



CITY OF
PORT LAVACA



202 N. Virginia, Port Lavaca, Texas 77979 www.portlavaca.org
Main Number: (361)-552-9793 Ext. 222 Main Facsimile: (361)-552-6062

April 27, 2025

Matagorda Bay Mitigation Trust
P.O. Box 1269
Pooh, Texas 78147

Attn: Steven Raabe, P.E., Trustee

RE: Status Report No. 2: 2024 MBMT Grant for Downtown Waterfront Public Access Improvements Project

Dear Steven:

As of March 28, the City has received USACE approval to construct the proposed improvements being the bulkhead bank stabilization activities and the transient boat slips and ADA compliant dock. We have therefor met the target date for receiving COE approval for construction, however completion of the bid package is not yet ready.

On April 11, 2025, Matt Glaze with Urban Engineering and I met with a team from Clean Coast Texas to discuss ideas and options to effectively incorporate Green Infrastructure into the design of the parking lot improvements. Matt and I have discussed a few more ideas over the phone and he is working on a draft set of plans we can then review with Clean Coast Texas before finalizing and bidding. I will send you a copy of the review set of plans for your files once I have them. You may also keep up with the current status of the project at the following link on our Projects Transparency webpage. <https://cleargov.com/texas/calhoun/city/port-lavaca/projects/14636/downtown-waterfront-public-access-improvement>

Attached for you review and files are the following:

- USACE Nationwide Permit Verification dated 1.29.2025 for the bank stabilization activities
- USACE Letter of Permission dated 3.28.25 to construct the structures in Smith Harbor (three transient boat slips and an ADA compliant dock)
- Minutes from the April 11, 2025, Clean Coast Texas Green Infrastructure meeting

Best Regards,

JoAnna "Jody" P. Weaver
Interim City Manager
jweaver@portlavaca.org
361-827-3601



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
2000 FORT POINT RD
GALVESTON, TEXAS 77550

January 29, 2025

Evaluation Branch

SUBJECT: Permit No. SWG-2024-00743; Nationwide Permit Verification

Ms. JoAnna Weaver
City of Port Lavaca
202 North Virginia Street
Port Lavaca, Texas 77979

Dear Ms. Weaver:

This is in reference to your request, dated October 8, 2024, to discharge 31.9 cubic yards of fill below the mean high-water mark of Lavaca Bay into a 3,190 square-foot area to install 319 linear feet of bulkhead and to discharge 52.8 cubic yards of fill below the mean high-water mark of Lavaca Bay into a 3,300 square foot area to install 330 linear feet of riprap. The project site is located in Lavaca Bay, at 400 East Live Oak Street, in Port Lavaca, Calhoun County, Texas.

You may proceed with this proposed discharge of fill for the bulkhead and riprap bank stabilization, as shown on the project plans (including any proposed mitigation) dated December 5, 2024. This Nationwide Permit (NWP) 13 verification is valid provided the activity is compliant with the NWP General/Regional Conditions, Section 401 Water Quality Certification, and the Coastal Management Program, which can be found at:

<https://www.swg.usace.army.mil/Missions/Regulatory/Permits/Nationwide-General-Permits/>, a hard copy can be provided to you upon request.

NWP 13. Bank Stabilization: Authorizes activities necessary for erosion control or prevention, such as vegetative stabilization, bioengineering, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of other methods.

Based on available information, there appear to be "waters of the United States" and/or "navigable waters of the United States" on the project site. Therefore, your letter resulted in the initiation of the pre-construction notification (PCN) procedure specified for NWP 13. Your application was considered complete on December 5, 2024. The time period to process the PCN expired on January 16, 2024. Therefore, according to the NWP regulations, the project is verified under NWP 13.

The NWP verification is valid until the NWP is modified, reissued, or revoked. The subject NWPs authorized in 2021 are scheduled to be modified, reissued, or revoked prior to March 15, 2026. It is incumbent upon you to remain informed of changes to the

NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

This letter does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such. A copy of your plans in 4 sheets is enclosed. If you have any questions, please contact Nicole Patterson by telephone at 409-766-6355 or by electronic mail (email) Nicole.E.Patterson@USACE.Army.Mil. Please notify the Chief of the Compliance Branch in the Galveston District Regulatory Division in writing by email at CESWGRegulatoryInbox@USACE.Army.Mil, upon completion of the authorized project.

