Elwha Shoreline Armor Removal

SURVEY NOTES:

Horizontal Datum: NAD83 State Plane Washington North Feet
Horizontal coordinates based on coordinates for survey monuments "6A", "7", and "5B" provided by the Lower Elwha Klallam Tribe.

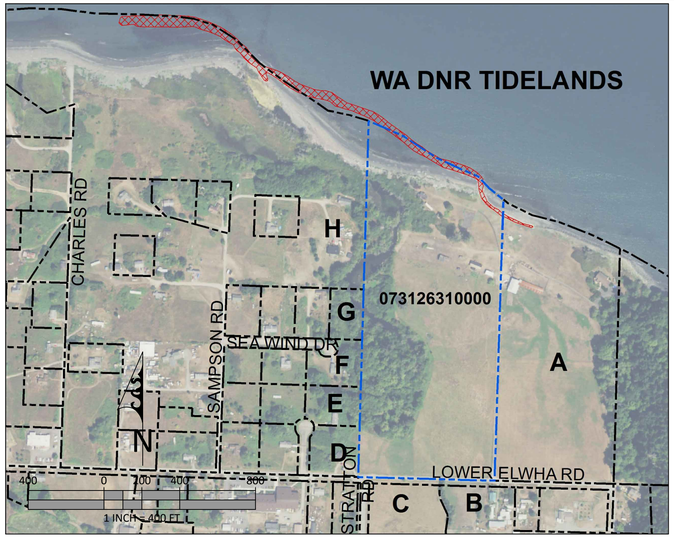
Vertical Datum: Mean Lower Low Water (MLLW)
Datum based on elevations provided by Lower Elwha Klallam Tribe for monuments "6A", "7", and "5B". Monument "7" established 1996 by Polaris Engineering & Surveying (PLS 27129). Monuments "6A" and "5B" established 2006 by Johnston Land Surveying (PLS 37531).
0 FT NAVD88 = 0.30 FT MLLW
0 FT MHHW = 7.00 FT MLLW

Topography:
Limited topographic surveying was completed by Coastal Geologic Services on 4/11/16 using a Leica TCR-1105 total station with direct rod measurements from existing control. Ordinary high water mark (OHWM) was mapped in the field as the waterward extent of vegetation. Points elevations shown are derived from the 4/11/16 ground survey. Topographic contours shown landward of OHWM were derived from LiDAR data flown in November 2014 by the US Geological Survey, and provided as bare-earth points in NAVD88, and have been datum shifted to MLLW. Topographic contours shown waterward of OHWM were flown in November 2015 by USGS provided as last returns in NAVD88, datum shifted to MLLW. Note that the beach had eroded considerably in places since the LiDAR flights, producing erroneous contours in the vicinity of the beach. Flood plain elevation based on 7 FT NGVD29 (10.91 FT MLLW).

MONUMENT LIST:

#	NAME	EASTING	NORTHING	ELEV.
1	5B	977508.590	431028.808	12.857
2	6A	978707.182	430540.987	12.119
3	7	979160.410	430337.900	13.670

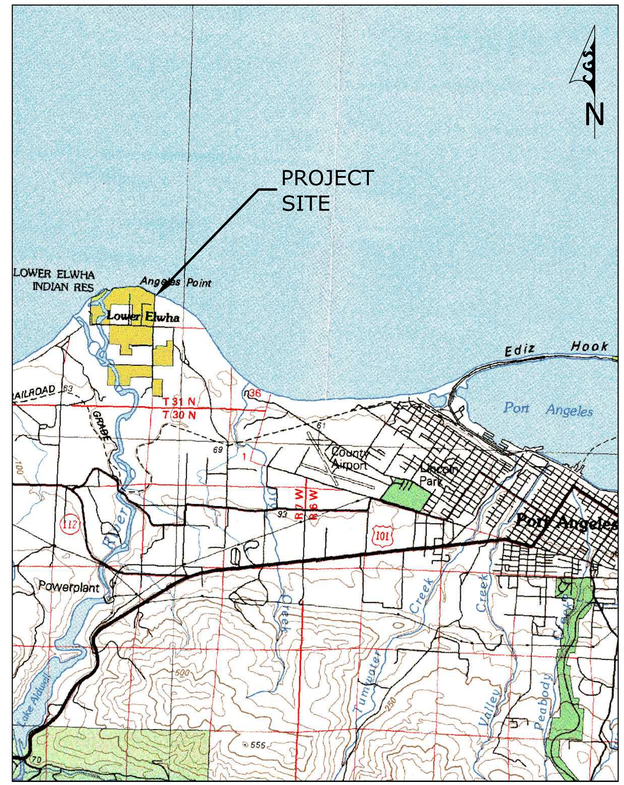
MONUMENT MAP / ADJACENT PARCEL MAP / AREIAL PHOTO:



ADJACENT PROPERTY OWNERS

	PARCEL #	NAME	ADDRESS
A	073126310200	MALCOME & PHOEBE MOORE	796 NW CULBERTSON DR, SEATTLE, WA 98177
B	073135220030	WINSTON & WALTER WADDELL	168 WASANKARU RD, PORT ANGELES, WA 98363
C	073135220020	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD
D	073127RES299	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD
E	073127440060	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD
F	073127440050	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD
G	073127440040	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD
H	073127440000	NO ASSESSOR RECORD (LEKT)	NO ASSESSOR RECORD

LOCATION AND VICINITY MAP:



SITE ADDRESS:
2646 Lower Elwha Rd
Port Angeles WA 98363

DRIVING DIRECTIONS:
From Port Angeles take 101 west-bound to right turn on S Airport Rd. In 0.6 mi. turn left on W Edgewood Dr. In 1.7 mi. turn right on Lower Elwha Rd. In 0.8 mi. turn left on Kacee Way, which becomes Stratton Rd. Follow Kacee/Stratton onto the lower delta for 2.1 mi. to T-intersection. Go right on Lower Elwha Rd and take first driveway on left to the Beach Lake project site.
To reach the Charles Road project site, go past the Beach Lake driveway for 0.4 miles and take right on Charles Road. Proceed on Charles Road for 0.4 miles to the beach.

