



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

August 20, 2020

Regulatory Division
West Branch
Tampa Permits Section

PUBLIC NOTICE

Permit Application Number SAJ-2015-00337 (SP-CSH)

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: Pinellas County BOCC, Public Works
c/o Susan Goebel-Canning
22211 US Highway 19 N., Bldg. 1
Clearwater, FL 33765

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Mullet Creek. The project site is located northeast of the intersection of McMullen Booth Road and Union Street, in Section 33, Township 28 South, Range 16 East, Pinellas County. The project corridor is located within the limits of the City of Safety Harbor, with the upstream contributing area located within unincorporated Pinellas County. The project area for Mullet Creek runs easterly from McMullen Booth Road past the Cypress Trace condominiums for approximately 1,300 feet. The first approximately 260 feet of Mullet Creek downstream from McMullen Booth Road is stabilized with riprap from a previously complete County project. The focus of the proposed project is stabilization of approximately 1,600 feet of stream bank downstream from the currently riprap stabilized area.

Directions to the site are as follows: Traveling east on Gulf to Bay Blvd (SR 60) from Tampa, turn right on to McMullen Booth Road. Travel north on McMullen Booth Road for approximately 2.3 miles. Mullet Creek is located on the right just north of Cedar Street and immediately south of the Cypress Trace Condominiums.

APPROXIMATE CENTRAL COORDINATES: Latitude 27.99838° N
Longitude 82.706622° W

PROJECT PURPOSE:

Basic: The basic project purpose is erosion control and bank stabilization.

Overall: The overall project purpose is to address erosion and sedimentation issues in Mullet Creek by armoring the sides and bottom of the creek while maintaining flooding level of service.

EXISTING CONDITIONS: The wetland system consists of a freshwater system. The existing Mullet Creek channel is a shallow stormwater conveyance system that flows from west to east, it is generally grassed on the side slopes with a bare sandy bottom. The creek shows signs of disturbance and is surrounded by invasive plant species including Guinea grass (*Megathyrsus maximus*), Johnson grass (*Sorghum halepense*) and Paragrass (*Urochloa mutica*).

The distances from the Cypress Trace condominium buildings to the top edge of the northern bank vary from approximately 15 to 30 feet. The top of bank (TOB) width of the channel is approximately 30 feet. The bottom width of the channel varies from approximately 2 to 20 feet throughout the project area. The depth of the channel varies between 8 to 9 feet deep along the western end to 5 to 7 feet deep at the eastern end. This tapers off to channel depths of approximately a few feet in the eastern portions of the project corridor. The County has a 10 foot drainage and utility access easement along the north side of the drainage right-of-way. The southern side of the channel is heavily overgrown with large trees. Riprap is present along the creek for approximately 260 feet downstream of McMullen Booth Road, placed during previous restoration efforts. There is also spot placement of riprap where the County repaired some failures along the project area.

The floodplain expansion area of the Mullet Creek erosion control project is located on vacant property between McMullen Booth Road and Elm Street in Safety Harbor. The property contains a variety of mature tree species that have created a successional hardwood forest with a nearly closed canopy. The dominant tree species on the property are Carrotwood (*Cupaniopsis anacardioides*), Chinaberry (*Melia azedarach*), and Ear tree (*Enterolobium cyclocarpum*). The lack of light penetration and heavy leaf litter on the forest floor has suppressed ground cover growth, creating a community that lacks herbaceous vegetation. There is a limited number of mature native trees on the project site including Pond cypress (*Taxodium ascendens*), Sweetbay (*Magnolia virginiana*), Red maple (*Acer rubrum*), and numerous Laurel oaks (*Quercus laurifolia*). Muscadine grape vine (*Vitis rotundifolia*) and Old World climbing fern (*Lygodium microphyllum*) are growing into the canopy, jeopardizing the health of the mature native trees.

PROPOSED WORK: The applicant seeks authorization to stabilize approximately 1,600-feet of stream bank downstream from the currently riprap stabilized area and create an additional 1.2-acres of hydraulically connected area for floodplain and water quality enhancement. Construction would consist of installation of a vertical wall (gabion baskets) on the south bank and channel bottom and Flexamat® lining on the north bank. The channel section would maintain an approximate minimum bottom width of 5

feet. The depth of the channel would mimic existing conditions and vary between 8 to 9-feet deep along the western end to 5 to 7-feet deep at the eastern end.

The proposed floodplain area would be provided within the County's Tract E parcel and the County owned parcel downstream of Tract E. The proposed floodplain extends to the property boundary within the aforementioned parcels, resulting in approximately 1.2-acres of additional floodplain area. Graded "islands" are proposed around trees greater than 4-inches DBH that occur above the proposed floodplain area bottom elevation. Construction of an access road, impacting approximately 0.03 acres, is proposed to facilitate access to the proposed floodplain expansion area during construction activities and post-construction for maintenance purposes.

The proposed work would impact a total of roughly 0.25 acres of wetlands. The volume to be excavated is 3,265-cubic-yards and the volume to be filled is approximately 1,351-cubic-yards, including 1,296-cubic-yards of gabions and 55-cubic-yards of riprap.

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:

The design will implement minimal use of gabions and concrete matting, which provide adequate voids to promote aquatic and upland vegetation to naturally recruit. Impacts are limited only to areas with fluvial erosion and mass failure. A floodplain expansion area is provided and designed around wetland areas that have a higher quality. To minimize the impacts of the project, ecological friendly concepts were incorporated into the design including the addition of an extended and diversely vegetated littoral shelf, varying adjacent wetland communities, retaining native trees by creating tree islands and horizontal snags for wildlife utilization.

COMPENSATORY MITIGATION: The applicant has offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment:

A floodplain expansion area with native plants and trees will be created to reduce the risk of flooding, improve water quality and restore wildlife habitat. The proposed mitigation will provide greater long-term ecological benefits than the existing wetland/surface waters currently provide.

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 work is not likely to adversely affect the Wood Stork (*Mycteria americana*) based on The Corps of Engineers, Jacksonville District, U.S. Fish and Wildlife Service, Jacksonville Ecological Services Field Office and State of Florida Effect Determination Key for the Wood Stork In Central And North Peninsular Florida September 2008. Therefore, additional coordination with the U.S. Fish and Wildlife Service is not required.

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. There is no EFH found within the project area. The Corps' initial determination is that the proposed action would have no impact on EFH. Our final determination relative to project impacts is subject to review 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 Tampa Permits Section within 15 days from the date of this notice. For electronic mail submit comments to Caitlin.S.Hoch@usace.army.mil. Please reference this permit number, SAJ-2015-00337 (SP-CSH), on all submittals.

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, Caitlin Hoch, in writing at the Tampa Permits Section, by electronic mail at Caitlin.S.Hoch@usace.army.mil or, by telephone at (813)355-0789.

IMPACT ON NATURAL RESOURCES: Preliminary review of this application indicates that an Environmental Impact Statement will not be required. 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

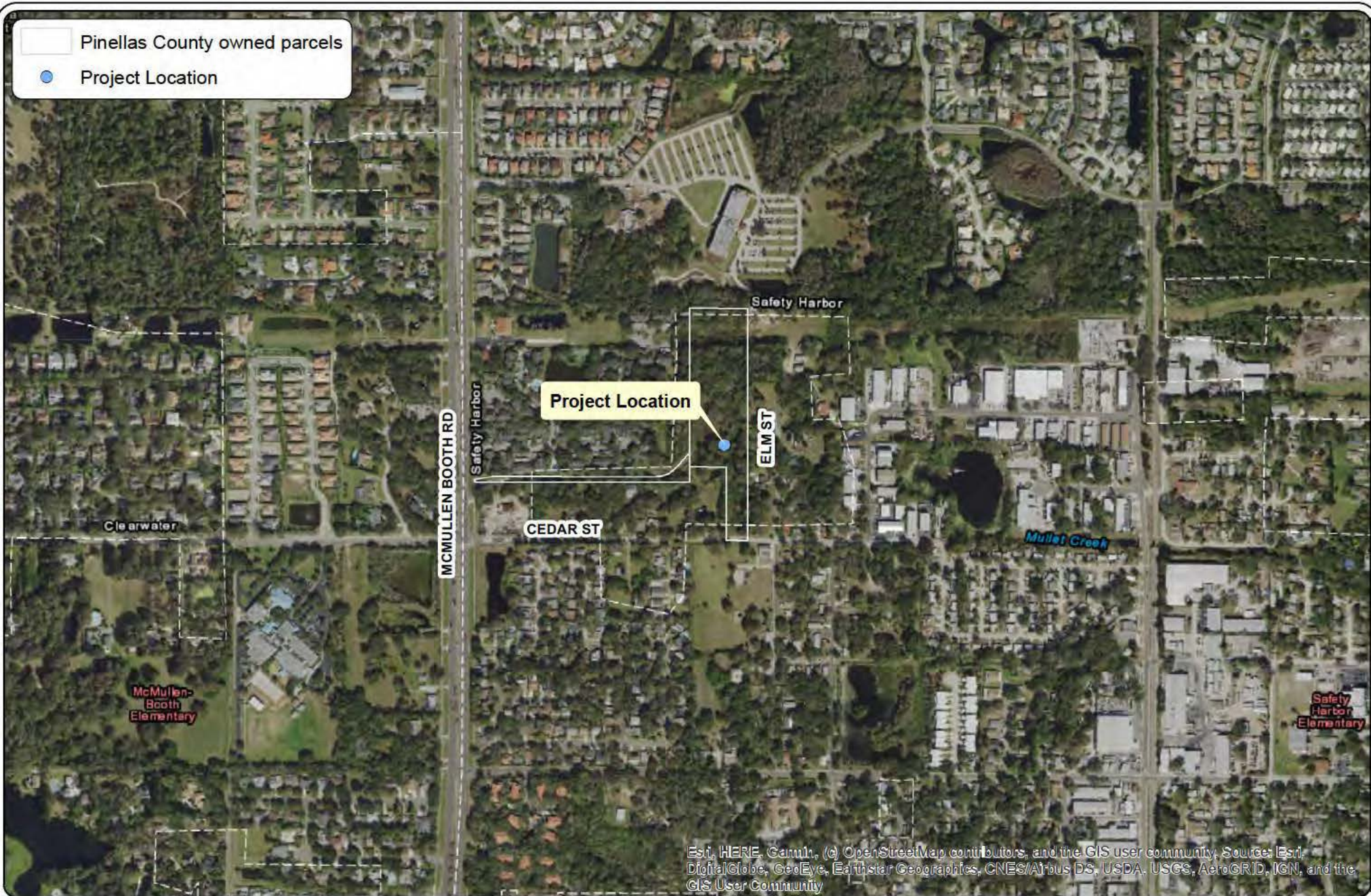
resources of the area. By means of this notice, we are soliciting comments on the potential effects of the project on threatened or endangered species or their habitat

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 of 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 decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act 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.



MAP 1 - Project Location



Pinellas County, Florida
Map Created 12/2019



FIGURE 3 – Ecological Communities

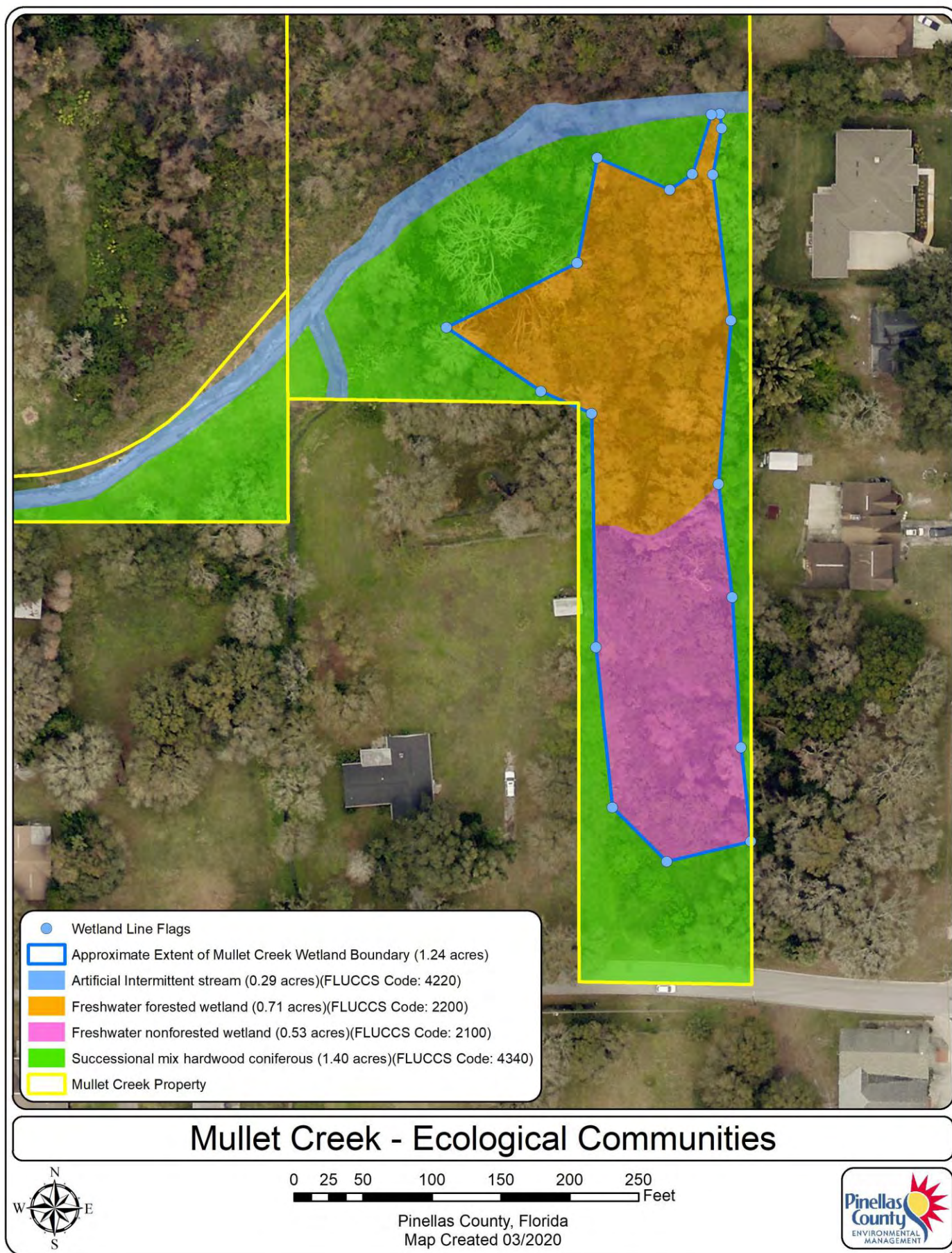
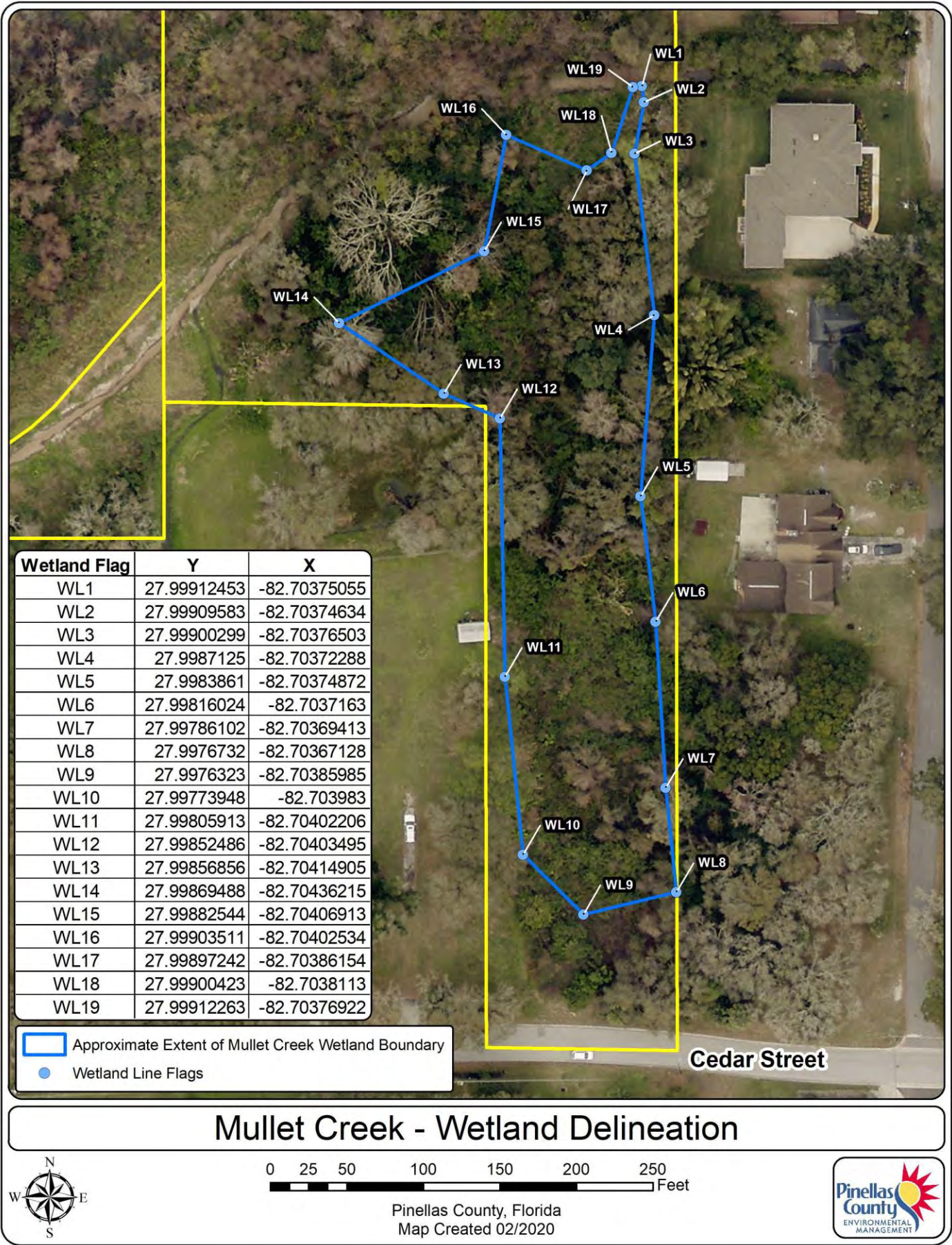
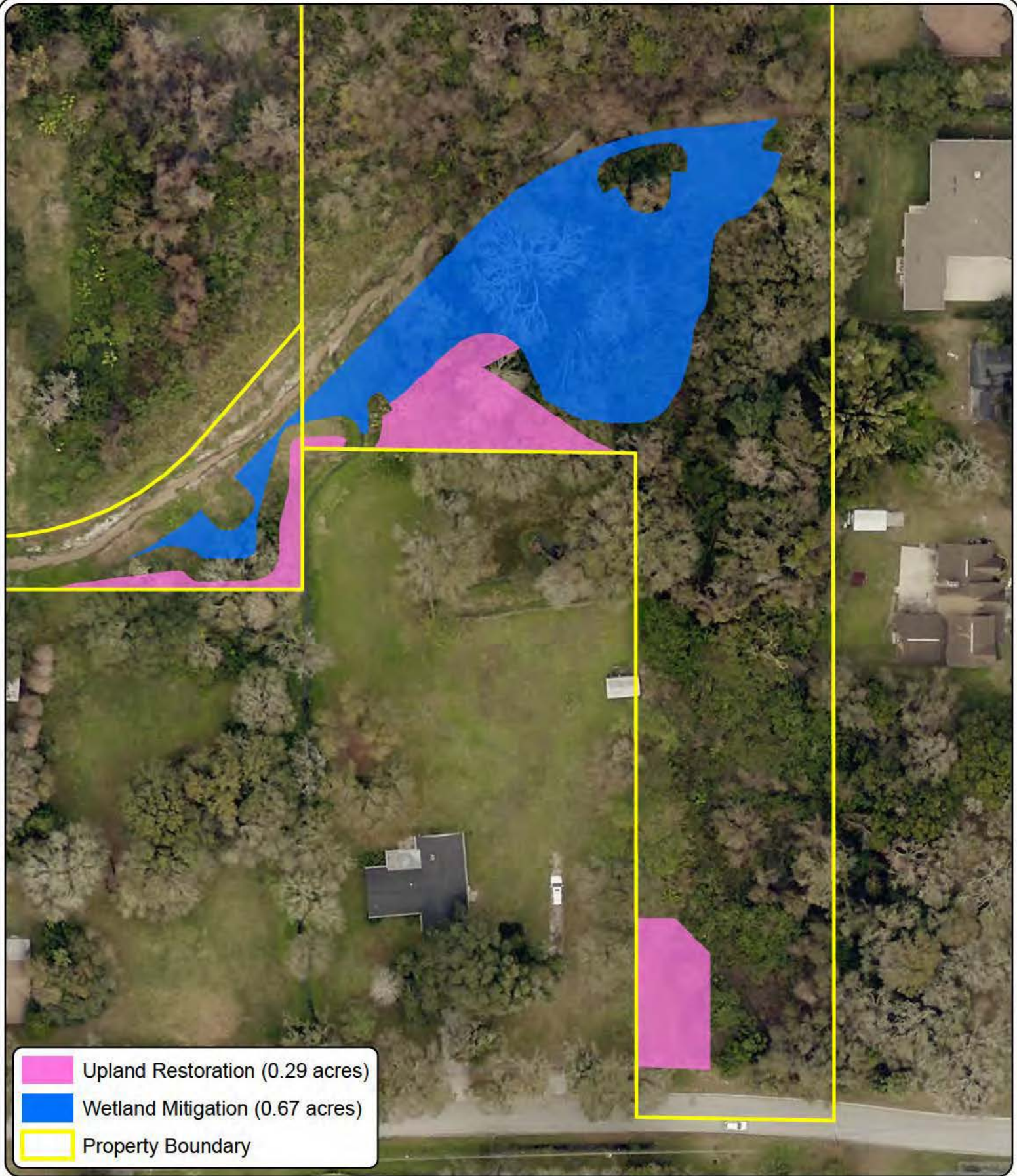


