

# CIVIL DESIGN DRAWINGS

## FOR

# CITY OF STOCKBRIDGE

# STORMWATER IMPROVEMENTS

## JUNE, 2017

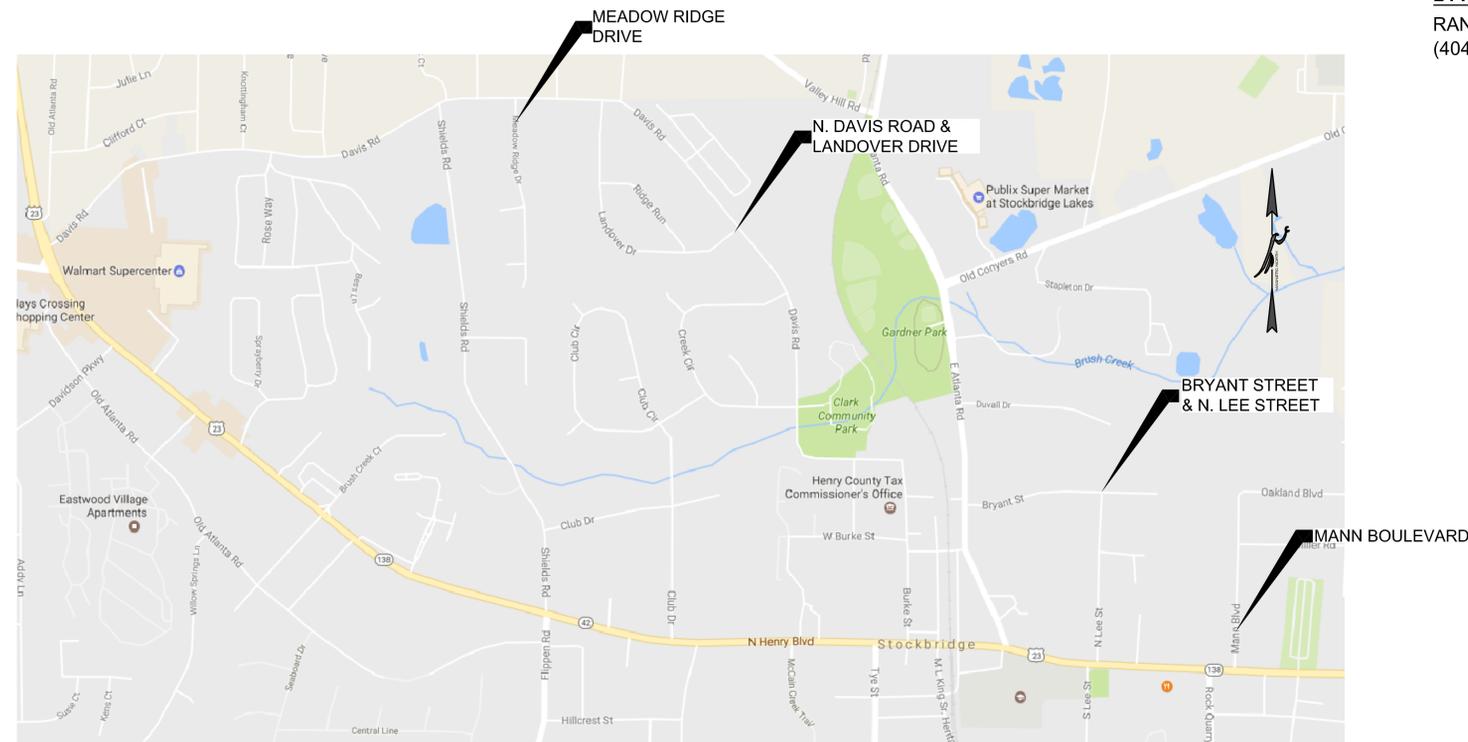
**CITY OFFICIALS:**  
 JUDY B. NEAL - MAYOR  
 ANTHONY S. FORD - MAYOR PRO TEM  
 ELTON ALEXANDER - COUNCIL MEMBER  
 LAKEISHA T. GANTT - COUNCIL MEMBER  
 JOHN BLOUNT - COUNCIL MEMBER  
 NEAT ROBINSON - COUNCIL MEMBER  
 DECIUS AARON - PUBLIC WORKS DIRECTOR  
 VANESSA HOLIDAY - CITY CLERK

**OWNER:**  
 CITY OF STOCKBRIDGE  
 4640 NORTH HENRY BLVD  
 STOCKBRIDGE, GA 3028

**24 HOUR CONTACT:**  
 RANDY WILLIS  
 (404) 353-5057

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VICINITY MAP  
 N.T.S.



COVER SHEET  
 FOR  
**STORMWATER IMPROVEMENTS**  
 FOR THE  
 CITY OF STOCKBRIDGE  
 HENRY COUNTY, GEORGIA

| REVISIONS |  |
|-----------|--|
| 1.        |  |
| 2.        |  |
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| 4.        |  |

Know what's below.  
 Call before you dig.  
 811  
 UNIFORMED SERVICES FOR THE DISABLED  
 NATIONAL CENTER FOR PROMOTING SAFETY  
 OR: 811

|              |            |
|--------------|------------|
| DATE:        | 06/30/2017 |
| SCALE:       | N/A        |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |



SHEET NUMBER  
**1.0**

# GENERAL NOTES:

## GENERAL NOTES:

- CAUTION, UNDERGROUND SERVICE ALERT! THE CONTRACTOR SHALL TELEPHONE TOLL FREE 1-800-282-7411 OR 811 A MINIMUM OF 48 HOURS PRIOR TO THE START OF ANY EXCAVATION AS SHOWN AND NOTED ON THE APPROVED PLANS.
- ALL NECESSARY PERMITS TO PERFORM THE WORK AS SHOWN AND NOTED HEREON SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION FROM CITY OF STOCKBRIDGE.
- UNDERGROUND UTILITY LINE LOCATIONS (IF ANY) ARE APPROX. ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF ANY SUCH UTILITIES. UTILITIES SHOWN ON PLANS ARE FOR THE CONTRACTORS CONVENIENCE ONLY, THE ENGINEER ASSUMES NO RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS. CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY EXISTING UTILITIES WILL EFFECT OR IMPEDE THE PROGRESSION OR COMPLETION OF THE DESIGN INTENT OF THESE CONSTRUCTION DOCUMENTS.
- THERE IS NO 100 YEAR FLOOD PLAIN ON THIS SITE PER FEMA FLOOD PLAIN COMMUNITY PANEL NUMBER 13151C0086D DATED OCTOBER 6, 2016.
- THERE ARE NO STATE WATERS LOCATED WITHIN 200 FT. OF ANY PROJECT SITE.
- THE CONTRACTOR SHALL COORDINATE RELOCATION OF ANY EXISTING UTILITIES WITH THE APPROPRIATE UTILITY ENTITY PRIOR TO THE START OF ANY CONSTRUCTION.
- THE OWNER SHALL DIRECT THE CONTRACTOR AS TO WHAT EXISTING VEGETATION ON SITE SHALL BE REMOVED BEYOND THE CLEARING LIMITS AS SHOWN AND NOTED HEREON. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN PROTECTING EXISTING TREES. COORDINATE ALL TREE REMOVAL WITH OWNER PRIOR TO THE START OF ANY CONSTRUCTION.
- MISCELLANEOUS MAPPING NOTES:
  - UTILITIES SHOWN ARE LOCATIONS OF GROUND IDENTIFIABLE ITEMS. ADDITIONAL UTILITIES MAY EXIST ABOVE OR BELOW THE GROUND. THE SURVEYOR & ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE COMPLETENESS OF THIS DATA.
  - THIS PROPERTY IS SUBJECT TO ALL RIGHT-OF-WAYS & EASEMENTS SHOWN OR NOT SHOWN, RECORDED OR NOT RECORDED.
- THE CONTRACTOR SHALL REMOVE AND ABANDON EXISTING UTILITIES ONLY AFTER APPROVAL FROM ALL INTERESTED PARTIES. THESE FACILITIES MAY INCLUDE, BUT NOT BE LIMITED TO: EXISTING ON-SITE DRAINAGE PIPING, ON-SITE PRIVATE ELECTRICAL LINES AND APPURTENANCES, ABANDONED EROSION CONTROL DEVICES AND STRUCTURES. THE CONTRACTOR SHALL COORDINATE ANY AND ALL ABANDONMENT AND/OR RELOCATION WITH THE APPROPRIATE UTILITY COMPANIES OR ENTITY. ANY DISPOSAL OF SAID FACILITIES SHALL BE DONE IN ACCORDANCE WITH LOCAL UTILITY AND/OR GOVERNMENTAL REGULATIONS. RELOCATION AND/OR ABANDONMENT OF SAID FACILITIES AND/OR UTILITIES SHALL BE DONE AT THE EXPENSE OF THE OWNER/DEVELOPER. PERMITS (IF ANY) SHALL BE OBTAINED BY THE CONTRACTOR AND/OR OWNER/DEVELOPER.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT PRIOR TO ORDERING PROJECT MATERIALS, THAT THE MOST CURRENT SET OF CONSTRUCTION DOCUMENTS HAVE BEEN OBTAINED FROM THE PROJECT ENGINEER INCLUDING, BUT NOT LIMITED TO, THE PERMITTED SET(S) FROM ALL APPLICABLE AGENCIES AS APPROPRIATE. THE PROJECT ENGINEER ACCEPTS NO RESPONSIBILITY FOR IMPROPER ORDERING OF MATERIALS.
- ALL CONSTRUCTION MUST CONFORM TO CITY OF STOCKBRIDGE AND THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, WHETHER OR NOT REVIEW COMMENTS WERE MADE.
- ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL SILT BARRIER INSTALLATION AND STORMWATER MANAGEMENT FACILITIES ARE CONSTRUCTED.
- SILT BARRIERS TO BE PLACED AS SHOWN AND/OR AS DIRECTED BY PROJECT ENGINEER AND/OR THE CITY OF STOCKBRIDGE REPRESENTATIVE.
- NOTIFY CITY OF STOCKBRIDGE INSPECTOR 24 HOURS PRIOR TO CONSTRUCTION.
- THE ENGINEER HAS REVIEWED THE APPROPRIATE LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING DEVELOPMENT ACTIVITIES ADJACENT TO FLOOD PLAINS AND WETLANDS AND HAVE DETERMINED THAT THIS DEVELOPMENT PLAN SATISFIES THE STANDARDS PRESENTED IN APPLICABLE REGULATIONS.
- ALL EROSION AND SEDIMENTATION CONTROLS, AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.
- SIGNING AND STRIPING TO BE PROVIDED BY THE CONTRACTOR ACCORDING TO M.U.T.C.D. SPECIFICATIONS.
- ALL FILL AREAS MUST BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR.
- ALL STORM PIPE AND STRUCTURES SHALL COMPLY WITH GDOT STANDARDS FOR DESIGN, CONSTRUCTION, AND INSTALLATION.
- INVERTS ON ALL STORM STRUCTURES SHALL BE PAVED SMOOTH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIGNING AND MAINTENANCE OF TRAFFIC CONTROL DURING CONSTRUCTION IN ACCORDANCE WITH THE MUTCD, GDOT, AND CITY OF STOCKBRIDGE STANDARDS.

