PORT OF BROOKINGS HARBOR
Special Commission Meeting
Thursday, May 6, 2021 • 2pm
Teleconference / Meeting Room *(limited capacity)*

Teleconference Call-In Number: 1 (253) 215-8782
Meeting ID: 771 205 4017 Passcode: 05062021 (to mute/unmute: * 6)
When calling in, please announce your arrival and state your name when you join the meeting.

TENTATIVE AGENDA

1. **CALL MEETING TO ORDER** **PAGE**
   - Roll Call
   - Modifications, Additions, and Changes to the Agenda
   - Declaration of Potential Conflicts of Interest

2. **APPROVAL OF AGENDA**

3. **PUBLIC COMMENTS** – (Limited to a maximum of three minutes per person. Please email your comments to danielle@portofbrookingsharbor.com prior to the meeting. ***Please wait to be called on before speaking***)

4. **ACTION ITEMS**
   A. Pacific Seafood Processing Consent and Amended and Restated Lease.....2
   B. FEMA Projects DR-4432 & 4452 Construction Method and Drawing Approval.....17
   C. Collect Northwest Collection.....120

5. **INFORMATION ITEMS**
   A. None

   EXECUTIVE SESSION per ORS 192.660 (2)(h)
   This executive session of the Port of Brookings Harbor Board of Directors is called pursuant to ORS 192.660 (2)(h) to consult with counsel concerning the legal rights and duties of a public body with regard to current litigation or litigation likely to be filed.

   Any member of the media that is here may remain. However, the Board will require that any information derived from this meeting may not be disclosed pursuant to ORS 192.660(4).

   ORS 192.660 (6) No executive session may be held for the purpose of taking any final action or making any final decision.

   Adjourn out of executive session and reconvene into regular session.

6. **COMMISSIONER COMMENTS**

7. **NEXT REGULAR MEETING DATE** – Tuesday, May 18, 2021 at 6:00pm

8. **ADJOURNMENT**

A request for an interpreter for the hearing impaired, for those who want to participate but do not have access to a telephone, or for other accommodations for persons with disabilities should be made at least 48 hours in advance of the meeting to Port of Brookings Harbor Office at 541-469-2218.

ACTION ITEM – A

DATE:	May 6, 2021
RE:	Pacific Seafood Processing Amended and Restated Lease
TO:	Honorable Board President and Harbor District Board Members
ISSUED BY:	Gary Dehlinger, Port Manager

OVERVIEW

- Draft amended and restated lease is for the existing BC Fisheries facility ground and dock space to be transferred to Pacific Seafood Processing, LLC.
- This lease will reflect the current conditions for the facility and dock. When the original lease was entered into, neither the processing plant nor the new receiving dock were built.
- Port legal counsel drafted a new lease to be more consistent with our current lease form for new leases. Pacific Seafood reviewed the draft and has agreed to its terms.
- The restated lease term will begin July 1, 2021 and be for 30 years, with an option to renew for an additional 30 years.
- The base rent continues on the same schedule as was established under the BC Fisheries lease.
- The required insurance amount has increased from $1 million to $2 million, with the Port as additional insured.

DOCUMENTS

- Consent to Assignment of Lease, 1 page
- Draft Amended and Restated Lease, 11 pages

COMMISSIONERS ACTIONS

- **Recommended Motion:**
  Motion to approve Consent to Assignment of BC Fisheries Lease to Pacific Seafood Processing, LLC and the draft Amended and Restated Lease with Pacific Seafood Processing, LLC.

CONSENT TO ASSIGNMENT OF AGREEMENT FOR LEASE OF BUSINESS PREMISES (DOCK AND PROCESSING PLANT)

DRAFT

THIS CONSENT TO ASSIGNMENT OF AGREEMENT FOR LEASE OF BUSINESS PREMISES (the "Consent") is made by the Port of Brookings Harbor, an Oregon Port District (the "Port") with respect to a lease by BC Fisheries, LLC, an Oregon limited liability company ("BC Fisheries").

RECITALS

A. The Port and BC Fisheries are the parties to a Commercial Lease Agreement BC Fisheries dated July 1, 2015, as amended by the Lease Amendment dated September 1, 2017 (collectively, the "Amended Lease");

B. The Amended Lease includes two leased premises: (i) a 3,600 square foot receiving dock and two hoists (the "Dock Premises"), and (ii) 21,875 square foot of bare ground adjacent to the Dock Premises (the "Processing Plant");

C. BC Fisheries will sell substantially all of the assets used or useful in connection with its business at the Dock Premises and Processing Plant (the "Transaction") to Pacific Seafood Processing, LLC, an Oregon limited liability company ("Pacific"), on or after May 31, 2021 (the "Closing");

D. As a result of the Transaction, Pacific will assume all rights and obligations of BC Fisheries under the Amended Lease.

CONSENT

NOW THEREFORE, in consideration of the mutual covenants, terms, and conditions set forth herein, the Port consents to the assignment of the Amended Lease as follows:

1. By its execution hereof, the Port hereby: (i) consents and agrees to the assignment of the aforementioned Amended Lease to Pacific, as described above, effective as of Closing; (ii) waives any further or additional notice or consent requirements related to the Transaction described in the Amended Lease or otherwise; (iii) in accordance with the Amended Lease, agrees that Pacific shall be responsible for and perform and satisfy all BC Fisheries duties and obligations under the Amended Lease that arise from and after Closing; and (iv) confirms that (a) the Amended Lease is currently in full force and effect, (b) no event of default currently exists.
2. The undersigned represents and warrants that it has the right, power, and authorization to execute this Consent.
3. This consent is expressly conditioned upon the Parties' execution of the Amended and Restated Lease approved by the Commission.
4. The undersigned further agrees that all future notices required to be sent to the lessee under the Amended Lease shall be sent to:

Pacific Seafood Processing, LLC
Attn: Legal & Strategic Affairs
16797 SE 130th Avenue
Clackamas, Oregon 97015

Port of Brookings Harbor, an Oregon Port District

By:_____

Name:_____

Its:_____

Date:_____

AMENDED AND RESTATED
COMMERCIAL LEASE AGREEMENT
PACIFIC SEAFOOD PROCESSING, LLC

DRAFT

This amended and restated lease agreement ("Agreement") is made and entered into at Brookings, Oregon, by and between the **Port of Brookings Harbor**, an Oregon special district (referred to herein as the "Landlord") and **Pacific Seafood Processing, LLC,** an Oregon limited liability company (hereinafter referred to as "Tenant"). This Agreement will be effective as of the Effective Date as defined herein.

RECITALS

A. The Port of Brookings Harbor and BC Fisheries, LLC entered into a Commercial Lease Agreement dated July 1, 2015, as amended by the Lease Amendment dated September 1, 2017 (collectively, the "Amended Lease");

B. BC Fisheries, LLC will sell substantially all of the assets used or useful in connection with its business conducted on the leased premises (the "Transaction") to Pacific Seafood Processing, LLC, on or after May 31, 2021 (the "Closing");

C. As a result of the Transaction, Pacific Seafood Processing, LLC will assume all rights and obligations of BC Fisheries, LLC under the Amended Lease;

D. The Port of Brookings Harbor has given its consent to the assignment of the Amended Lease effective upon the Closing; and

E. The Port of Brookings Harbor and Pacific Seafood Processing, LLC intend and agree that this Amended and Restated Lease Agreement be effective immediately upon the Closing (the "Effective Date").

AGREEMENT

NOW, THEREFORE, the parties hereto agree to be bound by the following terms and conditions:

1. Leased Premises. Landlord hereby leases to Tenant the following described property located in the Port of Brookings Harbor on the terms and conditions stated herein (referred to herein collectively as the "Leased Premises"):

a. A commercial receiving dock of approximately 3,600 square feet and the two hoists located thereon as shown in Exhibit "A" attached hereto and incorporated herein by this reference; and

b. Bare ground of approximately 21,875 square feet underlying a seafood processing plant facility owned by Tenant, as shown in Exhibit "B" attached hereto and incorporated herein by this reference, located at 16263 Harbor Drive, Brookings, Oregon.

2. Lease Term and Base Rental Rate.

a. Initial Term. The initial term of this lease shall be for thirty (30) years commencing July 1, 2021 and continuing through June 30, 2051.

b. Base Rental Rate. As of the Effective Date of this Agreement, the base rental rate for the Leased Premises shall be Four Thousand Seventy-three and 39/100 Dollars ($4,073.39) per month, as calculated below, payable on the first day of each month. If the Effective Date is a day other than the first of the month, the rate for the first month

will be prorated using a daily rate based on a 30-day month. The monthly base rental rate is the combined rate of:

1. The base rental rate for the receiving dock and hoists shall be $0.67546 per square foot per month, for a total of Two Thousand Four Hundred Thirty-one and 65/100 Dollars ($2,431.65) per month; and

2. The base rental rate for the bare ground underlying the seafood processing plant facility, consisting of 21,875 square feet, shall be $0.07505 per square foot per month, for a total of One Thousand Six Hundred Forty-one and 74/100 Dollars ($1,641.74) per month.

c. **Option to Renew.** Upon termination of the initial term of this lease, Landlord grants to Tenant the option to renew this lease in whole or in part for the Leased Premises, for one (1) additional thirty (30) year term at terms and conditions to be negotiated, provided that Tenant is not in default of this lease at the time the option is exercised. The parties agree to negotiate in good faith with respect to the renewal terms and conditions on terms at least as favorable as those offered to any other tenant of Landlord at the time.

d. **Notice of Intent.** Tenant shall notify the Landlord in writing ninety (90) days prior to expiration of the lease of Tenant's intent to exercise all or any portion of Tenant's option to extend the lease. Failure to provide such notice is a default and a material breach of the lease and Landlord may terminate the lease on the expiration date and retake possession of the Leased Premises with or without process of law.

3. **Base Rent Payment.**

a. **Annual Adjustment.** Tenant must pay the base rent for the Leased Premises and any additional rent provided herein without deduction or offset. The base rent will increase annually, on each anniversary of the lease commencement for the second and each subsequent year, according to the Consumer Price Index for All Urban Consumers (CPI-U). The base rent increase will be for the total amount of the base rent due. Base rent includes all prior percentage increases. In the event that the CPI-U is negative, the base rent will remain the same, it will not increase or decrease.

b. **Proration.** Rent for any partial month during the lease term will be prorated to reflect the number of days during the month that Tenant actually occupied the Leased Premises.

c. **Additional Rent.** Additional rent means any other sums payable by Tenant to Landlord under this lease. At the end of the initial lease term, a new base rent will be established.

d. **Fees and Charges.** Should any rent or other payment required of Tenant by this lease not be paid within 10 days after it is due, a late charge of 1.5% per month (18% per annum) will be assessed. A $50.00 fee will be assessed on any returned payment.

4. **Lease Consideration/Security Deposit.** Upon execution of this Agreement, Tenant's base rent is due the first day of the month of the lease term for which rent is payable. Tenant is required to pay a security deposit in the sum of $3,633.39 (one month's rent with credit for $440 paid by assignor BC Fisheries). Landlord may apply the security deposit to pay the cost of performing any obligation which Tenant fails to perform within the time required by this lease, but such application by Landlord shall not be the exclusive remedy for Tenant's default. If the security deposit is applied by the Landlord, Tenant shall on demand pay the sum necessary to replenish the security deposit to its original amount. To the extent not applied by Landlord to cure defaults by Tenant, the security deposit shall be returned to Tenant upon termination of this lease, or, by mutual agreement between Landlord and Tenant, applied against the rent payable for the last month of the term.

5. **Use.** Tenant shall use the Leased Premises to offload and process fish, crab and other product from commercial boats and for no other purpose without Landlord's prior written consent. Tenant is entitled to the exclusive use of the two hoists owned by Landlord. In connection with its use of the Leased Premises, Tenant shall at its expense promptly comply with all applicable laws, ordinances, rules and regulations of any public authority, including those of the Port of Brookings Harbor, and not unreasonably annoy, obstruct or interfere with the rights of other tenants of the Port of Brookings Harbor, wherever located. Tenant shall not create or maintain any nuisance or any objectionable fumes, noise, or vibrations while using the Leased Premises.

6. **Relocation.** Landlord, during the term of this lease, may need to relocate the existing hoists on the Dock Premises. In the event that such a relocation becomes necessary, Landlord shall provide Tenant a similar location that will be suitable for handling commercial boats and which will allow Tenant the same facilities as are described in the Exhibit "A", at no cost to Tenant associated with such relocation of the hoists.

7. **Equipment.** Tenant shall install in the Leased Premises only such equipment as is customary for the intended ***use*** and shall not overload the dock or electrical circuits of the Leased Premises or alter the plumbing or wiring of the Leased Premises, without the prior written consent of Landlord. Landlord must approve, in advance, the location and manner of installing any electrical, heat generating or communication equipment or exceptionally heavy articles. Any equipment installed by Tenant shall remain Tenant's property and shall be installed and operated at Tenant's expense. Cranes or boom trucks not owned or leased by Tenant are prohibited from operating on the Leased Premises unless authorized by Landlord.

8. **Sign.** No signs, awnings, antennas, or other apparatus shall be positioned as to be visible from outside the Leased Premises without Tenant obtaining Landlord's prior written approval as to design, size, location, and color. All signs installed by Tenant shall comply with Landlord's standards for signs and all applicable codes. All signs and sign hardware shall be removed upon termination of this lease with the sign location restored to its former state unless Landlord elects to retain all or any portion thereof.

9. **Utilities and Services.** Landlord shall furnish all utilities up to the Leased Premises and Tenant shall be directly responsible for any and all electrical charges or fees for electrical service, and shall make arrangements to be billed directly from the local electric co-op (Coos-Curry Electric Cooperative, Inc.). Tenant shall make the necessary arrangements to have a meter installed in the name of Tenant for billing purposes. Tenant shall comply with all government laws or regulations regarding the use or reduction of use of utilities on the Leased Premises. Water, sewer, trash disposal and telecommunications utilities are Tenant responsibilities. Unless caused by Landlord's negligence or intentional act, interruption, limitation, curtailment, or rationing of services or utilities shall not be deemed an eviction or disturbance of Tenant's use and possession of the Leased Premises, render Landlord liable to Tenant for damages, or relieve Tenant from performance of Tenant's obligations under this lease. Landlord shall take all reasonable steps to correct any interruption in service.

10. **Maintenance and Repair - Tenant**

    a. Tenant is at all times during the term of this lease, and at Tenant's sole cost and expense, obligated to keep the entirety of the Leased Premises and every part thereof in good condition and repair, excepting ordinary wear and tear and damage to the Leased Premises by earthquake, act of God, or the elements. Landlord has no obligation and has made no promise to alter, remodel, improve, repair, decorate, or paint the Leased Premises or any part thereof. Landlord shall have the right to erect scaffolding and other apparatus necessary for the purpose of making repairs, and Landlord shall have no

liability for interference with Tenant's use because of repairs and installations. Tenant shall have no claim against Landlord for any interruption or reduction of services or interference with Tenant's occupancy, and no such interruption or reduction shall be construed as a constructive or other eviction of Tenant. Repair of damage caused by negligent or intentional acts or breach by this lease by Tenant, its employees or invitees shall be at Tenant's expense.

b. Tenant shall maintain the Leased Premises, including the hoists and dock structures, in the condition existing at time of leasing, normal wear and tear excepted. Landlord may inspect repairs and may declare a default if the Leased Premises are not reasonably deemed in good repair after written notice of thirty (30) days for the dock and ten (10) days for the hoist itself has been made to Tenant and Tenant has failed to repair. If repairs cannot be made within the notice period, then Landlord may not declare default so long as Tenant commences correction within such period and thereafter proceeds in good faith andwith reasonable diligence to effect compliance as soon as possible.

c. Tenant shall be responsible for controlling and preventing any equipment usage of the dock area from vehicles or equipment which exceed 26,000 pounds per square inch, by their invitees or other persons utilizing the facility in connection with the permitted usage described herein. Tenant shall be responsible for damages and/or repairs to the Leased Premises which result from overload of the dock, hoist or storage facility by the invitees of Tenant or persons utilizing the structure in connection with Tenant's business.

d. Tenant shall be responsible for any repairs necessitated by the negligence of Tenant, its agents, employees, and invitees, except repairs that would otherwise be the responsibility of Landlord under Section 11 or Section 16.

e. Tenant is responsible for all other repairs to the Leased Premises that Landlord is not required to make under Section 11 or Section 16.

f. If Tenant fails to perform Tenant's obligations under this Section 10 or under any other Section of this lease, Landlord may enter upon the affected portion of the Leased Premises after ten (10) days' prior written notice to Tenant (except in case of emergency, in which no notice shall be required), perform such obligations on Tenant's behalf and put the Leased Premises in good order, condition and repair, and the cost thereof together with interest thereon at the maximum rate then allowable by law shall be due and payable as additional rent to Landlord together with Tenant's next base rent installment.

g. On the last day of the term hereof, or upon any sooner termination, Tenant shall surrender the Leased Premises to Landlord in the same condition as received, ordinary wear and tear excepted, clean and free of debris. Any damage or deterioration of the Leased Premises shall not be deemed ordinary wear and tear if the same could have been prevented by commercially reasonable maintenance practices. Tenant shall leave the air lines, power panels, electrical distribution systems, lighting fixtures, space heaters, air conditioning, plumbing and fencing which were on the Leased Premises prior to the commencement of the lease, in good operating condition.

11. Maintenance and Repair - Landlord's Obligations. The following shall be the responsibility of Landlord:

a. Provide adequate means of ingress and egress to the Leased Premises.

b. Provide access to a water supply and electricity.

c. Repair and maintenance of existing exterior water, sewage, and electrical services up the point of entry to the Leased Premises.

d. Repair and maintain any structural element with respect to the Leased Premises. Unless the lease is terminated by either party pursuant to Section 16.

12. **Alterations and Improvements.** Tenant shall not make any permanent alterations, additions, or improvements to the Leased Premises without Landlord's prior written consent. Any such permanent additions, alterations, or improvements to the Leased Premises (including the structure of the seafood processing facility now existing on the Leased Premises), except for removable machinery and trade fixtures, shall become part of the realty and belong to the Landlord immediately upon the expiration or earlier termination of this Agreement. Landlord may at its option require that Tenant remove any alterations and restore the Leased Premises to the original condition upon termination of this lease. Landlord shall have the right to approve the contractor used by Tenant for any work on the Leased Premises and to post notices of non-responsibility in connection with any work being performed by Tenant on the Leased Premises.

13. **Indemnity.**

a. Tenant shall not allow any liens to attach to the Leased Premises or Tenant's interest in the Leased Premises as a result of its activities. In the event that a materialman, mechanic's, or other lien is filed, or a claim of lien is made for work claimed to have been done for Tenant, Landlord will have the option in its sole discretion to require Tenant to post a Surety Bond within ten (10) days at Tenant's expense or to pay and discharge the lien. Tenant agrees to reimburse Landlord promptly upon demand. These Landlord remedies are not exclusive as Landlord has other remedies as provided by law including requiring Tenant to pay for Landlord's attorney's fees and costs relating to any such lien.

b. Except as otherwise stated herein, Tenant hereby waives all claims against Landlord for damage to any property or injury, illness, or death of any person in, upon, or about the Leased Premises arising at any time and from any cause whatsoever other than by reason of the negligence or willful act of Landlord, its officers, employees, invitees, licensees or agents. Tenant shall defend, indemnify and hold Landlord harmless from any and all claims or liability for damage to any property or injury, illness, or death of any person (a) occurring in or on the Leased Premises or any part thereof arising at any time and from any cause whatsoever other than by reason of the negligence or willful act of Landlord, its officers, employees, invitees, licensees or agents; or (b) occurring in, on, or about any part of the Leased Premises when such damage, injury, illness, or death was caused by the act, negligence, omission, or fault of Tenant, its agents, servants, employees, invitees, or licensees. Except as otherwise stated herein, Landlord shall have no liability to Tenant because of loss or damage caused by the acts or omissions of other tenants of Landlord, or by third parties. The provisions of this paragraph shall survive the termination of this lease with respect to any damage, injury, illness, or death occurring prior to such termination.

c. Landlord shall not allow any new liens to attach to the Leased Premises or Tenant's interest in the Leased Premises as a result of its activities. In the event that a materialman, mechanic's, or other lien is filed, or a claim of lien is made for work claimed to have been done for Landlord, Tenant will have the option in its sole discretion to require Landlord to post a Surety Bond within ten (10) days at Landlord's expense or to pay and discharge the lien, and Landlord agrees to reimburse Tenant promptly upon demand. These Tenant remedies are not exclusive as Tenant has other remedies as provided by law. Landlord hereby waives all claims against Tenant for damage to any property or injury, illness, or death of any person in, upon, or about the property owned by Landlord other than the Leased Premises arising at any time and from any cause whatsoever other than by reason of the negligence or willful act of Tenant, its officers, employees, invitees, licensees or agents. Landlord shall defend, indemnify and hold Tenant harmless from any and all claims or liability for damage to any property or injury, illness, or death of any person (a) occurring in or on the Leased Premises or any part thereof arising at any time and from any cause whatsoever other than solely by reason of the negligence or

willful act of Tenant, its officers, employees, invitees, licensees or agents; or (b) occurring in, on, or about any part of the Leased Premises when such damage, injury, illness, or death shall be caused by the act, negligence, omission, or fault of Landlord, its agents, servants, employees, invitees, or licensees. Tenant shall have no liability to Landlord because of loss or damage caused by the acts or omissions of other tenants of Landlord, or by third parties unrelated to Tenant's business. The provisions of this paragraph shall survive the termination of this lease with respect to any damage, injury, illness, or death occurring prior to such termination.

14. **Insurance.** Tenant shall carry liability insurance and fire insurance with limits of not less than Two Million Dollars ($2,000,000) combined single limit bodily injury and property damage, which insurance shall have an endorsement naming Landlord and Landlord's agent, if any, as additional insured and additional loss payee and covering the liability insured under Paragraph 15 of this Lease. Tenant shall furnish a certificate evidencing such insurance which shall state, if possible, that the coverage shall not be cancelled or materially changed without ten (10) days advance notice to Landlord and Landlord's agent, if any, and a renewal certificate shall be furnished at least ten (10) days prior to expiration of any policy.

15. **Exemption of Landlord from Liability.** Except as otherwise stated herein, Tenant hereby agrees that Landlord shall not be liable for injury to Tenant's business or any loss of income therefrom or for damage to the goods, wares, merchandise or other property of Tenant, Tenant's employees, invitees, customers, or any other person in or about the Leased Premises or the Port, nor shall Landlord be liable for injury to the person of Tenant, Tenant's employees, agents or contractors, whether such damage or injury is caused by or results from fire, steam, electricity, gas, water or rain, or from the breakage, leakage, obstruction or other defects of pipes, wires or lighting fixtures, or from any other cause, whether said damage or injury results from conditions arising upon the Leased Premises or upon other premises of the Port, or from other sources or places and regardless of whether the cause of such damage or injury or the means of repairing the same is inaccessible to Tenant. Except as otherwise stated herein, Landlord shall not be liable for any damages arising from any act of neglect of any other tenant, occupant or user of the Port, nor from the failure of Landlord to enforce the provisions of any other lease of the Port.

16. **Major Damage.** Major damage means damage by fire or other casualty to the Leased Premises that causes the Leased Premises or any substantial portion of the Leased Premises to be unusable, or which will cost more than twenty-five percent (25%) of the pre-damage value of the Leased Premises to repair, or which is not covered by insurance. In the case of major damage, then either Landlord or Tenant may elect to terminate this lease by providing written notice to the other party within thirty (30) days after the occurrence of the damage. If this lease is not terminated following major damage, or if damage occurs that is not major damage, Landlord must promptly restore the Leased Premises to the condition existing just prior to the damage, with the exception of damage to Tenant improvements. Restoration of any Tenant improvements or alterations installed by Tenant, and the costs thereof, will be the responsibility of the Tenant. Rent will be reduced from the date of damage until the date restoration work being performed by the Landlord is substantially complete, with the reduction to be in proportion to the area of the Leased Premises not useable by Tenant.

17. **Tenant Property Insurance.** Tenant shall be responsible for insuring its personal property and trade fixtures located on the Leased Premises and any alterations or Tenant improvements it has made to the Leased Premises.

18. **Eminent Domain.** If a condemning authority takes title by eminent domain or by agreement in lieu thereof to the entire Leased Premises or a portion sufficient to render the Leased Premises unsuitable for Tenant's use, then either party may elect to terminate this lease effective on the date that possession is taken by the condemning authority; provided, however, that a condition to the exercise by Tenant of such right to terminate shall be that the portion of the Leased Premises taken shall be of such extent and nature as to substantially handicap, impede, or impair Tenant's use of the balance of the Leased Premises for the purpose intended. Rent shall be reduced for the remainder of the term in an amount proportionate to the reduction in area of the Leased Premises caused by the taking. All condemnation proceeds shall belong to Landlord, and Tenant shall have no claims against Landlord or the condemnation award because of the taking.

19. **Assignment and Subletting.** This lease binds and inures to the benefit of the parties, their respective heirs, successors, and assigns, provided that Tenant may not assign its interest under this lease or sublet all or any portion of the Leased Premises without first obtaining Landlord's consent in writing. This provision applies to all transfers by operation of law including but not limited to mergers and changes in control of Tenant. No assignment may relieve Tenant of its obligation to pay rent or perform other obligations required by this lease and no consent to one assignment or subletting may be deemed consent to any further assignment or subletting. Landlord may not unreasonably withhold or delay its consent to any assignment, or to subletting, accepting that the proposed Tenant has been approved by Landlord in writing. Tenant will pay any costs incurred by Landlord in connection with a request for assignment or subletting, including reasonable attorney's fees.

20. **Default.**

a. Any of the following shall constitute a default by Tenant under this lease:

1. Tenant's failure to pay rent or any other charge under this lease within ten (10) days after it is due, or failure to comply with any other term or condition within twenty (20) days following written notice from Landlord specifying the noncompliance. If such noncompliance cannot be cured within the 20-day period, this provision shall be satisfied if Tenant commences correction within such period and thereafter proceeds in good faith and with reasonable diligence to effect compliance as soon as possible. Time is of the essence of this lease.

2. Tenant's insolvency, business failure or assignment for the benefit of its creditors. Tenant's commencement of proceedings under any provision of any bankruptcy or insolvency law or failure to obtain dismissal of any petition filed against it under such laws within the time required to answer, or the appointment of a receiver for Tenant's property.

3. Assignment or subletting by Tenant in violation of Section 19 above.

4. Vacation or abandonment of the Leased Premises for more than three (3) months without the written consent of Landlord.

5. If this lease is levied upon under any attachment or execution and such attachment or execution is not vacated within ten (10) days.

b. Any of the following shall constitute a default by Landlord under this lease:

1. Landlord's failure to comply with any term or condition within twenty (20) days following written notice from Tenant specifying the noncompliance. If such noncompliance cannot be cured within the 20-day period, this provision shall be satisfied if Landlord commences correction within such period and thereafter proceeds in good faith and with reasonable diligence to effect compliance as soon as possible.

2. Landlord's insolvency, business failure or assignment for the benefit of its creditors. Landlord's commencement of proceedings under any provision of anybankruptcy or insolvency law or failure to obtain dismissal of any petition filed against it under such laws within the time required to answer, or the appointment of a receiver for Landlord's property.

21. **Remedies for Default.** In case of default as described in Section 20 above, Landlord shall have the right to the following remedies, which are intended to be cumulative and in addition to any other remedies provided under applicable law.

a. Landlord may terminate the lease and reenter, retake possession of the Leased Premises, and remove any persons or property by legal action or by self-help with the use of reasonable force and without liability for damages. Following such retaking of possession, efforts by Landlord to relet the Leased Premises will be sufficient if Landlord follows its usual procedures for finding tenants for the Leased Premises at rates not less than the current rates for other comparable space on Port property. If Landlord has other vacant space available, prospective tenants may be placed in such other space without prejudice to Landlord's claim to damages to loss of rentals from Tenant.

b. Landlord may recover all damages caused by Tenant's default, which include an amount equal to rent lost because of the default. Landlord may sue periodically to recover damages as they occur throughout the lease term, and no action for accrued damages will bar a later action for damages subsequently accruing. Landlord may elect in any one action to recover accrued damages plus damages attributable through the remaining term of the lease. Such damages will be measured by the difference between the rent under this lease and the reasonable rental value of the Leased Premises for the remainder of the term, discounted to the time of judgment at the prevailing interest rate on judgments.

c. Landlord may make any payment or perform any obligation that Tenant has failed to perform, in which case Landlord will be entitled to recover from Tenant upon all demand all amounts so expended plus interest from the date of the expenditure at the rate of one and one-half percent (1.5%) per month. Any such payment or performance by Landlord will not waive Tenant's default.

22. **Regulations.** Landlord shall have the right (but shall not be obligated) to make, revise, and enforce commercially reasonable regulations or policies consistent with this lease for the purpose of promoting safety, order, economy, cleanliness, and good service to all tenants of the Landlord, provided that if Landlord passes a regulation or policy that interferes with Tenant's quiet enjoyment or unreasonably interferes with Tenant's use of the Leased Premises, then Tenant may terminate this lease. All such regulations and policies shall be complied with as if part of this lease.

23. **Access.** During times other than normal business hours, Tenant's officers and employees or those having business with Tenant may be required to identify themselves or show passes in order to gain access to the Leased Premises. In such event, Landlord shall have no liability for permitting or refusing to permit access to anyone. With reasonable notice to Tenant, Landlord shall have the right to enter upon the Leased Premises at any time by passkey or otherwise to determine Tenant's compliance with this lease, to perform necessary services, maintenance and repairs to the Leased Premises, or to show the Leased Premises to any prospective tenant or purchasers. Except in case of emergency, such entry shall be with at least 24 hours prior notice and at such times and in such manner as to minimize interference with the reasonable business use of the Leased Premises by Tenant.

24. **Notices.** Notices to the parties relating to the lease shall be in writing, effective when delivered, or if mailed, effective on the second day following mailing, postage prepaid, to the address for the party stated in this lease or to such other address as either party may specify by notice to the other. Notice to Tenant may always be delivered to the Leased Premises. Rent shall be payable to Landlord at the same address and in the same manner, but shall be considered paid only when received.

25. **Subordination.** This lease shall be subject and subordinate to any mortgages, deeds of trust, or land sale contracts (hereafter collectively referred to as encumbrances) now existing against the Leased Premises. At Landlord's option this lease shall be subject and subordinate to any future encumbrance hereafter placed against the Leased Premises (including the underlying land) or any modifications of existing encumbrances. Tenant shall execute such documents as may reasonably be requested by Landlord or the holder of the encumbrance to evidence this subordination.

26. **Transfer of Premises.** If the Leased Premises is sold or otherwise transferred by Landlord or any successor, Tenant will attorn to the purchaser or transferee and recognize it as the landlord under this lease, and, provided the purchaser assumes all obligations hereunder, the Landlord (transferor) will have no further liability hereunder.

27. **Estoppel.** Either party will within twenty (20) days after notice from the other party execute, acknowledge and deliver to the other party a certificate reciting: whether or not this lease has been modified and is in full force and effect; whether there are any modifications or alleged breaches by the other party; the dates to which rent has been paid in advance, and the amount of any security deposit or prepaid rent; and any other facts that may be reasonably requested. Failure to deliver the certificate within the specified time will be conclusive upon the party of whom the certificate was requested that the lease is in full force and effect and has not been modified except as may be represented by the party requesting the certificate. If requested by the holder of any encumbrance or any ground lessor, Tenant will agree to give such holder or lessor notice of and an opportunity to cure any default by Landlord under this lease.

28. **Attorney's Fees.** In the event, any action, suit, or other proceeding is instituted by either party to this lease to enforce any provision of this lease or any matter arising therefrom or to interpret any provision of this lease, the prevailing party will be entitled to an award of reasonable attorney's fees and costs of suit, including expert witness fees. In the event, any such action, suit, or other proceeding is appealed to any higher court or courts, the prevailing party will be entitled to an award of reasonable attorney's fees and costs for prosecuting or defending such appeal or appeals, in addition to the reasonable attorney's fees and costs in the lower court, or courts.

29. **Quiet Enjoyment.** Landlord warrants that so long as Tenant complies with all material terms of this lease, it shall be entitled to peaceable and undisturbed possession of the Leased Premises free from any eviction or disturbance by Landlord. Landlord shall have no liability to Tenant for loss or damages arising out of the acts of other tenants of Port property or third parties, nor any liability for any reason which exceeds the value of its interest in the Leased Premises. Notwithstanding the above, Landlord reserves to itself a right of access over and across the dock leased herein, provided that such access does not unreasonably interfere with Tenant's use of the Leased Premises.

30. **Complete Agreement.** This lease and the attached exhibits constitute the entire agreement of the parties and supersede all prior written and oral agreements and representations. Neither Landlord nor Tenant is relying on any representations other than those expressly set forth herein. Any modification to this lease must be in writing and signed by both parties.

31. **Nonwaiver.** Waiver by either party of strict performance of any provision of this lease shall not be deemed a waiver of or prejudice of the party's right to require strict performance of the same provision in the future or of any other provision.

32. **Real Property Taxes.**

a. **Payment of Taxes.** Tenant must pay all real and personal property taxes, if any, applicable to Tenant's portion of the use and possession of the Leased Premises.

b. **Definition of "Real Property Tax".** As used herein, the term "real property tax" includes any form of real estate tax or assessment, general, special, ordinary or extraordinary, and any license fee, commercial rental tax, improvement bond or bonds, levy or tax (other than inheritance, personal income or estate taxes) imposed on the Port or any portion thereof by any authority having the direct or indirect power to tax, including any city, county, state or federal government, or any school, agricultural, sanitary, fire, street, drainage or other improvement district thereof.

33. **Severability.** The invalidity of any provision of this lease as determined by a court of competent jurisdiction, shall in no way affect the validity of any other provisions herein.

34. **Time of Essence.** Time is of the essence with respect to the obligations to be performed under this lease.

35. **Security Measures.** Each party acknowledges that they have no obligation whatsoever to provide guard service or other security measures for the benefit of the other party or their property. Each party assumes full responsibility for the protection of itself, its agents and invitees and its property from acts of third parties. Nothing herein contained prevents Landlord, at Landlord's sole option from providing security protection for the Port or any part thereof.

36. **No Warranties.** The Leased Premises are leased "as-is" and in their current condition as of the first day of the lease term. No warranties, express or implied, are provided by Landlord regarding the condition or fitness for purpose of the Leased Premises.

37. **Parking.** Landlord does not assign any specific parking spaces to Tenant under this lease. Tenant and Tenant's employees and invitees are permitted to use any un-restricted Port public parking areas.

38. **Headings.** The headings in this lease are for the convenience of the parties only and are not to be used in the interpretation of its provisions.

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IN WITNESS WHEREOF, the duly authorized representatives of the parties have executed this lease as of the last date written below.

PORT OF BROOKINGS-HARBOR,
Landlord

Dated: _____

By: _____
Richard Heap, President

ATTEST:

_____
Sharon Hartung, Secretary/Treasurer

Mailing Address:
P.O. Box 848
Brookings, OR 97415

Phone: 541-469-2218
Fax: 541-359-3999

PACIFIC SEAFOOD PROCESSING, LLC
Tenant

Dated: _____

By: _____

Name:
Its:

Mailing Address:
Attn: Legal & Strategic Affairs
16797 SE 130th Avenue
Clackamas, Oregon 97015

Phone:
Fax:

Pacific Seafood Processing LLC

Exhibit "A"

Processing Plant

Pacific Seafood Processing LLC

Exhibit "A"

Receiving Dock and Hoists

ACTION ITEM – B

DATE:	May 6, 2021
RE:	FEMA DR-4432 and DR-4452 Construction Method and Drawing Approval
TO:	Honorable Board President and Harbor District Board Members
ISSUED BY:	Gary Dehlinger, Port Manager

OVERVIEW

- A severe storm occurred on February 24, 2019 causing enough damage in Curry County and to the Port which activated FEMA disaster relief protocol. The Port submitted our storm damage report and throughout the process FEMA has approved the first Phase of engineering and permitting to repair large portion of Basin 2 slopes and approximately 8,000 cubic yards of dredging.

- Another severe storm occurred on April 6, 2019 causing enough damage in Curry County and to the Port which activated FEMA disaster relief protocol again. The Port submitted our storm damage report and throughout the process FEMA has approved the first phase of engineering and permitting to dredge approximately 30,000 cubic yards from Basins 1 and 2.

- Once the construction funding phase is approved by FEMA, both disaster repair projects will concurrently progress, but financial accounting of the work will be separated.

- The Port has a FEMA approved Hazard Mitigation Grant Program (HMGP) to allow additional funding to mitigate future disasters by repairing existing or build new infrastructure. The Port submitted additional funding requests under the 2019 declared disasters. The Port is optimistic receiving additional construction mitigation funding under DR-4452.

- FEMA disasters projects and HMGP require 25% matching. Business Oregon can provide up to $500,000 match per disaster claim. Total possible matching from Business Oregon would be $1 million. The maximum cost of the projects before the Port would need to cover any matching would be $4 million.

- Once FEMA approves the funding amounts, Oregon Emergency Management (OEM) handles the contracts and oversees the financial accounting and reimbursements for FEMA. If the Port receives funding from HGMP and Business Oregon, all three agencies oversee their own funding and reimbursements. The Port must pay out funds prior to reimbursement requests.

- The Port and OEM currently have a contract and funding of $120,000 for Phase 1 Engineering and Permitting for the two disasters. Jack Akin with EMC Engineers / Scientists was hired by the Port to produce the engineering and permitting for Phase 1.

- On April 26, 2021, Jack Akin presented and answered questions on the construction methods and drawings from the public and Board of Commissioners for both DR-4432 and DR-4452.

- On April 27, 2021, Jack Akin and I had a conference call with OEM to discuss the next steps needed to move the FEMA projects forward. We found out our project was getting covered up by all the other events happening to the State and Country. OEM suggested we move as fast as possible to submit a scope of work and budget for their review so it would get into their system. OEM also stated if the scope of work changes after submission no additional funding will be permitted.

DOCUMENTS

- In-House Dredging Feasibility Study by Jack Akin/EMC Engineering, 50 pages
- Construction Drawings for DR-4432 and DR-4452, 51 pages

COMMISSIONERS ACTIONS

- **Recommended Motion:**
  Motion to approve FEMA DR-4432 and DR-4452 projects as presented by EMC Engineering / Scientists. Approve Jack Akin/EMC Engineering / Scientists and Port Manager to continue pursuing FEMA funding and permitting for the repairs and mitigation work and authorize the Port Manager to sign all documents and agreements on the behalf of Port of Brookings Harbor to secure FEMA funding for these projects. FEMA projects included are repairs to Basin 2 slopes and dredging approximately 38,000 cubic yards from Basins 1 & 2, which also includes purchasing dredging equipment and system as described in the presentation. Mitigation measures included are RV Park and storm drainage on Kite Field, paving and storm drainage in the Boat Yard which includes boat washing water recycling unit, and paving and storm drainage in the gear storage and receiving dock areas.

A Feasibility Study Was Done for the Port

IN-HOUSE DREDGING: FEASIBILITY STUDY

By Jack Akin, MS, PE, IC, HMS, AI

For

Port of Brookings Harbor
Gary Dehlinger, Port Manager
Travis Webster, Harbormaster

In Summary

This study investigated the feasibility of implementing an in-house maintenance dredging program and operation at the Port, in comparison to other dredging alternatives.

A continuous reduction in the availability of safe moorage due to shoaling is occurring at the Port. In order to focus on solutions that make sense, a number of options have been considered in the Study. Some of these options have been reviewed in the past and have been determined to be too expensive, cumbersome and/or unpredictable.

Barge and scow, hydraulic suction dredging, mechanical, or clamshell dredging; disposing of sediments upland via storage piling on land, beach nourishment, or other out-of-water beneficial or non-beneficial uses, trucking to a more distant disposal area (e.g. landfill or private property), or in-water, including ocean disposal, beach nourishment, flow-lane and tidal/intertidal storage were evaluated via data and experience.

For the purposes of comparison these dredging and disposal options use a volume of 25,000 cubic yards of sediment.

Barge and scow dredging has been found to be both expensive and impractical, primarily due to considerations of navigability and availability. The standard barge may be as large as 200-foot long and 50-foot wide, with a 12-deep scow. Such a barge would be outfitted with appropriate duty spuds for anchoring and stability once it is in the desired location. The spuds on the barge must be of sufficient length allowing it to anchor itself in harbor depth of water. Out of the USACE's most recent abstract of offers for the barge and scow dredging of several port locations nearby, mobilization and demobilization alone, depending upon the selected sediment placement location, varies in the cited bid from $477,211 to about $756,250. Dredging/disposal per cubic yard was bid competitively, based on the large total volume of sediment to be dredged for this multi-locational project.

During third quarter 2019, for example, while McAmis, a barge and scow USACE winning subcontractor, was fulfilling their contract with the USACE at Winchester Bay, they accepted an offer from Salmon Harbor Marina to add to their federally contracted work by "piggybacking" the Marina's work. A $21/cubic yard charge was proposed to the Marina, rather than the $11 or $12/ cubic yard offered to the USACE as part of the federal project. The Marina would have had to pay hundreds of thousands of dollars to mobilize such equipment for themselves, unless they were able to gain agreement to "piggyback" as described. The cost to dredge 25,000 cubic yards, if "piggybacking" was available, is therefore estimated at the Port of Brookings Harbor to be $525,000, and, if "piggybacking" was not available, at best, $777,000 ($12/cy + $477,000 mobe/demobe). However, many areas requiring dredging in Basins 1 and 2 would not be accessible via this equipment.

Hydraulic suction dredging utilizing contracting standard swing-ladder dredges has been seen to be a viable method at the Port, but comes with high mobe/demobe costs, and does not lend itself to in-house maintenance dredging at smaller ports and marinas. Mobe/demobe costs to and from nearby locations have been seen to range from $40,000 to $55,000. Dredging costs additional to mobe/demobe have been found to range from $20 to $35/cubic yard, if sediment is disposed to nearby in-water or upland locations.

However, without development, no nearby in-water or upland disposal locations are available for the Port, and so the only other alternative is that of ocean disposal.

A number of analytical routines have been done for the Port, including selection of an appropriate pipe diameter (14" OD), determination of the required DR or SDR (17 SDR HDPE), determination of the required weighting, and of the design, construction and spacing of ballast weights, buoyant force, weight of pipe and pipe contents, methods of installation, preparation of land-to-water transition zones and, when required, underwater bedding, assembly of individual lengths of pipe into long continuous lengths, launching of pipeline into water, bending radius at which buckling can be initiated, etc. The higher sediment slurry velocities required in long pipelines to prevent clogging result in higher total dynamic head (TDH).

Combinations of pipe thicknesses necessary to resist the high total dynamic head (TDH) created by slurry traveling through 12,000 foot pipe lines at the recommended velocity are not found to be available for reasonably sized dredges, and so, booster pumping would be required.

Additional to the complexities associated with pumping slurry such long distances are those presented by the challenging task of working with a pipeline placed through river and ocean currents, whether floating or sunken. EMC has estimated designed and provided project engineering for ocean disposal and estimates the cost for such a project (25,000 cubic yards to the ocean disposal location via pipeline) from the Port to be $980,000.

Disposal Limitations

1. Available ocean disposal location is about 12000 feet from the furthest Port reach.
2. Hydraulic suction dredges small enough to navigate throughout the Port docks would be equipped with pump horsepower not sufficient to pump that distance, without at least one in-line booster pump. Potential pipeline pathways require a combination of land and water routes unfriendly to a successful dredging operation during winter weather.
3. USACE has determined in the past that the Chetco River reach and entrance are not approached with enough river flow energy to deliver flow-lane sediments beyond the federal channel.
4. No nearby in-water storage areas are permitted to be used by the Port.

5. When considering upland storage during a dredging event at the Port, it must be taken into account that any possible storage and de-watering area within the Port limits sediment volumes during a single event to 25,000 cubic yards, and reasonable volumes of 6 – 8000. Therefore, use of a large dredge for upland disposal at the Port would require multiple events and subsequently multiple mobe/demobe costs, rendering this option infeasible.

6. Likewise, to utilize barge and scow for upland storage at the Port would present the Port, in addition to multiple handling of the sediment for placement, the same volume limitations and associated multiple mobe/demobe costs.

So this Study concludes that a low cost, in-house dredging operation would bring many advantages to the Port. Flexibility and rapid response to ongoing mooring challenges would bring a level of internal control not often experienced at small ports in Southern Oregon. During our review of practicable alternatives, we concluded that a smaller and more mobile dredging unit could provide the required navigability, and in-house control, that would be affordable and be more able to provide the Port with long-term maintenance dredging.

It is also concluded that annual maintenance dredging volume requirements at the Port are relatively small, because the major portion of shoaled sediments from Port facilities slough to federally maintained channels, and so a modest maintenance program, on an annual basis, could maintain the Port mooring spaces, and additionally could enable the Port to gradually and affordably reduce its backlog, which has been accumulating over decades.

The above conclusions bring us to the analyses of in-house operational scenarios, utilizing small, maneuverable dredges, and local, perhaps even beneficial sediment disposal options.

EMC in the past has specified portable, centrifugal pump-driven slurry pumps, well fitted for the dredging of dock locations (e.g. Port of Port Orford).

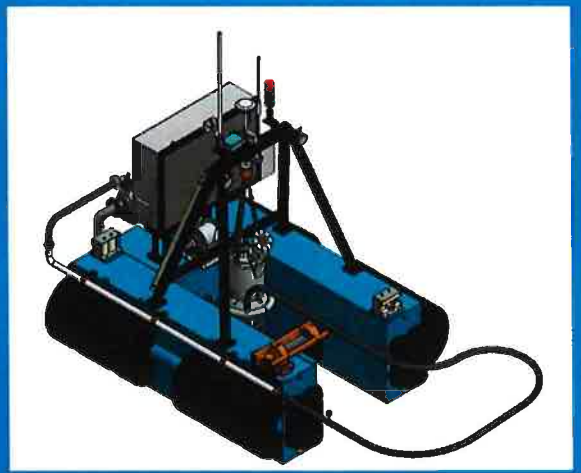
So equipment provided by BPH, Eddy, DragFlow and TOYO Pumps were analyzed and compared.

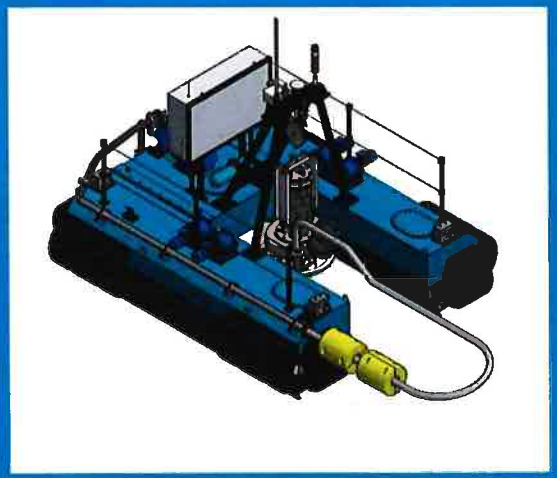
After considering economic value, equipment design, horsepower, maneuverability, etc., EMC recommends that the Port consider an in-house, small dredge system, utilizing the DragFlow DPR-120 remote controlled dredge, rigged with the EL 1204HH C Model pump system.

Slides and video clips focus on this equipment, its applicability, function and maintenance. We will also briefly review the proposed upland disposal option, permitting requirements and costs associated with this recommended in-house dredging option.

