

**BENCHMARK:**  
SEWER MANHOLE RIM -  
ELEV. = 9.6' (M.S.L. Datum)





# PROPOSED IMPROVEMENTS

## BELLA VISTA ISLAND

### FAIRHAVEN, MA

**OWNER:**

HEIAM ALSWALHI  
FAIRHAVEN, MASSACHUSETTS

**PROPERTY:**

ASSESSORS MAP 43B, LOTS 326, 359, & 360



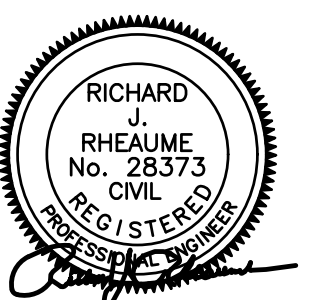
**SCHEDULE OF DRAWINGS**

| SHEET # | PLAN TITLE                 |
|---------|----------------------------|
| -       | COVER SHEET                |
| 1       | EXISTING CONDITIONS PLAN   |
| 2       | RESOURCE AREAS PLAN        |
| 3       | ACOP IMPROVEMENTS          |
| 4       | PROPOSED IMPROVEMENTS PLAN |
| 5       | PROPOSED REPLANTING PLAN   |

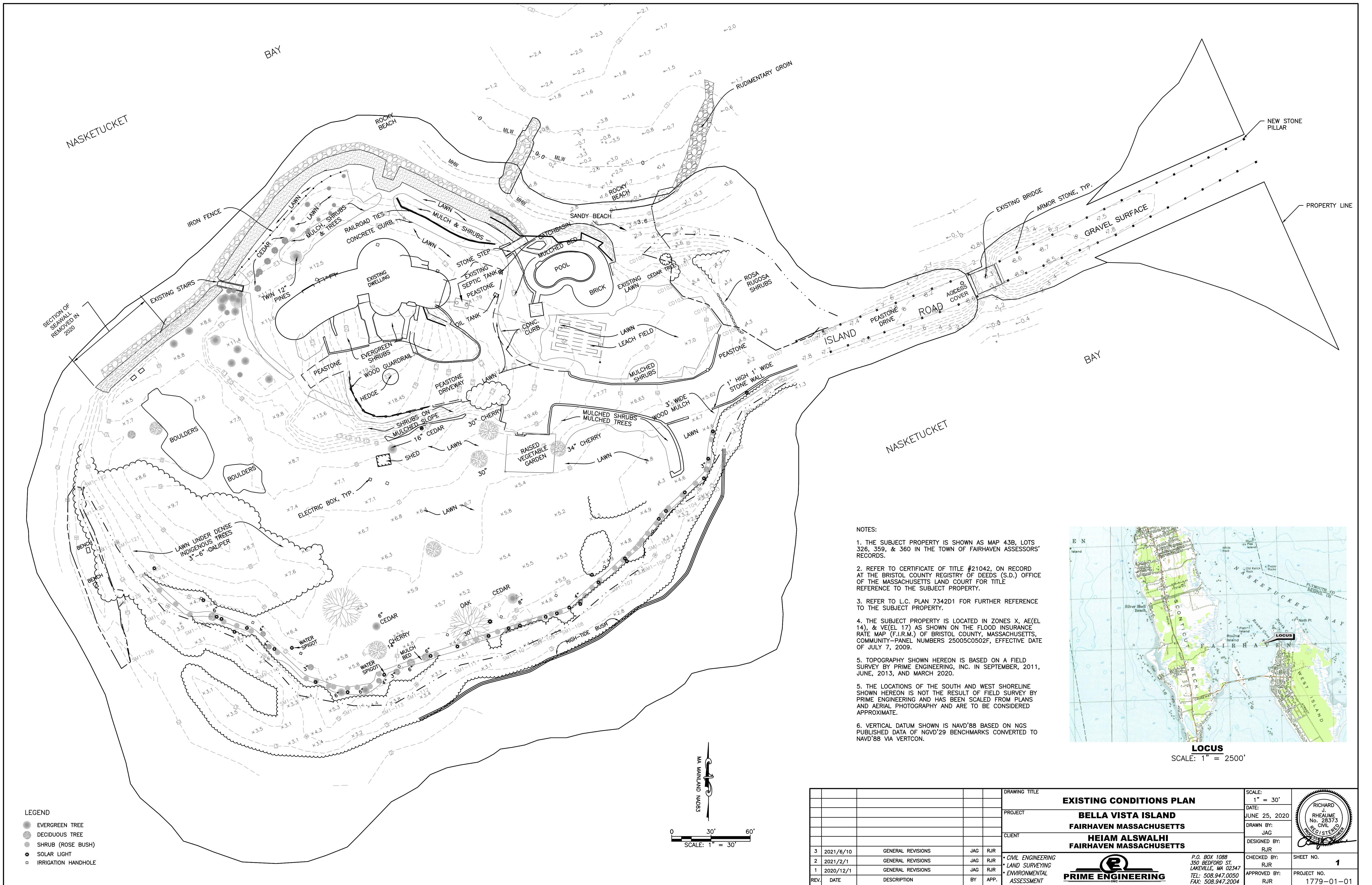
**LOCUS**  
**SCALE: 1"=100'**  
**ISSUED: JUNE 25, 2020**

**REVISED: JUNE 10, 2021**

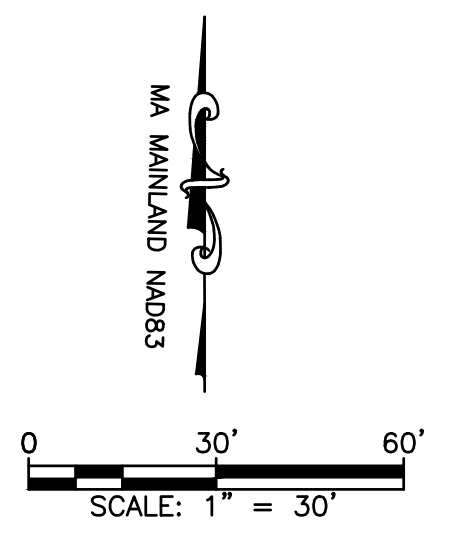
**PREPARED BY:**



CIVIL ENGINEERING—LAND SURVEYING—ENVIRONMENTAL ASSESSMENT  
P.O. BOX 1088, 350 BEDFORD STREET, LAKEVILLE, MA 02347  
TEL: 508.947.0050 FAX: 508.947.2004



- LEGEND**
- EVERGREEN TREE
  - DECIDUOUS TREE
  - SHRUB (ROSE BUSH)
  - ⊛ SOLAR LIGHT
  - IRRIGATION HANDHOLE



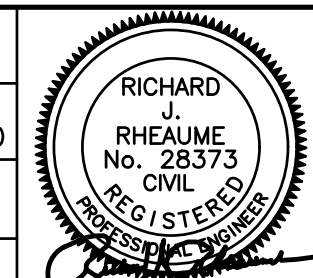
- NOTES:**
1. THE SUBJECT PROPERTY IS SHOWN AS MAP 43B, LOTS 326, 359, & 360 IN THE TOWN OF FAIRHAVEN ASSESSORS' RECORDS.
  2. REFER TO CERTIFICATE OF TITLE #21042, ON RECORD AT THE BRISTOL COUNTY REGISTRY OF DEEDS (S.D.) OFFICE OF THE MASSACHUSETTS LAND COURT FOR TITLE REFERENCE TO THE SUBJECT PROPERTY.
  3. REFER TO L.C. PLAN 7342D1 FOR FURTHER REFERENCE TO THE SUBJECT PROPERTY.
  4. THE SUBJECT PROPERTY IS LOCATED IN ZONES X, AE(EL 14), & VE(EL 17) AS SHOWN ON THE FLOOD INSURANCE RATE MAP (F.I.R.M.) OF BRISTOL COUNTY, MASSACHUSETTS, COMMUNITY-PANEL NUMBERS 25005C0502F, EFFECTIVE DATE OF JULY 7, 2009.
  5. TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY BY PRIME ENGINEERING, INC. IN SEPTEMBER, 2011, JUNE, 2013, AND MARCH 2020.
  5. THE LOCATIONS OF THE SOUTH AND WEST SHORELINE SHOWN HEREON IS NOT THE RESULT OF FIELD SURVEY BY PRIME ENGINEERING AND HAS BEEN SCALED FROM PLANS AND AERIAL PHOTOGRAPHY AND ARE TO BE CONSIDERED APPROXIMATE.
  6. VERTICAL DATUM SHOWN IS NAVD'88 BASED ON NGS PUBLISHED DATA OF NGVD'29 BENCHMARKS CONVERTED TO NAVD'88 VIA VERTCON.



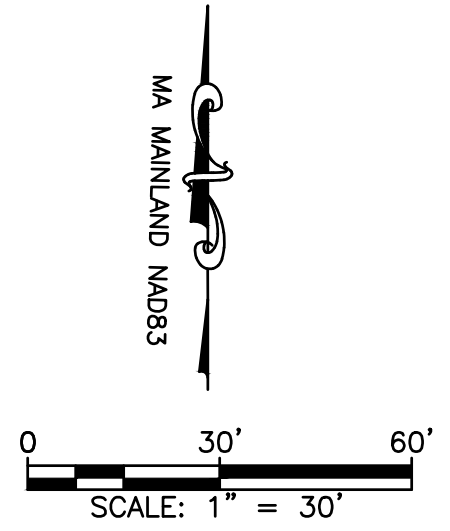
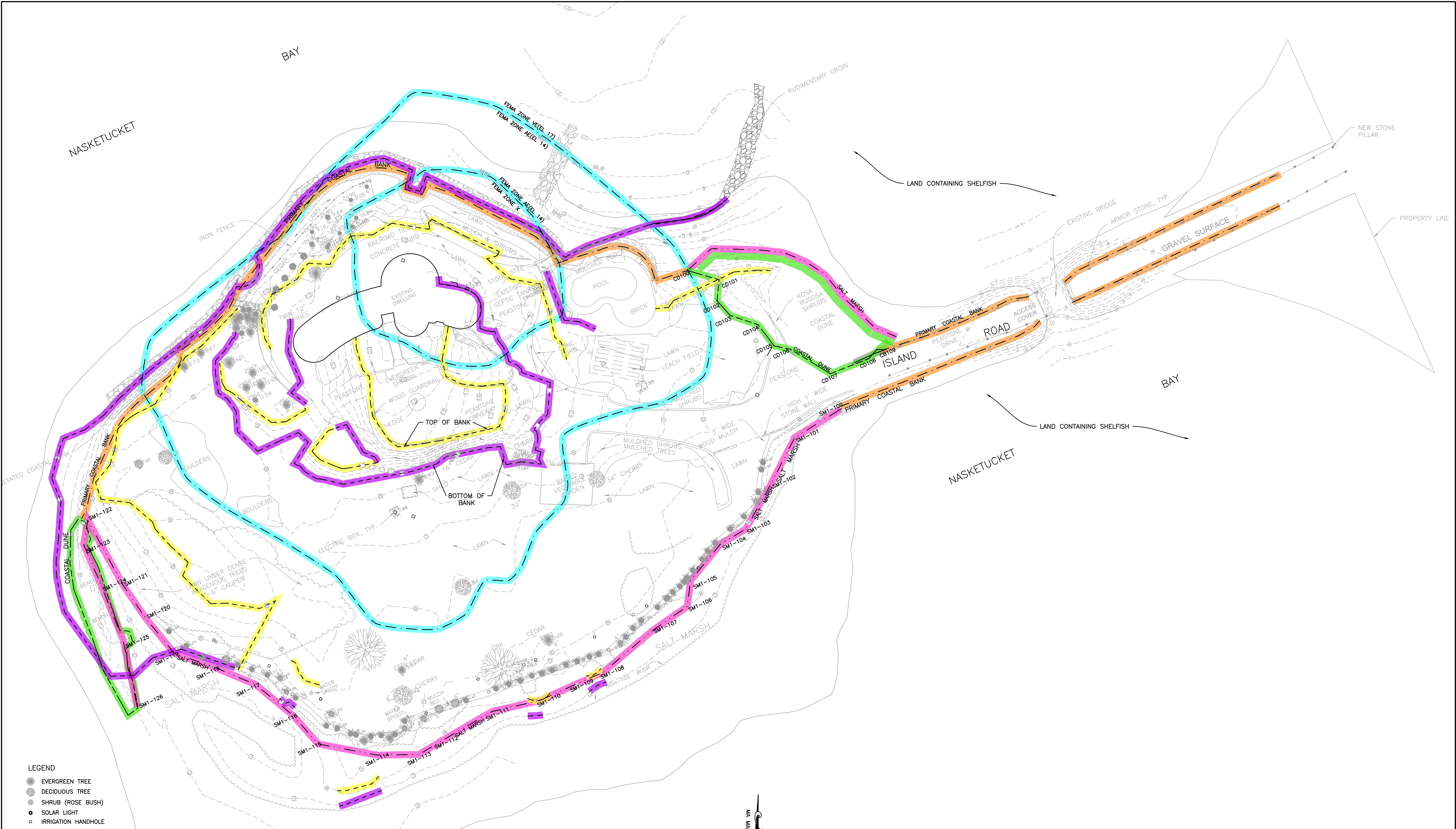
|               |           |   |             |              |               |
|---------------|-----------|---|-------------|--------------|---------------|
| DRAWING TITLE |           | <b>EXISTING CONDITIONS PLAN</b>                       |             | SCALE:       | 1" = 30'      |
| PROJECT       |           | <b>BELLA VISTA ISLAND<br/>FAIRHAVEN MASSACHUSETTS</b> |             | DATE:        | JUNE 25, 2020 |
| CLIENT        |           | <b>HEIAM ALSWALHI<br/>FAIRHAVEN MASSACHUSETTS</b>     |             | DRAWN BY:    | JAG           |
| REV.          |           | DATE  | DESCRIPTION | DESIGNED BY: | RJR           |
| 3             | 2021/6/10 | GENERAL REVISIONS                                     | JAG RJR     | CHECKED BY:  | RJR           |
| 2             | 2021/2/1  | GENERAL REVISIONS                                     | JAG RJR     | APPROVED BY: | RJR           |
| 1             | 2020/12/1 | GENERAL REVISIONS                                     | JAG RJR     |              |               |
|               |           | DESCRIPTION   | BY          |              |               |



