Location Map
N.T.S.

NOTES:
THESE PLANS ARE IN ENGLISH UNITS
ALL ELEVATIONS HEREIN REFERENCE N.A.V.D. 1988 DATUM.

CONSTRUCTION PLANS FOR HERMAN CANAL IMPROVEMENTS

LYING IN SEC. 33, TWP 37 S, RNG 38 E

Prepared for the CITY OF PORT ST. LUCIE ST. LUCIE COUNTY, FLORIDA

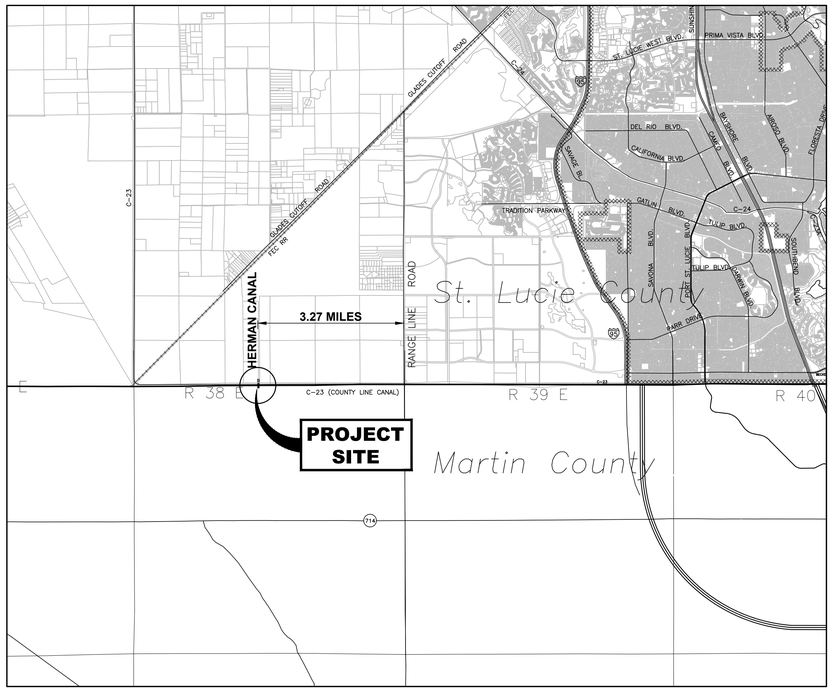
PORT ST. LUCIE
HEART OF THE TREASURE COAST

PROJECT NO. 2091.2 HERMAN CANAL IMPROVEMENTS

SHEET INDEX

ENGINEER

JOSEPH W. CAPRA, P.E.
FLORIDA P.E. NO. 37638
CAPTEC ENGINEERING, INC.
301 N.W. FLAGLER AVENUE
STUART, FLORIDA 34994
PHONE: (772) 692-4344
EMAIL: CAPTECinfo@goCAPTEC.com



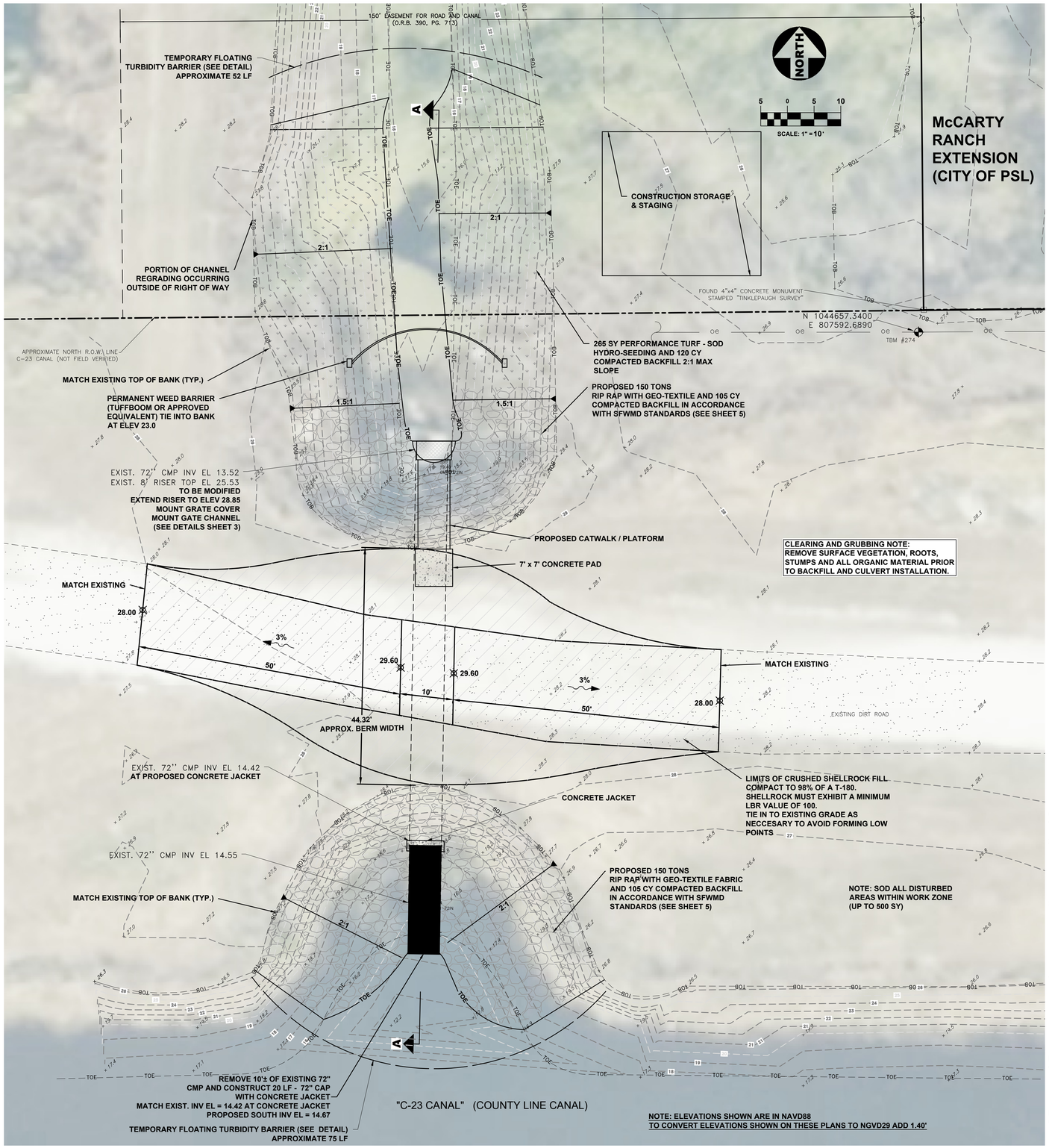
Vicinity Map
N.T.S.

