



<b>TRANSMITTAL MEMORANDUM</b>
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TO: The Honorable Mayor and City Council

FROM: Karl R. Amylon, City Manager

DATE: November 11, 2020

RE: **Approving Sixty Percent Design for Contract No. 20-07 – Design of Berth III New Mooring Dolphin and Bollards, PND Engineers, Inc.**

At its meeting of March 5, 2020, the City Council adopted a motion approving Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards, between the City of Ketchikan and PND Engineers, Inc. of Seattle in an amount not to exceed \$163,000. At its meeting of May 21, 2020, the City Council adopted a motion approving Amendment No. 1 to the agreement in the amount of \$110,000, which provided for PND Engineers, Inc. taking the design to 100% and completing the required permitting.

Attached for City Council review is a memorandum from Acting Port & Harbors Director Mark Hilson, which provides a status update of the project based on sixty percent design. Mr. Hilson's comments are self-explanatory and require little elaboration on the part of my office. Other than approving the sixty percent design of the project, no further action is necessary, as PND Engineers, Inc. has been authorized to complete design and permitting.

If the City Council wishes to proceed with the project with a target completion date of April 2023, the projected cost is approximately \$5 million. Given the current financial status of the Port Enterprise Fund, this will likely necessitate submitting a bond proposition to the voters in the fall of 2021. Until the modifications at Berth III are completed, my office can confirm that Royal Caribbean has engaged the Ward Cove Dock Group about the possibility of berthing its larger class vessels at Ward Cove.

Mr. Hilson will be attending the City Council meeting of November 19, 2020, in order to address any questions and/or concerns that Councilmembers may have.

A motion has been prepared for City Council consideration.

**RECOMMENDATION**

It is recommended the City Council adopt the motion approving the sixty percent design for Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards, between the City and PND Engineers, Inc.; and directing the City Manager and Acting Port & Harbors Director to take such other actions as determined appropriate by the City Council.

**Recommended Motion:** I move the City Council approve the sixty percent design for Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards, between the City and PND Engineers, Inc.; and direct the City Manager and Acting Port & Harbors Director to take such other actions as determined appropriate by the City Council.



2933 Tongass Avenue  
Ketchikan, Alaska 99901  
Phone (907) 228-5632  
Fax (907) 247-3610

**MEMORANDUM**

**To:** Karl Amylon, City Manager  
**From:** Mark Hilson, P.E., Interim Port & Harbors Director  
**Date:** November 10<sup>th</sup>, 2020  
**Re:** **Update on the Design and Permitting of the Berth III New Mooring Dolphin & Bollards, Contract No. 20-07**

On March 5, 2020, the City Council approved Contract No. 20-07 for PND Engineers to begin the initial schematic design work and preparation and submission of the necessary permits for installation of an additional mooring dolphin and bollards at Berth III.

On May 7, 2020, the City Council reviewed and approved the 30% schematic design for a new Berth III mooring dolphin and bollards and authorized the Manager to submit applications for all of the necessary permits. The City Council also requested that design of the project continue to 100%.

On May 21, 2020, the City Council approved contract amendment No. 1 to contract No. 20-07 in the amount of \$110,000 for completing the design work and preparing all the drawings and other documents necessary to issue an invitation for bid in order for the project to progress towards being "shovel ready" should any federal funding opportunities arise.

Even though we have berthed the Bliss and other 1100'+/- class vessels at Berth III, it is worth noting that Berth III was not designed for the forces involved and consequently the number of lines needed to moor such a large ship. The optimum configuration for ships of this class, and what cruise lines are looking for is a minimum of eight bow lines, eight stern lines and two spring lines. Currently, we can accommodate six lines from the bow, five lines from the stern, and two spring lines. The current dolphins are behind the nose of the vessel, which is not an optimum configuration and can result in undesirable movement depending on wind direction, and increased forces acting on the dolphin. When complete this project would increase design wind speeds to 35 knots (except a broadside wind), which is approximately a 200% increase from what can be accommodated now. While berthing one 1100' +/- class vessel at a time with existing infrastructure can be done successfully, the industry would prefer to have the benefits that this project would offer. According to Brian Porter, P.E. of PND, and confirmed by Survey Point Holdings, the cruise line's perception is that Berth III is undersized for the 1100' +/- class vessel. It is highly likely ships like the Ovation and Quantum will not be scheduled to berth in their preferred location of downtown Ketchikan in 2022, opting instead for Ward Cove. Staff recommends a tentative construction start date of fall 2022 with a project completion date of April 2023 in order for the City to remain a berthing option with cruise lines that have deployed or will be deploying 1100' +/- class vessels to Alaska. The completion of this project would allow us to delay the expansion of Berth I. Further, this schedule would allow the project to be built prior to expiration of permitting.

An added benefit to this project is that it will provide an additional dolphin with bollards that will provide additional operational flexibility for tying vessels at Berth II or Berth III.

Attached are the latest design drawings from PND. The key highlights are as follows:

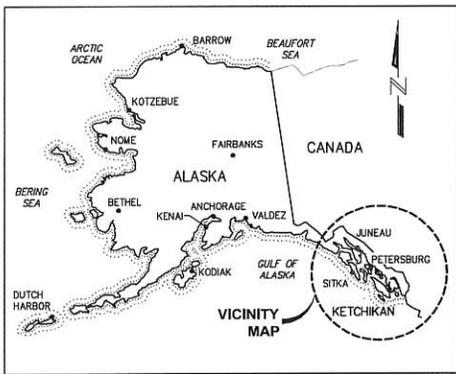
- The 60% design and cost estimate has been completed. Preliminary estimates were approximately \$4.5M. Due to material escalations, increased construction costs, and increased marine mammal observation costs the project should be considered a \$5M project for budgeting purposes. The 100% design and cost estimate is scheduled to be completed by early January 2021, but is currently running ahead of schedule.
- The Army Corps of Engineers (ACOE) permit and the National Marine Fisheries Service (NMFS) Incidental Harassment Authorization (IHA) are both tracking towards being approved by February or March 2021.
- The ACOE permit once issued should be valid for five years with the potential for extending if necessary, usually an additional year at a time.
- The NMFS IHA once approved will be valid for only one year with the potential for extending one additional year if necessary. It should be noted an approved IHA is a requirement for issuance of the ACOE permit so putting review of the IHA on hold would also put review of the ACOE permit on hold. That also means that if an approved IHA expires then an approved ACOE permit is no longer valid.

I will continue to keep you informed as the design and permitting progresses.

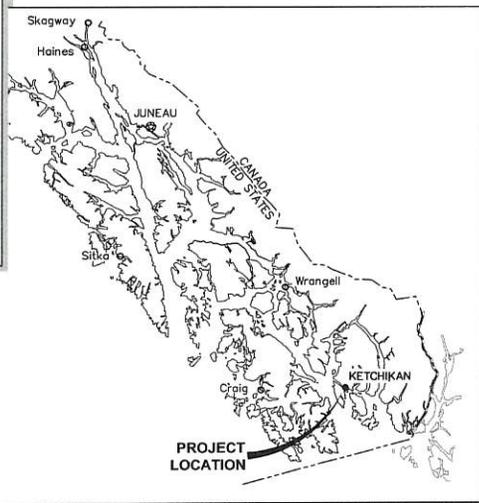
# CITY OF KETCHIKAN

## BERTH III MD NO. 2, 3 AND 4

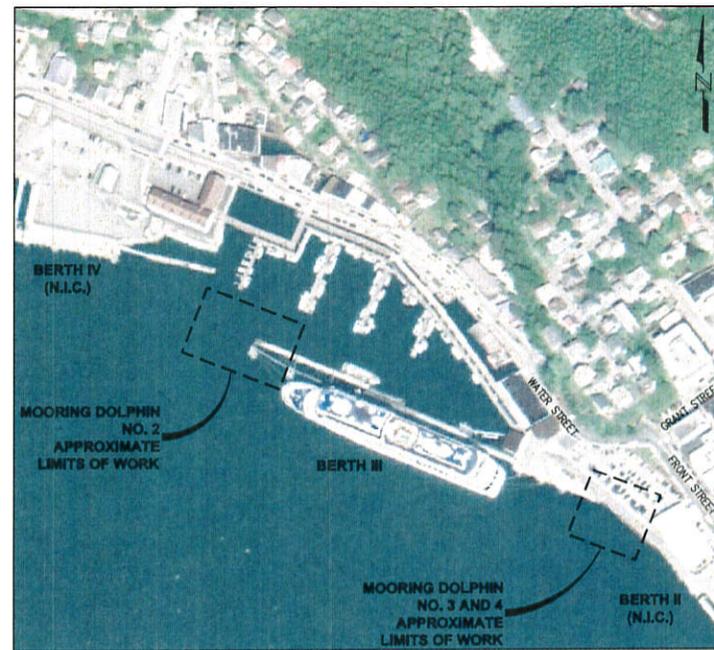
### 60% SUBMITTAL



**ALASKA KEY MAP**



**VICINITY MAP**



**LOCATION MAP**  
(EXISTING CONDITIONS)

TIDAL DATA	ELEV. (FT)
HIGHEST OBSERVED WATER LEVEL (12/2/1967)	+21.31
MEAN HIGHER HIGH WATER	+15.45
MEAN HIGH WATER	+14.55
MEAN SEA LEVEL	+8.07
MEAN TIDE LEVEL	+8.06
MEAN LOW WATER	+1.57
MEAN LOWER LOW WATER	0.00
LOWEST OBSERVED WATER LEVEL (12/14/2008)	-5.27

60% SUBMITTAL

**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

TITLE: **TITLE SHEET AND TIDAL DATA**

DESIGNED BY:	TWO	PROJECT NO:	204031.01	SHEET NO:	<b>G1.01</b>
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020		
CHECKED BY:		SCALE:	NTS		

PND INCORPORATED 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.

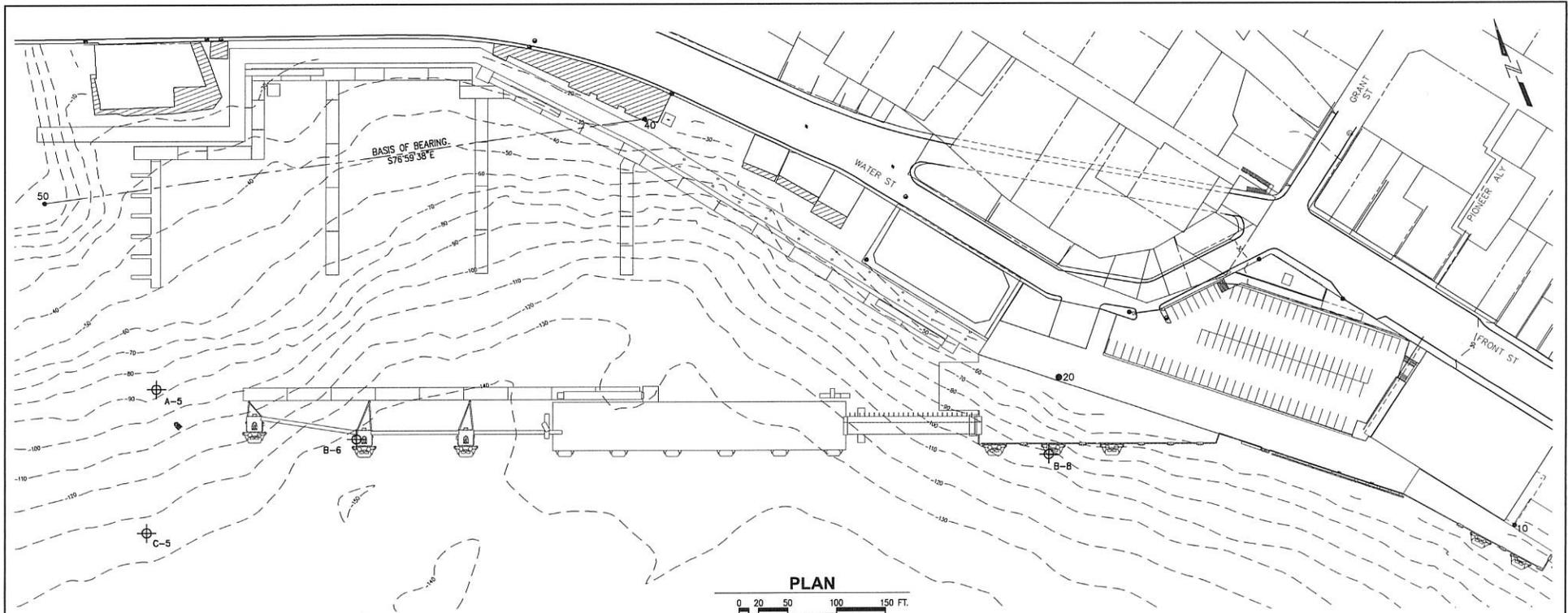
REVISIONS		
REV	DATE	DESCRIPTION

9/16/20 Drawings 2020\204031 - KTN\_B3\_Rev\_M0\_and\_Baldris\0325\_Submittal\204031\_01-G1.01.dwg





8/19/20 Drawings 2020\204031 - KTM, B3 New MD and Berths\60% Submittal\204031-01-G1.03.dwg



