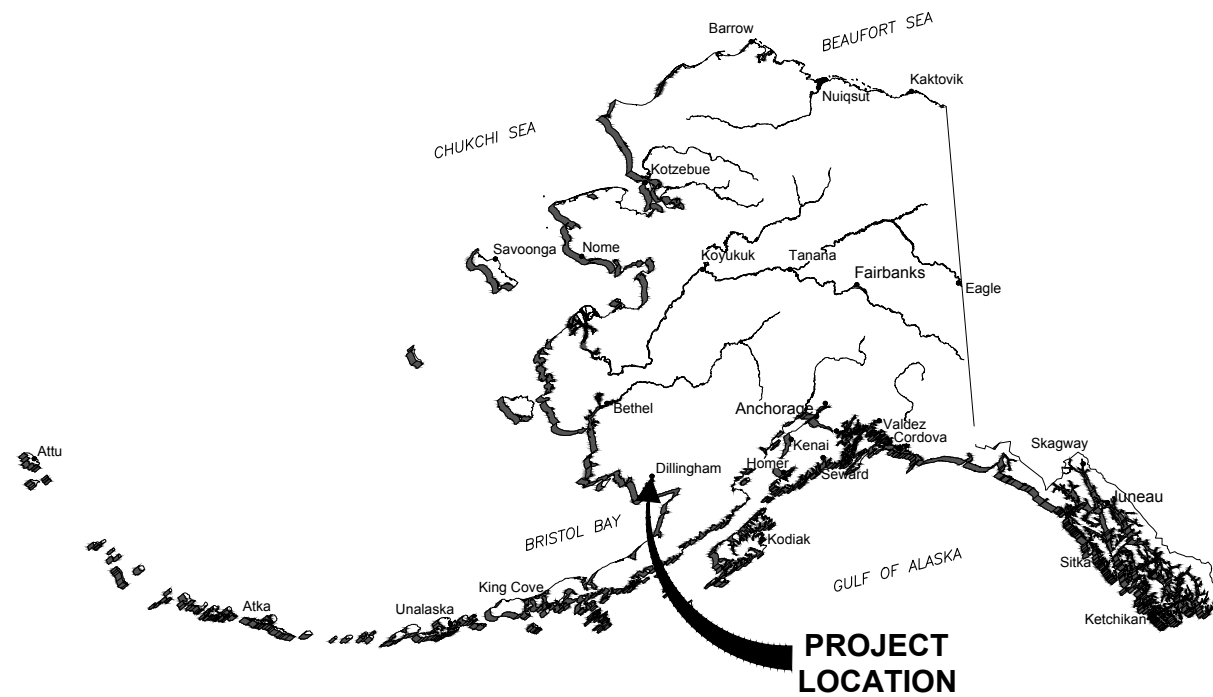


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

MARCH 2019
DILLINGHAM, ALASKA



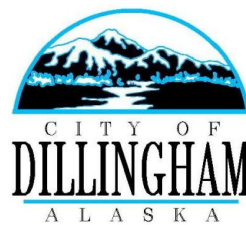
STATE OF ALASKA



DILLINGHAM VICINITY

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\1.01_1_02 Cover Sheet and Index.dwg, 1.01, 4/9/2019 3:49:28 PM, James, 1:2

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
COVER SHEET AND VICINITY MAP			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 1.01	SHEET NO: 1 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

ABBREVIATIONS

A.B. - ANCHOR BOLT	L - LENGTH OF CURVE
AC - ASPHALT CONCRETE	L - STEEL ANGLE
AKDOT - ALASKA DEPARTMENT OF TRANSPORTATION	LF - LINEAR FEET
ALT - ALTERNATE	LSH - LONG SIDE HORIZONTAL
B.O. - BOTTOM OF	LSV - LONG SIDE VERTICAL
BTM - BOTTOM	MAX - MAXIMUM
BTR - BETTER	MH - MAN HOLE
BP - BEGIN PROJECT	MHW - MEAN HIGH WATER
C - CHANNEL	MIN - MINIMUM
CB - CORNER BAR	MLLW - MEAN LOWER LOW WATER
CIP - CAST IN PLACE	MT - MAGNETIC PARTICLE TESTING
CL - CENTERLINE	N - NOTHING
CL - CENTERLINE	NIC - NOT IN CONTRACT
CLR - CLEAR	NFS - NON-FROST SUSCEPTIBLE
CONC - CONCRETE	NTS - NOT TO SCALE
CONN - CONNECTION	OC - ON CENTER
CONT - CONTINUOUS	O.D. - OUTSIDE DIAMETER
CY - CUBIC YARD	PL - PLATE
DIP - DUCTILE IRON PIPE	ROW - RIGHT OF WAY
E - EASTING	R/W - RIGHT OF WAY
EA - EACH	S.S. - STAINLESS STEEL
E.F. - EACH FACE	SDR - STANDARD DIMENSION RATIO
EL - ELEVATION	SF - SQUARE FEET
ELEV - ELEVATION	SHT - SHEET
E.W. - EACH WAY	SIM - SIMILAR
EOP - END OF PROJECT	SSMH - SANITARY SEWER MANHOLE
EP - END PLATE	STA - STATION
EQL - EQUAL	t - THICKNESS
EW - END WALL	T&B - TOP AND BOTTOM
EXIST - EXISTING	T.O. - TOP OF
F&I - FURNISH AND INSTALL	TYP - TYPICAL
HDG - HOT-DIP GALVANIZED	UNO - UNLESS NOTED OTHERWISE
HDPE - HIGH DENSITY POLYETHYLENE	USACE - UNITED STATES ARMY CORPS OF ENGINEERS
HORZ - HORIZONTAL	V - VALVE
HP - H-PILE SECTIONS	VERT - VERTICAL
HTL - HIGH TIDE LINE	w/ - WITH
I.D. - INSIDE DIAMETER	W - WIDE FLANGE BEAM
INV - INVERT	WWF - WELDED WIRE FABRIC

GENERAL NOTES

GENERAL

- PROPERTY DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ITS PRECONSTRUCTION CONDITION OR BETTER AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES, PERMITS AND SAFETY REQUIREMENTS.
- THE LOCATIONS OF EXISTING FEATURES AND UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADDITIONAL UTILITIES NOT SHOWN IN THESE DRAWINGS MAY BE PRESENT. 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.
- GRADING AND FINAL ALIGNMENT OF UTILITIES AND PIPING ARE SUBJECT TO MINOR REVISIONS BY THE ENGINEER TO FIT SITE CONDITIONS, AT NO ADDITIONAL COST.

APPLICABLE CODES AND STANDARDS

ALL LOCAL CODES PLUS THE FOLLOWING SPECIFICATIONS, STANDARDS AND CODES ARE APPLICABLE:

- AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS, CURRENT EDITION
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), "STEEL CONSTRUCTION MANUAL, THIRTEENTH EDITION"
- AMERICAN CONCRETE INSTITUTE (ACI), BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE - ACI 301-11
- AISC CODE OF STANDARD PRACTICE.
- AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10)
- INTERNATIONAL BUILDING CODE (IBC), 2006 EDITION
- AMERICAN WOOD COUNCIL, NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION, 2012 EDITION
- AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODES FOR STEEL & ALUMINUM AWS D1.1 & D1.2, CURRENT EDITION
- ALUMINUM ASSOCIATION, ALUMINUM DESIGN MANUAL 2015 EDITION

DESIGN PARAMETERS

FLOAT SYSTEM IS DESIGNED FOR SEASONAL SUMMER USE ONLY. THE OWNER SHALL REMOVE THE FLOATS PRIOR TO ICING CONDITIONS WITHIN THE HARBOR.

DESIGN LIFE	30 YEARS
WIND LOAD	127 MPH 3-SEC GUST (50 YEAR MRI PER ASCE 7-10), ADJUSTED TO 2-MINUTE DURATION WITH VESSEL SHAPE FACTORS
VESSEL SIZE	BRISTOL BAY GILLNETTER 32'x13', 9' AVERAGE BROAD SIDE EXPOSED HEIGHT, 11' AVERAGE BOW/STERN EXPOSED HEIGHT
DEAD LOAD	ALL
LIVE LOAD	40 POUNDS PER SQUARE FOOT UNIFORM LOAD OR 1,000 POUND CONCENTRATED LOAD OVER 1 SQUARE FOOT AREA
FREEBOARD	30-INCHES UNDER DEADLOAD ONLY, APPROX 30 POUNDS PER SQUARE FOOT SURPLUS FLOATATION
IMPACT	DESIGN VESSEL AT VELOCITY OF 1.5 FEET/SECOND, VESSEL IMPACT ANGLE OF 30°
ICE	APPLICABLE TO PILES ONLY. 4-FT THICKNESS, 8 KSF CRUSHING STRENGTH
GANGWAY	SEE CONTRACT REQUIREMENTS
GEOTECH	SEE CONTRACT DOCUMENTS FOR AVAILABLE GEOTECHNICAL INFORMATION



TIDAL LEVELS - ELEVATION DATUM FOR THIS PROJECT IS 0.0 MEAN LOWER LOW WATER (MLLW)
NOAA TIDAL DATUM FOR 1983-2001 EPOCH AT SNAG POINT, DILLINGHAM ALASKA (STATION ID #9465374)

EXTREME HIGH WATER (EHW)	+25.0 FT (ESTIMATED)
MEAN HIGHER HIGH WATER (MHHW)	+20.6 FT
MEAN HIGH WATER (MHW)	+18.9 FT
MEAN TIDE LEVEL (MTL)	+10.6 FT
MEAN LOW WATER (MLW)	+2.30 FT
MEAN LOWER LOW WATER (MLLW)	+0.00 FT
EXTREME LOW WATER LEVEL (ELW)	-5.00 FT (ESTIMATED)

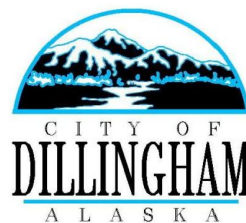
DRAWING INDEX

SHEET NO.	DWG NO.	TITLE
GENERAL		
1 OF 27	1.01	COVER SHEET AND VICINITY MAP
2 OF 27	1.02	DRAWING INDEX, ABBREVIATIONS AND GENERAL NOTES
3 OF 27	1.03	EXISTING CONDITIONS & DEMOLITION PLAN
4 OF 27	1.04	NEW SITE PLAN
ABUTMENTS & ACCESS		
5 OF 27	2.01	RAMP SECTIONS
6 OF 27	2.02	GANGWAY & CATWALK DETAILS
7 OF 27	2.03	ABUTMENT DETAILS
8 OF 27	2.04	PILE CAP DETAILS
FLOAT SYSTEM		
9 OF 27	3.01	FLOAT LAYOUT & PILE DETAILS
10 OF 27	3.02	TYPICAL FLOAT (TYP-1) PLAN
11 OF 27	3.03	TYPICAL FLOAT DETAILS (1 OF 2)
12 OF 27	3.04	TYPICAL FLOAT DETAILS (2 OF 2)
13 OF 27	3.05	STRUT FLOAT (ST-1) PLAN
14 OF 27	3.06	STRUT FLOAT DETAILS (1 OF 2)
15 OF 27	3.07	STRUT FLOAT DETAILS (2 OF 2)
16 OF 27	3.08	GANGWAY FLOAT (GW-1) PLAN
17 OF 27	3.09	GANGWAY FLOAT SECTIONS
18 OF 27	3.10	GANGWAY FLOAT DETAILS
SEASONAL WATER SERVICE		
19 OF 27	4.01	WATER SUPPLY PLAN
20 OF 27	4.02	WATER SUPPLY SECTIONS
21 OF 27	4.03	UPLANDS WATER DETAILS (1 OF 2)
22 OF 27	4.04	UPLANDS WATER DETAILS (2 OF 2)
23 OF 27	4.05	FIREWATER ROUTING FROM SHORE
24 OF 27	4.06	POTABLE WATER ROUTING FROM SHORE
25 OF 27	4.07	FLOAT WATER DETAILS (1 OF 2)
26 OF 27	4.08	FLOAT WATER DETAILS (2 OF 2)
27 OF 27	4.09	WATER SIGNAGE

LEGEND

NEW WATERLINE	— W — W —
EXISTING WATERLINE	- - - - - W - - - - -
NEW FIRE LINE	— F — F —
EXISTING UNDERGROUND ELECTRIC	- - - - - UGE - - - - -
EXISTING FENCE	□ □ □ □
NEW FIRE HYDRANT	
EXISTING FIRE HYDRANT	

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION

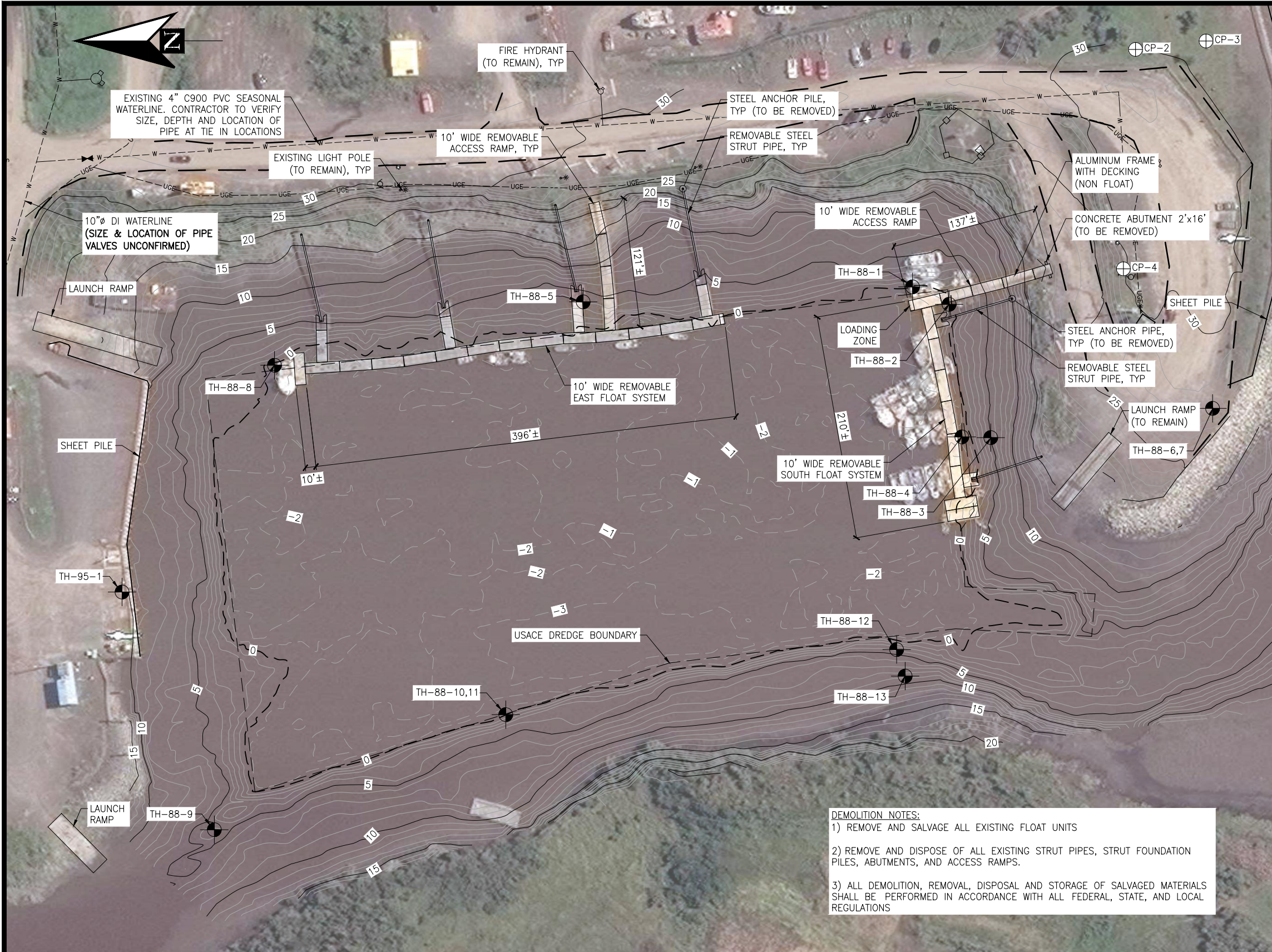


DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
TITLE: DRAWING INDEX, ABBREVIATIONS, AND GENERAL NOTES			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	1.02	SHEET NO: 2 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



BATHYMETRIC SURVEY NOTES

1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 6, NAD83 (2011), IN US SURVEY FEET BASED ON NGS PUBLISHED VALUES, HOLDING USC&GS STATION "DILLINGHAM 1947" (PID UV7691) AS N 1,849,383.08', E 1,551,809.45' AND USC&GS AZIMUTH MARK "DILLINGHAM AZ MK 1947" (PID UV7690) AS N 1,841,347.21', E 1,553,844.91'.
2. LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 6, NAD83 (2011), IN US SURVEY FEET HOLDING USACE DOMED BC "1277-3 1984" AS N 1,840,427.98', E 1,550,887.60'.
3. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "946 5374, SNAG POINT, NUSHAGAK BAY, DILLINGHAM, ALASKA" PUBLISHED 04/29/2013. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "5374 D 2007" AS 60.45'.
4. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 12B) ELEVATIONS HOLDING NOAA BENCHMARK "946 5374 B 2007" (PID BBBF17) AS 18.46'.
5. BATHYMETRY OBTAINED FROM THE US ARMY CORPS OF ENGINEERS 2017 POST DREDGE SURVEY. BATHYMETRY WAS COLLECTED JUNE 1-2, 2017 BY HUGHES & ASSOCIATES, WASILLA, AK. SOUNDINGS WERE COLLECTED USING AN CEESCOPE ECHO SOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN DIGIBAR PRO SOUND VELOCITY PROBE. POSITION AND TIDES WERE PROVIDED IN REAL TIME USING A TRIMBLE R8 RTK GPS RECEIVER OPERATING ON KINEMATIC CORRECTIONS BROADCAST FROM A TRIMBLE R8 RTK BASE RECEIVER SET AT CONTROL STATION, "1277-3". DATA WAS COLLECTED AND PROCESSED USING HYPACK 2017 INTEGRATED SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES.

UPLANDS SURVEY NOTES

1. BASIS OF COORDINATES FOR THIS SURVEY ARE NAD 83, ALASKA STATE PLANE ZONE 6 IN U.S. SURVEY FEET, DERIVED BY GPS OBSERVATION CONSTRAINING COORDINATES PROVIDED ON THE US ARMY CORPS OF ENGINEERS, ALASKA DISTRICT, "DILLINGHAM HARBOR POST DREDGE SURVEY" DATED JUNE 1-2, 2017. COORDINATES OF "1277-3 1984", (CP-3) HELD FOR THIS PROJECT ARE N=1840427.98, E=1550887.60.
2. THE VERTICAL DATUM FOR THIS SURVEY IS MEAN LOWER LOW WATER (MLLW=0.0'), BASIS OF VERTICAL CONTROL IS "1277-3 1984" (CP-3), PROVIDED ON THE US ARMY CORPS OF ENGINEERS, ALASKA DISTRICT, "DILLINGHAM HARBOR POST DREDGE SURVEY" DATED JUNE 1-2, ELEVATION OF "1277-3 1984" (CP-3) HELD FOR THIS SURVEY IS 30.21 U.S. FEET (MLLW).
3. THE FIELD SURVEY WAS PERFORMED DECEMBER 14, 2017 AND JANUARY 4, 2018 BY EDGE SURVEY AND DESIGN, LLC.
4. ALL DIMENSIONS AND COORDINATES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
5. THIS SURVEY WAS COMPLETED USING GNSS SURVEY TECHNIQUES.
6. UTILITY LOCATES WERE SURVEYED WHERE MARKED BY LOCATE COMPANIES.
7. CONTOURS ARE IN FEET, WITH ONE FOOT INTERVALS.
8. NO TITLE SEARCH WAS PREPARED FOR THIS SURVEY. OTHER EASEMENTS AND ENCUMBRANCES MAY EXIST.

SURVEY CONTROL DATA

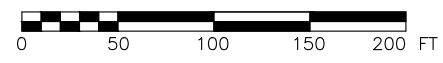
CONTROL POINT	STATION	NORTHING	EASTING	MLLW	DESCRIPTION
CP-1	1277-1 1984	1,841,622.39	1,550,745.71	32.11	3.25 INCH USACE SBC
CP-2	1277-2 1984	1,840,494.00	1,550,879.74	30.86	3.25 INCH USACE SBC
CP-3	1277-3 1984	1,840,427.98	1,550,887.60	30.21	3.25 INCH USACE SBC
				25.62	NOAA/NOS TIDAL BM
				24.87	NOAA/NOS TIDAL BM
CP-4	DILL 1998	1,840,505.33	1,550,674.26	29.80	3.25 INCH FLAT ALCAP
	DILLINGHAM 1947	1,849,383.08	1,551,809.45		3.5 INCH USCGS SBC
CP-5	DILLINGHAM AZ MK	1,841,347.21	1,553,844.91		2 INCH USCGS IRON PIPE
	PICKEL 1998	1,841,509.51	1,550,437.81	28.82	3.25 INCH FLAT ALCAP
CP-6	WDS-2 2001	1,841,419.33	1,549,910.66	22.77	3.25 INCH DOMED ALCAP

- ⊕ CP-# CONTROL POINT
- ⊙ TH-88-XX APPROXIMATE TEST HOLE LOCATION FROM 1988 PND GEOTECH REPORT
- ⊙ TH-95-1 APPROXIMATE TEST HOLE LOCATION FROM 1995 SHANNON & WILSON GEOTECH REPORT

DEMOLITION NOTES:

- 1) REMOVE AND SALVAGE ALL EXISTING FLOAT UNITS
- 2) REMOVE AND DISPOSE OF ALL EXISTING STRUT PIPES, STRUT FOUNDATION PILES, ABUTMENTS, AND ACCESS RAMPS.
- 3) ALL DEMOLITION, REMOVAL, DISPOSAL AND STORAGE OF SALVAGED MATERIALS SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\1.03 Existing Site Plan.dwg, 1.03, 4/9/2019 3:49:37 PM, James, 1:2



100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out in the drawings, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



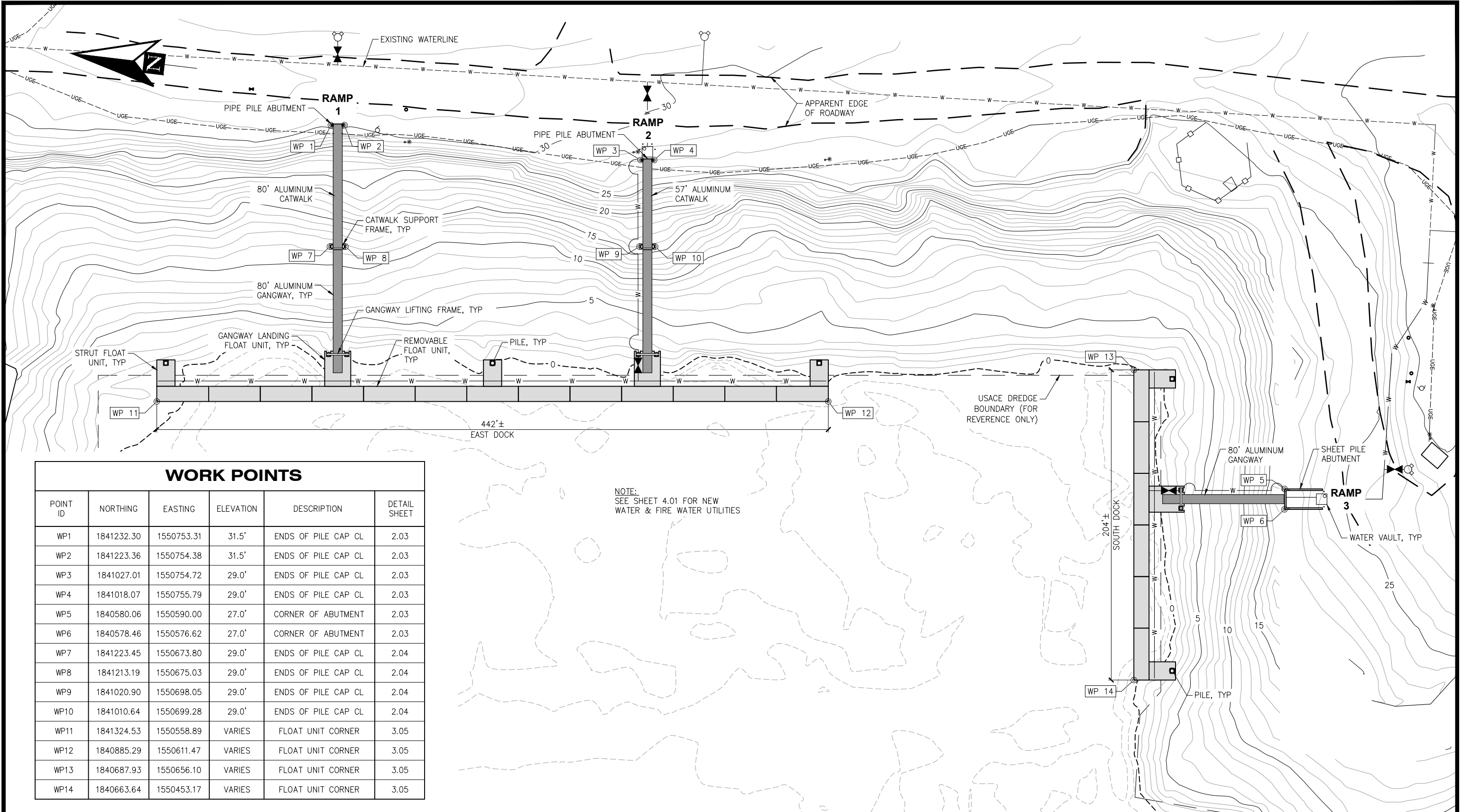
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

EXISTING CONDITIONS & DEMOLITION PLAN

DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	DWG NO: 1.03	SHEET NO: 3 OF 27
CHECKED BY:	CDC	PROJECT NO:	171113		

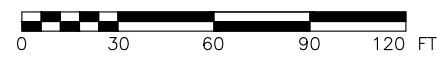


WORK POINTS

POINT ID	NORTHING	EASTING	ELEVATION	DESCRIPTION	DETAIL SHEET
WP1	1841232.30	1550753.31	31.5'	ENDS OF PILE CAP CL	2.03
WP2	1841223.36	1550754.38	31.5'	ENDS OF PILE CAP CL	2.03
WP3	1841027.01	1550754.72	29.0'	ENDS OF PILE CAP CL	2.03
WP4	1841018.07	1550755.79	29.0'	ENDS OF PILE CAP CL	2.03
WP5	1840580.06	1550590.00	27.0'	CORNER OF ABUTMENT	2.03
WP6	1840578.46	1550576.62	27.0'	CORNER OF ABUTMENT	2.03
WP7	1841223.45	1550673.80	29.0'	ENDS OF PILE CAP CL	2.04
WP8	1841213.19	1550675.03	29.0'	ENDS OF PILE CAP CL	2.04
WP9	1841020.90	1550698.05	29.0'	ENDS OF PILE CAP CL	2.04
WP10	1841010.64	1550699.28	29.0'	ENDS OF PILE CAP CL	2.04
WP11	1841324.53	1550558.89	VARIES	FLOAT UNIT CORNER	3.05
WP12	1840885.29	1550611.47	VARIES	FLOAT UNIT CORNER	3.05
WP13	1840687.93	1550656.10	VARIES	FLOAT UNIT CORNER	3.05
WP14	1840663.64	1550453.17	VARIES	FLOAT UNIT CORNER	3.05

NOTE:
SEE SHEET 4.01 FOR NEW
WATER & FIRE WATER UTILITIES

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\1.04 New Site Plan.dwg, 1.04, 4/9/2019 3:49:42 PM, james, 1:2