FIGURE 4 – Delineated Wetlands





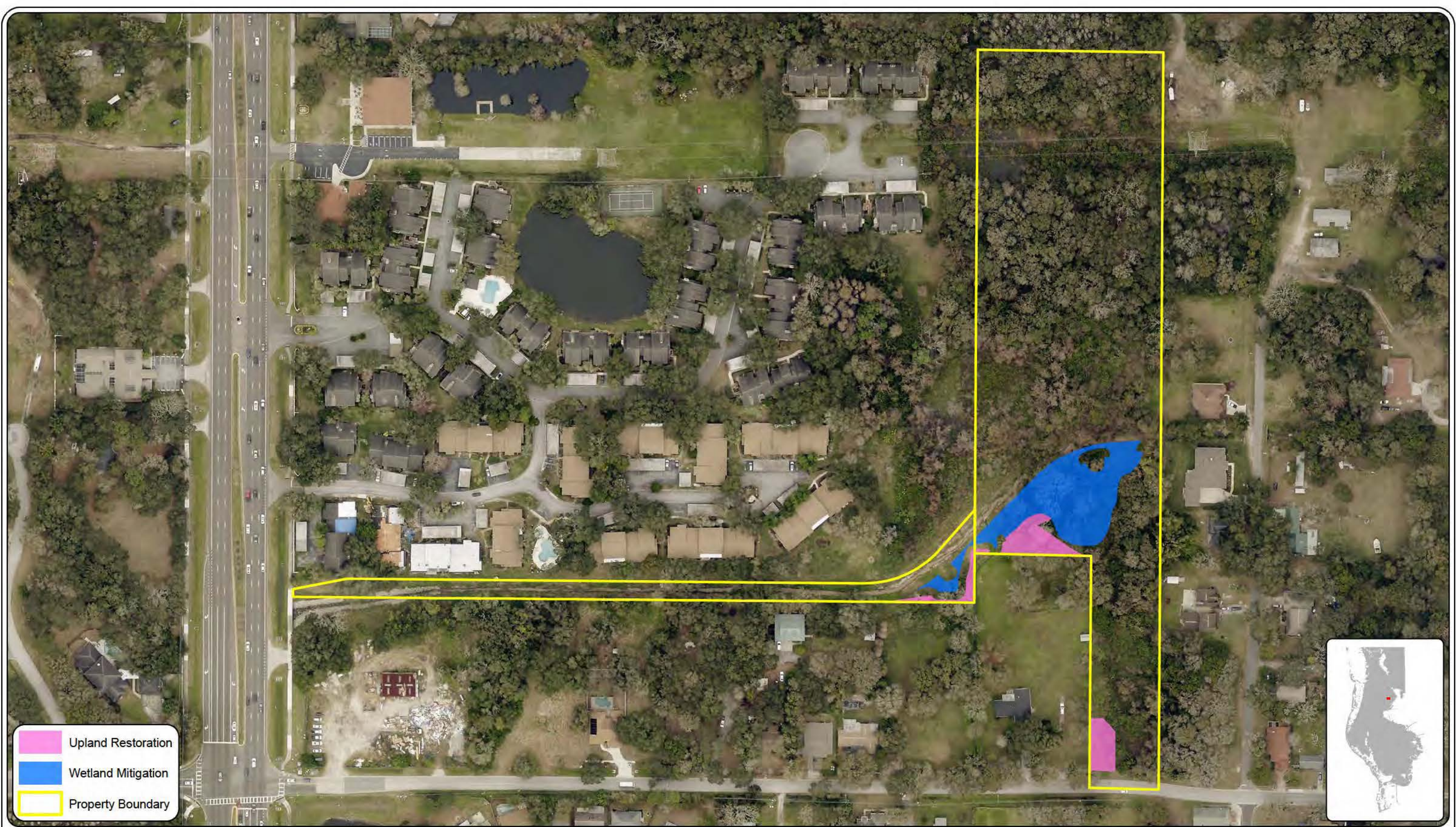
003894A Mullet Creek Channel B Erosion Control - Attachment E



0 25 50 100 150 200 250 Feet

Pinellas County, Florida
Map Created 07/2020

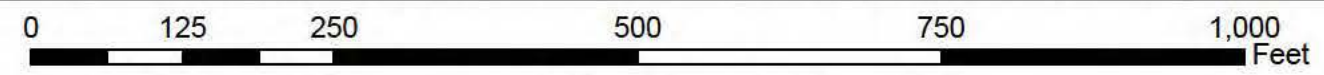




-  Upland Restoration
-  Wetland Mitigation
-  Property Boundary



003894A Mullet Creek Channel B Erosion Control - Exhibit A



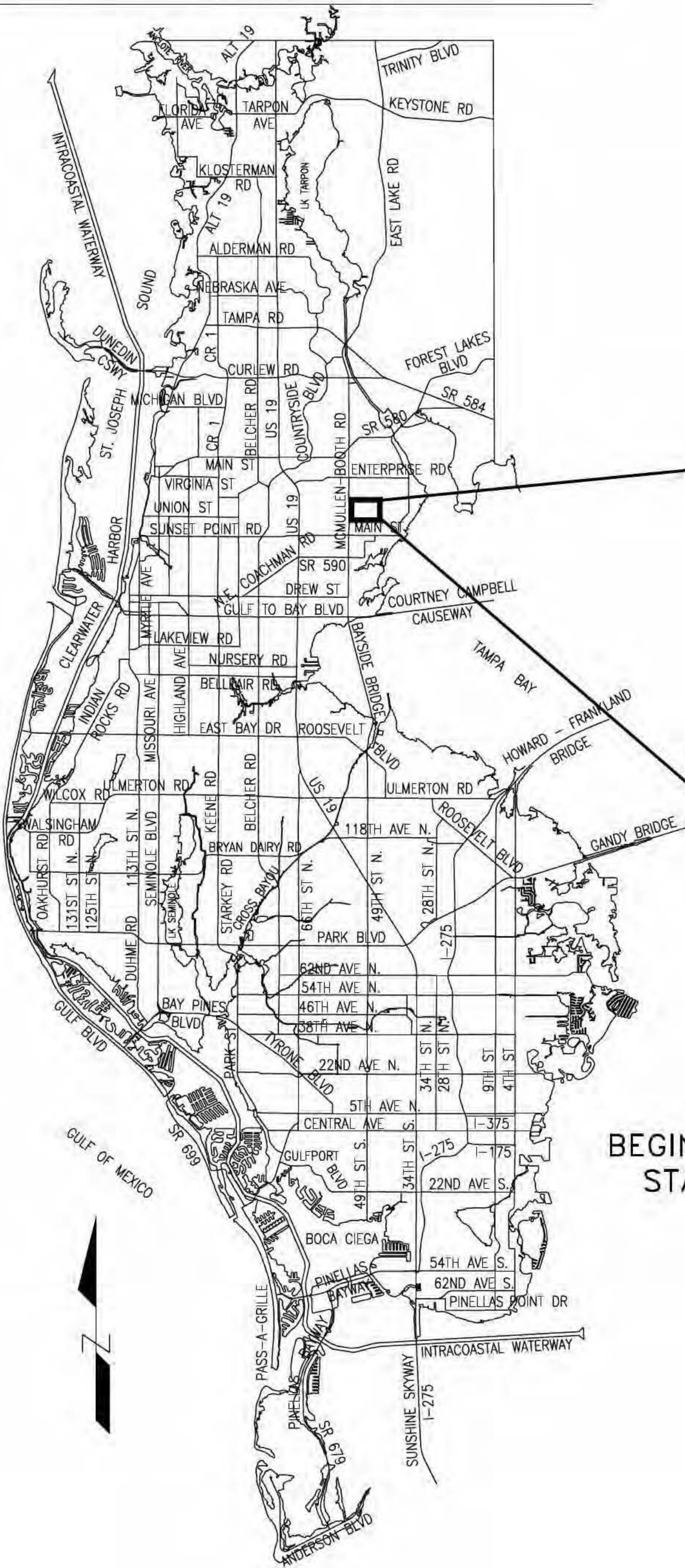
Pinellas County, Florida
Map Created 07/2020



MULLET CREEK CHANNEL B EROSION CONTROL ENVIRONMENTAL RESOURCE PERMIT PLANS MARCH 2020



PINELLAS COUNTY LOCATION MAP

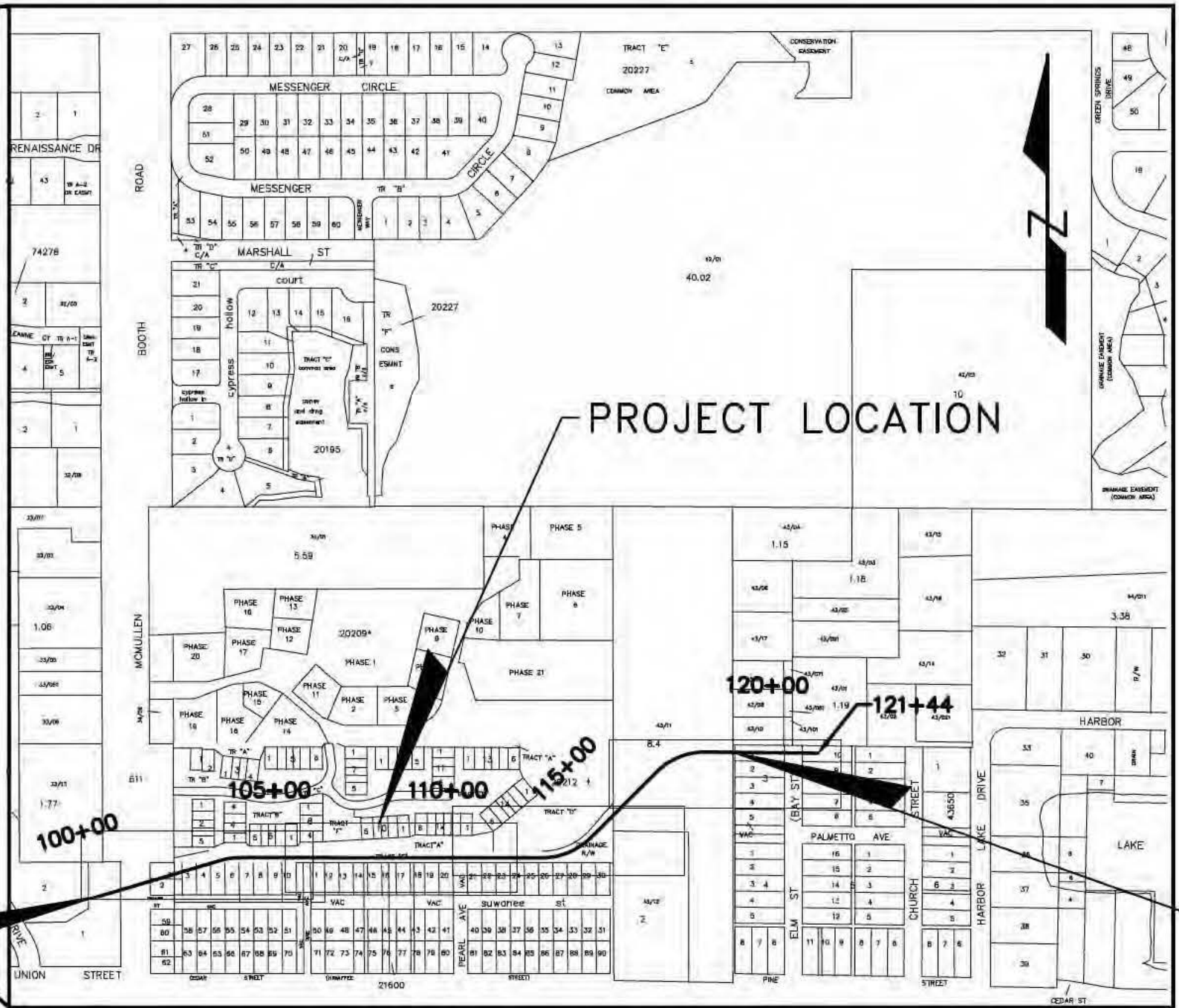


PID 003894A

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28	FLOODPLAIN PLANTING CROSS SECTIONS
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BEGIN PROJECT
STA. 105+00



SECTION 33, TOWNSHIP 28 SOUTH, RANGE 16 EAST

KEY MAP
NOT TO SCALE

END PROJECT
STA. 118+85

PROJECT MANAGER: NANCY C. LAMAGNA, P.E.
PINELLAS COUNTY
OPERATIONS & WATERSHED PLANNING
PUBLIC WORKS STORMWATER AND VEGETATION DIVISION
22211 U.S. HIGHWAY 19 N. BLDG.1
CLEARWATER, FL 33765
PHONE: 727.464.8900

PREPARED BY:
Geosyntec
consultants
12802 TAMPA OAKS BLVD., SUITE 151
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813.558.9726
AUTHORIZATION NUMBER: 4321

KATHERINE R. FOX No. 74636
ENGINEER OF RECORD

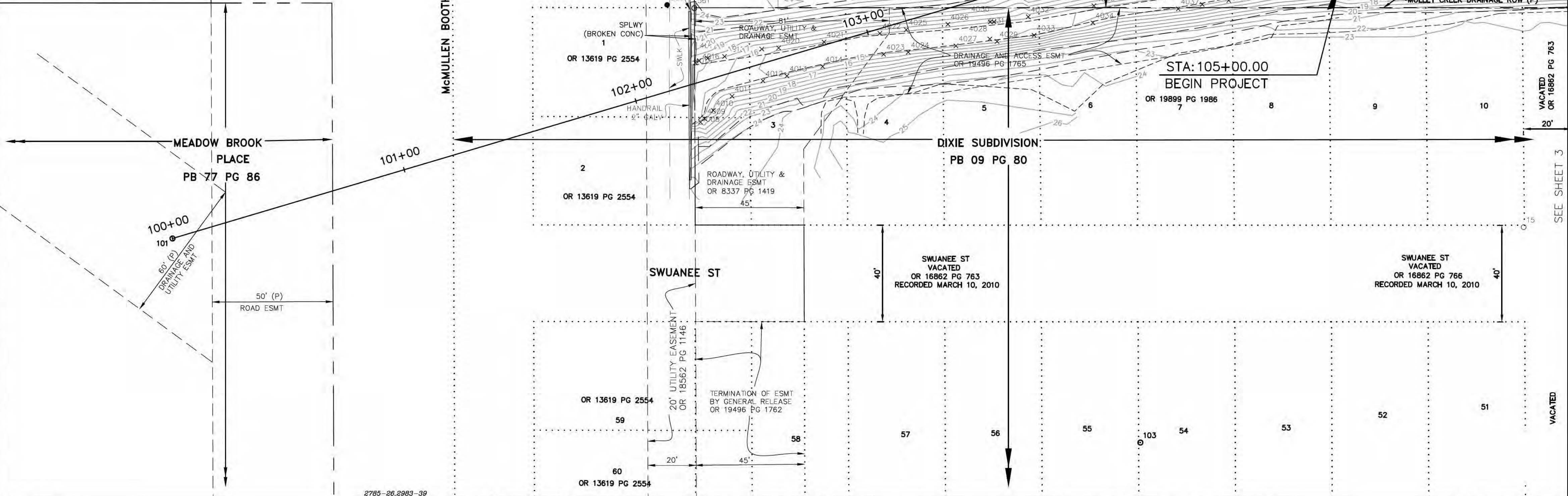
DATE

I:_CADD (Projects)\P\PINELLAS\FW3453_MULLET_CREEK\CAD\DESIGN\FW3453_C04.dwg, Mar 16, 2020 - 2:37pm

