



CITY COUNCIL WORK SESSION

Tuesday, January 23, 2024 at 5:30 PM

AGENDA

In compliance with the Americans with Disabilities Act, individuals needing special accommodations / during this meeting should notify the City of Dillingham at 907-842-5212 at least three working days before the meeting.

MEETING INFORMATION

AGENDA

CITY COUNCIL WORK SESSION

DILLINGHAM WATERFRONT STRATEGIC PLAN

CITY HALL COUNCIL CHAMBERS / 5:30 p.m.
141 Main Street, Dillingham, AK 99576 (907) 842-5212

This meeting will also be available at the following online location:
<https://us02web.zoom.us/j/85281879639?pwd=dERrRmFTWlJ1NnNBbStab0tYZTNTQT09>

Meeting ID: 852 8187 9639; passcode: 996433
Or dial (346) 248-7799, or (669) 900-6833

CALL TO ORDER

SESSION BUSINESS

- [1.](#) Dillingham Waterfront Strategic Plan

PUBLIC/COMMITTEE COMMENT(S)

ADJOURNMENT

Dillingham Waterfront Strategic Plan

PREPARED FOR:

City of Dillingham

IN PARTNERSHIP WITH:

PND Engineers

June 2020

Dillingham Waterfront Strategic Plan

PREPARED FOR:

City of Dillingham

IN PARTNERSHIP WITH:

PND Engineers

June 2020

McDowell Group Anchorage Office

1400 W. Benson Blvd., Suite 510
Anchorage, Alaska 99503

McDowell Group Juneau Office

9360 Glacier Highway, Suite 201
Juneau, Alaska 99801

Website: www.mcdowellgroup.net



Table of Contents

- Introduction..... 1**
- Port and Waterfront Overview 3**
 - Overview 3
 - Dock and Harbor Activity 4
 - Adjacent Property Owners 4
- Development Landscape 6**
 - Seafood Industry..... 6
 - Visitor Industry..... 7
 - Competitive Analysis 8
- Waterfront Development Plan..... 10**
 - Goals and Strategies..... 10
 - Major Capital Project Budget Estimates..... 13
- Appendix..... 14**
 - Project Contacts 14
 - Project Resources 15
 - Potential Sources of Project Funding..... 15
 - Summary of Public and Tribal Meeting Comments 19
 - PND Engineers Diagrams and Detailed Cost Estimates..... 22

Introduction

As the largest community in the Bristol Bay region, Dillingham serves as a critical transportation and service hub. Bristol Bay supports the world’s largest sockeye salmon run; commercial and subsistence fishing activities are central to the economy and lifestyle.

After serving as a seasonal hunting and gathering area for thousands of years, Dillingham became a permanent settlement following Russian fur trading activity in the early 1800s and development of numerous salmon canneries in the late 1800s and early 1900s. The establishment of a mission, hospital, and school in the late 1800s further established Dillingham as a regional hub.

The current Dillingham population is estimated at nearly 2,400 residents, with approximately 5,000 people living in the Dillingham Census Area. The table below shows annual fluctuations over the past decade.

City of Dillingham and Dillingham Census Area Population, 2009-2018

Year	City of Dillingham	Annual Change	Census Area	Annual change
2009	2,245	+64	4,716	-23
2010	2,329	-84	4,847	+131
2011	2,375	-46	4,930	+83
2012	2,411	-36	4,978	+48
2013	2,402	+9	5,025	+47
2014	2,444	-42	5,063	+38
2015	2,384	+60	5,008	-55
2016	2,318	+66	4,958	-50
2017	2,335	-17	4,925	-33
2018	2,382	-47	5,021	+96

Source: ADOLWD, Population Estimates Program.

Prior community planning efforts reflected a strong vision of a thriving harbor and port positioning Dillingham as a leader for high-quality seafood and value-added processing. Goals articulated in the 2010 Comprehensive Plan included development of infrastructure that created more local benefits from commercial fishing; improved access between waterfront and local services and businesses; enhanced understanding and response to waterfront changes including erosion; and enhanced marine-related training and job creation. The vision and goals remain valid today.

Purpose and Methodology

The purpose of this Strategic Plan is to identify waterfront-related opportunities and constraints that impact community and economic development in Dillingham and the region. The plan is focused on waterfront in the downtown core, including the City-owned boat harbor and port and adjacent lands.

The project team conducted a site visit and kick off meeting in mid-July 2019 to meet with City staff, tour the waterfront, and interview key stakeholders. Additional tasks included review of the *2010 Comprehensive Plan*

and recent planning documents, analysis of data concerning waterfront usage, and review of additional information concerning commercial fishing and the regional economy.

The Strategic Plan identifies priority actions and rough timeline, estimated capital costs, and lead entities. The initial draft was submitted September 2019. The draft plan was reviewed with City staff, Curyung Tribal Council, Port Advisory Committee, other stakeholders, and in public meetings. A summary of public comments is included in the Appendix.

The McDowell Group project team was supported by PND Engineers. We appreciate the insights provided by stakeholders and support from the City of Dillingham staff throughout the project.

Port and Waterfront Overview

Overview

The Port of Dillingham serves residents in Dillingham and many Southwest Alaska villages. Commercial fishing, cargo, and recreational vessels utilize the docks, marine services, and wide array of other community services and facilities.

Boat Harbor and Uplands

The Dillingham boat harbor is the only protected harbor in the area, providing moorage for approximately 400 vessels up to 32 feet in length (gillnetters and set netters) and space for transient vessels up to 80 feet in length.



Services include bathrooms/showers, fuel, potable water, repairs, ice, gear storage, and waste disposal. A small community park is located on the south end, on the waterfront.

Recent upgrades include a bulkhead on the north end of the harbor and lengthening of pilings anchoring floats to the shoreline.



Most commercial fishing vessels use the south boat launch, while the north ramp is used by recreational, subsistence, and charter fishing vessels.

Upland property includes parking, access roads, and property leased to companies providing marine supplies, service and repair, and retail. Additional leases are contemplated, however parking, safe routing of vehicular and pedestrian traffic, and improved access to utilities are important considerations. Use could be optimized if parcels were square, rather than pie-shaped.

The City began clean-up of recently acquired property adjacent to the harbor in 2019. Additional funding will be needed to complete the project. Given its high visibility and accessibility for residents and harbor users, the site has significant potential for future leases and small business development.

City Docks



The City owns two adjacent docks that facilitate cargo and freight movement. The All-Tide Dock is an open cell dock approximately 300 ft. by 300 ft. The City Dock is a pile supported platform dock approximately 80 ft. by 200 ft. with a 50 ft. wide approach trestle.

Services include forklifts, cranes, potable water, garbage disposal, and access to waterfront bathhouse and restrooms.

The City has capacity for 33 containers to be connected directly to electricity. During peak season as many as 150 containers can be onsite; many are plugged into generators.

Additional Waterfront Infrastructure

The Icicle Seafood plant is located at the end of Wood River Road. Several additional boat launches are located outside of the downtown core area including Squaw Creek, Kanakanak Beach, and Wood River.

Dock and Harbor Activity

The following table provides a summary of the dock activity in recent years.

Dillingham Dock Activity (2017-2018)

Description	2017	2018
Frozen seafood containers	392	574
Containers of freight ¹	1,686	1,601
Heavy equipment/freight rolled or craned	95	110
Gensets ²	8	12
Empty freezer containers ³	460	515
Empty containers (other than freezer units) ⁴	627	1,014
Gallons of fuel pumped over the dock ⁵	2,269,363	2,930,587
Total billed weight moved over the dock (lbs.)	65,498,914	78,035,804

Source: City of Dillingham.

Notes:

1. Includes 20', 24', and 40' containers and flats and large bundles/lifts not on or in equipment.
2. Brought in specifically for running fish freezer containers on the dock and/or on the barges that haul freezers.
3. Mostly inbound but includes units that were not used and then shipped out.
4. Included in the total weight.
5. Most fuel was pumped through the Nushagak Cooperative Pipeline, although some was pumped from fuel trucks.

The table below provides recent data for permits sold and vessels serviced for each of the past three years and totals for the period.

Permits Sold and Services (2017-2019)

Description	2017	2018	2019	Total
Vessel permits sold	289	319	325	962
Skiff permits sold	186	178	184	548
Vessels serviced: 28'-32'	323	363	343	1,029
Skiffs serviced: 18'-26'	186	178	184	548

Source: City of Dillingham.

Adjacent Property Owners

Fairly significant private sector investment has occurred on or near the waterfront in recent years, including from the following entities.

Bristol Alliance Fuels (BBNC subsidiary): In April 2019, BAF began leasing and operating Delta Western's facilities in Dillingham and Naknek. The Delta Western dock and tanks are now used for bulk sales and storage (including for clients Peter Pan and Crowley). Vessels can obtain fuel from BAF's facilities on the west side of the harbor. Additional services include barge haul-out services.

Bristol Bay Native Corporation: The regional Native Corporation owns considerable lands on the west side of the harbor, surrounding the BAF operation. Near-term plans include a large vessel haul out and storage. Longer-term development is contemplated and could include additional marine services, moorage, containers, or agricultural development. BBNC has approached the City to resolve ownership of a City-owned strip of land adjacent to BBNC lands. Need to assess how much land exists (given erosion), explore options to enhance site utilization, and consider state and municipal restrictions for land transfer/disposal.

Choggiung Limited: The village Native Corporation owns lands directly across from the boat harbor. They are interested in development and possible partnerships, but no immediate plans. They are also interested in having dredge spoils pumped onto their lands.

Ekuk Village Council: The Council is working to develop land leased from the City adjacent to Napa (lot 3a) for marine support sector businesses. Plans were delayed by loss of the contractor. Council leadership noted that water and sewer upgrades are needed to fully develop the site and adjacent lands.

PAF Marine Services: The boat yard was redesigned in recent years, reorienting vessel storage, upgrading utilities, and attracting marine industry vendors. Current capacity is about 250 boats. Future development could include expansion of the boat yard footprint towards the water, expanding shower and toilet facilities, and increasing the area for vendors along the main road. Direct access between the boat yard and launch ramp would reduce traffic on City property (access point to be determined). A wider boat ramp would be useful for pulling larger, heavier vessels in the fleet.

Peter Pan Seafoods: Recent upgrades including improved container staging and new processing infrastructure to support a shift to frozen H&G production (instead of canning). More than 500 people work onsite at peak times. Direct access to the port (potentially across Delta Western/BAF property) would reduce traffic on City property and Main Street. Public access on Peter Pan property (mentioned in prior plans) is discouraged.

Development Landscape

The seafood industry dominates regional economic development and has direct implications for Dillingham's port and waterfront usage. The waterfront is also used to access subsistence fishing sites, launch sportfishing vessels, and to supply area lodges. State tideland ownership and leases also need to be considered in future development and planning.

Seafood Industry

Data available from the Commercial Fisheries Entry Commission (CFEC) reveals an increase in the volume and value of seafood landed in the last decade for regional setnet and driftnet fisheries.

Dillingham resident participation in commercial fisheries has grown from 157 residents to 193 in the past decade; annual changes in participation, earnings, and vessels can be seen in the table below.

Participation in Bristol Bay Setnet and Driftnet Fisheries

Year	Setnet			Driftnet		
	Pounds Landed (millions)	Ex-Vessel Value (\$millions)	Fishermen who fished	Pounds Landed (millions)	Ex-Vessel Value (\$millions)	Fishermen who fished
2009	35.6	\$26.2	982	157	\$122.0	1,863
2010	34.0	\$31.0	982	147	\$134.1	1,863
2011	25.6	\$27.4	981	114	\$131.6	1,862
2012	23.5	\$24.7	979	104	\$117.9	1,862
2013	16.5	\$23.9	978	84	\$127.5	1,862
2014	31.4	\$39.3	977	140	\$182.2	1,863
2015	35.8	\$20.2	975	165	\$104.7	1,864
2016	42.2	\$34.4	971	170	\$158.0	1,863
2017	44.0	\$49.0	972	177	\$226.5	1,863
2018	43.3	\$52.3	970	187	\$224.7	1,863

Source: CFEC Fishery Permit Database.

Participation by Dillingham Residents in Bristol Bay Fisheries

Year	DLG Resident Fishermen Active in BB Fisheries	DLG resident earnings (\$millions)	BB fishing vessels owned by DLG Residents
2009	157	\$7.5	110
2010	164	\$8.8	111
2011	173	\$7.4	110
2012	167	\$5.9	114
2013	175	\$7.8	102
2014	177	\$10.5	106
2015	169	\$5.8	109
2016	178	\$10.1	100
2017	187	\$16.4	103
2018	193	\$19.0	110

Source: CFEC Permit Database, CFEC Vessel Database.

The tables below reveal the significant investment by the regional driftnet fleet in chilling. In turn, this investment yields greater harvest value for fishermen and processors.

Number of Driftnet Vessels Chilling their Catch (RSW or slush ice)

Year	Chilled	Unchilled
2009	743	565
2010	733	611
2011	758	599
2012	651	425
2013	808	445
2014	828	423
2015	990	408
2016	1,024	236
2017	1,109	217
2018	1,202	125

Source: BBSRDA Processor's Survey

Total Chilled Product Purchased, as a Percent of Round Weight

Year	Chilled	Unchilled
2009	38%	62%
2010	40%	60%
2011	48%	52%
2012	55%	45%
2013	55%	45%
2014	52%	49%
2015	55%	45%
2016	70%	30%
2017	72%	28%
2018	79%	21%

Source: BBSRDA Processor's Survey

Visitor Industry

The *Alaska Visitor Statistics Program* (AVSP) indicated that 84,000 (4 percent of Alaska non-resident visitors) visited Southwest Alaska in 2016. The Southwest region includes Bristol Bay, Aleutian and Pribilof Islands, and Kodiak. Sportfishing and hunting are the primary motivation for non-resident travelers visiting Dillingham and surrounding areas.

A study conducted in 2017 by McDowell Group for Bristol Bay Native Association analyzed the number and type of visitor accommodations in the area. Among the 55 properties identified in the study, Dillingham had 11, 5 were in the City of Aleknagik and nearby areas, and another 20 were located along the Nushagak River. Many of the smaller, remote properties operate between June and August.

Competitive Analysis

The competitive analysis below is summarized from project interviews, research conducted for the Strategic Plan, and project team observations.

Strengths and Opportunities

Competitive advantages for waterfront-related development include:

- Strong runs in the Nushagak and nearby areas have generated continued strong demand for port and harbor infrastructure.
- Processor investment bodes well for the industry outlook and community tax base.
- Fleet upgrades, including chilling, are increasing harvest value and generating demand for marine support services.
- The City of Dillingham is home to a major airport, providing passenger and cargo linkages with Anchorage and to communities within western Bristol Bay.
- The City Dock supports freight and cargo services for Dillingham and western Bristol Bay communities. The dock generates sufficient income to support operations and partially supports services at the harbor.
- Port operations are working well, with City staff noted as a key factor.
- Growing interest in direct marketing is incrementally extending the season and resource value.
- Bristol Bay Economic Development Corporation programs help to facilitate local ownership of vessels, permits, and quota.
- Bristol Bay Native Corporation is positioned for future development on the west side of boat harbor.
- Strong connections with commercial fishing and a subsistence lifestyle maintain residents' focus on waterfront activity and infrastructure.
- The region has an iconic reputation among sportfishing enthusiasts.
- Growing interest in strategies that maximize utilization of the fishery resource, including innovations in food, energy, and waste disposal.
- Dillingham remains the regional hub for medical, transportation, in-region shopping, and other services.
- Waterfront development projects may be eligible for Community Development Block Grant funding, a competitive federal grant funded through the U.S. Department of Housing and Urban Development (HUD) administered by the Alaska Department of Commerce, Community and Economic Development. (The local government specialist based in Dillingham is familiar with the program and the process.)

Weaknesses and Challenges

Competitive challenges concerning the port and waterfront include:

- Harbor-related issues and needs were frequently cited throughout the study including pre-season congestion, limited parking, erosion, dredge channel narrowing/changing, insufficient areas for skiffs, need for a wider launch ramp, and fire suppression.
- Harbor operations are dependent on the U.S. Army Corps of Engineers for dredging. The City has had little ability to influence the annual dredging plan.

- The City is not able to generate sufficient income for the harbor from operations. General funds support operations and capital improvements.
- Harbor floats and other critical infrastructure are near end of usable life; funding source(s) for replacement is not yet identified.
- Limited opportunity to expand boat harbor in the immediate area.
- Face of bulkhead near the Boat Harbor is bent.
- Erosion concerns are widespread in the community including the harbor, city dock, sewage lagoon, and hospital areas.
- Limited water and sewer currently available in the boat harbor and uplands.
- Larger array of marine services presently available in Naknek.
- Warming weather trends could create uncertainty for public and private investment.
- State budget challenges have direct implications on the City's ability to invest in port and waterfront development.

Strategic Implications

- The regional economy and lifestyle are anchored by fishing and the seafood industry.
- Port and waterfront improvements can help strengthen the critical ties between Dillingham and neighboring communities and the economic, social, and cultural value of the fishery resource.
- Dillingham's waterfront infrastructure and service base must remain competitive with other communities in the Bristol Bay region.

Waterfront Development Plan

The following development strategies will be further vetted and prioritized in consultation with the public and key stakeholders in the coming months.

Goals and Strategies

Goal 1: Maximize safe and efficient usage of the Boat Harbor and uplands

SHORT TERM STRATEGIES

- Upgrade and organize floats for better utilization
- Improve vehicle and trailer parking at and near the harbor
- Improve pedestrian access, walkways, and ramps for increased safety and more efficient movement of boats and supplies
- Upgrade existing bathhouse
- Improve ice machine access and usage
- Improve lighting and security

MID TERM STRATEGIES

- Extend water, sewer, power, telecommunications throughout site
- Construct east side revetment
- Extend north bulkhead with boat grid
- Construct west side revetment
- Facilitate leasing of lands closest to the harbor for year-round marine support and other community services
- Resume disposal of dredging spoils on land

LONG TERM STRATEGIES

- Expand upland area for parking, boardwalk, second bathhouse, and other services through additional pile and fill
- Explore property resolution to allow access to the west side of the harbor and west side expansion with additional moorage floats
- Explore demand and options for boat harbor expansion at alternative sites

Goal 2: Enhance community access to the waterfront

SHORT TERM STRATEGIES

- Improve pedestrian access and short-term parking for park users
- Upgrade picnic seating and grill

MID TERM STRATEGIES

- Develop interpretive signage to showcase waterfront use and history
- Continue clean-up and development of City-owned lands along Kakanak Road

LONG TERM STRATEGIES

- Establish a covered pavilion for community events
- Install additional bathhouse and restrooms

Goal 3: Improve functionality of City-owned docks and downtown interface**SHORT TERM STRATEGIES**

- Increase staffing during peak demand periods

MID TERM STRATEGIES

- Improve truck and vehicular access to the City Dock
- Upgrade power to reduce generator use during peak season

LONG TERM STRATEGIES

- Extend dock face when demand warrants for two vessels
- Evaluate long-term growth needs and alternative sites for possible relocation

Goal 4: Facilitate waterfront collaboration and communication**SHORT TERM STRATEGIES**

- Involve Port Advisory Committee in planning
- Formalize communications with private landowners located on and adjacent to the waterfront

MID TERM STRATEGIES

- Identify shared needs (such as access, erosion control, advocacy) and implementation strategy

LONG TERM STRATEGIES

- Collaborate on long-term development projects

Implementation Plan

The table below summarizes goals, approximate development timeline, and lead entities. Community prioritization and access to funding will influence the development sequence.

Waterfront Strategic Plan Implementation

Strategies	Estimated Timeframe			Primary Responsibility
	1-5 Years	6-10 Years	11-20 Years	
Goal 1: Maximize safe and efficient usage of the boat harbor and uplands				
Upgrade harbor floats for better utilization	✓			City
Improve vehicle and trailer parking at and near the harbor	✓			City
Improve pedestrian access, walkways, and ramps	✓			City
Upgrade existing bathhouse	✓			City
Improve ice machine access and usage	✓			City
Improve lighting and security	✓			City
Extend utilities throughout site		✓		City, Utilities
Construct east side revetment		✓		City
Extend north bulkhead with boat grid		✓		City
Construct west side revetment		✓		City, Private Sector
Lease uplands for marine support and community services		✓		City, Private Sector
Restore on-land disposal of dredge spoils		✓		City, ACE
Expand and develop uplands through pile and fill			✓	City, Private Sector
Resolve property ownership and expand moorage			✓	City, Private Sector
Explore boat harbor expansion at other sites			✓	City, Private Sector
Goal 2: Enhance community access to the waterfront				
Improve pedestrian access and parking for park users	✓			City
Upgrade picnic seating and grill	✓			City
Develop waterfront interpretive signage		✓		City, Private Sector
Continue clean-up and development of City-owned lands		✓		City
Install pavilion, additional bathhouse, and restrooms			✓	City
Goal 3: Improve functionality of City-owned docks and downtown interface				
Increase staffing during peak periods	✓			City
Improve truck and vehicular access		✓		City, Private Sector
Upgrade power		✓		City, Utilities
Extend dock face when demand warrants			✓	City
Evaluate long-term needs and alternative sites			✓	City
Goal 4: Facilitate waterfront collaboration and communication				
Involve Port Advisory Committee in planning	✓			City
Formalize communications with private landowners	✓			City, Private Sector
Address shared needs and implementation strategy		✓		City, Private Sector
Collaborate on long-term development projects			✓	City, Private Sector

Major Capital Project Budget Estimates

Estimated costs for major capital projects are identified below. Detailed cost estimates and diagrams developed by PND Engineers are included in the Appendix. (For consistency, projects are listed below in the same order as in the Appendix.)

As noted above, community prioritization and funding will influence the development sequence.

Major Capital Project Budget Estimates

Description	Estimated Cost
Phase 1	
Water and Sewer Upgrades	\$1,217,850
North Bulkhead Extension	\$3,111,210
West Side Revetment	\$14,391,675
City Dock Side Revetment	\$7,449,240
Boat Harbor Float Replacement	\$4,958,360
Lease Parcel Development (City Harbor Side)	\$1,989,270
Bingman Property Development	\$1,604,250
Park Improvements	\$2,001,000
Phase 2	
Pavilion	\$324,300
Boat Harbor Development (Uplands)	\$15,238,650

Source: PND Engineers

Appendix

Project Contacts

The project team appreciates information and insights provided by the many Dillingham residents and organizations who assisted with the site visit, interviews, and outreach to fishermen and other community members. Additional input was solicited via two public meetings, meetings with Curyung Tribal Council and Port Advisory, and by public service announcements and notices.

City of Dillingham Staff

- Jean Barrett, City Port Director/Public Works
- Tod Larson, City Manager
- Dagen Nelson, Special Projects Coordinator
- Cynthia Rogers, City Planning Director

Project Contacts

- Andy Anderson, Council Member
- Mary Barnes, Choggiung Limited
- James Bond, Bristol Alliance Fuels
- Courtenay Carty, Curyung Tribal Council
- Dab Cheyette, Bristol Bay Native Corporation
- Elizabeth Clark, Planning Commission
- Dan Dunaway, Port Advisory Committee
- Robert Heyano, Ekuk Village Council, Port Advisory Committee
- Warner Lew, Icicle Seafoods
- Joe LoSciuto, Bristol Alliance Fuels
- Gregg Marxmiller, Planning Commission
- Chris Napoli, Bristol Bay Economic Development Corporation, City Council
- Melody Nibeck, Division of Community and Regional Affairs
- Isaac Pearson, Bristol Engineering
- Rebecca Roenfan, PAF
- Travis Roenfan, Peter Pan
- Alice Ruby, Mayor
- Tim Sands, Alaska Department of Fish and Game
- Helen Smeaton, Bristol Bay Economic Development Corporation
- First Chief Thomas Tilden, Curyung Tribal Council and fellow Chiefs in attendance at the Feb meeting
- Michael Tencza, U.S. Army Corps of Engineers, AK District
- Noman Van Vactor, Bristol Bay Economic Development Corporation

Project Resources

Alaska Department of Labor & Workforce Development, Population Estimates

Alaska Visitor Statistics Program, 2016, prepared by McDowell Group

BBRSDA Processor Survey, 2018, prepared by Northern Economics

CFEC Fishery Permit Database

CFEC Vessel Database

City of Dillingham Capital Improvement Plan, 2015-2020, prepared by the City of Dillingham

City of Dillingham Comprehensive Plan Update & Waterfront Plan, October 2010, prepared by the City of Dillingham with assistance from Agnew::Beck Consulting, Land Design North, PND Engineers

Potential Sources of Project Funding

The following section provides information about potential funding sources, including grants and financing.

Alaska Community Development Block Grant Program

Administrator: Alaska Department of Commerce

Eligibility: Alaskan communities.

Use of Funds: The CDBG program provides financial resources for public facilities and planning activities which reduce the cost of essential community services and address health and safety issues. Funded by the U.S. Department of Housing and Urban Development (HUD), a maximum of \$850,000 can be awarded for a single project. Funding categories include community development, planning, and special economic development projects.

URL: <https://www.commerce.alaska.gov/web/dcra/GrantsSection/CommunityDevelopmentBlockGrants.aspx>

Alaska Department of Transportation CIP Program

Administrator: Alaska Department of Transportation and Public Facilities

Eligibility: Alaskan communities.

Use of Funds: ADOT&PF CIP program works with three main streams of funding for transportation projects in the State of Alaska: federal highway funds, other federal funds, and state capital budget funds.

URL: <http://www.dot.state.ak.us/stwdplng/cip/index.shtml>

Alaska Industrial Development and Export Authority

Administrator: Alaska Industrial Development and Export Authority

Eligibility: Alaska businesses and communities.

Use of Funds: AIDEA supports economic activity in Alaska by providing loan guarantees, conduit revenue bonds, and participation in infrastructure projects (wholly or partially owned by AIDEA). Current port-related projects owned by AIDEA and leased to the private operators include the Skagway Ore Terminal, Ketchikan Shipyard, and the Delong Mountain Transportation System (connecting the Red Dog Mine to export markets).

URL: <http://www.aidea.org/Programs.aspx>

Alaska Municipal Bond Bank Authority

Administrator: Alaska Municipal Bond Bank Authority

Eligibility: Alaska municipalities, joint action agencies, and regional health organizations.

Use of Funds: AMBBA can assist eligible Alaska borrowers with bond financing for capital improvements such as schools, water and sewer systems, public buildings, harbors, and docks. General obligation bonds are backed by a city's taxing authority, such as a local property tax, while revenue bonds are backed by specified revenues from an income-producing project. Project completed with support from AMBBA include harbor improvements for the cities of Seward and Homer.

URL: <http://treasury.dor.alaska.gov/ambba/>

Alaska Municipal Harbors Matching Grant

Administrator: Alaska Department of Transportation and Public Facilities

Eligibility: Alaska municipalities and regional housing authorities

Use of Funds: This program requires a 50/50 match and can only be used for the construction phase of small boat harbor facilities. Legislative grants to municipalities may not be used for the local match requirement. Maximum state contribution is \$5 million per year.

URL: <http://dot.alaska.gov/stwdplng/ports/>

Better Utilizing Investments to Leverage Development (BUILD) Grants

Administrator: U.S. Department of Transportation

Eligibility: State, local, and tribal governments.

Use of Funds: Formerly known as TIGER grants, BUILD grants help fund surface transportation projects such as roads, bridges, transit, rail, port, or intermodal transportation. Half of available funds (\$450 of \$900 million) are designated for rural areas of the United States. There is no matching requirement for projects in rural areas. The minimum project award for rural areas is \$1 million, and the maximum is \$25 million. Selection criteria focus on "safety, economic competitiveness, quality of life, state of good repair, innovation and partnerships with a broad range of stakeholders." Federal share of project costs under the BUILD Transportation grant program may not exceed 80 percent for a project located in an urban area. The Secretary may increase the Federal share of costs above 80 percent for a project located in a rural area.

URL: <https://www.transportation.gov/BUILDgrants>

Bristol Bay Economic Development Corporation Community Programs

Administrator: BBEDC

Eligibility: Local government organizations (tribal or city entities).

Use of Funds: The **Infrastructure Grant Fund** provides funding for infrastructure that promotes and supports long-term economic growth and opportunity in CDQ communities. The **Community Block Grant Program** funds projects that promote sustainable community and regional economic development. The budgeted amount for 2018 was \$500,000 per community.

URL: <http://www.bbedc.com/>

Dingell-Johnson Sport Fish Restoration Act

Administrator: U.S. Fish and Wildlife Service.

Eligibility: State fish and wildlife agencies.

Use of Funds: Conservation and outdoor recreation projects, including recreational boating access and facilities. Funds are derived from excise taxes paid on firearms, ammunition, sport fishing tackle, small boat engines, small engine fuels, and other equipment. For approved grants up to 75% of the project costs.

URL: <https://wsfrprograms.fws.gov/Subpages/GrantPrograms/SFR/SFR.htm>

Economic Development Administration Public Works and Economic Adjustment Assistance Program

Administrator: U.S. Economic Development Administration

Eligibility: State, local, and tribal governments and institutions of higher education.

Use of Funds: Grants of \$600,000 to \$3 million are provided under this grant program to “leverage regional assets to support the implementation of regional economic development strategies designed to create jobs, leverage private capital, encourage economic development, and strengthen America’s ability to compete in the global marketplace.” Grant applications are accepted on a rolling basis. Generally, the amount of an EDA award may not exceed 50 percent of the total cost of the project. Projects may receive an additional amount that may not exceed up to 30 percent of the total project cost, based on the relative needs of the Region in which the project will be located, as determined by EDA.

URL: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=306735>

Federal Lands Access Program (FLAP)

Administrator: U.S. Department of Transportation

Eligibility: Unrestricted.

Use of Funds: FLAP funds support projects that improve access to federal lands. Funding is provided to states via a specified formula. FLAP projects in Alaska typically involve trailhead, boat launch, road, and/or trail improvements.

URL: <https://flh.fhwa.dot.gov/programs/flap/>

Rasmuson Foundation

Administrator: Rasmuson Foundation

Eligibility: Non-profit organizations, as well as local and tribal governments.

Use of Funds: This grant program is designed to support capital projects of “demonstrable strategic importance or innovative nature that address issues of broad community or statewide significance.” The Foundation specifies that they are rarely the largest or only contributor and generally expect the project have multiple other funding sources that demonstrate widespread community support. Two different grant programs (Tier 1 and Tier 2) are available, one for grants up to \$25,000 and the other for grants of more than \$25,000.

URL: <https://www.rasmuson.org/grants/>

State of Alaska Boating and Angler Access Grant Program

Administrator: Alaska Department of Fish and Game, Sport Fish Division

Eligibility: Typically involve state, federal, and local agencies that manage boating access sites.

Use of Funds: Funds for this program derive from federal excise taxes and import duties placed on recreational fishing and boating equipment and supplies – as set up by the Dingell-Johnson Act. This program will cover up to 75 percent of the cost of an eligible project and requires a 25 percent non-federal match. Funded projects must primarily benefit the recreational boating and sport fishing public (not primarily benefiting subsistence or commercial fishing users).

URL: <https://www.adfg.alaska.gov/index.cfm?adfg=fishingSportBoatingAnglerAccess.main>

USACE Civil Works Program

Administrator: U.S. Army Corps of Engineers

Eligibility: These projects typically involve a local municipality

Use of Funds: USACE’s civil works program supports selected projects from the planning and feasibility stages all the way through to construction. The new harbor in Valdez is an example of a recent project that received funding from the USACE.

URL: <https://www.poa.usace.army.mil/Missions/Civil-Works-and-Planning/>

USDA Rural Community Facilities Direct Loan & Grant Program

Administrator: U.S. Department of Agriculture

Eligibility: Public agencies, non-profit organizations, and tribal entities located in rural areas.