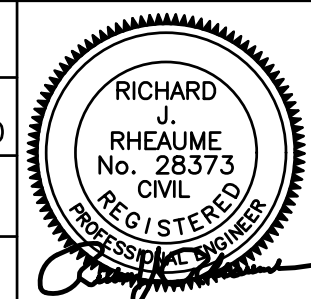
P.O. BOX 1088  
350 BEDFORD ST.  
LAKEVILLE, MA 02347  
TEL: 508.947.0050  
FAX: 508.947.2004

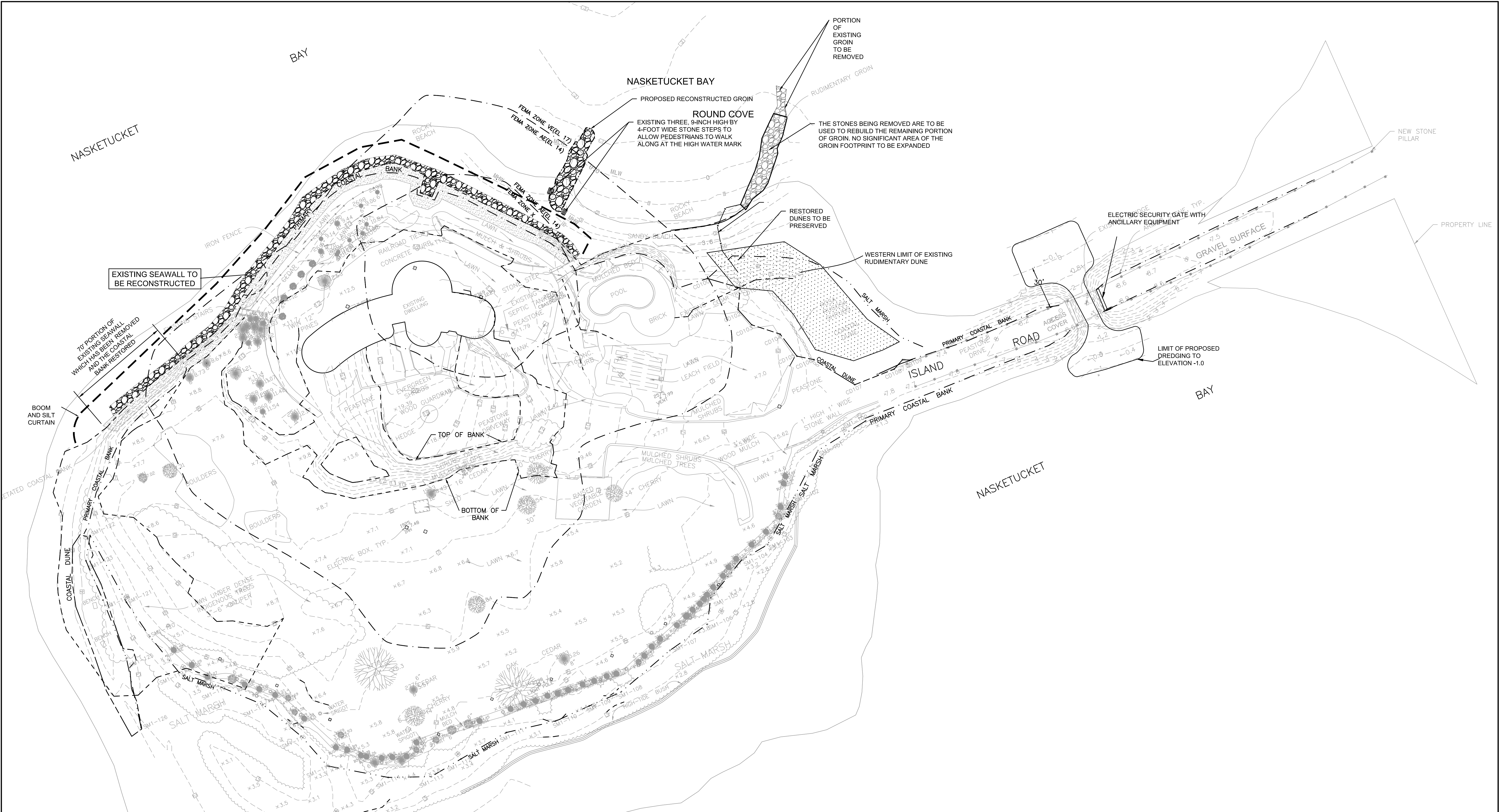


SHEET NO. **1**  
PROJECT NO. 1779-01-01



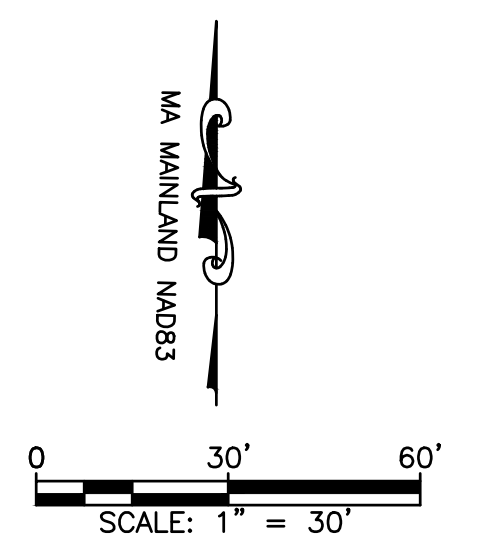
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|--------------------------|-----------|---|-------------|--------------|---------------|
| DRAWING TITLE            |           | <b>RESOURCE AREAS PLAN</b>                            |             | SCALE:       | 1" = 30'      |
| PROJECT                  |           | <b>BELLA VISTA ISLAND<br/>FAIRHAVEN MASSACHUSETTS</b> |             | DATE:        | JUNE 25, 2020 |
| CLIENT                   |           | <b>HEIAM ALSWALHI<br/>FAIRHAVEN MASSACHUSETTS</b>     |             | DRAWN BY:    | JAG           |
| REV.                     |           | DATE  | DESCRIPTION | BY           | APP.          |
| 3                        | 2021/6/10 | GENERAL REVISIONS                                     |             | JAG          | RJR           |
| 2                        | 2021/2/1  | GENERAL REVISIONS                                     |             | JAG          | RJR           |
| 1                        | 2020/12/1 | GENERAL REVISIONS                                     |             | JAG          | RJR           |
| CIVIL ENGINEERING        |           | P.O. BOX 1088   |             | CHECKED BY:  | RJR           |
| LAND SURVEYING           |           | 350 BEDFORD ST.                                       |             | APPROVED BY: | RJR           |
| ENVIRONMENTAL ASSESSMENT |           | LAKEVILLE, MA 02347                                   |             | PROJECT NO.  | 1779-01-01    |
| PRIME ENGINEERING        |           | TEL: 508.947.0050                                     |             | SHEET NO.    | <b>2</b>      |
|                          |           | FAX: 508.947.2004                                     |             |              |               |





- LEGEND**
- EVERGREEN TREE
  - DECIDUOUS TREE
  - SHRUB (ROSE BUSH)
  - SOLAR LIGHT
  - IRRIGATION HANDHOLE
- RESOURCE AREA LEGEND**
- PRIMARY COASTAL BANK
  - COASTAL DUNE
  - UPGRADIENT EDGE OF SALT MARSH
  - BOTTOM OF COASTAL BANK
  - TOP OF COASTAL BANK
  - FEMA ZONE (SCALED FROM FEMA MAP)


**GENERAL NOTES:**  
 1. THE SHOREFRONT IMPROVEMENTS PLANS ARE REQUIRED TO BE ON MEAN LOW WATER DATUM. REFER TO SEPARATE PLANS FOR THOSE FEATURES.



**THIS PLAN PRESENTS THE IMPROVEMENTS MANDATED BY THE ADMINISTRATIVE CONSENT ORDER (ISSUED BY MA DEP ACOP) REFER TO LARGER SCALE PLANS FOR MORE DETAILS**

|               |           |   |             |           |               |
|---------------|-----------|---|-------------|-----------|---------------|
| DRAWING TITLE |           | <b>ACOP IMPROVEMENTS PLAN</b>                         |             | SCALE:    | 1" = 30'      |
| PROJECT       |           | <b>BELLA VISTA ISLAND<br/>FAIRHAVEN MASSACHUSETTS</b> |             | DATE:     | JUNE 25, 2020 |
| CLIENT        |           | <b>HEIAM ALSWALHI<br/>FAIRHAVEN MASSACHUSETTS</b>     |             | DRAWN BY: | JAG           |
| REV.          |           | DATE  | DESCRIPTION | BY        | APP.          |
| 2             | 2021/6/10 | GENERAL REVISIONS                                     |             | JAG       | RJR           |
| 1             | 2021/2/1  | GENERAL REVISIONS                                     |             | JAG       | RJR           |

• CIVIL ENGINEERING  
 • LAND SURVEYING  
 • ENVIRONMENTAL ASSESSMENT

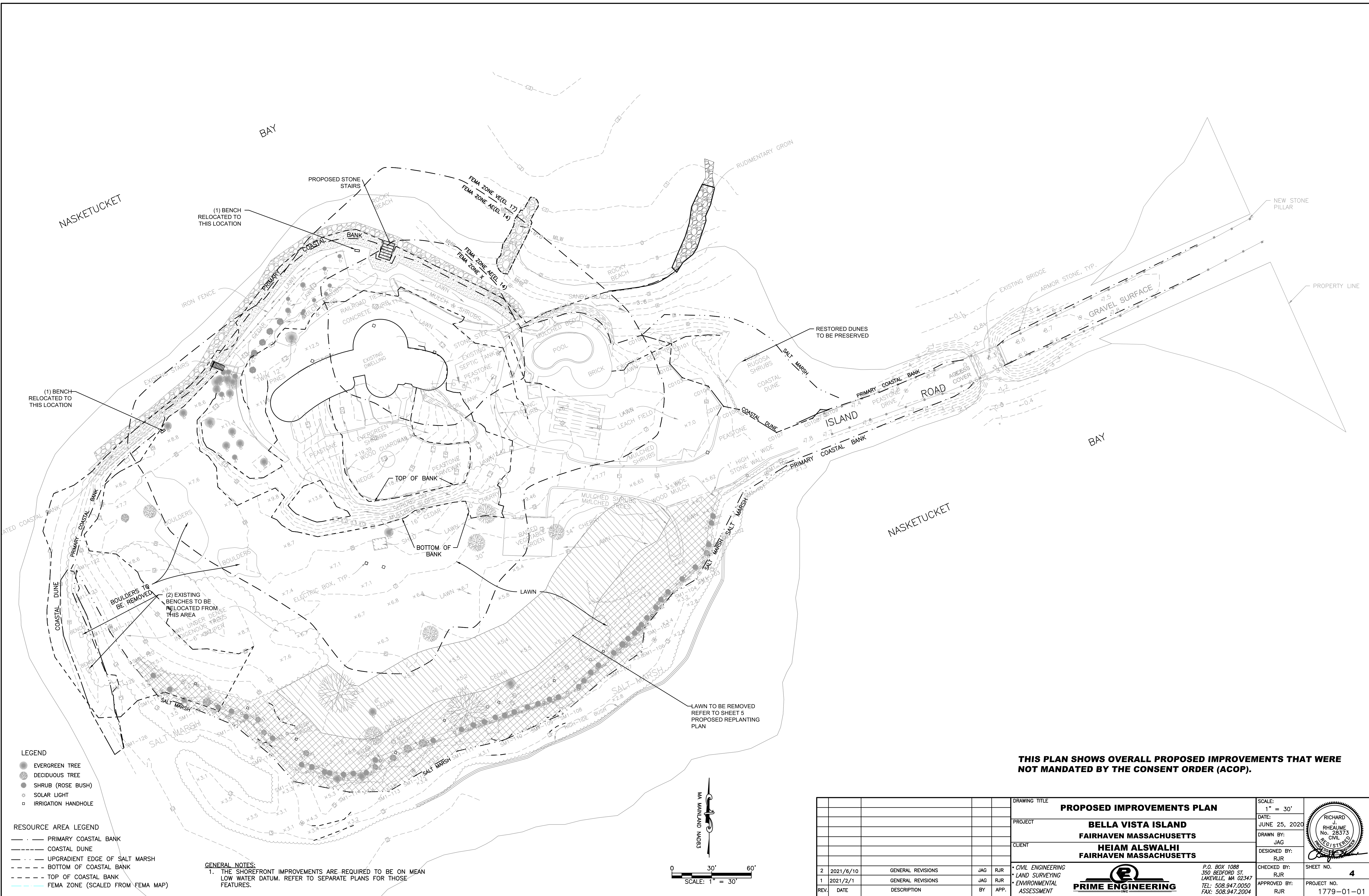


**PRIME ENGINEERING**  
INC.

P.O. BOX 1088  
 350 BEDFORD ST.  
 LAKEVILLE, MA 02347  
 TEL: 508.947.0050  
 FAX: 508.947.2004

CHECKED BY: RJR  
 APPROVED BY: RJR

SHEET NO. **3**  
 PROJECT NO. 1779-01-01



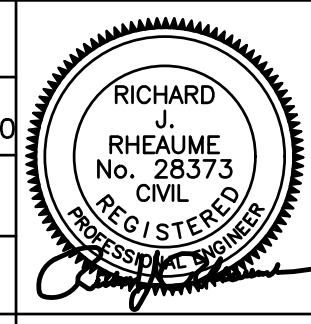
- LEGEND**
- EVERGREEN TREE
  - DECIDUOUS TREE
  - SHRUB (ROSE BUSH)
  - SOLAR LIGHT
  - IRRIGATION HANDHOLE