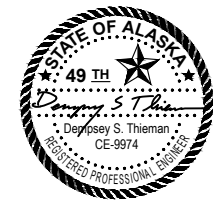


100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

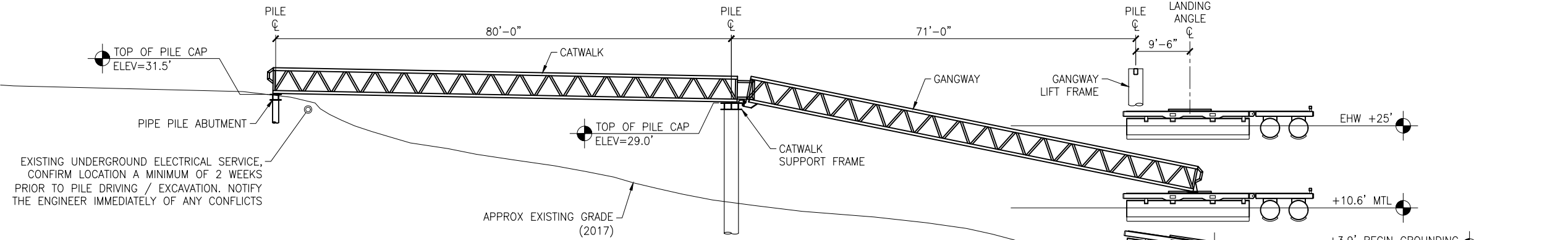
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



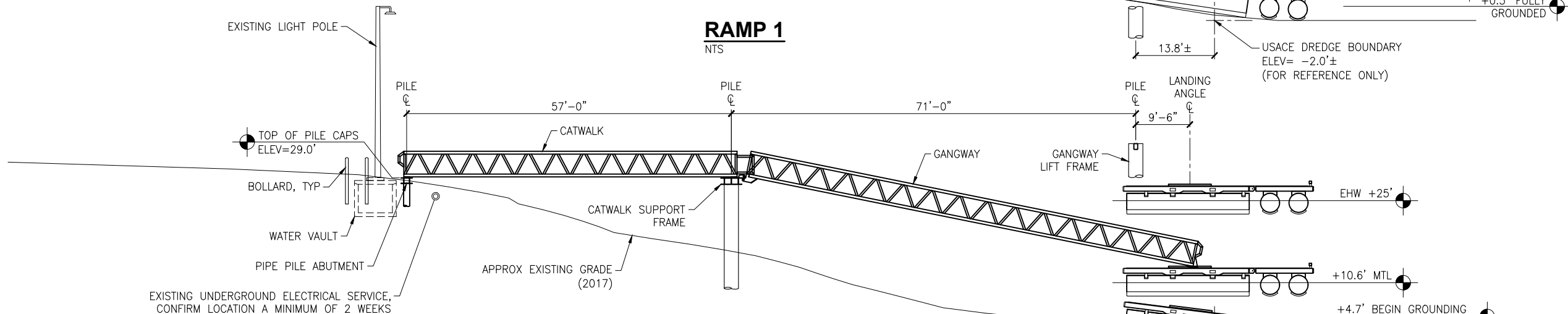
PROJECT: **DILLINGHAM SMALL BOAT HARBOR REPLACEMENT**

TITLE: **NEW SITE PLAN**

DESIGNED BY: CR/BJ DATE: APRIL 2019
CHECKED BY: CDC PROJECT NO: 171113 **1.04** SHEET NO: 4 OF 27

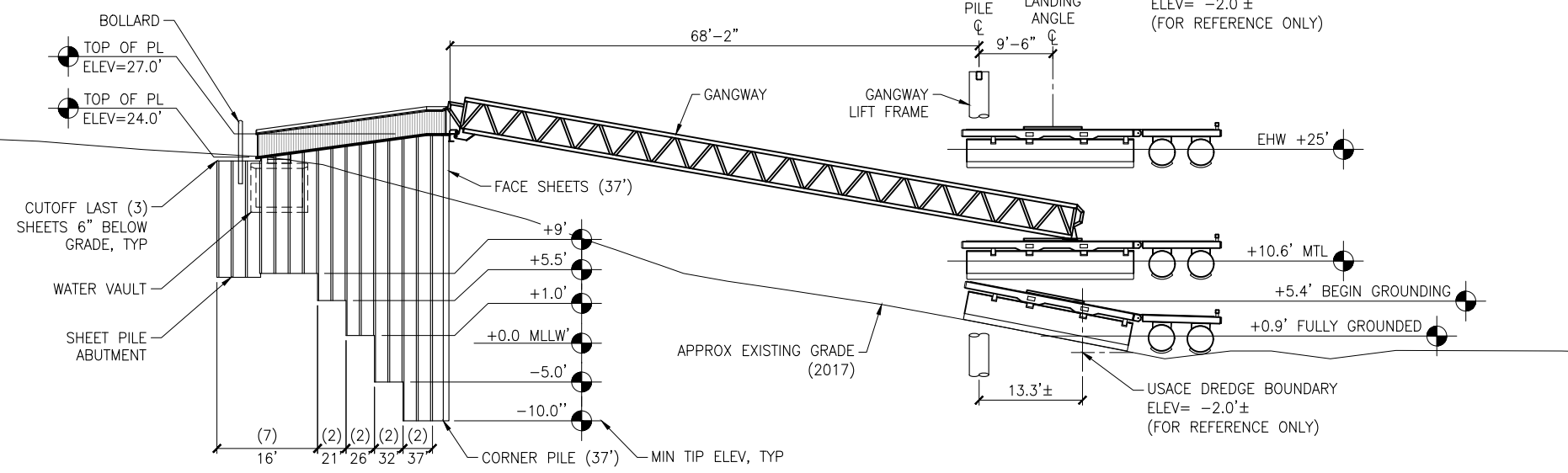


RAMP 1 NTS



RAMP 2 NTS

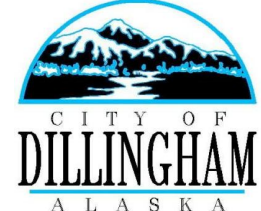
EXISTING UNDERGROUND ELECTRICAL SERVICE, CONFIRM LOCATION A MINIMUM OF 2 WEEKS PRIOR TO PILE DRIVING / EXCAVATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS



RAMP 3 NTS

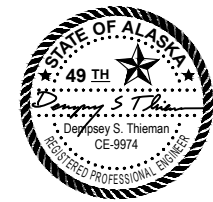
NOTE:
MINOR GRADING AT ALL APPROACHES IS INCIDENTAL. PROVIDE SMOOTH TRANSITIONS (5% MAX SLOPE) w/ EXISTING GRADE & REPAIR ALL DISTURBED AREAS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



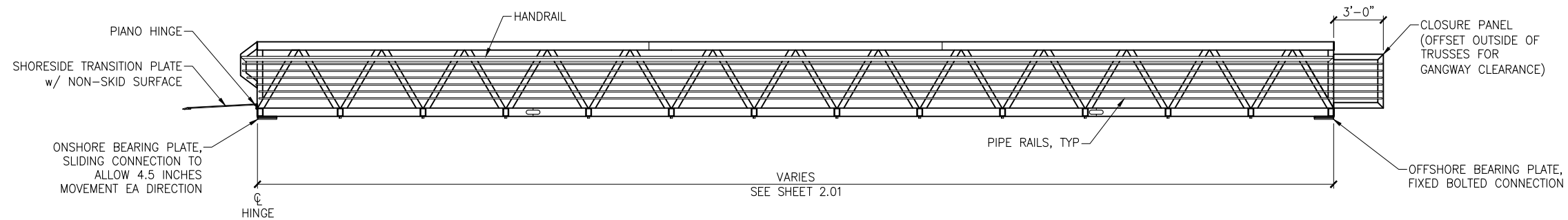
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

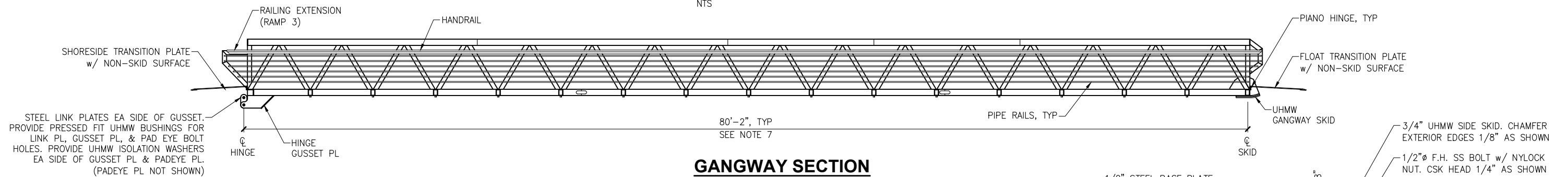
RAMP SECTIONS

DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	2.01
CHECKED BY:	CDC	PROJECT NO.:	171113	



CATWALK SECTION

NTS

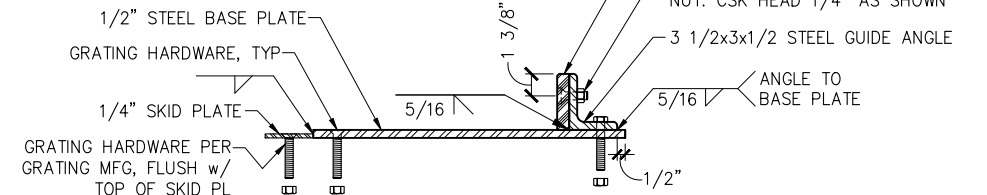


GANGWAY SECTION

NTS

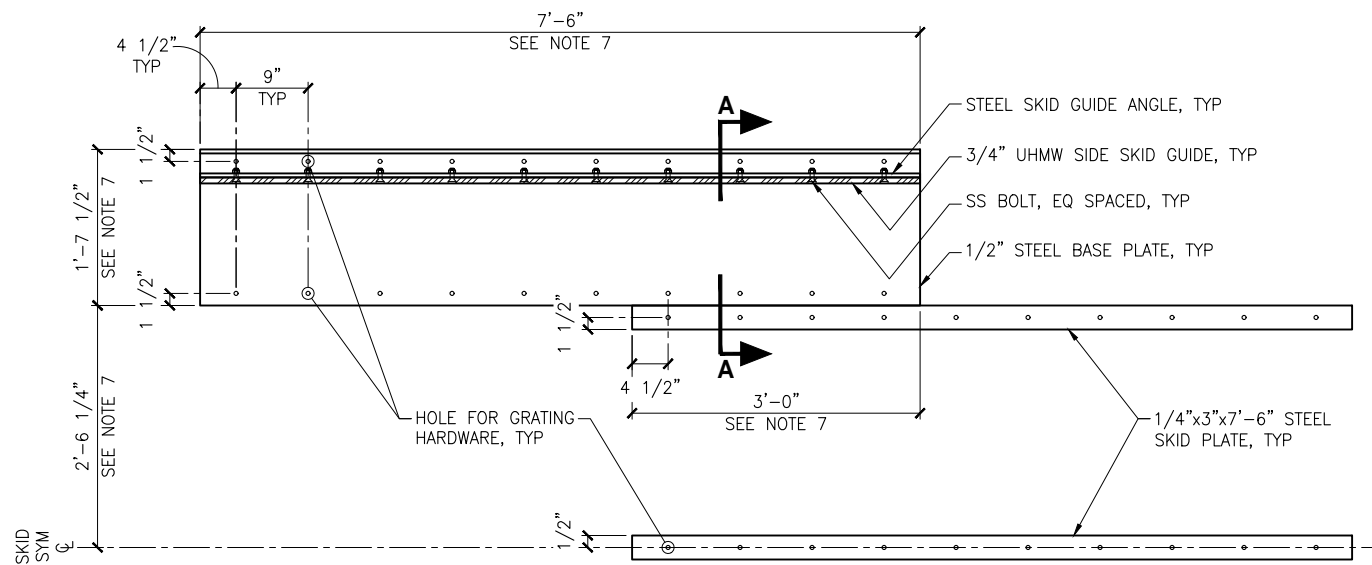
GENERAL NOTES:

1. NO TENSION SPLICES IN MIDDLE THIRD OF GANGWAY/CATWALK.
2. CHORD SPLICE LOCATIONS SHOWN FOR ILLUSTRATION ONLY. ACTUAL LOCATIONS SHALL BE SUBMITTED BY FABRICATOR FOR ENGINEER APPROVAL.
3. TOP AND BOTTOM CHORD SPLICES SHALL BE STAGGERED 5-FT MIN.
4. PROVIDE CAMBER OF 3" AT MID-SPAN.
5. ALL MATERIALS SHALL BE ALUMINUM UNLESS OTHERWISE NOTED.
6. PROVIDE WEEP HOLES AT DOWNHILL END OF ALL CHORD TUBES AND DECK BEAM TUBES. FABRICATOR SHALL SUBMIT HOLE LOCATIONS TO ENGINEER FOR APPROVAL.
7. ASSUMED DIMENSION FOR DESIGN. CONTRACTOR VERIFY BASED ON ACTUAL SKID/HINGE/BEARING DETAILS.
8. SUBMIT POTABLE WATER/FIREWATER MOUNTING DETAILS FOR ENGINEER APPROVAL.



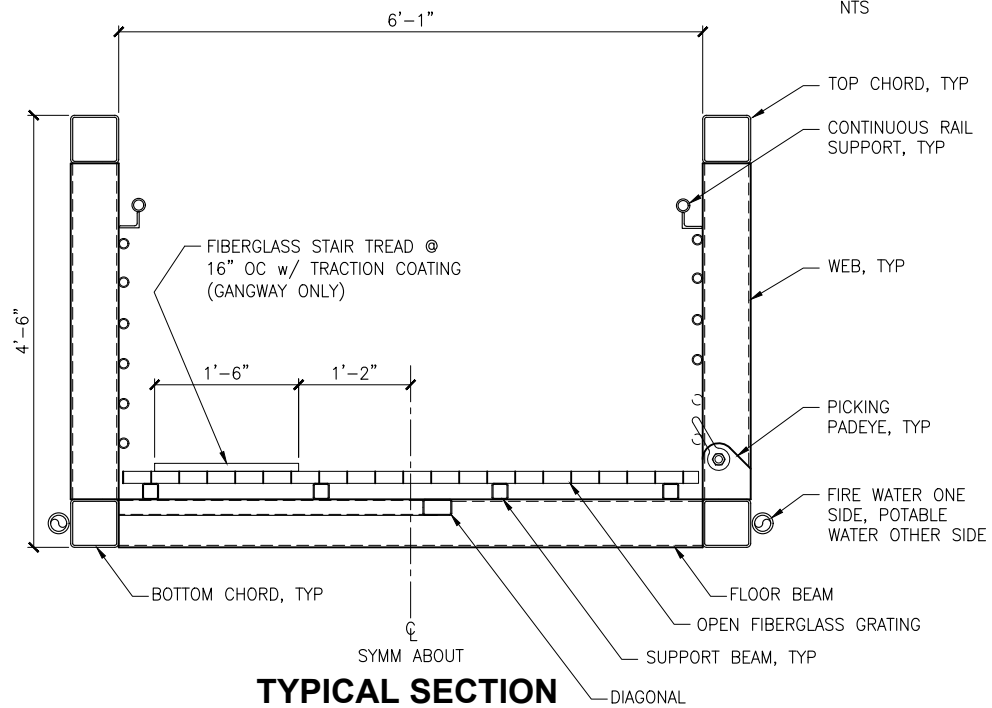
SKID ASSEMBLY SECTION A-A

NTS



SKID BASE PLATE/GUIDE ANGLE ASSEMBLY - PLAN

NTS



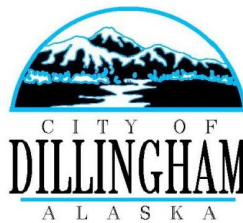
TYPICAL SECTION

NTS

NOTE:
THE GANGWAY & SKID ASSEMBLY SHOWN IN THESE PLANS IS PROVIDED FOR REFERENCE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AN ENGINEERED GANGWAY MEETING THE REQUIREMENTS OF THE SPECIFICATIONS AND REFERENCED CODES. THE GANGWAY SUPPLIED BY THE CONTRACTOR MAY DEVIATE FROM THE DETAILS SHOWN IN THE PLANS, HOWEVER DEVIATIONS MUST PROVIDE AN EQUAL LEVEL OF SERVICE AS DETERMINED BY THE ENGINEER. PROVIDE TOTAL WEIGHT OF GANGWAY PRIOR TO ORDERING GANGWAY OR FLOATS

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\2.01_2.04 Access Details.dwg, 2.02, 4/9/2019 3:49:49 PM, james, 1:2

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

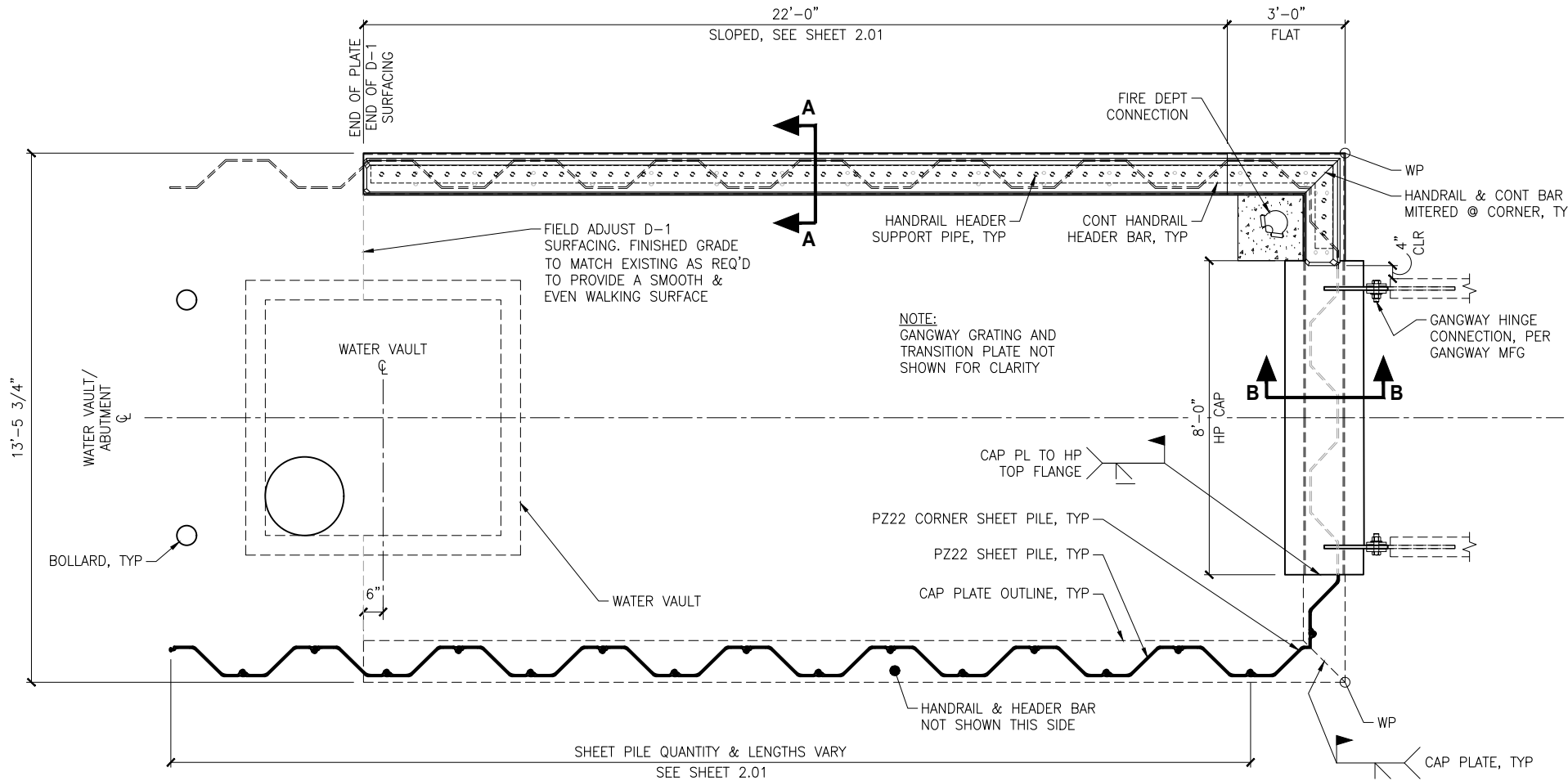
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



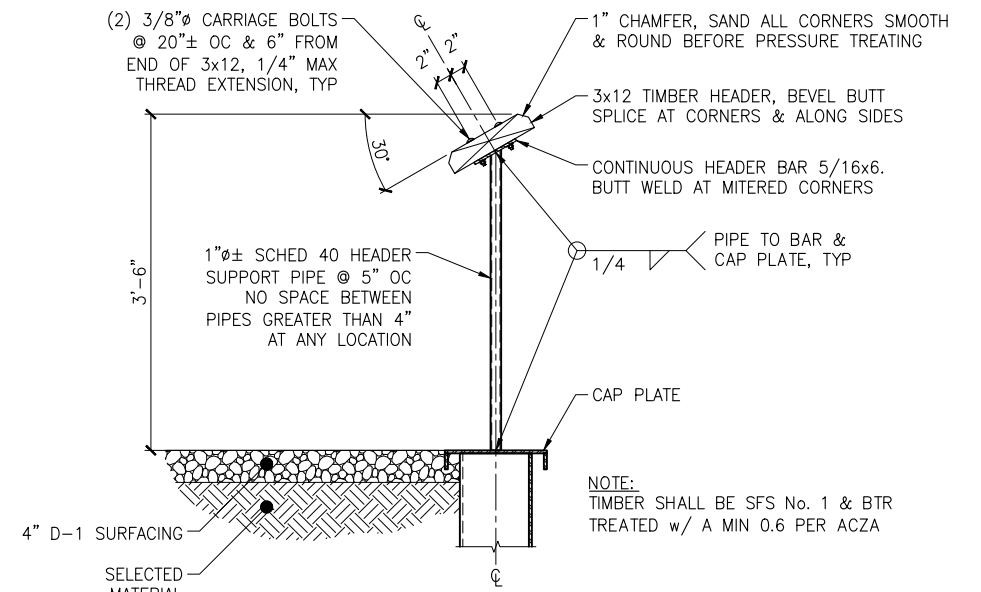
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

GANGWAY & CATWALK DETAILS

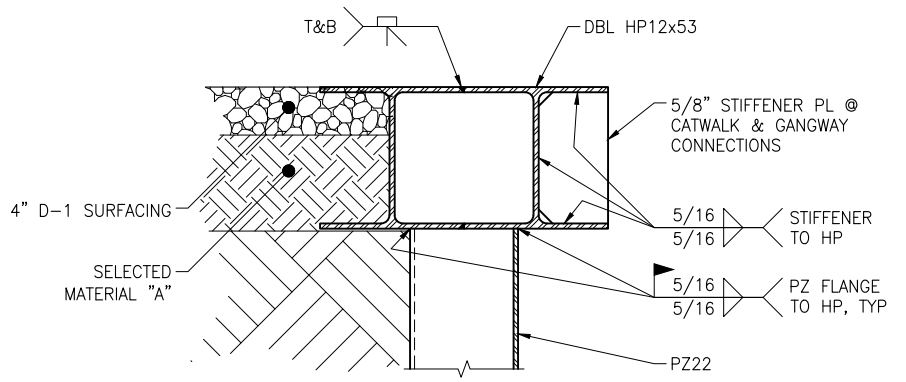
DESIGNED BY: CR/BJ	DATE: APRIL 2019	2.02	SHEET NO: 6 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



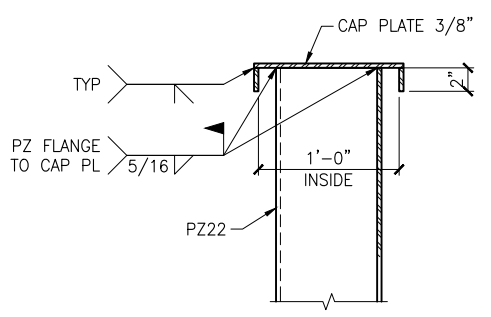
SHEET PILE ABUTMENT PLAN
NTS (RAMP 3)



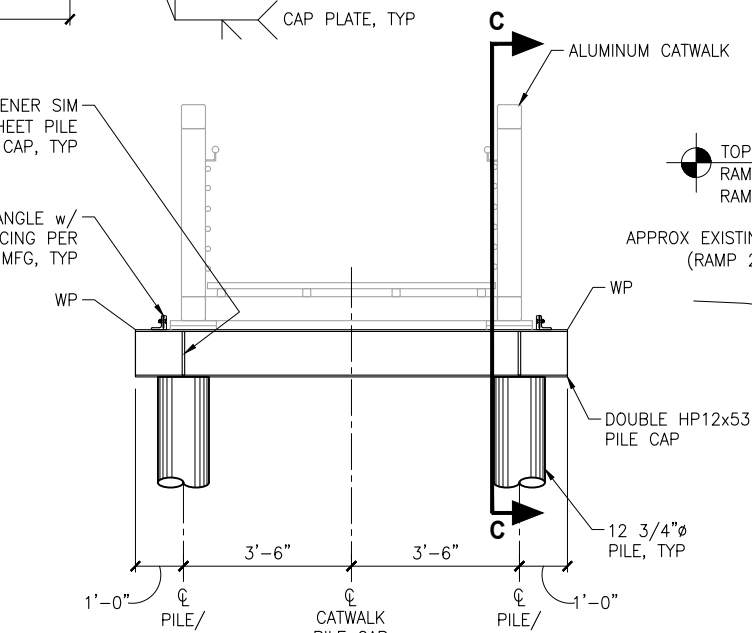
SECTION A-A
NTS



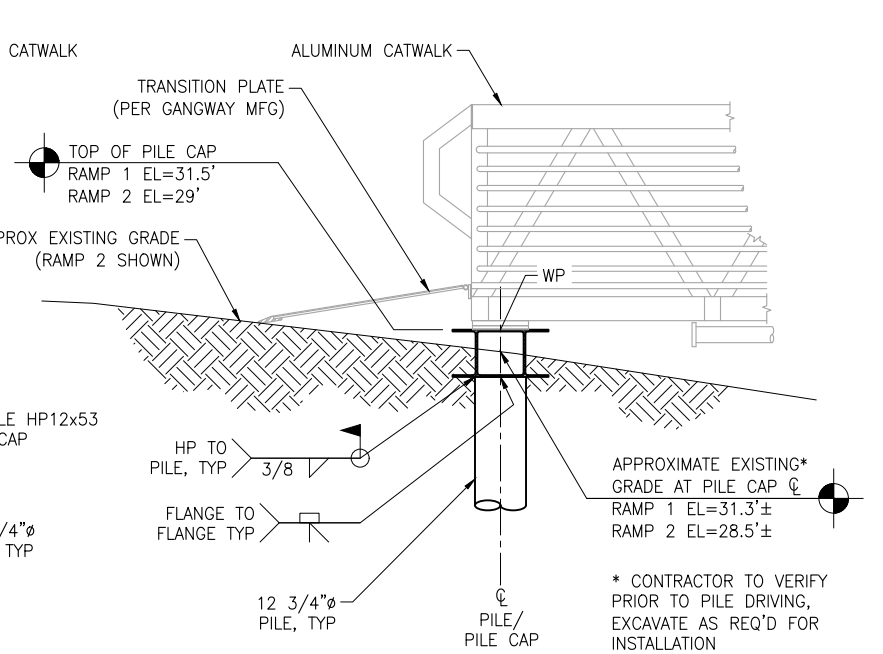
SECTION B-B
NTS



CAP DETAIL
NTS



PIPE PILE ABUTMENT
NTS (RAMPS 1 & 2)

