



Title: Big Island Nature Park Improvements – Final Design Review

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Purpose:

To provide the Board of Managers with staff's analysis of the final design plans for Big Island Nature Park Improvements (Attachment A).

Background:

At the January 9, 2020 Board of Managers meeting, staff presented Big Island Nature Park Improvements 80% design plans for Board review. District staff evaluated the plan set under the guidelines set forth in the conservation easement and management plan for Big Island Nature Park. Through this analysis staff found the plan set to be in conformance, and the Board of Managers raised no concerns regarding this determination. The 80% design plan proposed the following improvements:

Proposed improvements in the Natural Areas:

- Conversion of existing trails to ADA standards
- 1:1 sign replacement
- Winter installation of temporary, removable bollards

Proposed improvements in the Recreation Areas:

- Establishment of ADA trail from city docks to visitor center
- Conversion of existing trails to ADA standards
- 1:1 sign replacement
- Installation of vault toilet(s)
- Installation of shade structure and picnic tables

After the January 9, 2020 meeting, staff documented the Board and staff review of 80% design plans in an email to city of Orono staff on January 21, 2020. Over the next several weeks, 95% plans were completed, and District staff reviewed and provided comments.

Current Status:

On February 20, 2020 the District received a draft of Big Island Nature Park Improvements final design. No additional improvements were proposed since the development of 80% design, thus the plan set remains in conformance with the conservation easement and management plan. The final design plan set addresses District staff requests to incorporate a more comprehensive tree protection plan, thorough detail regarding shoreline restoration at the construction access and staging locations, and installation of erosion control practices which will result in less overall land disturbance.

Next Steps:

District staff intends to continue coordinating with city of Orono staff through the permitting and construction process of the Big Island Nature Park Improvements Project.

Supporting documents:

- Attachment A: Big Island Nature Park Master Plan Final Design

CITY OF ORONO

CONSTRUCTION PLANS FOR

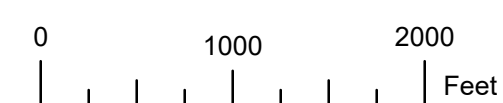
BIG ISLAND NATURE PARK IMPROVEMENTS

FEBRUARY, 2020

SHEET NUMBER	SHEET TITLE
GENERAL	
G0.01	TITLE SHEET
SITE PLANS	
L1.01	EXISTING CONDITIONS
L1.02	SHEET LAYOUT
L1.03	OVERALL SITE PLAN
L1.04 - L1.11	SITE PLAN & PROFILE
L1.12	DETAIL SITE PLANS
LANDSCAPE DETAILS	
L2.01	LANDSCAPE DETAILS
L2.02	SITE DETAILS
L2.03	PICNIC TABLE DETAILS
L2.04	EROSION CONTROL DETAILS
TRAIL CROSS SECTIONS	
C1.01 - C1.04	CROSS SECTIONS - WEST TRAIL
C1.05 - C1.09	CROSS SECTIONS - EAST TRAIL



MAP OF THE
CITY OF ORONO
HENNEPIN COUNTY, MN



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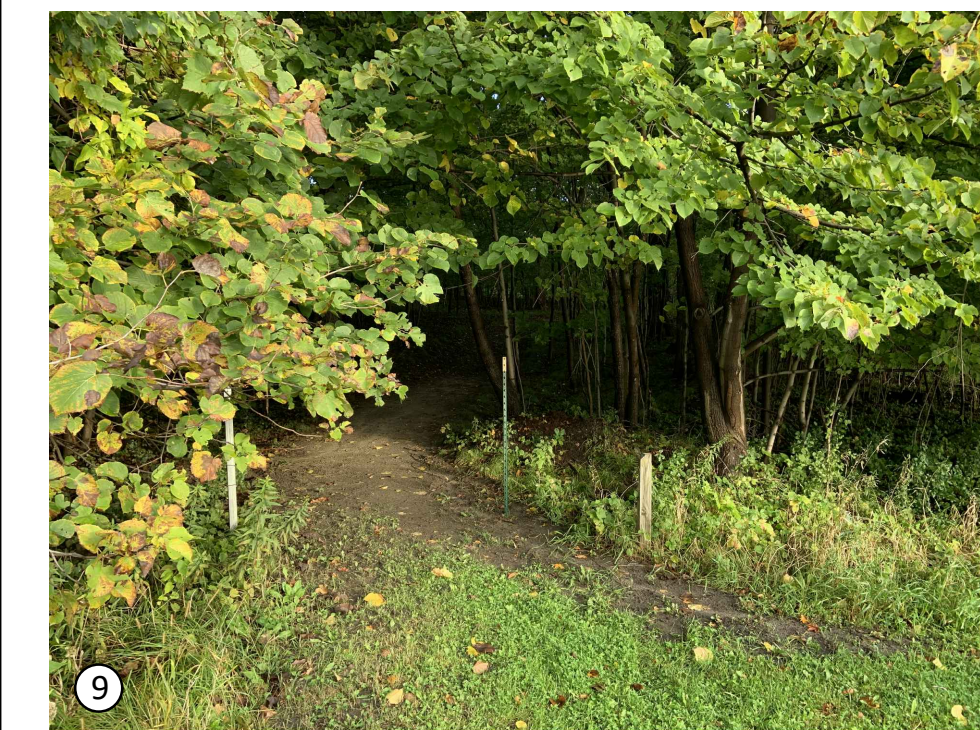
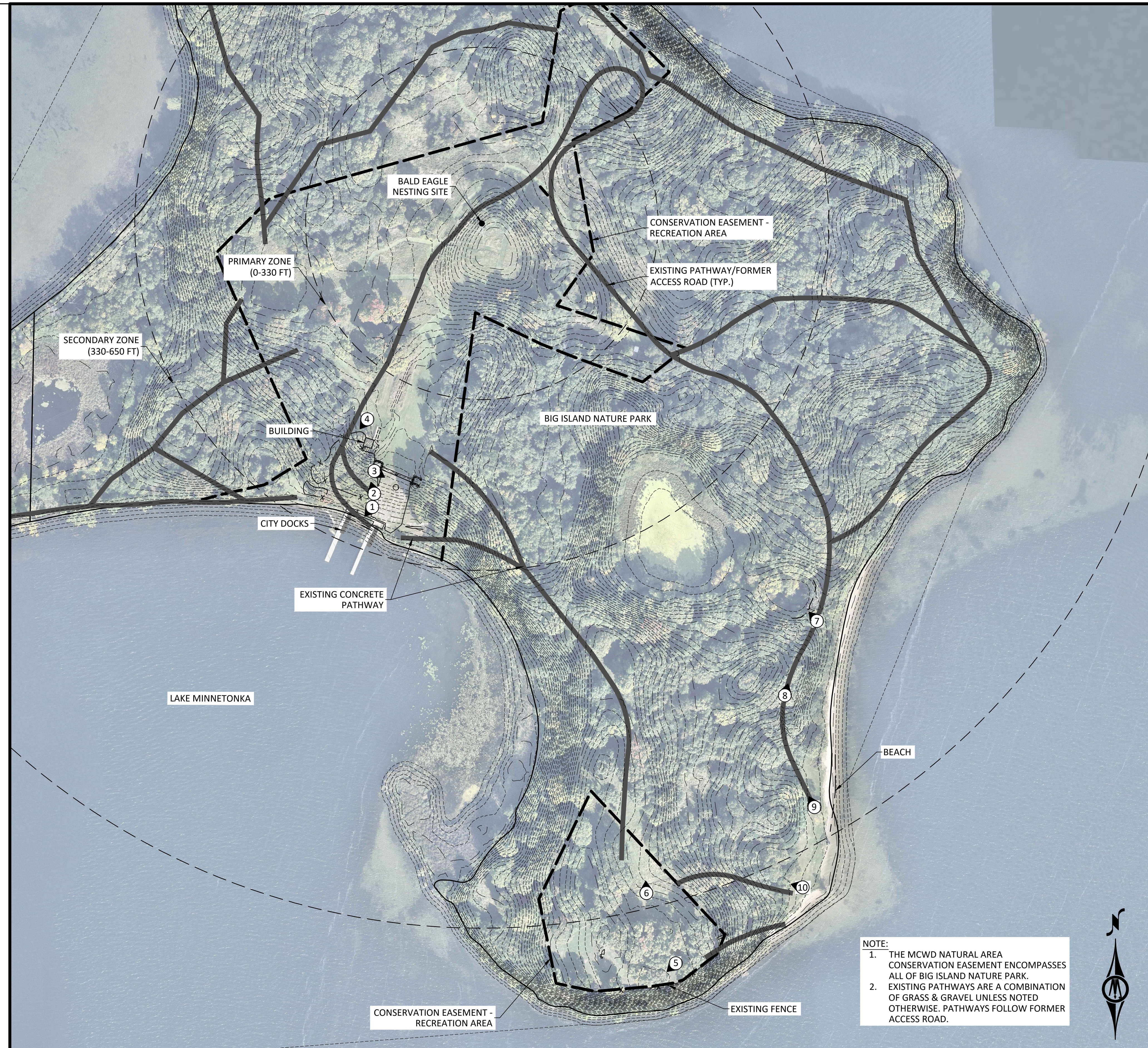
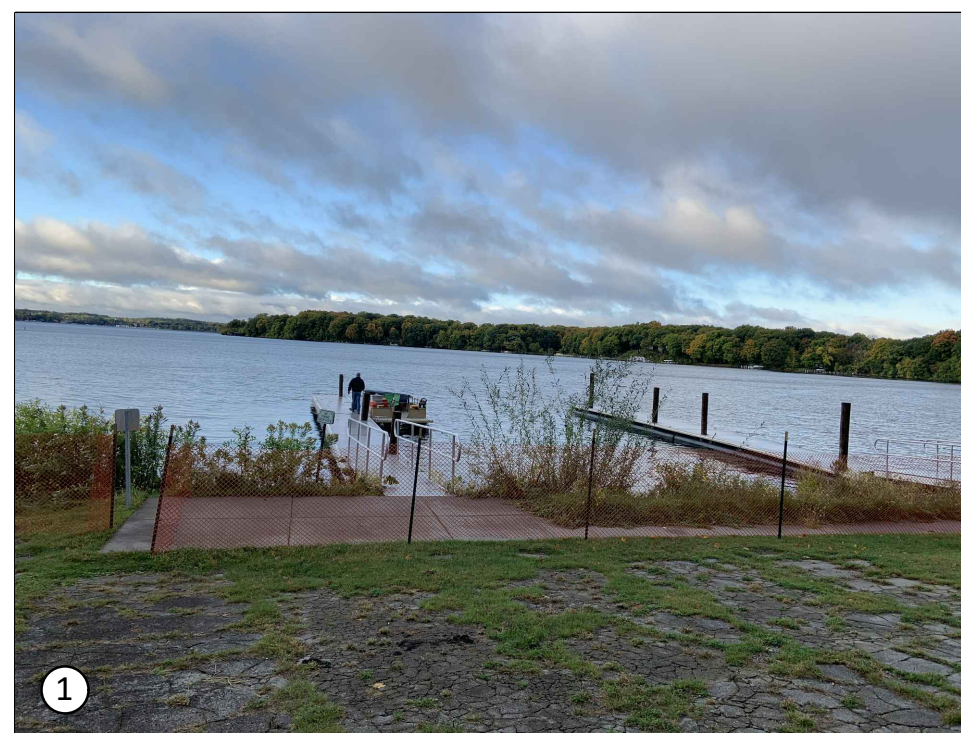
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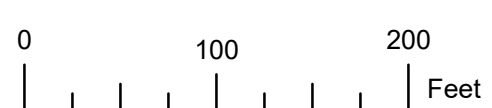
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CITY OF ORONO
BIG ISLAND NATURE PARK IMPROVEMENTS
TITLE SHEET

SHEET
G0.01



NOTE:
 1. THE MCWD NATURAL AREA CONSERVATION EASEMENT ENCOMPASSES ALL OF BIG ISLAND NATURE PARK.
 2. EXISTING PATHWAYS ARE A COMBINATION OF GRASS & GRAVEL UNLESS NOTED OTHERWISE. PATHWAYS FOLLOW FORMER ACCESS ROAD.



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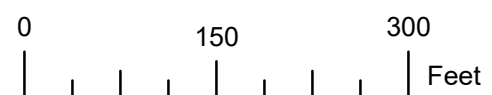
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BIG ISLAND NATURE PARK IMPROVEMENTS
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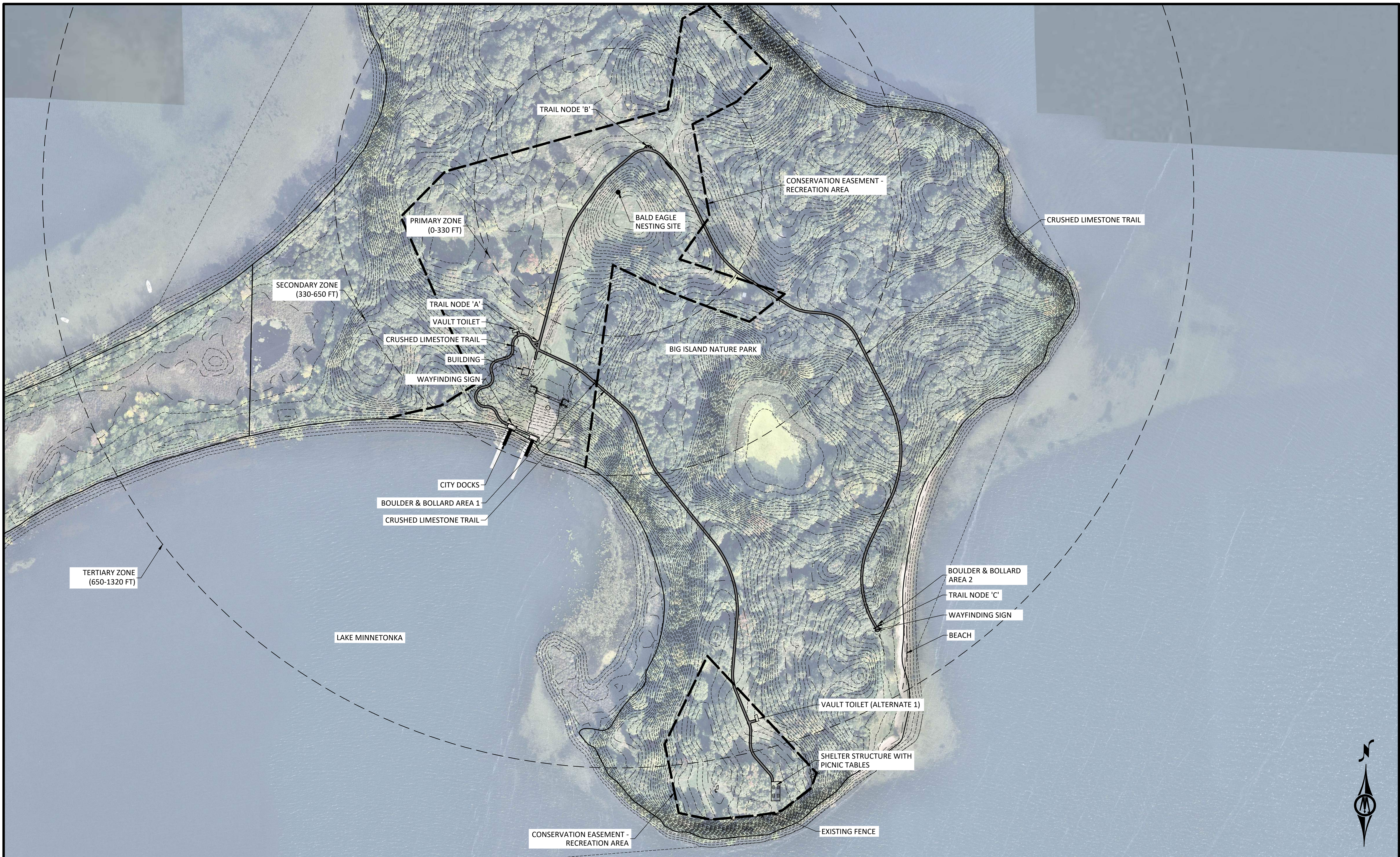
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 BIG ISLAND NATURE PARK IMPROVEMENTS
 SHEET LAYOUT

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 L1.02



TERTIARY ZONE
(650-1320 FT)

SECONDARY ZONE
(330-650 FT)

PRIMARY ZONE
(0-330 FT)

TRAIL NODE 'B'

BALD EAGLE
NESTING SITE

CONSERVATION EASEMENT -
RECREATION AREA

CRUSHED LIMESTONE TRAIL

TRAIL NODE 'A'

VAULT TOILET

CRUSHED LIMESTONE TRAIL

BUILDING

WAYFINDING SIGN

BIG ISLAND NATURE PARK

CITY DOCKS

BOULDER & BOLLARD AREA 1

CRUSHED LIMESTONE TRAIL

LAKE MINNETONKA

BOULDER & BOLLARD
AREA 2

TRAIL NODE 'C'

WAYFINDING SIGN

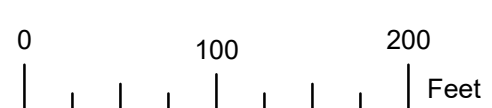
BEACH

VAULT TOILET (ALTERNATE 1)

SHELTER STRUCTURE WITH
PICNIC TABLES

CONSERVATION EASEMENT -
RECREATION AREA

EXISTING FENCE



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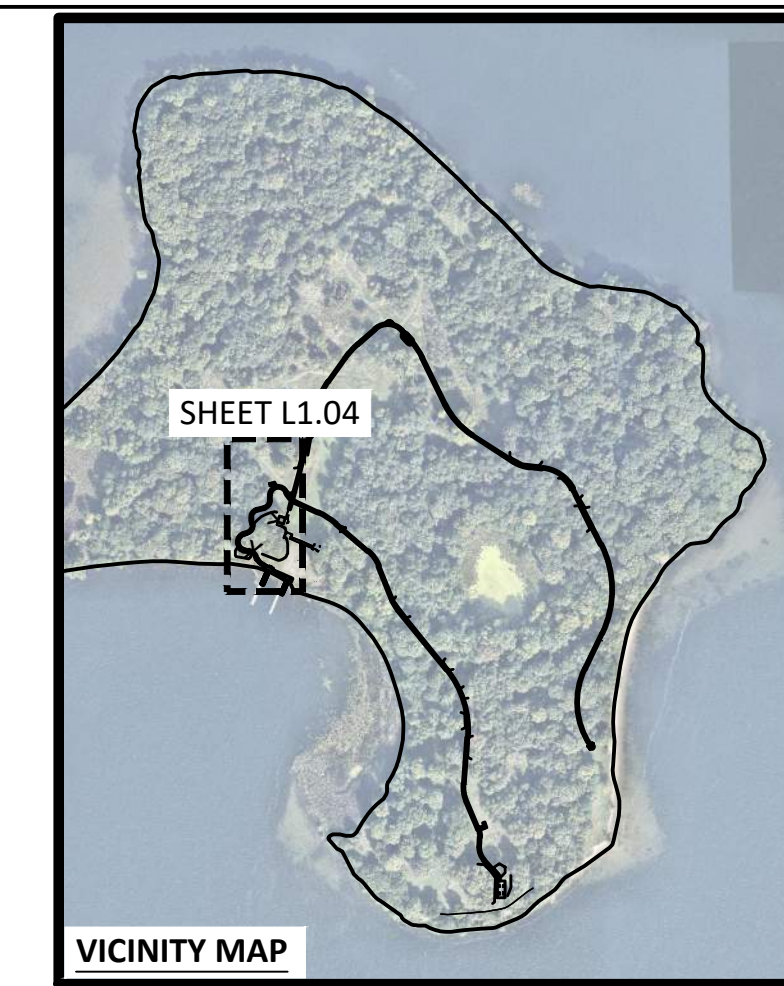
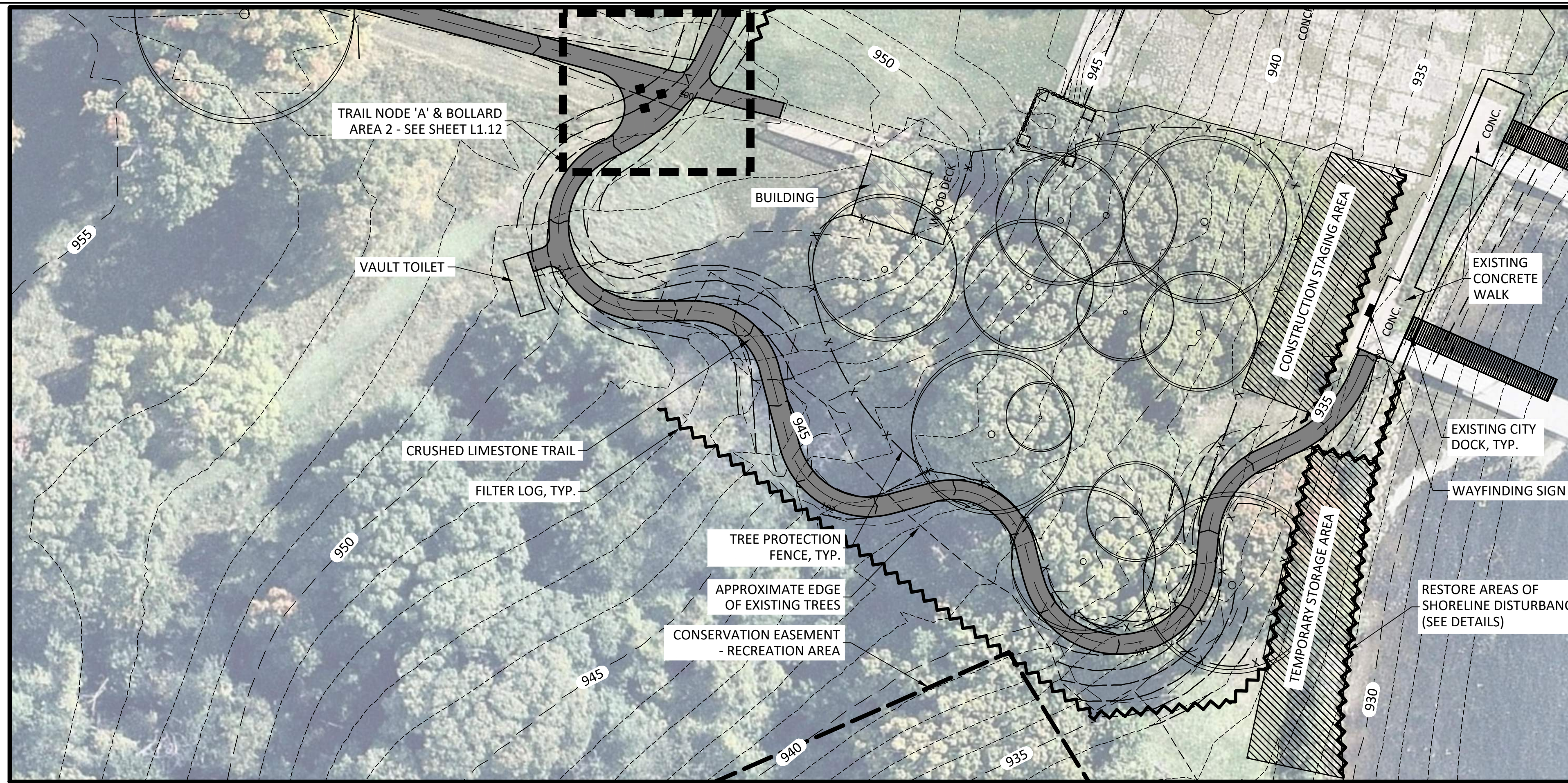
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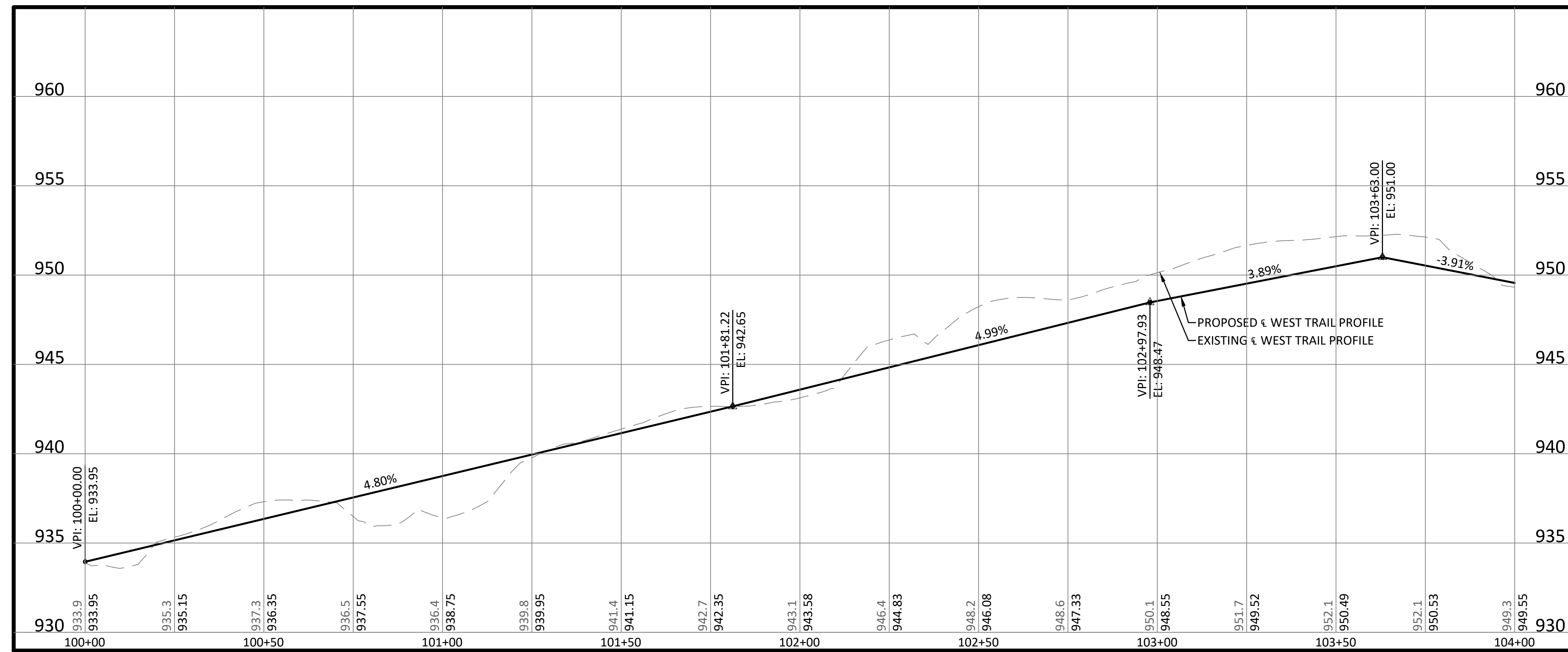
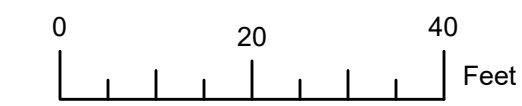
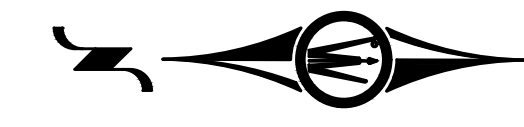
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BIG ISLAND NATURE PARK IMPROVEMENTS
OVERALL SITE PLAN

SHEET
L1.03

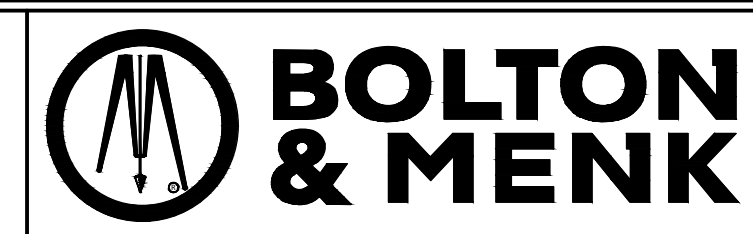




- LEGEND**
- FILTER LOG
 - TREE PROTECTION FENCE



- EROSION CONTROL NOTES:**
1. CONTRACTOR SHALL MAINTAIN FILTER LOG EROSION CONTROL MEASURES DURING ENTIRE CONSTRUCTION PROCESS.
 2. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL AREAS OF DISTURBANCE INCLUDING THE SHORELINE TO PRECONSTRUCTION CONDITIONS.
 3. THE TEMPORARY STORAGE AREA IS FOR UNLOADING AND STAGING MATERIAL. MATERIAL PLACED IN THIS AREA SHALL BE MOVED TO THE CONSTRUCTION STAGING AREA AS SOON AS POSSIBLE OR INSTALLED WITHIN THE CONSTRUCTION DAY. IF UNABLE TO INSTALL MATERIAL WITHIN THE CONSTRUCTION DAY, CONTRACTOR SHALL COVER MATERIAL WITH TARPS TO ELIMINATE POSSIBLE EROSION ISSUES.
 4. TEMPORARY PERIMETER CONTROL CONSTRUCTED OF MATERIALS THAT DO NOT EASILY DECOMPOSE, SUCH AS FILTER LOGS, SHALL BE REMOVED WHEN THE SITE HAS BEEN PERMANENTLY STABILIZED AND PRIOR TO PROJECT CLOSE OUT.



