Sammy H. Rich, *City Manager*
**DEPARTMENT OF PUBLIC SERVICES**
W. Kirk Milam, P.E., *Manager*
**Engineering Services Department**
Aaron Carroll, R.L.S., P.E., *Director*

**ADDENDUM NO. 1**

**BURNETT FERRY ROAD IMPROVEMENT**
**BID NO. 031-16**

October 20, 2016

**Specifications and Contract Documents**

Revised Instructions to Bidders Section
Revised Bid Form
Revised Section No. 2 Storm Drainage System
Revised Section No. 5 Protection and Restoration of Work Area

**Plans**

Revised Sheet 5-01 Typical Sections Revised
Revised Sheet 13-05 Added CB-67
Revised Sheet 13-05 Added CB-66, CB-65, FES-17, Additional Storm Drain, Adjusted Milling Limits, Added new Guard Rail
Revised Sheet 22-01 Added Profile Information
Revised Sheets 23-11 to 23-13 Grade Changes to Roadway
Revised Sheets 54-05 to 54-06 Revised BMP's to reflect additional Drainage Structures
Revised Sheets 55-04, 55-06 to 55-08 Revised "Typical Curb and Gutter Section along Burnett Ferry Road**",** Added Details associated with addition of Guard Rail to project.

**** * END OF ADDENDUM * ****

***NOTE:* ALL BIDDERS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ON THEIR BID.**

200 Vaughn Road • PO Box 1433 • Rome, Georgia 30162-1433
*phone*: 706/378-3846 • *fax*: 706/236-4532
www.romega.us

# INSTRUCTIONS TO BIDDERS

1. Intent: It is intended that the Instructions to Bidders, General Conditions, Detailed Specifications and the Contract Drawings shall define and describe the complete work to which they relate.

2. Definitions: Where the following words or the pronouns used in their stead occur herein, they shall have the following meaning:

"Owner" shall mean the City of Rome, Georgia, or its authorized and legal representative.

"Director" shall mean the Public Services Manager for the City of Rome, Georgia, or his authorized and legal representatives.

"Engineer" shall mean the Director of Engineering Services Department of Rome, Georgia, or his authorized and legal representative.

"Contractor" shall mean the party of the second part to the Contract Agreement or the authorized and legal representative of such party.

"Contract Time" shall mean **360** consecutive calendar days for completion of the work, to be computed from the date of the Notice to Proceed.

"Liquidated Damages" shall mean the sum of Five Hundred Dollars ($500.00) which the Bidder agrees to pay for each consecutive calendar day beyond the Contract Time required to complete the work.

"Products" shall mean materials or equipment permanently incorporated into the work.

"Provide" shall mean to furnish and install.

"Anticipated Start Date" shall mean the date on which the contractor will be able to be mobilized and begin construction on this project.

3. Work to Be Done: The work to be done consists of furnishing all products and performing all labor necessary to construct BURNETT FERRY ROAD IMPROVEMENTS, including, but not limited to, clearing, grading, drainage improvements, paving, curb & gutter, sidewalk, water service relocation and erosion control.

NOTE: IT SHALL BE THE FULL AND COMPLETE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY RESIDENTS WHEN CUTTING OFF WATER TO RELOCATE WATER METERS. RELOCATION SHALL BE DONE IN A MANNER AS TO MINIMIZE THE TIME WATER IS OFF TO EACH RESIDENT. RELOCATION OF WATER METERS AND SANITARY SEWER SERVICES SHALL BE COMPLETED BY A LICENSED UTILTIY CONTRACTOR ACTIVELY REGISTERED TO WORK IN THE STATE OF GEORGIA.

NOTE: CONTRACTOR SHALL PROVIDE ADEQUATE NOTICE TO EACH RESIDENT AND/OR OCCUPANT WHEN DRIVEWAYS ARE BEING CONSTRUCTED SUCH THAT SAID RESIDENT/OCCUPANT CAN MAKE ARRANGEMENTS FOR ALTERNATE PARKING TO ALLOW ADEQUATE CURING TIME FOR CONCRETE.

NOTE: ALL DEEP PATCHING TO BE COMPLETED WITHIN FIRST 60 DAYS OF CONTRACT TO ALLOW AMPLE TIME TO EVALUATE THOSE AREAS TO INSURE THEIR STABILITY PRIOR TO PLACING FINAL WEARING SURFACE ON PROJECT.

NOTE: **NO** LANE CLOSURES ALONG BURNETT FERRY ROAD WILL BE PREMITTED FROM 6:00 A.M. UNTIL 8:15 A.M. ON DAYS WHEN SCHOOL IS IN SESSION AT ALTO PARK ELEMENTARY SCHOOL AS AN EFFORT TO INSURE THE FREE FLOW OF TRAFFIC TO THE SCHOOL. THE CONTRACTOR MAY CALL THE SCHOOL AT 706-236-1892 TO CONFIRM ITS SCHEDULE.

NOTE: DUE TO THE REQUIREMENT FOR DEEP LEVELING FROM STATION 298+00 TO STATION 305+00 (AND POSSIBLE OTHER AREAS), ADDITIONAL MOBILIZATION(S) FOR LEVELING WILL BE REQUIRED IN ORDER TO RAISE THE ROADWAY TO THE REQUIRED ELEVAITON FOR TOPPING TO KEEP THE ROADWAY SAFE. NO ADDITIONAL PAYMENT WILL BE MADE FOR MOBILIZATION(S) OF PAVING EQUIMENT AND CREWS TO COMPLETE THIS TASK, BUT SHALL BE INCLUDED IN THE UNIT COST FOR ASPHALTIC CONCRETE LEVELING COURSE.

NOTE: ALL MILLINGS SHALL REMAIN THE PROPERTY OF THE CITY OF ROME AND SHALL BE DELIVERED TO THE CITY OF ROME STREET DEPARTMENT STOCKYARD LOCATED AT 200 VAUGHN ROAD. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE HAULING OF SAID MILLINGS BUT SHALL BE INCLUDED IN THE UNIT PRICE FOR MILLING.

4. Addenda and Interpretations: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. All questions should be submitted simultaneously to jallen@romega.us and acarroll@romega.us via Email. All questions and answers will be posted on the website – www.RomeFloyd.com. In order for a request for an interpretation to be given consideration, it must be received at least five days prior to the date fixed for the opening of bids.

Any and all such interpretations and any supplemental instructions will be in the form of written Addenda to the Specifications which, if issued, will be mailed to all prospective bidders that have purchased plans from the Engineering Services Department (at the respective addresses furnished) and shall be posted on the City of Rome Web Site not later than three days prior to the date affixed for the opening of the bids. Failure of a bidder to receive any Addendum shall not relieve him of any obligation under his bid. It shall be the full and complete responsibility of interested parties choosing to download documents from the City of Rome website to check said site on a frequent basis to insure discovery of any addenda that may be issued. Any bid received that does not include all addenda issued shall be considered incomplete and may be rejected.

5. Substitutions: Whenever the design is based on a specific product of a particular manufacturer, that manufacturer will be shown on the Drawings and/or provided in the list of approved manufacturers in the specifications. Any item other than those so designated shall be considered a substitution.

Approval of substitutions will be made under the following provisions:

(a) If the manufacturer is named in the Drawings and/or Detailed Specifications as an approved manufacturer, products of the manufacturer meeting all specification requirements are acceptable.

(b) If the term "EQUAL TO" precedes the names of approved manufacturers in the Specifications, the Contractor may, after receiving the Notice to Proceed, submit shop drawings on the substitute product for the approval of the Engineer.

Any bidder intending to furnish substitute products is cautioned to verify that the item being furnished will perform the same functions and have the same capabilities as the item specified. The Bidder should include in his bid the cost of accessory items which may be required by the substitute product and the cost of any architectural, structural, mechanical, piping, electrical, or other modifications required to accommodate the substitution.

Approval of the Engineer is dependent on his determination that the product offered is essentially equal in function, performance, quality of manufacture, ease of maintenance, reliability, and service life to the product on which the design is based, and will require no other major modifications to the project design.

6. Site Examination: The Bidder is advised to examine the location of the work and to inform himself fully as to its conditions; the conformation of the ground; the character, quality, the prosecution of the work; the general and local conditions and all other matters which can in any way affect the work to be done under the Contract. Failure to examine the site will not relieve the successful bidder of his obligation to furnish all products and labor necessary to carry out the provisions of his contract.

The Bidder shall notify the Owner and Engineer of the date and time he proposes to examine the location of the work. The Bidder shall confine his examination to the specific areas designated for the proposed construction, including easements and public right-of-ways. If, due to some unforeseen reason, the Owner's proceedings for obtaining the proposed construction site (including easements), have not been completed, the Bidder may enter the site only with the express consent of the property owner and the Engineer.

7. Proposals: All proposals must be made on the Proposal forms contained herein, and shall not be detached from these Specifications. The Proposals shall be enclosed in a sealed envelope, addressed to the City of Rome, P.O. Box 1433, Rome, Georgia, 30162-1433, and labeled “BURNETT FERRY ROAD IMPROVEMENTS, Bid No. 031-16".

8. Bid and Contract Security: Each Proposal must be accompanied by the Bid Bond provided in the Contract Documents, complete and executed, for an amount equal to at least five percent (5%) of the amount bid. The Bid Bond may be removed from the bid book to facilitate its execution, but must be reattached for submittal of the "Proposal". Security may be provided in the form of a certified check, cashier’s check, or cash deposit check. No other check type will be acceptable.

No Proposal shall be read aloud or considered complete unless the Bid Bond accompanies the Proposal (O.C.G.A. 36-91-41(d)). If for any reason whatsoever the Bidder withdraws from the competition after opening the bids, or if he refuses to execute the Contract, the Owner will proceed on the Bid Bond.

The Surety of the Bid Bond, Performance Bond, and Payment Bond shall be a surety company authorized to do business in the State of Georgia, shall be listed in the Department of the Treasury Circular 570, and shall have an underwriting limitation in excess of 100% of the bid amount. The Bonds and Surety shall be subject to approval by the Attorney for the Owner. Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

10. Right to Reject Bids: The Owner reserves the right to reject any or all bids and to waive informalities. No bids will be received after the time set for opening Bids. Any unauthorized conditions, limitations or provisions attached to the Bid, except as provided herein, will render it informal and may cause its rejection. Unbalanced bids will be subject to rejection. Any bidder may withdraw his bid, either personally, by facsimile or written request, at any time prior to the scheduled closing time for receipt of bids. Facsimile or written request for withdrawal must be in the possession of the Owner prior to the closing time for receipt of bids.

11. Bid Opening: Bids will be opened in public and read aloud. All bidders are welcome to be present at the opening.

12. Determination of Successful Bidder: Bids will be evaluated not only on Bid amount, but will be also be given consideration related to life expectancy of the Bid option compared with

Bid amount to provide the overall best value for the project. The Contract will be awarded to the overall best responsive, responsible bidder, if awarded.

(a) Responsibility: The determination of the bidder's responsibility will be made by the Owner based on whether the bidder:

(1) maintains a permanent place of business,

(2) has the appropriate technical experience,

(3) has adequate plant and equipment to do the work properly and expeditiously, and

(4) has suitable financial means to meet obligations incidental to the work.

The bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, the bidder fails to satisfy the Owner that he is properly qualified to carry out the obligations of the Contract.

(b) Responsiveness: The determination of responsiveness will be made by the Owner based on a consideration of whether the bidder has submitted a complete Bid form without irregularities, excisions, special conditions, or alternative bids for any item unless specifically requested in the Bid form.

BID (REVISED 10-20-2016)

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TO THE CITY OF ROME, GEORGIA

Submitted: _____, 2016

The undersigned, as Bidder, hereby declares that the only person or persons interested in the BID as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this BID or in the Contract to be entered into; that this Bid is made without connection with any other person, company or parties making BID; and that it is in all respects fair and in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the Drawings and the Specifications for the work and contractual documents relative thereto, and has read all Instructions to Bidders and General Conditions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees, if this BID is accepted, to contract with the City of Rome, Georgia, in the form of contract specified, to furnish all necessary products, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of **BURNETT FERRY ROAD IMPROVEMENTS, Bid No. 031-16** , in full and complete accordance with the shown, noted, and reasonably intended requirements of the Specifications and Contract Documents to the full and entire satisfaction of the City with a definite understanding that no money will be allowed for



**(DO NOT DETACH)**

extra work except as set forth in the attached General Conditions and Contract Documents, for the following prices:

ITEM 1 - For furnishing all materials and performing all labor necessary to complete Burnett Ferry Road Improvements, including all work shown and/or specified and not included in Items 2 through 40 below, the amount of

_____Dollars ( $_____).

ITEM 2 - GRADING COMPLETE

| | | | | |
|---|---|---|---|---|
| a. | 1 | ea. | Lump Sum | $_____ |

ITEM 3 - TRAFFIC CONTROL

| | | | | |
|---|---|---|---|---|
| a. | 1 | ea. | Lump Sum | $_____ |

ITEM 4 – EROSION CONTROL DEVICES

| | | | | | |
|---|---|---|---|---|---|
| a. | 63 | ea. | Inlet Sediment Trap | $_____/ea. | $_____ |
| b. | 200 | l.f. | Fabric Check Dam | $_____/l.f. | $_____ |
| c. | 10,000 | l.f. | Temp. Silt Fence, Type 'A' | $_____/l.f. | $_____ |
| d. | 1,000 | l.f. | Temp. Silt Fence, Type 'C' | $_____/l.f. | $_____ |
| e. | 2 | acre | Permanent Grassing | $_____/acre | $_____ |
| f. | 2 | acre | Temporary Grassing | $_____/acre | $_____ |
| g. | 50 | ton | Mulch | $_____/ton | $_____ |
| h. | 2,500 | s.y. | Sod | $_____/s.y. | $_____ |

ITEM 5 - CLASS B CONCRETE, INCLUDING REINFORCING STEEL

| | | | | | |
|---|---|---|---|---|---|
| a. | 5 | c.y. | | $_____/c.y. | $_____ |

ITEM 6 – 18" STORM DRAIN PIPE.

| | | | | | |
|---|---|---|---|---|---|
| a. | 3,075 | l.f. | 1' - 10' Deep | $_____/l.f. | $_____ |

ITEM 7 - 24" STORM DRAIN PIPE

| | | | | | |
|---|---|---|---|---|---|
| a. | 2,370 | l.f. | 1' – 10' Deep | $_____/l.f. | $_____ |



**(DO NOT DETACH)**

ITEM 8 - 30” STORM DRAIN PIPE

a. 598 l.f. 1’ - 10’ Deep $_____/l.f. $_____

ITEM 9 - 36” STORM DRAIN PIPE

a. 12 l.f. 1’ – 10’ Deep $_____/l.f. $_____

ITEM 10 - 18” FLARED END SECTION

a. 12 each Storm Drain $_____/each $_____

ITEM 11 - 24” FLARED END SECTION

a. 3 each Storm Drain $_____/each $_____

ITEM 12 - 36” FLARED END SECTION

a. 1 each Storm Drain $_____/each $_____

ITEM 13 - ADJUSTMENT OF MANHOLE RING AND COVER TO GRADE

a. 11 each East Jordan Iron Works Standard w/ Clock Tower Logo

$_____/each $_____

b. 18 each Old Style to be Replaced $_____/each $_____

ITEM 14 – ADJUSTMENT OF WATER VALVE BOX TO GRADE

a. 5 each $_____/each $_____

ITEM 15 – RELOCATION OF EXISTING WATER METER

a. 80 each Relocation of Existing Water Meters

$_____/each $_____

ITEM 16 – RELOCATION/CAPPING OF EXISTING SANITARY SEWER SERVICES

a. 8 each Relocation of Existing Sanitary Sewer Service

$_____/each $_____

b. 10 each Capping of Existing Sanitary Sewer Service

$_____/each $_____



**(DO NOT DETACH)**

ITEM 17 - REPLACE AND RELOCATE FENCE

a. 100 l.f. Dog Wire Fence $_____/l.f. $_____

b. 350 l.f. 4-ft Chain Link Fence $_____/l.f. $_____

c. 126 l.f. 4-ft Chain Link Fence (Vinyl Coated)

$_____/l.f. $_____

ITEM 18 - CATCH BASIN, GDOT STD 1033D

a. 40 each 0' - 6' Deep $_____/each $_____

b. 40 l.f. Additional Depth $_____/l.f. $_____

ITEM 19 - CATCH BASIN, GDOT STD 1034D

a. 22 each 0' - 6' Deep $_____/each $_____

b. 10 l.f. Additional Depth $_____/l.f. $_____

ITEM 20 - DROP INLET, GDOT STD 1019A

a. 9 each 0' - 6' Deep $_____/each $_____

b. 10 l.f. Additional Depth $_____/l.f. $_____

ITEM 21 - STORM SEWER MANHOLE/JB, GDOT STD 1011A

a. 5 each 0' - 6' Deep $_____/each $_____

b. 5 l.f. Additional Depth $_____/l.f. $_____

ITEM 22 - CONCRETE SIDEWALK

a. 5,100 s.y 4 inch Thick $_____/s.y. $_____

ITEM 23 - CONCRETE CURB & GUTTER

a. 9,000 l.f. 8" x 30", Type 2 NEW $_____/l.f. $_____

b. 100 l.f. 8" x 30", Type 2 Remove & Replace $_____/l.f. $_____

ITEM 24 - DRIVEWAY CONSTRUCTION

a. 1,700 l.f. Rome Standard Driveway (with 6" compacted G.A.B.) $_____/l.f. $_____

b. 600 s.y. Driveway Concrete $_____/s.y. $_____



**(DO NOT DETACH)**

(with 6” compacted G.A.B.)

c. 300 s.y. Add.Concrete needed for tie in. $_____/s.y. $_____
(with 6” compacted G.A.B.)

d. 590 s.y. Add.Asphalt needed for tie in. $_____/s.y. $_____
(with 6” compacted G.A.B.)

e. 325 s.y. Add.Gravel needed for tie in. $_____/s.y. $_____

ITEM 25 - GRADED AGGREGATE BASE

a. 200 s.y. 10” Graded Aggregate Base $_____/s.y. $_____
(compacted)

ITEM 26 - ASPHALTIC CONCRETE LEVELING COURSE

a. 380 ton. Group I or II Superpave $_____/ton $_____
(including Tack)