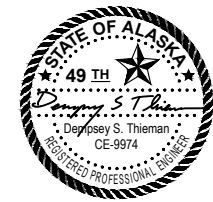


SECTION C-C
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com

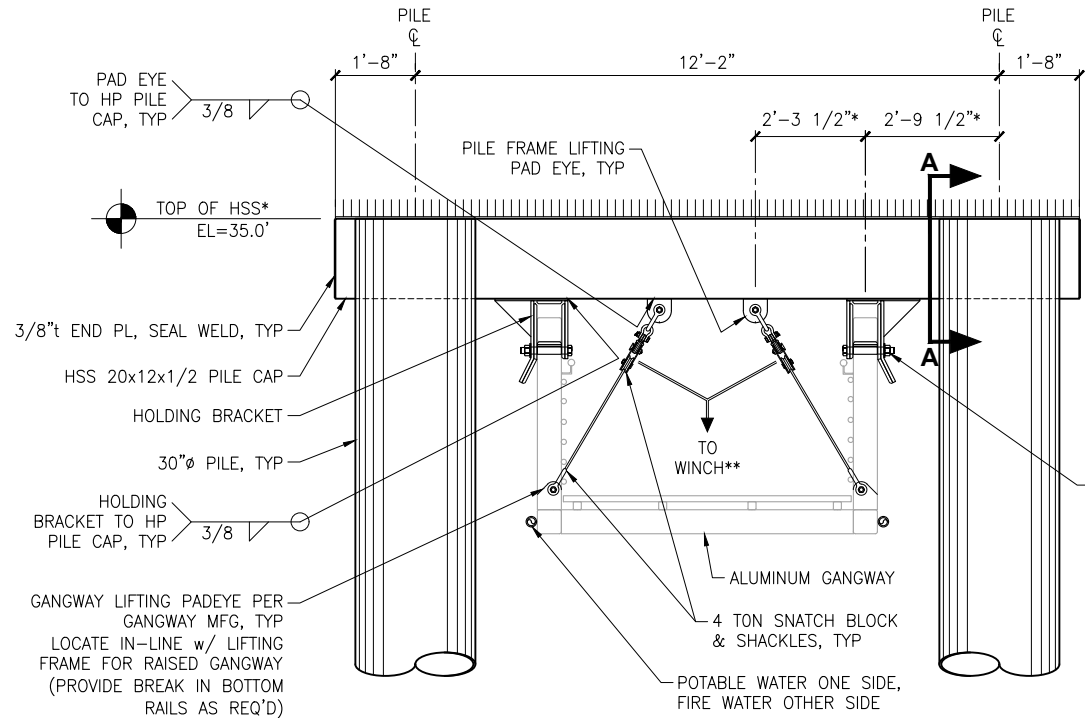


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT
ABUTMENT DETAILS

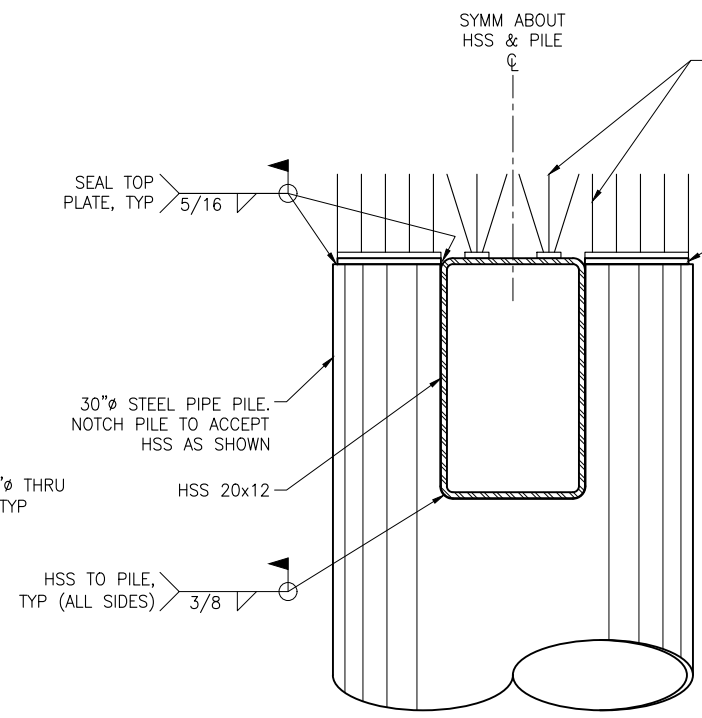
DESIGNED BY: CR/BJ	DATE: APRIL 2019	2.03	SHEET NO: 7 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor Drawings\2.01_2.04 Access Details.dwg, 2.03, 4/9/2019 3:49:51 PM, jemes, 1:2

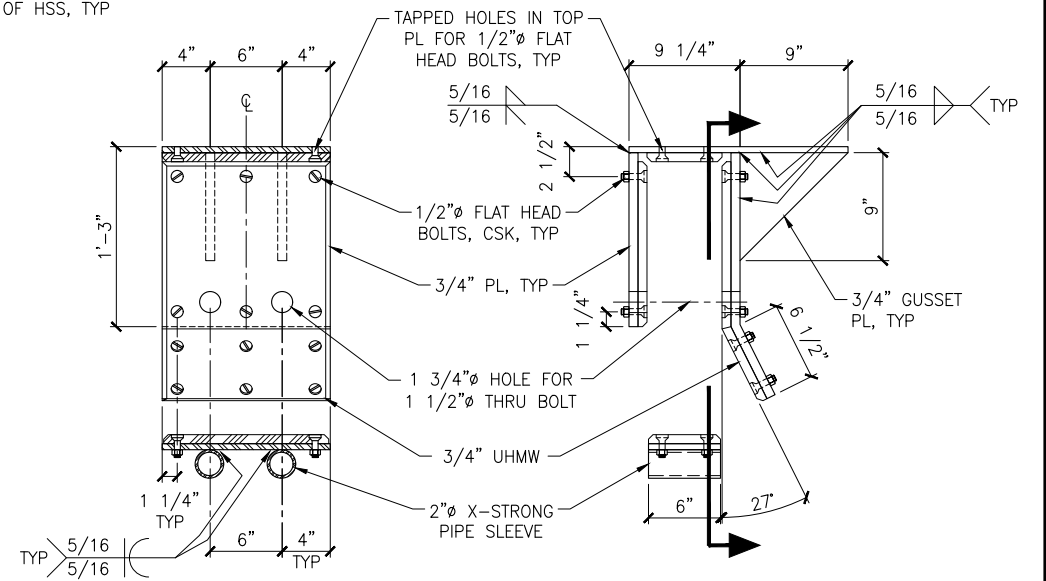
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\2.01_2.04 Access Details.dwg, 2.04, 4/9/2019 3:49:52 PM, james, 1:2



GANGWAY LIFTING FRAME
NTS



SECTION A-A
NTS



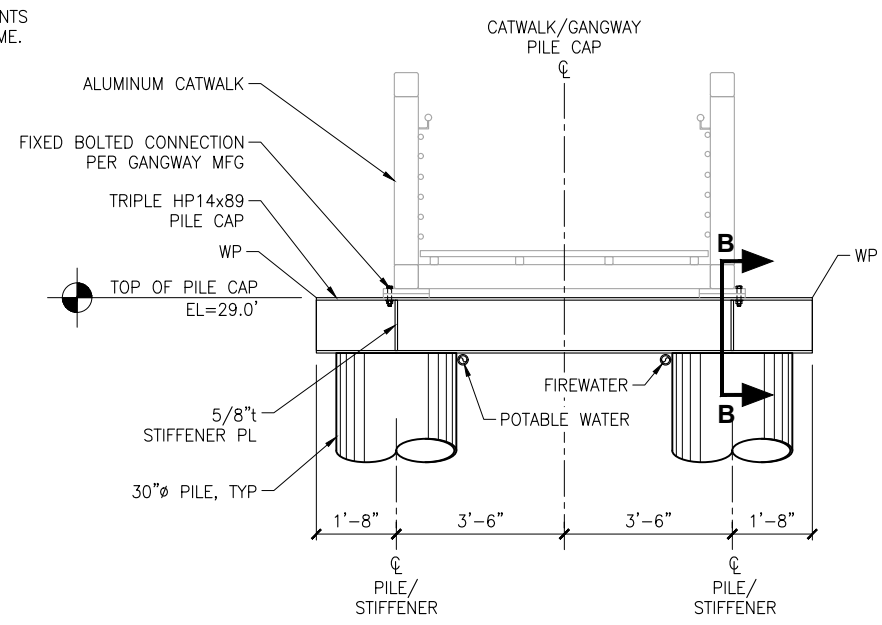
SECTION

NOTE:
BASED ON 6x6
GANGWAY TOP CHORD

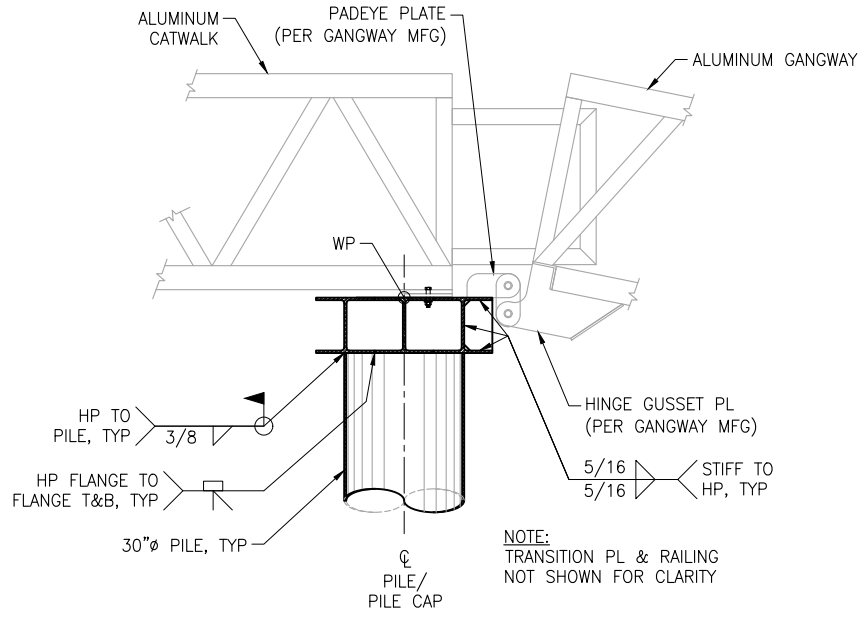
ELEVATION

HOLDING BRACKET
NTS

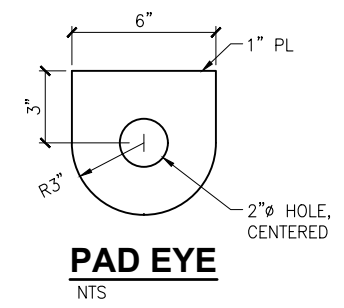
NOTES:
* DIMENSIONS SHOWN ARE BASED ON THE "REFERENCE GANGWAY" GEOMETRY PROVIDED ON SHEET 2.02. MODIFY THE GANGWAY LIFTING FRAME & HOLDING BRACKET AS REQ'D FOR FURNISHED GANGWAY.
** PROVIDE (1) NEW WINCH & ASSOCIATED HARDWARE REQ'D FOR GANGWAY LIFTING OPERATIONS. PROVIDE WINCH ANCHOR POINTS ON CATWALK OR OFFSHORE CATWALK FRAME. SUBMIT WINCHING PLAN FOR APPROVAL.



OFFSHORE CATWALK FRAME
NTS



SECTION B-B
NTS



PAD EYE
NTS

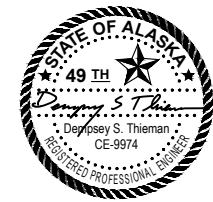
NOTE:
TRANSITION PL & RAILING
NOT SHOWN FOR CLARITY

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION

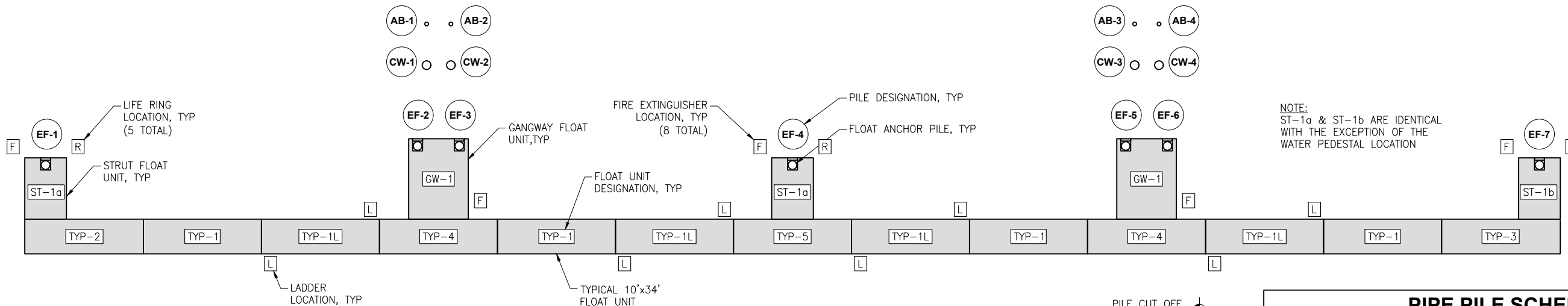


DATE: 4/9/2019

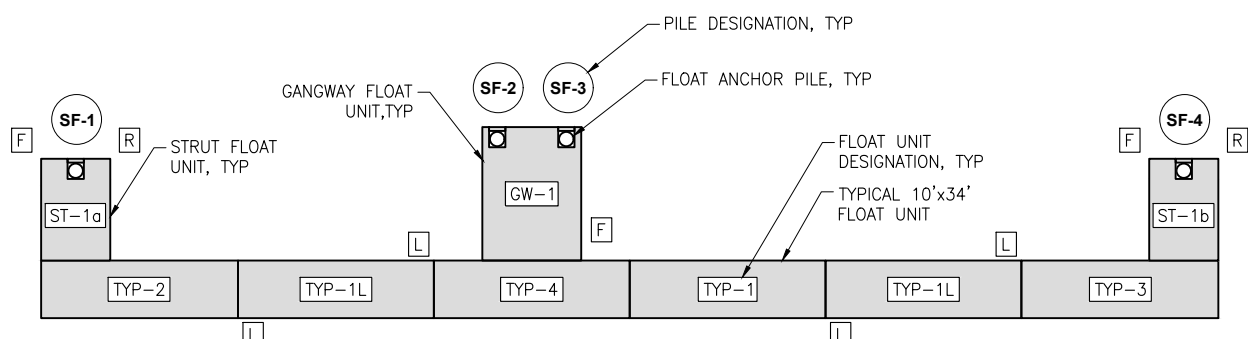
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



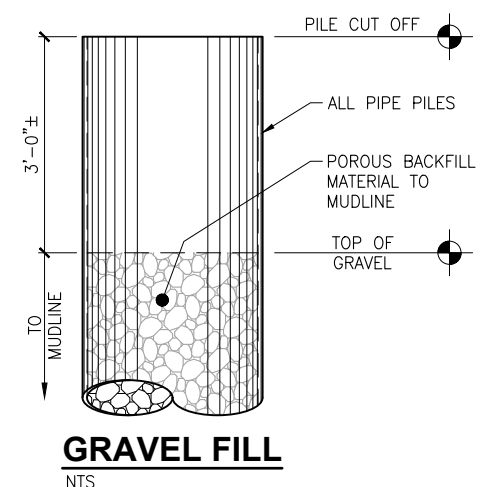
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
PILE CAP DETAILS			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 2.04	SHEET NO: 8 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



EAST FLOAT LAYOUT
NTS



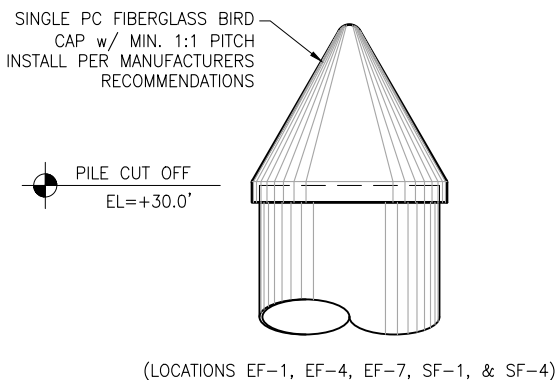
SOUTH FLOAT LAYOUT
NTS



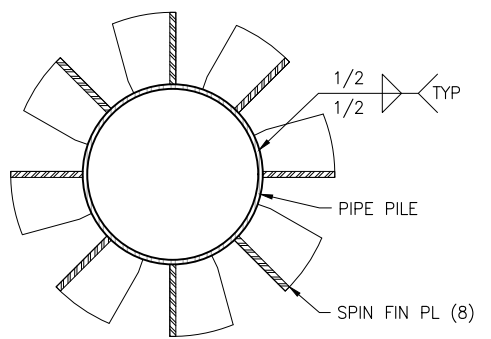
GRAVEL FILL
NTS

PIPE PILE SCHEDULE							
PILE ID	SIZE	MIN TIP EL	SUPPLY LENGTH	NOMINAL BEARING CAPACITY	PILE TIP	NORTHING (NOTE 2)	EASTING (NOTE 2)
EF-1	30"x0.750"	-49.0'	85'	200 KIPS	SPIN FIN	1841321.57	1550584.68
EF-2	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1841215.84	1550603.21
EF-3	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1841203.92	1550604.63
EF-4	30"x0.750"	-49.0'	85'	200 KIPS	SPIN FIN	1841107.91	1550610.25
EF-5	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1841013.28	1550627.45
EF-6	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1841001.37	1550628.88
EF-7	30"x0.750"	-49.0'	85'	200 KIPS	SPIN FIN	1840894.25	1550635.82
SF-1	30"x0.750"	-49.0'	85'	200 KIPS	SPIN FIN	1840662.15	1550653.14
SF-2	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1840647.66	1550581.17
SF-3	30"x0.750"	-49.0'	90'	200 KIPS	SPIN FIN	1840646.23	1550569.25
SF-4	30"x0.750"	-49.0'	85'	200 KIPS	SPIN FIN	1840639.28	1550462.13
CW-1	30"x0.750"	-40.0'	75'	200 KIPS	SPIN FIN	1841221.80	1550674.00
CW-2	30"x0.750"	-40.0'	75'	200 KIPS	SPIN FIN	1841214.85	1550674.83
CW-3	30"x0.750"	-40.0'	75'	200 KIPS	SPIN FIN	1841019.24	1550698.24
CW-4	30"x0.750"	-40.0'	75'	200 KIPS	SPIN FIN	1841012.29	1550699.08
AB-1	12.75"x0.500"	-8.0'	40'	20 KIPS	OPEN SHOE	1841231.30	1550753.43
AB-2	12.75"x0.500"	-8.0'	40'	20 KIPS	OPEN SHOE	1841224.35	1550754.27
AB-3	12.75"x0.500"	-10.0'	40'	20 KIPS	OPEN SHOE	1841026.01	1550754.84
AB-4	12.75"x0.500"	-10.0'	40'	20 KIPS	OPEN SHOE	1841019.06	1550755.67
EXTRA	30"x0.750"		40'				

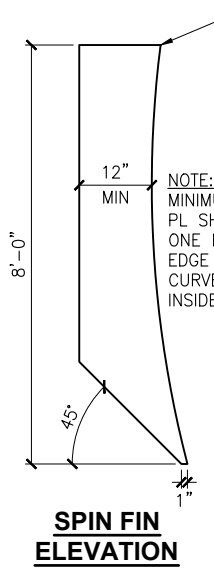
- NOTES:
 1) ALL PIPE PILES SHALL BE GRAVEL FILLED, SEE DETAIL.
 2) CONFIRM NORTHINGS & EASTINGS FOR PILES BASED ON FINAL FABRICATED FLOAT UNIT DIMENSIONS PRIOR TO INSTALLATION



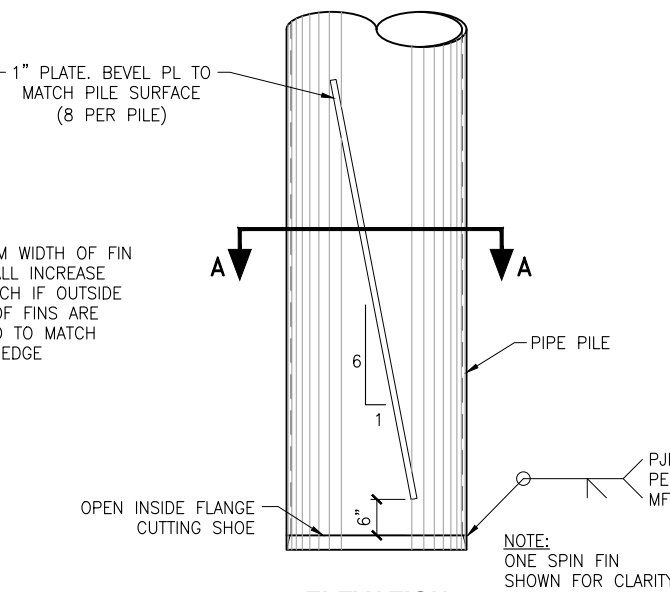
FLOAT PILE CAP
NTS



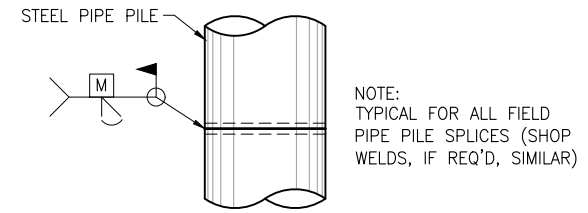
SECTION A-A
NTS



SPIN FIN ELEVATION
NTS

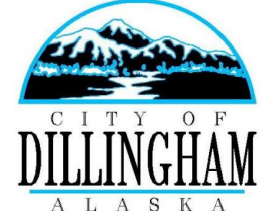


SPIN FIN PILE TIP DETAILS
NTS

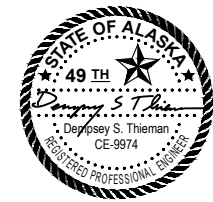


SPLICE DETAIL
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



1506 West 36th Avenue
 Anchorage, Alaska 99503
 Phone: 907.561.1011
 Fax: 907.563.4220
 www.pndengineers.com



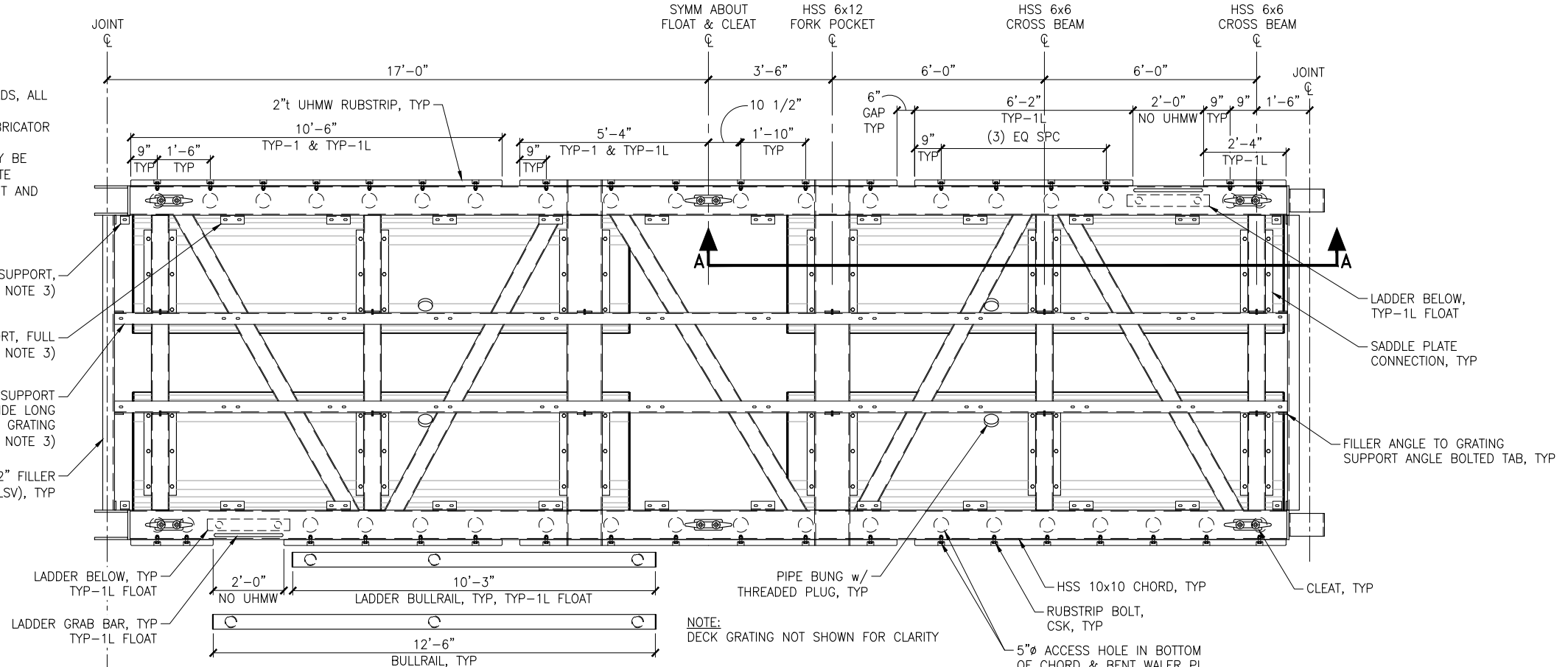
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT
 FLOAT LAYOUT & PILE DETAILS

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.01	SHEET NO: 9 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.01, 4/9/2019 3:50:04 PM, james, 1,2

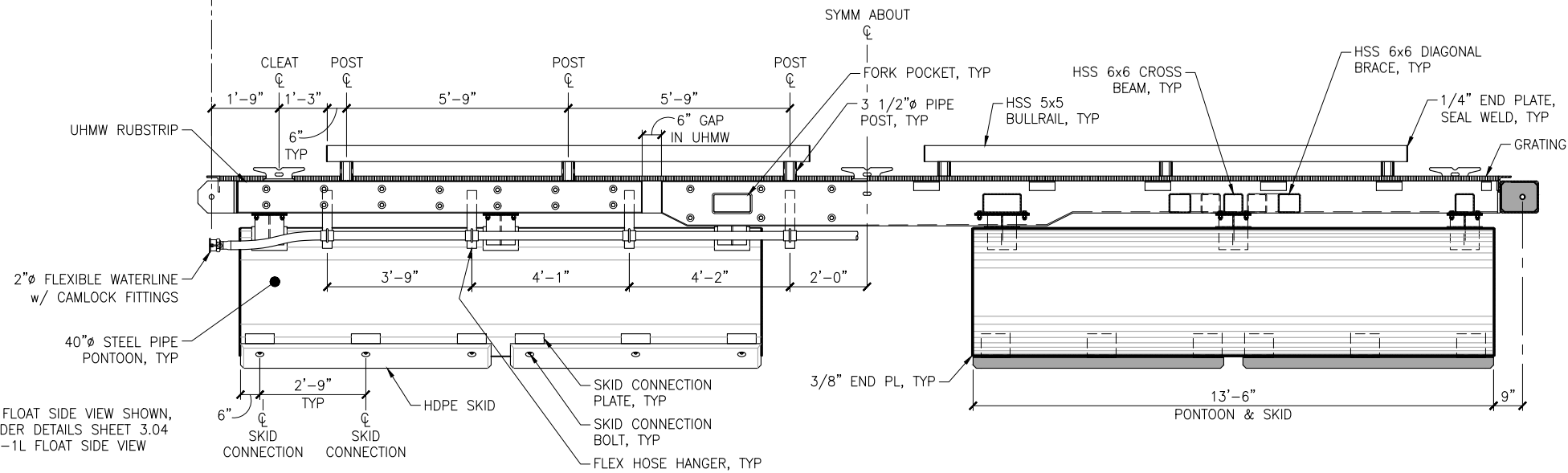
- NOTES:**
- DECK GRATING & WATERLINE NOT SHOWN FOR CLARITY.
 - ALL JOINTS SHALL BE SEAL WELDED WITH 5/16" FILLET WELDS, ALL SIDES, ALL AROUND, UNLESS OTHERWISE NOTED.
 - FLOAT FABRICATOR TO COORDINATE w/ GRATING VENDOR/FABRICATOR TO DETERMINE GRATE SUPPORT LOCATIONS & BOLT HOLE LAYOUT/CONFIGURATIONS. CONTINUOUS SUPPORT ANGLES MAY BE ADJUSTED (+/- 1" TRANSVERSE TO FLOAT) TO ACCOMMODATE GRATING MESH LAYOUT). SUBMIT FINAL GRATING MESH LAYOUT AND BOLT ATTACHMENT LOCATIONS FOR ENGINEER APPROVAL.