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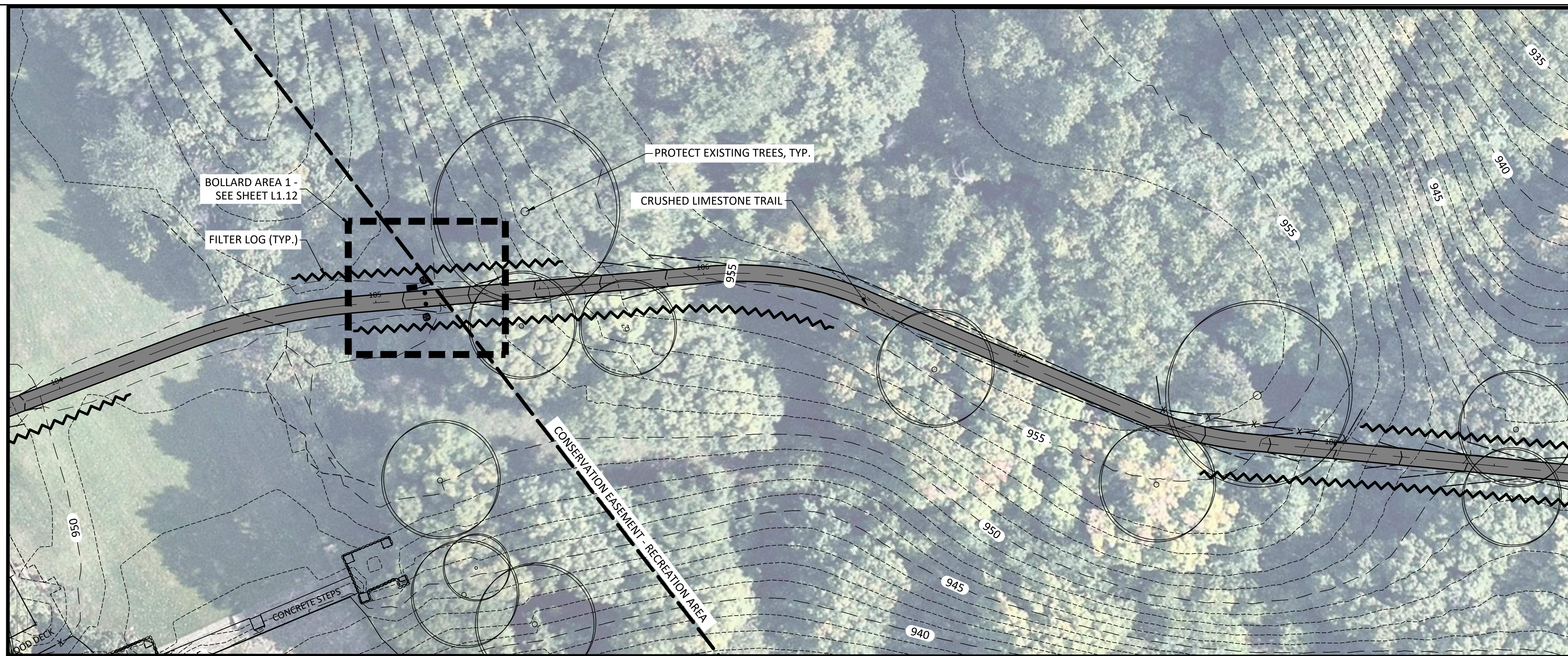
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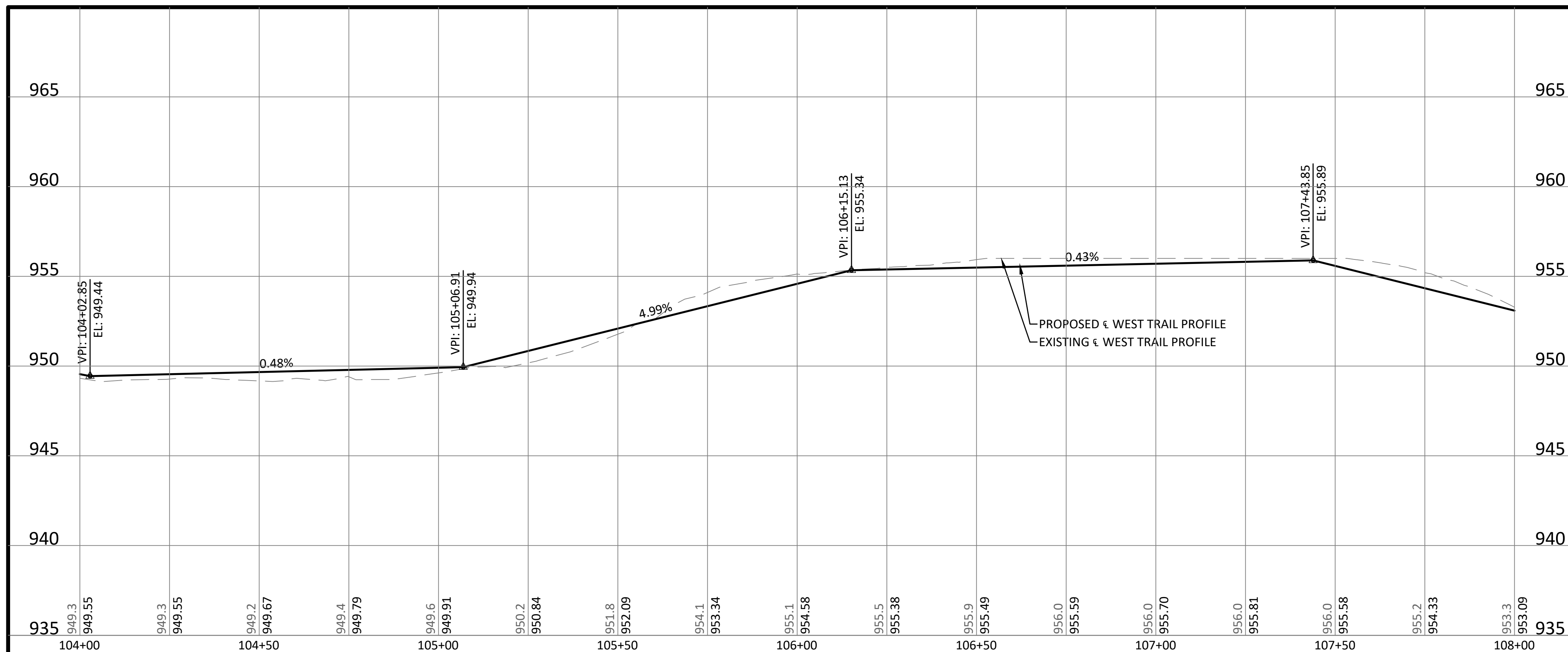
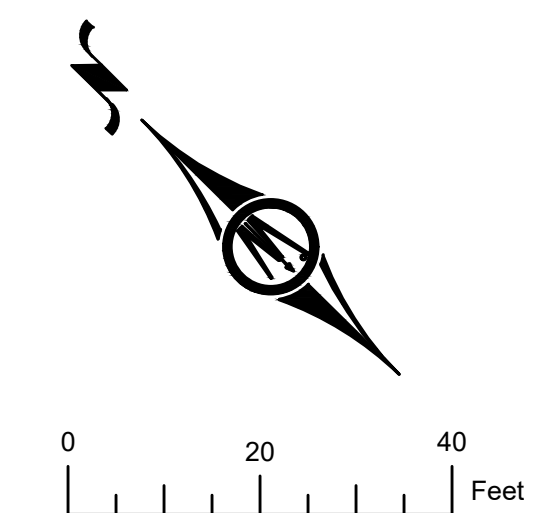
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 BIG ISLAND NATURE PARK IMPROVEMENTS
 SITE PLAN & PROFILE

