

Powel Bulkhead Removal

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Driving Directions

From Seattle-Bainbridge Island Ferry take WA State Highway 305 north six miles to NE Port Madison Road. Go east on NE Port Madison Road. After NE Port Madison Road becomes NE County Park Road, turn right onto Broom Street NE. Property is at the end of Broom Street NE.

PURPOSE: Bulkhead removal for beach restoration

DATUM: MLLW (MHHW = +11.4' MLLW)

ADJACENT PROPERTY OWNERS:

ERKA J NESIOLM
SUNNYBRANCH LLC

Powel Bulkhead Removal

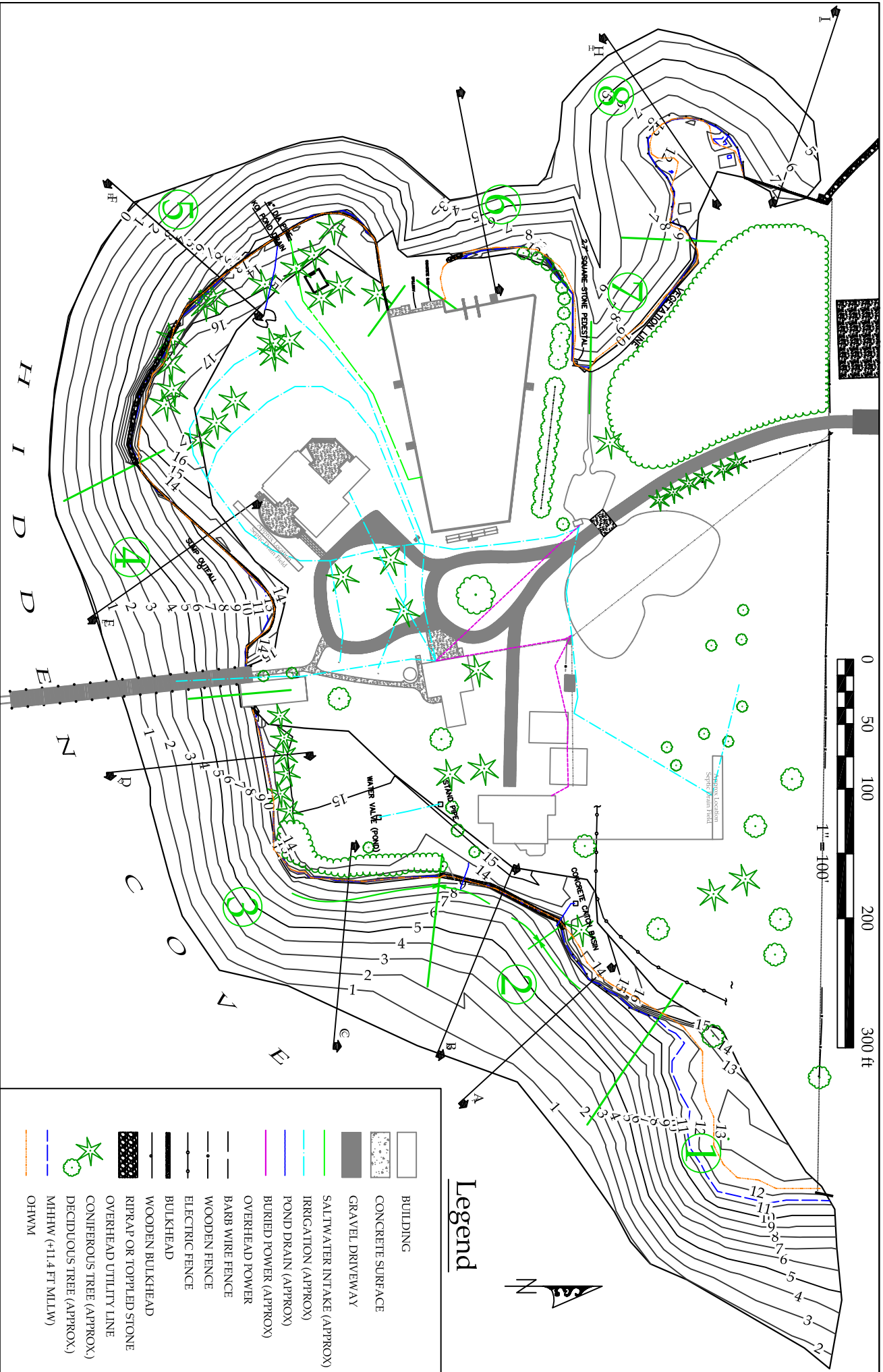
Vicinity Map

OWNER AND ADDRESS

Powel and Broom Street Preservation LLC
15254 and 15260 Broom Street NE
Bainbridge Island, WA 98110