- L3x3 GRATING SUPPORT, HALF CLIP, TYP (SEE NOTE 3)
- L3x3 GRATING SUPPORT, FULL CLIP, TYP (SEE NOTE 3)
- CONTINUOUS GRATING SUPPORT 4x4 ANGLE, TYP. PROVIDE LONG SLOTTED HOLES FOR GRATING ATTACHMENT (SEE NOTE 3)
- L5x4x1/2" FILLER ANGLE (LSV), TYP



TYPICAL FLOAT MODULE PLAN

NTS ESTIMATED DRY WT = 19,700 LBS



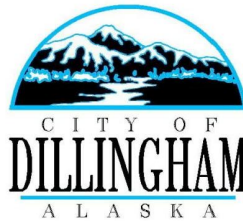
SIDE VIEW

NTS

SECTION A-A

NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



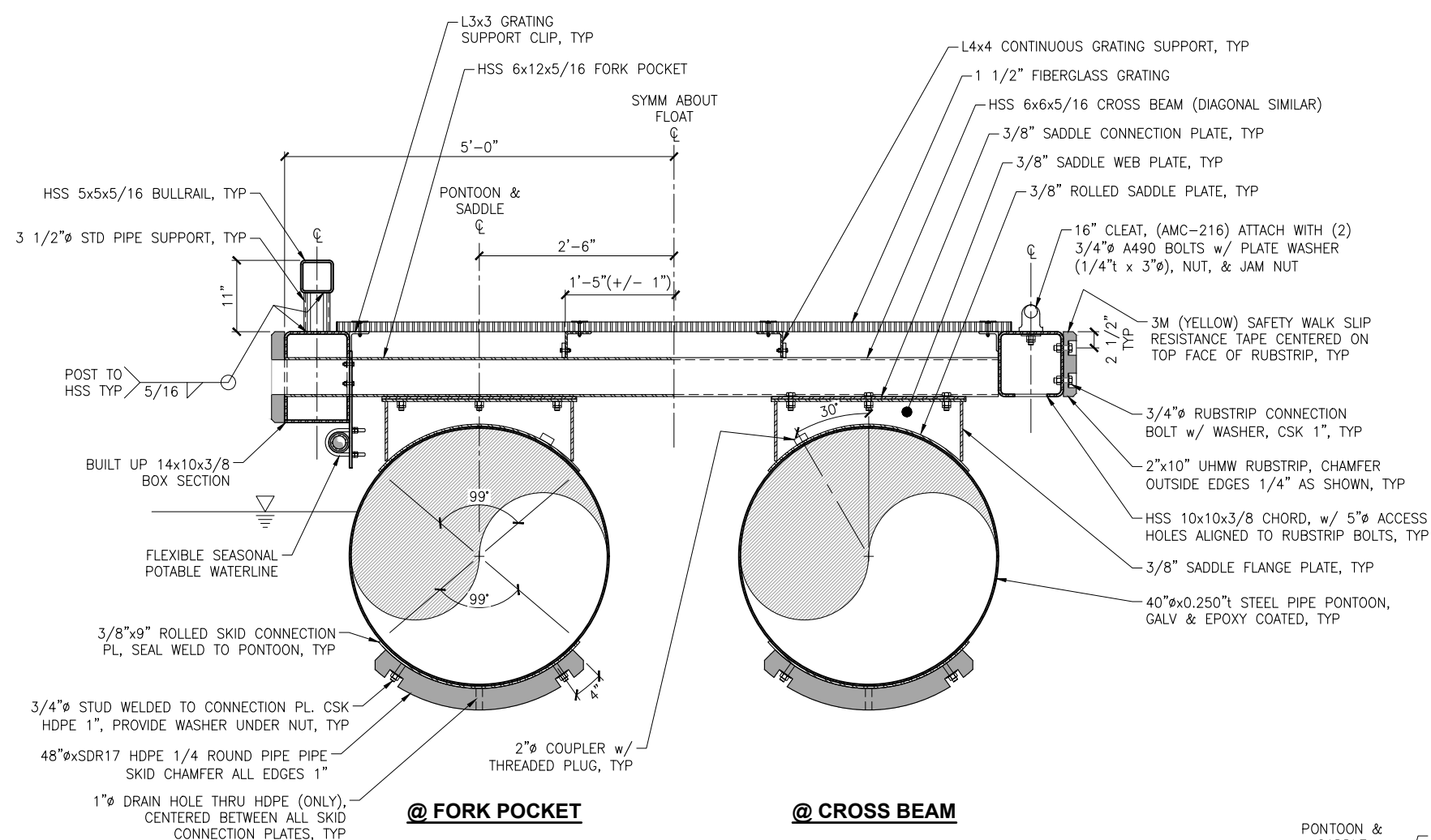
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



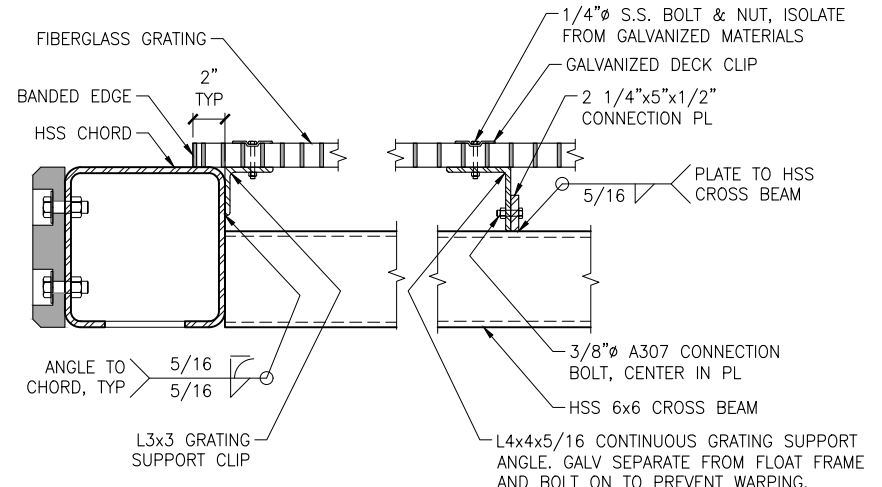
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TYPICAL FLOAT (TYP-1) PLAN

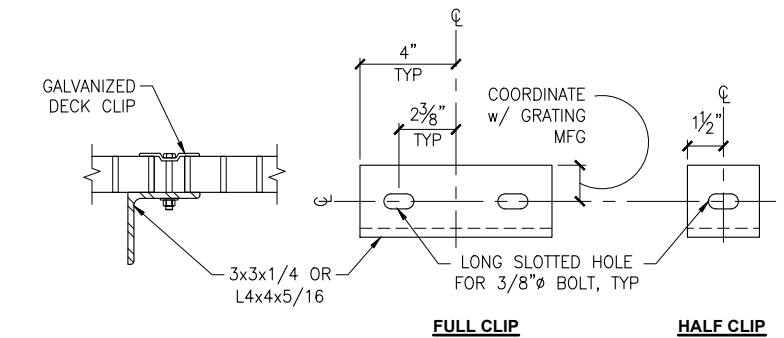
DESIGNED BY: CR/BJ DATE: APRIL 2019
CHECKED BY: CDC PROJECT NO: 171113 **3.02** SHEET NO: 10 OF 27



TYPICAL SECTION
NTS

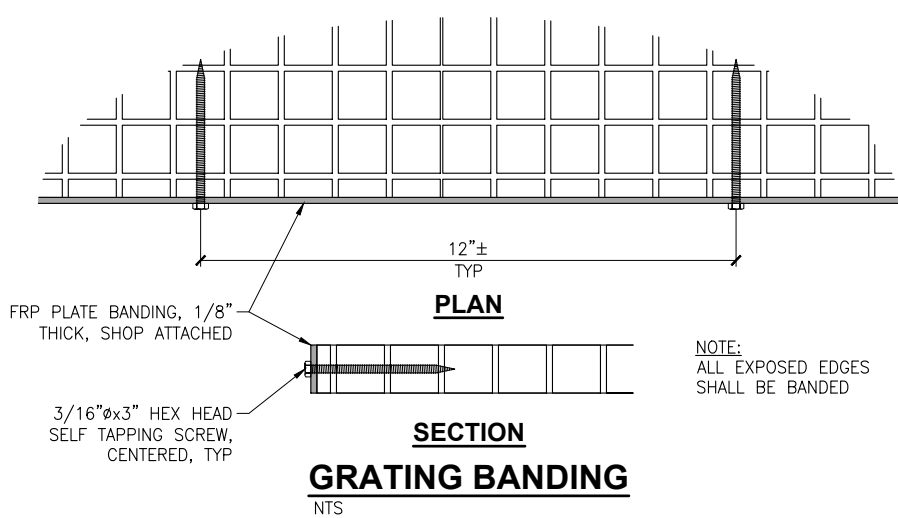


GRATING SUPPORT DETAILS
NTS

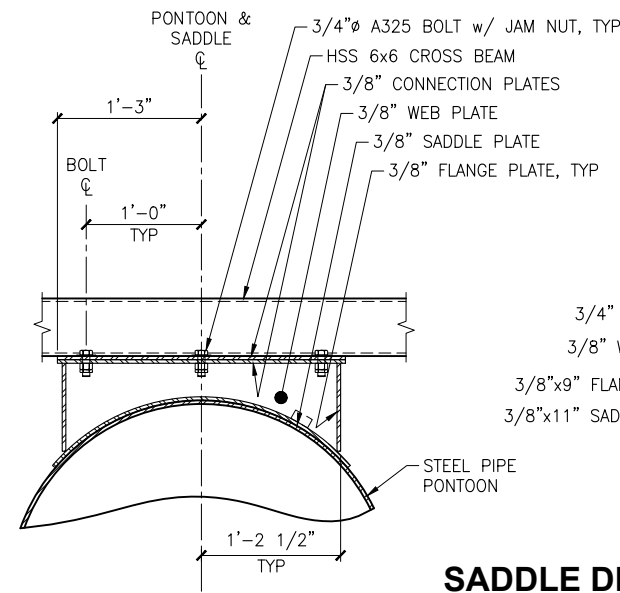


SUPPORT CLIP
NTS

NOTE:
ALL GRATING SHALL BE 1-1/2" DEEP MOLDED FIBERGLASS GRATING WITH A 1-1/2"x1-1/2" MESH, AS MFG BY FIBERGRATE COMPOSITE STRUCTURES. COLOR AS SELECTED BY OWNER

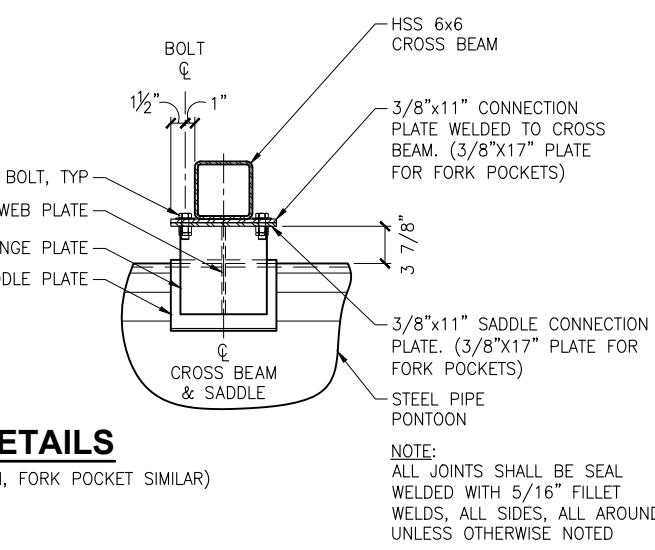


SECTION GRATING BANDING
NTS



SADDLE DETAILS

(CROSS BEAM SHOWN, FORK POCKET SIMILAR)
NTS



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **TYPICAL FLOAT DETAILS (1 OF 2)**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.03	SHEET NO: 11 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

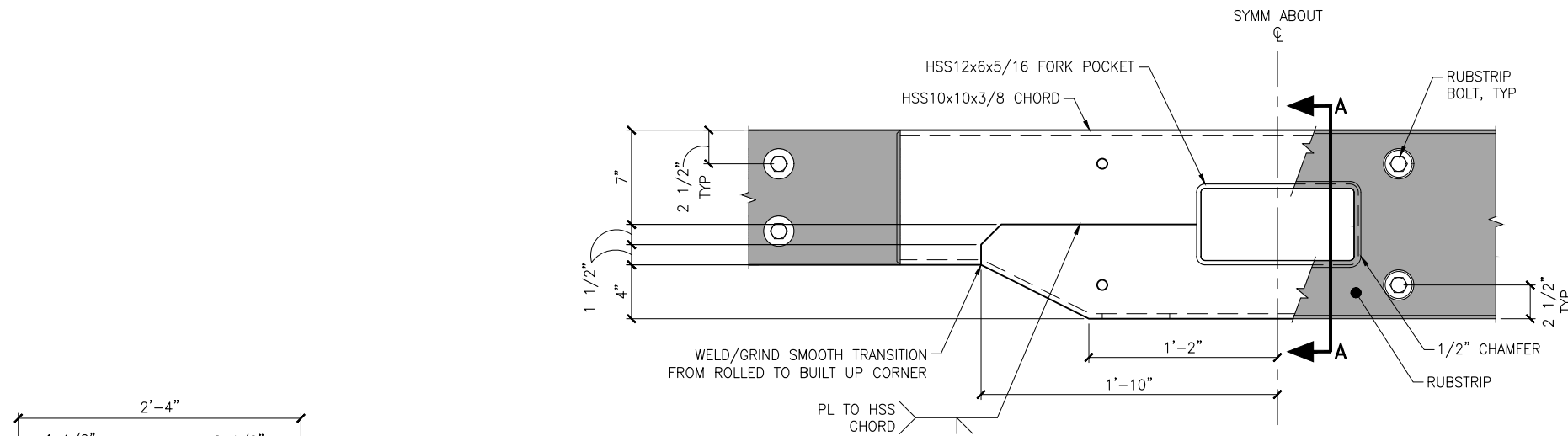


1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com

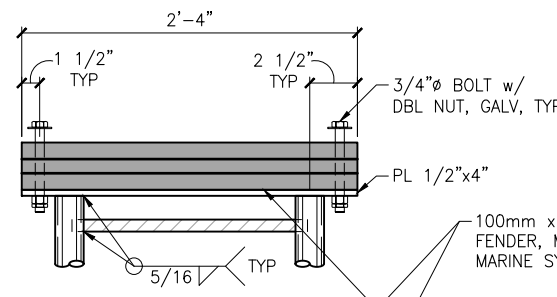


J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3.10 Float System.dwg, 3.03, 4/9/2019 3:50:08 PM, James, 1,2

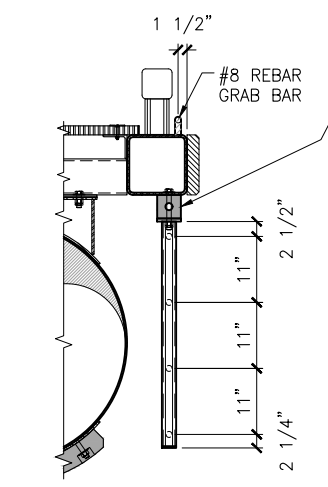
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.04, 4/9/2019 3:50:10 PM, James, 1,2



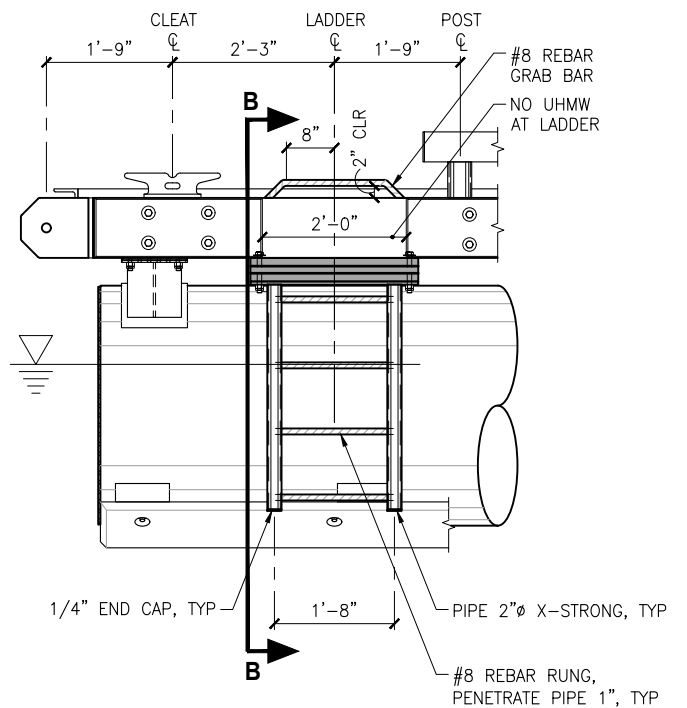
FORK POCKET
NTS



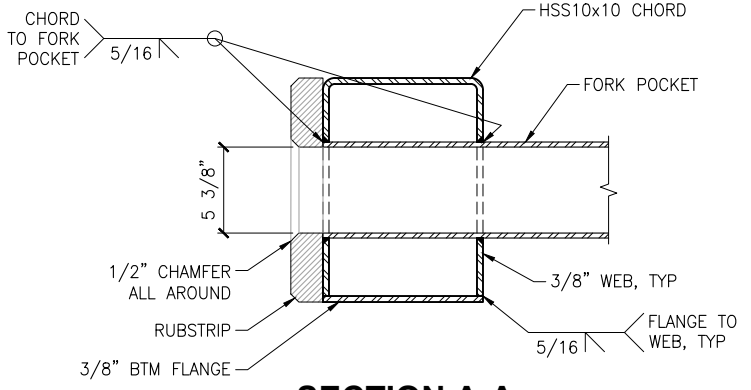
100mm x 100mm SQUARE EXTRUDED RUBBER FENDER, MODEL SC, AS MFG BY TRELLEBORG MARINE SYSTEMS OR APPROVED EQUAL



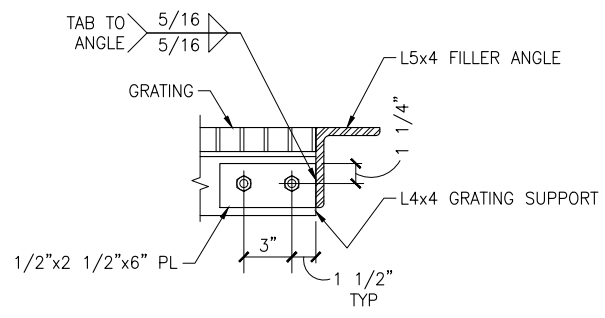
B-B



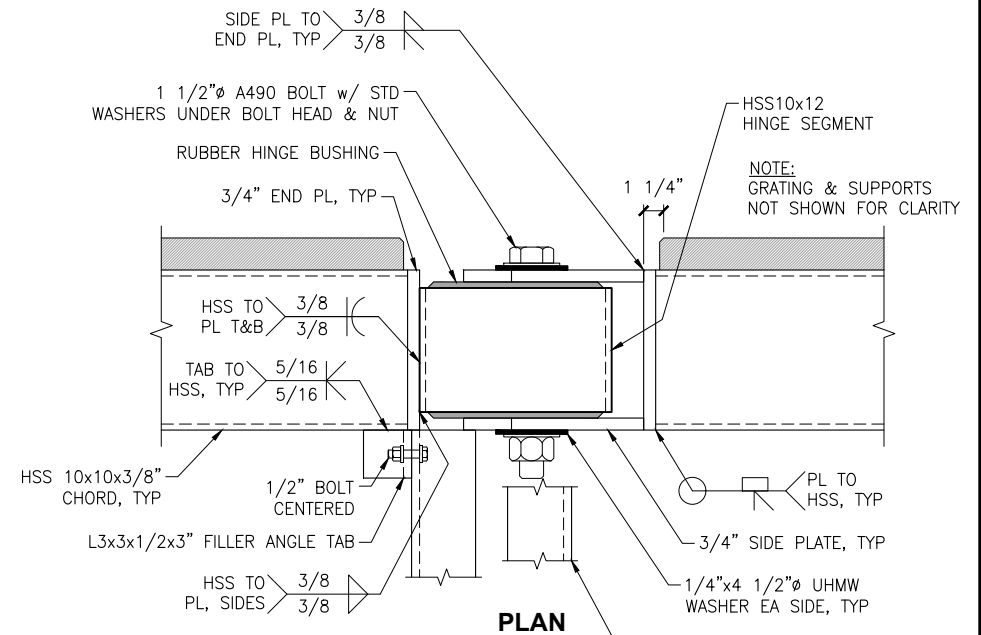
LADDER DETAILS (TYP-1L FLOATS)
NTS



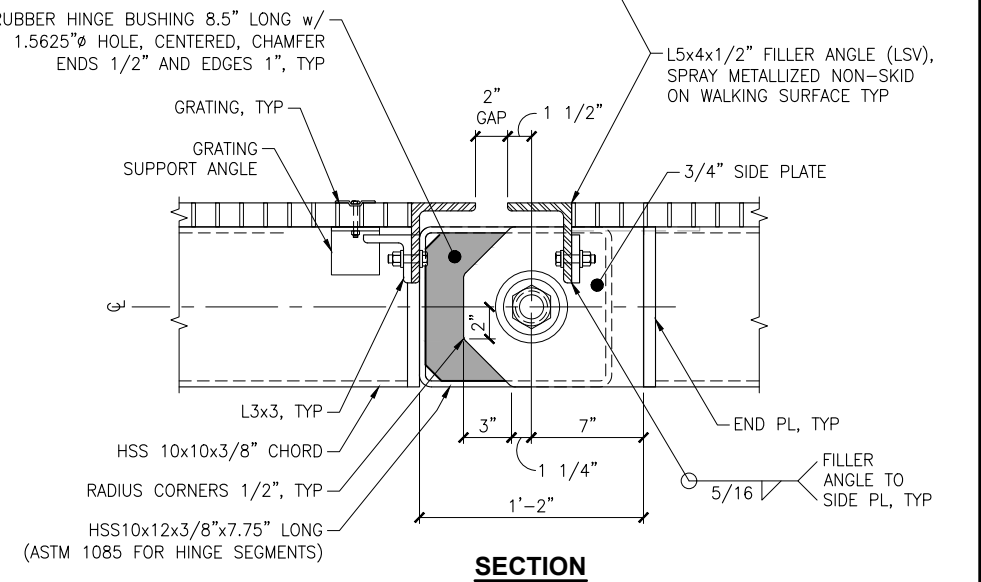
SECTION A-A
NTS



CONTINUOUS GRATING SUPPORT TO FILLER ANGLE TAB
NTS



PLAN



SECTION

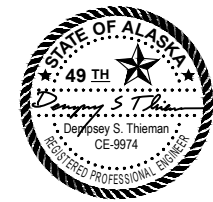
FLOAT TO FLOAT CONNECTION
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



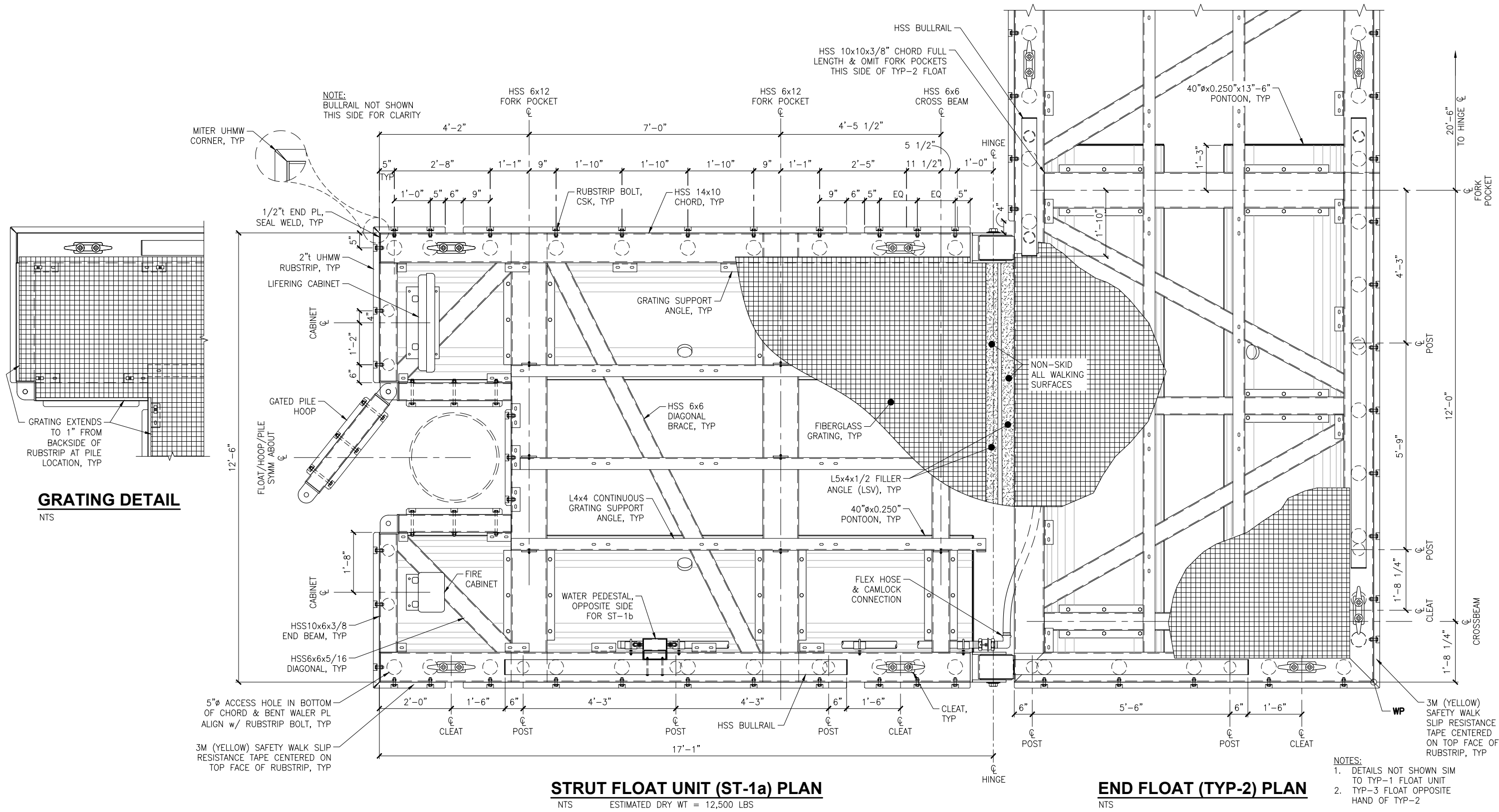
DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
TITLE: TYPICAL FLOAT DETAILS (2 OF 2)			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 3.04	SHEET NO: 12 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Float System.dwg, 3.05, 4/9/2019 3:50:12 PM, James, 1,2