Location Map

Know what's below. Call before you dig.

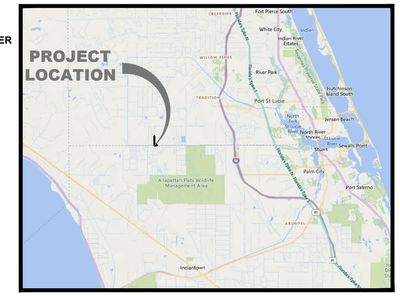
BID SET
6-12-25

CAPTEC Engineering, Inc.
Civil Engineering Professionals
Engineering Business No. EB-0007657



LEGEND

- EXISTING STORM PIPE & FLASHBOARD RISER
- PROPOSED STORM PIPE
- PROPOSED RIPRAP
- PROPOSED TURBIDITY BARRIER
- EXISTING TOP OF BANK (TOB)
- EXISTING TOE OF SLOPE (TOE)
- EXISTING GRADES
- EXISTING CONTOURS (27)
- EXISTING OVERHEAD WIRES (OE)



FOUND 4"x4" CONCRETE MONUMENT W/NO IDENTIFICATION

S 00°30'56" E 290.74'

ST. LUCIE COUNTY
MARTIN COUNTY

33 34
4 3

DESCRIPTION:

A PORTION OF LAND LYING IN THE SOUTHWEST 1/4 OF SECTION 33, TOWNSHIP 37 SOUTH, RANGE 38 EAST, ST. LUCIE COUNTY, FLORIDA.

SURVEYOR'S GENERAL NOTES AND REPORT:

1. UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER, THIS DRAWING, SKETCH, PLAT OR MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
2. THE LAST DAY OF FIELD WORK PERFORMED FOR THE INITIAL SURVEY EFFORT WAS JULY 21, 2020. SUBSEQUENT ADDITIONS, DELETIONS AND/OR UPDATES, IF ANY, ARE REFLECTED IN THE DRAWING REVISIONS.
3. BEARINGS AND OR COORDINATES SHOWN HEREON ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, AND ARE PROJECTED IN THE FLORIDA STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE (901) AND ARE REFERENCED TO THE ESTABLISHED AND MONUMENTED LINE SHOWN HEREON LABELED AS THE BEARING BASIS.
4. UNLESS A DIFFERENCE IS SHOWN, OBSERVED AND RECORD DIMENSIONS ARE THE SAME. ALL DIMENSIONS SHOWN HEREON ARE DISPLAYED IN U.S. SURVEY FEET AND DECIMAL PARTS THEREOF.
5. THIS IS A TOPOGRAPHIC SURVEY ONLY NO BOUNDARY SURVEY WAS PERFORMED FOR THIS SURVEY AND IT IS NOT INTENDED TO IMPLY OR DETERMINE OWNERSHIP. THIS SURVEY DOES NOT INTEND TO DELINEATE LOCAL AREAS OF CONCERN OR ANY OTHER JURISDICTIONAL DETERMINATION.
6. THIS TOPOGRAPHIC SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE BENEFIT AND USE OF THE PERSONS AND/OR ENTITIES NAMED HERON FOR THE PURPOSES IDENTIFIED HEREON ONLY. UNLESS OTHERWISE STATED, CERTIFICATION OF THIS SURVEY MAP APPLIES ONLY TO THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J17 FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES. THE CERTIFICATION IN NO WAY CONSTITUTES NEITHER GUARANTY NOR WARRANTY TO ANY OTHER INFORMATION NOT SHOWN HEREON. ADDITIONS, DELETIONS OR REVISIONS TO THIS DRAWING BY OTHERS ARE NOT PERMITTED AND THIS TOPOGRAPHIC SURVEY MAY NOT BE TRANSFERRED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE SIGNING SURVEYOR. THIS TOPOGRAPHIC SURVEY IS NOT VALID FOR ANY OTHER PURPOSE OTHER THAN INTENDED BY THE SIGNING SURVEYOR.
7. WITH EXCEPTION TO WHAT HAS BEEN FIELD LOCATED AND SHOWN ON THIS SURVEY, THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. SUBSURFACE AND/OR AERIAL ENCROACHMENTS, IF ANY, WERE NOT LOCATED AND/OR DEPICTED ON THIS SURVEY UNLESS NOTED OR IDENTIFIED.
8. THE HEREON DESCRIBED PROPERTY APPEARS TO LIE WITHIN FLOOD ZONE X, AREA OF MINIMAL FLOOD AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) NUMBER 12111C0375J, COMMUNITY NUMBER 120287, PANEL 0375, SUFFIX J MAP EFFECTIVE DATE FEBRUARY 15, 2012. NO ADDITIONAL SEARCH OF THE PUBLIC RECORDS HAS BEEN PERFORMED. THERE MAY BE ADDITIONAL MAP AMENDMENTS AFFECTING THIS PROPERTY.
9. THIS TOPOGRAPHIC SURVEY WAS PERFORMED AT THE REQUEST OF TERI L. ANDRE, P.E. FROM CAPTEC ENGINEERING, INC AND SHOWS ONLY EXISTING TOPOGRAPHIC INFORMATION AS REQUESTED.