**PLAN**



**LEGEND**

● FOUND MONUMENT	— WATER VALVE
○ FOUND ALUMINUM CAP	— FIRE HYDRANT
● FOUND CONTROL POINT	— WATER VAULT
● SET NAIL	— PHONE MANHOLE
● SANITARY SEWER MANHOLE	— PHONE BOOTH
⊙ UTILITY VAULT	— MAIL BOX
— STORM DRAIN CATCH BASIN	— SPOT ELEVATIONS
— STORM DRAIN MANHOLE	— DECORATIVE FENCE
□ STORM DRAIN HOLE	— CHAIN LINK FENCE
⊕ ELECTRIC TRANSFORMER	— O H E OVERHEAD ELECTRIC
⊙ ELECTRIC MANHOLE	— GUARD RAIL
⊕ LIGHT POLE	— PROPERTY LINE
— POWER POLE	— WOOD DECKING
○ PILE	— PAVED AREA
⊗ PILE CAPS	— CONCRETE AREA
— STREET SIGN	— APPROX. BOREHOLE LOCATION. SEE BID PROJECT MANUAL BACKGROUND DRAWINGS FOR MORE INFORMATION.
⊙ TRAFFIC SIGNAL	

**NOTES:**

- 1) VERTICAL DATUM FOR THIS DRAWING IS MEAN LOWER LOW WATER (MLLW = 0.0').
- 2) BASIS OF VERTICAL DATUM FOR THIS DRAWING IS FROM TIDAL BENCH MARK "NO. 37 1956" ELEVATION 35.09' MLLW (SEE NOTE 1), LOCATED ON TOP OF A CONCRETE RETAINING WALL NEAR THE U.S.C.G. ADMINISTRATION BUILDING IN KETCHIKAN, ALASKA. FOR FURTHER DESCRIPTION AND INFORMATION REFER TO THE NOAA WEB SITE STATION I.D. "9450480".
- 3) BASIS OF BEARING FOR THIS DRAWING IS S76°59'38"E BETWEEN PND CONTROL POINTS 40 AND 50. SAID BEARING IS A ALASKA STATE PLANE NAD 83 ZONE 1 GRID BEARING DERIVED BY GPS STATIC OBSERVATIONS.
- 4) BASIS OF COORDINATES FOR THIS DRAWING IS CONTROL POINT 50, WHICH IS A NAD 83 ALASKA STATE PLANE ZONE 1 VALUE. THE COORDINATE FOR POINT 50 WAS DERIVED BY GPS STATIC OBSERVATIONS BETWEEN CONTROL POINT 50 AND BENCH MARK NO. 37 (SEE NOTE 2) WITH A NGS PUBLISHED VALUE OF 5519°58.65991" LATITUDE, 131°37'31.82053" LONGITUDE. ALL OTHER DISTANCES AND COORDINATES HAVE BEEN SCALED TO GROUND VALUES.
- 5) NO UNDERGROUND UTILITIES WERE LOCATED FOR THIS DRAWING. ONLY ABOVE GROUND UTILITY STRUCTURES HAVE BEEN LOCATED AT THIS TIME.
- 6) CONTOURS ARE IN FEET, WITH TWO FOOT INTERVALS.
- 7) ORIGINAL FIELD DRAWING PERFORMED JUNE 18-21 & JULY 20-23, 2005. REFER TO ORIGINAL SURVEY DRAWING IN PROJECT MANUAL REFERENCE DRAWINGS.
- 8) PROPERTY LINES SHOWN WHERE TAKEN FROM THE CITY OF KETCHIKAN GIS DRAWING AND ARE APPROXIMATE. NO BOUNDARY DRAWING HAS BEEN PERFORMED AT THIS TIME TO VERIFY PROPERTY LINES.

**PROJECT CONTROL**

PT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10	1287228.821	3106100.544	24.19	SET SURVEY NAIL
20	1287539.826	3105721.254	24.29	SET SURVEY NAIL
40	1287941.260	3105421.122	22.83	SET SURVEY NAIL
50	1288080.684	3104817.505	20.01	SET SPIKE

**60% SUBMITTAL**

**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

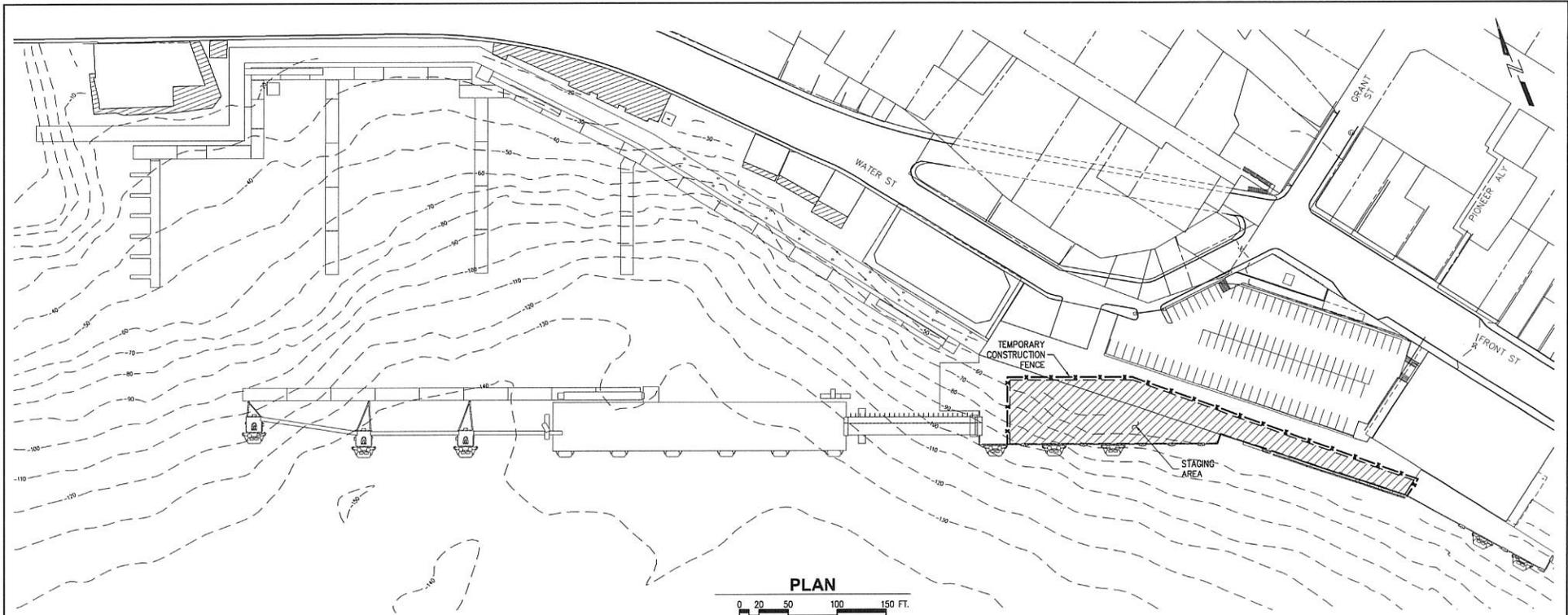
**PROJECT CONTROL PLAN AND  
GEOTECHNICAL BOREHOLE LOCATIONS**

REV	DATE	DESCRIPTION

DESIGNED BY:	TWO	PROJECT NO.:	204031.01	SHEET NO.:	<b>G1.03</b>
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020		
CHECKED BY:		SCALE:			



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**PLAN**



**STAGING AND SECURITY NOTES**

**GENERAL**  
Contractor may utilize the areas designated for staging and lay down during construction of the project.

Construction access and lay down areas shall be protected by the Contractor against any damage from the construction activities. Any damage to these areas incurred during construction shall be repaired and restored to its original condition. Such repair and restoration shall be done by the Contractor at no cost to the Owner and be subject to approval by the Engineer.

**FENCING**  
The Contractor shall be responsible for fencing the site to prevent public entry into the site and Contractor's own security. Minimum 6' wide walkway shall be maintained on pier.

**SIGNS**  
Place construction signs and barricades as required preventing public entry into the site.

**LOAD LIMITATIONS**

- 1. Area 1 - TBD
- 2. Area 2 - TBD

Contractor shall be responsible for determining capacity of structure at each area. Heavier construction equipment and stockpiled material may be supported on cribbing, which transfers load directly to the pile caps in Areas 1 and 2. A detailed plan on the method of application and limits of such loading shall be prepared and stamped by a registered engineer, licensed in the state of Alaska, retained by the Contractor. This plan shall be submitted to the Engineer for review at least four weeks in advance of intended use. Plans are available for viewing at the office of the Project Engineer. Existing Berth II structure will be furnished by the Owner upon request of prospective bidders. Any damage resulting from Contractor use shall be repaired to the satisfaction of the Engineer at no cost to the Owner.

**ENGINEER'S OFFICE**  
The Contractor shall, as part of the work, supply an office space for the on-site Engineer (Owner's representative). The office shall be located in the designated project staging area. See Special Conditions for additional information.

**LEGEND**

- STAGING AREA
- TEMPORARY CONSTRUCTION FENCING

**60% SUBMITTAL**

**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

**STAGING AND SECURITY PLAN NOTES**

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED BY:	TWO	PROJECT NO:	204031.01	SHEET NO:	<b>G1.04</b>
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020	NTS	
CHECKED BY:		SCALE:			

9/21/20 Drawings 2020 204031 - KTR E3 New MD and Bidders' 60% Submittal 204031.01 - G1.04.dwg



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**STRUCTURAL GENERAL NOTES**

The following General Notes are applicable and shall be considered part of this specification:

**APPLICABLE CODES AND STANDARDS**

1. International Code Council (ICC), "International Building Code (IBC) 2012".
2. American Society for Testing and Materials (ASTM) Standards, current edition.
3. American Institute of Steel Construction (AISC), "Specification for Structural Steel Buildings" (AISC 360-10).
4. American Institute of Steel Construction (AISC), "Steel Construction Manual" (AISC 325-11)
5. American Welding Society (AWS), "D1.1 Structural Welding Code - Steel, current edition".
6. American Concrete Institute (ACI), "ACI Manual of Concrete Practice, current edition".
7. American Concrete Institute (ACI), "Building Code Requirements for Structural Concrete" (ACI 318-11).

The information contained in these General Notes is in addition to the details and notes provided on the individual plan sheets. In case of conflict between notation in the above references, these General Notes, and notes and details on individual sheets, the following priority shall be followed:

1. All project permit requirements.
2. Notes on individual plan sheets.
3. Details and callouts on individual plan sheets.
4. These General Notes.
5. Local Codes.
6. The specifications and standards listed above in order of appearance.

**DESIGN CRITERIA**

**DESIGN GRAVITY LOADS:**

- Dead Loads - Weight of all materials
- Live Loads - Uniform Load = 60 psf
- Concentrated = 1,000 lbs (Catwalk Only)
- Snow Loads - Uniform Load = 55 psf

**WIND DESIGN INFORMATION:**

- I = 1.0
- Risk Cat. II
- Basic Wind Speed  $V_{30}$  = 142 mph, Exposure C

**SEISMIC DESIGN INFORMATION:**

Seismic loads do not control mooring dolphin nor ballard design and are excluded from this design.

**CURRENT (FIXED) STRUCTURES:**

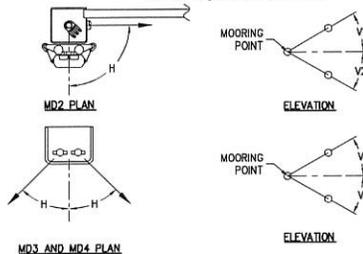
- Return Period = 100 years
- V = 2 knots

**VESSEL CRITERIA:**

- Length - 1100 feet
- Draft - 28 feet
- Beam - 136 feet
- Broadside Sail Area - 150,600 square feet
- End Stall Area - 23,600 square feet
- Displacement Tonnage - 83,000 TONNES (143,300 kips)
- Approach Velocity - 1.74 feet / sec.
- Approach Angle - 10 degrees
- Perpendicular Approach Velocity - 0.30 feet / sec.

**MOORING DOLPHIN:**

- Mooring Dolphin No. 2 (MD2) - 500 kips net line pull at the following angles:  
H = 90 degrees, V1 = 30 degrees, V2 = 5 degrees
- Mooring Dolphin No. 3 (MD3) - 500 kips net line pull at the following angles:  
H = 60 degrees, V = 30 degrees



**BERTHING LOAD:**

- Normal Berthing Reaction = 290 kip
- Abnormal Berthing Reaction = 370 kip

**LOAD COMBINATIONS USING ALLOWABLE STRESS DESIGN**

LOAD COMBINATION	D	L	S	W (STRENGTH LEVEL)	C (SERVICE LEVEL)	Be OR M (SERVICE LEVEL)
1	1.00					
2	1.00	1.00			1.00	1.00
3	1.00		1.00			
4	1.00	1.00	0.70		1.00	
5	1.00			0.60	1.00	1.00
6	1.00	0.75	0.75	0.45	0.75	0.75
7	0.60			0.60	1.00	1.00
8	0.60					

**LOAD COMBINATIONS USING LOAD AND RESISTANCE FACTOR DESIGN**

LOAD COMBINATION	D	L	S	W (STRENGTH LEVEL)	C (SERVICE LEVEL)	Be OR M (SERVICE LEVEL)
1	1.40					
2	1.20	1.60	0.50			
3	1.20	1.00	1.60			
4	1.20	1.00	0.50	1.00	1.60	1.60
6	0.09			1.00	1.60	1.60
7	1.20	1.60			1.20	1.60

LOAD COMBINATIONS PER ASCE 7-10 AND UFC 2017

**CATHODIC PROTECTION:**

Provided by galvanization and paint system. After 10 years owner inspect and provide anodes if necessary.

