CHATHAM COUNTY PURCHASING & CONTRACTING DEPARTMENT

ADDENDUM NO. 1 TO 21-0149-4

FOR: 2021 RESURFACING / WILMINGTON ISLAND ROAD SAFETY ENHANCEMENTS

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PLEASE SEE THE FOLLOWING FOR ADDITIONS, CLARIFICATIONS AND/OR CHANGES:

SEE ATTACHED SHEET FOR *RESPONSES TO QUESTIONS RECEIVED* (1 page)

NOTE: THE RESURFACING OF CENTRAL AVENUE AND LANSING AVENUE TRAFFIC CALMING has been added to this project per this addendum. See the attached:

1. **Revised Bid Sheets (2 pages)**
2. **Special Conditions for Lansing Avenue and Central Avenue (5 pages)**
3. **Central Avenue location maps and Typical Sections (5 pages)**
4. **Central Avenue Profile/Road Listing (2 pages)**
5. **Lansing Avenue / Central Avenue Summary of Quantities (2 pages)**
6. **Special Conditions - Sampling & Testing of Materials (2 pages)**
6. **Lansing Avenue Traffic Calming Plan Sheets (18 sheets)**

NOTE: Additional questions in writing will be accepted until 11:00am, February 1, 2022.

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BID OPENING HAS BEEN EXTENDED TO : 2PM, TUESDAY, FEBRUARY 8, 2022

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THE PROPOSER IS RESPONSIBLE FOR MAKING THE NECESSARY CHANGES AND MUST ACKNOWLEDGE RECEIPT OF ADDENDUM.

1/25/22
DATE

ROBERT E. MARSHALL
SENIOR PROCUREMENT SPECIALIST
CHATHAM COUNTY

RESPONSES TO QUESTIONS RECEIVED:

1. **Q)** What is the specification for Sod on the 2021 Resurfacing project?
   A) Sod will only be replaced where there is sod existing. For areas where sod is replaced, St. Augustine will be required.

2. **Q)** The installation of the electric flashers will require a bore under the existing road. Can the County please provide a bid item for the bore?
   A) Neither of the flashers proposed for the Wilmington Island Road Curve section of the project will require a bore. The flasher at Sta. 100+36 is solar powered. The flasher at Sta. 117+00 states to connect to adjacent Georgia Power pole for power.

3. **Q)** Can you please confirm that special Condition 2.1 means that once asphalt construction starts on one road, that the contractor has two weeks to complete that specific road and not all roads within two weeks?
   A) Special Condition 2.1 concerns intermediate deadlines. Each road individually has a deadline of two weeks to complete asphalt construction. This does NOT imply that asphalt construction for the entire project must be completed in two weeks.

NOTE: Regarding to the resurfacing of Central Avenue, the Contractor will be allowed to close one of the two driveways to the Norwood Plaza shopping center at a time during the closure but must keep access to one for delivery trucks.

Pavement Rehabilitation 2021
BID SHEET

ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
150-1000	TRAFFIC CONTROL	LS	1		
163-0232	TEMPORARY GRASSING	AC	1.3		
163-0240	MULCH	TN	45		
163-0528	TYPE C SILT FENCE	LF	70		
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	8		
165-0041	MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	35		
165-0105	MAINTENANCE OF INLET SEDITMENT TRAP	EA	4		
207-0203	FOUNDATION BACKFILL MATERIAL, TYPE 2	CY	10		
210-0101	GRADING COMPLETE - RESURFACING	LS	1		
210-0102	GRADING COMPLETE - CENTRAL AVE	LS	1		
210-0103	GRADING COMPLETE - LANSING AVE	LS	1		
231-0100	DEEP PATCHING	SY	270		
310-1101	GR AGGR BASE CRS, INCL MATL	TN	240		
318-3000	AGGR SURF CRS	TN	50		
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	420		
402-3100	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE I, GP 1 OR BLEND 1, INCL BITUM MATL & H LIME	TN	3840		
402-3103	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP2 ONLY, INCL BITUM MATL & H LIME	TN	2380		
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2 , INCL BITUM MATL & H LIME	TN	480		
402-3147	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, BLEND 1, INCL BITUM MATL & H LIME	TN	1430		
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	790		
413-1000	BITUM TACK COAT	GL	5080		
415-1000	ASPHALTIC CONCRETE OPEN GRADED CRACKED RELIEF INTERLAYER, GP BLEND, INCL BITUM MATL & H LIME	TN	1040		
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	76900		
441-0060	CONC FILLET AT INTERSECTION, 6 IN DEPTH, CLASS A	SY	40		
441-0740	CONCRETE MEDIAN,TYPE 1 FACE, 4 IN	SY	16		
441-6002	CONC CURB & GUTTER, 6 IN X 18 IN, TP 2	LF	80		
446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 IN WIDTH	LF	200		
446-1200	PAVEMENT REINFORCEMENT FABRIC FULL WIDTH, TYPE 2	SY	6400		
456-2021	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (CONTINUOUS)	GLM	0.2		
500-3801	CONC SWALE, 3 FT W X 6.5 IN D, CL A CONC INCL REINF STEEL	LF	50		
500-3802	CONC SWALE, 4 FT W X 6.5 IN D, CL A CONC INCL REINF STEEL	LF	325		
500-9999	CLASS B CONCRETE BASE OR PVMT WIDENING	CY	15		
550-3000	ELLIPTICAL PIPE - 18 IN	LF	120		
550-3100	ELLIPTICAL SFETY END SECTION - 18 IN	EA	1		
550-3101	ELLIPTICAL FLARED END SECTION - 18 IN	EA	1		
611-5551	RESET SIGN	EA	1		

