

**AMENDMENT TO THE
COASTAL MARSHLANDS PROTECTION
PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA
NOVEMBER 14, 2023**

This amendment includes an updated section on Site Plans and Related Information, an updated topographic survey with updates to the JD Line, and updated permit drawings with the updated JD line.

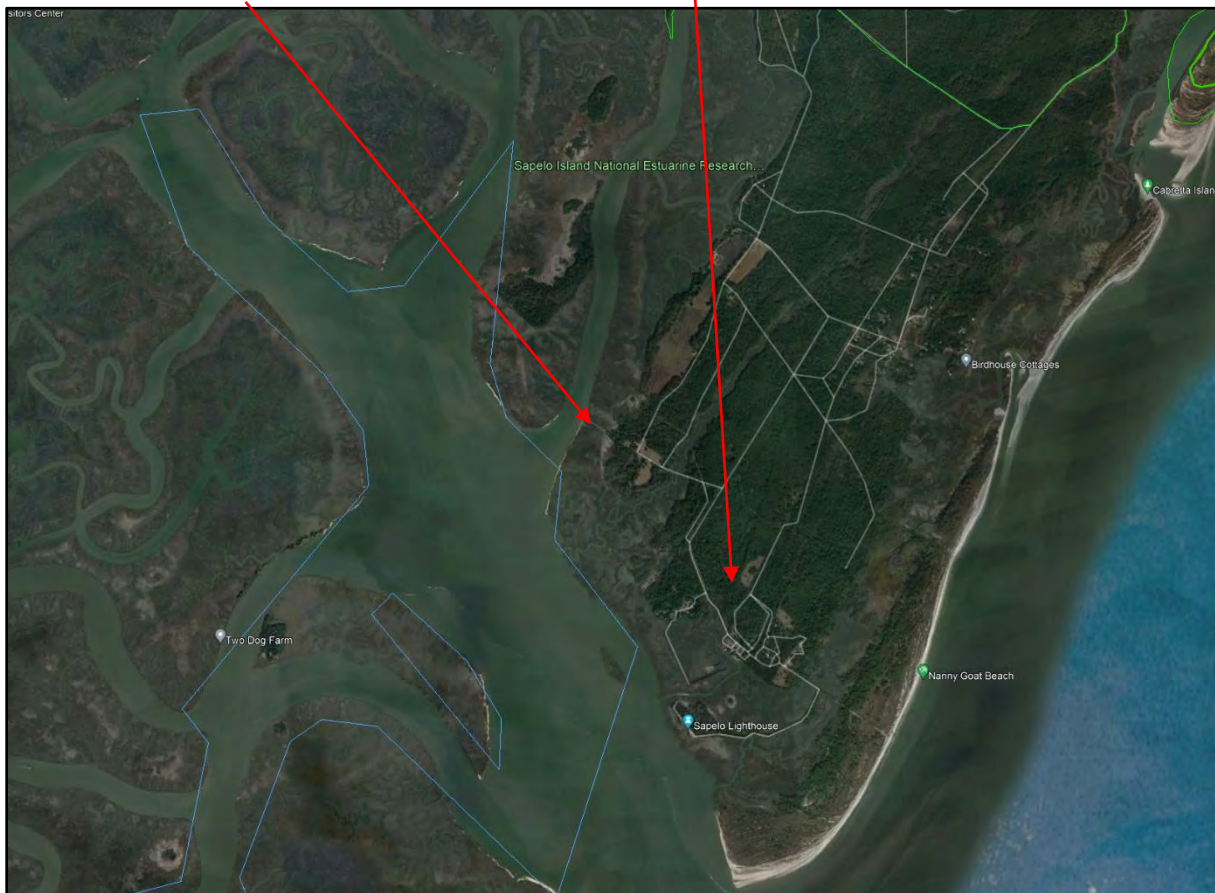
SITE PLANS AND RELATED INFORMATION
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA
REVISED NOVEMBER 14, 2023

The vicinity maps are below.

PROJECT LOCATION

31.395022, -81.271360

SAPELO ISLAND FERRY DOCK



PROJECT LOCATION

TRAILHEAD

31.395022, -81.271360



LIGHTHOUSE ROAD

DEAN CREEK

BEACH ROAD

Marshland Component of Project:

The DNR Marsh Jurisdiction Line is shown on the drawings and was located by a field survey. The line was flagged by representatives of the Coastal Resources Division and trained DNR staff of the Sapelo Island National Estuarine Research Reserve (SINERR). Due to the linear nature of the project and the existence of the earthen causeway, the JD line is somewhat complicated and is not a single line.

The existing features within the jurisdictional area include the following:

The existing observation platform, 15' by 15' or 225 square feet, and the boardwalk from the observation platform to the earthen causeway, 80' long by 6' wide or 480 square feet.

The existing wooden gangway ramp on the east side of Dean Creek, 12' by 4' or 48 square feet, and the wooden gangway ramp on the west side of Dean Creek, 12' by 6' or 72 square feet.

A portion of Boardwalk #1, 6' wide by 10' long = 60 square feet.

A portion of Boardwalk #2, 6' wide by 5' long = 30 square feet.

The earthen causeway portion in the marsh, 457' long by an average of 6' wide or 2,742 square feet.

A portion of the soft surface trail, 49' long by 3' wide = 147 square feet.

The total of existing components in the marshland is $225 + 480 + 48 + 72 + 60 + 30 + 2,742 + 147 = 3,804$ square feet.

The proposed project components within the jurisdictional area include the following:

Boardwalk #3, 488' long by 6' wide or 2,928 square feet plus stairs at end of boardwalk (6' by 5.6') = 33.6 square feet. Total = 2,961.6 square feet.

The new observation platform, 16' by 16' or 256 square feet plus lower level and stairs = 165 square feet. Total = 421 square feet.

The two 12' long by 6' wide timber gangway approaches or 144 square feet.

A portion of Boardwalk #1, 6' wide by 10' long = 60 square feet.

A portion of Boardwalk #2, 6' wide by 5' long = 30 square feet.

A portion of Boardwalk #4, 17' long by 6' wide or 102 square feet.

A portion of the relocated soft surface trail, 13' long by 3' wide or 39 square feet.

The total of proposed components in the marshland is $2,961.6 + 421 + 144 + 60 + 30 + 102 + 39 = 3,757.6$ square feet.

Upland Component of Project:

The existing features within the upland component of the project include the following:

Boardwalk #1 – 6' wide by 105' long or 630 square feet less 60 square feet = 570 square feet.

Boardwalk #2 – 6' wide by 18' long or 108 square feet less 30 square feet = 78 square feet.

A portion of the soft surface trail, 65' long by 3' wide = 195 square feet.

The total of existing project components in the upland is $570 + 78 + 195 = 843$ square feet.

The proposed features within the upland component of the project include the following:

Boardwalk #1 – 6' wide by 105' long or 630 square feet less 60 square feet = 570 square feet.

Boardwalk #2 – 6' wide by 18' long or 108 square feet less 30 square feet = 78 square feet.

A portion of Boardwalk #3, 6' wide by 32' long = 192 square feet.

A portion of Boardwalk #4 - 6' wide by 7' long or 42 square feet.

A portion of the relocated soft surface trail, 100' long by 3' wide = 300 square feet.

The total of proposed project components in the upland is $570 + 78 + 192 + 42 + 300 = 1,182$ square feet.

Marshlands Buffers for Upland Component:

There is a 50-foot buffer for all 4 boardwalks starting at the marsh/upland line. The total impacts are 6 feet wide by 50 feet long or 300 square feet at the end of each boardwalk. For four boardwalks this equals 2,400 square feet. Permanent impacts in the buffer are as follows:

Boardwalk #1 – 570 square feet.

Boardwalk #2 – 78 square feet.

Boardwalk #3 – 192 square feet.

Boardwalk #4 – 42 square feet.

Relocated soft surface trail - 300 square feet.

Total = 1,182 square feet.

Stormwater Management Plan of the Upland Component:

The proposed project components within the marshland buffer consist of timber boardwalks. While these are considered somewhat of an impervious surface since they have a minor impact on stormwater runoff, there is no way to capture the runoff from the timber boardwalk. Considering the minimal increase in impervious surface from the timber boardwalks, the project will have no adverse impact on stormwater quantity or quality.

Impervious Surface Calculations of the Upland Component:

The existing impervious project components in the upland area include Boardwalks #1 and #2 totaling 648 square feet. The proposed impervious components in the upland consist of replacement of Boardwalk #1 and #2 in the existing footprint or 648 square feet. The only additional impervious surface in the upland component is a 7' long section of Boardwalk #4 or

42 square feet and a 32' long section of Boardwalk #3 or 192 square feet. If the timber boardwalks are considered 50% impervious the runoff coefficient calculations are as follows:

Existing Runoff Coefficient = 0.50

Existing CA = $(0.50)(648) = 324$

Proposed Runoff Coefficient = $(324 + (0.50)(234))/(648 + 234) = 0.50$

There is no change in the pre and post project Runoff Coefficient.

D:\2022\12-0200 SAPELO ISLAND NATURE TRAIL SURVEY\DWG\12-0200_SAPELO ISLAND NATURE TRAIL SURVEY.dwg, 11/16/2022 12:23 PM

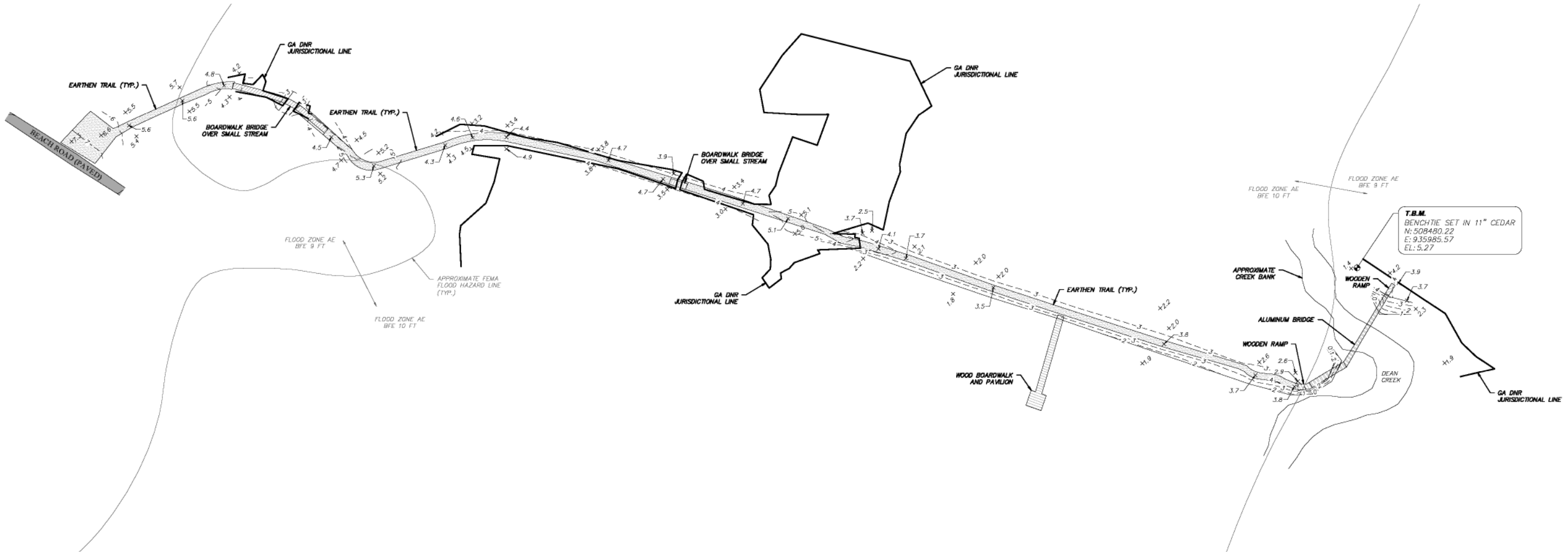
SURVEYOR'S CERTIFICATION



This Topographic Survey was prepared in conformity with The Technical Standards for Surveys in Georgia as set forth in the Rules of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as defined in Rule 180-07-.07. The certification extends only to the topographic aspects of this survey. This topographic survey does not constitute a boundary survey and is not to be recorded.

Jimmy R. Toole
REG. L. S. LIC. NO. 3119

11/16/2022
DATE



SURVEY NOTES

- Horizontal Datum is Georgia State Plane Coordinate System of 1985, East Zone, North American Datum of 1983 (NAD83).
- Vertical Datum is North American Vertical Datum of 1988 (NAVD88).
- Basis of Bearings, Horizontal Control, Vertical Control and some spot elevations were obtained utilizing GPS (global positioning systems). The equipment used to obtain this data was a Champion TKO receiver [RTK Accuracy (Horizontal: 1cm + 1ppm RMS) (Vertical: 2cm + 1ppm RMS)] with a Scepter II data collector receiving RTK corrections via a Verizon Jetpack Mifi 6620L from the eGPS Solutions Real Time Network. The technique used was RTK corrected measurements from a Trimble VRS Real Time Network operated by eGPS Solutions, Inc.
- This survey was prepared without the benefit of an abstract of title. Subject and adjacent property owners' deed references were provided by EMC Engineering Services, Inc. and are not guaranteed as to accuracy or completeness.
- Locations are accurate only where dimensioned.
- This property is located in Zone AE, a Special Flood Hazard Area per the Federal Emergency Management Agency's Flood Insurance Rate Map No. 13191C0320E; Effective Date: August 2, 2018. The flood hazard lines as shown on this plat have been taken digitally from <http://hazards-fema.maps.arcgis.com>, and have not been verified in the field by EMC Engineering Services, Inc.
- No person may copy, reproduce, distribute or alter this plat in whole or in part without the written permission of EMC Engineering Services, Inc.
- The term "Certification" as used in Rule 180-6-.09 (2) and (3) and relating to professional engineering or land surveying services, as defined in O.C.G.A. 43-15-2 (6) and (11), shall mean a signed statement based upon facts and knowledge known to the registrant at the time of the survey and is not a guarantee or warranty, either expressed or implied.
- This survey is valid only if print has the original signature of the surveyor.
- This Survey complies with both the rules of the Georgia Board of Registration for Professional Engineers and Land Surveyors and the Official Code of Georgia Annotated (OCGA) 16-6-67, in that where a conflict exists between those two sets of specifications, the requirements of law prevail.
- This Topographic Survey was prepared in conformity with The Technical Standards for Surveys in Georgia as set forth in the Rules of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as defined in Rule 180-07-.07. The certification extends only to the topographic aspects of this survey. This topographic survey does not constitute a boundary survey and is not to be recorded.
- There was no evidence of recent earth moving work, building construction, or building additions observed in the process of conducting the fieldwork.
- There were no proposed changes in street right of way lines made available to the surveyor by the controlling jurisdiction. There was no evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.
- There were no welland delineation markers observed in the process of conducting the fieldwork.

SURVEY DATA

Equipment used: Topcon PS 103A
Champion TKO GPS/eGPS Network

Field Work Completed on: 09/22/2022

NO.	REVISION DESCRIPTION	DATE



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CIVIL
MARINE
ENVIRONMENTAL

A TOPOGRAPHIC SURVEY OF THE SAPELO ISLAND NATURE TRAIL

1312TH G. M. DISTRICT
SAPELO ISLAND, MCINTOSH COUNTY, GEORGIA

Prepared for:

Freedman Engineering Group

PROJECT NO.: 22-0020
DRAWN BY: SMB
DESIGNED BY:
SURVEYED BY: JEH
SURVEY DATE: 09/22/2022
CHECKED BY: JET
SCALE: 1" = 50'
DATE: 11/03/2022

SHEET
1
OF 1

PERMIT DRAWINGS

DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

OWNER'S REPRESENTATIVE

JOEL GRIFFIN
SOUTHERN REGION ENGINEERING
AND CONSTRUCTION
912-381-2511
JOEL.GRIFFIN@DNR.GA.GOV

CIVIL ENGINEER

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STATESBORO, GEORGIA, 30458
(912) 764- 7022
STATESBORO@EMC-ENG.COM



24hr. Contact
JOEL GRIFFIN
912-381-2511

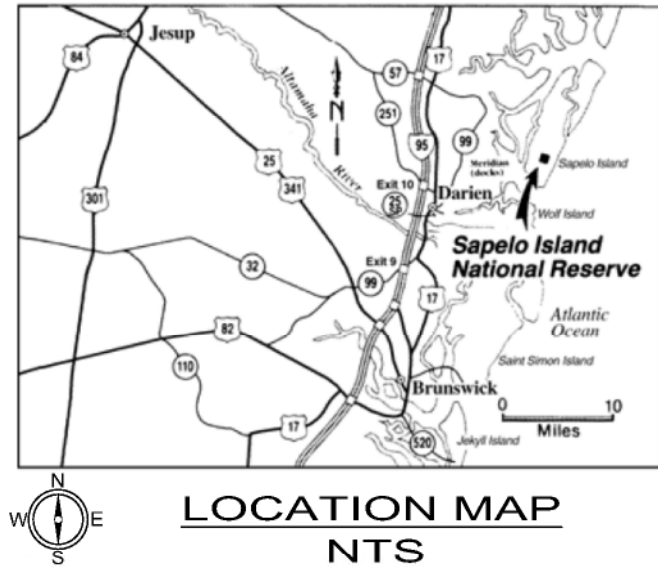
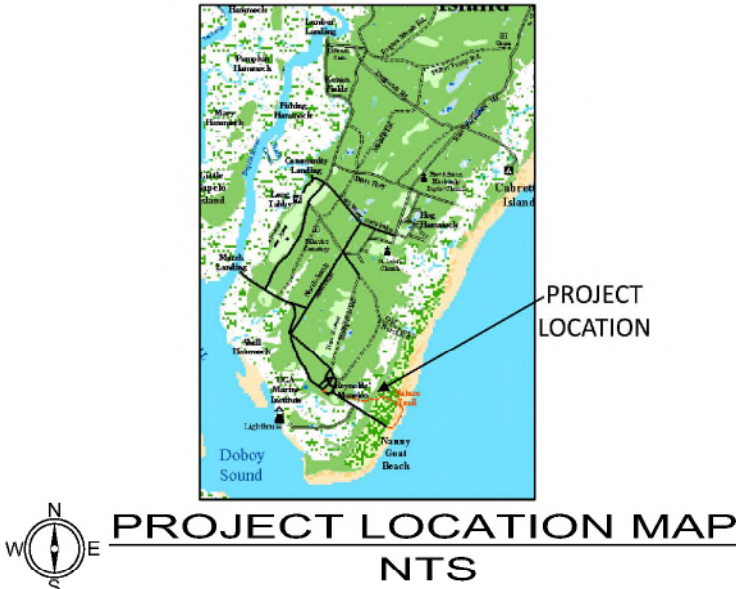
FOR THE

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING AND CONSTRUCTION
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334
(404) 656-6531

MAY, 2023

DRAWING INDEX

- C-1 COVER SHEET
- C-2 EXISTING CONDITIONS
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DISTURBED AREA: 0.72 ACRE

CERTIFICATION - ES&PC DESIGN PROFESSIONAL
DAVID FREEDMAN
P.E. - LICENSE NO. 14382, GSWCC LEVEL II CERTIFICATION NO. 66474
DATE 5/16/2023
EXPIRES: 06/22/2024

GSWCC
GEORGIA SOIL AND WATER
CONSERVATION COMMISSION
David M. Freedman
Level II Certified Design Professional
CERTIFICATION NUMBER 0000066474
ISSUED: 06/22/2021 EXPIRES: 06/22/2024

RELEASED FOR CONSTRUCTION

FREEDMAN
ENGINEERING
GROUP

David Freedman, PE, LEED AP-BD&C
1000 Whitlock Avenue
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Date: 05/16/2023
Project No:
Drawn By: MW
Checked By: DF

DEAN CREEK
NATURE TRAIL IMPROVEMENTS
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

Revisions:		
NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
COVER SHEET

Sheet No:
C-1

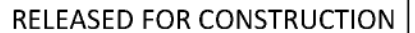
11/20/2023

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Checked By:	DF

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#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