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

SHEET INDEX:

#Sheet	Title
1	Cover Sheet- Vicinity Map
2	Existing Conditions - Overview
3	Existing Conditions - Detail A
4	Existing Conditions - Detail B
5	Existing Conditions - Detail C
6	Existing Conditions - Detail D
7	Temporary Sediment and Erosion Control, Staging, and Stockpile - East
8	Temporary Sediment and Erosion Control, Staging, and Stockpile - West
9	Temporary Sediment and Erosion Control Details
10	Proposed Conditions - Rock Removal Area
11	Proposed Conditions - Rock Placement Plan
12	Proposed Conditions - Cross Sections

GENERAL NOTES:

1. Project activities shall not occur when the work area is inundated by tidal waters.
2. Work during holidays, weekends, and outside the normal work hours requires prior arrangements and approval.
3. Contractor must obtain appropriate permissions to encroach and work within any rights-of-way.
4. The contractor shall contact utility location service 48 hours prior to starting construction at 1-800-424-5555 or 811.
5. The contractor shall restore all private and public property disturbed by the project immediately after construction.
6. Contractor shall sweep and remove all debris tracked onto existing paved roads during all phases of construction.
7. The contractor shall keep records of deviations and forward to the project engineer.
8. Traffic control is to be maintained.
9. The contractor shall have on the job site a current tide chart for the duration of the project activities.
10. A copy of the approved plans must be on the job site whenever construction is in process.
11. Location of utilities was not determined prior to project design.
12. Vegetable-based hydraulic fluid shall be used whenever possible.
13. All equipment shall be cleaned prior to transport to the project site.

ABBREVIATIONS:

CGS	COASTAL GEOLOGIC SERVICES
LEKT	LOWER ELWHA KLALLAM TRIBE
EX	EXISTING FEATURE
ELEV	ELEVATION
MHHW	MEAN HIGHER HIGH WATER
MLLW	MEAN LOWER LOW WATER
MON	MONUMENT
OHWM	ORDINARY HIGH WATER MARK
LF	LINEAR FEET
SF	SQUARE FEET
CY	CUBIC YARDS
TYP.	TYPICAL
MIN.	MINIMUM
MAX.	MAXIMUM
CONC	CONCRETE
EOP	EDGE OF PAVEMENT
LWD	LARGE WOODY DEBRIS

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REVISIONS

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DESIGNED BY: ACB
CHECKED BY: ACB
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SURVEYED BY: JFW

Elwha Shoreline Armor Removal
Cover Sheet

Coastal Watershed Institute
coastalwatershedinstitute.org

Coastal Watershed Institute
www.coastalwatershedinstitute.org

NAVD 88
MLLW=0.00
MHHW=7.00
NAVD88=-0.32

SCALE: AS SHOWN
DATE: 6/8/2016
SHEET: 1
OF: 12

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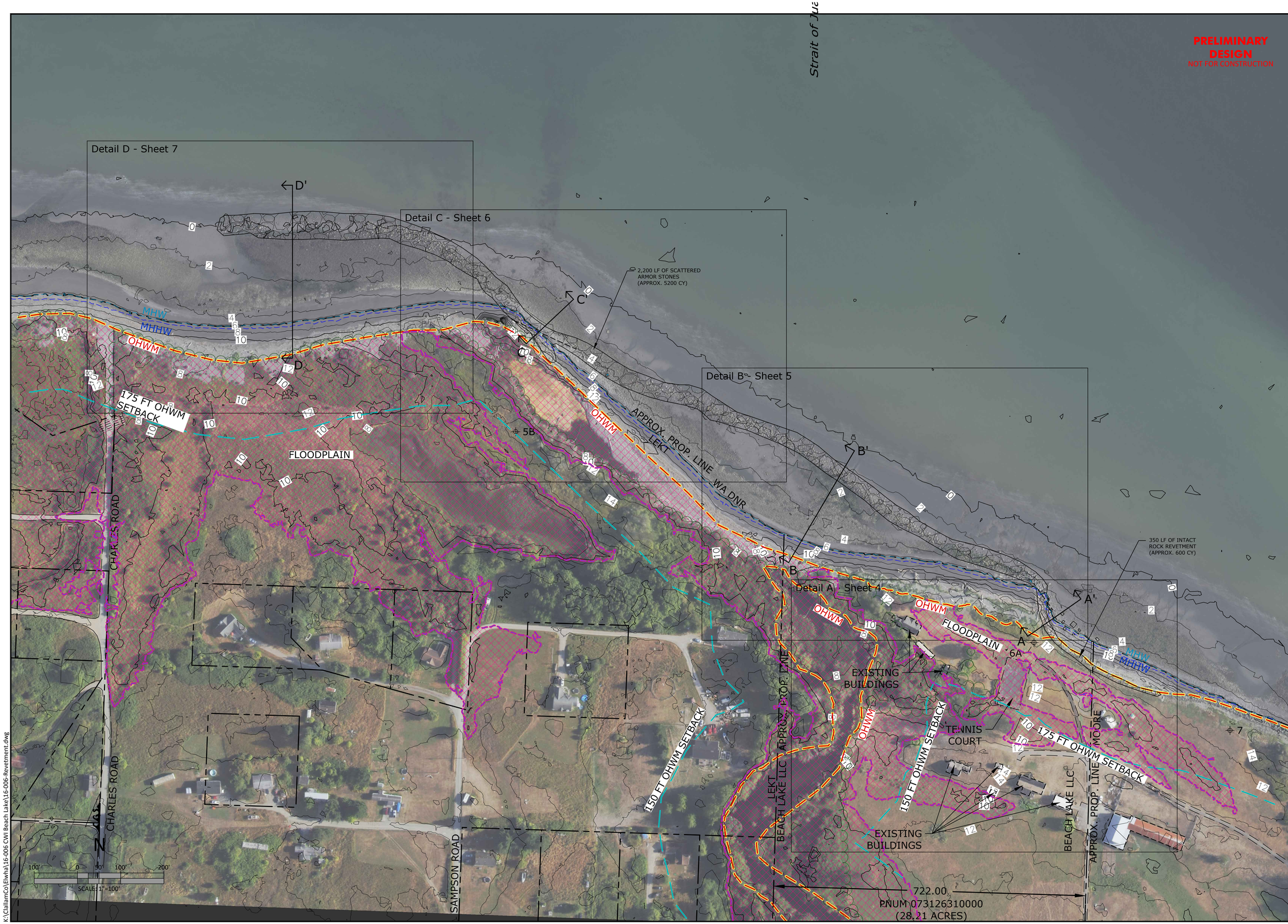

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Elwha Shoreline Armor Removal
Existing Conditions

overview
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MLLW=0.00
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NAVD88=-0.32

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Elwha Shoreline Armor Removal
Existing Conditions