ITEM 27 - ASPHALTIC CONCRETE PAVEMENT

a. 1,350 ton 165 lbs/s.y. GP I or II 12.5 mm $_____/ton $_____
Superpave (including Tack)

ITEM 28 – MILLING

a. 1,500 s.y. 0”-2” Depth $_____/s.y. $_____

b. 300 s.y. 2”-5” Depth $_____/s.y. $_____

ITEM 29 - GUARD RAIL & END TREATMENTS

a. 270 l.f. “W” Beam Guard Rail $_____/l.f. $_____
(with Post and all appurtenances)

b. 2 each Type “1” Guard Rail Anch. $_____/each $_____

c. 2 each Type “12A” Guard Rail Anch.$_____/each $_____

ITEM 30 - PAVEMENT MARKING AND SIGNAGE

a. 11,700 l.f. Thermoplastic 5” Yellow Solid Line

$_____/l.f. $_____



**(DO NOT DETACH)**

b. 180 l.f. Thermoplastic 24" White Solid Line

$_____/l.f. $_____

c . 160 l.f. Sign Posts $_____/l.f. $_____
(Galv. Steel TP 7 w/Stub Post Base Incl.)

d. 150 s.f. Highway Signs, TP 1 Mat'l. $_____/s.f. $_____
TP 11 Refl. Sheeting

e. 10 s.f. Highway Signs, TP 1 Mat'l. $_____/s.f. $_____
TP 9 Refl. Sheeting

ITEM 31 - DETECTABLE WARNING SURFACE WITHIN WHEEL CHAIR RAMP AT PUBLIC STREETS

a. 26 each Matt Type (Yellow) $_____/each $_____

ITEM 32 – DEEP PATCHING

a. 1,500 s.y. $_____/s.y. $_____

**ADDITIONAL WORK IF DIRECTED BY ENGINEER**

ITEM 33 - CASH ALLOWANCE

a. Soil and Concrete Testing $1,500.00

ITEM 34 - ROCK EXCAVATION

a. 100 c.y. $_____/c.y. $_____

ITEM 35 - REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIALS

a. 50 c.y. Trench or Excavation Stabilization $_____/c.y. $_____

ITEM 36 – GEOTEXTILE FABRIC

a. 500 s.y. $_____/s.y. $_____

ITEM 37 – EROSION CONTROL DEVICES

a. 1,500 s.y. Erosion Control Mats, Slopes $_____/s.y. $_____



**(DO NOT DETACH)**

ITEM 38 - 18” STONE DUMPED RIP RAP

a. 5 s.y Type 3 $_____/s.y. $_____

ITEM 39 - 24” STONE DUMPED RIP RAP

a. 5 s.y. Type 3 $_____/s.y. $_____

ITEM 40 - PLASTIC FILTER FABRIC

a. 10 s.y. $_____/s.y. $_____

TOTAL ITEMS 1 THROUGH 40, INCLUSIVE IN THE AMOUNT OF _____ DOLLARS ( $_____).

The Bidder agrees hereby to commence work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Owner, and to fully complete all work under this Contract within 360 consecutive calendar days from and including said date.

The Bidder declares that he understands that quantities for unit price items are subject to either increase or decrease, and that should the quantities of any of the items of work be increased, the Bidder proposes to do the additional work at the unit prices started herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in quantities; and that actual quantities will be determined upon completion of work, at which time adjustment will be made to the contract amount by direct increase or decrease.

Bidder acknowledges receipt of Addenda _____ .

Bidder:_____

By:_____

Title: _____

Address: _____

_____

_____

Phone: _____



**(DO NOT DETACH)**

SECTION NO. 2

STORM DRAINAGE SYSTEM

2.01 - SCOPE: This section of the Specifications describes products and requirements for their use and installation in the storm drainage systems shown on the Drawings and/or Specified.

Furnish all materials and equipment and perform all labor necessary to fulfill the requirements of these Specifications.

2.02 - GENERAL: Supply all products and perform all work in accordance with applicable American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI) or other recognized standards. Latest revisions of all standards are applicable. If requested by the Engineer, submit evidence that manufacturer has consistently produced products of satisfactory quality and performance over a period of at least two years.

2.03 - PIPE, MATERIALS, AND ACCESSORIES:

(a) Reinforced Concrete Pipe: Reinforced concrete pipe shall be supplied in lengths of at least four feet.

(1) Pipe: Pipe shall be reinforced concrete conforming to ASTM C 76 for Class III pipe. Wall thickness design shall correspond to Wall B. Pipe shall have tongue and groove type joints.

(2) Acceptance: For pipe with a diameter of 30-inches or greater, acceptance shall be on the basis of material tests and inspection of manufactured pipe for defects and imperfections as defined in Paragraph 4.1.2 of ASTM C 76. Acceptance of smaller pipe shall be on the basis of plant load-bearing tests, material tests, and inspection of manufactured pipe for visual defects and imperfections as described in Paragraph 4.1.1 of ASTM C 76.

All pipe is subject to the inspection of the Engineer at the pipe plant, jobsite, or other point of delivery for the purpose of rejecting pipe not conforming to these Specifications.

Pipe shall be inspected after delivery for shape, cracks, uniformity, blisters and imperfect surfaces, and damaged ends. Repaired or patched pipe or pipe with repaired or patched joint ends or shoulders will be rejected.

(b) Manholes: Provide materials for construction of manholes in accordance with the following:

(1) Precast Concrete Sections: Precast concrete sections shall meet the requirements of ASTM C 478. The minimum compressive strength of the concrete in precast sections shall be 4,000 psi. The minimum shell thickness shall be one-twelfth of the inside diameter of the riser of the largest cone diameter. Each section shall be Georgia D.O.T. certified.

(2) Brick and Mortar: Brick shall be whole and hardburned, conforming to ASTM C 32 Grade MS. Mortar shall be made of one part Portland cement and two parts clean sharp sand. Cement shall be Type 1 and shall conform to ASTM C 150. Sand shall meet ASTM C 53.

NOTE: **All** Storm Drainage Structures to have a 6-inch solid concrete (min. 3000 psi) base if built in-place.

NOTE: All drainage structures to have weep holes with a conduit to be approved by the Engineer constructed from inside structure into bedding area of pipe on upstream sides to allow the conveyance of water into the drainage structure as approved by the Engineer. A minimum of two weeps (one of each side of pipe) per structure are required. No additional payment shall be made for weeps but shall be included in the price of the structure.

NOTE: **All** drainage structures to have solid concrete inverts in compliance with GDOT Details 1033D and 1034D.

(3) Iron Castings: Cast iron manhole frames, covers, and steps shall be gray iron, conforming to ASTM A 48 for Class 258 gray iron and all applicable local standards. All castings shall be tough, close grained, smooth and free from blow holes, blisters, shrinkage, strains, cracks, cold shots and other imperfections. No casting will be accepted which weighs less than 95% of the design weight. Shop drawings must indicate the design weight and provide sufficient dimensions to permit checking. All castings shall be thoroughly cleaned in the shop and given two coats of approved bituminous paint before rusting begins. All castings shall be made in the U.S.A.

Grate inlets shall be equal to East Jordan Iron Works 7510 with M3 vane type grate as shown on the Drawings.

Manhole frames and covers shall be equal to the following:

| Type | Design Weight | Manufacturer's Reference |
|---|---|---|
| Non-Traffic (std.) | 131# | EJIW G-1860 |
| Heavy Duty (traffic) | 318# | EJIW V-1480 |

All Heavy Duty Covers to have the following casting "CITY OF ROME GEORGIA" and "STORM" and City Clock Tower Emblem. All light duty cover to have ¾" raised lettering "PROPERTY OF CITY OF ROME".

All frames and covers shall have machined horizontal bearing surfaces.

(4) Plastic Steps: Manhole steps of polypropylene molded around a steel rod, equal to products of M. A. Industries may be used.

(5) Pipe/Manhole Connector: Pipe connections to precast concrete manholes shall be made using a compression type rubber boot manufactured in accordance with ASTM C 923, and equal to Kor-N-Seal.

(e) Concrete: Concrete shall be composed of cement, fine aggregate, coarse aggregate, admixtures, and water proportioned and mixed to produce a plastic workable mix. Concrete shall have a minimum 28-day compressive strength of 3,000 psi.

(f) Grout: Grout which is required by the Drawings or Specifications, and is not otherwise specified, shall be composed of one part cement and three parts sand. Grout shall have a maximum water cement ratio of 5.0 U.S. gallons per 94 lb. bag of cement.

(g) Reinforcing Steel: Bar reinforcing steel shall conform to the requirements of ASTM A 615 Grade 40, as amended to date.

(h) Rip Rap: Provide rip-rap where shown on the Drawings or otherwise directed using only one method, either (1) or (2), throughout the job.

(1) Stone Rip-Rap: Use sound, tough, durable stones resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Specific gravity shall be 2.0 or higher. Minimum weight of individual stones shall be 50 pounds. The maximum allowable dimension for an individual stone is 24 inches. The minimum allowable dimension for an individual stone is 6 inches. At least 50% of the stones shall have a minimum dimension of 12 inches.

(2) Sand-Cement Bag Rip-Rap: Use cement sacks or burlap bags having a capacity of from 1 to 2 cubic feet. Do not use bags previously used for sugar or

chemicals. Fill bags with a mixture of one part Portland Cement to five parts sand.

2.04 - LOCATION AND GRADE: The Drawings show the location and grade of catch basins, manholes, and drainage ditches. The grade line shown on the profile, or spot elevations in the plan view, corresponds to the invert of the pipe or ditch, respectively.

The Contractor shall protect the location and elevation of bench marks and reference points shown on the Drawings and shall provide all other control required to construct the drainage systems.

2.05 - EXCAVATION OF TRENCHES: Excavate all materials encountered, including rock, and dispose of excess excavated material not required for backfilling. Perform all excavation in accordance with the Occupational Safety and Health Act of 1970 (PL 91596).

(a) Dimensions: Excavate trenches to the depths shown on the drawings to accommodate the required bedding and for manholes and other structures.

Excavate the top portion of the trench to any width which will not cause unnecessary damage to adjoining structures, roadways, pavements, utilities, trees, or private property.

Excavate the lower portion of the trench to a width no greater than the outside diameter of the pipe plus 18 inches. Maintain this width up to two feet above the pipe.

(b) Earth Excavation: Excavate and prepare the trench bottom to support the pipe uniformly throughout its length.

NOTE: No additional payment will be made for improved bedding required to compensate for over excavation of the trench.

(c) Rock Excavation:

(1) Definition of Rock: Any material which cannot be excavated with a backhoe equal to a Caterpillar Model 426, Series II, and occupying an original volume of at least one-half cubic yard.

(2) Excavation: Where rock is encountered, excavate to the minimum depth and width which will provide 6 inches clearance beyond the outside diameter of the pipe.

(3) Blasting: Provide experienced workmen to perform blasting. Conduct blasting operations in accordance with all existing ordinances and regulations.

Protect all structures from the effects of the blast. Repair any resulting damage.

NOTE: No additional payment will be made for repair of damage caused by blasting.

(4) Removal of Rock: Do not use excavated rock as backfill material. Dispose of rock which is surplus or not suitable for use as rip-rap.

NOTE: Rock excavation will be paid for as an extra in addition to payment for pipe provided for elsewhere in these Specifications. Payment will be made for the measured quantity of rock excavated, at the unit price bid. The Unit price for rock excavation shall include the cost of rock excavation, the cost of additional backfill material as specified and all costs incidental thereto. The allowable volume of rock excavation for payment shall be based on the width of trench specified above, (but not less than 36 inches), and depth of rock in the centerline, from the top of the rock to the specified bottom of the trench. The Owner must be given reasonable notice to measure all rock. No allowance shall be made for excavating to extra width for construction of appurtenances and cost of all such additional rock excavation shall be included in the unit price bid for rock excavation.

(d) Bracing and Sheeting: When required by regulations, for safety of workers, or to prevent damage to adjoining structures, roadways pavements, utilities, trees, or private property which are specifically required to remain, provide bracing and sheeting.

(1) Timber: Timber for shoring, sheeting, or bracing shall be sound and free of large or loose knots and in good condition. Size and spacing shall be in accordance with OSHA regulations.

Remove bracing and sheeting in units when backfill reaches the point necessary to protect the pipe and adjacent property. Leave sheeting in place when in the opinion of the Engineer it cannot be safely removed. Cut off sheeting left in place at least two feet below the surface.

(2) Steel Sheet Piling: Continuous lockjoint steel sheet piling may be substituted for timber sheeting when approved by the Engineer. Steel piling may be removed, without cutting, provided the rate of removal is kept in pace with the tamping and backfilling operations to assure complete filling of the void created by the withdrawal of the piling. Complete withdrawal of the piling in advance of the tamping and backfilling will not be permitted. Piling, where ordered to be left in place by the Engineer for reasons of safety, will be cut off where directed.

(e) Dewatering and Trench Stabilization: Dewater excavation continuously to maintain a water level below the bottom of the trench.

Wherever the material at the bottom of the trench is unsuitable for the proper installation of the pipe, the Engineer will direct the removal and replacement of the unsuitable material.

When so directed, undercut the trench and backfill with crushed stone bedding material. Place and compact this material to bring the trench to the required grade.

NOTE: Trench stabilization will be paid for as an extra in the amount authorized by the Engineer and at the unit price bid in the Bid.

NOTE: The price bid for pipe, culverts and manholes shall include excavation for the depth below the grade line necessary to provide specified bedding, and to lay pipe or set structures to grade, but measurements for payment will be made only to the grade line.

NOTE: No additional payment shall be made for the use of steel piling in lieu of timber sheeting.

NOTE: All cost of equipment, labor, and materials required for dewatering shall be included in the price bid for pipe.

2.06 - BEDDING: Bed pipe and other storm drainage structures in accordance with the detail drawings and the following specifications.

(a) Materials: Bedding shall be crushed stone. Material shall meet the requirements of Georgia Department of Transportation Specification 800.01 for No. 57 stone.

(b) General: Prepare the trench bottom to support the pipe uniformly throughout its length. Compact stone bedding material by tamping or slicing with a flat blade shovel. If the trench is excavated to excessive width or depth, provide the next better class of bedding. In rock trenches, bed pipe in at least six inches of suitable bedding material.

(c) Bedding Classification: Lay all pipe with Class “C” crushed stone bedding unless shown or specified otherwise.

(1) Class "A": Excavate the trench to a depth of one-fourth the nominal diameter of the pipe below grade and lay the pipe to line and grade on concrete block. Place concrete to the full width of the trench and to a height of one-fourth the outside diameter of the pipe above the invert.

(2) Class "B": Excavate the bottom of the trench flat at a minimum depth shown on the Drawings below the bottom of the pipe barrel. Place and compact bedding material to the proper grade. Bedding shall then be carefully placed by hand and compacted to provide full support under and up to the centerline of the pipe. Install Type "A" silt material over bedding as shown on Pipe Bedding Detail within Plans.

(d) Manholes: Excavate to a minimum of 12 inches below the planned elevation of the base of the manhole. Place and compact stone bedding material to the required grade before constructing the manhole.

NOTE: No separate payment will be made for material used to provide specified bedding. The cost of all bedding materials shall be included in the unit price bid for the item to which it relates.

2.07 - LAYING PIPE AND PRECAST CULVERTS: Lay the pipe to conform accurately to the alignment and grade shown on the Drawings.

(a) Handling: Use suitable tools and equipment to handle and lay pipe. Prevent damage to the pipe. Examine all pipe for cracks and other defects as it is laid. Do not lay pipe or other materials which are known to be defective.

If any pipe or other material is discovered to be defective or damaged after being laid, remove and replace it.

NOTE: No additional payment will be made for replacement of defective materials.

(b) Sequence: Excavate, lay the pipe, and backfill as closely together as possible. Do not leave unjointed pipe in the trench overnight. Backfill and compact the trench as soon as possible after laying and jointing is completed. Cover the exposed end of the installed pipe each day at the close of work and at all other times when work is not in progress. If necessary to backfill over the end of an uncompleted pipe, close the end with a plug.

(c) Placing and Jointing: Clean pipe and fittings thoroughly before laying. Before making the joint, clean the sealing surfaces of dust, dirt, gravel, and other foreign substances. Apply joint lubricant recommended by the pipe manufacturer.

Center the tongue end in the groove of the preceding pipe and shove home. Apply moderate force to ensure proper seating.

Immediately after jointing bring the pipe to final alignment and grade.

NOTE: Measurement for payment at the unit price for storm drain pipe and culverts shall be made from centerline to centerline of manholes, catch basins, junction boxes, or to the point of connection with headwalls or flared end sections. Depth of cut, if applicable, shall be measured from grade line to the invert of the pipe. Cut sheets prepared by the Contractor and approved by the Owner shall be the basis for payment.

NOTE: Full payment will not be made until inspection and clean-up are complete and the line is ready to be placed into service.

2.08 - CATCH BASINS AND MANHOLES: Construct catch basins and manholes as shown on the Drawings:

(a) Precast Concrete: Handle sections carefully to prevent cracking or chipping. Provide uniform bedding of the bottom section to prevent uneven loading. If preformed openings must be enlarged or altered, or if new openings must be made in the field, minimize the amount of material removed to provide closely matched surfaces for grouting. Install gaskets in accordance with manufacturer's recommendations to produce a watertight structure.

(b) Brick: Bed the bottom and sides of every brick in mortar. Apply a smooth coat of mortar, 3/4-inches thick, on the inside and outside.

(c) Inverts: Form channels as shown on the drawings, rounded, and troweled smooth. Maintain consistent grade through the invert. Seal the connection of pipes to the manhole with brick and mortar on the inside and outside.

(d) Top elevations: Build manholes outside of paved areas 18 inches above ground unless otherwise shown on the plans or directed by the Owner. Build manholes in paved areas to existing grades.

(e) Diamond Dowels: All catch basins shall have Diamond Dowel System (or equal) installed therein. Installation shall be in full and complete compliance with manufacturers' recommendations.

(f) Lids: All lids on catch basins will be squared up and extended to the back of the sidewalk as shown on the plans. Reinforcement shall be incorporated into all portions of the lid in order to provide a matt over the entire lid. Reinforcement spacing and bar size shall be in compliance with GDOT Standards. No additional payment will be made for the modification to the lid. Payment shall be included in the unit price for catch basins.

