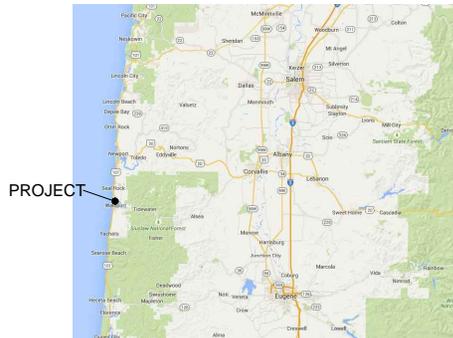


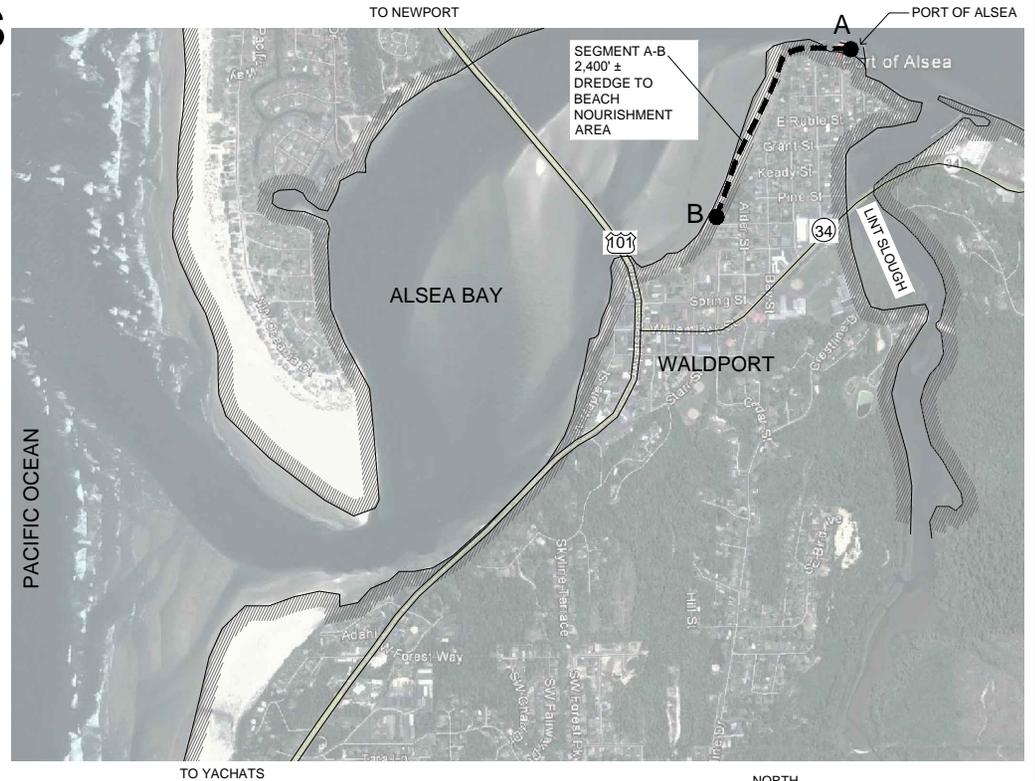
# DREDGING PLAN & SPECIFICATIONS FOR: PORT OF ALSEA, ALSEA BAY

## DREDGING DISPOSAL NOTES

- EXISTING SURVEY DATA SHOWN HAS BEEN SUPPLIED BY OREGON STATE MARINE BOARD - BASIN SURVEY, EMC DATA, AND BY THE PORT OF ALSEA.
- INTERPOLATED ELEVATION DATA WAS USED AT SEVERAL LOCATIONS ON THIS DRAWING IN ORDER TO EXTEND BEYOND THE PROPOSED DREDGING BOUNDARY.
- ALL AREAS OF THE BOAT BASIN TO BE DREDGED TO 10 FEET MLLW (INCLUDES 2 FOOT OVERDREDGE), OR TO OTHER DEPTHS AS DICTATED BY CONDITIONS, WHICHEVER IS SHALLOWER.
- ALL AREAS OF THE LAUNCH RAMP ARE ALSO TO BE DREDGED TO 10 FEET MLLW (INCLUDES 2 FOOT OVERDREDGE), OR TO OTHER DEPTHS AS DICTATED BY CONDITIONS, WHICHEVER IS SHALLOWER.
- DISPOSAL PIPE IS SPECIFIED TO BE 10 OR 12 INCH HDPE SDR 11, 17 OR 21 HDPE, WITH THE TOTAL OF PIPE SECTIONS TO BE ABOUT 3,000 FEET, AND SUBSEQUENT ENGINE HORSEPOWER AND PUMP (CENTRIFUGAL, SLURRY) CHARACTERISTICS ARE BASED ON PRODUCTION RATE CAPACITY OF THE AVAILABLE DREDGE.
- THE SYSTEM IS DESIGNED ASSUMING A 440 HP HYDRAULIC SUCTION DREDGE, SUPPLIED WITH A ROTATING CUTTERHEAD/LADDER SYSTEM CAPABLE OF PUMPING ABOUT 10-12 FEET/SECOND, 3000 GPM OF 15%-30% SLURRY AS SPECIFIED BY THE PROJECT MANAGER, PROVIDING AN APPROXIMATED 160 TO 250 YD.<sup>3</sup> PER HOUR PRODUCTION RATE. UTILIZING THESE PRODUCTION RATE ASSUMPTIONS, THIS PROJECT IS EXPECTED TO BE COMPLETED IN ABOUT 30-45 DAYS, INCLUDING MOBILIZATION/DEMobilIZATION. HORSEPOWER IS SPECIFIED AS THE MOVEMENT OF MASS AGAINST HEAD PER UNIT OF TIME.
- PIPE SECTIONS WITHIN THE PORT WILL BE SUNKEN BY SEDIMENT ONLY, AND THEREFORE WILL HAVE POTENTIAL TO FLOAT WHEN FILLED ONLY WITH SEAWATER. THIS CAN OCCUR DURING PURGING, AND SAFETY PRECAUTIONS TO AVOID COLLISIONS WITH BOATERS MUST BE TAKEN DURING PURGING (PIPE CLEANOUT).
- ANCHORING OF THE PIPE WILL BE COMPLETED AS SPECIFIED BY THE PROJECT ENGINEER/MANAGER TO PREVENT UNCONTROLLED HORIZONTAL DRIFTING OF PIPE SECTIONS.
- ALL ANCHORS, IF USED WITHIN NAVIGABLE WATERS, WILL BE MARKED BY BUOYS AND LIGHTED AS SPECIFIED BY THE PROJECT ENGINEER/MANAGER.
- THE END OF THE PIPE WILL BE MANAGED SO AS TO PROVIDE EVEN LOADING OF DESIGNATED UPLAND DISPOSAL (BEACH NOURISHMENT) AREA (SEE ATTACHED DRAWING ENTITLED "REQUEST FOR REVIEW OF NEARBY BEACH NOURISHMENT CANDIDATE). PIPING WILL BEGIN TO THE MOST DISTAL END OF THE UPLAND DISPOSAL SITE AND BE MOVED SIDE TO SIDE, SHORTENED AS REQUIRED, LAYERED AS DETERMINED BY THE PROJECT MANAGER/ENGINEER DURING THE PROJECT.
- A TURBIDITY CURTAIN SHALL BE PLACED ALONGSIDE THE BEACH SECTIONS, IF REQUIRED WITHIN INTER-TIDAL AREAS, TO ENSURE RETURN WATER FLOWING BACK INTO THE INTER-TIDAL AREAS WITH MINIMAL TURBIDITY.