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NAVD88=-0.32

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OF: 12

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Existing Conditions

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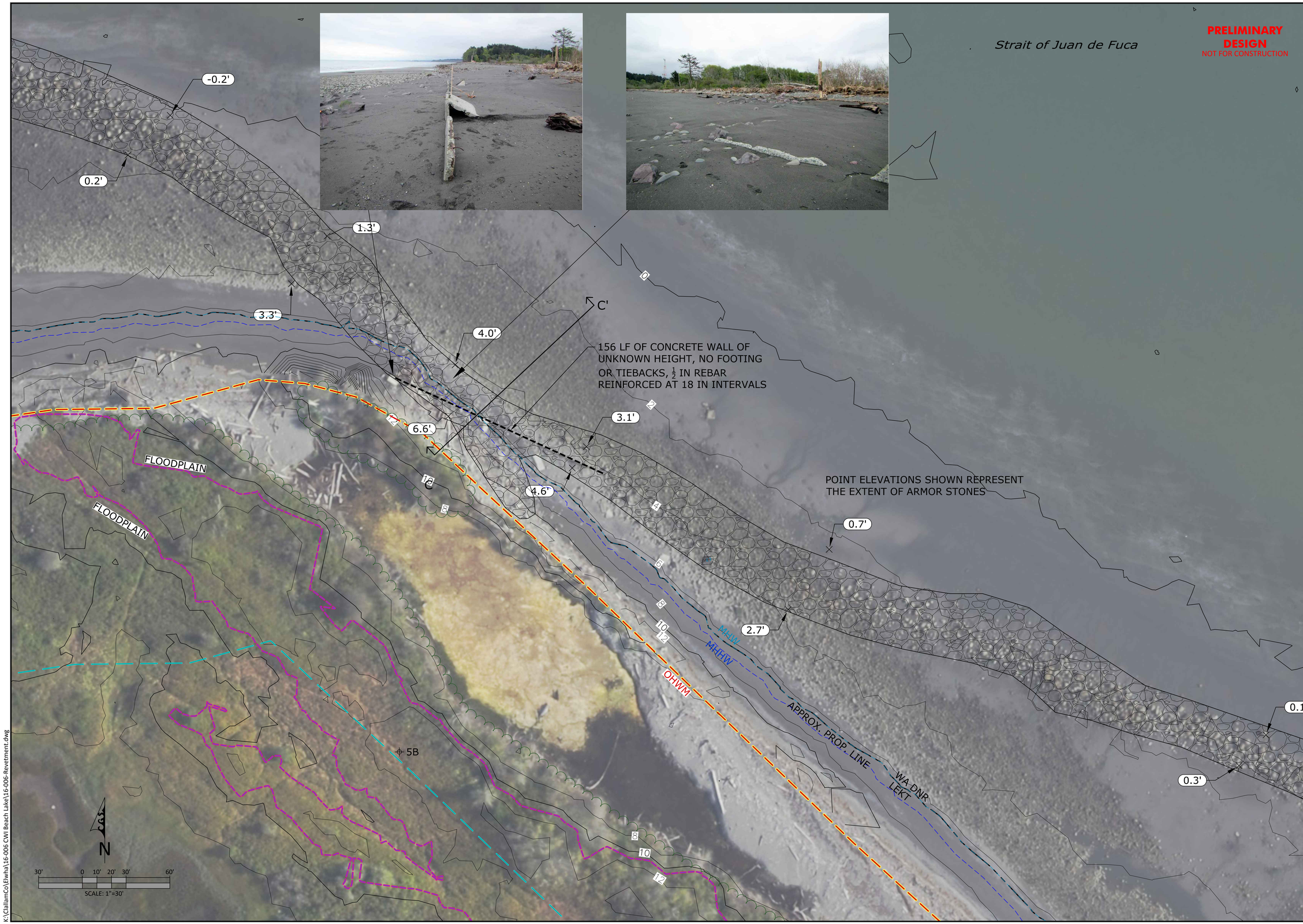
SCALE: AS SHOWN
DATE: 6/8/2016
SHEET: 4
OF: 12



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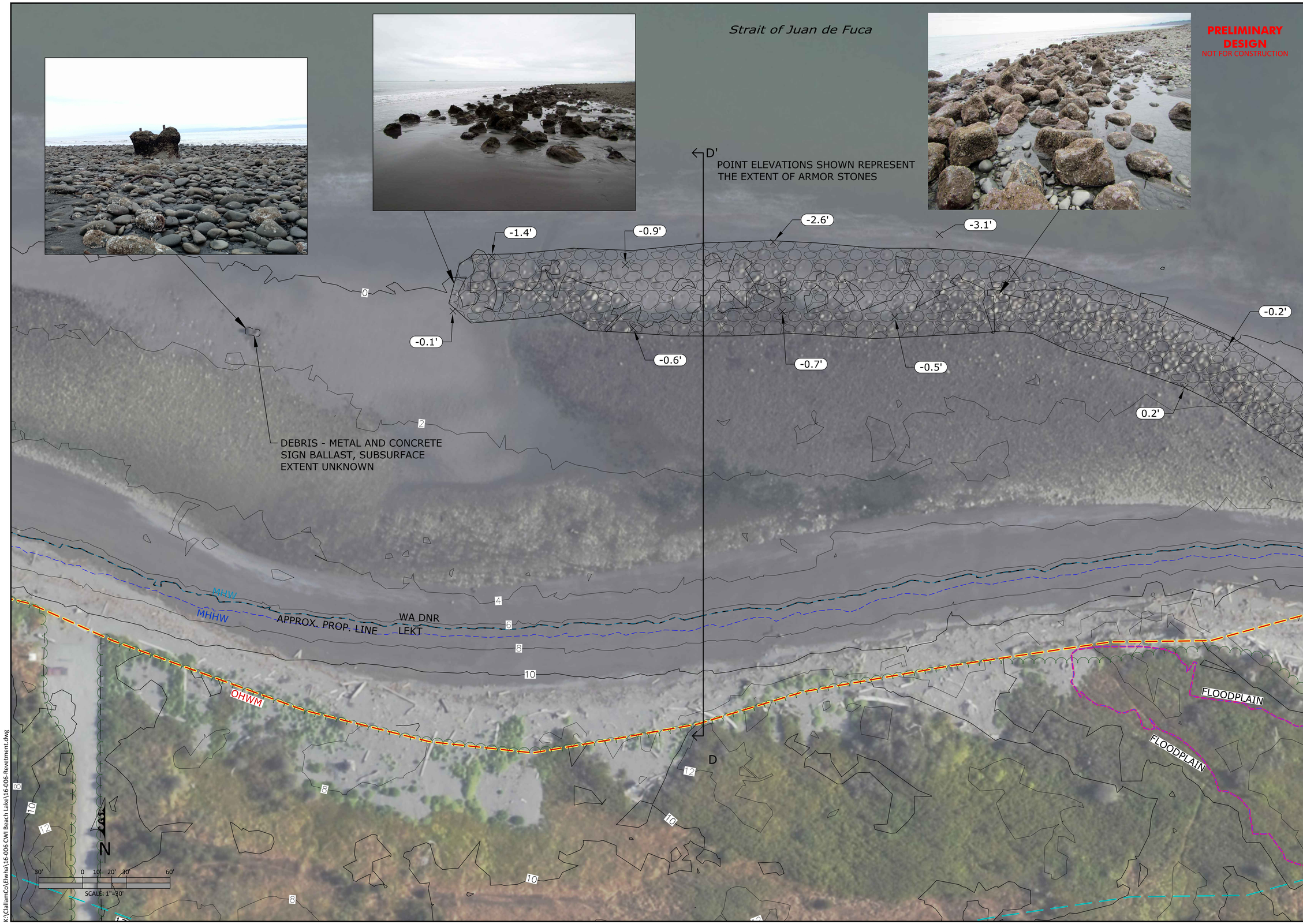
OF:12