## STATE WATERS BUFFER NOTE:

THERE IS ESTABLISHED A 25 FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION. NO LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED WITHIN A BUFFER AND A BUFFER SHALL REMAIN IN ITS NATURAL, UNDISTURBED STATE OF VEGETATION UNTIL ALL LAND DISTURBING ACTIVITIES ON THE CONSTRUCTION SITE ARE COMPLETED. ONCE THE FINAL STABILIZATION OF THE SITE IS ACHIEVED, A BUFFER MAY BE THINNED OR TRIMMED OF VEGETATION AS LONG AS A PROTECTIVE VEGETATIVE COVER REMAINS TO PROTECT WATER QUALITY AND AQUATIC HABITAT AND A NATURAL CANOPY IS LEFT IN SUFFICIENT QUANTITY TO KEEP SHADE ON THE STREAM BED; PROVIDED, HOWEVER, THAT ANY PERSON CONSTRUCTING A SINGLE FAMILY RESIDENCE, WHEN SUCH RESIDENCE IS CONSTRUCTED BY OR UNDER CONTRACT WITH THE OWNER FOR HIS OR HER OWN OCCUPANCY, MAY TRIM OR TRIM VEGETATION IN A BUFFER AT ANY TIME AS LONG AS PROTECTIVE VEGETATIVE COVER REMAINS TO PROTECT WATER QUALITY AND AQUATIC HABITAT AND A NATURAL CANOPY IS LEFT IN SUFFICIENT QUANTITY TO KEEP SHADE ON THE STREAM.

## HOW TO USE THESE DRAWINGS:

- THE PLANS, PROFILES, DETAILS, SPECIFICATIONS AND OTHER DESIGN APPURTENANCES CONTAINED HEREIN ARE FOR INFORMATION, PERMITTING, AND CONSTRUCTION PURPOSES. THESE DOCUMENTS ARE NOT VALID FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE ENGINEER OF RECORD AND THE APPROPRIATE PERMITS ARE OBTAINED FROM LOCAL GOVERNING AUTHORITIES.
- ADDITIONAL PROVISIONS MAY BE REQUIRED DURING CONSTRUCTION DUE TO SITE CONDITIONS, WEATHER, OR REQUESTS BY THE INSPECTOR.
- THE FEATURES, DISTANCES, AND ANGLES ON THESE DRAWINGS SHALL NOT BE SCALED. IF THE NECESSARY DIMENSIONS ARE NOT PROVIDED, THE CONTRACTOR SHALL NOTIFY THE OWNER OR ENGINEER FOR CLARITY.
- PIPE LENGTHS ARE MEASURED TO THE CENTER OF THE STRUCTURES IN LINEAR HORIZONTAL FEET AND PIPE SIZES ARE MEASURED BY INSIDE DIAMETER IN INCHES UNLESS OTHERWISE NOTED.
- THE PROPOSED GRADING SHOWN ON THESE PLANS REPRESENTS THE FINISHED SURFACE ELEVATIONS UNLESS OTHERWISE NOTED.

## ACKNOWLEDGEMENT:

- THE PLANS, SPECIFICATIONS, AND REPORTS CONTAINED HEREIN ARE INSTRUMENTS OF FALCON DESIGN CONSULTANTS, LLC AND SHALL NOT BE COPIED, PUBLISHED, SOLD, OR OTHERWISE DISSEMINATED WITHOUT WRITTEN CONSENT BY FALCON DESIGN CONSULTANTS, LLC. UPON COMPLETION OF SAID DESIGN OR ASBUILTS, APPROVAL BY LOCAL GOVERNING AUTHORITIES, AND FULL COMPENSATION BY THE OWNER OR DEVELOPER, THESE PLANS, SPECIFICATIONS, AND REPORTS MAY BE RELEASED AT THE DISCRETION OF THE OWNER OR DEVELOPER AND THE LOCAL GOVERNING AUTHORITY. AT SUCH TIME FALCON DESIGN CONSULTANTS, LLC WILL MAKE THIS INFORMATION AVAILABLE IN PAPER OR ELECTRONIC FORMAT. ADDITIONAL FEES MAY APPLY.
- THE EXISTING UTILITIES, TOPOGRAPHY, AND SITE FEATURES SHOWN ON THESE DRAWINGS ARE ONLY THOSE RECEIVED BY THE SURVEYOR OF RECORD. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE EXISTING CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND FEATURES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE OWNER. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES OR STRUCTURES AT HIS OWN EXPENSE AT THE SUPERVISION OF THE APPROPRIATE UTILITY DEPARTMENT.
- THE REMOVAL OF EXISTING FEATURES ONSITE MAY REQUIRE A SEPARATE DEMOLITION PLAN AND PERMIT. THE CONTRACTOR SHALL OBTAIN THESE DOCUMENTS WHEN REQUIRED PRIOR TO COMMENCING ANY LAND DISTURBANCE ACTIVITY.
- ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL CODES AS APPLICABLE. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND LICENSES PRIOR TO COMMENCING CONSTRUCTION.

## GRADING NOTES: PLACEMENT AND COMPACTION

- GROUND SURFACE PREPARATION: REMOVE VEGETATION INCLUDING GRASS, ROOTS, AND SURFICIAL ORGANICS, DEBRIS, UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACEMENT OF FILLS, FLOW STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERT. TO 2 HORIZ. SO THAT FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN EXISTING GROUND SURFACE HAS A DENSITY LESS THAN THAT SPECIFIED UNDER COMPACTION FOR PARTICULAR AREA CLASSIFICATION, BREAK UP GROUND SURFACE, PULVERIZE, MOISTURE CONDITION TO OPTIMUM MOISTURE CONTENT, AND COMPACT TO REQUIRED DEPTH AND PERCENTAGE OF MAXIMUM DENSITY.
- PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 12 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT AND NOT MORE THAN 6 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
- BEFORE COMPACTION, MOISTEN AND AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. COMPACT EACH LAYER TO REQUIRED PERCENTAGE OF MAXIMUM DRY DENSITY OR RELATIVE DRY DENSITY FOR EACH AREA CLASSIFICATION. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
- COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OF FILL MAT'L TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 6" BELOW BOTTOM OF FINAL GRADE.
- MOISTURE CONTROL: WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE MOISTURE CONDITIONED BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE OR LAYER OF SOIL MAT'L. APPLY WATER IN MINIMUM QUANTITY AS NECESSARY TO PREVENT FREE WATER FROM APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.
- REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, SOIL MATERIAL THAT IS TOO WET TO PERMIT COMPACTION TO SPECIFIED DENSITY.
- SPREAD SOIL MATERIAL THAT HAS BEEN REMOVED BECAUSE IT IS TOO WET TO PERMIT COMPACTION. ASSIST DRYING BY DISCING, HARROWING, OR PULVERIZING UNTIL MOISTURE CONTENT IS REDUCED TO A SATISFACTORY VALUE.
- QUALITY CONTROL TESTING DURING CONSTRUCTION: ALLOW GEOTECHNICAL TESTING SERVICE TO INSPECT AND APPROVE EACH SUB-GRADE AND BACKFILL OR FILL LAYER BEFORE FURTHER BACKFILL OR CONSTRUCTION WORK IS PERFORMED. TEST SHALL BE PERFORMED EVERY 50 LINEAR FT. OF AREA PER ONE FOOT LIFT (OR AS DIRECTED BY A REGISTERED GEOTECHNICAL ENGINEER.
- GEOTECHNICAL SPEC'S DEPICTED HEREON ARE GUIDELINES ONLY AND SHOULD BE VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. RECOMMENDATIONS FROM A REGISTERED GEOTECHNICAL ENGINEER (IF ANY) SHALL SUPERSEDE THE ABOVE REFERENCED SPEC'S.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THE DISCOVERY OF ANY GROUNDWATER, SUBSURFACE SEEPAGE OR SPRINGS DURING THE COURSE OF CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO CONSULT WITH A REGISTERED GEOTECHNICAL ENGINEER TO INSPECT THE SITE, AND TO MAKE ANY RECOMMENDATIONS REGARDING EVIDENCE AND REMEDIATION (IF ANY) OF SAID SUBSURFACE WATERS.
- ALL CUT AND FILL SLOPES (WITH THE EXCEPTION OF DETENTION AND SEDIMENT PONDS) SHALL BE LESS THAN OR EQUAL TO 2:1. POND SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED.