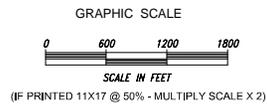


PROJECT VICINITY MAP  
NO SCALE



1 DISPOSAL PIPE LOCATION PLAN  
PORT OF ALSEA

GEOGRAPHIC LOCATION:  
TOWNSHIP 13 SOUTH, RANGE 11 WEST, SECTION 19,  
WILLAMETTE MERIDIAN, LINCOLN COUNTY, OREGON  
LATITUDE 44° 26' 04" NORTH, LONGITUDE 124° 03' 31" W



### SHEET INDEX

DR1	COVER SHEET - DREDGING NOTES - OVERALL DISPOSAL PIPE LOCATION
DR2	WORK AND STAGING AREA
DR3	DREDGING PLAN
DR4	DREDGING BASIN SITE SECTIONS

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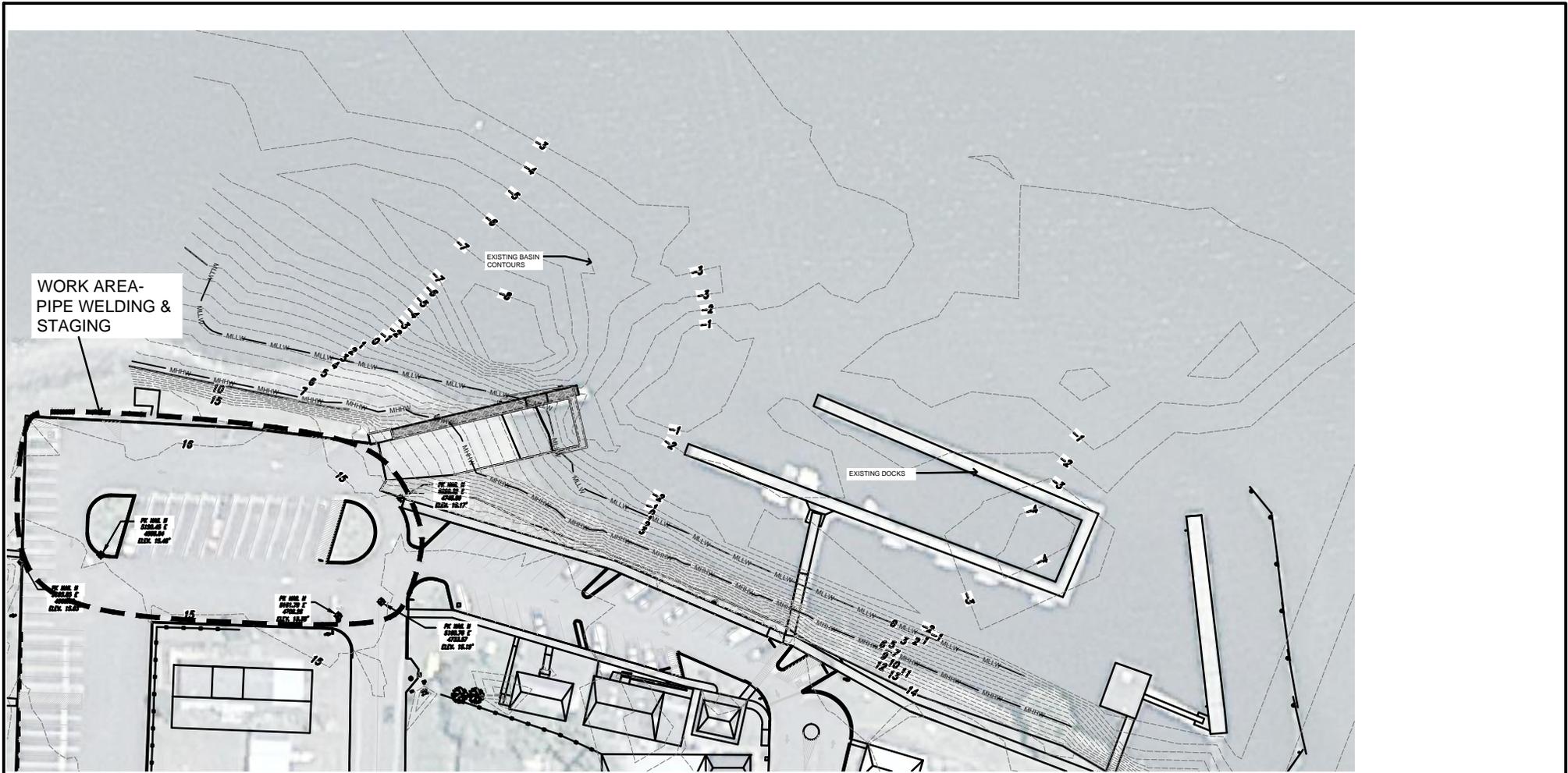
## PORT OF ALSEA, ALSEA BAY

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COVER SHEET  
DREDGING NOTES  
DISPOSAL PIPE LOCATION PLAN

DRAWN: JW  
 CHECKED: JA  
 DATE: 01-04-2016

DR1  
OF 4

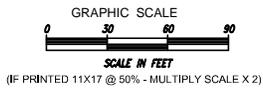


**1 EXISTING BASIN SITE PLAN**

PORT OF ALSEA SCALE 1" = 30'

