

# ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

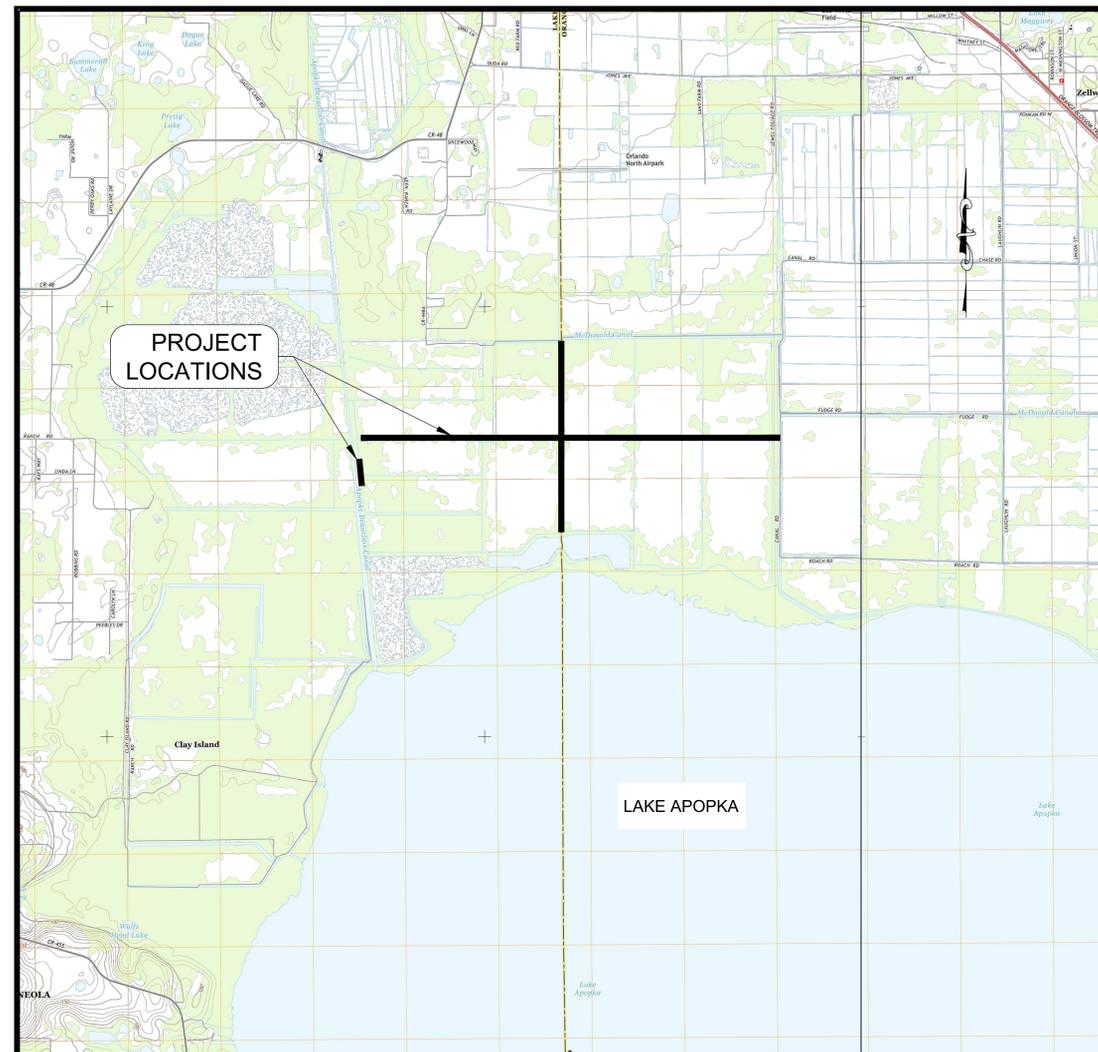
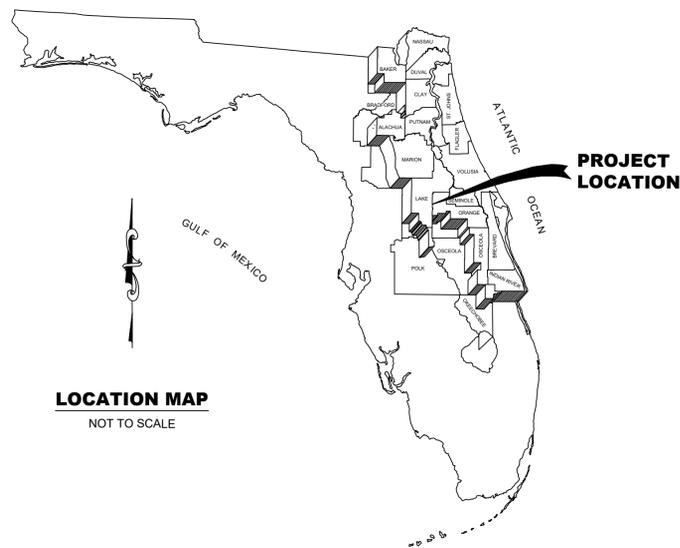
## UPPER OCKLAWAHA RIVER BASIN

### LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS

#### LAKE COUNTY AND ORANGE COUNTY, FLORIDA

### NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.09.



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### ENGINEER'S NOTES:

- These drawings are prepared for the sole and exclusive use of the St. Johns River Water Management District and shall not be relied upon by any other entity or individual.
- Reproductions of these drawings are "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL SEAL OF A FLORIDA LICENSED ENGINEER."

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### VICINITY MAP

NOT TO SCALE

**FOR BID PURPOSES ONLY  
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CERTIFICATION:	DRAWING FILENAME:
ROBERT J. NALEWAY	SHEET:
P.E. NUMBER: 53197	C1
DATE: AUGUST 24, 2020	

NO.	REVISION	BY	DATE	APPROVED	DATE
1	ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20

J:\Projects\CADD\APOPKA LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS\CONSTRUCTION\ADVISOR\CRST.DWG

**GENERAL NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE TO FAMILIARIZE HIMSELF WITH THE NATURE AND EXTENT OF THE CONTRACT DOCUMENTS, SCOPE OF WORK, LOCAL CONDITIONS, ALL FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS THAT MAY AFFECT THE WORK.
- THE EXISTING CONDITIONS REPRESENTED IN THESE DRAWINGS AND THE PROJECT TOPOGRAPHIC SURVEY ARE BELIEVED TO BE ACCURATE ACCORDING TO THE INFORMATION AVAILABLE TO THE DISTRICT. HOWEVER, IT IS THE SOLE RESPONSIBILITY OF THE BIDDER (CONTRACTOR) TO VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE DISTRICT PRIOR TO SUBMITTAL OF THE BID.
- ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION AND THE PLANS AND CONSTRUCTION SPECIFICATIONS. WHERE CONFLICTS OR OMISSIONS EXIST, THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS SHALL DICTATE. SUBSTITUTIONS AND DEVIATIONS FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE DISTRICT PROJECT MANAGER.
- PERMITS: THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS CONTAINED IN ALL PERMITS WHICH HAVE BEEN OBTAINED FOR THE PROJECT.
  - DISTRICT OBTAINED PERMITS INCLUDE:
    - US ARMY CORPS OF ENGINEERS
    - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
  - THE CONTRACTOR SHALL OBTAIN ANY AND ALL REMAINING PERMITS AS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT PRIOR TO BEGINNING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO:
    - SUBMITTAL OF THE NOTICE OF INTENT (NOI) TO USE THE US EPA NPDES CONSTRUCTION GENERAL PERMIT AND COMPLETION OF ANY SUPPORTING DOCUMENTS REQUIRED FOR THE PERMIT.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, LEVEES, ROADS, UTILITIES, AND OTHER IMPROVEMENTS FROM DAMAGE WHETHER OR NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR PROTECTION METHODS, COORDINATION WITH OWNERS AND REPAIRS TO UTILITIES AND OTHER SITE IMPROVEMENTS DAMAGED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION MEETING WITH THE DISTRICT PROJECT MANAGER AND DISTRICT CONSTRUCTION INSPECTOR A MINIMUM OF 48-HOURS IN ADVANCE OF MOBILIZING TO SITE. PROVIDE CONSTRUCTION SEQUENCE PLAN TO DISTRICT IN WRITING FOR APPROVAL PRIOR TO PRECONSTRUCTION MEETING.
- CONSTRUCTION INSPECTION WILL BE PERFORMED BY THE DISTRICT. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AT LEAST 48 HOURS PRIOR TO THE REQUIRED TIME OF INSPECTION FOR EACH AND EVERY PHASE OF WORK.
- WORK WHEN IT IS RAINING OR THE ROADWAY IS WET SHALL BE AVOIDED. THE DISTRICT'S PROJECT MANAGER SHALL BE THE SOLE DECISION MAKER AS TO WORK COMMENCING OR CONTINUING.
- THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DOCUMENTS INCLUDING DRAWINGS, PERMITS, AND SPECIFICATIONS AT THE JOB SITE CLEARLY MARKED TO REFLECT ALL AS-BUILT CONDITIONS. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT THESE ANNOTATED DRAWINGS AND SPECIFICATIONS TO THE DISTRICT.
- THE CONTRACTOR SHALL MAINTAIN AND SUBMIT WEEKLY REPORTS TO THE DISTRICT PROJECT MANAGER OR CONSTRUCTION INSPECTOR.

**REFERENCED REPORTS USED TO DEVELOP THE DESIGN DRAWINGS AND TECHNICAL SPECIFICATIONS:**

- DUDA WATER STORAGE IMPROVEMENTS GEOTECHNICAL REPORT DATED MAY 2020 WAS SUBMITTED BY WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC..

**SPECIFICATIONS:**

**MOBILIZATION / DEMOBILIZATION**

- TASKS RELATED TO MOBILIZATION SHALL ADHERE TO THE CURRENT REQUIREMENTS OF SECTION 101 (MOBILIZATION) OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).
- AREA IS AVAILABLE ADJACENT TO THE PROJECT AREA FOR EQUIPMENT STAGING AND MATERIALS STORAGE. CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH DISTRICT PROJECT MANAGER PRIOR TO BEGINNING MOBILIZATION.
- WORK WILL BE CONSIDERED COMPLETE ONLY AFTER ALL RUBBISH AND UNUSED MATERIAL DUE TO OR CONNECTED WITH THE WORK HAS BEEN REMOVED AND THE PREMISES LEFT IN A CONDITION SATISFACTORY TO THE DISTRICT.
- ALL PROPERTY DISTURBED OR DAMAGED DURING EXECUTION OF THE WORK SHALL BE RESTORED TO ITS FORMER CONDITION OR BETTER AT NO ADDITIONAL EXPENSE TO THE DISTRICT. FINAL PAYMENT WILL BE WITHHELD UNTIL SUCH CLEANUP IS COMPLETED AND APPROVED BY THE DISTRICT.

**MAINTENANCE OF TRAFFIC**

- PROVIDE ALL SAFETY AND TRAFFIC CONTROL NECESSARY FOR ACCESS TO THE SITE AND WORK WITHIN THE PROJECT LIMITS.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL TAKE BEFORE PICTURES OF THE ENTIRE ROADWAY TO ENSURE THAT THE ROADWAY IS NOT FURTHER DAMAGED BY TRUCK USE, SHARP TURNING AND BRAKING QUICKLY IS TO BE AVOIDED. IN ADDITION, THE CONTRACTOR SHALL REMOVE ANY DRIVER THAT IS NOT COMPLYING WITH SAFE DRIVING OPERATIONS.

- THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT PROJECT MANAGER, OR DISTRICT CONSTRUCTION INSPECTOR REGARDING MAINTENANCE OF TRAFFIC ALONG THE TRAILS AND DISTRICT MAINTENANCE ROADS WITHIN DUDA.
- THE CONTRACTOR SHALL NOT SCHEDULE WORK REQUIRING WILDLIFE DRIVE ROAD CLOSURES ON THE DAYS THE WILDLIFE DRIVE IS OPEN (FRIDAY, SATURDAY, SUNDAY AND FEDERAL HOLIDAYS).
- FULL ROAD CLOSURES MAY BE ACCEPTABLE BUT MUST BE APPROVED BY THE DISTRICT PRIOR TO CLOSING. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUEST TO CLOSE A ROAD INCLUDING THE LOCATION AND DURATION.
- ANY PROPOSED CLOSURES OF NORTH-SOUTH ROAD, CENTRAL INTERSECTION OR MARSH RABBIT ROAD WEST OF THE CENTRAL INTERSECTION SHOULD NOT INCLUDE WEEKENDS OR FEDERAL HOLIDAYS. IF ANY OF THESE SECTIONS OF ROAD ARE CLOSED TO PUBLIC HIKING AND BICYCLING ACTIVITIES, ALL ROADS SHOULD BE OPEN AND PASSABLE BY A TWO WHEEL DRIVE VEHICLE AT THE END OF THE DAY FRIDAY. CLOSED ROADS MAY STILL BE USED BY DISTRICT STAFF FOR MAINTENANCE ACTIVITIES, THEREFORE THE CONTRACTOR SHALL LIMIT THE SIZE OF CLOSED SECTIONS SO THEY CAN BE QUICKLY MADE PASSABLE BY FOUR-WHEEL DRIVE VEHICLES SHOULD THE DISTRICT HAVE NEED TO ACCESS AN AREA.
- SOME PORTIONS OF THE CONSTRUCTION SITE WILL BE SUBJECT TO ACTIVITY BY DISTRICT STAFF OR OTHER CONTRACTORS. THE CONTRACTOR SHALL ACCOMMODATE THIS ACTIVITY (OUTSIDE OF PLANNED AND APPROVED CLOSURES) BY MAKING ROAD SECTIONS UNDER CONSTRUCTION PASSABLE WITHIN A FEW MINUTES AS NECESSARY TO LET VEHICLES TO PASS THROUGH THE SITE.
- THE CONTRACTOR WILL LIKELY INTERACT WITH THE PUBLIC. ALL OPERATORS SHALL BE INFORMED OF BASIC PROJECT DETAILS IN THE EVENT OF THIS PUBLIC INTERACTION. CONTRACTOR STAFF AND OPERATORS SHALL DIRECT THE PUBLIC TOWARDS DISTRICT STAFF WITH ANY QUESTIONS.
- AT THE COMPLETION OF CONSTRUCTION ALL ROADS IMPACTED BY THE CONSTRUCTION OR TRANSPORT OF MATERIAL SHALL BE IN EQUAL OR BETTER CONDITION THAN BEFORE CONSTRUCTION FREE OF POT HOLES, STANDING WATER AND THIN SPOTS IN THE LIMEROCK. IF NECESSARY A FINAL GRADING OF ALL IMPACTED ROADS SHALL BE COMPLETED TO INSURE THE CONDITION OF THE DRIVING SURFACE.

**SURVEY NOTES:**

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- THE POWER POLES WITH THIS INFORMATION " 
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**DESIGN NOTES:**

- THE DESIGN ALIGNMENT IS BASED OFF WHAT WAS SURVEYED IN THE FIELD WITHIN THE PROJECT LIMITS AS THE CENTERLINE OF THE LEVEES.

**EROSION AND SEDIMENTATION CONTROL**

- THE CONTRACTOR SHALL CARRY OUT ALL CONSTRUCTION OPERATIONS IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (SILT FENCE, HAY BALES, TURBIDITY BARRIER, ETC.) AS REQUIRED FOR COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS.
- SHEET C20 PROVIDES THE EROSION CONTROL PLAN AND NOTES FOR THE PROJECT SITE. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING THE STORMWATER POLLUTION PREVENTION PLAN WHICH WILL BE REQUIRED AS PART OF THE US EPA NPDES CONSTRUCTION GENERAL PERMIT.
- ALL ERODIBLE GROUND AREAS AND SLOPES DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED WITH MULCH, SEED, DISTRICT APPROVED ALTERNATE METHODS OR OTHERWISE APPROPRIATELY STABILIZED WITHIN 72 HOURS AFTER COMPLETION OF THE CONSTRUCTION ACTIVITY AND AT ANY OTHER TIME AS NECESSARY TO PREVENT VIOLATIONS OF STATE WATER QUALITY STANDARDS.
- EROSION CONTROL SHALL FURTHER COMPLY WITH THE REQUIREMENTS OF SECTION V OF THE FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

**EARTHWORK - EXCAVATION AND EMBANKMENT (FILL)**

- SURFACE WATER RUNOFF CONTROL: SURFACE WATER RUNOFF CONTROL WILL BE REQUIRED DURING SITE PREPARATION, FILL PLACEMENT AND COMPACTION, ETC. PONDING WATER SHALL BE CONTROLLED BY PROPER GRADING OF THE AREA AND THE USE OF TEMPORARY DRAINAGE DITCHES, DIVERSION BERMS AND/OR PUMPING FROM DRAINAGE CONTROLLED COLLECTION POINTS, AS NECESSARY, TO PREVENT INSTABILITY, PUMPING OR DISTURBED SUBGRADE CONDITIONS, OR GENERALLY UNACCEPTABLE SUBGRADE CONDITIONS.
- SITE PREPARATION - ALL GRASSED AREAS WHERE FILL IS TO BE PLACED SHALL BE GRUBBED. ALL LIMEROCK SURFACES WHERE FILL IS TO BE PLACED SHALL BE SCARIFIED SUITABLE TO CREATE A ROUGH SURFACE FOR THE PLACEMENT OF NEW MATERIAL.
- ANY STRIPPING SHALL BE TEMPORARILY STOCK PILED AND USED AS A FINAL COVER ON THE SIDE SLOPES OF THE LEVEES.

**LIMEROCK ROADWAY**

- LIMEROCK ROADWAY SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 200 (ROCK BASE) AND SECTION 911 (LIMEROCK MATERIAL FOR BASE AND STABILIZED BASE) OF THE FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION. ALL EXISTING LIMEROCK SURFACES SHALL BE SCARIFIED PRIOR TO PLACEMENT OF NEW LIMEROCK.

GENERAL FILL: FILL SHALL CONSIST OF SOILS CLASSIFIED AS FINE SAND (SP), SLIGHTLY SILTY SAND

(SP-SM), SLIGHTLY CLAYEY SAND (SP-SC), SILTY SAND (SM), AND CLAYEY SAND (SC). SOILS WITH FINES CONTENT GREATER THAN 20 PERCENT SHALL BE TO BE APPROVED BY THE DISTRICT IN ADVANCE. MORE MOISTURE SENSITIVE SOILS WILL BE DIFFICULT TO PLACE AND COMPACT.

THE CONTRACTOR SHALL PROVIDE A SUBMITTAL FOR THE GENERAL FILL MATERIAL TO BE DISTRICT WITH THE FOLLOWING INFORMATION:

USCS SOIL CLASSIFICATION  
MOISTURE CONTENT  
PERCENT PASSING NO. 200 SIEVE  
LIQUID AND PLASTIC LIMITS

- FILL SHALL BE FREE OF ROOTS, LOGS, REFUSE, BRUSH, SOD, OR ORGANIC AND/OR PERISHABLE MATERIALS, MUCK OR OTHER HIGHLY ORGANIC MATERIAL, ROCKS, COBBLES, BOULDERS, OR CEMENTED FRAGMENTS HAVING A DIMENSION LARGER THAN 2 INCHES.

GENERAL EXCAVATION: MATERIALS RESULTING FROM THE STRIPPING OF THE GRASSED AREAS SHALL BE STOCK PILED AND PLACED BACK ON THE FINISHED SIDE SLOPES TO PROVIDE GOOD ORGANIC BASE FOR THE GROWTH OF NEW STABILIZING VEGETATION.

ORGANIC SOILS (PT) AND ANY SANDY CLAYS (CL OR CH) FOUND WITHIN THE BORROW/SPOIL PILE SHALL BE CONSIDERED UNSUITABLE AS GENERAL FILL. THESE SOILS SHOULD BE DISPOSED AS DIRECTED BY THE DISTRICT PROJECT MANAGER.

PROTECTION OF EARTHWORK: PRIOR TO RAIN EVENTS, THE CONTRACTOR SHALL PROTECT THE SOIL THAT HAS BEEN PLACED DURING CONSTRUCTION FROM TRAPPING RAINWATER AND BECOMING OVERLY UNSTABLE BY GRADING AND SMOOTH-ROLLING THE SURFACE TO POSITIVELY DRAIN AWAY WATER, AND TO PROMOTE RUNOFF. ALL SMOOTH-ROLLED SURFACES SHALL BE SCARIFIED PRIOR TO PLACING THE NEXT LIFT OF SOIL.

**COMPACTION**

- FILL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 12 INCHES IN THICKNESS. EACH LIFT SHALL BE COMPACTED UTILIZING A STATIC ROLLER WITH A MINIMUM 84-INCH 7 TON ROLLER A MINIMUM OF THREE PASSES SHALL BE REQUIRED TO ACHIEVE COMPACTION. THE SOIL SHALL BE FIRM AND UNYIELDING WHEN TRAVERSED WITH CONSTRUCTION EQUIPMENT. FILL PLACEMENT AND COMPACTION SHALL CONTINUE IN LIFTS UNTIL DESIGN GRADES ARE ACHIEVED.
- FILL IN SURFACE WATERS SHALL BE SUFFICIENT TO PROVIDE A STABLE UNYIELDING SURFACE WHEN TRAVERSED BY FOOT. NO MECHANICAL COMPACTION OTHER THAN COMPRESSION OF SOILS WITH THE EXCAVATOR BUCKET IS REQUIRED.