COASTAL GEOLOGIC SERVICES

1711 Ellis St, suite 103
Bellingham, WA 98225
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1" = 100'

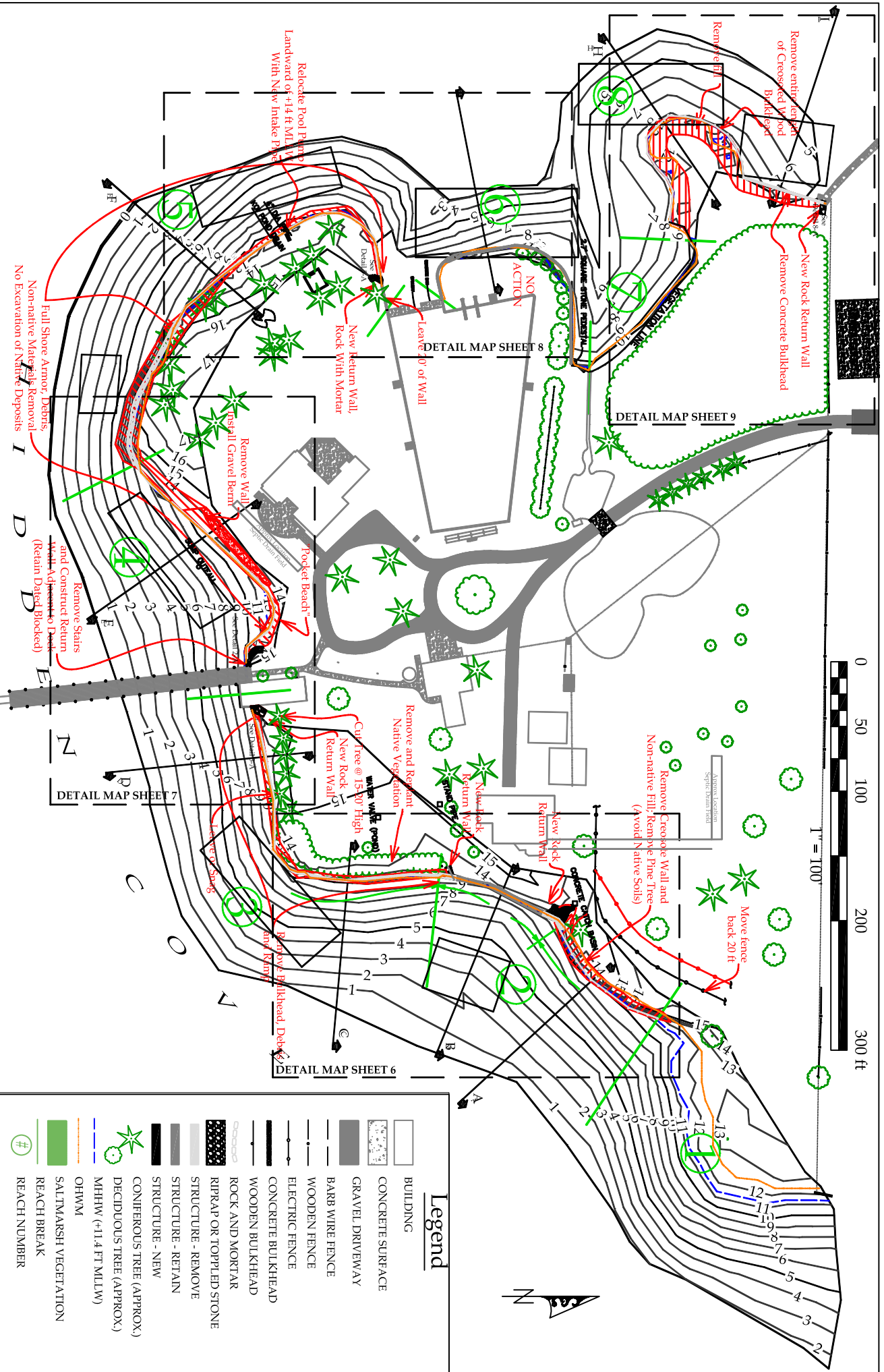


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**Powel Bulkhead Removal
Site Plan - Existing Conditions**
1" = 100'
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PROPOSED: Bulkhead removal for beach restoration
IN: Port Madison - Hidden Cove
COUNTY: Kitsap **STATE:** WA
APPLICATION BY: Bainbridge Island Land Trust



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**Powel Bulkhead Removal
Site Plan - Site Details and Proposed
Restoration Actions**
1" = 100'