- RESOURCE AREA LEGEND**
- PRIMARY COASTAL BANK
  - COASTAL DUNE
  - - - UPGRADIENT EDGE OF SALT MARSH
  - BOTTOM OF COASTAL BANK
  - TOP OF COASTAL BANK
  - FEMA ZONE (SCALED FROM FEMA MAP)

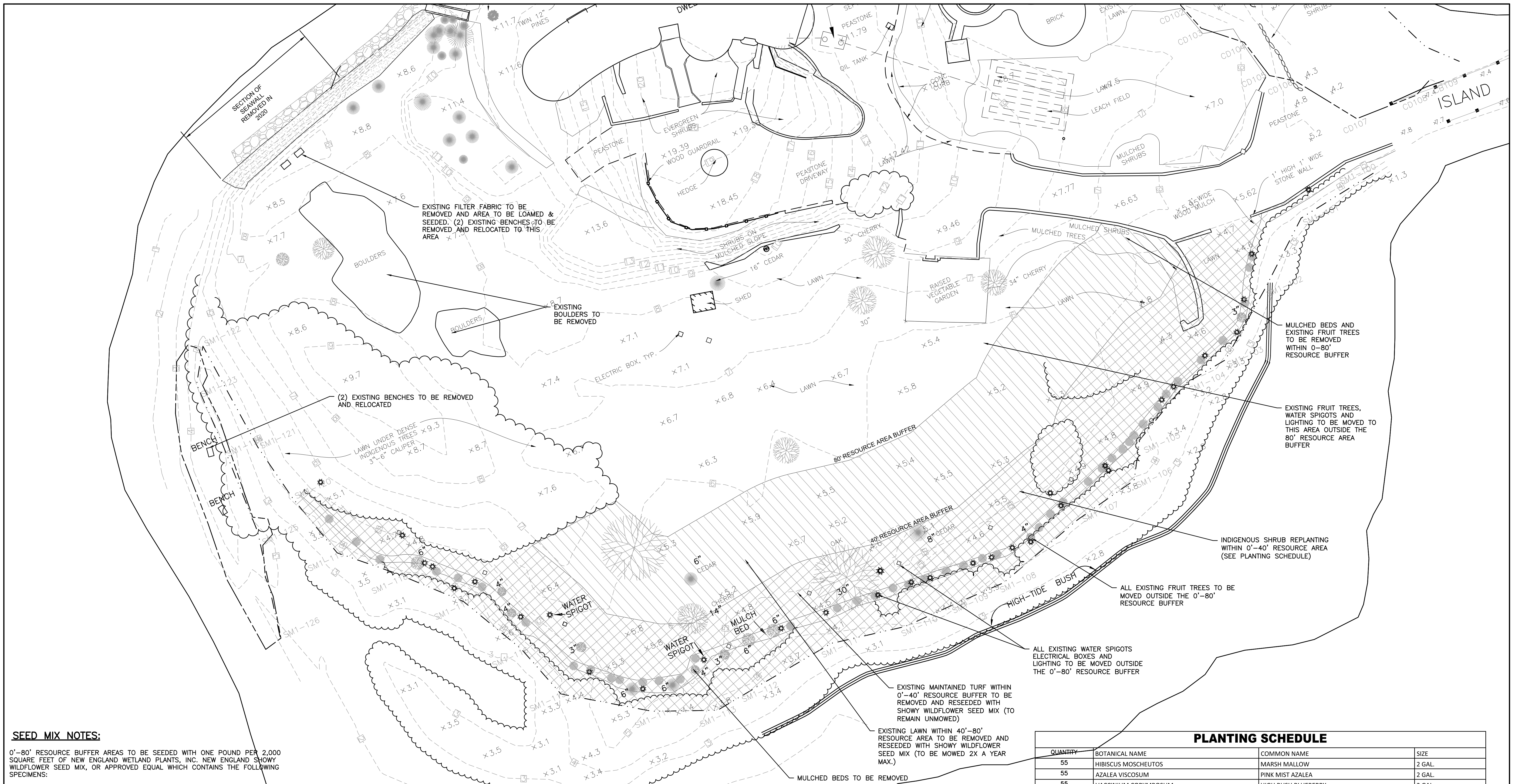
**GENERAL NOTES:**  
 1. THE SHOREFRONT IMPROVEMENTS ARE REQUIRED TO BE ON MEAN LOW WATER DATUM. REFER TO SEPARATE PLANS FOR THOSE FEATURES.

**THIS PLAN SHOWS OVERALL PROPOSED IMPROVEMENTS THAT WERE NOT MANDATED BY THE CONSENT ORDER (ACOP).**

|               |           |   |             |           |               |
|---------------|-----------|---|-------------|-----------|---------------|
| DRAWING TITLE |           | <b>PROPOSED IMPROVEMENTS PLAN</b>                     |             | SCALE:    | 1" = 30'      |
| PROJECT       |           | <b>BELLA VISTA ISLAND<br/>FAIRHAVEN MASSACHUSETTS</b> |             | DATE:     | JUNE 25, 2020 |
| CLIENT        |           | <b>HEIAM ALSWALHI<br/>FAIRHAVEN MASSACHUSETTS</b>     |             | DRAWN BY: | JAG           |
| REV.          |           | DATE  | DESCRIPTION | BY        | APP.          |
| 2             | 2021/6/10 | GENERAL REVISIONS                                     |             | JAG       | RJR           |
| 1             | 2021/2/1  | GENERAL REVISIONS                                     |             | JAG       | RJR           |



CHECKED BY: RJR  
 APPROVED BY: RJR  
 SHEET NO. **4**  
 PROJECT NO. 1779-01-01



**SEED MIX NOTES:**

0'-80' RESOURCE BUFFER AREAS TO BE SEEDED WITH ONE POUND PER 2,000 SQUARE FEET OF NEW ENGLAND WETLAND PLANTS, INC. NEW ENGLAND SHOWY WILDFLOWER SEED MIX, OR APPROVED EQUAL WHICH CONTAINS THE FOLLOWING SPECIMENS:

| Botanical Name  | Common Name                          | Indicator |
|---|--------------------------------------|-----------|
| <i>Schizachyrium scoparium</i>                            | Little Bluestem                      | FACU      |
| <i>Chamaecrista fasciculata</i>                           | Partridge Pea                        | FACU      |
| <i>Sorghastrum nutans</i>                                 | Indian Grass                         | UPL       |
| <i>Festuca rubra</i>                                      | Red Fescue                           | FACU      |
| <i>Elymus canadensis</i>                                  | Canada Wild Rye                      | FACU+     |
| <i>Elymus riparius</i>                                    | Riverbank Wild Rye                   | FACW      |
| <i>Helopsis helianthoides</i>                             | Ox Eye Sunflower                     | UPL       |
| <i>Coreopsis lanceolata</i>                               | Lance Leaved Coreopsis               | FACU      |
| <i>Rudbeckia hirta</i>                                    | Black Eyed Susan                     | FACU-     |
| <i>Liatris spicata</i>                                    | Spiked Gayfeather/Marsh Blazing Star | FAC+      |
| <i>Asclepias syriaca</i>                                  | Common Milkweed                      | FACU-     |
| <i>Yernonia noveboracensis</i>                            | New York Ironweed                    | FACW+     |
| <i>Aster novae-angliae (Symphyotrichum novae-angliae)</i> | New England Aster                    | FACW-     |
| <i>Eupatorium purpureum (Eutrochium maculatum)</i>        | Purple Joe Pye Weed                  | FAC       |
| <i>Asclepias tuberosa</i>                                 | Butterfly Milkweed                   | NI        |
| <i>Solidago juncea</i>                                    | Early Goldenrod                      | FACW      |
| <i>Eupatorium perfoliatum</i>                             | Boneset                              | FACW      |

**LEGEND**

- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING SHRUB (ROSE BUSH)
- ★ EXISTING SOLAR LIGHT
- EXISTING IRRIGATION HANDHOLE

**40'-80' RESOURCE BUFFER AREA**

- LAWN TO BE REMOVED
- MULCHED BEDS TO BE REMOVED
- RESEEDED WITH SHOWY WILDFLOWER MIX
- PROPOSED MEADOW TO BE MOWED 2X A YEAR MAXIMUM.

**0'-40' RESOURCE BUFFER AREA**

- EXISTING FRUIT TREES, LIGHTING AND SPIGOTS TO BE REMOVED AND RELOCATED OUTSIDE THE 80' RESOURCE BUFFER AREA
- EXISTING LAWN TO BE REMOVED
- AREA TO BE REPLANTED WITH INDIGENOUS SHRUBS (SEE SCHEDULE)
- RESEEDED WITH SHOWY WILDFLOWER MIX
- TO REMAIN UNMOWED

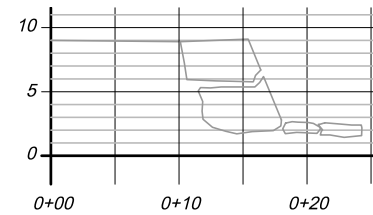
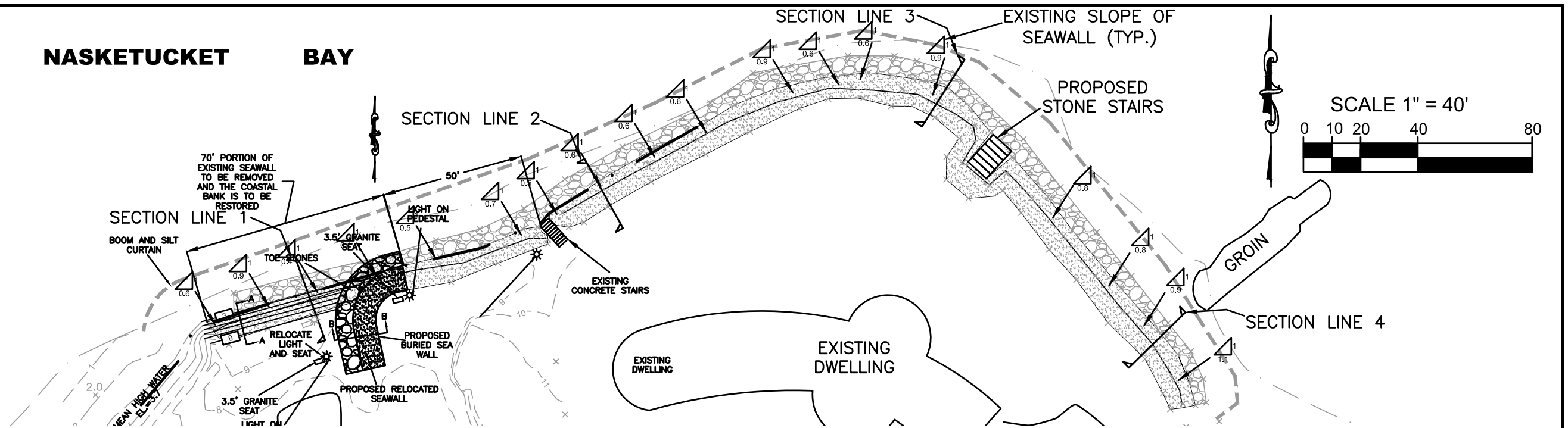


| QUANTITY | BOTANICAL NAME       | COMMON NAME         | SIZE   |
|----------|----------------------|---------------------|--------|
| 55       | HIBISCUS MOSCHEUTOS  | MARSH MALLOW        | 2 GAL. |
| 55       | AZALEA VISCOSUM      | PINK MIST AZALEA    | 2 GAL. |
| 55       | VACCINIUM CORYMBOSUM | HIGH BUSH BLUEBERRY | 2 GAL. |
| 51       | ILEX VERTICILLATA    | WINTERBERRY FEMALE  | 3 GAL. |
| 4        | ILEX VERTICILLATA    | WINTERBERRY MALE    | 3 GAL. |
| 55       | MYRICA PENNSYLVANICA | BAYBERRY            | 2 GAL. |