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C-2

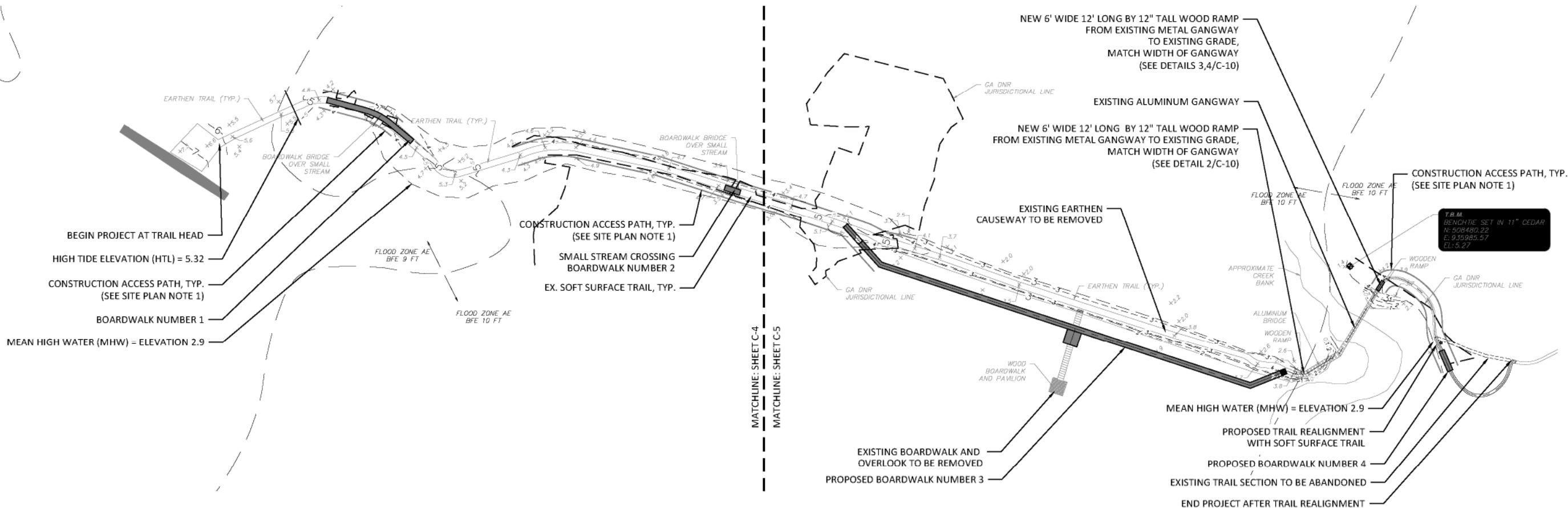


NOTES

- CONTRACTOR TO STAKE OUT NEW BOARDWALKS FOR OWNER'S APPROVAL INCLUDING ELEVATIONS.
- ALL LUMBER/TIMBER TO BE SOUTHERN YELLOW PINE NUMBER 1.
- ALL LUMBER/TIMBER SHALL BE OF SOUND STOCK, DELIVERED DRY, AND SHALL BE FULLY PROTECTED AT ALL TIMES FROM INJURY AND DAMPNES. SPLIT, BROKEN, OR OTHERWISE DAMAGED PIECES WILL NOT BE ALLOWED IN THE WORK.
- LUMBER/TIMBER SHALL BE TREATED WITH PRESERVATIVES TO THE FOLLOWING REQUIREMENTS IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1 OR ICC-ES EVALUATION REPORTS:
 - 6" BY 6" OR 8" DIAMETER PILES AND 8" BY 8" TIMBERS – USE CATEGORY UCSB, 2.5 PCF CCA.
 - STRUCTURAL LUMBER FOR BOARDWALKS AND STAIRS – 8" x 8", 2" x 12", 2" x 10", 6" x 6", 4" x 4" – USE CATEGORY UC4B, 0.60 PCF CCA.
 - HANDRAIL SYSTEM INCLUDING 2" x 8" TOP RAIL, PLATFORM, AND BOARDWALK CURBING – 4" x 6", 2" x 6", 2" x 4", 4" BY 4" – USE CATEGORY UC4B, 0.31 PCF CA-C.
- ALL TREATMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OF THE AMERICAN WOOD PROTECTION ASSOCIATION FOR TREATING WOOD. APPLY A HEAVY COAT OF THE SAME PRESERVATIVE USED IN TREATING TO ALL SURFACES CUT AFTER TREATMENT.
- HURRICANE ANCHORS TO BE SIMPSON H2.5ASS (STAINLESS STEEL) WITH STAINLESS STEEL NAILS AS RECOMMENDED BY ANCHOR MANUFACTURER.
- ALL HARDWARE (BOLTS, SCREWS, NAILS, ETC.) TO BE STAINLESS STEEL.
- CONNECTING HARDWARE TO BE AS FOLLOWS:
 - DECKING TO STRINGERS – 3 - 3" STAINLESS STEEL SCREWS AT EACH STRINGER
 - 2" X 6" CURB TO DECKING - 3" STAINLESS STEEL SCREWS EVERY 12"
 - 4" X 6" CURB THROUGH 2" X 6" TO DECKING – 5/8" DIAMETER STAINLESS STEEL BOLTS EVERY 18". COUNTERSINK BOLTS SO THEY ARE FLUSH WITH WOOD SURFACE.
 - BLOCKING – 3" STAINLESS STEEL SCREWS
 - STRINGER SPLICE PLATE – TWO 5/8" DIAMETER STAINLESS STEEL BOLTS WITH 3" FLAT WASHERS AT EACH SIDE OF JOINT
 - SPLIT PILE CAPS TO PILES – TWO 3/4" DIAMETER STAINLESS STEEL BOLTS WITH 3" FLAT WASHERS.
 - RAILINGS – 3" STAINLESS STEEL SCREWS
 - RAIL POSTS - TWO 3/4" DIAMETER STAINLESS STEEL BOLTS WITH 3" FLAT WASHERS.
- FOR BOLTED WORK, BORE HOLES OF SAME DIAMETER AS BOLTS AND DRIVE BOLTS INTO PLACE.
- WASHERS SHALL BE PROVIDED UNDER ALL BOLT HEADS AND NUTS.
- BOLTS SHALL BE STANDARD HEX HEAD.
- DECKING SHALL BE INSTALLED WITH THE BARK SIDE UP TO PREVENT CUPPING.
- EDGES OF CURBS AND RAILS SHALL BE CHAMFERED. HANDRAILS AND ALL OTHER ACCESSIBLE SURFACES SHALL BE GROUND SMOOTH WITH NO SHARP EDGES OR CORNERS.
- BOARDWALK HEIGHT WITHOUT RAILINGS, TOP OF DECK TO GROUND SURFACE, CANNOT EXCEED THIRTY (30) INCHES.
- DESIGN IS BASED ON A LIVE LOAD OF 85 POUNDS PER SQUARE FOOT.
- ALL DEMOLITION MATERIALS TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
- ALL POSTS AND UNDERGROUND ELEMENTS TO BE REMOVED TO BE CUT OFF ONE (1) FOOT BELOW THE GROUND SURFACE.
- THE OWNER RESERVES THE RIGHT TO RETAIN ANY MATERIALS IDENTIFIED FOR DEMOLITION. THESE MATERIALS TO BE NEATLY STACKED IN A LOCATION DESIGNATED BY THE OWNER.
- SUBMITTALS ARE REQUIRED ON ALL MATERIALS TO BE INCORPORATED INTO THE WORK.
- EXISTING SIGNAGE ALONG TRAIL, WHEN IMPACTED BY PROPOSED WORK, TO BE REMOVED, STORED, AND REPLACED IN THE SAME LOCATION UPON COMPLETION OF THE WORK.

SITE PLAN NOTES:

- CONSTRUCTION ACCESS PATH TO BE 14 FEET WIDE, 7 FEET ON EITHER SIDE OF THE BOARDWALK CENTERLINE. MATS TO BE PLACED ON THE GROUND IN ALL AREAS WITHIN THE DNR JURISDICTIONAL LINE.
- HIGH TIDE LINE ELEVATION = 5.32.
- MEANT HIGH WATER ELEVATION = 2.9.



0 30' 60' 120' 180'
SCALE: 1" = 60'

RELEASED FOR CONSTRUCTION

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Seal:

11/20/2023

Date: 05/16/2023
Project No:
Drawn By: MW
Checked By: DF

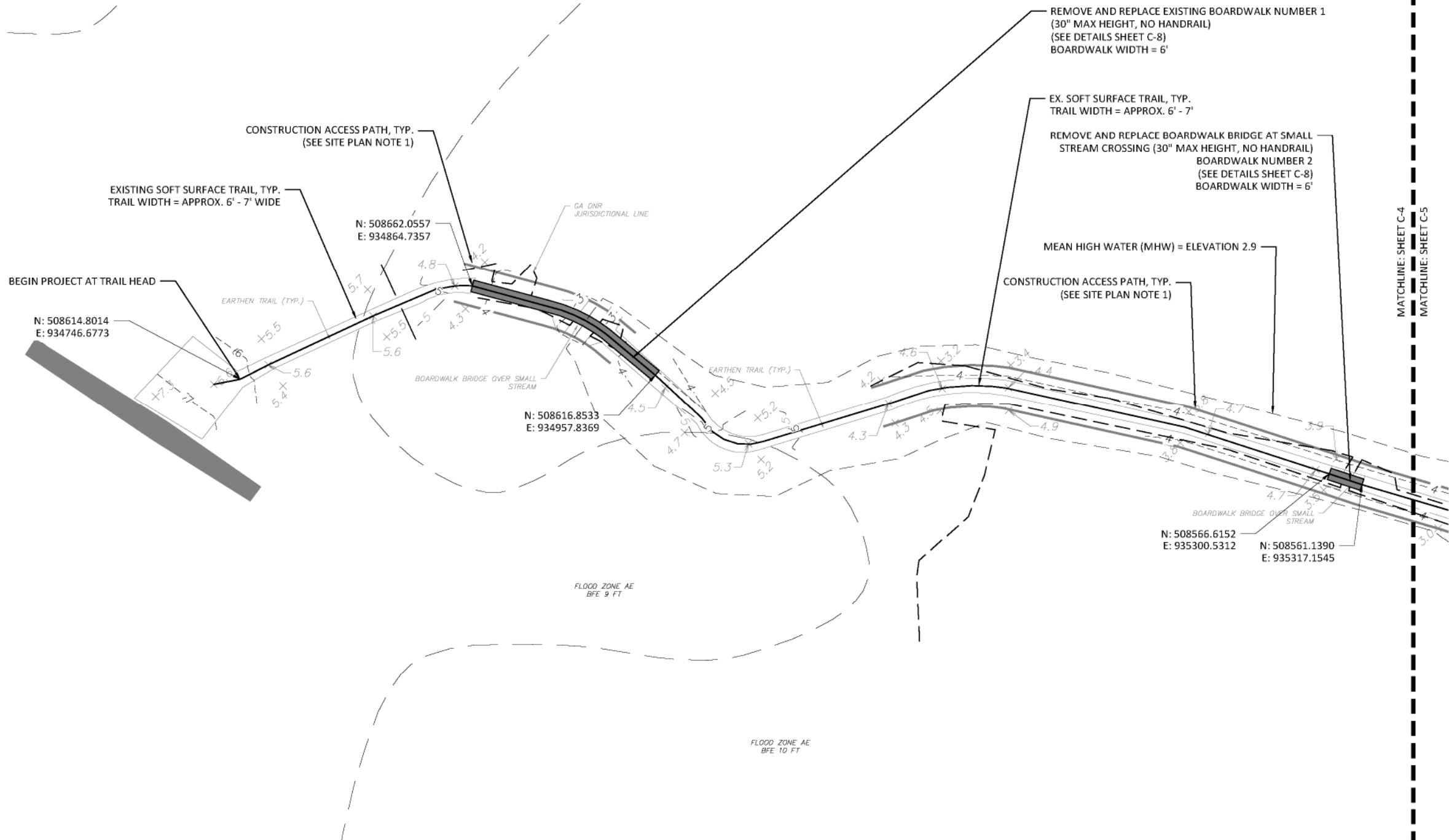
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NATURE TRAIL IMPROVEMENTS**
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

Revisions:		
NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
**SITE PLAN
KEY MAP**

Sheet No:
C-3

- SITE PLAN NOTES:
1. CONSTRUCTION ACCESS PATH TO BE 14 FEET WIDE, 7 FEET ON EITHER SIDE OF THE BOARDWALK CENTERLINE. MATS TO BE PLACED ON THE GROUND IN ALL AREAS WITHIN THE DNR JURISDICTIONAL LINE.
 2. HIGH TIDE LINE ELEVATION = 5.32.
 3. MEANT HIGH WATER ELEVATION = 2.9.



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DEAN CREEK NATURE TRAIL IMPROVEMENTS

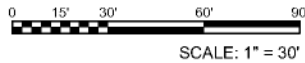
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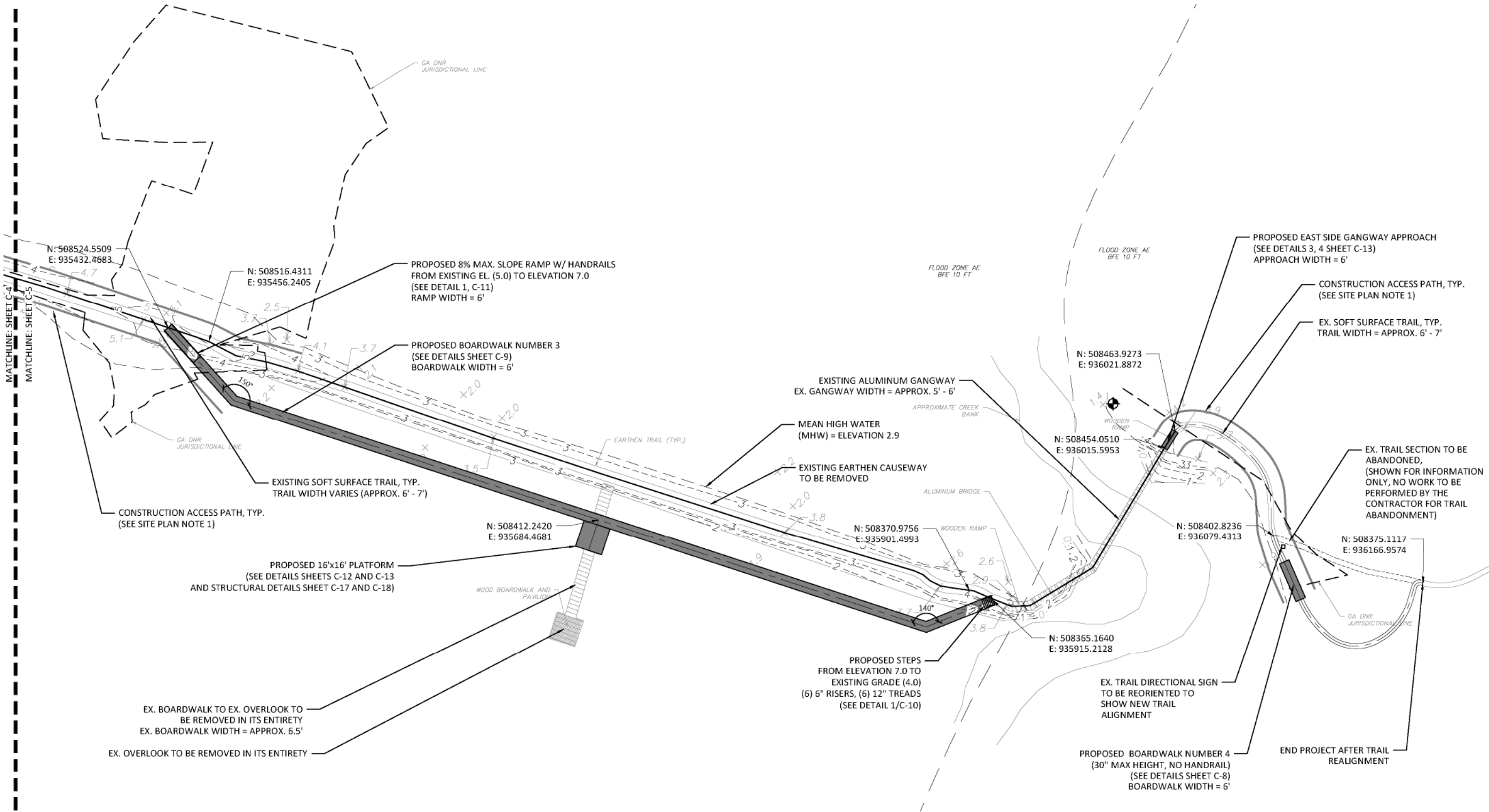
Sheet Title:
SITE PLAN

Sheet No:
C-4



RELEASED FOR CONSTRUCTION

- SITE PLAN NOTES:
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 2. HIGH TIDE LINE ELEVATION = 5.32.
 3. MEANT HIGH WATER ELEVATION = 2.9.



0 15' 30' 60' 90'

SCALE: 1" = 30'

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Seal:

GEORGIA
REGISTERED
PROFESSIONAL
ENGINEER
DAVID M. FREEDMAN
11/20/2023

Date: 05/16/2023

Project No:

Drawn By: MW

Checked By: DF

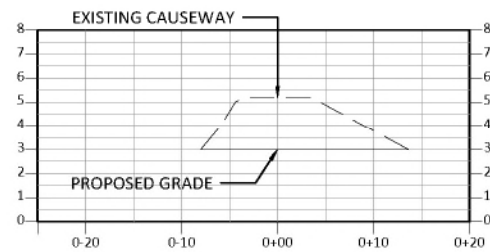
**DEAN CREEK
NATURE TRAIL IMPROVEMENTS**

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ATLANTA, GA 30334

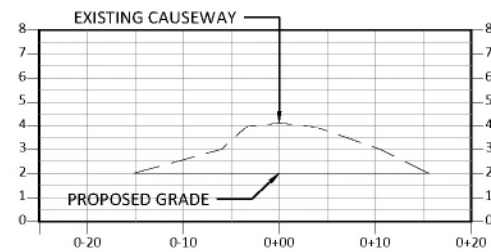
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NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
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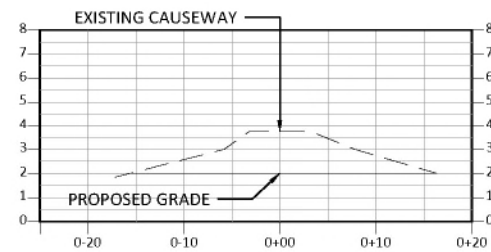
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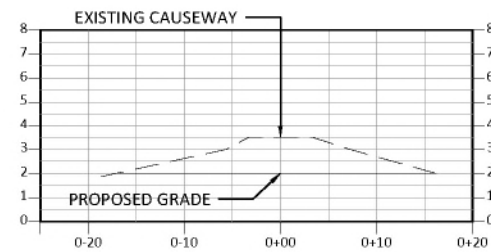
CAUSEWAY REMOVAL SECTION 1



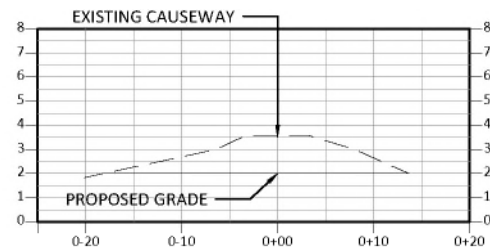
CAUSEWAY REMOVAL SECTION 2



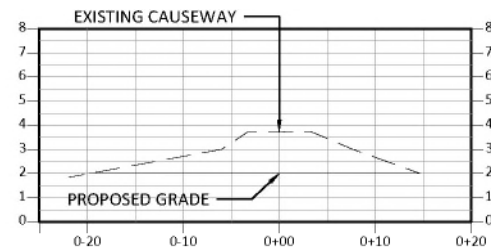
CAUSEWAY REMOVAL SECTION 3



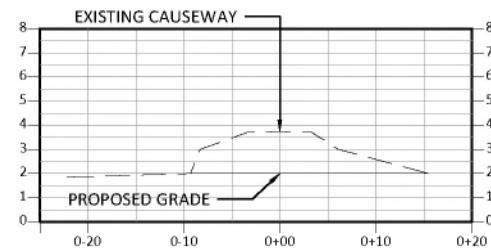
CAUSEWAY REMOVAL SECTION 4



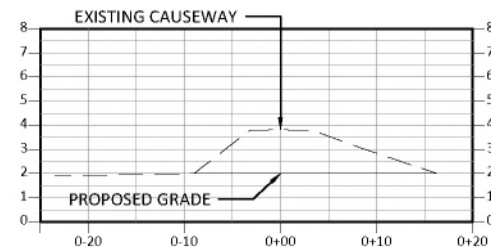
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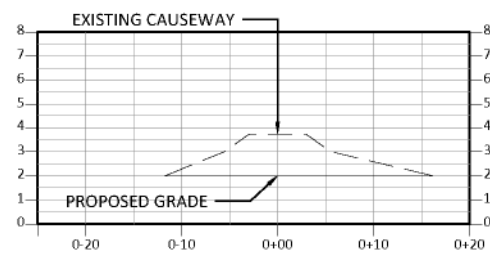
CAUSEWAY REMOVAL SECTION 6



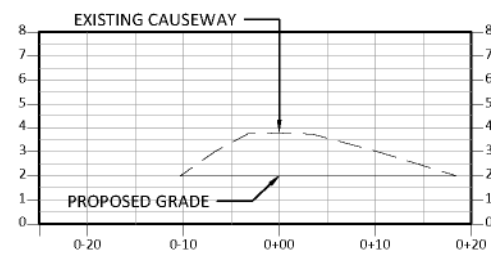
CAUSEWAY REMOVAL SECTION 7



CAUSEWAY REMOVAL SECTION 8

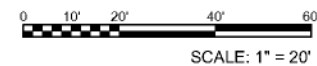
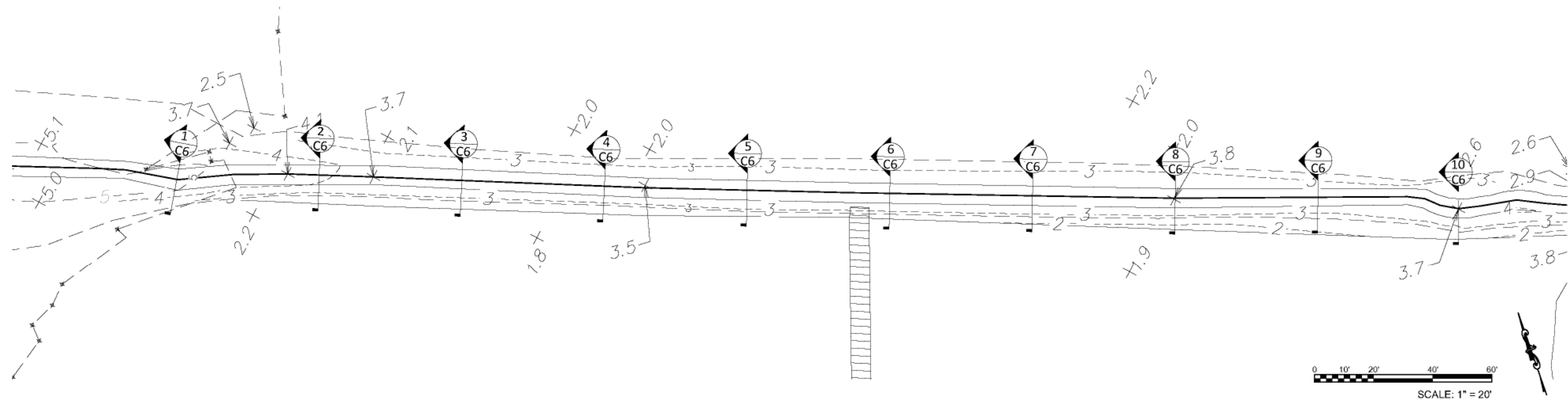


CAUSEWAY REMOVAL SECTION 9



CAUSEWAY REMOVAL SECTION 10

 CAUSEWAY SECTIONS
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"



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Date: 05/16/2023
Project No:
Drawn By: MW
Checked By: DF

**DEAN CREEK
NATURE TRAIL IMPROVEMENTS**
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

Revisions:

NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
**CAUSEWAY
SECTIONS**

Sheet No:
C-6

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DEAN CREEK
NATURE TRAIL IMPROVEMENTS

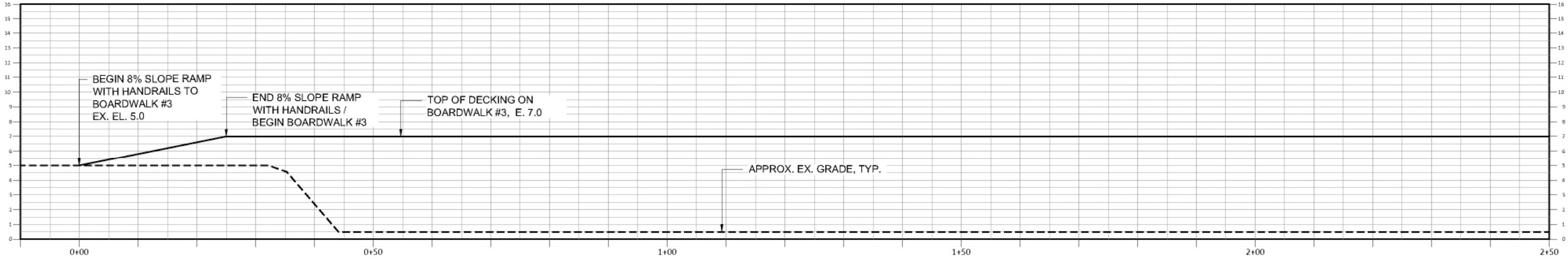
GEORGIA DEPARTMENT OF NATURAL RESOURCES
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ATLANTA, GA 30334

