DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

October 10, 2019

Regulatory Division
South Branch
Palm Beach Gardens Permits Section

PUBLIC NOTICE

Permit Application No. SAJ-2009-00400 (SP-CGK)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) as described below:

APPLICANT: North St. Lucie River Water Control District
14666 Orange Avenue
Fort Peirce, Florida 34945

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Ten Mile Creek. The project site is located at Canal 93, Canal 95, Canal 96, and Canal 101 in Section 26, Township 35 South, Range 39 East, St. Lucie County, Florida.

Directions to the site are as follows: From Florida's Turnpike, take exit 152, onto FL-70 W/ Okeechobee Rd, make a U-turn after 2.45 mile, turn right to an unnamed road before Blue Goose Construction.

APPROXIMATE CENTRAL COORDINATES:

Canal 93:
Latitude: 27.392° Longitude: -80.424°

Canal 95:
Latitude: 27.400° Longitude: -80.407°

Canal 96:
Latitude: 27.402° Longitude: -80.399°

Canal 101:
Latitude: 27.389° Longitude: -80.416°

PROJECT PURPOSE:

Basic: The basic project purpose is canal stabilization.

Overall: The overall project purpose is stabilization of existing canals in St. Lucie County, Florida.

EXISTING CONDITIONS: The project site is located within 4-canals which are part of the North St. Lucie Water Control District. The canals are adjacent to a combination of agricultural fields and natural, undeveloped areas. Routine inspections are performed to identify potential slope failures, animal burrows, seepages, and boils. Proper inspection of the canal banks, slopes, and berm requires periodic mowing to maintain grasses no higher than 12-inches. Considering the cost of flat mowing is substantially lower than boom mowing, the banks along Canals 93, 95, and 101 will be both flattened and backfilled to have a 3:1 slope, whereas Canal 96 has eroded.

PROPOSED WORK: The applicant seeks authorization to discharge 4,184 cubic yards of clean fill material along the shorelines and the bottom of 2.87 acres of non-wetland waters. Specifically, 144 cubic yards of riprap will be placed into 0.36 acres to stabilize Canal 93; 584 cubic yards of filter sand will be placed into 0.89 acres to stabilize Canal 95; 442 cubic yards of riprap will be placed into 0.5 acres to stabilize Canal 96, and 3014 cubic yards of clean fill will be placed into 1.12 acres to stabilize Canal 101.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

- Only clean fill materials will be used
- Erosion control measures will be used during construction
- Turbidity curtains will be used during construction

COMPENSATORY MITIGATION –

The applicant has provided the following explanation why compensatory mitigation should not be required:

The project will not cause a loss to aquatic resources.

CULTURAL RESOURCES:

The Corps is not aware of any known historic properties within the permit area. By copy of this public notice, the Corps is providing information for review. Our final determination relative to historic resource impacts is subject to review by and coordination with the State Historic Preservation Officer and those federally recognized tribes with concerns in Florida and the Permit Area.

ENDANGERED SPECIES:

The Corps has determined the proposed project may affect, but is not likely to adversely affect the Eastern indigo snake (*Drymarchon couperi*) and wood stork

(*Mycteria americana*). The Corps will request U.S. Fish and Wildlife/National Marine Fisheries Service concurrence with this determination pursuant to Section 7 of the Endangered Species Act:

May affect, not likely to adversely affect:

Wood stork (*Mycteria americana*): The action area is located within 11 miles of one wood stork nesting colony according to the google earth RAR layers. The site includes temporary periods of ponding which would provide wood stork foraging habitat. Using the key 2010 Wood Stork Key, the following pathway results in A, B, C, E; not likely to adversely affect.

Eastern indigo snake (*Drymarchon couperi*): Use of The Corps of Engineers, Jacksonville District and the U.S. Fish and Wildlife's Indigo Snake Key dated 1 August 2017 resulted in a path of A-B-C-D-E, not likely to adversely affect. A determination of "not likely to adversely affect" was made for the Indigo snake provided the Nationwide Permit authorization includes the special conditions for the Eastern Indigo Snake Protection Measures during construction and the permit will be conditioned such that all gopher tortoise burrows, active or inactive, shall be evacuated via methods pursuant to FWC excavation guidance prior to site manipulation in the vicinity of the burrows. Additionally, holes, cavities, and snake refugia other than gopher tortoise burrows shall be inspected each morning before planned site manipulation of a particular area with work stopping if an indigo snake is discovered. With an outcome of "not likely to adversely affect (NLAA)" as outlined in the key, the requirements of Section 7 of the Endangered Species Act are fulfilled for the eastern indigo snake and no further action is required.

No effect:

Florida scrub jay (*Aphelocoma coerulescens*): The project is located within the species consultation area. Suitable habitats for the scrub-jay are not only the more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but also include: improved, unimproved, and woodland pastures, citrus groves, rangeland, pine flatwoods, longleaf pine xeric oak, sand pine, sand pine plantations, forest regeneration areas, sand other than beaches, disturbed rural land in transition without positive indicators of intended activity, and disturbed burned areas. The project is not located in any of these types of habitats, therefore the Corps has determined that the project will have no effect on the species.

Everglade snail kite (*Rostrhamus sociabilis plumbeus*): The project is located within the species consultation area. The species regularly occur in lake shallows along the shores and islands of many major lakes, including Lakes Okeechobee, Kissimmee, Tohopekaliga (Toho) and East Toho. They also regularly occur in the expansive marshes of southern Florida such as Water Conservation Areas 1, 2,

and 3, Everglades National Park, the upper St. John's River marshes, and Grassy Waters Preserve. Kite foraging habitat consists of relatively shallow wetland vegetation, either within extensive marsh systems, or in lake littoral zones. The project is not located in any of these types of habitats, therefore the Corps has determined that the project will have no effect on the species.

Audubon's Crested Caracara (*Caracara plancus audubonii*): The project is located within the species consultation area. The project does not include the species nesting or foraging habitat which consists of large expanses of pastures, grasslands, or prairies dotted with numerous shallow ponds and sloughs and single or small clumps of live oaks, cabbage palms, and cypress, therefore the Corps has determined that the project will have no effect on the species.

Red-cockaded woodpecker (*Leuconotopicus borealis*): The project is located within the species consultation area. Nesting habitat includes Pine or pine dominated pine/hardwood stands, with old-growth pines and low or sparse understory. Cavities are generally constructed/excavated from mature pine trees, more than 60 years old. Suitable habitats include: Upland coniferous forest, pine flatwoods, longleaf pine-Xeric Oak, and Pine-Mesic Oak. While the project site includes pine flatwoods, they include a dense understory, dominated by saw palmetto and also including gallberry, fetterbush, rusty fetterbush, and, wax myrtle, which is not preferred nesting habitat for the woodpecker.

ESSENTIAL FISH HABITAT (EFH): This notice initiates consultation with the National Marine Fisheries Service on EFH as required by the Magnuson-Stevens Fishery Conservation and Management Act 1996. No EFH is located within or areas affected by the project. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or Federally managed fisheries in the South Atlantic Region. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The jurisdictional line has not been verified by Corps personnel.

AUTHORIZATION FROM OTHER AGENCIES: Water Quality Certification may be required from the Florida Department of Environmental Protection and/or one of the state Water Management Districts.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Palm Beach Gardens Permits Section, 4400 PGA Boulevard, Suite 500, Palm Beach Gardens, Florida 33410 within 21 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, Christian Karvounis, in writing at the Palm Beach Gardens Permits Section, 4400 PGA Boulevard, Suite 500, Palm Beach Gardens, Florida 33410; by electronic mail at Christian.G.Karvounis@usace.army.mil; or, by telephone at (561) 472-3508.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The US Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto

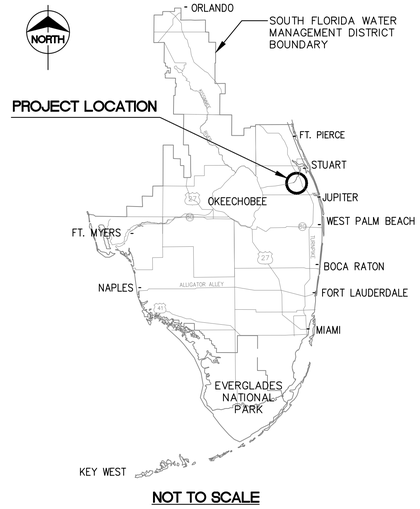
Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and Natural Resources permit constitutes compliance with the Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.

SOUTH FLORIDA
WATER MANAGEMENT DISTRICT

RFB 6000000XXX
TEN MILE CREEK
BANK REHABILITATION

ST. LUCIE COUNTY, FLORIDA



NOT TO SCALE

GOVERNING BOARD

(GOVERNING BOARD MEMBERS WILL BE UPDATED FOLLOWING THE CORRECTED FINAL CHECK SET REVIEW BASED ON THE ACTIVE BOARD AT THAT TIME.)