VERTICAL DATUM AND CONTROL NOTES:

THE ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988) AND ARE DISPLAYED IN U.S. SURVEY FEET AND DECIMAL PARTS THEREOF. SAID ELEVATIONS SHOWN ARE BASED ON A CLOSED DIFFERENTIAL LEVEL LOOP MEETING OR EXCEEDING +/-0.05 TIMES THE SQUARE ROOT OF THE DISTANCE OF THE LOOP IN MILES. GROUND ELEVATIONS SHOWN HEREON HAVE AN ESTIMATED ACCURACY OF +/-0.2 FEET, AND HARD (WELL DEFINED) FEATURES HAVE AN ESTIMATED ACCURACY OF +/-0.1 FEET.

ORIGINATING BENCH MARK(S) (FB 839WP/23-35, 47-48):
DESIGNATION: V-543
PID: AJ8572
STATE/COUNTY: FL/ST. LUCIE
USGS QUAD: BLUEFIELD (1970)
SPC FL E NORTHING 1044595.8218 EASTING 812763.6123 (FEET) 9OBS)
NAD 83 (1986) - 27°12'24."(N) 080°31'05."(W)
ORTHOMETRIC HEIGHT: 25.21 FEET (ADJUSTED) (NAVD'88)
DESCRIPTION: CORP OF ENGINEER SURVEY MARKER "V-543 2001" CERP

DESIGNATION: G 667
PID: DL3200
STATE/COUNTY: FL/ST. LUCIE
USGS QUAD: INDIAN TOWN NW (1983)
SPC FL E NORTHING 1049747.5103 EASTING 824826.8450 (FEET)(OBS)
NAD 83 (2011) 27°13'14.6"(N) 080°28'51.7"(W)
ORTHOMETRIC HEIGHT: 30.01 FEET (NAVD'88)
DESCRIPTION: SOUTH FLORIDA WATER MANAGEMENT DISTRICT "GPS SURVEY MARK CANAL "G 667 2006"

TEMPORARY BENCHMARK(S):

TBM #274 "MAG" NAIL IN WOOD POWER POLE (AS SHOWN)
ELEVATION 29.56' NAVD'88

TBM #8 FOUND 1/2" DIA. REBAR/CAP STAMPED "WIT. COR. LB 205" (NOT DISPLAYED)
N 1046829.81
E 807602.46
ELEVATION: 25.99' NAVD'88

TBM #1003 FOUND 1/2" DIA. REBAR/CAP STAMPED 'WIT. COR. LB 205" (AS SHOWN)
N 1044745.77
E 807624.75
ELEVATION: 26.93' NAVD'88

SURVEYOR'S GLOBAL POSITIONING SYSTEM (G.P.S.) NOTES:

1. G.P.S. SURVEY METHOD: REAL TIME KINEMATIC (RTK)
2. G.P.S. RECEIVER TYPE: LEICA GS 18 / CS 20 GPS/GLONASS/GALILEO GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM), SBAS, CODE AND PHASE (L1, L2, L2C & L5 / L1, L2, L2C & L3 / E1, E5A, E5B, ALTBOC, E6). THE HORIZONTAL AND VERTICAL TARGET ACCURACY FOR THIS EQUIPMENT IS: HORIZONTAL: 8MM + 1PPM (RMS) VERTICAL: 15MM + 1PPM (RMS).
3. HORIZONTAL POSITIONS OF LOCAL SITE CONTROL WERE ESTABLISHED BY GPS RTK OBSERVATIONS UTILIZING THE FDOT FPRN NETWORK CORRECTIONS. LOCAL GPS SITE CONTROL VALUES ARE NETWORK CORRECTED (ADJUSTED) POSITIONS.
4. G.P.S. SURVEY MEASUREMENTS WERE PROCESSED AND ADJUSTED USING LEICA INFINITY, VERSION 3.4.2 APPLYING THE GEOID 18 MODEL.

REFERENCES:

PLAN TITLED "McCARTY RANCH WATER FARM PROJECT PART OF SECTION 33, 34, 35, 36, T. 37 S., R. 38 E. ST. LUCIE COUNTY, FLORIDA" PROJECT NUMBER 16-461S, DRAWING NUMBER 20368-C DATED OCTOBER 12, 2016, LATEST REVISION DATED DECEMBER 6, 2016. PREPARED BY CARTER ASSOCIATES, INC.

CERTIFIED TO:

1. CAPTEC ENGINEERING, INC.

GENERAL NOTES:

1. ALL AREAS SHALL BE CLEARED AND GRUBBED PRIOR TO CONSTRUCTION.
2. ALL UNSUITABLE MATERIALS, SUCH AS MUCK, ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIAL SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED FILL MATERIAL IN MAXIMUM 12" LIFTS COMPACTED TO NOT LESS THAN 100% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE IN ACCORDANCE WITH AASHTO T-99.
3. HEAVY RAINFALL AND/OR A HIGH WATER TABLE MAY OCCUR BEFORE THE EARTHWORK COMMENCES, OR DURING THE EARTHWORK OPERATION. WHEN THESE CONDITIONS OCCUR AND THE SITE PREPARATION CANNOT BE ACHIEVED AS SPECIFIED, AN EXCAVATION OF THE EXISTING CONDITIONS SHOULD BE CONDUCTED AND THE SPECIFICATIONS REVISED ACCORDINGLY.
4. LOADER AND HEAVY PLACE COMPACTORS ARE TWO TYPES OF EQUIPMENT THAT HAVE BEEN USED SUCCESSFULLY. DENSIFICATION PROCEDURES MUST COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED.