REVISED 1/25/22 per Addendum 1

Pavement Rehabilitation 2021
BID SHEET

ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
611-8050	ADJUST MANHOLE TO GRADE	EA	21		
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	12		
636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	151		
636-2070	GALV STEEL POSTS, TP 7	LF	442		
647-1041	FLASHING BEACON INSTALLATION - SOLAR	LS	1		
647-1042	FLASHING BEACON INSTALLATION	LS	1		
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	7		
653-0230	THERMOPLASTIC PVMT MARKING, WORD, TP 3A	EA	2		
653-0399	THERMOPLASTIC PVMT MARKING, SYMBOL, INTERSECTION BOX	EA	1		
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LM	3.15		
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LM	4.25		
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	636		
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	880		
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLM	0.06		
653-3502	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	GLM	0.9		
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	50		
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	415		
654-1000	RAISED PVMT MARKERS TP 1, BLUE	EA	17		
654-1001	RAISED PVMT MARKERS TP 1, YELLOW	EA	38		
668-2299	1019A, TP C, TRAFFIC RATED LID, 8" CLASS A CONC W/ #4 BARS AND GRATE	EA	1		
700-6910	PERMANENT GRASSING	AC	1.3		
700-7000	AGRICULTURAL LIME	TN	2		
700-8000	FERTILIZER MIXED GRADE	TN	1		
700-8100	FERTILIZER NITROGEN CONTENT	LB	80		
700-9300	SOD	SY	3300		
999-9000	FIELD CONDITION ALLOWANCE	LS	1	$ 25,000.00	$ 25,000.00

Total Bid (Round off to whole dollar) _____

_____
Name/Title

_____
Company

_____
Address

_____
Phone/Fax Numbers

_____
Email

REVISED 1/25/22 per Addendum 1

SPECIAL CONDITIONS
LANSING AVENUE & CENTRAL AVENUE

1. **DESCRIPTION OF WORK:** The work will consist of furnishing all materials, labor, and equipment for:

Traffic calming improvements on Lansing Avenue including construction of minor pavement widening, integral concrete median, paving, installation of reinforced concrete pipe, grading (complete), signing and marking. Construction plans are available elsewhere.

And

Pavement rehabilitation on Central Avenue including a section of mill and inlay, a section of removal and replacement of paving, grading (complete), signing and marking. A location map and typical sections are provided here.

All work under this contract shall be done in accordance with the 2021 edition of the Georgia Department of Transportation (GDOT) Standard Specifications, all subsequent Supplemental Specifications and Special Provision 150 – Traffic Control which are available online at the GDOT website www.dot.ga.gov/PS/Business/Source. The latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) as well as the Special Provision for Sampling and Testing included in this proposal will also apply.

All materials used in the process of completion of the work included in the contract shall be furnished from Georgia Department of Transportation certified suppliers only as per the GDOT Qualified Products List available on the website www.dot.ga.gov/PS/Materials/QPLCategories.

The Prime Contractor must be pre-qualified by GDOT at the time of the bid opening. All subcontractors must be qualified or registered by GDOT. All subcontractors shall be listed in the bid package or approved by the County in writing prior to performing work on the project.

It is the responsibility of the bidder to carefully examine and fully understand the construction contract, construction plans, technical specifications and other documents hereto attached and make a personal examination of the site of the proposed work and satisfy him or herself as to the actual conditions and requirements of the work.

The bidder further agrees that the cost of any work performed, materials furnished, services provided, or expenses incurred, which are not specifically delineated in the contract documents, but which are incidental to the scope, intent, and completion of the contract, shall be deemed to have been included in the prices bid for the various items scheduled.

2. **COMMENCEMENT AND COMPLETION:** The Contractor shall agree to commence work under this contract within ten (10) working days after the Notice to Proceed is issued and complete all work within **90** calendar days after the 10-day period. The Contractor shall work continuously on the project after the Notice to Proceed is issued.

The Contractor will have 45 days to complete any punchlist work after a final inspection is performed and the punchlist is provided. Time charges will resume after 45 days and continue until all punchlist work is complete.

Intermediate Deadlines

1. Milled surfaces shall be resurfaced as follows:
    a. Soil cement shall be covered within 48 hours.

2. Road closures:
    a. Central Avenue may be closed no longer than 5 days between Norwood Avenue and Washington Street.
    b. Lansing Avenue may be closed within project limits for no longer than 30 days.

The Contractor shall notify the County when the work is substantially complete by submitting in writing a request for a Certificate of Substantial Completion (Substantial Completion shall mean the date when the work has progressed to the point where it can be utilized for the purpose for which it is intended). The Certificate shall be a mutually agreed upon document listing the date of substantial completion, items of the work remaining to be completed or corrected and shall fix the time with which the Contractor shall complete items listed therein (no more than 45 days). The Certificate shall be signed by the Contractors Construction Manager and the County Project Manager. Time charges shall recommence if all work, including corrective work but excluding permanent grassing, is not complete with the time specified in the Certificate.

3. **MAINTENANCE:** Once the Notice to Proceed has been issued, the Contractor is held responsible for all maintenance included within the limits of the project throughout the duration of the contract without exception.

4. **LIQUIDATED DAMAGES:** Failure to complete all work within 90 calendar days plus any extension authorized in writing by the County Project Manager shall entitle the County to deduct as "Liquidated Damages" from the monies due the Contractor the amount of $200 for each calendar day in excess of the authorized construction time. The Georgia Department of Transportation schedule for liquidated damages will not be used.

