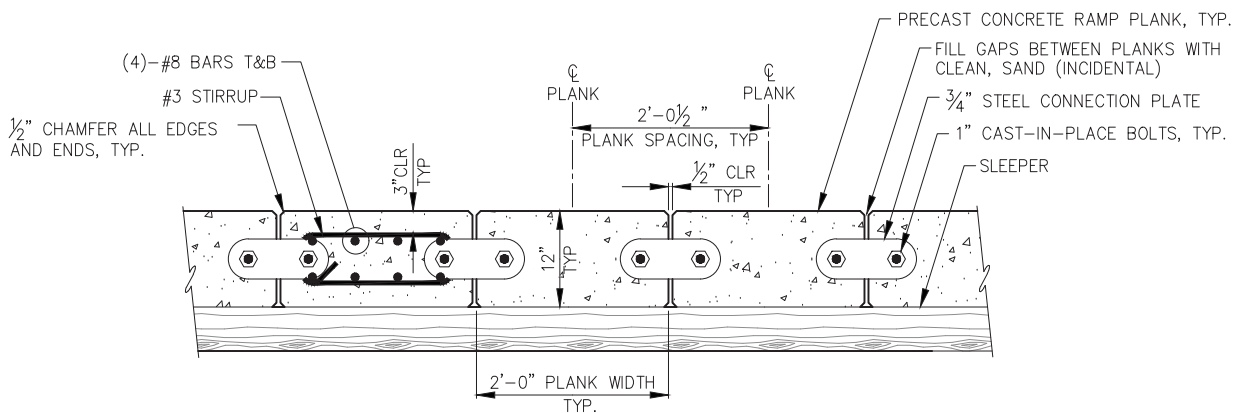
**TYPICAL SECTIONS**

PND PROJECT NO.: 172032

**3.02**

SHEET  
15 OF 28

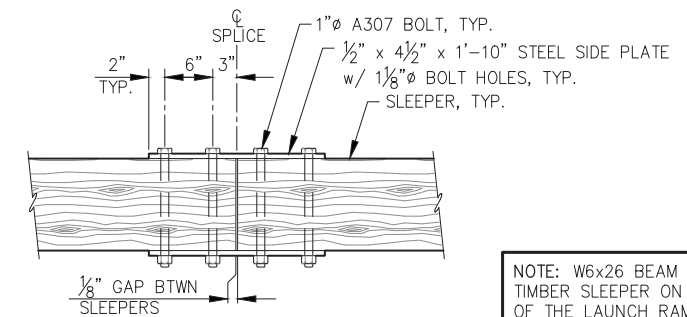




**TYPICAL RAMP PLANK SECTION**

NOTE: V-GROOVE SURFACE NOT SHOWN THIS SECTION FOR CLARITY

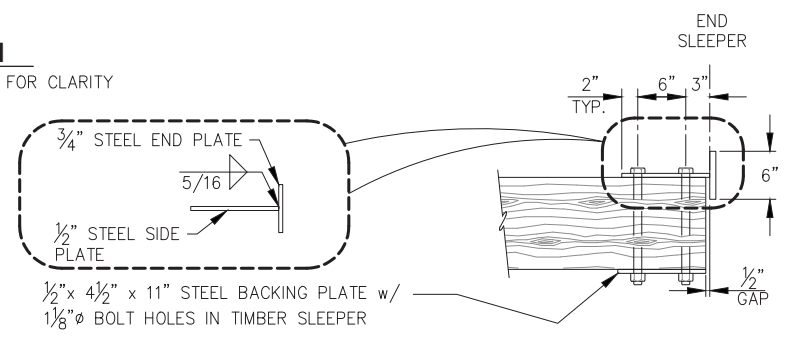
RAMP PLANK SCHEDULE	
TYPE	QUANTITY
TYPE 1	214 TOTAL
TYPE 2	36 TOTAL



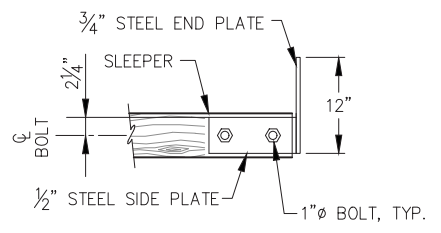
**SLEEPER SPLICE DETAIL - PLAN**

NOTE: SLEEPER SPLICES SHALL BE STAGGERED.

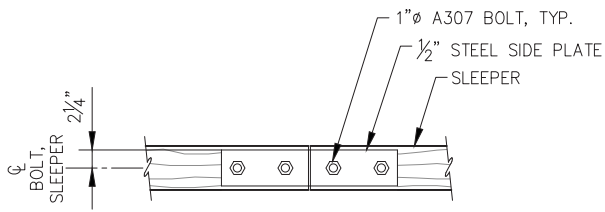
NOTE: W6x26 BEAM MAY BE USED IN LIEU OF TIMBER SLEEPER ON THE SUBMERGED PORTION OF THE LAUNCH RAMP. ATTACH END TAB AND SPLICE PLATES TO BEAM WEB SIMILAR AS SHOWN.



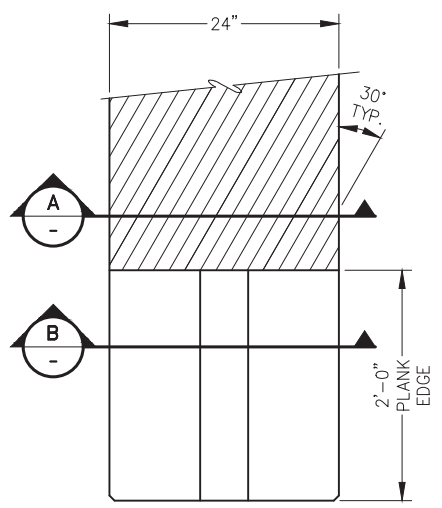
**SLEEPER END TAB DETAIL - PLAN**



**SLEEPER END TAB DETAIL - PROFILE**

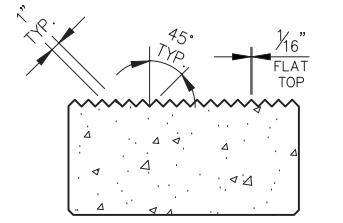


**SLEEPER SPLICE DETAIL - PROFILE**

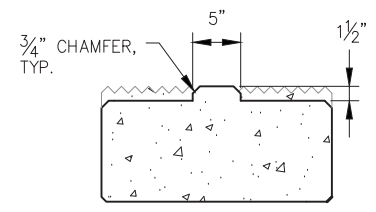


**PLAN**

NOTE: CONSTRUCT PLANKS AS REQ'D TO ACHIEVE RAMP LANES WITH OPPOSING V-GROOVES AS SHOWN IN PLAN VIEW.

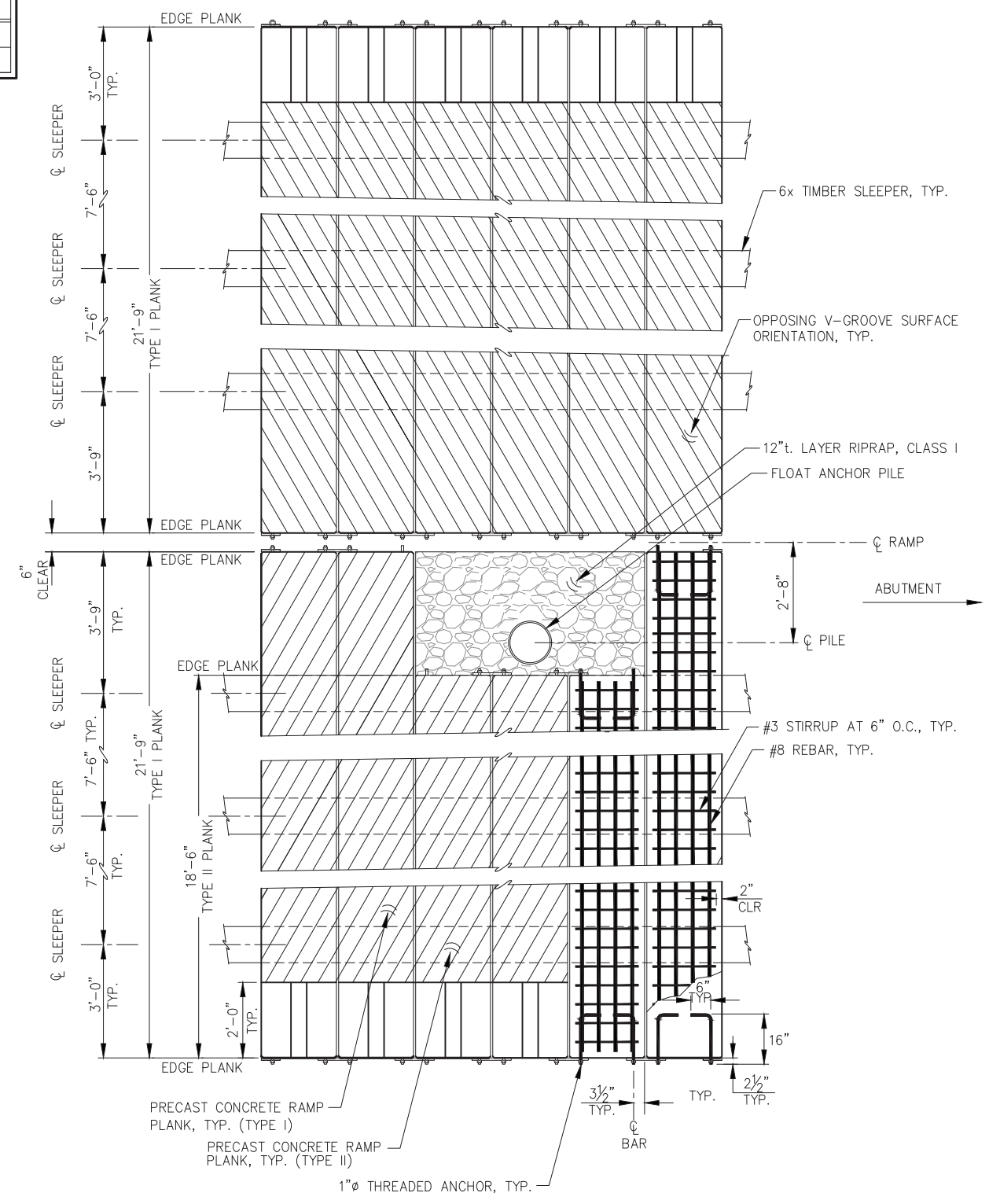


**TYPICAL SECTION A**



**TYPICAL SECTION B**

**PLANK SURFACE FINISH DETAILS**



**CONCRETE RAMP PLANKS - PLAN**



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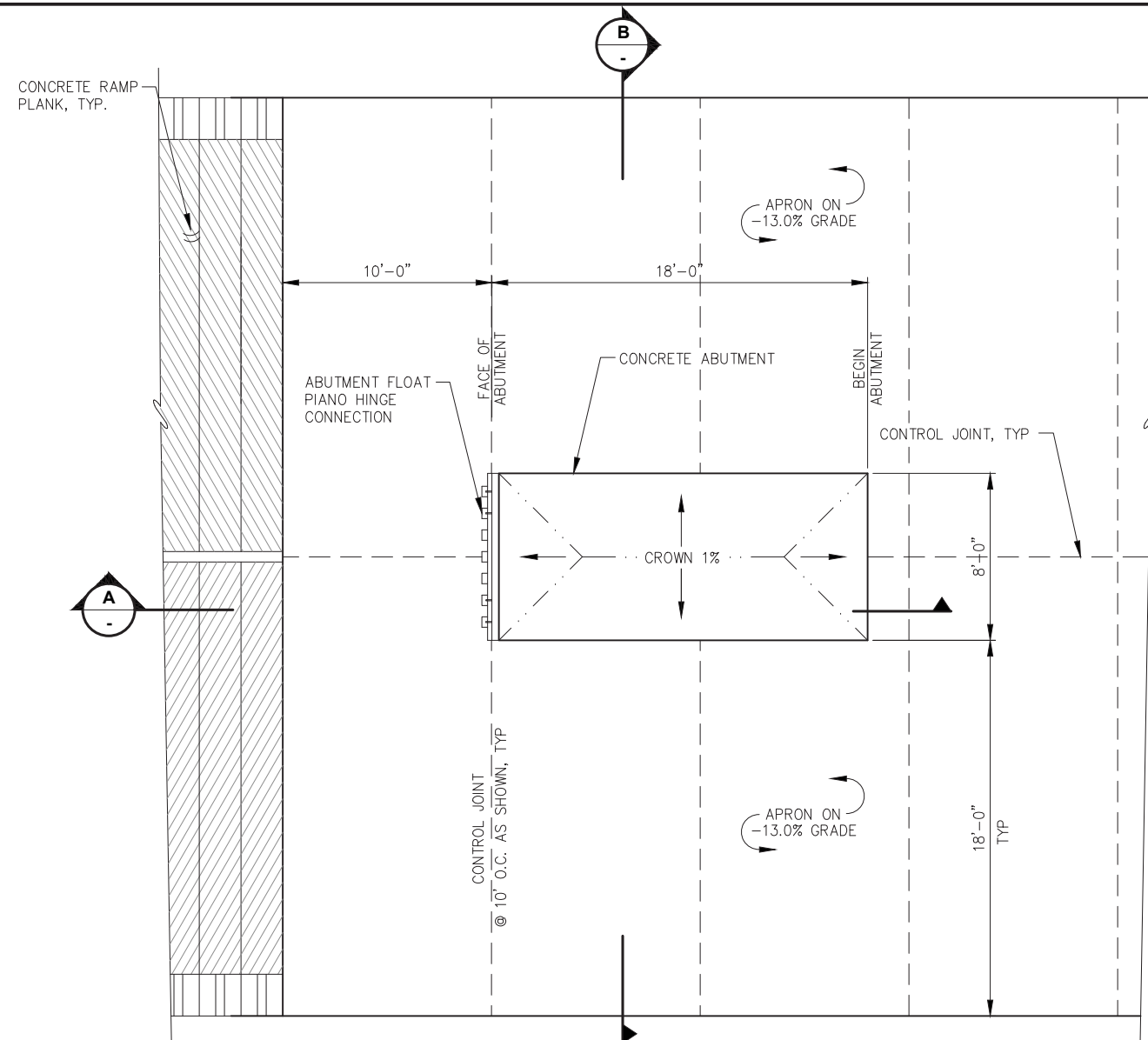
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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **PLANK AND SLEEPER DETAILS**

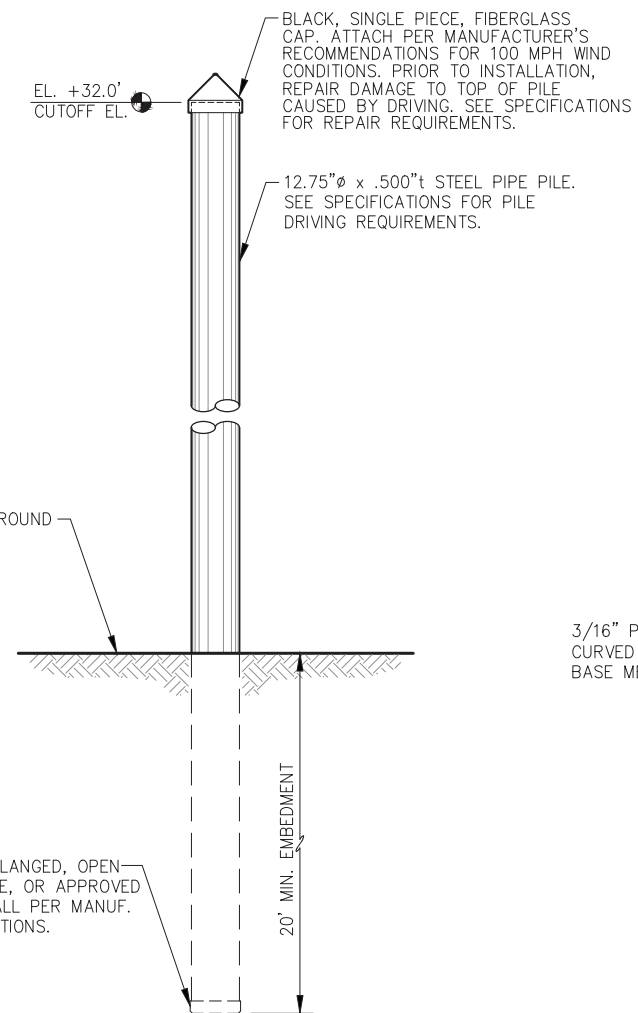
PND PROJECT NO.: 172032

**3.03**  
 SHEET 16 OF 28



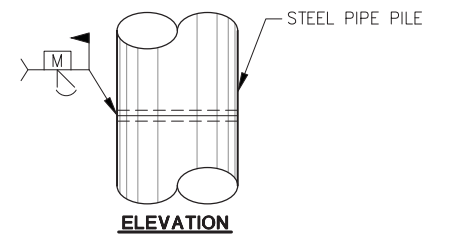
**APRON AND ABUTMENT PLAN**

- NOTES:  
 1. RIPRAP AND FLOAT NOT SHOWN FOR CLARITY  
 2. CONTROL JOINTS 1/4" x 1 1/2" TOOLED JOINT w/1/4" RADIUS. FILL SLOT w/FIELD-MOLDED FILLER ASPHALT SEALANT.

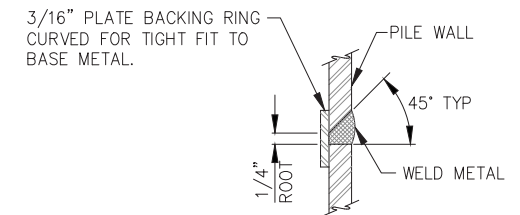


**PILE INSTALLATION DETAIL**

BOAT LAUNCH FLOAT ANCHOR PILE SCHEDULE		
PILE NO.	CUT-OFF ELEV.	PILE LENGTH TO BE SUPPLIED (FEET)
1	32.0'	35 FT
2	32.0'	40 FT
3	32.0'	45 FT
4	32.0'	50 FT
5	32.0'	55 FT
6	32.0'	60 FT
7	32.0'	70 FT

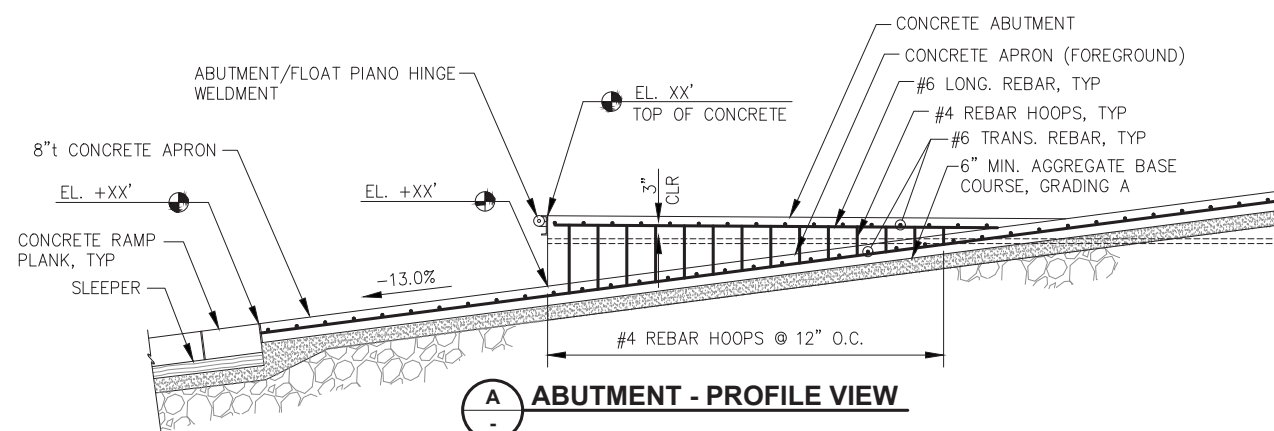


**ELEVATION**

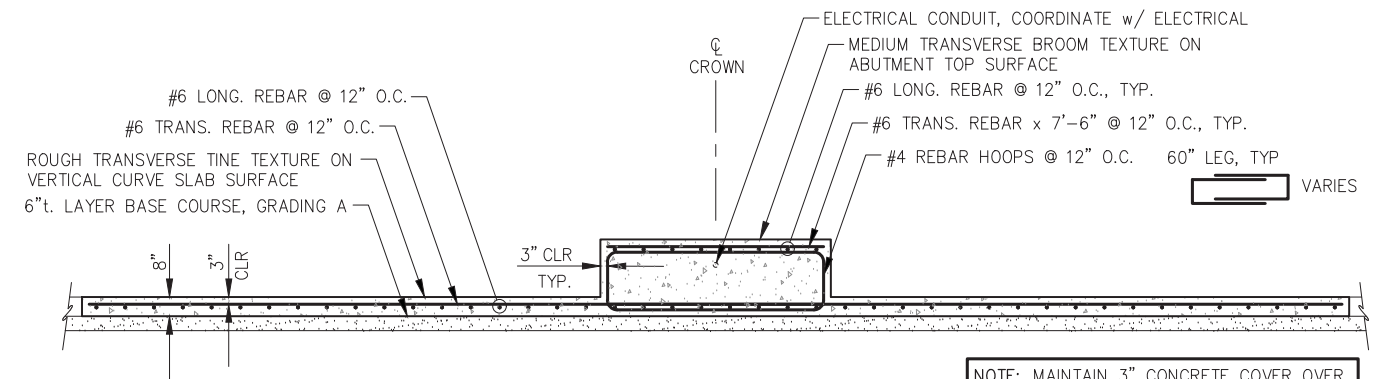


**TYPICAL SECTION**

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



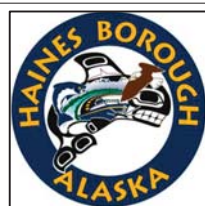
**ABUTMENT - PROFILE VIEW**



**APRON AND ABUTMENT TYPICAL SECTION**

NOTE: MAINTAIN 3" CONCRETE COVER OVER REINFORCEMENT, TOP, BTM, AND ALL SIDES.

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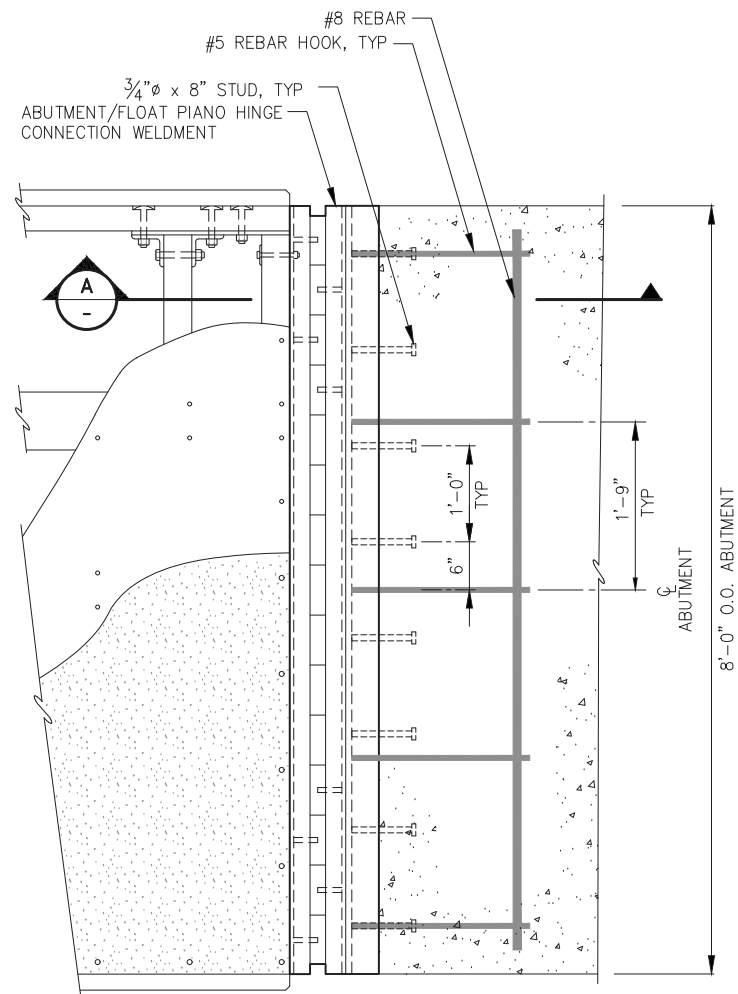
**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **APRON, ABUTMENT AND PILE DETAILS**

**3.04**

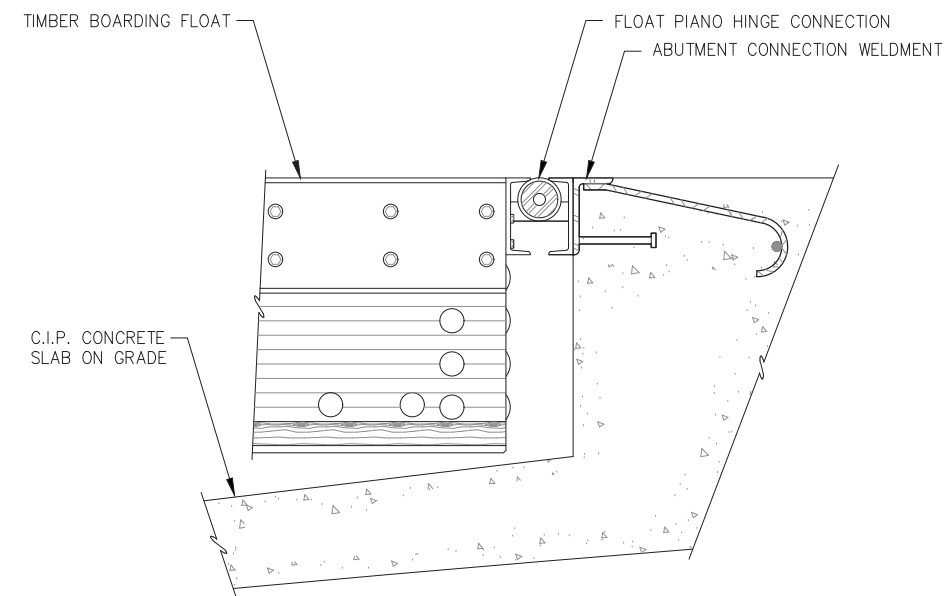
SHEET 17 OF 28

PND PROJECT NO.: 172032



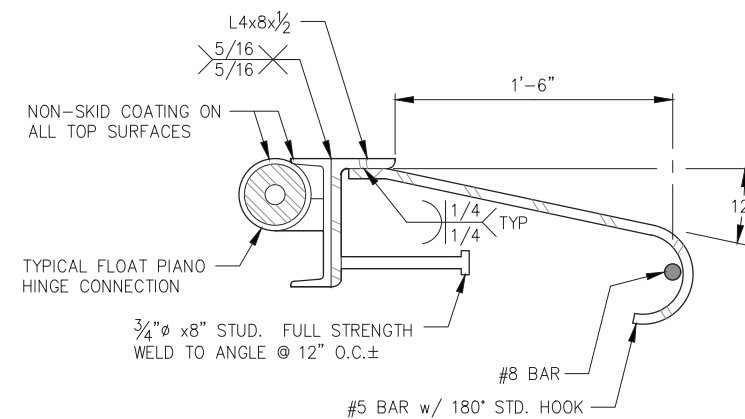
**ABUTMENT/FLOAT CONNECTION - PLAN**

NOTE: 1. ALL STEEL WALKING SURFACES TO BE COATED WITH NON-SKID SURFACE (I.E. ALL TOP SURFACES OF ABUTMENT HINGE CONNECTION WELDMENTS).



**A PROFILE VIEW  
ABUTMENT/FLOAT CONNECTION**

NOTE: NOT ALL ELECTRICAL DETAILS SHOWN THIS SHEET. SEE ELECTRICAL.



