



ADDENDUM NO. 01, AUGUST 19, 2022

RE: Brighton Beach Resiliency Plan – Shoreline Restoration Work: Phase I

LHB Project No. 210260

To: All Planholders

From: LHB, Inc.

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated August 18, 2022. Acknowledge receipt of this Addendum by checking the appropriate box within the Bid Express solicitation. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of 01 pages and the following attachment (s):

General

None

Specifications

Div 00 – 01: 01 1000, 01 2200, 01 2300, & 01 3000

Drawings

Civil: C000, C003, C101, C102, C103, C104, C105, C301, C302, C303, C304, C305, C401, C402, C403, C404, & C405

Coastal: CH2.1.0, CH2.2.0, CH2.2.1, CH2.3.0, & CH2.4.0

General

1. Clarification: Modifications to the Bidding Structure have been made to the Drawings. Instead of four (4) Bid Areas, there is now one (1) Base Bid Area and two (2) Alternate Areas.
2. The Bid Form has been replaced in Bid Express.

Changes to Specifications

3. Replace Section 01 1000 Summary in its entirety.
4. Replace Section 01 2200 Unit Prices in its entirety.
5. Add Section 01 2300 Alternates in its entirety.
6. Replace Section 01 3000 Administrative Requirements in its entirety.

Changes to Drawings

7. Replace Sheets C000, C003, C101, C102, C103, C104, C105, C301, C302, C303, C304, C305, C401, C402, C403, C404, C405 and CH2.1.0, CH2.2.0, CH2.2.1, CH2.3.0, & CH2.4.0 in their entirety.

END OF ADDENDUM NO. 01

SECTION 01 1000
SUMMARY - REVISED PER ADDENDUM 01

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Brighton Beach Resiliency - Shoreline Restoration: Phase I
- B. Owner's Name: City of Duluth, Parks & Recreation Department.
- C. Landscape Architect & Engineer: Name: LHB, Inc.
- D. The Project consists of coastal shoreline restoration work with incidental removals, erosion control, stormwater management and vegetation re-establishment. The shoreline work primarily includes earthwork modifications to regrade damaged/eroded areas and the placement of large on-site armored stone and vegetated riprap along the beach embankment for storm protection. Removal of existing vegetation, rock, bituminous and gravel surfacing will need to occur to accommodate the shoreline restoration. A series of beach access points and drainage ways intersect the shoreline restoration area and will include detailed grading for the swales, and installation of drainage rock, large stone steppers, surface aggregate and landscape boulders. Vegetation restoration will consist of native seeding with erosion control blanket, coir matting, netting straw mat and protection fencing as well as the planting of trees, native plugs, live stakes and brush bundles.
- E. The project includes one Base Bid and two Alternates for shoreline restoration work within the Gitchi Gammi Park limits and along Brighton Beach in Duluth, MN.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 5200 - Agreement Form.

1.03 CONTRACT TIME

- A. The Work will be substantially completed by December 31st, 2022.
- B. The Work will be completed by May 31st, 2023.

1.04 CONSTRUCTION SCHEDULE

- A. All shoreline restoration work to be completed during the 2022 construction season. If time and weather allows, a portion of the vegetation restoration work may occur during 2022, however the majority of the site must be stable and contained for the duration of winter. Final vegetation restoration work will need to occur in the spring of 2023.

1.05 OWNER OCCUPANCY

- A. Owner intends to keep the existing lakewalk trail open during the entire construction period. If required, the trail will be temporarily closed at necessary locations for construction crossing. Safety fencing will be required to keep trail users out of the construction limits, as indicated on Drawings.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
 - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Arrange use of site and premises to allow:
 - 1. Use of trail by the public. Any significant damage to the trail will be the responsibility of the Contractor to restore.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2200
UNIT PRICES - REVISED PER ADDENDUM 01

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. List of unit prices, for use in preparing Bids.
 - 2. Measurement and payment criteria applicable to Work performed under a unit price payment method.

1.2 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services, and incidentals; erection, application or installation of an item of the Work; overhead and profit

1.3 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.
- B. Refer to specification section 00 41 00 for Bid Form with Estimated Quantities.

1.4 MEASUREMENT OF QUANTITIES

- A. Take all measurements and compute quantities. Measurements and quantities will be verified by Engineer.
- B. Assist by providing necessary equipment, workers, and survey personnel as required.
- C. Measurement Devices: Measurement devices shall be capable of producing accuracy of one decimal place greater than the quantity provided within the bid form.
- D. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- E. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Engineer prior to starting work.

1.5 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Engineer, multiplied by the unit price.

1.6 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not conforming to specified requirements.

1.7 SCHEDULE OF UNIT PRICES

- A. Measurement and payment for unit prices will be as follows. For bid items not listed, refer to MnDOT Standard Specifications for Construction, 2020 edition as modified by the plans, specifications, and project Special Provisions.

Item: #01 Mobilization and Demobilization

Measurement: Lump sum

Payment: Payment for mobilization and demobilization will be made at the contract unit price for lump sum according to the plans. Payment for this item shall be made in three installments. The first payment is 60 percent of the lump sum price and shall be made on the first pay request, after mobilization is complete. The second payment is 30 percent of the lump sum price and shall be made after substantial completion. The final payment is the remaining 10 percent and shall be made on the final pay request. The Mobilization and Demobilization bid item includes all labor, equipment, and materials to provide and remove (where applicable) a field office, provide a dumpster, provide temporary construction fence, protect existing utility poles, protect specified trees, protect historic structures, and protect storm utility features according to the details shown in the plans and specifications. This bid item also includes all mobilization and demobilization of equipment and personnel to the project site.

Item: #02 Erosion and Sediment Control

Measurement: Lump sum

Payment: Payment for erosion and sediment control will be made at the contract unit price for lump sum according to the plans. This item includes all labor, equipment, and materials to construct rock construction entrances and staging areas, install and maintain silt curtain (if required by MNDNR due to excessive silt disturbance in Lake Superior due to construction), place sediment control logs, install erosion control blankets and anchoring system, furnishing, and sowing seed, and provide maintenance, supervision, and inspection according to the details shown in the plans and specifications.

Item: #03 Traffic Control & Signage

Measurement: Lump sum

Payment: Payment for traffic control and signage will be made at the contract unit price for lump sum according to the plans. This item includes all labor, equipment, and materials to place traffic signage and provide traffic control as required to protect the safety of employees and the public, and, if applicable, according to the details shown in the plans and specifications.

Item: #04 Site Preparation and Demolition

Measurement: Lump sum

Payment: Payment for site preparation and demolition will be made at the contract unit for lump sum according to the plans. This item includes all labor, equipment, and materials to remove stone, perform any general clearing and grubbing, salvage picnic tables, salvage benches, salvage signs, and to store on-site for reinstallation according to the details shown in the plans and specifications.

Item: #05 Excavation and Removals/Disposal

Measurement: Lump sum

Payment: Payment for excavation and disposal will be made at the contract unit for lump sum according to the plans. This item includes all labor, equipment, and materials to excavate soil, timber, and miscellaneous asphalt and concrete debris and haul off site, according to the details shown in the plans and specifications.

Item: #06 Site Restoration

Measurement: Lump sum

Payment: Payment for site restoration will be made at the contract unit for lump sum according to the plans. This item includes all labor, equipment, place topsoil along finished grades and into stone voids for vegetated hard armoring, trees, seedlings, plugs, live stakes, brush bundles, coir fiber matting, restoration fencing and misc. materials to restore and clean-up project site according to the details shown in the plans and specifications.

Item: #07 Haul Roads

Measurement: Lump sum

Payment: Payment for maintenance and replacement of haul roads will be made at the contract unit price per lump sum according to the plans. This item includes all labor, equipment, and materials to: 1) protect and maintain the haul roads including furnishing and placement of protective materials over the bike path, and 2) to maintain and replace the haul roads including saw cut, remove pavement, remove curb and gutter (if damaged), haul off site and properly dispose of materials, provide traffic control, re-compact subbase materials, replace wet subbase materials, place new pavement and curb/gutter, and perform all material and density testing associated with maintenance and replacement of haul road efforts. This item also includes any work associated with barge haul routes including draft analysis, proper sizing of vessels and barges, obstruction determination, and certification of vessels and barges for compliance with United States Coast Guard.

Item: #08 Bonds

Measurement: Lump sum

Payment: Payment for payment and performance bonds will be made at the contract unit price for lump sum according to the plans. This item includes all labor, equipment, and materials to furnish payment and performance bonds.

Item: #09 Salvaged Stone for Shoreline Armoring

Measurement: Lump sum

Payment: Payment for salvaged stone and soil will be made at the contract unit for lump sum according to the plans. This item includes all labor, equipment, and materials to salvage onsite materials, at each bid area, approved by the Engineer, sort materials, stockpile materials and transport to other bid areas within this project, and reinstall according to the details shown in the plans and specifications and the Engineer. Purchasing and installing geotextile fabric shall be incidental to this bid item. Salvaging of bedding or filter stone for sub layers of the armor stone steps shall be included in this item. All chinking stone is to be salvaged onsite. Any select flat stones salvaged that may work as stone steps should be set aside.

Item: #10 Select Armor Stones

Measurement: Each

Payment: Payment for new select armor stones will be made at the contract unit price per each stone according to the plans. This item includes all labor, equipment, and materials required to transport stones to Brighton Beach for installation.

Item: #11 Armor Stone Steps

Measurement: Each

Payment: Payment for armor stone steps will be made at the contract unit price per each set of steps according to the plans. This item includes all labor, equipment, and materials including removal of loose bedrock materials, positioning and leveling of toe stones, drilling, coring, cleaning drill/core holes, furnishing and cutting and installing reinforcement anchors (as necessary), grouting anchors, topping off anchors to have grout surface flush with top of stone drill hole surface, and cleaning excess grout off of stones according to the details shown in the plans and specifications. Compaction and installation of all bedding layers is incidental to this bid item.

ALTERNATE: #1 Bid Area A

Measurement: Lump sum

Payment: This bid item includes all labor, equipment, and materials (neat quantities and excess) required to complete the work in Bid Area A. Contractor shall include all costs associated with Bid Items 1-9, within Bid Area A, for this alternate bid item. Contractor shall review plans and specifications, in detail, to determine quantities of materials required to perform the work at Bid Area A.

ALTERNATE: #2 Bid Areas C & D

Measurement: Lump sum

Payment: This bid item includes all labor, equipment, and materials (neat quantities and excess) required to complete the work in Bid Areas C & D. Contractor shall include all costs associated with Bid Items 1-9, within Bid Area C & D, for this alternate bid item. Contractor shall review plans and specifications, in detail, to determine quantities of materials required to perform the work at Bid Areas C & D.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 NOT USED

END OF SECTION

SECTION 01 2300
ALTERNATES - ADDED PER ADDENDUM 01

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.

1.02 ACCEPTANCE OF ALTERNATES

- A. Alternates are not shown in any particular order of priority or precedence. Alternates quoted on the Bid Form will be reviewed and selected or rejected at Owner's option, based on overall project budget. Accepted Alternates will be identified in the Owner-Contractor Agreement.

1.03 SCHEDULE OF ALTERNATES

- A. Alternate No. 1 - Area A: Provide and install all work associated with shoreline restoration work in Area A including removals, erosion control, grading and drainage, site restoration and vegetation re-establishment.
 - 1. Alternate Item: See all Sections and Drawing numbers C003, C101, C301 and C401 for scope of work and location.

- B. Alternate No. 2 - Areas C & D: Provide and install all work associated with shoreline restoration work in Areas C & D including removals, erosion control, grading and drainage, site restoration and vegetation re-establishment.
 - 1. Alternate Item: See all Sections and Drawing numbers C003, C102, C103, C302, C303, C402, and C403 for scope of work and locations.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000

ADMINISTRATIVE REQUIREMENTS - REVISED PER ADDENDUM 01

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Submittals for review, information, and project closeout.
- C. Submittal procedures.

1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit for review in PDF (electronic format) as an attachment to E-Mail:
 - 1. Product data.
 - 2. Design data.
 - 3. Shop drawings.
 - 4. Samples for selection.
 - 5. Samples for verification.
- B. Provide quantity and size as specified in individual sections for review.
 - 1. Samples for selection.
 - 2. Samples for verification.
- C. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.02 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections or as indicated on the drawings, submit for review in PDF (electronic format) as an attachment to E-Mail:
 - 1. Certificates.
 - 2. Test reports.
 - 3. Inspection reports.
 - 4. Manufacturer's instructions.
 - 5. Manufacturer's field reports.
 - 6. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.03 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. Refer to Section 01 7800 for closeout submittals.
- D. Submit for Owner's benefit during and after project completion.