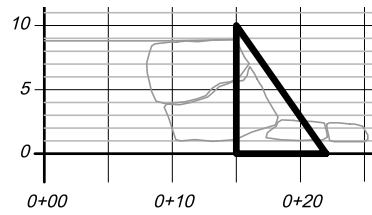
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|---|-----------|---|---------|--------------|---------------|
| DRAWING TITLE   |           | <b>PROPOSED PLANTING PLAN</b>                         |         | SCALE:       | 1" = 20'      |
| PROJECT   |           | <b>BELLA VISTA ISLAND<br/>FAIRHAVEN MASSACHUSETTS</b> |         | DATE:        | APRIL 5, 2021 |
| CLIENT  |           | <b>HEIAM ALSWALHI<br/>FAIRHAVEN MASSACHUSETTS</b>     |         | DRAWN BY:    | JAG           |
| REV. DATE DESCRIPTION   |           | BY APP.   |         | DESIGNED BY: | RJR           |
| 2   | 2021/6/10 | GENERAL REVISIONS                                     | JAG RJR | CHECKED BY:  | RJR           |
| 1   | 4/16/2021 | RESPONSE TO COMMENTS                                  | JAG RJR | APPROVED BY: | RJR           |
| • CIVIL ENGINEERING<br>• LAND SURVEYING<br>• ENVIRONMENTAL ASSESSMENT                             |           |   |         | SHEET NO.    | <b>5</b>      |
| P.O. BOX 1088<br>350 BEDFORD ST.<br>LAKEVILLE, MA 02347<br>TEL: 508.947.0050<br>FAX: 508.947.2004 |           |   |         | PROJECT NO.  | 1779-01-01    |



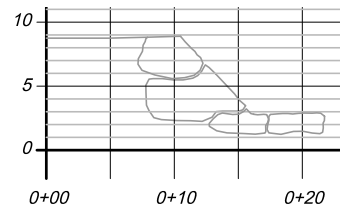
# NASKETUCKET BAY



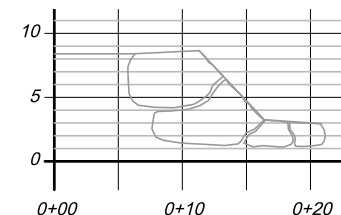
SECTION VIEW 1 - EXISTING



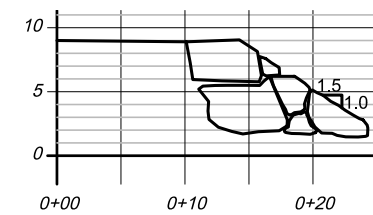
SECTION VIEW 2 - EXISTING



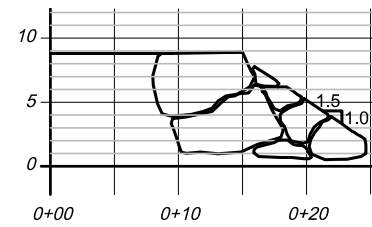
SECTION VIEW 3 - EXISTING



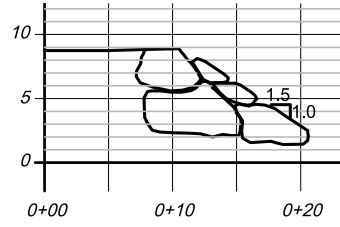
SECTION VIEW 4 - EXISTING



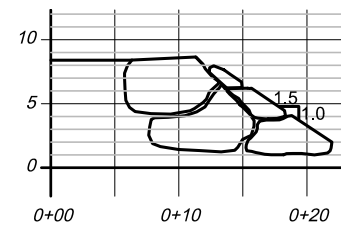
SECTION VIEW 1 - PROPOSED



SECTION VIEW 2 - PROPOSED

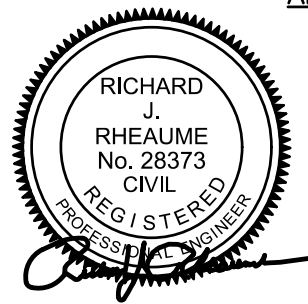


SECTION VIEW 3 - PROPOSED



SECTION VIEW 4 - PROPOSED

ALL CROSS SECTIONS  
SCALE: 1" = 5'



## SEAWALL PLAN AND CROSS SECTIONS

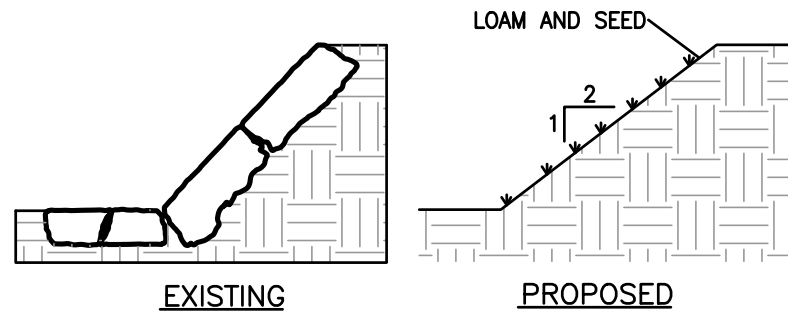
ACCOMPANYING THE PETITION OF  
HEIAM ALSAWALHI  
PROPOSED SEAWALL PERMITTING  
ROUND COVE/NASKETUCKET BAY  
BELLA VISTA ISLAND, FAIRHAVEN, MA

## EXHIBIT A



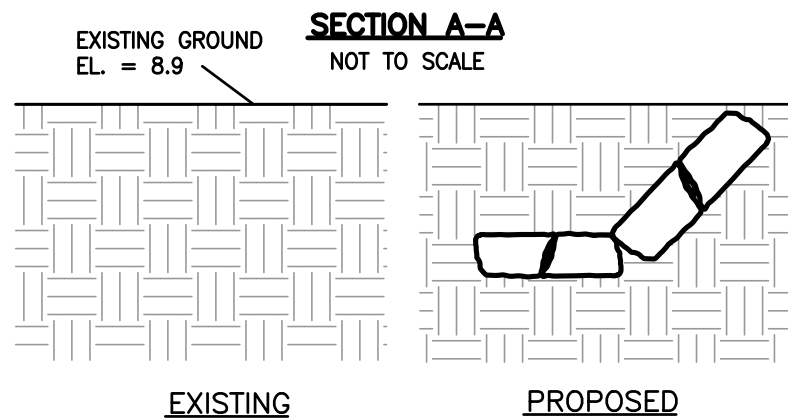
DATE: JUNE 10, 2021

SHEET 1 OF 4



EXISTING

PROPOSED



**SECTION A-A**  
NOT TO SCALE

EXISTING

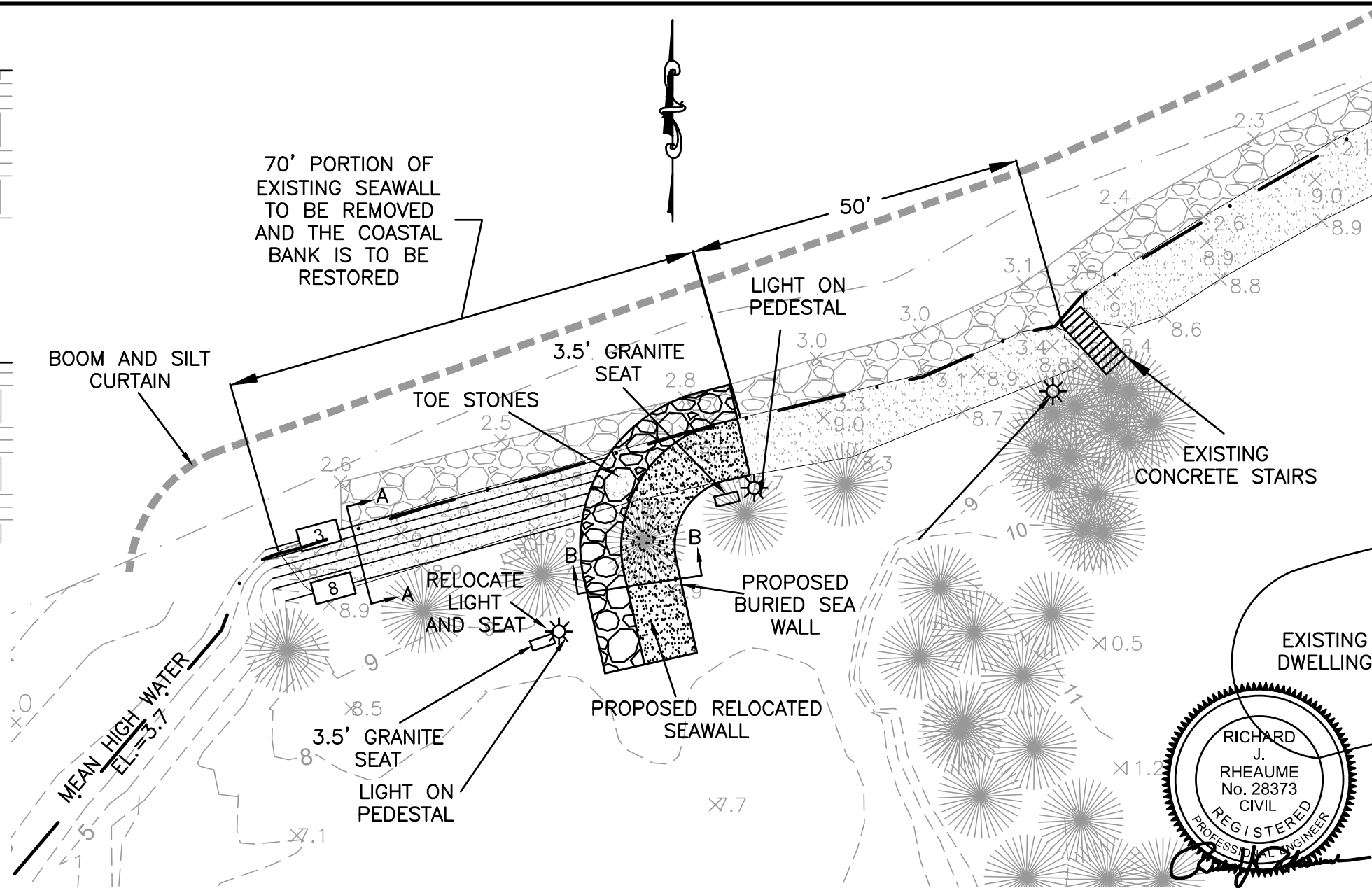
PROPOSED

**SECTION B-B**  
NOT TO SCALE

**NOTES**

1. THE VERTICAL DATUM SHOWN NAVD'88, BASED ON NGS PUBLISHED DATA OF NGVD'29 BENCHMARKS CONVERTED TO NAVD'88 VERTCON.
2. THE SUBJECT PROPERTY IS SHOWN ON THE TOWN OF FAIRHAVEN ASSESSORS' MAP 43B AS LOTS 326, 359 & 360

70' OF THE WESTERN END OF THE SEAWALL, ALONG WITH THE ANCILLARY TOE STONES, ARE TO BE REMOVED AS SHOWN ON THESE PLANS. THE COASTAL BANK IS TO BE RECONSTRUCTED BY THE PLACEMENT OF ORDINARY EARTH AT A SLOPE COMPARABLE TO THE EXISTING COASTAL BANK TO THE IMMEDIATE SOUTH. THE SURFACE SHALL BE SEEDED WITH GRASS SEED AND COVERED WITH JUTE NETTING OR A COMPARABLE TEMPORARY EROSION MATTING. THE ROCKY BEACH IN FRONT OF THE COASTAL BANK IS TO BE FILLED WITH SAND AND COBBLES TO A GRADE COMPARABLE TO THE ADJOINING BEACH. THE STONES RECOVERED FROM THE SEAWALL REMOVAL SHALL BE USED TO TURN THE THEN REMAINING WESTERN END OF THE SEAWALL SOUTHERLY INTO THE ISLAND WHERE BOTH SIDES OF THE SEAWALL WILL BE BURIED, AS SHOWN ON THE PLAN. THE WORK WILL BE PERFORMED WITH AN EXCAVATOR ON TRACKS WITH THE MAJORITY OF THE WORK BEING PERFORMED WITH THE EXCAVATOR POSITIONED LANDWARD OF THE EXISTING SEAWALL. A BOOM AND SILT CURTAIN SHALL BE EMPLOYED THROUGHOUT CONSTRUCTION.