**ABUTMENT CONNECTION  
WELDMENT DETAIL**

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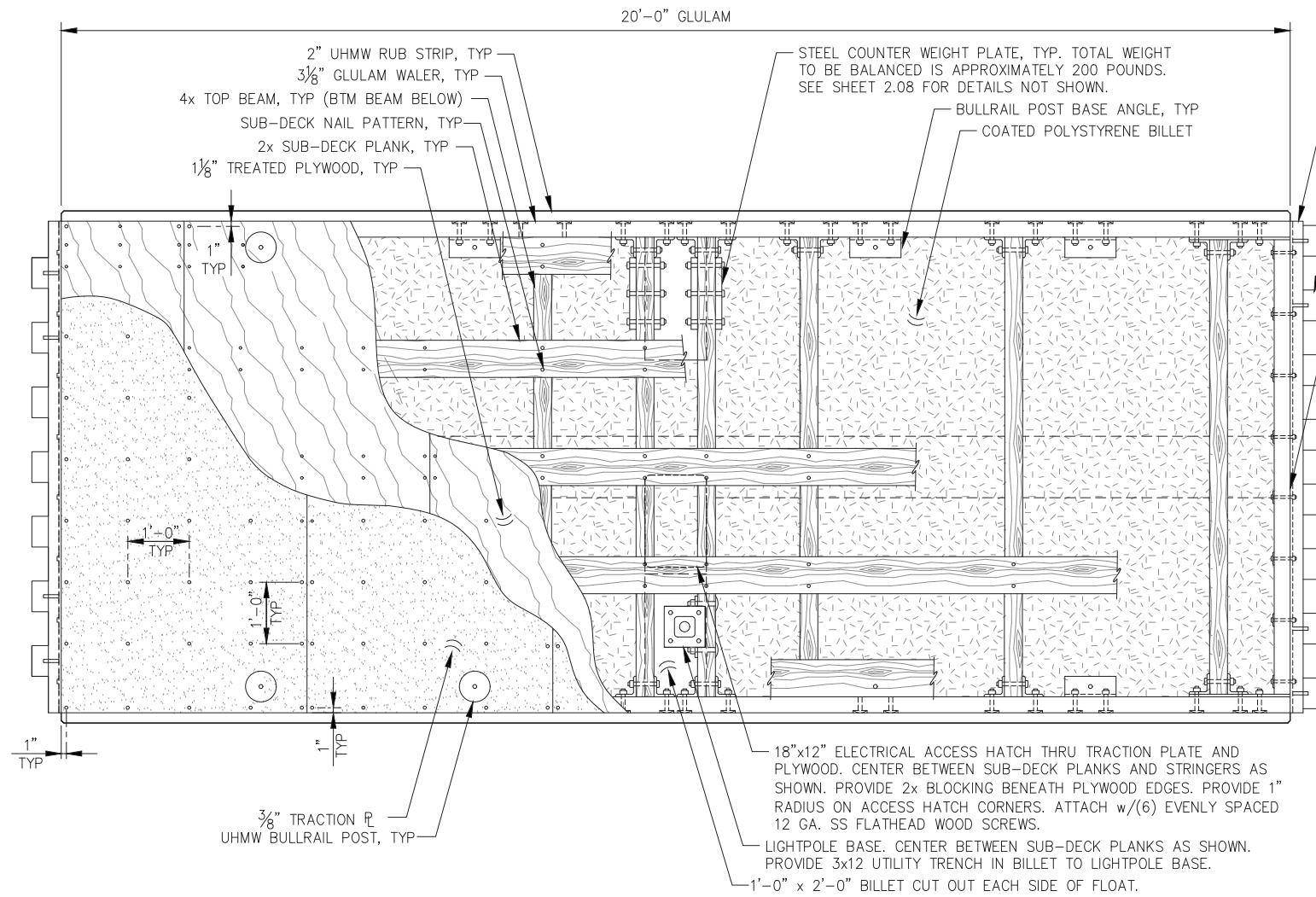
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**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

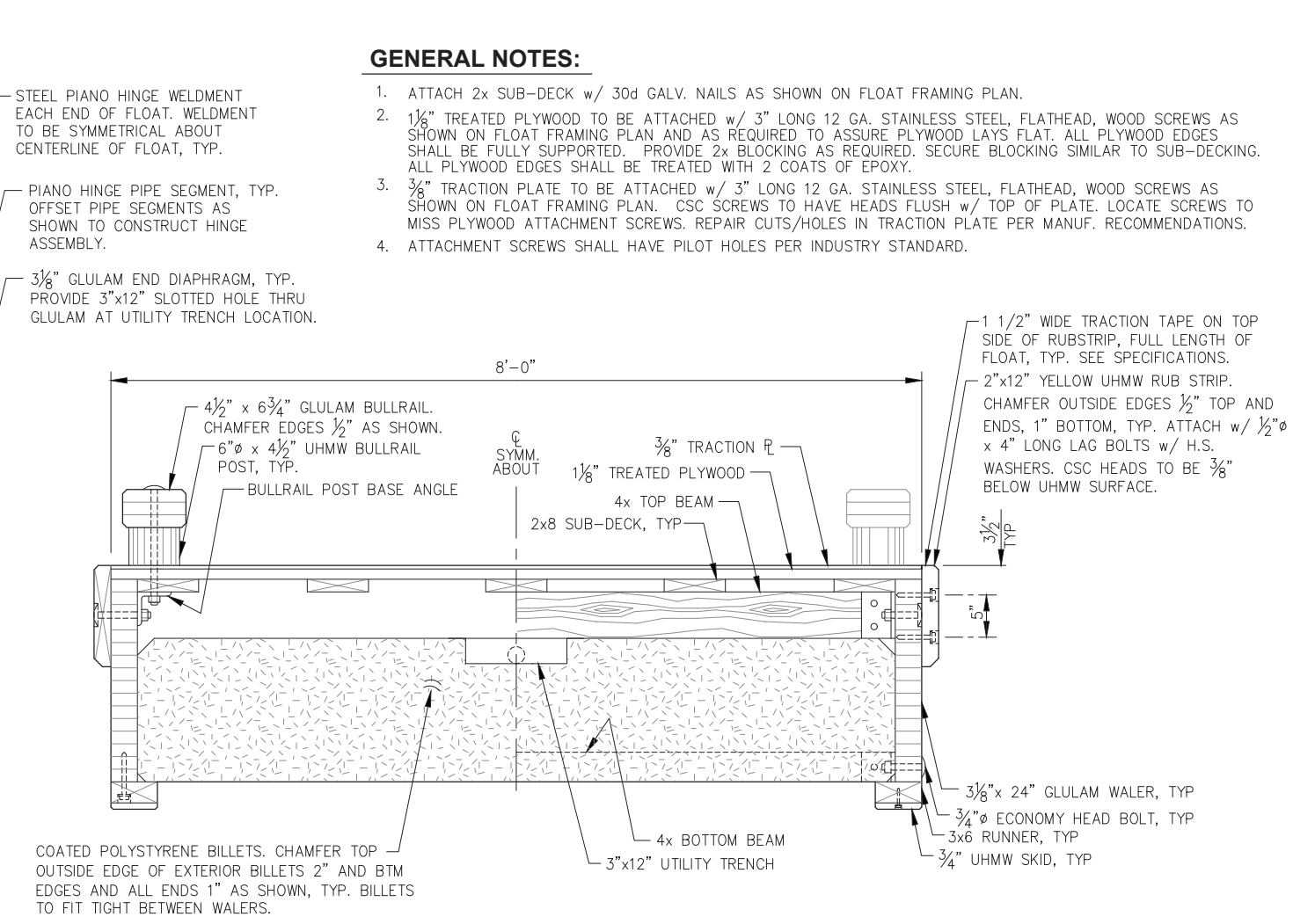
SHEET TITLE: **APRON AND  
ABUTMENT DETAILS**

3.05  
SHEET  
18 OF 28

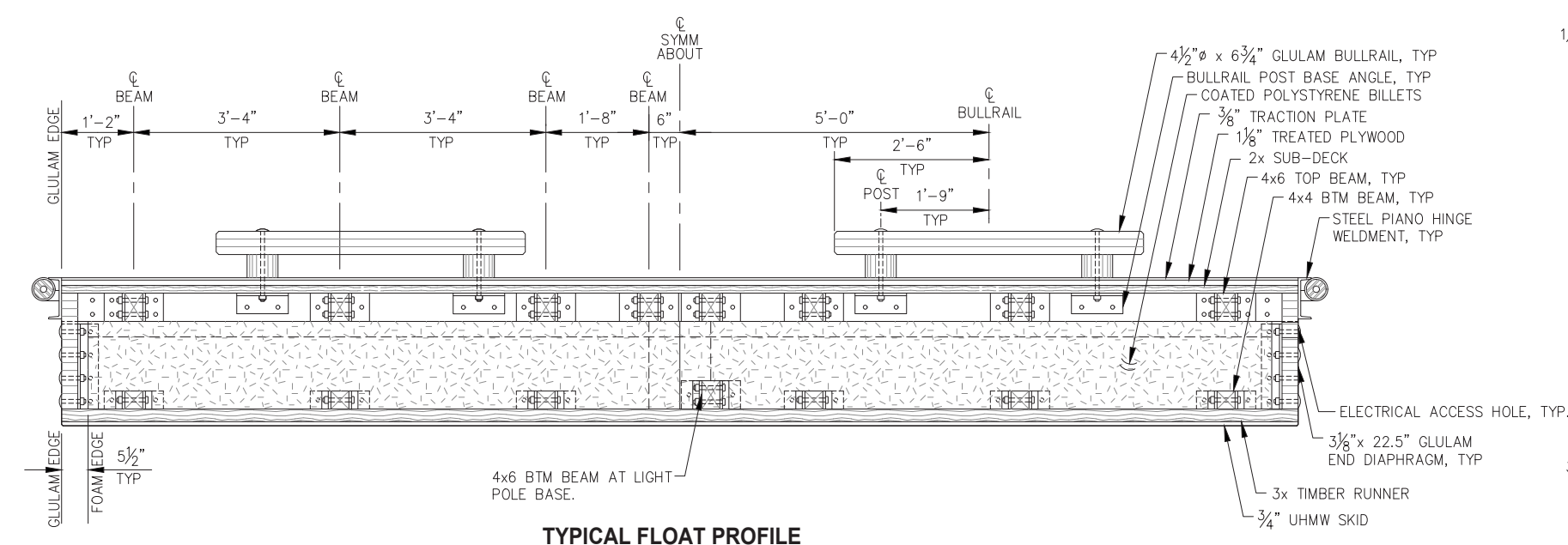
PND PROJECT NO.: 172032



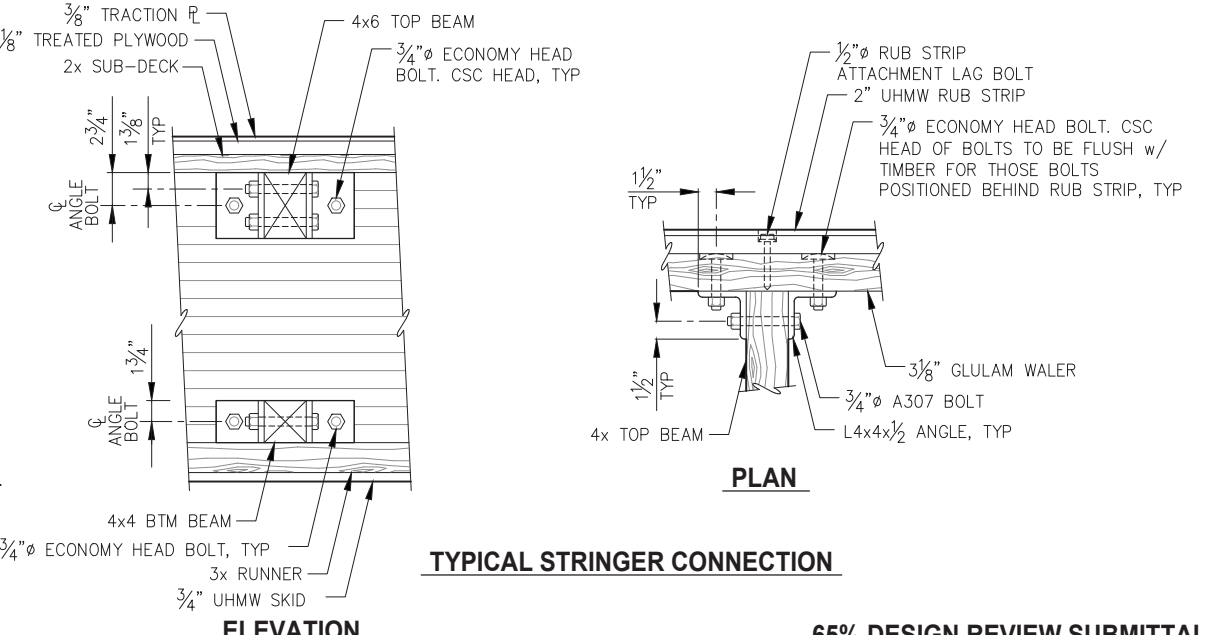
**FLOAT FRAMING PLAN (TYPE 1)**



**BOARDING FLOAT TYPICAL SECTION**



**TYPICAL FLOAT PROFILE**



**TYPICAL STRINGER CONNECTION**

**ELEVATION**

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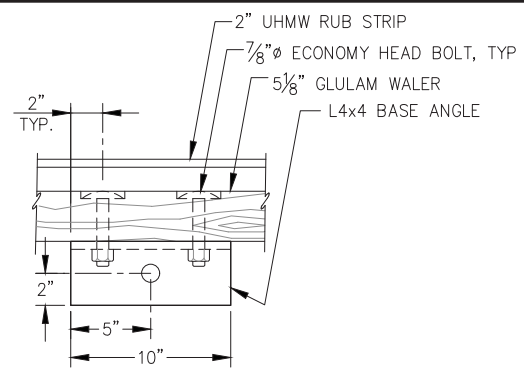
**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **BOARDING FLOAT DETAILS**

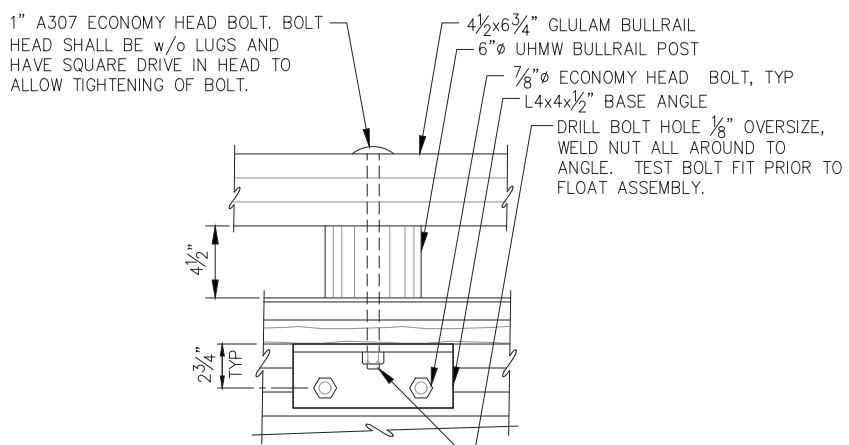
DATE: JULY 20, 2018

PND PROJECT NO.: 172032

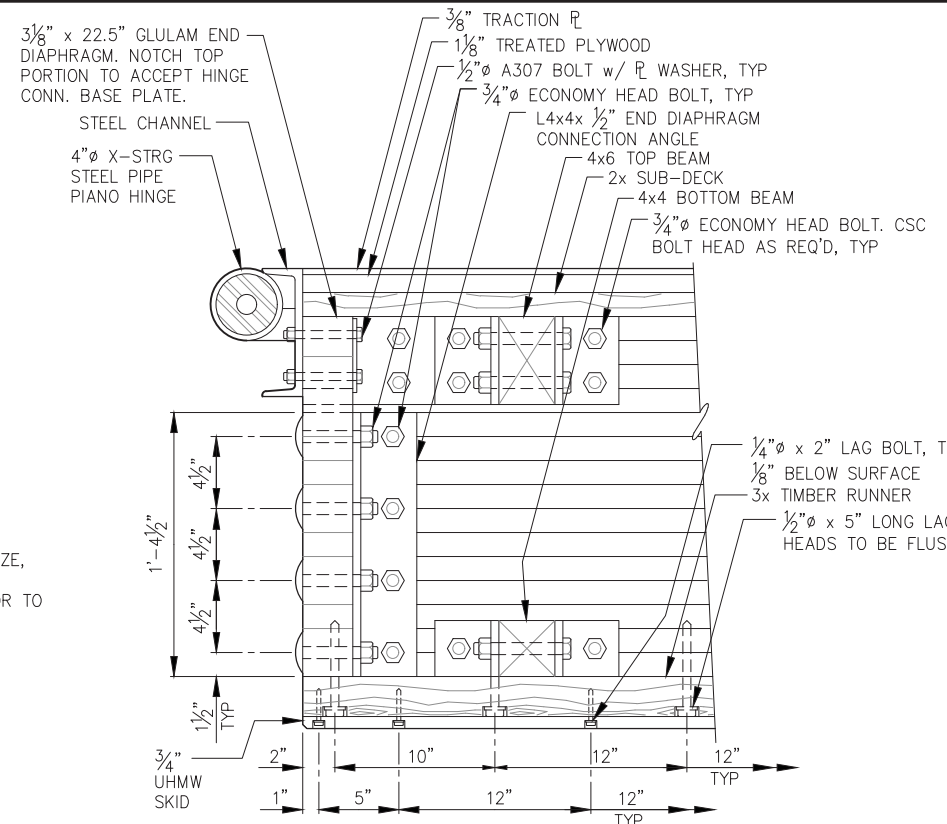
**3.06**  
SHEET 19 OF 28



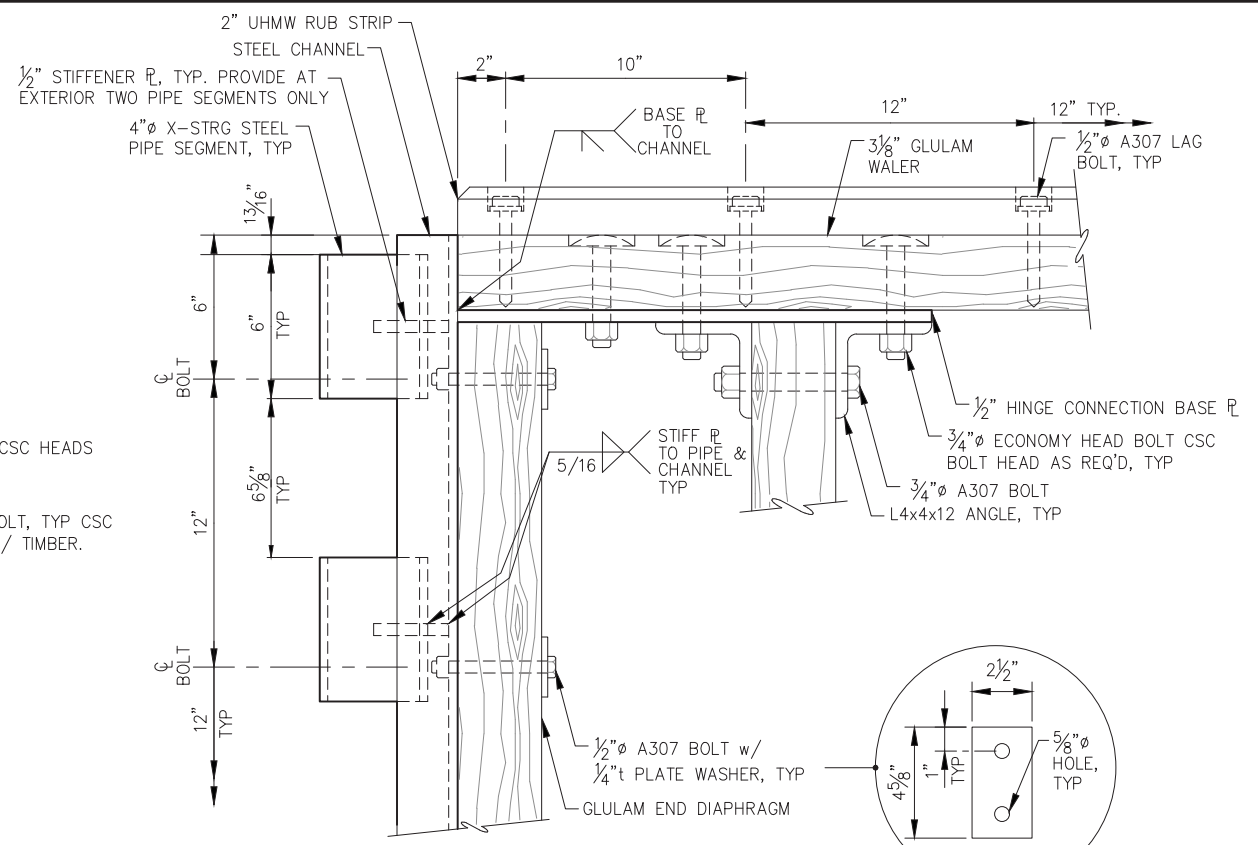
**BULLRAIL BASE ANGLE - PLAN**



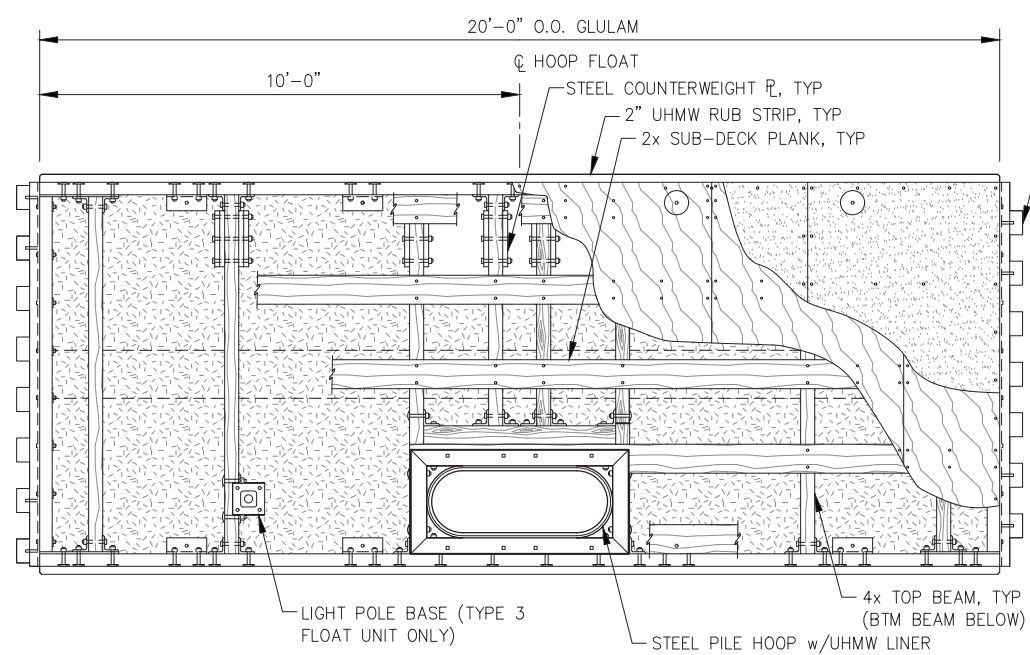
**BULLRAIL BASE ANGLE - PROFILE**



**END DIAPHRAGM/FLOAT CONNECTION PROFILE**



**HINGE CONNECTION PLAN**

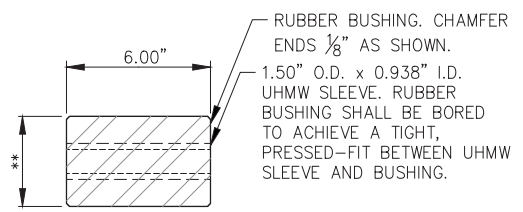


**FLOAT FRAMING PLAN (TYPE 2)**

**NOTES:**  
 1. DETAILS NOT SHOWN SIMILAR TO TYPE 1 FLOAT.  
 2. TYPE 3 FLOAT SIMILAR TO TYPE 2 FLOAT. IN LIEU OF HINGE ON OUTBOARD END INSTALL YELLOW UHMW RUB STRIP AND TIMBER BULLRAIL FULL WIDTH ACROSS END OF FLOAT, AND LIGHT POLE BASE w/BTM 4x6 BEAM AND STEEL COUNTERWEIGHTS.

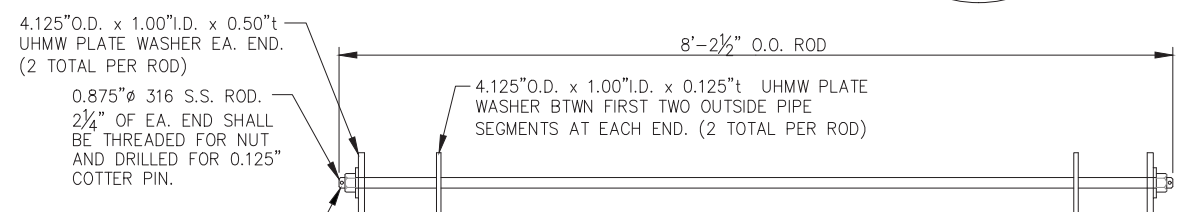
STEEL PIPE PIANO HINGE WELDMENT EACH END OF FLOAT. WELDMENT TO BE SYMMETRICAL ABOUT CENTERLINE OF FLOAT, TYP

**NOTES:**  
 FABRICATOR TO DRY-FIT HINGE ASSEMBLIES PRIOR TO APPLICATION OF COATINGS TO ENSURE HINGE MOVES FREELY AND DOES NOT BIND.  
 \*\* DIMENSION ASSUMED TO BE MINIMUM OF 3 5/8". FABRICATOR SHALL VERIFY DIMENSION REQ'D FOR TOP OF PIPE SEGMENT TO BE FLUSH WITH TOP OF ANGLE, AND WELDED AS SHOWN. ALSO, PIPE SEGMENT SHALL HAVE MINIMUM CLEARANCE BETWEEN IT AND THE ANGLE OF 3/8" SUCH THAT WHEN ASSEMBLED, HINGE PIPE SEGMENTS DO NOT RUB AGAINST EDGE OF ANGLE TOP LEG. (I.E. AVOID NON-SKID COATING BEING WORE OFF AFTER INSTALLATION.)



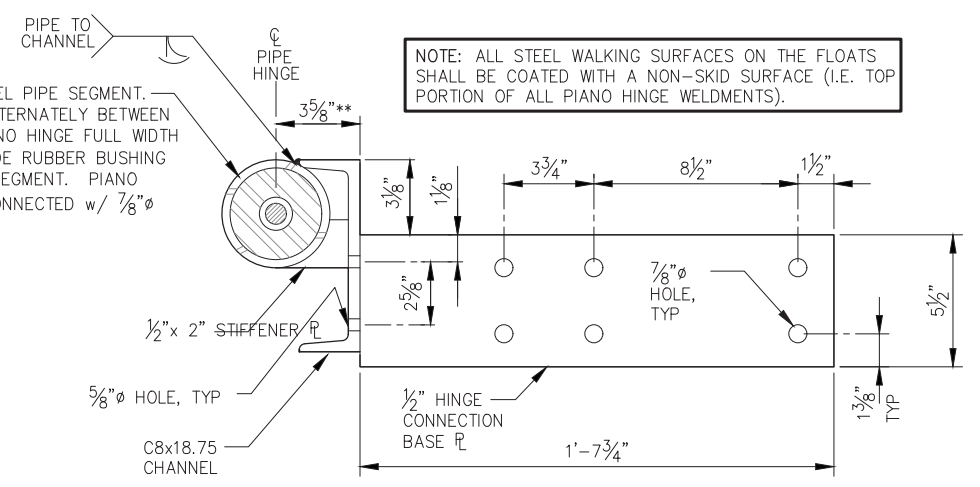
**TYPICAL PIANO HINGE RUBBER BUSHING**

\*\*SEE SPECIFICATIONS FOR DIAMETER REQUIREMENTS



**HINGE CONNECTION ROD**

4.125" O.D. x 1.00" I.D. x 0.50" t UHMW PLATE WASHER EA. END. (2 TOTAL PER ROD)  
 0.875" 316 S.S. ROD. 2 1/4" OF EA. END SHALL BE THREADED FOR NUT AND DRILLED FOR 0.125" COTTER PIN.  
 316 S.S. "NYLOCK" NUT w/ 316 S.S. WASHER EACH END (2 TOTAL PER ROD)



**HINGE CONNECTION SECTION**

**NOTE:** ALL STEEL WALKING SURFACES ON THE FLOATS SHALL BE COATED WITH A NON-SKID SURFACE (I.E. TOP PORTION OF ALL PIANO HINGE WELDMENTS).

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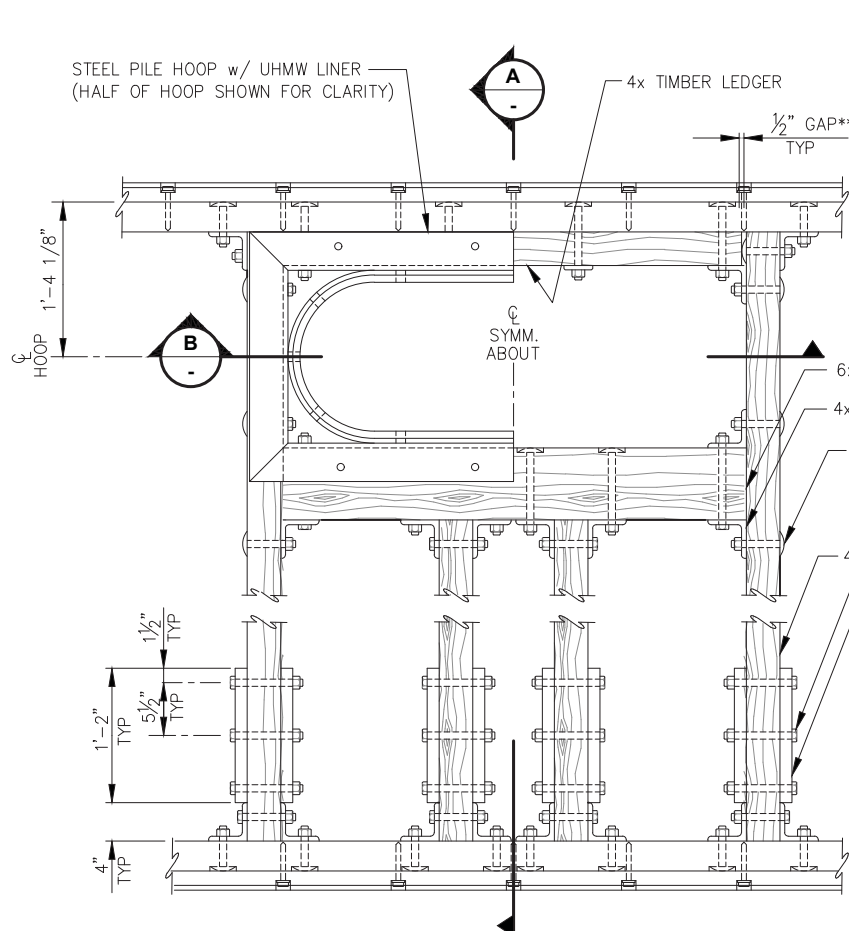
**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **BOARDING FLOAT DETAILS**

DATE: JULY 20, 2018

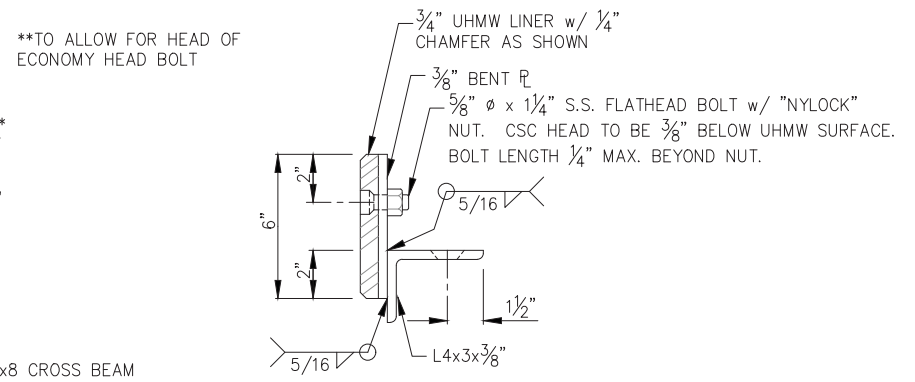
PND PROJECT NO.: 172032

**3.07**  
 SHEET 20 OF 28

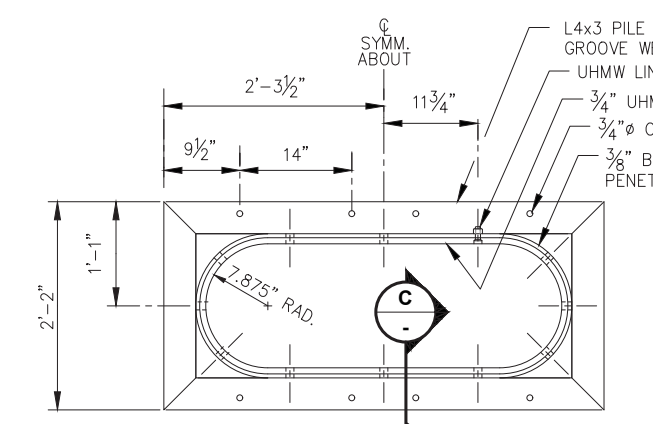


**PILE HOOP FRAMING PLAN**

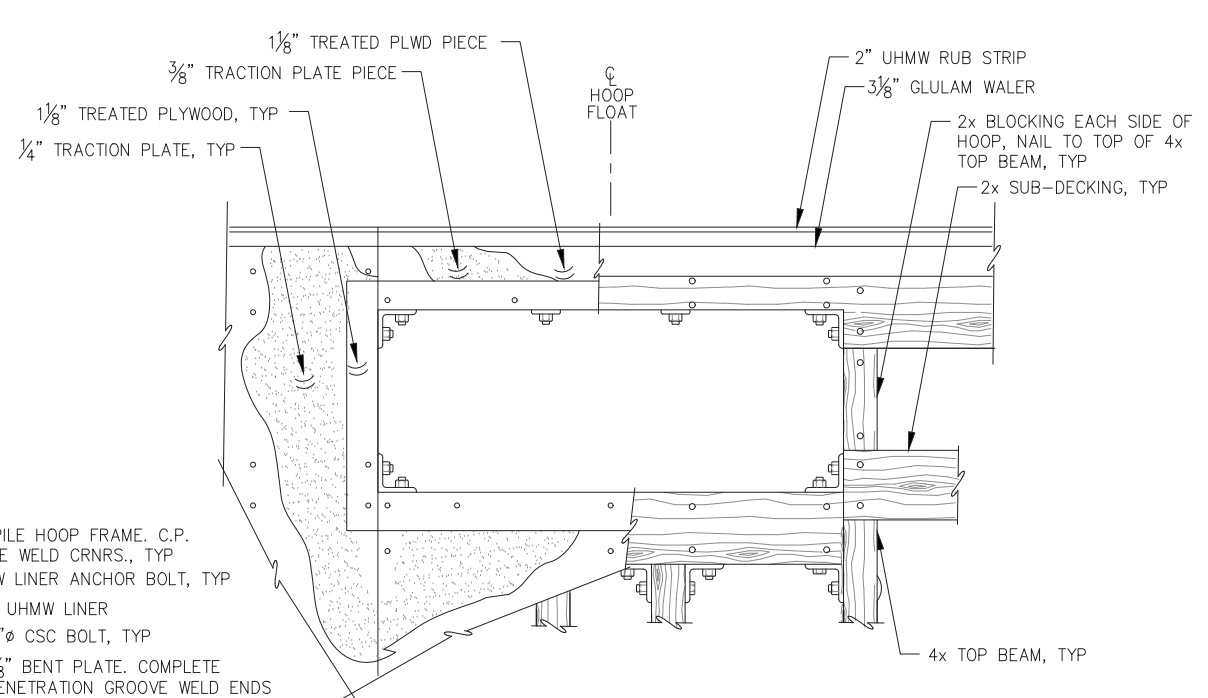
NOTE: FOAM BILLETS NOT SHOWN THIS VIEW FOR CLARITY.