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Existing Conditions

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NAVD88=-0.32

SCALE: AS SHOWN

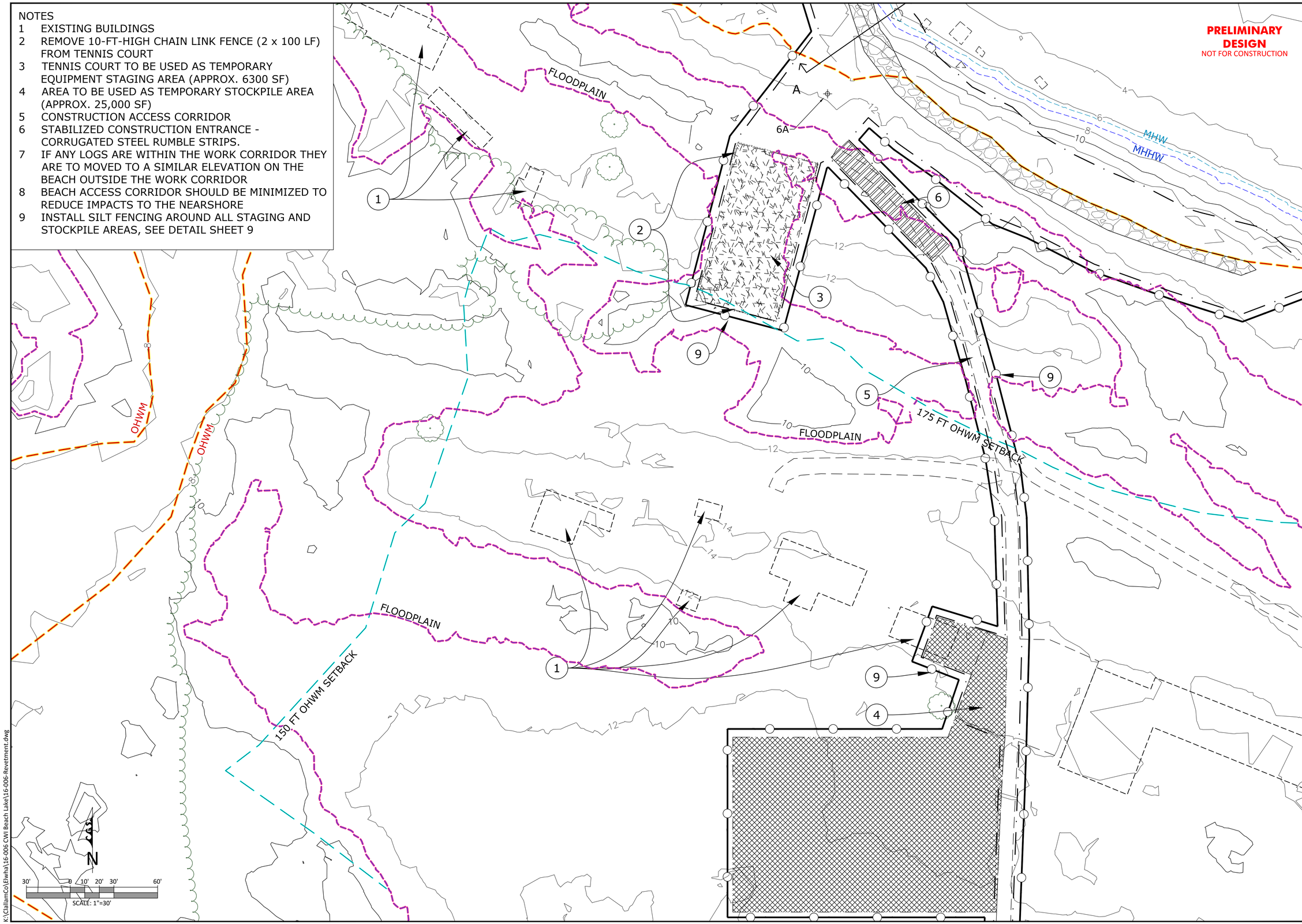
DATE: 6/8/2016

SHEET:

6

OF: 12

NOTES
1 EXISTING BUILDINGS
2 REMOVE 10-FT-HIGH CHAIN LINK FENCE (2 x 100 LF) FROM TENNIS COURT
3 TENNIS COURT TO BE USED AS TEMPORARY EQUIPMENT STAGING AREA (APPROX. 6300 SF)
4 AREA TO BE USED AS TEMPORARY STOCKPILE AREA (APPROX. 25,000 SF)
5 CONSTRUCTION ACCESS CORRIDOR
6 STABILIZED CONSTRUCTION ENTRANCE - CORRUGATED STEEL RUMBLE STRIPS.
7 IF ANY LOGS ARE WITHIN THE WORK CORRIDOR THEY ARE TO MOVED TO A SIMILAR ELEVATION ON THE BEACH OUTSIDE THE WORK CORRIDOR
8 BEACH ACCESS CORRIDOR SHOULD BE MINIMIZED TO REDUCE IMPACTS TO THE NEARSHORE
9 INSTALL SILT FENCING AROUND ALL STAGING AND STOCKPILE AREAS, SEE DETAIL SHEET 9



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Elwha Shoreline Armor Removal
Temporary Sediment and Erosion Control, Staging, and Stockpile
East Access
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DATUM
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NAVD88=-0.32

SCALE: AS SHOWN
DATE: 6/8/2016
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OF: 12