INDEX OF SHEETS

DRAWING NUMBER	SHEET NUMBER	SHEET TITLE
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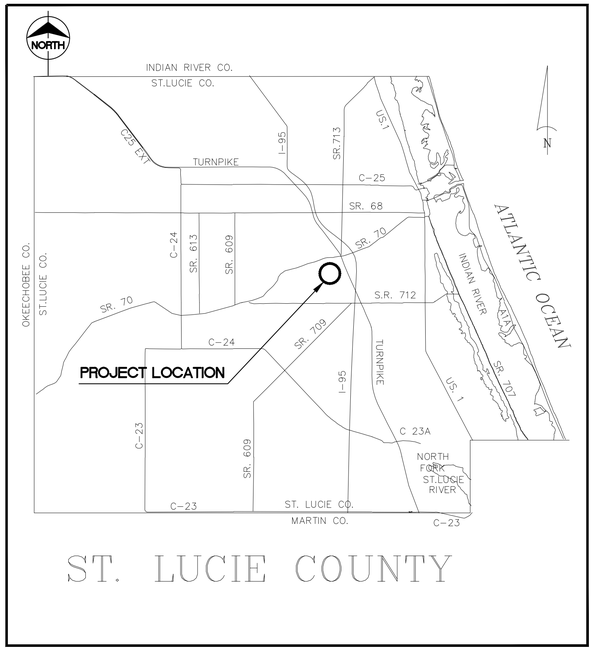
C004	06	C-95 PLAN AND PROFILE
C005	07	C-101 PLAN AND PROFILE (1 OF 2)
C006	08	C-101 PLAN AND PROFILE (2 OF 2)
C007	09	CANAL CROSS SECTIONS



LOCATION MAP

NOT TO SCALE

APPROVED BY:

ALAN SHIRKEY, P.E.
BUREAU CHIEF,
ENGINEERING & CONSTRUCTION BUREAU
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION

PROJECT I.D. NO. 100424

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

This item has been electronically signed and sealed by XXXXX, P.E., and XXXX, P.E. using SHA-1 authentication codes. Printed copies of this document are not considered signed and sealed and the SHA-1 authentication codes must be verified on any electronic copies.

REVISION DESCRIPTION	REF#	DRAWN	DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

PRELIMINARY

TEN MILE CREEK
BANK REHABILITATION

COVER

CIVIL

ENGINEER OF RECORD:
JOSE D. A. GUARDIARIO JR., P.E.
FLORIDA P.E. LICENSE NO.: 59342

DATE:

PROJECT ID NO.
100424
DRAWING NUMBER
G001
SHEET
01 OF 09

R:\100424 - Ten Mile Creek\drawing Native Files\Ten Mile Creek Bank Rehab\drawing Native Files\01 COVER.dwg — Friday, December 28, 2018 11:04:40 AM

ABBREVIATIONS:

ADD'L	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATELY
ASS'Y	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICES
BOT	BOTTOM
BOS	BOTTOM OF STRUCTURE
CAP	CORRUGATED ALUMINUM PIPE
CFS	CUBIC FEET PER SECOND
CJ	CONSTRUCTION JOINT
CIRC	CIRCUMFERENCE
CLR	CLEARANCE
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COMP	COMPARTMENT
CTRS	CENTERS
DBL	DOUBLE
DHW	DESIGN HIGH WATER
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DWE	DESIGN WATER ELEVATION
DWG	DRAWING
EA	EACH
EEOL	EXISTING EDGE OF LEVEE
EF	EACH FACE
EW	EACH WAY
EOW	EDGE OF WATER
ELEV/EL	ELEVATION
EQ	EQUAL
EXIST	EXISTING
FBC	FLORIDA BUILDING CODE
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FED SPEC	FEDERAL SPECIFICATION
FF	FAR FACE
FIN FL	FINISHED FLOOR
FPL	FLORIDA POWER & LIGHT
FT	FEET OR FOOT
FWC	FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
FWS	UNITED STATES FISH AND WILDLIFE SERVICE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GRTG	GRATING
HEX	HEXAGONAL
HDPE	HIGH DENSITY POLYETHLYENE
HMWPE	HIGH MOLECULAR WEIGHT POLYETHYLENE
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HT	HEIGHT
ID	INSIDE DIAMETER, IDENTIFICATION
IN	INCH(ES)
INV	INVERT
L	LENGTH
LB	POUND
LBR	LIMEROCK BEARING RATIO
LF	LINEAR FEET
LG	LONG
LONGIT	LONGITUDINAL
LS	LAP SPLICE
LW	LOW WATER
LWSE	LOW WATER SURFACE ELEVATION
MAX	MAXIMUM
MBGR	METAL BEAM GUARD RAIL
MEG	MATCH EXISTING GRADE
MFGR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MM	MILLIMETER
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NAVD	NORTH AMERICAN VERTICAL DATUM OF 1988
NGVD	NATIONAL GEODETIC VERTICAL DATUM OF 1929
NO	NUMBER
NSLRWCD	NORTH ST. LUCIE RIVER WATER CONTROL DISTRICT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHW	OVERHEAD WIRE
OPNG	OPENING
PCF	POUNDS PER CUBIC FOOT
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
R	RISERS, RADIUS
RGE	RANGE
RCBS	REINFORCED CONCRETE BOX STRUCTURES
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
RFB	REQUEST FOR BID
SF	SQUARE FEET
SFWMD/DISTRICT	SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SCH	SCHEDULE
SEC	SECTION
SECT	SECTIONAL
SPA	SPACING
SP	SUPER-PAVE ASPHALT
SPECS	SPECIFICATIONS
SSP	STEEL SHEET PILE
SST	STAINLESS STEEL
STA	STATION
STL	STEEL
STD	STANDARD
STRUCT	STRUCTURE
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TCP	TRAFFIC CONTROL PLAN
TBD	TO BE DETERMINED
TOB	TOP OF BANK
TOL	TOP OF LEVEE
TWP	TOWNSHIP
TYP	TYPICAL
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
VERT	VERTICAL
WSE	WATER SURFACE ELEVATION
WT	WEIGHT, WATERTIGHT
(F)	FIELD
(D)	DEED

Always call 811 two full business days before you dig to have underground utilities located and marked.

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LEGEND:

- 57.4 — EXISTING ELEVATION
- 55.0 — PROPOSED ELEVATION
- MEG — MATCH EXISTING GRADE
- 3H:1V — SLOPE (3 HORIZONTAL TO 1 VERTICAL)
- 3/11 — SLOPE (3 HORIZONTAL TO 1 VERTICAL)
- DRAINAGE FLOW DIRECTION
- 8 MAPLE — EXISTING TREE (SIZE, TYPE)
- WATER SURFACE ELEVATION
- ø — DIAMETER
- EXISTING STRUCTURES
- NEW STRUCTURES
- EXISTING CONTOURS
- PROPOSED CONTOURS
- D — DEGRADE LEVEE/ROAD
- F — FILL DITCH
- NSLRWCD RIGHT-OF-WAY
- SILT FENCE
- FLOATING TURBIDITY BARRIER
- FENCE REMOVAL
- GUARDRAIL
- STEEL SHEET PILE WALL
- RIP RAP
- TOP OF BANK
- EDGE OF WATER
- SLOPED AREA WITH DIRECTION
- ROCK BASE (COQUINA SHELLROCK)
- SELECT FILL
- CUT
- COMPACTED SUBGRADE
- CONCRETE
- DEMOLITION/REMOVAL
- STAGING AREA
- SOD
- EXCAVATE
- SAND-CEMENT END WALL
- B-1 — SOIL BORING
- CONCRETE PILE-MOUNTED STAFF GAUGE
- 869 — STATE ROAD
- 835 — COUNTY ROAD
- 95 — U.S. FEDERAL HIGHWAY
- DIRECTION OF TRAVEL
- 2% — CROSS SLOPE AND DIRECTION
- TURFBOOM

SECTION A — C002 | S002
DRAWING WHERE SECTION IS CUT | DRAWING WHERE SECTION IS LOCATED

DETAIL 1 — C002 | S002
DRAWING WHERE DETAIL IS SHOWN | DRAWING WHERE DETAIL IS LOCATED

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

PRELIMINARY

ENGINEER OF RECORD:
JOSE A. GUARDIARIO JR., P.E.
FL. ENGINEERING CERTIFICATE NO.: 59342
DATE:

REVISION DESCRIPTION	REF#	DRAWN	DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, MAINTENANCE & CONSTRUCTION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
GENERAL NOTES AND LEGEND

PROJECT ID NO.
100424
DRAWING NUMBER
G002
SHEET
02 OF 09

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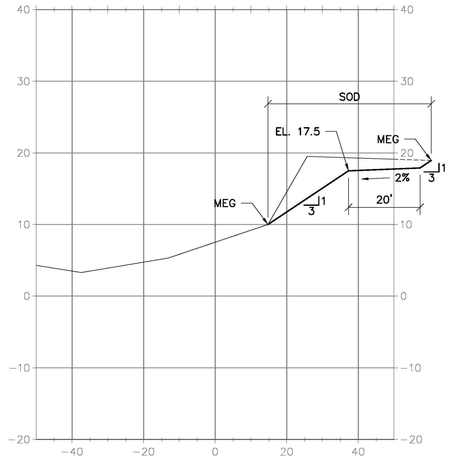
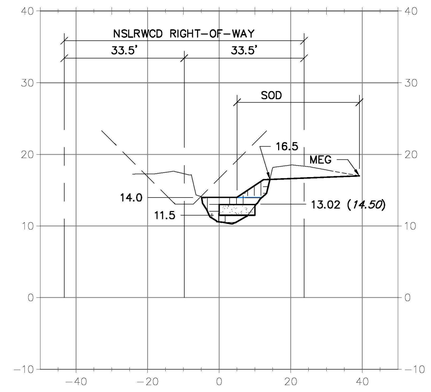
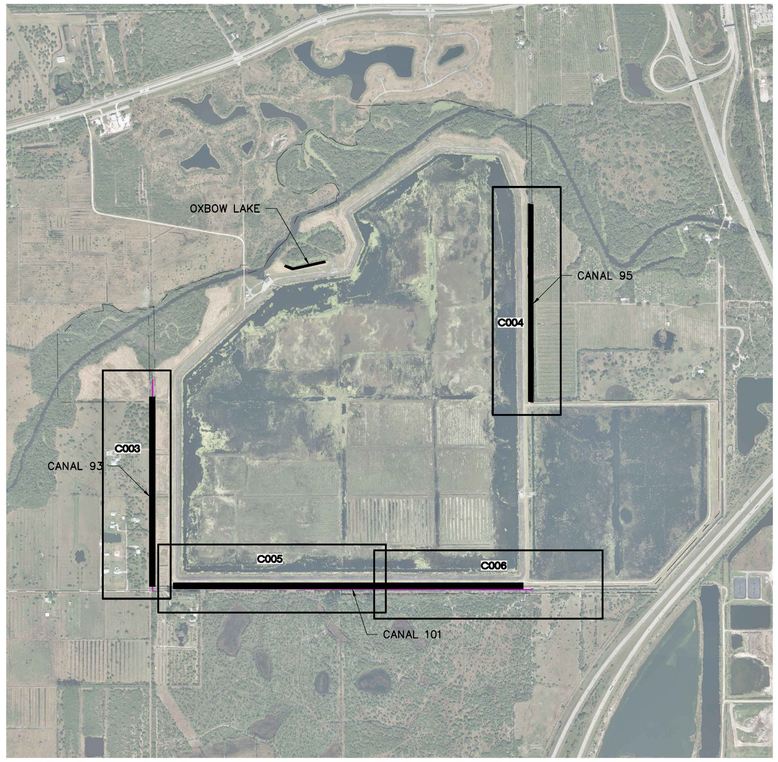


