

MEMORANDUM

To: Mayor and City Council

From: J. Gregory Wilson, P.E., Senior Stormwater Engineer

Date: October 28, 2019

Subject: **Approval of Funding for Stormwater Culvert Replacement at 2610 Amberly Drive**

ITEM DESCRIPTION

Request for Approval of Funding for Stormwater Culvert Replacement at 2610 Amberly Drive. Seven bids were received on October 21, and the low bid is \$305,300.00 by The Dickerson Group, Inc. Requested funding is \$335,830.00, which includes a 10% contingency.

BACKGROUND

City staff identified the compromised structural condition of the culvert, headwalls and channel in July of 2018. The deteriorated stormwater system includes the primary culvert which is constructed of two 90 foot segments of 48" corrugated metal pipe, two brick masonry catch basins, 60 feet of 18" CMP, and two stone masonry headwalls. This infrastructure is approximately 54 years old and exhibits significant pipe corrosion, structural failures, and embankment erosion. Staff recommendations include:

- **Total replacement of masonry and metal storm drainage system with reinforced concrete structures (box culvert, headwalls, catch basins, pipes, and manholes)**
- **Stabilization of stream embankments with riprap & staked vegetative reinforcement**

Replacement of the failing 48" twin culverts with a 7'x4' concrete box culvert will alleviate flooding conditions at the adjacent upstream property by lowering the 100-year flood elevation and minimizing the possibility of pipe blockage. Construction is projected to begin in December.

The remaining projects budgeted for completion in FY2019 could generate a deficit in the Stormwater Repairs & Maintenance account if contingencies are needed (see attached summary). As of FY2019, the Stormwater Reserve Fund balance is \$2,688,155.95. For emergency repairs, Public Works prefers to keep a balance of \$1,000,000. If approved by Council, the cost of this project would be deducted from the surplus available in this account.

RECOMMENDED ACTION

Staff recommends approval of \$335,830.00 in funding for the Stormwater Culvert Replacement at 2610 Amberly Drive.