ALIGNMENT:

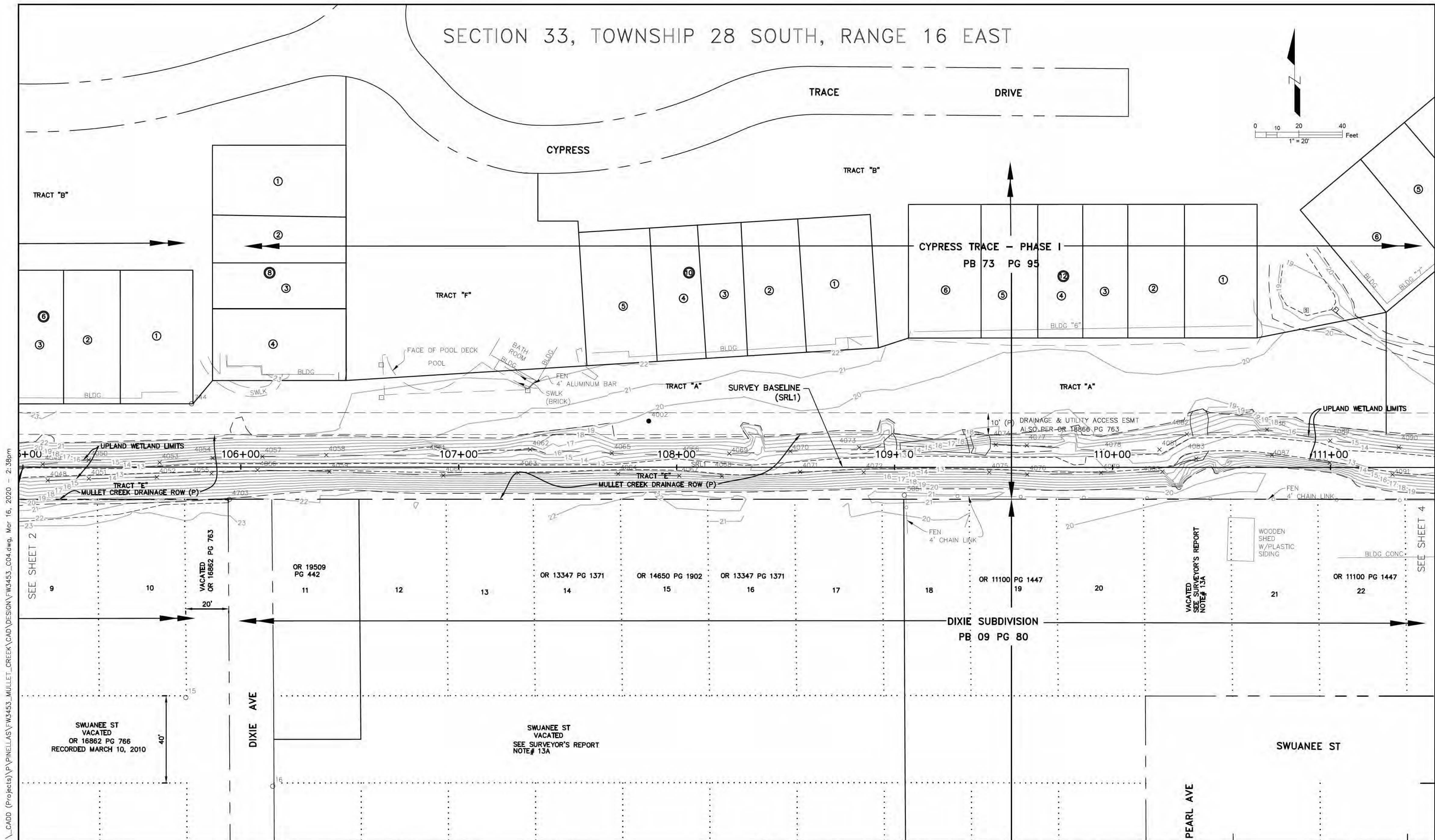
Alignment: SRL1				
Description: BASIN 13 CHANNEL B				
Points	Description	PT Station	Northing	Easting
101	Start	100+00.00	1332651.2578	427307.0854
Tangent Data				
Length:		359.89	Course:	N 73° 27' 52" E
Curve Point				
Description				
Station		103+59.89	Northing	1332753.6854
PC:			Easting	427652.0907
103		RP:	1332566.7490	427707.5897
104		PT:	104+16.23	1332761.7499
			Easting	427707.6575
Circular				
Parameter		Value	Parameter	Value
Delta:		16° 33' 19"	Type:	RIGHT
Radius:		195		
Length:		56.34	Tangent:	28.37
Chord:		56.15	Course:	N 81° 44' 32" E
Tangent Data				
Length:		847.31	Course:	S 89° 58' 48" E
Curve Point				
Description				
Station		112+63.54	Northing	428554.9672
105		PC:	1332761.4541	428554.9672
106		RP:	1332956.4543	428555.0353
107		PT:	114+16.70	1332818.5201
			Easting	428692.8730
Circular				
Parameter		Value	Parameter	Value
Delta:		45° 00' 00"	Type:	LEFT
Radius:		195		
Length:		153.15	Tangent:	80.77
Chord:		149.25	Course:	N 67° 31' 12" E
Tangent Data				
Length:		258.36	Course:	N 45° 01' 12" E
Curve Point				
Description				
Station		116+75.05	Northing	1333001.1413
108		PC:	1333001.1413	428875.6217
109		RP:	1332863.2074	429013.4593
110		PT:	118+30.48	1333058.1933
			Easting	429015.8001
Circular				
Parameter		Value	Parameter	Value
Delta:		45° 40' 04"	Type:	RIGHT
Radius:		195		
Length:		155.43	Tangent:	82.11
Chord:		151.34	Course:	N 67° 51' 14" E
Tangent Data				
Length:		313.49	Course:	S 89° 18' 44" E
Curve Point				
Description				
Station		121+43.97	Northing	1333054.43
111		End:	1333054.43	429529.2705

SECTION 33, TOWNSHIP 28 SOUTH, RANGE 16 EAST



2785-26,2983-39

						DESIGNED		KRF			PROJECT:			DESCRIPTION:			PUBLIC WORKS			APPROVED BY:			DATE:	
						DRAWN		BL			MULLET CREEK CHANNEL B			HORIZONTAL CONTROL			22211 U.S. HIGHWAY 19 N.			MARCH 2020				
						CHECKED		MWE			EROSION CONTROL			PLAN			BLDG. 1			PROJECT NO.				
																CLEARWATER, FL 33765			KATHERINE R. FOX, P.E.			SHEET:		
																			FLA. LIC. NO 74636			2 OF 38		
REV. NO.			DATE			DESCRIPTION			REV. BY									DATE						



				DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: HORIZONTAL CONTROL PLAN	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE MARCH 2020	PROJECT NO. 003894A	SHEET: 3 OF 38
				DRAWN	BL								
				CHECKED	MWE								
REV. NO.	DATE	DESCRIPTION	REV. BY										

10' CITY OF SAFETY HARBOR
SANITARY SEWER ESMT
OR 12672, PG 2422

EAST BOUNDARY OF THE SW 1/4 OF SEC 33-28-16
WEST BOUNDARY OF THE SE 1/4 OF SEC 33-28-16

STA EQ: 116+53.03 SURVEY BASELINE (SRL1) =
STA:10+00 BEGIN BASELINE TRANSITION

43/11
PINELLAS COUNTY
OR 7045 PG 1622

OR 18516 PG 1809

CYPRESS TRACE - PHASE I
PB 73 PG 95

**SURVEY BASELINE
(SRL1)**

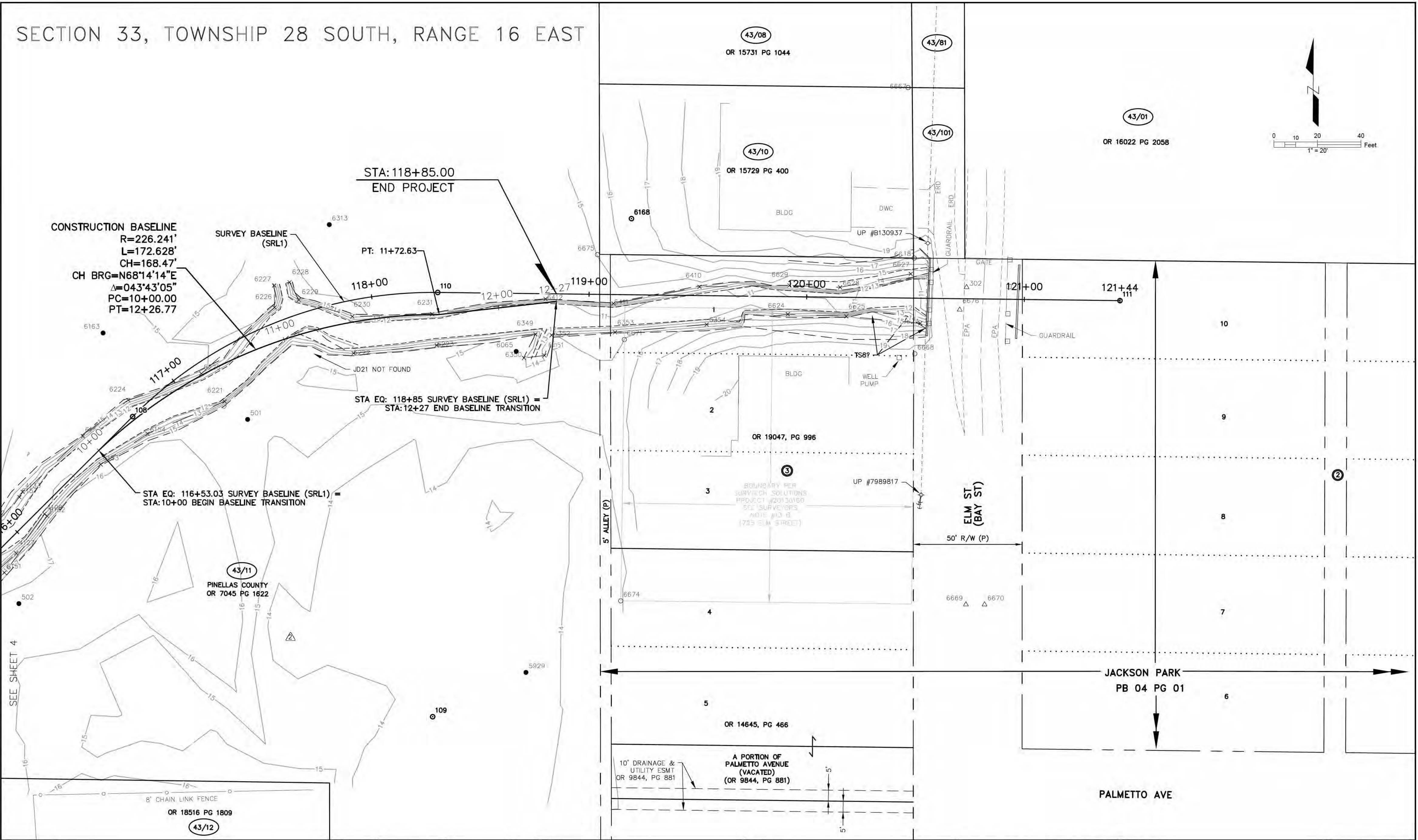
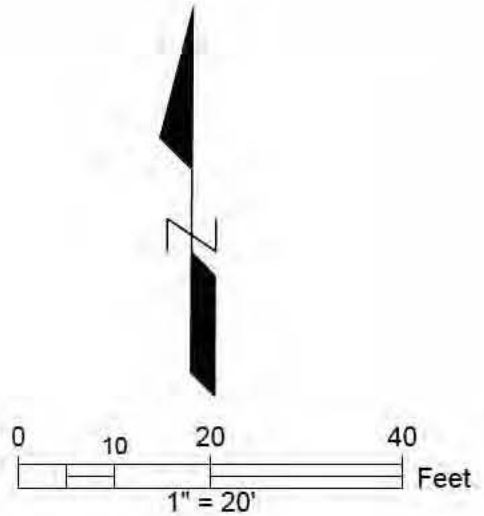
TRACT "E"
—MULLET CREEK DRAINAGE ROW (P)


DIXIE SUBDIVISION
PB 09 PG 80

10'(P)

				DESIGNED	KRF		PROJECT:		DESCRIPTION:		PUBLIC WORKS	APPROVED BY:		DATE:	MARCH 2020
				DRAWN	BL		MULLET CREEK CHANNEL B	HORIZONTAL CONTROL	22211 U.S. HIGHWAY 19 N.					PROJECT NO.	003894A
				CHECKED	MWE		EROSION CONTROL	PLAN	BLDG. 1						SHEET:
REV. NO.	DATE	DESCRIPTION	REV. BY								CLEARWATER, FL 33765	KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE		

SECTION 33, TOWNSHIP 28 SOUTH, RANGE 16 EAST



				DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: HORIZONTAL CONTROL PLAN	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE MARCH 2020	
				DRAWN	BL							PROJECT NO. 003894A
				CHECKED	MWE							SHEET: 5 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY									

I:_CADD (Projects)\PINELLAS\W3453_MULLET_CREEK\CAD\DESIGN\W3453_C08.dwg, Mar 16, 2020 - 2:38pm

1. REMOVE ONLY TREES DESIGNATED FOR REMOVAL IN THE PLAN, OR AS DIRECTED BY THE ENGINEER. OBTAIN THE HABITAT MANAGEMENT PERMIT FROM PINELLAS COUNTY TRANSPORTATION & STORMWATER – NATURAL RESOURCES. TREE REMOVAL IS INCLUDED IN THE UNIT PRICE BID FOR CLEARING AND GRUBBING, UNLESS SEPARATE PAY ITEMS ARE PROVIDED.

2. ALL MATERIALS NOT CLAIMED BY THE COUNTY MUST BECOME THE PROPERTY OF THE CONTRACTOR, AND MUST BE DISPOSED OF BY THE CONTRACTOR IN AREAS PROVIDED BY THE CONTRACTOR. THE COST FOR THIS WORK IS INCLUDED IN THE UNIT PRICE BID FOR CLEARING AND GRUBBING. MATERIALS TO BE CLAIMED BY AND DELIVERED TO THE COUNTY ARE AS FOLLOWS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

3. ALL STATIONS AND OFFSETS REFER TO SURVEY BASE LINE, UNLESS OTHERWISE NOTED.

4. ALL EXISTING PIPES THAT ARE TO REMAIN IN SERVICE WITHIN THE RIGHT-OF-WAY CORRIDOR ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED IN THE PLANS.

5. STORM DRAIN INLET AND MANHOLE STATION LOCATIONS REFERENCE THE CENTER OF THE SPECIFIED STRUCTURE BOTTOM.

6. ALL DISTURBED AREAS, INCLUDING AREAS OUTSIDE THE CONSTRUCTION LIMITS, MUST BE RETURNED TO THEIR PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL EXPENSE TO THE COUNTY. SEEDING MUST NOT BE USED AS FINAL GROUND COVER EXCEPT WHERE SPECIFICALLY SHOWN IN THE PLANS OR DIRECTED BY THE ENGINEER.

7. SHEETING, SHORING, AND BRACING MUST BE PROVIDED TO PROTECT ADJACENT STRUCTURES AND UTILITIES, OR TO MINIMIZE TRENCH WIDTH. THE COST OF ALL SHEETING, SHORING, AND BRACING REQUIRED IS INCLUDED IN THE UNIT PRICE BID FOR THE ITEM OF WORK FOR WHICH SHEETING, SHORING, AND BRACING IS REQUIRED, UNLESS OTHERWISE PROVIDED FOR SEPARATELY IN THE BID SUBMITTAL SHEETS.

8. THE ENGINEER MUST RECEIVE PERMISSION FROM THE PROPERTY OWNER THROUGH A RIGHT OF ENTRY AGREEMENT AND\OR A SIDEWALK, UTILITY, OR DRAINAGE EASEMENT PRIOR TO ANY GRADING OR CONSTRUCTION BEYOND THE RIGHT-OF-WAY..

9. ANY AND ALL EXISTING CONDITIONS MUST BE FIELD VERIFIED PRIOR TO COMMENCING CONSTRUCTION. THE ENGINEER MUST BE PROMPTLY NOTIFIED OF ANY DISCREPANCIES.

10. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.

11. SURFACING MUST NOT BE APPLIED TO ANY MANHOLE COVERS, FRAMES, VALVE BOXES, GAS DROPS, ETC.

12. SIDEWALK CURB RAMPS MUST BE PAID FOR AS DEFINED BY PINELLAS COUNTY SPECIFICATION 522 AND PINELLAS COUNTY STANDARD DETAIL 1360

13. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS MUST REMAIN UNLESS OTHERWISE NOTED IN THE PLANS, OR AS DIRECTED BY THE ENGINEER. PROPOSED SIGN LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT, AS DIRECTED BY THE ENGINEER.