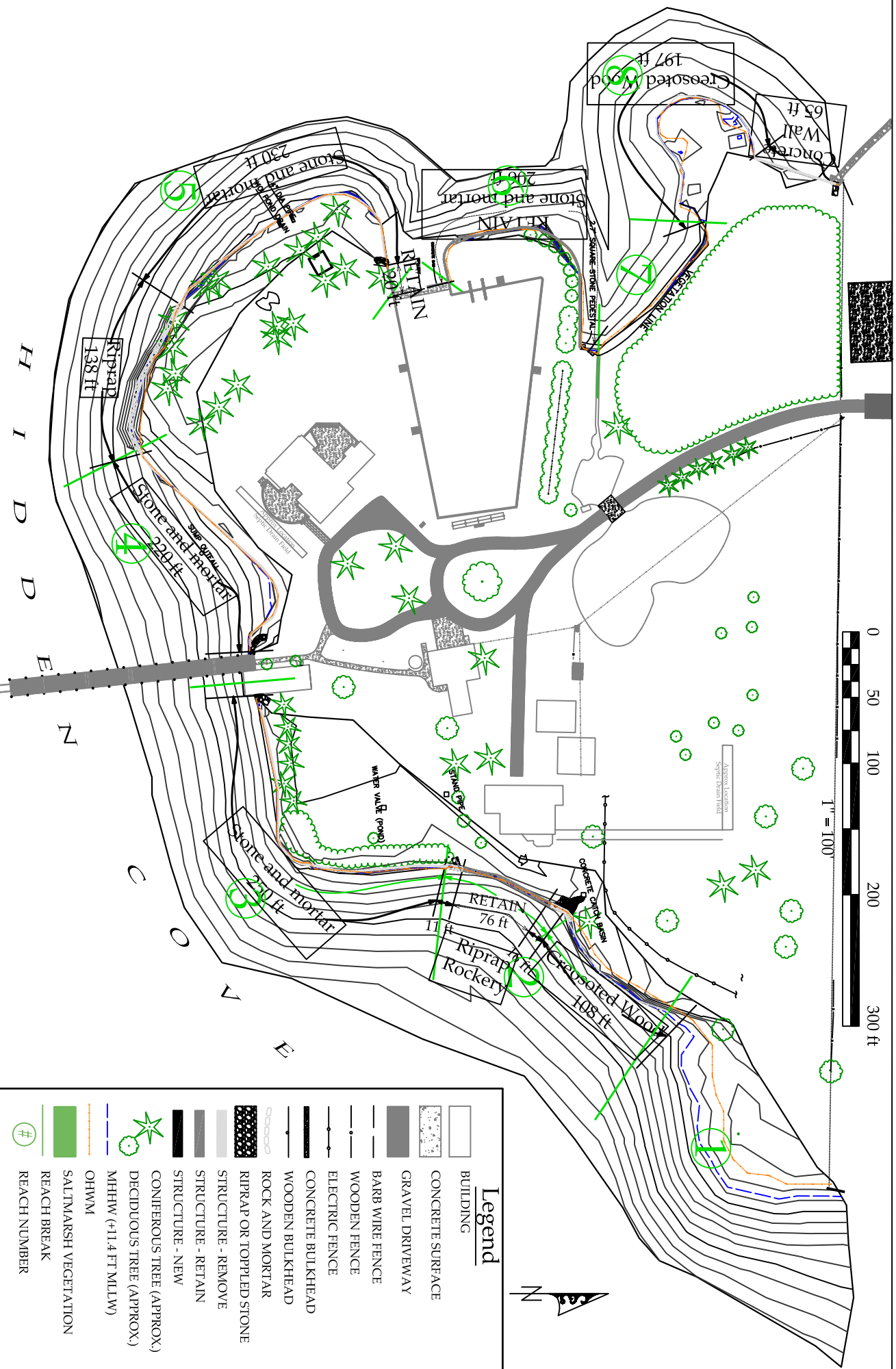
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Sheet 3 of 9

