# PORT OF NEWPORT
# COMMERCIAL FISHING USERS GROUP COMMITTEE

Tuesday, September 30, 2025, 9:00 a.m.
600 SE Bay Blvd.
Newport, OR

*This will be a hybrid meeting, which means you can attend in-person, or you can view the livestream of this meeting on https://www.portofnewport.com/commercial-fishing-users-group-committee.*

*Anyone interested in making virtual public comment must complete the form on our website and submit it by 11:00 a.m. on Monday, September 29, 2025.*

**I. Call to Order**

**II. Changes to the Agenda**

**III. Approval of Minutes**
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**IV. Port Dock 7 Project Update –** *Bretz*.....Page 12

**V. Discussion on delinquent moorage, uninsured vessels, and derelict vessels -** *Bretz*.....Page 191

**VI. Public Comment (3-minute limit per person)**

**VII. Adjournment**

# PORT OF NEWPORT
# COMMERCIAL FISHING USERS GROUP COMMITTEE MINUTES

April 18, 2025
Port of Newport Admin Building, 600 SE Bay Blvd, Newport

*This is not an exact transcript. The video of the meeting is available on the Port's website.*

## CALL TO ORDER

Committee Chair Heather Mann called the Commercial Fishing Users Group Committee Meeting to order at 9:00 a.m.

Committee Members Present: John Moody (Pos. #3); Bob Eder (Pos. #9); Heather Mann (Pos. #5); Gary Ripka (Pos. #6); Dean Fleck (Pos. #10); Cari Brandburg (Pos. #4); Corey Rock (Pos. #7); and Jim Seavers (Pos. #11).

Alternates Present: Bob Kemp (Alt. #8); and Mark Cooper (Alt. #5).

Committee Members Absent: Clint Funderburg (Pos. #1); Doug Ison (Alt. #11); John Wagner (Alt. #6); Mike Retherford Sr. (Alt. #2); Mike Pettis (Pos. #2); Roy Hale (Pos. #8); and John Holt (Alt. #7).

Port Commission Liaisons: Jeff Lackey

Presenters and Staff: Paula Miranda, Executive Director; Aaron Bretz, Director of Operations/Deputy Executive Director; Don Moon, NIT Facility Manager; Doug Williams, NIT Maintenance; and Kelly Janes, Senior Planner at the US Army Corps of Engineers, who attended remotely.

Members of the Public and Media: Justin Johnson, Robert Smith, Fred Yeck Jr., Kelley Retherford, and Angela Nebel, Summit PR Representative.

## MEMBERSHIP ROSTER

Members of the Committee and Port staff introduced themselves.

## APPROVAL OF MINUTES

MOTION was made by Ripka, seconded by Seavers, to approve the minutes of September 12, 2024. The motion carried unanimously in a voice vote.

## DISCUSSION ITEMS

**Commercial Marina Channel Project Update**. Bretz reported the purpose of the presentation is to remind people of the project. He stated Kelly Janes, Senior Planner at

the Corps, has been leading this effort. He explained it complements the Port project to rebuild Port Dock 7. He noted the channel project opens access to the Port Dock 7 area to larger vessels and maintains that perpetually. He indicated the Port project is the Port Dock 7 Rebuild Project.

Janes presented the report included in the packet. Ripka asked if they had determined how much eelgrass would have to be removed. Janes replied it was about 2 acres that would have to be permanently removed. She explained an ecological model helped them determine how much eelgrass to plant or enhance to mitigate. Ripka confirmed with Janes the Corps has to mitigate for that. He asked if they figured out where to plant it. Janes replied she has a slide on the area recommended for planting.

Mann asked where the information on the industry came from. Janes replied their economist did a survey with the Port of Newport and local fishermen and then did an industry analysis. Mann asked if the survey and analysis are available. Janes replied an economic appendix will be in the report, which will be available shortly for public review. Mann asked if Janes sees any changes coming to the requirements around eelgrass under the current administration. Janes replied she does not. She explained eelgrass is listed as essential fish habitat, which requires mitigation by law. She added unless that law changes, they still need to mitigate for those changes.

Bretz asked if vessels larger than the design vessel could fit. Mann confirmed with staff this design vessel is for the access not the dock slips. Rock asked what the draft would be. Janes replied it would be a 15 ft draft.

Ripka asked if all these calculations are made at mean low water. Janes replied all are at mean lower, low water. Bretz explained the standard. Rock asked what is the depth now. Janes replied 5 to 10 feet. She stated Port Dock 5 has depths as low as 20 feet. She added Port Dock 7 is 10 to 15 feet. Mann confirmed with staff the slides are available in color.

Eder stated unless the mudstone really degrades, if rock gets dumped on those offshore sites, [it will impact] crab gear there. He noted right now the bottom is suitable for crab, and if they put a bunch of rock there, they would be eliminating crab grounds. He suggested upland disposal. Bretz replied the Port has several options. He added there are three different scenarios in addition to offshore. Janes noted if it went offshore, they would layer mudstone with sandy material on top.

Ripka asked why they use those areas since they are Port Dock 7 crab grounds. Janes replied the Ocean Deep Material Disposal Sites are permitted by the EPA, and they are used regularly for that purpose. Brandburg confirmed with Janes sand would be placed at sea. Mann asked if the project disturbs two acres [of eelgrass], they must replace two acres. Janes replied there is no clear requirement. She stated their biologist looked at literature about the success rates for other restoration projects along Oregon and California coasts, and the success rate was between 50-60 percent. She explained the biologist then used a model out of Long Beach, California, and modified it based on parameters of the Oregon coast and project area.

Mann asked how does mitigation impact useability of the area. Janes replied it is off limits for a certain amount of time, and the Port would protect that area for mitigation for the life of the project, 50 years. She added she knows one area is a clamming bed area, and they recommended signage to ask folks to stay away from the eelgrass

mitigation area. Bretz reported state planning laws determine what the Port can do within these areas, and eelgrass mitigation is a highest use for the Port in terms of value.

Mann suggested a more in-depth presentation once the report is finished. Janes replied that is fine as long as the presentation is open to the public. She noted there will be a website for project updates during the public review period. Ripka asked if there are any preliminary cost figures. Janes replied those will be in the report. Rock asked why the north dump site is used in the summertime because it blows back into the channel. Janes replied she will ask the sediment management team and get back to the group on that. Mann recommended this committee meet during the public comment period. She added CFUG can provide written public comment to the Corps.

Lackey asked at what point in the schedule would the Port evaluate Port Dock 7 slips. Bretz replied at 30 percent engineering level or more. Miranda noted that information would be provided by DOWL Engineering. Moody noted the outfall line is used quite a bit, and it is good to get ahead of that with timing. Janes replied they will make sure to coordinate with Pacific Seafood.

**2025-26 Rates, Fees, and Charges**. Miranda reported there is a lot of anxiety and excitement whenever the Port has to increase fees. She stated she understands there is an impact, especially on fishermen, because times have been hard for everyone. She noted on the Port's end, she wants folks to understand times are hard on the Port as well. She indicated as fishermen have seen increases on all sides, the Port has seen increases on all sides. She added she was touring Puget Sound ports, and the folks in Washington, even the small ports, get an average of $2 to $3 million in taxes.

Miranda reported the Port of Newport got $125,000 last year, and $130,000 is projected this year. She noted the Port's garbage is more than that. She stated what that means is the Port very much relies on rates and grants. She indicated grants have been hard; there is a lot of uncertainty right now. She added folks complain on a regular basis about not fixing this or that, and the docks have gone through a long period of no attention because there was no funding.

Miranda reported even with grants; rates are still a very important component. She stated last year was a rough time, and the Port cut down any increase with the intent to eventually catch up. She explained CPI affects a lot of consumer goods, but the Port is in the maritime industry, almost the same as bridges and roads, and that goes up way higher than CPI. She noted if the Port doesn't keep up, the Port will fall more and more behind, and maintenance will fall even more behind. She indicated staff looked at CPI and took into consideration areas that have been affected higher than the typical CPI. She noted the Port has been discounting certain long-term moorage by 76 percent, and that needs to be addressed. She indicated staff increased it by very little. She added the other area looked at was dredging.

Miranda reported for NOAA dredging in 2017, the Port paid $350,000, and last year the Port paid $1.2 million. She stated for Port Dock 7, the Port had to do sediment sampling and that cost $1.2 million, and without it the Port can't redo Port Dock 7. She noted the Port used to pay $3,000 for pilings, and now they cost $15-$18,000. She explained matches for grants. She indicated Brown put together a lot of information, which includes comparing it to other ports. She added the Port tries not to be the most expensive port, and the Port wants to help the fishing industry.

Miranda reported the Port is working with Pacific Seafood to help them stay here. She noted there are many ways the Port works with [commercial fishing], but there is only so much the Port can subsidize. She added she is open for questions, comments, and suggestions.

Mann stated it's going to be a lot harder on the Port as fishing businesses go out of business. She noted there has to be some kind of a balance. She indicated she had concerns with the comparison with other ports. She stated she did research on that. She noted she looked at Westport, Ilwaco, Seattle, and the moorage here is more expensive than at fishermen's terminal in Seattle. She indicated she appreciates the percent change column, but it stopped short of the International Terminal. She asked why. Miranda replied, unfortunately, Brown provided this and then left the next day, so staff had very little time to change it.

Mann stated she has a really hard time looking at raising fees at the same time the Port is looking to spend $600,000 on equipment with no customer at the Terminal because [fishermen] will have to pay for the equipment too. She stated she doesn't think that's smart from a fiscal perspective. She explained the equipment is log loading equipment.

Brandburg asked where did the Port pull the $1.2 million for sediment sampling from. Miranda replied the Port has contingency and shuffles projects. Brandburg asked even though this is a 3 percent increase, some of the businesses are looking at 30 percent or more decreases in this past year. She stated, especially small boats, these hit people hard. She indicated little things like this can make the difference between people being able to fish. She added there are little buyers at the Port, and there are more fees than before like truck axle costs, and that all adds up. She explained it makes it hard for them to continue, and makes her wonder are they going to continue, and what will she do if they don't.

Brandburg stated as a lease holder looking at increases, she used to have water and things like that included. She noted her water has been miscalculated multiple times at thousands of dollars. She added she is still not sure what her water bill is supposed to look like. She requested only a pass through of city costs as a lease holder. Discussion continued on water use and cost.

Brandburg stated there is now a license fee of $500 for dock sales. She stated she didn't know that had been enacted. She indicated she feels like that is a steep fee for someone to try to sell their fish in this economy, when sometimes there is no market for fish. She noted sometimes a last resort is to buy a license and sell off the dock, and she would hate for that to be $500. She indicated the fees for charter businesses [are high]. She added they have a lot of competition, and the fillet fee significantly increased.

Brandburg stated those filleters don't make a lot of money, and if they don't have filleters, the charters can't be successful. She explained $200 is already hard for someone to pay, and going above $300 is unreasonable. Miranda replied whenever there is a permit, the Port has to manage that permit. She stated people have no idea how much time staff takes managing permits. She indicated $200 doesn't pay for any time spent. She added $500 is very reasonable for most people that have that type of permit.

Mann stated now might be a good time to take into consideration the landscape that has not been taken into consideration at all, what is happening federally. She noted [fishermen] have lost hundreds of employees at the National Marine Fisheries Service (NMFS). She explained they are gutting and cancelling surveys, and NMFS employees

are doing janitorial work. She indicated [fishermen] are in a situation where they may not be able to fish period in federal fisheries. She explained federal fisheries need surveys, robust stock assessments, and employees who can manage the regulations. She stated all those things are in flux. She indicated [without federal fisheries], there will not be a Port. She added to put this [increase] on top of what people are struggling with is unmanageable.

Mann stated buying $600,000 worth of equipment seems unreasonable at this time. She noted there needs to be a balance, and they need Moon to be able to work and have the resources he needs. She indicated every port is subsidized, there is no port that stands alone, and every port has to get grants to stay afloat. She added they need to figure out how to work together.

Mann asked, thinking about the city putting everything on the Port, why can't the Port and seafood industry meet with the city and county and have a collaborative approach to protect the seafood industry in Newport. She stated without federal fisheries, [Newport] is not going to have seafood processors because they can't stay in business only processing pulse fisheries. She indicated if [fishermen] pay more to the Port, they pay less to places like Englund Marine. She added passing on costs to fishermen simply because they are passed onto the Port doesn't work. She emphasized that some families can weather it; a lot of families can't.

Mann stated it feels tone deaf to hear reasonable cost. Miranda replied she understands [fishermen] have costs and things are difficult. She stated as someone who has to manage the Port, she looks overall at how to stay in business and continue to help [fishermen]. She noted before she came on board, the Port was not maintaining many things. She indicated when she looks back at the stuff not maintained, it was crazy. She explained the Port is trying its best to get things done. She added the Port can keep going back and defer the tariffs, like last year, but where will the Port find the funds to continue operating.

Miranda stated [as far as] buying the equipment, part of the Port's strategic plan is to diversify the port. She noted the Port loves having the fisheries and wants to continue having the fisheries. She explained the Port also has an obligation to the taxpayers to do other things. She indicated the Port has a bond that requires bringing cargo and other opportunities. She added the Port is not going to kick anyone out of NIT, it just means the Port is trying to diversify business.

Miranda reported the Port had people knocking on its doors and had to turn them away because the Port didn't have the equipment. She stated the opportunity came where the federal government is paying 80 percent of that cost, including improving 9 acres. She noted the Port does not have a customer around the corner, not yet. She explained Newport only has a couple different natural resources, one is seafood and the other is timber. She indicated the Port has to try to tap into those two opportunities. She added the Port never wants to send fishermen away. She emphasized as manager of the Port, she has to be able to diversify, maintain docks, and make things safe. She stated the Port can keep cutting down the tariffs, but the Port will be cutting down a lot of services as well.

Brandburg stated she appreciates all the work Miranda, Bretz, and staff have done. She noted [fishermen] have seen huge changes to the Port, and she thinks Miranda has tried to balance commercial fishing with cargo really well. She indicated Mann's point was

well said. She asked how [fishermen] help can get more funding and grants; how can the fishing community address these deficits rather than raising fees. She added these increases are not going to pencil out to the big numbers that the Port needs. She noted these are going to make an impact on [fishermen], but will they make an impact on the big picture, probably not.

Brandburg suggested eliminating the filleter permit. She stated if the permit is costing more than it takes to monitor, the permit is not worth it. She suggested having the city enforce its business licenses. Miranda replied the reason the Port has a permit is because there were a lot of issues. She explained people were taking over the tables and wouldn't allow others to use them. She stated the Port created the permit to better manage the tables and be more organized.

Kemp asked if this discussion could be continued. He stated he will meet with Bretz separately. Ripka asked what the work barge is. Bretz replied it is a not very often used work platform, so that people can work alongside their boat. Bretz stated when it comes to grants, the way to get grants is through planning. He explained if you don't do the planning and don't spend money on the planning, you will not compete for the grants. He noted 30 percent engineering is required for the Port Dock 7 project, which costs $430,000. He added it may be easy to put together a grant package, but it has to be planned. He explained the piece the Port is missing is planning money. He indicated he hears from people, the Port is not doing anything. He added the Port is spending a lot of dollars on planning, but there is no return on that until a facility is built.

Mann stated the Port only comes to her when it needs a letter of support or public comment, and it never comes for planning help. She suggested she could raise $100,000. She noted some of [the committee] know important people who can help. She emphasized the need to collaborate more.

Mann asked why it is a priority to get cargo now. She noted last year she asked for research on where the bond measure dollars went. She stated right now, the Port might not have a fishing industry, and this Port and community will not survive with just shipping. Miranda replied the Port is obligated by the Legislature to have a strategic plan. She explained every year [Commission] goes over the goals and objectives in the strategic plan, what has been done, what needs to be done, what is a priority, and what is no longer a priority. She noted that part of goals and objectives is capital improvements, which prioritizes all the Port projects. She added there is a lot of shuffling [of projects] to take advantage of what grants are available today.

Mann stated there needs to be a way to be more nimble and responsive to what is happening in the world, not every five years or every year. She suggested legislators would be responsive. She noted groups need to work together for the benefit of the community, and being stuck in rigid ways of doing things doesn't work today. Miranda stated she has access to the state and federal legislators, and she has delivered the same messages Mann is telling her. She indicated that is not a fair characterization of the Port. She added staff work very hard with Commissioners to be as flexible as possible when addressing issues. Mann confirmed with Miranda she is aware of the topics Mann brought up during the meeting.

Ripka stated he doesn't think [the fees] are going to make the Port very much money. He noted [fishermen] are looking at being hit everywhere. He explained shrimp

and bottom fish prices are compared to 1980. He indicated insurance bills have gone up. He added fishing is barely getting by. He emphasized now is not the time.

Fleck noted [Englund] does a lot of importing. He stated all safety supplies come from China. He explained $3,200 was the cost for a small raft, and it is going up to $6,000. He indicated he has never seen anything like it in his career. He added they have chosen to not jack prices up and hold.

Mann asked what if CFUG made an appeal to Commission to not raise rates for a year, and over the next year, the CFUG work with the Port in identifying other funding sources. Ripka added fishermen will see where things shake out in a year. Mann stated this would put the onus on the industry in Newport to work to identify opportunities to help the Port. She added this Committee needs to make a report to the Commission.

Miranda stated it is up to the Commission. She explained staff put together what they see the Port needs to keep the Port moving and continue the status quo. She noted at the end of the day, staff come to the Commission with what it needs to get things moving. She indicated she gets it; this is affecting this group. She added the Port can try to subsidize some areas, but some things may not get done. She stated the Port is not being unreasonable on its end on how much time and money it spends on these areas. She noted the Port held off last year, so it will be two years in a row.

Mann asked if there is an estimate of what these increases will generate for the Port. Miranda replied Brown has done work on that, but it's not included in the packet. She added in general, deferring increases will impact Port operations rather than add up to a bunch of revenue

Retherford stated there are five Commissioners, and they can't talk to one another outside of a meeting. She noted when these things are being delt with, she has the voice for the fishing industry. She indicated she wrote a letter to Brown to address these issues. She added she understands the Port side of it.

Retherford stated everything has increased, and staff are trying to minimize increases without going backwards. She noted one place can't take the blunt of it all. She indicated as a member of the industry and Commissioner; she has to balance that too. She added it's a big responsibility, and it's hard. She explained the Port is trying to get Port Dock 7 for the industry, and planning is important. She stated the Port can't stop the planning because prices have gotten so bad, or there will never be a Port Dock 7.

Retherford noted she hears the [Committee]. She stated she supports and pushes these issues they are having as a fishing industry. She indicated collaboration is important. She added it is time for budgeting, and no one wants rates raised. She emphasized the question is how do we all succeed.

Retherford stated Miranda has fought on behalf of the Port and community. She asked should Commissioners make a mistake and take chances. She noted the Port has to find revenue somewhere, and [fishermen] keep asking that no fees go up. She emphasized she loves the commercial fishing industry, and she has fought for them all her life. She noted to make decisions for them is not easy, and she wants the fishing industry to succeed. She explained there are three other Commissioners who have different hopes and dreams for the Port, and they are all protecting it together in different ways.

Retherford stated everyone needs to remember we are on the same team. She noted she doesn't want to raise people's rates. She explained the Commission needs to

be careful on how it does this, because it will play out in the future. Ripka stated for small boat members, there was no salmon season and increases to costs for rope. He noted the Port needs to have the small fleet for the future of the fleet, for guys coming in. He emphasized these rates are really going to hit the small fishermen, another nail in coffin.

Mann stated she doesn't think there is a good understanding of the work the Port is doing. She noted all the costs are coming down to fishermen in the end. She indicated she works for a group of very successful fishermen, and when her members are worried about the future, she is worried. She stated this is an unprecedented time for all of us. She indicated she understands the Port has obligations beyond fishing, but if the Port doesn't protect the customer it has to the best of its ability, then complimenting that won't matter. She added what commercial fishing brings to the Port and community is more than what shipping would bring.

Moody stated he would volunteer people to assist with funding opportunities. Bretz stated when someone brings an opportunity to pursue, he thinks about bandwidth. He explained Miranda, Brown, and he only have so much they can do. He noted they often run out of time, and don't have the ability to add 12 more grant applications to the work queue and do the contracting and grant compliance. Mann replied that's where collaboration comes in. She stated she has written tons of grants and raised almost a million. She noted a lot of people have that ability, and maybe there are opportunities to partner where industry is doing a lot of heavy lifting. Retherford noted it would be nice to have those names and phone numbers because Mann's schedule can't take on any more. Discussion ensued on feasibility of internships and grant writers.

Johnson stated commercial docks and South Beach have daily, weekly, and monthly rates. He noted with the increase at the International Terminal, he can't find a more expensive place to tie 95 feet. He indicated the Terminal does not offer a weekly or monthly rate, which is offered at the other facilities. He added slips in the commercial marina are not tied two to three deep. He explained at the Terminal boats are stacked two or three deep and charged the same moorage.

Johnson stated back in 2018, [Terminal vessels were charged] $2,000 a month. He noted there's some days he is looking for crane access, but the rest of the time he is just looking for basic moorage. He emphasized he can't find a more expensive place to tie. He asked why there is no monthly rate at the Terminal.

Bretz stated the Port has a state waterway lease for the use of the pier space. He explained it is a service location, and vessels are supposed to be there for service only. He noted there is no long-term moorage at the Terminal, and the Port can't do that. Miranda replied it is supposed to be a service area, and because the Port has a lack of slips at commercial docks, that became a default place to moor. She added the Port wants to create more space at Port Dock 7 so that if you're not receiving service, you can be here and pay less.

Johnson asked if there will be changes to the west entrance for Port Dock 7, a widening. He explained that is a very tight space, a choke point when only 42 feet wide. Bretz replied the rubble mound breakwater can't be affected any more. He agreed that is a concern for operators. Johnson asked if they looked at the east access. Bretz replied the problem is the utility undercrossing. He explained all the water that goes to South Beach and sewer coming back goes through that line. He stated the Port can't cut that,

and it's just sitting on the bottom, not buried. He added the Port would have a $30 million project to replace the line.

Yeck Jr. asked staff for clarification on the failure to register fee. Bretz replied [vessels] need to have insurance, a MLA on file, and let staff know they are coming in. He explained that something run into on the commercial side is the transient boats will come in but won't check in and won't give insurance information. Miranda added those boats often won't pay.

Lackey stated with Miranda, Bretz, Brown, and staff, so much has been accomplished. He noted the bandwidth as a small team has been great, like their ability to get grants. He explained it was true 10 years ago, no one can support themselves on user [fees] when there is property over water. He stated 10 years later, everything is so much more expensive and red tape is worse; it's even more impossible. He indicated the Port has to have grants. He added for the $1.2 million on sediment sampling, the Commission hated to spend money that doesn't build anything, but they have to do it to unlock the $9 million for dredging.

Lackey stated Port Dock 5 pedestal work is coming along, the RORO Dock work is coming up, and with Rogue Seawall, there was additional costs. He noted Port costs are going up. He explained with rates and fees, everyone is tight. He noted in 2018, moorage was $46 per foot, now its $75, and it is looking to go to $86. He stated that doubled within 10 years. He indicated the Terminal already doubled in five years. He added each time there is an increase, there is more incentive to go to other ports.

Lackey stated at some point there is diminishing returns. He noted the Commission can't run this Port [solely] on fees, everything takes grants. He indicated he looked at what folks around are paying. He explained Coos Bay is a like port, but the other two in the report are not comparable. He stated Astoria, Westport, Ilwaco, and Reedsport are similar, and the Port is pretty high above the similar ports except for Coos Bay. He added the Port is way high for the distant water fleet.

Lackey stated the bond measure included the purpose to keep fleets returning here. He asked where else they were going to go. He noted there could be diminishing returns on higher fees. He added there is more to the Terminal than service and go. Bretz replied in terms of compliance with DSL, the Port provides services to vessels at the Terminal.

Mann asked Bretz if he has some ideas of the top [regulations] to comply with, things the Committee could advocate to eliminate or change. She explained the administration is looking at gutting the Environmental Protection Act, and maybe the Port could take advantage of some of that. Miranda explained the work of PNWA, Business Oregon, and OPPA. She noted she has worked with DSL for 22 years, and that is the hardest state agency to make changes on leases or registrations. Bretz stated he would meet with Mann later to discuss regulations.

Lackey stated everyone is in a difficult spot. He noted he doesn't have a great solution, but he is concerned with diminishing returns. He added the Port is too far above comparable ports. Miranda replied her understanding is that Brown did those comparisons, but staff will look at it again.

Miranda stated the Port supports the fishermen, supports the businesses. She noted the Port doesn't want them to go away. She added it would not be good for the Port

or community, and that has never been its intent. Mann confirmed with staff she could speak on rates and fees during the Commission meeting on Tuesday.

**Future Meeting Schedule**. Discussion ensued on meeting schedules. Tucker confirmed second Tuesdays once a quarter for the CFUG meetings would work the best. Miranda added if the Port needs to add another meeting, the Port can add another meeting.

## ADJOURNMENT

Having no further business, the meeting adjourned at 11:45 a.m.

Port of Newport

# STAFF REPORT

| | |
|---|---|
| **DATE:** | **September 18, 2025** |
| **RE:** | **Port Dock 7 Preliminary Design Report** |
| **TO:** | **Paula Miranda, General Manager** |
| **ISSUED BY:** | **Aaron Bretz, Director of Operations** |

## BACKGROUND

The Port has received the Port Dock 7 Preliminary Design Report, which is a 30% engineering plan for the replacement of Port Dock 7 and the Hoist Dock (Fishermen's Wharf). This preliminary design is attached in the meeting packet for the purpose of garnering feedback from commercial users of the Port of Newport.

In 2023, the Port convened focus groups to determine some basic concepts for design criteria for the new Port Dock 7 and Fishermen's Wharf. We have reached 30% design, but at this point in the planning process, we are seeking input by commercial users to adjust the design where needed and to create a better plan moving forward.

The specifics of the design as it has been developed can be seen in the Preliminary Design Report, and we welcome input so that we can further improve the current design. This project is being done alongside the Army Corps project to dredge a -20' channel into the Commercial Marina and back to Port Dock 7, and the entire Port Dock 7 area will also be dredged to -20' MLLW. The intent of the project is to modernize the facilities at Port Dock 7 and the Fishermen's Wharf, to continue to serve the existing users there, but also to build a larger facility that will provide berthing to all modern catcher vessels for the next 50 years.

A representative from DOWL Engineering will be present at the CFUG Meeting to present the project and discuss the design.

# PORT DOCK 7 PRELIMINARY DESIGN REPORT

Port of Newport Dock 7 Replacement Design

2621.80022.01

**August 2025**


**Prepared for:**

Port of Newport
Aaron Bretz
600 SE Bay Blvd
Newport, OR 97365

**Prepared by:**

DOWL

Nick Robertson, PE, SE
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035

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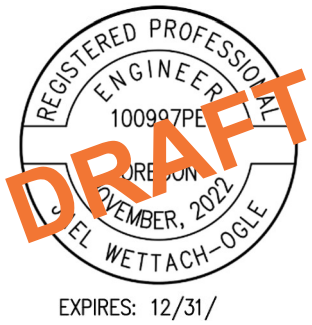



| Prepared by | Reviewed by |
|---|---|
| Jael Wettach-Ogle, PE<br>Baelie Werner, EI | Nick Robertson, PE, SE |

# 1.0 INTRODUCTION

The purpose of this report is to document the preliminary design and design criteria for the Port of Newport Dock 7 Replacement Design project. The Port of Newport (Port) plans to upgrade Port Dock 7 (PD7) and the adjacent Fisherman's Wharf to accommodate the modern commercial vessels based at the facility. This report will also be used to support the Port's application for the U.S. Department of Transportation Maritime Administration (MARAD) Port Infrastructure Development Program (PIDP) grant.

# 2.0 PROJECT LOCATION

This is a large project at a small coastal seaport located in a rural area at 44°37'50.73"N, 124°02'38.91"W, within the city of Newport, Oregon. The project serves a disadvantaged community in rural Lincoln County, which has a population of 50,821. The project connects to existing transportation infrastructure, such as U.S. Route 101 and U.S. Route 20, and connects to Yaquina Bay and the Yaquina River. See Figure 1 for a project vicinity map.

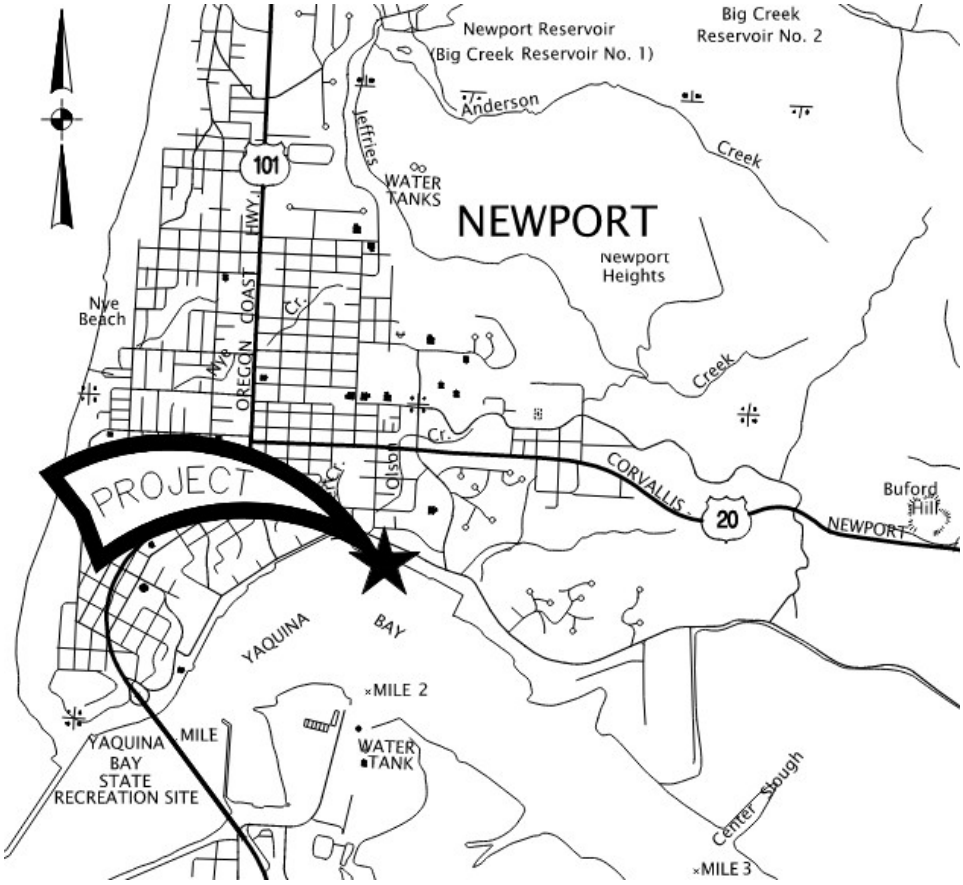



*Figure 1. Project Vicinity Map*

# 3.0 PROJECT DESCRIPTION

The existing PD7 facility cannot accommodate modern commercial vessels. More space is needed to accommodate the number and size of commercial vessels, business needs, long-term moorage for offshore wave-energy service vessels, and short-term moorage for tug and pilot boats. The PD7 infrastructure and Fisherman's Wharf are approaching the end of their design life and are in varying condition, ranging from fair to poor. To accommodate modern commercial vessels and address structural deficiencies, the existing infrastructure would require substantial rehabilitation. This project proposes to completely replace the existing floating dock and Fisherman's Wharf structures and to install security fencing and other facility improvements.

## 3.1 Existing Conditions

The following sections document the existing conditions of the PD7 floating dock system and Fisherman's Wharf, which will be replaced as part of this project.

### 3.1.1 Floating Dock

The existing floating dock system at PD7 is comprised of six docks, labeled B, C, D, E, F, and X (see Figure 2). Over time, portions of the dock have been lost due to storm events and other damage, particularly at Docks B, E, and F. Dock B is a floating dock that primarily serves as access to boathouses used by the Oregon Boating Foundation and other lease holders. Docks C and D consist of a central floating dock leading to concrete finger piers on either side. Docks E and F consist of a floating dock that runs parallel to the central aisleway of Docks C and D. Dock X is the main access from shore and runs perpendicular to Docks B through F. All docks are restrained by steel piles, which vary in size, type, and spacing.

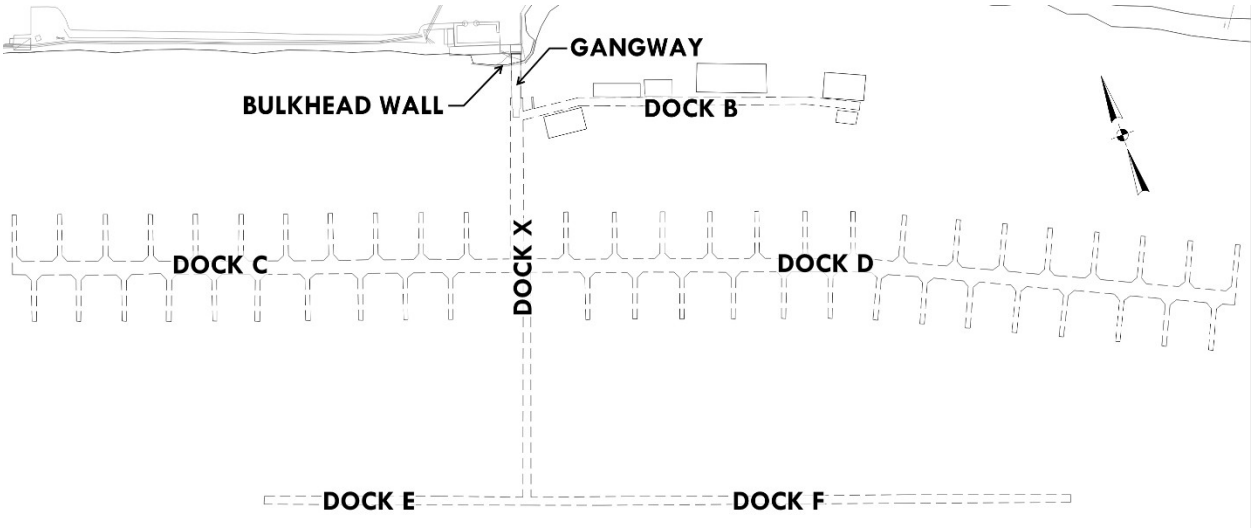



*Figure 2. Existing Floating Dock Layout*

On October 22, 2021, HDR conducted a conditions assessment of the existing floating dock. The conditions assigned to each component of the dock are summarized in Table 1. The condition assessment indicates that the floating dock facility is in poor condition and requires repairs to make it operational. The assessment concludes that in its current condition, the use of the floating dock should be restricted. Vessels should only be moored in certain locations and the use of slips during sustained winds should be limited. For more information, see the full condition assessment report in Appendix 5.

*Table 1. Summary of Floating Dock Conditions*

| Dock Component | Condition |
|---|---|
| Dock B | Poor |
| Dock C & D | Fair |
| Dock E & F | Fair to Poor |
| Dock X | Fair |
| Gangway | Poor |
| Bulkhead Wall | Fair to Poor |
| **Overall** | **Poor** |

### 3.1.2 Fisherman's Wharf

The existing Fisherman's Wharf located to the west of PD7 is a fixed pier used for loading and unloading commercial fishing equipment, as well as the delivery of fish. The existing wharf is comprised of three different structures, an original timber structure and two newer precast concrete structures with steel piles that were built adjacent to the original (see Figure 3). The dock has at least 20 timber support piles, 16 steel support piles, and 21 steel fender piles. There may be more support piles present under the abutment on the upland side, but they are not visible. The size of the dock is approximately 221 feet wide by 44 feet long.

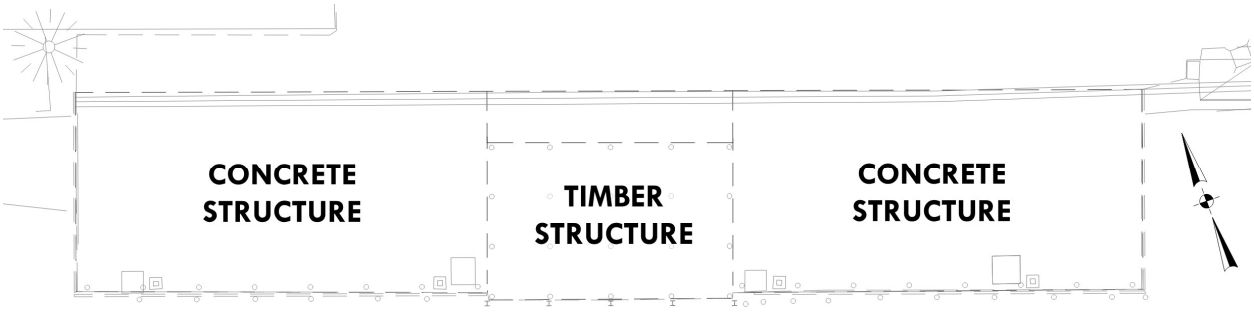



*Figure 3. Existing Fisherman's Wharf Layout*

On April 30, 2025, DOWL conducted a condition assessment of the existing Fisherman's Wharf. The assessment found section loss in the steel piles, delamination's in the concrete slabs, and a broken timber girder. DOWL found the structure to be in fair condition and recommended immediate isolated repairs to address structural deficiencies in the corroded piles and broken timber girder. For more information, see the full condition assessment report in Appendix 6.

## 3.2 Design Standards and Criteria

The proposed structures will be designed for minimum design loads according to American Society of Civil Engineers (ASCE) 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures,* as well as the 2024 International Building Code (IBC) and the 2025 Oregon Structural Specialty Code.

Structure-specific design loads are described below:

- Floating Dock
  - ASCE Planning and Design Guidelines for Small Craft Harbors, Third Edition
    - 50 pounds per square foot (psf) distributed load
    - 650-pound concentrated point loads
  - Draft Preliminary Geotechnical Investigation Report (see Appendix 4)
    - Site Class C
    - 0.71g Peak Ground Acceleration (PGA)
    - Lateral spread loading
  - Coastal Metocean Memorandum (see Appendix 7)
    - 1.5-foot significant wave height
    - 2.2 knot current speed
  - Other Loads
    - 2,800 foot-pound (ft*lb) vessel berthing energy (see following text for description of design vessel)
- Gangways
  - American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) *Guide Specifications for the Design of Pedestrian Bridges*, December 2009
    - 90 psf distributed load
- Fisherman's Wharf
  - AASHTO LRFD *Bridge Design Specifications*, 9th Edition, 2020
    - HL-93 loading. Provisions for fatigue and dynamic load allowance will not be applied in accordance with ASCE 7-22.
  - Draft Preliminary Geotechnical Investigation Report (see Appendix 4)
    - Site Class D
    - 0.76g PGA
  - Lateral spread loading
- Other Loads

- Two new and two salvaged 5-ton swing hoists (davit arms)
- One 10-ton carry deck crane (IC-100-B)
- 2,800 ft*lb vessel berthing energy (see following text for description of design vessel)

The floating dock and wharf will be designed to accommodate the existing fleet of commercial vessels, as well as larger vessels in the future. Space will be provided to accommodate vessels up to 70-foot length overall (LOA) in the slips of the floating dock. In addition, space will be provided in the turning basin of the floating dock to accommodate vessels up to 101-foot LOA and a 29-foot beam. Both the floating dock and Fisherman's Wharf will be designed for berthing loads from vessels up to 101-foot LOA and a 29-foot beam.

The floating dock will be designed for a 50-year design life. To achieve that design life, the floating dock piles will have a passive corrosion protection system, which will include galvanizing the piles and designing the piles to include a sacrificial layer of steel. The basis for design of the sacrificial steel thickness is the Oregon Department of Transportation (ODOT) Bridge Design Manual. Additional testing is recommended during final design to determine the water chemistry, which will be used to refine the corrosion protection system.

The structural components of Fisherman's Wharf will be designed for a 50-year design life and the fender system of the wharf will be designed for a 30-year design life. The Fisherman's Wharf piles will have an active cathodic protection system designed to prevent corrosion in the piles. The active cathodic protection system will be comprised of an impressed current system using mixed metal oxide anodes. The active cathodic protection system will require a continuous electrical connection.

The floating dock and Fisherman's Wharf will be designed for the full tidal range at the site (see Table 2), as well as the expected sea level change over the design life of the structures. The structures will not be designed for tsunami loading.

*Table 2. Tidal Data*

| Datum | Elevation (feet)[a] |
|---|---|
| 1% Annual Exceedance Probability (AEP) | 12.34 |
| Highest Astronomical Tide (HAT) | 10.62 |
| Mean Higher-High Water (MHHW) | 8.34 |
| Mean High Water (MHW) | 7.64 |
| Mean Lower-Low Water (MLLW) | 0.00 |
| Lowest Astronomical Tide (LAT) | -2.80 |
| [a] Elevations are based on the MLLW Datum. | |

The floating docks will be designed for the following freeboard requirements:

- Dead load only
  - 14-inch minimum

    - 17-inch maximum
- Dead load and live load
    - 11-inch minimum

The floating dock piles will be designed to have a height of 2 feet above the 1% AEP elevation.

## 3.3 Preliminary Design

The following section outlines the preliminary design of the PD7 replacement project. This level of design reflects a 30% design effort, sufficient to support the Port's application for the MARAD PIDP grant. A set of preliminary design plans is provided in Appendix A to accompany the preliminary design described below.

### 3.3.1 Floating Dock

The Port plans to completely replace the existing floating dock system with a new floating dock system. The new system will include new commercial docks, dredged berths to accommodate a wide variety of commercial vessels, and improved marina amenities.

The new floating dock will include:

- Concrete floating docks for improved access through all tide cycles
- Increased linear moorage space
- Two long side-tie docks for moorage of vessels up to 101-foot LOA
- 60-foot slips to provide assigned moorage for vessels up to 70-foot LOA
- Ample space for vessels less than 50-foot LOA
- Accommodation for current tenants of the dock
    - Chelsea Rose
    - Yaquina Bay Yacht Club
    - Oregon Boating Foundation

The improved marina amenities include:

- 50-amp (A) electrical service
    - Individual metering at each electrical pedestal
    - Controllable from the Port office
- Accommodation for future bilge pump-out stations
- Potable water with water meters at each service
- Lighting on the docks and pedestals
- Pinniped deterrence technology

Berth dredging will take place as part of this project. Berths will be dredged to an elevation of -20 feet MLLW underneath the footprint of the floating dock. Berth dredging under the floating dock is not part of a federally maintained navigation channel. Dredging outside of the footprint of the floating dock will be completed by the U.S. Army Corps of Engineers (USACE) Port of Newport Navigation Improvement Project. Dredging will be completed using a clam shell

dredge, and spoils will be disposed in the ocean at a location that will be determined in the future.

The proposed floating dock layout combines input from the Port with the physical constraints and dimensions identified in ASCE, Planning and Design Guidelines for Small Craft Harbors, Third Edition. The proposed floating dock layout assumes the following design components:

- Aisle (fairway) widths of 1.75 times the longest vessel LOA
- Two vessels per slip, except as noted
- Main float pier widths of 12 feet
- Finger float pier widths of 4 feet
- Side-tie basin with two side-tie docks that are 291 feet long and 286 feet long to accommodate up to three 90-foot LOA vessels each
- Turning room for vessels of 101-foot LOA and a 29-foot beam within the side-tie basin
    - Will also support all known current port users, including a commercial vessel with approximate 80-foot LOA and a 40-foot beam
- No mooring piles

The number of slips and linear moorage space in the preliminary design are presented in Table 3, and the slip and maximum vessel dimensions are presented in Table 4. A total linear moorage space of 5,541 feet is provided. Although not considered in the proposed layout, an additional 408 feet of linear moorage space is available at the channel side of the exterior finger piers to accommodate vessels up to 60-foot LOA. There is 205 feet of linear moorage space available for businesses. See Appendix A for the proposed floating dock layout.

*Table 3. Slip Count and Linear Moorage*

| Moorage Type | Number of Double Slips | Number of Single Slips | Vessel Capacity | Linear Moorage Space (feet) |
|---|---|---|---|---|
| 34-foot Slips | 18 | 0 | 36 | 1224 |
| 40-foot Slips | 24 | 1 | 49 | 1,960 |
| 50-foot Slips | 12 | 0 | 24 | 1,200 |
| 60-foot Slips [a] | 5 | 0 | 10 | 600 |
| Side-Tie Basin [b] | N/A | N/A | 6 | 557 |
| **Total** | **59** | **1** | **125** | **5,541** |

[a] Accommodates vessels up to 70-foot LOA, including sufficient turning room in the navigation channel adjacent to the slips.

[b] Two side-tie areas that are 286 feet and 291 feet; with 20 feet of buffering between vessels, that is 557 feet of linear moorage space

*Table 4. Slip and Vessel Dimensions*

| Moorage Type | Max. Vessel Length (feet) | Max. Vessel Beam (feet)[a] | Single Slip Clear Width (feet) | Double Slip Clear Width (feet) |
|---|---|---|---|---|
| 34-foot Slips | 34 | 13 | 16 | 32 |
| 40-foot Slips | 40 | 14 | 18 | 35 |
| 50-foot Slips | 50 | 17 | 20 | 41 |
| 50-foot Slips WIDE [b] | 50 | 23 | 26 | 52 |
| 60-foot Slips [c] | 70 | 19 | 23 | 45 |
| 60-foot Slips WIDE | 70 | 26 | 29 | 58 |
| 60-foot Slips EXTRA WIDE | 70 | 29 | 32 | 64 |
| Side-Tie Basin | 80.6 | 39 | N/A | N/A |
| | 101 | 29 | | |

[a] Double slips accommodate two vessels with the associated max. vessel beam.
[b] One of the double slips clear widths is 51 feet.
[c] One of the double slips clear widths is 49 feet.

The floating dock system will be comprised of concrete floating dock segments joined together with a continuous whaler or a hinge. The system will consist of mainwalk segments and finger pier segments. The floats will be made up of a lightweight concrete shell around a solid polystyrene core. The mainwalk float segments will have a typical length of 20 feet, and the finger pier segments will vary in length depending on the slip length that will be accommodated. The mainwalk float segments will be separated by a grating material, which can be supported by steel angle brackets fixed to the concrete floats and/or walers. The grating will have a typical length of 5 feet. Non-structural timber or composite rub board will be added to the outside face of the floats to protect them from wear and damage. Electrical lines and water lines will be carried through the mainwalk floats in 5-inch-deep by 16-inch-wide utility chases. Pull boxes will be provided at pedestal locations where the electrical and water lines will connect. The mainwalk floats and finger pier segments will be restrained by steel pipe piles and will be connected by internal pile collars. Landing floats will be provided at the seaward end of each gangway and will include additional floatation to accommodate the additional load from the gangways.

Three prefabricated aluminum gangways will provide access to the floating docks. These gangways will comply with the Americans with Disabilities Act (ADA) accessibility guidelines outlined in United States Access Board, Accessible Boating Facilities. Per the guidelines, gangways must be designed to provide a maximum 1:12 (8.33%) slope or at least 80 feet in length. Given the elevation difference between the shore and the floating dock at MLLW, 80-foot gangways are needed. The gangways will have a 4-foot-wide travel way, which meets ADA requirements. Gangways will be fixed to the face of the pile caps on the shoreward end and land on a landing float on the seaward end. The gangways will have wheels on the seaward end to accommodate movement with the changing tides. The range of horizontal movement of the gangways between HAT and LAT is less than 2 feet for all three gangways. One gangway will

be placed near the existing gangway alignment. As part of the installation, the existing bulkhead wall, which is in poor condition, will be removed and the existing ground will be regraded.

The floating dock system will be restrained by 123 steel pipe piles. Six steel pipe piles will be out of the water and will support the shoreward end of the gangways. All pipe piles will be PP 24 x 1.000 and will have a fiberglass conical topper, except for the gangway piles, which will be embedded into concrete pile caps.

A pinniped deterrence system will be installed at the floating dock to prevent pinnipeds from climbing on to the floating docks. The pinniped deterrence system will be comprised of low frequency acoustic startle response devices that will target and guide away pinnipeds. The devices will deliver a range of randomized frequencies and tonal patterns designed to startle pinnipeds and not impact other marine mammals. This pinniped deterrence system will be compliant with the National Oceanic and Atmospheric Administration's Marine Mammal Protection Act certification process. The pinniped deterrence system will have a control panel located on the floating dock and will require an electrical connection.

### 3.3.2 Fisherman's Wharf

The Port plans to replace the existing Fisherman's Wharf with a structure that has approximately the same footprint and elevation as the existing dock. The new structure will have a deck that is 224 feet wide by 45 feet, 10 inches long, making it approximately 543 square feet larger than the existing wharf.

The proposed structure will include:

- 56 precast prestressed concrete slab girders (45-foot span)
- 5-inch-thick minimum cast-in-place concrete deck
- Two cast-in-place concrete pile caps founded on 38 concrete-filled steel pipe piles each
- 18 steel fender pipe piles with ultra-high molecular weight polyethylene rub strips
- Four permanent swing hoists (davits), two of which will be salvaged from the existing dock
- Timber bull rail on three sides (west, east, and south)
- Illumination on the west and east side

The girder soffit elevation will be at 13.54 feet MLLW, which provides 2.92 feet and 1.20 feet of freeboard at the HAT and AEP tide levels, respectively. The deck will have a 0.5% grade and no cross slope. Runoff will drain to the shoreward end of the structure to a trench drain. The trench drain will have a traffic-rated cover and will connect to the existing storm sewer network on SE Bay Boulevard with a drain pipe.

The new abutment will be set behind the existing abutments to facilitate staged construction. The existing ground in front of the shoreward abutment will be excavated as necessary to provide a constant slope to the newly dredged elevation in front of the seaward bent. More excavation will be necessary near the centerline of the wharf since the abutment of the timber structure sits approximately 10.5 feet ahead of the existing concrete abutments. The finished grade will have a 4-foot bench in front of the abutment and be 2 feet below the girder sofit. New riprap will be placed in front of the abutment to protect it from scour and provide slope stabilization. The shoreline will be regraded as necessary to catch the finished grade after dredging.

The Port plans to purchase a mobile 10-ton carry deck crane to replace the two existing fixed cranes on the wharf. The carry deck crane will be furnished by the Port and is not included in the costs for this project.

See Appendix A for a plan, elevation, and typical section of the proposed Fisherman's Wharf.

### 3.3.3 Construction Staging

A significant challenge in replacing the existing PD7 infrastructure is providing berth space for vessels at the floating dock and workspace at Fisherman's Wharf during construction. As segments of the existing floating dock are removed, the vessels that are moored in those slips will need to be temporarily moored elsewhere. Facilities that can be used for temporary mooring during construction include the International Terminal, Port Dock 5, and the South Beach Marina (Figure 4). Since vacant slips are scarce, temporary accommodation will need to be created. Presented below is a potential sequence for managing the fleet during replacement of the floating dock and Fisherman's Wharf.


*Figure 4. Locations for Temporary Mooring of Vessels During Construction*

***Floating Dock***

The following is the proposed construction sequence for Fisherman's Wharf (see Figure 5):

- Phase 0
  - Install new utility services at each of the proposed gangway landings.

- Phase 1
  - Remove the outer half of the eastern existing docks and piles and temporarily relocate to the end of the outer western existing docks. Temporarily secure the relocated docks with existing piles in good condition and/or new piles. The total number of new piles is not anticipated to exceed 43 piles.
  - Install the new eastern section of floating docks and utilities (Dock A and B).
- Phase 2
  - Remove all existing docks and piles west of the central existing docks, including the temporarily relocated docks from Phase 1. Temporarily relocate docks, as necessary, to the east side of Port Dock 5 and secure the docks with existing piles in good condition and/or new piles.
  - Install the new western section of floating docks and utilities (Docks D and E).
- Phase 3
  - Remove and dispose of the remaining existing docks and piles and temporarily relocated docks and piles.
  - Install the new central section of floating docks and utilities (Dock C). Relocate existing businesses and install the final gangway.
  - Complete utility connections to the new docks.


*Figure 5. Floating Dock Construction Staging*

***Fisherman's Wharf***

During construction, part of Fisherman's Wharf will be kept open for commercial use. The western section of the existing wharf will be removed first since that is the section that is in the worst condition. The following is the proposed construction sequence for Fisherman's Wharf (see Figure 6):

- Phase 1
  - Remove the western existing concrete section and the central existing timber section of the existing wharf.
  - Construct the new western section of the wharf.
- Phase 2
  - Remove the eastern existing concrete section of the existing wharf.
  - Construct the new eastern section of the wharf.

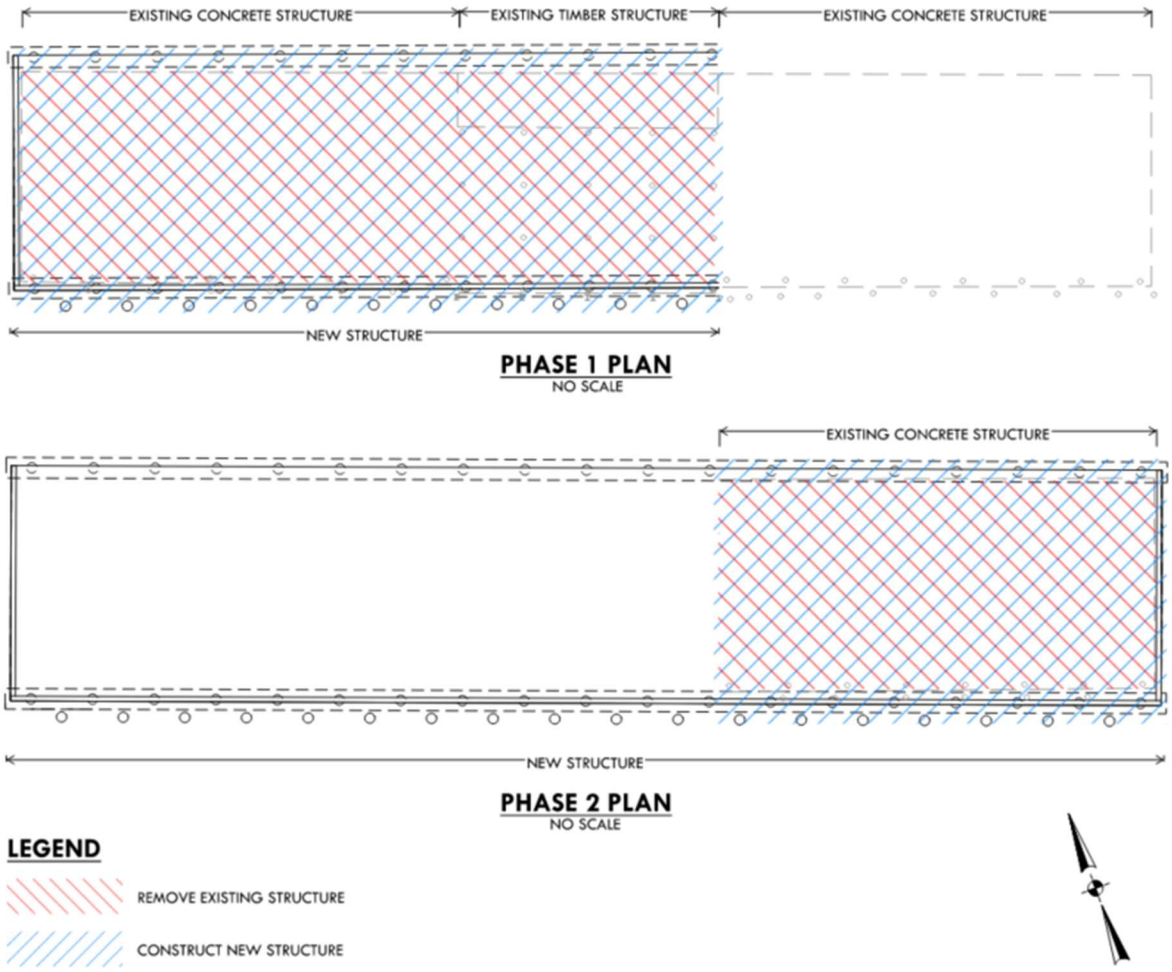



*Figure 6. Fisherman's Wharf Construction Staging*

### 3.3.4 Security Fence

The Port plans to have security fence installed around the uplands of PD7 to restrict access to the floating dock and Fisherman's Wharf. The fence will enclose two regions, one west and one east of the Port Administration Building. The fence will include access gates for authorized personnel and will accommodate the circulation of truck traffic. The proposed security fence includes approximately 2,400 feet of fence, five gates for vehicles, and three gates for pedestrians. The western region will have one vehicular gate at the northwest entrance off SE Bay Boulevard and two along the fence line parallel to the Port Administration Building. The eastern region will have two vehicular gates running perpendicular to the shoreline to accommodate vehicles entering from the west near the Port Administration Building and east near the Yaquina Bay Yacht Club building. The pedestrian gates will be located at the shoreward end of each gangway along the fence line running parallel to the shoreline.