NOTE: Measurement for payment at the unit price for manholes shall be made from the invert to the base of the manhole frame.

NOTE: Payment for installation of Diamond Dowel System shall be included in the unit price for catch basins.

2.09 - CONCRETE COLLARS, HEADWALLS AND OTHER STRUCTURES: Provide concrete and reinforcement for collars, headwalls and other structures in accordance with the requirements of Section 3 - Concrete Work. Construct according to the details on the Drawings or D.O.T. standards where referenced.

2.10 - BACKFILLING: Backfill carefully to restore the ground surface to its original condition. Dispose of surplus material.

(a) Backfill Under Roads: Compact backfill underlying pavement and backfill under dirt and gravel roads to 95% of the maximum dry density as determined by the Standard Proctor Compaction Test (ASTM D 698), except in the top 12 inches, which shall be to 100% of the maximum dry density. All other bedding and backfill shall be compacted to 85% of the maximum dry density.

(b) Initial: Place initial backfill material carefully around the pipe above bedding in uniform 6 inch layers to a depth of at least 18 inches above the pipe bell. Compact each layer thoroughly with suitable hand tools. Do not disturb or damage the pipe. Backfill on both sides of the pipe simultaneously to prevent side pressures. Initial backfill material is earth material excavated from the trench which is clean and free of rock, organics, and other unsuitable material. If materials excavated from the trench are not suitable for use as initial backfill material, obtain suitable materials elsewhere.

(c) Final: After initial backfill material has been placed and compacted, backfill with general excavated material. Final backfill material shall not contain more than 1/3 broken rock, of which no single stone or boulder shall weigh more than 50 pounds. Place backfill material in uniform layers and thoroughly compact with heavy power tamping tools of the "Wacker" type.

(d) Settlement: If trenches settle, refill and grade the surface to conform to the adjacent surfaces.

(e) Additional Material: Where final grades above the pre-existing grades are required to maintain minimum cover, additional fill material will be shown on the Drawings.

Utilize excess material excavated from the trench if the material is suitable. If excess excavated materials are not suitable, or if the quantity available is not sufficient, provide suitable additional fill material.

NOTE: No separate payment will be made for backfilling. The cost of all such work and all costs incidental thereto shall be included in the unit price bid for the item to which the work pertains.

2.11 - RIP-RAP: Where shown on the Drawings, carefully compact backfill and place rip-rap to prevent subsequent settlement and erosion.

(a) Imbed stone rip-rap by hand so as to form a compact layer at least 12 inches thick. Place rip rap in such a way that the smaller stones are not segregated by evenly distributed. Place chinking stones in the crevices between the larger stones so that a dense, well graded mass is produced.

(b) Imbed sand-cement bag rip-rap by hand to form a compact layer at least 12 inches thick. Place with overlapping joints. The finished surface shall not deviate from the specified by more than 3 inches at any point.

(c) Place a filter fabric between rip-rap and soil foundation. Fabric shall be a geotextile underliner as per ASSHTO M288-98.

NOTE: The cost of all Rip-Rap along with required filter fabric shown on the Drawings or specified shall be included in the unit price bid for pipe, headwalls, or flared end sections to which it pertains. Payment at the unit price bid for Rip-Rap along with required filter fabric shall be made only when such Rip-Rap is specifically authorized by the Engineer and not shown on the Drawings or specified. Said payment at the unit price bid for Rip-Rap shall include filter fabric.

2.12 - INSPECTION: Clean pipe lines before requesting final acceptance. Where any obstruction is met, clean the pipe by means of rods, swabs, or other instruments. When requested by the Owner flush out lines and other structures before final inspection.

Pipe lines shall be straight and show a uniform grade between manholes. Correct any discrepancies discovered during inspection.

2.13 - PAYMENT: No separate payment shall be made for work required in this Section of the Specifications except as specifically set forth in the Bid. The cost of all required work and all costs incidental thereto shall be included in the unit prices bid in the Bid for the items to which it pertains.

SECTION NO. 5

PROTECTION AND RESTORATION OF WORK AREA

5.01 - GENERAL: Return all items and all areas disturbed, directly or indirectly by work under these Specifications, to their original condition or better, as quickly as possible after work is started.

5.02 - MAN-MADE IMPROVEMENTS: Protect, or remove and replace with the Owner's approval, all fences, walkways, mail boxes, pipe lines, drain culverts, power and telephone lines and cables, and other improvements that may be encountered in the work.

Note: Relocate fences to current right of way as called for on plans. All fences to be relocated with new like-kind fencing material, line post, corner post and all other appurtenances currently in-place.

Payment: Payment shall be by linear feet of fencing relocated as shown in the bid. NO ADDITIONAL payment shall be made for any other appurtenances associated with the relocation of said fences.

Note: All mailboxes are to be relocated in a manner acceptable to the U.S. Post Office such that mail delivery is NOT disrupted. During the course of the project should mailboxes/post be damaged, it is the full and complete responsibility of the contractor to replace mailboxes/post with that of like kind in its permanent location.

Payment: NO ADDITIONAL payment shall be made for the maintaining proper mailbox location, or for the replacement thereof for damaged mailboxes/post. All cost associated therewith should be included in Item No. 1 within the Bid.

5.03 - CULTIVATED GROWTH: Do not disturb cultivated trees or shrubbery unless approved by the Owner. Any such trees or shrubbery which must be removed shall be heeled in and replanted under the direction of an experienced nurseryman.

5.04 - CUTTING OF TREES: Do not cut trees for the performance of the work except as absolutely necessary. Protect trees that remain in the vicinity of the work from damage from equipment. Do not store spoil from excavation against the trunks. Remove excavated material stored over root system of trees within 30 days to allow proper natural watering of the root system. Repair any damaged tree over 3-inches in diameter, not to be removed, under the direction of an experienced nurseryman. All trees and brush that require removal

shall be promptly and completely removed from the work area and disposed of by the Contractor. No stumps, wood piles, or trash piles will be permitted on the work site.

Note: No separate Payment shall be made for the cutting of trees or stump removal specified above but shall be included in Unit Price for Grading Complete.

5.05 - REMOVING AND REPLACING PAVEMENT:

(a) Removing Pavement: Remove existing pavement as required or specified.

(1) Marking: Before removing any pavement, mark the pavement neatly paralleling pipe lines and existing street lines. Space the marks the width of the trench.

(2) Breaking: Break asphalt pavement along the marks using jack hammers or other suitable tools. Break concrete pavement along the marks by use of jack hammers or by scoring with a rotary saw and breaking below the score by the use of jack hammers or other suitable tools.

(3) Machine Pulling: Do not pull pavement with machines until completely broken and separated from pavement to remain.

(4) Damage to Adjacent Pavement: Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement.

NOTE: No additional payment will be made for removing and replacing damaged adjacent pavement.

(5) Sidewalk: Remove and replace sidewalks disturbed by construction for their full width and to the nearest undisturbed joint.

(6) Curb: Remove and replace to the nearest undisturbed joint, or tunnel under, any curb disturbed or encountered by construction.

(b) Replacing Pavement: Upon completion of backfilling and consolidation of the backfill, arrange to have the compaction checked by the Engineer.

Prior to replacing pavement, make a final cut in concrete pavement nine inches back from the edge of damaged pavement. Make the cut using a rotary saw. Remove asphalt pavement nine inches back from the edge of damaged pavement using jack hammers or other suitable tools.

Replace all street and roadway pavement as shown on the Drawings. Replace driveways, sidewalks, and curbs with the same material and to the same dimensions as existing.

(c) Supervision and Approval: Pavement restoration shall meet the requirements of the regulatory agency responsible for the pavement. Obtain agency approval of pavement restorations before requesting final payment.

Obtain the Owner's approval of restoration of pavement not the responsibility of a regulatory agency, such as private roads and drives.

Complete pavement restoration as soon as possible after backfilling.

(d) Failure of Pavement: Should any pavement restoration or repairs fail or settle during the life of the Contract, including the bonded period, promptly restore or repair defects.

NOTE: No separate payment for removing and replacing damaged pavement will be made.

5.06 BACKFILLING SHOULDERS: After placement and proper curing of curb and gutter and/or sidewalk, the Contractor shall place top soil which has been stockpiled from excavation or from borrow areas (secured and fully permitted by the Contractor at his expense) in areas to be grassed to a minimum depth of 4-inches. The finished surface shall present a smooth, uniform, loose, well-broken soil without large clods, rocks, roots or other unsatisfactory materials.

Topsoil shall be defined as soil in its unaltered state as having a Ph range of 5.5 – 6.5 and containing more than 80 percent of the nutrients necessary for plants to produce sustainable growth.

NOTE: No separate payment shall be made for the incorporation of lime into soil to bring it into the required Ph range for classification as top soil, but shall be included in the Bid Item for Backfilling Shoulders.

5.07 GRASSING: Grass surfaces by hydro seeding with a mixture of fertilizer, seed, mulch, and water at the following rates:

| | |
|---|---|
| Fertilizer (12-12-12) | 1500 lbs/acre |
| Bermuda Seed | 60 lbs/acre |
| Fescue Seed | 200 lbs/acre |

| | |
|---|---|
| Mulching Material | 1500 lbs/acre |

Mulching material shall be Conwed-2000, Weyerhauser Silva Fiber, or equal.

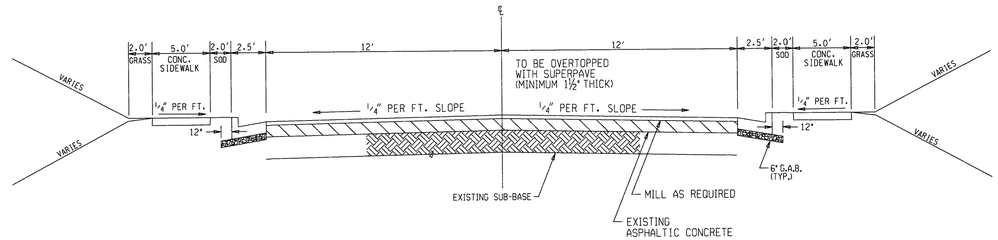
In areas where hydro seeding is not practical, hand seeding is permissible using the same mixture of fertilizer and seed listed above. These areas shall be mulched in accordance with the "Manual for Erosion and Sediment Control in Georgia", latest revision.

In areas so specified, grassing shall be Bermuda sod as specified by the Engineer.

5.08 - DISPOSAL OF RUBBISH: Dispose of all materials cleaned and grubbed during the construction of the project in accordance with the applicable codes and rules of the appropriate regulatory agencies, county, state and federal.

5.09 - PAYMENT: No additional payment shall be made for work required in this Section of the Specifications except as specifically set forth in the Bid. The cost of all labor, materials, and equipment required by the work shall be included in the unit price bid for the work to which it pertains.

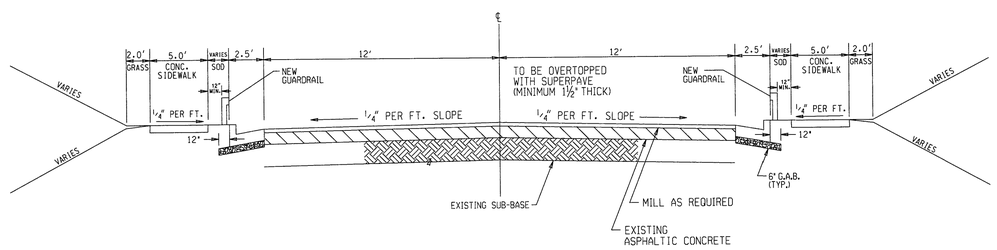
| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 5 | |




# TYPICAL ROADWAY SECTION

STA. 256+71 TO STA. 299+28
STA. 301+08 TO STA. 313+02

SCALE : NOT TO SCALE




# TYPICAL ROADWAY SECTION WITH GUARDRAIL

STA. 299+28 TO STA. 301+08

SCALE : NOT TO SCALE

GEORGIA REGISTERED No. 26579 PROFESSIONAL ENGINEER CHARLES F. HARDIN 10-20-16

SES


Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com


**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

| ISSUED FOR BID: | |
|---|---|
| 9/9/2016 | |
| ISSUED FOR CONSTRUCTION: | |
| | |
| REVISION DATES: | |
| 10/20/2016 | |
| | |
| | |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**TYPICAL SECTIONS**

DRAWING No.
5-01

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 13 | |

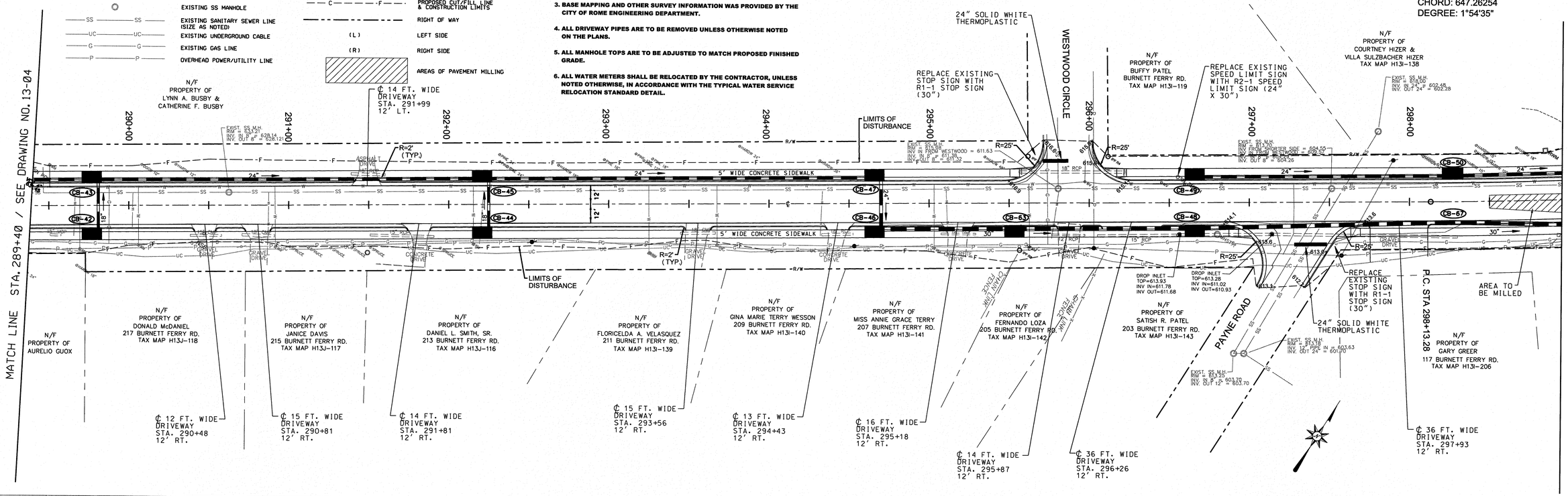
## LEGEND

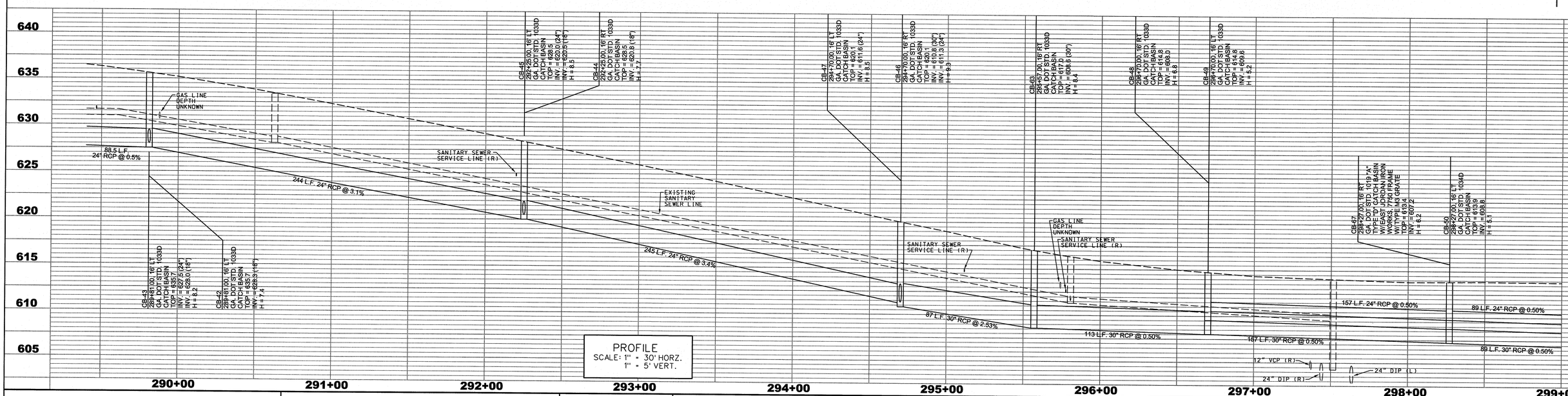
- EXISTING WATER PIPELINE (SIZE AS NOTED)
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING POWER/LIGHT POLE
- EXISTING SS MANHOLE
- EXISTING SANITARY SEWER LINE (SIZE AS NOTED)
- EXISTING UNDERGROUND CABLE
- EXISTING GAS LINE
- OVERHEAD POWER/UTILITY LINE
- EXISTING STORM DRAIN
- PROPOSED CATCH BASIN
- CB-7 CATCH BASIN NUMBER (SEE CROSS SECTIONS & PROFILES)
- PROPOSED STORM DRAIN
- PROPOSED CUT/FILL LINE & CONSTRUCTION LIMITS
- RIGHT OF WAY
- (L) LEFT SIDE
- (R) RIGHT SIDE
- AREAS OF PAVEMENT MILLING

## NOTES:

1. CONFINE ALL WORK TO THE ROAD RIGHT-OF-WAY.
2. THE LOCATION OF THE UTILITIES SHOWN HEREON WERE TAKEN FROM THE BEST INFORMATION AVAILABLE AND MAY NOT BE ACCURATE OR COMPLETE. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL UTILITIES WITH THE UTILITY OWNER.
3. BASE MAPPING AND OTHER SURVEY INFORMATION WAS PROVIDED BY THE CITY OF ROME ENGINEERING DEPARTMENT.
4. ALL DRIVEWAY PIPES ARE TO BE REMOVED UNLESS OTHERWISE NOTED ON THE PLANS.
5. ALL MANHOLE TOPS ARE TO BE ADJUSTED TO MATCH PROPOSED FINISHED GRADE.
6. ALL WATER METERS SHALL BE RELOCATED BY THE CONTRACTOR, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH THE TYPICAL WATER SERVICE RELOCATION STANDARD DETAIL.
7. THE CONTRACTOR SHALL RETURN ALL SIGNS AND SIGN POSTS TO THE CITY OF ROME.