   Failure to meet any of the intermediate deadlines outlined above in the section for Commencement and Completion plus any extension authorized in writing by the County Project Manager shall entitle the County to deduct as "Liquidated Damages" from the monies due the Contractor the amount of $200 for each calendar day in excess of the authorized construction time and the Contractor will be required to make corrections or complete any patching required due to traffic on exposed surfaces at their own expense.

   Failure to complete the punchlist work within 45 days after the contract time of 90 calendar days shall entitle the County to deduct as "Liquidated Damages" from the monies due the Contractor the amount of $200 for each calendar day in excess of authorized construction time plus 45 days for completion of punchlist work.

5. **PRE-CONSTRUCTION CONFERENCE:** The Contractor shall attend a pre-construction conference prior to commencing any work. The County Project Manager in charge of day-to-day operations and Project Superintendent for the Contractor shall attend.

6. **CONSTRUCTION SCHEDULE:** The Contractor shall prepare a detailed schedule showing progress dates and completion dates of all phases of each project. The schedule must be submitted and approved prior to commencement of work.

7. **PAYMENT:** Quantities are approximate, and payment shall be for measured of actual in-place work as per the bid documents, plans and specifications. Any quantities exceeding the contract amount shall be requested by the Contractor in writing, for approval by the County Project Manager, prior to the work being performed. Payment will not be made for additional quantities without prior, written approval of the County Project Manager.

8. **TRAFFIC CONTROL:** Traffic safety is paramount. Contractor will be allowed to close Lansing Avenue within project limits for 30 days and Central Avenue between Norwood Avenue and Washington Street for 5 days. The Contractor will be responsible for all traffic signage, in accordance with the Manual on Uniform Traffic Control Devices, GDOT standards and details, Special Provision 150 and all other safety measures that will enhance the safety of the construction site. All costs associated with this work shall be included in the bid price for traffic control. The contractor must submit a traffic control plan to the County Project Manager for approval prior to commencing work. A minimum two weeks' notice for road closures is required to allow for public notice. Any changes to the approved traffic control plan must be submitted to and approved in writing by the County Project Manager.

9. **INCIDENTAL ITEMS OF CONSTRUCTION:** The cost associated with any incidental items of construction in which no specific pay items are set up for shall be included in the overall cost of the project.

10. **FORCE ACCOUNT:** When no agreement is reached for additional work to be done at Lump Sum or Unit Prices, then such additional work shall be done based on the following Cost-Plus-Percentage basis of payment:

    a. For work performed by the prime contractor/general contractor, the contractor shall be reimbursed for actual cost incurred in doing the work, and an additional payment of 15% to cover overhead and profit.

    b. For work performed by a sub-contractor, the sub-contractor shall be reimbursed for actual cost incurred in doing the work, and an additional payment of 10% to cover overhead and profit. The contractor shall be allowed an overhead and profit mark-up not to exceed 7% on the subcontractor's price. The County shall not recognize subcontractors of subcontractors.

    c. The term "Actual Cost" shall include the cost of material and labor as follows:
    i. Material cost - Direct cost of material, sales tax, freight, and equipment rental.
    ii. Labor cost - Man hour cost listed separately by trade, payroll costs including workman's compensation, social security, pension, and retirement.

    d. The term "Overhead and Profit" shall include bonds (Payment & Performance, Roof & Wall), insurance (Liability, Builders Risk), permits, supervision costs (cost of subcontractor to supervise own work, cost of contractor to supervise work of sub-contractor), proposal preparation and all administrative costs.

11. **PRE-CONSTRUCTION INSPECTION:** A preconstruction video, DVD or CD of photographs are required and must be submitted to Chatham County Department of Engineering for approval prior to the start of work. Special emphasis shall be given to record the existing condition of roadway pavement, signs, driveways, utilities, and any other improvements within 25 feet of the project limits.

12. **WORK HOURS:** Contractor work hours shall be restricted to daylight hours on weekdays unless specifically approved otherwise at least 48 hours in advance.

13. **UTILITIES:** The Contractor will be responsible for all utility coordination, including required relocation, and protection of utility facilities.

14. **PERMIT:** Contractor shall obtain an Encroachment Permit through the Public Works Department prior to any work within County right of way.

15. **PRIME CONTRACTOR SUPERINTENDENT**: A qualified Superintendent of the prime contractor shall be on-site during construction activities, including those of subcontractors. A sub-contractor will not be an approved representative of the prime contractor. If the Superintendent is not present to control the work, work may be suspended by County personnel until such time as the Superintendent is on-site and has adequately addressed any problems or concerns.

16. **GRADING COMPLETE:** Grading Complete shall include both Central Avenue and Lansing Avenue. Work should include but is not limited to: borrow material, hauling and placing or excavating material as needed; grading subgrade for roadway, shoulders, slopes and ditches; adjusting water valves to grade; tree trimming as needed to allow for paving operations; cleaning gutters throughout the paving limits and other miscellaneous work as required. Some grading may require hand work around existing trees, landscaping, and mailboxes. If mailboxes must be moved to complete shoulder work, the Contractor is responsible for removing and replacing them on the same day. Required shoulder grading shall begin prior to paving of the topping asphalt or at least three days after the topping asphalt paving is complete. The Contractor will be responsible for removal and replacement of any damaged pavement surface as per GDOT specifications. See typical sections for shoulder grading details on Central. See plans for required grading on Lansing Avenue.

17. **MILL AND INLAY OTHER AREAS**: Mill and inlay topping asphalt full width to the back of the radius on Billings Road. Also, mill and inlay on Lansing Avenue full width approximately 275 LF between Hunt Club Road and Garfield Street.