**NON-SLIP SURFACES:**

Provided by thermal spray. Regularly inspect and reapply if necessary. If additional traction is required for the drive lane of the transfer bridge, consider adding a three foot width of expanded metal along each wheel path for the full length of the bridge.

**MATERIALS AND CONSTRUCTION**

**GENERAL**

All material and equipment incorporated into this project shall be new unless otherwise noted on the plans. Material not specifically noted in these General Notes or elsewhere on the drawings shall be submitted by the Supplier for approval by the Engineer. Approval will be based on conformance to current standards utilized by the Owner. All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

**SURVEYS**

The Contractor shall layout the work from established horizontal and vertical control points indicated on the drawings and shall be responsible for all required measurements taken from these points.

**STRUCTURAL STEEL**

Wide Flange Shapes shall conform to A992 Grade 50.  
Plate shall conform to A572 Grade 50, unless otherwise noted.  
Flotbar shall conform to ASTM A36.  
Rectangular and Square HSS shall be ASTM A500 Grade B.  
Pipe sections with 12-inches O.D. or less shall conform to ASTM A53 Grade B, Type E or S.  
Angles shall conform to ASTM A36 at a minimum.

All steel to be welded shall have a carbon equivalency (CE) less than 0.45 based on the following equation:

$$CE = \frac{C}{6} + \frac{Mn}{16} + \frac{Si}{5} + \frac{Cu}{15} + \frac{Ni}{15} + \frac{V}{15}$$

**BOILTS AND OTHER HARDWARE**

All connecting bolts for steel to steel shall be ASTM F3125, Grade A325 with threads excluded from the shear plane. All steel to concrete and anchor bolts shall be ASTM F1554, Grade 55, or as specified on the drawings. All other bolts shall be ASTM A307 with heavy hex nuts or as otherwise shown on the drawings. All bolts shall be galvanized, unless otherwise noted. For bolts in treated wood, swab field-drilled bolt holes with preservative before installing bolts.

All stainless steel bolts, screws, nuts, washers, piano hinge rods and miscellaneous hardware called out as stainless steel (S.S.) shall be Type 316.

Washers are required under both head and nut of all bolts unless otherwise noted. Cut washers shall be 1/4-inch thick plate with diameter to match equivalent malleable iron washer. Cut washers or economy heads are required wherever bolt heads or nuts bear against wood.

Threaded sleeves shall have compatible threads to the fastener being attached. Sleeves shall be able to develop the full strength of the fasteners being attached.

**STEEL WELDING**

All field and shop steel welding shall conform per AWS D1.1 Structural Welding Code - Steel, current edition.

Deposited filler metal shall meet Charpy requirements of 20 ft.-lbs. at -20 degrees F and have chemistry similar to the base metal as approved by the Engineer. Filler metals shall only be used in welding positions recommended by the manufacturer. Welding consumables shall be stored and the condition shall be maintained per AWS Section 5.

Pre-heat shall be based on material grade and thickness shown herewith, per AWS tables. Uniformity of pre-heat shall conform to AWS stipulations.

Welding personnel shall be qualified per AWS to weld procedures and weld positions necessary for the joint details specified herewith. All steel fabrication shop drawings shall reference the weld procedure specification for each weld detailed. Weld procedure specifications shall be submitted with the shop drawings. Submittals verifying welder qualifications must be transmitted to the Owner for approval prior to any welding.

No welding through galvanized coating shall be performed. The galvanizing within 2" of the weld shall be removed prior to welding and repaired as discussed in coating repair.

All welds shall be visually inspected to comply with the visual inspection criteria, for statically loaded non-tubular and tubular connections, per AWS Section 6.

Where noted, non-destructively test welds using UT, RT, MT methods, per AWS Section 6. Acceptance criteria shall be for non-cyclic loading. Welds failing shall be repaired at the Contractor's expense, which will also include all costs for retesting, to achieve passing inspection test.

**GALVANIZING**

All bolts, nuts, washers, sleeves, weldments, shapes, and other miscellaneous metals and hardware shall be hot-dip galvanized per ASTM A123 or A153 as appropriate, unless otherwise noted.

**SPRAY METALIZING**

Spray metalize with zinc per the Steel Structures Painting Council (SSPC) Guide No. 23. A minimum dry coating thickness of 6 mils is required for steel that is at or above El. +21.00'. For steel located below El. +21.00', a minimum dry coating thickness of 12 mils is required. Contractor shall mask off all areas that will be field welded such as pile, plate or stud locations. Areas of steel encased in concrete within 2" of any concrete edge may be left bare.

Spray metalizing may also be used as an alternate to hot-dip galvanizing.

The following items shall be spray metalized:

1. Mooring Dolphin Pile Cap
2. Other specifically noted items

**NON-SLIP SURFACE**

All non-slip/non-skid steel walking surfaces noted shall be thermal sprayed with DURALCAN 90/10 as manufactured by AlcoaTec, Traverse City, MI (231-941-4111), or approved equal, to obtain a slip resistant surface. Prepare surface and apply per manufacturer's recommendations. Coating thickness shall be 10 mils minimum. Seal and top coat per manufacturer's recommendations. Submit samples of surface texture for approval to Engineer.

The following items shall have non-slip surfaces unless otherwise noted:

1. Transition plates
2. Mooring Dolphin attachment plates
3. Breastling and mooring dolphin top plates.
4. Other specifically noted items.

**COATING REPAIR**

All damaged galvanizing and spray metalizing, including that removed for welding, shall be repaired per ASTM A780 and modified as follows:

Repair using zinc sticks to a minimum thickness of 3 mils, followed with two top coats of zinc rich paint or repair by spray metalizing as described in these notes. Total repair thickness shall be a minimum 12 mils.

60% SUBMITTAL

PROJECT: **CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

TITLE: **STRUCTURAL GENERAL NOTES**

DESIGNED BY: **TWO** PROJECT NO: **204031.01** SHEET NO:  
DRAWN BY: **GRD** DATE: **SEPTEMBER 22, 2020**  
CHECKED BY: **SCALE:** **NTS**

**G2.01**

REV	DATE	DESCRIPTION

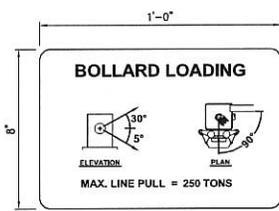
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9/19/20 2:00 PM KTN B3 New MD and Ballards V03X Submittal 204031.01-G2.01.dwg

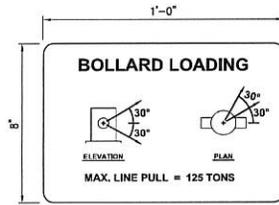


**SIGNAGE**

Bollard loading sign shall generally conform visually and dimensionally as detailed on 'bollard load limit sign' (this sheet). Material for sign shall be aluminum, stainless steel or approved alternative suitable for the marine environment. Sign detailing shall be engraved or an approved equal.



**MOORING DOLPHIN 2  
BOLLARD LOAD LIMIT SIGN**



**MOORING DOLPHIN 3 & 4  
BOLLARD LOAD LIMIT SIGN**

**UHMW**

All Ultra High Molecular Weight (UHMW) Polyethylene shall be equivalent to Tivar® UV Resistant or approved equal, and be suitable for the marine environment. UHMW components shall be black in color, unless otherwise noted. Pressure fit bushings shall be manufactured from UHMW.

**UTILITY ATTACHMENTS**

Utilities and electrical connections shall be attached to structures with Unistrut or approved equal. Unistrut shall be model P1000 or as required by electrical requirements and shall be galvanized or painted unless otherwise noted.

**SUBMITTALS**

The following is a partial list of required submittals for this project. The Engineer may require additional submittals.

1. Steel certification for all steel.
2. Coating certification for all steel.
3. Steel coating repair methods.
4. AWS Weld Procedure Specifications for all welding.
5. AWS Welder Qualification records for welders working on this project.
6. Steel fabrication shop drawings.
7. Precast concrete panel shop drawings.
8. CIP concrete mix, precast concrete mix and grout mix.
9. Reinforcing steel and prestressing steel certification.
10. Reinforcing steel shop drawings.
11. Expansion joint cut sheets.
12. Non Slip Surface sample.
13. Signage.

**AS-BUILT RECORDS**

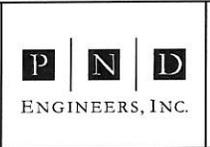
The Contractor shall maintain an updated set of red-line as-built drawings at the project site. The as-built drawings shall include all surveyed dimension for new work items tied horizontally and vertically to existing monuments or prominent features. As-built drawings shall be submitted upon request to the Engineer at anytime throughout the project and upon substantial completion.

9/16/20 2:00 PM 2020\204031 - KTN B3 New MD and Bollards\BOS Submittal\204031-01-G2.02.dwg

60% SUBMITTAL

**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

**STRUCTURAL GENERAL NOTES**



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REVISIONS		
REV	DATE	DESCRIPTION

PROJECT:			
<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>			
TITLE:			
<b>STRUCTURAL GENERAL NOTES</b>			
DESIGNED BY:	TWB	PROJECT NO.:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
SHEET NO.:			<b>G2.02</b>

**PILE NOTES**

**PILE TIPS VALUE ENGINEERING**

The Contractor may submit, after award, alternative designs and/or construction details of the pile tips where it may result in reduced project cost without loss of essential function or project betterment without cost reduction.

The following shall be the sequence of events for submitting a Value Engineering (VE) submittal:

1. Award Contract.
2. Submit Conceptual Value Engineering concepts for review and general acceptance by City and Engineer. This shall include enough information to determine all components that will be incorporated into the formal VE submittal and that the submittal will adhere to the guidelines described in the plans.
3. City and Engineer Review.
4. Issue change order if VE proposal is in the best interest of the City.
5. Contractor proceeds with work.

**STRUCTURAL STEEL**

**STEEL PIPE PILES**

Steel pipe pile shall conform to ASTM A252, Grade 3, except that minimum yield strength shall be 60 ksi, unless otherwise noted. All steel pipe piles shall be furnished, complete with pile tips, in the lengths indicated in the Pile Schedule. Piles shall be delivered full length or field spliced in accordance with approved welding and galvanizing repair procedures. Final ordered length of each pile shall contain no more than one section less than 40'. Spiral welds are allowed but shall be without coil butt splices. Piles with different yield strength shall be tagged.

Piles shall have a carbon equivalency less than 0.45 based on the following:  
 $CE = C + (Mn + Si) / 5 + (Cr + Mo + V) / 5 + (Ni + Cu) / 15$

The outside diameter shall not vary more than 1%± the outside diameter shown on the plans. The straightness of the pile shall not vary more than 0.5 inch:40 foot length of the pile.

**STRUCTURAL STEEL**

Plate and Flatbar shall be A572 Grade 50, unless otherwise noted.

**GALVANIZING**

All steel pile, including Pin Piles shall be hot-dipped galvanized per ASTM A123 or A153 after fabrication unless otherwise noted. All piles shall be galvanized full length.

**STEEL WELDING**

See Structural General Notes.

**COATING REPAIR**

See Structural General Notes.

**GROUT**

Grout cement shall be type II and have a minimum 28-day unconfined compressive strength of 6000psi. Grout may be neat or have aggregate.

**SURFACE RUBBLE**

The Contractor is responsible to visit the site and make own assessment of pile driving interferences. Surface rubble includes but is not limited to broken timber piles, concrete debris, abandoned vessel items, and a variety of other debris. A dive survey video of the project site is included in the Project Manual.

**PILE INSTALLATION**

**GENERAL**

All pile installations shall be conducted with the Engineer present. The Contractor shall assist the Engineer in monitoring the pile installation. The Contractor shall mark each pile with one-foot increments, with every five-foot increment numbered. The marks shall be visible and readable from all sides of the pile. All piles shall be driven into bedrock with an impact hammer.

All piles shall be initially driven to refusal with a vibratory hammer. All piles shall then be driven with an impact hammer appropriately sized for that pile. Impact hammer driving shall continue until the pile is firmly seated into bedrock and refusal occurs as determined by the Engineer.

Piles hitting obstacles, misaligned piles and piles that have not achieved minimum penetration prior to refusal shall be pulled by the Contractor and reinstalled at no additional cost to the Owner. Minimum penetration requirement shall be determined solely by the Engineer. Piles with less than minimum required penetration may require an alternative method of installation.

The Contractor shall assist the Owner in monitoring sea level during the installations of pre-selected piles. If signs of injury or death of fish are discovered during pile driving activities, the pile driving activities shall cease and NMFS (907-586-7643) and the Coast Guard (33-2712) shall be contacted immediately.

A 50-meter safety zone shall be established around the pile-driving site and a person designated to watch for marine mammals shall scan the safety zone continuously prior to and during pile driving to determine whether marine mammals are present. Pile driving shall not begin until the safety zone is clear. If an animal is in the safety zone before initiation of the pile driving activity on any given work day, operations shall be delayed until the animal has moved outside the safety zone. If an animal enters the safety zone while pile driving is occurring, operations shall be stopped immediately until the animal has moved beyond the range of the safety zone.

The Contractor shall assist the Owner in monitoring adjacent structures for damages during the pile driving operations. If damages to the structures are detected, the pile driving operation shall be halted immediately. Photos of the structures shall be taken before and after the operation by the Owner and Contractor.