100% DESIGN
 4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



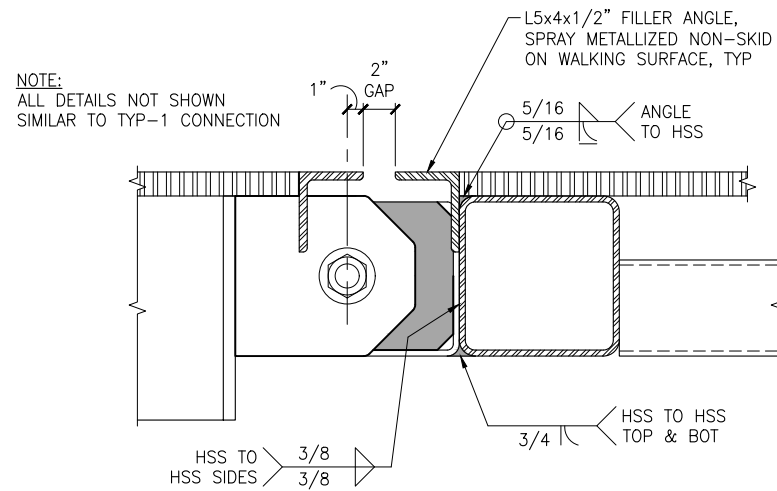
1506 West 36th Avenue
 Anchorage, Alaska 99503
 Phone: 907.561.1011
 Fax: 907.563.4220
 www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
TITLE: STRUT FLOAT (ST-1) PLAN			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 3.05	SHEET NO: 13 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

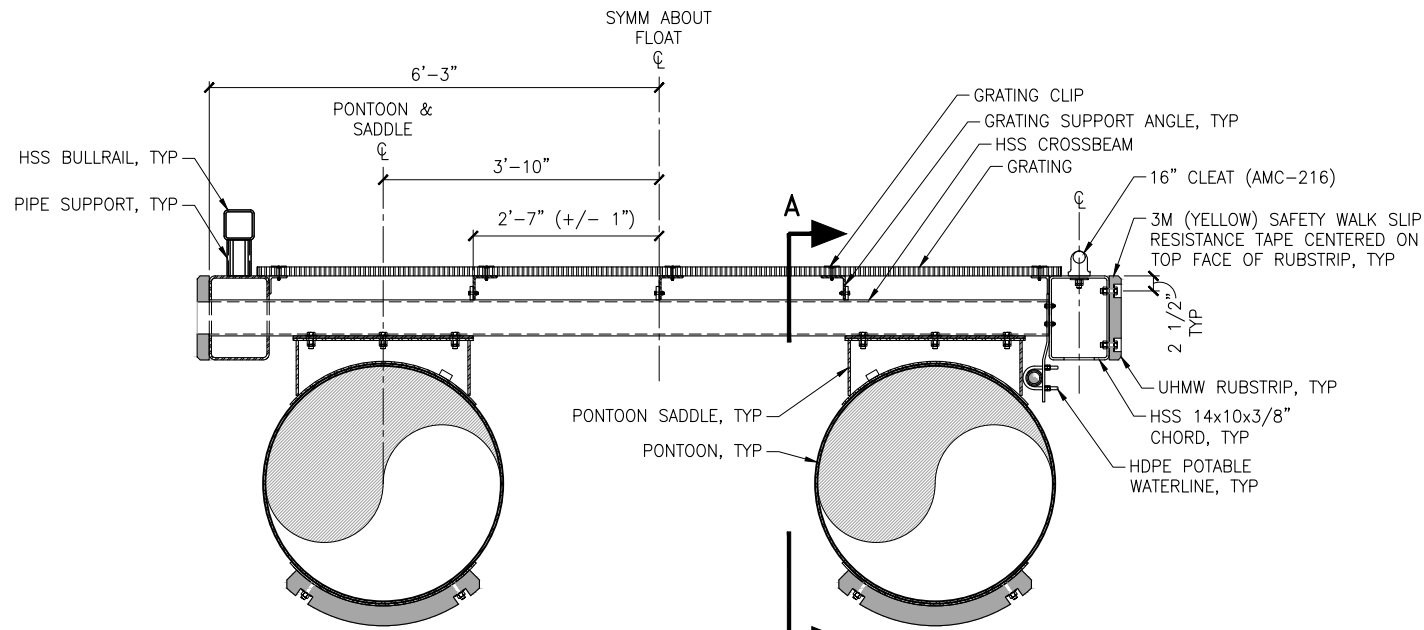
REV	DATE	DESCRIPTION

DATE: 4/9/2019



FLOAT TO FLOAT CONNECTION

NTS

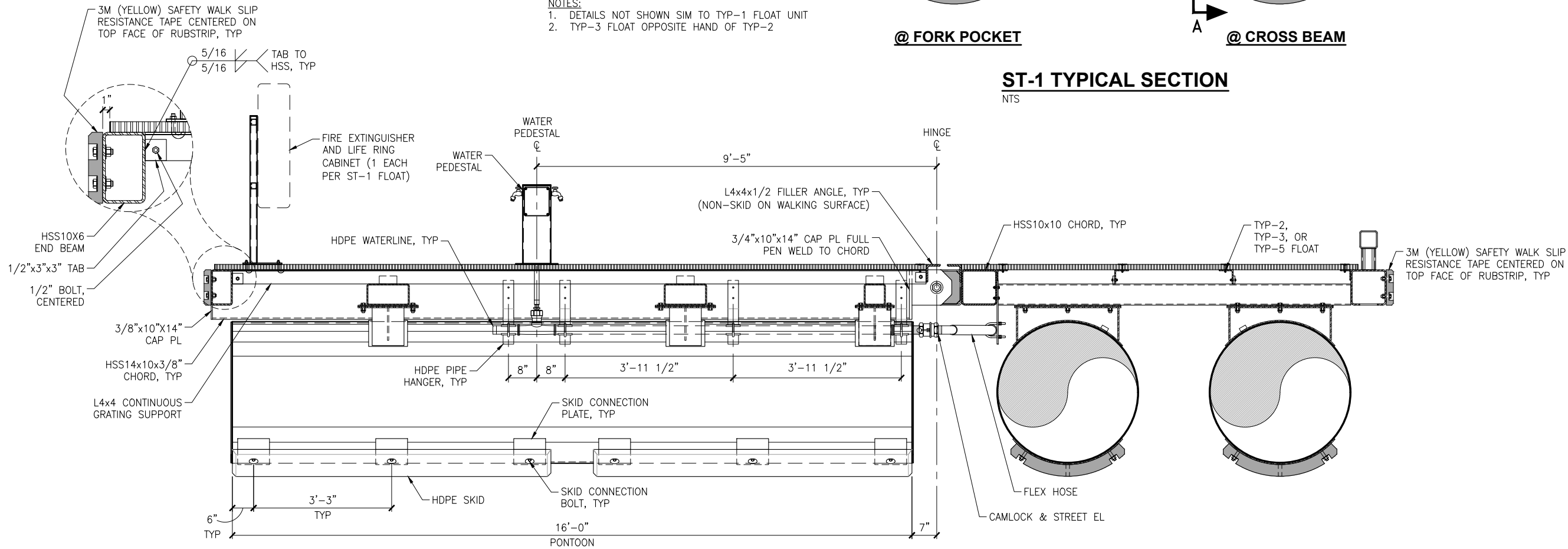


@ FORK POCKET

@ CROSS BEAM

ST-1 TYPICAL SECTION

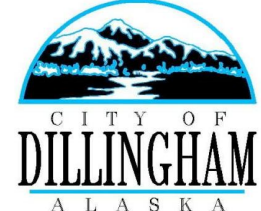
NTS



SECTION A-A

NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



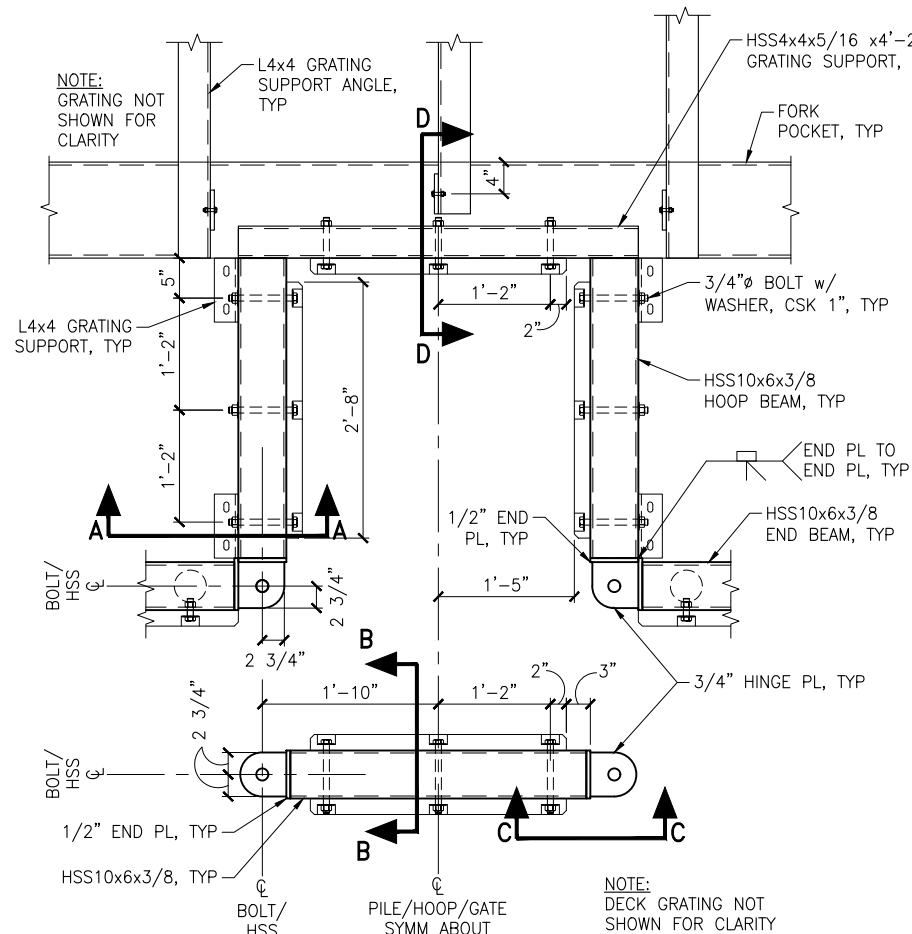
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **STRUT FLOAT DETAILS (1 OF 2)**

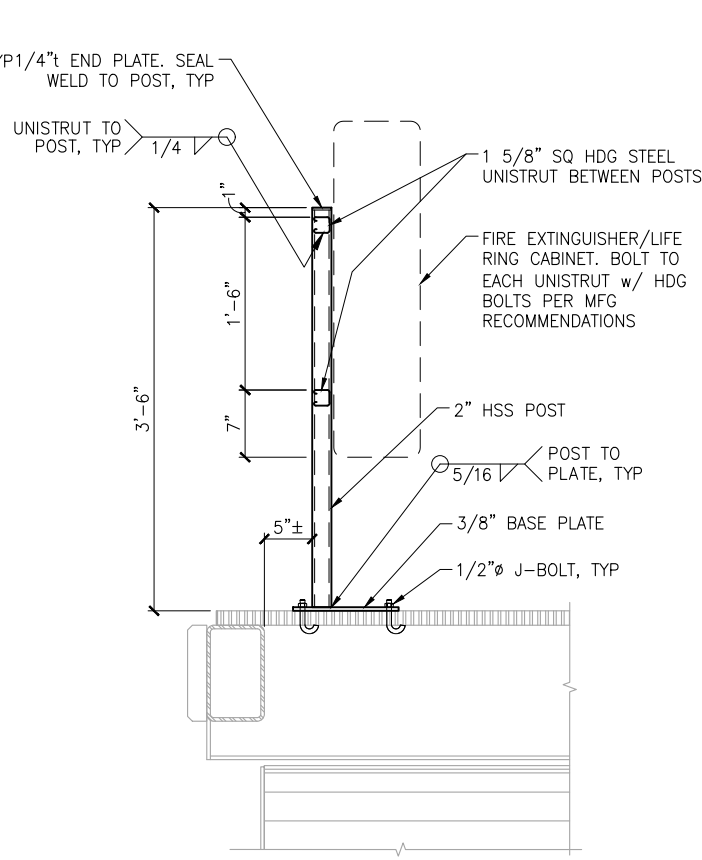
DESIGNED BY: CR/BJ DATE: APRIL 2019
CHECKED BY: CDC PROJECT NO: 171113

DWG NO: **3.06** SHEET NO: 14 OF 27

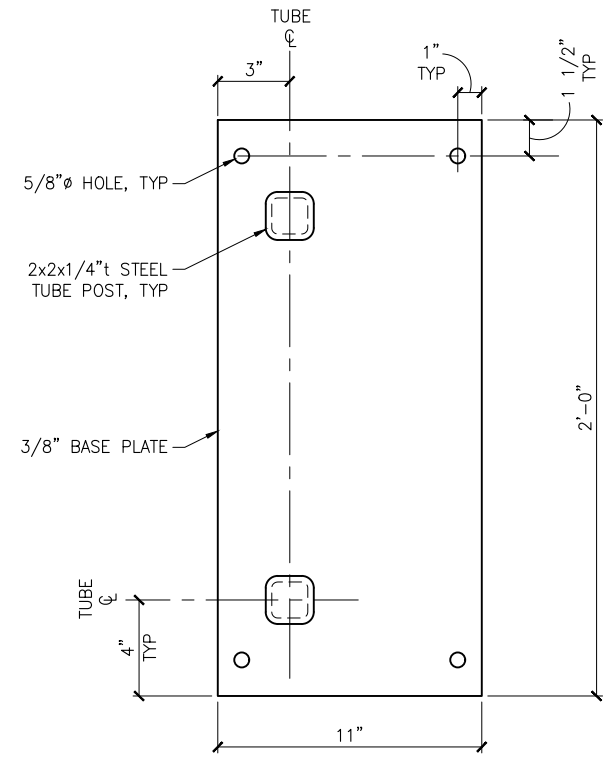
J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Float System.dwg, 3.06, 4/9/2019 3:50:13 PM, james, 1,2



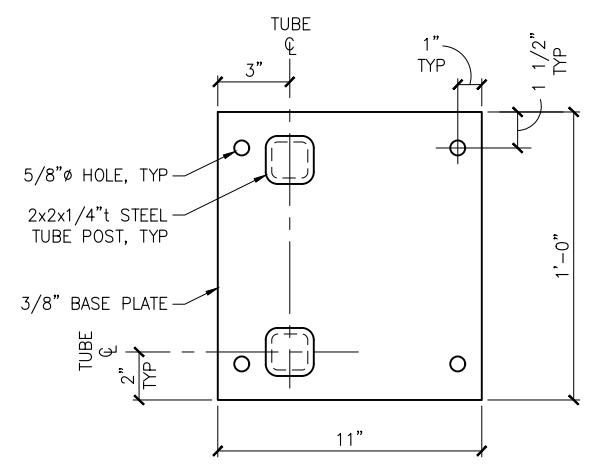
ST-1 PILE HOOP PLAN
NTS



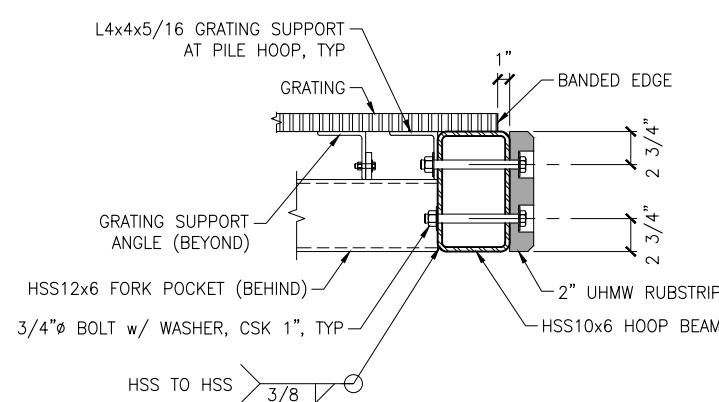
SAFETY EQUIPMENT BASE TYPICAL SECTION
NTS



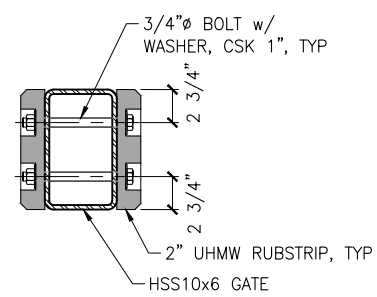
LIFE RING CABINET BASE PLAN
NTS



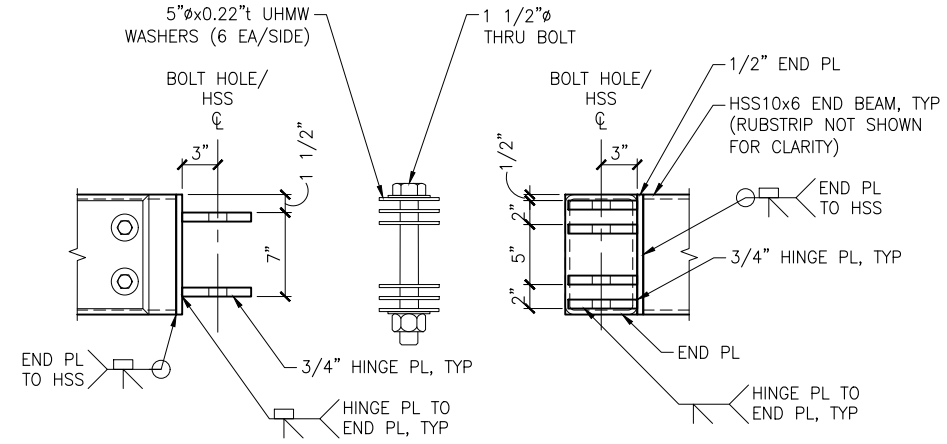
FIRE EXTINGUISHER BASE PLAN
NTS



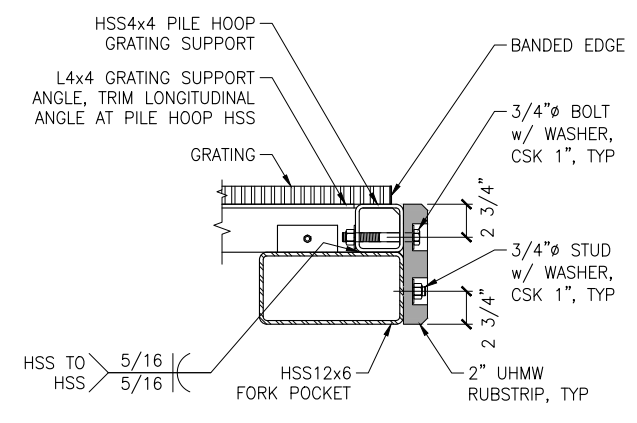
SECTION A-A
NTS



SECTION B-B
NTS



ELEVATION C-C
NTS



SECTION D-D
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



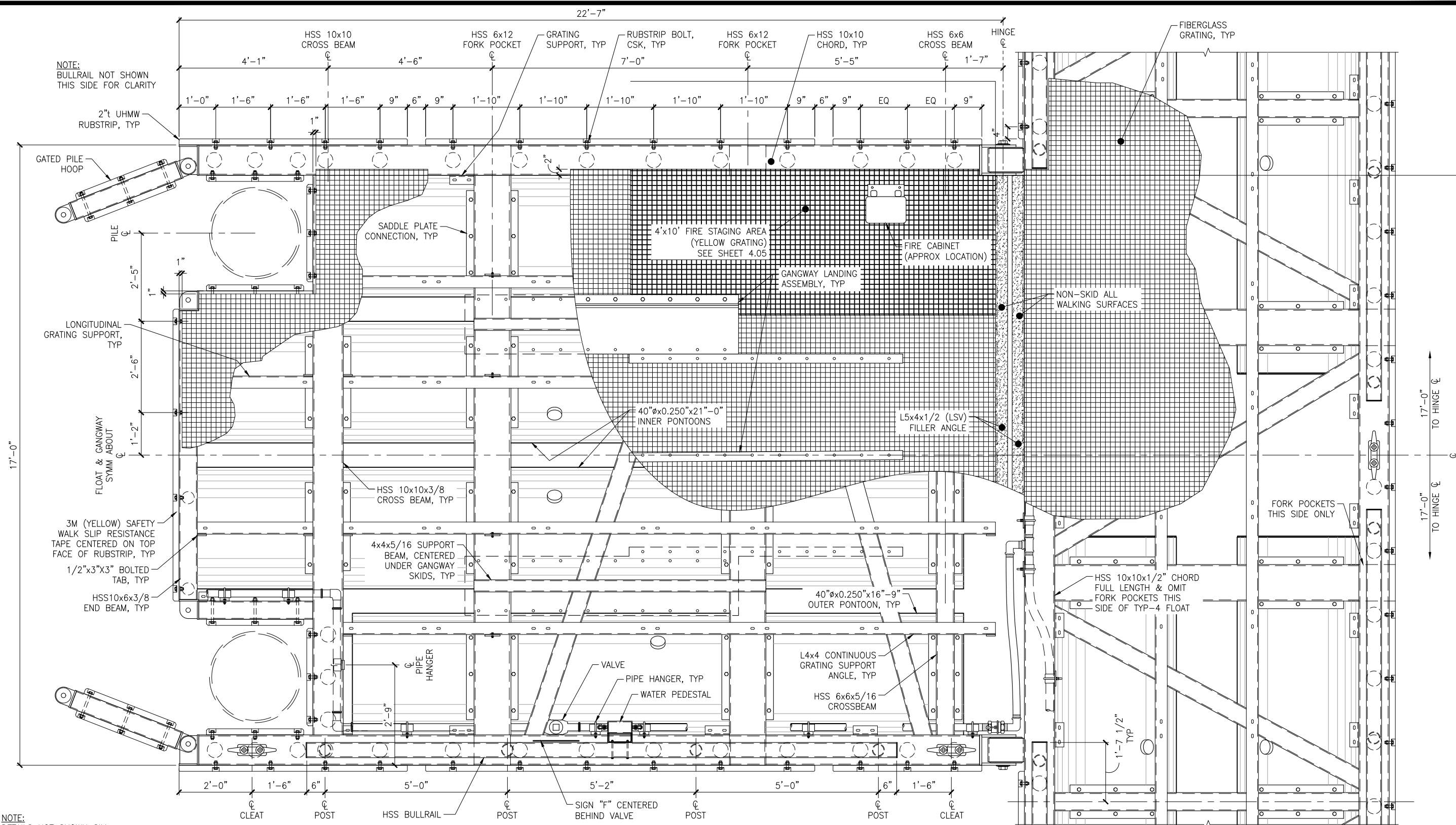
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **STRUT FLOAT DETAILS (2 OF 2)**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.07	SHEET NO: 15 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3.10 Float System.dwg, 3.07, 4/9/2019 3:50:16 PM, james, 1.2

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.08, 4/9/2019 3:50:17 PM, James, 1, 2



NOTE:
BULLRAIL NOT SHOWN
THIS SIDE FOR CLARITY

NOTE:
DETAILS NOT SHOWN SIM
TO TYP-1 & ST-1 FLOATS

GANGWAY LANDING FLOAT (GW-1)
NTS ESTIMATED DRY WT = 27,000 LBS

GANGWAY CONNECTION FLOAT (TYPE-4)
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



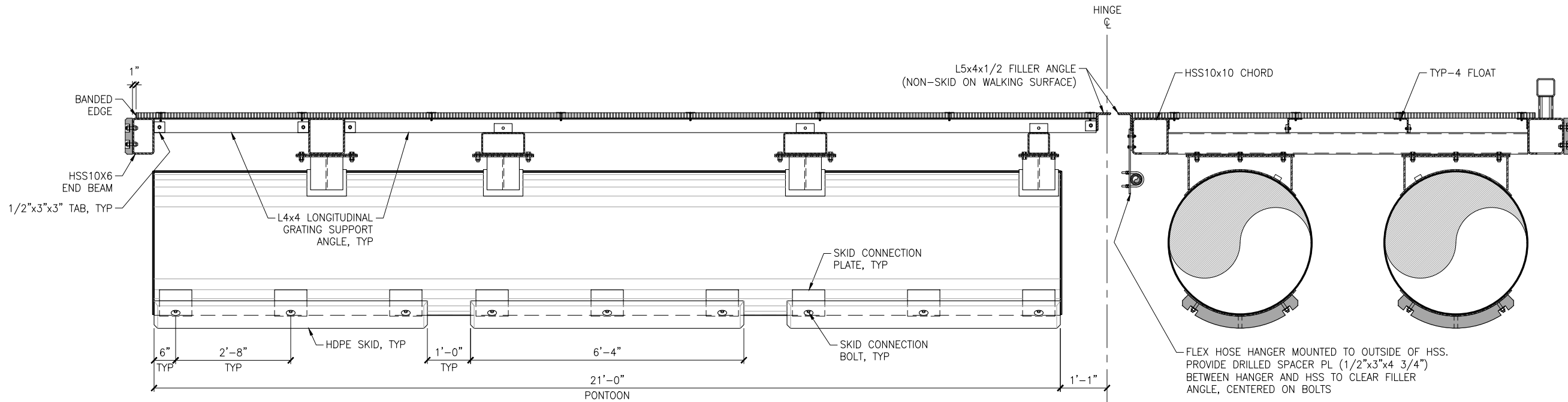
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

GANGWAY FLOAT (GW-1) PLAN

DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	DWG NO: 3.08	SHEET NO: 16 OF 27
CHECKED BY:	CDC	PROJECT NO.:	171113		

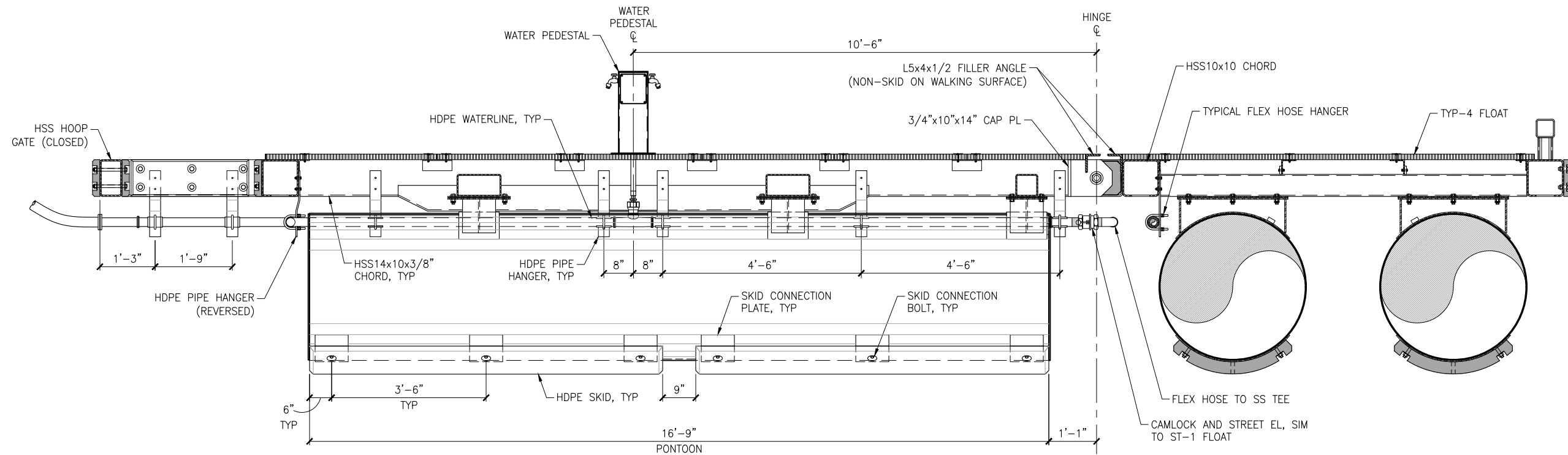
REV	DATE	DESCRIPTION

DATE: 4/9/2019



SECTION @ 21' PONTOONS

NTS

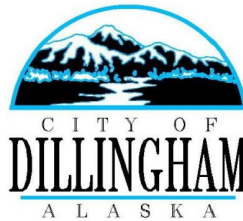


SECTION @ PILE HOOP

NTS

J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Boat System.dwg, 3.09, 4/9/2019 3:50:19 PM, James, 1, 2