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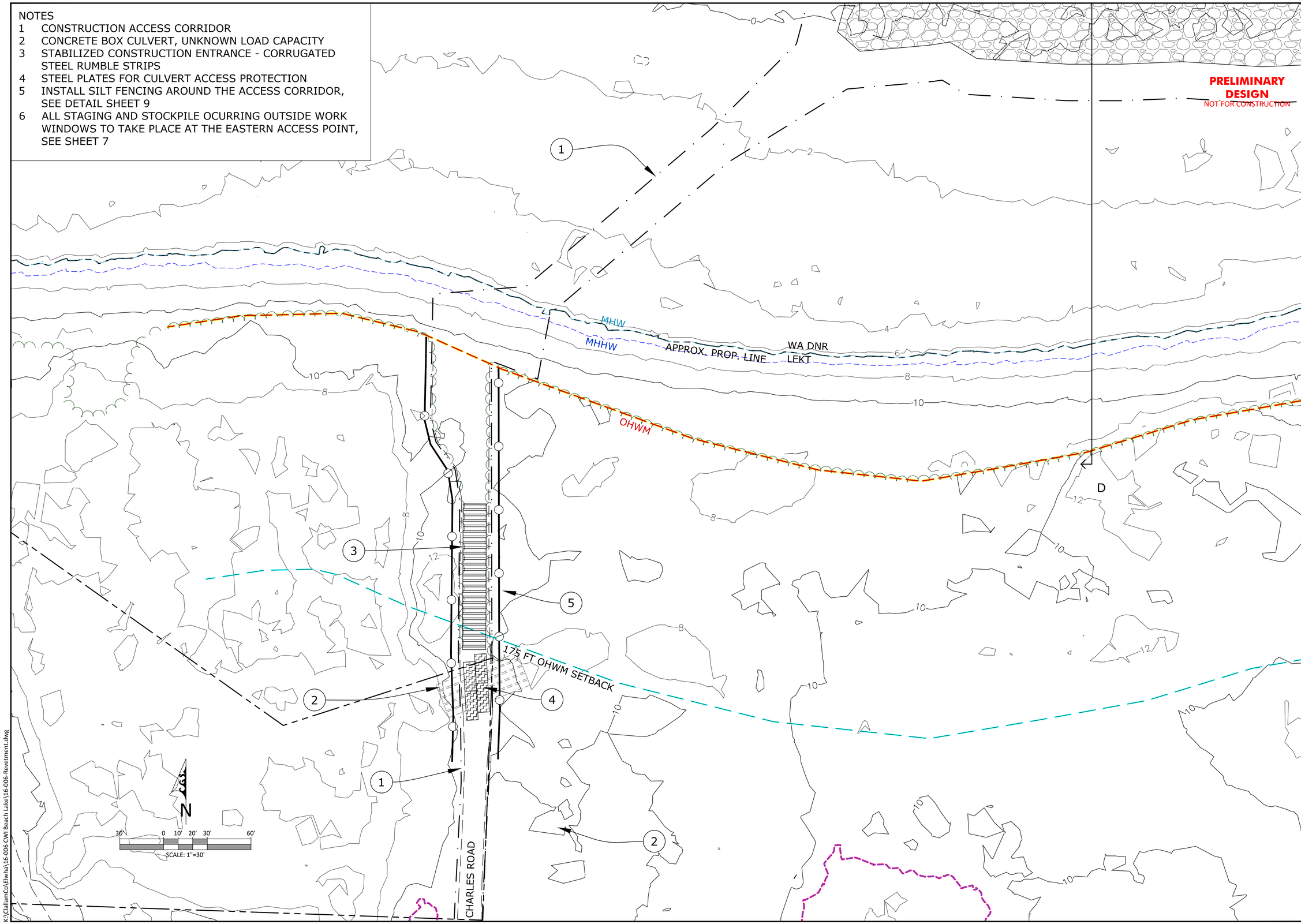
NOTES
1 CONSTRUCTION ACCESS CORRIDOR
2 CONCRETE BOX CULVERT, UNKNOWN LOAD CAPACITY
3 STABILIZED CONSTRUCTION ENTRANCE - CORRUGATED STEEL RUMBLE STRIPS
4 STEEL PLATES FOR CULVERT ACCESS PROTECTION
5 INSTALL SILT FENCING AROUND THE ACCESS CORRIDOR, SEE DETAIL SHEET 9
6 ALL STAGING AND STOCKPILE OCURRING OUTSIDE WORK WINDOWS TO TAKE PLACE AT THE EASTERN ACCESS POINT, SEE SHEET 7



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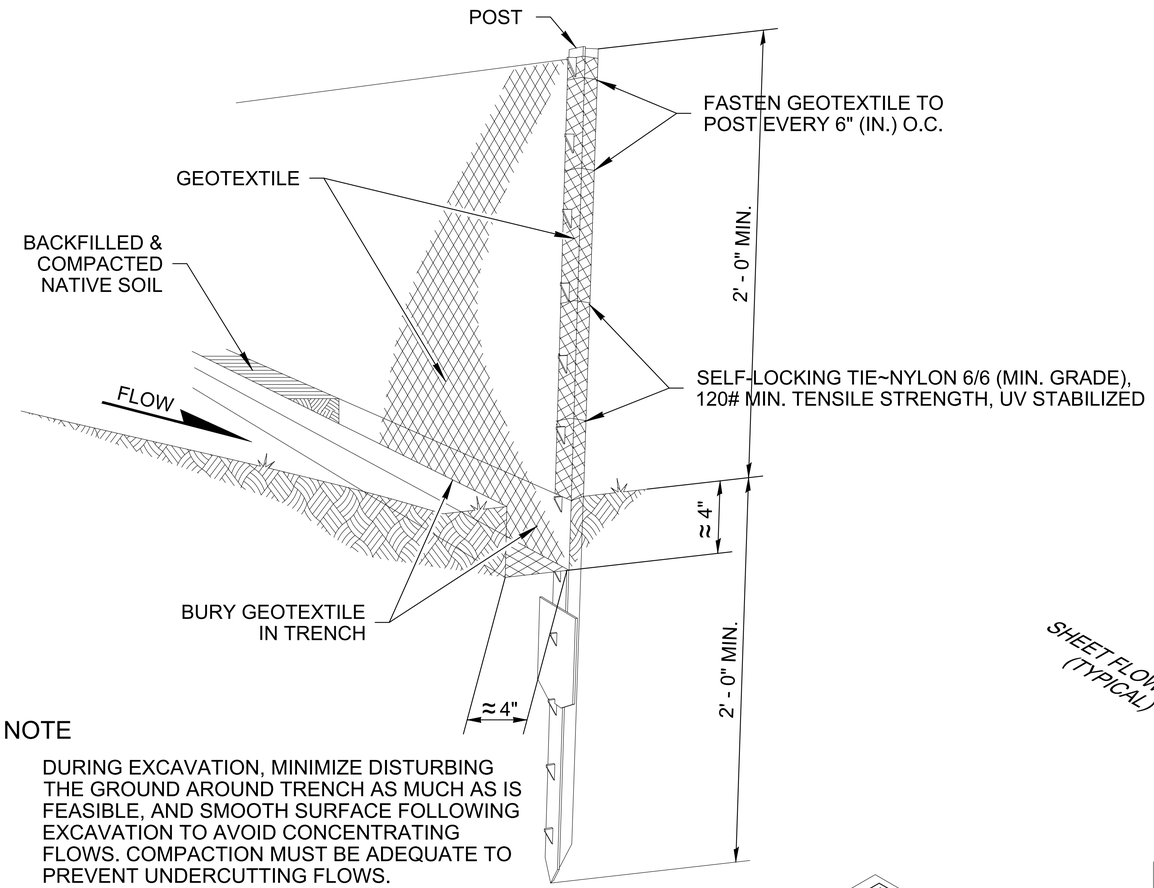