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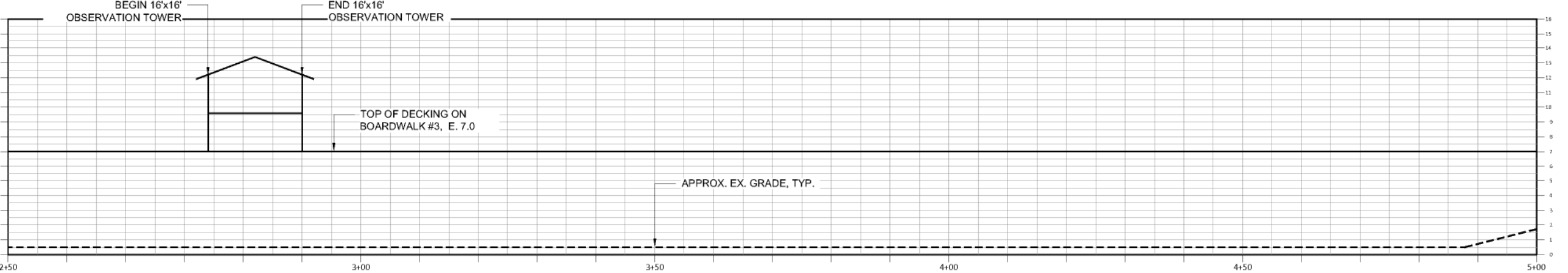
Sheet Title:
BOARDWALK
PROFILES

Sheet No:
C-7



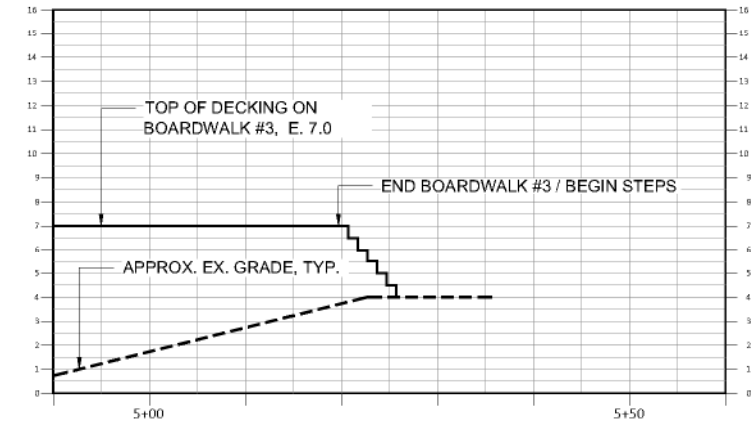
1 BOARDWALK #3 PROFILE: SECTION A

HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"



2 BOARDWALK #3 PROFILE: SECTION B

HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"



3 BOARDWALK #3 PROFILE: SECTION C

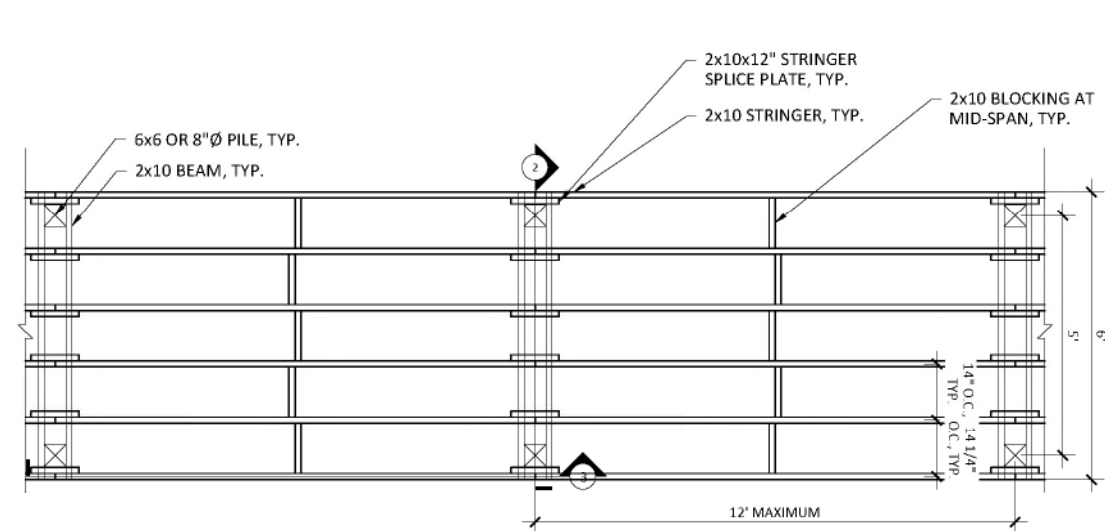
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"

DEAN CREEK
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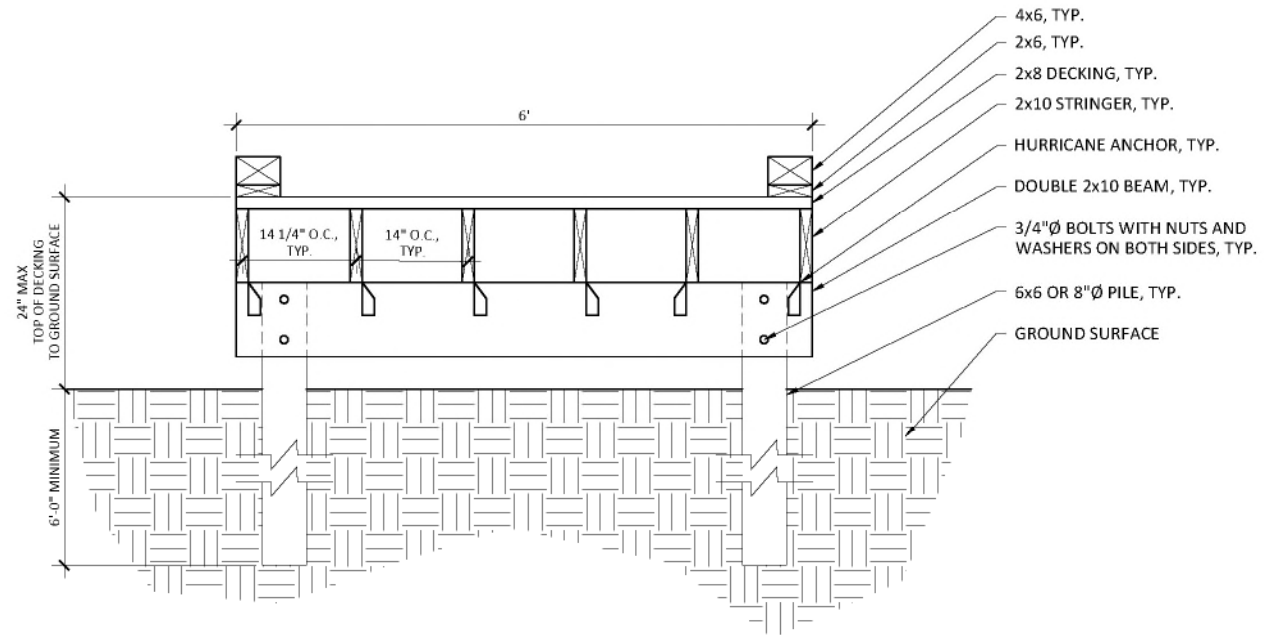
Sheet Title:
**CONSTRUCTION
DETAILS**

Sheet No:
C-8

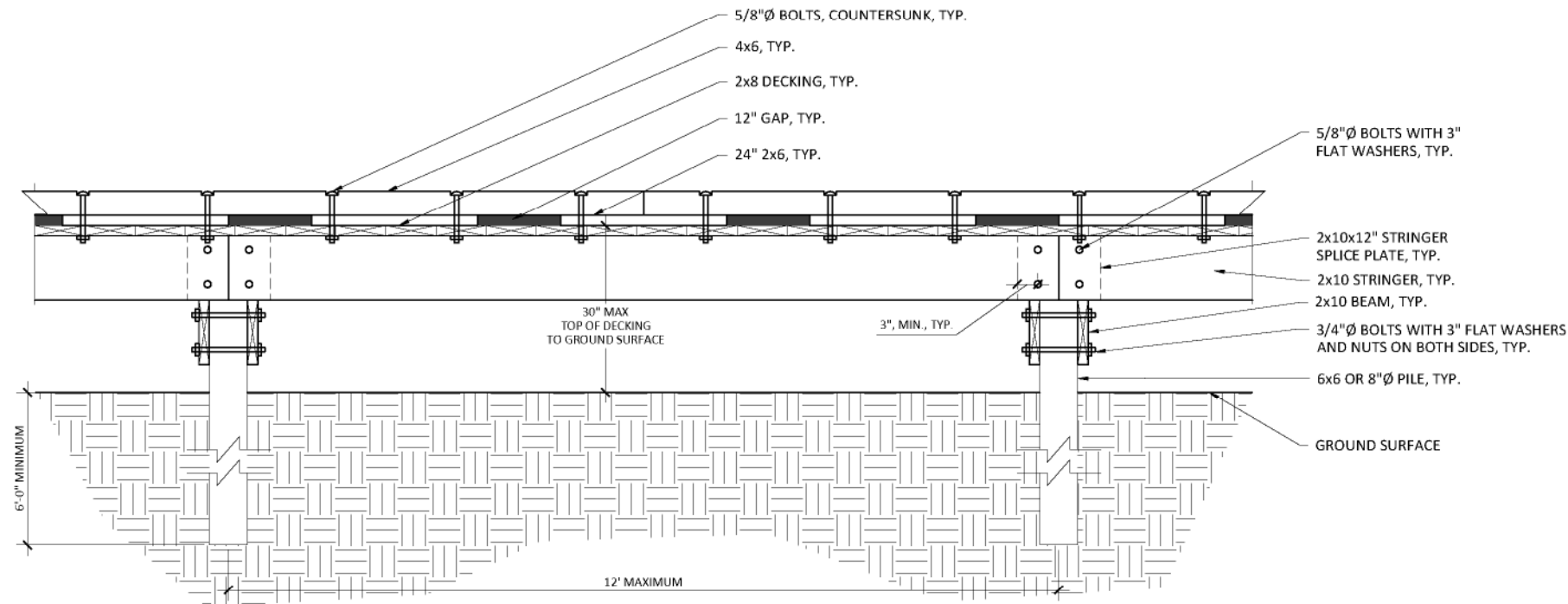


NOTE
BOARDWALK 1 IS 105 FEET LONG.
BOARDWALK 2 IS 18 FEET LONG.
BOARDWALK 4 IS 24 FEET LONG.

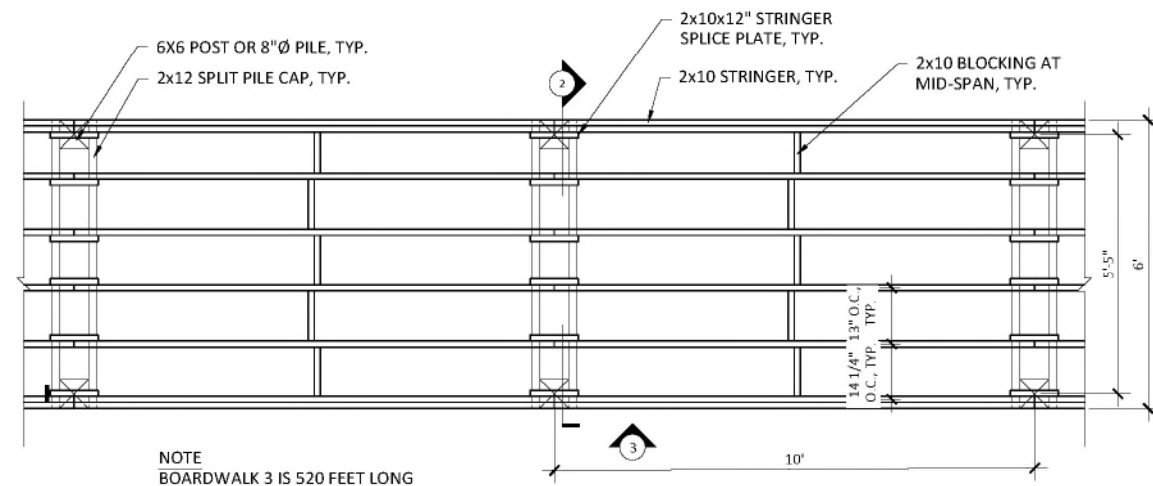
1 TYPICAL FRAMING PLAN - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1/2" = 1'-0"



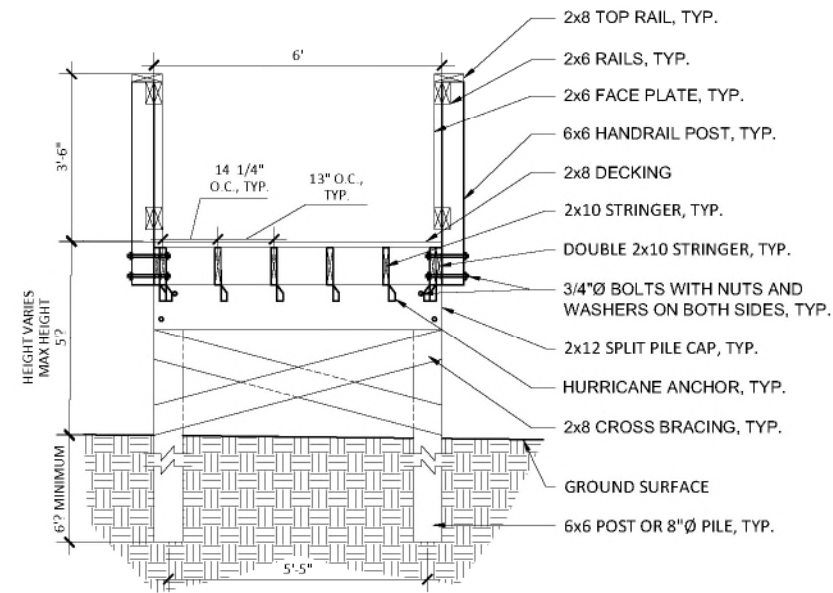
2 TYPICAL CROSS SECTION - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1" = 1'-0"



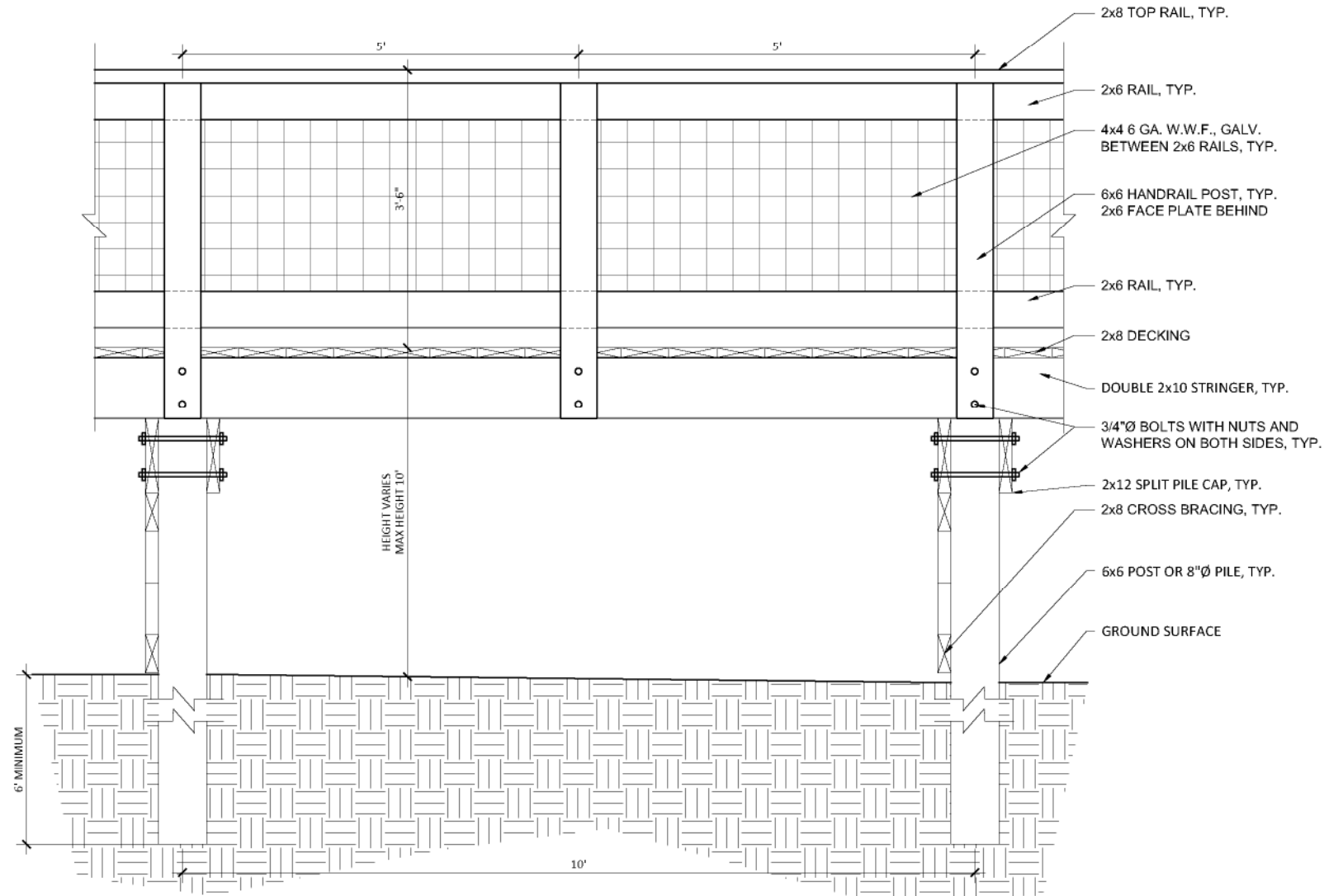
3 TYPICAL PROFILE SECTION - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1" = 1'-0"



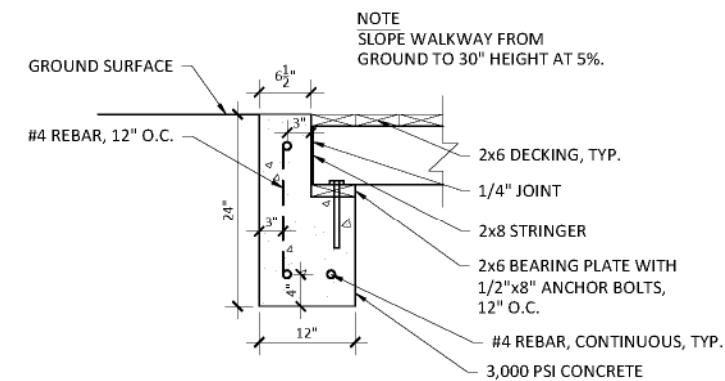
1 BOARDWALK 3 FRAMING PLAN
1/2" = 1'-0"



2 BOARDWALK 3 CROSS SECTION
1/2" = 1'-0"



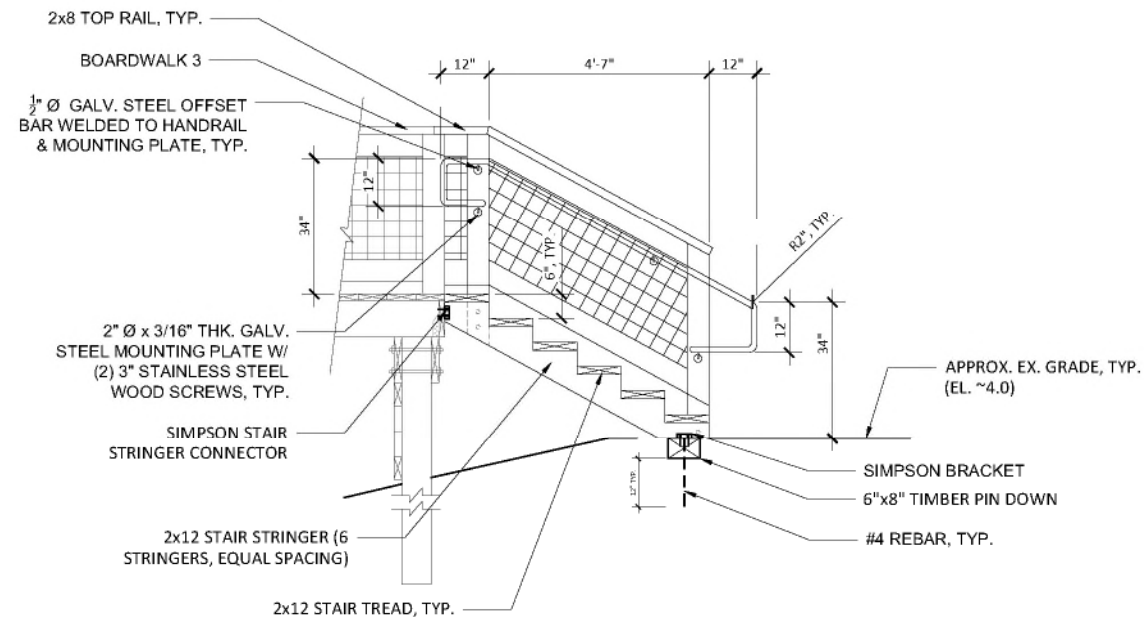
3 TYPICAL PROFILE SECTION - BOARDWALK 3
1" = 1'-0"



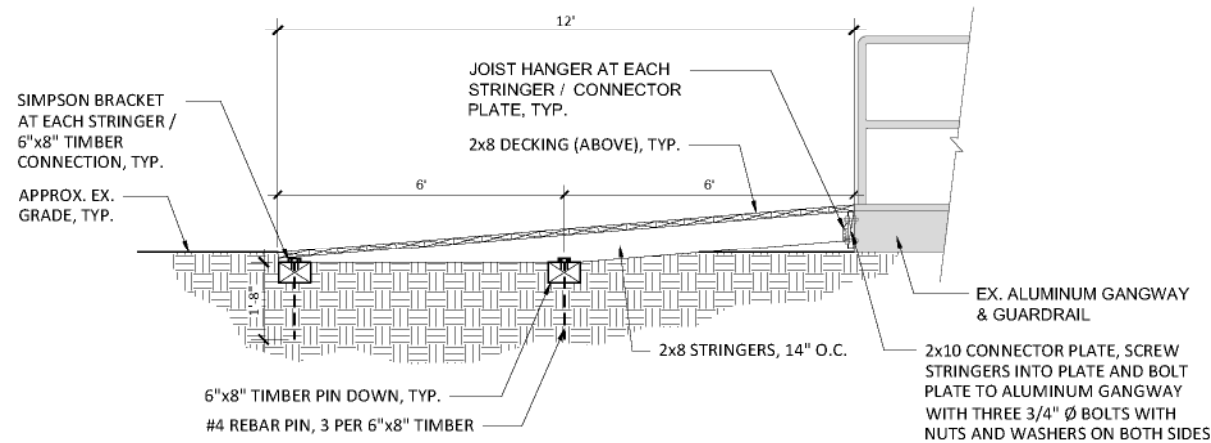
4 ABUTMENT DETAIL
1" = 1'-0"