DRP18

Flow up to: 60m3/h
Max solids: 25mm



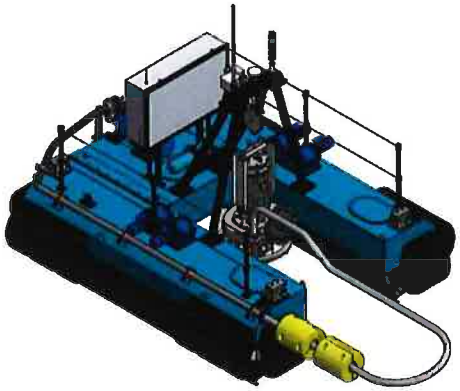


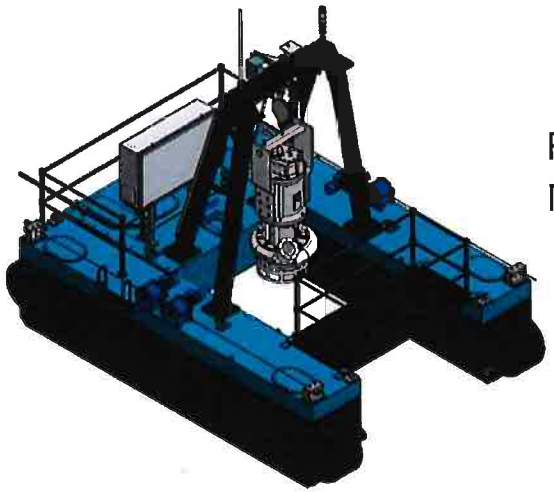
DRP60

Flow up to: 300m3/h
Max solids: 60mm

DRP120

Flow up to: 500m3/h
Max solids: 90mm



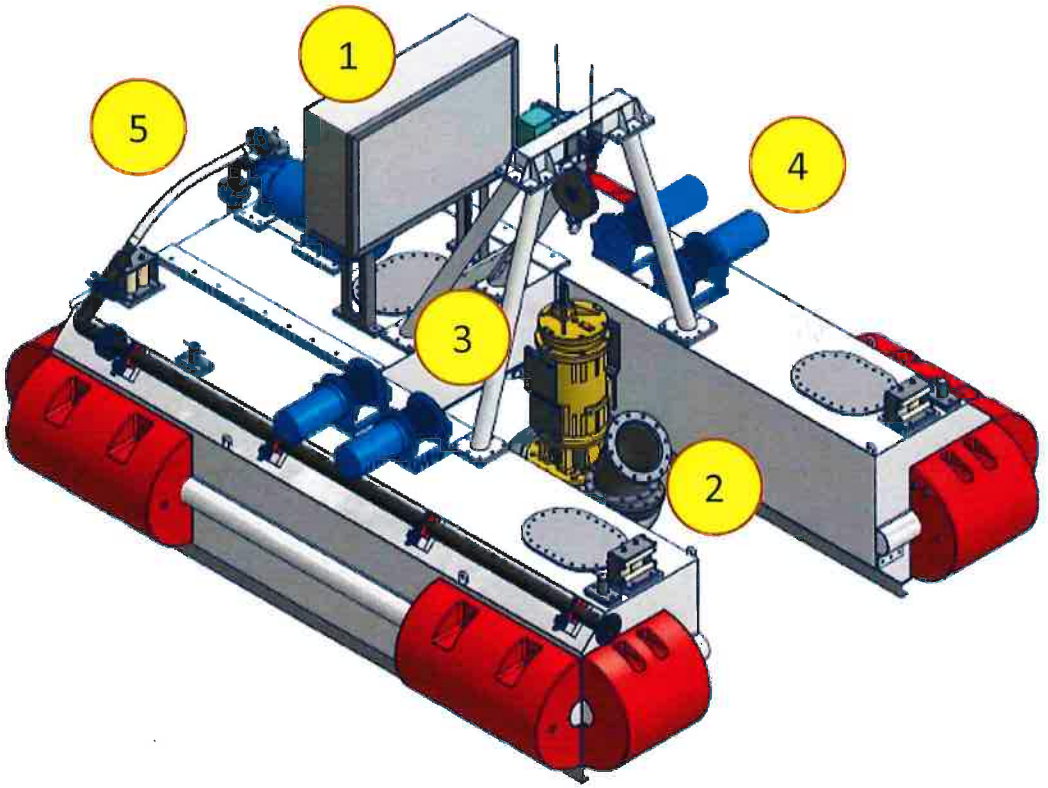


DRP150

Flow up to: 800m3/h
Max solids: 120mm

Dredge Details:

1. Control Panel
2. Dredging pump
3. Electric Hoist
4. 4 Winches (45 – 110m)
5. Jet Ring System for breaking the material to be dredged



A look at some operating clips

Some Video Links of the Dragflow

Videos

Remote control

- Pump ON/OFF
- Jet ring ON/OFF
- Move pump up and down
- Control set of winches
- Reset depth counter
- Check battery level
- Working depth and power absorption
- Emergency Stop

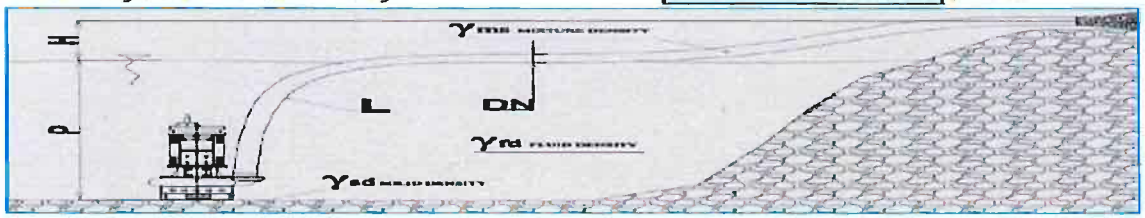
- **Power: from 5 to 400 Horse Power**
- **Capacity: from 30 to 3600 m^3/h**
- **Discharge diameter: up to 18 inch**
- **Max. Pumping distance: 2000m**
- **Max. solid handling: 120 mm**
- **Models: <u>42 models</u>**

Client: Jack Akin - EMC-Engineers-Scientists, LLC-Oregon-US	Date: Oct 28, 2020
Project:SHM feasibility-	Author: Maurice

Mixture Details

Solids concentration in the mixture		
% by volume	25	%
corresponding to % by weight	40	%
Solid Particles Dimension	d50 > 15 mm	
Particle Median Diameter	1	kg/dm^3
Liquid SG	2	kg/dm^3
Solids SG	1.25	kg/dm^3
Mixture Specific Gravity	0.001	Pa s
Fluid dynamic viscosity		

DRAGFLOW ULTIMATE EFFICIENCY



Application Details

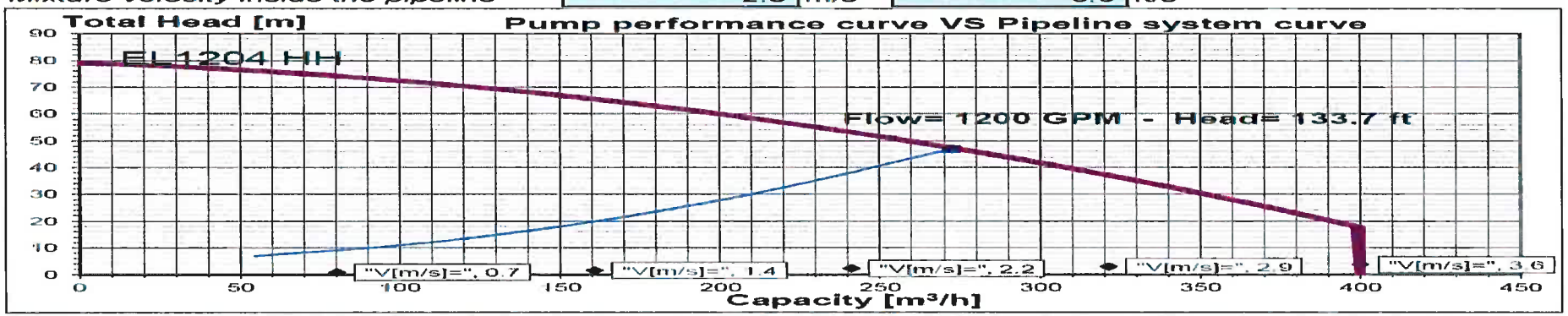
Geodetic Height (Air) =	H	1.2	m	4	ft
Geodetic Height (Water) =	P	15.2	m	50	ft
Pipeline Total Length =	L	914.4	m	3000	ft
Pipe Internal Diameter =	DN	198.2	mm	7.803	inch
Total Mixture Capacity		273	m^3/h	1200	GPM

System TDH at set capacity

	SLURRY [m]		SLURRY [ft]	
Friction loss along the pipeline	35.3	m	115.7	ft
Concentrated pressure drops	0.5	m	1.5	ft
Geodetic: [H+(mixSG-liqSG)*P]	5.0	m	16.5	ft
Total Dynamic Head (TDH)	40.8	m	133.7	ft
Mixture velocity inside the pipeline	2.5	m/s	8.0	ft/s

REQUIRED POWER
100 HP

PUMP POWER
120 HP



* All the above values come from theoretical calculations. The solid concentration can vary from 10% to 50% pump capacity due

Port of Brookings-Harbor
Calculation Sheet For 6'' and 8'', SDR 21 Pipeline, 120 hp
by Jack Akin, MS, PE

Q_{gpm}	1098.00	1200.00	3000.00	1000.00	1720.00	3000.00
C_{HW}	155.00	155.00	155.00	155.00	155.00	155.00
$L_{ft.}$	3000.00	3000.00	3000.00	3000.00	3000.00	3000.00
d_{in}	5.96	5.96	5.96	7.75	7.75	7.75
$Q_{ft.^3/s}$	2.45	2.67	6.68	2.23	3.83	6.68
$V_{ft./s}$	12.65	13.82	34.55	6.80	11.69	20.39
$e_{ft.}$	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06	5.00E-06
ν_{50°	1.45E-05	1.45E-05	1.45E-05	1.45E-05	1.45E-05	1.45E-05
R_e	4.34E+05	4.74E+05	1.19E+06	3.04E+05	5.22E+05	9.11E+05
$e/D_{ft.}$	1.01E-05	1.01E-05	1.01E-05	7.74E-06	7.74E-06	7.74E-06
$R_e^{0.9}$	1.18E+05	1.28E+05	2.93E+05	8.59E+04	1.40E+05	2.31E+05
F Log_{10} Precalc	-4.29	-4.32	-4.65	-4.16	-4.37	-4.57
Square of Previous	18.41	18.70	21.63	17.32	19.06	20.88
F Approx.	1.36E-02	1.34E-02	1.16E-02	1.44E-02	1.31E-02	1.20E-02
$1/F^{1/2}$	8.58	8.65	9.30	8.32	8.73	9.14
$1/F^{1/2}$ Calc	8.56	8.63	9.30	8.30	8.71	9.13
$h_{f\text{-}DW}$	203.79	239.74	1294.87	48.09	129.30	359.02
$h_{e\text{-}ft.}$	0.00	0.00	0.00	0.00	0.00	0.00
$h_{s\text{-}ft.}$	0.00	0.00	0.00	0.00	0.00	0.00
$h_{v\text{-}ft.}$	2.48	2.97	18.54	0.72	2.12	6.46
$h_{f\text{-}HW}$	198.58	234.04	1274.93	46.31	126.31	353.50
TDH-HW	201.06	237.01	1293.47	47.03	128.44	359.96
TDH-DW	206.28	242.70	1313.41	48.81	131.42	365.48
$HP_{Brake\text{-}HW}$	55.75	71.82	979.90	11.88	55.79	272.70
$HP_{Brake\text{-}DW}$	57.20	73.55	995.01	12.33	57.08	276.88
Assumed total eff	0.65	0.65	0.65	0.65	0.65	0.65
HP_{HW}	85.77	110.49	1507.54	18.27	85.82	419.54
HP_{DW}	87.99	113.15	1530.78	18.96	87.82	425.97
Yds^3/hr. (Production Rate)	32.62	35.65	89.13	29.71	51.10	89.13
10-Hr Days to Move .000 Yds^3 0.10 Solids*	76.64	70.13	28.05	84.15	48.92	28.05

Port of Brookings-Harbor
Calculation Sheet For 6" and 8", SDR 21 Pipeline, 120 hp
by Jack Akin, MS, PE

Adjusted $h_{f\text{-}HW}$	278.01	327.66	1784.90	64.84	176.84	494.91
Adjusted HP_{HW}**	119.65	154.14	2101.91	25.47	119.59	584.34
Adjusted v_{50} (assumes 20% slurry)	1.84E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05
Adjusted R_e	3.42E+05	3.73E+05	9.33E+05	2.39E+05	4.11E+05	7.17E+05
Adjusted $R_e^{0.9}$	9.55E+04	1.03E+05	2.36E+05	6.93E+04	1.13E+05	1.86E+05
Adjusted F Log_{10} Precalc	-4.20E+00	-4.24E+00	-4.57E+00	-4.07E+00	-4.28E+00	-4.48E+00
Adjusted Square of Previous	17.66	17.94	20.87	16.57	18.29	20.09
Adjusted F Approx.	1.42E-02	1.39E-02	1.20E-02	1.51E-02	1.37E-02	1.24E-02
Adjusted $1/F^{1/2}$	8.40	8.47	9.14	8.14	8.55	8.97
Adjusted $1/F^{1/2}$ Calc	8.38	8.45	9.13	8.12	8.53	8.95
Adjusted TDH $_{DW}$	217.58	255.93	1380.14	51.73	139.09	386.24
Adjusted HP_{DW}	92.82	119.31	1608.56	20.10	92.94	450.16

Notes

* Production assumes 100% efficiency. The actual production rate and dredging period must be adjusted per project.

** Safe recommended coefficient of 1.4 for various concentrations of slurry when using Hazen Williams.

Main benefits of using Dragflow submersible pumps:

- An integrated **double blade AGITATOR** to lift settled material creating a higher % of solids around the pump. Can be used with other cutting mechanisms.

- The pump suction is directly **in front of the material** allowing the pumps to move slurries with solid content up to **70%** by weight.

- High solid concentration means using **energy to move solids** instead of water. It means higher **efficiency,** working with smaller diesel engines with a considerably **reduction** of operating cost **per cubic meter.**

- **Adjustable lower wear plate** maintains **maximum performance** by a simple regulation of the gap between the high chrome wear plate and the impeller through the adjusting screws.

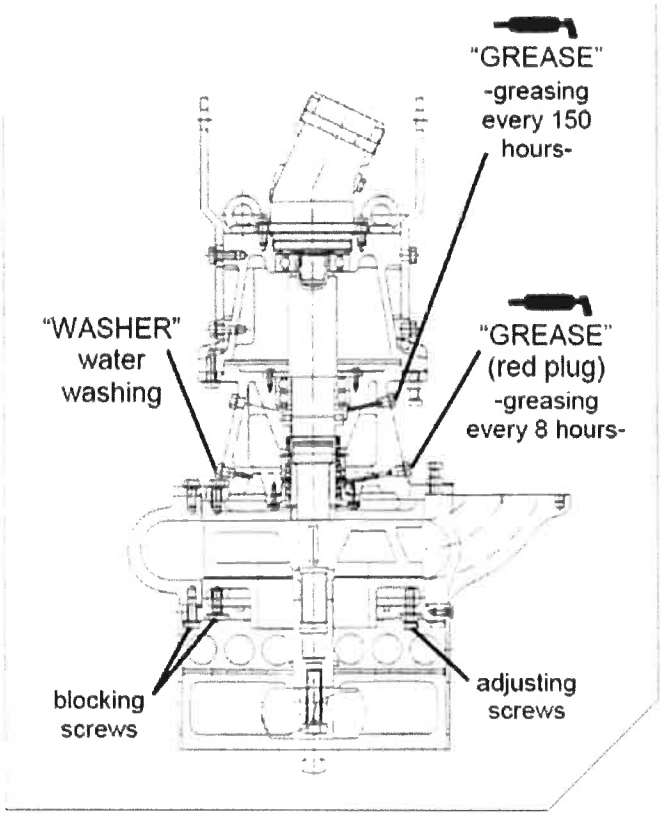
- **Dual thrust bearings** to reduce vibration and counter thrust loads in both directions.

- **Front deflector protecting the seals.** Pumps are equipped with a front deflector to prevent fine materials from penetrating the seal.

- **External Grease Inlet:** the lip seals package can be kept clean for material with an easy manual greasing schedule. After the end of the day or every 8 hours of work, the seals should be greased with 2-3 pumps from the grease gun.

- **Lube oil inspection ports**: A wide-angle port outside the oil chamber ensures easy inspection of shaft seal oil levels as well as providing easy access for oil replacement.

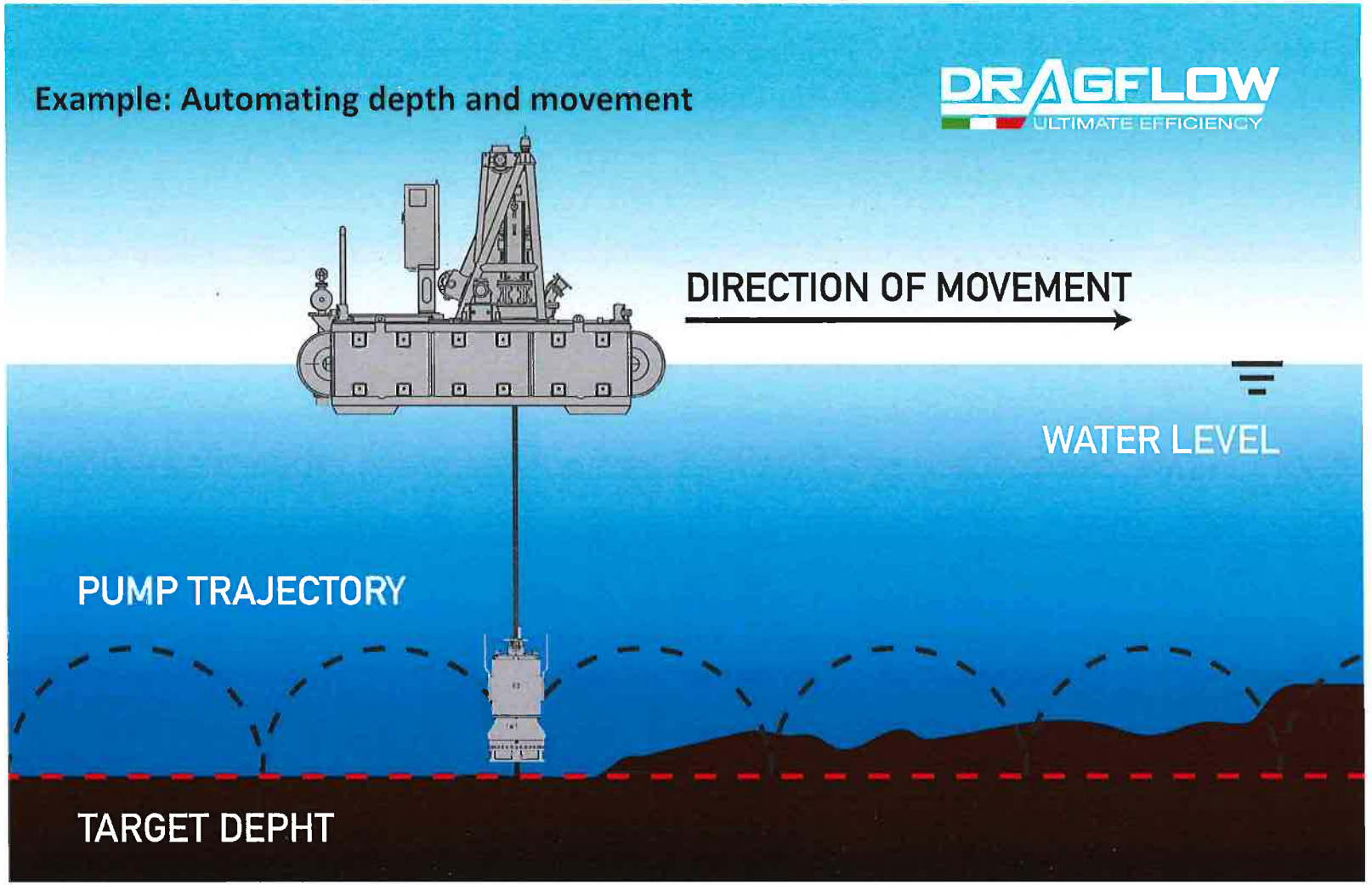
- **A water inlet** to wash the inside of the pump to remove material, provide a better maintenance.



It is possible to **fully automate the operation of a DRP remote controlled dredge** based on the most important project parameters.

Some of the automation packages include:

- Setting a **desired dredging depth** and let the dredge do the job on its own
- Automatically **monitor discharge density** and make changes to maintain a preset density value
- **Monitor flow** and change the pump speed to maintain a steady flow
- **Move around the dredging area** without intervention from the operator


Example: Automating depth and movement
DRAGFLOW
ULTIMATE EFFICIENCY
DIRECTION OF MOVEMENT
WATER LEVEL
PUMP TRAJECTORY
TARGET DEPHT

A CASE STUDY

Boat parking lots

Limited space due to presence of boats.

Removing the boats is an expensive operation.

Entrance

Traditional dredging vessels are too big and expensive (a Port can't afford such an equipment).

Compared to these, Dragflow systems are easy affordable and a Port can do the maintenance on its own.

HARBOR MAINTENANCE

Port Sveva, Italy 2016

The problem: High volume of sediments inside harbor, causing a shallow draft which created difficult access to the boats.

HARBOR MAINTENANCE

Port Sveva, Italy 2016

Our solution: Dragflow supplied a Remote controlled dredge (DRP18), equipped with a dredging pump (EL 12.5S),with an output of about 70 m^3/h of mixture to a distant of approximately 150m. 2 winches to move the dredge and no operators on board.

Sediment Disposal


Pipeline Length –
About 2000' max


Pipeline Length –
About 1700' max

Costs

Equipment

* Dredge – About $168,800
* Jet power ring and power jet high-pressure pump, recommended by EMC, about 26,600
- Floating discharge piping, 8 inches, is about $3900 for 25 foot assembly
- Power control cable with power and lights, is estimated to be about $13,400.
- HDPE pipe is about 3.15 per foot (SDR 21), for 3000 feet is about $9450.
- Electric Generator (min. 275 KVA, prime use, New) : $60,000, with specified trailer.

- Total Estimated Costs for Equipment: **$281,350**

Maintenance Information – See Next Slides

Maintenance

Most Important Pump Parts Exposed to Wear

These are the agitator, the impeller, the upper and lower wear plates and the casing.

Impeller: 5000 – 6000 hours of operation expected while dredging average beach sand before replacing the impeller.

Lower wear plate: Expect to replace two lower wear plates before replacing the impellor (estimate 2500 – 3000 hrs. ea).

Agitator: Expect to replace two agitators per each lower wear plate (estimate 1250 – 1500 hrs. ea)

Upper wear plate: Expect to replace two impellers before replacing the upper wear plate (estimate 10,000 – 12,000 hrs. ea).

Casing. Expect to replace two impellers before replacing the casing (estimate 10,000 – 12,000 hrs. ea).

Other than this, if preventive maintenance is carried on regularly with greasing schedule and inspection, the pump will operate for a long period of time with no major trouble.

Inspecting the oil in the oil chamber regularly for signs of humidity or moisture will reveal the good standing state of the seals of the pump

START UP AND MAINTENANCE
OF DRAGFLOW PUMPS WITH AGITATOR
Considerations and Recommendations

DATA MEASURED AT START UP

	amps	psi
pump operating in air		
pump operating in water (air pocket)		
pump operating normally in water		
pump operating in slurry		
pump operating with very high slurry density		

If, while the pump is working, the amperage or pressure is higher than the values in the initial measure, this is an indication that there are residues in the impeller intake, or trash entangled in the shaft.

With readings higher than the normal values, the pump must be moved to a clean water area, and, if the amperage/pressure does not get lower, you must stop the pump and clean the trash.

Never try to start the pump with the shaft locked. After cleaning the pump, you should be able to turn the pump by hand. During the cleaning, make sure that the pump has been completely disconnected from the power source. Serious accidents have occurred due to negligence with this precaution.

Note: Conversion from electric power to hydraulic is an option. It is estimated that the cost for the Hydraulic Power Pack necessary to do that is likely to be in the range of $100,000 to $120,000, plus hoses, plus reel, floaters, etc. This is about twice of the best estimates that we have received for a prime, Tier III new portable electric generator necessary to drive the 120 HP motor.

Dragflow reportedly hasn't had issues to date with oil spills or leakage, as there is a separate drain line that returns to the main oil tank of the preliminarily designed system needed at the Port. Nevertheless, there is always the possibility of accidents and mistakes so the oil hoses must be handled with special care, especially when the dredge is moved from one location to another.

It would appear that cost benefits, if any, gained by an electric-to-hydraulic powered conversion does not justify potential associated environmental risk.

PERMITTING

The project proposes dredging via hydraulic suction dredge, with upland disposal. The Port of Brookings Harbor (POBH) and its consultant has reviewed requirements within OAR 141-085-550 and 141-93-250 through 280, and thus herein puts forth that the proposed project conforms to the applicable requirements therein stated. For example, OAR 141-093-0255, Maintenance Dredging – Definitions, states " (1) "Baseline Authorization" means a previous removal-fill authorization for a dredge prism of specified area(s) and depth(s) that was executed within fifteen (15) years of the date of application for authorization under this General Permit." The proposed dredging will occur within the footprint and depths of the existing, authorized prism, as shown in drawings attached to previous Applications. Major maintenance dredging last occurred in 2011.

Sediment Evaluation Requirements

The EPA and USACE have in the past informed the Port that they have concerns about the presence of contaminants (benzyl alcohol) in the south section of Basin 1, and would require further sampling, analyses and characterization prior to issuing a permit to dredge at the Port. However, this concern was expressed with the understanding that sediments were to be disposed in-water. However, upland disposal sediment quality requirements are greatly relaxed. Concern RE the very low acceptable concentration limits of contaminants imposed to protect sensitive aquatic species are eliminated by the change to upland disposal. The very low concentrations of benzyl alcohol and related contaminants pose no concerns for upland storage or use.

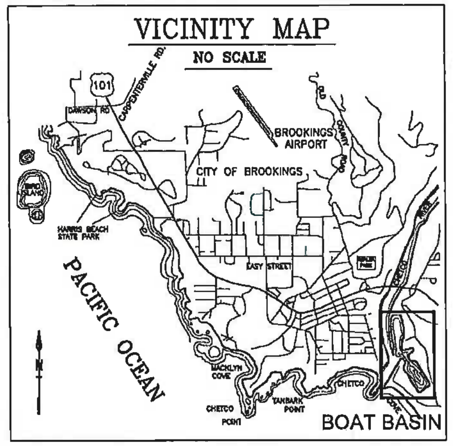
Sediment Evaluation Requirements

It may be therefore that sediment evaluation will not even be required.

Permit Term and Frequency

Further, upland disposal lengthens the likely permitting term from the 3-year term, given for in-water disposal, to a 10-year term.

Finally, unlike one-time permitting for large events, when granted, maintenance dredging projects at the Port can be conducted during any and all in-water work periods (10/15 – 3/15) during the 10-year permit term.



NATURAL FEATURES
EXISTING NATURAL RESOURCES OR NATURAL HAZARDS ON THE SUBJECT PROPERTY, INCLUDING WETLANDS, STREAMS, RIPARIAN AREAS, FLOOD PLAINS, OR FLOODWAYS TO BE DETERMINED BY ENGINEER

EXISTING TREE CANOPY
THERE ARE NO EXISTING TREES ON THE SUBJECT PROPERTY

CULTURAL RESOURCES
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PROJECT DESCRIPTION

TITLE: SEDIMENT STOCKPILE
REFERENCE: PB114
LOCATION: HARBOR ST
TAX LOT(S): 2500

DRAWING REGISTER

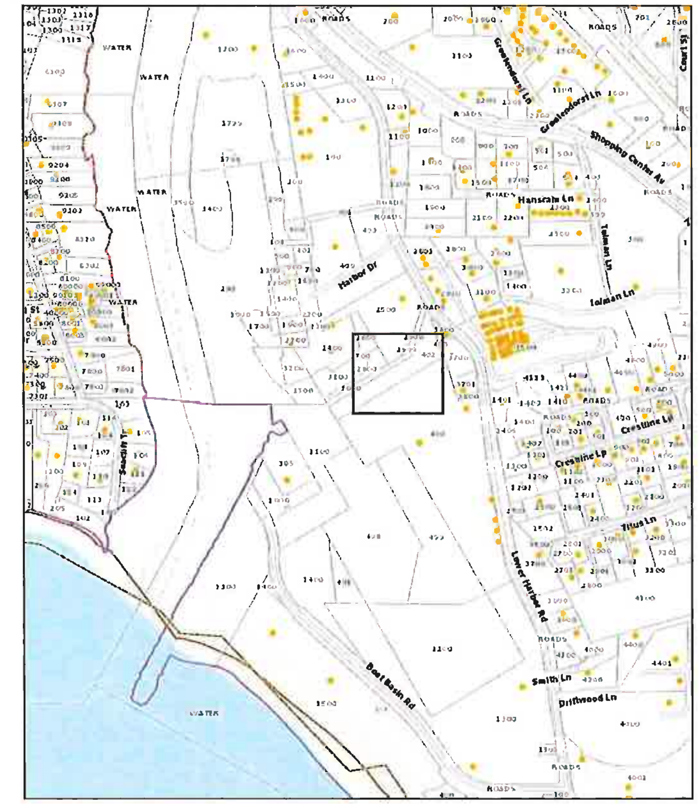
PB114-C100 COVER SHEET
PB114-C101 GRADING NOTES
PB114-C102 EXISTING CONDITIONS
PB114-C103 PROPOSED SEDIMENT STOCKPILE

PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS-HARBOR
2021 CIVIL IMPROVEMENTS

SEDIMENT STOCKPILE LOCATION #2

PROJECT OVERVIEW
SCALE 1":100'



PORT OF BROOKINGS HARBOR
MAP OF TAX LOTS

PRELIM GRADING NOTES
1. DEQ 1200-C PERMIT IS REQUIRED.
2. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. PRIOR TO THE START OF CONSTRUCTION, VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
4. MINIMIZE TRAFFIC ON SOIL AREAS DURING WET WEATHER. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EROSION AND RUNOFF.
5. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
6. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

LEGEND

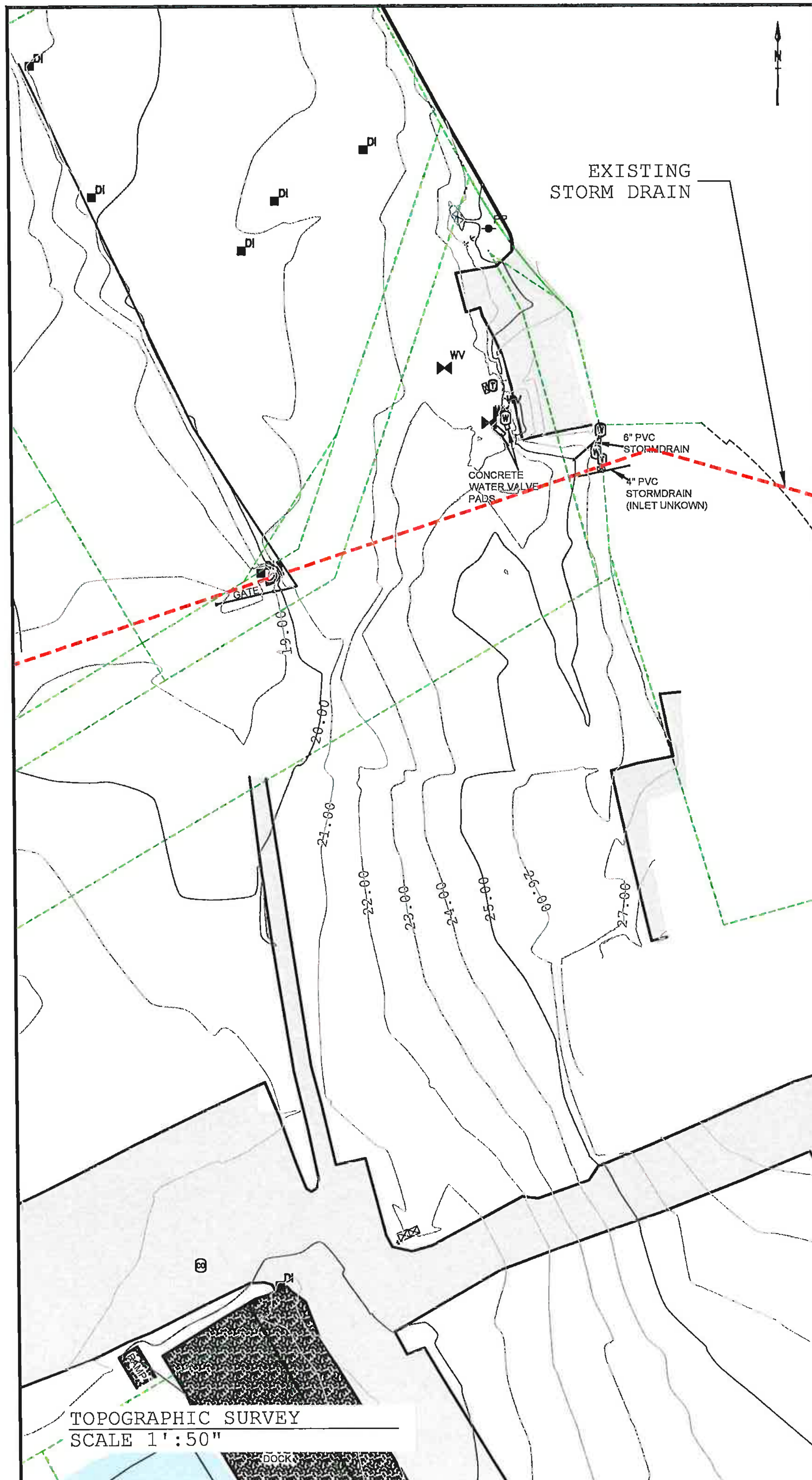
5	ELEVATION
	SUBGRADE MINOR CONTOUR
	SUBGRADE MAJOR CONTOUR
	PARCEL
	GEOTEXTILE
	CONCRETE PAD
	GRASS
	JETTY
	SLIP WAY
	PAVED ROAD

ENGINEER:
EMC - Engineers/Scientists, LLC
Grants Pass • Jacksonville • Medford, OR

No.	DATE	REVISION	BY

PREPARED FOR:
PORT OF BROOKINGS
(LOT 2900, MAP '360522DB')
16330 Lower Harbor Rd, Brookings, OR 97415
PORT OF BROOKINGS HARBOR

Date 04/04/2021
Drawn By INFRADRAFT
Sheet No. C-100
File No. PB114



TOPOGRAPHIC SURVEY
SCALE 1':50"

GRADING NOTES

1. PRIOR TO THE CONSTRUCTION OF EMBANKMENTS, THE CONTRACTOR SHALL EXCAVATE UNSUITABLE FOUNDATION MATERIAL. BASEMENTS, TRENCHES AND HOLES ENCOUNTERED WITHIN EMBANKMENT LIMITS SHALL BE FILLED WITH APPROVED MATERIAL. PRIOR TO BACKFILLING THE CONTRACTOR SHALL BREAK CONCRETE FLOORS OF BASEMENTS AS DIRECTED. THE CONTRACTOR SHALL BREAK UP AND ROUGHEN THE GROUND SURFACE BEFORE EMBANKMENTS MATERIAL IS PLACED THE NATURAL GROUND UNDERLYING EMBANKMENTS SHELL BE COMPACTED TO THE DENSITY SPECIFIED FOR THE EMBANKMENT MATERIALS TO BE PLACED, AND TO THE DEPTH OF THE GRUBBING OR A MINIMUM OF 6 INCHES.
2. EMBANKMENT CONSTRUCTION SHALL INCLUDE PREPARATION OF THE AREAS UPON WHICH EMBANKMENTS ARE PLACED, THE PLACEMENT AND COMPACTION OF APPROVED EMBANKMENT MATERIALS AND FILLING OF HOLES, PITS AND OTHER DEPRESSIONS WITHIN THE SUBDIVISION.
3. THE CONTRACTOR SHALL PLACE EMBANKMENTS AND FILLS IN THE HORIZONTAL LAYERS OF 8 INCHES MAXIMUM DEPTH AND COMPACT EACH LAYER TO THE DENSITY SPECIFIED.
4. EMBANKMENT SHALL NOT BE CONSTRUCTED WHEN THE EMBANKMENT MATERIAL OR THE FOUNDATION ON WHICH THE EMBANKMENT WOULD BE PLACED IS FROZEN.
5. IMMEDIATELY PRIOR TO COMPLETION OF THE EARTHWORK, THE CONTRACTOR SHALL CLEAN THE ENTIRE WORK AREA OF DEBRIS AND FOREIGN MATTER.
6. THE MAXIMUM DENSITY OF COMPACTED MATERIAL WILL BE DETERMINED BY AASHTO T-99
7. THE CONTRACTOR SHALL COMPACT ALL EMBANKMENTS, FILLS AND BACKFILLS TO A MINIMUM IN PLACE DENSITY OF 95 PRESENT.
8. THE CONTRACTOR SHALL WATER THE MATERIALS TO PROVIDE OPTIMUM MOISTURE FOR COMPACTION OF EMBANKMENT AND BACKFILLS. EMBANKMENTS OD BACKFILL MATERIALS SHALL NOT BE PLACED IN FINAL POSITION UNTIL MOISTURE IN EXCESS OF OPTIMUM MOISTURE HAS BEEN REMOVED.
9. IF THE SPECIFIED COMPACTION IS NOT OBTAINED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR MAY BE REQUIRED TO USE A MODIFIED COMPACTION PROCEDURE OR APPLY ADDITIONAL COMPACTIVE EFFORT. IF APPROVED MATERIALS MEETING THE SPECIFICATIONS CANNOT BE COMPACTED TO THE REQUIRED DENSITY REGARDLESS OF COMPACTIVE EFFORT OR METHOD, THE ENGINEER MAY REDUCE THE REQUIRED DENSITY OR DIRECT THE ALTERNATE MATERIALS BE USED. IN NO CASE SHALL EARTHWORK OPERATIONS PROCEED UNTIL THE CONTRACTOR IS ABLE TO COMPACT THE MATERIAL TO THE SATISFACTION OF THE ENGINEER.
10. DEQ 1200-C PERMIT IS NOT REQUIRED.
11. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
12. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
13. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

GEOTECHNICAL NOTE

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE PROJECT ENGINEER FOR REQUIRED REMEDIATION. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER FOR REQUIRED SITE OBSERVATIONS AND TESTING OF ALL FILLS.

ENGINEER: EMC - Engineers/Scientists, LLC
Grants Pass • Jacksonville • Medford, OR

NO.	DATE	REVISION	BY

PORT OF BROOKINGS HARBOR

PREPARED FOR: (LOT 2900, MAP '360522DB')
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415

Date 04/04/2021
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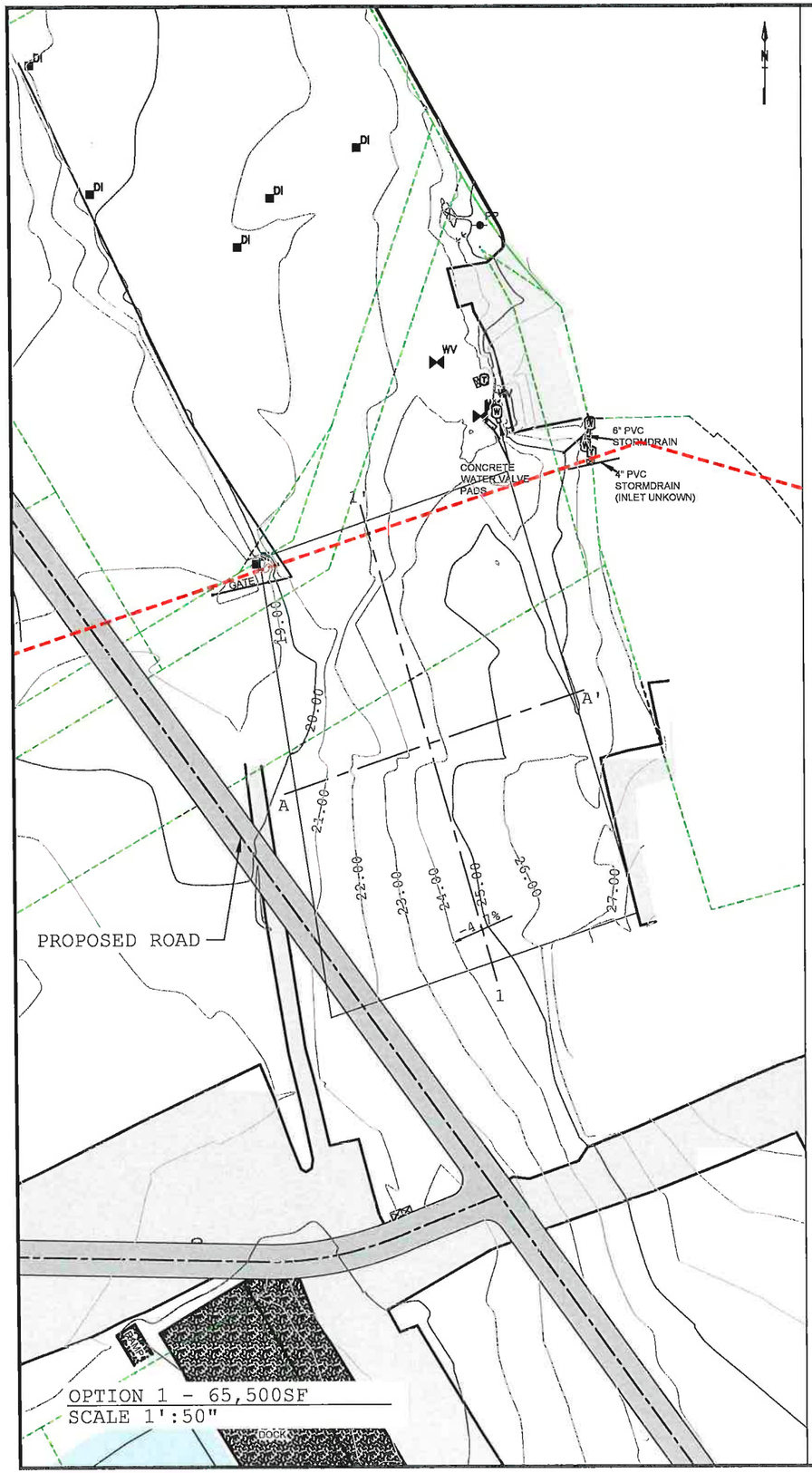
Sheet No. C-101
File No. PB114

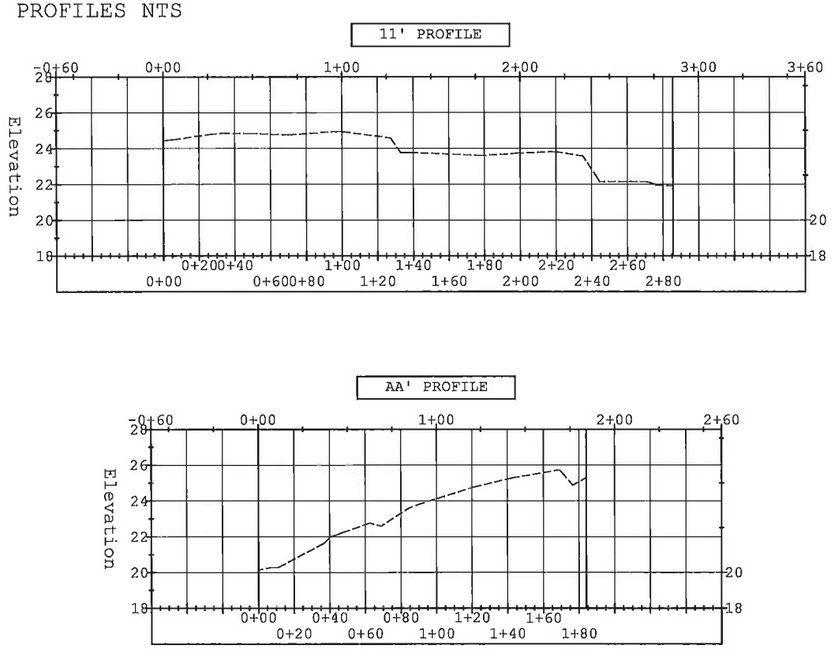


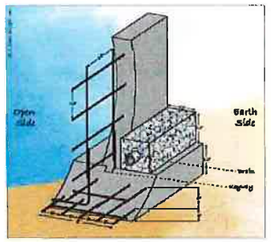
NEW SEDIMENT STORAGE AREA

AREA: 45,185SF

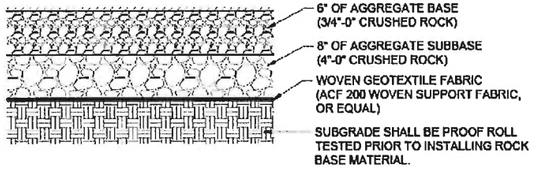
APPROX. STORAGE CAPACITY
7,350 cu.yards

PROFILES NTS

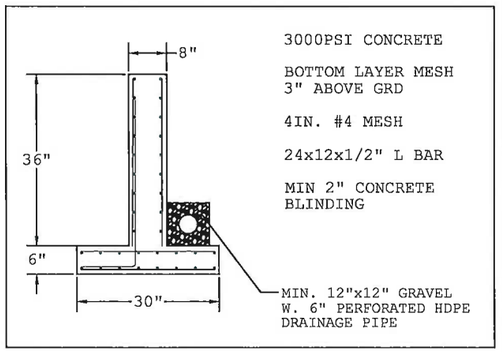




RETAINING WALL
DETAIL NTS



SUB-GRADE
PREPARATION DETAIL



REINFORCED CONCRETE
RETAINING WALL DETAIL

ENGINEER:
EMC | Engineers/Scientists, LLC
Grants Pass • Jacksonville • Medford, OR

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PREPARED FOR:
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415
(LOT 2900, MAP "38S22DB")

PORT OF BROOKINGS HARBOR

Date 04/04/2021
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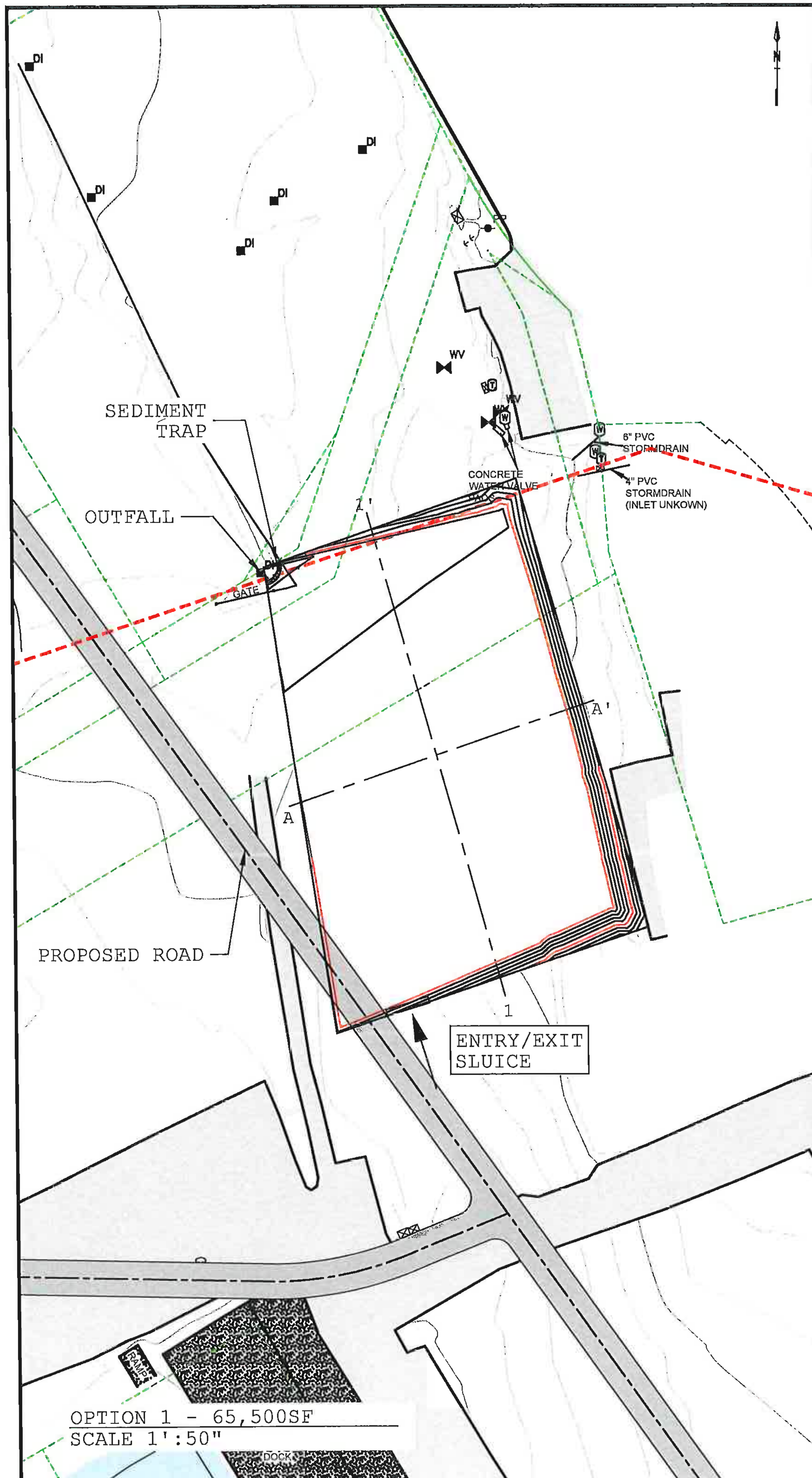
Sheet No. C-102
File No. PB114

NEW SEDIMENT STORAGE AREA



LEGEND

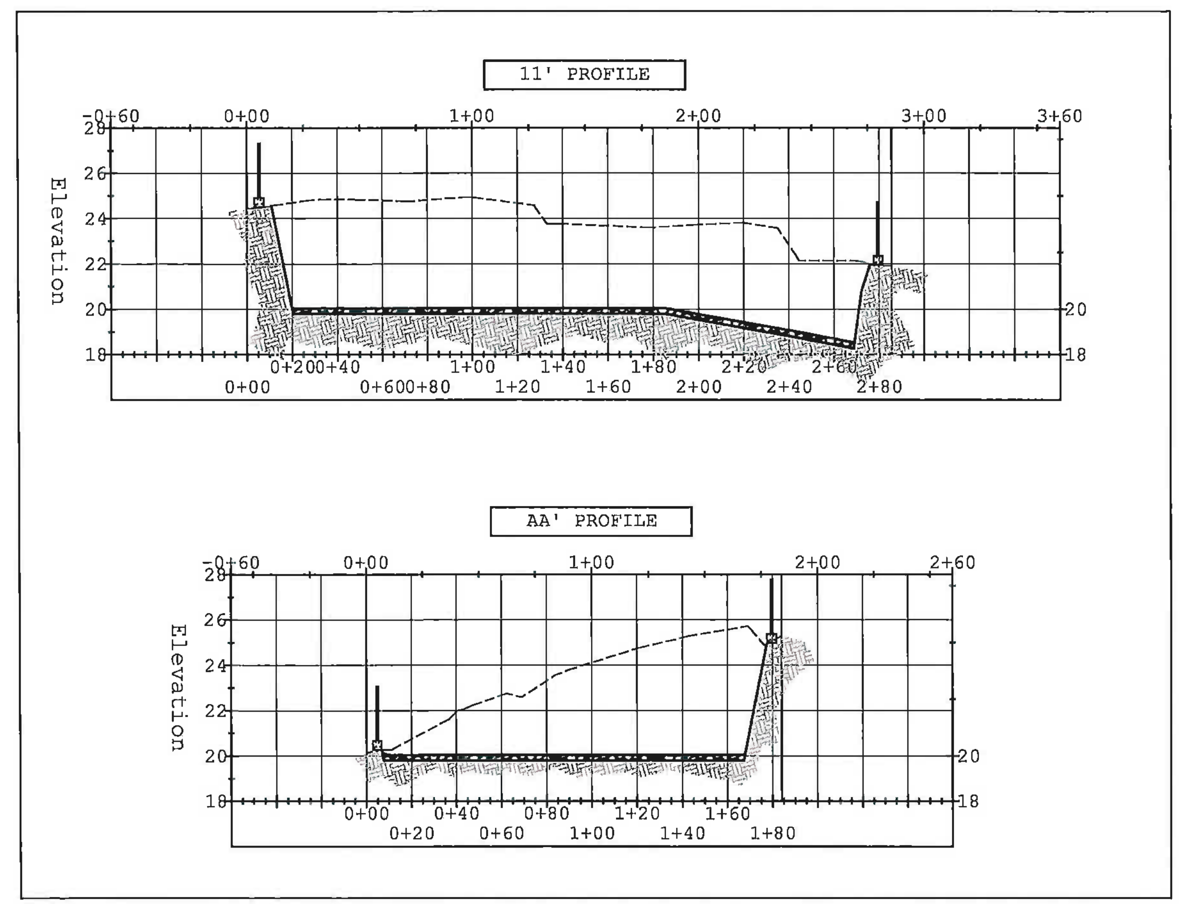
6" AGGREGATE BASE 3/4"-0" CRUSHED ROCK

~~8" AGGREGATE SUBBASE 4" 0" CRUSHED ROCK~~

WOVEN GEOTEXTILE FABRIC ACF200

PROOF ROLLED SUBGRADE

~~ENGINEERED FILL~~



SEDIMENT STORAGE GRADING
NTS

ENGINEER: EMC Engineers/Scientists, LLC

No.	DATE	REVISION	BY

PREPARED FOR: (LOT 2900, MAP '360522DB')

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

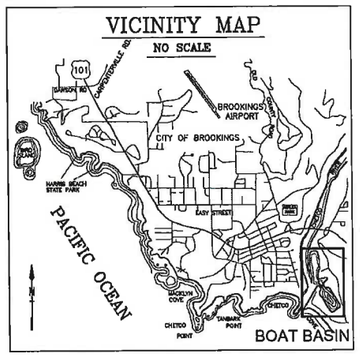
PORT OF BROOKINGS HARBOR

Date 04/04/2021

Drawn By INFRADRAFT

Sheet No. C103

File No. PB114



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PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS-HARBOR
2021 CIVIL IMPROVEMENTS

BASIN DREDGING

PROJECT OVERVIEW
SCALE 1":500'

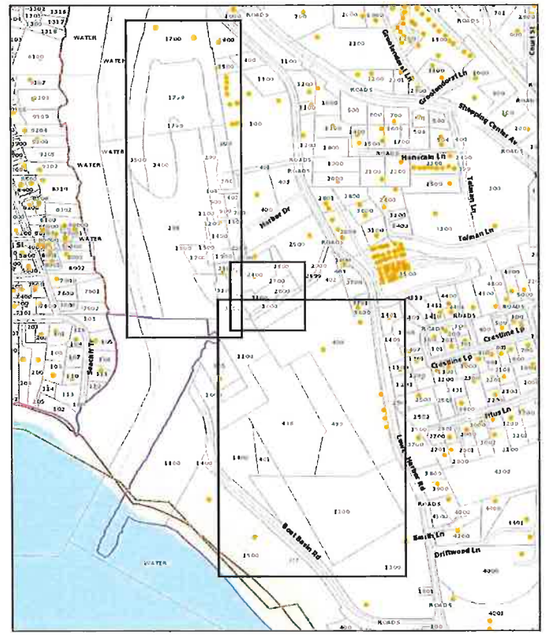
PROJECT DESCRIPTION

TITLE: BASIN DREDGING
REFERENCE: PB115
LOCATION: NORTH AND SOUTH BASIN
TAX LOT(S): 298,299,498,499,500,1100,1200 1700,1799,1798,1800,3400,3100,3300

DRAWING REGISTER

Name	Type	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
DREDGE 4432	full	51826.48	9081.75	887.80	8193.95<Cut>
DREDGE 4452	full	349993.68	69380.03	0.00	69380.03<Cut>
DREDGE ICEHOUSE	full	35086.03	3862.12	2.58	3859.53<Cut>

VOLUME REPORT



PORT OF BROOKINGS HARBOR
MAP OF TAX LOTS

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LEGEND

- 5 ELEVATION
- SUBGRADE MINOR CONTOUR
- SUBGRADE MAJOR CONTOUR
- PARCEL
- GEOTEXTILE
- CONCRETE PAD
- GRASS
- JETTY
- SLIP WAY
- PAVED ROAD

REGISTERED PROFESSIONAL ENGINEER OREGON JOHN CHICKI A. ASH RENEWAL 12/31/21

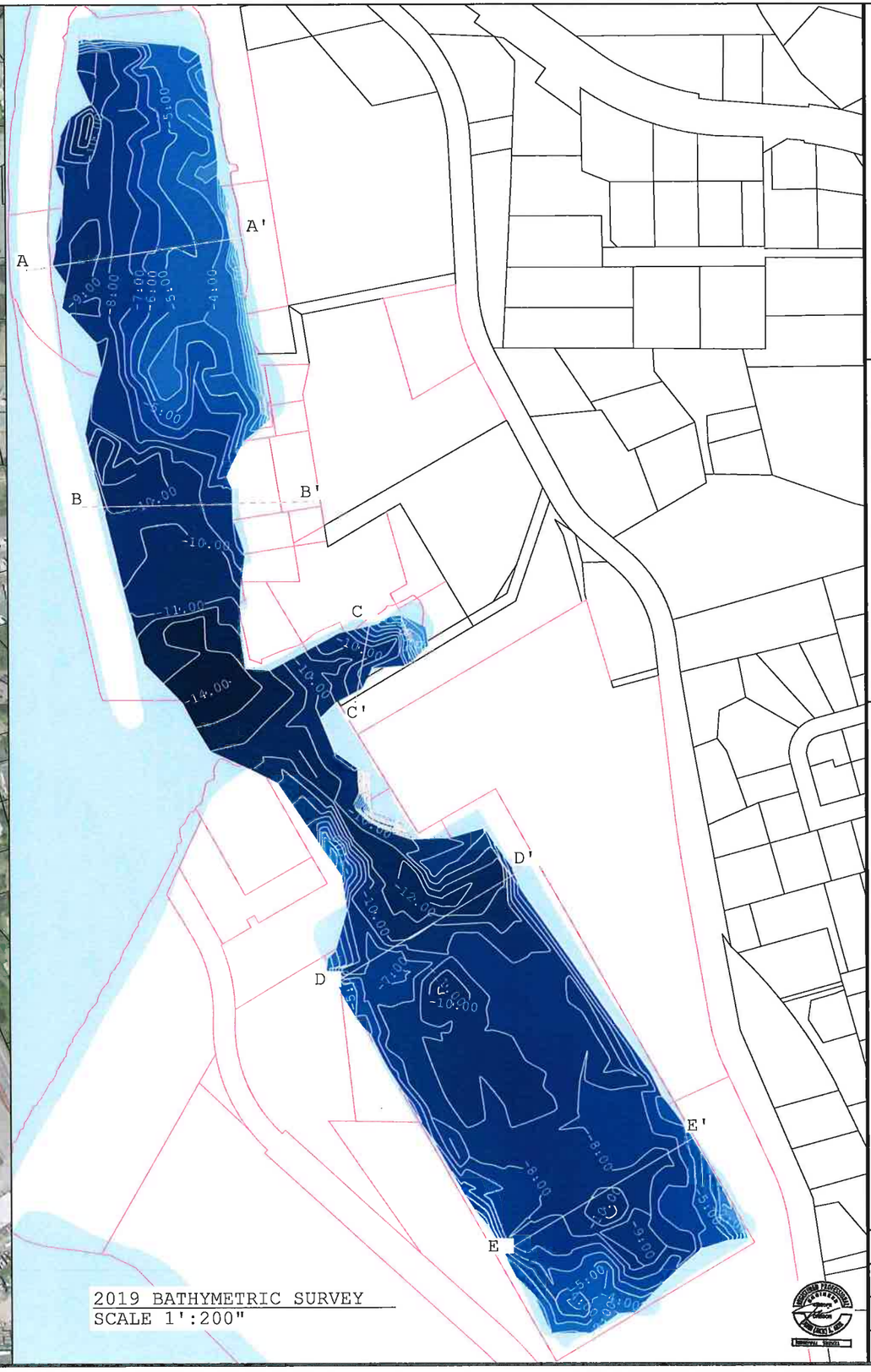
ENGINEER:
EMC
Engineering Solutions, LLC
Grants Pass • Jacksonville • Medford, OR

BY	REVISION	DATE	NO.