**HYDROSEEDING AND SODDING**

- THE CONTRACTOR AND A DISTRICT CONSTRUCTION REPRESENTATIVE SHALL MEET AFTER FINAL GRADING HAS BEEN COMPLETED ON A SECTION AND DETERMINE THE EXTENT OF AREAS THAT ALL NEED TO BE HYDROSEEDED, SODDED OR HAVE SUFFICIENTLY ESTABLISHED NATIVE VEGETATION.
- AFTER FINAL GRADING OF AN AREA, FOR ANY AREA THAT HAS NOT ALREADY ESTABLISHED NATIVE VEGETATION BEFORE HYDROSEEDING CAN OCCUR, THE CONTRACTOR SHALL HYDROSEED WITH GEOMATRIX II VIRGIN WOOD MULCH WITH ORGANIC BONDING AGENTS (3,000 LBS./ACRE) OR AN EQUIVALENT MULCH/BONDING AGENT SHALL BE ACCEPTABLE, PENSACOLA BAHIA GRASS SEED (50 LBS./ACRE), COMMON BERMUDA (75 LBS./ACRE), BROWN TOP MILLET SEED OR ANNUAL RYEGRASS SEED DEPENDING ON SEASON (35 LBS./ACRE) AND 16-0-8 SLOW RELEASE FERTILIZER WITH MICRONUTRIENTS (250 LBS./ACRE). IT SHOULD BE NOTED THAT THE SEED AND FERTILIZER TYPES AND RATES SHALL NOT BE MODIFIED, UNLESS OTHERWISE APPROVED BY THE DISTRICT IN WRITING. SLOPES WILL BE PREPARED (UNIFORMLY GRADED) PRIOR TO WORK COMMENCING. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING RUTS CAUSED BY THEIR OPERATIONS BEFORE APPLYING HYDROSEED.
- IN AREAS DETERMINED TO BE APPROPRIATE FOR SODDING RATHER THAN SEED AND MUCH, THE CONTRACTOR SHALL USE BAHIA SOD. IF SODDING CANNOT BE PLACED ON ERODABLE SURFACES IMMEDIATELY AFTER GRADING, COCONUT FIBER BLANKET ECC-2 BY EAST COAST EROSION SHALL BE USED AS A TEMPORARY EROSION COVER UNTIL SODDING CAN BE PLACED.
- ALL RE-VEGETATED AREAS SHALL BE WATERED UNTIL SUFFICIENTLY ESTABLISHED

**AS-BUILT DRAWINGS**

- THROUGHOUT THE CONSTRUCTION PHASE, CONTRACTOR SHALL MAINTAIN ONE (1) COMPLETE SET OF THE SIGNED AND SEALED CONTRACT PLANS ON FULL-SIZED PLAN SHEETS AS THE AS-BUILT DRAWINGS FOR THE PROJECT. THE AS-BUILT DRAWINGS SHALL INCLUDE ALL CHANGES, BOTH DESIGN AND CONSTRUCTION, WITH ALL SHOP DRAWINGS, INCLUDING ADEQUATE SKETCHES, DIMENSIONS, AND NOTES. ALL REVISIONS, INCLUDING THOSE OCCURRING DURING CONSTRUCTION, WILL BE INCLUDED IN THE AS-BUILT DRAWINGS SET.
- UPON CONSTRUCTION COMPLETION, CONTRACTOR WILL INCORPORATE ALL CHANGES AND REVISIONS MADE TO THE PROJECT AND RECORDED ON THE ON-SITE AS-BUILT PLANS INTO A FINAL AS-BUILT PLAN. SEE CONTRACT DOCUMENTS FOR SPECIFIC AS-BUILT DRAWING SUBMITTAL REQUIREMENTS.

**SUBMITTALS**

- THE CONTRACTOR SHALL SUBMIT SUBMITTALS FOR THE FOLLOWING MATERIALS.
  - GENERAL FILL
  - LIMEROCK
  - PIPE (CAP)
  - STRUCTURES
  - SLIDE GATES
  - PLATFORMS AND SUPPORTING PILES
  - DEWATERING PLAN
  - SHEET PILE
  - MAINTENANCE OF TRAFFIC
- THE CONTRACTOR SHALL BEAR THE COST AND RESPONSIBILITY OF ANY MATERIAL ORDERED, PLACED OR DELIVERED PRIOR TO APPROVAL IN WRITING BY THE DISTRICT.

**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

NO.	ISSUED FOR BID	REVISION	BY	DATE	APPROVED	DATE
			N.J.G.	08/24/20	R.J.N.	08/24/20

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: NONE DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

NOTES AND SPECIFICATIONS

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C:\LADWSICRST.dwg  
PROJECT NO.:  
SHEET:  
C2

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McDONALD CANAL ROAD

McDONALD CANAL RECREATION AREA

DUKE ENERGY EASEMENT

NORTH - SOUTH ROAD

NORTH - SOUTH ROAD

McDONALD CANAL ROAD

LAKE LEVEL CANAL ROAD

ALL ELEVATIONS ARE NAVD (88)  
STATE PLANE EAST

MARSH RABBIT ROAD

MARSH RABBIT ROAD

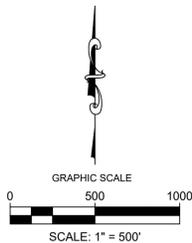
APOPKA LOOP TRAIL

APOPKA LOOP TRAIL

LAKE APOPKA

NOTE:  
NOT ALL EXISTING STRUCTURES SURVEYED OR  
SHOWN ON THIS DRAWING. ONLY STRUCTURES  
IMPACTED BY CONSTRUCTION  
ACTIVITIES SHOWN.

**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**



EXIST. PIPE UNKNOWN DIA.  
N. TOP OF RISER EL. 63.49'  
N. TOP OF PIPE EL. 58.90'  
S. TOP OF PIPE EL. 59.37'  
TO BE REMOVED

EXIST. STORM PIPE SIZE UNKNOWN  
S. TOP OF RISER EL. 65.39'  
N. TOP OF PIPE EL. 61.03'  
S. TOP OF PIPE EL. 61.36'  
TO BE REMOVED

EXIST. 36" CMP  
N. TOP OF RISER EL. 64.47'  
N. TOP OF PIPE EL. 61.57'  
N. INV. EL. 58.57'  
S. TOP OF PIPE EL. 60.00'  
S. INV. EL. 57.00'  
TO BE REMOVED

EXIST. 36" CMP  
W. TOP OF RISER EL. 69.46'  
W. TOP OF PIPE EL. 63.38'  
W. INV. EL. 60.38'  
E. TOP OF RISER EL. 67.60'  
E. TOP OF PIPE EL. 62.82'  
E. INV. EL. 59.82'  
TO BE REMOVED

ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20
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SCALE: 1" = 500' DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

EXISTING CONDITIONS

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C2LADWSIOASP.dwg  
PROJECT NO.:  
SHEET:  
C3

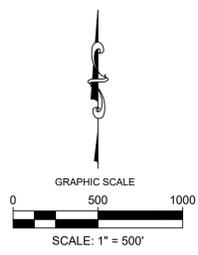
McDONALD CANAL ROAD

McDONALD CANAL RECREATION AREA

ALL PROJECT ACCESS SHOULD BE THROUGH THE MAIN COUNTY ROAD 448A PROPERTY ACCESS.

McDONALD CANAL ROAD

LAKE LEVEL CANAL ROAD



EXIST. PIPE UNKNOWN DIA. TO BE REMOVED

MARSH RABBIT ROAD

CENTRAL INTERSECTION IMPROVEMENTS SHEETS C14 THROUGH C16

EXIST. STORM PIPE SIZE UNKNOWN TO BE REMOVED

MARSH RABBIT ROAD

EXIST. 36" CMP TO BE REMOVED

MARSH RABBIT ROAD IMPROVEMENTS SHEETS C8 THROUGH C12

LAKE LEVEL CANAL IMPROVEMENTS SHEETS C13

DUDA WEST ROAD

DUDA WEST ROAD IMPROVEMENTS SHEETS C5 THROUGH C7

EXIST. 36" CMP TO BE REMOVED

NORTH - SOUTH ROAD

NORTH - SOUTH ROAD IMPROVEMENTS SHEETS C17 THROUGH C19

ALL ELEVATIONS ARE NAVD (88) STATE PLANE EAST

APOPKA LOOP TRAIL

APOPKA LOOP TRAIL

LAKE APOPKA

NOTE:  
NOT ALL EXISTING STRUCTURES SURVEYED OR SHOWN ON THIS DRAWING. ONLY STRUCTURES IMPACTED BY CONSTRUCTION ACTIVITIES SHOWN.

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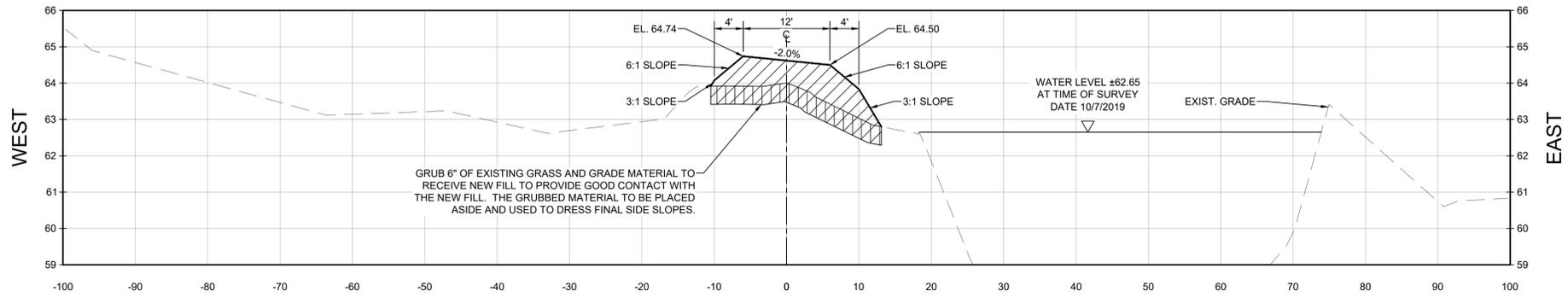
PROPOSED IMPROVEMENTS

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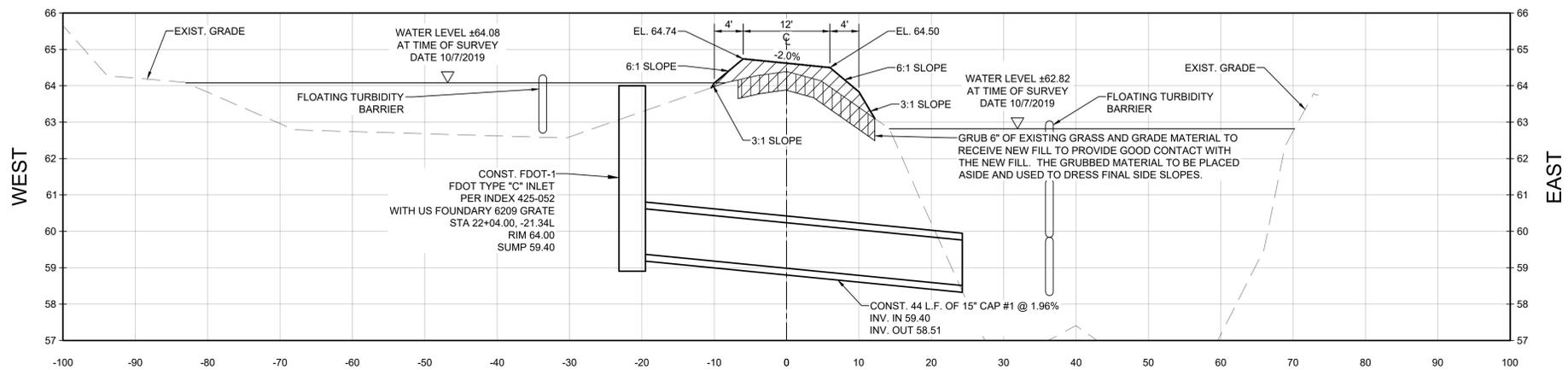
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C2LADWSIOASP.dwg  
PROJECT NO.:  
SHEET:  
C4



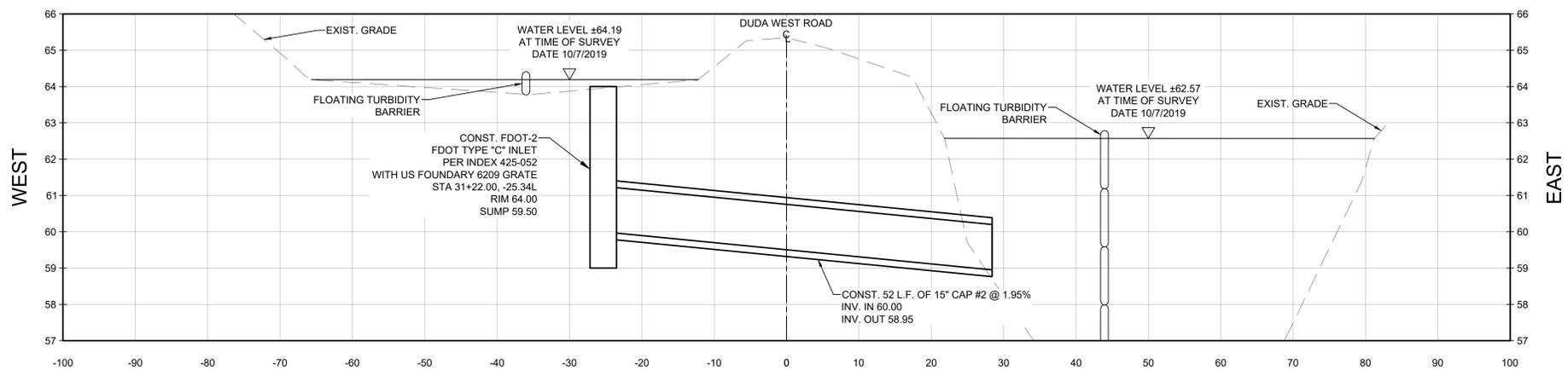




**C7**  
1  
DUDA WEST ROAD CROSS SECTION STA 17+00.00



**C7**  
2  
DUDA WEST ROAD CROSS SECTION STA 22+04.00



**C7**  
3  
DUDA WEST ROAD CROSS SECTION STA 31+22.00

**LEGEND:**

GENERAL FILL

GRUB OF GRASS

GRAPHIC SCALE IN FEET

HORIZONTAL

VERTICAL

**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.

SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

DUDA ROAD CROSS SECTIONS

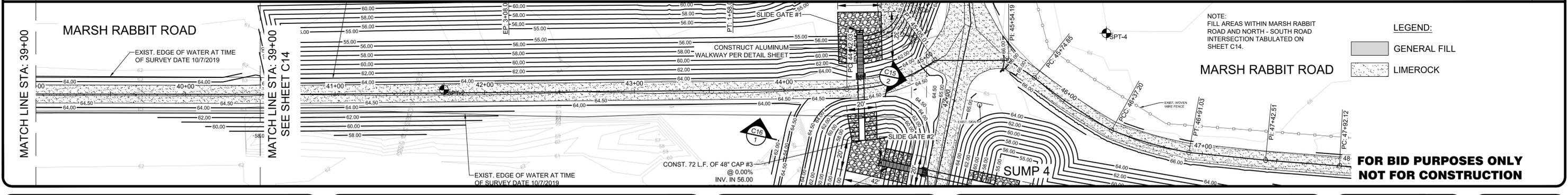
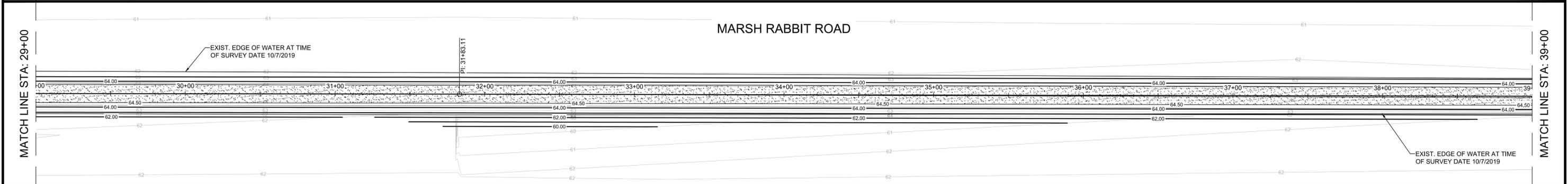
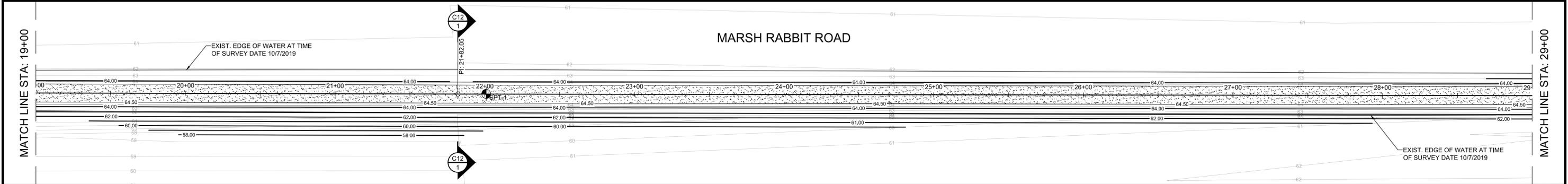
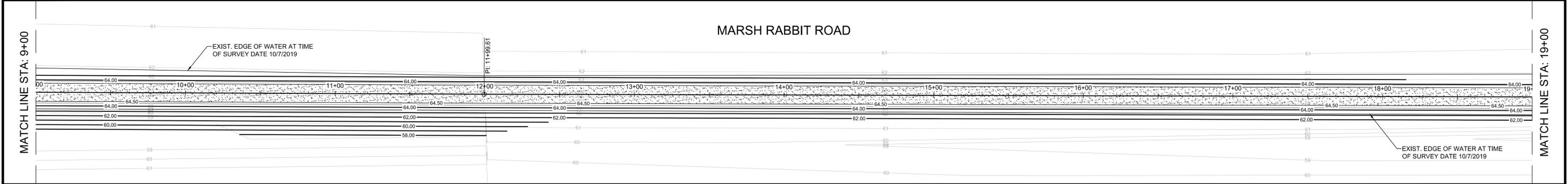
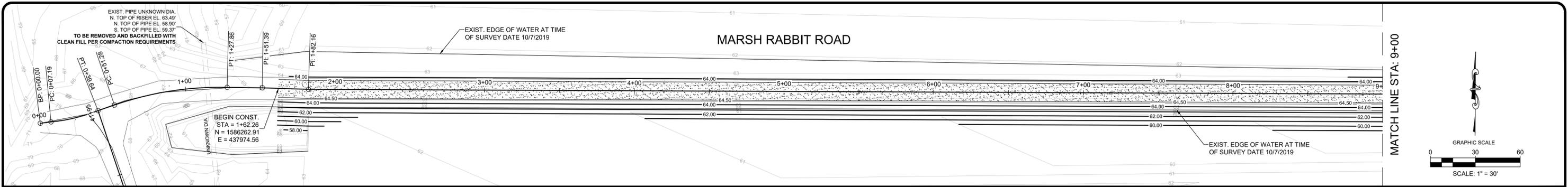
CERTIFICATION:

ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C3LADWSIXSEC.dwg

PROJECT NO.:

SHEET:  
C7



NO.	REVISION	BY	DATE	APPROVED	DATE
		N.J.G.	08/24/20	R.J.N.	08/24/20

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

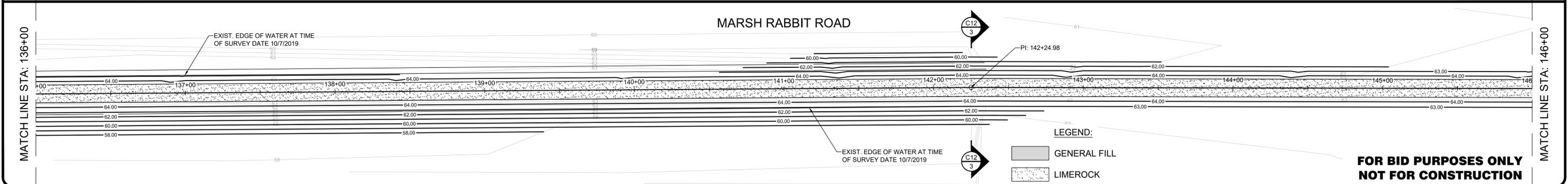
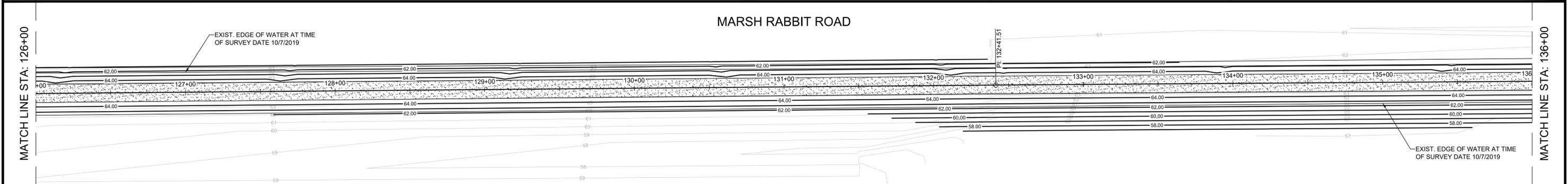
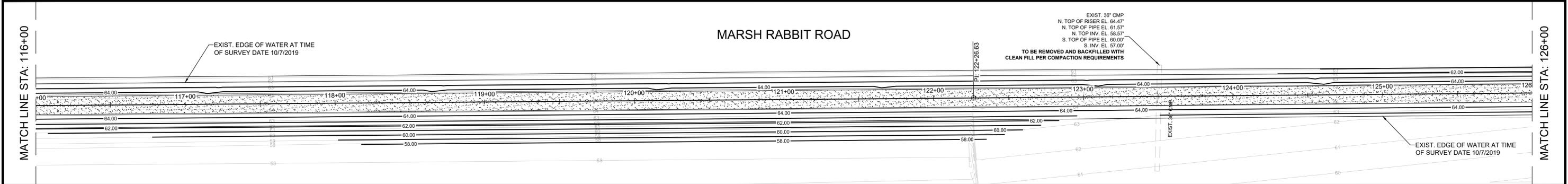
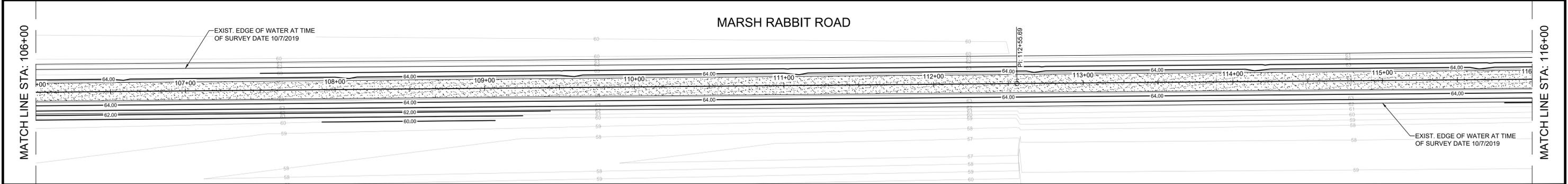
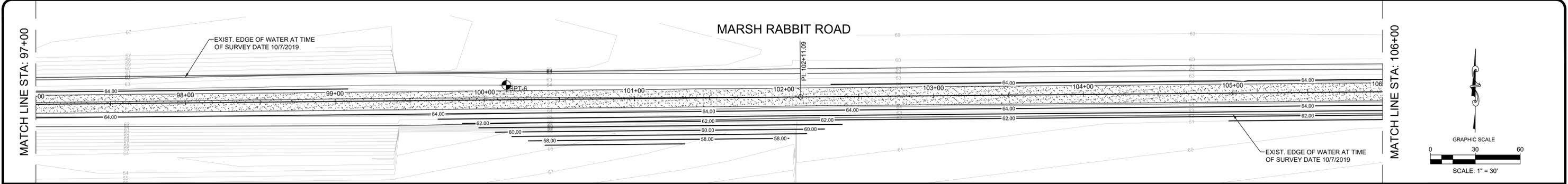
DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: 1" = 30' DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

MARSH RABBIT ROAD PLAN

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C2LADWSIOASP.dwg  
PROJECT NO.:  
SHEET:  
C8





NO.	REVISION	BY	DATE	APPROVED	DATE
1	ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20

**UPPER OCKLAWAHA RIVER BASIN**  
**LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS**  
**LAKE COUNTY AND ORANGE COUNTY, FLORIDA**

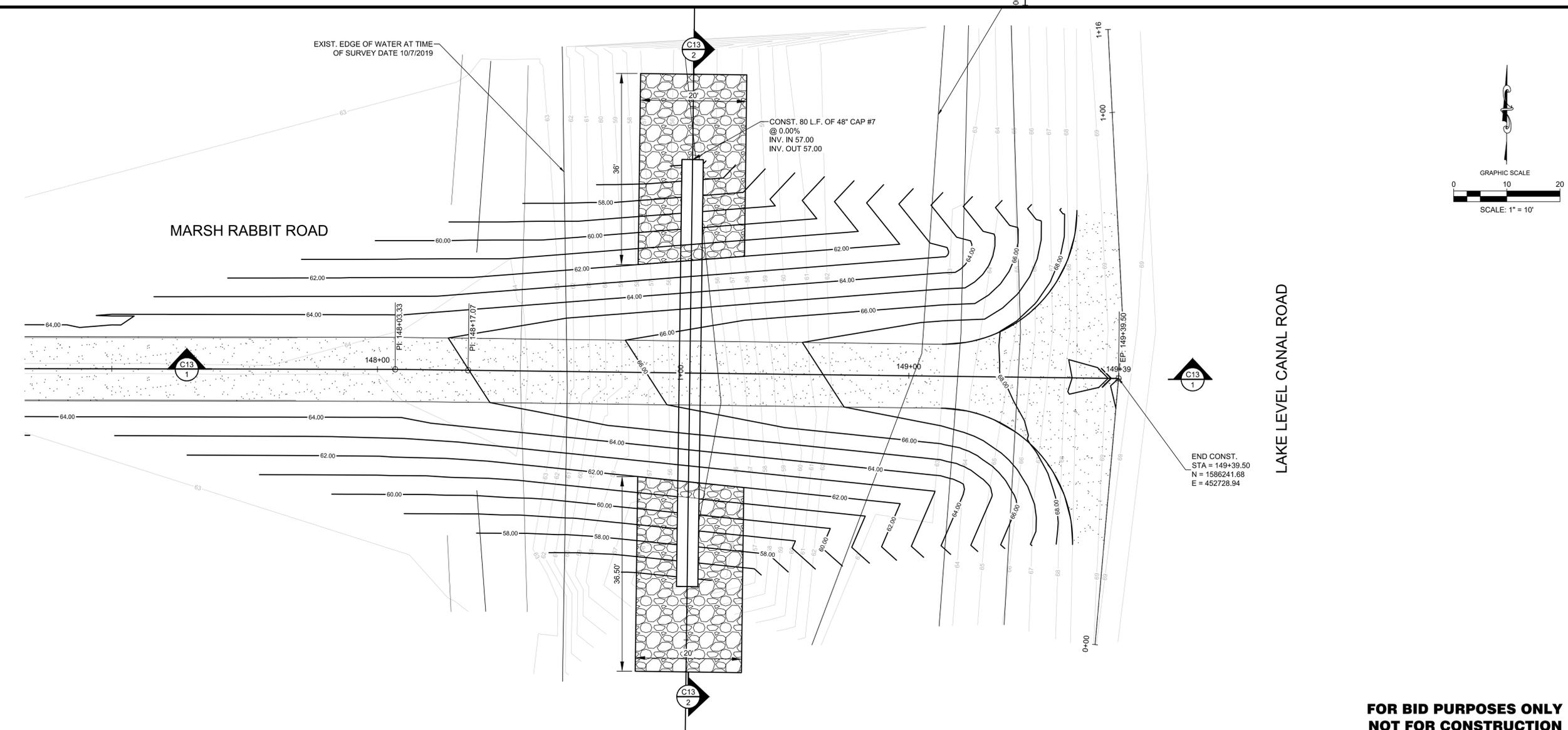
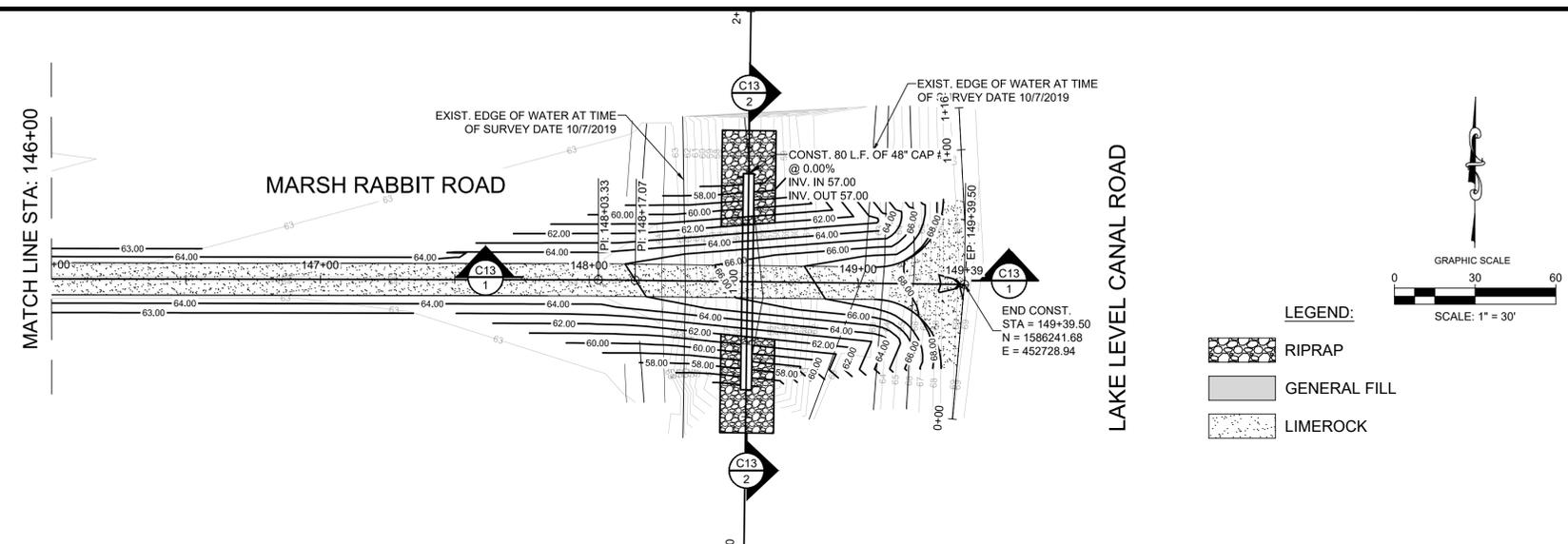
**ST. JOHNS RIVER**  
**WATER MANAGEMENT DISTRICT**  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.    DATE: AUGUST 24, 2020    REVIEWER: W.R.C.  
 SCALE: 1" = 30'    DESIGNER: R.J.N.    SECTION CHIEF: W.R.C.

**MARSH RABBIT ROAD PLAN**

CERTIFICATION:  
 ROBERT J. NALEWAY  
 P.E. NUMBER: ROBERT J. NALEWAY  
 DATE: AUGUST 24, 2020

FILE NAME:  
 C2LADWSIOASP.dwg  
 PROJECT NO.:  
 SHEET:  
**C10**



**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20
NO.	REVISION	BY	DATE	APPROVED

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

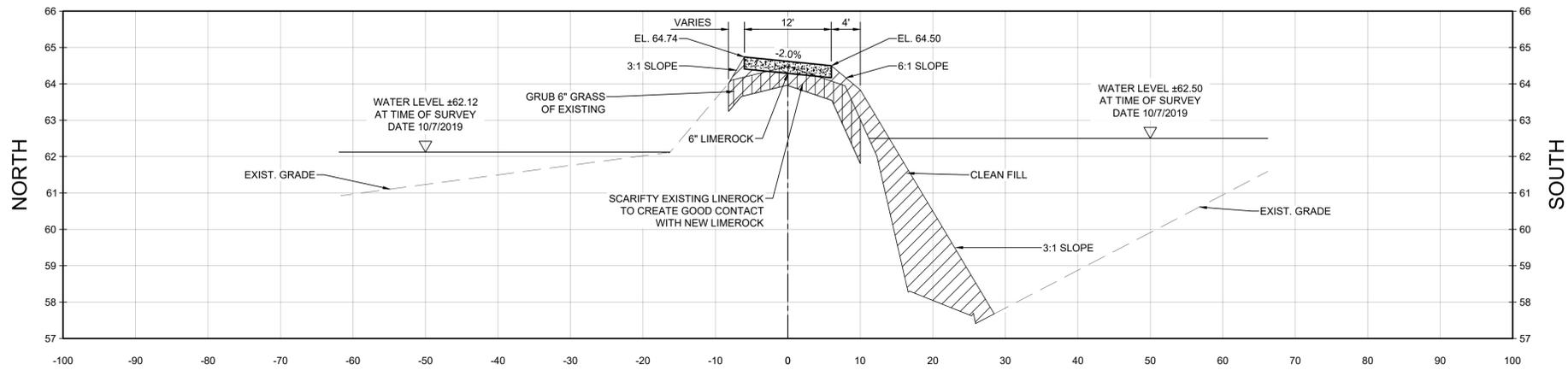
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

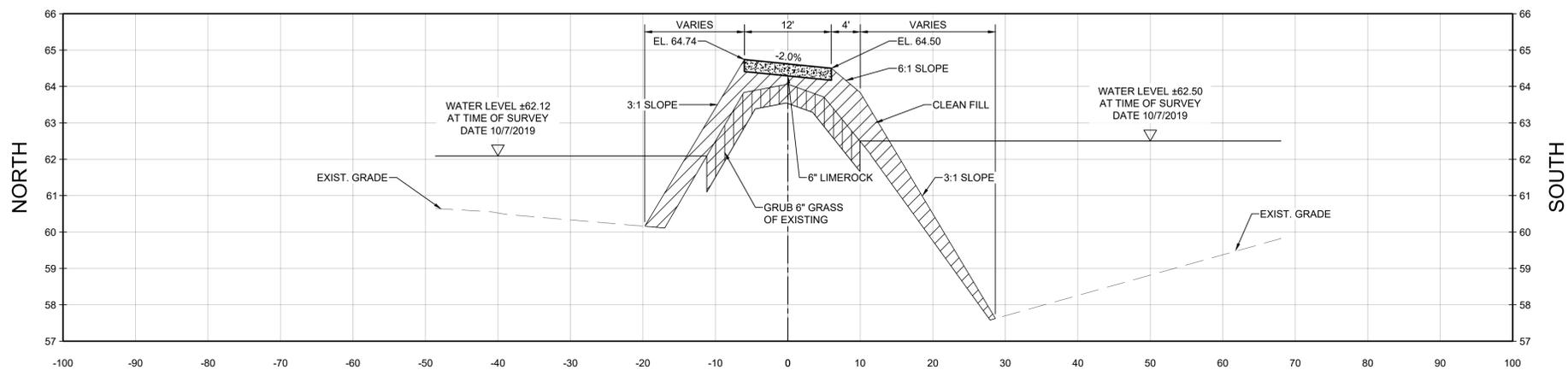
MARSH RABBIT ROAD PLAN

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

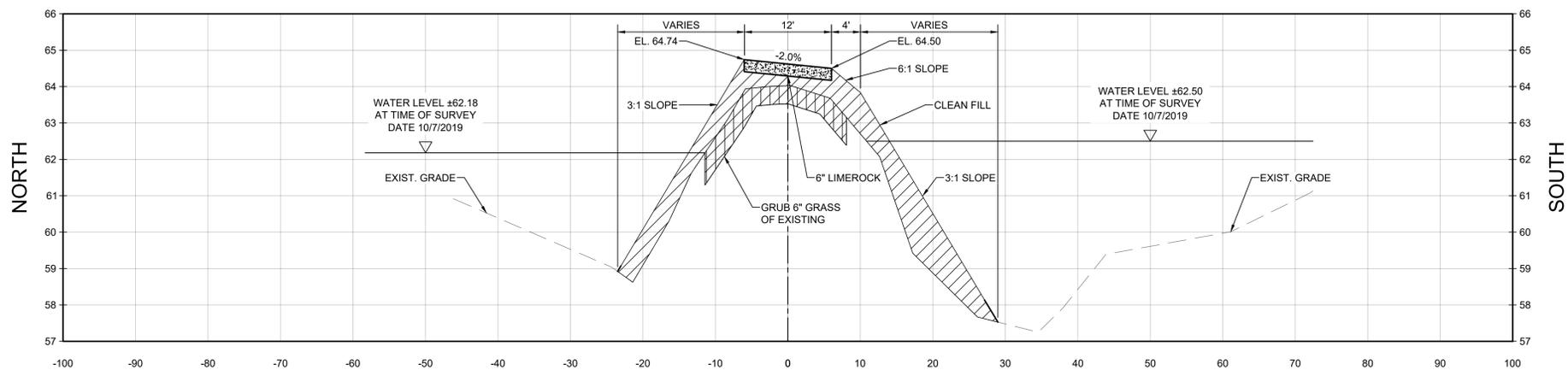
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PROJECT NO.:  
SHEET:  
C11



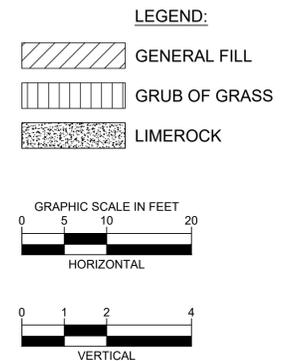
**C12**  
1 MARSH RABBIT ROAD CROSS SECTION STA 21+82.00



**C12**  
2 MARSH RABBIT ROAD CROSS SECTION 91+98.00



**C12**  
3 MARSH RABBIT ROAD CROSS SECTION STA 139+73.33



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UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

**ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT**  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

MARSH RABBIT ROAD CROSS SECTIONS

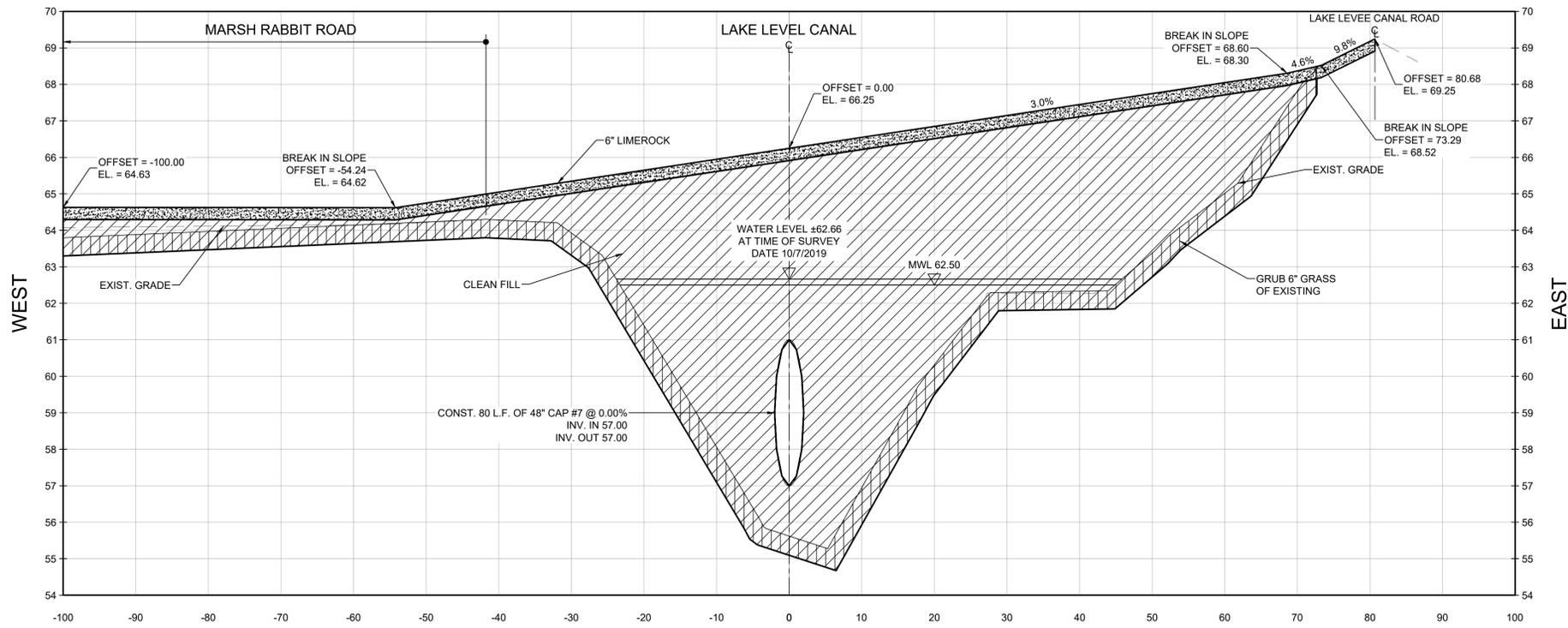
CERTIFICATION:

ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C3LADWSIXSEC.dwg

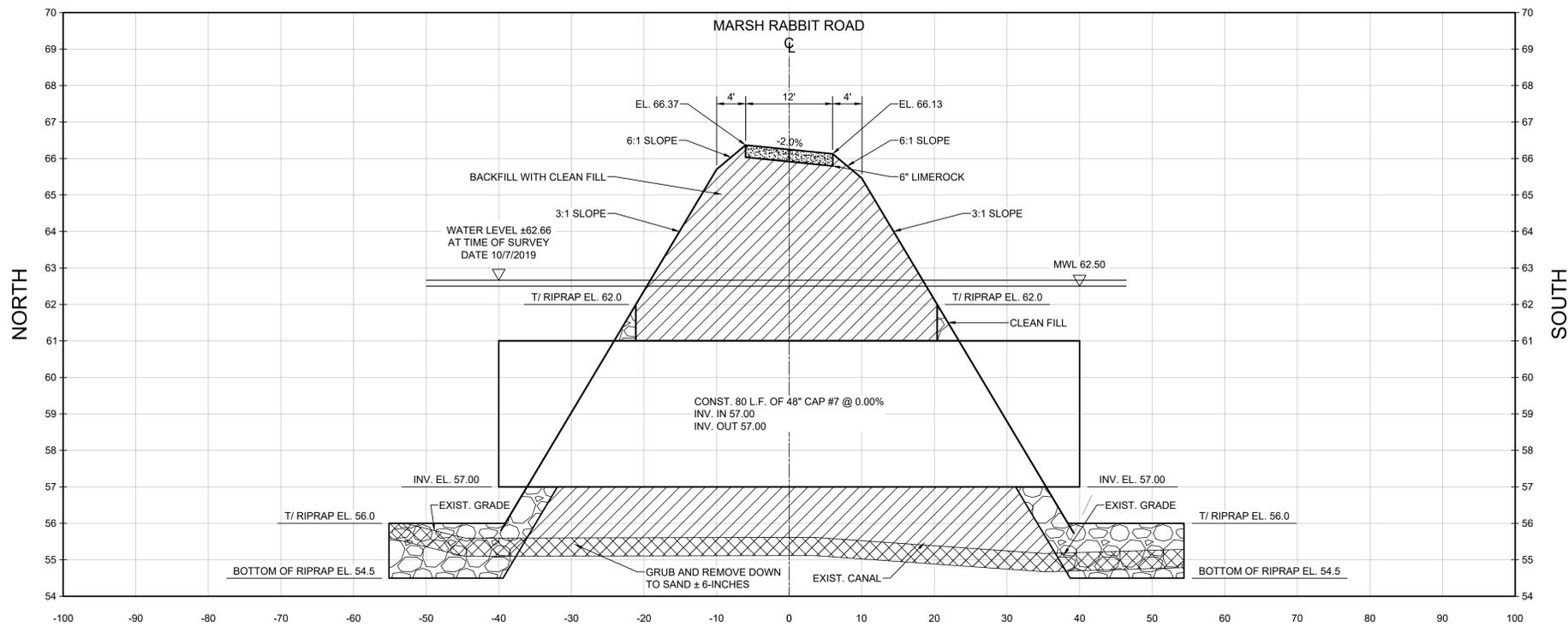
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SHEET:  
**C12**



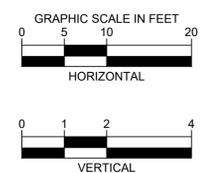
**C13**  
1 **LAKE LEVEL CANAL ROAD PROFILE**

NOTE: THIS PROFILE IS ALONG THE CENTERLINE OF MARSH RABBIT ROAD.



**C13**  
2 **LAKE LEVEL CANAL ROAD CROSS SECTION**

- LEGEND:**
- GENERAL FILL
  - GRUB AND REMOVE
  - GRUB OF GRASS
  - LIMEROCK
  - RIPRAP



**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20
NO.	REVISION	BY	DATE	APPROVED

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

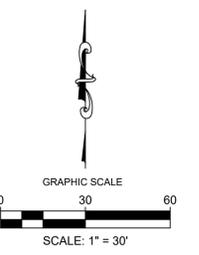
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

LAKE LEVEL CANAL ROAD  
PROFILE & CROSS SECTION

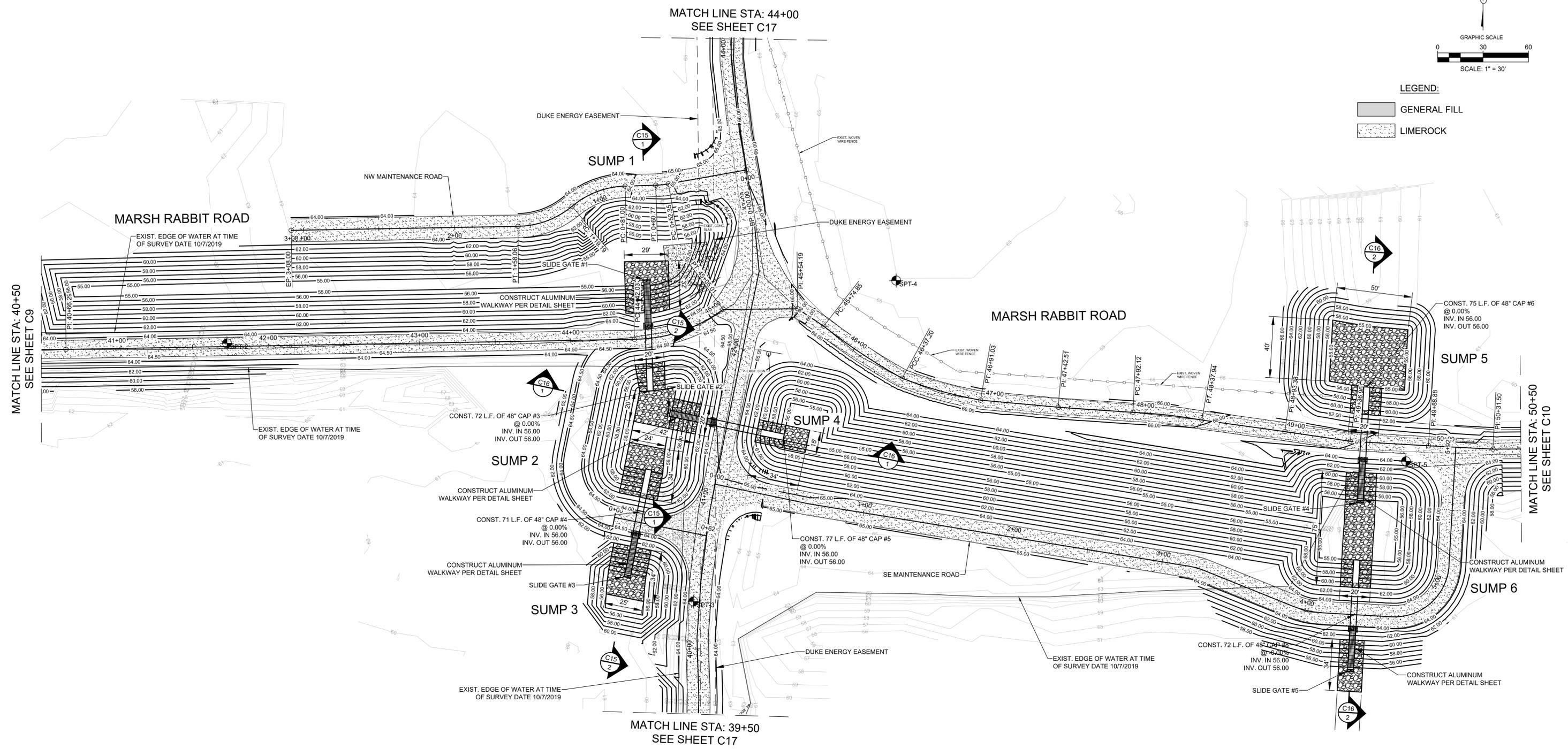
CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
C3LADWSIXSEC.dwg  
PROJECT NO.:  
SHEET:  
**C13**



**LEGEND:**

- GENERAL FILL
- LIMEROCK



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**UPPER OCKLAWAHA RIVER BASIN**  
**LAKE AOPKA DUDA WATER STORAGE IMPROVEMENTS**  
**LAKE COUNTY AND ORANGE COUNTY, FLORIDA**

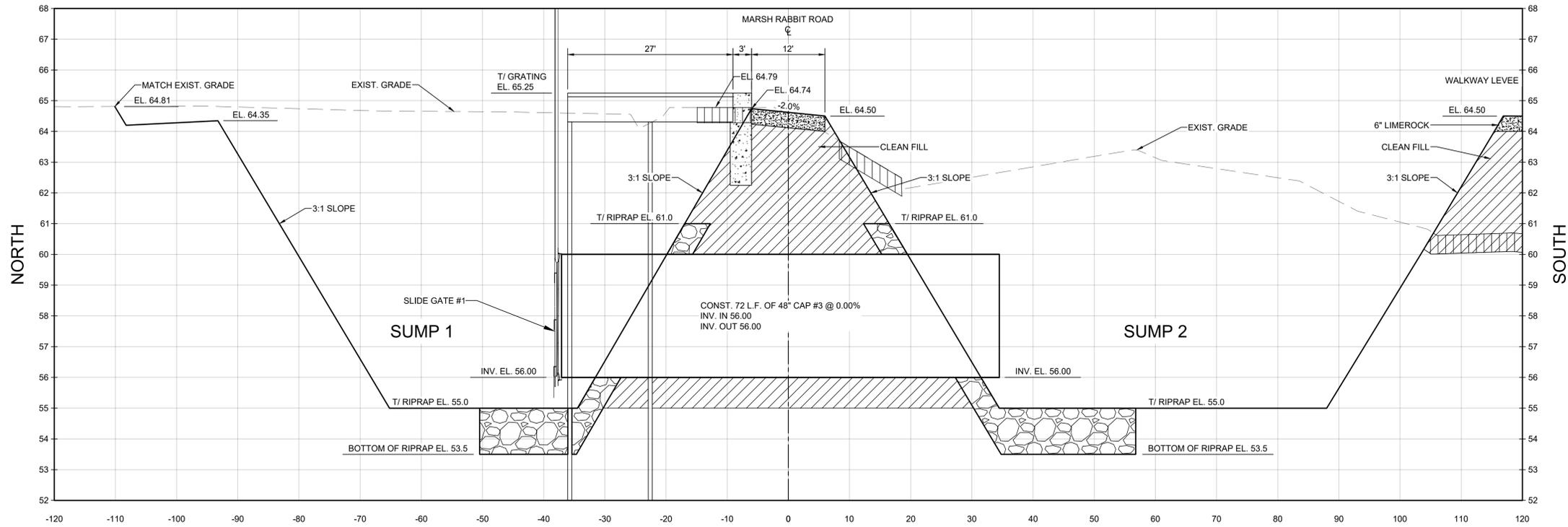
**ST. JOHNS RIVER**  
**WATER MANAGEMENT DISTRICT**  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.    DATE: AUGUST 24, 2020    REVIEWER: W.R.C.  
 SCALE: 1" = 30'    DESIGNER: R.J.N.    SECTION CHIEF: W.R.C.

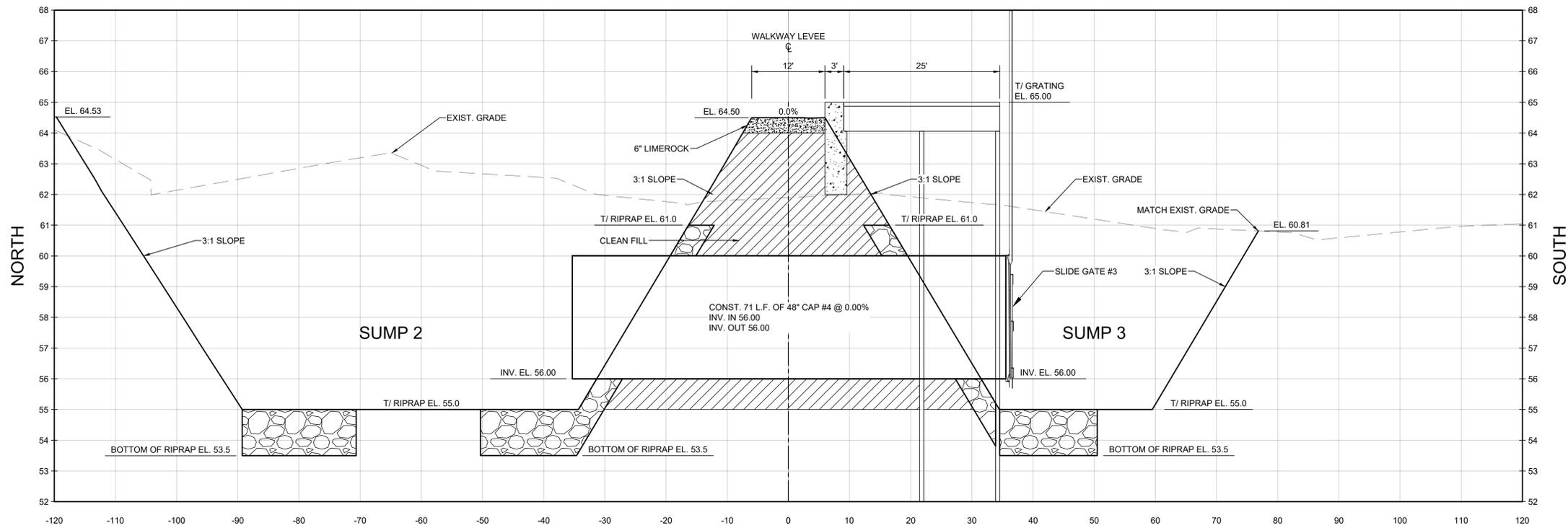
CENTRAL INTERSECTION

CERTIFICATION:  
 ROBERT J. NALEWAY  
 P.E. NUMBER: 53197  
 DATE: AUGUST 24, 2020

FILE NAME:  
 C2LADWSIOASP.dwg  
 PROJECT NO.:  
 SHEET:  
C14



C15 GATE STRUCTURE #1 CROSS SECTION STA 44+51.49  
1



C15 GATE STRUCTURE #3 CROSS SECTION STA 0+15.97  
2

**LEGEND:**

- CONCRETE
- GENERAL FILL
- GRUB OF GRASS
- LIMEROCK
- RIPRAP

GRAPHIC SCALE IN FEET

0 5 10 20  
HORIZONTAL

0 1 2 4  
VERTICAL

**FOR BID PURPOSES ONLY  
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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

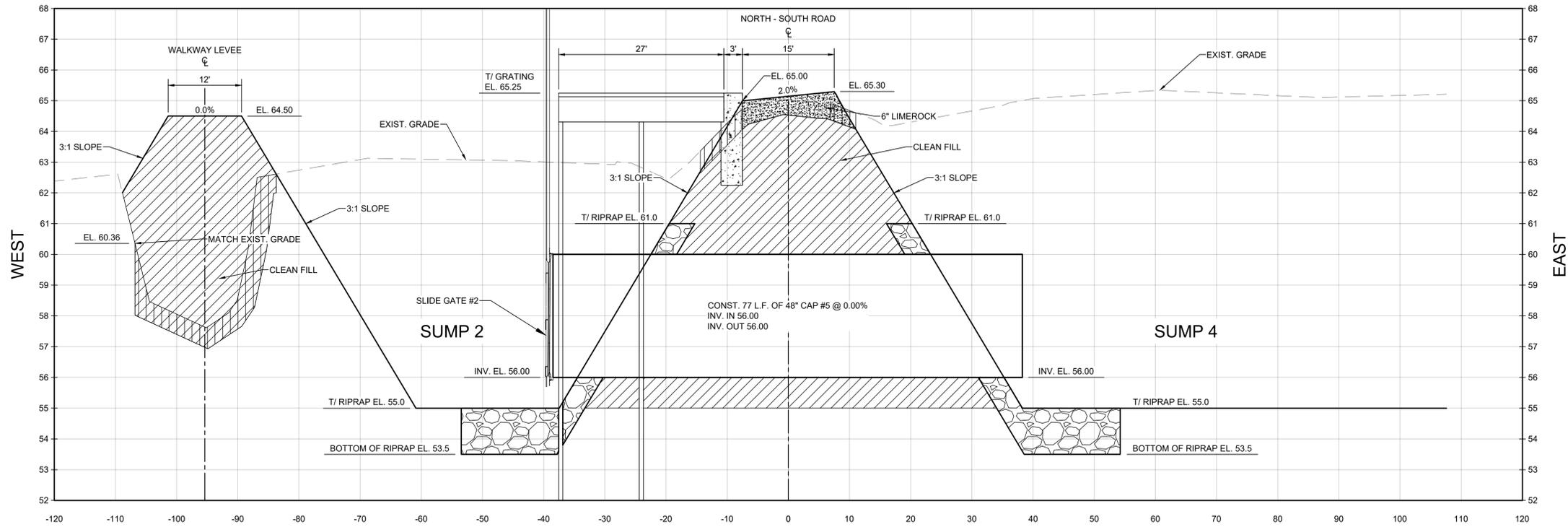
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
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DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

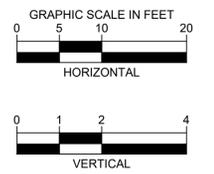
CENTRAL INTERSECTION CROSS SECTIONS

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

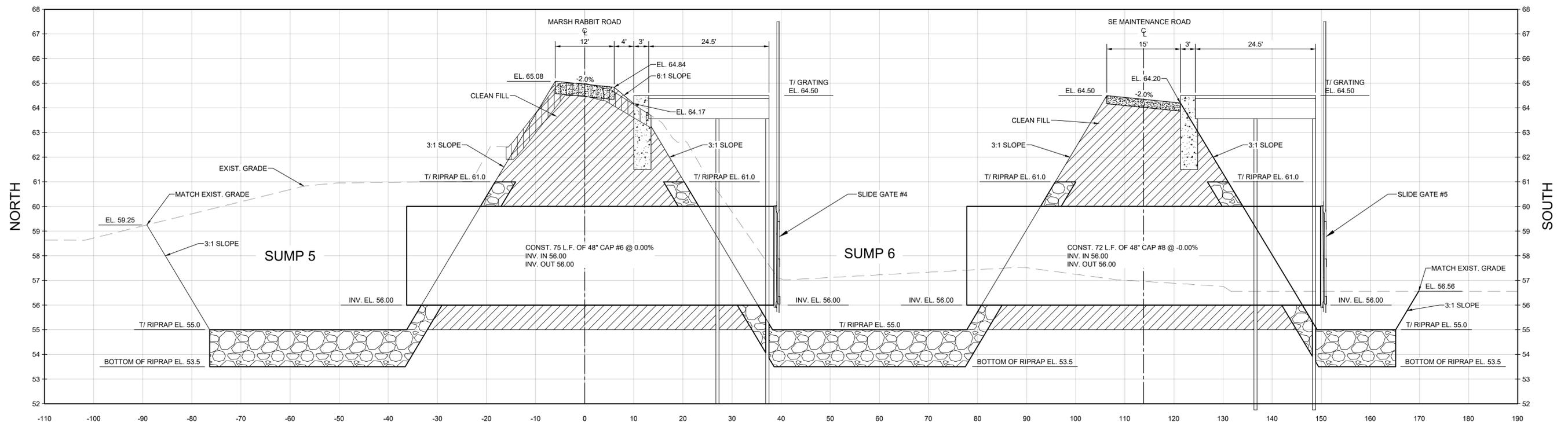
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PROJECT NO.:  
SHEET:  
C15



- LEGEND:**
- CONCRETE
  - GENERAL FILL
  - GRUB OF GRASS
  - LIMEROCK
  - RIPRAP



**C16** GATE STRUCTURE #2 CROSS SECTION 41+38.61  
1



**C16** GATE STRUCTURES #4 & #5 CROSS SECTION STA 49+45.93  
2

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UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