Use of Funds: Funds may be used to purchase or construct various types of community facilities, including health care clinics, street improvements, community centers, fire trucks, museums, community gardens, and many other types of facilities. Priority is given to communities with fewer than 5,500 residents and/or median household incomes below 80% of the state nonmetropolitan median household income. Loans, grants, and loan guarantees are available through this program. Applicants must be unable to finance the project from their own resources and/or through commercial credit at reasonable terms. Maximum grant award is 75% of proposed project.

URL: <https://www.rd.usda.gov/files/fact-sheet/RD-Factsheet-RHS-CFDirect.pdf>

US DOT Port Infrastructure Development Grants

Administrator: U.S. Department of Transportation, Maritime Administration

Eligibility: State, local, or tribal governments or their subdivisions.

Use of Funds: Projects funded will “improve the safety, efficiency, or reliability” or coastal seaports (deep draft ports capable of handling drafts of at least 20 feet). A total \$200 million is made available to all U.S. coastal seaports, while another \$93 million is set aside for the nation’s largest 15 ports by TEUs handled. The minimum grant award is \$10 million and there is no maximum award amount specified. Minimum 20% non-Federal funding match.

URL: <https://www.maritime.dot.gov/PIDPgrants>

Summary of Public and Tribal Meeting Comments

Public Meeting: December 2, 2019

- Need to engage fishermen in project.
- Reconvene Port Advisory Committee and fill vacant seats.
- Link with hazard mitigation plan? Potential funding/partners: HUD, FEMA, Housing Authority.
- Bingman property is now a much better welcome to town. Used for net storage? Trailer parking could be compatible with 100-foot ROW. Educational purposes? Connect commercial fishing with K-12?
- Interest in BBNC, PAF, other private investment.
- State-owned road. They plow. Need to clarify ROW.
- Enhance green space, beautification, median.
- Addressing erosion is critical.
- Need more information about timeline for development.
- Revetment is a priority.
- Shoreline studies show urgency for coastline and lagoon.
- UAF is monitoring storm surge. DNR and DGGS have some information on erosion. Creating stepped ledges underwater.
- Why did ACE change? Likely cost. Rigid interpretation of responsibility now.
- Pumping in the mouth of the river changes the landscape. We are fighting soils from erosion and washing back in.
- Census count is important. We need an accurate count for funding for waterfront and other community needs.
- How does revetment affect channel?

- Fishermen can experience damage from larger vessels.
- Need to raise revenues for city—need to prioritize needs.
- Short-term parking is 32 spaces.
- Need places to work on boats outside of PAF.
- In the spring and fall, City could rent space for vessel work.
- Need input from Port Advisory Committee.
- Also non-residents have waterfront needs.
- What is maximum harbor capacity?
- What is cost in Phase I for harbor to be walled in? (Note: \$15 million.)
- Need to engage other users.
 - What about a survey with questions and some open-ended comments?
 - CFEC has contact information for vessel owners. Could send a post-card with QR code.
 - Email permit holders.
 - Email BBEDC contacts.
 - BBRSDA has lists.
 - Create webpage.
- How are we addressing people coming from villages? They have skiffs, need to access community stores/services, load purchases.
- Ramp is dangerous and lacks parking.
- People could park across the road.
- Need to straighten up lease parcels; NAPA has higher/lower land.
- Peter Pan is eroding harbor; culvert near memorial.
- People are working on boats on City property; oil spills. Need better area to work.
- Choggiung land is pie-shaped. Not usable. Can we align property thought agreements?
- Need water down to the end of the harbor for fire and potable water. When the tide is out, there is no way out of the harbor. Potential for huge loss to individuals and community revenues.
- East side has more/better parking.
- Longer-term plan should include lease on Choggiung lands.
- Trucks not used much, maybe weekly.
- Need plan for super-long term parking –some as much as six weeks.
- Subsistence users have no place to park. Can be ¾ mile to ramp.
- Setnet only one functional access. Other launches not usable.
- Ramp by harbor office needs to be more usable, better flow of trucks/boats.
- Bingham property has a couple more years of clean-up. In the short term can be used for parking.
- Aleknagik is an example for us of orderly, attractive parking?
- What are the revenue-generating services we should be focusing on?
- Bristol Alliance dock is filling in, storm carve out. Peter Pan had to extend because of it.
- Bulkheads creating an eddy, not a shelf.
- The trees are mostly on City land. Used by campers and homeless.
- Original float design was not designed for 400+ boats. Can be 20 boats rafted together at peak times.
- Need close coordination with landowners.
- Urgent need for fire hydrant with proper water supply.
- Need to look t other areas including Wood River and Kanakanak.
- Food production businesses could use the area if proper water and sewer.
- Additional bathhouse is needed.
- Health and safety are priorities.

Public Meeting: February 11, 2020

- Will ACE allow dredge spoils on land? Cost share is key concern.
- Ensure additional bathhouse, not losing one.
- Peter Pan reconfiguration allows road access without highway.
- How many boat stalls after reconfiguration? Don't want to lose spaces.
- Where is best place for approaching floats?
- Longer floats = more capacity, more rafting.
- Boats add revenue, not parting.

- Lease space also revenue generation for City and private sector.
- Bringing walls up with sheet pile increases parking, reduces erosion issues.
- Bristol Alliance dock is building land due to movement of water/soils.
- Was not intended to be an all-tide harbor. ACE has rocks at entrance to hold water.
- Entrance to harbor is very skinny at certain times. Would ACE dredge that? Need to confirm plans, as prior plans had ACE planning entrance channel dredging.
- In recent years, ACE's intended to build north bulkhead Feel robbed. Any prospect of resuming?
- Bingman parcel clean-up is great. Although 100 ft. ROW, can expand parking and some uses. Also entrance to town is improved; shows community pride. Can we do the same with Stan Smalls?
- Can we change the size/location ACE dredging? They are confined to original footprint now.
- BBNC is in development mode. Need to understand and align interests.
- Would love to see welders and others working on boats, as in Naknek. Economic opportunity here.
- Would need to take some other area, as heavy industry needs more space than right at harbor.
- Ramps are blocked – need to ensure usability from uplands and in water.
- Bluff revetment is needed, or sloughing will continue.
- City has sliver of land adjacent to BBNC. Need to understand status and options.
- Choggiung and BBNC are natural partners.
- Port Advisory Committee to meet soon. Need to finalize plan and meet with AK Delegation in DC.
- Add details in plan for design, permitting, construction. Need to arm Tod with info to see vision, secure funding. Consider maintenance.
- ACE planning horizon can be long due to funding cycles and robust design. Some cities take on project themselves and find costs come out close to ACE cost-share percentage.
- Float next to bulkhead—access could be on south side.
- Change gangways to be parallel to at end of floats.
- Water and sewer infrastructure needed for fire, sanitation, and lease potential.
- Vehicle parking seems optimistic. How is trailing parking addressed near launch? Better location is center area, pull through, with loop at the end, no backing.
- Ice-house only moved slightly. Harbor staff can access it. Needs an auger, move totes around. Scows prevent access to it. Can they be moved?
- Be sure to consider Division of Sportfish funding.
- Lost a small fish processing business due to lack of harbor access. Needed walk-ins, waste disposal, DEC approved water. Could have been successful. Support vision for lots, water, sewer.
- See written notes provided by Alice.

Curyung Tribal Council Meeting: February 11, 2020

- Traffic patterns and congestion need to be addressed.
- Move to other uplands.
- Move trailer parking to center, pull-through.
- Is paving planned? Road is bad, potholes. How indicate parking plan?
- Subsistence users use steep access on south side. Will that be blocked by ACE or City development? (Does not look like it.)
- Could floats be repurposed for set net skiffs at north end? Boats prevent access on existing floats. (Note floats are near end of useful life.)
- Rate comparison with Lake & Penn and Bristol Bay is planned. Want to be competitive and reinvest in facilities.
- Barge is anchored late in the year; presents safety concerns.
- Dredging is key issue. Can see channel changes, sandbars, also affecting Kakanak access.
- Village corporation has lands across the road. Could be part of overall plan/coordination.
- Tribe had govt-to-govt meeting with ACE on Jan 29. They plan to continue dredging at some site/cost. Need to change their position.
- Leave north end ramp in place.
- Repair the unusable "cliff" ramp.
- Playground should be upgraded. Our grandkids are using the equipment we grew up with.
- Covered area with tables and grills would be nice. Popular spot.
- With bulkhead, erosion and sloughing would be less challenging.

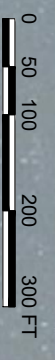
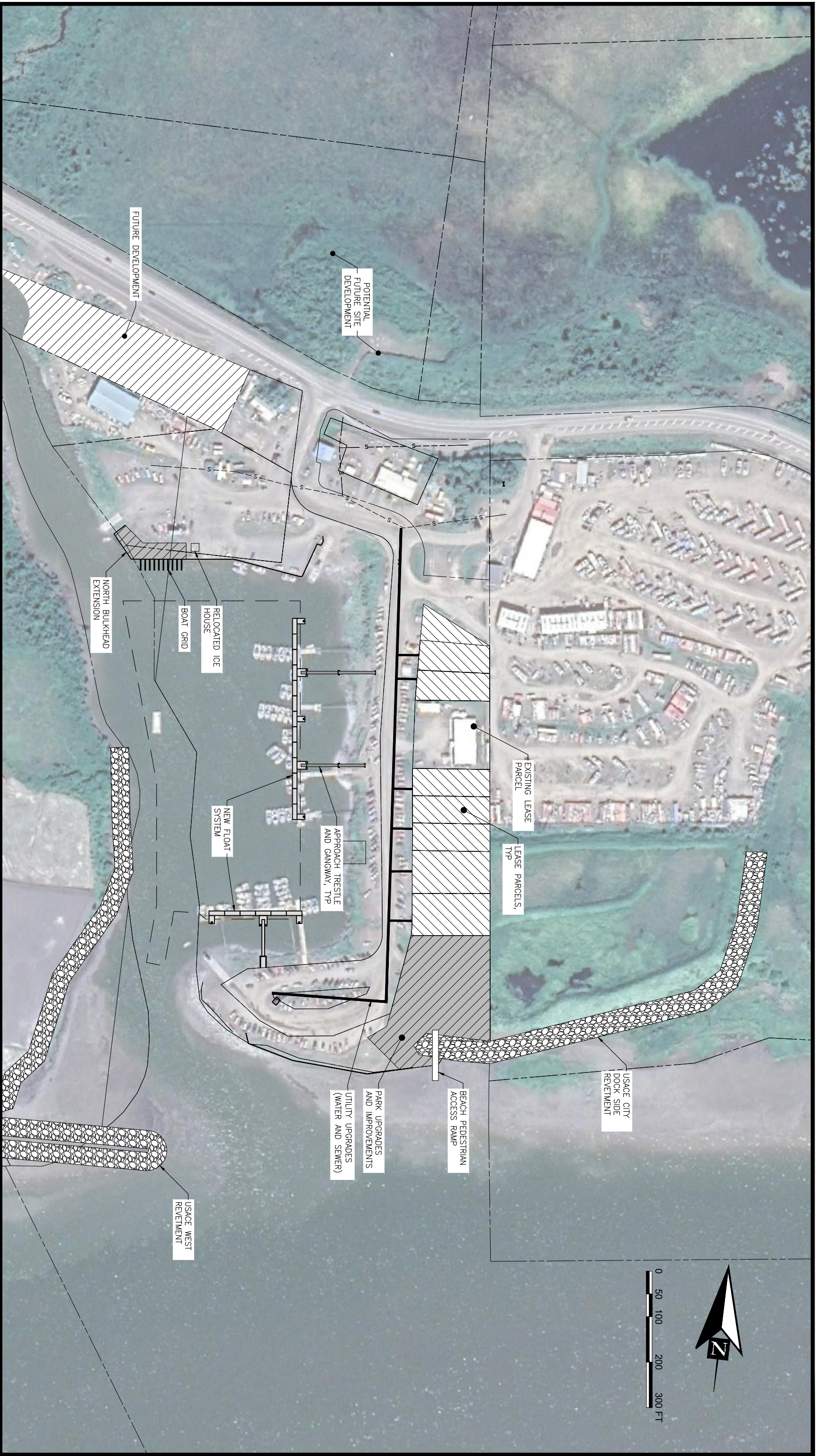
- Appreciate the lighting improvements. Much safer.
- Tribal members use the waterfront for commercial fishing, subsistence, recreation. Definitely an important issue.
- Other tribes in the region also benefit from the harbor and dock. Should be involved in the planning, funding, and advocacy.
- Like Port of Alaska in ANC, Dillingham infrastructure serves the region.
- Make this a priority for SWAMC.
- Please define how the City wants us to work with you.
- Joint meeting between the City and Tribe is needed.
- Federal government support is critical.
- Why was this focused only on downtown? Wood River and Kanakanak beach are part of Dillingham's waterfront. Disappointed. Can't access site due to trucks and trailers. (Note: Wanted to address priorities in harbor and lagoon to get started.)

Port Advisory Committee: May 11, 2020

- Does plan increase moorage or revenues to the City?
 - Yes, City revenues increase when leasing potential is realized.
 - Plan helps to protect and enhance private-sector assets, which strengthens tax base.
- Boat harbor capacity has potential to be expanded on the west side. Need to resolve property line and access issues first.
- Federal funding is available for improvements related to sport fishing.
- Has outer harbor been considered?
 - Given tide and currents, would likely exacerbate silt/accretion issues.
- Need to increase haul out and storage space at the harbor and on adjacent lands.
- A gravel pad with space for up to 20 boats would allow boats to be hauled out for short-term work. Could charge for access to pad, electricity, and water.
- What is cost to increase dredging outside of existing footprint?
 - The average cost for ongoing maintenance dredging is approximately \$8/cubic yard.
- Uplands expansion versus potential harbor expansion.
- Location of an upland bulkhead would be optimized during future design efforts to provide balance between potential inner harbor footprint expansion and created uplands.

PND Engineers Diagrams and Detailed Cost Estimates

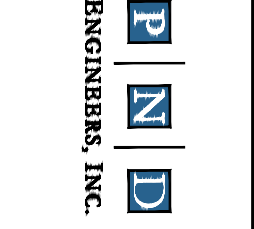
Diagrams developed by PND Engineers and cost estimates for major capital projects are attached. Phase 1 incorporates short-term and mid-term projects. Phase 2 reflects more extensive redevelopment of the boat harbor including sheet pile bulkhead, fill, and upland improvements.



PND Engineers, Inc. (PND) 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.

DRAFT
6/14/20

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
www.pndengineers.com
AK Lic# AEC2250



DILLINGHAM WATERFRONT STRATEGIC PLAN
SITE PLAN - PHASE 1

DESIGNED BY: CC DATE: 6/4/20
CHECKED BY: DST PROJECT NO: 191142

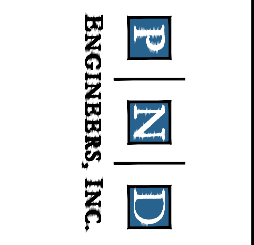
SHEET NO: **1** OF **2**



PND Engineers, Inc. (PND) 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.

DRAFT
6/14/20

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
www.pndengineers.com
AK Lic.# AEC2250



PROJECT: **DILLINGHAM WATERFRONT STRATEGIC PLAN**
TITLE: **SITE PLAN - PHASE 2**

DESIGNED BY:	CC	DATE:	6/4/20	SHEET NO. 2 OF 2
CHECKED BY:	DST	PROJECT NO.:	191142	

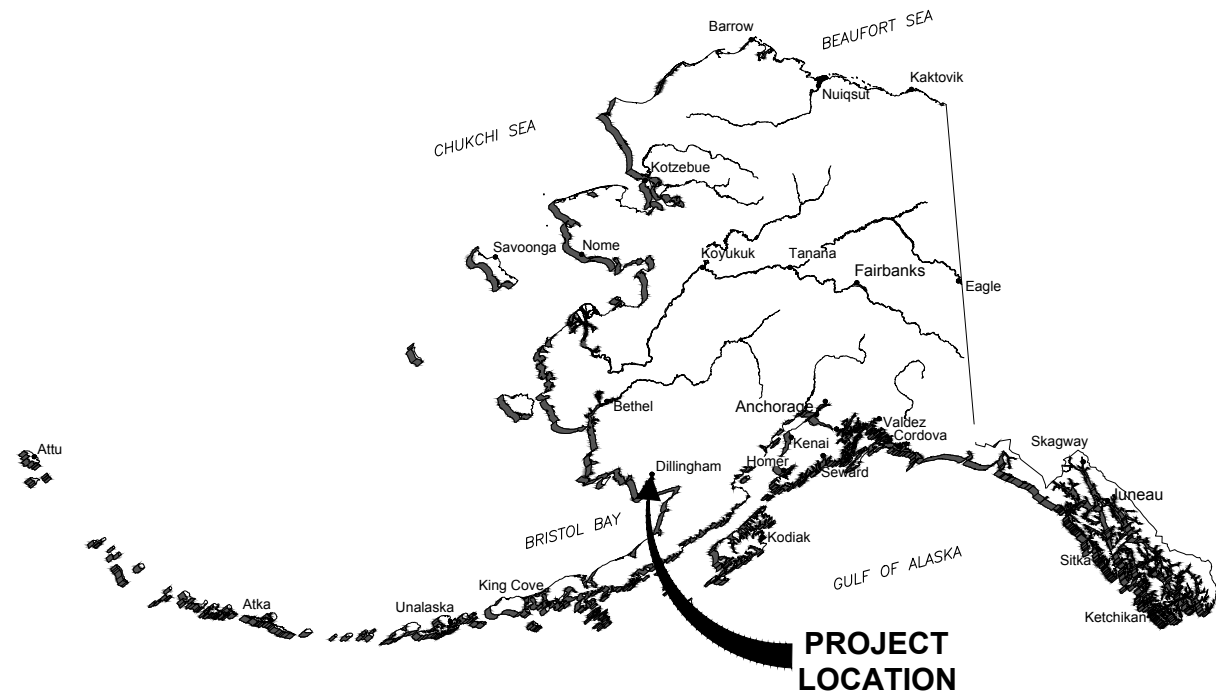
Description	Pay Unit	Quantity	Unit Cost	Amount
PHASE 1				
WATER AND SEWER UPGRADES				\$1,217,850
Provide and Install Waterline	Lineal Foot	1,150	\$350	\$402,500
Provide and Install Sewer Force Main	Lineal Foot	1,200	\$400	\$480,000
		Contingency (Assumed 20%)		\$176,500
		Design, Engineering and Permitting (Assumed 10%)		\$88,250
		Construction Management (Assumed 8%)		\$70,600
NORTH BULKHEAD EXTENSION				\$3,111,210
Mob/Demob	Lump Sum	1	\$500,000	\$500,000
Sheet Pile Bulkhead	Lineal Foot	230	\$3,000	\$690,000
Face Beam and Fenders	Lineal Foot	230	\$1,200	\$276,000
Gravel Fill	Cubic Yard	4,500	\$30	\$135,000
Surfacing Course	Cubic Yard	300	\$95	\$28,500
Relocate Ice House	Lump Sum	1	\$75,000	\$75,000
Boat Grid	Lump Sum	1	\$550,000	\$550,000
		Contingency (Assumed 20%)		\$450,900
		Design, Engineering and Permitting (Assumed 10%)		\$225,450
		Construction Management (Assumed 8%)		\$180,360
WEST REVETMENT (W2)				\$14,391,675
Mob/Demob	Lump Sum	1	\$600,000	\$600,000
Clearing and Grubbing	Lump Sum	1	\$60,000	\$60,000
Excavation and Disposal	Cubic Yard	30,720	\$25	\$768,000
Geotextile	Square Yard	15,000	\$10	\$150,000
Porous Fill	Cubic Yard	3,600	\$95	\$342,000
Core Rock	Cubic Yard	8,100	\$200	\$1,620,000
'B' Rock	Cubic Yard	10,450	\$225	\$2,351,250
'A' Rock	Cubic Yard	16,500	\$275	\$4,537,500
		Contingency (Assumed 20%)		\$2,085,750
		Design, Engineering and Permitting (Assumed 10%)		\$1,042,875
		Construction Management (Assumed 8%)		\$834,300
CITY DOCK SIDE REVETMENT (C1)				\$7,449,240
Mob/Demob	Lump Sum	1	\$600,000	\$600,000
Clearing and Grubbing	Lump Sum	1	\$60,000	\$60,000
Excavation and Disposal	Cubic Yard	7,700	\$25	\$192,500
Geotextile	Square Yard	3,200	\$10	\$32,000
Crushed Rock Road Surfacing	Cubic Yard	700	\$95	\$66,500
Porous Fill	Cubic Yard	9,300	\$95	\$883,500
Core Rock	Cubic Yard	1,100	\$200	\$220,000
'B' Rock	Cubic Yard	3,100	\$225	\$697,500
'A' Rock	Cubic Yard	5,600	\$275	\$1,540,000
Beach Access Ramp	Lump Sum	1	\$250,000	\$250,000
Rip Rap	Ton	3,800	\$200	\$760,000
Secondary Rip Rap	Ton	480	\$200	\$96,000
		Contingency (Assumed 20%)		\$1,079,600
		Design, Engineering and Permitting (Assumed 10%)		\$539,800
		Construction Management (Assumed 8%)		\$431,840

Description	Pay Unit	Quantity	Unit Cost	Amount
PHASE 1 - Continued				
SMALL BOAT HARBOR FLOAT REPLACEMENT				\$4,958,360
Mob/Demob	Lump Sum	1	\$550,000	\$550,000
Demolition	Lump Sum	1	\$25,000	\$25,000
Float Approach Trestles and Gangways	Lump Sum	1	\$523,000	\$523,000
Float System and Piles	Lump Sum	1	\$2,989,000	\$2,989,000
Utilities	Lump Sum	1	\$115,000	\$115,000
			Contingency (Assumed 10%)	\$420,200
			Construction Management (Assumed 8%)	\$336,160
LEASE PARCEL DEVELOPMENT - HARBOR SIDE				\$1,989,270
Mob/Demob	Lump Sum	1	\$250,000	\$250,000
Site Fill and Grading	Square Foot	85,000	\$7.50	\$637,500
Surfacing Course	Cubic Yard	3,200	\$95	\$304,000
Utilities	Lump Sum	1	\$250,000	\$250,000
			Contingency (Assumed 20%)	\$288,300
			Design, Engineering and Permitting (Assumed 10%)	\$144,150
			Construction Management (Assumed 8%)	\$115,320
PARCEL DEVELOPMENT - BINGMAN PROPERTY				\$1,604,250
Mob/Demob	Lump Sum	1	\$250,000	\$250,000
Site Fill and Grading	Square Foot	70,000	\$7.50	\$525,000
Surfacing Course	Cubic Yard	2,500	\$95	\$237,500
Utilities	Lump Sum	1	\$150,000	\$150,000
			Contingency (Assumed 20%)	\$232,500
			Design, Engineering and Permitting (Assumed 10%)	\$116,250
			Construction Management (Assumed 8%)	\$93,000
PARK IMPROVEMENTS				\$2,001,000
Mob/Demob	Lump Sum	1	\$250,000	\$250,000
Site Fill	Cubic Yard	10,000	\$25	\$250,000
Greenscape with Site Furnishing	Lump Sum	1	\$500,000	\$500,000
Playground w/ Safety Surfacing	Lump Sum	1	\$450,000	\$450,000
			Contingency (Assumed 20%)	\$290,000
			Design, Engineering and Permitting (Assumed 10%)	\$145,000
			Construction Management (Assumed 8%)	\$116,000

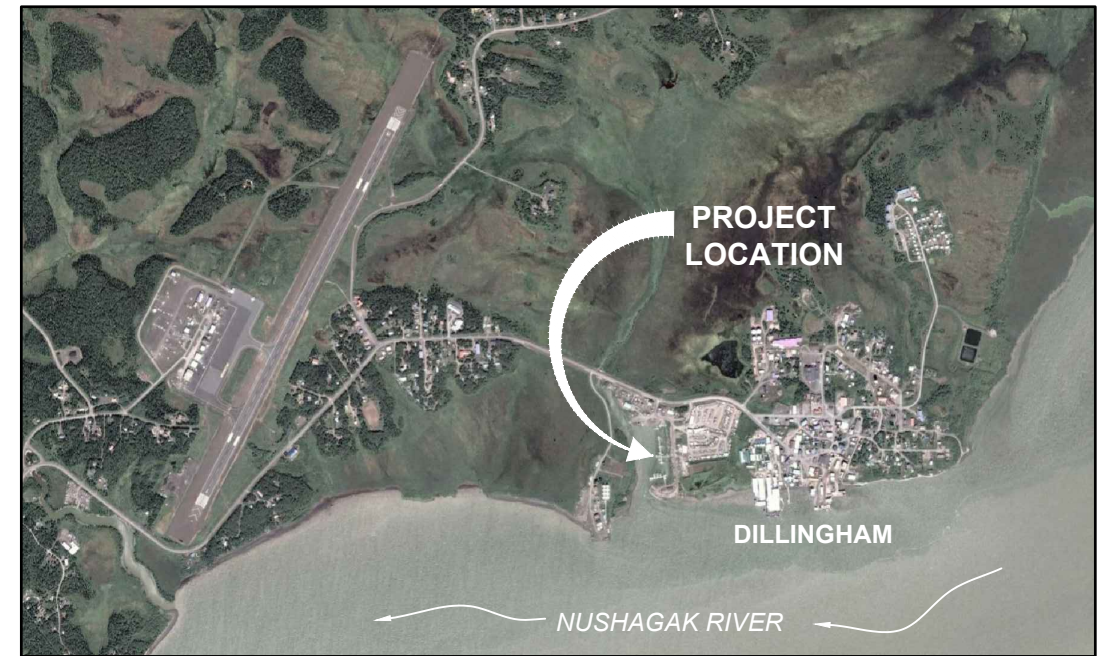
Description	Pay Unit	Quantity	Unit Cost	Amount
PHASE 2				
PARK IMPROVEMENTS				\$324,300
Mob/Demob	Lump Sum	1	\$35,000	\$35,000
Pavillion	Each	1	\$200,000	\$200,000
		Contingency (Assumed 20%)		\$47,000
		Design, Engineering and Permitting (Assumed 10%)		\$23,500
		Construction Management (Assumed 8%)		\$18,800
SMALL BOAT HARBOR DEVELOPMENT				\$15,238,650
Mob/Demob	Lump Sum	1	\$600,000	\$600,000
Sheet Pile Bulkhead	Lineal Foot	1,200	\$4,000	\$4,800,000
Gravel Fill	Cubic Yard	120,000	\$25	\$3,000,000
Surfacing Course	Cubic Yard	4,500	\$95	\$427,500
Utilities	Lump Sum	1	\$350,000	\$350,000
Boardwalk	Square Foot	8,000	\$100	\$800,000
Sidewalks	Lineal Foot	600	\$50	\$30,000
Signage and wayfinding	Lump Sum	1	\$35,000	\$35,000
Restroom / Showers	Square Foot	2,000	\$500	\$1,000,000
		Contingency (Assumed 20%)		\$2,208,500
		Design, Engineering and Permitting (Assumed 10%)		\$1,104,250
		Construction Management (Assumed 8%)		\$883,400

DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

MARCH 2019
DILLINGHAM, ALASKA



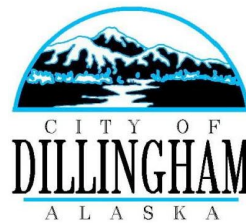
STATE OF ALASKA



DILLINGHAM VICINITY

J:\2017\17113 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



TITLE: **COVER SHEET AND VICINITY MAP**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 1.01
CHECKED BY: CDC	PROJECT NO: 171113	SHEET NO: 1 OF 27

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

LEGEND

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

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

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



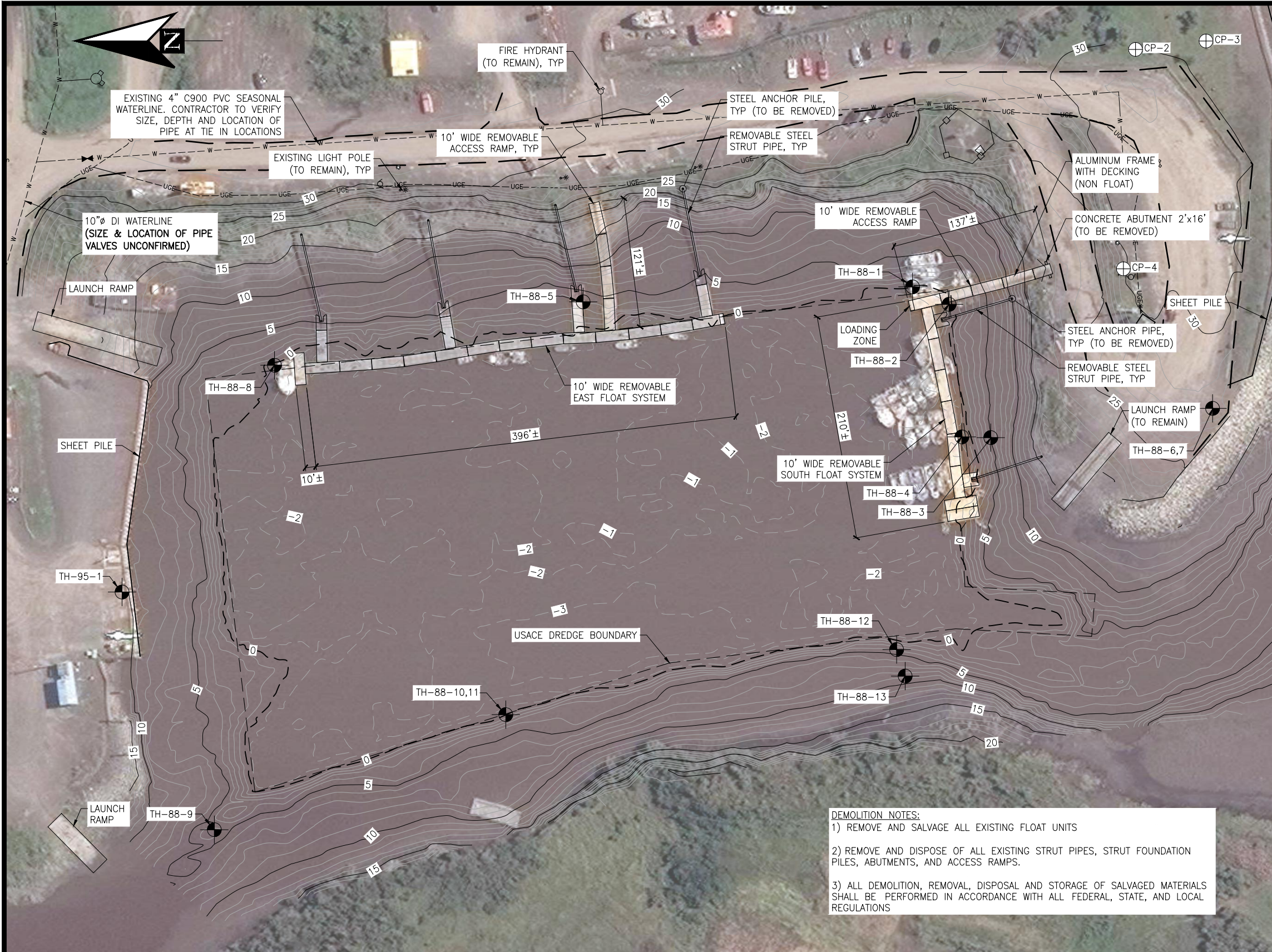
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

DRAWING INDEX, ABBREVIATIONS, AND GENERAL NOTES

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

DWG NO: **1.02** SHEET NO: 2 OF 27

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\1.01_1.02 Cover Sheet and Index.dwg, 1.02, 4/9/2019 3:49:30 PM, james, 1:2



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

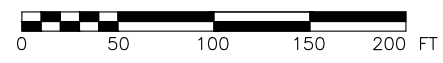
CONTROL POINT	STATION	NORTHING	EASTING	MLLW	DESCRIPTION
CP-1	1277-1 1984	1,841,622.39	1,550,745.71	32.11	3.25 INCH USACE SBC
CP-2	1277-2 1984	1,840,494.00	1,550,879.74	30.86	3.25 INCH USACE SBC
CP-3	1277-3 1984	1,840,427.98	1,550,887.60	30.21	3.25 INCH USACE SBC
				25.62	NOAA/NOS TIDAL BM
				24.87	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, 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.