**PILE HOOP TYPICAL SECTION**

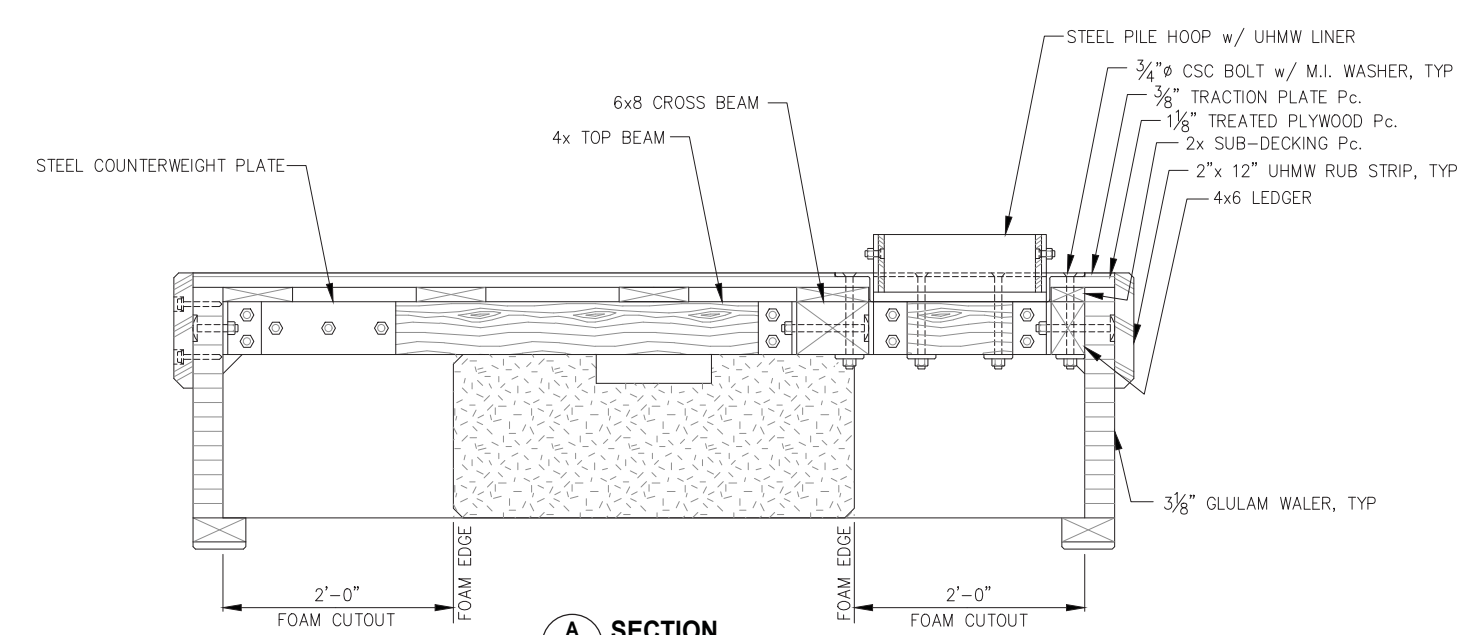


**PILE HOOP PLAN**

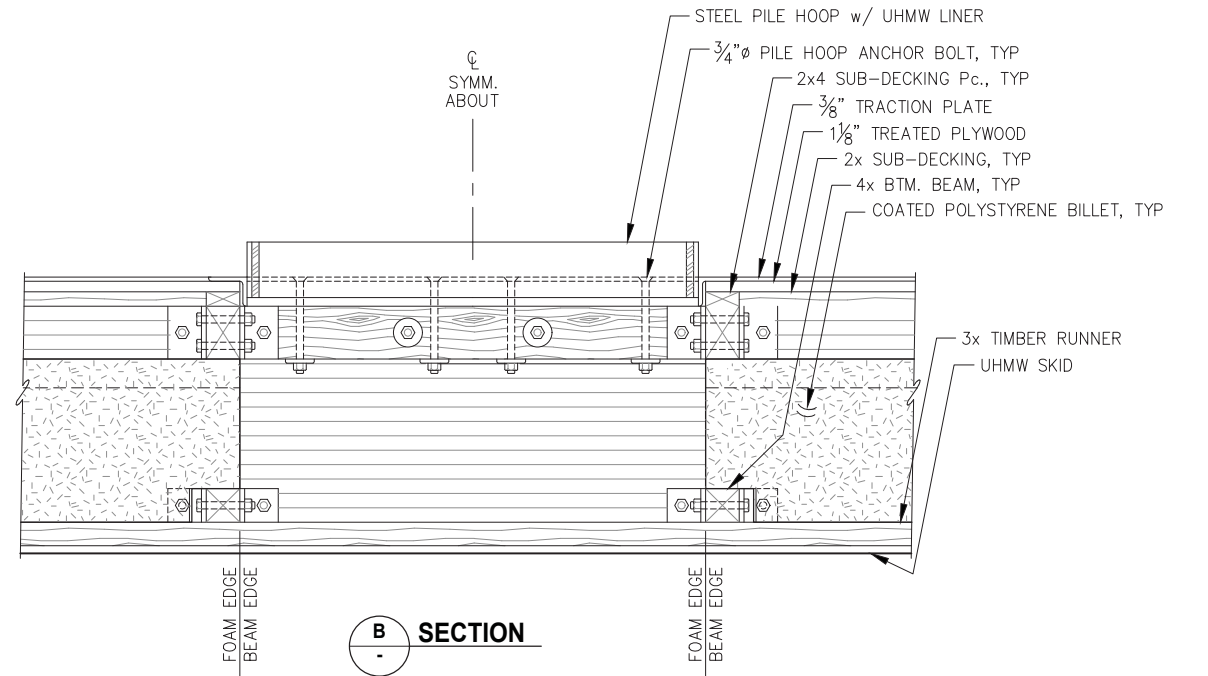


**PILE HOOP DECKING PLAN**

NOTES: PILE HOOP NOT SHOWN FOR CLARITY. CHAMFER TOP INSIDE EDGE OF TRACTION PLATE/DECK AS REQ'D FOR PILE HOOP FRAME FIT-UP.



**SECTION A**



**SECTION B**

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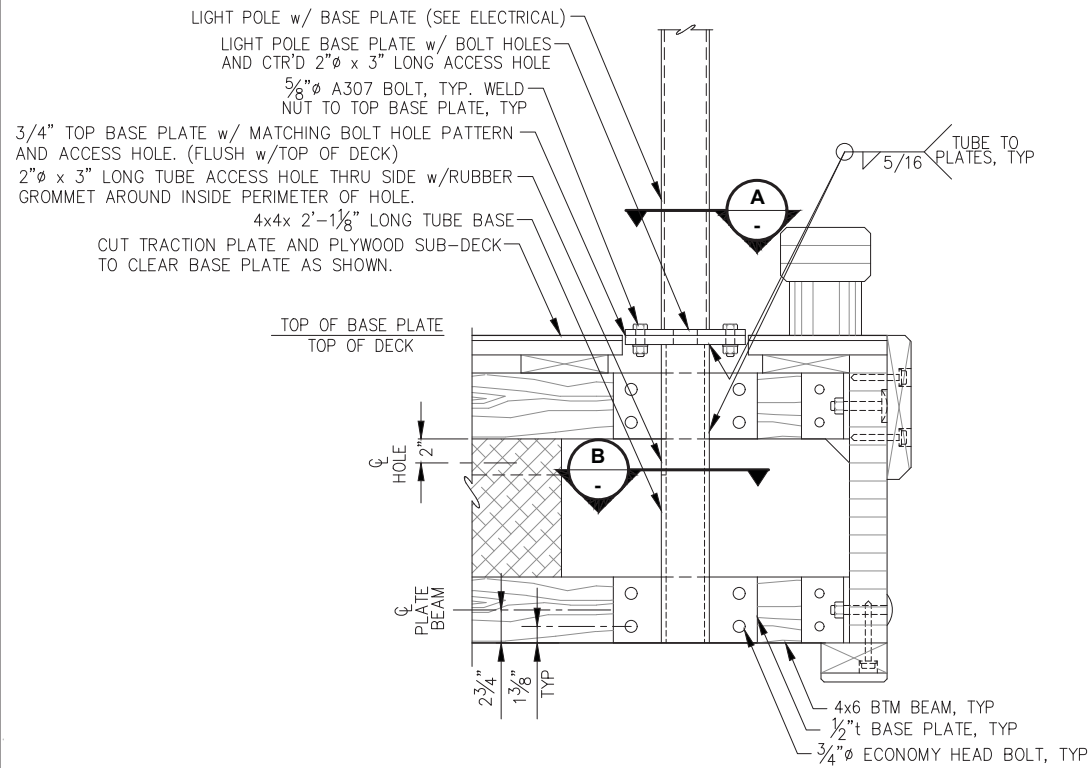
DATE: JULY 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **BOARDING FLOAT DETAILS**

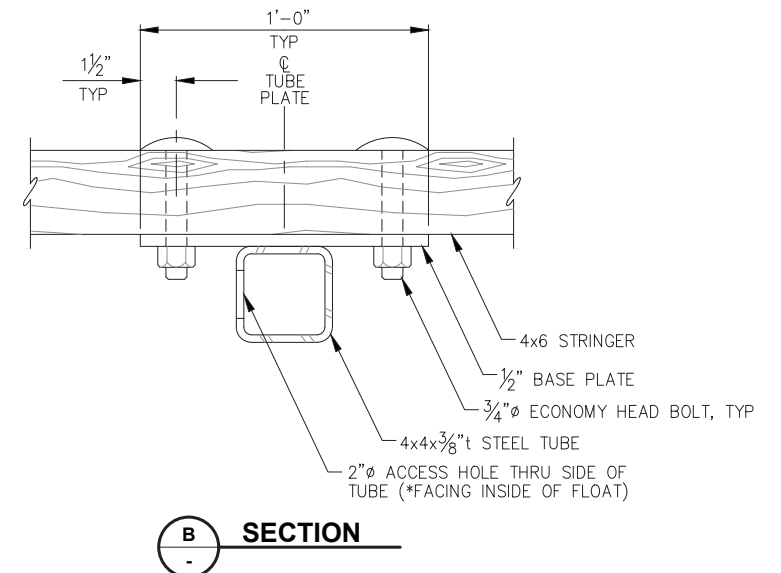
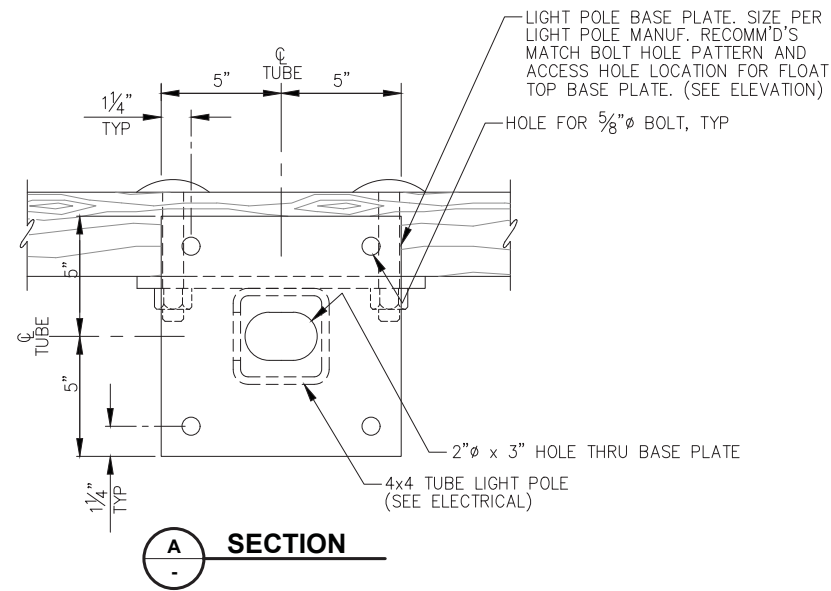
PND PROJECT NO.: 172032

**3.08**  
SHEET 21 OF 28

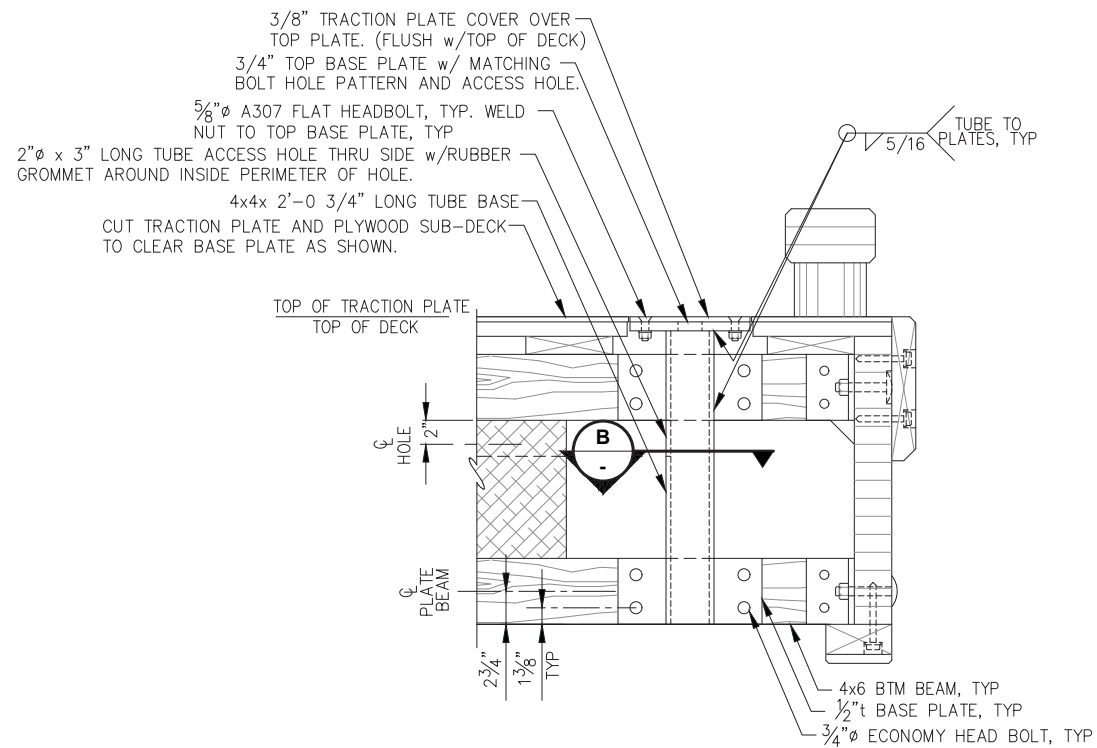


**LIGHT POLE BASE - ELEVATION - ADD ALT 2**

NOTE: SEE FLOAT PLANS FOR LOCATION (7 TOTAL).



\*NOTE: FLOAT TYPE 3 LIGHT POLE BASE ON OPPOSITE SIDE OF 4x TUBE FOR TYPE 3 FLOAT UNIT.



**LIGHT POLE BASE - ELEVATION - BASE BID**

NOTE: SEE FLOAT PLANS FOR LOCATION (7 TOTAL).

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**HAINES BOROUGH  
 PORTAGE COVE HARBOR  
 BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:

**BOARDING FLOAT DETAILS**

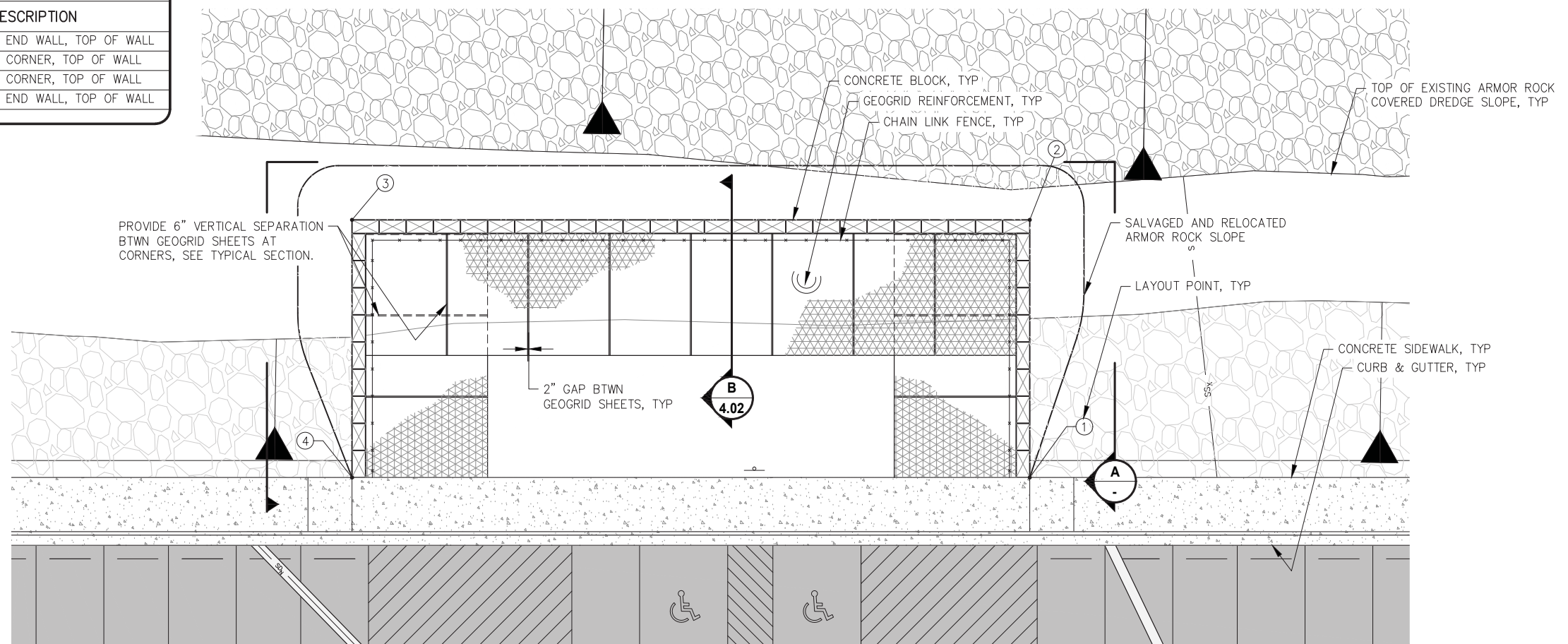
**3.09**

SHEET 22 OF 28

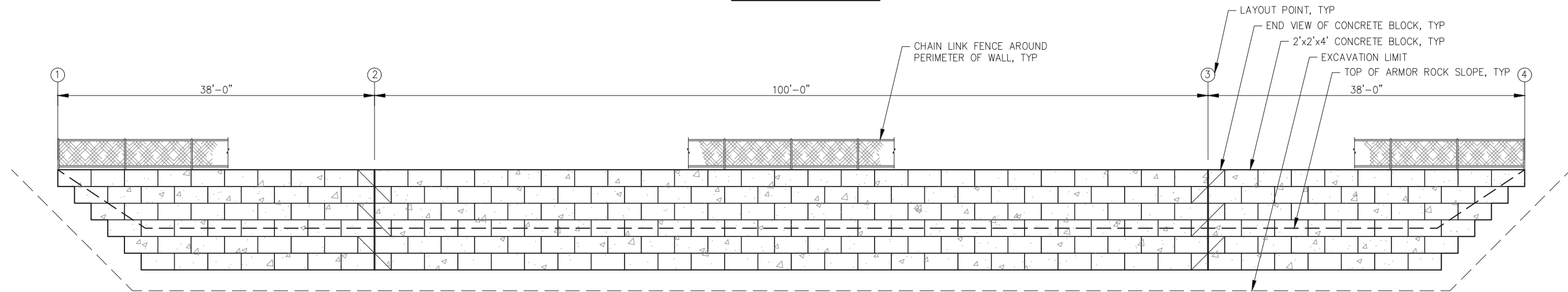
PND PROJECT NO.: 172032

### MSE WALL LAYOUT POINTS

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	2706758.42	2353576.71	X	FACE OF BLOCK, END WALL, TOP OF WALL
2	2706754.10	2353614.46	X	FACE OF BLOCK, CORNER, TOP OF WALL
3	2706853.45	2353625.82	X	FACE OF BLOCK, CORNER, TOP OF WALL
4	2706857.77	2353588.07	X	FACE OF BLOCK, END WALL, TOP OF WALL



**MSE WALL - PLAN**



**MSE WALL - PROFILE**

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 DRAWN: BMI    APPROVED: \_\_\_\_\_

DATE: JULY 20, 2018

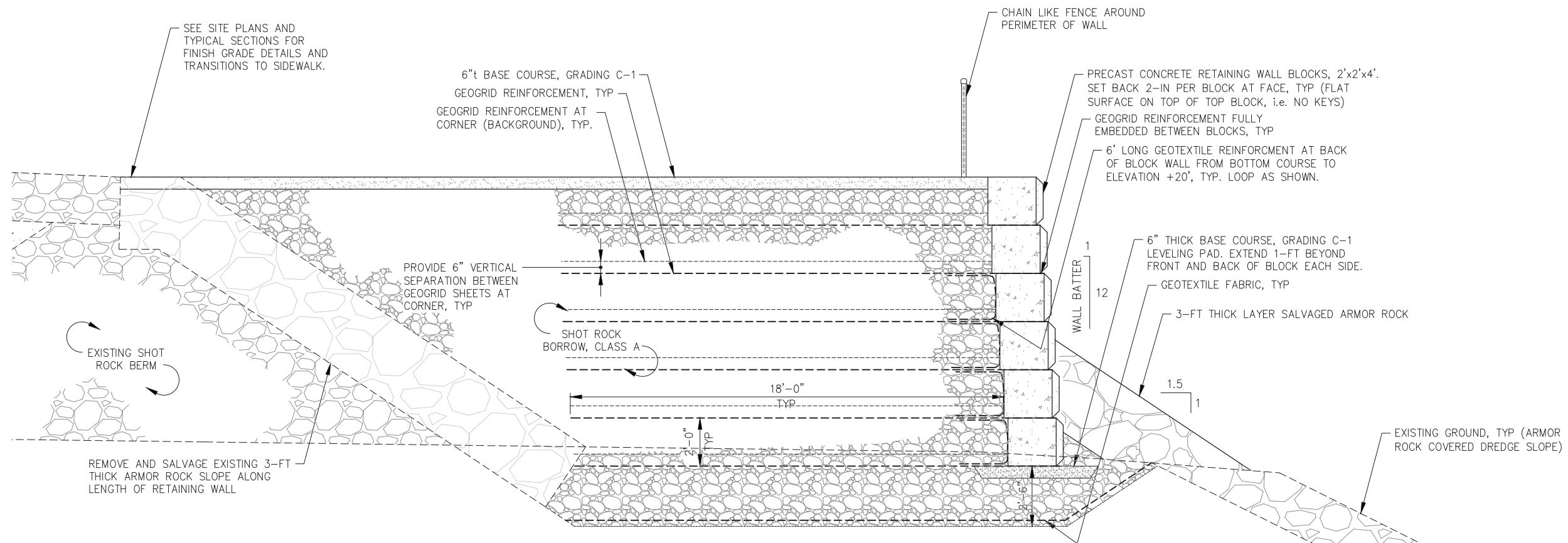
**HAINES BOROUGH  
 PORTAGE COVE HARBOR  
 BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**MSE WALL PLAN AND PROFILE**

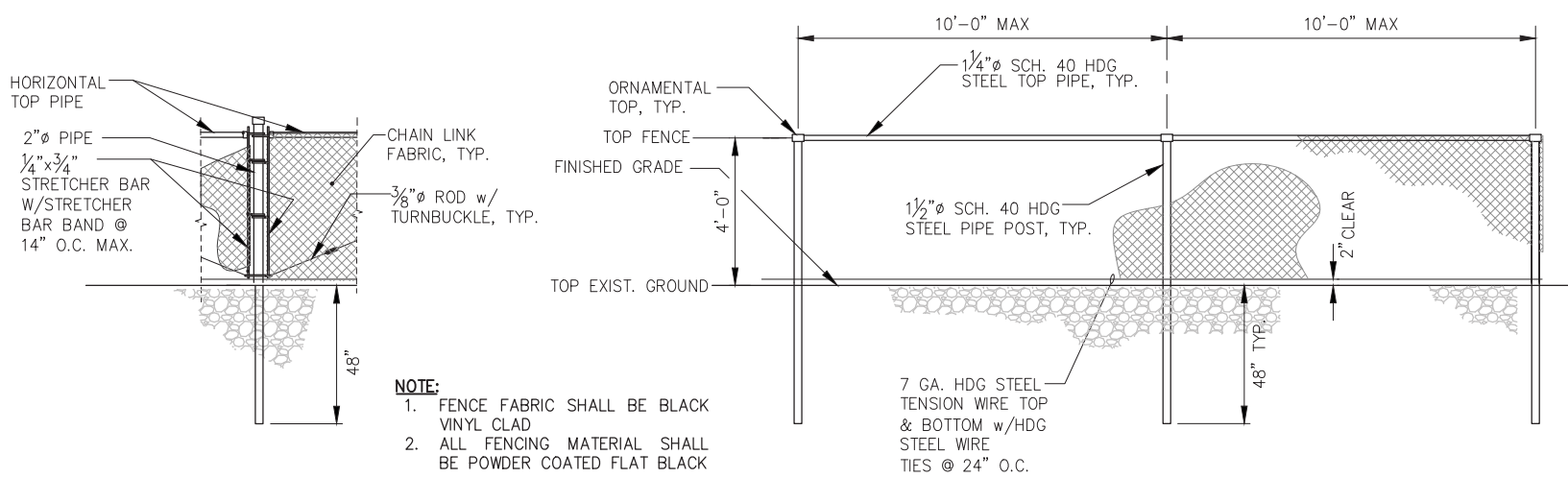
PND PROJECT NO.: 172032

**4.01**  
 SHEET  
 23 OF 28





**B** MSE WALL TYPICAL SECTION  
4.01



**CORNER & END FENCE POST**

**FENCE ELEVATION**

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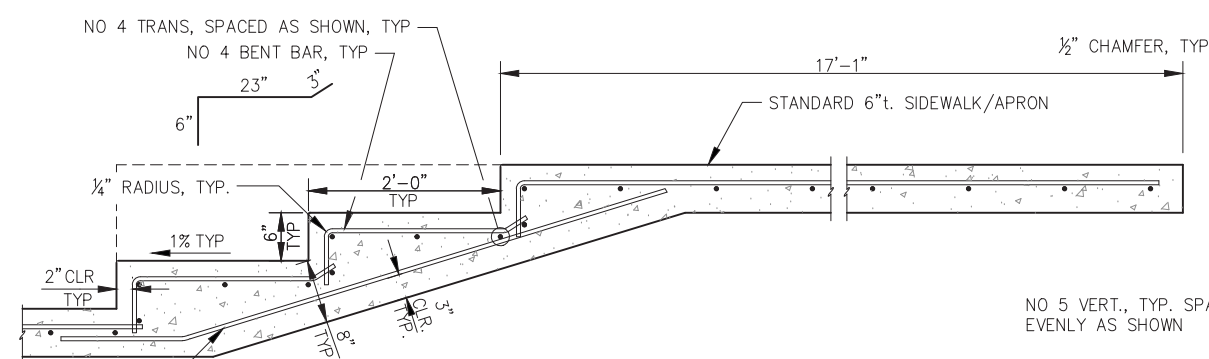
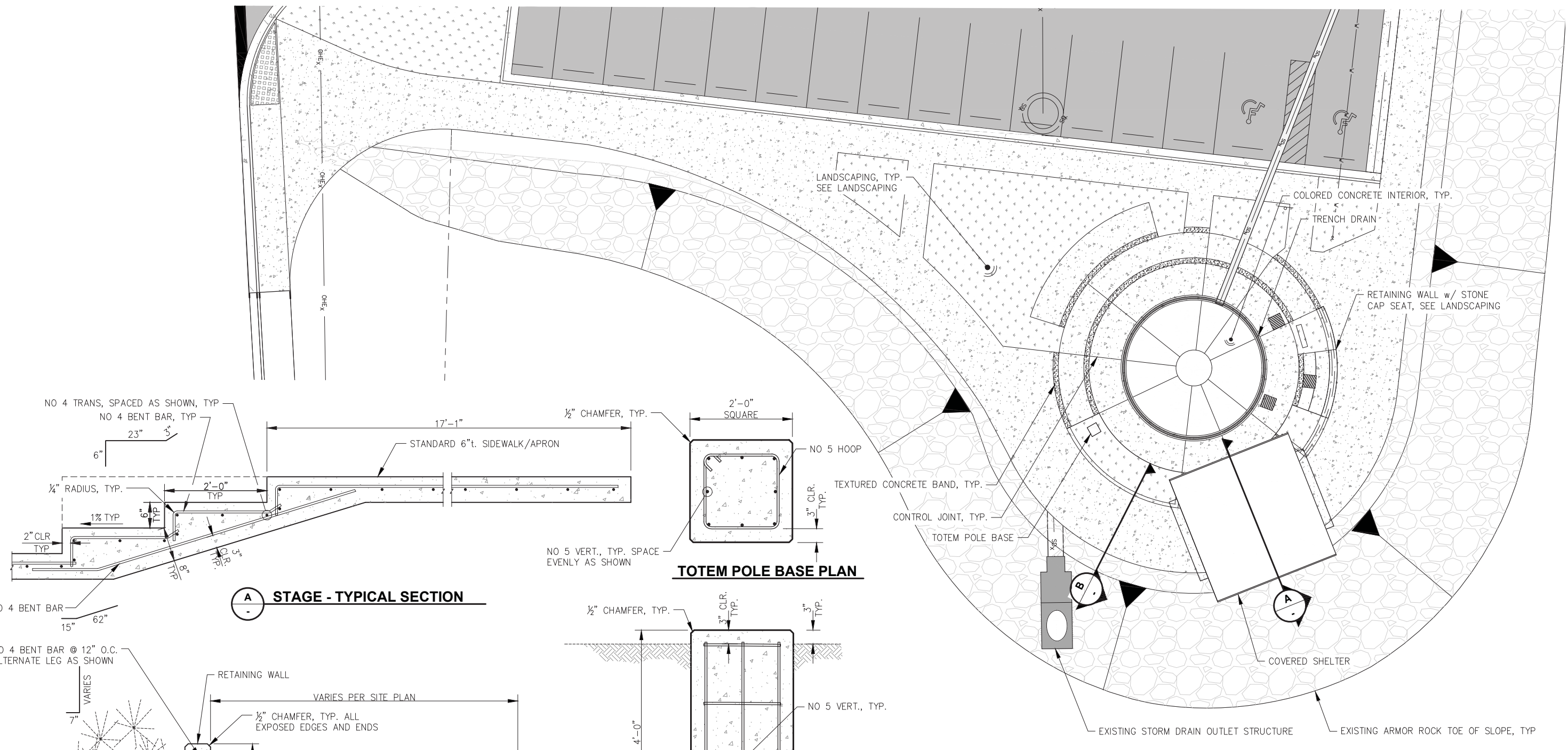
DATE: JULY 20, 2018

**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

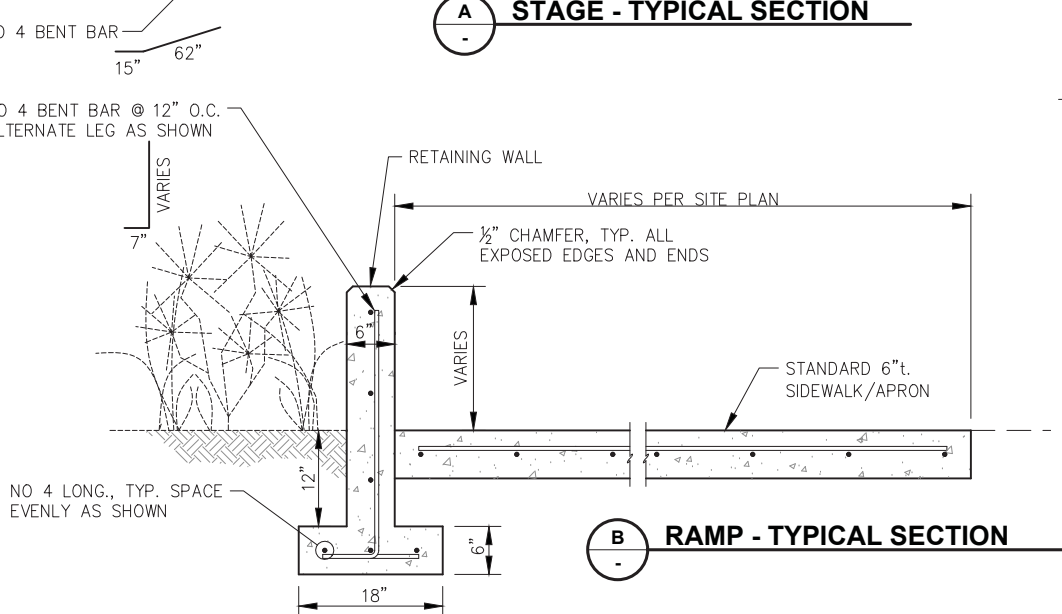
SHEET TITLE:  
**MSE WALL TYPICAL SECTION**