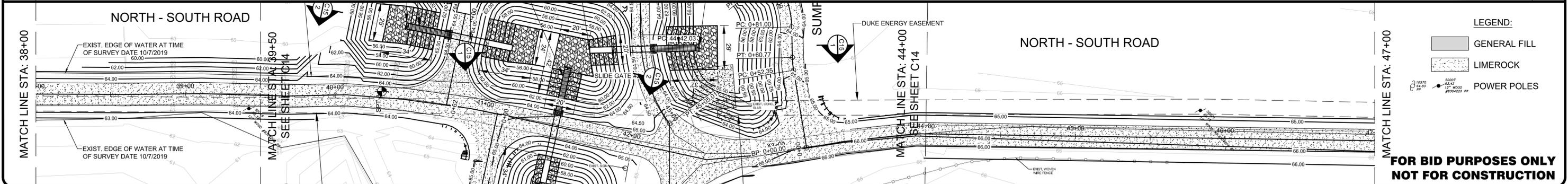
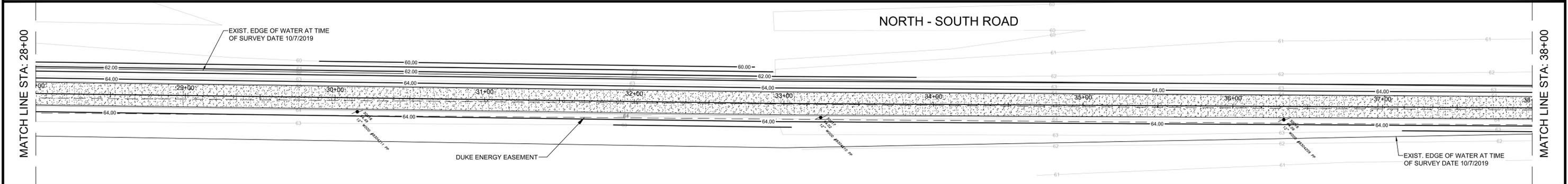
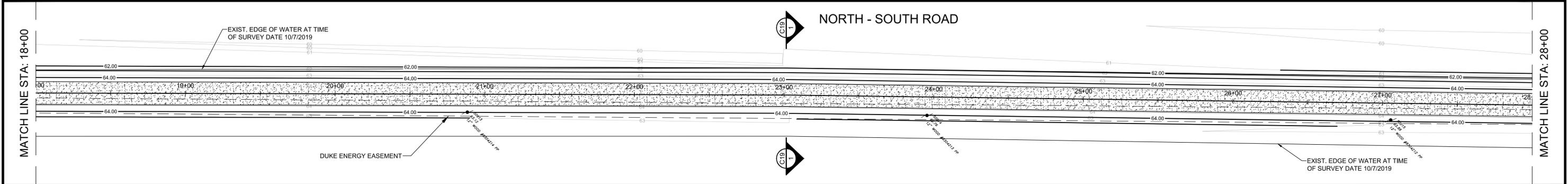
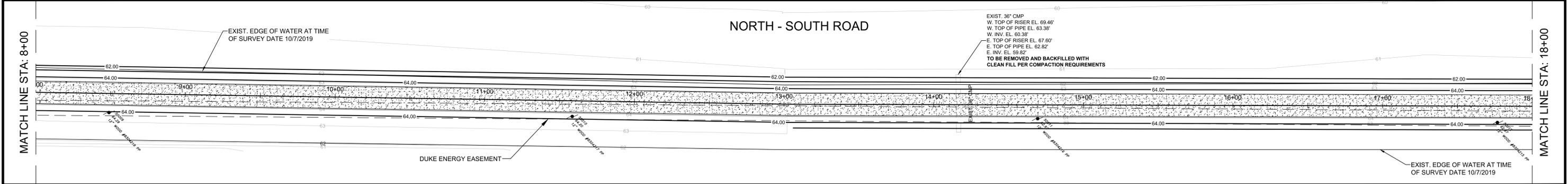
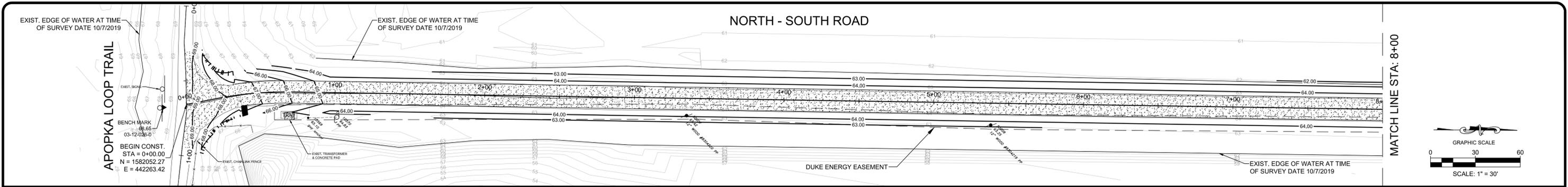
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

CENTRAL INTERSECTION CROSS SECTIONS

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
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SHEET:  
**C16**



NO.	REVISION	BY	DATE	APPROVED	DATE
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UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

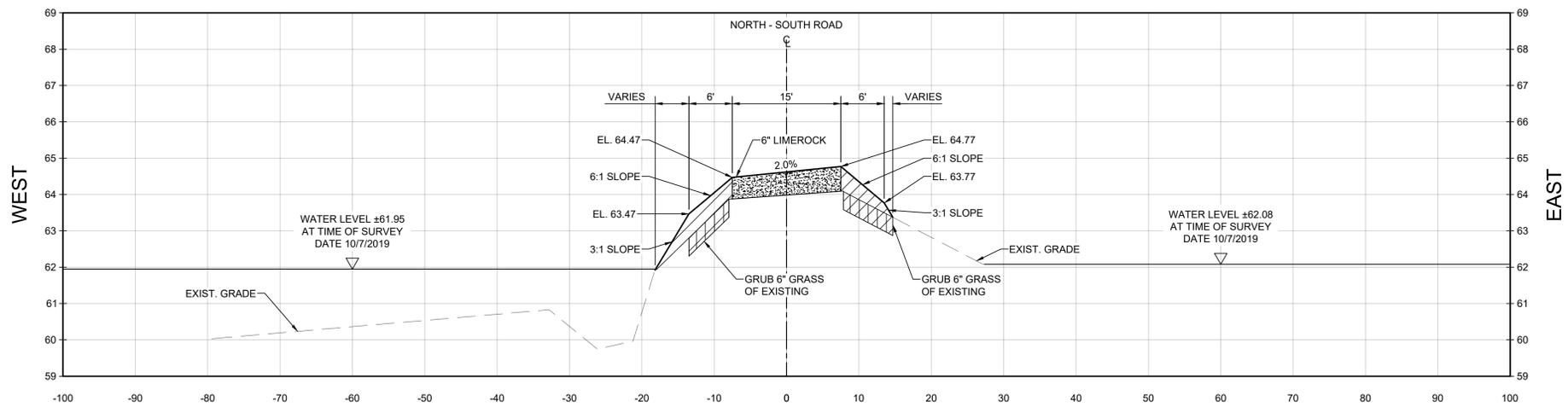
DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
 SCALE: 1" = 30' DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

NORTH - SOUTH ROAD PLAN

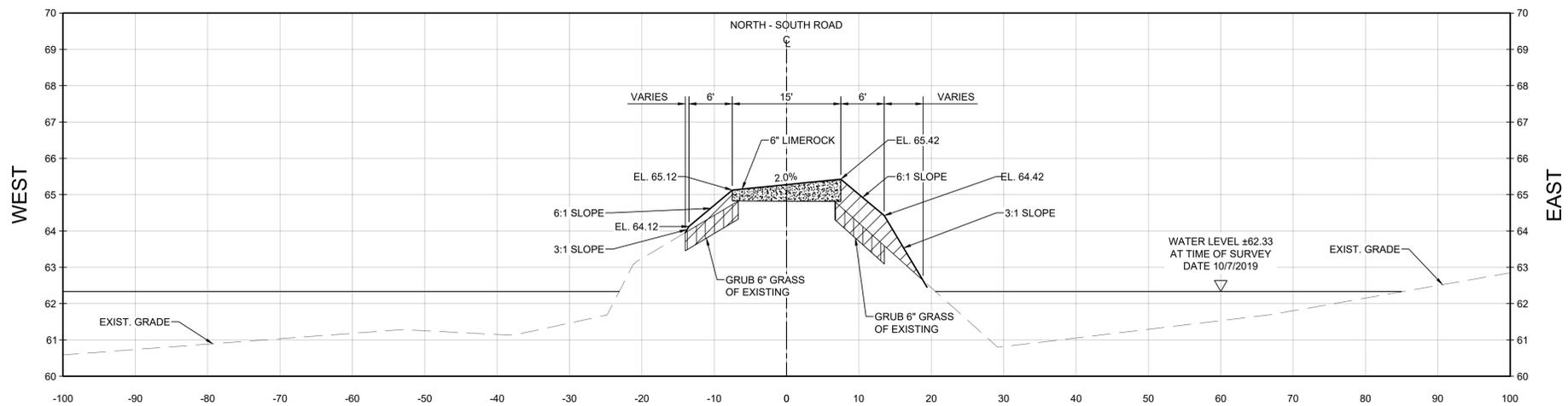
CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME: C2LADWSIOASP.dwg  
PROJECT NO.:  
SHEET: C17





**C19**  
1 NORTH - SOUTH ROAD CROSS SECTION STA 22+91.00



**C19**  
2 NORTH - SOUTH ROAD CROSS SECTION STA 62+91.00

**LEGEND:**

- GENERAL FILL
- GRUB OF GRASS
- LIMEROCK

GRAPHIC SCALE IN FEET

0 5 10 20  
HORIZONTAL

0 1 2 4  
VERTICAL

**FOR BID PURPOSES ONLY  
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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.

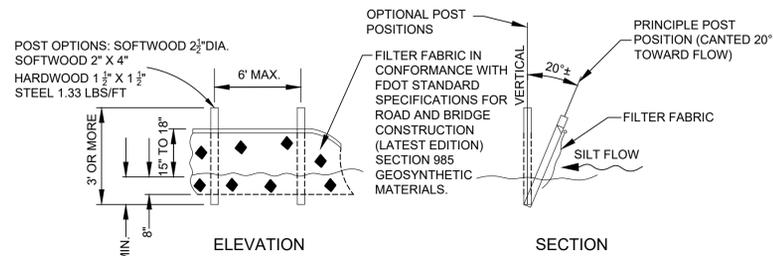
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

NORTH - SOUTH ROAD CROSS SECTIONS

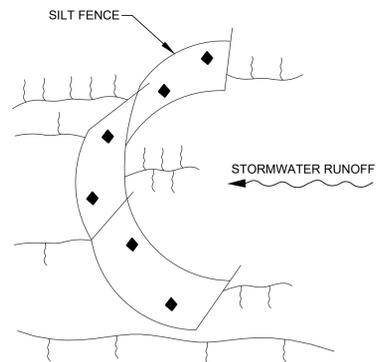
CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME:  
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PROJECT NO.:  
SHEET:  
**C19**

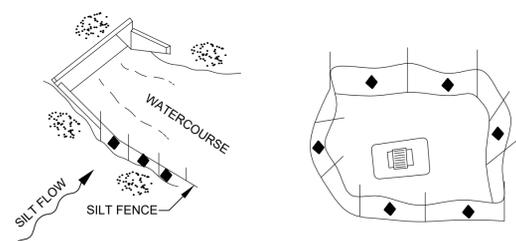
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TYPE III SILT FENCE



SILT FENCE PROTECTION IN DITCHES WITH INTERMITTENT FLOW

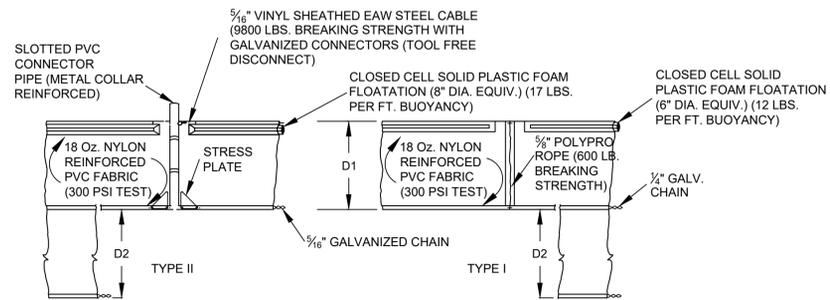


SILT FENCE APPLICATIONS

**NOTES FOR SILT FENCES**

- TYPE III SILT FENCE TO BE USED AT MOST LOCATIONS. WHERE USED IN DITCHES, THE SPACING FOR TYPE III SILT FENCE SHALL BE IN ACCORDANCE WITH SECTION V OF THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL (JULY 2013).
- TYPE IV SILT FENCE TO BE USED WHERE LARGE SEDIMENT LOADS ARE ANTICIPATED. SUGGESTED USE IS WHERE FILL SLOPE IS 1:2 OR STEEPER AND LENGTH OF SLOPE EXCEEDS 25 FEET. AVOID USE WHERE THE DETAINED WATER MAY BACK INTO TRAVEL LANES OR OFF THE RIGHT OF WAY.
- DO NOT CONSTRUCT SILT FENCES ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
- WHERE USED AS SLOPE PROTECTION, SILT FENCE IS TO BE CONSTRUCTED ON 0% LONGITUDINAL GRADE TO AVOID CHANNELIZING RUNOFF ALONG THE LENGTH OF THE FENCE.
- SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, (LF).

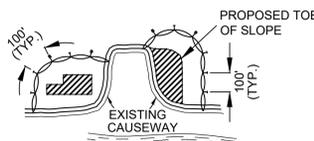
**TEMPORARY SILT FENCE DETAIL**  
NOT TO SCALE



D1= 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS).  
D2= 5' STD. (ADDITIONAL PANEL FOR DEPTHS > 5')  
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTICE: COMPONENTS OF TYPE I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGN. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

**FLOATING TURBIDITY BARRIERS**  
NOT TO SCALE



**GENERAL NOTES:**

- FLOATING TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FLOATING TURBIDITY BARRIER, LF.
- STAKED TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED TURBIDITY BARRIER, LF.

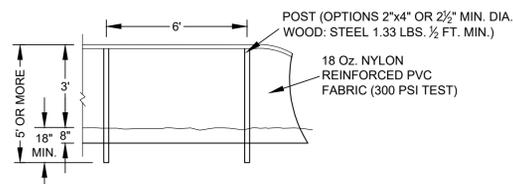
**NOTES:**

- TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
- NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
- DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
- NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.
- TURBIDITY BARRIERS SHALL CONFORM TO SECTION 104 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

**LEGEND**

- PILE LOCATIONS
- ▨ DREDGE OR FILL AREA
- MOORING BUOY/WANCHOR
- ANCHOR
- BARRIER MOVEMENT DUE TO CURRENT ACTION

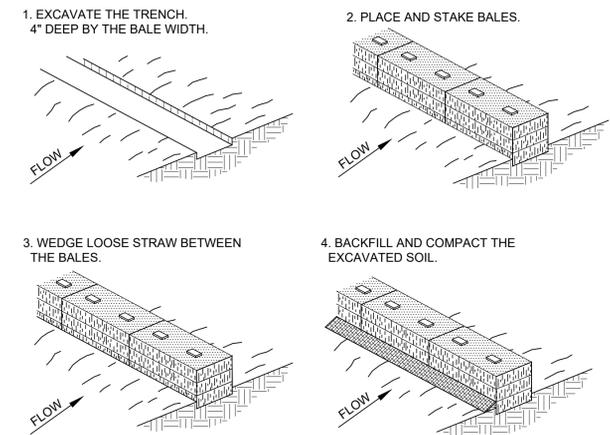
**TURBIDITY BARRIER APPLICATIONS**  
NOT TO SCALE



**STAKED TURBIDITY BARRIER**  
NOT TO SCALE

**NOTES:**

TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTOR'S OPTION UNLESS OTHERWISE SPECIFIED IN THE PLANS, HOWEVER PAYMENT WILL BE UNDER THE PAY ITEM(S) ESTABLISHED IN THE PLANS FOR FLOATING TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY THE DISTRICT.



**NOTES:**

- INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

**HAY BALE BARRIER**  
NOT TO SCALE

**EROSION AND SEDIMENT CONTROL NOTES:**

- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL WORK AT COMPLETION OF CONSTRUCTION.
- ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
- THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
- SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND GRASSED.
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS, PERMITS, AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT CRITERIA.
- FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL (LATEST EDITION).
- ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, WATERED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. GRASSING SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 570 AND 981 THRU 983 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITIONS). NOTE THAT OTHER GRASSING ALTERNATIVES MAY BE USED WITH PRIOR DISTRICT APPROVAL.

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NO.	REVISION	BY	DATE	APPROVED

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

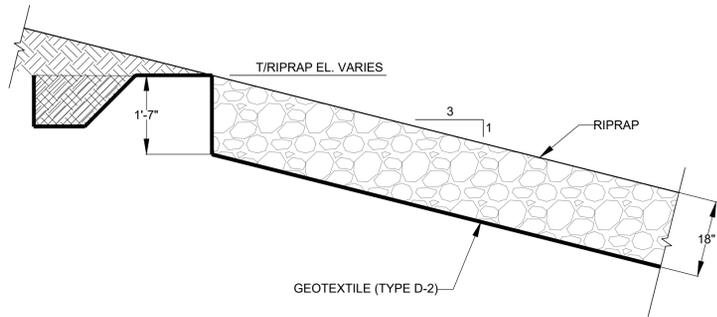
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

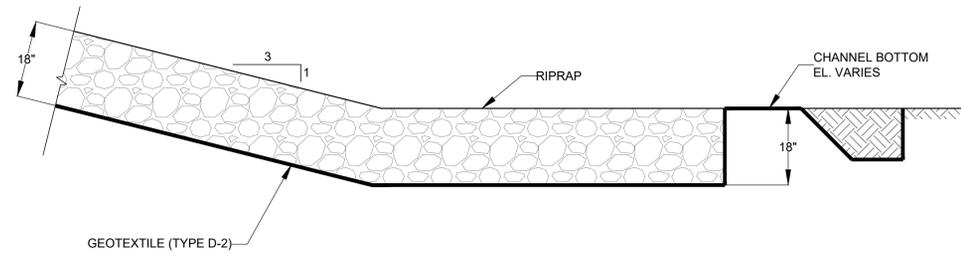
EROSION AND SEDIMENT CONTROL

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

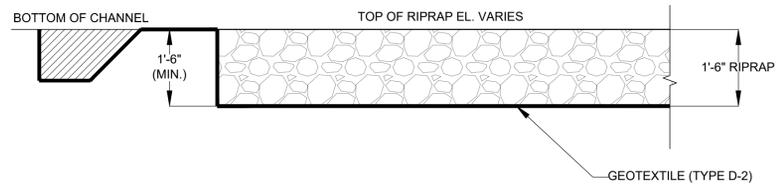
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PROJECT NO.:  
SHEET: C20



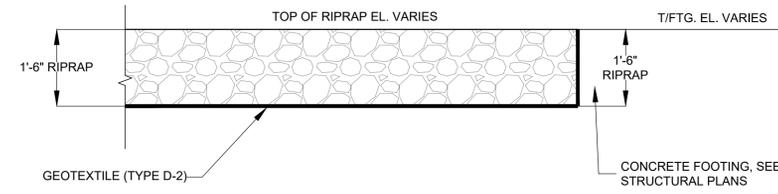
**C21**  
1  
RIPRAP KEY AT TOP OF SLOPE  
NOT TO SCALE



**C21**  
2  
RIPRAP KEY AT TOE OF SLOPE  
NOT TO SCALE



**C21**  
3  
RIPRAP KEY AT CHANNEL BOTTOM & EDGES  
NOT TO SCALE



**C21**  
4  
RIPRAP KEY AT CONCRETE FOOTING  
NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS AND NOTES FOR RIPRAP SYSTEM:**

- GENERAL: THIS SECTION SHALL COVER THE WORK OF FURNISHING AND CONSTRUCTING THE RIPRAP WHICH SHALL CONSIST OF A PROTECTIVE COURSE OF STONE OR OTHER APPROVED MATERIALS ON EMBANKMENT SLOPES, IN CHANNELS, OR OTHER WORK AS SHOWN ON THE PLANS OR DIRECTED, WITH A FILTER BLANKET, ALL IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CONFORMITY WITH THE LINES AND GRADES NOTED IN THE PLAN DETAILS.
- RELATED DOCUMENTS:
  - DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
  - FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), SECTION 530, AND FDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION). WORK SHALL COMPLY WITH THE REQUIREMENTS OF FDOT SPECIFICATIONS AND STANDARD INDEX AS MODIFIED HEREIN.
- UNLESS OTHERWISE NOTED, RUBBLE RIPRAP FOR CHANNEL PROTECTION ON DISTRICT LAND FOR THIS PROJECT SHALL CONSIST ENTIRELY OF BROKEN STONE OR CONCRETE AND SHALL COMPLY WITH THE REQUIREMENTS SECTION 530-2.1.3.2 (DITCH LINING) OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).
- GEOTEXTILE FABRIC SHALL BE MIRAFI FILTERWEAVE WOVEN NO. FW 404 (OR APPROVED EQUAL) AND SHALL COMPLY WITH THE REQUIREMENTS SECTION 514 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION). ADDITIONALLY, THE GEOTEXTILE FABRIC MATERIAL SHALL CONFORM TO THE REQUIREMENTS FOR TYPE D-2 OF THE FDOT SPECIFICATIONS SECTION 985.
- CONSTRUCTION REQUIREMENTS: ALL SLOPES TO BE TREATED WITH RIPRAP SHALL BE TRIMMED TO THE LINES AND GRADES INDICATED BY THE PLANS OR DIRECTED, LOOSE MATERIAL SHALL BE COMPACTED BY METHODS APPROVED BY THE DISTRICT OR REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. PLACEMENT OF ANY RIPRAP ON A FILTER BLANKET SHALL BE BY SUCH MEANS THAT WILL NOT DAMAGE OR DESTROY THE BLANKET. ANY DAMAGE TO THE BLANKET SHALL BE REPAIRED OR REPLACED; TO THE DISTRICT'S APPROVAL, WITHOUT ADDITIONAL COMPENSATION. IF DIRECTED BY THE DISTRICT OR SHOWN BY PLAN DETAILS, ALL OUTER EDGES AND THE TOP OF RIPRAP WHERE THE RIPRAP TERMINATES SHALL BE FORMED SO THAT THE SURFACE OF THE RIPRAP WILL BE EMBEDDED AND EVEN WITH THE SURFACE OF THE GROUND AND/OR SLOPE. ALL RIPRAP CONSTRUCTION SHALL BEGIN AT THE BOTTOM OF THE SLOPE AND PROGRESS UPWARD.