GENERAL NOTES FOR STORMWATER IMPROVEMENTS FOR THE CITY OF STOCKBRIDGE HENRY COUNTY, GEORGIA

| REVISIONS |  |
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| 1.        |  |
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| DATE:        | 06/30/2017 |
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| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |
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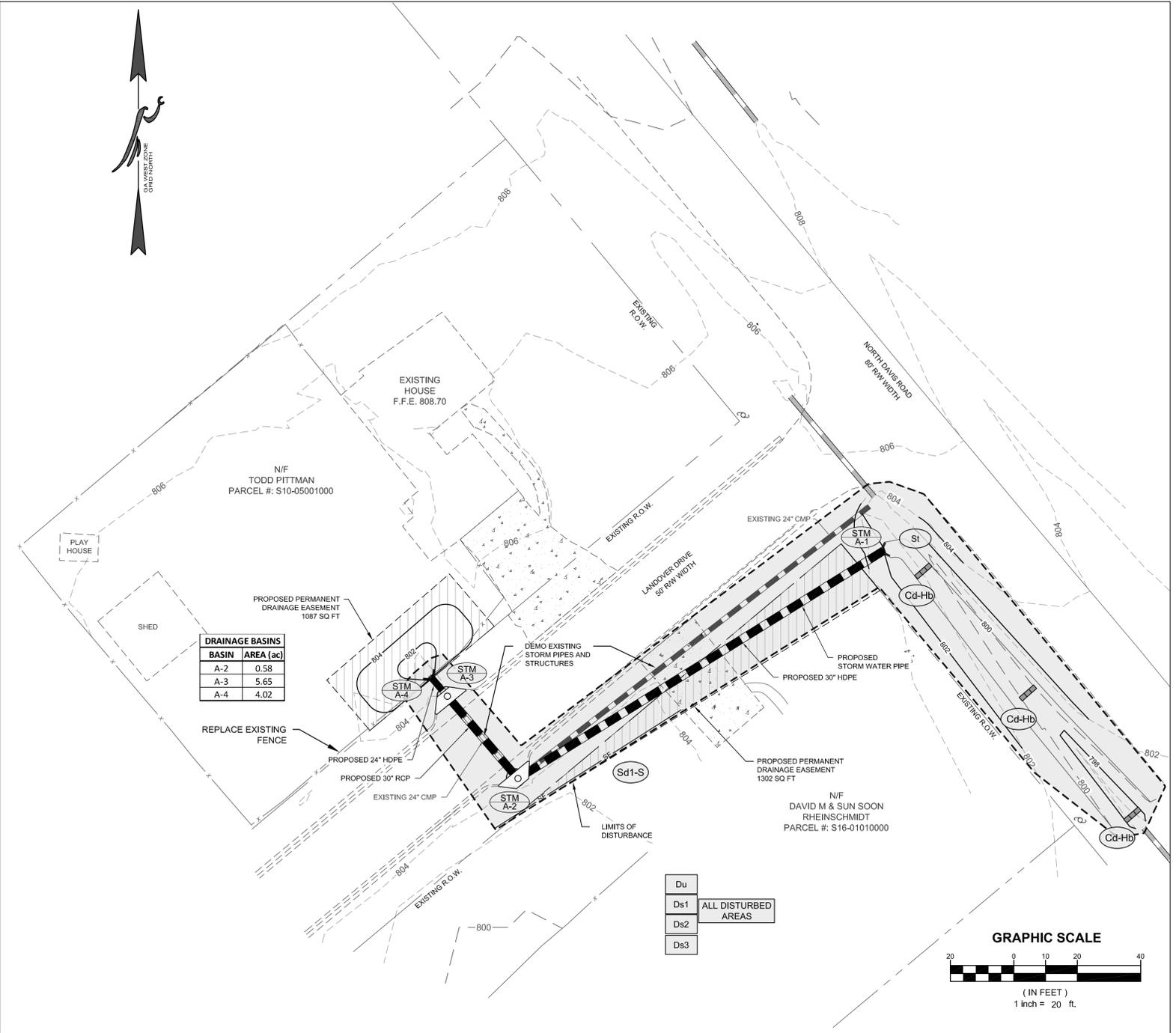
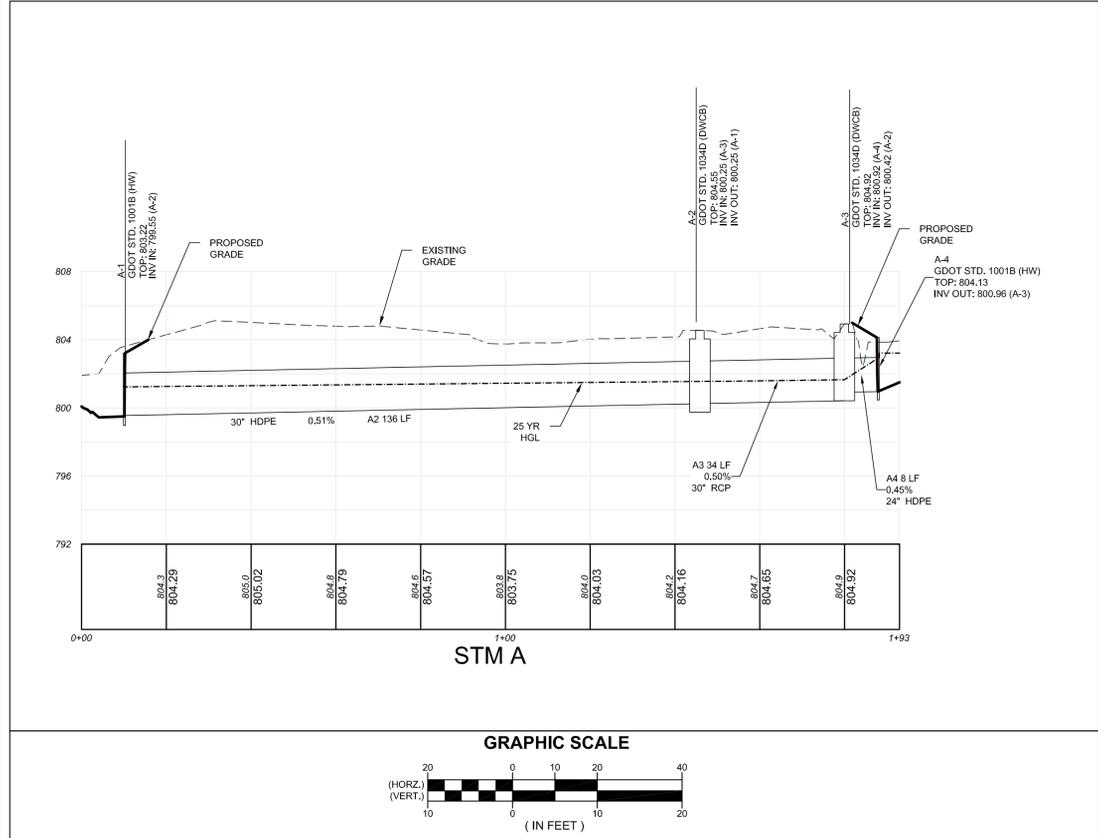


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SHEET NUMBER  
**2.0**

|  | LEGEND   |          |
|--|----------|----------|
|  | PROPOSED | EXISTING |
| RIGHT-OF-WAY                                       | R/W      | R/W      |
| BOUNDARY LINE                                      | ---      | ---      |
| PROPERTY LINE                                      | ---      | ---      |
| CURB & GUTTER                                      | ---      | ---      |
| EASEMENT   | ---      | ---      |
| BUILDING   | ---      | ---      |
| SIDEWALK   | ---      | ---      |
| FENCE  | ---      | ---      |
| FIRE HYDRANT                                       | ⊕        | ⊕        |
| WATER VALVE  | ⊕        | ⊕        |
| WATER METER  | ⊕        | ⊕        |
| WEIR INLET   | ⊕        | ⊕        |
| JUNCTION BOX                                       | ⊕        | ⊕        |
| SANITARY SEWER MANHOLE                             | ⊕        | ⊕        |
| SINGLE WING CATCH BASIN                            | ⊕        | ⊕        |
| DOUBLE WING CATCH BASIN                            | ⊕        | ⊕        |
| STORM PIPE   | ---      | ---      |
| CONTOUR (MAJOR)                                    | ---000   | ---000   |
| CONTOUR (MINOR)                                    | ---000   | ---000   |
| SILT FENCE   | SF       | SF       |
| LIMITS OF DISTURBANCE                              | ---      | ---      |
| EROSION CONTROL SYMBOLS (SEE SHEET 2.1 FOR LEGEND) | XXX      | XXX      |

| OUTLET No. | Do PIPE SIZE | La (FEET) | W1 (FEET) | W2 (FEET) | d50 RIP-RAP SIZE | RIP-RAP AREA | VELOCITY AT END OF APRON (FPS) |
|------------|--------------|-----------|-----------|-----------|------------------|--------------|--------------------------------|
| A-1        | 30"          | 16.0'     | 7.5'      | 18.5'     | 0.5'             | 208 SF.      | 4.2                            |



- PROJECT SCOPE**
- REMOVE 177 LF 24" CMP
  - REMOVE AND REPLACE 2 EXISTING GDOT STD. 1034D (DWCB)
  - SAW CUT PAVEMENT FOR ROAD CROSSING APPROX. 60 LF
  - DEMO. PAVEMENT FOR ROAD CROSSING APPROX. 22 SY
  - SAW CUT CONCRETE FOR DRIVEWAY CROSSING APPROX. 43 LF
  - DEMO. CONCRETE FOR DRIVEWAY CROSSING APPROX. 32 SY
  - INSTALL RIPRAP AT EFFLUENT PIPE END PER OUTLET PROTECTION TABLE
  - RESTORE ASPHALT PAVED AREAS PER PATCHING DETAIL GDOT STD. 1401
  - RESTORE CONCRETE DRIVEWAY APPROX. 32 SY. DRIVEWAY REPAIR SHOULD CONSIST OF A 6" GAB LAYER OVERTOPPED BY A 4" LAYER OF 3000 PSI CONCRETE
  - INSTALL 2 GDOT STD. 1001B (HW)
  - INSTALL 8 LF OF 24" HDPE
  - INSTALL 136 LF OF 30" HDPE
  - INSTALL 34 LF OF 30" RCP
  - REPLACE EXISTING 4 FT GALVANIZED CHAIN LINK GATE AND FENCE ALONG THE NORTH SIDE OF LANDOVER DRIVE WHERE IMPACTED BY CONSTRUCTION ACTIVITY. APPROX. 70 LF.



N. DAVIS RD. AND LANDOVER DR.  
FOR  
**STORMWATER IMPROVEMENTS**  
FOR THE  
CITY OF STOCKBRIDGE  
HENRY COUNTY, GEORGIA

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
| 1.  |      |             |
| 2.  |      |             |
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REVISIONS

Know what's below.  
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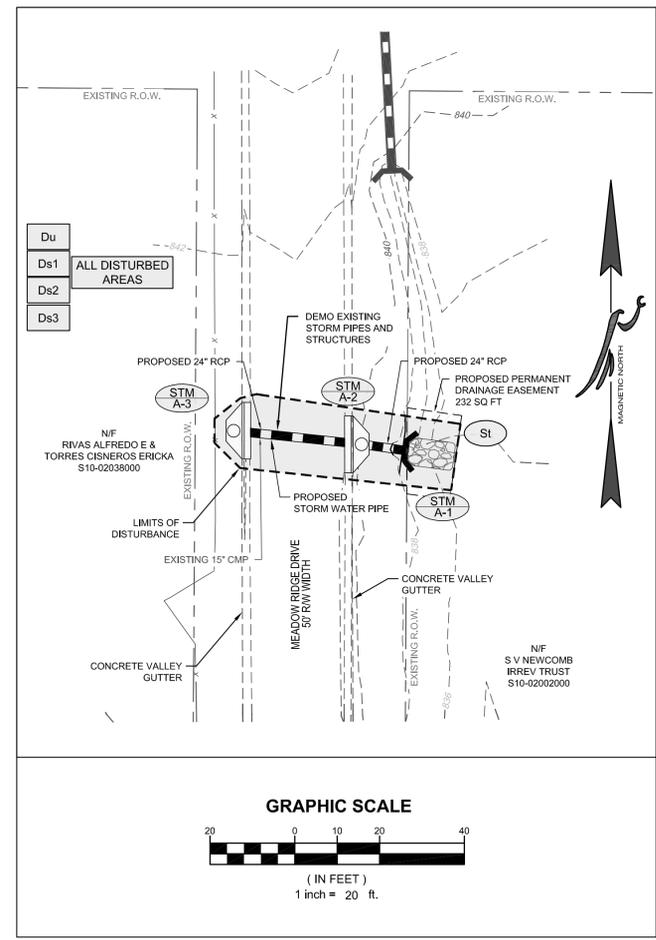
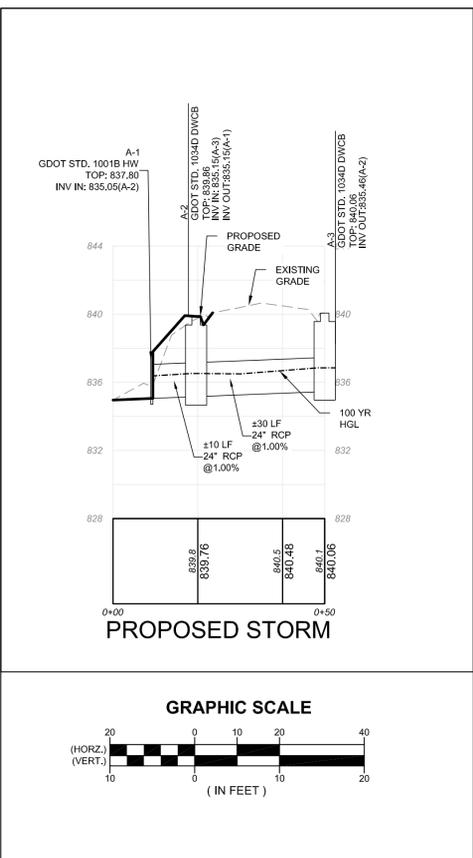
GEORGIA REGISTERED PROFESSIONAL ENGINEER  
No. 030440  
J.JONES