4.02  
SHEET  
24 OF 28

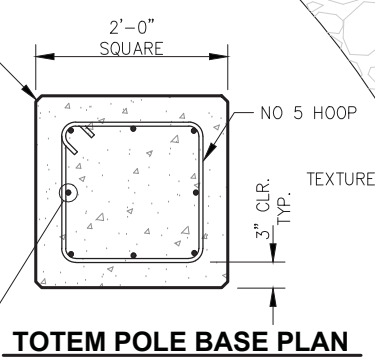
PND PROJECT NO.: 172032



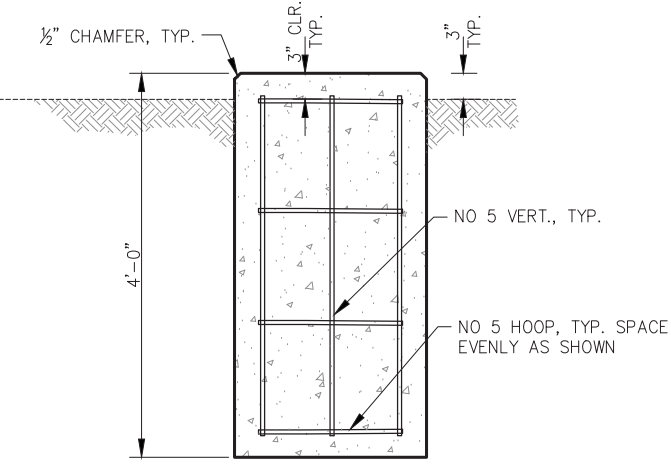
**A STAGE - TYPICAL SECTION**



**B RAMP - TYPICAL SECTION**



**TOTEM POLE BASE PLAN**



**TOTEM POLE BASE SECTION**

**HARBOR PARK - PLAN**  
NOTE: NOT ALL AMENITIES OR SITE FURNISHINGS SHOWN THIS SHEET. SEE LANDSCAPING.

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SCALE: SCALE IN FEET  
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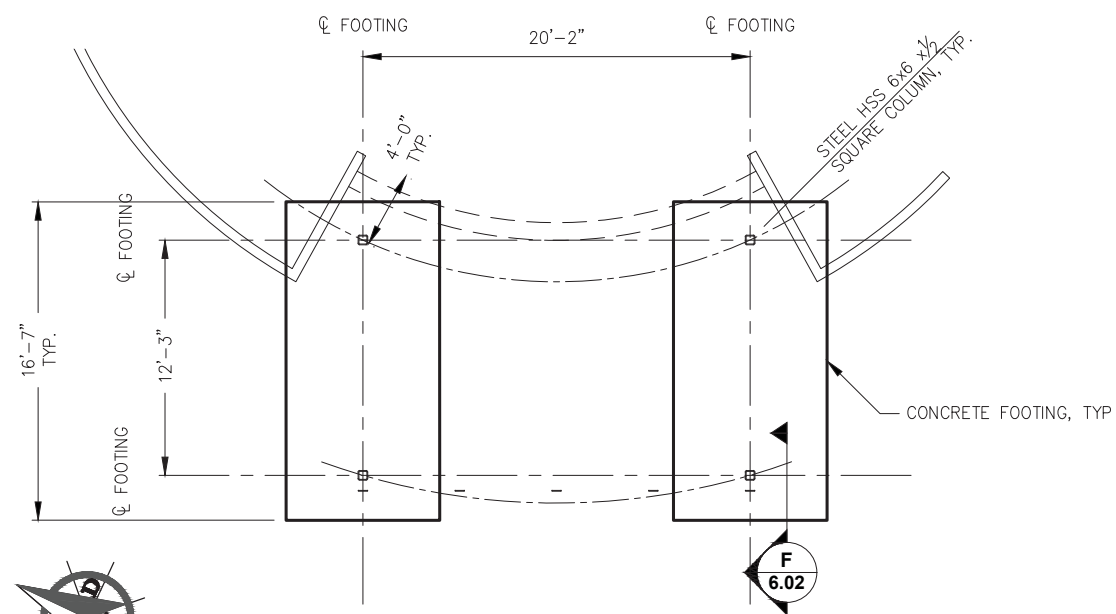
DATE: JULY 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

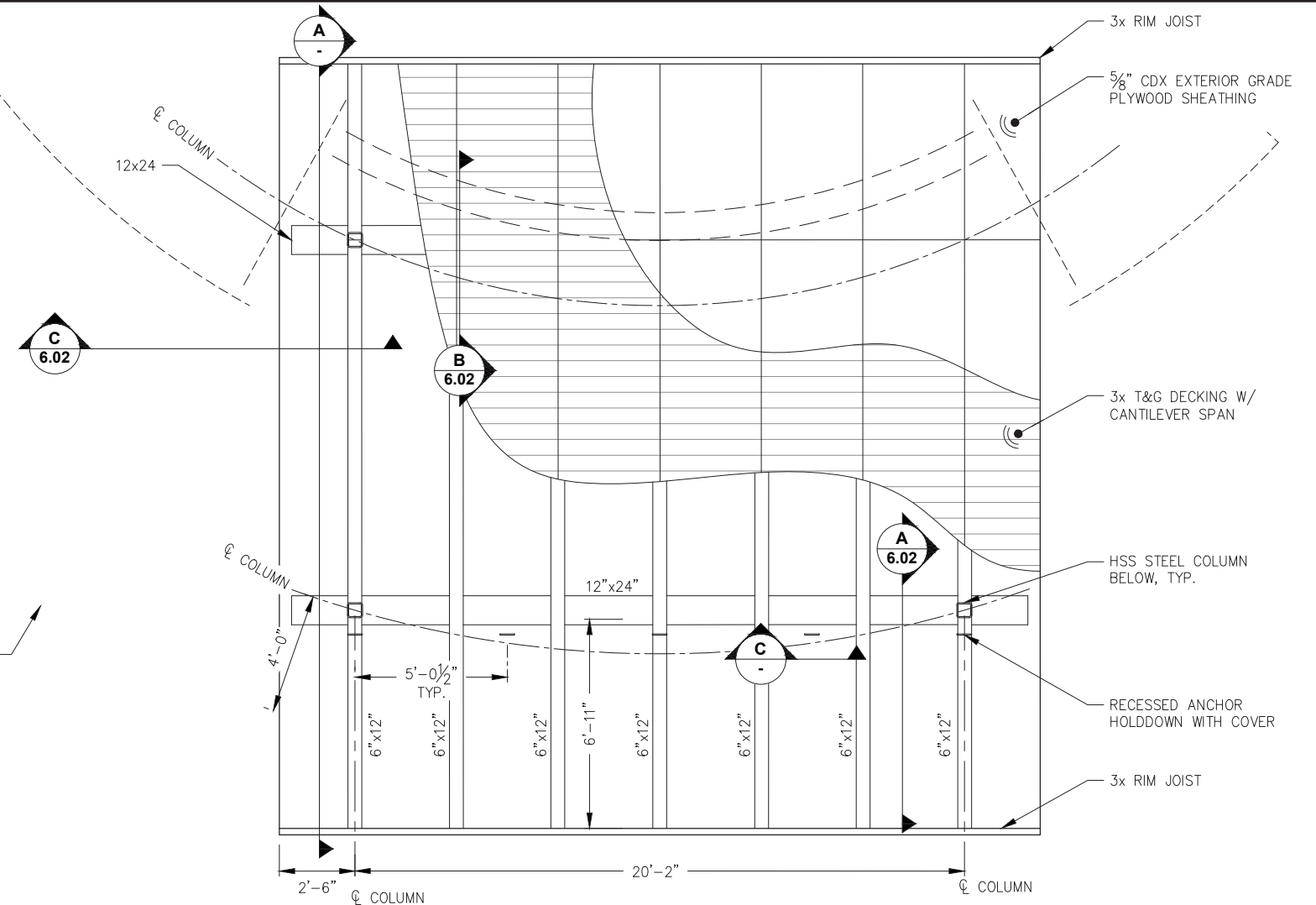
SHEET TITLE: **HARBOR PARK PLAN AND SECTIONS**

PND PROJECT NO.: 172032

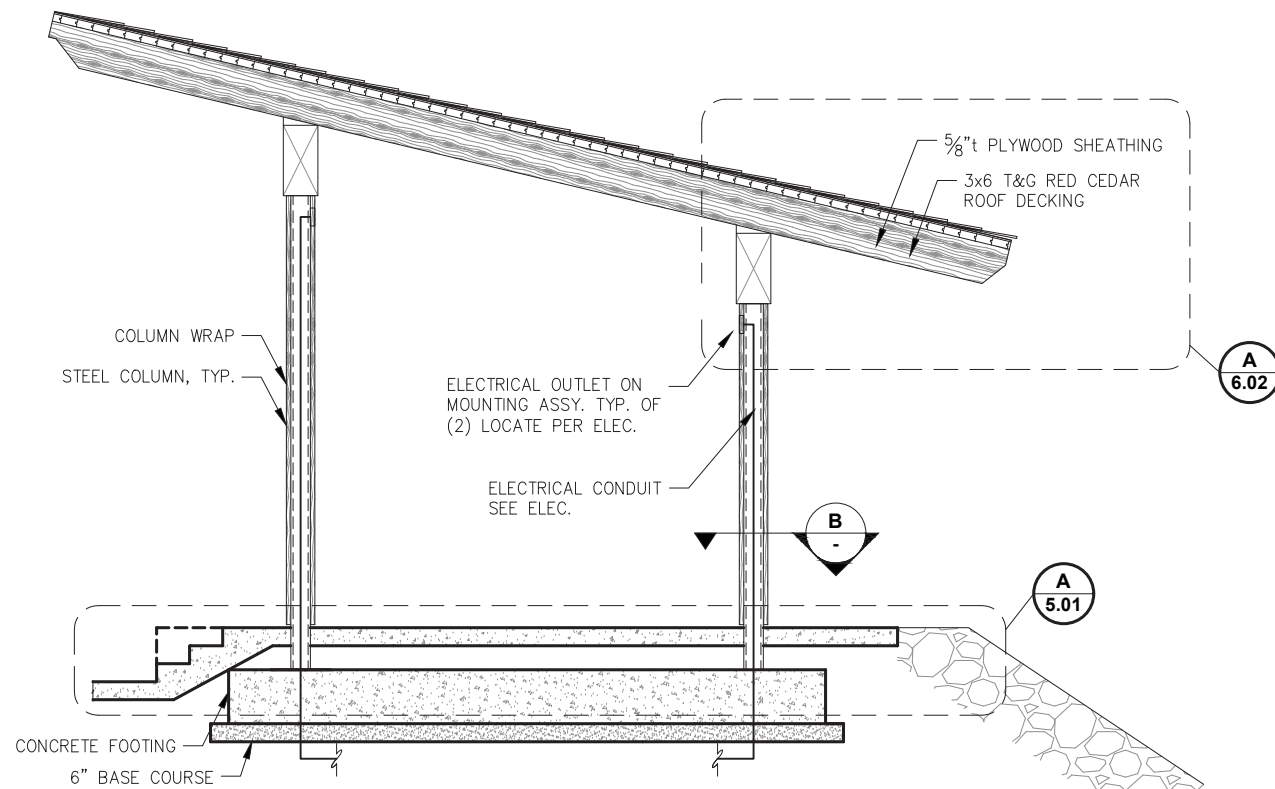
**5.01**  
SHEET 25 OF 28



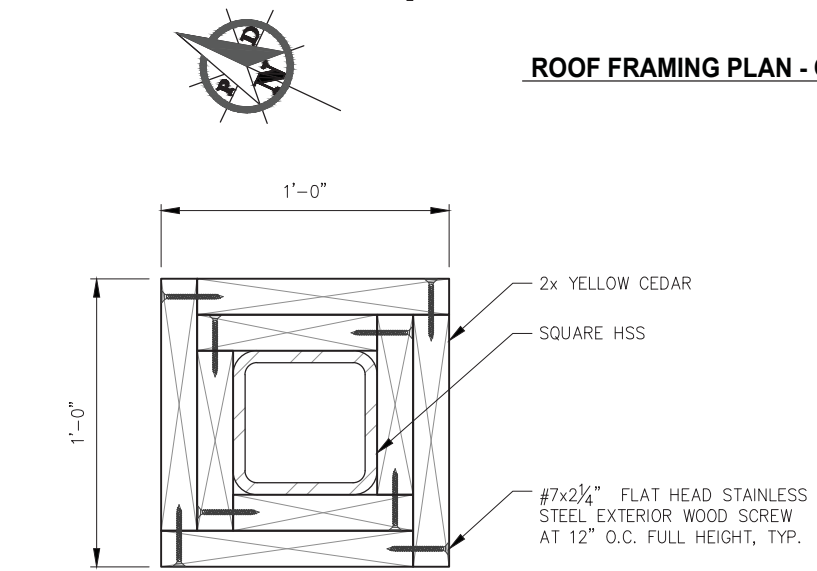
**FOUNDATION PLAN - COVERED SHELTER**



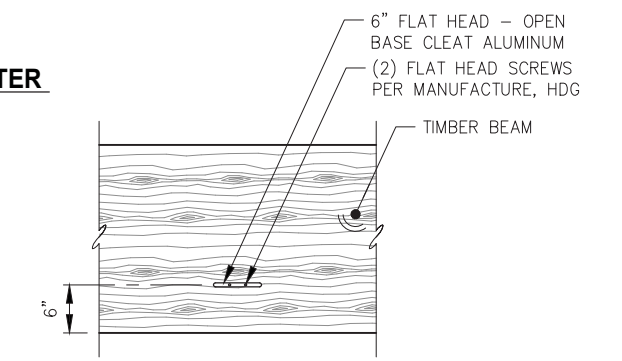
**ROOF FRAMING PLAN - COVERED SHELTER**



**SHELTER ELEVATION - COVERED SHELTER**



**DECORATIVE COLUMN WRAP SECTION**



**CANVAS CLEAT CONNECTION**  
\*CENTER CLEATS ABOVE CONCRETE EMBEDS  
SPACING FOR EMBEDS SHOWN ON SHEET 6.01

- NOTES:**
- EDGE NAIL ALL ROOF SHEATHING @ 6" O.C., FIELD NAIL @ 12" O.C. w/ 10d HOT-DIP GALVANIZED COMMON NAILS.
  - NAIL ALL TONGUE AND GROOVE ROOF DECKING PER THE MANUFACTURERS RECOMMENDATIONS.
  - ALL FRAMING NAILS TO BE 16d HOT-DIP GALVANIZED COMMON NAILS.

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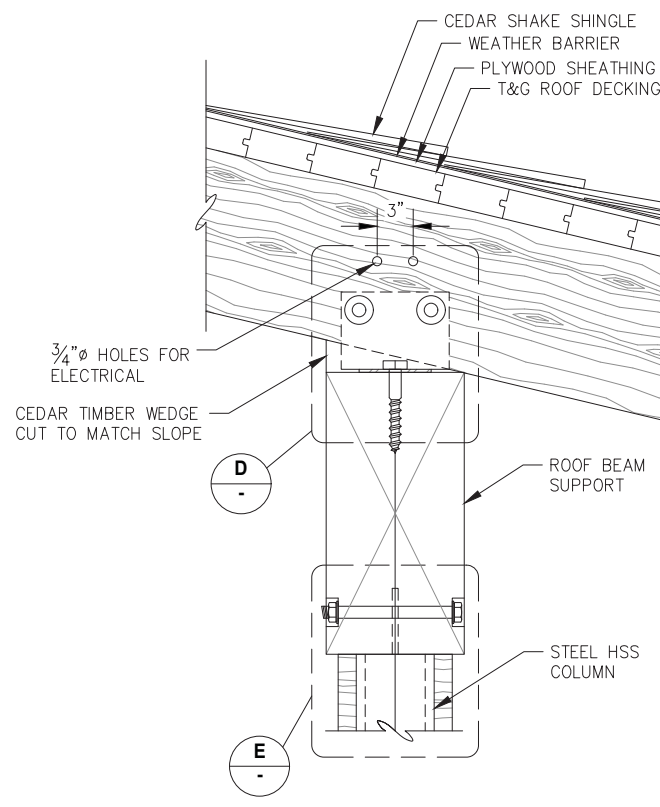
DATE: JULY 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

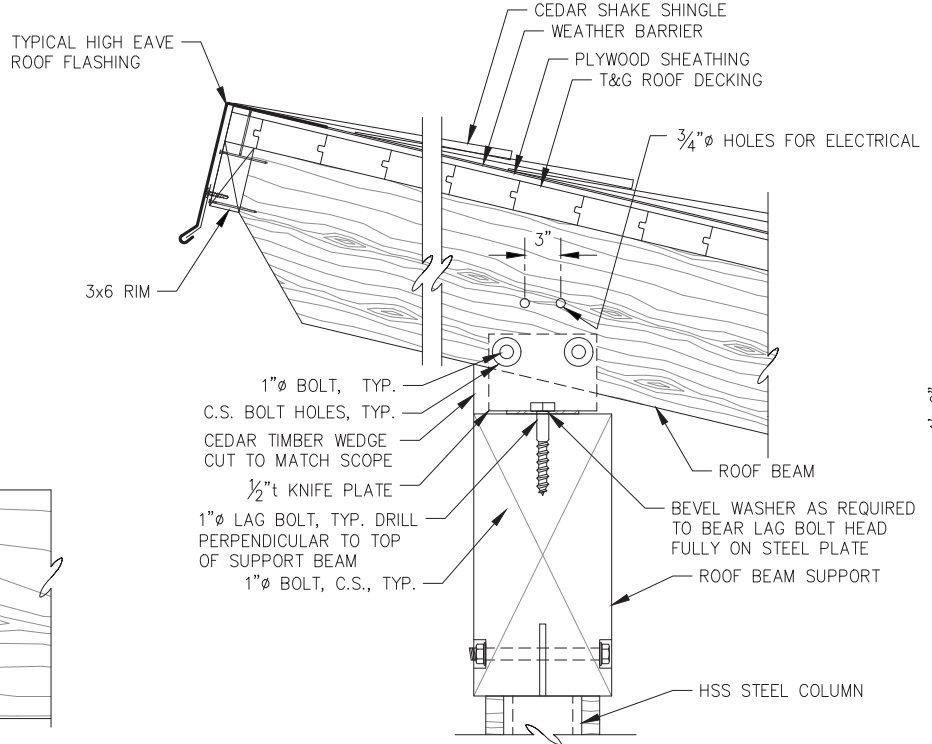
SHEET TITLE: **COVERED SHELTER PLANS AND ELEVATION**

PND PROJECT NO.: 172032

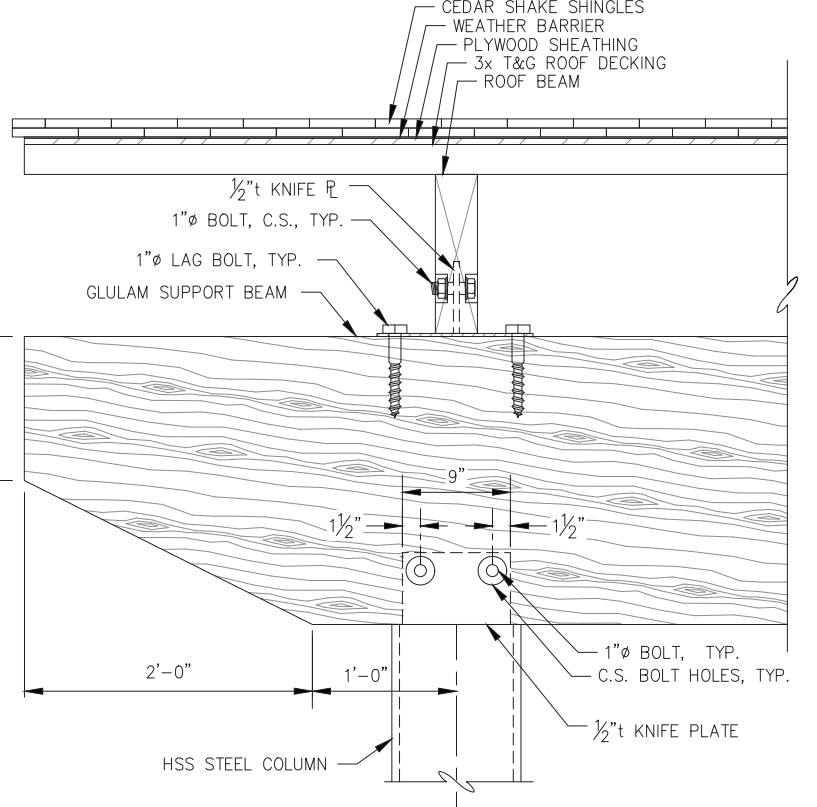
**6.01**  
SHEET 26 OF 28



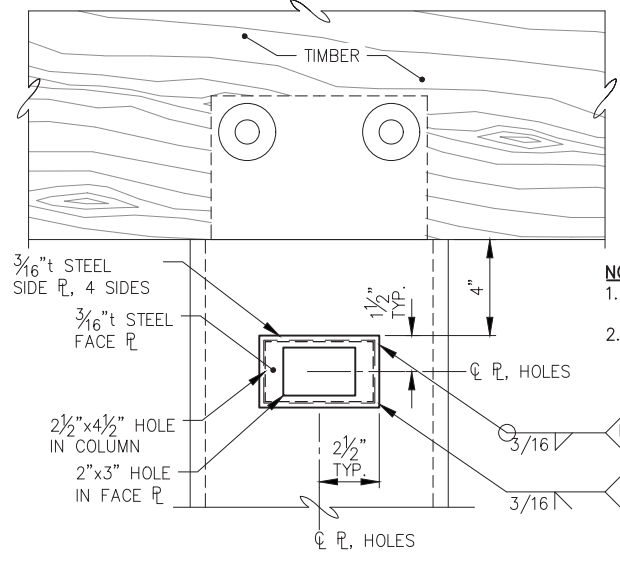
**A**  
7.01  
**TYPICAL LOW EAVE SECTION  
COVERED SHELTER**



**B**  
7.01  
**TYPICAL HIGH EAVE SECTION  
COVERED SHELTER**



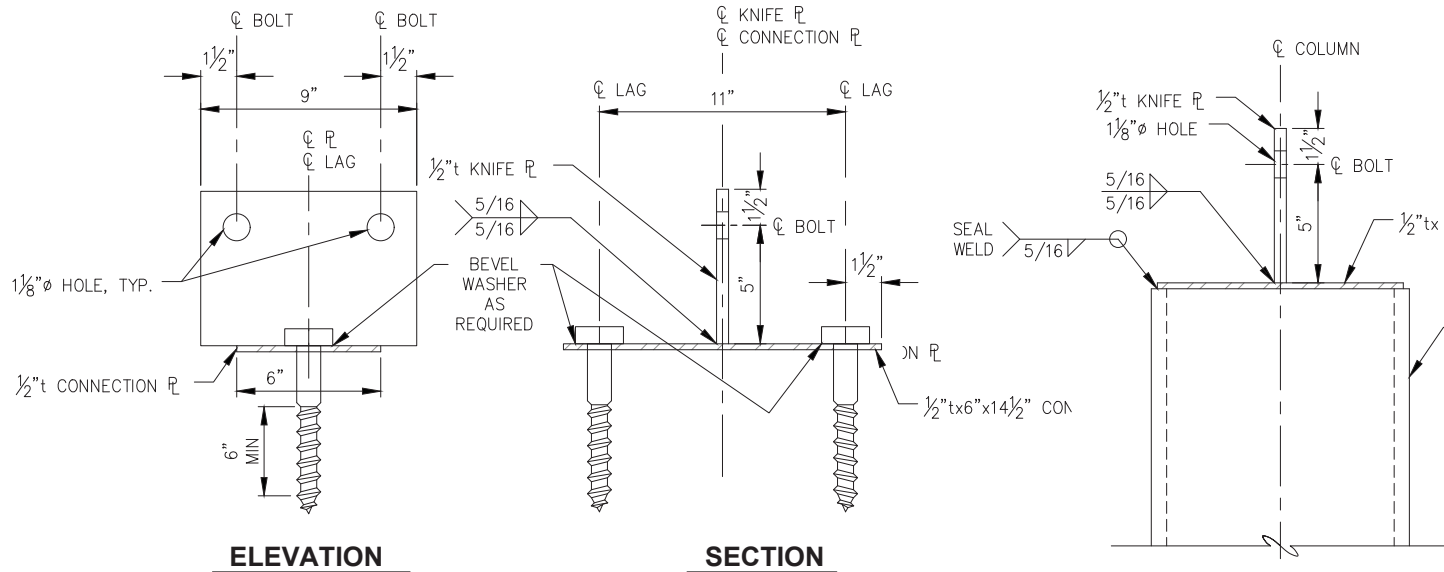
**C**  
7.01  
**TYPICAL RAKE EAVE SECTION  
COVERED SHELTER**



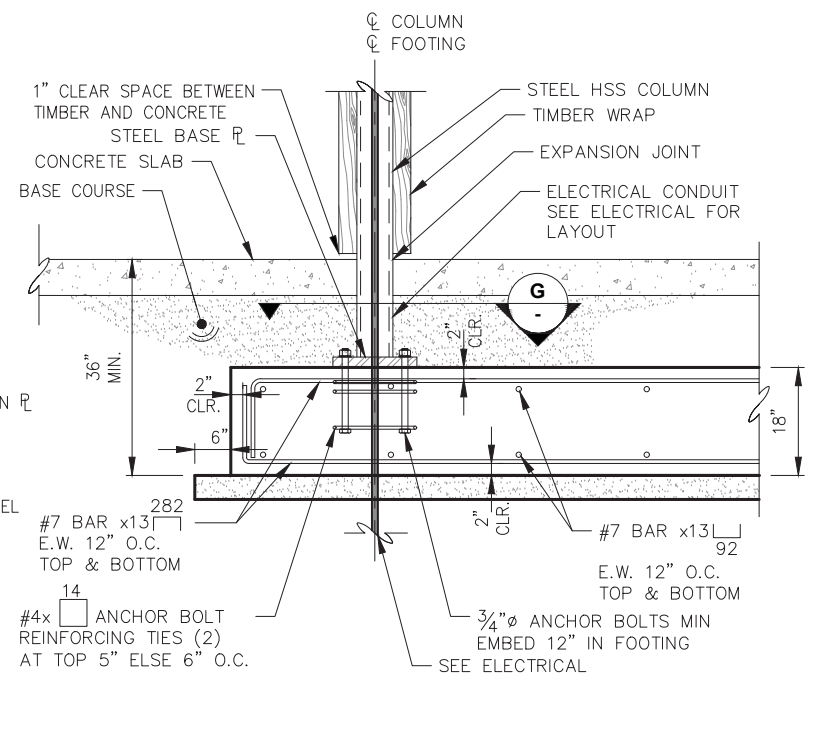
**D**  
-  
**CURVED GLULAM  
CONNECTION PLATE DETAIL**

**NOTES:**  
1. TYP. OF (2) LOCATIONS, LOCATE PER ELEC.  
2. ASSY. SHALL PROTRUDE 1/2" MAX. FROM FACE OF COLUMN.

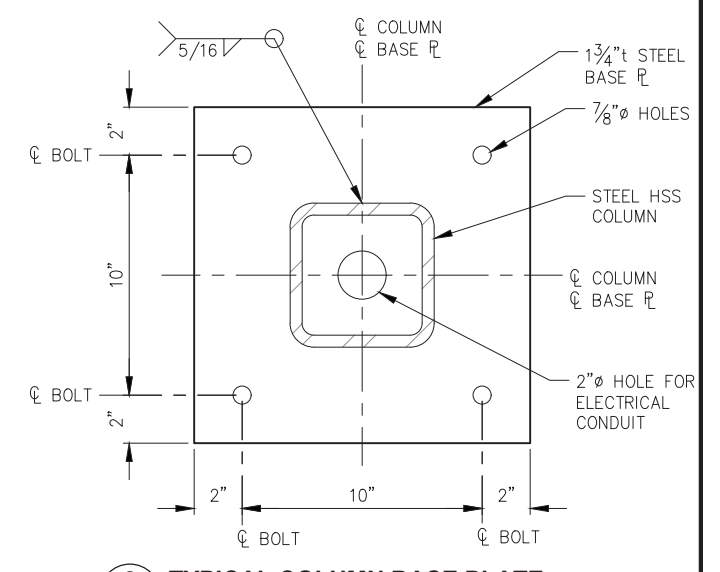
**ELECTRIC OUTLET MOUNTING ASSY.**



**E**  
-  
**GLULAM SUPPORT BEAM  
CONNECTION DETAIL**



**F**  
7.01  
**TYPICAL FOOTING DETAIL  
COVERED SHELTER**



**G**  
-  
**TYPICAL COLUMN BASE PLATE  
COVERED SHELTER**

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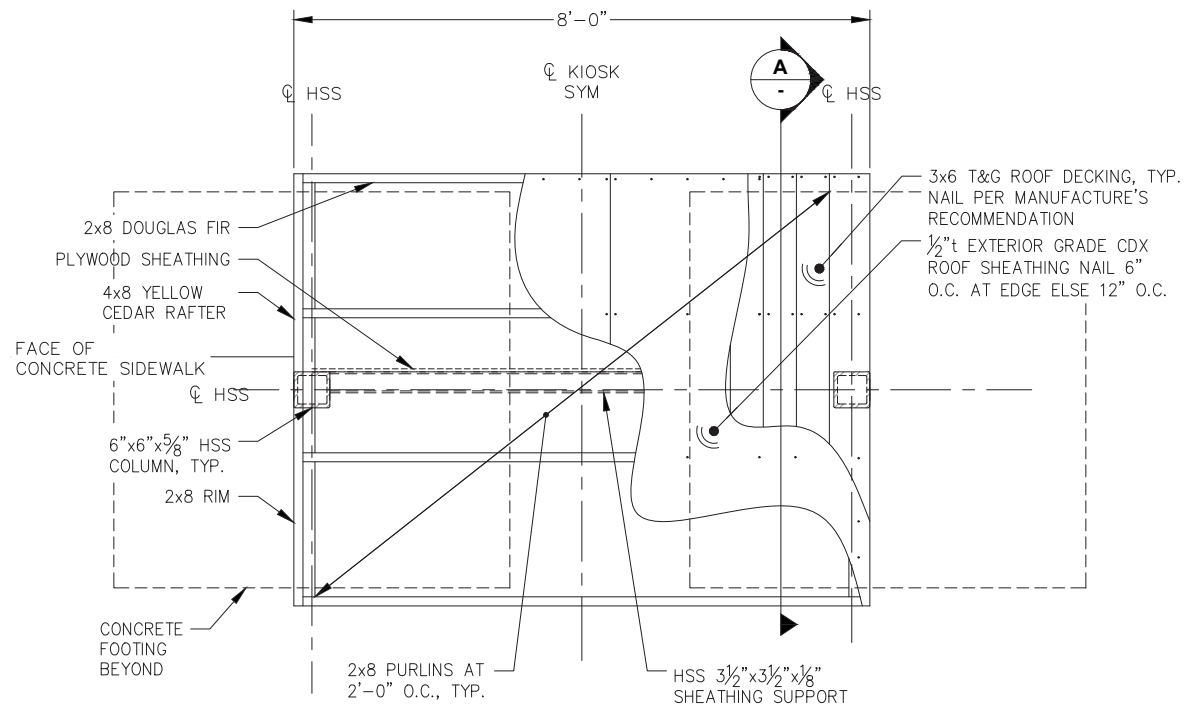
DATE: JULY 20, 2018