The security fence and gates will be 8 feet tall and will be constructed of wrought iron. The vehicular gates and pedestrian gates will have 14- and 6-foot-wide openings, respectively. The gates will be locked and have proximity card or PIN access, which will require internet connectivity and power at each gate. Since internet connectivity is required, a cybersecurity plan in accordance with U.S. Code 70103(c) will be provided.

See Appendix A for the proposed layout of the security fence and typical fence and gate details.

## 3.4 Utilities

### 3.4.1 Electrical

The electrical power is provided to the area by Central Lincoln People's Utility District (PUD). The electric utility has an existing primary feeder from SE Bay Boulevard that currently powers four services on the property: the port dock building, the existing floating dock, and a service on each side of Fisherman's Wharf. These existing services are 120/208-volt (V) three-phase services.

***Floating Dock***

The floating dock will be designed for a new service located on the land side of each gangway to power the corresponding dock section. The services will include an external pad-mounted utility transformer, new service switchboard, house power panel, security access control panel, and data networking. The service equipment will be housed in conditioned structures to provide weatherproofing. The new structures will be located near the shoreward end of each gangway.

These new structures will be networked together with fiber connection and back the existing Port building on-site where it will tie into the existing port network for data connections. Monitoring and control of the service metering will be performed through Port computers in the dock building utilizing this network connection. The security and access control of the new dock will be networked back to the existing dock building for monitoring.

The west section of the dock will require a 1,600A,120/208V three-phase service. This new service will replace the existing floating dock service. This service will power 22 slips with a 50A three-phase 208V power pedestal each and an additional ten 50A three-phase 208V power pedestals for side slip moorage. House power will provide lighting and standard 120V

maintenance receptacles along the dock; the maintenance receptacles will be controlled from the shore and not normally powered.

The central section of the dock will require a 1,000A, 120/208V three-phase service. This service will power 31 slips with a 30A three-phase 208V power pedestal each and an additional two 30A three-phase 208V power receptacles for the businesses on the dock. House power will provide lighting and standard 120V maintenance receptacles along the dock; the maintenance receptacles will be controlled from the shore and not normally powered.

The east section of the dock will require a 2,000A, 120/208V three-phase service. This service will power 66 slips with a 30A three-phase 208V power pedestal each and an additional two 30A three-phase 208V power receptacles for the businesses on the dock. House power will provide lighting and standard 120V maintenance receptacles along the dock; the maintenance receptacles will be controlled from the shore and not normally powered.

Power pedestals will contain a 30A or 50A three-phase receptacle and a 30A single-phase receptacle. A power pedestal will be provided for each slip for a total of 129 pedestals. Each pedestal will also be independently metered by either a revenue-grade meter in the pedestal or by a central meter in the distribution switchboards capable of tracking power usage at each slip and creating a centralized report each month.

Maintenance receptacles will be spaced 50 feet apart along the dock on separate maintenance circuits from the house power panels. Maintenance receptacles will be in a lockable enclosure to prevent use by non-maintenance personnel.

Lighting along the dock will be mounted under the handrails for the gangways and will meet the requirements for marine lighting. Lighting will be controlled by a photocell and time clock to be on after dark during hours of operation.

The pinniped deterrent system will be installed at key points on the floating dock. It is estimated this will require seven 16A, 208V power connections from the house power panels located on the shore, as well as network controls from each unit to a central controller in the new electrical room on the shore.

All equipment will be ground fault circuit interrupter (GFCI)-protected, as required at the breaker and device level.

***Fisherman's Wharf***

The existing Fisherman's Wharf has two 150-kilo-volt-amperes (kva), 120/208V services powering the existing equipment. The existing service will be replaced with new equipment, housing, and panels to provide weather protection and extend the equipment life. New and relocated davit equipment will be powered from the existing services.

New lighting will be provided at Fisherman's Wharf for better visibility on the wharf as the lot lighting is farther away and blocked by wharf activities. Lighting will be designed for marine environments and minimal light spill into the water.

New 30A three-phase 120/208V receptacles will be provided on the east and west side of the docks for businesses to use. These receptacles will be metered by revenue-grade metering for

passing along the power consumption to the tenant. The existing 120V receptacles will be connected to the new metering system.

***Security Fence***

Power and security access control for each vehicle gate will be provided by connecting each vehicle gate to the nearest electrical building located upland of the floating dock. The security access control of the vehicle gates will be networked back to the existing dock building for monitoring using a fiber connection.

### 3.4.2 Potable Water

Potable water will be provided at the floating dock at each slip. A 4-inch water line will be connected to the existing water line along SE Bay Boulevard, which will extend from the road to the floating dock. The water line will be supported from the gangways and floats and will be routed to each slip with a ¾-inch flexible hose service line where a hose bibb will be provided. The water line will be routed through utility chases in the mainwalk floats. Flexible connections will be provided where the gangways meet the landing floats to allow for movement as the water level changes. The water line supported by the gangways and floats will be high-density polyurethane (HDPE) and cross-lined polyethylene (PEX) pipe. A water meter will be installed at each slip on the floating dock to track and regulate usage.

## 3.5 Geotechnical Investigations

### 3.5.1 Background

The subsurface explorations for the PD7 project were completed during two separate mobilizations in conjunction with the geotechnical explorations completed to support the USACE Port of Newport Navigation Improvement Project. Drilling during the first mobilization occurred on February 28, 2024, and included one rotosonic boring designated 2-A. Drilling during the second mobilization occurred on March 7, 2024, with two mud-rotary borings designated 1-A and 1-C. The locations of the explorations are included on a site plan in the preliminary geotechnical report (see Appendix 4). All three offshore explorations encountered mudstone at depths of less than 1.5 feet below the mudline. A portion of this mudstone will be dredged as part of the deepening effort. Installation and risk of refusal into the remaining mudstone will be a consideration for the floating dock piles. Historical information in the upland portions of the site indicates a risk of liquefaction and lateral spreading, which will be design considerations for the Fisherman's Wharf piles and the floating dock piles near the upland transition. The available historical information indicates the depth to siltstone could vary between about elevation -14 feet to -23 feet in the vicinity of Fisherman's Wharf. The following sections discuss design considerations related to seismicity, liquefaction, and lateral spreading and axial and lateral pile design.

### 3.5.2 Seismic Parameters

Because of the potential public use of the facility, we understand the dock improvements will be designed in accordance with the 2024 *International Building Code* (IBC) and 2025 Oregon Structural Specialty Code, which incorporates recommendations from the ASCE 7-22, *Minimum Design Loads for Building and Other Structures*. The 2024 IBC and ASCE 7-22 seismic hazard levels are based on a Risk-Targeted Maximum Considered Earthquake ($MCE_R$). The ground

motion associated with the probabilistic $MCE_R$ represents a targeted risk level of 1% in 50 years probability of collapse in the direction of maximum horizontal response. In accordance with Section 20.4 of ASCE 7-22, the upland area is classified as Site Class D (Stiff Soil), and the area in the footprint of the floating dock is classified as Site Class C (Very Dense Soil and Soft Rock) based on estimated shear wave velocity in the upper 100 feet of the soil profile.

In accordance with Section 20.2 of ASCE 7-22, sites with subsurface conditions identified as vulnerable to failure or collapse, such as liquefied soils, are classified as Site Class F. For Site Class F sites, ASCE 7-22 Section 20.2 requires completion of a site-specific ground motion analysis unless the structures have a fundamental period of vibration less than or equal to 0.5 seconds. The response spectrum for sites with structures having a fundamental period less than 0.5 seconds can be derived using the non-liquefied subsurface profile. The majority of the floating dock structure will be primarily supported in the underlying non-liquefiable mudstone layer, and site response will not be controlled by a limited thickness of potentially liquefiable soils. Once explorations are completed for Fisherman's Wharf, we recommend reevaluating whether a site response analysis is prudent. Therefore, for this stage of design, we recommend assuming Site Class D is appropriate for Fisherman's Wharf and upland area of the site.

The recommended Risk-Targeted Maximum Considered Earthquake-level and design-level spectral response parameters for the new dock are provided in the table below. The table presents both multi-period and two-period spectral values. The design-level response spectrum is calculated as two-thirds of the ground-surface $MCE_R$ spectrum.

*Table 5. Recommended $MCE_R$ and Design Response Spectral Values at Ground Surface, 5% Damping*

| | Site Class C | | Site Class D | |
|---|---|---|---|---|
| | Recommended Multi-Period Spectral Values | | | |
| Period, seconds | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g |
| PGA | 1.06 | 0.71 | 1.14 | 0.76 |
| 0.05 | 1.32 | 0.88 | 1.33 | 0.89 |
| 0.1 | 1.99 | 1.33 | 1.86 | 1.24 |
| 0.15 | 2.35 | 1.57 | 2.14 | 1.43 |
| 0.2 | 2.46 | 1.64 | 2.31 | 1.54 |
| 0.3 | 2.37 | 1.58 | 2.59 | 1.73 |
| 0.4 | 2.08 | 1.39 | 2.64 | 1.76 |
| 0.5 | 1.79 | 1.19 | 2.47 | 1.65 |
| 0.75 | 1.38 | 0.92 | 2.03 | 1.35 |
| 1 | 1.10 | 0.73 | 1.64 | 1.09 |
| 1.5 | 0.79 | 0.53 | 1.19 | 0.79 |
| 2 | 0.60 | 0.40 | 0.89 | 0.59 |
| 3 | 0.36 | 0.24 | 0.56 | 0.37 |
| 4 | 0.25 | 0.17 | 0.39 | 0.26 |

| Period, seconds | Site Class C | | Site Class D | |
|---|---|---|---|---|
| | Recommended Multi-Period Spectral Values | | | |
| | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g |
| 5 | 0.18 | 0.12 | 0.29 | 0.19 |
| **Parameter** | **Recommended Two-Period Spectral Values** | | | |
| $S_{MS}$ / $S_{DS}$ | 2.22 | 1.48 | 2.38 | 1.59 |
| $S_{M1}$ / $S_{D1}$ | 1.1 | 0.73 | 1.64 | 1.09 |

**Abbreviations:** $MCE_R$ = Risk-Targeted Maximum Considered Earthquake; PGA = peak ground acceleration, $S_{MS}$ and $S_{M1}$= $MCE_R$ spectral values at 0.2- and 1-second, $S_{DS}$ and $S_{D1}$= Design spectral values at 0.2- and 1-second

### 3.5.3 Liquefaction Considerations

Section 11.8.3 of ASCE 7-22 requires the potential for liquefaction to be evaluated for site PGA, earthquake magnitude, and source characteristics consistent with the Maximum Considered Earthquake Geometric Mean PGA. Based on our review of the 2018 U.S. Geological Survey Probabilistic Seismic Hazard Analysis disaggregation, which forms the basis for developing seismic ground motions in accordance with ASCE 7-22, the Cascadia Subduction Zone earthquakes with a $M_W$ of 9.0 generally control the seismic hazards at the project site. For the purposes of these evaluations, we assumed average groundwater elevation of +4 feet. The groundwater elevations correspond to the average of MLLW (+7.60 feet) and MHHW (-0.4 feet) at the site.

The potential for liquefaction was evaluated by comparing the cyclic shear stresses induced within a soil profile during an earthquake to the ability of the soils to resist these stresses. Our analyses indicate that the very loose to medium-dense sands located below the groundwater table to the top of the mudstone are susceptible to liquefaction during the code-based event. Furthermore, our analysis indicates that the underlying mudstone unit is not susceptible to liquefaction.

### 3.5.4 Pile Considerations

As currently planned, the floating dock and Fisherman's Wharf will be supported on 24-inch-diameter steel-pipe piles. The floating dock piles will primarily be laterally loaded, while Fisherman's Wharf piles will have allowable axial capacities of about 300 kips. The majority of the axial foundation support for Fisherman's Wharf piles will be provided in the underlying mudstone. As indicated previously, liquefaction-induced deformations toward the bay will result in kinematic soil loading on the structure during a design level earthquake.

For the floating dock piles, an important design and construction consideration will be driving the piles a sufficient length into the underlying mudstone to achieve lateral fixity. For this reason, we have assumed the piles will be installed open-ended to reduce the risk of shallow refusal. Preliminary design indicates that the floating dock piles should be driven to an estimated tip elevation of -37 feet.

For the axially loaded Fisherman's Wharf piles, we have estimated that piles with ultimate capacities of about 600 kips in compression will likely achieve the design capacity with a 15- to 30-foot embedment into the mudstone. Pile lengths should be reevaluated during the next

phase of design after additional explorations are completed in the Fisherman's Wharf area. Depending on the results of the explorations, a test pile program may be prudent to reduce uncertainty.

If pile coatings are used for corrosion considerations, the potential variability in pile embedment should be considered for the range of estimated coating elevations.

Depending on the results of the additional upland explorations, the team should reevaluate the risks of shallow pile refusal. If harder zones of mudstone are encountered, consideration may be needed for predrilling and socketing piles to achieve the required lateral capacities.

### 3.5.5 Lateral Pile Loading Considerations

The attached geotechnical memo includes tabulated L-Pile parameters for the dock structures. In addition, liquefaction-induced deformations toward the bay will result in kinematic soil forces acting on the structures. We have estimated the earth pressure from the non-liquefied fill (above water level) may be computed using an equivalent fluid having a unit weight of 375 pounds per cubic foot (pcf). The passive pressure will act over two pile diameters for pile sections above the water level, assumed at Mean Sea Level for design. An equivalent fluid weight of 35 pcf will act over one pile diameter for pile sections between elevations 4 feet to the top of the mudstone, which varies along the length of the docks. These pressures and distributions should be reevaluated after additional upland explorations are completed.

### 3.5.6 Proposed Additional Explorations

As the Fisherman's Wharf portion of the project was added following initial project scoping, additional explorations are recommended to supplement the next phase of design. Based on review of existing information and the observed variability of mudstone elevation and fill depths/consistency, we recommend three to five additional explorations to be completed in the upland between the floating dock and fisherman's wharf. These borings can be used to help better estimate pile lengths and the potential for seismically induced liquefaction and lateral spreading at the site.

## 3.6 Environmental Considerations

### 3.6.1 Permitting

The Port is advancing a multi-faceted permitting strategy to support the replacement of PD7 and the associated dredging activities. Given the project's location within coastal waters and its proximity to a federally maintained navigation channel, the permitting process involves coordination with federal and state regulatory agencies, with an emphasis on environmental compliance and streamlined review. Permitting efforts on this project will be combined with the adjacent USACE Port of Newport Navigation Improvement Project to the maximum extent possible.

The permitting effort began with early coordination between the Port and the USACE, Oregon Department of State Lands (DSL), the Oregon Department of Environmental Quality (DEQ), Oregon Department of Land Conservation and Development (DLCD), Oregon Department of Fish and Wildlife (ODFW), and the National Marine Fisheries Service (NMFS). Recognizing the need for dredging to support large commercial vessel access, the Port initiated sediment testing

following the Sediment Evaluation Framework (SEF). A Sediment Sampling and Analysis Plan (SAP) was developed, reviewed, and approved, and field sampling and laboratory analysis was completed by GRI. Results were compiled in a sediment characterization report, forming a foundation for subsequent permit applications.

Following completion of the 30% design efforts, the Port will submit a Joint Permit Application (JPA) for review by USACE and DSL. The JPA will request authorization under:

- Section 404 of the Clean Water Act (USACE)
- Section 10 of the Rivers and Harbors Act (USACE)
- Section 401 Water Quality Certification (DEQ)
- Removal-Fill Law (DSL)

Concurrent with the JPA submittal, the project will require a Biological Assessment (BA) to initiate consultation under the Endangered Species Act (ESA) and address Essential Fish Habitat (EFH) requirements. The BA will be submitted to NMFS. Because the project occurs within Oregon's coastal zone, a Coastal Zone Management Act (CZMA) consistency review will also be initiated through the DLCD.

Impacts to eelgrass beds are expected as a result of dredging. To address these impacts, the Port is coordinating with agencies to develop a comprehensive eelgrass mitigation plan. Rather than crafting separate plans, the Port will propose a unified mitigation strategy to offset all eelgrass impacts with a single, well-coordinated action. Field verification of eelgrass presence and density has already been completed to support mitigation site planning and credit estimation.

All in-water work will occur between November 1 and February 1, which is the ODFW preferred in-water work window (IWWW) for the Yaquina River estuary. The removal of the existing structures and the construction of the proposed structures will be conducted in accordance with the General Construction design criteria outline in the Standard Local Operating Procedures for Endangered Species (SLOPES) IV In-water/Over-water Structures programmatic opinion.

The existing creosote-treated wood floating docks will be disconnected from the support piles and floated to a nearby boat ramp where they will be transported and disposed of at an appropriate upland location. The existing steel piles will be dislodged with a vibratory hammer and slowly lifted from the sediment and placed into a containment basin. The existing fisherman's wharf will be deconstructed and reconstructed with containment measures in place to prevent debris from entering the water. The new replacement piles will be installed using an impact hammer. The contractor will implement appropriate sound attenuation methods, such as confined or unconfined bubble curtains.

Additional mitigation is expected for new piling and the increased footprint of the proposed PD7 floating dock system. Due to the heavy commercial and industrial uses of PD7, solid concrete floating docks are required to provide sufficient durability. For these systems it is impractical to meet the minimum 60% open area requirement that is typically required by DSL and NMFS. Grating can be provided on up to 25% of the floating dock area. As part of the permitting strategy, the Port will need to demonstrate that no practicable alternatives are available and may need to provide additional mitigation at another location. The Port's planned demolition and rebuilding of the public fishing pier is expected to provide the mitigation needed to offset the proposed impacts from the PD7 project.

The project will require local permits to be acquired from the City of Newport. Local permits will include an estuarine use permit, a building permit, a right-of-way encroachment permit, and a storm water discharge permit.

# 4.0 GRANT FUNDS, SOURCES, AND USE OF FUNDS

The Port has been awarded a Connect Oregon grant through ODOT. This grant will provide $6,986,600 towards the project but is contingent on MARAD awarding a PIDP grant for the project. The Port is seeking to acquire an additional $1,933,400 through the Ports general funds or a loan through Business Oregon.

The total cost of the project is estimated to be $44,600,000 (see Appendix 2). The Port is seeking $35,680,000 in PIDP funds to complete the project. See Table 6 for a breakdown of PIDP funds and non-federal funds.

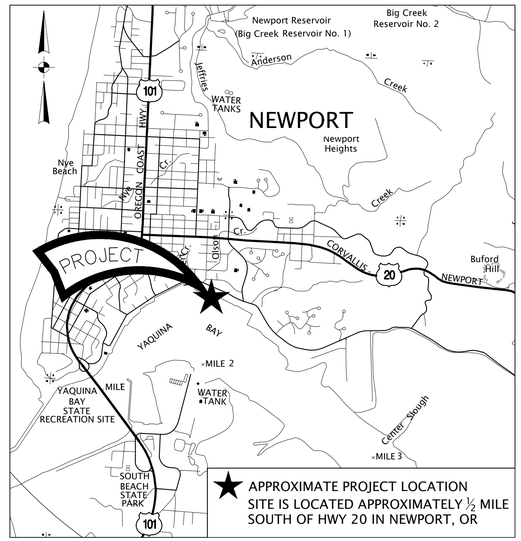
*Table 6. Project Costs*

| | Funding Amount | % of Project Cost |
|---|---|---|
| PIDP Funds | **$35,680,000** | **80%** |
| Non-Federal Funds | **$8,920,000** | **20%** |
| Total | **$44,600,000** | **100%** |

# APPENDIX 1:
# PRELIMINARY PLANS

# PORT OF NEWPORT
## DOCK 7 REPLACEMENT DESIGN
### YAQUINA BAY
### NEWPORT, OR

| SHEET INDEX | |
|---|---|
| SHEET NO. | DESCRIPTION |
| 1 | TITLE SHEET |
| 2 | SITE PLAN |
| 3 | FLOATING DOCK DEMOLITION PLAN |
| 4 | FLOATING DOCK PLAN |
| 5 | FLOATING DOCK DETAILS |
| 6 | GANGWAY DETAILS |
| 7 | ELECTRICAL PLAN |
| 8 | FISHERMAN'S WHARF DEMOLITION PLAN |
| 9 | FISHERMAN'S WHARF PLAN AND ELEVATION |
| 10 | FISHERMAN'S WHARF TYPICAL SECTION |
| 11 | FENCE AND GATE DETAILS |




VICINITY MAP
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
10/09/22
OREGON
OCTOBER, 2022
JAEL WETTACH-OGLE
EXPIRES: 12/31/
30% PLANS

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ACCOMPANIED BY DRAWINGS:

SCALE WARNING
If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN
YAQUINA BAY
NEWPORT, OR

TITLE SHEET


DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM


| DESIGNER: Baelie Werner, EI | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Jael Wettach-Ogle, PE | DRAFTER: Samantha Stauss |

| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
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| AUG 2025 | N/A | N/A | 1 OF 11 | 1 |

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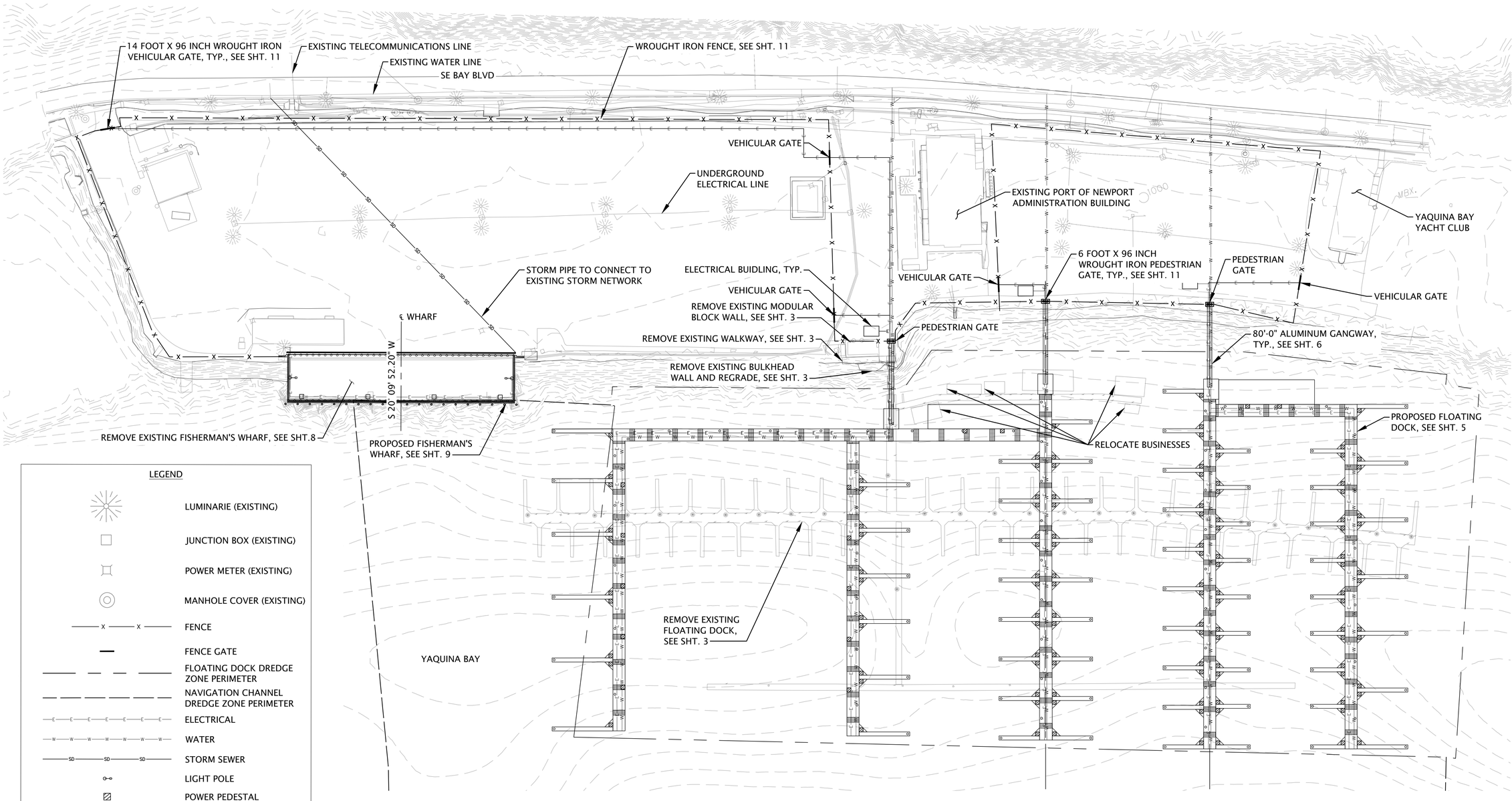


LEGEND

- LUMINARIE (EXISTING)
- JUNCTION BOX (EXISTING)
- POWER METER (EXISTING)
- MANHOLE COVER (EXISTING)
- FENCE
- FENCE GATE
- FLOATING DOCK DREDGE ZONE PERIMETER
- NAVIGATION CHANNEL DREDGE ZONE PERIMETER
- ELECTRICAL
- WATER
- STORM SEWER
- LIGHT POLE
- POWER PEDESTAL

## SITE PLAN

SCALE: 1" = 50'-0"

REGISTERED PROFESSIONAL ENGINEER — OREGON — 13008724 — DECEMBER, 2022 — BAELIE WETTACH-OGLE — EXPIRES: 12/31/

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PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

SITE PLAN

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| DESIGNER: Baelie Werner, EI | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Jael Wettach-Ogle, PE | DRAFTER: Samantha Stauss |

| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
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EXISTING MODULAR BLOCK WALL

EXISTING WALKWAY

EXISTING BULKHEAD WALL

EXISTING GANGWAY

RELOCATE BUSINESSES

EXISTING FLOATING DOCK

LEGEND

REMOVAL LIMITS

YAQUINA BAY

## DEMOLITION PLAN

SCALE: 1" = 30'-0"

REGISTERED PROFESSIONAL ENGINEER 100987PE OREGON DECEMBER, 2022 JAEL WETTACH-OGLE EXPIRES: 12/31/

30% PLANS

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PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FLOATING DOCK DEMOLITION PLAN

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503.620.6103
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| | | | |
|---|---|---|---|
| DESIGNER: Baelie Werner, EI | | REVIEWER: Nick Robertson, PE, SE | |
| CHECKER: Jael Wettach-Ogle, PE | | DRAFTER: Samantha Stauss | |
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LEGEND

- SINGLE SLIP
- WIDE DOUBLE SLIP
- EXTRA WIDE DOUBLE SLIP
- FLOATING DOCK DREDGE ZONE PERIMETER
- NAVIGATION CHANNEL DREDGE ZONE PERIMETER
- ELECTRICAL
- WATER
- FENCE
- GRATING
- POWER PEDSTAL
- SPILL RESPONSE BOX
- LIFE RING
- FIRE EXTINGUISHER
- SAFETY LADDER

10'-0" X 15'-0" ELECTRICAL BUILDING, TYP.

GANGWAY PILE CAP, TYP.

GANGWAY 1

GANGWAY 2

GANGWAY 3

80'-0" ALUMINUM GANGWAY, TYP.

RELOCATED BUSINESSES

RELOCATED BUSINESSES

12'-0", TYP.

PP 24 X 1.000 PILE, TYP.

4'-0", TYP.

S19° 56' 14.39"W, TYP.

286'-0"

291'-1"

361'-3"

365'-0"

339'-11"

CONCRETE FLOATS, TYP., SEE SHT. 5

CONCRETE FLOATS, TYP., SEE SHT. 5

| 60'-0" FINGER PIERS | 219'-0¾" SIDE TIE BASIN | 50'-0" FINGER PIERS | 88'-2" FAIRWAY | 40'-0" FINGER PIERS | 40'-0" FINGER PIERS | 69'-5" FAIRWAY | 40'-0" FINGER PIERS | 34'-0" FINGER PIERS | 59'-7" FAIRWAY | 34'-0" FINGER PIERS | 50'-0" FINGER PIERS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ℄ DOCK E | | ℄ DOCK D | | ℄ DOCK C | | | ℄ DOCK B | | | ℄ DOCK A | |

844'-9"
DOCK

# PLAN

SCALE: 1" = 30'-0"

REGISTERED PROFESSIONAL ENGINEER
13006274
OREGON
DECEMBER, 2022
JAEL WETTACH-OGLE
EXPIRES: 12/31/

SUBMITTAL

| △ | DATE | REVISION | BY |
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PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FLOATING DOCK PLAN

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5 Centerpointe Drive, Suite 350
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| DESIGNER: Baelie Werner, EI | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Jael Wettach-Ogle, PE | DRAFTER: Samantha Stauss |

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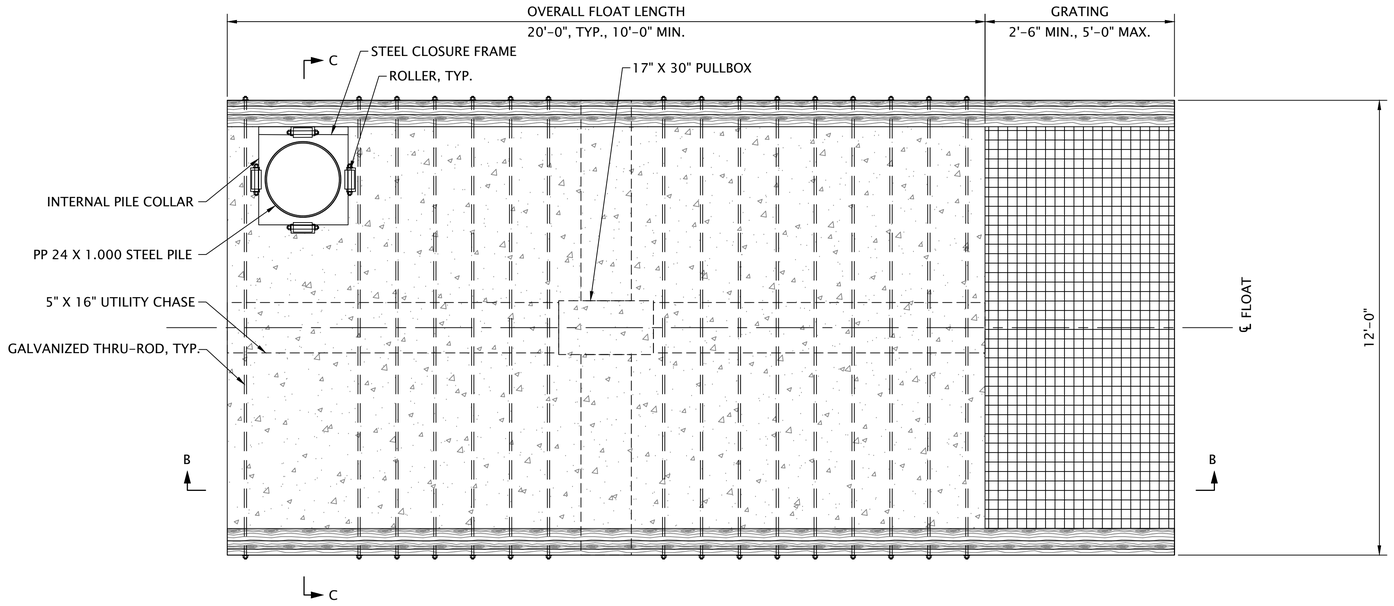



## FLOAT PLAN VIEW

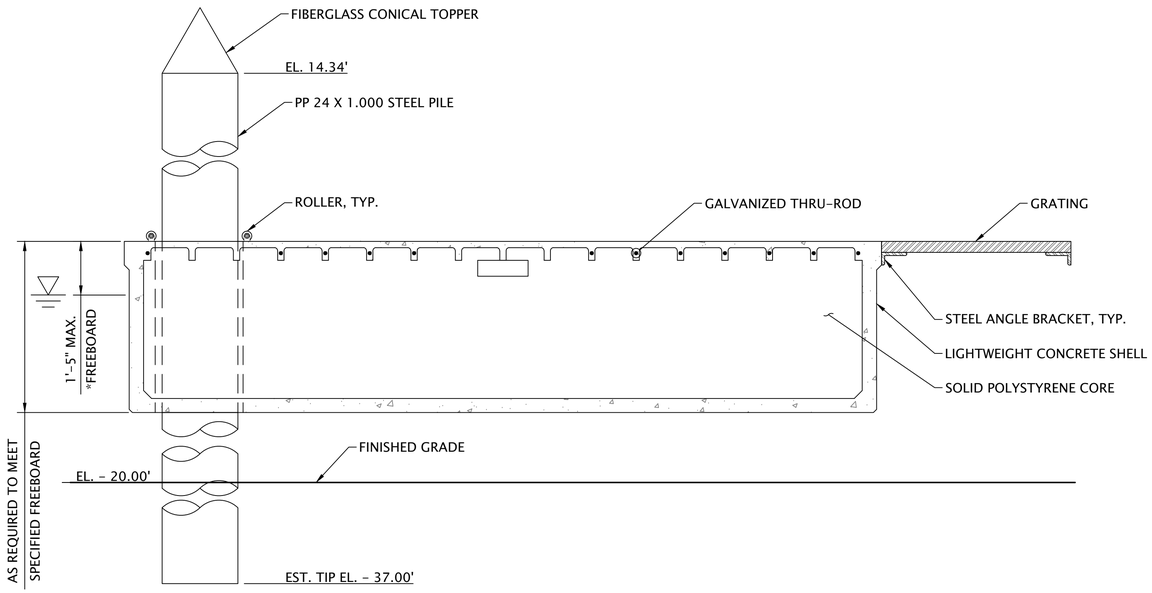
SCALE: 1/2" = 1'-0"

NOTES:

MAINWALK FLOAT SHOWN. FINGER PIER FLOATS AND GANGWAY LANDING FLOATS ARE SIMILAR.

PILE LOCATION IN MAINWALK FLOAT VARIES, SEE SHT. 2 FOR PILE LOCATIONS.

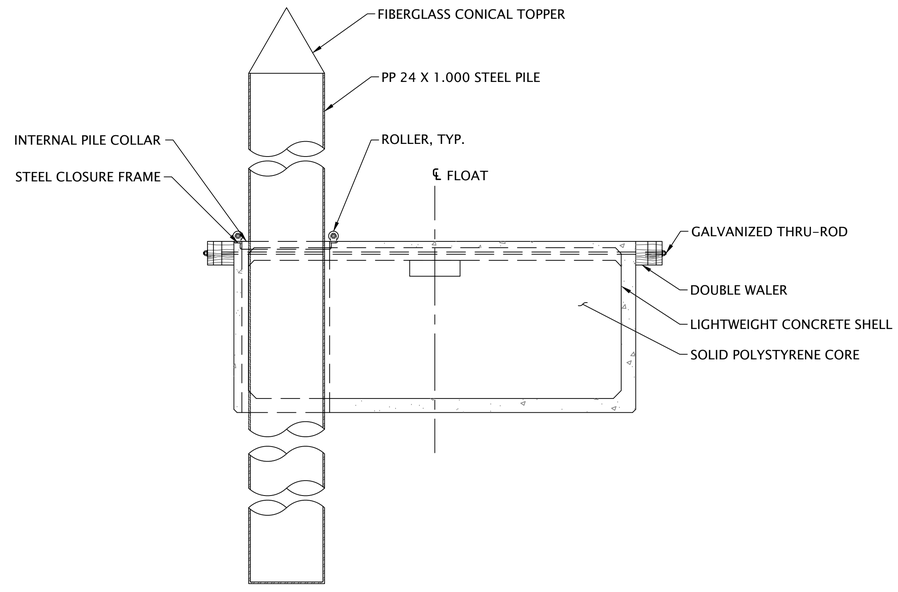
PULLBOX AND UTILITY CHASE PERPENDICULAR TO ℄ FLOAT VARIES BASED ON PEDESTAL LOCATIONS, SEE SHT. 2 FOR PEDESTAL LOCATIONS.




* MIN. FREE BOARD
DEAD LOAD ONLY = 1'-2"
DEAD LOAD AND LIVE LOAD = 11"

## SECTION B-B

SCALE: 1/2" = 1'-0"




## SECTION C-C

SCALE: 1/2" = 1'-0"

NOTE:
ELEVATIONS SHOWN ARE BASED ON MEAN LOWER-LOW WATER (MLLW) VERTICAL DATUM.

REGISTERED PROFESSIONAL ENGINEER — OREGON — NOVEMBER, 2022 — WETTACH-OGLE — EXPIRES: 12/31/ — 3DB PLANS

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SCALE WARNING

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PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FLOATING DOCK DETAILS

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
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| | | | |
|---|---|---|---|
| DESIGNER: Baelie Werner, EI | | REVIEWER: Nick Robertson, PE, SE | |
| CHECKER: Jael Wettach-Ogle, PE | | DRAFTER: Samantha Stauss | |
| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
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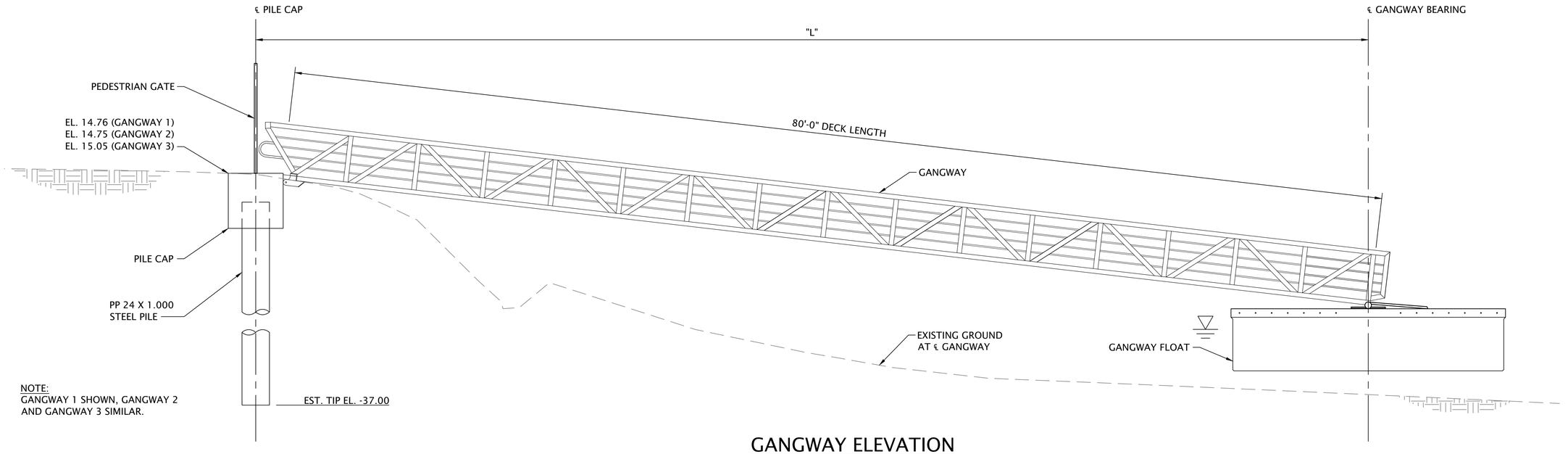
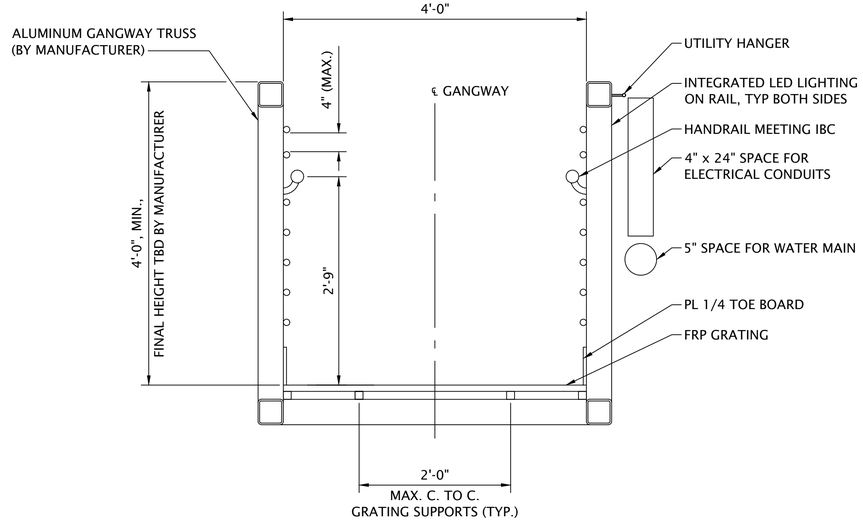



NOTE:
GANGWAY 1 SHOWN, GANGWAY 2
AND GANGWAY 3 SIMILAR.

## GANGWAY ELEVATION

SCALE: 1/4" = 1'-0"




| GANGWAY NO. | APPROX. "L" AT GIVEN WATER ELEVATION | | | RANGE |
|---|---|---|---|---|
| | HAT | MHHW | LAT | |
| 1 | 78'-0 ½" | 79'-9" | 79'-10 3/4" | 1'-10 1/4" |
| 2 | 78-0 ¾" | 79'-9" | 79'-10 3/4" | 1'-10" |
| 3 | 77'-11 ¾" | 79-8 ½" | 79'-10 1/2" | 1'-10 3/4" |

NOTE:
ELEVATIONS SHOWN ARE BASED ON MEAN
LOWER-LOW WATER (MLLW) VERTICAL DATUM.

## TYPICAL GANGWAY SECTION

SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
13008PE
OREGON
DECEMBER, 2022
SAMANTHA M. WETTACH-OGLE
EXPIRES: 12/31/

| △ | DATE | REVISION | BY |
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SCALE WARNING

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PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

GANGWAY DETAILS

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5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| DESIGNER: Baelie Werner, EI | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Jael Wettach-Ogle, PE | DRAFTER: Samantha Stauss |

| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
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| AUG 2025 | N/A | N/A | 6 OF 11 | 6 |

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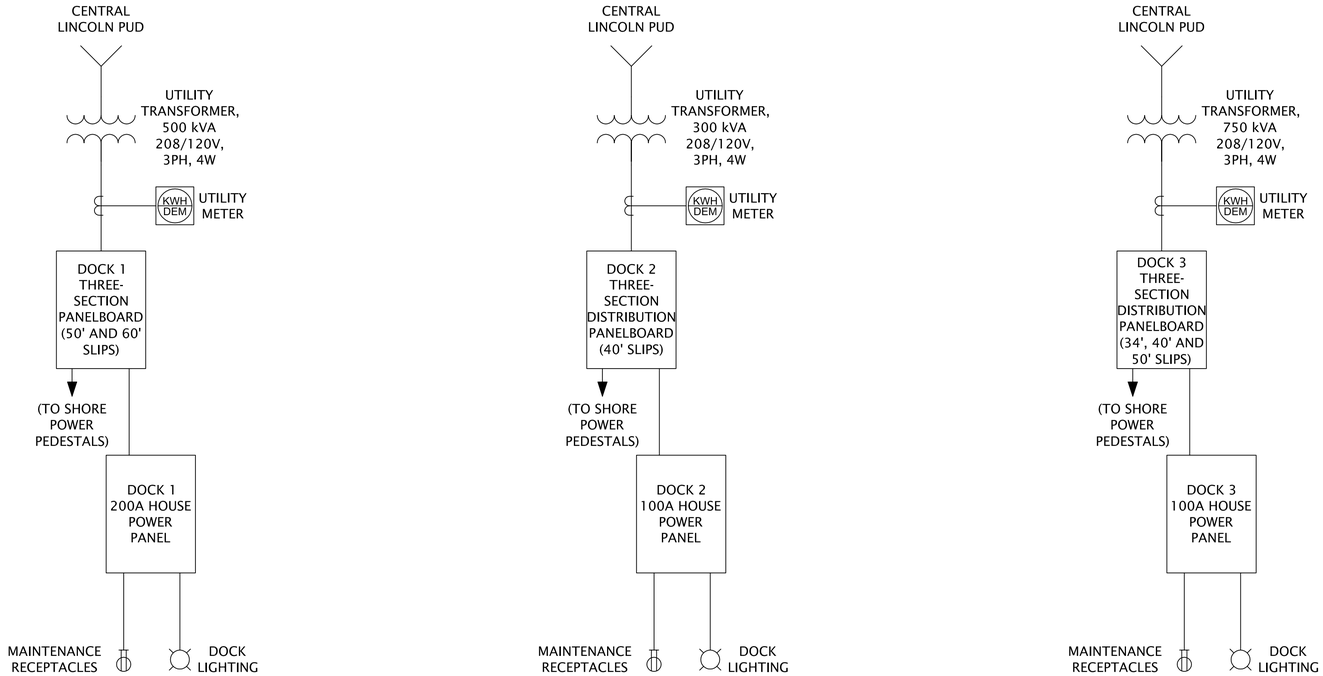


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ACCOMPANIED BY DRAWINGS:

SCALE WARNING

If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

ELECTRICAL ONE LINE DIAGRAM

HDR ENGINEERING, INC.
1050 SW 6TH AVE, SUITE 1800
PORTLAND, OR 97204
(503) 423-3700

| DESIGNER: Ian Paulo-Santiago | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Todd Thayer, PE | DRAFTER: Shawn Nishimura |

| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
|---|---|---|---|---|
| AUG 2025 | N/A | N/A | 7 OF 11 | 7 |

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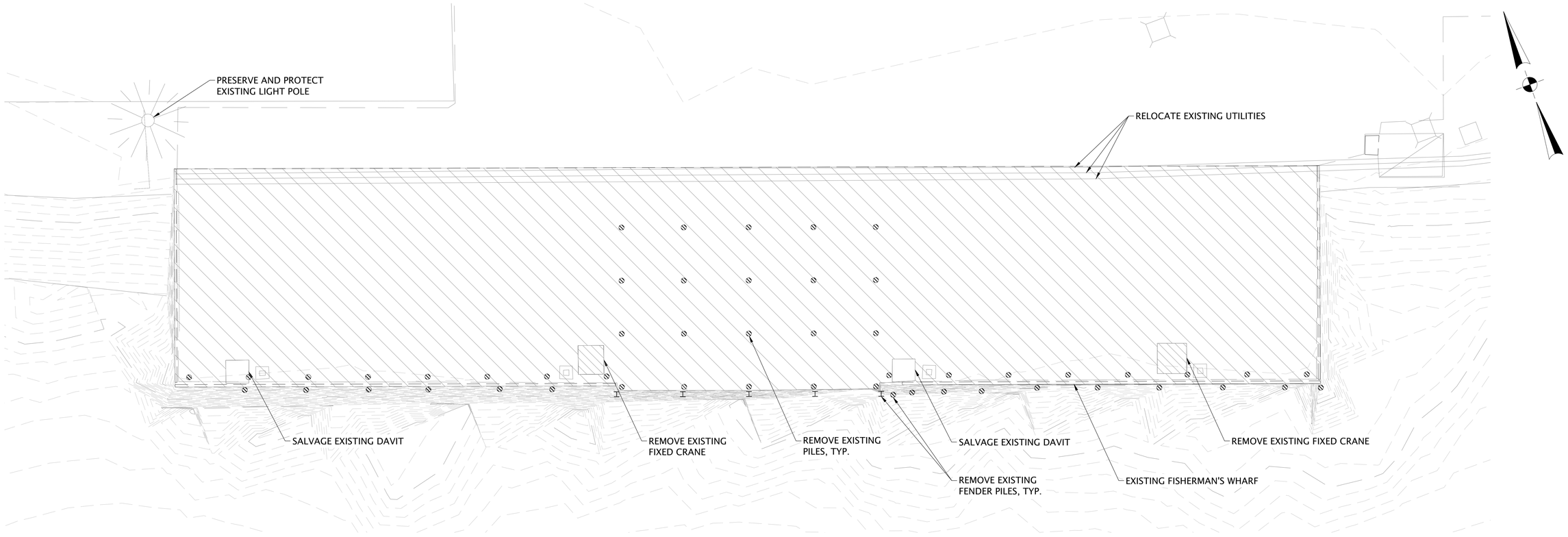


# DEMOLITION PLAN

SCALE: 1" = 10'-0"

LEGEND

REMOVAL LIMITS

REGISTERED PROFESSIONAL ENGINEER
100987PE
OREGON
DECEMBER, 2022
JASON WETTACH-OGLE
EXPIRES: 12/31/

30% PLANS

| △ | DATE | REVISION | BY |
|---|---|---|---|
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ACCOMPANIED BY DRAWINGS:

SCALE WARNING

If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FISHERMAN'S WHARF DEMOLITION PLAN

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| DESIGNER: Baelie Werner, EI | REVIEWER: Nick Robertson, PE, SE |
|---|---|
| CHECKER: Jael Wettach-Ogle, PE | DRAFTER: Samantha Stauss |

| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
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| AUG 2025 | N/A | N/A | 8 OF 11 | 8 |

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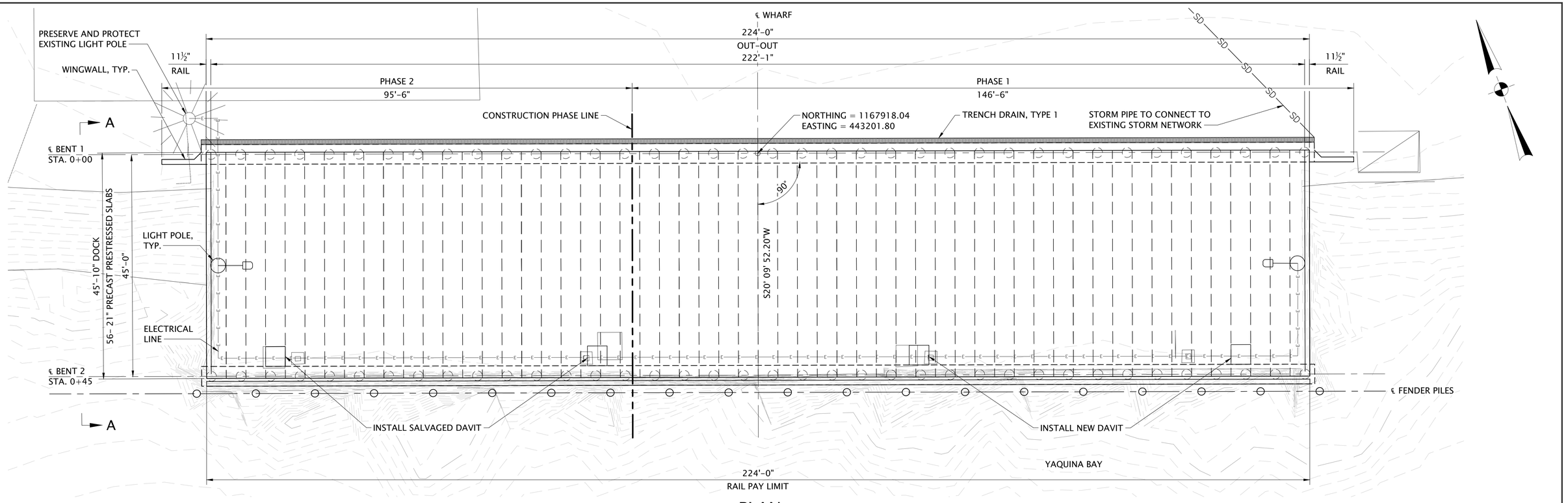
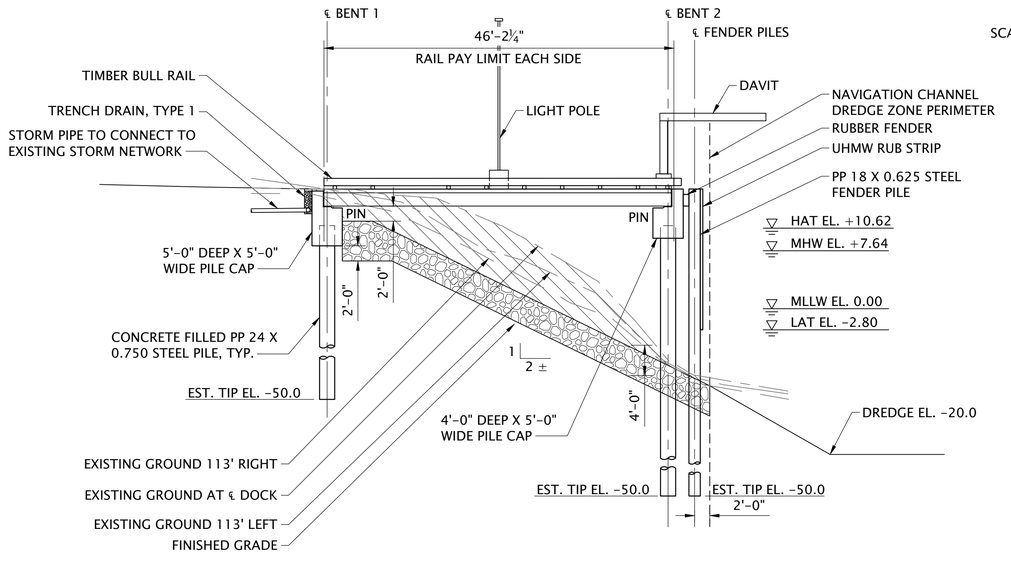



## PLAN
SCALE: 1" = 10'-0"



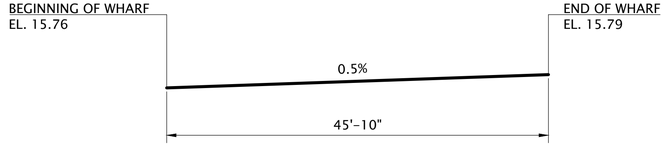

## VIEW A-A
SCALE: 1" = 10'-0"

NOTE:
ELEVATIONS SHOWN ARE BASED ON MEAN LOWER-LOW WATER (MLLW) VERTICAL DATUM.