PREPARED FOR:
PORT OF BROOKINGS
(LOT 2800, MAP '3605220B')
16330 Lower Harbor Rd, Brookings, OR 97415
PORT OF BROOKINGS HARBOR

Date 01/06/2021
Drawn By INFRADRAFT
Sheet No. C-100
File No. PB115

Port of Brookings-Harbor
SCALE 1':200"



2019 BATHYMETRIC SURVEY
SCALE 1':200"

ENGINEER:
EMC
Grants Pass • Jacksonville • Medford, OR
Engineering/Scientific, LLC

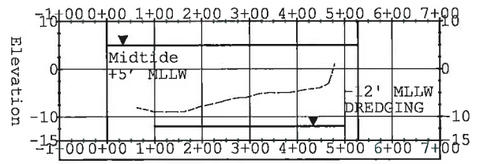
No.	DATE	REVISION	BY

PREPARED FOR:
PORT OF BROOKINGS HARBOR
(LOT 2900, MAP '36S32DB')
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415

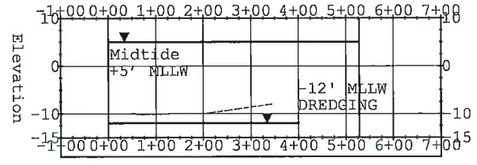
Date	12/26/2020
Drawn By	INFRADRAFT
Sheet No.	C-101
File No.	PB115

2019 BATHYMETRIC SURVEY
SCALE 1':200"

AA' PROFILE



BB' PROFILE



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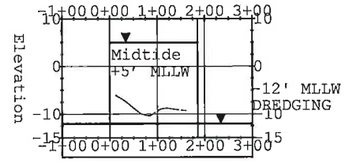

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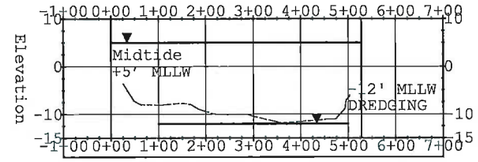

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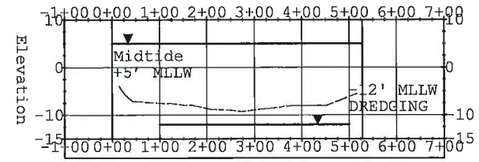


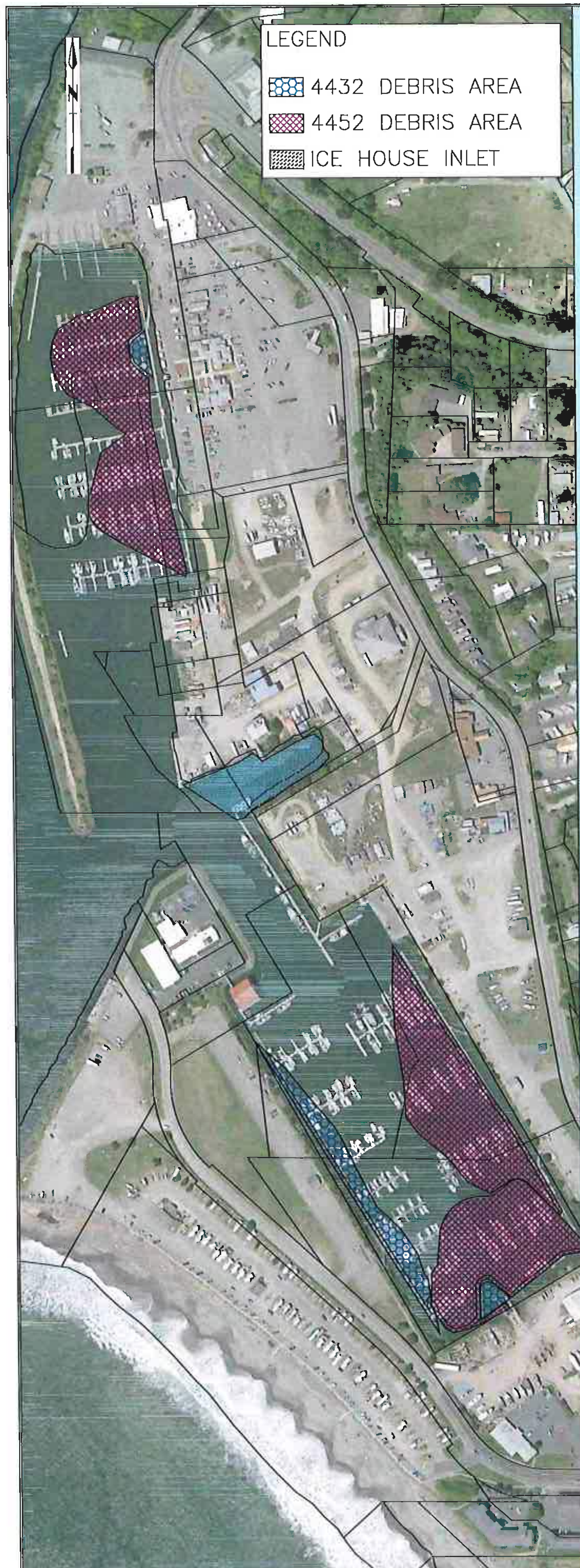
PROFILES
HZ SCALE 1':200"

ENGINEER:
EMC | Engineers/Scientists, LLC
Grants Pass • Jacksonville • Medford, OR

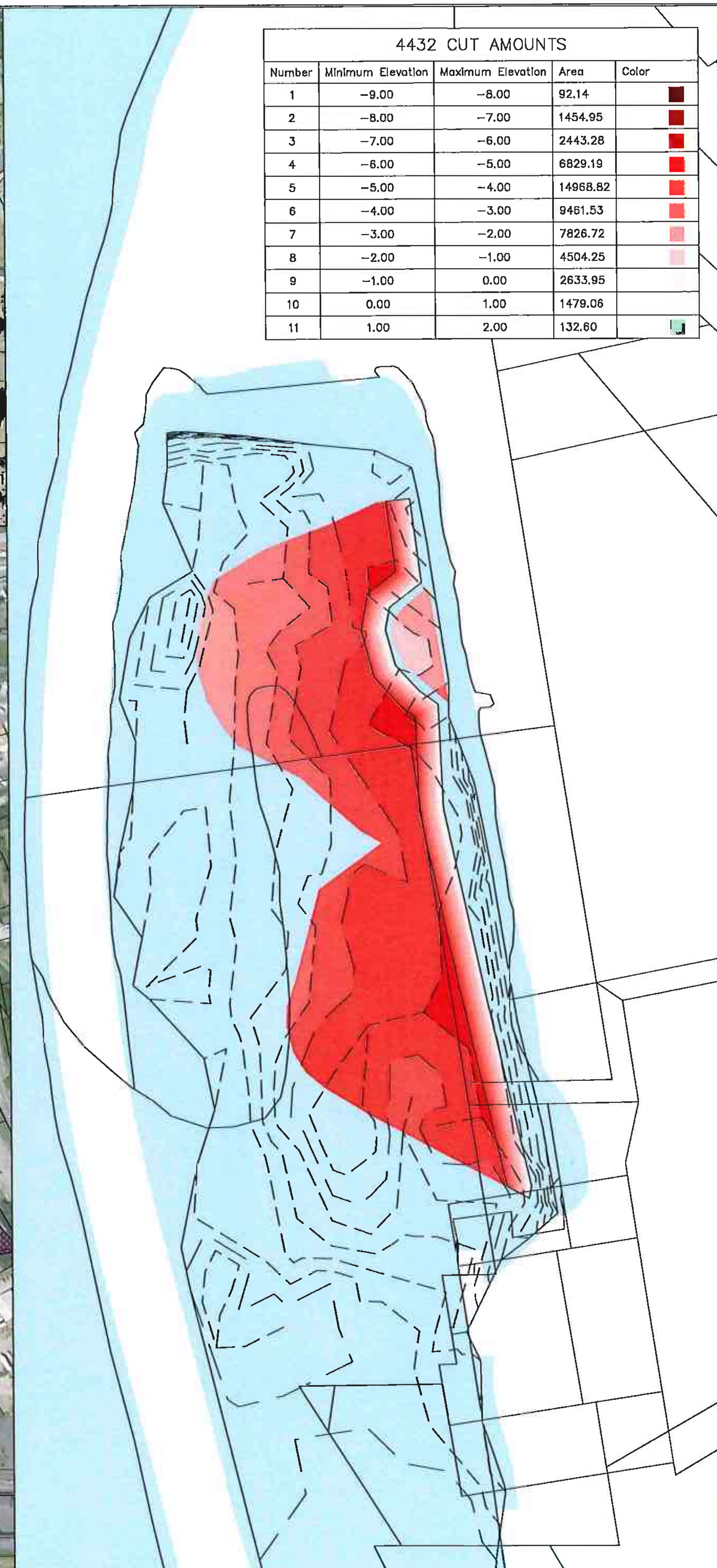
No.	DATE	REVISION	BY

PREPARED FOR:
PORT OF BROOKINGS HARBOR
(LOT 2900, MAP '36S22DB')
16330 Lower Harbor Rd, Brookings, OR 97415

Date	12/26/2020
Drawn By	INFRADRAFT
Sheet No.	C-102
File No.	PB115



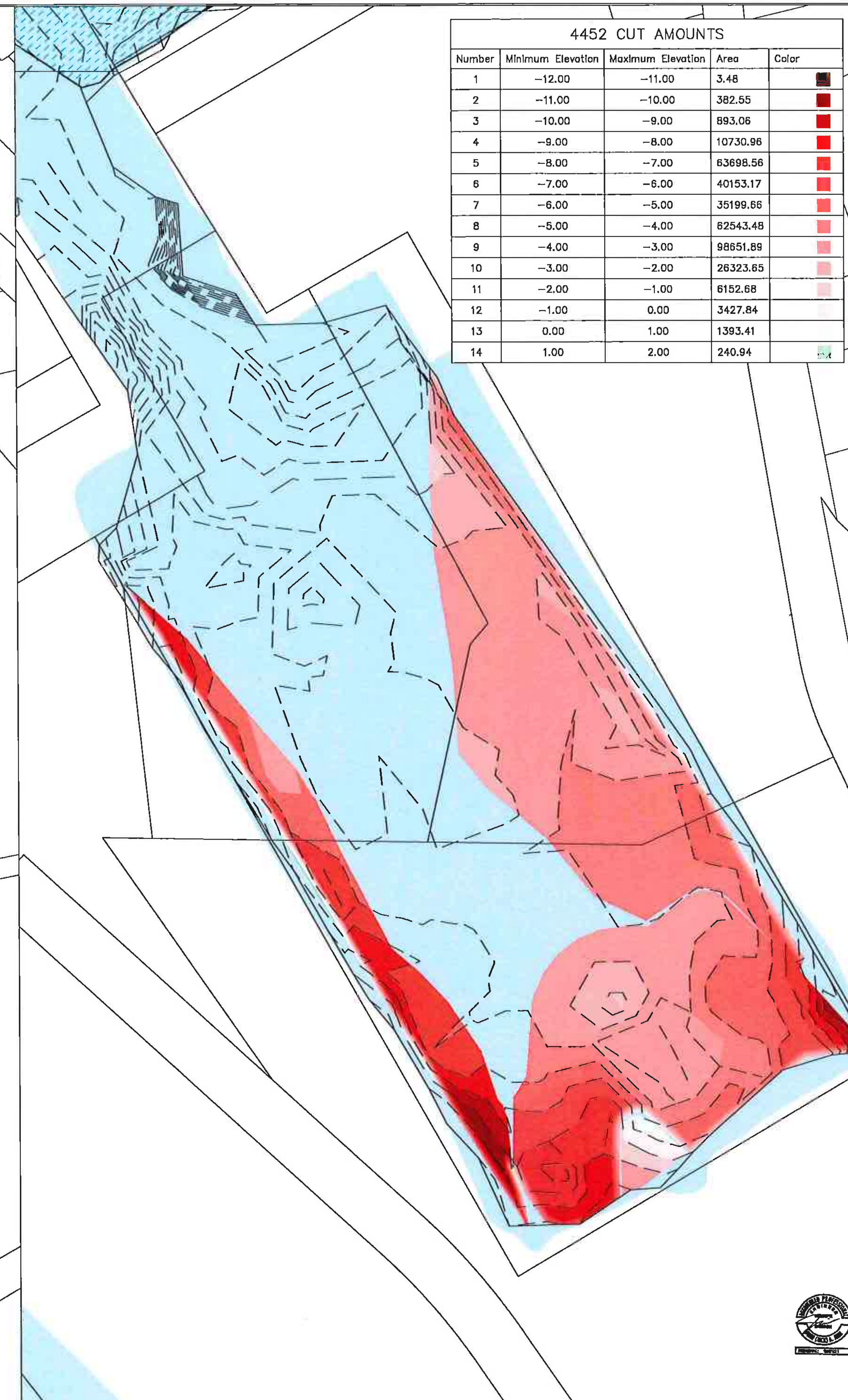
PLANNED DREDGING
SCALE 1":150'



4432 CUT AMOUNTS

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-9.00	-8.00	92.14	
2	-8.00	-7.00	1454.95	
3	-7.00	-6.00	2443.28	
4	-6.00	-5.00	6829.19	
5	-5.00	-4.00	14968.82	
6	-4.00	-3.00	9461.53	
7	-3.00	-2.00	7826.72	
8	-2.00	-1.00	4504.25	
9	-1.00	0.00	2633.95	
10	0.00	1.00	1479.06	
11	1.00	2.00	132.60	

NORTH BASIN ISOPACH
SCALE 1":80'



4452 CUT AMOUNTS

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-12.00	-11.00	3.48	
2	-11.00	-10.00	382.55	
3	-10.00	-9.00	893.06	
4	-9.00	-8.00	10730.96	
5	-8.00	-7.00	63698.56	
6	-7.00	-6.00	40153.17	
7	-6.00	-5.00	35199.66	
8	-5.00	-4.00	62543.48	
9	-4.00	-3.00	98651.89	
10	-3.00	-2.00	26323.65	
11	-2.00	-1.00	6152.68	
12	-1.00	0.00	3427.84	
13	0.00	1.00	1393.41	
14	1.00	2.00	240.94	

SOUTH BASIN ISOPACH
SCALE 1":80'

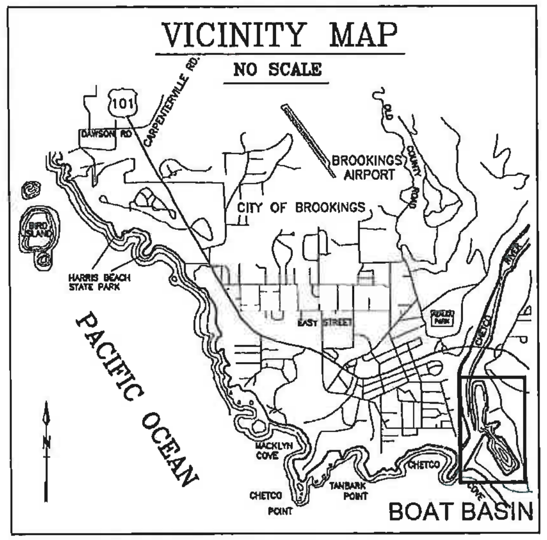
ENGINEER: EMC - Engineers/Scientists, LLC

No.	DATE	REVISION	BY

PREPARED FOR: (LOT 2900, MAP '36052208')
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date 12/28/2020
Drawn By INFRADRAFT
Sheet No. C103
File No. 115



NATURAL FEATURES
EXISTING NATURAL RESOURCES OR NATURAL HAZARDS ON THE SUBJECT PROPERTY, INCLUDING WETLANDS, STREAMS, RIPARIAN AREAS, FLOOD PLAINS, OR FLOODWAYS TO BE DETERMINED BY ENGINEER

EXISTING TREE CANOPY
THERE ARE NO EXISTING TREES ON THE SUBJECT PROPERTY

CULTURAL RESOURCES
LOCALLY, OR FEDERALLY DESIGNATED HISTORIC AND/OR CULTURAL RESOURCES ON THE SITE OR ON ADJACENT PARCELS TO BE DETERMINED BY ENGINEER.

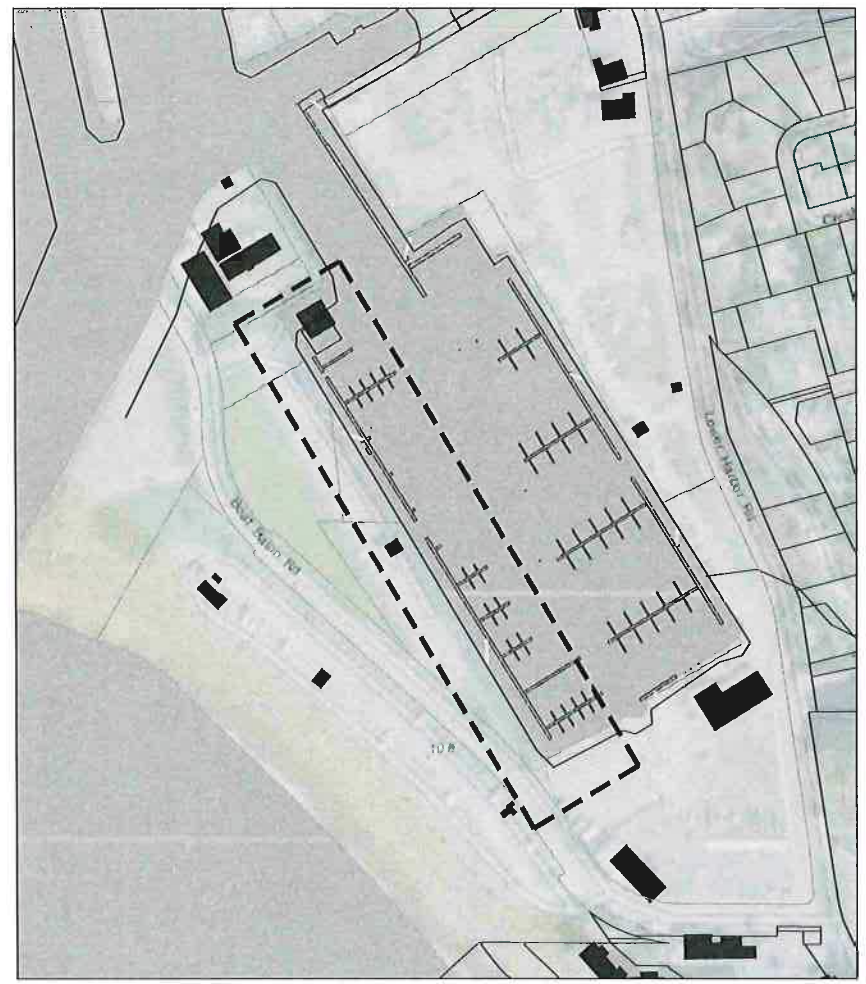
PUBLIC SERVICES
PUBLIC UTILITY SERVICES, INCLUDING WATER, SEWER, STORM DRAINAGE, POWER, TELEPHONE, CABLE INTERNET, AND GAS ARE AVAILABLE TO THE SUBJECT PROPERTY.

UTILITY STATEMENT
EXISTING UNDERGROUND UTILITIES ILLUSTRATED IN THESE PLANS ARE APPROXIMATED BASED ON MAPS OBTAINED FROM CURRY COUNTY GIS ELEVATIONS ESTIMATES, OR HAVE BEEN LOCATED BY A UTILITY LOCATE COMPANY. LAYOUT INDICATED IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL LINES WITHIN PROJECTED WORK ZONE SHALL BE FIELD VERIFIED AS REQUIRED PRIOR TO CONSTRUCTION.

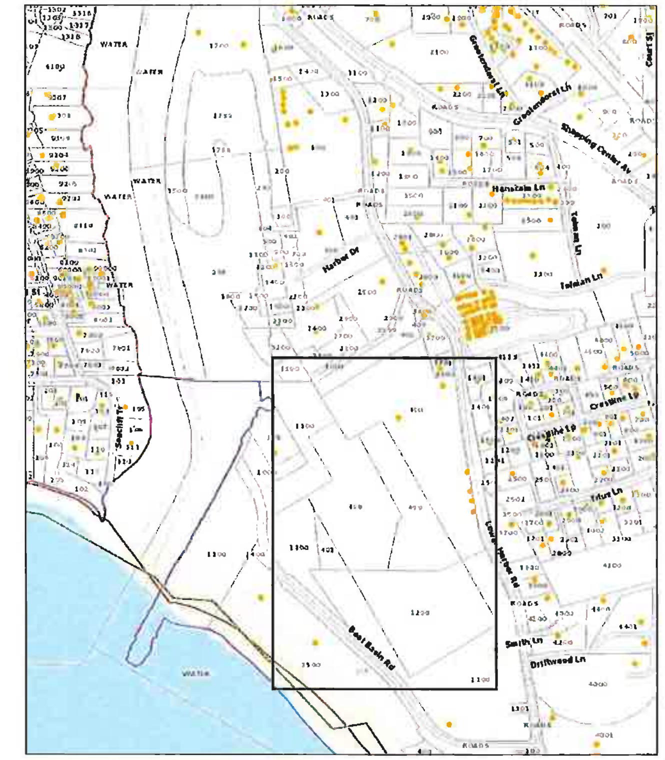
PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS-HARBOR
2021 CIVIL IMPROVEMENTS

SOUTH BASIN EMBANKMENT RECONSTRUCTION



PROJECT OVERVIEW
SCALE 1":200'



PORT OF BROOKINGS HARBOR
MAP OF TAX LOTS

PROJECT DESCRIPTION

TITLE: SOUTH BASIN EMBANKMENT RECONSTRUCTION
REFERENCE: PB113
LOCATION: SOUTH BASIN
TAX LOT(S): 401,498,1100,1200,1300,1400

DRAWING REGISTER

PB113-C100	Cover sheet
PB113-C101	Notes
PB113-C102	Existing Condition
PB113-CI02A	EXISTING EMBANKMENT VIEWS
PB113-C103	Embankment
PB113-C104	Details
PB113-C105	Plan details

PRELIM GRADING NOTES
1. DEQ 1200-C PERMIT IS REQUIRED.
2. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. PRIOR TO THE START OF CONSTRUCTION, VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
4. MINIMIZE TRAFFIC ON SOIL AREAS DURING WET WEATHER. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EROSION AND RUNOFF.
5. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
6. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

LEGEND

5	ELEVATION
	SUBGRADE MINOR CONTOUR
	SUBGRADE MAJOR CONTOUR
	PARCEL
	GEOTEXTILE
	CONCRETE PAD
	GRASS
	JETTY
	SLIP WAY
	PAVED ROAD

ENGINEER: EMC Engineers/Scientists, LLC

No.	DATE	REVISION	BY
1	12/8/2020	FOR CLIENT REVIEW	DD

PREPARED FOR: (LOT 2900, MAP '3605220B')
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date 12/8/2020
Drawn By INFRADRAFT
Sheet No. C-100
File No. 113

GENERAL NOTES

These notes are intended for use in interpreting and implementing the tasks shown on the following construction plans and specifications sheets. These are in addition to the overall project specification and bid documents and contractual items.

These are intended for the use of the general contractor and his/her subcontractors in the demolition and
reconstruction of the subject area of the Port of Brookings Harbor. Use for other purposes or at other sites is not recommended and is accomplished at the sole risk of the user.

These items are to be used as a supplement to the details provided on the plan sheets and specification pages. Any discrepancies found among the Drawings, the Specifications, referenced reports, these General Notes and other items listed on this sheet and the site conditions shall be reported to the Engineer, who shall correct such discrepancy in writing. Any work done by the General Contractor after discovery of such discrepancy shall be done at the General Contractor's risk. The General Contractor shall verify and coordinate dimensions among all drawings prior to proceeding with any work.

The embankment repair has been designed to resist anticipated vertical and lateral forces after the construction of all structural elements has been completed. Stability of the structure and slope areas prior to completion is the responsibility of the General Contractor. This responsibility includes, but is not limited to jobsite safety, construction means, methods, and sequences, temporary shoring, slope stability, formwork and bracing, use of equipment and construction procedures.

Construction observation by the Engineer is for checking for conformance with design aspects only and is not intended in any way to review and/or approve the General Contractor's construction procedures or relieve the contractor from providing a completed project, consistent with the plans and specifications and good construction practices. Special inspection by the engineer does not provide a certification of the project or relieve the contractor of all responsibility for a properly constructed project.

Standards Used for Design

All methods, materials and workmanship shall conform to the plans and specifications and ODOT Standard Specifications, unless elsewhere herein specified otherwise. International Building Code (IBC) 2009; 2010 Oregon Structure Specialty Code (OSSC); American Society of Civil Engineers (ASCE)

Other Notes

1. Jobsite safety is the responsibility of the Contractor.
2. All products and workmanship shall be new materials of good quality, acceptable for this type of construction. Work to be accomplished in a good and workmanlike manner.
3. All materials to be shipped, handled and stockpiled in accordance with the manufacturers recommendations and good construction practices.
4. Locations must be verified at the site with the geotechnical engineer and the Port of Brookings Harbor representative prior to placement.
5. Abide by local, state and federal building ordinances, including all safety requirements, in all phases of the project.
6. All phases of the project are to conform to the plans and specifications attached hereto and specifications provided by the owner and the engineer-of-record.
7. Proposed changes to project plans and specifications must be approved by the designer prior to acceptance and implementation at the site.
8. Proposed changes must be submitted in writing for review and approval/disapproval by the designer and the owner.
9. In no case shall changes, substitutions or omissions be made to the design or materials without the written authorization of the designer and the owner.
10. Authorization of a design change by the engineer does not constitute acceptance by the Port of Brookings Harbor, nor does it authorize additional funds for the changes. The Port's representative must authorize in writing the design change and applicable changes in the contract amount and/or construction time period prior to implementation of such changes.
11. Project schedule and general sequencing of all work must be reviewed and approved by the design engineer and the owner. Such approval does not relieve the contractor or his/her subcontractors of all responsibilities for proper execution of the subject project construction.
12. Sequencing of tasks that requires varying the installed sizes of project materials must be reviewed and approved by the design engineer and owner.
13. Traffic control and signage must be provided by the contractor unless otherwise so stated in the contract. Access to the US Coast Guard facilities must be maintained during construction.
14. Contractor must understand that the project site is in a Harbor area subject to tidal fluctuations. Therefore, sequencing and project work must take into account effects of high and low tides.
15. Replacement of specified products by an "Equivalent" product must be approved by the design engineer and the owner. Redesign required for use of alternate "Equivalent" materials is to be borne by the contractor.

GRADING NOTES

1. DEQ 1200-C PERMIT IS NOT REQUIRED.
2. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. PRIOR TO THE START OF CONSTRUCTION, VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
4. MINIMIZE TRAFFIC ON SOIL AREAS DURING WET WEATHER. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EROSION AND RUNOFF.
5. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
6. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN NOTES

SEE PAGE C-103 ?

1. PROJECT/PURPOSE - ITH THE PURPOSE OF MAINTAINING, REHABILITATING, REPLACING, AND UPGRADING THE EXISTING WESTERN EMBANKMENT AT THE SOUTH BASIN OF PORT OF BROOKINGS. THE EXISTING EMBANKMENT WILL BE CLEARED DOWN TO SUITABLE SUBGRADE AT A SLOPE BETWEEN 1.5:1 AND 2:1. A 4FT DEEP TRENCH WILL BE EXACAVATED AT THE BASE OF THE EMBANKMENT. A 3FT DEEP LAYER OF AGGREGATE WILL BE PLACED ON TOP OF THE SLOPE AND INTO THE TRENCH ? C-103
2. CONTRACTOR ACTIVITIES - CONTRACTOR ACTIVITIES ARE DESCRIBED AS EXCAVATION AND CLEARING USING A 25T EXCAVATOR. EXCAVATION AND SPREADING AT THE BASE OF THE SLOPE USING A LONG REACH EXCAVATOR. PLACEMENT OF GEOGRID. PLACEMENT OF CRUSHED AGGREGATE FROM FINE GRAVEL TO 2FT BOULDERS
3. SOIL DISTURBING ACTIVITIES - EXCAVATION WILL BE LIMITED TO EXISTING MARINA EDGES AS SHOWN ON DRAWING C102
4. NON-STORMWATER DISCHARGES - NO DEWATERING, WATER-LINE FLUSHING, PAVEMENT WASH WATERS OR IRRIGATION WATER DISCHARGES ARE PLANNED FOR THIS PROJECT.
5. ESTIMATED START DATE FOR CONSTRUCTION - 02/01/21 - 03/30/21
6. NEAREST SURFACE WATER BODIES - PORT OF BROOKINGS ICE HOUSE INLET IN THE COMMERCIAL BASIN (SOUTH BASIN) AND THE SPORT BASIN, NEAR DOCK A (NORTH BASIN).
7. RECEIVING WATERS - PACIFIC OCEAN
8. SPECIAL ENVIRONMENTAL CONSIDERATIONS - SEE SECTION BELOW DESCRIBING PRECAUTION REGARDING CREOSOTE COATED PILES TO BE EXTRACTED. ESA OPINIONS PROVIDED BY USACE, NMFS AND ODFW.
9. DESIGNATED EPCM - THE DESIGNATED EROSION AND POLLUTION CONTROL MANAGER (EPCM) WHO WILL ASSURE COMPLIANCE WITH ALL ITEMS IN THIS PLAN IS TED FITZGERALD, PORT DIRECTOR, OR HIS DESIGNEE.
10. EROSION, SEDIMENTATION AND POLLUTION CONTROL BMPS - BEST MANAGEMENT PRACTICES (BMP) TO BE USED, WHEN APPLICABLE, TO PREVENT POLLUTION RELATED TO CONTRACTOR ACTIVITIES LISTED IN THIS SECTION ARE AS FOLLOWS: A) OFFSITE VEHICLE TRACKING AND DUST PREVENTION - MEASURES WILL BE TAKEN TO PREVENT OFFSITE TRACKING OF MATERIALS, INCLUDING SWEEPING PAVEMENTS, COVERING LOADS AND WETTING SOIL TO PREVENT DUST. THERE WILL BE NO AGGREGATE CONSTRUCTION. B) MATERIAL MANAGEMENT AND SPILL PREVENTION - ALL ON SITE FUELS WILL BE DELIVERED, HANDLED, STORED, USED, AND APPLIED SO AS NOT TO BE RELEASED INTO THE WATERS OF THE STATE/US. FUELING WILL BE ACCOMPLISHED AWAY FROM THE WORK AREA A SPILL CLEANUP KIT WILL BE AVAILABLE IF DEEMED BY THE EPCM TO BE REQUIRED. C) WASTE MANAGEMENT - HANDLING, STORAGE AND DISPOSAL OF SOLID WASTE AND/OR HAZARDOUS WASTE WILL BE DISPOSED INTO SUITABE LANDFILL OFFSITE D) INSPECTION AND MAINTENANCE - DAILY INSPECTION AND MAINTENANCE FOR ALL CONTROLS INCLUDED IN THE POLLUTION CONTROL PLAN AND THE ESCP WILL BE PERFORMED BY THE EPCM OR HIS DESIGNEE. E) EMPLOYEE AND SUBCONTRACTOR TRAINING - EMPLOYEE AND SUBCONTRACTOR EDUCATION AT A MINIMUM WILL INCLUDES INFORMING PERSONNEL OF THE POSTED LOCATIONS OF THE POLLUTION CONTROL PLAN/EROSION AND SEDIMENT CONTROL PLAN/MSDS'S AND IMPORTANT EMERGENCY PHONE NUMBERS. EDUCATION WILL ALSO INCLUDE INFORMING PERSONNEL OF REVISED MATERIAL MANAGEMENT PROCEDURES FOLLOWING A SPILL F) (CRITERIA 15) PRECONSTRUCTION ACTIVITY - BEFORE ALTERATION OF THE ACTION AREA, FLAG THE BOUNDARIES OF CLEARING LIMITS ASSOCIATED WITH SITE ACCESS AND CONSTRUCTION TO MINIMIZE SOIL AND VEGETATION DISTURBANCE, AND ENSURE THAT ALL TEMPORARY EROSION CONTROLS ARE IN PLACE AND FUNCTIONAL. G) (CRITERIA 16) SITE PREPARATION - DURING SITE PREPARATION, CONSERVE NATIVE MATERIALS FOR RESTORATION, INCLUDING LARGE WOOD, VEGETATION, TOPSOIL AND CHANNEL MATERIALS (GRAVEL, COBBLE AND BOULDERS) DISPLACED BY CONSTRUCTION. WHENEVER PRACTICAL, LEAVE NATIVE MATERIALS WHERE THEY ARE FOUND AND IN AREAS TO BE CLEARED, CLIP VEGETATION AT GROUND LEVEL TO RETAIN ROOT MASS AND ENCOURAGE REESTABLISHMENT OF NATIVE VEGETATION. BUILDING AND RELATED STRUCTURES MAY NOT BE CONSTRUCTED INSIDE THE RIPARIAN MANAGEMENT AREA H) (CRITERIA 17) HEAVY EQUIPMENT - HEAVY EQUIPMENT WILL BE SELECTED AND OPERATED AS NECESSARY TO MINIMIZE ADVERSE EFFECTS ON THE ENVIRONMENT; AND ALL VEHICLES AND OTHER HEAVY EQUIPMENT WILL BE USED AS FOLLOWS:
    (A.) STORED, FUELED AND MAINTAINED IN A VEHICLE STAGING AREA PLACED 150 FEET OR MORE FROM ANY WATERBODY, OR IN AN ISOLATED HARD ZONE SUCH AS A PAVED PARKING LOT.
    (B.) INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 50 FEET OF ANY WATERBODY.
    (C.) STEAM-CLEANED BEFORE OPERATION BELOW ORDINARY HIGH WATER, AND AS OFTEN AS NECESSARY DURING OPERATION TO REMAIN FREE OF ALL EXTERNAL OIL, GREASE, MUD, SEEDS, ORGANISMS AND OTHER VISIBLE CONTAMINANTS.
    (D.) GENERATORS, CRANES AND ANY OTHER STATIONARY EQUIPMENT OPERATED WITHIN 150 FEET OF ANY WATERBODY WILL BE MAINTAINED AND PROTECTED AS NECESSARY TO PREVENT LEAKS AND SPILLS FROM ENTERING THE WATER I) (CRITERIA 18)

IN-WATER WORK PERIOD -
ALL WORK WITHIN THE ACTIVE CHANNEL WILL BE COMPLETED IN ACCORDANCE WITH THE OREGON GUIDELINES FOR TIMING OF IN-WATER WORK TO PROTECT FISH AND WILDLIFE RESOURCES (ODFW 2000, OR THE MOST RECENT VERSION).

J) (CRITERIA 21) EMBANKMENT INSTALLATION -
<TBC>

K) (CRITERIA 24) SUBGRADE PREPARATION -
<TBC>

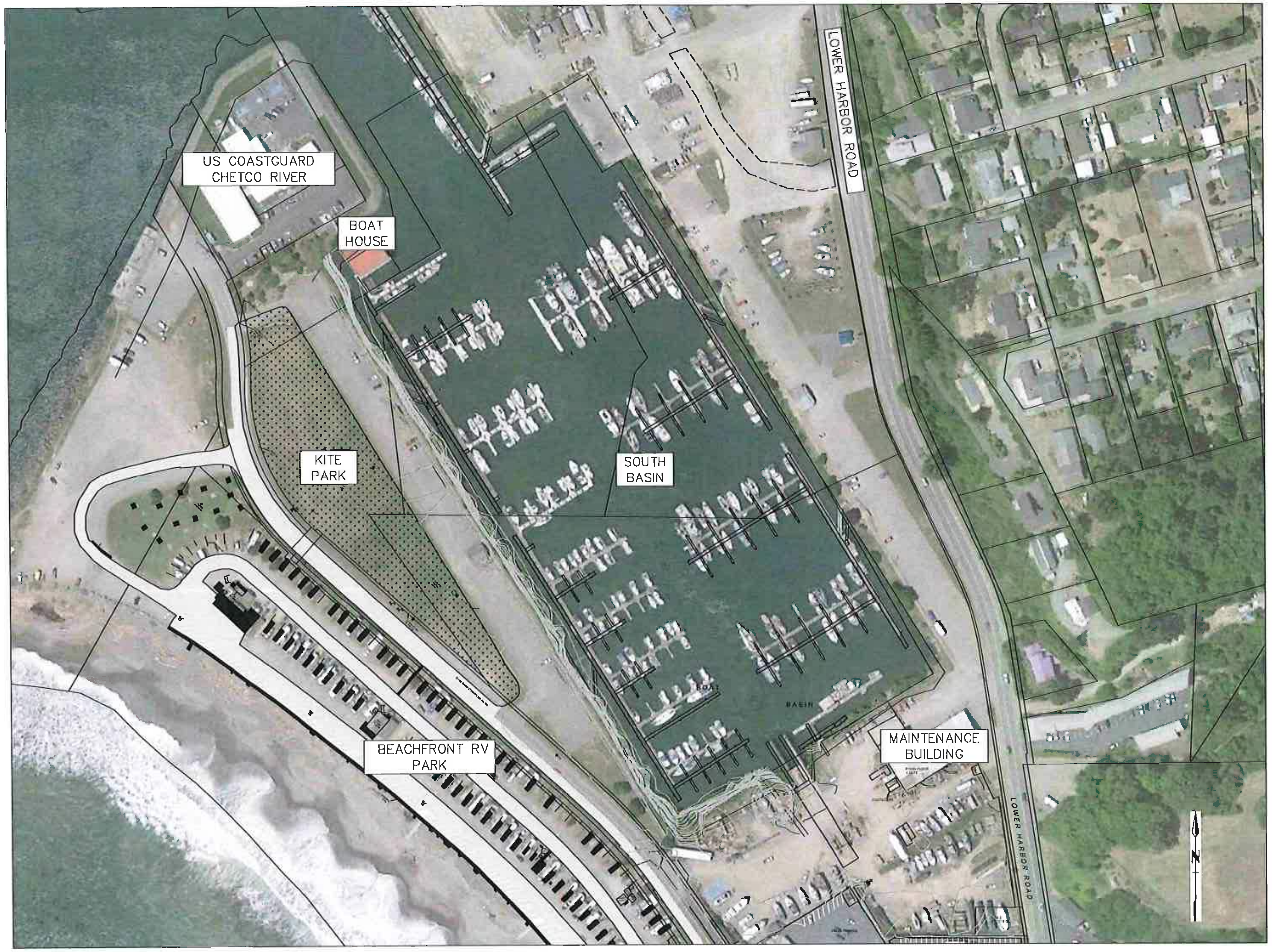
ENGINEER: EMC Engineers/Scientists, LLC

No.	DATE	REVISION	BY
1	12/8/2020	FOR CLIENT REVIEW	

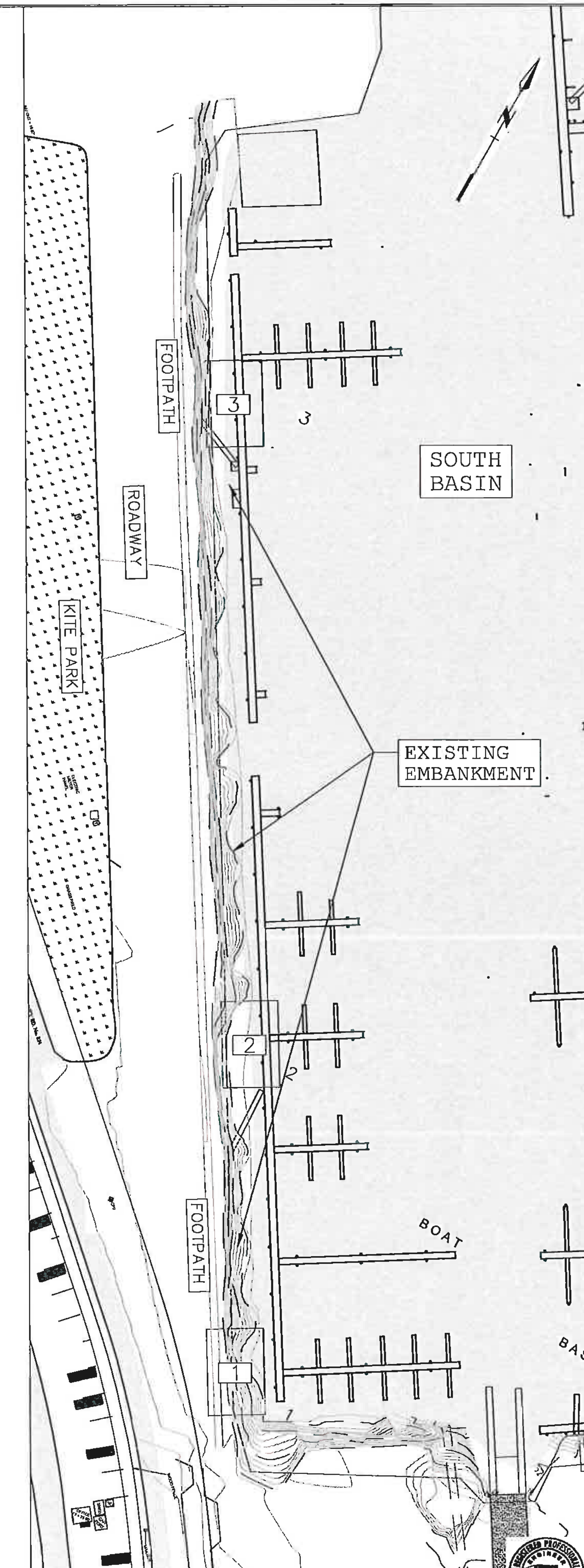
PREPARED FOR: PORT OF BROOKINGS (LOT 2900, MAP '3605220B')
16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date 12/8/2020
Drawn By INFRADRAFT
Sheet No. C-101
File No. 113



EXISTING CONDITIONS
SCALE 1":100'



PROJECT SITE 1":60'

ENGINEER: EMC - Engineers/Scientists, LLC

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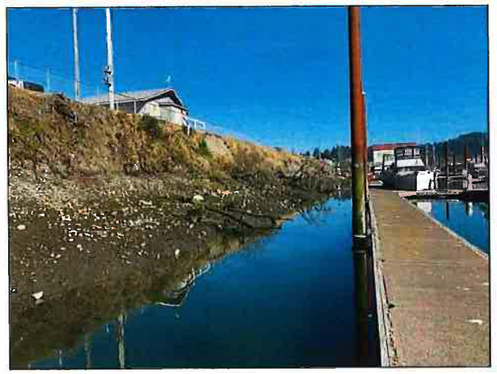
PORT OF BROOKINGS HARBOR

PREPARED FOR:
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415
(LOT 2900, MAP '3605220B')

Date 12/8/2020
Drawn By INFRADRAFT
Sheet No. C-102
File No. 113



EXISTING EMBANKMENT VIEWS

ENGINEER:
EMC
Engineering Consultants, LLC

PREPARED FOR:
PORT OF BROOKINGS
(LOT 2800, MAP "36032DB")
16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

No.	Date	Description
1	12/6/2020	FOR CLIENT REVIEW

Date 01/6/2021
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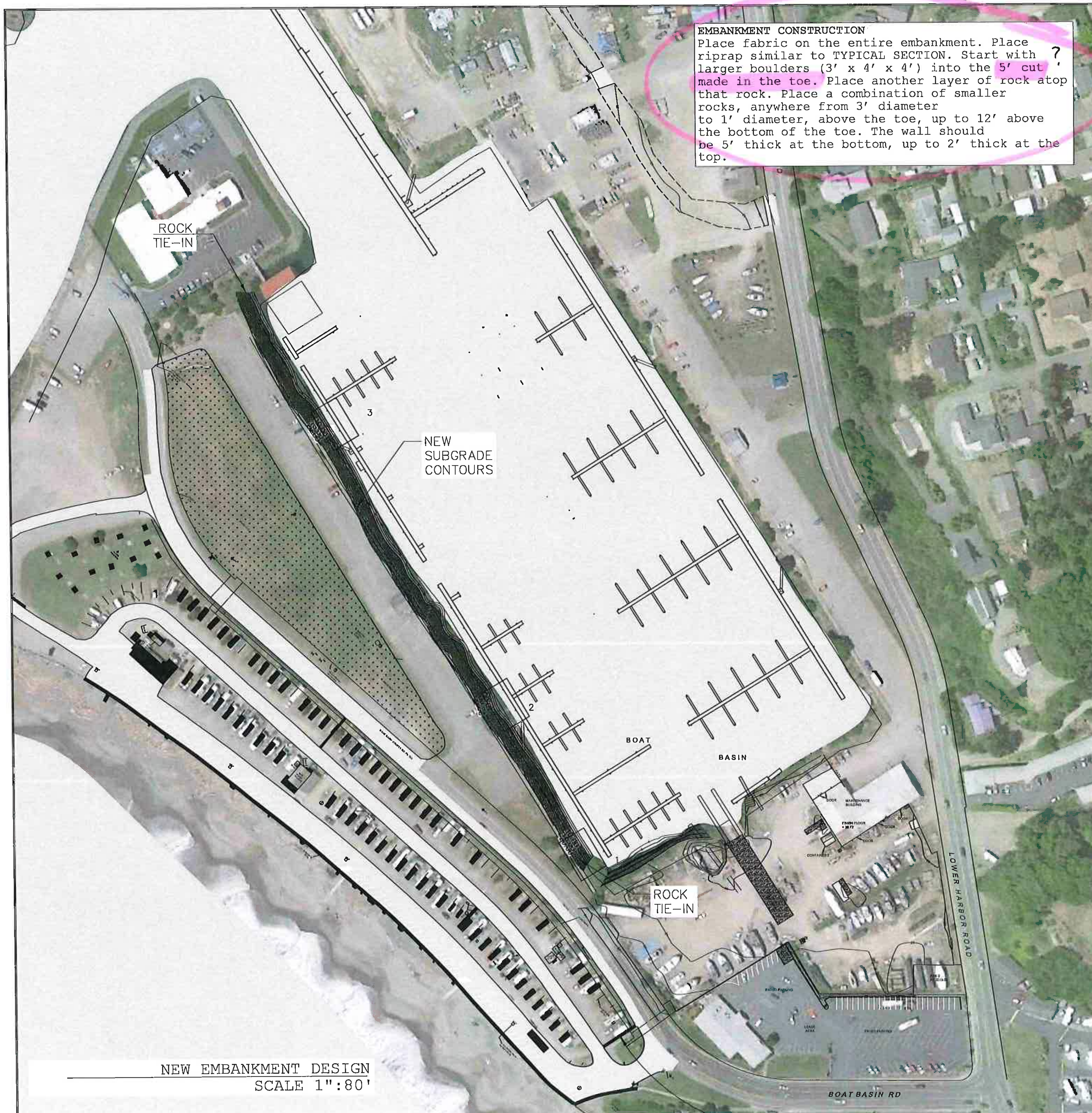
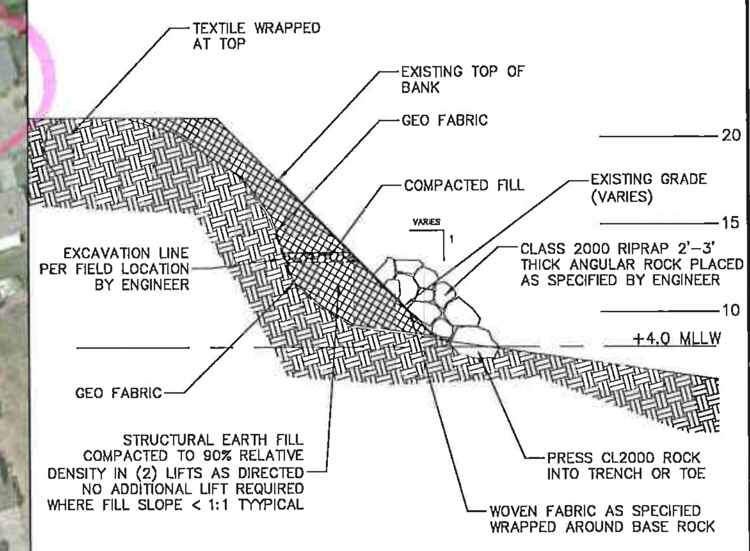
File No. 113

EMBANKMENT CONSTRUCTION

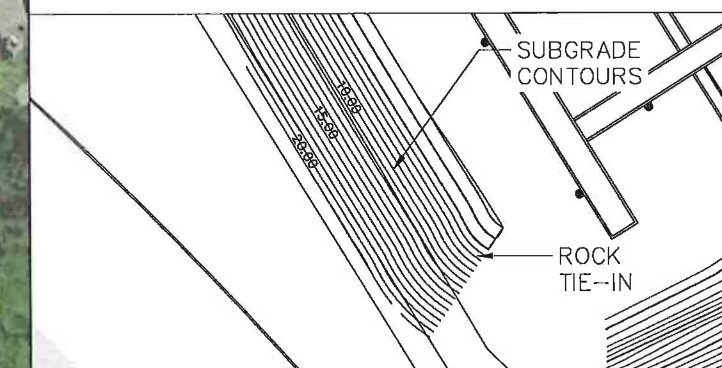
Place fabric on the entire embankment. Place riprap similar to TYPICAL SECTION. Start with larger boulders (3′ x 4′ x 4′) into the 5′ cut made in the toe. Place another layer of rock atop that rock. Place a combination of smaller rocks, anywhere from 3′ diameter to 1′ diameter, above the toe, up to 12′ above the bottom of the toe. The wall should be 5′ thick at the bottom, up to 2′ thick at the top. ?