**HAINES BOROUGH  
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BOAT LAUNCH IMPROVEMENTS**

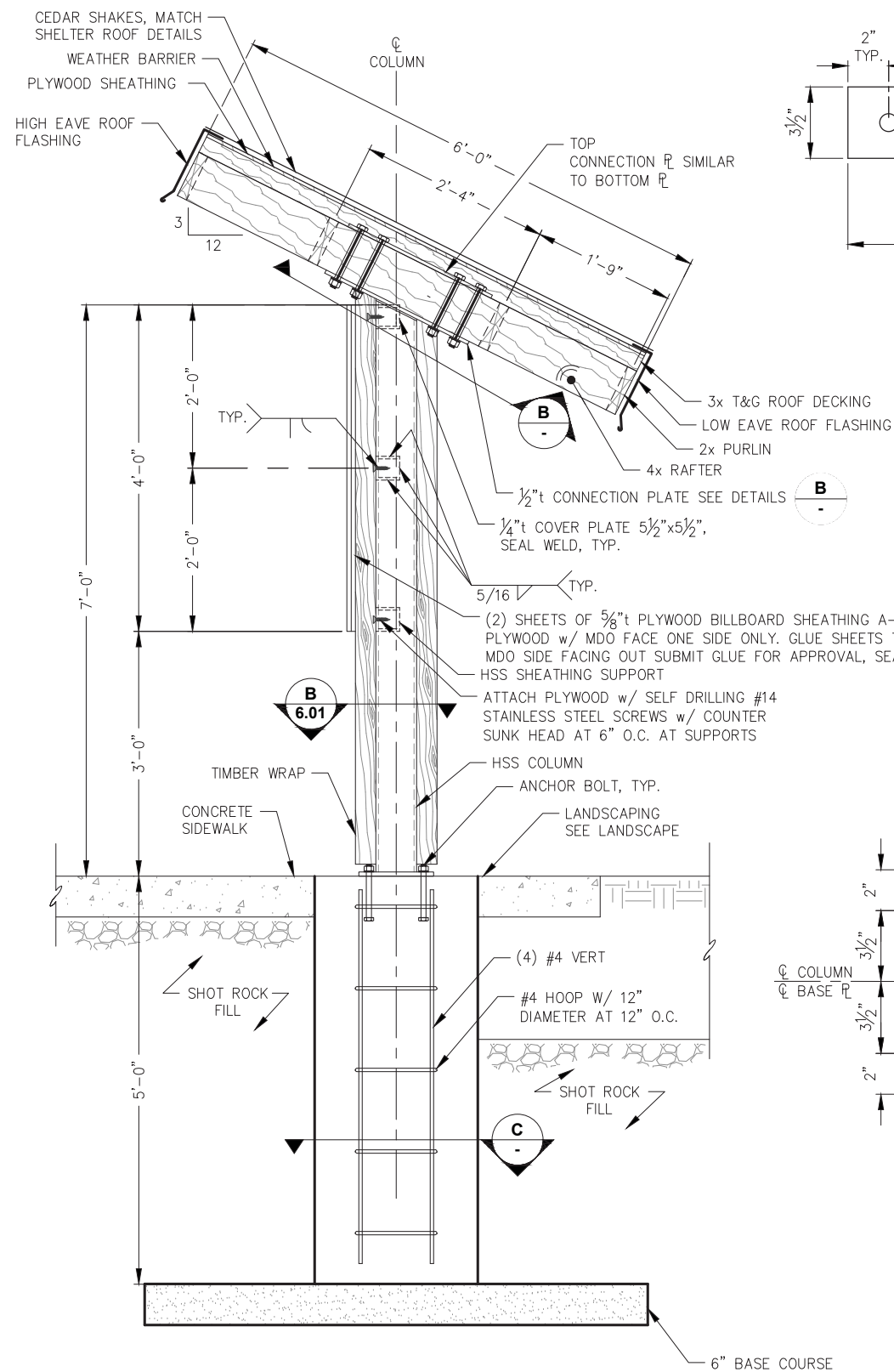
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**COVERED SHELTER DETAILS**

PND PROJECT NO.: 172032

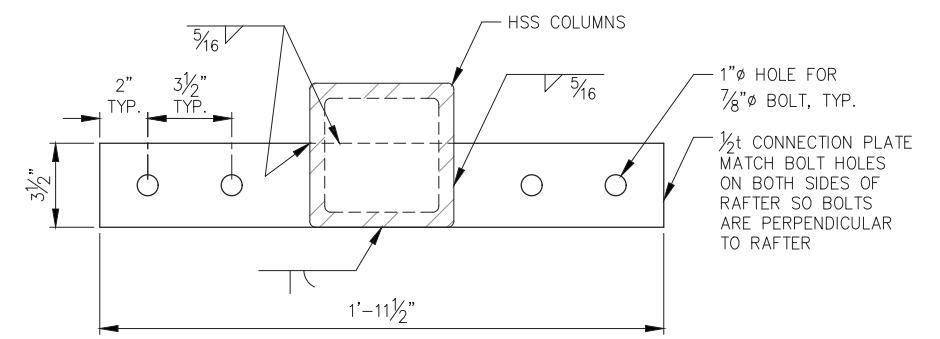
**6.02**  
SHEET  
27 OF 28



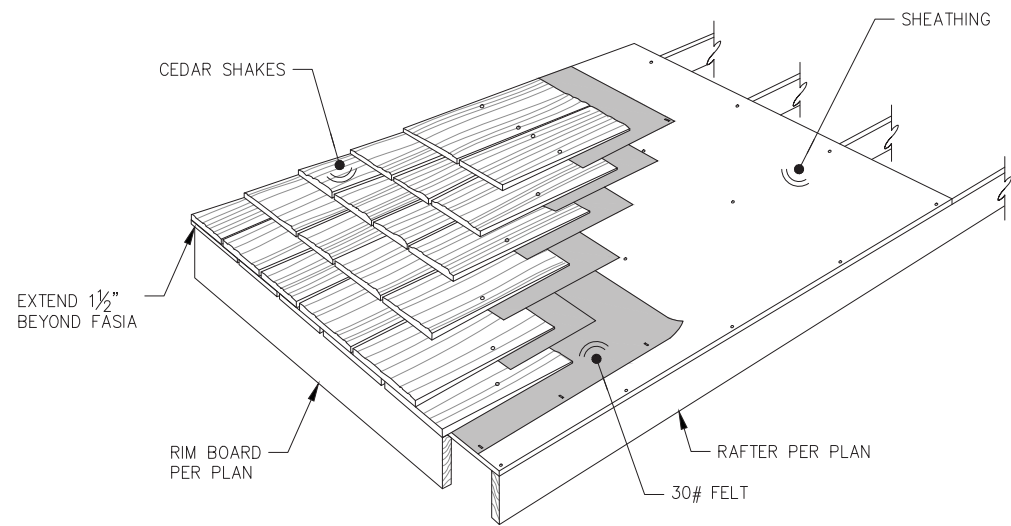
**COVERED KIOSK SECTION FRAMING PLAN**



**A TYPICAL HIGH EAVE SECTION COVERED KIOSK**

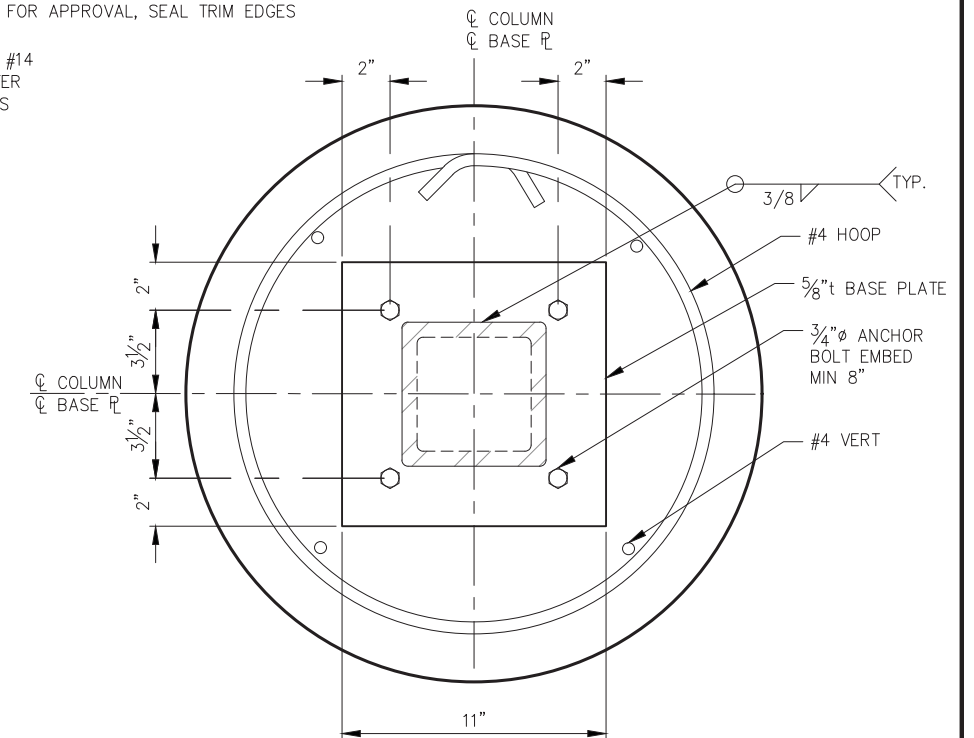


**B TYPICAL TIMBER FRAME CONNECTION PLATE**



**TYPICAL CEDAR SHAKE SHINGLE**

\*RAFTERS, RIM BOARD AND SHEATHING SHOWN FOR REFERENCE ONLY. SEE FRAMING FOR SIZE AND SPACING



**C POLE FOUNDATION DETAIL**

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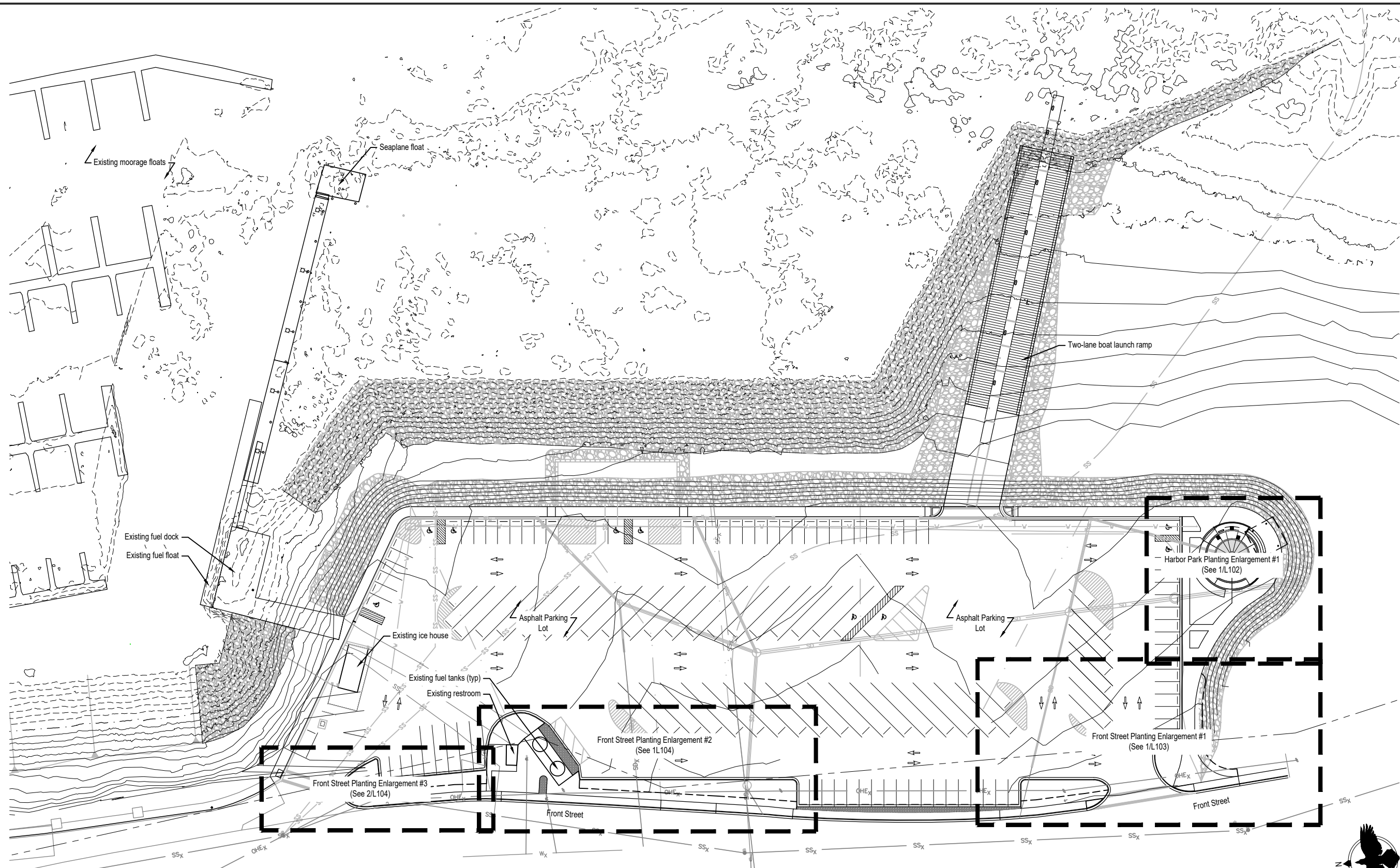
DATE: JULY 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **COVERED KIOSK PLANS AND DETAILS**

PND PROJECT NO.: 172032

**6.03**  
SHEET 28 OF 28



1 Key Plan  
L100 SCALE: 1" = 40'-0" @22x34



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SCALE:

DATE: JULY 20, 2018

**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:

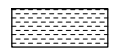
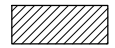
Key Plan

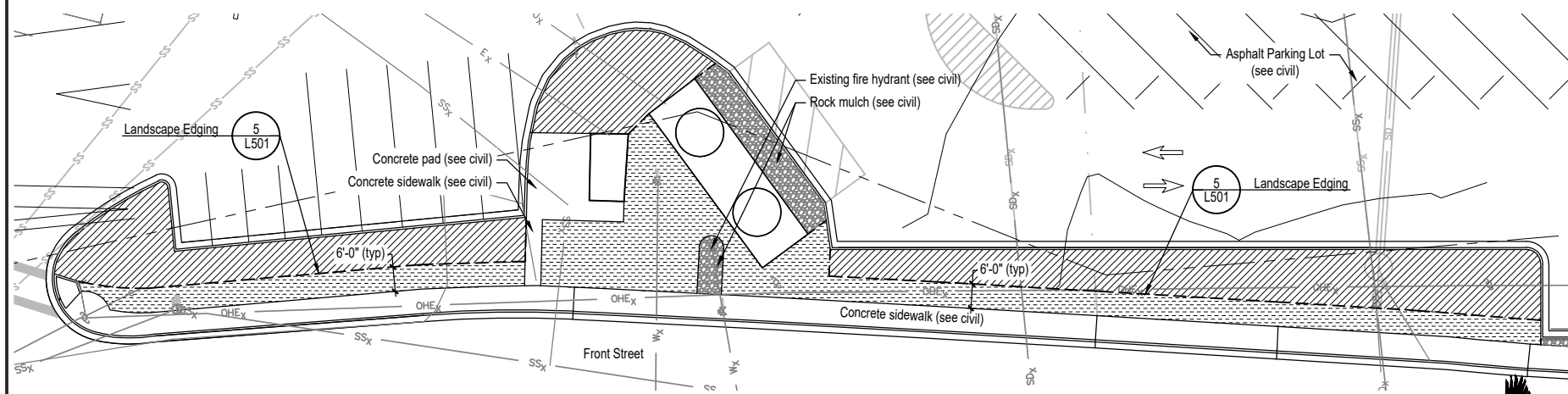
PND PROJECT NO.: 172032

**L100**

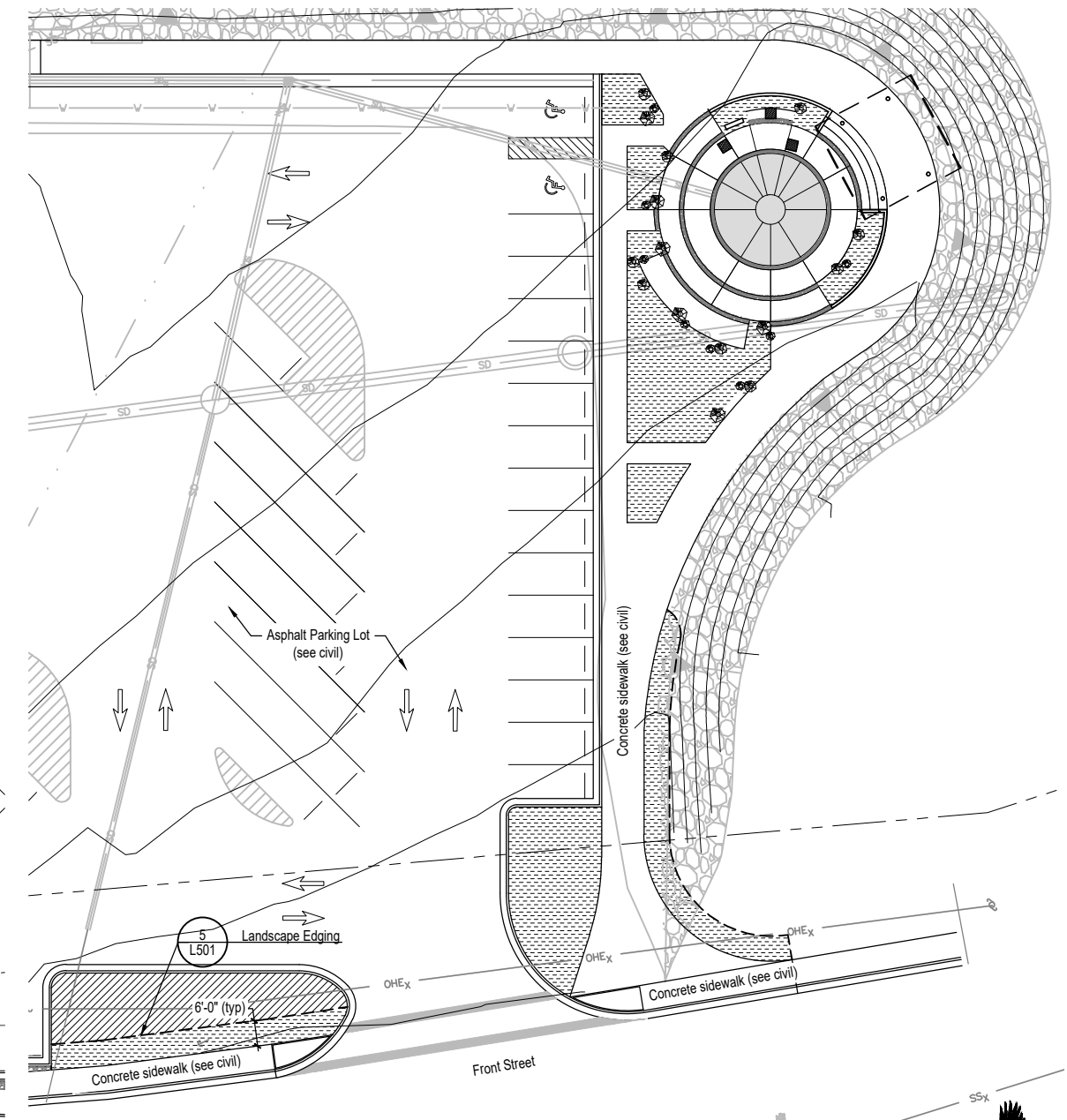
SHEET  
OF 28

# Soils Legend

-  18" depth Planting Soil- Excavate as necessary to allow placement of 18" depth of planting soil (as measured after compaction) and installation of 2" depth mulch to meet finished grades.
-  4" depth Planting Soil- Excavate as necessary to allow placement of 4" depth of planting soil (as measured after compaction).



**2** Front Street Soils Plan Enlargement  
 L101 SCALE: 1" = 20'-0" @22x34



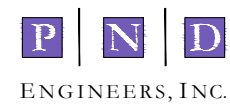
**1** Harbor Plaza & Front Street Soils Plan Enlargement  
 L101 SCALE: 1" = 20'-0" @22x34



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DESIGN: LP/CM CHECKED: CM  
 DRAWN: LP APPROVED: \_\_\_\_\_

SCALE:

DATE: JULY 20, 2018

**HAINES BOROUGH  
 PORTAGE COVE HARBOR  
 BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:

**Soils Plan**

PND PROJECT NO.: 172032

**L101**  
 SHEET OF 28

# Planting Schedule

## Deciduous Trees- See Detail:

1 L501 Deciduous Tree Planting - Staked

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
02	+	AP	Acer platanoides 'Schwedleri'	Schwedleri Norway maple	2" CAL	B&B	Single stem
04	+	AC	Amelanchier canadensis	Shadblow serviceberry	2" CAL	B&B	Multi-stemmed
12	+	MA	Malus 'Prairiefire'	Prairie Fire flowering crabapple	2" CAL	B&B	Single stem - low branches min. 6' ht.
03	+	PC	Populus tremuloides	Quaking aspen	2" CAL	B&B	Multi-stemmed
03	+	PS	Prunus cerasus	Haines cherry	2" CAL	B&B	Single stem

## Evergreen Trees- See Detail:

2 L501 Evergreen Tree Planting - Staked

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
05	+	PS	Picea sitchensis	Sitka spruce	6' HT	B&B	
02	+	TH	Tsuga heterophylla	Western hemlock	6' HT	B&B	

## Shrubs - See Detail:

3 L501 Shrub Planting

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
09	+	AM	Aronia melanocarpa var. elata	Black chokeberry	#5 24" MIN	CG	
48	⊗	CS	Cornus sericea 'Farrow'	Arctic Fire dogwood	#5 24" MIN	CG	
112	+	RSA	Rosa rugosa	Rugosa rose	#2 18" MIN	CG	
95	+	SJM	Spiraea japonica 'Magic Carpet'	Magic Carpet spirea	#2 18" MIN	CG	
04	+	SJ	Spiraea japonica 'Shirobana'	Shirobana spirea	#5 24" MIN	CG	
74	+	VT	Viburnum trilobum 'Compactum'	Compact highbush cranberry	#5 24" MIN	CG	

## Perennials- See Detail:

4 L501 Perennial Planting

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
63	AMO	AMO	Alchemilla mollis	Lady's mantle	#1	CG	18" OC Triangular spacing
163	AD	AD	Astilbe 'Deutschland'	False spirea astilbe	#1	CG	18" OC Triangular spacing
708	AF	AF	Astilbe 'Fanal'	Fanal astilbe	#1	CG	18" OC Triangular spacing
46	IS	IS	Iris setosa	Wild Iris	#1	CG	18" OC Triangular spacing
		AD	Astilbe 'Deutschland'	False spirea astilbe	#1	CG	18" OC Triangular spacing
		AF	Astilbe 'Fanal'	Fanal astilbe	#1	CG	18" OC Triangular spacing

## Grasses- See Detail:

4 L501 Perennial Planting

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
51	+	CAK	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#1	CG	18" OC Triangular spacing

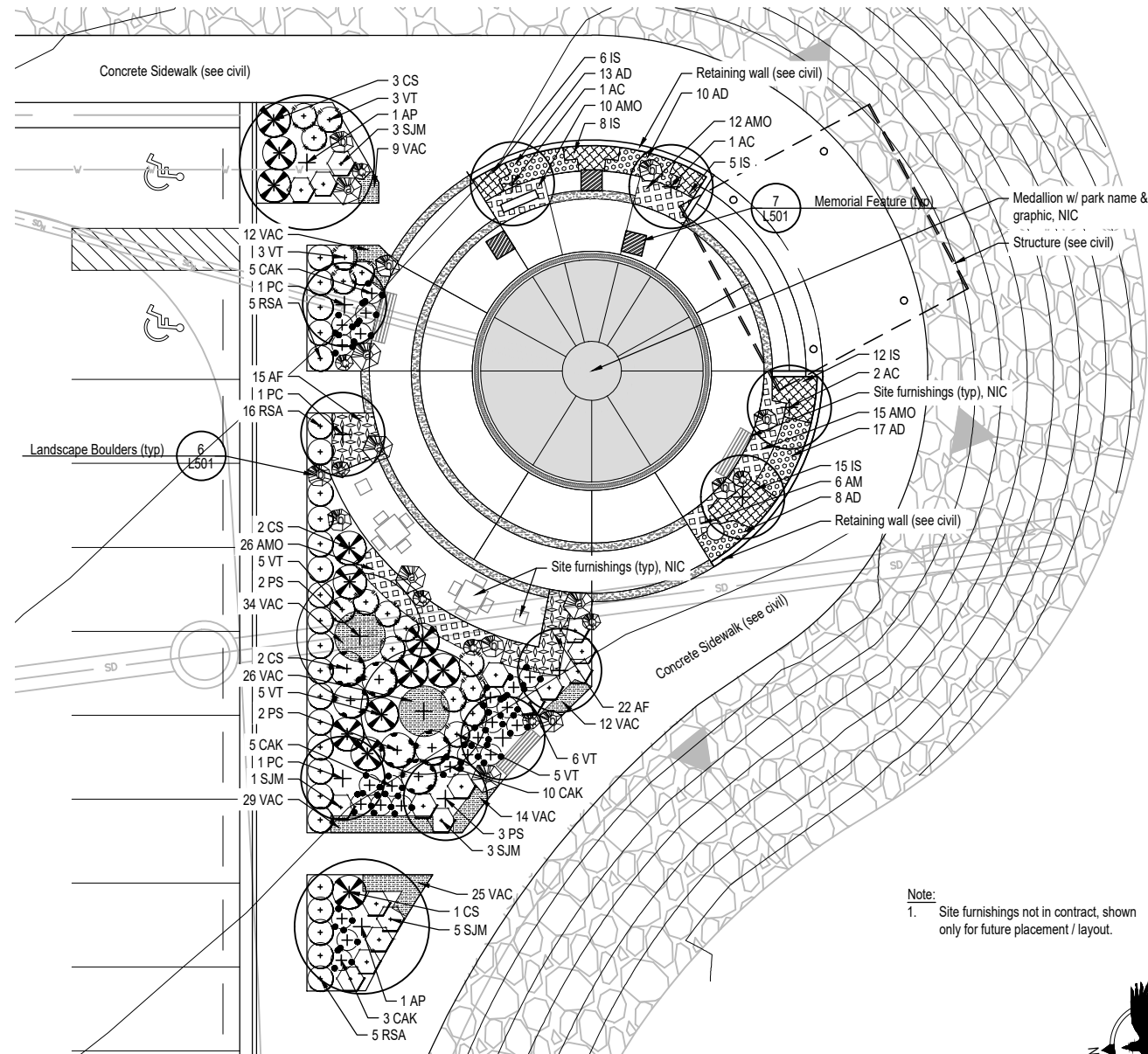
## Groundcovers- See Detail:

4 L501 Perennial Planting

Qty.	Symbol	Label	Latin Name	Common Name	Size	Furnished	Notes
161	VAC	VAC	Vaccinium vitis-idaea	Lingonberry	#1	CG	12" OC Triangular spacing

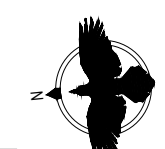
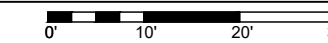
## Miscellaneous

- Type A Seed Mix
- Rock Mulch (see civil)



## 1 L102 Harbor Plaza Planting Enlargement

SCALE: 1" = 10'-0" @22x34



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ENGINEERS, INC.