EXISTING SURVEY DATA SHOWN SUPPLIED BY OREGON STATE MAPS BOARD DATED 4/20/16

CONTOUR ELEVATIONS GIVEN IN MLLW DATUM



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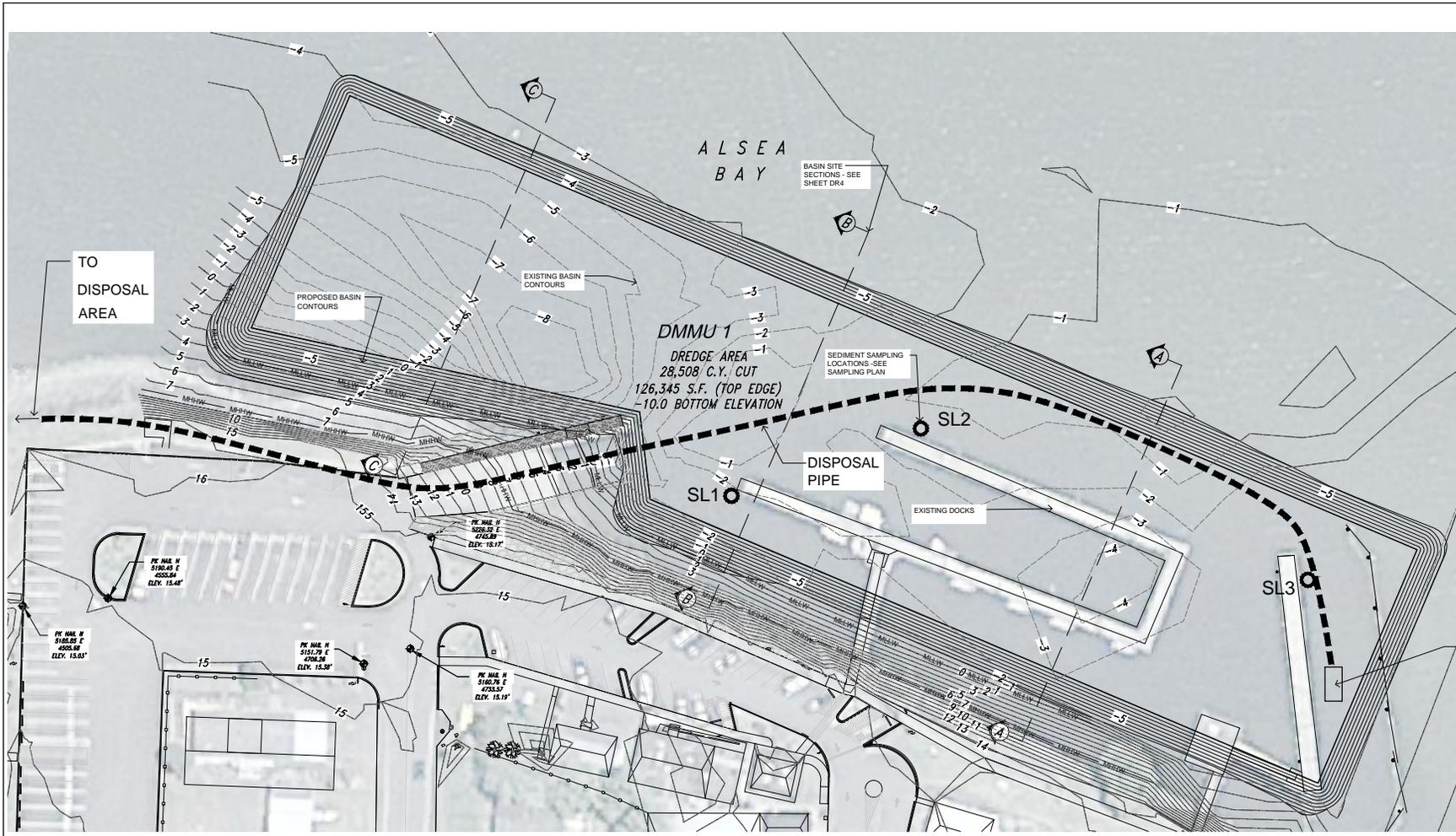
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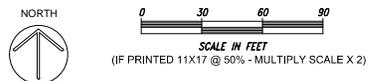
WORK AND STAGING AREA

DRAWN:	JW
CHECKED:	JA
DATE:	01-04-2016
DR2	
OF 4	



- NOTES**
- EXISTING SURVEY DATA SHOWN HAS BEEN SUPPLIED BY OREGON STATE MARINE BOARD - BASIN SURVEY, AND BY THE PORT OF ALSEA, COMBINED WITH USACE POST DREDGING ELEVATIONS.
  - INTERPOLATED ELEVATION DATA WAS USED AT SEVERAL LOCATIONS ON THIS DRAWING IN ORDER TO EXTEND BEYOND THE PROPOSED DREDGING BOUNDARY.
  - ALL AREAS OF THE BASIN TO BE DREDGED TO 10 FEET MLLW (INCLUDES 2 FOOT OVEREDGE), OR TO OTHER DEPTHS AS DICTATED BY CONDITIONS, WHICHEVER IS SHALLOWER.
  - DISPOSAL PIPE IS SPECIFIED TO BE 10 OR 12 INCH HDPE SDR 11, 17 OR 21, WITH THE TOTAL OF PIPE SECTIONS TO BE DETERMINED, AND SUBSEQUENT ENGINE HORSEPOWER AND PUMP (CENTRIFUGAL, SLURRY) CHARACTERISTICS ARE BASED ON PRODUCTION RATE CAPACITY OF THE AVAILABLE DREDGE.
  - THE SYSTEM IS DESIGNED ASSUMING A 440 HP HYDRAULIC SUCTION DREDGE, SUPPLIED WITH A ROTATING CUTTERHEAD/LADDER SYSTEM CAPABLE OF PUMPING ABOUT 10-12 FEET/SECOND, 3000 GPM OF 15%-30% SLURRY, COUPLED IN SERIES WITH A BOOSTER PUMP OF AT LEAST 440 HP (POSITIONED AS SPECIFIED BY THE PROJECT MANAGER) PROVIDING AN APPROXIMATED 160 TO 250 YD<sup>3</sup> PER HOUR PRODUCTION RATE. UTILIZING THESE PRODUCTION RATE ASSUMPTIONS, THIS PROJECT IS EXPECTED TO BE COMPLETED IN ABOUT 60 DAYS, INCLUDING MOBILIZATION/DEMobilIZATION. HORSEPOWER IS SPECIFIED AS THE MOVEMENT OF MASS AGAINST HEAD PER UNIT OF TIME.
  - PIPE SECTIONS WITHIN THE MARINA WILL BE SUNKEN BY SEDIMENT ONLY, AND THEREFORE WILL HAVE POTENTIAL TO FLOAT WHEN FILLED ONLY WITH SEAWATER. THIS CAN OCCUR DURING PURGING, AND SAFETY PRECAUTIONS TO AVOID COLLISIONS WITH BOATERS MUST BE TAKEN DURING PURGING (PIPE CLEANOUT).
  - ANCHORING OF THE PIPE WILL BE COMPLETED AS SPECIFIED BY THE PROJECT ENGINEER/MANAGER TO PREVENT UNCONTROLLED HORIZONTAL DRIFTING OF PIPE SECTIONS IN THE PACIFIC OCEAN.
  - ALL ANCHORS WITHIN NAVIGABLE WATERS WILL BE MARKED BY BUOYS AND LIGHTED AS SPECIFIED BY THE PROJECT ENGINEER/MANAGER.

**1 PORT DREDGE SITE PLAN**  
 PORT OF ALSEA SCALE 1" = 30'  
 EXISTING SURVEY DATA SHOWN SUPPLIED BY OREGON STATE MARINE BOARD DATED 4/06/15.  
 CONTOUR ELEVATIONS GIVEN IN MLLW DATUM



APPROXIMATE VOLUMES WITHIN LIMITS SHOWN		
AREA (Approx.)	DREDGING DEPTH	VOLUME (CUT)
126,345 SQ. FT. (2.90 Ac.)	-8'	21,200 CU. YDS.
126,345 SQ. FT. (2.90 Ac.)	-10'	28,508 CU. YDS.