3.04 ELECTRONIC (AUTOCAD) DRAWING FILES

- A. Architect will provide Contractor or its Subcontractors with CAD background files, in .DWG format, only upon the following conditions:

1. Drawing files requested were prepared by the Architect and not by the Architect's Consultant; (requests for drawing files prepared by Architect's consultant should be sent directly to the Consultant).
2. Architect obtains approval from Owner.
3. Receipt of Architect's Limited License Agreement (LLA) prepared and signed by Architect and Contractor or its Subcontractor.
4. Receipt of \$500 service fee payable to LHB.
5. Electronic drawing files will only be provided to the party that signed the LLA and that party assumes the responsibility and the risk of conversion into another format.

END OF SECTION

BRIGHTON BEACH RESILIENCY PLAN

SHORELINE RESTORATION: PHASE 1

BRIGHTON BEACH ROAD DULUTH, MN 55804

CONTACTS

CLIENT
CITY OF DULUTH PARKS AND RECREATION
411 WEST FIRST STREET
DULUTH, MN 55802
CONTACT: JIM SHOBERG
EMAIL: JSHOBERG@DULUTHMN.GOV
PHONE: (218) 730-4316

PROJECT MANAGER
LHB, INC.
21 WEST SUPERIOR STREET, SUITE 500
DULUTH, MN 55802
CONTACT: HEIDI BRINGMAN
E-MAIL: HEIDI.BRINGMAN@LHBCORP.COM
PHONE: (218) 279-2429

PROJECT LANDSCAPE ARCHITECT
LHB, INC.
21 WEST SUPERIOR STREET, SUITE 500
DULUTH, MN 55802
CONTACT: RACHEL JOHNSON
E-MAIL: RACHEL.JOHNSON@LHBCORP.COM
PHONE: (218) 249-7116

PROJECT CIVIL ENGINEER
LHB, INC.
CONTACT: MEGAN GOPLIN
E-MAIL: MEGAN.GOPLIN@LHBCORP.COM
PHONE: (218) 249-7152

PROJECT COASTAL ENGINEER
AMI CONSULTING ENGINEERS, PA
CONTACT: RYAN DAGGER
E-MAIL: RYAN.DAGGER@AMIENTINEERS.COM
PHONE: (715) 718-5722

SHEET INDEX

C000 TITLE SHEET
C001 GENERAL NOTES
C002 EXISTING CONDITIONS PLAN
C003 BID AREA SITE INDEX PLAN

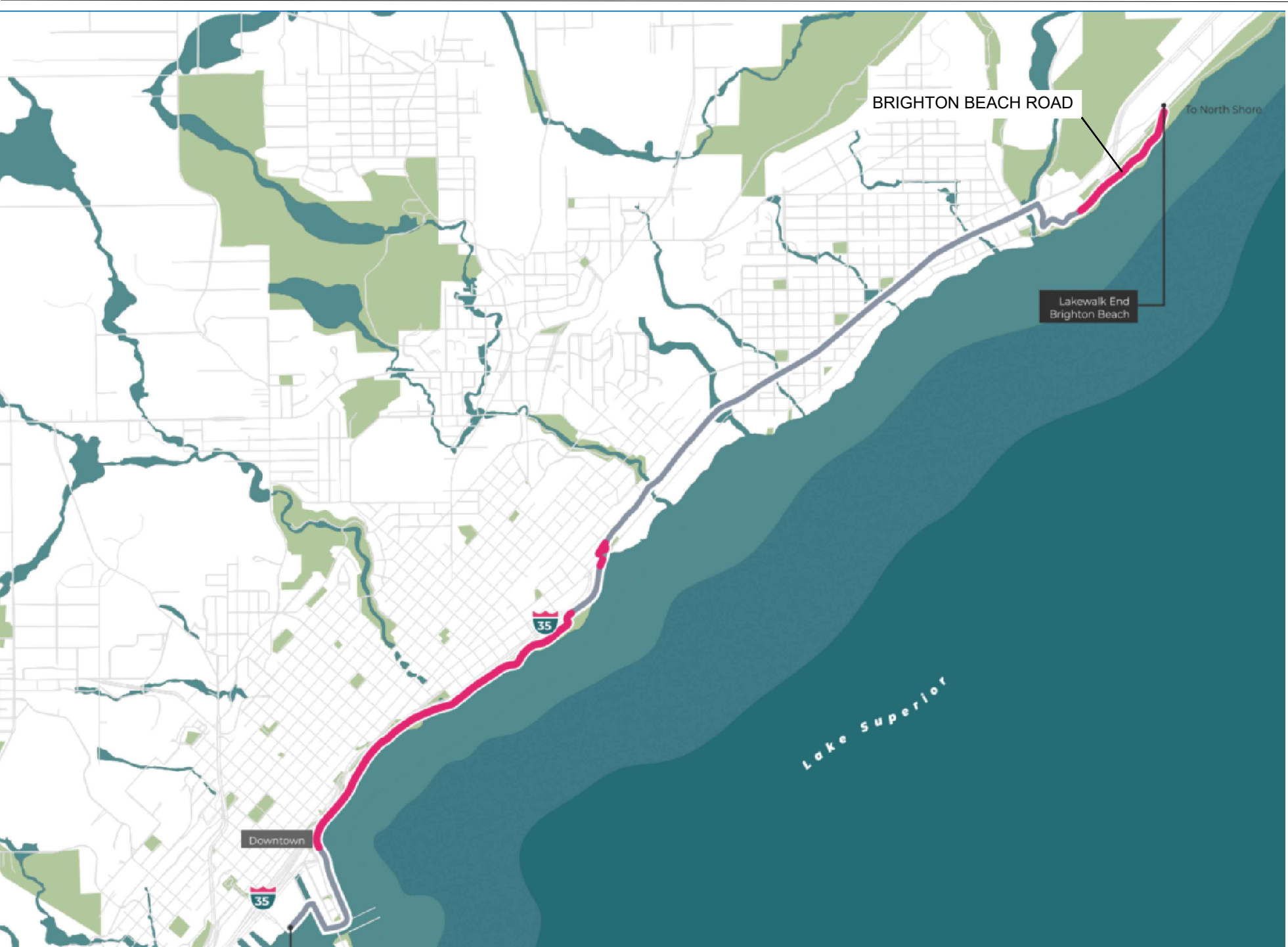
RESTORATION SHEETS

C101 REMOVALS AND EROSION CONTROL PLAN AREA A: ALTERNATE 1
C102 REMOVALS AND EROSION CONTROL PLAN AREA C: ALTERNATE 2
C103 REMOVALS AND EROSION CONTROL PLAN AREA D: ALTERNATE 2
C104 REMOVALS AND EROSION CONTROL PLAN AREA G: BASE BID
C105 REMOVALS AND EROSION CONTROL PLAN AREA H: BASE BID
C301 GRADING PLAN AREA A: ALTERNATE 1
C302 GRADING PLAN AREA C: ALTERNATE 2
C303 GRADING PLAN AREA D: ALTERNATE 2
C304 GRADING PLAN AREA G: BASE BID
C305 GRADING PLAN AREA H: BASE BID
C401 RESTORATION PLAN AREA A: ALTERNATE 1
C402 RESTORATION PLAN AREA C: ALTERNATE 2
C403 RESTORATION PLAN AREA D: ALTERNATE 2
C404 RESTORATION PLAN AREA G: BASE BID
C405 RESTORATION PLAN AREA H: BASE BID
C501 DRAINAGE PROFILES
C502 DRAINAGE PROFILES
C601 STORMWATER POLLUTION PREVENTION PLAN NARRATIVE
C602 STORMWATER POLLUTION PREVENTION PLAN NARRATIVE
C603 EROSION CONTROL DETAILS
C604 CONSTRUCTION DETAILS
L501 LANDSCAPE DETAILS
L502 LANDSCAPE DETAILS

SHORELINE RESTORATION SHEETS

CH0.0.0 GENERAL PROJECT NOTES
CH2.1.0 PROPOSED PLAN - PLAN AREA A - ALTERNATE 1
CH2.2.0 PROPOSED PLAN - PLAN AREA C&D - ALTERNATE 2
CH2.2.1 PROPOSED PLAN - PLAN AREA C&D - ALTERNATE 2
CH2.2.2 PROPOSED DETAILED CROSS-SECTION
CH2.2.3 PROPOSED GENERAL CROSS-SECTION
CH2.2.4 PROPOSED GENERAL CROSS-SECTION
CH2.2.5 PROPOSED GENERAL CROSS-SECTION
CH2.2.6 PROPOSED GENERAL CROSS-SECTION
CH2.3.0 PROPOSED PLAN - PLAN AREA G - BASE BID
CH2.3.1 PROPOSED DETAILED CROSS-SECTION
CH2.4.0 PROPOSED PLAN - PLAN AREA G&H - BASE BID
CH2.4.1 PROPOSED TYPICAL CROSS-SECTIONS
CH2.4.2 PROPOSED GENERAL CROSS-SECTIONS
CH2.4.3 PROPOSED GENERAL CROSS-SECTIONS
CH2.4.4 PROPOSED GENERAL CROSS-SECTIONS
CH2.5.0 COASTAL DETAILS

PROJECT LOCATION MAP



THIS SQUARE APPEARS 1/2" x 1/2"
ON FULL SIZE SHEETS.

08/18/2022 BID ISSUE
NO DATE ISSUED FOR

01 08/19/2022 ADDENDUM 01
NO DATE REVISION

I HEREBY CERTIFY that this plan, specifica-
tion or report was prepared by me or under
my direct supervision and that I am a duly
Licensed Landscape Architect under the
laws of the State of Minnesota.

SIGNATURE: Heidi Bringman

TYPED OR PRINTED NAME: HEIDI S. BRINGMAN

DATE: 08-18-22 REG. NO.: 46914

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PROJECT NAME:
BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
TITLE SHEET

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO: 210260
DRAWING NO:

C000



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**

411 WEST FIRST ST
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2"
ON FULL SIZE SHEETS.

08/18/2022		BID ISSUE
NO	DATE	ISSUED FOR

01	08/19/2022	ADDENDUM 01
NO	DATE	REVISION

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tion or report was prepared by me or under
my direct supervision and that I am a duly
Licensed Landscape Architect under the
laws of the State of Minnesota.

SIGNATURE: *Heidi S. Bringman*

TYPED OR PRINTED NAME: HEIDI S. BRINGMAN

DATE: 08-18-22 REG. NO.: 46914

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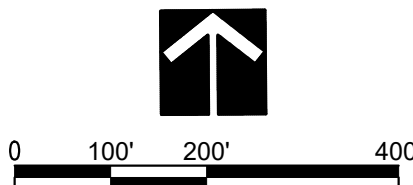
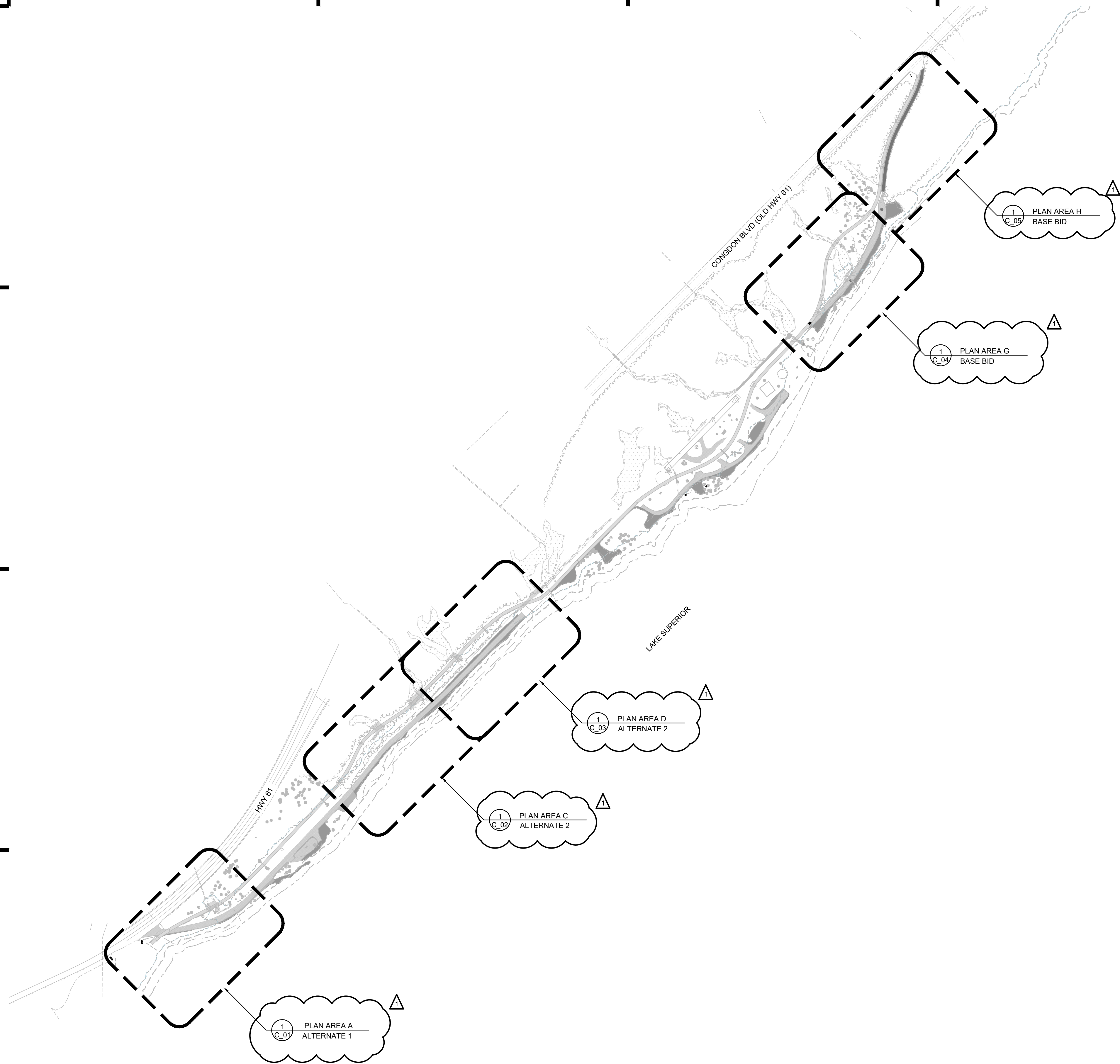
PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**BID AREA SHEET INDEX
PLAN**