GSWCC# 000009371

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SHEET NUMBER  
**3.0**

| OUTLET PROTECTION TABLE |              |           |                       |                       |                  |                                |
|-------------------------|--------------|-----------|-----------------------|-----------------------|------------------|--------------------------------|
| OUTLET No.              | Do PIPE SIZE | La (FEET) | W <sub>1</sub> (FEET) | W <sub>2</sub> (FEET) | d50 RIP-RAP SIZE | VELOCITY AT END OF APRON (FPS) |
| A-1                     | 24"          | 12.0'     | 6.0'                  | 14.0'                 | 0.4'             | 120 SF, 6.56                   |



|  | PROPOSED | EXISTING |
|--|----------|----------|
| RIGHT-OF-WAY                                       | RW       | RW       |
| BOUNDARY LINE                                      | ---      | ---      |
| PROPERTY LINE                                      | ---      | ---      |
| CURB & GUTTER                                      | ==       | ==       |
| EASEMENT   | - - - -  | - - - -  |
| BUILDING   | ▬        | ▬        |
| SIDEWALK   | ▬        | ▬        |
| FENCE  | X-X      | X-X      |
| FIRE HYDRANT                                       | ⊙        | ⊙        |
| WATER VALVE  | ⊕        | ⊕        |
| WATER METER  | ⊕        | ⊕        |
| WEIR INLET   | ⊕        | ⊕        |
| JUNCTION BOX                                       | ⊕        | ⊕        |
| SANITARY SEWER MANHOLE                             | ⊕        | ⊕        |
| SINGLE WING CATCH BASIN                            | ⊕        | ⊕        |
| DOUBLE WING CATCH BASIN                            | ⊕        | ⊕        |
| STORM PIPE   | ▬        | ▬        |
| CONTOUR (MAJOR)                                    | 000      | 000      |
| CONTOUR (MINOR)                                    | 000      | 000      |
| SILT FENCE   | SF       | SF       |
| LIMITS OF DISTURBANCE                              | ---      | ---      |
| EROSION CONTROL SYMBOLS (SEE SHEET 2.1 FOR LEGEND) | XXX      | XXX      |

- PROJECT SCOPE**
- REMOVE 40 LF OF 15" CMP
  - REMOVE EXISTING DROP INLET
  - REMOVE EXISTING CONCRETE FLUME
  - SAW CUT PAVEMENT FOR ROAD CROSSING APPROX. 45 LF
  - DEMO. PAVEMENT FOR ROAD CROSSING APPROX. 16 SY
  - INSTALL RIPRAP AT EFFLUENT PIPE END PER OUTLET PROTECTION TABLE
  - RESTORE PAVED AREA PER PATCHING DETAIL GDOT STD. 1401
  - INSTALL 40 LF OF 24" RCP
  - INSTALL 2 GDOT STD. 1034D (DWCB)
  - INSTALL 1 GDOT STD. 1001B (HW)

MEADOW RIDGE DR.  
 FOR  
**STORMWATER IMPROVEMENTS**  
 FOR THE  
 CITY OF STOCKBRIDGE  
 HENRY COUNTY, GEORGIA

| REVISIONS |  |
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| 1.        |  |
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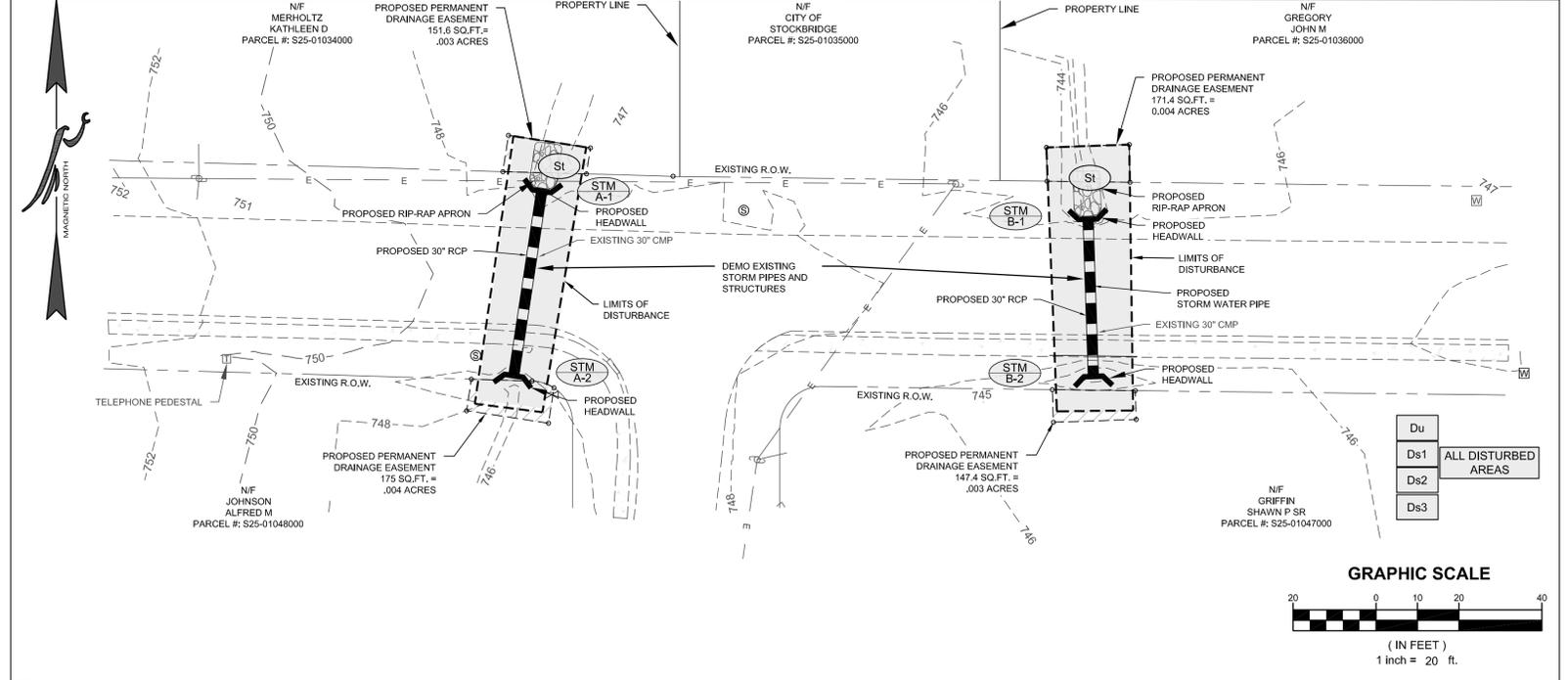
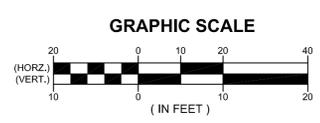
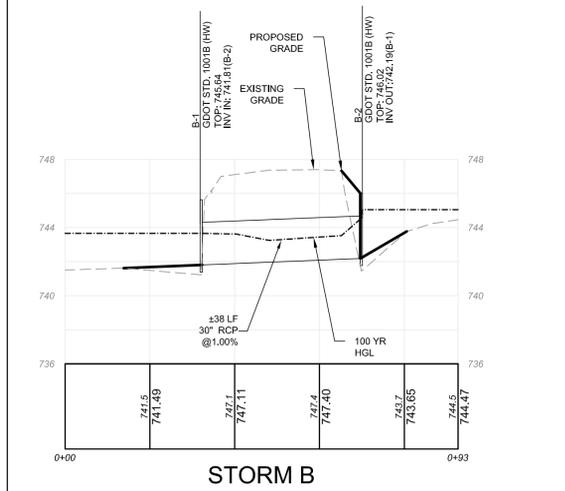
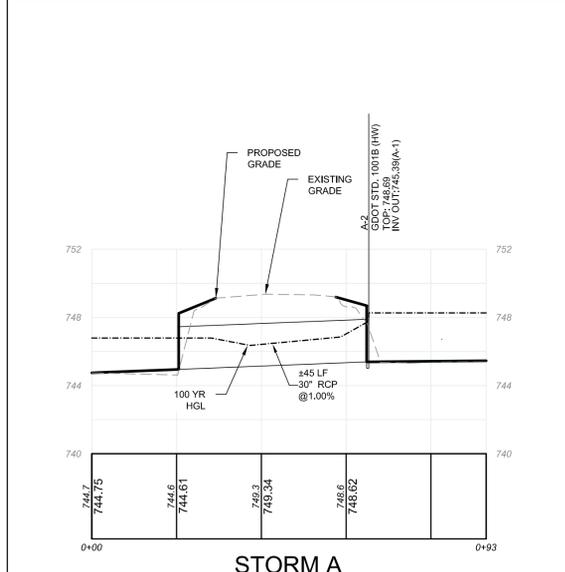
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| DATE:        | 06/30/2017 |
| SCALE:       | 1" = 20'   |
| FILE NUMBER: | ENG00      |
| DRAWN BY:    | J.JONES    |

**GEORGIA REGISTERED PROFESSIONAL ENGINEER**  
 No. 03440  
 JAMES H. JONES  
 6/20/17  
 GSWCC# 000009371  
 THIS DOCUMENT IS NOT VALID UNLESS IT BEARS THE ORIGINAL SIGNATURE OF THE REGISTRANT ACROSS THE REGISTRANT'S SEAL.