**CURVE #5**
RAD: 3000.00000
LEN: 18201.03134
TAN: 325.53099
CEN. ANG: 347°36'51"
CHORD: 647.26254
DEGREE: 1°54'35"




SCALE IN FEET
0 30 60 120
SCALE: 1" = 30'

GEORGIA REGISTERED No. 19579 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.
10-20-16

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**PROJECT OWNER:**
**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

| | |
|---|---|
| ISSUED FOR BID: | 9/9/2016 |
| ISSUED FOR CONSTRUCTION: | |
| REVISION DATES: | 10/20/2016 |

**CITY OF ROME PUBLIC WORKS**
**BURNETT FERRY ROAD**
**PLAN & PROFILE**
**STA. 289+40 TO STA. 299+00**

DRAWING No. 13-05

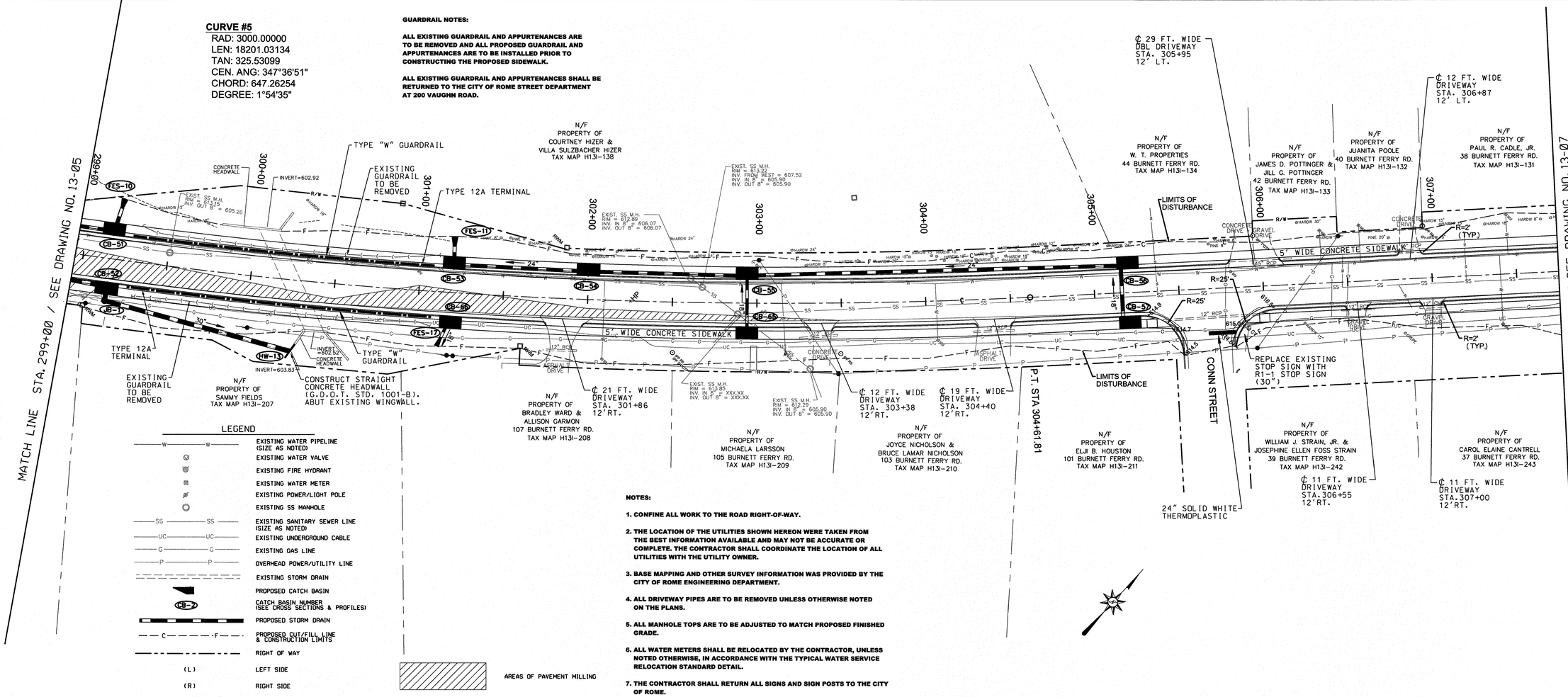
| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 13 | |

**CURVE #5**
RAD: 3000.00000
LEN: 18201.03134
TAN: 325.53099
CEN. ANG: 347°36'51"
CHORD: 647.26254
DEGREE: 1°54'35"

**GUARDRAIL NOTES:**

**ALL EXISTING GUARDRAIL AND APPURTENANCES ARE TO BE REMOVED AND ALL PROPOSED GUARDRAIL AND APPURTENANCES ARE TO BE INSTALLED PRIOR TO CONSTRUCTING THE PROPOSED SIDEWALK.**

**ALL EXISTING GUARDRAIL AND APPURTENANCES SHALL BE RETURNED TO THE CITY OF ROME STREET DEPARTMENT AT 200 VAUGHN ROAD.**

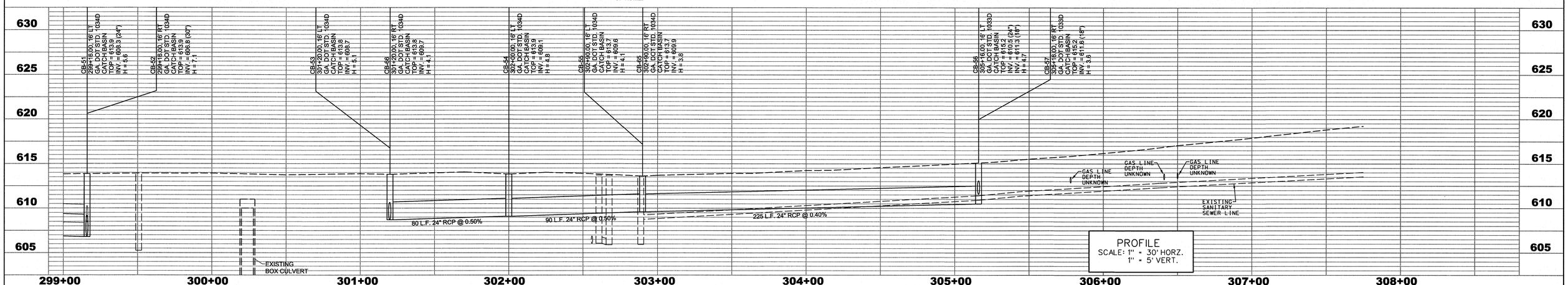



**LEGEND**

| | |
|---|---|
| —W—W— | EXISTING WATER PIPELINE (SIZE AS NOTED) |
| | EXISTING WATER VALVE |
| | EXISTING FIRE HYDRANT |
| | EXISTING WATER METER |
| | EXISTING POWER/LIGHT POLE |
| | EXISTING SS MANHOLE |
| —SS—SS— | EXISTING SANITARY SEWER LINE (SIZE AS NOTED) |
| —UC—UC— | EXISTING UNDERGROUND CABLE |
| —G—G— | EXISTING GAS LINE |
| —P—P— | OVERHEAD POWER/UTILITY LINE |
| | EXISTING STORM DRAIN |
| | PROPOSED CATCH BASIN |
| CB-7 | CATCH BASIN NUMBER (SEE CROSS SECTIONS & PROFILES) |
| | PROPOSED STORM DRAIN |
| —C—F— | PROPOSED CUT/FILL LINE & CONSTRUCTION LIMITS |
| | RIGHT OF WAY |
| (L) | LEFT SIDE |
| (R) | RIGHT SIDE |
| | AREAS OF PAVEMENT MILLING |

**NOTES:**

1. **CONFINE ALL WORK TO THE ROAD RIGHT-OF-WAY.**
2. **THE LOCATION OF THE UTILITIES SHOWN HEREON WERE TAKEN FROM THE BEST INFORMATION AVAILABLE AND MAY NOT BE ACCURATE OR COMPLETE. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL UTILITIES WITH THE UTILITY OWNER.**
3. **BASE MAPPING AND OTHER SURVEY INFORMATION WAS PROVIDED BY THE CITY OF ROME ENGINEERING DEPARTMENT.**
4. **ALL DRIVEWAY PIPES ARE TO BE REMOVED UNLESS OTHERWISE NOTED ON THE PLANS.**
5. **ALL MANHOLE TOPS ARE TO BE ADJUSTED TO MATCH PROPOSED FINISHED GRADE.**
6. **ALL WATER METERS SHALL BE RELOCATED BY THE CONTRACTOR, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH THE TYPICAL WATER SERVICE RELOCATION STANDARD DETAIL.**
7. **THE CONTRACTOR SHALL RETURN ALL SIGNS AND SIGN POSTS TO THE CITY OF ROME.**




SCALE IN FEET
0 30 60 120
SCALE: 1" = 30'

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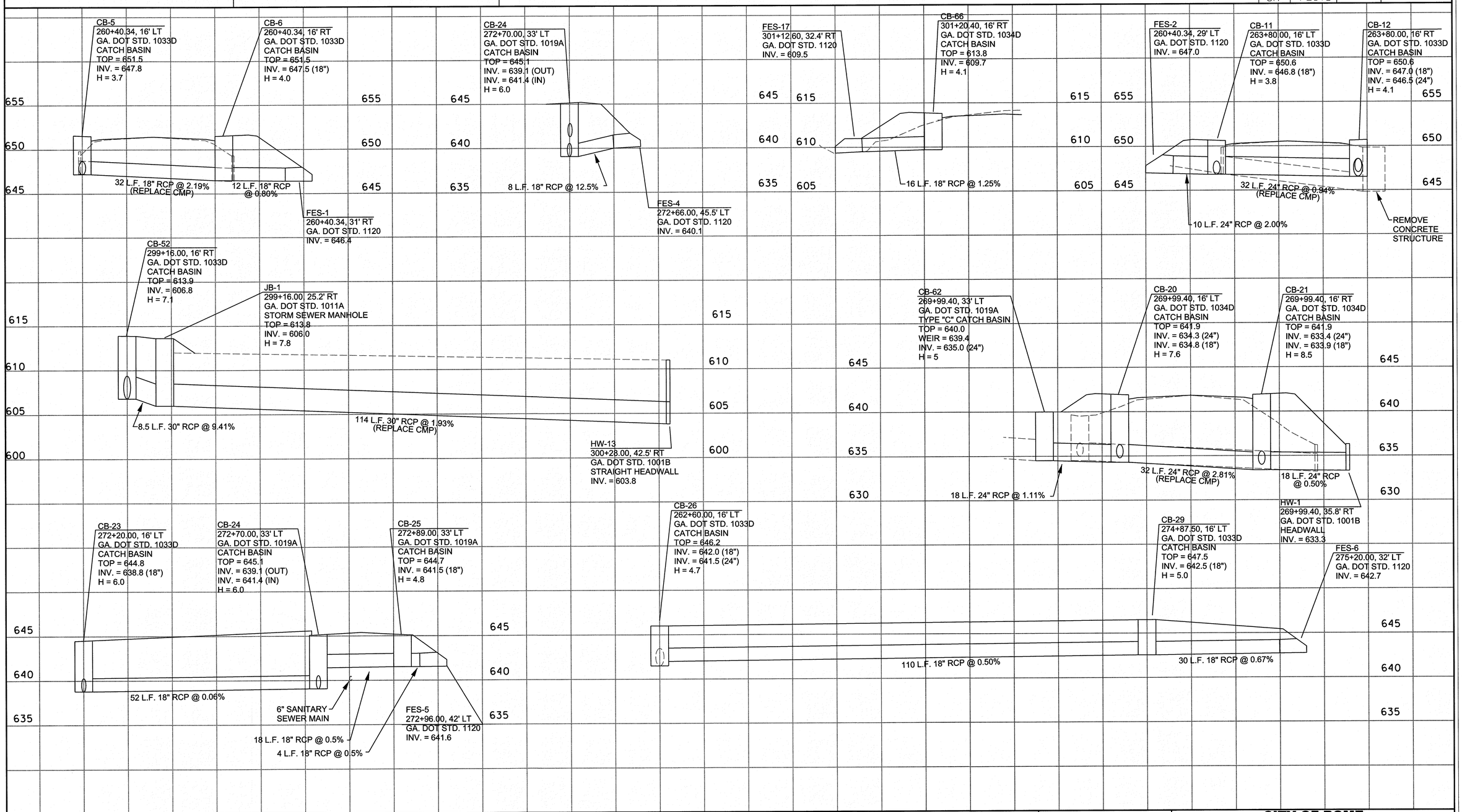
ISSUED FOR BID:
9/9/2016
ISSUED FOR CONSTRUCTION:
REVISION DATES:
10/20/2016

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**PLAN & PROFILE**
**STA. 299+00 TO 307+75**

DRAWING No.
13-06

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | | |




GEORGIA REGISTERED No. 29571 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR. 10-2-16

SCALE:
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'

SES


Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

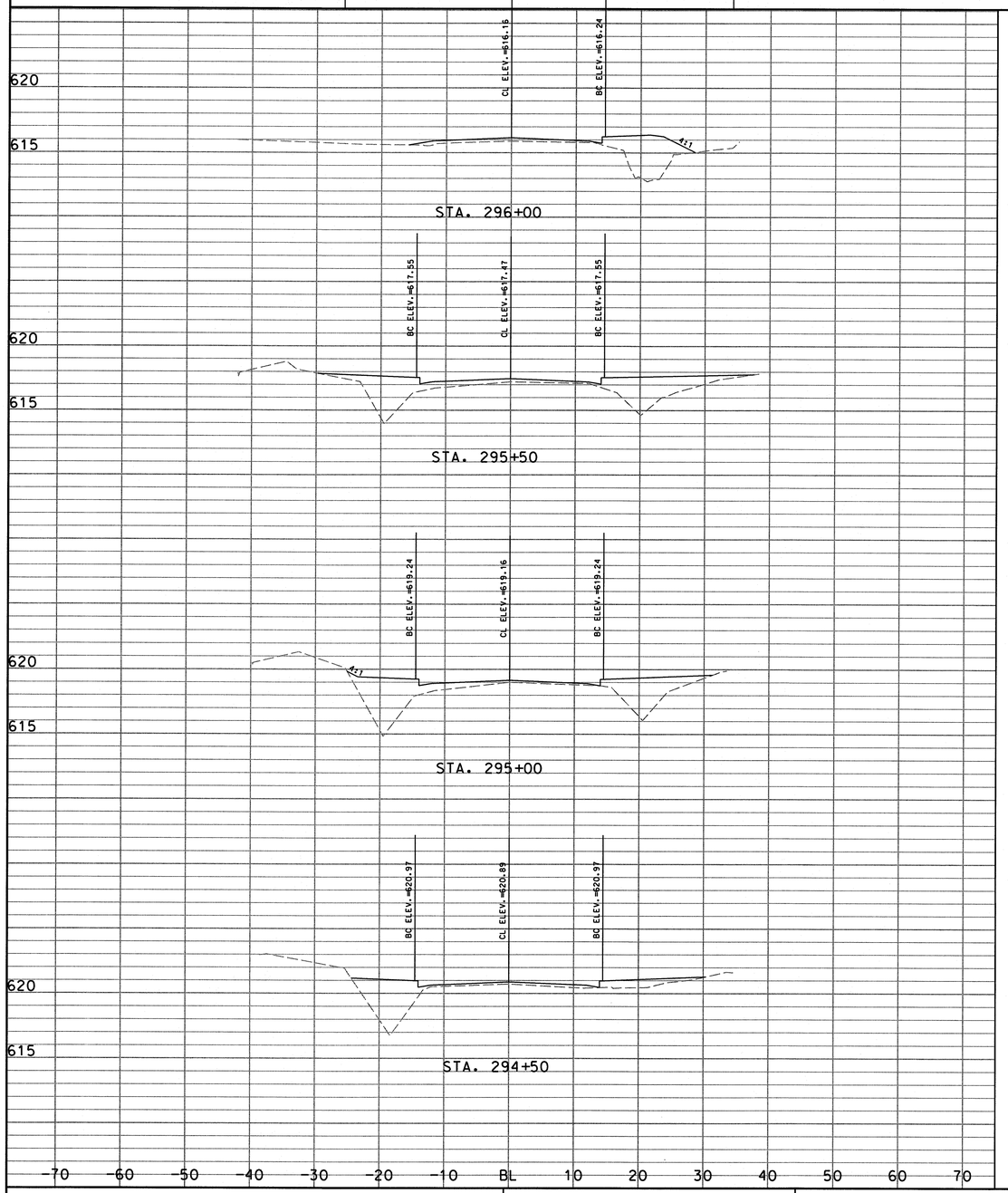

ISSUED FOR BID:
9/9/2016
REVISION DATES:
10/20/2016

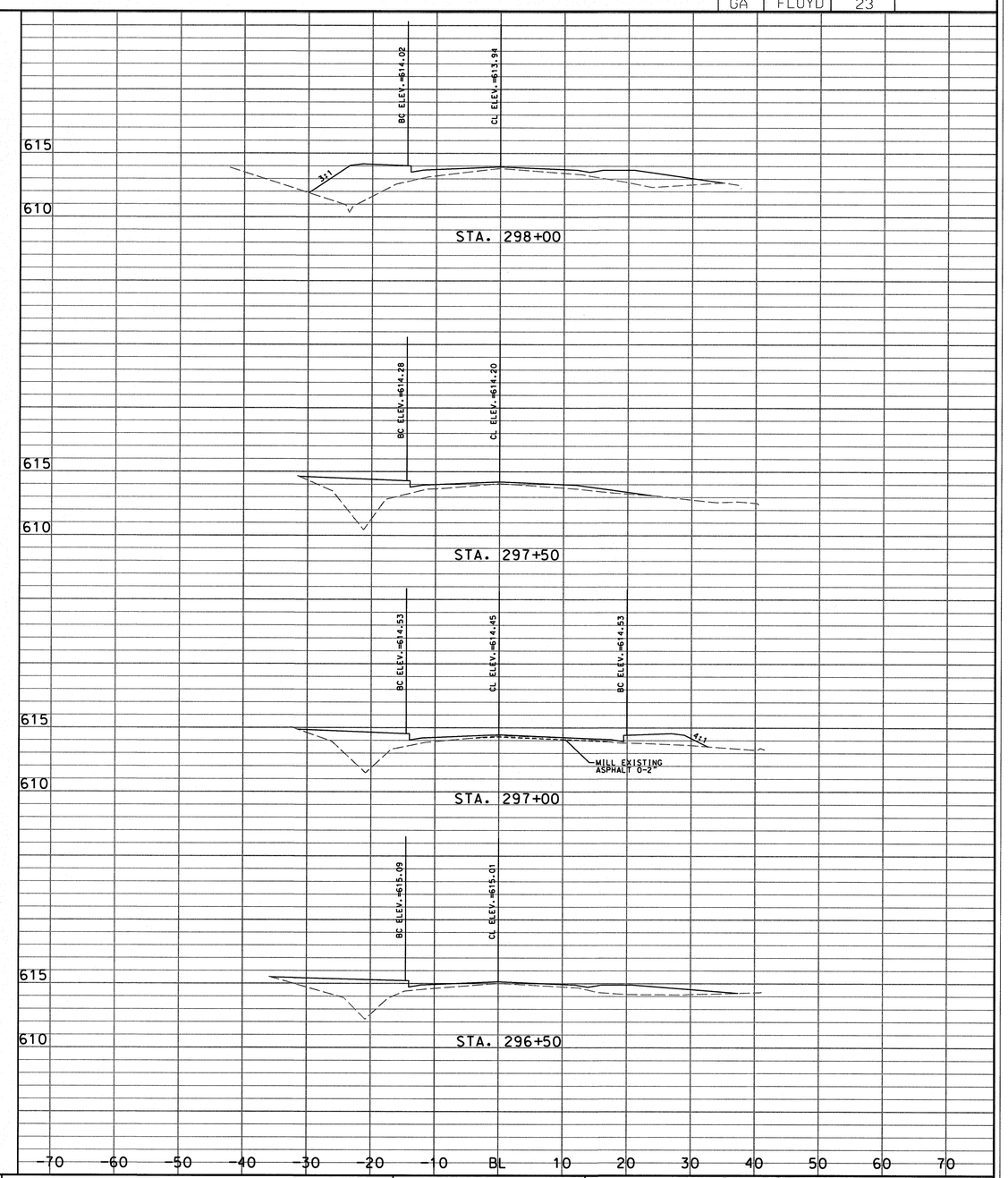
**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**DRAINAGE PROFILES**