70' PORTION OF EXISTING SEAWALL TO BE REMOVED AND THE COASTAL BANK IS TO BE RESTORED

BOOM AND SILT CURTAIN

LIGHT ON PEDESTAL

3.5' GRANITE SEAT

TOE STONES

EXISTING CONCRETE STAIRS

RELOCATE LIGHT AND SEAT

PROPOSED BURIED SEA WALL

PROPOSED RELOCATED SEAWALL

3.5' GRANITE SEAT

LIGHT ON PEDESTAL

EXISTING DWELLING

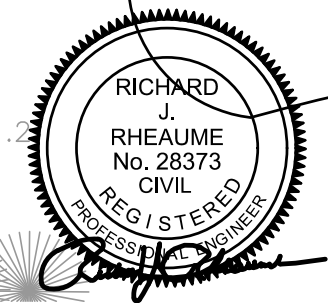


EXHIBIT A (SHEET 2 OF 4)

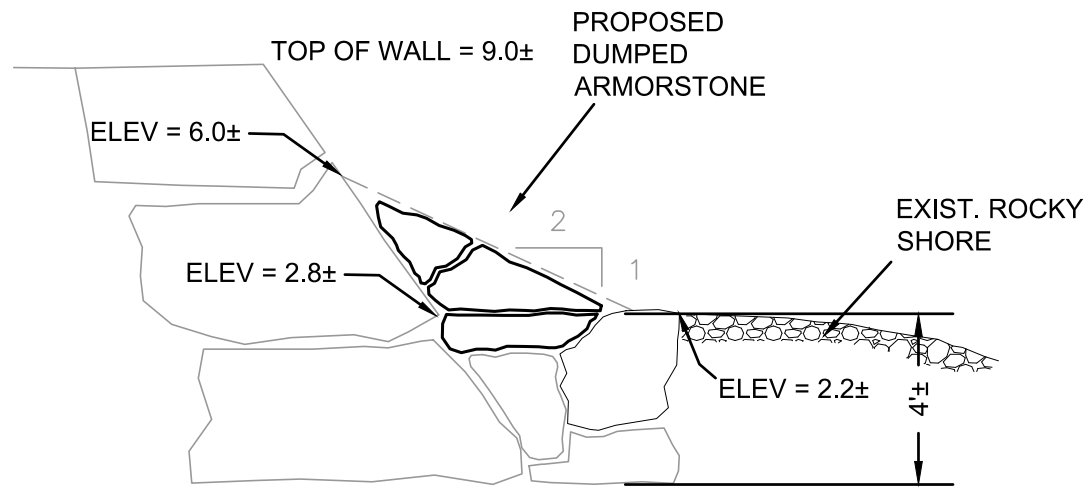
**SEAWALL PLAN**

ACCOMPANYING THE PETITION OF HEIAM ALSAWALHI  
PROPOSED SEAWALL PERMITTING  
ROUND COVE/NASKETUCKET BAY  
BELLA VISTA ISLAND, FAIRHAVEN, MA

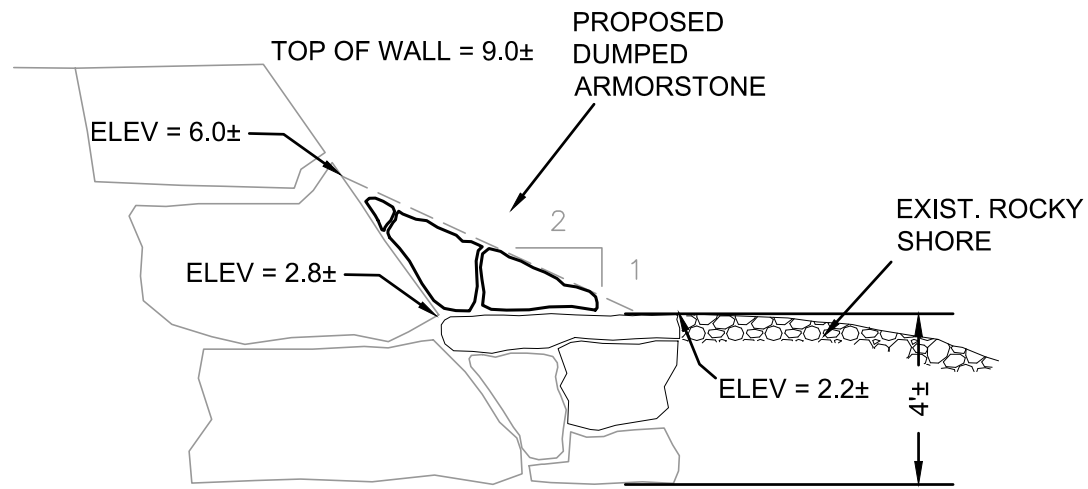
**PROPOSED PLAN**



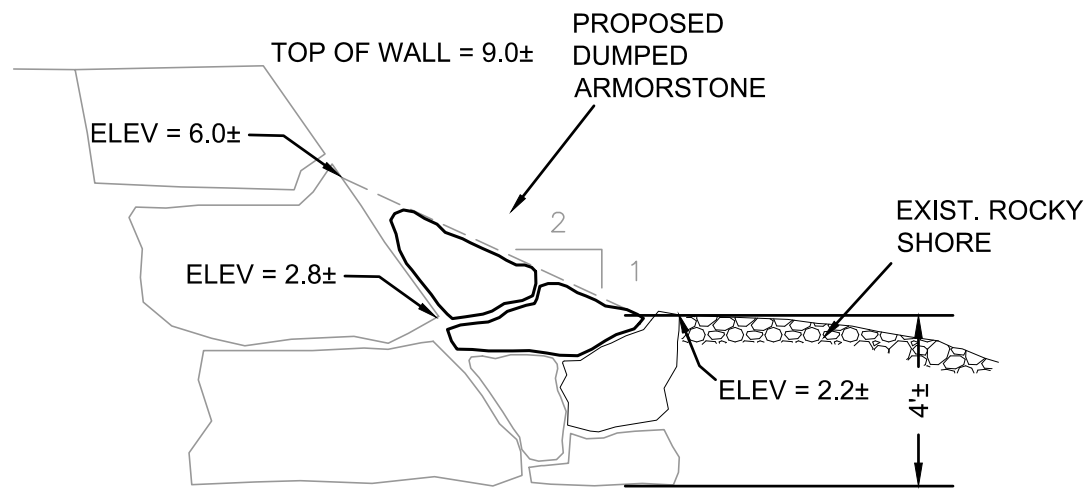
ISSUED: JUNE 10, 2021



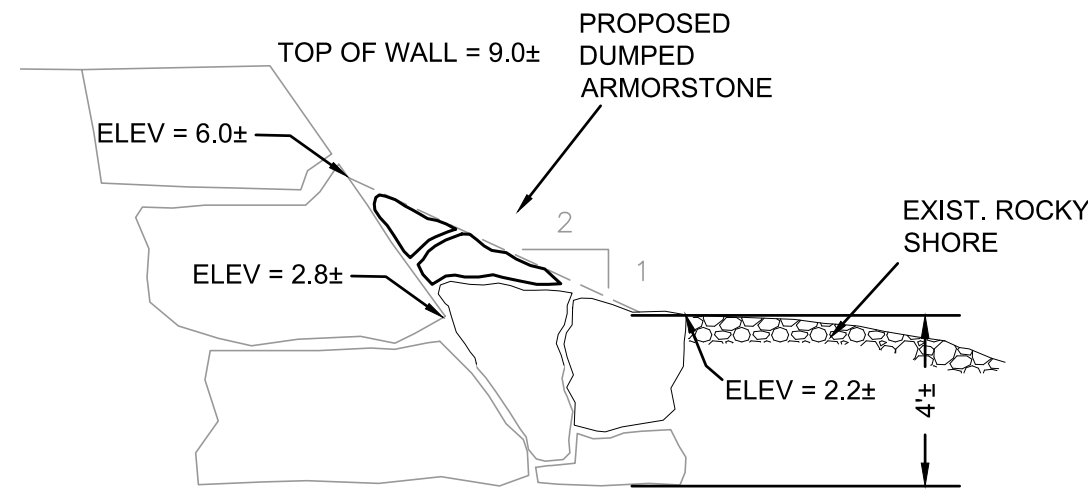
PROPOSED SEAWALL CROSS SECTION  
N.T.S.



PROPOSED SEAWALL CROSS SECTION  
N.T.S.



PROPOSED SEAWALL CROSS SECTION  
N.T.S.



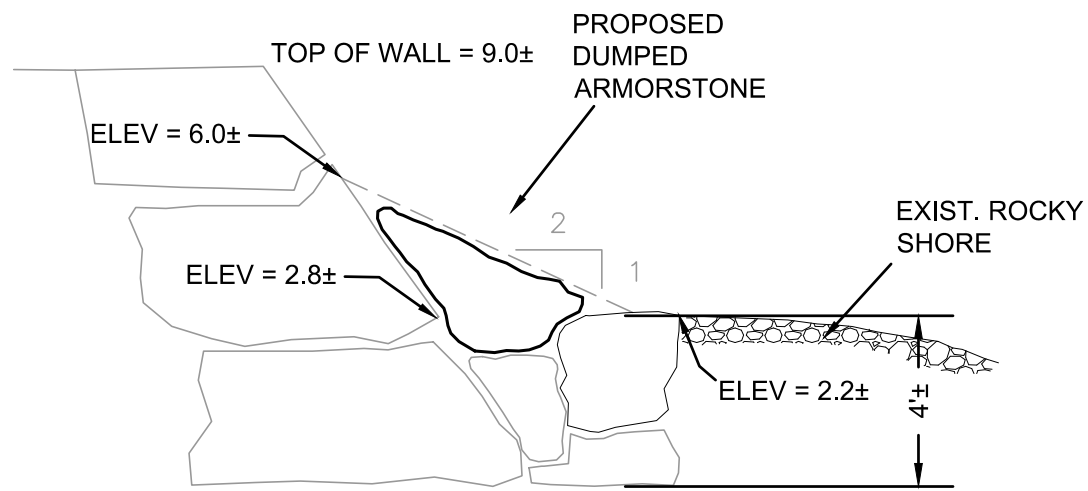
PROPOSED SEAWALL CROSS SECTION  
N.T.S.



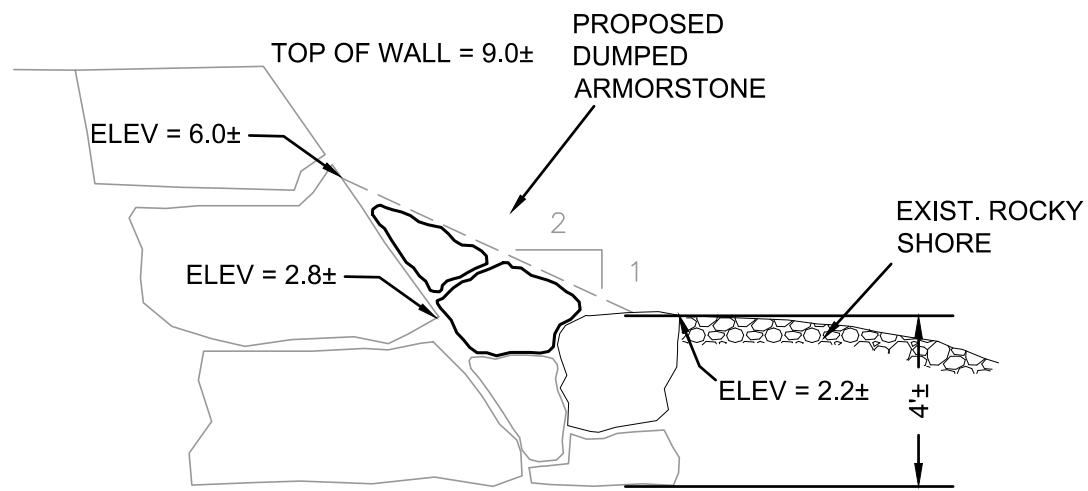
EXHIBIT A (SHEET 3 OF 4)

THE SEAWARD FACE OF THE REMAINING WALL IS TO BE RECONSTRUCTED AS SHOWN ON THESE PLANS. THE PURPOSE OF THE WORK IS TO REDUCE THE STEEPNESS OF THE SEAWALL FACE BY THE PLACEMENT OF DUMPED ARMOR STONE. DEPENDENT ON THE SIZE AND SHAPE OF THE SPECIFIC IMPORTED ROCKS, THE WORK MAY, IN SOME CASES, REQUIRE THE REMOVAL OF SOME OF THE EXISTING TOE STONES. IN OTHER CASES, THE IMPORTED ROCKS WILL BE OF ADEQUATE SIZE AND SHAPE THAT THEY CAN BE PLACED ON TOP OF THE EXISTING TOE STONES. THE INTENT OF THE WORK IS TO ESTABLISH AN AVERAGE SLOPE OF 2:1 WITH NO SIGNIFICANT PORTION OF THE SLOPE STEEPER THAN 1:1 AND NO SIGNIFICANT PORTION OF THE WALL AT A SLOPE FLATTER THAN 3:1. IN NO CASE IS THE DUMPED ARMOR STONE TO EXTEND BEYOND THE SEAWARD EXTENT OF THE CURRENT TOE STONES. THE WORK IS TO BE DONE BY AN EXCAVATOR ON TRACKS OPERATING PRIMARILY FROM MID TO LOW TIDES. THE EXCAVATOR WILL BE STAGED PARTIALLY ON EXISTING TOE STONES AND PARTIALLY ON THE ROCKY BEACH. FLOATING BOOMS WITH SILT CURTAINS WILL BE EMPLOYED THROUGHOUT THE CONSTRUCTION.