FOR THE DISTRICT COMMANDER:

K. Marie Taylor
Leader, Central Evaluation Unit

cc w/Encl.
Urban Engineering, Matt Glaze

Eighth Coast Guard District, New Orleans, LA

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coast & Geodetic Survey, Silver Spring, MD

Texas Commission on Environmental Quality

Texas General Land Office



PROJECT LOCATION

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DATE 12/04/24

E23799.01

CITY OF PORT LAVACA - DOWNTOWN WATERFRONT ACCESS IMPROVEMENTS

VICINITY MAP

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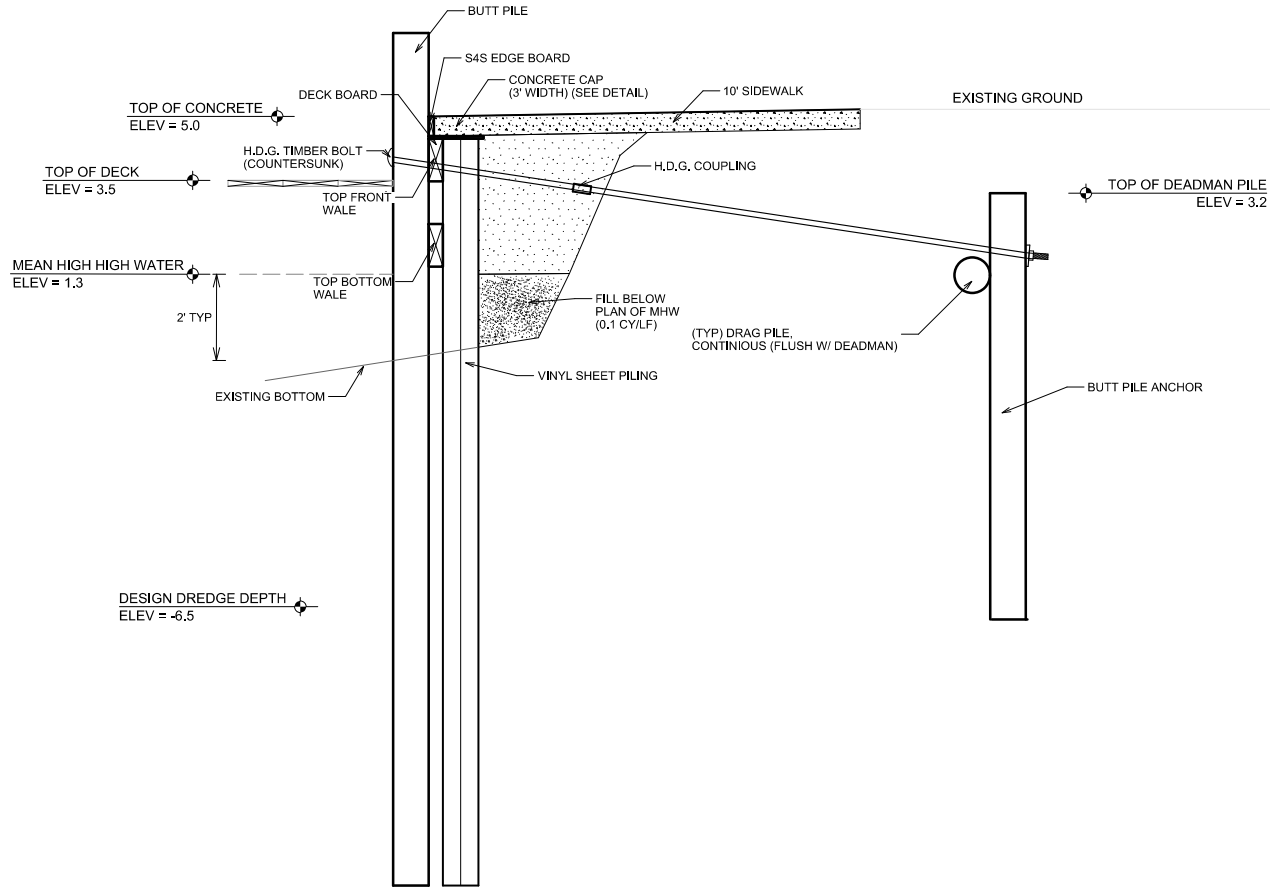




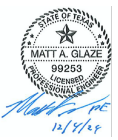
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**CITY OF PORT LAVACA - DOWNTOWN
WATERFRONT ACCESS IMPROVEMENTS**
PIER & BULKHEAD PLAN & DETAILS