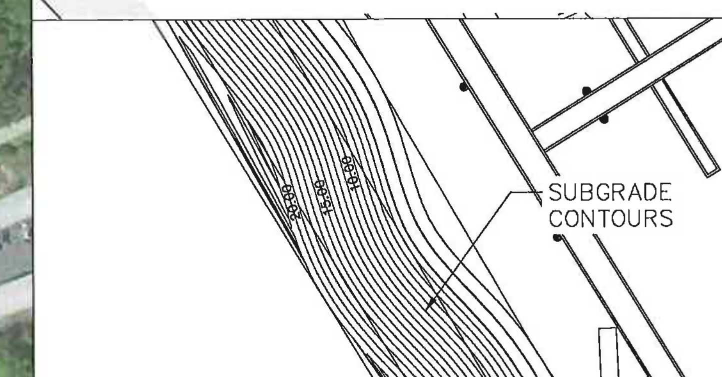
NEW EMBANKMENT DESIGN
SCALE 1":80'



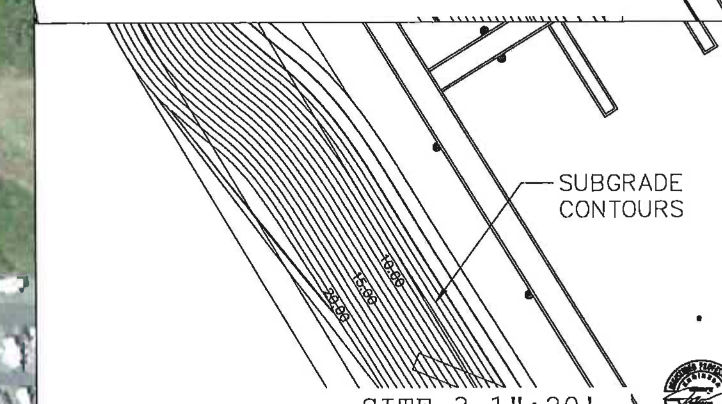
TYPICAL EMBANKMENT CROSS-SECTION



SITE 1 1":20'



SITE 2 1":20'



SITE 3 1":20'

ENGINEER: EMC - Engineers/Scientists, LLC

No.	DATE	REVISION	BY	CD
1	12/8/2020	FOR CLIENT REVIEW		

PREPARED FOR: (LOT 2900, MAP '36052208')
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date: 12/8/2020
Drawn By: INFRADRAFT
Sheet No.: C–103
File No.: 113

Design Specifics of Rock & Construction
The rock used (if 406 Mitigation is approved) for this project will be specified to follow test requirements found within AASHTO 85 (Apparent specific gravity, percent absorption); ODOT TM 208A (degradation); and AASHTO T 104 (soundness). All rock specified in this project must be angular in shape, and the thickness of any single rock shall not be less than one third of its length. Round rock will not be accepted unless authorized by EMC. The rock must meet the gradation requirements for the class specified, be free from overburden, spoiled, shale and organic material. Non-durable rock, shale or rock with shale seams is not acceptable. Class 2000 rip rap is by definition comprised of rocks that are 20% by weight of 1400 pounds to 2000 pounds, 30% by weight of 700 to 1400 pounds, 40% by weight 40 to 700 pounds and 0 to 10% 0 to 40 pounds. Either a filter blanket of 16 inch layer of class 50, or specified filter fabric will be laid beneath the rock.

A clamshell, orange peel bucket, skip or similar approved device will be used which will transport the riprap material to its final destination. This revetment repair is for flow assumed to generally be uniform, steady and subcritical. However, rapidly varying, unsteady flow conditions occur occasionally, and excessive wave action, hydraulic jumps and extreme flow turbulence can occur at this location. These conditions are among the reasons for the extent of protection proposed. The longitudinal extent of this repair should be continuous for a distance greater than the length that is impacted. The vertical extent of protection required for this revetment includes design height and foundation or toe depth. The design height of the rip rap installation is to be equal to the design high water elevation (King tide plus storm surge) with adequate freeboard to accommodate wave action, super elevation from the channel bend, hydraulic jump, and flow irregularities, plus erratic phenomena such as unforeseen embankment settlement, accumulation of trash and debris from the river.

Scour depth is estimated at about 4 feet from the lowest elevation in the cross-section of the basin at this point, utilizing the conservative assumption of a median diameter of bed material to be about 0.15 m. Riprap thickness for Class 2000 is specified to be at least a 4 foot layer.

The filter beneath the riprap and overlying the structural fill is to prevent the migration of fine soil particles through structural voids and to distribute the weight of the armoring units (riprap) to provide more uniform settlement, and also permits relief of hydrostatic pressures within the soils.

For the areas above the waterline at any given time the fabric or geotextile also prevents surface water from causing erosion beneath the rip rap. In addition to toe considerations with respect to scour the flanks of this revetment are designed for upstream and downstream conditions

General Construction, Erosion & Control Notes
Final bank slope will be between 1V:1.5H and 1V:2H. Bank preparation will consist of clearing debris and minor grading. Riprap placement will be by machine placing and hand placing. Hand placing will be performed as specified by EMC on steeper side slopes.
Re-handling or dragging to smooth revetment services tend to result in segregation and breakage of stone and are to be avoided. Stone will not be dropped from an excessive height.

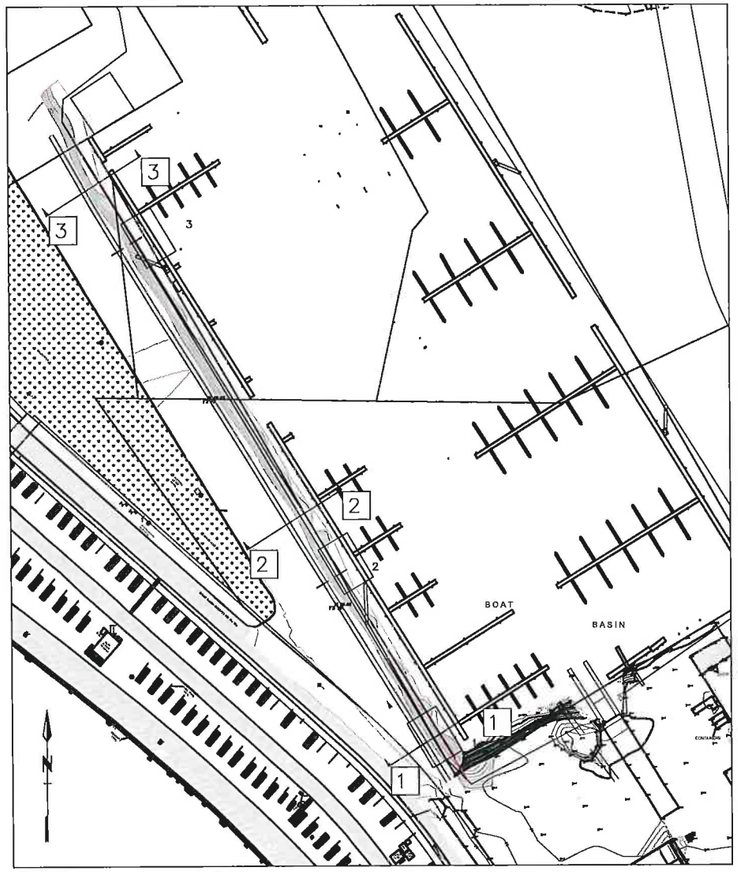
Actions that will require the use of materials that are hazardous or toxic to aquatic life (such as motor fuel, oil, or drilling fluid), are included within the pollution and erosion control plan sections of this narrative, to be managed by EMC and enforced by the Port of Brookings-Harbor. The plan includes practices to minimize erosion and sedimentation associated with all aspects of the project (e.g., staging areas, stockpiles, grading); to prevent debris from dropping or otherwise entering any stream or waterbody; and to prevent and control hazardous material spills.

Erosion controls will be monitored and maintained daily during the rainy season and weekly during the dry season as necessary to ensure controls are properly functioning. If monitoring shows that the erosion controls are ineffective at preventing visible sediment discharge, the project will stop to evaluate erosion control measures. Repairs, replacements or the installation of additional erosion control measures will be completed before the project resumes.

If applicable, maintenance will include removal of sediment and debris from erosion controls like silt fences or hay bales once it has reached on-third of the exposed height of the control. Whenever practical, native materials are to be left where they are found and in areas to be cleared, vegetation is to be clipped at ground level to retain root mass and encourage reestablishment of native vegetation.

Heavy equipment will be selected and operated as necessary to minimize adverse effects on the environment (e.g., minimally-sized, low pressure tires, minimal hard turn paths for tracked vehicles, temporary mats or plates within wet areas or sensitive soils); and all vehicles and other heavy equipment will be used as follows:

1) Stored, fueled and maintained in a vehicle staging area placed 150 feet or more from any waterbody, or in an isolated hard zone such as a paved parking lot, or lined surface;
2) Inspected daily for fluid leaks before leaving the vehicle staging area for operation within 50 feet of any waterbody;
3) Steam-cleaned before operation below ordinary high water, and as often as necessary during operation to remain free of all external oil, grease, mud, seeds, organisms and other visible contaminants and
4) Generators, cranes and any other stationary equipment operated within 150 feet of any waterbody will be maintained and protected as necessary to prevent leaks and spills from entering the water.



SITES 1, 2, 3 SECTION LINES

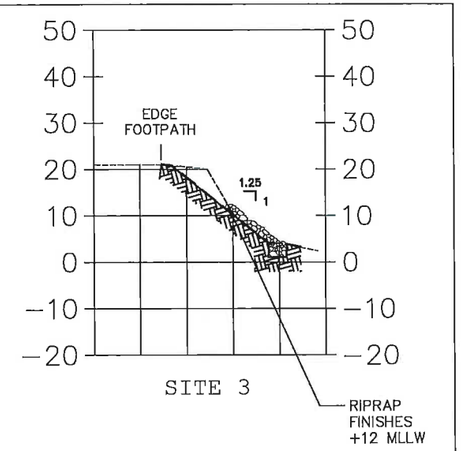
Nonwoven Geotextile

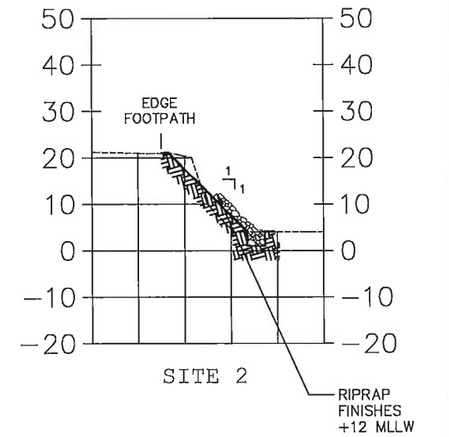
NTPEP APPROVED - GTX-2013-01-019. US 300NW is a nonwoven needlepunched geotextile made of 100% polypropylene staple filaments. US 300NW resists ultraviolet and biological deterioration, rotting, naturally encountered basics and acids. Polypropylene is stable within a pH range of 2 to 13. US 300NW meets the following M.A.R.V. values except where noted:

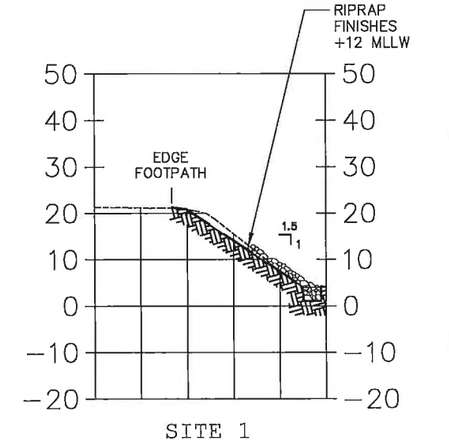
PROPERTY	TEST METHOD	ENGLISH	METRIC
Weight - Typical	ASTM D-5261	12 oz/sy	407 g/sm
Tensile Strength	ASTM D-4632	300 lbs	1,335 N
Elongation @ Break	ASTM D-4632	50%	50%
Mullen Burst*	ASTM D-3786*	580 psi	3,999 kPa
Puncture Strength*	ASTM D-4833*	180 lbs	801 N
CBR Puncture	ASTM D-6241	850 lbs	3,782 N
Trapezoidal Tear	ASTM D-4533	115 lbs	511 N
Apparent Opening Size	ASTM D-4751	100 US Sieve	0.150 mm
Permittivity	ASTM D-4491	1.00 Sec-1	1.00 Sec-1
Water Flow Rate	ASTM D-4491	75 g/min/sf	3,055 l/min/sm
UV Resistance @ 500 Hours	ASTM D-4355	70%	70%

ROLL SIZE	ROLL DIAMETER	AREA WEIGHT
12.5' x 360'	23.0 in	500 sys 380 lbs
15' x 300'	25.0 in	500 sys 380 lbs

VOLUME REPORT (APPROXIMATE)		
GEOTEXTILE FABRIC	4498	SQ YD
CLASS 2000 RIP RAP	2462.34	CU YD
CUT	1792	CU YD
FILL	966	CU YD







CROSS-SECTIONS NTS

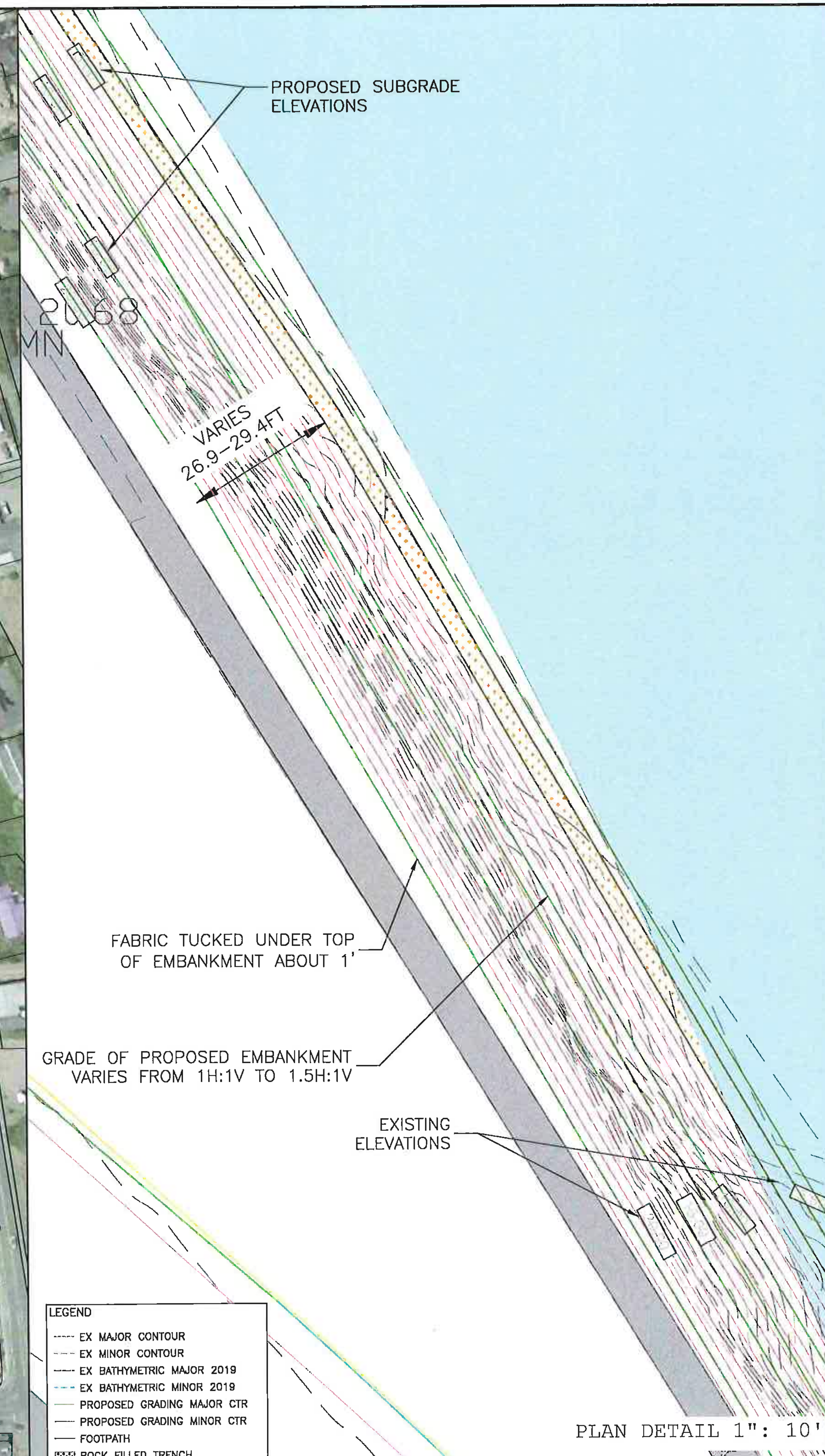
ENGINEER: EMC

No.	DATE	REVISION
1	12/8/2020	FOR CLIENT REVIEW

PREPARED FOR:
PORT OF BROOKINGS
(LOT 2800, MAP "36S32CB")
16330 Lower Harbor Rd, Brookings, OR 97415

Date 12/8/2020
Drawn By INFRADRAFT
Sheet No. C-104
File No. 113

NEW AND EXISTING CONTOURS
SCALE 1":80'



PLAN DETAIL 1": 10'

ENGINEER: EMC Engineers/Scientists, LLC

No.	DATE	REVISION	CD	BY
1	12/8/2020	FOR CLIENT REVIEW		

PREPARED FOR: (LOT 2900, MAP "36052208")

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date 12/27/2020

Drawn By INFRADRAFT

Sheet No. C105

File No. 113

REVISIONS | BY:

EMC

Grants Pass * Jacksonville * Medford, OR

- Engineers/Scientists, LLC

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

SOUTH BOAT BASIN WALL

SHEET INDEX

DRAWN BY: JG
DATE: 18 APR 2021
JOB No: #
SHEET No:
C0.0
COVER SHEET

SURVEY BY
ROBERTS & ASSOCIATES LAND SURVEYING, INC.
611 SPRUCE STREET
BROOKINGS, OR 97415
(541) 469-0162

HORIZONTAL DATUM
OREGON COORDINATE REFERENCE SYSTEM (OREGON COAST ZONE) AS DEFINED IN OREGON ADMINISTRATIVE RULES 734-005-0005 THRU 734-005-0015. COORDINATES WERE CONSTRAINED TO THE OREGON REAL-TIME (GPS) REFERENCE NETWORK (ORGN) REFERENCED TO NAD 83(2011) EPOCH 2010, INTERNATIONAL FEET, WITH A RELATIVE ACCURACY OF <2cm.

VERTICAL DATUM
MEAN LOWER LOW WATER EPOCH 1983-2001.
BENCH MARK UTILIZED FOR THIS SURVEY
US ARMY CORPS OF ENGINEERS
BENCH MARK - "FUEL 2"
ELEVATION - 21.65 FEET

0 10 20 40
SCALE: 1" = 20'

EXISTING CONDITIONS
SCALE: 1" = 20' (24x36)

NORTH

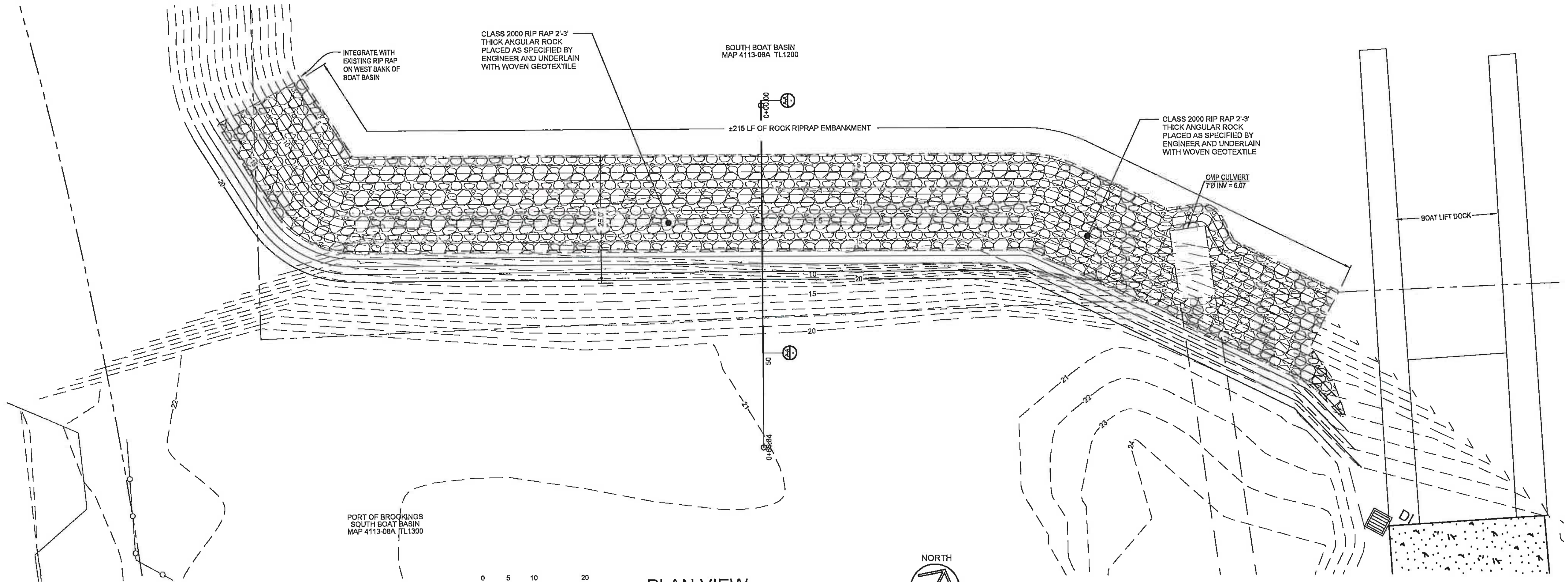
REVISIONS	BY:

EMC
Grants Pass * Jacksonville * Medford, OR
GP Office: 1867 Williams Hwy., Suite 216, Grants Pass, OR, 97527
Jville Office: 450 Conestoga Dr., Jacksonville, OR, 97530
Ph: 541-474-9434 * Cell: 541-261-9929 * Fax 541-727-5488
emc@emcengineersscientists.com; http://www.emcengineersscientists.com
- Engineers/Scientists, LLC

REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A. — PRELIMINARY
RENEWAL DATE 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
SOUTH BOAT BASIN WALL

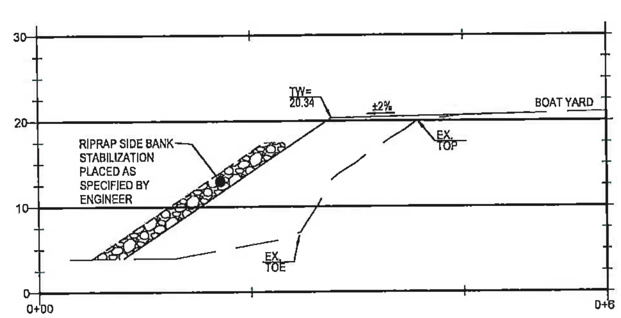
DRAWN BY: JG
DATE: 18 APR 2021
JOB No: #
SHEET No:
C1.0
EXISTING CONDITIONS



PLAN VIEW

SCALE: 1" = 10' (24x36)

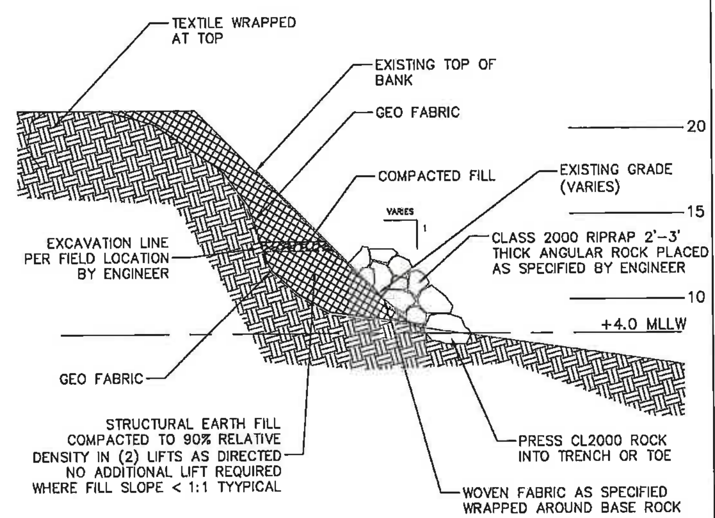
BOAT YARD



ROCK EMBANKMENT - SECTION A - A

A-A
-

SCALE: 1" = 10' (H & V)



TYPICAL EMBANKMENT CROSS SECTION

NOT TO SCALE

PLACE FABRIC ON THE ENTIRE EMBANKMENT. PLACE RIPRAP SIMILAR TO TYPICAL SECTION. START WITH LARGER BOULDERS (3' x 4' x 4') INTO THE 5' CUT MADE IN THE TOE. PLACE ANOTHER LAYER OF ROCK ATOP THAT ROCK. PLACE A COMBINATION OF SMALLER ROCKS, ANYWHERE FROM 3' DIAMETER TO 1' DIAMTER, ABOVE THE TOE, UP TO 12' ABOVE THE BOTTOM OF THE TOE. THE WALL SHOULD BE 5' THICK AT THE BOTTOM, UP TO 2' THICK AT THE TOP.

EMBANKMENT CONSTRUCTION NOTES

PROPOSED ROCK EMBANKMENT - OPTION 4

SCALE: 1" = 10' (24x36)

REVISIONS	BY:

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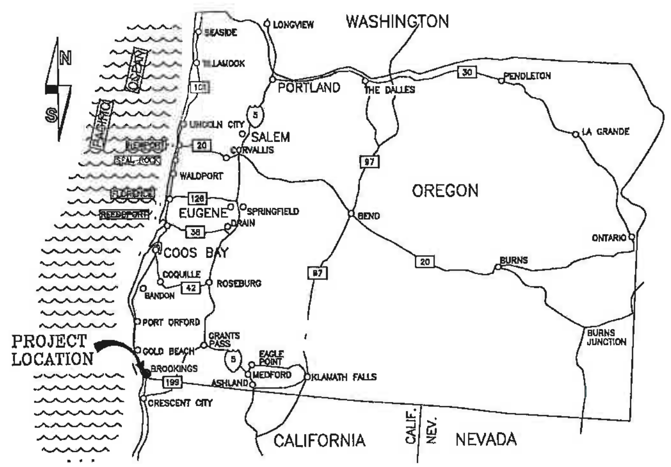
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
SOUTH BOAT BASIN WALL

DRAWN BY:	JG
DATE:	18 APR 2021
JOB No:	#
SHEET No:	C2.0 OPTION 4 ROCK WALL



LOCATION MAP

NOT TO SCALE

PORT OF BROOKINGS HARBOR

KITE FIELD RV PARK

KITE FIELD PARK EXTENTS

PROJECT OVERVIEW

SCALE: 1" = 200' (24 x 36) 1" = 400' (11 x 17)

0 100 200 400

SCALE: 1" = 200'

LEGEND:

EXIST. FIRE HYDRANT	FIRE HYDRANT
EXIST. WATER VALVE	WATER VALVE
EXIST. BLOW OFF	WATER METER
EXIST. WATER METER	BACKFLOW DEVICE
EXIST. HOSE BIB	IRRIGATION WATER METER
EXIST. IRRIGATION VALVE	AIR RELEASE VALVE
EXIST. AIR RELEASE VALVE	BLOWOFF DEVICE ASSEMBLY
EXIST. STORM DRAIN MANHOLE	FIRE DEPARTMENT CONNECTION
EXIST. CLEANOUT	END PLUG
EXIST. SANITARY SEWER MANHOLE	TEE
EXIST. MAILBOX	SANITARY SEWER CLEANOUT
CURB RAMP	SANITARY SEWER MANHOLE
PARALLEL RAMP	STORM DRAIN CLEANOUT
HANDICAP PARKING SYMBOL	STORM DRAIN MANHOLE
PARALLEL PARKING STRIPING	ATRIUM DRAIN / BUBBLER
BICYCLE LANE SYMBOL	CATCH BASIN INLET
EXIST. SANITARY SEWER	CURB INLET
EXIST. STORM DRAIN	STORM DRAIN CONTROL STRUCTURE
EXIST. WATER	ELECTRIC BOX
EXIST. GAS	ELECTRIC TRANSFORMER
EXIST. ELECTRIC	LIGHTS
EXIST. OVERHEAD POWER	CONTROL POINT
EXIST. TELEPHONE	MONUMENT
EXIST. FIBER OPTIC	TRAFFIC SIGNAL LIGHT
EXIST. CURB AND GUTTER	SIGN (TRAFFIC, INFORMATION)
EXIST. CENTERLINE	BOLLARD
EXIST. RIGHT OF WAY	BICYCLE PARKING SPACE
EXIST. CONTOUR (1398)	DECIDUOUS TREE
PROPOSED CONTOUR (1398)	CONIFER TREE
EXIST. EDGE OF PAVEMENT	NEW CONCRETE
CHAIN LINK FENCE	NEW GRAVEL PAVING
BARB WIRE FRANC	NEW HMAC PAVING - STANDARD
SANITARY SEWER	NEW HMAC PAVING - HEAVY
STORM DRAIN	NEW LANDSCAPING
WATER	NEW RIP RAP
GAS	
ELECTRIC	
CURB AND GUTTER	
PROPOSED RIGHT OF WAY	
FLOW LINE	
PROPERTY LINE	

SHEET INDEX

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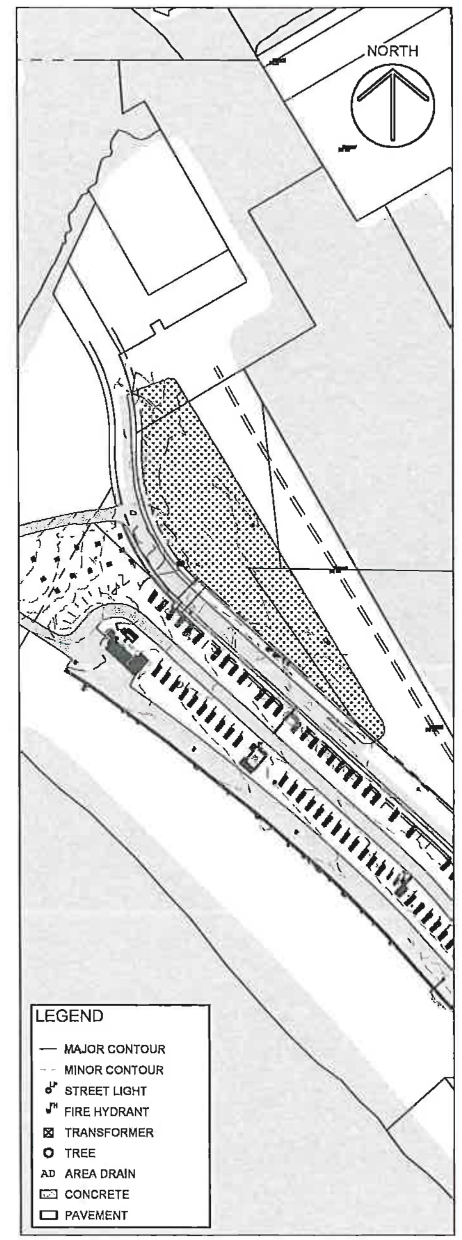
REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A.
PRELIMINARY
RENEWAL DATE: 12/31/21

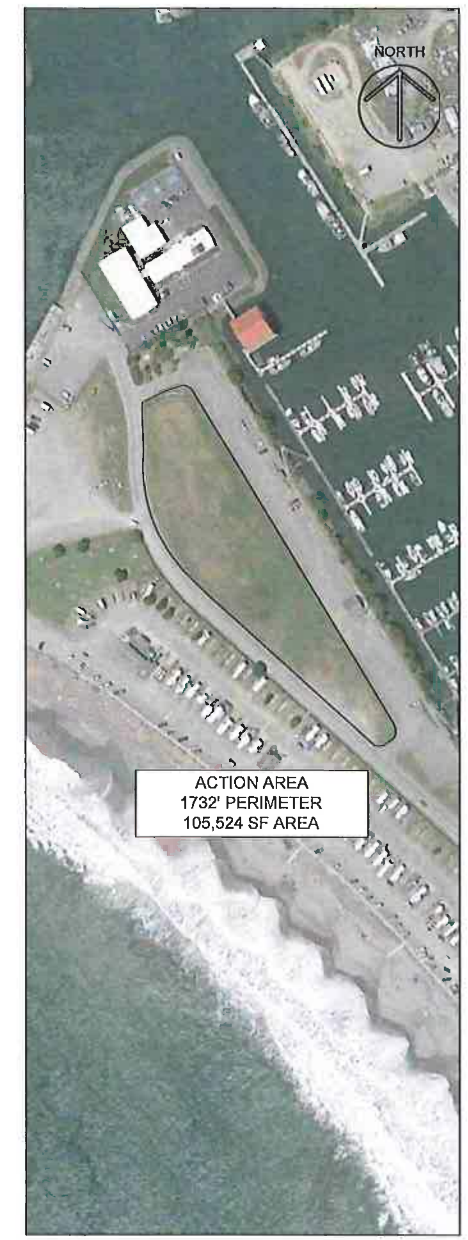
PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY:	JG
DATE:	21 MAR 2021
JOB No:	PB116
SHEET No:	C1.0 PROJECT DETAILS

PORT OF BROOKINGS HARBOR
TAX LOTS
SCALE: NOT TO SCALE



PORT OF BROOKINGS HARBOR
TOPOGRAPHIC SURVEY
SCALE: NOT TO SCALE



PORT OF BROOKINGS HARBOR
EXISTING ACTION AREA
SCALE: NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER PE
OREGON
JOHN (JACK) A.
PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

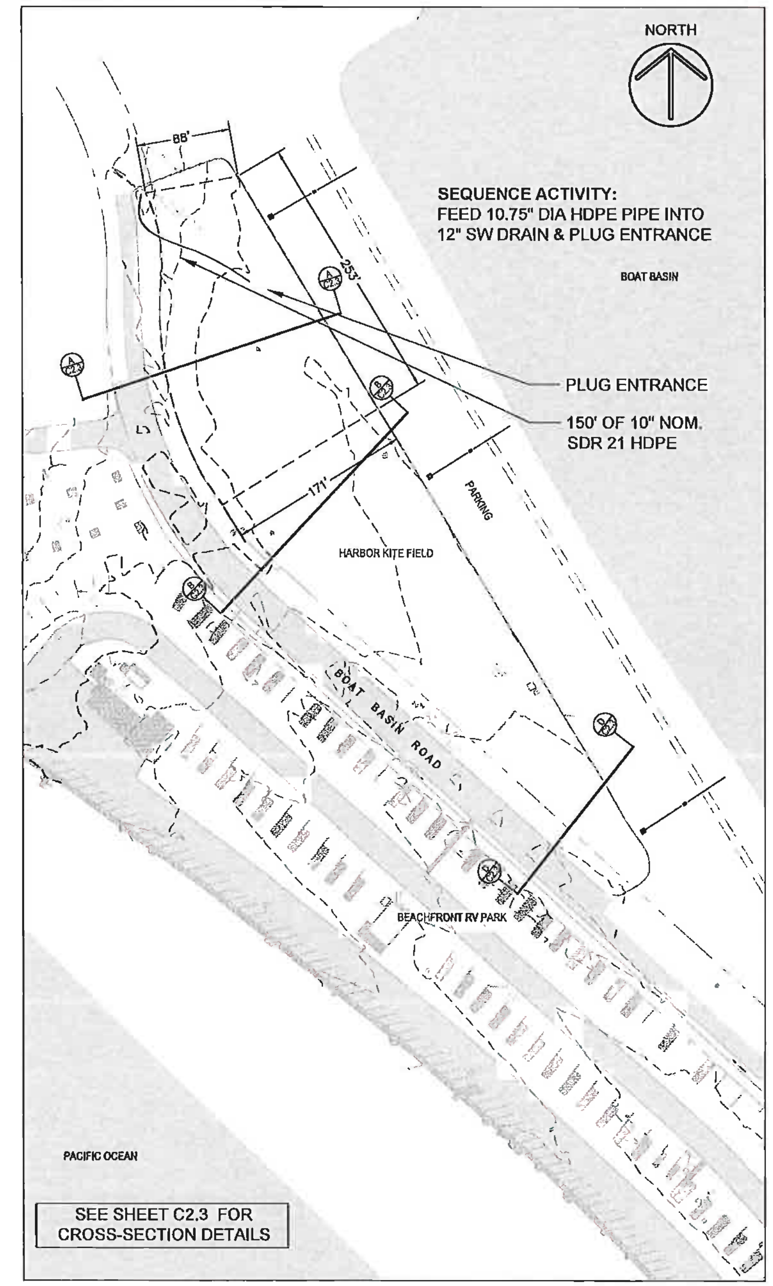
DRAWN BY: JG
DATE: 21 MAR 2021
JOB No: PB116
SHEET No:
C1.1
EXISTING CONDITIONS

SEQUENCE #0: EXISTING CONDITIONS

SCALE: 1" = 80' (24x36)

0 40 80 160

SCALE: 1" = 80'



SEQUENCE #1: SEDIMENT & COLLECTION AREA

SCALE: 1" = 80' (24x36)

0 40 80 160

SCALE: 1" = 80'

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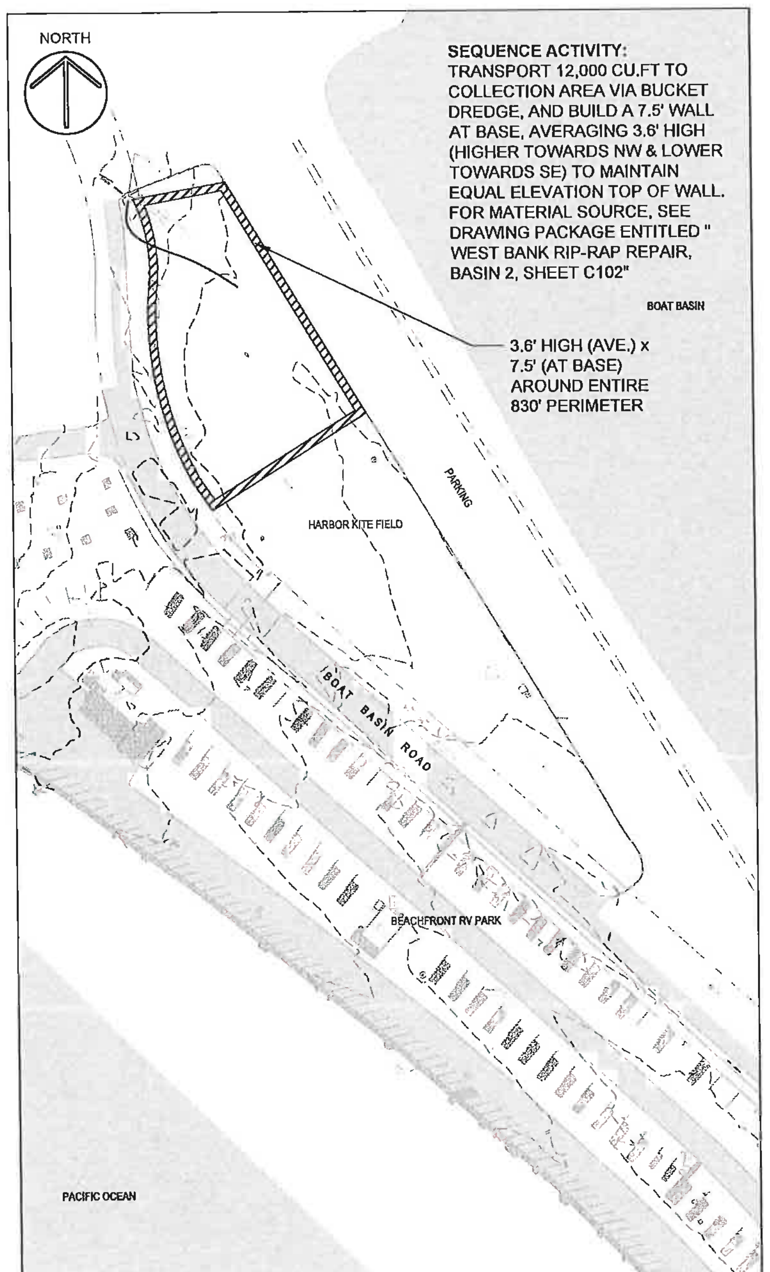
REGISTERED PROFESSIONAL ENGINEER PE
OREGON
JOHN (JACK) A.
PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

KITE FIELD RV PARK

DRAWN BY:	JG
DATE: 21 MAR 2021	
JOB No:	PB116
SHEET No: C2.0	
SEQUENCING	



SEQUENCE #2: PERIMETER WALL

SCALE: 1" = 80' (24x36)

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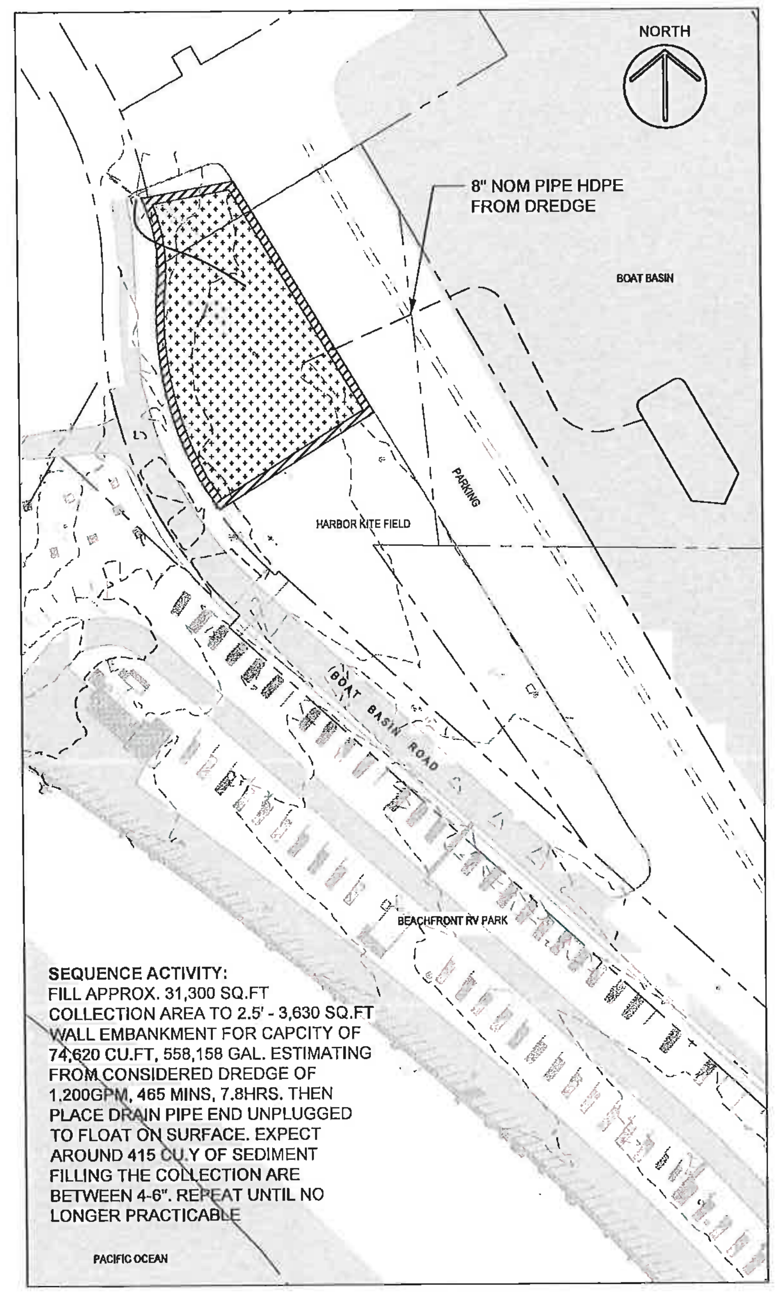
SCALE: 1" = 80'



SEQUENCE #3: FILLING PART 1

SCALE: 1" = 80' (24x36)

0 40 80 160
SCALE: 1" = 80'

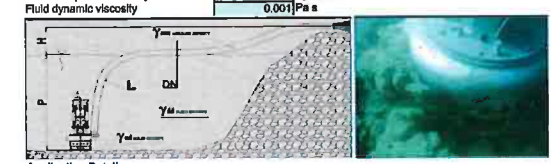
EMC-Engineers-Scientists, LLC-Oregon-US-oct 28, 2020.XLSX

Client: Jack Akin - EMC-Engineers-Scientists, LLC-Oregon-US	Date: Oct 28, 2020
Project:SHM feasibility-	Author: Maurice

DRAGFLOW ULTIMATE EFFICIENCY

Mixture Details

Solids concentration in the mixture		
% by volume	25	%
corresponding to % by weight	40	%
Solid Particles Dimension		
Particle Median Diameter	d50 > 15 mm	
Liquid SG	1	kg/dm^3
Solids SG	2	kg/dm^3
Mixture Specific Gravity	1.25	kg/dm^3
Fluid dynamic viscosity	0.001	Pa s



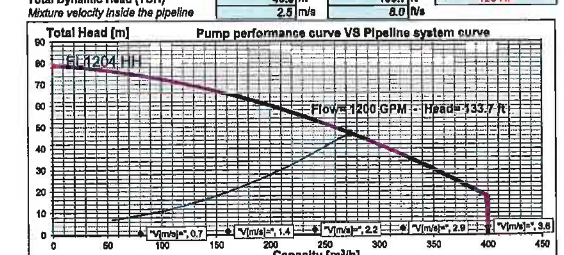
Application Details

Geodetic Height (Air) =	H	1.2	m		4	ft
Geodetic Height (Water) =	P	15.2	m		50	ft
Pipeline Total Length =	L	914.4	m		3000	ft
Pipe Internal Diameter =	DN	198.2	mm		7.803	inch
Total Mixture Capacity		273	m^3/h		1200	GPM

System TDH at set capacity	SLURRY [m]		SLURRY [ft]	
Friction loss along the pipeline	35.3	m	115.7	ft
Concentrated pressure drops	0.5	m	1.5	ft
Geodetic: [H+(mixSG-liqSG)*P]	5.0	m	16.5	ft
Total Dynamic Head (TDH)	40.8	m	133.7	ft
Mixture velocity inside the pipeline	2.5	m/s	8.0	ft/s

REQUIRED POWER
100 HP

PUMP POWER
120 HP



* All the above values come from theoretical calculations. The solid concentration can vary from 10% to 50% pump capacity due to the kind of material to be pumped, the delivery distance, the working depth, the static head and to the ability of the operator to keep the pump's agitator in constant contact with the material to be pumped.
Max production with soft sand and silt both well diluted whilst the efficiency decrease significantly with hard and plastic clay.