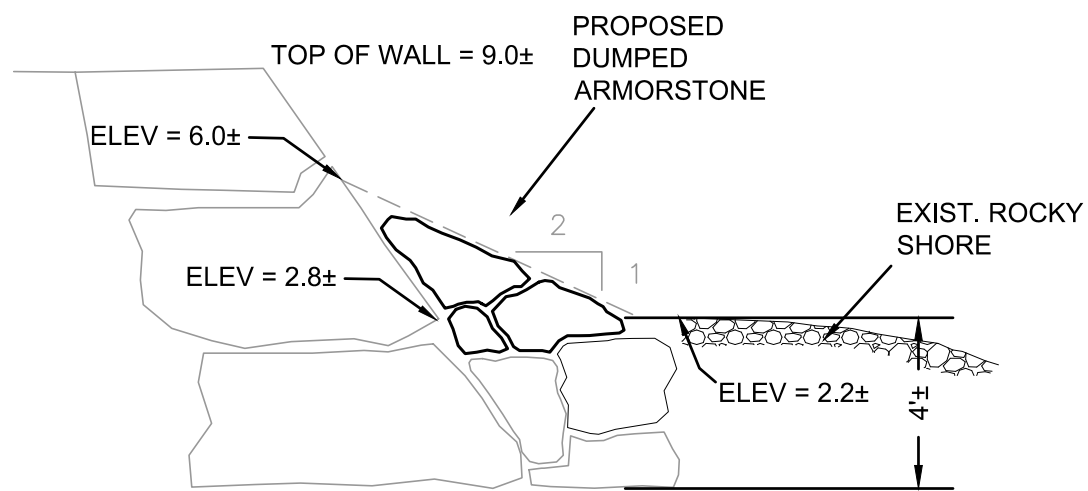
|   |  |  |
|---|--|--|
| DRAWING TITLE   | PROPOSED SEAWALL IMPROVEMENT<br>SHOWING EXAMPLES OF DUMPED ARMOR STONE |  |
| PROJECT   | BELLA VISTA ISLAND, FAIRHAVEN, MA                                      |  |
| SCALE: N.T.S.   | ISSUED: JUNE 10, 2021  |  |
| <ul style="list-style-type: none"> <li>CIVIL ENGINEERING</li> <li>LAND SURVEYING</li> <li>ENVIRONMENTAL ASSESSMENT</li> </ul> |  | P.O. BOX 1088<br>LAKEVILLE, MA 02347<br>TEL: 508.947.0050<br>FAX: 508.947.2004 |



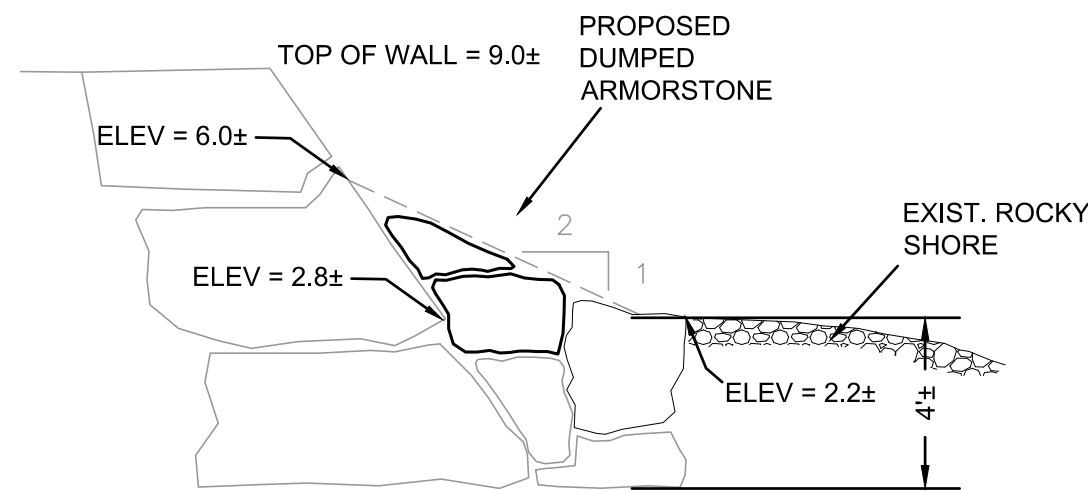
**PROPOSED SEAWALL CROSS SECTION**  
N.T.S.



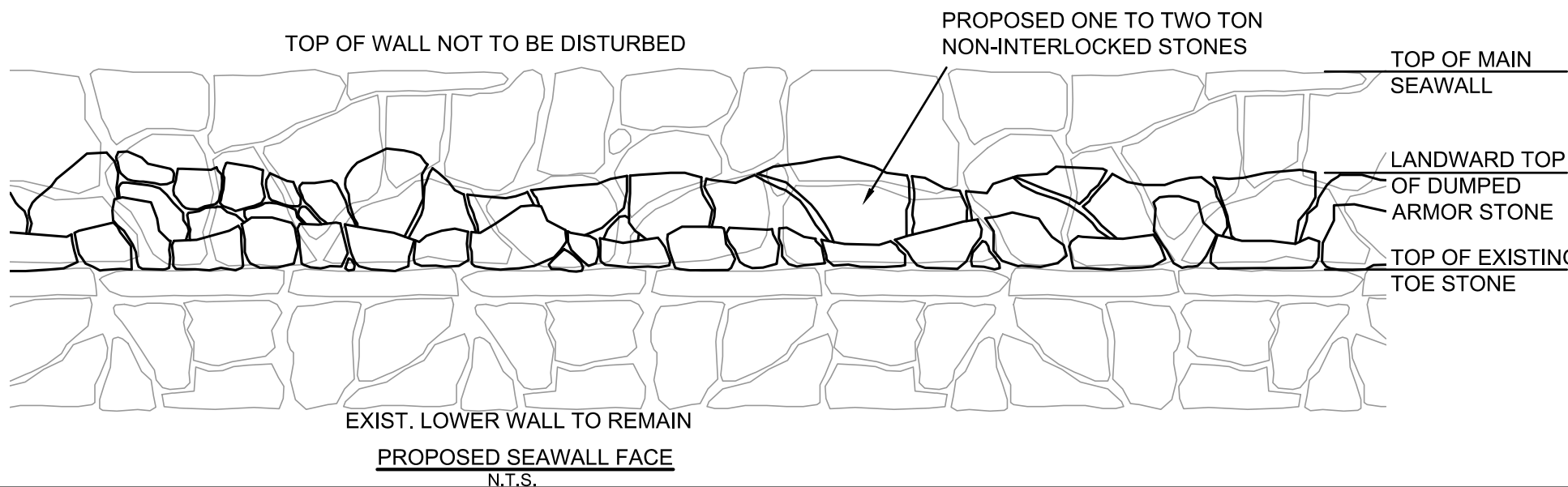
**PROPOSED SEAWALL CROSS SECTION**  
N.T.S.



**PROPOSED SEAWALL CROSS SECTION**  
N.T.S.



**PROPOSED SEAWALL CROSS SECTION**  
N.T.S.

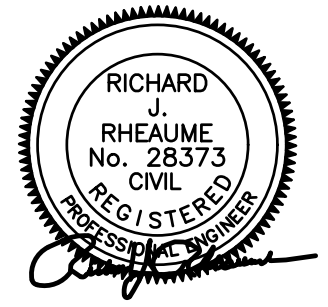
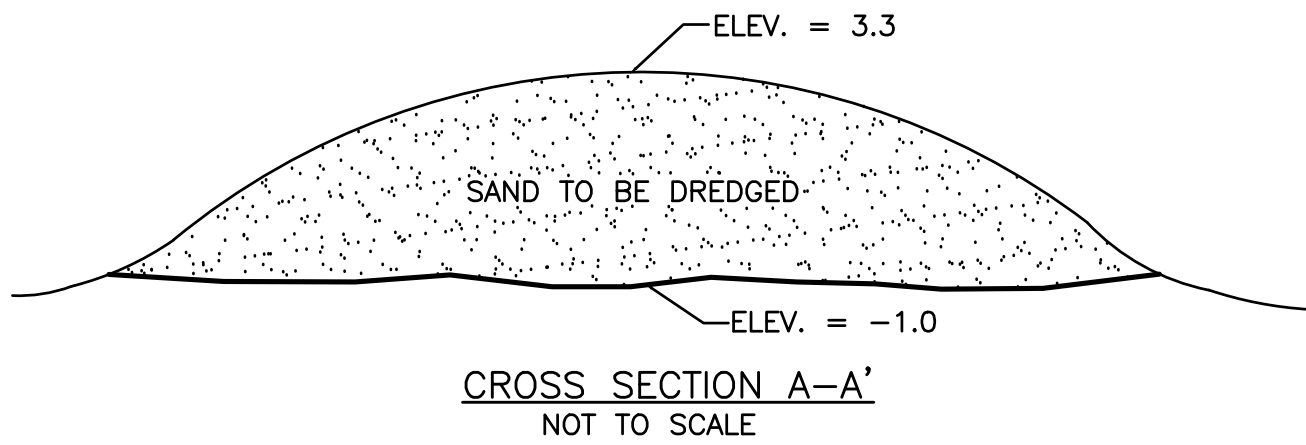
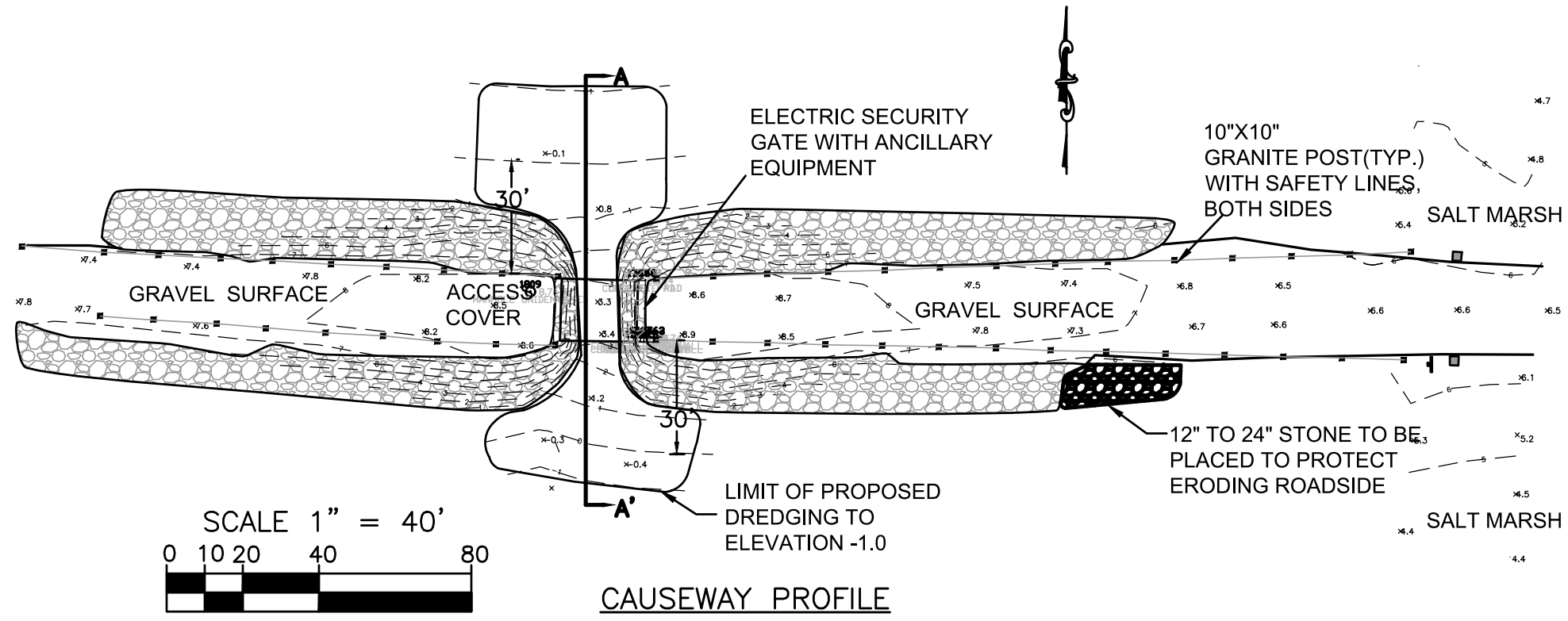


**PROPOSED SEAWALL FACE**  
N.T.S.

THE GOAL IS TO HAVE THE LOWER WALL AT AN AVERAGE SLOPE OF 2.0 TO 1.0 WITH NO SIGNIFICANT PORTION BEING STEEPER THAN 1.0 TO 1.0 AND NO SIGNIFICANT PORTION BEING FLATTER THAN 3.0 TO 1.0.