Revisions:

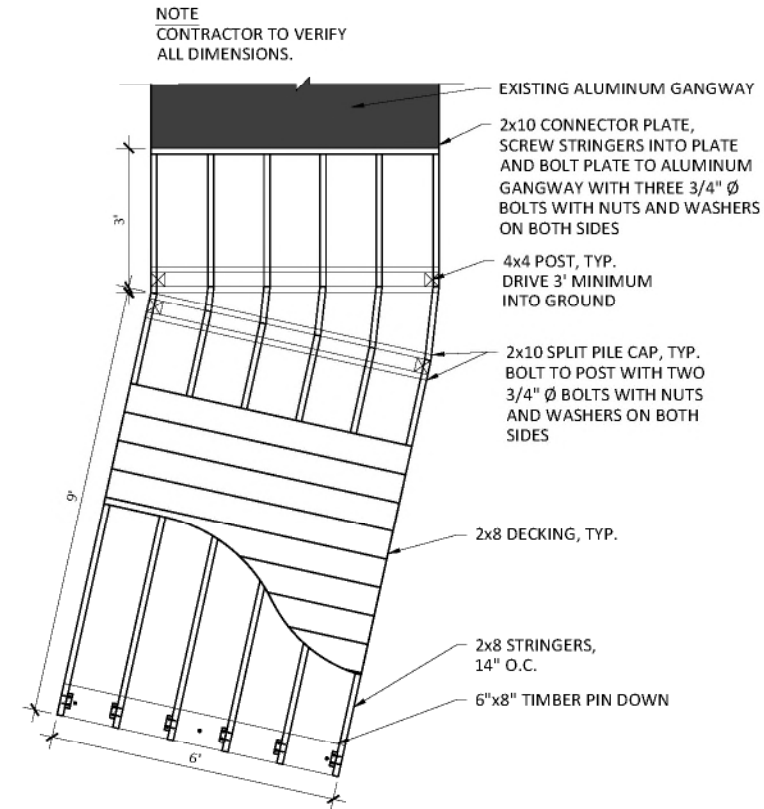
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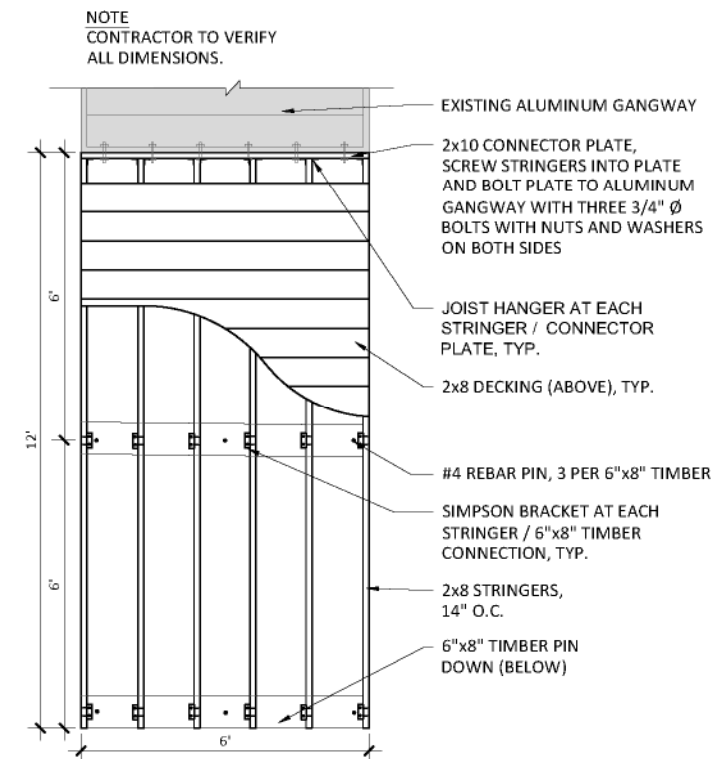
1 PROPOSED STEPS AT END OF BOARDWALK 3 (AT WEST SIDE GANGWAY APPROACH) - SECTION
1/2" = 1'-0"



3 EAST SIDE GANGWAY APPROACH - SECTION
1/2" = 1'-0"

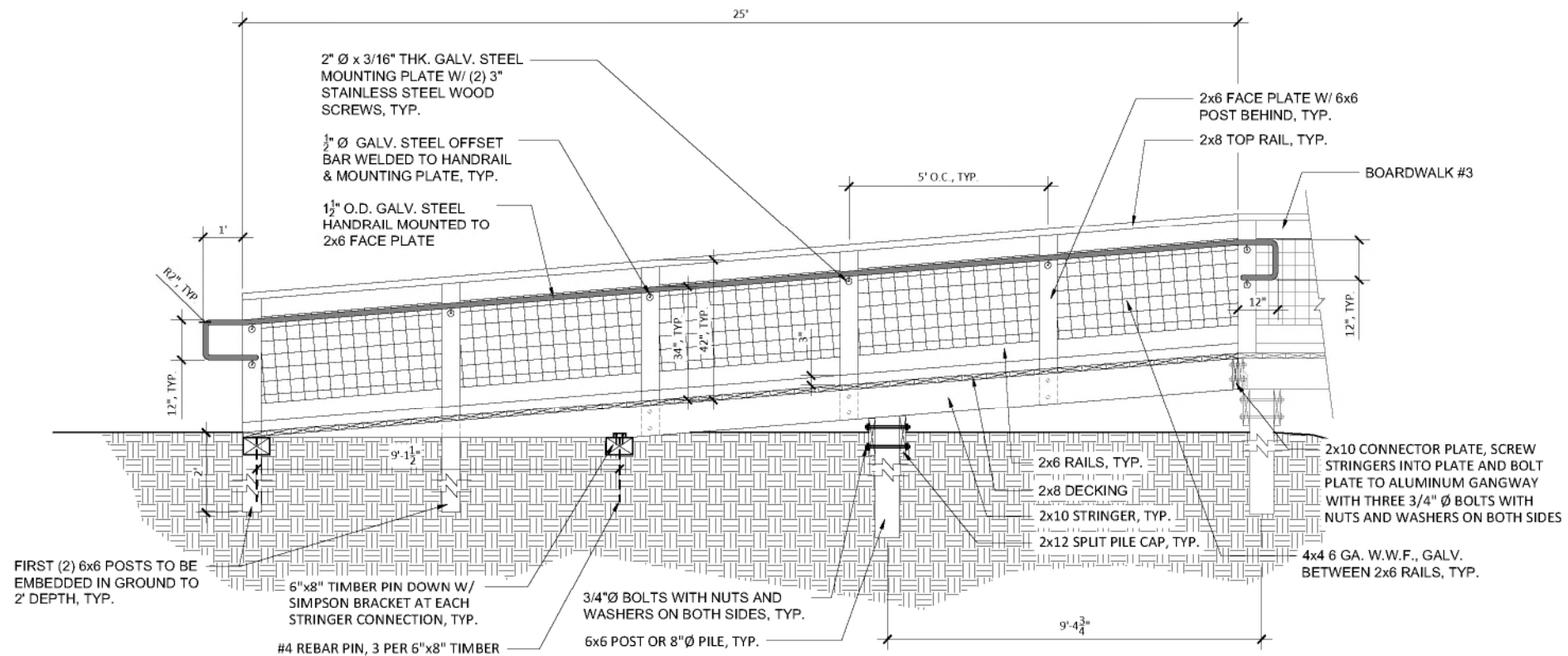


2 WEST SIDE GANGWAY APPROACH - FRAMING PLAN
1/2" = 1'-0"

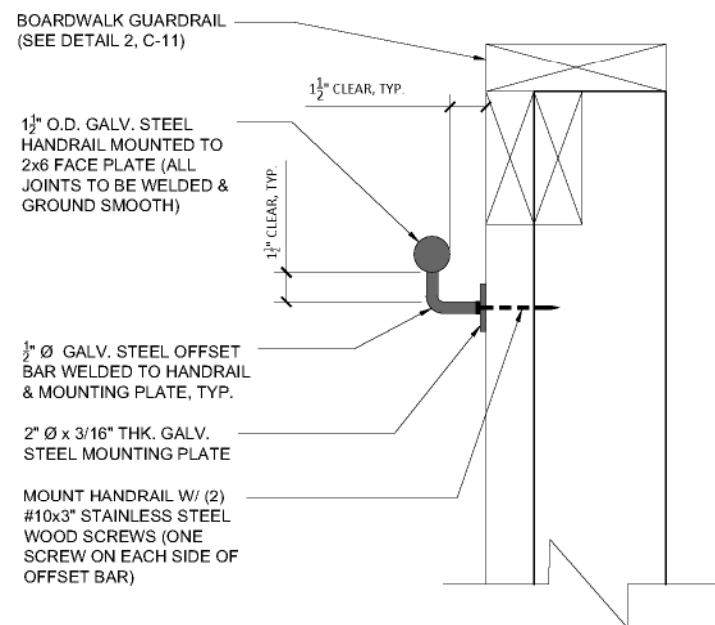


4 EAST SIDE GANGWAY APPROACH - FRAMING PLAN
1/2" = 1'-0"

NO.	DATE	DESCRIPTION
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1 RAMP @ BEGINNING OF BOARDWALK #3 - LONGITUDINAL SECTION
1/2" = 1'-0"



2 GALV. STEEL HANDRAIL - CROSS SECTION
3" = 1'-0"

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Seal:



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**DEAN CREEK
NATURE TRAIL IMPROVEMENTS**
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

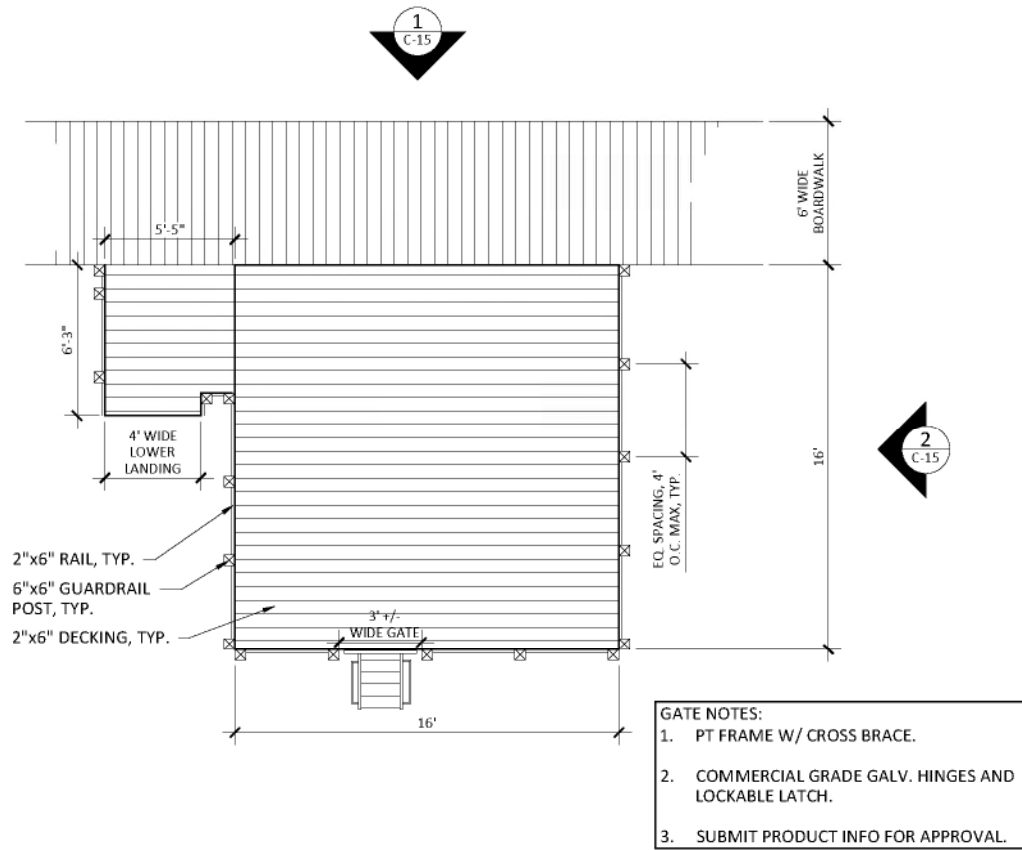
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Sheet Title:
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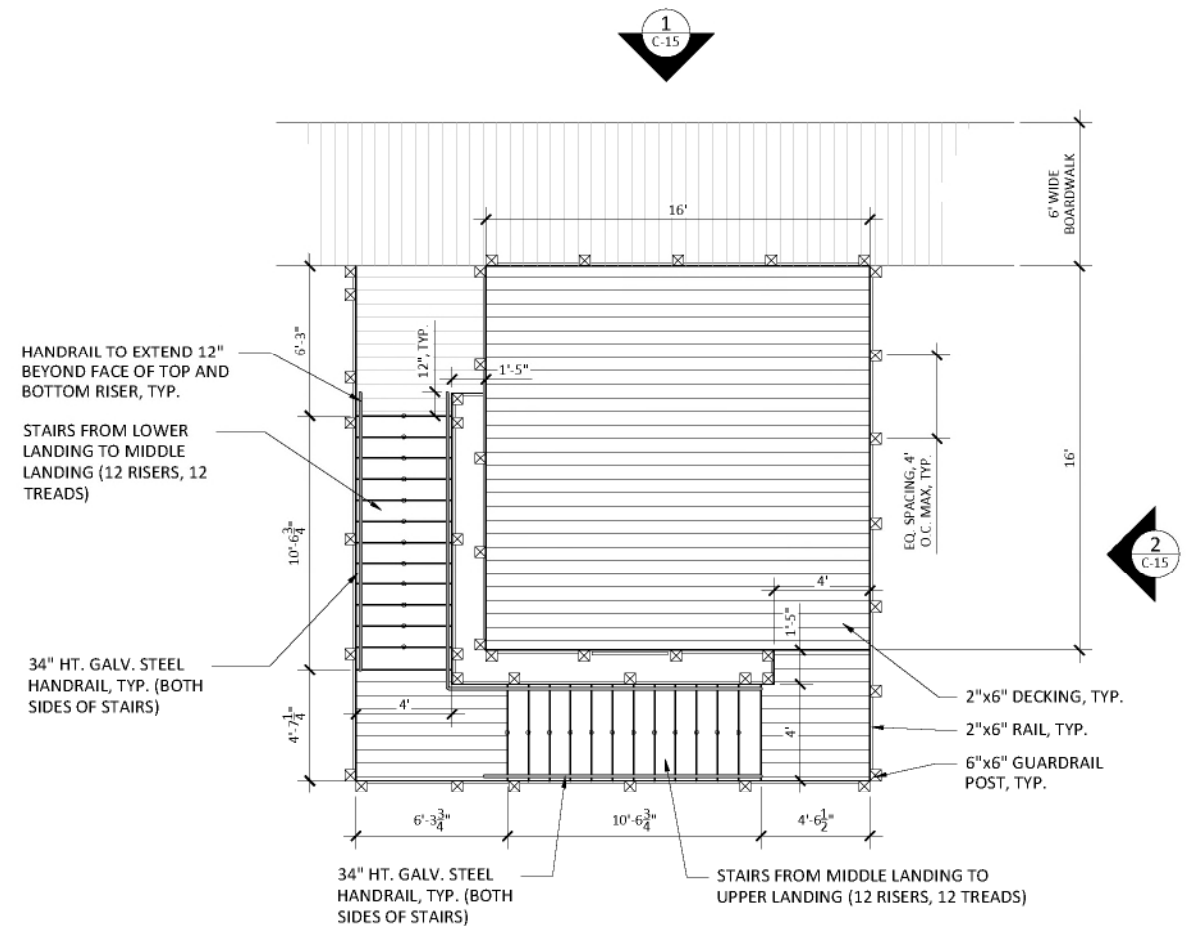
Sheet No:
C-11

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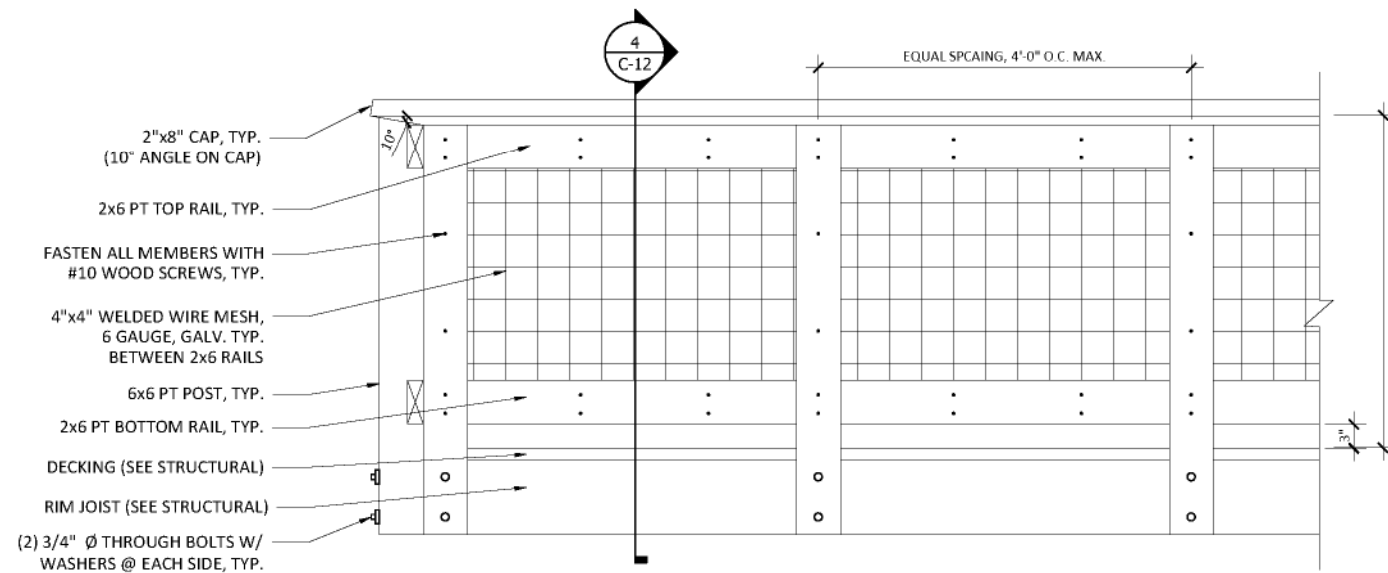
REFER TO STRUCTURAL PLANS FOR
MEMBER SIZES, CONNECTIONS,
FASTENERS, AND FOUNDATIONS.



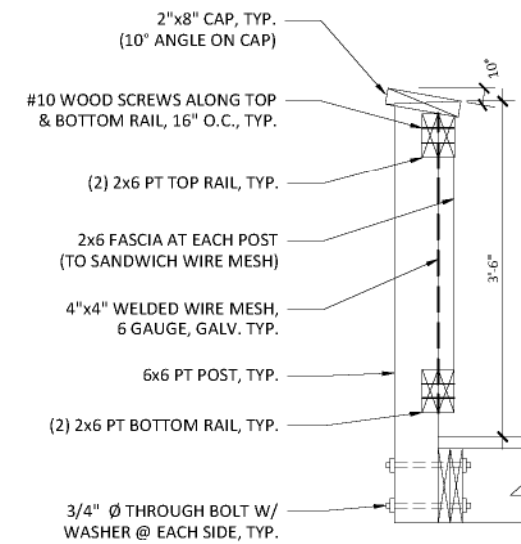
1 PLATFORM FLOOR PLAN - LOWER PLATFORM
1/4" = 1'-0"



2 PLATFORM FLOOR PLAN - UPPER PLATFORM
1/4" = 1'-0"



3 42" GUARDRAIL - TYPICAL ELEVATION
1" = 1'-0"



4 42" GUARDRAIL - TYPICAL SECTION
1" = 1'-0"

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DEAN CREEK NATURE TRAIL IMPROVEMENTS

GEORGIA DEPARTMENT OF NATURAL RESOURCES
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1	11/20/2023	UPDATED TOPO

Sheet Title:

CONSTRUCTION
DETAILS

Sheet No:

C-12

RELEASED FOR CONSTRUCTION

Revisions:

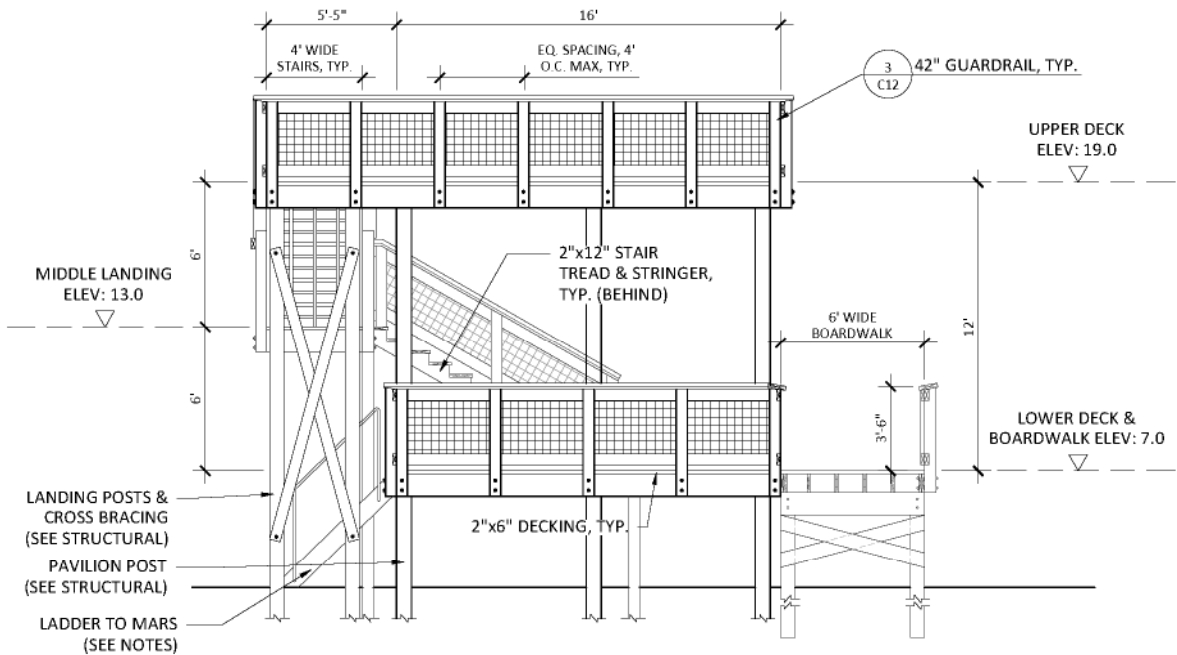
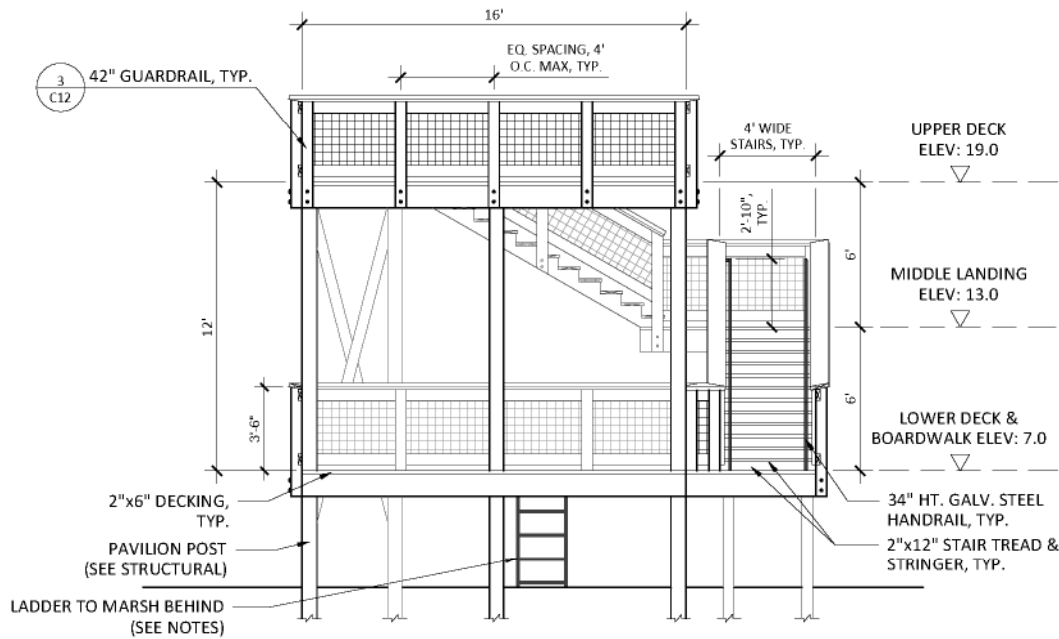
NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
CONSTRUCTION
DETAILS

Sheet No:
C-13

REFER TO STRUCTURAL PLANS FOR
MEMBER SIZES, CONNECTIONS,
FASTENERS, AND FOUNDATIONS.

