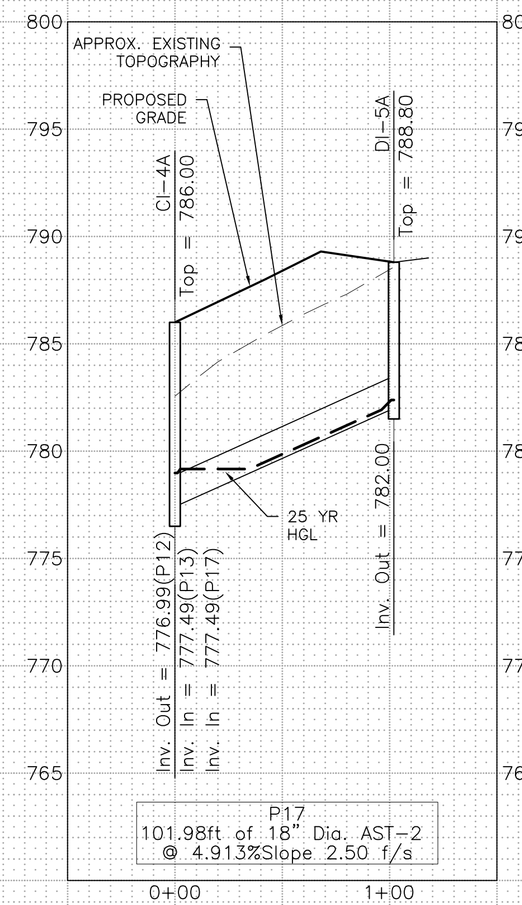


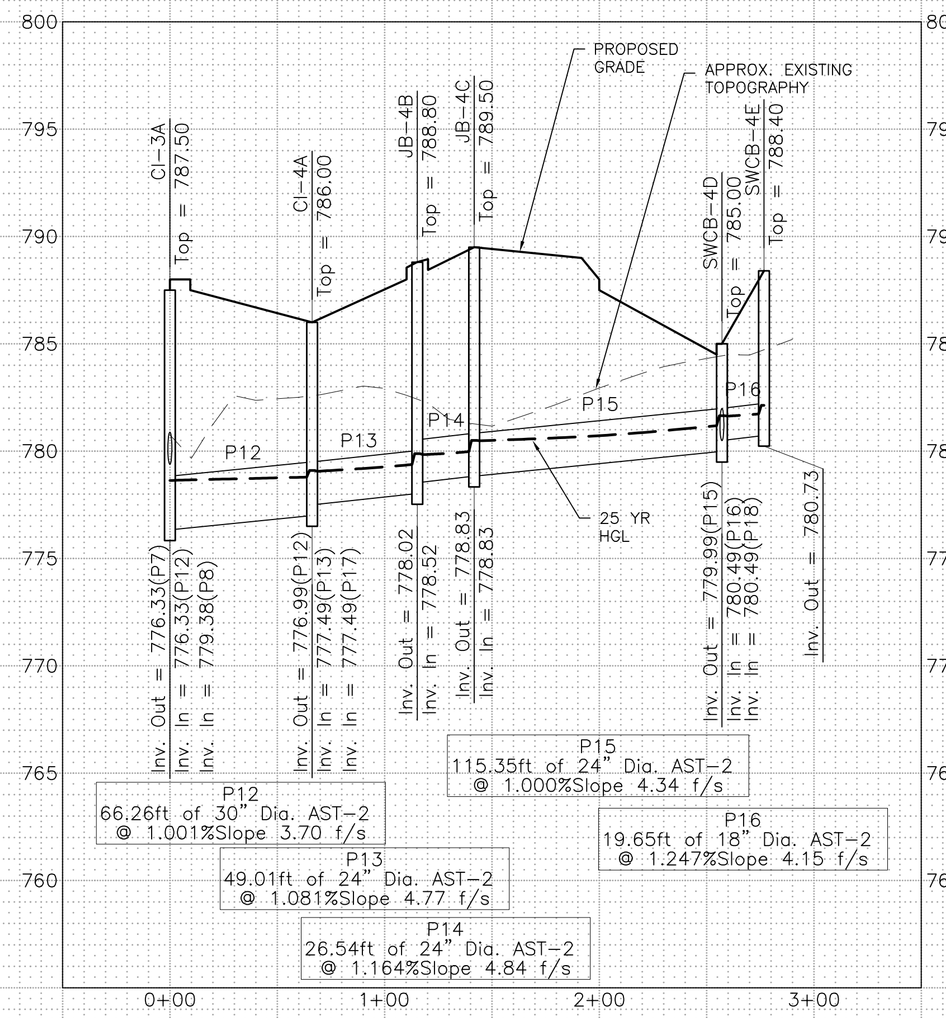


## PIPED SYSTEMS NOTES

1. DESIGN RUNOFF AND HYDRAULIC CAPACITY SHALL DETERMINE PIPE SIZE. THE MINIMUM ALLOWABLE PIPE DIAMETER SHALL BE 18 INCHES.

2. STORM DRAIN PIPES SHALL BE CONSTRUCTED OF CLASS III REINFORCED CONCRETE (OR GREATER), HIGH DENSITY POLYETHYLENE CORRUGATED-SMOOTH LINED PIPE, OR CORRUGATED STEEL PIPE. PIPE MATERIALS, RELATED CONNECTIONS AND FITTING SHALL MEET THE REQUIREMENTS BELOW.

   REINFORCED CONCRETE – AASHTO M 1 70 ASTM C 969 MINIMUM EIGHT (8) FOOT JOINT LENGTHS BELL & SPIGOT WITH RUBBER O-RING GASKET CONFORMING TO ASTM C-36 1 , CLASS OF PIPE AND WALL THICKNESS SHALL BE IN ACCORDANCE WITH 1030D, GEORGIA DOT SPECIFICATION, TABLE 1, AND SHALL BE APPROVED ON GEORGIA DOT QPL #04

   CORRUGATED STEEL PIPE, ALUMINIZED TYPE II CORRUGATED CULVERT – AASHTO M36 AASHTO M274, ASTM C-969, 12 GAUGE MINIMUM, SHALL BEAPPROVED ON GEORGIA DOT QPL #56, SHALL BE