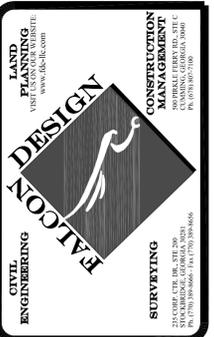
SHEET NUMBER  
**4.0**

| OUTLET No. | Do PIPE SIZE | La (FEET) | W1 (FEET) | W2 (FEET) | d50 RIP-RAP SIZE | RIP-RAP AREA | VELOCITY AT END OF APRON (FPS) |
|------------|--------------|-----------|-----------|-----------|------------------|--------------|--------------------------------|
| A-2        | 30"          | 16.0'     | 7.5'      | 18.5'     | 0.5'             | 208 SF.      | 6.0                            |
| B-2        | 30"          | 16.0'     | 7.5'      | 18.5'     | 0.5'             | 208 SF.      | 6.0                            |



- PROJECT SCOPE STORM A**
- REMOVE 45' LF 30" CMP
  - SAW CUT PAVEMENT FOR ROAD CROSSING APPROX. 48 LF
  - DEMO. PAVEMENT FOR ROAD CROSSING APPROX. 20 SY
  - SAW CUT SIDEWALK CROSSING APPROX. 8 LF
  - DEMO. SIDEWALK CROSSING APPROX. 4 SY
  - INSTALL 45 LF 30" RCP
  - INSTALL 2 GDOT STD. 1001B (HW)
  - INSTALL RIPRAP AT EFFLUENT PIPE END PER OUTLET PROTECTION TABLE
  - RESTORE ASPHALT PAVED AREAS PER PATCHING DETAIL 1401

- PROJECT SCOPE STORM B**
- REMOVE 38' LF 30" CMP
  - HANDRAILS TO BE REMOVED AND REPLACED WITH NEW
  - SAW CUT PAVEMENT FOR ROAD CROSSING APPROX. 47 LF
  - DEMO. PAVEMENT FOR ROAD CROSSING APPROX. 18 SY.
  - SAW CUT CONCRETE FOR SIDEWALK CROSSING APPROX. 8 LF
  - DEMO. CONCRETE FOR SIDEWALK CROSSING APPROX. 4 SY
  - INSTALL 38 LF 30" RCP
  - INSTALL 2 GDOT STD. 1001B (HW)
  - INSTALL RIPRAP AT EFFLUENT PIPE END PER OUTLET PROTECTION TABLE
  - RESTORE ASPHALT PAVED AREAS PER PATCHING DETAIL 1401



BRYANT ST. & N. LEE ST.  
FOR  
**STORMWATER IMPROVEMENTS**  
FOR THE  
CITY OF STOCKBRIDGE  
HENRY COUNTY, GEORGIA

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
| 1.  |      |             |
| 2.  |      |             |
| 3.  |      |             |
| 4.  |      |             |

REVISIONS

|              |            |
|--------------|------------|
| DATE:        | 06/30/2017 |
| SCALE:       | 1" = 20'   |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |

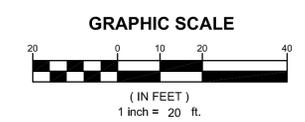
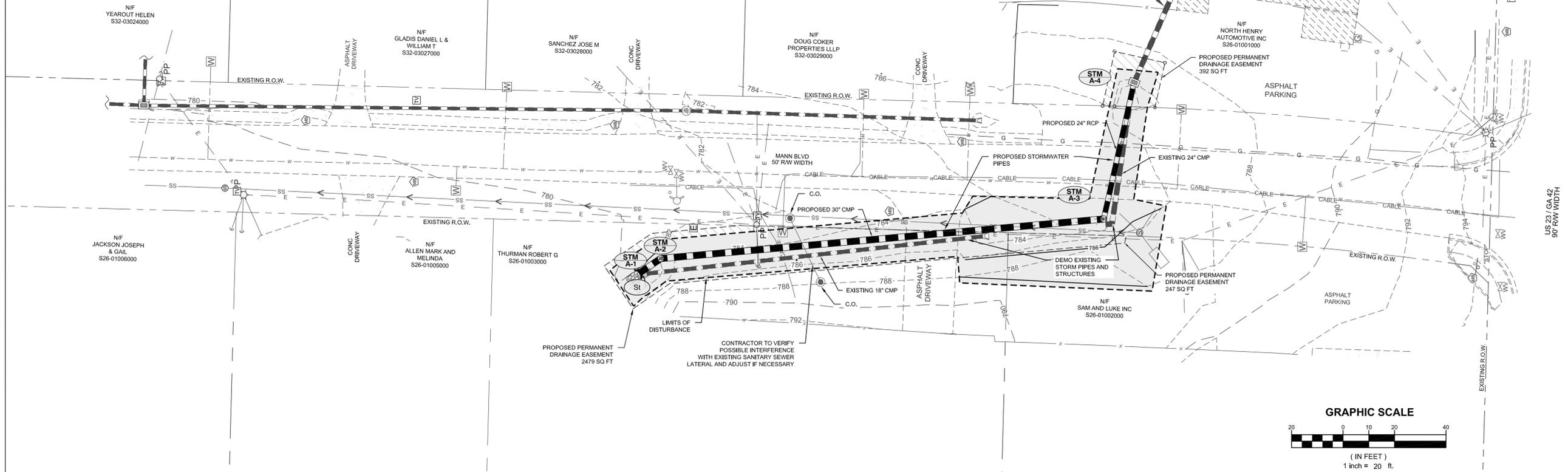


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**5.0**

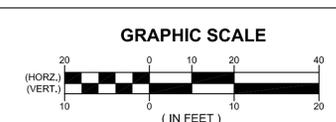
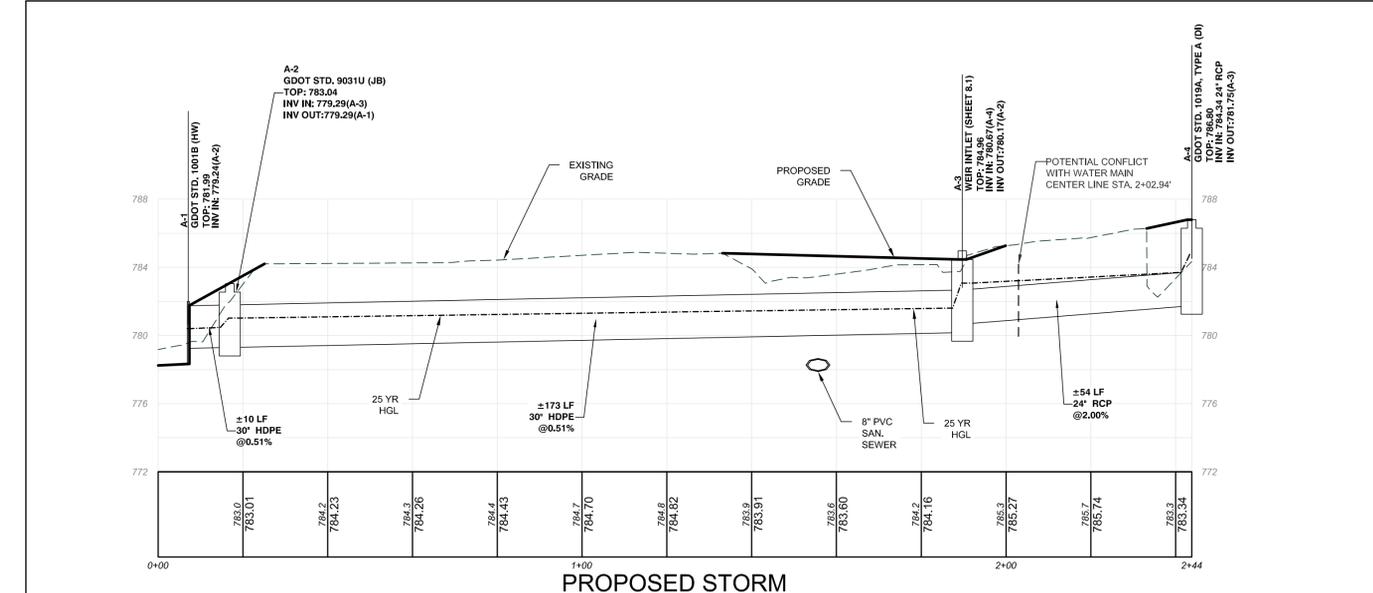
**OUTLET PROTECTION TABLE**

| OUTLET No. | Do PIPE SIZE | La (FEET) | W1 (FEET) | W2 (FEET) | d50 RIP-RAP SIZE | RIP-RAP AREA | VELOCITY AT END OF APRON (FPS) |
|------------|--------------|-----------|-----------|-----------|------------------|--------------|--------------------------------|
| A-1        | 30"          | 16.0'     | 7.5'      | 18.5'     | 0.5'             | 208 SF.      | 7.27                           |



**LEGEND**

|  | PROPOSED | EXISTING |
|--|----------|----------|
| RIGHT-OF-WAY                                       | R/W      | R/W      |
| BOUNDARY LINE                                      | ---      | ---      |
| PROPERTY LINE                                      | ---      | ---      |
| CURB & GUTTER                                      | ---      | ---      |
| EASEMENT   | ---      | ---      |
| BUILDING   | ---      | ---      |
| SIDEWALK   | ---      | ---      |
| FENCE  | ---      | ---      |
| FIRE HYDRANT                                       |          |          |
| WATER VALVE  |          |          |
| WATER METER  |          |          |
| WEIR INLET   |          |          |
| JUNCTION BOX                                       |          |          |
| SANITARY SEWER MANHOLE                             |          |          |
| SINGLE WING CATCH BASIN                            |          |          |
| DOUBLE WING CATCH BASIN                            |          |          |
| STORM PIPE   | ---      | ---      |
| CONTOUR (MAJOR)                                    | 000      | 000      |
| CONTOUR (MINOR)                                    | 000      | 000      |
| SILT FENCE   | SF       | SF       |
| LIMITS OF DISTURBANCE                              | ---      | ---      |
| EROSION CONTROL SYMBOLS (SEE SHEET 2.1 FOR LEGEND) | XXX      | XXX      |



- PROJECT SCOPE**
- REMOVE 48 LF OF 24" CMP
  - REMOVE 132 LF OF 18" CMP
  - REMOVE 2 FLARED END SECTIONS (CMP)
  - SAW CUT PAVEMENT FOR ROAD CROSSING APPROX. 120 LF
  - DEMO. PAVEMENT FOR ROAD CROSSING APPROX. 45 SY
  - SAW CUT PAVEMENT FOR DRIVEWAY CROSSING APPROX. 42 LF
  - DEMO. PAVEMENT FOR DRIVEWAY CROSSING APPROX. 22 SY
  - INSTALL RIPRAP AT EFFLUENT PIPE END PER OUTLET PROTECTION TABLE
  - INSTALL 54 LF OF 24" RCP
  - INSTALL 183 LF OF 30" HDPE
  - RESTORE ASPHALT PAVED AREAS PER PATCHING DETAIL GDOT STD. 1401
  - INSTALL 1 GDOT STD. 9031U (JB)
  - INSTALL 1 GDOT STD. 1019A, TYPE A (DI)
  - INSTALL 1 WEIR INLET (SEE SHEET 8.2 FOR DETAIL)
  - INSTALL 1 GDOT STD. 1001B (HW)
  - IF STORM LINE IS IN CONFLICT WITH WATER MAIN, CONTRACTOR SHALL ADJUST THE WATER MAIN PER WATER MAIN ADJUSTMENT DETAIL ON SHEET 8.1.