EXHIBIT A (SHEET 4 OF 4)

|   |  |  |
|---|--|--|
| DRAWING TITLE   | PROPOSED SEAWALL IMPROVEMENT<br>SHOWING EXAMPLES OF DUMPED ARMOR STONE |  |
| PROJECT   | BELLA VISTA ISLAND, FAIRHAVEN, MA                                      |  |
| SCALE: N.T.S.   | ISSUED: JUNE 10, 2021  |  |
| <ul style="list-style-type: none"> <li>CIVIL ENGINEERING</li> <li>LAND SURVEYING</li> <li>ENVIRONMENTAL ASSESSMENT</li> </ul> |  | P.O. BOX 1088<br>LAKEVILLE, MA 02347<br>TEL: 508.947.0050<br>FAX: 508.947.2004 |

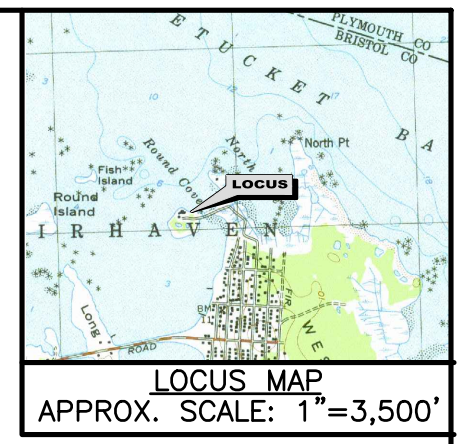
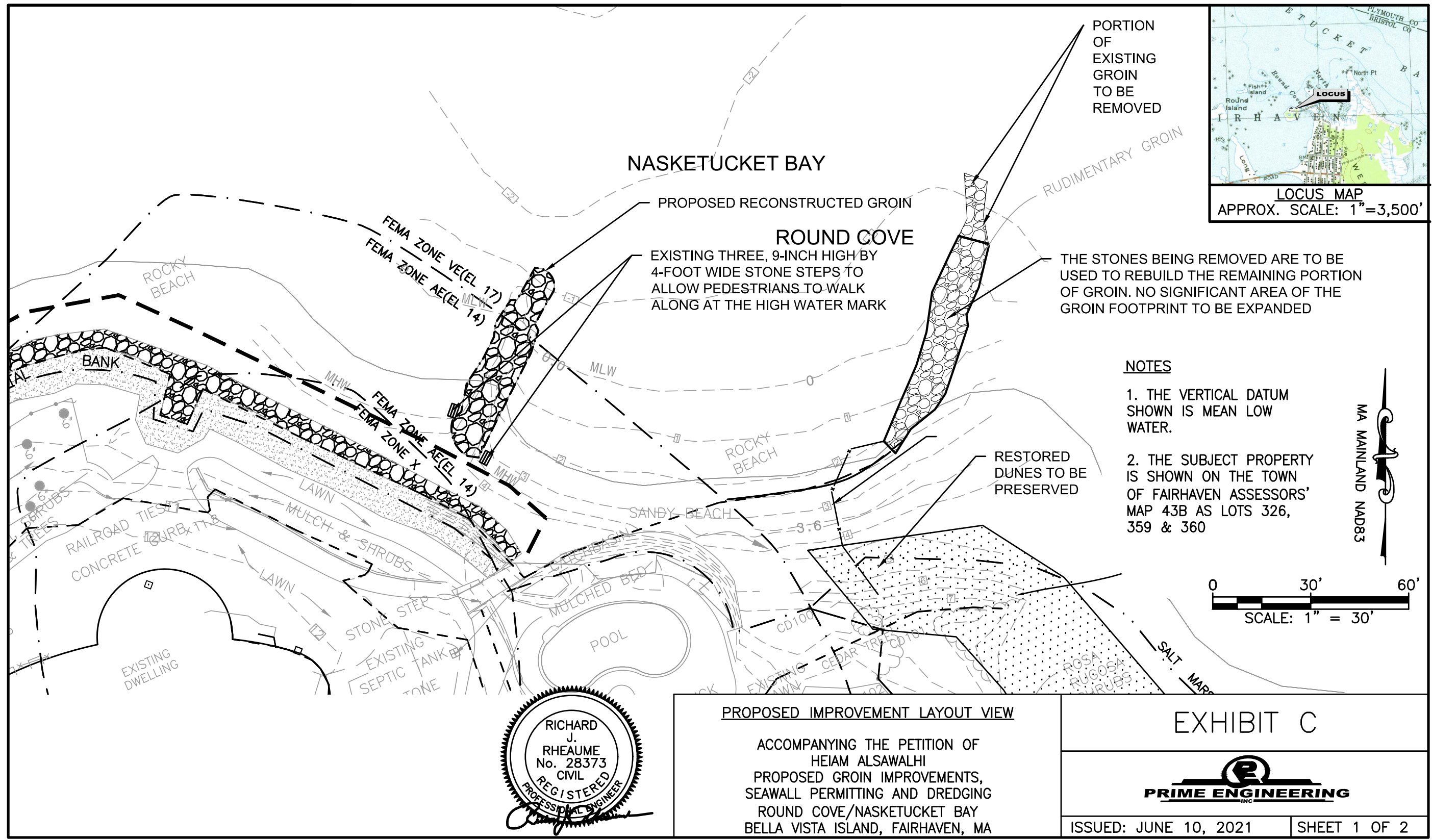


CAUSEWAY DETAIL AND DREDGING PLAN  
 ACCOMPANYING THE PETITION OF  
 HEIAM ALSAWALHI  
 PROPOSED GROIN IMPROVEMENTS,  
 SEAWALL PERMITTING AND DREDGING  
 ROUND COVE/NASKETUCKET BAY  
 BELLA VISTA ISLAND, FAIRHAVEN, MA

EXHIBIT B

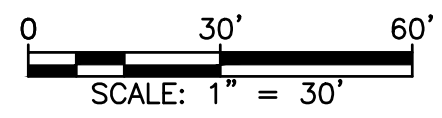
**PRIME ENGINEERING**  
INC.

ISSUED: JUNE 10, 2021 | SHEET 1 OF 1



**NOTES**

1. THE VERTICAL DATUM SHOWN IS MEAN LOW WATER.
2. THE SUBJECT PROPERTY IS SHOWN ON THE TOWN OF FAIRHAVEN ASSESSORS' MAP 43B AS LOTS 326, 359 & 360



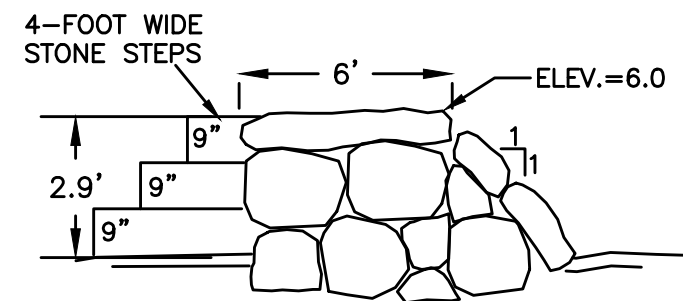
**PROPOSED IMPROVEMENT LAYOUT VIEW**

ACCOMPANYING THE PETITION OF HEIAM ALSAWALHI  
PROPOSED GROIN IMPROVEMENTS,  
SEAWALL PERMITTING AND DREDGING  
ROUND COVE/NASKETUCKET BAY  
BELLA VISTA ISLAND, FAIRHAVEN, MA

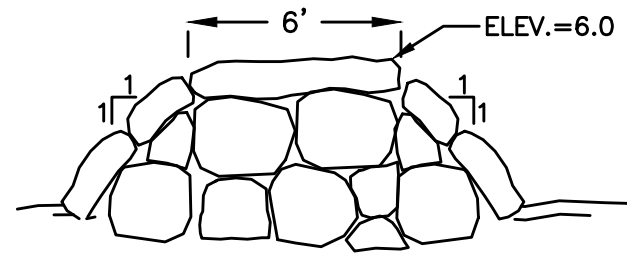
**EXHIBIT C**



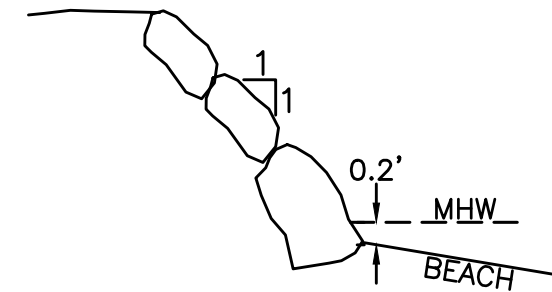
|                        |                 |      |
|------------------------|-----------------|------|
| 3.6                    | MEAN HIGH WATER | /    |
| 2.6                    | MEAN SEA LEVEL  | 1.0' |
| 0                      | MEAN LOW WATER  | 2.6' |
| <u>TIDE ELEVATIONS</u> |                 |      |



CROSS SECTION OF  
PROPOSED RECONSTRUCTED GROIN  
AT STONE STAIRS (TYP.)  
NOT TO SCALE



CROSS SECTION OF PROPOSED  
RECONSTRUCTED GROIN (TYP.)  
NOT TO SCALE



SECTION A-A  
EXISTING POOL SEAWALL  
NOT TO SCALE



PROFILE PLAN OF GROIN IMPROVEMENT

ACCOMPANYING THE PETITION OF  
HEIAM ALSAWALHI  
PROPOSED GROIN IMPROVEMENTS,  
SEAWALL PERMITTING AND DREDGING  
ROUND COVE/NASKETUCKET BAY  
BELLA VISTA ISLAND, FAIRHAVEN, MA

EXHIBIT C

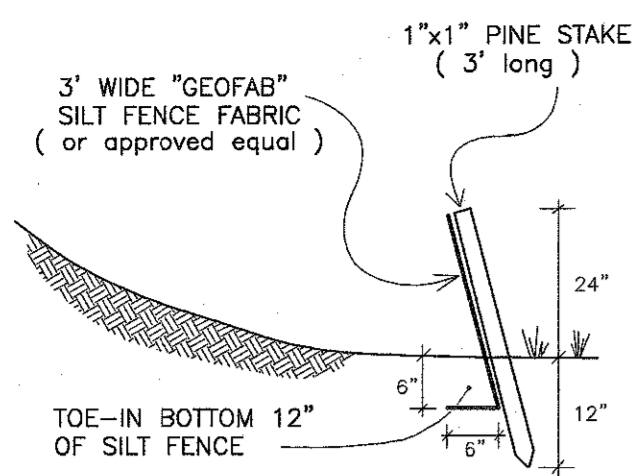


ISSUED: JUNE 10, 2021

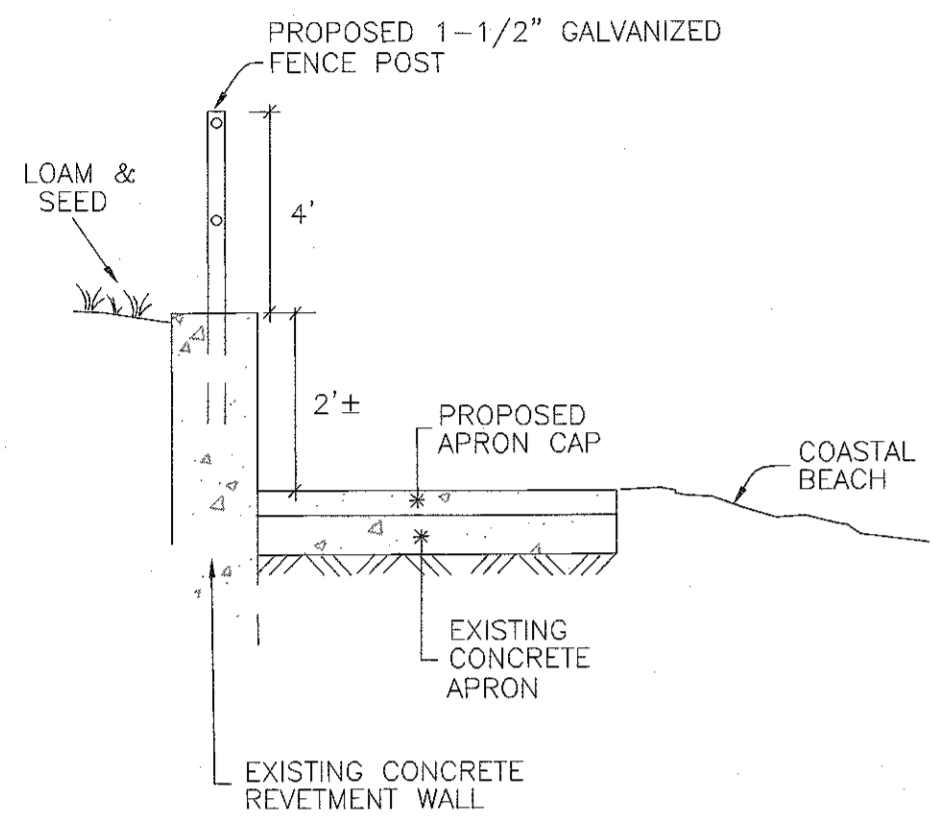
SHEET 2 OF 2



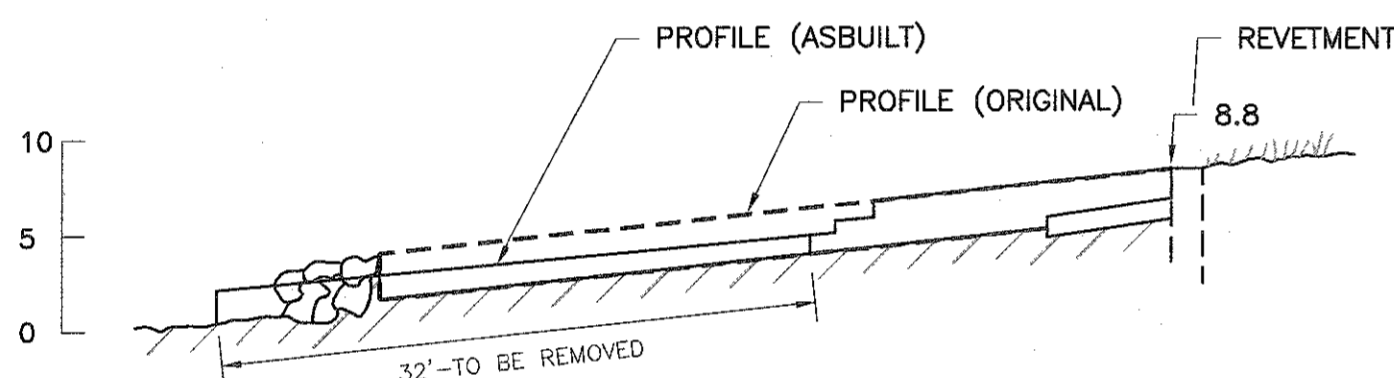




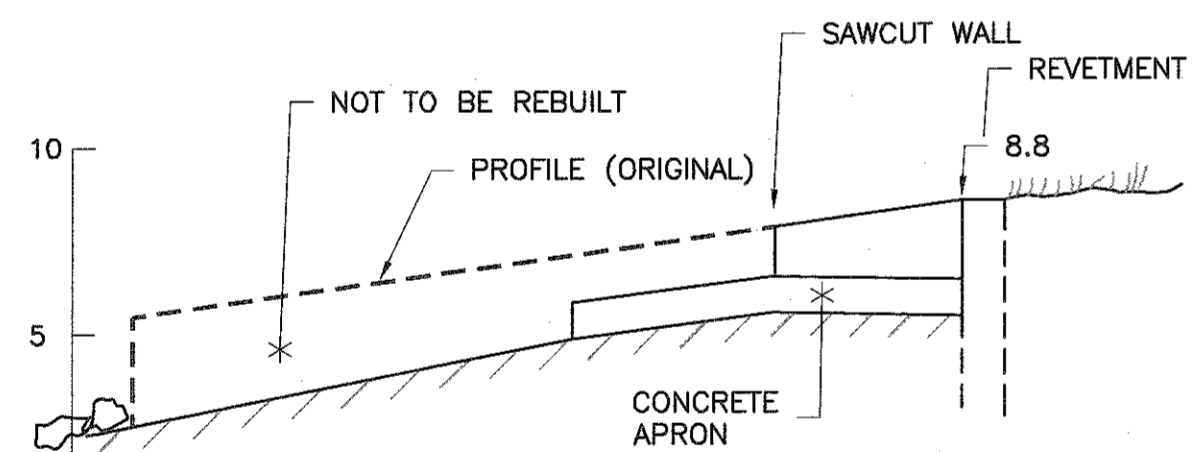
**SILT / EROSION CONTROL FENCING**  
NOT TO SCALE