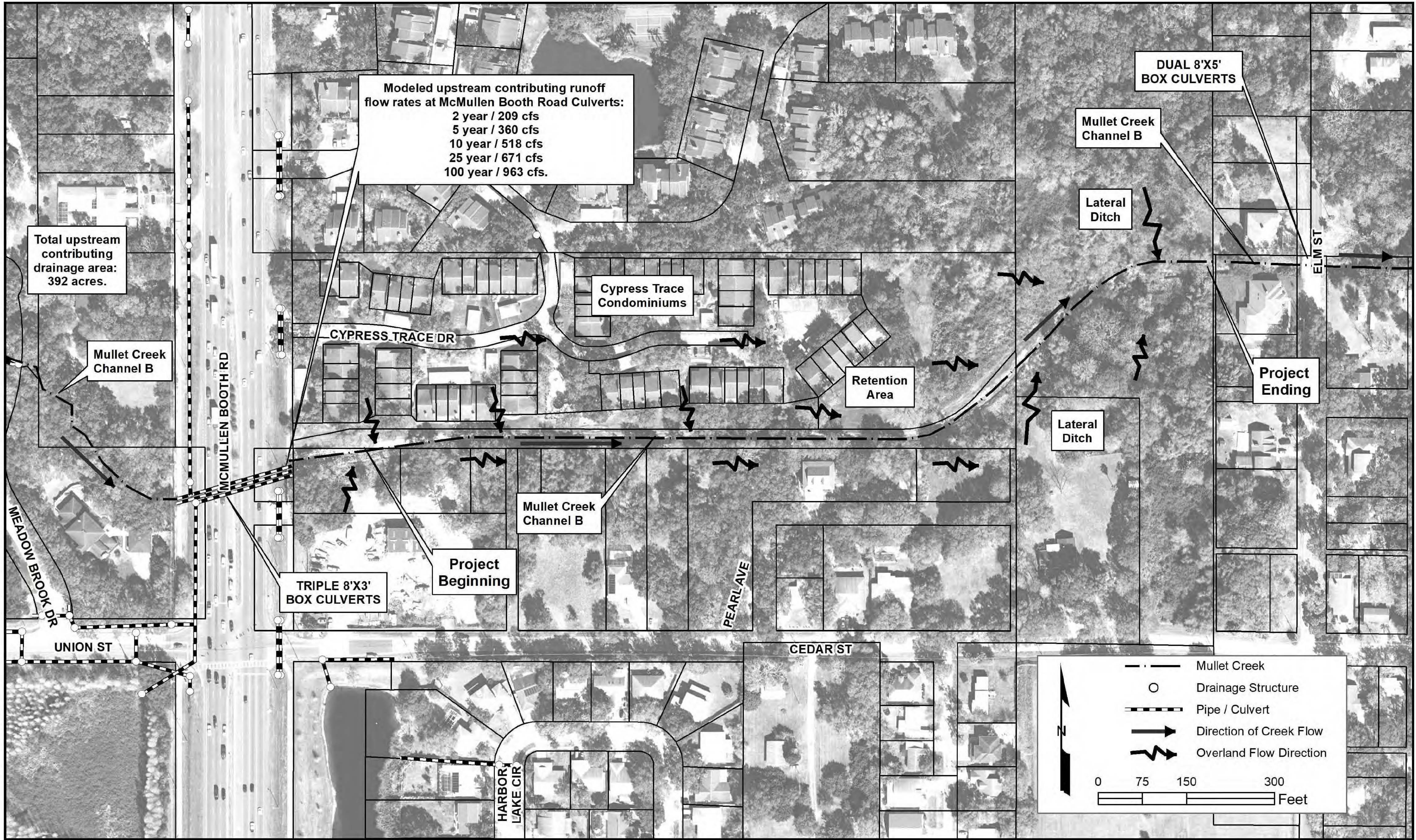
14. BLUE, BI-DIRECTIONAL RPMS MUST BE INSTALLED ADJACENT TO ALL FIRE HYDRANTS, PLACED PER FDOT TRAFFIC ENGINEERING MANUAL, SECTION 4.3 – USE OF BLUE RAISED PAVEMENT MARKERS TO IDENTIFY FIRE HYDRANTS.

15. ABOVE GROUND AND/OR UNDERGROUND UTILITIES MAY BE IN THE AREA OF THIS PROJECT – PROCEED WITH CAUTION – CALL "SUNSHINE 811" IN ADVANCE OF BEGINNING WORK, IN ACCORDANCE WITH CHAPTER 556, FLORIDA STATUTES, UNDERGROUND FACILITY DAMAGE PREVENTION & SAFETY ACT. ALL UTILITY OWNERS MAY NOT BE A MEMBER, REQUIRING DIRECT CONTACT. FURTHER COORDINATION WITH UTILITY OWNERS MAY BE NECESSARY TO RESOLVE CONFLICTS THAT MAY ARISE IN THE FIELD DURING CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY UTILITIES DAMAGED AS A RESULT OF FAILURE TO CALL "SUNSHINE 811" AND THE UTILITY OWNERS.

16. THE RESPONSIBLE UTILITY OWNER MUST BE NOTIFIED FOR RELOCATION OF METER BOXES FOR POTABLE AND NON-POTABLE WATER SERVICE.

				DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: GENERAL NOTES	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE:	MARCH 2020
				DRAWN	BL						PROJECT NO.	003894A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	MWE						DATE	SHEET:

I:_CADD (Projects)\PINELLAS\W3453_MULLET_CREEK\CAD\DESIGN\W3453_C09.dwg, Mar 16, 2020 - 2:38pm



REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED	KRF
DRAWN	BL
CHECKED	MWE



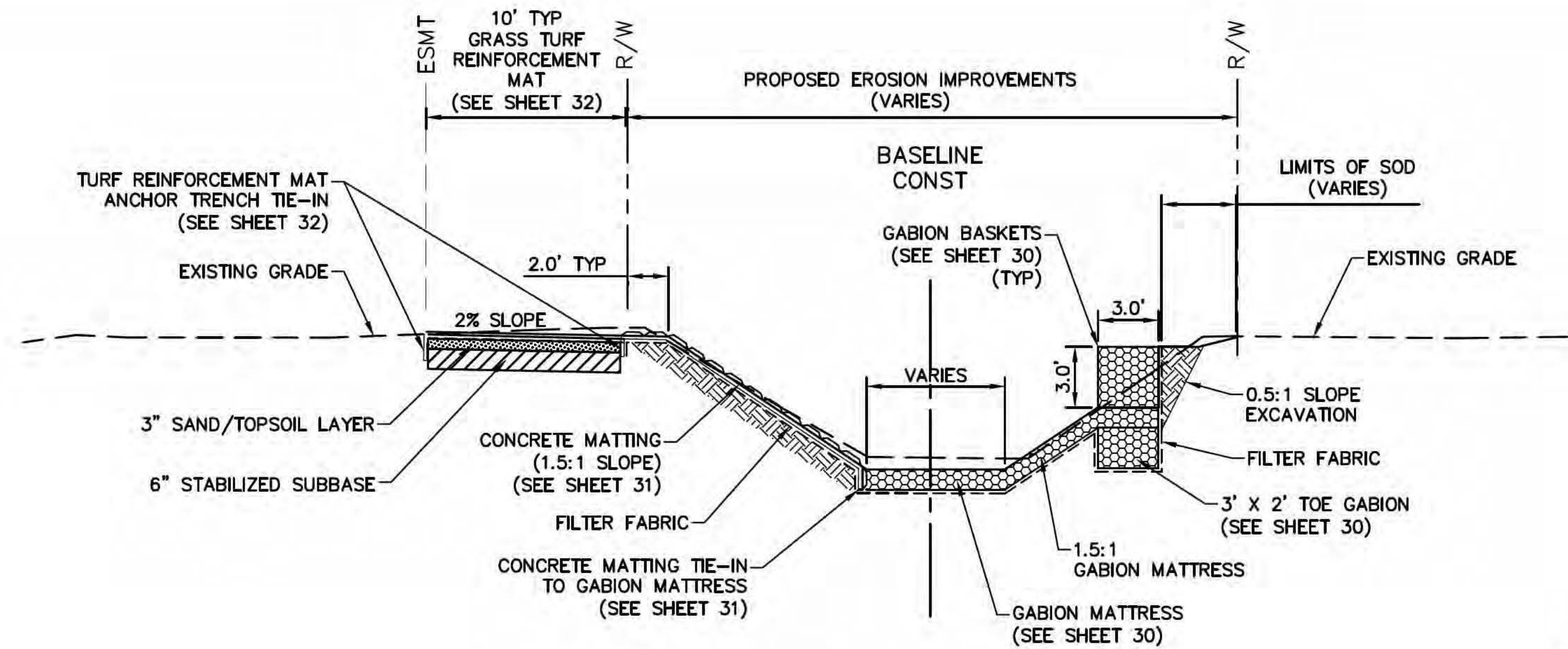
MULLET CREEK CHANNEL B
EROSION CONTROL

DRAINAGE MAP

PUBLIC WORKS
22211 U.S. HIGHWAY 19 N.
BLDG. 1
CLEARWATER, FL 33765

APPROVED BY:	DATE:
KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	MARCH 2020
DATE	PROJECT NO.
	003894A
	SHEET:
	7 OF 38

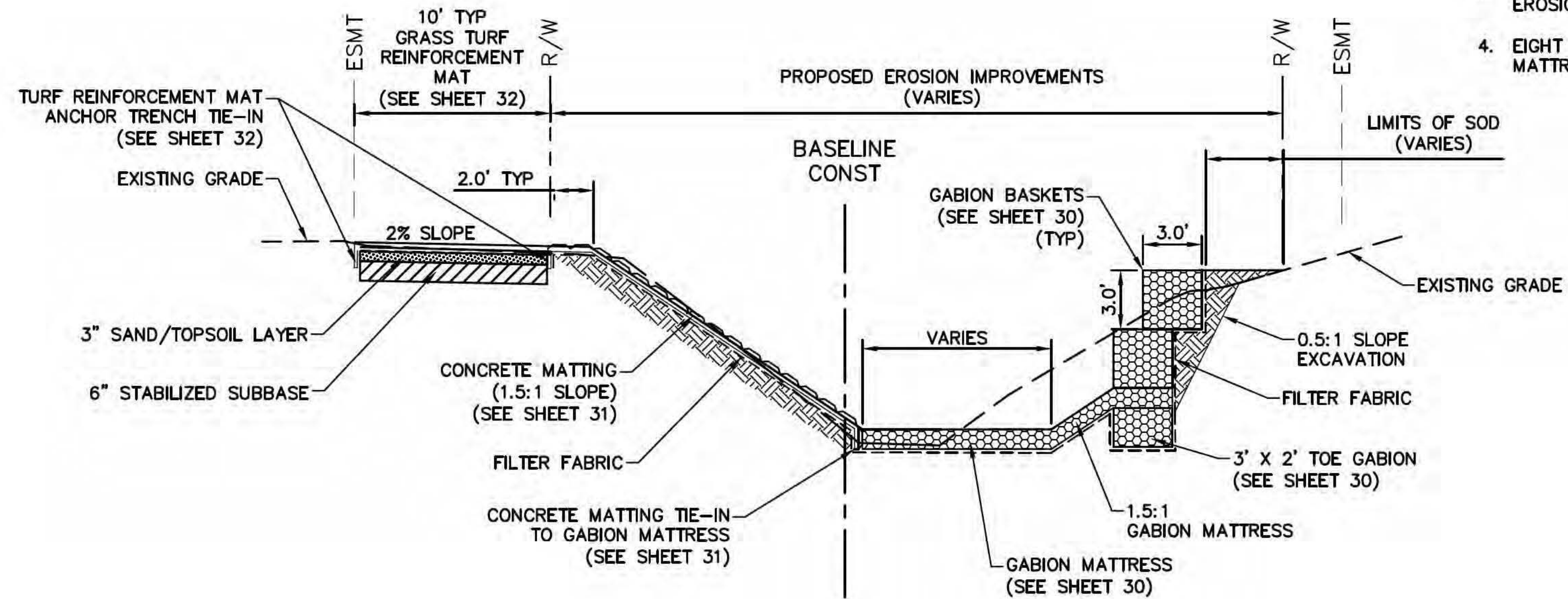
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2 CREEK PROTECTION WITH
1 COURSE GABION WALL
(STA 111+75 TO 113+00)

NOTES:

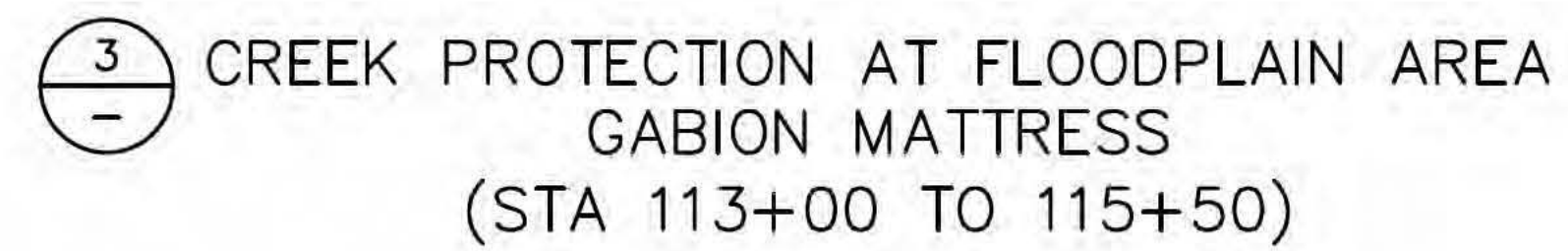
1. A POLYACRYLAMIDE (PAM) AND FLORIDA NATIVE WILDFLOWER/FAST GERMINATING GRASS SEED MIX SHALL BE APPLIED UNDER ALL TURF REINFORCEMENT MAT AND CONCRETE MATTING. THESE AREAS SHALL BE WATERED UNTIL 80% GERMINATED. THE COST FOR THE PAM, SEED, AND WATERING SHALL BE PAID FOR UNDER PAY ITEM NUMBER 9999-1 (CONCRETE MATTING).
2. THREE (3) INCHES OF CLEAN FILL MATERIAL WITH 2.5-10% ORGANICS SHALL BE PLACED ON TOP OF ALL GABION COURSES AND GABION MATTRESSES. FILL MATERIAL SHALL BE WATERED IN TO ENSURE SETTLING INTO VOIDS AND MINIMIZE MIGRATION DOWNSTREAM.
3. ALL GABION TRANSITIONS SHALL HAVE A 3' X 2' TOE GABION UNDERNEATH TO PREVENT EROSION AND UNDERMINING.
4. EIGHT (8) INCHES OF COMPACTED SUBGRADE SHALL BE PLACED UNDER GABIONS/GABION MATTRESS.



1 CREEK PROTECTION WITH
2 COURSE GABION WALL
(STA 105+17 TO 111+75)

Scale: 1"=5' Horiz.
1"=5' Vert.

			DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: TYPICAL SECTIONS	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	DATE:	MARCH 2020
			DRAWN	BL							PROJECT NO.	003894A
			CHECKED	MWE							SHEET:	8 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY									



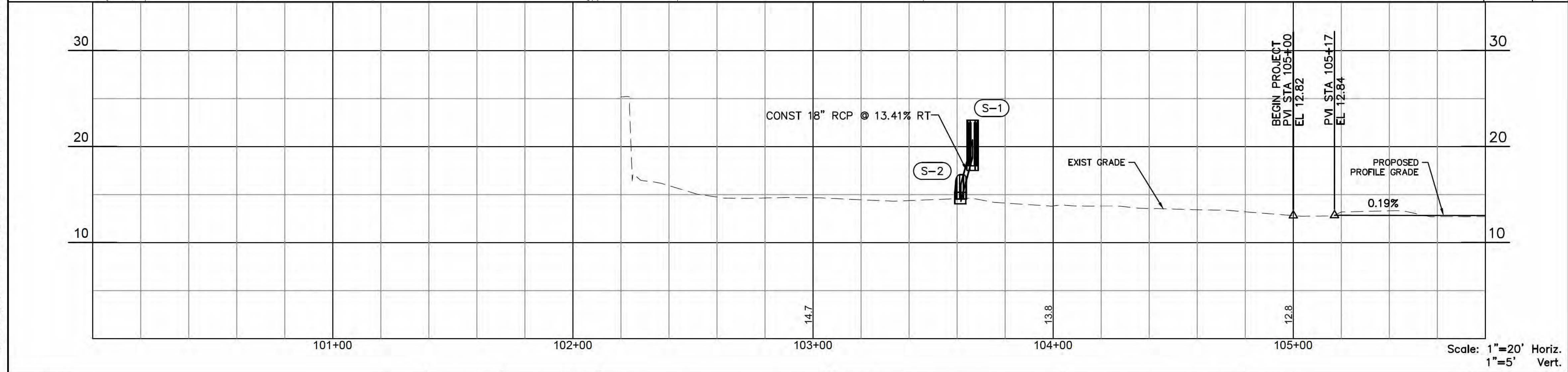
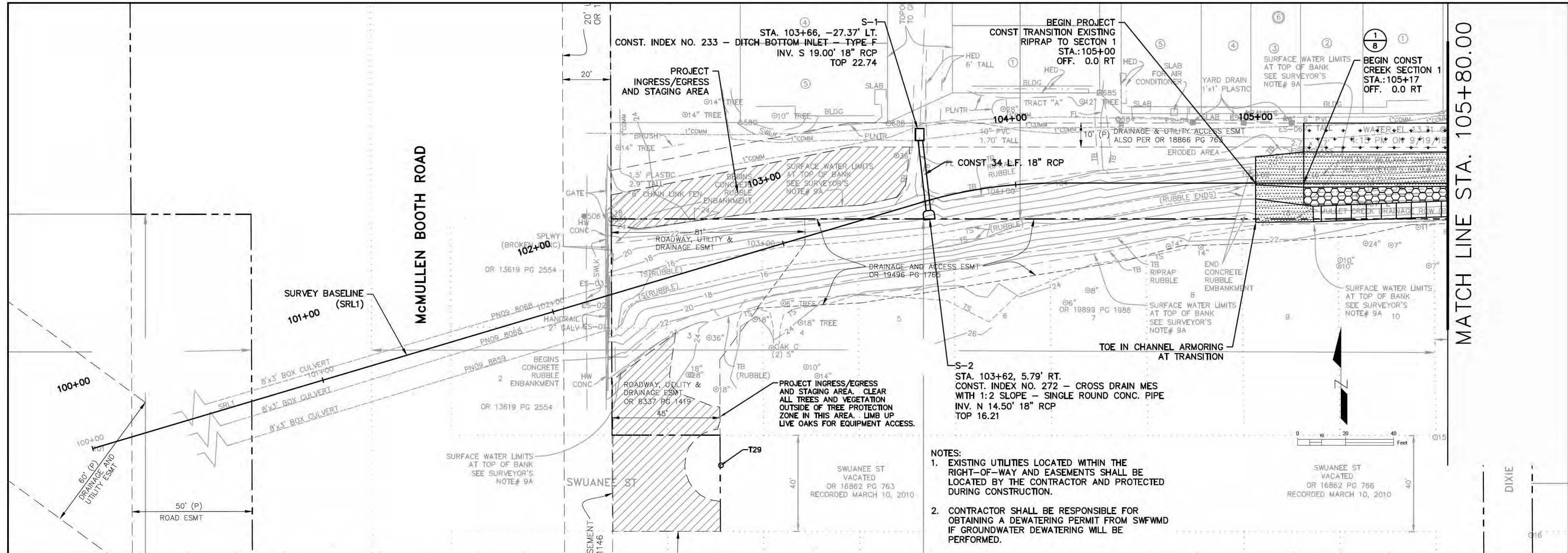
3 CREEK PROTECTION AT FLOODPLAIN AREA
- GABION MATTRESS
(STA 113+00 TO 115+50)

1. A POLYACRYLAMIDE (PAM) AND FLORIDA NATIVE WILDFLOWER/FAST GERMINATING GRASS SEED MIX SHALL BE APPLIED UNDER ALL TURF REINFORCEMENT MAT. THESE AREAS SHALL BE WATERED UNTIL 80% GERMINATED. THE COST FOR THE PAM, SEED, AND WATERING SHALL BE PAID FOR UNDER PAY ITEM NUMBER 9999-1 (CONCRETE MATTING).
2. THREE (3) INCHES OF CLEAN FILL MATERIAL WITH 2.5-10% ORGANICS SHALL BE PLACED ON TOP OF ALL GABION COURSES AND GABION MATTRESSES. FILL MATERIAL SHALL BE WATERED IN TO ENSURE SETTLING INTO VOIDS AND MINIMIZE MIGRATION DOWNSTREAM.
3. ALL GABION TRANSITIONS SHALL HAVE A 3' X 2' TOE GABION UNDERNEATH TO PREVENT EROSION AND UNDERMINING.
4. EIGHT (8) INCHES OF COMPACTED SUBGRADE SHALL BE PLACED UNDER GABIONS/GABION MATTRESS.