18. **GRASSING:** Graded areas shall be stabilized daily with either grass or mulch. Grassing shall be completed within 7 days of disturbance. It will be the Contractors responsibility to maintain all areas until a final stand of grass is established and accepted. This includes watering, mowing, reseeding, additional applications of mixed grade fertilizer or other miscellaneous work as related to maintenance of the grass as needed. The cost for this work shall be included in the bid price for temporary grassing and permanent grassing. The Contractor is responsible for keeping sediment from entering storm drainage structures or leaving the site. Additional Best Management Practice (BMP) devices may be required.

19. **SAMPLING AND TESTING OF MATERIALS:** All sampling and testing services shall be performed by an independent testing agency accepted by the County Project Manager, at the Contractor's expense. All sampling testing required for the project will be in accordance with the GDOT Sampling, Testing and Inspection Guidelines except as revised in the attached Special Provision – Sampling and Testing of Materials. It is understood that these are the minimum testing requirements, and that additional testing may be requested by the County Project Manager, as needed. A copy of all test reports shall be sent to the County Project Manager and must be received prior to placement of the next lift if applicable and prior to any payment for the work. Written field reports are acceptable for compaction testing to expedite construction. Verbal approval will not be acceptable. The cost associated with testing shall be included in the bid price for that item.

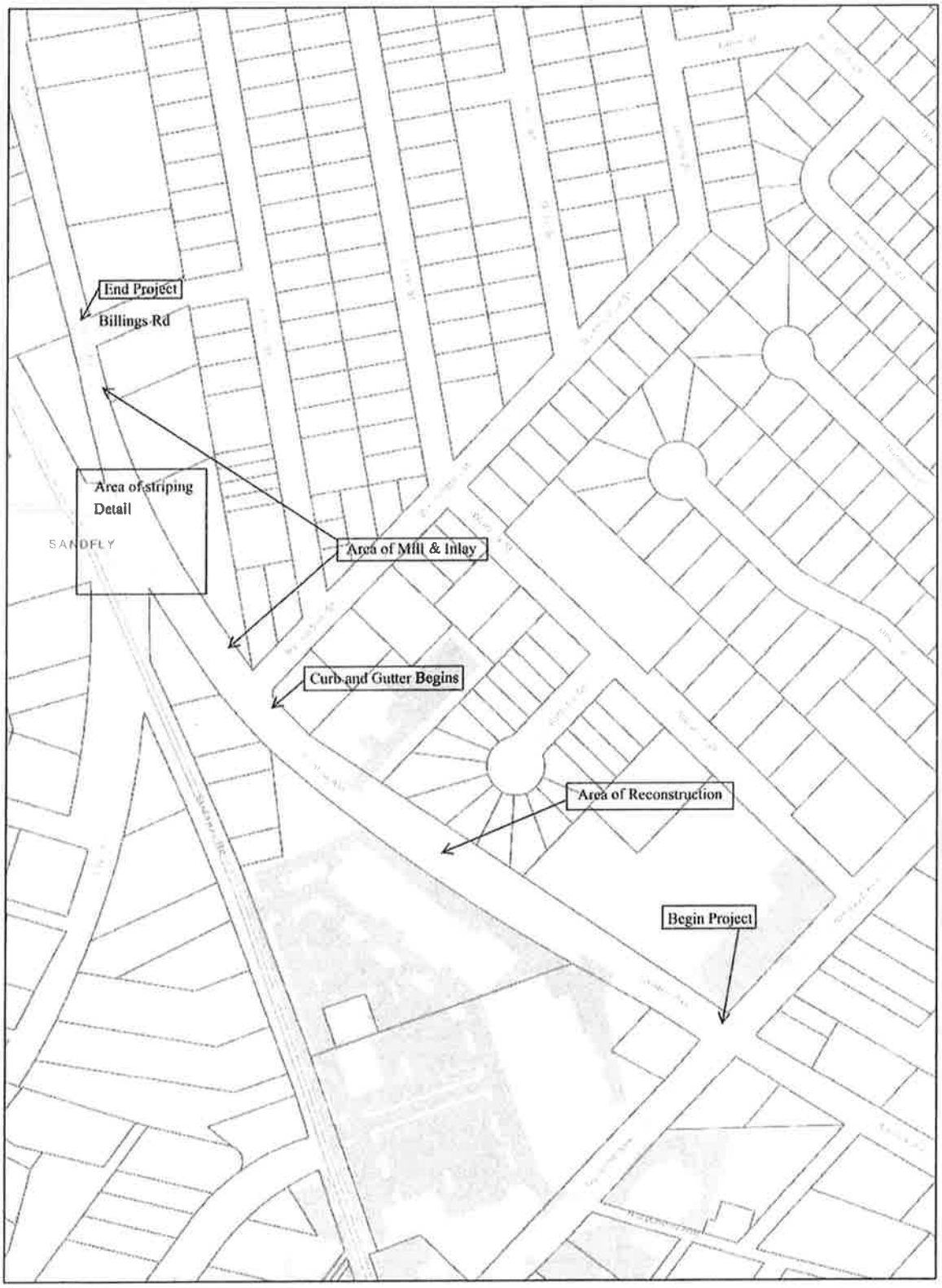
20. **AS-BUILTS:** The Contractor is responsible for providing as-built information including elevation and location for all drainage structure inverts.

21. **FIELD CONDITION ALLOWANCE:** The field condition allowance shown on the bid sheet shall belong to Chatham County. The purpose of this Allowance is to allow the County to designate actions associated with completion of the project which are not indicated on the plans, but which are dictated by field conditions. Bidders shall not use this Allowance to assume any Contractor costs known or unknown at the bidding. Chatham County must approve use of the Allowance. All bidders shall include this Field Condition Allowance within their base bid. Any unused allowance shall revert to Chatham County.