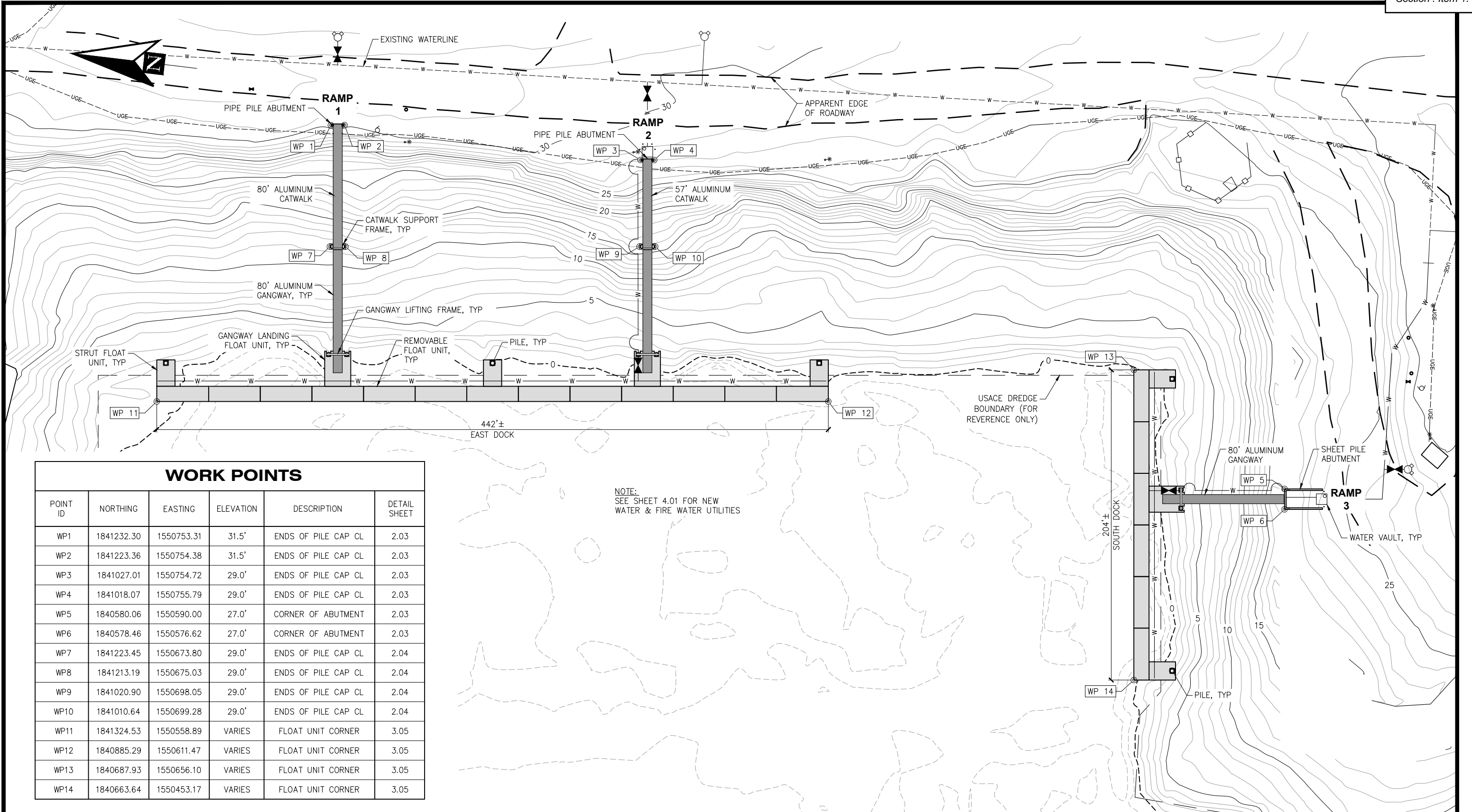
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

EXISTING CONDITIONS & DEMOLITION PLAN

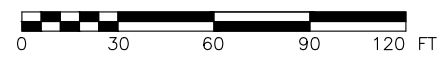
DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	1.03
CHECKED BY:	CDC	PROJECT NO.:	171113	



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

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



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



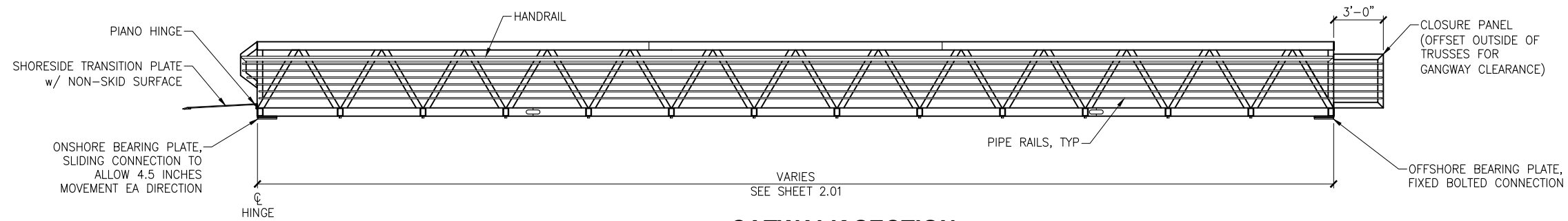
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

NEW SITE PLAN

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

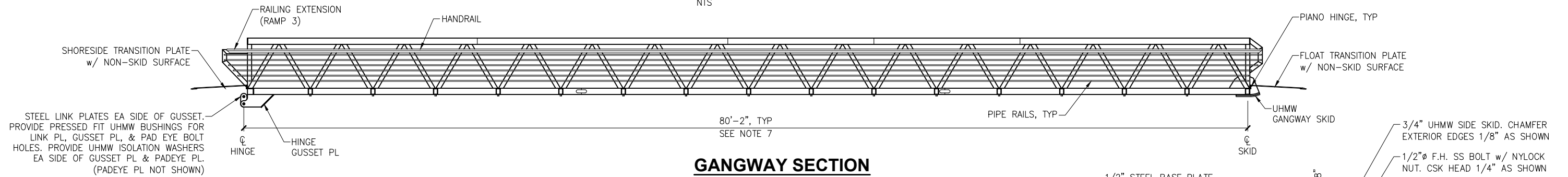
DWG NO: **1.04** SHEET NO: 4 OF 27

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



CATWALK SECTION

NTS

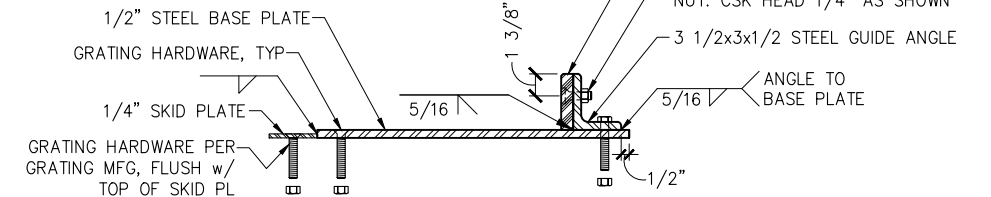


GANGWAY SECTION

NTS

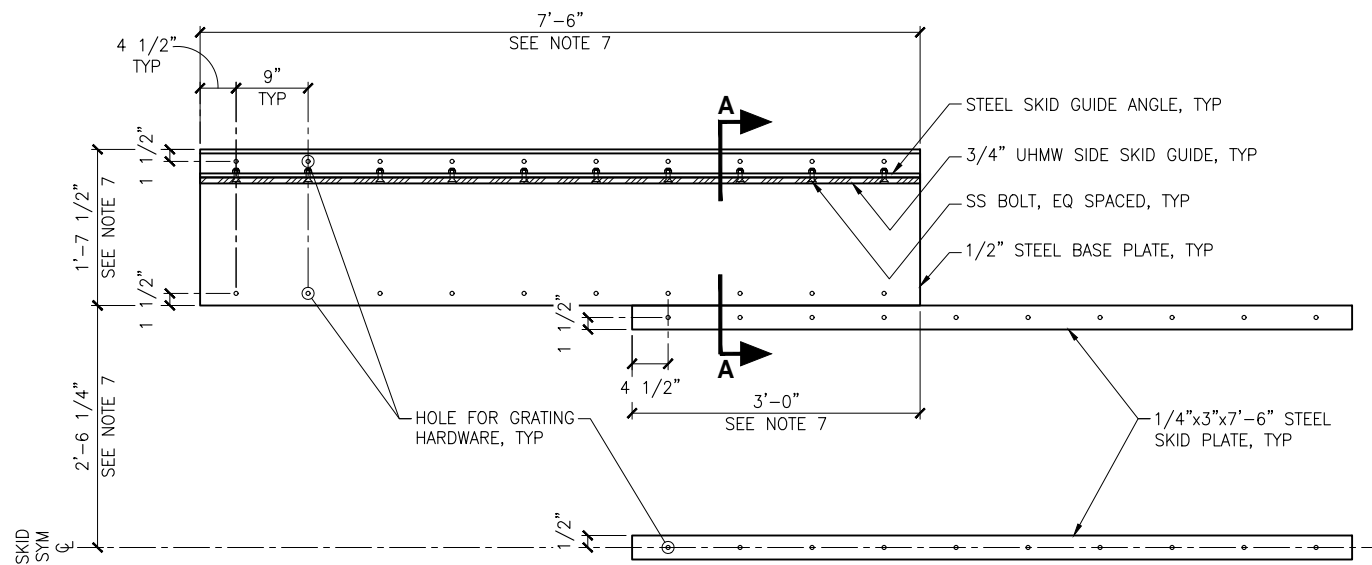
GENERAL NOTES:

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.



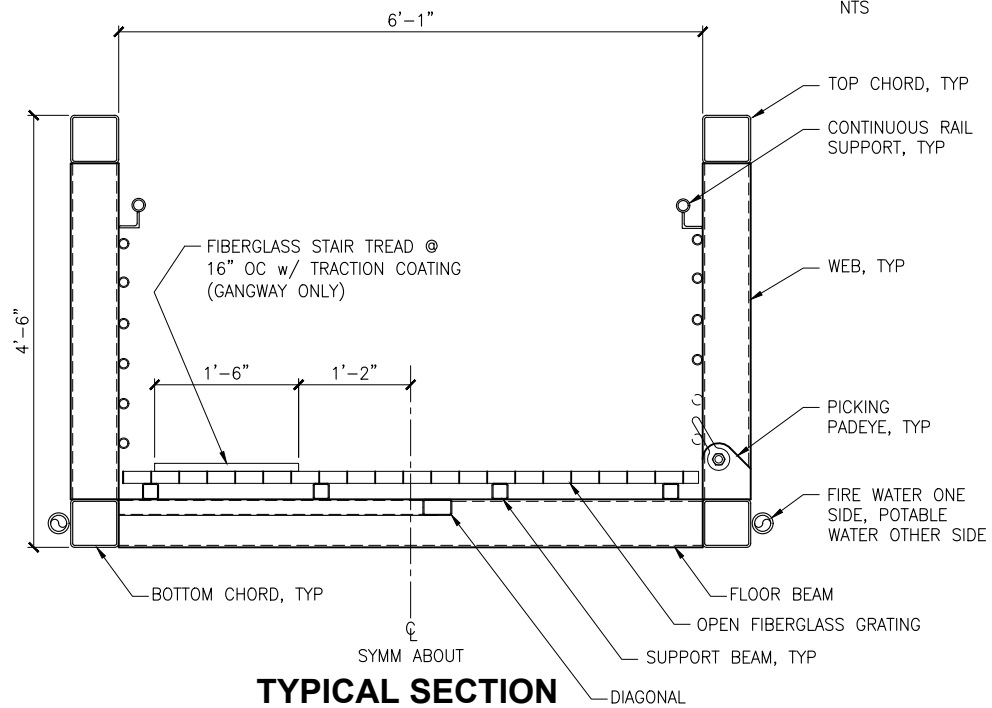
SKID ASSEMBLY SECTION A-A

NTS



SKID BASE PLATE/GUIDE ANGLE ASSEMBLY - PLAN

NTS



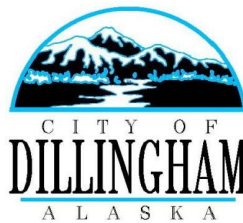
TYPICAL SECTION

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

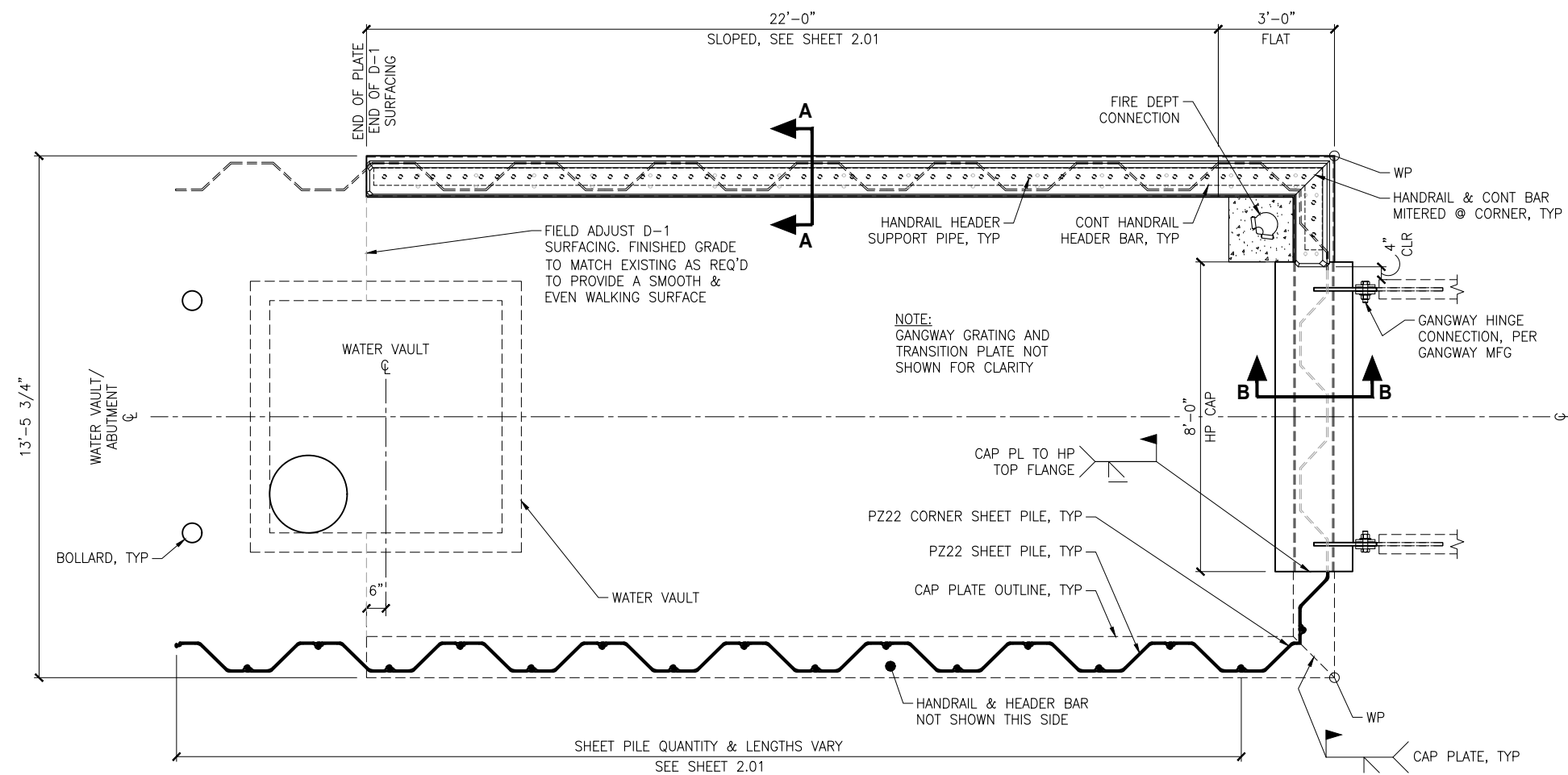
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



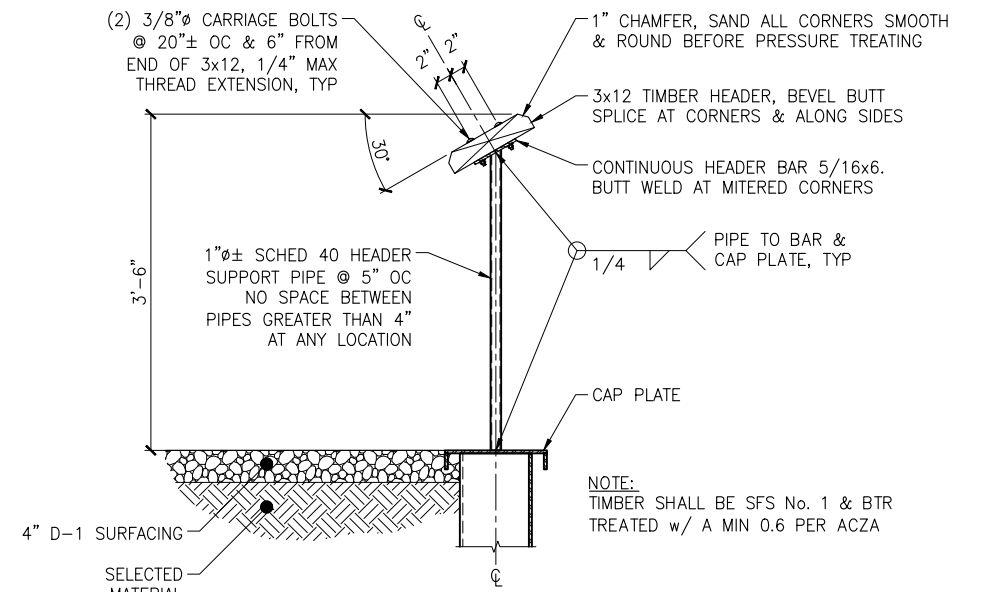
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

GANGWAY & CATWALK DETAILS

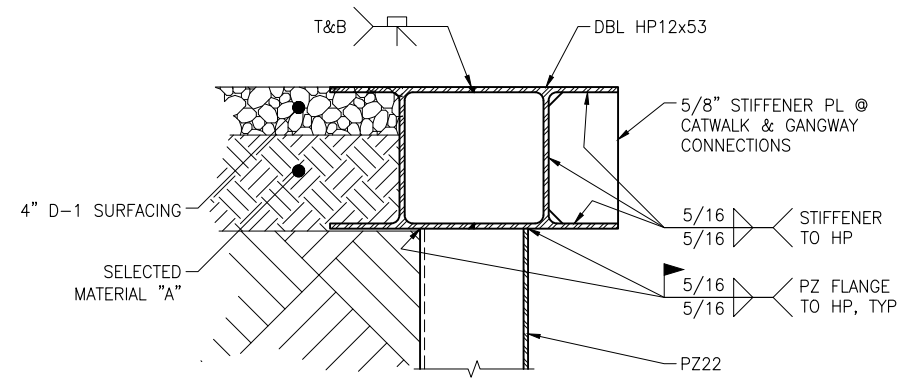
DESIGNED BY: CR/BJ	DATE: APRIL 2019	2.02
CHECKED BY: CDC	PROJECT NO: 171113	



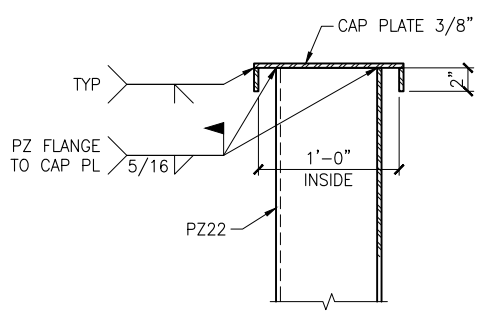
SHEET PILE ABUTMENT PLAN
NTS (RAMP 3)



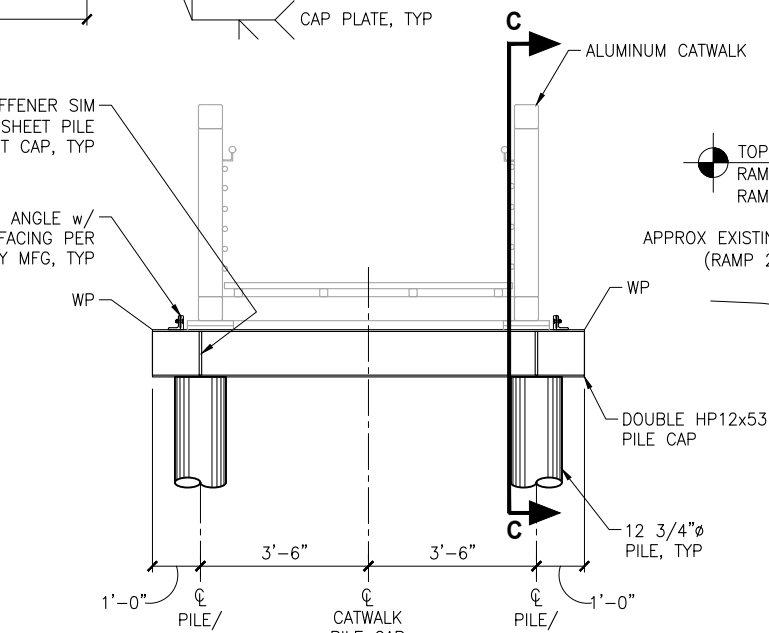
SECTION A-A
NTS



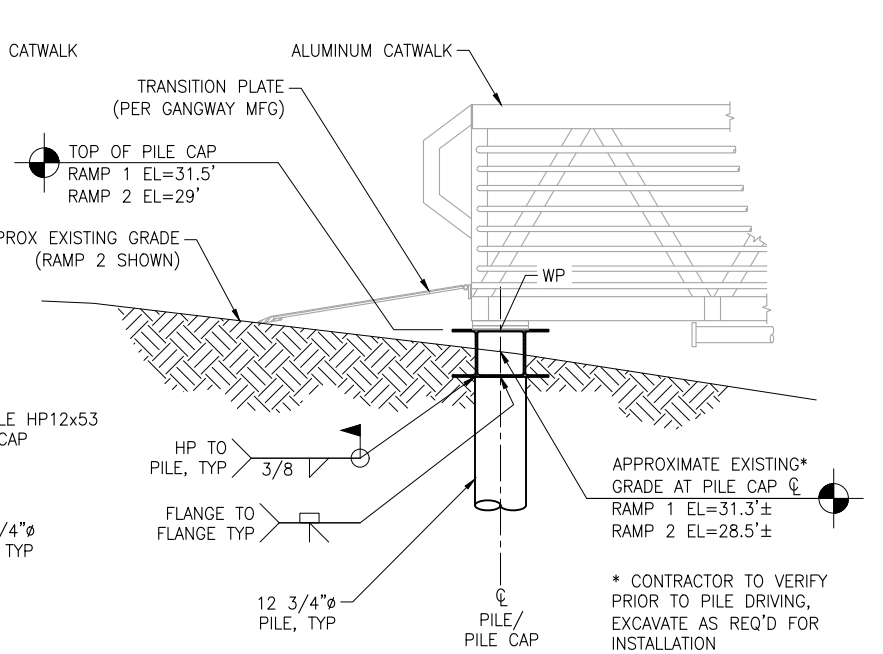
SECTION B-B
NTS



CAP DETAIL
NTS

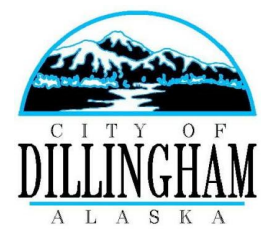


PIPE PILE ABUTMENT
NTS (RAMPS 1 & 2)

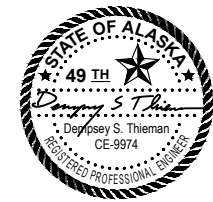


SECTION C-C
NTS

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.



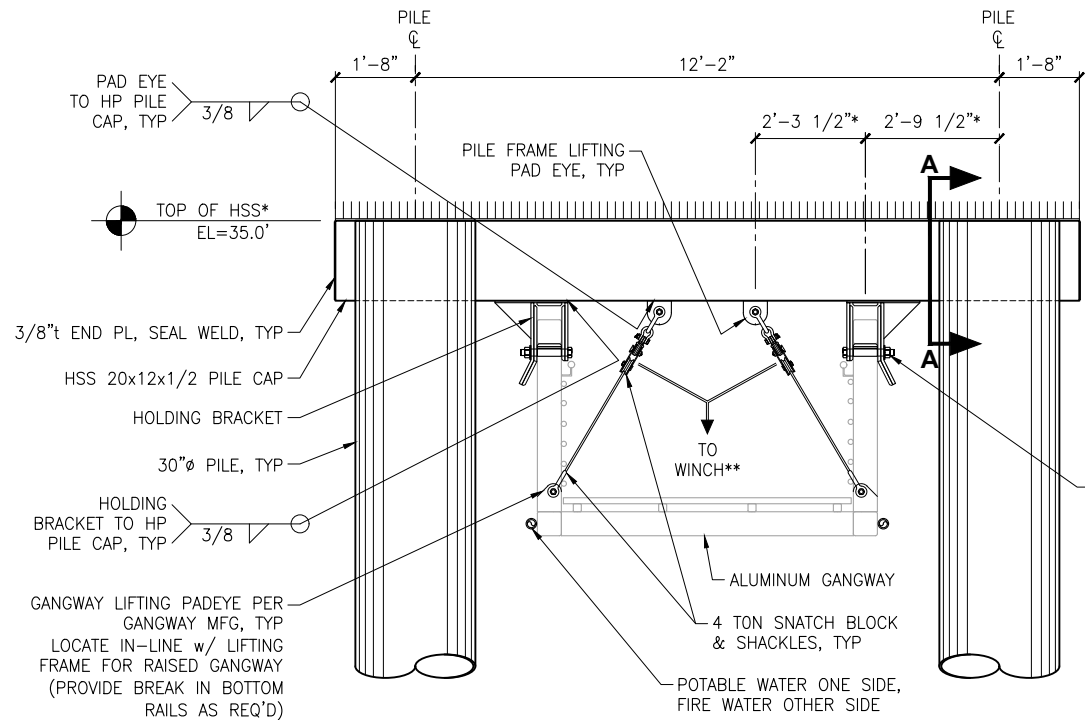
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



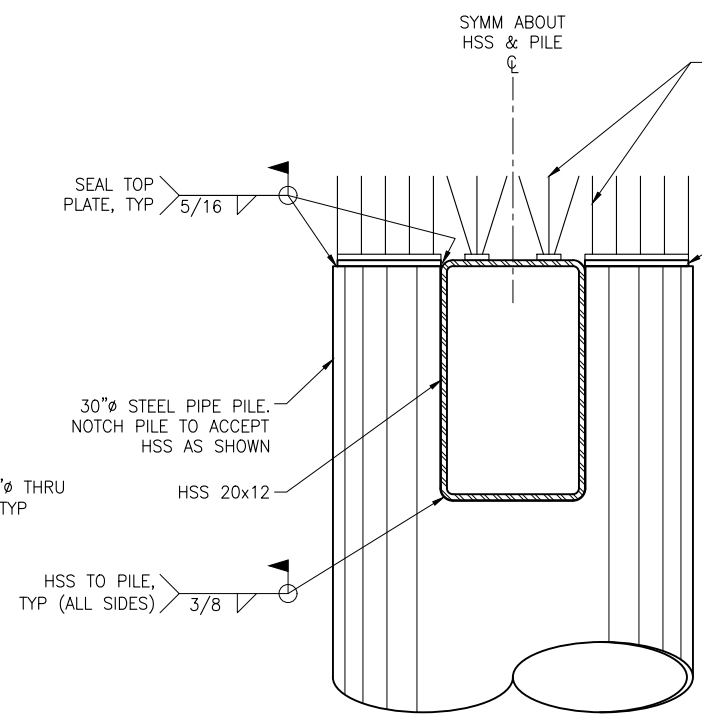
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT
ABUTMENT DETAILS

DESIGNED BY: CR/BJ	DATE: APRIL 2019	2.03
CHECKED BY: CDC	PROJECT NO: 171113	

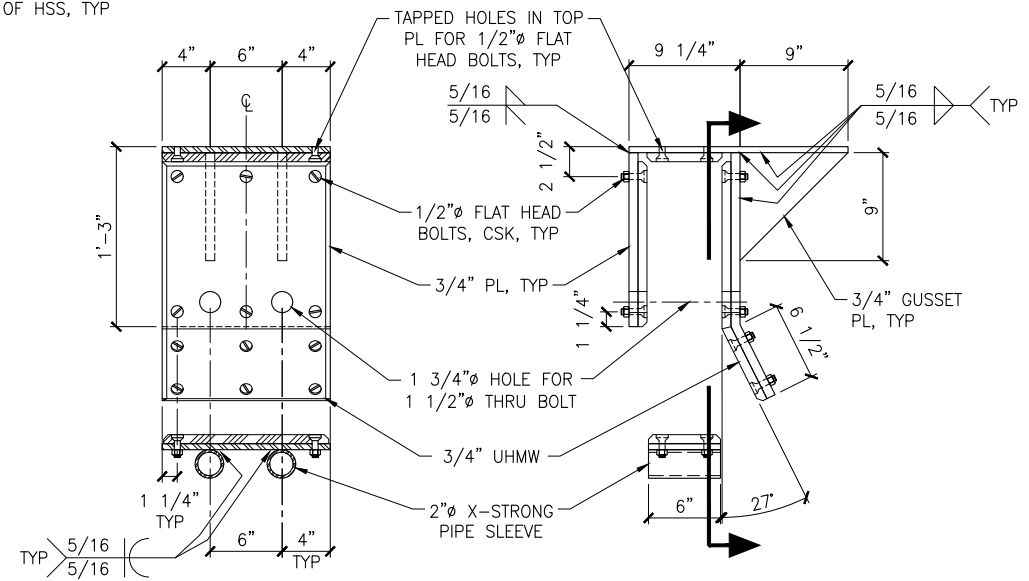
J:\2017\171113 Dillingham Small Boat Harbor Drawings\2.01_2.04 Access Details.dwg, 2.03, 4/9/2019 3:49:51 PM, jemes, 1:2



GANGWAY LIFTING FRAME
NTS



SECTION A-A
NTS



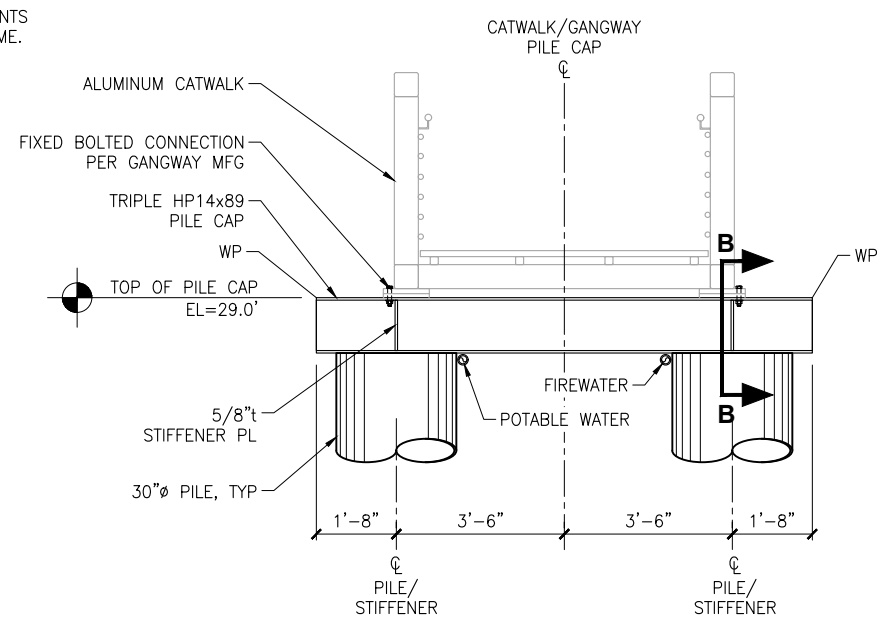
SECTION

NOTE:
BASED ON 6x6
GANGWAY TOP CHORD

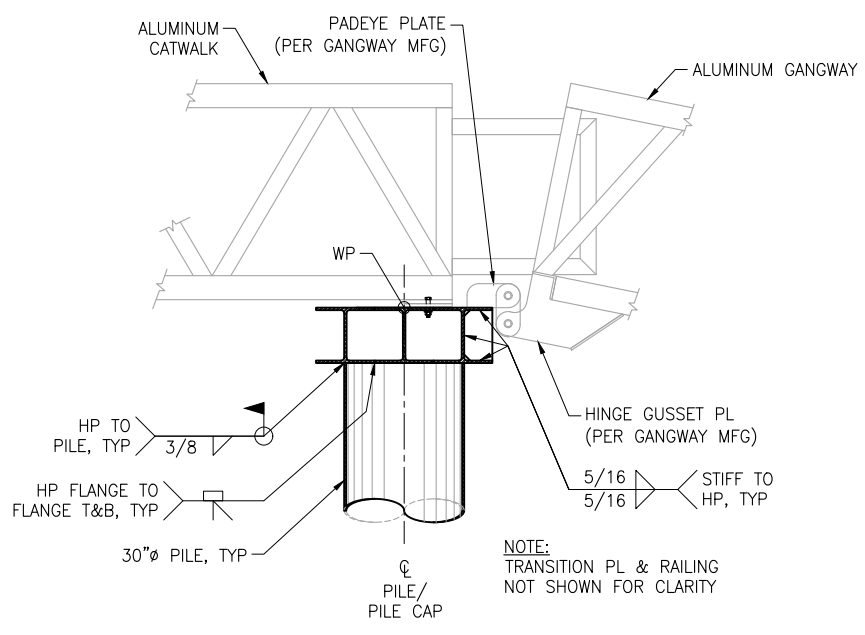
ELEVATION

HOLDING BRACKET
NTS

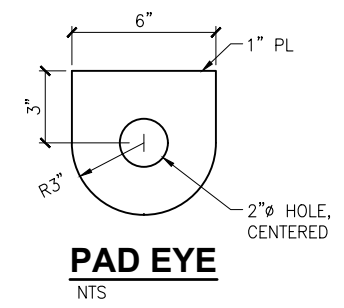
NOTES:
* DIMENSIONS SHOWN ARE BASED ON THE "REFERENCE GANGWAY" GEOMETRY PROVIDED ON SHEET 2.02. MODIFY THE GANGWAY LIFTING FRAME & HOLDING BRACKET AS REQ'D FOR FURNISHED GANGWAY.
** PROVIDE (1) NEW WINCH & ASSOCIATED HARDWARE REQ'D FOR GANGWAY LIFTING OPERATIONS. PROVIDE WINCH ANCHOR POINTS ON CATWALK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



OFFSHORE CATWALK FRAME
NTS

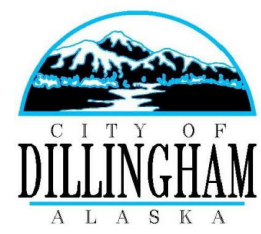


SECTION B-B
NTS

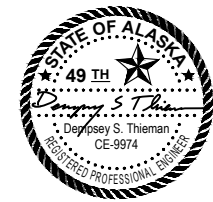


PAD EYE
NTS

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.