USED ONLY WHEN PIPE VELOCITIES ARE LESS THAN. 5 FPS, BACKFILL SOIL SHALL BE TESTED BY A GEOTECHNICAL ENGINEER TO ENSURE PH IS GREATER THAN 6.0 AND SOIL RESISTIVITY IS GREATER THAN 1,500 OHM/CM.

3. FOUNDATION AND BEDDING: UNSUITABLE OR UNSTABLE FOUNDATIONS SHALL BE UNDERCUT AND REPLACED WITH SUIT-ABLE MATERIAL A 4" – 6" BEDDING AND HAUNCHING MATERIALS UP TO THE SPRING-LINE SHALL BE PLACED WITH BACK-FILL WITH LESS THAN 50% PASSING THE #200 SIEVE PLASTICITY INDEX LESS THAN 1 0 WITH MAXIMUM PARTICLE SIZE OF 1.25 INCHES, COMPACTED TO MINIMUM 90% STANDARD PROCTOR DENSITY AS PER AASHTO T99. ALL BACKFILL TO BE PLACED IN 8" MAX. LIFTS. PIPES SHALL BE INSTALLED IN A DRY TRENCH.

4. BACKFILL ABOVE SPRING-LINE RCP SHALL BE PLACED WITH BACKFILL WITH LESS THAN 50% PASSING THE #200 SIEVE PLASTICITY INDEX LESS THAN 10 WITH MAXIMUM PARTICLE SIZE OF 1 25 INCHES COMPACTED TO MINIMUM 90% STANDARD PROCTOR DENSITY AS PER AASHTO T99 ALL BACKFILL TO BE PLACED IN 8 MAX LIFTS.