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DATE: JULY 20, 2018

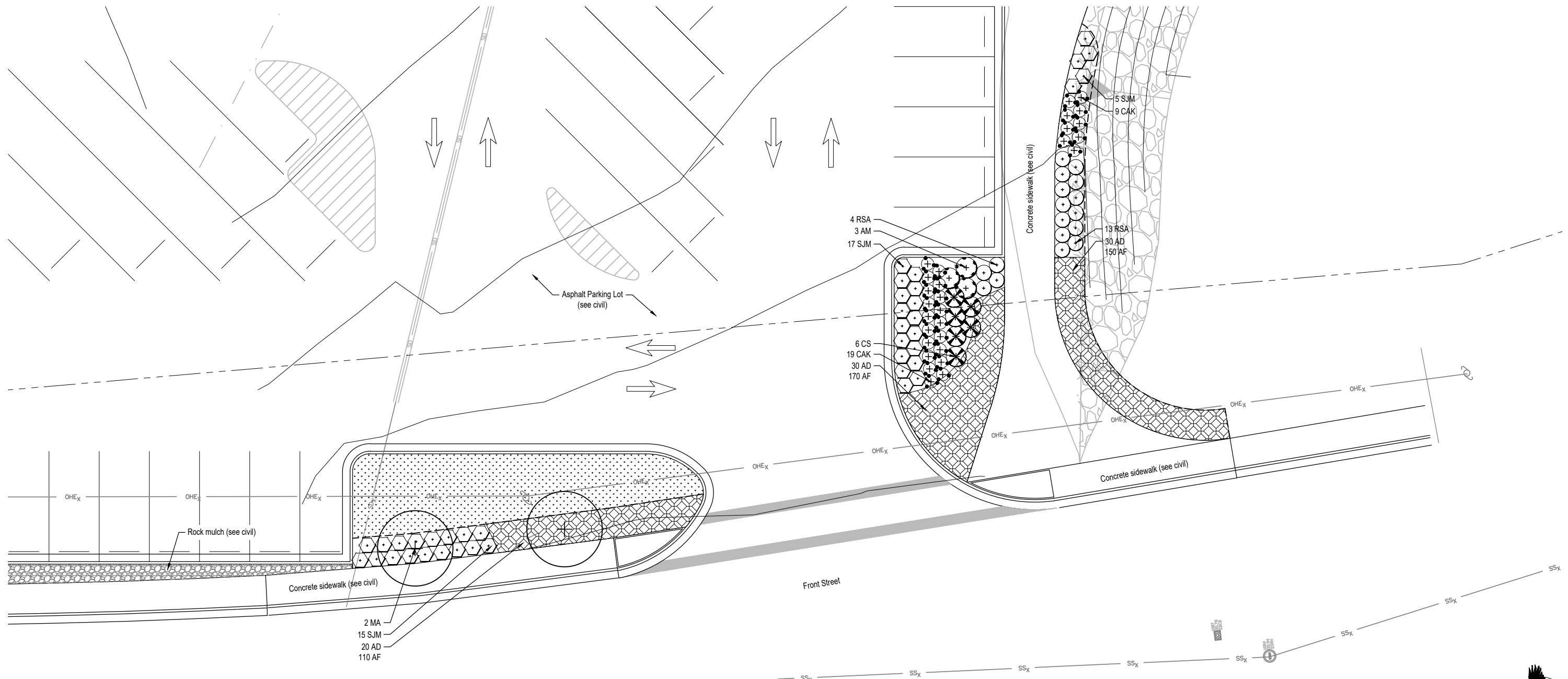
**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**Planting Plan**

PND PROJECT NO.: 172032

**L102**  
SHEET OF 28





1 Front Street Planting Enlargement #1  
 L103 SCALE: 1" = 10'-0" @22x34



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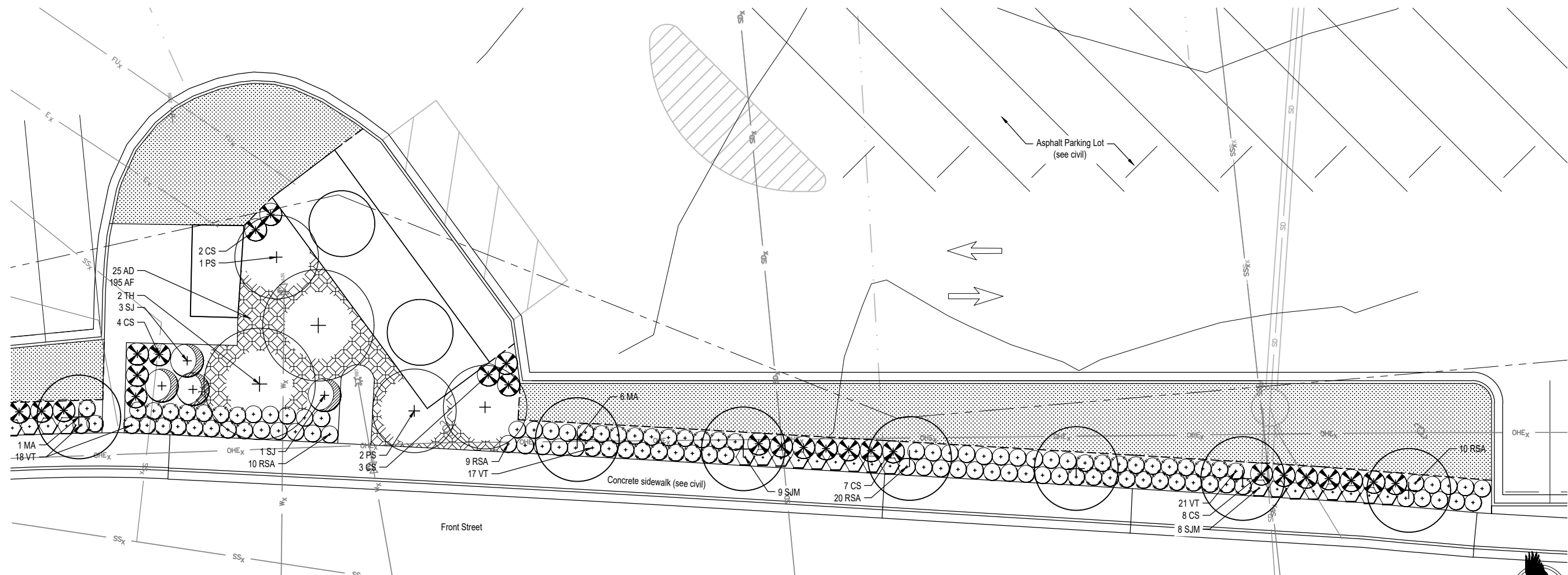
DATE: JULY 20, 2018

**HAINES BOROUGH  
 PORTAGE COVE HARBOR  
 BOAT LAUNCH IMPROVEMENTS**

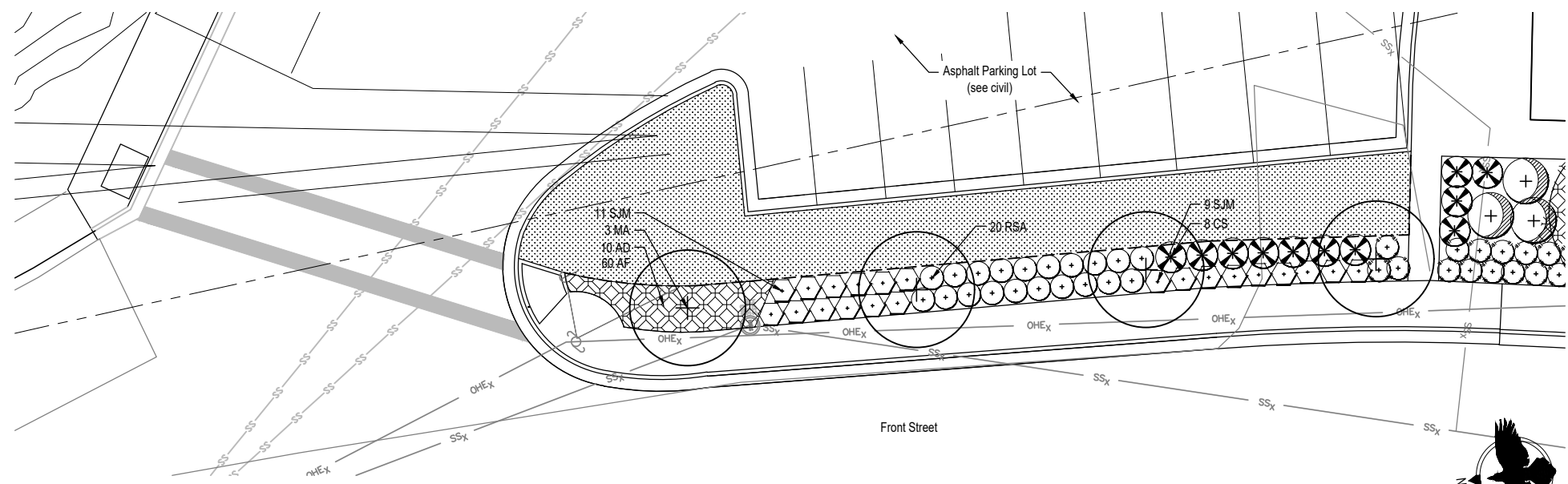
SHEET TITLE:  
**Planting Plan**

PND PROJECT NO.: 172032

**L103**  
 SHEET OF 28



1 Front Street Planting Enlargement #2  
L104 SCALE: 1" = 10'-0" @22x34



2 Front Street Planting Enlargement #3  
L104 SCALE: 1" = 10'-0" @22x34

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SCALE: \_\_\_\_\_

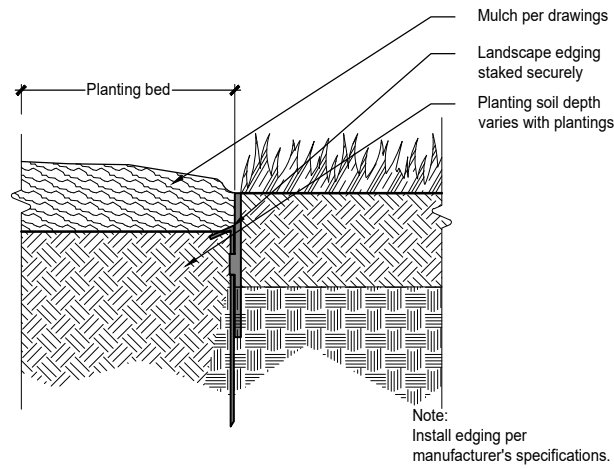
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**HAINES BOROUGH  
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BOAT LAUNCH IMPROVEMENTS**

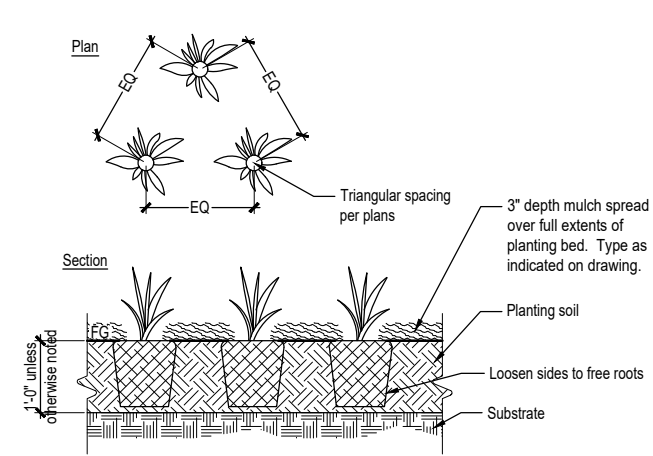
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**Planting Plan**

PND PROJECT NO.: 172032

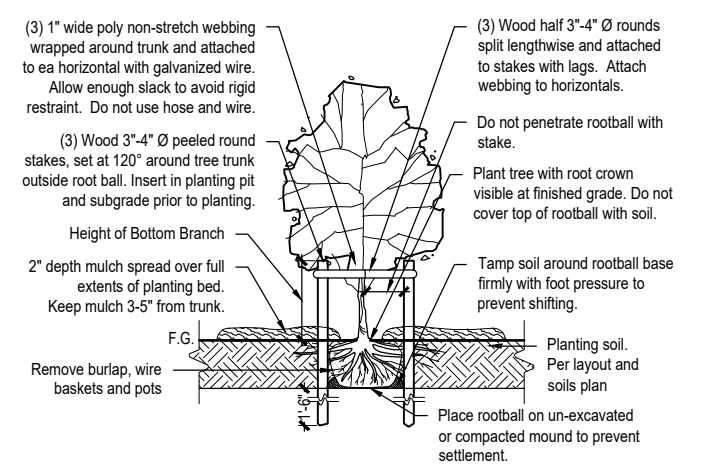
**L104**  
SHEET OF 28



**5 Landscape Edging**  
SCALE: NTS @22x34



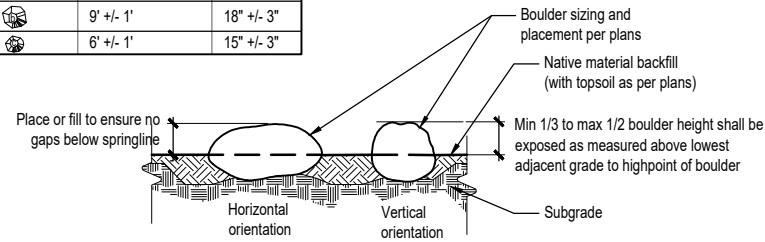
**4 Perennial Planting**  
SCALE: NTS @22x34



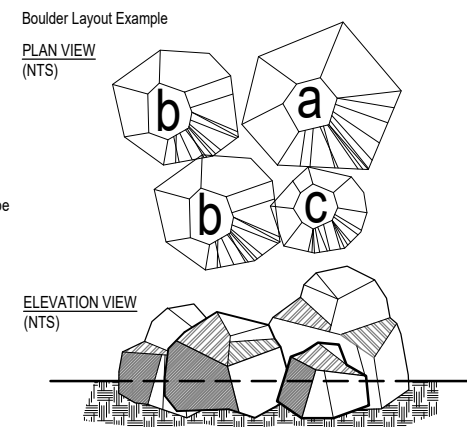
**1 Deciduous Tree Planting - Staked**  
SCALE: NTS @22x34

**Landscape Boulder Sizing Schedule**

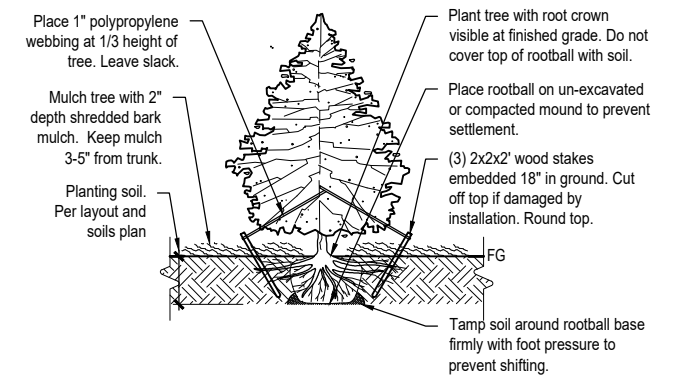
Boulder Symbol	Circumference	Height
	12" +/- 1"	21" +/- 3"
	9" +/- 1"	18" +/- 3"
	6" +/- 1"	15" +/- 3"



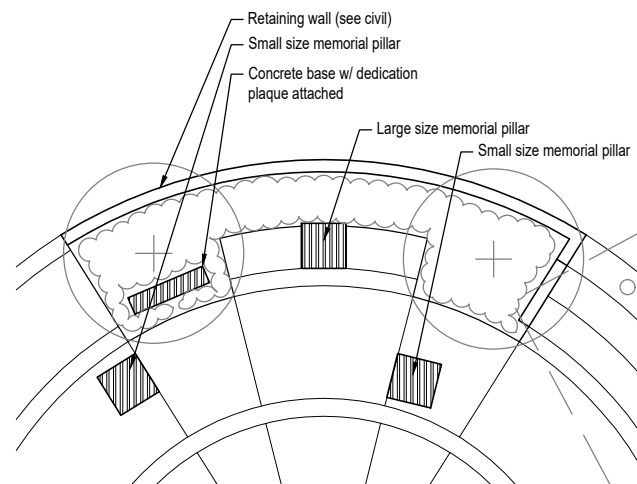
- Notes:
1. Location and orientation of placed rocks shall be field approved by owner's representative.
  2. Boulders should be no higher than 30" above any adjacent grade.
  3. Circumference refers to the largest circumference of the boulder.
  4. Height is measured perpendicular to axis used for determining circumference.



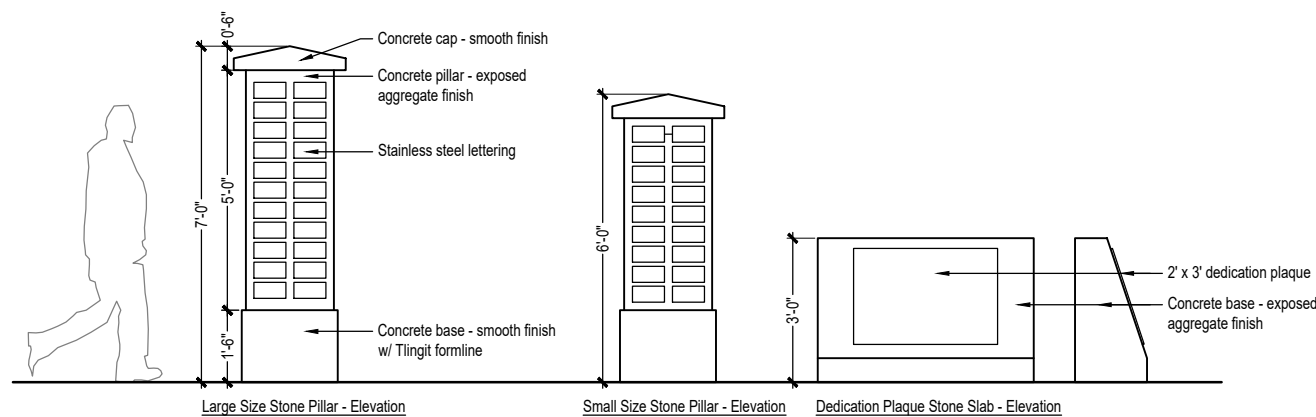
**6 Landscape Boulders**  
SCALE: NTS @22x34



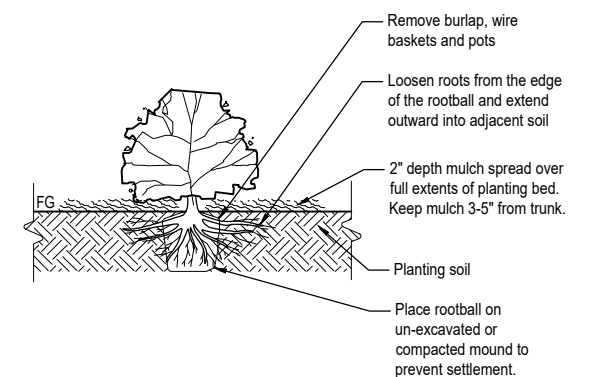
**2 Evergreen Tree Planting - Staked**  
SCALE: NTS @22x34



**8 Memorial Feature Enlargement**  
SCALE: 3/16" = 1'-0" @22x34

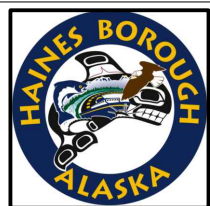


**7 Memorial Feature**  
SCALE: 1/2" = 1'-0" @22x34



**3 Shrub Planting**  
SCALE: NTS @22x34

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**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**Landscape Details**

PND PROJECT NO.: 172032












**L501**  
SHEET OF 28

HAINES BOROUGH  
**PORTAGE COVE HARBOR**  
**BOAT LAUNCH IMPROVEMENTS**

JULY 2018

Sheet List Table	
Sheet Number	Sheet Title
E1	TITLE, LEGEND, INDEX & GENERAL NOTES
E2	UPLANDS SITE PLAN - ELECTRICAL
E3	RAMP PLAN AND PROFILE - ELECTRICAL
E4	LIGHTING SCHEMATICS
E5	LUMINAIRE SCHEDULE
E6	UPLANDS LIGHT POLE DETAILS
E7	UPLANDS LIGHT POLE DETAILS, HANDHOLE & TRENCH DETAIL
E8	UPLANDS ELECTRICAL RACK ELEVATION
E9	COVERED SHELTER PLANS AND ELEVATION - ELECTRICAL
E10	CABLE ROUTING DETAILS
E11	FLOAT LIGHT POLE DETAIL

**LEGEND**

	CIRCUIT BREAKER (AMPS/POLES)		LIGHT POLE
C/B	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
CIVIL	CIVIL PROJECT DRAWINGS	N.I.C.	NOT IN CONTRACT
	CONTACTOR	NM	NON METALLIC
	DISCONNECT		PHOTO ELECTRIC CELL
GRS	GALVANIZED RIGID STEEL	REC	RECEPTACLE
GND	GROUND		RECEPTACLE, 120V, 20A INDUSTRIAL SPEC GRADE, WHITE WITH STAINLESS COVER PLATE
	GROUND BUSS	STRUCTURAL	STRUCTURAL PROJECT DRAWING SPECIFICATIONS
GFI	GROUND FAULT INTERRUPTER	UNISTRUT	SUPPORT CHANNEL UNISTRUT BRAND OR EQUAL
HT	HEAT TRACE	S	SWITCH, 120V, 20A INDUSTRIAL SPEC GRADE, WHITE WITH STAINLESS COVER PLATE
	HEAVY DUTY DISCONNECT (AMPS/POLES AS SHOWN)	(TYP)	TYPICAL
	HOME RUN	UHMW	ULTRA HIGH DENSITY MOLECULAR WEIGHT
LTG	LIGHTING		UTILITY METER
	LIGHTING CONTACTOR		

NOTES:

- PERFORM ALL WORK PER THE 2017 NATIONAL ELECTRICAL CODE (NEC) AND OTHER APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND STANDARDS. PROVIDE EQUIPMENT AND AN INSTALLATION THAT COMPLIES WITH ARTICLE 555 OF THE NEC.
- ALL CONDUIT SHALL BE SCHEDULE 80 PVC, WITH GRS ELBOWS.
- PROVIDE MOUNTING EQUIPMENT AND HARDWARE AS REQUIRED TO MOUNT ELECTRICAL EQUIPMENT. SIZE MOUNTING BOLTS, BRACKETS, HARDWARE, ETC. FOR A SAFETY FACTOR OF 5 MINIMUM. ALL EQUIPMENT AND MATERIALS SHALL NOT MOVE WHEN PULLED OR PUSHED BY HAND (EXCEPT CABLES AND FLEXIBLE CONDUIT). SECURE ALL CONDUIT WITHIN 12 INCHES OF END OF CONDUIT AND AS REQUIRED PER NEC.
- FIELD TREAT ALL HOT DIPPED GALVANIZED MATERIALS THAT ARE CUT, DRILLED, SCRATCHED OR DAMAGED. SEE CIVIL FOR FIELD TREATMENT.
- ALL CONDUCTORS SHALL BE COPPER, ALL INSULATION SHALL BE 600V RATED, TYPE XHHW FOR CONDUCTORS NOT IN A CABLE. ALL CABLES SHALL BE TYPE G-GC. G-GC CABLE DESCRIPTION DOES NOT INCLUDE GROUND CONDUCTOR. PROVIDE CODE COMPLIANT GROUND CONDUCTORS WITH G-GC CABLE. USE STAINLESS STEEL STRAPS TO SECURE CONDUIT. PROVIDE HEAT SHRINK OVER ALL CRIMP CONNECTIONS WHEN TERMINATING A CABLE. NO SPLICES IN ANY CABLES OR CONDUCTORS. PROTECT ALL CABLES FROM CHAFING AND "WALKING THROUGH THE FLOAT SYSTEM". PROVIDE CHAFE PROTECTION AROUND CABLES WHERE THEY ARE LIKELY TO RUB OR CHAFE AGAINST OTHER SURFACES.
- IF GALVANIZED THREADS ARE CHASED IN ORDER TO BE USABLE, TREAT CHASED THREADS WITH BRAKE CLEANER, THEN COAT WITH MARINE TRAILER WHEEL BEARING GREASE BEFORE APPLYING A STAINLESS STEEL WASHER AND NUT.
- USE 316 STAINLESS STEEL BOLTS, WASHERS, ETC. TO MOUNT ELECTRICAL EQUIPMENT AND STRUT CHANNEL. ALL FASTENERS AND OTHER EXPOSED HARDWARE SHALL BE 316 STAINLESS STEEL.
- SEAL ALL PENETRATIONS IN ELECTRICAL EQUIPMENT WITH UL LISTED HARDWARE FOR SUCH USE. USE RUBBER OR SILICONE WASHERS IN ADDITION TO STAINLESS STEEL WASHERS. DRILL 1/4" DRAIN HOLE IN BOTTOM OF ALL EQUIPMENT AND ENCLOSURES.
- USE 316 STAINLESS STEEL STRUT CHANNEL (UNISTRUT) TO SUPPORT CABLES, CONTACTORS, AND ALL OTHER ELECTRICAL EQUIPMENT. TRIM STRUT CHANNEL 1/4" SHORT OF EDGE OF EQUIPMENT AND POSTS. SAND END OF STRUT CHANNEL SMOOTH. MOUNT ALL PANELS TO GALVANIZED TUBES THAT ARE PART OF ELECTRICAL EQUIPMENT SUPPORTS. USE CABLE SUPPORTS THAT COMPLY WITH 555.13(4). USE CUSHION STRAPS WHEN SUPPORTING CABLE TO STRUT CHANNEL.
- ROUTE CABLES IN UTILIDOR TRENCH IN FLOAT. DO NOT EXCEED 8 TIMES CABLE DIAMETER FOR BENDING RADIUS. USE STAINLESS STEEL CABLE GRIP CONNECTORS FOR ALL CABLE WHERE IT TURNS TO FEED POLE IN SHORT TRENCH SECTION. ALSO PROVIDE CABLE GRIP WHERE IT LEAVES UTILIDOR AND AGAIN INSIDE POLE AS SHOWN.
- ALL CABLE TERMINATIONS AND ALL ELECTRICAL CONNECTIONS SHALL BE A MINIMUM OF 12 INCHES ABOVE THE FLOAT DECKING INCLUDING WIRING TERMINATIONS, RECEPTACLES, ETC.
- PROVIDE OXIDE INHIBITING COMPOUND ON ALL ELECTRICAL CONNECTIONS. BURNDY PENTROX TYPE A OR E AS REQUIRED.
- MINIMUM BENDING RADIUS FOR ALL CABLES IS 8 TIMES THE DIAMETER OF THE CABLE. PUT CHAFE PROTECTION AROUND CABLE WHERE IT IS LIKELY TO CHAFE.
- CABLE ROUTING AT ALL TRANSITIONS BETWEEN UPLANDS, CONCRETE TRANSITION, AND FLOAT SHALL BE INSTALLED SO THAT IT WILL NOT BE DAMAGED IN ALL LOCATIONS INCLUDING HINGED FLOAT CONNECTIONS.
- CABLE GRIPS ARE USED TO KEEP CABLES FROM BECOMING TIGHT DUE TO A CABLE "WALKING" THROUGH FLOAT WITH WAVE ACTION. THIS IS WHY SO MANY ARE SHOWN AND SO MUCH SLACK IS REQUIRED IN THE CABLE AS SHOWN.

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**MORRIS**  
ENGINEERING GROUP  
LLC

2375 Jordan Avenue #7, Juneau, AK 99801  
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DESIGN: <u>MGM</u>	CHECKED: <u>MGM</u>	SCALE:
DRAWN: <u>JRW</u>	APPROVED: <u>MGM</u>	

DATE: July 20, 2018

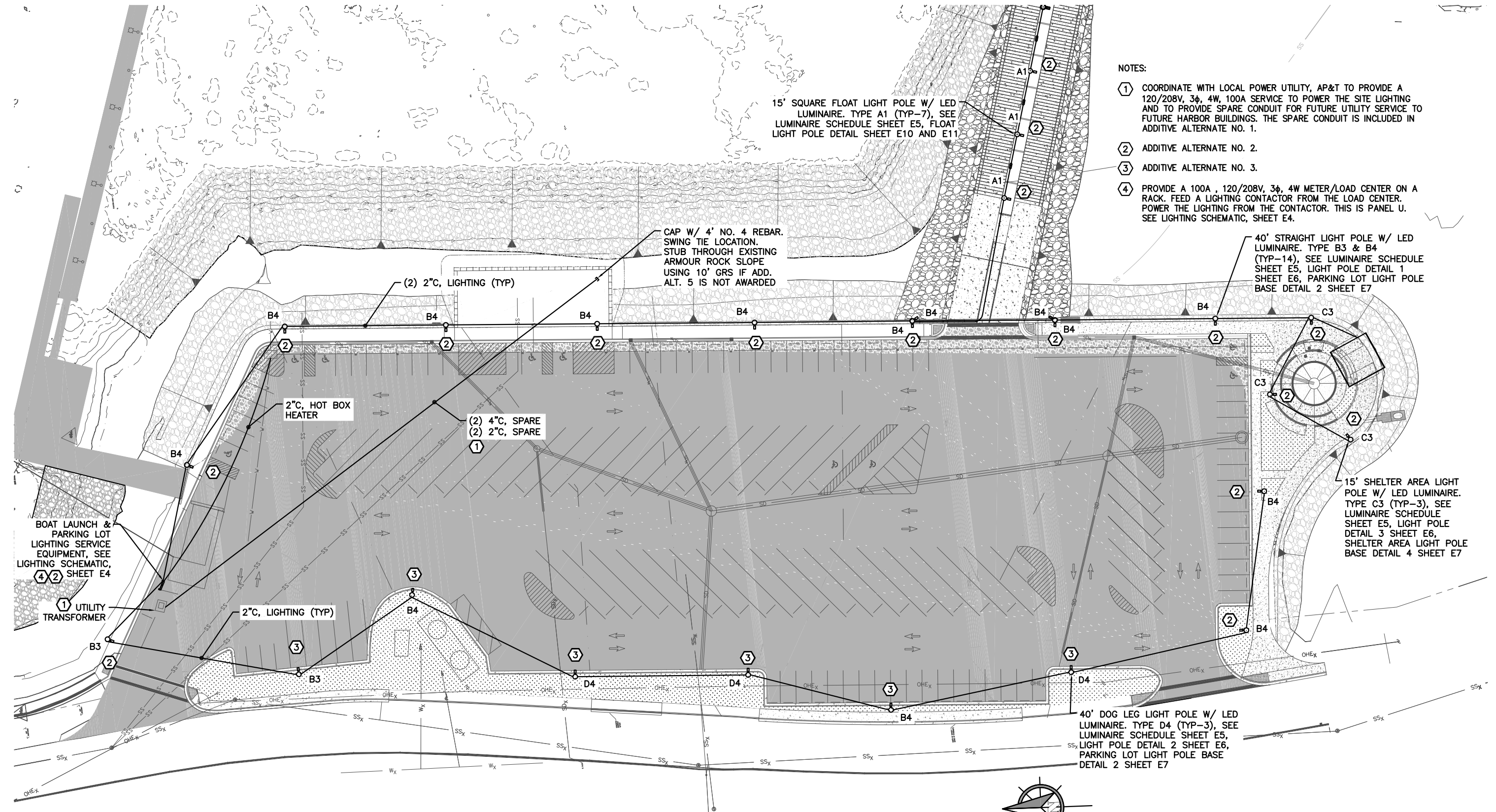
**HAINES BOROUGH**  
**PORTAGE COVE HARBOR**  
**BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**TITLE, LEGEND, INDEX & GENERAL NOTES**

PND PROJECT NO.: 172032

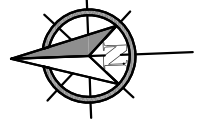
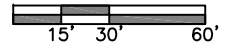
**E1**

SHEET OF 11



- NOTES:
- ① COORDINATE WITH LOCAL POWER UTILITY, AP&T TO PROVIDE A 120/208V, 3 $\phi$ , 4W, 100A SERVICE TO POWER THE SITE LIGHTING AND TO PROVIDE SPARE CONDUIT FOR FUTURE UTILITY SERVICE TO FUTURE HARBOR BUILDINGS. THE SPARE CONDUIT IS INCLUDED IN ADDITIVE ALTERNATE NO. 1.
  - ② ADDITIVE ALTERNATE NO. 2.
  - ③ ADDITIVE ALTERNATE NO. 3.
  - ④ PROVIDE A 100A, 120/208V, 3 $\phi$ , 4W METER/LOAD CENTER ON A RACK. FEED A LIGHTING CONTACTOR FROM THE LOAD CENTER. POWER THE LIGHTING FROM THE CONTACTOR. THIS IS PANEL U. SEE LIGHTING SCHEMATIC, SHEET E4.