TYPICAL OXBOW LAKE BANK REHABILITATION



TYPICAL CANAL 95 BANK REHABILITATION



LOCATION OF BANK REHABILITATION
SCALE: 1" = 1000'

TYPICAL CANAL 93 BANK REHABILITATION

TYPICAL CANAL 101 BANK REHABILITATION
*NOTE:
NSLRWCD RIGHT-OF-WAY ALONG CANAL 101
VARIES FROM 63 FEET WIDE TO 98 FEET WIDE.

NOTES:

1. ALL BANKS ADJACENT TO THE TEN MILE CREEK RESERVOIR SHALL BE SLOPED TO 3H:1V AS SHOWN IN THE PLANS. UNLESS OTHERWISE SHOWN IN THE CROSS SECTIONS, ALL BERMS SHALL BE GRADED TOWARDS THE CANAL AT 2% SLOPE. ALL DISTURBED AREAS SHALL BE SODDED.
2. CLEAR AND GRUB ALL VEGETATION OVER THE BANKS THAT WILL BE REHABILITATED.
3. THE BERM BETWEEN CANAL 93 AND THE RESERVOIR SHALL BE GRADED TO ALLOW SURFACE WATER TO FLOW INTO THE SWALES (LATERAL DITCHES). REMOVE AND REPLACE ALL CULVERTS THAT DISCHARGE INTO CANAL 93 FROM THE RESERVOIR BERM.
4. ON CANAL 95, CLEAR AND REGRADE EXISTING CANAL BOTTOM TO ELEVATION +11.5 FT. NAVD88 AND INSTALL 1.5 FEET THICK FILTER SAND.
5. INSTALL TYPE A RUBBLE RIPRAP AND CORRESPONDING #57 STONE AS SHOWN IN THE PLANS.
6. THE NSLRWCD RIGHT-OF-WAY LIMITS (DIMENSION) IS BASED ON THE "ELEVATIONS MAP OF NORTH ST. LUCIE RIVER WATER MANAGEMENT DISTRICT, ST. LUCIE COUNTY, FLORIDA, MAY, 1980".

0 50' 100'
HORIZONTAL SCALE: 1" = 50'
(24"x36")

0 25 50
VERTICAL SCALE: 1" = 25'
(24"x36")

LEGEND:

= DESIGN PROFILE

= 2017 EXISTING PROFILE

= CANAL 93 WATER SURFACE ELEVATION = 11.91' (12/27/17)
CANAL 95 WATER SURFACE ELEVATION = 13.97' (12/31/17)
CANAL 101 WATER SURFACE ELEVATION = 14.22' (12/26/17)

= 1919 DESIGN PROFILE

Always call 811 two full business days before you dig to have underground utilities located and marked.

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NOTE:
THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). NGVD29 = NAVD88 + 1.48' FOR THIS LOCATION.

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

PRELIMINARY

ENGINEER OF RECORD:
JOSE D. A. GUARDIARIO JR., P.E.
FLORIDA P.E. LICENSE NO.: 59342

DATE:

TEN MILE CREEK
BANK REHABILITATION
TYPICAL SECTIONS AND OVERALL PLAN

PROJECT ID NO.
100424

DRAWING NUMBER
C001

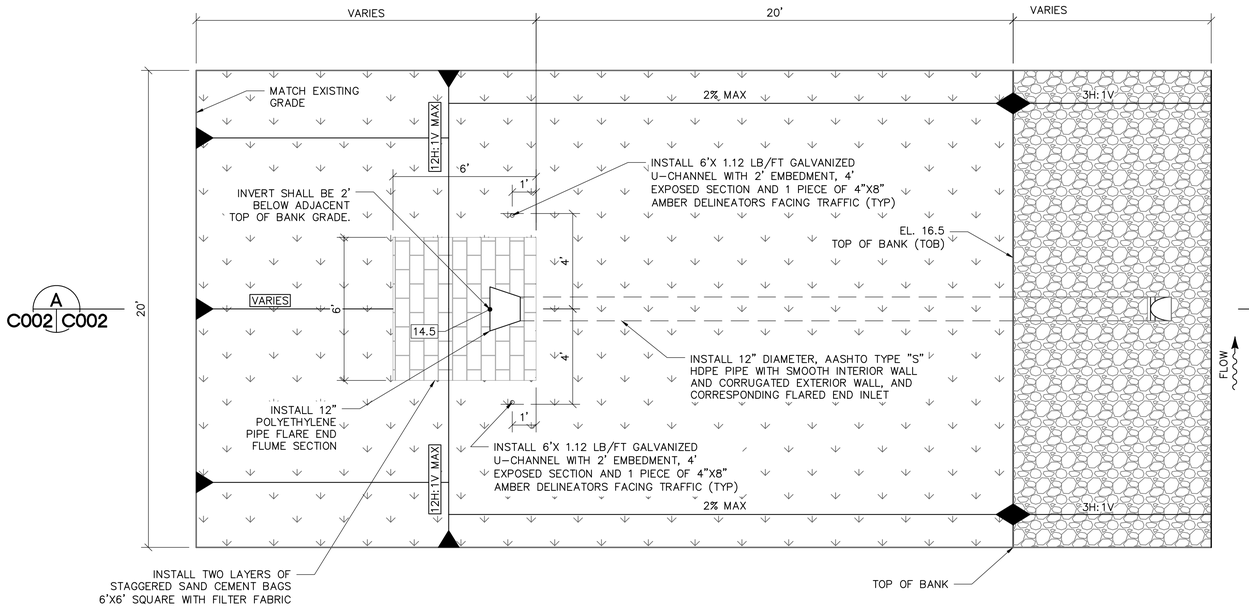
SHEET
03 OF 09

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

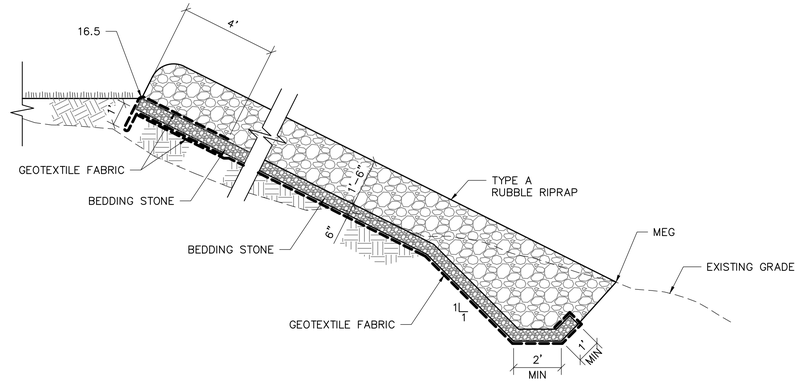
REVISION DESCRIPTION	REF#	DRAWN	DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

R:\100424 - Ten Mile Creek\drawing Native Files\Ten Mile Creek Bank Retab\drawing Native Files\TYPICAL SECTIONS.dwg - Friday, December 28, 2018 11:04:38 AM

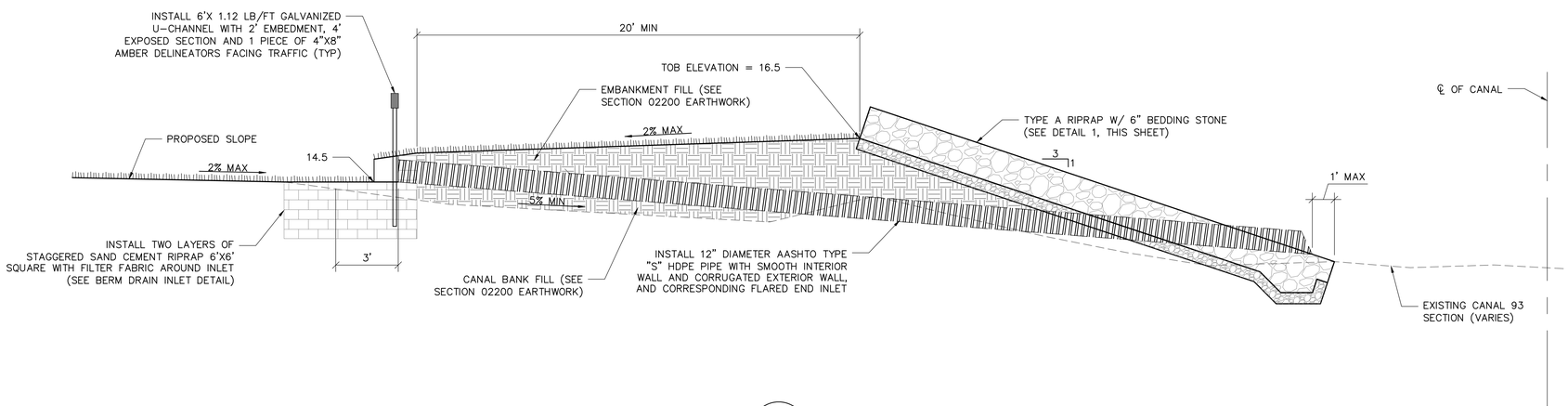


PLAN - TYPICAL BERM DRAIN INLET DETAIL
SCALE: 1" = 3'