E23799.01
DATE 12/04/24



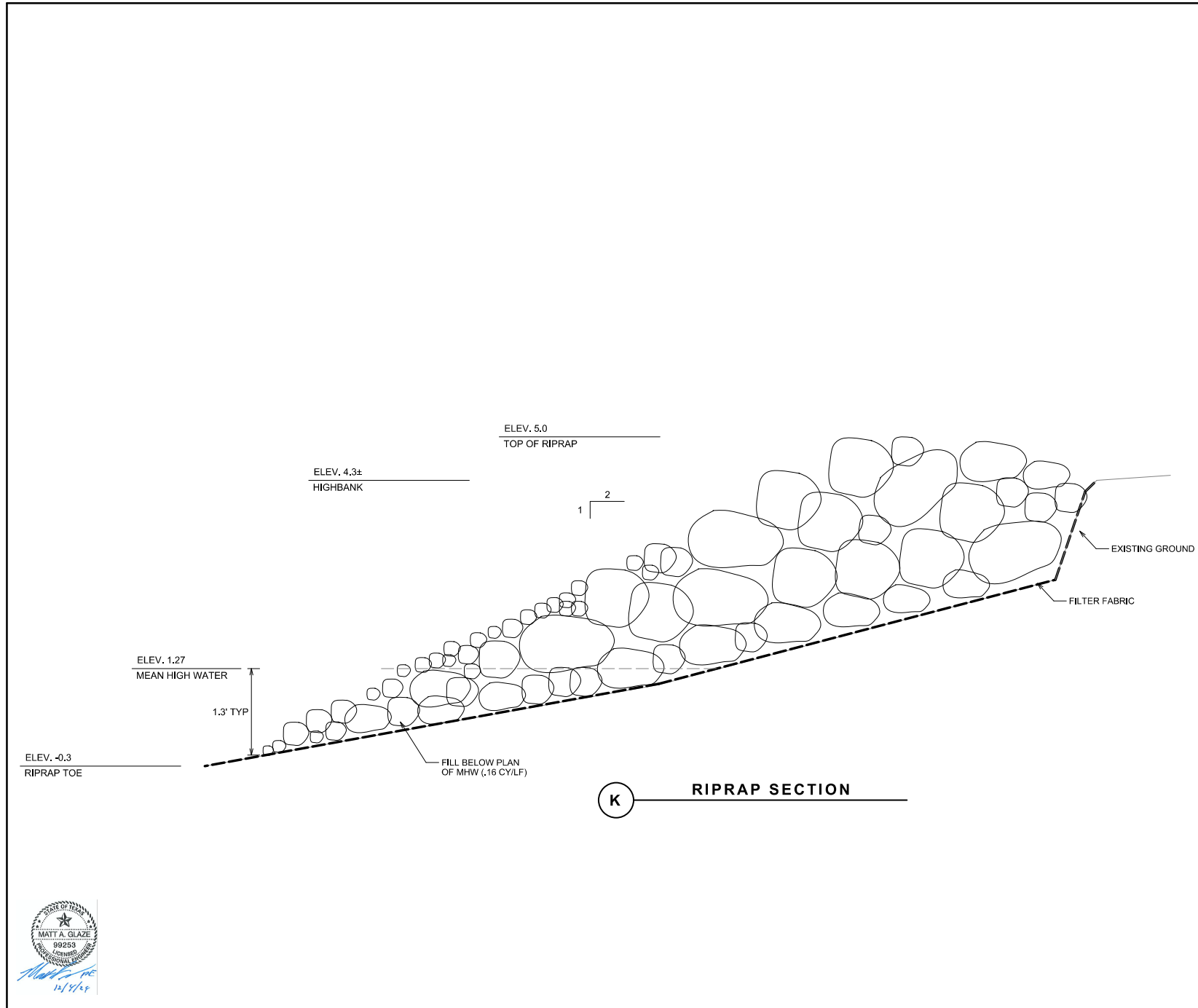
G BULKHEAD SECTION



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**CITY OF PORT LAVACA - DOWNTOWN
WATERFRONT ACCESS IMPROVEMENTS**
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E23799.01
DATE 12/04/24





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
2000 FORT POINT RD
GALVESTON, TEXAS 77550

March 28, 2025

Evaluation Branch

SUBJECT: Permit No. SWG-2024-00743; Letter of Permission

Ms. JoAnna Weaver
City of Port Lavaca
400 East Live Oak Street
Port Lavaca, Texas 77979

Dear Ms. Weaver:

This is in reference to your October 8, 2024, request, to construct a 5,960 square foot structure into Lavaca Bay. Your request is approved by this Letter of Permission (LOP) pursuant to Section 10 of the Rivers and Harbors Act of 1899. The work and/or structure will consist of a 368-foot-long by 10-foot-wide boardwalk, a 56-foot by 30-foot dock, and four 5-foot-wide by 30-foot-long finger piers. The structure will extend up to 30 feet into Lavaca Bay. The project site is located in Lavaca Bay, at 400 East Live Oak Street, in Port Lavaca, Calhoun County, Texas.