① UPLAND SITE PLAN - ELECTRICAL



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 Phone: 907-789-3350, License: AECL1010

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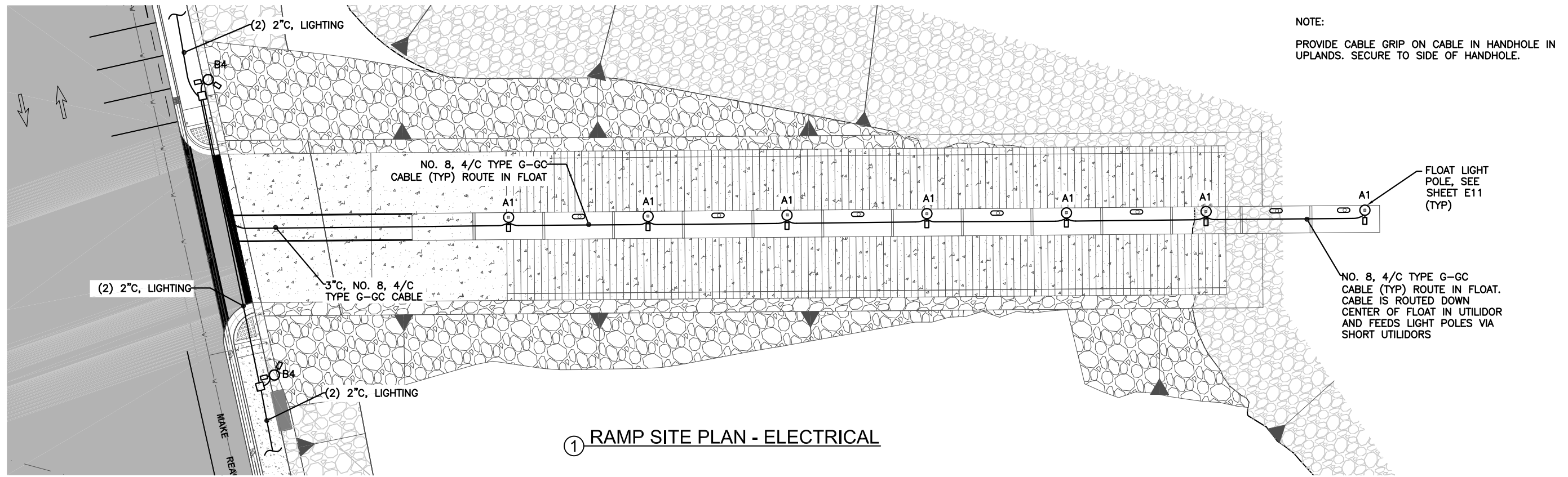
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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

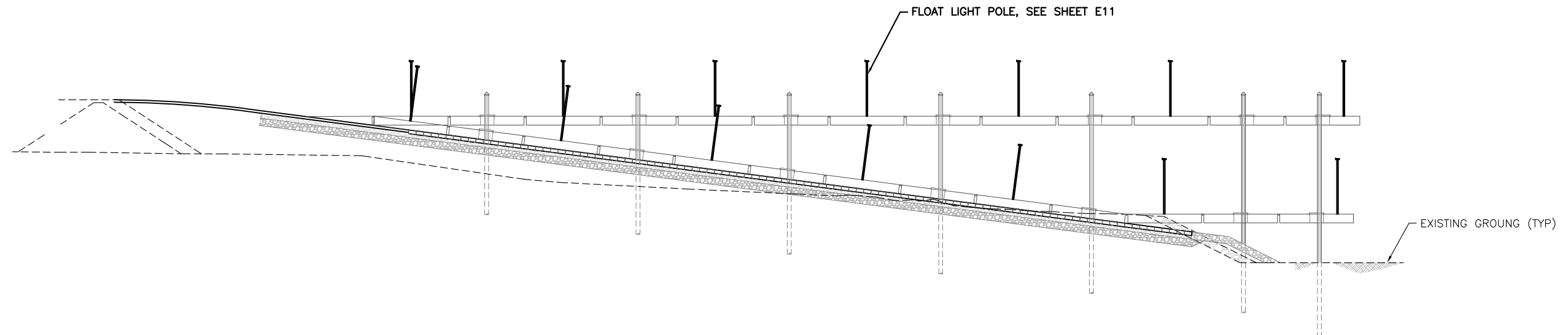
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**UPLANDS SITE PLAN - ELECTRICAL**

PND PROJECT NO.: 172032

**E2**  
 SHEET OF 11



① RAMP SITE PLAN - ELECTRICAL



② RAMP PROFILE - ELECTRICAL

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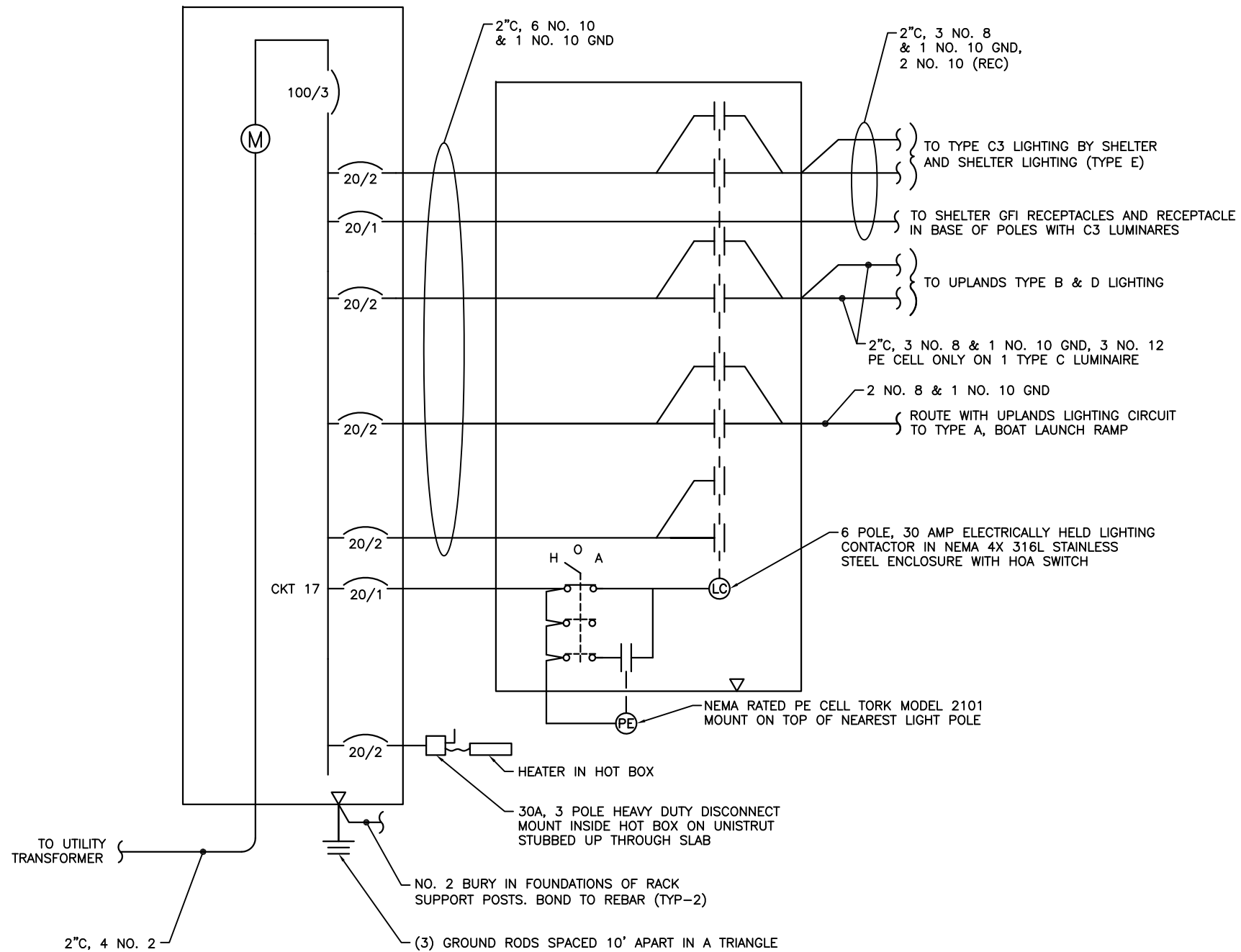
**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: RAMP PLAN AND PROFILE - ELECTRICAL

PND PROJECT NO.: 172032

**E3**  
SHEET OF 11

PANEL U – UPLANDS  
 120/208V, 3 $\phi$ , 4W, 100A, METER/LOAD CENTER  
 WITH 100/3 MAIN CIRCUIT BREAKER 18 CKT, 22 KAIC,  
 7 JAW RING STYLE METER WITH SAFETY SOCKET AND  
 TEST/BYPASS FACILITIES FACTORY INSTALLED  
 IN NEMA 3R 316 STAINLESS STEEL ENCLOSURE  
 COOPER B-LINE U217MTBL-316SS 22 KAIC  
 MODIFY FOR SPECIAL ORDER



① UPLANDS PARKING, BOAT LAUNCH, AND TRANSFER BRIDGE LIGHTING SCHEMATIC  
 NO SCALE

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REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

**MORRIS ENGINEERING GROUP LLC**  
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DESIGN: MGM CHECKED: MGM SCALE:  
 DRAWN: JRW APPROVED: MGM

DATE: July 20, 2018

**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**LIGHTING SCHEMATICS**

PND PROJECT NO.: 172032

**E4**  
 SHEET OF 11

LUMINAIRE SCHEDULE					
TYPE	DESCRIPTION	MANUFACTURER	LAMPS	SPARES	REMARKS
A1	POLE MOUNT, CUTOFF LED LUMINAIRE, FLOAT	KIM LIGHTING TYPE 1 DISTRIBUTION 1SA/ARX16X4K35UVBLSTSFSQ	LED 4000K (11,000 LUMENS) 350MA SEE NOTE 5	SEE NOTE 4	POLE MOUNT TO SQUARE POLE. PROVIDE WITH NIXALITE BIRD CONTROL. ATTACH WITH MANUFACTURER RECOMMENDED ADHESIVE. NO HOLES IN HOUSING. FLAT BLACK. USE ON FLOAT. 120-277V. PROVIDE WITH FUSING.
B3	POLE MOUNT, STRAIGHT POLE, UPLANDS	BEACON VIPER L TYPE 3 DISTRIBUTION VPL-96L-395-3K7-3	LED 3000K 70 CRI	1	POLE MOUNT TO ROUND TAPERED POLE. PROVIDE WITH NIXALITE BIRD CONTROL. ATTACH WITH MANUFACTURER RECOMMENDED ADHESIVE. NO HOLES IN HOUSING. FLAT BLACK. 120-277V. ADJUST PART NO. FOR POLE MOUNTING.
B4	POLE MOUNT, STRAIGHT POLE, UPLANDS	BEACON VIPER L TYPE 4 DISTRIBUTION VPL-96L-395-3K7-4	LED 3000K 70 CRI	1	POLE MOUNT TO ROUND TAPERED POLE. PROVIDE WITH NIXALITE BIRD CONTROL. ATTACH WITH MANUFACTURER RECOMMENDED ADHESIVE. NO HOLES IN HOUSING. FLAT BLACK. 120-277V. ADJUST PART NO. FOR POLE MOUNTING.
C3	POLE MOUNT, CUTOFF LED LUMINAIRE, UPLANDS BY SHELTER	BEACON VIPER L TYPE 3 DISTRIBUTION VPL-64L-135-3K7-3	LED 3000K (15,000 LUMENS) 70 CRI	SEE NOTE 4	POLE MOUNT TO SQUARE POLE. PROVIDE WITH NIXALITE BIRD CONTROL. ATTACH WITH MANUFACTURER RECOMMENDED ADHESIVE. NO HOLES IN HOUSING. FLAT BLACK. USE ON FLOAT. 120-277V. PROVIDE WITH FUSING.
D4	POLE MOUNT, DOG LEG POLE, UPLANDS	BEACON VIPER L TYPE 4 DISTRIBUTION VPL-96L-395-3K7-4	LED 3000K 70 CRI	1	POLE MOUNT TO ROUND TAPERED POLE. PROVIDE WITH NIXALITE BIRD CONTROL. ATTACH WITH MANUFACTURER RECOMMENDED ADHESIVE. NO HOLES IN HOUSING. FLAT BLACK. 120-277V. ADJUST PART NO. FOR POLE MOUNTING.
E	LINEAR SURFACE MOUNT CANOPY LED, 2' WEATHERPROOF LUMINAIRE, REFRACTOR LENS, DUAL WET HUB, KNOCKOUTS FOR SURFACE FEED IN AND OUT ON SIDES, SEALED	COLUMBIA LXEM2-35LW-RFA-EU-DWH	LED 3500K (3,300 LUMENS)	1	SURFACE MOUNT ABOVE BEAM WITH STRUCTURE MOUNTING PLATE. FEED IN AND OUT WITH NM FLEX CONDUIT WITH WEATHERPROOF CONNECTORS. FIBERGLASS HOUSING, NONPOROUS GASKET, WET LABEL. USE NM FLEX CONDUIT TO ENTER FIXTURES AND AS REQUIRED TO ROUTE AROUND STRUCTURE WHERE SCHEDULE 80 PVC IS IMPRACTICAL. USE SCHEDULE 80 PVC CONDUIT AS MUCH AS POSSIBLE.

NOTES APPLICABLE TO TYPE A AND B LUMINAIRES:

1. THE PART NUMBERS IN THE LUMINAIRE SCHEDULE MAY NOT BE COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL PARTS AND ACCESSORIES NECESSARY TO COMPLY WITH THE FEATURES SHOWN IN THE LUMINAIRE SCHEDULE (INCLUDING THE MOUNTING) AS SHOWN ON THE OTHER PLAN SHEETS AND SPECIFICATIONS.
2. SEE LIGHT POLE DETAILS ON SHEETS E6-E7, LUMINAIRES SHALL BE FLAT BLACK.
3. CUTOFF LUMINAIRE. ONE PIECE DIE CAST LOW COPPER ALUMINUM ALLOY HOUSING. HOUSING SHALL HAVE A CURVED UPPER SURFACE TO PREVENT LIQUID FROM PUDDLING ON TOP OF FIXTURE. SOLID BARRIER WALL SEPARATING OPTICAL AND ELECTRICAL COMPONENTS. ONE PIECE SILICONE GASKETS SEAL COMPARTMENTS AT BARRIER SURFACE. OPTICAL MODULE UTILIZES IP66 RATED COMPONENTS. ALL OPTICAL MODULES ARE FASTENED TO THE BODY OF THE LUMINAIRE ACROSS THE CENTER AND AROUND THE PERIMETER. HOUSING AND SUPPORT ARM SHALL PROVIDE TOOL-LESS ENTRY. ELECTRICAL COMPARTMENT SHALL INCLUDE INTEGRAL 10KV SURGE PROTECTION. ALL ELECTRONIC COMPONENTS ARE UL AND CSA RECOGNIZED AND SHALL BE DIRECTLY MOUNTED TO A DRIVER TRAY. DRIVER SHALL BE RATED FOR -40°C STARTING AND HAVE A 0-10V DIMMING INTERFACE FOR MULTI-LEVER ILLUMINATION OPTIONS. ALL ELECTRONIC COMPONENTS SHALL BE IP66 RATED. A TERMINAL BLOCK LOCATED IN THE ARM CAVITY SHALL ACCEPT #14 TO #8 WIRE SIZES. TERMINAL BLOCK SHALL BE FACTORY PREWIRED TO THE ELECTRICAL MODULE TO PROVIDE A QUICK-DISCONNECT PLUG INSIDE THE ELECTRICAL COMPARTMENT. MOUNTING ARM SHALL BOLT TO SQUARE POLE OR (ROUND POLE AS NEEDED). PROVIDE WITH WIRE STRAIN RELIEF. PROVIDE WITH SUPER TGIC THERMOSET POLYESTER POWDER COAT PAINT 2.5 MIL NOMINAL THICKNESS OVER TITANATED ZIRCONIUM CONVERSION COATING. 2500 HOUR SALT SPRAY TEST ENDURANCE RATING.
4. PROVIDE (2) SPARE LUMINAIRES AND (2) SPARE DRIVERS. PROVIDE (4) OPTICAL MODULES FOR TYPE A1. PROVIDE (1) SPARE LUMINAIRE FOR TYPE B3 AND B4.
5. PROVIDE LUMINAIRE WITH ADJUSTABLE LED MODULES AND TYPE 1 DISTRIBUTION AS MODIFIED HEREIN. FACTORY AIM MODULES SO NO LIGHT IS PRESENT ABOVE 60° WHERE 0° (NADIR) POINTS STRAIGHT DOWN VERTICALLY. THIS WILL MODIFY THE SIDE TO SIDE PERFORMANCE OF THE TYPE 1 DISTRIBUTION, HOWEVER, RETAIN AS MUCH OF THE TYPE 1 DISTRIBUTION AS POSSIBLE (CUTOFF FRONT AND BACK). THE PART NUMBERS SHOWN NEEDS TO BE MODIFIED FOR THIS CUSTOM LIGHT DISTRIBUTION. CONTACT KIM LIGHTING.

① LUMINAIRE SCHEDULE

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**MORRIS**  
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LLC

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DESIGN: MGM    CHECKED: MGM    SCALE:     
DRAWN: JRW    APPROVED: MGM

DATE: July 20, 2018

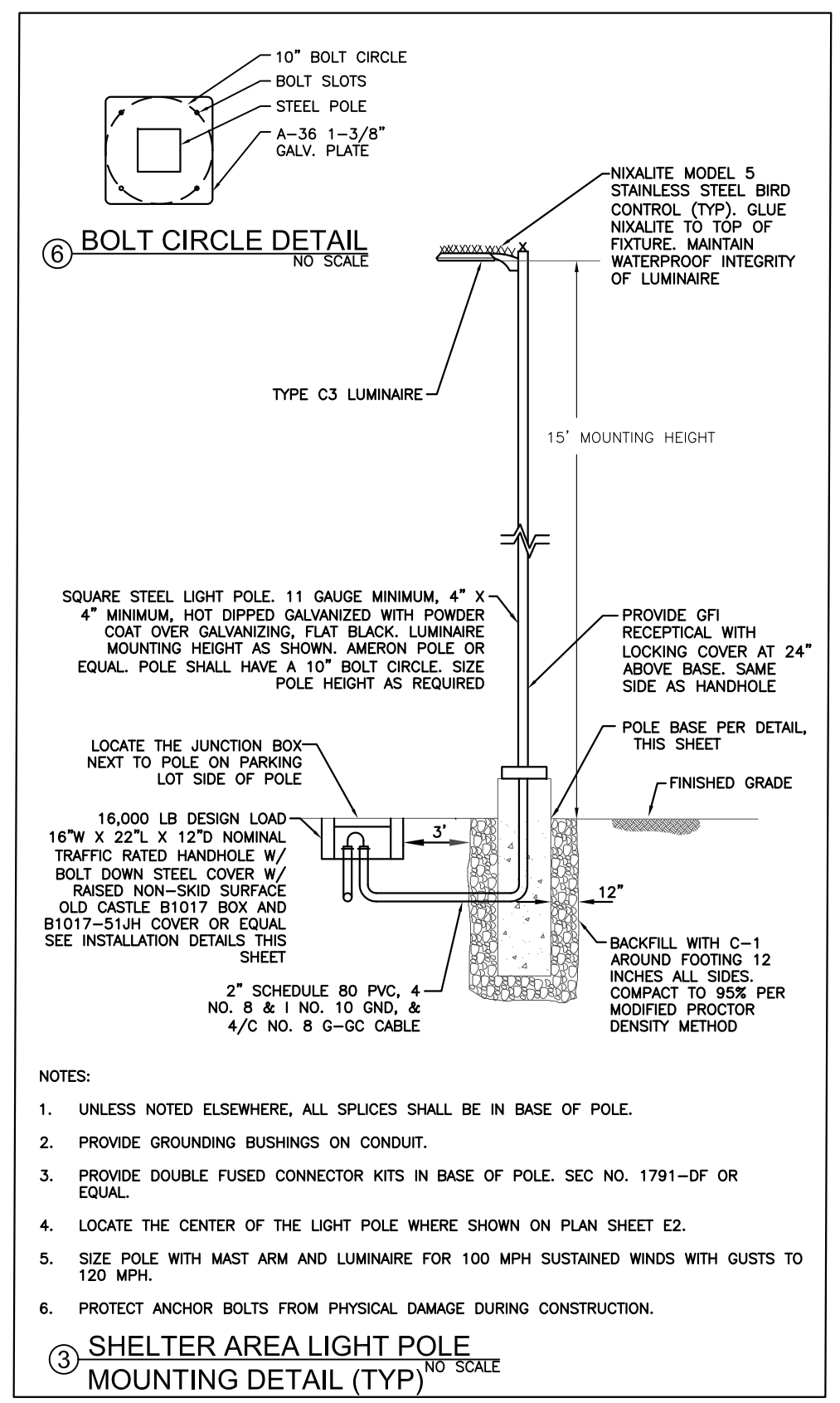
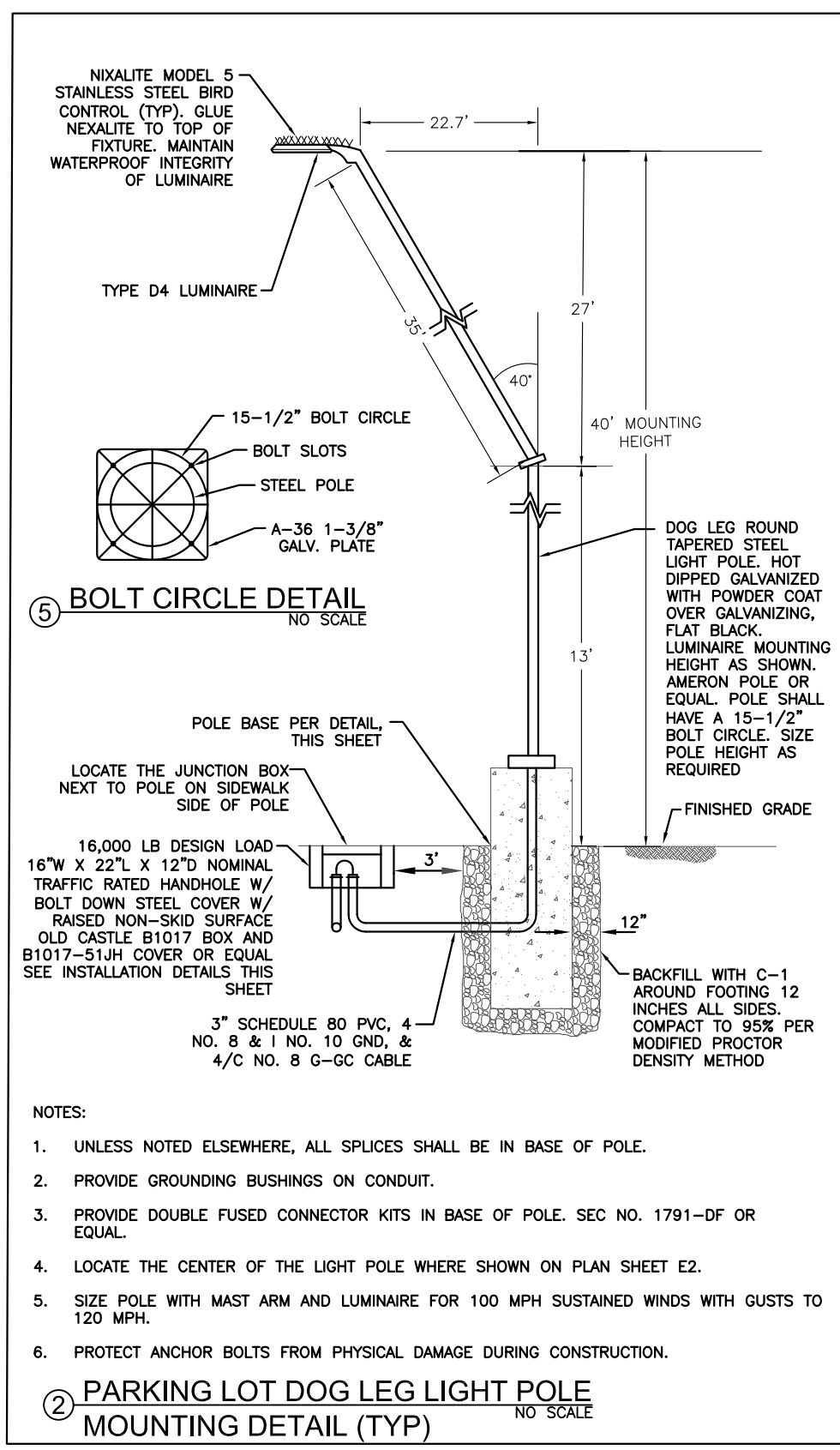
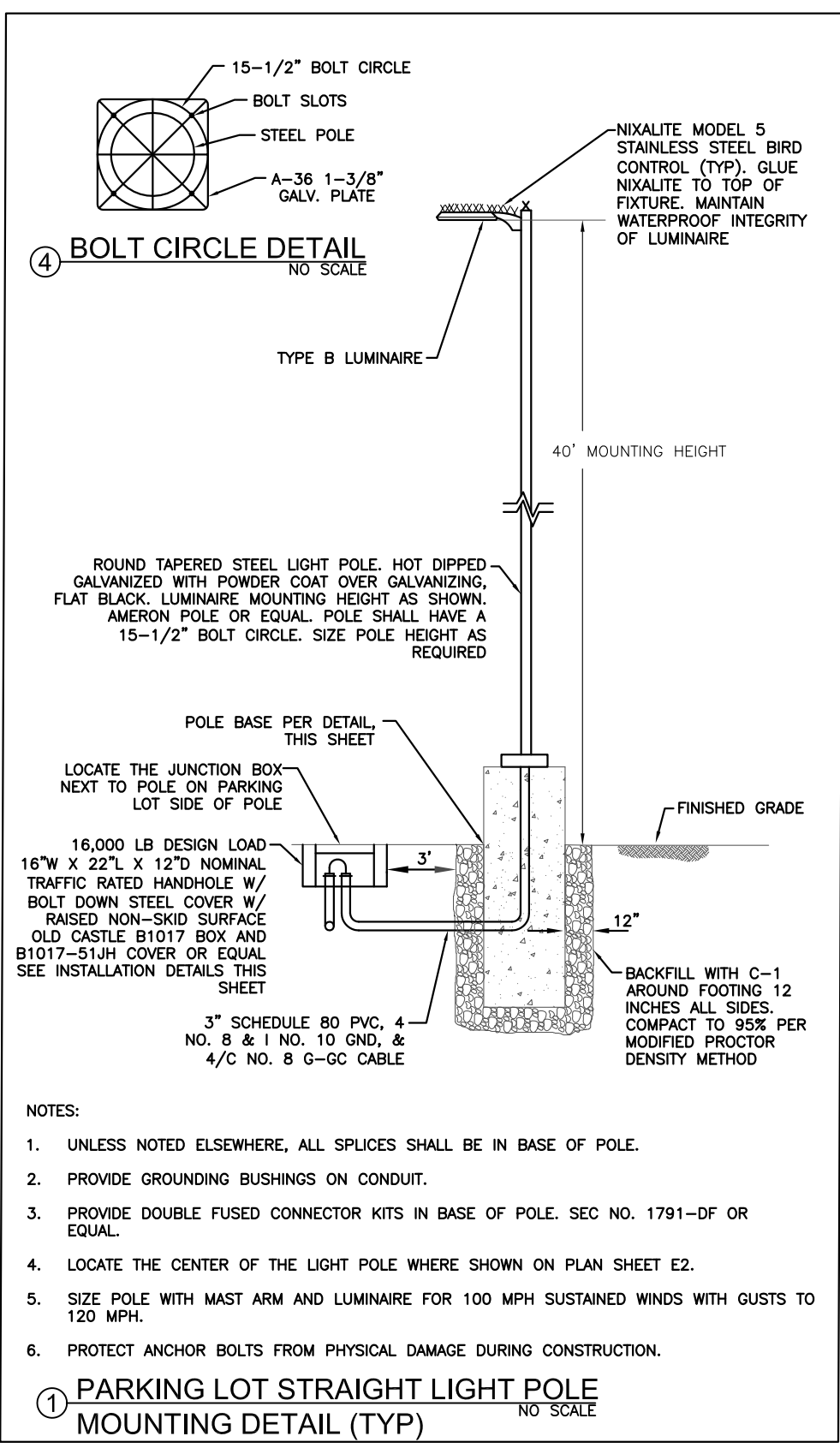
**HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**LUMINAIRE SCHEDULE**

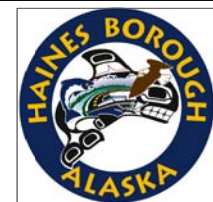
PND PROJECT NO.: 172032

**E5**  
SHEET  
OF 11





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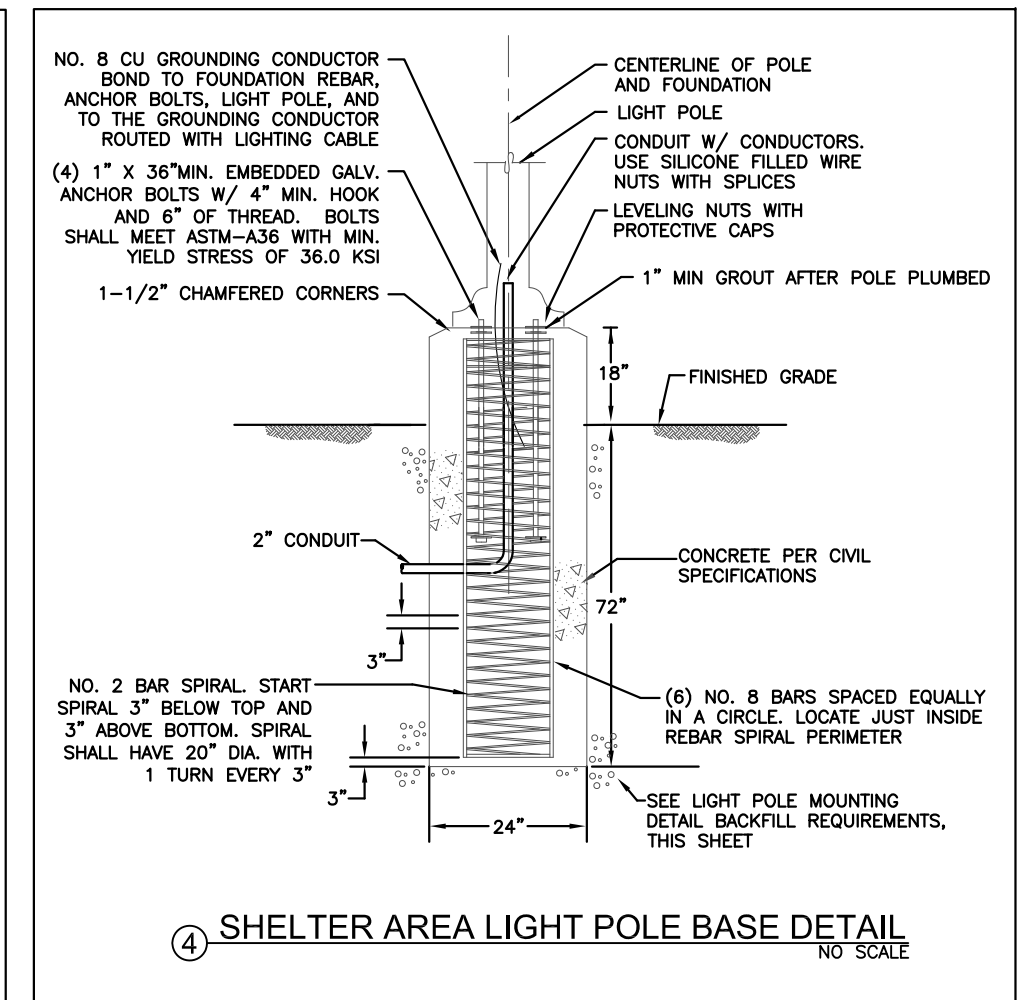
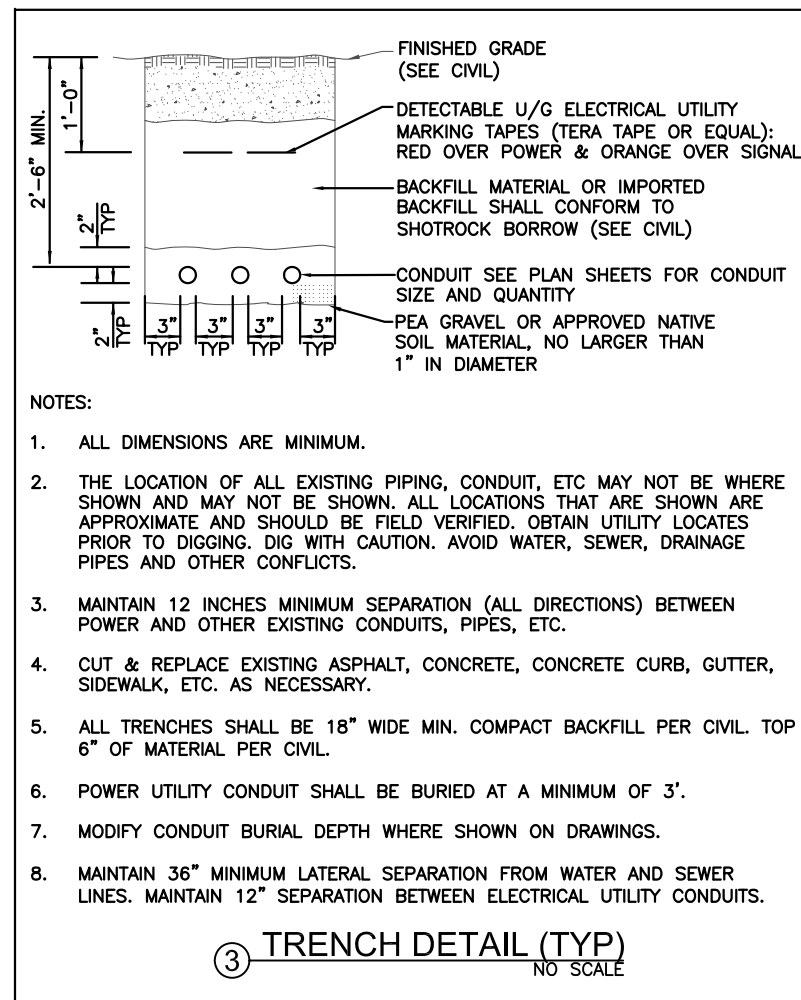
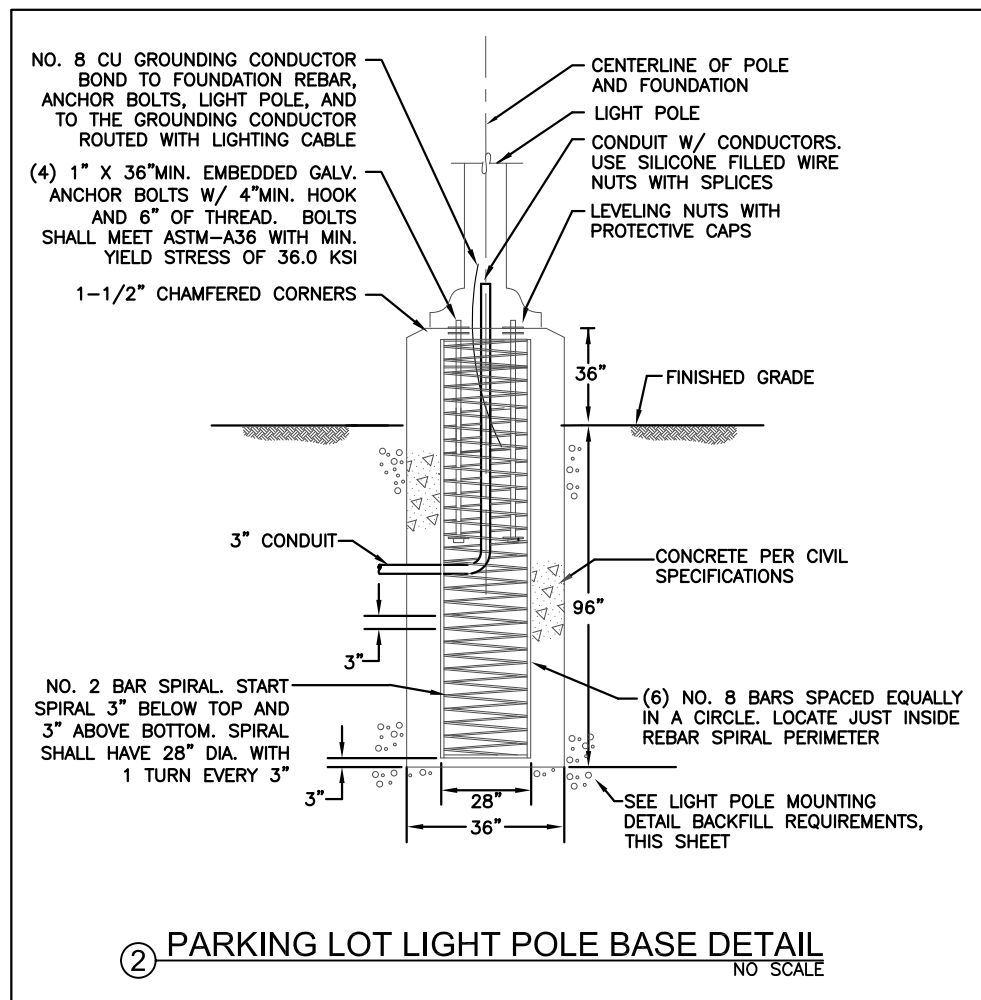
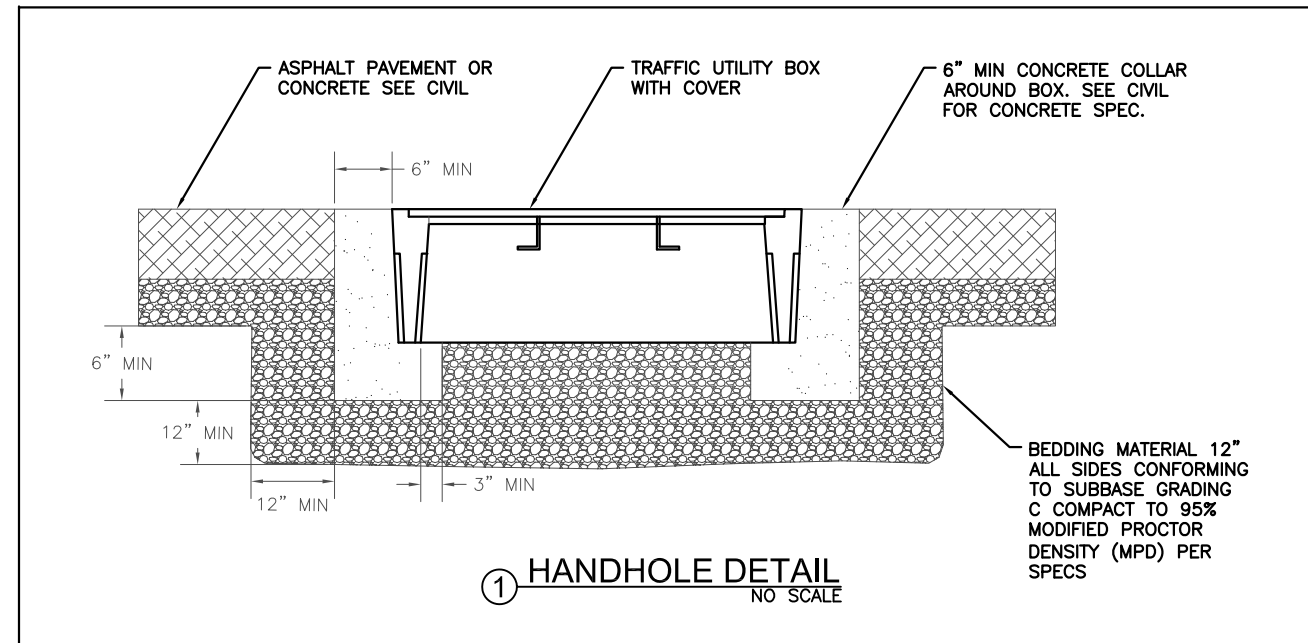
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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE: **UPLANDS LIGHT POLE DETAILS**