LEGEND:

FOUNDATION EXCAVATION

LOOSE RIPRAP, CLASS 700




## "℄ WHARF" GRADELINE DIAGRAM
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
OREGON
DECEMBER, 2022
JAEL WETTACH-OGLE
EXPIRES: 12/31/
50% PLANS

| △ | DATE | REVISION | BY |
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ACCOMPANIED BY DRAWINGS:

SCALE WARNING
If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FISHERMAN'S WHARF PLAN AND ELEVATION

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| | | | |
|---|---|---|---|
| DESIGNER: Baelie Werner, EI | | REVIEWER: Nick Robertson, PE, SE | |
| CHECKER: Jael Wettach-Ogle, PE | | DRAFTER: Samantha Stauss | |
| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
| AUG 2025 | N/A | N/A | 9 OF 11 | 9 |

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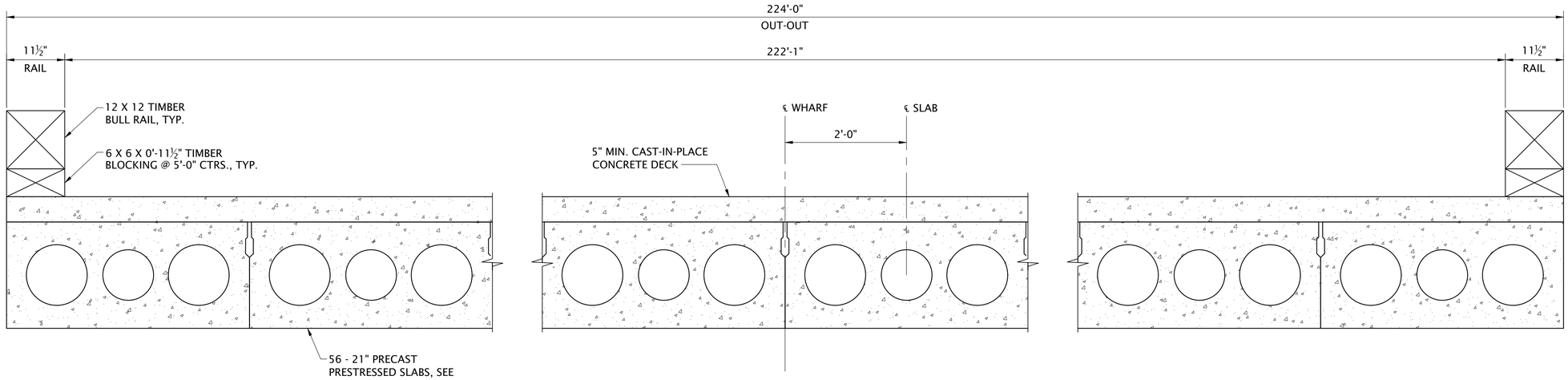


## TYPICAL SECTION

SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
10/08/14
OREGON
OCTOBER, 2022
JAEL WETTACH-OGLE
EXPIRES: 12/31/
30% PLANS

| △ | DATE | REVISION | BY |
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ACCOMPANIED BY DRAWINGS:

SCALE WARNING

If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FISHERMAN'S WHARF TYPICAL SECTION

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| | | | |
|---|---|---|---|
| DESIGNER: Baelie Werner, EI | | REVIEWER: Nick Robertson, PE, SE | |
| CHECKER: Jael Wettach-Ogle, PE | | DRAFTER: Samantha Stauss | |
| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
| AUG 2025 | N/A | N/A | 10 OF 11 | 10 |

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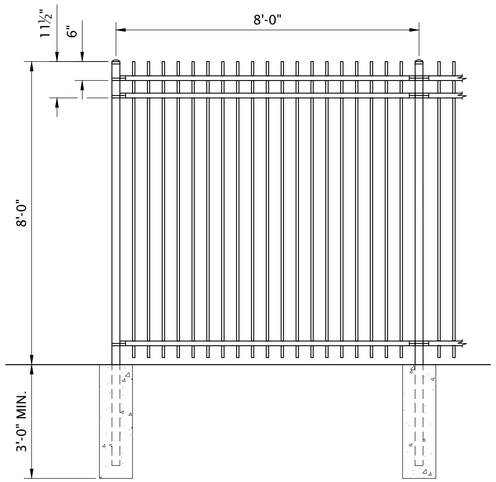
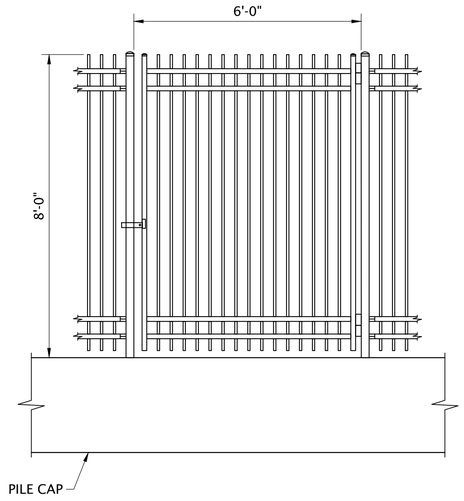


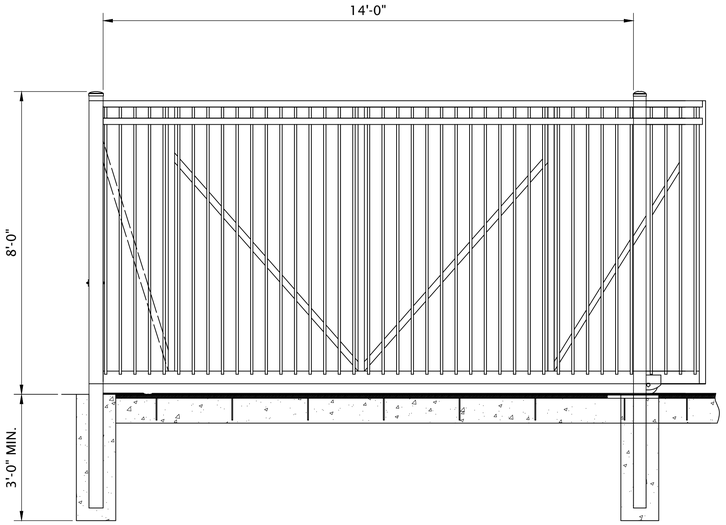

## SECURITY FENCE DETAIL

SCALE: 1/2" = 1'-0"




## PEDESTRIAN GATE DETAIL

SCALE: 1/2" = 1'-0"




## VEHICULAR GATE DETAIL

SCALE: 1/2" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
120987PE
OREGON
DECEMBER, 2022
JAEL WETTACH-OGLE
30% PLANS
EXPIRES: 12/31/

| △ | DATE | REVISION | BY |
|---|---|---|---|
| | | | |
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| 4 | | | |

ACCOMPANIED BY DRAWINGS:

SCALE WARNING

If scale bar does not measure one inch, then drawing is not to scale

PORT OF NEWPORT
DOCK 7 REPLACEMENT DESIGN

YAQUINA BAY
NEWPORT, OR

FENCE AND GATE DETAILS

DOWL
5 Centerpointe Drive, Suite 350
Lake Oswego, OR 97035
503.620.6103
WWW.DOWL.COM

| | | | |
|---|---|---|---|
| DESIGNER: Baelie Werner, EI | | REVIEWER: Nick Robertson, PE, SE | |
| CHECKER: Jael Wettach-Ogle, PE | | DRAFTER: Samantha Stauss | |
| DATE | STRUCTURE NO. | CALC. BOOK | SHEET | DRAWING NO. |
| AUG 2025 | N/A | N/A | 11 OF 11 | 11 |

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# APPENDIX 2:
# PRELIMINARY COST ESTIMATE

**Port Dock 7 Replacement**
**Port of Newport**
**Newport, Oregon**
**DOWL Project No. 2621.80022.01**

**Engineer's Opinion of Probable Construction Cost**

**Preliminary (30%) Plan Submittal**
**August 14, 2025**

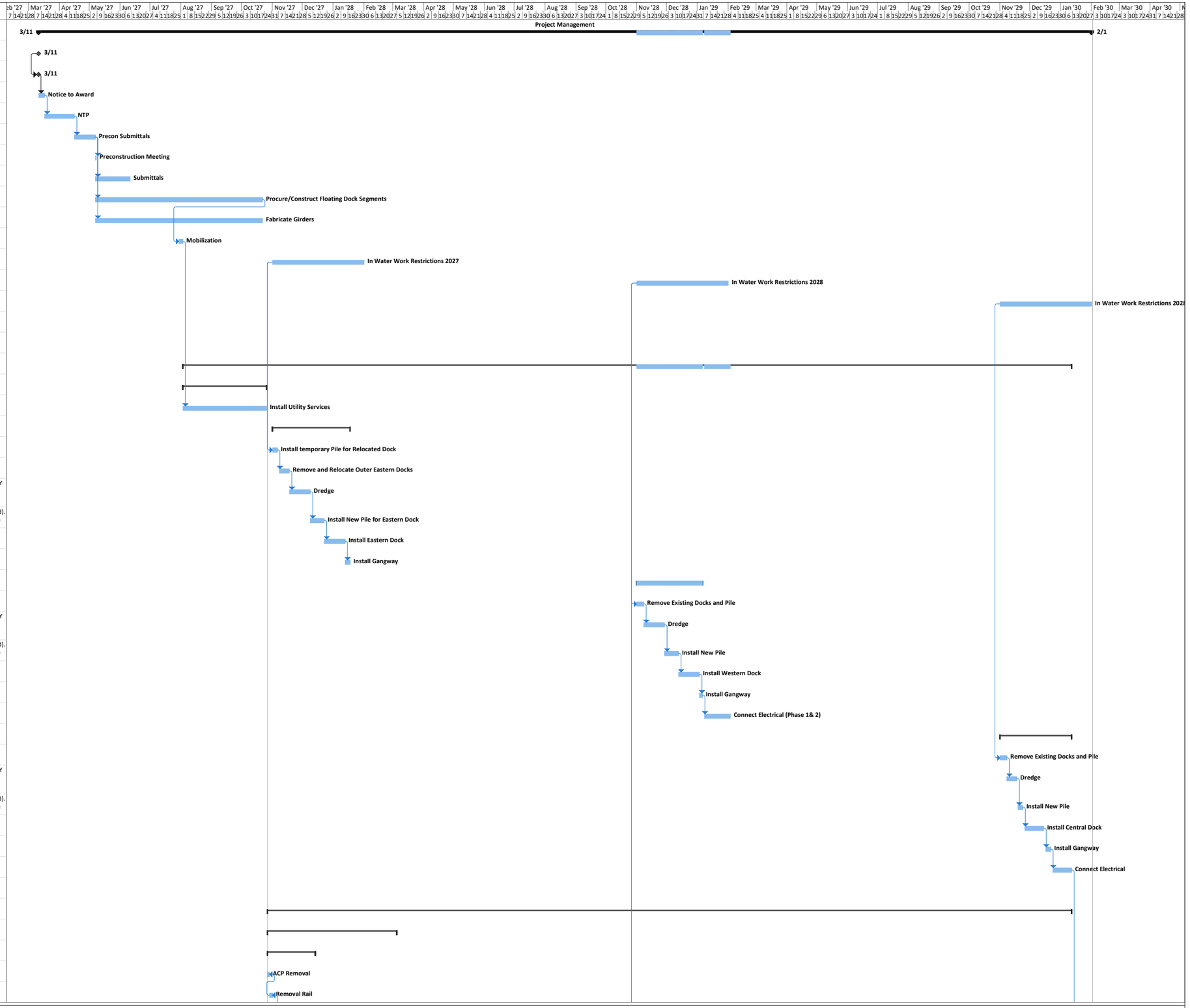
| Spec. No. | Item No. | Item | Est. Unit | Quantity | Unit Price | Total Price |
|---|---|---|---|---|---|---|
| | | **TEMPORARY FEATURES AND APPURTENANCES** | | | | |
| 00210 | 10 | Mobilization | LS | 1 | $ 2,790,000.00 | $ 2,790,000.00 |
| 00250 | 20 | Temporary Work Zone Traffic Control, Complete | LS | 1 | $ 15,000.00 | $ 15,000.00 |
| 00253 | 30 | Temporary Work Access and Containment | LS | 1 | $ 50,000.00 | $ 50,000.00 |
| 00280 | 40 | Erosion Control | LS | 1 | $ 5,000.00 | $ 5,000.00 |
| 00290 | 50 | Pollution Control Plan | LS | 1 | $ 2,000.00 | $ 2,000.00 |
| 00290 | 60 | Work Containment Plan | LS | 1 | $ 10,000.00 | $ 10,000.00 |
| 00290 | 70 | Turbidity Monitoring | LS | 1 | $ 10,000.00 | $ 10,000.00 |
| | | **SUBTOTAL** | | | | **$ 2,882,000.00** |
| | | **FLOATING DOCK** | | | | |
| 00310 | 80 | Removal of Structures and Obstructions, Bulkhead Wall | LS | 1 | $ 20,000.00 | $ 20,000.00 |
| 00310 | 90 | Removal of Structures and Obstructions, Modular Block Wall | LS | 1 | $ 5,000.00 | $ 5,000.00 |
| 00310 | 100 | Removal of Structures and Obstructions, Timber Walkway | LS | 1 | $ 1,000.00 | $ 1,000.00 |
| 00330 | 110 | General Excavation | CY | 70 | $ 80.00 | $ 5,600.00 |
| XXXXX | 120 | Floating Dock Dredging | CY | 104,455 | $ 35.00 | $ 3,655,925.00 |
| 00495 | 130 | Trench Resurfacing | SY | 119 | $ 245.00 | $ 29,155.00 |
| 00501 | 140 | Dock Removal | LS | 1 | $ 870,000.00 | $ 870,000.00 |
| 00501 | 150 | Extra for Salvaging and Stockpiling Structure | LS | 1 | $ 50,000.00 | $ 50,000.00 |
| 00510 | 160 | Structure Excavation | CY | 27 | $ 254.00 | $ 6,858.00 |
| 00510 | 170 | Granular Structure Backfill | CY | 12 | $ 342.00 | $ 4,104.00 |
| 00520 | 180 | Furnish Pile Driving Equipment | LS | 1 | $ 80,000.00 | $ 80,000.00 |
| 00520 | 190 | Furnish PP 24 x 1.000 Steel Piles | FT | 6,614 | $ 366.00 | $ 2,420,724.00 |
| 00520 | 200 | Drive PP 24 x 1.000 Steel Piles | EA | 129 | $ 8,000.00 | $ 1,032,000.00 |
| 00520 | 210 | Pile Concrete | LS | 1 | $ 13,320.00 | $ 13,320.00 |
| 00520 | 220 | Reinforced Pile Tips | EA | 129 | $ 462.00 | $ 59,598.00 |
| 00520 | 230 | Steel Pile Protective Coating | LS | 1 | $ 175,000.00 | $ 175,000.00 |
| 00530 | 240 | Coated Reinforcement, Grade 60 | LB | 3,750 | $ 5.00 | $ 18,750.00 |
| 00540 | 250 | General Structural Concrete, Class 4000 | CY | 15 | $ 3,493.00 | $ 52,395.00 |
| 00589 | 260 | Utility Attachment on Structure, Electrical | LS | 1 | $ 30,000.00 | $ 30,000.00 |
| 00589 | 270 | Utility Attachment on Structure, Potable Water | LS | 1 | $ 50,000.00 | $ 50,000.00 |
| 00592 | 280 | Structural Aluminum Gangway | EA | 3 | $ 90,000.00 | $ 270,000.00 |
| 00598 | 290 | Structural Precast Concrete Float System, 4 Feet Wide | SF | 10,808 | $ 180.00 | $ 1,945,440.00 |
| 00598 | 300 | Structural Precast Concrete Float System, 12 Feet Wide | SF | 26,480 | $ 180.00 | $ 4,766,400.00 |
| 005XX | 310 | Pinniped Deterrence Technology | LS | 1 | $ 105,000.00 | $ 105,000.00 |
| 00960 | 320 | Lighthouse Pedestal | EA | 125 | $ 3,168.00 | $ 396,000.00 |
| 00960 | 330 | Vendor Pedestal | EA | 4 | $ 2,009.00 | $ 8,036.00 |
| 00960 | 340 | 1000A Service | EA | 1 | $ 41,479.00 | $ 41,479.00 |
| 00960 | 350 | 1600A Service | EA | 1 | $ 45,642.00 | $ 45,642.00 |
| 00960 | 360 | 2000A Service | EA | 1 | $ 50,070.00 | $ 50,070.00 |
| 00970 | 370 | 1000A Dist Section | EA | 1 | $ 22,942.00 | $ 22,942.00 |
| 00970 | 380 | 1600A Dist Section | EA | 2 | $ 26,838.00 | $ 53,676.00 |
| 00970 | 390 | 2000A Dist Section | EA | 3 | $ 29,524.00 | $ 88,572.00 |
| 00970 | 400 | House Panel | EA | 3 | $ 7,018.00 | $ 21,054.00 |
| 00970 | 410 | Multi-Point Meters | EA | 6 | $ 56,048.00 | $ 336,288.00 |
| 00970 | 420 | 1" Fiberglass Conduit | FT | 40,000 | $ 21.00 | $ 840,000.00 |
| 00970 | 430 | #6 XHHW Wire | FT | 300,000 | $ 2.50 | $ 750,000.00 |
| 00970 | 440 | #10 XHHW Wire | FT | 30,000 | $ 1.10 | $ 33,000.00 |
| 00970 | 450 | Handrail Lighting | EA | 45 | $ 872.00 | $ 39,240.00 |
| 00970 | 460 | Pinniped Deterrence Technology Connections | EA | 3 | $ 1,138.00 | $ 3,414.00 |
| 00970 | 470 | Security | LS | 1 | $ 46,948.00 | $ 46,948.00 |
| 00970 | 480 | Network | LS | 1 | $ 34,848.00 | $ 34,848.00 |
| 01140 | 490 | 4 Inch Potable Water Pipe, Fittings, and Couplings with Class B Backfill | FT | 642 | $ 110.00 | $ 70,620.00 |
| 01140 | 500 | 4 Inch Potable Water Pipe, Fittings, and Couplings on Structure | FT | 2,455 | $ 100.00 | $ 245,500.00 |
| 01140 | 510 | Ductile Iron Pipe Tees, 10 x 10 x 4 Inch | EA | 3 | $ 2,700.00 | $ 8,100.00 |
| 01140 | 520 | 4 Inch Connection to 10 Inch Existing Main | EA | 3 | $ 3,000.00 | $ 9,000.00 |
| 01170 | 530 | 3/4 Inch Water Service Connection Piping | FT | 665 | $ 70.00 | $ 46,550.00 |
| 01170 | 540 | 3/4 Inch Water Meter Assembly | EA | 133 | $ 2,000.00 | $ 266,000.00 |
| XXXXX | 550 | Fire Extinguisher Station | EA | 30 | $ 1,500.00 | $ 45,000.00 |
| XXXXX | 560 | Life Ring Station | EA | 12 | $ 1,500.00 | $ 18,000.00 |
| XXXXX | 570 | Spill Response Box | EA | 3 | $ 2,000.00 | $ 6,000.00 |
| XXXXX | 580 | Safety Ladder | EA | 3 | $ 500.00 | $ 1,500.00 |
| | | **SUBTOTAL** | | | | **$ 19,193,748.00** |
| | | **FISHERMAN'S WHARF** | | | | |
| 00330 | 590 | Foundation Excavation | CY | 3,111 | $ 30.00 | $ 93,330.00 |
| 00495 | 600 | Trench Resurfacing | SY | 65 | $ 245.00 | $ 15,925.00 |
| 00390 | 610 | Loose Riprap, Class 700 | CY | 1,751 | $ 120.00 | $ 210,120.00 |
| 00430 | 620 | 6 Inch Storm Sewer Pile, 5 Foot Depth | FT | 350 | $ 192.00 | $ 67,200.00 |
| 00446 | 630 | Trench Drain, Type 1 | FT | 226 | $ 470.00 | $ 106,220.00 |
| 00490 | 640 | Connection to Existing Structures | EA | 1 | $ 2,200.00 | $ 2,200.00 |
| 00501 | 650 | Wharf Removal | LS | 1 | $ 390,000.00 | $ 390,000.00 |
| 00501 | 660 | Extra for Salvaging and Stockpiling | LS | 1 | $ 20,000.00 | $ 20,000.00 |
| 00510 | 670 | Structure Excavation | CY | 474 | $ 254.00 | $ 120,396.00 |
| 00510 | 680 | Granular Structure Backfill | CY | 193 | $ 342.00 | $ 66,006.00 |
| 00520 | 690 | Steel Pile Protective Coating | LS | 1 | $ 120,000.00 | $ 120,000.00 |
| 00520 | 700 | Furnish Pile Driving Equipment | LS | 1 | $ 70,000.00 | $ 70,000.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 00520 | 710 | Furnish PP 18 x 0.625 Steel Piles | FT | 1,316 | $ | 173.00 | $ | 227,668.00 |
| 00520 | 720 | Drive PP 18 x 0.625 Steel Piles | EA | 18 | $ | 3,320.00 | $ | 59,760.00 |
| 00520 | 730 | Furnish PP 24 x 0.750 Steel Piles | FT | 4,670 | $ | 278.00 | $ | 1,298,260.00 |
| 00520 | 740 | Drive PP 24 x 0.750 Steel Piles | EA | 76 | $ | 5,320.00 | $ | 404,320.00 |
| 00520 | 750 | Pile Concrete | LS | 1 | $ | 143,500.00 | $ | 143,500.00 |
| 00520 | 760 | Reinforced Pile Tips | EA | 96 | $ | 462.00 | $ | 44,352.00 |
| 00530 | 770 | Coated Reinforcement, Grade 60 | LB | 156,000 | $ | 5.00 | $ | 780,000.00 |
| 00540 | 780 | Deck Concrete, Class HPC4500 | CY | 179 | $ | 2,323.00 | $ | 415,817.00 |
| 00540 | 790 | Foundation Concrete, Class 4000 | CY | 377 | $ | 1,500.00 | $ | 565,500.00 |
| 00540 | 800 | General Structural Concrete, Class 4000 | CY | 69 | $ | 3,493.00 | $ | 241,017.00 |
| 00541 | 810 | Saw Cut Texturing | SY | 1,062 | $ | 12.00 | $ | 12,744.00 |
| 00550 | 820 | 21 Inch Precast Prestressed Slabs | FT | 2,567 | $ | 670.00 | $ | 1,719,890.00 |
| 00585 | 830 | Poured Joint Seal | LS | 1 | $ | 12,768.00 | $ | 12,768.00 |
| 00587 | 840 | Timber Bull Rail | FT | 316 | $ | 128.00 | $ | 40,448.00 |
| XXXXX | 850 | Active Cathodic Protection | LS | 1 | $ | 120,000.00 | $ | 120,000.00 |
| XXXXX | 860 | Purchase Davit | EA | 2 | $ | 22,500.00 | $ | 45,000.00 |
| 00960 | 870 | Electrical Service | LS | 1 | $ | 60,000.00 | $ | 60,000.00 |
| 00970 | 880 | Luminaires, Lamps, and Ballasts | LS | 1 | $ | 5,000.00 | $ | 5,000.00 |
| 00970 | 890 | Switching, Conduit, and Wiring | LS | 1 | $ | 35,000.00 | $ | 35,000.00 |
| 00970 | 900 | Lighting Poles and Arms | LS | 1 | $ | 20,000.00 | $ | 20,000.00 |
| | | **SUBTOTAL** | | | | | **$** | **7,532,441.00** |
| | | **SECURITY FENCE** | | | | | | |
| 00330 | 910 | Trench Excavation | CY | 178 | $ | 80.00 | $ | 14,240.00 |
| 00495 | 920 | Trench Resurfacing | SY | 267 | $ | 245.00 | $ | 65,415.00 |
| 00970 | 930 | 1" Fiberglass Conduit | FT | 2,400 | $ | 21.00 | $ | 50,400.00 |
| 00970 | 940 | #10 XHHW Wire | FT | 6,000 | $ | 1.10 | $ | 6,600.00 |
| 01050 | 950 | Wrought Iron Fence | FT | 2,394 | $ | 282.00 | $ | 675,108.00 |
| 01050 | 960 | 6 Foot x 96 Inch Wrought Iron Pedestrian Gate | EA | 3 | $ | 16,000.00 | $ | 48,000.00 |
| 01050 | 970 | 14 Foot x 96 Inch Wrought Iron Vehicular Gate | EA | 5 | $ | 25,200.00 | $ | 126,000.00 |
| | | **SUBTOTAL** | | | | | **$** | **985,763.00** |

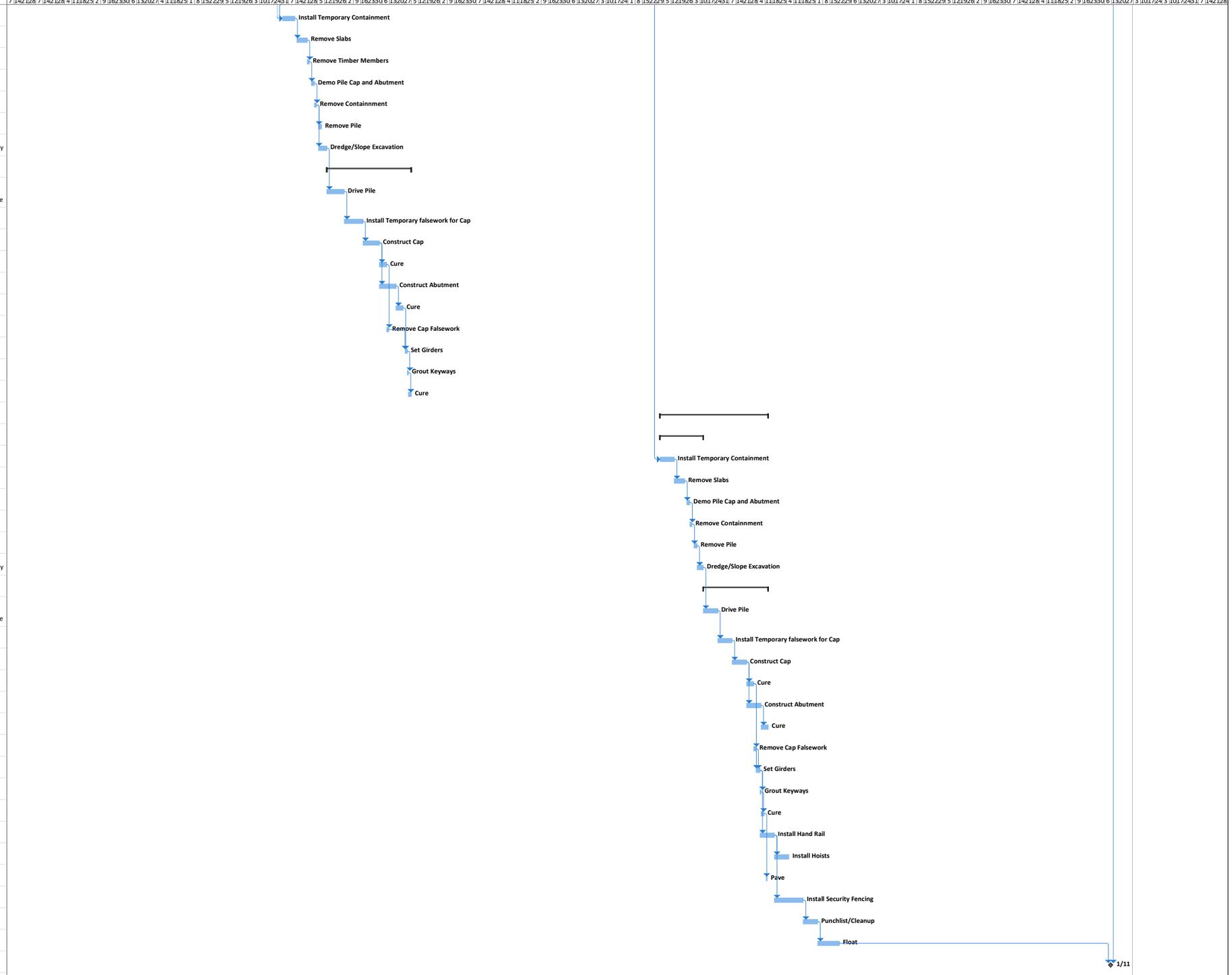
| | | |
|---|---|---|
| | SUB-TOTAL OF ITEMS | $ 30,593,952.00 |
| | PE Services @ 6.0% | $ 1,835,637.12 |
| | CE Services @ 10.0% | $ 3,059,395.20 |
| | Subtotal | $ 35,488,984.32 |
| | Contigencies @ 20.0% | $ 6,118,790.40 |
| *Inflate 2025 costs by 3.5% a year to bid year costs. | Inflation for 2027 Bid*: | $ 2,963,513.75 |
| | **TOTAL COST ESTIMATE (2027 DOLLARS)** | **$ 44,571,288.47** |
| | **AACE Class 3, Low Range @ -15.0%** | **$ 37,885,595.20** |
| | **AACE Class 3, High Range @ 25.0%** | **$ 55,714,110.59** |

# APPENDIX 3: CONSTRUCTION TIME ESTIMATE

| ID | Task Name | Duration | Start | Finish | Predecess | Resource Names | Text1 |
|---|---|---|---|---|---|---|---|
| 1 | **Project Management** | **756 days** | **Thu 3/11/27** | **Fri 2/1/30** | | **Project Management** | |
| 2 | Bid Project | 0 days | Thu 3/11/27 | Thu 3/11/27 | | Bid Project | |
| 3 | Notice of "Intent" to Award | 0 edays | Thu 3/11/27 | Thu 3/11/27 | 2SS | Notice of "Intent" to Award | |
| 4 | Notice to Award | 6 edays | Thu 3/11/27 | Wed 3/17/27 | 3 | Notice to Award | |
| 5 | NTP | 22 days | Wed 3/17/27 | Thu 4/15/27 | 4 | NTP | |
| 6 | Precon Submittals | 15 days | Fri 4/16/27 | Thu 5/6/27 | 5 | Precon Submittals | |
| 7 | Preconstruction Meeting | 1 day | Fri 5/7/27 | Fri 5/7/27 | 6 | Preconstruction Meeting | |
| 8 | Submittals | 25 days | Fri 5/7/27 | Thu 6/10/27 | 6 | Submittals | |
| 9 | Procure/Construct Floating Dock Segments | 120 days | Fri 5/7/27 | Thu 10/21/27 | 6 | Procure/Construct Floating Dock Segments | |
| 10 | Fabricate Girders | 120 days | Fri 5/7/27 | Thu 10/21/27 | 6 | Fabricate Girders | |
| 11 | Mobilization | 2 days | Fri 7/30/27 | Mon 8/2/27 | 9FS-60 days | Mobilization | |
| 12 | In Water Work Restrictions 2027 | 92 edays | Mon 11/1/27 | Tue 2/1/28 | | In Water Work Restrictions 2027 | |
| 13 | In Water Work Restrictions 2028 | 92 edays | Wed 11/1/28 | Thu 2/1/29 | | In Water Work Restrictions 2028 | |
| 14 | In Water Work Restrictions 2023 | 92 edays | Thu 11/1/29 | Fri 2/1/30 | | In Water Work Restrictions 2028 | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | **Floating Dock Construction** | **639 days** | **Tue 8/3/27** | **Fri 1/11/30** | | **Floating Dock Construction** | |
| 18 | **Phase 0** | **60 days** | **Tue 8/3/27** | **Mon 10/25/27** | | **Phase 0** | |
| 19 | Install Utility Services | 60 days | Tue 8/3/27 | Mon 10/25/27 | 11 | Install Utility Services | |
| 20 | **Phase 1** | **56 days** | **Mon 11/1/27** | **Mon 1/17/28** | | **Phase 1** | |
| 21 | Install temporary Pile for Relocated Dock | 5 days | Mon 11/1/27 | Fri 11/5/27 | 12SS | Install temporary Pile for Relocated Dock | |
| 22 | Remove and Relocate Outer Eastern Docks | 8 days | Mon 11/8/27 | Wed 11/17/27 | 21 | Remove and Relocate Outer Eastern Docks | |
| 23 | Dredge | 21 edays | Wed 11/17/27 | Wed 12/8/27 | 22 | Dredge | 105k CY of dredging. Production rate of 2k CY per day (24hr shift) % of dredge per phase:P1:42K CY, P2:42K CY, P3: 21K CY |
| 24 | Install New Pile for Eastern Dock | 10 days | Thu 12/9/27 | Wed 12/22/27 | 23 | Install New Pile for Eastern Dock | Total: 119 steel pile + 6 steel pile (conc. Filled). Assume P1 & P2 have 80% of pile. P1=50 pile |
| 25 | Install Eastern Dock | 15 days | Thu 12/23/27 | Wed 1/12/28 | 24 | Install Eastern Dock | |
| 26 | Install Gangway | 3 days | Thu 1/13/28 | Mon 1/17/28 | 25 | Install Gangway | |
| 27 | **Phase 2** | **48 days** | **Wed 11/1/28** | **Fri 1/5/29** | | **Phase 2** | |
| 28 | Remove Existing Docks and Pile | 5 days | Wed 11/1/28 | Tue 11/7/28 | 13SS | Remove Existing Docks and Pile | |
| 29 | Dredge | 21 edays | Tue 11/7/28 | Tue 11/28/28 | 28 | Dredge | 105k CY of dredging. Production rate of 2k CY per day (24hr shift) % of dredge per phase:P1:42K CY, P2:42K CY, P3: 21K CY |
| 30 | Install New Pile | 10 days | Wed 11/29/28 | Tue 12/12/28 | 29 | Install New Pile | Total: 119 steel pile + 6 steel pile (conc. Filled). Assume P1 & P2 have 80% of pile. P2=50 pile |
| 31 | Install Western Dock | 15 days | Wed 12/13/28 | Tue 1/2/29 | 30 | Install Western Dock | |
| 32 | Install Gangway | 3 days | Wed 1/3/29 | Fri 1/5/29 | 31 | Install Gangway | |
| 33 | Connect Electrical (Phase 1 & 2) | 20 days | Mon 1/8/29 | Fri 2/2/29 | 32 | Connect Electrical (Phase 1& 2) | |
| 34 | **Phase 3** | **52 days** | **Thu 11/1/29** | **Fri 1/11/30** | | **Phase 3** | |
| 35 | Remove Existing Docks and Pile | 5 days | Thu 11/1/29 | Wed 11/7/29 | 14SS | Remove Existing Docks and Pile | |
| 36 | Dredge | 10 edays | Wed 11/7/29 | Sat 11/17/29 | 35 | Dredge | 105k CY of dredging. Production rate of 2k CY per day (24hr shift) % of dredge per phase:P1:42K CY, P2:42K CY, P3: 21K CY |
| 37 | Install New Pile | 5 days | Mon 11/19/29 | Fri 11/23/29 | 36 | Install New Pile | Total: 119 steel pile + 6 steel pile (conc. Filled). Assume P1 & P2 have 80% of pile. P3=25 pile |
| 38 | Install Central Dock | 15 days | Mon 11/26/29 | Fri 12/14/29 | 37 | Install Central Dock | |
| 39 | Install Gangway | 5 days | Mon 12/17/29 | Fri 12/21/29 | 38 | Install Gangway | |
| 40 | Connect Electrical | 15 days | Mon 12/24/29 | Fri 1/11/30 | 39 | Connect Electrical | |
| 41 | | | | | | | |
| 42 | **Fishermans Wharf Construction** | **578 days** | **Wed 10/27/27** | **Fri 1/11/30** | | **Hoist Dock Construction** | |
| 43 | **Phase 1 (Western + Timber Section)** | **93 days** | **Wed 10/27/27** | **Sat 3/4/28** | | **Phase 1 (Western + Timber Section)** | |
| 44 | **Remove Existing Structure** | **34 days** | **Wed 10/27/27** | **Mon 12/13/27** | | **Remove Existing Structure** | |
| 45 | ACP Removal | 2 days | Wed 10/27/27 | Fri 10/29/27 | 46SF | ACP Removal | |
| 46 | Removal Rail | 1 day | Fri 10/29/27 | Mon 11/1/27 | 47SF | Removal Rail | |



| ID | Task Name | Duration | Start | Finish | Predecess | Resource Names | Text1 |
|---|---|---|---|---|---|---|---|
| 47 | Install Temporary Containment | 10 days | Mon 11/1/27 | Fri 11/12/27 | 12SS | Install Temporary Containment | |
| 48 | Remove Slabs | 8 days | Mon 11/15/27 | Wed 11/24/27 | 47 | Remove Slabs | |
| 49 | Remove Timber Members | 2 days | Thu 11/25/27 | Fri 11/26/27 | 48 | Remove Timber Members | |
| 50 | Demo Pile Cap and Abutment | 3 days | Mon 11/29/27 | Wed 12/1/27 | 49 | Demo Pile Cap and Abutment | |
| 51 | Remove Containnment | 2 days | Thu 12/2/27 | Fri 12/3/27 | 50 | Remove Containnment | |
| 52 | Remove Pile | 3 days | Mon 12/6/27 | Wed 12/8/27 | 51 | Remove Pile | |
| 53 | Dredge/Slope Excavation | 6 days | Mon 12/6/27 | Mon 12/13/27 | 51 | Dredge/Slope Excavation | Assumed 10k CY of material. Phase 1=6k and Phase 2 is 4k. Production rate is 1k CY per day |
| 54 | **Construct New Structure** | **59 days** | **Tue 12/14/27** | **Sat 3/4/28** | | **Construct New Structure** | |
| 55 | Drive Pile | 13 days | Tue 12/14/27 | Thu 12/30/27 | 53 | Drive Pile | 76 conc filled Steel pile + 18 non filled. Total=94 pile. Abutment is 38 and 58 are in the water. Phase 1 is 58 pile, Phase 2 is 36 pile |
| 56 | Install Temporary falsework for Cap | 12 days | Fri 12/31/27 | Mon 1/17/28 | 55 | Install Temporary falsework for Cap | |
| 57 | Construct Cap | 12 days | Tue 1/18/28 | Wed 2/2/28 | 56 | Construct Cap | |
| 58 | Cure | 7 edays | Wed 2/2/28 | Wed 2/9/28 | 57 | Cure | |
| 59 | Construct Abutment | 12 days | Thu 2/3/28 | Fri 2/18/28 | 57 | Construct Abutment | |
| 60 | Cure | 7 edays | Fri 2/18/28 | Fri 2/25/28 | 59 | Cure | |
| 61 | Remove Cap Falsework | 2 days | Thu 2/10/28 | Fri 2/11/28 | 58 | Remove Cap Falsework | |
| 62 | Set Girders | 2 days | Mon 2/28/28 | Tue 2/29/28 | 61,60 | Set Girders | |
| 63 | Grout Keyways | 1 day | Wed 3/1/28 | Wed 3/1/28 | 62 | Grout Keyways | |
| 64 | Cure | 3 edays | Wed 3/1/28 | Sat 3/4/28 | 63 | Cure | |
| 65 | **Phase 2 (Eastern Section)** | **75 days** | **Wed 11/1/28** | **Tue 2/13/29** | | **Phase 2 (Eastern Section)** | |
| 66 | **Remove Existing Structure** | **30 days** | **Wed 11/1/28** | **Tue 12/12/28** | | **Remove Existing Structure** | |
| 67 | Install Temporary Containment | 10 days | Wed 11/1/28 | Tue 11/14/28 | 13SS | Install Temporary Containment | |
| 68 | Remove Slabs | 8 days | Wed 11/15/28 | Fri 11/24/28 | 67 | Remove Slabs | |
| 69 | Demo Pile Cap and Abutment | 3 days | Mon 11/27/28 | Wed 11/29/28 | 68 | Demo Pile Cap and Abutment | |
| 70 | Remove Containnment | 2 days | Thu 11/30/28 | Fri 12/1/28 | 69 | Remove Containnment | |
| 71 | Remove Pile | 3 days | Mon 12/4/28 | Wed 12/6/28 | 70 | Remove Pile | |
| 72 | Dredge/Slope Excavation | 4 days | Thu 12/7/28 | Tue 12/12/28 | 71 | Dredge/Slope Excavation | Assumed 10k CY of material. Phase 1=6k and Phase 2 is 4k. Production rate is 1k CY per day |
| 73 | **Construct New Structure** | **45 days** | **Wed 12/13/28** | **Tue 2/13/29** | | **Construct New Structure** | |
| 74 | Drive Pile | 10 days | Wed 12/13/28 | Tue 12/26/28 | 72 | Drive Pile | 76 conc filled Steel pile + 18 non filled. Total=94 pile. Abutment is 38 and 58 are in the water. Phase 1 is 58 pile, Phase 2 is 36 pile |
| 75 | Install Temporary falsework for Cap | 10 days | Wed 12/27/28 | Tue 1/9/29 | 74 | Install Temporary falsework for Cap | |
| 76 | Construct Cap | 10 days | Wed 1/10/29 | Tue 1/23/29 | 75 | Construct Cap | |
| 77 | Cure | 7 edays | Tue 1/23/29 | Tue 1/30/29 | 76 | Cure | |
| 78 | Construct Abutment | 10 days | Wed 1/24/29 | Tue 2/6/29 | 76 | Construct Abutment | |
| 79 | Cure | 7 edays | Tue 2/6/29 | Tue 2/13/29 | 78 | Cure | |
| 80 | Remove Cap Falsework | 2 days | Wed 1/31/29 | Thu 2/1/29 | 77 | Remove Cap Falsework | |
| 81 | Set Girders | 2 days | Fri 2/2/29 | Mon 2/5/29 | 77,80 | Set Girders | |
| 82 | Grout Keyways | 1 day | Tue 2/6/29 | Tue 2/6/29 | 81 | Grout Keyways | |
| 83 | Cure | 3 edays | Tue 2/6/29 | Fri 2/9/29 | 82 | Cure | |
| 84 | Install Hand Rail | 10 days | Tue 2/6/29 | Mon 2/19/29 | 81 | Install Hand Rail | |
| 85 | Install Hoists | 10 days | Tue 2/20/29 | Mon 3/5/29 | 84 | Install Hoists | |
| 86 | Pave | 1 day | Mon 2/12/29 | Mon 2/12/29 | 83 | Pave | |
| 87 | Install Security Fencing | 20 days | Tue 2/20/29 | Mon 3/19/29 | 84 | Install Security Fencing | |
| 88 | Punchlist/Cleanup | 10 days | Tue 3/20/29 | Mon 4/2/29 | 87 | Punchlist/Cleanup | |
| 89 | Float | 21 edays | Mon 4/2/29 | Mon 4/23/29 | 88 | Float | |
| 90 | Completion Date | 0 days | Fri 1/11/30 | Fri 1/11/30 | 89,40 | Completion Date | |
| 91 | | | | | | | |



# APPENDIX 4:
# DRAFT PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT

# Preliminary Geotechnical Investigation

## Port of Newport

## Port Dock 7 and Hoist Dock Replacement

**Newport, Oregon**

**August 1, 2025**

**Prepared for**

**DOWL, LLC**
**309 SW 6th Avenue, Suite 700**
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# 1 INTRODUCTION

The Port of Newport (Port) seeks to change the design and layout of Port Dock 7 (PD7) to update infrastructure for the Commercial Marina, which is over capacity. In addition, the Port plans to replace the existing Hoist Dock, which is west of PD7. The project location is shown on the Vicinity Map, Figure 1.

# 2 PROJECT DESCRIPTION

The existing pile-supported PD7 will be replaced with a new concrete floating dock system supported by steel pipe piles. The new dock will include slips and berthing areas designed to accommodate both a greater number of vessels and larger vessel sizes. As currently proposed, the floating dock will be supported by 114 steel pipe piles, as shown on the Site Plan, Figure 2. Six of these piles will be located above the waterline to support the shoreward ends of the gangways. To accommodate the larger vessels, the PD7 area will be dredged to an elevation of about -20 feet Mean Lower Low Water (MLLW) but includes a 2-foot over-depth dredging allowance to an elevation of approximately -22 feet with 3H:1V (Horizontal to Vertical) sideslopes. As part of a parallel project, the U.S. Army Corps of Engineers (USACE) is improving the federal channel through the marina with similar dredging depths.

The existing Hoist Dock, which is west of PD7, will be replaced with a new structure supported by steel pipe piles that will be approximately 224 feet long and 46 feet wide. The existing structure consists of three separate structures: an original timber dock and two adjacent, newer precast concrete docks supported by steel piles. We understand that the existing Hoist Dock currently includes at least 20 timber support piles, 16 steel support piles, and 21 steel fender piles. The western edge of the planned dredging near PD7 will stop near the east edge of the Hoist Dock.

# 3 SITE DESCRIPTION

## 3.1 Bathymetry and Topography

Based on the review of bathymetric data for the PD7 dredging area from the USACE October 6, 2022, Navigation Improvement Project Utilities map provided by the project team, the current mudline elevations within the PD7 area range from about 2 feet to -20 feet. The upland elevations at the site vary from about 14 feet at the crest of the shoreline to about 18 feet adjacent to SE Bay Boulevard. All elevations in this report reference the MLLW datum unless stated otherwise.

## 3.2 Geology

Available geologic literature and our experience in the area indicate the upland portions of the site are mantled with variable thicknesses of sand or gravel fill underlain by native sand deposits to the top of the mudstone. The dredging area of PD7 is mantled with a variable thickness of marine sand or clay underlain by mudstone. Miocene-aged mudstone

and sandstone of the Nye Formation underlie the bay at relatively shallow depths (Snavely et al., 1976). Explorations at the site indicate the upper portion of the mudstone is typically moderately weathered.

# 4 SUBSURFACE CONDITIONS

## 4.1 General

The subsurface explorations completed for the PD7 project were completed during two separate mobilizations in conjunction with the geotechnical explorations completed to support the USACE dredging effort. Drilling during the first mobilization occurred on February 28, 2024, and included one rotosonic boring designated 2-A. Drilling during the second mobilization occurred on March 7, 2024, with two mud-rotary borings designated 1-A and 1-C. The approximate locations of the borings are shown on Figure 2. Logs of the borings are provided on Figures 1A through 3A. The field and laboratory testing programs completed for this project are described in Appendix A. The terms and symbols used to describe the soil and rock encountered in the borings are defined in Tables 1A and 2A, respectively, and the attached legend. Rotosonic core photographs are provided in Appendix B. It should be noted that the Hoist Dock portion of the project was added after initial project scoping, and additional explorations are recommended to support the next phase of design.

The subsurface borings were completed by overwater methods using a barge provided and operated by Bergerson Construction of Astoria, Oregon.

A summary of the location, mudline elevation, elevation where rock was first encountered, and bottom-of-exploration elevation for each geotechnical boring completed for the PD7 portion of the overall project is provided in Table 4-1, below.

**Table 4-1: GEOTECHNICAL BORING LOCATIONS AND ELEVATIONS FOR PORT DOCK 7**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Geotechnical | 1-A | 44.6305 | -124.0423 | -5.0 | -6.5 | -37.5 |
| Geotechnical | 2-A | 44.6307 | -124.0451 | -18.5 | -19.0 | -53.4 |
| Geotechnical | 1-C | 44.6307 | -124.0430 | -6.3 | -7.3 | -38.3 |

**Abbreviation:** MLLW = Mean Lower Low Water

**Note:**

[(a)]All elevations are estimates. See Appendix A.1.2 for additional information.

## 4.2 Soil and Rock

For the purposes of this discussion, the materials disclosed by the geotechnical borings for the PD7 portion of the overall project (borings 1-A, 2-A, and 1-C) have been grouped into the following units based on their physical characteristics and engineering properties and listed as they were encountered below mudline:

a. Silty SAND
b. Sandy CLAY
c. MUDSTONE (Nye Mudstone)

The following paragraphs provide a description of the materials encountered and a discussion of the groundwater conditions at the site.

### a. Silty SAND

Silty sand was encountered at mudline in boring 2-A and extended to a depth of 0.5 feet (elevation -19 feet). The silty sand is dark gray and fine to medium grained. The sand contains shell fragments and has an organic odor. Based on our observations, the relative density of the sand is very loose.

### b. Sandy CLAY

Sandy clay was encountered at mudline in borings 1-A and 1-C and extended to depths of 1.5 feet and 1 foot (elevations -6.5 feet and -7.3 feet), respectively. The sandy clay is dark gray and contains fine- to medium-grained sand. The sandy clay contains shell fragments, and an organic odor was identified in boring 1-A. Based on the SPT N-values, the relative consistency of the sandy clay is very soft to soft.

### c. MUDSTONE (Nye Mudstone)

Mudstone was encountered at shallow depths below the silty sand or sandy clay and extended to the maximum depths explored in the borings, from 32 feet to 34.9 feet below mudline (elevation -37.5 feet to -53.4 feet). In addition, mudstone was encountered at the mudline (elevation -14) in front of the Hoist Dock location in geotechnical boring 4-A, which was drilled as part of the CAP 107 dredging project. Based on historical data, the top of the mudstone or interpreted weathered rock near the Hoist Dock location may vary between elevations of -14 feet and -23 feet. The mudstone is typically light gray to dark gray or dark brown, moderately weathered, and extremely weak (R0) to very weak (R1). Our experience in the area indicates that zones of R2 or harder mudstone can be encountered within the unit, although they were not specifically encountered at the exploration sampling locations within the depths explored. Atterberg limits testing completed on the mudstone is provided on Figure 4A.

## 4.3 Additional Geotechnical Information Sources

As part of this study, GRI reviewed several other sources of geotechnical information in the area. The information reviewed included explorations completed by GRI within the existing marina as part of the USACE Continuing Authority Program (CAP) Section 107 project to improve the federal channel through the marina. The investigation included geotechnical borings completed for the CAP 107 dredging and sediment sampling. The CAP 107 borings are provided in the Geotechnical Data Report (GRI, 2024) presented in Appendix C. A summary of the approximate boring location, mudline elevation, elevation where rock was first encountered, and bottom-of-exploration elevation for each geotechnical boring completed for the CAP 107 dredging is provided in Table 4-2, below. A summary of the same aspects for the sediment sampling portion of the overall project is provided in Table 4-3, below. The locations of the geotechnical borings and sediment sampling (referred to as "Environmental Borings") are also shown on Figure 2.

**Table 4-2: GEOTECHNICAL BORING LOCATIONS AND ELEVATIONS FOR CAP 107**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Geotechnical | 3-C | 44.6295 | -124.0426 | -11.2 | -26.2 | -31.2 |
| Geotechnical | 4-A | 44.6313 | -124.0456 | -14.8 | -14.8 | -32.7 |
| Geotechnical | 4-B | 44.6302 | -124.0468 | -10.7 | -48.2 | -49.7 |
| Geotechnical | 5-A | 44.6298 | -124.0514 | -13 | -23.5 | -34.5 |
| Geotechnical | 5-B | 44.6292 | -124.0524 | -12.6 | -26.6 | -34.1 |
| Geotechnical | 5-C | 44.6279 | -124.0540 | -17 | -23.5 | -33 |

**Abbreviation:** MLLW = Mean Lower Low Water

**Note:**

[(a)]All elevations are estimates. See Appendix A.1.2 for additional information.

**Table 4-3: SEDIMENT SAMPLING BORING LOCATIONS AND ELEVATIONS FOR CAP 107**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Environmental | 3-A | 44.6302 | -124.0453 | -10.1 | NA | -22 |
| Environmental | 3-B | 44.6299 | -124.0442 | -9.8 | NA | -22 |
| Environmental | 3-C | 44.6295 | -124.0426 | -10.1 | NA | -22 |
| Environmental | 4-A | 44.6302 | -124.0459 | -9.7 | NA | -22 |
| Environmental | 4-B | 44.6302 | -124.0468 | -10.4 | NA | -22 |
| Environmental | 4-C | 44.6301 | -124.0490 | -9.2 | NA | -22 |
| Environmental | 5-A | 44.6298 | -124.0514 | -14.7 | -22 | -24 |

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Environmental | 5-B | 44.6291 | -124.0522 | -9.9 | -21.4 | -24 |
| Environmental | 5-C | 44.6279 | -124.0539 | -16.6 | -22 | -24 |

**Abbreviations:** MLLW = Mean Lower Low Water; NA = not applicable

**Note:**

[(a)]All elevations are estimates. See Appendix A.1.2 for additional information.

In addition, GRI reviewed a geotechnical report completed by GRI (2014) for the Port's Administration building in the upland area north of PD7. Borings B-1 through B-3 from the report are shown on Figure 2, and the boring logs are provided in Appendix D. A geotechnical report completed by Foundation Engineering, Inc. for a waterline crossing was also reviewed. The locations of the two closest borings, HDD-1 and HDD-3, which were completed near the Hoist Dock, are shown on Figure 2, and the boring logs are attached in Appendix E.

To support this preliminary phase of the project, the historical data in the project vicinity has been used to help estimate the depth of liquefiable soils and the elevation of the underlying mudstone. At the upland area of PD7 at the existing administration building, explorations encountered a variable thickness of gravel fill underlain by very loose to loose sand to depths ranging from about 13 feet to 16 feet, underlain by siltstone.

Available subsurface information from a boring completed northwest of the Hoist Dock by Foundation Engineering, Inc. encountered loose to medium dense sand and gravel fill to an elevation of about -12 feet (datum unknown) underlain by loose sand to about elevation -22.5 feet underlain by stiff, clayey silt (likely decomposed mudstone).

# 5 CONCLUSIONS AND RECOMMENDATIONS

## 5.1 General

The borings completed as part of this project were completed within the footprint of the PD7 dredging (B-1A, B-2A, and B-1C) and encountered mudstone at depths of less than 1.5 feet below mudline. In addition, boring B-4-A from the CAP 107 project completed offshore near the Hoist Dock encountered mudstone at mudline. Our review of existing subsurface information in the upland area indicates a variable thickness of loose to medium dense sand or gravel fill underlain by very loose to loose sand to the top of mudstone. As proposed by the project team, foundation support for PD7 and the Hoist Dock replacement will be provided by 24-inch-diameter steel pipe piles.

Historical information about the upland portions of the site indicates a risk of liquefaction during a design-level earthquake. Associated liquefaction-induced lateral spreading will result in kinematic soil lateral loading on the proposed docks. The more significant kinematic loading will likely occur on the abutment location for PD7 and the Hoist Dock, where larger thicknesses of non-liquefiable soil are present above the potentially liquefiable layers. Additional significant geotechnical considerations include variations in pile capacities and lengths due to a range in the stiffness/hardness of weathered siltstone. In addition, a portion of the mudstone will be dredged as part of the deepening effort, and the installation and risk of refusal into the remaining mudstone will be a consideration, particularly for the PD7 piles.

The following sections of this report provide our conclusions and recommendations concerning foundation design and construction.