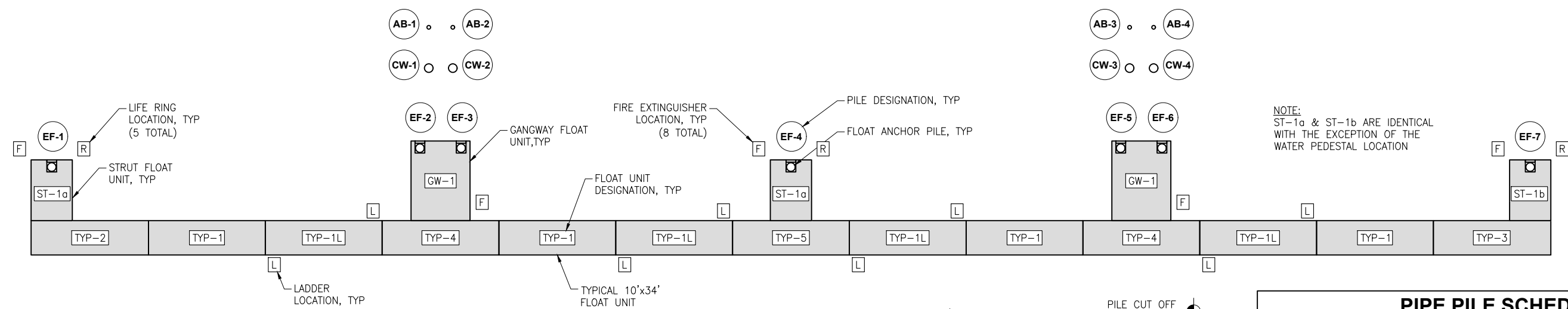
1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.563.4220
www.pndengineers.com



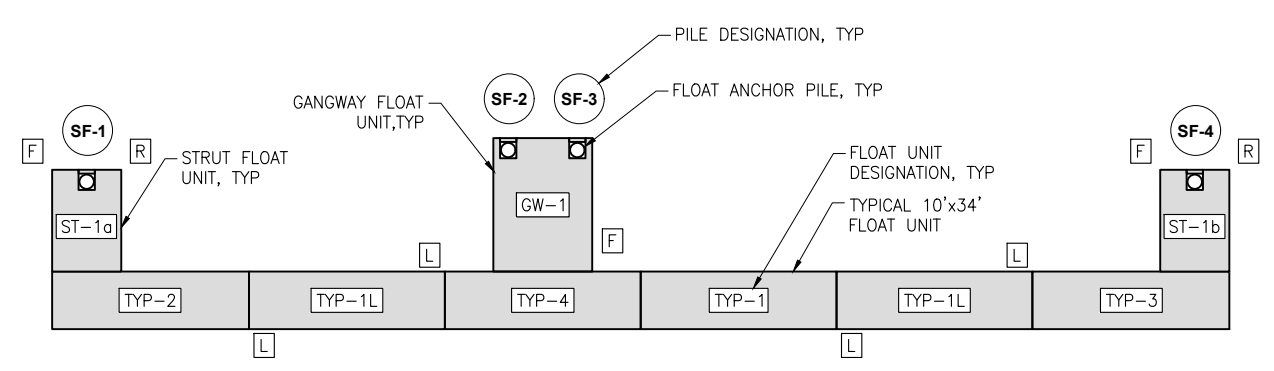
PROJECT: **DILLINGHAM SMALL BOAT HARBOR REPLACEMENT**
TITLE: **PILE CAP DETAILS**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	2.04
CHECKED BY: CDC	PROJECT NO: 171113	

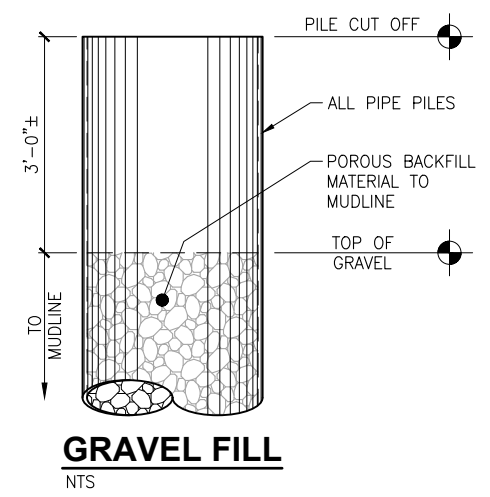
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\2.01_2.04 Access Details.dwg, 2.04, 4/9/2019 3:49:52 PM, james, 1:2



EAST FLOAT LAYOUT
NTS



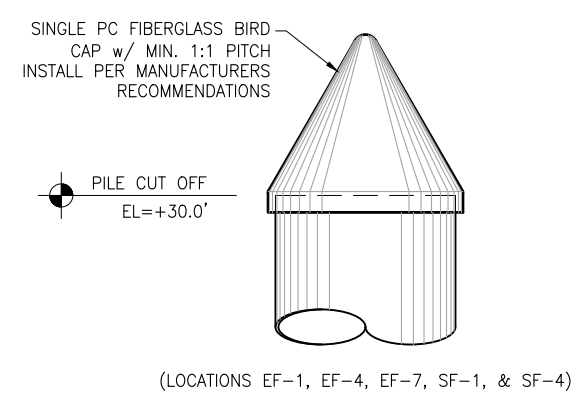
SOUTH FLOAT LAYOUT
NTS



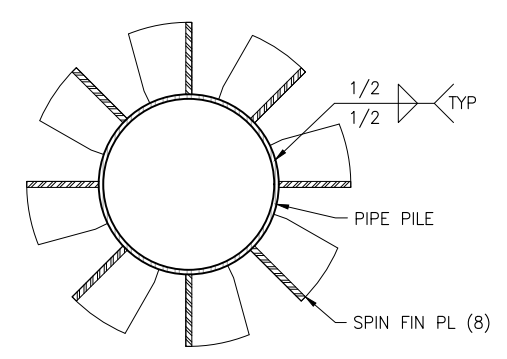
GRAVEL FILL
NTS

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'				

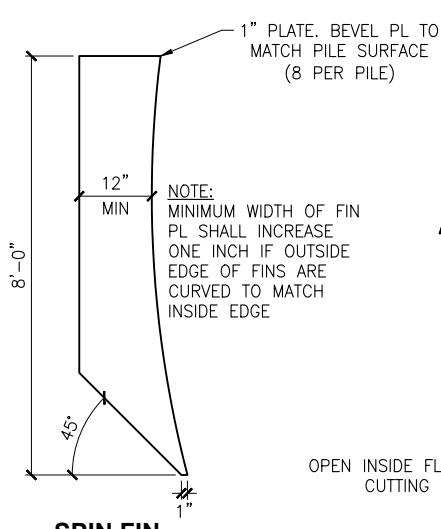
- NOTES:
 1) ALL PIPE PILES SHALL BE GRAVEL FILLED, SEE DETAIL.
 2) CONFIRM NORTHINGS & EASTINGS FOR PILES BASED ON FINAL FABRICATED FLOAT UNIT DIMENSIONS PRIOR TO INSTALLATION



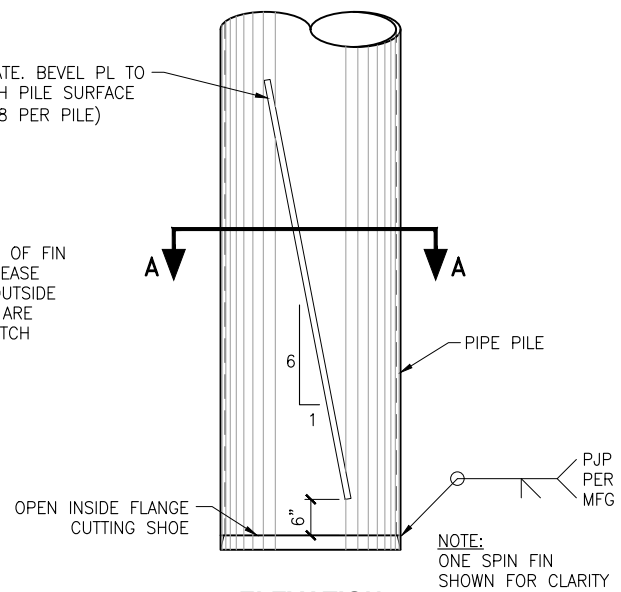
FLOAT PILE CAP
NTS



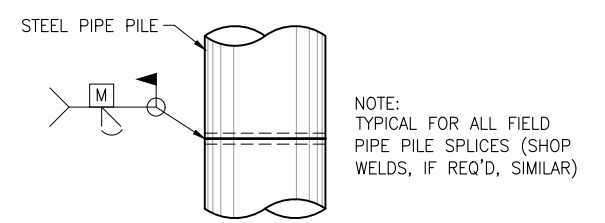
SECTION A-A
NTS



SPIN FIN ELEVATION
NTS

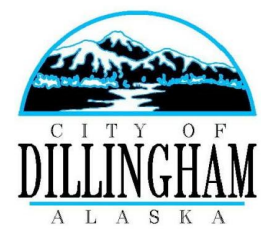


SPIN FIN™ PILE TIP DETAILS
NTS



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

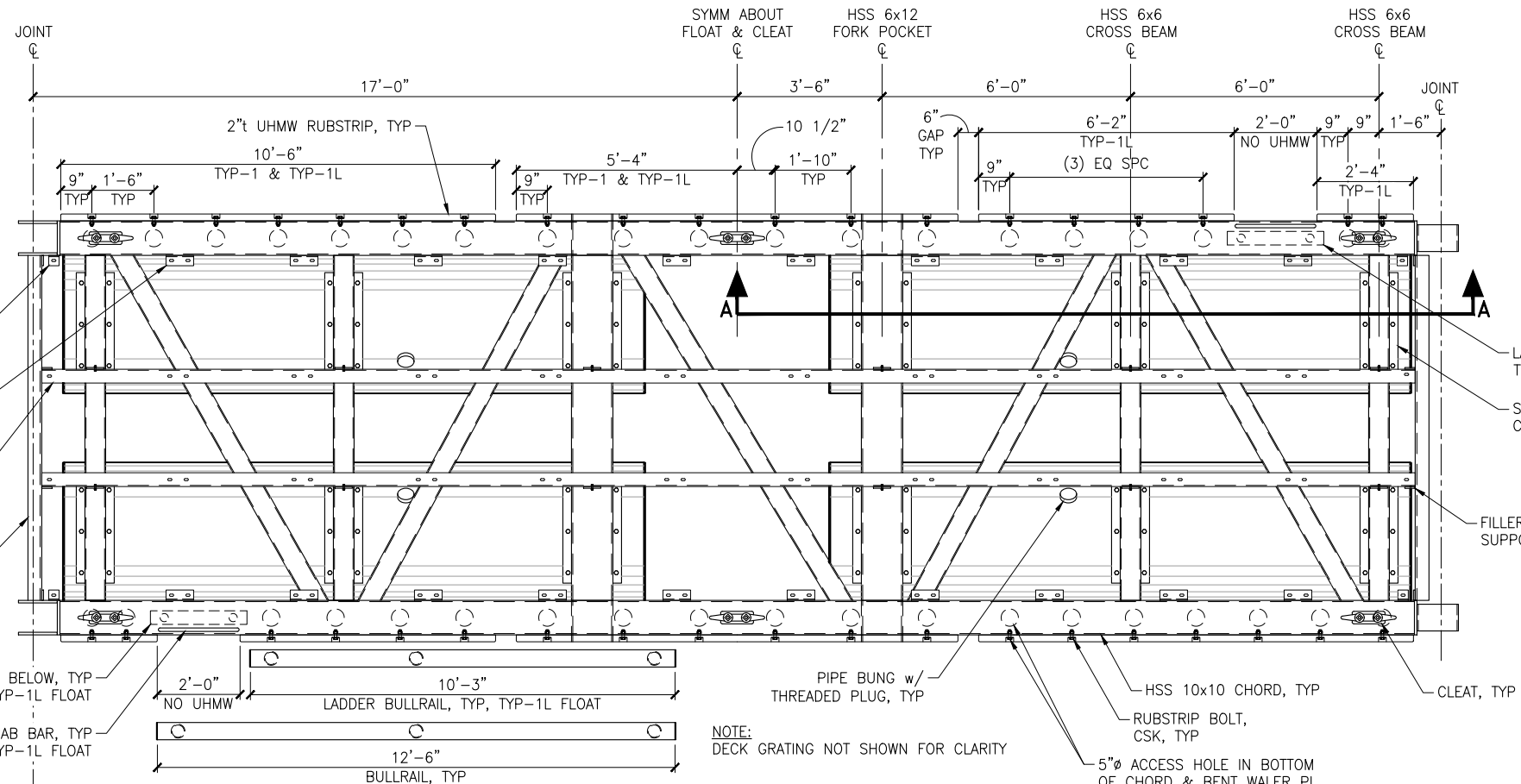
FLOAT LAYOUT & PILE DETAILS

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.01
CHECKED BY: CDC	PROJECT NO: 171113	

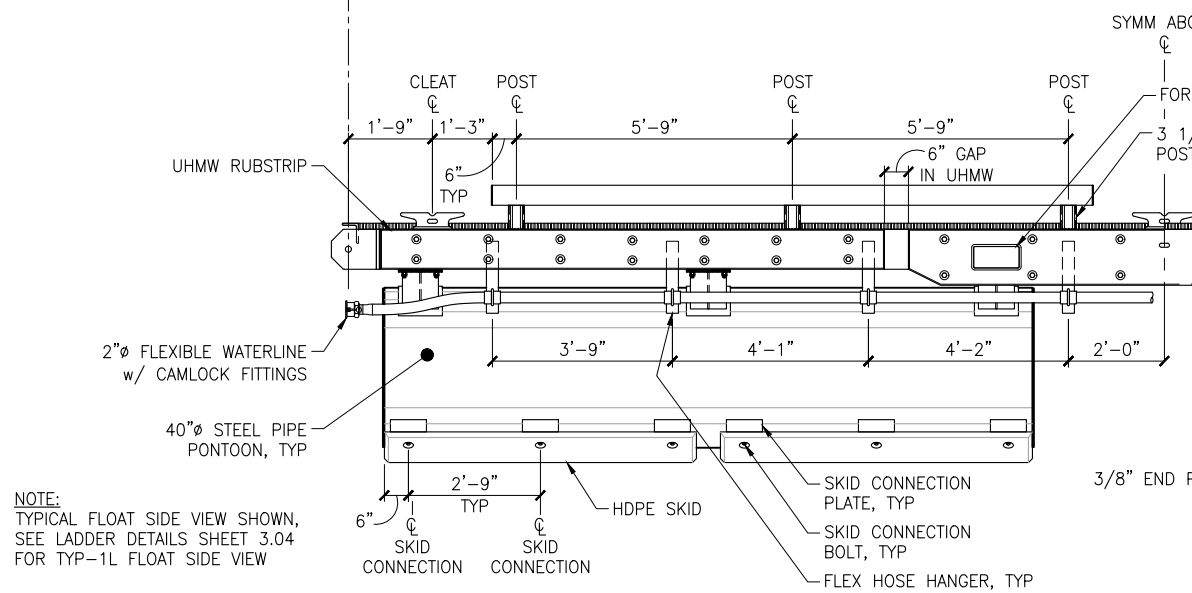
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.01, 4/9/2019 3:50:04 PM, james, 1,2

- NOTES:**
1. DECK GRATING & WATERLINE NOT SHOWN FOR CLARITY.
 2. ALL JOINTS SHALL BE SEAL WELDED WITH 5/16" FILLET WELDS, ALL SIDES, ALL AROUND, UNLESS OTHERWISE NOTED.
 3. 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.

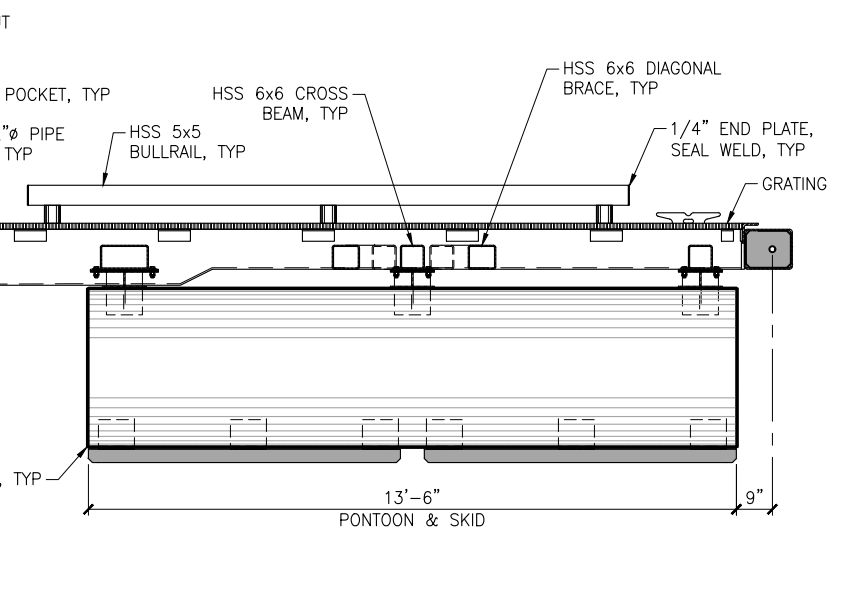
- L3x3 GRATING SUPPORT, HALF CLIP, TYP (SEE NOTE 3)
- L3x3 GRATING SUPPORT, FULL CLIP, TYP (SEE NOTE 3)
- CONTINUOUS GRATING SUPPORT 4x4 ANGLE, TYP. PROVIDE LONG SLOTTED HOLES FOR GRATING ATTACHMENT (SEE NOTE 3)
- L5x4x1/2" FILLER ANGLE (LSV), TYP



TYPICAL FLOAT MODULE PLAN
 NTS ESTIMATED DRY WT = 19,700 LBS

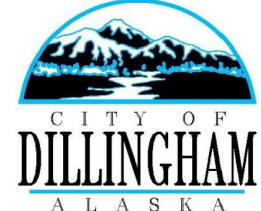


SIDE VIEW
 NTS

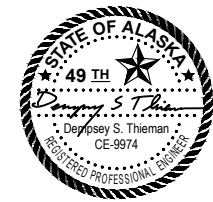


SECTION A-A
 NTS

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

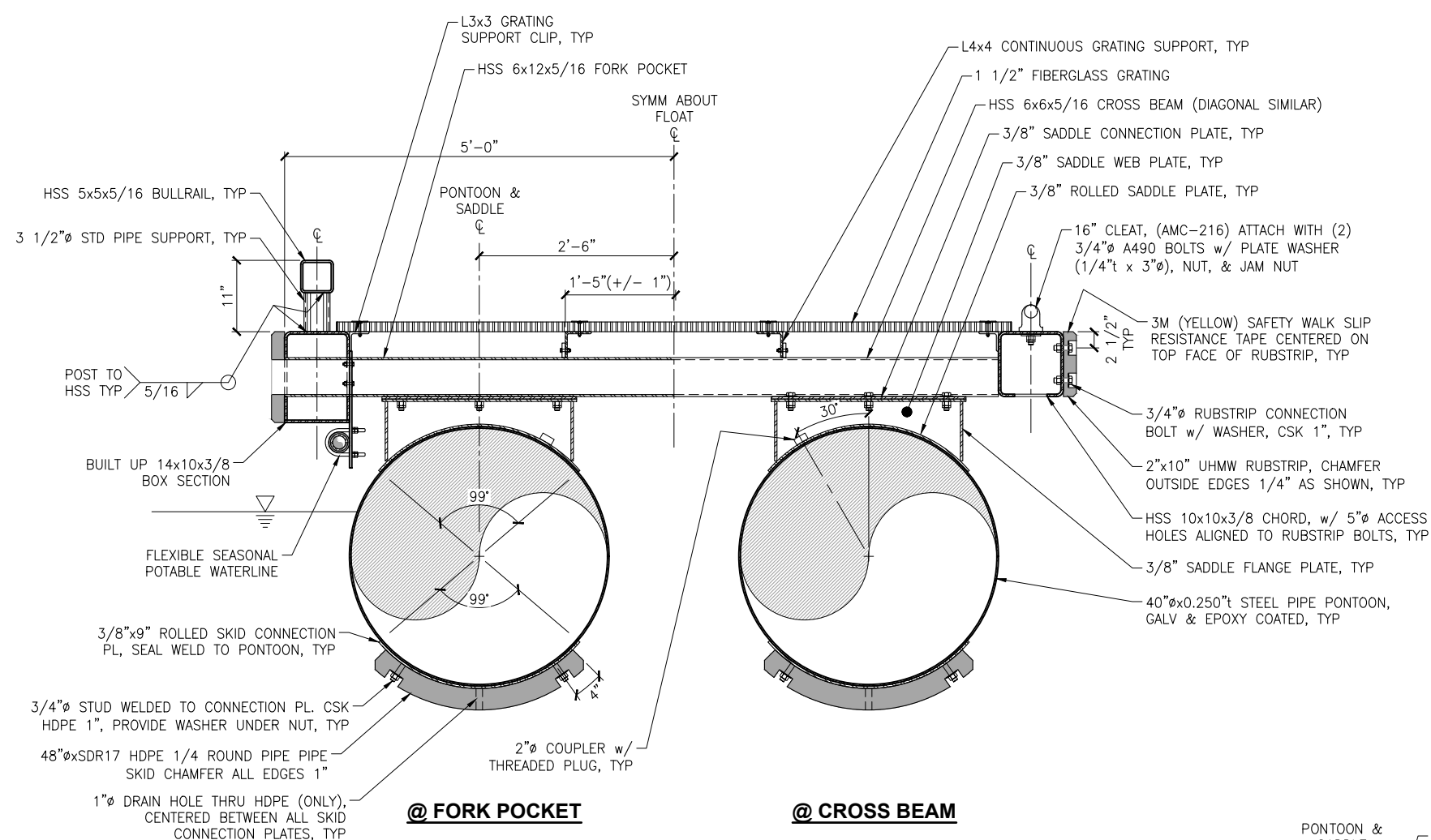
TYPICAL FLOAT (TYP-1) PLAN

REV	DATE	DESCRIPTION

DATE: 4/9/2019

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

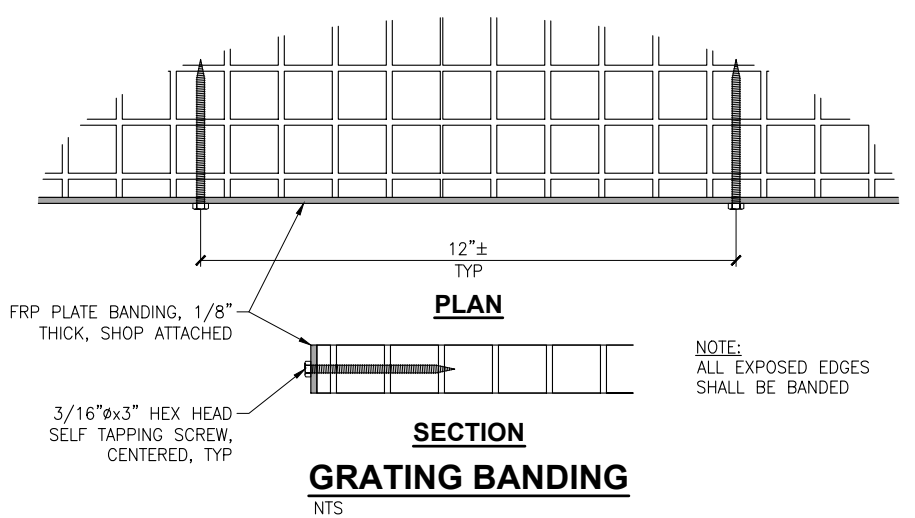
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.02, 4/9/2019 3:50:06 PM, James, 1,2



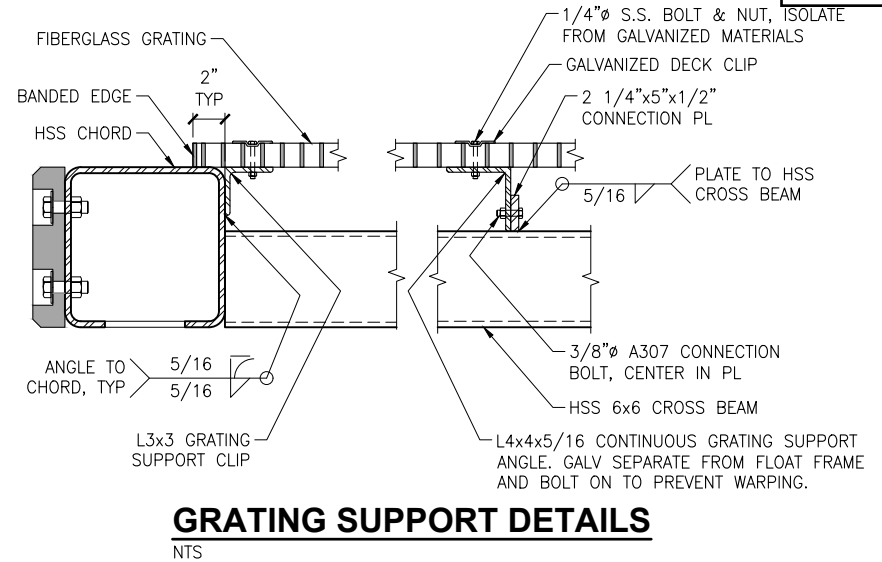
@ FORK POCKET **@ CROSS BEAM**

TYPICAL SECTION
NTS

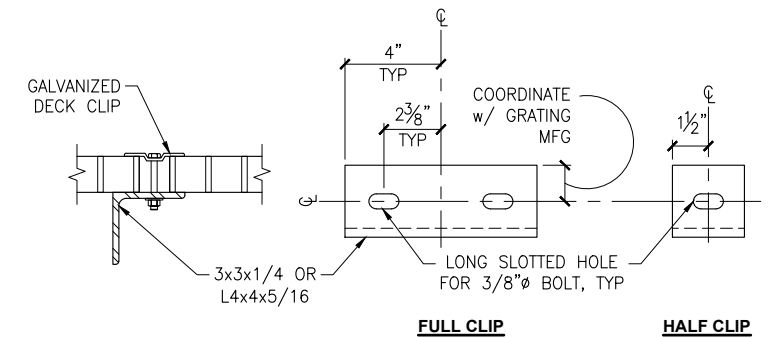
NOTE:
ALL GRATING SHALL BE 1-1/2" DEEP MOLDED FIBERGLASS GRATING WITH A 1-1/2"x1-1/2" MESH, AS MFG BY FIBERGRATE COMPOSITE STRUCTURES. COLOR AS SELECTED BY OWNER