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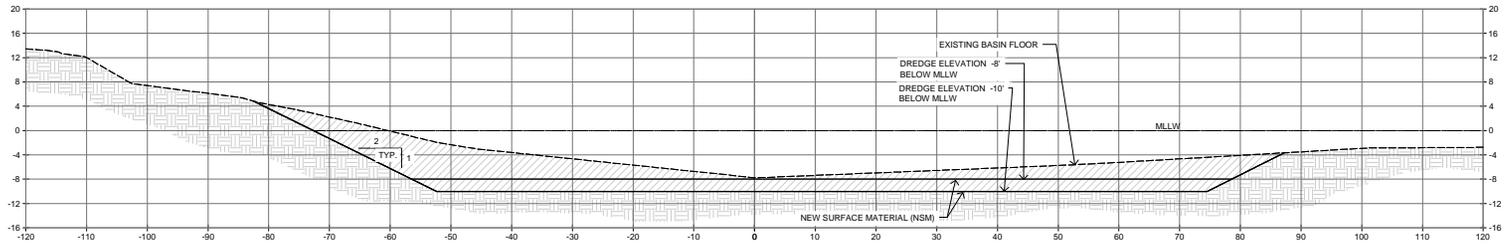
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<http://www.emcengineers.com> [ken.specker@emcengineers.com](mailto:ken.specker@emcengineers.com)  
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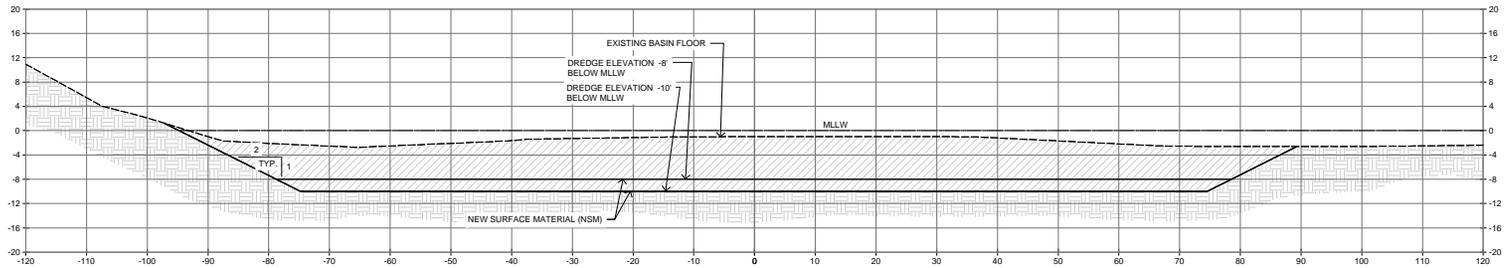
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**BASIN DREDGING PLAN**

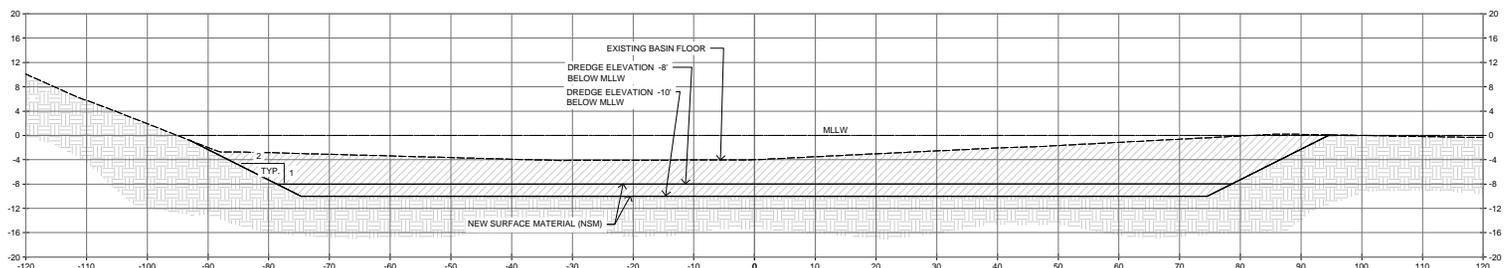
DRAWN:	JW
CHECKED:	JA
DATE:	01-04-2016
<b>DR3</b>	
OF 4	



SECTION C-C

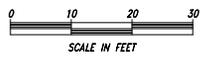


SECTION B-B



SECTION A-A

*BASIN CROSS SECTIONS*



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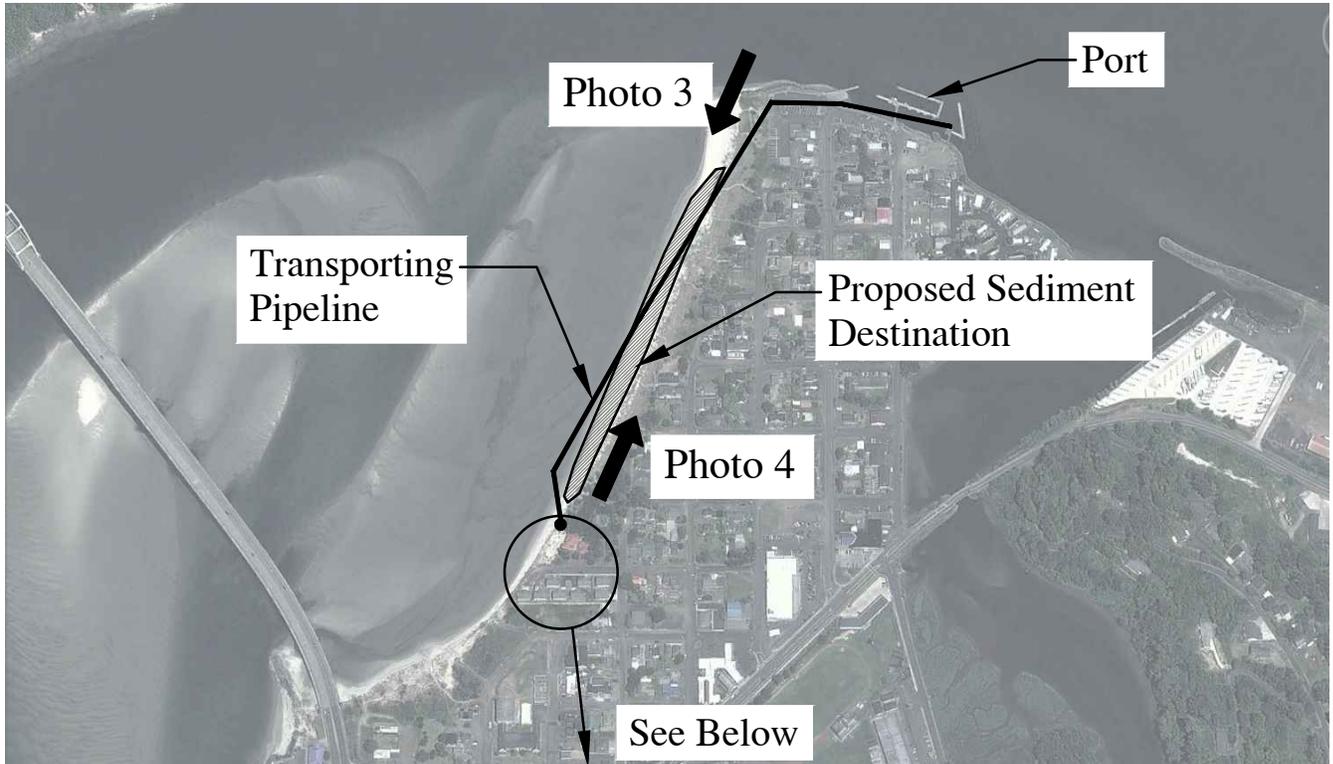