**BEARING PILES**

All bearing piles shall be within 2 inches of the plan location at cutoff elevation. All bearing piles, except for those along the dock face, may be placed within 5 feet of the plan location at bedrock. The bearing piles along the dock face may be placed 1-foot seaward of the plan location at bedrock and 5 feet in any other direction.

**BOLLARD PILES**

All bollard piles shall be within 2 inches of the plan location at cutoff elevation. All bollard piles may be placed 1 foot seaward of the plan location and 5 feet in any other direction at bedrock.

**FENDER PILES**

All fender piles shall be installed plumb in such a manner to allow the installation of the fender panel without binding. Piles shall also be installed within a 2 inches of the plan location at cutoff elevation.

**IMPACT HAMMER**

The impact hammers shall be selected by the Contractor and approved by Engineer prior to mobilizing to the site. The impact hammer shall be single acting and shall be adequately sized to achieve the stated ultimate bearing capacities on the pile schedules. Pile ultimate bearing capacities shall be determined by the following equation:

$$P_{ULT} = \left( \frac{12E}{S+0.1} \right) \left( \frac{W_c}{W_c+W_p} \right)$$

- P<sub>ULT</sub> = Ultimate capacity, pounds
- E = Hammer energy, foot-pounds
- S = Set, inches per blow
- W<sub>c</sub> = Weight of ram
- W<sub>p</sub> = Weight of cap
- W<sub>p</sub> = Weight of pile

Any hammer that causes damage to the piles during driving operations shall be substituted with an acceptable alternate hammer at no additional expense to the Owner. Impact hammer shall be supplied with new cap block cushions, which shall be changed at the manufacturer's recommended cycle. The Contractor's driving plan shall include manufacturer's recommendations and information on hammer cushion.

**PILE CUTOFFS**

Cutoff steel piles at the elevations indicated on the plans. The top of all piles shall be cut off if damaged after driving. Unused pipes and pipe cutoffs greater than 10 feet shall become the property of the Owner. The Contractor shall remove the pipes from the Project site and shall neatly stack the pipe, as approved by the Engineer, at the upland storage area. Refer to the project manual for the upland storage location.

**DRILLING DISCHARGE**

Discharge of sediment into water produced during drilling shall occur a minimum of 20-feet below the surface of water.

**SUPPLEMENTAL INFORMATION**

Rock samples from the geotechnical investigation are available for viewing at the PND Seattle Office.

**SUBMITTALS**

The following is a partial list of required submittals for this project. The Engineer may require additional submittals.

1. Manufacturer's Mill Certificate: Steel Certification including chemistry, yield strength, and mill numbers.
2. Shop Drawings for all fabricated items
3. Welding procedures. All weld metal proposed to be used in the shop or in the field shall be submitted and approved for use prior to construction. The submittal shall contain all required information and the manufacturer's recommendations for the use of the product on this Project.
4. Welder Certificates – Certify welders employed in the WORK with AWS qualifications within the previous 12 months.
5. Pile Installation Plan – Provide narrative and illustrations to fully describe complete installation plan. The plan shall address, as a minimum, all equipment, temporary pile support and template systems, survey control, sequence and method of installation.
6. Manufacturer's information on equipments intended for use, complete with satisfactory data to ensure properly suited for installation of pipe piles. The information shall include equipment specs, methods for all pile types and manufacturer's recommendations. The Contractor shall not mobilize drilling equipment and pile driving hammers and related equipment prior to receiving written review of the plan. All driving methods shall meet the requirements of the permits issued for this Project.
7. Galvanizing certificates verifying that coated material conforms to the Specifications.
8. Pile Location Survey – Plan locations of piles as driven shall be surveyed by the Contractor and a written as driven location plan of each pile shall be submitted to the Engineer within 72 hours of completion.
9. The Contractor shall size primary and secondary grout tubes for anticipated grouting pressures and available equipment. The Contractor shall submit grout tube size and material type, grout pump type, characteristics, and size for review and approval. Grout pump shall be outfitted for cold weather to prevent freeze up during grouting. (Below 32°F)
10. Contractor shall submit grout mix design for approval prior to grouting.

**60% SUBMITTAL**

**PROJECT: CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4**

**TITLE: PILE NOTES**

DESIGNED BY: TMO PROJECT NO: 204033.01 SHEET NO:  
 DRAWN BY: GRD DATE: SEPTEMBER 22, 2020  
 CHECKED BY: SCALE: NTS

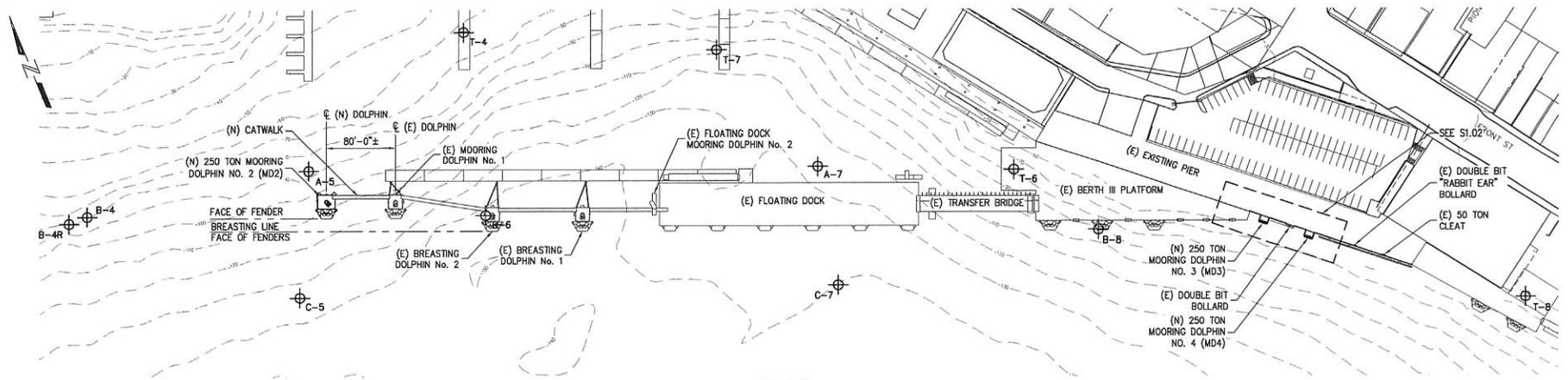
**G2.03**

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REVISIONS		
REV	DATE	DESCRIPTION

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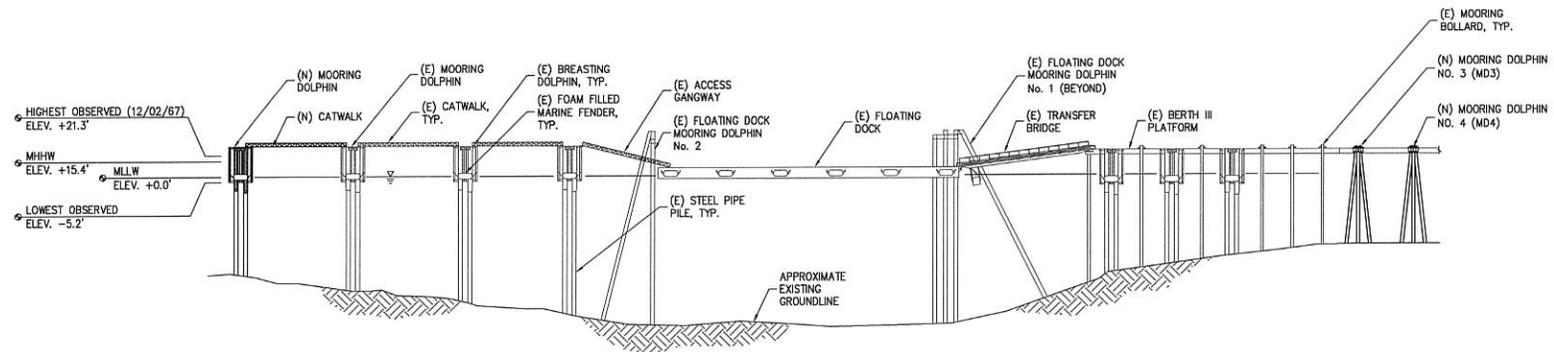




PLAN



LEGEND  
 APPROXIMATE BORE HOLE LOCATION



SOUTH ELEVATION



NOTES:  
 1) SOIL CONFIGURATION IS FOR ILLUSTRATION AND MAY NOT REPRESENT ACTUAL CONDITIONS.  
 2) SEE PILE SCHEDULE & DETAILS FOR PILE/BEDROCK INTERFACE REQUIREMENTS

60% SUBMITTAL

PROJECT: CITY OF KETCHIKAN  
 BERTH III MD NO. 2, 3 AND 4

TITLE: BERTH III  
 GENERAL ARRANGEMENT PLAN AND ELEVATION

DESIGNED BY: TMB PROJECT NO: 204031.01 SHEET NO:  
 DRAWN BY: GRD DATE: SEPTEMBER 22, 2020  
 CHECKED BY: SCALE: NTS **S1.01**

REVISIONS		
REV	DATE	DESCRIPTION

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 Drawn by: GRD



TBD

9/21/20 Drawings 2020 204031 - KTH\_B3 New MD and Batters\B3\Submitted\204031\_01-S1.02.dwg

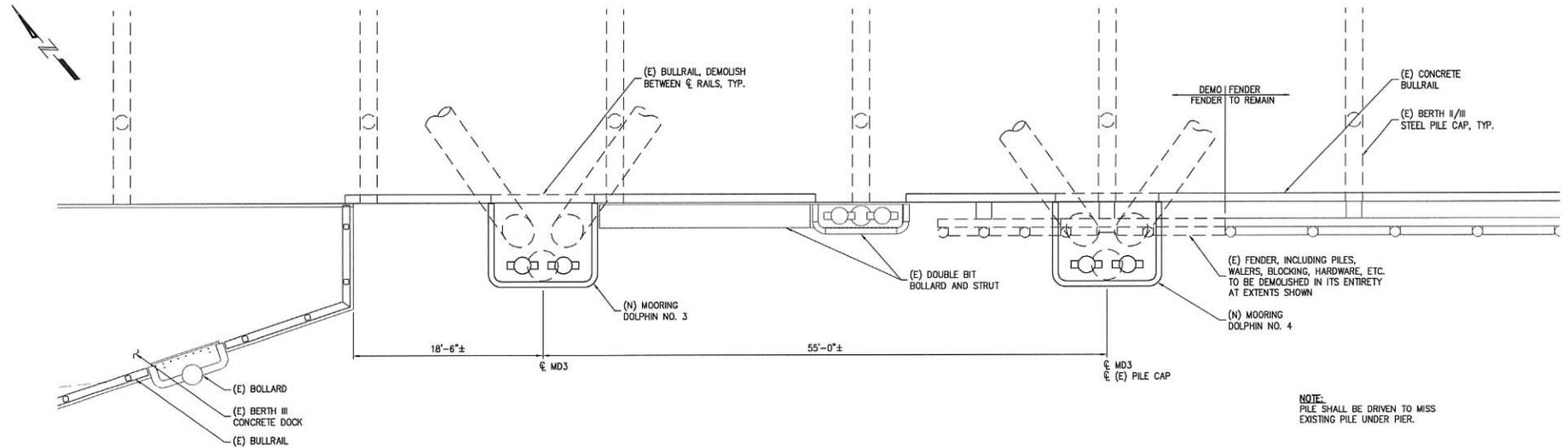


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REVISIONS		
REV	DATE	DESCRIPTION

PROJECT:	<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>		
TITLE:	<b>DOLPHIN NO. 2 PILE INSTALLATION TEMPLATE AND LAYOUT</b>		
DESIGNED BY:	TWO	PROJECT NO:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
			<b>S1.02</b>

60% SUBMITTAL



**NOTE:**  
PILE SHALL BE DRIVEN TO MISS  
EXISTING PILE UNDER PIER.



**DEMOLITION NOTES**

**GENERAL**  
The Contractor shall remove and dispose of the structures indicated on the plans, along with all miscellaneous items associated with these structures in their entirety. Salvaged items are listed on the plans. Refer to the project manual for the storage locations. Items not scheduled for salvage shall be properly disposed. Refer to permits for reporting requirements for disposal.

**PILES**  
The Contractor shall remove all piles with a vibratory hammer suitable for that type of operation and equipped with suitable jaws so that not to break the pile. Piles that are anchored or cannot be pulled without excessive breakage shall be cut off below mudline. Steel piles may be cut in length not less than 40 feet for transportation.

**UTILITIES**  
Contractor shall coordinate with appropriate utilities for removal, shutoff, etc. of all power, water, etc.

**CONCRETE REPAIR**  
No damage to main reinforcement is permitted. Concrete damage over 1/4 inch thickness shall be repaired with SIKA Top 122 Plus or approved equal. Surface to be repaired shall be sound and free of oil and other contaminants. The edge of patch shall be square cut and to a depth not less than 1/2 inch. Irregular and odd shaped repair areas shall not be used. Repair areas less than 12 inches apart shall be combined into one repair area. Contractor shall submit repair method and materials of repair for review and approval.

**STEEL COATING REPAIR**  
Damaged coating or field-cut steel shall be repaired with zinc stick galvanizing. Contractor shall submit repair method and materials of repair for review and approval.

**TIMBER**  
All damaged, cut or drilled areas remaining structurally sound shall be filed-coated with preservatives per AWWA M4.