MANN BLVD.  
FOR  
**STORMWATER IMPROVEMENTS**  
FOR THE  
CITY OF STOCKBRIDGE  
HENRY COUNTY, GEORGIA

**REVISIONS**

| No. | Description | Date |
|-----|-------------|------|
| 1   |             |      |
| 2   |             |      |
| 3   |             |      |
| 4   |             |      |

Know what's below. Call before you dig. UTILITIES HAVE A LOCATION CENTER OR DIAL 811

|              |            |
|--------------|------------|
| DATE:        | 06/30/2017 |
| SCALE:       | 1" = 20'   |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |



SHEET NUMBER  
**6.0**

**Ds1** DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)  
MATERIALS AND RATES:

| MATERIAL                            | RATE                  |
|-------------------------------------|-----------------------|
| STRAW OR HAY                        | 2-4" DEEP             |
| WOOD WASTE, CHIPS, SAW DUST OR BARK | 2-3" DEEP             |
| POLYETHYLENE FILM                   | COMPLETELY COVER AREA |

**Ds2** DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDINGS)

SEEDING RATES FOR TEMPORARY SEEDINGS

| Species  | Broadcast Rates     | Resource Area <sup>1</sup>          | Planting Dates by Resource Area |               |   |   |   |   |   |   |   |   |   |   | Remarks |   |
|--|---------------------|-------------------------------------|---------------------------------|---------------|---|---|---|---|---|---|---|---|---|---|---------|---|
|  |                     |                                     | J                               | F             | M | A | M | J | J | A | S | O | N | D |         |   |
| <b>BARLEY</b><br><i>Hordeum vulgare</i>                | Alone<br>In Mixture | 3 bu. (144 lbs)<br>1/2 bu. (24 lbs) | 3.3 lbs<br>0.6 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 14,000 seed per pound. Winter hardy. Use on productive soils.   |
| <b>LESPEDEZA, ANNUAL</b><br><i>Lespedeza striata</i>   | Alone<br>In Mixture | 40 lbs<br>10 lbs                    | 0.9 lb<br>0.2 lb                | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 200,000 seed per pound. May volunteer for several years. Use inoculant EL.  |
| <b>LOVEGRASS, WEEPING</b><br><i>Eragrostis curvula</i> | Alone<br>In Mixture | 4 lbs<br>2 lbs                      | 0.1 lb<br>0.05 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 1,500,000 seed per pound. May last for several years. Mix with <i>Sericea lespedeza</i> .                         |
| <b>MILLET, BROWNTOP</b><br><i>Panicum fasciculatum</i> | Alone<br>In Mixture | 40 lbs<br>10 lbs                    | 0.9 lb<br>0.2 lb                | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 137,000 seed per pound. Quick dense cover. Will provide excessive competition in mixtures if seeded at high rate. |
| <b>MILLET, PEARL</b><br><i>Pennisetum glaucum</i>      | Alone               | 50 lbs                              | 1.1 lbs                         | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 88,000 seed per pound. Quick dense cover. May reach 5 feet in height, not recommended for mixtures.               |
| <b>OATS</b><br><i>Avena sativa</i>                     | Alone<br>In Mixture | 4 bu. (128 lbs)<br>1 bu. (32 lbs)   | 2.9 lbs<br>0.7 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 13,000 seed per pound. Use on productive soils. Not as a winter hardy as rye or barley.                           |
| <b>RYE</b><br><i>Secale cereale</i>                    | Alone<br>In Mixture | 3 bu. (168 lbs)<br>1/2 bu. (28 lbs) | 3.9 lbs<br>0.6 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 18,000 seed per pound. Quick cover. Drought tolerant and winter hardy.  |
| <b>RYEGRASS, ANNUAL</b><br><i>Lolium temulentum</i>    | Alone               | 40 lbs                              | 0.9 lb                          | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.                          |
| <b>SUDANGRASS</b><br><i>Sorghum sudanese</i>           | Alone               | 60 lbs                              | 1.4 lbs                         | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.                                      |
| <b>TRITICALE</b><br><i>X-Triticosecale</i>             | Alone               | 3bu. (144 lbs)<br>1/2 bu. (24 lbs)  | 3.3 lbs<br>0.6 lb               | C             |   |   |   |   |   |   |   |   |   |   |         | Use on lower part of Southern Coastal Plain and Atlantic Coastal Flatwoods only.                                  |
| <b>WHEAT</b><br><i>Triticum aestivum</i>               | Alone<br>In Mixture | 3 bu. (180 lbs)<br>1/2 bu. (30 lbs) | 4.1 lbs<br>0.7 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 15,000 seed per pound. Winter hardy.  |

<sup>1</sup>Temporary cover crops are very competitive and will crowd out perennials if seeded too heavily.  
<sup>2</sup>Reduce seeding rates by 50% when drilled.  
<sup>3</sup>M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs  
P represents the Southern Piedmont MLRA  
C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs  
(see Figure 6-4.1, p. 6-40 of the Georgia Manual for Sedimentation and Erosion Control, 2014)

**Ds4** DISTURBED AREA STABILIZATION (WITH SOD)

| GRASS         | VARIETIES                            | RESOURCE AREA             | GROWING SEASON |
|---------------|--------------------------------------|---------------------------|----------------|
| BERMUDAGRASS  | COMMON TIFWAY<br>TIFGREEN<br>TIFLAWN | M-L, P, C<br>P, C<br>P, C | WARM WEATHER   |
| BAHAGRASS     | PENSACOLA                            | P, C                      | WARM WEATHER   |
| CENTIPEDE     | -                                    | P, C                      | WARM WEATHER   |
| ST. AUGUSTINE | COMMON BITTERBLUE<br>RALEIGH         | C                         | WARM WEATHER   |
| ZOYSIA        | EMERALD<br>MYER                      | P, C                      | WARM WEATHER   |
| TALL FESCUE   | KENTUCKY                             | M-L, P                    | COOL WEATHER   |

TABLE 6-6.3

**Ds3** DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

NOTE: AGRICULTURAL LIME IS REQUIRED FOR ALL GRADED AREAS AT THE RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS DETERMINE OTHERWISE.

| Species  | Broadcast Rates  | Resource Area <sup>1</sup>     | Planting Dates by Resource Area |               |   |   |   |   |   |   |   |   |   |   | Remarks |   |
|--|--|--------------------------------|---------------------------------|---------------|---|---|---|---|---|---|---|---|---|---|---------|---|
|  |  |                                | J                               | F             | M | A | M | J | J | A | S | O | N | D |         |   |
| <b>BAHIA, PENSACOLA</b><br><i>Paspalum notatum</i>   | Alone or With Temporary Cover<br>With Other Perennials                                 | 60 lbs<br>30 lbs               | 1.4 lbs<br>0.7 lb               | P<br>C        |   |   |   |   |   |   |   |   |   |   |         | 166,000 seed per pound. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Will spread into bermuda pastures and lawns. Mix with <i>Sericea lespedeza</i> or weeping lovegrass.  |
| <b>BAHIA, WILMINGTON</b><br><i>Paspalum notatum</i>  | Alone or With Temporary Cover<br>With Other Perennials                                 | 60 lbs<br>30 lbs               | 1.4 lb<br>0.7 lb                | M-L<br>P      |   |   |   |   |   |   |   |   |   |   |         | Same as above.  |
| <b>BERMUDA, COMMON</b><br><i>Cynodon dactylon</i>  | Alone<br>Hulled Seed<br>With Other Perennials  | 10 lbs<br>6 lbs                | 0.2 lb<br>0.7 lb                | P<br>C        |   |   |   |   |   |   |   |   |   |   |         | 1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields.   |
| <b>BERMUDA, COMMON</b><br><i>Cynodon dactylon</i>  | Unhulled Seed<br>With Other Perennials   | 10 lbs<br>6 lbs                | 0.2 lb<br>0.1 lb                | P<br>C        |   |   |   |   |   |   |   |   |   |   |         | Plant with winter annuals.<br>Plant with Tall Fescue.   |
| <b>BERMUDA SPRIGS</b><br><i>Cynodon dactylon</i>   | Coastal, Common, Midland, or Tift 44<br>Coastal, Common, or Tift 44<br>sod plugs 3'x3' | 40 cu ft<br>or                 | 0.9 cu ft                       | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 sprigs.<br>Southern Coastal Plain only.  |
| <b>CENTIPEDE</b><br><i>Eremochloa ophiuroides</i>  | Block sod only   |                                |                                 | P<br>C        |   |   |   |   |   |   |   |   |   |   |         | Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winter hardy as far as north Athens and Atlanta.  |
| <b>CROWNVETECH</b><br><i>Coronilla varia</i>   | With winter annuals or cool season grasses<br>Alone                                    | 15 lbs                         | 0.3 lbs                         | M-L<br>P      |   |   |   |   |   |   |   |   |   |   |         | 100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink, and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate seed with M inoculant. Use from North Atlanta and Northward.   |
| <b>FESCUE, TALL</b><br><i>Festuca arundinacea</i>  | with other perennials  | 50 lbs<br>30 lbs               | 1.1 lbs<br>0.7 lbs              | M-L<br>P      |   |   |   |   |   |   |   |   |   |   |         | 227,000 seed per pound. Use alone only on better sites. Mix with perennial <i>lespedeza</i> or crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.  |
| <b>Pueraria thurbergiana</b>   | Plants or crowns   | 3' - 7' apart                  |                                 | ALL           |   |   |   |   |   |   |   |   |   |   |         | Rapid and vigorous growth. Excellent in gully erosion control. Will climb good livestock forage.  |
| <b>LESPEDEZA SERICEA</b><br><i>Lespedeza cuneata</i>   | 60 lbs<br>75 lbs<br>seed-bearing hay   | 1.4 lbs<br>1.7 lbs<br>1338 lbs | M-L<br>P<br>C<br>M-L<br>P<br>C  |               |   |   |   |   |   |   |   |   |   |   |         | 350,000 seed per pound. Widely adapted. Low maintenance. Mix with weeping lovegrass, common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.<br>Mix with all fescue or winter annuals.<br>Cut when seed mixture is mature but before it shatters. Add tall fescue or winter annuals. |
| <b>LESPEDEZA</b><br><i>Ambro virgata</i><br><i>Lespedeza virgata DC</i><br>or<br><i>Appalaw</i><br><i>Lespedeza cuneata</i><br>(Dumont G. Don) | 60 lbs<br>75 lbs   | 1.4 lbs<br>1.7 lbs             | M-L<br>P<br>C<br>M-L<br>P       |               |   |   |   |   |   |   |   |   |   |   |         | 350,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth. New growth has bronze coloration, mix with weeping lovegrass, common bermuda, bahia, tall fescue or winter annuals. Do not mix with <i>Sericea lespedeza</i> . Slow to develop solid stands, inoculate seed with EL inoculant.                               |
| <b>LESPEDEZA</b><br><i>Lespedeza bicolor</i><br><i>Lespedeza thurbergii</i>  | plants   | 3' x 3'                        |                                 | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | Provide wildlife food and cover.  |
| <b>LOVEGRASS, WEEPING</b><br><i>Eragrostis curvula</i>   | alone<br>with other perennials   | 4 lbs<br>2 lbs                 | 0.1 lb<br>0.05 lb               | M-L<br>P<br>C |   |   |   |   |   |   |   |   |   |   |         | 1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with <i>Sericea lespedeza</i> on roadbanks.   |
| <b>MAIDENCANE</b><br><i>Panicum hemitomon</i><br>sprigs  |  | 2' x 3' spacing                |                                 | ALL           |   |   |   |   |   |   |   |   |   |   |         | For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.   |
| <b>PANICGRASS, ATLANTIC COASTAL</b><br><i>Panicum amarum var amarikum</i>  |  | 20 lbs                         | 0.5 lb                          | P<br>C        |   |   |   |   |   |   |   |   |   |   |         | Grow well on coastal sand dunes, borrow areas and gravel pits. Provide winter cover for wildlife. Mix with <i>Sericea lespedeza</i> except on sand dunes.   |
| <b>REED CANARY GRASS</b><br><i>Phalaris arundinacea</i>  | alone<br>with other perennials   | 50 lbs<br>30 lbs               | 1.1 lb<br>0.7 lb                | M-L<br>P      |   |   |   |   |   |   |   |   |   |   |         | Grow well on coastal sand dunes, borrow areas and gravel pits. Provide winter cover for wildlife. Mix with <i>Sericea lespedeza</i> except on sand dunes.   |
| <b>SUNFLOWER, 'AZTEC'</b><br><i>Helianthus maximiliani</i>   |  | 10 lbs                         | 0.2 lb                          | M-L<br>P      |   |   |   |   |   |   |   |   |   |   |         | 227,000 seed per pound. Mix with weeping lovegrass or other low-growing grasses or legumes.   |