FOUNDATION PREPARATION: AREAS ON WHICH FILTER FABRICS ARE TO BE PLACED SHALL BE UNIFORMLY TRIMMED AND DRESSED TO CONFORM TO CROSS-SECTIONS SHOWN BY THE PLANS AND SHALL ALSO CONFORM TO THE REQUIREMENTS UNDER "EARTHWORK" AND ANY OTHER APPLICABLE SPECIFICATIONS ON SHEET C1 OF THE FWMA AREA 3-4-5 LEVEE RECORD DRAWINGS DATED 8/25/2011.

FILTER FABRIC (GEOTEXTILE MATERIAL): FILTER FABRIC SHALL BE PLACED IN THE MANNER AND AT THE LOCATIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE DISTRICT. AT THE TIME OF INSTALLATION, FABRIC SHALL BE REJECTED IF IT HAS DEFECTS, RIPS, HOLES, FLAWS, DETERIORATION OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION OR STORAGE. THE FABRIC SHALL BE PLACED WITH THE LONG DIMENSION PARALLEL TO THE CENTERLINE OF THE CHANNEL OR SHORELINE UNLESS OTHERWISE DIRECTED BY THE DISTRICT, AND SHALL BE LAID SMOOTH AND FREE OF TENSION, STRESS, FOLDS, WRINKLES OR CREASES. THE STRIPS SHALL BE PLACED TO PROVIDE A MINIMUM WIDTH OF 24 INCHES OF OVERLAP FOR EACH JOINT WITH THE UPSTREAM STRIP OF FABRIC OVERLAPPING THE DOWNSTREAM STRIP. OVERLAP JOINTS AND SEAMS SHALL BE MEASURED AS A SINGLE LAYER OF CLOTH. SECURING PINS WITH WASHERS SHALL BE INSERTED THROUGH BOTH STRIPS OF OVERLAPPED CLOTH AT NOT GREATER THAN THE FOLLOWING INTERVALS ALONG A LINE THROUGH THE MIDPOINT OF THE OVERLAP.

PIN SPACING	SLOPE
2 FT.	STEEPER THAN 3:1
3 FT.	3:1 TO 4:1
5 FT.	FLATTER THAN 4:1

THE FABRIC SHALL BE TURNED DOWN AND BURIED TWO FEET AT ALL EXTERIOR LIMITS EXCEPT WHERE A STONE-FILLED KEY IS PROVIDED BELOW NATURAL GROUND OR OTHERWISE SHOWN. ADDITIONAL PINS REGARDLESS OF LOCATION SHALL BE INSTALLED AS NECESSARY TO PREVENT ANY SLIPPAGE OF THE FILTER FABRIC. OVERLAPS IN THE FABRIC SHALL BE PLACED SO THAT ANY UPSTREAM STRIP OF FABRIC WILL OVERLAP THE DOWNSTREAM STRIP. SHOULD THE DISTRICT DIRECT THAT THE FABRIC BE PLACED WITH THE LONG DIMENSION PERPENDICULAR TO THE CENTERLINE OF THE CHANNEL OR SHORELINE, THE LOWER STRIP OF FABRIC SHALL UNDERLAP THE NEXT HIGHER STRIP. EACH SECURING PIN SHALL BE PUSHED THROUGH THE FABRIC UNTIL THE WASHER BEARS AGAINST THE FABRIC AND SECURES IT FIRMLY TO THE FOUNDATION. THE FABRIC SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION FROM CONTAMINATION BY SURFACE RUNOFF AND ANY FABRIC SO CONTAMINATED SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED FABRIC. ANY DAMAGE TO THE FABRIC DURING ITS INSTALLATION OR DURING PLACEMENT OF RIPRAP SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST. THE WORK SHALL BE SCHEDULED SO THAT 5 DAYS DOES NOT EXPIRE BETWEEN PLACEMENT OF THE FABRIC AND THE COVERING OF THE FABRIC WITH RIPRAP.

STONE AND CONCRETE RUBBLE RIPRAP: PLACEMENT OF STONE OR CONCRETE MAY, UNLESS OTHERWISE NOTED HEREINAFTER, BE PLACED BY METHODS AND EQUIPMENT APPROVED BY THE DISTRICT SUITABLE FOR THE PURPOSE OF PLACING THE RIPRAP IN ACCORDANCE WITH THE REQUIREMENTS FOR THE CLASS RIPRAP INVOLVED WITHOUT DAMAGING ANY EXISTING FACILITY OR CONSTRUCTION FEATURE. THE STONE OR CONCRETE SHALL BE PLACED IN SUCH A MANNER AS TO PRODUCE A REASONABLY WELL GRADED MASS OF ROCK WITH THE MINIMUM PRACTICAL PERCENTAGE OF VOIDS. STONE OR CONCRETE SHALL BE LAID WITH CLOSE BROKEN JOINTS AND RESTING ON THE EMBANKMENT SLOPE. THE RIPRAP SHALL BE CONSTRUCTED TO THE LINES, GRADES AND THICKNESS SHOWN BY THE PLANS OR AS DIRECTED. RIPRAP SHALL BE PLACED TO ITS FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACING OR DAMAGING THE FILTER BLANKET MATERIAL. THE LARGER STONE OR CONCRETES SHALL BE WELL DISTRIBUTED AND THE ENTIRE MASS OF STONE OR CONCRETES IN THEIR FINAL POSITION SHALL CONFORM TO A REASONABLE UNIFORM GRADATION. THE FINISHED RIPRAP SHALL BE FREE FROM OBJECTIONABLE POCKETS OF SMALL STONE OR CONCRETES AND CLUSTERS OF LARGER STONE OR CONCRETES. OPEN JOINTS SHALL BE FILLED WITH SPALLS, OR SMALL STONE OR CONCRETES IN SUCH MANNER THAT ALL STONE OR CONCRETES ARE TIGHTLY WEDGED OR KEYED. PLACING RIPRAP BY DUMPING INTO CHUTES OR BY OTHER METHODS LIKELY TO CAUSE SEGREGATION OF SIZES SHALL NOT BE PERMITTED. THE DESIRED DISTRIBUTION OF THE VARIOUS SIZES OF STONE OR CONCRETES THROUGHOUT THE MASS SHALL BE OBTAINED BY SELECTIVE LOADING OF THE MATERIAL AT THE SOURCE, BY CONTROLLED DUMPING OF SUCCESSIVE LOADS DURING FINAL PLACING, OR BY OTHER METHODS OF PLACEMENT WHICH WILL PRODUCE THE SPECIFIED RESULTS. THE INDIVIDUAL PIECES OF STONE OR CONCRETE IN EACH HORIZONTAL COURSE SHALL BE LAID SO THAT THEY WILL BREAK AWAY FROM EMBANKMENT. REARRANGING OF INDIVIDUAL STONE OR CONCRETES BY MECHANICAL EQUIPMENT, OR BY HAND, WILL BE REQUIRED TO THE EXTENT NECESSARY TO OBTAIN A REASONABLY WELL GRADED DISTRIBUTION OF STONE OR CONCRETE AS SPECIFIED HEREIN.

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NOT FOR CONSTRUCTION**

NO.	REVISION	BY	DATE	APPROVED	DATE
1	ISSUED FOR BID	N.J.G.	08/24/20	R.J.N.	08/24/20

UPPER OCKLAWAHA RIVER BASIN  
LAKE AOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

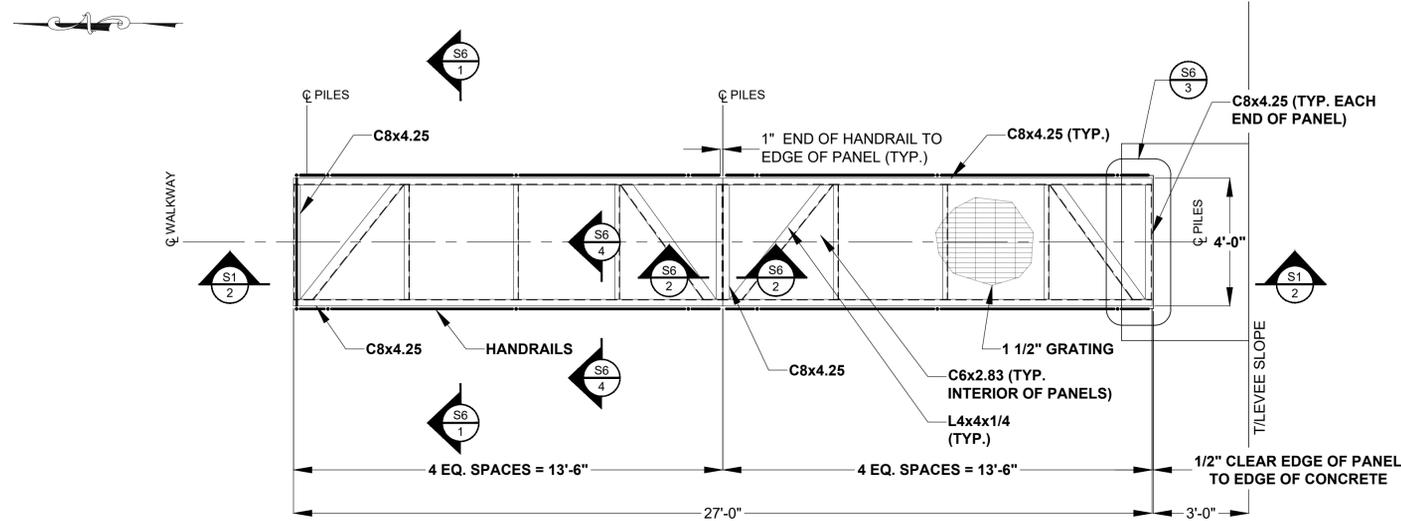
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: DESIGNER: R.J.N. SECTION CHIEF: W.R.C.

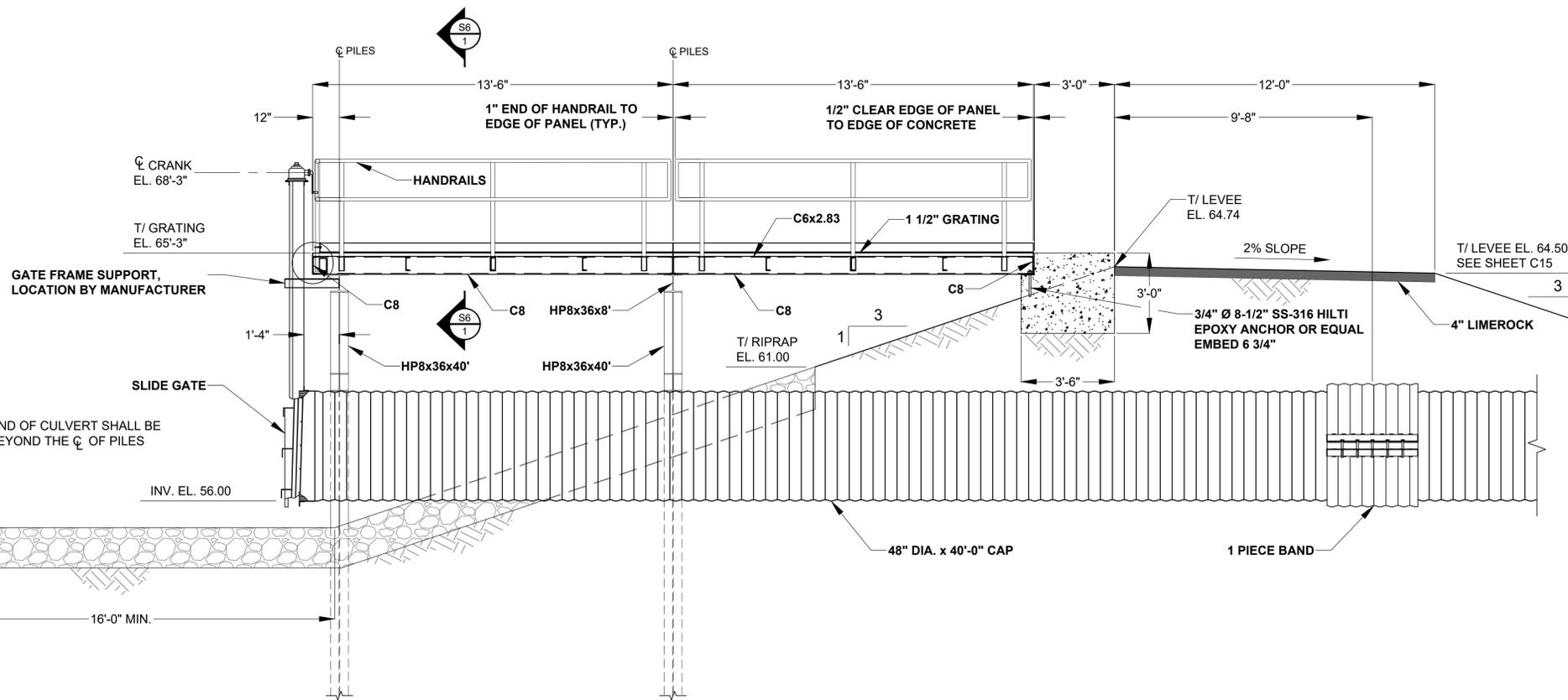
RIPRAP DETAILS

CERTIFICATION:  
ROBERT J. NALEWAY  
P.E. NUMBER: 53197  
DATE: AUGUST 24, 2020

FILE NAME: CSLADWSIOARR.dwg  
PROJECT NO.:  
SHEET: C21



S1  
1 PLAN GATE STRUCTURE #1  
SCALE: 3/8" = 1'-0"  
REFER TO SHEET C14 FOR LOCATION



S1  
2 SECTION GATE STRUCTURE #1  
SCALE: 3/8" = 1'-0"

**NOTE SPECIFICATIONS:**

**CONCRETE:**

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, SECTION 400 WITH SUPPLEMENTS AND ALL PERTINENT SPECIFICATIONS CONTAINED THEREIN.
2. ALL CONCRETE SHALL BE FDOT CLASS I WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. PORTLAND CEMENT SHALL BE TYPE II IN ACCORDANCE WITH ASTM C-150. THE AGGREGATES SHALL CONFORM TO ASTM C-33 AND SHALL HAVE A 3/4-INCH MAXIMUM SIZE.
3. REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BILLET STEEL BARS CONFORMING TO ASTM A-615.
4. THE MINIMUM CLEAR CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST EARTH AND 2 INCHES ELSEWHERE, UNLESS OTHERWISE NOTED.
5. CONCRETE ANCHORS SHALL UTILIZE THE HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM, OR EQUAL. THREADED ANCHOR RODS, SHALL BE 3/4" DIA. X 8-1/2" LONG HAS-R 316 STAINLESS STEEL WITH A MINIMUM EMBEDMENT DEPTH OF 6-3/4". NUTS AND WASHERS SHALL ALSO BE SS-316.

**STRUCTURAL STEEL:**

1. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", NINTH EDITION.
2. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE" AWS D1.1.
3. ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE NEW AND CONFORM TO THE REQUIREMENTS OF THE AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) STANDARD A36 UNLESS NOTED OTHERWISE.
4. ALL BOLTS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A276, TYPE 304.
5. ALL WELDING SHALL UTILIZE E70XX LOW-HYDROGEN ELECTRODES UNLESS NOTED OTHERWISE.

**STRUCTURAL ALUMINUM:**

1. STRUCTURAL ALUMINUM DESIGN AND FABRICATION SHALL BE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION, INC. "SPECIFICATIONS FOR ALUMINUM STRUCTURES", LATEST EDITION.
2. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE - ALUMINUM" AWS D1.2.
3. ALUMINUM STRUCTURAL SHAPES SHALL BE NEW AND CONSIST OF ALLOY 6061-T6 CONFORMING TO THE REQUIREMENTS OF THE AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) STANDARD B308.
4. ALUMINUM BARS, RODS, AND WIRE SHALL BE NEW AND CONSIST OF ALLOY 6061-T6 CONFORMING TO THE REQUIREMENTS OF ASTM STANDARD B211.
5. ALUMINUM PLATE SHALL BE NEW AND CONSIST OF ALLOY 5052-H32 CONFORMING TO THE REQUIREMENTS OF ASTM STANDARD B209.
6. ALL BOLTS, NUTS, AND WASHERS SHALL CONSIST OF SS316 STAINLESS STEEL CONFORMING TO THE REQUIREMENTS OF ASTM STANDARDS F593 AND F594. MINIMUM BOLT SIZE SHALL BE 3/4-INCH UNLESS OTHERWISE NOTED.
7. ALL WELDING SHALL UTILIZE ER4043 FILLER ALLOY AND SHALL BE SHOP WELDED TO THE GREATEST EXTENT POSSIBLE.
8. THE MINIMUM THICKNESS OF ALL CONNECTION ANGLES AND GUSSET PLATES SHALL BE 1/4-INCH UNLESS NOTED OTHERWISE.
9. FIELD CORRECTING OF FABRICATED COMPONENTS SHALL NOT BE PERMITTED ON STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
10. ALUMINUM GRATING SHALL BE RECTANGULAR BAR TYPE (SERRATED), SWAGE-LOCKED, AND CONSIST OF ALUMINUM ALLOY 6063-T6. THE BEARING BARS SHALL BE 1-1/2" X 3/16" AT 1-3/16" ON CENTER. RECTANGULAR CROSS BARS SHALL BE 4" ON CENTER. GRATING SHALL BE ATTACHED WITH GRATING CLIPS TYPE AND SPACING AS RECOMMENDED BY THE MANUFACTURER.
11. THE HANDRAIL POSTS AND RAILS SHALL BE 1-1/2 INCH DIAMETER SCHEDULE 40 PIPE FORMED FROM EXTRUDED 6063-T6 ALUMINUM EXCEPT THAT FORMED ELBOWS SHALL BE 6063-T4 ALUMINUM. THE MAXIMUM POST SPACING SHALL BE 6'-0" CENTER TO CENTER.
12. THE STRUCTURES ARE DESIGNED AS STABLE UNITS AFTER ALL COMPONENTS, INCLUDING BRACING, ARE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AS REQUIRED TO ENSURE THE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR ANY PORTION THEREOF DURING CONSTRUCTION.