All work is to be performed in accordance with the enclosed plans in 5 sheets and the permit conditions. The time limit for completing the work authorized ends on December 31, 2030. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached. The following special conditions have been added to your authorization:

- 1) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
- 2) When structures or work authorized by this permit are determined by the District Engineer to have become abandoned, obstructive to navigation or cease to be used for the purpose for which they were permitted, such structures or other work must be removed, the area cleared of all obstructions, and written notice given to the Corps of Engineers, Galveston District, Regulatory Division, Chief of the Compliance Branch by electronic mail (email) at CESWGRegulatoryInbox@USACE.Army.Mil, within 30 days of completion.

3) The permittee must install and maintain, at the permittee's expense, any safety lights, signs and signals required by U.S. Coast Guard, through regulations or otherwise, on the permittee's fixed structures. To receive a U.S. Coast Guard Private Aids to Navigation marking determination, at no later than 30 days prior to installation of any fixed structures in navigable waters and/or prior to installation of any floating private aids to navigation, you are required to contact the Eight Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504) 671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eight Coast Guard District web site at: <https://www.atlanticarea.uscg.mil/District-8/District-Divisions/Waterways/PATON/>

If you object to the work authorized or the terms and conditions of this LOP, you may request that the LOP be modified (in accordance with 33 CFR 331.6). To object, you must submit a copy of the completed Request for Appeal (RFA) form to the District Engineer (DE) at the letterhead address, located at the top of this letter. Your objections must be received by the DE within **60 days** of the date of this notice; noting the NAP date is considered day 1, or you will forfeit your right to appeal the LOP in the future. It is not necessary to submit an RFA form to this office if you accept the LOP's terms and conditions.

If, after review by the DE, you are still unsatisfied with the LOP because of certain terms and conditions therein, you may appeal under the Corps of Engineers Administrative Appeal Process by completing Section II of the attached RFA form and sending it to the following address:

Mr. Jamie Hyslop
Administrative Appeals Review Officer
Southwestern Division USACE (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Telephone: 469-216-8324
Email: Jamie.r.hyslop@usace.army.mil

This letter does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such. If you have any questions, please contact Nicole Patterson by telephone at 409-766-6355 or by electronic mail (email) Nicole.E.Patterson@USACE.Army.Mil. Please notify the Chief of the Compliance Branch in the Galveston District Regulatory Division in writing by email at CESWGRegulatoryInbox@USACE.Army.Mil, upon completion of the authorized project.

FOR THE DISTRICT COMMANDER:

K. Marie Taylor
Leader, Central Evaluation Unit

cc w/Encl.
Urban Engineering, Matt Glaze

Eighth Coast Guard District, New Orleans, LA

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coast & Geodetic Survey, Silver Spring, MD