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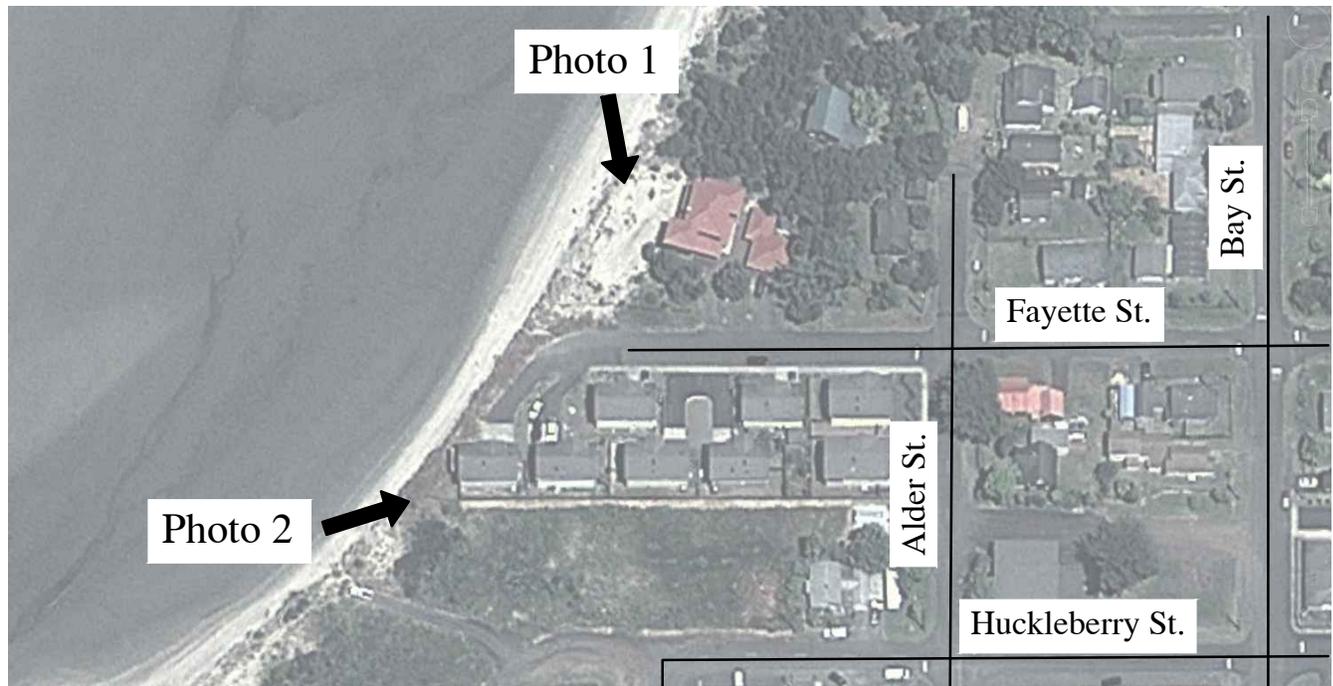
SEDIMENT SAMPLING PLAN  
 BASIN SITE SECTIONS

DRAWN:	JW
CHECKED:	JA
DATE:	01-04-2016
<b>DR4</b>	
OF 4	

# EXHIBIT A



The approximate (not surveyed) capacity of this area is about 32,000 cu. yds. (500' long X 200' wide X 3' (6' on high side, 0' on low side + 600' X 150' X 3' + 900' X 100' X 3' + 200' X 50' X 3').