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com

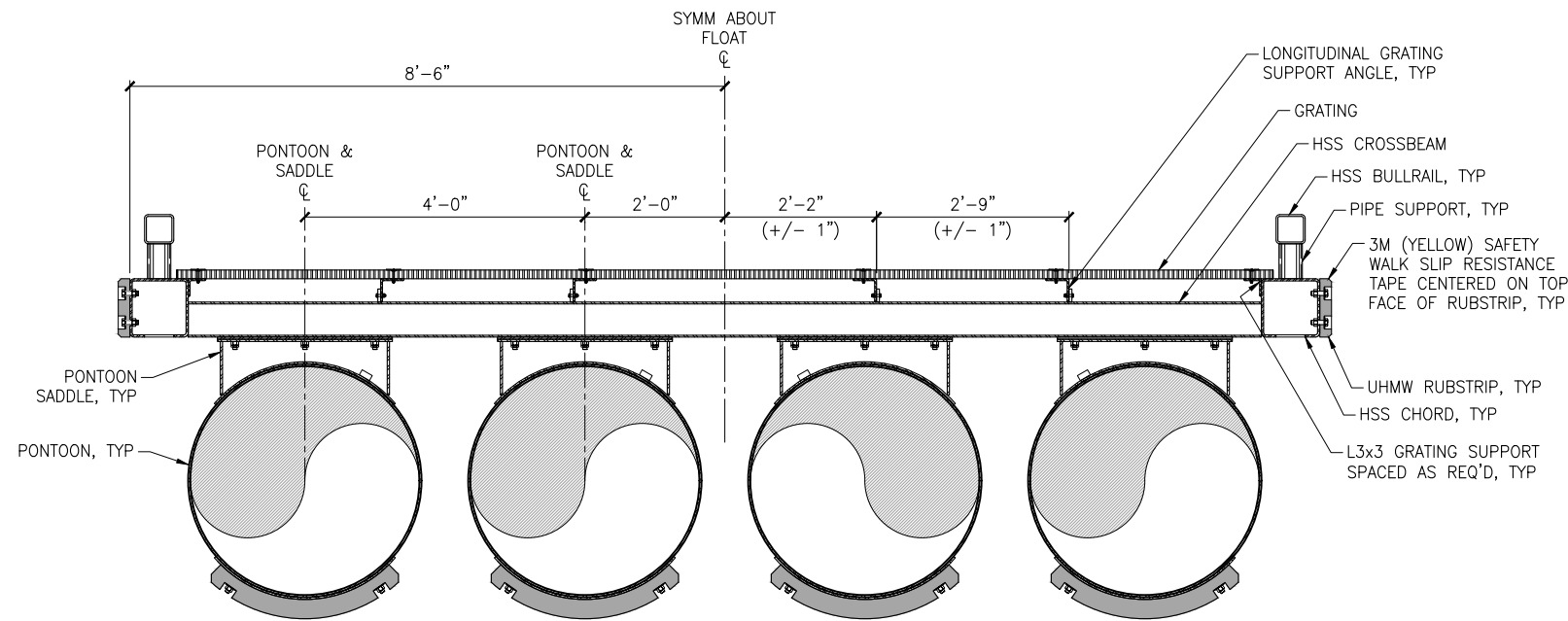


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

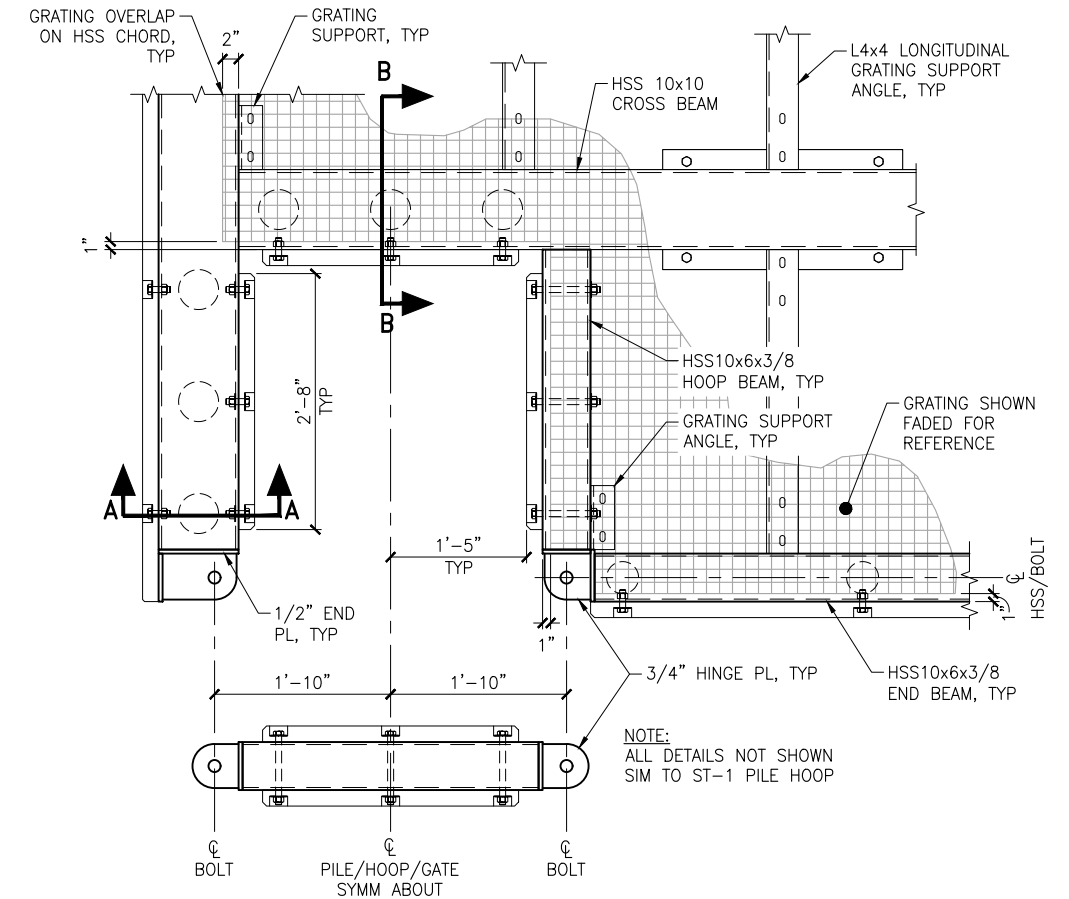
GANGWAY FLOAT SECTIONS

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.09	SHEET NO: 17 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

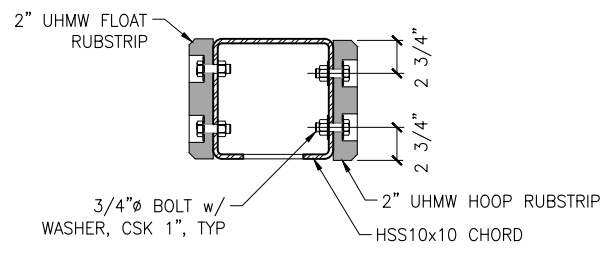
J:\2017\17113 Dillingham Small Boat Harbor Drawings\3.01_3_10_Float System.dwg, 3_10_4/9/2019 3:50:21 PM, James, 1, 2



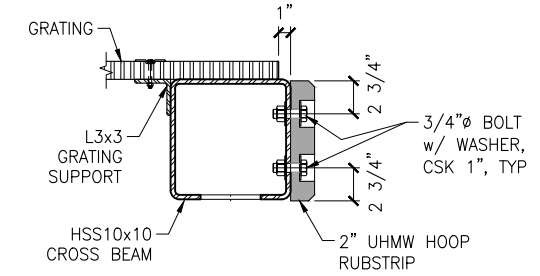
GW-1 TYPICAL SECTION
NTS



GW-1 PILE HOOP PLAN
NTS



SECTION A-A
NTS



SECTION B-B
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



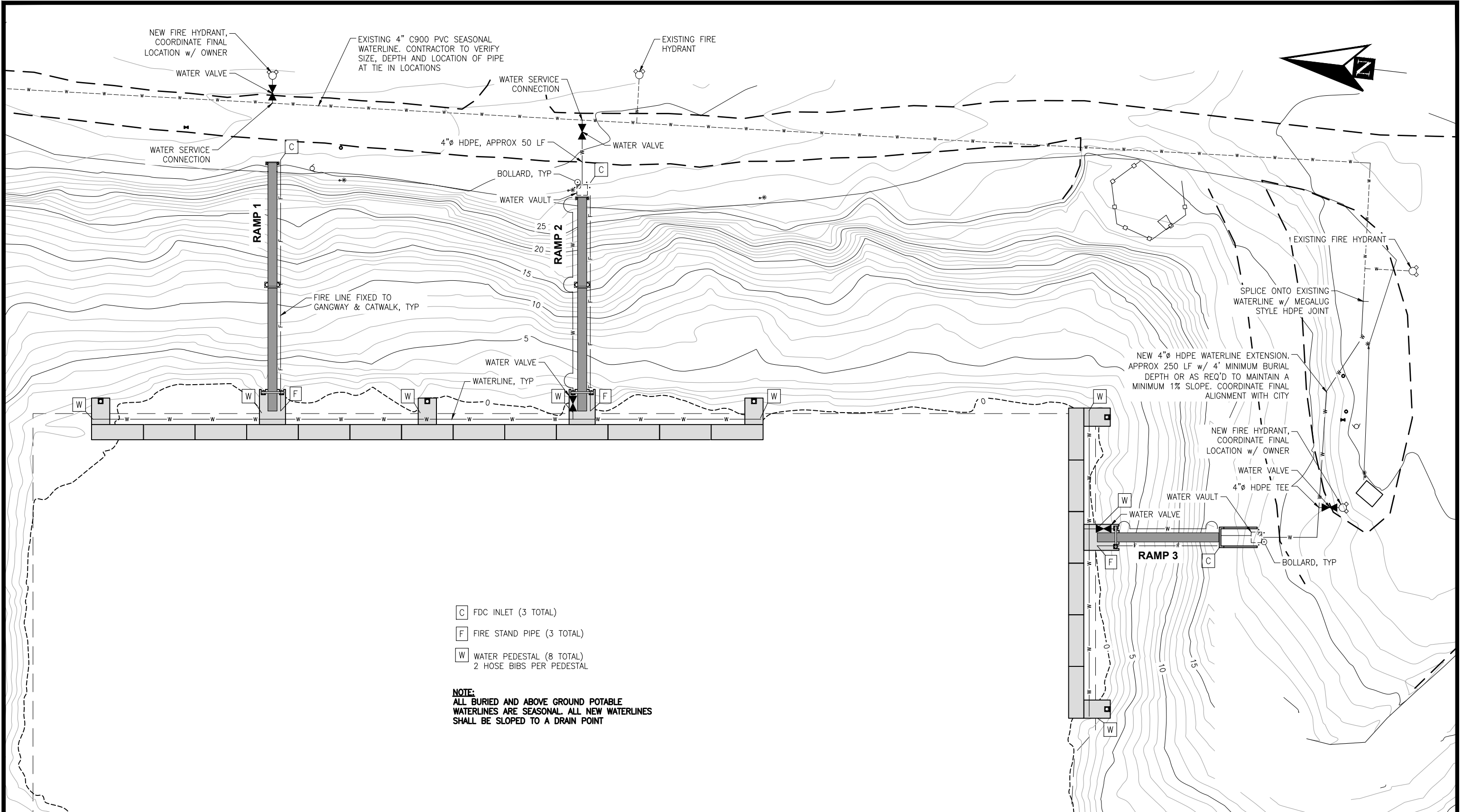
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **GANGWAY FLOAT DETAILS**

DESIGNED BY: CR/BJ DATE: APRIL 2019
CHECKED BY: CDC PROJECT NO: 171113

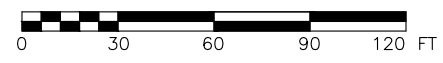
DWG NO: **3.10** SHEET NO: 18 OF 27

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.01 Water Supply Plan.dwg, 4.01, 4/9/2019 3:50:28 PM, James, 1, 2

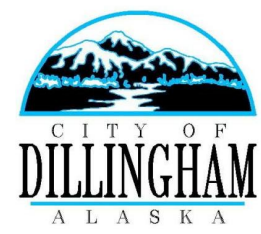


- [C] FDC INLET (3 TOTAL)
- [F] FIRE STAND PIPE (3 TOTAL)
- [W] WATER PEDESTAL (8 TOTAL)
2 HOSE BIBS PER PEDESTAL

NOTE:
ALL BURIED AND ABOVE GROUND POTABLE WATERLINES ARE SEASONAL. ALL NEW WATERLINES SHALL BE SLOPED TO A DRAIN POINT



100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



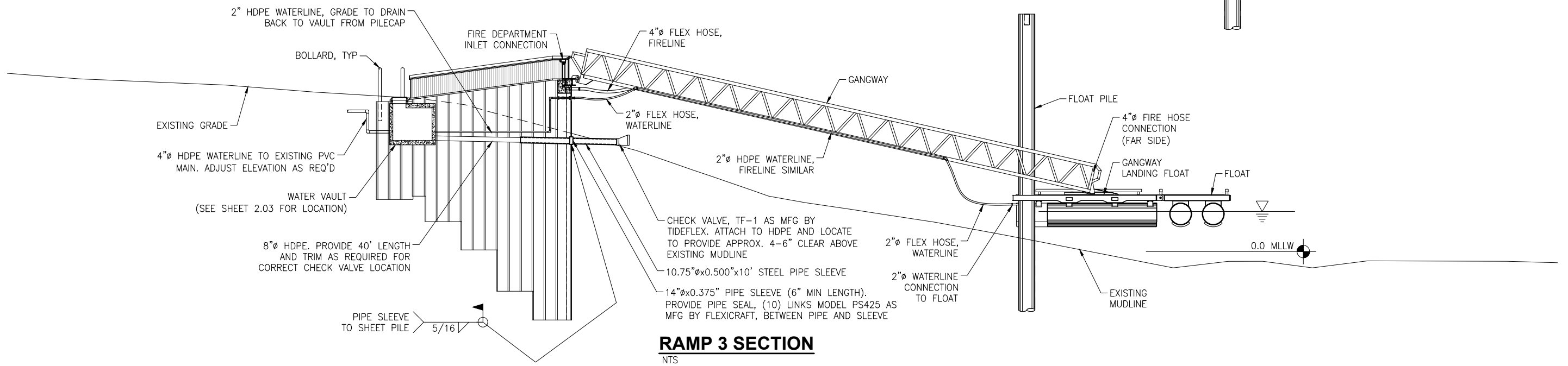
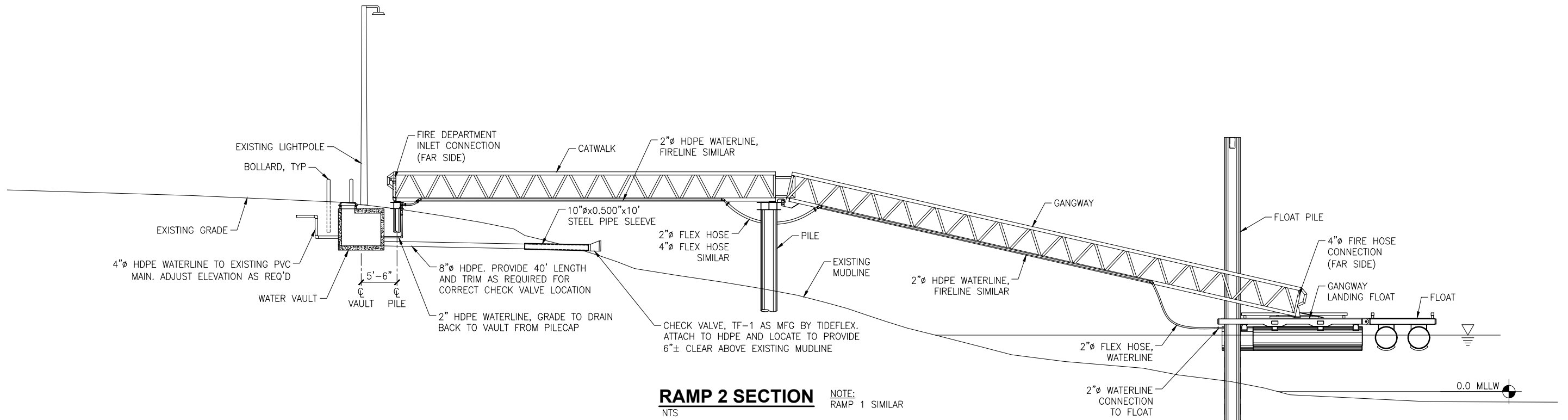
DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



PROJECT: DILLINGHAM SMALL BOAT HARBOR REPLACEMENT	
TITLE: WATER SUPPLY PLAN	
DESIGNED BY: CR/BJ	DATE: APRIL 2019
CHECKED BY: CDC	PROJECT NO: 171113
DWG NO: 4.01	
SHEET NO: 19 OF 27	

J:\2017\17113 Dillingham Small Boat Harbor Drawings\4.02_4.07 Water Details.dwg, 4.02_4.07 Water Details.dwg, 4.02_4.07 Water Details.dwg, 4.02_4.07 Water Details.dwg, 4.02_4.07 Water Details.dwg, 4.02_4.07 Water Details.dwg, 1:2



100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION

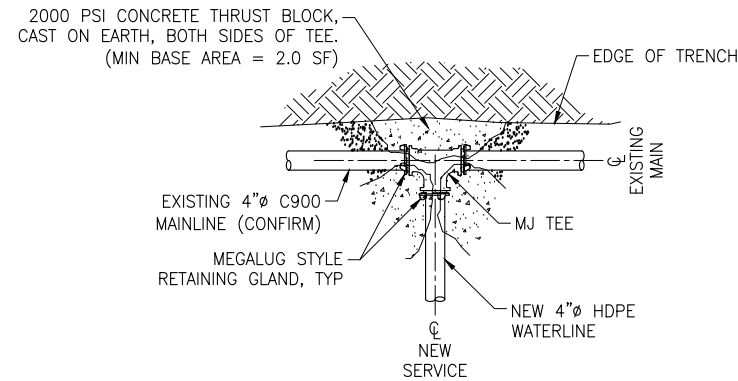


DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com

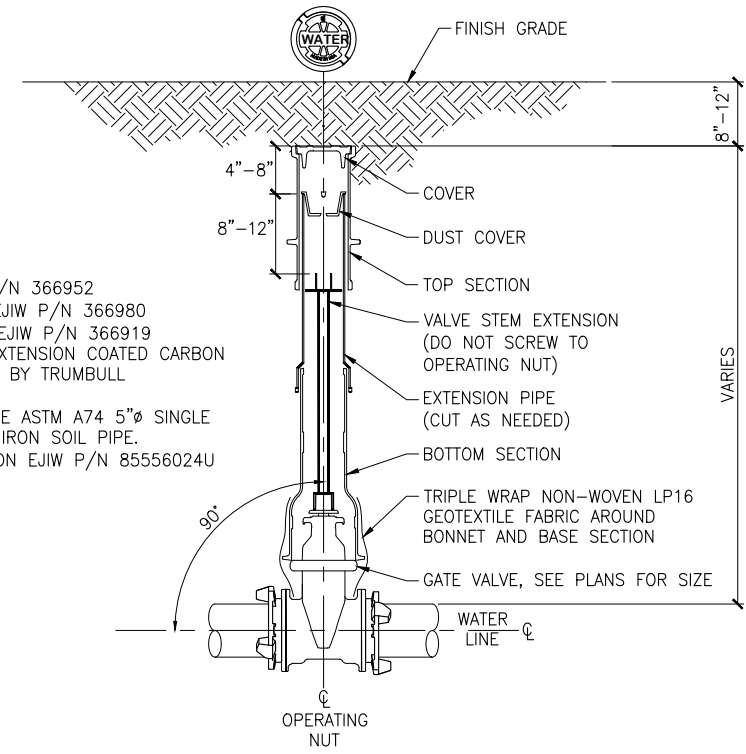


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT			
TITLE: WATER SUPPLY SECTIONS			
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 4.02	SHEET NO: 20 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



WATER SERVICE CONNECTION (EXISTING MAIN)

NTS

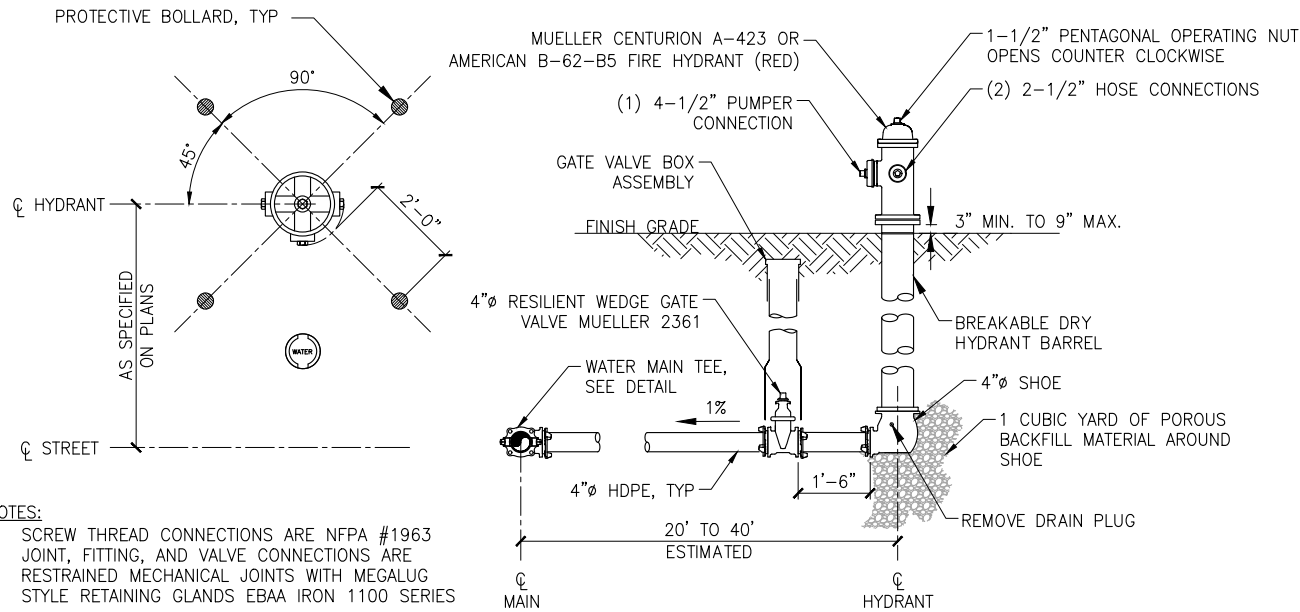


NOTES:

- COVER EJIW P/N 366952
- DUST COVER EJIW P/N 366980
- TOP SECTION EJIW P/N 366919
- VALVE STEM EXTENSION COATED CARBON STEEL AS MFG BY TRUMBULL INDUSTRIES
- EXTENSION PIPE ASTM A74 5"Ø SINGLE HUB SV CAST IRON SOIL PIPE.
- BOTTOM SECTION EJIW P/N 85556024U

GATE VALVE BOX

NTS

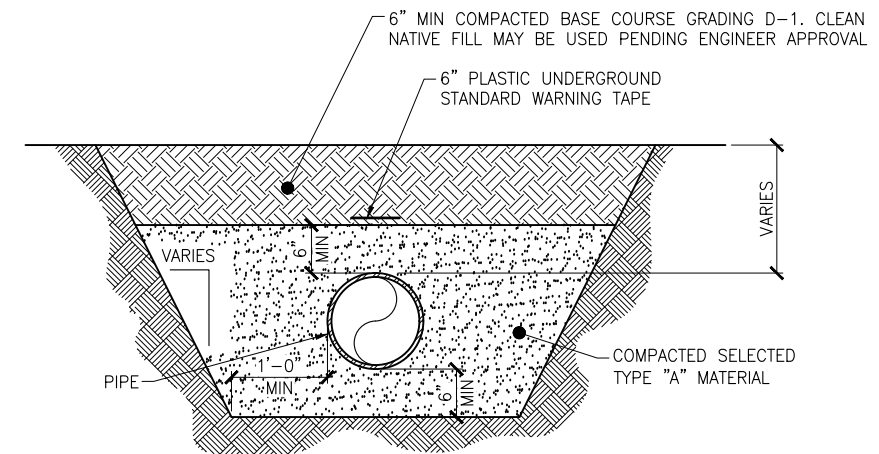


NOTES:

- SCREW THREAD CONNECTIONS ARE NFPA #1963
- JOINT, FITTING, AND VALVE CONNECTIONS ARE RESTRAINED MECHANICAL JOINTS WITH MEGALUG STYLE RETAINING GLANDS EBAA IRON 1100 SERIES

FIRE HYDRANT

NTS



TYPICAL TRENCH SECTION

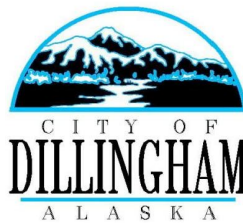
NTS

NOTE:

- TRENCH WALL SLOPES WILL VARY WITH SOIL STRENGTH AND CHARACTER PER OSHA
- SLOPE PIPE TO DRAIN 1% MIN TO OUTLET

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4.07 Water Details.dwg, 4.03_4.09/2019 3:50:34 PM, James, 1:2

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



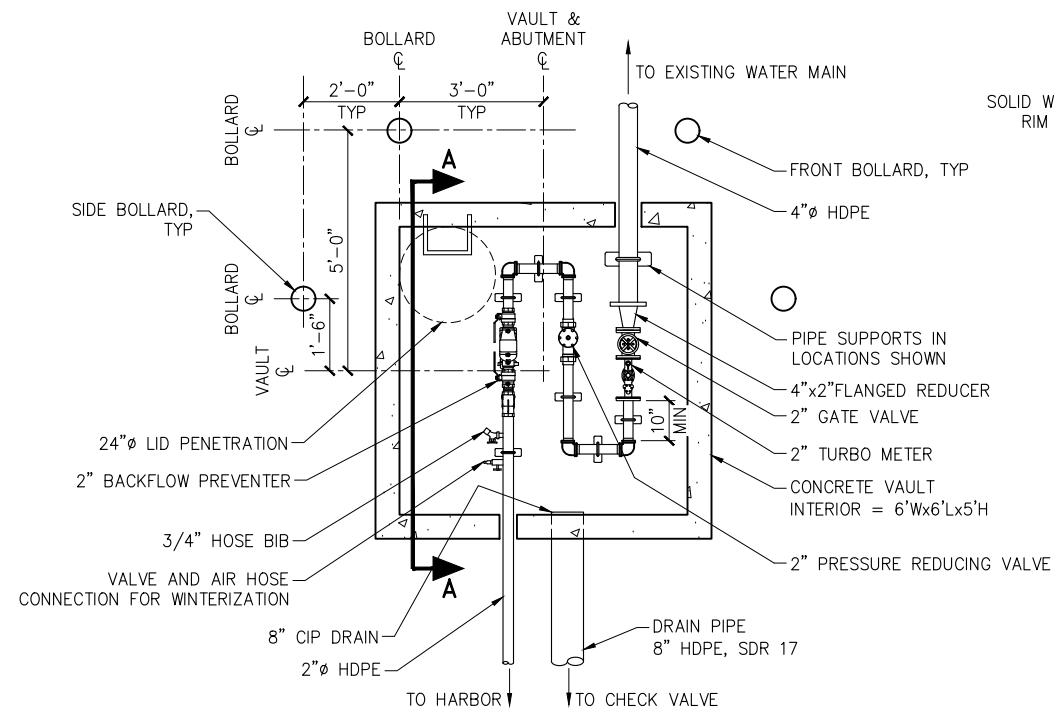
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **UPLANDS WATER DETAILS (1 OF 2)**