**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

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NO.	REVISION	BY	DATE	APPROVED	DATE
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UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

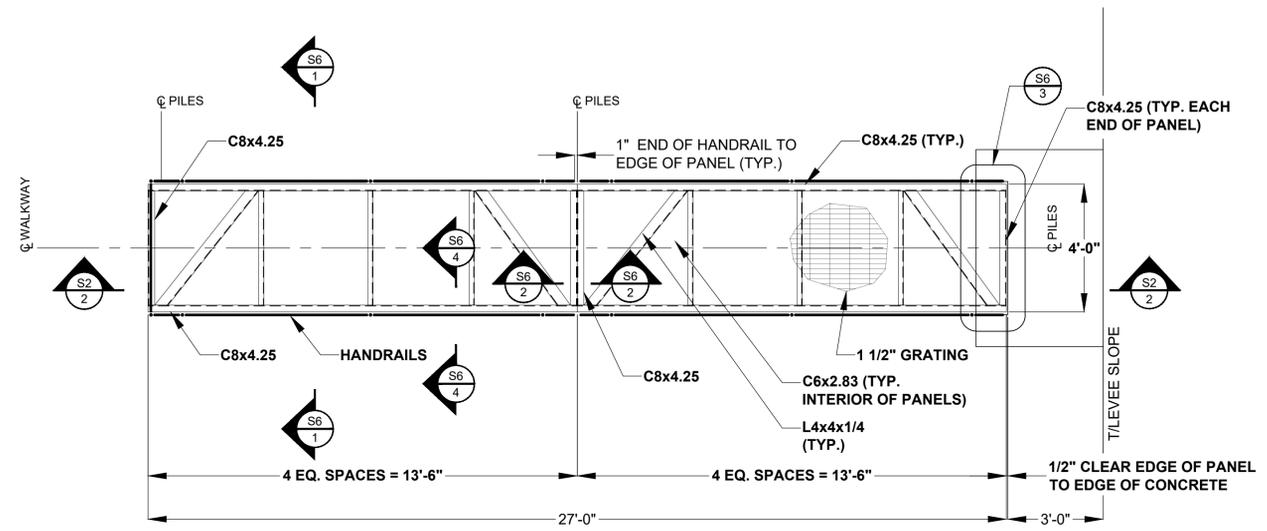
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: 3/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

GATE STRUCTURE #1  
PLAN AND SECTION

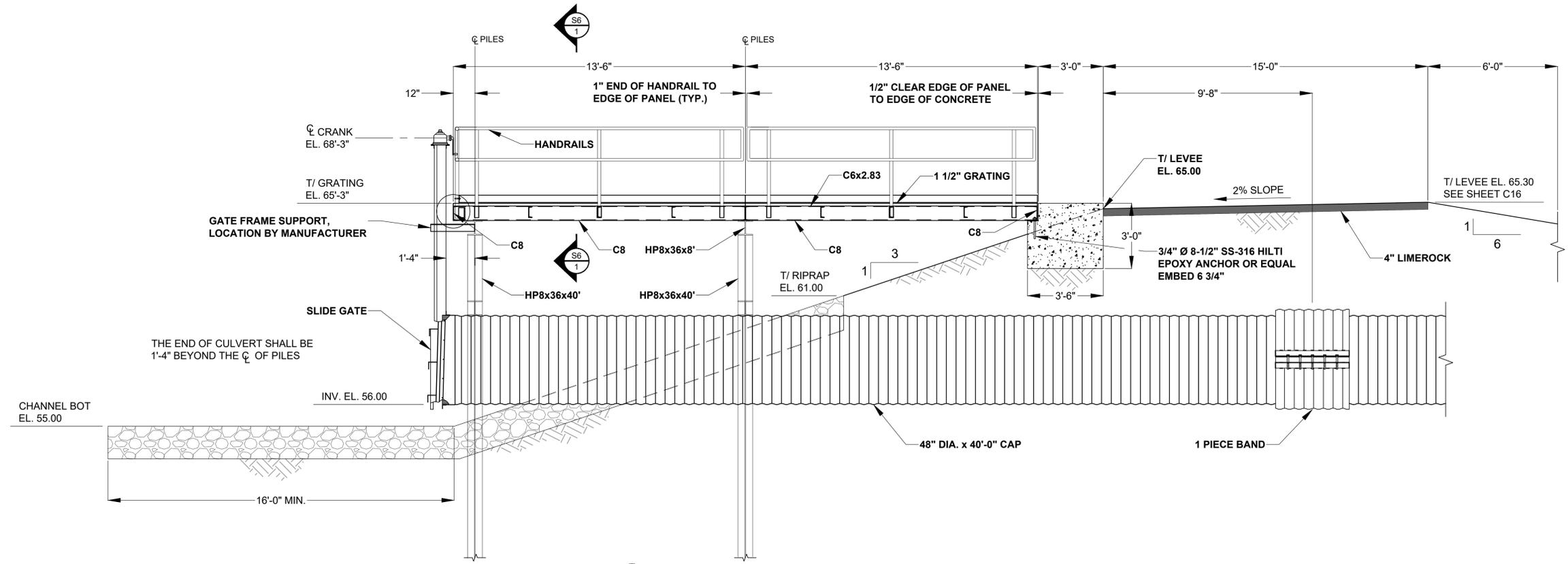
CERTIFICATION:  
WILLIAM R. COTE  
P.E. NUMBER: 53746  
DATE: AUGUST 24, 2020

FILE NAME:  
S1DUDAWALKWAY.dwg  
PROJECT NO.:  
SHEET:  
S1



**S2**  
1  
PLAN GATE STRUCTURE #2  
SCALE: 3/8" = 1'-0"  
REFER TO SHEET C14 FOR LOCATION

SEE SHEET S1 FOR NOTE SPECIFICATIONS:



**S2**  
2  
SECTION GATE STRUCTURE #2  
SCALE: 3/8" = 1'-0"

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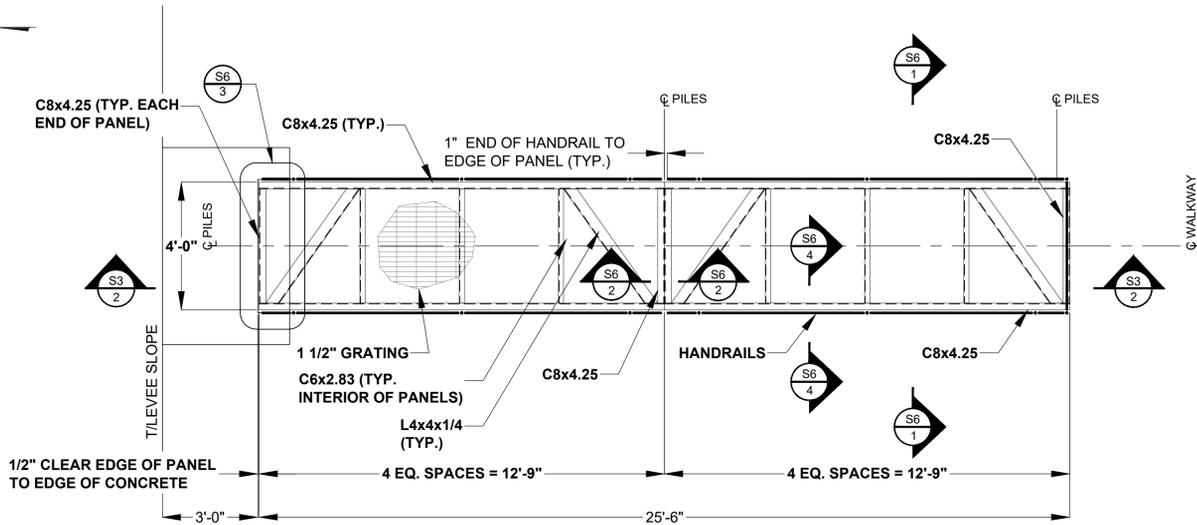
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DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: 3/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

GATE STRUCTURE #2  
PLAN AND SECTION

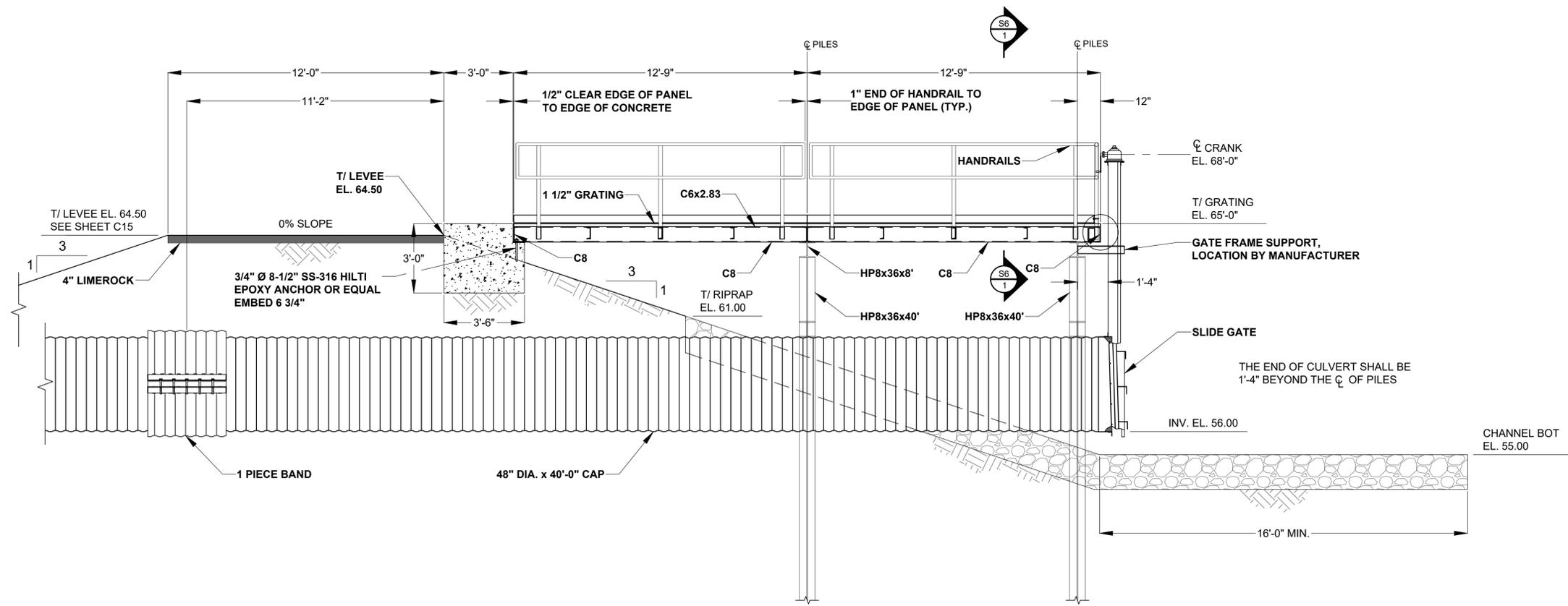
CERTIFICATION:  
WILLIAM R. COTE  
P.E. NUMBER: 53746  
DATE: AUGUST 24, 2020

FILE NAME:  
SIDWALKWAY.dwg  
PROJECT NO.:  
SHEET:  
S2



SEE SHEET S1 FOR NOTE SPECIFICATIONS:

**S3 1** PLAN GATE STRUCTURE #3  
 SCALE: 3/8" = 1'-0"  
 REFER TO SHEET C14 FOR LOCATION



**S3 2** SECTION GATE STRUCTURE #3  
 SCALE: 3/8" = 1'-0"

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NO.	REVISION	BY	DATE	APPROVED	DATE
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UPPER OCKLAWAHA RIVER BASIN  
 LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
 LAKE COUNTY AND ORANGE COUNTY, FLORIDA

**ST. JOHNS RIVER  
 WATER MANAGEMENT DISTRICT**  
 P.O. BOX 1429 PALATKA, FLORIDA

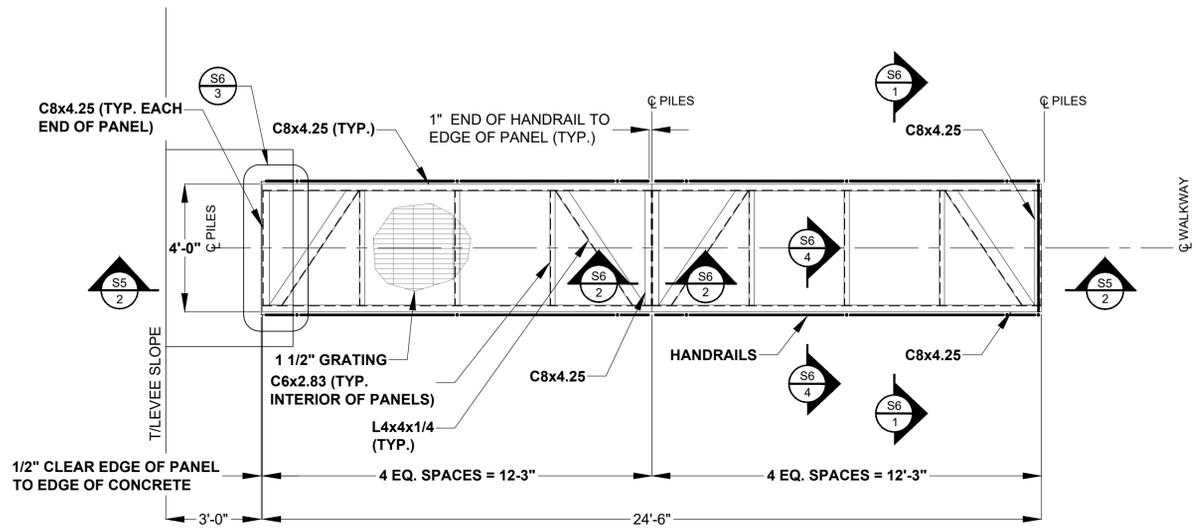
DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
 SCALE: 3/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

**GATE STRUCTURE #3  
 PLAN AND SECTION**

CERTIFICATION:  
 WILLIAM R. COTE  
 P.E. NUMBER: 53746  
 DATE: AUGUST 24, 2020

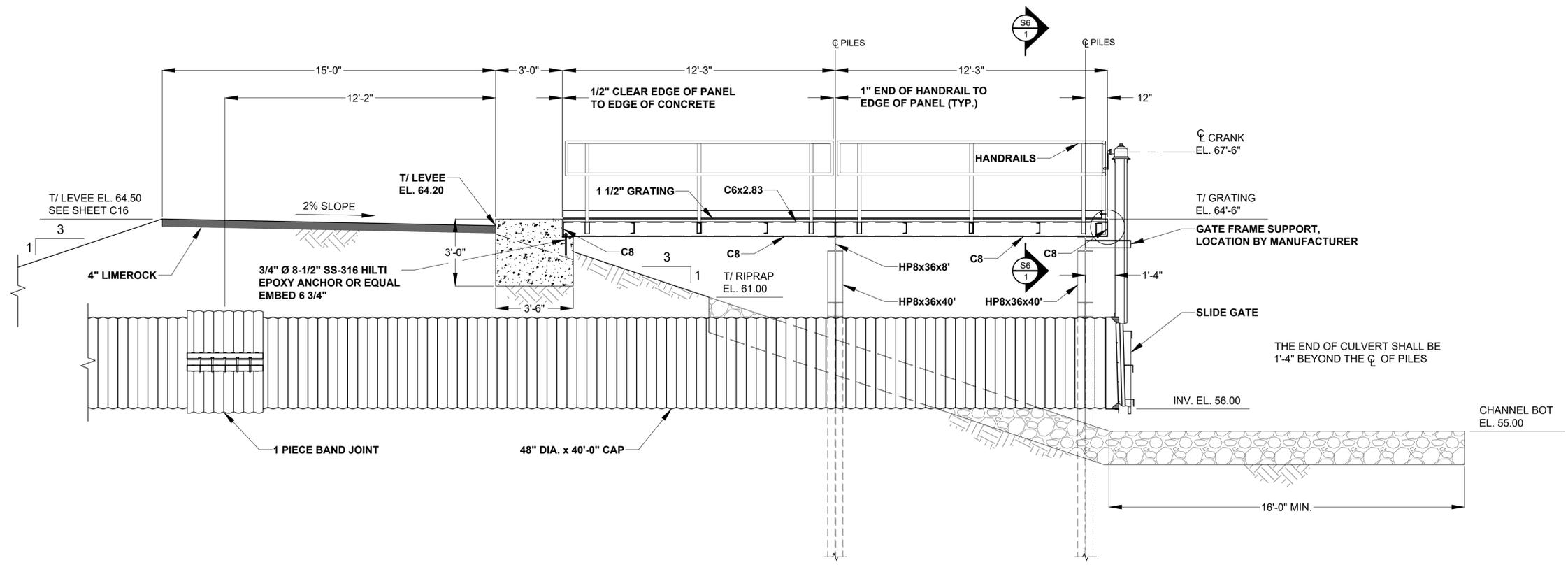
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 SHEET:  
**S3**





**S5**  
1  
**PLAN GATE STRUCTURE #5**  
SCALE: 3/8" = 1'-0"  
REFER TO SHEET C14 FOR LOCATION

SEE SHEET S1 FOR NOTE SPECIFICATIONS:



**S5**  
2  
**SECTION GATE STRUCTURE #5**  
SCALE: 3/8" = 1'-0"

**FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION**

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NO.	REVISION	BY	DATE	APPROVED	DATE
1	ISSUED FOR BID	N.J.G.	08/24/20	W.R.C.	08/24/20

UPPER OCKLAWAHA RIVER BASIN  
LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
LAKE COUNTY AND ORANGE COUNTY, FLORIDA

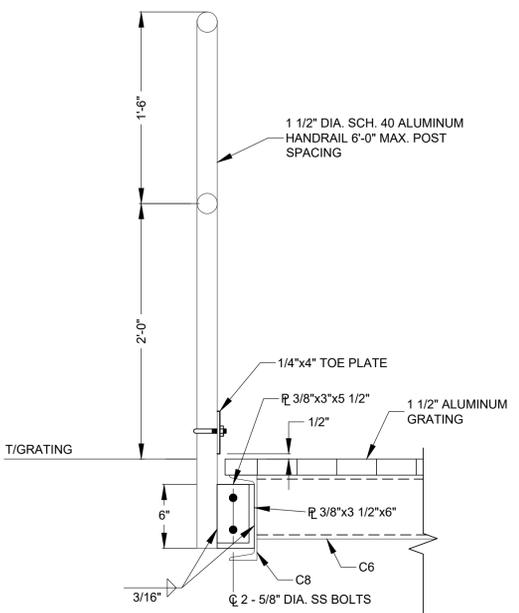
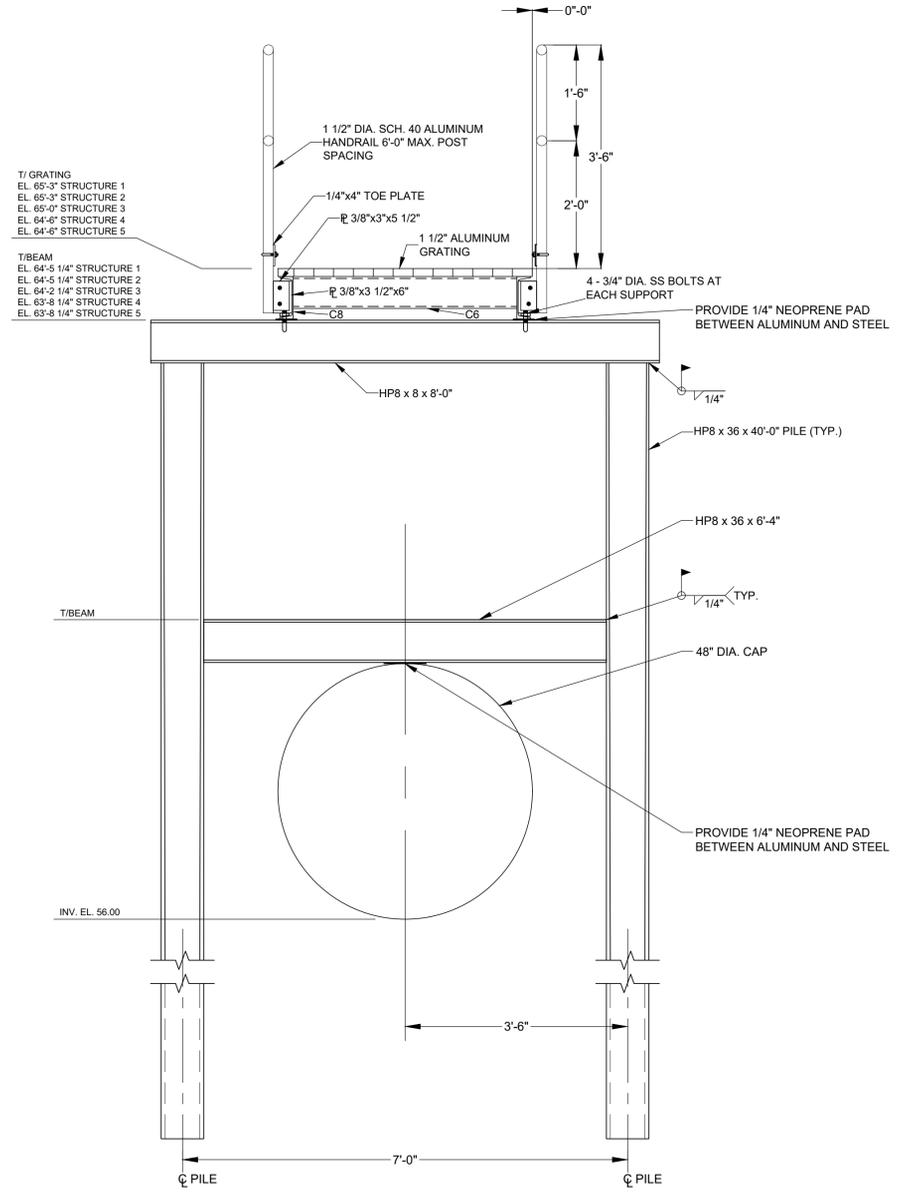
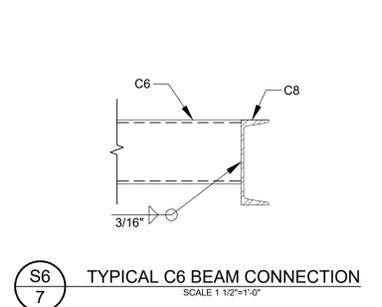
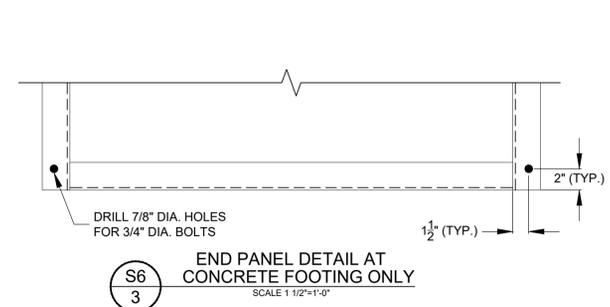
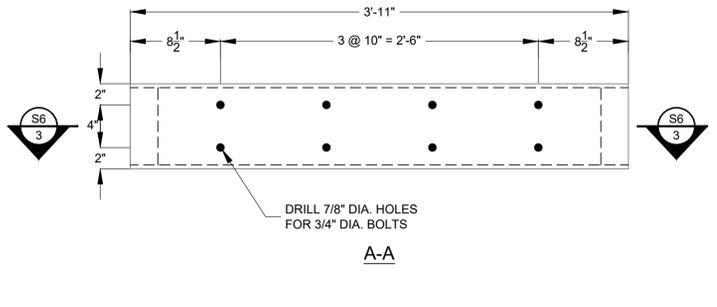
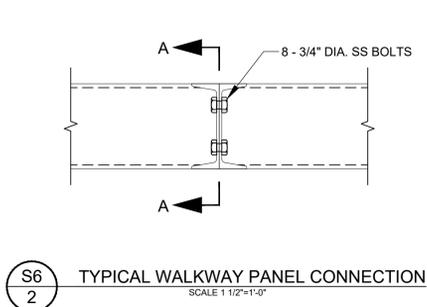
**ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT**  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: 3/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