DRAWING No.
22-01

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 23 | |




GEORGIA REGISTERED No. 29879 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

SCALE:
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'

SES
Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

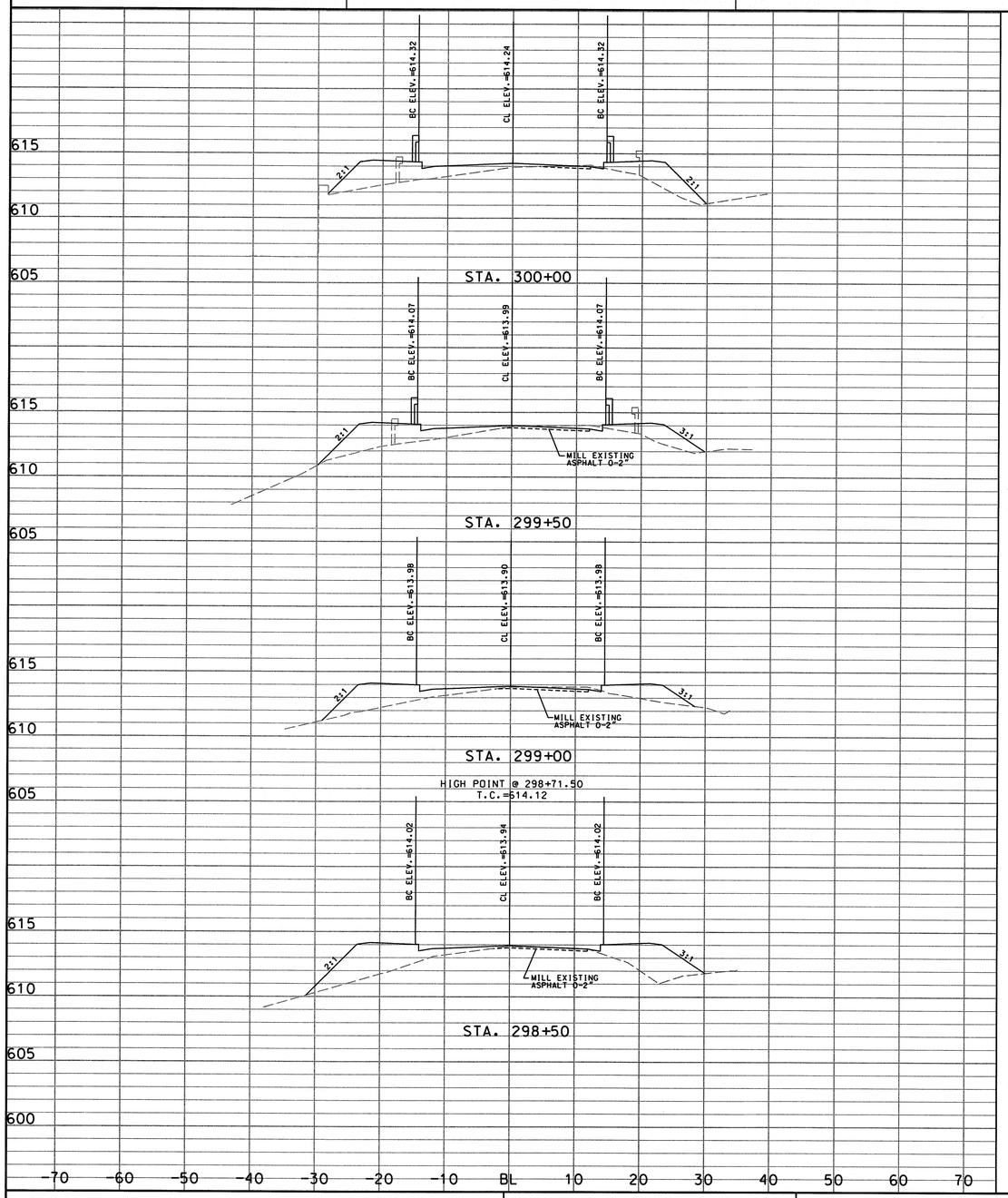
ISSUED FOR BID:
9/9/2016
REVISION DATES:
10/20/2016

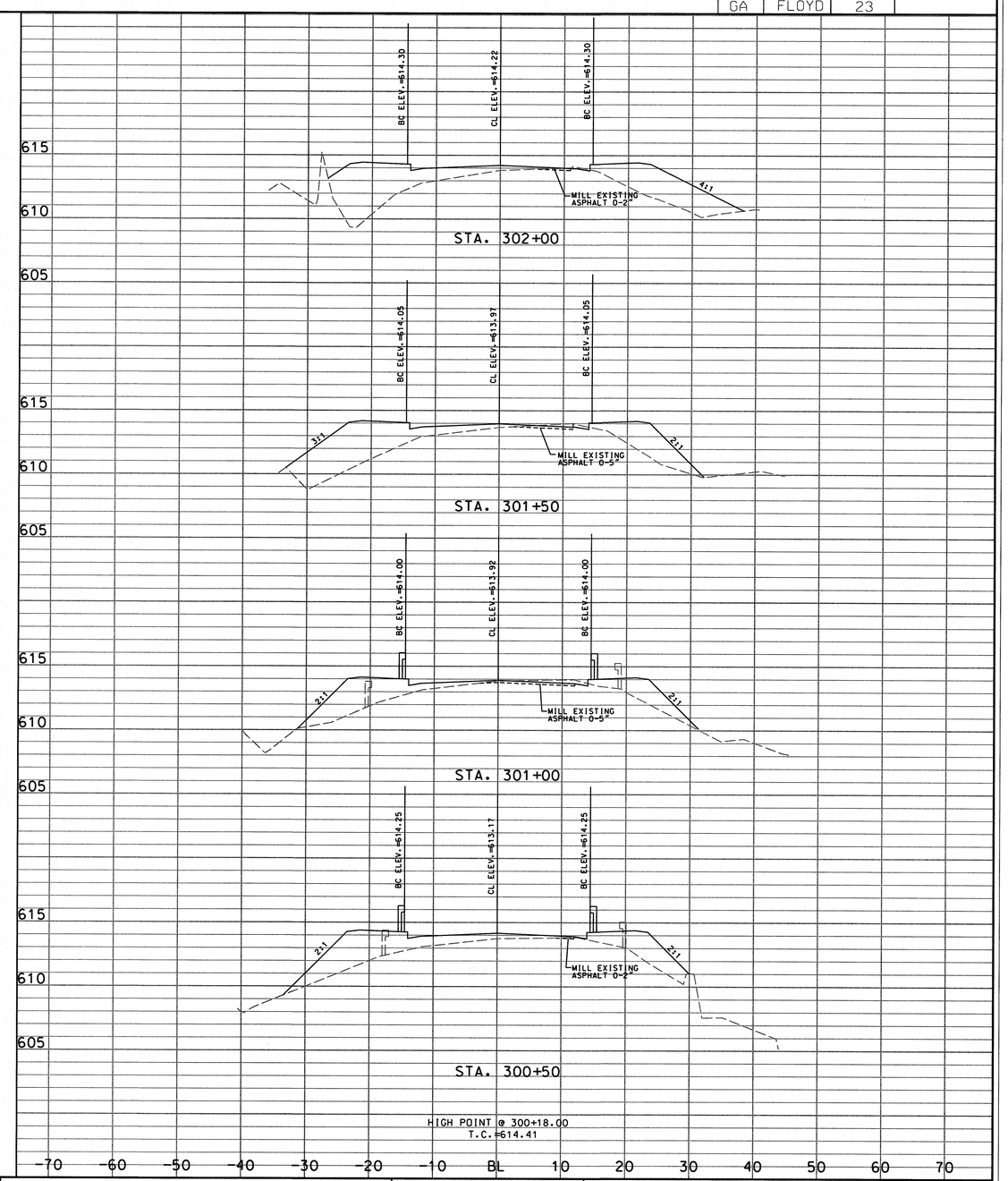
**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**CROSS SECTIONS**
**STA. 294+50 TO STA. 298+00**

DRAWING No.
23-11

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 23 | |




GEORGIA REGISTERED PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR. 11-2-16

SCALE:
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'


SES
Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
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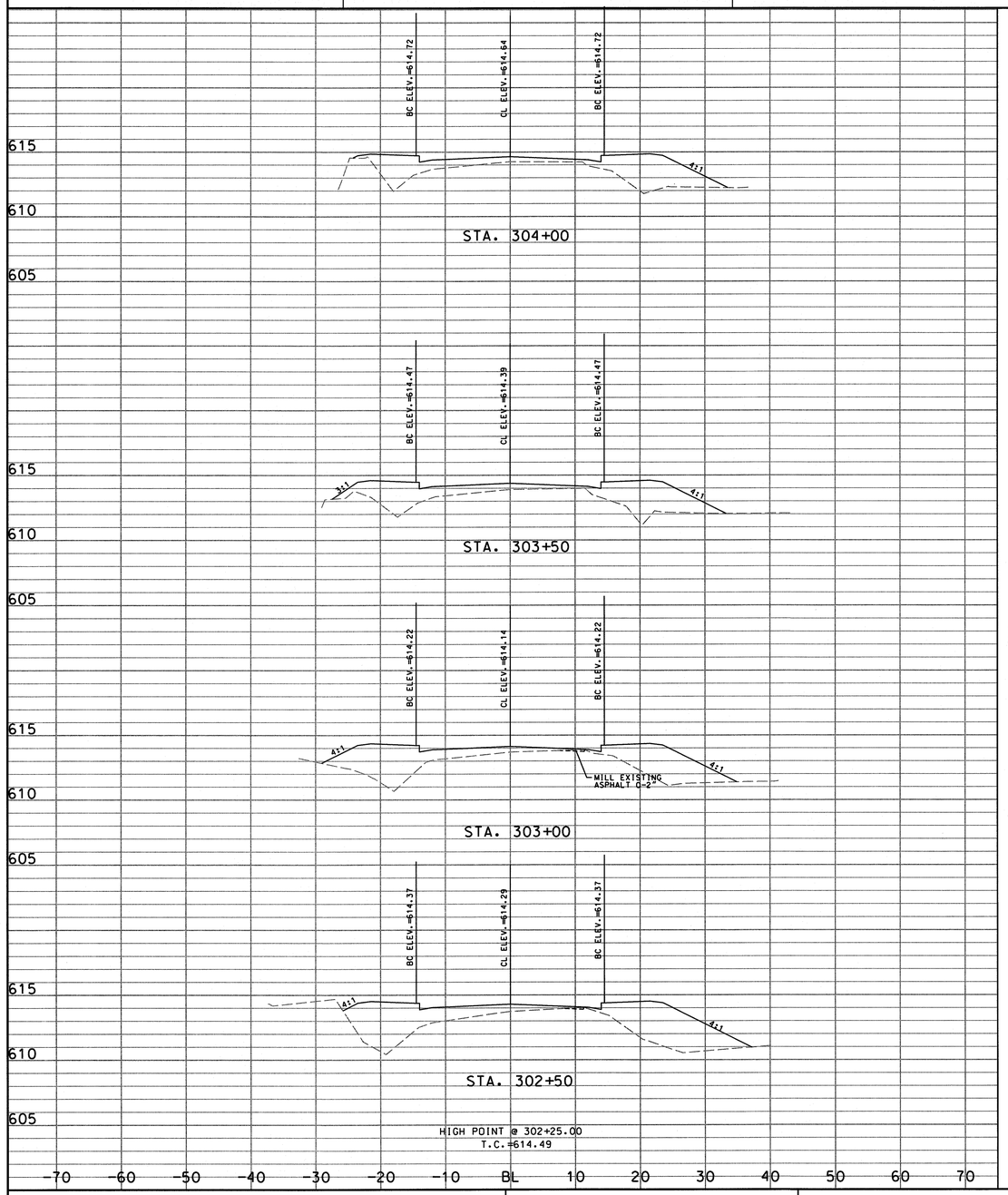
| ISSUED FOR BID: |
|---|
| 9/9/2016 |
| REVISION DATES: |
| 10/20/2016 |

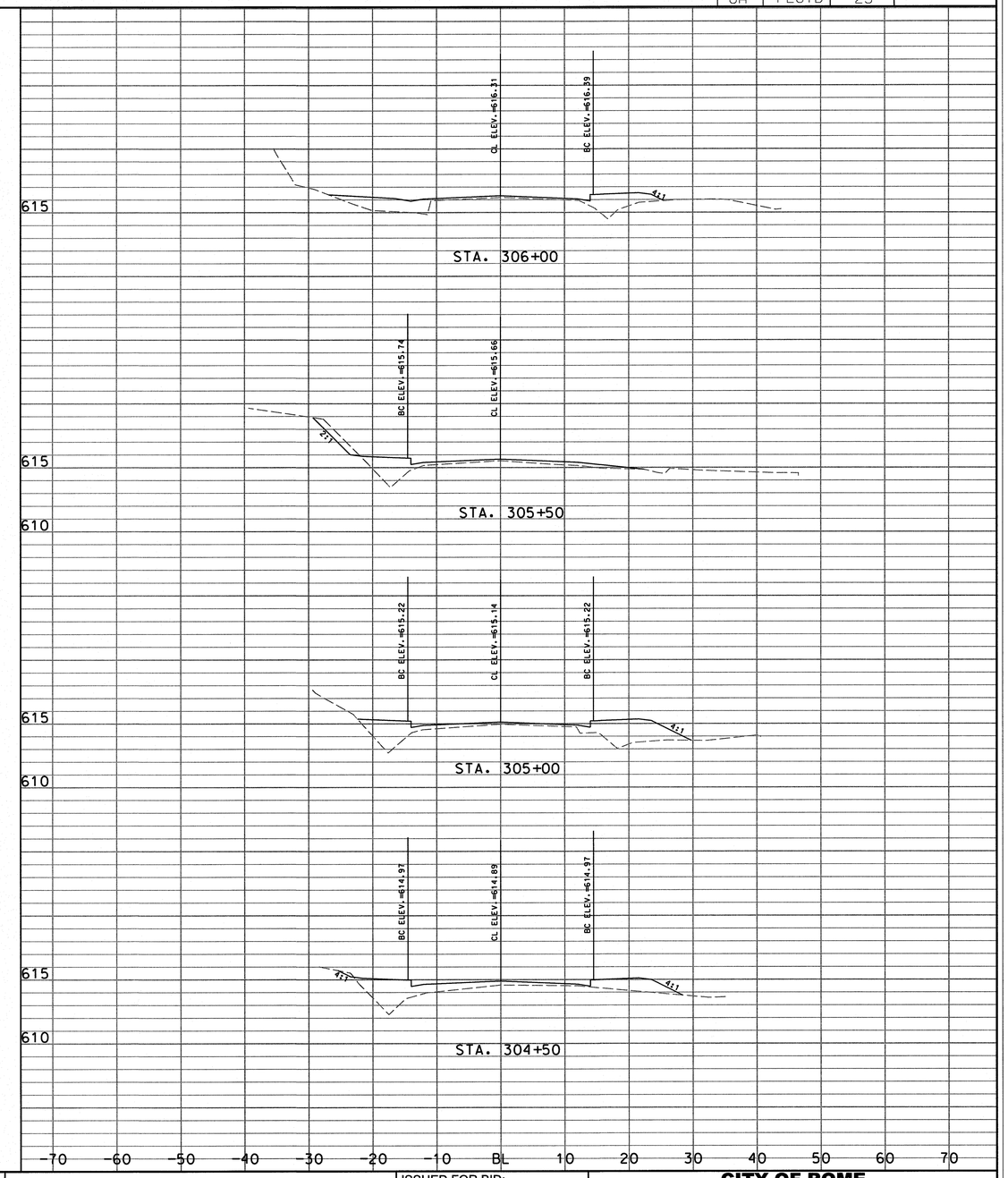
**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**CROSS SECTIONS**
**STA. 298+50 TO STA. 302+00**