ROADWAY WORK IMPROVEMENTS NOTE:

1. CONTRACTOR TO COORDINATE ROADWAY WORK WITH THE CITY OF PORT ST LUCIE TO ENSURE THE EXISTING ROAD IS ACCESSIBLE TO ADJACENT PROPERTY OWNERS / BUSINESSES.

PLEASE CONTACT PIERRE VIGNIER 48 HOURS IN ADVANCE OF ANY TEMPORARY ROAD CLOSURE. 772-871-5434

CAPTEC Engineering, Inc.
Civil Engineering Professionals
Engineering Business No. EB-0007657
301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341

DATE:	3-30-23
DRAWN BY:	RC
DESIGNED BY:	TJS
CHECKED BY:	JWC
PROJECT No.:	2091.2
HORZ. SCALE:	1" = 10'
VERT. SCALE:	N/A
CADD FILE:	

NO.	DATE	BY	REVISIONS
1	6-12-25	JWC	BID SET

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING, ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

HERMAN CANAL IMPROVEMENTS
CITY OF PORT ST LUCIE, FLORIDA

PLAN VIEW

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 2091.2
SHEET 2 OF 5

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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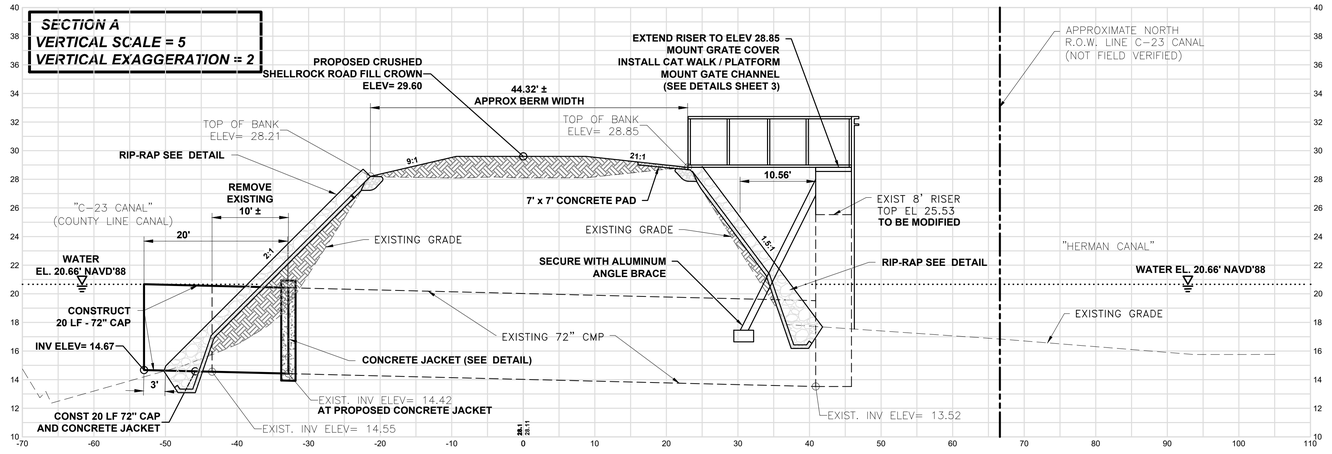
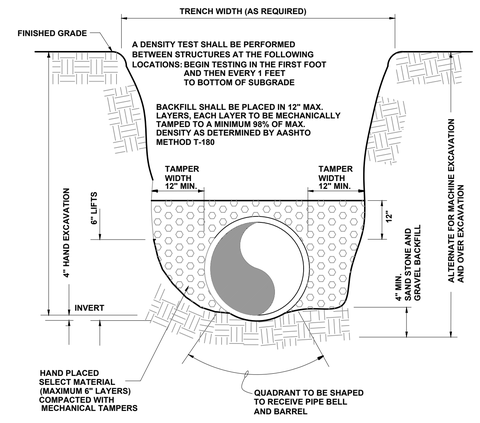
NOTE: ELEVATIONS SHOWN ARE IN NAVD88
TO CONVERT ELEVATIONS SHOWN ON THESE PLANS TO NGVD ADD 1.40'



CULVERT CROSS SECTION

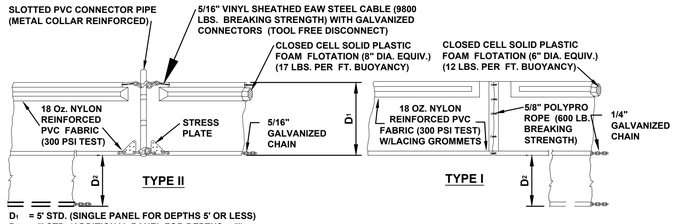


NOTES:

1. FOR TRENCHES REQUIRING SHEETING, SHORING, STAY BRACING, TRENCH JACKS OR TRENCH BOX, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SUPPORTS.
2. IF THE MAXIMUM TRENCH WIDTH MUST BE EXCEEDED, THE AREA OUTSIDE OF THE MAXIMUM EMBEDMENT SHALL BE COMPACTED TO FINAL BACKFILL REQUIREMENTS. IF THE PIPE IS INSTALLED IN A COMPACTED EMBANKMENT, THE EMBANKMENT SHALL BE IN PLACE AND COMPACTED TO 12" MIN. COVER BEFORE INSTALLATION OF UTILITY.
3. IF BEDDING IS REQUIRED TO BRING TRENCH BOTTOM UP TO GRADE AND PROVIDE UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE, THEN A MINIMUM COMPACTED DEPTH OF 4 TO 6 INCHES OF SELECT EMBEDMENT MATERIAL IS REQUIRED.
4. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.

PIPE TRENCH DETAIL

N.T.S.