## 5.2 Seismic Considerations

### *5.2.1 General—Code-Based Response Spectrum*

Because of the potential public use of the facility, we understand the dock improvements will be designed in accordance with the 2024 International Building Code (IBC) and 2025 Oregon Structural Specialty Code, which incorporates recommendations from the American Society of Civil Engineers (ASCE) 7-22, *Minimum Design Loads for Building and Other Structures*. The 2024 IBC and ASCE 7-22 seismic hazard levels are based on a Risk-Targeted Maximum Considered Earthquake ($MCE_R$). The ground motion associated with the probabilistic $MCE_R$ represents a targeted risk level of 1% in 50 years probability of collapse in the direction of maximum horizontal response. In accordance with Section 20.4 of ASCE 7-22, the upland area classifies as Site Class D (Stiff Soil), and the area in the footprint of PD7 classifies as Site Class C (Very Dense Soil and Soft Rock) based on the estimated shear wave velocity in the upper 100 feet of the soil profile.

In accordance with Section 20.2 of ASCE 7-22, sites with subsurface conditions identified as vulnerable to failure or collapse, such as liquefied soils, are classified as Site Class F. For Site Class F sites, ASCE 7-22 Section 20.2 requires completion of a site-specific ground motion analysis unless the structures have a fundamental period of vibration less than or equal to 0.5 seconds. The response spectrum for sites with structures having a fundamental period of less than 0.5 seconds can be derived using the non-liquefied subsurface profile.

The majority of the PD7 structure will be primarily supported in the underlying non-liquefiable mudstone layer, and site response will not be controlled by a limited thickness of potentially liquefiable soils. Once explorations are completed for the Hoist Dock, we recommend reevaluating whether a site response analysis is prudent. Therefore, for this

stage of design, we recommend assuming Site Class D is appropriate for the Hoist Dock and upland area of the site.

The recommended $MCE_R$-level and design-level spectral response parameters for the new Hoist Dock, which will be located at the approximate latitude and longitude coordinates of 44.6306° N and 124.0451° W, are provided in Table 5-1. The table presents both multi-period and two-period spectral values. The design-level response spectrum is calculated as two-thirds of the ground-surface $MCE_R$ spectrum.

**Table 5-1: RECOMMENDED $MCE_R$ AND DESIGN RESPONSE SPECTRAL VALUES AT GROUND SURFACE, 5% DAMPING**

| | Site Class C | | Site Class D | |
|---|---|---|---|---|
| | Recommended Multi-Period Spectral Values | | | |
| Period, seconds | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g | $MCE_R$-Level Response Spectral Values, g | Design-Level Response Spectral Values, g |
| PGA | 1.06 | 0.71 | 1.14 | 0.76 |
| 0.05 | 1.32 | 0.88 | 1.33 | 0.89 |
| 0.1 | 1.99 | 1.33 | 1.86 | 1.24 |
| 0.15 | 2.35 | 1.57 | 2.14 | 1.43 |
| 0.2 | 2.46 | 1.64 | 2.31 | 1.54 |
| 0.3 | 2.37 | 1.58 | 2.59 | 1.73 |
| 0.4 | 2.08 | 1.39 | 2.64 | 1.76 |
| 0.5 | 1.79 | 1.19 | 2.47 | 1.65 |
| 0.75 | 1.38 | 0.92 | 2.03 | 1.35 |
| 1 | 1.10 | 0.73 | 1.64 | 1.09 |
| 1.5 | 0.79 | 0.53 | 1.19 | 0.79 |
| 2 | 0.60 | 0.40 | 0.89 | 0.59 |
| 3 | 0.36 | 0.24 | 0.56 | 0.37 |
| 4 | 0.25 | 0.17 | 0.39 | 0.26 |
| 5 | 0.18 | 0.12 | 0.29 | 0.19 |
| Parameter | Recommended Two-Period Spectral Values | | | |
| $S_{MS}/S_{DS}$ | 2.22 | 1.48 | 2.38 | 1.59 |
| $S_{M1}/S_{D1}$ | 1.1 | 0.73 | 1.64 | 1.09 |

**Abbreviations:** $MCE_R$ = Risk-Targeted Maximum Considered Earthquake; PGA = peak ground acceleration, $S_{MS}$ and $S_{M1}$= $MCE_R$ spectral values at 0.2 seconds and 1 second; $S_{DS}$ and $S_{D1}$= design spectral values at 0.2 seconds and 1 second

### 5.2.2 Liquefaction

Liquefaction is a process by which saturated, granular materials, such as sand and nonplastic and low-plasticity silts, temporarily lose strength during and immediately after a seismic event. Liquefaction occurs as seismic shear stresses propagate through saturated soil and distort the soil structure, causing loosely packed groups of particles to contract or collapse. If drainage is impeded and cannot occur quickly, the collapsing soil structure increases the porewater pressure between the soil grains. If the porewater pressure increases to a level approaching the weight of the overlying soil, the soil temporarily behaves as a viscous liquid rather than a solid. In waterfront areas, liquefaction can also cause large lateral-spreading deformation of the existing banks. The risk of liquefaction-induced lateral spreading at the site is discussed in the "Lateral Spreading" section of this report.

Section 11.8.3 of ASCE 7-22 requires the potential for liquefaction to be evaluated for site peak ground acceleration, earthquake magnitude, and source characteristics consistent with the Maximum Considered Earthquake Geometric Mean peak ground acceleration. Based on our review of the 2018 U.S. Geological Survey (USGS) probabilistic seismic hazard analysis disaggregation, which forms the basis for developing seismic ground motions in accordance with ASCE 7-22, the Cascadia Subduction Zone earthquakes with an $M_W$ of 9.0 generally control the seismic hazards at the project site. For the purposes of these evaluations, we assumed an average groundwater elevation of +4 feet. The groundwater elevations correspond to the average of MLLW (+7.60 feet) and Mean Higher High Water (-0.4 feet) at the site.

The potential for liquefaction was evaluated by comparing the cyclic shear stresses induced within a soil profile during an earthquake to the ability of the soils to resist these stresses. In this procedure, earthquake-induced shear stress is characterized by the cyclic stress ratio (CSR), and soil resistance is characterized by the cyclic resistance ratio (CRR). The CSR was estimated based on empirical correlations. The CRR for sandy soils is typically estimated based on soil shear strength as characterized by SPT N-values, with various corrections to account for fines content and other factors. The cyclic resistance of fine-grained soils such as silt and clay is commonly evaluated using simplified correlations based on undrained shear strength, over-consolidation ratio, plasticity, and soil sensitivity. The factor of safety (FS) against liquefaction is calculated as the ratio of the CRR to CSR on a layer-by-layer basis within the soil profile. As the FS decreases to 1.0, there is an increased risk of liquefaction or soil strength loss.

Our analyses indicate that the very loose to loose sands located below the groundwater table to the top of the mudstone are susceptible to liquefaction during the code-based

event. Furthermore, our analysis indicates that the underlying mudstone unit is not susceptible to liquefaction.

### 5.2.3 Lateral Spreading

Lateral spreading involves the horizontal displacement of large volumes of soil as a result of seismically induced liquefaction and inertial loading. Lateral spreading can develop on shallow sloping ground or near a moderately to steeply sloping free face, such as a river channel. Differential internal movements within the spreading mass usually create surface features, such as ground cracks or fissures, scarps, and grabens in overlying unsaturated or non-liquefied soils. Lateral displacement may range from a few inches to many feet depending on soil conditions, the steepness of the slope, and the magnitude, duration, and source-to-site distance of the earthquake. Associated differential vertical movements, or ground-surface subsidence, may range up to about half of the total horizontal movement.

The methods presented by Zhang et al. (2004) were used to evaluate the risk of lateral spreading at the site. For this methodology, the possible magnitude of lateral spreading is evaluated based on slope geometry and the maximum shear strain potential of the liquefiable layers based on initial soil density. The lateral spreading estimates were completed using the same earthquake sources, magnitudes, and PGAs considered for the liquefaction analyses. The results of our analysis indicate lateral spreading deformations occurring at the top of the slope will be significant (greater than several feet) during the code-based event. It should be noted that there is significant uncertainty in regard to the lateral spreading estimates, and lateral spreading estimates may be on the order of one-half times to two times the estimated deformations using the methods referenced above. The lateral spreading deformations will result in additional vertical ground settlement, which is typically estimated to be on the order of one-quarter to one-half the horizontal movement.

### 5.2.4 Tsunami Hazard

The Oregon Department of Geology and Mineral Industries (DOGAMI) has completed tsunami inundation mapping as described in the Witter et al. (2011) paper and presented in a series of DOGAMI (2012) tsunami inundation maps (TIM). The DOGAMI TIM and ASCE 7-22 tsunami maps indicate the project site is located within the potential tsunami inundation zone; therefore, there is a high risk of tsunami inundation at the site following a Cascadia Subduction Zone event.

### 5.2.5 Coseismic Subsidence

Modeling megathrust earthquake ruptures on the CSZ indicate sequences of interseismic uplift and coseismic coastal subsidence. Leonard et al. (2010), Witter et al. (2011), and ASCE 7-22 present profiles of coastal deformations from Northern California to Southern British Columbia based on this geologic information. The ASCE 7-22 documentation indicates the

estimated 2,500-year probabilistic Earthquake Induced Regional Ground Subsidence is 6.3 feet.

### 5.2.6 Fault Rupture

We have reviewed the mapped location of the Yaquina Fault and the potential activity associated with it. Utilizing the U.S. Geological Survey (2025) Quaternary Fault and Fold Database, the Yaquina Fault is considered seismologically active and approaches within about 1 kilometer of the northwest corner of the site. It should be understood that the mapped location of this fault is poorly constrained and may be different than as mapped. This uncertainty is largely due to the lack of historical seismicity, lack of surface expression, and thickness of recent Quaternary fine-grained deposits. According to the Geomatrix (1995) report, the last known activity of the Yaquina Fault was approximately 80,000 years to 780,000 years ago. As a result of the low probability of occurrence of an earthquake on the Yaquina Fault and the uncertainty regarding the fault location, it is our opinion that the potential for surface rupture to affect the project footprint following a seismic event is low.

## 5.3 Foundation Support

### 5.3.1 General

As currently planned, PD7 and the Hoist Dock will be supported on 24-inch-diameter steel-pipe piles. The PD7 piles will primarily be laterally loaded, while the Hoist Dock piles will have maximum factored service and strength limit loads of about 195 kips and 280 kips, respectively. The majority of the axial foundation support for the Hoist Dock piles will be provided in the underlying mudstone. As indicated previously, liquefaction-induced deformations toward the bay will result in kinematic soil loading on the structure during a design level earthquake.

### 5.3.2 General and Axial Capacity

In our opinion, the required compressive capacities for the docks should be achievable for 24-inch-diameter piles driven to sufficient resistance into the underlying mudstone with an adequately sized impact hammer. The actual pile penetration into the extremely soft to very soft mudstone is difficult to estimate due to variations in the weathering and hardness of the mudstone. The available geotechnical information indicates mudstone will be present at the mudline throughout most of the footprint following dredging. In general the mudstone tends to slope to the south in the footprint of PD7. For the Hoist Dock, the limited information available suggests the depth to mudstone varies significantly from an elevation of about -14 feet to an elevation of about -23 feet and is likely sloping to the south and west in the area.

Assuming Pile Driving Analyzer testing will be completed on a series of representative piles using Load Resistance Factored Design (LRFD), we recommend using resistance factors of

0.65 for Strength Limit design and 1.0 for Service and Extreme limit design for evaluation of nominal pile capacities. If Allowable Stress Design is used, we recommend an FS of at least 2.0 for dead load plus frequently applied live loads and an FS of 1.5 for the total of all loads: dead, live, and wind or seismic.

Based on our previous experience with piles driven into mudstone in the bay, we have estimated that piles with nominal capacities of about 430 kips to 560 kips in compression will likely achieve these nominal capacities with a 15- to 30-foot embedment into the mudstone. Pile lengths should be re-evaluated during the next phase of design after additional explorations are completed in the Hoist Dock area. Depending on the results of the explorations, a test pile program may be prudent to reduce uncertainty. If pile coatings are used for protection against corrosion, the potential variability in pile embedment should be considered for the range of estimated coating elevations.

The piles can be installed with an impact hammer or a combination of vibratory hammer and impact hammer capable of driving the pile to the desired penetration without damaging the pile. We anticipate a suitably sized vibratory hammer can only be used to install the open-end pipe piles to a minimal embedment into the mudstone before encountering practical refusal. An impact hammer or other method will be necessary to install the steel-pipe piles to the final tip elevation. We recommend considering an impact hammer with a rated energy of at least 90,000 foot-pounds for installation of the 24-inch-diameter steel pipe piles. To avoid damage to the pile during installation, driving stresses should not exceed 0.9 $F_y$ for steel piles.

We have assumed that open-ended pipe piles will be used to improve embedments for lateral pile considerations. The piles should be fitted with a driving or cutting shoe that mounts flush with the outside of the pile (inside cutting shoe). For preliminary design purposes, we recommend pipe piles have a minimum wall thickness of at least ½ inch and steel yield strength of at least 45 kilopounds per square inch (ASTM International [ASTM] A252 Grade 3).

A description of the proposed pile driving equipment and accessories to be used for the production pile should be provided to the geotechnical engineer for review before the equipment is mobilized to the site. We also recommend that a continuous record of the driving resistance (blows per foot or blows per inch) be maintained at the time of installation for each pile driven and for the full depth of pile penetration. We recommend a representative from GRI observe or review all pile installation.

### *5.3.3 Lateral Pile Capacity*

Lateral structural loads can be resisted by the piles in bending. The lateral load behavior of the piles can be analyzed using the computer program LPILE by Ensoft, Inc. We

recommend using the input parameters summarized in the following table to model the soils at the site. As indicated in the table, we have assumed no lateral soil resistance in the zone of lateral spreading during a seismic event due to the large, estimated soil movements. In addition, the lateral spreading loads provided on the Lateral Earth Pressure Diagrams for PD7 and the Hoist Dock (Figures 3 and 4, respectively) need to be considered for the seismic lateral pile design of both docks.

**Table 5-2: SOIL PROPERTIES FOR LPILE ANALYSIS—PORT DOCK 7 AND HOIST DOCK PILES**

| Soil/Rock Unit | Elevation, feet | LPILE Soil Type | Condition | Soil Properties | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | K, pci | g', pcf | f' | c, psf | $e_{50}$ |
| Sand | Ground surface to +4 | Sand (Reese) | Static | 25 | 115 | 32 | N/A | N/A |
| | | | Seismic | Assumes no lateral soil resistance in zone of lateral spreading above groundwater[a] | | | | |
| Submerged[b] Sand | +4 to Top of Mudstone (Varies) | Sand (Reese) | Static | 20 | 53 | 32 | N/A | N/A |
| | | Liquefied Sand | Seismic | N/A | 53 | N/A | N/A | N/A |
| Mudstone | (Varies)[c],[d] | Weak Rock | Static & Seismic | See rock properties below. | | | | |

| Rock Unit | Elevation, feet | LPILE Soil Type | Condition | Rock Properties | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | $q_u$, psi | g', pcf | E, psi | RQD, % | $k_{rm}$ |
| Mudstone | (Varies)[c] | Weak Rock | Static & Seismic | 100 to 400 | 68 | 5,000 To 50,000 | 50 | 0.0005 |

**Abbreviations:** pci = pounds per cubic inch; pcf = pounds per cubic foot; psf = pounds per square foot; N/A = not applicable; RQD = rock quality designation

**Notes:**

[a]Lateral spreading loads should be applied to the piles as discussed on the lateral earth pressure diagrams.

[b]Submerged soils are below groundwater level.

[c]At the Port Dock 7 location, the top of the mudstone is estimated at an elevation of -1 foot in the upland area and at an elevation of -7 feet near the pile row along the dredging slope.

[d]At the Hoist Dock location, top of mudstone ranging from elevation -14 feet to elevation -23 feet. Recommend bracketing until further explorations.

LPILE provides isolated, single-pile capacities. Depending on the direction of the loading and orientation of the piles, group effects should be considered for spacing less than five pile diameters. This reduction is often applied as a p-multiplier. LPILE uses a p-multiplier as a reduction of the $k_h$ value for pile spacing less than five pile diameters. The following table provides a summary of p-multipliers for various center-to-center pile spacing.

**Table 5-3: LATERAL PILE GROUP ANALYSIS**

| Center-to-Center Pile Spacing | Calculated P-Multipliers for Rows 1, 2, and 3+ |
|---|---|
| 3D | 0.80, 0.40, 0.30 |
| 4D | 0.90, 0.65, 0.50 |
| 5D | 1.0, 0.85, 0.70 |

**Abbreviation:** D = pile diameter

For liquefiable soils, a p-modifier of 1 should be used. Additional design methodology of laterally loaded pile groups is provided in the December 1996 Federal Highway Administration (FHWA) publication FHWA-HI-96-033, titled *Design and Construction of Driven Pile Foundations*.

### 5.3.4 Seismic Lateral Earth Pressures

As previously discussed, liquefaction-induced deformations toward the bay will result in kinematic soil forces acting on the structure. Figures 3 and 4 provide preliminary lateral pressure criteria that may be used to analyze the piles for lateral spreading loads during a seismic event at PD7 and the Hoist Dock, respectively. We have estimated that the earth pressure from the non-liquefied fill (above water level) may be computed using an equivalent fluid having a unit weight of 375 pounds per cubic foot (pcf). The passive pressure will act over two pile diameters for pile sections above the water level, which is assumed to be at mean sea level for design. An equivalent fluid weight of 35 pcf will act over one pile diameter for pile sections between an elevation of 4 feet to the top of the mudstone, the elevation of which varies along the length of the docks. This pressure is based on 30% of the total overburden pressure outlined in the Japanese Road Association methodology (Yokoyama et al., 1997).

### 5.3.5 Additional Pile Installation Considerations

Based on our experience in the area, there is a risk of encountering practical refusal on obstructions in the near-surface fill material. If the obstructions are encountered near the ground surface, a trackhoe may be able to remove the material. Pre-driving through the fill with a removable pile section may also be considered at the individual pile locations to reduce the risk of refusal or pile damage. If practical refusal is encountered on a boulder at depth, some accommodation should be considered for relocating the pile. The existing

bank slopes are protected with riprap. Prior to installation of pipe piles, the riprap will need to be removed from the slope within the limits of the piling. The extent of riprap removed at one time should be determined based on the risk of losing material due to upland oversteepened slopes, wave action, etc.

Depending on the results of the additional upland explorations, the team should reevaluate the risks of shallow pile refusal. If harder zones of mudstone are encountered, consideration may be needed for predrilling and socketing piles to achieve the required lateral capacities.

### 5.4 Additional Explorations for Final Design

As noted previously, the Hoist Dock portion of the project was added following initial project scoping, and additional explorations are recommended to supplement the next phase of design. Based on our review of existing information and the observed variability of mudstone elevation and fill depths/consistency, we recommend three additional soil borings be completed in the upland area between PD7 and the Hoist Dock. These borings can be used to help better estimate pile lengths and the potential for seismically induced liquefaction and lateral spreading at the site.

## 6 LIMITATIONS

This report presents the results of a preliminary, 30% geotechnical investigation for PD7 and the Hoist Dock. The information presented herein is preliminary and provides our general conclusions regarding the feasibility of the project with respect to the observed site conditions. This information is intended for 30% design purposes. A more detailed geotechnical investigation, including subsurface explorations, laboratory testing, and engineering analyses, should be completed as part of the final geotechnical investigation in order to further evaluate pile design and dock constructability.

We have included as Appendix F the Geoprofessional Business Association guidance document "Important Information about This Geotechnical-Engineering Report" to assist you and others in understanding the use and limitations of this report. We recommend you read this document.

***DRAFT***

Submitted for GRI,


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This document has been submitted electronically.

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N

0 0.5 1

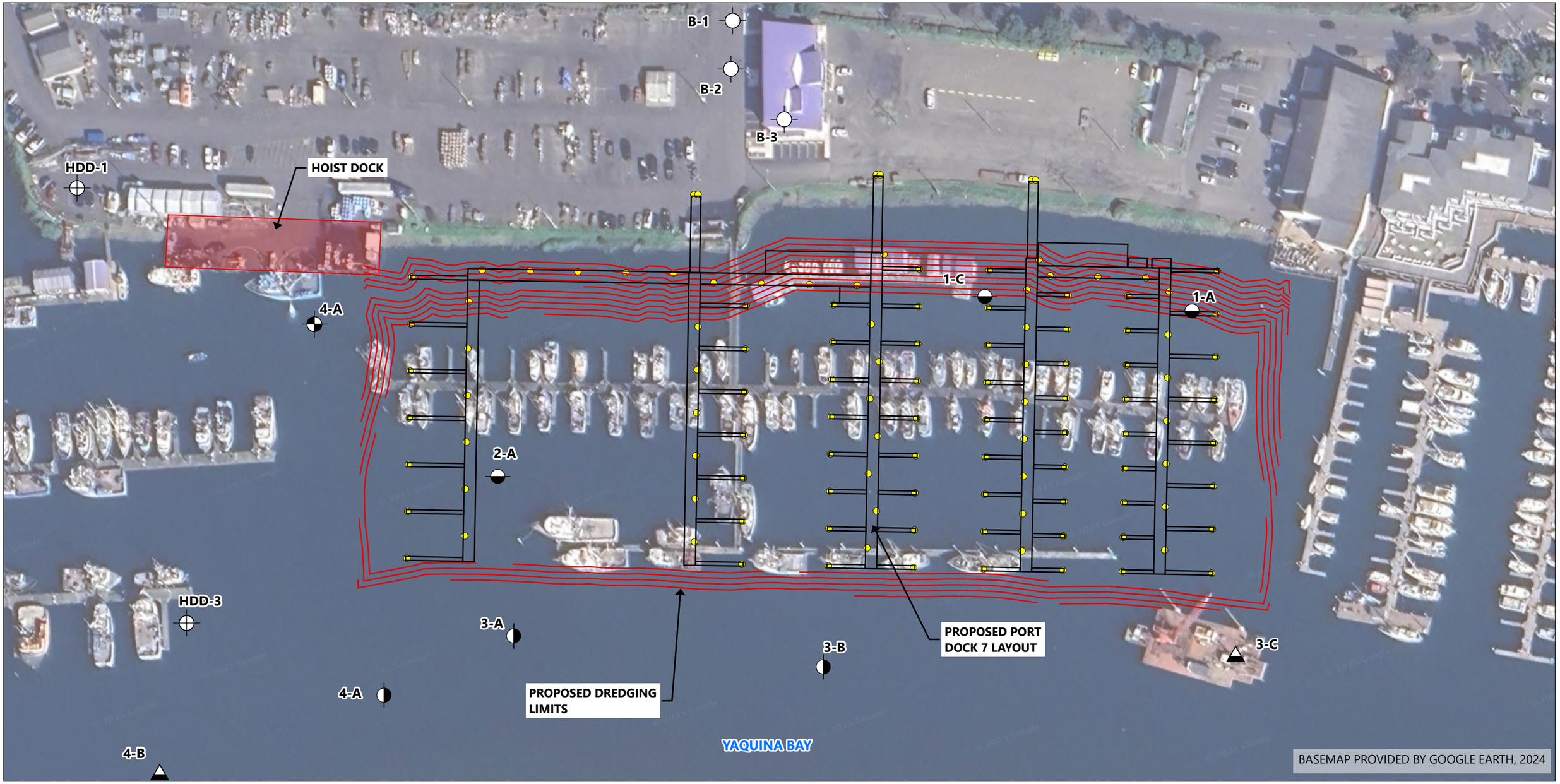
1 INCH = 0.5 MILES

GRI

DOWL, LLC
PORT OF NEWPORT PORT DOCK 7
AND HOIST DOCK

# VICINITY MAP

AUG. 2025 JOB NO. 6801-B Page 76 FIG. 1




**LEGEND:**

- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY GRI FOR PORT DOCK 7 PROJECT (FEBRUARY 28 - MARCH 7, 2024)
- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY GRI FOR CAP 107 PROJECT (FEBRUARY 19 - MARCH 13, 2024)
- APPROXIMATE LOCATION OF GEOTECHNICAL AND ENVIRONMENTAL BORINGS COMPLETED BY GRI FOR CAP 107 PROJECT
- APPROXIMATE LOCATION OF ENVIRONMENTAL BORING COMPLETED BY GRI FOR CAP 107 PROJECT (FEBRUARY 19 - MARCH 13, 2024)
- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY GRI FOR PORT OF NEWPORT ADMINISTRATION BUILDING PROJECT (OCTOBER 27, 2014)
- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY FOUNDATION ENGINEERING, INC. FOR A WATERLINE CROSSING PROJECT (APRIL 2000)
- APPROXIMATE LOCATION OF PROPOSED FLOATING DOCK
- APPROXIMATE CONTOURS OF DREDGING AREA
- APPROXIMATE LOCATION OF PROPOSED PILES

N

0 100 200

1 INCH = 10 FEET

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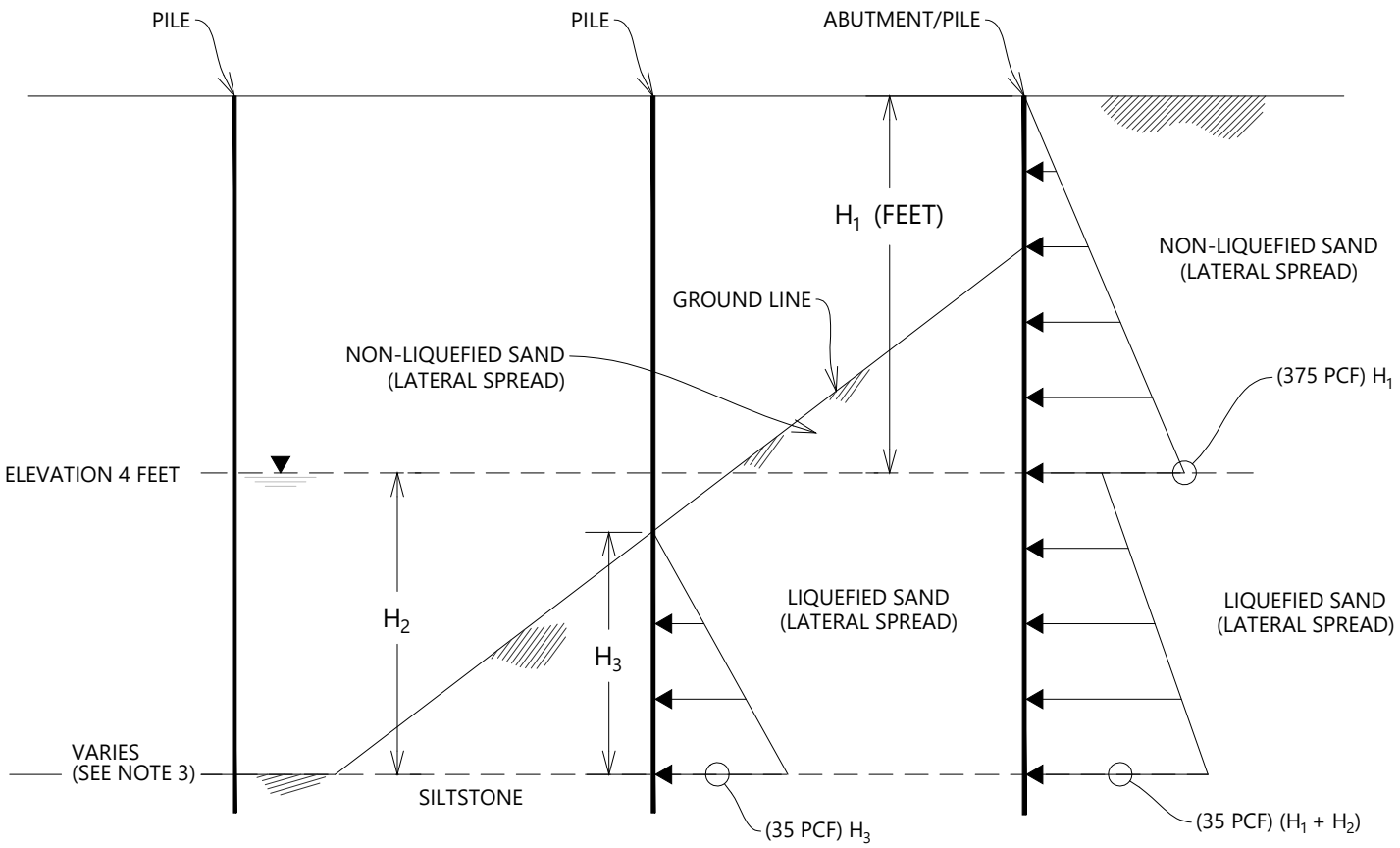
AND HOIST DOCK

# SITE PLAN

AUG. 2025 JOB NO. 6801-B  FIG. 2




NOTES:

1. GROUNDWATER ASSUMED AT ELEVATION 4 FEET.
2. LIQUEFACTION AND LATERAL SPREAD OCCUR TO TOP OF SILTSTONE.
3. TOP OF SILTSTONE ESTIMATED AT ELEVATION -1 FOOT FOR PILE ROW CLOSEST TO SHORE (CREST OF SLOPE). TOP OF SILTSTONE ESTIMATED AT ELEVATION -7 FEET FOR PILE ROW. ALONG THE DREDGING SLOPE, PILES FARTHER FROM SHORE ESTIMATED TO ENCOUNTER MUDSTONE AT DREDGING DEPTH.
4. EARTH PRESSURES ACT OVER ENTIRE SURFACE OF ABUTMENT WALL OR TWO PILE DIAMETERS ABOVE THE WATER LEVEL AND ONE PILE DIAMETER BELOW THE WATER LEVEL.

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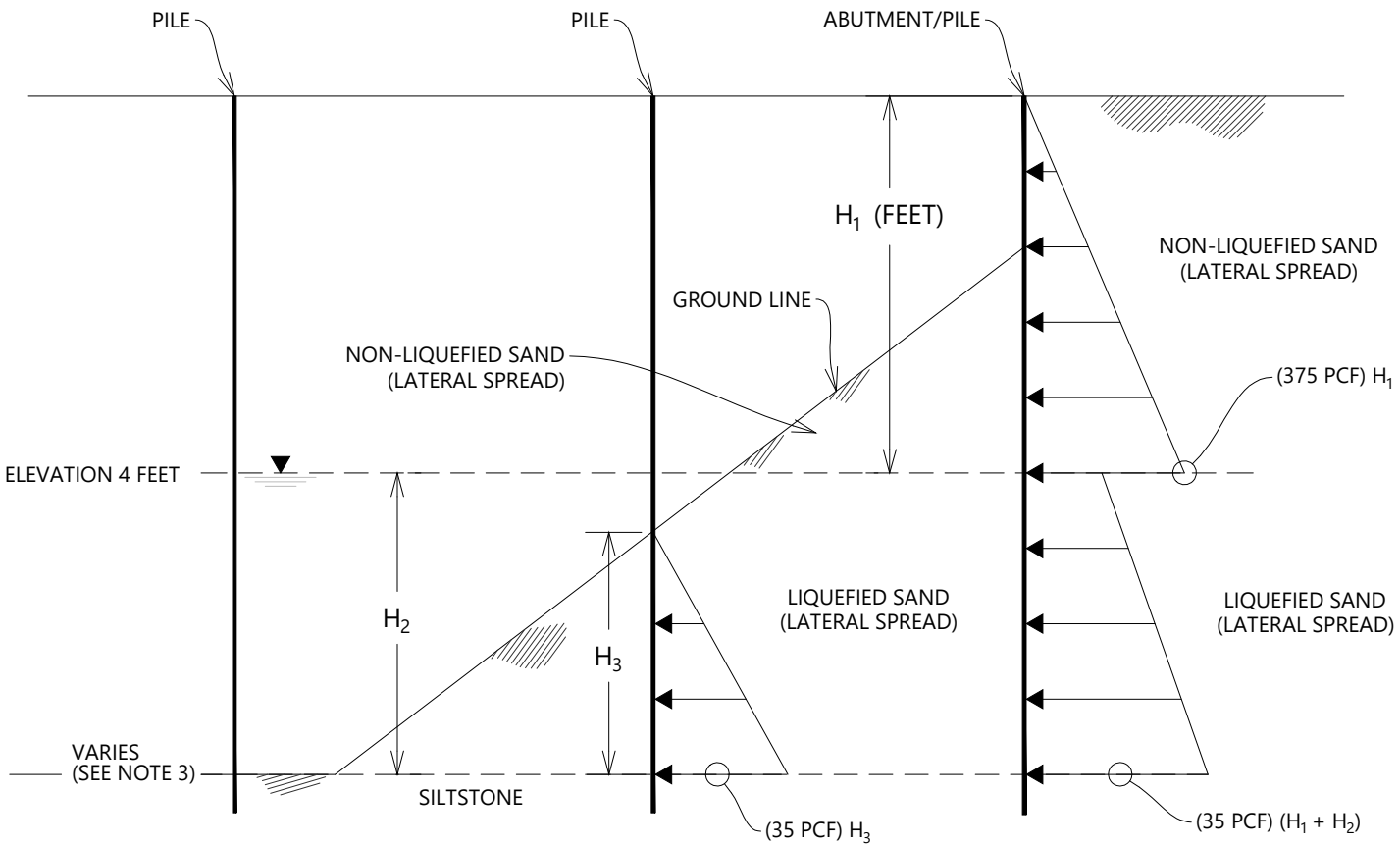
PORT OF NEWPORT PORT DOCK 7
AND HOIST DOCK

# LATERAL EARTH PRESSURE DIAGRAM (PORT DOCK 7)

AUG. 2025 JOB NO. 6801-B FIG. 3




NOTES:

1. GROUNDWATER ASSUMED AT ELEVATION 4 FEET.
2. LIQUEFACTION AND LATERAL SPREAD OCCUR TO TOP OF SILTSTONE.
3. TOP OF SILTSTONE ESTIMATED TO RANGE FROM ELEVATION -14 FEET TO ELEVATION -23 FEET. RECOMMEND BRACKETING UNTIL FURTHER EXPLORATIONS COMPLETED.
4. EARTH PRESSURES ACT OVER ENTIRE SURFACE OF ABUTMENT WALL OR TWO PILE DIAMETERS ABOVE THE WATER LEVEL AND ONE PILE DIAMETER BELOW THE WATER LEVEL.

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AND HOIST DOCK

# LATERAL EARTH PRESSURE DIAGRAM (HOIST DOCK)

AUG. 2025 JOB NO. 6801-B FIG. 4

# APPENDIX A

*Field Explorations and Laboratory Testing*

**APPENDIX A**

**FIELD EXPLORATIONS AND LABORATORY TESTING**

# A.1 FIELD EXPLORATIONS

## A.1.1 General

The subsurface exploration program for this phase of the project was completed during two separate mobilizations. Drilling during the first mobilization occurred on February 28, 2024, and included one rotosonic boring designated 2-A. Drilling during the second mobilization occurred on March 7, 2024, with two mud-rotary borings designated 1-A and 1-C. The approximate locations of the borings are shown on the Site Plan, Figure 2.

The subsurface borings were completed by overwater methods using a barge provided and operated by Bergerson Construction of Astoria, Oregon. The barge was held in place for drilling by two spuds.

## A.1.2 Comments on Mudline and Rock Elevations

The mudline elevations reported herein for the geotechnical borings should be considered approximate and were developed using the following methodology:

1. Tidal water level elevations were taken from the National Oceanic and Atmospheric Administration Tide Predictions tables for the South Beach, Yaquina Bay, tidal station.

2. A GRI field representative took several depth soundings from the barge deck to mudline at the location of the drilling equipment.

3. The distance from the barge deck to the water was subtracted from the depth taken in Step 2. This final depth was the depth from water level to mudline.

4. The depth noted in Step 3 was subtracted from the elevation noted in Step 1, which resulted in the approximate mudline elevation for the borings.

5. A barge spud was marked at the beginning of each boring. The spud markings were referenced during the recovery of each sample to correct for tidal changes during drilling.

The vertical uncertainty of elevations associated with the preceding procedure is estimated to be approximately +/-1 foot.

## A.1.3 Rotosonic Boring

Boring 2-A was advanced to a depth of about 34.9 feet below mudline with rotosonic drilling techniques using a track-mounted Geoprobe 8150LS rotosonic track-mounted drill

rig provided and operated by Western States Soil Conservation, Inc. (WSSC) of Hubbard, Oregon. Geotechnical staff from GRI maintained a log of materials and conditions encountered in the boring. The boring was advanced using a 5-inch-diameter casing. Continuous 5-inch-diameter cores were obtained from the boring and stored in plastic bags. The plastic bags were opened in the field for visual classifications, and digital photographs were taken of each run. Representative soil samples were carefully examined in the field and saved in plastic sample bags for further examination in our laboratory. Photographs of the cores are provided in Appendix B.

Disturbed soil samples were typically obtained at intervals of 5 feet to 7.5 feet. Disturbed soil samples were obtained using a standard split-spoon sampler or grab sample. The Standard Penetration Test (SPT) was conducted while obtaining the split-spoon samples. This test is performed by driving a 2-inch outside-diameter, split-spoon sampler into the soil a distance of 18 inches using the force of a 140-pound hammer dropped 30 inches. The number of blows required to drive the sampler the last 12 inches is known as the Standard Penetration Resistance (SPT N-value). The SPT N-values provide a measure of the relative density of granular soils and the relative consistency of cohesive soils. Samples obtained from the sampler or grab samples were placed in airtight bags and returned to our office for further classification and testing.

A log of the rotosonic boring is provided on Figure 3A. The log provides a descriptive summary of the various types of material encountered during drilling. To the left of the descriptive summary, a graphic log indicates the general soil type. To the right of the descriptive summary, the numbers and types of soil or rock samples taken during the drilling operation are indicated. Farther to the right, SPT N-values are shown graphically, along with the natural moisture contents, percent material passing the No. 200 sieve, and Atterberg limits determinations. The terms used to describe the materials encountered in the borings are defined in Tables 1A and 2A.

### A.1.4 Mud-Rotary Borings

Borings 1-A and 1-C were advanced to depths of about 32 feet and 32.5 feet using a CME 75 HT truck-mounted drill rig provided and operated by WSSC. Disturbed soil samples were obtained at 5-foot intervals of depth using a standard split-spoon sampler. The soil samples obtained in the split-spoon sampler were carefully examined in the field, and representative portions were saved in airtight jars for further examination and physical testing in our laboratory. At the time of sampling, the SPT was being conducted. All samples were returned to our laboratory for further examination and physical testing.

Logs of the mud-rotary borings are provided on Figures 1A and 2A. The logs present a descriptive summary of the various types of materials encountered in the boring and note

the depth at which the materials and/or characteristics of the materials change. To the right of the descriptive summary, the numbers and types of samples are indicated. Farther to the right, N-values are shown graphically, along with the natural moisture contents, percent material passing the No. 200 sieve, and Atterberg limits determinations. The terms used to describe the materials encountered in the borings are defined in Tables 1A and 2A.

## A.2 LABORATORY TESTING

### A.2.1 General

The samples obtained from the borings were returned to our laboratory for further examination, and field classifications were modified where necessary. At the time of classification, the natural moisture content of each sample was determined. Additional testing included Atterberg-limits testing and grain size analyses. The following paragraphs describe the testing program in more detail. The results of the testing are summarized in Table 3A.

### A.2.2 Natural Moisture Contents

Natural moisture content determinations were made in conformance with ASTM International (ASTM) D2216. The results are shown on Figures 1A through 3A and summarized in Table 3A.

### A.2.3 Grain-Size Analysis

#### *A.2.3.1 Washed-Sieve Method*

To assist in the classification of the soils, samples of known dry weight were washed over a No. 200 sieve. The material retained on the sieve is oven-dried and weighed. The percentage of material passing the No. 200 sieve is then calculated. The results are shown on Figures 1A through 3A and summarized in Table 3A.

### A.2.4 Atterberg Limits

Atterberg limits determinations were performed on three samples in substantial conformance with ASTM D4318. The test results are summarized on the Plasticity Chart, Figure 4A, and summarized in Table 3A.

## Table 1A

## GUIDELINES FOR DESCRIPTION OF SOIL[1]

### Description of Relative Density for Cohesionless (Coarse-Grained) Soils

| Relative Density | Standard Penetration Resistance (N-values) blows/foot (ft) | 3-inch Sampler, 140-lb hammer approx. N-Value (blows/ft)[2] | 3-inch Sampler, 300-lb hammer approx. N-Value (blows/ft)[1] |
|---|---|---|---|
| Very Loose | 0 - 4 | 0 – 10 | 0 – 5 |
| Loose | 4 - 10 | 10 – 24 | 5 – 11 |
| Medium Dense | 10 - 30 | 24 – 73 | 11 – 34 |
| Dense | 30 - 50 | 73 – 122 | 34 – 57 |
| Very Dense | over 50 | over 122 | over 57 |

### Description of Relative Consistency for Cohesive (Fine-Grained) Soils

| Relative Consistency | Standard Penetration Resistance (N-values) blows/ft | 3-inch Sampler, 140 lb hammer approx. N-Value (blows/ft)[1] | 3-inch Sampler, 300 lb hammer approx. N-Value (blows/ft)[2] | Torvane or Undrained Shear Strength, tsf |
|---|---|---|---|---|
| Very Soft | 0 - 2 | 0 – 3 | 0 – 1 | less than 0.125 |
| Soft | 2 - 4 | 3 – 6 | 1 – 3 | 0.125 - 0.25 |
| Medium Stiff | 4 - 8 | 6 – 12 | 3 – 6 | 0.25 - 0.50 |
| Stiff | 8 - 15 | 12 – 23 | 6 – 11 | 0.50 - 1.0 |
| Very Stiff | 15 - 30 | 23 – 46 | 11 – 22 | 1.0 - 2.0 |
| Hard | 30 – 60 | 46 – 92 | 22 – 43 | over 2.0 |
| Very Hard | over 60 | over 92 | over 43 | |

| Grain-Size Classification | Modifier for Subclassification | | |
|---|---|---|---|
| | | Primary Constituent SAND or GRAVEL | Primary Constituent SILT or CLAY |
| *Boulders:* >12 inches<br>*Cobbles:* 3 inches - 12 inches<br>*Gravel:* ¼ inch - ¾ inch (fine); ¾ inch - 3 inches (coarse)<br>*Sand:* No. 200 - No. 40 sieve (fine); No. 40 - No. 10 sieve (medium); No. 10 - No. 4 sieve (coarse)<br>*Silt/Clay:* Pass No. 200 sieve | Adjective | Percentage of Other Material (By Weight) | |
| | trace: | <15 (sand, gravel) | <15 (sand, gravel) |
| | some: | 15 - 30 (sand, gravel) | 15 - 30 (sand, gravel) |
| | sandy, gravelly: | 30 - 50 (sand, gravel) | 30 - 50 (sand, gravel) |
| | trace: | <5 (silt, clay) | *Relationship of clay and silt determined by plasticity index test* |
| | some: | 5 - 12 (silt, clay) | |
| | silty, clayey: | 12 - 50 (silt, clay) | |

1. Soil descriptions are developed using visual-manual procedures (ASTM D2488) and generally follow ODOT Geotechnical Design Manual (Chapter 5) guidelines.
2. Oversized sampler (OD = 3 inches, ID = 2.4 inches) blow counts converted to SPT N-Value using equations provided by Burmister, D.M., 1948, The importance and practical use of relative density in soil mechanics: Proceedings of ASTM, v. 48:1249.

## Table 2A

## GUIDELINES FOR CLASSIFICATION OF ROCK

### Relative Rock Weathering Scale

| Term | Field Identification |
|---|---|
| Fresh | Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric. |
| Slightly Weathered | Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1 in. into rock. |
| Moderately Weathered | Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits. |
| Predominantly Decomposed | Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water. |
| Decomposed | Rock mass is completely decomposed. Original rock "fabric" may be evident. May be reduced to soil with hand pressure. |

### Relative Rock Strength Scale

| Term | Hardness Designation | Field Identification | Approximate Unconfined Compressive Strength |
|---|---|---|---|
| Extremely Weak | R0 | Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure. | 35 - 150 psi |
| Very Weak | R1 | Crumbles under firm blows with point of a geology pick. Can be peeled by a pocketknife and scratched with fingernail. | 150 - 725 psi |
| Weak | R2 | Can be peeled by a pocketknife with difficulty. Cannot be scratched with fingernail. Shallow indentation made by firm blow of geology pick. | 725 – 3,500 psi |
| Medium Strong | R3 | Can be scratched by knife or pick. Specimen can be fractured with a single firm blow of hammer/geology pick. | 3,500 – 7,250 psi |
| Strong | R4 | Can be scratched with knife or pick only with difficulty. Several hard hammer blows required to fracture specimen. | 7,250 – 14,500 psi |
| Very Strong | R5 | Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact. | 14,500 – 36,250 psi |
| Extremely Strong | R6 | Can only be chipped with a rock hammer | >36,250 psi |

### RQD and Rock Quality

| Relation of RQD and Rock Quality | |
|---|---|
| RQD (Rock Quality Designation), % | Description of Rock Quality |
| 0 - 25 | Very Poor |
| 25 - 50 | Poor |
| 50 - 75 | Fair |
| 75 - 90 | Good |
| 90 - 100 | Excellent |

| Terminology for Planar Surface | | |
|---|---|---|
| Bedding | Joints and Fractures | Spacing |
| Laminated | Very Close | < 2 in. |
| Thin | Close | 2 in. – 12 in. |
| Medium | Moderately Close | 12 in. – 36 in. |
| Thick | Wide | 36 in. – 10 ft |
| Massive | Very Wide | > 10 ft |

## Table 3A

## SUMMARY OF LABORATORY RESULTS

| Sample Information | | | | | | Atterberg Limits | | | |
|---|---|---|---|---|---|---|---|---|---|
| Location | Sample | Depth, ft | Elevation, ft | Moisture Content, % | Dry Unit Weight, pcf | Liquid Limit, % | Plasticity Index, % | Fines Content, % | Soil Type |
| 1-A | S-1 | 0.0 | -5.0 | 77 | -- | -- | -- | 69 | Sandy SILT |
| | S-2 | 5.0 | -10.0 | 30 | -- | -- | -- | -- | MUDSTONE |
| | S-3 | 10.0 | -15.0 | 33 | -- | 69 | 38 | 100 | MUDSTONE |
| | S-4 | 15.0 | -20.0 | 38 | -- | -- | -- | -- | MUDSTONE |
| | S-5 | 20.0 | -25.0 | 24 | -- | -- | -- | -- | MUDSTONE |
| | S-6 | 25.0 | -30.0 | 31 | -- | -- | -- | -- | MUDSTONE |
| | S-7 | 31.0 | -36.0 | 32 | -- | -- | -- | -- | MUDSTONE |
| 1-C | S-1 | 0.0 | -6.3 | 46 | -- | -- | -- | 52 | Sandy SILT |
| | S-2 | 5.0 | -11.3 | 44 | -- | 61 | 22 | 100 | MUDSTONE |
| | S-3 | 10.0 | -16.3 | 38 | -- | -- | -- | -- | MUDSTONE |
| | S-4 | 15.5 | -21.8 | 29 | -- | -- | -- | -- | MUDSTONE |
| | S-5 | 21.0 | -27.3 | 41 | -- | -- | -- | -- | MUDSTONE |
| | S-6 | 26.0 | -32.3 | 36 | -- | -- | -- | -- | MUDSTONE |
| | S-7 | 31.0 | -37.3 | 33 | -- | -- | -- | -- | MUDSTONE |
| 2-A | S-1(a) | 0.0 | -18.5 | 50 | -- | -- | -- | 38 | Silty SAND |
| | G-1 | 3.5 | -22.0 | 28 | -- | 69 | 39 | -- | MUDSTONE |
| | S-2 | 7.0 | -25.5 | 30 | -- | -- | -- | -- | MUDSTONE |
| | G-2 | 11.5 | -30.0 | 24 | -- | -- | -- | -- | MUDSTONE |
| | S-3 | 12.0 | -30.5 | 32 | -- | -- | -- | -- | MUDSTONE |
| | G-3 | 14.0 | -32.5 | 24 | -- | -- | -- | -- | MUDSTONE |
| | S-4 | 17.0 | -35.5 | 29 | -- | -- | -- | -- | MUDSTONE |
| | G-4 | 20.0 | -38.5 | 21 | -- | -- | -- | -- | MUDSTONE |
| | S-5 | 22.0 | -40.5 | 26 | -- | -- | -- | -- | MUDSTONE |
| | G-5 | 24.0 | -42.5 | 19 | -- | -- | -- | -- | MUDSTONE |
| | S-6 | 27.0 | -45.5 | 35 | -- | -- | -- | -- | MUDSTONE |
| | R-6 | 27.0 | -45.5 | 22 | -- | -- | -- | -- | MUDSTONE |
| | S-7 | 33.5 | -52.0 | 29 | -- | -- | -- | -- | MUDSTONE |

# BORING AND TEST PIT LOG LEGEND

## SOIL SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | LANDSCAPE MATERIALS |
|  | FILL |
|  | GRAVEL; clean to some silt, clay, and sand |
|  | Sandy GRAVEL; clean to some silt and clay |
|  | Silty GRAVEL; up to some clay and sand |
|  | Clayey GRAVEL; up to some silt and sand |
|  | SAND; clean to some silt, clay, and gravel |
|  | Gravelly SAND; clean to some silt and clay |
|  | Silty SAND; up to some clay and gravel |
|  | Clayey SAND; up to some silt and gravel |
|  | SILT; up to some clay, sand, and gravel |
|  | Gravelly SILT; up to some clay and sand |
|  | Sandy SILT; up to some clay and gravel |
|  | Clayey SILT; up to some sand and gravel |
|  | CLAY; up to some silt, sand, and gravel |
|  | Gravelly CLAY; up to some silt and sand |
|  | Sandy CLAY; up to some silt and gravel |
|  | Silty CLAY; up to some sand and gravel |
|  | PEAT |

## BEDROCK SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | BASALT |
|  | MUDSTONE |
|  | SILTSTONE |
|  | SANDSTONE |

## SURFACE MATERIAL SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | Asphalt concrete PAVEMENT |
|  | Portland cement concrete PAVEMENT |
|  | Crushed rock BASE COURSE |

## SAMPLER SYMBOLS

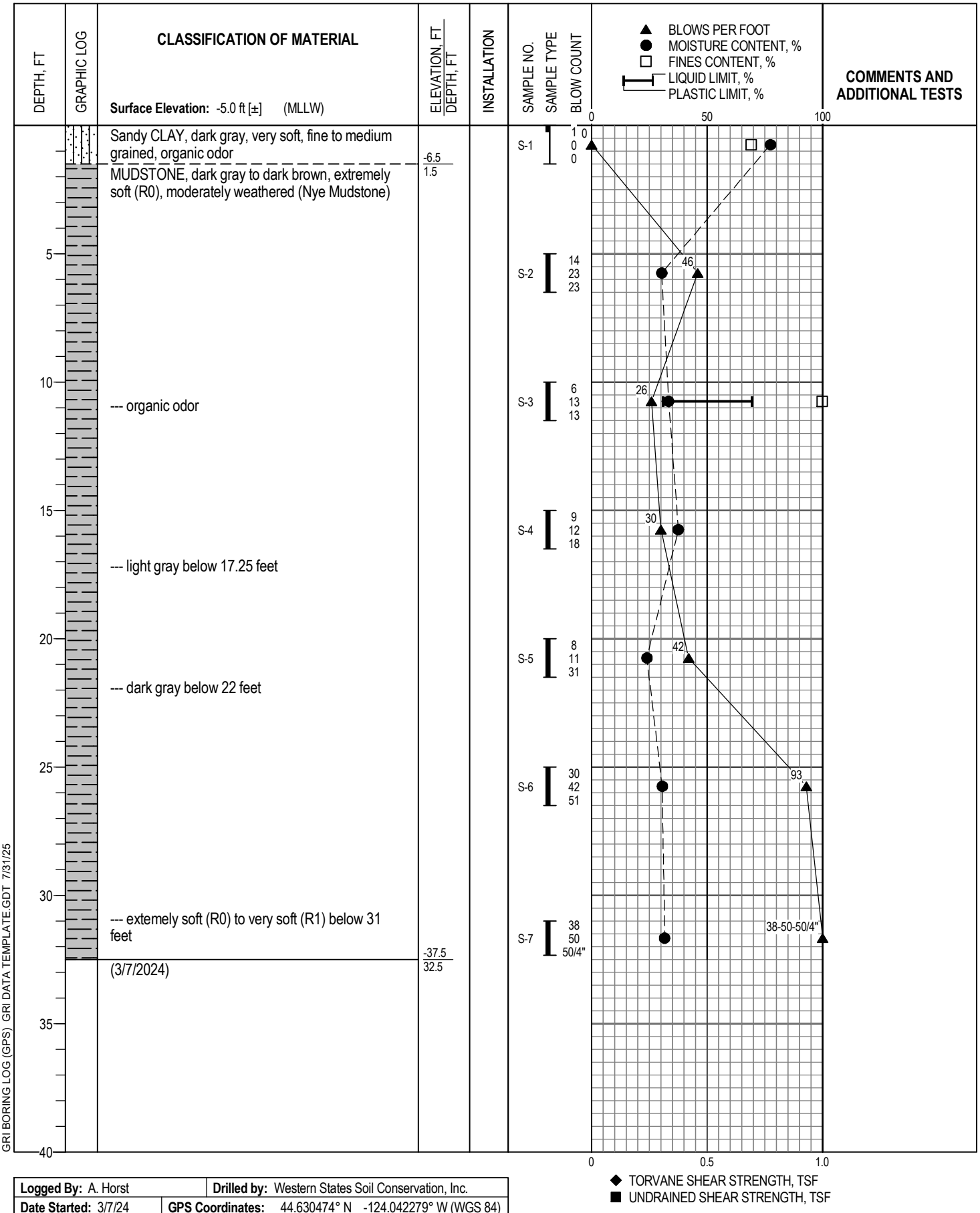
| Symbol | Sampler Description |
|---|---|
|  | 2.0 in. O.D. split-spoon sampler and Standard Penetration Test with recovery (ASTM D1586) |
|  | Shelby tube sampler with recovery (ASTM D1587) |
|  | 3.0 in. O.D. split-spoon sampler with recovery (ASTM D3550) |
|  | Grab Sample |
|  | Rock core sample interval |
|  | Sonic core sample interval |
|  | Push probe sample interval |

## INSTALLATION SYMBOLS

| Symbol | Symbol Description |
|---|---|
|  | Flush-mount monument set in concrete |
|  | Concrete, well casing shown where applicable |
|  | Bentonite seal, well casing shown if applicable |
|  | Filter pack, machine-slotted well casing shown where applicable |
|  | Grout, vibrating-wire transducer cable shown where applicable |
|  | Vibrating-wire pressure transducer |
|  | 1-in.-diameter solid PVC |
|  | 1-in.-diameter hand-slotted PVC |
|  | Grout, inclinometer casing shown where applicable |