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO: 210260
DRAWING NO:

C003

File Path: \\21026000 Drawings\\C00 Brighton Beach\\C000 C003 Index Sheet.dwg
Plot Date: 9/29/2021 4:29 PM



ALTERNATE 1



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**
411 WEST FIRST ST
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2"
ON FULL SIZE SHEETS.

08/18/2022 BID ISSUE
NO DATE ISSUED FOR

01 08/19/2022 ADDENDUM 01
NO DATE REVISION

I HEREBY CERTIFY that this plan, specifica-
tion or report was prepared by me or under
my direct supervision and that I am a duly
Licensed Professional Engineer under the
laws of the State of Minnesota.

SIGNATURE: *Megan Goplin*

TYPED OR PRINTED NAME: MEGAN GOPLIN

DATE: 08-18-22 REG. NO.: 53018

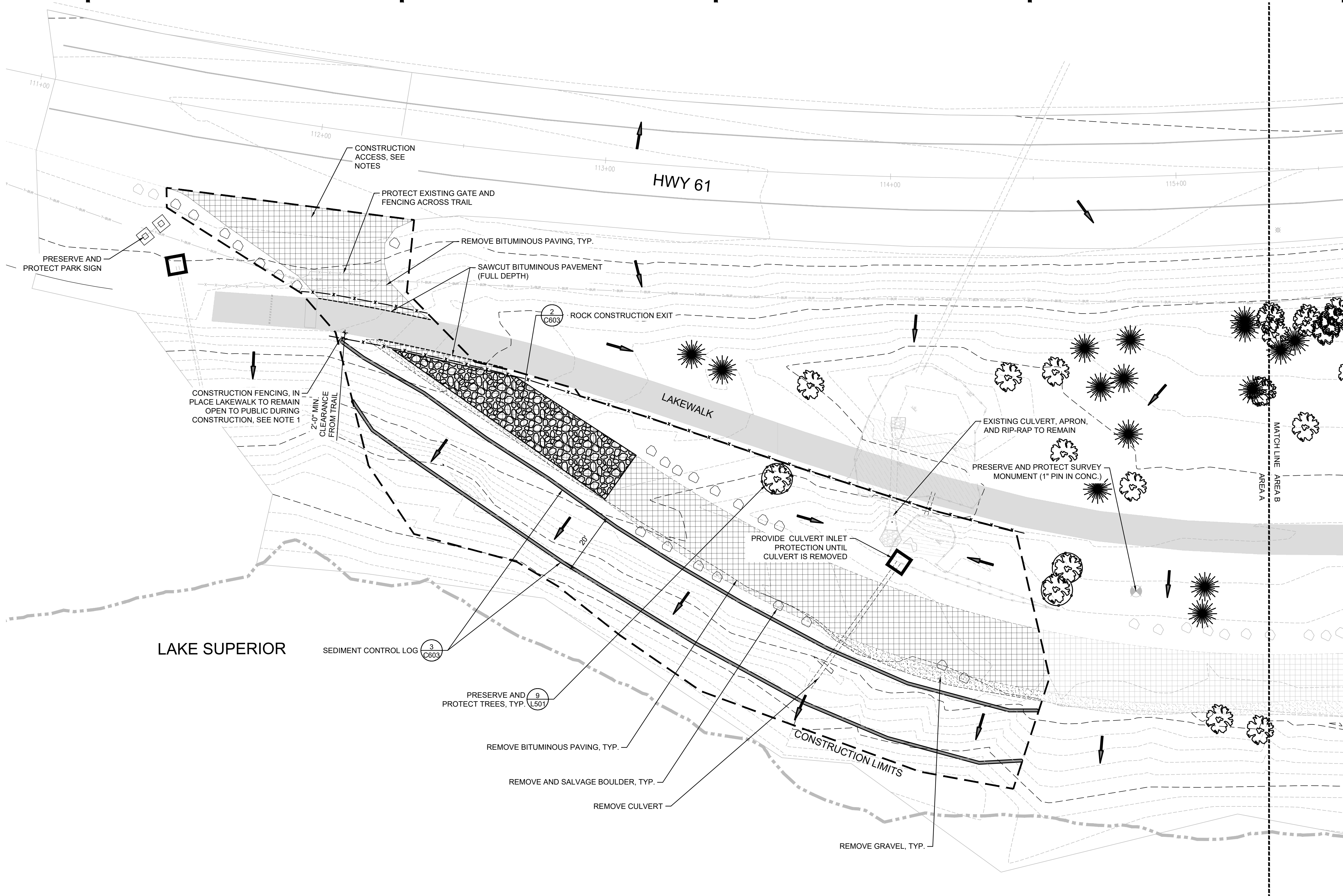
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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**EROSION CONTROL &
REMOVALS PLAN - AREA A**

DRAWN BY: RMJ
CHECKED BY: MAG
PROJ. NO: 210260
DRAWING NO:

C101



LEGEND	
	REMOVE BITUMINOUS PAVING
	REMOVE GRAVEL PAVING
	ROCK CONSTRUCTION EXIT (SEE DETAIL 2/C603)
	SEDIMENT CONTROL LOG (SEE DETAIL 3/C603)
	CONSTRUCTION FENCE
	SILT FENCE (SEE DETAIL 1/C603)
	CONSTRUCTION LIMITS
	REMOVE TREE
	PROTECT TREE. SEE 9/L501
	DRAINAGE ARROW
	CULVERT INLET PROTECTION (SEE DETAIL 5/C603)

NOTES:
1. IN PLACE LAKEWALK TRAIL TO REMAIN OPEN DURING CONSTRUCTION.
COORDINATE ANY TEMPORARY CLOSURES WITH CITY.
2. EXISTING PAVEMENT SHALL SERVE AS CONSTRUCTION ACCESS FOR
PROJECT. PHASE PAVEMENT REMOVAL TO SERVE AS CONSTRUCTION
ACCESS.

WARNING
LOCATION OF ALL UNDERGROUND
UTILITIES SHALL BE VERIFIED BY
THE CONTRACTOR.
CALL BEFORE DIGGING

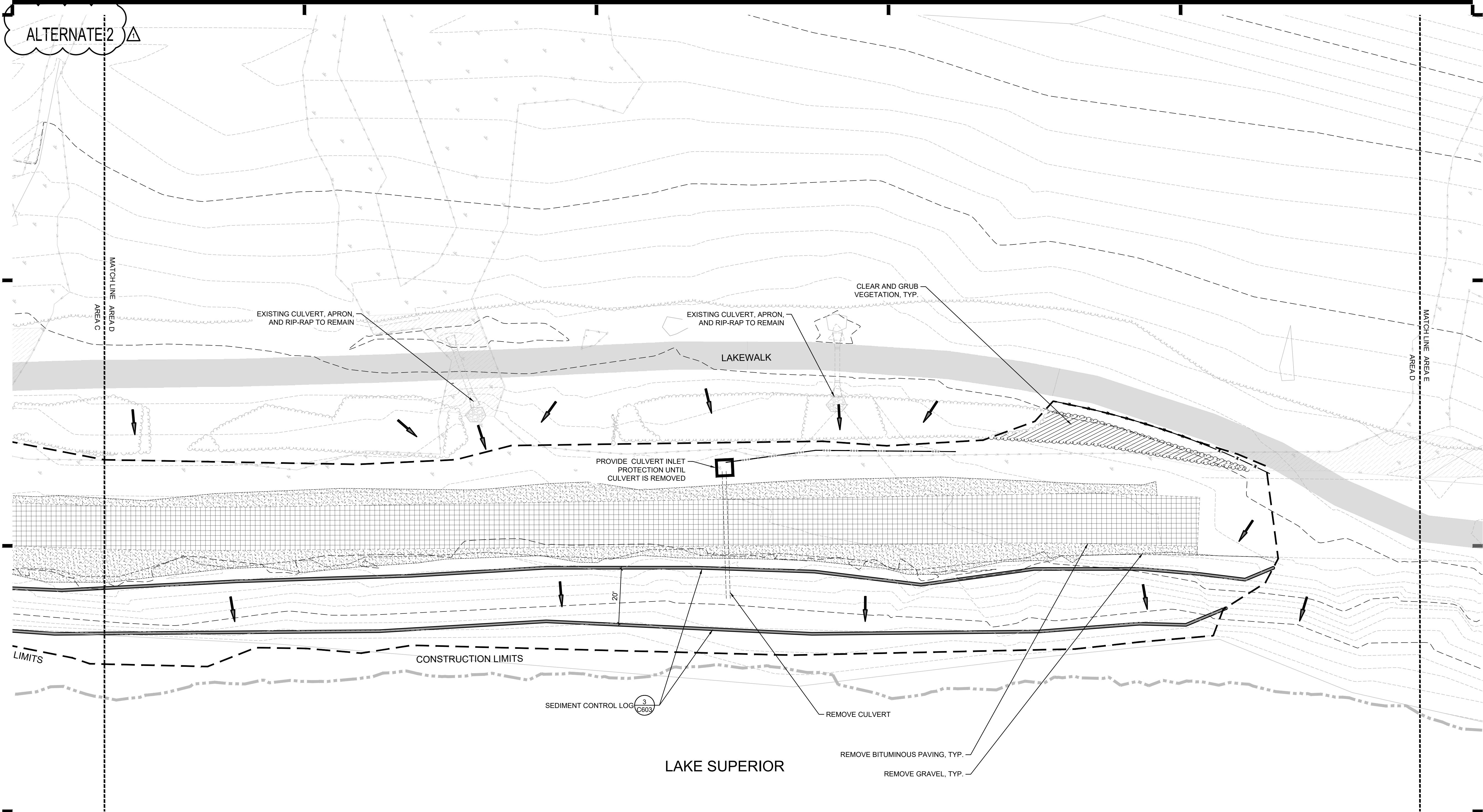
MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D



0 10' 20' 40'

File Path: \\21026000 Drawings\\Brighton Beach\\C101\\C101 Removals Plan.dwg
Plot Date: 9/29/2021 4:29 PM

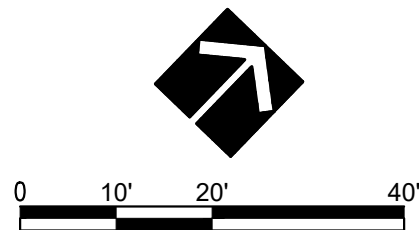
File Path: ..\21020801600 Drawings\Civil\Brighton Beach\210260 C100 Removals Plan.dwg
 Plot Date: 9/29/2021 4:29 PM



WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR. CALL BEFORE DIGGING.