I:_CADD (Projects)\PIPINELLAS\FW3453_MULLET_CREEK\CAD\DESIGN\FW3453_C02.dwg, Mar 16, 2020 - 2:38pm

				DESIGNED	KRF		PROJECT:	MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION:	TYPICAL SECTIONS	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY:	DATE:
				DRAWN	BL		PROJECT NO.					MARCH 2020	
				CHECKED	MWE		SHEET:					003894A 9 OF 38	
REV. NO.	DATE	DESCRIPTION	REV. BY					KATHERINE R. FOX, P.E. FLA. LIC. NO 74636				DATE	

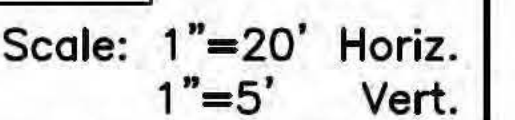
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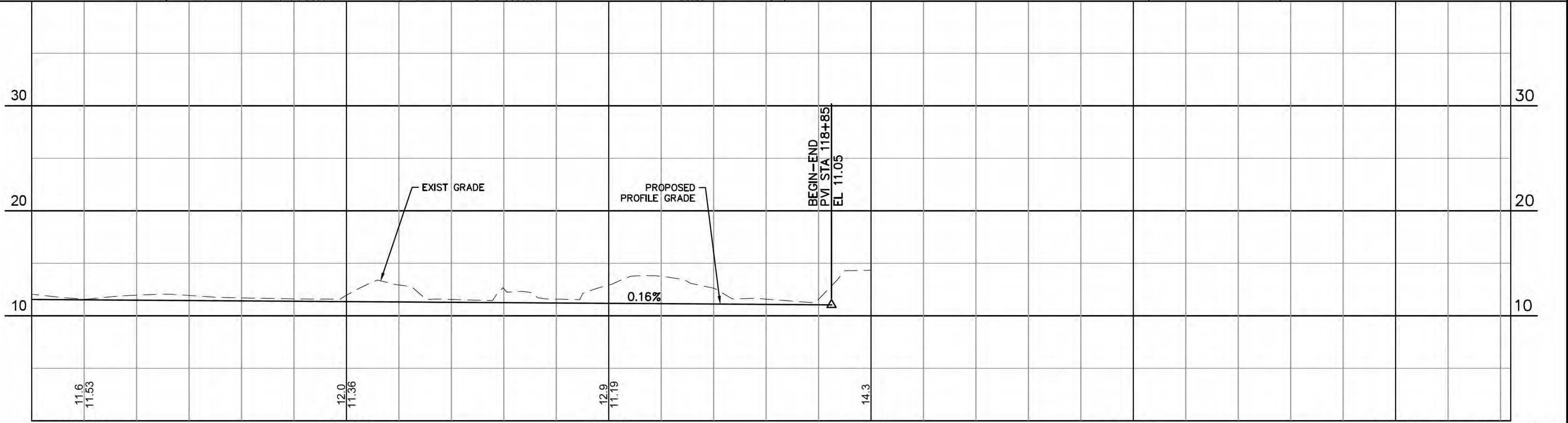
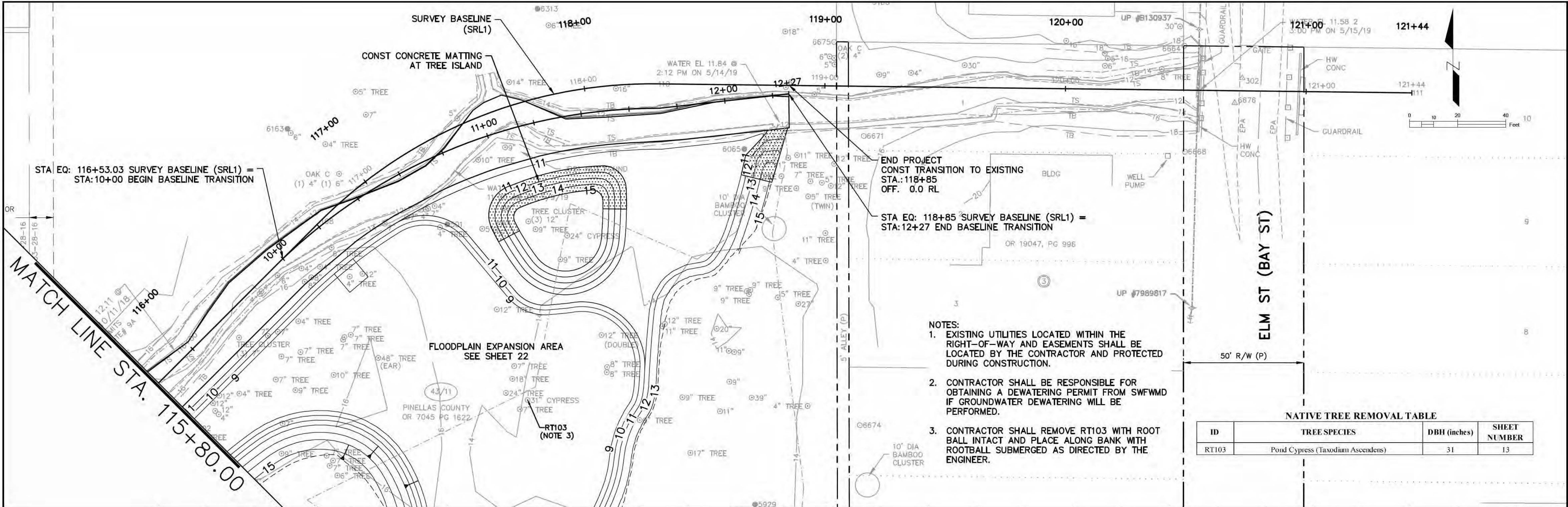
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				DRAWN	BL							PROJECT NO. 003894A
				CHECKED	MWE							
REV. NO.	DATE	DESCRIPTION	REV. BY									

MATCH LINE STA. 105+80.00


Scale: 1"=20' Horiz.
1"=5' Vert.



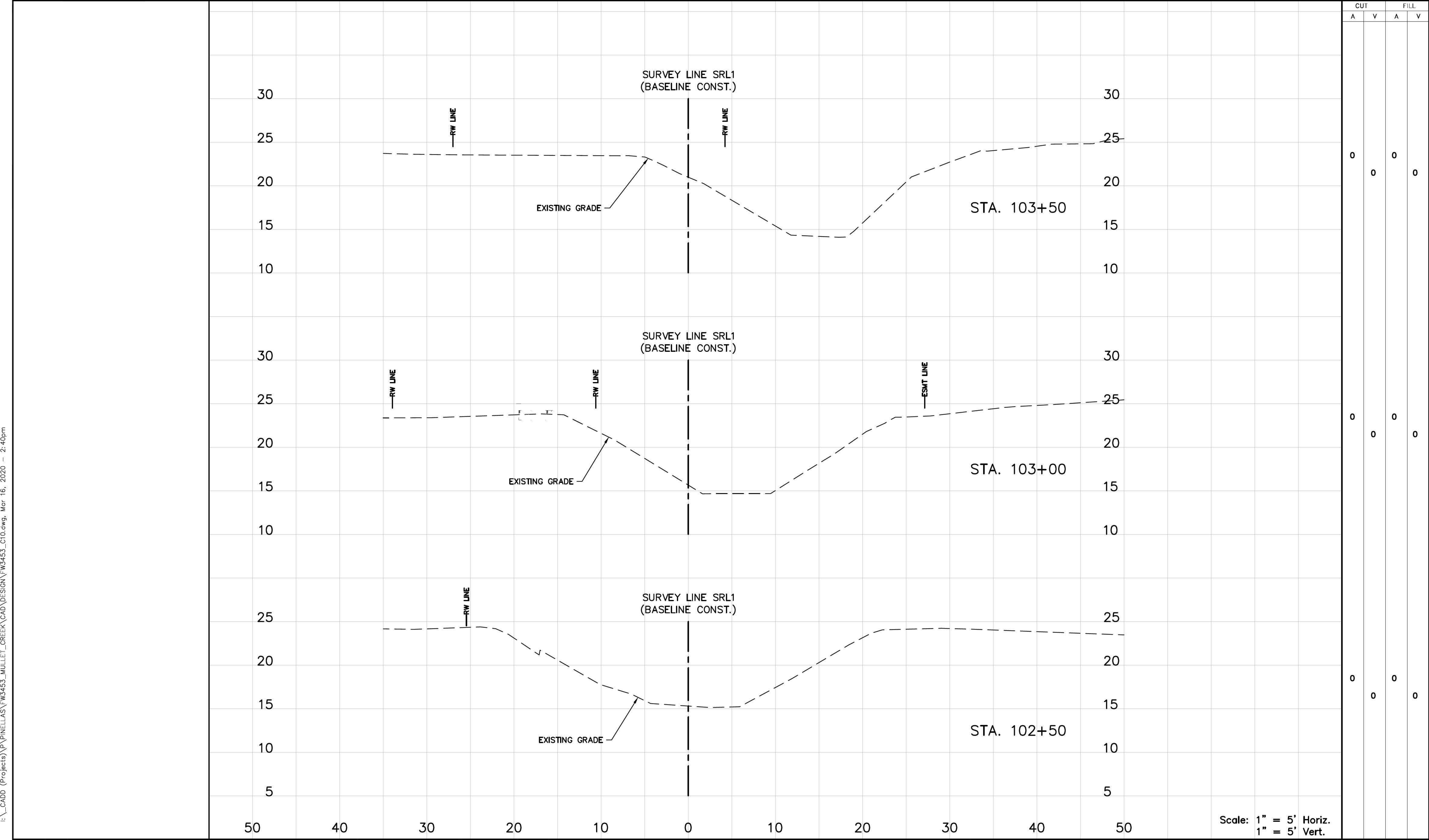
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				CHECKED	MWE		EROSION CONTROL		(105+80.00-111+60.00)		14 S. FT. HARRISON AVE., CLEARWATER, FL 33756				PROJECT NO.
REV. NO.	DATE	DESCRIPTION		REV. BY								KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	SHEET:	11 OF 38



Scale: 1"=20' Horiz.
1"=5' Vert.

				DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: PLAN & PROFILE (115+80.00-121+43.97)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE MARCH 2020	
				DRAWN	BL							PROJECT NO. 003894A
				CHECKED	MWE							SHEET: 13 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY									

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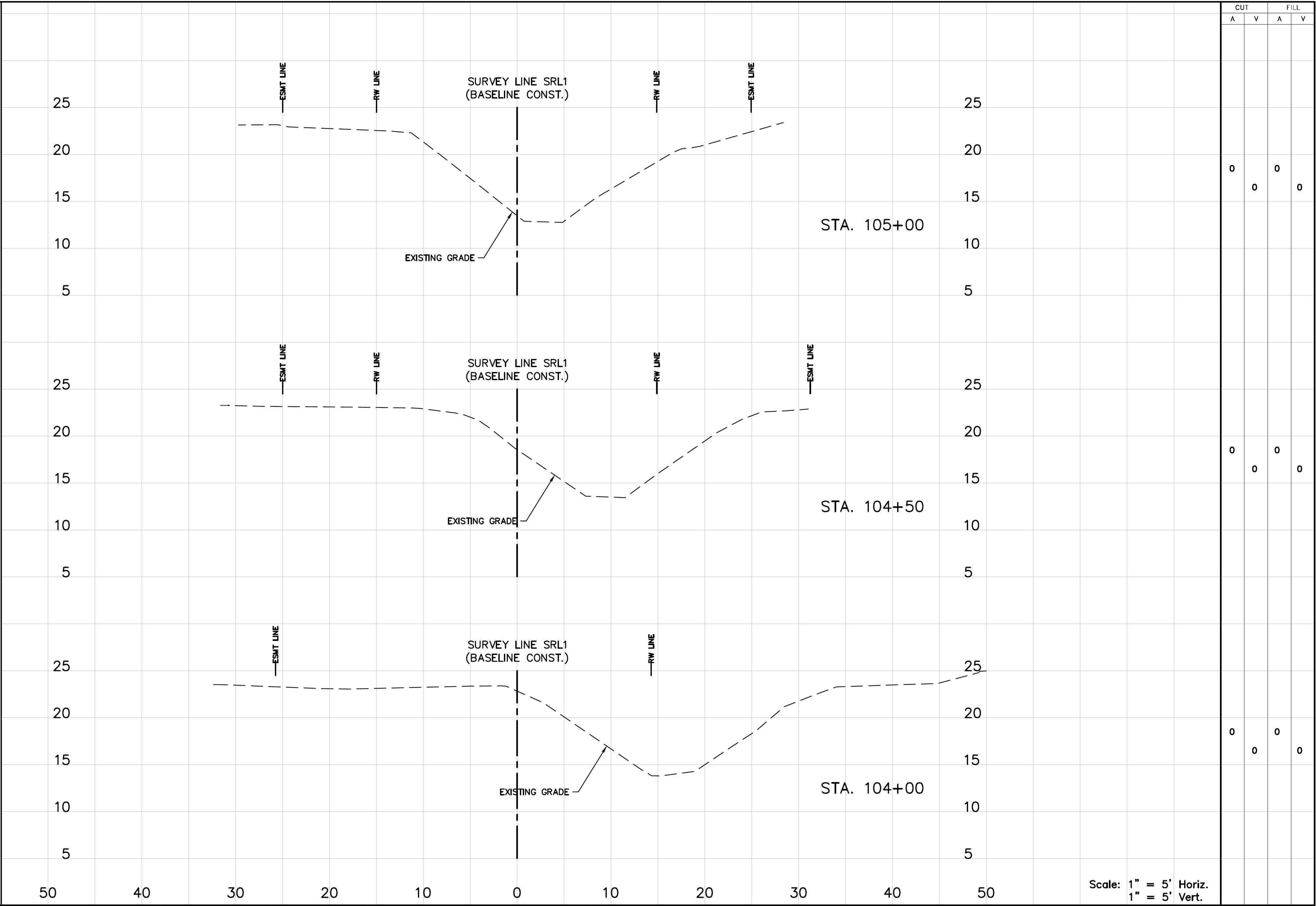


Scale: 1" = 5' Horiz.
1" = 5' Vert.

CUT		FILL	
A	V	A	V
0	0	0	0
0	0	0	0
0	0	0	0

DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: CROSS SECTIONS (1)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	DATE:	MARCH 2020
DRAWN	BL							PROJECT NO.	003894A
CHECKED	MWE							SHEET:	14 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY						

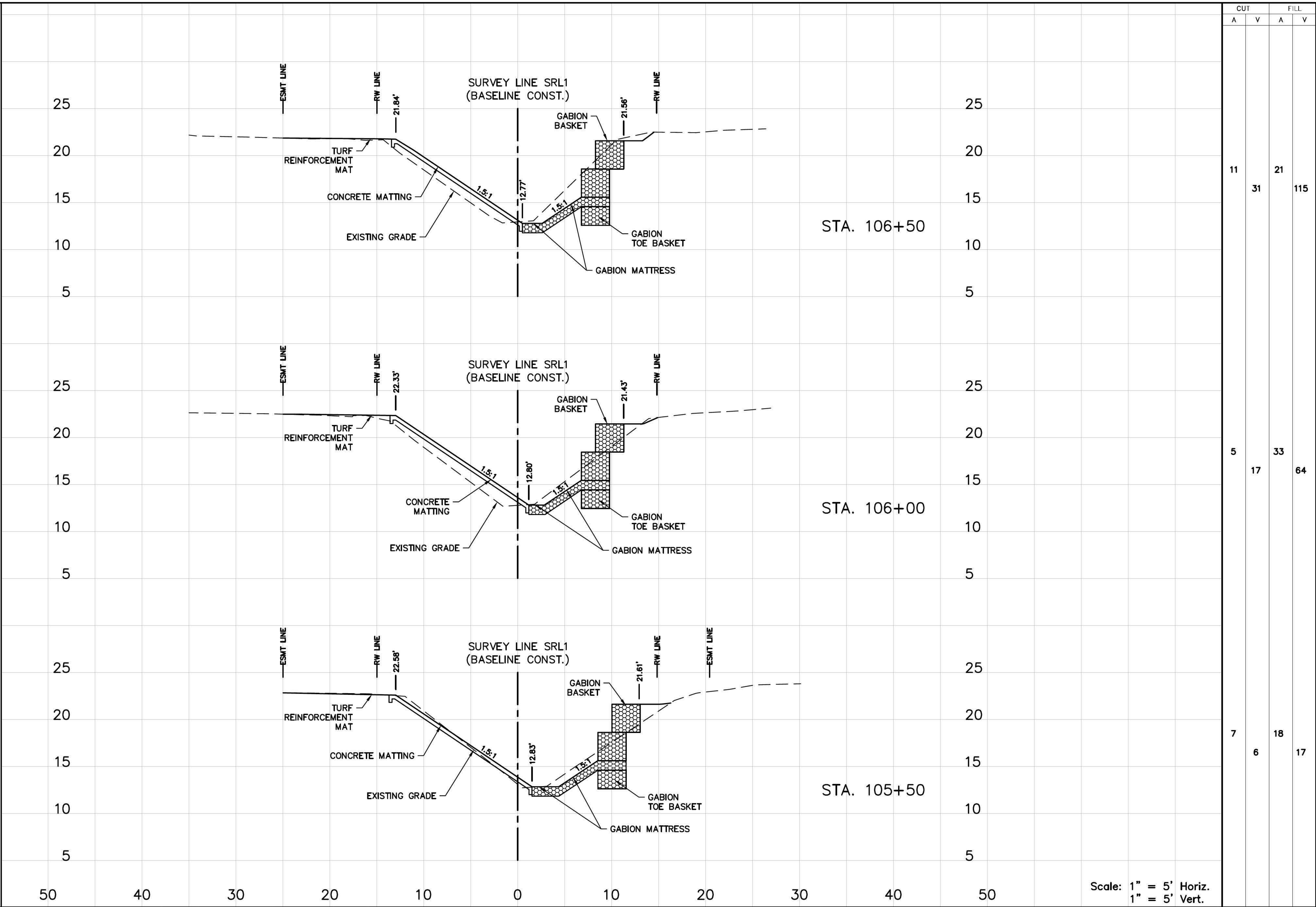
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CUT		FILL	
A	V	A	V
0	0	0	0
0	0	0	0
0	0	0	0