<sup>1</sup>Reduce seeding rates by 50% when drilled.  
<sup>2</sup>PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications.  
<sup>3</sup>M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs  
P represents the Southern Piedmont MLRA  
C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs  
(see Figure 6-4.1, p. 6-40 of the Georgia Manual for Sedimentation and Erosion Control, 2014)

**Du** Dust Control on Disturbed Areas



**DEFINITION**  
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

**PURPOSE**  
To prevent surface and air movement of dust from exposed soil surface.  
To reduce the presence of airborne substances that may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

**CONDITIONS**  
This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

**METHOD AND MATERIALS**

**A. Temporary Methods**  
**Mulches.** See standard Ds1 - Disturbed Area Stabilization (With Mulching Only). Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification **Tac - Tackifiers**. Resins should be used according to manufacturer's recommendations.  
**Vegetative Cover.** See specification Ds2 - Disturbed Area Stabilization (With Temporary Seeding).  
**Spray-on Adhesives.** These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification **Tac - Tackifiers**.

**Tillage.** This practice is designed to roughen and bring clods to the surface. It is an emergency

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measure that should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

**Irrigation.** This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

**Barriers.** Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

**Calcium Chloride.** Apply at rate that will keep surface moist. May need retreatment.

**B. Permanent Methods**

**Permanent Vegetation.** See specification Ds3 - Disturbed Area Stabilization (With Permanent Vegetation). Existing trees and large shrubs may afford valuable protection if left in place.

**Topsolling.** This entails covering the surface with less erosive soil material. See specification **Top - Topsolling**.

**Stone.** Cover surface with crushed stone or coarse gravel. See specification **Cr-Construction Road Stabilization**.

**Storm Drain Outlet Protection**



**DEFINITION**  
Paved and/or riprapped channel sections, placed below storm drain outlets.

**PURPOSE**  
To reduce velocity of flow before entering receiving channels below storm drain outlets.

**CONDITIONS**  
This standard applies to all storm drain outlets, road culverts, paved channel outlets, etc., discharging into natural or constructed channels. Analysis and/or treatment will extend from the end of the conduit, channel or structure to the point of entry into an existing stream or publicly maintained drainage system.

**DESIGN CRITERIA**  
Structurally lined aprons at the outlets of pipes and paved channel sections shall be designed according to the following criteria:

**Capacity**  
Peak stormflow from the 25-year, 24-hour frequency storm or the storm specified in Title 12-7-1 of the Official Code of Georgia Annotated or the design discharge of the water conveyance structure, whichever is greater.

**Tailwater Depth**  
The depth of tailwater immediately below the pipe outlet must be determined for the design capacity of the pipe. Manning's Equation may be used to determine tailwater depth. If the tailwater depth is less than half the diameter of the outlet pipe, it shall be classified as a Minimum Tailwater Condition. If the tailwater depth is greater than half the pipe diameter, it shall be classified as a

Maximum Tailwater Condition. Pipes that outlet onto flat areas with no defined channel may be assumed to have a Minimum Tailwater Condition.

**Apron Length and Thickness**  
The apron length and  $d_{50}$  stone median size, shall be determined from the curves according to tailwater conditions:

Minimum Tailwater- Use Figure 6-34.1

Maximum Tailwater- Use Figure 6-34.2

Maximum Stone Size =  $1.5 \times d_{50}$

Apron Thickness =  $1.5 \times d_{max}$

**Apron Width**  
If the pipe discharges directly into a well-defined channel, the apron shall extend across the channel bottom and up the channel banks to an elevation one foot above the maximum tailwater depth or to the top of the bank (whichever is less). If the pipe discharges onto a flat area with no defined channel, the width of the apron shall be determined as follows:

- The upstream end of the apron, adjacent to the pipe, shall have a width three times the diameter of the outlet pipe.
- For a Minimum Tailwater Condition, the downstream end of the apron shall have a width equal to the pipe diameter plus the length of the apron. Refer to Figure 6-34.1.
- For a Maximum Tailwater Condition, the downstream end shall have a width equal to the pipe diameter plus 0.4 times the length of the apron. Refer to Figure 6-34.2.

**Bottom Grade**  
The apron shall be constructed with no slope along its length (0.0% grade). The invert elevation of the downstream end of the apron shall be equal to the elevation of the invert of the receiving channel. There shall be no overfall at the end of the apron.

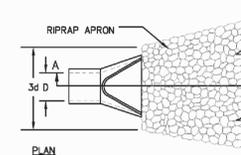
**Side Slope**  
If the pipe discharges into a well-defined channel, the side slopes of the channel shall not be steeper than 2:1.

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6-207

**St** RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA - NO WELL DEFINED CHANNEL



- NOTES:
- $L_0$  IS THE LENGTH OF THE RIPRAP APRON.
  - $D = 1.5$  TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
  - IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
  - A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

PIPE OUTLET TO WELL DEFINED CHANNEL

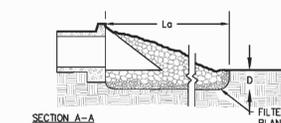
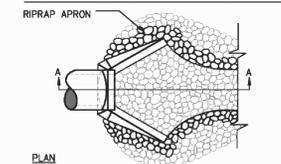
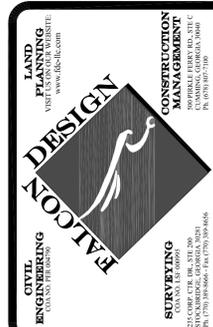


Figure 6-34.3 - Riprap Outlet Protection (Modified From Va SWCC)

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6-212



EROSION CONTROL DETAILS FOR STORMWATER IMPROVEMENTS FOR THE CITY OF STOCKBRIDGE, GEORGIA  
HENRY COUNTY, GEORGIA

| REVISIONS | DATE       | DESCRIPTION       |
|-----------|------------|-------------------|
| 1         | 06/30/2017 | ISSUED FOR PERMIT |
| 2         |            |                   |
| 3         |            |                   |
| 4         |            |                   |

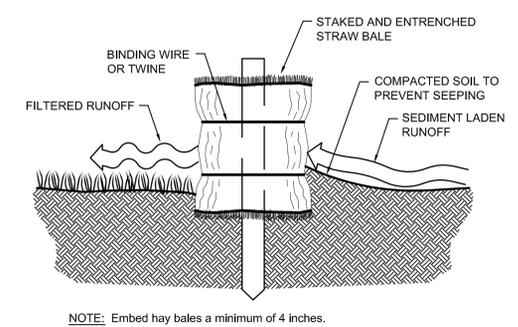
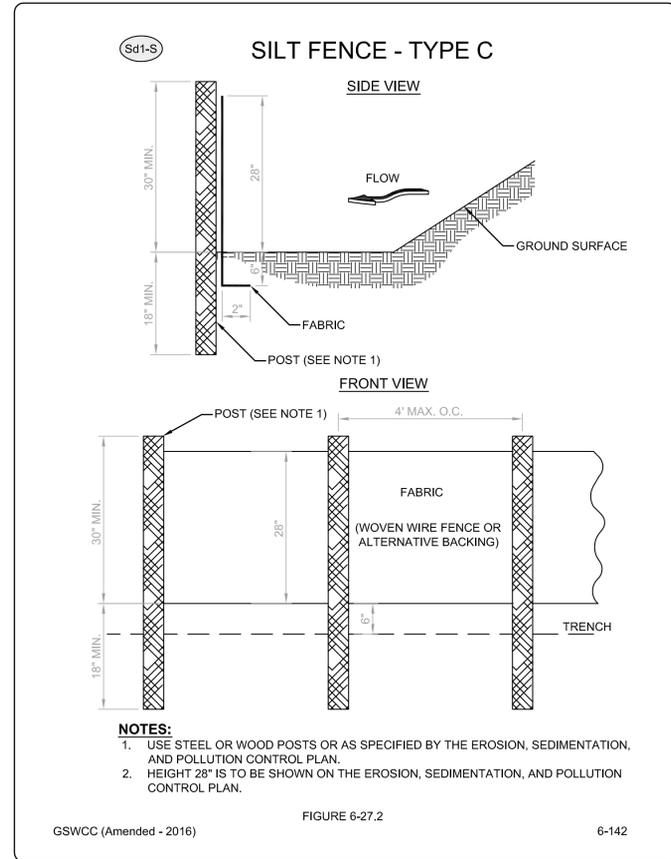
|              |            |
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| DATE:        | 06/30/2017 |
| SCALE:       | VARIABLE   |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | JJONES     |



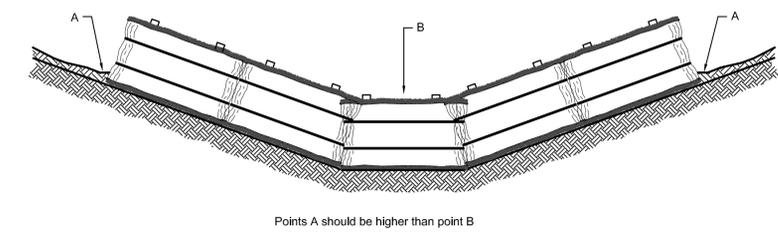
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SHEET NUMBER  
**7.0**



