

**To:** Mayor and City Council  
**From:** Carl Thomas, Stormwater Utility Manager  
**Re:** Funding Authorization for Nature Center Eco Classroom Storm Improvements  
**Date:** June 12<sup>th</sup>, 2023

### **Action**

Authorize the Mayor, City Manager, or designee to approve \$830,800.95 in funding for Nature Center Eco Classroom Storm Improvements.

### **Summary/Details**

The 2016 Master Plan for the Dunwoody Nature Center (DNC) includes various stormwater management strategies to address issues in critical areas within the park. One of the tasks involves a stormwater improvement project near the existing eco-classroom/bee hive area. The project addresses stormwater runoff and erosion issues posing a safety hazard to visitors due to the failing sidewalk. Flow through the forested area to the north and west also drains into the site. Most offsite flow comes from the stormwater drainage system in the Arden Woods subdivision north of the Nature Center. To mitigate the drainage issues, the City's Stormwater Division collaborated with Dewberry Engineers, who developed a plunge-pool system based on the master plan concept that captures the stormwater, slows it down, and directs it into the existing detention facility. The plunge pool/bio-swale will be constructed of river rock, rip rap, and concrete veneer walls matching the existing weir wall. The plan also includes a 40 cubic yard forebay system collecting runoff from the forested area and a +/-190 linear foot reinforced concrete pipe (RCP) directing runoff into the plunge pools. The landscaping plan involves planting species similar to the existing micropool, ensuring functionality, educational opportunities, and similar aesthetics. Additionally, part of the construction consists of removing and replacing the failing sidewalk section with an elevated boardwalk connected to the existing eco-classroom. This approach allows the stormwater to flow underneath the proposed deck, eliminating the safety concern of the failing sidewalk.

If approved by Council, this project will be funded from the Stormwater Repairs and Maintenance budget allocated for stormwater improvement projects.

### **Recommendation**

Staff recommends approving \$791,239.00, plus 5% contingency, for a total of \$830,800.95 in funding for the Dunwoody Nature Center Eco Classroom Storm Improvements.