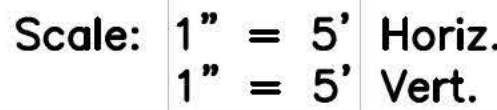
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				DRAWN	BL							PROJECT NO.	003894A
				CHECKED	MWE							SHEET:	15 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY										

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CUT		FILL	
A	V	A	V
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5	17	33	64
7	6	18	17

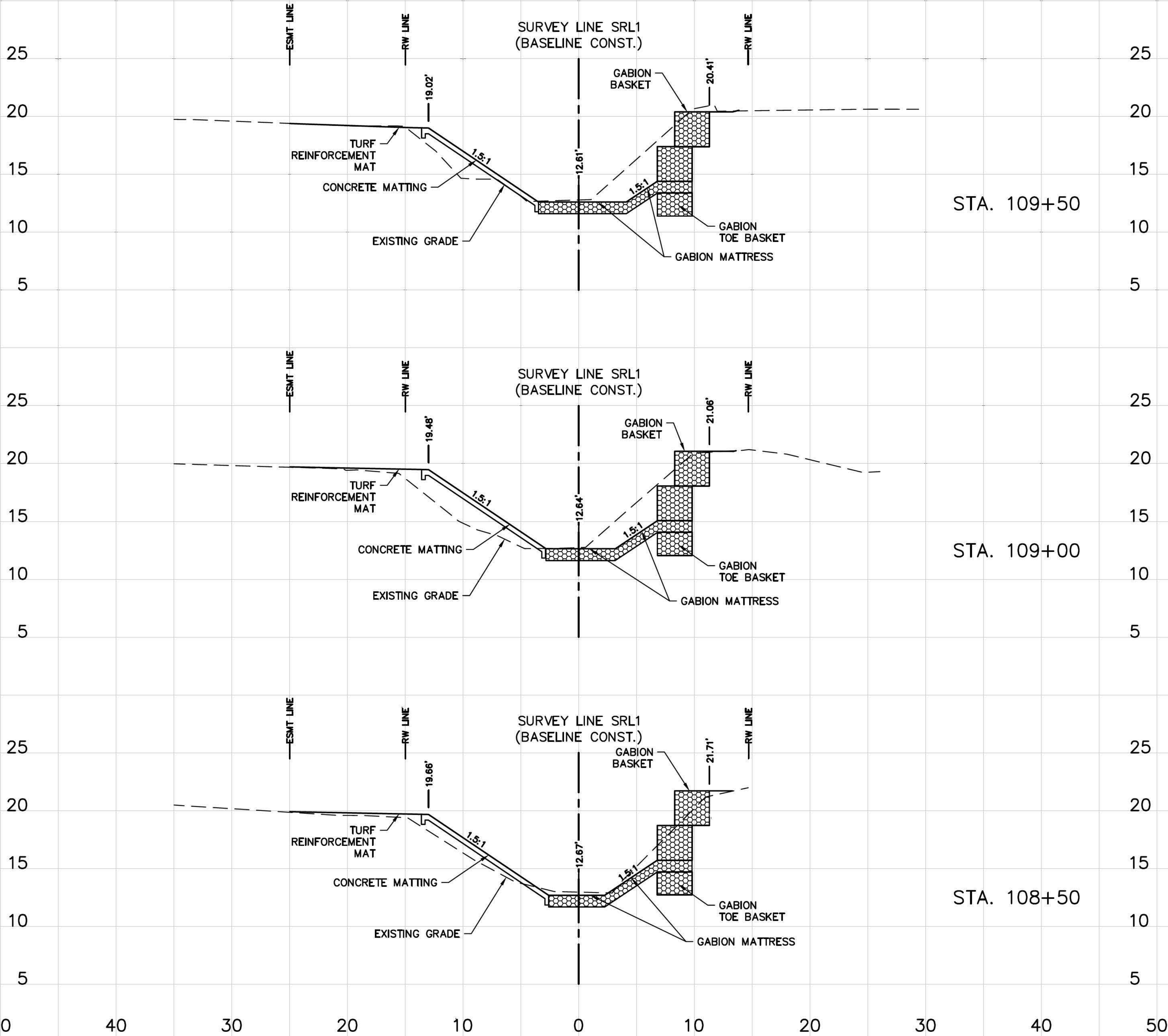
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DRAWN	BL							PROJECT NO.	003894A
CHECKED	MWE							SHEET:	16 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY						



CUT		FILL	
A	V	A	V
5	64	14	234
3	56	32	192
6	47	15	148

				DESIGNED	KRF		PROJECT:	MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION:	CROSS SECTIONS (4)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY:	DATE:	MARCH 2020
				DRAWN	BL								PROJECT NO.	003894A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	MWE								<div style="display: flex; justify-content: space-between;"><div>KATHERINE R. FOX, P.E. FLA. LIC. NO 74636</div><div>DATE</div></div>	SHEET:

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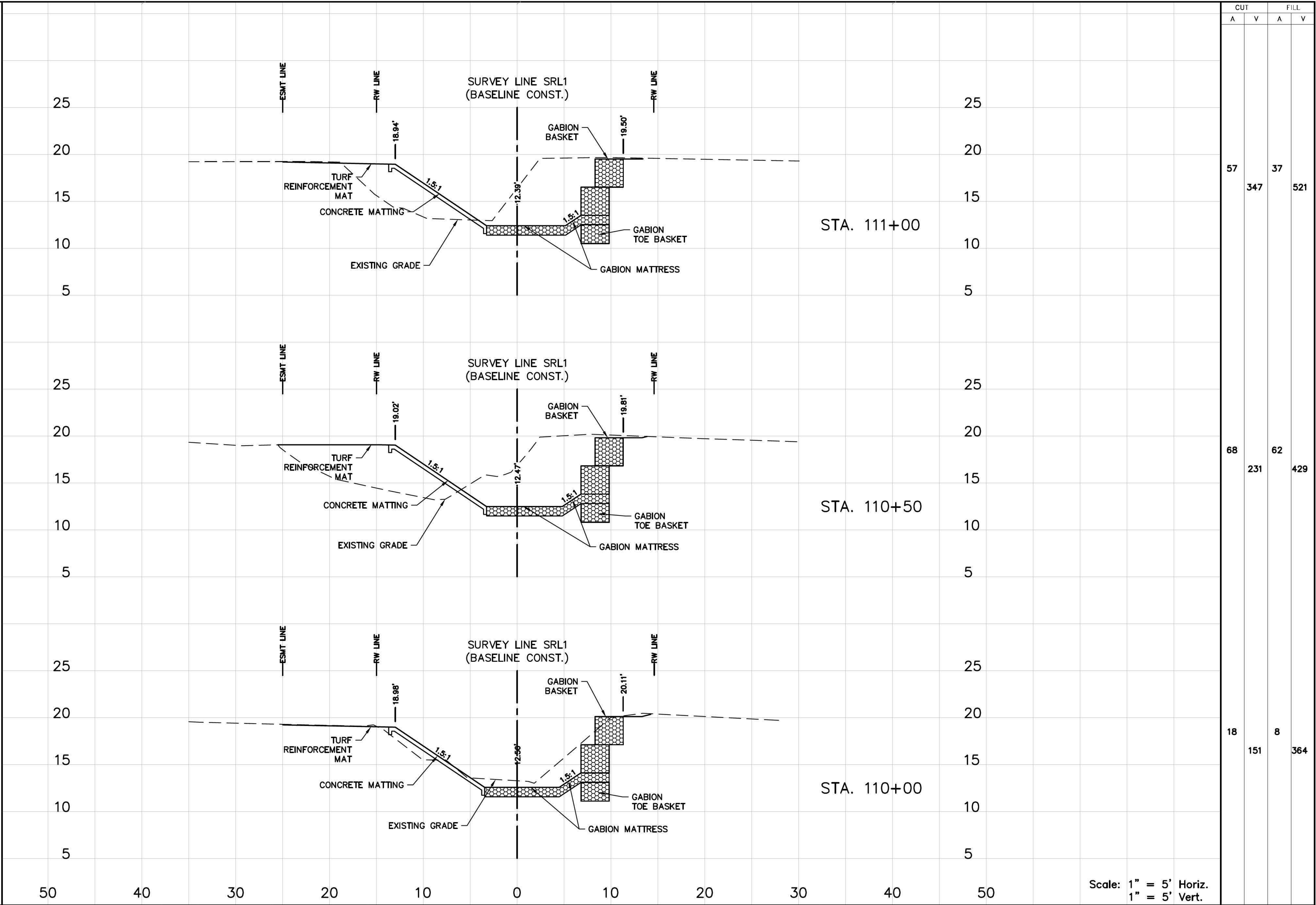


Scale: 1" = 5' Horiz.
1" = 5' Vert.

CUT		FILL	
A	V	A	V
17	119	14	343
15	89	25	307
4	72	20	265

DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: CROSS SECTIONS (5)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	DATE:	MARCH 2020
DRAWN	BL							PROJECT NO.	003894A
CHECKED	MWE							SHEET:	18 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY						

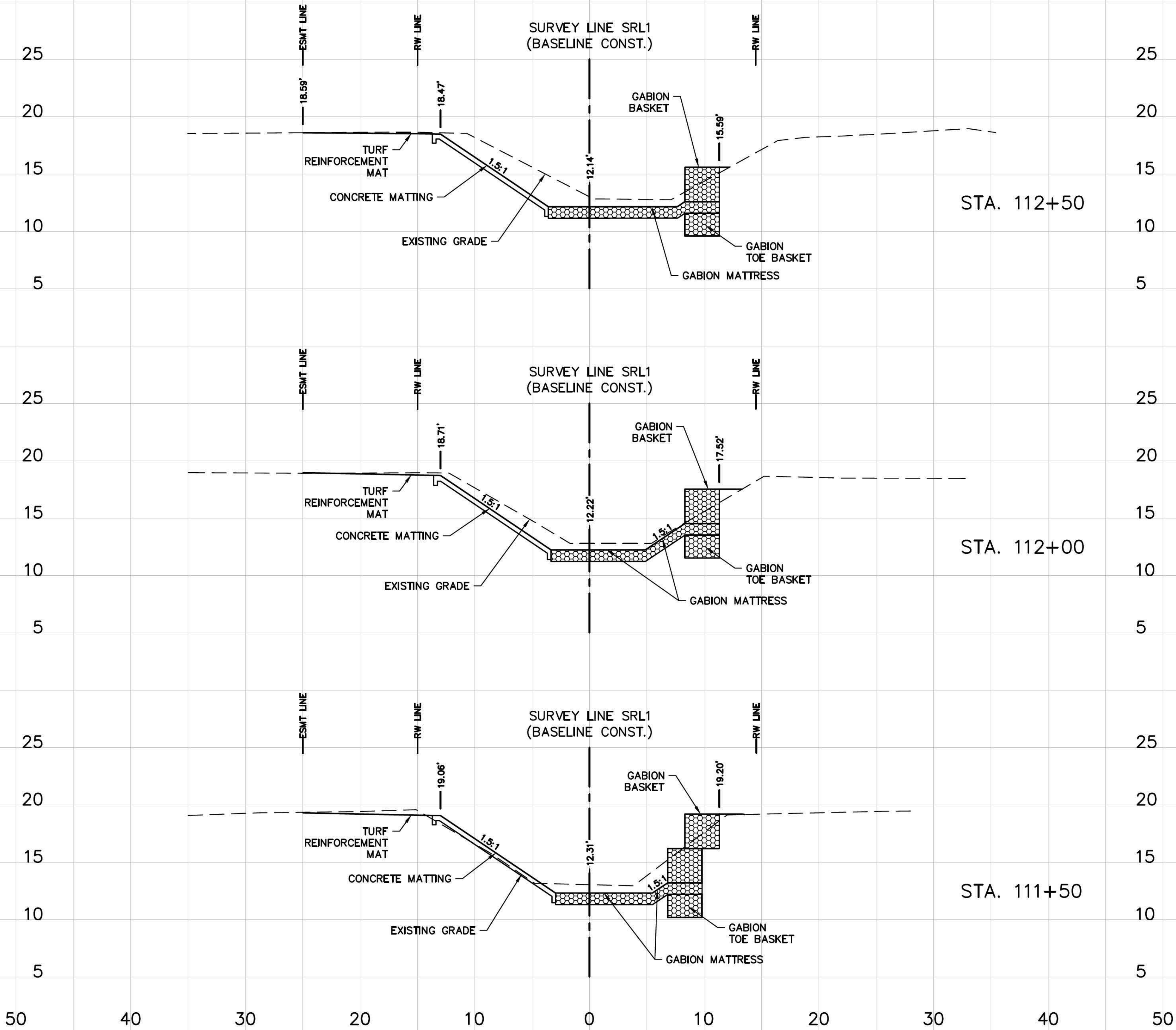
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CUT		FILL	
A	V	A	V
57	347	37	521
68	231	62	429
18	151	8	364

DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: CROSS SECTIONS (6)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	DATE:	MARCH 2020
DRAWN	BL							PROJECT NO.	003894A
CHECKED	MWE							SHEET:	19 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY						

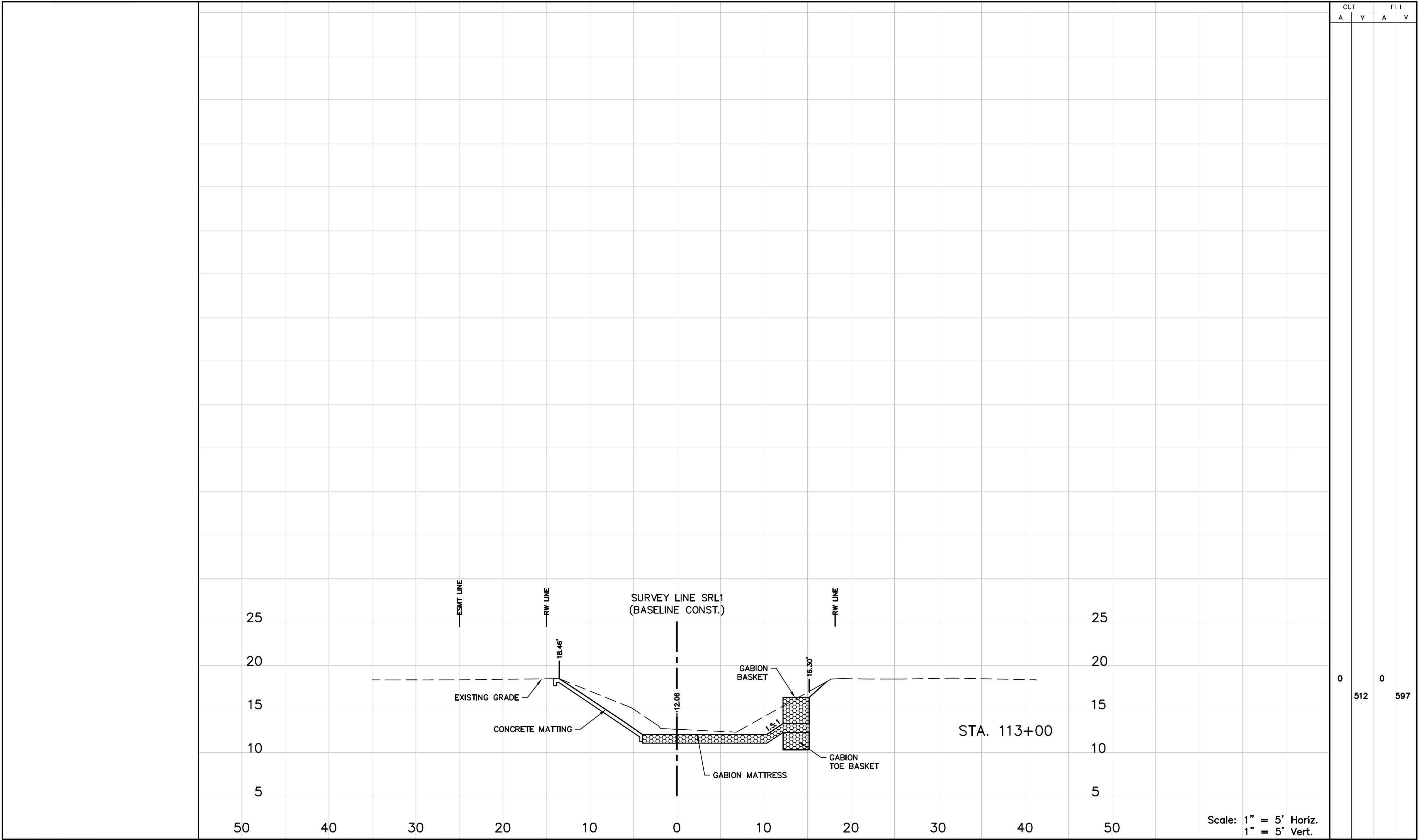
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CUT		FILL	
A	V	A	V
30	485	4	593
18	440	7	582
13	412	10	566

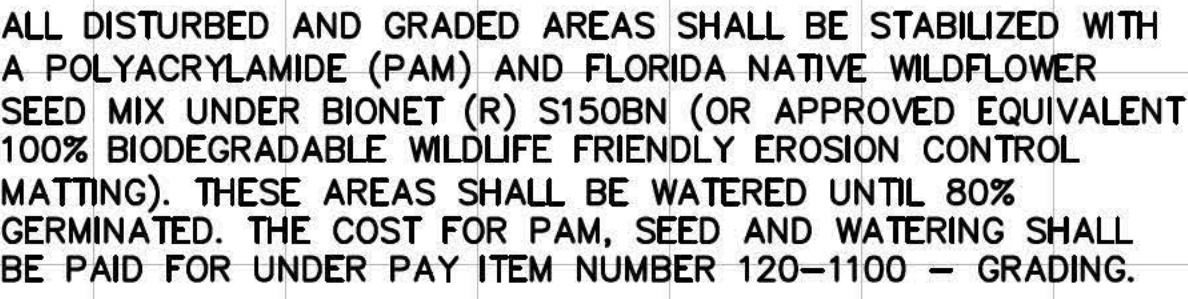
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DRAWN	BL						PROJECT NO.	003894A	
CHECKED	MWE						SHEET:	20 OF 38	
REV. NO.	DATE	DESCRIPTION	REV. BY						

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DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: CROSS SECTIONS (8)	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE:	MARCH 2020
DRAWN	BL						PROJECT NO.	003894A
CHECKED	MWE						SHEET:	21 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY					

