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Storm Sewer Profiles  
Prepared For:  
**DUNKIN' DONUTS**

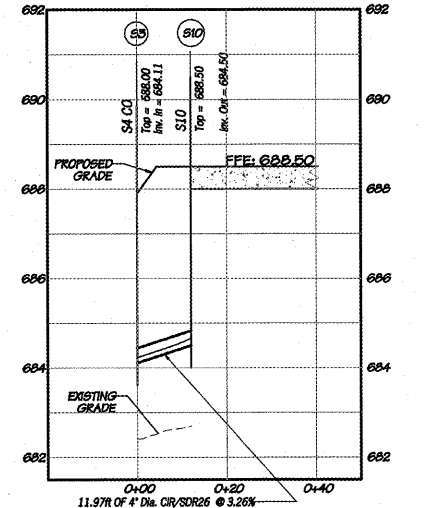
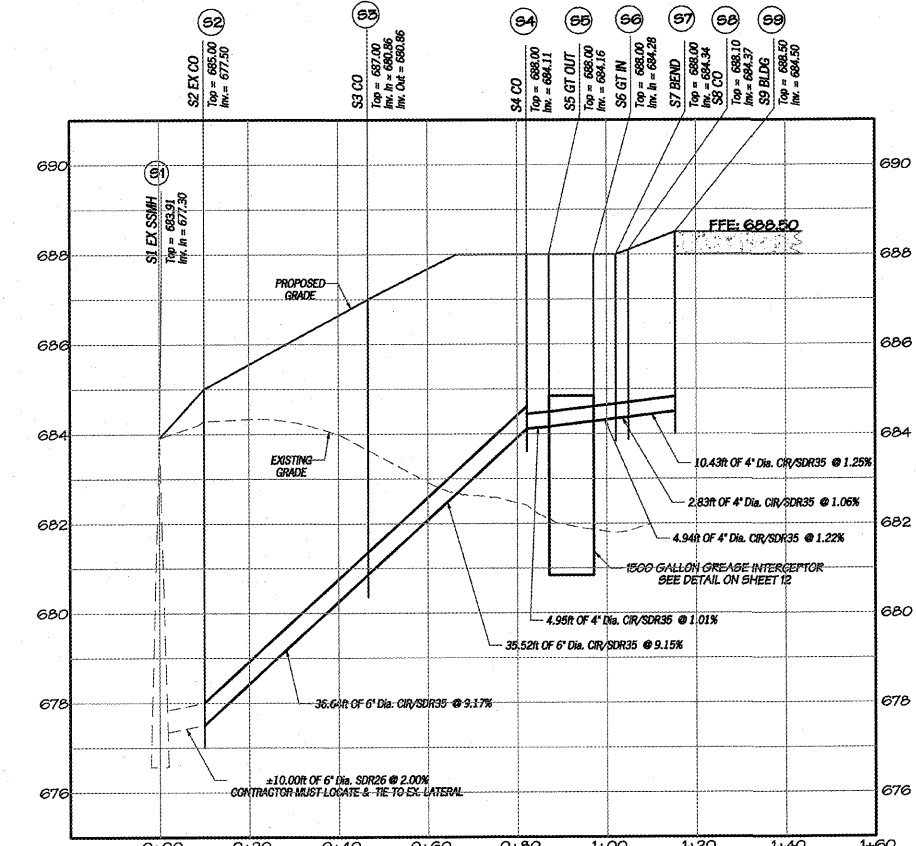