CITY OF DUNWOODY RFP 22-03 STANDBY STORMWATER REPAIR UNIT PRICE CONTRACT					
SOUTHERN PREMIER CONTRACTORS, INC. 2022					
PROJECT LOCATION:			Dunwoody Nature Center		
PREPARED BY:			M. Massey		
DATE ESTIMATE PREPARED:			05.30.2023		
TOTAL INVOICE \$			791,239.00		
PLUS 5% CONTINGENCY \$			830,800.95		
Item#	Item	Quantity	Unit	Unit Price	Total Cost
1	Mobilization	1	EA	\$ 2,000.00	\$ 2,000.00
2	Out of Scope Work, Foreman	80	HR	\$ 95.00	\$ 7,600.00
3	Out of Scope Work, Laborer	320	HR	\$ 80.00	\$ 25,600.00
5	Traffic Control Minor 2 – Includes Cones and Signage	5	Per Day	\$ 1,800.00	\$ 9,000.00
60	24" RCP	146	LF	\$ 95.00	\$ 13,870.00
62	36" RCP	48	LF	\$ 190.00	\$ 9,120.00
68	15" HDPE	20	LF	\$ 70.00	\$ 1,400.00
176	4' Round Precast Inlet w/ Pedestal Top & Grate or MH Ring & Cover	14	VF	\$ 800.00	\$ 11,200.00
177	5' Round Precast Inlet w/ Pedestal Top & Grate or MH Ring & Cover	16	VF	\$ 950.00	\$ 15,200.00
191	ADS Inlet Box	1	EA	\$ 1,600.00	\$ 1,600.00
206	Invert Installation, 4' Diameter	4	EA	\$ 450.00	\$ 1,800.00
222	24" Grout Each End to Structure	6	EA	\$ 225.00	\$ 1,350.00
225	36" Grout Each End to Structure	2	EA	\$ 275.00	\$ 550.00
232	Grout all joint, cracks & holes, in structures, complete (structures 8' deep or less)	2	EA	\$ 800.00	\$ 1,600.00
233	Grout all joint, cracks & holes, in structures, complete (structures greater than 8' d	2	EA	\$ 1,550.00	\$ 3,100.00
342	Medium Duty Sidewalk (5" Thick, Fiber Reinf. 3000 psi) 11'-20' length	32	SY	\$ 90.00	\$ 2,880.00
346	Curb & Gutter 6"x24"x12" High Back	67	LF	\$ 52.00	\$ 3,484.00
350	Concrete Drainage Structures Poured In Place w/ Steel	155	CY	\$ 2,000.00	\$ 310,000.00
353	Graded Aggregate Base	18	Ton	\$ 95.00	\$ 1,710.00
355	Mill Existing Parking Lot	1	LS	\$ 10,000.00	\$ 10,000.00
356	Asphaltic Concrete Surface Course	18	Ton	\$ 350.00	\$ 6,300.00
357	Tack Coat	25	Gal	\$ 40.00	\$ 1,000.00
361	Tree Removal 13"-23"	2	EA	\$ 1,800.00	\$ 3,600.00
363	Clear & Grubbing	2000	SY	\$ 15.00	\$ 30,000.00
365	Additional Excavation	200	CY	\$ 20.00	\$ 4,000.00
367	Haul-Off Soil Material	340	CY	\$ 85.00	\$ 28,900.00
368	Finish Grading	2000	SY	\$ 10.00	\$ 20,000.00
371	Stone River Rock- Jumbo in Place	360	TON	\$ 225.00	\$ 81,000.00
372	Stone Rip Rap Type III In Place	323	TON	\$ 95.00	\$ 30,685.00
373	Stone Veneer Granite Wall Overlay Installed	191	LF	\$ 295.00	\$ 56,345.00
377	Install & Remove Type C Silt Fence - Alternative	1200	LF	\$ 8.00	\$ 9,600.00
378	Inlet Sediment Traps - Silt Fence Sd2-F	1	EA	\$ 350.00	\$ 350.00
379	Inlet Sediment Traps - Silt Fence Sd2-B	1	EA	\$ 550.00	\$ 550.00
380	Install & Remove Orange Tree Save Fence	600	LF	\$ 10.00	\$ 6,000.00
381	Cd-Hb Installed and Removed	5	EA	\$ 450.00	\$ 2,250.00
382	Permanent Soil Reinf Mat Installed	200	SY	\$ 11.00	\$ 2,200.00
385	Seed & Straw (Temporary Grassing)	2000	SY	\$ 6.00	\$ 12,000.00
390	Topsoil Complete	85	CY	\$ 70.00	\$ 5,950.00
392	Straw Mulch	2000	SY	\$ 6.00	\$ 12,000.00
407	Debris Removal, Tandem Dump Truck	5	Per Load	\$ 850.00	\$ 4,250.00
408	Removal of Existing Non Drainage Structure	1	EA	\$ 2,500.00	\$ 2,500.00
409	Removal of Existing Drainage Structure	1	EA	\$ 2,250.00	\$ 2,250.00
410	Remove Existing Pipe all Types and Sizes	22	LF	\$ 85.00	\$ 1,870.00
411	Saw Cut Existing Pavements	50	LF	\$ 5.00	\$ 250.00
412	Stone #57	90	TON	\$ 90.00	\$ 8,100.00
413	Pebbble Stone	15	TON	\$ 225.00	\$ 3,375.00
418	Bypass pumping setup-equipment and hose placement	2	EA	\$ 1,000.00	\$ 2,000.00
419	4" Pumping Operation Time	80	HR	\$ 60.00	\$ 4,800.00
430	Remove and Replace Existing 6' Wood Fence Residential	60	LF	\$ 80.00	\$ 4,800.00
431	Steel Plates Unforseen soils & engineering changes	75	EA/Day	\$ 150.00	\$ 11,250.00



**BEEHIVE/ECO-CLASSROOM AREA**



*Existing eco-classroom with green roof to remain. The proposed building architecture is influenced by this structure.*



*Existing beehive to remain.*



*Evidence of stormwater runoff pooling, creating a muddy area around the existing classroom.*