RIPRAP DETAIL
SCALE: 1" = 3'

1
C002 C002



SECTION
TYPICAL BERM DRAIN INSTALLATION DETAIL
SCALE: 1" = 3'

A
C002 C002

GENERAL NOTES:

1. SOD ALL DISTURBED SOIL AREAS AND SLOPES.
2. PIPE:
   A. CULVERT PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE WITH SMOOTH INTERIOR (ADS N-12 OR EQUAL).
   B. PIPE COUPLINGS SHALL BE SPLIT COUPLINGS (NON-PRESSURE).
   C. OUTLET END OF PIPE SHALL BE MITERED TO MATCH THE EMBANKMENT SLOPE.
   D. INLET END OF PIPE SHALL BE FITTED WITH A POLYETHYLENE FLARED END SECTION (WITH TOE BLOCK).
3. SAND/CEMENT BAGS:
   A. SAND/CEMENT BAGS SHALL BE ANCHORED USING #4 REINFORCEMENT BARS.
   B. BAG PLACEMENT SHALL PROVIDE TWO ROWS OF BAGS ON PERIMETER OF INLET IN STAGGERED COURSES.
   C. VERTICAL COURSES OF BAGS SHALL BE STAGGERED.
   D. SECURE RIPRAP BAGS IN ACCORDANCE WITH FDOT INDEX 258 AS FOLLOWS:
      a. THE END BAG SHALL BE SECURED WITH TWO BARS PER BAG, ONE VERTICAL, AND ONE DIAGONAL.
      b. THE NEXT TO LAST BAG ON EACH END SHALL BE SECURED WITH TWO BARS VERTICALLY.
      c. ANCHORING BARS SHALL BE DRIVEN ONE-INCH BELOW THE SURFACE OF THE BAG.

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PRELIMINARY

ENGINEER OF RECORD:
JOSE D. A. GUARDIARIO JR., P.E.
FLORIDA P.E. LICENSE NO.: 59342

DATE:

REVISION DESCRIPTION | REF# | DRAWN | DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
BANK STABILIZATION DETAILS

PROJECT ID NO.
100424

DRAWING NUMBER
C002

SHEET
04 OF 09

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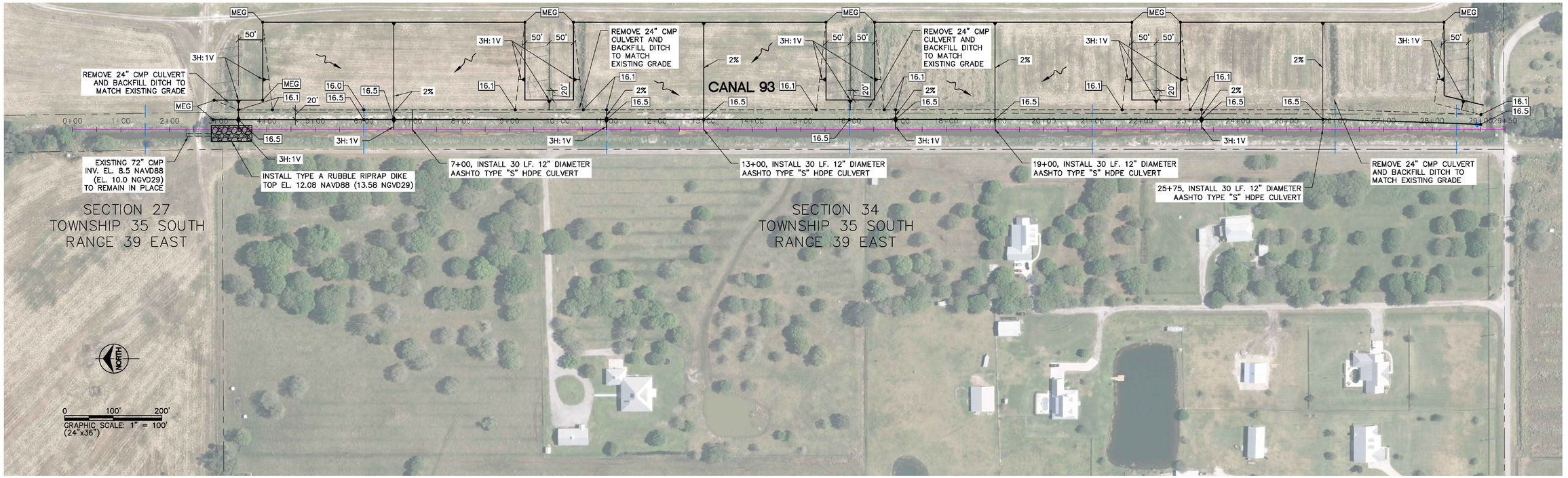
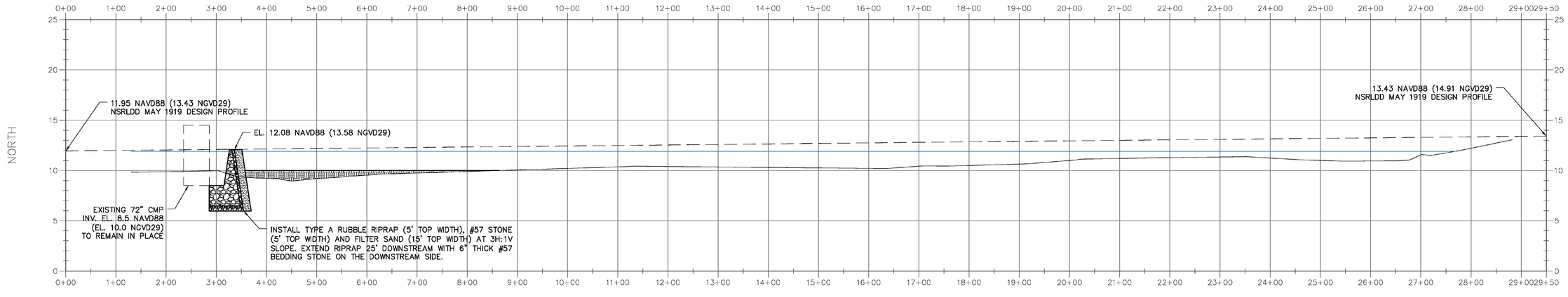


CANAL93 PROFILE



0 100' 200'
HORIZONTAL SCALE: 1" = 100'
(24"x36")

0 5' 10'
VERTICAL SCALE: 1" = 5'
(24"x36")

LEGEND:

= DESIGN PROFILE
= 2017 EXISTING PROFILE
= WATER SURFACE ELEVATION = 11.91' (12/27/17)
= 1919 DESIGN PROFILE

PRELIMINARY

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Sunshine811.com

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JOSE D. A. GUARDIARIO JR., P.E.
FLORIDA P.E. LICENSE NO.: 59342
DATE:

REVISION DESCRIPTION | DATE | DRAWN | REF#

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
C-93 PLAN AND PROFILE

PROJECT ID NO.
100424

DRAWING NUMBER
C003

SHEET
05 OF 09

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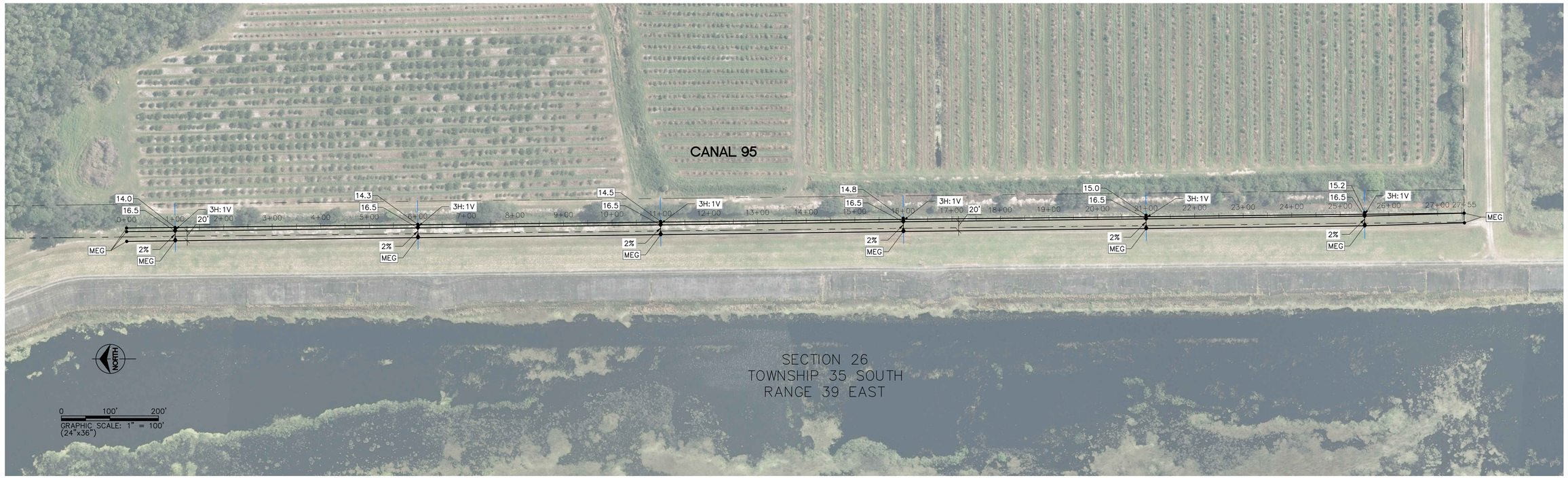