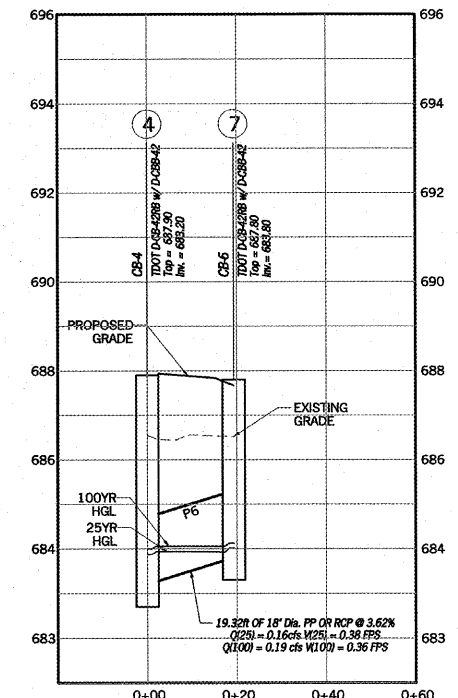
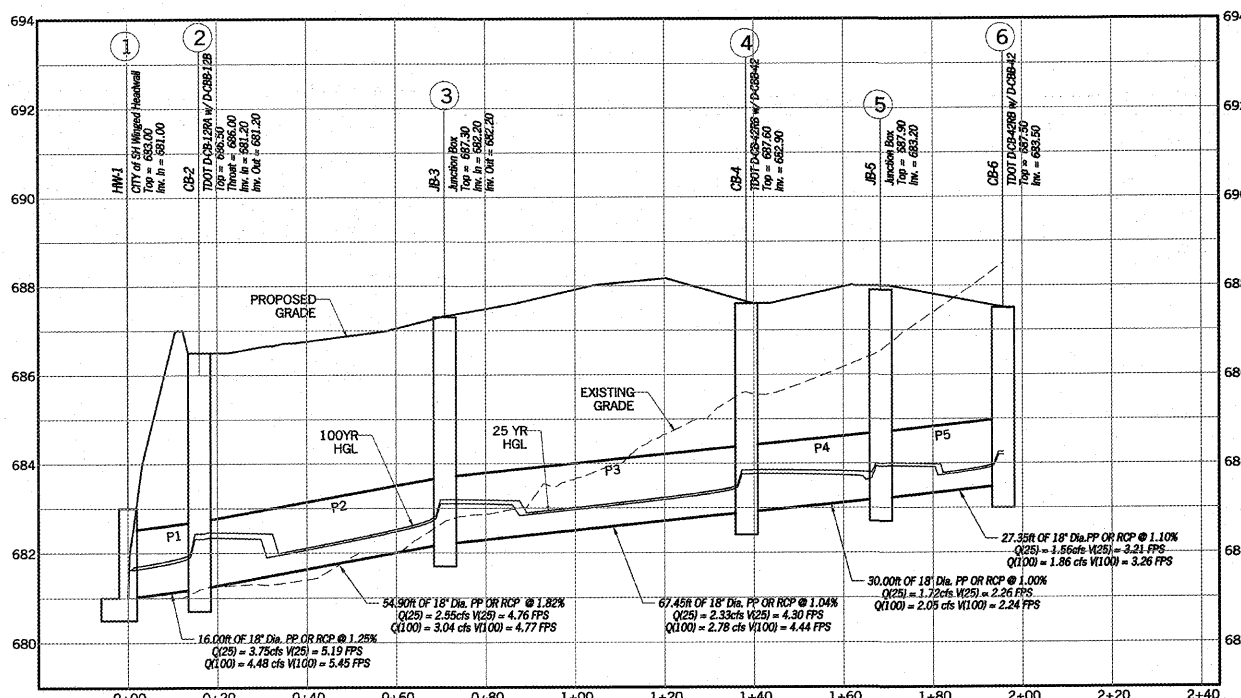
Developer:  
**SHULER DEVELOPMENT, LLC.**  
6400 POWERS FERRY RD  
SUITE 350  
ATLANTA, GA 30339  
770-303-8200