Deformed metal pipe with invert corrosion & visible holes



Large horizontal cracks along stone headwall



Embankment scour exposing tree roots

BID/PROPOSAL RESPONSES
CITY OF DUNWOODY

Solicitation: ITB 19-06 Amberly Dr. Culvert Replacement
Date: 10-21-2019

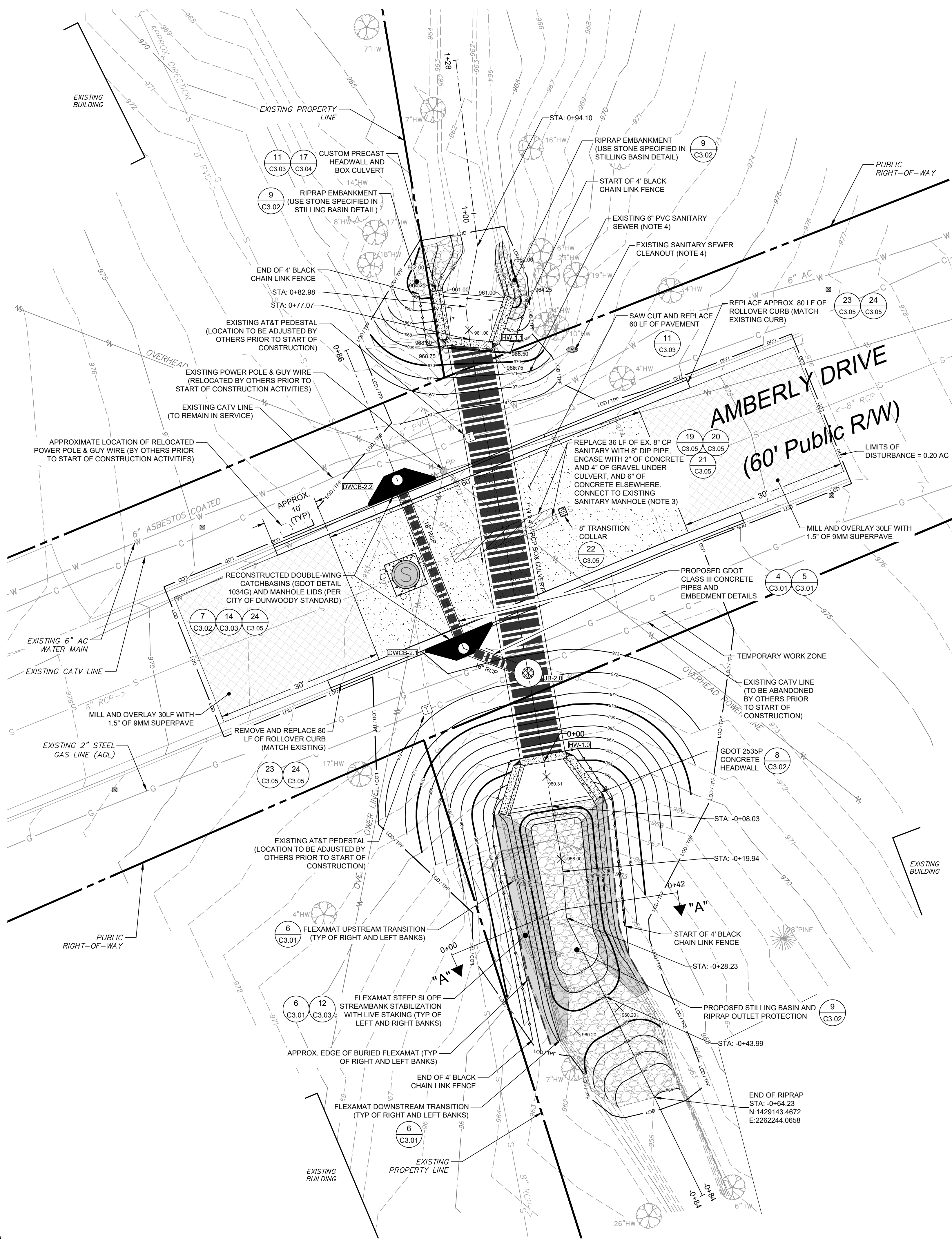
	COMPANY	BID TOTAL
1	Summit Construction + Development	\$387,225.00
2	CMES, Inc.	\$372,946.00
3	J.G. Leone Enterprises, Inc.	\$686,114.00
4	Georgia Development Partners	\$348,737.98
5	Site Engineering, Inc.	\$568,000.00
6	The Dickerson Group, Inc.	\$305,300.00
7	Tri Scopes, Inc.	\$408,164.53
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YTD Stormwater Repairs & Maintenance Budget

FY 2019 Remaining Balance		\$129,615.95
Current Stormwater Projects In Progress	Estimated Cost (-w- contingency)	
1708 N Houghton Ct (Pipe Lining)		\$56,315.88
4616 Amberly Ct (Pipe Lining)		\$64,288.50
5134 Meadowlake Ln (Pipe Lining)		\$70,275.00
Estimated Remaining balance		-\$61,263.43

Stormwater Reserve Fund

Balance	\$2,688,155.95
1280 Witham Dr (Dig & Replace Pipe Repair/Lining)	\$197,962.50
1370 Center Dr (Dig & Replace, Pond Maintenance)	\$221,232.78
2610 Amberly Dr (Culvert Replacement)	\$335,830.00
Estimated Remaining balance	\$1,871,867.24



100-YEAR DESIGN STORM PIPES CHART

Line	Line ID	To Line	Line Length (ft)	Incr. Area (ac)	Total Area (ac)	Incr. Coeff. (C)	Incr C x A	Total C x A	Inlet Time (min)	Rnfal Conc (min)	Total Int (in/hr)	Adnl Runoff (cfs)	Total Flow (cfs)	Capac Full (cfs)	Veloc (ft/s)	Pipe Size (in)	Pipe Material	Manning's n	Pipe Slope (%)	Inv Elev Dn (ft)	Inv Elev Up (ft)	HGL Dn (ft)	HGL Up (ft)	Grnd/Rim Dn (ft)	Grnd/Rim Up (ft)	
1	2.1	Outfall	12.41	0.63	2.79	0.54	0.34	1.49	10.0	11.1	8.1	12.01	0	12.01	12.99	7.32	18	RCP	0.013	1.53	965.94	966.13	967.08	967.44	972.30	973.28
2	2.2	1	32.51	2.16	2.16	0.53	1.14	1.14	11.0	11.0	8.1	9.29	0	9.29	10.58	6.24	18	RCP	0.013	1.00	967.00	967.33	968.09	968.51	973.28	973.56
3	1.1	Outfall	77.10	0	0	0	0	0	0	0	0	0	140.8	140.8	355.7	11.11	84x48	BOX RCP	0.013	0.90	960.31	961.00	962.15	964.60	970.84	968.73