## FIELD MEASUREMENTS

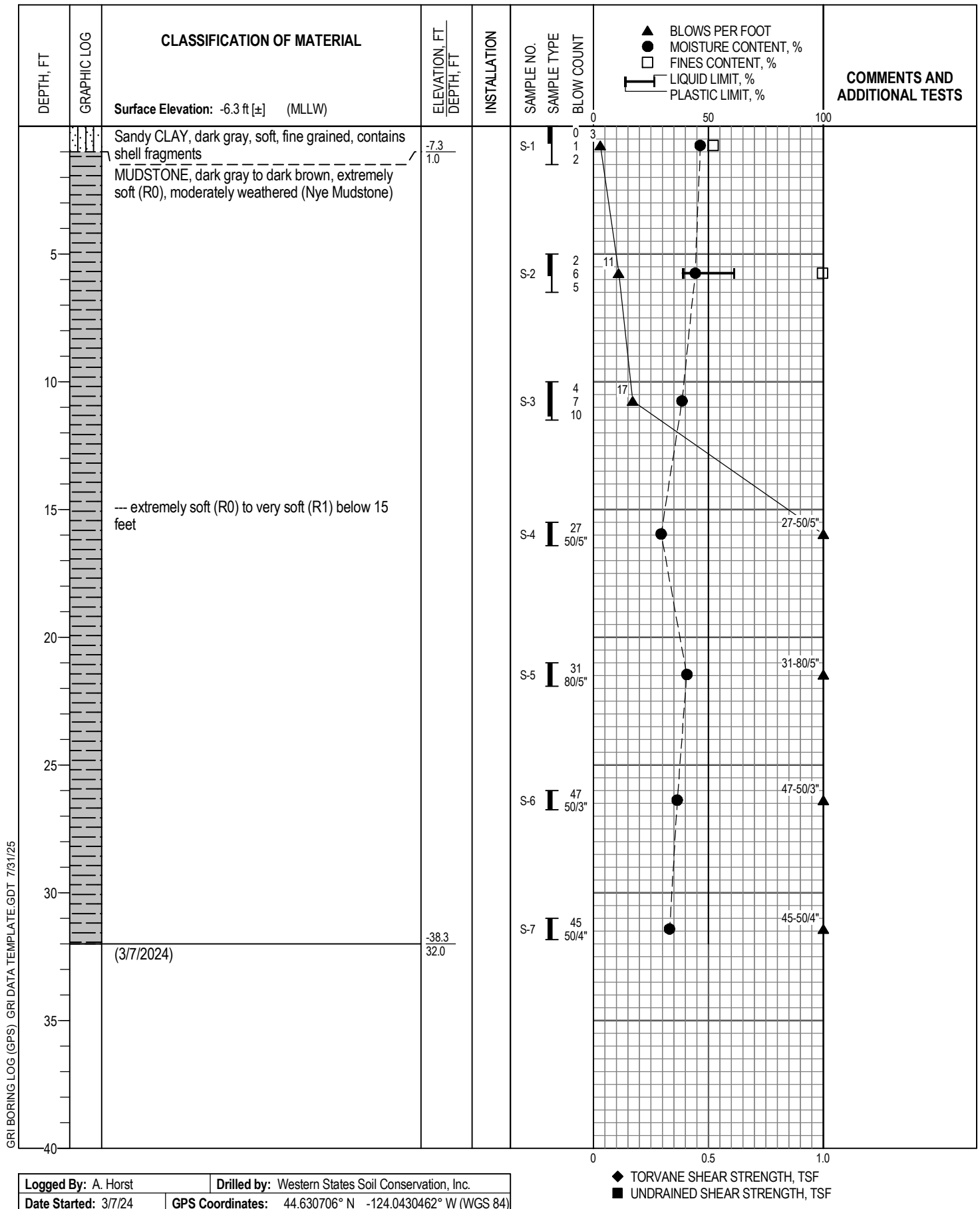
| Symbol | Typical Description |
|---|---|
|  | Groundwater level during drilling and date measured |
|  | Groundwater level after drilling and date measured |
|  | Rock/sonic core or push probe recovery (%) |
|  | Rock quality designation (RQD, %) |




GRI BORING LOG (GPS) GRI DATA TEMPLATE.GDT 7/31/25

| | | | |
|---|---|---|---|
| **Logged By:** A. Horst | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 3/7/24 | **GPS Coordinates:** 44.630474° N -124.042279° W (WGS 84) | | |
| **Drilling Method:** Mud Rotary<br>**Equipment:** CME 75 Truck-Mounted Drill Rig<br>**Hole Diameter:** 4 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 85% | |
| **Note:** See Legend for Explanation of Symbols | | | |

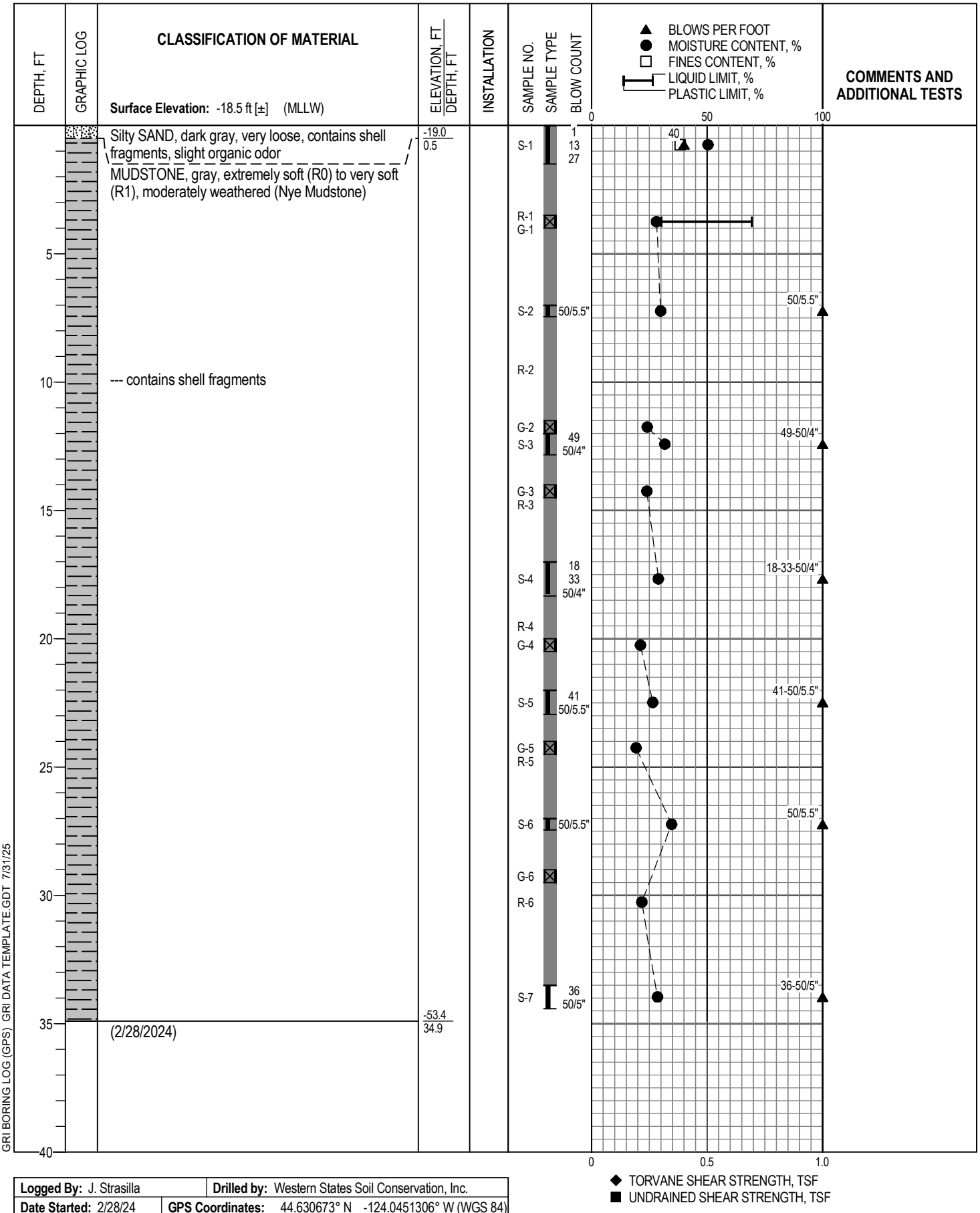
# BORING 1-A




GRI BORING LOG (GPS) GRI DATA TEMPLATE.GDT 7/31/25

| | | |
|---|---|---|
| **Logged By:** A. Horst | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 3/7/24 | **GPS Coordinates:** 44.630706° N -124.0430462° W (WGS 84) | |
| **Drilling Method:** Mud Rotary<br>**Equipment:** CME 75 Truck-Mounted Drill Rig<br>**Hole Diameter:** 4 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 85% |
| **Note:** See Legend for Explanation of Symbols | | |

# BORING 1-C



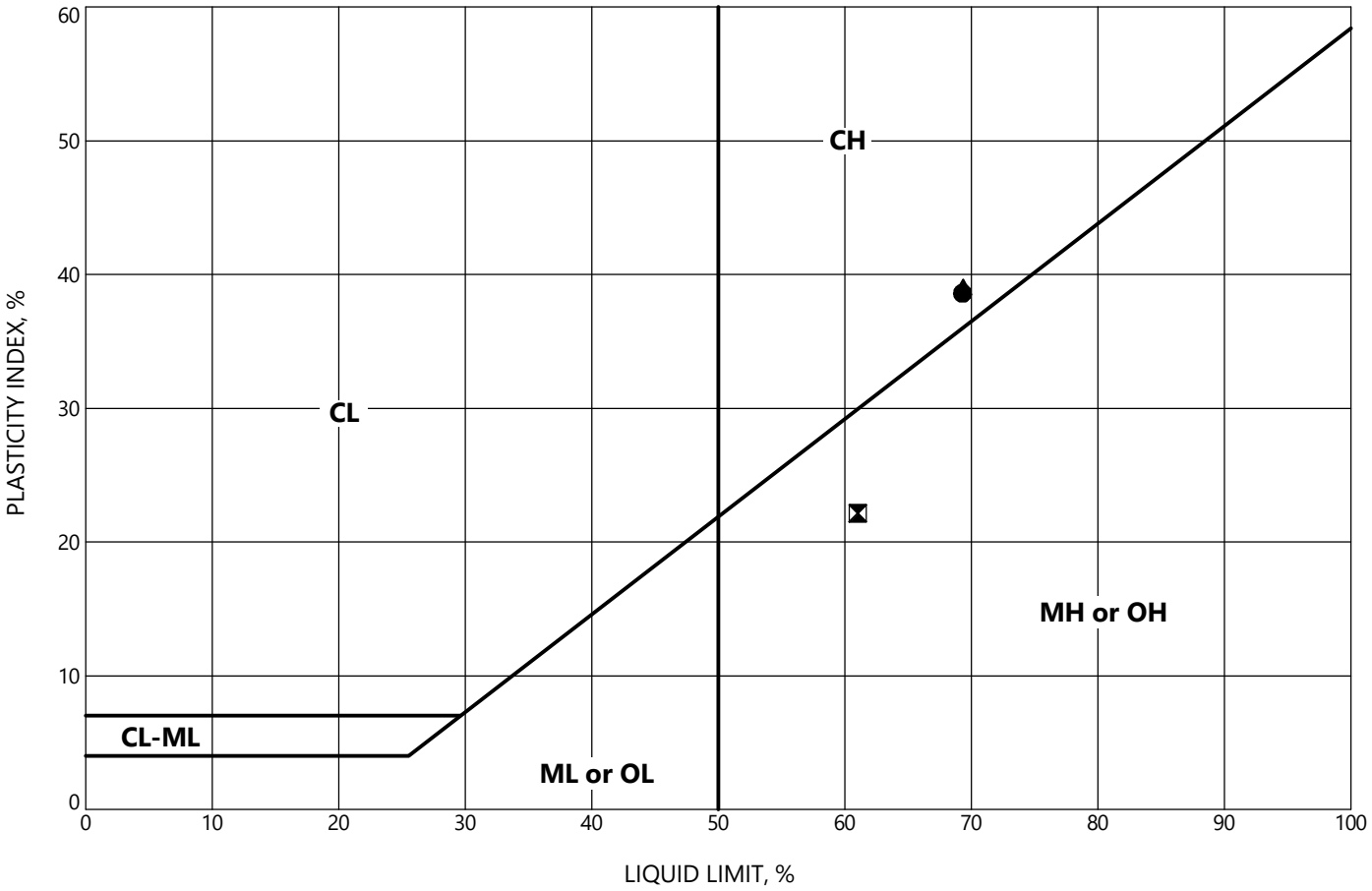

GRI BORING LOG (GPS) GRI DATA TEMPLATE.GDT 7/31/25

| | | | |
|---|---|---|---|
| **Logged By:** J. Strasilla | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/28/24 | **GPS Coordinates:** 44.630673° N -124.0451306° W (WGS 84) | | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe 8150 LS<br>**Hole Diameter:** 4 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 88% | |
| **Note:** See Legend for Explanation of Symbols | | | |

# BORING 2-A

| GROUP SYMBOL | UNIFIED SOIL CLASSIFICATION FINE-GRAINED SOIL GROUPS |
|---|---|
| OL | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY |
| ML | INORGANIC CLAYEY SILTS TO VERY FINE SANDS OF SLIGHT PLASTICITY |
| CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY |

| GROUP SYMBOL | UNIFIED SOIL CLASSIFICATION FINE-GRAINED SOIL GROUPS |
|---|---|
| OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS |
| MH | INORGANIC SILTS AND CLAYEY SILT |
| CH | INORGANIC CLAYS OF HIGH PLASTICITY |




| | Location | Sample | Depth, ft | Classification | LL | PL | PI | MC, % |
|---|---|---|---|---|---|---|---|---|
| ● | 1-A | S-3 | 10.0 | MUDSTONE, dark gray to dark brown | 69 | 31 | 38 | 33 |
| ⊠ | 1-C | S-2 | 5.0 | MUDSTONE, dark gray to dark brown | 61 | 39 | 22 | 44 |
| ▲ | 2-A | G-1 | 3.5 | MUDSTONE, gray | 69 | 30 | 39 | 28 |

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# PLASTICITY CHART

AUG. 2025 JOB NO. 6801-B FIG. 4A

# APPENDIX B

*Rotosonic Core Photographs*


**BORING 2-A: CORE RUN 1 (ELEVATION -18.5 FEET TO -23.5 FEET)**


**BORING 2-A: CORE RUN 2 (ELEVATION -23.5 FEET TO -28.5 FEET)**

GRI

# CORE PHOTOS

AUG. 2025 JOB NO. 6801-B FIG. 1B


**BORING 2-A: CORE RUN 3 (ELEVATION -30.5 FEET TO -35.5 FEET)**


**BORING 2-A: CORE RUN 4 (ELEVATION -35.5 FEET TO -40.5 FEET)**

GRI

# CORE PHOTOS


**BORING 2-A: CORE RUN 5 (ELEVATION -40.5 FEET TO -45.5 FEET)**


**BORING 2-A: CORE RUN 6 (ELEVATION -45.5 FEET TO -50.4 FEET)**

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# CORE PHOTOS

# APPENDIX C

*October 24, 2017, Geotechnical Data Report, Port of Newport Continuing Authority Program 107 Project*

# Geotechnical Data Report
# Port of Newport Continuing Authority Program 107 Project

**Newport, Oregon**

**October 25, 2024**

**Prepared for**

**DOWL**
**309 SW 6th Avenue, Suite 700**
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## APPENDICES

# 1 INTRODUCTION

The Port of Newport (Port) seeks to change the design and layout of Port Dock 7 to update infrastructure for the Commercial Marina, which is over capacity. The U.S. Army Corps of Engineers (USACE) Continuing Authority Program (CAP) Section 107 project has been approved to improve the federal channel through the marina. The project will include increases in linear moorage at Port Dock 7 and complete dredging of access channels and berths to accommodate modern fishing vessels for the CAP 107 part of the project. The CAP 107 portion is also being completed under Corps Section 404/10 permit (NWP-2023-626) and Marine Protection, Research, and Sanctuaries Act Section 103 authority. The project location is shown on the Vicinity Map, Figure 1.

The Port is currently in the second phase of a three-phase CAP 107 navigational improvement project to provide 80-foot vessels access to the east end of the Commercial Marina. The current condition and design of Port Dock 7 do not reflect modern vessel design and do not adequately support the users of the Commercial Marina. The purpose of this project is to improve channel access and allow large, modern fishing vessels the maneuvering room to be able to access the future Port Dock 7.

The overall project goals include the following:

- Dredge access channels.
- Expand the marina moorage space.
- Change the available space to accommodate more vessels that are 60 feet to 80 feet long.
- Continue to provide adequate moorage for vessels under 60 feet in length, particularly those vessels that are 40 feet and under.
- Provide adequate draft for the full range of vessels in the berths and in the areas accessing the berths.
- Provide better amenities, services, and access to diverse moorage holders.

USACE maintenance of the main navigation channel and jetty features provides ongoing navigation access to the Port facilities.

# 2 PROJECT DESCRIPTION

The existing Federal Navigation Channel includes a 40-foot-deep, 400-foot-wide entrance channel; a 30-foot-deep, 300-foot-wide bay channel leading to a turning basin at Newport; and an 18-foot-deep, 200-foot-wide, 4.5-mile-long channel from Newport to Yaquina.

A breakwater for a small-boat basin on the north shore (a timber structure 2,650 feet long) was authorized in 1946 to protect commercial fishing boats.

USACE is working with the Port to construct and maintain a dedicated access channel to the Port's Commercial Marina, which is located on the north side of Yaquina Bay from river mile 1+12 to 1+45. The Commercial Marina Access Channel (CMAC) will be maintained at an elevation of approximately -20 feet Mean Lower Low Water (MLLW) but includes a 2-foot over-depth dredging allowance to an elevation of approximately -22 feet. The western dredge area outside the breakwater will be maintained at an elevation of -22 feet MLLW with a 2-foot over-depth dredging allowance to an elevation of -24 feet.

A separate design report will be prepared for the Port Dock 7 project.

# 3 PROJECT DIMENSIONS

The Yaquina CAP 107 project CMAC dredging area is west of the breakwater, as shown on the Site Plan, Figure 2. The dredging area is approximately 1,400 feet long and 180 feet wide, with a dredge depth elevation of -20 feet. Within the breakwater, the dredging area is about 2,250 feet long and varies from about 220 feet to 570 feet wide, with a dredge depth elevation of -22 feet.

# 4 SITE DESCRIPTION

## 4.1 Bathymetry

Based on review of bathymetry for the dredging area provided by the project team, mudline elevations range from elevations of about -6 feet to -28 feet for the dredging area west of the breakwater. Within the breakwater, mudline elevations range from elevations of about -20 feet to 12 feet, with the higher elevations along the breakwater near the south side of the navigation channel. All elevations in this report reference the MLLW datum unless stated otherwise.

## 4.2 Geology

Available geologic literature and our experience in the area indicate the channel is mantled with a variable thickness of marine sand or clay underlain by mudstone. Miocene-aged mudstone and sandstone of the Nye Formation underlie the bay at a relatively shallow depth (Snavely et al., 1976). Explorations at the site indicate the upper portion of the mudstone is typically moderately weathered to predominantly decomposed.

# 5 SUBSURFACE CONDITIONS

## 5.1 General

The subsurface exploration program for this geotechnical investigation phase of the CAP 107 dredging project was completed during two separate mobilizations. Drilling

during the first mobilization occurred between February 20 and 23, 2024, and included five rotosonic borings, designated 3-C, 4-A, 4-B, 5-B, and 5-C. Drilling during the second mobilization occurred on March 13, 2024, with one mud-rotary boring, designated 5-A, completed. The approximate locations of the borings are shown on the Site Plan, Figure 2. Logs of the borings are provided on Figures 1A through 6A. The field and laboratory testing programs completed for this project are described in Appendix A. The terms and symbols used to describe the soil and rock encountered in the borings are defined in Tables 1A and 2A, respectively, and the attached legend. Rotosonic core photographs are provided in Appendix B. The samples for testing were sent to Professional Service Industries of Portland, Oregon or Cooper Testing Laboratory of Palo Alto, California, and are summarized in Appendices C and D, respectively.

The subsurface borings were completed by overwater methods using a barge provided and operated by Bergerson Construction of Astoria, Oregon. The barge was held in place for drilling by two spuds.

A summary of the boring location, mudline elevation, elevation where rock was first encountered, and bottom-of-exploration elevation for the geotechnical borings completed for the CAP 107 portion of the overall project is provided in the table below.

**Table 5-1: GEOTECHNICAL BORING LOCATIONS AND ELEVATIONS FOR CAP 107**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Geotechnical | 3-C | 44.6295 | -124.0426 | -11.2 | -26.2 | -31.2 |
| Geotechnical | 4-A | 44.6313 | -124.0456 | -13.7 | -13.7 | -31.6 |
| Geotechnical | 4-B | 44.6302 | -124.0468 | -10.2 | -47.7 | -49.2 |
| Geotechnical | 5-A | 44.6298 | -124.0514 | -13.1 | -23.6 | -34.6 |
| Geotechnical | 5-B | 44.6292 | -124.0524 | -11.8 | -25.8 | -33.3 |
| Geotechnical | 5-C | 44.6279 | -124.0540 | -16.2 | -22.7 | -32.2 |

**Abbreviation:** MLLW = Mean Lower Low Water

**Note:**

[(a)] All elevations are estimates. See Appendix A.1.2 for additional information.

In addition to the geotechnical borings discussed above, GRI completed sediment sampling for the overall CAP 107 project. A summary of the approximate boring location, mudline elevation, elevation where rock was first encountered, and bottom-of-exploration elevation for the borings for sediment sampling for the CAP 107 portion of the overall project is provided in Table 5-2.

**Table 5-2: SEDIMENT SAMPLING BORING LOCATIONS AND ELEVATIONS FOR CAP 107**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Environmental | 3-A | 44.6302 | -124.0453 | -9.9 | NA | -21.9 |
| Environmental | 3-B | 44.6298 | -124.0442 | -8.7 | NA | -21.7 |
| Environmental | 3-C | 44.6295 | -124.0426 | -10.5 | NA | -21.9 |
| Environmental | 4-A | 44.6302 | -124.0459 | -9.8 | NA | -21.5 |
| Environmental | 4-B | 44.6302 | -124.0468 | -10.0 | NA | -21.7 |
| Environmental | 4-C | 44.6301 | -124.0490 | -9.0 | NA | -21 |
| Environmental | 5-A | 44.6298 | -124.0514 | -13.9 | -22.8 | -25.2 |
| Environmental | 5-B | 44.6291 | -124.0522 | -9.2 | -20.7 | -24.3 |
| Environmental | 5-C | 44.6279 | -124.0539 | -16 | -21.4 | -23.4 |

**Abbreviations:** MLLW = Mean Lower Low Water; NA = not applicable

**Note:**

[(a)]All elevations are estimates. See Appendix A.1.2 for additional information.

In addition to the geotechnical borings completed for the CAP 107 dredging project and sediment sampling for the conceptual level design of the new Port Dock 7 configuration, a summary of the approximate boring location, mudline elevation, elevation where rock was first encountered, and bottom-of-exploration elevation for the geotechnical borings for the Port Dock 7 configuration project is provided in the table below. The Port Dock 7 borings will be provided in a separate upcoming report.

**Table 5-3: GEOTECHNICAL BORING LOCATIONS AND ELEVATIONS FOR PORT DOCK 7**

| Boring Type | Boring No. | Latitude | Longitude | Estimated Mudline Elevation,[(a)] feet MLLW | Estimated Top of Rock Elevation,[(a)] feet MLLW | Bottom of Boring Elevation,[(a)] feet MLLW |
|---|---|---|---|---|---|---|
| Geotechnical | 1-A | 44.6305 | -124.0423 | -5.1 | -6.6 | -37.6 |
| Geotechnical | 2-A | 44.6307 | -124.0451 | -17.9 | -18.4 | -52.8 |
| Geotechnical | 1-C | 44.6307 | -124.0430 | -5.8 | -6.8 | -37.8 |

**Abbreviation:** MLLW = Mean Lower Low Water

**Note:**

[(a)]All elevations are estimates. See Appendix A.1.2 for additional information.

## 5.2 Soil and Rock

For the purposes of this discussion, the materials disclosed by the geotechnical borings for the CAP 107 dredging (borings 3-C, 4-A, 4-B, 5-A, 5-B, and 5-C) have been grouped into the following units based on their physical characteristics and engineering properties and listed as they were encountered below the aforementioned pavement section:

a. SAND
b. MUDSTONE (Nye Mudstone)

The following paragraphs provide a description of the materials encountered and a discussion of the groundwater conditions at the site.

### a. SAND

Sand was encountered at mudline in borings 3-C, 4-B, 5A, and 5-B and was likely encountered at mudline in boring 5-C; however, the initial 5 feet of drilling in boring 5-C had no recovery. The sand extended to depths ranging from 6.5 feet (elevation -22.7 feet) to 37.5 feet (elevation -47.7 feet). The sand is gray to dark gray, fine to medium grained, and contains variable percentages of silt ranging from a trace of silt to silty. The sand contains shell fragments, and an organic odor was encountered throughout most of the sand in borings 3-C and 4-B. Based on the Standard Penetration Resistance, the relative density of the sand is very loose to medium dense.

### b. MUDSTONE (Nye Mudstone)

Mudstone was encountered at the mudline in boring 4-A and beneath the sand in borings 3-C, 4-B, 5-A, 5-B, and 5-C. It extended to depths ranging from 16 feet to 39 feet below mudline (elevations -31.2 feet to -49.2 feet), or to the maximum depths explored in all explorations. The mudstone is typically light brown or dark gray, moderately weathered to predominantly decomposed, and extremely weak (R0) to very weak (R1). Our experience in the area indicates that zones of R2 or harder mudstone can be encountered within the unit, although they were not specifically encountered at the exploration sampling locations within the depths explored.

# 6 DISCUSSION

In general, the recent explorations disclosed subsurface conditions consisting of marine sand over mudstone. Based on the recent explorations, the planned dredging to an elevation of -22 feet to the west of the breakwater and an elevation of -20 feet within the breakwater will likely encounter mudstone in portions of the dredged areas.

# 7 LIMITATIONS

This report has been prepared to aid USACE in the design and evaluation of this project. The scope is limited to the specific project and location described within this report. The

findings submitted in this report are based on the data obtained from the subsurface explorations made at the locations indicated on Figure 2 and other sources of information discussed in this report. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in subsurface conditions may exist between exploration locations. This report does not reflect variations that may occur between these explorations.

We have included in Appendix E the Geoprofessional Business Association guidance document "Important Information about This Geotechnical-Engineering Report" to assist you and others in understanding the use and limitations of this report. We recommend you read this document.

Submitted for GRI,


RENEWS: 02/2025
George A. Freitag, CEG
Principal


RENEWS: 12/2025
Brian J. Bayne, PE
Associate

This document has been submitted electronically.

# 8 REFERENCES

Snavely, P. D., MacLeod, N. S., Wagner, H. C., and Rau, W. W., 1976, Geologic map of the Yaquina and Toledo quadrangles, Lincoln County, Oregon: U.S. Geological Survey Miscellaneous Investigations Map I-867, scale 1:62,500.


N

0 0.5 1

1 INCH = 0.5 MILES

GRI

DOWL, LLC
PORT OF NEWPORT CAP 107
NEWPORT, OREGON

# VICINITY MAP

OCT. 2024 JOB NO. 6801-B



FIG. 1


**LEGEND:**

- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY GRI FOR CAP 107 PROJECT (FEBRUARY 19 - MARCH 13, 2024)
- APPROXIMATE LOCATION OF GEOTECHNICAL AND ENVIRONMENTAL BORINGS COMPLETED BY GRI FOR CAP 107 PROJECT
- APPROXIMATE LOCATION OF ENVIRONMENTAL BORING COMPLETED BY GRI FOR CAP 107 PROJECT (FEBRUARY 19 - MARCH 13, 2024)
- APPROXIMATE LOCATION OF GEOTECHNICAL BORING COMPLETED BY GRI FOR PORT DOCK 7 PROJECT (FEBRUARY 28 - MARCH 7, 2024)
- PROPOSED DREDGING AREA

N

0 250 500

1 INCH = 250 FEET

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PORT OF NEWPORT CAP 107
NEWPORT, OREGON

# SITE PLAN

OCT. 2024 JOB NO. 6801-B



FIG. 2

# APPENDIX A

*Field Explorations and Laboratory Testing*

**APPENDIX A**

**FIELD EXPLORATIONS AND LABORATORY TESTING**

# A.1 FIELD EXPLORATIONS

## A.1.1 General

The subsurface exploration program for this phase of the project was completed during two separate mobilizations. Drilling during the first mobilization occurred between February 20 and 23, 2024, and included five rotosonic borings designated 3-C, 4-A, 4-B, 5-B, and 5-C. Drilling during the second mobilization occurred on March 13, 2024, with one mud-rotary boring designated 5-A. The approximate locations of the borings are shown on the Site Plan, Figure 2.

The subsurface borings were completed by overwater methods using a barge provided and operated by Bergerson Construction of Astoria, Oregon. The barge was held in place for drilling by two spuds.

## A.1.2 Comments on Mudline and Rock Elevations

The mudline elevations reported herein for the geotechnical borings should be considered approximate and were developed using the following methodology:

1. Tidal-water level elevations were estimated from available predictions.

2. A GRI field representative took several depth soundings from the barge deck to mudline at the location of the drilling equipment.

3. The distance from the barge deck to the water was subtracted from the depth taken in Step 2. This final depth was the depth from water level to mudline.

4. The depth noted in Step 3 was subtracted from the elevation noted in Step 1, which resulted in the approximate mudline elevation for the borings.

5. A barge spud was marked at the beginning of each boring. The spud markings were referenced during the recovery of each sample to correct for tidal changes during drilling.

6. Once back in the office, the predicted tide tables were compared to the verified tide tables from the National Oceanic and Atmospheric Administration Tide Predictions tables for the South Beach, Yaquina Bay, tidal station for the same time as the recordings were taken in the field. The mudline elevations were revised if needed.

The vertical uncertainty of elevations associated with the preceding procedure is estimated to be approximately +/- 1 foot.

### A.1.3 Rotosonic Borings

Borings 3-C, 4-A, 4-B, 5-B, and 5-C were advanced to depths of 16 feet to 39 feet below mudline with rotosonic drilling techniques using a track-mounted Geoprobe 8150LS rotosonic track-mounted drill rig provided and operated by Western States Soil Conservation, Inc. (WSSC) of Hubbard, Oregon. Geotechnical or geology staff from GRI maintained a log of materials and conditions encountered in each boring. The borings were advanced using a 5-inch-diameter casing. Continuous 5-inch-diameter cores were obtained from some of the borings and stored in plastic bags. The plastic bags were opened in the field for visual classifications, and digital photographs were taken of each run. Representative soil samples were carefully examined in the field and saved in plastic sample bags for further examination in our laboratory. Photographs of the cores are provided in Appendix B.

Disturbed soil samples were typically obtained at intervals of up to 5 feet. Disturbed soil samples were obtained using a standard split-spoon sampler or grab sample. The standard penetration test (SPT) was conducted while obtaining the split-spoon samples. This test is performed by driving a 2-inch-outside-diameter, split-spoon sampler into the soil a distance of 18 inches using the force of a 140-pound hammer dropped 30 inches. The number of blows required to drive the sampler the last 12 inches is known as the Standard Penetration Resistance, or SPT N-value. The SPT N-values provide a measure of the relative density of granular soils and the relative consistency of cohesive soils. Samples obtained from the sampler or grab samples were placed in airtight bags and returned to our office for further classification and testing.

Logs of the rotosonic borings are provided on Figures 1A through 6A. Each log provides a descriptive summary of the various types of material encountered during drilling. To the left of the descriptive summary, a graphic log indicates the general soil type. To the right of the descriptive summary, the numbers and types of soil or rock samples taken during the drilling operation are indicated. Farther to the right, N-values are shown graphically, along with the natural moisture contents, percent material passing the No. 200 sieve, and Atterberg limits determinations. The terms used to describe the materials encountered in the borings are defined in Tables 1A and 2A.

### A.1.4 Mud-Rotary Borings

Boring 5-A was advanced to a depth of 21.5 feet with mud-rotary drilling techniques using a CME 75 HT truck-mounted drill rig provided and operated by WSSC. Disturbed soil samples were obtained at 5-foot to 7.5-foot intervals of depth using a standard split-spoon sampler. The soil samples obtained in the split-spoon sampler were carefully

examined in the field, and representative portions were saved in airtight jars for further examination and physical testing in our laboratory. At the time of sampling, the SPT was being conducted. All samples were returned to our laboratory for further examination and physical testing.

A log of the mud-rotary boring is provided on Figure 4A. The log presents a descriptive summary of the various types of materials encountered in the boring and notes the depth at which the materials and/or characteristics of the materials change. To the right of the descriptive summary, the numbers and types of samples are indicated. Farther to the right, N-values are shown graphically, along with the natural moisture content and Atterberg limits determinations. The terms used to describe the materials encountered in the boring are defined in Tables 1A and 2A.

## A.2 LABORATORY TESTING

### A.2.1 General

The samples obtained from the borings were returned to our laboratory for further examination, and field classifications were modified where necessary. Samples were sent to Professional Service Industries (PSI), an external laboratory for testing including natural moisture content, percent passing the No. 200 sieve, and Atterberg limits testing. An additional sample of sand was sent to Cooper Testing Laboratory for consolidated undrained direct shear testing. A summary of the laboratory testing is provided on the logs, Figures 1A through 6A, and on the laboratory summary sheet provided in Appendices C and D.

### A.2.2 Natural Moisture Contents

Natural moisture content determinations were made in conformance with ASTM International (ASTM) D2216 by PSI. The results are summarized on Figures 1A through 6A and tabulated in Appendix C.

### A.2.3 Grain-Size Analysis

#### *A.2.3.1 Washed-Sieve Method*

To assist in classification of the soils, samples of known dry weight were washed over a No. 200 sieve by PSI. The material retained on the sieve is oven-dried and weighed. The percentage of material passing the No. 200 sieve is then calculated. The results are summarized on Figures 1A through 6A and tabulated in Appendix C.

### A.2.4 Atterberg Limits

Atterberg limits determinations were performed on six representative samples in substantial conformance with ASTM D4318 by PSI. The test results are summarized on Figures 1A through 6A and tabulated in Appendix C.

### A.2.5 Direct Shear

The effective friction angle of a grab sample of sand from a depth of 12 feet to 13 feet in boring B-5 was determined using a direct shear device under consolidated and undrained conditions. The grab sample was sent to Cooper Testing Laboratory, which completed the tests in substantial conformance with ASTM D3080M. Cooper Testing Laboratory used light compactive effort to remold the sample prior to testing. The test results are summarized in Appendix D. A fifth test was attempted at a normal load of 225 pounds per square foot; however, per discussions with Cooper Testing Laboratory, the normal load is below the calibration of their equipment and the data point was discarded.

## Table 1A

## GUIDELINES FOR DESCRIPTION OF SOIL[1]

### Description of Relative Density for Cohesionless (Coarse-Grained) Soils

| Relative Density | Standard Penetration Resistance (N-values) blows/foot (ft) | 3-inch Sampler, 140-lb hammer approx. N-Value (blows/ft)[2] | 3-inch Sampler, 300-lb hammer approx. N-Value (blows/ft)[1] |
|---|---|---|---|
| Very Loose | 0 - 4 | 0 – 10 | 0 – 5 |
| Loose | 4 - 10 | 10 – 24 | 5 – 11 |
| Medium Dense | 10 - 30 | 24 – 73 | 11 – 34 |
| Dense | 30 - 50 | 73 – 122 | 34 – 57 |
| Very Dense | over 50 | over 122 | over 57 |

### Description of Relative Consistency for Cohesive (Fine-Grained) Soils

| Relative Consistency | Standard Penetration Resistance (N-values) blows/ft | 3-inch Sampler, 140 lb hammer approx. N-Value (blows/ft)[1] | 3-inch Sampler, 300 lb hammer approx. N-Value (blows/ft)[2] | Torvane or Undrained Shear Strength, tsf |
|---|---|---|---|---|
| Very Soft | 0 - 2 | 0 – 3 | 0 – 1 | less than 0.125 |
| Soft | 2 - 4 | 3 – 6 | 1 – 3 | 0.125 - 0.25 |
| Medium Stiff | 4 - 8 | 6 – 12 | 3 – 6 | 0.25 - 0.50 |
| Stiff | 8 - 15 | 12 – 23 | 6 – 11 | 0.50 - 1.0 |
| Very Stiff | 15 - 30 | 23 – 46 | 11 – 22 | 1.0 - 2.0 |
| Hard | over 30 | over 46 | over 22 | over 2.0 |

| Grain-Size Classification | Modifier for Subclassification | | |
|---|---|---|---|
| | | Primary Constituent SAND or GRAVEL | Primary Constituent SILT or CLAY |
| *Boulders:* >12 inches<br>*Cobbles:* 3 inches - 12 inches<br>*Gravel:* ¼ inch - ¾ inch (fine) ¾ inch - 3 inches (coarse)<br>*Sand:* No. 200 - No. 40 sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse)<br>*Silt/Clay:* Pass No. 200 sieve | Adjective | Percentage of Other Material (By Weight) | |
| | trace: | 5 - 15 (sand, gravel) | 5 - 15 (sand, gravel) |
| | some: | 15 - 30 (sand, gravel) | 15 - 30 (sand, gravel) |
| | sandy, gravelly: | 30 - 50 (sand, gravel) | 30 - 50 (sand, gravel) |
| | trace: | <5 (silt, clay) | *Relationship of clay and silt determined by plasticity index test* |
| | some: | 5 - 12 (silt, clay) | |
| | silty, clayey: | 12 - 50 (silt, clay) | |

1. Soil descriptions are developed using visual-manual procedures (ASTM D2488) and generally follow ODOT Geotechnical Design Manual (Chapter 5) guidelines.
2. Oversized sampler (OD = 3 inches, ID = 2.4 inches) blow counts converted to SPT N-Value using equations provided by Burmister, D.M., 1948, The importance and practical use of relative density in soil mechanics: Proceedings of ASTM, v. 48:1249.

## Table 2A

## GUIDELINES FOR CLASSIFICATION OF ROCK

### Relative Rock Weathering Scale

| Term | Field Identification |
|---|---|
| Fresh | Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric. |
| Slightly Weathered | Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1 in. into rock. |
| Moderately Weathered | Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits. |
| Predominantly Decomposed | Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water. |
| Decomposed | Rock mass is completely decomposed. Original rock "fabric" may be evident. May be reduced to soil with hand pressure. |

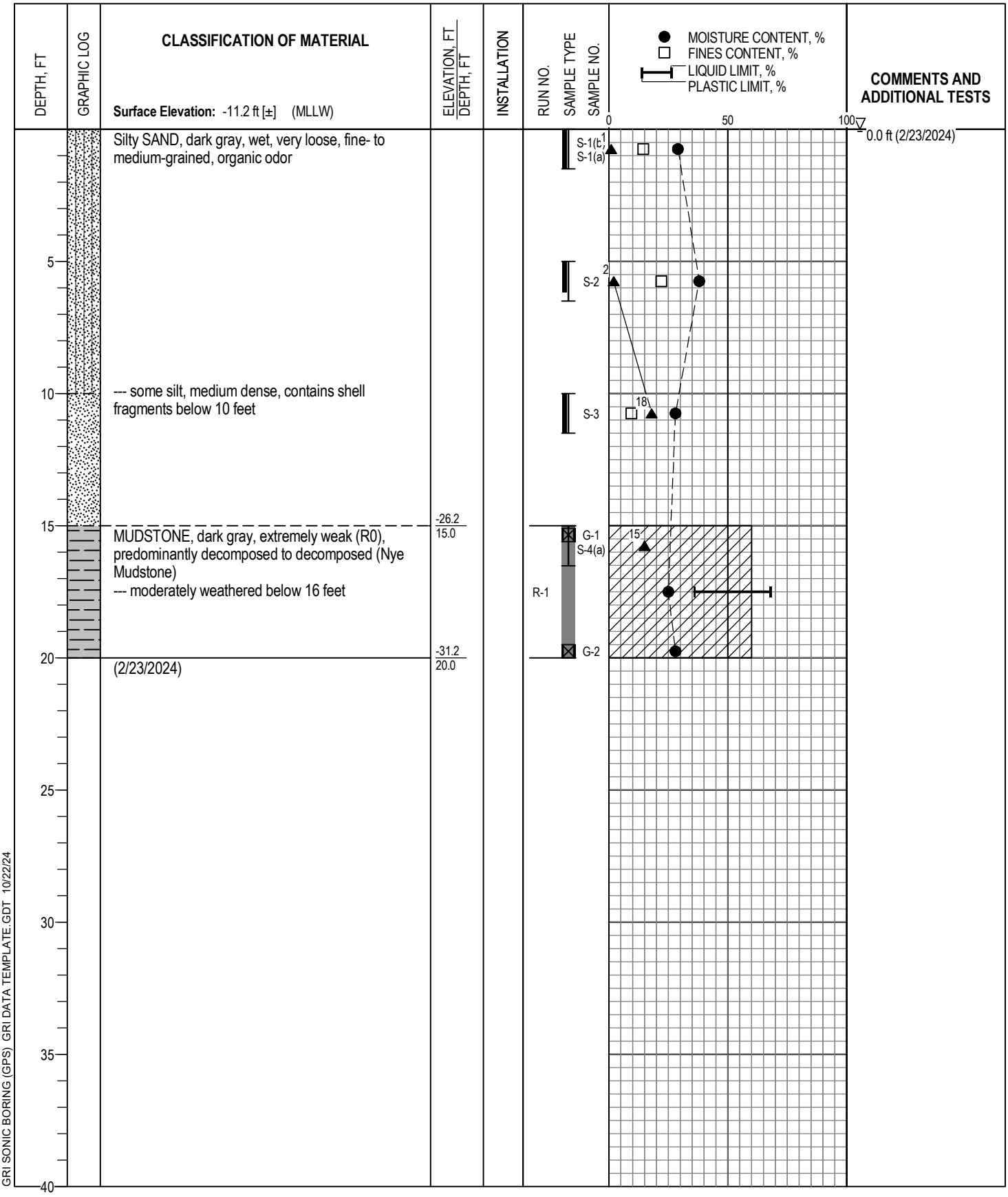
### Relative Rock Strength Scale

| Term | Hardness Designation | Field Identification | Approximate Unconfined Compressive Strength |
|---|---|---|---|
| Extremely Weak | R0 | Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure. | 35 - 150 psi |
| Very Weak | R1 | Crumbles under firm blows with point of a geology pick. Can be peeled by a pocketknife and scratched with fingernail. | 150 - 725 psi |
| Weak | R2 | Can be peeled by a pocketknife with difficulty. Cannot be scratched with fingernail. Shallow indentation made by firm blow of geology pick. | 725 – 3,500 psi |
| Medium Strong | R3 | Can be scratched by knife or pick. Specimen can be fractured with a single firm blow of hammer/geology pick. | 3,500 – 7,250 psi |
| Strong | R4 | Can be scratched with knife or pick only with difficulty. Several hard hammer blows required to fracture specimen. | 7,250 – 14,500 psi |
| Very Strong | R5 | Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact. | 14,500 – 36,250 psi |
| Extremely Strong | R6 | Can only be chipped with a rock hammer | >36,250 psi |

### RQD and Rock Quality

| Relation of RQD and Rock Quality | |
|---|---|
| RQD (Rock Quality Designation), % | Description of Rock Quality |
| 0 - 25 | Very Poor |
| 25 - 50 | Poor |
| 50 - 75 | Fair |
| 75 - 90 | Good |
| 90 - 100 | Excellent |

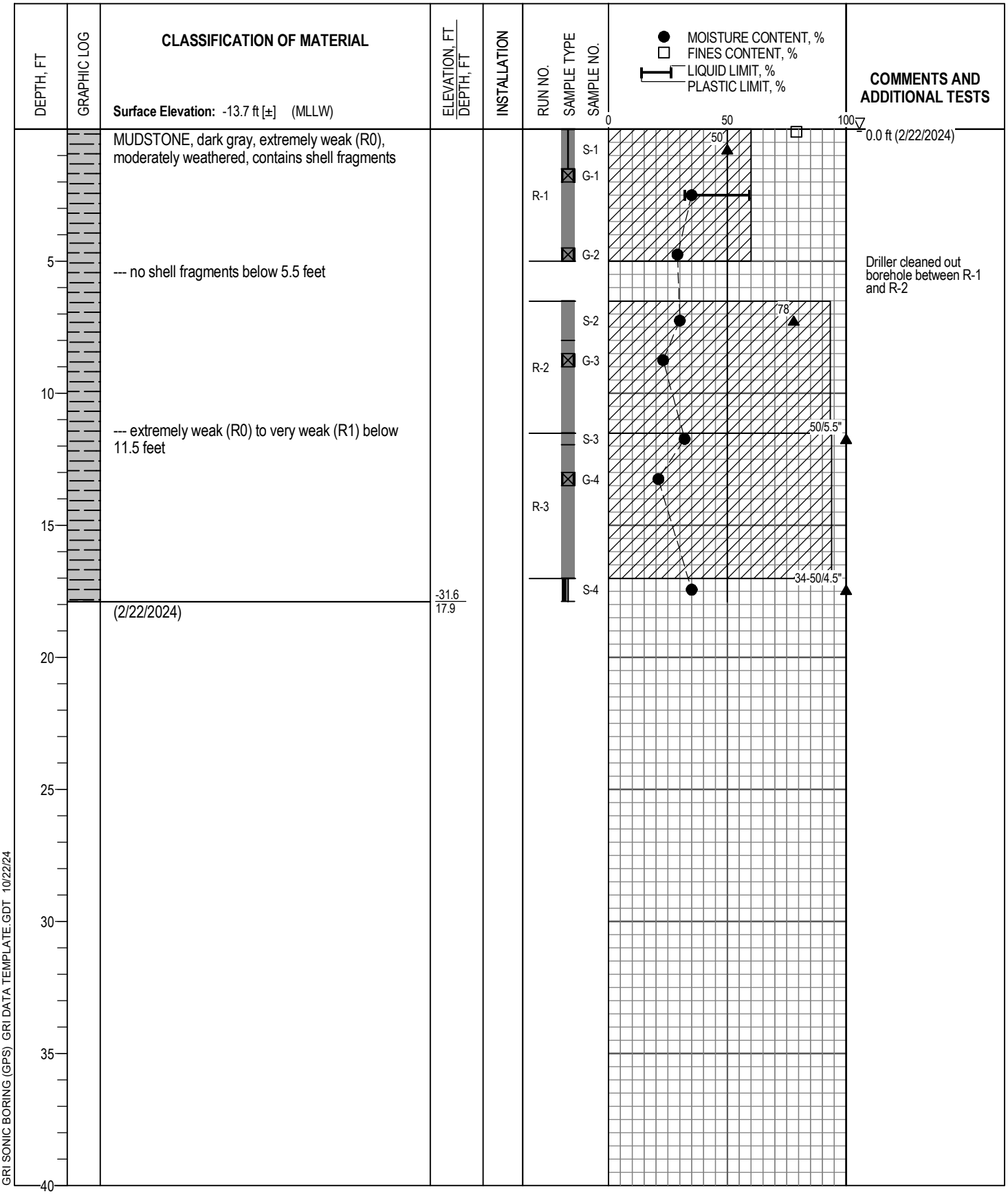
| Terminology for Planar Surface | | |
|---|---|---|
| Bedding | Joints and Fractures | Spacing |
| Laminated | Very Close | < 2 in. |
| Thin | Close | 2 in. – 12 in. |
| Medium | Moderately Close | 12 in. – 36 in. |
| Thick | Wide | 36 in. – 10 ft |
| Massive | Very Wide | > 10 ft |




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | | |
|---|---|---|---|
| **Logged By:** J. Strasilla | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/23/24 | **GPS Coordinates:** 44.6295123° N -124.0425591° W (WGS 84) | | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.88 | |
| **Note:** See Legend for Explanation of Symbols | | | |

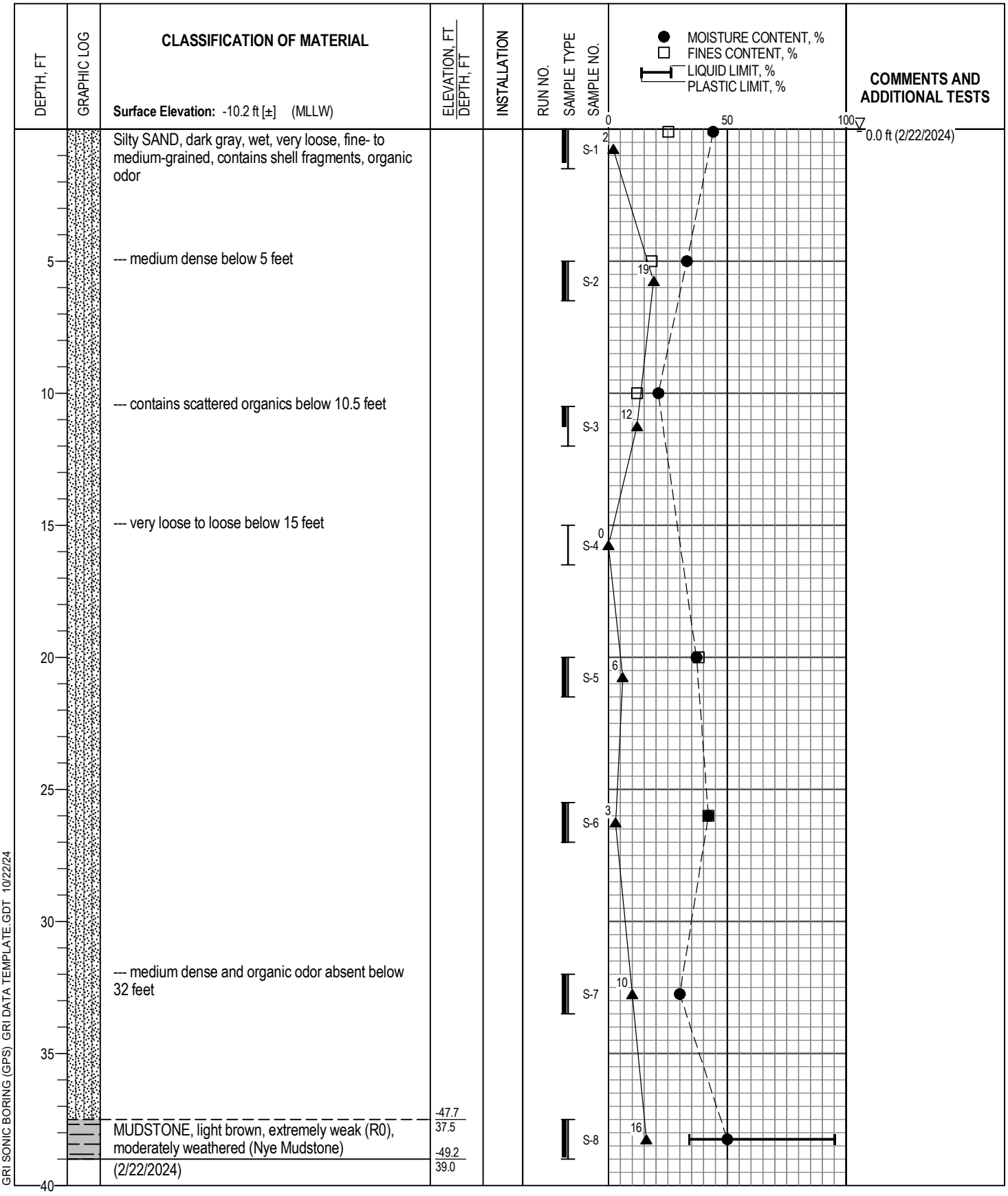
# BORING 3-C




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | |
|---|---|---|
| **Logged By:** J. Strasilla | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/22/24 | **GPS Coordinates:** 44.6312626° N -124.0456427° W (WGS 84) | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.88 |
| **Note:** See Legend for Explanation of Symbols | | |

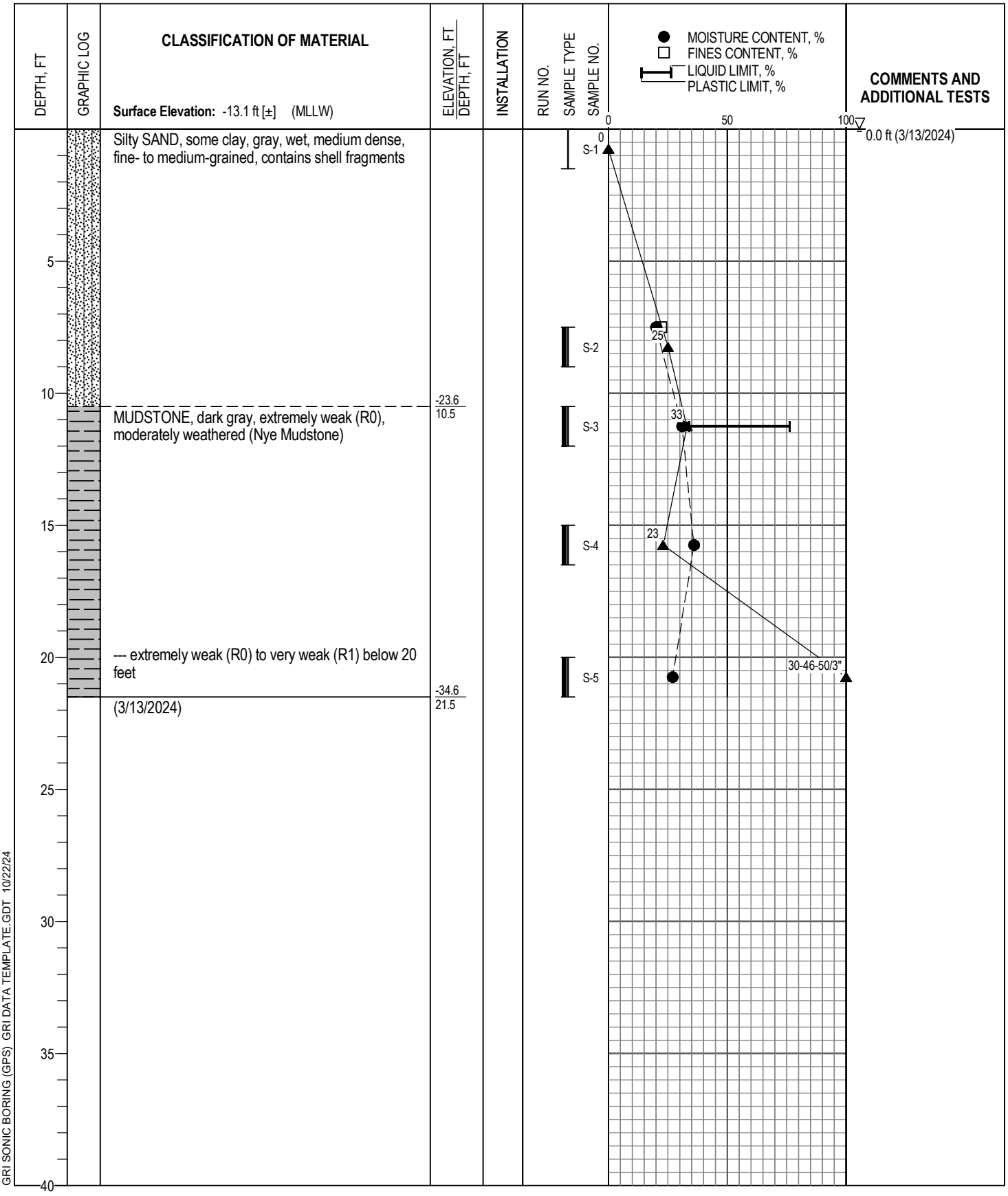
# BORING 4-A




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | | |
|---|---|---|---|
| **Logged By:** J. Strasilla | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/22/24 | **GPS Coordinates:** 44.6301885° N -124.0468187° W (WGS 84) | | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.88 | |
| **Note:** See Legend for Explanation of Symbols | | | |