Texas Commission on Environmental Quality

Texas General Land Office



PROJECT LOCATION

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CITY OF PORT LAVACA - DOWNTOWN WATERFRONT ACCESS IMPROVEMENTS

VICINITY MAP



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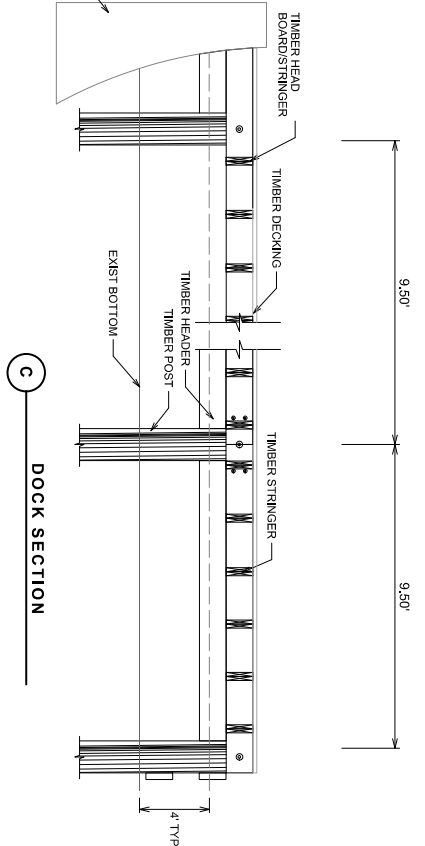
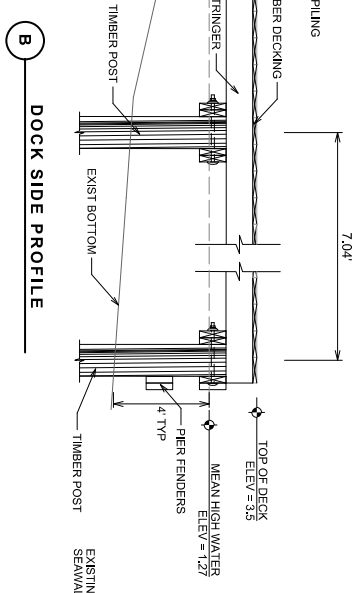
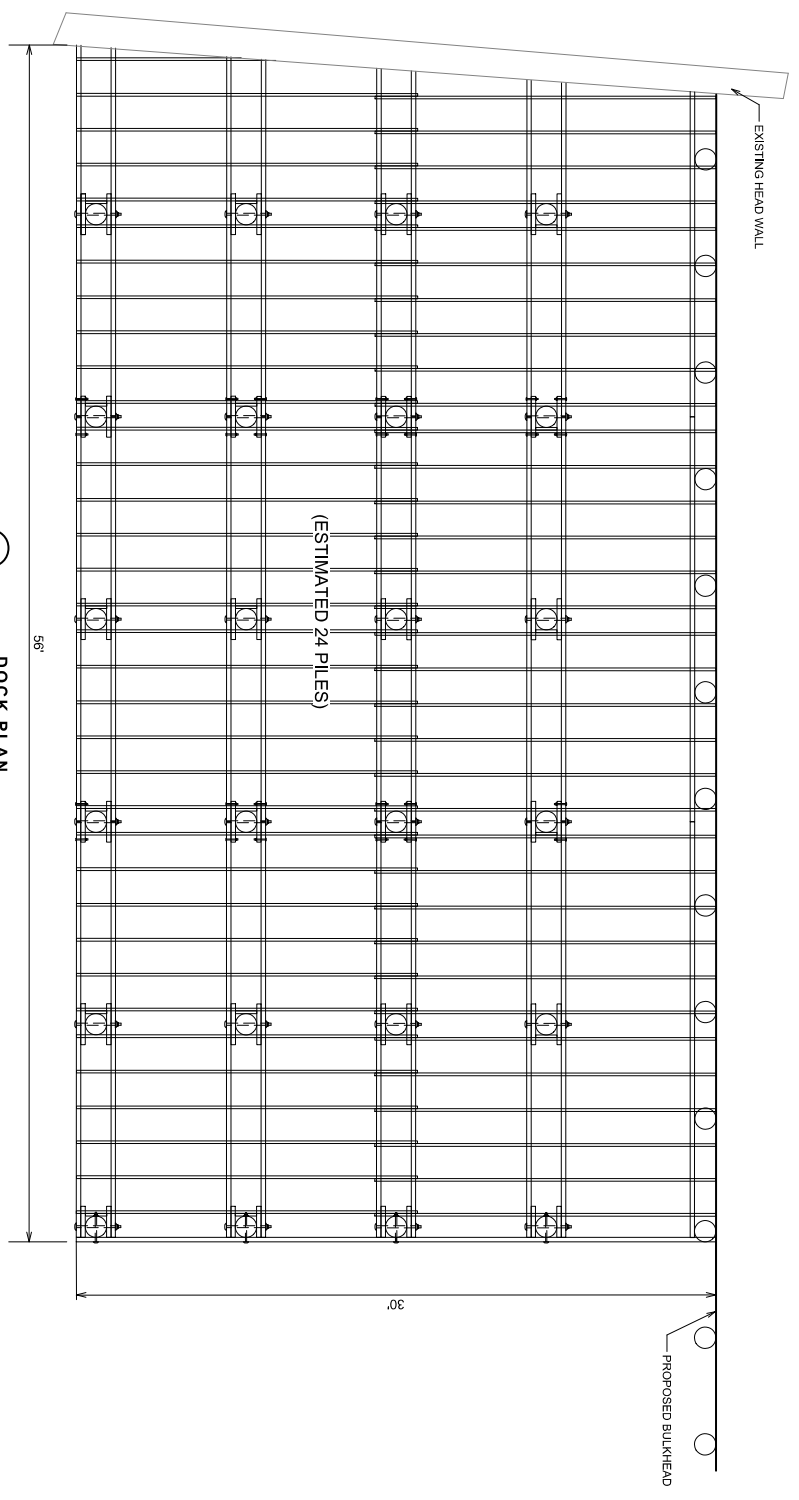