SEDIMENT DRAGFLOW SPECIFICATIONS

REVISIONS	BY:

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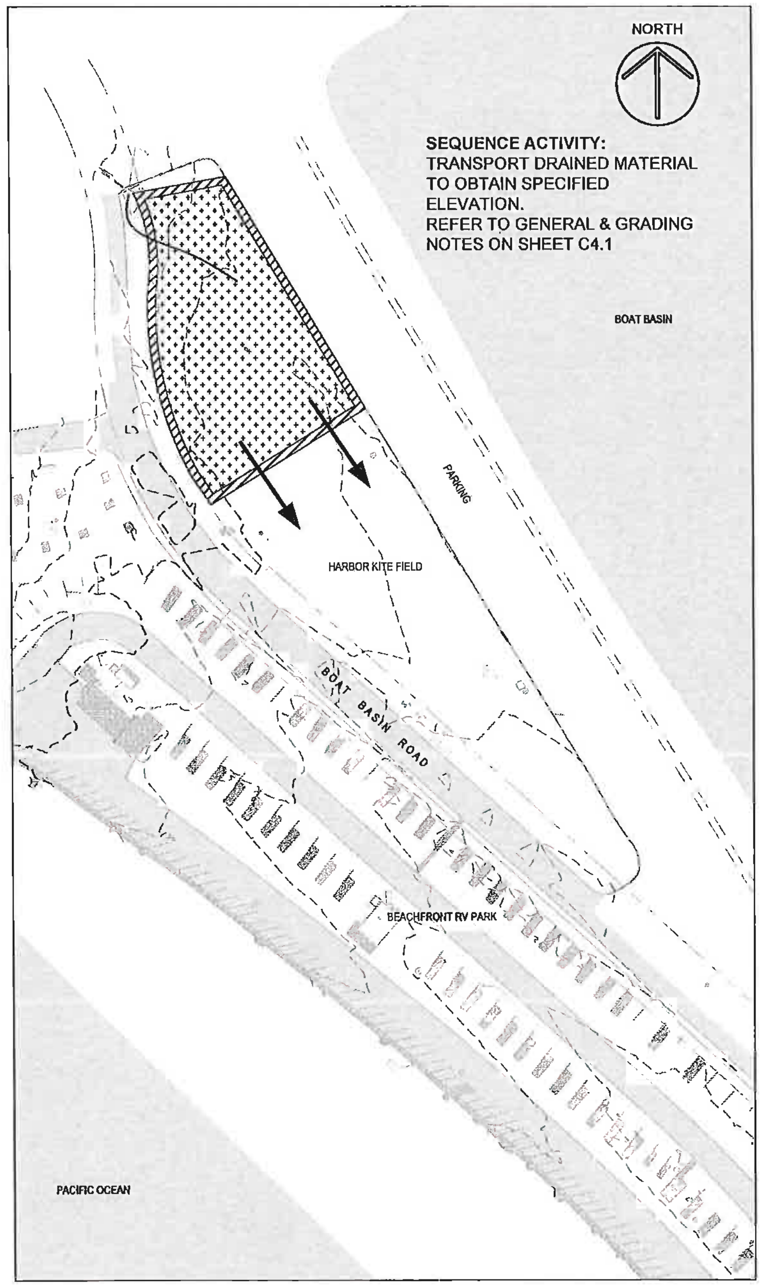
REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A. AKIN
PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

KITE FIELD RV PARK

DRAWN BY:	JG
DATE: 21 MAR 2021	
JOB No:	PB116
SHEET No: **C2.1**	
SEQUENCING	



SEQUENCE #4: TRANSPORT MATERIAL

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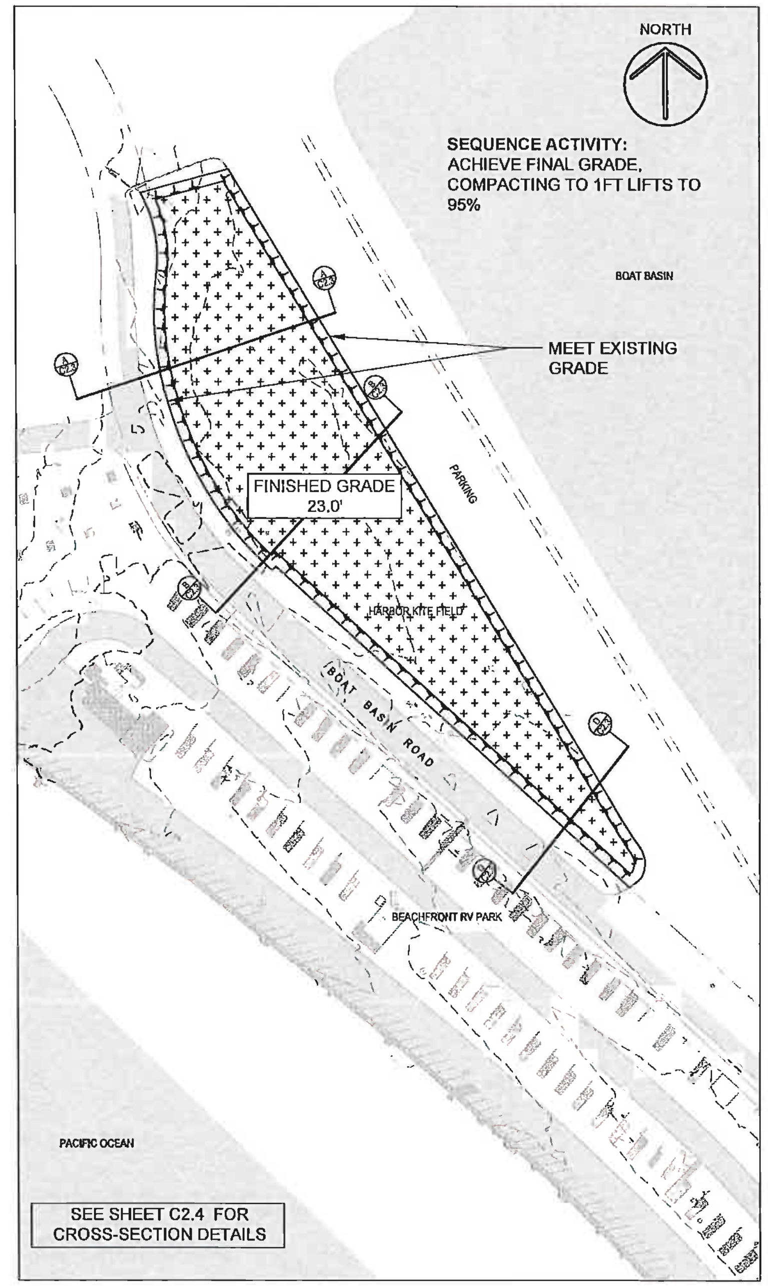
SCALE: 1" = 80'



SEQUENCE #5: GRADING AND COMPACTION

SCALE: 1" = 80' (24x36)

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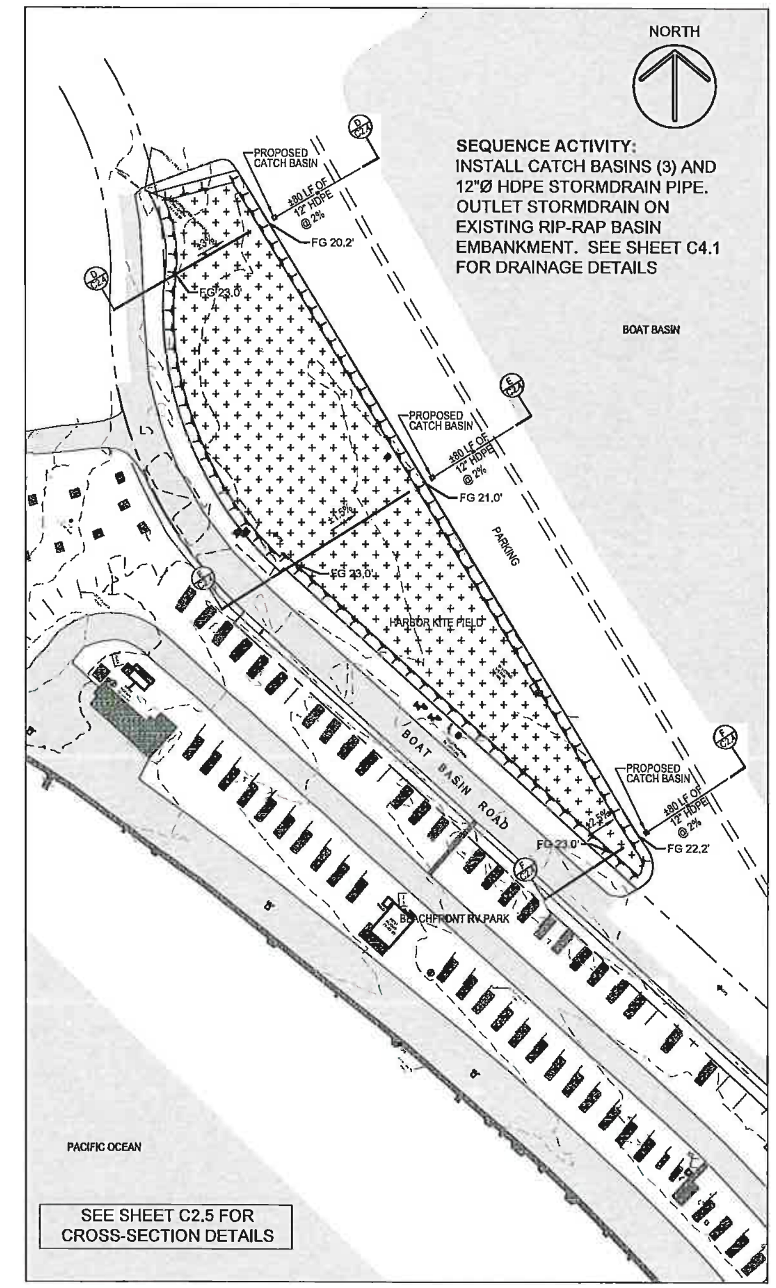
SCALE: 1" = 80'



SEQUENCE #6: DRAINAGE

SCALE: 1" = 80' (24x36)

0 40 80 160
SCALE: 1" = 80'

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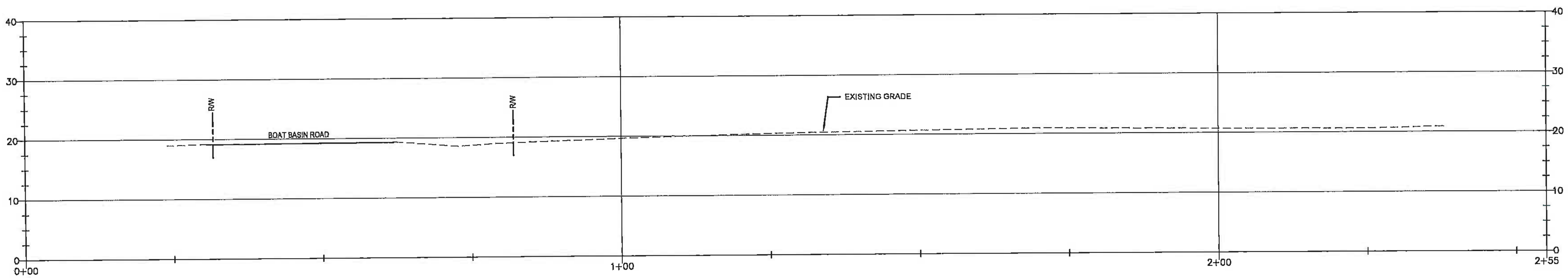
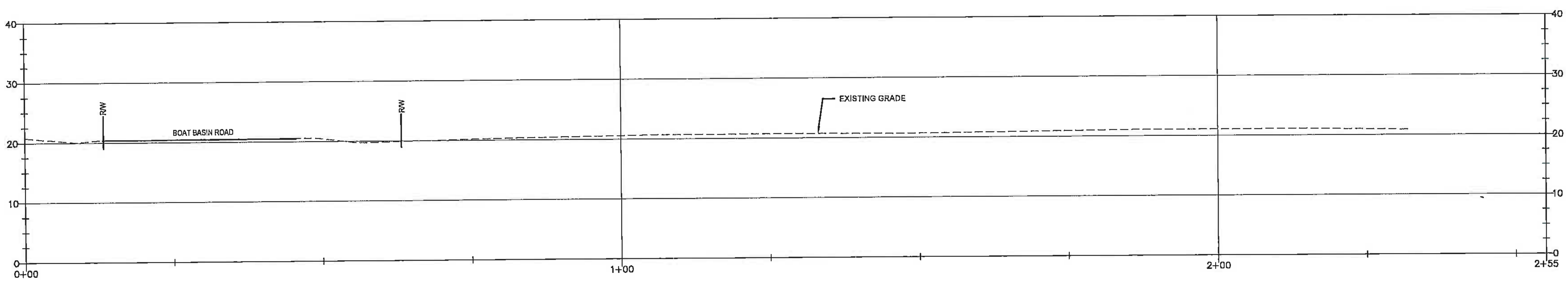
REGISTERED PROFESSIONAL ENGINEER PE — OREGON — JOHN (JACK) A. — PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

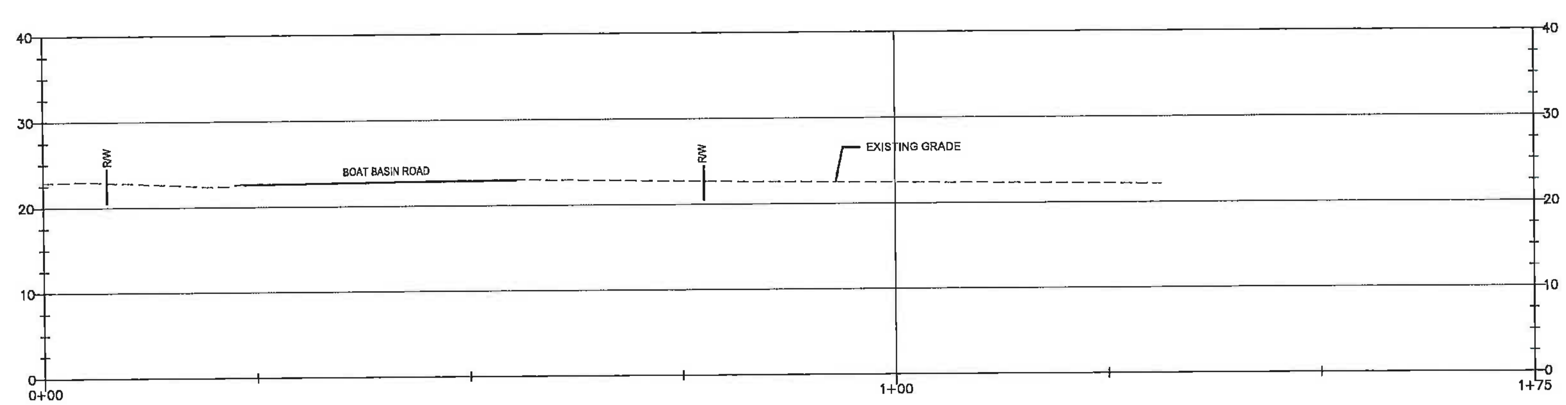
DRAWN BY:	JG
DATE: 21 MAR 2021	
JOB No:	PB116
SHEET No: C2.2	
SEQUENCING	



A-A
EXISTING CROSS SECTION - "A - A" SEE SHEET C2.0
SCALE: 1" = 10' (H & V)



B-B
EXISTING CROSS SECTION - "B - B" SEE SHEET C2.0
SCALE: 1" = 10' (H & V)



C-C
EXISTING CROSS SECTION - "C - C" SEE SHEET C2.0
SCALE: 1" = 10' (H & V)

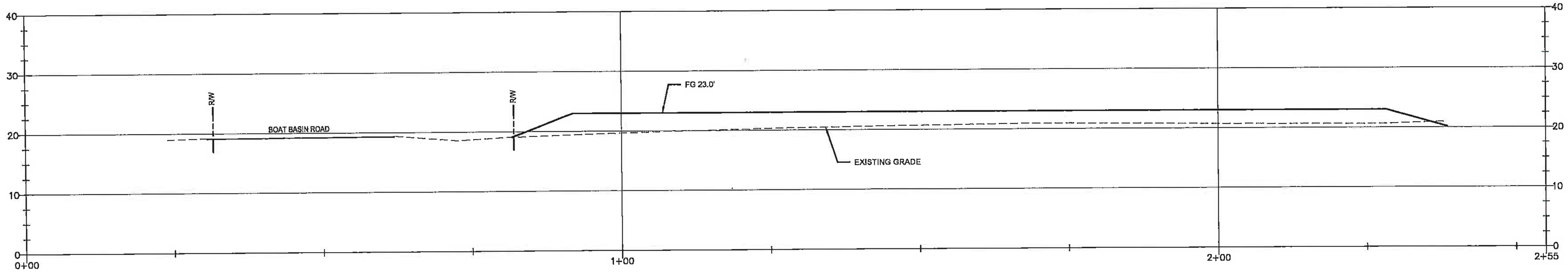
REVISIONS	BY:

EMC
Grants Pass * Jacksonville * Medford, OR
- Engineers/Scientists, LLC

PRELIMINARY
RENEWAL DATE: 12/31/21

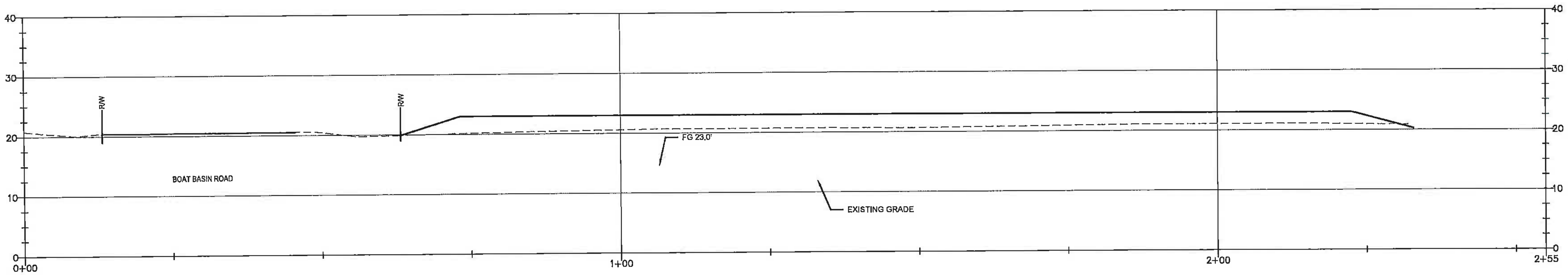
PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY: JG
DATE: 21 MAR 2021
JOB No: PB116
SHEET No:
C2.3
CROSS SECTIONS



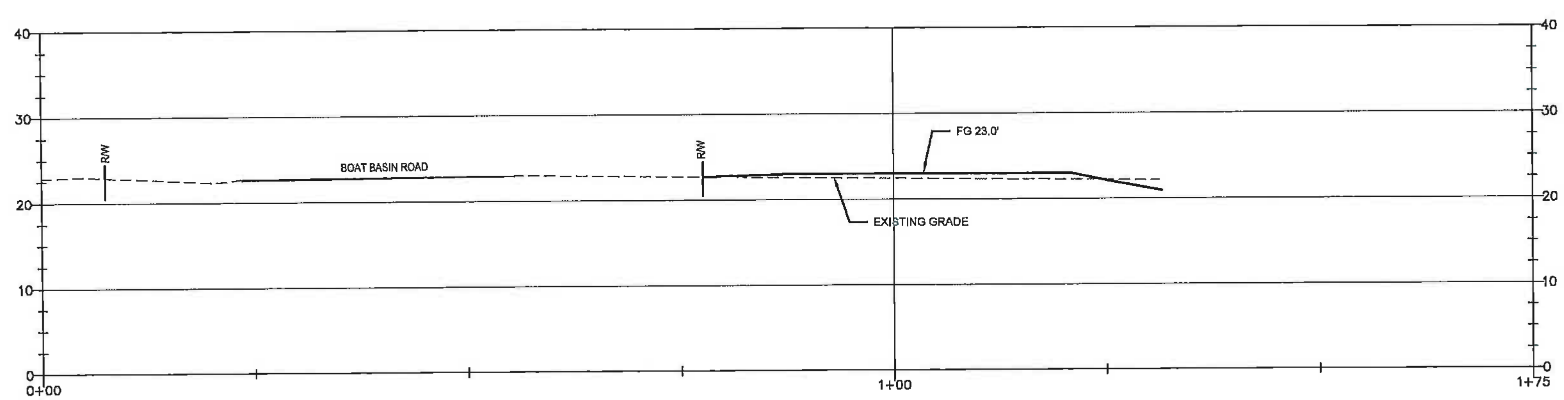
PROPOSED CROSS SECTION - "A - A" SEE SHEET C2.2

SCALE: 1" = 10' (H & V)



PROPOSED CROSS SECTION - "B - B" SEE SHEET C2.2

SCALE: 1" = 10' (H & V)



PROPOSED CROSS SECTION - "C - C" SEE SHEET C2.2

SCALE: 1" = 10' (H & V)

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PRELIMINARY

RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

KITE FIELD RV PARK

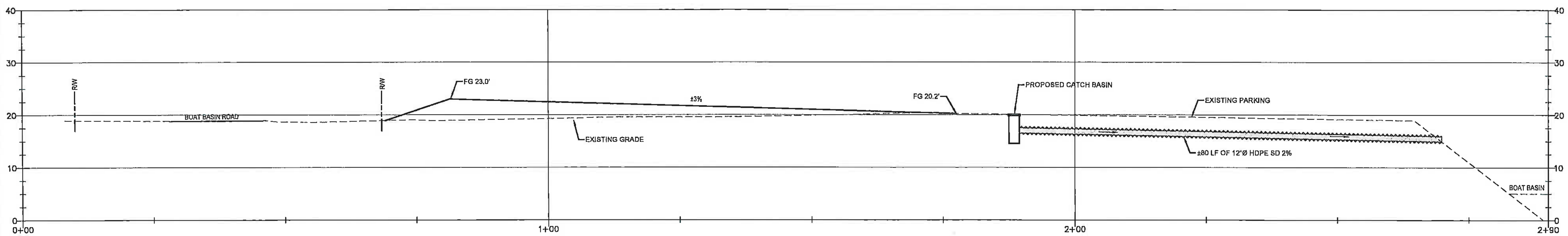
DRAWN BY: JG

DATE: 21 MAR 2021

JOB No: PB116

SHEET No: **C2.4**

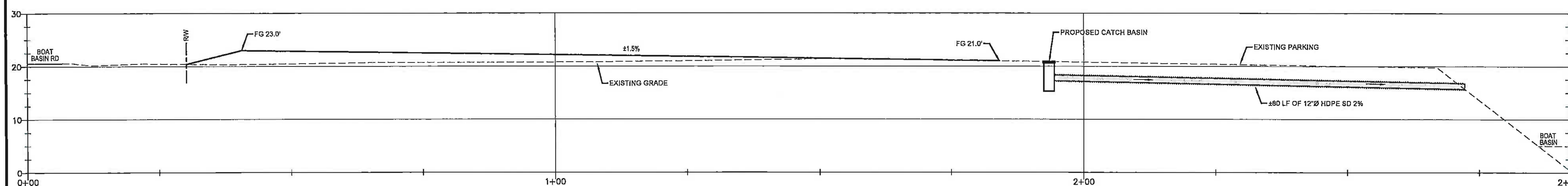
CROSS SECTIONS



PROPOSED CROSS SECTION - "D - D" SEE SHEET C2.2

D-D

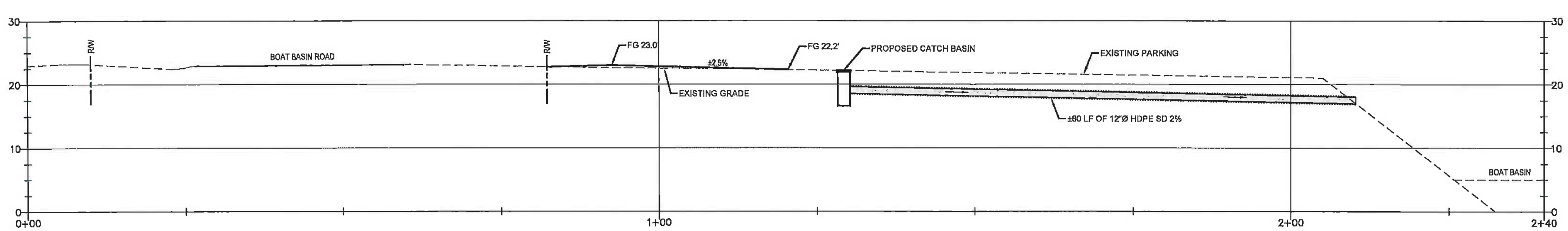
SCALE: 1" = 10' (H & V)



PROPOSED CROSS SECTION - "E - E" SEE SHEET C2.2

E-E

SCALE: 1" = 10' (H & V)



PROPOSED CROSS SECTION - "F - F" SEE SHEET C2.2

F-F

SCALE: 1" = 10' (H & V)

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PRELIMINARY

RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

KITE FIELD RV PARK

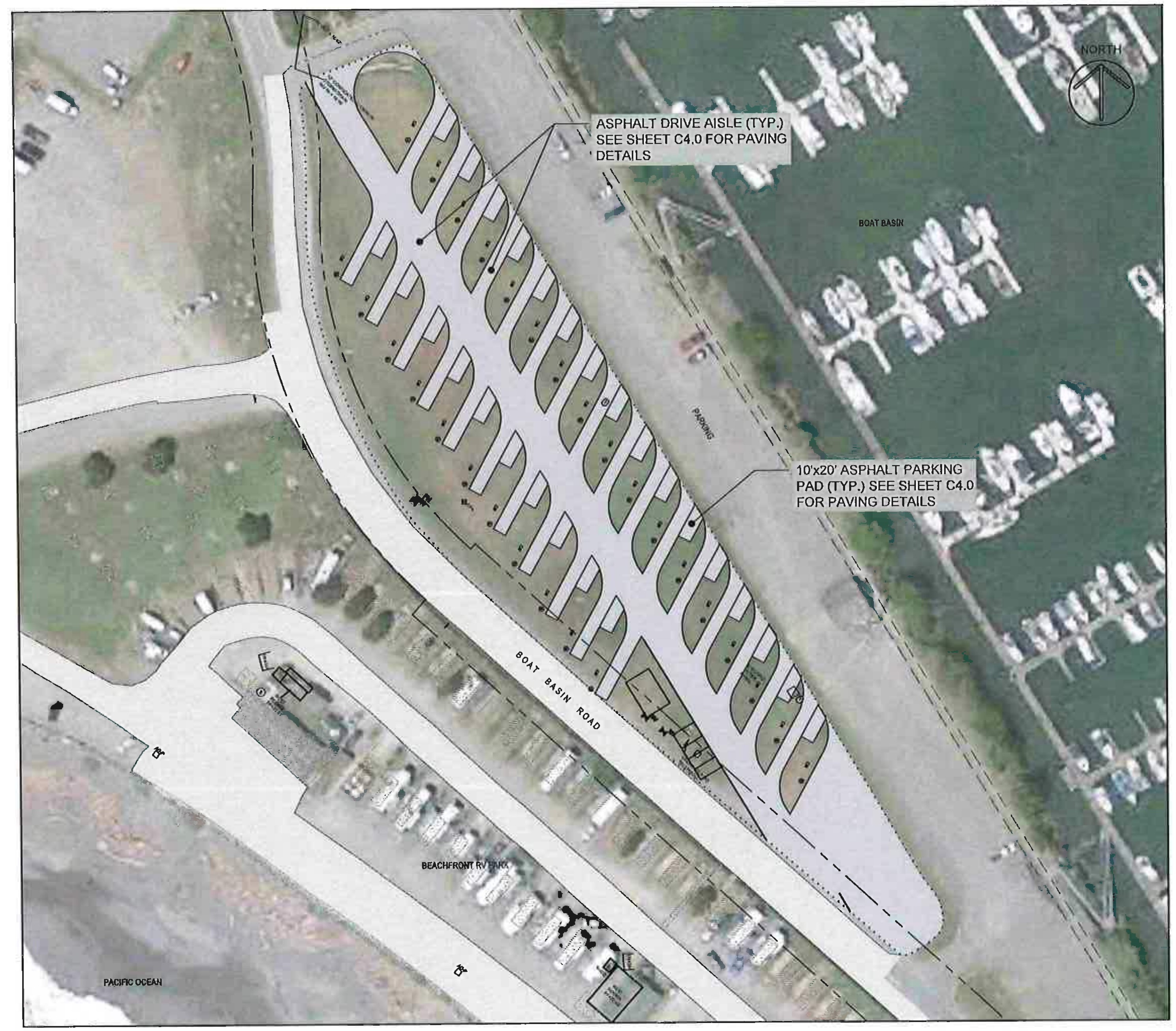
DRAWN BY: JG

DATE: 21 MAR 2021

JOB No: PB116

SHEET No: **C2.5**

CROSS SECTIONS



0 25 50 100

SCALE: 1" = 50'

KITE FIELD RV PARK PRELIMINARY LAYOUT

SCALE: 1" = 50' (24x36)

REVISIONS	BY:

EMC

Grants Pass * Jacksonville * Medford, OR

- Engineers/Scientists, LLC

REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A.

PRELIMINARY

RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

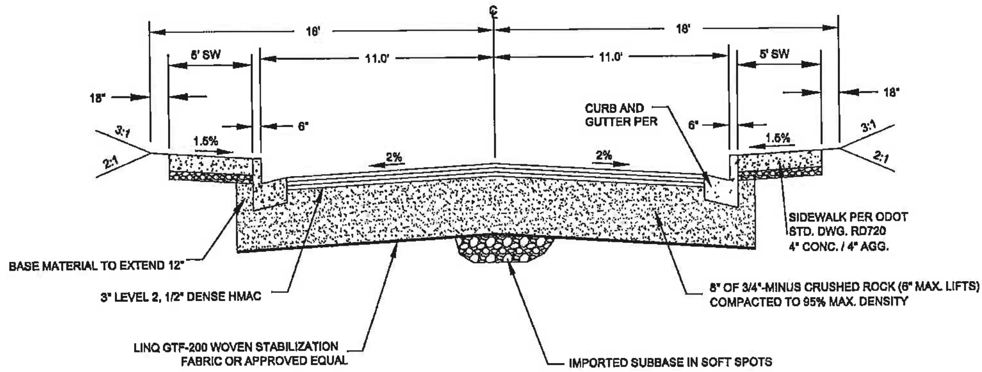
KITE FIELD RV PARK

DRAWN BY:	JG
DATE: 21 MAR 2021	
JOB No:	PB116

SHEET No:

C3.0

PRELIMINARY RV LAYOUT



STREET SECTION

SCALE: NTS

THE PORT OF BROOKINGS HARBOR STREET STANDARDS

NOTES

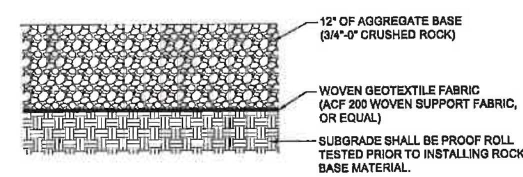
1. AGGREGATE BASE AND SUBBASE SHALL BE INSTALLED IN MAXIMUM 6" LIFTS AND MECHANICALLY COMPACTED TO MINIMUM 98% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH THE AASHTO T-99 METHOD.
2. JUST PRIOR TO PAVING, THE AGGREGATE BASE SHALL BE PROOF ROLLED. AGGREGATES THAT DO NOT PASS PROOF ROLL TESTING SHALL BE REMOVED, RECOMPACTED, AND TESTED AGAIN.
3. JUST PRIOR TO INSTALLING AGGREGATE BASE ROCK THE SUBGRADE SHALL BE PROOF ROLLED. SUBGRADE MATERIAL THAT DOES NOT PASS PROOF ROLL TESTING SHALL BE REMOVED AND ADDITIONAL CRUSHED ROCK INSTALLED.
4. PAVEMENT SECTION IS BASED ON THE ASSUMPTION THAT PAVEMENT CONSTRUCTION WILL BE ACCOMPLISHED DURING THE DRY SEASON.
5. PAVEMENTS SUBJECT TO CONSTRUCTION TRAFFIC MAY REQUIRE REPAIR.

GENERAL NOTES

1. MAXIMUM CUT AND FILL SLOPES SHALL BE MAXIMUM OF 3:1 FOR FILL AND MAXIMUM OF 2:1 FOR CUT.
2. PUE GRADE AS SHOWN. EMBANKMENT, WHERE REQUIRED, SHALL BE CONSTRUCTED FROM SELECT NATIVE SOILS.
3. IMPORTED SUBBASE (WHERE APPLICABLE) TO BE 4"-0" CRUSHED ROCK.

CONCRETE NOTES

1. PROVIDE A MINIMUM 8' TRANSITION SECTION WHEN JOINING CURBS OF DIFFERENT CROSS SECTIONS.
2. CONCRETE SHALL NOT BE PLACED UNTIL FORMS HAVE BEEN INSPECTED AND APPROVED.
3. CONCRETE SHALL BE COMMERCIAL GRADE RETAINING THE FOLLOWING CHARACTERISTICS: ENTRAINED AIR – 4.0% TO 7.0%; SLUMP – 5 INCHES OR LESS; COMPRESSIVE STRENGTH – MINIMUM 3,000 PSI AT 28 DAYS; TEMPERATURE – MINIMUM 50°F TO MAXIMUM 90°F.
4. ALL CONCRETE STRUCTURES REINFORCED WITH REBAR SHALL BE VIBRATED TO REMOVE VOIDS.
5. SURFACE SHALL HAVE A FINISHED TEXTURE THAT WILL NOT BE SLICK WHEN WET (MEDIUM BROOM FINISH). CURING COMPOUND MAY BE APPLIED IMMEDIATELY AFTER CONCRETE IS FINISHED. WHITE PIGMENT RECOMMENDED, CLEAR ACCEPTABLE.
6. AN EDGING TOOL SHALL BE USED ON ALL EDGES AND JOINTS.
7. PROVIDE CONTRACTION JOINTS AT 15' INTERVALS AND "DUMMY" TOOLED JOINTS AT 5' INTERVALS ON CURBS, SIDEWALKS AND APPROACHES. CONTRACTION JOINT GROOVES SHALL BE AT MINIMUM, 1 ½" DEEP OR ONE-THIRD THE THICKNESS OF THE CONCRETE.
8. PROVIDE EXPANSION JOINTS OPPOSITE ABUTTING EXPANSION JOINTS IN ABUTTING CONCRETE, AT EACH POINT OF TANGENCY IN THE STRUCTURE ALIGNMENT, BETWEEN DRIVEWAYS AND CONCRETE PAVEMENT, AROUND POLES, POSTS, BOXES AND OTHER FIXTURES WHICH PROTRUDE THROUGH OR AGAINST THE STRUCTURES, AT ALL BCR'S AND ECR'S, AT MAXIMUM OF 100' INTERVALS. EXPANSION JOINT MATERIAL SHALL BE OF THE BITUMINOUS, PREFORMED FILLER TYPE NOT LESS THAN ½" WIDE, PLACED FLUSH OR NO MORE THAN 1/8" BELOW THE CONCRETE SURFACE.
9. STRAIGHT LINE EDGES SHALL NOT VARY MORE THAN ¼" UNDER A TWELVE-FOOT STRAIGHT EDGE.
10. CURE AND PROTECT CONCRETE AFTER PLACING AND FINISHING. KEEP STRUCTURES FREE FROM CONTACT, STRAIN AND PUBLIC TRAFFIC FOR AT LEAST SEVEN DAYS OR LONGER AS DIRECTED. MIXES TO EXPEDITE CURING MAY BE USED WITH APPROVAL OF CITY ENGINEER.
11. CONCRETE SHALL BE REMOVED TO THE NEAREST CONTRACTION JOINT, COLD JOINT OR CRACK WITHIN 4' OF THE REPLACEMENT AREA. CONCRETE SHALL BE SAW CUT WITH A SMOOTH, UNIFORM JOINT PROVIDED.
12. EXISTING A/C SHALL BE REMOVED/REPLACED ALONG ENTIRE CURB SECTION TO A MINIMUM 18" WIDTH UNLESS APPROVED BY ENGINEER OF RECORD.

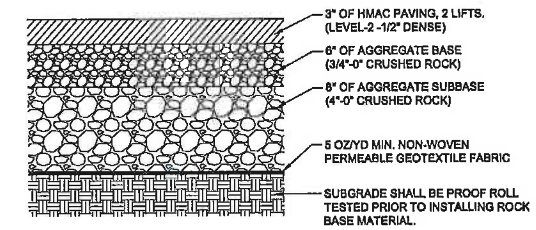


NOTES

1. AGGREGATE BASE AND SUBBASE SHALL BE INSTALLED IN MAXIMUM 6" LIFTS AND MECHANICALLY COMPACTED TO MINIMUM 98% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH THE AASHTO T-99 METHOD.
2. JUST PRIOR TO INSTALLING AGGREGATE BASE ROCK THE SUBGRADE SHALL BE PROOF ROLLED. SUBGRADE MATERIAL THAT DOES NOT PASS PROOF ROLL TESTING SHALL BE REMOVED AND ADDITIONAL CRUSHED ROCK INSTALLED.

2 EMERGENCY VEHICLE GRAVEL SECTION

SCALE: NTS

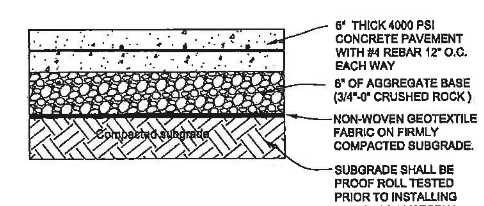


NOTES

1. AGGREGATE BASE AND SUBBASE SHALL BE INSTALLED IN MAXIMUM 6" LIFTS AND MECHANICALLY COMPACTED TO MINIMUM 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH THE AASHTO T-99 METHOD.
2. JUST PRIOR TO PAVING, THE AGGREGATE BASE SHALL BE PROOF ROLLED. AGGREGATES THAT DO NOT PASS PROOF ROLL TESTING SHALL BE REMOVED, RECOMPACTED, AND TESTED AGAIN.
3. JUST PRIOR TO INSTALLING AGGREGATE BASE ROCK THE SUBGRADE SHALL BE PROOF ROLLED. SUBGRADE MATERIAL THAT DOES NOT PASS PROOF ROLL TESTING SHALL BE REMOVED AND ADDITIONAL CRUSHED ROCK INSTALLED.
4. PAVEMENT SECTION IS BASED ON THE ASSUMPTION THAT PAVEMENT CONSTRUCTION WILL BE ACCOMPLISHED DURING THE DRY SEASON.
5. PAVEMENTS SUBJECT TO CONSTRUCTION TRAFFIC MAY REQUIRE REPAIR.

3 ASPHALT SECTION - DRIVE AISLES

SCALE: NTS



NOTES

1. 3/4"-0" AGGREGATE BASE SHALL BE INSTALLED IN MAXIMUM 6" LIFTS AND MECHANICALLY COMPACTED TO MINIMUM 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH THE AASHTO T-99 METHOD A.
2. JUST PRIOR TO INSTALLING AGGREGATE BASE ROCK THE SUBGRADE SHALL BE PROOF ROLLED. SUBGRADE MATERIAL THAT DOES NOT PASS PROOF ROLL TESTING SHALL BE REMOVED, INSTALL ADDITIONAL CRUSHED ROCK PER ENGINEERS RECOMMENDATIONS.

4 REINFORCED CONCRETE SECTION

SCALE: NTS

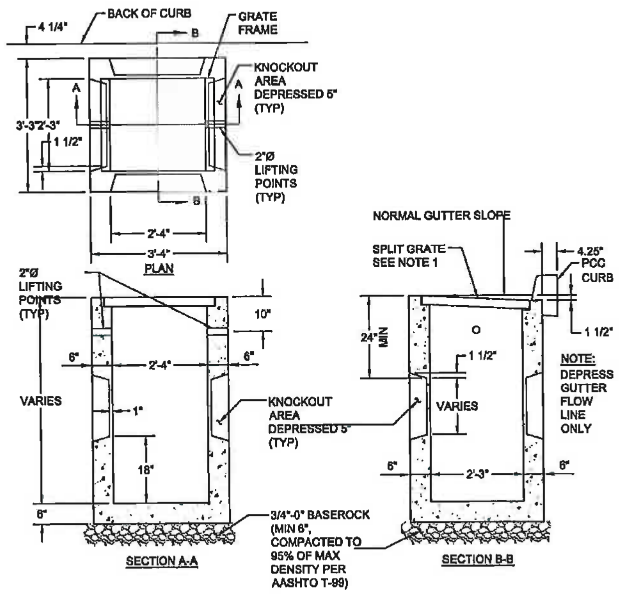
REVISIONS | BY:

EMC - Engineers/Scientists, LLC
Grants Pass * Jacksonville * Medford, OR

RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY: JG
DATE: 21 MAR 2021
JOB No: PB116
SHEET No: **C4.0**
ROAD SECTIONS

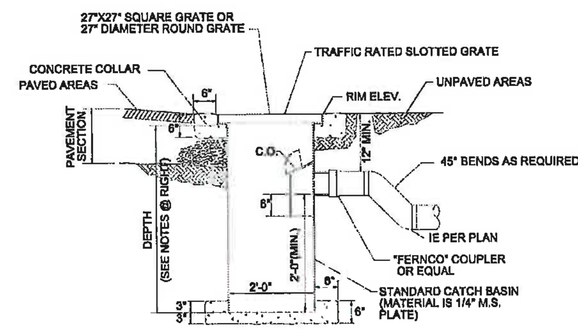


NOTES

1. GRATE AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION. GRATE AND FRAME TO BE ODOT G-2 TYPE 2 (BICYCLE SAFE).
2. FOR PRECAST BOX, CURB MUST BE HAND FORMED 10' EACH SIDE OF CATCH BASIN.
3. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
4. CATCH BASIN AND GRATE SHALL MEET HS20 LOADING.
5. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
6. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

1 CATCH BASIN

SCALE: NTS



*NOTE:
LYNCH OR APPROVED EQUAL CATCH BASIN.

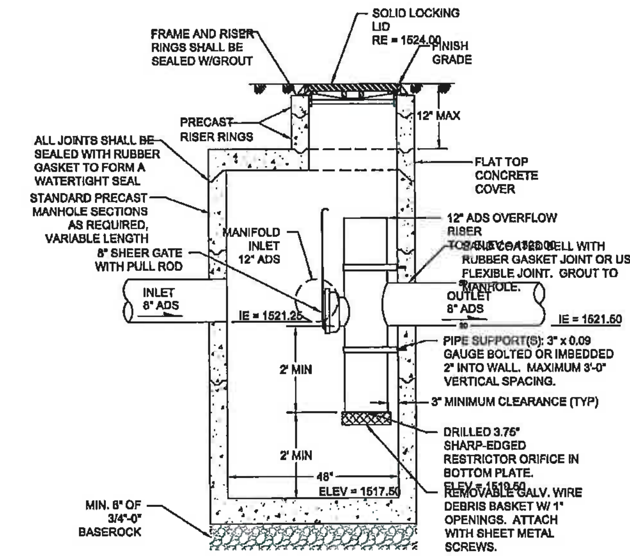
*NOTE:
LOCATE ROUND BASIN IN PAVED AREAS, AND SQUARE BASINS ARE TO BE USED WHEN LOCATED NEXT TO CURB.

GENERAL NOTES:

1. ASPHALT COAT ALL SURFACES OF CATCH BASIN AND CLEANOUT AFTER WELDING OR HOT DIP GALVANIZE (AT MANUFACTURER'S DISCRETION)
2. BREAK SHARP CORNERS AFTER WELDING.
3. ALL WELDED STEEL CONSTRUCTION
4. 10 GAUGE STEEL MINIMUM THICKNESS
5. OPENING ON BOTTOM OF WATERSEAL TO BE GREATER, OR EQUAL TO AREA IN OUTLET PIPE.
6. STANDARD DEPTH: 48"

2 LYNCH STYLE CATCH BASIN

SCALE: NTS

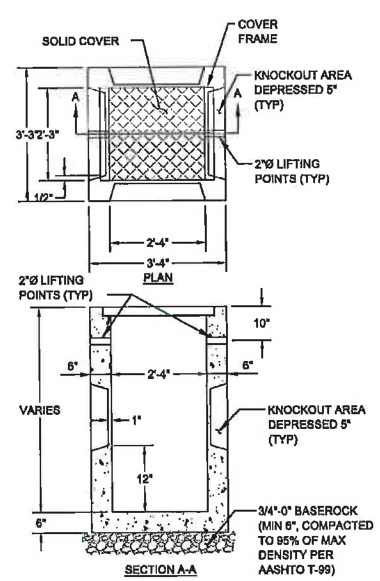


NOTE

ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

3 CONTROL STRUCTURE MANHOLE

SCALE: NTS (PONDS 2 & 3)

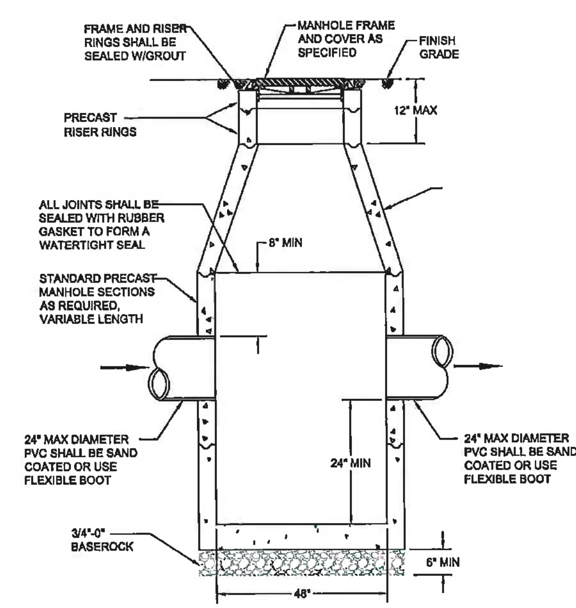


CONSTRUCTION NOTES:

1. COVER AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION.
2. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
3. JUNCTION BASIN AND GRATE SHALL MEET HS20 LOADING.
4. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
5. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

4 JUNCTION BASIN

SCALE: NTS

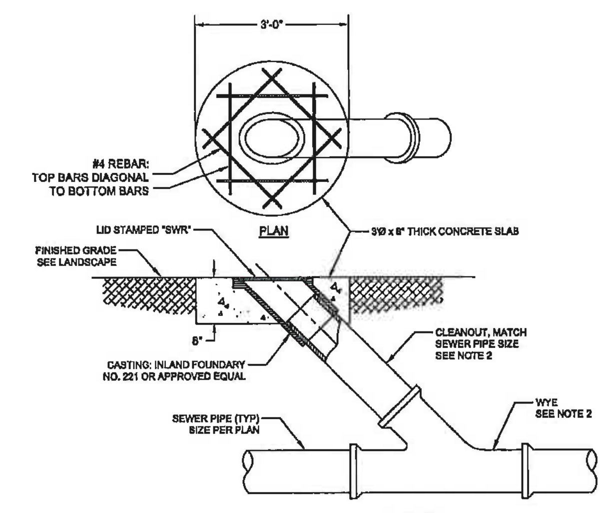


NOTE

ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

5 48" STORM MANHOLE

SCALE: NTS



NOTES

1. CONCRETE TO BE COMMERCIAL GRADE CONCRETE (CGC) PER 2015 ODOT STANDARD SPECIFICATIONS SECTION 00440. MINIMUM 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. FITTINGS AND PIPE TO BE GASKETED PVC SDR 26.

6 TYPICAL CLEANOUT

SCALE: NTS

REVISIONS	BY:

EMC
Grants Pass * Jacksonville * Medford, OR
- Engineers/Scientists, LLC

REGISTERED PROFESSIONAL ENGINEER — OREGON — JOHN (JACK) A. — PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY: JG
DATE: 21 MAR 2021
JOB No: PB116
SHEET No:
C4.1
DRAINAGE DETAILS

GENERAL NOTES

1. ALL WORK SHALL BE IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES. SPECIFICATIONS AND STANDARDS SHALL MEAN, AND ARE INTENDED TO BE, THE LATEST EDITION, AMENDMENT OR REVISION OF SUCH REFERENCE STANDARD IN EFFECT AS OF THE DATE OF THE CONTRACT DOCUMENTS. APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
   - 1.1. CURRENT OREGON STRUCTURAL SPECIALTY CODE
   - 1.2. CURRENT OREGON PLUMBING SPECIALTY CODE
   - 1.3. CURRENT OREGON ELECTRICAL SPECIALTY CODE
   - 1.4. NATIONAL FIRE PROTECTION ASSOCIATION
   - 1.5. CURRENT CURRY COUNTY STANDARDS SPECIFICATIONS FOR PUBLIC WORKS INFRASTRUCTURE.
2. WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF THE CURRENT "STANDARD SPECIFICATIONS FOR CONSTRUCTION", ODOT/AMERICAN PUBLIC WORKS ASSOCIATION (APWA), UNLESS OTHERWISE COVERED BY THE SPECIFICATIONS WRITTEN FOR THIS PROJECT OR THE COUNTY SPECIFICATIONS.
3. ALL WORK PERTAINING TO THIS PROJECT SHALL BE SUBJECT TO INSPECTION BY THE PROJECT ENGINEER AND/OR CITY ENGINEER. PRIOR TO ANY SITE WORK, THE CONTRACTOR SHALL CONTACT THE CITY AND PROJECT ENGINEER TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE.
4. PRIOR TO ANY SITE DISTURBING ACTIVITY INCLUDING CLEARING, LOGGING OR GRADING, THE SITE BOUNDARIES & CLEARING LIMITS AS SHOWN ON THESE PLANS SHALL BE LOCATED AND FIELD IDENTIFIED BY THE PROJECT SURVEYOR AND ALL ESC MEASURES SHALL BE INSTALLED AS IDENTIFIED ON THE EROSION & SEDIMENT CONTROL PLAN.
5. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. ALL SITE WORK IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE APPROVED PLANS. ANY DEVIATION FROM THESE PLANS WILL REQUIRE PRIOR APPROVAL FROM THE OWNER, ENGINEER AND APPROPRIATE PUBLIC AGENCIES PRIOR TO PERFORMING THE CHANGES IN THE FIELD.
7. ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND UTILITIES LOCATION SERVICE (DIAL 811) AT LEAST TWO BUSINESS DAYS PRIOR TO CONSTRUCTION. THE APPLICANT OR HIS REPRESENTATIVE AND THE ENGINEER SHALL BE CONTACTED IMMEDIATELY IF CONFLICTS EXIST.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.
9. THE CONTRACTOR SHALL KEEP OFF-SITE STREETS CLEAN AT ALL TIMES BY SWEEPING. STREET WASHING WILL NOT BE ALLOWED WITHOUT PRIOR CITY APPROVAL.
10. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO INITIATING WORK. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER WHEN CONFLICTS OCCUR BETWEEN THE PLANS AND FIELD CONDITIONS. CONFLICTS SHALL BE RESOLVED PRIOR TO PROCEEDING WITH CONSTRUCTION. REVISIONS SHALL BE FORMALLY APPROVED BY THE APPLICANT AND PROJECT ENGINEER PRIOR TO MAKING CHANGES IN THE FIELD.
11. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY UTILITY RELOCATIONS WITH UTILITY COMPANIES.
12. ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND.
13. CONTRACTOR SHALL DOCUMENT AND RECORD FIELD CHANGES, PIPE INVERT, PIPE SLOPE, AND ANY OTHER CRITICAL AS-CONSTRUCT DATA. AS-BUILT DRAWINGS AND FINAL REPORTS WILL BE REQUIRED BEFORE FINAL APPROVAL.
14. WORK IN COUNTY RIGHT-OF-WAY REQUIRES AN ENCROACHMENT PERMIT FROM THE LOCAL AUTHORITY.
15. APPROVED PERMANENT TRAFFIC CONTROL SIGNS AND MARKINGS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE INSTALLED PRIOR TO FINAL APPROVAL.
16. DURING PROJECT CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TEMPORARY CONSTRUCTION SIGNS, TRAFFIC CONTROL SIGNS, DELINEATORS AND TEMPORARY MARKINGS AS REQUIRED.
17. ACCESS BY EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
18. ALL CLEARED AND GRUBBED MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED AT AN APPROVED LOCATION.
19. ALL AREAS WITH ABANDONED UTILITY LINES, STORM DRAINS, UNDERGROUND TANKS, ETC. WHICH MAY PROVIDE VOID SPACE BENEATH THE SURFACE SHALL BE REMOVED. WHEN APPROVED BY THE ENGINEER THE VOID SPACE MAY BE FILED WITH APPROVED MATERIAL. ALL TANKS OR HAZARDOUS MATERIALS SHALL BE DEALT WITH IN ACCORDANCE TO ALL LOCAL, STATE AND FEDERAL LAWS.
20. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
21. CONTRACTOR IS RESPONSIBLE FOR ANY ASPHALT GRINDING, OVERLAY AND SLURRY SEAL. ALL SPECIFICATIONS SHALL COMPLY WITH ALL LOCAL AUTHORITY REQUIREMENTS.
22. CONSTRUCTION SHALL CONFORM TO THE 2018 STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PUBLISHED BY THE OREGON CHAPTER OF APWA, AND THE CURRENT AMENDMENTS OF THE APPROVING AGENCY.
23. ALL CONCRETE SHALL BE 3300 PSI AT 28 DAYS UNLESS OTHERWISE SPECIFIED.
24. CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN AND/OR MAINTAIN EXISTING PUBLIC STREETS OF SOIL OR OTHER DEBRIS DEPOSITED BY CONSTRUCTION OPERATIONS AND REPAIR ALL STREETS DAMAGED BY CONSTRUCTION OPERATIONS IN A TIMELY MANNER TO AVOID INCONVENIENCES OR HAZARDS TO THE PUBLIC.
25. CONTRACTOR SHALL NOTIFY OREGON UTILITY NOTIFICATION CENTER AT 1-800-332-2344.
26. ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE PRE-QUALIFIED WITH THE PORT OF BROOKINGS HARBOR PRIOR TO ANY CONSTRUCTION OF THIS PROJECT.
27. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN AND SECURE APPROVAL OF THE PLAN FROM THE AGENCY AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING WORK.
28. THE CONTRACTOR SHALL NOT PERFORM WORK WITHOUT AGENCY INSPECTIONS WHERE INSPECTIONS ARE REQUIRED BY THE SPECIFICATIONS.
29. WHERE CONNECTING TO AN EXISTING PIPE, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE AND ALLOW THE ENGINEER TO VERIFY EXACT LOCATION AND ELEVATION BEFORE LAYING ANY NEW PIPE ON THAT SYSTEM.
30. REQUESTS BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE CONSULTING ENGINEER BEFORE CHANGES ARE IMPLEMENTED.
31. WHEN PERFORMING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF ORS 757.542 TO 757.562, WHICH INCLUDE REQUIREMENTS THAT THE CONTRACTOR HAND-EXPOSE (POTHOLE) UNDERGROUND FACILITIES AND USE REASONABLE CARE TO AVOID DAMAGING THEM.
32. PLACEMENT OR STORAGE OF SPOILS FROM THE SEWER LINE TRENCHES IS NOT PERMITTED ON HARD SURFACE STREETS WITHIN PUBLIC RIGHT-OF-WAY. SPOILS STORED IN OTHER RIGHT-OF-WAY AREAS SHALL BE COVERED TO PREVENT EROSION.
33. FORMS OF ADEQUATE SIZE AND CONFIGURATION TO MEET CONCRETE THICKNESS REQUIREMENTS SHALL BE USED AROUND OUTSIDES OF OUTSIDE-DROP MANHOLES.
34. GRANULAR MATERIALS SHALL BE OBTAINED FROM A SOURCE APPROVED BY TTHE PORT OF BROOKINGS HARBOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE MATERIAL

GRADING NOTES

1. DEQ 1200-C PERMIT IS REQUIRED.
2. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. PRIOR TO THE START OF CONSTRUCTION, VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
4. MINIMIZE TRAFFIC ON SOIL AREAS DURING WET WEATHER. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EROSION AND RUNOFF.
5. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
6. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 3:1 FOR FILL AND MAXIMUM OF 2:1 FOR CUT.
7. USE OF CURRY COUNTY WATER SUPPLY FOR DUST CONTROL.

STORM DRAIN NOTES

1. ALL STORM SEWER PIPE SHALL MEET THE OREGON STATE PLUMBING SPECIALTY CODE.
2. ALL PIPE SHALL BE PLACED ON STABLE EARTH, OR IF IN THE OPINION OF THE PROJECT ENGINEER THE EXISTING FOUNDATION IS UNSATISFACTORY, THEN IT SHALL BE EXCAVATED BELOW GRADE AND BACKFILLED WITH A GRAVEL MATERIAL TO SUPPORT THE PIPE.
3. THE BACKFILL SHALL BE PLACED EQUALLY ON BOTH SIDES OF THE PIPE IN LAYERS WITH A LOOSE AVERAGE DEPTH OF 6", MAXIMUM DEPTH 8"-9", THOROUGHLY TAMPING EACH LAYER. THESE COMPACTED LAYERS MUST EXTEND FOR ONE DIAMETER ON EACH SIDE OF THE PIPE OR TO THE SIDE OF THE TRENCH. MATERIALS TO COMPLETE THIS FILL OVER PIPE SHALL BE THE SAME AS DESCRIBED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL MANHOLE, INLET AND CATCH BASIN FRAMES AND GRATES TO GRADE JUST PRIOR TO PAVING.
5. UNLESS OTHERWISE NOTED, ALL STORM SEWER PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE: THE MATERIAL SUPPLIED UNDER THIS SPECIFICATION SHALL BE HIGH-DENSITY CORRUGATED POLYETHYLENE SMOOTH INTERIOR PIPE AND SHALL BE MANUFACTURED IN CONFORMITY WITH THE LATEST AASHTO SPECIFICATIONS. COUPLERS SHALL COVER NOT LESS THAN ONE FULL CORRUGATION ON EACH ANNULAR SECTION OF PIPE.
6. CULVERT ENDS AT OUTFALLS SHALL BE BEVELED TO MATCH SIDE SLOPES. FIELD CUT OF CULVERT ENDS IS PERMITTED WHEN APPROVED BY THE ENGINEER OF RECORD OR HIS DESIGNATED REPRESENTATIVE. CULVERT OUTFALLS SHALL BE RIPRAPPED WITH A PAD MINIMUM OF 12" THICK, EXTENDING MINIMUM OF 6' FROM DISCHARGE POINT.
9. ALL STEEL PIPES, CULVERTS, TANKS AND OTHER STEEL PARTS OF ANY STORM DRAINAGE SYSTEM SHALL BE GALVANIZED OR HAVE A TREATMENT 1 ASPHALT COATING OR BETTER AS SPECIFIED IN THE ODOT STANDARD SPECIFICATIONS. ALUMINUM AND CONCRETE PIPES AND STRUCTURES DO NOT REQUIRE A TREATMENT 1 COATING.
10. STORM WATER RETENTION/DETENTION FACILITIES, STORM DRAINAGE PIPE AND CATCH BASINS SHALL BE FLUSHED AND CLEANED PRIOR TO CITY ACCEPTANCE.
11. ALL PIPES SHALL HAVE A MINIMUM OF 30" COVER AT THE TOP OF THE BELL, OR SHALL HAVE MINIMUM COVER PER THE MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS GREATER.
12. CATCH BASIN STATIONS AND OFFSETS ARE MEASURED TO CENTER OF GRATE.
13. 100-FT MAX LINEAR RUN BETWEEN CLEANOUTS. 135° MAX AGGREGATE HORIZONTAL CHANGE IN DIRECTION WITHOUT CLEANOUT.