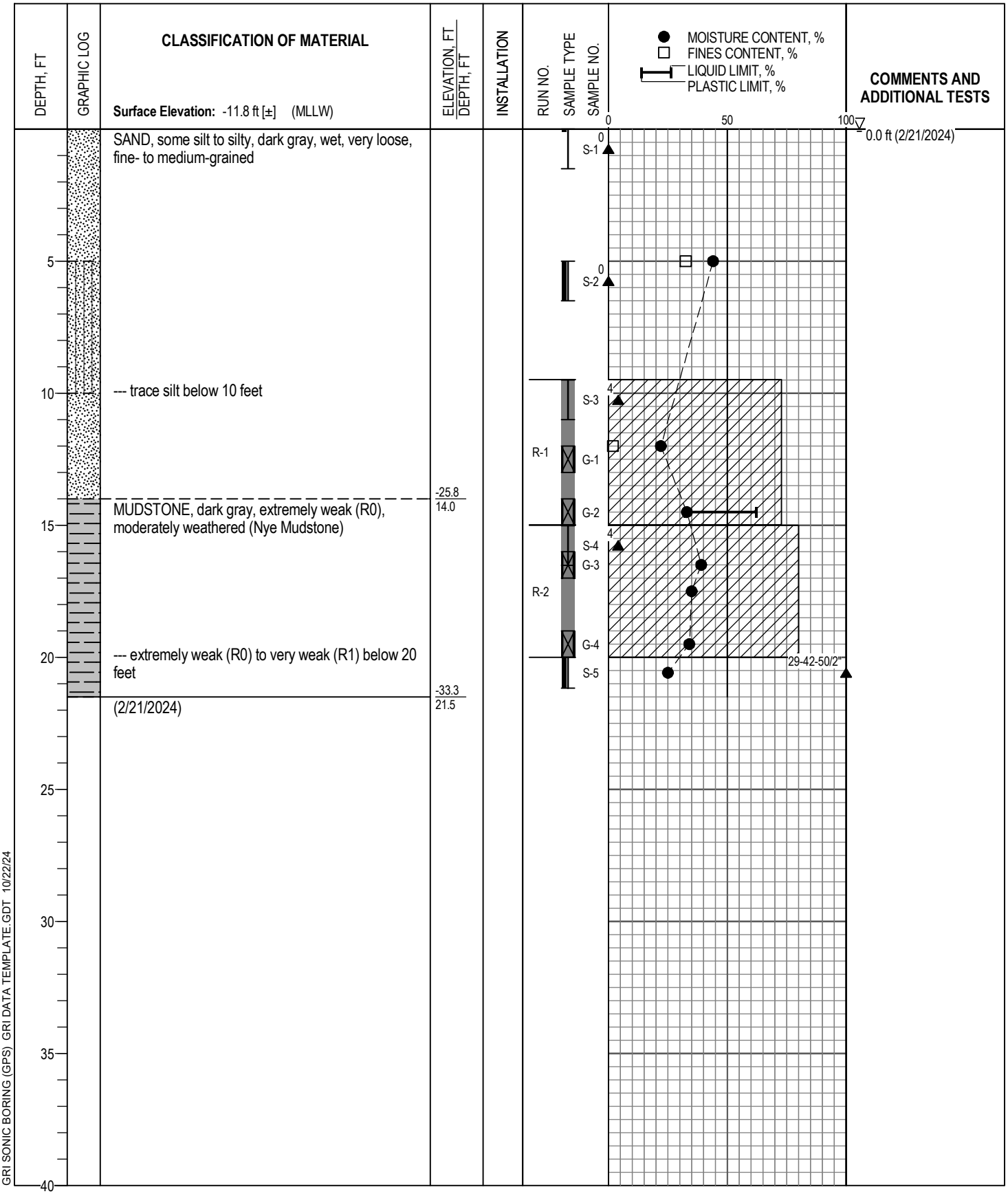
# BORING 4-B




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | | |
|---|---|---|---|
| **Logged By:** A. Horst | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 3/13/24 | **GPS Coordinates:** 44.6297565° N -124.0514345° W (WGS 84) | | |
| **Drilling Method:** Mud Rotary<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.8 | |
| **Note:** See Legend for Explanation of Symbols | | | |

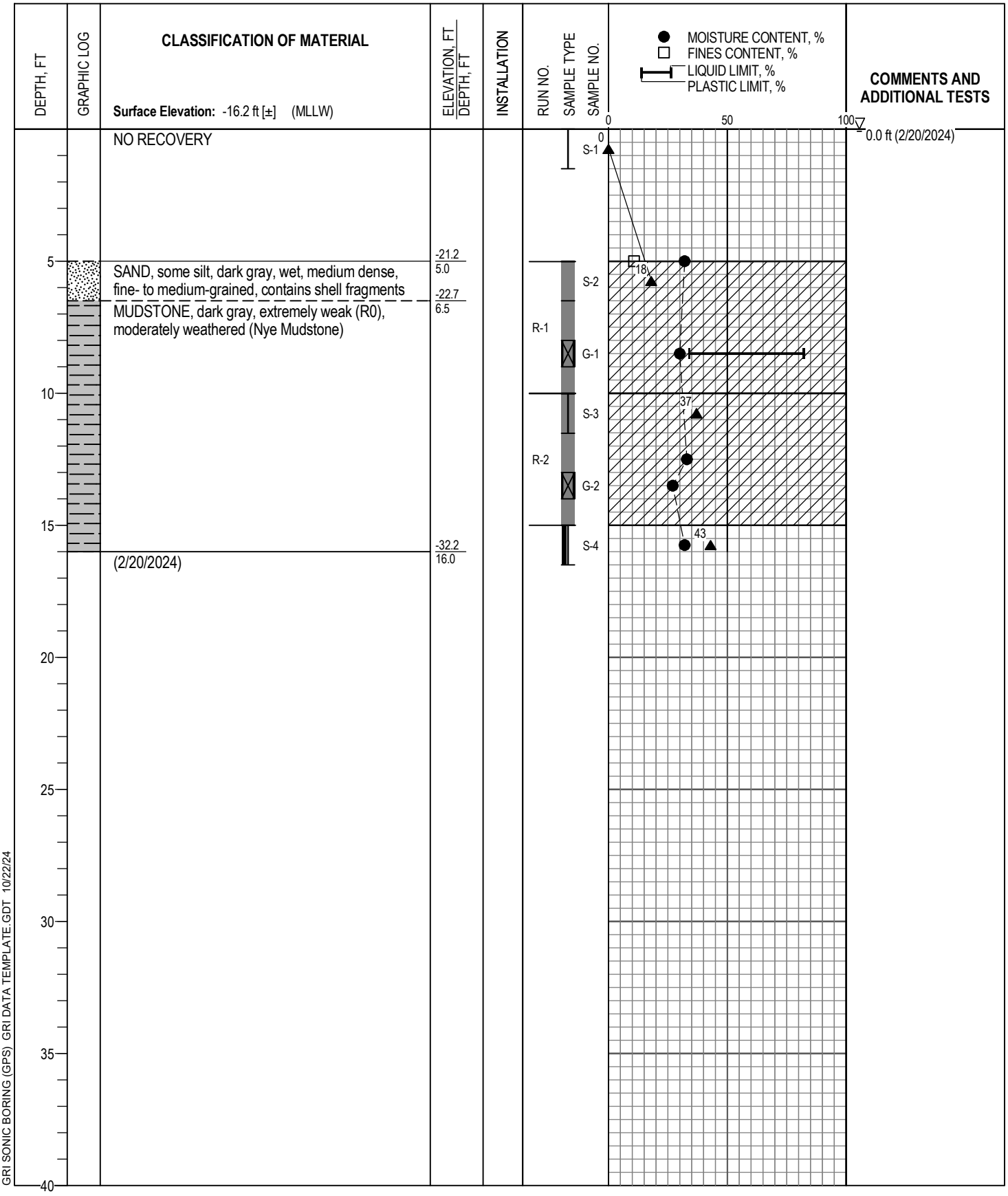
# BORING 5-A




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | | |
|---|---|---|---|
| **Logged By:** A. Horst | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/21/24 | **GPS Coordinates:** 44.629136° N -124.0523556° W (WGS 84) | | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.88 | |
| **Note:** See Legend for Explanation of Symbols | | | |

# BORING 5-B




GRI SONIC BORING (GPS) GRI DATA TEMPLATE.GDT 10/22/24

| | | | |
|---|---|---|---|
| **Logged By:** A. Horst | | **Drilled by:** Western States Soil Conservation, Inc. | |
| **Date Started:** 2/20/24 | **GPS Coordinates:** 44.6278672° N -124.0539529° W (WGS 84) | | |
| **Drilling Method:** Roto Sonic<br>**Equipment:** Geoprobe Sonic 8150<br>**Hole Diameter:** 5 in. | | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 0.88 | |
| **Note:** See Legend for Explanation of Symbols | | | |

# BORING 5-C

# APPENDIX B

*Rotosonic Core Photographs*

6801-B: BORING 3-C: CORE RUN 1 (ELEVATION -26.2 FEET TO -31.2 FEET)

GRI

# CORE PHOTOGRAPHS

6801-B: BORING 4-A: CORE RUN1 (ELEVATION -14.8 FEET TO -19.8 FEET)

6801-B: BORING 4-A: CORE RUN 2 (ELEVATION -21.3 FEET TO -26.3 FEET)

6801-B: BORING 4-A: CORE RUN 3 (ELEVATION -26.3 FEET TO -31.8 FEET)

GRI

# CORE PHOTOGRAPHS

6801-B: BORING 5-B: CORE RUN 1 (ELEVATION -22.6 FEET TO -27.6 FEET)

6801-B: BORING 5-B: CORE RUN 2 (ELEVATION -27.6 FEET TO -32.6 FEET)

GRI

# CORE PHOTOGRAPHS


6801-B: BORING 5-C: CORE RUN 1 (ELEVATION -22 FEET TO -27 FEET)


6801-B: BORING 5-C: CORE RUN 2 (ELEVATION -27 FEET TO -32 FEET)

GRI

# CORE PHOTOGRAPHS

# APPENDIX C

*Professional Service Industries Laboratory Results*

# Laboratory Summary Sheet



| Borehole | Approx. Depth | Liquid Limit | Plastic Limit | Plasticity Index | Qu (tsf) | %<#200 Sieve | Est. Specific Gravity | Water Content (%) | Dry Density (pcf) | Satur-ation (%) | Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-C | 0 | | | | | 14.5% | | 29 | | | |
| 3-C | 5 | | | | | 22.1% | | 38 | | | |
| 3-C | 10 | | | | | 9.4% | | 28 | | | |
| 3-C | 15 | 68 | 36 | 32 | | | | 25 | | | |
| 3-C | 18.5 | | | | | | | 28 | | | |
| 4-A | 0 | 59 | 32 | 27 | | 79.1% | | 35 | | | |
| 4-A | 4.5 | | | | | | | 29 | | | |
| 4-A | 6.5 | | | | | | | 30 | | | |
| 4-A | 8.5 | | | | | | | 23 | | | |
| 4-A | 11.5 | | | | | | | 32 | | | |
| 4-A | 13 | | | | | | | 21 | | | |
| 4-A | 17 | | | | | | | 35 | | | |
| 4-B | 0 | | | | | 25.2% | | 44 | | | |
| 4-B | 5 | | | | | 18.2% | | 33 | | | |
| 4-B | 10 | | | | | 12.1% | | 21 | | | |
| 4-B | 20 | | | | | 38.0% | | 37 | | | |
| 4-B | 25.5 | | | | | 42.1% | | 42 | | | |
| 4-B | 32 | | | | | | | 30 | | | |
| 4-B | 37.5 | 95 | 34 | 61 | | | | 50 | | | |
| 5-A | 7.5 | | | | | 22.3% | | 20 | | | |
| 5-A | 8.5 | | | | | | | 22 | | | |
| 5-A | 10.5 | 76 | 34 | 42 | | | | 31 | | | |
| 5-A | 15 | | | | | | | 36 | | | |
| 5-A | 20 | | | | | | | 27 | | | |
| 5-B | 5 | | | | | 32.5% | | 44 | | | |
| 5-B | 12 | | | | | 1.9% | | 22 | | | |
| 5-B | 14 | 62 | 32 | 30 | | | | 33 | | | |
| 5-B | 15 | | | | | | | 35 | | | |
| 5-B | 16 | | | | | | | 39 | | | |
| 5-B | 19 | | | | | | | 34 | | | |
| 5-B | 20 | | | | | | | 25 | | | |
| 5-C | 5 | | | | | 10.8% | | 32 | | | |
| 5-C | 8 | 82 | 34 | 48 | | | | 30 | | | |
| 5-C | 10 | | | | | | | 33 | | | |
| 5-C | 13 | | | | | | | 27 | | | |
| 5-C | 15 | | | | | | | 32 | | | |

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## Summary of Laboratory Results

PSI Job No.: GRI-6801-B
Project: GRI Project
Location:

# APPENDIX D

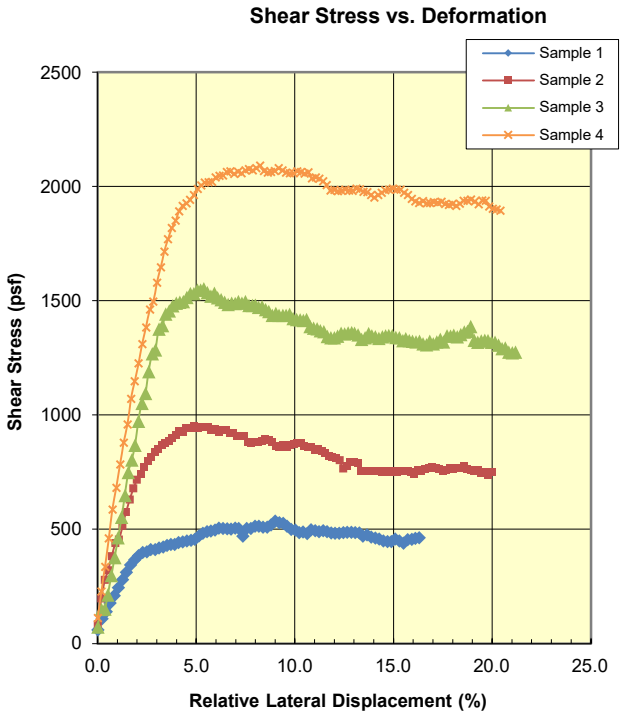
*Cooper Testing Laboratory Direct Shear Test Results*

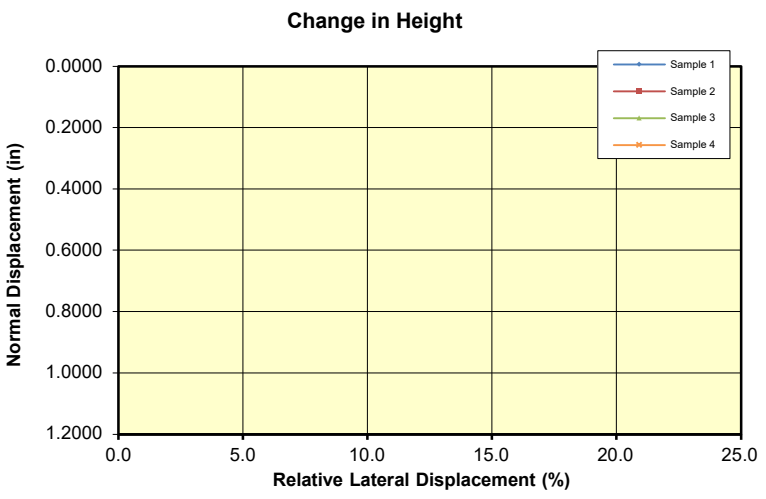
# Consolidated Undrained Direct Shear (ASTM D3080M)

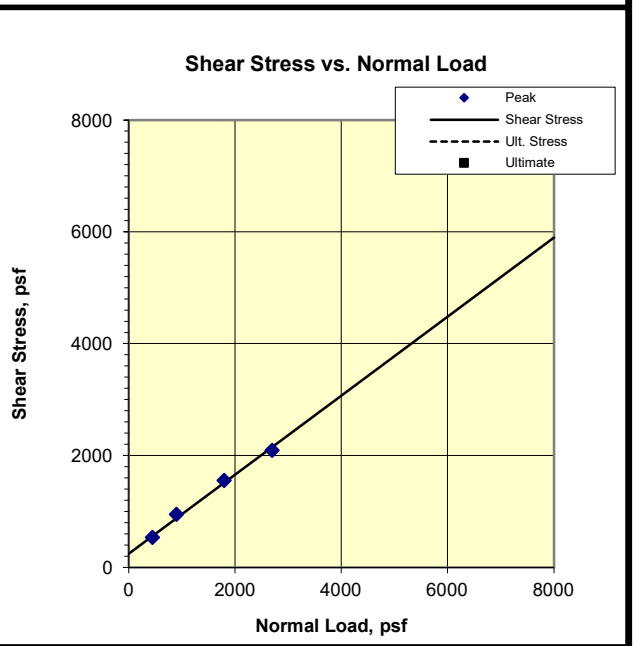
| | | | | | |
|---|---|---|---|---|---|
| CTL Job #: | 823-079 | Project #: | 6801-B | By: | MD |
| Client: | GRI | Date: | 10/22/2024 | Checked: | PJ |
| Project Name: | Newport | Remolding Info: | Samples remolded using light compactive effort. | | |

| Specimen Data | | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Boring: | 5-B | 5-B | 5-B | 5-B |
| Sample: | G-1 | G-1 | G-1 | G-1 |
| Depth (ft): | 12-13 | 12-13 | 12-13 | 12-13 |
| Visual Description: | Dark Greenish Gray SAND | Dark Greenish Gray SAND | Dark Greenish Gray SAND | Dark Greenish Gray SAND |
| Normal Load (psf) | 450 | 900 | 1800 | 2700 |
| Dry Mass of Specimen (g) | 104.1 | 107.2 | 107.0 | 103.3 |
| Initial Height (in) | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Diameter (in) | 2.42 | 2.42 | 2.42 | 2.42 |
| Initial Void Ratio | 0.955 | 0.898 | 0.901 | 0.971 |
| Initial Moisture (%) | 22.1 | 22.2 | 23.0 | 22.6 |
| Initial Wet Density (pcf) | 105.2 | 108.5 | 109.1 | 104.9 |
| Initial Dry Density (pcf) | 86.2 | 88.8 | 88.7 | 85.5 |
| Initial Saturation (%) | 62.4 | 66.6 | 69.0 | 62.8 |
| ΔHeight Consol (in) | 0.0170 | 0.0160 | 0.0218 | 0.0305 |
| At Test Void Ratio | 0.922 | 0.868 | 0.860 | 0.911 |
| At Test Moisture (%) | 23.1 | 23.0 | 22.4 | 22.6 |
| At Test Wet Density (pcf) | 108.0 | 111.0 | 110.9 | 108.1 |
| At Test Dry Density (pcf) | 87.7 | 90.2 | 90.6 | 88.2 |
| At Test Saturation (%) | 67.7 | 71.6 | 70.3 | 67.0 |
| Strain Rate (%/min) | 1.2 | 1.1 | 1.0 | 1.1 |
| Strengths Picked at | Peak | Peak | Peak | Peak |
| Shear Stress (psf) | 535 | 949 | 1552 | 2091 |
| ΔHeight (in) at Peak | | | | |
| Ultimate Stress (psf) | | | | |

| | | | |
|---|---|---|---|
| Phi (deg) | 35.2 | Ult. Phi (deg) | |
| Cohesion (psf) | 250 | Ult. Cohesion (psf) | |




Remarks: *DS-CU* A fully undrained condition may not be attained in this test. ΔH is not measured during undrained direct shear tests.

# APPENDIX E

*Geoprofessional Business Association Guidance Document*

# Important Information about This

# Geotechnical-Engineering Report

**Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.**

**While you cannot eliminate all such risks, you can manage them. The following information is provided to help.**

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

## Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

## Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

## You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

*responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

## Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

## This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

## This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

## Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

## Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

## Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

## Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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# APPENDIX D

*Previous Explorations by GRI (2014)*

## Table 1A: GUIDELINES FOR CLASSIFICATION OF SOIL

### RELATIVE DENSITY FOR GRANULAR SOIL

| Relative Density | Standard Penetration Resistance (N-values) blows per foot |
|---|---|
| very loose | 0 - 4 |
| loose | 4 - 10 |
| medium dense | 10 - 30 |
| dense | 30 - 50 |
| very dense | over 50 |

### CONSISTENCY FOR FINE-GRAINED (COHESIVE) SOIL

| Consistency | Standard Penetration Resistance (N-value) blows per foot | Torvane or Undrained Shear Strength, tsf |
|---|---|---|
| very soft | 0 - 2 | less than 0.125 |
| soft | 2 - 4 | 0.125 - 0.25 |
| medium stiff | 4 - 8 | 0.25 - 0.50 |
| stiff | 8 - 15 | 0.50 - 1.0 |
| very stiff | 15 - 30 | 1.0 - 2.0 |
| hard | over 30 | over 2.0 |

| Grain-Size Classification | Modifier for Subclassification | |
|---|---|---|
| | Adjective | Percentage of Other Material In Total Sample |
| *Boulders* > 12 in. | | |
| *Cobbles* 3 - 12 in. | clean | 0 - 2 |
| *Gravel* | trace | 2 - 10 |
| 1/4 - 3/4 in. (fine) 3/4 - 3 in. (coarse) | some | 10 - 30 |
| *Sand* No. 200 - No. 40 sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse) | sandy, silty, clayey, etc. | 30 - 50 |
| *Silt/Clay* - pass No. 200 sieve | | |

## Table 2A: GUIDELINES FOR CLASSIFICATION OF ROCK

### RELATIVE ROCK WEATHERING SCALE

| Term | Field Identification |
|---|---|
| Fresh | Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric. |
| Slightly Weathered | Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1 in. into rock. |
| Moderately Weathered | Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits. |
| Predominantly Decomposed | Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water. |
| Decomposed | Rock mass is completely decomposed. Original rock "fabric" may be evident. May be reduced to soil with hand pressure. |

### RELATIVE ROCK HARDNESS SCALE

| Term | Hardness Designation | Field Identification | Approximate Unconfined Compressive Strength |
|---|---|---|---|
| Extremely Soft | R0 | Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure. | < 100 psi |
| Very Soft | R1 | Crumbles under firm blows with point of a geology pick. Can be peeled by a pocket knife and scratched with fingernail. | 100 - 1,000 psi |
| Soft | R2 | Can be peeled by a pocket knife with difficulty. Cannot be scratched with fingernail. Shallow indentation made by firm blow of geology pick. | 1,000 - 4,000 psi |
| Medium Hard | R3 | Can be scratched by knife or pick. Specimen can be fractured with a single firm blow of hammer/geology pick. | 4,000 - 8,000 psi |
| Hard | R4 | Can be scratched with knife or pick only with difficulty. Several hard hammer blows required to fracture specimen. | 8,000 - 16,000 psi |
| Very Hard | R5 | Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact. | > 16,000 psi |

### RQD AND ROCK QUALITY

**Relation of RQD and Rock Quality**

| RQD (Rock Quality Designation), % | Description of Rock Quality |
|---|---|
| 0 - 25 | Very Poor |
| 25 - 50 | Poor |
| 50 - 75 | Fair |
| 75 - 90 | Good |
| 90 - 100 | Excellent |

**Terminology for Planar Surface**

| Bedding | Joints and Fractures | Spacing |
|---|---|---|
| Laminated | Very Close | < 2 in. |
| Thin | Close | 2 in. – 12 in. |
| Medium | Moderately Close | 12 in. – 36 in. |
| Thick | Wide | 36 in. – 10 ft |
| Massive | Very Wide | > 10 ft |

# BORING AND TEST PIT LOG LEGEND

## SOIL SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | GRAVEL; clean to some silt, clay, and sand |
|  | Sandy GRAVEL; clean to some silt and clay |
|  | Silty GRAVEL; up to some clay and sand |
|  | Clayey GRAVEL; up to some silt and sand |
|  | SAND; clean to some silt, clay, and gravel |
|  | Gravelly SAND; clean to some silt and clay |
|  | Silty SAND; up to some clay and gravel |
|  | Clayey SAND; up to some silt and gravel |
|  | SILT; up to some clay, sand, and gravel |
|  | Gravelly SILT; up to some clay and sand |
|  | Sandy SILT; up to some clay and gravel |
|  | Clayey SILT; up to some sand and gravel |
|  | CLAY; up to some silt, sand, and gravel |
|  | Gravelly CLAY; up to some silt and sand |
|  | Sandy CLAY; up to some silt and gravel |
|  | Silty CLAY; up to some sand and gravel |
|  | PEAT |
|  | LANDSCAPE MATERIALS |

## BEDROCK SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | BASALT |
|  | SILTSTONE |
|  | SANDSTONE |

## SURFACE MATERIAL SYMBOLS

| Symbol | Typical Description |
|---|---|
|  | Asphaltic-concrete PAVEMENT |
|  | Portland cement concrete PAVEMENT |
|  | Crushed rock BASE COURSE |

## SAMPLER SYMBOLS

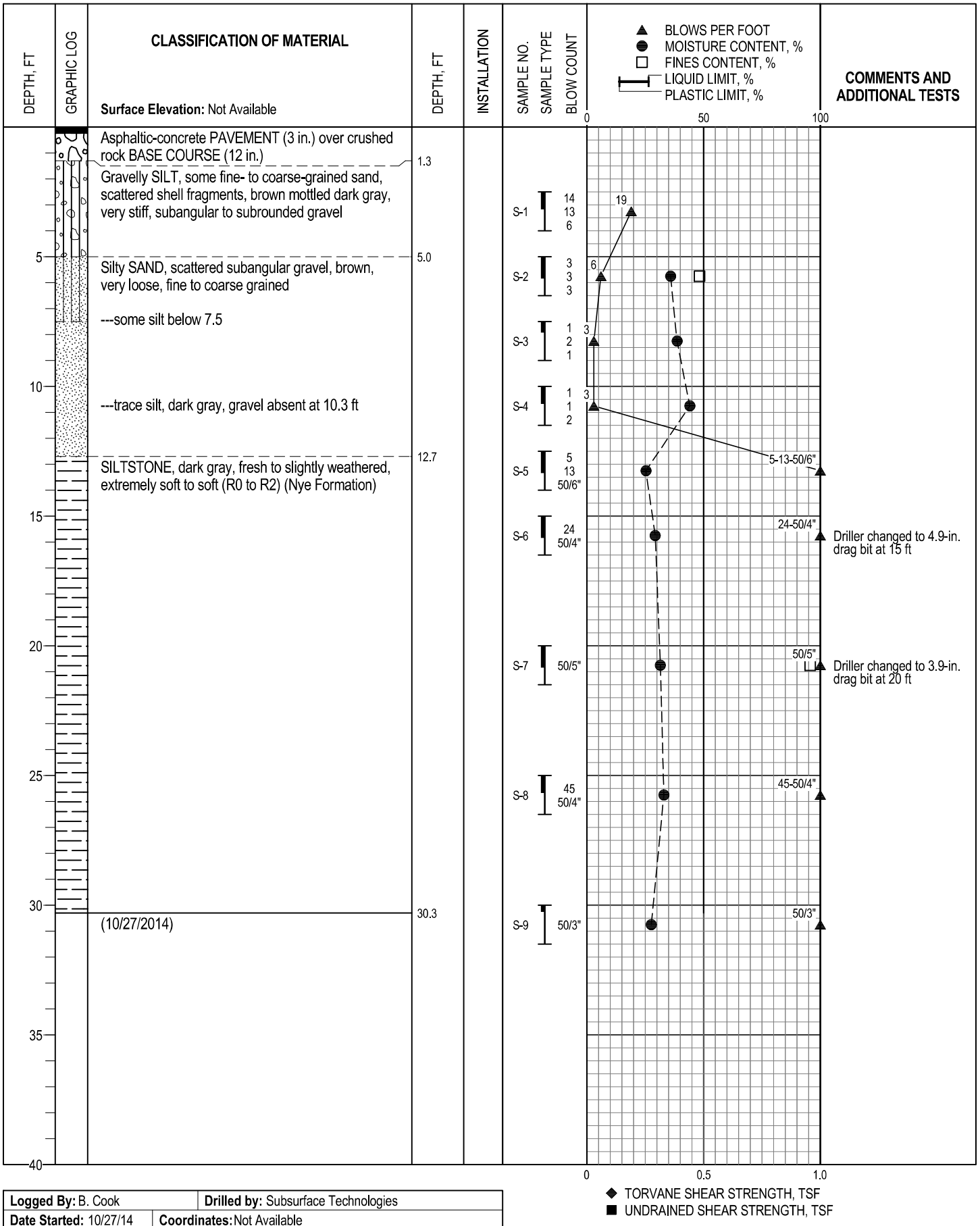
| Symbol | Sampler Description |
|---|---|
|  | 2.0-in. O.D. split-spoon sampler and Standard Penetration Test with recovery (ASTM D1586) |
|  | Shelby tube sampler with recovery (ASTM D1587) |
|  | 3.0-in. O.D. split-spoon sampler with recovery (ASTM D3550) |
|  | Grab Sample |
|  | Rock core sample interval |
|  | Sonic core sample interval |
|  | Geoprobe sample interval |

## INSTALLATION SYMBOLS

| Symbol | Symbol Description |
|---|---|
|  | Flush-mount monument set in concrete |
|  | Concrete, well casing shown where applicable |
|  | Bentonite seal, well casing shown where applicable |
|  | Filter pack, machine-slotted well casing shown where applicable |
|  | Grout, vibrating-wire transducer cable shown where applicable |
|  | Vibrating-wire pressure transducer |
|  | 1-in.-diameter solid PVC |
|  | 1-in.-diameter hand-slotted PVC |
|  | Grout, inclinometer casing shown where applicable |

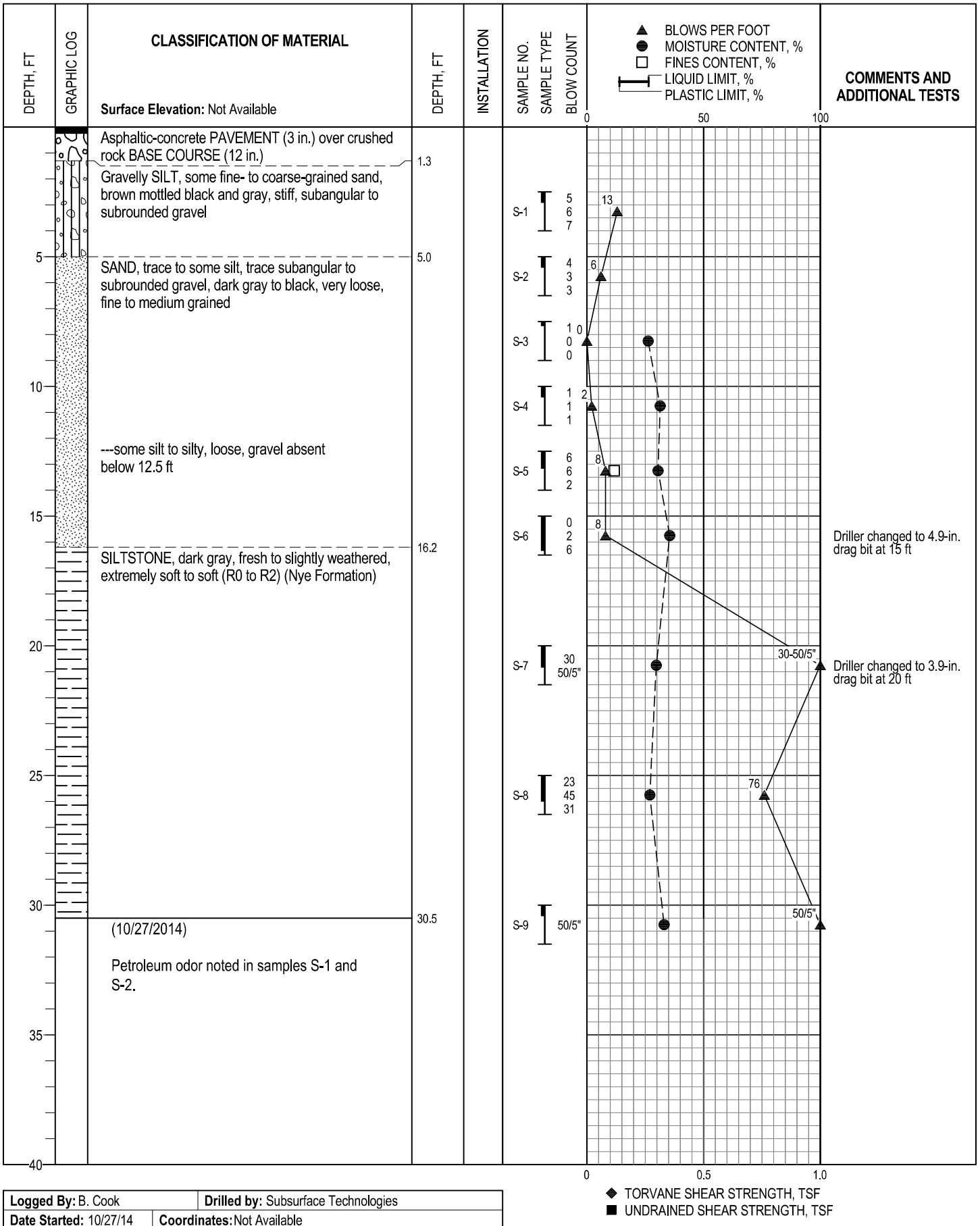
## FIELD MEASUREMENTS

| Symbol | Typical Description |
|---|---|
|  | Groundwater level during drilling and date measured |
|  | Groundwater level after drilling and date measured |
|  | Rock core recovery |
|  | Rock quality designation (RQD) |



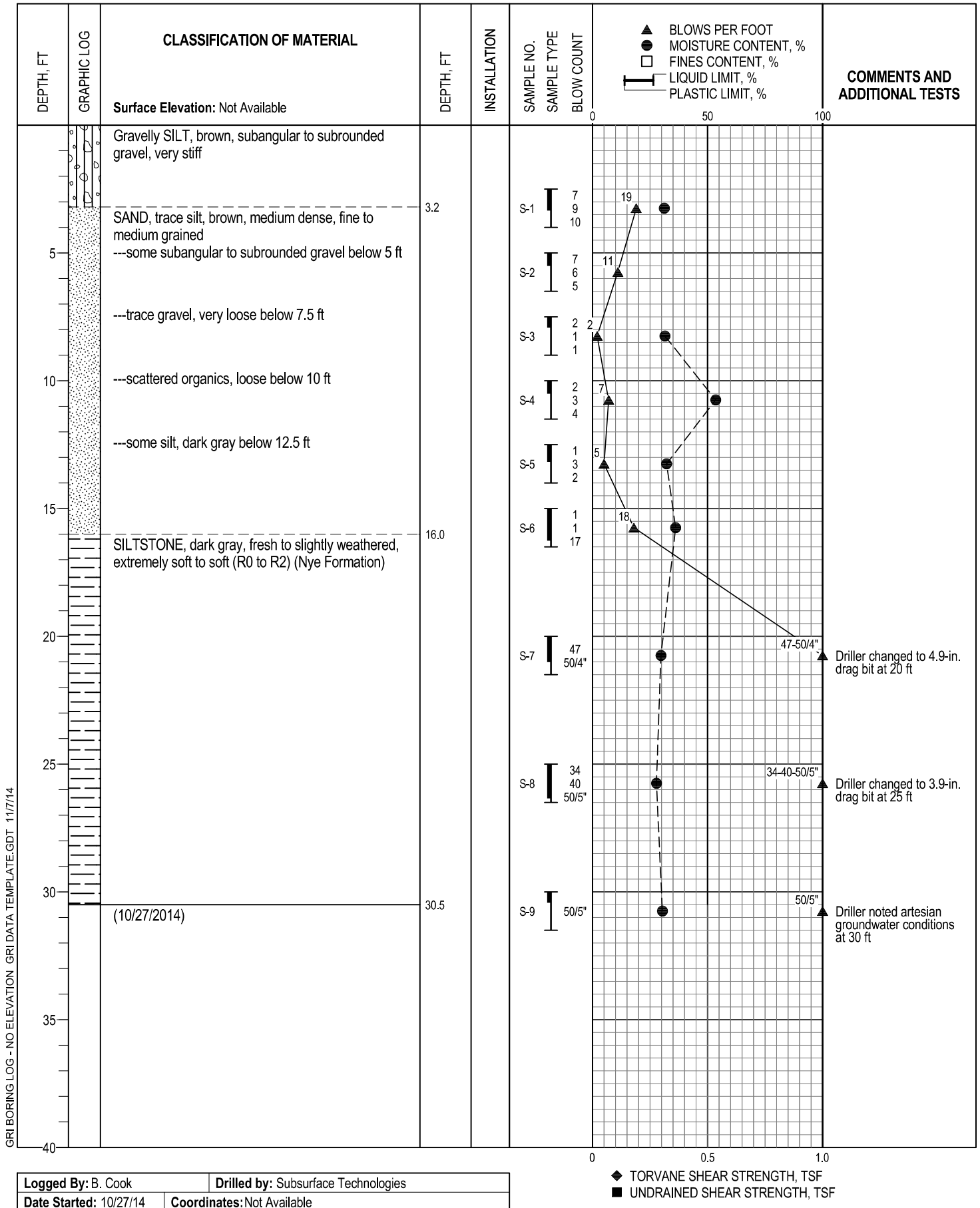

| | |
|---|---|
| **Logged By:** B. Cook | **Drilled by:** Subsurface Technologies |
| **Date Started:** 10/27/14 | **Coordinates:** Not Available |
| **Drilling Method:** Mud Rotary<br>**Equipment:** Diedrich D-90 Truck-Mounted Drill Rig<br>**Hole Diameter:** 5 in. | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 78% |
| **Note:** See Legend for Explanation of Symbols | |

# BORING B-1




| | |
|---|---|
| **Logged By:** B. Cook | **Drilled by:** Subsurface Technologies |
| **Date Started:** 10/27/14 | **Coordinates:** Not Available |
| **Drilling Method:** Mud Rotary<br>**Equipment:** Diedrich D-90 Truck-Mounted Drill Rig<br>**Hole Diameter:** 5 in. | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 78% |
| **Note:** See Legend for Explanation of Symbols | |

# BORING B-2



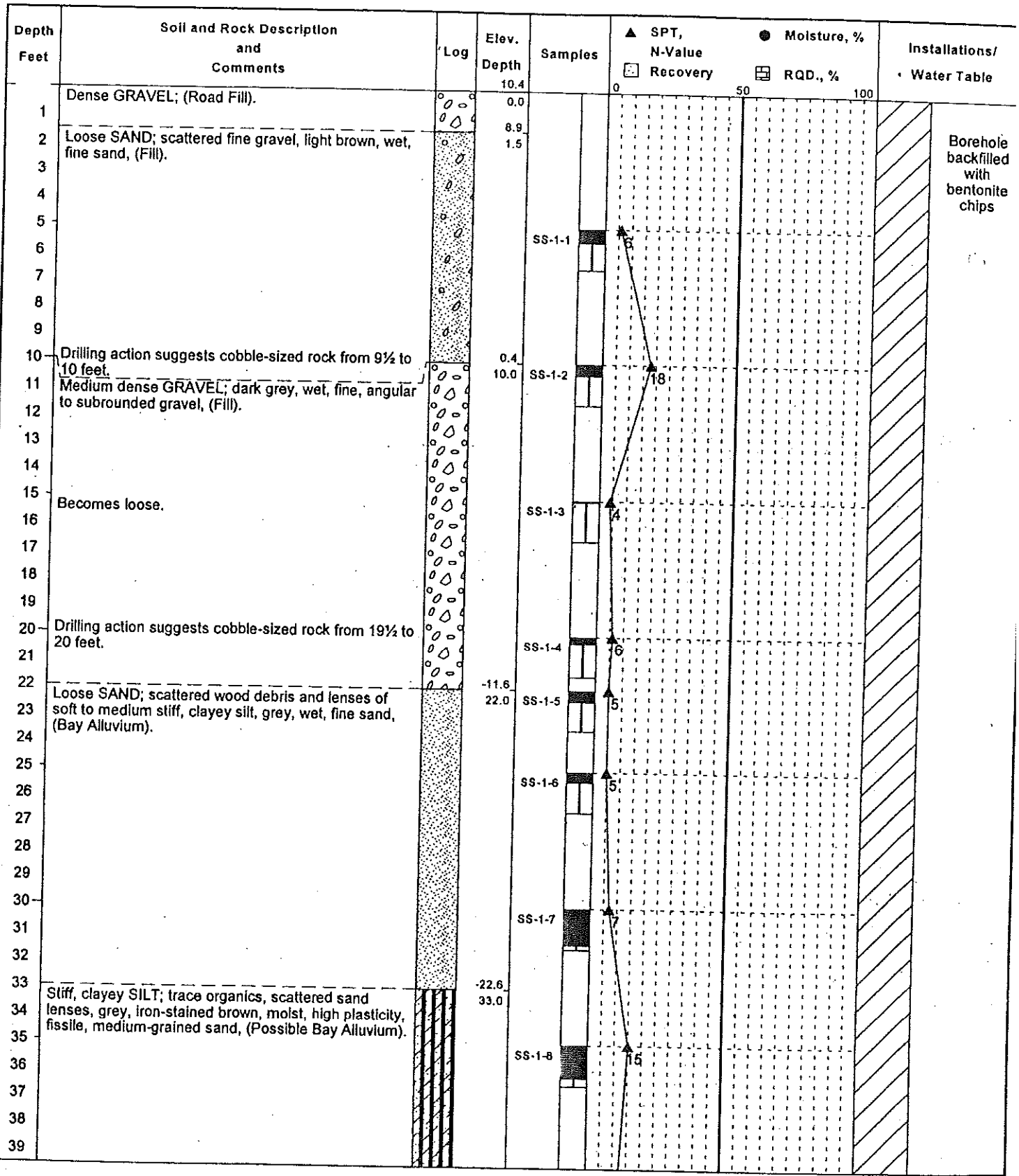

GRI BORING LOG - NO ELEVATION GRI DATA TEMPLATE.GDT 11/7/14

| | |
|---|---|
| **Logged By:** B. Cook | **Drilled by:** Subsurface Technologies |
| **Date Started:** 10/27/14 | **Coordinates:** Not Available |
| **Drilling Method:** Mud Rotary<br>**Equipment:** Diedrich D-90 Truck-Mounted Drill Rig<br>**Hole Diameter:** 5 in. | **Hammer Type:** Auto Hammer<br>**Weight:** 140 lb<br>**Drop:** 30 in.<br>**Energy Ratio:** 78% |
| **Note:** See Legend for Explanation of Symbols | |

# BORING B-3

# APPENDIX E

*Previous Explorations by Others (2000)*




Project No.: 2001031

Surface Elevation: 10.4 feet

Date of Boring: April 5, 2000

**Boring Log: HDD-1**

**Sta. 1 + 24, 5' Lt.**

**Yaquina Bay Undercrossing**

**Newport, Oregon**

Foundation Engineering, Inc.

| Depth Feet | Soil and Rock Description and Comments | Log | Elev. Depth | Samples | SPT, N-Value / Recovery / Moisture, % / RQD., % | Installations/ Water Table |
|---|---|---|---|---|---|---|
| 40 | No sand lenses noted between ±40 and 41½ feet. | | -29.1<br>39.5 | SS-1-9 | 12 | |
| 41 | | | | | | |
| 42 | | | | | | |
| 43 | | | | | | |
| 44 | | | | | | |
| 45 | Grades to stiff SILT; some clay, grey, moist, medium | | | SS-1-10 | 3 | |
| 46 | to high plasticity, micaceous. | | | | | |
| 47 | | | | | | |
| 48 | | | | | | |
| 49 | | | | | | |
| 50 | Becomes very stiff at ±50 feet. | | | SS-1-11 | 19 | |
| 51 | | | | | | |
| 52 | | | | | | |
| 53 | | | | | | |
| 54 | Grades to hard SILT; some clay, grey, moist, medium | | -43.6<br>54.0 | | | |
| 55 | to high plasticity, micaceous, fissile, (Decomposed | | | SS-1-12 | 39 | |
| 56 | Nye Mudstone). | | | | | |
| 57 | | | | | | |
| 58 | | | | | | |
| 59 | | | | SS-1-13 | 43 | |
| 60 | | | | RUN 1 | | |
| 61 | | | | | | |
| 62 | | | | | | |
| 63 | | | | RUN 2 | | |
| 64 | | | | | | |
| 65 | | | | | | |
| 66 | Extremely weak (R0), clayey SILTSTONE; grey, highly | | -55.6<br>66.0 | RUN 3 | | |
| 67 | to moderately weathered, very close to close-jointed, | | | | | |
| 68 | some clay infilled joints, some vertical laminations, micaceous, (Nye Mudstone). | | | RUN 4 | | |
| 69 | | | | | | |
| 70 | Siltstone becomes more competent below 59 feet, no vertical laminations apparent. | | | | | |
| 71 | | | | RUN 5 | | |
| 72 | | | | | | |
| 73 | Below 72 feet, siltstone becomes moderately weathered, trace coarse-grained particles, fissile, quartz grains and scattered shell fragments apparent. | | | | | |
| 74 | Below 74 feet, siltstone becomes slightly weathered. | | | RUN 6<br>RUN 7 | | |
| 75 | More abundant shell fragments and red-brown, glass-like, semi-round fragments are apparent. | | | | | |
| 76 | | | | | | |
| 77 | Black organic/charcoal fragments noted at 77 feet. | | | RUN 8 | | |
| 78 | | | | | | |

Project No.: 2001031

Surface Elevation: 10.4 feet

Date of Boring: April 5, 2000

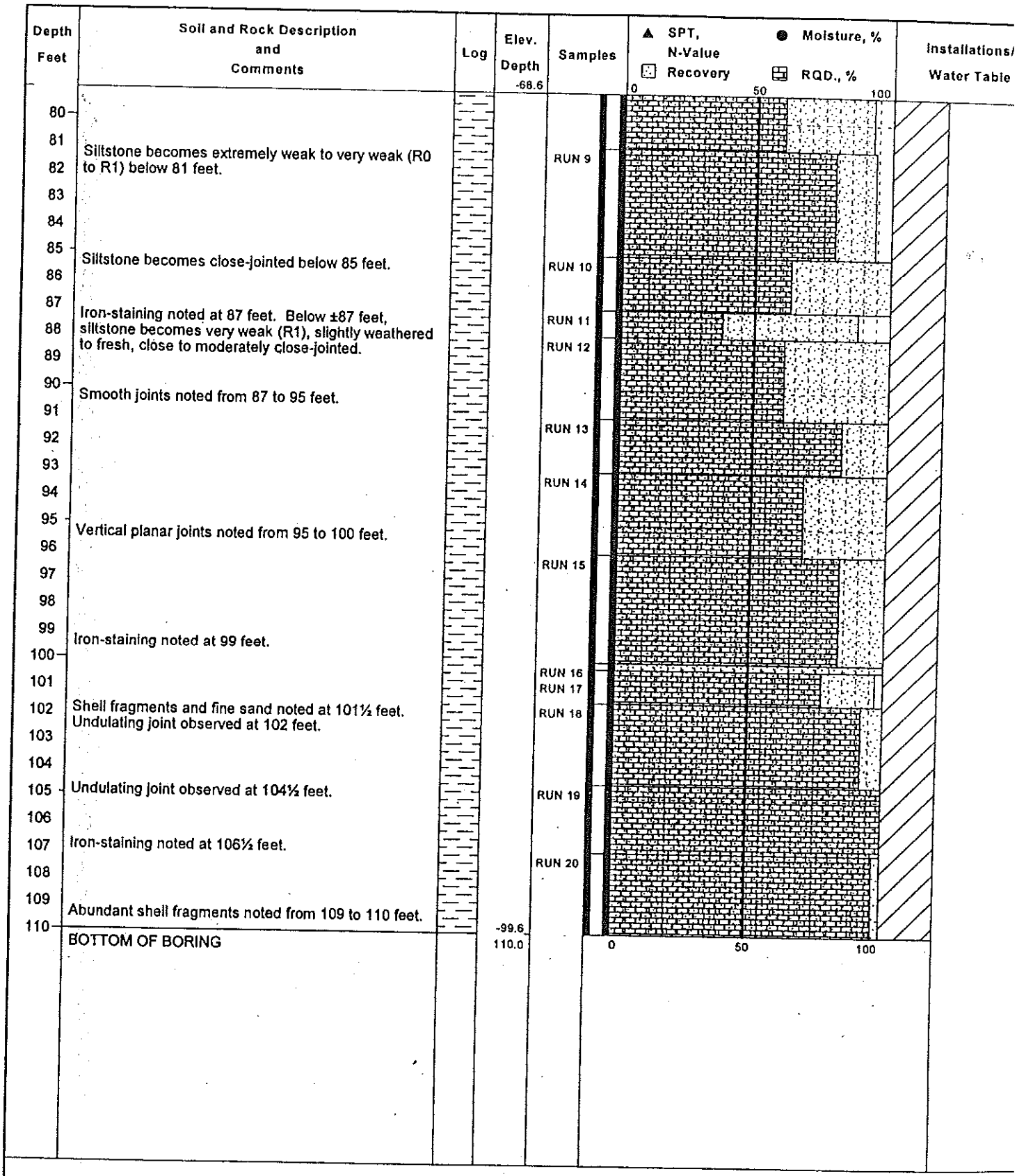
**Boring Log: HDD-1**

**Sta. 1 + 24, 5' Lt.**

**Yaquina Bay Undercrossing**

**Newport, Oregon**

Foundation Engineering, Inc.




Project No.: 2001031

Surface Elevation: 10.4 feet

Date of Boring: April 5, 2000

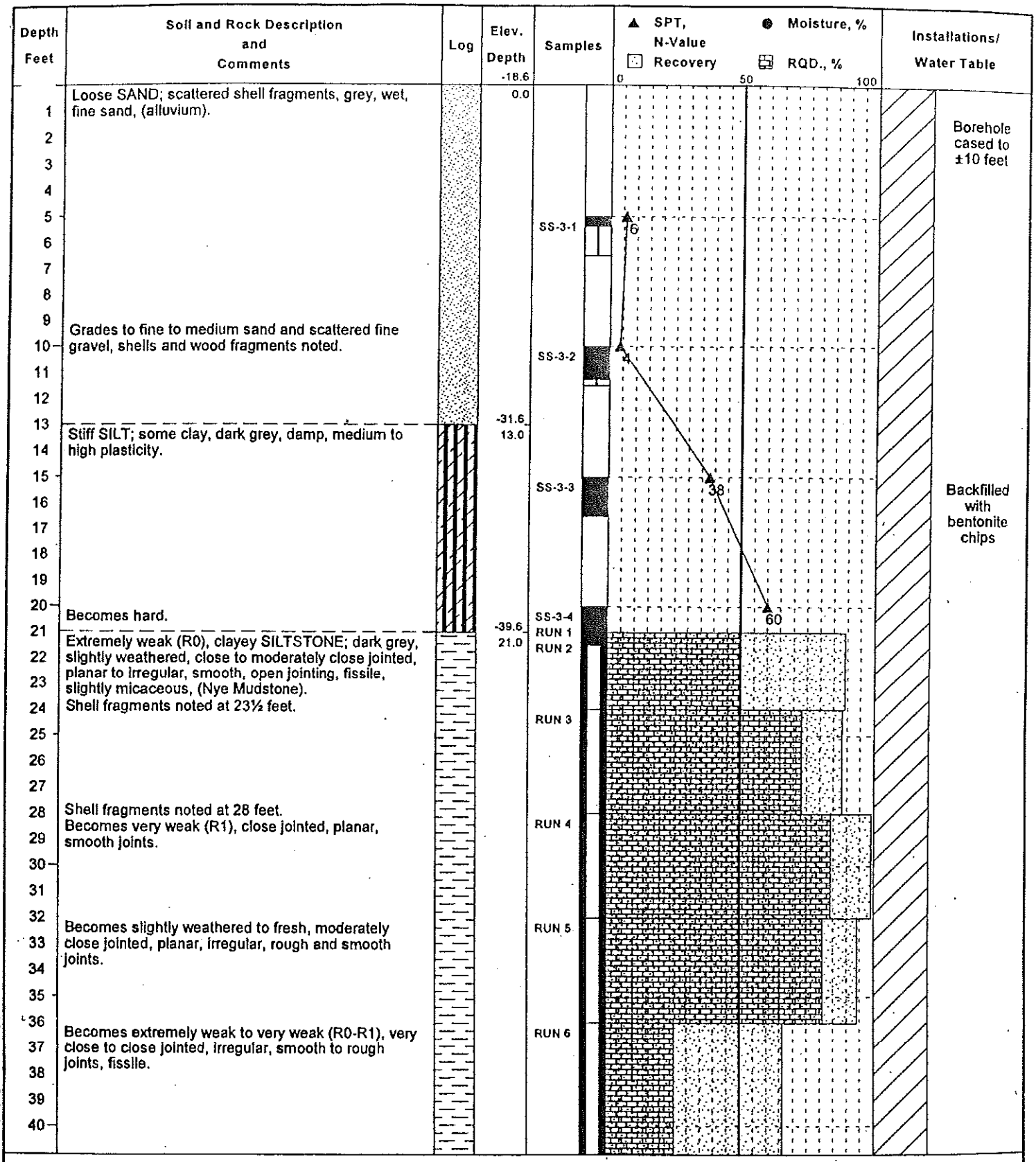
**Boring Log: HDD-1**

**Sta. 1 + 24, 5' Lt.**

**Yaquina Bay Undercrossing**

**Newport, Oregon**

Foundation Engineering, Inc.