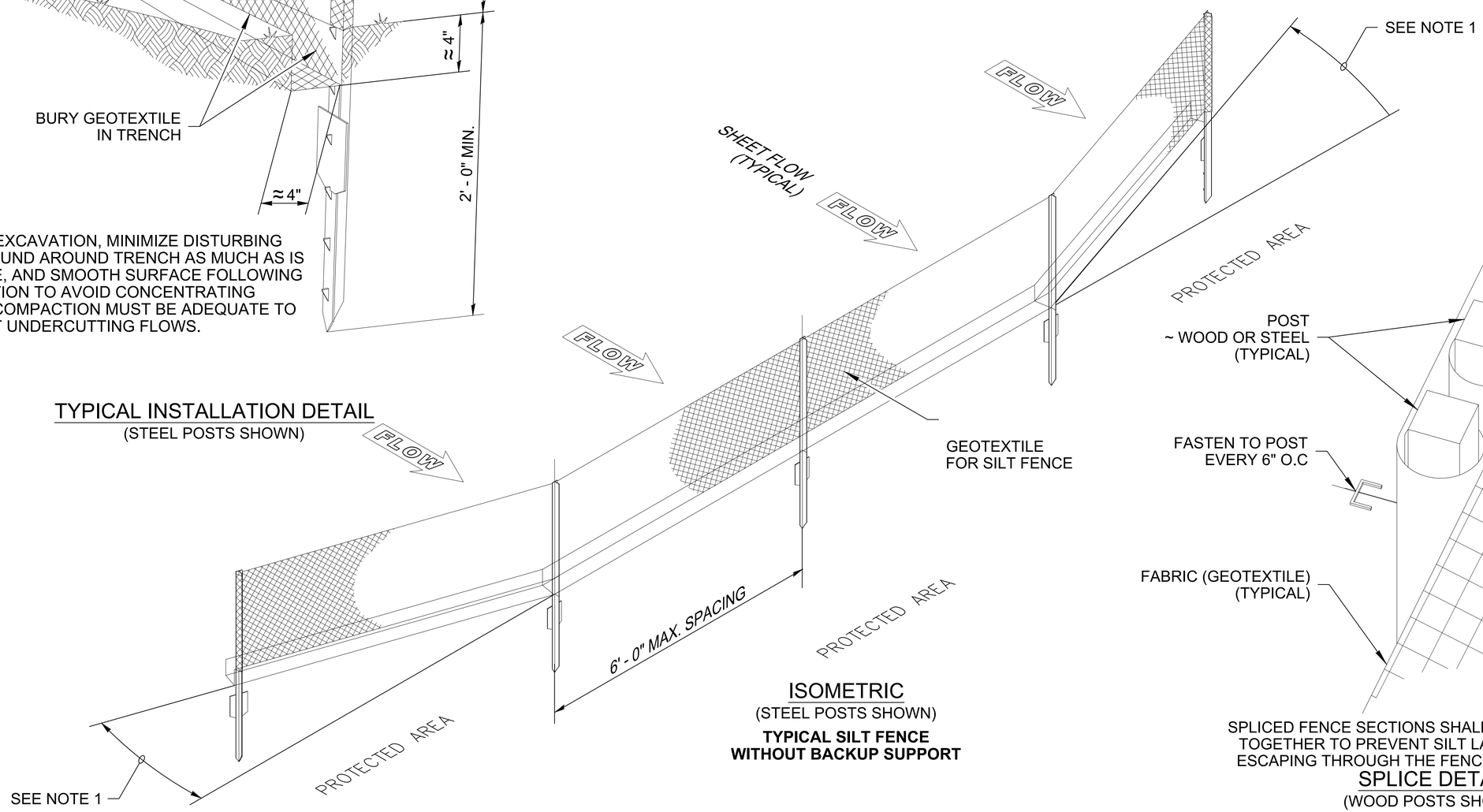
NOTE

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

TYPICAL INSTALLATION DETAIL
(STEEL POSTS SHOWN)

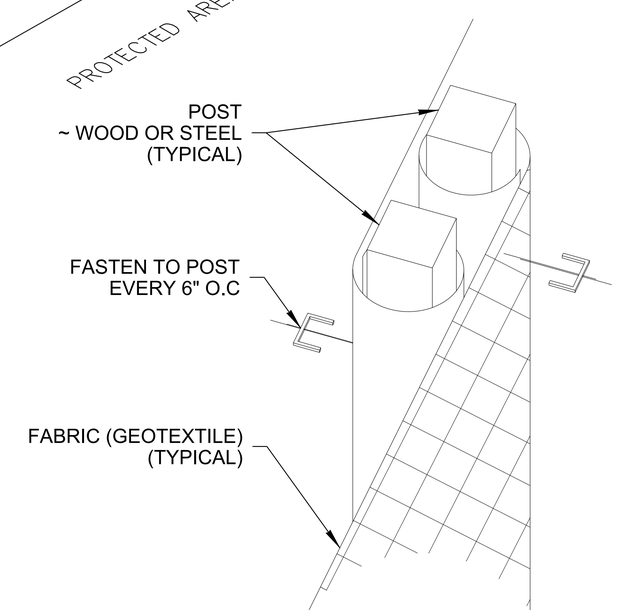
NOTES

1. Install the ends of the silt fence to point slightly upslope to prevent sediment from flowing around the ends of the fence.
2. Contractor shall maintain silt fencing.
3. Splices shall never be placed in low spots or sump locations. If splices are located in low or sump areas, the fence may need to be reinstalled unless the Project Engineer approves the installation.
4. Install silt fencing parallel to mapped contour lines.