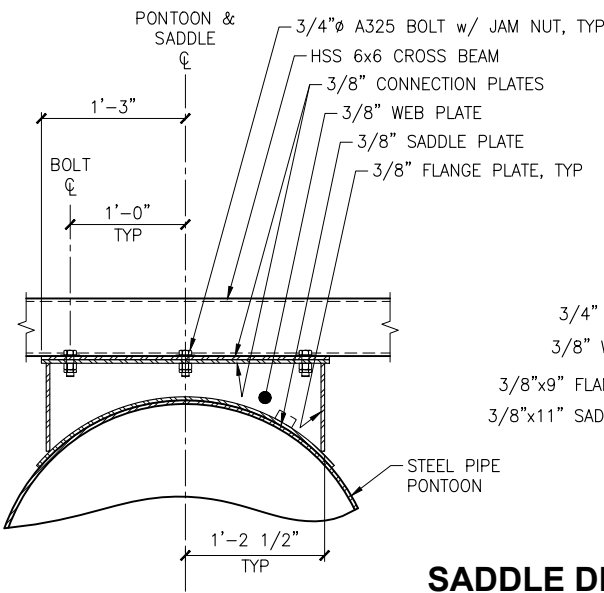
SECTION GRATING BANDING
NTS



GRATING SUPPORT DETAILS
NTS

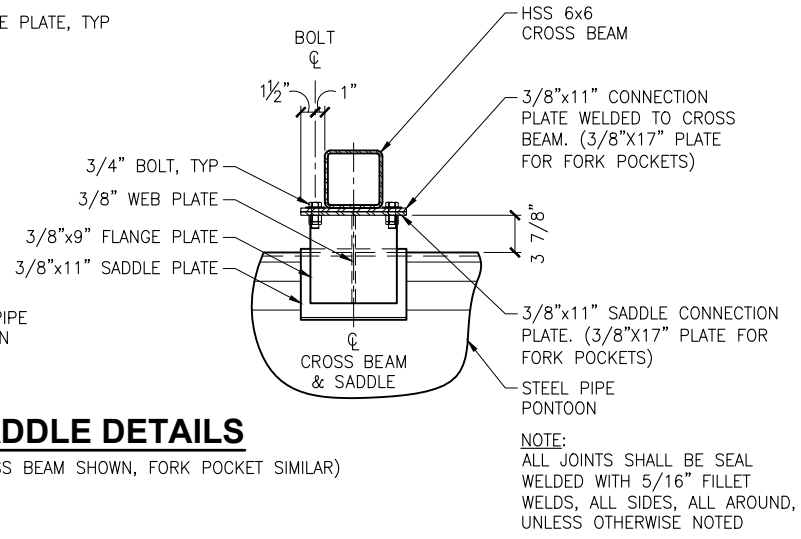


SUPPORT CLIP
NTS



SADDLE DETAILS

(CROSS BEAM SHOWN, FORK POCKET SIMILAR)
NTS



NOTE:
ALL JOINTS SHALL BE SEAL WELDED WITH 5/16" FILLET WELDS, ALL SIDES, ALL AROUND, UNLESS OTHERWISE NOTED

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

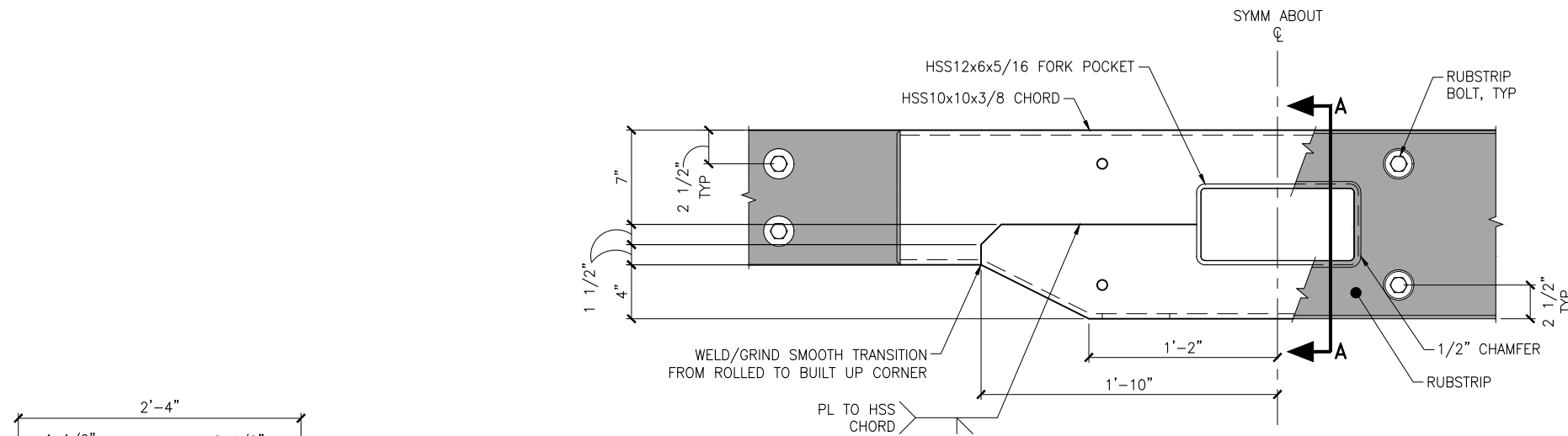


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

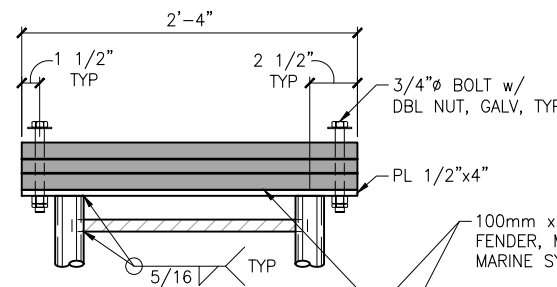
TITLE: **TYPICAL FLOAT DETAILS (1 OF 2)**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.03
CHECKED BY: CDC	PROJECT NO: 171113	

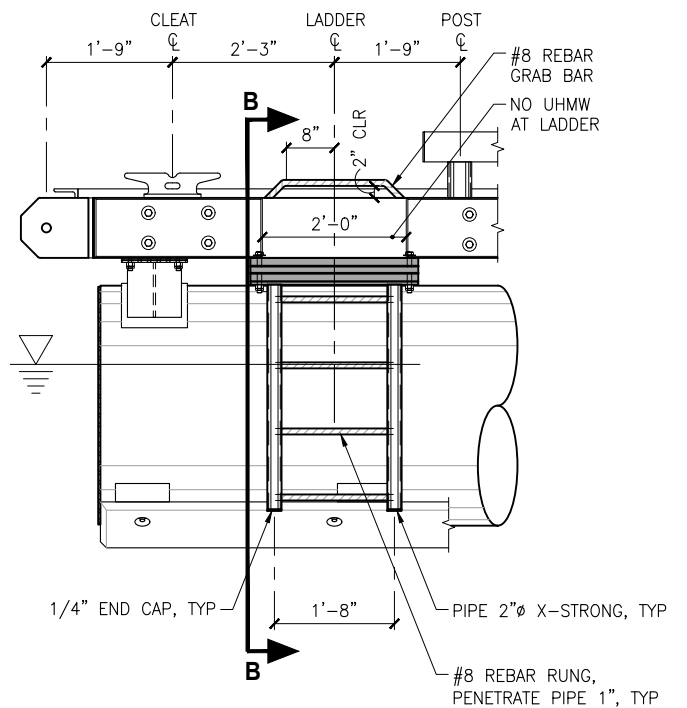
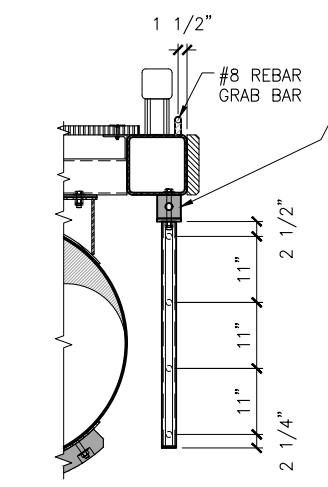
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.03, 4/9/2019 3:50:08 PM, James, 1,2



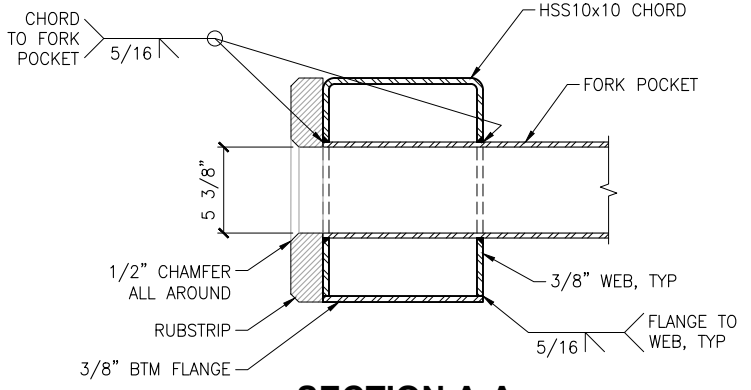
FORK POCKET
NTS



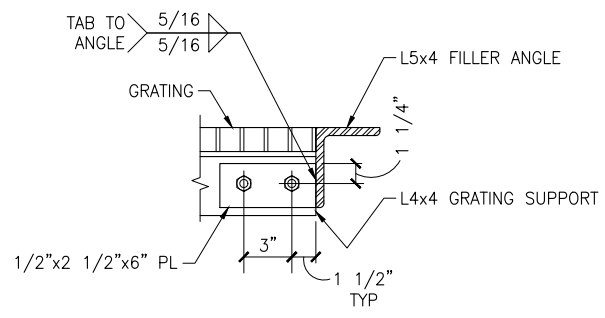
100mm x 100mm SQUARE EXTRUDED RUBBER FENDER, MODEL SC, AS MFG BY TRELLEBORG MARINE SYSTEMS OR APPROVED EQUAL



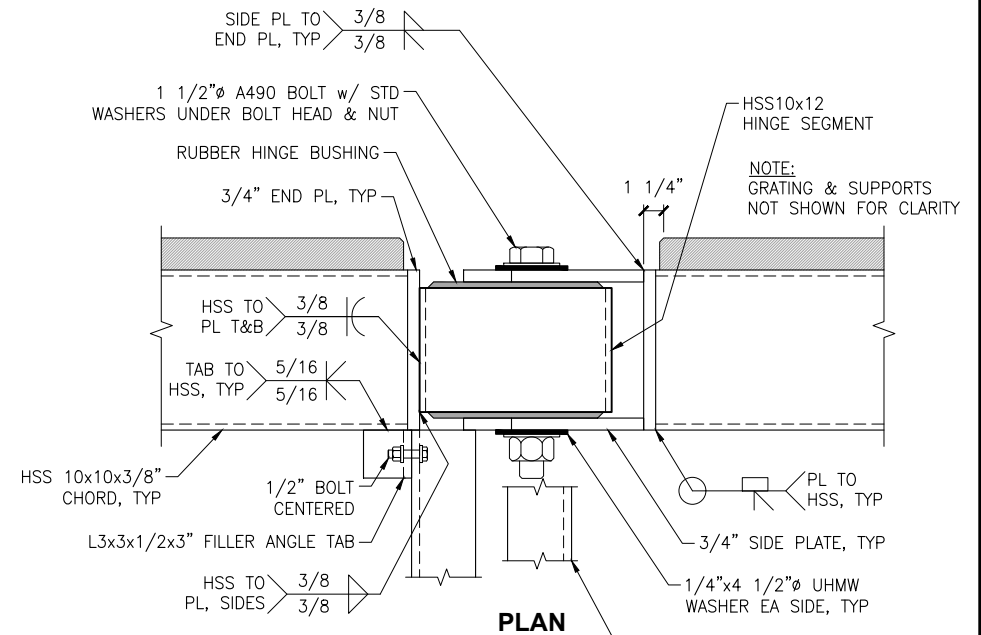
LADDER DETAILS (TYP-1L FLOATS)
NTS



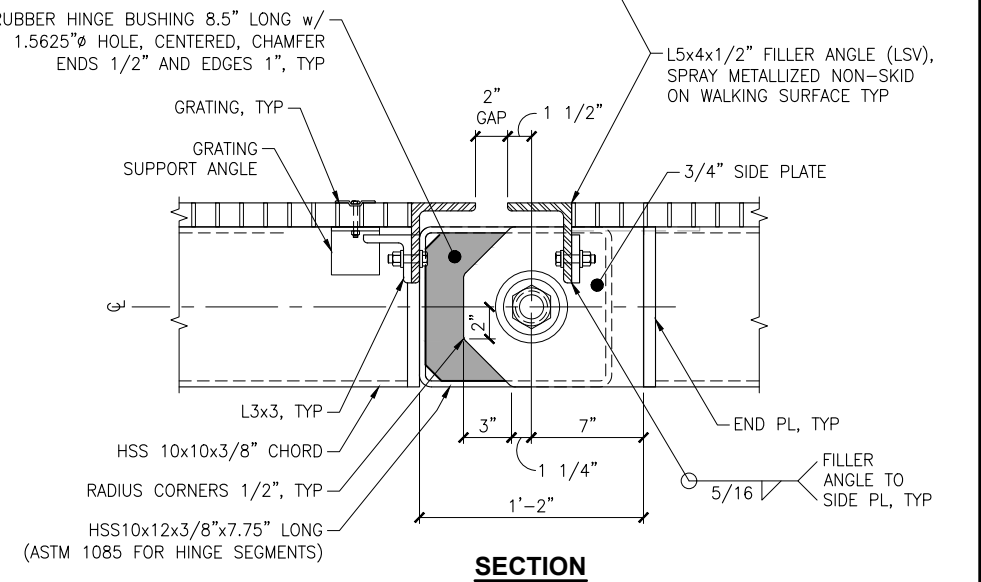
SECTION A-A
NTS



CONTINUOUS GRATING SUPPORT TO FILLER ANGLE TAB
NTS



PLAN



SECTION

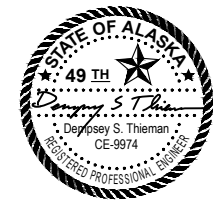
FLOAT TO FLOAT CONNECTION
NTS

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

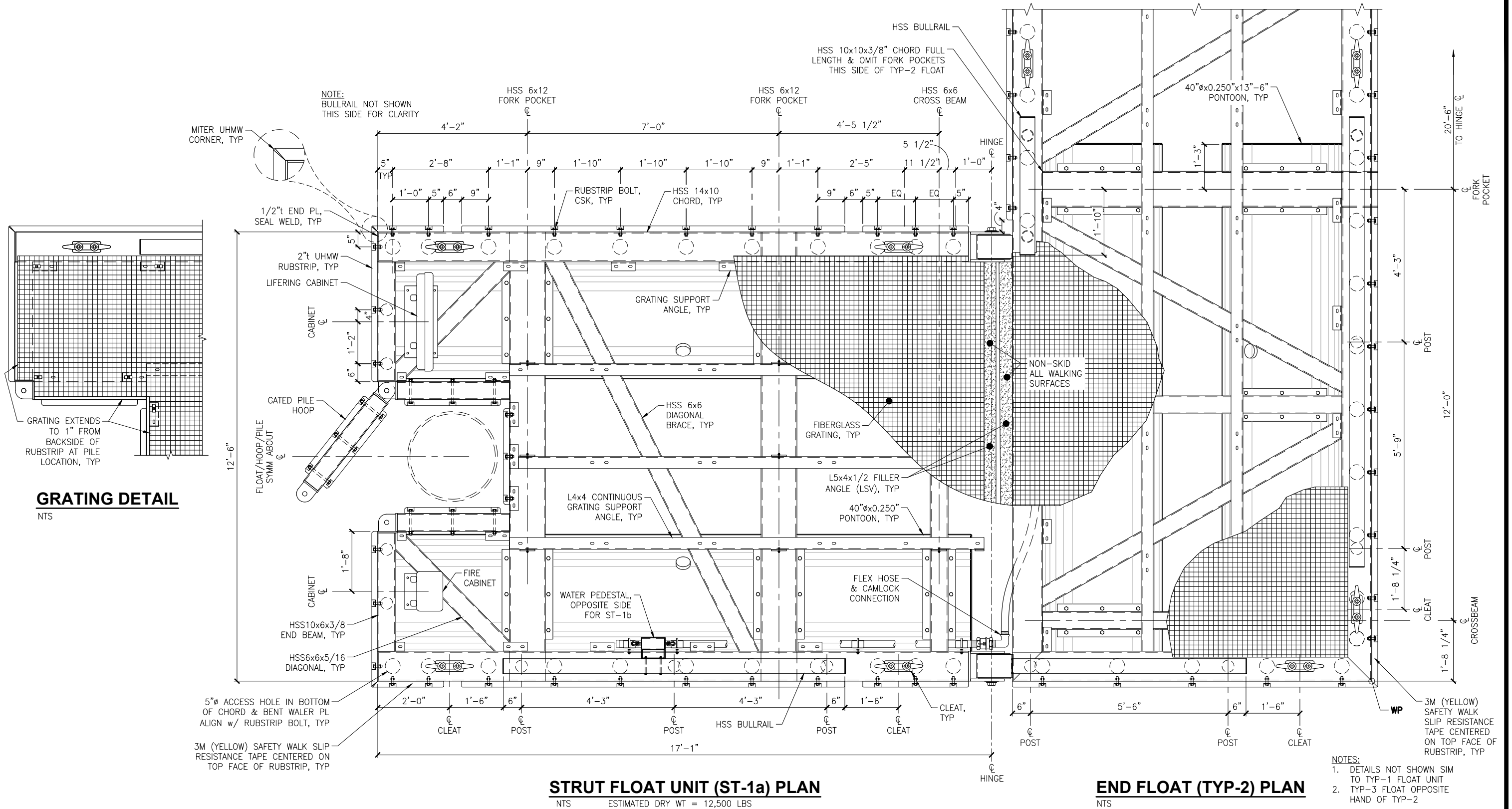


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

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

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.04
CHECKED BY: CDC	PROJECT NO: 171113	

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



GRATING DETAIL
NTS

STRUT FLOAT UNIT (ST-1a) PLAN
NTS ESTIMATED DRY WT = 12,500 LBS

END FLOAT (TYP-2) PLAN
NTS

- NOTES:
 1. DETAILS NOT SHOWN SIM TO TYP-1 FLOAT UNIT
 2. TYP-3 FLOAT OPPOSITE HAND OF TYP-2

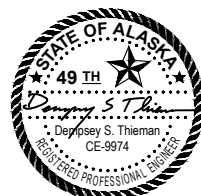
J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Float System.dwg, 3.05, 4/9/2019 3:50:12 PM, James, 1,2

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.

REV	DATE	DESCRIPTION



DATE: 4/9/2019

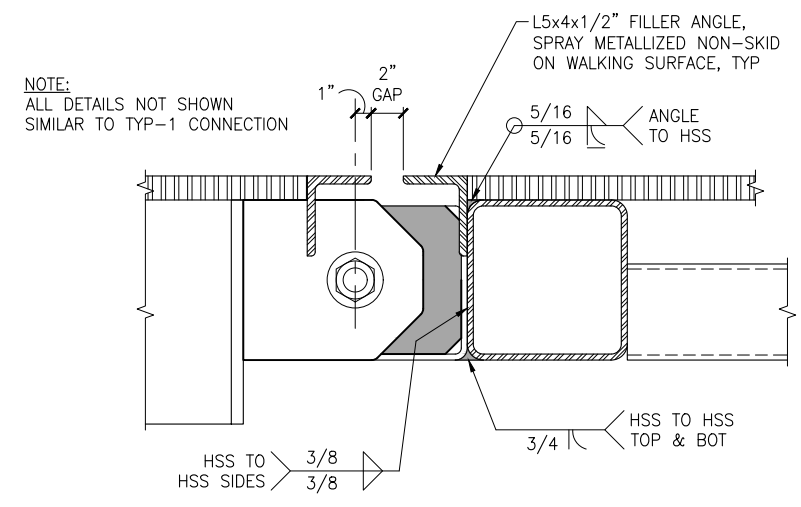
1506 West 36th Avenue
 Anchorage, Alaska 99503
 Phone: 907.561.1011
 Fax: 907.563.4220
 www.pndengineers.com



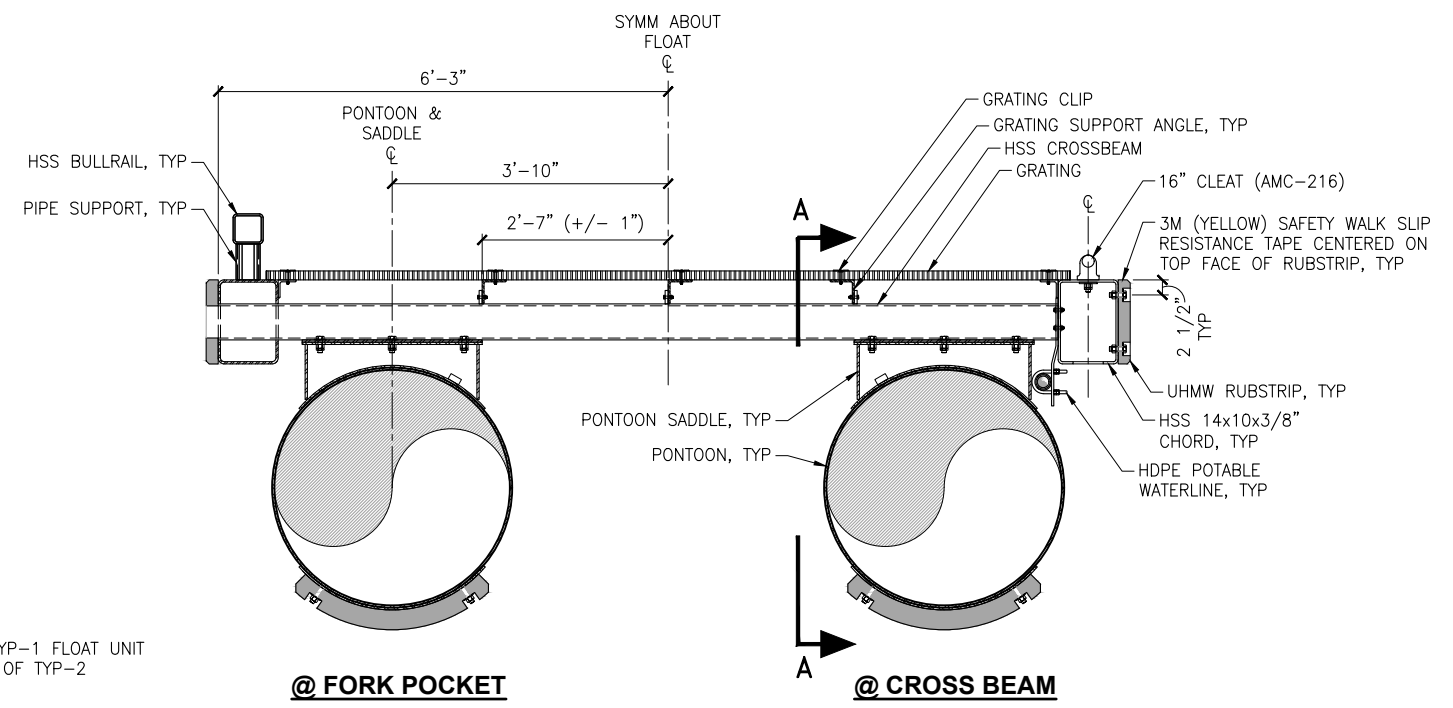
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

STRUT FLOAT (ST-1) PLAN

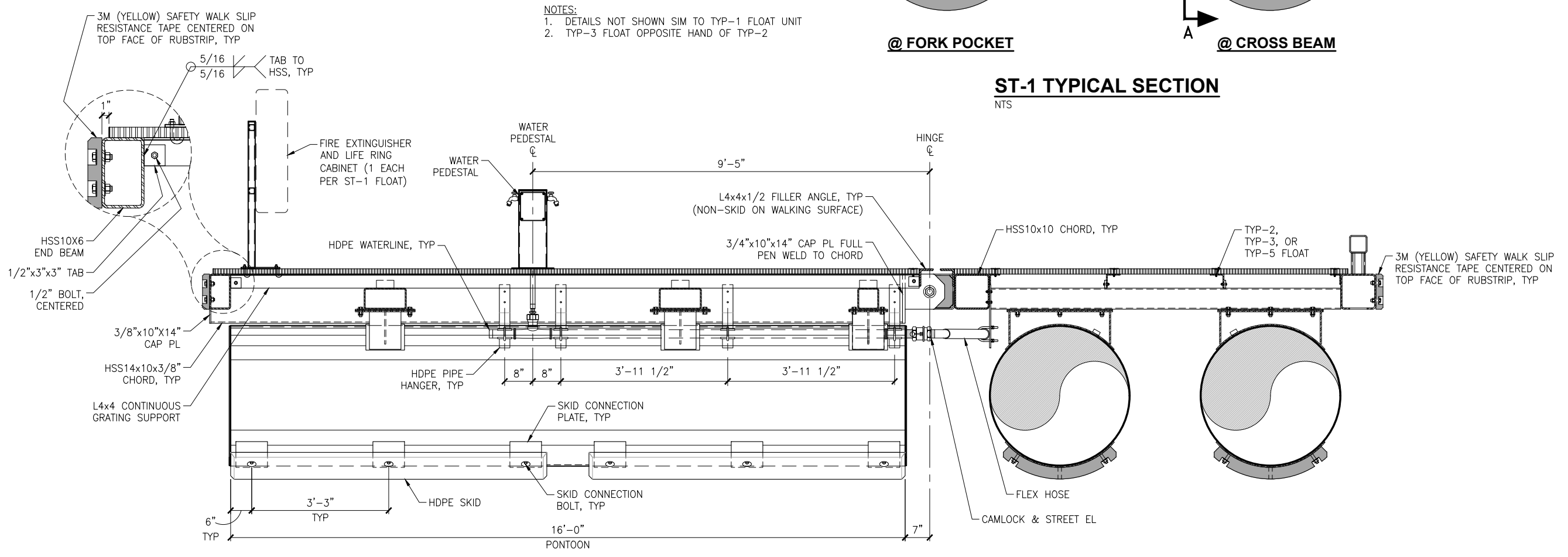
DESIGNED BY: CR/BJ	DATE: APRIL 2019	DWG NO: 3.05	SHEET NO: 13 OF 27
CHECKED BY: CDC	PROJECT NO: 171113		



FLOAT TO FLOAT CONNECTION
NTS



ST-1 TYPICAL SECTION
NTS

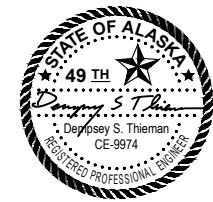


SECTION A-A
NTS

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.



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



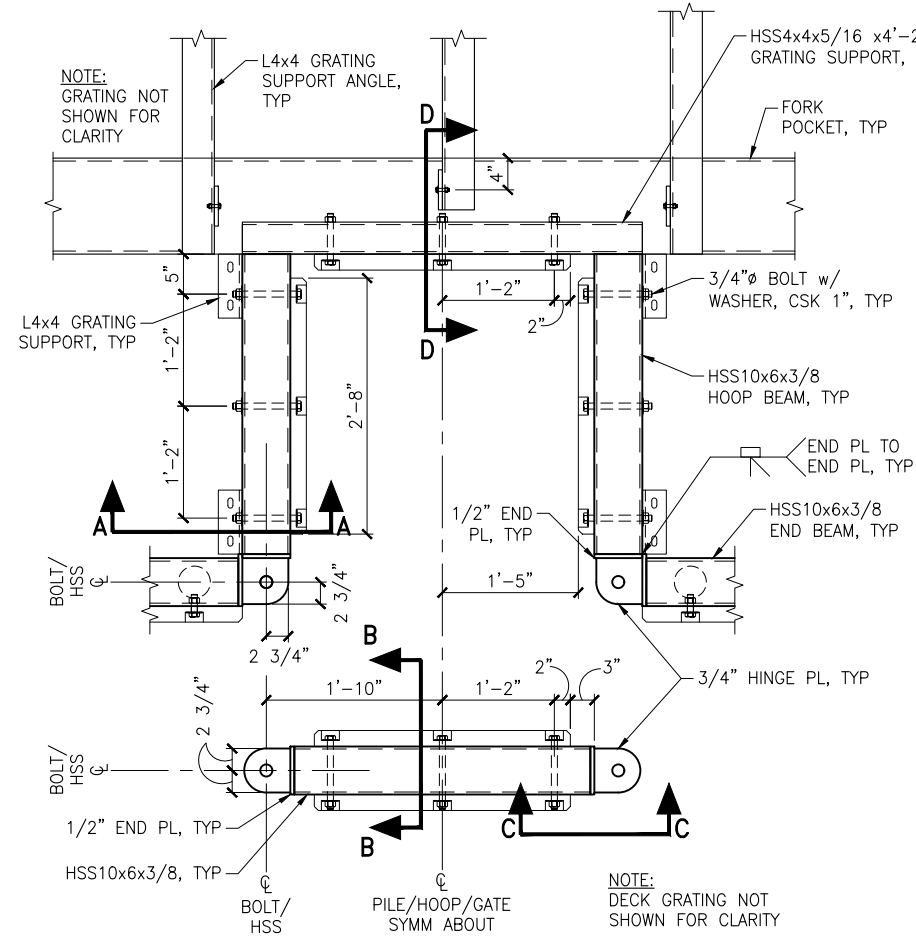
**DILLINGHAM SMALL BOAT HARBOR
REPLACEMENT**

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

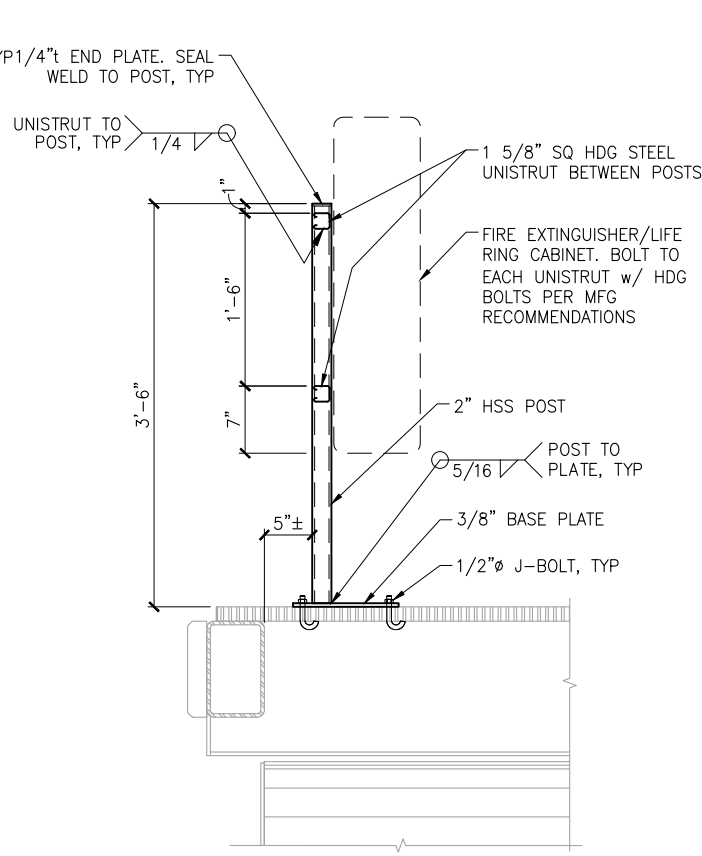
DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.06
CHECKED BY: CDC	PROJECT NO: 171113	