**CONCRETE PAINT/SEALANT**  
Concrete paint/sealant shall be Chemprobe 668 Deck A Pell 40 or approved equal, applied by manufacturer's recommendations. Prior to applying concrete paint/sealant, exposed rebar or steel shall be repaired by 2 mils of Inemec Series 394 Perimeter Prime or approved equal, followed by 8 mils of Inemec Series N69 Epoxiline II or approved equal, both applied by manufacturer's recommendations. Submit applying method and material for review and approval.

**DISPOSAL**  
The Contractor shall submit a disposal plan for review and approval. The Contractor shall sign a notarized affidavit agreeing that pilings will only be reused in accordance with all existing local, state and federal laws and only if and after all local state and federal permits authorizing the use of piling has been obtained. The affidavit must be executed and a notarized copy submitted to the Corps for the record prior to commencement of any work on the site.

**PRECONSTRUCTION SURVEY**  
The Contractor shall assist the owner with a preconstruction survey of all adjacent properties prior to any work on site. The preconstruction survey shall include an extensive photographic and video documentation of the existing structural, cosmetic, plumbing and electrical condition for each adjacent building.

9/21/20 Planning 2020\204031 - KTN B3 New MD and Bollards\6025 Submitted\204031-01-S1.03.dwg



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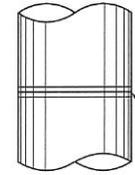
REVISIONS		
REV	DATE	DESCRIPTION

PROJECT:		<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>	
TITLE:		<b>DOLPHIN No. 3 AND 4 SITE PLAN</b>	
DESIGNED BY:	TWO	PROJECT NO.:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
SHEET NO.:			<b>S1.03</b>

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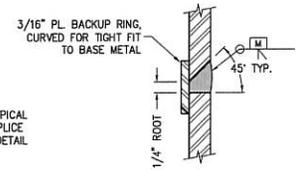
PILE SCHEDULE								
LOCATION	PILE ID	BATTER (V:H)	DIAMETER (IN)	THICKNESS (IN)	PILE TIP	TOTAL SUPPLY LENGTH (FT)	ULTIMATE CAPACITY (KIPS)	
							COMPRESSION	TENSION
MOORING DOLPHIN NO. 2	MD2-V	VERTICAL	48	1.5"	RA	175'	TBD	TBD
	MD2-NW	2:1	48	1"	RA	175'	TBD	TBD
	MD2-NE	2:1	48	1"	RA	180'	TBD	TBD
	FENDER (E)	VERTICAL	48	1"	BEARING	180'	TBD	TBD
	FENDER (W)	VERTICAL	48	1"	BEARING	180'	TBD	TBD
MOORING DOLPHIN NO. 3	MD3-V	VERTICAL	36	1"	BEARING	110'	TBD	TBD
	MD3-N	2:1	36	0.875"	RA	115'	TBD	TBD
	MD3-E	2:1	36	0.875"	RA	115'	TBD	TBD
MOORING DOLPHIN NO. 4	MD4-V	VERTICAL	36	1"	BEARING	110'	TBD	TBD
	MD4-N	2:1	36	0.875"	RA	115'	TBD	TBD
	MD4-E	2:1	36	0.875"	RA	115'	TBD	TBD

**LEGEND:**  
V = VERTICAL PILE  
N = NORTH BATTER PILE  
NE = NORTH EAST BATTER PILE  
NW = NORTH WEST BATTER PILE  
E = EAST BATTER PILE  
B = BEARING PILE TIP, SEE PILE TIP DETAILS  
RA = ROCK ANCHOR PILE TIP, SEE PILE TIP DETAILS  
HDG = HOT-DIP GALVANIZED, SEE GENERAL NOTES FOR SPECIFICATIONS  
NO COATING REQUIRED ON STEEL PIPE PILE  
BARE =



**PILE SPLICE**

TYPICAL FOR ALL FIELD PIPE PILE SPLICES (SHOP WELD, IF REQ'D. SIMILAR)



**TYPICAL PILE SPLICE WELD**

**NOTE:**  
1. TENSION CAPACITY TO BE FIELD VERIFIED BY ENGINEER. REFER TO GENERAL NOTES FOR IMPACT DRIVING REQUIREMENTS.  
2. ULTIMATE CAPACITY INCLUDES A MINIMUM FACTOR OF SAFETY EQUAL TO 2.0 FOR COMPRESSION AND 2.25 FOR TENSION.  
3. EACH PILE TIP SHALL BE EQUIPPED WITH AN APP OUTSIDE FLANGE CUTTING SHOE.

60% SUBMITTAL

**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

**PILE SCHEDULE, DETAILS  
AND WELD DETAILS**

DESIGNED BY: TWS PROJECT NO: 204031.01 SHEET NO:  
DRAWN BY: GRD DATE: SEPTEMBER 22, 2020  
CHECKED BY: NTS SCALE: NTS

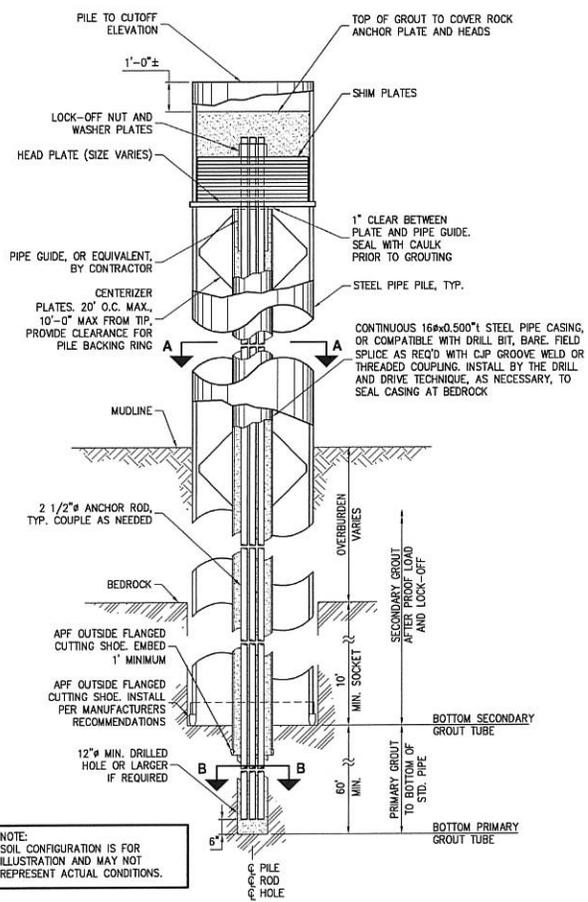
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REV	DATE	DESCRIPTION

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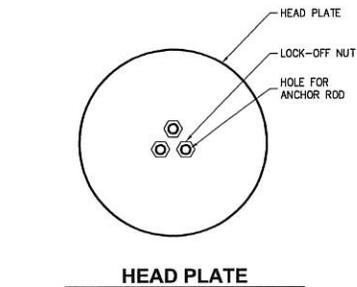
9/21/20 2020\204031 - KTN B3 New MD and Battered 60% Submittal 204031.01-S1.05.dwg



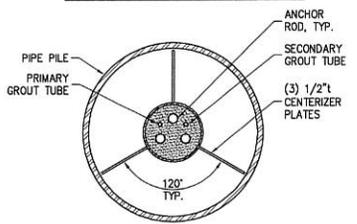
**ROCK ANCHOR PILE TIP DETAIL**

1. GROUT TUBES NOT SHOWN FOR CLARITY.
2. PILE SHOWN VERTICAL FOR CLARITY.
3. 48" PILE SHOWN, 36" PILE SIMILAR.
4. CENTRALIZERS AND SPACERS ON ANCHOR RODS NOT SHOWN FOR CLARITY.

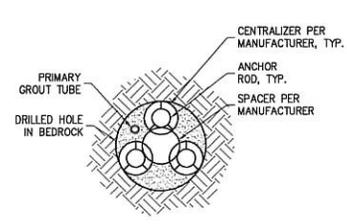
NOTE:  
SOIL CONFIGURATION IS FOR ILLUSTRATION AND MAY NOT REPRESENT ACTUAL CONDITIONS.



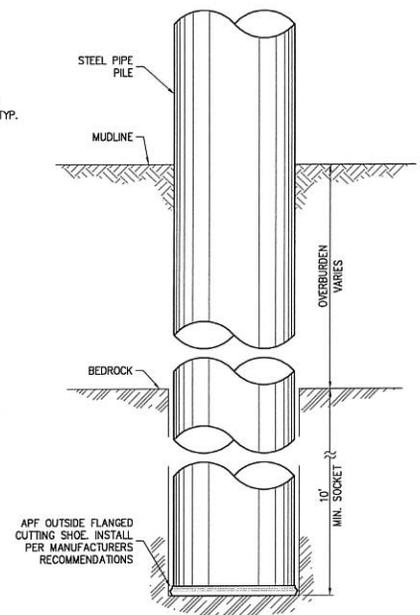
**HEAD PLATE**



**SECTION A-A**



**SECTION B-B**



**BEARING PILE PILE TIP DETAIL**

48" PILE SHOWN. 36" PILE SIMILAR.

**ROCK ANCHOR NOTES:**

1. THE INTENT OF THE ROCK ANCHOR IS TO PROVIDE TENSION AND SHEAR CAPACITY TO A PILE WHERE THERE IS INSUFFICIENT OR LOOSE OVERBURDEN.
2. TO CONFIRM BEDROCK IS REACHED, ALL TENSION PILES SHALL INITIALLY BE SOCKETED THE MINIMUM DISTANCE SHOWN ON ROCK ANCHOR PILE TIP DETAIL.
3. GROUT CEMENT SHALL BE TYPE II AND HAVE A MINIMUM 28-DAY UNCONFINED COMPRESSION STRENGTH OF 6,000 PSI. GROUT MAY BE NEAT OR HAVE AGGREGATE.
4. PRIMARY GROUT SHALL HAVE REQUIRED COMPRESSIVE CAPACITY OF 4,000 PSI MIN. PRIOR TO STRESSING ANCHOR ROD.
5. PRIOR TO SECONDARY GROUT PLACEMENT THE ANCHOR RODS SHALL BE PROOF LOADED TO 500 KIPS AND HELD ONE HOUR. REMOVE LOAD. RELOAD TO 475 KIPS AND LOCK OFF LOAD. PLACE SECONDARY GROUT.
6. ALL HEAD PLATES SHALL BE 100% UT TESTED BY STRAIGHT METHOD PER AWS D1.1. ANY DISCONTINUITY FOUND SHALL BE CONSIDERED REJECTABLE AND THAT PORTION OF PLATE SHALL NOT BE USED IN HEAD PLATES.
7. HEAD PLATES MAY BE BARE AND HOT-STICK GALVANIZED OR SPRAY-METALIZED AFTER INSTALLATION.
8. WITH ENGINEERS APPROVAL CONTRACTOR MAY PROVIDE ALTERNATE METHOD FOR CENTRALIZING PIPE CASING.
9. ANCHOR ROD CENTRALIZERS AND SPACERS PER MANUFACTURERS SPECIFICATIONS.
10. CLEAR COVER AND ANCHOR RODS SHALL BE 1-INCH MINIMUM.

**60% SUBMITTAL**

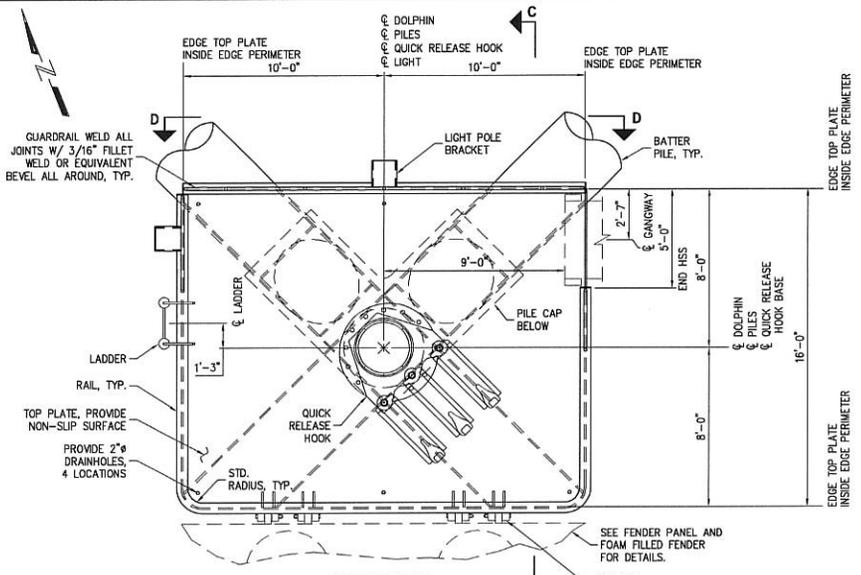
**CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

PROJECT:		<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>	
TITLE:		<b>PILE TIP DETAILS</b>	
DESIGNED BY:	TWO	PROJECT NO.:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
			<b>S1.05</b>