CITY OF PORT LAVACA - DOWNTOWN WATERFRONT ACCESS IMPROVEMENTS

PIER & BULKHEAD PLAN & DETAILS

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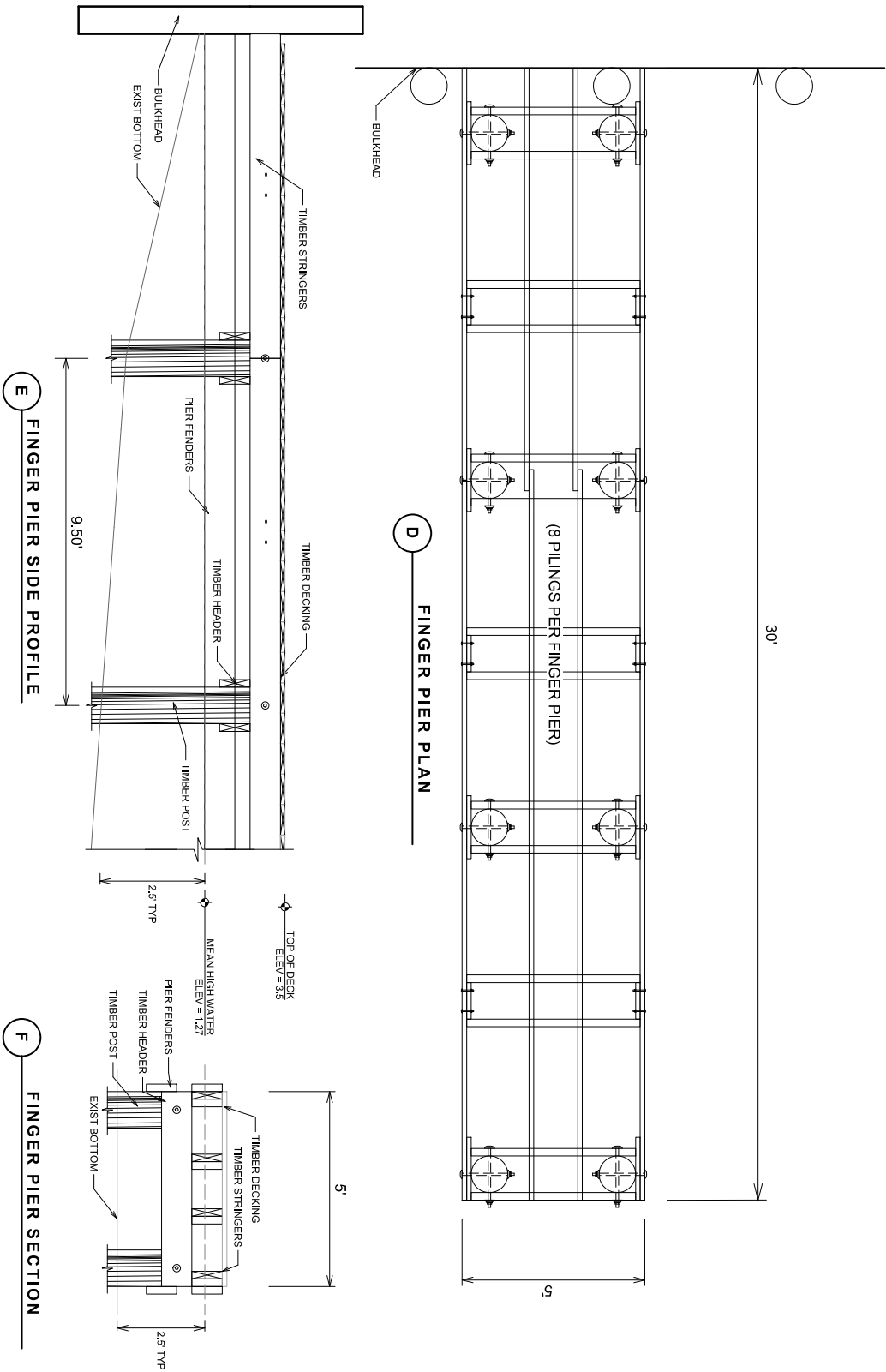