DWG NO: 14 OF 27

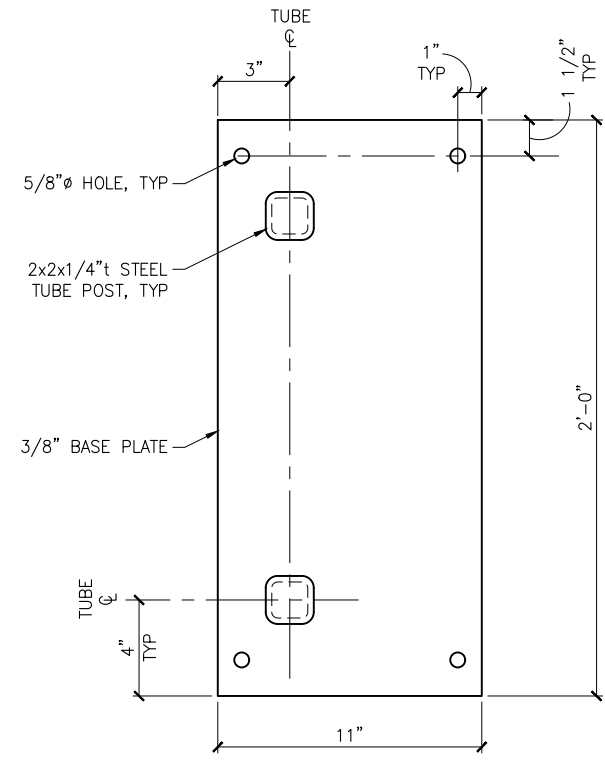
J:\2017\171113 Dillingham Small Boat Harbor\Drawings\3.01_3_10 Float System.dwg, 3.06, 4/9/2019 3:50:13 PM, james, 1, 2



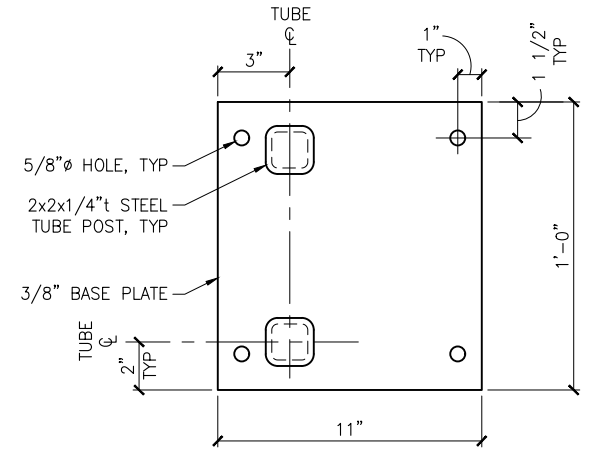
ST-1 PILE HOOP PLAN
NTS



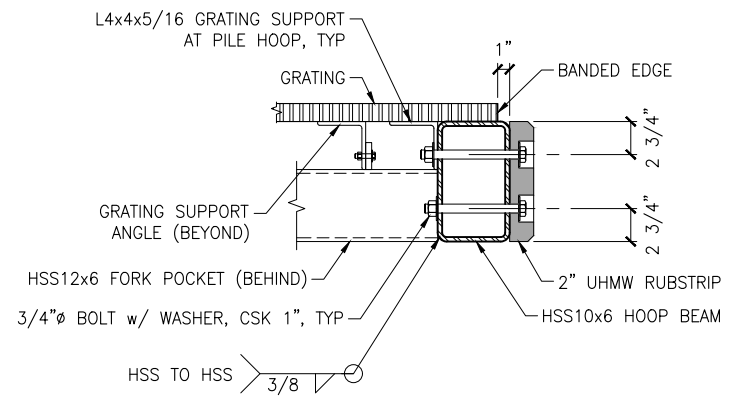
SAFETY EQUIPMENT BASE TYPICAL SECTION
NTS



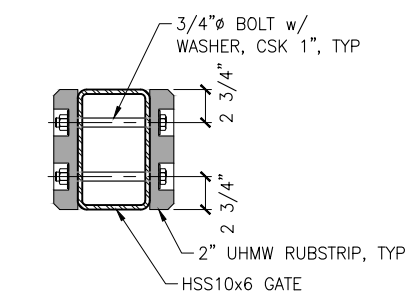
LIFE RING CABINET BASE PLAN
NTS



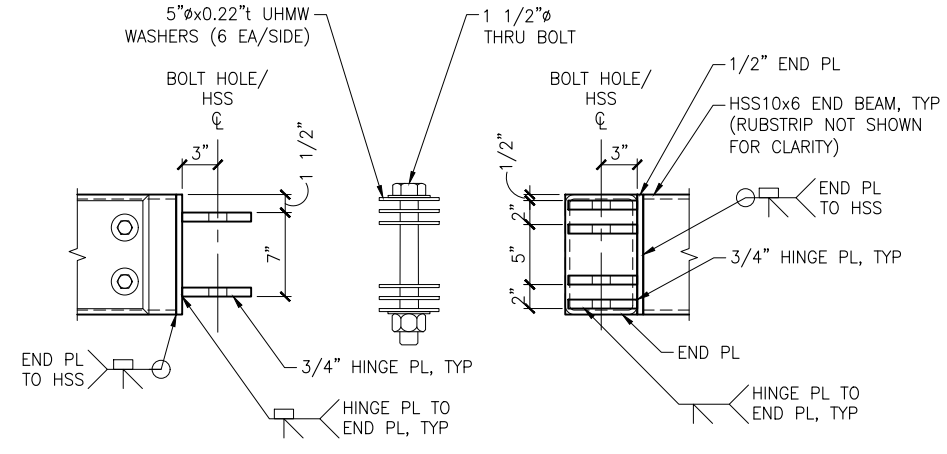
FIRE EXTINGUISHER BASE PLAN
NTS



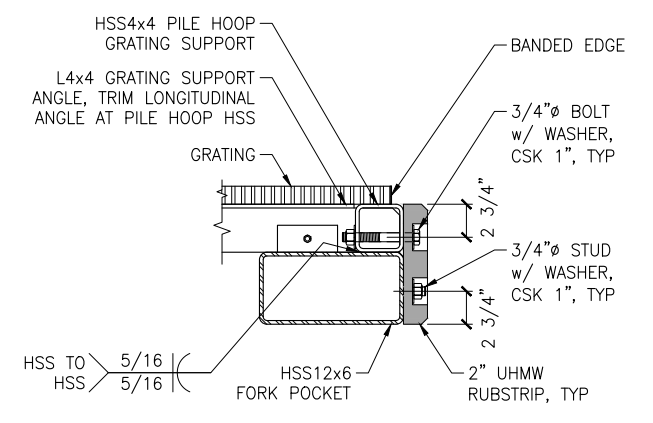
SECTION A-A
NTS



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

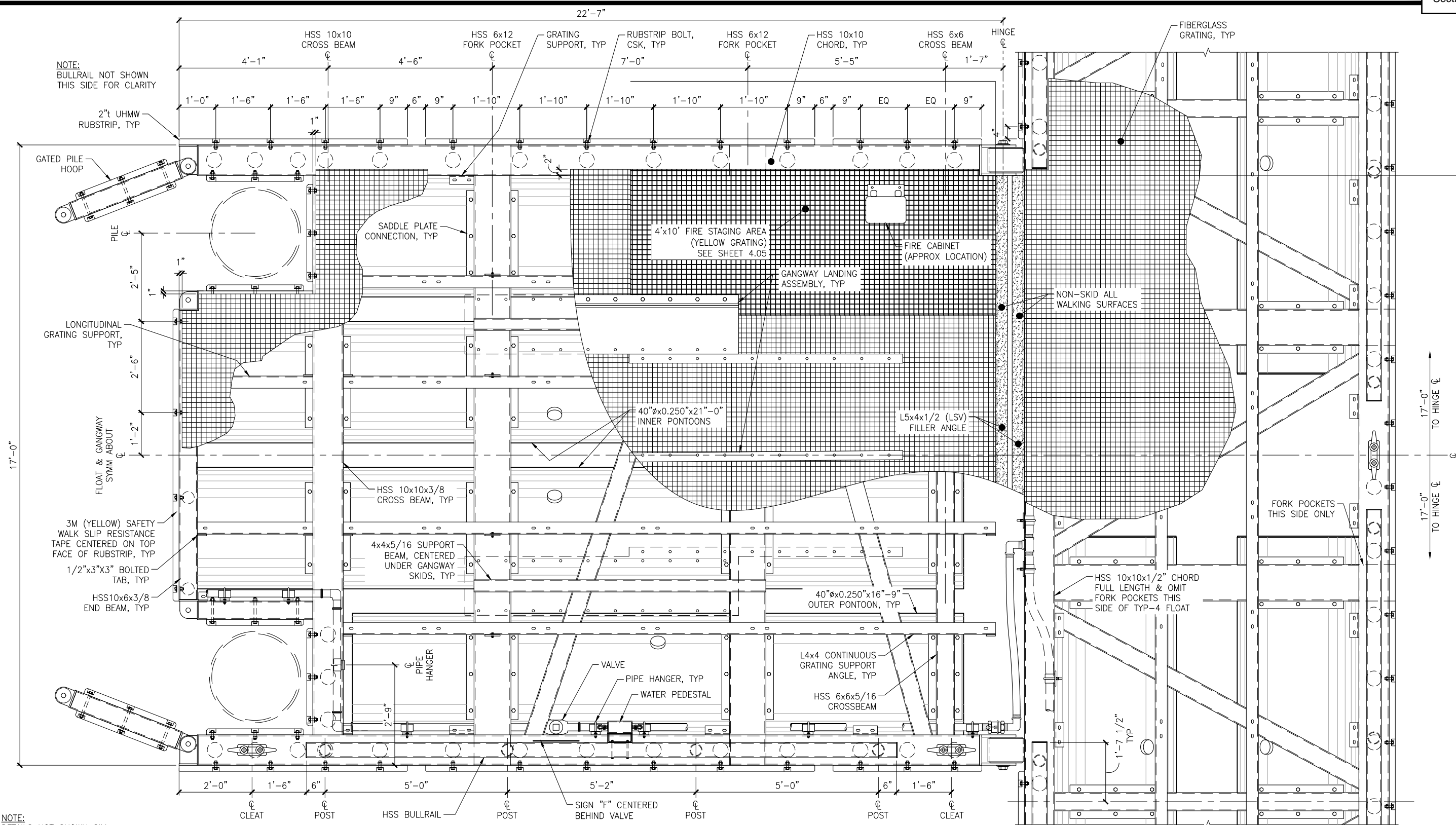


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

STRUT FLOAT DETAILS (2 OF 2)

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.07
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



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

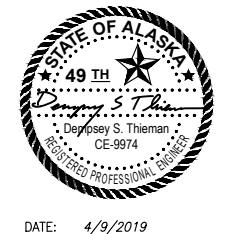
GANGWAY CONNECTION FLOAT (TYPE-4)
 NTS

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.

REV	DATE	DESCRIPTION



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



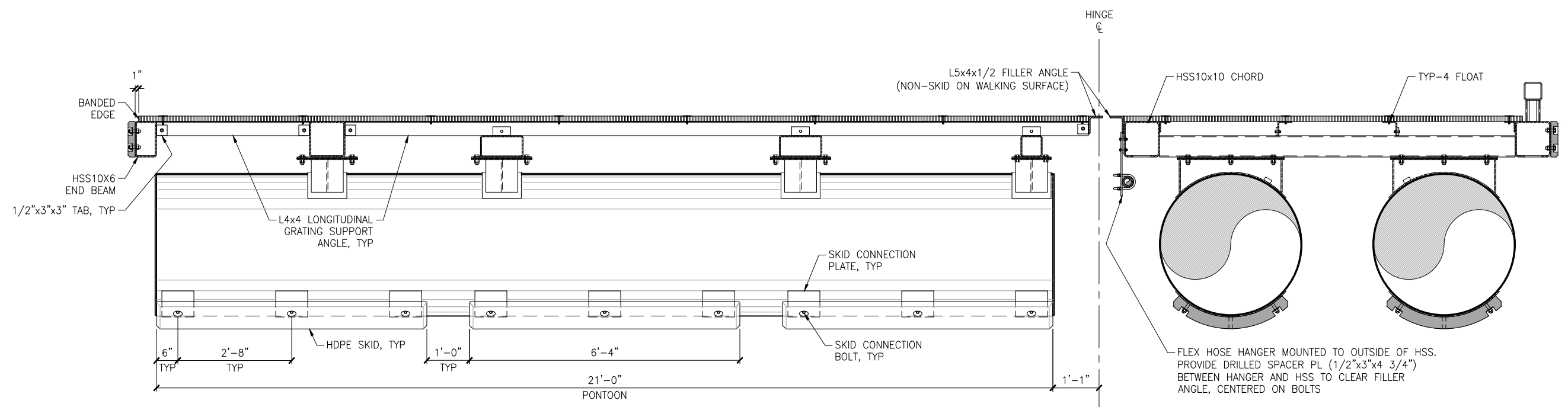
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **GANGWAY FLOAT (GW-1) PLAN**

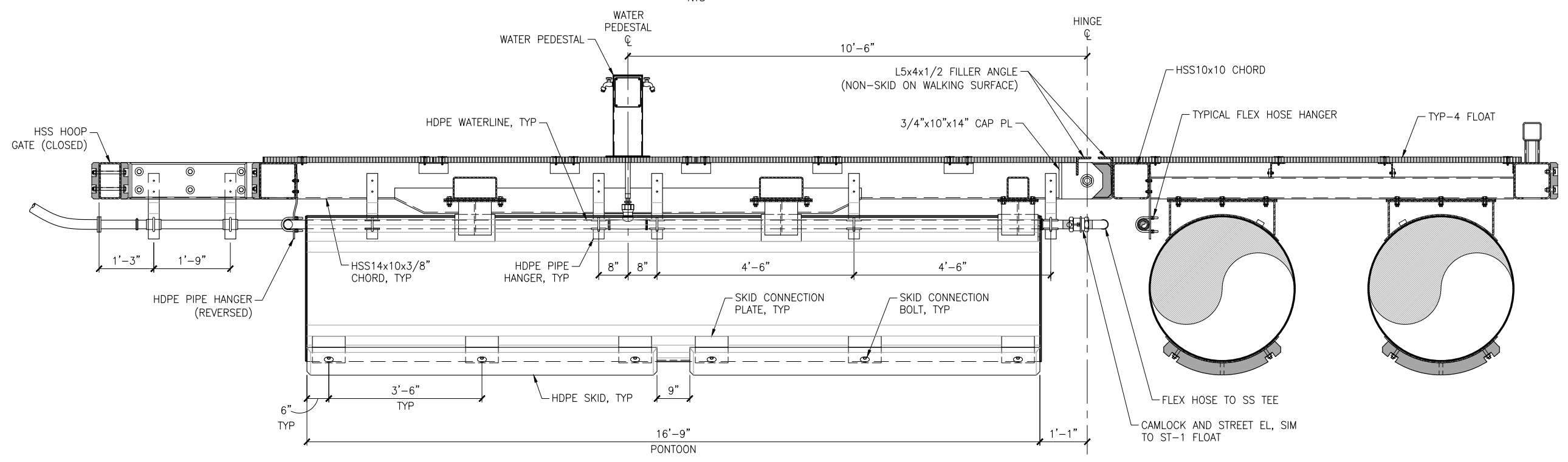
DESIGNED BY: CR/BJ DATE: APRIL 2019
 CHECKED BY: CDC PROJECT NO: 171113

DWG NO: **3.08** SHEET NO: 16 OF 27

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



SECTION @ 21' PONTOONS
NTS



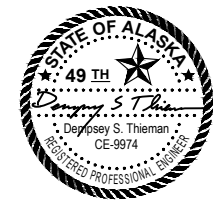
SECTION @ PILE HOOP
NTS

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

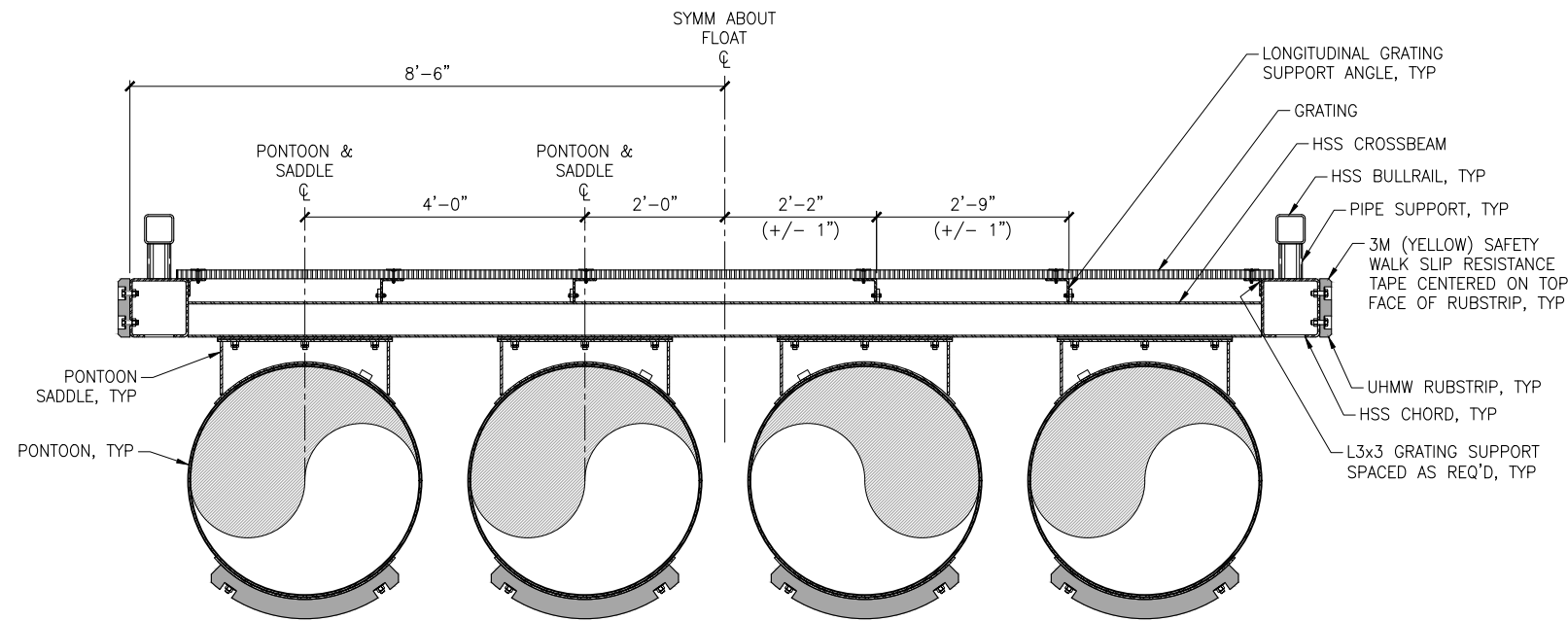


PROJECT: **DILLINGHAM SMALL BOAT HARBOR REPLACEMENT**

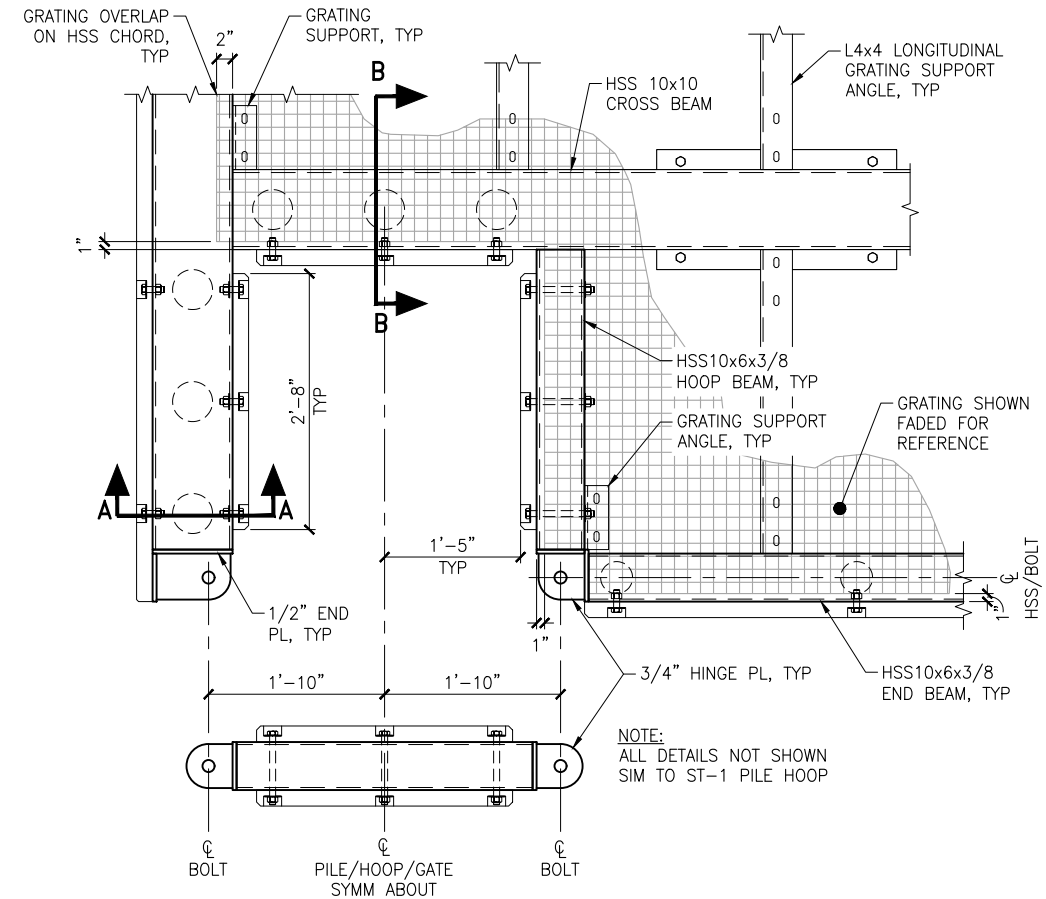
TITLE: **GANGWAY FLOAT SECTIONS**

DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.09
CHECKED BY: CDC	PROJECT NO: 171113	

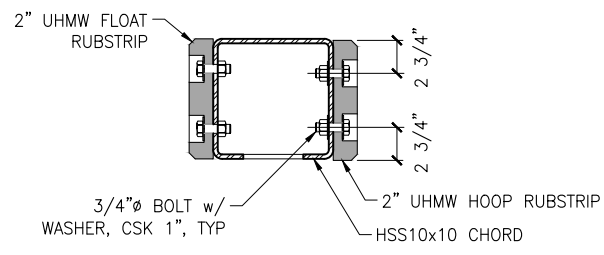
J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Float System.dwg, 3.09, 4/9/2019 3:50:19 PM, James, 1,2



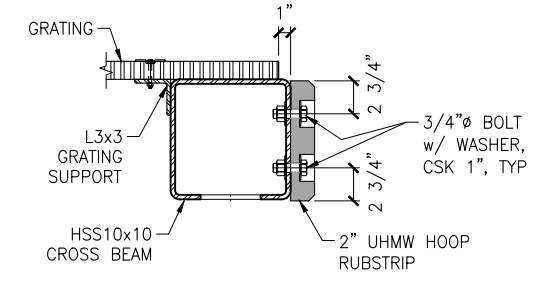
GW-1 TYPICAL SECTION
NTS



GW-1 PILE HOOP PLAN
NTS

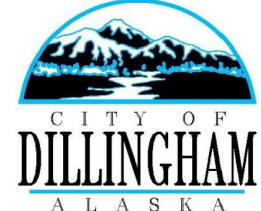


SECTION A-A
NTS



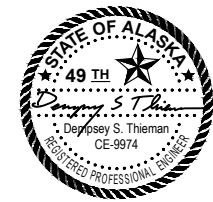
SECTION B-B
NTS

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

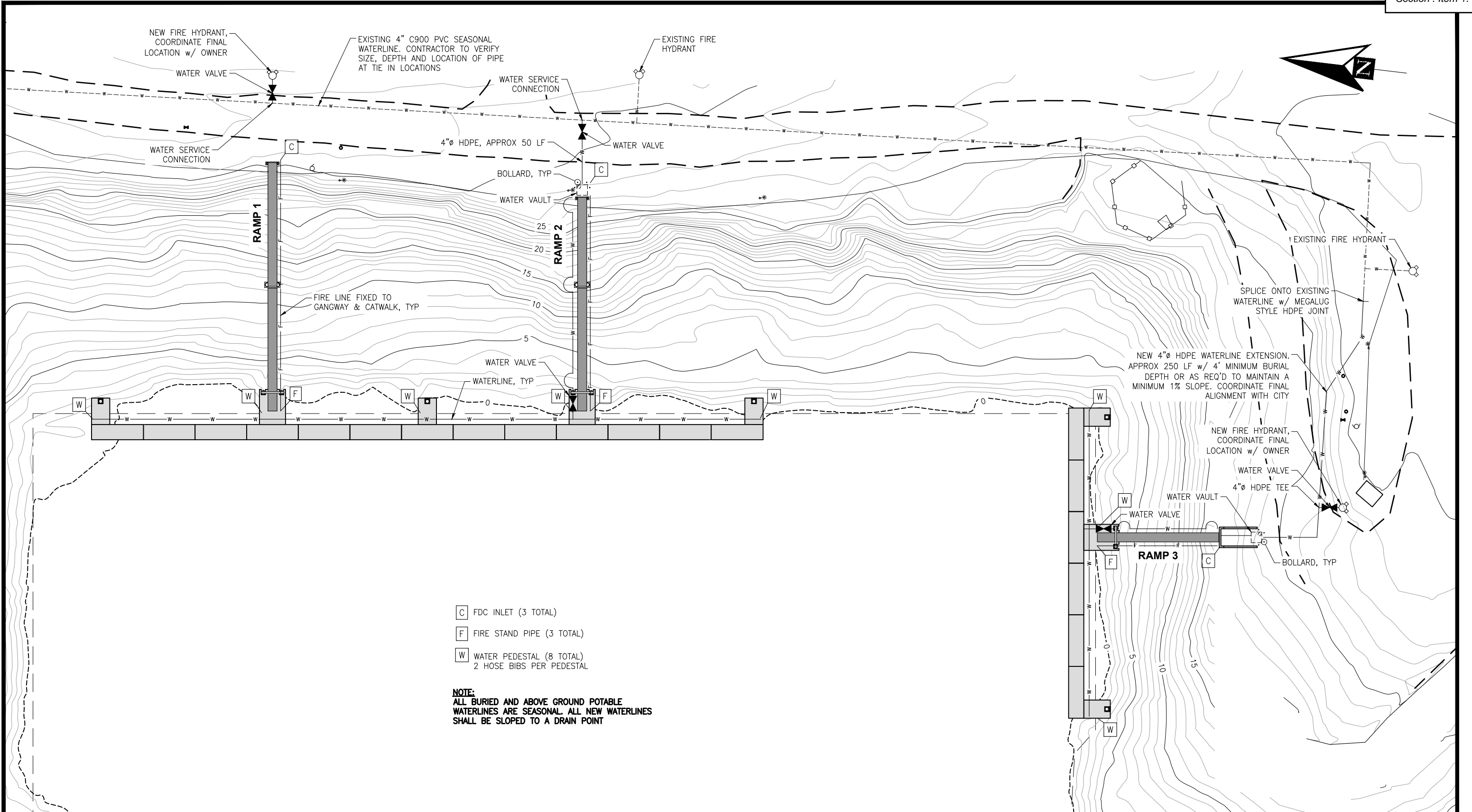


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

TITLE: **GANGWAY FLOAT DETAILS**

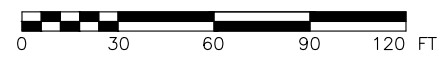
DESIGNED BY: CR/BJ	DATE: APRIL 2019	3.10
CHECKED BY: CDC	PROJECT NO: 171113	

J:\2017\171113 Dillingham Small Boat Harbor Drawings\3.01_3_10 Float System.dwg, 3_10_4/9/2019 3:50:21 PM, James, 1, 2

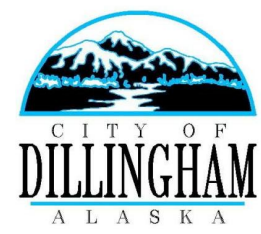


- [C] FDC INLET (3 TOTAL)
- [F] FIRE STAND PIPE (3 TOTAL)
- [W] WATER PEDESTAL (8 TOTAL)
2 HOSE BIBS PER PEDESTAL

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



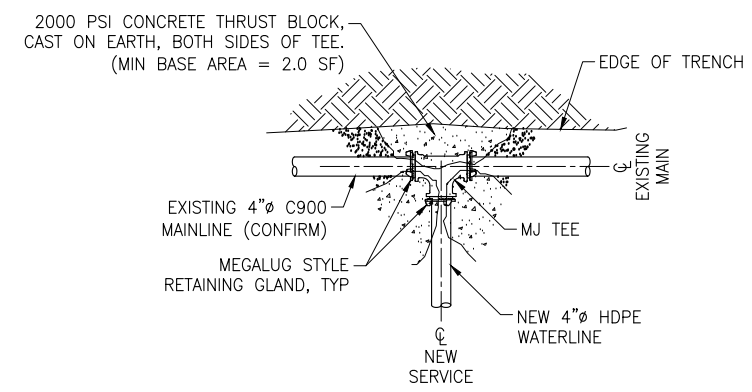
DATE: 4/9/2019

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

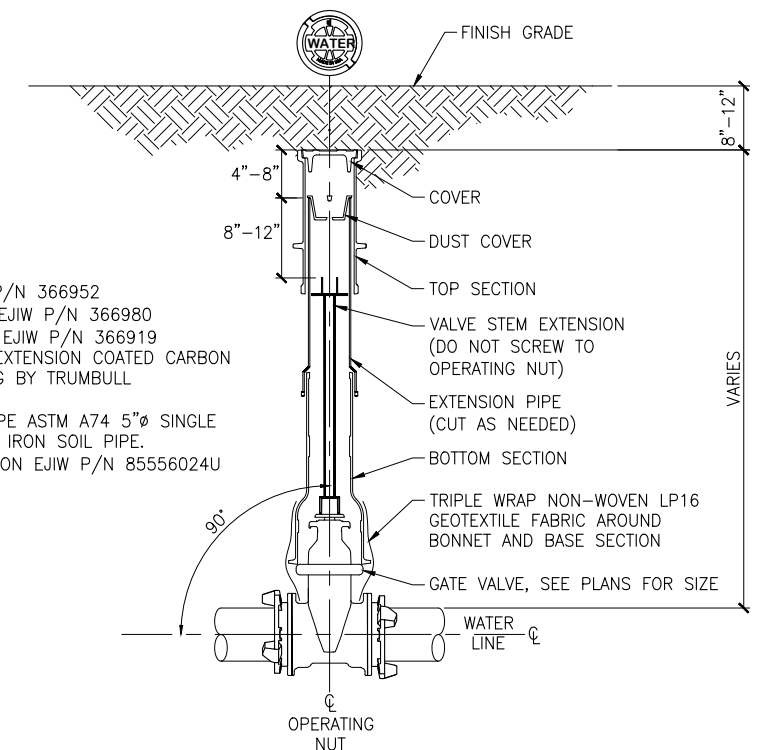


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT	
WATER SUPPLY PLAN	
DESIGNED BY: CR/BJ	DATE: APRIL 2019
CHECKED BY: CDC	PROJECT NO: 171113
4.01	