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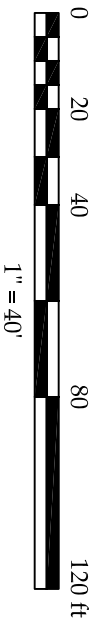
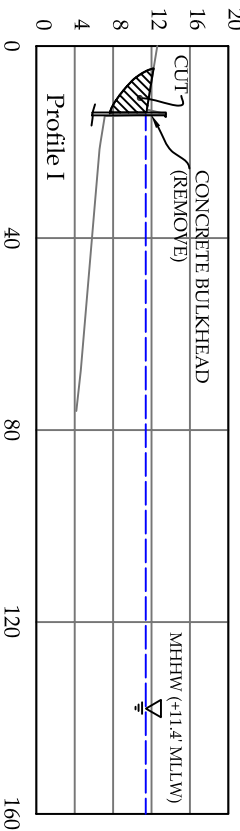
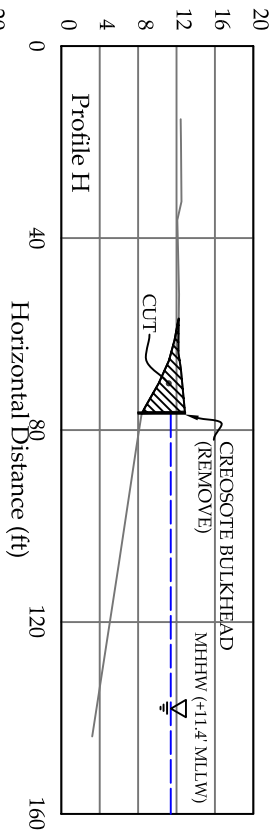
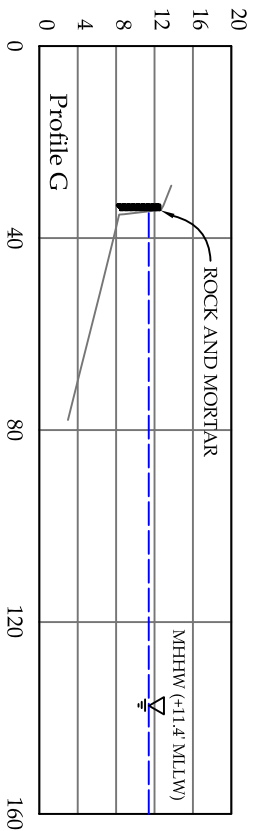
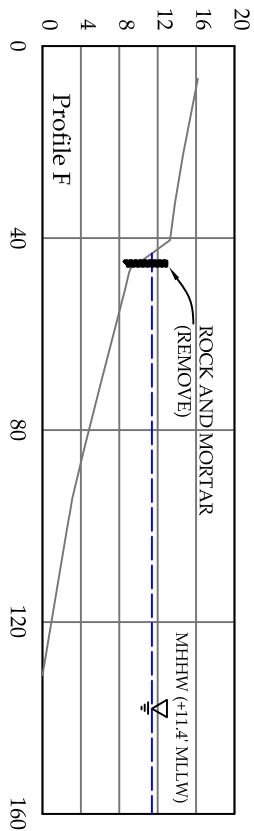
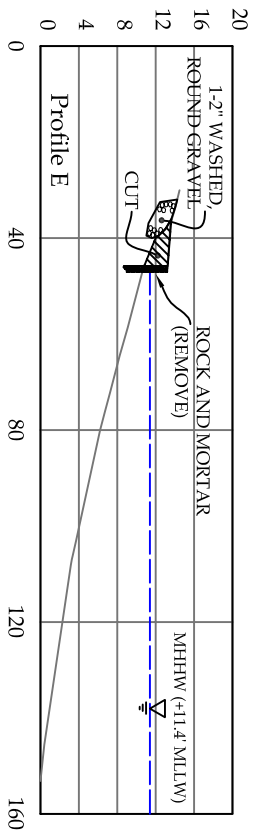
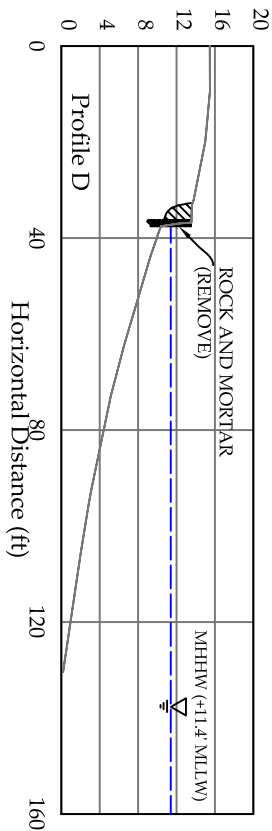
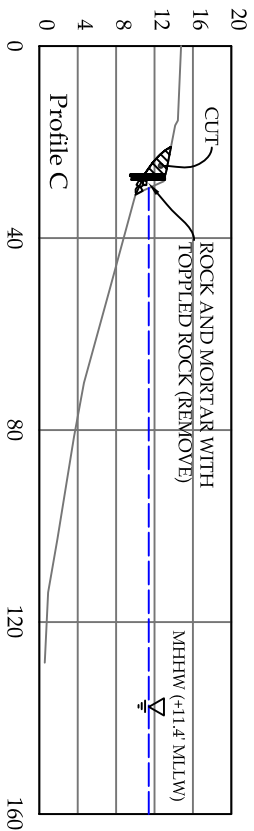
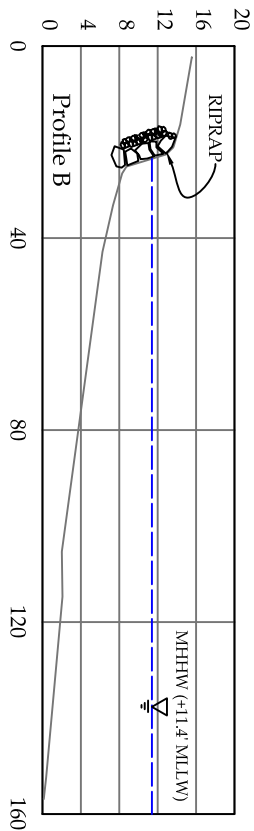
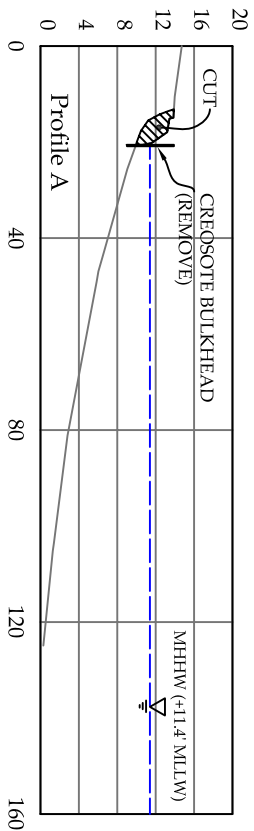
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**Powel Bulkhead Removal
Proposed Armor Removal**
1" = 100'
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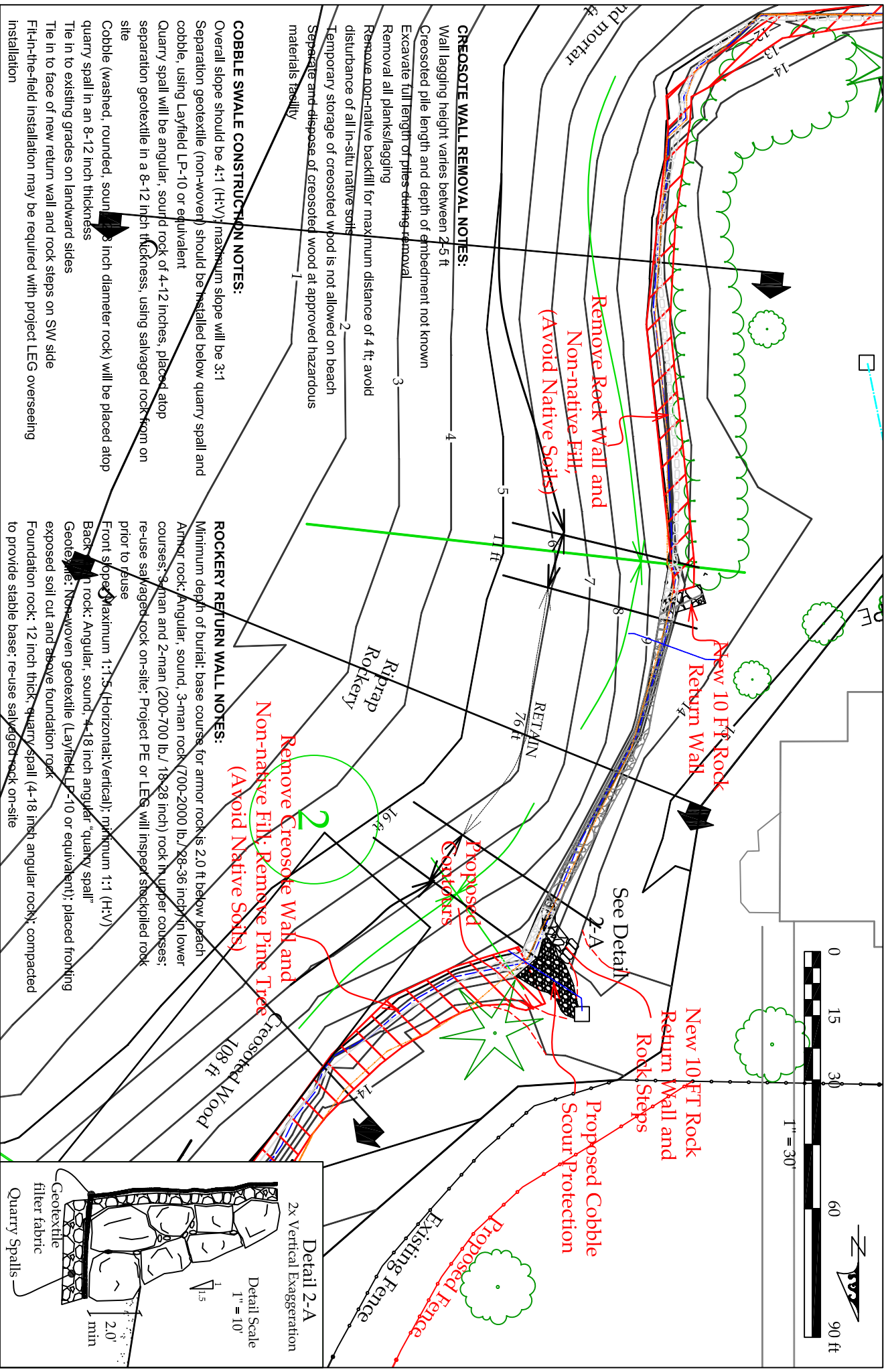