PROPOSAL INDEX: This proposal includes the following for your information.

- Map for Central Avenue
- Typical Sections for Central Avenue
- Signing and Marking layout of Central Avenue
- Profile for Central Avenue Reconstruction
- Road Listing for Central Avenue
- A Summary of Quantities (Lansing & Central)
- Special Provision for Sampling and Testing

Central Ave Rehabilitation



July 20, 2021

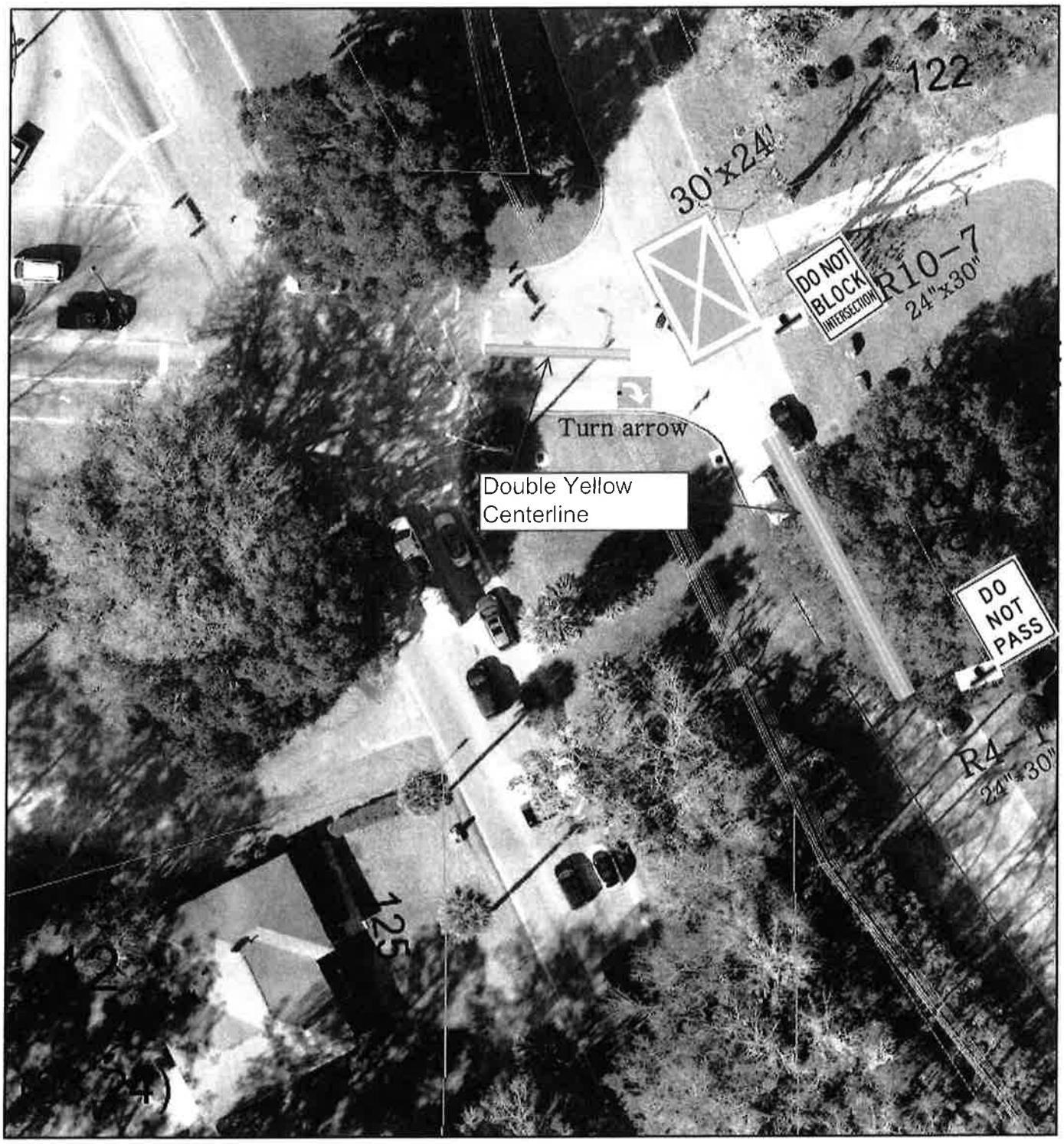
Parcel Weekly Update

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

SAGIS



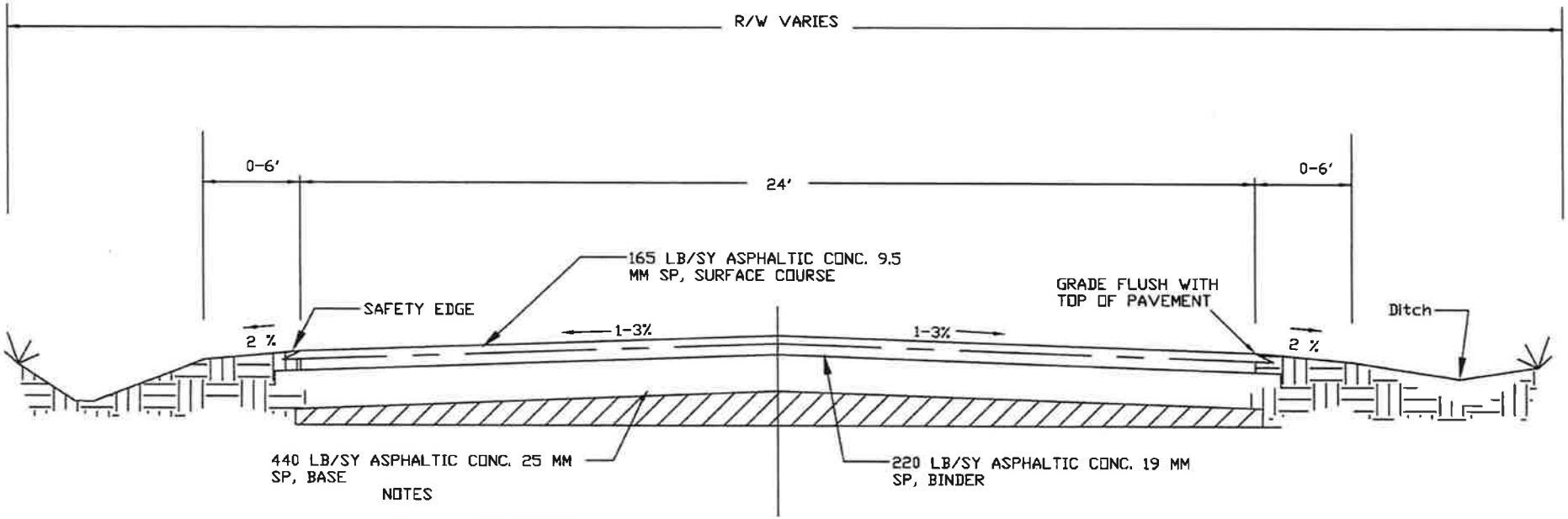
1:564

0 0 0.01 0.02 mi

0 0.01 0.01 0.02 km

* Continue double yellow centerline on Central Avenue from Montgomery Cross Rd to Norwood Avenue.