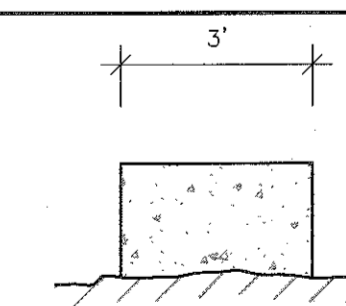
**SECTION A-A**  
(NOT TO SCALE)



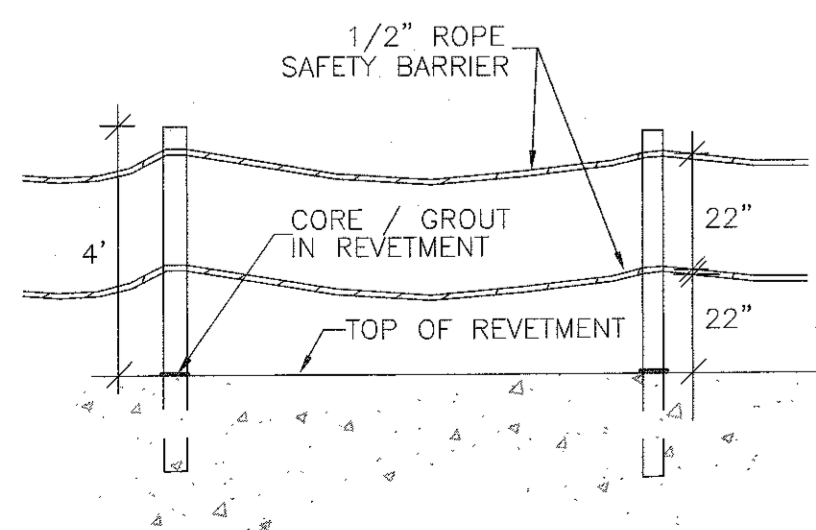
**NORTH GROIN**  
SECTION B-B  
1"=10'



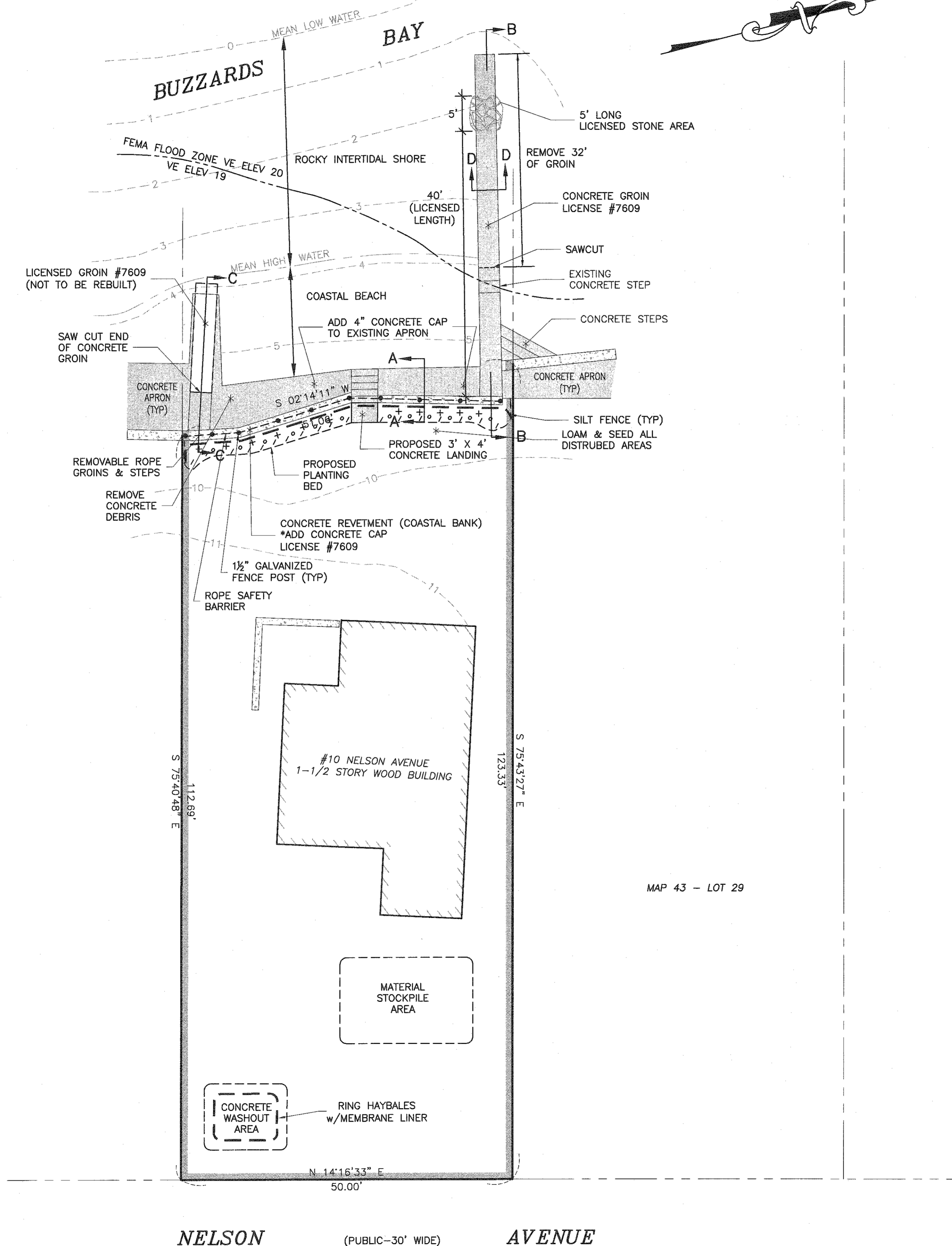
**SOUTH GROIN**  
SECTION C-C  
1"=5'



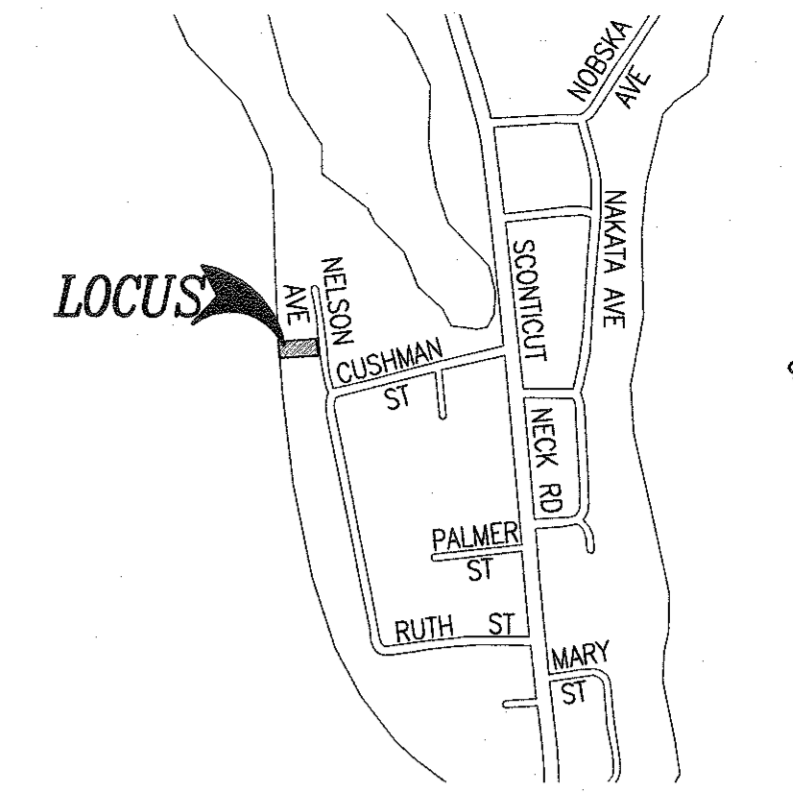
**NORTH GROIN**  
SECTION D-D  
1"=3'



**ROPE SAFETY BARRIER**  
(NOT TO SCALE)



MAP 43 - LOT 29



**LOCUS MAP**

SCALE: 1"=600'±

**LEGEND**

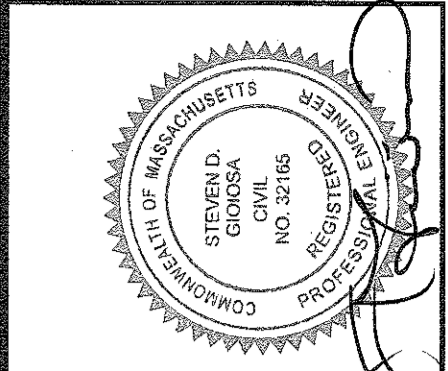
- PROPERTY LINE
- - - - - EXISTING CONTOUR

**CONSTRUCTION NOTES**

1. ALL WORK DEPICTED ON THIS PLAN IS SUBJECT TO ALL ORDER OF CONDITIONS ISSUED BY THE FAIRHAVEN CONSERVATION COMMISSION. THE CONTRACTOR SHALL HAVE A COPY OF THE ORDER AND APPROVED PLAN ONSITE AT ALL TIME DURING THE CONSTRUCTION PROVIDED.
2. A PRE-CONSTRUCTION MEETING WILL BE SCHEDULED BY THE CONTRACTOR WITH THE CONSERVATION AGENT TO REVIEW THE REQUIREMENTS OUTLINED IN THE ORDER OF CONDITIONS.
3. THE SILT FENCE FOR EROSION CONTROL SHALL BE SET PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS UNTIL ALL DISTURBED AREAS ARE STABILIZED.
4. STOCKPILING OF MATERIALS SHALL BE LIMITED TO THE DESIGNATED UPLAND AREA.
5. IF REQUIRED, A LINED CONCRETE WASHOUT PIT SHALL BE SET IN THE STOCKPILE AREA WITH SILT FENCING SET ALONG THE DOWNGRADE PERIMETER OF THE PIT.
6. ALL DISTURBED AREAS SHALL BE IMMEDIATELY STABILIZED WITH LOAM AND SEEDING UPON COMPLETION OF CONSTRUCTION.
7. THE USE OF HEAVY EQUIPMENT ON THE BEACH OR ROCKY INTERTIDAL SHORE IS PROHIBITED.

**PLANT LIST**

| SYMBOL | QUANTITY | NAME                                      |
|--------|----------|---|
| +      | 11       | 'EURYBIA SPECTABILIS' Eastern Showy Aster |
| o      | 12       | 'HEMEROCALLIS SPP.' Daylily Stelladora    |
| /      | 18       | 'COREOPSIS ROSEA' Pink Tickseed           |



| No. | Date          | Revision Description         | Checked By | App'd. By |
|-----|---------------|------------------------------|------------|-----------|
| 4   | JULY 26, 2021 | REVISE NORTH GROIN           | SDG        | SDG       |
| 3   | MAY 17, 2021  | REVISE NORTH GROIN           | SDG        | SDG       |
| 2   | APR. 16, 2021 | REVISED PLAN DETAILS         | SDG        | SDG       |
| 1   | APR. 05, 2021 | REVISED DESIGN/ADD PLANTINGS | SDG        | SDG       |

scale: 1"=10'  
date: FEBRUARY 11, 2021  
drawn: BPL  
checked: SDG  
approved: SDG  
sheet 1 of 1  
drawing number: CSRP-1

project: ASSESSORS MAP 43 - LOT 30  
10 NELSON AVENUE  
FAIRHAVEN, MASSACHUSETTS  
client: THE DELANO IRREVOCABLE TRUST  
drawing title: COASTAL STRUCTURE REPAIR PLAN

**SITEC**  
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440 Francis Center Road - Danvers, MA 01923  
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**OWNER/APPLICANT:**  
THE DELANO IRREVOCABLE TRUST  
10 NELSON AVENUE  
FAIRHAVEN, MA 02719