10-YEAR DESIGN STORM GUTTER SPREAD CHART

Line No.	Inlet ID	Bypass Line No.	Area (ac)	Inlet Time (min)	Int. Runoff Coeff. (C)	Q= Runoff (cfs)	Q= Carry-over (cfs)	Q= Captured (cfs)	Q= Bypassed (cfs)	Junct Type	Curb Height (in)	Curb Length (ft)	Grate Area (sqft)	Grate Length (ft)	Grate Width (ft)	Gutter Slope (ft/ft)	Gutter Width (ft)	Cross Slope, Sw (ft/ft)	Cross Slope, Sx (ft/ft)	Local Depr. (in)	Inlet Depth (ft)	Bypass Depth (ft)	Bypass Spread (ft)	Gutter Depth (ft)	Gutter Spread (ft)
1	2.1	Sag	0.63	10	6.09	0.54	2.07	0	2.07	0	6	13	.....	.....	.....	Sag	1.5	0.05	0.02	6	0.69	n/a	n/a	0.19	7.43
2	2.2	Sag	2.16	11	5.9	0.53	6.75	0	6.75	0	6	13	.....	.....	.....	Sag	1.5	0.05	0.02	6	0.87	n/a	n/a	0.37	16.34

24 HOUR CONTACT:
CITY OF DUNWOODY @ (678) 382-6700

LIMIT OF DISTURBANCE =
0.20 ACRES



Know what's below.
Call before you dig.

- NOTES:
- CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL. TRAFFIC CONTROL SHALL MEET MUTCD REQUIREMENTS.
 - CONCRETE BOX CULVERT SHALL BE GDOT STANDARD 2530P OR ENGINEER APPROVED EQUAL.
 - SANITARY SEWER REPLACEMENT REQUIREMENTS/SPECIFICATIONS INCLUDING BUT NOT LIMITED TO: DEMOLITION, ENCASEMENT, INSTALLATION, AND MATERIALS; SHALL BE IN ACCORDANCE WITH THE DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT'S DESIGN STANDARDS MANUAL FOR POTABLE WATER MAIN, GRAVITY SANITARY SEWER, SANITARY SEWER PUMPING STATION AND FORCE MAIN DESIGN STANDARDS, LATEST EDITION.
 - CONTRACTOR SHALL MAINTAIN SANITARY LATERAL SERVICE DURING ENTIRETY OF CONSTRUCTION PROCESS. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING LATERAL AND/OR CLEANOUT IF DAMAGED DURING CONSTRUCTION PROCESS. SEE NOTE 3 FOR SANITARY SEWER REPLACEMENT REQUIREMENTS/SPECIFICATIONS.
 - CONTRACTOR SHALL SUBMIT ASBUILTS (BOTH HARD COPY AND ELECTRONIC FILES DGN/CADD) TO DEKALB COUNTY'S DEPARTMENT OF WATERSHED MANAGEMENT (DWM) AT THE COMPLETION OF THE WORK.
 - CONTRACTOR SHALL COORDINATE WITH DWM TO ENSURE A DWM INSPECTOR IS PRESENT ON SITE FOR ANYWALL WORK PERFORMED ON ITS FACILITIES.
 - CONTRACTOR SHALL GIVE THE PUBLIC NO LESS THAN 72 HOURS ADVANCE NOTICE PRIOR TO PERFORMING WORK ON DWM FACILITIES (PROPER ADVANCED NOTIFICATION CAN BE COORDINATED WITH DWM'S OUTREACH DEPARTMENT).

REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	2019-03-29	MS	SUBMITTAL
2	2019-05-09	NS	EX. COND. / EASEMENTS
3	2019-06-07	PEC	STAFF COMMENTS
4	2019-07-31	MS	STAFF COMMENTS
5	2019-09-18	MS	HEADWALL/CULVERT DETAIL

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GRADING & UTILITY PLAN



SCALE: 1" = 10'
DATE: 05/02/2018
PROJECT: 18119.00

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.



GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION # 0000067548 EXP. 12/21/2021



C2.00

SHEET