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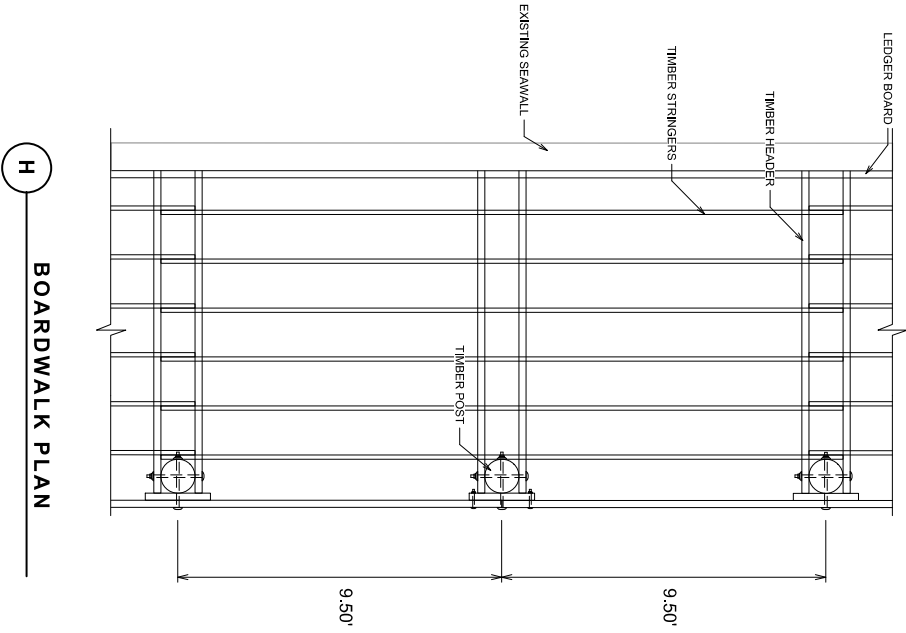
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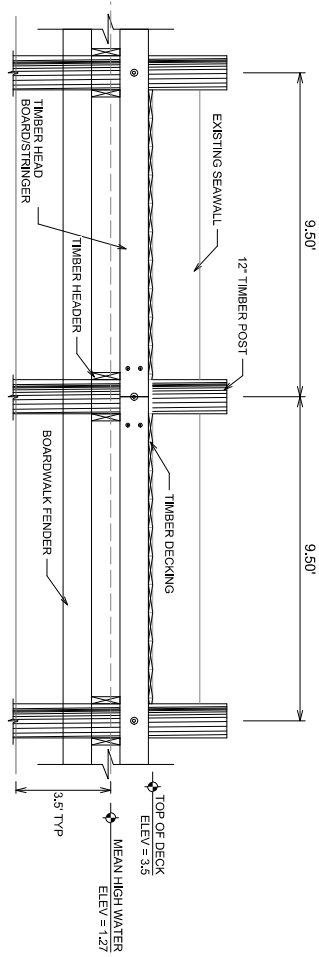
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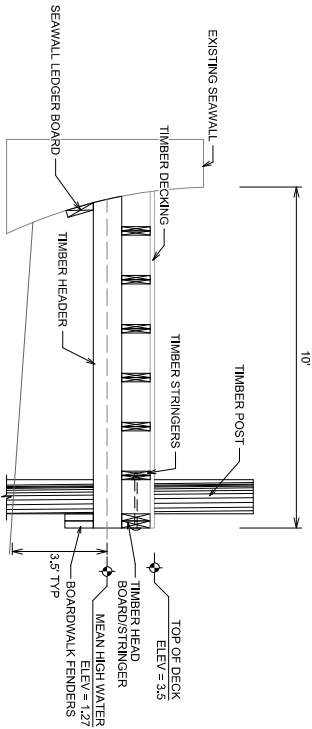
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H BOARDWALK PLAN



I BOARDWALK PROFILE



J BOARDWALK SECTION



CITY OF PORT LAVACA - DOWNTOWN WATERFRONT ACCESS IMPROVEMENTS

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Conditions for Letter of Permission:

General Conditions:

1. The time limit for completing the activity authorized ends on **31 December 2030**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See Authorization Letter

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 Section 404 of the Clean Water Act (33 U.S.C. 1344).
 Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization:
 - a. This permit does not obviate the need to obtain other Federal, state or local authorizations required by law.
 - b. This permit does not grant property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of time limit.