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Powel Bulkhead Removal Cross Sections
1"=40'
OWNER AND ADDRESS
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CREOSOTE WALL REMOVAL NOTES:

- Wall lagging height varies between 2-5 ft
- Creosoted pile length and depth of embedment not known
- Excavate full length of piles during removal
- Remove all plank/lagging
- Remove non-native backfill for maximum distance of 4 ft; avoid disturbance of all in-situ native soils
- Temporary storage of creosoted wood is not allowed on beach
- Separate and dispose of creosoted wood at approved hazardous materials facility

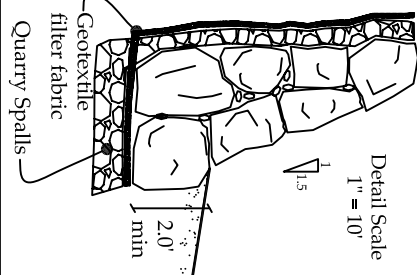
COBBLE SWALE CONSTRUCTION NOTES:

- Overall slope should be 4:1 (H:V); maximum slope will be 3:1
- Separation geotextile (non-woven) should be installed below quarry spall and cobble, using Layfield LP-10 or equivalent
- Quarry spall will be angular, sound rock of 4-12 inches, placed atop separation geotextile in a 8-12 inch thickness, using salvaged rock from on site
- Cobble (washed, rounded, sound, 8 inch diameter rock) will be placed atop quarry spall in an 8-12 inch thickness
- Tie in to existing grades on landward sides
- Tie in to face of new return wall and rock steps on SW side
- Fit-in-the-field installation may be required with project LEG overseeing installation

ROCKERY RETURN WALL NOTES:

- Minimum depth of burial; base course for armor rock is 2.0 ft below beach
- Armor rock: Angular, sound, 3-man rock (700-2000 lb./ 28-36 inch) in lower courses; 2-man and 2-man (200-700 lb./ 18-28 inch) rock in upper courses; re-use salvaged rock on-site; Project PE or LEG will inspect stockpiled rock prior to reuse
- Front slope: Maximum 1:1.5 (Horizontal:Vertical); minimum 1:1 (H:V)
- Back slope: Non-woven geotextile (Layfield LP-10 or equivalent); placed fronting exposed soil cut and above foundation rock
- Foundation rock: 12 inch thick, quarry spall (4-18 inch angular rock); compacted to provide stable base; re-use salvaged rock on-site

Detail 2-A
2x Vertical Exaggeration
Detail Scale
1" = 10'