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

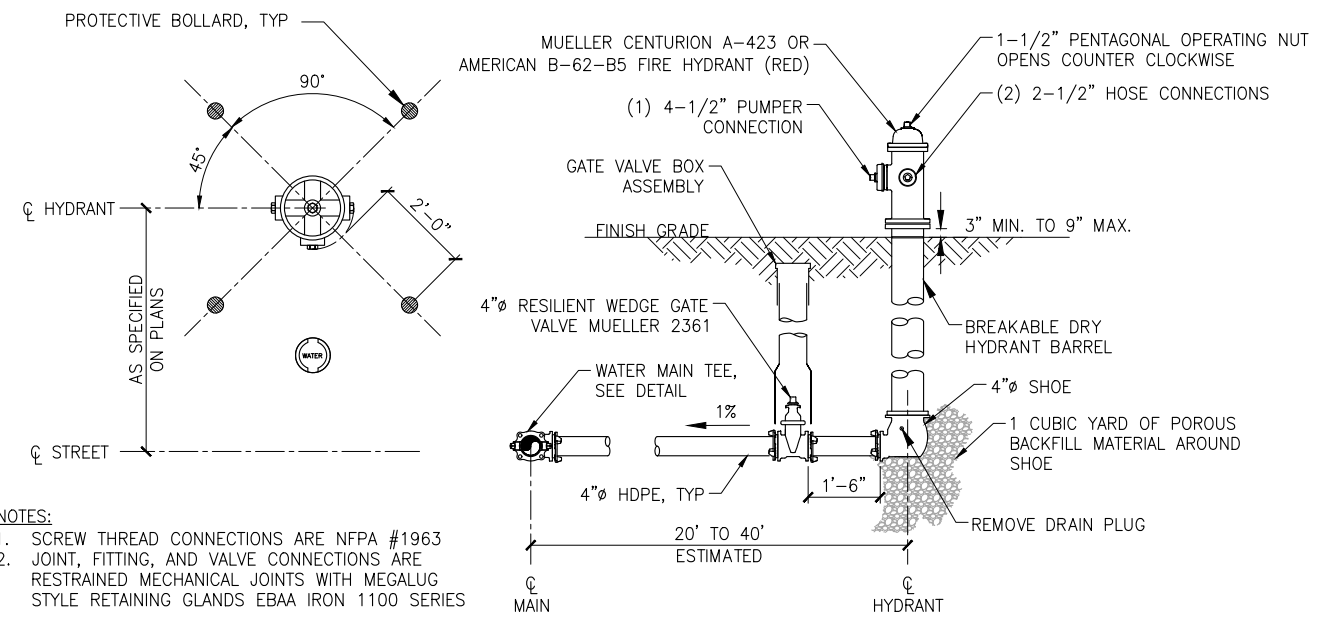


WATER SERVICE CONNECTION (EXISTING MAIN)
NTS



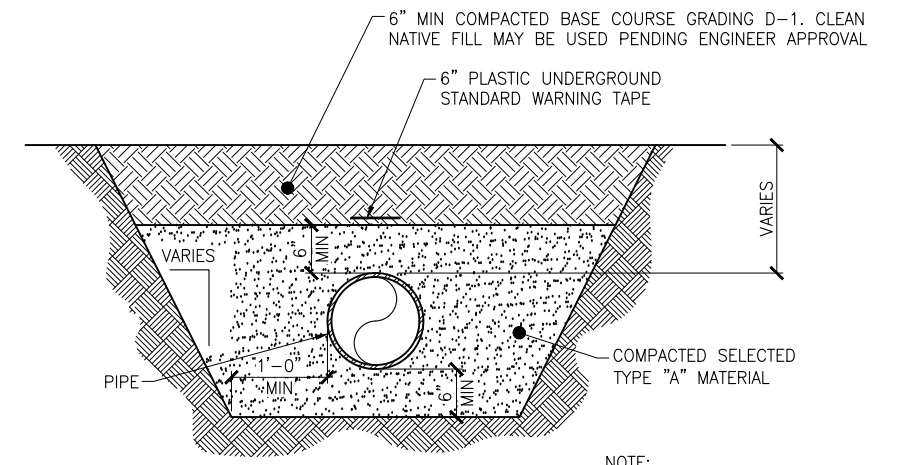
- NOTES:
- COVER EJIW P/N 366952
 - DUST COVER EJIW P/N 366980
 - TOP SECTION EJIW P/N 366919
 - VALVE STEM EXTENSION COATED CARBON STEEL AS MFG BY TRUMBULL INDUSTRIES
 - EXTENSION PIPE ASTM A74 5"Ø SINGLE HUB SV CAST IRON SOIL PIPE.
 - BOTTOM SECTION EJIW P/N 85556024U

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

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

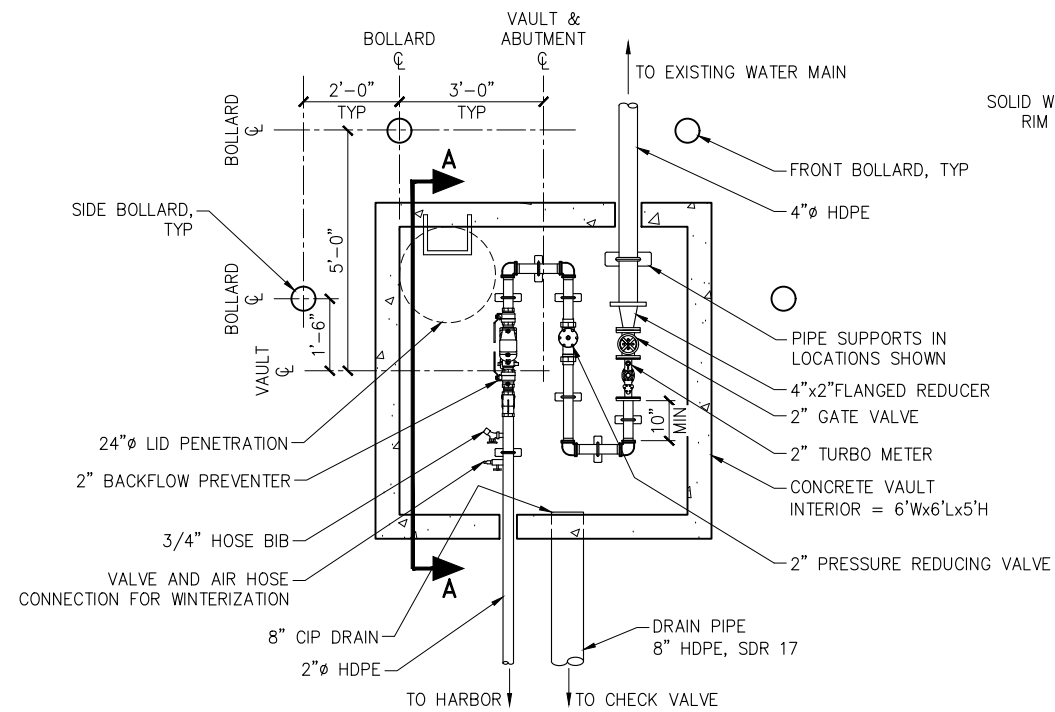


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

UPLANDS WATER DETAILS (1 OF 2)

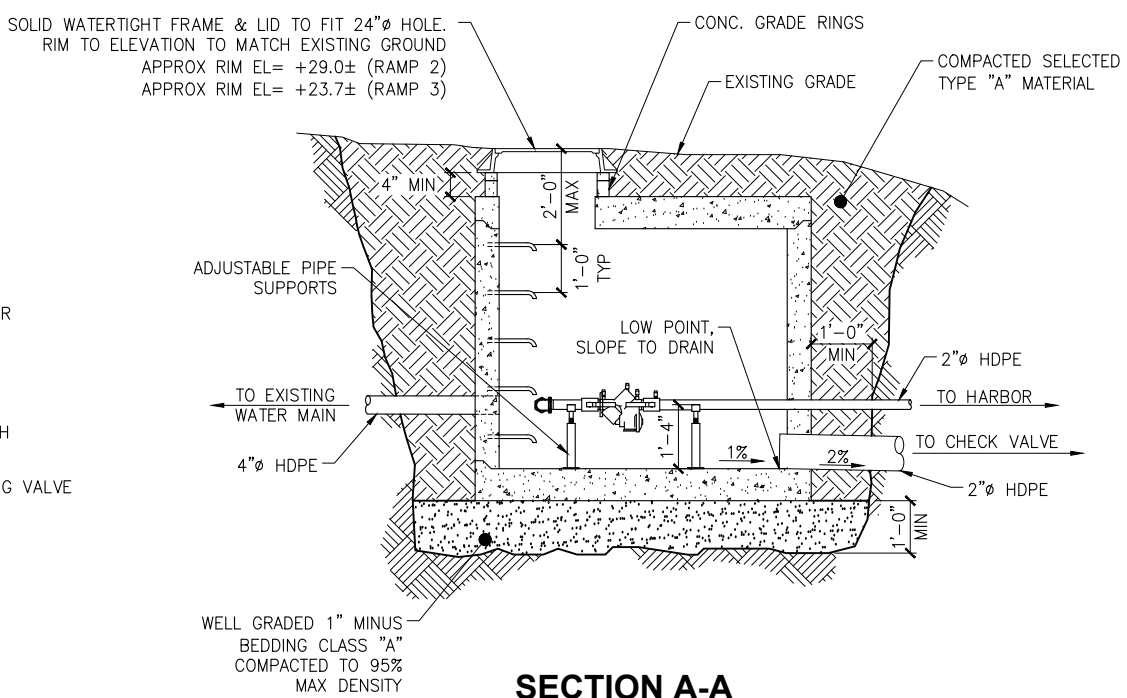
DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	4.03
CHECKED BY:	CDC	PROJECT NO.:	171113	

J:\2017\171113 Dillingham Small Boat Harbor\Drawings\4.02_4.07 Water Details.dwg, 4.03_4/9/2019 3:50:34 PM, James, 1:2

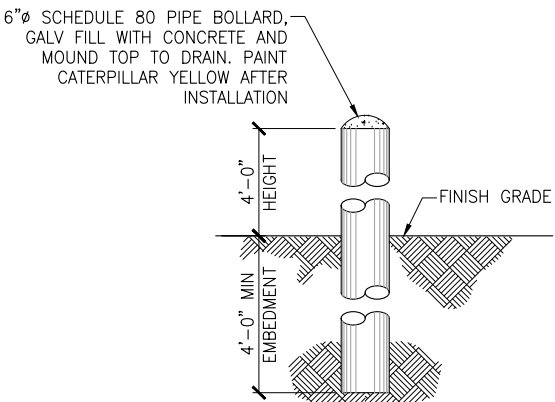


WATER SERVICE VAULT PLAN
NTS

- 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



SECTION A-A
NTS



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.



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

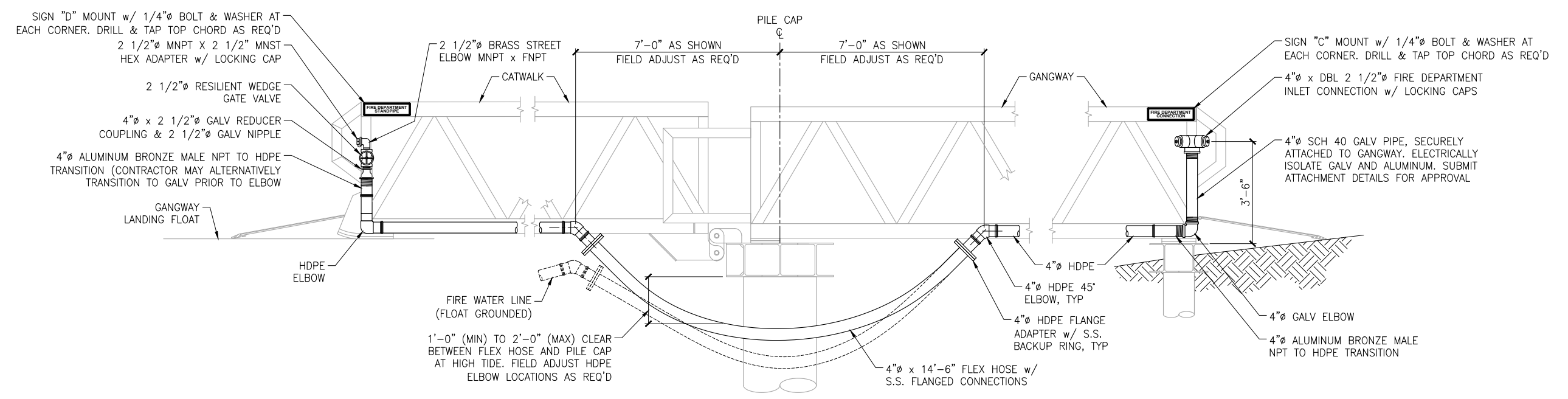


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

UPLANDS WATER DETAILS (2 OF 2)

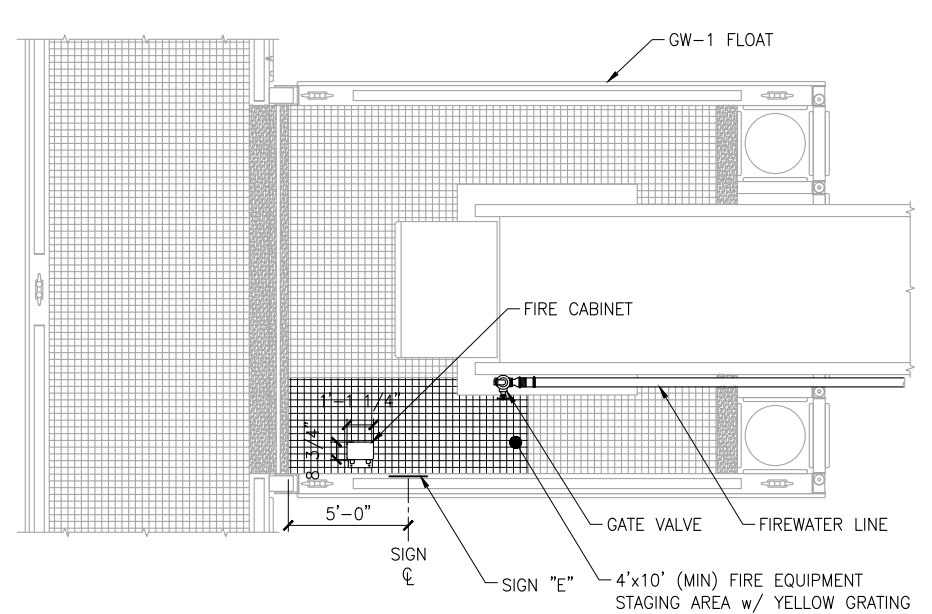
DESIGNED BY:	CR/BJ	DATE:	APRIL 2019	4.04
CHECKED BY:	CDC	PROJECT NO.:	171113	

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

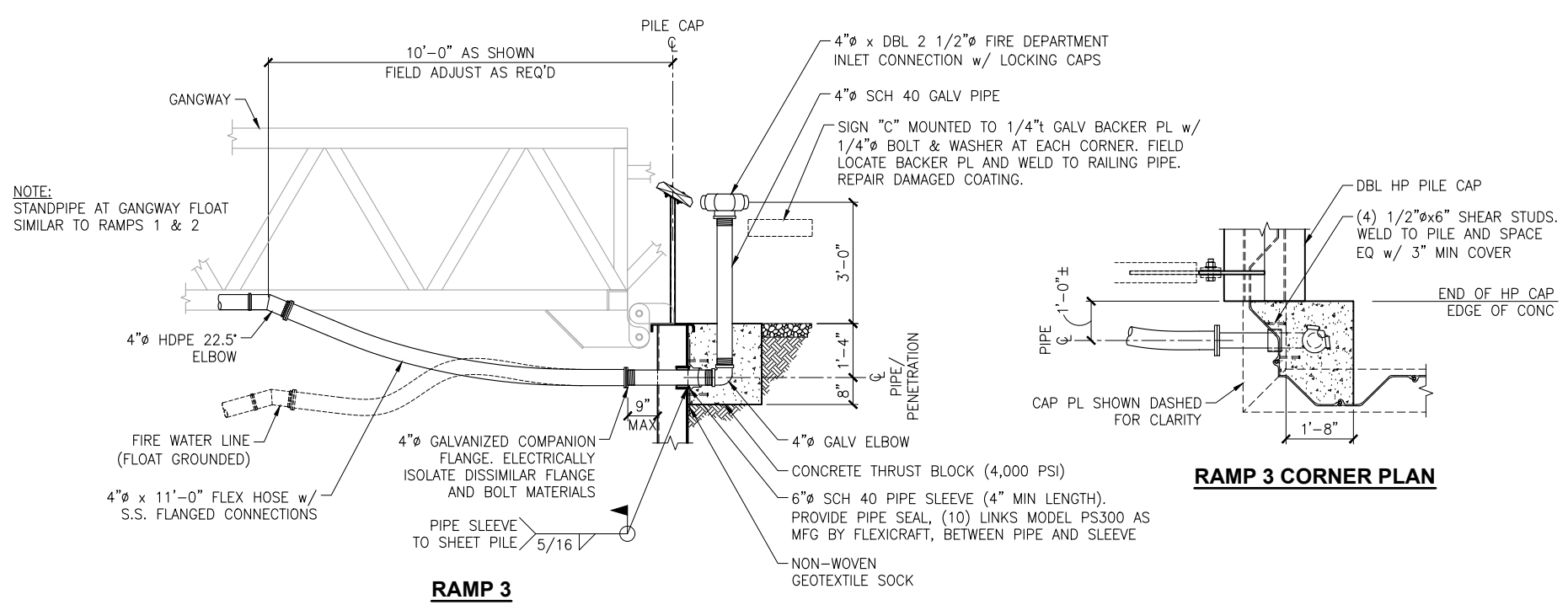


RAMPS 1 & 2

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



FIRE EQUIPMENT STAGING AREA
NTS



RAMP 3

RAMP 3 CORNER PLAN

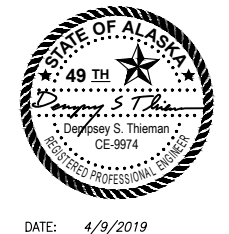
FIREWATER ROUTING FROM SHORE
NTS

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



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

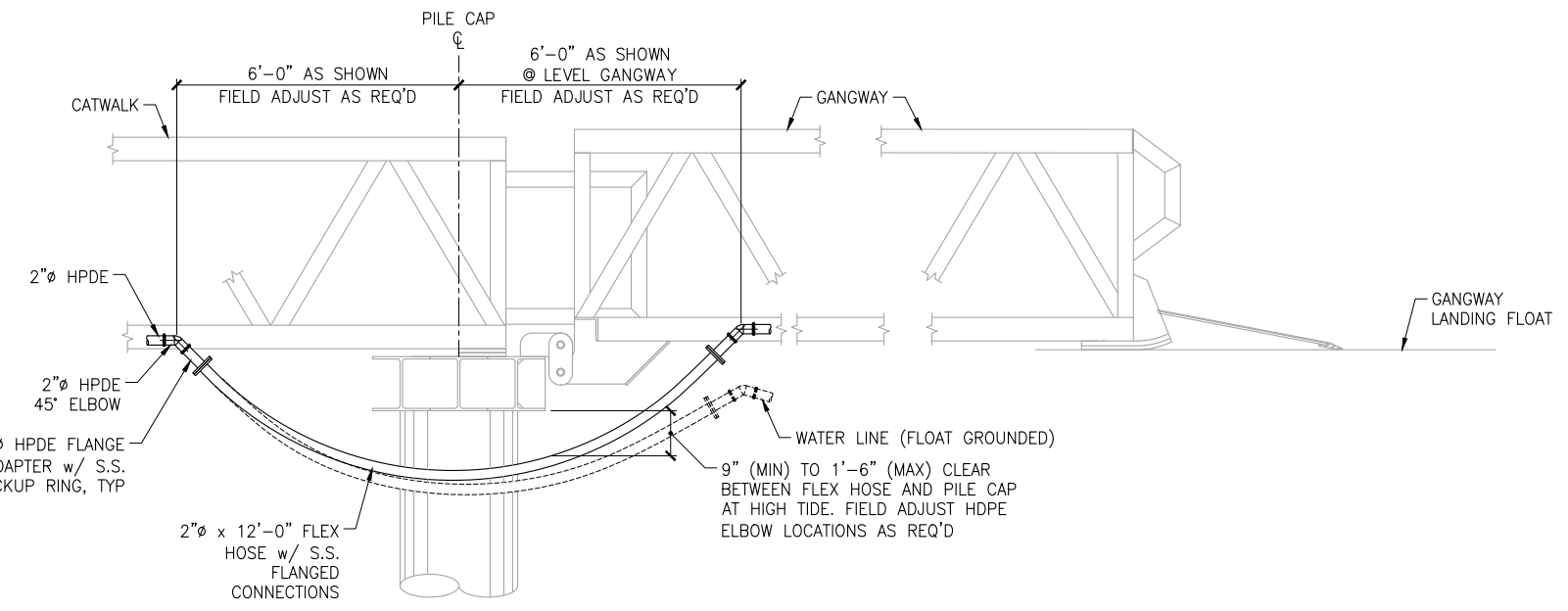
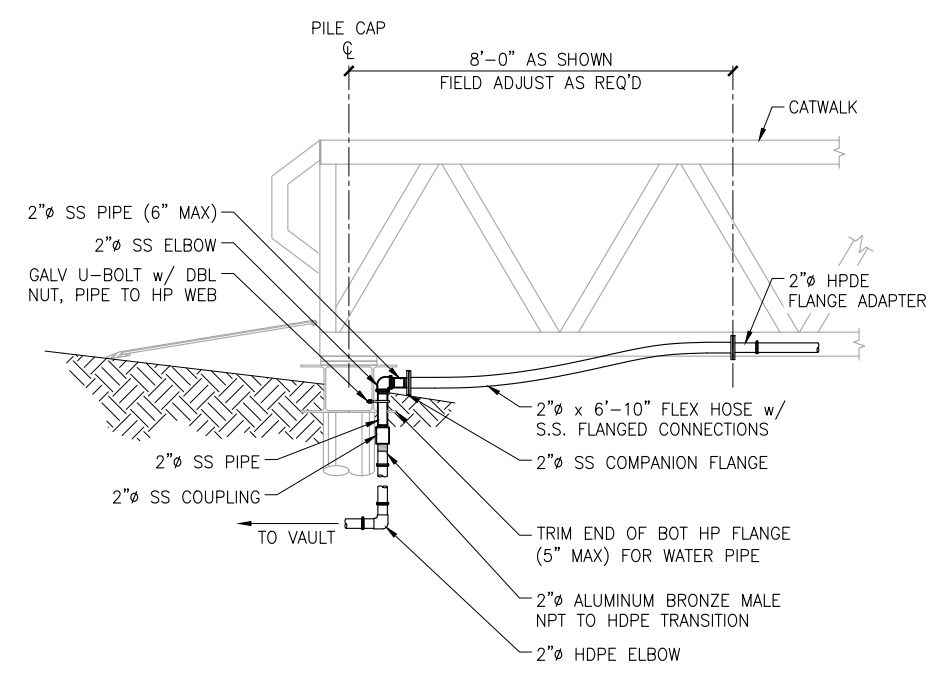


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

FIREWATER ROUTING FROM SHORE

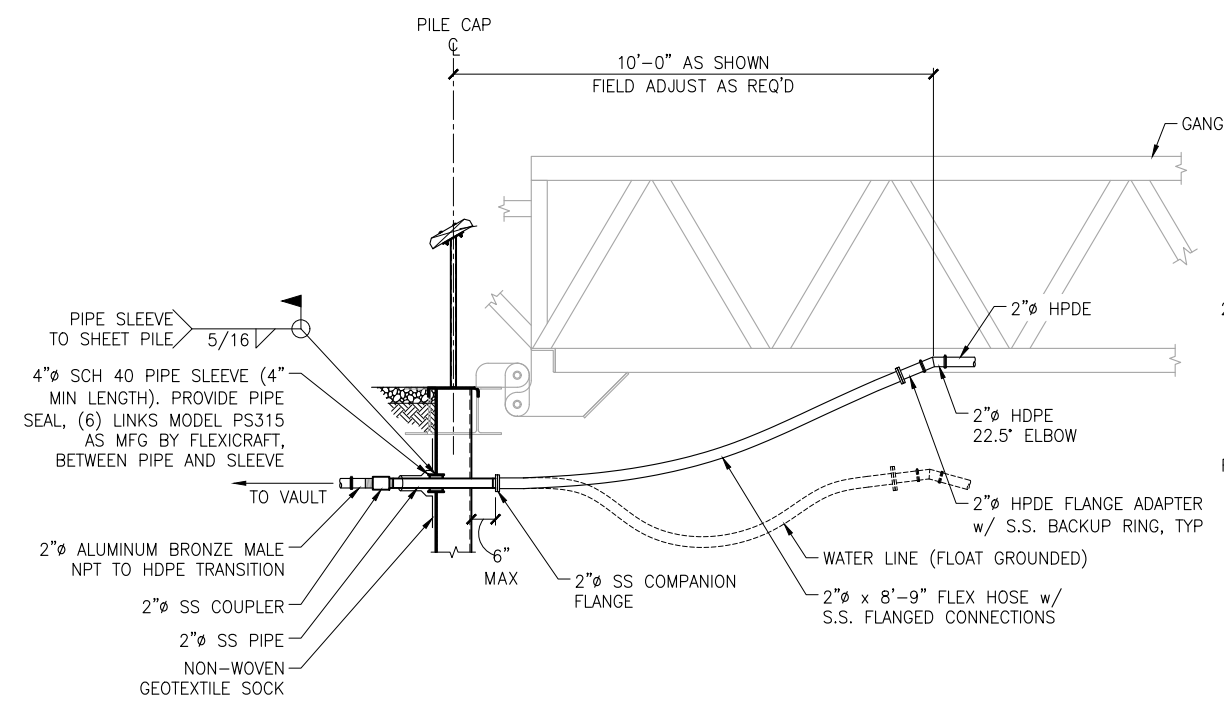
DESIGNED BY: CR/BJ
CHECKED BY: CDC
DATE: APRIL 2019
PROJECT NO: 171113
DWG NO: **4.05**
SHEET NO: 23 OF 27