DATE	RELEASE DESCRIPTION
06-19-17	REVISION PER STAFF COMMENTS (06-16-17)
07-02-17	REVISION PER WORK SESSION COMMENTS (06-26-17)
07-07-17	REVISION PER CITY COMMENT
07-11-17	REVISION PER PLANNING COMMISSION COMMENTS

DATE: JUNE 11, 2017  
THIRD CIVIL DISTRICT  
A: Map 027, 30.06  
B: Map 027, 01.02  
CITY: SPRING HILL  
COUNTY: MAURY  
STATE: TENNESSEE  
JOB NUMBER:  
2016.095

**STORMWATER NOTES**

- WARNING! UTILITY LINES:**  
THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND UTILITY WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF OVERHEAD OR UNDERGROUND SERVICES, THE UTILITY COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION. THE UNDERGROUND UTILITY LINES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED AT THIS TIME FROM THE INFORMATION OBTAINED FROM THE SURVEY. THE CONTRACTOR SHALL CONTACT EACH OF THESE COMPANIES PRIOR TO BEGINNING CONSTRUCTION AND HAVE THEM DETERMINE THE EXACT LOCATION AND TYPE OF THEIR SERVICES.
- SITE BENCHMARK NOTE:**  
CONTRACTOR SHALL ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION. EXISTING BENCHMARK MUST BE REVERIFIED AND APPROVED BY THE ENGINEER/SURVEYOR PRIOR TO USE.
- STORMWATER NOTES:**
1. ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE & LEFT IN SLIGHTLY CONDITION. ALL EXPOSED SURFACE OF EMBANKMENT, SPILLWAY, SPOIL, BORROW AREAS AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH LOCAL NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATION.
  2. PIPES DEEPER THEN 10' REQUIRE TRENCH BOX PER OSHA CODE. BACKFILL ON PIPES WITH #57 STONE.
  3. INVERTS ON ALL STRUCTURES TO BE PAVED SMOOTH.
  4. ALL METAL PIPES USED MUST BE BCCMP WITH RE-ROLLED ENDS AND HUGGER/CORRUGATED BANDS USED FOR CONNECTIONS.
  5. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS," LATEST EDITION.
  6. ALL CMP TO BE ASPHALT COATED WITH PAVED INVERTS OR ALUMINUM TYPE II.
  7. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS," LATEST EDITION.
  8. ALL CMP TO BE ASPHALT COATED WITH PAVED INVERTS OR ALUMINUM TYPE II.
  9. NO WOODY VEGETATION IS ALLOWED WITHIN 15' OF THE DOWNSTREAM TOE OF EARTHEN EMBANKMENT.
  10. FIELD VERIFY SUITABILITY OF TIE-INS TO EXISTING STORM STRUCTURES.
  11. NOTE THAT ALL INVERTS ARE INSIDE OF STRUCTURE PIPE INVERTS.
  12. REINFORCED CONCRETE PIPE SHALL CONFORM TO THE MINIMUM STANDARDS FOR CLASS III REINFORCED PIPE AND SHALL BE UTILIZED UNDER ROADWAYS AND ALL PAVED AREAS WHETHER PUBLIC OR PRIVATE DEVELOPMENTS. ALL RCP STORM WATER PIPES AND STRUCTURE JOINTS AND CONNECTIONS SHALL BE GROUTED, WITH NON-SHRINK GROUT, AND/OR OTHERWISE SEALED BOTH INSIDE AND OUT. BUTYLENE GASKET MATERIALS SHALL ALSO BE UTILIZED WITHIN PRE-CAST MANHOLES AND STRUCTURES TO FURTHER SEAL THE JOINTS AND CONNECTIONS. CONCRETE AND HOPE STORM PIPING CONNECTIONS SHALL BE SEALED WITH PROPER COLLAR RINGS WHEN APPLICABLE AND DIRECTED BY THE CITY OF SPRING HILL.
  13. DUAL WALL POLYPROPYLENE (PP) STORM DRAINAGE PIPE (18" - 60") SHALL ALSO BE ALLOWED FOR USE WITHIN PAVED AREAS (PUBLIC AND PRIVATE) ONLY IF THE INSTALLATION REQUIREMENTS AND BACKFILL MATERIALS ARE UTILIZED AS RECOMMENDED BY THE MANUFACTURER. DUAL WALLED SMOOTH INTERIOR PP PIPE SHALL BE IN ACCORDANCE WITH MASH TO HB SECTION 30-341, 8-16 AND 10-21 ALONG WITH ASTM C295, C1103, D2321, D3212, F477, F1417, F2487, F2736, AND F2881. DETECTABLE WARNING TAPE SHALL BE UTILIZED IN THE TRENCH OF THE PP PIPE WHEN INSTALLED. A MINIMUM COVER OF 2'-FEET IS REQUIRED ON ALL PP PIPE SIX INCHES OF PIPE BEDDING OF TYPICAL #57 STONE SHALL BE REQUIRED FOR ALL PP PIPE. A MINIMUM COVER OF TWO FEET IS REQUIRED FOR ALL STORM DRAINAGE PIPE INSTALLATION WHETHER RCP OR PP PIPE. APPROVED BACKFILL SOIL MATERIAL, FREE OF ANY ROCK MATERIAL GREATER THAN 2IN. OR TOTAL DEPTH BACKFILL WITH TYPICAL #57 STONE SHALL BE ALLOWED. APPROVED SOIL BACKFILL SHALL BE AT MAXIMUM LIFTS OF 8" COMPACTED TO 98% DENSITY. WHERE IN PUBLIC OR PRIVATE ROADWAYS, IF SOIL BACKFILL IS UTILIZED, AN ADDITIONAL 2-YEAR MAINTENANCE BOND IS REQUIRED ABOVE THE STANDARD ONE YEAR MAINTENANCE BOND TO ASSURE NO SETTLEMENT OR PIPE FAILURES OCCUR. STANDARD HOPE PIPING MAY BE UTILIZED OUTSIDE OF PAVED AREAS AS LONG AS ITS INSTALLATION IS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, SUITABLE BEDDING AND SOIL, FREE OF ROCKS, BACKFILL WILL BE REQUIRED. MINIMUM COVER ABOVE HOPE PIPING SHALL BE 2'-FEET.