DESIGNED BY: CR/BJ DATE: APRIL 2019
CHECKED BY: CDC PROJECT NO: 171113

DWG NO: **4.03** SHEET NO: 21 OF 27

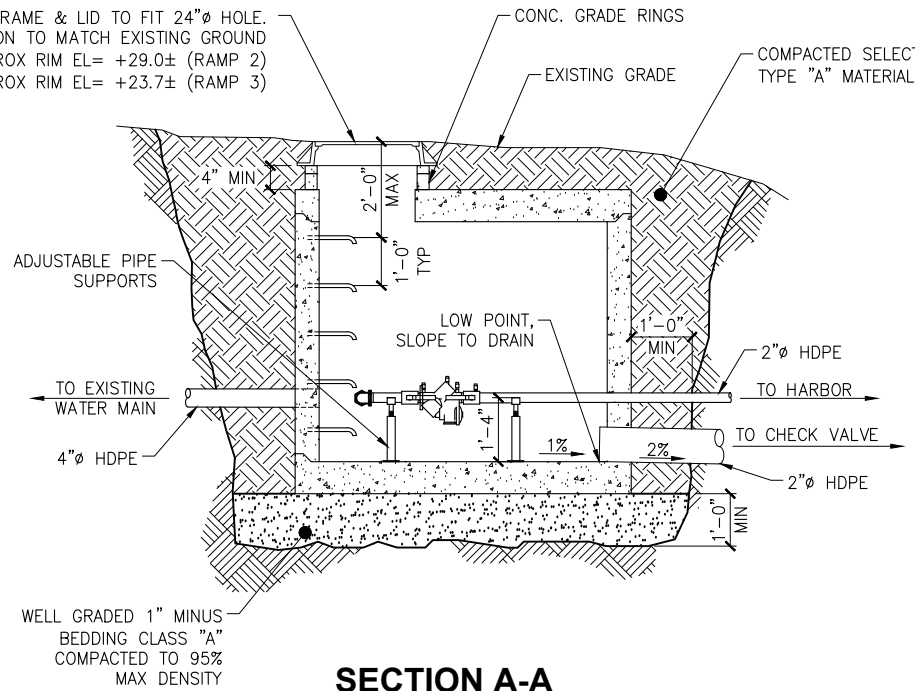
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4_07 Water Details.dwg, 4.04_4/9/2019 3:50:35 PM, James, 1:2



WATER SERVICE VAULT PLAN
NTS

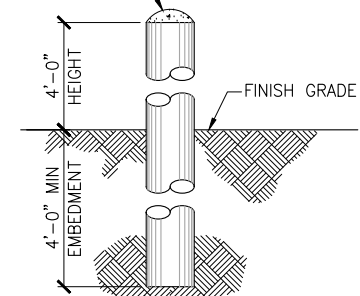
- NOTES:
1. CONTRACTOR SHALL SUBMIT VAULT LAYOUT & PIPE SUPPORT PLAN FOR ENGINEER APPROVAL PRIOR TO VAULT CONSTRUCTION.
 2. GROUT ALL WALL PENETRATIONS WITH NON-SHRINK GROUT.
 3. ADJUSTABLE PIPE SUPPORTS SHALL BE STANON MODEL S92 (HOT DIP GALV). ANCHOR BASE PLATES TO VAULT FLOOR
 4. RESILIENT WEDGE GATE VALVE SHALL BE WATTS SERIES 405-NRS-RW
 5. TURBO METER SHALL BE BADGER RECORDALL MODEL 200
 6. PRESSURE REDUCING VALVE SHALL BE WATTS SERIES LF25AUB-Z3
 7. BACKFLOW PREVENTER SHALL BE WATTS LF909 M1-QT-S
 8. ALL PARTS SHALL BE AS SPECIFIED OR APPROVED EQUAL
 9. VAULT DESIGN PER ASTM C-857. VAULT, FRAME, AND LID SHALL BE RATED FOR AASHTO HS-20 LOADING

SOLID WATERTIGHT FRAME & LID TO FIT 24"Ø HOLE.
RIM TO ELEVATION TO MATCH EXISTING GROUND
APPROX RIM EL= +29.0± (RAMP 2)
APPROX RIM EL= +23.7± (RAMP 3)



SECTION A-A
NTS

6"Ø SCHEDULE 80 PIPE BOLLARD,
GALV FILL WITH CONCRETE AND
MOUND TOP TO DRAIN. PAINT
CATERPILLAR YELLOW AFTER
INSTALLATION



TYPICAL PROTECTIVE BOLLARD
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



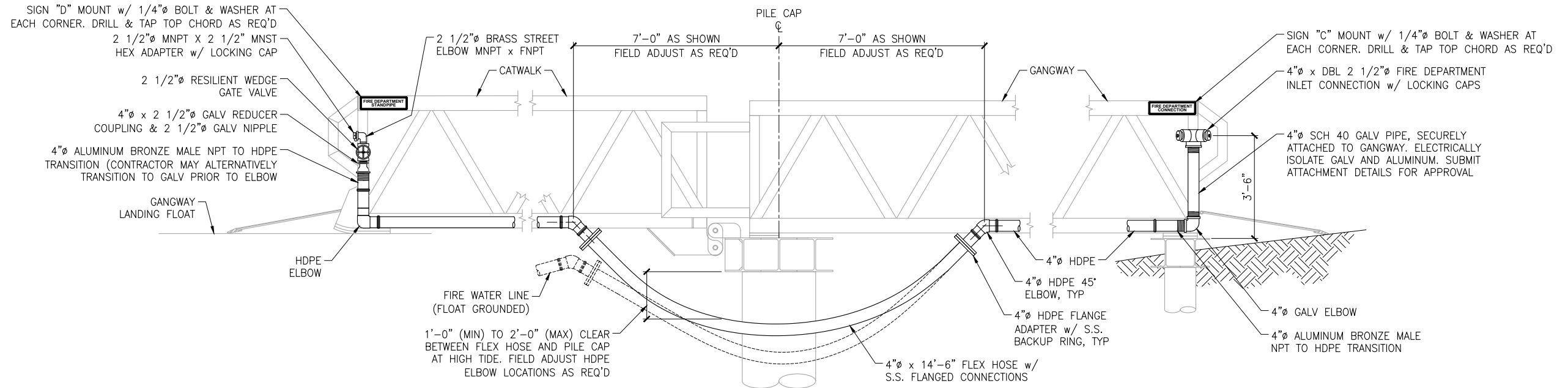
DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



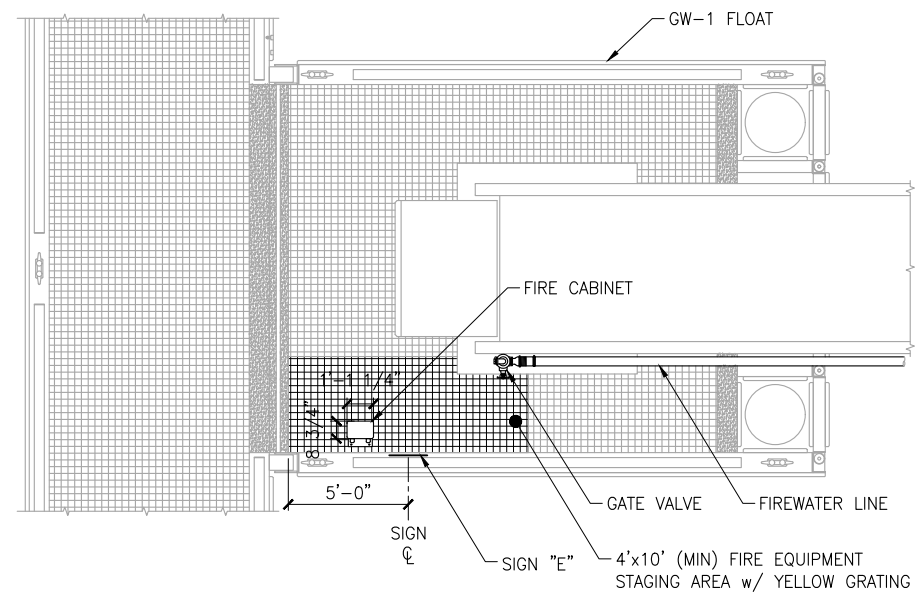
PROJECT: DILLINGHAM SMALL BOAT HARBOR REPLACEMENT	
TITLE: UPLANDS WATER DETAILS (2 OF 2)	
DESIGNED BY: CR/BJ	DATE: APRIL 2019
CHECKED BY: CDC	PROJECT NO: 171113
DWG NO: 4.04	
SHEET NO: 22 OF 27	

J:\2017\171113 Dillingham Small Boat Harbor Drawings\4.02_4.07 Water Details.dwg, 4.05, 4/9/2019 3:50:36 PM, James, 1:2

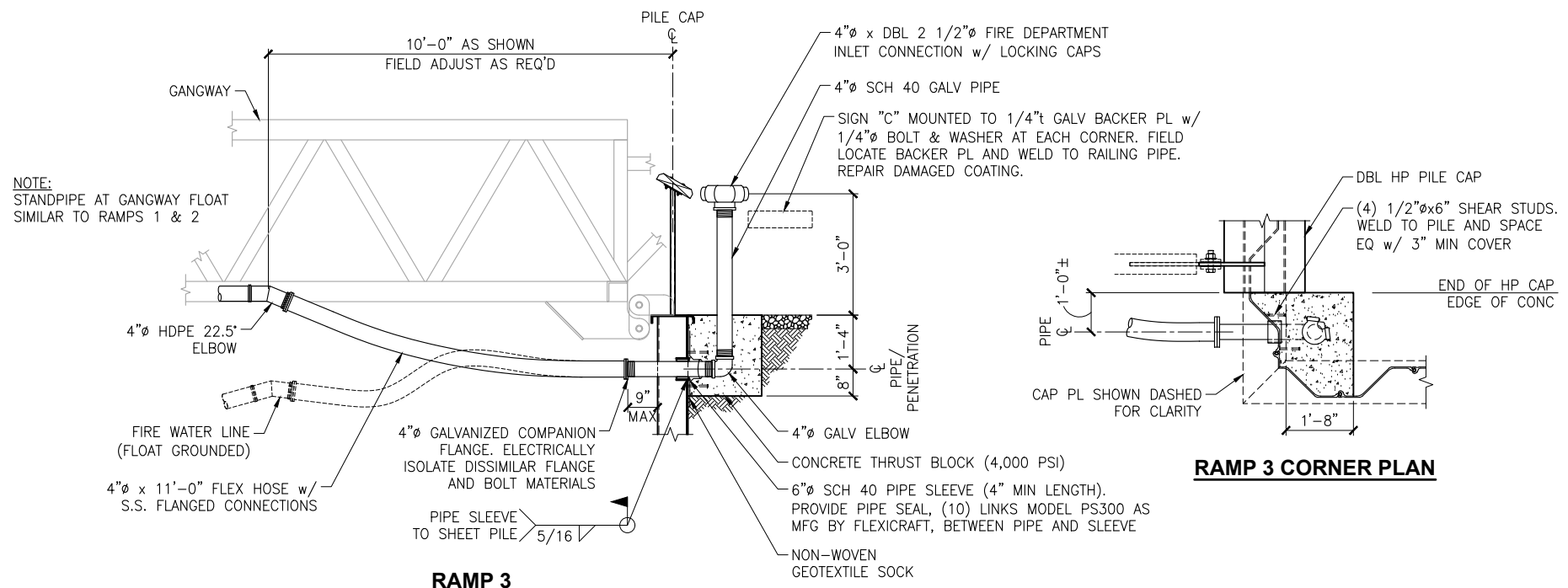


RAMPS 1 & 2

SHEET NOTE:
HANDRAILS, PIPE RAILS, AND
OTHER DETAILS NOT SHOWN
FOR CLARITY



FIRE EQUIPMENT STAGING AREA
NTS



RAMPS 3

FIREWATER ROUTING FROM SHORE
NTS

RAMPS 3 CORNER PLAN

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

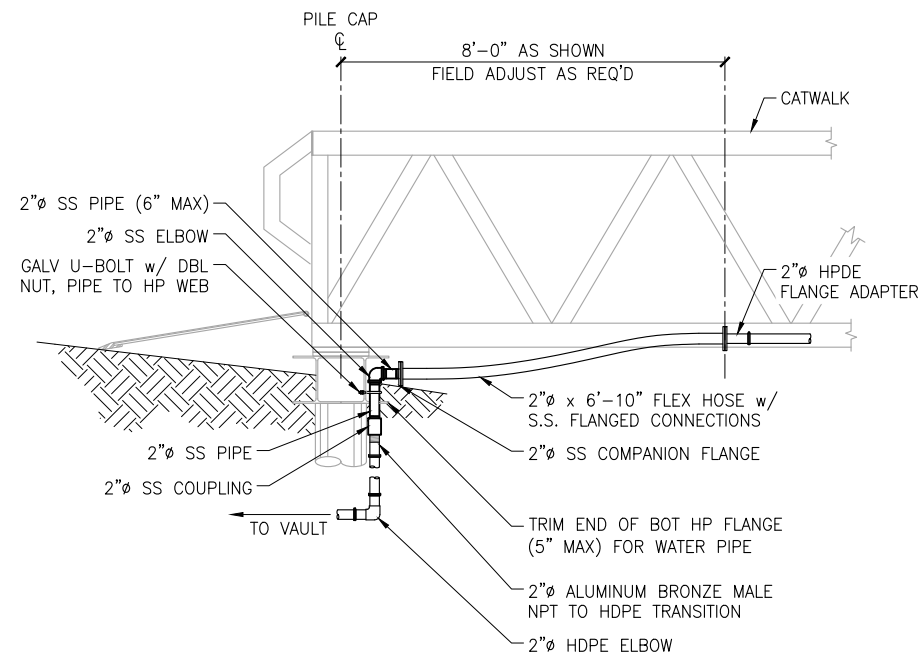
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



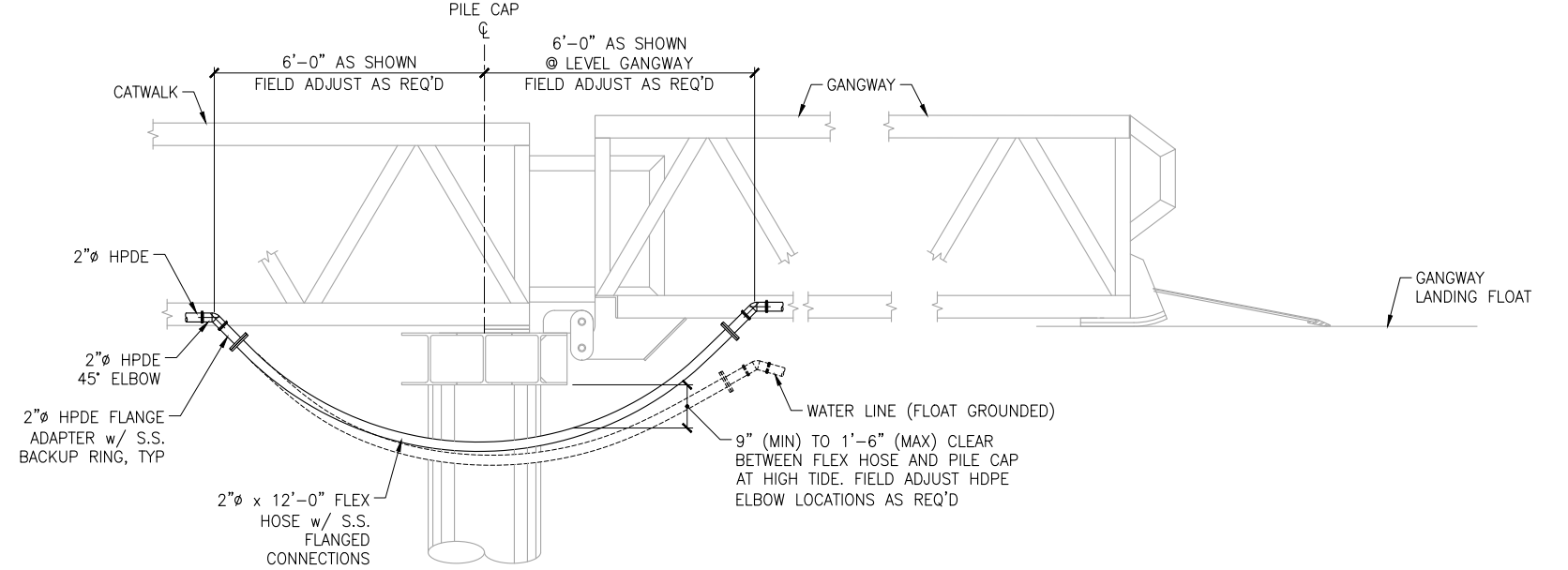
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

FIREWATER ROUTING FROM SHORE

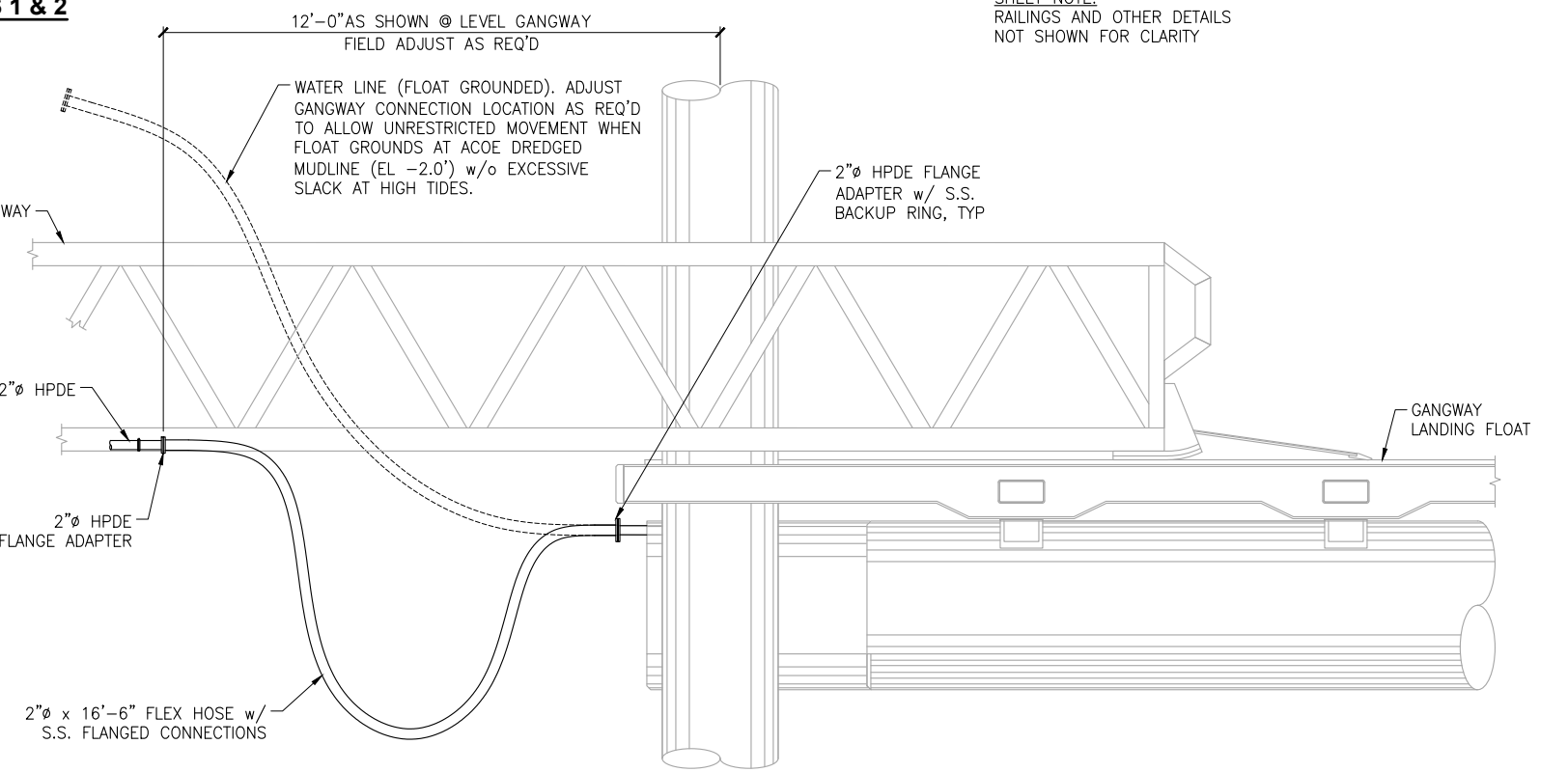
DESIGNED BY: CR/BJ	DATE: APRIL 2019	4.05	SHEET NO: 23 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



RAMPS 1 & 2



RAMPS 1 & 2



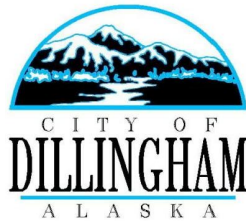
SHEET NOTE:
RAILINGS AND OTHER DETAILS
NOT SHOWN FOR CLARITY

WATERLINE ROUTING FROM SHORE

NTS

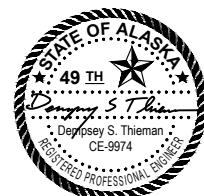
TYPICAL FLOAT WATERLINE CONNECTION

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



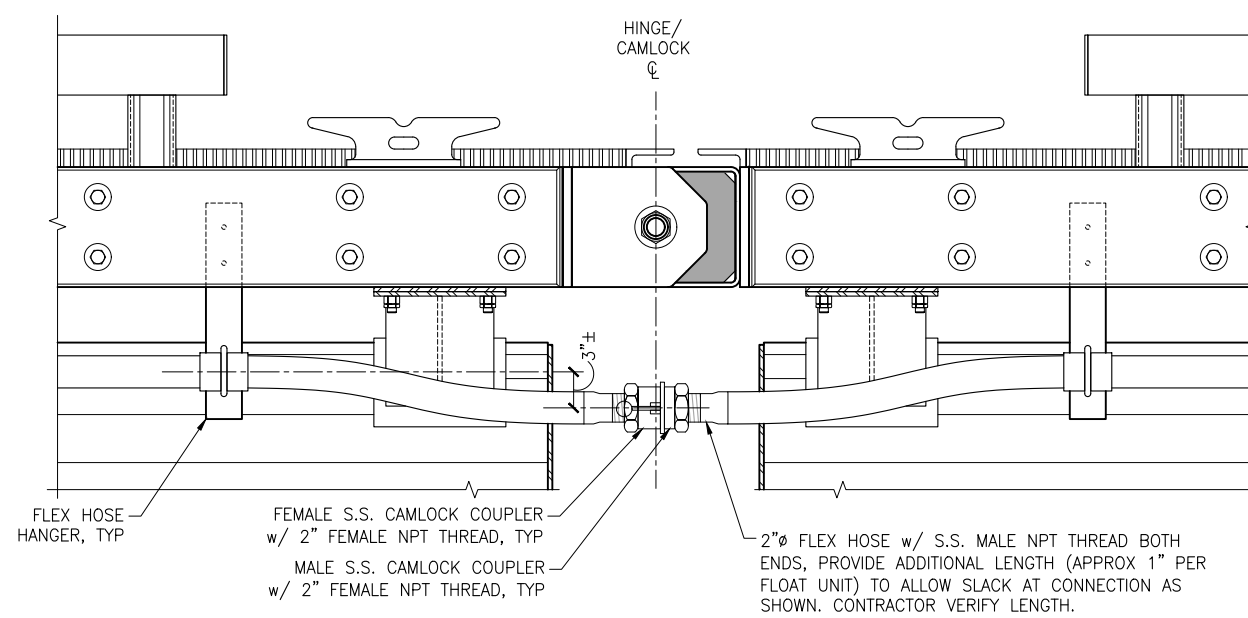
DATE: 4/9/2019

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



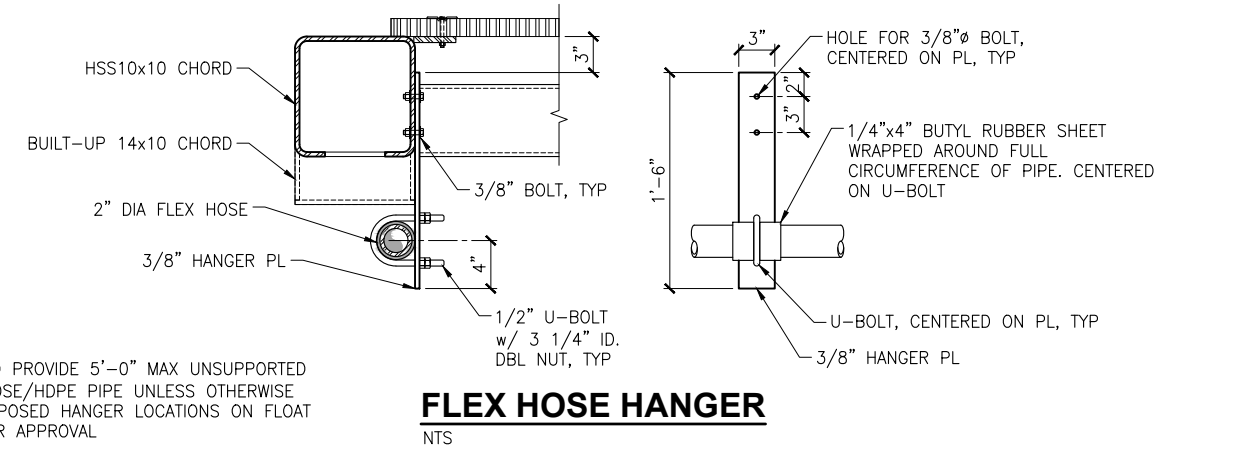
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT	
TITLE: POTABLE WATER ROUTING FROM SHORE	
DESIGNED BY: CR/BJ	DATE: APRIL 2019
CHECKED BY: CDC	PROJECT NO: 171113
DWG NO: 4.06	
SHEET NO: 24 OF 27	

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4_07 Water Details.dwg, 4.06, 4/9/2019 3:50:37 PM, James, 1:2