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

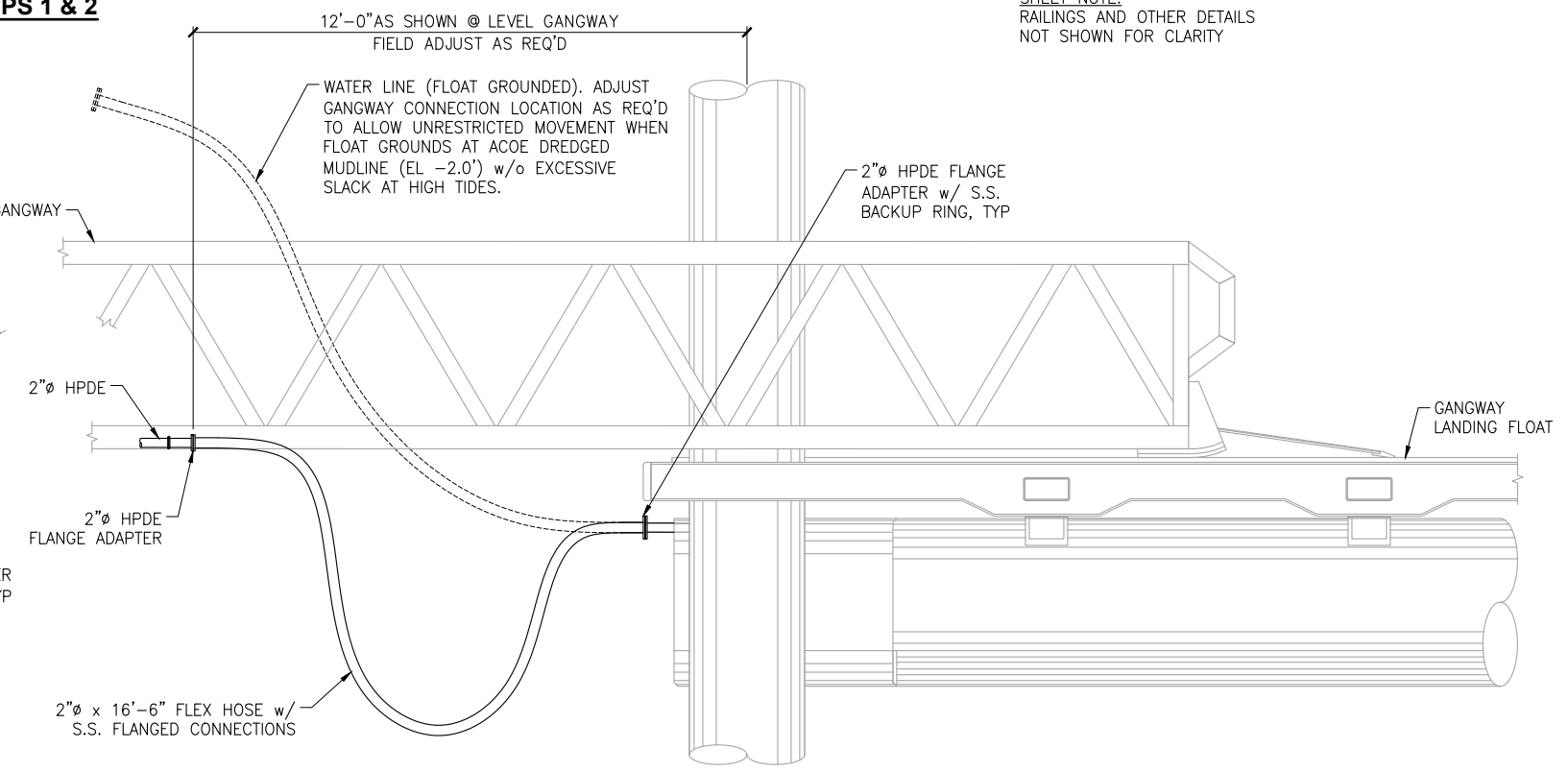


RAMPS 1 & 2

SHEET NOTE:
RAILINGS AND OTHER DETAILS
NOT SHOWN FOR CLARITY



RAMP 3



TYPICAL FLOAT WATERLINE CONNECTION

WATERLINE ROUTING FROM SHORE

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

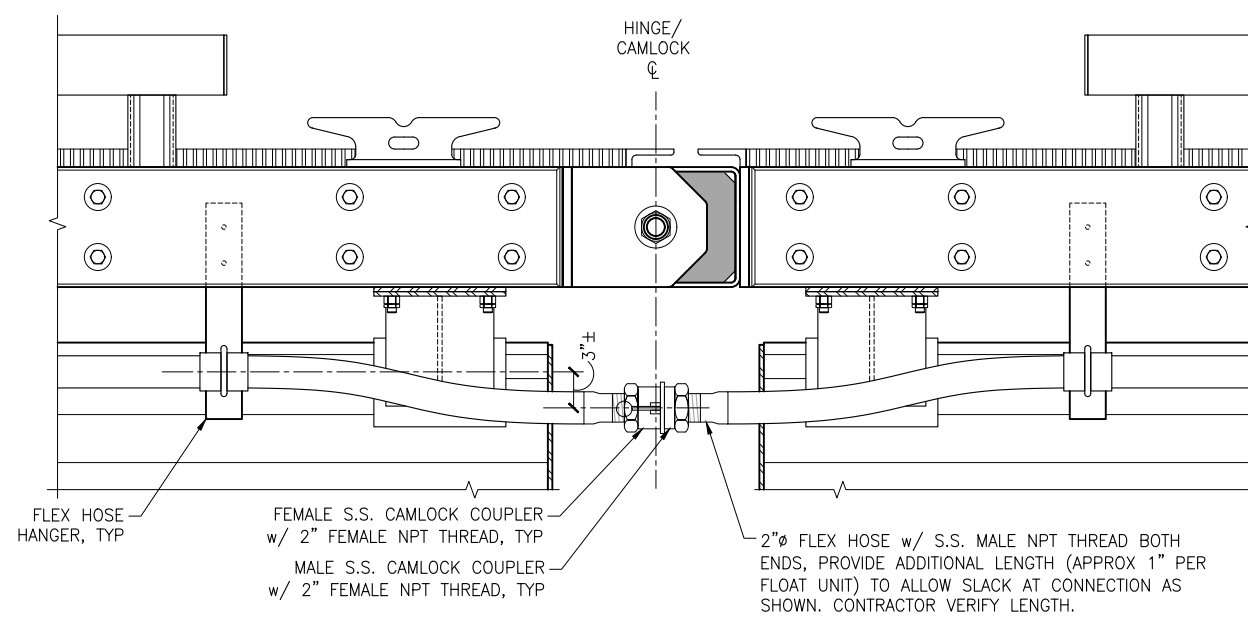


DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

POTABLE WATER ROUTING FROM SHORE

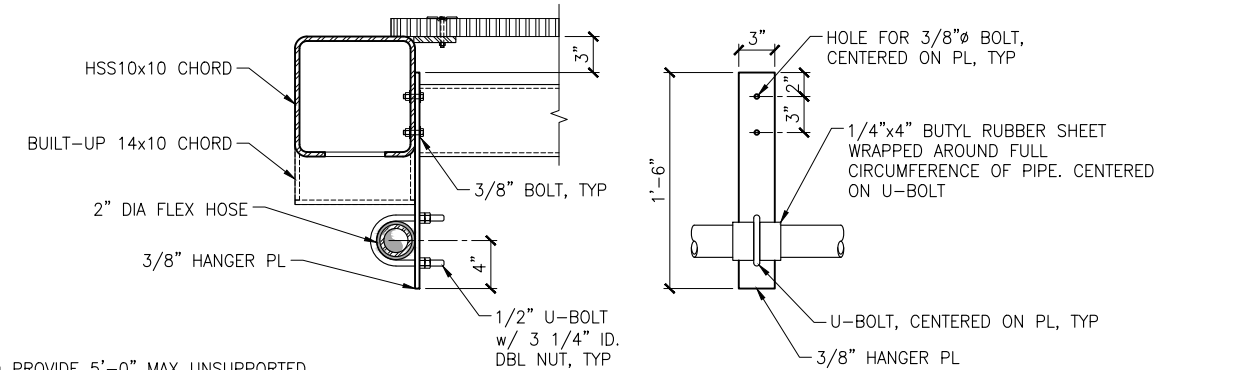
DESIGNED BY: CR/BJ	DATE: APRIL 2019	4.06
CHECKED BY: CDC	PROJECT NO: 171113	

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



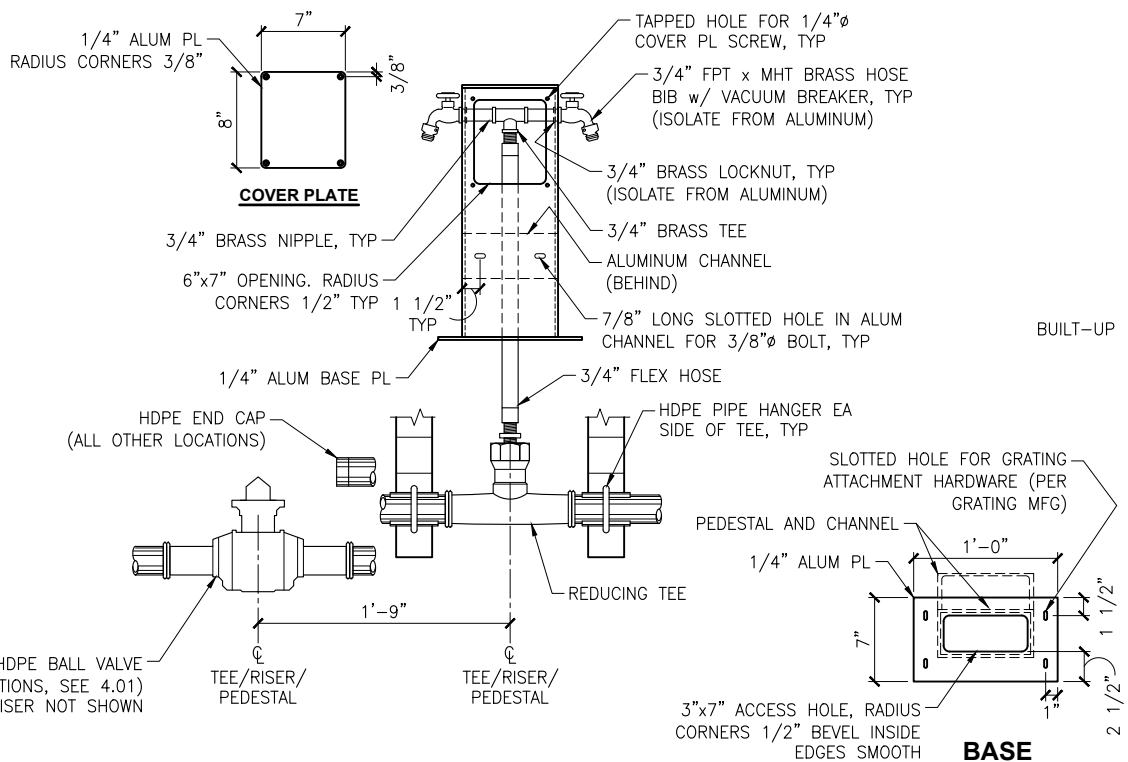
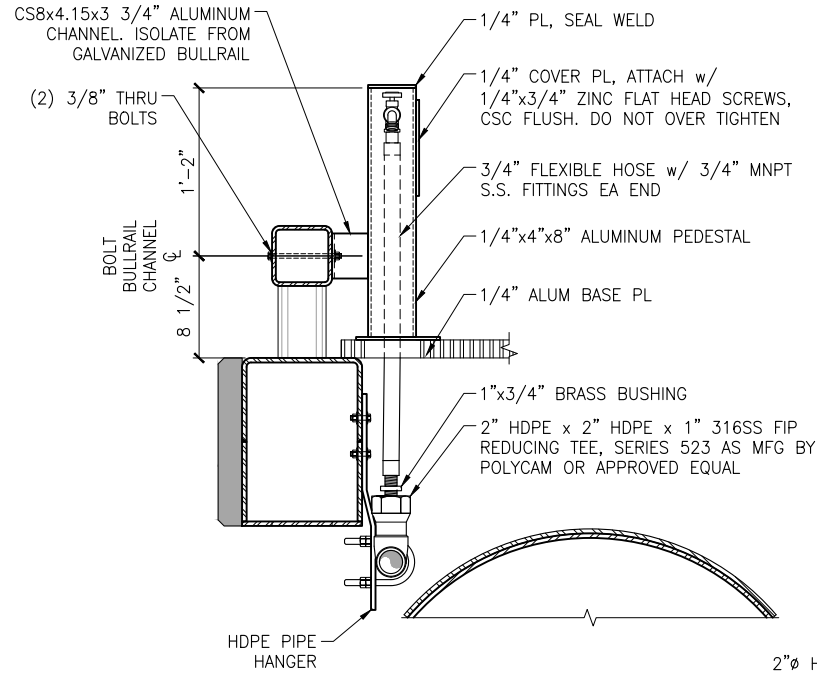
HOSE CONNECTION @ TYP FLOAT HINGE
NTS

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

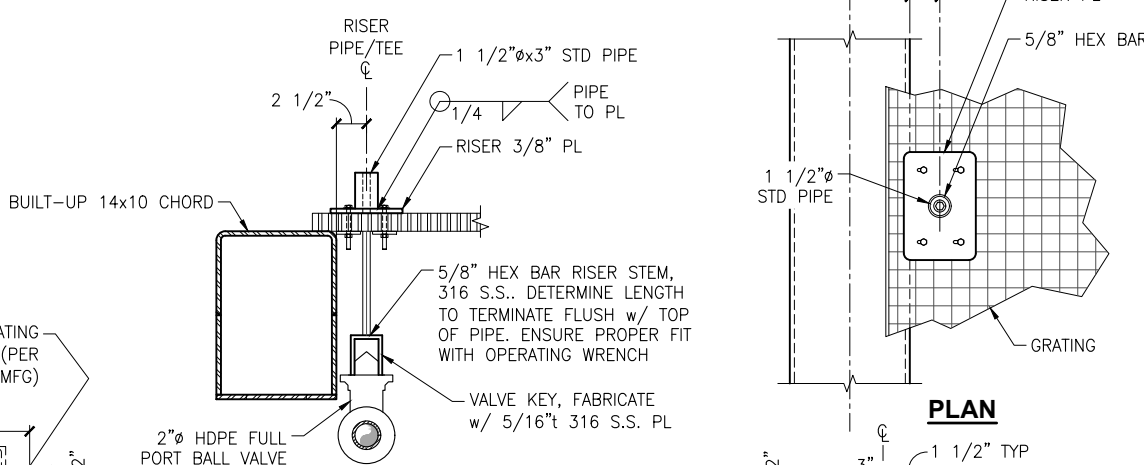
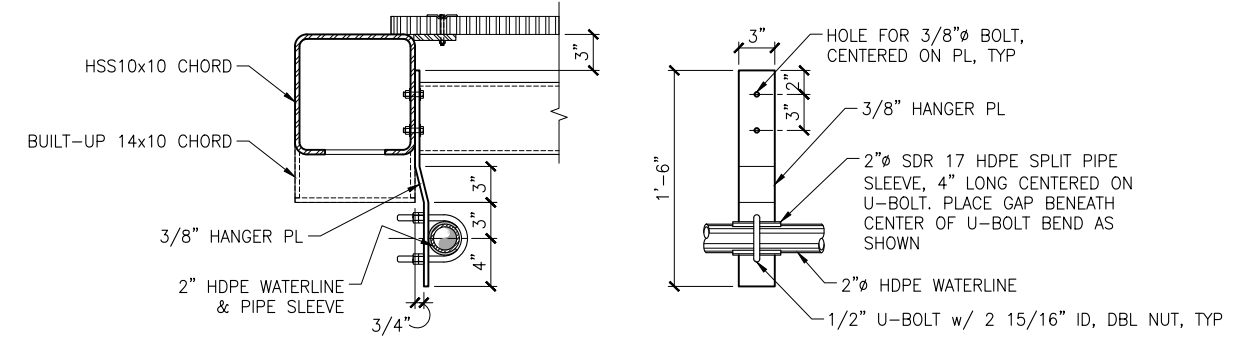


FLEX HOSE HANGER
NTS

HDPE PIPE HANGER
NTS

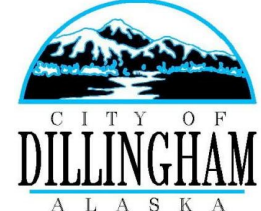


WATER PEDESTAL DETAILS
NTS



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



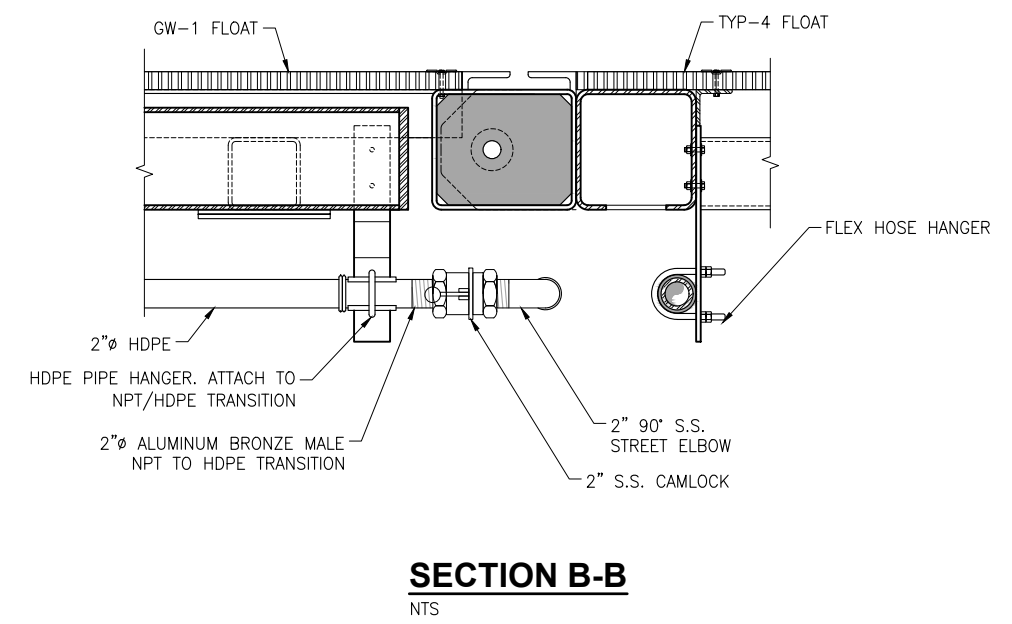
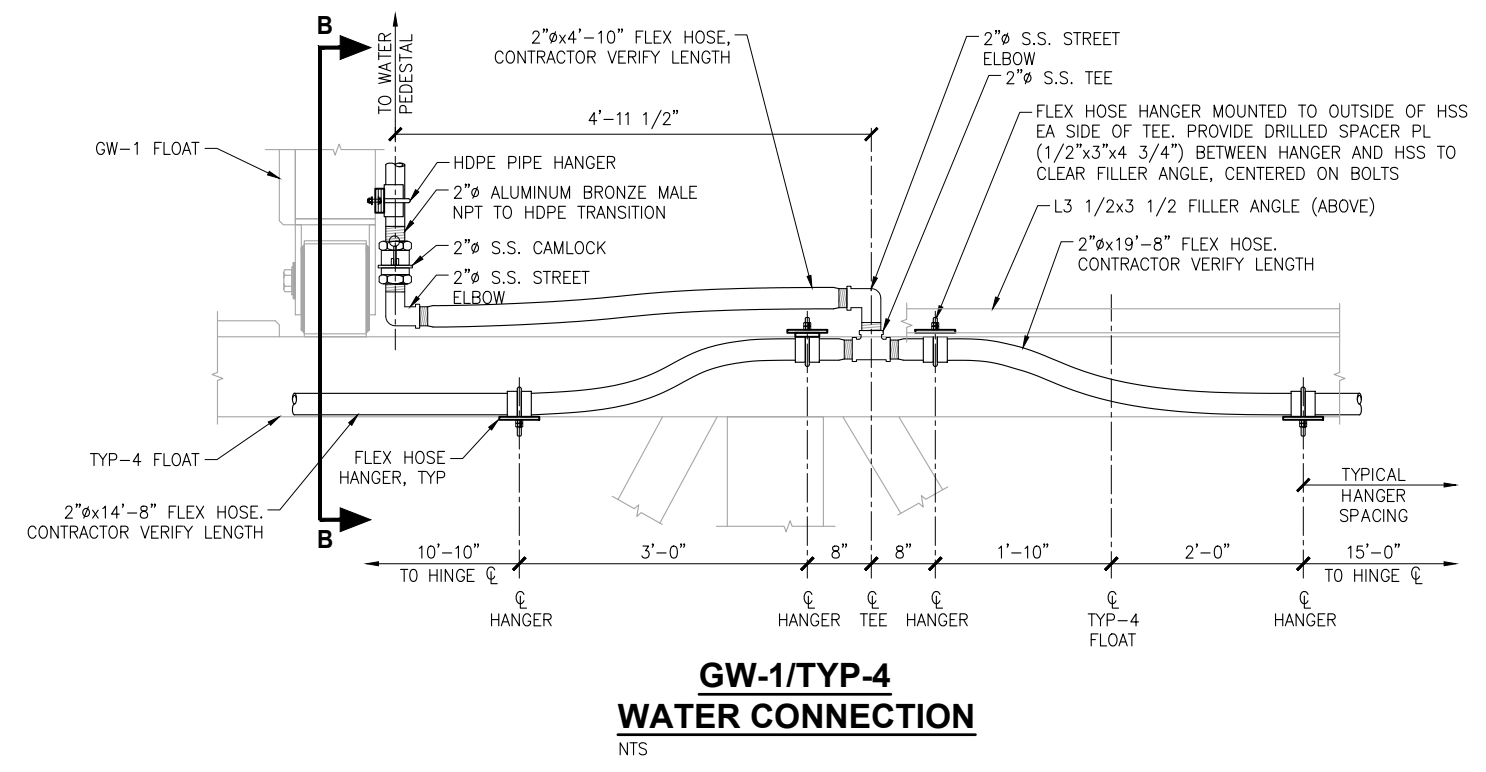
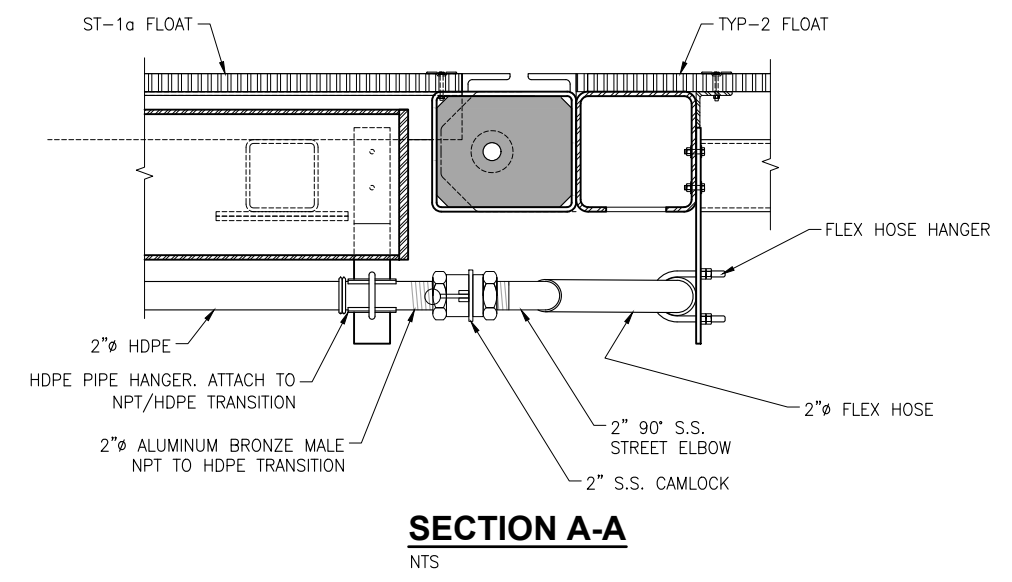
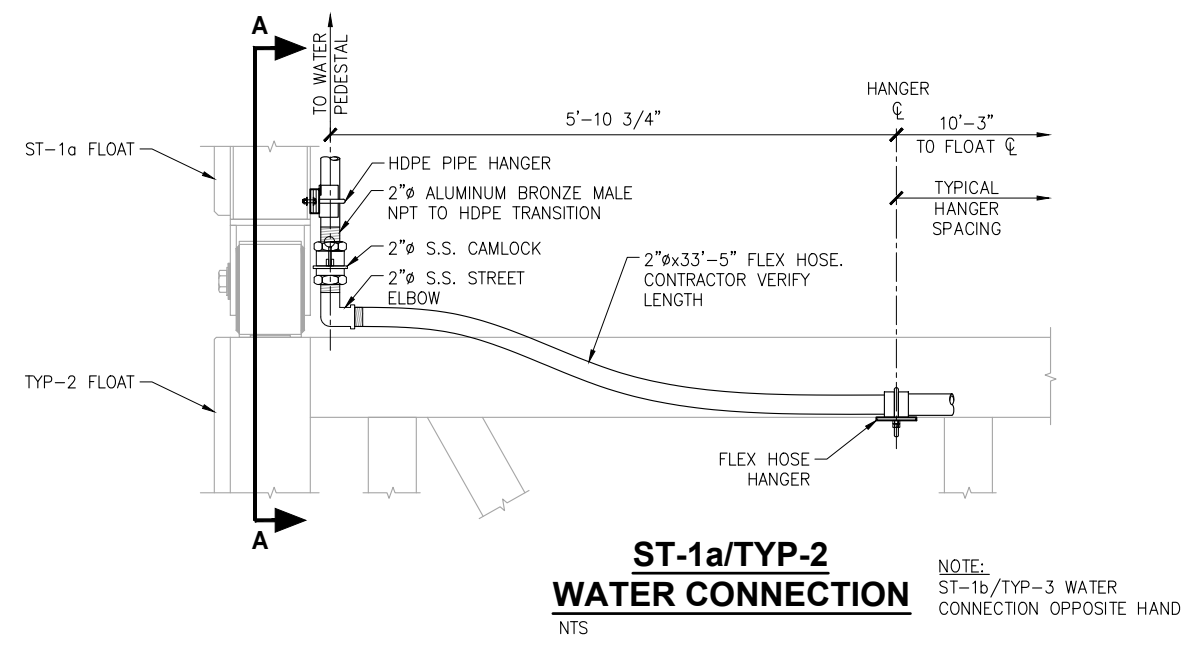
DILLINGHAM SMALL BOAT HARBOR REPLACEMENT

FLOAT WATER DETAILS (1 OF 2)

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

4.07

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

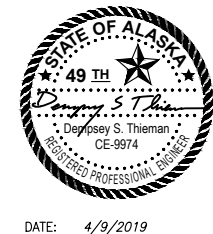


100% DESIGN
4/9/2019



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



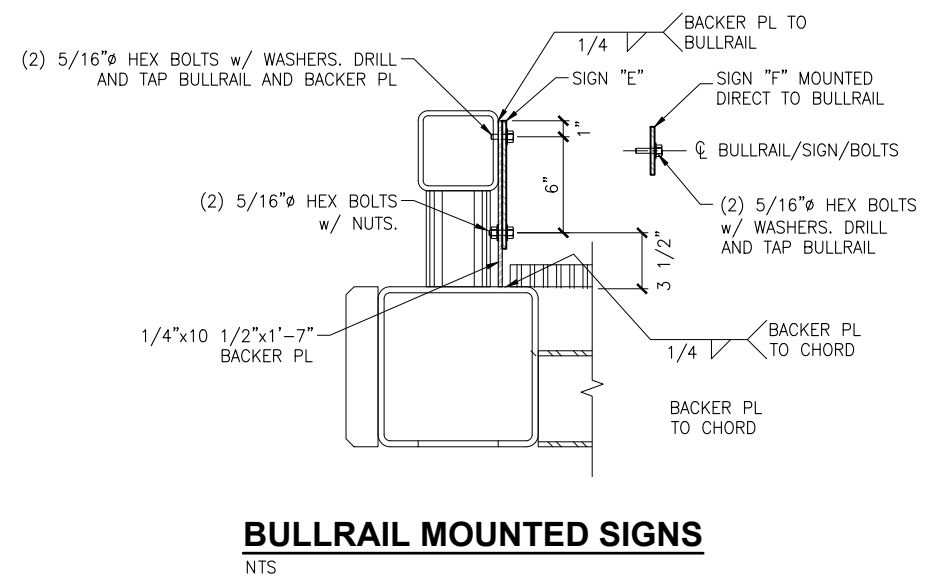
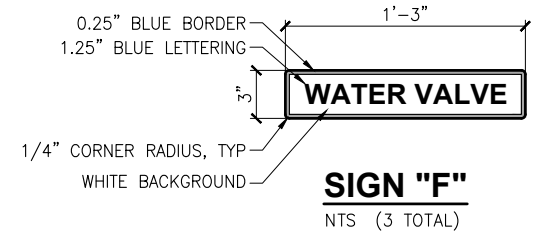
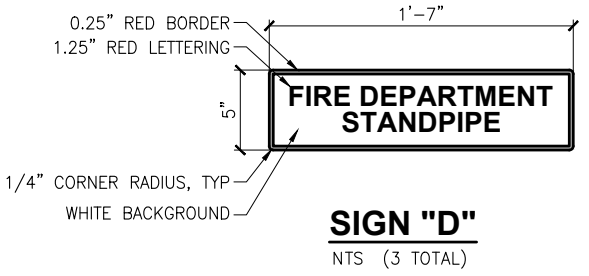
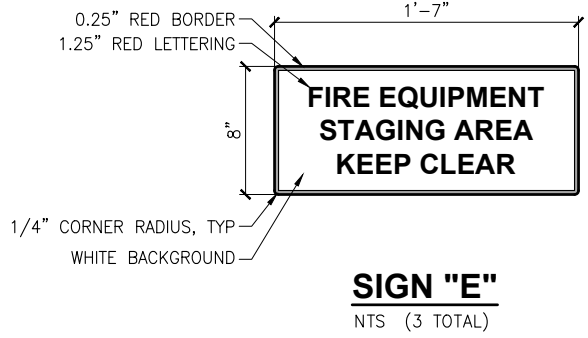
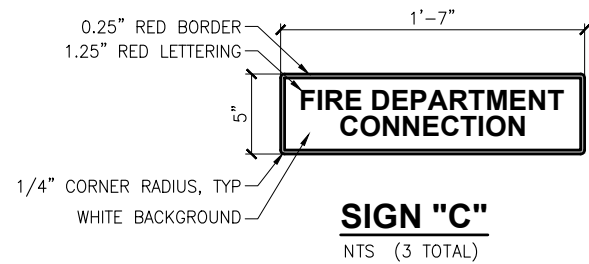
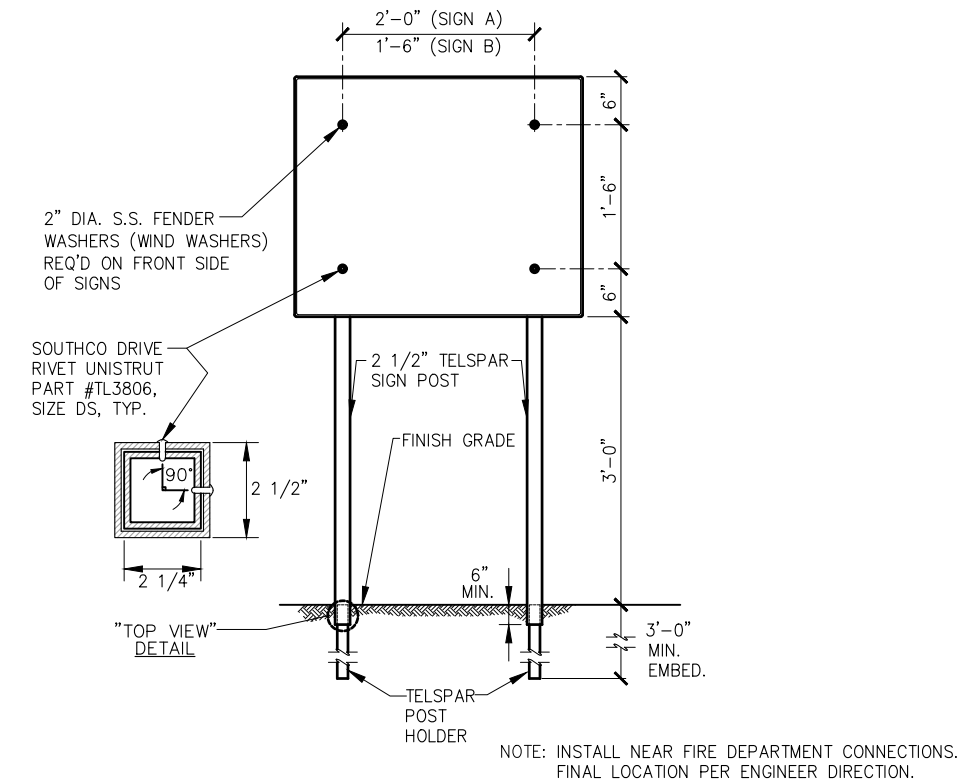
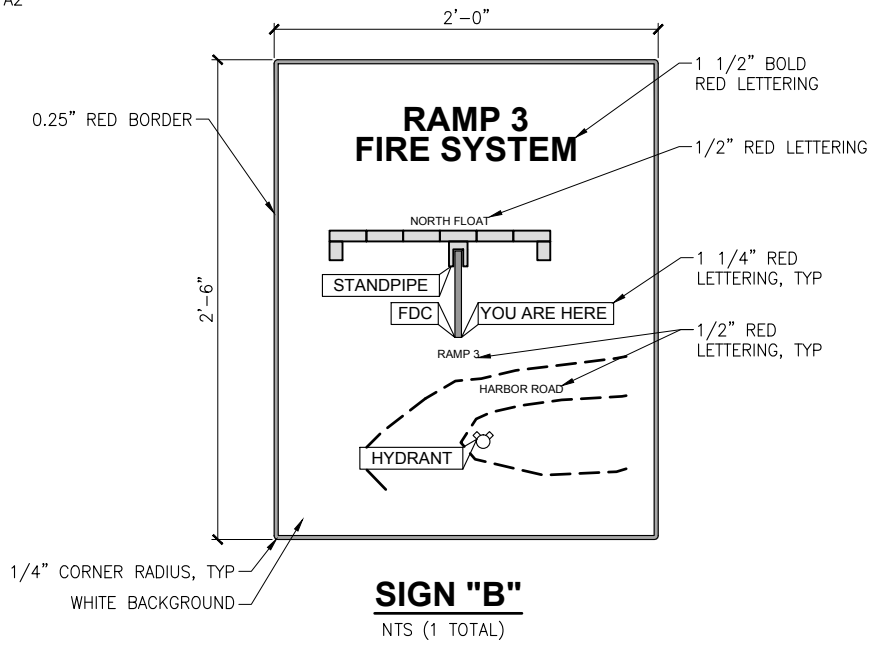
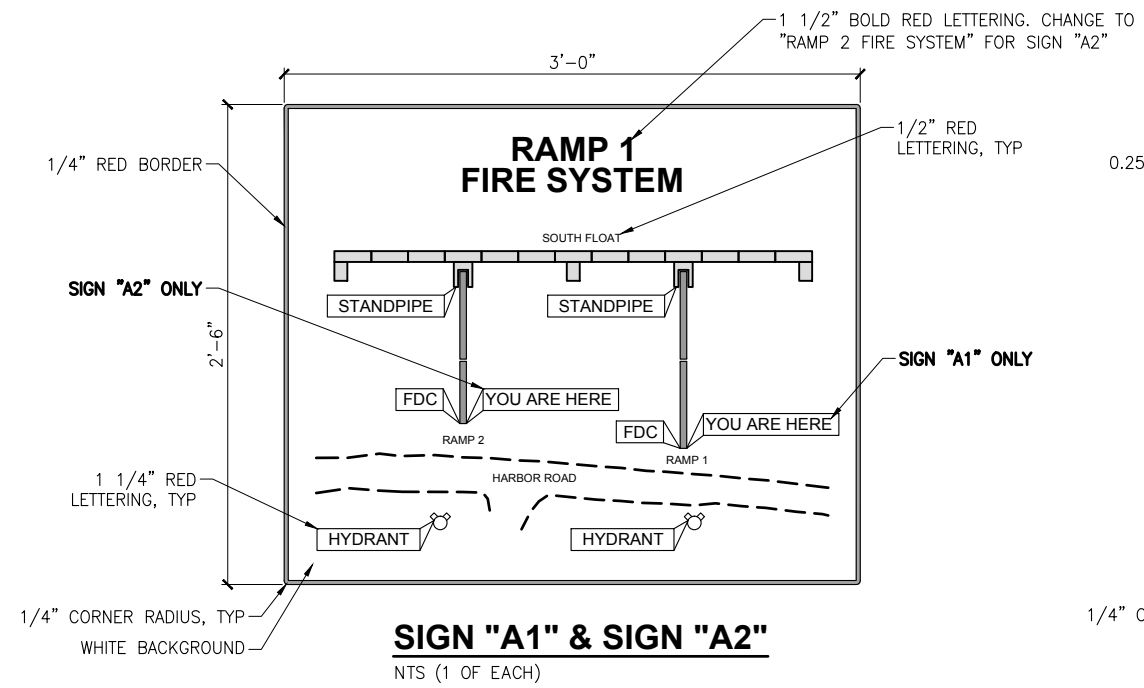
PROJECT: **DILLINGHAM SMALL BOAT HARBOR REPLACEMENT**

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

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

DWG NO: **4.08** SHEET NO: 26 OF 27

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.



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
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