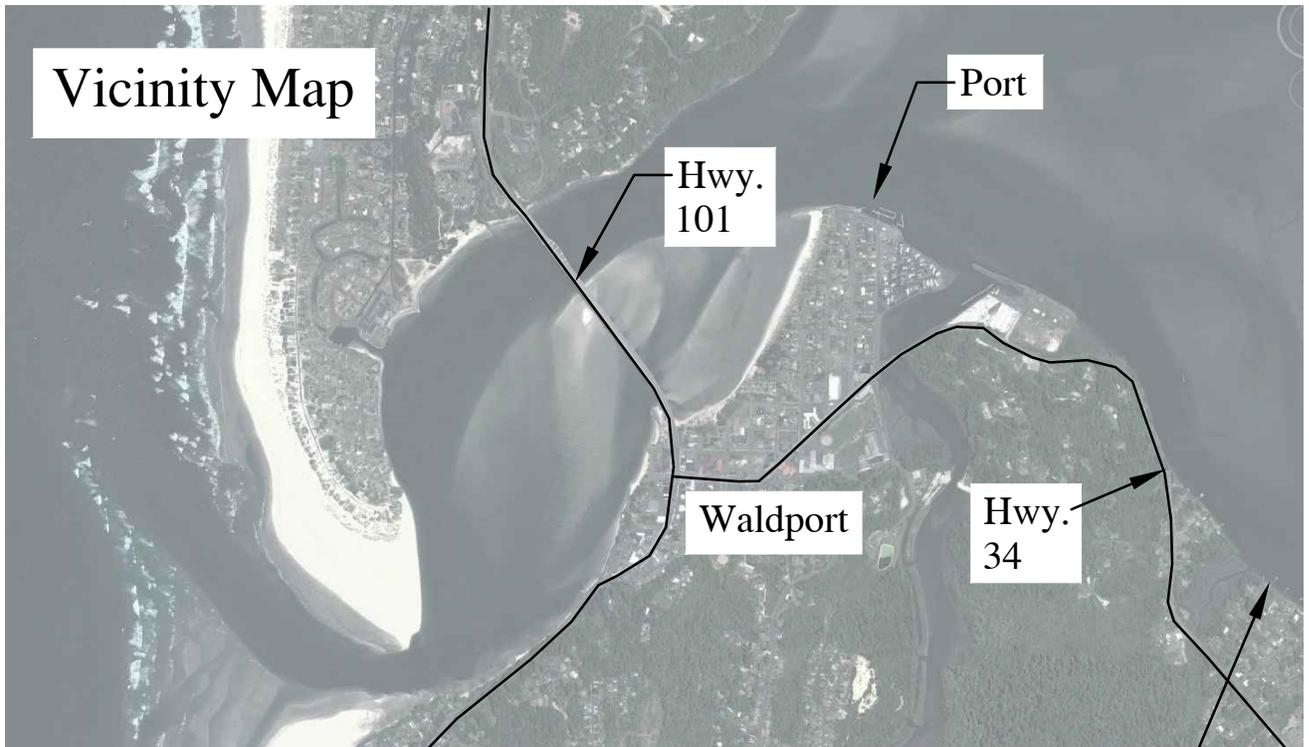


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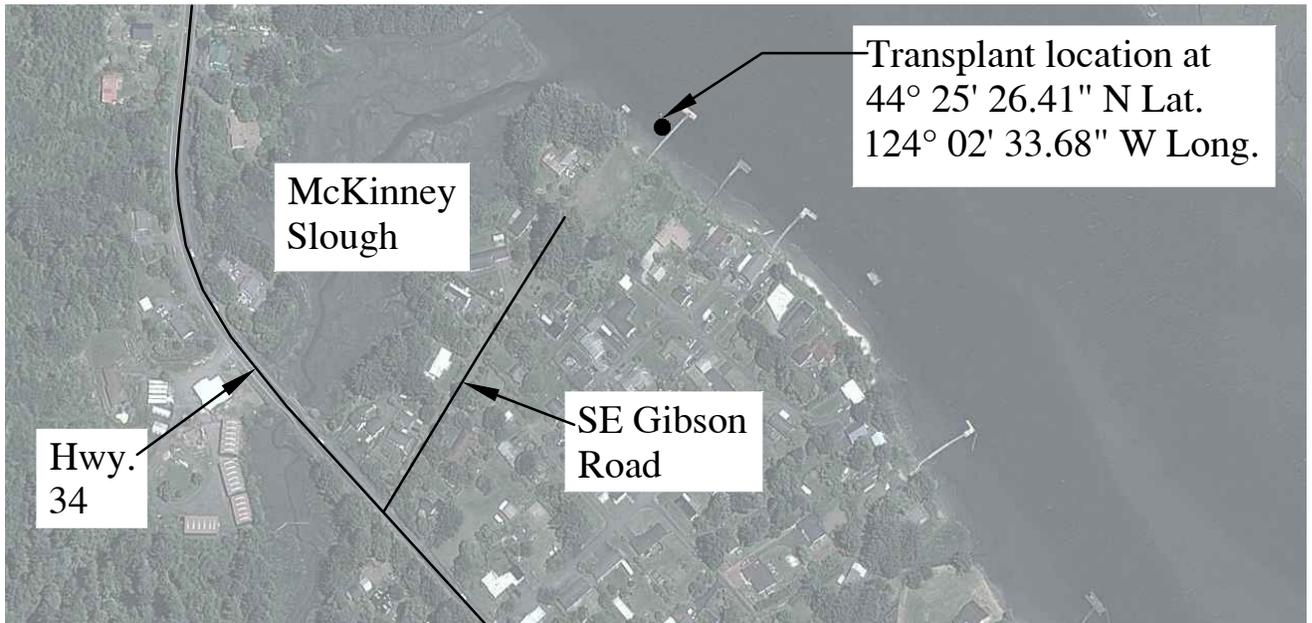
# EXHIBIT A

## Proposed Transplant Area



Donor site location at the Port is seen in EXHIBIT C, attached to this report. The transplant location is seen in the aerial photograph below. The location is easily accessed by SE Gibson Road or by boat upriver about 4,400 feet.

Transplant location

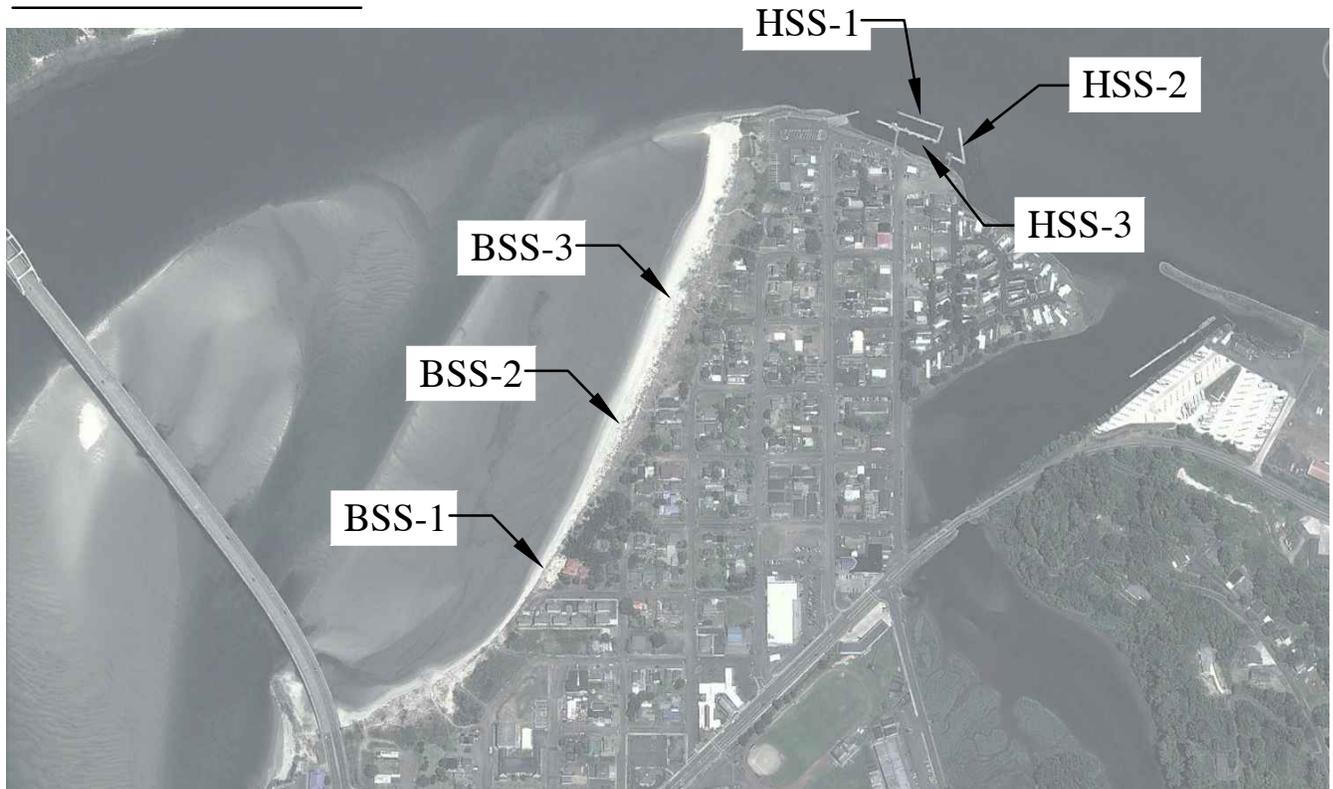


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[emc@emcengineersscientists.com](mailto:emc@emcengineersscientists.com); [bioscapetechnologies@charter.net](mailto:bioscapetechnologies@charter.net)  
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# **EXHIBIT B**