DRAWING No.
23-12

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 23 | |




GEORGIA REGISTERED No. 19579 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

SCALE:
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'

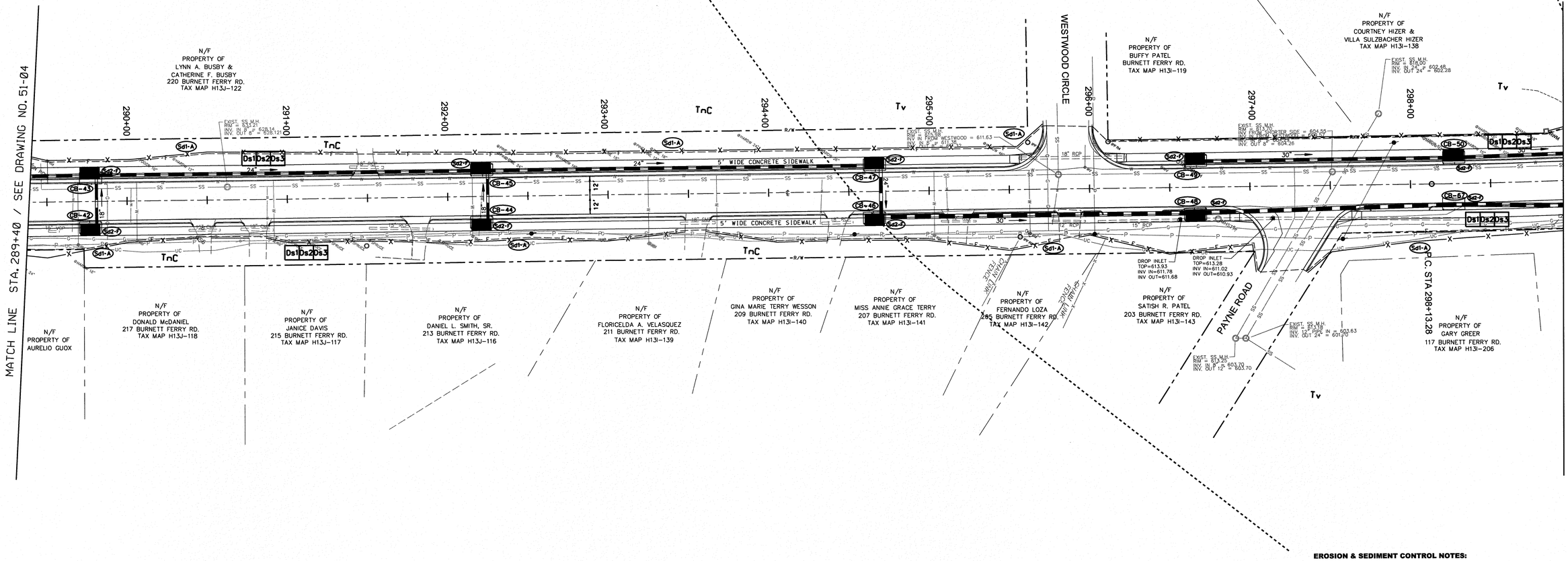

SES
Southern Engineering & Surveying, Inc.
16 South Three Rivers Drive
Suite 1400
Rome, Georgia 30165
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com


| ISSUED FOR BID: |
|---|
| 9/9/2016 |
| REVISION DATES: |
| 10/20/2016 |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**
**CROSS SECTIONS**
**STA. 302+50 TO STA. 306+00**

DRAWING No.
23-13

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 54 | |




| |
|---|
| ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, THEN PERMANENT PERENNIAL VEGETATION SHALL BE USED. MULCH USED FOR TEMPORARY STABILIZATION SHALL BE APPLIED TO A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVER. |
| IN ACCORDANCE WITH PERMIT GAR100002, CONSTRUCTION MUST BE COMPLETE AND 100% OF THE SITE MUST BE "STABILIZED" WITH A STAND OF GRASS BEFORE A NOTICE OF TERMINATION CAN BE FILED WITH THE E.P.D. |
| IN ACCORDANCE WITH GAR100002, THE OWNER MUST CONTACT THE DESIGN PROFESSIONAL WITHIN 7 DAYS OF COMMENCEMENT OF LAND DISTURBING ACTIVITIES FOR CERTIFICATION OF THE INITIAL EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN. |
| THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES. |

**PRIMARY PERMITTEE**
**24 HOUR PROJECT CONTACT:**
**CITY OF ROME ENGINEERING DEPT.**
**200 VAUGHN ROAD**
**ROME, GA 30161**
**MR. AARON CARROLL, DIRECTOR**
**706-252-5118**

EROSION & SEDIMENT CONTROL LEGEND

| | |
|---|---|
| ---------- | SOIL TYPE DELINEATION LINE |
| TnC | SOIL TYPE |
| DoA | SOIL TYPE |
| Ck | SOIL TYPE |
| Tv | SOIL TYPE |

**EROSION & SEDIMENT CONTROL NOTES:**

**SEE DRAWING NO. 51-01 & DRAWING NO. 52-01 FOR N.P.D.E.S. NOTES AND EROSION & SEDIMENT CONTROL DETAILS.**

**SILT FENCE MUST BE INSTALLED PRIOR TO EXCAVATION.**

**THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EROSION AND SEDIMENT CONTROL BMP'S WITHIN THE PROPOSED RIGHT OF WAY.**

**SOME BMP'S MAY BE MODIFIED, OMITTED OR ADDED TO ACCOMMODATE ROADWAY CONSTRUCTION. ALL MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROL BMP'S MUST BE APPROVED BY THE ENGINEER.**

**THE DESIGN PROFESSIONAL WHO PREPARED THE PLANS IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT REQUIREMENTS, PERIMETER CONTROL BMPS, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.**

**NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.**

**AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.**

**EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DIES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**

SCALE IN FEET
0 30 60 120
SCALE: 1" = 30'

GEORGIA REGISTERED No. 29577 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR. 10-20-16

SES
Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

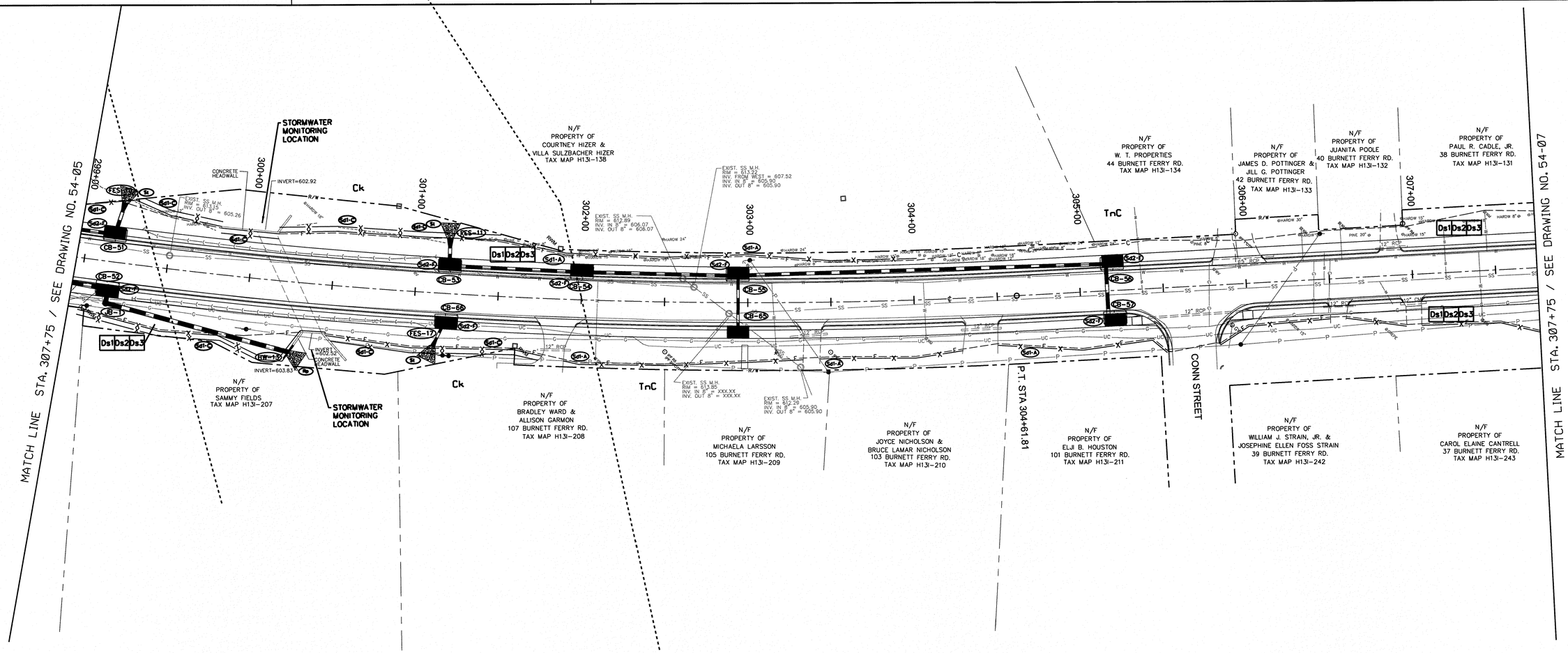
| | |
|---|---|
| ISSUED FOR BID: | 9/9/2016 |
| ISSUED FOR CONSTRUCTION: | |
| REVISION DATES: | 10/20/2016 |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**BMP LOCATION DETAILS**

DRAWING No. 54-05

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | 54 | |




ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, THEN PERMANENT PERENNIAL VEGETATION SHALL BE USED. MULCH USED FOR TEMPORARY STABILIZATION SHALL BE APPLIED TO A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVER.

IN ACCORDANCE WITH PERMIT GAR100002, CONSTRUCTION MUST BE COMPLETE AND 100% OF THE SITE MUST BE "STABILIZED" WITH A STAND OF GRASS BEFORE A NOTICE OF TERMINATION CAN BE FILED WITH THE E.P.D.

IN ACCORDANCE WITH GAR100002, THE OWNER MUST CONTACT THE DESIGN PROFESSIONAL WITHIN 7 DAYS OF COMMENCEMENT OF LAND DISTURBING ACTIVITIES FOR CERTIFICATION OF THE INITIAL EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.

**PRIMARY PERMITTEE**
**24 HOUR PROJECT CONTACT:**
**CITY OF ROME ENGINEERING DEPT.**
**200 VAUGHN ROAD**
**ROME, GA 30161**
**MR. AARON CARROLL, DIRECTOR**
**706-252-5118**

EROSION & SEDIMENT CONTROL LEGEND

| | |
|---|---|
| ---------- | SOIL TYPE DELINEATION LINE |
| TnC | SOIL TYPE |
| DoA | SOIL TYPE |
| Ck | SOIL TYPE |
| Tv | SOIL TYPE |

**EROSION & SEDIMENT CONTROL NOTES:**

**SEE DRAWING NO. 51-01 & DRAWING NO. 52-01 FOR N.P.D.E.S. NOTES AND EROSION & SEDIMENT CONTROL DETAILS.**

**SILT FENCE MUST BE INSTALLED PRIOR TO EXCAVATION.**

**THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EROSION AND SEDIMENT CONTROL BMP'S WITHIN THE PROPOSED RIGHT OF WAY.**

**SOME BMP'S MAY BE MODIFIED, OMITTED OR ADDED TO ACCOMMODATE ROADWAY CONSTRUCTION. ALL MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROL BMP'S MUST BE APPROVED BY THE ENGINEER.**

**THE DESIGN PROFESSIONAL WHO PREPARED THE PLANS IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT REQUIREMENTS, PERIMETER CONTROL BMPS, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.**

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**AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.**

**EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DIES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**

SCALE IN FEET
0 30 60 120
SCALE: 1" = 30'

GEORGIA REGISTERED PROFESSIONAL ENGINEER 22951 CHARLES F. HARDIN, JR. 10-20-16

SES
Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

| | |
|---|---|
| ISSUED FOR BID: | |
| 9/9/2016 | |
| ISSUED FOR CONSTRUCTION: | |
| | |
| REVISION DATES: | |
| 10/20/2016 | |
| | |
| | |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**BMP LOCATION DETAILS**

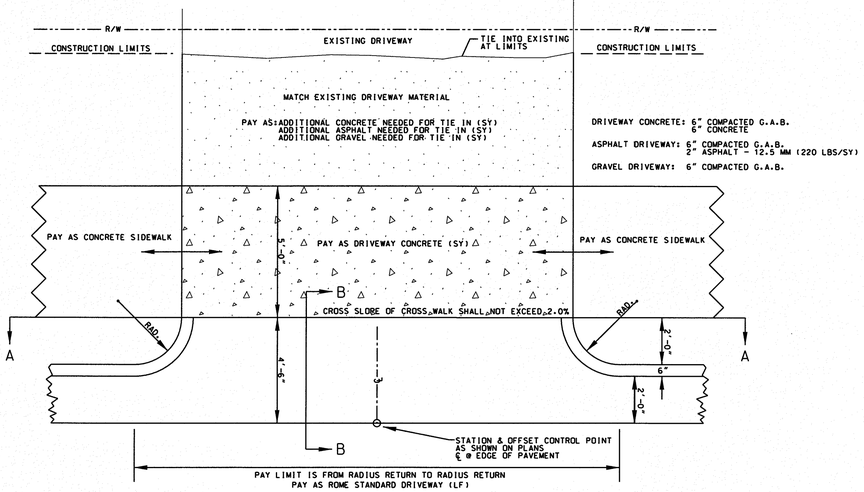
DRAWING No.
54-06

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | | |

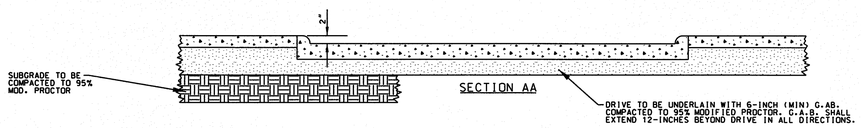
NOTE:
HANDICAP RAMPS REQUIRED AT THE INTERSECTION OF SIDEWALK AND ALL DRIVES. RAMPS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH GEORGIA D.O.T. STANDARDS A3 AND A4. TRUNCATED DOME MATS (YELLOW) ARE ONLY REQUIRED AT THE INTERSECTION OF SIDEWALKS AND INTERSECTING STREETS.

RADIUS CHART

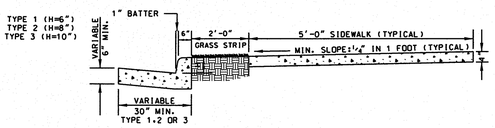
| LAND USE | MINIMUM DRIVEWAY RADIUS |
|---|---|
| SINGLE FAMILY RESIDENTIAL | 2' |
| COMMERCIAL OR MULTI-FAMILY | 15' |
| INDUSTRIAL | 25' |



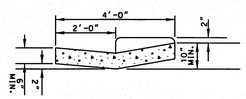

PLAN




SECTION AA

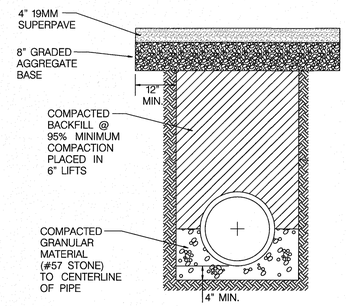



TYPICAL SECTION 30" CURB & GUTTER WITH 4" SIDEWALK



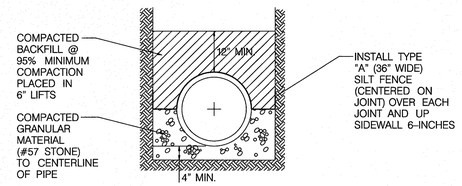

SECTION BB

CITY OF ROME DRIVEWAY DETAIL AND CURB & GUTTER SECTIONS




PAVEMENT REPLACEMENT FOR ASPHALT PAVEMENT

SCALE : NOT TO SCALE

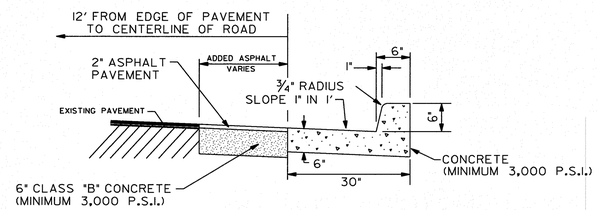



PIPE BEDDING DETAIL

SCALE : NOT TO SCALE

NOTES:

1. OMIT GASKETS FROM ALL R.C.P.
2. PROVIDE WEEP HOLES AT ALL DRAINAGE STRUCTURES FROM GRANULAR BEDDING AREA INTO STRUCTURE.




TYPICAL CURB AND GUTTER SECTION ALONG BURNETT FERRY ROAD

N.T.S.

1. VOID AREAS (EXISTING OR CREATED TO FORM FRONT OF CURB AND GUTTER) UP TO TWO FEET WIDE SHALL HAVE A MINIMUM OF SIX INCHES OF COMPACTED G.A.B. AND SIX INCHES OF CONCRETE (MINIMUM 3,000 P.S.I.) TO WITHIN $1\frac{1}{2}$ INCHES OF FINISHED GRADE. NO ADDITIONAL PAYMENT SHALL BE MADE FOR G.A.B. OR CONCRETE, BUT SHALL BE INCLUDED IN PRICE OF CURB & GUTTER OR DRIVEWAY CONSTRUCTION (ROME STANDARD DRIVEWAY).
2. AREAS NEAR STREET INTERSECTIONS WIDER THAN TWO FEET SHALL BE CONSTRUCTED WITH TEN INCHES OF COMPACTED G.A.B. AND $1\frac{1}{2}$ INCHES PAVEMENT.