**Cd-Hb** CROSS-SECTION OF PROPERLY INSTALLED STRAW BALE NTS



**Cd-Hb** PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY NTS

| REVISIONS |  |
|-----------|--|
| 1.        |  |
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| SCALE:       | VARIES     |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |

GEORGIA REGISTERED PROFESSIONAL ENGINEER  
 No. 03440  
 J. JONES  
 6/30/17

GSWCC# 000009371

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**CONCRETE TO PE OR PVC SIDE DRAIN OR CROSS DRAIN CONNECTION ALTERNATES**

**PE Corrugated Pipes (AASHTO M 294)**

| Number | Min. S.D. (in.) | Min. O.D. (in.) | Min. A (in. 2x1/4) | Min. B (in.) | Min. C (in.) | Cell Class | Cell Class Designation |
|--------|-----------------|-----------------|--------------------|--------------|--------------|------------|------------------------|
| 12     | 8.8             | 14.7            | 1.00               | 0.35         | 0.034        |            |                        |
| 15     | 14.8            | 18.0            | 1.01               | 0.45         | 0.053        |            |                        |
| 18     | 17.7            | 20.5            | 1.02               | 0.50         | 0.062        |            |                        |
| 24     | 23.6            | 28.1            | 1.14               | 0.65         | 0.086        |            |                        |
| 30     | 29.5            | 36.4            | 1.30               | 0.75         | 0.083        |            |                        |
| 36     | 35.5            | 42.5            | 1.50               | 0.90         | 0.122        |            |                        |

**Profile Wall PVC Pipes (AASHTO M 304)**

| Number | Min. S.D. (in.) | Min. O.D. (in.) | Min. A (in. 2x1/4) | Min. B (in.) | Min. C (in.) | Cell Class | Cell Class Designation |
|--------|-----------------|-----------------|--------------------|--------------|--------------|------------|------------------------|
| 12     | 8.7             | 13.6            | 1.20               | 0.05         | 0.004        |            |                        |
| 15     | 14.3            | 18.2            | 1.20               | 0.17         | 0.005        |            |                        |
| 18     | 17.5            | 20.0            | 1.08               | 0.09         | 0.009        |            |                        |
| 24     | 23.4            | 28.0            | 1.05               | 0.23         | 0.006        |            |                        |
| 30     | 29.4            | 35.8            | 1.30               | 0.27         | 0.004        |            |                        |
| 36     | 35.3            | 42.5            | 1.60               | 0.33         | 0.033        |            |                        |

**Mechanical Properties for PE Design**

| Initial                | Minimum | 50 - Year | Minimum |        |
|------------------------|---------|-----------|---------|--------|
| Tensile Strength (psi) | 3,000   | 110,000   | 900     | 22,000 |

**Minimum cell class, ASTM D 3350, 335420C Allowable long-term strain = 5%**

**Minimum Properties for PVC Design**

| Initial                | Minimum | 50 - Year | Minimum |         |
|------------------------|---------|-----------|---------|---------|
| Tensile Strength (psi) | 7,000   | 400,000   | 3,700   | 140,000 |

**Minimum cell class, ASTM D 1784, D2454C Allowable long-term strain = 5%**

**DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD CORRUGATED SMOOTH LINED POLYETHYLENE PIPE (PE) AND POLY VINYL CHLORIDE PIPE (PVC)**

SCALE AS SHOWN REV. & REOR. AUG. 1999 NUMBER 1030P

**CATCH BASIN (FOR CATCH BASIN WITH LONGIT. PIPE OVER 24" SEE DETAILS AT RIGHT.)**

**DETAIL OF TOP STAB REINF. STEEL & CLEARANCES RED'D.**

**CASTING DETAILS**

**CATCH BASIN (WITH PROTRUD BACK)**

**SECTION A-A' (FOR LONGIT. PIPE OVER 24")**

**SECTION A-A' (FOR RECESSED BOX)**

**DETAIL OF TOP REINFORCED CONCRETE SLAB**

**CATCH BASIN ON RADIUS**

**SECTION J-J**

**SECTION A-A**

**DETAIL OF TOP REINFORCED CONCRETE SLAB**

**DETAIL OF LADDER BARS**

**CONSTRUCTION ALTERNATES**

**DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD CATCH BASINS FOR USE WITH CURB (6" OR 8" HT.) & GUTTER (IN SAGS OR LOW POINTS)**

SCALE AS SHOWN REV. & REOR. AUGUST 1992 NUMBER 1034D

**TYPE 'A'** **TYPE 'B' WITH WEIR** **TYPE 'C'** **TYPE 'C' WITH WEIR** **TYPE 'D'** **TYPE 'E' (WITH HOOD)**

**LONGITUDINAL SECTION** **CROSS SECTION** **PLAN**

**DETAIL OF HOOD (NON-MOUNTABLE USE WITH TYPE 'C')**

**BRICK WALL THICKNESSES**

**CONSTRUCTION ALTERNATES**

**DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD DROP INLETS (BUILT-IN-PLACE)**

SCALE AS SHOWN REV. & REOR. AUG. 1999 NUMBER 1019A

**TYPE 'A'** **TYPE 'B' WITH WEIR** **TYPE 'C'** **TYPE 'E'**

**LONGITUDINAL SECTION** **CROSS SECTION** **PLAN**

**DETAIL OF HOOD (NON-MOUNTABLE USE WITH TYPE 'C')**

**CONSTRUCTION ALTERNATES**

**DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD PRECAST DROP INLETS**

SCALE AS SHOWN REV. & REOR. AUG. 1999 NUMBER 1019A

**REVISIONS**

| NO. | DATE | DESCRIPTION |
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**DATE:** 06/30/2017  
**SCALE:** VARIES  
**FILE NUMBER:** ENG-00  
**DRAWN BY:** J. JONES

**GEORGIA PROFESSIONAL ENGINEER**  
 No. 00840  
 J. JONES

**GSWCC# 000009371**

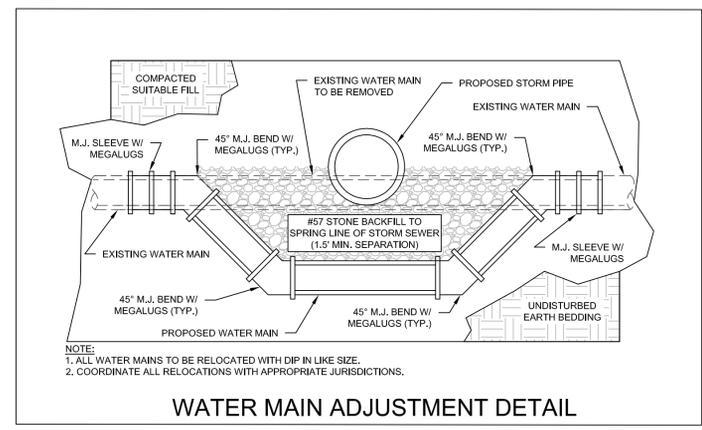
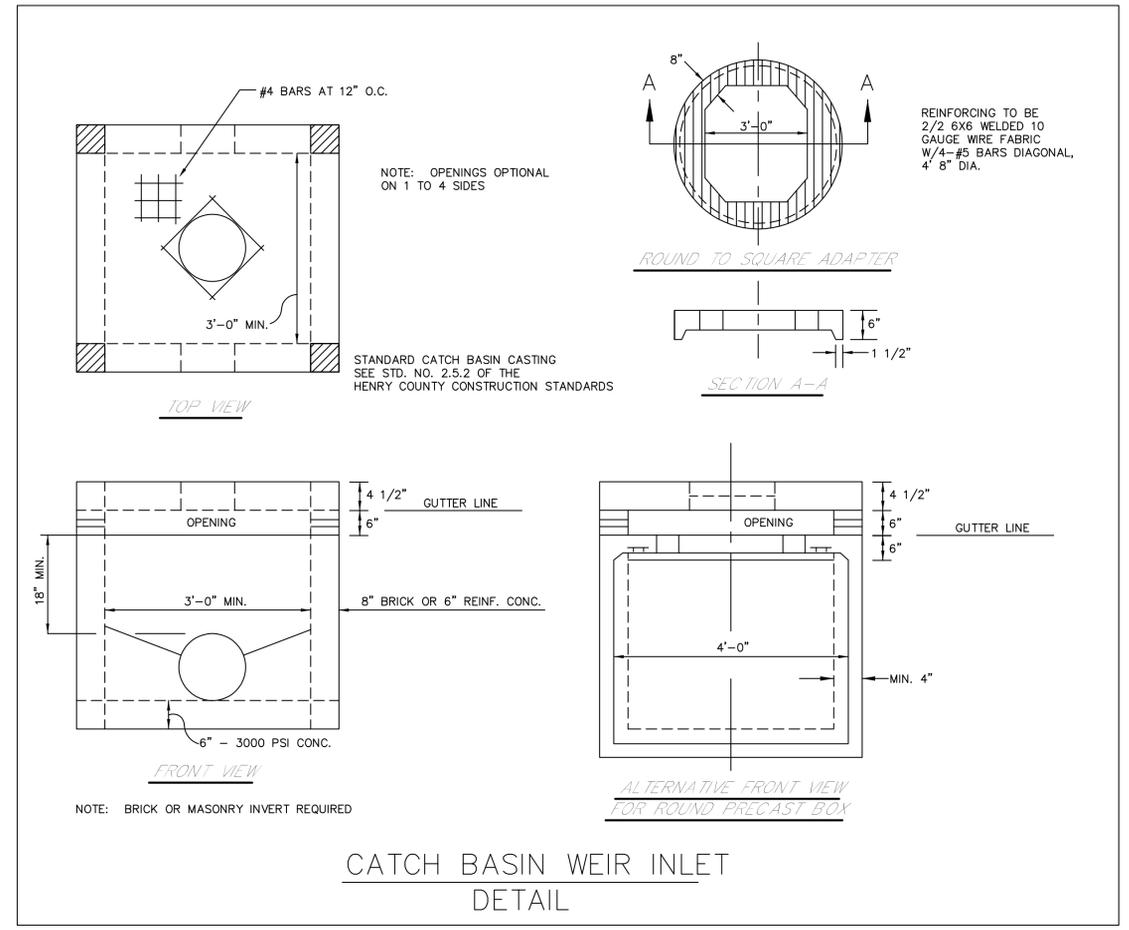
**DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD PRECAST DROP INLETS**

SCALE AS SHOWN REV. & REOR. AUG. 1999 NUMBER 1019A

**SHEET NUMBER 8.1**



CONSTRUCTION DETAILS  
FOR  
STORMWATER  
IMPROVEMENTS  
FOR THE  
CITY OF STOCKBRIDGE  
HENRY COUNTY, GEORGIA



| REVISIONS |  |
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| SCALE:       | VARIES     |
| FILE NUMBER: | ENG-00     |
| DRAWN BY:    | J.JONES    |



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