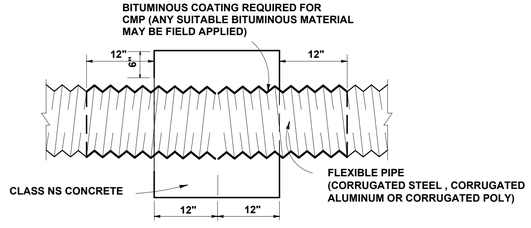


D_1 = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS)
D_2 = 5' STD. (ADDITIONAL PANEL FOR DEPTHS > 5') CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET.
TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. 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

N.T.S.



NOTE: COST OF BITUMINOUS COATING TO BE INCLUDED IN CONTRACT UNIT PRICE FOR EITHER NEW PIPE OR MITERED END SECTION.

CONCRETE JACKET FOR CONNECTING PIPES

CAPTEC Engineering, Inc.
Civil Engineering Professionals
301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
Engineering Business No. EB-0007657

DATE: 3-30-23
DRAWN BY: RC
DESIGNED BY: TJS
CHECKED BY: JWC
PROJECT No.: 2091.2
HORZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 1'
CADD FILE:

NO.	DATE	BY	REVISIONS
1	6-12-25	JWC	BID SET

SCALE VERIFICATION
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SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING, ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

HERMAN CANAL IMPROVEMENTS
CITY OF PORT ST LUCIE, FLORIDA

SECTIONS AND DETAILS

Joseph W. Capra
301 N.W. Flagler Ave.
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P.E. No. 37638

Printed Date:

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SHEET 3 OF 5

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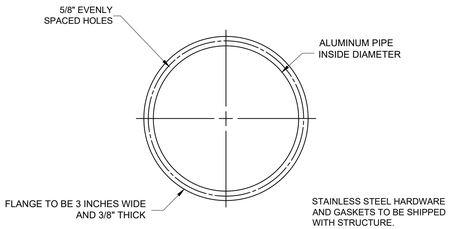
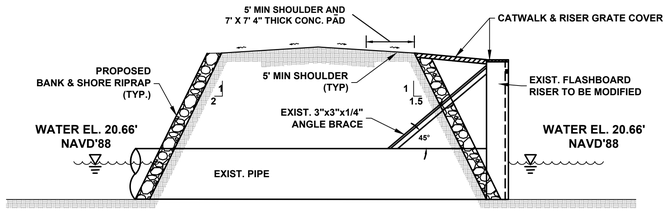
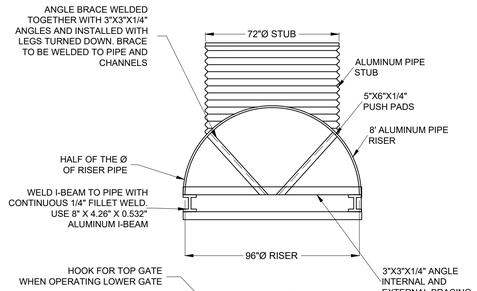


FLANGE CONNECTION DETAIL
NOT TO SCALE

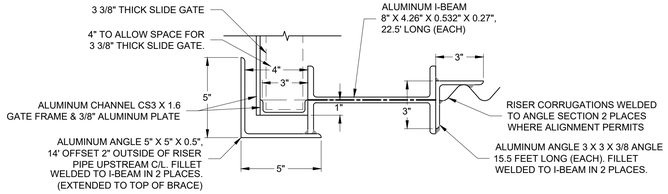


CATWALK CONNECTION DETAIL
N.T.S.



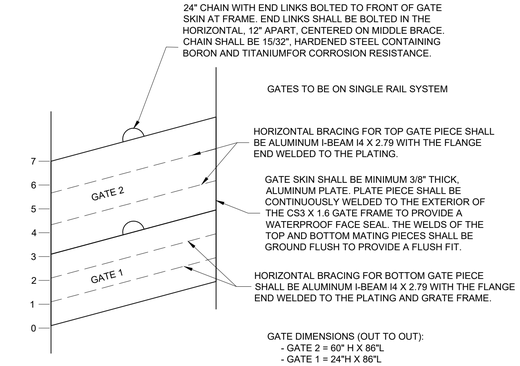
MATERIAL:

THE RISER AND STUB SHALL BE ALUMINUM 3004 PIPE AS SPECIFIED ON THE ORDER. CHANNELS, ANGLES AND PLATES TO BE 6061-T6 EXTRUSIONS.



NOTE: THE OPPOSITE RISER I-BEAM SHALL HAVE THE SAME COMPONENTS CONSTRUCTED AS A MIRROR IMAGE OF THE SECTION PLAN VIEW ABOVE.