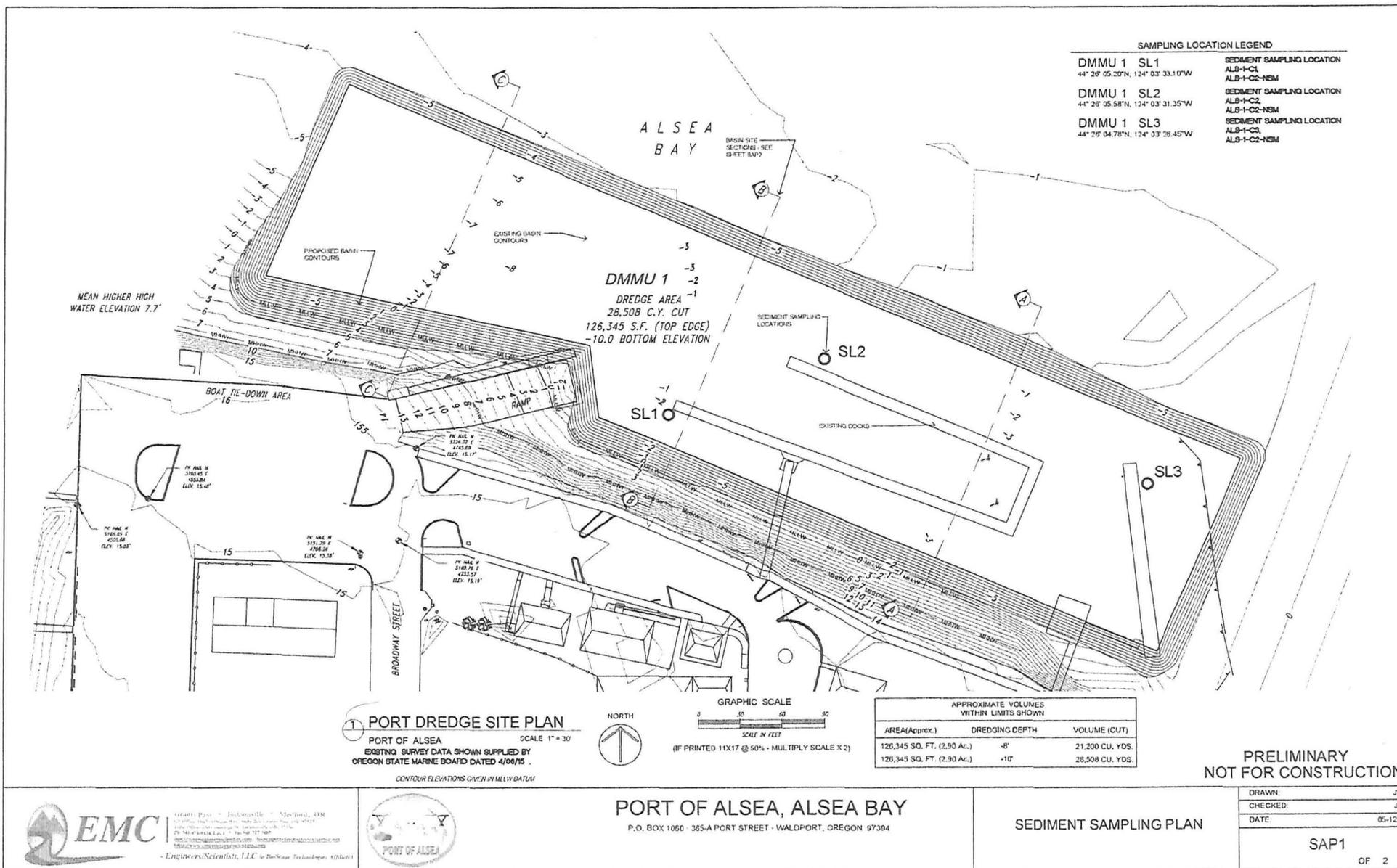
Two sand samples, with three composites each, were collected from the proposed source (Port of Alsea) and from the proposed beachhead, in order to conduct the analyses described in the Port of Alsea 2015 Dredge & Disposal Plan.

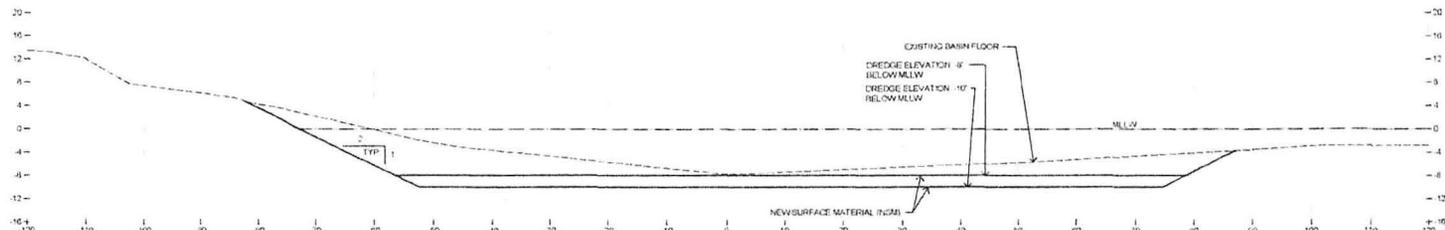


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<http://www.emcengineersscientists.com>

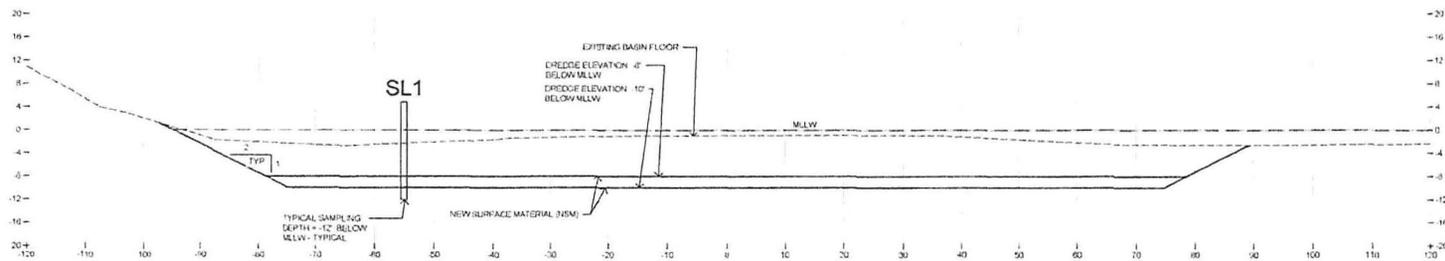
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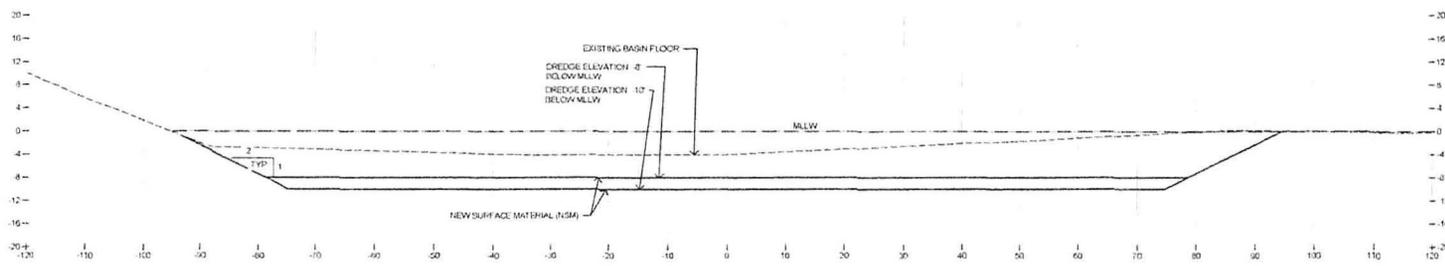