* Stripe white edgelines on Central Avenue from the end of curb and gutter to Norwood Avenue for 11 ft lanes.

TYPICAL SECTION 1



NOTES

1. THE CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE GEORGIA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION OF TRANSPORTATION SYSTEMS (2021 EDITION), STANDARDS AND CONSTRUCTION DETAILS.
2. REMOVE APPROXIMATELY 800 FEET AT 7 ½ INCHES IN DEPTH OF EXISTING SURFACE AND BASE STARTING FROM NORWOOD AVENUE JOINT AND STOPPING WHERE SOIL CEMENT BEGINS.
3. CROWN THE FIRST 170 FEET STARTING FROM NORWOOD AVENUE JOINT.
4. CREATE DRAINAGE DITCH ALONG CENTRAL AVENUE TOWARDS FLARED INLET.

CENTRAL AVENUE
CROWN 0-1+70

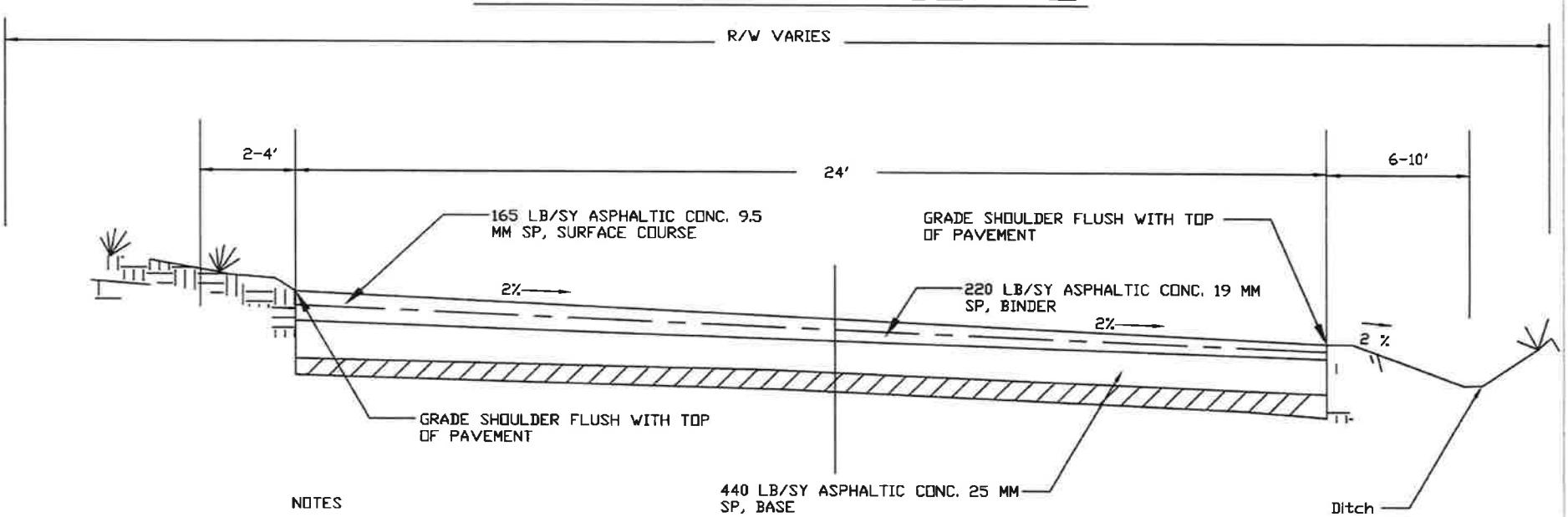
CHATHAM COUNTY

DEPARTMENT OF ENGINEERING

SCALE: N.T.S.