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

 (TRANSFEEE – Typed/Printed Name)

 (DATE)

 (TRANSFEEE - Signature)

 (Mailing Address)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: City of Port Lavaca	File Number: SWG-2024-00743	Date: 03/28/2025
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
X	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Nicole Patterson, Regulatory Specialist
2000 Fort Point Road
Galveston, Texas 77550
Phone: 409-766-6355
Email: Nicole.E.Patterson@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Mr. Jamie Hyslop
Administrative Appeals Review Officer,
Southwestern Division (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Phone: 469-216-8324
Email: jamie.r.hyslop@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

Clean Coast Texas – Port Lavaca
Nautical Landing Green Stormwater Infrastructure

April 11, 2025

Port Lavaca: Jody Weaver, Wayne Saffer

Urban Engineering: Matt Glaze

Clean Coast Texas: Charriss York, Jason Pinchback, Mike Wetz, Ashley Bennis, Troy Dorman, Scott Jones

Texas Sea Grant: RJ Shelly

Project funded by the Matagorda Bay Mitigation Trust – larger project includes bulk heading, fish deck, sidewalks, in addition to parking lot at Nautical Landing and the City would like to include green infrastructure in the design

Nautical Landings Marina Project

- Revive existing parking lot
- Is graded so that runoff flows directly into the marina
- Will create a 10 ft wide path parallel to the sea wall
- The goal is for the area to look nice and include GI elements
- Would like landscaping features as well as drainage

Port Lavaca wants to tap into CCT for the ideas about GI that can be incorporated and help make this show case project

Possible areas to work in:

- Parking area by the building
- Tin roof fishing and viewing area
- Along the Bulkhead
- On or near the docks (possible educational sign placement)
- Parking lot areas, and areas set aside for vegetation

Opportunities:

- Making the parking spaces pervious – pavers or other system
- Capturing water from the building to and soaking it into landscaped areas. Where do the existing down spouts go?
- Troy: think about one row of permeable pavers closest to the water. Collect water off the building and get it into the ground. Soil is most likely clay, so will need an under drain. Maybe a pipe out by the fishing structure.
- Existing outfalls could be used - opposite the deck and at the end of the shared use path.
- Might be an existing stormwater discharge pipe that can be utilized

Permeable options

- Pervious interlocking concrete pavers (PICP)
- Large paver sheets - precast porous concrete stormwater systems
- Is a True Grid system an option for the parking spaces? – this does require a lot of sediment removal, cannot use a vacuum truck on this one.

What's happens under the pavement?

Use clean washed stone (#57 or #2) to support the pavement, has 40% void space to store the water until it's released into a perforated pipe (4: to 8") and into an outfall. Pipe could run parallel to the sea wall.

Less paver area might mean a deeper under drain

Could drain parking lot into the smaller green areas. Can depress them so water can flow into them and water the space. Make sure there is enough soil volume.

Ideas for Vegetated Areas

- Putting a green strip between the parking lot and the sidewalk? Space restrictions on the sidewalk and the
- Constructed systems for trees – can be easier to install, but are costly
- Shallow rain gardens in designated vegetation areas
- Native plantings in designated vegetation areas
- Rainwater harvesting off the building to water vegetated areas

Potential along the pathway for educational signage. Can CCT help with that?

- There are some specific signs for the Rockport projects
- Can use what we have and maybe modify them for this project

What is our design storm?

- 5 year, mostly cannot get the big storms here
 - For pervious pavement the sublayer would typically be 1-1.5 inch storm
- Note that the shellfish area is managed at 1.5 inches in 7 day rain fall event automatically shuts down the area

Next steps:

- Matt and Jody discuss ideas then get the team back together. Jody will contact Charriss within 2 weeks.
- Troy will share the design specs from the two Rockport Projects
- Charriss share meeting notes and resources mentioned in the meeting chat.

Resources mentioned and/or linked in Meeting Chat

- Stormcrete Precast porous concrete stormwater systems (see attached PDF)
- San Antonio River Manual: https://www.sariverauthority.org/wp-content/uploads/2023/09/lid_tech_manual-3rded-manual.pdf
- Sustainable Stormwater Manual: <https://www.glo.texas.gov/sites/default/files/2025-01/2022-sustainable-stormwater-drainage-cleancoasttexas.pdf>

Photos of the pervious interlocking concrete pavers (PICP) at the Rockport Aquatic Center. Parking stalls are dark gray pavers, striping is lighter gray (never has to be repainted), and drive lanes are traditional concrete. Under the pavers is a rock base with a perforated pipe.



Figure 1 Completed Pavers



Figure 2 Completed Pavers other end



Figure 3 Rock sub-base before paver installation