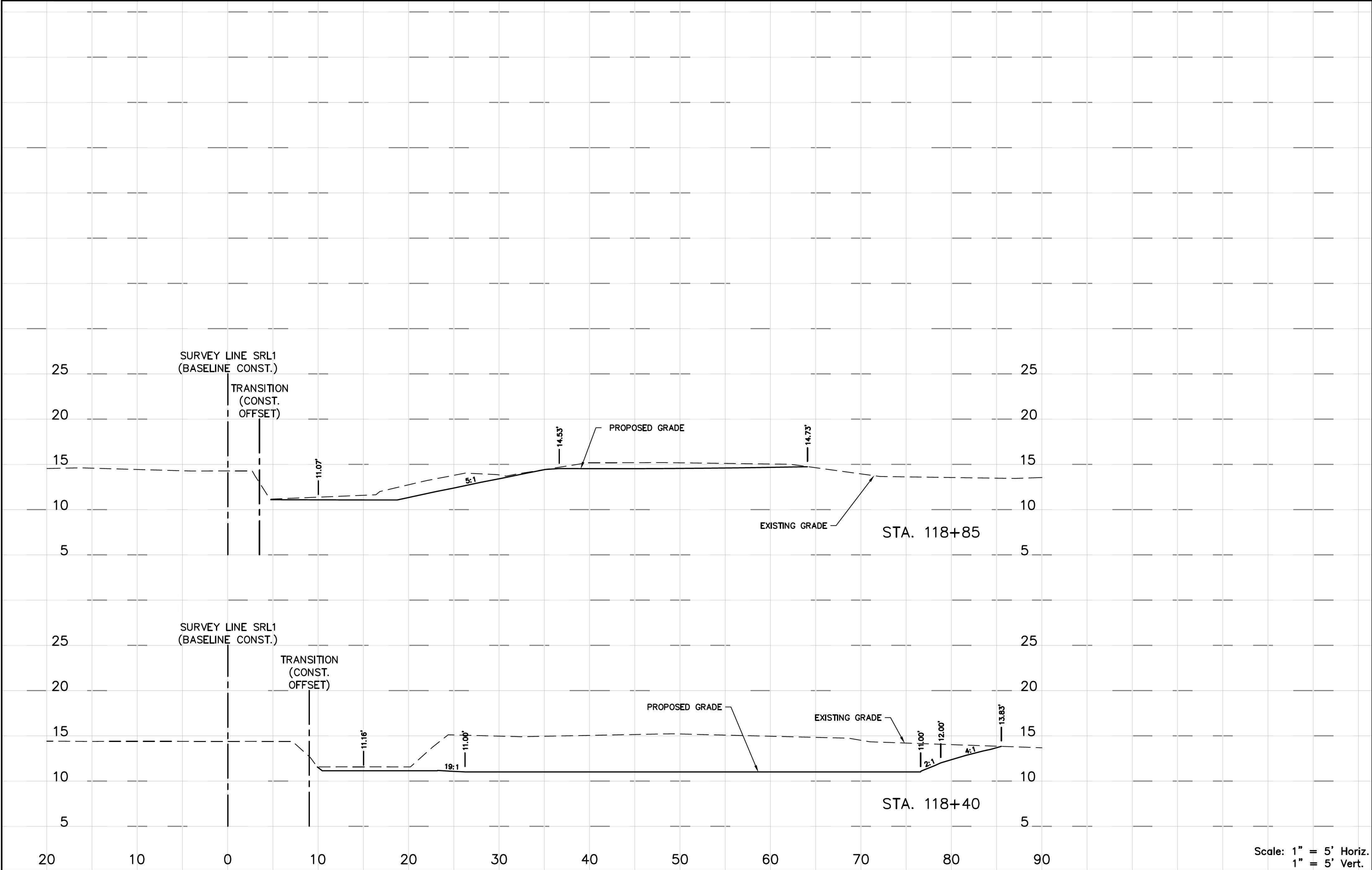
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				DRAWN	BL							PROJECT NO.	003894A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	MWE							SHEET:	22 OF 38




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				DESIGNED	KRF		PROJECT:		DESCRIPTION:			APPROVED BY:		DATE:	MARCH 2020
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REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	MWE								KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	SHEET:

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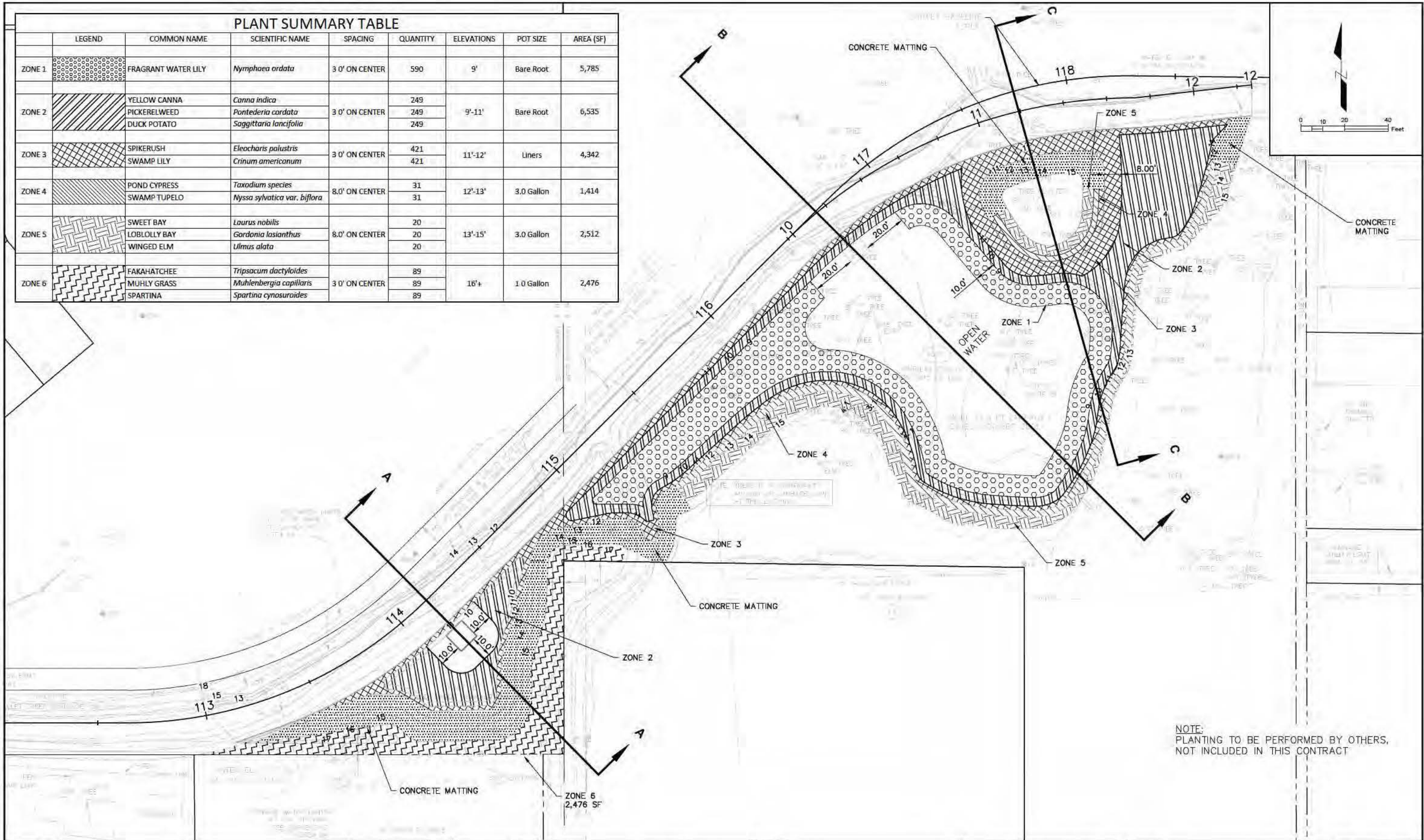


Scale: 1" = 5' Horiz.
1" = 5' Vert.

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				DRAWN	BL								PROJECT NO.	003894A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	MWE								SHEET:	26 OF 38


FN003894A\Plans\Jwg\Production\Mullet Creek Planting-PLR.dwg, Mar 12, 2020 - 9:30am

PLANT SUMMARY TABLE								
	LEGEND	COMMON NAME	SCIENTIFIC NAME	SPACING	QUANTITY	ELEVATIONS	POT SIZE	AREA (SF)
ZONE 1		FRAGRANT WATER LILY	<i>Nymphaea odorata</i>	3 0' ON CENTER	590	9'	Bare Root	5,785
ZONE 2		YELLOW CANNA	<i>Canna indica</i>	3 0' ON CENTER	249	9'-11'	Bare Root	6,535
		PICKERELWEED	<i>Pontederia cordata</i>		249			
		DUCK POTATO	<i>Sagittaria lancifolia</i>		249			
ZONE 3		SPIKERUSH	<i>Eleocharis palustris</i>	3 0' ON CENTER	421	11'-12'	Liners	4,342
		SWAMP LILY	<i>Crinum americanum</i>		421			
ZONE 4		POND CYPRESS	<i>Taxodium species</i>	8.0' ON CENTER	31	12'-13'	3.0 Gallon	1,414
		SWAMP TUPELO	<i>Nyssa sylvatica var. biflora</i>		31			
ZONE 5		SWEET BAY	<i>Laurus nobilis</i>	8.0' ON CENTER	20	13'-15'	3.0 Gallon	2,512
		LOBLOLLY BAY	<i>Gordonia lasianthus</i>		20			
		WINGED ELM	<i>Ulmus alata</i>		20			
ZONE 6		FAKAHATCHEE	<i>Tripsacum dactyloides</i>	3 0' ON CENTER	89	16'+	1 0 Gallon	2,476
		MUHLY GRASS	<i>Muhlenbergia capillaris</i>		89			
		SPARTINA	<i>Spartina cynosuroides</i>		89			

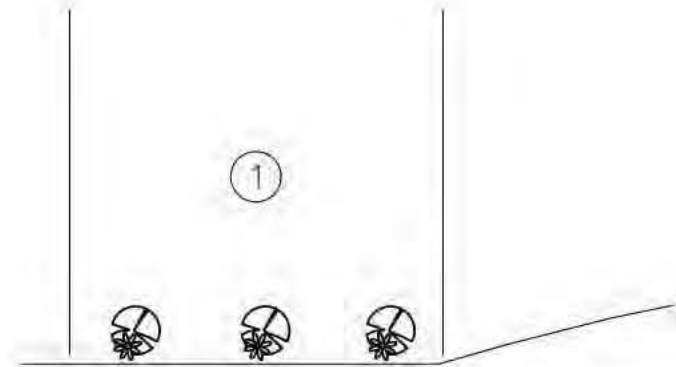


				DESIGNED	RDS		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: FLOODPLAIN PLANTING	PUBLIC WORKS 14 S. FT. HARRISON AVE., CLEARWATER, FL 33756	APPROVED BY: _____ XXXX XXXX, P.E. FLA. LIC. NO XXXX	DATE:	FEB/2020
				DRAWN	DDM						PROJECT NO.	003894A
				CHECKED								
REV. NO.	DATE	DESCRIPTION	REV. BY								SHEET:	27 OF 38

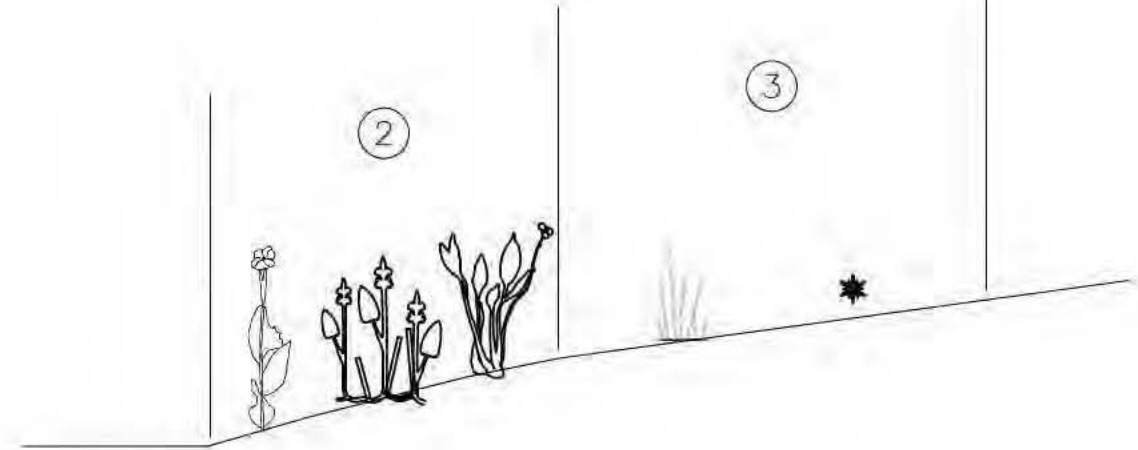


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				DRAWN	DDM								PROJECT NO.	003894A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED									XXXX, XXXX, P.E. FLA. LIC. NO XXXX	DATE

F:\003894A\Pinellas\Jug\Production\003894A-TYP.dwg, Mar 12, 2020 - B01ch

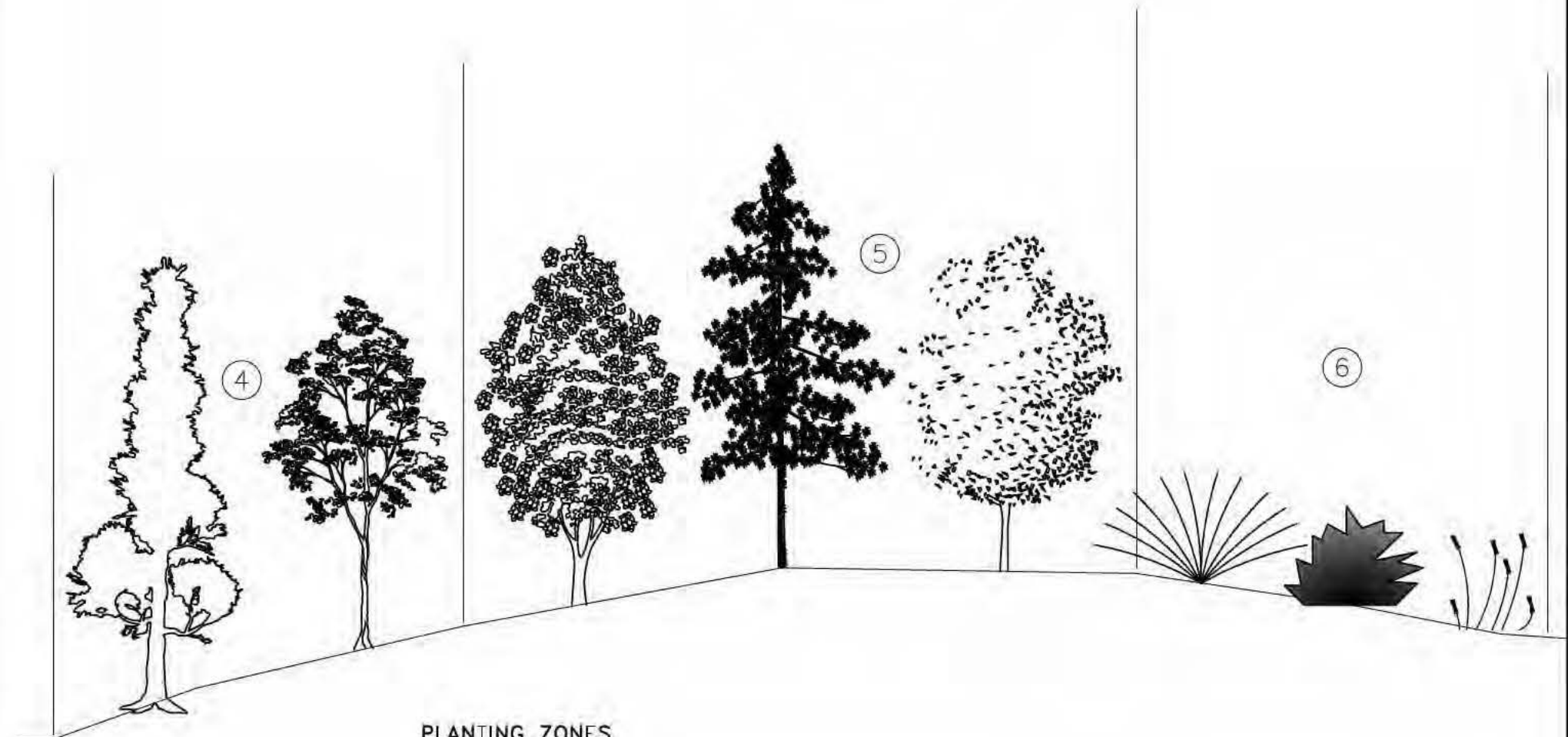
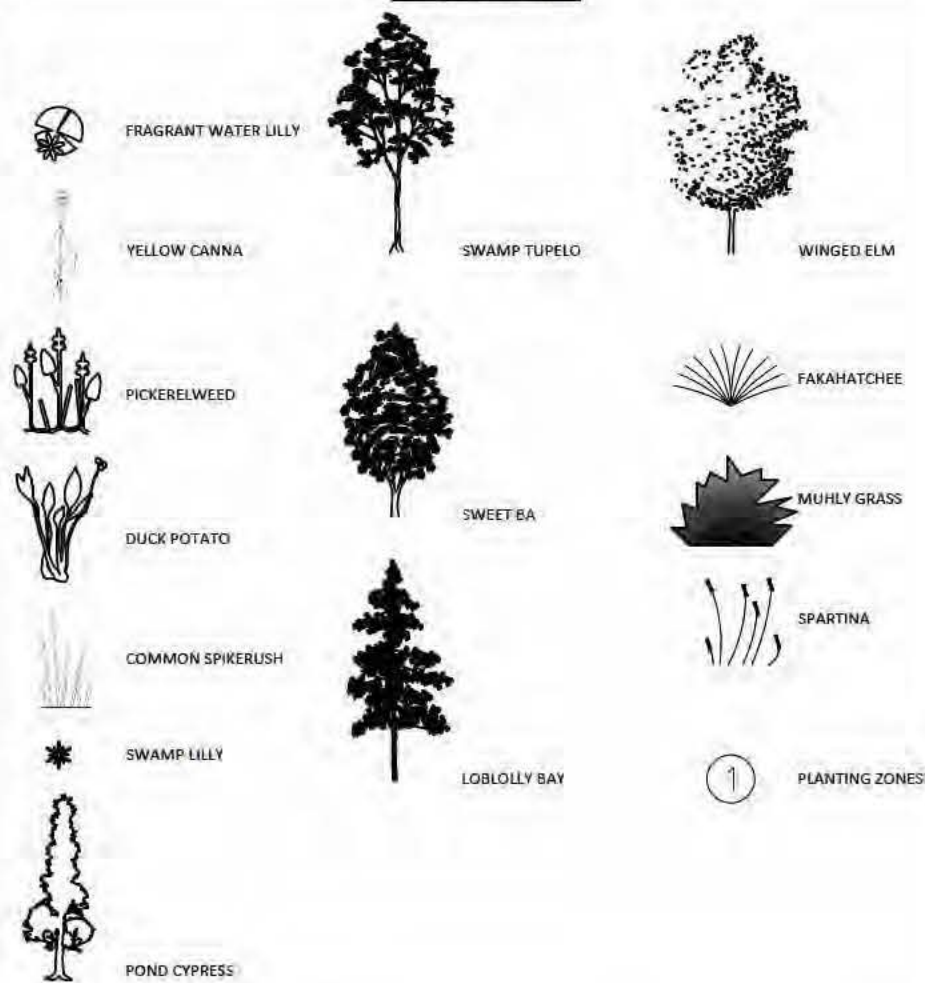


PLANTING ZONE 1
(N.T.S.)