GEORGIA REGISTERED No. 23579 PROFESSIONAL ENGINEER
12-20-16
CHARLES F. HARDIN, JR.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Southern Engineering & Surveying, Inc.
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Rome, Georgia 30161
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www.southernEandS.com


**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

| ISSUED FOR BID: |
|---|
| 9/9/2016 |
| ISSUED FOR CONSTRUCTION: |
| |
| REVISION DATES: |
| 10/20/2016 |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

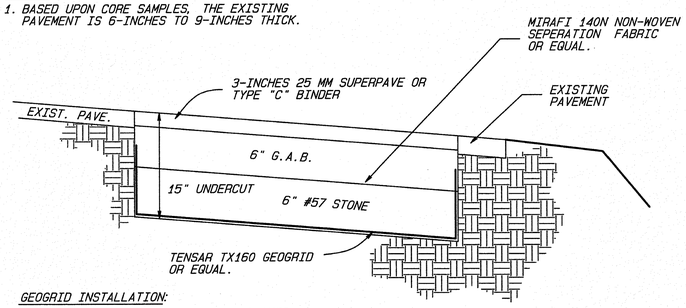
**MISCELLANEOUS DETAILS**

DRAWING No.
55-04

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | | |

NOTE:

1. BASED UPON CORE SAMPLES, THE EXISTING PAVEMENT IS 6-INCHES TO 9-INCHES THICK.



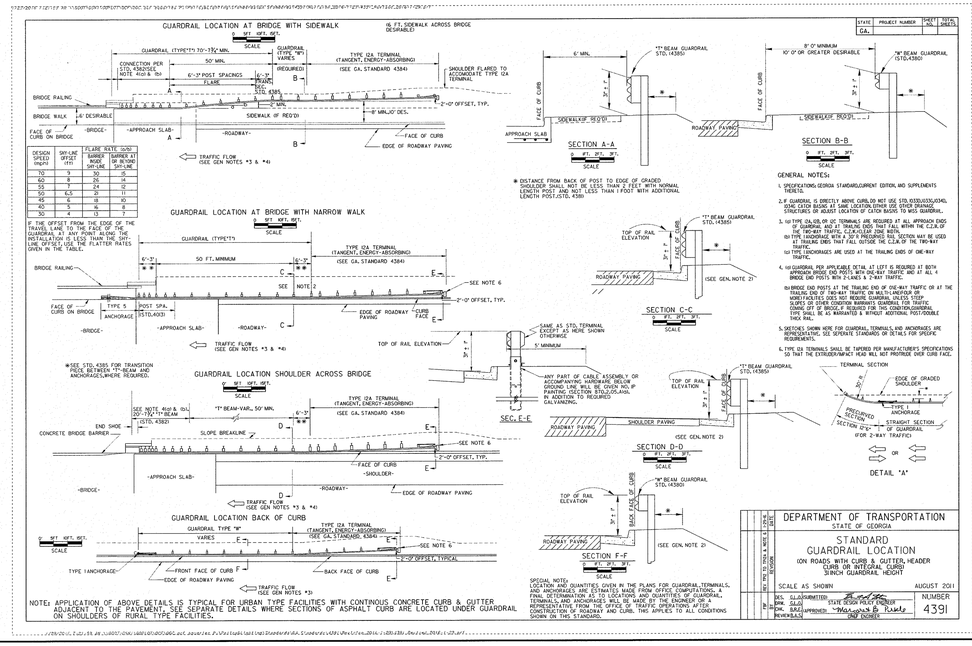

GEOGRID INSTALLATION:

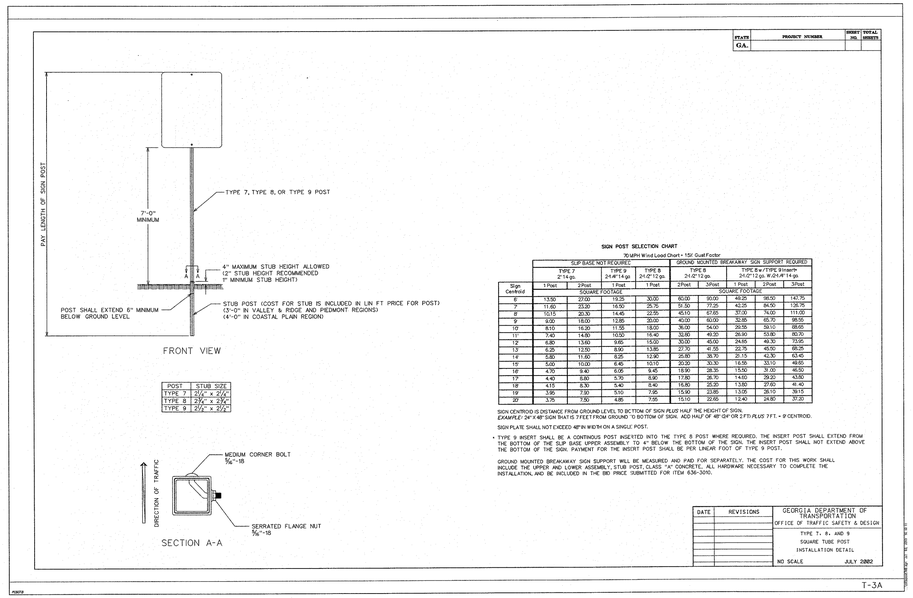
1. OVERLAP GEOGRID ON ITS LONG AXIS BY 18-INCHES AND SECURE WITH WIRE TIES EVERY 5 FEET.
2. OVERLAP GEOGRID AT IT ENDS BY THREE (3) FEET.
3. GEOGRID TO EXTEND UP ALL SIDEWALLS TO WHERE GAB BEGINS.
4. NO ADDITIONAL PAYMENT WILL BE MADE FOR GEO-GRID UP SIDEWALLS. PAYMENT BASED ON HORIZONTAL DIEMENSIONS ONLY.

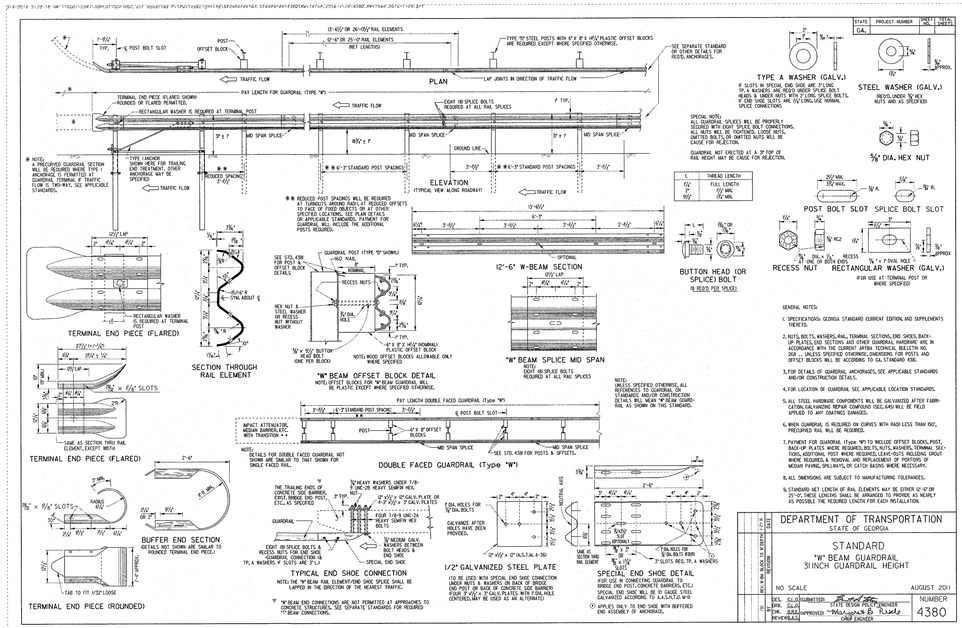
CITY OF ROME, GEORGIA
ENGINEERING DEPARTMENT

TYPICAL "DEEP PATCHING" STANDARD DETAIL

| | |
|---|---|
| SCALE: AS SHOWN | DRAWN BY: AMC |
| DATE: 05/31/2016 | FINAL APPROVAL: |
| EFF. DATE: 05/31/2016 | SHEET 1 OF 1 |




| ISSUED FOR BID: |
|---|
| 9/9/2016 |
| ISSUED FOR CONSTRUCTION: |
| REVISION DATES: |
| 10/20/2016 |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**MISCELLANEOUS DETAILS**

DRAWING No. 55-06

**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**


Southern Engineering & Surveying, Inc.
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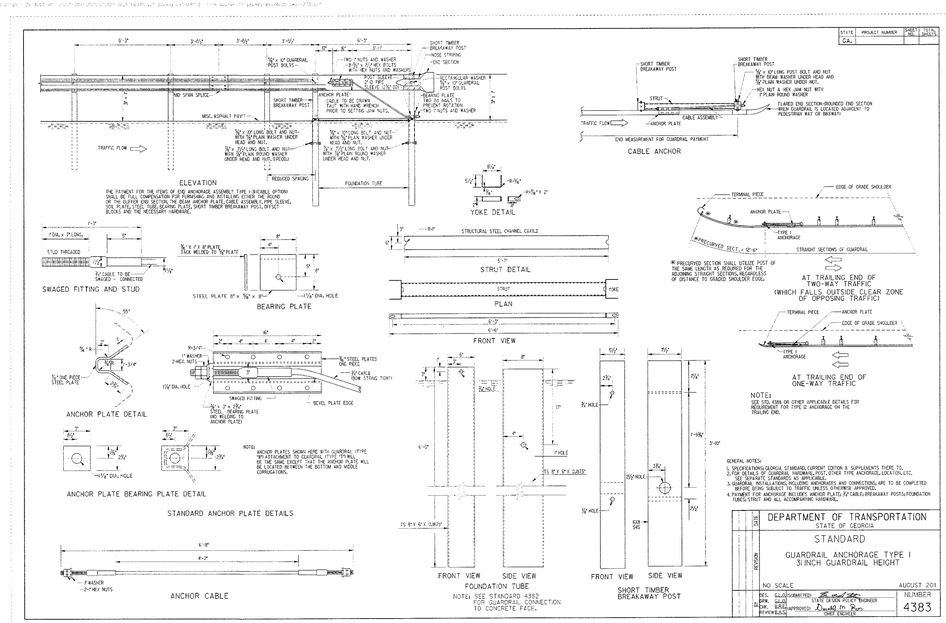
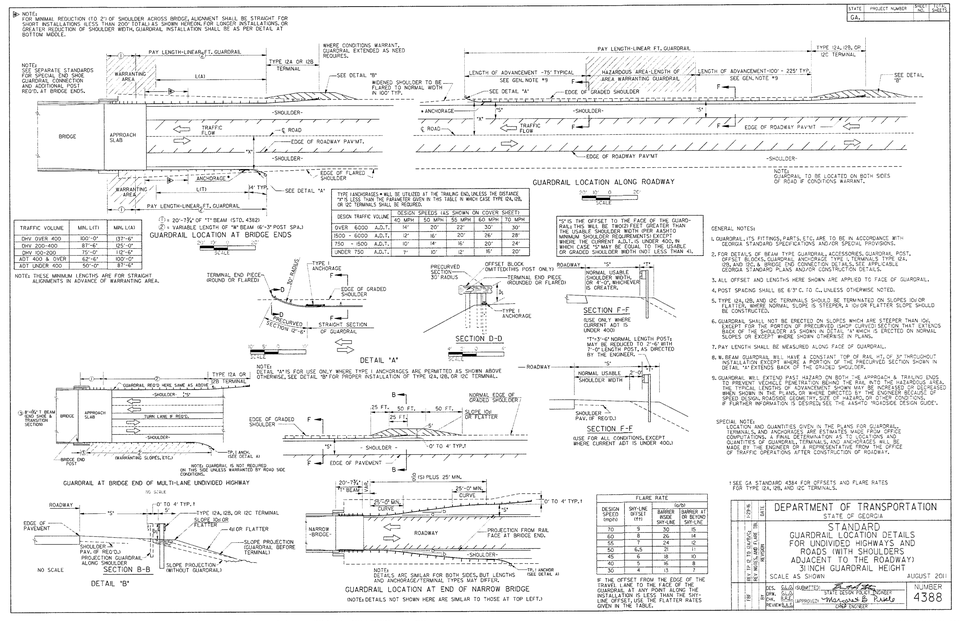
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | | |




GENERAL NOTES:
1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERE TO.
2. FOR DETAILS OF GUARDRAIL MATERIALS, POST, OTHER TYPE ANCHORAGE, TERMINAL, AND CONNECTION, SEE STANDARD 4382.
3. GUARDRAIL INSTALLATIONS, ANCHORAGES AND CONNECTIONS, ARE TO BE COMPLETED BEFORE BEING SUBJECT TO TRAFFIC UNLESS OTHERWISE APPROVED.
4. PAYMENT FOR ANCHORAGE INCLUDES ANCHOR PLATE, 7/8" CABLE, BREAKAWAY POSTS, FOUNDATION TUBES, NUTS AND ALL ACCOMPANYING HARDWARE.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
GUARDRAIL ANCHORAGE TYPE I
31INCH GUARDRAIL HEIGHT
NO SCALE — AUGUST 201
NUMBER 4383




| TRAFFIC VOLUME | MIN. L(FT) | MIN. L(A) |
|---|---|---|
| DHV OVER 400 | 100'-0" | (37'-6") |
| DHV 200-400 | 75'-0" | (25'-0") |
| DHV 100-200 | 50'-0" | (12'-6") |
| ADT OVER 400 | 50'-0" | (37'-6") |
| ADT UNDER 400 | 50'-0" | (37'-6") |

NOTE: THESE MINIMUM LENGTHS ARE FOR STRAIGHT ALIGNMENTS IN ADVANCE OF WARRANTING AREA.

| DESIGN TRAFFIC VOLUME | DESIGN SPEEDS (45 SHOWN ON COVER SHEET) 40 MPH | 45 MPH | 50 MPH | 55 MPH | 60 MPH | 70 MPH |
|---|---|---|---|---|---|---|
| OVER 6000 A.D.T. | 14' | 20'* | 22' | 30' | 30' | |
| 6000 - 6000 A.D.T. | 12' | 16' | 20' | 26' | 28' | |
| 750 - 600 A.D.T. | 10' | 14' | 16' | 20' | 24' | |
| UNDER 750 A.D.T. | 1' | 10' | 12' | 16' | 20' | |

TYPE ANCHORAGES • WILL BE UTILIZED IF THE TRAILING END, UNLESS THE DISTANCE "X" IS LESS THAN THE PARAMETER GIVEN IN THIS TABLE IN WHICH CASE TYPE 12A, 12B, OR 12C TERMINALS SHALL BE REQUIRED.

*X" IS THE OFFSET TO THE FACE OF THE GUARDRAILS. WILL BE TWENTY-FEET GREATER THAN THE VALUE SHOWN IF THE ROADWAY DOES NOT HAVE MINIMUM SHOULDER REQUIREMENTS EXCEPT WHERE THE CURRENT A.D.T. IS UNDER 400, IN WHICH CASE "X" MAY BE EQUAL TO THE USABLE OR GRADED SHOULDER WIDTH (NOT LESS THAN 4).

GENERAL NOTES:
1. GUARDRAIL, ITS FITTINGS, PARTS, ETC. ARE TO BE IN ACCORDANCE WITH GEORGIA STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.
2. FOR DETAILS OF BEAM TYPE GUARDRAIL, ACCESSORIES, GUARDRAIL POST, OTHER TYPE ANCHORAGES, TERMINALS, CONNECTION, BRIDGE RAILS, ETC. SEE GA. STANDARD 4382 AND GEORGIA STANDARD PLANS AND/OR CONSTRUCTION DETAILS.
3. ALL OFFSET AND LENGTHS HERE SHOWN ARE APPLIED TO FACE OF GUARDRAIL.
4. POST SPACING SHALL BE 6'9"C. TO C. UNLESS OTHERWISE NOTED.
5. TYPE 12A, 12B, AND 12C TERMINALS SHOULD BE TERMINATED ON SLOPES 10:1 OR FLATTER. WHERE NORMAL SLOPE IS STEEPER, A 10:1 OR FLATTER SLOPE SHOULD BE CONSTRUCTED.
6. GUARDRAIL SHALL NOT BE ERECTED ON SLOPES WHICH ARE STEEPER THAN 10:1 EXCEPT FOR THE PORTION OF PRECURVED (SHOP CURVED) SECTION THAT EXTENDS BACK OF THE SHOULDER AS SHOWN IN DETAIL "A" WHICH IS ERECTED ON NORMAL SLOPES OR EXCEPT WHERE SHOWN OTHERWISE IN PLANS.
7. PAY LENGTH SHALL BE MEASURED ALONG FACE OF GUARDRAIL.
8. W-BEAM GUARDRAIL BILL HAVE A CONSTANT TOP OF RAIL HT. OF 31" THROUGHOUT INSTALLATION EXCEPT WHERE A PORTION OF THE PRECURVED SECTION SHOWN IN DETAIL "A" EXTENDS BACK OF THE GRADED SHOULDER.
9. GUARDRAIL WILL EXTEND PAST HAZARD ON BOTH THE APPROACH & TRAILING ENDS TO PREVENT VEHICLE PENETRATION BEHIND THE RAIL INTO THE HAZARDOUS AREA. THE TYPICAL LENGTHS OF ADVANCEMENT MAY BE INCREASED OR DECREASED WHEN SHOWN IN THE PLANS, OR WHERE DIRECTED BY THE ENGINEER BECAUSE OF SITE CONDITIONS, ALIGNMENT, SIGHT DISTANCE, OR OTHER HAZARDS. THE ENGINEER IF FURTHER INFORMATION IS DESIRED, SEE THE AASHTO "ROADSIDE DESIGN GUIDE".

SPECIAL NOTE:
THE LENGTHS AND QUANTITIES GIVEN IN THE PLANS FOR GUARDRAIL, TERMINALS, AND ANCHORAGES ARE ESTIMATES MADE FROM OFFICE COMPUTATIONS. A FINAL DETERMINATION AS TO LOCATIONS AND LENGTHS MUST BE MADE BY THE ENGINEER IN ACCORDANCE WITH THE MANUAL OF THE ENGINEER IS A REPRESENTATIVE FROM THE OFFICE OF TRAFFIC OPERATIONS AFTER CONSTRUCTION OF ROADWAY.