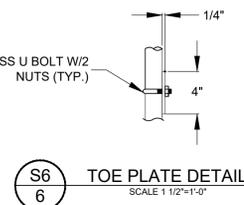
**GATE STRUCTURE #5  
PLAN AND SECTION**

CERTIFICATION:  
WILLIAM R. COTE  
P.E. NUMBER: 53748  
DATE: AUGUST 24, 2020

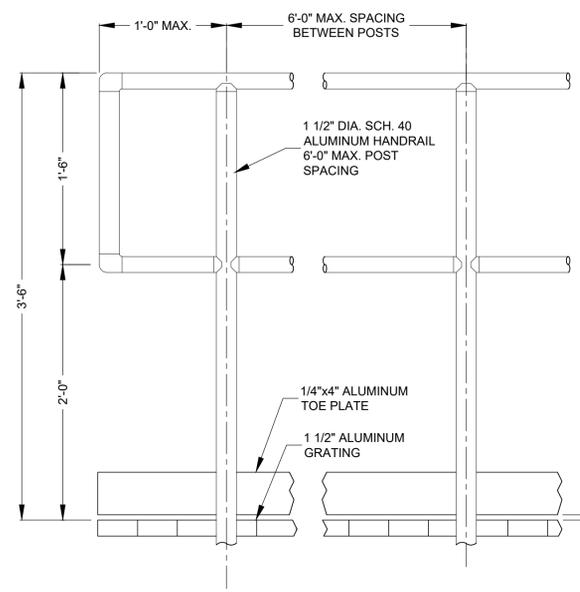
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PROJECT NO.:  
SHEET:  
**S5**



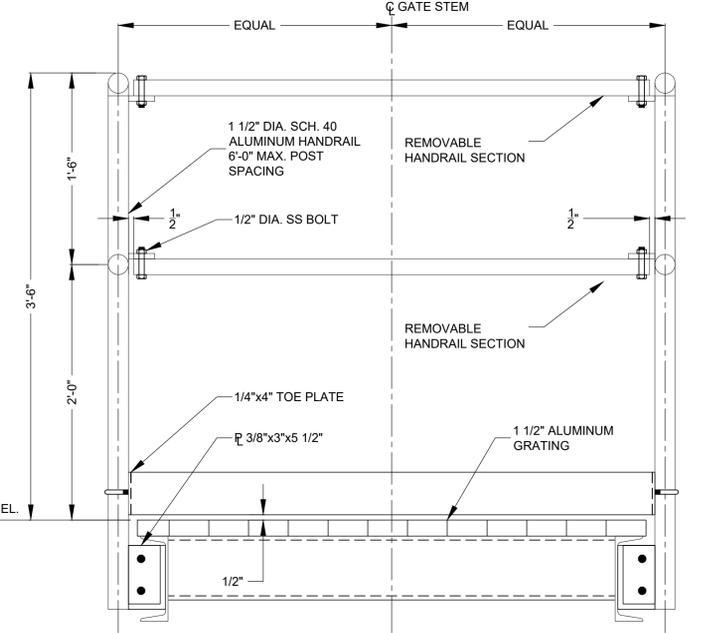
S6 4 HANDRAIL DETAIL  
SCALE 1 1/2"=1'-0"



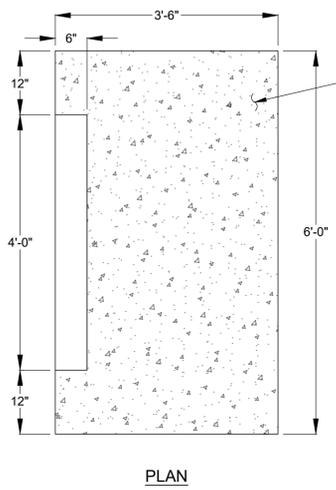
S6 6 TOE PLATE DETAIL  
SCALE 1 1/2"=1'-0"



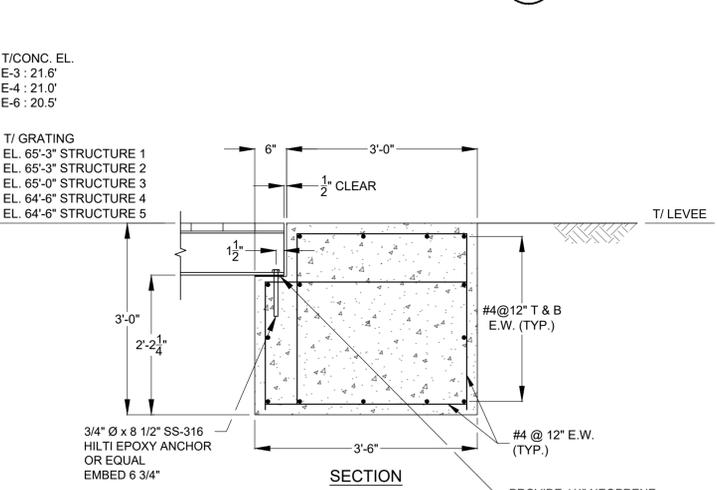
S6 5 TYPICAL HANDRAIL END DETAIL  
SCALE 1 1/2"=1'-0"



S6 8 TYPICAL REMOVABLE HANDRAIL DETAIL AT GATE OPERATOR LOCATION  
SCALE 1 1/2"=1'-0"



S6 9 WALKWAY FOOTING DETAIL  
SCALE: 3/4"=1'-0"



PROVIDE 1/4" NEOPRENE PAD BETWEEN ALUMINUM CHANNEL AND CONCRETE

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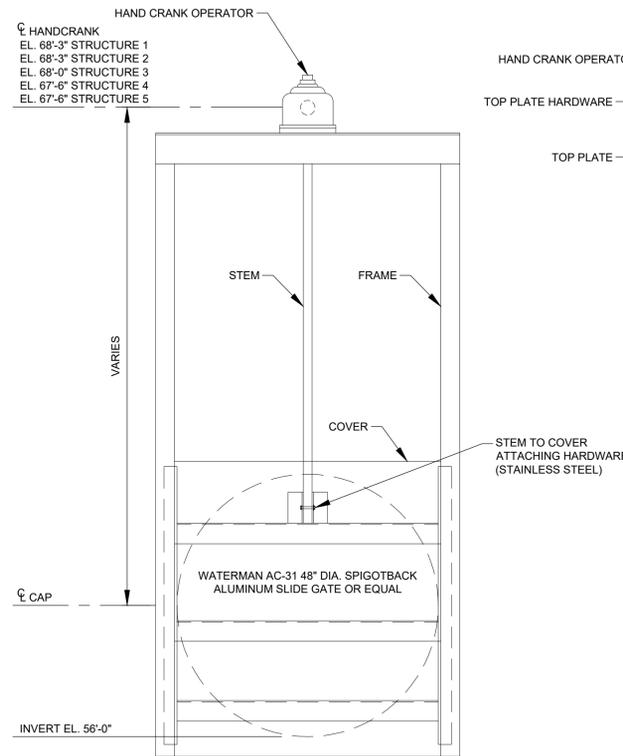
ST. JOHNS RIVER  
WATER MANAGEMENT DISTRICT  
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: AUGUST 24, 2020 REVIEWER: W.R.C.  
SCALE: AS NOTED DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

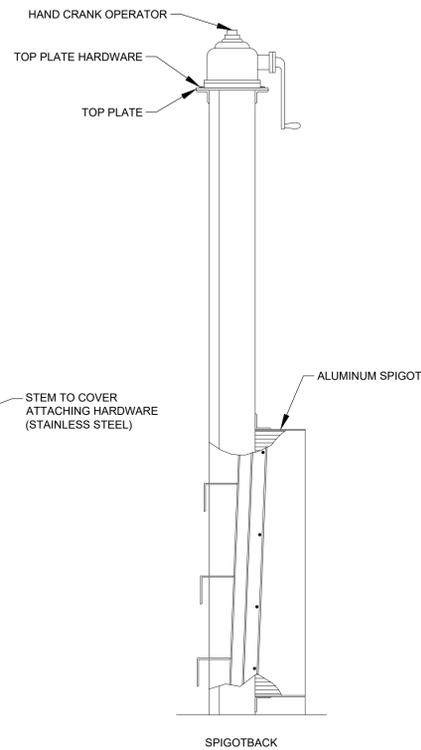
STRUCTURE DETAILS

CERTIFICATION:  
WILLIAM R. COTE  
P.E. NUMBER: 53746  
DATE: AUGUST 24, 2020

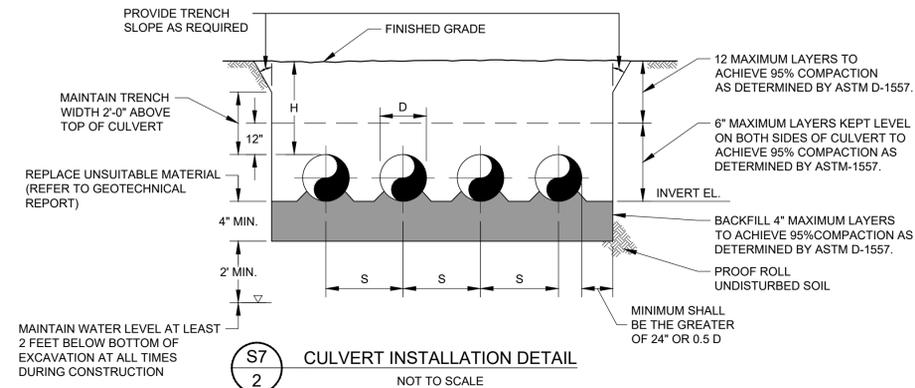
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PROJECT NO.:  
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S6



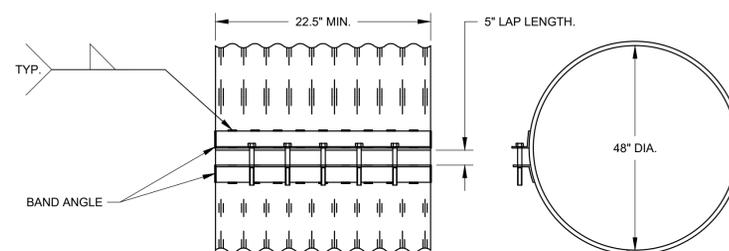
**S7**  
**1**  
**SLIDE GATE DETAIL**  
NOT TO SCALE



DRAWING REPRESENTS SIDE VIEW OF TAPERED SLIDE GATE AGAINST J-BULB SEATING



**S7**  
**2**  
**CULVERT INSTALLATION DETAIL**  
NOT TO SCALE



- NOTES:
- BAND ANGLES MADE FROM 2" x 2" x 3/16" ANGLE, WELDED TO BAND AT THE PEAK OF EACH CORRUGATION.
  - BAND CORRUGATION SHALL MATCH EXISTING PIPE CORRUGATION. CONTRACTOR SHALL VERIFY PRIOR TO PURCHASE.
  - PROVIDE 24-INCH NEOPRENE GASKET BETWEEN CAP AND BAND.
  - GAUGE OF BANDS ARE 2 GAUGES LIGHTER THEN GAUGE OF PIPES BEING JOINED.

**S7**  
**3**  
**3" x 1" CORRUGATION 1 PIECE BAND**  
NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS FOR CULVERT INSTALLATION:**

- CULVERTS:**
- ALL MATERIALS AND METHODS OF CONSTRUCTION WHERE REFERENCED SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (FDOT), LATEST EDITION.
  - ALL CULVERTS SHALL BE CORRUGATED ALUMINUM PIPE CONFORMING TO THE REQUIREMENTS OF FDOT SECTION 945. CULVERTS SHALL HAVE HELICAL CORRUGATIONS AND CONFORM TO THE FOLLOWING PARAMETERS:

DIA. - D(IN.)	GAUGE	CORRUGATION	SPACING S(FT)	MIN. COVER H(FT)
12	16	2-2/3" X 1/2"	2'-6"	3'-0"
18	16	2-2/3" X 1/2"	3'-0"	3'-0"
24	16	2-2/3" X 1/2"	3'-6"	3'-0"
30	14	2-2/3" X 1/2"	4'-3"	3'-0"
36	14	3" X 1"	5'-0"	3'-0"
42	12	3" X 1"	6'-0"	3'-0"
48	12	3" X 1"	6'-9"	4'-0"
54	12	3" X 1"	7'-9"	4'-0"
60	10	3" X 1"	8'-6"	4'-0"
66	10	3" X 1"	9'-3"	4'-0"
72	8	3" X 1"	10'-0"	4'-0"
78	8	3" X 1"	10'-9"	5'-0"
84	8	3" X 1"	11'-9"	5'-0"

- ALL PIPE JOINTS SHALL BE ALUMINUM BAND TYPE CONNECTIONS BOLTED TOGETHER WITH NEOPRENE, RAU-NEK OR BITUMASTIC GASKETS INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS. THE TWO OUTERMOST PIPE ENDS SHALL BE REROLLED (REFORMED) FOR ANNUAL CORRUGATION.
- PIPE SURFACES IN CONTACT WITH CONCRETE, OR AS INDICATED ON THE DRAWINGS, SHALL BE BITUMINOUS COATED. THE BITUMINOUS COATING SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M190.
- SITE PREPARATION SHALL CONSIST OF STRIPPING ACTIVITIES PRIOR TO EXCAVATION AND BACKFILLING. STRIPPING INCLUDES COMPLETE REMOVAL OF LOW-GROWING VEGETATION, ORGANIC TOPSOIL, PEAT/MUCK (PT), AND ANY CONCENTRATED ROOT ZONES AND ROOT MATS. ALL UNSUITABLE MATERIALS SHALL BE REMOVED FROM WITHIN 5 FEET OF ANY AREA ON THE SITE THAT IS TO BE FILLED.
- CONTROL OF GROUNDWATER AND SURFACE WATER SHALL BE REQUIRED TO ACHIEVE THE NECESSARY DEPTHS OF EXCAVATION AND SUBSEQUENT CONSTRUCTION AND BACKFILLING AND COMPACTION REQUIREMENTS. THE ACTUAL METHOD OF DEWATERING SHALL BE DETERMINED BY THE CONTRACTOR, HOWEVER, REGARDLESS OF THE METHOD USED, DRAWING DOWN THE WATER TABLE TO A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE EXCAVATION IS REQUIRED TO PRECLUDE "PUMPING" AND/OR COMPACTION RELATED PROBLEMS WITH THE FOUNDATION SOILS.
- CONTRACTOR SHALL REFER TO THE SITE GEOTECH REPORT TO DETERMINE CONDITIONS AND SUITABILITY OF USING IN-SITU MATERIALS FOR BACKFILL.
- THE SOILS BELOW THE BOTTOM OF THE EXCAVATION SHALL NOT BE DISTURBED BY THE EXCAVATION PROCESS. IF SOILS BECOME DISTURBED AND DIFFICULT TO COMPACT, THEY SHALL BE OVER EXCAVATED TO A DEPTH NECESSARY TO REMOVE ALL DISTURBED SOILS. ANY OVER EXCAVATED AREAS SHALL BE REPLACED WITH COMPACTED BACKFILL. DEPTH OF OVER EXCAVATION AND REPLACEMENT SHALL EXTEND AS NECESSARY TO REMOVE ALL DISTURBED AND/OR UNSUITABLE MATERIALS.
- AREAS TO RECEIVE COMPACTED BACKFILL SHALL BE PROOF ROLLED TO IMPROVE THE OVERALL UNIFORMITY AND BEARING CONDITIONS OF THE EXPOSED SOILS. INITIAL COMPACTION OPERATIONS SHALL CONSIST OF AT LEAST 4 OVERLAPPING PASSES IN EACH DIRECTION WITH A SELF-PROPELLED ROLLER. PROOF ROLLING SHALL CONTINUE UNTIL ALL SOFT, WET, OR YIELDING AREAS HAVE BEEN IDENTIFIED, OVER-EXCAVATED, AND BACKFILLED. PROOF-ROLLING SHALL OCCUR AFTER CUTTING AND BEFORE FILLING.
- COMPACTED BACKFILL SHALL BE FINE SAND WITH CLAY OR CLAYEY FINE SAND HAVING A FINES CONTENT BETWEEN 8 AND 18 PERCENT PASSING THE U.S. STANDARD NO. 200 SIEVE. BACKFILL SHALL BE PLACED IN LIFTS AS SHOWN ON THE DRAWINGS. EACH LIFT SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY, AS DETERMINED BY THE MODIFIED PROCTOR (ASTM D-1557). MOISTURE CONTENT OF THE SOILS SHALL BE MANIPULATED AS NECESSARY TO MEET THE PERCENT COMPACTION REQUIREMENT. THE BACKFILL SOIL SHALL BE OF A HOMOGENEOUS NATURE SUCH THAT LAYERS OF RELATIVELY PERMEABLE SOIL ARE NOT PLACED BENEATH RELATIVELY LOW PERMEABLE SOILS. ORGANIC SOILS, PEAT, MUCK, OR CLAY (CL OR CH) SHALL NOT BE USED AS FILL.
- HAUNCH MATERIAL SHALL BE TAMPED BY HAND, OR "KNIFED," TO ENSURE COMPLETE CONTACT WITH THE PIPE BOTTOM AND TO FILL VOIDS, BEFORE PROCEEDING WITH REMAINING EMBEDMENT
- CARE SHALL BE TAKEN NOT TO DAMAGE THE CULVERTS OR DEFLECT IT BY COMPACTING DIRECTLY ABOVE THE PIPE WHERE THERE IS INSUFFICIENT COVER MATERIAL PRESENT.
- FIELD DENSITY TESTS SHALL BE PERFORMED AS NECESSARY (BY THE DISTRICT OR REPRESENTATIVE) WITH EITHER THE DRIVE CYLINDER METHOD (ASTM D 2937) OR NUCLEAR METHOD (ASTM D 2922). PENETROMETER PROBES SHALL ALSO BE PERFORMED TO VERIFY THE UNIFORMITY OF COMPACTION. LABORATORY COMPACTION PROCTOR TESTS SHALL BE PERFORMED WHENEVER CHANGES IN SOIL COMPOSITION ARE OBSERVED, OR ON NEW MATERIAL FROM A DIFFERENT SOURCE. MOISTURE CONTENT AND PERCENT FINES (<200) TESTS SHALL BE PERFORMED ON EACH BAG SAMPLE RECOVERED FOR PROCTOR TESTING. LIQUID AND PLASTIC LIMITS SHALL BE PERFORMED AS NECESSARY WHEN PLASTIC FINES ARE PRESENT. THE NECESSITY AND FREQUENCY OF THE SOIL TESTS OUTLINED HEREIN MAY BE ADJUSTED BY THE DISTRICT. ANY FAILING TEST RESULTS SHALL BE ACCOMPANIED BY RETESTS SHOWING PASSING RESULTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR GIVING ADVANCE NOTICE (MINIMUM 24 HOURS) TO THE DESIGNATED DISTRICT OR THE DISTRICT'S REPRESENTATIVE WHEN TESTING SERVICES ARE REQUIRED.
- AS AN ALTERNATIVE TO COMPACTED BACKFILL, FLOWABLE FILL MEETING THE REQUIREMENTS OF FDOT SECTION 121 MAY BE UTILIZED SUBJECT TO PRIOR APPROVAL BY THE DISTRICT. IF FLOWABLE FILL IS USED, THE EXTERIOR OF THE CULVERTS SHALL BE BITUMINOUS COATED CONFORMING TO THE REQUIREMENTS OF AASHTO M190. DUE CARE SHALL BE TAKEN DURING PLACEMENT TO AVOID FLOATATION OF THE CULVERTS.

- SLIDE GATES:**
- SLIDE GATES SHALL BE AC-41 SPIGOT BACK AS MANUFACTURED BY WATERMAN INDUSTRIES, OR APPROVED EQUAL. THE GATE REQUIREMENTS SHALL BE AS FOLLOWS:
- |            |  |
|------------|--|
| MATERIAL : | ALUMINUM   |
| SIZE :     | 48-INCH DIAMETER                                       |
| HOIST :    | MANUAL HANDCRANK RISING STEM WITH PLASTIC COVER        |
| MOUNTING : | SPIGOT BACK MOUNT TO ALUMINUM CULVERT                  |
| DESIGN :   | SELF CONTAINED WITH SEATING AND UNSEATING HEAD 15 FEET |

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LAKE APOPKA DUDA WATER STORAGE IMPROVEMENTS  
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ST. JOHNS RIVER  
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SCALE: 3/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

CULVERT AND SLIDE GATE DETAILS

CERTIFICATION:

WILLIAM R. COTE  
P.E. NUMBER: 53746  
DATE: AUGUST 24, 2020

FILE NAME:  
S3DUDAC8SGDTL.dwg

PROJECT NO.:

SHEET:  
**S7**