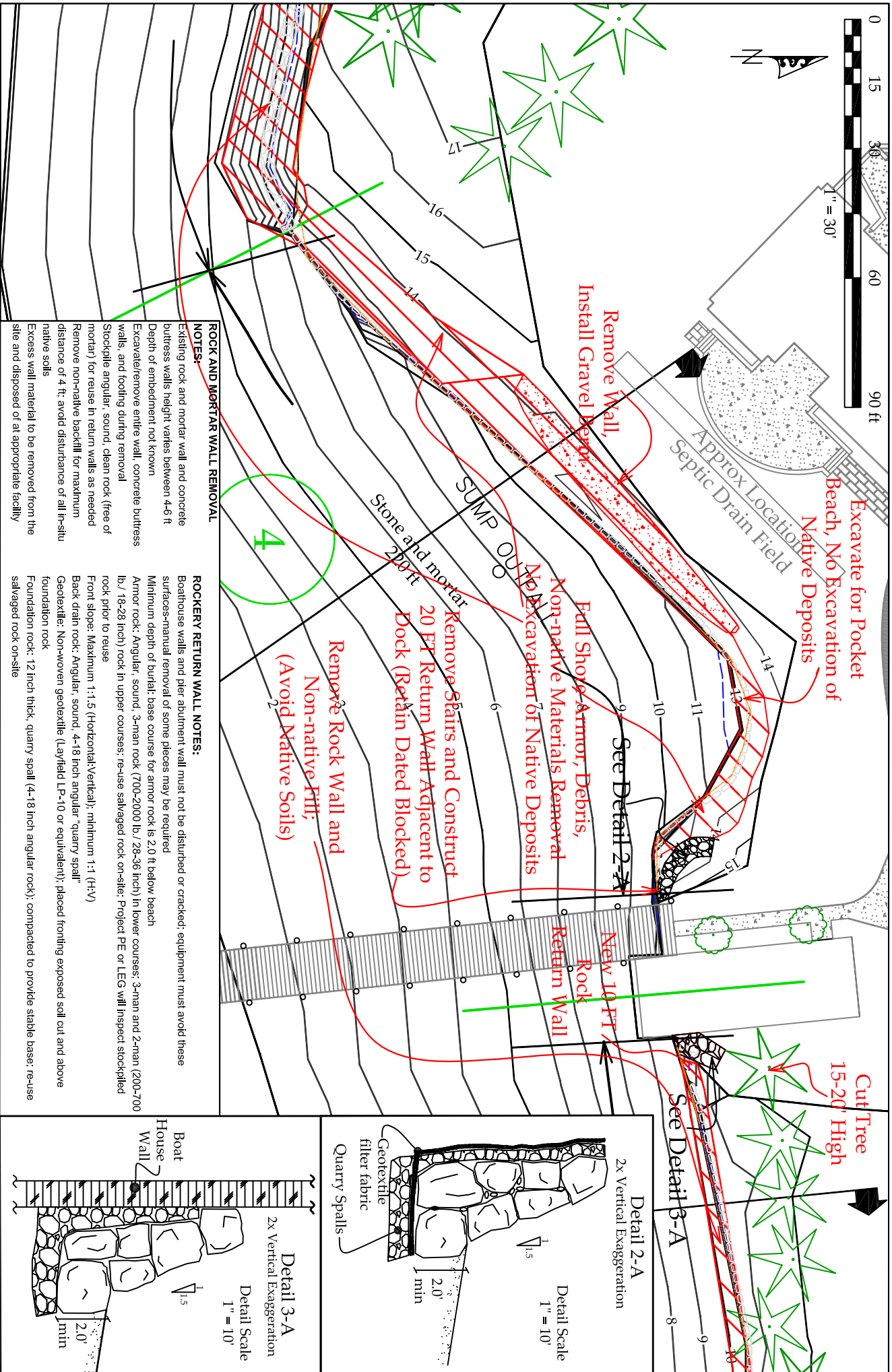
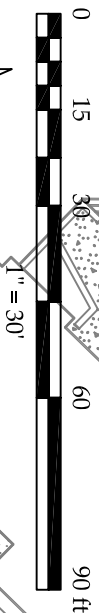
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**Powell Bulkhead Removal
Detail Map**

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IN: Port Madison - Hidden Cove
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ROCK AND MORTAR WALL REMOVAL NOTES:

Existing rock and mortar wall and concrete buttress walls height varies between 4-6 ft
Depth of embedment not known
Excavate/remove entire wall, concrete buttress walls, and footing during removal
Stockpile angular, sound, clean rock (free of mortar) for reuse in return walls as needed
Remove non-native backfill for maximum distance of 4 ft; avoid disturbance of all in-situ native soils
Excess wall material to be removed from the site and disposed of at appropriate facility

ROCKERY RETURN WALL NOTES:

Boathouse walls and pier abutment wall must not be disturbed or cracked; equipment must avoid these surfaces-manual removal of some pieces may be required
Minimum depth of burial: base course for armor rock is 2.0 ft below beach
Armor rock: Angular, sound, 3-man rock (700-2000 lb./ 28-36 inch) in lower courses; 3-man and 2-man (200-700 lb./ 18-28 inch) rock in upper courses; re-use salvaged rock on-site; Project PE or LEG will inspect stockpiled rock prior to reuse
Front slope: Maximum 1:1.5 (Horizontal:Vertical); minimum 1:1 (H:V)
Back drain rock: Angular, sound, 4-18 inch angular "quarry spall"
Geotextile: Non-woven geotextile (Layfield LP-10 or equivalent), placed fronting exposed soil cut and above foundation rock
Foundation rock: 12 inch thick, quarry spall (4-18 inch angular rock); compacted to provide stable base; re-use salvaged rock on-site