5. ALL PIPES SHALL BE LAID IN A STRAIGHT LINE BETWEEN STRUCTURES JUNCTION BOXES SHALL BE INSTALLED WHERE THE STORM DRAIN CHANGES DIRECTION AND WHERE ONE PIPE OR MORE INTERSECT

6. PIPE UNDER TRAVEL BEARING SURFACES: HDPE PIPE MAY BE INSTALLED IN TRAVEL BEARING APPLICATIONS WHEN THE ADT IS LESS THAN 15,000. REINFORCED CONCRETE PIPE SHALL BE USED IN ALL OTHER STREET CROSSINGS.

7. STORM WATER PIPES CARRYING LIVE STREAMS SHALL BE REINFORCED CONCRETE OR HDPE.

8. ALL STORM DRAINAGE PIPES SHALL BE AT LEAST 18 INCHES BELOW THE SURFACE AND SHALL HAVE A SLOPE OF AT LEAST 1 PERCENT.

**PIPE CHART**

| Pipe # | Pipe Mat. | Location | Inlet Type | D.A. (Acres) | C | Tc (Min) | I 25 (in/Hr) | Q 25 (cfs) | Q (Sum) (cfs) | Slope % | Lgth. +/-(ft.) | Size (in) | Vel. (fps) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pipe # | Pipe Mat. | Location | Inlet Type | D.A. (Acres) | C | Tc (Min) | I 25 (in/Hr) | Q 25 (cfs) | Q (Sum) (cfs) | Slope % | Lgth. +/-(ft.) | Size (in) | Vel. (fps) |
| 19 | AST-2 | 7A-2D | CI | 0.20 | 0.95 | 5 | 8.28 | 1.60 | 1.60 | 1.00 | 63.98 | 18 | 3.06 |
| 18 | AST-2 | 6A-4D | SWCB | 0.13 | 0.95 | 5 | 8.28 | 1.05 | 1.05 | 1.00 | 29.00 | 18 | 1.12 |
| 17 | AST-2 | 5A-4A | CI | 0.06 | 0.95 | 5 | 8.28 | 0.49 | 0.49 | 1.00 | 101.98 | 18 | 2.50 |
| 16 | AST-2 | 4E-4D | SWCB | 0.71 | 0.95 | 5 | 8.28 | 5.57 | 5.57 | 1.00 | 19.65 | 18 | 4.15 |
| 15 | AST-2 | 4D-4C | SWCB | 0.39 | 0.95 | 5 | 8.28 | 3.05 | 9.68 | 1.00 | 115.35 | 24 | 4.34 |
| 14 | AST-2 | 4C-4B | JB | 0.00 | 0.95 | 5 | 8.28 | 0.00 | 9.68 | 1.00 | 26.54 | 24 | 4.84 |
| 13 | AST-2 | 4B-4A | JB | 0.24 | 0.95 | 5 | 8.28 | 1.90 | 11.57 | 1.00 | 49.01 | 24 | 4.77 |
| 12 | AST-2 | 4A-3B | CI | 0.48 | 0.95 | 5 | 8.28 | 3.75 | 15.32 | 1.00 | 66.26 | 30 | 3.70 |
| 11 | AST-2 | 3E-3D | SWCB | 0.05 | 0.95 | 5 | 8.28 | 0.39 | 0.39 | 2.00 | 17.13 | 18 | 2.26 |
| 10 | AST-2 | 3D-3C | CI | 0.17 | 0.95 | 5 | 8.28 | 1.34 | 1.74 | 1.20 | 128.84 | 18 | 3.33 |
| 9 | AST-2 | 3C-3B | CI | 0.15 | 0.95 | 5 | 8.28 | 1.17 | 2.91 | 1.00 | 82.99 | 18 | 4.51 |
| 8 | AST-2 | 3B-3A | DI | 0.08 | 0.95 | 5 | 8.28 | 0.66 | 18.89 | 1.00 | 88.43 | 24 | 4.62 |
| 7 | AST-2 | 3A-2B | CI | 0.13 | 0.95 | 5 | 8.28 | 1.00 | 19.89 | 1.00 | 86.56 | 36 | 6.14 |
| 6 | AST-2 | 2F-2E | JB | 2.00 | 0.35 | 5 | 8.28 | 5.80 | 5.80 | 1.50 | 185.88 | 24 | 2.96 |
| 5 | AST-2 | 2E-2D | DI | 4.77 | 0.35 | 5 | 8.28 | 13.82 | 19.62 | 2.00 | 144.81 | 24 | 7.33 |
| 4 | AST-2 | 2D-2C | DI | 0.32 | 0.95 | 5 | 8.28 | 2.50 | 22.62 | 1.00 | 85.57 | 36 | 4.85 |
| 3 | AST-2 | 2C-2B | CI | 0.21 | 0.95 | 5 | 8.28 | 1.65 | 24.26 | 1.00 | 67.16 | 36 | 6.17 |
| 2 | AST-2 | 2B-2A | JB | 0.00 | 0.95 | 5 | 8.28 | 0.00 | 44.16 | 1.00 | 15.54 | 42 | 5.20 |
| 1 | RCP | OCS1-1A | OCS | 0.00 | 0.95 | 5 | 8.28 | 0.00 | 0.00 | 1.00 | 57.00 | 30 | 7.80 |