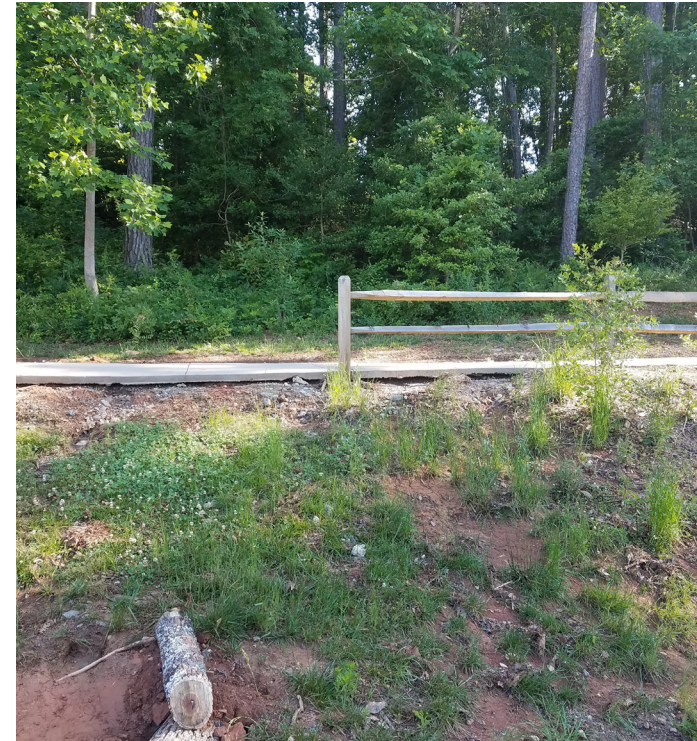
*Stormwater runoff is undercutting the existing sidewalk north of the pond, creating a safety hazard.*



*Proposed pollinator garden to be installed in area adjacent to parking lot.*



*Landscape steps and stepping stones are proposed to provide pedestrian access from parking lot to eco-classroom and beehive area.*



*Evidence of erosion along the slope adjacent to the sidewalk due to large amounts of stormwater runoff.*



*Significant erosion damage and storm damage exists along stream through wooded area adjacent to eco-classroom area.*



**BEEHIVE/ECO-CLASSROOM AREA**



*View looking down drainage swale into existing rain garden.*



*View looking down drainage swale into existing rain garden.*



*Evidence of erosion upstream of stormwater pond.*



*Existing pedestrian and maintenance access to be maintained.*



# ECO-CLASSROOM/BEEHIVE AREA

## PREFERRED CONCEPT

In the existing eco-classroom/beehive area, addressing the stormwater runoff and erosion issues are the main priorities of the preferred concept design. Because of the amount of stormwater runoff moving through this area, the current sidewalk is failing and is a safety hazard to visitors. In order to mitigate these water issues, the design proposes creating a plunge-pool system or bio-swale to capture the water, slow it down, and direct it into the existing rain garden. This system shall be created using natural boulders and planted with similar species to the existing rain garden. Not only is this solution functional, but it also provides educational opportunities and is aesthetically pleasing. In conjunction with the plunge-pool/bio-swale, this design proposes removing the section of failing sidewalk and instead connecting an elevated boardwalk to the existing eco-classroom. This allows the stormwater to pass under the boardwalk and eliminates the safety concern. In addition to the elevated boardwalk, a large, hexagonal deck is a recommended addition adjacent to the eco-classroom in order to provide a flexible outdoor space that can be used casually, for educational purposes, and other programmed events. The hexagonal shape of the proposed deck mimics the geometry of a honeycomb, and ties this area into the existing beehive. Additional features of this preferred concept design include installing a pollinator garden to compliment the beehive, creating access to this area from the parking lot, and extending the ADA ramp off the back of the eco-classroom in order to make the beehive more accessible.

### PLAN VIEW



### PERSPECTIVE VIEW



The above rendering depicts the proposed hexagonal deck overlooking the bio-swale/plunge-pool system. This design can significantly improve the stormwater runoff issues in this area while also enhancing aesthetics and providing educational and recreation opportunities.



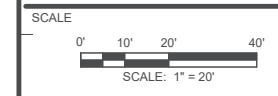
DEWBERRY ENGINEERS INC.  
2635 Brandywine Road  
Suite 100  
Atlanta, GA 30341-4015  
678.530.0022  
License No. PEF002398  
Expires 6/30/2024

**DUNWOODY NATURE CENTER  
DRAINAGE DESIGN**

CITY OF DUNWOODY  
4800 ASHFORD DUNWOODY RD NE  
DUNWOODY, GA 30338



CITY APPROVAL



NO.	DESCRIPTION	DATE
4	100 PERCENT SUBMITTAL	01/23/2023
3	90 PERCENT SUBMITTAL	12/01/2022
2	60 PERCENT SUBMITTAL	09/28/2022
1	CONCEPT PLAN	05/06/2022