DATED: JUNE 2021

TYPICAL SECTION 2



NOTES

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2. REMOVE APPROXIMATELY 800 FEET AT 7 ½ INCHES IN DEPTH OF EXISTING SURFACE AND BASE STARTING FROM NORWOOD AVENUE JOINT AND STOPPING WHERE SOIL CEMENT BEGINS.
3. CROSS SLOPE TOWARD DITCH ON RIGHT FOR APPROXIMATELY 640 FEET STARTING 170 FEET FROM NORWOOD AVENUE.
4. CREATE DRAINAGE DITCH ALONG CENTRAL AVENUE TOWARDS FLARED INLET.
5. PLACE AGGREGATE SURFACE COURSE ALONG DRIVEWAYS FOR ENTERING AND EXITING VEHICLES AS NEEDED.

CENTRAL AVENUE
CROSS SLOPE 1+70-8+10

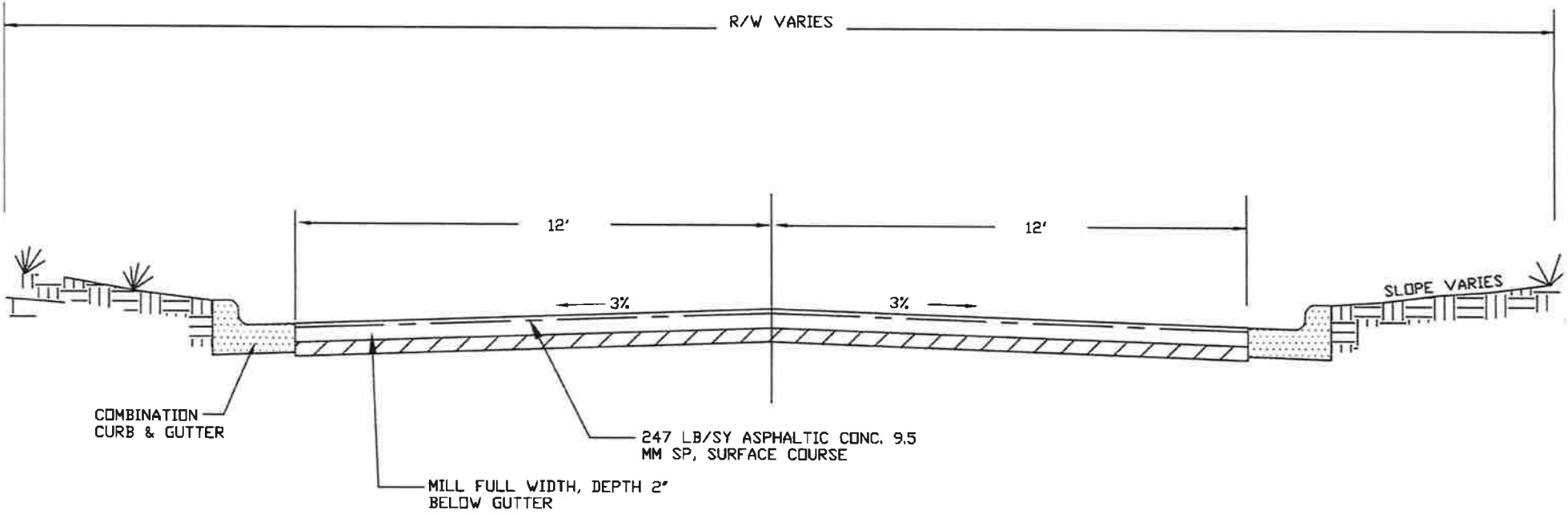
CHATHAM COUNTY

DEPARTMENT OF ENGINEERING

SCALE: N.T.S.

DATED: JUNE 2021

TYPICAL SECTION 3



NOTES

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2. MILL 2 IN FULL WIDTH, 247 LB/SY 9.5 MM TP 2 IN 2 LIFTS.
3. TRANSITION SLOPE FROM SUPER ELEVATED SECTION TO CROWN SECTION IN AREA WITH CURB ON ONE SIDE.

CURB & GUTTER SECTION OF CENTRAL AVENUE

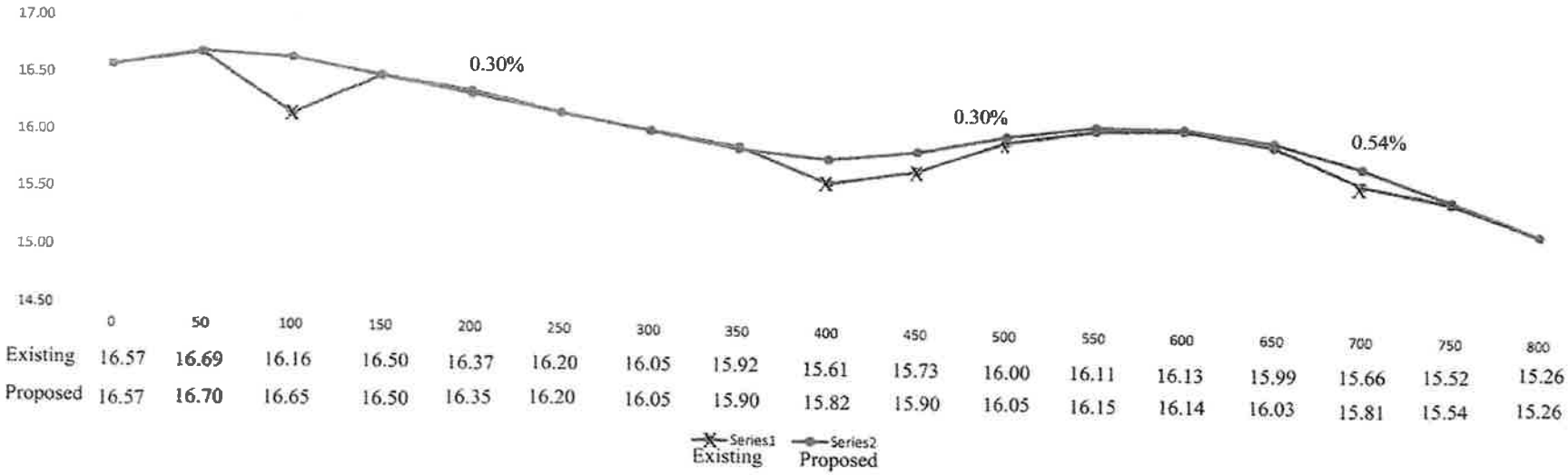
CHATHAM COUNTY

DEPARTMENT OF ENGINEERING

SCALE: N.T.S.