SHEET
L1.04



LEGEND

- FILTER LOG
- TREE PROTECTION FENCE



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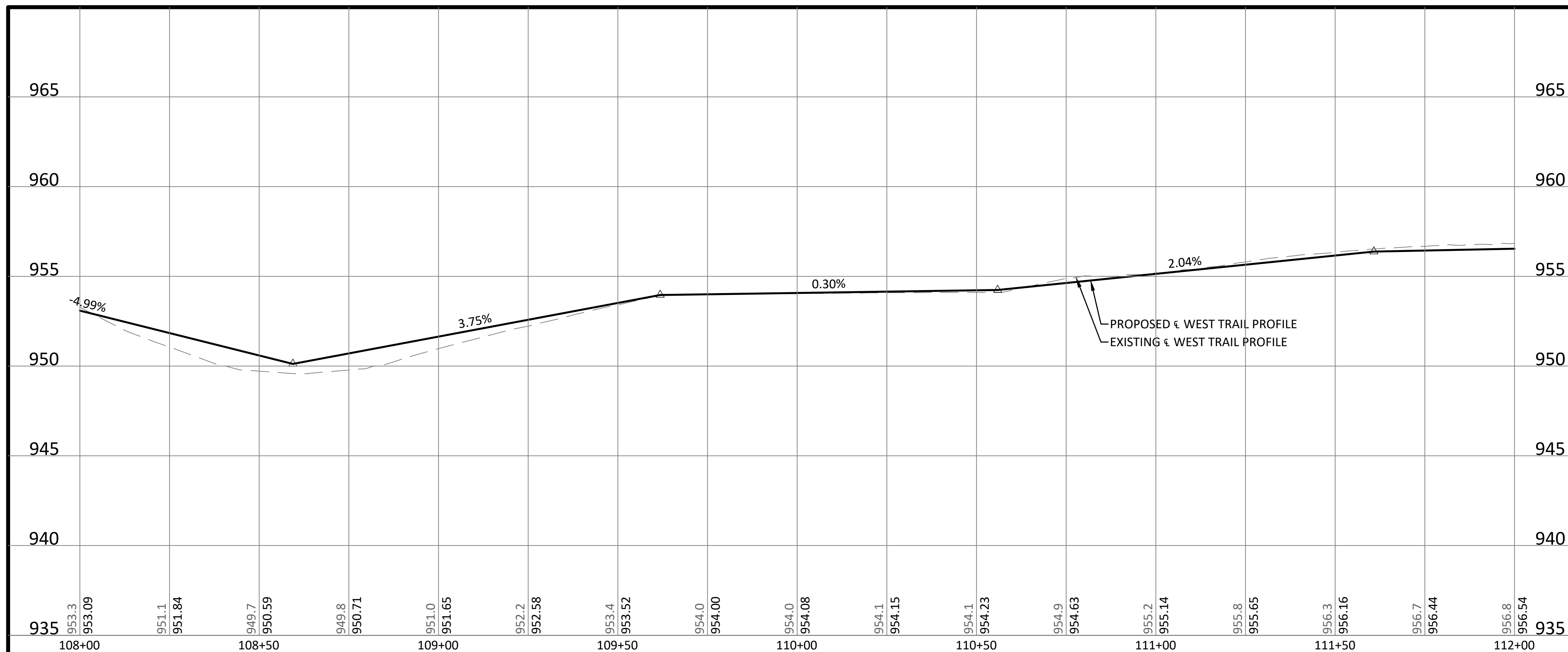
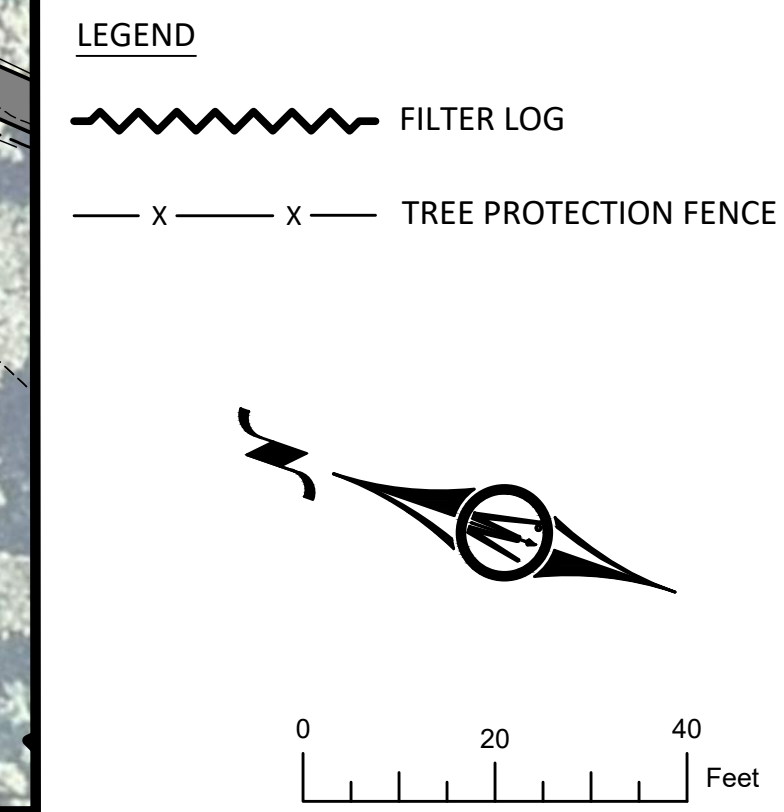
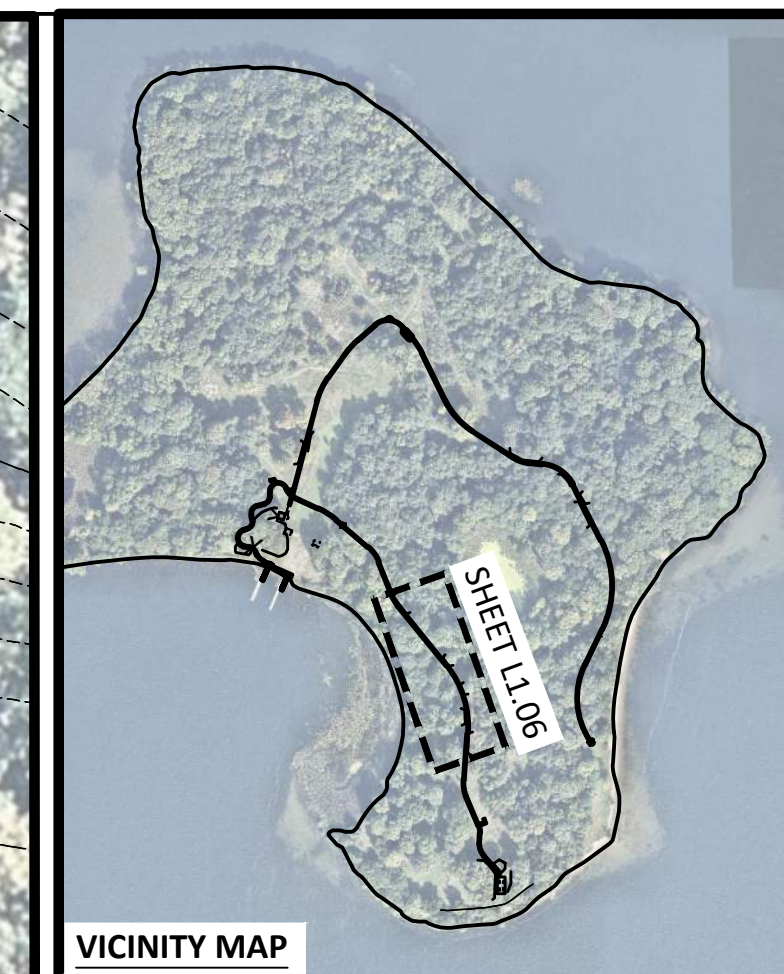
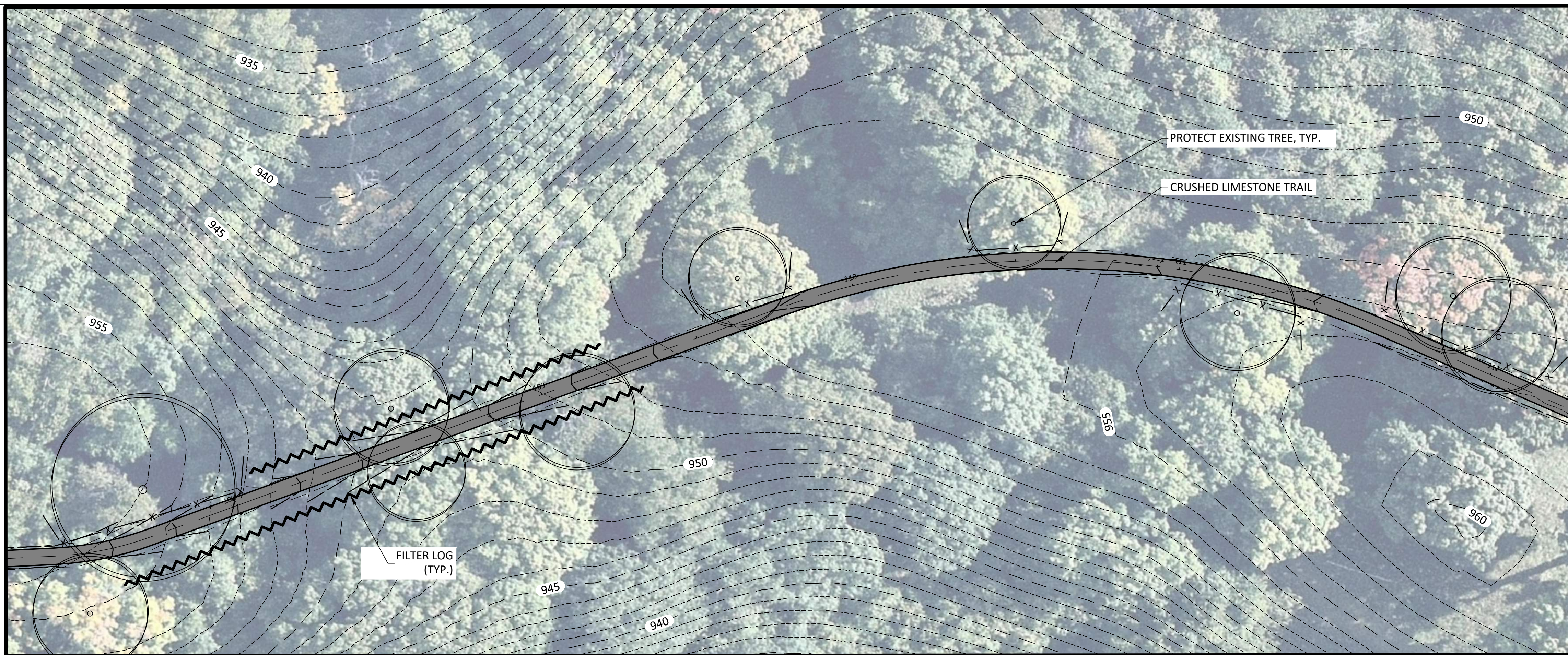
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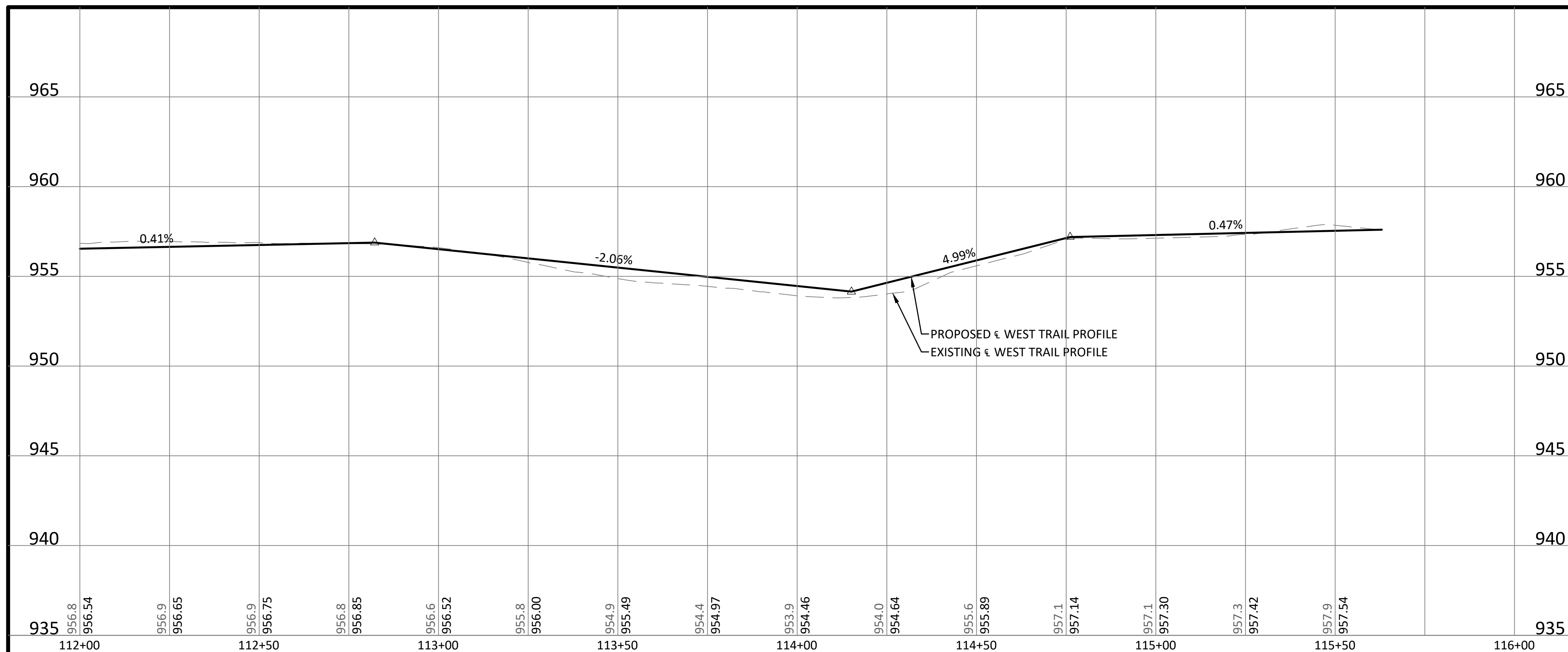
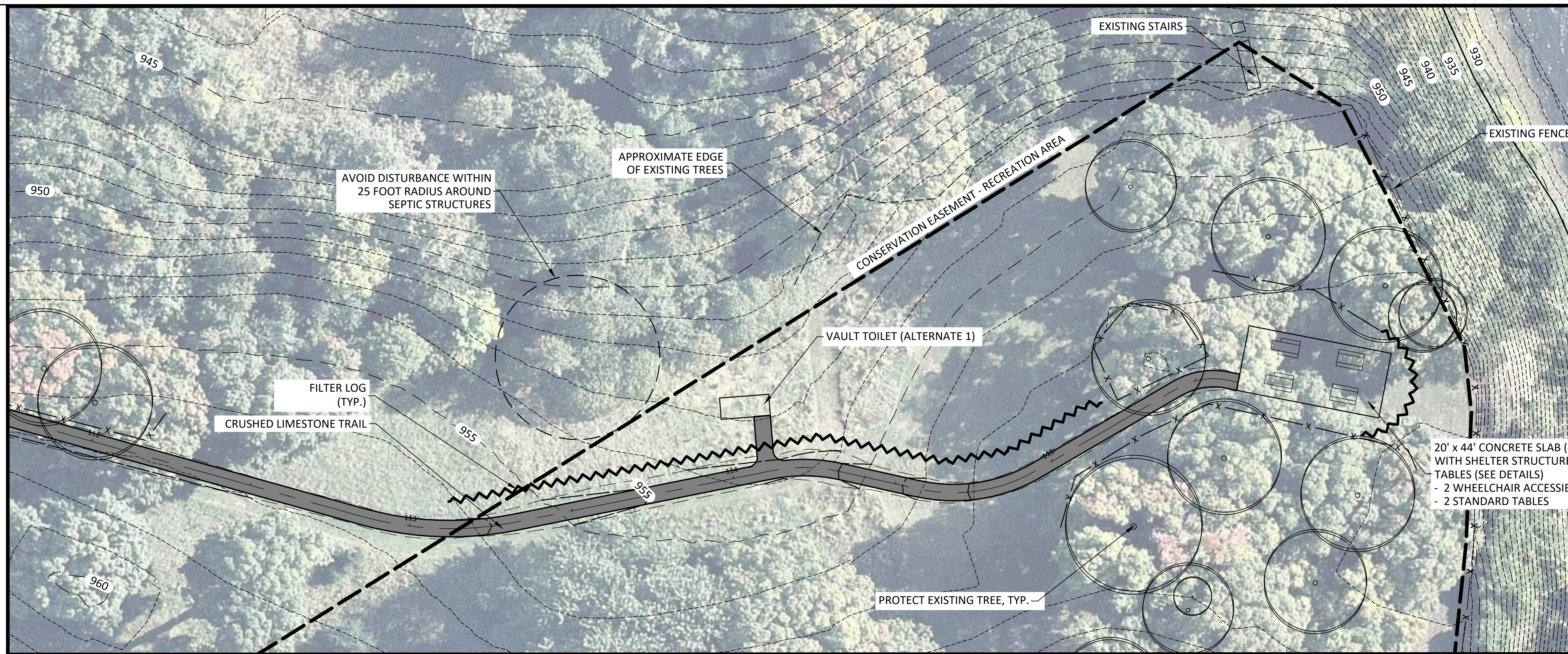
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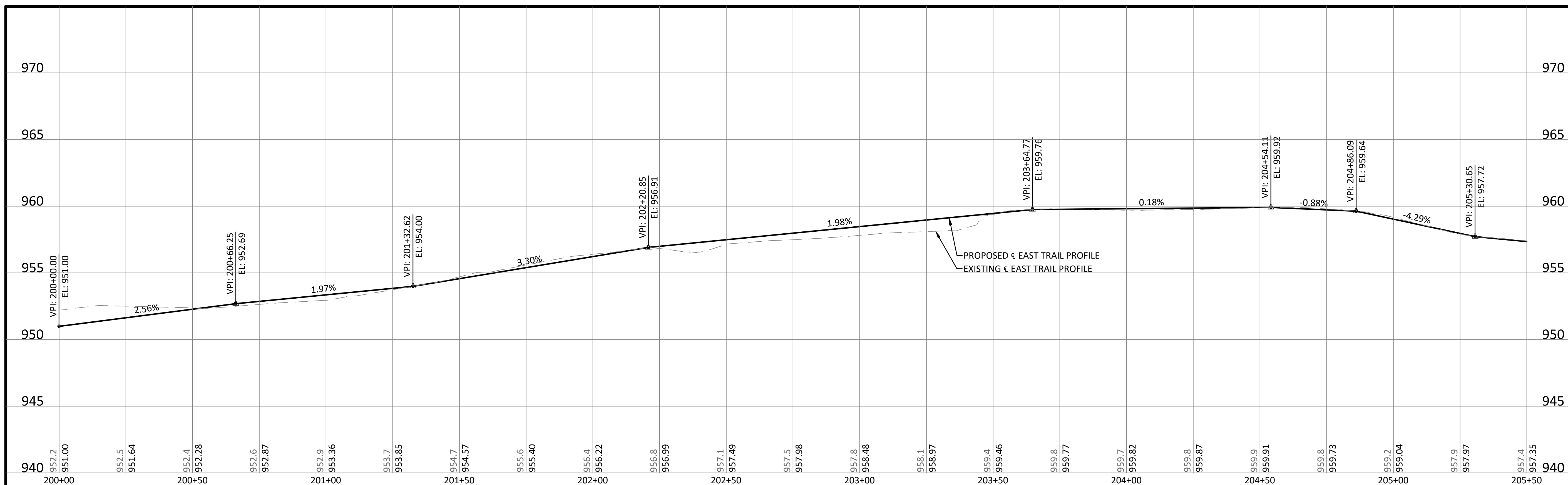
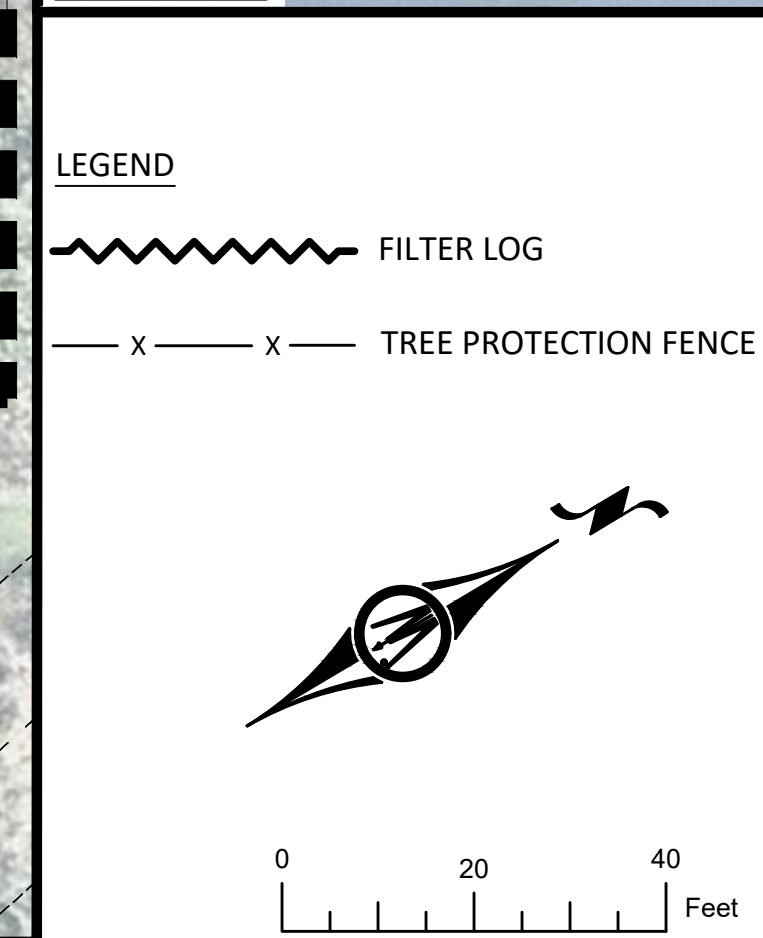
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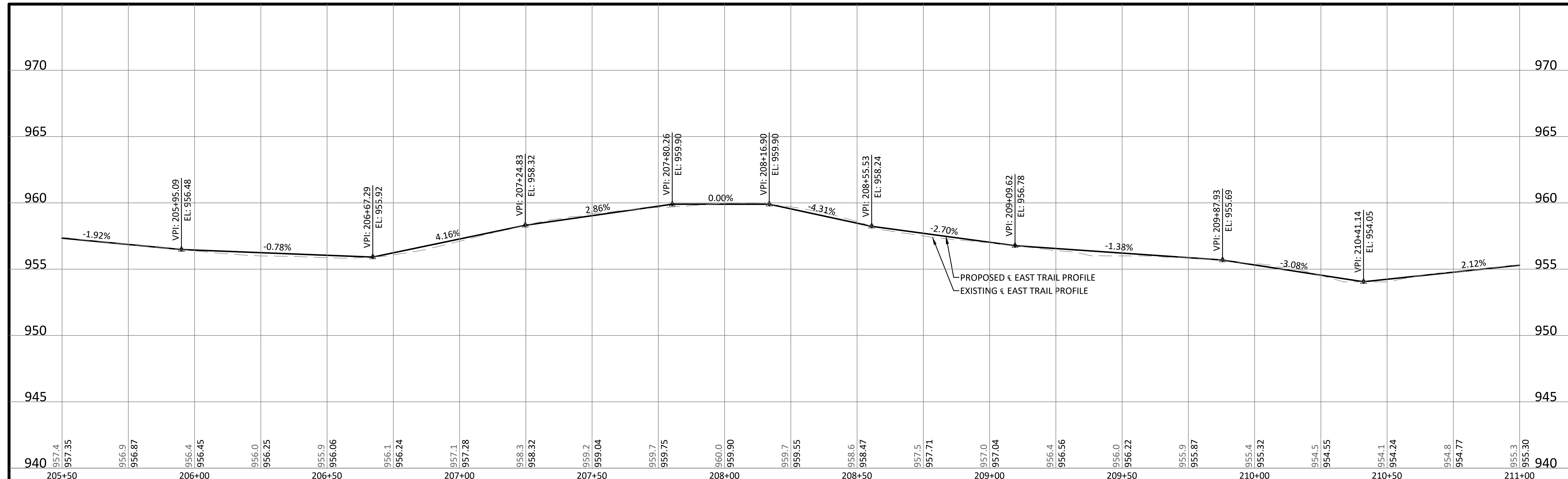
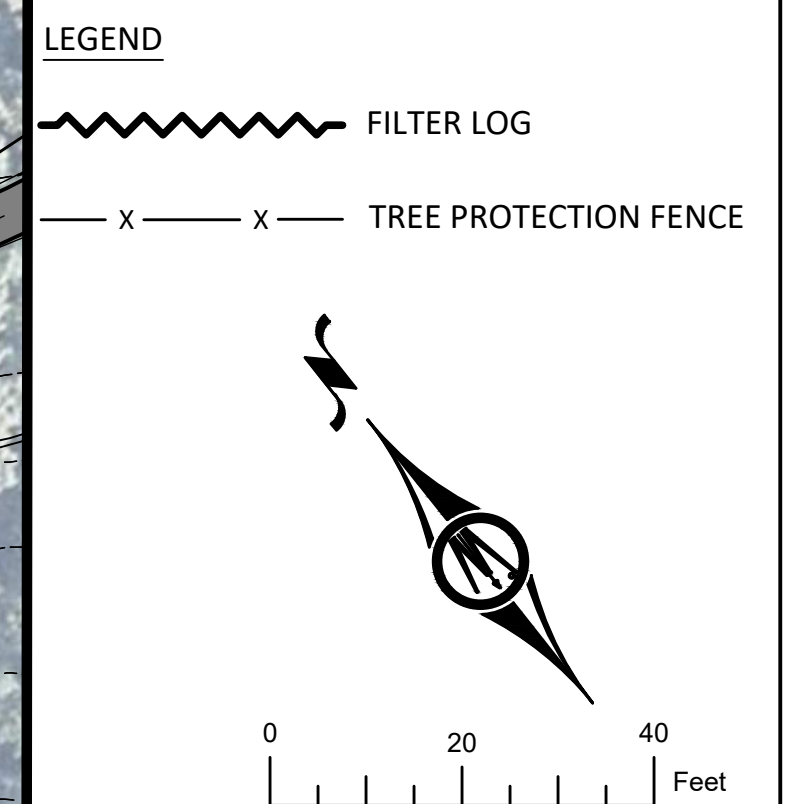
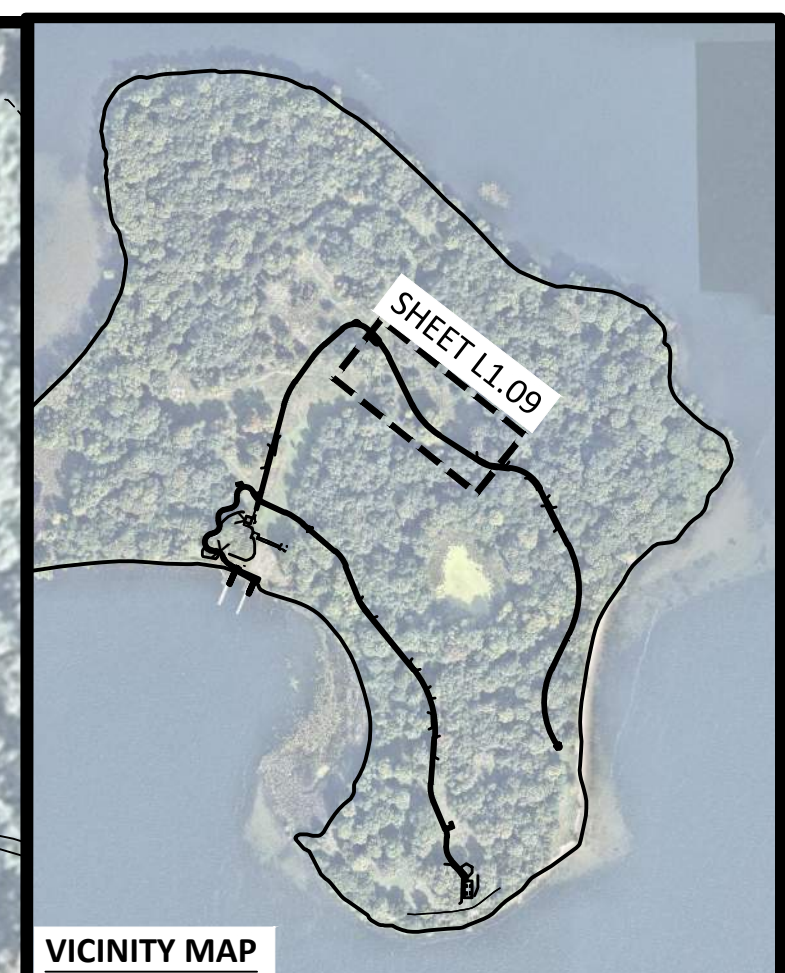
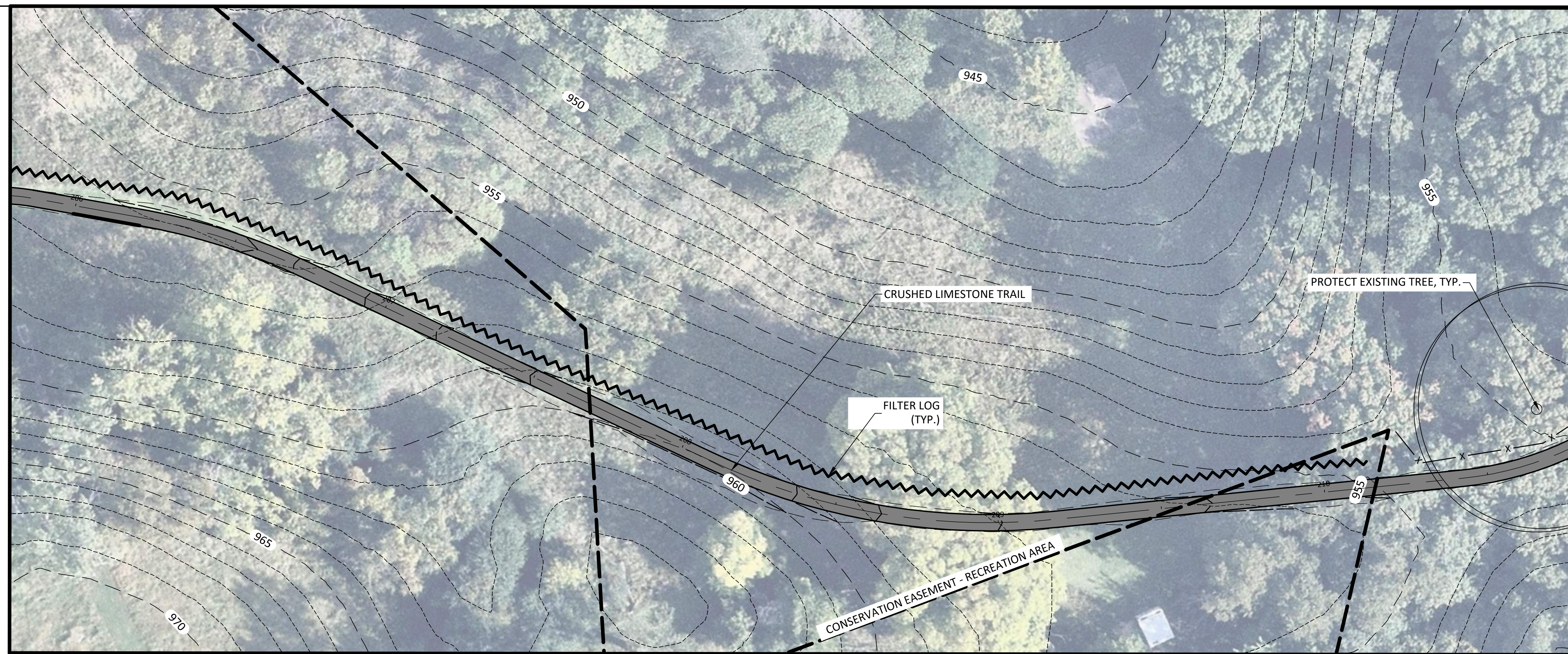
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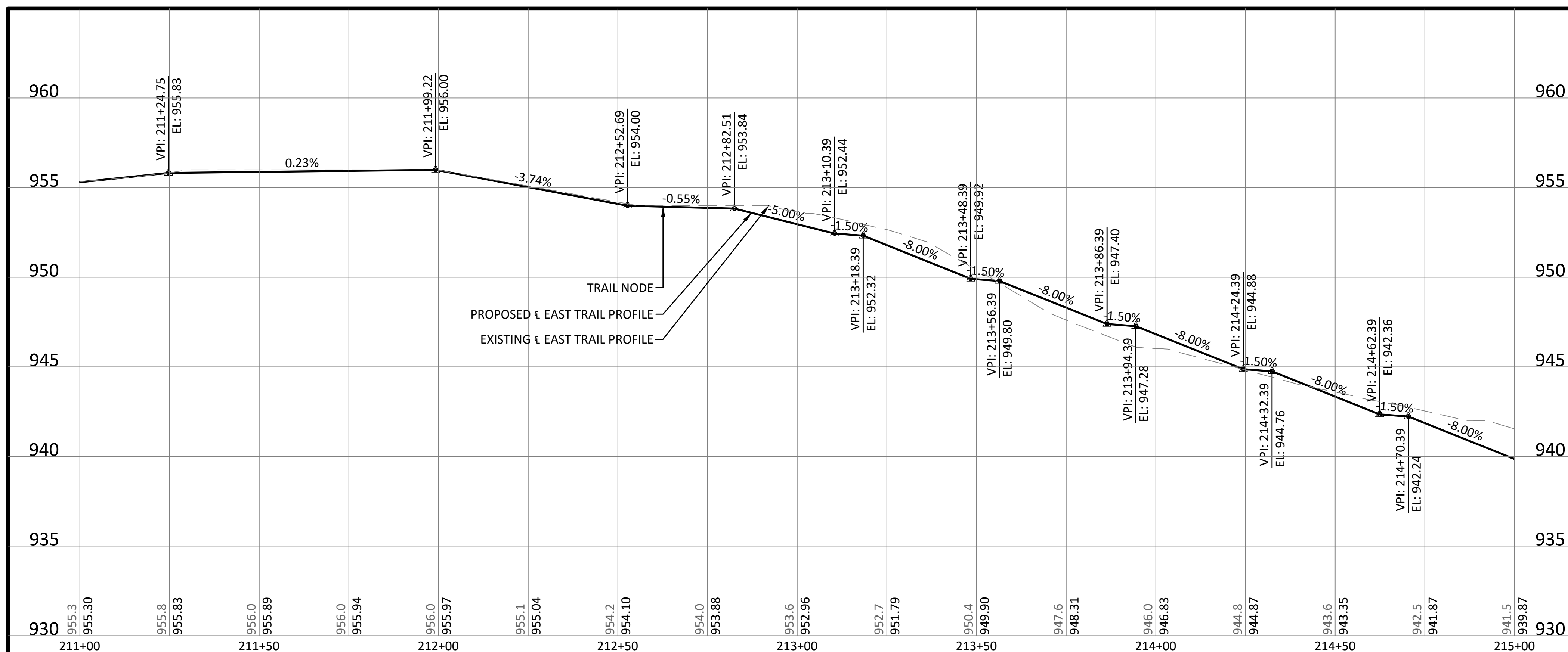
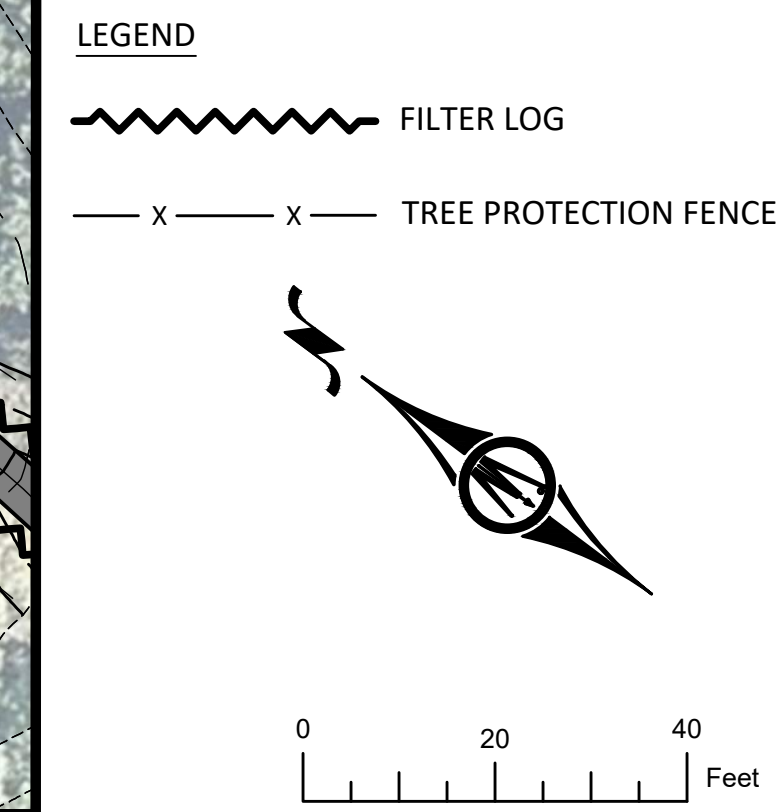
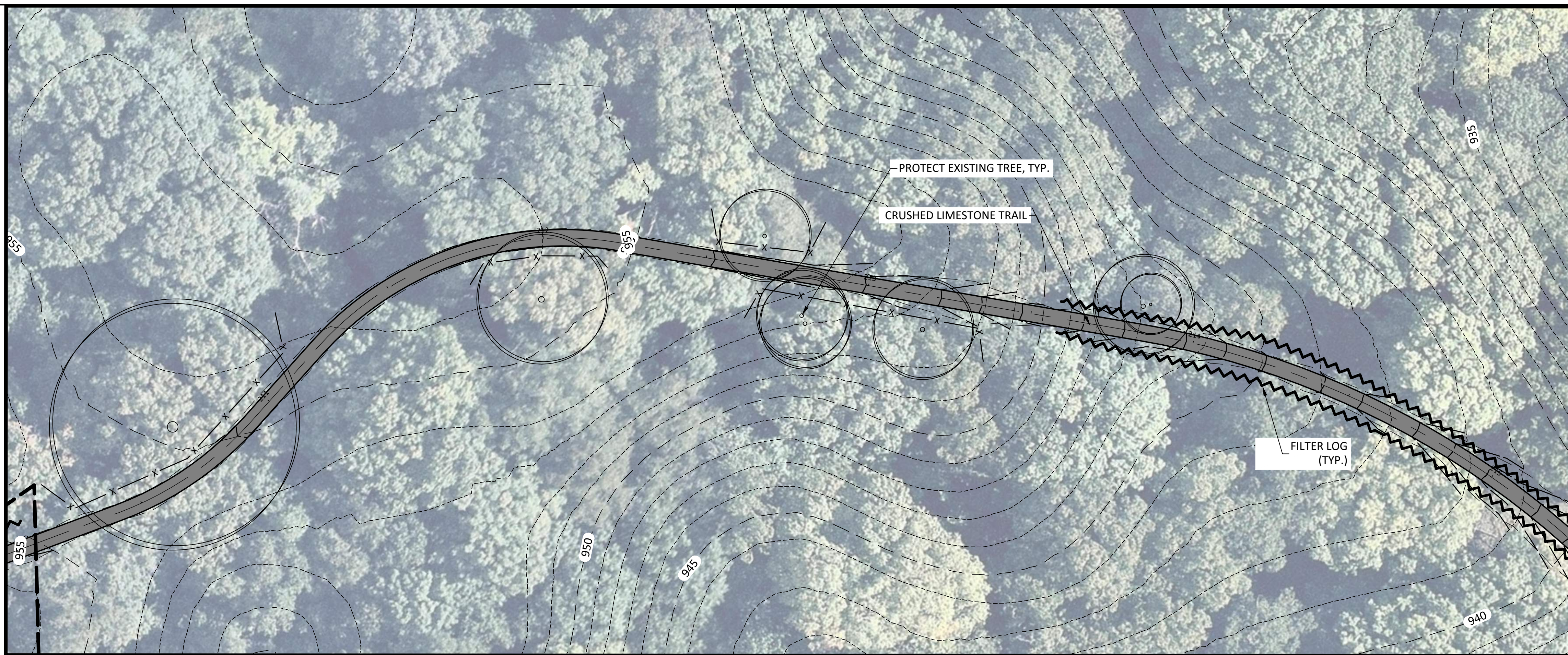
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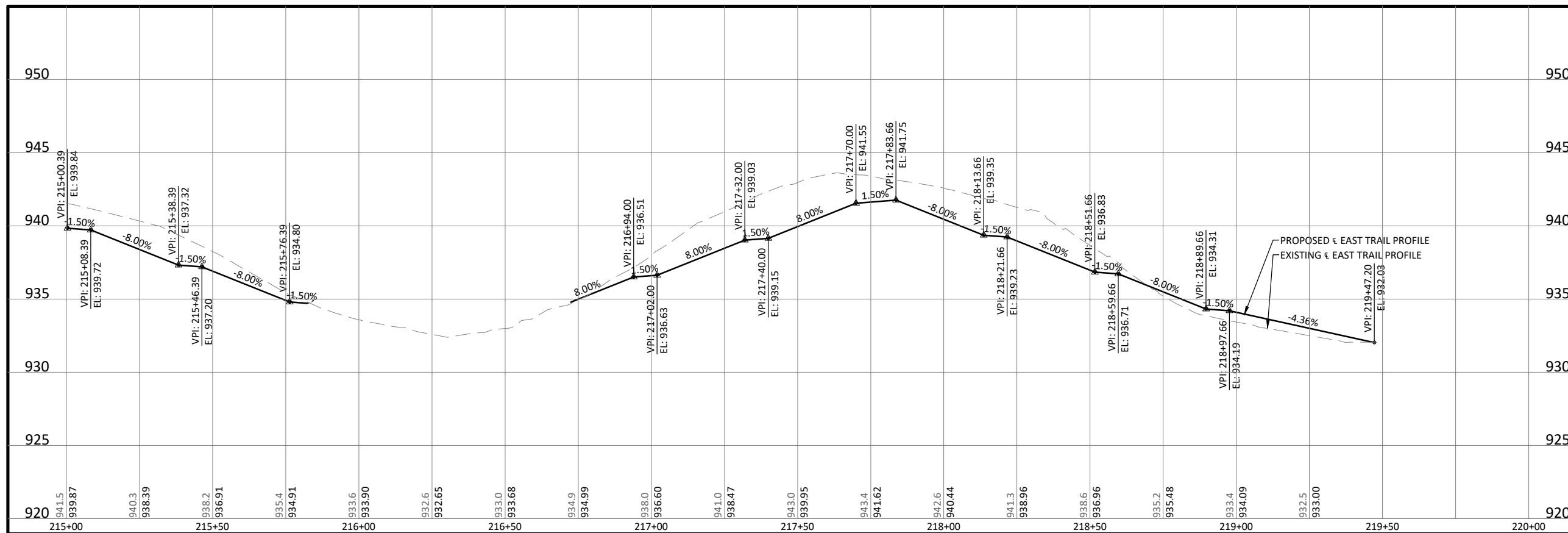
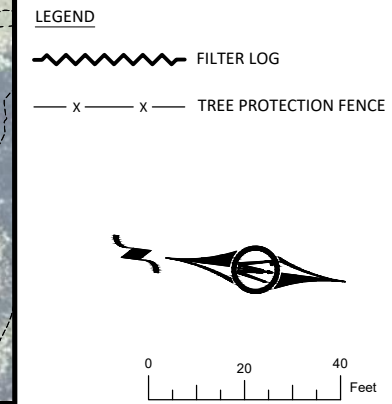
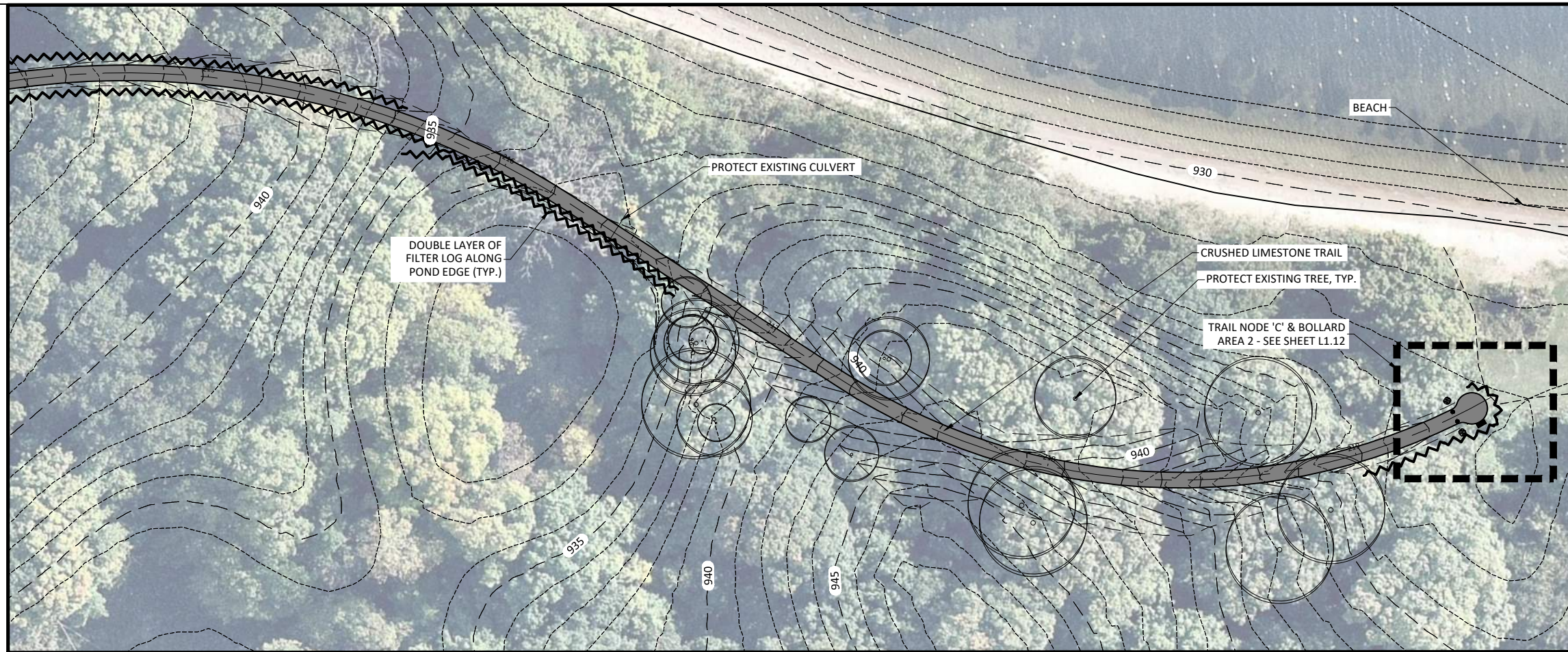
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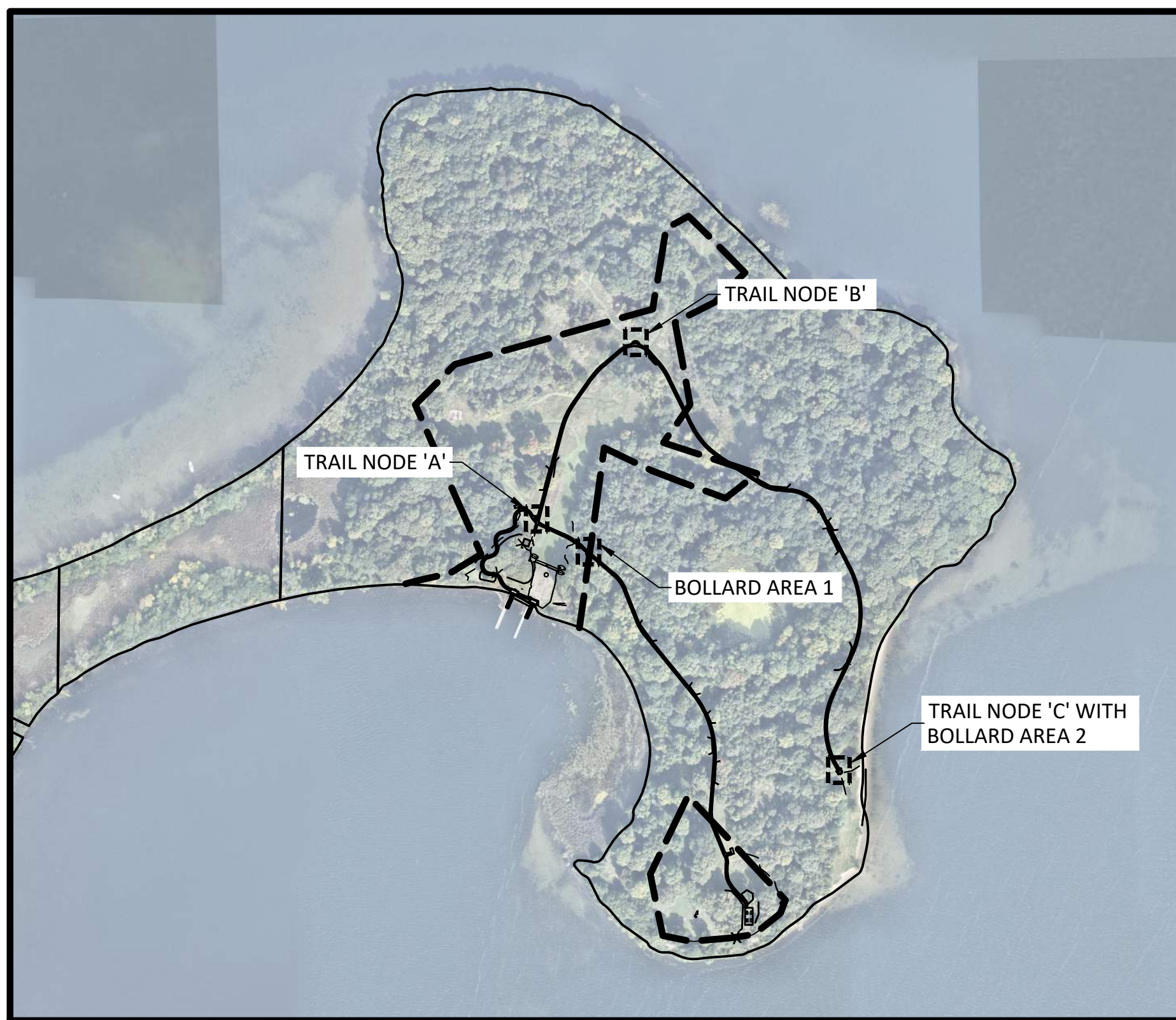
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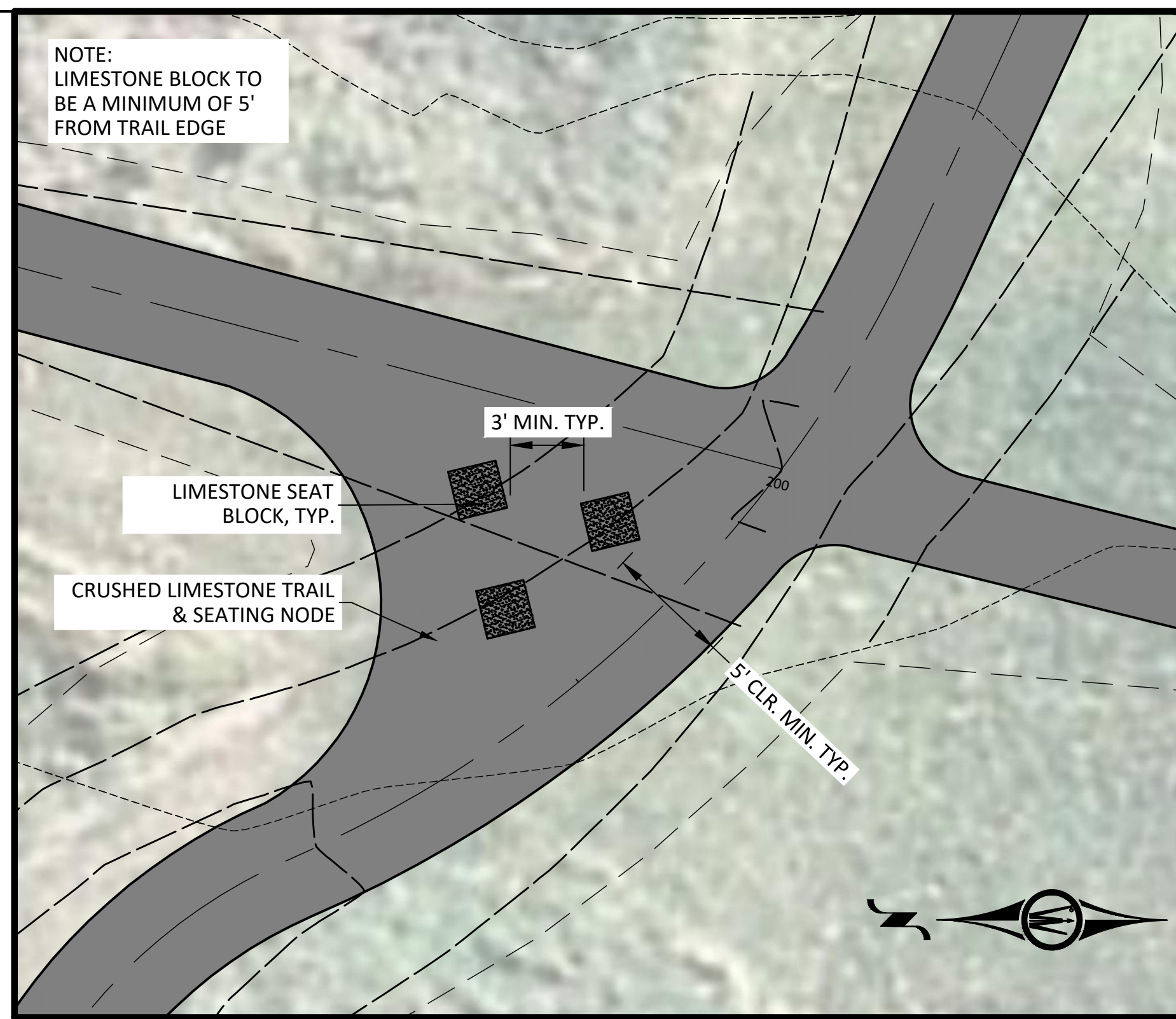
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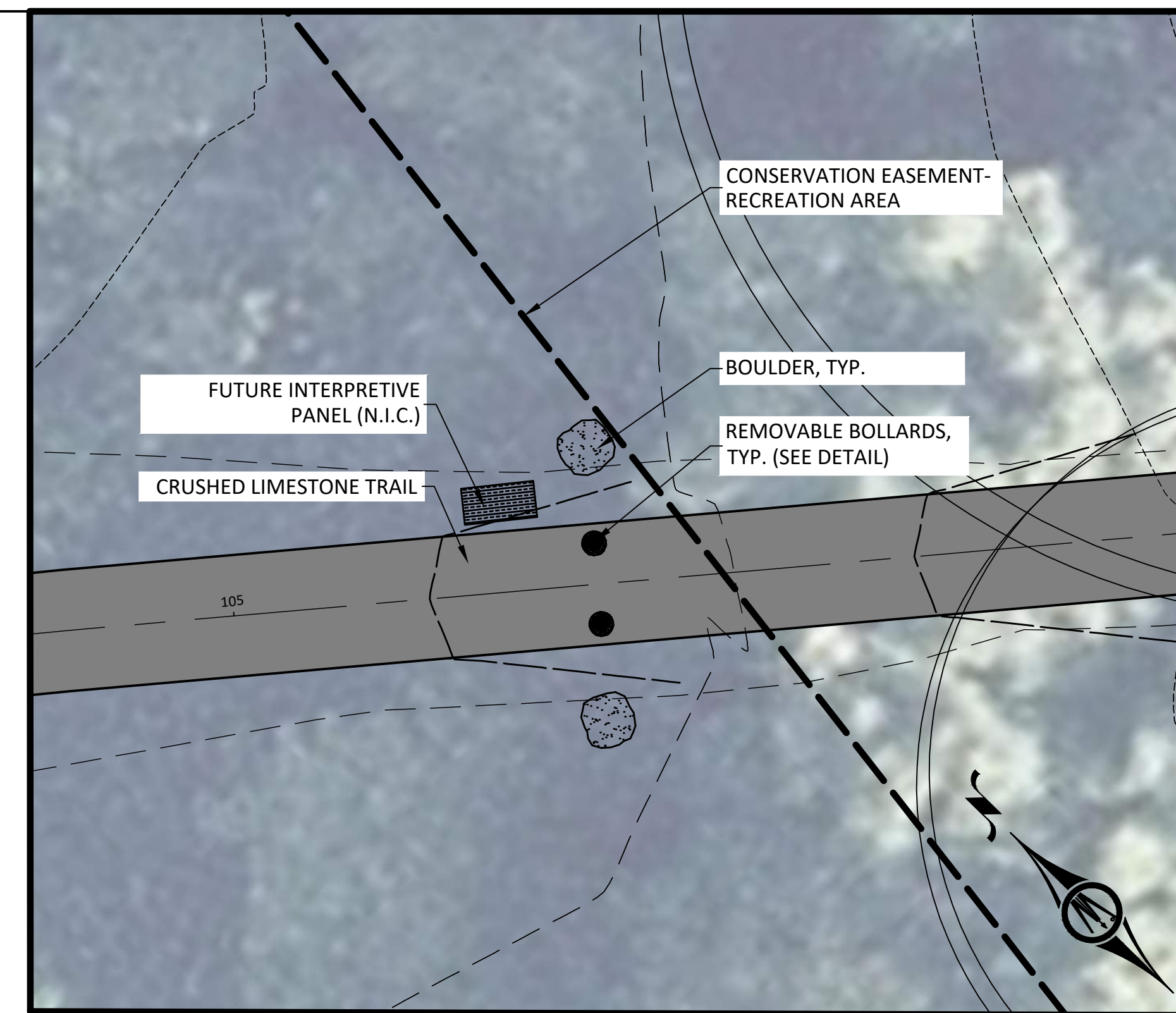
TRAIL NODE DETAIL LEGEND