- LADDER TO MARSH NOTES:
1. MANUFACTURER
THE DOCK DOCTORS, LLC
(800) 870-6756
thedockdoctors.com
 2. SHALLOW WATER STAIRS
MODEL: ONE-PIECE WELDED
ALUMINUM SHALLOW WATER DOCK
STAIRS WITH ALUMINUM
HANDRAILS, NON-SLIP TREADS &
ADJUSTABLE FOOTPADS
 3. SIZE
NUMBER OF TREADS TO BE
DETERMINED BY FIELD CONDITIONS.
 4. ATTACHMENT
SEE STRUCTURAL



1 PLATFORM FRONT ELEVATION
1/4" = 1'-0"

2 PLATFORM LEFT SIDE ELEVATION
1/4" = 1'-0"

SOILS NOTE:
ALL SOILS WITHIN THE PROJECT
AREA ARE DUNE LAND, DsL.

- EROSION CONTROL PLAN NOTES:
1. CONSTRUCTION ACCESS PATH TO BE 14 FEET WIDE, 7 FEET ON EITHER SIDE OF THE BOARDWALK CENTERLINE. MATS TO BE PLACED ON THE GROUND IN ALL AREAS WITHIN THE DNR JURISDICTIONAL LINE.
 2. HIGH TIDE LINE ELEVATION = 5.32.
 3. MEANT HIGH WATER ELEVATION = 2.9.

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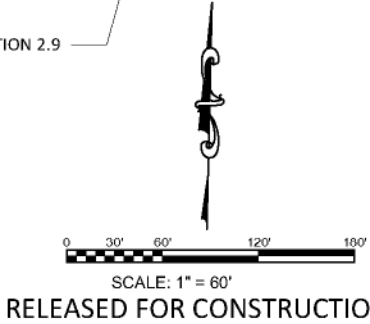
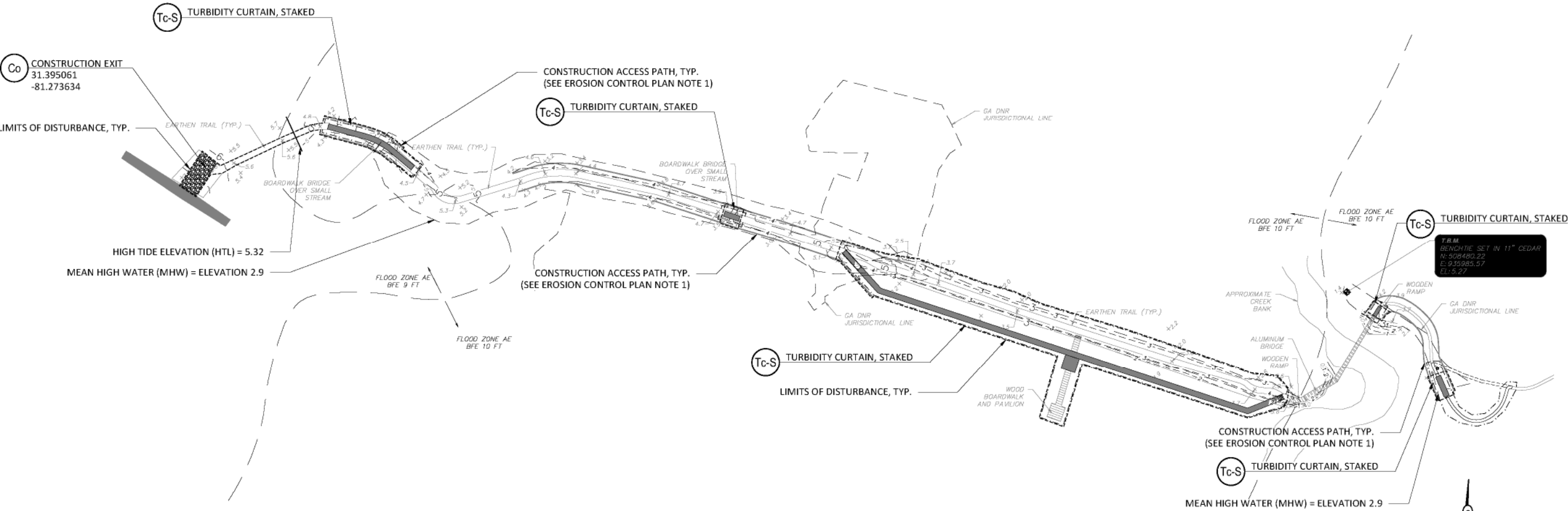
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

Revisions:

NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:
EROSION AND
SEDIMENTATION
CONTROL PLAN

Sheet No:
C-14



PROJECT DESCRIPTION

THE PROJECT CONSISTS OF REPLACING AN EXISTING BOARDWALK, CONSTRUCTING A NEW BOARDWALK AND OBSERVATION PLATFORM, AND REMOVING AN EXISTING EARTHEN CAUSEWAY. THE DISTURBED AREA IS 0.72 ACRE AND THE VOLUME OF EARTH TO BE DISTURBED IS 517 CUBIC YARDS.

CONSTRUCTION ACTIVITIES FOR THE PROJECT WILL INCLUDE THE FOLLOWING:

- INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES
- DEMOLITION
- CONSTRUCTION
- ESTABLISHING TEMPORARY AND PERMANENT VEGETATION

DISTURBED AREAS WILL BE RESTORED WITH PERMANENT GRASS VEGETATION AND LANDSCAPE MULCHING. THE REMAINING AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WILL BE RETURNED TO THEIR ORIGINAL CONDITIONS. TOPOGRAPHY WILL BE RETURNED TO ORIGINAL GRADE AND SLOPE AS MUCH AS POSSIBLE, AND RUNOFF COEFFICIENTS WILL BE COMPARABLE TO PRE CONSTRUCTION VALUES. STORM WATER RUNOFF RATES WILL BE MINIMALLY AFFECTED AS A RESULT OF THIS PROJECT.

STORM-DRAIN PIPE AND WEIR VELOCITIES:

EXISTING SITE DRAINAGE PATTERNS WILL NOT BE ALTERED AS A RESULT OF THE PROJECT. NO STORM DRAINAGE STRUCTURES WILL BE INSTALLED.

SEDIMENT STORAGE:

CONSTRUCTION ACTIVITY IS LIMITED TO INSTALLING AND MAINTAINING EROSION CONTROL MEASURES AND SITE IMPROVEMENTS. GIVEN THE SMALL SITE DRAINAGE AREA ASSOCIATED WITH THIS PROJECT AS WELL AS THE LINEAR NATURE OF THE IMPROVEMENTS, DIVERTING FLOWS AND/OR CONSTRUCTING TEMPORARY SEDIMENT BASINS OR EQUIVALENT CONTROLS IS NOT FEASIBLE. SILT FENCE, MULCHING, AND GRASSING WILL BE USED FOR SEDIMENT CONTROL FOR THE PROJECT.

DISTURBED AREA TOTAL = 0.72 ACRE

REQUIRED VOLUME OF SEDIMENT STORAGE = (0.06 ACRES)(67 C.Y./ACRE) = 4.02 CUBIC YARDS

SILT FENCE STORAGE = 1 L.F. X 1.5' HIGH X 1.5' DEEP = 0.003 C.Y./L.F.

TOTAL AMOUNT OF SILT FENCE REQUIRED FOR SEDIMENT STORAGE = (40.2 CUBIC YARDS)/(0.003 CUBIC YARDS/LINEAR FOOT) = 561 LINEAR FEET

THE AMOUNT OF SILT FENCE SHOWN ON THE PLANS EXCEEDS THIS AMOUNT.

SEDIMENT ACCUMULATED BEHIND SILT FENCE WILL BE REMOVED WITHIN 3 DAYS OF A STORM EVENT.

POLLUTION PREVENTION PRACTICES & REMEDIATION OF PETROLEUM SPILLS AND LEAKS:

THE CONTRACTOR IS PROHIBITED FROM STORING OIL OR ANY HAZARDOUS WASTE MATERIAL AT THE CONSTRUCTION SITE. CONSTRUCTION EQUIPMENT AND VEHICLES ARE THE ONLY ANTICIPATED SOURCE OF POTENTIAL POLLUTION EXPECTED WITHIN THE CONSTRUCTION AREA FOR THIS PROJECT.

PREVENTION OF SPILLS AND LEAKS:

THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING THE POTENTIAL OF POLLUTION FROM EQUIPMENT AND VEHICLE LEAKS OR SPILLS REACHING ANY RECEIVING WATERS. AT A MINIMUM, THE FOLLOWING PRACTICES SHALL BE IMPLEMENTED:

REGULARLY INSPECT ONSITE VEHICLES AND EQUIPMENT FOR LEAKS AND REPAIR IMMEDIATELY.

CHECK INCOMING VEHICLES AND EQUIPMENT FOR LEAKING OIL AND FLUIDS. DO NOT ALLOW LEAKING VEHICLES OR EQUIPMENT ONSITE.

IF FUELING MUST OCCUR ONSITE, USE LOCATIONS AWAY FROM DRAINAGE COURSES TO PREVENT THE RUNOFF OF STORMWATER AND THE RUNOFF OF SPILLS. ALWAYS USE SECONDARY CONTAINMENT, SUCH AS A DRAIN PAN, WHEN FUELING TO CATCH SPILLS/LEAKS.

IF MAINTENANCE MUST OCCUR ONSITE, USE A DESIGNATED AREA AND SECONDARY CONTAINMENT, LOCATED AWAY FROM DRAINAGE COURSES, TO PREVENT THE RUNOFF OF STORMWATER AND THE RUNOFF OF SPILLS.

ALWAYS USE SECONDARY CONTAINMENT, SUCH AS DRAIN PAN OR DROP CLOTH, TO CATCH SPILLS OR LEAKS WHEN REMOVING OR CHANGING FLUIDS. PROMPTLY TRANSFER USED FLUIDS TO PROPER WASTE OR RECYCLING CONTAINERS. IMMEDIATELY REMOVE FROM SITE AND AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

TO THE EXTENT THAT THE WORK CAN BE ACCOMPLISHED SAFELY, SPILLS OF OIL OR PETROLEUM PRODUCTS SHOULD BE CONTAINED AND CLEANED UP IMMEDIATELY. SPILLS SHOULD BE COVERED AND PROTECTED FROM STORMWATER RUNOFF DURING RAINFALL TO THE EXTENT THAT IT DOESN'T COMPROMISE CLEAN UP ACTIVITIES.

CLEANUP OF PETROLEUM LEAKS OR SPILLS:

CLEAN UP LEAKS AND SPILLS IMMEDIATELY. NEVER HOSE DOWN OR BURY SPILLS. REMOVE CONTAMINATED SOILS AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

MINOR SPILLS

CONTAIN THE SPREAD OF THE SPILL, REMOVE CONTAMINATED SOILS, AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SEMI-SIGNIFICANT SPILLS

SPILLS SHOULD BE CLEANED UP IMMEDIATELY WITH THE AID OF AS MANY ONSITE PERSONNEL AS NECESSARY. IMMEDIATELY CONTAIN THE SPILL BY CONSTRUCTING AN EARTHEN DIKE. DIG UP AND PROPERLY DISPOSE OF CONTAMINATED SOIL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SIGNIFICANT SPILLS

FOR SIGNIFICANT SPILLS THAT CANNOT BE CONTROLLED BY PERSONNEL IN THE IMMEDIATE VICINITY, THE FOLLOWING STEPS SHOULD BE TAKEN:

NOTIFY THE LOCAL EMERGENCY RESPONSE BY CONTACTING 911. IN ADDITION TO 911, THE CONTRACTOR WILL NOTIFY THE PROPER 24 HOUR EMERGENCY CONTACT. THE SERVICES OF A SPILLS CONTRACTOR OR A HAZ-MAT TEAM SHOULD BE OBTAINED IMMEDIATELY. CONSTRUCTION PERSONNEL SHOULD NOT ATTEMPT TO CLEAN UP UNTIL THE APPROPRIATE AND QUALIFIED STAFFS HAVE ARRIVED AT THE JOB SITE.

THE CONTRACTOR IS REQUIRED TO ADHERE TO ALL REPORTING REQUIREMENTS OF GEORGIA'S OIL OR HAZARDOUS MATERIAL SPILLS OR RELEASES ACT (O.C.G.A. §§12-14-2, ET SEQ.), 40 CFR PART 117 AND 40 CFR PART 302. WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO OR IN EXCESS OF A REPORTING QUANTITY ESTABLISHED UNDER EITHER GEORGIA'S OIL OR HAZARDOUS MATERIAL SPILLS OR RELEASES ACT (O.C.G.A. §§12-14-2, ET SEQ.), 40 CFR 117 OR 40 CFR 302 OCCURS DURING A 24 HOUR PERIOD, THE CONTRACTOR IS REQUIRED TO NOTIFY EPD AT (404) 658-4863 OR (800) 241-4113 AND THE NATIONAL RESPONSE CENTER (NRC) AT (800) 424-8802 IN ACCORDANCE WITH THE REQUIREMENTS OF GEORGIA'S OIL OR HAZARDOUS MATERIAL SPILLS OR RELEASES ACT (O.C.G.A. §§12-14-2, ET SEQ.), 40 CFR 117 AND 40 CFR 302 AS SOON AS HE/SHE HAS KNOWLEDGE OF THE DISCHARGE.

POST CONSTRUCTION POLLUTION CONTROL MEASURES:

DISTURBED AREAS WILL BE RETURNED TO PRE-CONSTRUCTION GRADES AND SLOPES AND PERMANENT GRASS VEGETATION WILL BE ESTABLISHED AS WORK PROGRESSES TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED.

THE CONTRACTOR SHALL ENSURE SATISFACTORY GROWTH AND COVERAGE OF PERMANENT GRASS VEGETATION ON DISTURBED AREAS. GRASSED AREAS WILL BE CONSIDERED ACCEPTABLE WHEN PERMANENT GRASS VEGETATION HAS REACHED A POINT OF MATURITY. COVERAGE IS AT LEAST 95% OF THE TOTAL AREA WITH NO BARE SPOTS EXCEEDING ONE SQUARE FOOT, AND GROUND SURFACE IS FULLY STABILIZED AGAINST EROSION. SILT FENCE AND MULCH INSTALLED DURING INSTALLATION OF THE PIPELINE WILL BE KEPT IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATION HAS BEEN EFFECTIVELY ESTABLISHED AND CONTRACTOR HAS RECEIVED FINAL ACCEPTANCE BY THE OWNER.

WASTE MATERIALS:

WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT BY A SECTION 404 PERMIT. ANY WASTE MATERIAL FROM CONSTRUCTION ACTIVITIES SHALL BE COLLECTED AND STORED IN A SECURE, LIDDED CONTAINER. AT THE END OF EACH WORK DAY WASTE MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF PROPERLY.

IF EXISTING SANITARY FACILITIES ARE UNAVAILABLE, PORTABLE SANITARY FACILITIES SHALL BE PROVIDED. CONTRACTOR SHALL PAY THE COST FOR INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY SANITARY FACILITIES. UNITS SHALL BE CLEANED AND SANITARY WASTE SHALL BE COLLECTED A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER AND IN COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

UNITS SHALL BE LOCATED AT SUCH PLACES AS APPROVED BY THE OWNER AND WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLECTABLE.

THESE PLANS ARE IN COMPLIANCE WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, AND SEPTIC SYSTEM REGULATIONS.

INSPECTION OF BMP'S:

CONTRACTOR IS TO NOTIFY ES AND PC DESIGN PROFESSIONAL WHEN CONSTRUCTION IS TO BEGIN. THE DESIGN PROFESSIONAL WHO PREPARED THE ES AND PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION IN ACCORDANCE WITH PART IV A.5, PAGE 25 OF THE GENERAL NOTES PERMIT.

ES&PC PLAN AMENDMENTS/REVISIONS:

ANY AMENDMENT TO THE EROSION CONTROL PLANS WHICH HAS A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE ES&PC PLAN DESIGN PROFESSIONAL.

CONCRETE WASHDOWN:

CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, DRUMS, THE REAR OF VEHICLES, AND/OR ANY OTHER EQUIPMENT IS PROHIBITED ON THE PROJECT SITE.

PRIMARY PERMITTEE:

THE PRIMARY PERMITTEE FOR THIS SITE IS THE GEORGIA DEPARTMENT OF NATURAL RESOURCES, #2 MLK JR. DRIVE, SUITE 1352, ATLANTA, GA, 30334, 912-381-2511, JOEL.GRIFFIN@DNR.GA.GOV.

STATE WATERS:

THIS PROJECT IS LOCATED WITHIN 200 FEET OF STATE WATERS. THERE IS A MINOR ENCROACHMENT ASSOCIATED WITH THIS PROJECT. THE RECEIVING WATERS FOR THIS PROJECT ARE DEAN CREEK. SINCE THE PROJECT HAS TO OBTAIN A CMAA PERMIT A BUFFER VARIANCE IS NOT REQUIRED.

EXISTING LAND USE:

THE EXISTING LANDS AT THE PROJECT SITE ARE A NATIONAL ESTUARINE RESEARCH RESERVE.

CRITICAL AREAS INFORMATION:

THERE ARE NO CRITICAL AREAS WITHIN THIS PROJECT.

WETLANDS:

THERE ARE WETLANDS WITHIN THE PROJECT AREA.

EROSION, SEDIMENTATION AND POLLUTION CONTROL INSPECTIONS AND REPORTING:

INSPECTIONS AND REPORTING REQUIREMENTS ARE NOT REQUIRED.

EROSION CONTROL NOTES:

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.

THE EXTENT AND LOCATION OF EROSION CONTROL MEASURES SHOWN ARE THE ESTIMATED REQUIRED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO THE ACTUAL FIELD CONDITIONS, AND WILL BE INSTALLED AT THE OWNER/DEVELOPERS EXPENSE WHEN DIRECTED BY THE PROPER GOVERNING AUTHORITY.

ALTERNATE TYPE C SILT FENCE CAN BE USED PROVIDED IT IS APPROVED BY THE GEORGIA DEPARTMENT OF TRANSPORTATION.

NO CLEARING OF THE SITE UNTIL ALL BASINS, DIVERSIONS, AND SEDIMENT CONTROLS ARE INSTALLED, STABILIZED, AND FUNCTIONAL.

THE GSWCC MANUAL REQUIRES TWO ROWS OF TYPE S SEDIMENT BARRIERS, 36 INCHES APART, ALONG ALL STATE WATERS.

IMPAIRED STREAM REQUIREMENTS, TMDL PLANS, AND ALTERNATIVE BMP NOTES

1. STORM WATER FROM THIS PROJECT WILL DISCHARGE INTO DEAN CREEK, A TIDAL STREAM THAT DISCHARGES INTO DOBOY SOUND, WHICH IS NOT AN IMPAIRED STREAM (SOUND/HARBOR).
2. ALTERNATIVE BMP'S WILL NOT BE INSTALLED DURING THIS PROJECT.

NON EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25 FEET OF A COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

GIVEN THE SMALL "SITE" DRAINAGE AREAS ASSOCIATED WITH THIS PROJECT, DIVERTING FLOWS AND/OR CONSTRUCTING TEMPORARY SEDIMENT BASINS OR EQUIVALENT CONTROLS IS NOT ATTAINABLE. SILT FENCE, TEMPORARY GRASSING, MULCHING AND PERMANENT GRASSING WILL BE USED FOR SEDIMENT CONTROL FOR THE PROJECT.