MINNESOTA ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY MN STATUTE 216D



- LEGEND
- | | | | |
|--|--|--|--|
| | REMOVE BITUMINOUS PAVING | | CONSTRUCTION LIMITS |
| | REMOVE GRAVEL PAVING | | REMOVE TREE |
| | ROCK CONSTRUCTION EXIT (SEE DETAIL 2/C603) | | PROTECT TREE. SEE 9/L501 |
| | SEDIMENT CONTROL LOG (SEE DETAIL 3/C603) | | DRAINAGE ARROW |
| | CONSTRUCTION FENCE | | CULVERT INLET PROTECTION (SEE DETAIL 5/C603) |
| | SILT FENCE (SEE DETAIL 1/C603) | | |

- NOTES:
1. IN PLACE LAKEWALK TRAIL TO REMAIN OPEN DURING CONSTRUCTION. COORDINATE ANY TEMPORARY CLOSURES WITH CITY.
 2. EXISTING PAVEMENT SHALL SERVE AS CONSTRUCTION ACCESS FOR PROJECT, PHASE PAVEMENT REMOVAL TO SERVE AS CONSTRUCTION ACCESS.



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**
411 WEST FIRST ST
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2"
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NO	DATE
	ISSUED FOR

01	08/19/2022	ADDENDUM 01
NO	DATE	REVISION

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SIGNATURE: *Megan Goplin*

TYPED OR PRINTED NAME: MEGAN GOPLIN

DATE: 08-18-22 REG. NO.: 53018

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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**EROSION CONTROL &
REMOVALS PLAN - AREA D**

DRAWN BY: RMJ
CHECKED BY: MAG
PROJ. NO: 210260
DRAWING NO:

C103

BASE BID



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**

411 WEST FIRST ST
DULUTH, MN 55802

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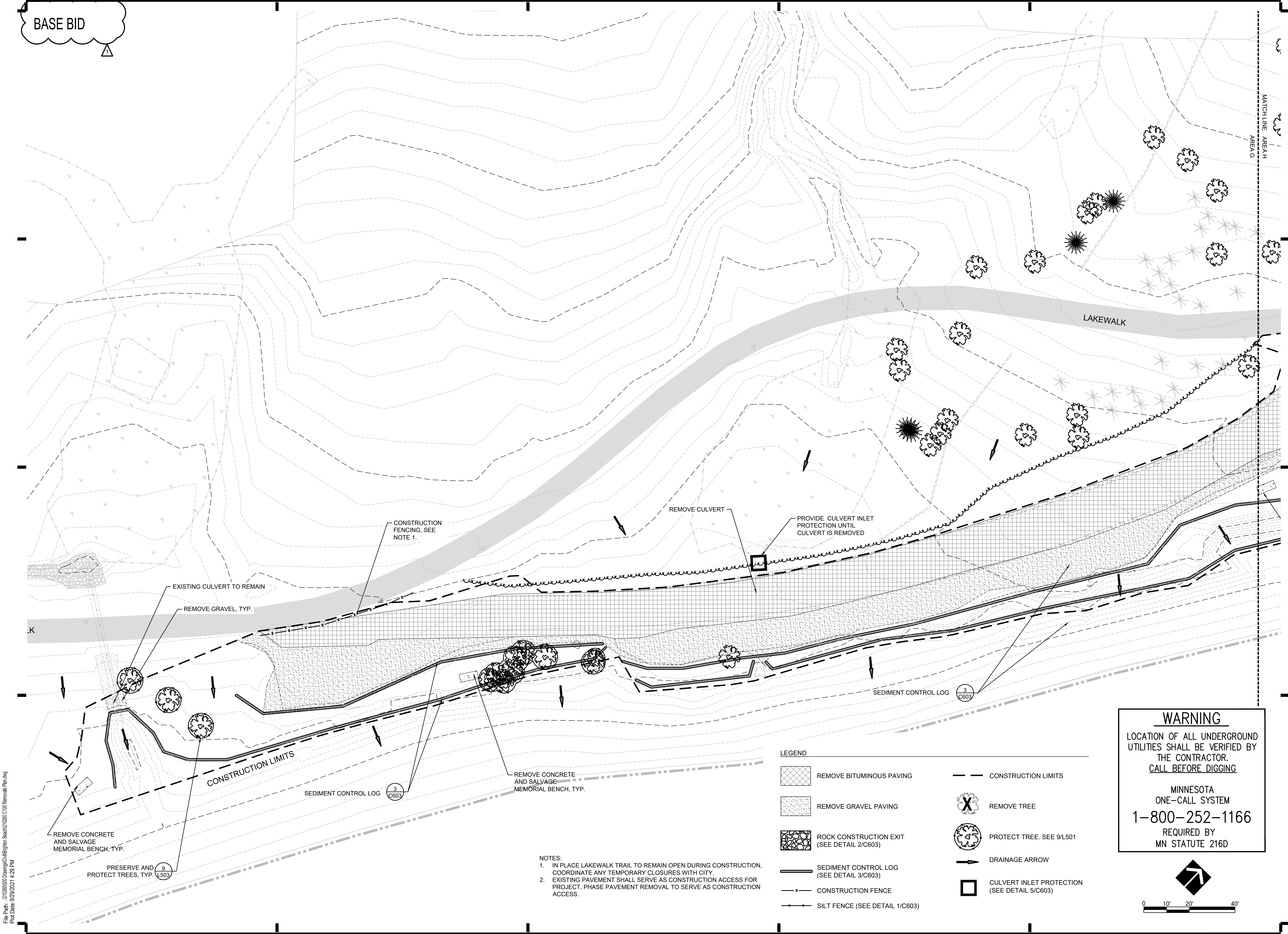
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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**EROSION CONTROL &
REMOVALS PLAN - AREA G**

DRAWN BY: RMJ
CHECKED BY: MAG
PROJ. NO.: 210260
DRAWING NO.:

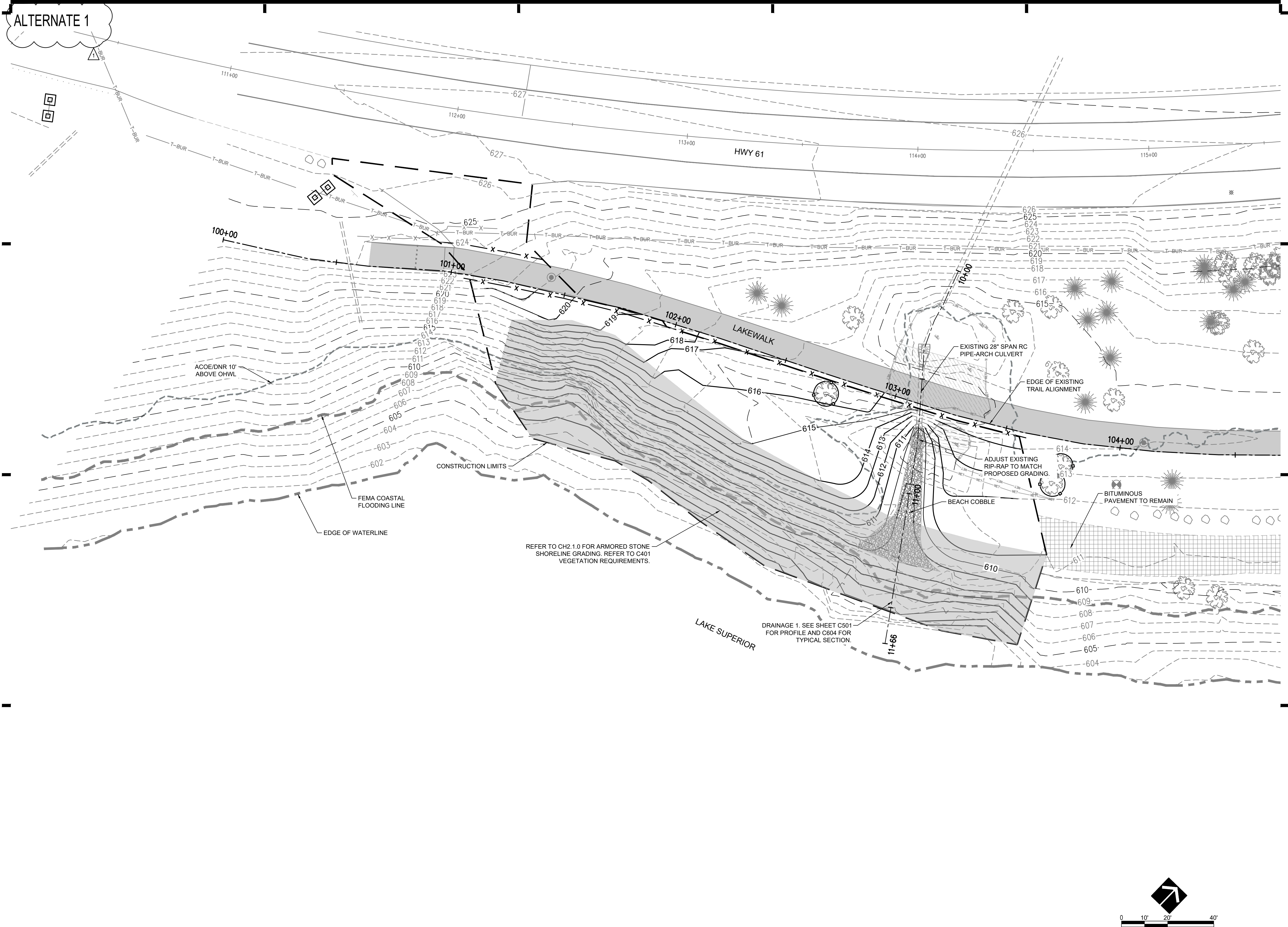
C104



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Plot Date: 9/29/2021 4:29 PM



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91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**
411 WEST FIRST ST
DULUTH, MN 55802

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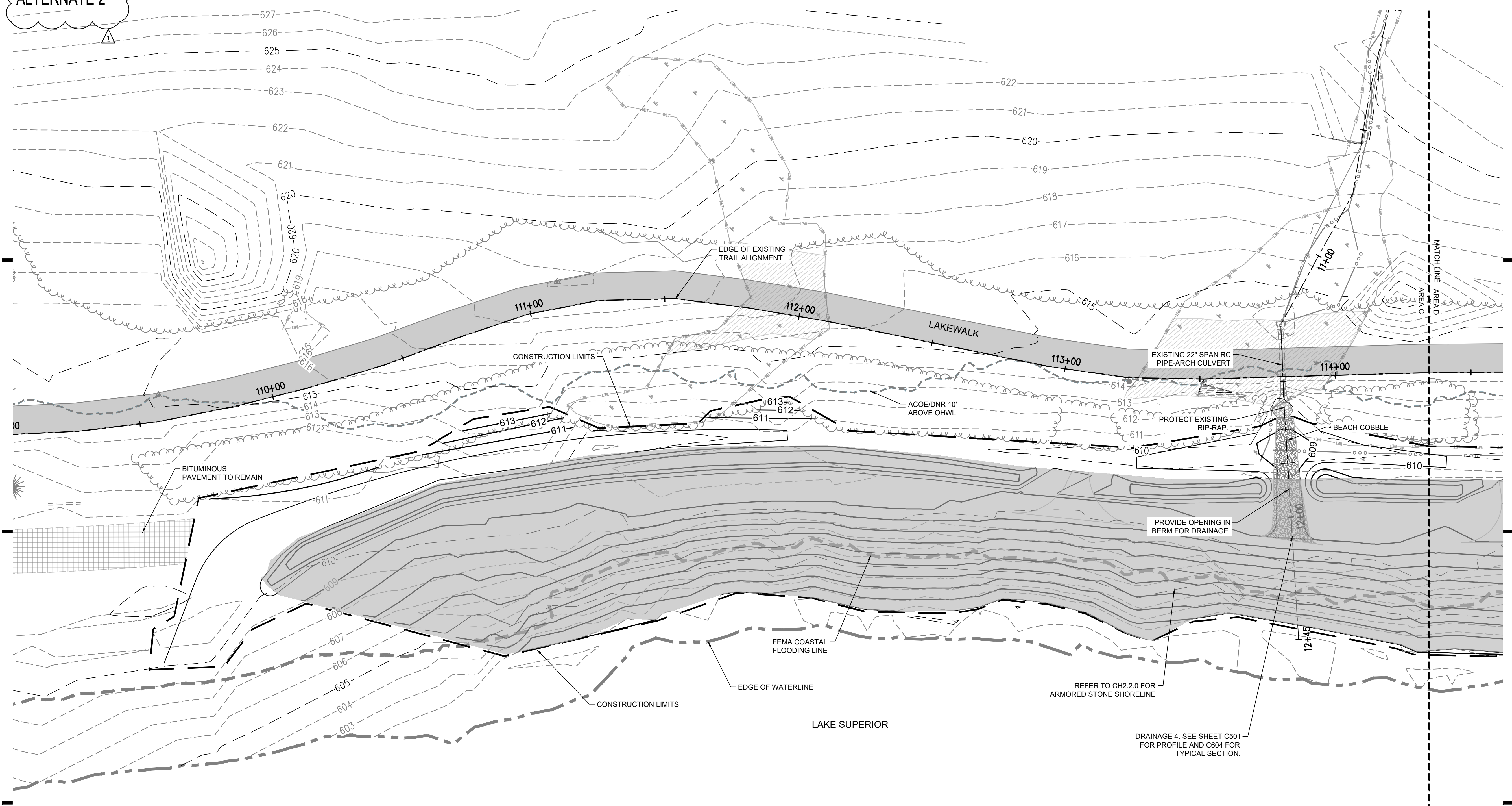
PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**GRADING AND DRAINAGE
AREA A**