SCALE: N.T.S.



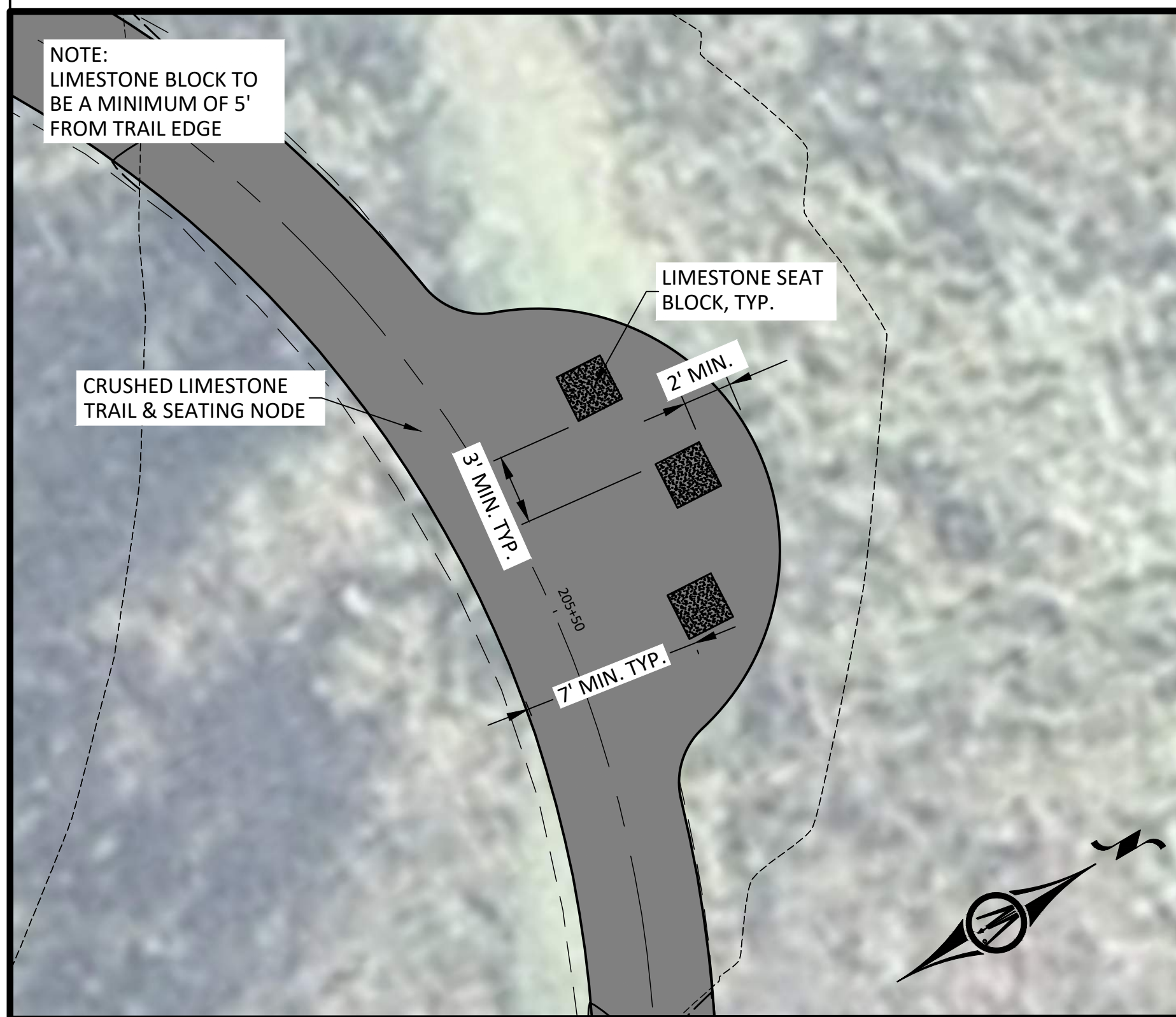
1 TRAIL NODE 'A' PLAN

SCALE: 1" = 5'-0"



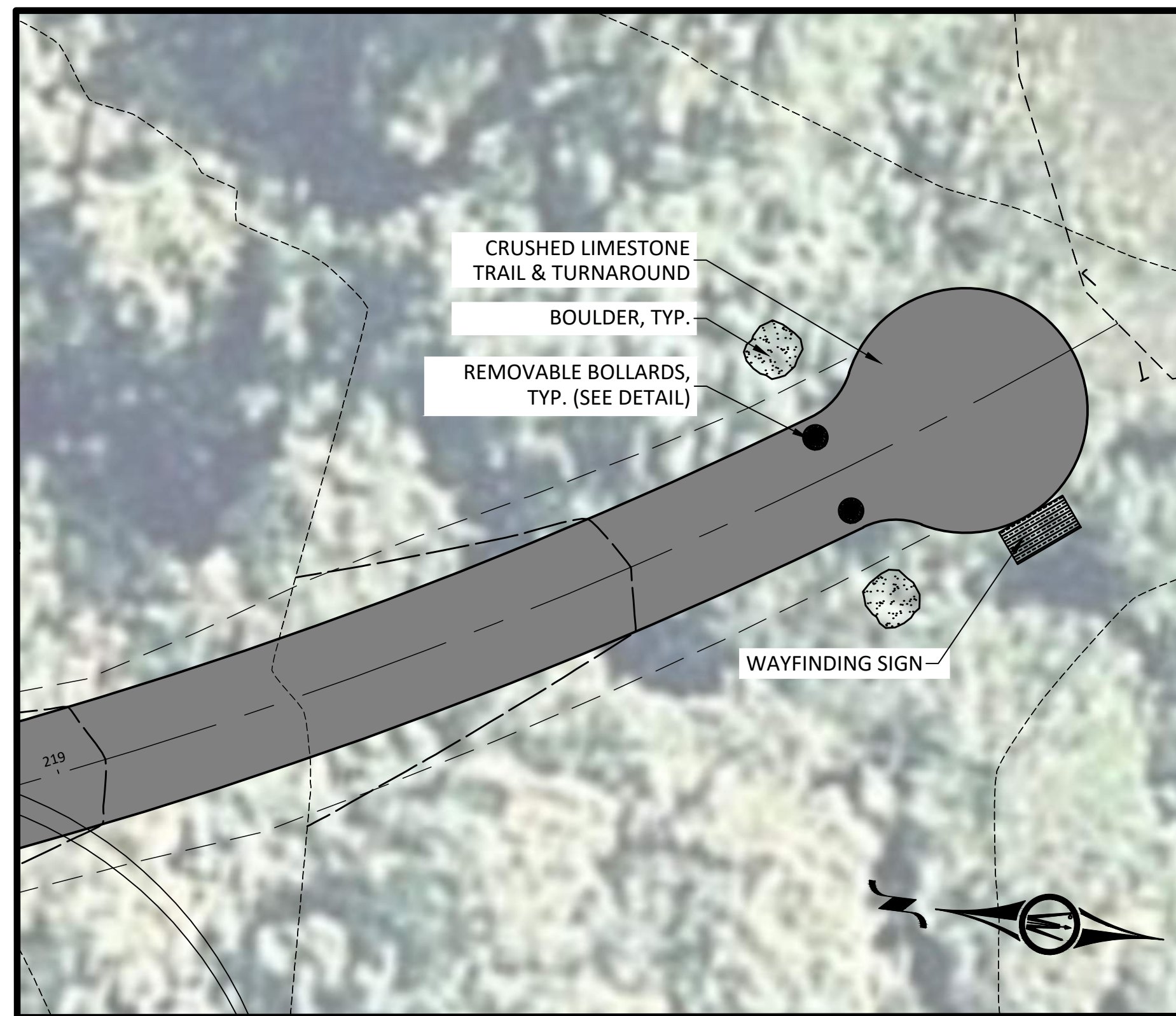
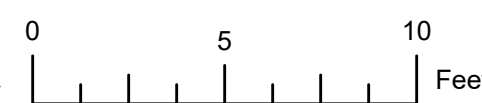
2 BOLLARD AREA 1 PLAN

SCALE: 1" = 5'-0"



3 TRAIL NODE 'B' PLAN

SCALE: 1" = 5'-0"



5 TRAIL NODE 'C' AND BOLLARD AREA 2 PLAN

SCALE: 1" = 5'-0"



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JOEL C. ODENS
LIC. NO. 44689 DATE 2-28-2020

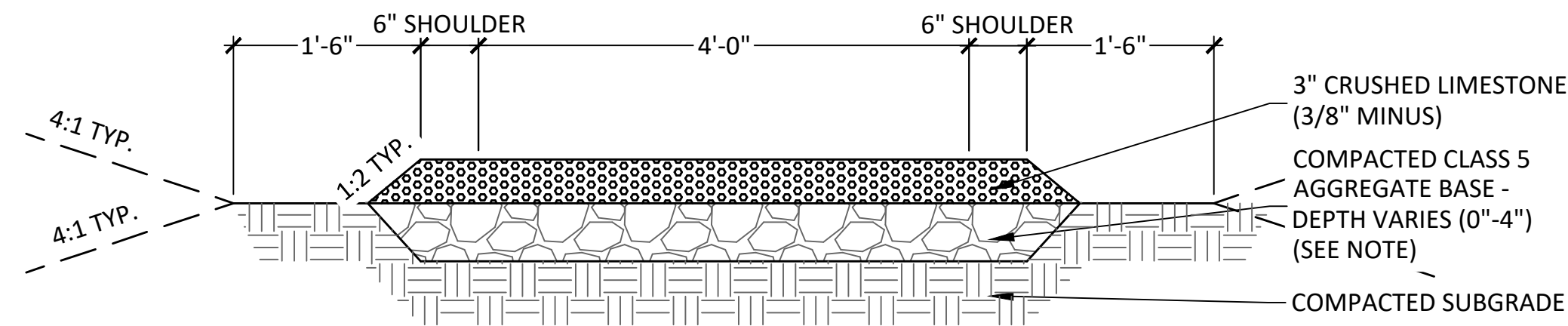
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DRAWN KAG
CHECKED JCO

CITY OF ORONO
BIG ISLAND NATURE PARK IMPROVEMENTS
DETAIL SITE PLANS

SHEET
L1.12

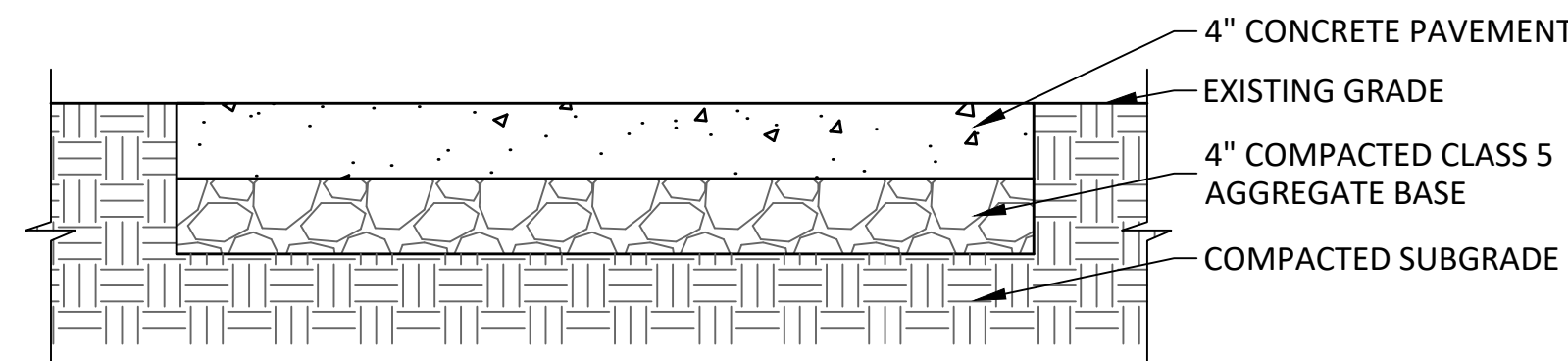
NOTES:

1. THE AMOUNT OF COMPACTED CLASS 5 AGGREGATE BASE NECESSARY TO CONSTRUCT THE PROPOSED TRAIL WILL VARY. IN AREAS WHERE THE PROPOSED TRAIL FOLLOWS AN EXISTING PATHWAY, LITTLE OR NO CLASS 5 AGGREGATE BASE WILL BE NECESSARY. HALF OF THE TOTAL PROPOSED TRAIL WORK CURRENTLY NOT PART OF THE EXISTING TRAIL SYSTEM SHALL RECEIVE THE FULL 4" COMPACTED CLASS 5 AGGREGATE BASE. IT IS ANTICIPATED SELECT AREAS WITHIN THE ENTIRE PROPOSED TRAIL SYSTEM WILL NEED ADDITIONAL COMPACTED CLASS 5 AGGREGATE. THIS AMOUNT IS ALSO ACCOUNTED FOR IN THE BID QUANTITY FOR CLASS 5 AGGREGATE BASE, AND THE LOCATIONS AND DEPTHS WILL BE COORDINATED ON SITE WITH THE OWNER'S REPRESENTATIVE.
2. THE PROPOSED TRAIL ALIGNMENT IS INTENDED TO PRESERVE ALL TREES WITHIN THE PROJECT AREA. SLIGHT FIELD ADJUSTMENTS MAY BE NECESSARY TO ACCOMMODATE TREES.