PLANTING ZONE 2 & 3
(N.T.S.)

PLANT LEGEND



PLANTING ZONES
4 THROUGH 6
(N.T.S.)

REV. NO.	DATE	DESCRIPTION

DESIGNED	RDS
DRAWN	DDM
CHECKED	
REV. BY	



PROJECT: MULLET CREEK
CHANNEL B
EROSION CONTROL

DESCRIPTION: FLOODPLAIN PLANTING
ZONES

PUBLIC WORKS
14 S. FT. HARRISON AVE.,
CLEARWATER, FL 33756

APPROVED BY: _____
XXXX XXXX, P.E.,
FLA. LIC. NO XXXX
DATE _____

DATE: FEB/2020
PROJECT NO. 003894A
SHEET: 29 OF 38

				DESIGNED	KRF		PROJECT:		DESCRIPTION:		PUBLIC WORKS	APPROVED BY:		DATE:	MARCH 2020
				DRAWN	BL		MULLET CREEK CHANNEL B	GABION & GABION	22211 U.S. HIGHWAY 19 N.					PROJECT NO.	003894A
				CHECKED	MWE		EROSION CONTROL	MATTRESS DETAILS	BLDG. 1						
REV. NO.	DATE	DESCRIPTION	REV. BY								CLEARWATER, FL 33765	KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE	SHEET:	30 OF 38

CONSTRUCTION NOTES:

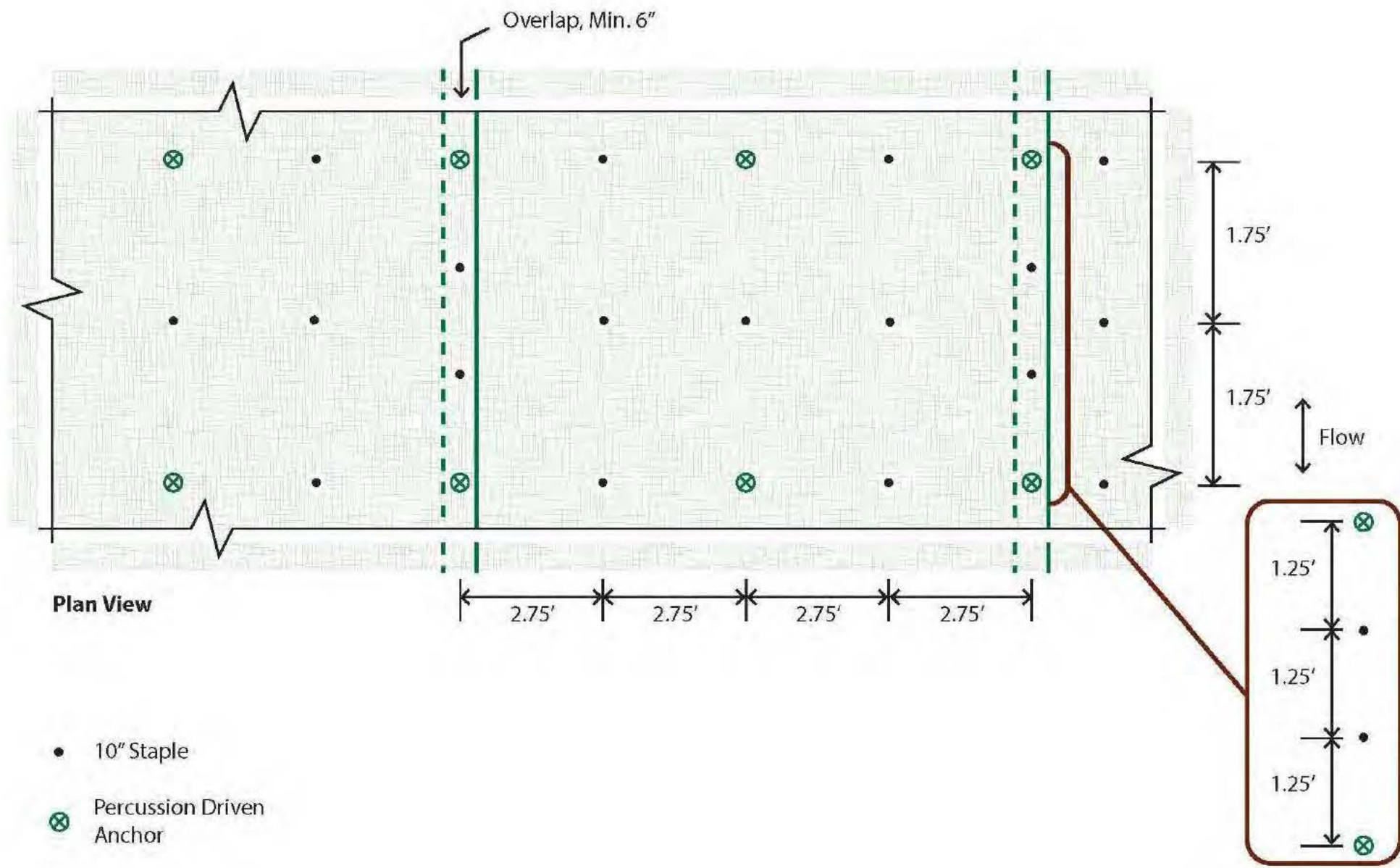
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|----------|------|-------------|---------|----------|-----|---|---|---|---|--|------|-------------|------------|
| | | | | DESIGNED | KRF |  | PROJECT:

MULLET CREEK CHANNEL B
EROSION CONTROL | DESCRIPTION:

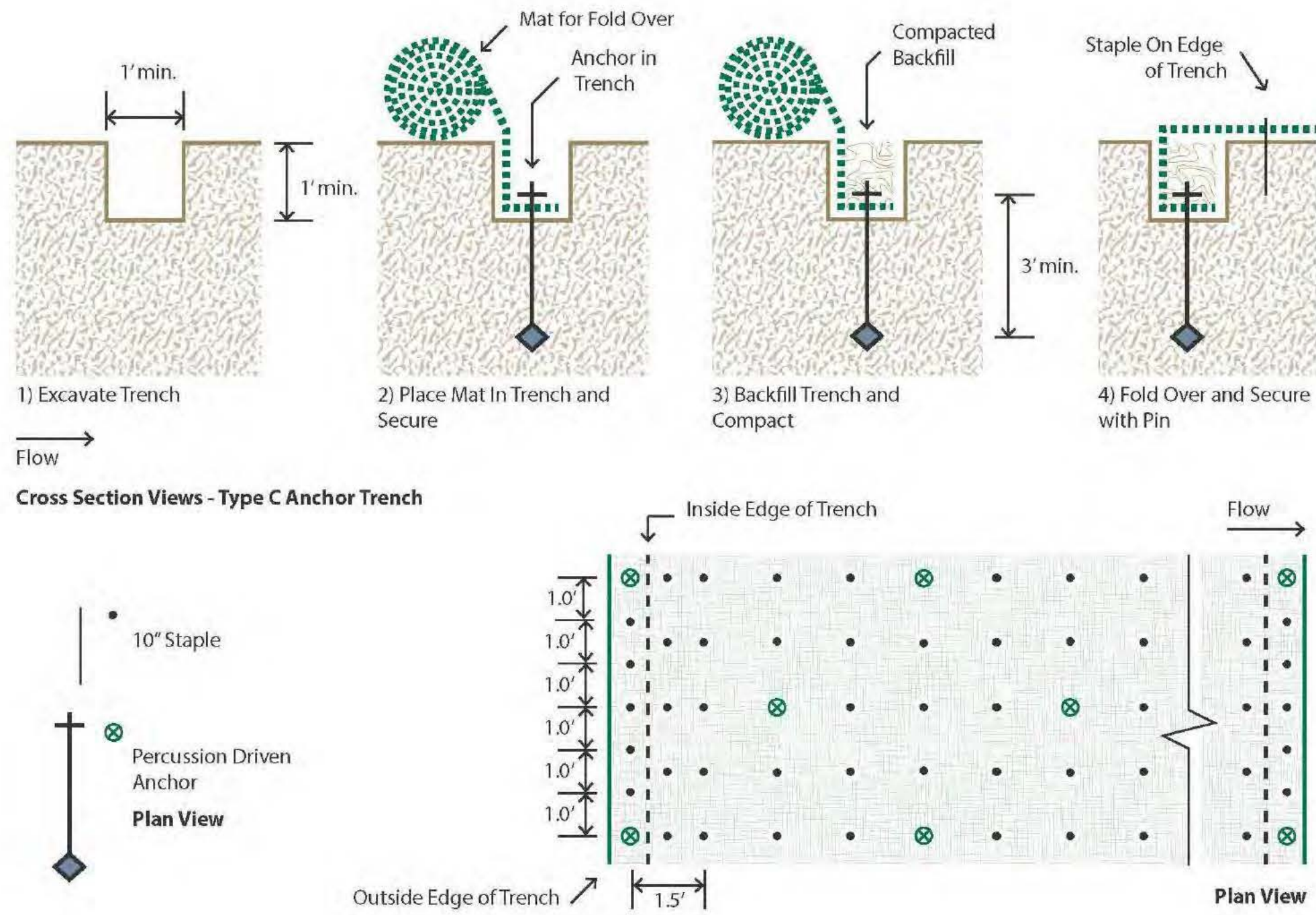
CONCRETE MATTING
DETAILS | PUBLIC WORKS
22211 U.S. HIGHWAY 19 N.
BLDG. 1
CLEARWATER, FL 33765 | APPROVED BY:

KATHERINE R. FOX, P.E.
FLA. LIC. NO 74636 | DATE | DATE: | MARCH 2020 |
| | | | | DRAWN | BL | | | | | | | PROJECT NO. | 003894A |
| REV. NO. | DATE | DESCRIPTION | REV. BY | CHECKED | MWE | | | | | | | SHEET: | 31 OF 38 |

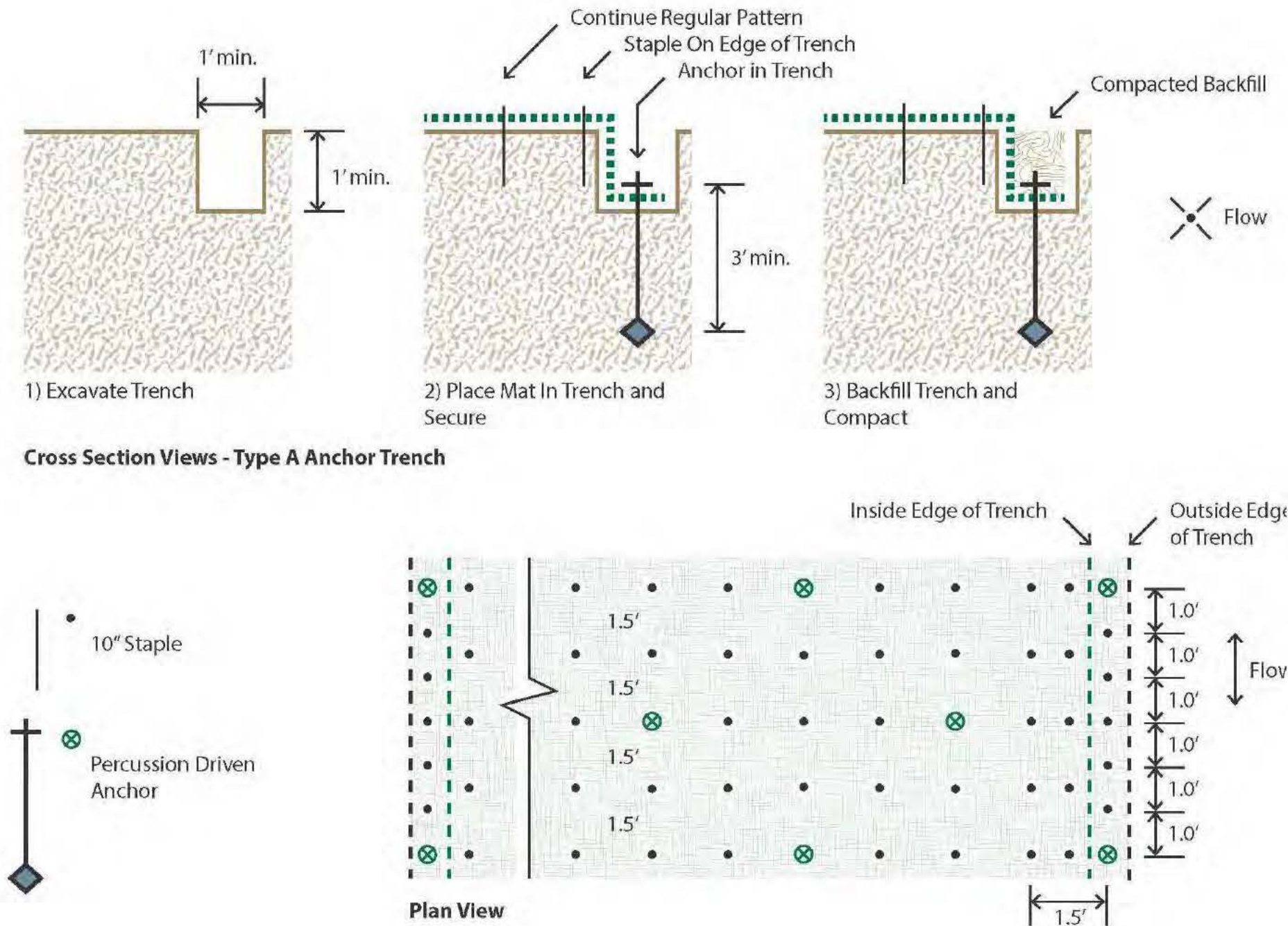
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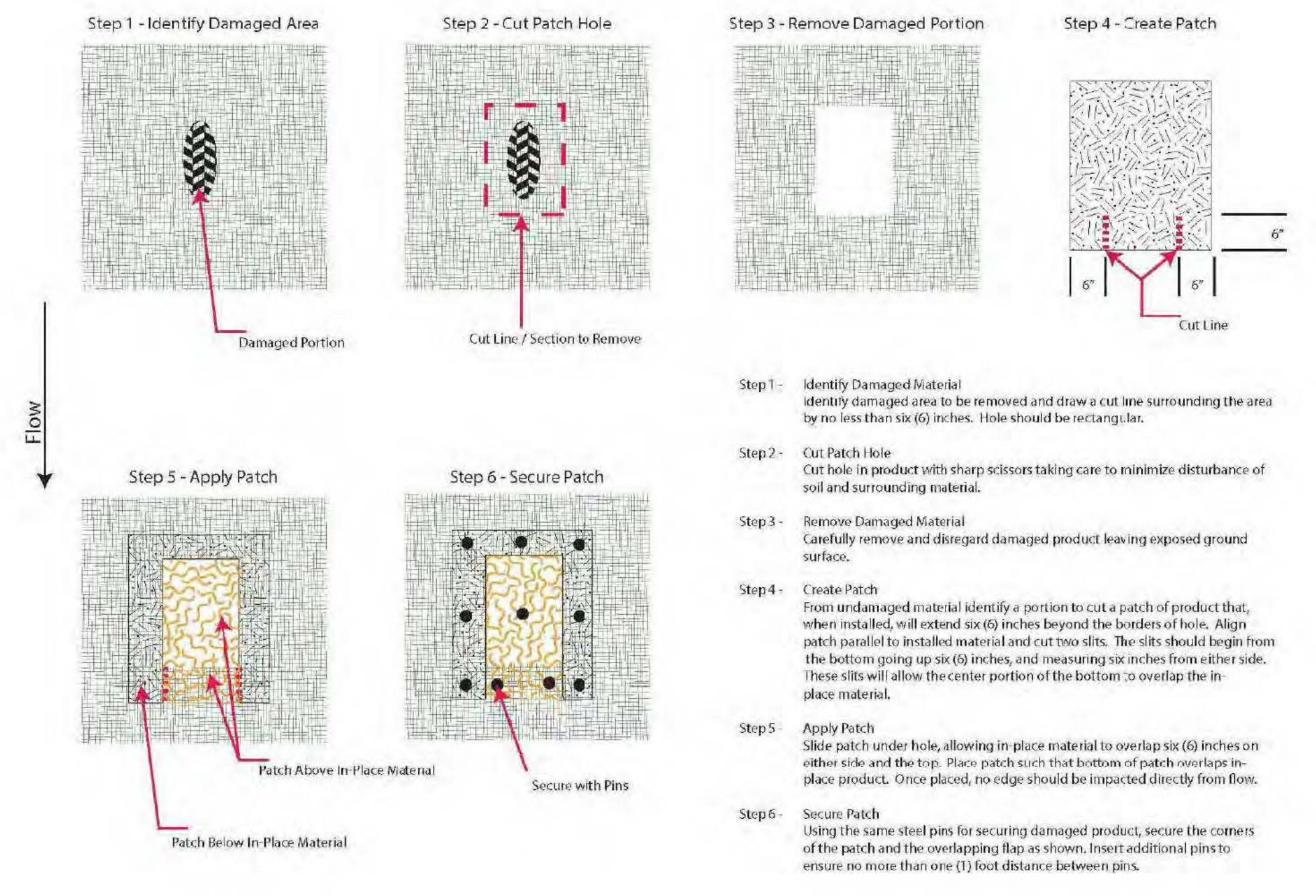
TURF REINFORCEMENT MAT INSTALLATION DETAIL



TURF REINFORCEMENT MAT ANCHORING DETAIL 1 OF 2



TURF REINFORCEMENT MAT ANCHORING DETAIL 2 OF 2



TURF REINFORCEMENT MAT REPAIR DETAIL

DESIGNED	KRF		PROJECT: MULLET CREEK CHANNEL B EROSION CONTROL	DESCRIPTION: TURF REINFORCEMENT MAT DETAILS	PUBLIC WORKS 22211 U.S. HIGHWAY 19 N. BLDG. 1 CLEARWATER, FL 33765	APPROVED BY: KATHERINE R. FOX, P.E. FLA. LIC. NO 74636	DATE:	MARCH 2020
DRAWN	BL						PROJECT NO.	003894A
CHECKED	MWE						SHEET:	32 OF 38
REV. NO.	DATE	DESCRIPTION	REV. BY					