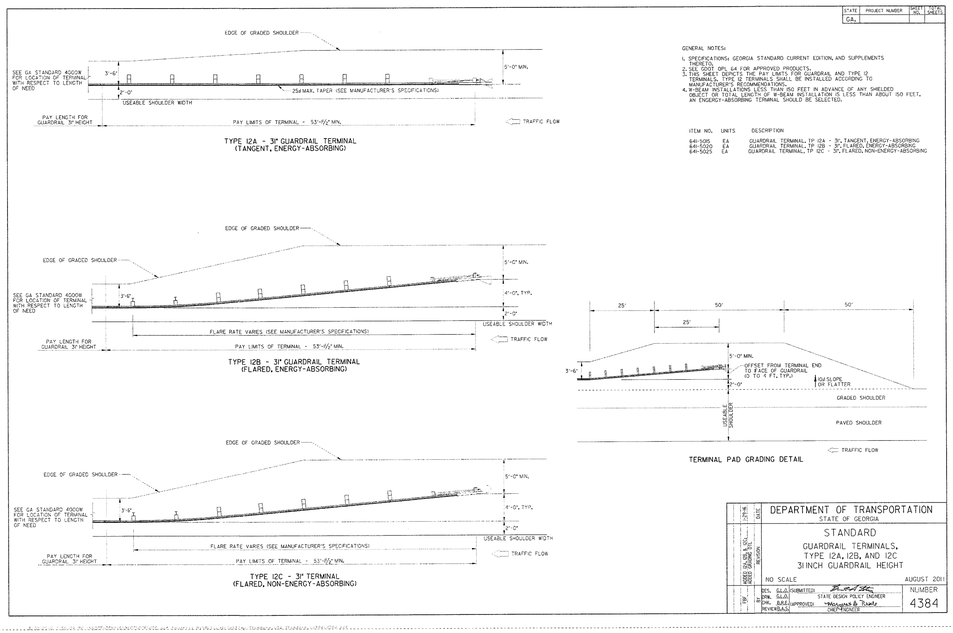
| DESIGN SPEED (mph) | SHY-LINE OFFSET (ft) | FLARE RATE (w/h) BARRIER NODE SHY-LINE | BARRIER AT OR BEYOND SHY-LINE |
|---|---|---|---|
| 70 | 9 | 30 | 15 |
| 60 | 8 | 26 | 14 |
| 55 | 7 | 24 | 12 |
| 50 | 6.5 | 21 | 11 |
| 45 | 6 | 18 | 10 |
| 40 | 5 | 16 | 8 |
| 30 | 4 | 13 | 7 |

IF THE OFFSET FROM THE EDGE OF THE TRAVEL LANE TO THE FACE OF THE GUARDRAIL AT ANY POINT ALONG THE LENGTH OF NEED IS LESS THAN THE SHY-LINE OFFSET, USE THE FLATTER RATES GIVEN IN THE TABLE.

| DESIGN SPEED (mph) | FLARE RATE (w/h) SHY-LINE | BARRIER NODE | BARRIER AT OR BEYOND SHY-LINE |
|---|---|---|---|
| 70 | 9 | 30 | 15 |
| 60 | 8 | 26 | 14 |
| 55 | 7 | 24 | 12 |
| 50 | 6.5 | 21 | 11 |
| 45 | 6 | 18 | 10 |
| 40 | 5 | 16 | 8 |
| 30 | 4 | 13 | 7 |

* SEE GA STANDARD 4384 FOR OFFSETS AND FLARE RATES FOR TYPE 12A, 12B, AND 12C TERMINALS.

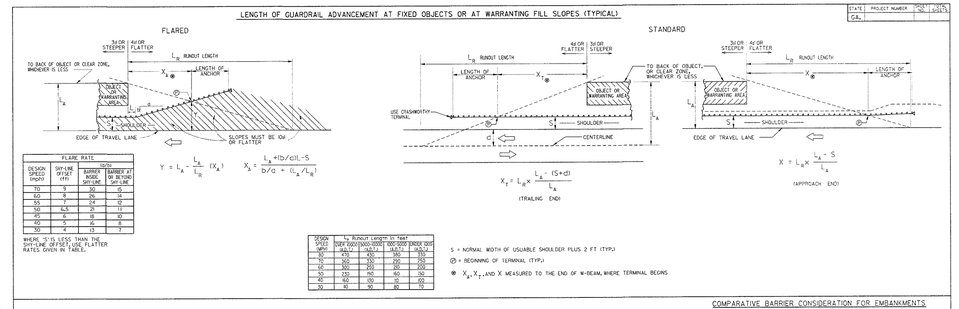
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
GUARDRAIL LOCATION DETAILS FOR UNDIVIDED HIGHWAYS AND ROADS (WITH SHOULDERS ADJACENT TO THE ROADWAY) 31INCH GUARDRAIL HEIGHT
SCALE AS SHOWN — AUGUST 201
NUMBER 4388




GENERAL NOTES:
1. SPECIFICATIONS: GEORGIA STANDARD CURRENT EDITION AND SUPPLEMENTS THERETO.
2. SEE DOST OPL 64 FOR APPROVED PRODUCTS.
3. THE TYPE 12A, TYPE 12B, AND TYPE 12C TERMINALS, TYPE 12 TERMINALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. W-BEAM INSTALLATIONS LESS THAN 150 FEET IN ADVANCE OF ANY SHIELDED OBJECT OR TOTAL LENGTH OF W-BEAM INSTALLATION IS LESS THAN ABOUT 150 FEET, AN ENERGY-ABSORBING TERMINAL SHOULD BE SELECTED.

| ITEM NO. | UNITS | DESCRIPTION |
|---|---|---|
| 641-5015 | EA | GUARDRAIL TERMINAL, TP 12A - 31" TANGENT, ENERGY-ABSORBING |
| 641-5020 | EA | GUARDRAIL TERMINAL, TP 12B - 31" FLARED, ENERGY-ABSORBING |
| 641-5025 | EA | GUARDRAIL TERMINAL, TP 12C - 31" FLARED, NON-ENERGY-ABSORBING |

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
GUARDRAIL TERMINALS, TYPE 12A, 12B, AND 12C 31INCH GUARDRAIL HEIGHT
NO SCALE — AUGUST 2011
NUMBER 4384




| DESIGN SPEED (mph) | $L_R$ Runout Length in feet (w/h) 10:1 | 15:1 | 20:1 | 30:1 |
|---|---|---|---|---|
| 70 | 350 | 350 | 350 | 350 |
| 60 | 300 | 300 | 300 | 300 |
| 50 | 230 | 190 | 150 | 150 |
| 45 | 160 | 100 | 70 | 60 |
| 30 | 70 | 40 | 30 | 15 |

S = NORMAL WIDTH OF USUABLE SHOULDER PLUS 2 FT (TYP.)
① = BEGINNING OF TERMINAL (TYP.)
⊛ $X_A$, $X_T$, AND X MEASURED TO THE END OF W-BEAM, WHERE TERMINAL BEGINS

CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

| DESIGN SPEED | DESIGN ADT | FOREslopes 1V:4H | 1V:5H TO 1V:6H | 1V:7H | BACKslopes 1V:4H | 1V:5H TO 1V:6H | 1V:7H |
|---|---|---|---|---|---|---|---|
| | | OR FLATTER | 1V:4H | | | 1V:6H | OR FLATTER |
| 40 MPH OR LESS | UNDER 750 | 7-10 | 7-10 | ■ ★ | 7-10 | 7-10 | 7-10 |
| | 750-1500 | 10-12 | 12-14 | ■ ★ | 12-14 | 12-14 | 12-14 |
| | 1500-6000 | 12-14 | 14-16 | ■ ★ | 14-16 | 14-16 | 14-16 |
| | OVER 6000 | 14-16 | 16-18 | ■ ★ | 16-18 | 16-18 | 16-18 |
| 45-50 M.P.H. | UNDER 750 | 10-12 | 12-14 | ■ ★ | 8-10 | 8-10 | 10-12 |
| | 750-1500 | 14-16 | 16-18 | ■ ★ | 14-16 | 14-16 | 16-18 |
| | 1500-6000 | 16-18 | 20-22 | ■ ★ | 17-14 | 18-18 | 18-18 |
| | OVER 6000 | 20-22 | 24-26 | ■ ★ | 18-16 | 18-20 | 20-22 |
| 55 M.P.H. | UNDER 750 | 12-14 | 14-16 | ■ ★ | 8-10 | 10-12 | 12-14 |
| | 750-1500 | 16-18 | 20-24 | ■ ★ | 10-12 | 14-16 | 16-18 |
| | 1500-6000 | 20-22 | 24-30 | ■ ★ | 14-16 | 16-18 | 20-22 |
| | OVER 6000 | 24-26 | 26-32■ | ■ ★ | 16-18 | 20-22 | 22-24 |
| 60 M.P.H. | UNDER 750 | 16-18 | 20-24 | ■ ★ | 8-10 | 10-12 | 12-14 |
| | 750-1500 | 20-22 | 24-32 | ■ ★ | 12-14 | 14-16 | 16-18 |
| | 1500-6000 | 24-26 | 30-34 | ■ ★ | 16-18 | 18-22 | 22-24 |
| | OVER 6000 | 26-32■ | 32-40★ | ■ ★ | 20-22 | 22-26 | 24-26 |
| 65-70 M.P.H. | UNDER 750 | 18-20 | 22-26 | ■ ★ | 8-10 | 10-12 | 12-14 |
| | 750-1500 | 24-26 | 28-36■ | ■ ★ | 12-14 | 14-16 | 16-18 |
| | 1500-6000 | 28-32■ | 34-42■ | ■ ★ | 16-20 | 20-24 | 24-28 |
| | OVER 6000 | 30-34■ | 38-46■ | ■ ★ | 22-24 | 24-30 | 28-30 |

■ WHEN A SITE-SPECIFIC INVESTIGATION INDICATES A HIGH PROBABILITY OF CONTINUING CRASHES OR WHEN SUCH OCCURRENCES ARE INDICATED BY CRASH HISTORY, THE DESIGNER MAY PROVIDE CLEAR-ZONE DISTANCES GREATER THAN THE CLEAR ZONE SHOWN ABOVE. CLEAR ZONES MAY BE LIMITED TO 30 FT. WHEN ALL OTHER ALTERNATIVES ARE EXCEEDED AND WHEN ON THE BASIS OF PREVIOUS EXPERIENCE WITH SIMILAR PROJECTS OR DESIGNS INDICATES SATISFACTORY PERFORMANCE.

★ ■ BECAUSE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE 1V:4H FILL SLOPES, FIXED OBJECTS SHOULD NOT BE PRESENT IN THE VICINITY OF THE TOE OF SLOPE. RECOVERY OF VEHICLES ON THESE SLOPES MAY BE HINDERED BY THE ABRUPT CHANGE IN GRADE AT THE TOE OF SLOPE. BEYOND THE TOE OF SLOPE, DETERMINATION OF THE WIDTH OF THE RECOVERY AREA AT THE TOE OF SLOPE SHOULD CONSIDER RIGHT-OF-WAY AVAILABILITY, ENVIRONMENTAL CONCERNS, ECONOMIC FACTORS, SAFETY NEEDS, AND MAINTENANCE COSTS. IN THE DETERMINATION OF THE DISTANCE BETWEEN THE BEGINNING OF THE FILL SLOPE AND THE OBJECT NEEDING SHIELDING, CONSIDER THE RECOVERY AREA PROVIDED AT THE TOE OF SLOPE. A 30-FT RECOVERY AREA AT THE TOE OF SLOPE SHOULD BE PROVIDED FOR ALL TRAVERSABLE, NON-RECOVERABLE FILL SLOPES.

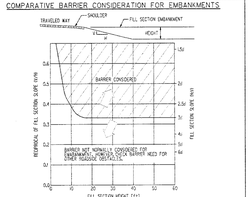
HORIZONTAL CURVE ADJUSTMENTS

| RADIUS (FEET) | $K_{c2}$ (CURVE CORRECTION FACTOR) DESIGN SPEED (MPH) 40 | 45 | 50 | 55 | 60 | 70 |
|---|---|---|---|---|---|---|
| 2800 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2300 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1910 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1432 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1145 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 955 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 818 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 716 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 637 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 573 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 520 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 477 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 437 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 400 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 382 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 364 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 347 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 331 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 316 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 302 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 289 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 277 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 265 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 255 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 245 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 236 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 227 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 219 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 211 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 204 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 197 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 191 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 185 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 179 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 174 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 169 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 164 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 159 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 155 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 151 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 147 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 143 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 139 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 136 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 133 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 130 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 127 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 124 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 121 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 118 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 116 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 113 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 111 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 109 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 107 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 105 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 103 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 101 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 100 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

$CZ_2 = CZ_1 (K_{c2})$
Where:
$CZ_2$ = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET
$CZ_1$ = CLEAR ZONES DISTANCE, FEET (SEE CHART AT LEFT)
$K_{c2}$ = CURVE CORRECTION FACTOR

NOTE:
THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CORRECTIONS ARE TYPICALLY MADE ONLY TO CURVES LESS THAN 2,000-FT RADIUS.

COMPARATIVE BARRIER CONSIDERATION FOR EMBANKMENTS




DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
GUARDRAIL WARRANT GUIDES
LENGTHS OF ADVANCEMENT
CLEAR ZONE DISTANCES
FILL HEIGHT EMBANKMENTS
NOT TO SCALE — DEC. 1993
NUMBER 4000W

| STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA. | | | |

SES — Southern Engineering & Surveying, Inc.
160 Three Rivers Drive
Suite 1400
Rome, Georgia 30161
P:(706) 235-4143 F:(706) 235-4191
www.southernEandS.com

**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

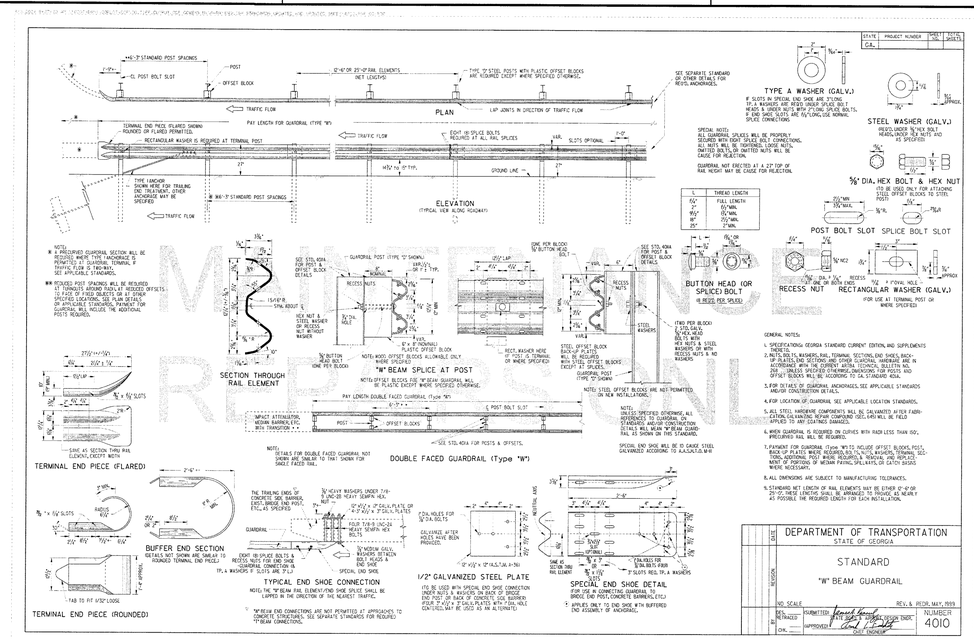
| ISSUED FOR BID: |
|---|
| 9/9/2016 |
| ISSUED FOR CONSTRUCTION: |
| REVISION DATES: |
| 10/20/2016 |

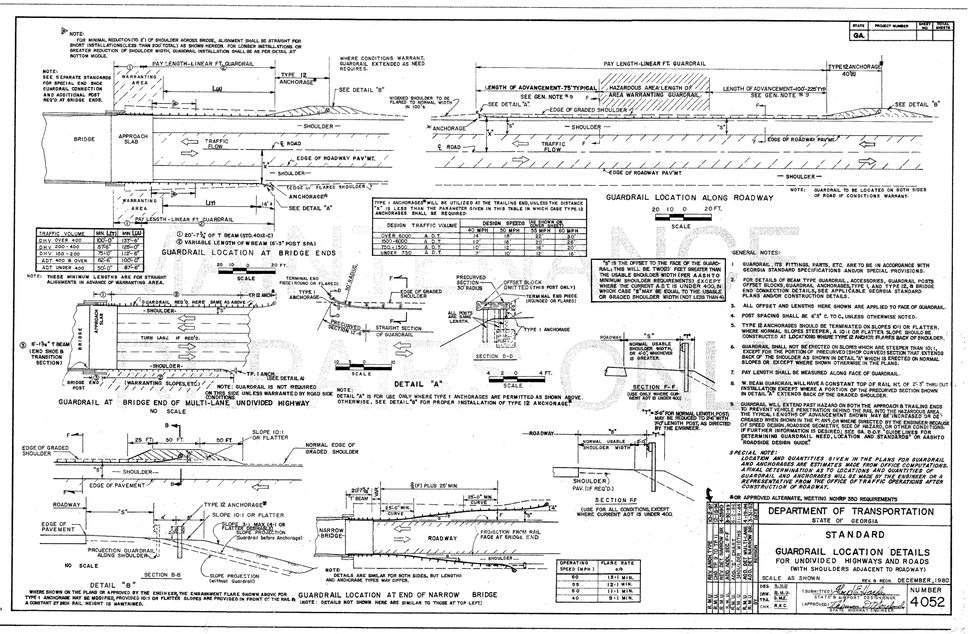
**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

# MISCELLANEOUS DETAILS

DRAWING No. 55-07

| STATE | COUNTY | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA | FLOYD | | |




GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 29579 10-20-16 CHARLES F. HARDIN, JR.

SES

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Suite 1400
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www.southernEandS.com

**PROJECT OWNER:**

**CITY OF ROME**
**601 BROAD STREET**
**ROME, GEORGIA 30161**

| | |
|---|---|
| ISSUED FOR BID: | 9/9/2016 |
| ISSUED FOR CONSTRUCTION: | |
| REVISION DATES: | 10/20/2016 |

**CITY OF ROME**
**PUBLIC WORKS**
**BURNETT FERRY ROAD**

**MISCELLANEOUS DETAILS**

DRAWING No. 55-08