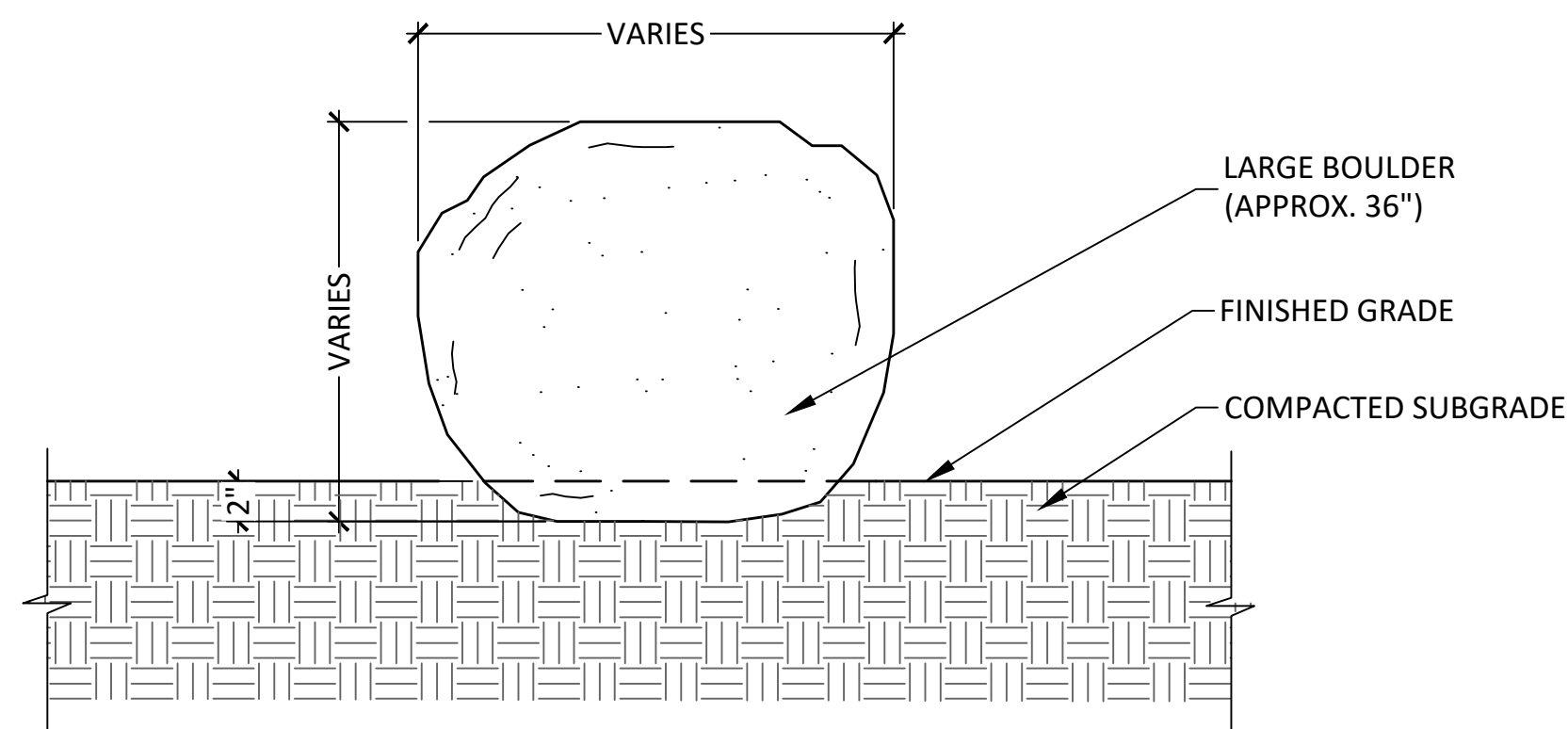
1 CRUSHED LIMESTONE TRAIL, TYP.

SCALE: N.T.S.



2 SHADE STRUCTURE AND PICNIC TABLE FOUNDATION, TYP.

SCALE: N.T.S.



3 SECTION: LARGE BOULDER

SCALE: N.T.S.

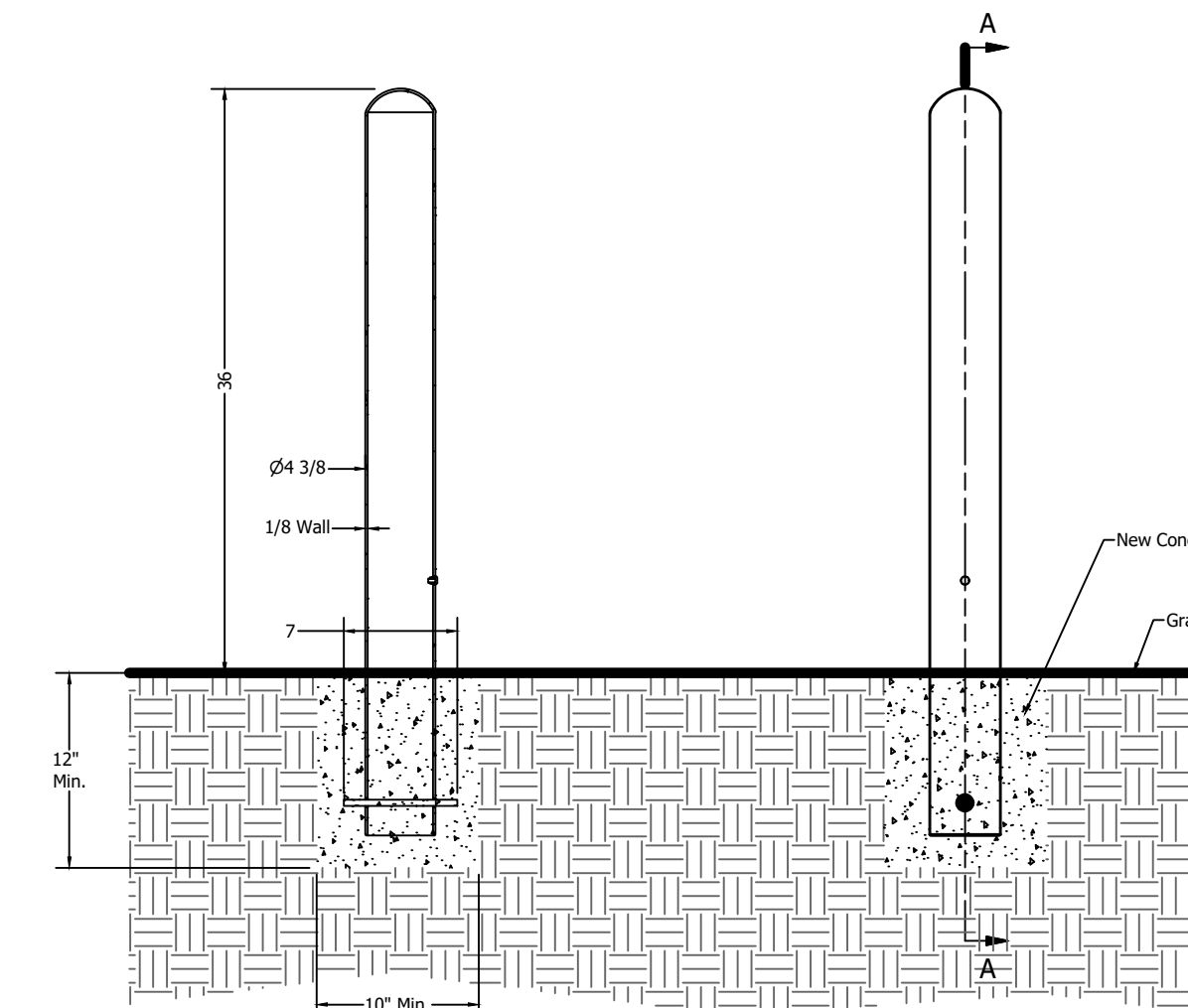
BOLLARD IMAGE



Stainless Steel Embedment Sleeve Included

NOTES:

1. BOLLARDS TO BE RELIANCE FOUNDRY PRODUCT R-7902 REMOVABLE STEEL BOLLARD WITH 4" STAINLESS STEEL REMOVABLE EMBEDDED RECEIVER WITH LID, OR APPROVED EQUAL. ONE SAFETY YELLOW POWDER COATED BOLLARD WITH WHITE REFLECTIVE STRIPE TO BE INSTALLED AT EACH AREA INDICATED TO PROHIBIT MOTORIZED VEHICLE TRAIL USE IN WINTER MONTHS. DRAWINGS SHOWN ARE FOR PRELIMINARY PLANNING AND ESTIMATING ONLY. FOR ADDITIONAL INFORMATION AND ORDERING OF POLYGON STRUCTURES, CONTACT:
LEN CRANMORE
RELIANCE FOUNDRY
6450 148TH STREET, UNIT 207,
SURREY, BC, CANADA V3S 7G7
EMAIL: len@reliance-foundry.com
DIRECT: (604) 547-0463
TOLL-FREE: 1-877-789-3245
2. INSTALL AT TWO LOCATIONS SHOWN ON PLANS, PER MANUFACTURER'S INSTRUCTIONS.



Fixed Installation in New Concrete

Notes:

- Embedment details are for reference illustration only. Minimum foundation sizes depend on local soil conditions, weather conditions, and engineering requirements.
- Bollard post is provided as shown, with material detailed in legend below. Concrete, foundation and/or installation ordered separately or provided by others.
- This drawing is not drawn to scale. Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

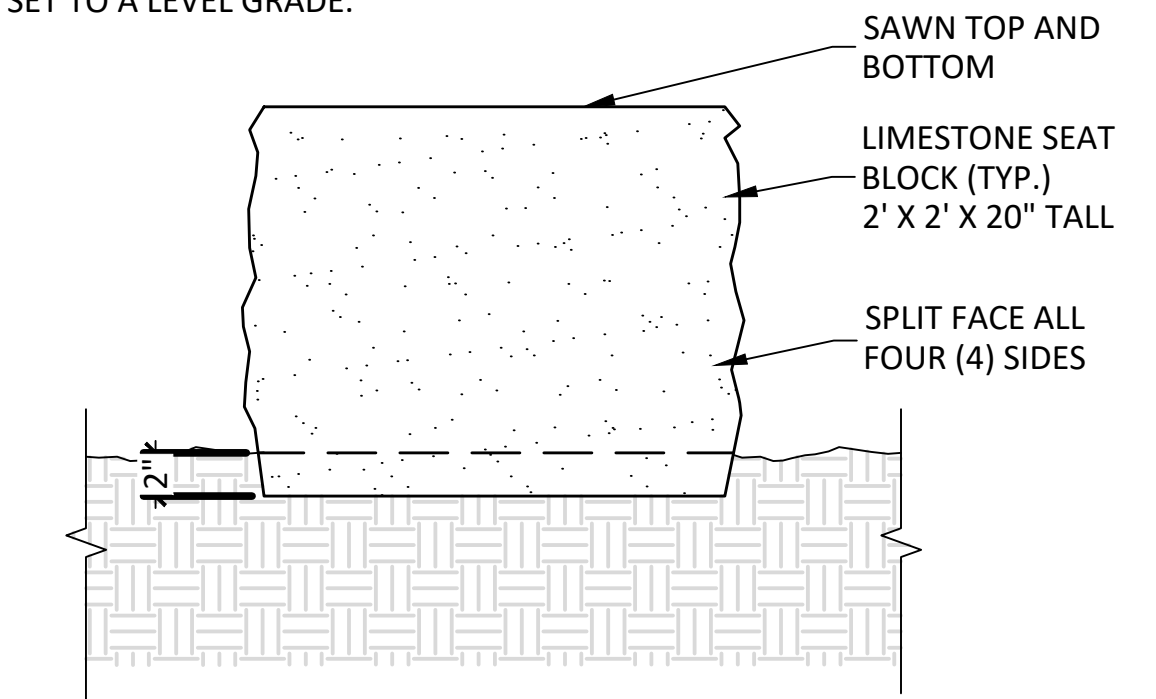
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R-7902	Fixed Bollard	Steel Powder Coated	31 lbs
2	1	Polyethylene Plug 1/2"	Polyethylene Plug 1/2"	Polyethylene Plastic	
3	1	Steel Rebar	Steel Rebar 10 mm x 7"	Steel Epoxy Coated	3/8 lbs

4 SEASONAL USE REMOVABLE BOLLARD

SCALE: N.T.S.

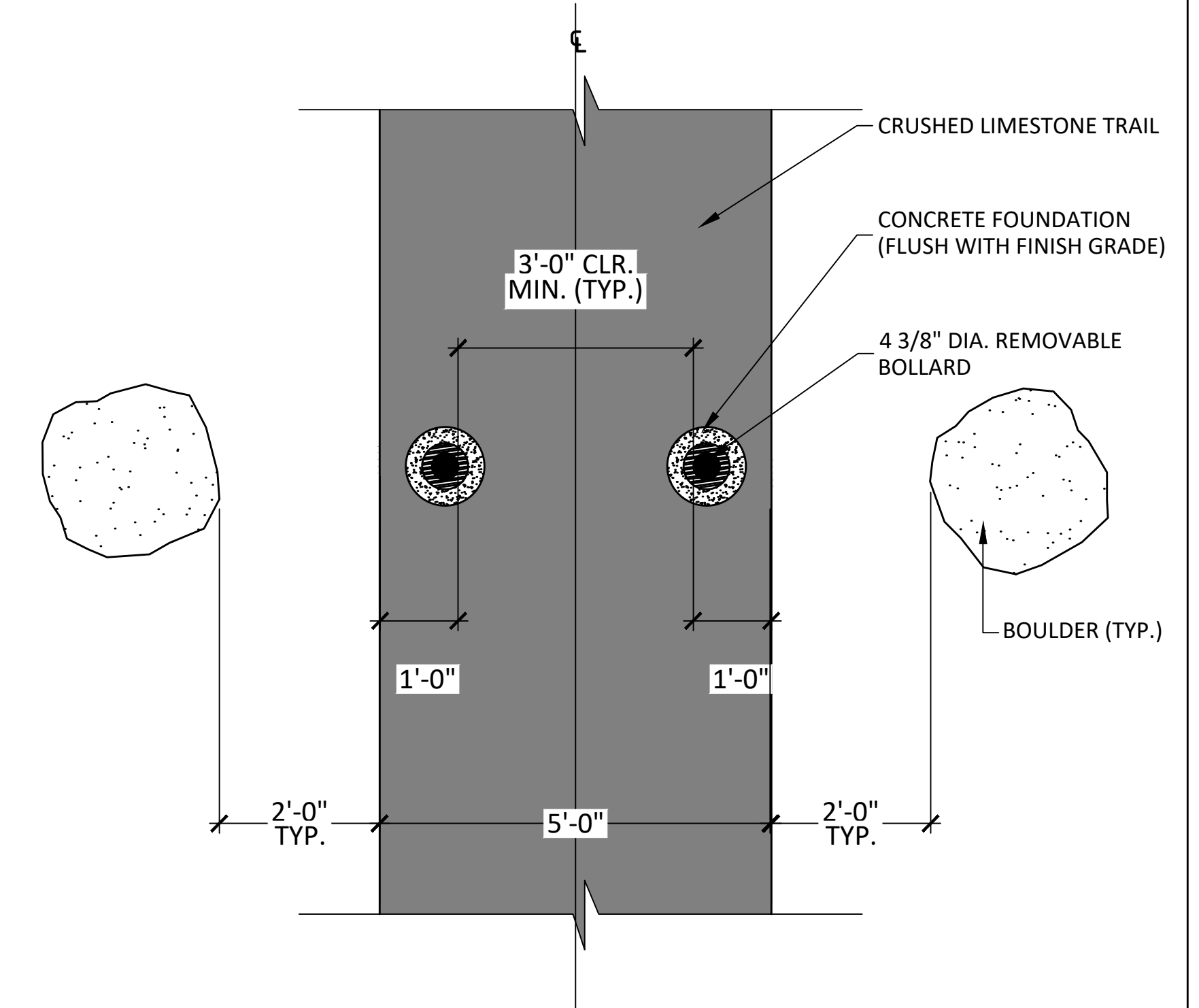
NOTE:

1. SEAT BLOCK SHALL BE SET TO A LEVEL GRADE.



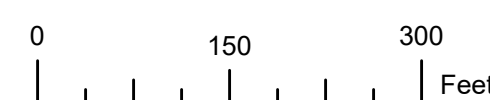
5 SECTION: LIMESTONE SEAT BLOCK

SCALE: N.T.S.



6 TYPICAL BOLLARD DETAIL

SCALE: N.T.S.



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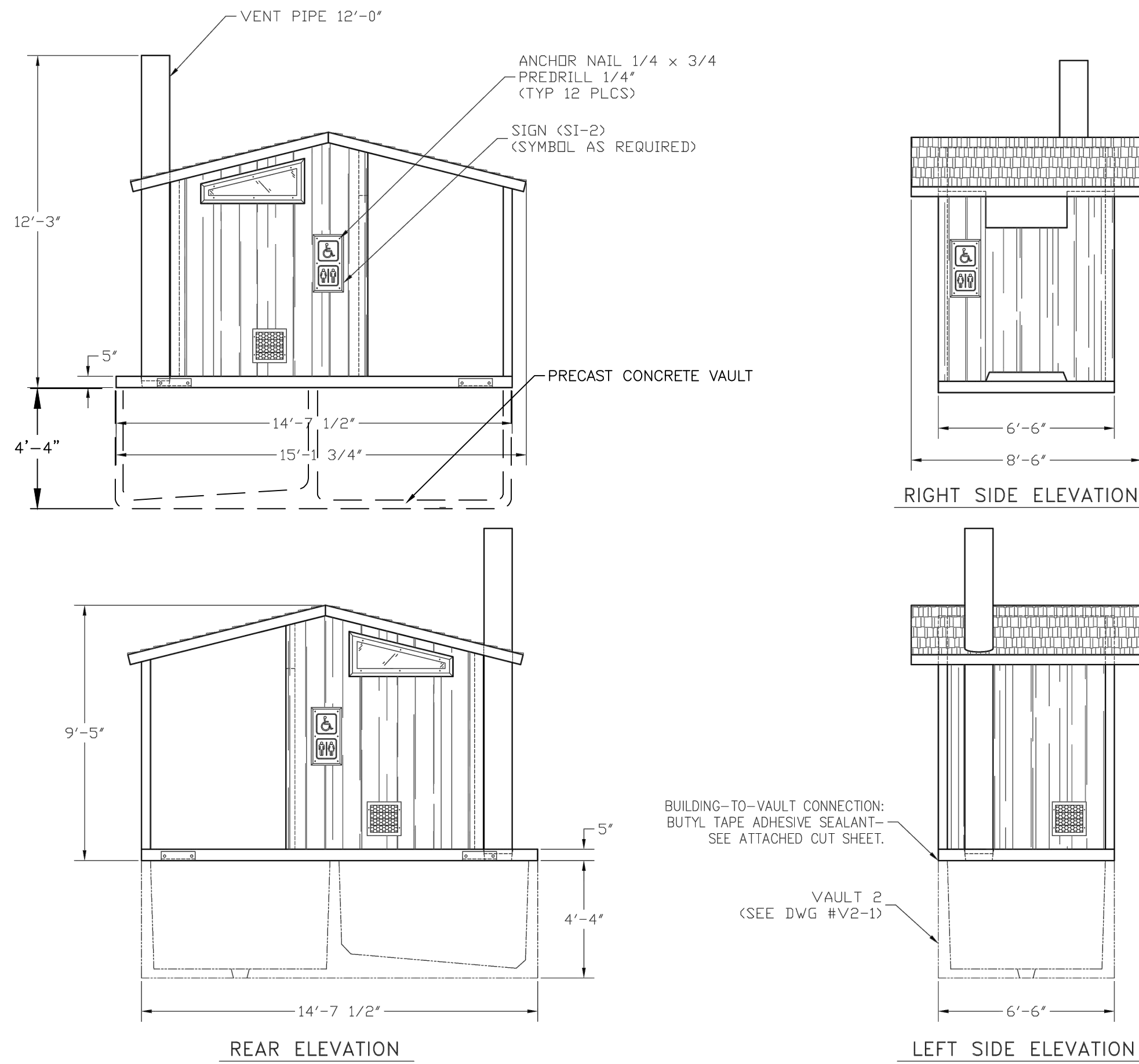
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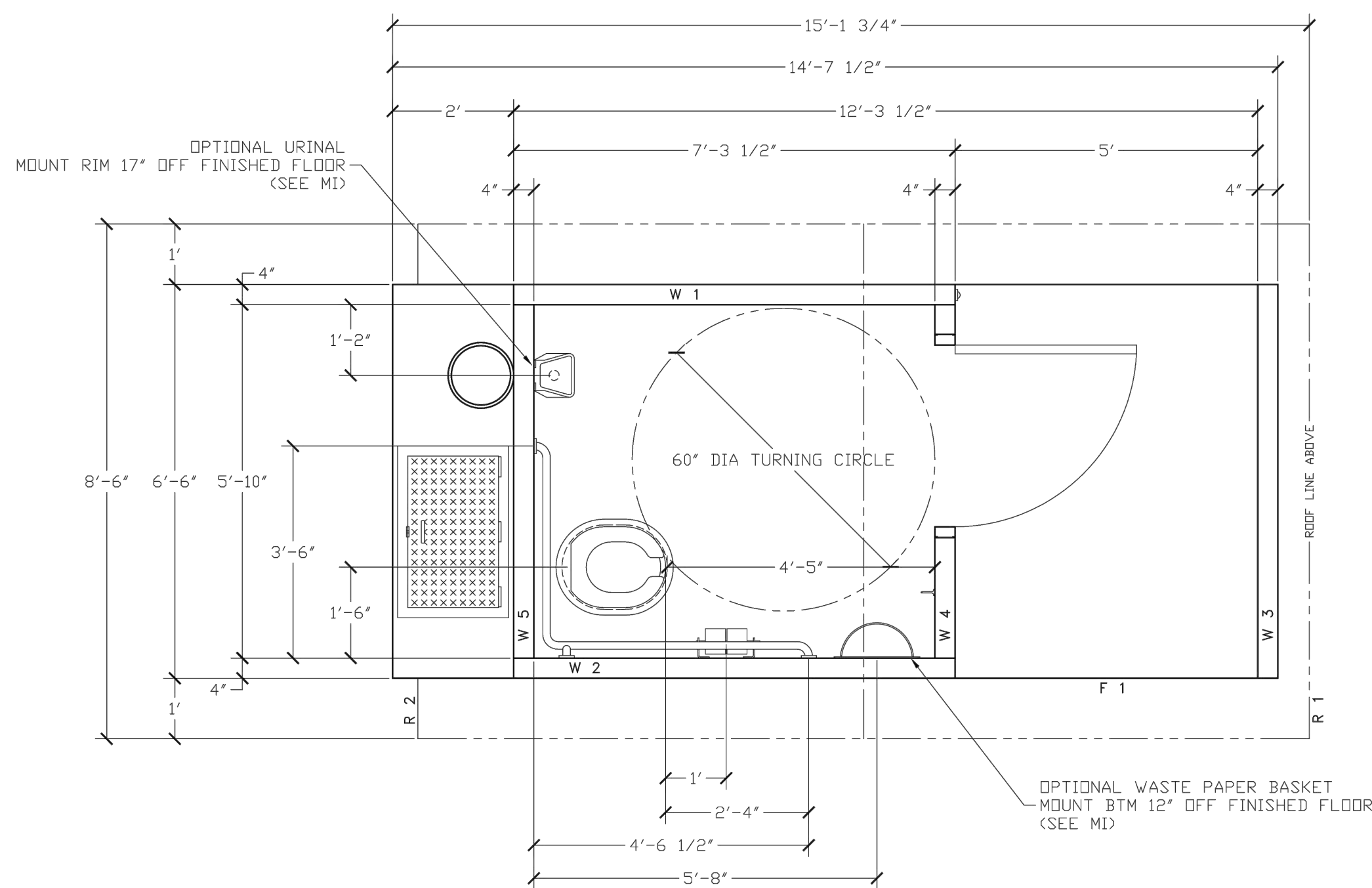
DESIGNED
JCO/JDN
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KAG
CHECKED
JCO