**REVISIONS**

DRAWN BY:            JJ  
 APPROVED BY:            SF  
 CHECKED BY:            EB  
 DATE:            01/23/2023

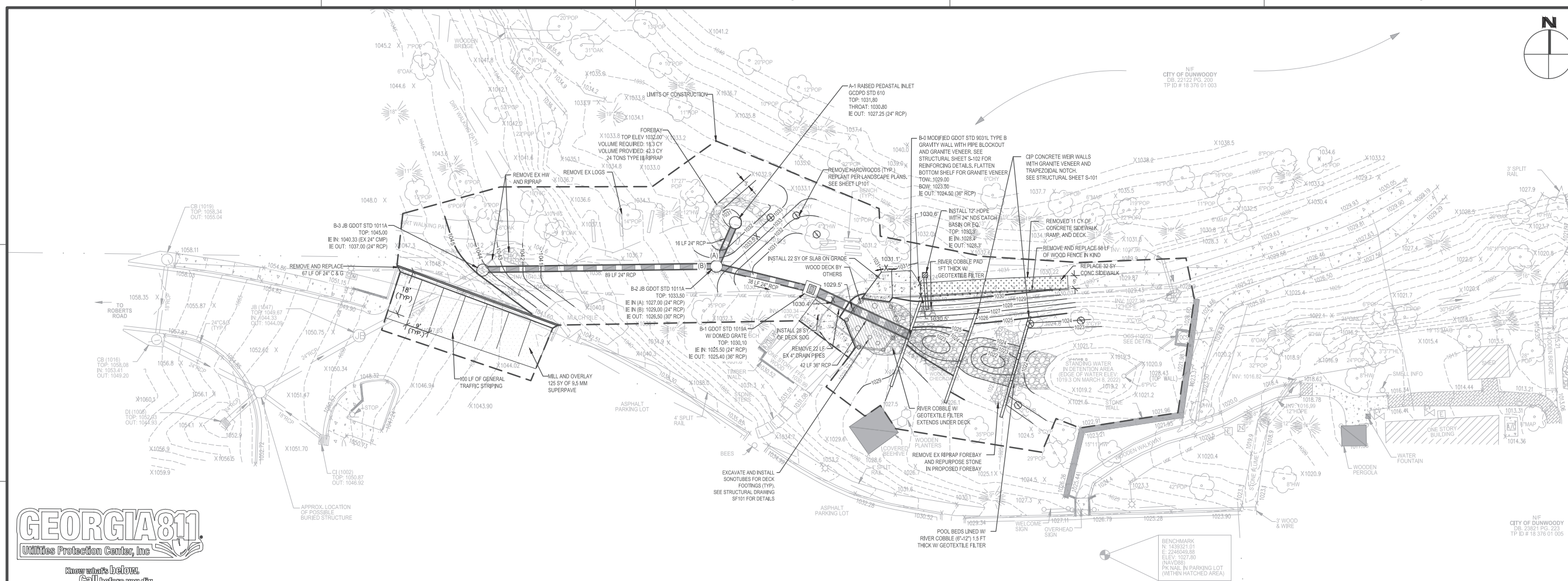
TITLE

**STORM PLAN & PROFILE**

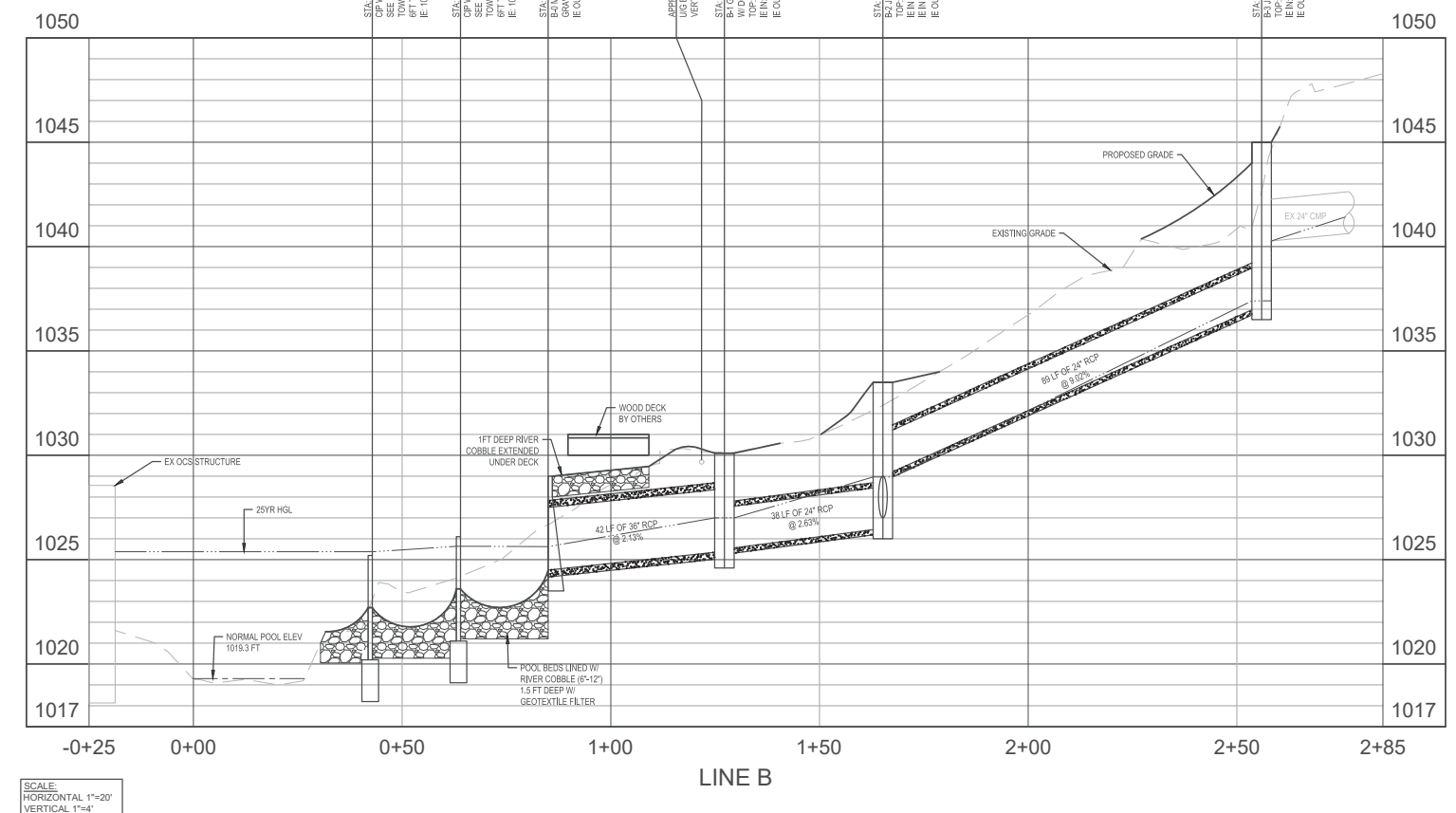