ACTIVITY	2020								
	MONTH								
	1	2	3	4	5	6	7	8	9
EROSION CONTROL INSTALLATION OF TURBIDITY CURTAIN (TC-S)									
DEMOLITION AND CONSTRUCTION									
MAINTAIN INSTALLED EROSION CONTROL BMP'S UNTIL PERMANENT VEGETATION IS ESTABLISHED AND EFFECTIVE CONTROL OF EROSION HAS BEEN ACHIEVED IN ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES (TC-S)									

DRAINAGE BASIN INFORMATION

ONSITE DRAINAGE BASIN

AREA DESCRIPTION	RUNOFF COEFFICIENT (C)	PRE- CONSTRUCTION SIZE (SQUARE FEET)	PRE- CONSTRUCTION CA	POST- CONSTRUCTION SIZE (SQUARE FEET)	POST- CONSTRUCTION CA
WOODEN BOARDWALK	0.75	1,727	1,295	4,312	3,234
GRASS/VEGETATION	0.25	4,152	1,038	2,760	690
ALUMINUM GANGWAY	0.75	540	405	540	405
TOTAL		6,419	2,738	7,612	4,329

PRE-CONSTRUCTION RUNOFF COEFFICIENT = 2,738/6,419 = 0.43

POST-CONSTRUCTION RUNOFF COEFFICIENT = 4,329/7,612 = 0.57

NOTE: THERE IS NO OFFSITE DRAINAGE

SINCE THERE IS NO PUBLISHED RUNOFF COEFFICIENT FOR A WOODEN BOARDWALK OR ALUMINUM GANGWAY A VALUE OF 0.75 WAS ASSUMED

FREEDMAN
ENGINEERING
GROUP

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1000 Whitlock Avenue
Suite 320, #218
Marietta, GA 30064
(770) 851-3175
David@Freedmanengineering.com

Seal:



Date: 05/16/2023

Project No:

Drawn By: MW

Checked By: DF

DEAN CREEK
NATURE TRAIL IMPROVEMENTS

GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

Revisions:

NO.	DATE	DESCRIPTION
1	11/20/2023	UPDATED TOPO

Sheet Title:

EROSION AND
SEDIMENTATION
CONTROL
DETAILS AND
NOTES

Sheet No:

C-16

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED
AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY
MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION

DAVID FREEDMAN
P.E. - LICENSE NO. 14392, GSWCC LEVEL II CERTIFICATION NO. 66474

5/16/2023

DATE



McIntosh County Building and Zoning Inspector

Post Office Box 2694
Darien, GA 31305

Archie Davis, Director
Donna Moody, Inspector
Glenda Davis, Secretary

Phone: 912-437-6603
FAX: 912-437-5088

David Freedman, Principal
Freedman Engineering Group
1000 Whitlock Avenue, Suite 320, #218
Marietta, Georgia, 30064

Dear Mr. Freedman;

I have reviewed the documents submitted to me for the following projects at Sapelo Island:

Sapelo Island Nature Trail Upgrades

Sapelo Island Community Dock Improvements

Sapelo Island Barge Landing Improvements

Sapelo Island Boathouse and Hoist Improvements

This is to certify that the proposed changes are not in violation of any local zoning ordinances.

If any additional information is needed, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Archie Davis", is written over a horizontal line. The signature is stylized and includes a date "24 Nov 2022" written in the middle.

Archie Davis
McIntosh County
Building & Zoning Inspector

DEAN CREEK NATURE TRAIL IMPROVEMENTS PERMIT DRAWINGS SAPELO ISLAND, GEORGIA

OWNER'S REPRESENTATIVE

JOEL GRIFFIN
 SOUTHERN REGION ENGINEERING
 AND CONSTRUCTION
 912-381-2511
 JOEL.GRIFFIN@DNR.GA.GOV

CIVIL ENGINEER

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 MKidd@RootDStudio.com

STRUCTURAL ENGINEER

EMC ENGINEERING SERVICES, INC.
 1211 MERCHANT WAY, SUITE 201
 STATESBORO, GEORGIA, 30458
 (912) 764- 7022
 STATESBORO@EMC-ENG.COM

FOR THE

GEORGIA DEPARTMENT OF NATURAL RESOURCES
 ENGINEERING AND CONSTRUCTION

#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
 ATLANTA, GA 30334
 (404) 656-6531

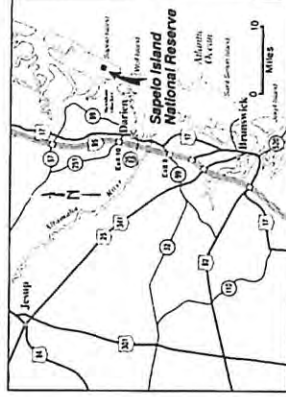
NOVEMBER, 2022

DRAWING INDEX

- C-1 COVER SHEET
- C-2 EXISTING CONDITIONS
- C-3 SITE PLAN KEY MAP
- C-4 SITE PLAN
- C-5 SITE PLAN
- C-6 CAUSEWAY SECTIONS
- C-7 BOARDWALK PROFILES
- C-8 CONSTRUCTION DETAILS
- C-9 CONSTRUCTION DETAILS
- C-10 CONSTRUCTION DETAILS
- C-11 CONSTRUCTION DETAILS
- C-12 CONSTRUCTION DETAILS
- C-13 CONSTRUCTION DETAILS



PROJECT LOCATION MAP
 NTS



LOCATION MAP
 NTS

AD
 24 NOV 22

**FREEDMAN
 ENGINEERING
 GROUP**
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 770-851-3175
 DavidF@Freedmanengineering.com



DATE: 11/22/2022
 PROJECT NO: N/A
 DRAWN BY: JWG
 CHECKED BY: DF

**DEAN CREEK
 NATURE TRAIL IMPROVEMENTS**
 GEORGIA DEPARTMENT OF NATURAL RESOURCES
 #2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
 ATLANTA, GA 30334

NO.	DATE	DESCRIPTION

DATE PLOTTED: 11/22/2022
 COVER SHEET

SHEET NO: C-1



Know what's below.
 Call before you dig.

24hr. Contact
 JOEL GRIFFIN
 912-381-2511

1. CONSTRUCT, TO STAKE OUT NEW INDIVIDUALS FOR OWNERS.
2. ALL COMBUSTIBLES TO BE SOUTHERN YELLOW PINE NUMBER 1 OR BETTER, OR WHITE PINE, OR WHITE OAK, OR HARD PINE, AND SHALL BE TREATED TO PROTECT AGAINST SUCH A HIGH MORTALITY AND SAVING THE TREES FROM BEING OTHERWISE DAMAGED BY INSECTS WILL.
3. LUMBER/SHOULDER SHALL BE TREATED WITH PRESERVATIVES TO PREVENT THE FOLLOWING REQUIREMENTS IN ACCORDANCE WITH AMERICAN NATIONAL ASSOCIATION STANDARD UNIFORM GRADING SYSTEM.
4. CATEGORY OR "B" DIAMETER PILES AND "D" OR "E" TIMBERS USE "C" OR "D" TREATMENT.
5. STRUCTURAL LUMBER FOR ROWDOWLS AND STAIRS "B" OR "C" TREATMENT.
6. HANDRAIL SYSTEM INCLUDING "A" TOP RAIL, PLATFORM, AND HANDRAIL CURBING - "A" OR "B" TREATMENT.
7. USE "B" OR "C" TREATMENT.
8. ALL LUMBER TO BE TREATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR THE WOOD PROTECT ASSOCIATION (OR TREATING WOOD APPLY A COAT OF THE SAME PRESERVATIVE USED IN TREATING TO ALL SIZES OF LUMBER TO BE TREATED).
9. ALL LUMBER TO BE TREATED WITH THE SAMPSON'S GLASS TREATLESS STEEL STAINLESS STEEL NAILS AS RECOMMENDED BY ANCHOR MANUFACTURER.
10. ALL HANDRAIL BRACKETS, CHAIRS, NAILS, ETC.) TO BE STAINLESS STEEL.
11. ALL DECORATIVE STAINLESS STEEL NAILS & BOLTS AT ANCHOR TO STAINLESS.
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17. HOLE LOCATED PLACE.
18. FOR BEST PROTECTION, BURIED HOLES OF SAME DIMENSIONS AS BULBS AND JARVIS.
19. WASHERS SHALL BE PROVIDED UNDER ALL BARK SKELEMS AND KNITS.
20. BARK SHALL BE STAMPED AND HEAVY DUTY BARK SHIPS TO BE USED.
21. BUCKING SHALL BE DONE BY HAND, NOT BY MACHINE.
22. PREVENT GRIPPING.
23. PREVENT CRACKING.
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AD 24 NOV 22

**FREEDMAN
ENGINEERING
GROUP**

David Freedman, PE, LEED AP-BD+C
1500 Whittaker Avenue
Suite 328, #218
Marinette, CA 95964
(707) 851-3175
David@freedmanengineering.com



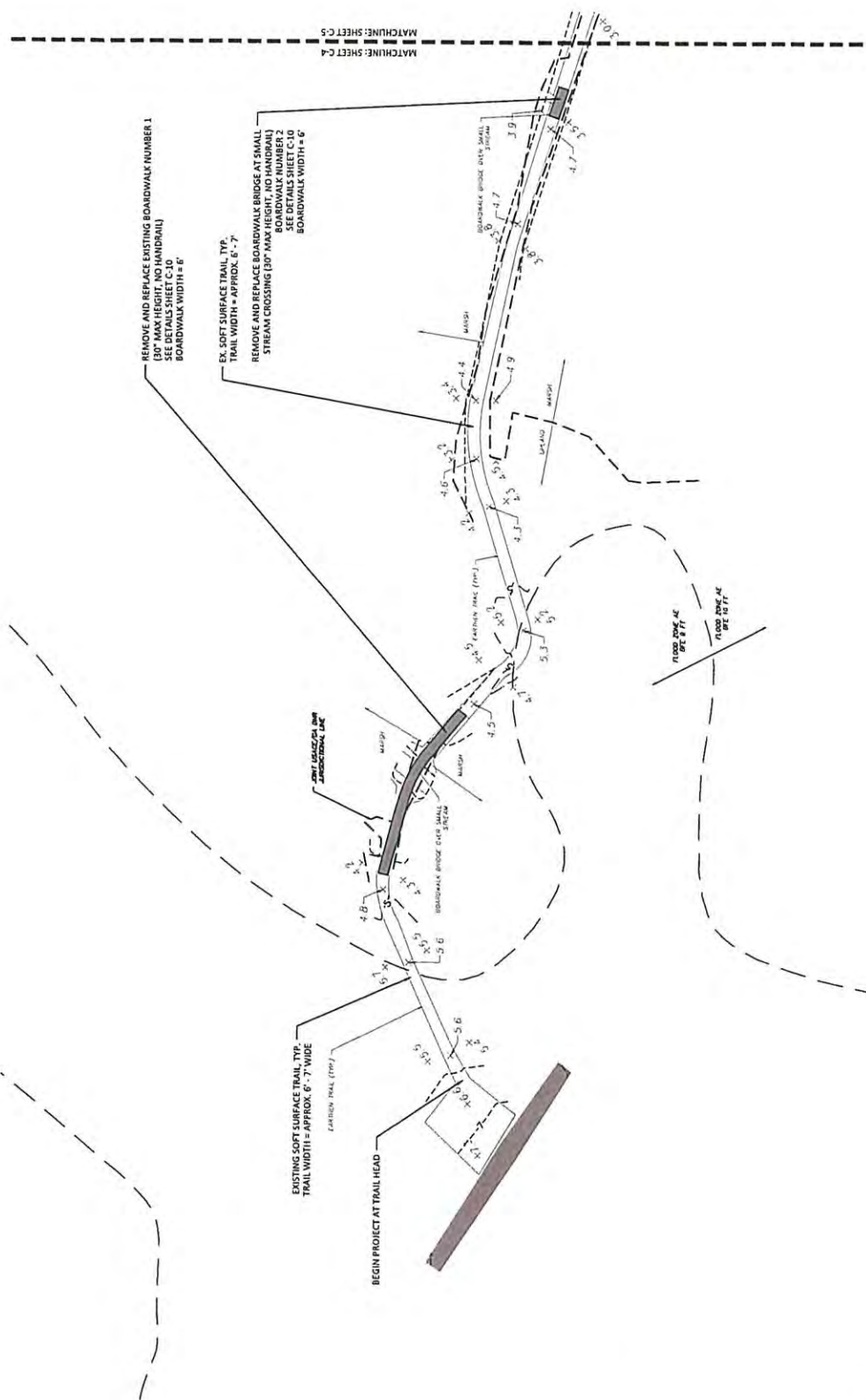
Date:	11/22/2012
Project No:	
Drawn By:	MW
Checked By:	DF

DEAN CREEK
NATURE TRAIL IMPROVEMENTS

[illegible]

Sheet Title:
SITE PLAN
KEY MAP

Sheet No: C-3



Know what's below.
Call before you dig.

Phosphorylation of the protein kinase C (PKC) α isoform is a critical step in the activation of this enzyme, which is involved in a variety of cellular processes, including cell growth, differentiation, and survival. The phosphorylation of PKC α is regulated by a number of factors, including the phosphatidylinositol 3-kinase (PI3K) pathway. PI3K is a key component of the insulin-like growth factor (IGF) receptor signaling pathway, which is involved in the regulation of growth and differentiation. The PI3K pathway is activated by the binding of IGF to its receptor, which leads to the recruitment of PI3K and the production of phosphatidylinositol (3,4,5)-trisphosphate (PIP₃). PIP₃ then recruits and activates the phosphoinositide-dependent kinase (PDK), which in turn phosphorylates PKC α at a specific site, leading to its activation. The activation of PKC α is essential for the IGF signaling pathway to exert its effects on cell growth and differentiation.

29 NOV 72

FREEDMAN ENGINEERING GROUP
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 Suite 200, #118
 Atlanta, GA 30334
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 David@freedmanengineering.com

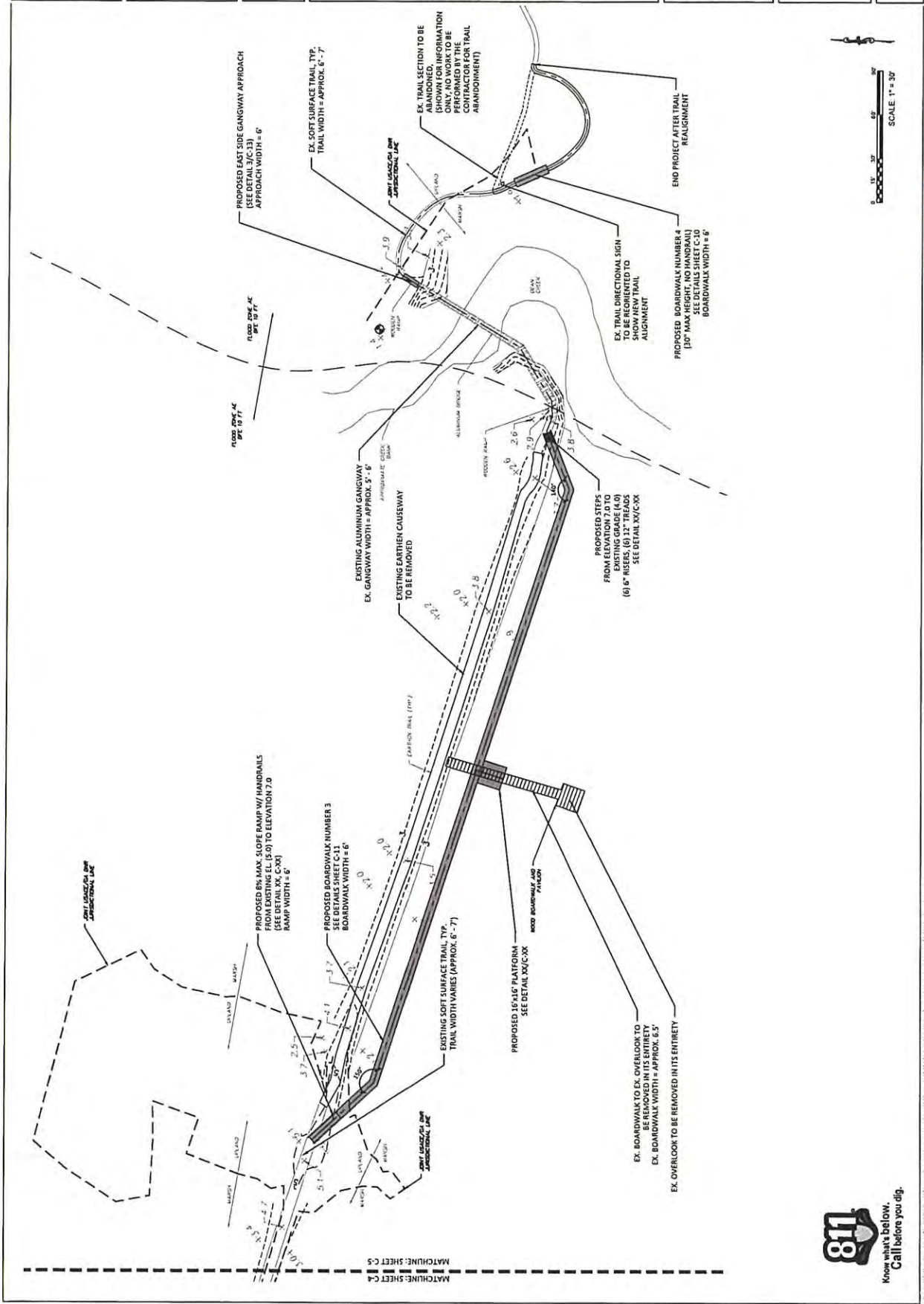
11/22/2022
 Date: 11/22/2022
 Project No: MW
 Drawn By: DF
 Checked By:

DEAN CREEK NATURE TRAIL IMPROVEMENTS
 GEORGIA DEPARTMENT OF NATURAL RESOURCES
 #2 MARTIN LUTHER KING, JR. DRIVE
 ATLANTA, GA 30334

Revisions:	NO.	DATE	EXTENSION

Sheet Title:
SITE PLAN

Sheet No:
C-5



AD 29 Nov 22

811
 Know what's below.
 Call before you dig.

811 is a registered trademark of the National Automated Clearing House Alliance (NACHA). 811 is a service mark of the National Automated Clearing House Alliance (NACHA). 811 is a service mark of the National Automated Clearing House Alliance (NACHA).

**FREEDMAN
ENGINEERING
GROUP**
David Freedman, P.E., LEED AP-RENC
11000 Highway 100, Suite 200
Atlanta, GA 30334
David@freedmanengineering.com



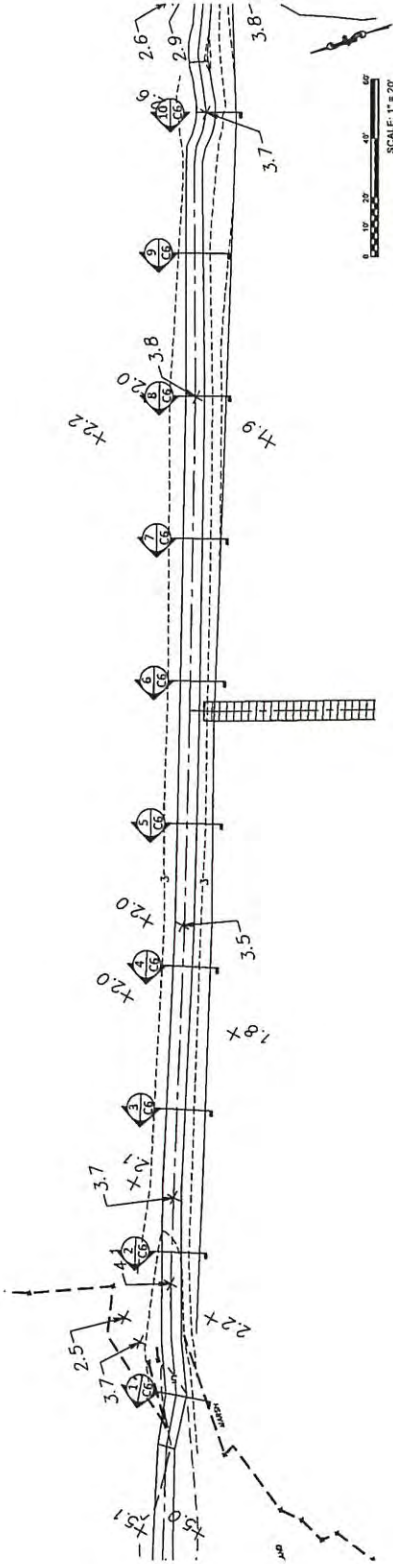
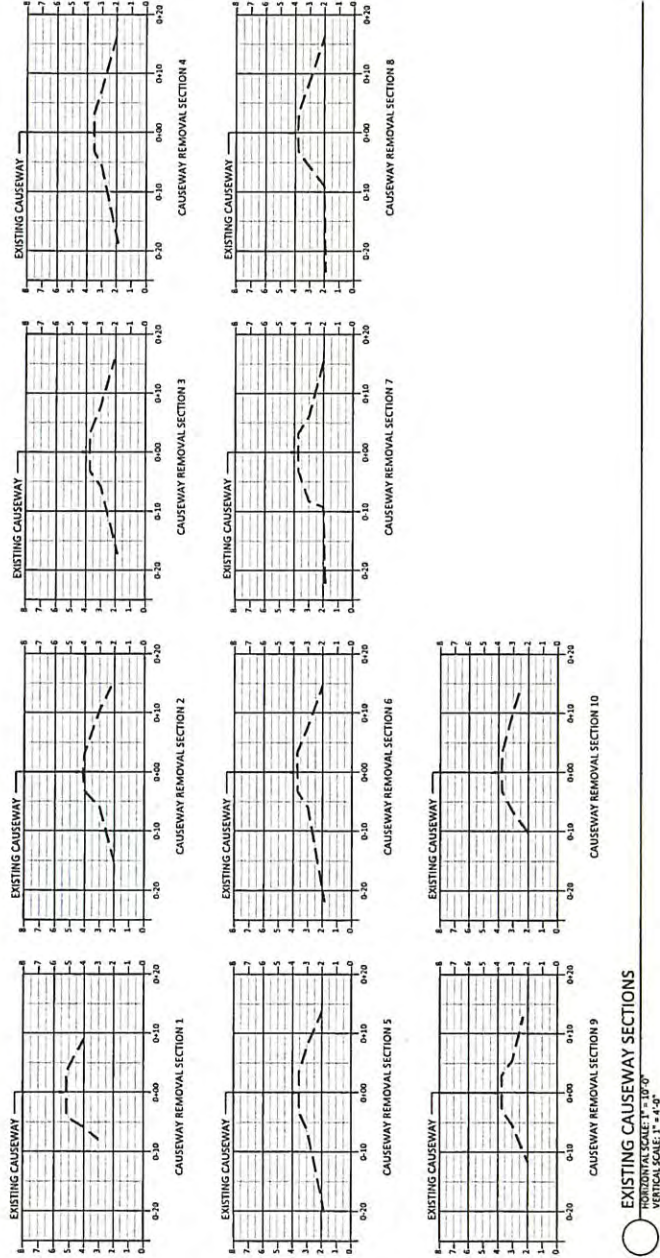
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**DEAN CREEK
NATURE TRAIL IMPROVEMENTS**
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

REVISIONS	DATE	BY	DESCRIPTION

SHEET NO.:
**CAUSEWAY
SECTIONS**

SHEET NO.:
C-6



AD 29 NOV 22

**FREEDMAN
ENGINEERING
GROUP**
Chief Engineer: P.E. LEO J. DOLAN
1000 Virginia Avenue
Suite 200, #200
Atlanta, GA 30304
(770) 851-3175
Dolan@freedmanengineering.com