CITY OF ORONO
BIG ISLAND NATURE PARK IMPROVEMENTS
LANDSCAPE DETAILS

SHEET
L2.01



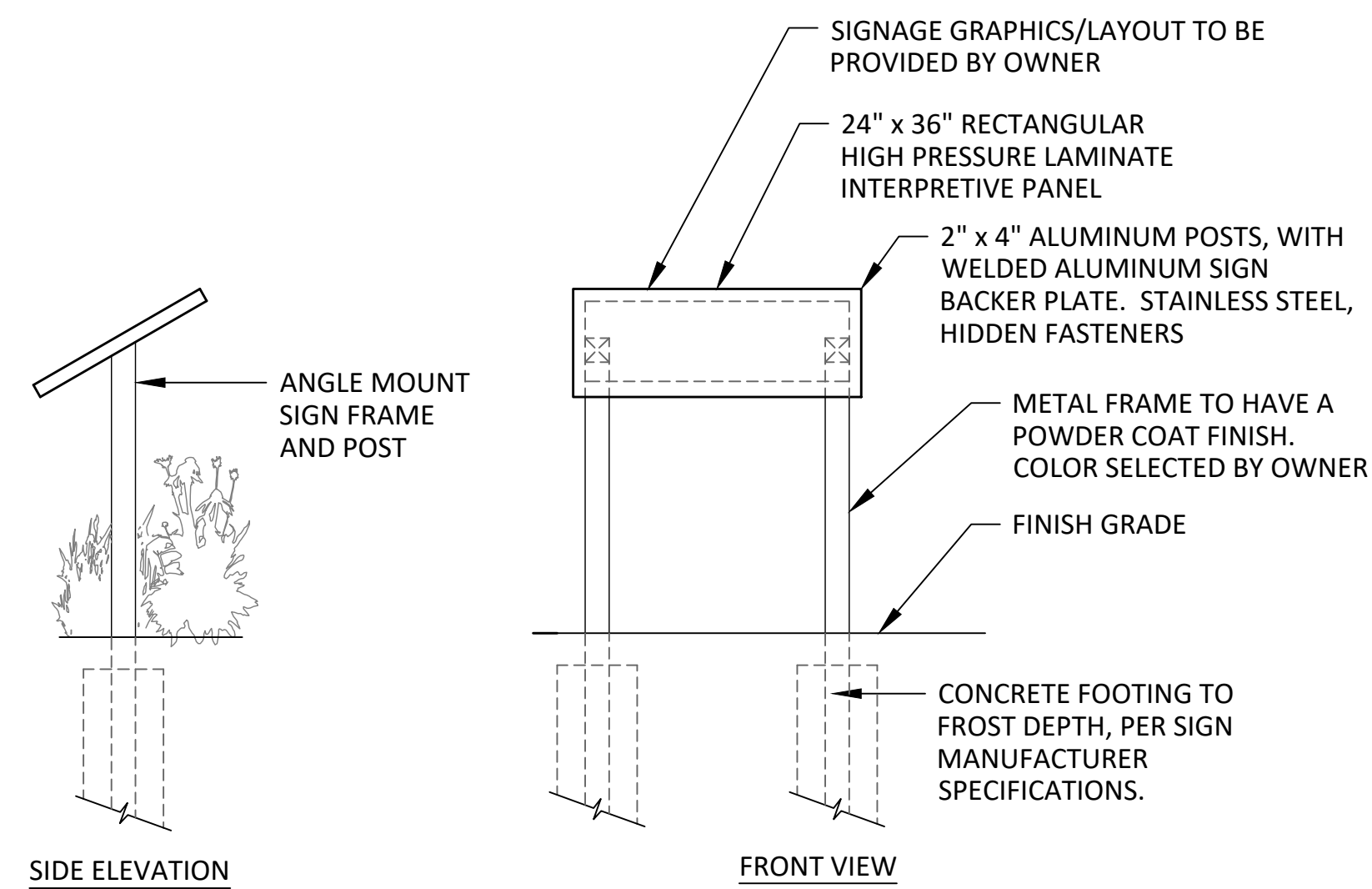
1 SINGLE VAULT TOILET FRONT ELEVATION
SCALE: N.T.S.



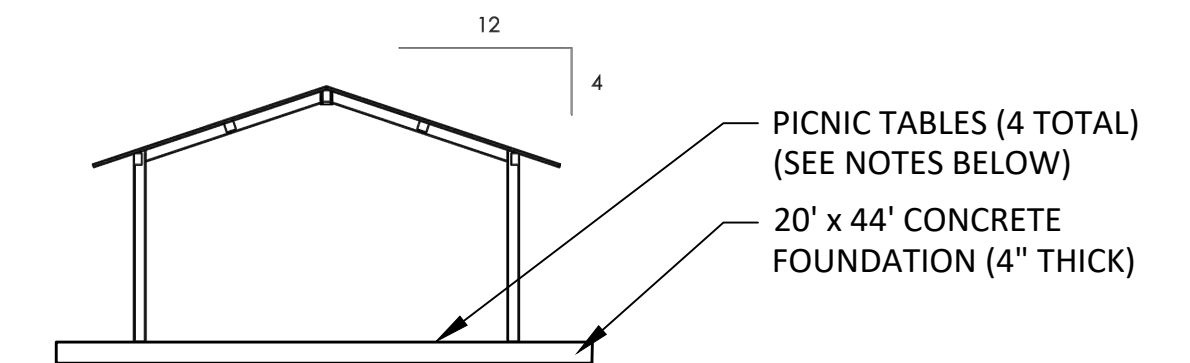
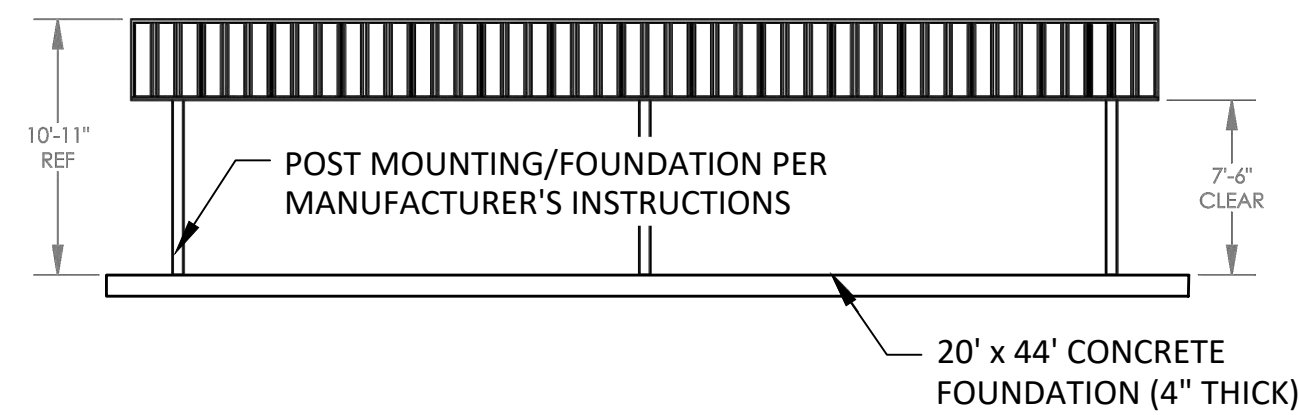
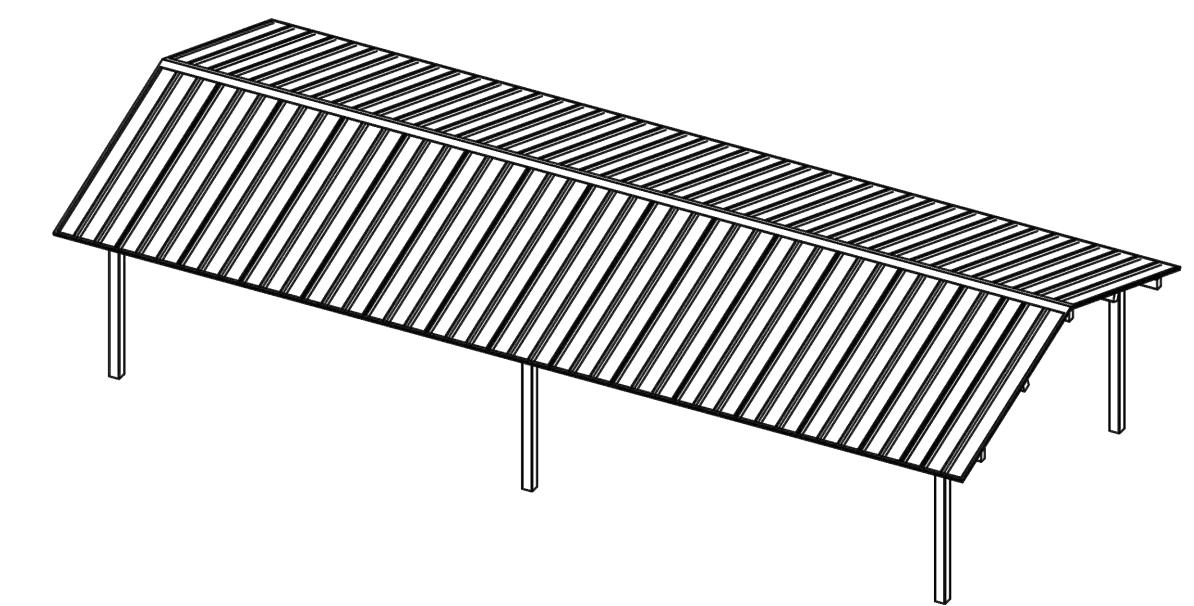
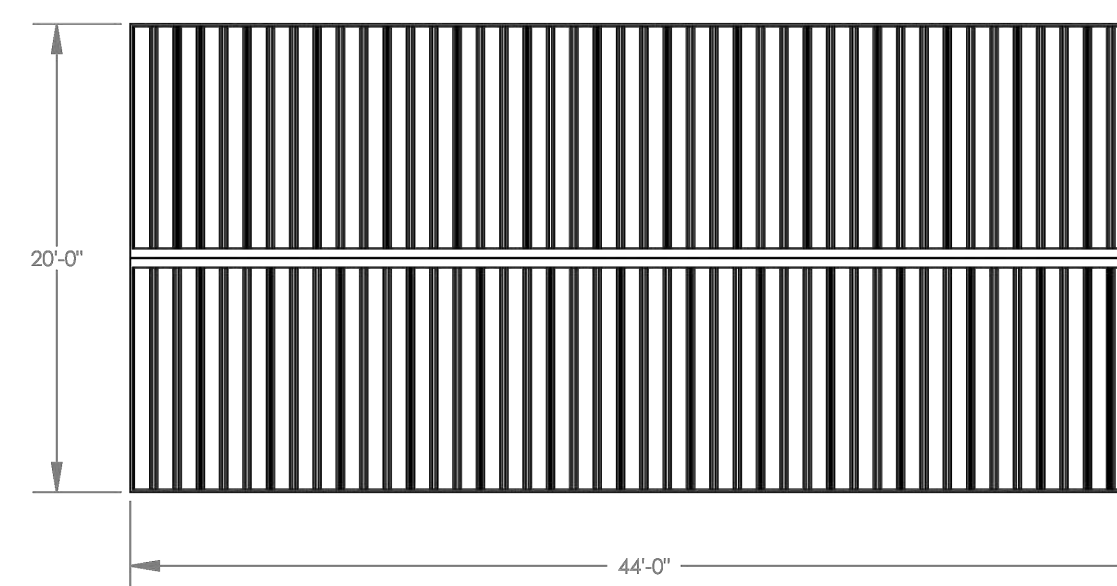
2 SINGLE VAULT TOILET PLAN
SCALE: N.T.S.

NOTES:

1. STRUCTURE TO BE CXT PRECAST PRODUCTS SINGLE VAULT TOILET, GUNNISON THRU SCREEN RH.
2. DRAWINGS SHOWN ARE FOR PRELIMINARY PLANNING AND ESTIMATING ONLY. FOR ADDITIONAL INFORMATION AND ORDERING OF STRUCTURE(S), CONTACT:
RICH EDWARDS
LBFOSTER CXT PRODUCTS
EMAIL: redwards@lbfooster.com
OFFICE: (800) 696-5766
MOBILE: (262) 321-1421
3. ALL HARDWARE AND MATERIAL SELECTIONS TO BE VANDAL-RESISTANT.
4. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

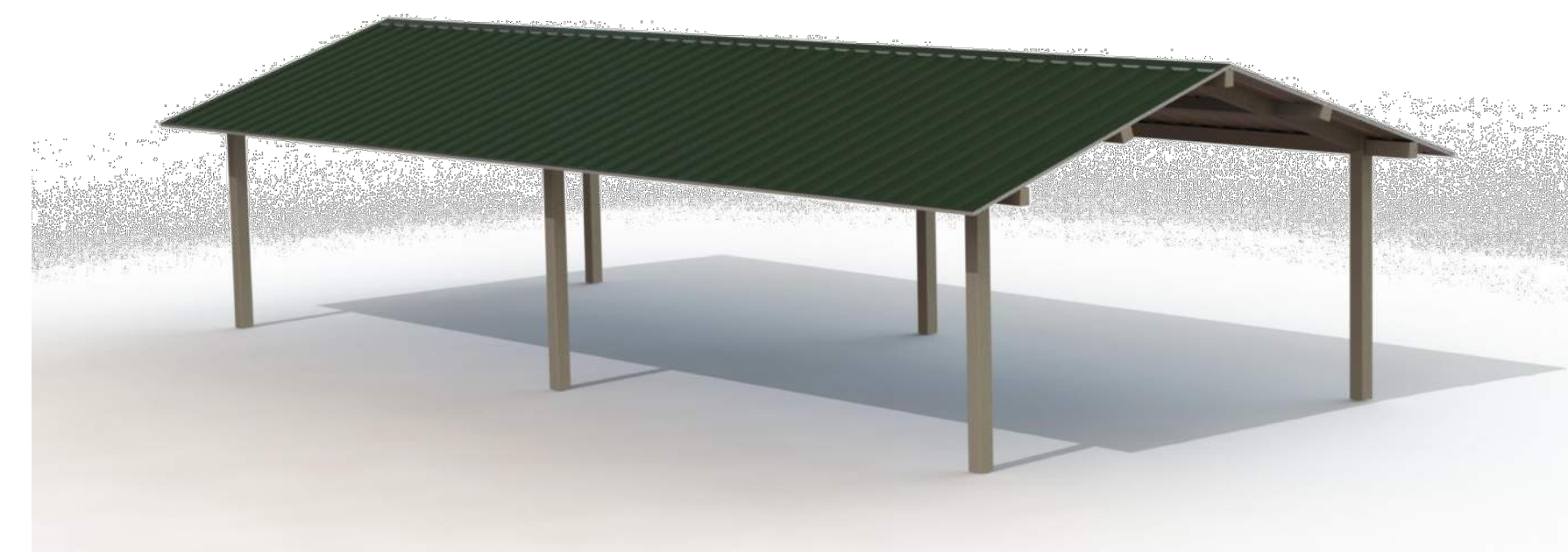


3 WAYFINDING SIGN
SCALE: N.T.S.



NOTES:

1. STRUCTURE TO BE POLIGON PRODUCT REK 20x44 WITH MULTI-RIB ROOF, OR APPROVED EQUAL. FOR FRAME AND ROOF COLOR, SEE SPECS.
2. DRAWINGS SHOWN ARE FOR PRELIMINARY PLANNING AND ESTIMATING ONLY. FOR ADDITIONAL INFORMATION AND ORDERING OF POLIGON STRUCTURES, CONTACT:
SUE AYERS
NORTHLAND RECREATION LLC
10085 BRIDGEWATER BAY
WOODBURY, MN 55129
EMAIL: sue@northlandrec.com
OFFICE: (651) 815-4097
3. ALL HARDWARE AND MATERIAL SELECTIONS TO BE VANDAL-RESISTANT.
4. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
5. PLACE TWO (2) WHEELCHAIR ACCESSIBLE AND TWO (2) STANDARD CONCRETE PICNIC TABLES UNDER SHELTER.



4 OVERLOOK SHELTER
SCALE: N.T.S.



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JOEL C. ODENS
LIC. NO. 44689 DATE 2-28-2020

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CHECKED JCO

CITY OF ORONO
BIG ISLAND NATURE PARK IMPROVEMENTS
SITE DETAILS

SHEET
L2.02

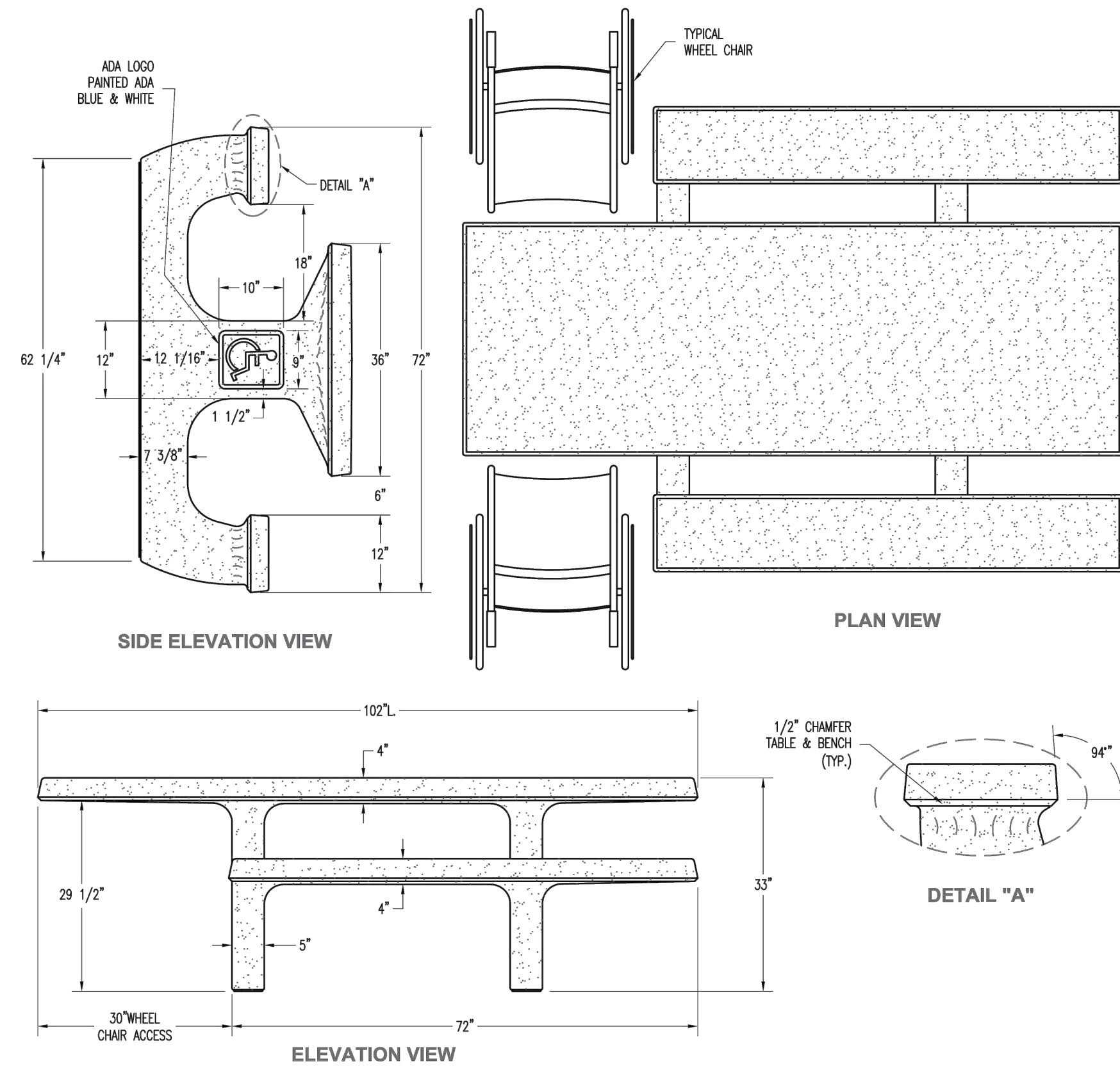
NOTES:

1. TWO STANDARD PICNIC TABLES TO BE QCP PRODUCT Q-LBT-96PT (IN HARVEST WITH CRAFTSMAN'S ETCH TEXTURE), OR APPROVED EQUAL.
2. TWO ADA ACCESSIBLE PICNIC TABLES TO BE QCP PRODUCT Q-LBT-102PT ADA (IN HARVEST WITH CRAFTSMAN'S ETCH TEXTURE), OR APPROVED EQUAL.
3. DRAWINGS SHOWN ARE FOR PRELIMINARY PLANNING AND ESTIMATING ONLY. FOR ADDITIONAL INFORMATION AND ORDERING OF QCP PRODUCTS, CONTACT:
ALLI HILL
EMAIL: ALLI-HILL@QCP-CORP.COM
OFFICE: (951) 737-6240 EXT. 252

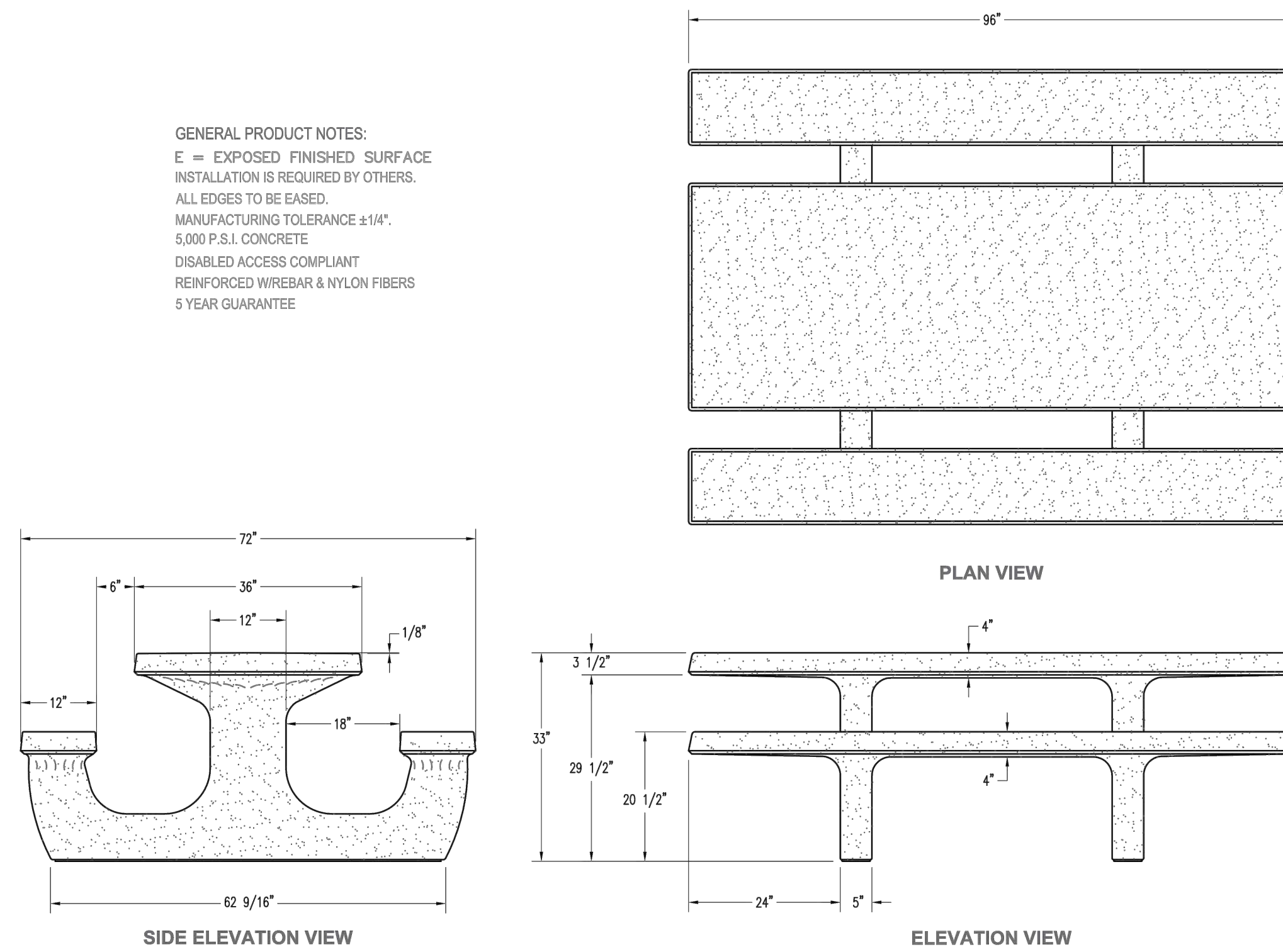


GENERAL PRODUCT NOTES:
E = EXPOSED FINISHED SURFACE
INSTALLATION IS REQUIRED BY OTHERS.
ALL EDGES TO BE EASED.
MANUFACTURING TOLERANCE ±1/4".