25 YEAR HGL
PROPOSED GRADE
APPROX. EXISTING GRADE

ALL PIPES CARRYING A LIVE STREAM MUST HAVE PAVED INVERTS.
MINIMUM GROUND COVER OF 1'-0" FOR PIPES.
MINIMUM VERTICAL SEPARATION BETWEEN PIPES IS 1'.
ABBREVIATION KEY:
AST2 = ALUMINIZED STEEL TYPE 2 PIPE
RCP = REINFORCED CONCRETE PIPE

STORM SEWER PROFILES
SCALE: HORIZ; 1"=50'
VERT; 1"=5'


WARNING:
Contractors, subcontractors, vendors and suppliers are advised that the contract documents consist of Engineer-reproduced printed, bound, and numbered specifications, Engineer-reproduced printed, bound and numbered blue or black line prints, addenda, post-bid addenda, and change orders only. Documents reproduced by parties other than Engineer, whether in hard copy or electronic format shall not be considered part of contract documents and do not supersede the provisions of the contract documents. The contractor, subcontractor, vendors, and suppliers are solely responsible for verification that information utilized in bidding, development of shop drawings and construction of facility are identical to contract documents.


04-0520 PIPECHART 7-31-2007.xls

5/22/2008

24 HOUR CONTACT
TRANSCLARKE PROPERTIES, LLC
TOM FORKNER
770-448-3385

IF YOU DIG IN GEORGIA
CALL US FIRST
(800) 282-7411
UTILITIES PROTECTION CENTER
IT'S THE LAW


GEORGIA REGISTERED PROFESSIONAL ENGINEER 22172 ARCHIS WHITLEY
GEORGIA REGISTERED PROFESSIONAL ENGINEER 22021 KEVIN D. WHIGHAM
LEVEL II E&S CERT.#945
EXP. DATE 09-27-08

MDA
McFARLAND-DYER & ASSOCIATES
4174 SILVER PEAK PARKWAY
SUWANEE, GEORGIA 30024
PHONE (770) 932-6550
FAX (770) 932-6551
WWW.GOMDA.NET


OWNER:
TRANSCLARKE PROPERTIES, LLC
5855 JIMMY CARTER BLVD.
NORCROSS, GEORGIA 30071
PHONE (770) 448-3385
MR. TOM FORKNER

PROJECT:
ATHENS AUTO MALL
CAMD 241
ATHENS-CLARKE COUNTY, GEORGIA

| DATE | DESCRIPTION |
|---|---|
| 07-31-2007 | FIRST SUBMITTAL |
| 08-21-2007 | 2ND SUBMITTAL |
| 10-8-2007 | GDOT SUBMITTAL |
| 01-15-2008 | R.SUBMITTAL |
| 01-31-2008 | W&S COMMENTS |
| 02-19-2008 | W&S APPROVAL |
| 05-22-2008 | 3RD SUBMITTAL |

JOB NO: 04-0520
DRAWN BY: CSM
CHECKED BY: JCW & KDW


COPYRIGHT 2007
McFARLAND-DYER & ASSOCIATES, INC.


STORM SEWER PROFILES
C-8.1