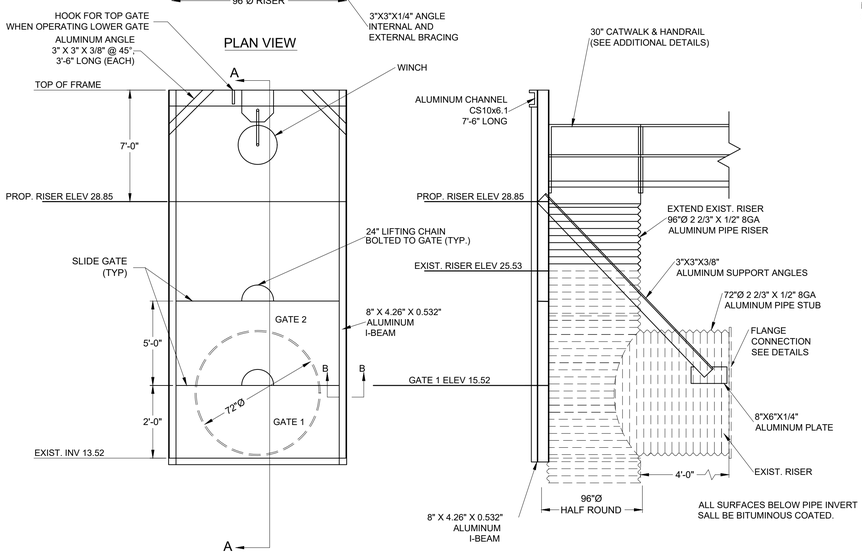
SECTION B-B VIEW
NOT TO SCALE



GATE DIMENSIONS (OUT TO OUT):
- GATE 2 = 60" H X 86"L
- GATE 1 = 24"H X 86"L

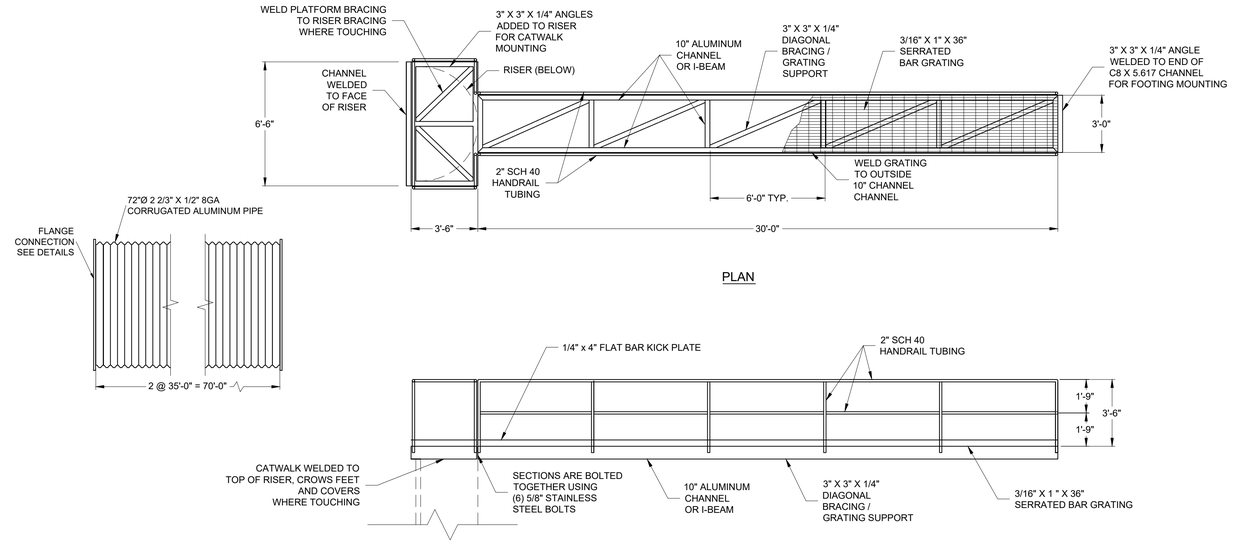
- PLATE WELDS TO THE EXTERIOR FLANGE OF THE FRAME CIRCUMFERENCE SHALL BE CONTINUOUS FILLET WELDS.
- CONTACT SURFACES OF THE GATE SHALL HAVE THEIR WELDS GROUND FLUSH WITH THE CHANNEL FLANGE AND GATE SKIN.
- WELDS OF THE PLATE TO THE BRACING I-BEAM FLANGES SHALL BE APPROXIMATELY 4" SKIP WELDS ON 8" CENTERS.
- WELDED CHANNEL FRAME CONNECTIONS SHALL BE CONTINUOUS FILLET WELDS ON BOTH SIDES OF THE CHANNEL SECTIONS.
- SLAG SHALL BE REMOVED FROM ALL WELDS.
- SEE NOTES ON ENGINEERING SITE PLANS SHEET C-3 FOR ALUMINUM SURFACE PREPARATION AND COATING.

TWO-PIECE FLOW CONTROL GATE DETAIL
NOT TO SCALE



NOTE: GATE 1 WILL MAINTAIN AN ELEVATION OF 15.5 WHEN THE ELEVATION IN THE C-23 CANAL IS BELOW ELEVATION 17.0, PER SFWMD PERMIT.

RISER DETAIL
N.T.S.



CATWALK DETAIL
N.T.S.

NOTES:
1. ALL EXISTING CONDITIONS MUST BE FIELD CONFIRMED BY THE CONTRACTOR.
2. EXISTING RISER TO BE EXTENDED TO ELEVATION DEPICTED IN THESE PLANS & DETAILS.

PROPOSED CATWALK, PLATFORM, GATE / GATE CHANNEL / CONTROL, AND ALUMINUM SUPPORT ANGLE TO BE INSTALLED AFTER MODIFICATION COMPLETED.

301 N.W. Flagler Ave.
Stuart, FL 34994-2866
Phone: (772) 692-4344
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Engineering Business No. EB-0007657
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HERMAN CANAL IMPROVEMENTS
CITY OF PORT ST LUCIE, FLORIDA