SANITARY SEWER NOTES

1. THE SANITARY SEWER SYSTEM IS TO BE OWNED AND MAINTAINED BY THE PORT OF BROOKINGS HARBOR
2. INSPECTION AND ACCEPTANCE IS TO BE THE RESPONSIBILITY OF THE PORT OF BROOKINGS HARBOR.
3. ALL WORK SHALL CONFORM TO THE LATEST VERSION OF THE APWA/ODOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND COB STANDARD SPECIFICATIONS AND DRAWINGS. CURRY COUNTY STANDARDS SHALL TAKE PRECEDENCE.
4. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR AND THE PORT OF BROOKINGS HARBOR IS REQUIRED PRIOR TO STARTING WORK.
5. CONTRACTOR SHALL NOTIFY COB 48 HOURS IN ADVANCE OF CONSTRUCTION.
6. CONTRACTOR SHALL OBTAIN PREQUALIFIED STATUS WITH COB PRIOR TO PERFORMING WORK ON SEWER TO BE OWNED AND MAINTAINED BY THE PORT OF BROOKINGS HARBOR, INCLUDING TAPS ON EXISTING SEWER MAINS.
7. CONFINED SPACE CERTIFICATION WILL BE VERIFIED PRIOR TO PERFORMING WORK ON THE PORT OF BROOKINGS HARBOR FACILITIES REQUIRING CONFINED SPACE ENTRY. PERSONAL PROTECTIVE EQUIPMENT INCLUDING BUT NOT LIMITED TO GAS DETECTION METERS, FALL PROTECTION AND A CONFINED SPACE RESCUE SYSTEM WILL BE REQUIRED.
8. CONTRACTOR IS RESPONSIBLE FOR THE TESTING OF SANITARY SEWER FACILITIES PER COB SPECIFICATIONS. TESTING OF SEWER FACILITIES IS SUBJECT TO THE PORT OF BROOKINGS HARBOR ACCEPTANCE.
9. CONTRACTOR IS RESPONSIBLE FOR THE MANAGEMENT OF EXISTING SEWER FLOWS DURING CONSTRUCTION. UPON REQUEST, A SEWER BYPASS PLAN MUST BE SUBMITTED TO THE PORT OF BROOKINGS HARBOR FOR APPROVAL PRIOR TO BYPASSING OR BLOCKING EXISTING SEWER.
10. SANITARY SEWER WORK SHALL MEET THE OREGON STATE PLUMBING SPECIALTY CODE.
11. NOTIFY ENGINEER IF ANY EXISTING ONSITE SEWER LATERALS ARE FOUND. UTILIZATION OF SUCH LATERALS IS SUBJECT TO COMPLETION OF TV INSPECTION, DYE TEST, AND APPROVAL OF LOCAL AUTHORITIES. ABANDON EXISTING LATERALS NOT UTILIZED PER LOCAL AUTHORITY STANDARDS.
12. 100-FT MAX LINEAR RUN BETWEEN CLEANOUTS. 135° MAX AGGREGATE HORIZONTAL CHANGE IN DIRECTION WITHOUT CLEANOUT.

WATER NOTES

ALL WATER WORKS SHALL BE DONE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE PORT OF BROOKINGS HARBOR STANDARDS STANDARD SPECIFICATIONS.

1. SERVICE CONNECTIONS ARE TO BE INSTALLED FOR EACH PARCEL PER CURRY COUNTY STANDARDS.
2. COVER OVER EXISTING MAINS SHALL NOT BE CHANGED WITHOUT WRITTEN AUTHORIZATION OF THE PORT OF BROOKINGS HARBOR.
3. NEW MAINS ARE TO BE PRESSURE TESTED, DISINFECTED AND PROVEN TO BE BACTERIOLOGICALLY SAFE PRIOR TO PLACING NEW MAINS IN SERVICE BY THE PORT OF BROOKINGS HARBOR. PRESSURE TESTING SHALL NOT BE DONE UNTIL ALL EXCAVATION AND BACKFILL UP TO SUBGRADE HAS BEEN ESTABLISHED.
4. INITIAL BACKFILL TO TOP OF WATER MAINS AND FIRE HYDRANTS RUNS SHALL BE COMPACTED IN ACCORDANCE WITH CURRY COUNTY STANDARD SPECIFICATION FOR TRENCH EXCAVATION AND BACKFILL, OR BACKFILL MATERIAL AND COMPACTION SHALL MEET THE REQUIREMENTS OF THE CONTROLLING AGENCY.
5. WATER MAINS AND FIRE HYDRANTS ARE TO BE INSTALLED WITH REFERENCE ALIGNMENT AND GRADE STATUS AND ONLY UPON NOTIFICATION OF CURRY COUNTY INSPECTOR.
6. WATER MAINS ARE TO BE INSTALLED AFTER SEWERS.
7. FIRE HYDRANT RUNS ARE TO BE INSTALLED BEFORE CURBS AND GUTTERS. IN THE EVENT A WATER MAIN IS INSTALLED LARGER THAN EIGHT (8) INCHES, OR IF THE MAIN HAS MORE THAN THREE (3) FEET OF COVER, THE CONTRACTOR WILL BE REQUIRED TO INSTALL AN OFFSET SIMILAR TO STANDARD DETAIL 4.37 TO PERMIT USE OF A STANDARD 3'-6: BURY FIRE HYDRANT.
8. STUBS SERVICE RUNS SHALL BE INSTALLED PRIOR TO CURB AND GUTTER AND AFTER PUBLIC UTILITY EASEMENTS ARE GRADED TO CURB LEVELS.
9. APPROVED PLANS AND SPECIFICATION SHALL BE AVAILABLE AT SITE OF THE CONSTRUCTION AT ALL TIMES DURING CONSTRUCTION OF WATER FACILITIES.
10. SEPARATION OF WATER MAIN, INCLUDING SERVICE LINES AND SANITARY SEWER, SHALL BE IN ACCORDANCE WITH CURRENT OREGON STATE HEALTH DIVISION RULES THE STANDARDS EXCEPT IN ALL CASES RUNNING PARALLEL WITH EACH OTHER, THERE SHALL BE A 10 FOOT SEPARATION CENTER LINE TO CENTER LINE. REFER CURRY COUNTY STANDARDS (STANDARD DETAILS NO 4.39).
11. NO ABOVE-GROUND APPURTENANCES ORE PHYSICAL STRUCTURES OF ANY KIND SHALL BE WITHIN FIVE (5) FEET (HORIZONTALLY) OF ANY WATER FACILITY WHETHER THAT WATER FACILITY IS ABOVE OR BELOW GROUND. THIS DISTANCE SHALL BE TEN (10) FEET (HORIZONTALLY) WHEN WATER AND SANITARY SEWER FACILITIES ARE CONCERNED.
12. NO BELOW-GROUND UTILITY LINES OR OTHER SERVICE OF ANY KIND SHALL BE WITHIN FIVE (5) FEET (HORIZONTALLY) OF ANY WATER FACILITY WHEN RUNNING PARALLEL TO THE WATER FACILITY.
13. NO BELOW-GROUND UTILITY LINES OR OTHER SERVICE OF ANY KIND SHALL BE WITHIN SIX (6) INCHES (VERTICALLY) OF ANY WATER FACILITY WHEN RUNNING APPROXIMATELY PERPENDICULAR TO THE WATER FACILITY. THIS DISTANCE SHALL BE EIGHTEEN (18) INCHES (VERTICALLY) WHEN WATER AND SANITARY SEWER FACILITIES ARE CONCERNED.
14. BLASTING OR EXPLOSIVE WORK WILL NOT BE ALLOWED WITHIN 30 FEET OF EXISTING WATER FACILITIES AND ONLY THEN USING PROPER INDUSTRY STANDARDS AND THROUGH A PERMIT PROCESS WITH THE FIRE DEPARTMENT OR OTHER AGENCY JURISDICTION.
15. THE CURRY COUNTY REQUIRES "POLY PIGS" TO BE USED ON ALL NEWLY LAID WATER LINES.
16. ALL DRY TAP WATER SERVICES AND AIR RELEASE VALVES SHALL BE INSTALLED BY A CURRY COUNTY PRE-QUALIFIED INSTALLER.
17. ONLY STATE OF OREGON-APPROVED BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED.

APPLICABLE CODES

ALL WORK SHALL BE IN CONFORMANCE WITH ALL FEDERAL, STATE, AND CITY CODES. SPECIFICATIONS AND STANDARDS SHALL MEAN, AND ARE INTENDED TO BE, THE LATEST EDITION, AMENDMENT OR REVISION OF SUCH REFERENCE STANDARD IN EFFECT AS OF THE DATE OF THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO TO FOLLOWING:

OREGON STANDARD DRAWINGS (ODOT)

CURRY COUNTY ADOPTED STANDARD DETAILS AND SPECIFICATIONS

OPSC: OREGON PLUMBING SPECIALTY CODE, LATEST EDITION

OFC: OREGON FIRE CODE, LATEST EDITION

NFPA: NATIONAL FIRE PROTECTION ASSOCIATION 101 LIFE SAFETY CODE, LATEST EDITION

PAVEMENT MARKING NOTES

1. ALL STRIPING AND SIGNAGE SHALL BE PER MUTCD STANDARDS OR AS DIRECTED BY THE LOCAL AUTHORITY.
2. ALL STRIPING AND MARKINS INSIDE PUBLIC RIGHT OF WAY SHALL BE PER LOCAL AUTHORITY STANDARDS.
3. ALL STRIPING SHALL MEET ADA REQUIREMENTS.

ADA NOTES

1. ALL ADA ACCESSIBLE FACILITIES SHALL BE INSTALLED PER THE CURRENT ADA REQUIREMENTS AND PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES. (PROWAG)
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE ACCESSIBLE PATH OF TRAVEL COMPLIES WITH AMERICAN DISABILITIES ACT AND ALL LOCAL CODES.
3. THE ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLANS IS A BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING ½" BEVELED AT 1:2 MAX SLOPE, OR VERTICAL CHANGES NOT EXCEEDING ¼" MAX AND AT LEAST 48" WIDE. SURFACE IS SLIP RESISTANT, STABLE, FIRM, AND SMOOTH. CROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5% UNLESS OTHERWISE NOTED.

INSPECTION AND TESTING NOTES

1. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL TESTING, INSPECTIONS, AND SPECIAL INSPECTIONS AS REQUIRED BY PROJECT ENGINEER, CURRENT BUILDING CODES, OR JURISDICTIONS HAVING AUTHORITY. ALL TESTING MUST BE COMPLETED AND APPROVED PRIOR TO SUBSEQUENT WORK. ADDITIONAL OR FREQUENT TESTS MAY BE REQUIRED BY AGENCY, BUILDING OFFICIAL, OR ENGINEER.
2. TESTING MUST BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY RETAINED BY CONTRACTOR.
3. IN ADDITION TO IN-PLACE DENSITY TESTING, THE SUB-GRADE AND BASE ROCK SHALL BE PROOF-ROLLED WITH A LOADED DUMP TRUCK OR HEAVY NON-VIBRATORY ROLLER. SOILS SHALL BE REMOVED AND RE-COMPACTED OR REPLACED WITH APPROVED IMPORTED STRUCTURAL FILL IF THEY DO NOT DEMONSTRATE A FIRM, UNYIELDING CONDITION. BASEROCK PROOF-ROLL SHALL TAKE PLACE LESS THAN 24 HOURS PRIOR TO PAVING AND SHALL BE WITNESSED BY THE ENGINEER OR GOVERNING AGENCY.
4. THE APPROVED INDEPENDENT LABORATORY SHALL PROVIDE CERTIFICATION STAMPED BY AN ENGINEER LICENSED IN THE STATE OF OREGON THAT THE SUB-GRADE IS PREPARED AND ALL ENGINEERED FILLS ARE PLACED IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND DOCUMENTS.
5. PROVIDE ENGINEER WITH SPOT ELEVATION VERIFICATION FOR SUB-GRADE AND TOP OF AGGREGATE PRIOR TO PLACING CONCRETE, ASPHALT, AND/OR STRUCTURES (WHEN INCLUDED IN THE PROJECT).

REVISIONS	BY:

EMC – Engineers/Scientists, LLC

Grants Pass * Jacksonville * Medford, OR

REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A. — PRELIMINARY

RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

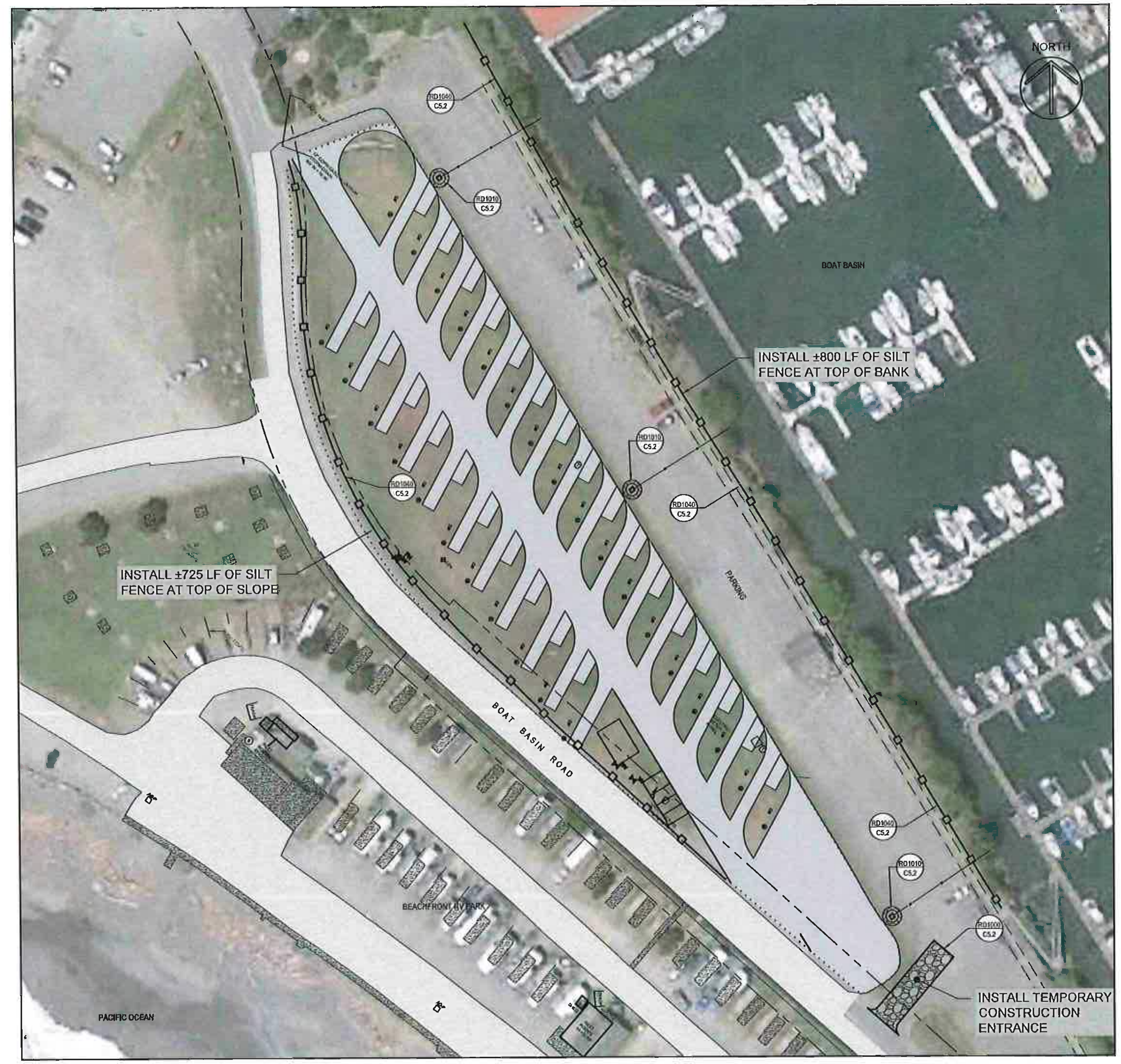
KITE FIELD RV PARK

DRAWN BY: JG

DATE: 21 MAR 2021

JOB No: PB116

SHEET No: C4.2 GENERAL NOTES



0 25 50 100

SCALE: 1" = 50'

KITE FIELD RV PARK PRELIMINARY EROSION CONTROL PLAN

SCALE: 1" = 50' (24x36)

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLAN	C5.0
EROSION AND SEDIMENT CONTROL NOTES	C5.1
EROSION AND SEDIMENT CONTROL DETAILS	C5.2

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KITE FIELD RV PARK

DRAWN BY:	JG
DATE: 21 MAR 2021	
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SHEET No:	C5.0 ESC PLAN

ESCP STANDARD NOTES:

1) HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE ENGINEER TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
2) ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
3) INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
4) RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE. (SCHEDULE B.2.C)
5) ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A 8.A)
6) THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SCHEDULE A.12.C.I)
7) SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV. AND V)
8) PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.III)
9) IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) AND (2))
10) PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
11) MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FEET OF WATERS OF THE STATE. (SCHEDULE A.7.B.I.AND (2(A)(B))
12) INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SCHEDULE A.8.C.I.(5))
13) CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
14) CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
15) ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
16) APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS. (SCHEDULE A.8.C.II.(3))
17) ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
18) PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND DISTURBING ACTIVITIES. (SCHEDULE A 7.D.II AND A.8.C.I(4))
19) WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(5))
20) CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SCHEDULE A.6)
21) USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
22) IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A. 7.E.III.)
23) USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A 7.A.IV)
24) THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.III)
25) IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
26) TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
27) AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A 7.E.II.(2))
28) CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND ACTIVITIES DURING WET WEATHER. (SCHEDULE A.7.A.I)
29) SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
30) OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.I)
31) CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III & IV)
32) WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
33) THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
34) THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
35) PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
36) DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.III (1) AND D.3.C.II AND III)

WET WEATHER CONSTRUCTION

THE SITE SOILS ARE CONSIDERED VERY MOISTURE SENSITIVE AND, AS SUCH, ARE SUSCEPTIBLE TO DISTURBANCE BY CONSTRUCTION EQUIPMENT, PARTICULARLY DURING PERIODS OF WET WEATHER. DURING WET WEATHER, THE CONTRACTOR SHALL MINIMIZE TRAFFIC ON PREPARED SOIL SUBGRADE AREAS. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. THE GRADING CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EXCESSIVE RUNOFF EROSION.

INSPECTION FREQUENCY	
SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURING. AT LEAST ONCE EVERY TWO WEEKS, REGARDLESS OF WHETHER OR NOT RUNOFF IS OCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

IMPLEMENTATION OF CONTROL MEASURES:

A. ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP (PARAGRAPH A.12). FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT.

B. ALL PERMIT REGISTRANTS MUST PREVENT THE DISCHARGE OF SIGNIFICANT AMOUNTS OF SEDIMENT TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. THE FOLLOWING CONDITIONS INDICATE THAT A SIGNIFICANT AMOUNT OF SEDIMENT HAS LEFT OR IS LIKELY TO LEAVE THE SITE:
I. EARTH SLIDES OR MUD FLOWS;
II. CONCENTRATED FLOWS OF STORMWATER SUCH AS RILLS, RIVULETS OR CHANNELS THAT CAUSE EROSION WHEN SUCH FLOWS ARE NOT FILTERED, SETTLED OR OTHERWISE TREATED TO REMOVE SEDIMENT;
III. SEDIMENT LADEN OR TURBID FLOWS OF STORMWATER THAT ARE NOT FILTERED OR SETTLED TO REMOVE SEDIMENTS AND TURBIDITY;
IV. DEPOSITS OF SEDIMENT AT THE CONSTRUCTION SITE IN AREAS THAT DRAIN TO UNPROTECTED STORMWATER INLETS OR TO CATCH BASINS THAT DISCHARGE TO SURFACE WATERS. INLETS AND CATCH BASINS WITH FAILING SEDIMENT CONTROLS DUE TO LACK OF MAINTENANCE OR INADEQUATE DESIGN ARE CONSIDERED UNPROTECTED;
V. DEPOSITS OF SEDIMENT FROM THE CONSTRUCTION SITE ON ANY PROPERTY (INCLUDING PUBLIC AND PRIVATE STREETS) OUTSIDE OF THE CONSTRUCTION ACTIVITY COVERED BY THIS PERMIT.

C. THE PERMIT REGISTRANT MUST ENSURE THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP ARE IMPLEMENTED ACCORDING TO THE FOLLOWING SEQUENCE:
I. BEFORE CONSTRUCTION.
(1) IDENTIFY, MARK, AND PROTECT (WITH CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES AND VEGETATION AREAS TO BE PRESERVED.
(2) IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (FOR EXAMPLE, WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS.
(3) HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE ENGINEER REQUIRED BY CONDITION A.12.B.III TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
(4) STABILIZE SITE ENTRANCES AND ACCESS ROADS INCLUDING, BUT NOT LIMITED TO CONSTRUCTION ENTRANCES, ROADWAYS AND EQUIPMENT PARKING AREAS (FOR EXAMPLE, USING GEOTEXTILE FABRIC UNDERLAY).
(5) INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS.
(6) ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK.
(7) ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS.
(8) STABILIZE STREAM BANKS AND CONSTRUCT THE PRIMARY RUNOFF CONTROL MEASURES TO PROTECT AREAS FROM CONCENTRATED FLOWS.

II. DURING CONSTRUCTION.
(1) LAND CLEARING, GRADING AND ROADWAYS.
(A) BEGIN LAND CLEARING, EXCAVATION, TRENCHING, CUTTING OR GRADING ONLY AFTER INSTALLING APPLICABLE SEDIMENT AND RUNOFF CONTROL MEASURES.
(B) PROVIDE APPROPRIATE EROSION AND SEDIMENT CONTROL BMPS FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS.
(C) INSTALL ADDITIONAL CONTROL MEASURES AS WORK PROGRESSES AS NEEDED.
(D) PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION.
(2) SURFACE STABILIZATION.
APPLY TEMPORARY OR PERMANENT SOIL STABILIZATION MEASURES (FOR EXAMPLE, TEMPORARY AND PERMANENT SEEDING, OR MULCHING) IMMEDIATELY ON ALL DISTURBED AREAS AS WORK IS COMPLETED. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE.
(3) CONSTRUCTION AND PAVING.
KEEP EROSION AND SEDIMENT CONTROL MEASURES IN PLACE FOR THE DURATION OF CONSTRUCTION, INCLUDING PROTECTION FOR ACTIVE STORM DRAIN INLETS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS.

III. FINAL STABILIZATION AND LANDSCAPING.
(1) PROVIDE PERMANENT EROSION PREVENTION MEASURES ON ALL EXPOSED AREAS.
(2) REMOVE AND PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS.
(3) REMOVE ALL TEMPORARY CONTROL MEASURES AS AREAS ARE STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS.

ESCP RESPONSIBILITY

IT IS THE INTENT OF THIS TEMPORARY EROSION AND SEDIMENT CONTROL PLAN THAT STORM WATER RUNOFF BE CONTROLLED AT ALL TIMES TO PREVENT SOIL EROSION AND TO MAINTAIN WATER QUALITY. ANY AND ALL MEASURES NECESSARY TO DO SO SHALL BE EMPLOYED BY THE CONTRACTOR.

1. REGARDLESS OF SITE, WEATHER, SOIL OR OTHER CONDITIONS, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ENSURING THAT EROSION DOES NOT OCCUR ON THE SITE AND THAT POLLUTED OR SILT-LADEN RUNOFF DOES NOT LEAVE THE SITE OR ENTER INTO ANY CREEK, STREAM, WETLAND OR WATER BODY ON THE SITE.
2. BEYOND THE MINIMUM REQUIREMENTS SHOWN ON THIS PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING AND IMPLEMENTING APPROPRIATE METHODS, "BEST MANAGEMENT PRACTICES" (BMPS), FOR STORM WATER TREATMENT AND CONTROL THAT MEET THE REQUIREMENTS OF THE STATE AND LOCAL JURISDICTION.
3. THE CONTRACTOR SHALL REPORT ALL WATER QUALITY CONCERNS AND ACTIVITIES TO THE PROJECT ENGINEER. IN THE EVENT THAT THE INSTALLED WATER QUALITY CONTROL MEASURES ARE INEFFECTIVE AT CONTROLLING EROSION AND SEDIMENT, THE CONTRACTOR SHALL IMMEDIATELY REPORT TO AND CONSULT WITH THE PROJECT ENGINEER TO FIND AN APPROPRIATE REMEDY. ALL CONSTRUCTION ACTIVITIES, WITH THE EXCEPTION OF EROSION AND SEDIMENT CONTROL MEASURES, SHALL CEASE UNTIL SUCH TIME AS THE WATER QUALITY IS BROUGHT UNDER CONTROL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING WEATHER FORECASTS AND ANTICIPATING STORM ACTIVITY AND SHALL SCHEDULE ALL PROJECT ACTIVITIES IN ANTICIPATION OF THE WEATHER.
5. ALL SUPPLIES AND MATERIALS NECESSARY FOR IMPLEMENTING BMPS SHALL BE STORED ON SITE AND SHALL BE IMMEDIATELY AVAILABLE FOR USE. SUCH SUPPLIES AND MATERIALS SHALL INCLUDE, BUT NOT BE LIMITED TO, STRAW BALES OR OTHER MULCHING MATERIAL, SILT FENCING AND STAKES, FILTER FABRIC, ETC.
6. DURING AND AFTER RUNOFF PRODUCING STORM EVENTS, CONTRACTOR SHALL MONITOR ALL EROSION CONTROL MEASURES AND SHALL PRIORITIZE IMPLEMENTATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES ABOVE ALL OTHERS.

ENGINEER

EMC - ENGINEERING/SCIENTISTS, LLC
450 CONESTOGA CIRCLE
JACKSONVILLE, OREGON
541-261-9929

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS
UNPAVED PARKING LOTS, OUTSIDE STORAGE, RECREATIONAL FIELD, BOAT YARD

DEVELOPED CONDITIONS
PAVED PARKING LOTS, STORM WATER SEWER SYSTEM, UTILITIES, RECREATIONAL VEHICLE USE, PAVED BOAT YARD

RECEIVING WATER BODIES
PORT BASIN THEM PACIFIC OCEAN/CHETCO MOUTH & ESTUARY

811
Know what's **below.**
Call before you dig.

INSPECTION FREQUENCY:

* HOLD A PRE-CON MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE EC ENGINEER.
* ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200 C PERMIT REQUIREMENTS.
* INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200 C PERMIT REQUIREMENTS.
* CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED TO DEQ IN THE FORM OF AN ACTION PLAN.

RATIONAL STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S 1200-C PERMIT APPLICATION AND ESCP GUIDANCE DOCUMENT HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMPS WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS, TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS. AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESCP, AN ACTION PLAN WILL BE SUBMITTED.

______ INITIAL

STOCKPILE SOILS

TEMPORARY STOCKPILE LOCATIONS MAY BE ADJUSTED BY CONTRACTOR IN FIELD. CARE SHOULD BE TAKEN TO AVOID UNINTENTIONAL DRAINAGE IMPOUND OR DIVERSION. TOPSOIL STRIPPINGS MAY BE INCORPORATED INTO EROSION CONTROL DIVERSION BERMS.

STOCKPILES SHALL NOT BE PLACED WITHIN PROTECTED AREAS, SCREEN BUFFERS, EXISTING DRAINAGE WAYS, UTILITIES EASEMENT, OR RIGHT-OF-WAYS. STOCKPILE MANAGEMENT SHALL COMPLY WITH THE ESC PLAN. ON-SITE TEMPORARY STOCKPILES SHALL BE REMOVED PRIOR TO FINALIZING CONSTRUCTION.

CONSTRUCTION ACTIVITY / ESTIMATED TIME

CLEARING:	TO BE DETERMINED
GRADING:	TO BE DETERMINED
UTILITY INSTALL :	TO BE DETERMINED
STREET CONSTRUCTION:	TO BE DETERMINED
FINAL STABILIZATION:	TO BE DETERMINED

REVISIONS | BY:

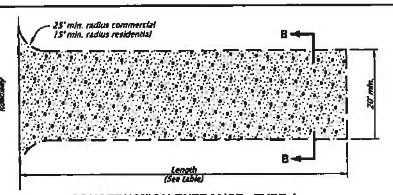
EMC - Engineers/Scientists, LLC
Grants Pass • Jacksonville • Medford, OR

PRELIMINARY
REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A.
RENEWAL DATE: 12/31/21

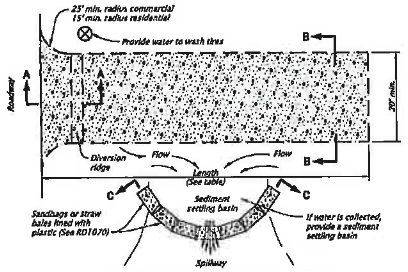
PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY:	JG
DATE:	21 MAR 2021
JOB No:	PB116
SHEET No:	C5.1 ESC GENERAL NOTES

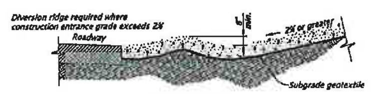
RD1000 — Construction Entrances



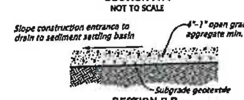
CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



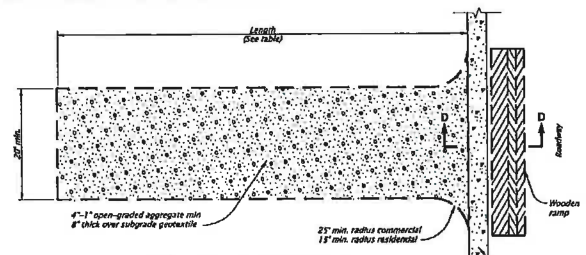
CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE



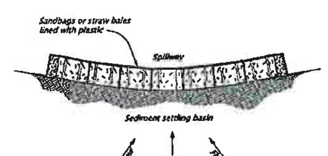
SECTION A-A
NOT TO SCALE



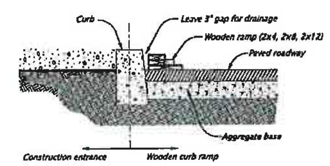
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

CALC. BOOK NO. 6408 — SDR DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

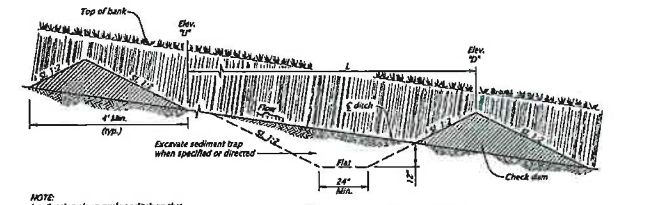
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021
DATE | REVISION DESCRIPTION

rd1000.dgn 07-01-2020 RD1000

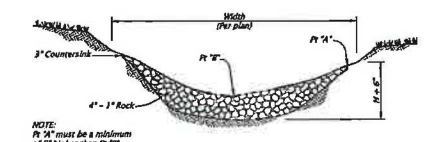
Effective Date: December 1, 2020 - May 31, 2021 RD1000

RD1005 — Check Dams



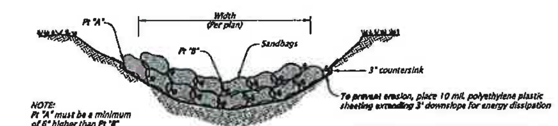
NOTE:
L = Spacing along swale or ditch so that Elevation "U" equals Elevation "D".

TYPICAL PROFILE SECTION CHECK DAMS
(SHOWN WITH AGGREGATE)
NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

AGGREGATE CHECK DAM - TYPE 1
NOT TO SCALE



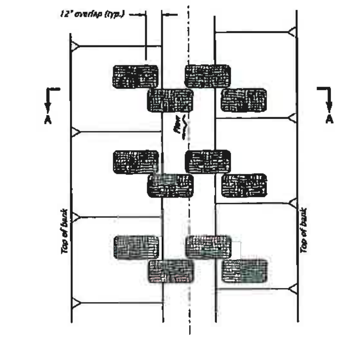
NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

SANDBAG CHECK DAM - TYPE 4
NOT TO SCALE

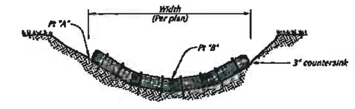
NOTES:
1. Type 3 – stake biofilter bags with two 2"x2"x18" (minimum) wood stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags. Omit stakes if placed over paved surfaces. Overlap bags 12" minimum at each joint.
2. Type 4 – Tightly abut or overlap ends of sandbags at each joint.
3. Spacing between check dams for all check dam types shall comply with the typical profile section shown above.

MAXIMUM CHECK DAM SPACING "L"				
Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	13'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed — H = Min. dam height



PLAN



SECTION A-A

BIOFILTER BAG CHECK DAM - TYPE 3
NOT TO SCALE

CALC. BOOK NO. 6407 — SDR DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

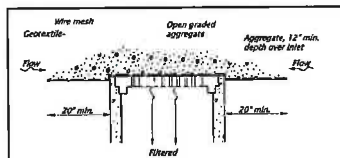
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
CHECK DAMS
TYPE 1, 3 AND 4
2021
DATE | REVISION DESCRIPTION

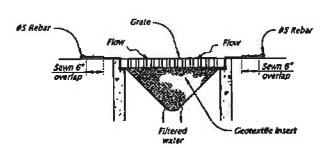
rd1005.dgn 07-01-2020 RD1005

Effective Date: December 1, 2020 - May 31, 2021 RD1005

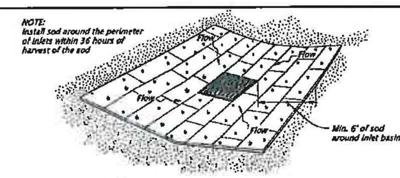
RD1010 — Inlet Protection



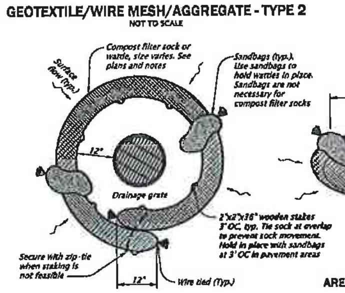
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2
NOT TO SCALE



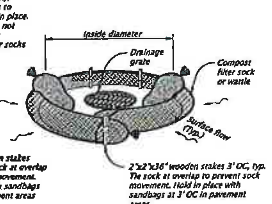
PREFABRICATED FILTER INSERT - TYPE 3
NOT TO SCALE



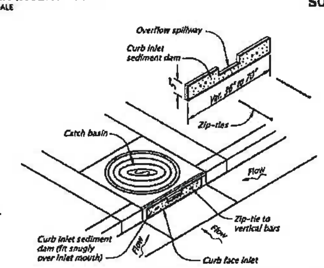
SOD PROTECTION - TYPE 6
NOT TO SCALE



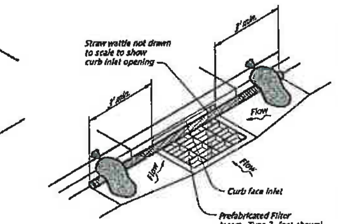
AREA DRAIN PLAN



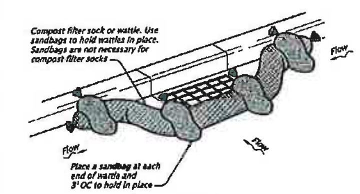
AREA DRAIN PERSPECTIVE VIEW



CURB INLET SEDIMENT DAM - TYPE 10
NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11
NOT TO SCALE



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7
NOT TO SCALE

NOTES:
Type 2 – Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 – Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems.
Field fabricated inserts are not allowed.

Type 7 – Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.).
Use 8" to 12" dia sock on curbside in traffic areas.

(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 – Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 – Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

CALC. BOOK NO. 6402, 6408, 6407 — SDR DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

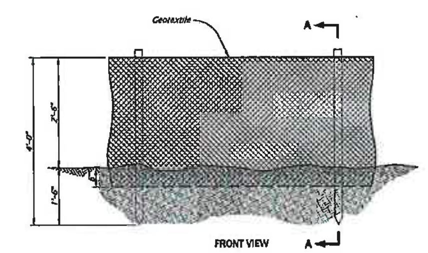
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

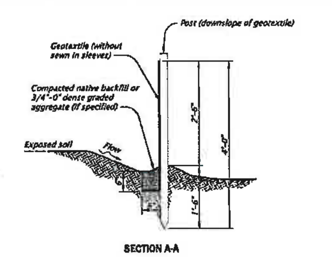
OREGON STANDARD DRAWINGS
INLET PROTECTION
TYPE 2, 3, 6, 7, 10 AND 11
2021
DATE | REVISION DESCRIPTION

rd1010.dgn 07-01-2020 RD1010

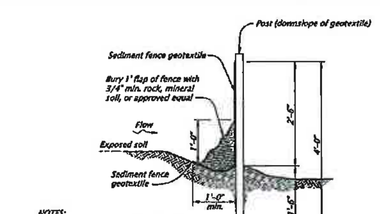
Effective Date: December 1, 2020 - May 31, 2021 RD1010

RD1040 — Sediment Fence



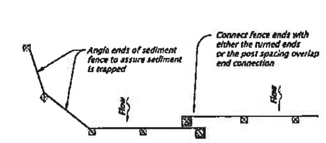


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

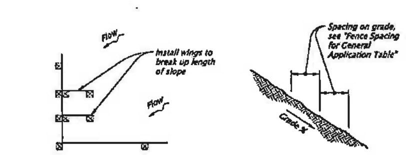


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

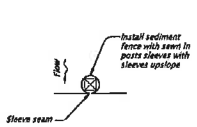


TERMINATION AT CORNER OR PROPERTY LINE

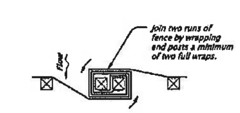
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

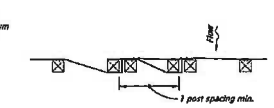
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

CALC. BOOK NO. 6403, 6404, 6405 — SDR DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021
DATE | REVISION DESCRIPTION

rd1040.dgn 07-01-2020 RD1040

Effective Date: December 1, 2020 - May 31, 2021 RD1040

Title Block

REVISIONS | BY:

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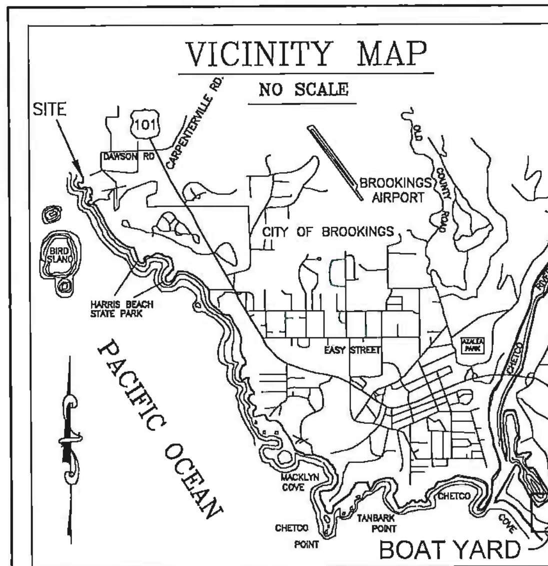
- Engineers/Scientists, LLC

REGISTERED PROFESSIONAL ENGINEER — OREGON — JOHN (JACK) A. — PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
KITE FIELD RV PARK

DRAWN BY: JG
DATE: 21 MAR 2021
JOB No: PB116
SHEET No: C5.2
ESC
STANDARD DETAILS



GRADING NOTES

1. PRIOR TO THE CONSTRUCTION OF EMBANKMENTS, THE CONTRACTOR SHALL EXCAVATE UNSUITABLE FOUNDATION MATERIAL. BASEMENTS, TRENCHES AND HOLES ENCOUNTERED WITHIN EMBANKMENT LIMITS SHALL BE FILLED WITH APPROVED MATERIAL. PRIOR TO BACKFILLING THE CONTRACTOR SHALL BREAK CONCRETE FLOORS OF BASEMENTS AS DIRECTED. THE CONTRACTOR SHALL BREAK UP AND ROUGHEN THE GROUND SURFACE BEFORE EMBANKMENTS MATERIAL IS PLACED THE NATURAL GROUND UNDERLYING EMBANKMENTS SHELL BE COMPACTED TO THE DENSITY SPECIFIED FOR THE EMBANKMENT MATERIALS TO BE PLACED, AND TO THE DEPTH OF THE GRUBBING OR A MINIMUM OF 6 INCHES.
2. EMBANKMENT CONSTRUCTION SHALL INCLUDE PREPARATION OF THE AREAS UPON WHICH EMBANKMENTS ARE PLACED, THE PLACEMENT AND COMPACTION OF APPROVED EMBANKMENT MATERIALS AND FILLING OF HOLES, PITS AND OTHER DEPRESSIONS WITHIN THE SUBDIVISION.
3. THE CONTRACTOR SHALL PLACE EMBANKMENTS AND FILLS IN THE HORIZONTAL LAYERS OF 8 INCHES MAXIMUM DEPTH AND COMPACT EACH LAYER TO THE DENSITY SPECIFIED.
4. EMBANKMENT SHALL NOT BE CONSTRUCTED WHEN THE EMBANKMENT MATERIAL OR THE FOUNDATION ON WHICH THE EMBANKMENT WOULD BE PLACED IS FROZEN.
5. IMMEDIATELY PRIOR TO COMPLETION OF THE EARTHWORK, THE CONTRACTOR SHALL CLEAN THE ENTIRE WORK AREA OF DEBRIS AND FOREIGN MATTER.
6. THE MAXIMUM DENSITY OF COMPACTED MATERIAL WILL BE DETERMINED BY AASHTO T-99.
7. THE CONTRACTOR SHALL COMPACT ALL EMBANKMENTS, FILLS AND BACKFILLS TO A MINIMUM IN PLACE DENSITY OF 95 PERCENT.
8. THE CONTRACTOR SHALL WATER THE MATERIALS TO PROVIDE OPTIMUM MOISTURE FOR COMPACTION OF EMBANKMENT AND BACKFILLS. EMBANKMENTS OR BACKFILL MATERIALS SHALL NOT BE PLACED IN FINAL POSITION UNTIL MOISTURE IN EXCESS OF OPTIMUM MOISTURE HAS BEEN REMOVED.
9. IF THE SPECIFIED COMPACTION IS NOT OBTAINED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR MAY BE REQUIRED TO USE A MODIFIED COMPACTION PROCEDURE OR APPLY ADDITIONAL COMPACTIVE EFFORT. IF APPROVED MATERIALS MEETING THE SPECIFICATIONS CANNOT BE COMPACTED TO THE REQUIRED DENSITY REGARDLESS OF COMPACTIVE EFFORT OR METHOD, THE ENGINEER MAY REDUCE THE REQUIRED DENSITY OR DIRECT THE ALTERNATE MATERIALS BE USED. IN NO CASE SHALL EARTHWORK OPERATIONS PROCEED UNTIL THE CONTRACTOR IS ABLE TO COMPACT THE MATERIAL TO THE SATISFACTION OF THE ENGINEER.
10. DEQ 1200-C PERMIT IS REQUIRED.
11. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED
12. MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOB SITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
13. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

GEOTECHNICAL NOTE

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE PROJECT ENGINEER FOR REQUIRED REMEDIATION. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER FOR REQUIRED SITE OBSERVATIONS AND TESTING OF ALL FILLS.

SHEET INDEX

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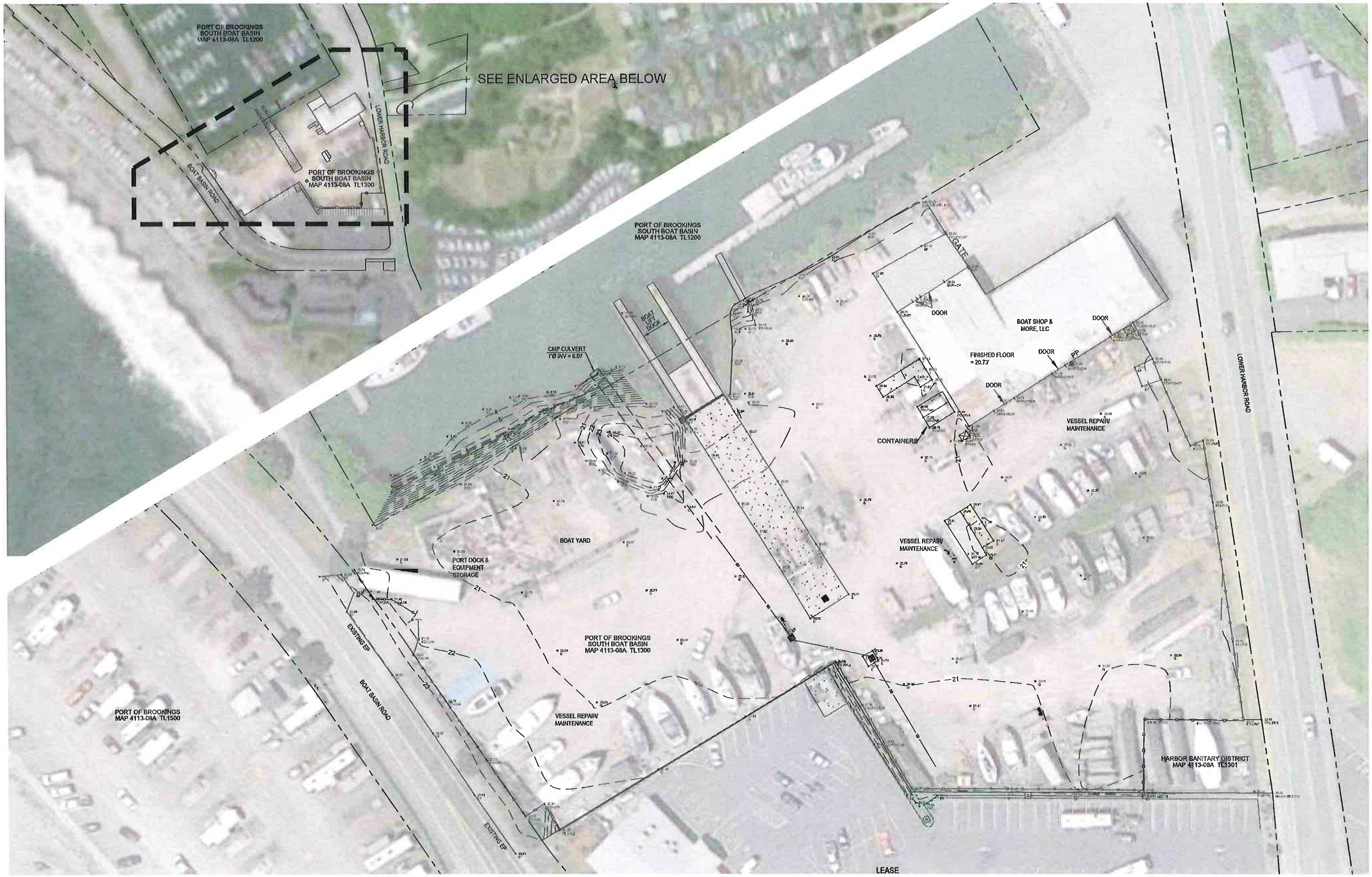
REGISTERED PROFESSIONAL ENGINEER PE — OREGON — JOHN (JACK) A. — PRELIMINARY — RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#

SHEET No: **C1.0** COVER SHEET



SURVEY BY
ROBERTS & ASSOCIATES LAND SURVEYING, INC.
611 SPRUCE STREET
BROOKINGS, OR 97415
(541) 469-0162

HORIZONTAL DATUM
OREGON COORDINATE REFERENCE SYSTEM (OREGON COAST ZONE) AS DEFINED IN OREGON ADMINISTRATIVE RULES 734-005-0005 THRU 734-005-0015. COORDINATES WERE CONSTRAINED TO THE OREGON REAL-TIME (GPS) REFERENCE NETWORK (ORGN) REFERENCED TO NAD 83(2011) EPOCH 2010, INTERNATIONAL FEET, WITH A RELATIVE ACCURACY OF <2cm.

VERTICAL DATUM
MEAN LOWER LOW WATER EPOCH 1983-2001.
BENCH MARK UTILIZED FOR THIS SURVEY
US ARMY CORPS OF ENGINEERS
BENCH MARK - "FUEL 2"
ELEVATION - 21.65 FEET

0 15 30 60
SCALE: 1" = 30'

EXISTING CONDITIONS
SCALE: 1" = 30' (24x36)

NORTH

REVISIONS	BY:

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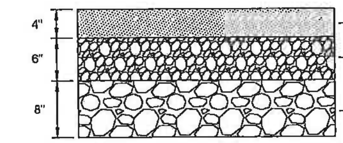
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#
SHEET No:	C2.0
	EXISTING CONDITIONS

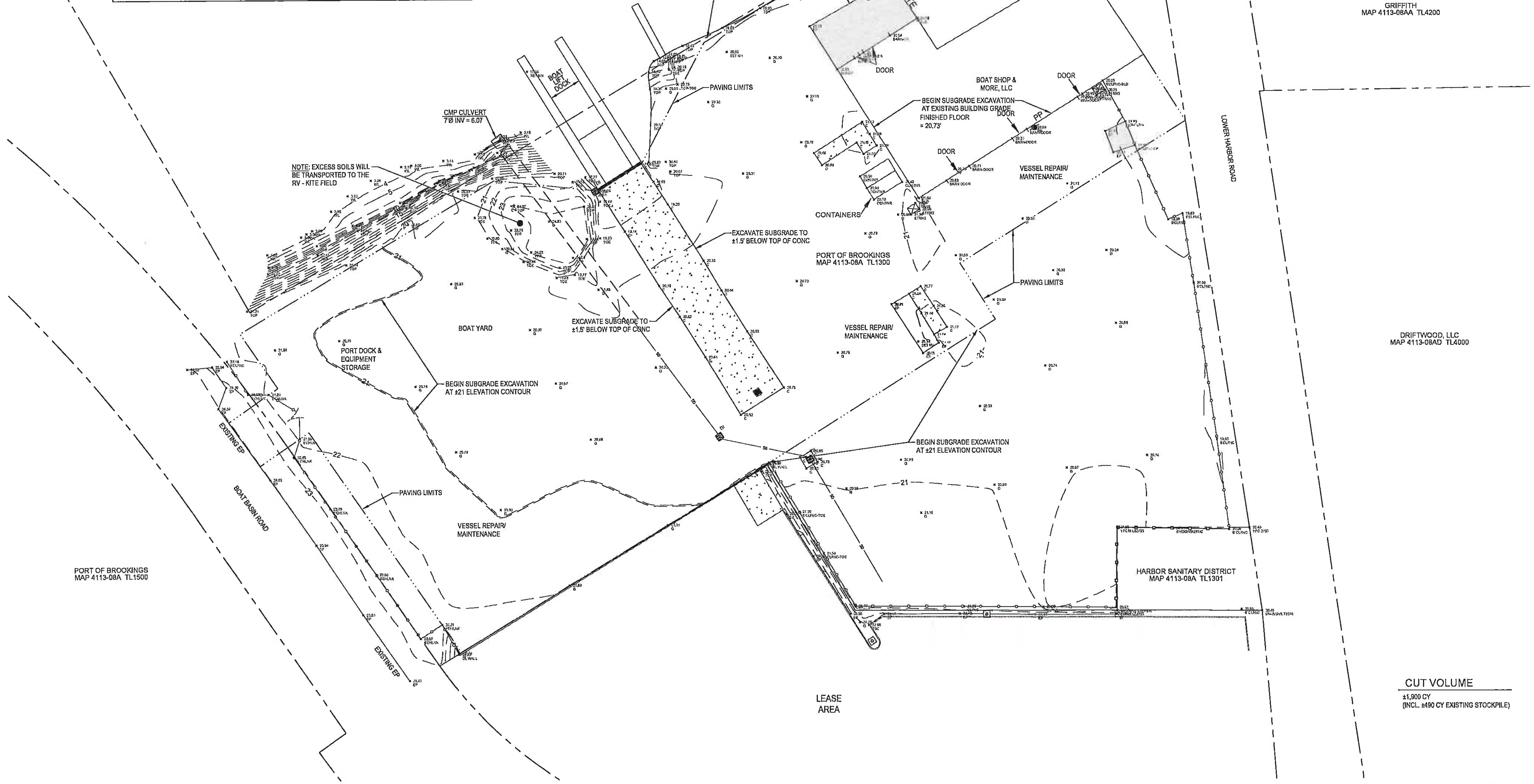


NOTES

1. PROOF ROLL EXISTING SOILS TO BE USED AS SUBGRADE.
2. NOTIFY ENGINEER IMMEDIATELY OF ANY FAILED AREAS AND REPAIR AS DIRECTED.
3. AREA TO BE EXCAVATED = ±83,150 SF AT AVERAGE 9" DEPTH = ±2,310 CY.

1 TYPICAL PAVING SECTION

SCALE: N.T.S.