5,000 P.S.I. CONCRETE
REINFORCED WIREBAR & NYLON FIBERS
DISABLED ACCESS COMPLIANT
5 YEAR GUARANTEE



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5 YEAR GUARANTEE



1 PRECAST CONCRETE PICNIC TABLE: WHEELCHAIR ACCESSIBLE
SCALE: N.T.S.

2 PRECAST CONCRETE PICNIC TABLE: STANDARD
SCALE: N.T.S.



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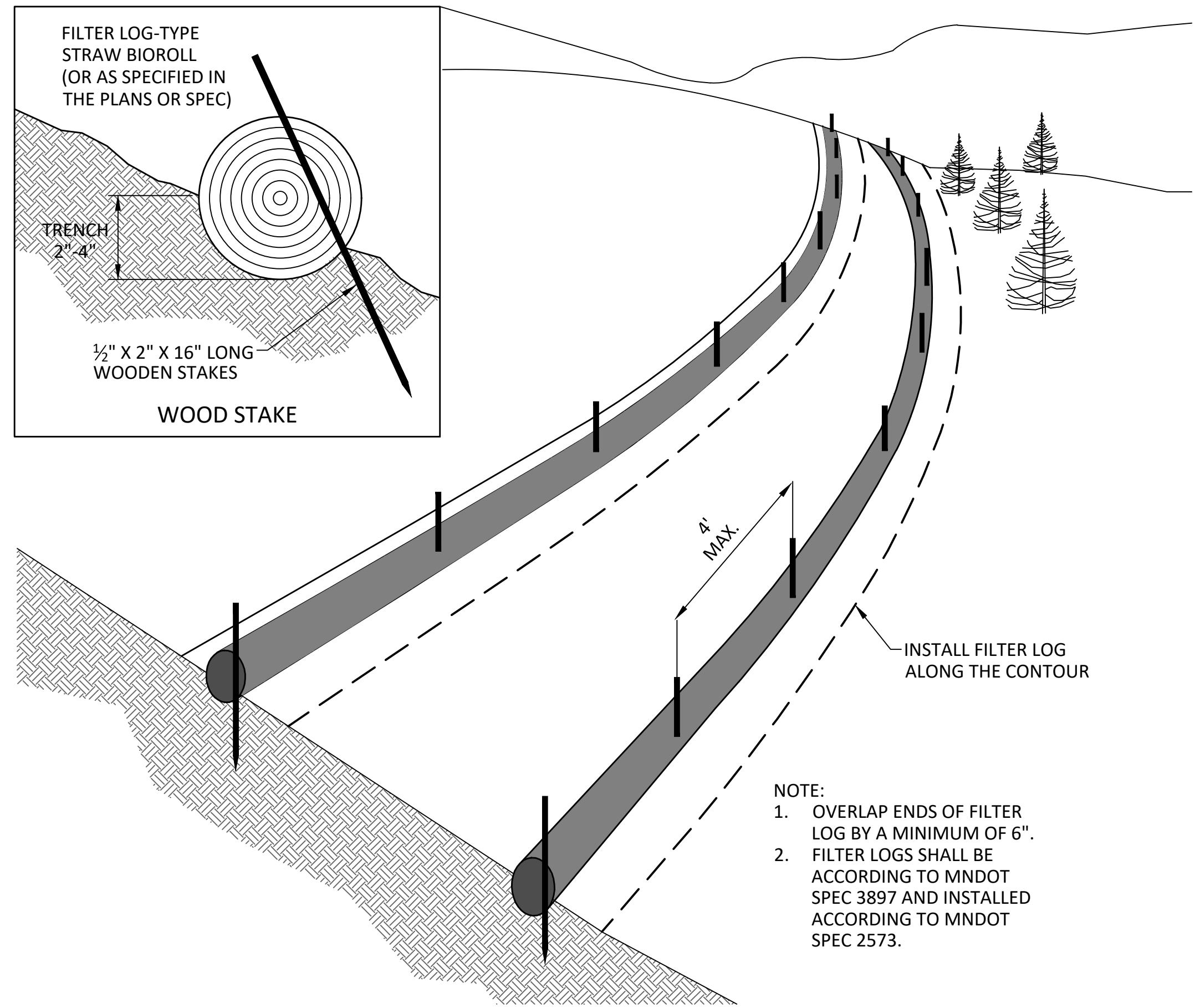
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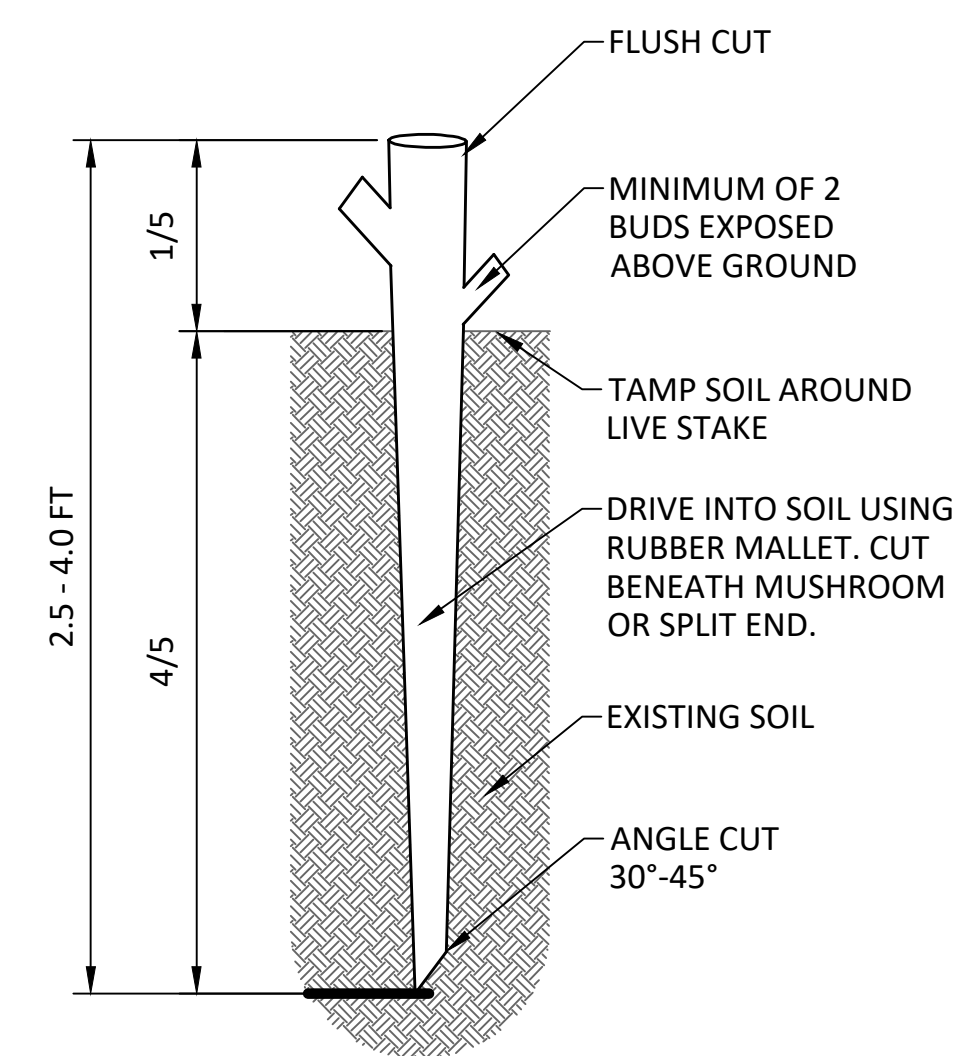
CITY OF ORONO
BIG ISLAND NATURE PARK IMPROVEMENTS
PICNIC TABLE DETAILS

SHEET
L2.03



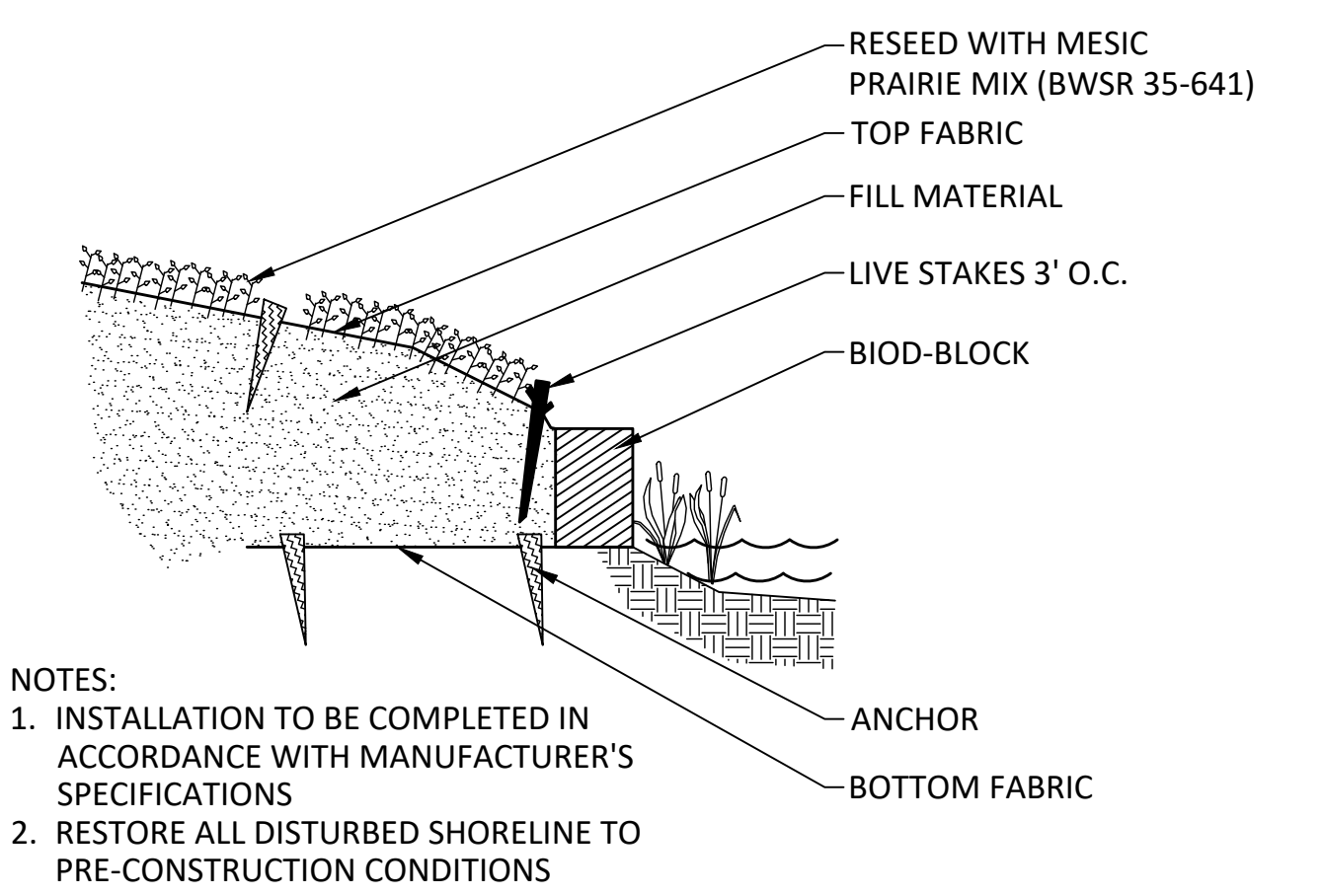
NOTE:
 1. OVERLAP ENDS OF FILTER LOG BY A MINIMUM OF 6".
 2. FILTER LOGS SHALL BE ACCORDING TO MNDOT SPEC 3897 AND INSTALLED ACCORDING TO MNDOT SPEC 2573.

1 FILTER LOG
 SCALE: N.T.S.



NOTES:
 1. DISTURBED SHORELINE AREA TO BE REPLANTED WITH LIVE STAKES 3' O.C. EXISTING WOODY SPECIES INCLUDE FALSE INDIGO BUSH (AMORPHA FRUTICOSA) AND PEACHLEAF WILLOW (SALIX AMYGDALOIDES).
 2. LIVE STAKE OR CUTTING PLANTED PERPENDICULAR TO GROUND SURFACE.
 3. LIVE STAKES OF 2" DIAMETER MINIMUM TO BE PLANTED IN THE DORMANT SEASON FROM SEPTEMBER TO MARCH.
 4. RESEED DISTURBED SHORELINE AREA WITH MESIC PRAIRIE SEED MIX (BWSR 35-64).

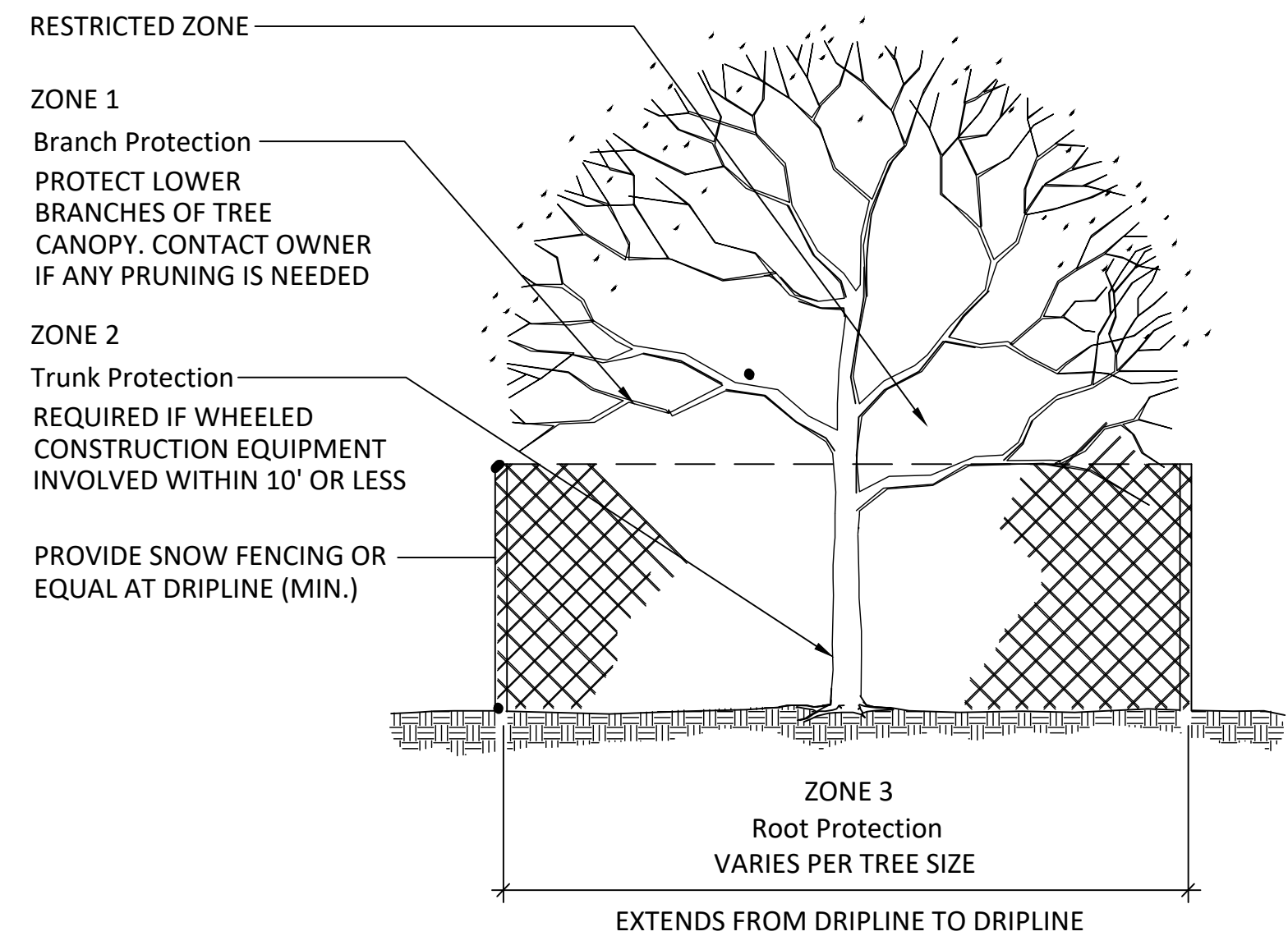
2 LIVE STAKE DETAIL
 SCALE: N.T.S.



3 SINGLE LAYER COIR BLOCK SYSTEM AT SHORELINE
 SCALE: N.T.S.

TREE PROTECTION NOTES

- ALL TREES TO BE PROTECTED AND PRESERVED SHALL BE PER DETAIL. GROUPING OF MORE THAN ONE TREE MAY OCCUR.
- TO PREVENT TREE ROOT SMOTHERING, SOIL STOCKPILES, SUPPLIES, EQUIPMENT OR ANY OTHER MATERIAL SHALL NOT BE PLACED OR STORED WITHIN A TREE DRIP LINE OR WITHIN 15 FEET OF A TREE TRUNK, WHICHEVER IS GREATER.
- TREE ROOTS SHALL NOT BE CUT UNLESS CUTTING IS UNAVOIDABLE.
- TRENCHES SHALL BE HAND DUG WITHIN THE DRIP LINE IN AREAS WHERE ROOTS TWO INCHES IN DIAMETER AND GREATER ARE PRESENT, OR WHEN IN CLOSE PROXIMITY TO LOW BRANCHING TREES. WHENEVER POSSIBLE, ROOTS TWO INCHES OR GREATER IN DIAMETER SHALL BE TUNNELED OR BORED UNDER AND SHALL BE COVERED TO PREVENT DEHYDRATION.
- WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. WHENEVER POSSIBLE, TREE ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, WHEN ROOT ENERGY SUPPLIES ARE HIGH AND CONDITIONS ARE LEAST FAVORABLE FOR DISEASE CAUSING AGENTS. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.
- WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
- AUGER TUNNELING RATHER THAN TRENCHING SHOULD BE USED FOR UTILITY PLACEMENT WITHIN DRIP LINE OF TREE.
- FENCING MATERIAL SHALL ENCIRCLE ANY TREE WHOSE OUTER DRIP LINE EDGE IS WITHIN 20 FEET OF ANY CONSTRUCTION ACTIVITIES.
- FENCING MATERIAL SHALL BE BRIGHT, CONTRASTING COLOR, DURABLE, AND A MINIMUM OF FOUR FEET IN HEIGHT.
- FENCING MATERIAL SHALL BE SET AT THE DRIP LINE OR 15 FEET FROM TREE TRUNK, WHICHEVER IS GREATER, AND MAINTAINED IN AN UPRIGHT POSITION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
- ANY GRADE CHANGES (SUCH AS THE REMOVAL OF TOPSOIL OR ADDITION OF FILL MATERIAL) WITHIN THE DRIP LINE SHOULD BE AVOIDED FOR EXISTING TREES TO REMAIN. IF GRADE CHANGES LIMIT THE RESTRICTED AREA, PLACE FENCING AT THE GRADING LIMITS AND NOTIFY ENGINEER OF LIMITED PROTECTION.



4 TYPICAL SECTION: EXISTING TREE PROTECTION
 N.T.S.



5 CONSTRUCTION STAGING AREAS
 SCALE: N.T.S.



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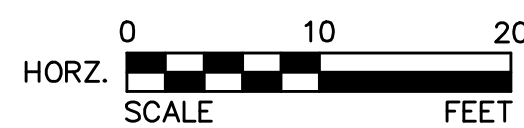
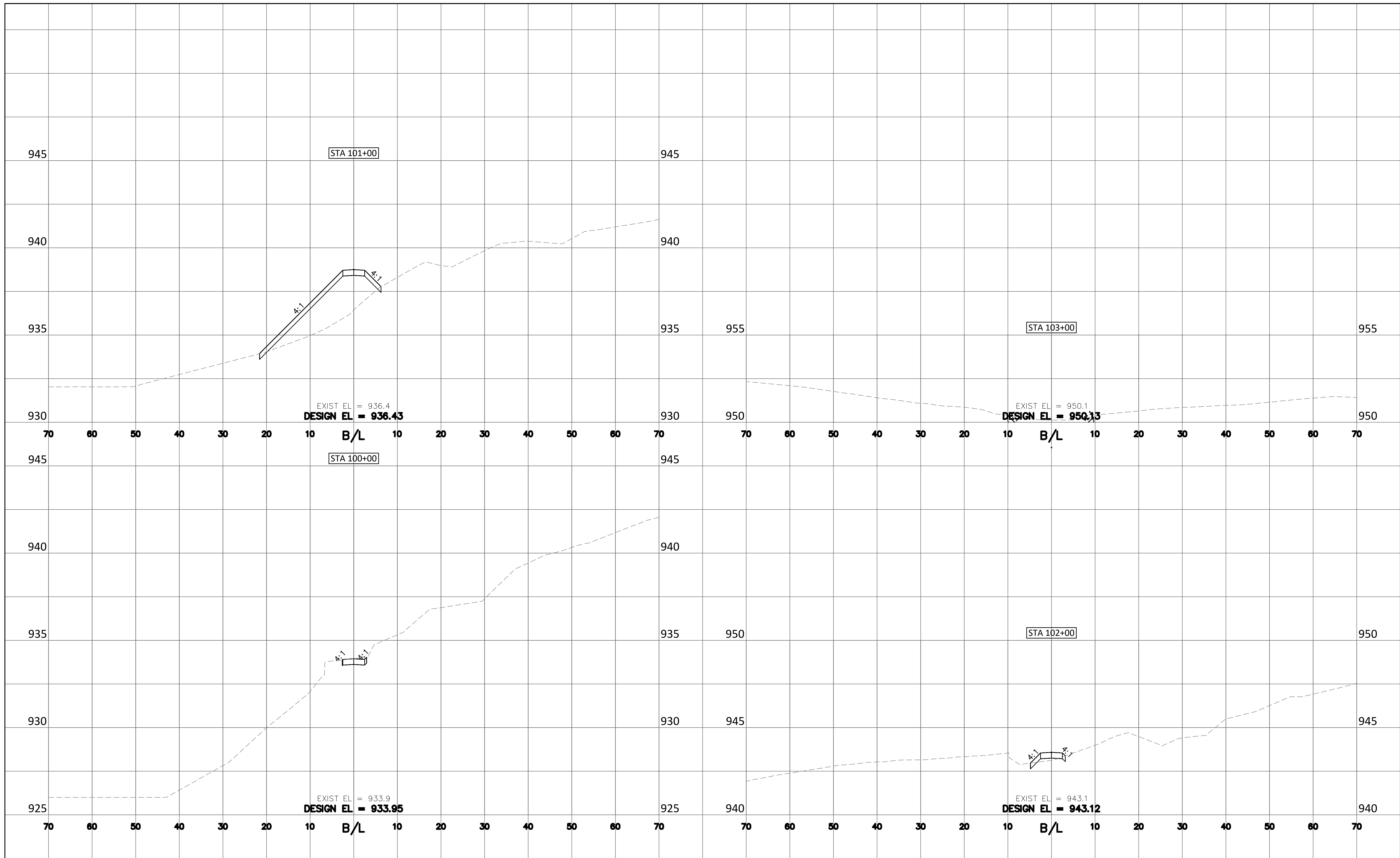
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 DRAWN
 KAG
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 JCO

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 EROSION CONTROL DETAILS

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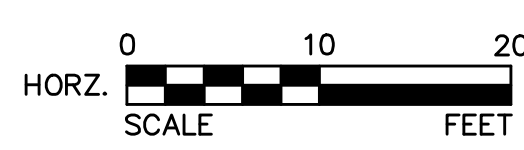
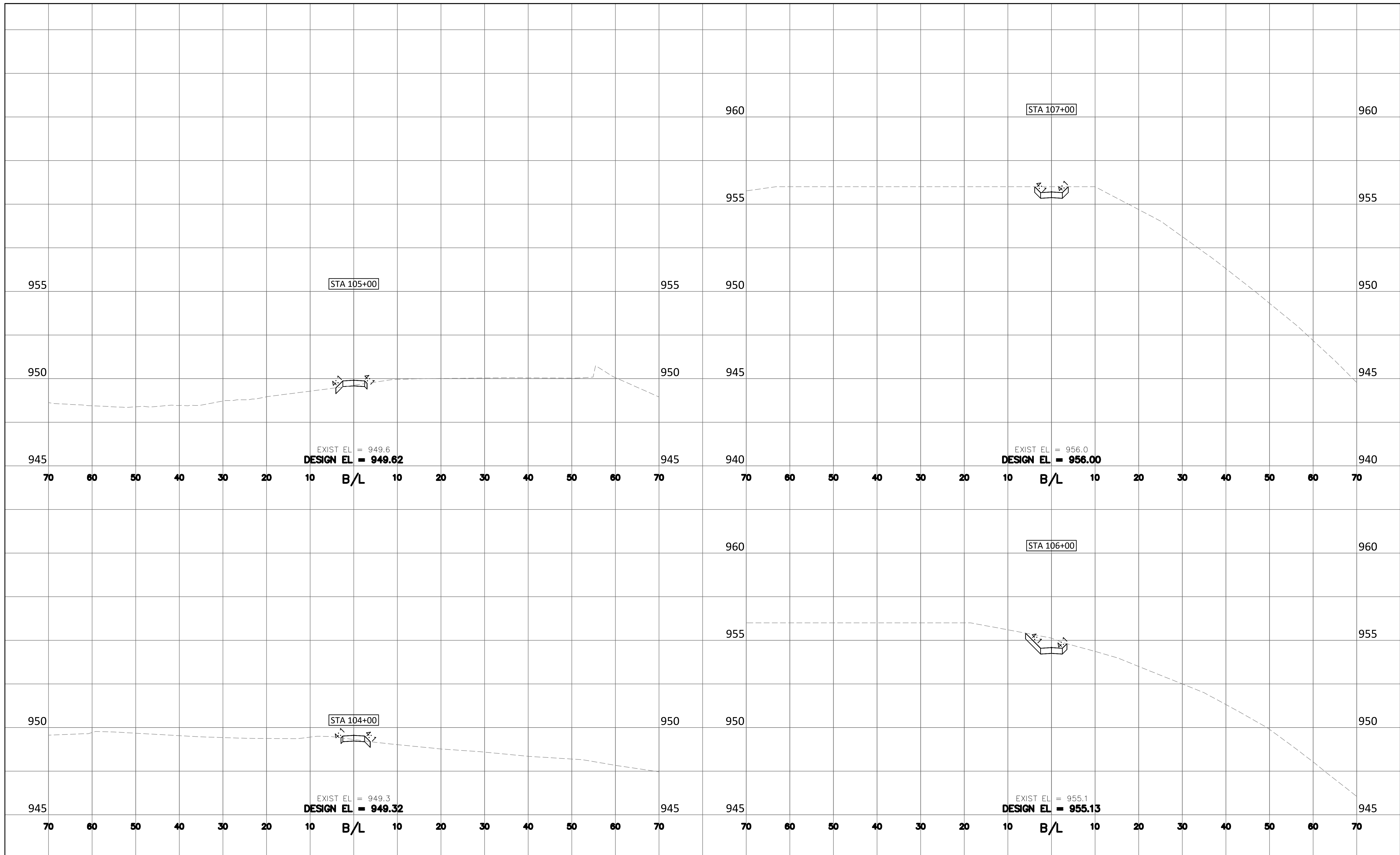
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CITY OF ORONO
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 CROSS SECTIONS - WEST TRAIL