CATWALK AND RISER DETAILS

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SHEET 4 OF 5

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SCHEDULE: ELEVATIONS

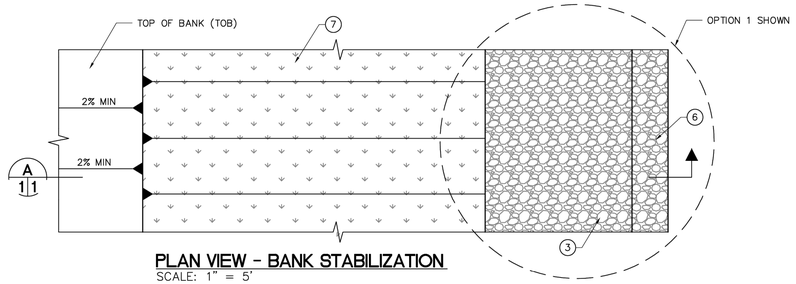
MARK	ELEVATION	DESCRIPTION	REMARKS
A	**25.50**	DESIGN HIGH [**OR HISTORICAL HIGH, WHICHEVER IS HIGHER**] WATER LEVEL	OPTIONS 1, 2 & 3
B	~~———~~	~~TOP ELEVATION OF RIPRAP [**OPTION 1**]~~	OPTION 1 – GABION & RIPRAP TREATMENT
C	~~———~~	~~TOP OF GABION ELEVATION~~	OPTION 1 – GABION & RIPRAP TREATMENT
D	**28.50**	TOP ELEVATION OF RIPRAP [**OPTION 2**]	OPTION 2 – RIPRAP TREATMENT
E	**17.5 N / 15.0 S**	BOTTOM ELEVATION OF RIPRAP	OPTION 2 – RIPRAP TREATMENT
F	———	TOP ELEVATION OF SPARTINA PLANTINGS	OPTION 3 – VEGETATIVE STABILIZATION TREATMENT
G	———	BOTTOM ELEVATION OF SPARTINA PLANTINGS	OPTION 3 – VEGETATIVE STABILIZATION TREATMENT
H	———	TOP ELEVATION OF HPTRM	OPTION 3 – VEGETATIVE STABILIZATION TREATMENT
I	———	BOTTOM ELEVATION OF HPTRM	OPTION 3 – VEGETATIVE STABILIZATION TREATMENT

KEY NOTES:

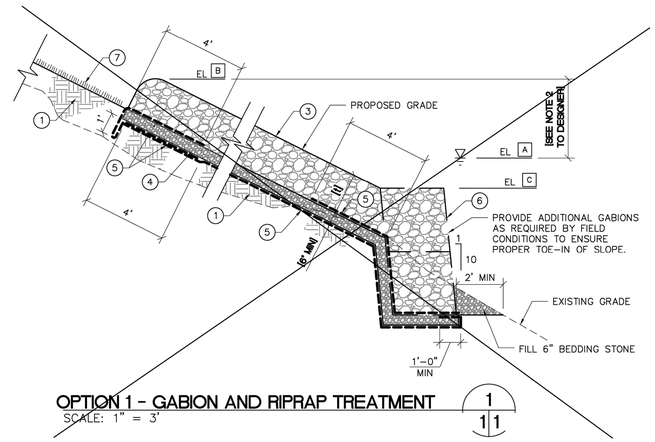
MARK	DESCRIPTION	REMARKS
1	EMBANKMENT FILL MATERIAL	PLACE EXCAVATED MATERIAL TO MEET PROPOSED GRADE PER SPECIFICATION SECTION 02200
2	GEOSYNTHETIC REINFORCEMENT	RGEOSYNTHETIC REINFORCEMENT PER FDOT SECTION 145 AND INDEX 501 **[SEE NOTE 9 TO DESIGNER]**
3	RIPRAP, MIN THICKNESS = 1.5D	RIPRAP SHALL BE TYPE **B** PER SPECIFICATION SECTION 02370
4	BEDDING STONE, 6" THICK (TYP)	BEDDING STONE SHALL BE PER SPECIFICATION SECTION 02370
5	FILTER FABRIC	FILTER FABRIC PER SPECIFICATION SECTION 02370
~~6~~	~~GABION BASKET~~	~~PROVIDE GABION BASKET(S) FOR TOE-IN OF RIPRAP PER SPECIFICATION SECTION 02272~~
7	VEGETATIVE TREATMENT	PER SPECIFICATION SECTION 02920
~~8~~	~~SPARTINA PLANTINGS~~	PLANT FIVE (5) ROWS @ 18" ON CENTER AND STAGGERED BOTTOM ROW 1' (MAX) BELOW THE AVERAGE WATER ELEVATION
~~9~~	~~HIGH PERFORMANCE TURF REINFORCEMENT MAT~~	PER SPECIFICATION SECTION 02278

GENERAL NOTE:

1. **[THE CONFIGURATION OF THE 6-INCH BEDDING STONE BEHIND THE GABION IS THE MINIMUM REQUIRED FOR THE PLACEMENT. IF THE EXISTING GROUND IS FARTHER BEHIND THE GABION OR IF THE CONTRACTOR OVEREXCAVATES EXISTING GROUND BEHIND THE GABION, IT SHALL BE BACKFILLED WITH BEDDING STONE WITH THE FILTER FABRIC BE PLACED ON THE EXCAVATED SURFACE AT NO ADDITIONAL COST TO THE DISTRICT.]**

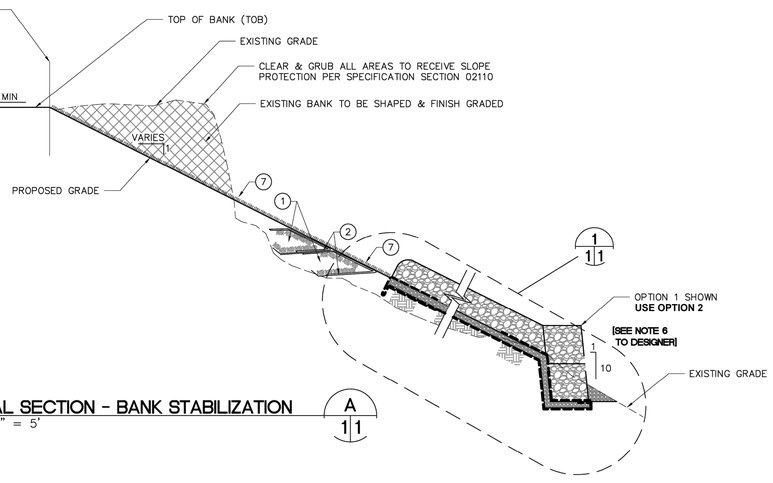


PLAN VIEW – BANK STABILIZATION
SCALE: 1" = 5'