**PIPE CHART - DD Smyrna**

PIPE ID	P1	P2	P3	P4	P5	P6
Time of Concentration (min)	5.0	n/a	5.0	n/a	5.0	5.0
Drainage Area (acres)	0.158	0.026	0.080	n/a	0.242	0.026
Rainfall Intensity (in/hr)	8.45	8.45	8.45	8.45	8.45	8.45
Runoff Coefficient	0.90	n/a	0.91	n/a	0.76	0.73
25-year Runoff to Structure (cfs)	1.20	n/a	0.61	n/a	1.56	0.16
100-year Runoff to Structure (cfs)	1.44	n/a	0.73	n/a	1.86	0.19
25-year Cumulative Flow (cfs)	3.75	2.25	2.33	1.72	1.56	0.16
100-year Cumulative Flow (cfs)	4.48	3.04	2.78	2.05	1.86	0.19
Manning's n	0.024	0.024	0.024	0.024	0.024	0.024
25-year Velocity (fps)	5.19	4.76	4.30	2.26	3.21	0.38
100-year Velocity (fps)	5.95	4.77	4.44	2.24	3.26	0.36
Pipe Material	PP/RCP	PP/RCP	PP/RCP	PP/RCP	PP/RCP	PP/RCP
Pipe Diameter (inches)	18	18	18	18	18	18
Pipe Slope (ft/ft)	0.0125	0.0182	0.0104	0.1000	0.0110	0.0362
Pipe Length (feet)	16.00	54.94	67.45	30.00	27.35	19.32
Inlet Invert	681.20	682.20	682.90	683.20	683.50	685.80
Outlet Invert	681.00	681.20	682.00	682.90	683.20	685.10
Structure at Entrance of Pipe	CB2	JB3	CB4	JB5	CB6	CB7
Structure at Outlet of Pipe	HW1	CB2	JB3	CB4	JB5	JB5

24-HR CONTACT  
ALLEN CURTIS  
770-303-8200