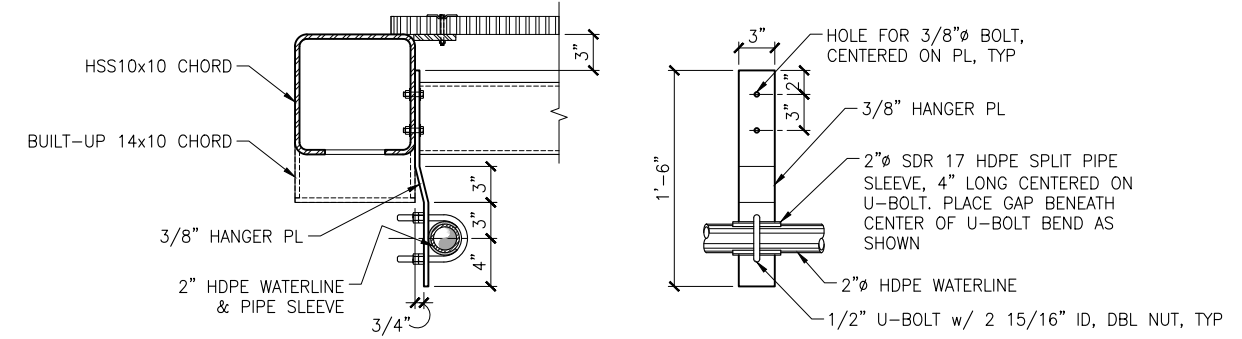


HOSE CONNECTION @ TYP FLOAT HINGE
NTS

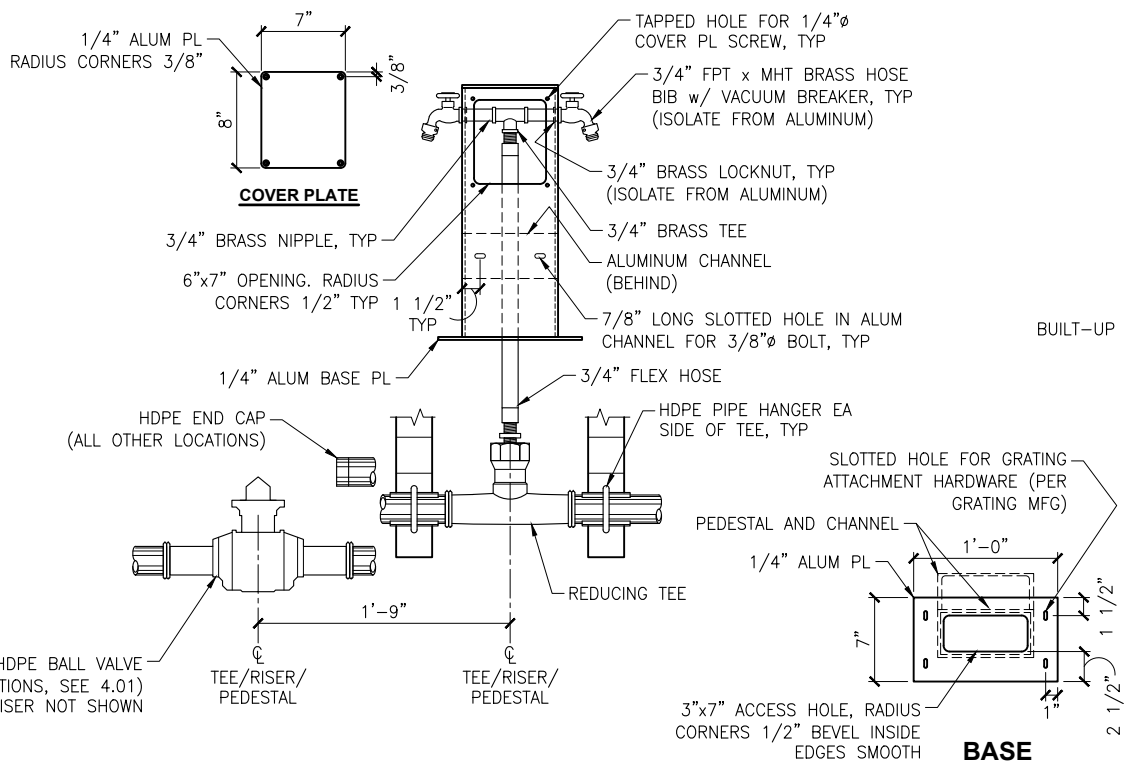
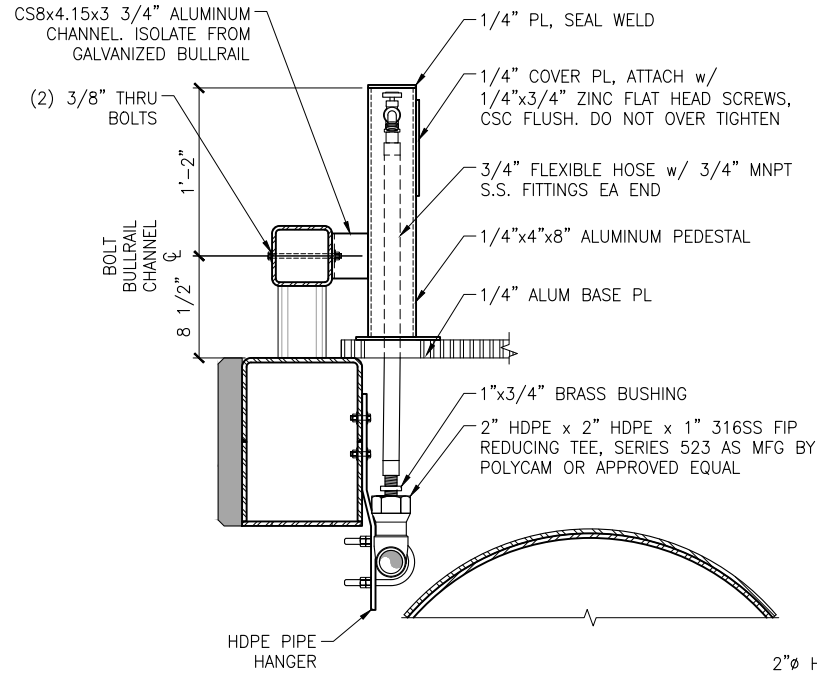
NOTE:
LOCATE HANGERS TO PROVIDE 5'-0" MAX UNSUPPORTED LENGTH OF FLEX HOSE/HDPE PIPE UNLESS OTHERWISE NOTED. SUBMIT PROPOSED HANGER LOCATIONS ON FLOAT SHOP DRAWINGS FOR APPROVAL



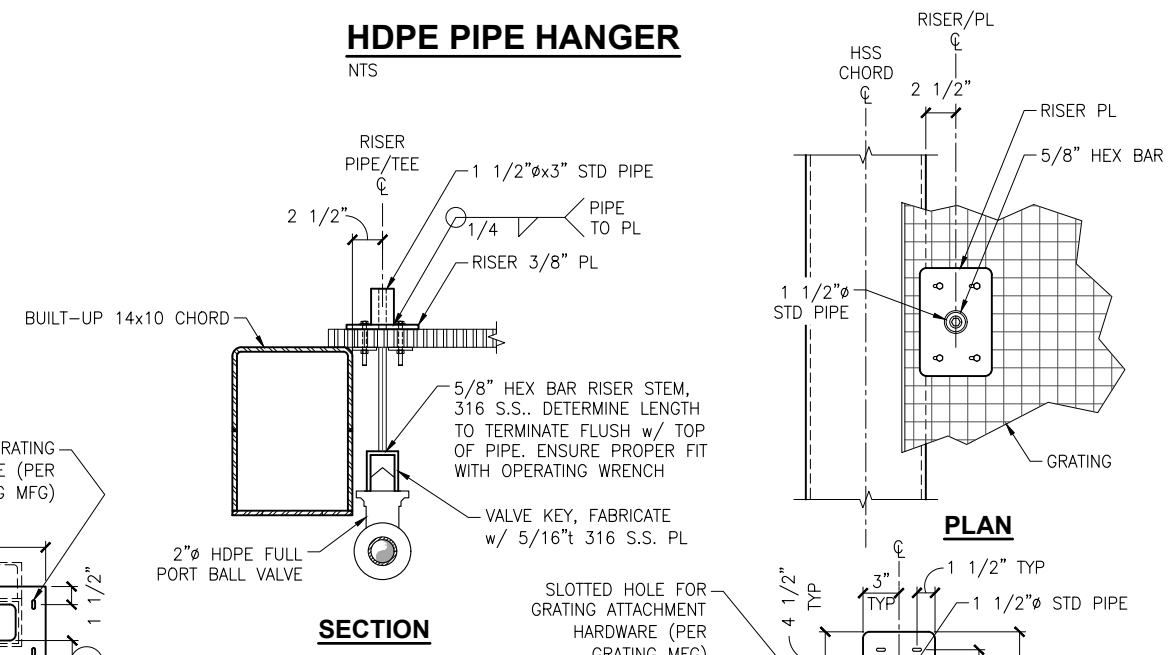
FLEX HOSE HANGER
NTS



HDPE PIPE HANGER
NTS

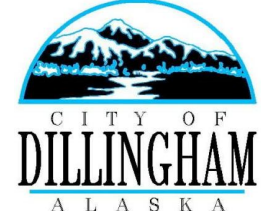


WATER PEDESTAL DETAILS
NTS



VALVE RISER
NTS

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



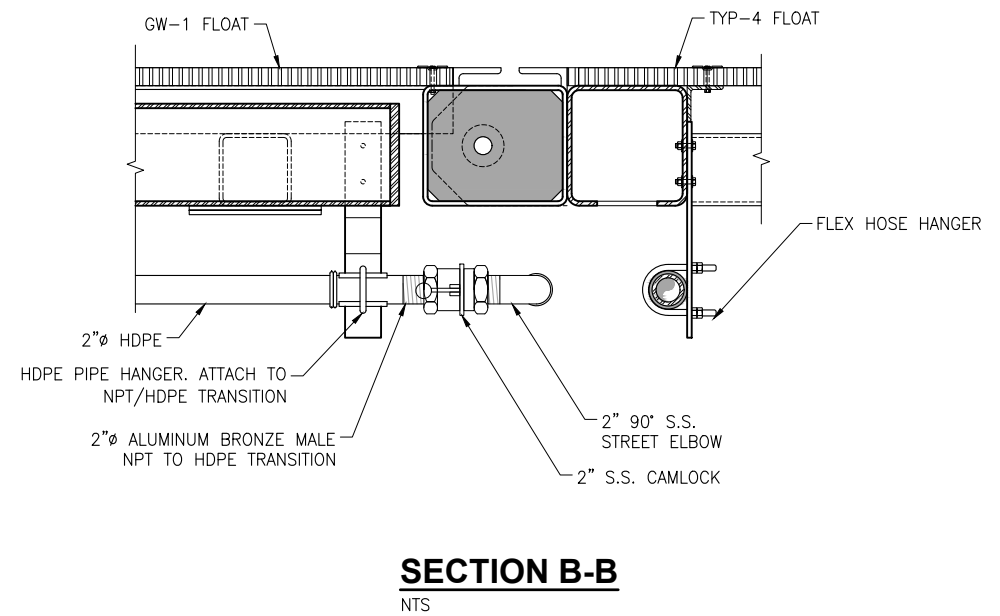
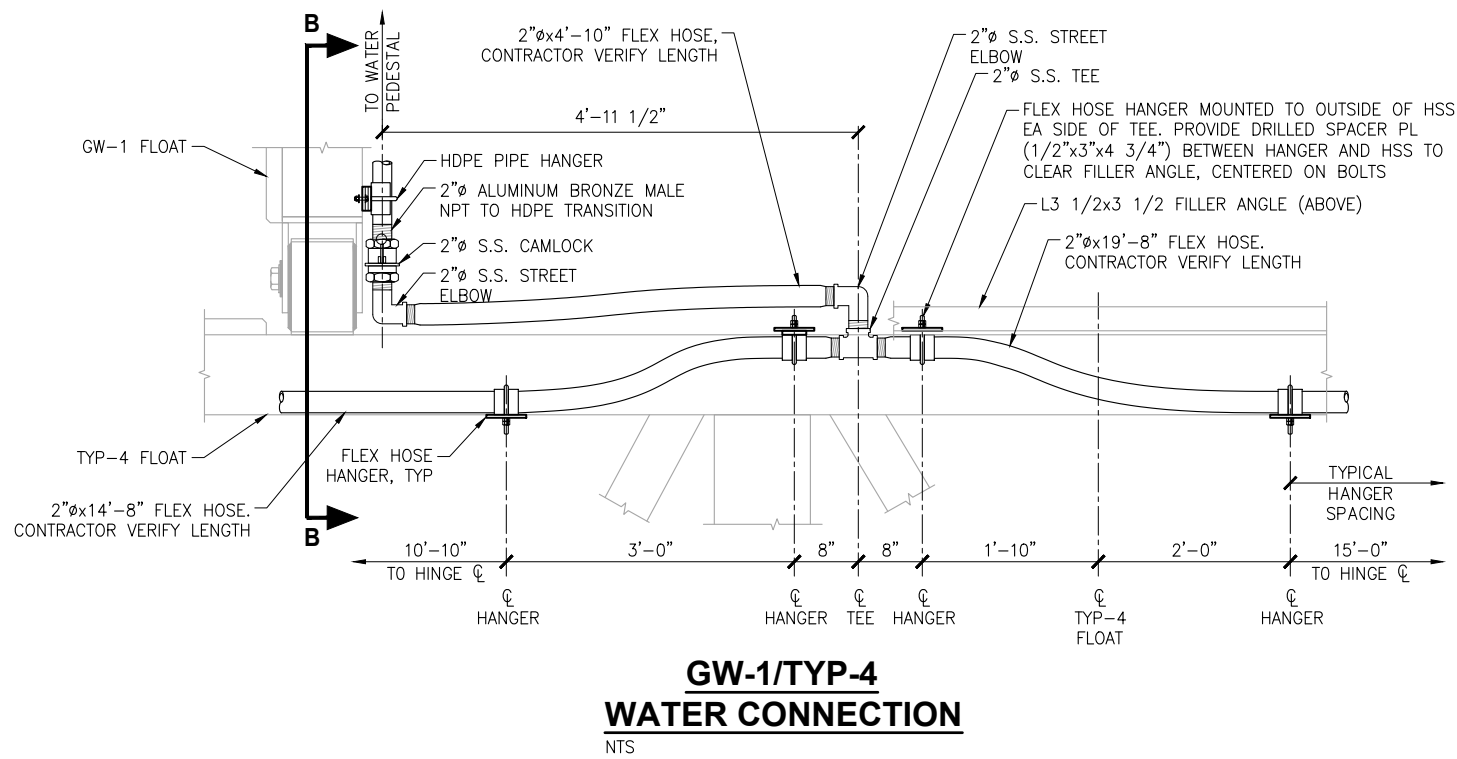
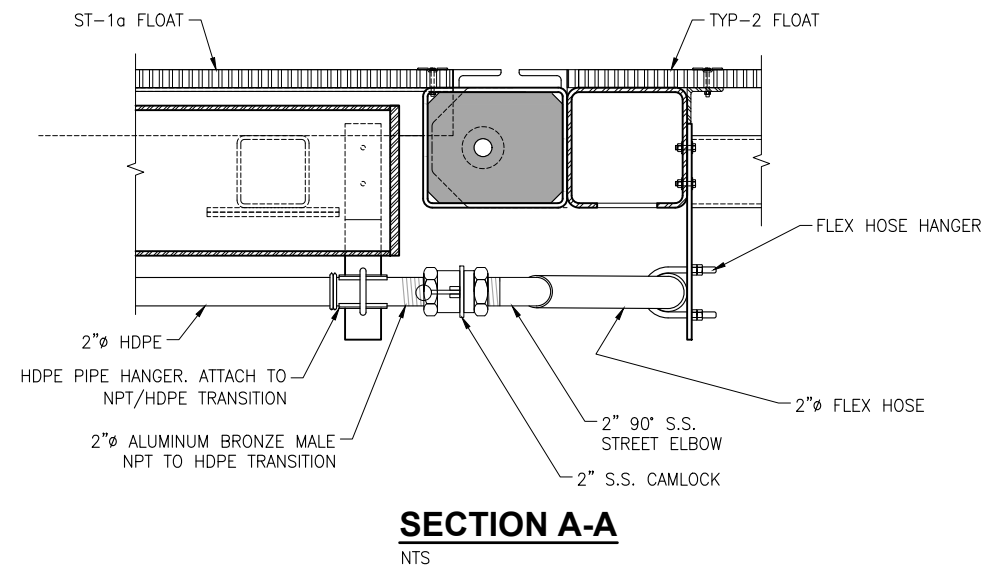
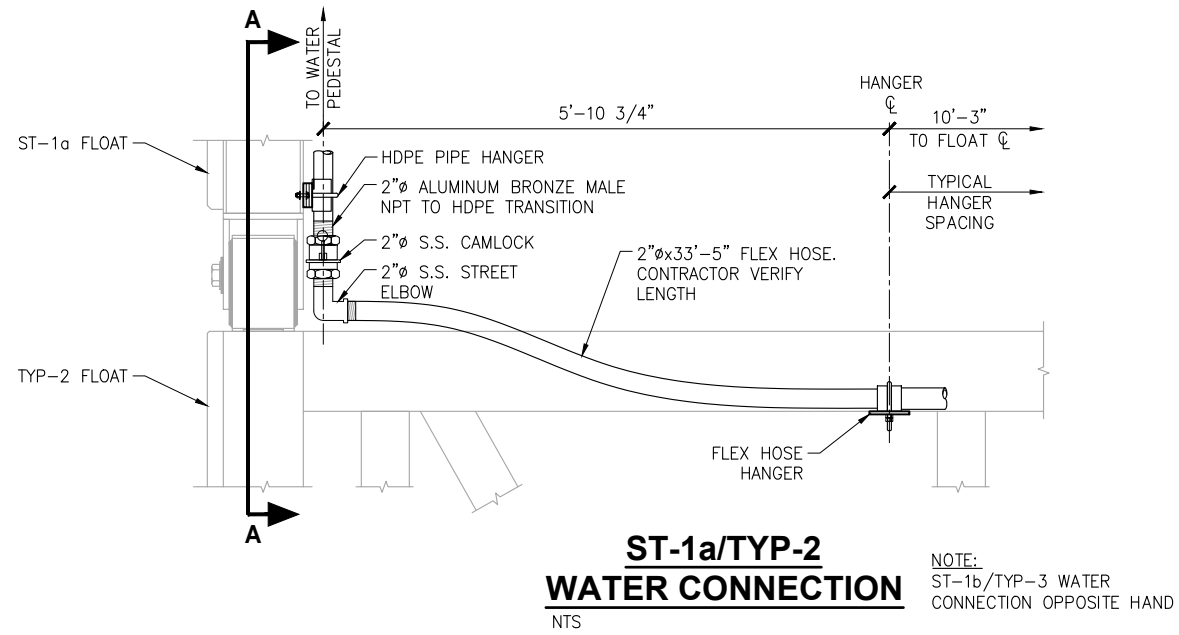
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT
PROJECT:
TITLE: **FLOAT WATER DETAILS (1 OF 2)**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	4.07	SHEET NO: 25 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4.07 Water Details.dwg, 4.07, 4/9/2019 3:50:38 PM, james, 1:2



J:\2017\1113 Dillingham Small Boat Harbor\Drawings\4.02_4_07 Water Details.dwg, 4.08, 4/9/2019 3:50:39 PM, James, 1:2

100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

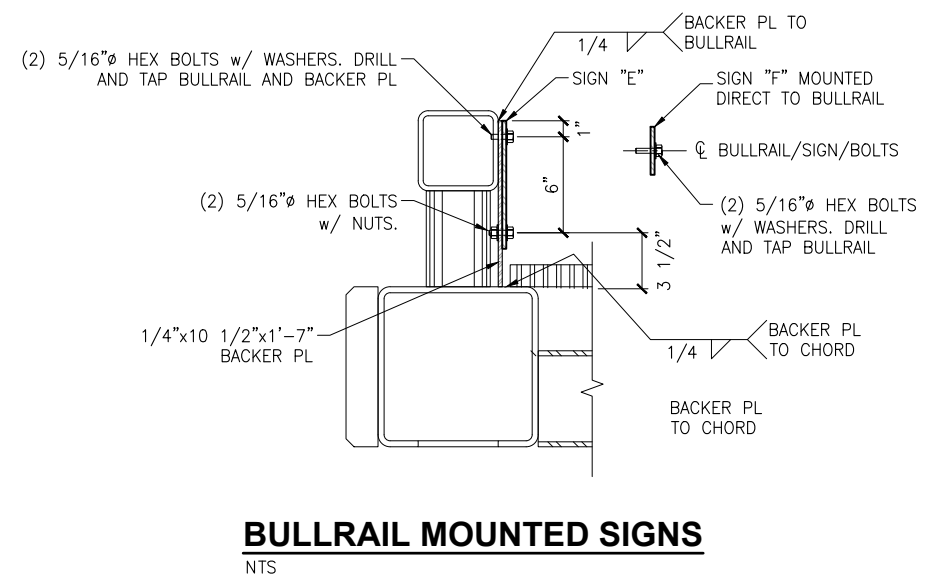
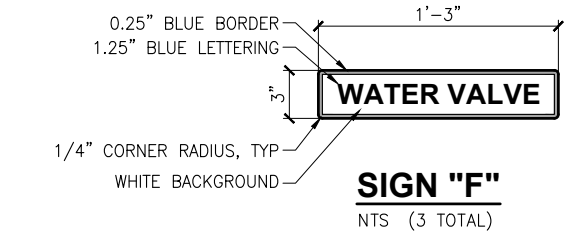
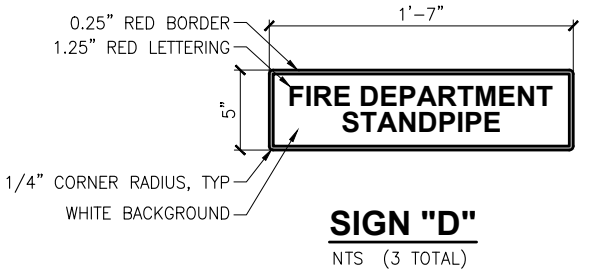
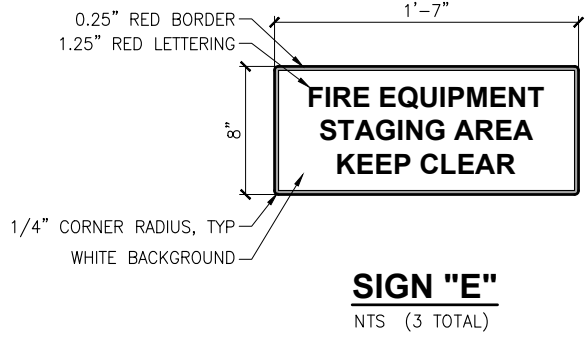
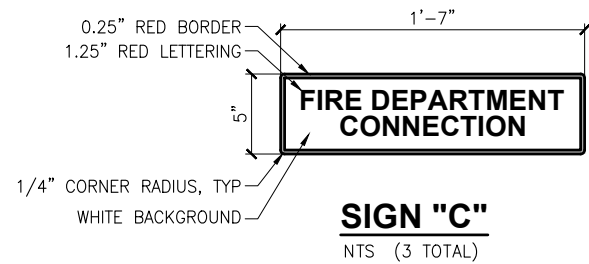
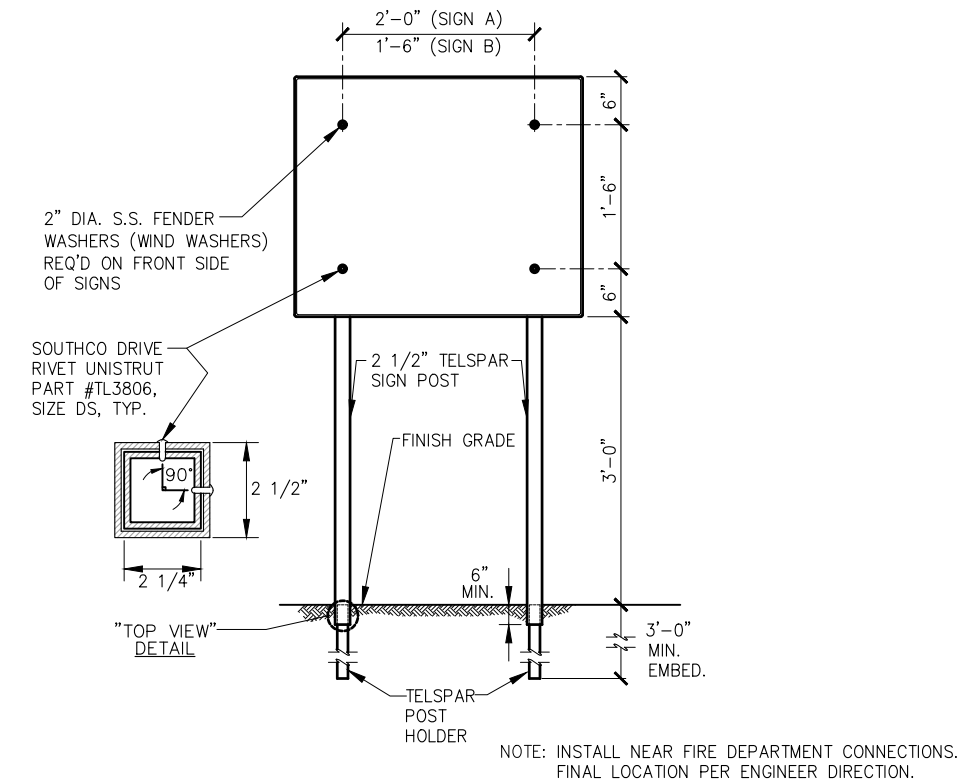
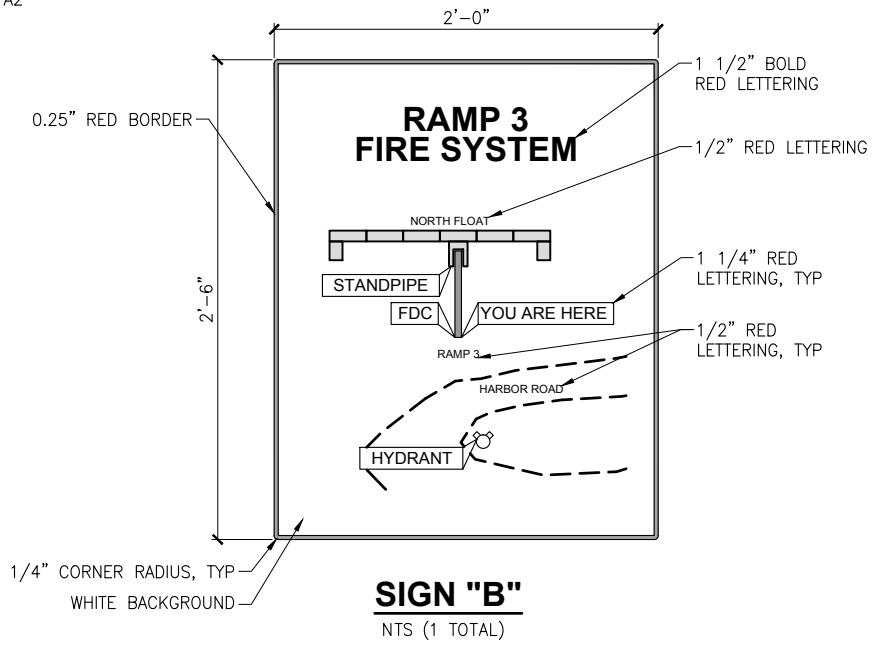
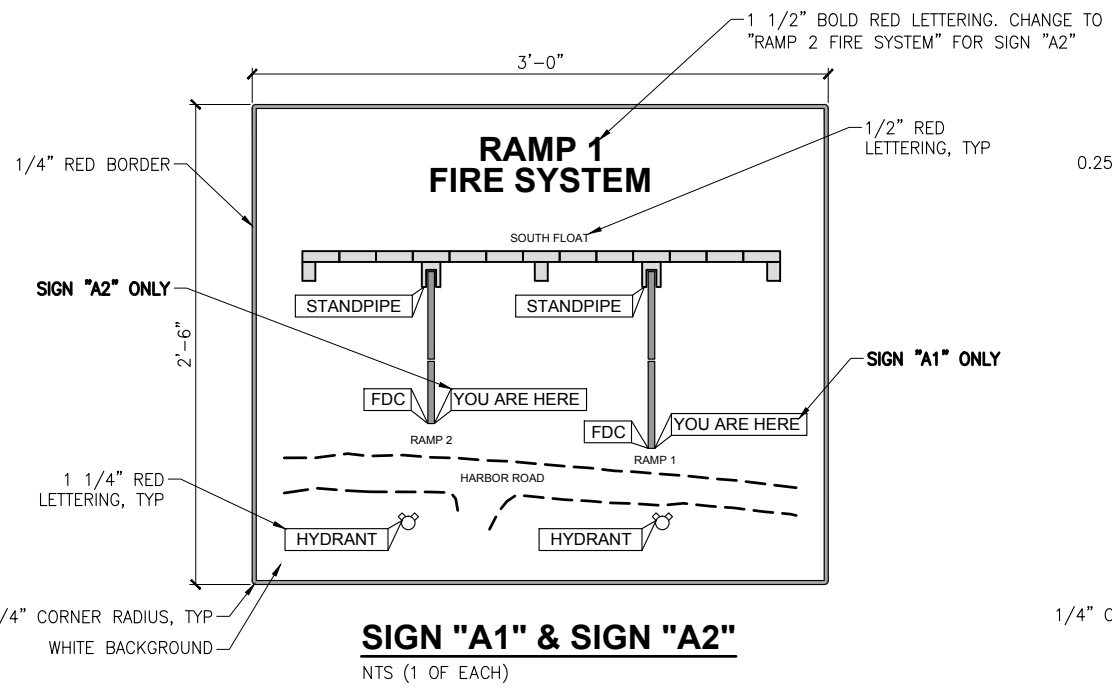
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

FLOAT WATER DETAILS (2 OF 2)

DESIGNED BY: CR/BJ	DATE: APRIL 2019	4.08	SHEET NO: 26 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



100% DESIGN
4/9/2019



PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.



1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT
TITLE: **WATER SIGNAGE**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	4.09	SHEET NO: 27 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4_07 Water Details.dwg, 4.09, 4/9/2019 3:50:40 PM, James, 1:2