Project No.: 2001031

Surface Elevation: -18.6 feet

Date of Boring: May 17, 2000

**Boring Log: HDD-3**

**Sta. 5 + 60, 69' Rt.**

**Yaquina Bay Undercrossing**

**Newport, Oregon**

Foundation Engineering, Inc.

| Depth Feet | Soil and Rock Description and Comments | Log | Elev. Depth | Samples |
|---|---|---|---|---|
| | | | -59.7 | |
| 42 | Becomes very weak (R1), moderately close jointed, planar, irregular and smooth joints, trace shell fragments noted. | | | RUN 7 |
| 43 | Becomes close jointed, planar, smooth joints. | | | RUN 8 |
| 44 | | | | RUN 9 |
| 45 | | | | |
| 46 | Jointing becomes irregular, rough and open, fissile. | | | RUN 10 |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | Becomes extremely weak to very weak (R0-R1), trace organics noted, fissile. | | | RUN 11 |
| 51 | | | | |
| 52 | | | | |
| 53 | Moderately weathered, very close jointed from ±52 to 53 feet. | | | RUN 12 |
| 54 | Becomes slightly weathered, close jointed, rough, irregular and open joints, fissile. | | | RUN 13 |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | RUN 14 |
| 58 | | | | |
| 59 | Becomes extremely to very weak (R0-R1). | | | RUN 15 |
| 60 | | | | |
| 61 | Becomes very weak (R1), slightly weathered to fresh. | | | RUN 16 |
| 62 | | | | |
| 63 | Becomes very fractured, very close jointed. | | | RUN 17 |
| 64 | | | | |
| 65 | | | | |
| | Inner barrel stuck. | | -84.3 | RUN 18 |
| | BOTTOM OF BORING | | 65.7 | |

▲ SPT, N-Value ● Moisture, %
Recovery RQD., %
0 50 100

Installations/ Water Table

0 50 100

Project No.: 2001031

Surface Elevation: -18.6 feet

Date of Boring: May 17, 2000

**Boring Log: HDD-3**

**Sta. 5 + 60, 69' Rt.**

**Yaquina Bay Undercrossing**

**Newport, Oregon**

Foundation Engineering, Inc.

## DISTINCTION BETWEEN FIELD LOGS AND FINAL LOGS

A field log is prepared for each boring or test pit by our field representative. The log contains information concerning sampling depths and the presence of various materials such as gravel, cobbles, and fill, and observations of ground water. It also contains our interpretation of the soil conditions between samples. The final logs presented in this report represent our interpretation of the contents of the field logs and the results of the laboratory examinations and tests. Our recommendations ore based on the contents of the final logs and the information contained therein and not on the field logs.

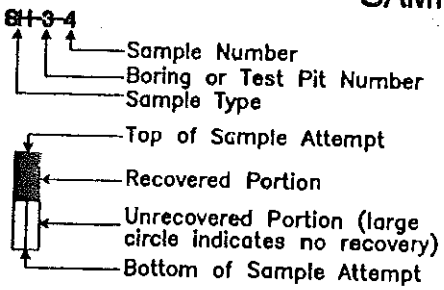
## VARIATION IN SOILS BETWEEN TEST PITS AND BORINGS

The final log and related information depict subsurface conditions only at the specific location and on the date indicated. Those using the information contained herein should be aware that soil conditions at other locations or on other dates may differ. Actual foundation or subgrade conditions should be confirmed by us during construction.

## TRANSITION BETWEEN SOIL OR ROCK TYPES

The lines designating the interface between soil, fill or rock on the final logs and on subsurface profiles presented in the report are determined by interpolation and are therefore appraximate. The transition between the materials may be abrupt or gradual. Only at boring or test pit locations should profiles be considered as reasonably accurate and then only to the degree implied by the notes thereon.

## SAMPLE OR TEST SYMBOLS




S – Grab Samples
SS – Standard Penetration Test Sample (split–spoon)
SH – Thin–walled Shelby Tube Sample
C – Core Sample
CS – Continuous Sample

▲ Standord Penetration Test Resistance equals the number of blows o 140 lb. weight falling 30 in. is required to drive a standard split–spoon sampler 1 ft. Practical refusal is equal to 50 or more blows per 6 in. of sampler penetration.

● Water Content (%).

### UNIFIED SOIL CLASSIFICATION SYMBOLS

| | |
|---|---|
| G – Gravel | W – Well Graded |
| S – Sand | P – Poorly Graded |
| M – Silt | L – Low Plasticity |
| C – Clay | H – High Plasticity |
| Pt – Peat | O – Organic |

### FIELD SHEAR STRENGTH TEST

Shear strength measurements on test pit side walls, blocks of soil or Shelby tube samples are typically made with Torvane or pocket penetrometer devices.

### TYPICAL SOIL/ROCK SYMBOLS

Sand
Silt
Clay
Gravel
Basalt
Siltstone

### WATER TABLE

Water Table Location

(1/31/00) Date of Measurement

Piezometer Tip Location (if used)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**SYMBOL KEY**
**BORING AND TEST PIT LOGS**

# Explanation of Common Terms Used in Soil Descriptions

| Field Identification | Cohesive Soils | | | Granular Soils | |
|---|---|---|---|---|---|
| | SPT | $S_u$* (tsf) | Term | SPT | Term |
| Easily penetrated several inches by fist. | 0 – 1 | < 0.125 | Very Soft | 0 – 4 | Very Loose |
| Easily penetrated several inches by thumb. | 2 – 4 | 0.125–0.25 | Soft | 5 – 10 | Loose |
| Can be penetrated several inches by thumb with moderate effort. | 5 – 8 | 0.25 – 0.50 | Medium Stiff (Firm) | 11 – 30 | Medium Dense |
| Readily indented by thumb but penetrated only with great effort. | 9 – 15 | 0.50 – 1.0 | Stiff | 31 – 50 | Dense |
| Readily indented by thumbnail. | 16 – 30 | 1.0 – 2.0 | Very Stiff | > 50 | Very Dense |
| Indented with difficulty by thumbnail. | 31 – 60 | > 2.0 | Hard | | |

* Undrained shear strength

| Term | Soil Moisture Field Description |
|---|---|
| Dry | Absence of moisture. Dusty. Dry to the touch. |
| Damp | Soil has moisture. Cohesive soils are below plastic limit and usually moldable. |
| Moist | Grains appear darkened, but no visible water. Silt/clay will clump. Sand will bulk. Soils ore often at or near plastic limit. |
| Wet | Visible water on larger grain surfaces. Sand and cohesionless silt exhibit dilatancy. Cohesive silt/clay can be readily remolded. Soil leaves wetness on the hand when squeezed. "Wet" indicates that the soil is wetter than the optimum maisture content and above the plastic limit. |

| Term | PI | Plasticity Field Test |
|---|---|---|
| Nonplastic | 0 – 3 | Cannot be rolled into a thread. |
| Low Plasticity | 3 – 15 | Can be rolled into a thread with same difficulty. |
| Medium Plasticity | 15 – 30 | Easily rolled into thread. |
| High Plasticity | > 30 | Easily rolled and rerolled into thread. |

| Term | Soil Structure Criteria |
|---|---|
| Stratified | Alternating layers at least 1 inch thick – describe variation. |
| Laminated | Alternating layers at less than 1 inch thick – describe variation. |
| Fissured | Contains shears and partings along planes of weakness. |
| Slickensides | Partings appear glossy or striated. |
| Blocky | Breaks into lumps – crumbly. |
| Lensed | Contains pockets of different soils – describe variation. |

| Term | Soil Cementation Criteria |
|---|---|
| Weak | Breaks under light finger pressure. |
| Moderate | Breaks under hard finger pressure. |
| Strong | Will not break with finger pressure. |

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COMMON TERMS
SOIL DESCRIPTIONS

# Explanation of Common Terms Used in Rock Descriptions

| Field Identification | | UCS (psi) | UCS (MPa) | Strength (Hardness) |
|---|---|---|---|---|
| Indented by thumbnail. | R0 | < 100 | 0.25–1.0 | Extremely Weak (Extremely Soft) |
| Crumbles under firm blows with geological hammer, can be peeled by a pocket knife. | R1 | 100–1000 | 1.0–5.0 | Very Weak (Very Soft) |
| Can be peeled by a pocket knife with difficulty, shallow indentotions made by firm blow with geological hammer. | R2 | 1000–4000 | 5.0–25 | Weak (Soft) |
| Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single blow of geological hammer. | R3 | 4000–8000 | 25–50 | Medium Strong (Medium Hard) |
| Specimen requires more than one blow of geological hammer to fracture it. | R4 | 8000–16000 | 50–100 | Strong (Hard) |
| Specimen requires many blows of geological hammer to fracture it. | R5 | 16000–36000 | 100–250 | Very Strong (Very Hard) |
| Specimen can only be chipped with geological hammer. | R6 | > 36000 | > 250 | Extremely Strong (Extremely Hard) |

| Term | Weathering Field Identification |
|---|---|
| Fresh | Crystals are bright. Discontinuities may show some minor surface stoining. No discoloration in rock fabric. |
| Slightly Weathered | Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discolorotion in rock fabric. |
| Moderotely Weathered | Significant portions of rock show discolorotion and weathering effects. Crystals are dull and show visible chemical alteration. Discantinuities are stained and may contain secondary mineral deposits. |
| Highly Weathered | Rock can be excavated with geologist's pick. All dicantinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water. |
| Decomposed | Rock mass is completely decomposed. Original rock "fabric" may be evident. May be reduced to soil with hand pressure. |

| Spacing (meters) | Spacing (feet) | Spacing Term | Bedding/Foliation |
|---|---|---|---|
| < 0.06 | < 2 in. | Very Close | Very Thin |
| 0.06 – 0.30 | 2 in. – 1 ft. | Close | Thin |
| 0.30 – 0.90 | 1 ft. – 3 ft. | Moderately Close | Medium |
| 0.90 – 3.0 | 3 ft. – 10 ft. | Wide | Thick |
| > 3.0 | > 10 ft. | Very Wide | Very Thick (Massive) |

| Vesicle Term | Volume |
|---|---|
| Some | 3 – 20% |
| Highly | 20 – 50% |
| Scoria | > 50% |

| Stratification Term | Description |
|---|---|
| Lamination | < 1 cm thick beds |
| Fissile | Preferred break along laminations |
| Parting | Preferred break direction |
| Foliation | Metamorphic layering of minerals |

| RQD % | Designation | RQD % | Designation |
|---|---|---|---|
| 0 – 25 | Very Poor | 75 – 90 | Good |
| 25 – 50 | Poor | 90 – 100 | Excellent |
| 50 – 75 | Fair | | |

Rock Quality Designation (RQD) is the percent of a core run with intact lengths greater than 0.1 m excluding breaks caused by drilling.

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**COMMON TERMS**
**ROCK DESCRIPTIONS**

# APPENDIX F

*Geoprofessional Business Association Guidance Document*

# Important Information about This

# Geotechnical-Engineering Report

**Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.**

**While you cannot eliminate all such risks, you can manage them. The following information is provided to help.**

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

## Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

## Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

## You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

*responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

## Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

## This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

## This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

## Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

## Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

## Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

## Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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# APPENDIX 5:
# FLOATING DOCK CONDITION ASSESSMENT

Mr. Aaron Bretz
Operations Manager
Port of Newport
600 SE Bay Boulevard
Newport, OR 97365

Dear Mr. Bretz:

HDR was retained by the Port of Newport to perform a high-level evaluation of Port Dock 7 to provide an estimated remaining service life and determine if any operational restrictions are appropriate for the facility.

Andy Fortner, P.E. visited the site on Friday, October 22, 2021 and met with Port of Newport staff to walk the dock and evaluate its condition.

**Background**

Port of Newport Dock 7 consists of six regions, labeled B, C, D, E, F and X. Over time, portions of the dock have been lost due to storm events and other damage, particularly at Docks B, E and F.

Dock B is a floating dock that primarily serves as access to boathouses used by the Oregon Boating Foundation and other lease holders. It is also used for storage of small rental boats. No vessels are tied to this portion of dock on a regular basis. The floats are secured via two 8-inch diameter steel piling through the middle of the dock, as well as additional tie offs to larger diameter piling securing the boat houses. This dock appears to have been originally restrained by four piles; however, two appear to have been lost to corrosion over time.

Docks C and D consist of a central floating dock leading to concrete finger piers on either side. Based on discussions with Port staff, the finger piers were constructed circa 1993. Per Port staff, all piling along Docks C and D were replaced at that time. Piles are spaced at approximately 32 feet on-center along the north side of the central aisleway and at the end of each finger pier.

Docks E and F consist of a floating dock that runs parallel to the central aisleway of Docks C and D. These two sections originally had finger piers, but those have been lost to damage. This section of the facility is now used for berthing of vessels in a side-to arrangement. Docks E and F appear to have been restrained by piles spaced at approximately 45 feet on center, however, due to damage and corrosion, multiple piles are missing, with some pile spaces upwards of 90 feet.

Dock X is the main access from shore and runs perpendicular to Docks B through F. The northern half of Dock X is restrained by H-piles along the west side of the dock approximately 30 feet on-center. The southern half of Dock X is restrained by piles both through and alongside the deck. Piles appear to have been originally spaced at 24 feet on-center and replacement piles were installed at approximately 30 feet on-center.

**Condition Assessment**

HDR's assessment of the topside included evaluating the condition of the deck surface, mooring hardware, the piles above the dock surface, and any other deficiencies visible from the deck.

The Port of Newport contracted with Ben's Diving Service, to do an underwater inspection. The scope of the underwater dive included a "swim by" of all accessible elements, and evaluation of piles for corrosion and section loss. Findings were documented via notes and photos and are incorporated into this report for reference.

***Dock B***

*Topside*

Dock B is in poor condition. It is noted that the floats are lacking in buoyancy and, although still maintaining plenty of freeboard, the dock does not feel stable and is unpleasant to walk on. The decking is in fair to poor condition, with significant weathering of the planks, as shown in Photo 1. Near space 15, the hardware joining two adjacent segments is missing, causing the dock to be uneven (Photo 2). The missing hardware should be replaced as soon as possible.

One location where a missing guide pile has left a void in the deck has been covered with a piece of plywood that is soft and decayed, located near Dock X. This is shown in Photo 3. This should be replaced to prevent a fall or injury.

The remaining piles along the center of the dock appear to be in fair condition. No rub rail or bumper is provided where the pile penetrates through the deck; however, it does not appear that the deck planks are adversely affected by the lack of protection. As a stopgap measure due to missing guide piles, Dock B is partially restrained by ropes fastened to the nearby boathouse (Photo 4). If replacement piles are not installed, the ropes should be checked and adjusted regularly.

Mooring hardware, although showing surface corrosion, is well anchored and appears to be in serviceable condition.

*Underwater*

The underwater inspection noted that the small diameter piles are severely corroded, with some areas showing complete section loss and holes through the wall of the pile, as shown in Photo 5.

The hardware adjoining adjacent segments is corroded throughout, in addition to the missing bolt at space 15. Corrosion is particularly heavy in the section between Dock X and the first small diameter pile. These bolts are the only restraint provided to this section of dock. Consideration should be given to replacing these bolts and providing some additional restraint via ropes or other means.

Two to three inches of growth is noted over all submerged surfaces. Measurements of the floats show 27" tall floats, with between six and eight inches submerged. This is typical for a foam billet type float. It was noted that the plastic material that encapsulates the floats has multiple tears; however, the foam billets themselves are in fair condition with no large pieces missing.

***Docks C and D***

*Topside*

Docks C and D are in fair condition. The timber decking appears to be well maintained, and is in fair condition, showing signs of wear, weathering and checking, but no significant decay or softness is noted. No signs of instability are noted in the dock. Port staff indicated that they regularly evaluate and replace the deck planks that are found to be decayed. The deck planks at the joints between segments, particularly at right angle joints where no pile is nearby, require more frequent replacement. This is likely due to large forces being imparted at the intersections. Ideally, both sections of adjoining dock should have an attachment to an anchoring pile at the joint.

Wooden blocks that appear to be replaceable are provided where piles pass through the dock structure. In general, these were in fair condition, but should be monitored for wear, particularly along the central walkway, see Photo 6 and Photo 7.

Mooring hardware is well anchored and in generally good condition, as shown in Photo 8.

Multiple finger piers were noted to be canted at the outboard ends; however, no instability was noted. It is likely that this is due to mooring lines pulling up on the dock and twisting the structure. In some locations, this deformation appears to be permanent. No other signs of distress, such as cracking in the concrete surfacing, is noted. Photo 9 shows a typical finger pier.

*Underwater*

Piles at Docks C and D are in poor condition. All piles showed signs of heavy corrosion that comes off the piles in flakes. The most significant corrosion is just below the low tide line. Piles at slips 17, 25, 31 and 53 along the common walkway between the finger piers have areas of complete section loss. Slip 25 is shown in Photo 10. It is likely that all the piles along Docks C and D could start to show areas of complete section loss or develop holes in the near future and are particularly susceptible to damage caused by floating debris.

The condition of these piles illustrates the significant issues that corrosion can create. Any new dock should have a cathodic protection system installed to prolong the life of steel piling. Careful measures should be taken during the installation of electrical connections on the new dock to prevent stray currents from causing electrolysis which would provide another potential source of corrosion.

The finger piers have 36-inch-tall floats with submerged depths ranging from 10 inches to 25 inches, with the average being around 21 inches for the areas checked. For a concrete decked finger pier, a 21-inch submerged depth is not unreasonable. No obvious issues underwater were noted with the floats at the ends of the fingers where a cant was noted.

A uniform two (2) inches of growth was noted on all submerged surfaces.

***Docks E and F***

*Topside*

Docks E and F are in fair to poor condition. As noted previously, multiple piles are missing. The decking is in poor condition, showing significant weathering and multiple checks/cracks. Some decay is present in localized areas, particularly near the ends of the planks. The deck runs at an angle to the main walkway.

Both ends of the dock are damaged due to weather events, as shown in Photo 11 and Photo 12. The Dock F portion is not frequently used for vessel berthing as power and water are not available. Sea lions commonly loiter at the end of Dock F. This area shows more wear than the rest of the dock.

Mooring hardware is in fair condition. Some cleats were noted as being pulled out. These should be replaced on an as needed basis.

Just west of the intersection with Dock X, a pile hoop is broken. All other pile hoops are intact; however, it is noted that they are not well anchored to the dock. This appears to be a combination of age and poor detailing of the connection between the hoop and the dock (Photo 13). As previously mentioned, multiple piles are missing along Docks E and F. In a strong current or wind event, this puts very large stresses on the remaining piles, the hoops, and on the connections between adjacent sections.

*Underwater*

This section of dock is supported by 12-inch floats, with approximately 2 inches submerged near the ends where the diver was able to access. The floats near the ends are in poor condition as they are unprotected.

Dock hoops are attached with simple lag bolts. The looseness observed in the topside inspection is likely due to these lag bolts pulling out of the wood. If the hoops are replaced, or when the loose hoop at the intersection with Dock X is repaired, a through-bolt with oversized washer is likely to provide a better connection. Consideration should be made to making the hoop connection to the underlying structure, and not the deck planks.

Piles were noted to have significant corrosion; however, no holes are noted. Based on the level of corrosion observed, it is likely that piles could begin to develop holes soon.

***Dock X***

*Topside*

Dock X is in fair condition. The section between the gangway and Docks C and D is restrained by H-piles. The H-pile nearest the gangway has obvious signs of significant corrosion with section loss near the waterline. This pile is shown in Photo 14, note the discoloration and heavy corrosion near the waterline.

Piles are missing in the section between Docks C/D and E/F, with patches present where piles previously passed through the deck. New piling has been installed on the exterior of the floats in proximal locations and secured with a hoop. Localized damage to the decking is noted where piles pass through the dock. Port staff indicated that this has been an ongoing problem and installation of reinforcing steel angles, like those shown in Photo 16, has generally not been effective as they loosen up quickly.

Decking is in fair condition. The decking is weathered with some local decay present in individual boards, particularly near the ends of the planks and at joints between segments. No issues with stability were observed; however, it was noted that a large stack of crab pots was present on the deck near the intersection with Docks C and D causing a lean. Stacking of pots for an extended period of time (longer than necessary to get them loaded or unloaded from a vessel) should be avoided.

Connections between segments show significant corrosion. Bolts are missing in the pad-eyes where Dock X meets Docks E and F and hardware that attaches the pad-eyes to the dock is pulling out, as shown in Photo 17. This should be repaired as soon as possible. New hardware should be at a minimum hot dip galvanized, with stainless steel preferred.

*Underwater*

Underwater inspection confirms that the H-piling restraining Dock X are in poor condition (see Photo 14 for typical example). Floats are nominally 24 inches high, with approximately half of the depth submerged. Floats near the gangway have been replaced with buoy balls. Over the remainder of the dock, floats are in similar condition as in other locations, with the outer encasement damaged but with no observed significant damage to the foam flotation material.

***Bulkhead Wall and Gangway***

The bulkhead wall at the shore end of the gangway is in poor condition. Soldier piles show evidence of corrosion and lagging between piles is missing, as shown in Photo 19. The entire wall is leaning away from the shore, shown in Photo 18.

Utilities attached to the gangway have come loose from their attachments and have fallen into the water or are near falling into the water, also shown in Photo 19.

The gangway is in fair to poor condition. Railings are intact and appear to be of a code compliant height, but do not meet current code standards for open space between elements. Timber elements show significant weathering; however, no obvious decay is noted.

***Conclusion and Recommendations***

Port of Newport Dock 7 is in poor condition and requires urgent repairs to maintain the current level of operation. In general, the dock has reached the end it's useful life and should be replaced. Until repairs can be made or the dock is replaced, our recommendations are listed below. The timeline for replacing the dock should be accelerated to the greatest extent feasible. Consideration should be given to make an application to USACE, Oregon Department of Fish and Wildlife (ODFW), and Oregon Department of State Lands (DSL) for emergency repairs to replace the piles with the most severe corrosion. Note the list of agencies listed above is not comprehensive. Additional agencies may also have jurisdiction.

- Large vessels, greater than 60 feet in length or heavy vessels of steel construction, similar to the *Lady Law* that was berthed at the end of Dock E during HDR's site visit, should be berthed elsewhere.
- Slips 17, 25, 31 and 53, and those immediately adjacent where piles have failed should see minimal use and have no vessels using them when sustained winds are forecast to exceed 30 mph.
- Use of Dock B should be limited to what is necessary for access to the boathouses. No vessels should be moored along this section of dock.

- Caution should be taken when using the west end of Dock E. Only smaller vessels (less than 25-30') should be moored in the area with long spans between piles.
- Missing hardware at joints between dock segments should be replaced.
- Corroded connecting hardware at Dock B should be replaced. Consideration should be given to adding some additional restraint in the section between Dock X and the first pile.
- Regular monitoring of piles via underwater inspection for continued corrosion and further section loss.

Sincerely,
HDR Engineering, Inc.

Andrew Fortner, P.E.
360-975-3865
andrew.fortner@hdrinc.com

Attachments: Photos 1 through 19

EC: Frank Proctor, HDR

## *Photos*

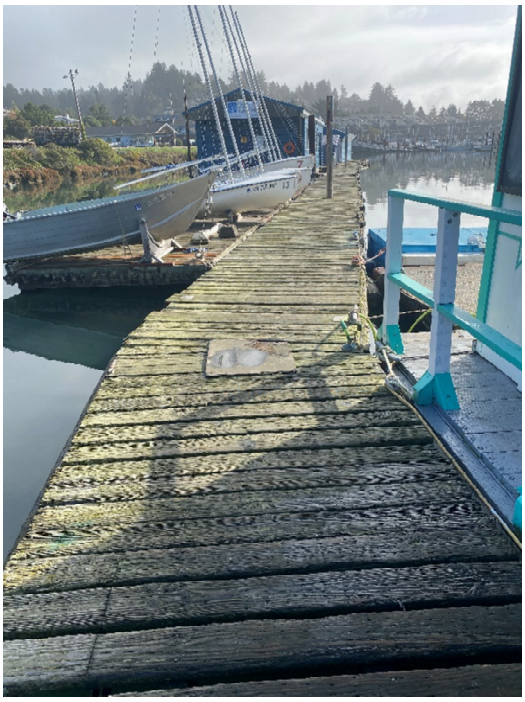


**Photo 1: Overall condition of Dock B.**

**Photo 2: Missing hardware near space 15 on Dock B**

**Photo 3: Hole with decayed patch in Dock B**

**Photo 4: Supplemental rope restraining Dock B to nearby piling**

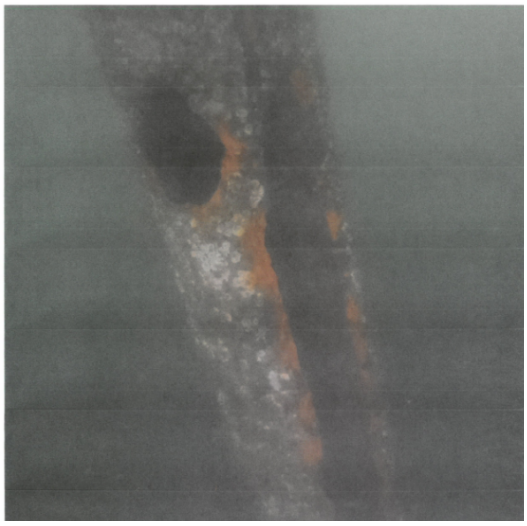


**Photo 5: Small diameter pile at Dock B showing significant section loss.**

**Photo 6: Rub block at piles**

**Photo 7: Rub block at piles**

**Photo 8: Typical condition of mooring hardware**

**Photo 9: Concrete finger, showing a lean to one side**

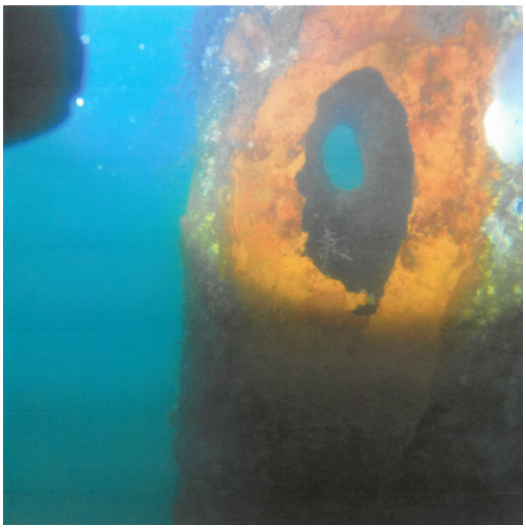


**Photo 10: Corroded pile near slip 25**

**Photo 11: East end of Dock E/F**

**Photo 12: West end of Dock E/F**

**Photo 13: Typical pile hoop attachment**

**Photo 14: H Pile on Dock X near the gangway.  Note heavy corrosion near the waterline.**

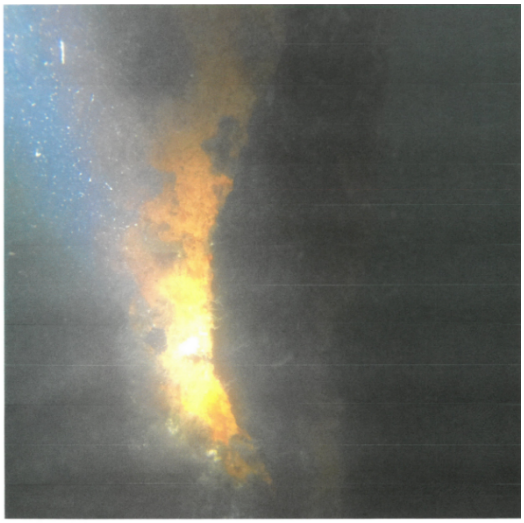


**Photo 15: Typical view of H piles from underwater.**

**Photo 16: Pile penetration at Dock X between Dock C/D and E/F.**


**Photo 17: Missing hardware at intersection of Dock X and Dock E/F**

**Photo 18: Leaning bulkhead wall**

**Photo 19: Fallen utilities on gangway.  Also note missing lagging in wall.**

# APPENDIX 6:
# FISHERMAN'S WHARF CONDITION ASSESSMENT

May 27, 2025

Aaron Bretz
Deputy Director
Port of Newport
600 SE Bay Blvd.
Newport, OR 97365

Subject: Hoist Dock Condition Assessment
DOWL Job No. 2621.80022.01

Dear Aaron,

DOWL has completed the condition assessment of the Hoist Dock located along the waterfront in Newport, OR. The assessment was conducted on April 30, 2025. DOWL performed the work by accessing the underside of the structure using a boat as well as traversing the shoreline during low tide. Prior to conducting the assessment, we met with you and another member of your team, onsite, to discuss your concerns and outline what we were going to evaluate. Once the work was completed, we again met with you to discuss any critical items. Below is an outline of our findings.

The dock is unique and comprised of two different structures. The original dock was constructed fully of timber and later widened to the east and west with steel pile, reinforced concrete caps and pre-stressed, pre-cast concrete slab. We performed a visual assessment of all accessible members. Pile below the waterline were not visible and would require an underwater inspection team to conduct this work.

## Deck

The deck members consist of the transverse timber planks installed in the original structure only. These timber planks were visually inspected as well as sounded for decay. There was evidence of water staining and discoloration of the underside of the deck, but no decay was found. Overall, the decking appeared to be in good condition with no immediate concerns. The top side of the deck was covered with asphalt (AC) and so could not be inspected.

The AC had some cracking predominantly at both the end of structure (shoreline) and at the transition between the original structure and new structures. These cracks are common at the end of a structure or at transition between structures. There was some AC settlement along the shore side of the structure (up to 1-inch) which does not appear to be caused by any structural issues or loss of embankment through the abutment.

Underside of the Timber Deck

## Superstructure

The superstructure is comprised of both timber girders and prestressed concrete slabs. The timber girders run parallel to the shoreline and are spaced at 30-inches on center and are roughly 12.5 feet long. The timber girders were visually inspected as well as sounded for decay. Overall, the timber girders were in fairly good condition. Each member had various degrees of drying checks with heavy water staining and discoloration. There was one timber girder that was found to be broken and was located near the end and centerline of the dock.

Broken Timber Girder

There are forty-two (42) slabs in the newer portion of the dock that run perpendicular to the shoreline (21 slabs on either side of the original structure). The top side of the slabs is covered with AC and not visible during our inspection. The underside soffits were visually inspected and found to have several locations where the concrete was delaminated with evidence of cracking along the edges of the delaminations. There was evidence of rust staining at many of these locations which indicates active corrosion to the reinforcing steel in the slabs. Most of these delaminations were noted in the east structure.

Delamination and Rust Staining in Underside of Slab

Several girders have bolted connections or holes for the hoisting systems. The hardware was heavily corroded and there was water staining in holes that were not being used. No evidence of corrosion was noted in holes that were not being used.

Holes in Slabs and Hoist Connections

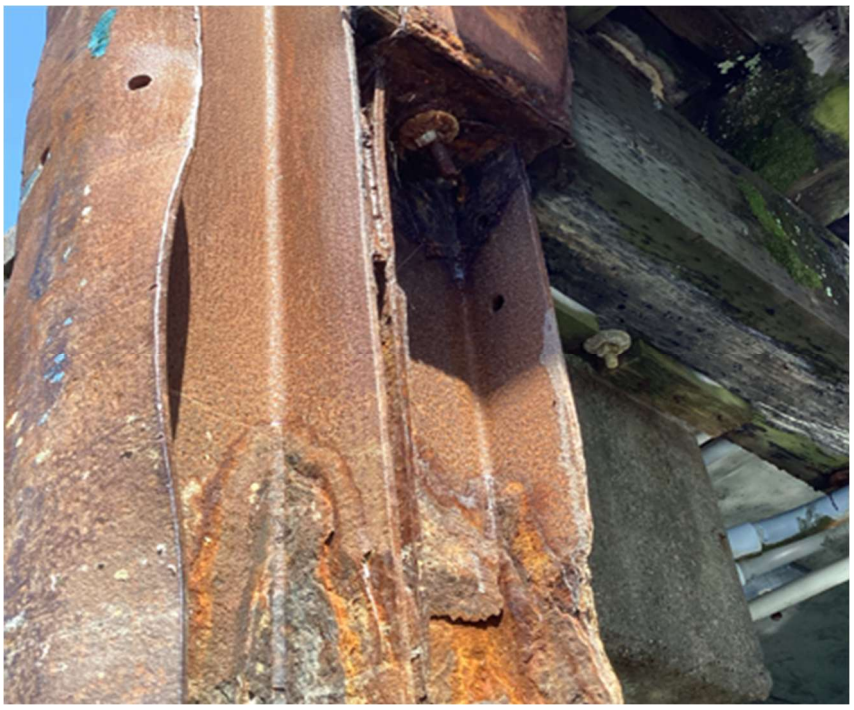
## Substructure

The original structure consists of timber caps that are supported by timber pile. The timber pile were sounded, where accessible, and no decay was found. There was an abundance of marine growth along the pile near the tidal zone, which was expected. There were some checks on many of the pile, but overall, the pile were in good condition. Similar to the pile, the timber caps were also sounded and no decay was identified. There are some light drying checks, but nothing larger than 1/8-inch. Several caps were heavily saturated from water infiltrating the deck. This was predominantly located near the end of the dock where active unloading was being conducted.

Timber Pile and Cap

Timber Pile Checking

There are several steel H-pile along the exterior end of the original dock. These pile appear to have replaced the original timber pile and are heavily corroded with over 50% section loss.

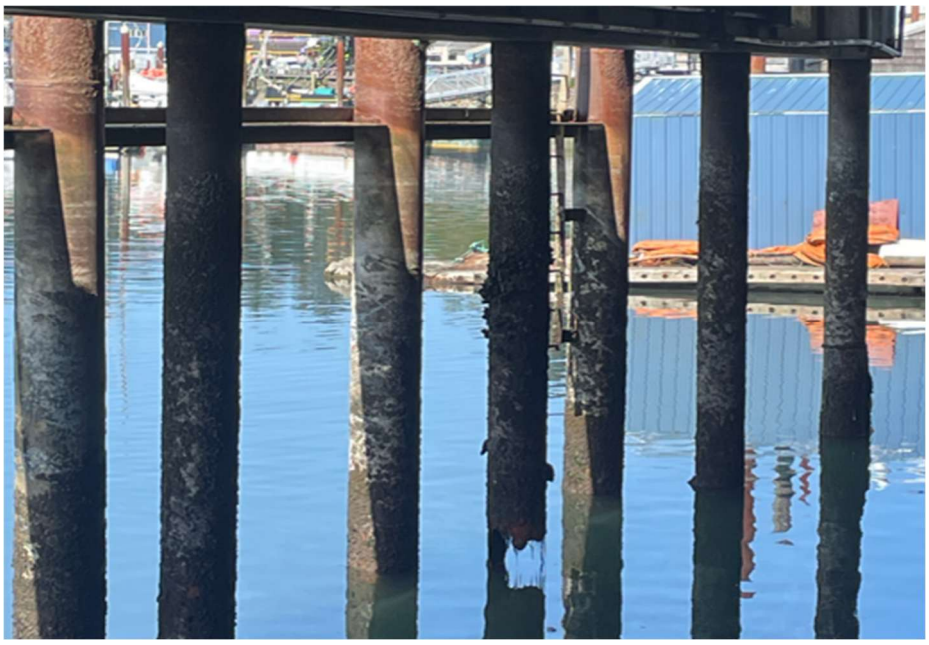


Exterior Steel Pile Corrosion

The newer portion of the structure is supported by reinforced concrete caps and steel pile. The concrete caps appear to be in good condition with only minor defects. The exterior face of the cap over the water is lightly abraded with the exposure of some aggregates. There are some vertical cracks at each pile and measure less than 0.012-inches.

Concrete Cap Exterior Face

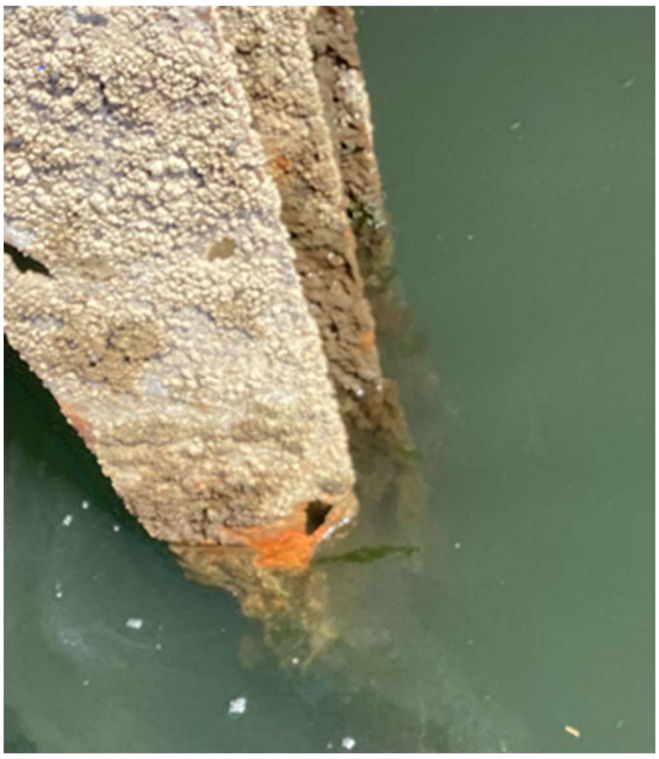
The steel pile are uncoated and are heavily corroded. The heavier corrosion was identified at the top 1-foot of the pile and along the tidal zone. The pile have extensive laminar corrosion, heavy pitting and severe section loss. The third pile from the west end of the structure was fully severed and no longer supporting load. All pile have heavy marine growth along the tidal zone similar to the timber pile.



Pile 3 at the West End Severed

Pile Corrosion at the Cap Interface

The dock also has steel fender pile that have been installed along the exterior face of the dock. These pile are heavily corroded, especially those that are installed along the older portion of the dock. These pile have over 50% section loss and in time will provide limited protection to the dock.



Fender Pile Corrosion at Waterline

## Conclusion

Overall, the structure is in fair condition and needs some immediate repairs to the following members:

- Pile 3 along the western end of the dock is fully severed and no longer supporting load.
- Broken timber girder located near the end of the dock along the centerline of structure.

As discussed on site, these areas need to be delineated so no equipment can access the compromised areas.

Thank you for having DOWL perform this work, and we hope to continue our services with the Port to provide any future Engineering assistance. If you have any questions about our findings, please do not hesitate to contact us.

Sincerely,

Mike Hawkins

Digitally signed by Mike Hawkins
DN: CN=Mike Hawkins, OU=Standard, OU=Users, OU=Staff, DC=DOWL, DC=COM
Date: 2025.05.27 07:18:03-07'00'

Michael Hawkins, P.E., CBSI
Project Manager

# APPENDIX 7:
# COASTAL METOCEAN MEMORANDUM

# Memo

| | |
|---|---|
| Date: | Tuesday, July 29, 2025 |
| Project: | Port Dock 7 Replacement, Port of Newport |
| To: | Nick Robertson, PE, SE (DOWL) |
| From: | Madison Heppe, PE (HDR)<br>Ronny McPherson, PE (HDR) |
| Subject: | Coastal Metocean |

The purpose of this memorandum is to document coastal metocean conditions that can be used to support preliminary (30%) design, particularly loading forces for piles, for Port Dock 7 (PD7) of the Port of Newport (Port) Commercial Marina. The project vicinity and features discussed in this memo are shown in Figure 1.

**Figure 1. Project vicinity overview. Current data stations are in green. Tide data station in red.**


## Tides

NOAA tide gauge South Beach, OR (Station ID 9435380) is located at the Marine Science Center at the Port of New Port (Figure 1). Table 1 shows tidal datums referenced in feet (ft) relative to Mean Lower Low Water (MLLW) and North American Vertical Datum on 1988 (NAVD88) for the 1983-2001 epoch.

**Table 1. Tidal Datums for South Beach, OR (9435380)**

| DATUM | DATUM NAME | HEIGHT (FT MLLW) | HEIGHT (FT NAVD88) |
|---|---|---|---|
| HAT | Highest Astronomical Tide | 10.62 | 9.85 |
| MHHW | Mean Higher High Water | 8.34 | 7.57 |
| MHW | Mean High Water | 7.64 | 6.87 |
| MTL | Mean Tide Level | 4.51 | 3.74 |
| MSL | Mean Sea Level | 4.45 | 3.68 |
| MLW | Mean Low Water | 1.38 | 0.61 |
| NAVD88 | North American Vertical Datum of 1988 | 0.77 | 0.00 |
| MLLW | Mean Lower Low Water | 0.00 | -0.77 |
| LAT | Lowest Astronomical Tide | -2.80 | -3.56 |

## Extreme Water Levels

The 1% annual exceedance probability (AEP) level is 4.00 ft above Mean Higher High Water (MHHW) (12.34 ft relative to MLLW) for NOAA tide gauge South Beach, OR (9435380).

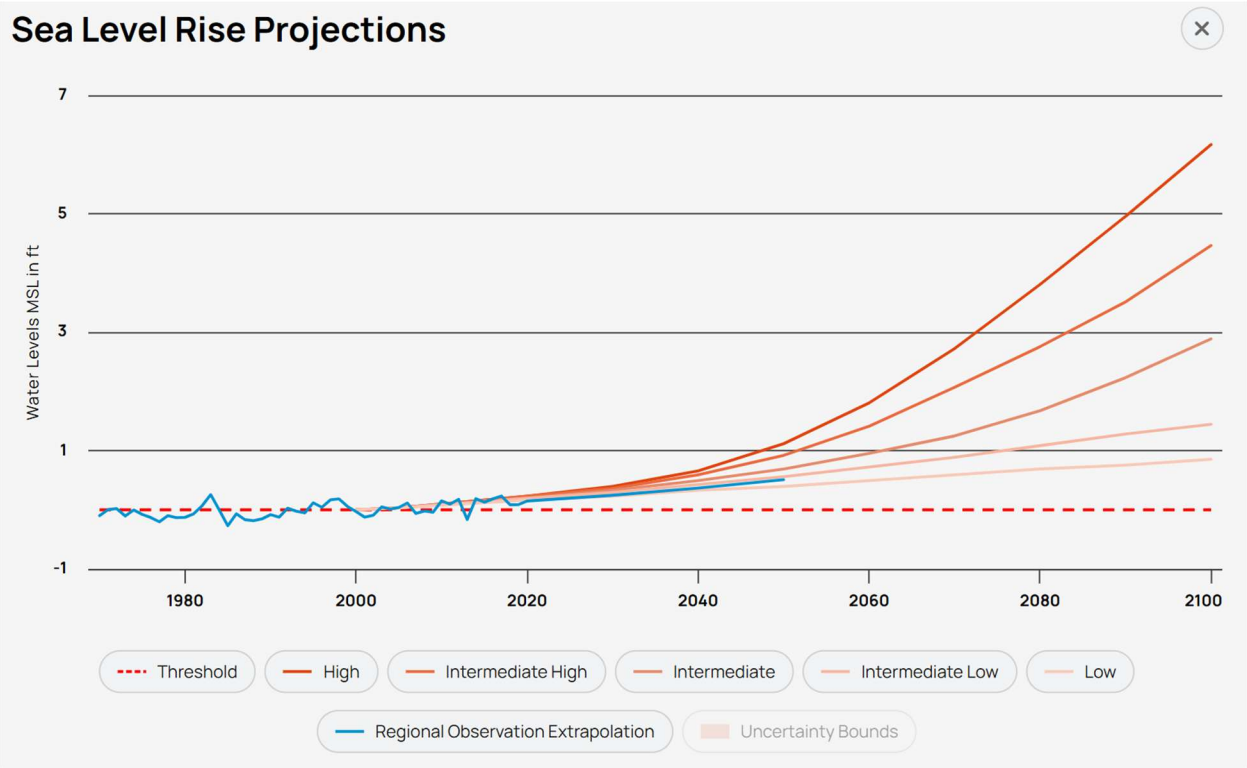
## Sea Level Change

For NOAA tide gauge South Beach, OR (9435380), the relative sea level trend is 1.78 millimeters/year (mm/yr) with a 95% confidence interval of +/- 0.58 mm/yr based on monthly mean sea level data from 1967 to 2024; this is equivalent to a change of 0.59 ft in 100 years.

Figure 2 from the NOAA Sea Level Calculator[1], which uses data from the 2022 Interagency Technical Report (Sweet et al. 2022), shows the sea level rise scenarios for a range of future warming conditions for South Beach, OR. Under the Intermediate scenario, sea level is expected to rise 0.95 ft from 2020 to 2060.

[1] Sea Level Calculator

**Figure 2. Sea Level Rise for South Beach, Oregon from the NOAA Sea Level Calculator**

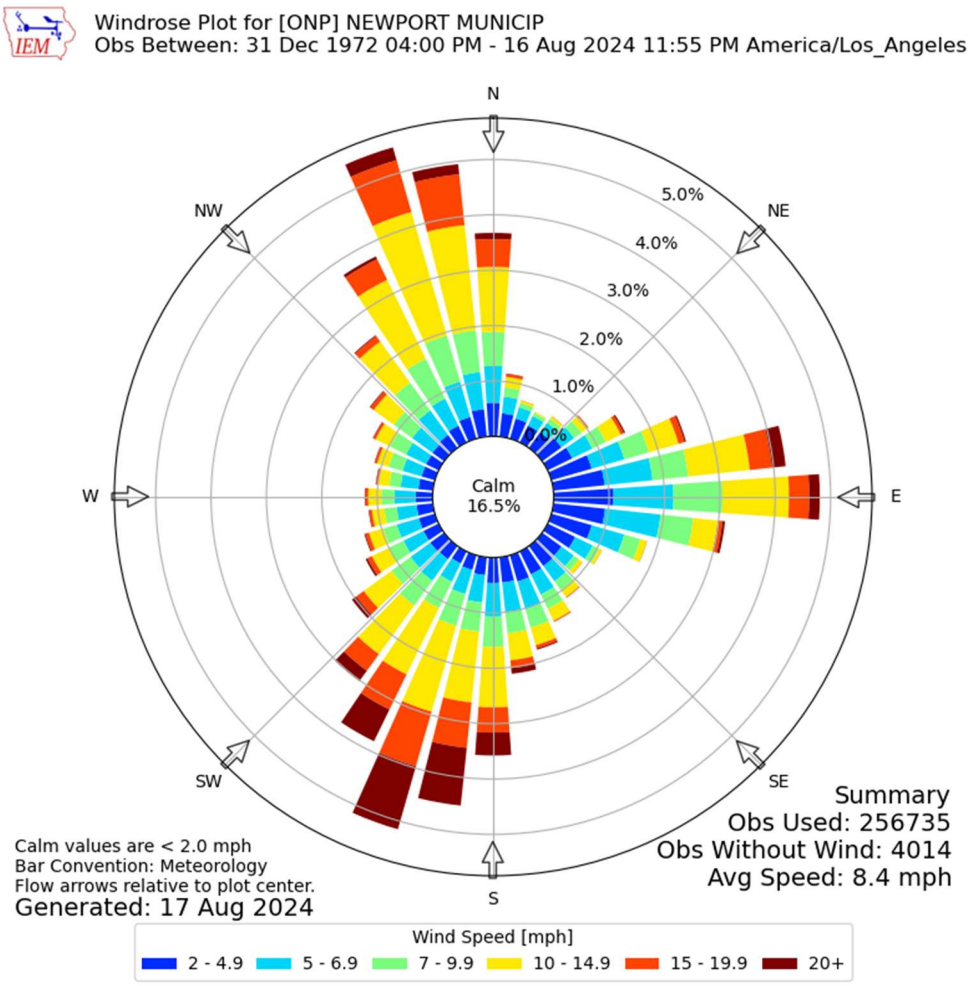



## Wind

Per wind data observations from 1972 through 2024 at the Newport Municipal Airport, wind in the region comes primarily from the north northwest (NNW), south southwest (SSW), and east with wind speeds reaching over 20 miles per hour (mph) from each of these directions (Figure 3).

The Port is sheltered from waves by a breakwater. Assuming zero wave energy transmission through this breakwater, wind wave development is limited, allowing for only small waves locally generated between the breakwater and the harbor, or waves that come through the entrances. The entrances to the Port are approximately orientated to the west and the southeast. Since the entrances are not oriented in a primary wind direction, minimal wave action is anticipated to travel through the entrances.

**Figure 3. Wind Rose at Newport Municipal Airport, from Iowa State University, Iowa Environmental Mesonet**




Extreme winds were obtained from the American Society of Civil Engineers (ASCE) hazards tool (ASCE 2025) for a location in the Project vicinity (44.630 N, 124.044 W). The ASCE/Structural Engineering Institute (SEI) 7-22 Standard 3-second gust speeds were converted to 2-minute winds (Table 2) using the US Army Corps of Engineers (USACE) *Shore Protection Manual* procedures (USACE 1984, pp. 3-27 to 3-29).

**Table 2. ASCE/SEI 7-22 winds near Project site**

| Mean Recurrence Interval (MRI) (years) | 3-Second Gust Wind Speed (mph) | 2-Minute Duration Wind Speed | |
|---|---|---|---|
| | | (mph) | (m/s) |
| 10 | 65 | 50 | 22 |
| 25 | 71 | 55 | 25 |
| 50 | 75 | 58 | 26 |

| | | | |
|---|---|---|---|
| 100 | 81 | 63 | 28 |
| 300 | 89 | 69 | 31 |

## Waves

PD7 is sheltered behind a breakwater, and therefore minimal wave action is expected. A wave hindcasting monogram (Figure 4) was used to get an estimate of possible wave characteristics. The variables (fetch and wind speed) and results (significant wave height and peak period) are presented in Table 3. The maximum possible fetch is from the southeast (through the eastern entrance) and is approximately 0.6 miles or 1 kilometer (km). The 100-year 2-minute duration wind speed was used. The result is a significant wave height of 1.5 feet and a peak period of 1.9 seconds.

These results are considered conservative for a number of reasons. Southeast is not a primary wind direction in this area, but it is the orientation that gives the longest possible fetch distance. The wave celerity (assuming deep water, $C_0 = \frac{gT}{2\pi}$) is 9.7 ft/s. The time for a wave to travel the 1 km fetch distance is 5.6 minutes. Longer duration averaged wind speeds are lower than shorter duration averaged wind speeds. As such, using the 2-minute averaged wind speeds is conservative. The results are also considered conservative given information regarding the modeling and design of the rubblemound breakwater, described below.

A rubblemound breakwater extension was constructed on the western end of the timber breakwater in 1998 (Figure 1) to reduce wave energy coming from the Yaquina ocean (west) entrance. The rubblemound breakwater was designed to reduce wave heights within the marina to less than 1.5 ft for a storm of one percent probability of exceedance (USACE 2025).

The design of this rubblemound breakwater was supported by a 1996 physical model study by the USACE Engineer Research and Development Center (ERDC) (Briggs 1996). Waves were generated approximately at the U.S. Highway 101 bridge and transformed as they approached the marina. The following test waves and water levels were run in the model: wave periods of 12.5, 13.4 and 16.7 seconds; wave heights of 3, 6, and 8 ft; and still water levels (SWL) of 0, +5, +8 and +11 ft, MLLW. Wave gages 8 and 9 are located at PD7 (Figure 5). From the model results, the highest wave height at these gages was 0.9 ft (Table 10 in Briggs 1996). This study gives credence that the 1.5 ft significant wave height found using the monogram (Table 3. Design Wave CharacteristicsTable 3) is conservative.

**Table 3. Design Wave Characteristics**

| Direction | Fetch (km) | Wind speed, 100-yr (m/s) | Significant Wave Height, Hs (m) | Significant Wave Height, Hs (ft) | Peak spectral period, Tp (sec) |
|---|---|---|---|---|---|
| Southeast | 1 | 28 | 0.45 | 1.5 | 1.9 |

**Figure 4. Wave hindcasting monogram (from Kamphius 2010 after USACE 1984 [Shore Protection Manual])**

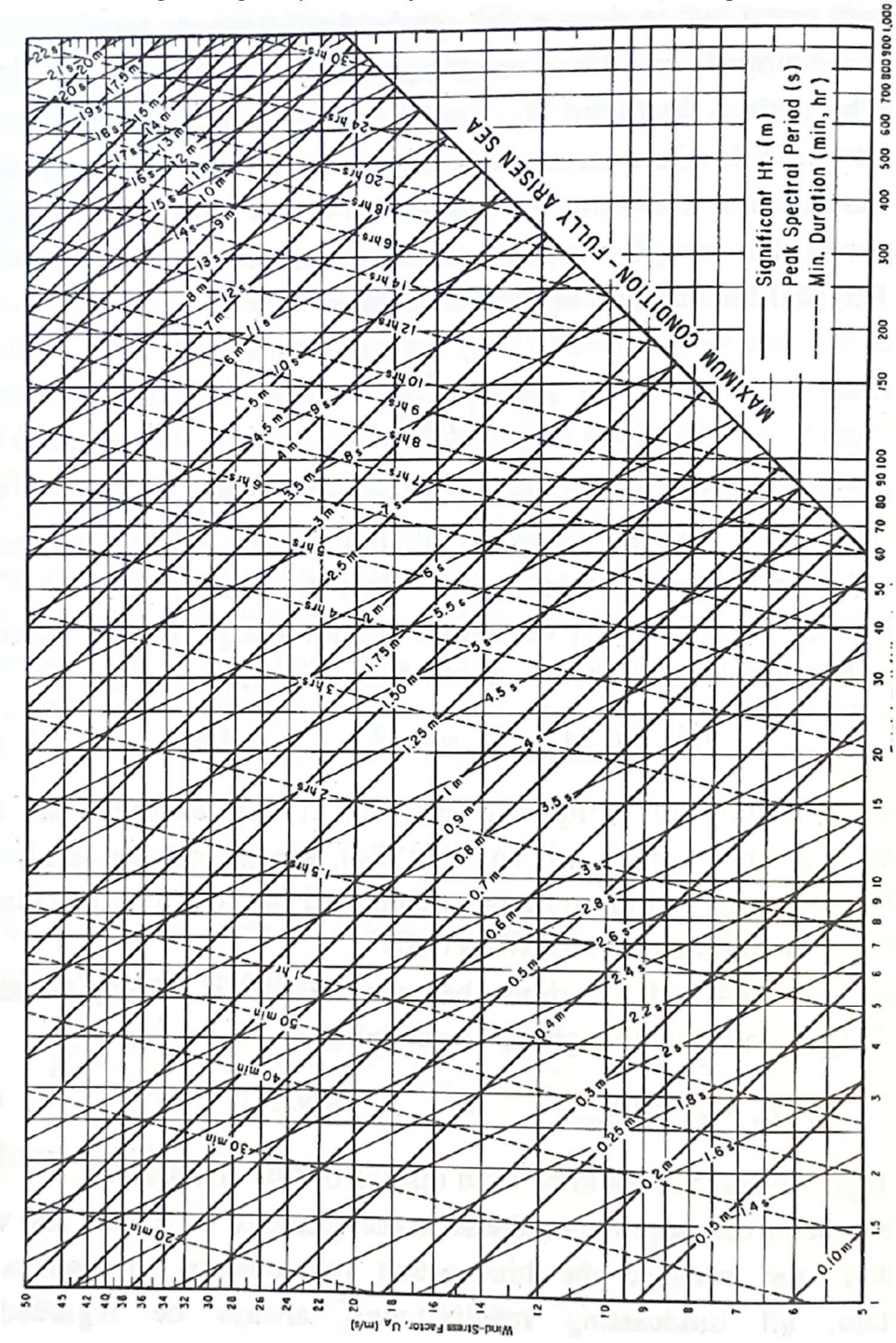
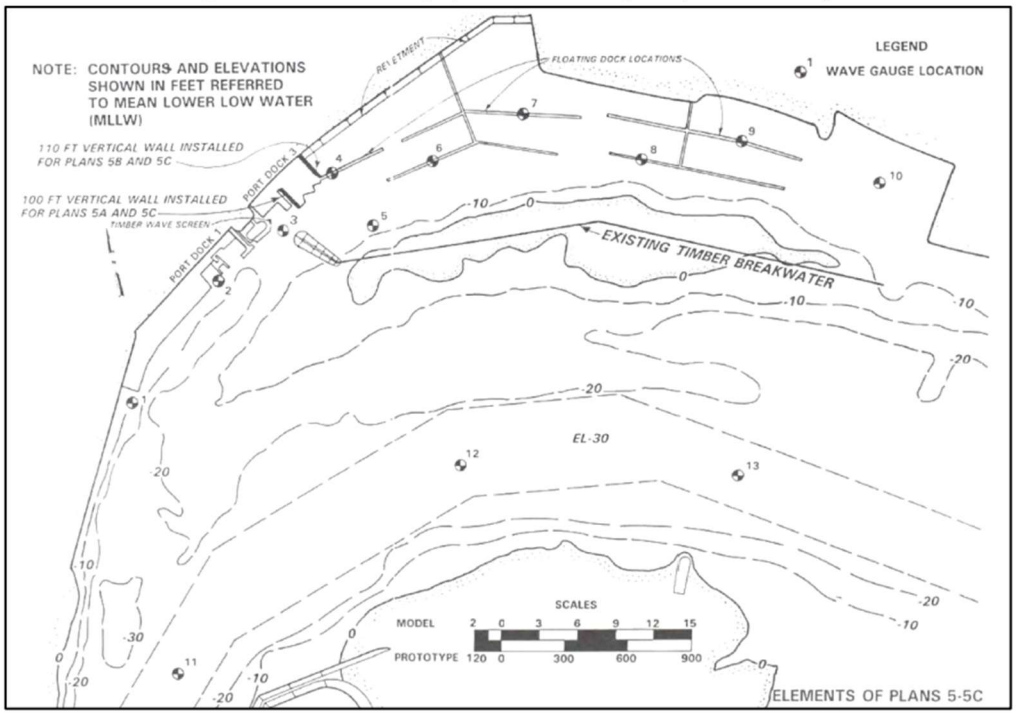


**Figure 5. ERDC 1996 physical model layout (Bottin, 1996)**




## Currents

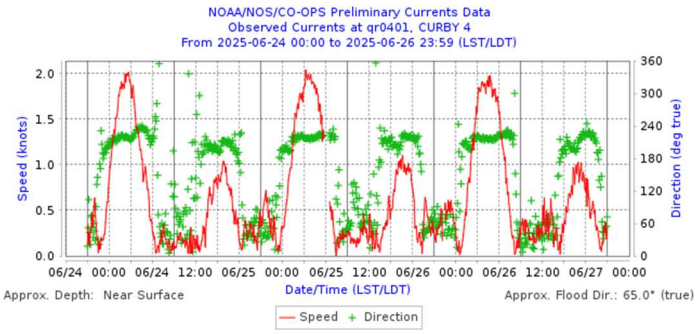
There are two NOAA current stations near the Port, Curby 4 (qr0401) is down river and Curby 5 (qr0501) is upriver (Figure 1). The period of data collection for both of these stations is spring through fall for 2022 and 2023, with deployment for 2025 since April. Given the period of data collection, no winter storms nor king tides (around three occur each winter) could be analyzed. Instead, a month of recent data was analyzed (June 17 – July 18, 2025) including a spring tide and neap tide within that month for each current station. Spring tides occur around the New Moon and Full Moon when there is the greatest difference between high and low tide. Conversely, neap tides are when the tidal range is the smallest. Figure 6 displays the currents data for a recent spring tide (June 24-26, 2025) and a recent neap tide (July 1-3, 2025) for both current stations. The maximum current during the month reviewed (June 17 – July 18, 2025) was 2.2 knots at Curby 5 during the spring tide (June 24-26), with current directions around 300 degrees.