PND PROJECT NO.: 172032

**E6**  
SHEET OF 11



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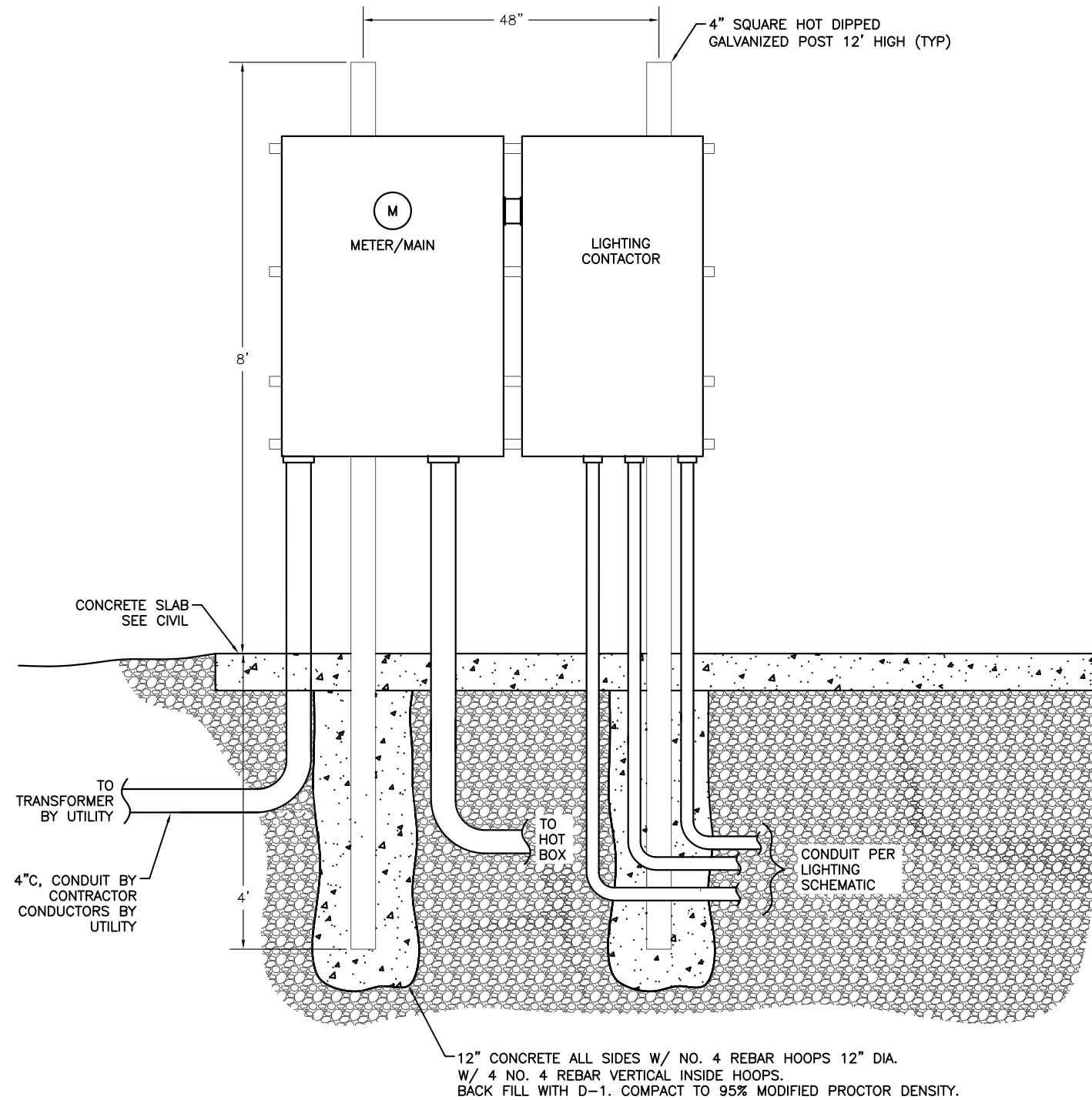
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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

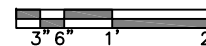
SHEET TITLE: UPLANDS LIGHT POLE DETAILS, HANDHOLE & TRENCH DETAIL

PND PROJECT NO.: 172032

**E7**  
SHEET OF 11



① UPLANDS ELECTRICAL RACK ELEVATION



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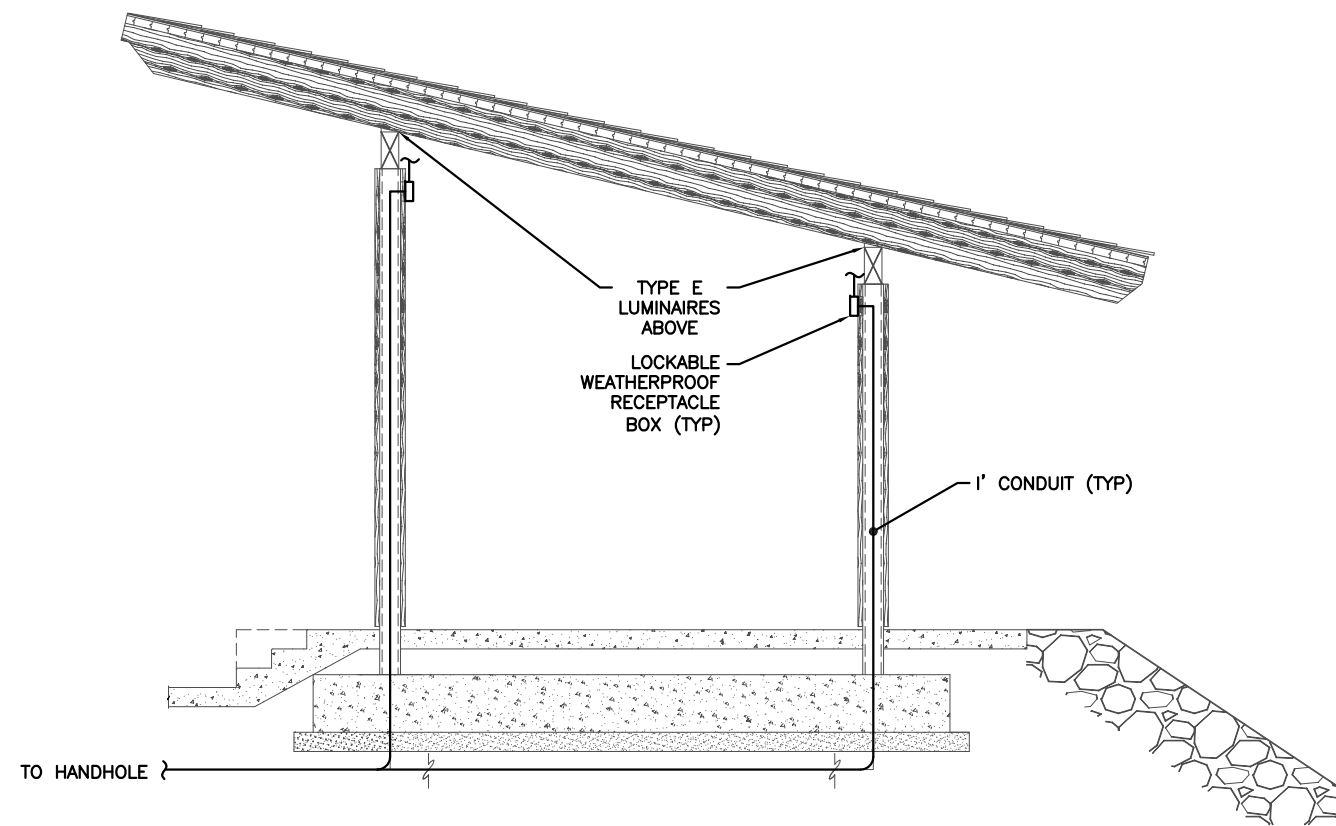
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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

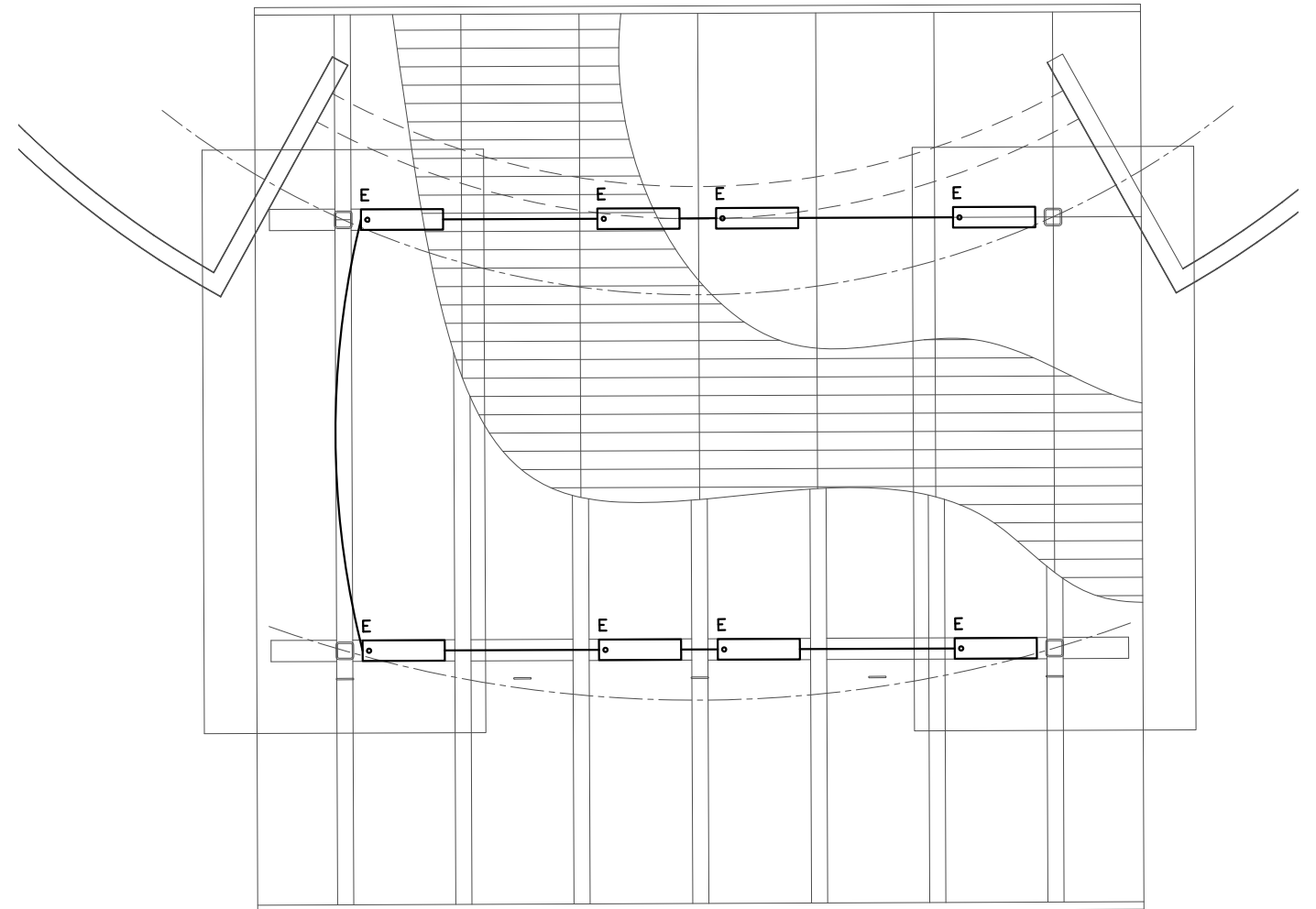
SHEET TITLE: **UPLANDS ELECTRICAL RACK ELEVATION**

PND PROJECT NO.: 172032

**E8**  
SHEET OF 11



① SHELTER ELEVATION - COVERED SHELTER  
NO SCALE



② ROOF FRAMING PLAN - COVERED SHELTER  
NO SCALE

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REVISIONS					
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HAINES BOROUGH  
PORTAGE COVE HARBOR  
BOAT LAUNCH IMPROVEMENTS

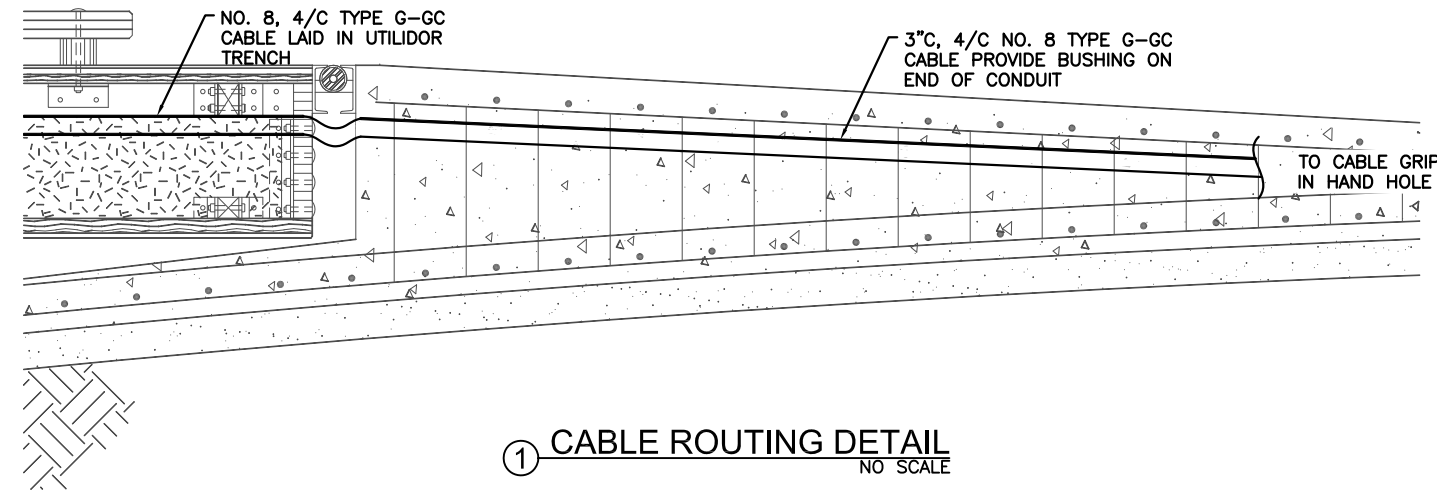
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COVERED SHELTER PLANS  
AND ELEVATION - ELECTRICAL

PND PROJECT NO.: 172032

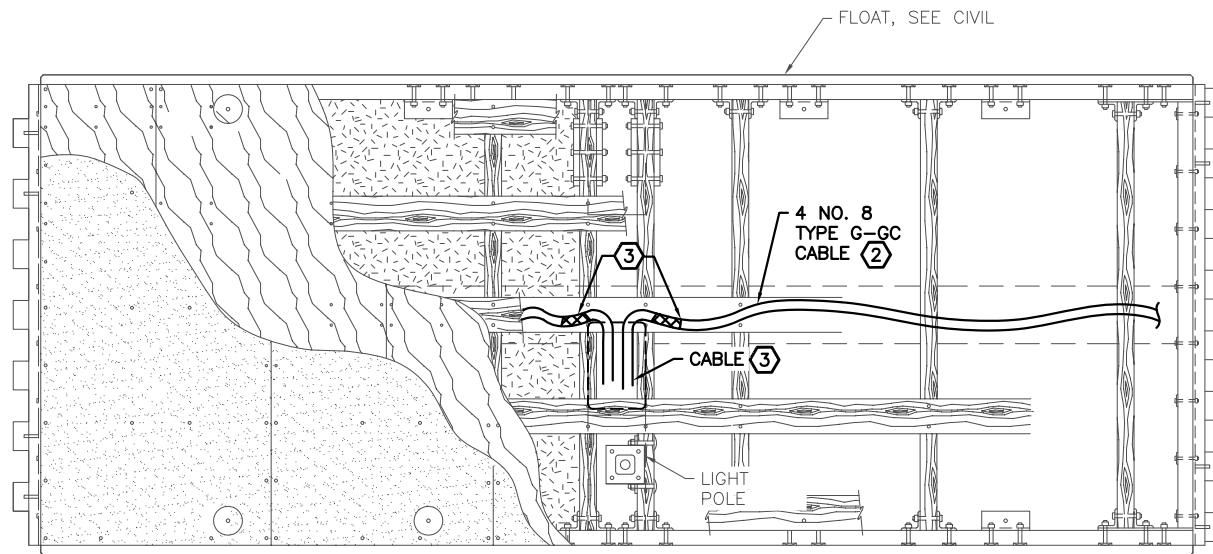
E9  
SHEET  
OF 11

NOTES:

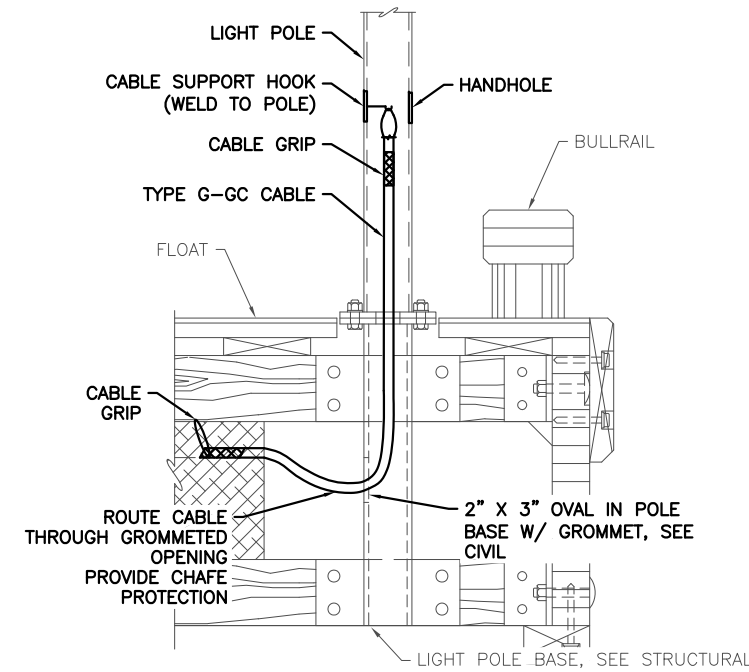
- ① CABLE IN UTILIDOR TRENCH. WAVE CABLE SIDE TO SIDE TO ADD MINIMUM OF 3' OF SLACK ON EACH SIDE OF POLE IN EACH FLOAT SECTION.
- ② WEAVE CABLE SIDE TO SIDE TO ADD SLACK IN THE CABLE.
- ③ PROVIDE CABLE GRIP ON CABLE IN MAIN UTILIDOR ON EACH SIDE OF SHORT UTILIDOR TO LIGHT POLE. SECURE GRIP TO SIDE OF UTILIDOR. ROUTE CABLE IN SHORT SECTION OF UTILIDOR BETWEEN MAIN UTILIDOR AND LIGHT POLE. ROUTE UP INTO POLE PER DETAIL THIS SHEET. PROVIDE CHAFE PROTECTION WHERE GOING AROUND CORNERS IN UTILIDOR.



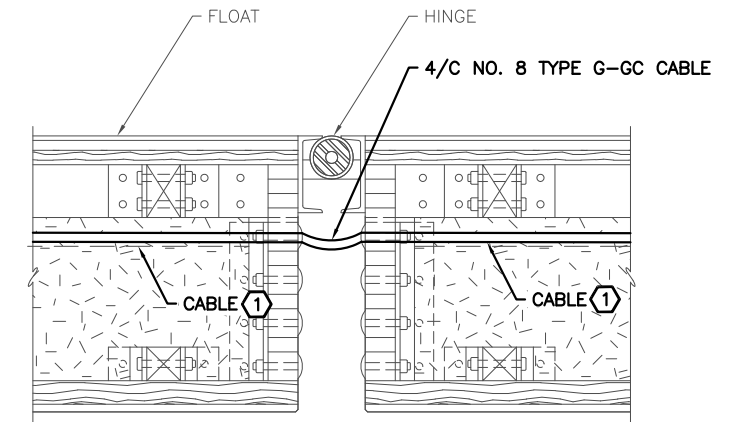
① CABLE ROUTING DETAIL  
NO SCALE



② FLOAT LIGHTING DETAIL  
NO SCALE



③ FLOAT LIGHT POLE DETAIL  
NO SCALE



④ FLOAT POWER TRANSITION DETAIL  
NO SCALE

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HAINES BOROUGH  
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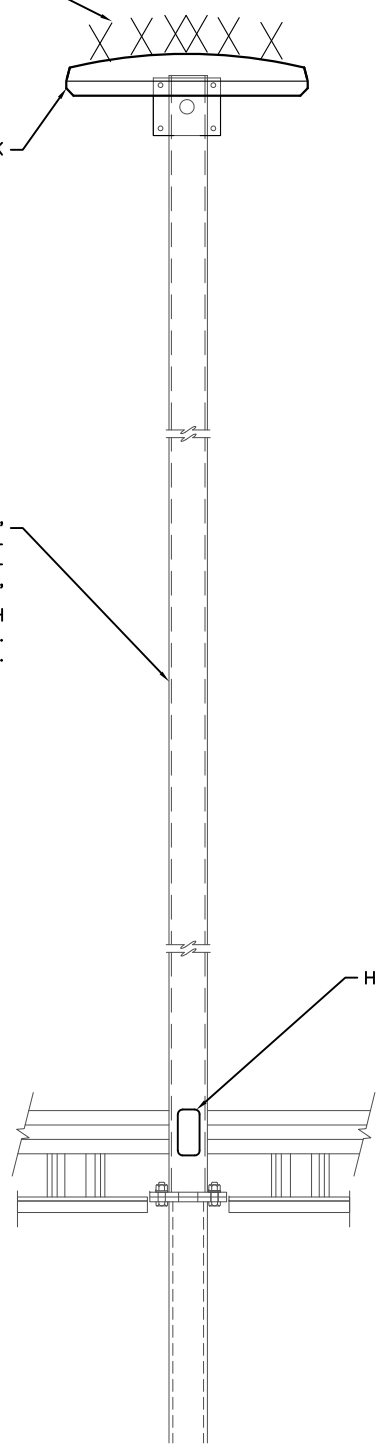
SHEET TITLE:  
CABLE ROUTING DETAILS

PND PROJECT NO.: 172032

E10  
SHEET  
OF 11

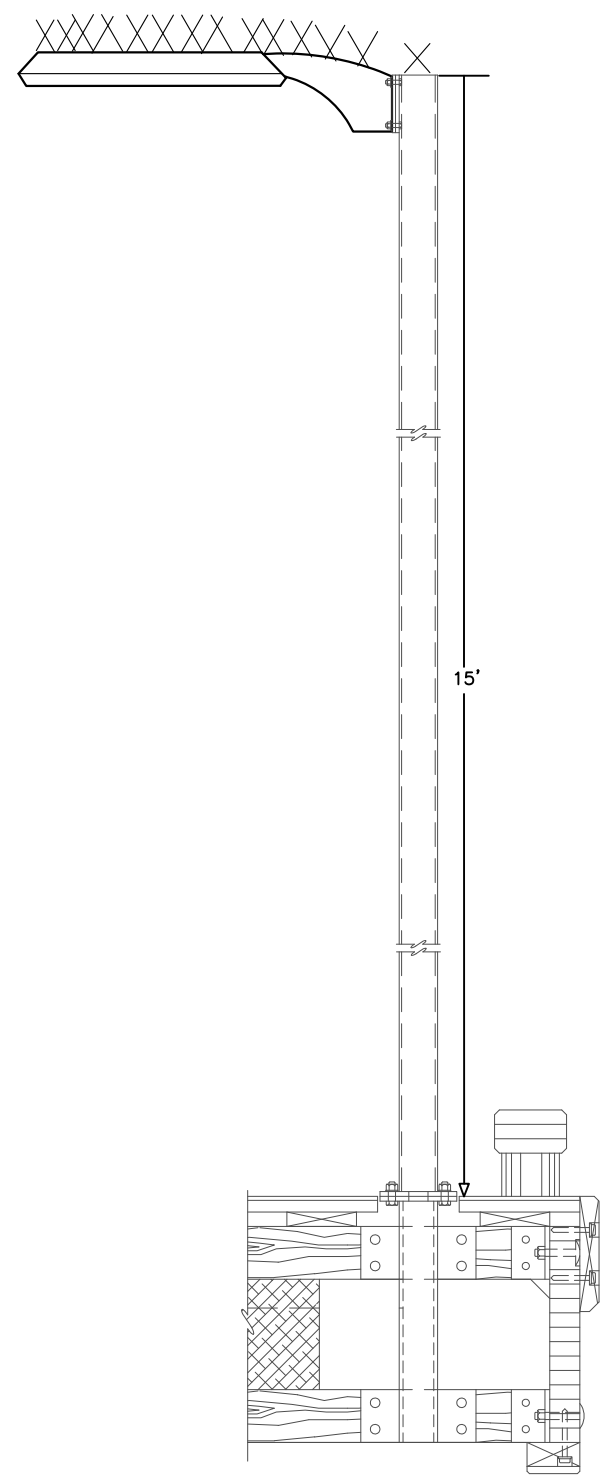
NIXALITE BIRD CONTROL (TYP)  
 TYPE A1 LUMINAIRE, FLAT BLACK

15' SQUARE POLE, 11 GAUGE MINIMUM, 4" X 4" MINIMUM, HOT DIPPED GALVANIZED STEEL LIGHT POLE. POWDER COAT FLAT BLACK OVER HOT DIPPED GALVANIZED. POLE SHALL HAVE A 10" BOLT CIRCLE. PROVIDE HANDHOLE AT 18" WITH INTERNAL HOOK FOR CABLE GRIP. SEE SHEET E6. HANDHOLE AND LUMINAIRE AT 0 DEGREES.



HANDHOLE

① FLOAT LIGHT POLE FRONT ELEVATION  
 NO SCALE

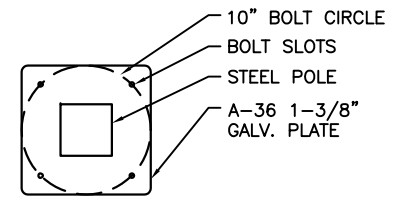


15'

② FLOAT LIGHT POLE SIDE ELEVATION  
 NO SCALE

NOTES:

1. DETAILS ON THIS SHEET APPLY TO ALL FLOAT LIGHT POLES.
2. ALL SPLICES SHALL BE IN BASE OF POLE AT HANDHOLE.
3. LOCATE LIGHT POLES WHERE SHOWN ON SITE PLAN SHEET E3.
4. SIZE POLE WITH MAST ARM AND LUMINAIRE FOR 100 MPH SUSTAINED WINDS WITH GUSTS TO 120 MPH.
5. PROTECT ANCHOR BOLTS FROM PHYSICAL DAMAGE DURING CONSTRUCTION.
6. COORDINATE LIGHT BASE DIMENSIONS WITH CIVIL.



③ BOLT CIRCLE DETAIL  
 NO SCALE

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**HAINES BOROUGH PORTAGE COVE HARBOR BOAT LAUNCH IMPROVEMENTS**

SHEET TITLE:  
**FLOAT LIGHT POLE DETAIL**

PND PROJECT NO.: 172032

**E11**  
 SHEET OF 11