DRAWN BY: MAG
CHECKED BY: HSB
PROJ. NO: 210260
DRAWING NO:

C301

ALTERNATE 2



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CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
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DULUTH, MN 55802

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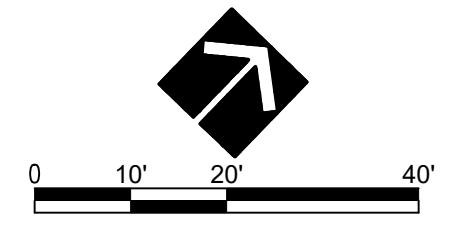
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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**GRADING AND DRAINAGE
AREA C**

DRAWN BY: MAG
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO:

C302



ALTERNATE 2



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CONSULTANT #1:
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91 MAIN ST
SUPERIOR, WI 54880

CLIENT:

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PARKS AND RECREATION

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NO	DATE	REVISION

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SIGNATURE: Megan Doplin

TYPED OR PRINTED NAME: MEGAN GOPLIN

DATE: 08-18-22 REG. NO.: 53018

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PROJECT NAME:

BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1
BRIGHTON BEACH ROAD
DULUTH, MN 55804

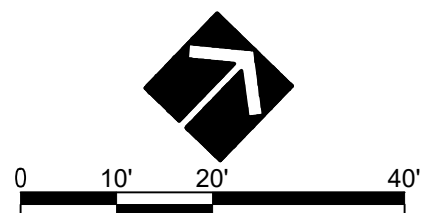
DRAWING TITLE:

GRADING AND DRAINAGE

AREA D

DRAWN BY: MAG
CHECKED BY: HSB
PROJ. NO: 210260
DRAWING NO:

C303



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Plot Date: 9/29/2021 4:29 PM

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SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
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411 WEST FIRST ST
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01	08/19/2022
NO	DATE
ADDENDUM 01	
REVISION	

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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**GRADING AND DRAINAGE
AREA G**

DRAWN BY: MAG
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO:

C304

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Plot Date: 9/29/2021 4:29 PM



BASE BID

CONGDON BLVD (OLD HWY 61)



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CONSULTANT #1:
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SUPERIOR, WI 54880

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DULUTH, MN 55802

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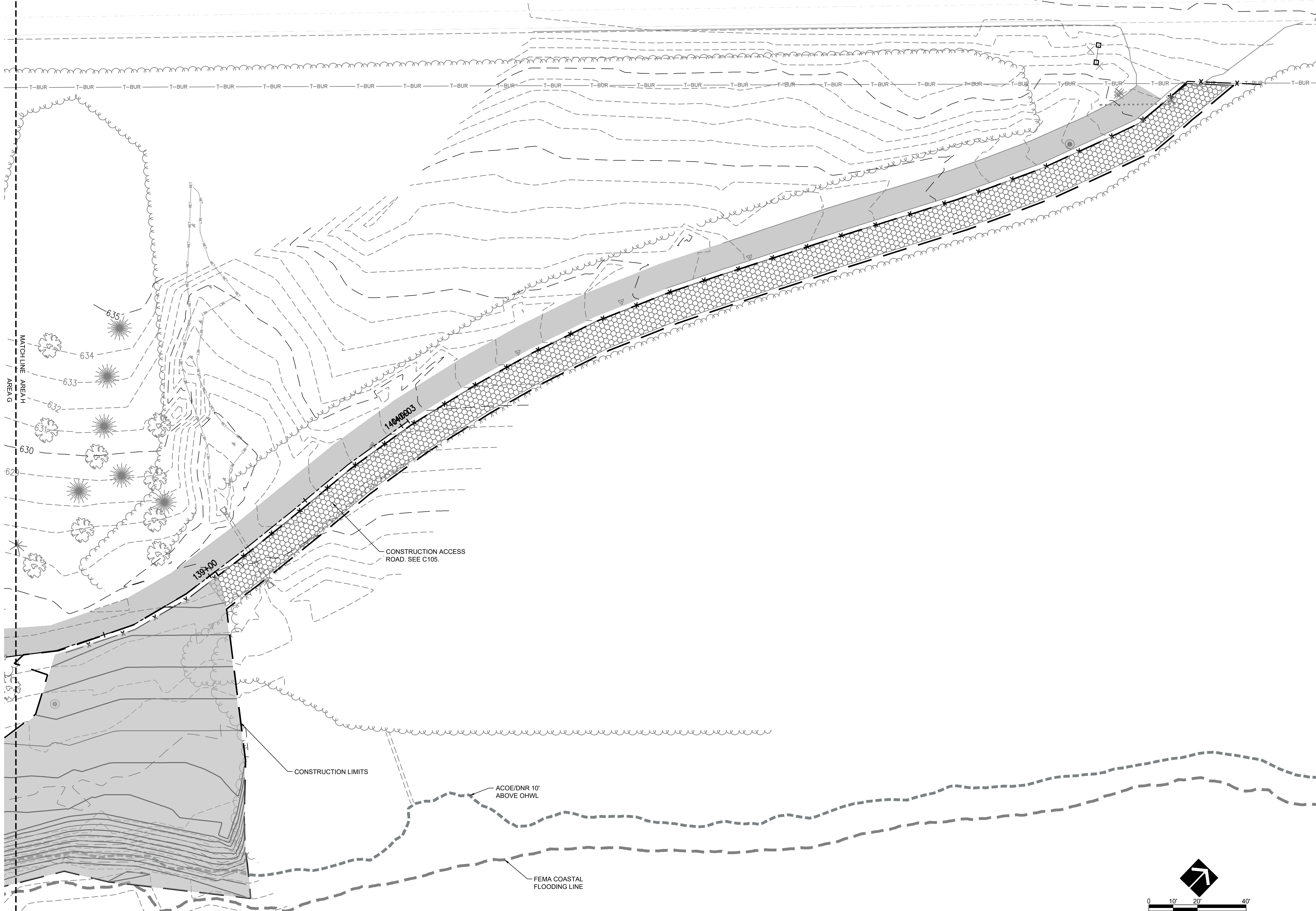
PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**GRADING AND DRAINAGE
AREA H**

DRAWN BY: MAG
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO:

C305

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Plot Date: 9/29/2021 4:29 PM



ALTERNATE 1



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SUPERIOR, WI 54880

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PARKS AND RECREATION
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laws of the State of Minnesota.

SIGNATURE: *Rachel M. Johnson*

TYPED OR PRINTED NAME: RACHEL M. JOHNSON

DATE: 08-18-22 REG. NO.: 58568

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PROJECT NAME:

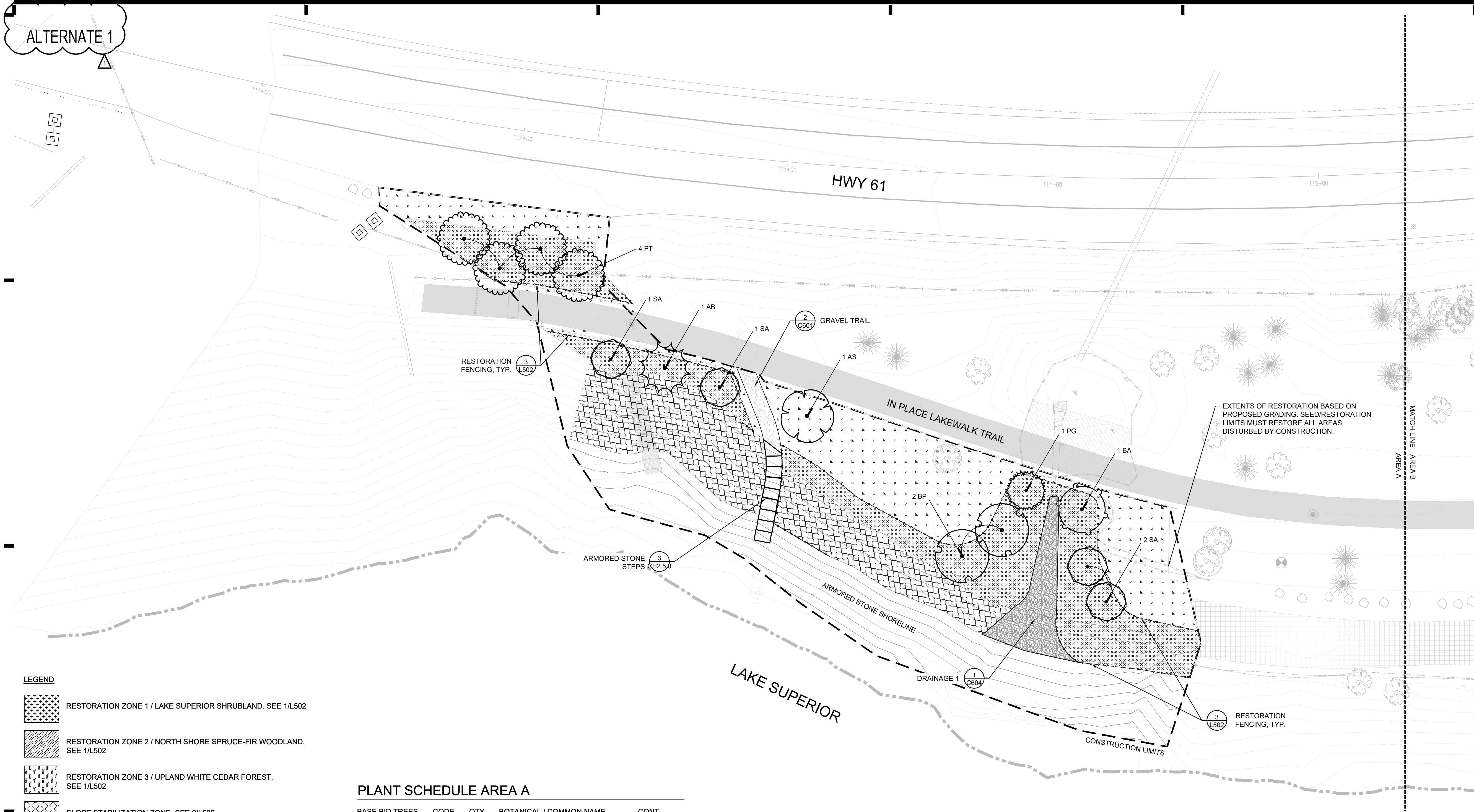
BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:

RESTORATION PLAN AREA A
ALTERNATE 1

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO.:

C401



LEGEND

- RESTORATION ZONE 1 / LAKE SUPERIOR SHRUBLAND. SEE 1/L502
- RESTORATION ZONE 2 / NORTH SHORE SPRUCE-FIR WOODLAND. SEE 1/L502
- RESTORATION ZONE 3 / UPLAND WHITE CEDAR FOREST. SEE 1/L502
- SLOPE STABILIZATION ZONE. SEE 2/L502
- TURF SEED / ECONOMY MIX
- NATIVE SEED/WOODLAND EDGE NE MIX
- BEACH COBBLE
- ROCK IN SWALES
- GRAVEL TRAILS



SALVAGED BOULDER

RESTORATION BOUNDARY FENCE, TEMPORARY
THROUGHOUT ESTABLISHMENT PERIOD

PLANT SCHEDULE AREA A

BASE BID TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AB	1	Abies balsamea / Balsam Fir	6" B&B
	AS	1	Acer saccharum / Sugar Maple	1.5" CAL.
	BA	1	Betula alleghaniensis / Yellow Birch	1.5" CAL.
	BP	2	Betula papyrifera / Paper Birch	1.5" CAL.
	PG	1	Picea glauca / White Spruce	6" B&B
	PT	4	Populus tremuloides / Quaking Aspen	1.5" CAL.
	SA	4	Sorbus americana / Mountain Ash	1.5" CAL.

NOTES:

- REFER TO SHEETS L501 AND L502 FOR TREE SEEDLING, PLUGS, LIVE STAKE, AND BRUSH BUNDLE PLANTING REQUIREMENTS IN ALL RESTORATION ZONES.
- REFER TO SHEET L502 FOR SPECIFIC SPECIES LIST.