ISOMETRIC
(STEEL POSTS SHOWN)

TYPICAL SILT FENCE WITHOUT BACKUP SUPPORT



SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

SPLICE DETAIL
(WOOD POSTS SHOWN)

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Elwha Shoreline Armor Removal
Temporary Sediment and Erosion Control, Staging, and Stockpile
Temporary Sediment and Erosion Control - Site Plan
Coastal Watershed Institute
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MLLW=0.00
MHHW=7.00
NAVD88=-0.32

SCALE: AS SHOWN
DATE: 6/8/2016
SHEET: 9
OF: 12

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NOTES:
1 REMOVE EXISTING ROCK.
2 REMOVE EXISTING CONCRETE DEBRIS.
3 REMOVE EXISTING SIGN DEBRIS.
4 MAINTAIN 5 FOOT ROCK REMOVAL BUFFER FROM PROPERTY LINE.

PRELIMINARY DESIGN
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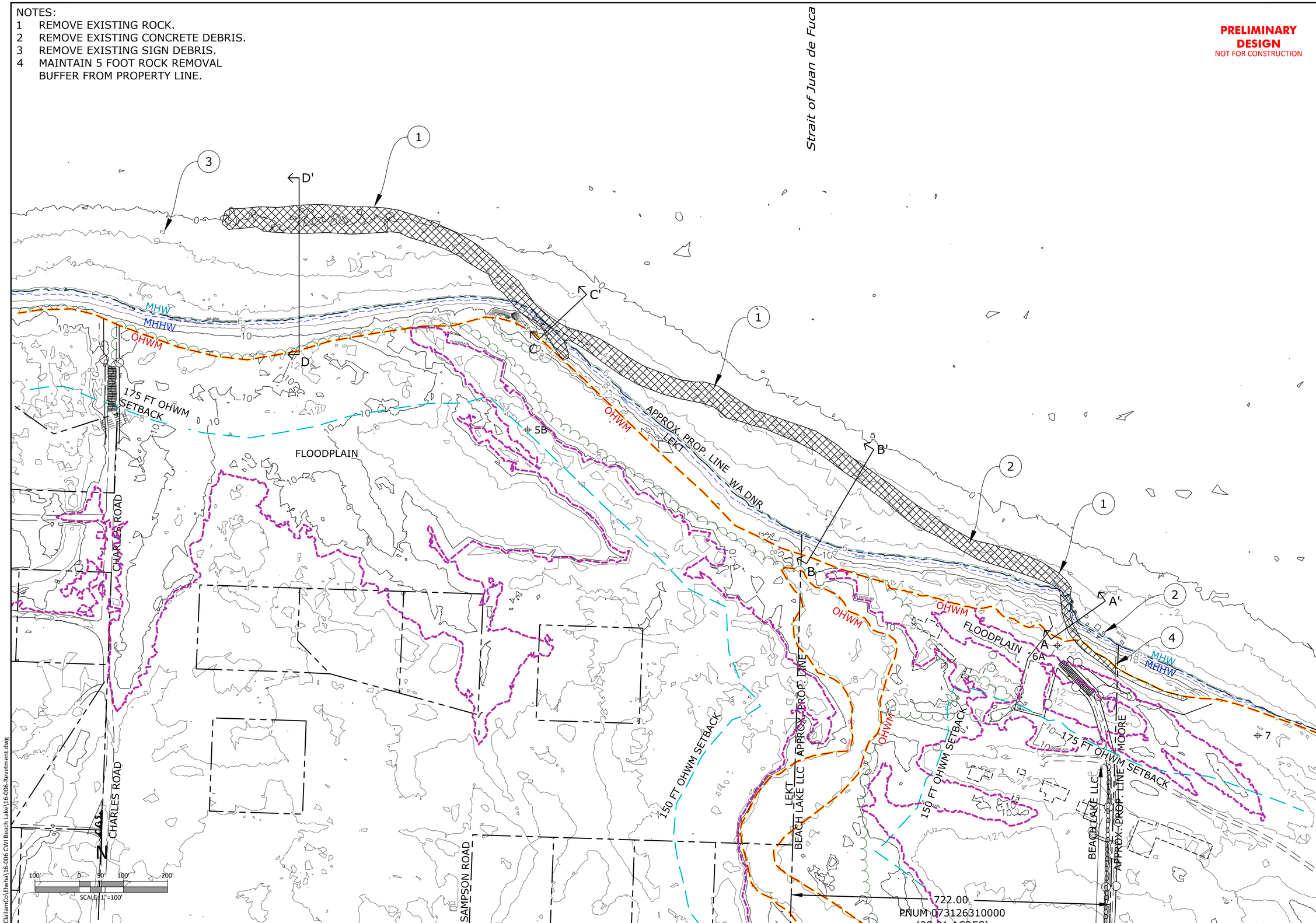