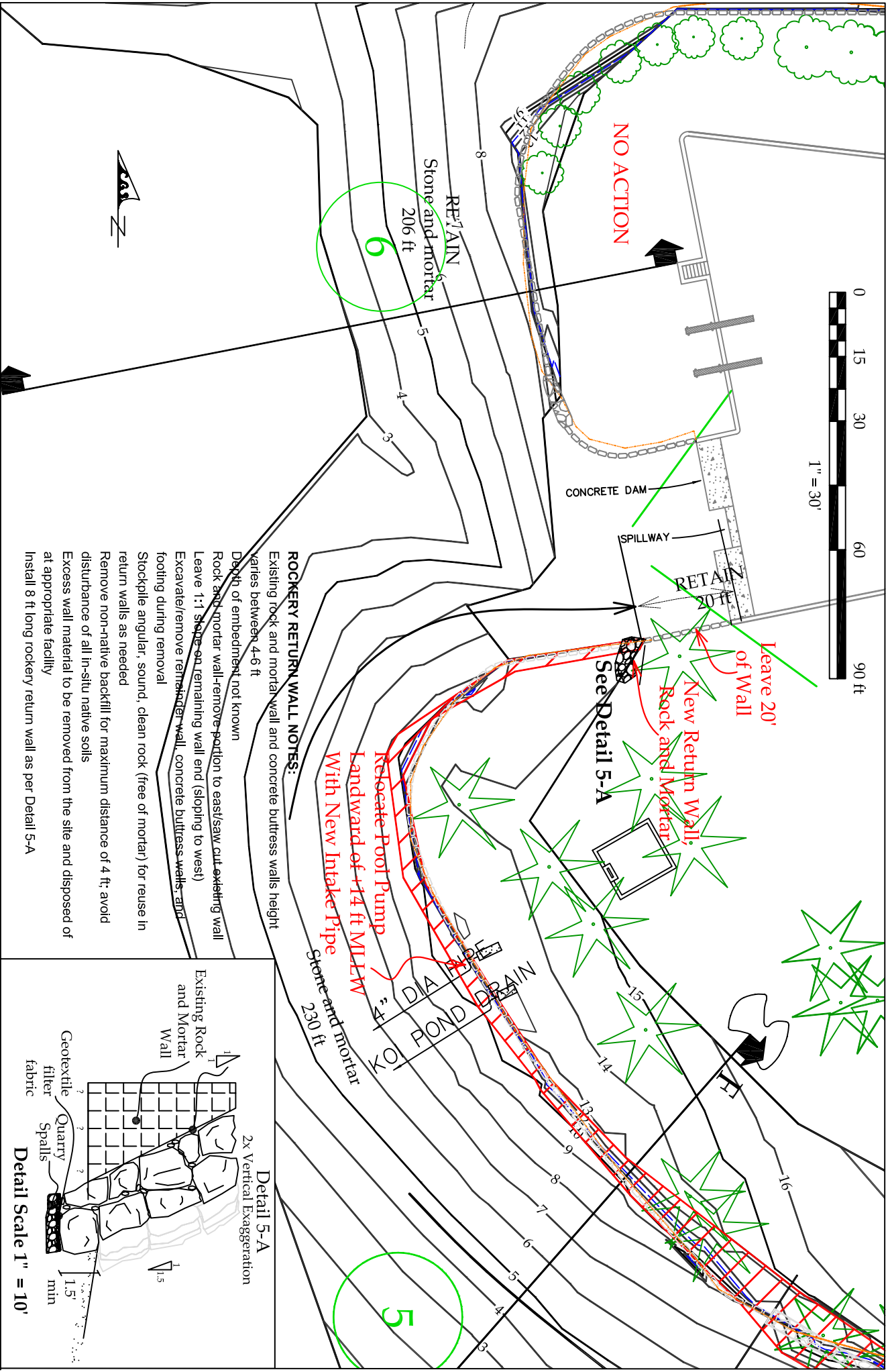
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Powel Bulkhead Removal Detail Map
1"=30'

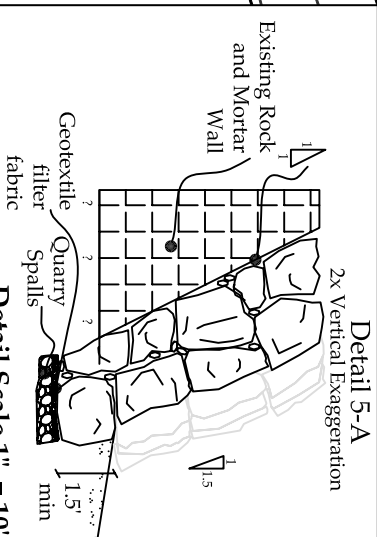
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ROCKERY RETURN WALL NOTES:
Existing rock and mortar wall and concrete buttress walls height varies between 4-6 ft
Depth of embedment not known
Rock and mortar wall-remove portion to east/saw cut existing wall
Leave 1:1 slope on remaining wall end (sloping to west)
Excavate/remove remainder wall, concrete buttress walls, and footing during removal
Stockpile angular, sound, clean rock (free of mortar) for reuse in return walls as needed
Remove non-native backfill for maximum distance of 4 ft; avoid disturbance of all in-situ native soils
Excess wall material to be removed from the site and disposed of at appropriate facility
Install 8 ft long rockery return wall as per Detail 5-A