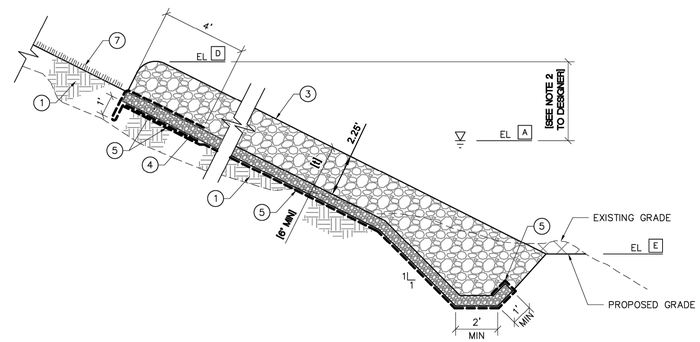


OPTION 1 – GABION AND RIPRAP TREATMENT
SCALE: 1" = 3'
1 / 1 1

RANGE OF PROPOSED TOP OF BANK AS SHOWN ON DRAWINGS AND SECTIONS. CONTRACTOR TO MAKE SUCH ADJUSTMENTS DEEMED NECESSARY TO BALANCE CUT AND FILL AND ENSURE PROPER TOE-IN OF STONE PROTECTION. PROVIDE MIN. 20 FT. FROM TOP OF SLOPE TO R/W LINE.



TYPICAL SECTION – BANK STABILIZATION
SCALE: 1" = 5'
A / 1 1



OPTION 2 – RIPRAP TREATMENT
SCALE: 1" = 3'
1 / 1 1

NOTES TO DESIGNER:

1. BOTTOM OF SLOPE PROTECTION SHALL BE AT LEAST 2 FEET BELOW THE LOW WATER ELEVATION. (DESIGN LOW FOR NEW STRUCTURE, RECORD LOW FOR EXISTING STRUCTURE)
2. TOP OF SLOPE PROTECTION SHALL BE AT LEAST 2 FEET ABOVE THE HIGH WATER ELEVATION (DESIGN HIGH FOR NEW STRUCTURE, RECORD HIGH FOR EXISTING STRUCTURE).
3. PROVIDE A 2% SLOPE AWAY FROM THE CANAL AND DRAINAGE SWALE WITH BERM DRAINS.
4. DESIGNER SHALL PROVIDE CALCULATIONS AND DETAILED DESIGN DRAWINGS TO SCALE.
5. DESIGNER SHALL DETERMINE ALL DIMENSIONS BASED ON SITE SPECIFIC CONDITIONS. THE DESIGN OF THE GABION RETAINING WALL SYSTEM SHALL INCLUDE OVERTURNING, SLIDING, BEARING CAPACITY AND SLOPE STABILITY ANALYSES.
6. DESIGNER SHALL CONSIDER INCLINED OR STEPPED GABION INSTALLATION BASED ON SITE SPECIFIC REQUIREMENTS.
7. DESIGNER SHALL DESIGN THE SLOPES IN ACCORDANCE WITH USACE PUBLICATION EM-1110-2-1902, SLOPE STABILITY.
8. 3H TO 1V OR FLATTER SLOPE IS PREFERRED FOR TYPICAL SLOPE MOWING PURPOSES. ANY STEEPER MUST BE JUSTIFIED AS THE MOWING COST RISES SUBSTANTIALLY. HPTRM IS NOT REQUIRED WHERE SLOPES ARE 4H TO 1V OR FLATTER OR IN AREAS WHERE ADEQUATE VEGETATIVE PROTECTION (CAT TAILS, BULL RUSH, ETC.) HOWEVER CANAL BANKS SUBJECT TO FREQUENT BOAT TRAFFIC /WAVE ACTION WILL REQUIRE HPTRM AT A MINIMUM EVEN AT FLATTER SLOPES.
9. SELECTION OF THE BEST OPTION TO ACHIEVE SLOPE STABILITY WHICH MAY INCLUDE GEOSYNTHETIC REINFORCEMENT, AS SHOWN, IS TO BE DETERMINED BY DESIGNER AFTER TAKING INTO CONSIDERATION SOIL, AVAILABLE RIGHT OF WAY, POTENTIAL MAINTENANCE COST, ETC.
10. REFER TO 02370 AND 02371 FOR CANAL BOTTOM STABILIZATION.
11. THE RIPRAP LAYER THICKNESS (t) SHOULD NOT BE LESS THAN THE SPHERICAL DIAMETER OF THE D100 (W100) STONE, OR LESS THAN 1.5 TIMES THE SPHERICAL DIAMETER OF THE D50 (W50) STONE, WHICHEVER RESULTS IN THE GREATER THICKNESS. IT SHOULD NOT BE LESS THAN TWELVE (12) INCHES FOR PRACTICAL PLACEMENT
12. THE THICKNESS OF RIPRAP SHOULD BE INCREASED BY SIX (6) TO TWELVE (12) INCHES, ACCOMPANIED BY INCREASE IN STONE SIZE, SHOULD RIPRAP REVETMENT BE SUBJECT TO DAMAGE BY FLOATING DEBRIS, WAVE FROM BOAT WAKES OR WIND.

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REVISION NO. V2.1
EFFECTIVE DATE MAY 2018
CHANGE NO. ECR08622

SOUTH FLORIDA
WATER MANAGEMENT DISTRICT

STANDARD CIVIL DETAILS
BANK STABILIZATION
TREATMENTS

C10

1 SHEET OF 4

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

JOB No.: 2091.2
SHEET 5 OF 5

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Civil Engineering Professionals
• 301 N.W. Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
Engineering Business No. EB-0007657

NO.	DATE	BY	REVISIONS
1	6-12-25	JWC	BID SET

DATE: 3-30-23
DRAWN BY: RC
DESIGNED BY: TJS
CHECKED BY: JWC
PROJECT No.: 1988
HORZ. SCALE: N/A
VERT. SCALE: N/A
CADD FILE:

SCALE VERIFICATION
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

HERMAN CANAL IMPROVEMENTS
CITY OF PORT ST LUCIE, FLORIDA

BANK STABILIZATION DETAILS