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Elwha Shoreline Armor Removal
Proposed Conditions
Rock Removal Area
Coastal Watershed Institute
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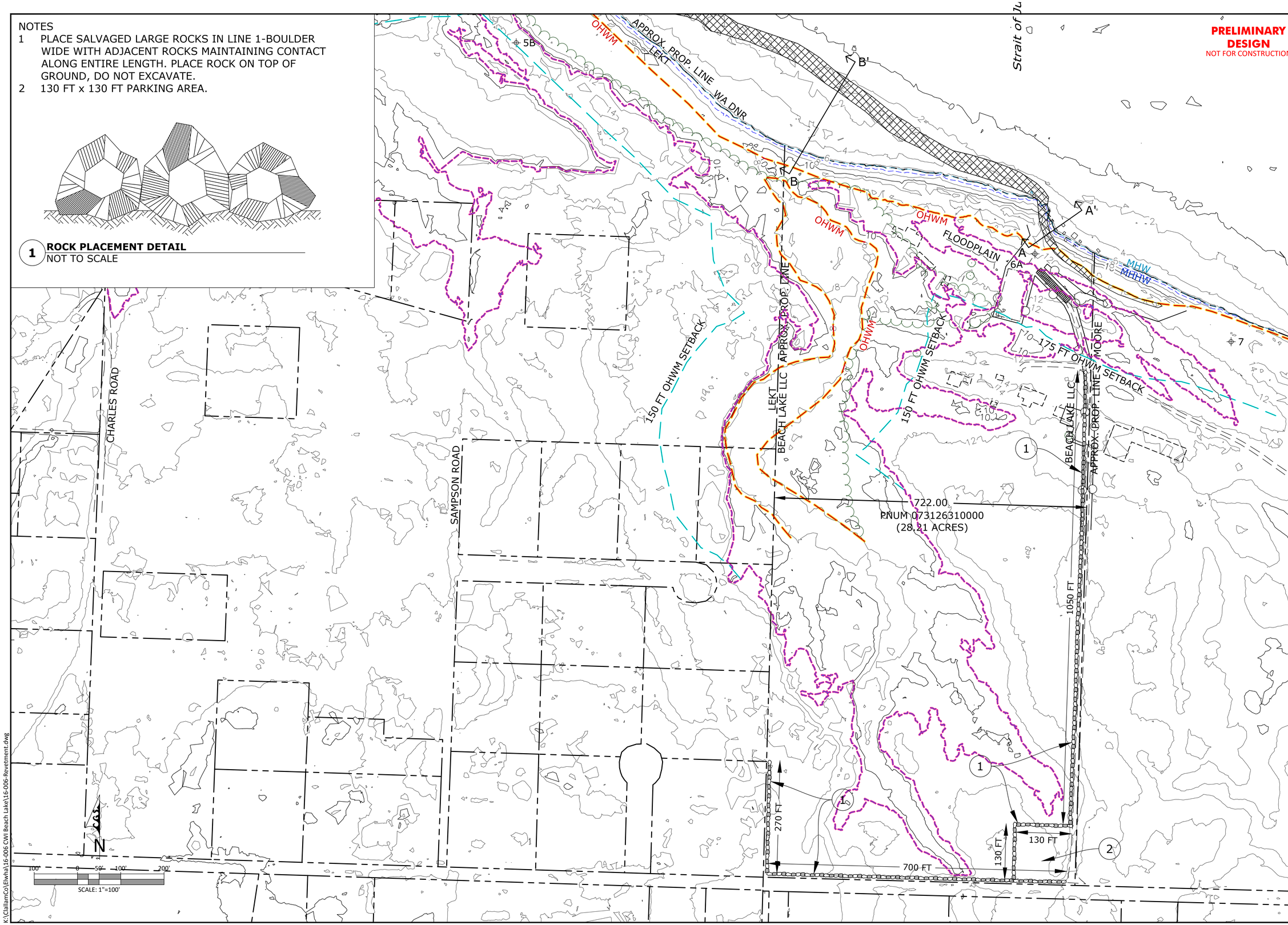
10
OF:12

NOTES

1 PLACE SALVAGED LARGE ROCKS IN LINE 1-BOULDER WIDE WITH ADJACENT ROCKS MAINTAINING CONTACT ALONG ENTIRE LENGTH. PLACE ROCK ON TOP OF GROUND, DO NOT EXCAVATE.

2 130 FT x 130 FT PARKING AREA.

1 **ROCK PLACEMENT DETAIL**
NOT TO SCALE



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Proposed Conditions
Rock Placement Plan
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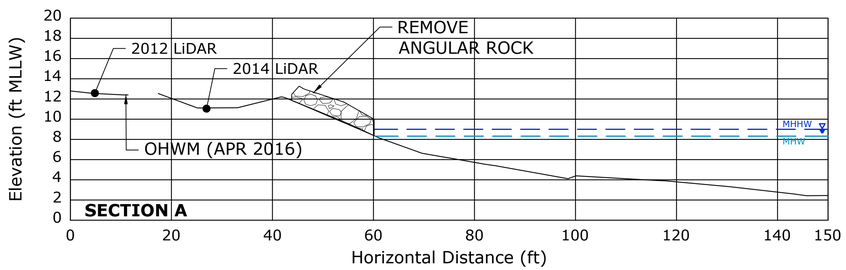

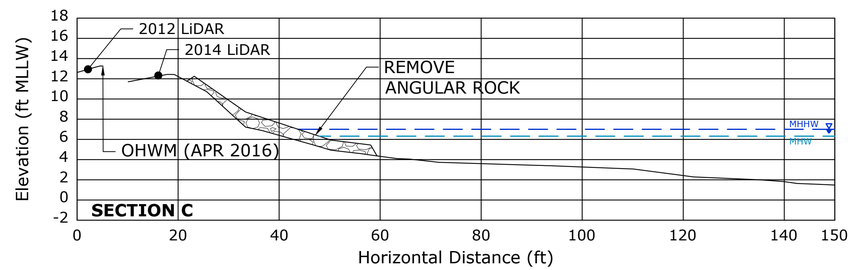

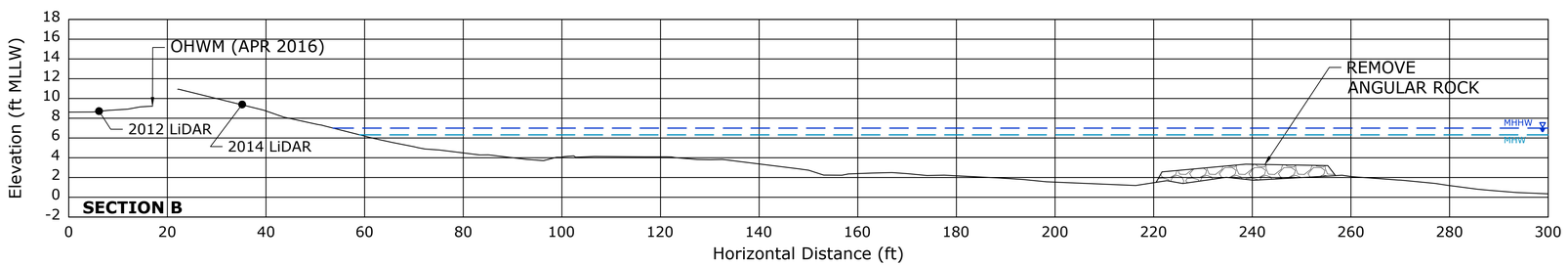

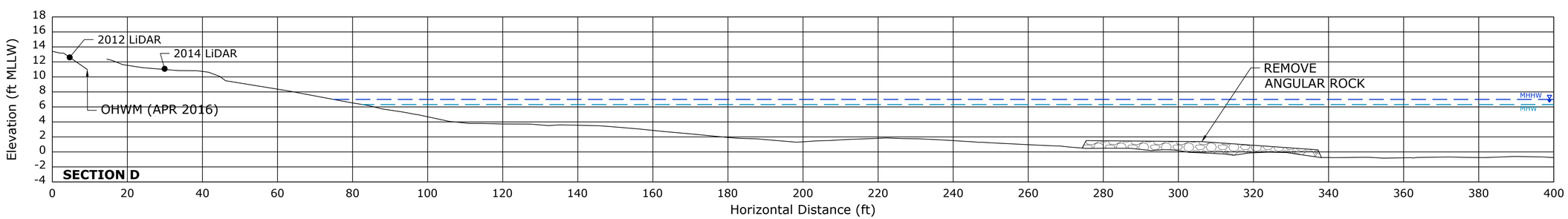

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