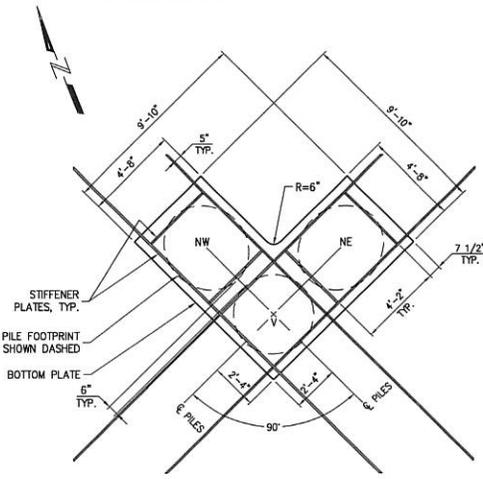


PND INCORPORATED IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY DRAWINGS ARE FOR USE ON THIS PROJECT ONLY 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

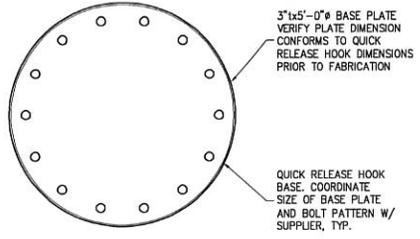


**MOORING DOLPHIN No. 2 PLAN**

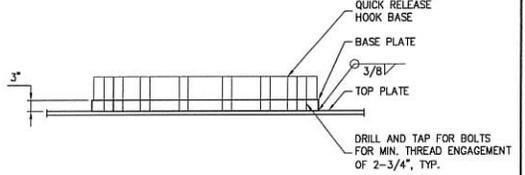


**PILE CAP PLAN**

**LEGEND**  
 V = VERTICAL  
 NE = NORTH EAST BATTER PILE  
 NW = NORTH WEST BATTER PILE

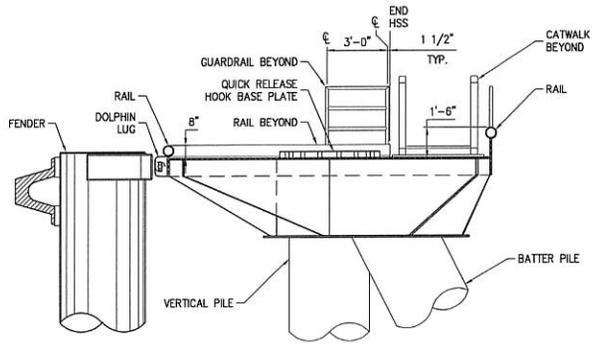


**PLAN**

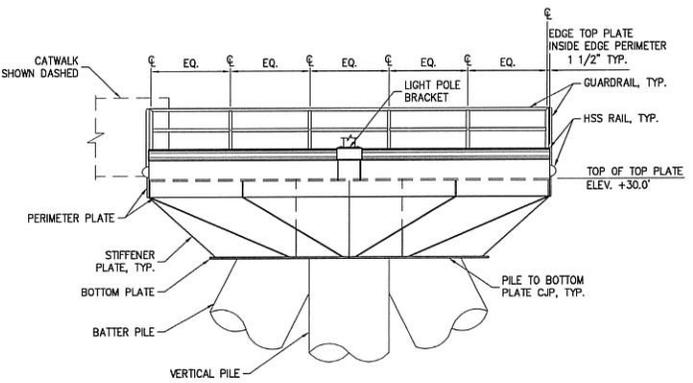


**ELEVATION**

**QUICK RELEASE HOOK BASE**



**SECTION C-C**



**SECTION D-D**

- NOTES:**
- SEE PILE SCHEDULE FOR PILE SIZE AND LENGTH.
  - ALL PILES SHALL BE LOCATED WITHIN 2" OF PLAN LOCATION AS INDICATED ON THE BOTTOM PLATE PLAN.
  - ALL PLATE IS 1" UNLESS OTHERWISE NOTED.
  - ALL JOINTS TO BOTTOM PLATE SHALL BE CJP.
  - ALL OTHER WELDS IN THE PILE CAP SHALL BE 1/2" FILLET ON ONE SIDE OR 5/16" FILLET BOTH SIDES.
  - IN ALL CASES THE EXTERIOR OF THE CAP IS WELDED. WELDMENTS ARE TOTALLY SEALED. (NO RAT HOLES OR DRAIN HOLES EXCEPT AS SHOWN).
  - ALL JOINTS SHALL BE WELDED CONTINUOUSLY ALL AROUND.
  - ALL BUTT JOINTS SHALL BE CJP.
  - ALL OTHER STEEL JOINTS SHALL BE WELDED WITH A 5/16" FILLET, OR EQUIVALENT GROOVE, OR APPROVED EQUAL UNLESS OTHERWISE NOTED.

**60% SUBMITTAL**

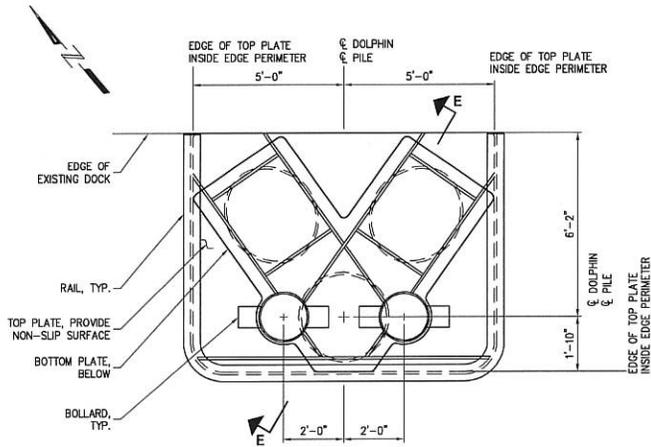
9/18/2020 204031-01-S2.01.dwg



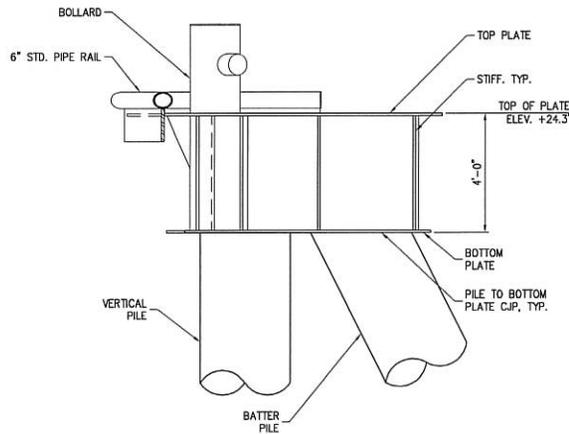
PND INCORPORATED IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY 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.

REVISIONS		
REV	DATE	DESCRIPTION

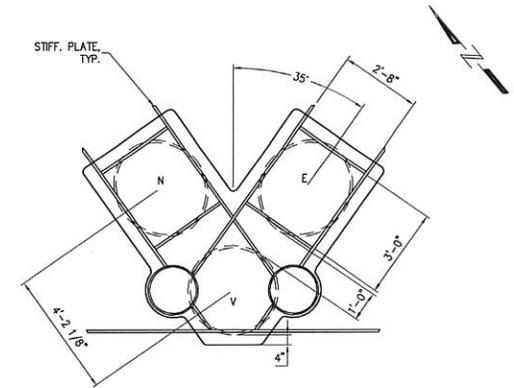
PROJECT:		<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>	
TITLE:		<b>MOORING DOLPHIN NO. 2</b>	
DESIGNED BY:	TMD	PROJECT NO:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
SHEET NO:			<b>S2.01</b>



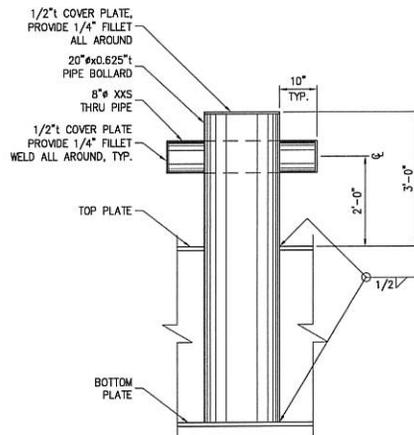
**MOORING  
DOLPHIN No. 3 AND 4 PLAN**



**SECTION E-E**



**PILE CAP PLAN**



**BOLLARD**

**LEGEND**

V	=	VERTICAL
N	=	NORTH BATTER PILE
E	=	EAST BATTER PILE

- NOTES:**
- SEE PILE SCHEDULE FOR PILE SIZE AND LENGTH.
  - ALL PILES SHALL BE LOCATED WITHIN 2" OF PLAN LOCATION AS INDICATED ON THE BOTTOM PLATE PLAN.
  - ALL PLATE IS 1" UNLESS OTHERWISE NOTED.
  - ALL JOINTS TO BOTTOM PLATE SHALL BE C.P.
  - ALL OTHER WELDS IN THE PILE CAP SHALL BE 1/2" FILLET ON ONE SIDE OR 5/16" FILLET BOTH SIDES UNLESS OTHERWISE NOTED.
  - IN ALL CASES THE EXTERIOR OF THE CAP IS WELDED. WELDMENTS ARE TOTALLY SEALED. (NO RAT HOLES OR DRAIN HOLES EXCEPT AS SHOWN).
  - ALL JOINTS SHALL BE WELDED CONTINUOUSLY ALL AROUND.
  - ALL BUTT JOINTS SHALL BE C.P.
  - ALL OTHER STEEL JOINTS SHALL BE WELDED WITH A 5/16" FILLET, OR EQUIVALENT GROOVE, OR APPROVED EQUAL UNLESS OTHERWISE NOTED.

**60% SUBMITTAL**

**PROJECT: CITY OF KETCHIKAN  
BERTH III MD NO. 2, 3 AND 4**

**TITLE: MOORING DOLPHINS NO. 3 AND 4**

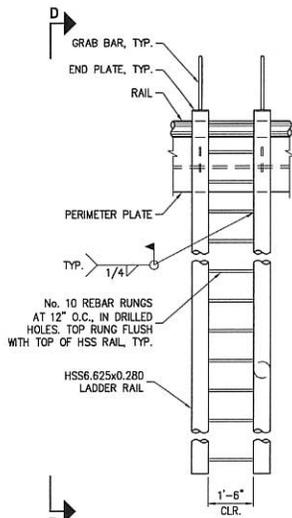
DESIGNED BY:	TWD	PROJECT NO.:	204031.01	SHEET NO.:	<b>S2.02</b>
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020		
CHECKED BY:		SCALE:	NTS		

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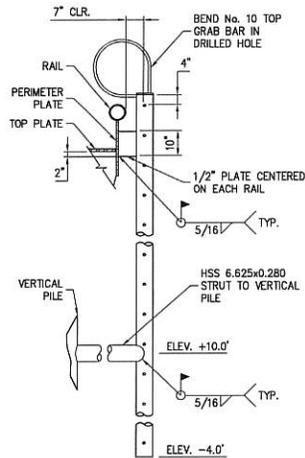
REV	DATE	DESCRIPTION

6/19/20 9:20am 204031.01 - KTN B3 New MD and Bollards V02E Submittal 204031.01 - S2.02.dwg



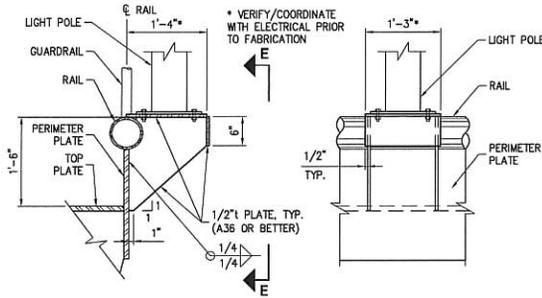


ELEVATION



VIEW D-D

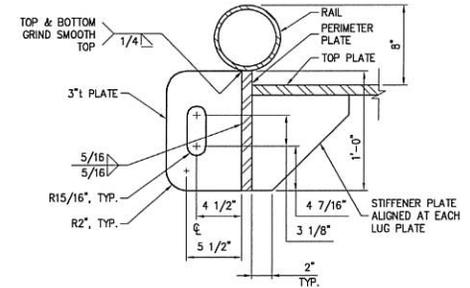
LADDER



SECTION

VIEW E-E

LIGHT POLE BRACKET



DOLPHIN LUG

9/19/20 Drawing: 20201204031 - KTN B3 New MD and Bolards V02, Submitted: 204031.01-S2.03.dwg



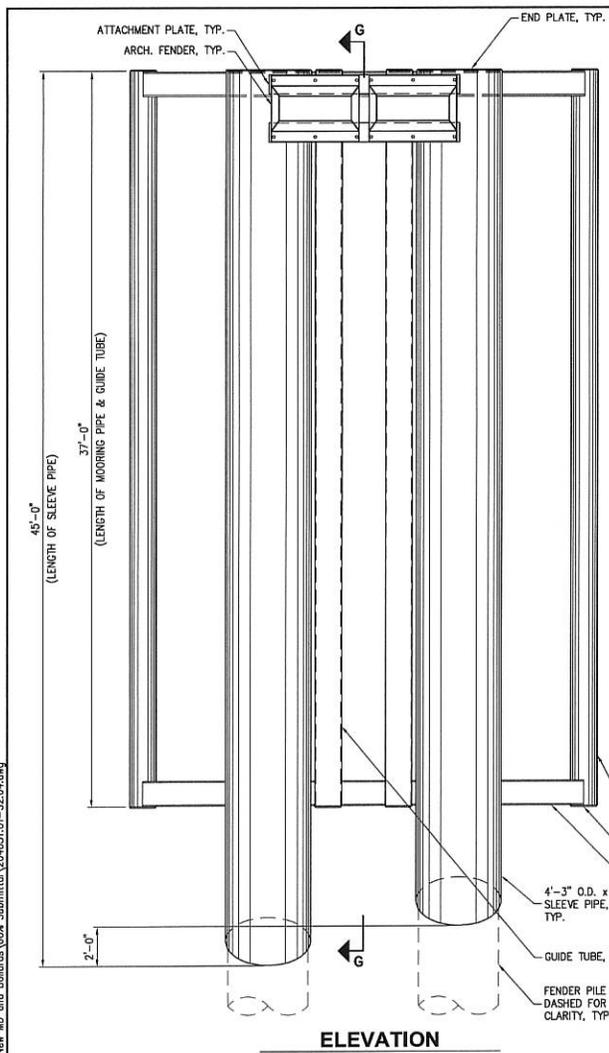
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REVISIONS		
REV	DATE	DESCRIPTION