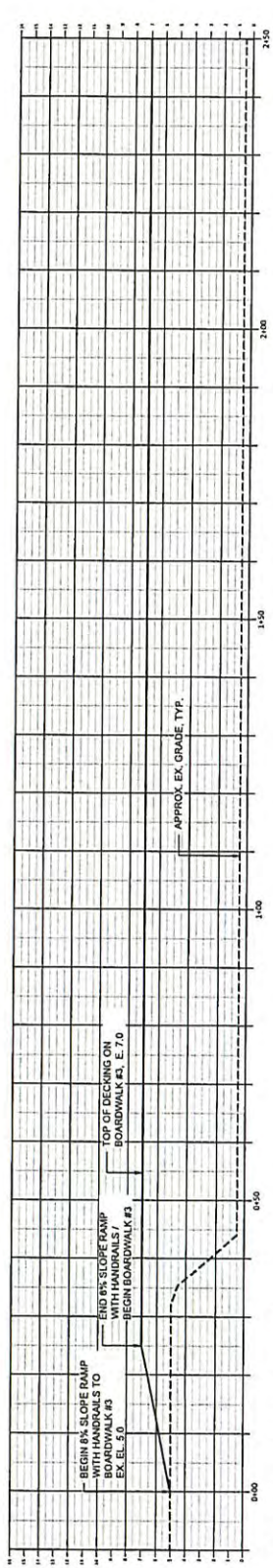
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#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

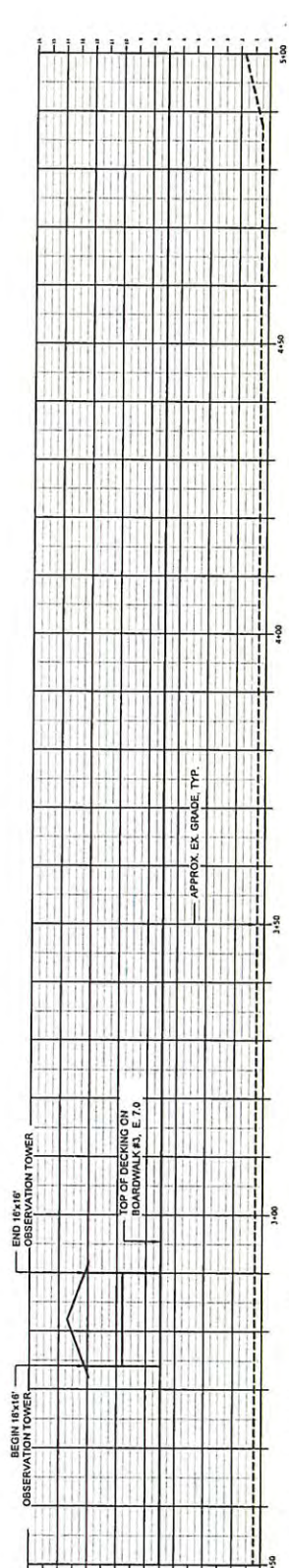
Revisions:	NO.	DATE	DESCRIPTION

Sheet Title:
**BOARDWALK
PROFILES**

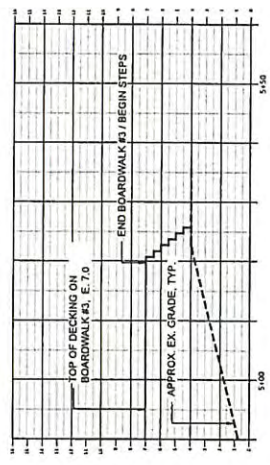
Sheet No.:
C-7



1 BOARDWALK #3 PROFILE: SECTION A
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"

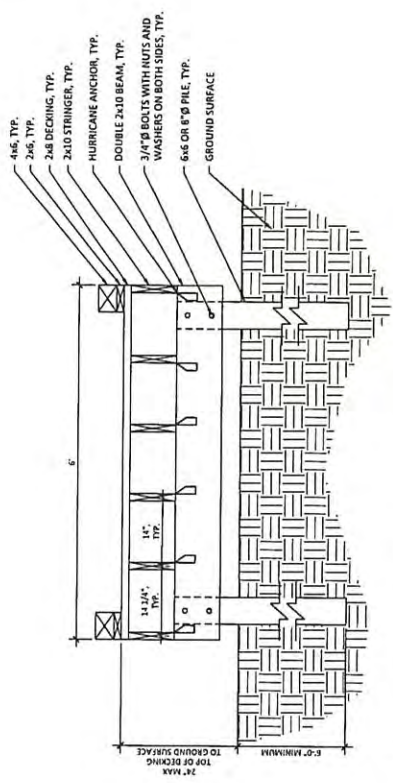


2 BOARDWALK #3 PROFILE: SECTION B
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"

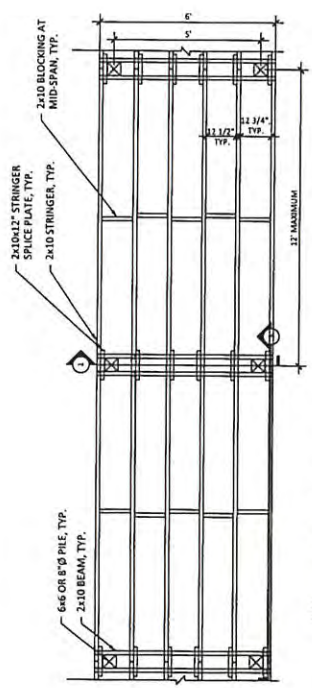


3 BOARDWALK #3 PROFILE: SECTION C
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 4'-0"

AD example CH

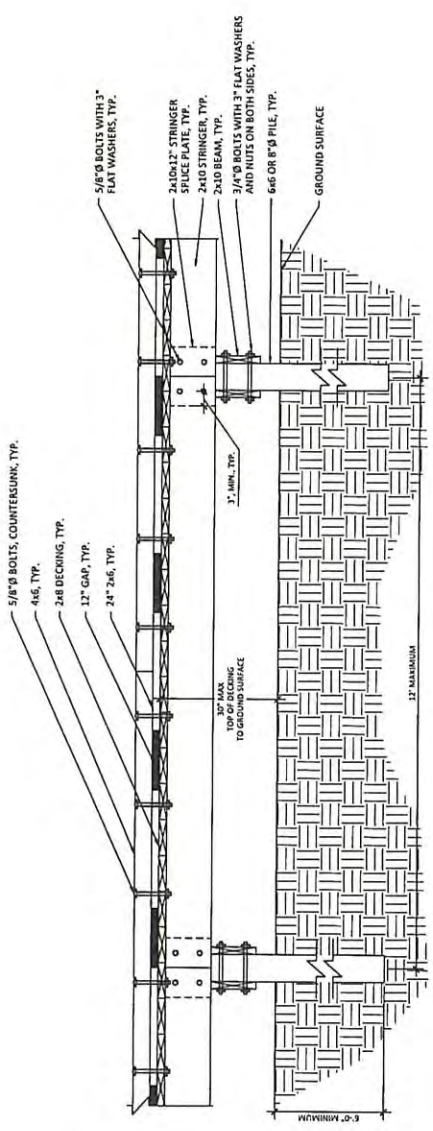


2 TYPICAL CROSS SECTION - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1" = 1'-0"



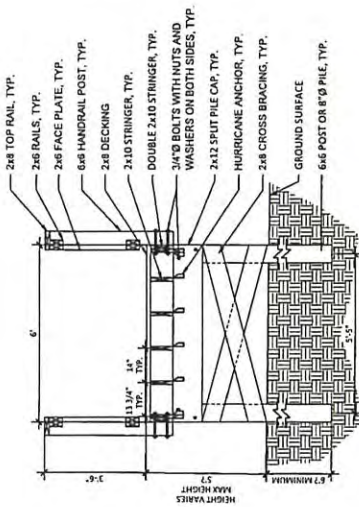
NOTE
BOARDWALK 1 IS 105 FEET LONG.
BOARDWALK 2 IS 18 FEET LONG.
BOARDWALK 4 IS 24 FEET LONG.

1 TYPICAL FRAMING PLAN - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1/2" = 1'-0"

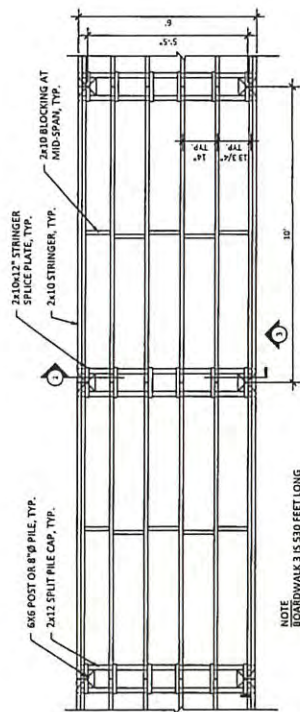


3 TYPICAL PROFILE SECTION - BOARDWALKS 1, 2, AND 4 (NO HANDRAIL)
1" = 1'-0"

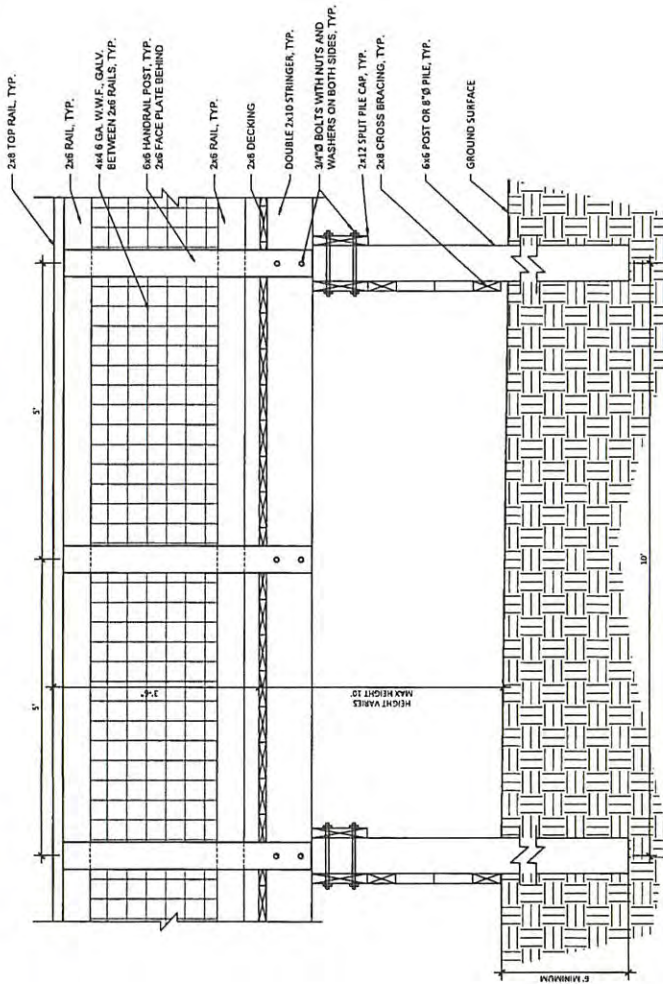
AD 202002



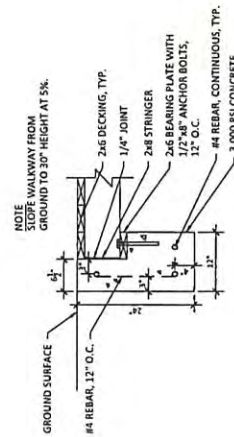
2 BOARDWALK 3 CROSS SECTION
1/2" = 1'-0"



1 BOARDWALK 3 FRAMING PLAN
1/2" = 1'-0"



3 TYPICAL PROFILE SECTION - BOARDWALK 3
3" = 1'-0"



4 ABUTMENT DETAIL
3" = 1'-0"

AD 29 Nov 22

**FREEDMAN
ENGINEERING
GROUP**
David Freedman, P.E., LEED AP BD+C
1509 Whitehall Avenue
Suite 200, #119
Atlanta, GA 30309
(770) 651-1175
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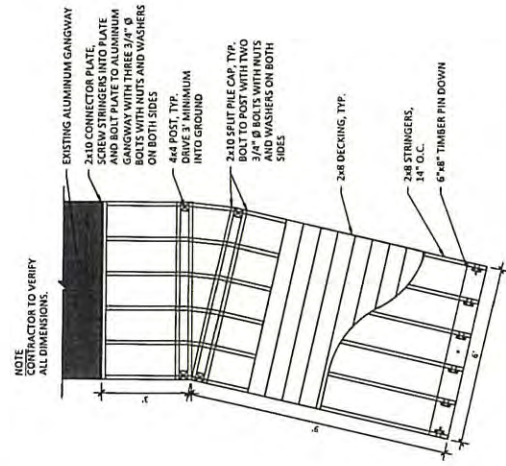
Date: 11/22/2022
Project No.:
Drawn By: MW
Checked By: DF

**DEAN CREEK
NATURE TRAIL IMPROVEMENTS**
GEORGIA DEPARTMENT OF NATURAL RESOURCES
#2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1352
ATLANTA, GA 30334

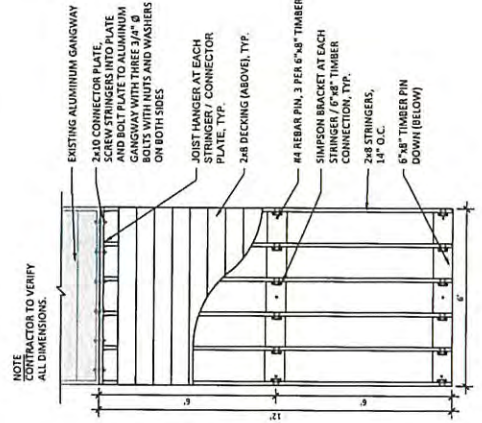
Revisions:	NO.	DATE	DESCRIPTION

Sheet Title:
**CONSTRUCTION
DETAILS**

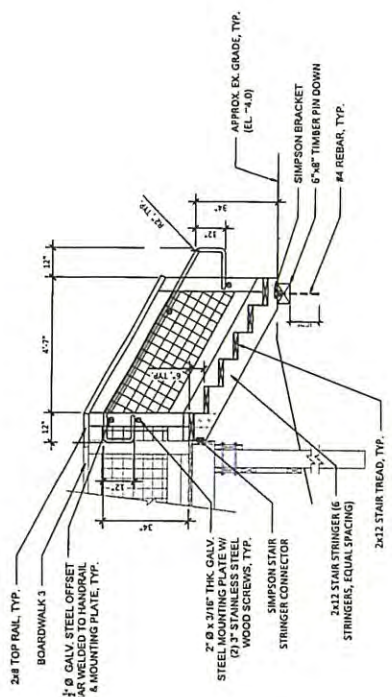
Sheet No.:
C-10



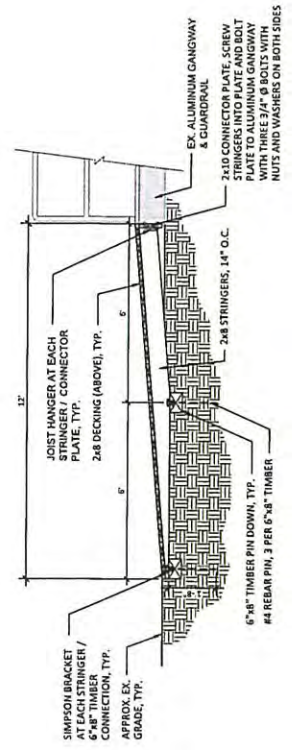
2 WEST SIDE GANGWAY APPROACH - FRAMING PLAN
1/2" = 1'-0"



4 EAST SIDE GANGWAY APPROACH - FRAMING PLAN
1/2" = 1'-0"

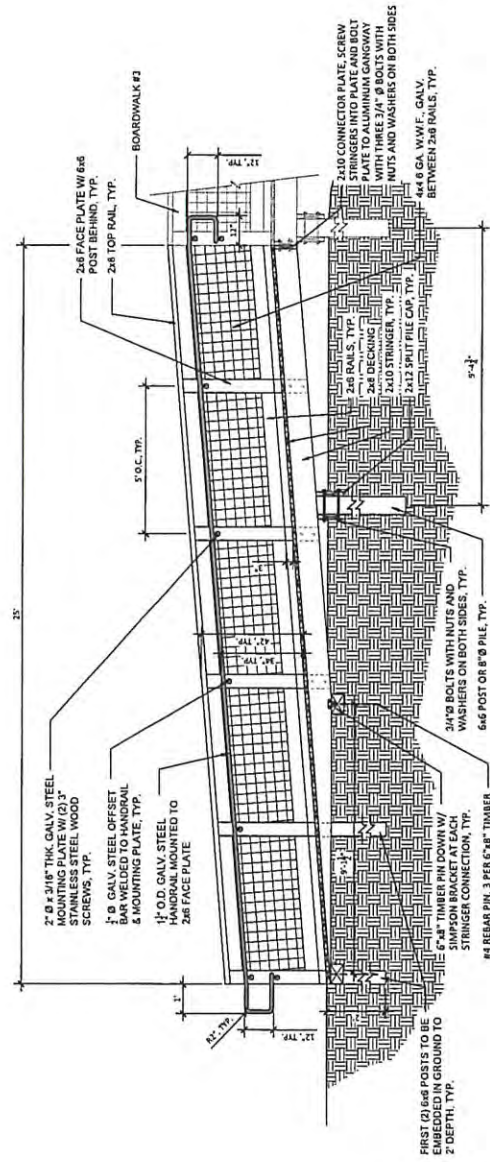


1 PROPOSED STEPS AT END OF BOARDWALK 3 (AT WEST SIDE GANGWAY APPROACH) - SECTION
1/2" = 1'-0"

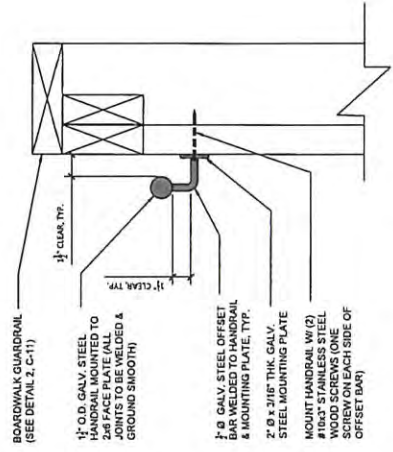


3 EAST SIDE GANGWAY APPROACH - SECTION
1/2" = 1'-0"

AD 24/10/22

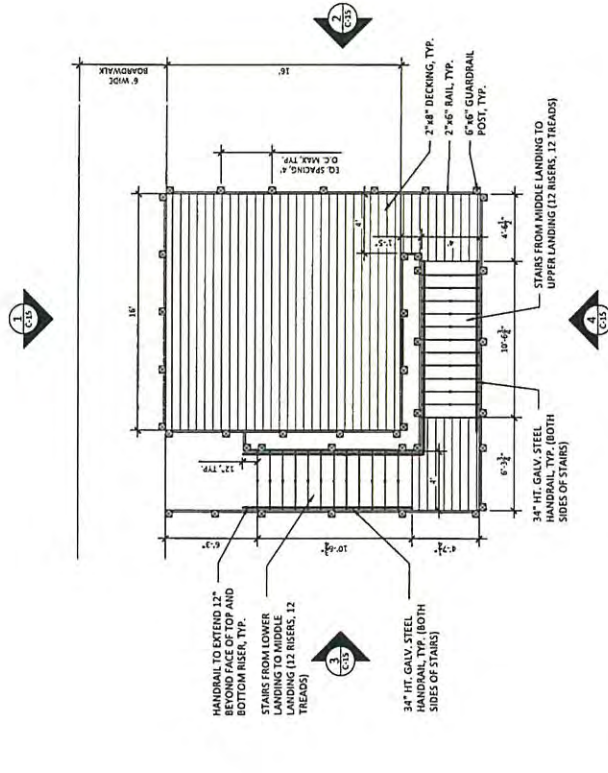


1 RAMP @ BEGINNING OF BOARDWALK #3 - LONGITUDINAL SECTION
1/2" = 1'-0"

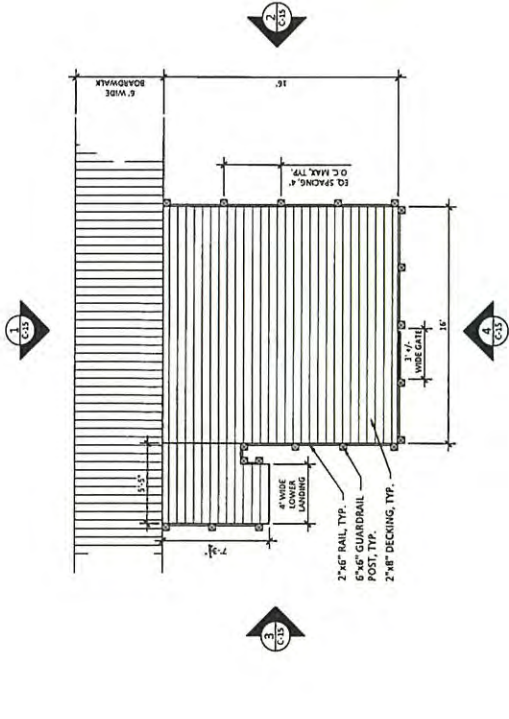


2 GALV. STEEL HANDRAIL - CROSS SECTION
3" x 1'-0"

AD 79 Nov 22



2 PLATFORM FLOOR PLAN - UPPER PLATFORM
1/4" = 1'-0"



1 PLATFORM FLOOR PLAN - LOWER PLATFORM
1/4" = 1'-0"

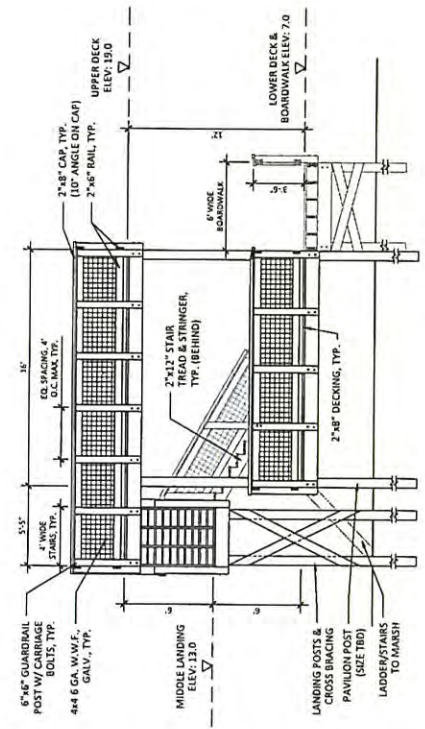
AD 29 Nov 22

NO.	DATE	DESCRIPTION

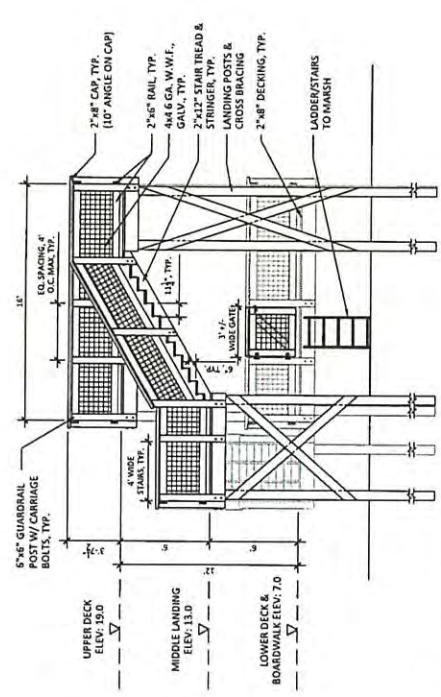
SHEET TITLE:
**CONSTRUCTION
DETAILS**

SHEET NO.
C-13

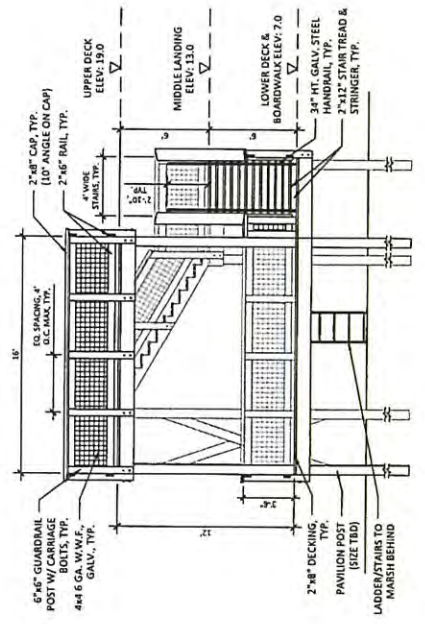
AD 29/11/22



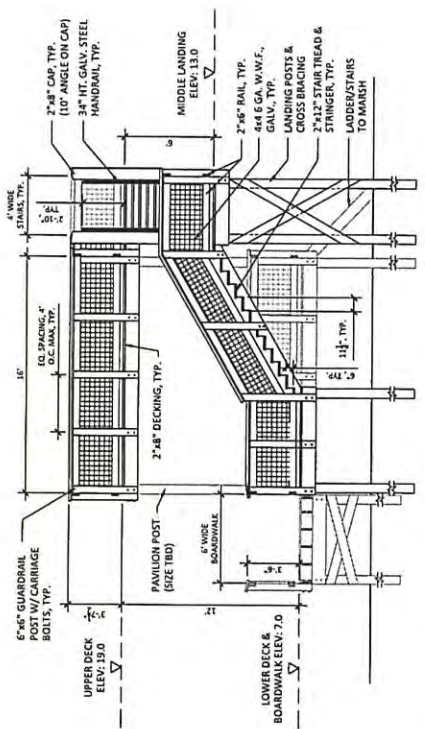
2 PLATFORM LEFT SIDE ELEVATION
1/4" = 1'-0"



4 PLATFORM REAR ELEVATION
1/4" = 1'-0"



1 PLATFORM FRONT ELEVATION
1/4" = 1'-0"



3 PLATFORM RIGHT SIDE ELEVATION
1/4" = 1'-0"

ALTERNATIVE ANALYSIS
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

Several alternatives were considered as discussed below:

No Action – If no action is taken the Dean Creek Nature Trail will eventually become unusable. The boardwalks to be replaced, #1 and #2, are nearing the end of their useful life and need to be replaced. The boardwalk to the observation platform and the platform itself are underwater frequently under high tide events. As sea level rise continues to increase high tide levels, the tower and boardwalk will not be accessible. In addition, the earthen causeway will eventually be underwater rendering the trail useless.