SHEET
C1.01



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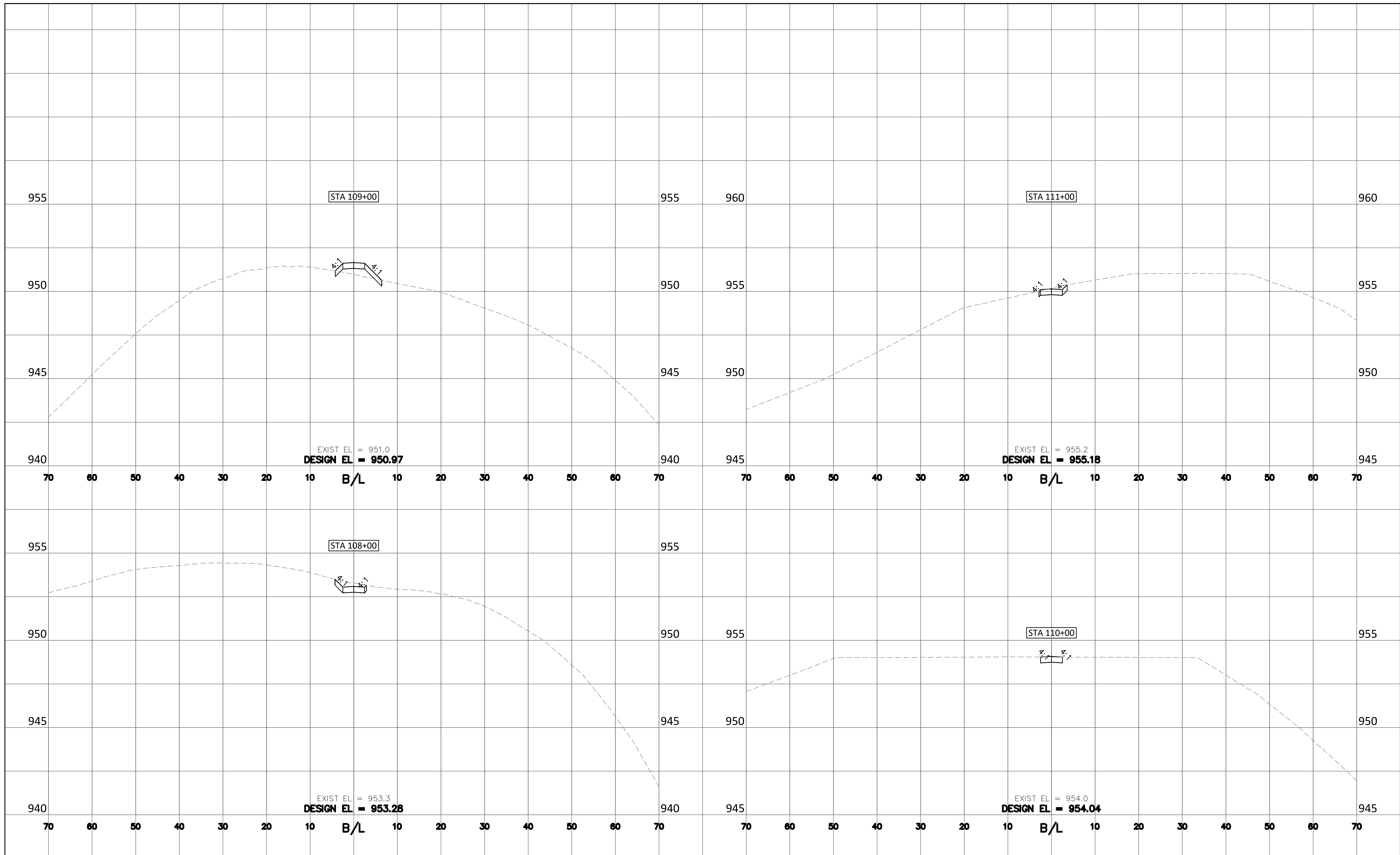
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SHEET
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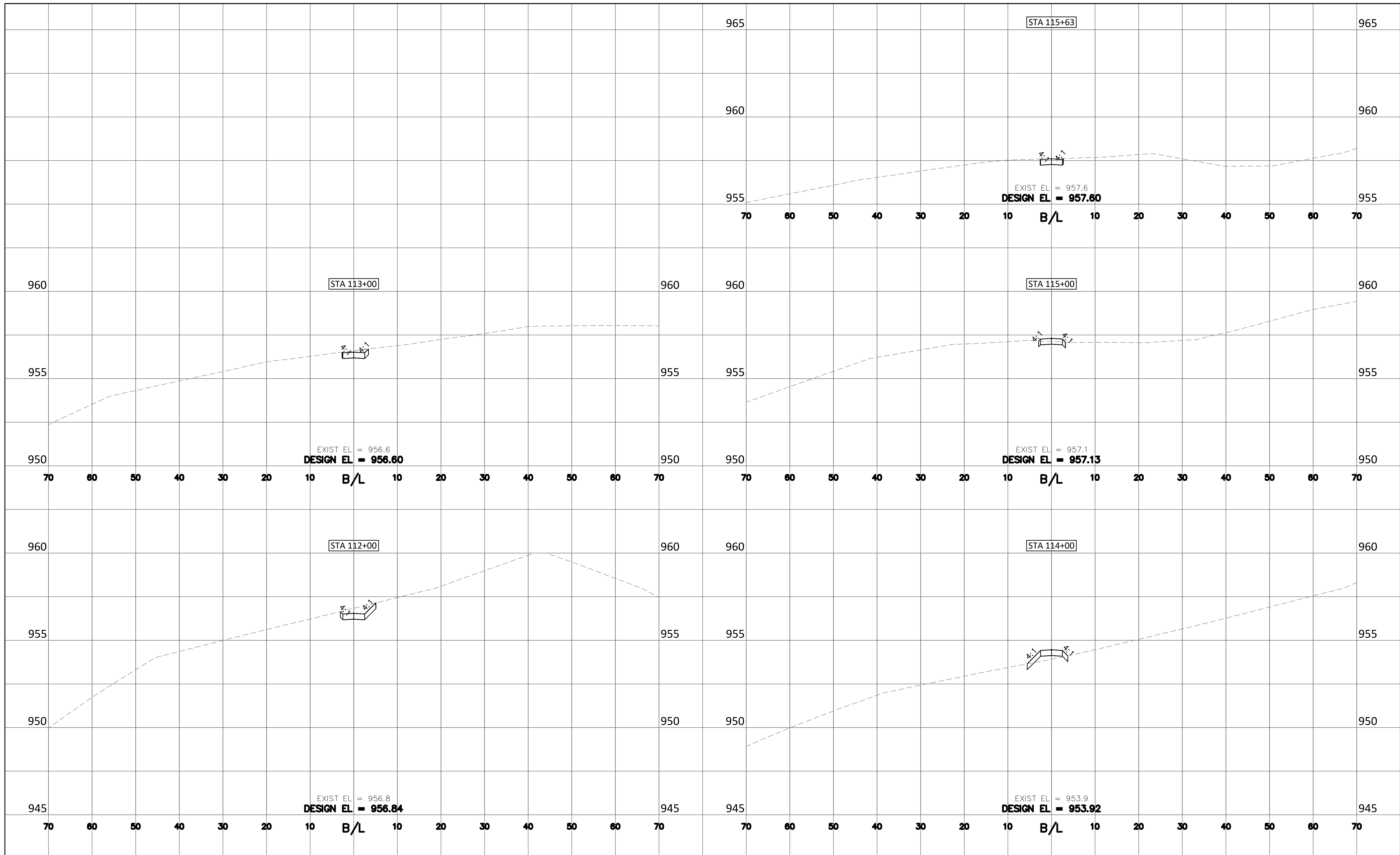
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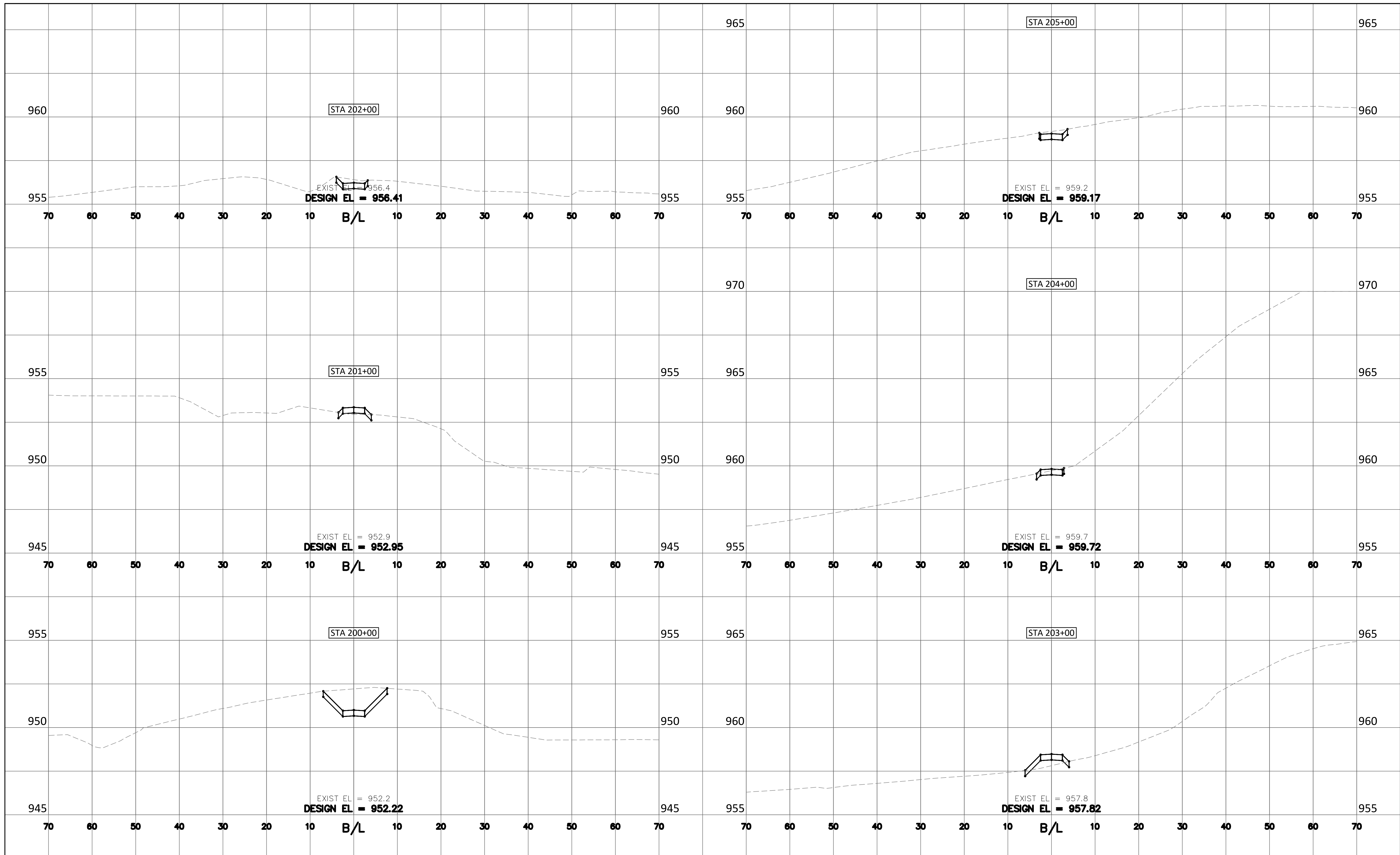
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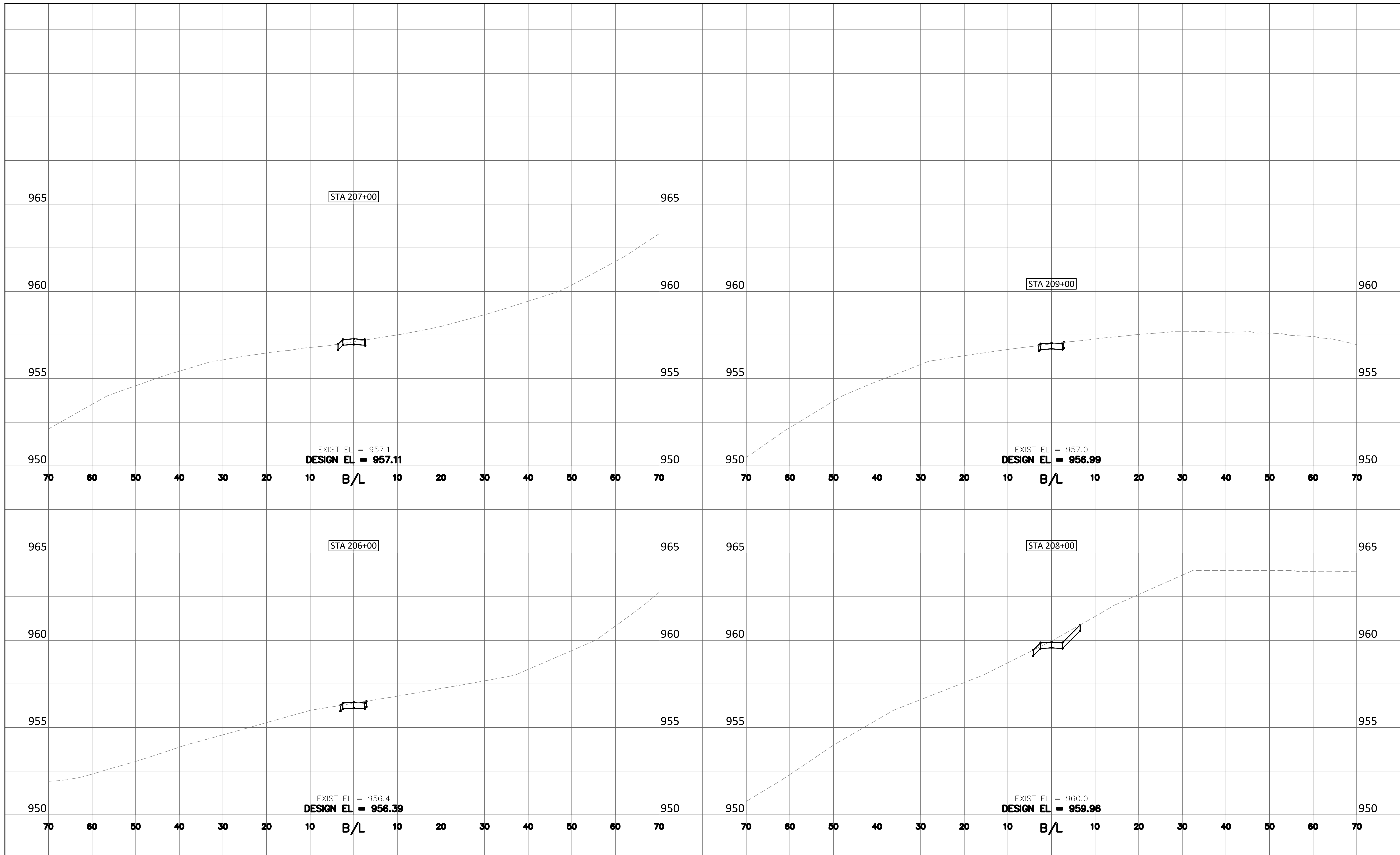
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 LIC. NO. 44689 DATE 2-28-2020

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CITY OF ORONO
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 CROSS SECTIONS - EAST TRAIL

SHEET
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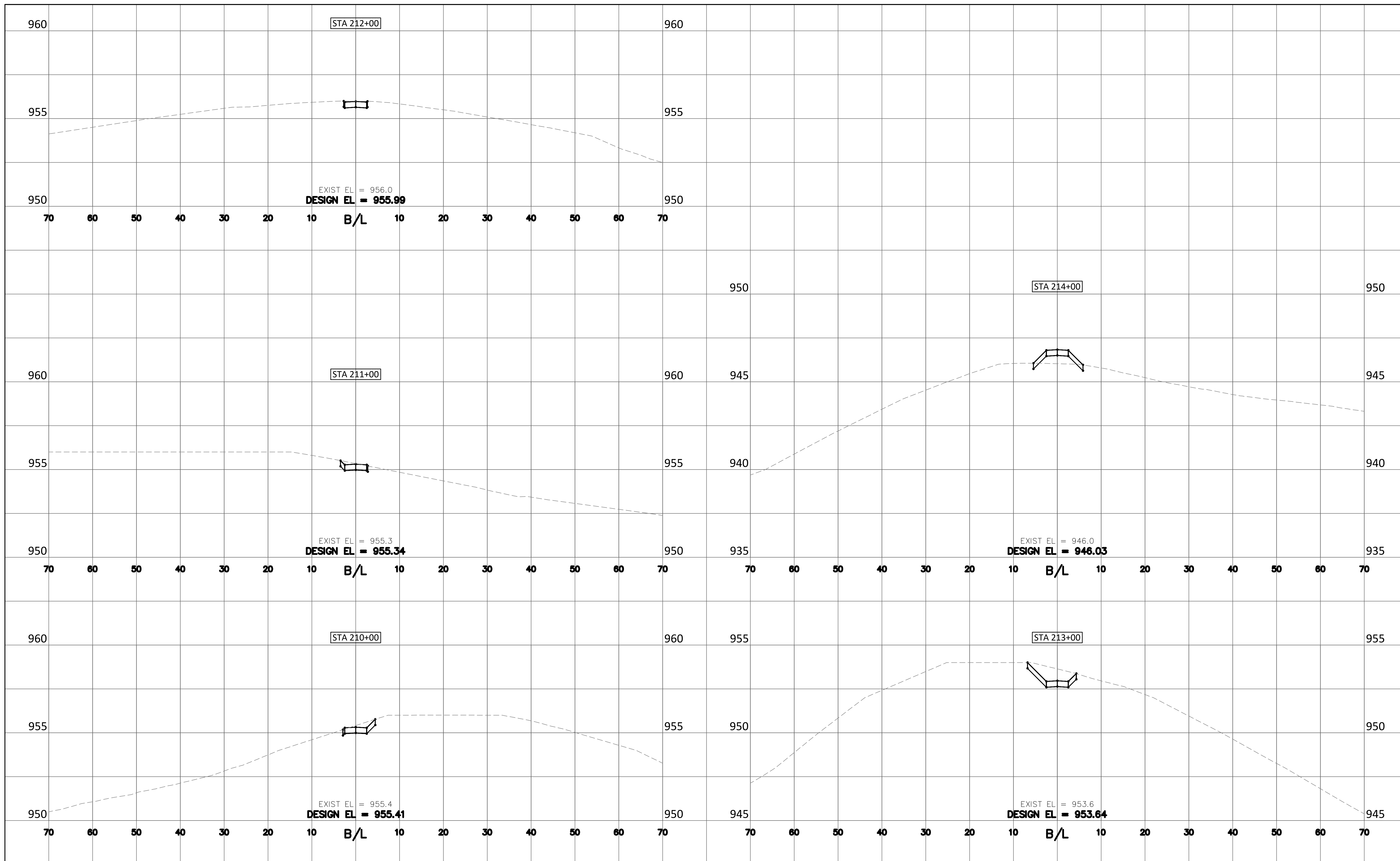
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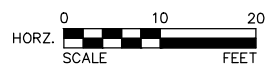
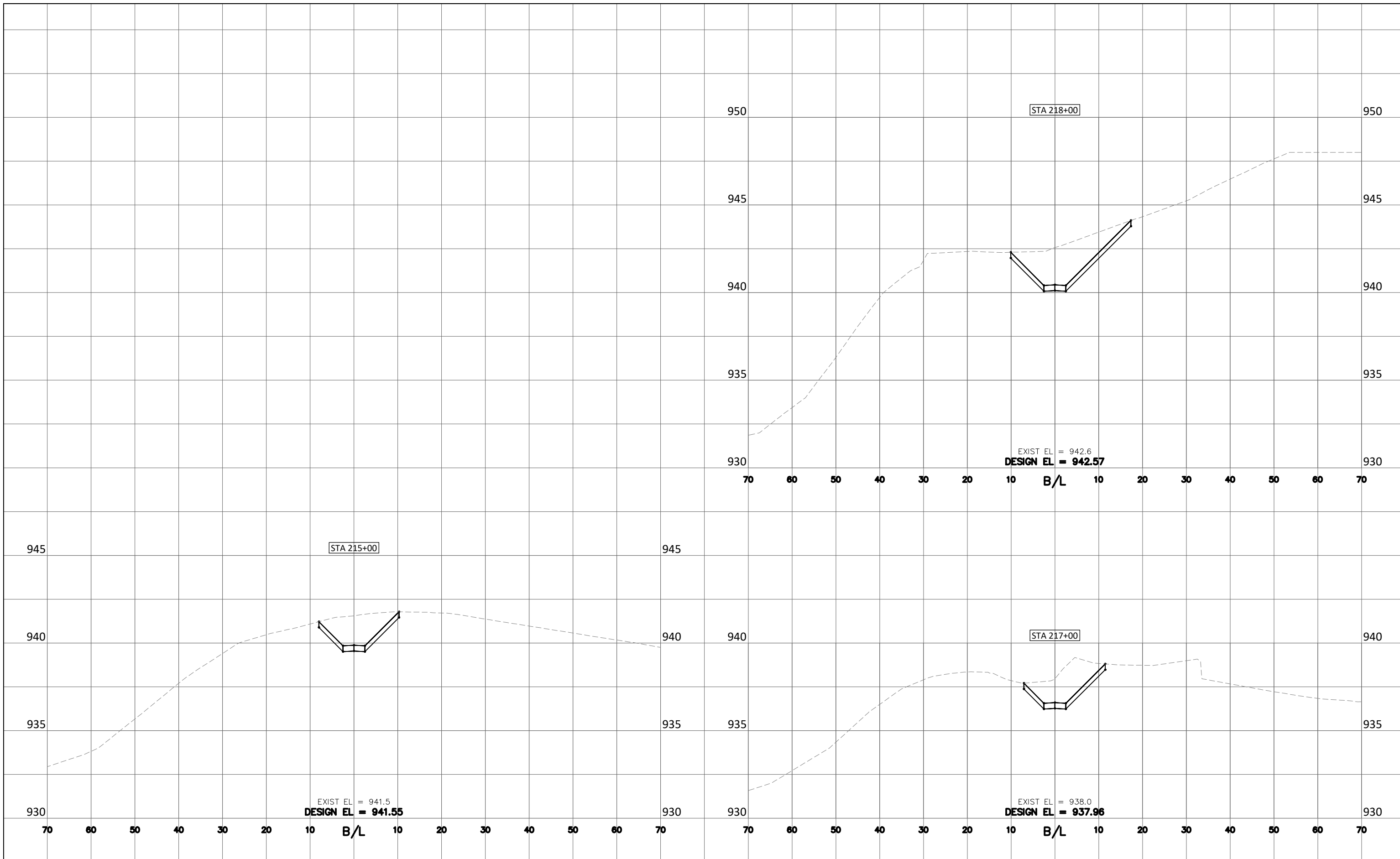
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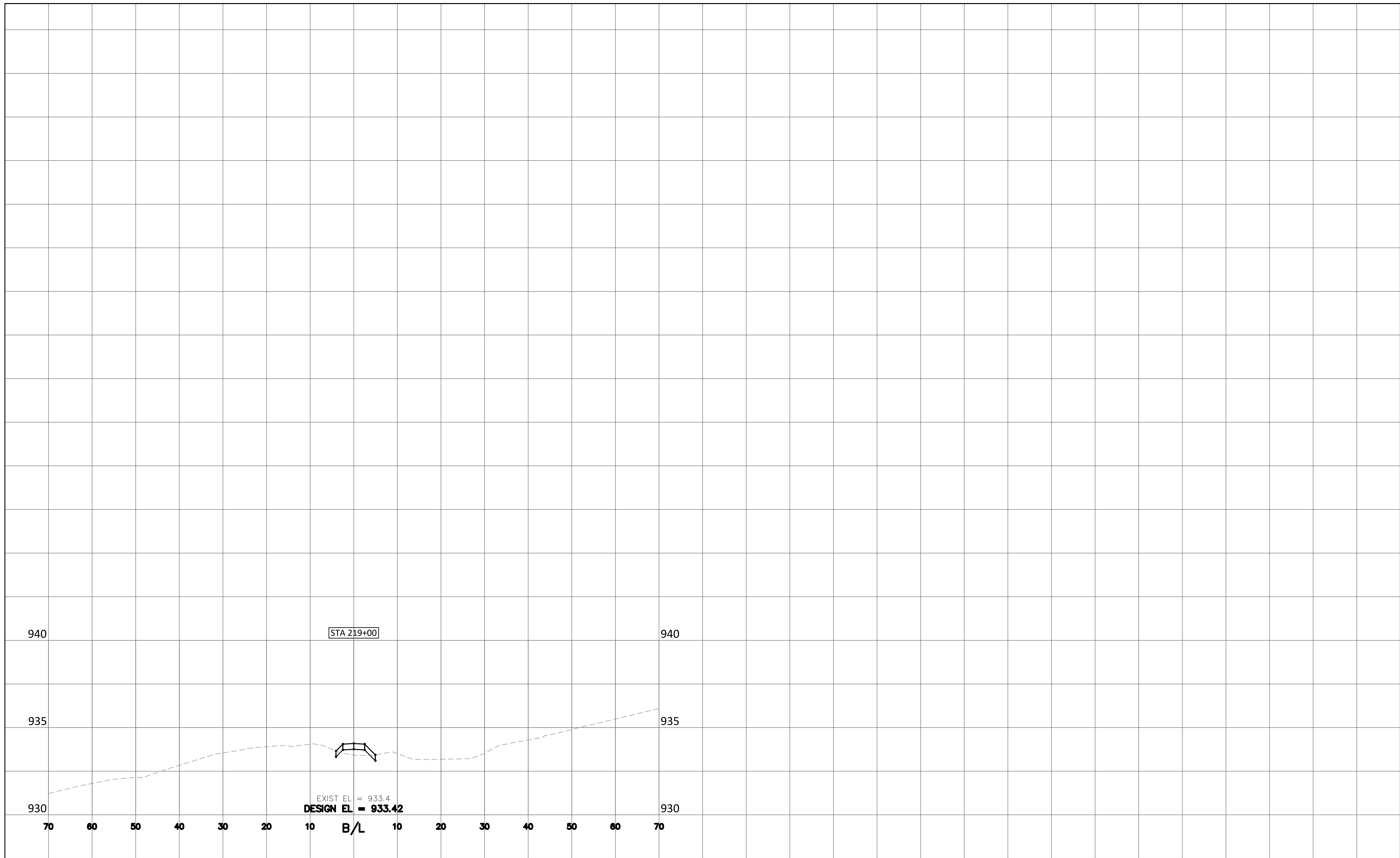
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