WARNING

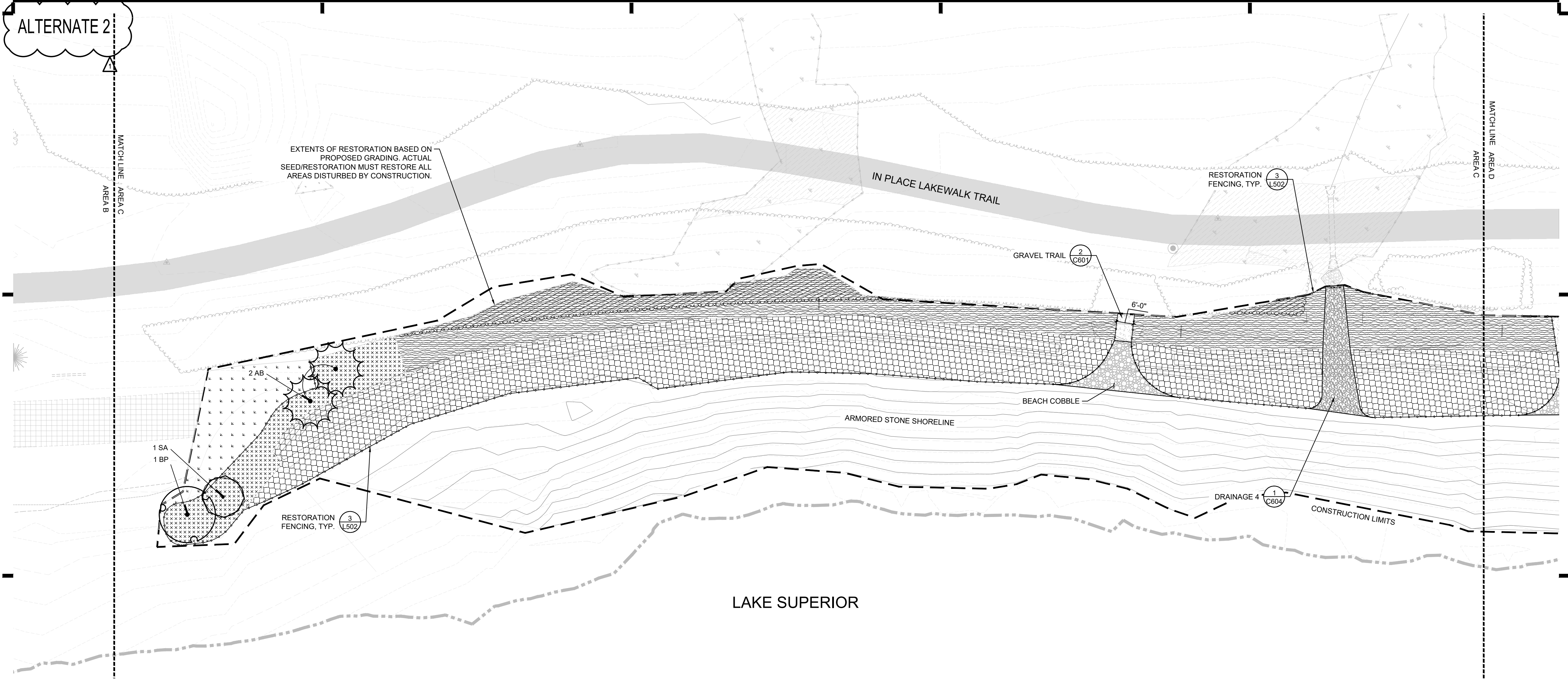
LOCATION OF ALL UNDERGROUND
UTILITIES SHALL BE VERIFIED BY
THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D



0 10' 20' 40'

ALTERNATE 2



LAKE SUPERIOR

- LEGEND**
- RESTORATION ZONE 1 / LAKE SUPERIOR SHRUBLAND. SEE 1/L502
 - RESTORATION ZONE 2 / NORTH SHORE SPRUCE-FIR WOODLAND. SEE 1/L502
 - RESTORATION ZONE 3 / UPLAND WHITE CEDAR FOREST. SEE 1/L502
 - SLOPE STABILIZATION ZONE. SEE 2/L502
 - TURF SEED / ECONOMY MIX
 - NATIVE SEED/WOODLAND EDGE NE MIX
 - BEACH COBBLE
 - ROCK IN SWALES
 - GRAVEL TRAILS
 - SALVAGED BOULDER
 - RESTORATION BOUNDARY FENCE, TEMPORARY THROUGHOUT ESTABLISHMENT PERIOD

PLANT SCHEDULE AREA C

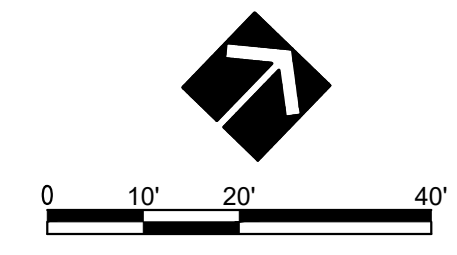
BASE BID TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AB	2	Abies balsamea / Balsam Fir	6" B&B
	BP	1	Betula papyrifera / Paper Birch	1.5" CAL.
	SA	1	Sorbus americana / Mountain Ash	1.5" CAL.

- NOTES:**
- REFER TO SHEETS L501 AND L502 FOR TREE SEEDLING, PLUGS, LIVE STAKE, AND BRUSH BUNDLE PLANTING REQUIREMENTS IN ALL RESTORATION ZONES.
 - REFER TO SHEET L502 FOR SPECIFIC SPECIES LIST.

WARNING

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MN STATUTE 216D



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CONSULTANT #1:
AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
PARKS AND RECREATION**

411 WEST FIRST ST
DULUTH, MN 55802

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01	08/19/2022	ADDENDUM 01
NO	DATE	REVISION

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SIGNATURE:

TYPED OR PRINTED NAME: RACHEL M. JOHNSON

DATE: 08-18-22 REG. NO.: 58568

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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**RESTORATION PLAN AREA C
ALTERNATE 2**

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO:

C402

File Path: \\21026000 Drawings\\C402 Brighton Beach\\C402 C403 Surfing and Layout Plan - B&W
Plot Date: 9/29/2021 4:29 PM

ALTERNATE 2



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PROJECT NAME:
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SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING NAME:
**RESTORATION PLAN AREA D
ALTERNATE 2**

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO.:

C403

EXTENTS OF RESTORATION BASED ON
PROPOSED GRADING. ACTUAL
SEED/RESTORATION MUST RESTORE ALL
AREAS DISTURBED BY CONSTRUCTION.

IN PLACE LAKEWALK TRAIL

2 C601 GRAVEL TRAIL

6'-0"

BEACH COBBLE

DRAINAGE 5 1 C604

RESTORATION
FENCING, TYP. 3 L502

DRAINAGE 6 1 C604

ARMORED STONE SHORELINE

BEACH COBBLE

2 C601 GRAVEL TRAIL

1 AS

6'-0"

1 AB

CONSTRUCTION LIMITS

LAKE SUPERIOR

LEGEND

RESTORATION ZONE 1 / LAKE SUPERIOR SHRUBLAND. SEE 1/L502

RESTORATION ZONE 2 / NORTH SHORE SPRUCE-FIR WOODLAND.
SEE 1/L502

RESTORATION ZONE 3 / UPLAND WHITE CEDAR FOREST.
SEE 1/L502

SLOPE STABILIZATION ZONE. SEE 2/L502

TURF SEED / ECONOMY MIX

NATIVE SEED/WOODLAND EDGE NE MIX

BEACH COBBLE

ROCK IN SWALES

GRAVEL TRAILS

SALVAGED BOULDER

RESTORATION BOUNDARY FENCE, TEMPORARY
THROUGHOUT ESTABLISHMENT PERIOD

PLANT SCHEDULE AREA D

BASE BID TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AB	1	Abies balsamea / Balsam Fir	6" B&B
	AS	1	Acer saccharum / Sugar Maple	1.5" CAL.
	PB	4	Pinus banksiana / Jack Pine	6" B&B

NOTES:

- REFER TO SHEETS L501 AND L502 FOR TREE SEEDLING,
PLUGS, LIVE STAKE, AND BRUSH BUNDLE PLANTING
REQUIREMENTS IN ALL RESTORATION ZONES.
- REFER TO SHEET L502 FOR SPECIFIC SPECIES LIST.

WARNING

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CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D








0 10' 20' 40'

LEGEND

- RESTORATION ZONE 1 / LAKE SUPERIOR SHRUBLAND. SEE 1/L502
- RESTORATION ZONE 2 / NORTH SHORE SPRUCE-FIR WOODLAND. SEE 1/L502
- RESTORATION ZONE 3 / UPLAND WHITE CEDAR FOREST. SEE 1/L502
- SLOPE STABILIZATION ZONE. SEE 2/L502
- TURF SEED / ECONOMY MIX
- NATIVE SEED/WOODLAND EDGE NE MIX
- BEACH COBBLE
- ROCK IN SWALES
- GRAVEL TRAILS
- SALVAGED BOULDER
- RESTORATION BOUNDARY FENCE, TEMPORARY THROUGHOUT ESTABLISHMENT PERIOD

PLANT SCHEDULE AREA G

BASE BID TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AB	1	Abies balsamea / Balsam Fir	6" B&B
	BP	1	Betula papyrifera / Paper Birch	1.5" CAL.
	PG	1	Picea glauca / White Spruce	6" B&B
	PB	2	Pinus banksiana / Jack Pine	6" B&B
	SA	2	Sorbus americana / Mountain Ash	1.5" CAL.

NOTES:

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BASE BID



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AMI CONSULTING ENGINEERS
91 MAIN ST
SUPERIOR, WI 54880

CLIENT:
**CITY OF DULUTH
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411 WEST FIRST ST
DULUTH, MN 55802

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SIGNATURE: *Rachel M. Johnson*

TYPED OR PRINTED NAME: RACHEL M. JOHNSON

DATE: 08-18-22 REG. NO.: 58568

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PROJECT NAME:
**BRIGHTON BEACH
SHORELINE
RESTORATION: PHASE 1**
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
**RESTORATION PLAN AREA G
BASE BID**

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO.:

C404

BASE BID

CONGDON BLVD (OLD HWY 61)



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SUPERIOR, WI 54880

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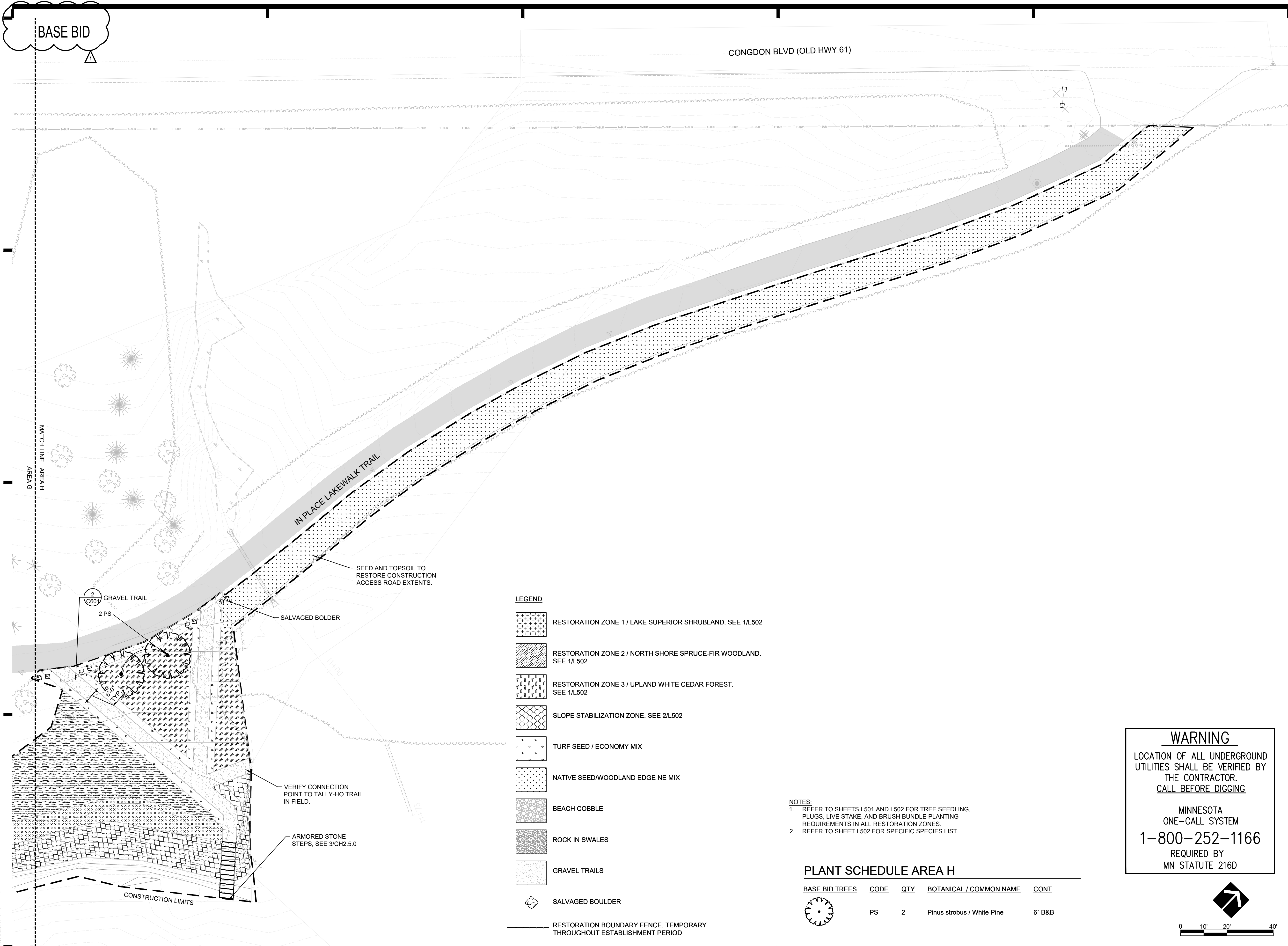
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SHORELINE
RESTORATION: PHASE 1
BRIGHTON BEACH ROAD
DULUTH, MN 55804