Trail Improvements Leaving the Causeway in Place - Replacing the two existing boardwalks is only a short-term solution. The tower and boardwalk to the tower could be replaced and raised but the earthen causeway will eventually become an issue. If the causeway is left in place a boardwalk could be constructed over it. While this is a workable solution it does not contain the environmental benefits of removing the causeway.

Trail Improvements as Proposed - This was the selected alternative. Under this alternative the Dean Creek Nature Trail will function for many years into the future. The aging boardwalks, #1 and #2, will be replaced. The earthen causeway will be removed and the original flow regime in the marsh will be restored. The causeway will be replaced with boardwalk #3 and the new two-story observation tower which will provide expansive views of the marsh. In addition, the tower will include easy access to the marsh for the many scientists on Sapelo Island performing critical marsh related research. The other improvements, the two gangway approaches and Boardwalk #4, will provide a sustainable trail that provides education and interpretation while minimizing impacts to the marsh.

LANDFILL OR HAZARDOUS WASTE STATEMENT
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

The following EPD documents were searched for the presence of landfills or hazardous waste sites in the vicinity of the project:

Regulated Solid Waste Facilities
Inert Waste Landfills
Landfills – Closed
Landfills – In Closure
Hazardous Site Inventory

There was one facility located on Sapelo Island. It is a Construction and Demolition Landfill located at 31.4167, -81.275. A Google Earth image showing the landfill location and proposed project location are below.



Based on the above an inquiry has been made to the appropriate authorities that the proposed project is not over a landfill or hazardous waste site and the site is otherwise suitable for the proposed project.

WATER QUALITY CERTIFICATION
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

The joint application has been submitted to the U.S. Army Corps of Engineers for review. They will determine the need for a water quality certification. The Corps has not responded to the application yet.

EROSION AND SEDIMENTATION STATEMENT
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

The project will be conducted in compliance with applicable erosion and sediment control responsibilities, if required. This includes adherence to the 50-foot buffer requirement. Some land disturbance will occur within the 25-foot buffer. If this disturbance exceeds 500 square feet, a Buffer Variance Application will be submitted to the Georgia EPD.

PUBLIC INTEREST STATEMENT
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
DEAN CREEK NATURE TRAIL IMPROVEMENTS
SAPELO ISLAND, GEORGIA

The Sapelo Island National Estuarine Research Reserve (SINERR, Reserve) is proposing to build a new elevated boardwalk in saltmarsh habitat on the west side of Dean Creek on Sapelo Island. The public interest would be strongly supported by this project because it would allow the Reserve to remove existing infrastructure and facilities that are currently having significant detrimental impacts on marsh habitat in Dean Creek. The project would maintain access to, and support all the current functions of, the Sapelo Island Nature Trail, one of the most significant public resources on the island, and it would substantially enhance the educational and public outreach features of the Trail.

Completed by the Reserve in 1995, the Nature Trail is one of the only publicly accessible trails in the state to fully incorporate beach/primary dunes, ancient dunes, maritime forest, and marshland into a mile-long walking path. It can be used as a self-guided experience, with more than 30 educational signs along the Trail informing visitors about the native flora, fauna and natural habitats found in the area. It includes an Education Pavilion in Dean Creek marsh, which consists of a wooden platform (16 x 16 ft) with interpretive signs, railings, and a lattice roof, accessed by an 80-foot long, low boardwalk perpendicular to the Trail.

The Nature Trail is an extremely valuable, accessible, and informative resource for SINERR's Education and Stewardship programs. The Education Program hosted over 11,000 students on Sapelo from 2012 to 2018, the majority whom experienced the Nature Trail during their class field trips on the island. The Education Program also regularly hosts adult special-interest groups, some of whom request field tours that include the Nature Trail. Countless other visitors utilize and enjoy the Trail on a regular basis, including, for example, visiting researchers and college groups from the University of Georgia Marine Institute, guests staying at Reynold's Mansion State Park, vacationers staying in rental units in Hog Hummock, and community residents and their families and friends. The Reserve's Research Program staff use the Nature Trail as the primary access route to a long-term water quality monitoring station attached to the Dean Creek bridge, and to access a nearby site in the marsh designed for monitoring the long-term effects of sea level rise on native vegetation communities.

The original Nature Trail was laid out in such a way as to incorporate an old earthen causeway that extends 460 feet across the marsh from upland on the west to the west bank of Dean Creek. Records are unavailable, but the location of the causeway and its straight-line design suggest that it was originally used as an access road to Nanny Goat Beach by past owners of the Reynolds Mansion, which lies a few hundred yards to the west. Regardless, the causeway completely bisects marsh habitat on the west side of Dean Creek, functioning as a 460-foot-long levee that precludes any regular surface flow of tidal waters between the north and south sections of the marsh.

While SINERR staff and volunteers have done regular maintenance and repair work on the Nature Trail consistently since its opening 27 years ago, the earthen causeway and the Education Platform have fallen into poor condition in recent years, due to the effects of periodic flooding from increasingly higher-than-average spring tides and storm surges (especially Tropical Storms Irma in 2017 and Nicole in 2022). The stringers for the Education Pavilion and access boardwalk are now buried in the

marsh mud, disrupting the natural hydrological flow in that area and suppressing saltmarsh habitat. During above-average high tides, water floods over the causeway and boardwalk. These increasingly frequent flooding events restrict access to the Trail, but also displace boardwalk pieces, erode low spots on the causeway further, and leave pools of standing water and mud for several days afterwards, which are exacerbated by foot traffic once the Trail re-opens. For better or worse, the dirt causeway has also suffered from unavoidable compaction since December 2021, as it has been used for foot, cart and all-terrain vehicle access by a construction crew replacing the five aging boardwalks in the eastern half of the Nature Trail, between Dean Creek and the beach. In short, the existing infrastructure in Dean Creek is experiencing maintenance needs and issues well above and beyond normal wear and tear.

The access and maintenance problems with the Nature Trail in Dean Creek are only going to get worse over time. Georgia has recorded at least 10 cm of sea level rise in the 30 years since the Nature Trail was built, and ongoing, increasingly rapid sea level rise will only exacerbate flooding impacts going forward. Raising the elevation of the dirt causeway using fill material is not a viable option, as the entire causeway is now within CMPA jurisdictional boundaries; any such work would likely cause more harm than good, even if low-impact methods could be devised. Obviously, replacing the Education Pavilion and access boardwalk in the same footprint with new, elevated structures makes no sense as the causeway becomes increasingly inaccessible over time.

The alternative solution that the Reserve is proposing is to build a new, elevated boardwalk across the Dean Creek marsh, near and parallel to the earthen causeway, and which will include a step-out area that will replace and improve upon, the Education Pavilion. The latter would feature a platform the same size as the existing Pavilion (to accommodate groups) and a second-story observation deck that would provide unimpeded, 360-degree views of the Dean Creek marsh. Replacing both the causeway and the Pavilion (plus access boardwalk) with a single new boardwalk would eliminate any need for the causeway, which the Reserve would then remove and restore to saltmarsh.

The proposed project will not cause unreasonable harm to the environment or natural resources but will instead enhance and improve the natural hydrology of the area, as well as water quality and the conservation of native estuarine and marine species. The removal and subsequent restoration of the raised causeway and Education Pavilion will *expand the area of saltmarsh in Dean Creek, increasing habitat for fish, shrimp, oysters, crabs, clams, other marine and marsh ecotone wildlife*. It will not have any permanent negative impacts on water or oxygen supply. It will also *decrease the long-term erosion and stagnant water* that occur on the deteriorating causeway during flood events. The proposed project should not have any effect on the current channel navigation or shoaling in Dean Creek, as the Creek would be outside the project boundaries. The new boardwalk would be elevated above the highest native vegetation in the marsh (*Spartina alterniflora*), so it will have minimal permanent new impacts on native species or natural habitats at the site.

There is no feasible alternative site for the project proposed here, given that it is one portion of a much longer existing Nature Trail, more than half of the length of which lies on the *east* side of Dean Creek, beginning at the bridge over the creek at the end of the dirt causeway. The only other way for visitors to get across Dean Creek is the paved road from the Reynolds Mansion to Nanny Goat Beach. Although nearby and visible from the Nature Trail, Nanny Goat Beach Road is too narrow (with bordering marshes) to support safe pedestrian use, especially with a single lane wooden deck bridge (with no shoulders or railings) over Dean Creek. The Nature Trail trailhead and parking area is on the west side of Dean Creek, about 500 feet from the beginning of the causeway. Moving the trailhead to the east side of Dean Creek isn't feasible, as it would eliminate any experience of saltmarsh habitat, require clearing a new path through ancient dune woodland habitats, and would render the Trail bridge over Dean Creek pointless.

The project being proposed here would contribute to the public interest on the Georgia coast by maintaining and enhancing all the public benefits provided by the existing section of the Sapelo Island

Nature Trail (i.e., the causeway and Education Pavilion). It would also provide significant new public benefits because it would serve as a publicly accessible, highly visible demonstration site for anyone curious about how saltmarsh habitat can be restored after long-standing human impacts. The Reserve would install new interpretive signage on the boardwalk describing the project and its benefits and would highlight the work in onsite presentations to student field classes and adult tour groups. SINERR was established in 1976 on Sapelo in large part due to the 20+ year legacy of pioneering estuarine research fostered by the last private owner of Sapelo Island, R.J. Reynolds, Jr., in partnership with University of Georgia scientists. The Reserve's core mission has come to include not only research and stewardship, but also education of the public on the concepts of coastal ecology, conservation, sustainability, and habitat restoration. The new boardwalk will provide both a literal and figurative platform for effective, thoughtful, and responsible public outreach and education about relevant coastal management issues. Visiting individuals and groups would not only benefit from the continued function of the Sapelo Island Nature Trail, but they would also have invaluable exposure to the concepts of salt marsh protection and restoration, objectives that fall within the core mission of the Coastal Marshlands Protection Act.

In Summary:

1. Unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will **not** arise as a result of the proposal.
2. Unreasonably harmful or increased erosion, shoaling of channels, or stagnant areas of water will **not** be created as a result of this project.
3. The granting of a permit and the completion of the applicant's proposal will **not** unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.

From: [Peffer, Colby](#)
To: [Tobler, Paul](#); [Davidf](#); [Samson, Doug](#)
Cc: [Vendola, Brent](#); [Griffin, Joel](#); [Hay, Fred](#); [Noble, Josh](#)
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island
Date: Friday, November 10, 2023 12:20:05 PM

Hi Paul,

I'm guessing that David will be able to answer most of these questions but I will address the following one as I can copy and paste it from our communications with the USACE:

- After the berm is removed, will there be any supplemental plantings in its footprint or is the plan to just let nature take over?

Yes, the entire impacted area will be replanted with native salt marsh species appropriate to the elevation of the restored area. These species would be dominated by *Sporobolus alterniflorus* (formerly *Spartina alterniflora*) but would utilize other species as needed in transitional areas (based on the elevation and tidal flooding levels) of the restoration site.

GA DNR staff members will do post-restoration monitoring of the restored sites for 5 years after the completion of the project. Restoring aquatic resource functions and services will be evaluated in two ways: 1) recovery of tidal exchange, and 2) revegetation of the site with native salt marsh species. Both evaluations would utilize the surrounding salt marsh at Dean Creek, which has been a long-term study area for research entities on the coast, as the baseline for restoration success indicators.

Revegetation of the site would be measured through stem density of *Sporobolus alterniflorus* plantings. Pre-monitoring of the undisturbed marsh adjacent to the disturbed areas would be conducted during the summer (growing period) before the removal of the berm. Stem density would be measured within 0.5 square meter quadrats along transects and used as the baseline for restoration. After the berm removal and planting, monitoring will occur within the restoration area. An average stem density equal to 50% of the "baseline" stem density of the surrounding marsh within two years and an average stem density of 80% of the baseline within 5 years of the completion of the projects would be an indicator of success. Additional plantings to achieve this marker would be done to ensure project success if needed. Revegetation and restored tidal flow of the site are the two most important factors in ensuring that the site can begin the natural recovery of species diversity, sediment composition, and above and below-ground biomass.

Recovery of tidal exchange will be the most straightforward evaluation of the restoration. Currently, the causeway does not allow consistent tidal flow outside of extreme high tide

events and twice-yearly spring high tides (these high tide events can last up to a week each occurrence typically.) Restoring regular tidal flow (on normal tidal cycles) would return the area to the hydrological norms of the surrounding salt marsh. This would be monitored utilizing regular observation and video observation of tidal cycles, observing the regular flooding, and ebbing of tidal waters in the restored site.

Colby Pepper
Stewardship Program Coordinator/GIS
Sapelo Island National Estuarine Research Reserve
Sapelo Island, Georgia
M: (912) 506-9069; O: (912) 485-2251
www.sapelonerr.org

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GEORGIA DEPARTMENT OF NATURAL RESOURCES

From: Tobler, Paul <paul.tobler@dnr.ga.gov>
Sent: Thursday, November 9, 2023 11:25 AM
To: Davidf <Davidf@Freedmanengineering.com>; Samson, Doug <Doug.Samson@dnr.ga.gov>
Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

David,

Wanted to provide you with a follow up on the items we discussed this morning. Please see below:

- Survey: Please have the JD lines reflect the 2 tidal stream crossings at boardwalk 1 and 2. There also needs to be a connection on the eastern side of the upland just before the berm is within jurisdiction. My sketch is attached.
- Marshlands Component: Add portions of boardwalk 1 and 2 that are crossing the tidal streams into the total impacts
 - Approximate sq.ft. of relocated soft trail within jurisdiction just to the west of boardwalk 4
 - After the berm is removed, will there be any supplemental plantings in its footprint or is the plan to just let nature take over?
- Upland component: add 50ft. buffer to all 4 boardwalks starting at the marsh/upland line, please include total sq.ft. of buffer at each location and any permanent and temporary impacts within those buffers.
 - Area of boardwalk 3 that is in the upland vs. in jurisdiction.

I will proceed with drafting the public notice once I receive the above information. Also, I will put this down for a NWP27 for federal consistency purposes only until I hear otherwise. Let me know if you have any questions about the above items or anything else that may come up.

Thanks,
Paul D. Tobler

Coastal Permit Coordinator
Coastal Resources Division
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From: David Freedman <Davidf@Freedmanengineering.com>
Sent: Thursday, November 9, 2023 9:24 AM
To: Samson, Doug <Doug.Samson@dnr.ga.gov>; Tobler, Paul <paul.tobler@dnr.ga.gov>
Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

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Paul,
Let's still talk at 10 and we can catch up with Coby next week.
David

David Freedman, PE, LEED AP
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(770) 851-3175
Davidf@Freedmanengineering.com
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From: Samson, Doug <Doug.Samson@dnr.ga.gov>
Sent: Thursday, November 9, 2023 9:22 AM
To: Davidf <Davidf@Freedmanengineering.com>; Tobler, Paul <paul.tobler@dnr.ga.gov>
Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

David, Paul,
FYI, Colby is in the field on St. Simons today with partners on another project. I think she'll be on Sapelo tomorrow, even though it's a State (& federal) holiday. Next week she'll be at the NERRS Annual Meeting (in NJ) all week, so she won't have much, if any, availability. Not sure about her schedule the week after, but that's Thanksgiving week. Timing on this is just not good -

Doug

.....
Douglas A. Samson, Ph.D.
Reserve Manager, Sapelo Island NERR

Wildlife Resources Division
(912) 485-2251 | M: (202) 251-0790

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From: David Freedman <Davidf@Freedmanengineering.com>
Sent: Thursday, November 9, 2023 8:34 AM
To: Tobler, Paul <paul.tobler@dnr.ga.gov>
Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Samson, Doug <Doug.Samson@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

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Paul,
10:00 a.m. today is good. Hopefully Colby is available since she was involved in staking the JD line.
David

David Freedman, PE, LEED AP
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From: Tobler, Paul <paul.tobler@dnr.ga.gov>
Sent: Thursday, November 9, 2023 8:24 AM
To: Davidf <Davidf@Freedmanengineering.com>
Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Samson, Doug <Doug.Samson@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>
Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

David,

I think that the changes can be made via desktop and surveyors will not be needed to go back out to Sapelo to pick anything up. This is simply fixing a couple of minor details so we can have an accurate survey to verify. I just spoke with Josh and decided that a site visit is not

essential for the verification letter. A shorter way to say it is that this shouldn't hold anything up further.

I can talk anytime after 10 today if you would like to just get the survey part out of the way. Let me know.

Paul D. Tobler

Coastal Permit Coordinator

Coastal Resources Division

(912) 262-3134 | M: (912) 689-6261

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GEORGIA DEPARTMENT OF NATURAL RESOURCES

From: David Freedman <Davidf@Freedmanengineering.com>

Sent: Thursday, November 9, 2023 7:43 AM

To: Tobler, Paul <paul.tobler@dnr.ga.gov>

Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Samson, Doug <Doug.Samson@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>

Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

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Paul,

It is obviously disappointing that we are just getting comments almost a year after the application was submitted. Colby has inquired about the status numerous times. A Teams meeting is fine as is getting your comments via e-mail. I am pretty open this week and next. If EMC has to go back out there my guess is the State will have to pay them for additional work.

David

David Freedman, PE, LEED AP

Principal, Freedman Engineering Group

1000 Whitlock Avenue, Suite 320, #218

Marietta, GA 30064

(770) 851-3175

Davidf@Freedmanengineering.com

www.Freedmanengineering.com

From: Tobler, Paul <paul.tobler@dnr.ga.gov>

Sent: Wednesday, November 8, 2023 1:31 PM

To: Davidf <Davidf@Freedmanengineering.com>

Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Samson, Doug <Doug.Samson@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>; Noble, Josh <Josh.Noble@dnr.ga.gov>

Subject: RE: Dean Creek Nature Trail Improvements Sapelo Island

Good afternoon David,

As of yesterday, I received the application for the above referenced project from the previous permit coordinator who no longer works here. Unfortunately, it doesn't look like he ever sent over a response letter or request for additional information of any kind. There are a few minor issues that I think can be easily resolved, mostly starting with the survey of the jurisdiction line that was submitted with the application. To make the application substantially complete the survey needs to be verified, since the line is over a year old at this point, we need to go out and take one more look at the site. However, I think most of my concerns with the survey can be modified via desktop. I would like to have a Teams meeting ASAP to go over the survey and point out the areas of concern so that EMC can begin working to send me a revised copy that can be verified immediately after our site visit.

In the meantime, I will work to get you a short list of the few other pieces of information that we need to start drafting the public notice. In the spirit of saving time, I hope that an email describing these items will suffice instead of our usual formal signed response letter.

Let me know when you are available to talk about the survey and let me know if you have any questions.

Sincerely,

Paul D. Tobler

Coastal Permit Coordinator

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From: David Freedman <Davidf@Freedmanengineering.com>

Sent: Wednesday, December 14, 2022 8:14 AM

To: Noble, Josh <Josh.Noble@dnr.ga.gov>; Tobler, Paul <paul.tobler@dnr.ga.gov>

Cc: Pepper, Colby <colby.pepper@dnr.ga.gov>; Vendola, Brent <brent.vendola@dnr.ga.gov>; Griffin, Joel <Joel.Griffin@dnr.ga.gov>; Samson, Doug <Doug.Samson@dnr.ga.gov>; Hay, Fred <Fred.Hay@dnr.ga.gov>

Subject: Dean Creek Nature Trail Improvements Sapelo Island

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Paul, Josh

At the link below you can download the CMPA application for the referenced project. The application includes the PCN for the Corps of Engineers.

Let me know if you have any comments or questions or need anything else.

<https://www.dropbox.com/s/w2dqmscb15pp5rk/Dean%20Creek%20Nature%20Trail%20Improvement>

[nts%20CMPA%20Application.pdf?dl=0](#)

Also, can you give us an update on the Barge Landing and Boat House and Hoist applications.

Thanks,
David

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