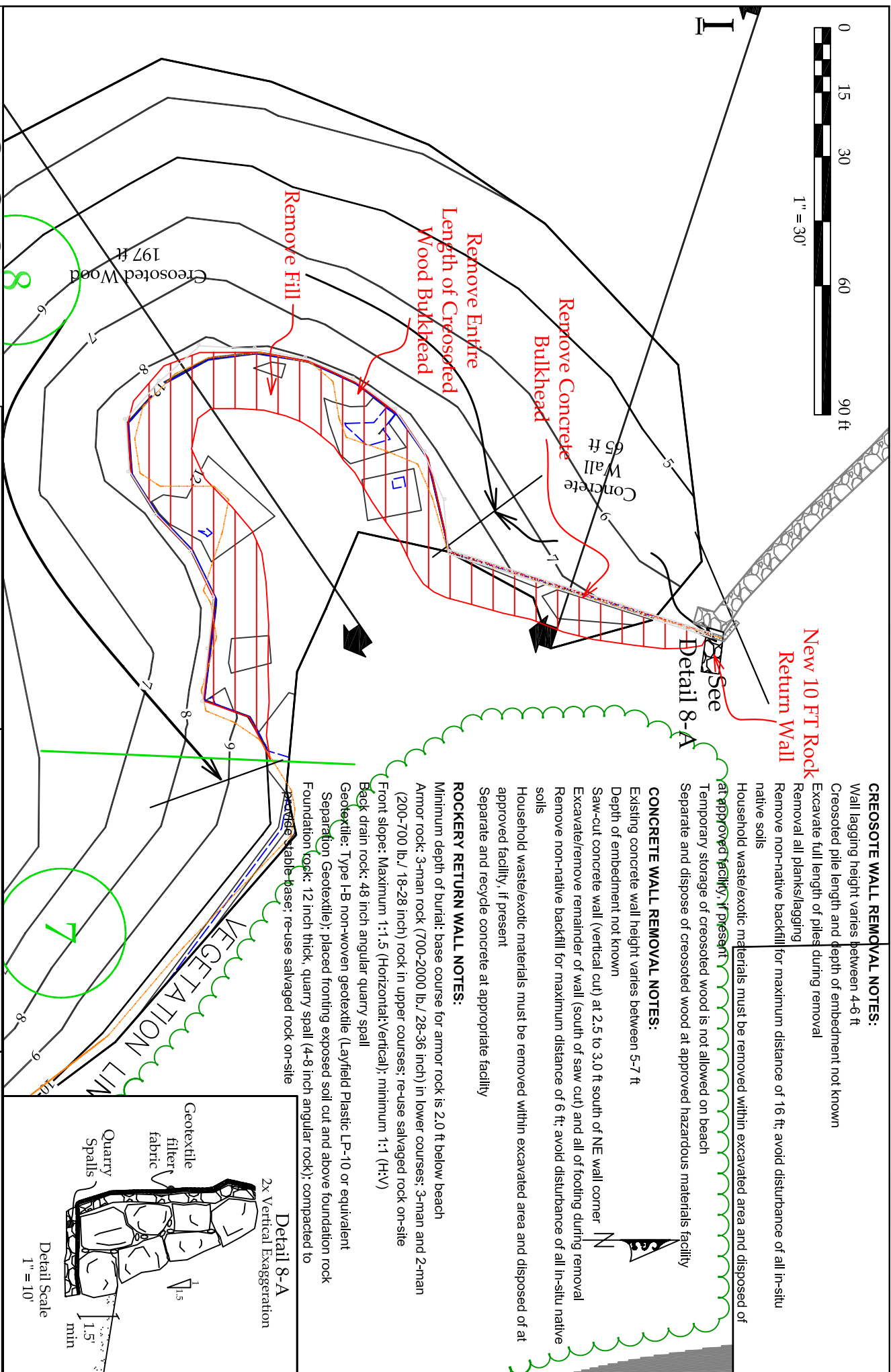
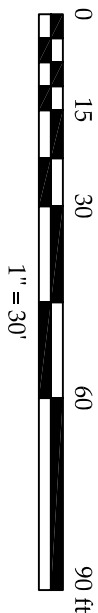
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**Powel Bulkhead Removal
Detail Map**
1"=30'

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CREOSOTE WALL REMOVAL NOTES:

- Wall lagging height varies between 4-6 ft
- Creosoted pile length and depth of embedment not known
- Excavate full length of piles during removal
- Remove all planks/lagging
- Remove non-native backfill for maximum distance of 16 ft; avoid disturbance of all in-situ native soils

Household waste/exotic materials must be removed within excavated area and disposed of at approved facility, if present
Temporary storage of creosoted wood is not allowed on beach
Separate and dispose of creosoted wood at approved hazardous materials facility

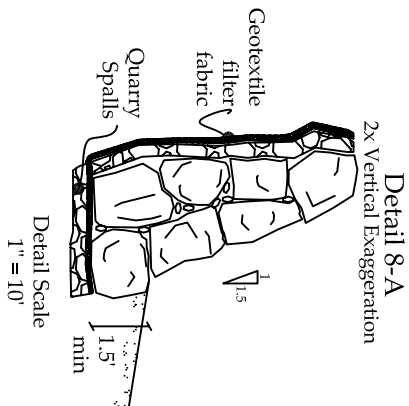
CONCRETE WALL REMOVAL NOTES:

- Existing concrete wall height varies between 5-7 ft
- Depth of embedment not known
- Saw-cut concrete wall (vertical cut) at 2.5 to 3.0 ft south of NE wall corner
- Excavate/remove remainder of wall (south of saw cut) and all of footing during removal
- Remove non-native backfill for maximum distance of 6 ft; avoid disturbance of all in-situ native soils

Household waste/exotic materials must be removed within excavated area and disposed of at approved facility, if present
Separate and recycle concrete at appropriate facility

ROCKERY RETURN WALL NOTES:

- Minimum depth of burial: base course for armor rock is 2.0 ft below beach
- Armor rock: 3-man rock (700-2000 lb./ 28-36 inch) in lower courses; 3-man and 2-man (200-700 lb./ 18-28 inch) rock in upper courses; re-use salvaged rock on-site
- Front slope: Maximum 1:1.5 (Horizontal:Vertical); minimum 1:1 (H:V)
- Back drain rock: 48 inch angular quarry spall
- Geotextile: Type I-B non-woven geotextile (Layfield Plastic LP-10 or equivalent
- Separation Geotextile): placed fronting exposed soil cut and above foundation rock
- Foundation rock: 12 inch thick, quarry spall (4-8 inch angular rock); compacted to provide stable base; re-use salvaged rock on-site



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