DRAWING TITLE:
RESTORATION PLAN AREA H
BASE BID

DRAWN BY: RMJ
CHECKED BY: HSB
PROJ. NO.: 210260
DRAWING NO.:

C405

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Plot Date: 9/29/2021 4:29 PM



LEGEND

- RESTORATION ZONE 1 / LAKE SUPERIOR SHRUBLAND. SEE 1/L502
- RESTORATION ZONE 2 / NORTH SHORE SPRUCE-FIR WOODLAND. SEE 1/L502
- RESTORATION ZONE 3 / UPLAND WHITE CEDAR FOREST. SEE 1/L502
- SLOPE STABILIZATION ZONE. SEE 2/L502
- TURF SEED / ECONOMY MIX
- NATIVE SEED/WOODLAND EDGE NE MIX
- BEACH COBBLE
- ROCK IN SWALES
- GRAVEL TRAILS
- SALVAGED BOULDER
- RESTORATION BOUNDARY FENCE, TEMPORARY THROUGHOUT ESTABLISHMENT PERIOD

- NOTES:
- REFER TO SHEETS L501 AND L502 FOR TREE SEEDLING, PLUGS, LIVE STAKE, AND BRUSH BUNDLE PLANTING REQUIREMENTS IN ALL RESTORATION ZONES.
 - REFER TO SHEET L502 FOR SPECIFIC SPECIES LIST.

PLANT SCHEDULE AREA H

BASE BID TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	PS	2	Pinus strobus / White Pine	6" B&B

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D

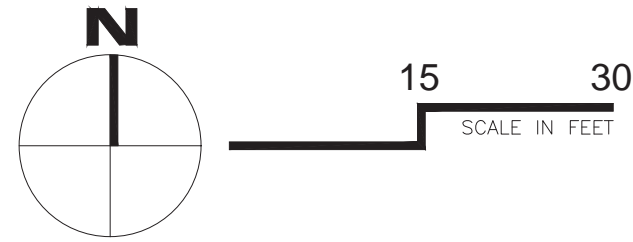
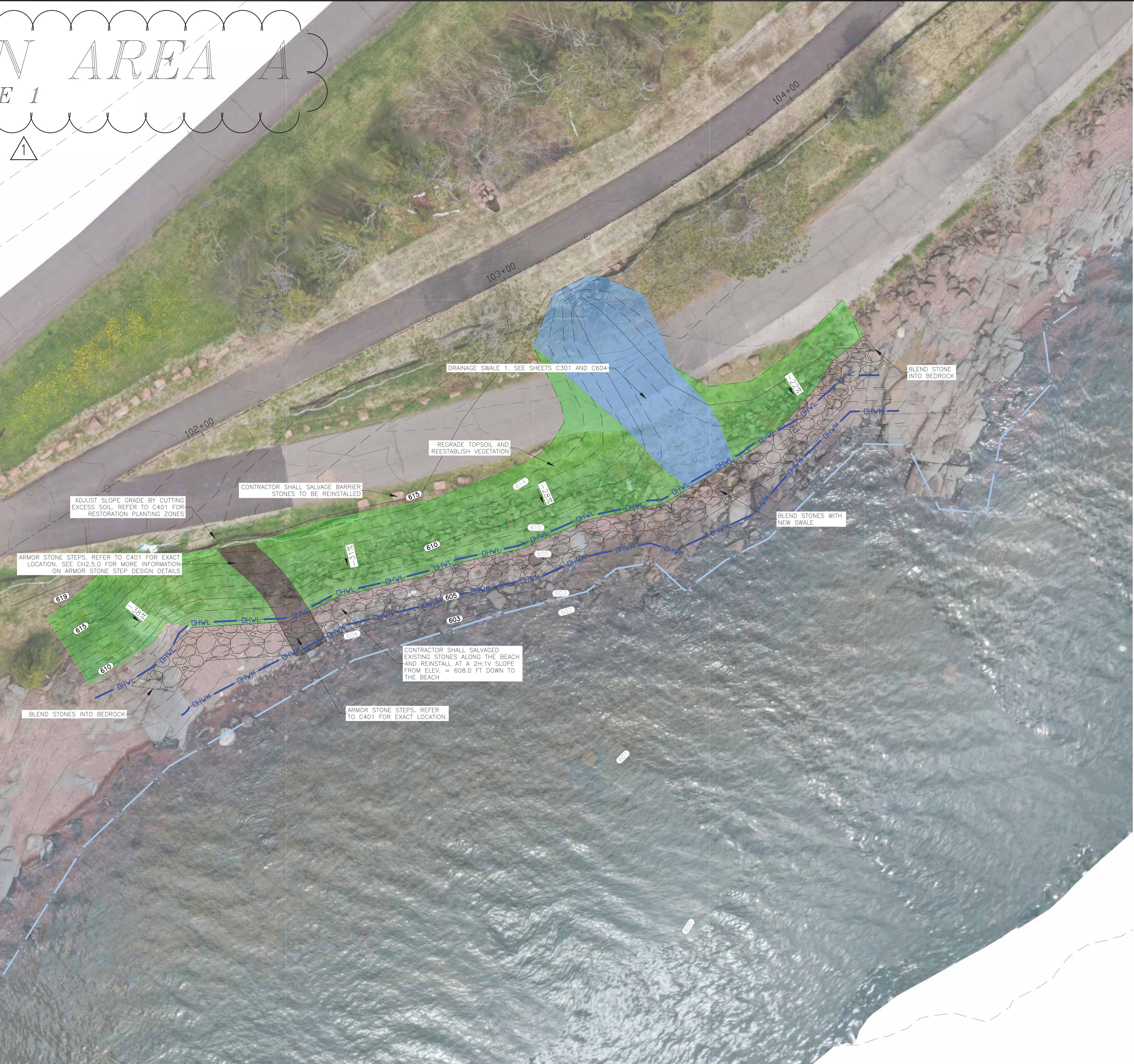


0 10' 20' 40'

PLAN AREA A

ALTERNATE 1

1



SITE LEGEND:

- 37% → FLOW ARROW AND GRADE
- 608 — EXISTING MINOR CONTOUR
- 605 — EXISTING MAJOR CONTOUR
- 608 — PROPOSED MINOR CONTOUR
- 605 — PROPOSED MAJOR CONTOUR
- 608.0 • PROPOSED SPOT ELEVATION
- DHWL — MN DNR ORDINARY HIGH WATER LEVEL (608 FT)
- DHWM — USACE ORDINARY HIGH WATER MARK (605 FT)
- WL — WATERLINE
- NATURAL SWALE
- NEW NATIVE VEGETATION
- SALVAGED AND REINSTALLED STONE

GENERAL GRADING AND DRAINAGE NOTES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE BEFORE BEGINNING SITE GRADING ACTIVITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES OF CUT, FILL AND WASTE MATERIAL TO BE HANDLED, AND FOR THE AMOUNT OF GRADING TO BE DONE. ALL COSTS ASSOCIATED WITH IMPORTING SUITABLE MATERIAL AND EXPORTING UNSUITABLE/EXCESS/WASTE MATERIAL SHALL BE INCLUDED IN THE BID PRICE.
- CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD EXISTING ONSITE TOPSOIL, IF MATERIAL IS APPROVED BY THE ENGINEER AND/OR SPECIFICATIONS. PROVIDE A UNIFORM THICKNESS OF 6" MINIMUM IN ALL DISTURBED AREAS TO BE LANDSCAPED/SEEDED.
- CONTRACTOR SHALL DISPOSE OF ANY EXCESS SOIL MATERIAL UNLESS OTHERWISE DIRECTED.
- MAINTAIN TEMPORARY PROTECTION MEASURES DURING CONSTRUCTION ACTIVITIES. PROVIDE ADDITIONAL PROTECTION AS NECESSARY AS WORK PROGRESSES.
- PROPOSED CONTOURS AND SPOT ELEVATIONS ARE TO FINISHED SURFACE GRADE.
- NO GRADED SLOPES SHALL EXCEED 3:1 (HORIZONTAL TO VERTICAL) UNLESS OTHERWISE NOTED.
- UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING AND PROVIDE A SMOOTH FINISHED SURFACE WITH UNIFORM SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN OR BETWEEN SUCH POINTS AND EXISTING GRADES.
- LIMIT THE DISTURBED AREA AS MUCH AS POSSIBLE AND CONDUCT GRADING OPERATIONS IN A MANNER TO MINIMIZE THE POTENTIAL FOR EROSION.
- CONDUCT GRADING PER MNDOT SPECIFICATIONS 2101, 2105 AND 2112.
- IF EXCESSIVE SEDIMENT PLUMES ARE CREATED DURING CONSTRUCTION THE CONTRACTOR SHALL INSTALL A SILT CURTAIN BEFORE PROCEEDING WITH CONSTRUCTION.

SUBGRADE CUT/FILL SUMMARY	
TOTAL CUT	100 CY
TOTAL FILL	0 CY
NET CUT/FILL	100 CY OF CUT

ESTIMATED CONSTRUCTION QUANTITIES BREAKDOWN	
SALVAGED STONE	300 CY
VEGETATED AREA	7000 SF

MN DNR MATERIAL ESTIMATES	
APPROXIMATE VOLUME OF MATERIAL TO BE EXCAVATED BELOW THE EXISTING OHWL	300 CY OF EXISTING STONE
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWL	300 CY OF EXISTING STONE

USACE MATERIAL ESTIMATES	
APPROXIMATE AREA IN PLAN VIEW OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 SF
LENGTH OF SHORELINE WITH MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 LF
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 CY



Consulting Engineers P.A.
91 MAIN STREET SUPERIOR, WI
715-718-2193 - amienr.com
TWIN CITIES - IRON RANGE

HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, AND CONTRACT DOCUMENTS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

NAME: RYAN DAGGER
SIGNATURE: Ryan Dagger
DATE: 08/18/2022
LIC. NO.: 97389

REV. BY:	REV.	DATE	DESCRIPTION
ELV	0	08/18/2022	ISSUED FOR BID
ELV	1	08/19/2022	ADDENDUM 1

REV. BY:	REV.	DATE	DESCRIPTION
ELV	0	08/18/2022	ISSUED FOR BID
ELV	1	08/19/2022	ADDENDUM 1

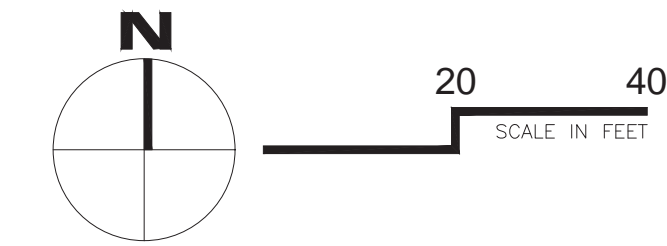
BRIGHTON BEACH RESILIENCY PLAN - PHASE I

CITY OF DULUTH
BRIGHTON BEACH
DULUTH, MN

PROPOSED PLAN

JOB No: 211033
DATE: 08/18/2022
DRAWN BY: AMD
DESIGNED BY: RRD

SHEET:
CH2.1.0



SITE LEGEND:

- 3.7% FLOW ARROW AND GRADE
- 608 EXISTING MINOR CONTOUR
- 605 EXISTING MAJOR CONTOUR
- 608 PROPOSED MINOR CONTOUR
- 605 PROPOSED MAJOR CONTOUR
- 608.0 PROPOSED SPOT ELEVATION
- DHWL MN DNR ORDINARY HIGH WATER LEVEL (608 FT)
- DHWM USACE ORDINARY HIGH WATER MARK (605 FT)
- WL WATERLINE
- SALVAGED ARMOR STONE
- NATURAL SWALE
- RESTORED BEACH
- NEW VEGETATION AREA

SUBGRADE CUT/FILL SUMMARY	
TOTAL CUT	200 CY
TOTAL FILL	0 CY
NET CUT/FILL	200 CY OF CUT

ESTIMATED CONSTRUCTION QUANTITIES BREAKDOWN	
SALVAGED STONE	28000 SF
VEGETATED AREA	28000 SF

MNDNR MATERIAL ESTIMATES	
APPROXIMATE VOLUME OF MATERIAL TO BE EXCAVATED BELOW THE EXISTING OHWL	500 CY OF EXISTING STONE
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWL	0 CY

USACE MATERIAL ESTIMATES	
APPROXIMATE AREA IN PLAN VIEW OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 SF
LENGTH OF SHORELINE WITH MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 LF
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 CY

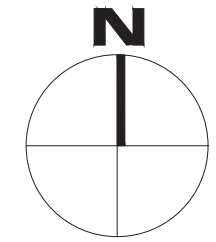
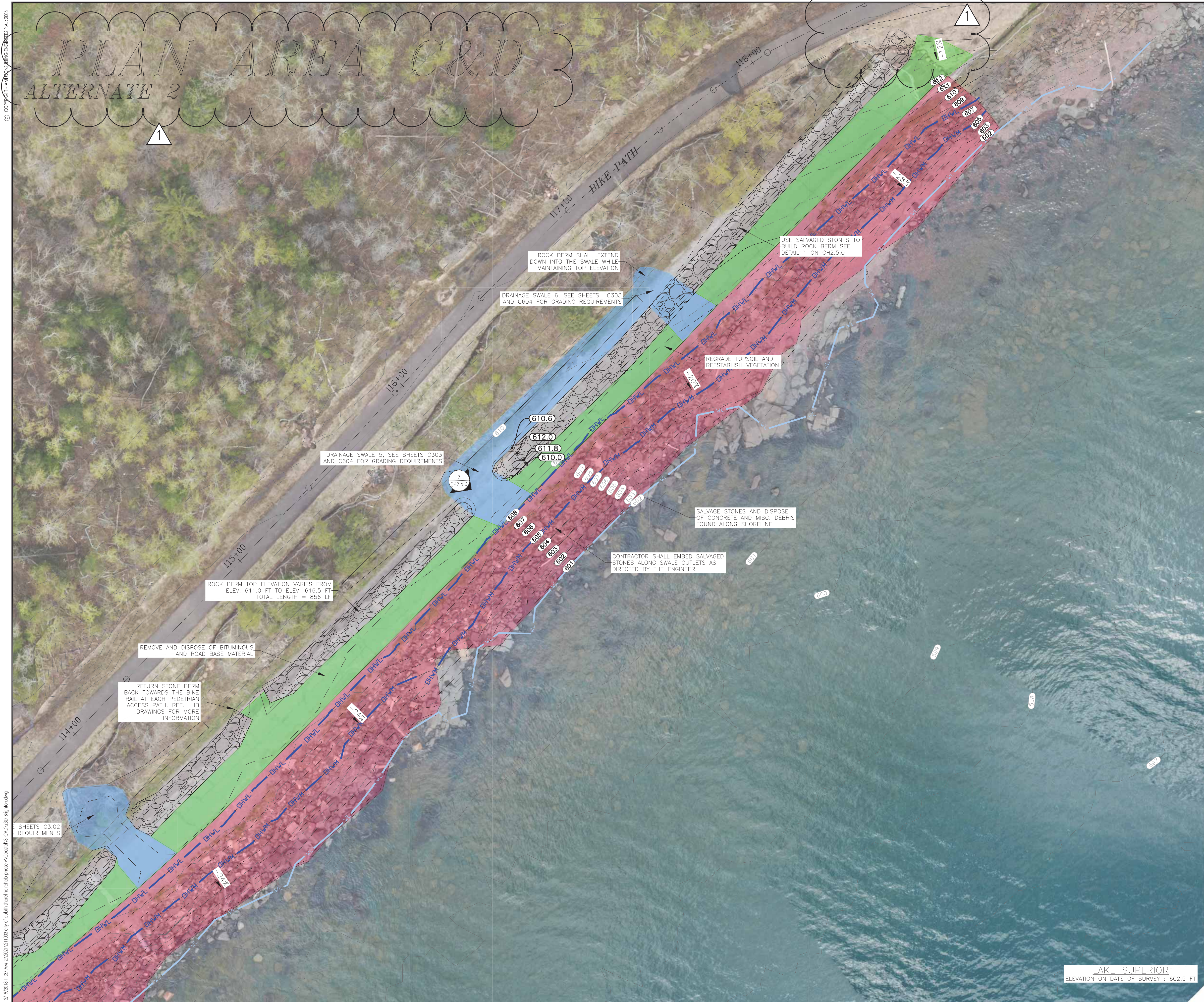
LAKE SUPERIOR
ELEVATION ON DATE OF SURVEY : 602.5 FT

REV.	DATE	DESCRIPTION	REV. BY:
0	08/18/2022	ISSUED FOR BID	ELV
1	08/17/2022	ADDENDUM 1	ELV

BRIGHTON BEACH RESILIENCY PLAN - PHASE I	PROPOSED PLAN
CITY OF DULUTH BRIGHTON BEACH DULUTH, MN	

JOB No: 211033
DATE: 08/18/2022
DRAWN BY: AMD
DESIGNED BY: RRD

SHEET:
CH2.2.0



20 40
SCALE IN FEET

SITE LEGEND:

- 37% FLOW ARROW AND GRADE
- 608 EXISTING MINOR CONTOUR
- 605 EXISTING MAJOR CONTOUR
- 608 PROPOSED MINOR CONTOUR
- 605 PROPOSED MAJOR CONTOUR
- 608.0 PROPOSED SPOT ELEVATION
- DHWL MN DNR ORDINARY HIGH WATER LEVEL (608 FT)
- DHWM USACE ORDINARY HIGH WATER MARK (605 FT)
- WL WATERLINE
- SALVAGED ARMOR STONE
- NATURAL SWALE
- RESTORED BEACH
- NEW VEGETATION AREA



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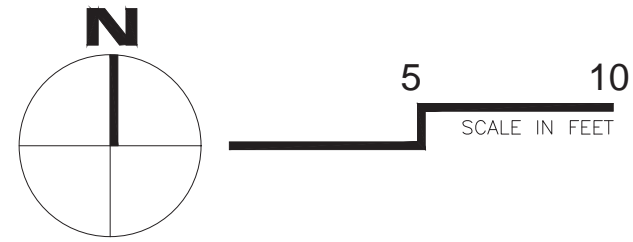
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ELIV	0	08/18/2022	ISSUED FOR BID
ELIV	1	08/19/2022	ADDENDUM 1

REV.	DATE	DESCRIPTION
0	08/18/2022	ISSUED FOR BID
1	08/19/2022	ADDENDUM 1

BRIGHTON BEACH RESILIENCY PLAN - PHASE I	REV.	DATE	DESCRIPTION
CITY OF DULUTH	0	08/18/2022	ISSUED FOR BID
BRIGHTON BEACH	1	08/19/2022	ADDENDUM 1
DULUTH, MN			
PROPOSED PLAN			

JOB No: 211033
DATE: 08/18/2022
DRAWN BY: AMD
DESIGNED BY: RRD

SHEET:
CH2.2.1



SITE LEGEND:

- [37%] FLOW ARROW AND GRADE
- [608] EXISTING MINOR CONTOUR
- [605] EXISTING MAJOR CONTOUR
- [608] PROPOSED MINOR CONTOUR
- [605] PROPOSED MAJOR CONTOUR
- [608.0] PROPOSED SPOT ELEVATION
- [DHWL] MN DNR ORDINARY HIGH WATER LEVEL (608 FT)
- [DHWM] USACE ORDINARY HIGH WATER MARK (605 FT)
- [WL] WATERLINE
- [SS] EXISTING CULVERT
- [SALVAGED STONE] SALVAGED STONE
- [BURIED SALVAGED STONE] BURIED SALVAGED STONE
- [NEW VEGETATION AREA] NEW VEGETATION AREA

SUBGRADE CUT/FILL SUMMARY	
TOTAL CUT	2 CY
TOTAL FILL	0 CY
NET CUT/FILL	2 CY OF CUT

ESTIMATED CONSTRUCTION QUANTITIES BREAKDOWN	
NEW OR SALVAGED REVETMENT STONE	20 CY
VEGETATED AREA	400 SF

MN DNR MATERIAL ESTIMATES	
APPROXIMATE VOLUME OF MATERIAL TO BE EXCAVATED BELOW THE EXISTING OHWL	20 CY
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWL	20 CY

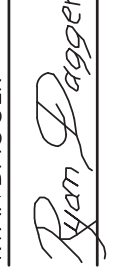
USACE MATERIAL ESTIMATES	
APPROXIMATE AREA IN PLAN VIEW OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 SF
LENGTH OF SHORELINE WITH MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 LF
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE EXISTING OHWM	0 CY



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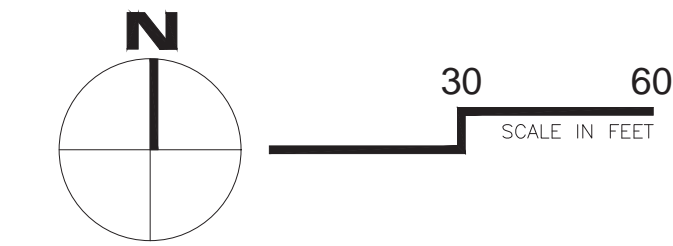
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1	08/19/2022	ADDENDUM 1	ELIV

DATE	REV.	DESCRIPTION	REV. BY:
08/18/2022	0	ISSUED FOR BID	ELIV
08/19/2022	1	ADDENDUM 1	ELIV

BRIGHTON BEACH RESILIENCY PLAN - PHASE I	PROPOSED PLAN
CITY OF DULUTH	----
BRIGHTON BEACH	
DULUTH, MN	

JOB No: 211033
DATE: 08/18/2022
DRAWN BY: AMD
DESIGNED BY: RRD

SHEET:
CH2.3.0



SITE LEGEND:

- 3.7% FLOW ARROW AND GRADE
- 608 EXISTING MINOR CONTOUR
- 605 EXISTING MAJOR CONTOUR
- 608 PROPOSED MINOR CONTOUR
- 605 PROPOSED MAJOR CONTOUR
- DHWL MN DNR ORDINARY HIGH WATER LEVEL (608 FT)
- DHWM USACE ORDINARY HIGH WATER MARK (605 FT)
- Tree Line
- Waterline
- C CONSTRUCTION LIMITS
- Armor Stone
- Buried Armor Stone
- Vegetation Reestablishment
- Earthen Swale
- Beach Encouragement Zone

SUBGRADE CUT/FILL SUMMARY	
TOTAL CUT	1460 CY
TOTAL FILL	200 CY
NET CUT/FILL	1260 CY OF CUT

ESTIMATED CONSTRUCTION QUANTITIES BREAKDOWN	
SALVAGED STONE	325 CY
VEGETATED AREA	30000 SF

MN DNR MATERIAL ESTIMATES	
APPROXIMATE VOLUME OF MATERIAL TO BE EXCAVATED BELOW THE OHWL	220 CY
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE OHWL	220 CY

USACE MATERIAL ESTIMATES	
APPROXIMATE AREA IN PLAN VIEW OF MATERIAL TO BE PLACED BELOW THE DHWM	0 SF
LENGTH OF SHORELINE WITH MATERIAL TO BE PLACED BELOW THE DHWM	0 LF
APPROXIMATE VOLUME OF MATERIAL TO BE PLACED BELOW THE DHWM	0 CY

REV.	DATE	DESCRIPTION	REV. BY:
0	08/18/2022	ISSUED FOR BID	ELIV
1	08/19/2022	ADDENDUM 1	ELIV

BRIGHTON BEACH RESILIENCY PLAN - PHASE I	PROPOSED PLAN
CITY OF DULUTH	----
BRIGHTON BEACH	
DULUTH, MN	

JOB No: 211033
DATE: 08/18/2022
DRAWN BY: AMD
DESIGNED BY: RRD

SHEET:
CH2.4.0