CUT VOLUME

±1,900 CY
(INCL. ±490 CY EXISTING STOCKPILE)

GRADING PLAN

SCALE: 1" = 30' (24x36)

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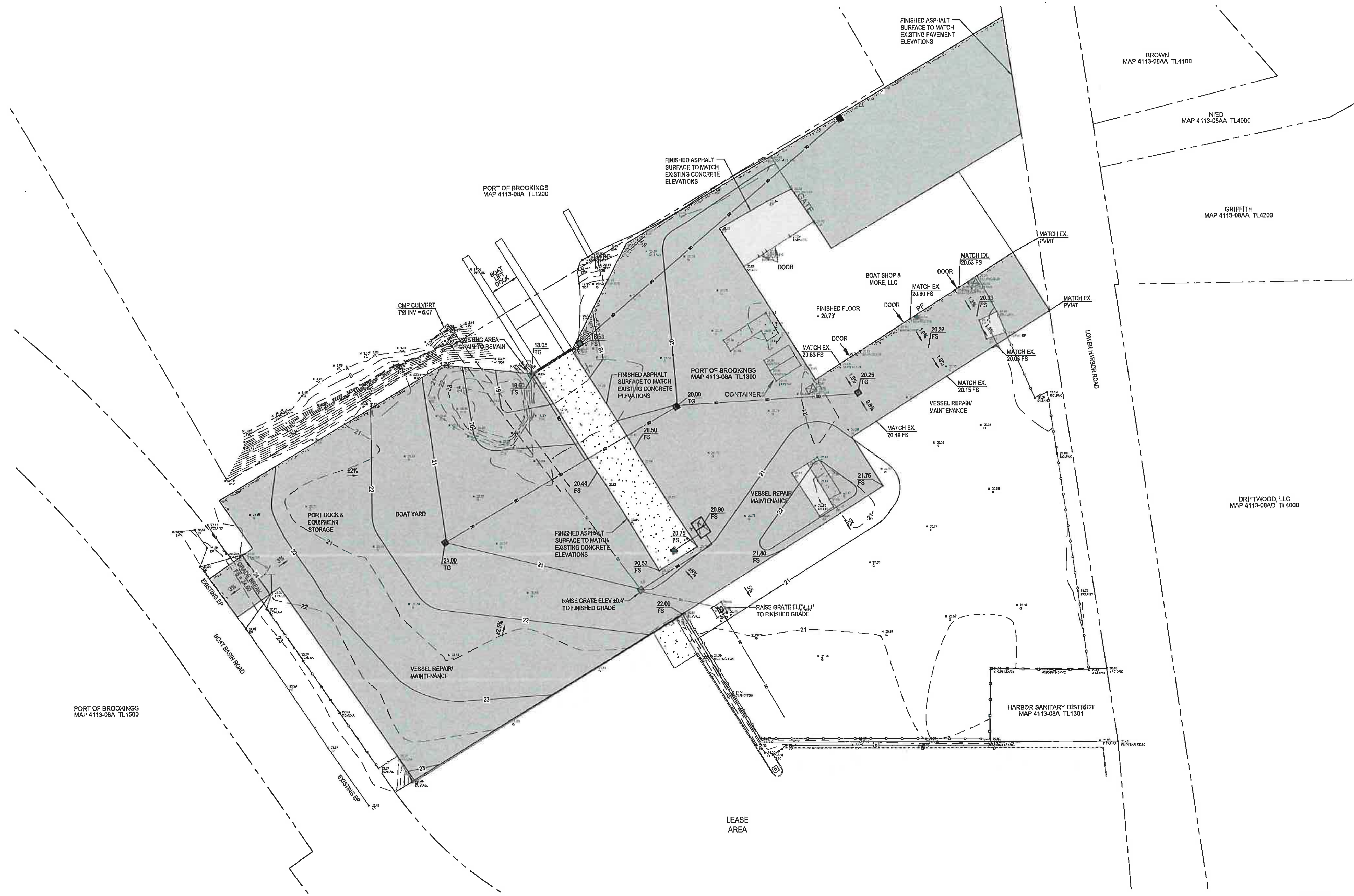
PORT OF BROOKINGS HARBOR

16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415

BOAT YARD PAVING

DRAWN BY: JG
DATE: 26 JAN 2021
JOB No: #
SHEET No:
C2.1
GRADING PLAN



0 15 30 60

SCALE: 1" = 30'

FINISHED PAVING PLAN

SCALE: 1" = 30' (24x36)

NORTH

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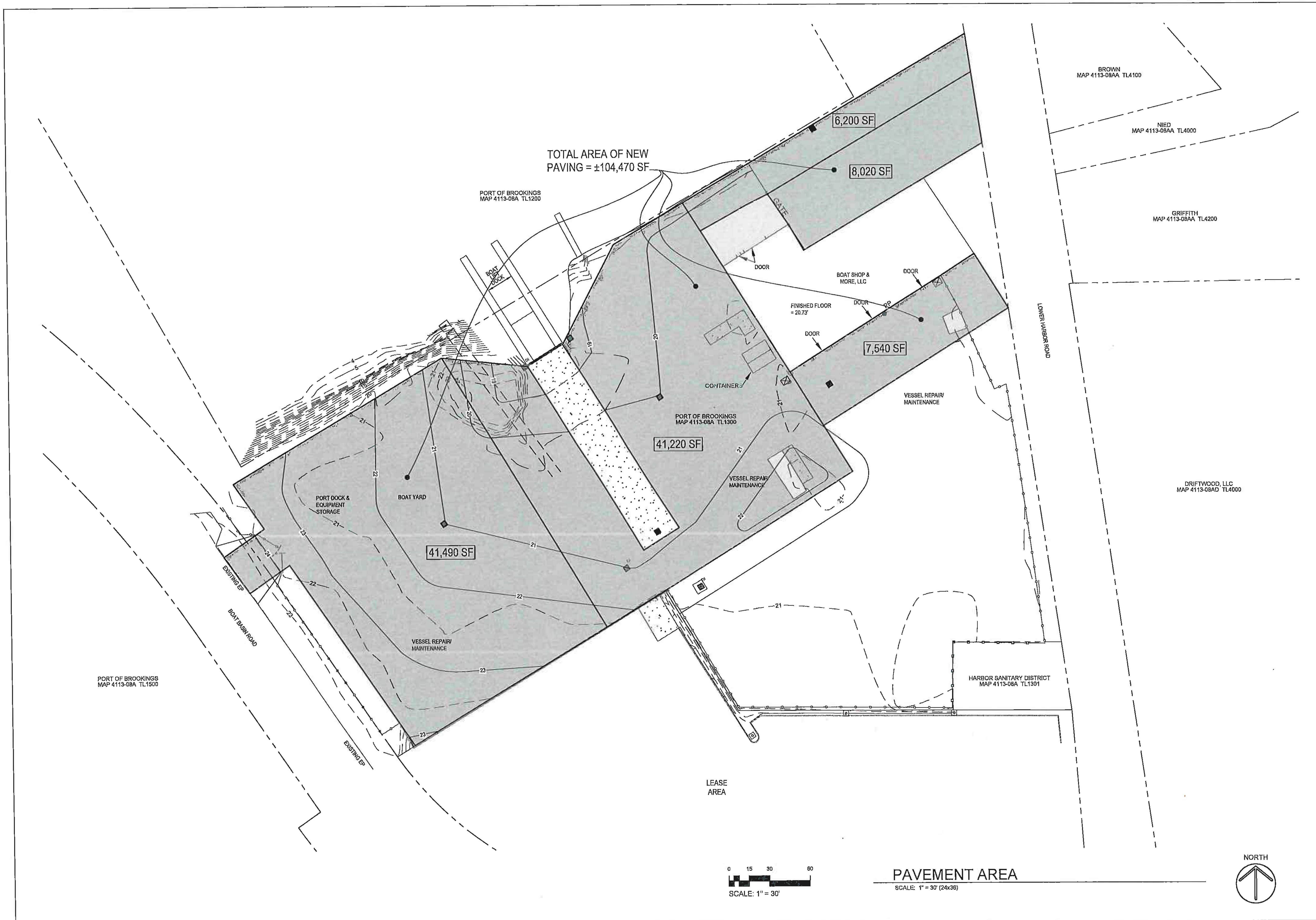
REGISTERED PROFESSIONAL ENGINEER PE
OREGON
JOHN (JACK) A.
PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY: JG
DATE: 26 JAN 2021
JOB No: #
SHEET No:
C2.2
FINISHED PAVING PLAN



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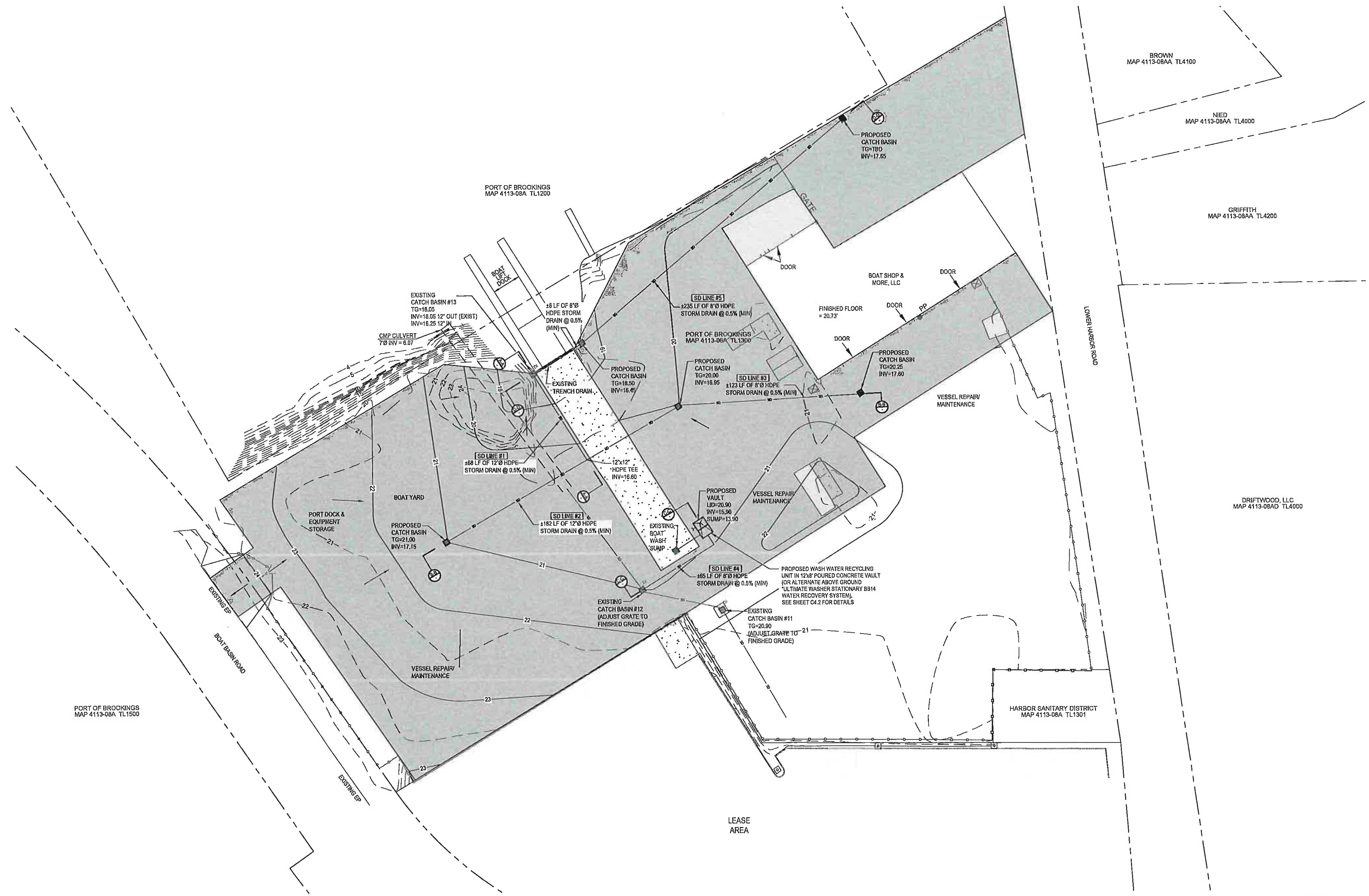
BOAT YARD PAVING

DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#
SHEET No:	

C3.0
PAVEMENT AREAS



0 15 30 60
SCALE: 1" = 30'

STORMWATER CONVEYANCE

SCALE: 1" = 30' (24x36)

NORTH

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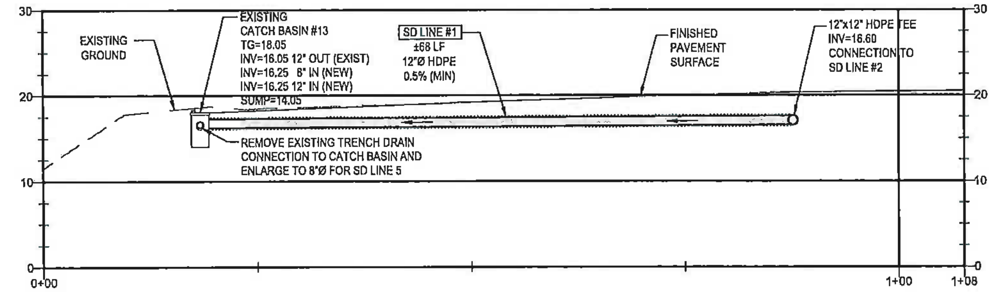
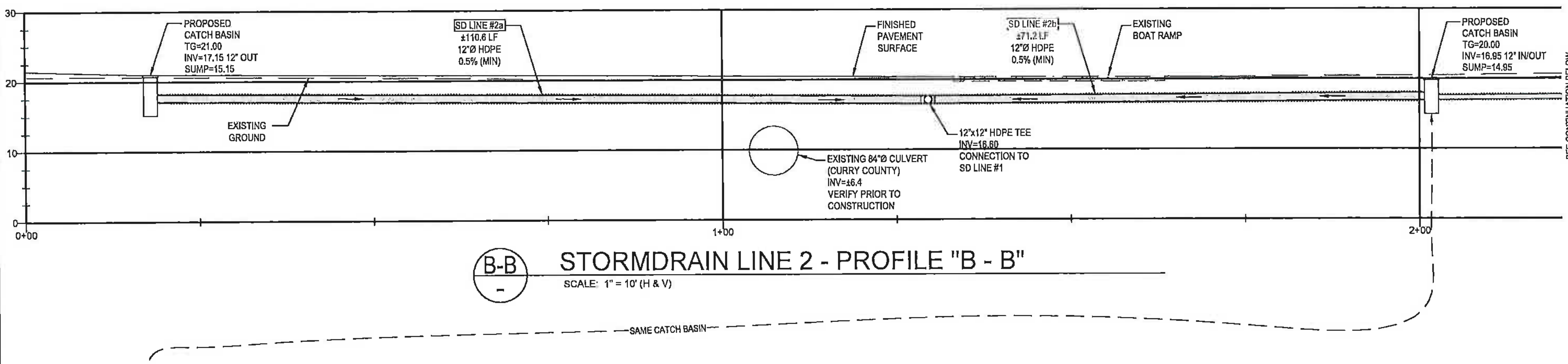
PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

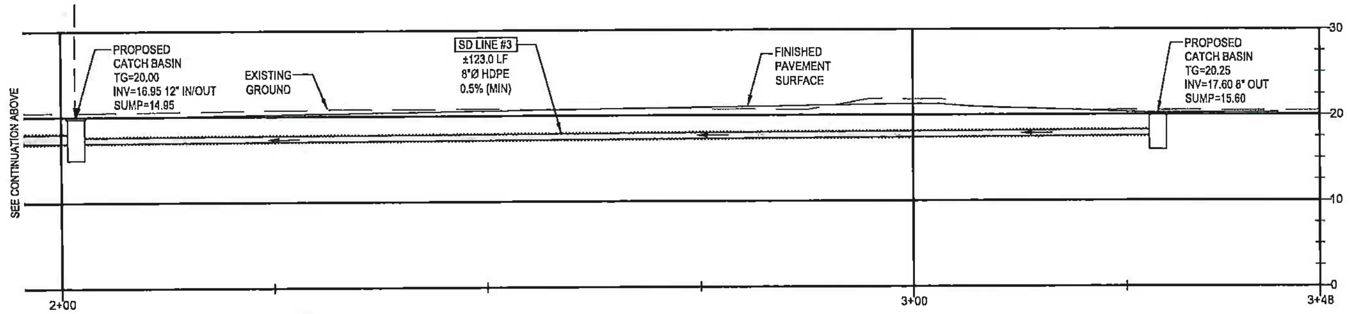
DRAWN BY: JG
DATE: 26 JAN 2021
JOB No: #
SHEET No:
C4.0
STORMWATER CONVEYANCE



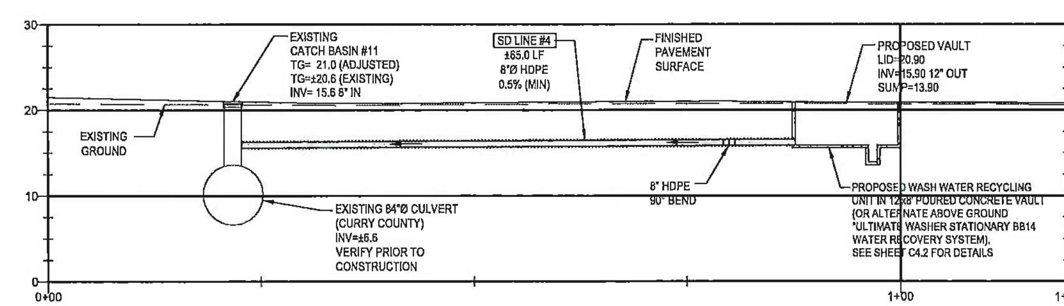
A-A
-
STORMDRAIN LINE 1 - PROFILE "A - A"
SCALE: 1" = 10' (H & V)



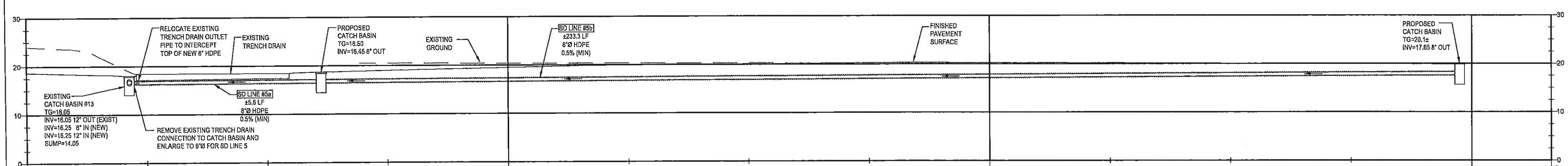
B-B
-
STORMDRAIN LINE 2 - PROFILE "B - B"
SCALE: 1" = 10' (H & V)



B-B
-
STORMDRAIN LINE 3 - PROFILE "B - B"
SCALE: 1" = 10' (H & V)



C-C
-
STORMDRAIN LINE 4 - PROFILE "C - C"
SCALE: 1" = 10' (H & V)



D-D
-
STORMDRAIN LINE 5 - PROFILE "D - D"
SCALE: 1" = 10' (H & V)

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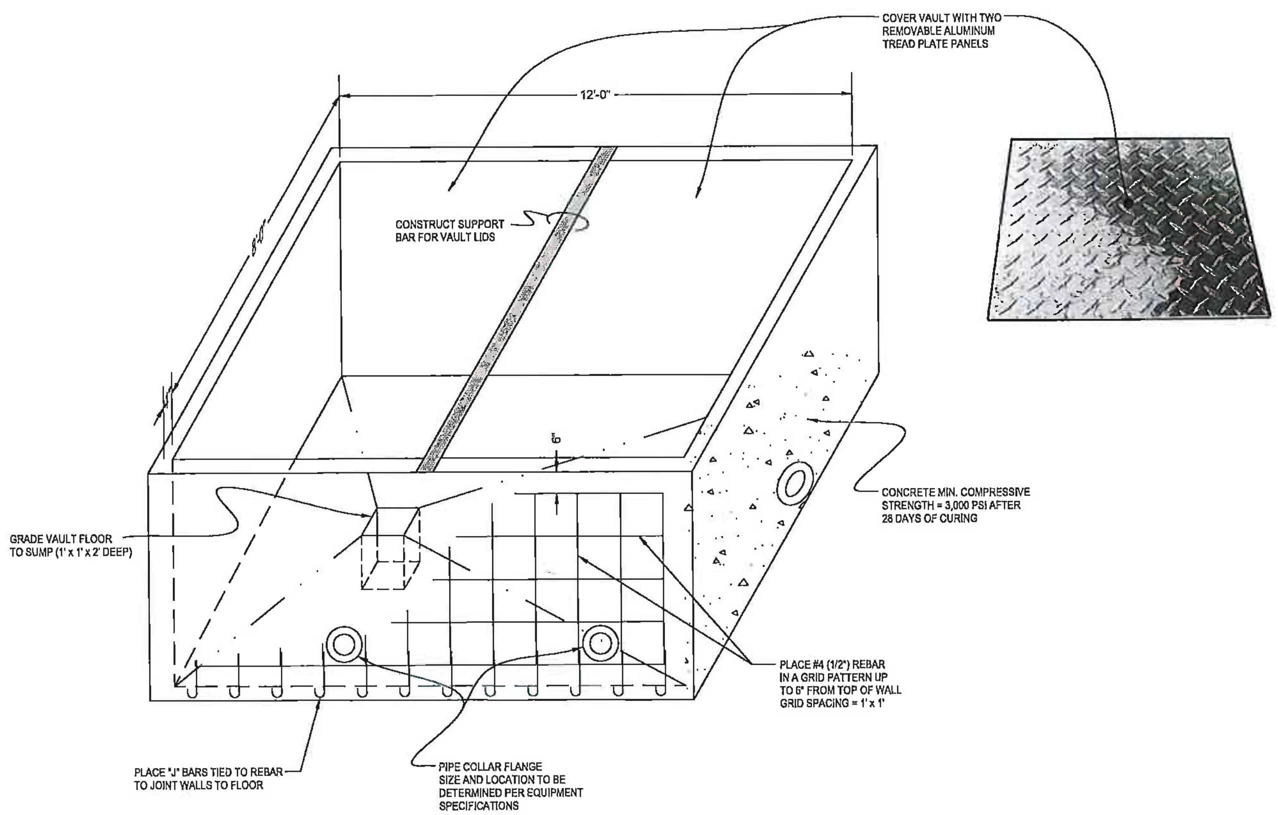
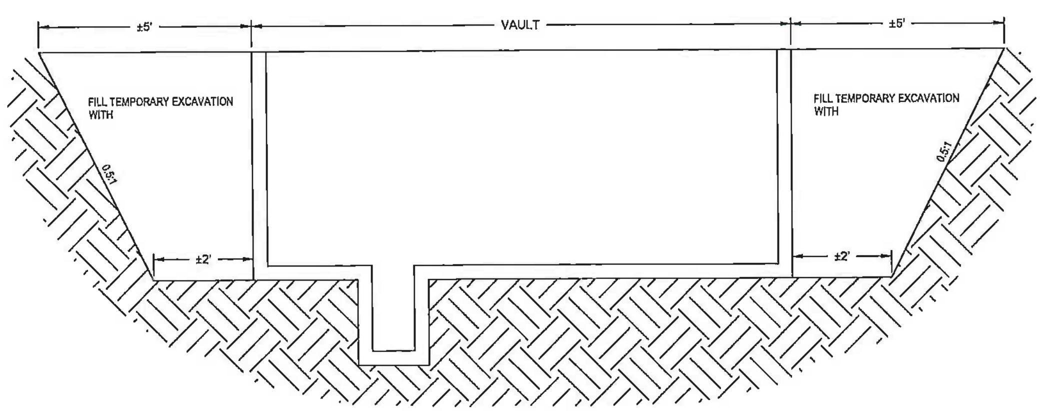
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

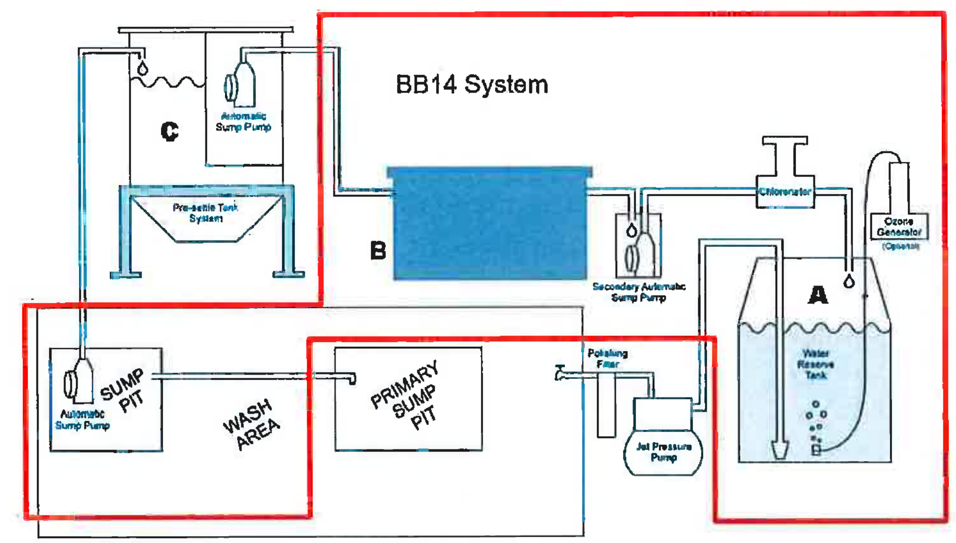
DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#
SHEET No:	

C4.1
STORMDRAIN PROFILES

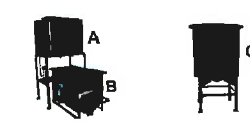




1 / -
PRELIMINARY WASHWATER RECYCLING VAULT
SCALE: N.T.S.



ULTIMATE WASHER STATIONARY BB14 WATER RECOVERY SYSTEM



SPECIFICATIONS
- FILTERS ARE REACHABLE FROM OUTSIDE
- 3/4 HP ELECTRIC MOTOR, 110V, 9 AMP
- TWO 20" POLISHING FILTERS
- OLEOPHILIC (OIL ATTRACTING) COALESCING PLATES
- REUSABLE OIL FILTERING FOAM MEDIA
- OIL ABSORPTION SKIMMER MEDIA
- WASHABLE OIL PLATES
- POLYETHYLENE HOUSING
- AUTO PUMP OUT SYSTEM
- 1 YEAR WARRANTY
- 25 AND 5 MICRON FILTERS
- WEIGHT: 300 LBS
- 220 GALLON RESERVE WATER TANK WITH 8" MANWAY ACCESS AND STAND
- IN-LINE CHLORINATOR
- AUTOMATIC OPERATION
- SUPPLY PUMP W/CHECK VALVE (110V/9A)
- SAFETY INSTRUCTION AND MAINTENANCE SCHEDULE

2 / -
ALTERNATE ABOVE-GROUND WASHWATER RECYCLING UNIT
SCALE: N.T.S.

REVISIONS	BY:

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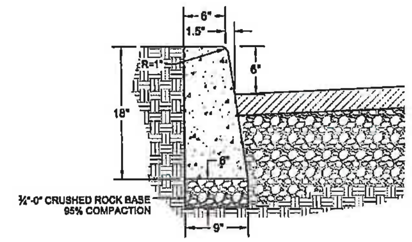
REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A. PRELIMINARY
RENEWAL DATE: 12/31/21

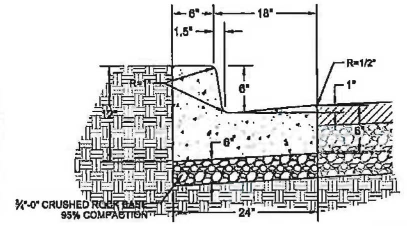
PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#
SHEET No:	C4.2

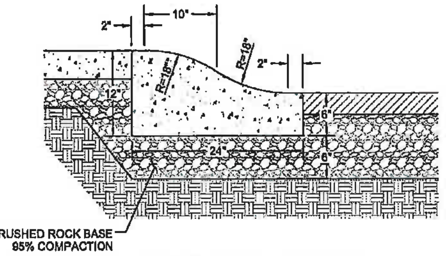
WASHWATER RECYCLING DETAILS



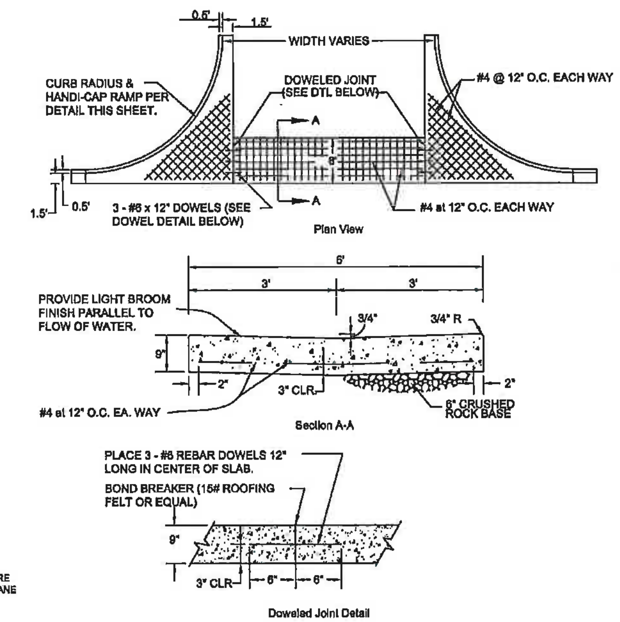
301 VERTICAL CURB
SCALE: NTS



302 CURB & GUTTER
SCALE: NTS

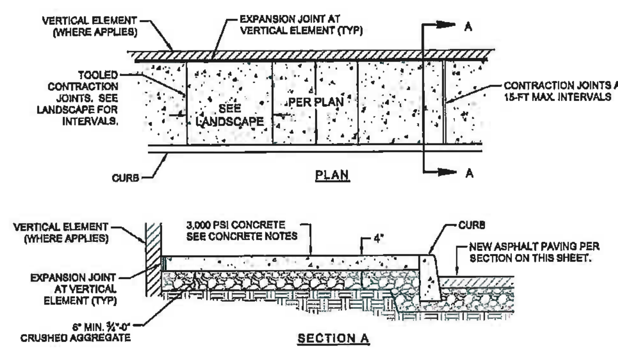


303 ROLLED CURB
SCALE: NTS



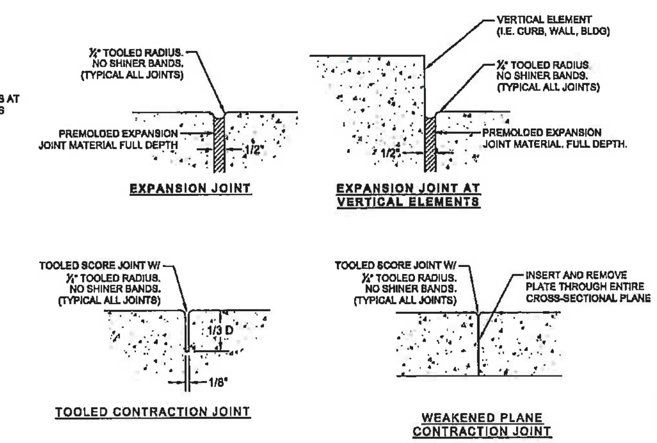
NOTES
1. CONCRETE TO BE COMMERCIAL GRADE CONCRETE (CGC) PER 2002 ODOT/OREGON APWA SECTION 00440.00
2. SUBGRADE AND BASE SHALL BE UNYIELDING AND FIRMLY COMPACTED.
3. VALLEY GUTTER SHALL PASS A WATER TEST TO ASSURE FLOW.

327 DRIVEWAY APRON WITH VALLEY GUTTER
SCALE: NTS

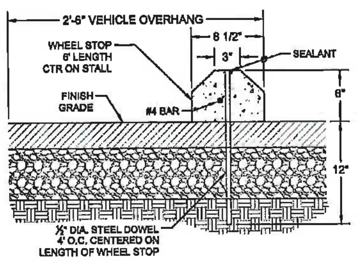


NOTES
1. COMPACT SUBGRADE AND AGGREGATE TO 95% OF MAXIMUM DRY DENSITY.
2. FINISH SHALL BE MEDIUM BROOM PERPENDICULAR TO PEDESTRIAN TRAFFIC UNLESS OTHERWISE DIRECTED.
3. CROSS SLOPE OF SIDEWALK SHALL BE 2% AWAY FROM THE BUILDING.
4. SEE CONCRETE CONTROL JOINT DETAIL ON THIS SHEET.

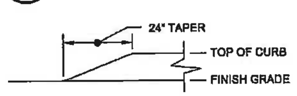
311 CURB LINE CONCRETE SIDEWALK
SCALE: NTS



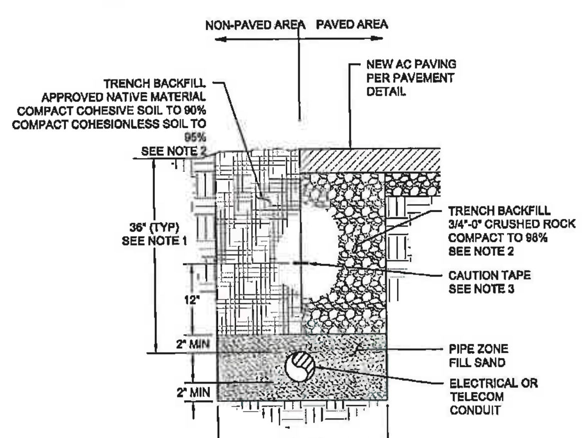
309 CONCRETE CONTROL JOINTS
SCALE: NTS



391 WHEEL STOP
SCALE: NTS

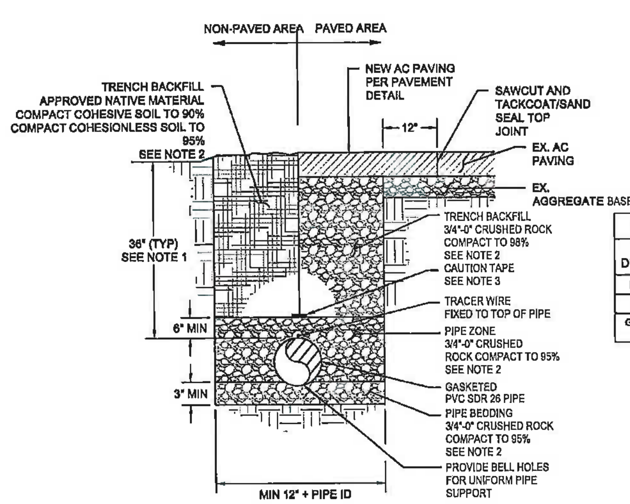


305 CURB TAPER
SCALE: NTS



NOTES
1. COVER OVER PIPE MAY VARY FROM 24" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. ELECTRIC: 6" WIDE RED POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED ELECTRIC BELOW" TELECOM: 3" WIDE ORANGE POLYETHYLENE TAPE IMPRINTED "CAUTION: COMMUNICATIONS LINE BURIED BELOW"

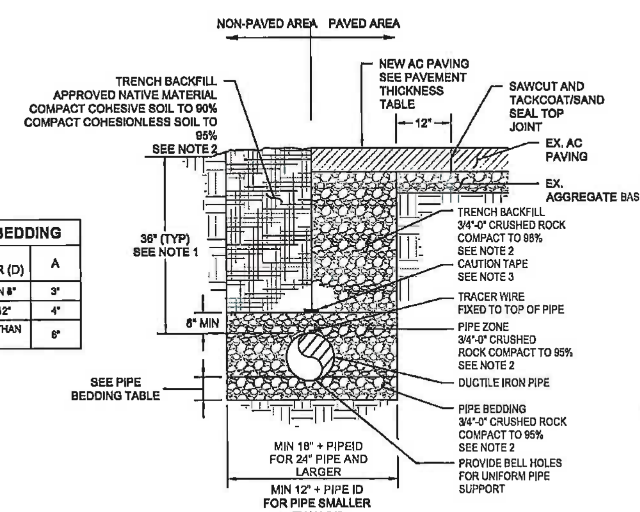
583 CONDUIT TRENCH DETAIL
SCALE: NTS



PIPE BEDDING	
PIPE DIAMETER (D)	A
LESS THAN 8"	3"
8" THRU 12"	4"
GREATER THAN 12"	6"

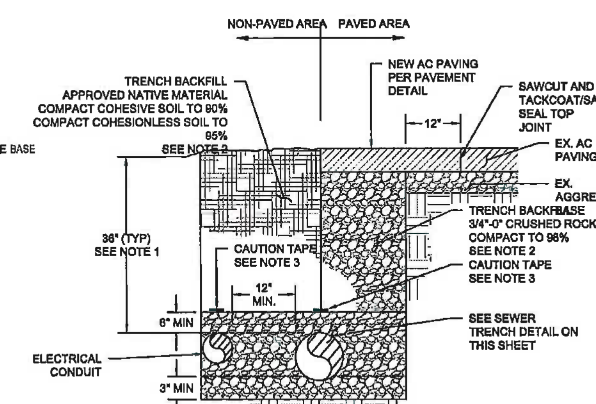
NOTES
1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. SEWER: 3" WIDE GREEN POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED SEWER LINE BELOW"

581 SEWER TRENCH DETAIL
SCALE: NTS



NOTES
1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. 3" WIDE BLUE POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED WATER LINE BELOW"

580 WATER TRENCH DETAIL
SCALE: NTS



NOTES
1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. ELECTRIC: 6" WIDE RED POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED ELECTRIC BELOW"
SEWER: 3" WIDE GREEN POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED SEWER LINE BELOW"

584 JOINT TRENCH DETAIL
SCALE: NTS

REVISIONS	BY:

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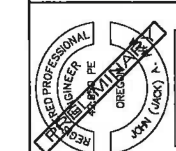
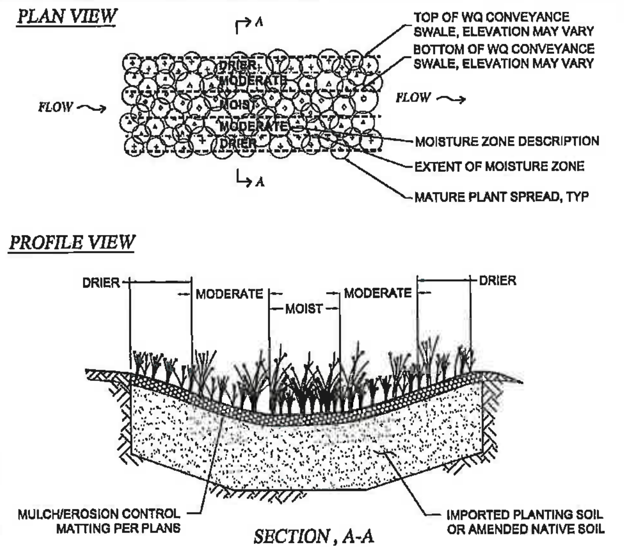
Ph: 541-474-9434 * Cell: 541-261-9929 * Fax 541-727-5488
emc@emcengineersscientists.com; http://www.emcengineersscientists.com
EMC - Engineers/Scientists, LLC



PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY:	JG
DATE:	26 JAN 2021
JOB No:	#
SHEET No:	C6.0
	PROJECT DETAILS



LEGEND:
---- INDICATES GRADE BREAK
-·- - MOISTURE ZONE
PLANT SPECIES APPROPRIATE FOR MOISTURE ZONE:
(+) DRIER
(▵) MODERATE
(◦) MOIST

NOTES:
1. THIS DETAIL IS PROVIDED AS A SCHEMATIC EXAMPLE OF THE RANDOM PLANT PLACEMENT AND 90% COVERAGE AFTER ESTABLISHMENT PERIOD DESIRED TO REDUCE EROSION AND WEEDS.
2. INSTALL PLANTS PER PLANS, ACCORDING TO LANDSCAPE DESIGN PLANT TABLE, WHICH SHOULD INCLUDE PLANT SPECIES, SPACING, AND QUANTITIES IN EACH MOISTURE ZONE.
3. MOISTURE ZONES VARY FROM THOSE SHOWN DEPENDING ON GRADING PLAN, LOCATION OF INLET(S) AND OUTLET(S) AND FACILITY SHAPE.

Rogue Valley Stormwater Design Manual	Water Quality Conveyance Swale Planting Schematic	BMP 8.03 1 of 1 Scale: NTS

General Notes for Vegetated BMPs

1. Excluding construction of the facility itself, exposed treatment area subgrade shall be fenced to prohibit impacts from construction (including materials and equipment storage).
2. Build and vegetate swale as early as possible to establish plantings before directing stormwater runoff to it or divert stormwater around facility. Preferably, vegetation will be given a minimum of 3 months to become established, or per landscape architect/designer guidelines.
3. Call the reviewing agency 48 hours in advance of constructing this facility so construction observation may be performed to identify variations in the field that may affect design and verify proper construction.
4. Over-excavate within the swale to allow for placement of amended or imported soil up to final grade.
5. Placement of amended native or imported soil mix shall occur as follows:
   a. Place soil in 8 inch maximum lifts (i.e. depths).
   b. Do not place if soil is saturated.
   c. Lightly compact each lift, (e.g. a water filled landscape roller) to achieve 85% compaction. Do not compact with heavy machinery or vibratory compaction.
6. Install energy dissipation below all outfalls per approved plans.
7. If unprotected soil has been exposed to rainfall, scarify the surface to a depth of 4 inches to restore filtration capacity.
8. Install ODOT Type E erosion control matting, if specified in approved plans.
9. Landscaping plan must adhere to one of the scenarios in Tables 1 and 2 of section 4.5.2. Plant per Landscaping plan and standard detail 4.5.2C. Contact approving jurisdiction 48 hours in advance of planting so that jurisdiction can review plant placement prior to plant installation.
10. Install mulch, if specified in approved plans. Use either shredded wood chips or coarse compost. Mulch must be dye, pesticide and weed free. Spread in a minimum two inch layer over bare soil or in a ring around plants to increase water retention. Ensure that mulch does not touch plant stems.
11. Side slopes outside of flow area must be permanently stabilized with mulch and vegetation.

AMENDED PLANTING SOIL MIX SPECIFICATIONS

1. Planting soil may be either amended native or imported soil mix with the following characteristics:
   A. Infiltrate between 0.5 and 12 inches/hour.
   B. Be free of weed seeds, contaminants, and hazardous materials.
   C. Organic content matter from 8-10% by weight
   D. Cation exchange capacity (CEC) greater than or equal to 5 milliequivalents/100 grams of dry soil
   E. 2-5% clayey fines content
   F. pH between 5.5 and 8.0
   G. Conform to the following gradation for the mix:

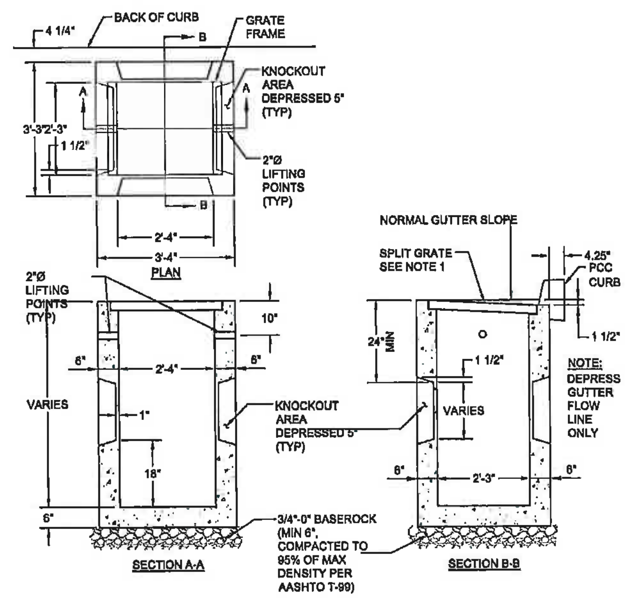
US Standard Sieve Size	Percent Passing
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

2. Imported soil shall be roughly 1/3 plant derived compost, 1/3 topsoil and 1/3 gravelly sand.
3. Amended native planting soil mix shall be created by blending compost into the native soil at a rate of 1 part compost to two parts soil. Soil mix must still meet the specifications in Note 1 above.
4. Amended native or imported soil mix shall be uniformly mixed.

Compost specifications

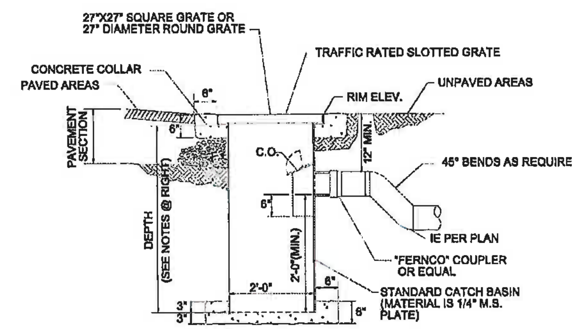
Must be derived from plant material and fully composted. Must be certified weed seed free. A Technical Data Sheet from the US Composting Council Seal of Testing Assurance must be provided to the approving jurisdiction. The Data Sheet must show that the compost meets the following criteria:

- Organic matter content between 40 and 50 percent.
- pH between 5.5 and 8.0. If the pH isn't quite right, it may be lowered by adding iron sulfate and sulfur or raised by adding lime. If lime is used, incorporate first into the compost, wet the compost down, and then fold mixture into the soil.
- Soluble salt content shall be less than 6.0mmhos/cm.
- 100% should pass a 1/2-inch screen.
- Stability Test Result shall Be Stable or Very Stable.
- Maturity Indicator for emergence and vigor shall be ≥ 80%.
- Trace Metals Test Result shall Be Pass.
- Carbon nitrogen ratio between 30:1 and 35:1.



NOTES
1. GRATE AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION. GRATE AND FRAME TO BE ODOT G-2 TYPE 2 (BICYCLE SAFE).
2. FOR PRECAST BOX, CURB MUST BE HAND FORMED 10' EACH SIDE OF CATCH BASIN.
3. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
4. CATCH BASIN AND GRATE SHALL MEET HS20 LOADING.
5. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
6. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

(2 / C6.1) CATCH BASIN
SCALE: NTS

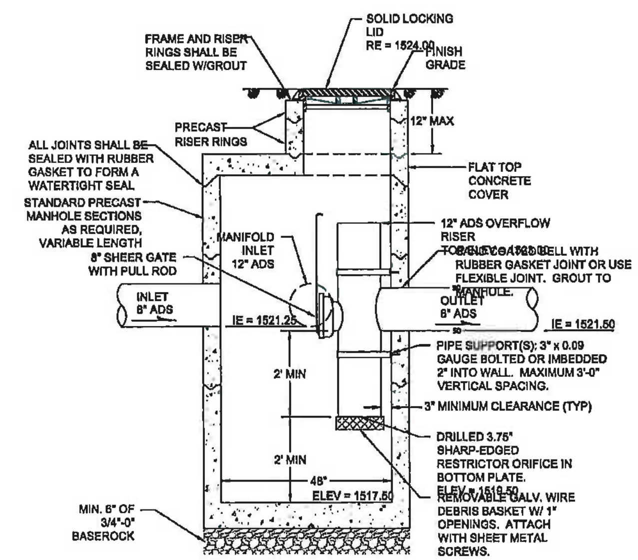


*NOTE: LYNCH OR APPROVED EQUAL CATCH BASIN.

*NOTE: LOCATE ROUND BASIN IN PAVED AREAS, AND SQUARE BASINS ARE TO BE USED WHEN LOCATED NEXT TO CURB.

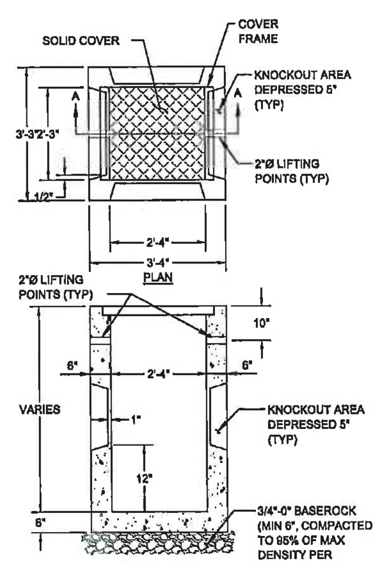
GENERAL NOTES:
1. ASPHALT COAT ALL SURFACES OF CATCH BASIN AND CLEANOUT AFTER WELDING OR HOT DIP GALVANIZE (AT MANUFACTURER'S DISCRETION)
2. BREAK SHARP CORNERS AFTER WELDING.
3. ALL WELDED STEEL CONSTRUCTION
4. 10 GAUGE STEEL MINIMUM THICKNESS
5. OPENING ON BOTTOM OF WATERSEAL TO BE GREATER, OR EQUAL TO AREA IN OUTLET PIPE.
6. STANDARD DEPTH: 48"

(3 / C6.1) LYNCH STYLE CATCH BASIN
SCALE: NTS



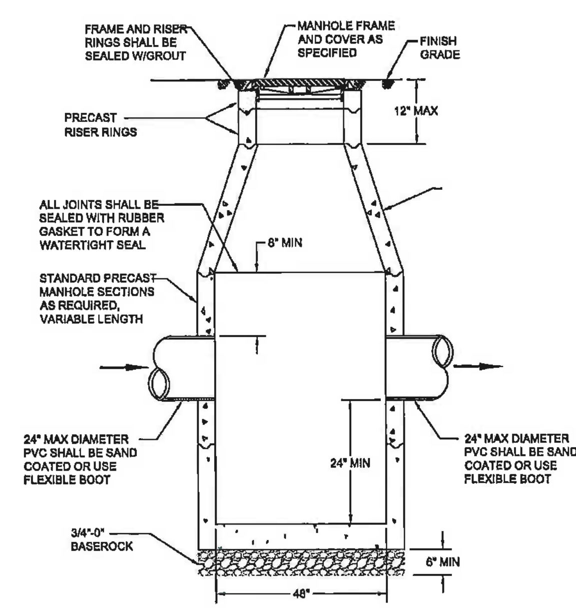
NOTE
ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

(4 / C6.1) CONTROL STRUCTURE MANHOLE
SCALE: NTS (PONDS 2 & 3)



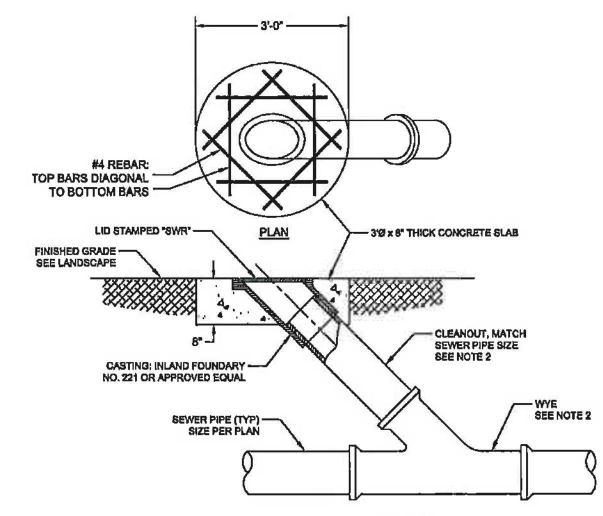
CONSTRUCTION NOTES:
1. COVER AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION.
2. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
3. JUNCTION BASIN AND GRATE SHALL MEET HS20 LOADING.
4. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
5. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

(6 / C6.1) JUNCTION BASIN
SCALE: NTS



NOTE
ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

(7 / C6.1) 48" STORM MANHOLE
SCALE: NTS



NOTES
1. CONCRETE TO BE COMMERCIAL GRADE CONCRETE (CGC) PER 2015 ODOT STANDARD SPECIFICATIONS SECTION 00440. MINIMUM 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. FITTINGS AND PIPE TO BE GASKETED PVC SDR 26.

(5 / C6.1) TYPICAL CLEANOUT
SCALE: NTS

REVISIONS	BY:

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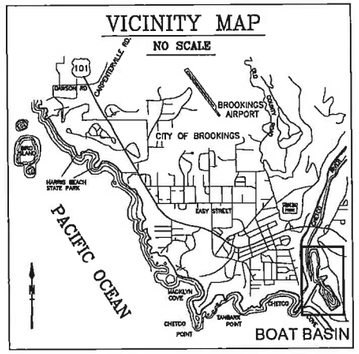
- Engineers/Scientists, LLC

REGISTERED PROFESSIONAL ENGINEER PE OREGON JOHN (JACK) A. PRELIMINARY
RENEWAL DATE: 12/31/21

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR ROAD, BROOKINGS, OR 97415
BOAT YARD PAVING

DRAWN BY: JG
DATE: 26 JAN 2021
JOB No: #
SHEET No:
C6.1
PROJECT DETAILS



NATURAL FEATURES
EXISTING NATURAL RESOURCES OR NATURAL HAZARDS ON THE SUBJECT PROPERTY, INCLUDING WETLANDS, STREAMS, RIPARIAN AREAS, FLOOD PLAINS, OR FLOODWAYS TO BE DETERMINED BY ENGINEER

EXISTING TREE CANOPY
THERE ARE NO EXISTING TREES ON THE SUBJECT PROPERTY

CULTURAL RESOURCES
LOCALLY, OR FEDERALLY DESIGNATED HISTORIC AND/OR CULTURAL RESOURCES ON THE SITE OR ON ADJACENT PARCELS TO BE DETERMINED BY ENGINEER.