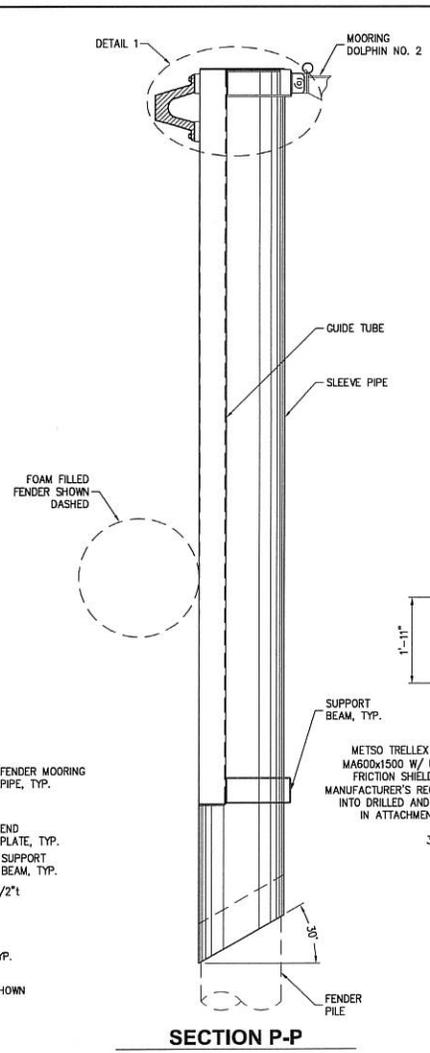
PROJECT:	<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>		
TITLE:	<b>MOORING DOLPHIN NO. 2 DETAILS</b>		
DESIGNED BY:	TWO	PROJECT NO:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
SHEET NO:			<b>S2.03</b>

60% SUBMITTAL

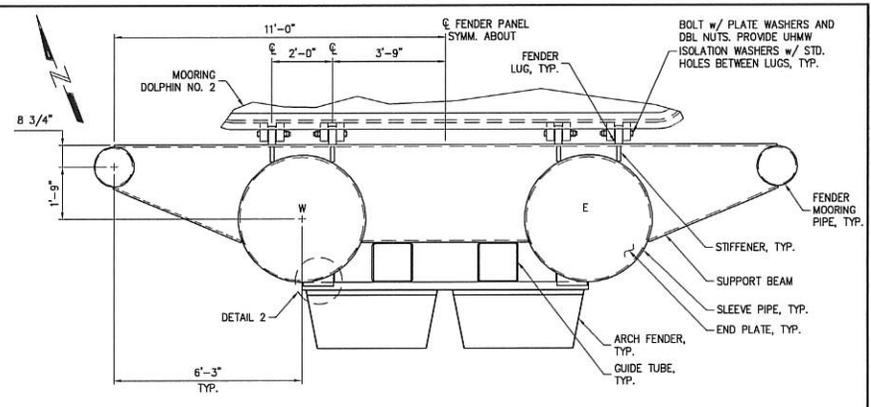
8/18/20  
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 6/18/20  
 204031.dwg  
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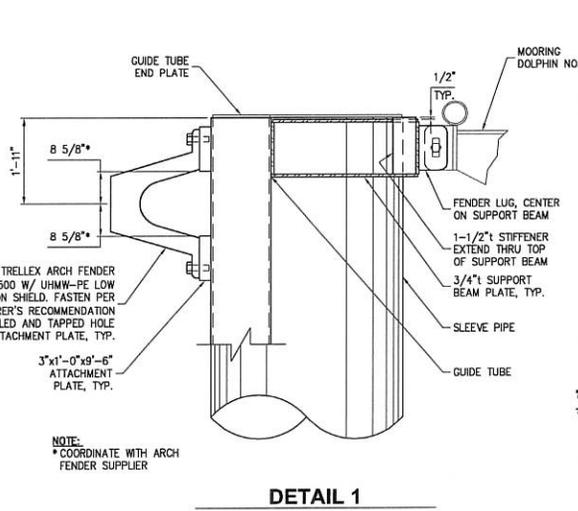
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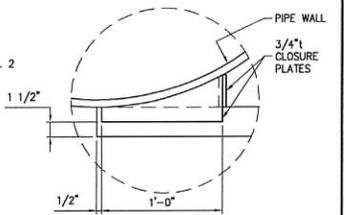
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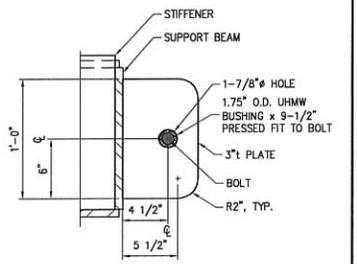
**PLAN**



**DETAIL 1**



**DETAIL 2**



**FENDER LUG**

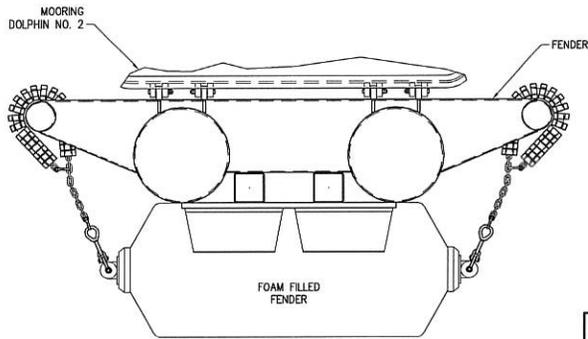
60% SUBMITTAL

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REV	DATE	DESCRIPTION

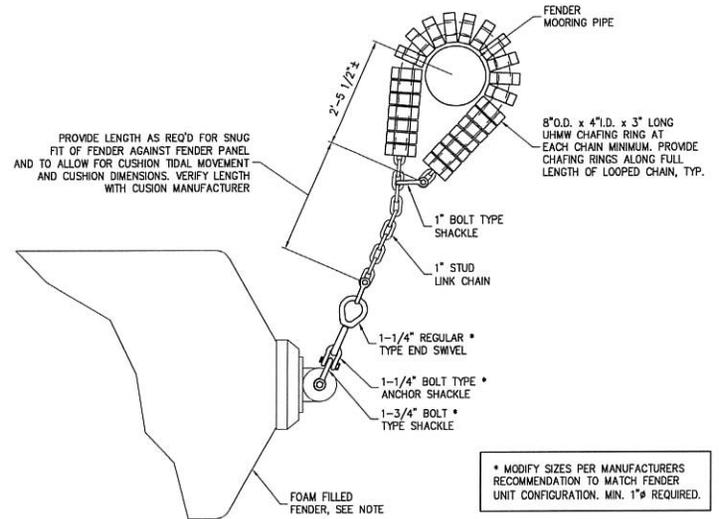
PROJECT:	<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>		
TITLE:	<b>MOORING DOLPHIN NO. 2 FENDER PANEL</b>		
DESIGNED BY:	TWO	PROJECT NO:	204031.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
SHEET NO:			<b>S2.04</b>





PLAN

**NOTE:**  
 FOAM FILLED FENDER IS A 6'x16' SEAGUARD, AS MANUFACTURED BY TBD OR APPROVED EQUAL. COORDINATE SHACKLES AND ATTACHMENTS WITH SUPPLIER/MANUFACTURER. ALL CHAIN ATTACHMENTS SHALL BE GALVANIZED.



DETAIL

\* MODIFY SIZES PER MANUFACTURERS RECOMMENDATION TO MATCH FENDER UNIT CONFIGURATION. MIN. 1"Ø REQUIRED.

8/21/20 9:45:28 AM 202010204031 - KTH\_B3 New MD and Berths 60% Submittal\_204031.01-S2.05.dwg



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REVISIONS		
REV	DATE	DESCRIPTION

PROJECT:		<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>	
TITLE:		<b>MOORING DOLPHIN NO. 2 FOAM FILLED FENDER</b>	
DESIGNED BY:	TWO	PROJECT NO:	204031.01
DRAWN BY:	CRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:		SCALE:	NTS
			<b>SHEET NO: S2.05</b>

60% SUBMITTAL

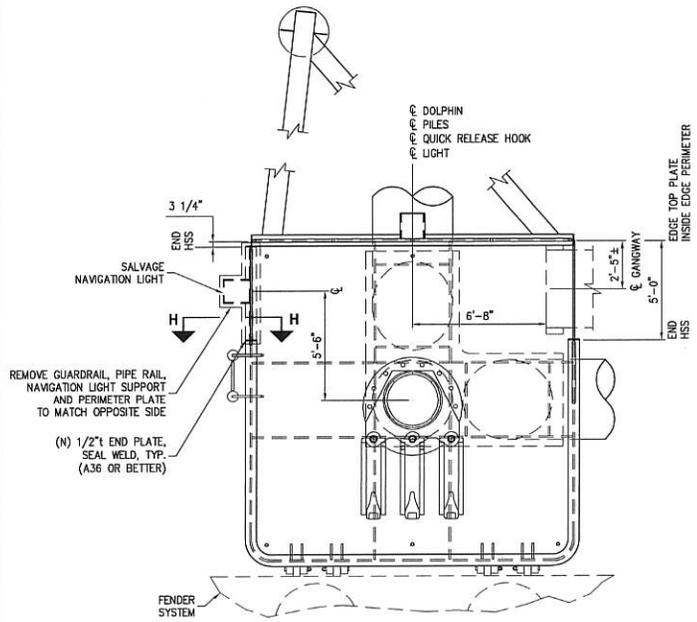
9/14/20 Drawings 2020\204031 - KTR\_B3 New MD and Bollards\B3K Submittal\204031-01-S2.06.dwg



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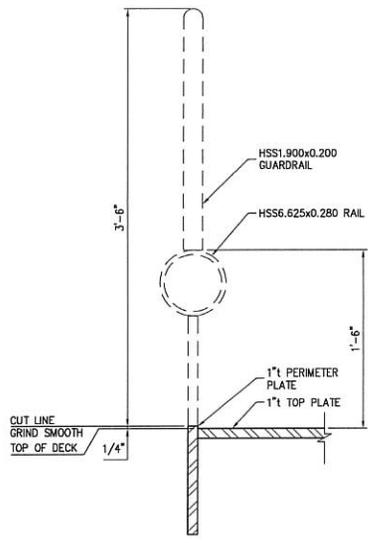
REV	DATE	DESCRIPTION

PROJECT: <b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>			
TITLE: <b>EXISTING MOORING DOLPHIN NO. 1 DEMOLITION PLAN AND DETAILS</b>			
DESIGNED BY: <b>TWS</b>	PROJECT NO: <b>204031.01</b>	SHEET NO:	
DRAWN BY: <b>GRD</b>	DATE: <b>SEPTEMBER 22, 2020</b>	<b>S2.06</b>	
CHECKED BY:	SCALE: <b>NTS</b>		

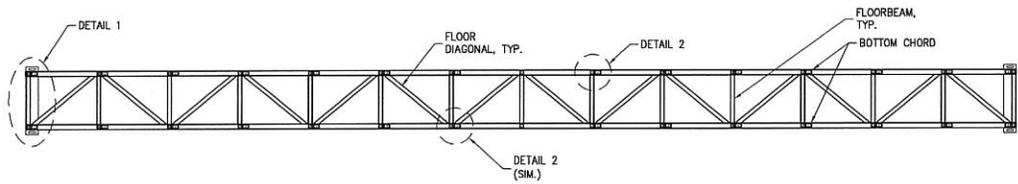


**MOORING  
DOLPHIN No. 1 PLAN**

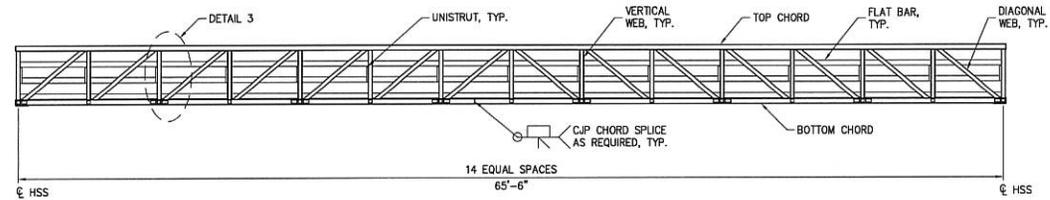
NOTE:  
REFERENCE DEMOLITION  
NOTES ON SHEET S1.02.