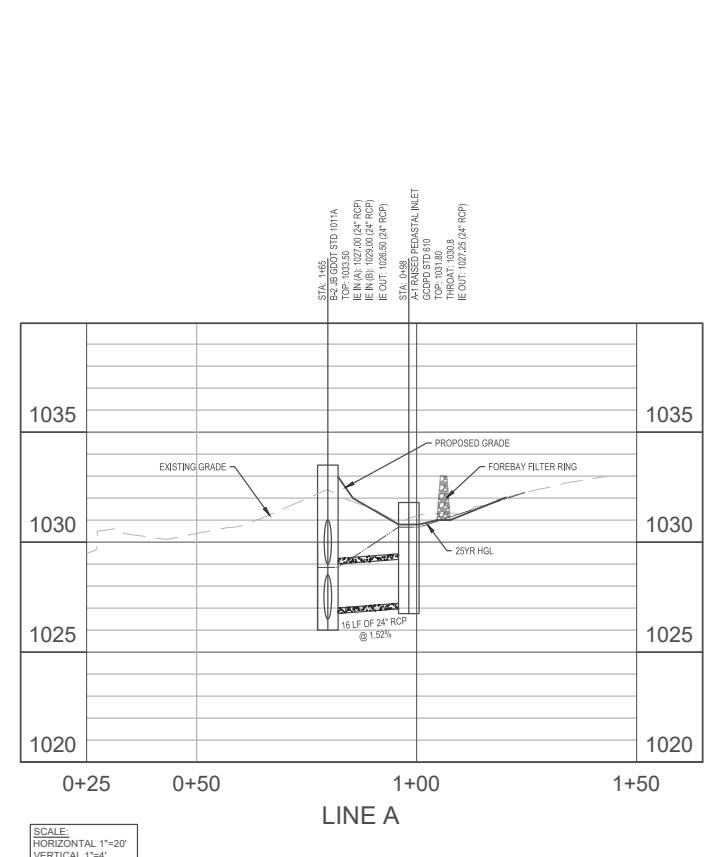
PROJECT NO. 50147521

**CU-101**

Packet page:...



**GEORGIA811**  
Utilities Protection Center, Inc.  
Know what's below.  
Call before you dig.



SCALE:  
HORIZONTAL 1"=20'  
VERTICAL 1"=4'

SCALE:  
HORIZONTAL 1"=20'  
VERTICAL 1"=4'