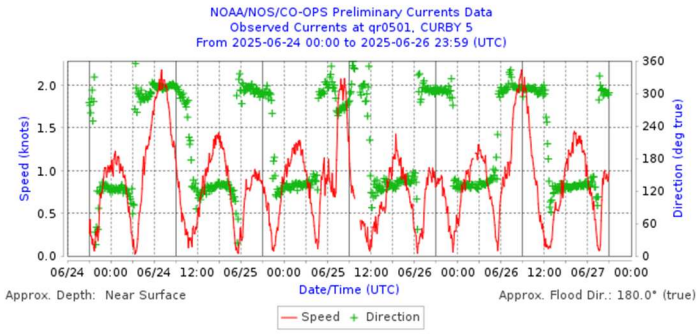
Currents were measured in the 1996 physical model study. The highest current simulated in the marina was 1.5 foot per second (0.89 knots) (Briggs 1996). The modeled currents came from the west through the western marina entrance - an example model study figure is shown in Figure 7. The 2.2 knots measured at Curby 5 is in the river to the east. It is not known how currents would transform coming into the marina from the east entrance. Using 2.2 knots is an approximate conservative estimate.

**Figure 6. Currents data for Curby 4 and Curby 5 for a spring tide and neap tide, from NOAA Tides and Currents**

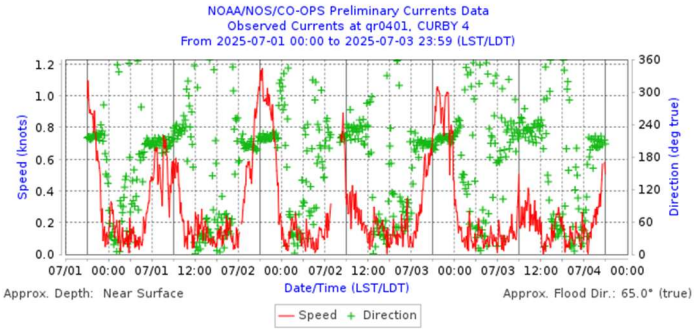
**Curby 4** | **Curby 5**

**Spring Tide (June24-26, 2025)**




**Neap Tide (July 1-3, 2025)**



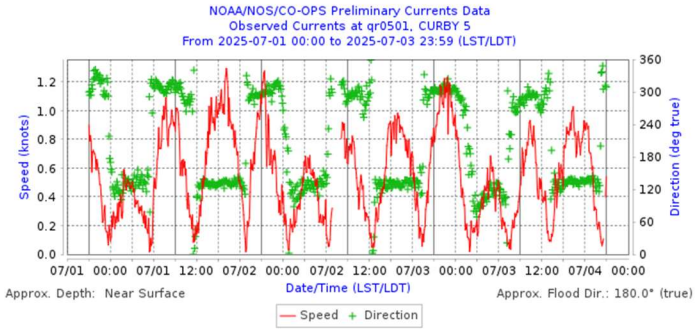




**Figure 7. ERDC 1996 physical model results for the rubble breakwater project condition for 12.5 sec, 8 ft incident wave at SWL of +8 MLLW (Bottin 1996)**

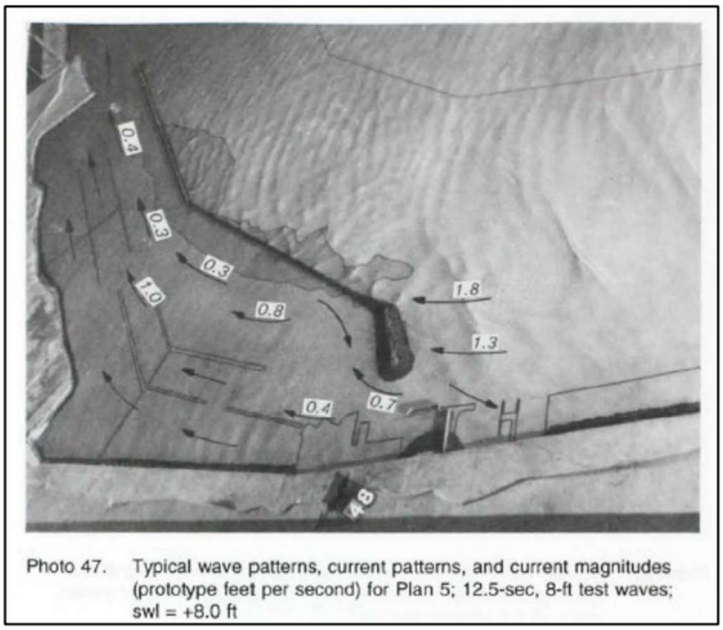



Photo 47. Typical wave patterns, current patterns, and current magnitudes (prototype feet per second) for Plan 5; 12.5-sec, 8-ft test waves; swl = +8.0 ft

## Boat Wakes

It is assumed that a “slow no wake” zone is maintained at the Port with a speed limit in the marina of 5 mph. For a tranquil harbor, boat wakes are typically less than 1 ft. To enter the marina, vessels will need to slow down to get around the breakwater, so it is unlikely they would accidentally speed into the marina. In the rare circumstance a boat travels faster than allowed, possible boat wake heights were investigated using equations from the Federal Waterways Engineering and Research Institute (FWERI) Bulletin No. 88.

When vessels are moving, they produce diverging and transversal waves from the bow and from the stern. These waves are known as the secondary wave system (Figure 8). The waves are superimposed and create interference lines where the largest waves occur.

The height of secondary waves at the interference line of diverging bow and stern waves, $H_{Sek}$, was computed using Equation 5-43 from FWERI No. 88. The height of pure secondary transversal stern waves, $H_{Sek,q}$, was computed using Equation 5-47 from FWERI No. 88. The following variable assumptions were made:

- The USACE channel is 190 ft wide, so the distance between the ship’s axis and bank line (in this case the edge of PD7 area) is 95 ft.
- The widest vessel beam is 39 ft.
- The distance between the ship’s side and the bank line is 75.5 ft.
- The wave height coefficient for conventional inland navigation vessels and tugs was assumed ($A_w = 0.25$).
- For ship speed through water, $v_s$, currents were not considered, and the following relationship was used (FWERI No. 88 pg. 46): $v_s = 0.97_{vkrit}$, where $v_{krit}$ is the vessel’s limiting speed.
- The wave generating ship length, corresponding to length at the waterline, was assumed to be 95 ft.

Table 4. Secondary wave heights for passing vessels shows the secondary wave height results for vessel speeds of 5, 10 and 15 mph. At 5 mph, the secondary wave heights are anticipated to be 0.3 ft or less. It is not anticipated that vessels would travel faster than 5 mph, especially large vessels such as the one used in these calculations.

**Figure 8. Secondary wave system (FWERI No. 88, Figure 5.20)**

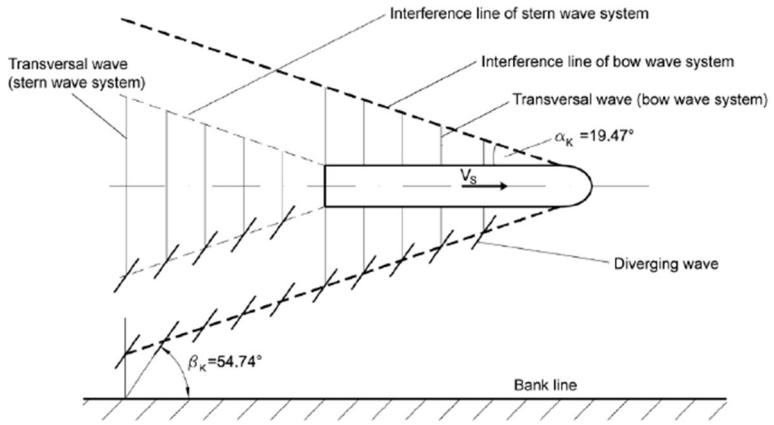



**Table 4. Secondary wave heights for passing vessels**

| Vessel velocity, $v_s$ (mph) | Height of secondary waves at interference line of diverging bow and stern waves, $H_{Sek}$ (ft) | Height of pure secondary transversal stern waves, $H_{Sek,q}$ (ft) | Notes |
|---|---|---|---|
| 5 | 0.19 | 0.31 | 5 mph is the most likely scenario due to the marina being a “slow no wake” zone”. |
| 10 | 1.24 | 1.26 | 10 mph would be a rare event with a large vessel moving quickly near the harbor. |
| 15 | 3.65 | 2.83 | 15 mph would also be a rare event with a large vessel moving dangerously fast in proximity to the marina. |

# Summary

The design metocean conditions are summarized in Table 5.

**Table 5. Design Metocean Conditions**

| Parameter | Value | Units |
|---|---|---|
| Water level 1% AEP | 12.34 | ft MLLW |
| Sea level rise, 2060 Intermediate | 0.95 | ft |
| Wind, 100-year, 2-minute duration | 63 | mph |
| Significant wave height | 1.5 | ft |
| Peak wave period | 1.9 | sec |
| Currents speed | 2.2 | knots |

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Port of Newport

# STAFF REPORT

| | |
|---|---|
| **DATE:** | **September 18, 2025** |
| **RE:** | **Abandoned and Derelict Vessels** |
| **TO:** | **Paula Miranda, General Manager** |
| **ISSUED BY:** | **Aaron Bretz, Director of Operations** |

## BACKGROUND

At the request of several fishermen, we've included an overview on the agenda of the Abandoned and Derelict Vessel situation at the Port of Newport. This issue involves numerous factors, and we have been working hard on getting state laws changed to make the situation easier for the Port to deal with, and to make those responsible for the vessels accountable for their actions.

I was heavily involved in a Department of State Lands working group on ADV's, drafting language for SB 795 (attached) and providing testimony to the Senate Natural Resources Committee about the impacts of abandoned and derelict vessels on the state waterways. This is a major nationwide issue, and it effects all the coastal ports in Oregon. SB795 passed this spring, and goes into effect this fall. We've been working toward establishing DSL authority and funding for several years, and things are finally falling into place.

The Port currently has 17 abandoned vessels that we are seeking funding for disposal. Often, those who abandon these vessels at Port facilities lack the resources to dispose of these vessels, and they lack assets that the Port can seize to fund the disposal of these vessels. However, Port Facilities Code and the Moorage License Agreement provides the Port with the authority to both seize vessels and to charge the owners for handling and disposal of these vessels.

## DETAIL

The attached list of vessels is our current inventory of abandoned/derelict vessels.

Port Facilities Code Section 1.10 establishes requirements for registration and moorage at the Port of Newport. Important points to remember:

- Vessels moored at the Port of Newport are not under the custodial care of the Port of Newport (again referenced in Section 2.25)
- Vessel point of contact must be identified
- Insurance requirements (minimums) are established each year by resolution during the budget process
- Currently in the code, long term moorage holders are required to name the Port as an "additional insured" and provide proof within 30 days of registration; we are seeking to change the 30 days due to problems with long term moorage holders not complying with insurance

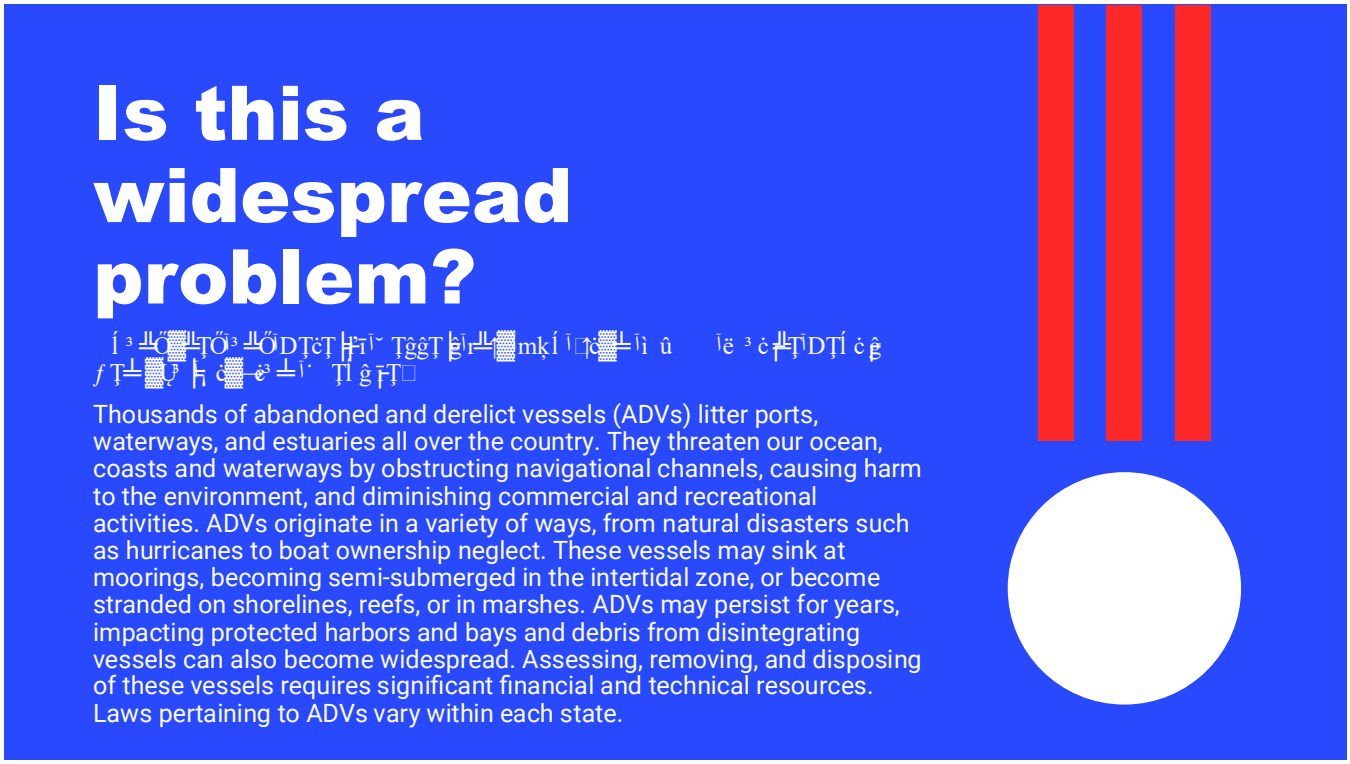
requirements. We generally encounter more risk of vessels sinking from those vessels that fail to provide proof of insurance.

- Moorage is non-transferable because when ownership is passed along, a new agreement with the Port is necessary. The Port refunds “unused” moorage fees.

Port Facilities Code Section 1.17 provides a Port definition for an “abandoned” vessel.

Port Facilities Code Section 2.22 requires ALL vessels at the Port to be securely moored, completely seaworthy, fully operational and ready for immediate cruising in local waters. It provides authority to the Port to take “Safekeeping Actions” on a vessel that the Harbormaster determines the existence of several conditions that would make it unseaworthy, while establishing that the Port is not required to do so. The safekeeping of any vessel moored at the Port of Newport is solely the responsibility of the operator and owner, if different.

Disposal of vessels in Oregon:



## What are the contributing factors?

- End of life vessel
- Low utility left (permits, insurance, other factors)
- Economical and Maritime influences
- Is living aboard a vessel considered an affordable alternative to housing?
- Regulation
- Disposal supply chain
- Cost of proper disposal
- “NO SHIP BREAKING”
- Difference between an ADV and a “wreck”


## Is it such a far -fetched possibility to abandon a 224’ ship on our waterway?


disposal of 10 vessels (including 3 sunk) from a site on the Columbia River in Goble, Oregon. The site began as a restoration project for a derelict auto ferry and grew as additional vessels were brought to the location. After a coordinated investigation, hearings, and notices the lease for the site was terminated. Before contractors could remove the vessels hazardous materials and waste, including oil,

PCB, and asbestos had to be removed from the site. The cost of the project increased as complications with the removal of the 230 foot ferry required it to be partly disassembled on site before transport. Final costs were estimated to be $12.2 million, and were obtained through a one-time allocation for the cleanup. *Photo: US Coast Guard, 2015*

# What does this mean to the Port and to Yaquina Bay?

# More abandoned boats to come..

- This is the same boat pictured previously, still in South Beach currently
- Department of State Lands is standing up an ADV program with funding, but the barriers to disposal are very real
- How do you incentivize people to do the right thing, while at the same time hold them accountable for dumping a liability on the public?

# Sunk/Abandoned

- Port of Newport operating budget roughly $29M, unrestricted tax receipts of about $130K
- Insuring against uninsured vessels is not a thing in the insurance market
- Ports are NOT insurance, nor are they response entities/salvors
- There are true, tangible costs to Ports trying to deal with these situations and the Port cannot avoid them

# What is the Port of Newport doing to respond?

- Actively supporting Oregon Department of State Lands in their effort to get federal funding
  - Disposed of a dozen vessels in 2022 for about $86K
  - Currently in possession of 16 vessels awaiting disposal
  - Directing removal of unseaworthy boats
  - Removed 30 day window to provide insurance certificates for long-term moorage
  - Employed Wharfinger(s)
  - Next time you hear “NO SHIPBREAKING” ask where and when those vessels should be disposed

| Slip | Reg # | Vessel Name | LOA | Beam | Draft | Material | Departure Date |
|---|---|---|---|---|---|---|---|
| ASD01 | OR597AEA | Red Dragon | 41 | 8 | 2 | Steel | 2/14/2026 |
| ASD01 | 555459 | Buster | 50 | 20 | 5 | Wood | 2/14/2026 |
| ASD01 | OR455AHA | Content | 48 | 10 | 5 | Wood | 2/14/2026 |
| ASD01 | OR020YF | Zero Balance II | 28 | 10 | 3 | Fiberglass | 8/25/2029 |
| B61 | OR670LM | Emancipator | 38 | 11 | 2 | Fiberglass | 2/26/2029 |
| C85 | OR352WC | Sami Rae | 26 | 11 | 2 | Fiberglass | 8/13/2029 |
| D37 | OR425MP | Therapy | 32 | 12 | 2 | Fiberglass | 3/1/2029 |
| ASD01 | OR126YH | Pacific Rim | 44 | 12 | 8 | Wood | 2/14/2026 |
| PD7 | 241493 | Elizabeth | 38 | 12 | 4 | Wood | |
| PD7 | OR544AGY | Darandy | 42 | 12 | 4 | Wood | |
| CPB | 242041 | Cleora | 37 | 12 | 4 | Wood | |
| PD7 | 227859 | Azalea | 60 | 12 | 8 | Wood | |
| PD7 | OR936AFK | WesternHunter | 66 | 19 | 7 | Steel | |
| PD7 | 270816 | Sea Wolf | 46 | 12 | 4 | Steel | |

# Enrolled
# Senate Bill 795

Printed pursuant to Senate Interim Rule 213.28 by order of the President of the Senate in conformance with presession filing rules, indicating neither advocacy nor opposition on the part of the President (at the request of Governor Tina Kotek for Department of State Lands)

CHAPTER .....

AN ACT

Relating to marine cleanup; amending ORS 274.376, 279A.050, 830.908, 830.911, 830.918, 830.923, 830.933, 830.936, 830.938, 830.940, 830.944 and 830.948; repealing ORS 830.928 and 830.931; and prescribing an effective date.

**Be It Enacted by the People of the State of Oregon:**

**SECTION 1.** ORS 830.908 is amended to read:

830.908. As used in ORS 830.908 to 830.948:

(1) "Abandoned vessel" means a vessel that [*has been left without authorization on public or private land, the waters of this state, or any other water*] **is on public or private land, the waters of this state or any other water without authorization**.

**(2) "Authorized agency" means a law enforcement agency, a federal agency, the State Marine Board or any other public body, as defined in ORS 174.109.**

[*(2)*] **(3)** "Business day" means any day other than a Saturday, a Sunday or a legal holiday as described in ORS 187.010.

[*(3)*] **(4)** "Derelict vessel" means a vessel that is on the waters of this state **or is in such close proximity to the waters of this state that the vessel is likely to enter the water** and that is:

(a) Sunk or in imminent danger of sinking;

(b) Obstructing a waterway;

(c) Endangering life or property; [*or*]

(d) In such dilapidated condition that it is in danger of becoming [*a significant*] **an** environmental hazard**, which may be evidenced by instances of leaking fuel, sewage or other pollutants** [*as evidenced by repeated and documented instances of leaking fuel, sewage or other pollutants.*]**; or**

**(e) Likely to meet one of the conditions listed in this subsection if the vessel enters the water.**

[*(4) "Enforcement agency" means a law enforcement agency, a federal agency, the State Marine Board or any other public body, as defined in ORS 174.109, that has responsibility for land or water on which an abandoned vessel or a derelict vessel is located.*]

**(5) "Marine debris" has the meaning given that term in ORS 274.376.**

[*(5)*] **(6)** "Owner" means a person who [*has a property interest in a vessel*] **is listed as the owner of a vessel in the records of the State Marine Board or another state agency**.

[*(6)(a)*] **(7)(a)** "Vessel" means a boat, a boathouse as defined in ORS 830.700, a floating home as defined in ORS 830.700, or any other floating structure that is normally secured to a pier or pilings.

(b) "Vessel" does not include**:**

**(A)** A dock as defined in ORS 307.120**;**

**(B) A boat that is no longer capable of being used as a means of transportation on the water due its dilapidated condition; or**

**(C) Any structure or component of a structure that, in its current state, does not meet the definition of boathouse or floating home in ORS 830.700**.

**SECTION 2.** ORS 274.376 is amended to read:

274.376. As used in ORS 274.376 to 274.388:

(1) "Abandoned structure" means a structure that has been left without authorization on, under or over state-owned submerged or submersible lands.

[*(2) "Abandoned vessel" has the meaning given that term in ORS 830.908.*]

[*(3)*] **(2)** "Derelict structure" means a structure that is on, under or over state-owned submerged or submersible lands and that is:

(a) Sunk or in imminent danger of sinking due to its dilapidated condition;

(b) Obstructing a waterway;

(c) Endangering life or property; or

(d) In dilapidated condition such that it is in danger of becoming an environmental hazard [*as evidenced by instances of leaking fuel, sewage or other pollutants*].

[*(4) "Derelict vessel" has the meaning given that term in ORS 830.908.*]

[*(5)*] **(3)** "Marine debris" means any manufactured or processed solid material**, or a boat, as defined in ORS 830.700, that is no longer capable of being used as a means of transportation on the water due its dilapidated condition,** that:

(a) Persists in the marine environment; and

(b) Is disposed of or abandoned, either with intention or unintentionally, in **or in close proximity to** any waters of which the submersible or submerged lands belong to the State of Oregon.

[*(6)*] **(4)** "Owner" means a person who has a property interest in a structure [*or vessel*].

**SECTION 3.** ORS 830.911 is amended to read:

830.911. [*(1) An enforcement agency may seize a vessel as an abandoned vessel if:*]

[*(a) The enforcement agency has probable cause to believe the vessel is an abandoned vessel; and*]

[*(b) An owner does not move the vessel to a place where the vessel can be lawfully kept within the time specified in the notice given under ORS 830.918, or within such additional time as may be specified in an order issued under ORS 830.936 (6).*]

[*(2) An enforcement agency may seize a vessel as a derelict vessel if:*]

[*(a) The enforcement agency has probable cause to believe the vessel is a derelict vessel and the enforcement agency documented the facts supporting that belief; and*]

[*(b) The owner does not correct the problems identified in the notice given under ORS 830.918 within the time specified in the notice, or within such additional time as may be specified in an order issued under ORS 830.936 (6).*]

[*(3) A vessel may be seized as a derelict vessel by reason of an imminent danger of sinking only if the enforcement agency has documented the facts supporting the belief that the vessel is in imminent danger of sinking.*]

[*(4) If an enforcement agency has probable cause to believe a vessel is an abandoned vessel or a derelict vessel, the enforcement agency may:*]

[*(a) Secure the vessel in such a manner as to prevent harm to life or damage to property or to prevent the vessel from becoming a hazard to navigation.*]

[*(b) Take action to mitigate any imminent environmental threat the vessel poses.*]

[*(c) Salvage, tow and store the vessel.*]

**(1) If an authorized agency has probable cause to believe a vessel is an abandoned vessel or a derelict vessel, the enforcement agency may take any of the following actions:**

**(a) Initiate seizure of the vessel.**

**(b) Secure the vessel in such a manner as to prevent harm to life or damage to property or to prevent the vessel from becoming a hazard to navigation.**

**(c) Take action to mitigate any imminent environmental threat the vessel poses.**

**(d) Tow and store the vessel.**

**(2) When an authorized agency takes action as described in subsection (1)(b), (c) or (d) of this section, the agency shall make a good faith effort to contact the owner of the vessel.**

**(3) An authorized agency that seizes an abandoned vessel or derelict vessel shall give notice before the vessel is seized as provided in ORS 830.918.**

[*(5)*] **(4)** If an [*enforcement*] **authorized** agency has probable cause to believe a vessel is an abandoned vessel, the [*enforcement*] **authorized** agency may enter and inspect the interior of the vessel, and objects in plain view within the interior of the vessel, only to the extent necessary to identify the owners of the vessel.

[*(6)*] **(5)** If an [*enforcement*] **authorized** agency has probable cause to believe a vessel is a derelict vessel by reason of endangering life or property, or by reason of being in danger of becoming an environmental hazard, the [*enforcement*] **authorized** agency may enter and inspect the interior of the vessel, objects in plain view within the interior of the vessel, and closed compartments within the interior of the vessel, only to the extent necessary to determine whether the vessel endangers life or property, or is in danger of becoming an environmental hazard.

[*(7)*] **(6)** An Oregon State Police officer, a sheriff, a deputy sheriff or a municipal police officer may enter privately owned land for the purpose of determining whether a vessel is abandoned only with the consent of the landowner.

**SECTION 4.** ORS 830.918 is amended to read:

830.918. (1) [*Except as provided in ORS 830.923,*] At least 10 business days before seizing an abandoned vessel or a derelict vessel an [*enforcement*] **authorized** agency shall provide notice by:

(a) Attaching a notice to the vessel; **and**

**(b) If the vessel has or had a certificate under ORS 830.770 or 830.775 and the identifying numbers on the boat are clearly visible and legible as required under ORS 830.780, serve notice by first class mail or, if requested by the recipient of the notice, by electronic mail, to the owners.**

[*(b) If the vessel has or had a certificate under ORS 830.770 or 830.775, mailing notice to the persons last shown as owners of the vessel in the records of the State Marine Board; and*]

[*(c) Mailing notice to any other person for whom the enforcement agency has obtained a mailing address and who the enforcement agency has reason to believe is an owner of the vessel.*]

(2) The notice required under this section must include:

(a) The name, **mailing** address and telephone number of the [*enforcement*] **authorized** agency.

(b) A statement indicating whether the [*enforcement*] **authorized** agency proposes to seize the vessel by reason of being an abandoned vessel, a derelict vessel, or both.

(c) The [*time*] **date** by which the owner must act to [*avoid having the vessel seized*] **prevent seizure of the vessel by the authorized agency**.

[*(d) A statement indicating that if the vessel is seized, the owner will be liable for the costs of salvage, towing and storage of the vessel.*]

**(d) A statement indicating:**

**(A) That if the vessel is seized, the vessel and personal property left inside the vessel may be destroyed or sold and the owner may be liable for the costs of salvage, towing, storage and disposal of the vessel and personal property left inside the vessel;**

**(B) The amount of the costs that have accrued as of the date the notice is sent; and**

**(C) An estimate of the final costs.**

[*(e) A statement indicating that if the vessel is seized the vessel may be destroyed or sold if the costs of salvage, towing, storage and disposal are not paid.*]

[*(f)*] **(e)** A statement indicating the owner may request a hearing before the [*enforcement*] **authorized** agency seizes the vessel, and the time and manner in which a request may be made.

**(f) A statement that the vessel will be seized unless the problems identified in the notice are remedied and the vessel is moved to a place where it can be lawfully kept within the specified time frame. The vessel and the personal property left inside may be immediately**

**reclaimed by establishing to the agency's satisfaction proof of ownership or right to possession and payment of the costs that have accrued.**

**(g) A statement that the owner may be cited for abandoning a vessel or possession of a derelict vessel under ORS 830.944.**

[*(3) In addition to the requirements of subsection (2) of this section, if an enforcement agency proposes to seize a vessel by reason of being an abandoned vessel the notice required by this section must indicate that:*]

[*(a) The vessel will be seized unless the owner moves the vessel to a place where the vessel can be lawfully kept within the time specified in the notice; and*]

[*(b) The owner may be cited for failure to remove an abandoned vessel if the owner fails to move the vessel to a place where the vessel can be lawfully kept within the time specified in the notice.*]

[*(4) In addition to the requirements of subsection (2) of this section, if an enforcement agency proposes to seize a vessel by reason of being a derelict vessel the notice required by this section must indicate:*]

[*(a) The reason or reasons that the enforcement agency believes that the vessel is a derelict vessel;*]

[*(b) That the vessel will be seized unless either the problems identified in the notice are remedied within the time specified in the notice; and*]

[*(c) That the owner may be cited for possession of a derelict vessel if the owner fails to remedy the problems identified in the notice within the time specified in the notice.*]

[*(5)*] **(3)** An owner of a vessel may request a hearing before an [*enforcement*] **authorized** agency seizes a vessel under ORS 830.908 to 830.948 by submitting a request for **a** hearing **within the time frame specified by the authorized agency, which must be at least** [*to the enforcement agency not more than*] 10 business days after the notice required by this section is given. The request must indicate [*if the owner contends that the vessel is not abandoned or derelict, or indicate such other*] specific grounds on which seizure of the vessel is challenged.

**SECTION 5.** ORS 830.923 is amended to read:

830.923. **An authorized agency may immediately remove and dispose of marine debris without notice.** [*(1) Nothing in ORS 830.908 to 830.948 affects the ability of an enforcement agency to immediately seize without notice a vessel that presents a hazard to navigation or an imminent threat to public health or safety.*]

[*(2) If an enforcement agency seizes without notice a vessel that presents a hazard to navigation or an imminent threat to public health or safety, and the enforcement agency wishes to dispose of the vessel under ORS 830.908 to 830.948, the enforcement agency shall provide notice as described in ORS 830.931.*]

**SECTION 6.** ORS 830.933 is amended to read:

830.933. (1) At any time before the date specified in the notice given pursuant to [*ORS 830.931 (2)*] **ORS 830.918**, any owner may reclaim the vessel **or personal property left inside the vessel** by:

(a) Paying all costs incurred by the [*enforcement*] **authorized** agency in salvaging, towing and storing the vessel **and the personal property left inside the vessel**; and

(b) Establishing to the satisfaction of the [*enforcement*] **authorized** agency that the owner is able to move the vessel to a place where the vessel can be lawfully kept.

(2) If a vessel **is** seized under ORS 830.908 to 830.948 [*is not reclaimed in the manner provided by this section*], title to the vessel and all personal property found in the vessel vests in the [*enforcement*] **authorized** agency, and the [*enforcement*] **authorized** agency may sell or otherwise dispose of the vessel and the property.

**SECTION 7.** ORS 830.936 is amended to read:

830.936. (1) If an owner of a vessel requests a [*preseizure*] hearing as provided in ORS 830.918 [*(5)*], the [*enforcement*] **authorized** agency may not seize the vessel until after the hearing.

(2) If an owner of a vessel requests a hearing as provided in ORS 830.918 [*(5) or 830.931 (4)*], the [*enforcement*] **authorized** agency shall set a time for the hearing that is no more than [*seven*] **10**

business days after the [*enforcement*] **authorized** agency receives the request. The [*enforcement*] **authorized** agency shall provide notice of the hearing to the person requesting the hearing, and to all other persons [*described in ORS 830.918 (1)*] **who were given notice under ORS 830.918**.

(3) If an owner of a vessel requests a hearing **conducted** under this section and fails to appear at the hearing, the owner is not entitled to another hearing **and the authorized agency shall seize and dispose of the vessel and any personal property left inside as provided in ORS 830.933** [*unless the owner shows good reasons to the enforcement agency for the person's failure to appear*].

(4) An [*enforcement*] **authorized** agency shall conduct a single hearing under this section for all requests for hearing that relate to the same vessel.

[*(5) Hearings held under this section may be informal in nature, but the presentation of evidence in a hearing shall be consistent with the standards for presentation of evidence under ORS 183.450.*]

[*(6)*] **(5)** If the notice given under ORS 830.918 indicates that the [*enforcement*] **authorized** agency proposes to seize a vessel by reason of being an abandoned vessel, and the owner of a vessel requests a [*preseizure*] hearing under ORS 830.918 [*(5)*], the owner may present a plan of action for moving the vessel to a place where the vessel can be lawfully kept. If the notice given under ORS 830.918 indicates that the [*enforcement*] **authorized** agency proposes to seize a vessel by reason of being a derelict vessel, and the owner of a vessel requests a [*preseizure*] hearing under ORS 830.918 [*(5)*], the owner may present a plan of action for remedying the problems identified in the notice. If the hearing officer approves the plan of action, the hearing officer by order may establish a time for moving the vessel, or remedying the problems, that is later than the time specified in the notice. If the hearing officer issues an order under this subsection, and the owner fails to move the vessel, or to remedy the problems, within the time allowed, the [*enforcement*] **authorized** agency may seize the vessel and take such other action authorized under ORS 830.908 to 830.948 without further notice to the owner or opportunity for hearing**.** [*except:*]

[*(a) Giving post-seizure notice under ORS 830.931; and*]

[*(b) If the owner requests a hearing under ORS 830.918 (5), allowing the owner to challenge the reasonableness of salvage, towing or storage costs as provided under ORS 830.931 (5).*]

[*(7) If the owner of a vessel requests a post-seizure hearing under ORS 830.931 (4) to challenge the reasonableness of costs incurred by the enforcement agency in salvaging, towing or storage of the vessel, costs that were incurred in compliance with laws, ordinances or rules establishing allowable costs for those purposes are reasonable as a matter of law.*]

[*(8)*] **(6)** If an [*enforcement*] **authorized** agency determines after a hearing under this section that seizure of the vessel is not warranted under the law, the [*enforcement*] **authorized** agency shall immediately release custody of the vessel **and the personal property inside the vessel** to the owner who requested the hearing and may not charge the owner any costs incurred by the agency in salvaging, towing or storage [*of the vessel*].

[*(9)*] **(7)** If an [*enforcement*] **authorized** agency determines after a hearing under this section that seizure of the vessel is warranted, the [*enforcement*] **authorized** agency shall seize [*the vessel if the vessel has not already been seized*] and dispose of the vessel **and any personal property left inside** as provided in ORS 830.933.

[*(10)*] **(8)** An [*enforcement*] **authorized** agency shall mail a written statement of the [*enforcement*] **authorized** agency's determination to all owners who requested a hearing **conducted** under this section.

[*(11)*] **(9)** The hearing officer at a hearing under this section may be an officer, official or employee of the [*enforcement*] **authorized** agency but may not have participated in any determination or investigation related to seizure of the vessel that is the subject of the hearing.

[*(12)*] **(10)** If the [*enforcement*] **authorized** agency conducting a hearing under this section is a state agency, the determination of the [*enforcement*] **authorized** agency is an order other than a contested case and is subject to review under ORS 183.484. If the [*enforcement*] **authorized** agency conducting a hearing under this section is not a state agency, judicial review of the order is as provided in ORS 34.010 to 34.100.

**SECTION 8.** ORS 830.938 is amended to read:

830.938. (1) Except as otherwise provided in ORS 830.908 to 830.948[,]**:**

**(a)** The owner of an abandoned vessel or a derelict vessel is liable to an [*enforcement*] **authorized** agency for all costs arising out of salvage, towing, storage and disposal of a vessel seized under ORS 830.908 to 830.948**; and**

**(b) If an authorized agency has probable cause to believe that a person other than the owner causes a vessel to be abandoned or derelict knowingly, intentionally, recklessly or with criminal negligence, as those terms are defined in ORS 161.085, that person may be held liable for all costs arising out of salvage, towing, storage and disposal of the vessel**.

**(2)** Any order imposing liability for those costs is subject to judicial review as provided in ORS 830.936 [*(12)*] **(10)**.

[*(2)*] **(3)** If an [*enforcement*] **authorized** agency sells a vessel seized under ORS 830.908 to 830.948, the liability imposed under this section shall be reduced by the net proceeds of the sale.

[*(3)*] **(4)** Except for costs of reclaiming a vessel under ORS 830.933 (1), an owner of a vessel whose only interest in the vessel is a security interest is not liable for costs arising out of salvage, towing, storage and disposal of a vessel under ORS 830.908 to 830.948.

**SECTION 9.** ORS 830.940 is amended to read:

830.940. An [*enforcement*] **authorized** agency may enter into a contract with any person to carry out the provisions of ORS 830.908 to 830.948 on behalf of the [*enforcement*] **authorized** agency.

**SECTION 10.** ORS 830.944 is amended to read:

830.944. **(1) A person commits the offense of abandoning a vessel if the person leaves a vessel without authorization on public or private land, the waters of this state, or any other water.**

[*(1)*] **(2)** A person commits the offense of failure to remove an abandoned vessel if the person is the owner of an abandoned vessel and, after notice is given under ORS 830.918, the person fails to move the vessel to a place where the vessel can be lawfully kept within the time specified in the notice, or within the time allowed under an order issued under ORS 830.936 [*(6)*] **(5)**.

[*(2)*] **(3)** A person commits the offense of possession of a derelict vessel if**:**

**(a)** The person is the owner of a derelict vessel and, after notice is given under ORS 830.918, the person fails to remedy the problems identified in the notice within the time specified in the notice, or within the time allowed under an order issued under ORS 830.936 [*(6)*] **(5); or**

**(b) The person in possession or control of a vessel knowingly, intentionally, recklessly or with criminal negligence, as those terms are defined in ORS 161.085, causes a vessel to become a derelict vessel**.

[*(3) An owner of a vessel does not violate this section if the owner's only interest in the vessel is a security interest.*]

**SECTION 11.** ORS 830.948 is amended to read:

830.948. (1) The Salvaged Vessel Subaccount is established within the Boating Safety, Law Enforcement and Facility Account created under ORS 830.140. The subaccount shall consist of moneys deposited into the subaccount by the State Marine Board from fees collected pursuant to ORS 830.790 and 830.850. The moneys in the subaccount are continuously appropriated to the board for the purposes specified in this section.

(2) The board may not deposit more than $150,000 per biennium into the Salvaged Vessel Subaccount and may not retain more than $150,000 in the subaccount at any time. After the board has deposited $150,000 into the subaccount under this subsection or any time there is more than $150,000 in the subaccount, any remaining moneys from fees collected pursuant to ORS 830.790 and 830.850 shall be deposited in the Boating Safety, Law Enforcement and Facility Account.

(3) The board may use the moneys in the Salvaged Vessel Subaccount to pay the expenses of the board in implementing ORS 830.908 to 830.948 that are associated with the salvage, towing, storage and disposal of:

(a) Vessels other than boats that are abandoned vessels or derelict vessels; [*and*]

(b) Vessels that are boats of less than 200 gross tons**; and**

**(c) Marine debris**.

(4) The board may use the moneys in the Salvaged Vessel Subaccount to pay an [*enforcement*] **authorized** agency for no more than 90 percent of the costs of salvage, towing, storage and cleanup of an abandoned vessel or a derelict vessel that has or had a certificate under ORS 830.770 or 830.775 and that is:

(a) A boat of less than 200 gross tons; or

(b) Any other abandoned vessel or derelict vessel that is not a boat.

(5) The board may use the moneys in the Salvaged Vessel Subaccount to pay an [*enforcement*] **authorized** agency for no more than 75 percent of the costs of salvage, towing, storage and cleanup of an abandoned vessel or a derelict vessel that has never had a certificate under ORS 830.770 or 830.775 and that is:

(a) A boat of less than 200 gross tons; or

(b) Any other abandoned vessel or derelict vessel that is not a boat.

(6) The board may reimburse an [*enforcement*] **authorized** agency under subsection (4) or (5) of this section for costs associated with an abandoned vessel or a derelict vessel only if the [*enforcement*] **authorized** agency complied with ORS 830.908 to 830.948 in seizing the vessel.

(7) The board may use the moneys in the Salvaged Vessel Subaccount to award grants to the state, a city, a county, a water improvement district, a park and recreation district or a port as provided in ORS 830.150 for the disposal of a vessel that has or had a certificate under ORS 830.770 or 830.775 and that the owner has surrendered to an accepting public agency if:

(a) The public agency has determined that the vessel was in danger of being an abandoned vessel or a derelict vessel and was likely to cause damage to the environment or become a hazard to navigation; and

(b) The decision to accept the vessel was based solely on the public agency's determination under paragraph (a) of this subsection.

(8) The board may recover payments made from the Salvaged Vessel Subaccount from an owner of a vessel who is liable for the costs of salvage, towing, storage and disposal under ORS 830.938. The board shall deposit all funds recovered under this section into the subaccount in accordance with the provisions of subsection (2) of this section.

**SECTION 12.** ORS 279A.050 is amended to read:

279A.050. (1)(a) Except as otherwise provided in the Public Contracting Code, a contracting agency shall exercise all of the contracting agency's procurement authority in accordance with the provisions of the Public Contracting Code.

(b) If a contracting agency has authority under this section to carry out functions described in this section, or has authority to make procurements under a provision of law other than the Public Contracting Code, the contracting agency need not exercise the contracting agency's authority in accordance with the provisions of the code if, under ORS 279A.025, the code does not apply to the contract or contracting agency.

(2)(a) Except as otherwise provided in paragraph (b) of this subsection and the Public Contracting Code, for state agencies the Director of the Oregon Department of Administrative Services has all the authority available to carry out the provisions of the Public Contracting Code.

(b) Except as otherwise provided in the Public Contracting Code, for state agencies the director may delegate to the State Chief Information Officer the authority to procure or supervise the procurement of all goods, services and personal services related to information technology and telecommunications for state contracting agencies. This paragraph does not apply to contracts under which the contractor delivers to the state agency information technology products or services incidentally in performing a personal services contract described in ORS chapter 279C or a construction contract described in ORS chapter 279C.

(3) Except as otherwise provided in the Public Contracting Code, the Director of Transportation has all the authority available to:

(a) Procure or supervise the procurement of all services and personal services to construct, acquire, plan, design, maintain and operate passenger terminal facilities and motor vehicle parking facilities in connection with any public transportation system in accordance with ORS 184.689 (5);

(b) Procure or supervise the procurement of all goods, services, public improvements and personal services that relate to operating, maintaining or constructing highways, bridges and other transportation facilities that are subject to the authority of the Department of Transportation; and

(c) Establish standards for, prescribe forms for and conduct the prequalification of prospective bidders on public improvement contracts that relate to operating, maintaining or constructing highways, bridges and other transportation facilities that are subject to the authority of the Department of Transportation.

(4) Except as otherwise provided in the Public Contracting Code, the Secretary of State has all the authority to procure or supervise the procurement of goods, services and personal services related to programs under the authority of the Secretary of State.

(5) Except as otherwise provided in the Public Contracting Code, the State Treasurer has all the authority to procure or supervise the procurement of goods, services and personal services related to programs under the authority of the State Treasurer.

(6) The state agencies listed in this subsection have all the authority to do the following in accordance with the Public Contracting Code:

(a) The Department of Human Services to procure or supervise the procurement of goods, services and personal services under ORS 179.040 for the department's institutions and the procurement of goods, services and personal services for constructing, demolishing, exchanging, maintaining, operating and equipping housing for the purpose of providing care to individuals with intellectual disabilities or other developmental disabilities, subject to applicable provisions of ORS 427.335;

(b) The Oregon Health Authority to procure or supervise the procurement of goods, services and personal services under ORS 179.040 and construction materials, equipment and supplies for the authority's institutions and the procurement of goods, services, personal services, construction materials, equipment and supplies for constructing, demolishing, exchanging, maintaining, operating and equipping housing for individuals with chronic mental illness, subject to applicable provisions of ORS 426.504;

(c) The State Department of Fish and Wildlife to procure or supervise the procurement of construction materials, equipment, supplies, services and personal services for public improvements, public works or ordinary construction described in ORS 279C.320 that is subject to the authority of the State Department of Fish and Wildlife;

(d) The State Parks and Recreation Department to procure or supervise the procurement of all goods, services, public improvements and personal services related to state parks;

(e) The Oregon Department of Aviation to procure or supervise the procurement of construction materials, equipment, supplies, services and personal services for public improvements, public works or ordinary construction described in ORS 279C.320 that is subject to the authority of the Oregon Department of Aviation;

(f) The Oregon Business Development Department to procure or supervise the procurement of all goods, services, personal services and public improvements related to its foreign trade offices operating outside the state;

(g) The Housing and Community Services Department to procure or supervise the procurement of goods, services and personal services that are unrelated to the department's duties prescribed in ORS chapters 456 and 458, and not otherwise provided for by ORS 456.625 (19);

(h) The Department of Corrections to procure or supervise the procurement of construction materials, equipment, supplies, services and personal services for public improvements, public works or ordinary construction described in ORS 279C.320 that is subject to the authority of the Department of Corrections;

(i) The Department of Corrections, subject to any applicable provisions of ORS 279A.120, 279A.125, 279A.145 and 283.110 to 283.395, to procure or supervise the procurement of goods, services and personal services under ORS 179.040 for its institutions;

(j) The Department of Veterans' Affairs to procure or supervise the procurement of real estate broker and principal real estate broker services related to programs under the department's authority;

(k) The Oregon Military Department to procure or supervise the procurement of construction materials, equipment, supplies, services and personal services for public improvements, public works or ordinary construction described in ORS 279C.320 that is subject to the authority of the Oregon Military Department;

(L) The Department of Education, subject to any applicable provisions of ORS 329.075, 329.085 and 329.485 and the federal Every Student Succeeds Act (P.L. 114-95, 129 Stat. 1802), to procure or supervise the procurement of goods, services, personal services and information technology related to student assessment;

(m) The Department of Early Learning and Care to procure or supervise the procurement of goods, services, personal services and information technology related to the authority of the department or the Early Learning Council; and

(n) Any state agency to conduct a procurement when the agency is specifically authorized by any provision of law other than the Public Contracting Code to enter into a contract.

(7)(a) Notwithstanding this section and ORS 279A.140 (1), the Director of the Oregon Department of Administrative Services has exclusive authority, unless the director delegates the authority, to procure or supervise the procurement of all price agreements on behalf of the state agencies identified in subsection (6) of this section under which more than one state agency may order goods, services or personal services.

(b) The director may delegate to the State Chief Information Officer the exclusive authority to procure or supervise the procurement of all price agreements related to information technology and telecommunications on behalf of the state agencies identified in subsection (6) of this section. Notwithstanding any authority that a state agency may have under subsection (3) or (6) of this section, the state agency may not establish a price agreement or enter into a contract for goods, services or personal services without the approval of the director or the State Chief Information Officer if the director or the State Chief Information Officer has established a price agreement for the goods, services or personal services.

(c) The State Chief Information Officer may review any solicitation document for procuring information technology or telecommunications that a state agency intends to issue before the state agency issues the solicitation document and may require the state agency to name the State Chief Information Officer as a third-party beneficiary with full authority to enforce the terms and conditions of any public contract for information technology or telecommunications. The State Chief Information Officer must approve a state agency's procurement for information technology or telecommunications if the procurement has an anticipated contract price of $1 million or more. The State Chief Information Officer may require the state agency to name the State Chief Information Officer as the contracting party on behalf of the State of Oregon in a procurement for information technology or telecommunications that has an anticipated contract price of $1 million or more.

**(8) Except as otherwise provided in the Public Contracting Code, the Director of the Department of State Lands has all the authority to procure or supervise the procurement of goods, services and personal services related to the removal of abandoned vessels and derelict vessels, as defined in ORS 830.908, and derelict structures as defined in ORS 274.376.**

**SECTION 13. ORS 830.928 and 830.931 are repealed.**

**SECTION 14. This 2025 Act takes effect on the 91st day after the date on which the 2025 regular session of the Eighty-third Legislative Assembly adjourns sine die.**

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**Passed by Senate March 6, 2025**

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Obadiah Rutledge, Secretary of Senate

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Rob Wagner, President of Senate

**Passed by House May 5, 2025**

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Julie Fahey, Speaker of House

**Received by Governor:**

.....M.,....., 2025

**Approved:**

.....M.,....., 2025

.....
Tina Kotek, Governor

**Filed in Office of Secretary of State:**

.....M.,....., 2025

.....
Tobias Read, Secretary of State

# LC 293 (now SB 795) — Oregon's Abandoned & Derelict Vessels Program

*Community-supported statutory fixes for effectively addressing the problem of hazardous vessels in publicly owned waterways*

## Background

For decades, hazardous boats, ships, and other vessels have seriously threatened the health, safety, and use of Oregon's public waterways. These abandoned and derelict vessels (ADVs) have also impacted Oregon schools, with the Common School Fund expending almost $19 million for cleanups since 2017.

In 2023, the State Land Board and the Oregon Legislature took multiple actions to address the state's ADV problem. House Bill 2914 established the state's ADV program and created a dedicated ADV fund at Oregon Treasury, with HB 5029 providing $18.8 million from the Monsanto settlement for the new fund.

At the Land Board's direction, the Department of State Lands conducted a robust community engagement process to guide development of the state's ADV program. This effort included convening an ADV Workgroup to help draft a program framework for public review and comment, then presentation to the Land Board in April 2024.

That process determined some statutory fixes are necessary to efficiently and effectively implement Oregon's ADV program as envisioned by the Legislature, Land Board, and community.

## Issue Addressed: Incomplete and Unclear Definitions, Unfeasible Requirements

Some current **statutory definitions are incomplete or unclear**. This can increase risk to the waterway, as well as delay removal or increase removal costs. For example:

- Notice, seizure, and storage requirements apply even to vessels that have been completely sunk and deteriorating for years.
- The current definition of "abandoned vessel" creates confusion for both enforcement agencies and the public when a boat is occupied.
- Vessels can be completely inoperable – without means of propulsion, steering, or seating – and still not meet the definition of abandoned or derelict.

Some statutory requirements are also **unfeasible given the challenges of tracing ownership and the complexity of some situations**. For example:

- Identifying the titled owner, as some current statutes require, can be impossible if the vessel does not have identifying information or has not been registered or reported sold in decades.
- Multiple parties who do not meet the current definition of "owner" may have possible interest in or responsibility for a vessel, like marinas where vessels are moored or reported buyers.
- Seizure notices and other communications may not reach a vessel owner due to limitations in who should receive a notice (last owner shown in State Marine Board records) and how it can be delivered (by postal mail only).
- Requirements for disposition of personal property on sunken vessels mimic requirements for vessels that are not sunken, despite the unsafe and unsanitary conditions created when sunken items must be sorted, cataloged, and made available for retrieval.

**Solution: Fixes for Timely, Cost-Effective Removal of Hazardous Vessels**

LC 293 seeks to ensure timely, cost-effective removal of hazardous vessels by:

- Updating statutory definitions that are incomplete or unclear.
- Updating requirements for storing and disposing of sunken or unusable vessels, or vessels for which no owner can be identified.
- Expanding notice requirements to include all entities that document vessels, and allowing notice options other than postal mail.
- Allowing personal property on a sunken vessel to be stored and disposed of in the same manner as the vessel.

**Fiscal Impact**

None. The initial funding provided for the program is supporting the Department's FY 2025-27 ADV program budget request. Implementation of this concept will be covered with the resources already requested.

**DSL Contact**

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