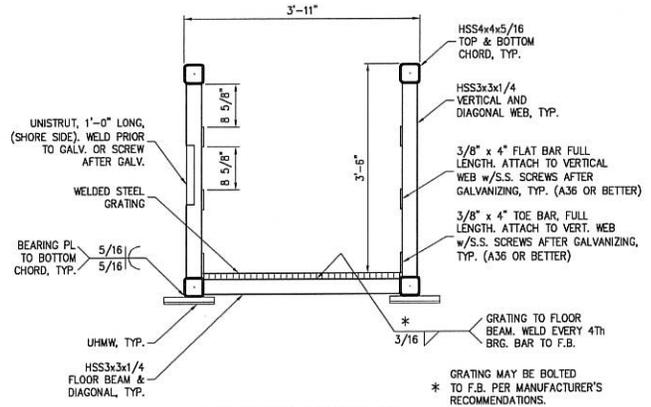
**SECTION H-H**



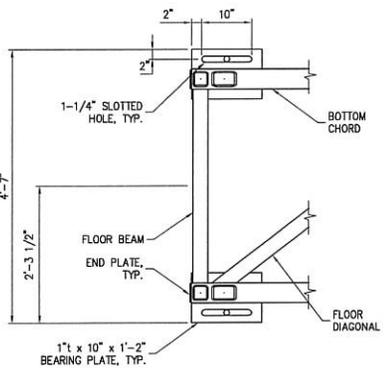
**FLOOR PLAN**  
GRATING NOT SHOWN FOR CLARITY



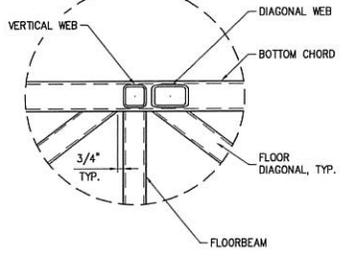
**ELEVATION**



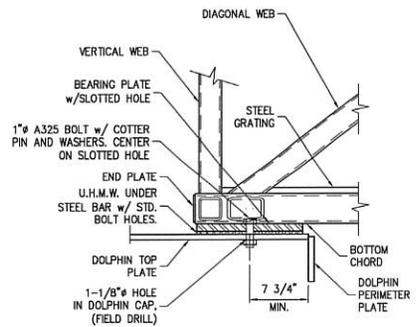
**TYPICAL SECTION**



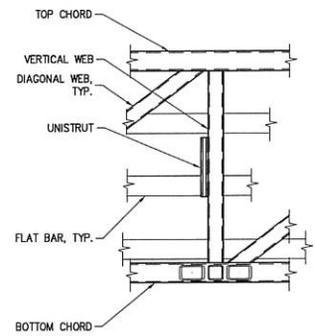
**DETAIL 1**  
GRATING NOT SHOWN FOR CLARITY  
(PLAN VIEW)



**DETAIL 2**  
(PLAN VIEW)



**DOLPHIN CONNECTION**  
(ELEVATION VIEW)



**DETAIL 3**  
(ELEVATION VIEW)

- CATWALK NOTES:**
1. ALL JOINTS SHALL BE WELDED WITH A 5/16" FILLET WELD OR EQUIVALENT GROOVE WELD, ALL AROUND, UNLESS OTHERWISE NOTED.
  2. PROVIDE 3 1/2" UPWARD CAMBER AT MID-SPAN. FABRICATOR SHALL SUBMIT CAMBER DIAGRAM FOR REVIEW AND APPROVAL.
  3. UNISTRUT SHALL BE MODEL P1000 OR AS REQUIRED BY ELECTRICAL REQUIREMENTS AND SHALL BE GALVANIZED OR PAINTED UNLESS OTHERWISE NOTED.
  4. CONTRACTOR SHALL SUBMIT TRANSPORT AND LIFTING PLAN A MINIMUM 14 DAYS PRIOR TO TRANSPORT OF CATWALK.
  5. STEEL GRATING SHALL BE TYPE 19-4 MANUFACTURED BY GRATING PACIFIC, LLC WITH 1 1/4"x3/16" BEARING BARS AND 1/4" SQUARE CROSS BARS OR ENGINEER APPROVED EQUAL STEEL USED FOR GRATING SHALL CONFORM TO ASTM A1011 WITH A MINIMUM YIELD STRENGTH OF 36 KSI. OPEN ENDS OF GRATING SHALL BE Banded. GRATING SHALL BE GALVANIZED AFTER FABRICATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

**60% SUBMITTAL**



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REV	DATE	DESCRIPTION

PROJECT:	<b>CITY OF KETCHIKAN BERTH III MD NO. 2, 3 AND 4</b>		
TITLE:	<b>MOORING DOLPHIN NO. 2 CATWALK</b>		
DESIGNED BY:	TWB	PROJECT NO:	204631.01
DRAWN BY:	GRD	DATE:	SEPTEMBER 22, 2020
CHECKED BY:	SCALE:	NTS	<b>S3.01</b>

9/21/20 Reminis 2020 204031 - KTN B3 New MD and Bollards BOX Submittal 204031.01 - S3.01.dwg

**CITY OF KETCHIKAN  
 BERTH III MOORING DOLPHIN AND BOLLARDS**

PND Project No: 204031.02  
 COK Project No: 20-07  
 Page: 1 of 1

**Engineer's Construction Bid Estimate - Based on 60% Level of Design**

ITEM No.	DESCRIPTION	AMOUNT	
		DOLLARS	CTS
1	Mobilization/Demobilization	\$ 720,000	00
2	Mooring Dolphin 2 and Catwalk	\$ 2,170,000	00
3	Mooring Dolphin 3	\$ 720,000	00
4	Mooring Dolphin 4	\$ 720,000	00
5	Electrical	\$ 25,000	00
6	Marine Mammal Monitoring	\$ 150,000	00

<b>ESTIMATED TOTAL BASE BID COST:</b>	\$ 4,505,000	00
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<b>TOTAL RECOMMENDED FUNDING<sup>1</sup>:</b>	\$ 4,960,000	00
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Note:

1. Includes recommended 10% Construction Contingency.

May 21, 2020

**Budget Transfer – Amendment No. 1 to Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards – PND Engineers, Inc.**

Moved by Bergeron, seconded by Coose the City Council approve Amendment No. 1 to Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards, between the City and PND Engineers, Inc. in an amount not to exceed \$110,000; authorize a budget transfer of \$110,000 from Appropriated Reserves of the Port Enterprise Fund to the Port Department’s Berth III New Mooring Dolphin and Bollards Capital Account; and direct the city manager to execute the change order on behalf of the City Council.

Motion passed with Flora, Bergeron, Coose, Kiffer, Gage, Chapel and Zenge voting yea.

**Award of Contract No. 20-11 – Ketchikan Creek Salmon Ladder Rehabilitation – BAM, LLC**

Moved by Bergeron, seconded by Coose the City Council accept the bid of BAM, LLC in the amount of \$98,800 for Contract No. 20-11, Ketchikan Creek Salmon Ladder Rehabilitation; establish a five percent contingency in the amount of \$4,940, bringing the total project cost to \$103,740; authorize funding from the Tourism & Economic Development Department’s Downtown Visitors Amenities Capital Account; and direct the city manager to execute the contract documents on behalf of the City Council.

Motion passed with Flora, Bergeron, Coose, Kiffer, Gage, Chapel and Zenge voting yea.

**Resolution No. 20-2773 – Approving the City’s Participation in a Proposed Refinancing by the Alaska Municipal Bond Bank of its General Obligation Bonds, 2012 Series Two, Which Provided Funds to Purchase the City’s General Obligation and Refunding Bonds 2012 (the “2012 Library Bond”), Under a Loan Agreement Between the City and the Bond Bank; Authorizing the City Manager and the Finance Director to Enter into an Amendatory Loan Agreement with the Bond Bank Setting Forth a Revised Debt Service Schedule for the Loan Evidenced by the 2012 Library Bond, in Accordance with the 2012 Loan Agreement, if the Bond Bank Successfully Refinances its 2012 Bonds; Authorizing the Issuance of a New General Obligation Bond to the Bond Bank to Evidence the Refinanced Loan**

Moved by Bergeron, seconded by Coose the City Council approve Resolution No. 20-2773 approving the City’s participation in a proposed refinancing by the Alaska Municipal Bond Bank of its General Obligation Bonds, 2012 Series Two, which provided funds to purchase the City’s General Obligation and Refunding Bonds 2012 (the “2012 Library Bond”), under a loan agreement between the City and the Bond Bank; authorizing the city manager and the finance director to enter into an amendatory loan agreement with the Bond Bank setting forth a revised debt service schedule for the loan evidenced by the 2012 Library Bond, in accordance with the 2012 loan agreement, if the Bond Bank successfully refinances its 2012 Bonds; authorizing the issuance of a new general obligation bond to the Bond Bank to evidence the refinanced loan; and establishing an effective date

Motion passed with Flora, Bergeron, Coose, Kiffer, Gage, Chapel and Zenge voting yea.

March 5, 2020

**Ordinance No. 20-1905 – Amending 5.4.230(e) of the Ketchikan Municipal Code; Increasing Taxicab Fares – First Reading**

Copies of Ordinance No. 20-1905 were available for all persons present.

Moved by Kiffer, seconded by Zenge the City Council approve in first reading Ordinance No. 20-1905 Amending 5.4.230(e) of the Ketchikan Municipal Code; increasing taxicab fares; and establishing an effective date.

Councilmember Kiffer stated he occasionally uses taxis in town and while he does not want to increase rates, it has been 15 years since they were increased.

Councilmember Bergeron asked for clarification on the rates increase.

Zac Boles with Sourdough Ingersoll Cabs answered questions from the Council.

Motion passed with Coose, Kiffer, Gage, Zenge, Chapel and Bergeron voting yea; Flora abstaining.

**Budget Transfer – Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards – PND Engineers, Inc.**

Moved by Bergeron, seconded by Kiffer the City Council approve Contract No. 20-07, Design of Berth III New Mooring Dolphin and Bollards, between the City of Ketchikan and PND Engineers, Inc. of Seattle in an amount not to exceed \$163,000; authorize a budget transfer in the amount of \$163,000 from Appropriated Reserves of the Port Enterprise Fund to the Port Department's 2020 Berth III New Mooring Dolphin & Bollards Capital Account; and direct the city manager to execute the contract documents on behalf of the City Council.

Councilmember Bergeron asked Manager Amylon for more details on this budget transfer.

In response to Councilmember Bergeron Manager Amylon informed the Council of the lack of space for the neo-panamax ships to dock. He said this was addressed in the RFP, but if we want to have it done in time for the 2021 season then we need to start a design for Berth III now and to get permitting underway.

In response to Councilmember Coose Manager Amylon said this addition will be able to accommodate ships of 1,100 feet.

Councilmember Flora said he was confused on the urgency to get some of these projects completed while part of the community feels these projects are not necessary. He mentioned that we do not know what the outcome will be with the RFP or if there will even be a viable outcome. He stated the cost of this project could be covered by the RFP versus by the City.

Councilmember Chapel stated she felt this urgency comes as a matter of safety. She noted we have received advice that we need to complete some of these projects, and since we do not know what will happen with the RFP we need to plan for our future.

Mayor Sivertsen questioned the size of the projected opening for access into City Float.

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Manager Amylon said he cannot address that at this point, but that it will be addressed as they go through the process.

Councilmember Coose said he would like to see the design options before a decision is made.

Manager Amylon commented on his prior interactions with PND Engineers, Inc., and that those issues will be addressed and presented back to Council.

In response to Councilmember Gage's question, Manager Amylon responded this is an interim measure based on the increased size of ships, and the amount of time to load and unload. He stated our fixed berths are not conducive to accommodate the number of passengers off the larger ships.

Councilmember Coose discussed the recent Chamber of Commerce luncheon with a representative of Royal Caribbean. He stated we experience 15-20 foot tides and with our current docks the gangways have to be moved, however, with a floating dock they do not.

Councilmember Gage questioned why the City needs to build bigger docks if Ward Cove will have docks that can accommodate the larger ships.

Manager Amylon said in response to Councilmember Gage based on previous Council direction, and the two berths out at Ward Cove, if we cannot accommodate larger vessels then we will continue to lose traffic to them. He stated his concerns in regards to the loss of sales tax generation if the ships move out to Ward Cove.

Councilmember Gage asked if there will be a guarantee if we expand this dock. She stated there is a small group of people in the City that would like us to continue with the status quo, and no one has a solution to benefit the community as a whole.

Manager Amylon replied that no one is recommending we expand Berth I right now because it would be too large of an investment given the circumstances. He explained that expanding Berth III would make the most sense, and it is his hope that we will not have to bond to complete the project. He reiterated that there will be two, first-class docks out at Ward Cove that will be able to take these new larger ships. He stated if we remain static and do not make these improvements, then more cruise lines will go out there.

Mayor Sivertsen said we should stay proactive in regards to what we are doing in the market. He informed the cruise ship industry likes Ketchikan, and he believes the industry will continue to grow as long as we can accommodate them.

Motion passed with Bergeron, Chapel, Flora, Zenge, Gage, Kiffer and Coose voting yea.

**Approval of Professional Services Agreement for Financial Advisor Services for the Redevelopment of Port of Ketchikan Berths I, II, III and IV Project – Piper Sandler**

Moved by Bergeron, seconded by Kiffer the City Council approve a professional services agreement for financial advisor services with Piper Sandler for Redevelopment of Port of Ketchikan Berths I, II, III and IV Project for an amount not to exceed \$40,000; authorize funding from the Port Department's 2020 Legal and Accounting Services Account No. 640.01; and direct the city manager to execute the contract documents on behalf of the City Council.