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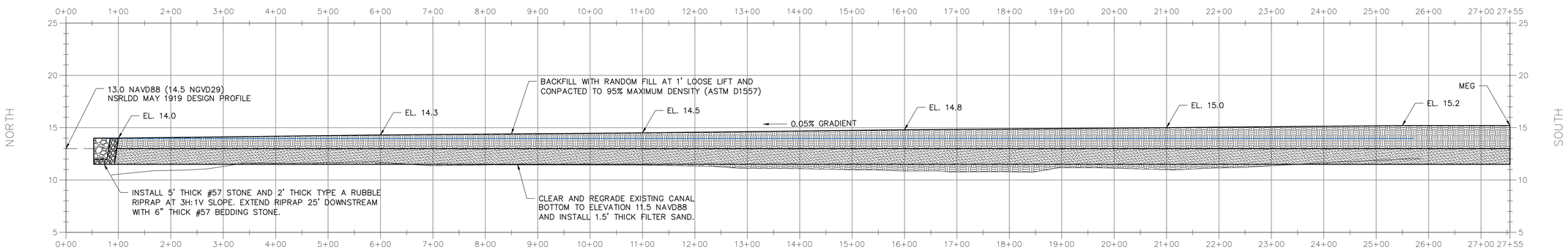

0 100' 200'
HORIZONTAL SCALE: 1" = 100'
(24"x36")

0 5' 10'
VERTICAL SCALE: 1" = 5'
(24"x36")

LEGEND:

= DESIGN PROFILE
= 2017 EXISTING PROFILE
= WATER SURFACE ELEVATION = 11.91' (12/27/17)
= 1919 DESIGN PROFILE

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ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

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OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK BANK REHABILITATION
C-95 PLAN AND PROFILE

PROJECT ID NO.
100424

DRAWING NUMBER
C004

SHEET
06 OF 09

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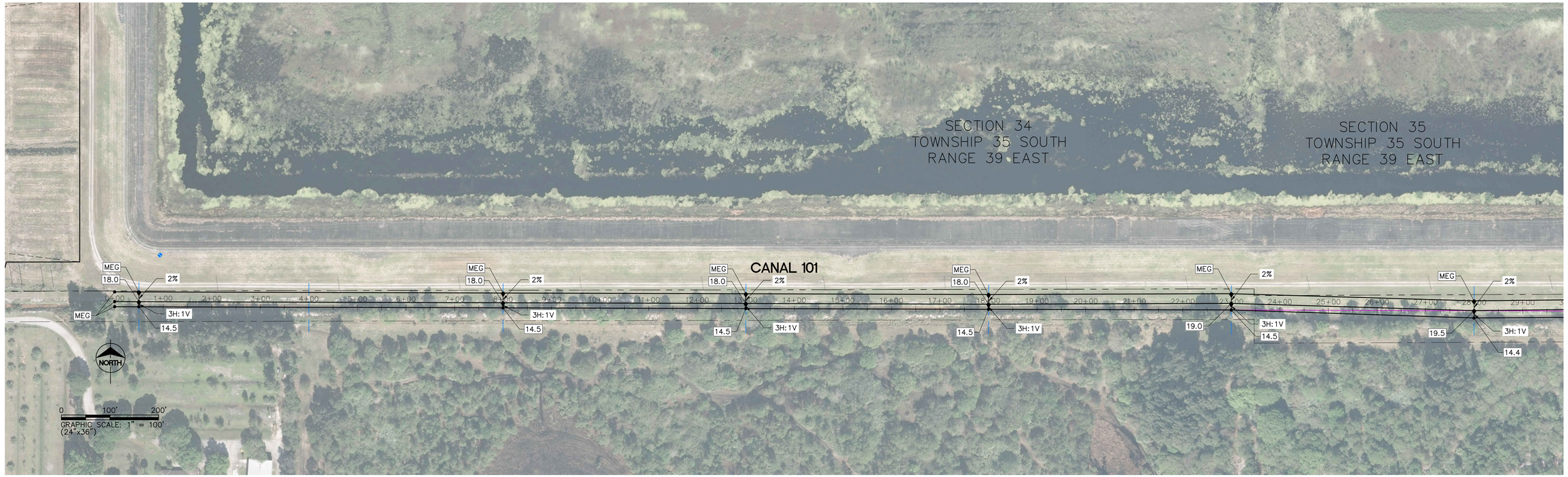

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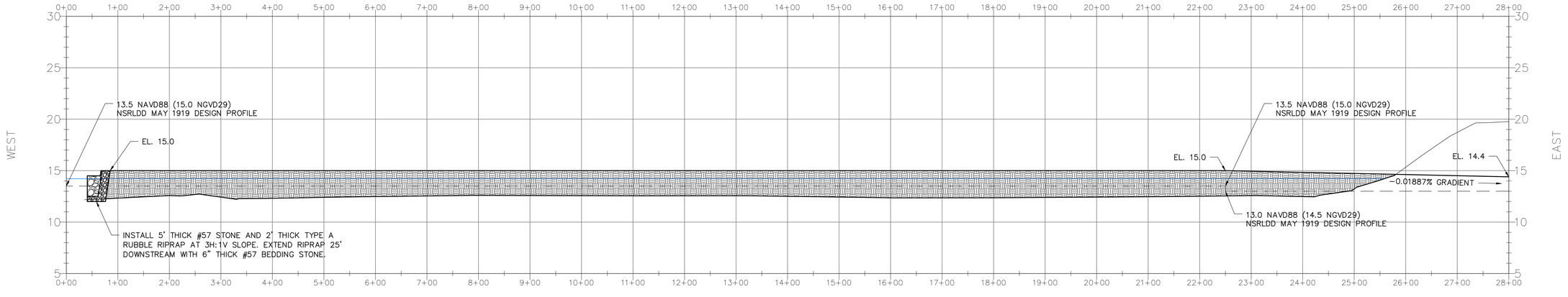

0 100' 200'
HORIZONTAL SCALE: 1" = 100'
(24"x36")

0 5' 10'
VERTICAL SCALE: 1" = 5'
(24"x36")

LEGEND:

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= 2017 EXISTING PROFILE
= WATER SURFACE ELEVATION = 11.91' (12/27/17)
= 1919 DESIGN PROFILE

PRELIMINARY

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DATE:

REVISION DESCRIPTION | REF# | DRAWN | DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

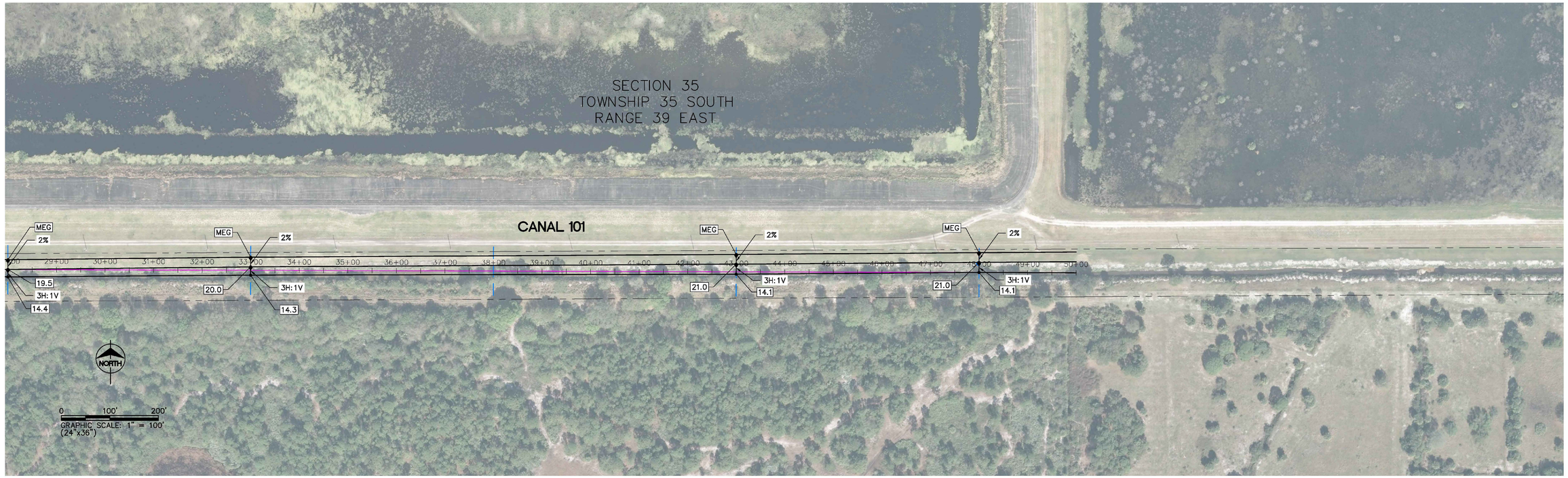
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
C-101 PLAN AND PROFILE (1 OF 2)