PUBLIC SERVICES
PUBLIC UTILITY SERVICES, INCLUDING WATER, SEWER, STORM DRAINAGE, POWER, TELEPHONE, CABLE INTERNET, AND GAS ARE AVAILABLE TO THE SUBJECT PROPERTY.

UTILITY STATEMENT
EXISTING UNDERGROUND UTILITIES ILLUSTRATED IN THESE PLANS ARE APPROXIMATED BASED ON MAPS OBTAINED FROM CURRY COUNTY GIS ELEVATIONS ESTIMATES, OR HAVE BEEN LOCATED BY A UTILITY LOCATE COMPANY. LAYOUT INDICATED IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL LINES WITHIN PROJECTED WORK ZONE SHALL BE FIELD VERIFIED AS REQUIRED PRIOR TO CONSTRUCTION.

PROJECT DESCRIPTION

TITLE: PROPOSED ROAD
REFERENCE: 140
LOCATION: HARBOR ST
TAX LOT(S): 2500,2600,2700,2800
2900,2999,402

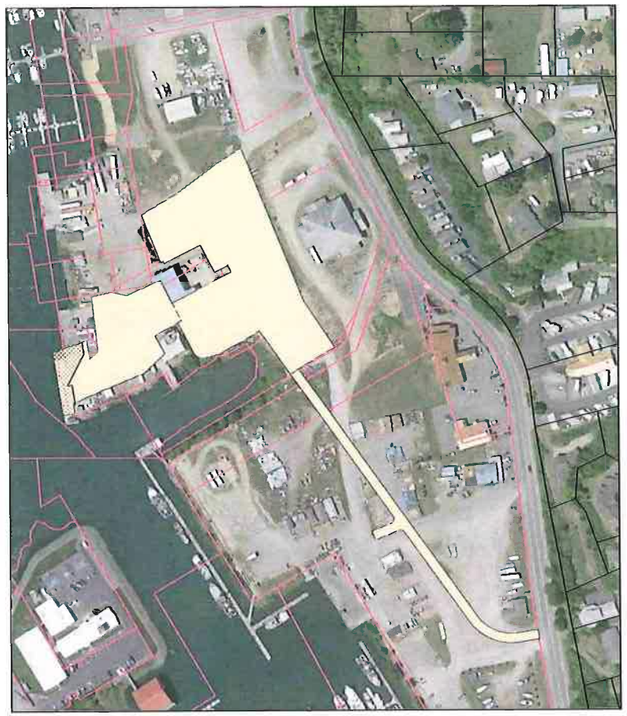
DRAWING REGISTER

140-CV	COVER SHEET
140-C100	NOTES
140-C101	EXISTING CONDITIONS
140-C102	PROPOSED GRADING
140-C103	PROPOSED PAVING
140-C104	PROPOSED DRAINAGE
140-C105	DETAILS
140-C106	DETAILS

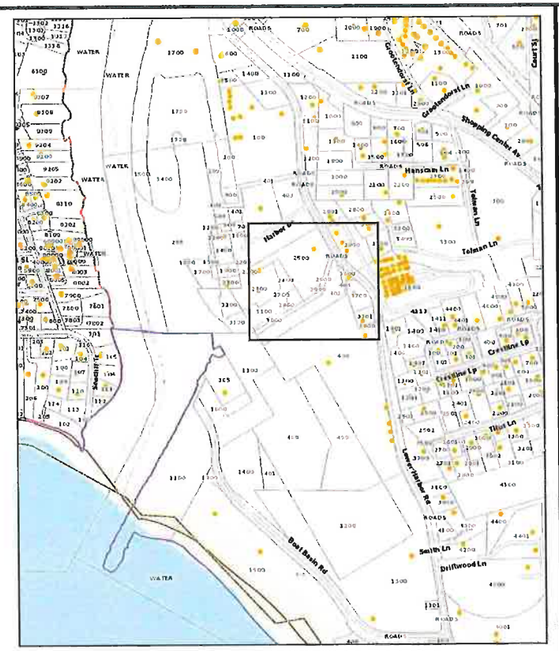
PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS-HARBOR
2021 CIVIL IMPROVEMENTS

PROPOSED ROAD



PROJECT OVERVIEW
SCALE 1":200'



PORT OF BROOKINGS HARBOR
MAP OF TAX LOTS

PRELIM GRADING NOTES

1. DEQ 1200-C PERMIT IS REQUIRED.
2. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. PRIOR TO THE START OF CONSTRUCTION, VERIFY GRADES AT SAWCUT LOCATIONS AND MATCHING OF EXISTING GRADE LOCATIONS.
4. MINIMIZE TRAFFIC ON SOIL AREAS DURING WET WEATHER. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EROSION AND RUNOFF.
5. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
6. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

LEGEND

5	ELEVATION
	SUBGRADE MINOR CONTOUR
	SUBGRADE MAJOR CONTOUR
	PARCEL
	GEOTEXTILE
	CONCRETE PAD
	GRASS
	JETTY
	SLIP WAY
	PAVED ROAD

REGISTERED PROFESSIONAL ENGINEER — OREGON — JOHN (JACK) A. KEIR — RENEWAL 12/31/21

ENGINEER:
EMC
Grants Pass • Jacksonville • Medford, OR
Engineers • Surveyors • Planners
- Engineers/Scientists, LLC

BY	REVISION	DATE	NO.

PREPARED FOR:
PORT OF BROOKINGS HARBOR
PORT OF BROOKINGS
16330 Lower Harbor Rd, Brookings, OR 97415
(LOT 2900, MAP "36S22DB")

Date	04/04/2021
Drawn By	INFRADRAFT
Sheet No.	CV
File No.	140

GRADING NOTES

1. PRIOR TO THE CONSTRUCTION OF EMBANKMENTS, THE CONTRACTOR SHALL EXCAVATE UNSUITABLE FOUNDATION MATERIAL. BASEMENTS, TRENCHES AND HOLES ENCOUNTERED WITHIN EMBANKMENT LIMITS SHALL BE FILLED WITH APPROVED MATERIAL. PRIOR TO BACKFILLING THE CONTRACTOR SHALL BREAK CONCRETE FLOORS OF BASEMENTS AS DIRECTED. THE CONTRACTOR SHALL BREAK UP AND ROUGHEN THE GROUND SURFACE BEFORE EMBANKMENTS MATERIAL IS PLACED THE NATURAL GROUND UNDERLYING EMBANKMENTS SHELL BE COMPACTED TO THE DENSITY SPECIFIED FOR THE EMBANKMENT MATERIALS TO BE PLACED, AND TO THE DEPTH OF THE GRUBBING OR A MINIMUM OF 6 INCHES.
2. EMBANKMENT CONSTRUCTION SHALL INCLUDE PREPARATION OF THE AREAS UPON WHICH EMBANKMENTS ARE PLACED, THE PLACEMENT AND COMPACTION OF APPROVED EMBANKMENT MATERIALS AND FILLING OF HOLES, PITS AND OTHER DEPRESSIONS WITHIN THE SUBDIVISION.
3. THE CONTRACTOR SHALL PLACE EMBANKMENTS AND FILLS IN THE HORIZONTAL LAYERS OF 8 INCHES MAXIMUM DEPTH AND COMPACT EACH LAYER TO THE DENSITY SPECIFIED.
4. EMBANKMENT SHALL NOT BE CONSTRUCTED WHEN THE EMBANKMENT MATERIAL OR THE FOUNDATION ON WHICH THE EMBANKMENT WOULD BE PLACED IS FROZEN.
5. IMMEDIATELY PRIOR TO COMPLETION OF THE EARTHWORK, THE CONTRACTOR SHALL CLEAN THE ENTIRE WORK AREA OF DEBRIS AND FOREIGN MATTER.
6. THE MAXIMUM DENSITY OF COMPACTED MATERIAL WILL BE DETERMINED BY AASHTO T-99
7. THE CONTRACTOR SHALL COMPACT ALL EMBANKMENTS, FILLS AND BACKFILLS TO A MINIMUM IN PLACE DENSITY OF 95 PRESENT.
8. THE CONTRACTOR SHALL WATER THE MATERIALS TO PROVIDE OPTIMUM MOISTURE FOR COMPACTION OF EMBANKMENT AND BACKFILLS. EMBANKMENTS OD BACKFILL MATERIALS SHALL NOT BE PLACED IN FINAL POSITION UNTIL MOISTURE IN EXCESS OF OPTIMUM MOISTURE HAS BEEN REMOVED.
9. IF THE SPECIFIED COMPACTION IS NOT OBTAINED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR MAY BE REQUIRED TO USE A MODIFIED COMPACTION PROCEDURE OR APPLY ADDITIONAL COMPACTIVE EFFORT. IF APPROVED MATERIALS MEETING THE SPECIFICATIONS CANNOT BE COMPACTED TO THE REQUIRED DENSITY REGARDLESS OF COMPACTIVE EFFORT OR METHOD, THE ENGINEER MAY REDUCE THE REQUIRED DENSITY OR DIRECT THE ALTERNATE MATERIALS BE USED. IN NO CASE SHALL EARTHWORK OPERATIONS PROCEED UNTIL THE CONTRACTOR IS ABLE TO COMPACT THE MATERIAL TO THE SATISFACTION OF THE ENGINEER.
10. DEQ 1200-C PERMIT IS NOT REQUIRED.
11. UNLESS DIRECTED OTHERWISE, REMOVE CLEARED AND GRUBBED MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
12. UNLESS OTHERWISE NOTED, THE SAMPLING AND TESTING OF MATERIALS FOR USE ON THE JOBSITE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ALL TESTING OF MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY A CERTIFIED TESTER. RESULTS OF THE TESTS SHALL BE SENT DIRECTLY TO THE PROJECT ENGINEER AS WELL AS THE CONTRACTOR, BY THE LABORATORY. LOCATION AND FREQUENCY OF TESTS SHALL BE DESIGNATED BY THE GENERAL CONTRACTOR.
13. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM OF 2:1.

GEOTECHNICAL NOTE

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE PROJECT ENGINEER FOR REQUIRED REMEDIATION. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER FOR REQUIRED SITE OBSERVATIONS AND TESTING OF ALL FILLS.

GENERAL NOTES

NO SCALE

ENGINEER:

EMC - Engineers/Scientists, LLC

Grants Pass • Jacksonville • Medford, OR

No.	DATE	REVISION	BY

PREPARED FOR: (LOT 2900, MAP '360522DB')

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

PORT OF BROOKINGS HARBOR

Date 04/04/2021

Drawn By INFRADRAFT

Sheet No. C-100

File No. 140

LEGEND

- 5.0 ELEVATION
- SUBGRADE MINOR CONTOUR
- SUBGRADE MAJOR CONTOUR
- PARCEL
- GEOTEXTILE
- CONCRETE PAD
- GRASS
- JETTY
- SLIP WAY
- PAVED ROAD

EXISTING CONDITIONS
SCALE 1':100"

EXISTING STORM DRAIN

LOWER HARBOR ROAD

BOAT BASIN

20.00 16.00 20.00 22.00 20.00 28.00 26.00 24.00 22.00

ENGINEER:

EMC
Grant Pass • Jackson ille • Medford, OR
Engineers/Scientists, LLC

No.	DATE	REVISION	BY

PREPARED FOR:

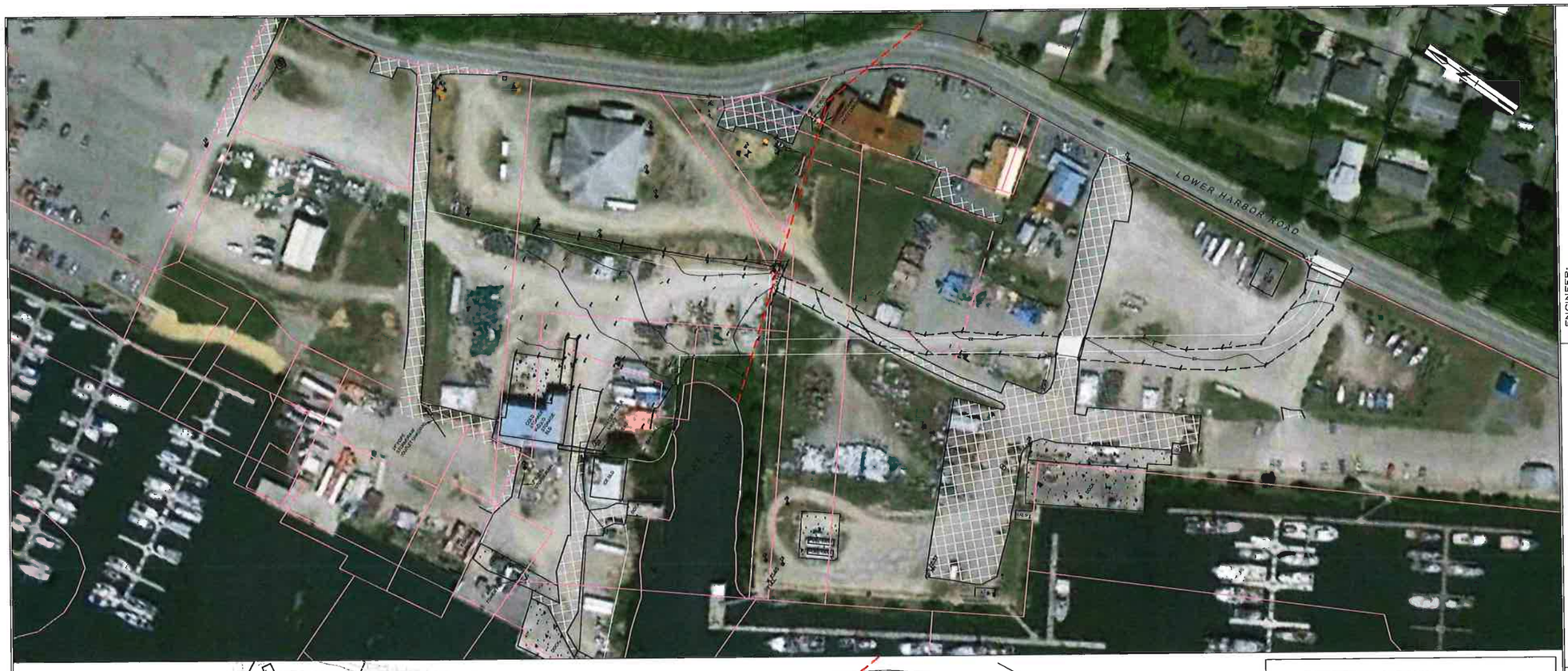
PORT OF BROOKINGS HARBOR

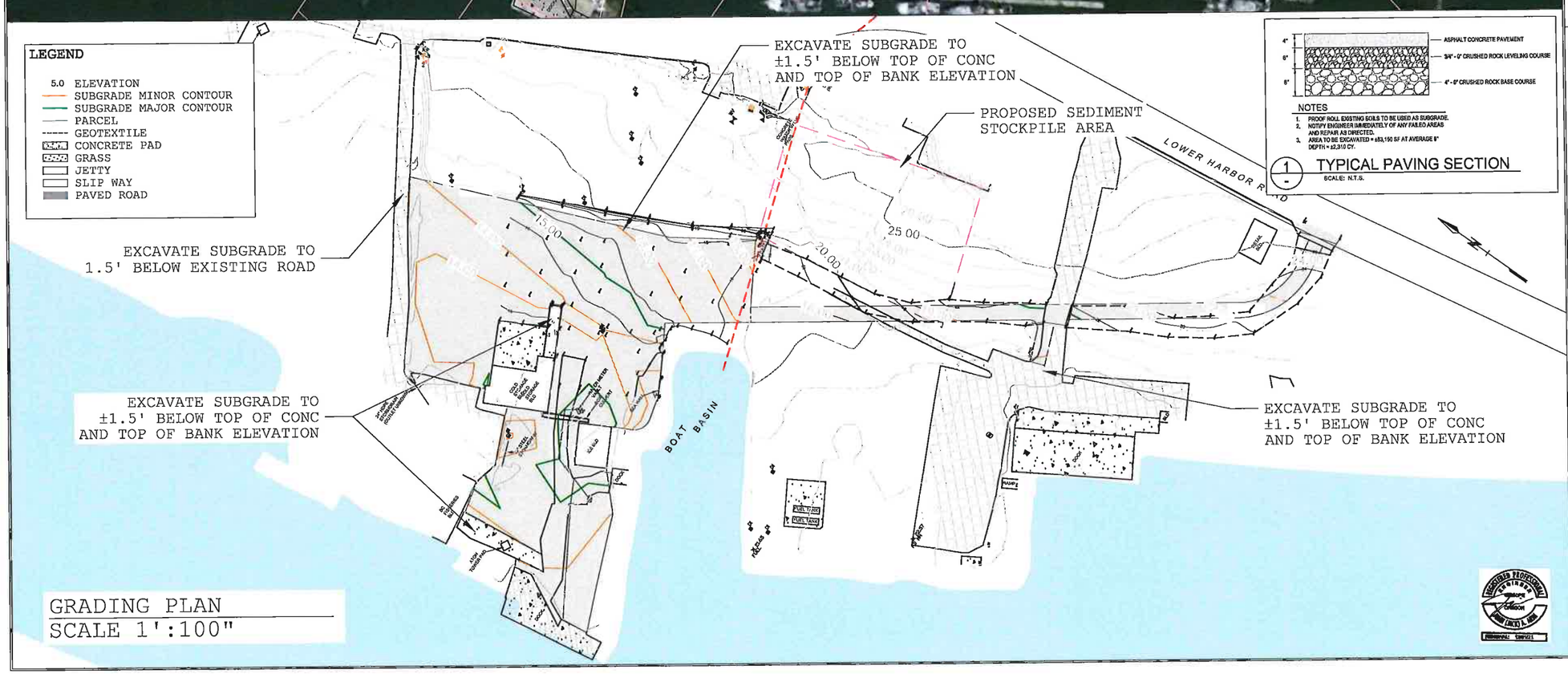
PORT OF BROOKINGS

(LOT 2900, MAP '36S22DB')

16330 Lower Harbor Rd, Brookings, OR 97415

Date	04/04/2021
Drawn By	INFRADRAFT
Sheet No.	C–101
File No.	140





GRADING PLAN
SCALE 1':100"

ENGINEER:

EMC | Engineers/Scientists, LLC

Grants Pass • Jacksonville • Medford, OR

No.	DATE	REVISION	BY

PREPARED FOR:

PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

(LOT 2900, MAP '36S22DB')

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File No.	140

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PREPARED FOR:

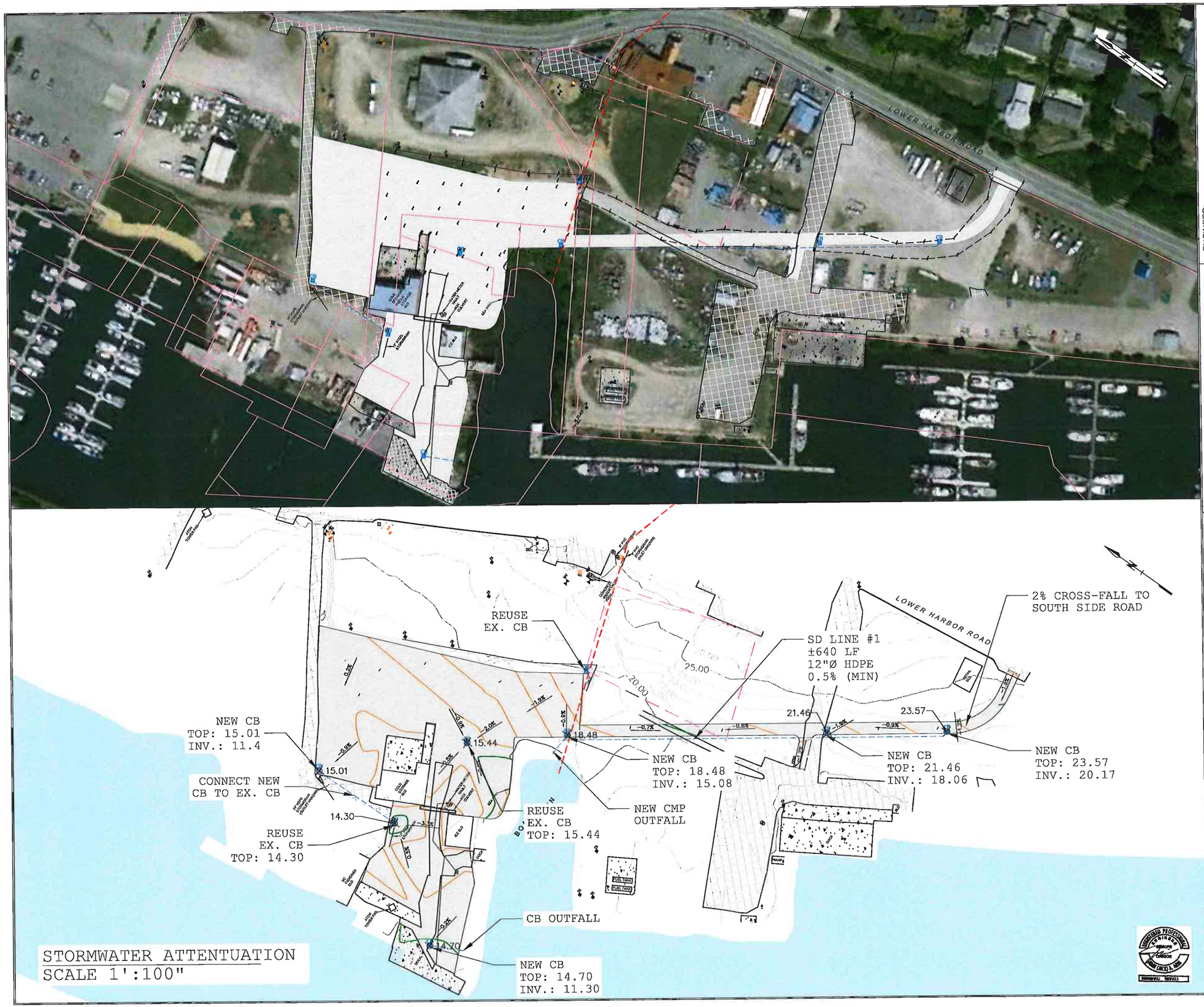
PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

(LOT 2900, MAP '36S22DB')

Date	04/04/2021
Drawn By	INFRADRAFT
Sheet No.	C-103
File No.	140



ENGINEER:

EMC | Engineers/Scientists, LLC

Grants Pass • Jacksonville • Medford, OR

No.	DATE	REVISION	BY

PREPARED FOR:

PORT OF BROOKINGS HARBOR

PORT OF BROOKINGS

16330 Lower Harbor Rd, Brookings, OR 97415

(LOT 2900, MAP '36S22DB')

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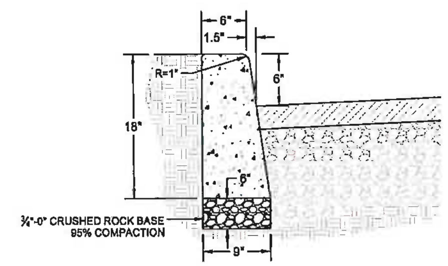
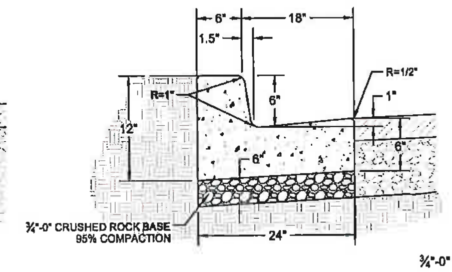
Sheet No.	C-104
File No.	140



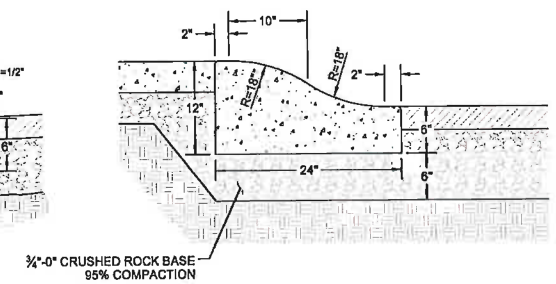
(301) **VERTICAL CURB**

SCALE: NTS



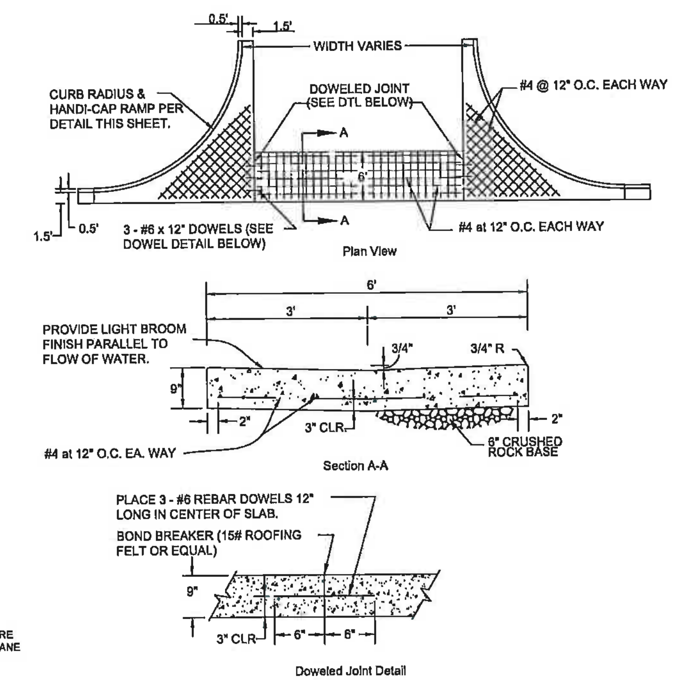
(302) **CURB & GUTTER**

SCALE: NTS



(303) **ROLLED CURB**

SCALE: NTS

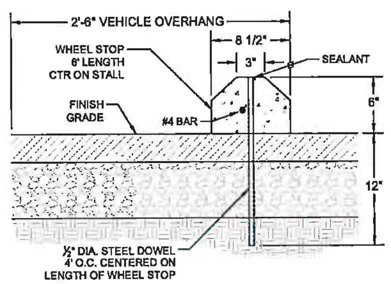


NOTES

1. CONCRETE TO BE COMMERCIAL GRADE CONCRETE (CGC) PER 2002 ODOT/OREGON APWA SECTION 00440.00
2. SUBGRADE AND BASE SHALL BE UNYIELDING AND FIRMLY COMPACTED.
3. VALLEY GUTTER SHALL PASS A WATER TEST TO ASSURE FLOW.

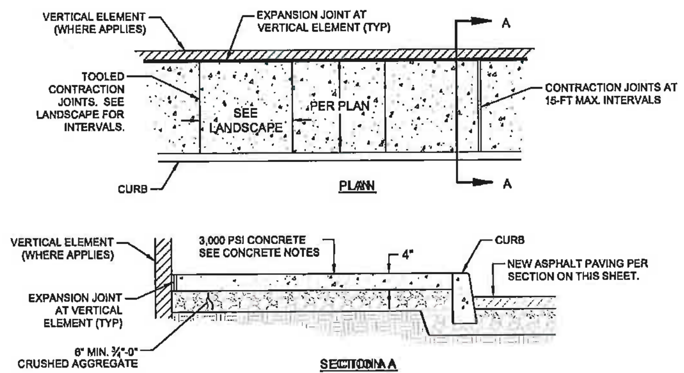
(327) **DRIVEWAY APRON WITH VALLEY GUTTER**

SCALE: NTS



(391) **WHEEL STOP**

SCALE: NTS

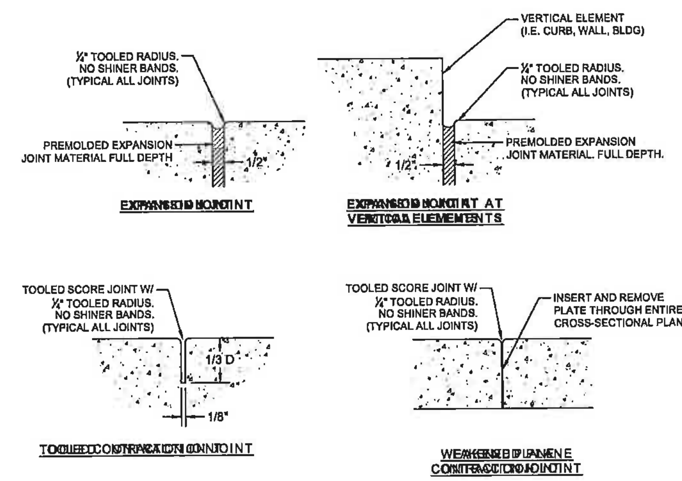


NOTES

1. COMPACT SUBGRADE AND AGGREGATE TO 95% OF MAXIMUM DRY DENSITY.
2. FINISH SHALL BE MEDIUM BROOM PERPENDICULAR TO PEDESTRIAN TRAFFIC UNLESS OTHERWISE DIRECTED.
3. CROSS SLOPE OF SIDEWALK SHALL BE 2% AWAY FROM THE BUILDING.
4. SEE CONCRETE CONTROL JOINT DETAIL ON THIS SHEET.

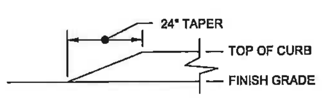
(311) **CURB LINE CONCRETE SIDEWALK**

SCALE: NTS



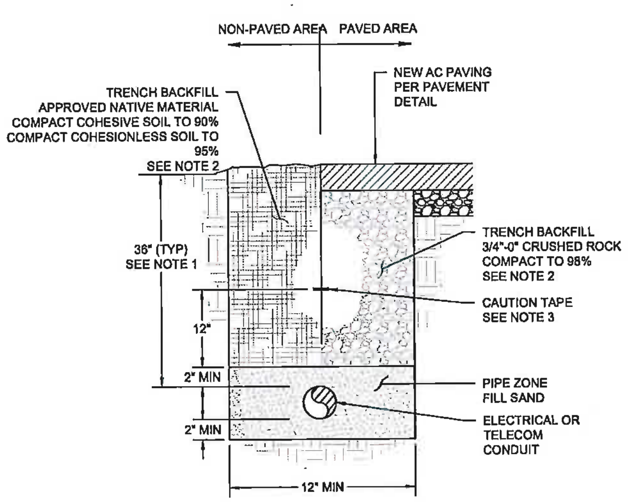
(309) **CONCRETE CONTROL JOINTS**

SCALE: NTS



(305) **CURB TAPER**

SCALE: NTS

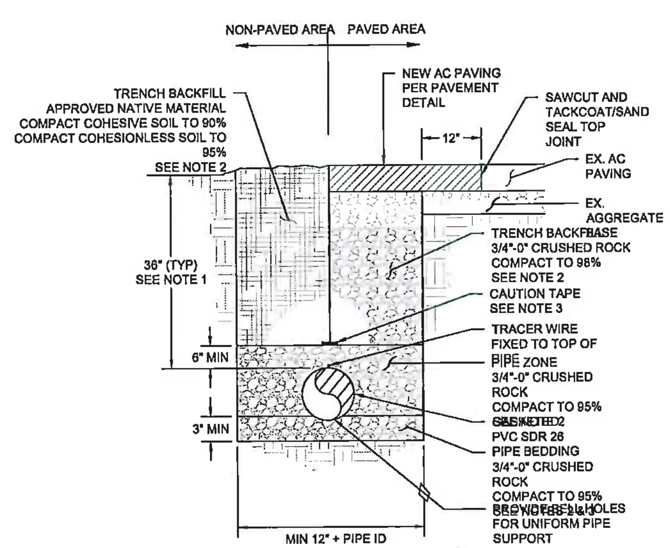


NOTES

1. COVER OVER PIPE MAY VARY FROM 24" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. ELECTRIC: 6" WIDE RED POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED ELECTRIC BELOW"
TELECOM: 3" WIDE ORANGE POLYETHYLENE TAPE IMPRINTED "CAUTION: COMMUNICATIONS LINE BURIED BELOW"

(583) **CONDUIT TRENCH DETAIL**

SCALE: NTS



NOTES

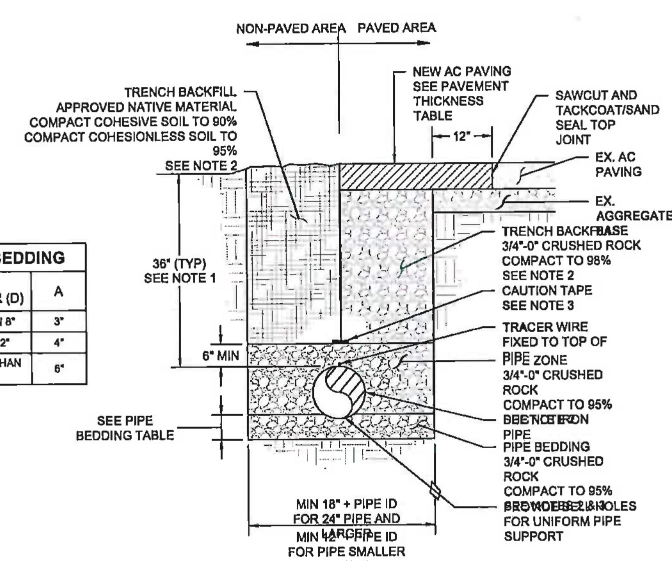
1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. SEWER: 3" WIDE GREEN POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED SEWER LINE BELOW"

(581) **SEWER TRENCH DETAIL**

SCALE: NTS

PIPE BEDDING

PIPE DIAMETER (D)	A
LESS THAN 8"	3"
8" THRU 12"	4"
GREATER THAN 12"	6"

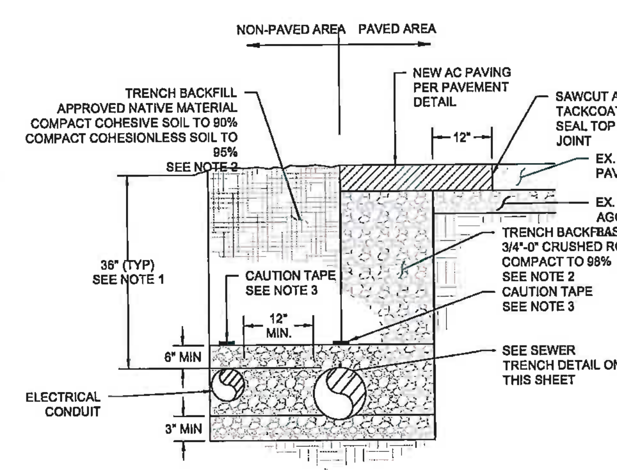


NOTES

1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. 3" WIDE BLUE POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED WATER LINE BELOW"

(580) **WATER TRENCH DETAIL**

SCALE: NTS



NOTES

1. COVER OVER PIPE MAY VARY FROM 36" MIN TO 42" MAX UPON APPROVAL FROM ENGINEER.
2. REQUIRED COMPACTION ACCORDING TO ASTM D 1557 MAXIMUM DRY DENSITY.
3. ELECTRIC: 6" WIDE RED POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED ELECTRIC BELOW"
SEWER: 3" WIDE GREEN POLYETHYLENE TAPE IMPRINTED "CAUTION: BURIED SEWER LINE BELOW"

(584) **JOINT TRENCH DETAIL**

SCALE: NTS

EMC - Engineers/Scientists, LLC (a BioScape Technologies Affiliate)
Grants Pass * Jacksonville * Medford, OR
emc@emcengineersscientists.com; bioscapetechnologies@charter.net

REGISTERED PROFESSIONAL ENGINEER 42650 PE OREGON JOHN (JACK) A. AKIN
RENEWAL DATE: 12/31/2021

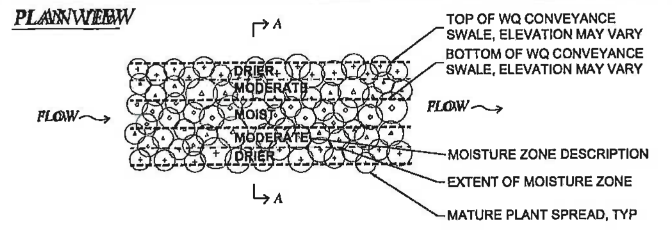
PORT OF BROOKINGS HARBOR
16350 LOWER HARBOR RD, BROOKINGS, OR 97415
HMGP DR-4452
2020 IMPROVEMENTS

DRAWN BY: TAM
DATE: 09/01/20
JOB NO: 20-XXX

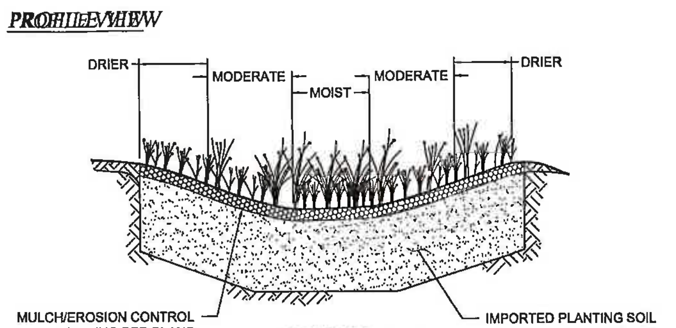
C105
PROJECT DETAILS

Water Quality Conveyance Swale Planting Schematic

PLAN VIEW



PROFILE VIEW



SECTION A-A

LEGEND:

---- INDICATES GRADE BREAK

- - - MOISTURE ZONE

PLANT SPECIES APPROPRIATE FOR MOISTURE ZONE:

(+) DRIER

(▵) MODERATE

(◦) MOIST

NOTES:

1. THIS DETAIL IS PROVIDED AS A SCHEMATIC EXAMPLE OF THE RANDOM PLANT PLACEMENT AND 90% COVERAGE AFTER ESTABLISHMENT PERIOD DESIRED TO REDUCE EROSION AND WEEDS.
2. INSTALL PLANTS PER PLANS, ACCORDING TO LANDSCAPE DESIGN PLANT TABLE, WHICH SHOULD INCLUDE PLANT SPECIES, SPACING, AND QUANTITIES IN EACH MOISTURE ZONE.
3. MOISTURE ZONES VARY FROM THOSE SHOWN DEPENDING ON GRADING PLAN, LOCATION OF INLET(S) AND OUTLET(S) AND FACILITY SHAPE.

Rogue Valley Stormwater Design Manual	Water Quality Conveyance Swale Planting Schematic	BMP 8.03 1 of 1 Scale: NTS

General Notes for Vegetated BMPs

1. Excluding construction of the facility itself, exposed treatment area subgrade shall be fenced to prohibit impacts from construction (including materials and equipment storage).
2. Build and vegetate swale as early as possible to establish plantings before directing stormwater runoff to it or divert stormwater around facility. Preferably, vegetation will be given a minimum of 3 months to become established, or per landscape architect/designer guidelines.
3. Call the reviewing agency 48 hours in advance of constructing this facility so construction observation may be performed to identify variations in the field that may affect design and verify proper construction.
4. Over-excavate within the swale to allow for placement of amended or imported soil up to final grade.
5. Placement of amended native or imported soil mix shall occur as follows:
   a. Place soil in 8 inch maximum lifts (i.e. depths).
   b. Do not place if soil is saturated.
   c. Lightly compact each lift, (e.g. a water filled landscape roller) to achieve 85% compaction. Do not compact with heavy machinery or vibratory compaction.
6. Install energy dissipation below all outfalls per approved plans.
7. If unprotected soil has been exposed to rainfall, scarify the surface to a depth of 4 inches to restore filtration capacity.
8. Install ODOT Type E erosion control matting, if specified in approved plans.
9. Landscaping plan must adhere to one of the scenarios in Tables 1 and 2 of section 4.5.2. Plant per Landscaping plan and standard detail 4.5.2C. Contact approving jurisdiction 48 hours in advance of planting so that jurisdiction can review plant placement prior to plant installation.
10. Install mulch, if specified in approved plans. Use either shredded wood chips or coarse compost. Mulch must be dye, pesticide and weed free. Spread in a minimum two inch layer over bare soil or in a ring around plants to increase water retention. Ensure that mulch does not touch plant stems.
11. Side slopes outside of flow area must be permanently stabilized with mulch and vegetation.

AMENDED PLANTING SOIL MIX SPECIFICATIONS

1. Planting soil may be either amended native or imported soil mix with the following characteristics:
   A. Infiltrate between 0.5 and 12 inches/hour.
   B. Be free of weed seeds, contaminants, and hazardous materials.
   C. Organic content matter from 8-10% by weight
   D. Cation exchange capacity (CEC) greater than or equal to 5 milliequivalents/100 grams of dry soil
   E. 2-5% clayey fines content
   F. pH between 5.5 and 8.0
   G. Conform to the following gradation for the mix:

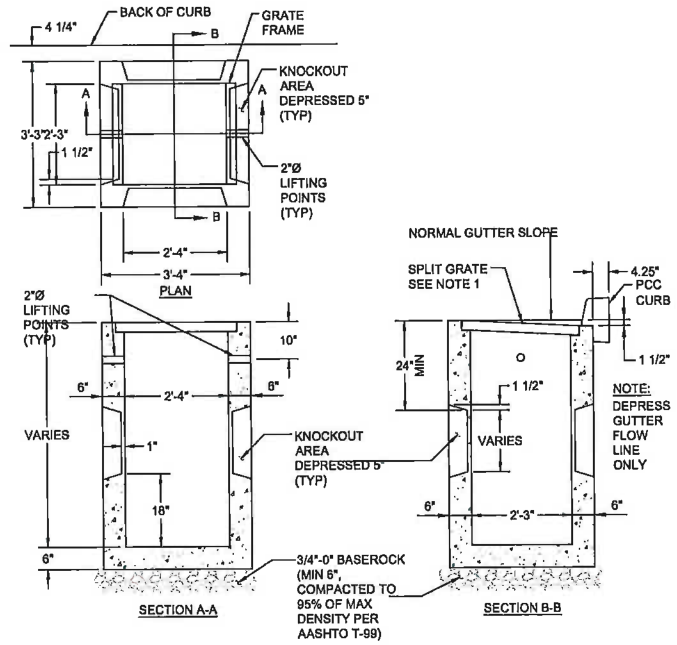
US Standard Sieve Size	Percent Passing
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

2. Imported soil shall be roughly 1/3 plant derived compost, 1/3 topsoil and 1/3 gravelly sand.
3. Amended native planting soil mix shall be created by blending compost into the native soil at a rate of 1 part compost to two parts soil. Soil mix must still meet the specifications in Note 1 above.
4. Amended native or imported soil mix shall be uniformly mixed.

Compost specifications

Must be derived from plant material and fully composted. Must be certified weed seed free. A Technical Data Sheet from the US Composting Council Seal of Testing Assurance must be provided to the approving jurisdiction. The Data Sheet must show that the compost meets the following criteria:

- Organic matter content between 40 and 50 percent.
- pH between 5.5 and 8.0. If the pH isn't quite right, it may be lowered by adding iron sulfate and sulfur or raised by adding lime. If lime is used, incorporate first into the compost, wet the compost down, and then fold mixture into the soil.
- Soluble salt content shall be less than 6.0mmhos/cm.
- 100% should pass a 1/2-inch screen.
- Stability Test Result shall Be Stable or Very Stable.
- Maturity indicator for emergence and vigor shall be ≥ 80%.
- Trace Metals Test Result shall Be Pass.
- Carbon nitrogen ratio between 30:1 and 35:1.

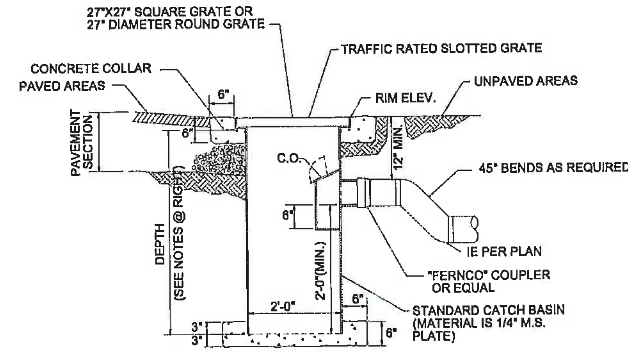


NOTES

1. GRATE AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION. GRATE AND FRAME TO BE ODOT G-2 TYPE 2 (BICYCLE SAFE).
2. FOR PRECAST BOX, CURB MUST BE HAND FORMED 10' EACH SIDE OF CATCH BASIN.
3. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
4. CATCH BASIN AND GRATE SHALL MEET HS20 LOADING.
5. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
6. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

2 / C6.1 CATCH BASIN

SCALE: NTS



*NOTE:
LYNCH OR APPROVED EQUAL CATCH BASIN.

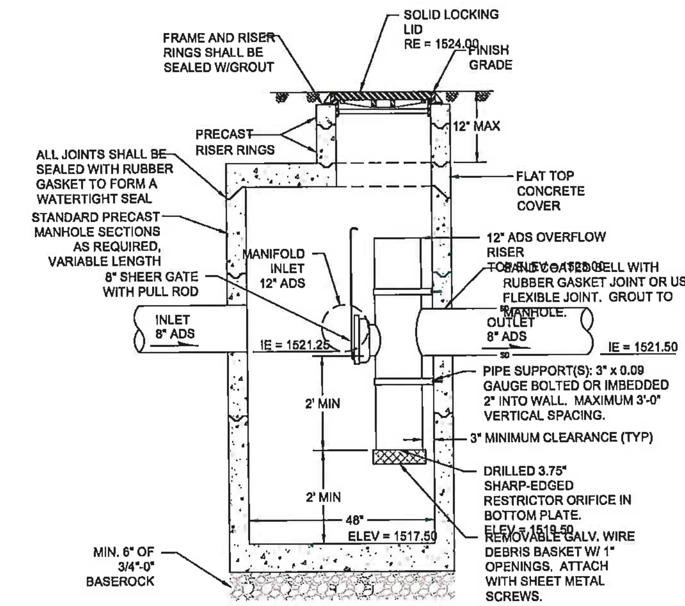
*NOTE:
LOCATE ROUND BASIN IN PAVED AREAS, AND SQUARE BASINS ARE TO BE USED WHEN LOCATED NEXT TO CURB.

GENERAL NOTES:

1. ASPHALT COAT ALL SURFACES OF CATCH BASIN AND CLEANOUT AFTER WELDING OR HOT DIP GALVANIZE (AT MANUFACTURER'S DISCRETION)
2. BREAK SHARP CORNERS AFTER WELDING.
3. ALL WELDED STEEL CONSTRUCTION
4. 10 GAUGE STEEL MINIMUM THICKNESS
5. OPENING ON BOTTOM OF WATERSEAL TO BE GREATER, OR EQUAL TO AREA IN OUTLET PIPE.
6. STANDARD DEPTH: 48"

3 / C6.1 LYNCH STYLE CATCH BASIN

SCALE: NTS

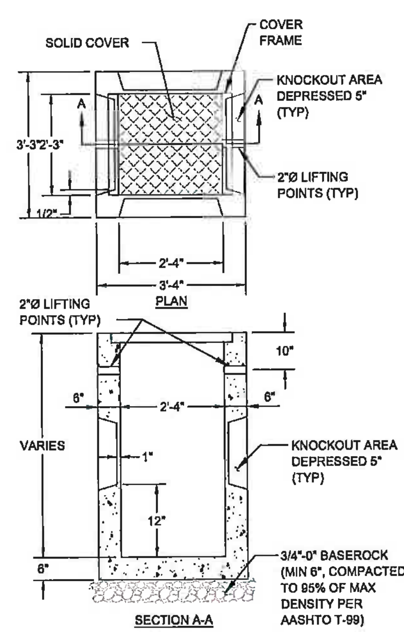


NOTE

ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

4 / C6.1 CONTROL STRUCTURE MANHOLE

SCALE: NTS (PONDS 2 & 3)

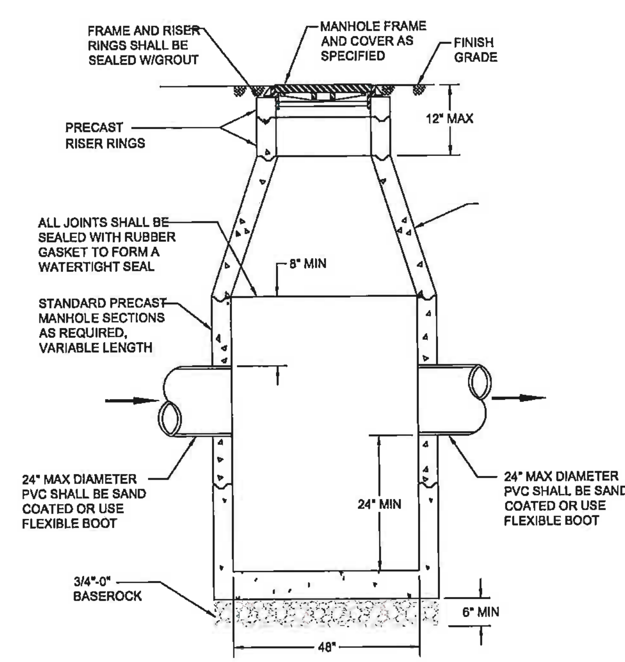


CONSTRUCTION NOTES:

1. COVER AND FRAME MAY EACH BE OF CAST IRON OR WELDED STEEL CONSTRUCTION.
2. CONCRETE STRENGTH SHALL BE 5000 PSI WITH FIBER MESH.
3. JUNCTION BASIN AND GRATE SHALL MEET HS20 LOADING.
4. A MINIMUM SUMP DEPTH OF 18" IS REQUIRED.
5. OUTLET PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

6 / C6.1 JUNCTION BASIN

SCALE: NTS

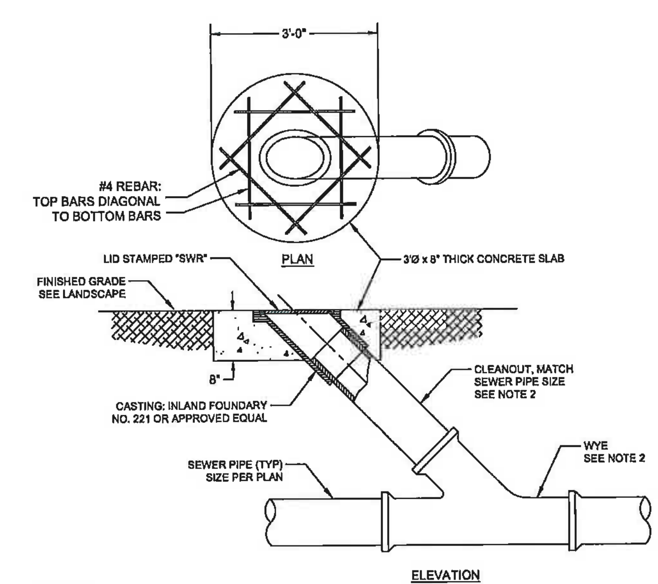


NOTE

ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.

7 / C6.1 48" STORM MANHOLE

SCALE: NTS



NOTES

1. CONCRETE TO BE COMMERCIAL GRADE CONCRETE (CGC) PER 2015 ODOT STANDARD SPECIFICATIONS SECTION 00440. MINIMUM 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. FITTINGS AND PIPE TO BE GASKETED PVC SDR 26.

5 / C6.1 TYPICAL CLEANOUT

SCALE: NTS

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http://www.emcengineersscientists.com
- Engineers/Scientists, LLC (a BioScape Technologies Affiliate)

REGISTERED PROFESSIONAL ENGINEER 42650 PE OREGON JOHN (JACK) A. AKIN
RENEWAL DATE: 12/31/2021

PORT OF BROOKINGS HARBOR
16330 LOWER HARBOR RD, BROOKINGS, OR 97415
HMGP DR-4452
2020 IMPROVEMENTS

DRAWN BY: TAM

DATE: 09/01/20

JOB NO: 20-XXX

C106

PROJECT DETAILS

ACTION ITEM – C

DATE:	May 6, 2021
RE:	Collect Northwest Collection
TO:	Honorable Board President and Harbor District Board Members
ISSUED BY:	Gary Dehlinger, Port Manager

OVERVIEW

- Lynnette Clark 23' boat sank the evening of October 19, 2019. Port staff cleaned up the pollution and removed the boat from the harbor that night.
- Port has not been able to contact Lynnette Clark since the removal of her boat from the Boat Yard. Lynnette Clark continued to refuse normal mail or certified mail from the Port.
- Board of Commissioners approved to send the outstanding account to Port collection agency at a Special Meeting June 11, 2020.
- Collect Northwest is the Port's collection agency.

DOCUMENTS

- None

COMMISSIONERS ACTIONS

- **Recommended Motion:**