SECTION C-C

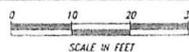


SECTION B-B



SECTION A-A

BASIN CROSS SECTIONS



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Emery, Papp, Jackson & Alford, P.C.  
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Phone: 503.325.1111 Fax: 503.325.1112  
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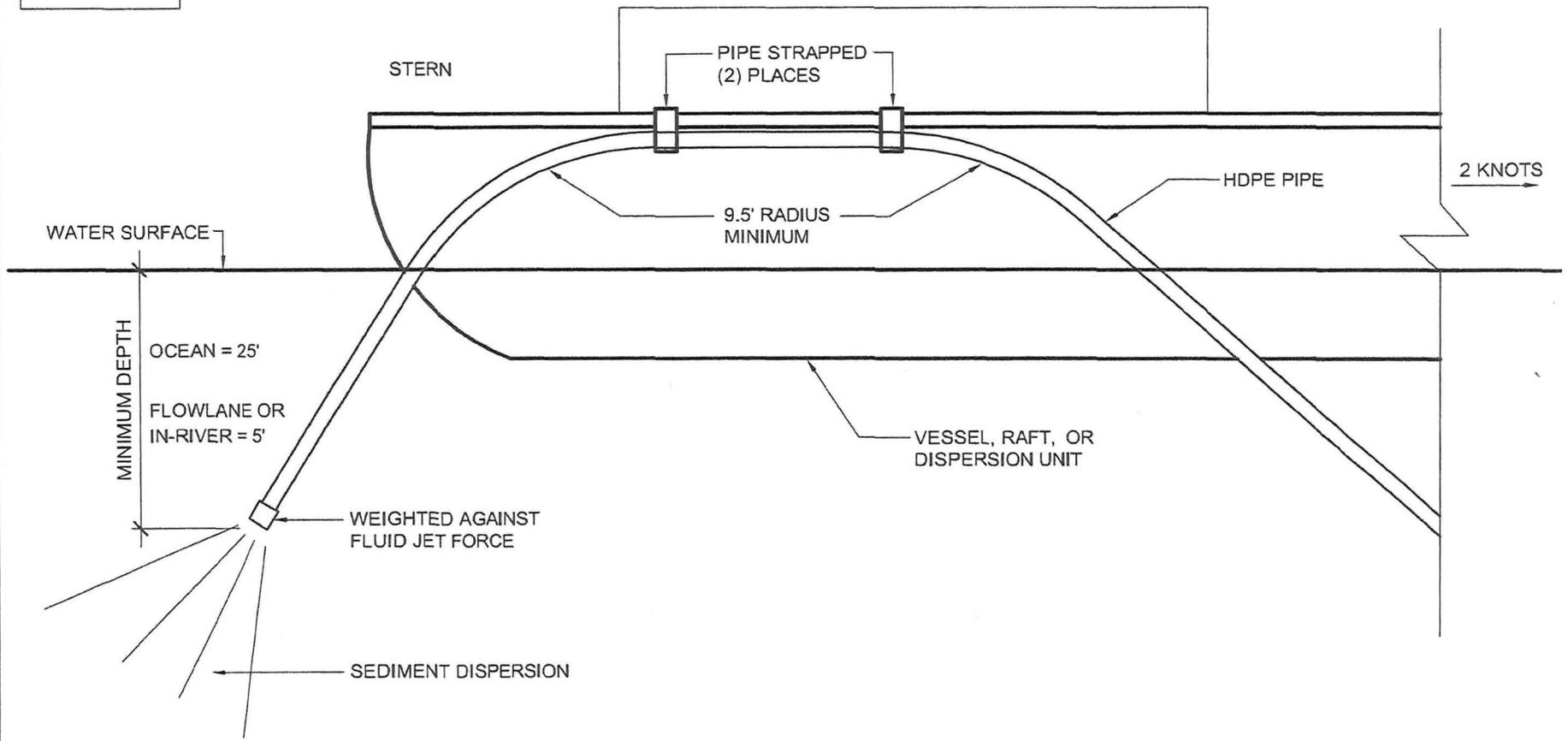
SEDIMENT SAMPLING PLAN  
BASIN SITE SECTIONS

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DR3

OF 4

FIGURE B



VESSEL ATTACHMENT DURING DISPOSAL

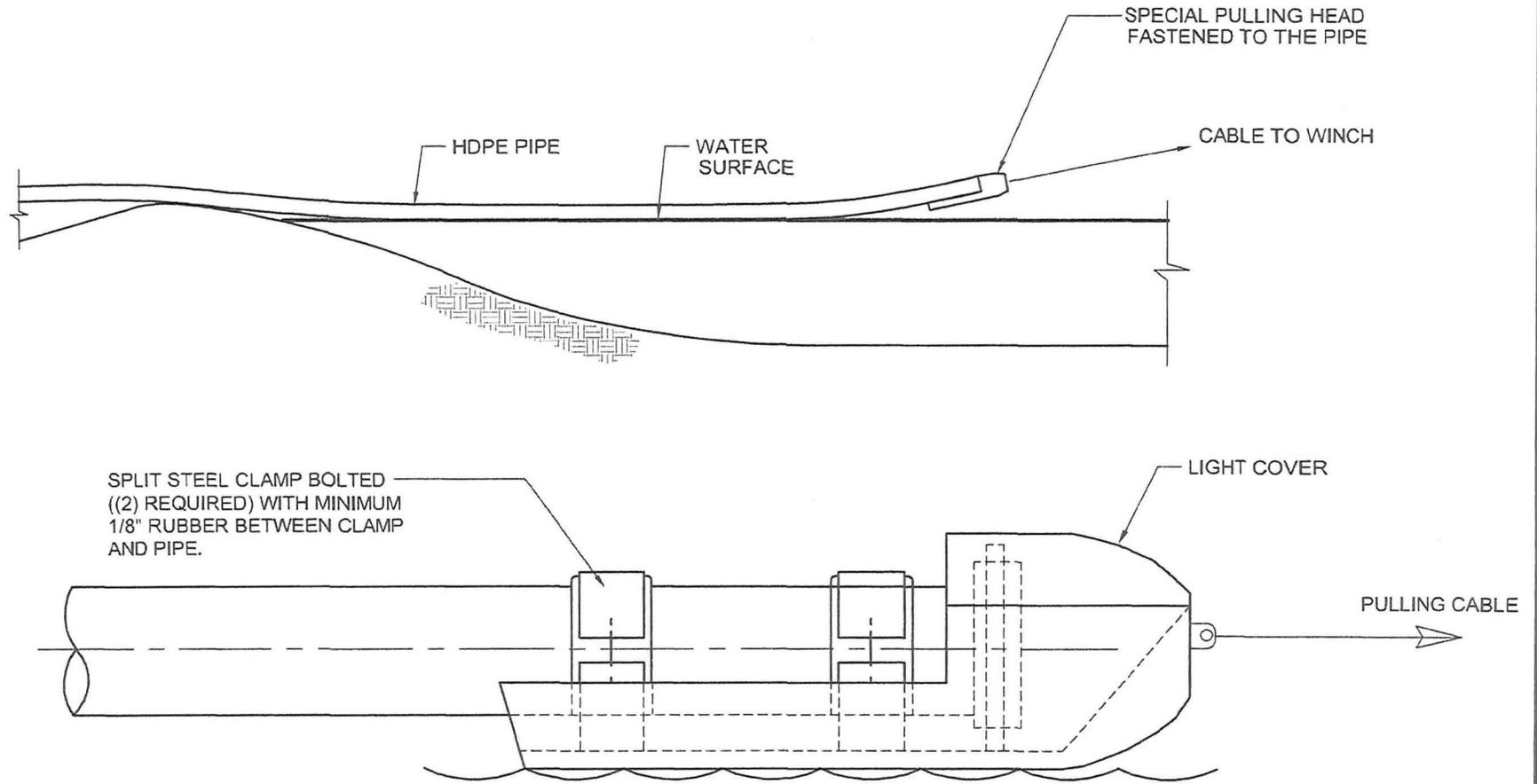


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FIGURE F



FLOATING PULL INSTALLATION OF HDPE PIPE  
(TO BE USED AS NECESSARY)



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