PROJECT ID NO.
100424

DRAWING NUMBER
C005

SHEET
07 OF 09



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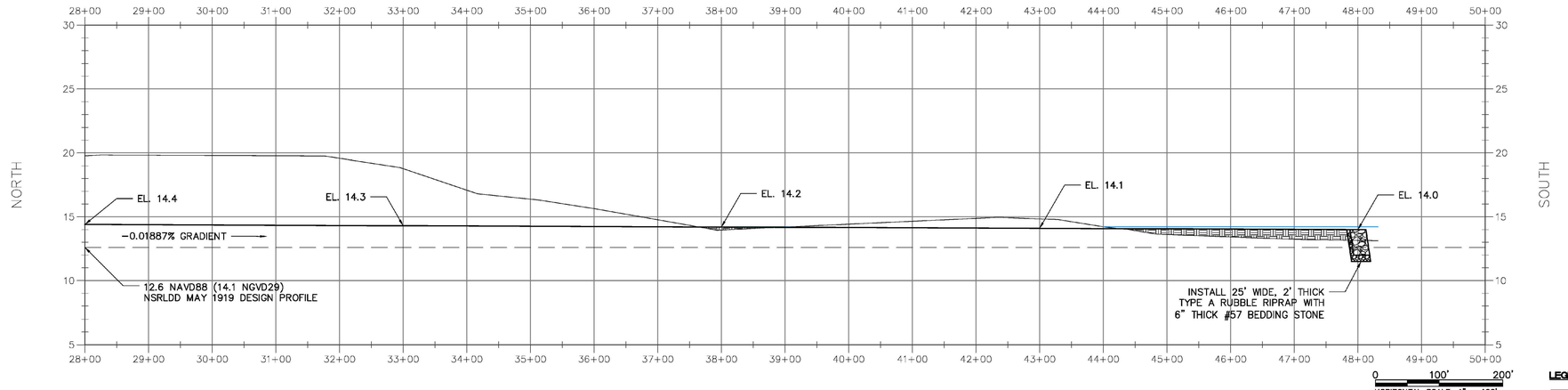

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HORIZONTAL SCALE: 1" = 100'
(24"x36")

0 5' 10'
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(24"x36")

LEGEND:

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FLORIDA P.E. LICENSE NO.: 59342

DATE:

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REVISION DESCRIPTION	REF#	DRAWN	DATE

ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

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OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
C-101 PLAN AND PROFILE (2 OF 2)

PROJECT ID NO.
100424

DRAWING NUMBER
C006

SHEET
08 OF 09

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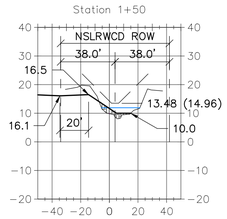
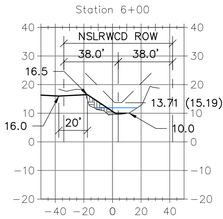
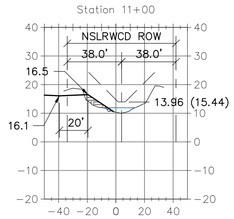
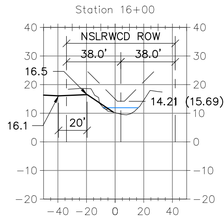
CANAL 93

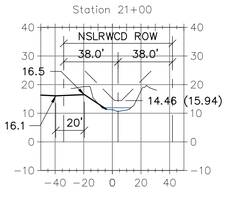
NORTH

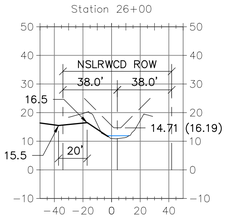


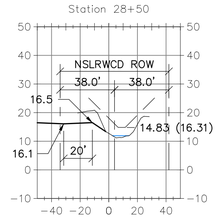








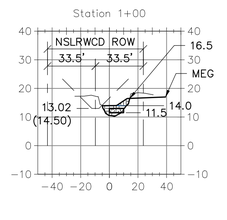


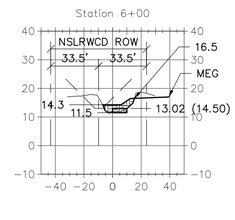


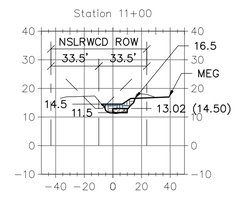
SOUTH

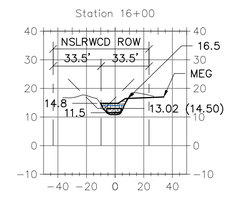
CANAL 95

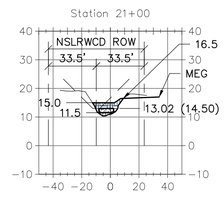
NORTH

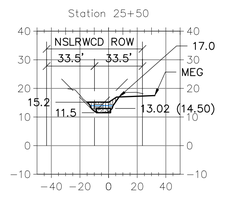








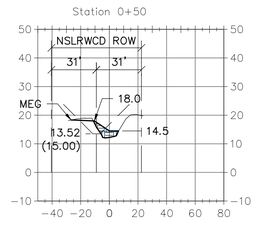


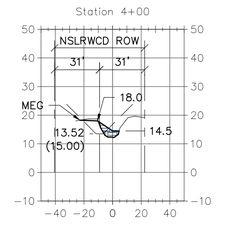


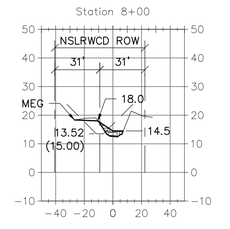
SOUTH

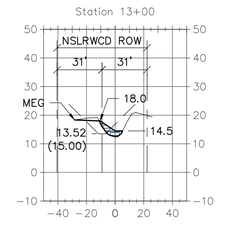
CANAL 101

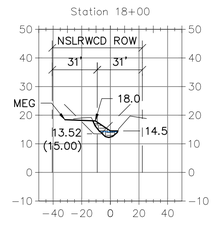
WEST

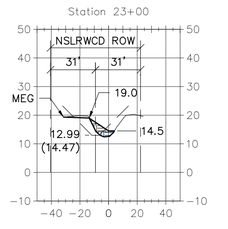


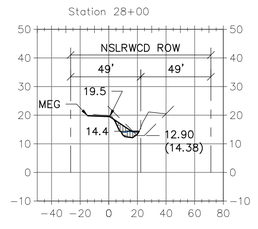






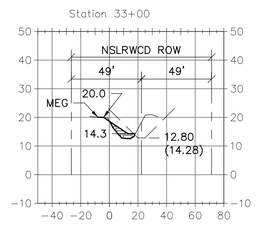


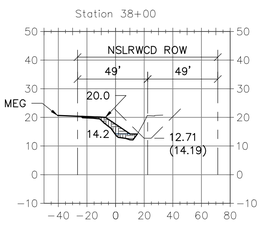


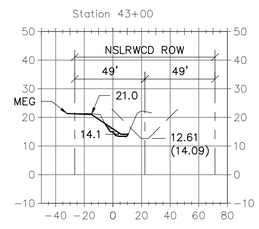


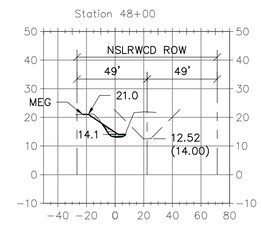
EAST

WEST









EAST

0 50' 100'
HORIZONTAL SCALE: 1" = 50'
(24"x36")

0 25 50
VERTICAL SCALE: 1" = 25'
(24"x36")

LEGEND:

= DESIGN PROFILE

= 2017 EXISTING PROFILE

= CANAL 93 WATER SURFACE ELEVATION = 11.91' (12/27/17)
CANAL 95 WATER SURFACE ELEVATION = 13.97' (12/31/17)
CANAL 101 WATER SURFACE ELEVATION = 14.22' (12/26/17)

= 1919 DESIGN PROFILE

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DATE:

PRELIMINARY

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ENGINEER: J. GUARDIARIO
DRAWN: R. TODD
CHECKED: N. PANDYA
DATE: JUNE 2018
SCALE: AS SHOWN

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
OPERATIONS, ENGINEERING & CONSTRUCTION DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

TEN MILE CREEK
BANK REHABILITATION
CANAL CROSS SECTIONS

PROJECT ID NO.
100424

DRAWING NUMBER
C007

SHEET
09 OF 09

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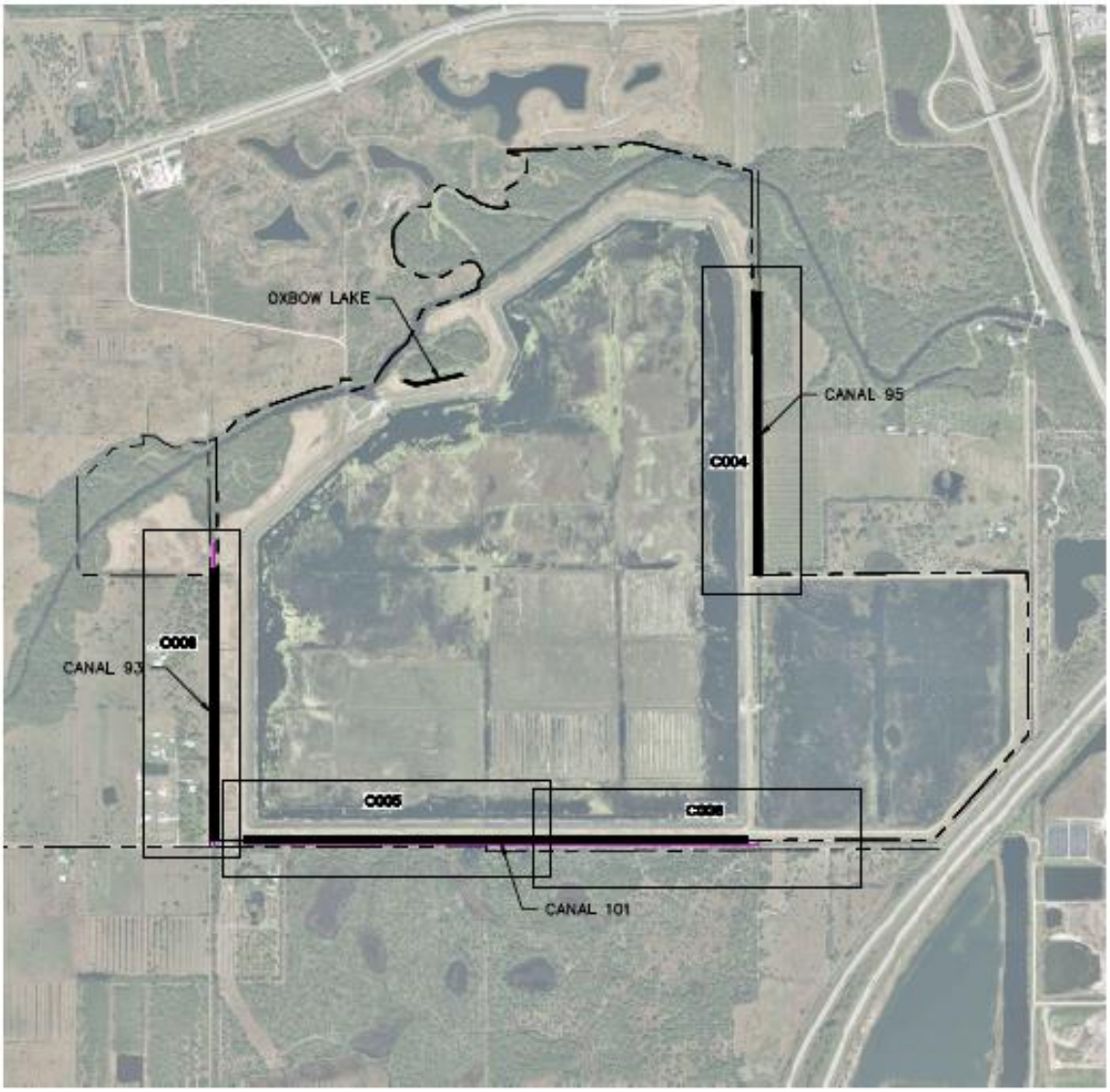


LOCATION OF BANK REHABILITATION

Canal 93 (Representative Lat and Long: -80.424, 27.392)

Canal 95 (Representative Lat and Long: -80.407, 27.400)

Canal 101 (Representative Lat and Long: -80.416, 27.389)

Cross Section 16

Cross Section 15

Cross Section 14

Cross Section 13

990
1.29
CL CANAL

922
0.73
CL CANAL

920
1.44
CL CANAL

915
0.67
CL CANAL

917
2.52
2736
CL CANAL

948
1.32
CL CANAL

951
1.37
CANAL

900
1.48
CL CANAL

897
1.53
CL CANAL

Cross Section 12

20+50, +11.57 ft. NAVD88
(+13.05 ft NGVD29)

Cross Section 11

20+25, +11.59 ft. NAVD88
(+13.07 ft NGVD29)

863
2.57
CL CANAL

Cross Section 10

20+00, +11.60 ft. NAVD88
(+13.08 ft NGVD29)

862
2.99
CL CANAL

Cross Section 9

19+75, +11.62 ft. NAVD88
(+13.10 ft NGVD29)

865
CL CANAL

Cross Section 8

19+50, +11.64 ft. NAVD88
(+13.12 ft NGVD29)

875
5.58
CL CANAL

Cross Section 7

19+25, +11.66 ft. NAVD88
(+13.14 ft NGVD29)

879
5.34
CL CANAL

19+00 +11.67 ft. NAVD88
(+13.15 ft NGVD29)

Cross Section 6

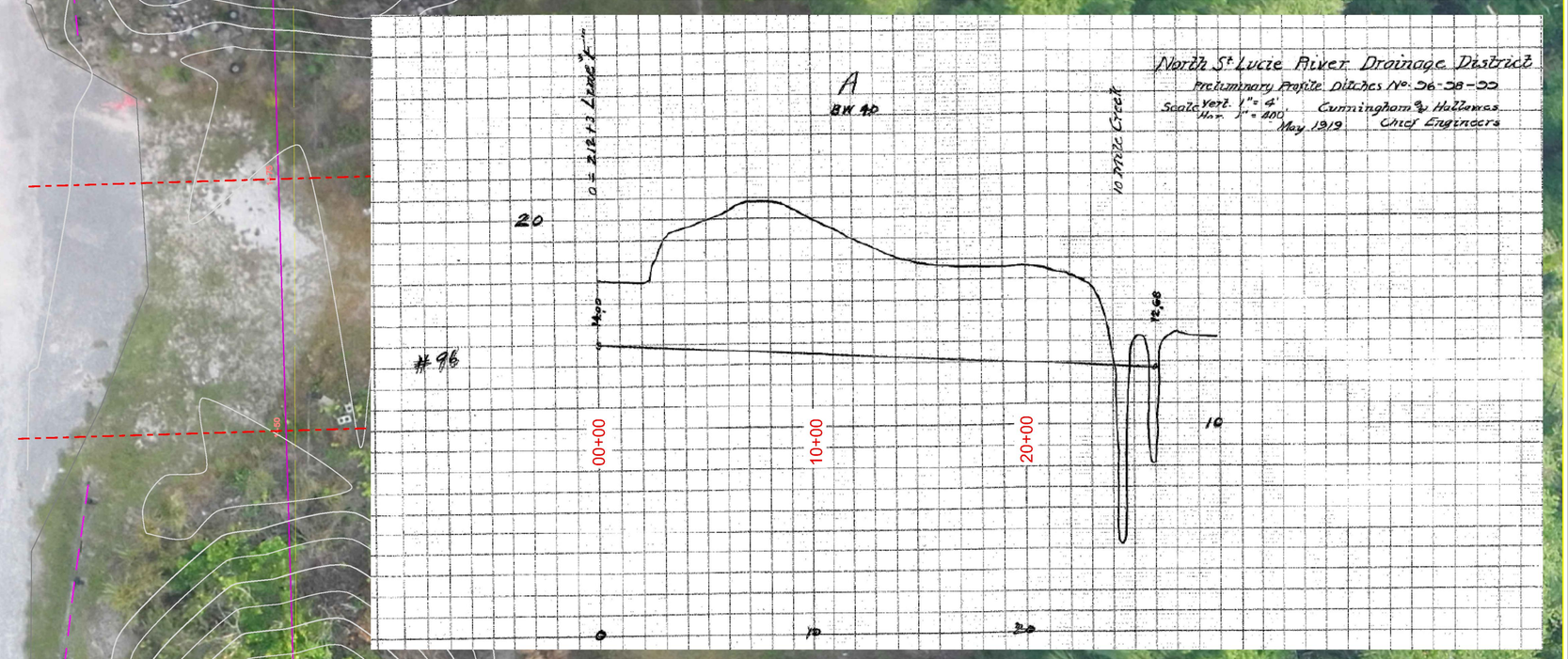
18+25 (XS06: 1+25), 11.73 ft. NAVD88
(+13.21 ft NGVD29)

NSLRWCD NOTES:

1. Profile starting location approx. 2,500 feet south of confluence with TMC Bottom Elevation @14.50 FT-NGVD Bottom width 4 feet.
2. Confluence with TMC Bottom Elevation @12.73 FT-NGVD Bottom width 4 feet.
3. (14.5 - 12.73)/2500 = 0.000708

SFWMD NOTES:

1. CONVERSION FACTOR FOR FT. NGVD29 = FT. NAVD88 + 1.5



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PAGE(S):	###		
DATA COLLECTOR FILE(S):	###		

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
INFRASTRUCTURE MANAGEMENT BUREAU
SURVEY AND MAPPING SECTION

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WEST PALM BEACH, FLORIDA 33416-4680

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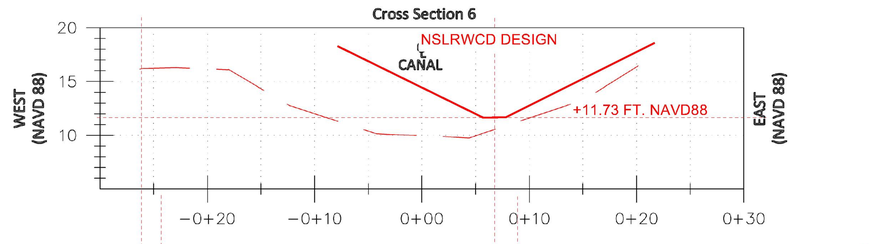

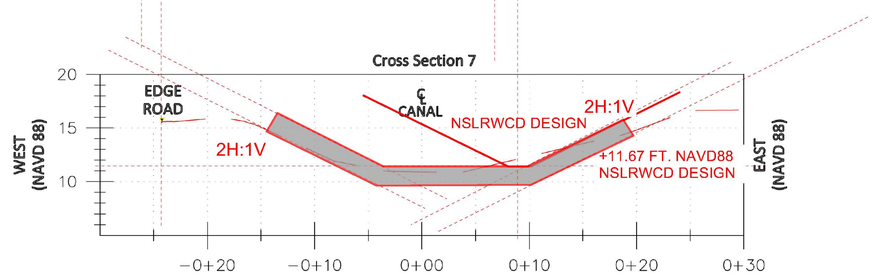

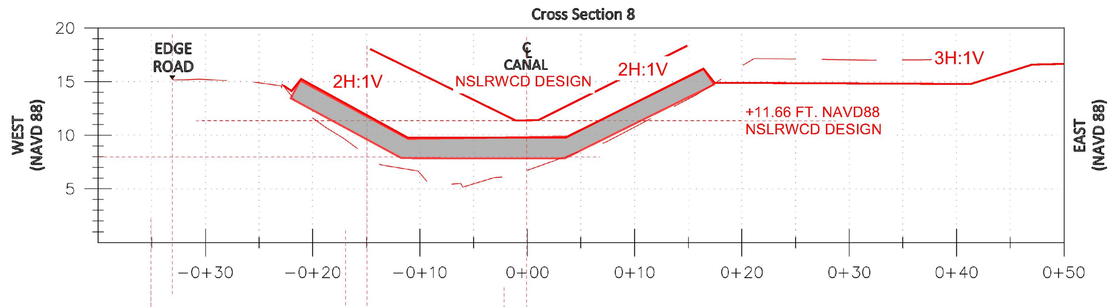

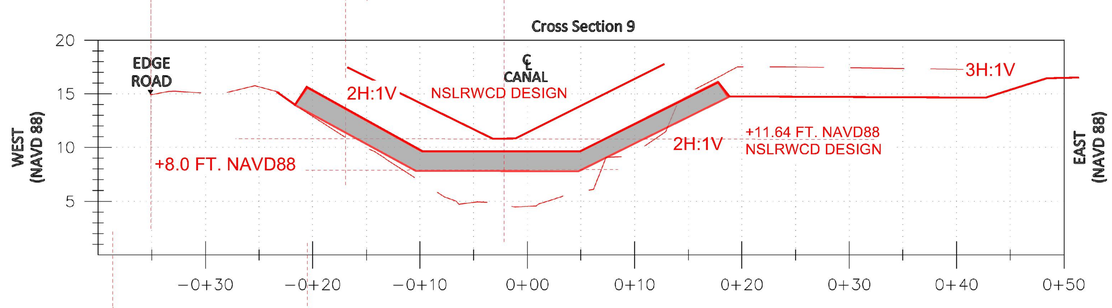

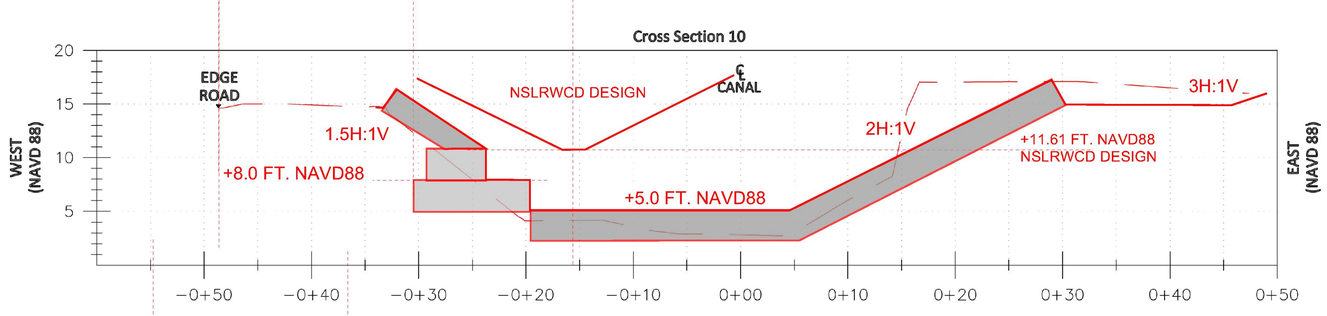

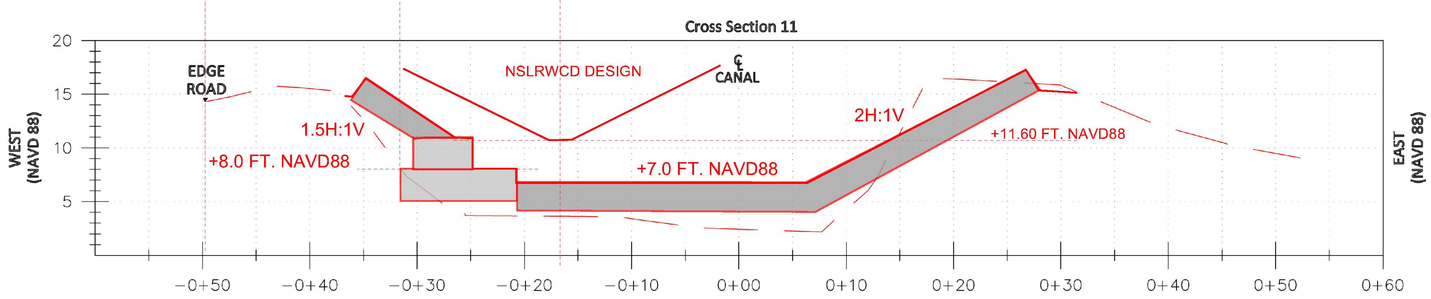

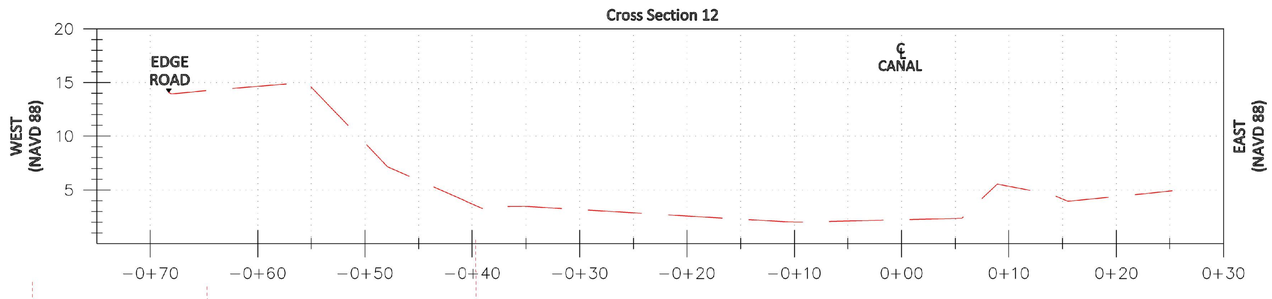

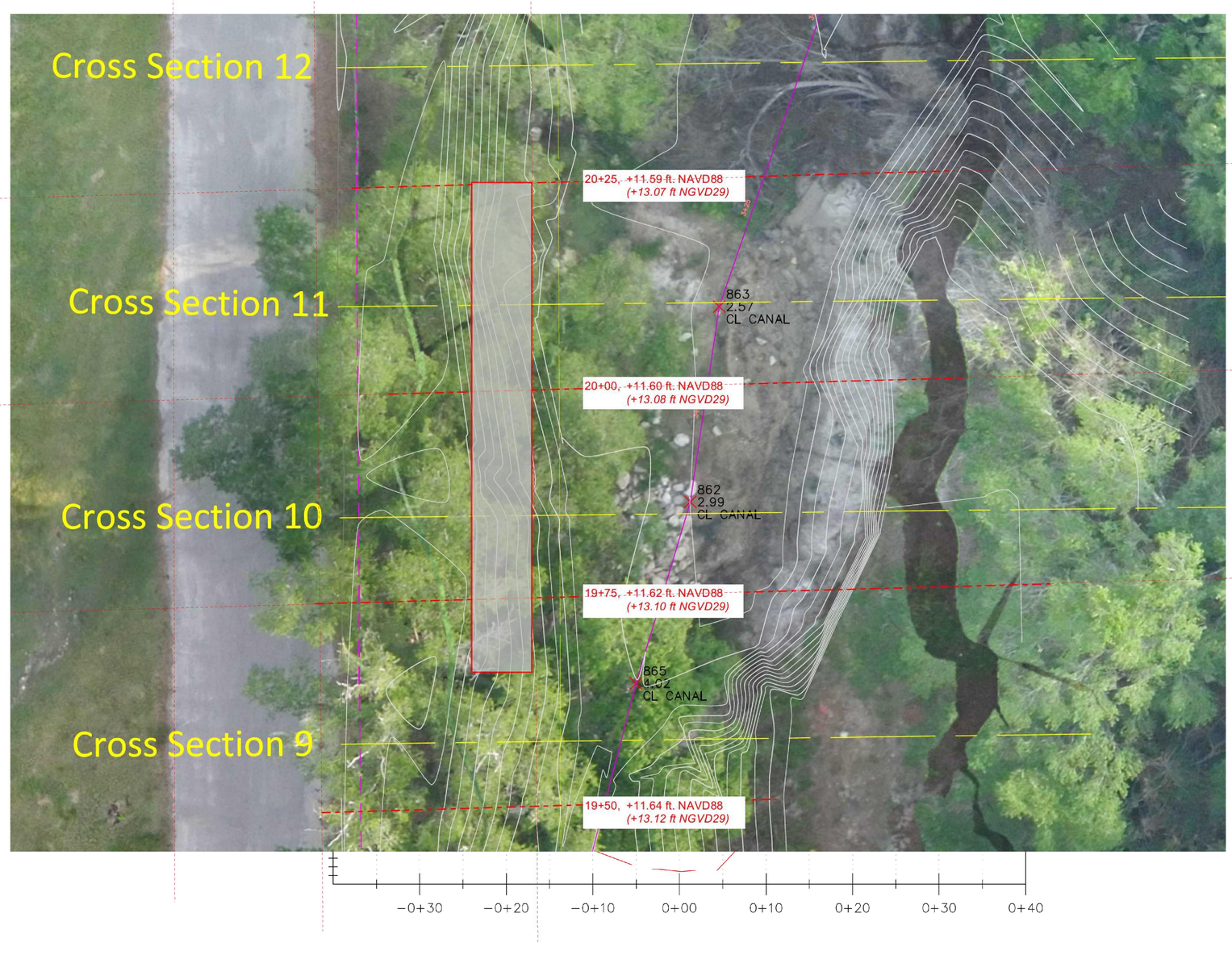

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