DATED: JUNE 2021

CENTRAL AVENUE PROFILE



	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Existing	16.57	16.69	16.16	16.50	16.37	16.20	16.05	15.92	15.61	15.73	16.00	16.11	16.13	15.99	15.66	15.52	15.26
Proposed	16.57	16.70	16.65	16.50	16.35	16.20	16.05	15.90	15.82	15.90	16.05	16.15	16.14	16.03	15.81	15.54	15.26

This is for information purposes only. Contractor to verify existing centerline grades.

Central Avenue
Road Listing

Road Name: **Central Avenue**

Begin At: Joint near Norwood Avenue
End at: Billings Road

Length (mi): 0.31
Width (ft): 24.0

Proposed Construction

Remove approximately 810 feet of Central Avenue Road at approximately7 1/2 inch depth starting frrm the joint at Norwood Avenue to the curb and gutter section near Washington Avenue, pave 4 inch base of 25 mm SP, 2 inch binder lift of 19 mm SP and top with 165 lb/sy of 9.5mm type 2 SP, install inlet sediment traps and mill full width in the curb and gutter section between Washington Avenue and Billings Road; inlay with two lifts of 123 lb/sy of 9.5 mm, type 2 SP. Adjust manholes on Central Avenue. Place 5 inch double yellow center line starting from Norwood Avenue to Central Avenue and East Montgomery Cross Road intersection. Stripe 5 " Solid White Edgelines on Central Avenue from Norwood Avenue to the curb and gutter section for 11 ft lanes. Place 12 foot stopbar on Central Avenue at Norwood Avenue. Reset " STOP" sign at Billings Road and Central Avenue. Grade shoulders and ditch along Central Avenue. Grass all disturbed areas.

LANSING AVE/ CENTRAL AVE - SUMMARY OF QUANTITIES

ROADS		TOTAL	Central Ave 0.31 mi	Lansing 0.15 mi
PAY ITEMS	**UNIT**	**QUANTITY**		
TRAFFIC CONTROL	LS	1		
FOUNDATION BACKFILL MATERIAL, TYPE 2	CY	10	0	10
GRADING COMPLETE	LS	1		
AGGR SURF CRS	TN	50	50	0
RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	60	34	25
RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	700	600	95
RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2 , INCL BITUM MATL & H LIME	TN	480	480	0
RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	240	240	0
TACK COAT	GL	480	400	80
MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	3300	2425	875
INTEGRAL CONCRETE MEDIAN, TYPE 1 FACE, 4 IN	SY	16	0	16
PVMT REINF FABRIC STRIPS, TP 2, 18 IN WIDTH	LF	200	0	200
CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING	CY	15	0	15
ELLIPTICAL PIPE - 18 IN	LF	120	0	112
ELLIPTICAL SAFETY END SECTION - 18 IN	EA	1	0	1
ELLIPTICAL FLARED END SECTION - 18 IN (FIELD CUT PIPE)	EA	1	0	1
ADJUST MANHOLE TO GRADE	EA	16	14	2
RESET SIGN	EA	1	1	0
HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	34	10	24
GALV STEEL POSTS, TP 7	LF	72	22	50
THERMOPLASTIC PVMT MARKING, ARROW, TP2	EA	1	1	0
THERMOPLASTIC PVMT MARKING, SYMBOL, INTERSECTION BOX	EA	1	1	0
THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	2700	1730	970
THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	3820	2750	1070

ROADS		TOTAL	Central Ave 0.31 mi	Lansing 0.15 mi
THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	36	24	12
THERMOPLASTIC TRAF STRIPING, YELLOW	SY	46	0	46
RAISED PVMT MARKERS TP 1, BLUE	EA	1	1	0
TEMPORARY GRASSING	AC	0.3	0.1	0.2
MULCH	TN	10	2	8
CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	LF	70	30	40
CONSTRUCT AD REMOVE INLET SEDIMENT TRAP	EA	8	8	0
MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	35	15	20
MAINTENANCE OF INLET SEDIMENT TRAP	EA	4	4	0
PERMANENT GRASSING, COMPLETE (INCL. FERTILZER & LIME AS REQD)	AC	0.3	0.1	0.2

CHATHAM COUNTY, GEORGIA

SPECIAL PROVISION

SAMPLING AND TESTING OF MATERIALS

All sampling and testing services shall be performed by an independent testing agency that operates in accordance to ASTM D3470 and E329, latest edition and accepted by the County Engineer, at the Contractor's expense. All sampling testing required for the project will be in accordance with the GDOT Sampling, Testing and Inspection Guidelines except as modified here. It is understood that these are the minimum testing requirements and that additional testing may be requested by the Engineer. A minimum of 24 hours notice shall be given to the County Project Manager prior to work which requires testing. A copy of all test reports shall be sent to the Project Manager and must be received prior to placement of the next lift if applicable and prior to any payment for the work. Written field reports are acceptable for compaction testing to expedite construction. Verbal approval will not be acceptable. The cost associated with testing shall be included in the bid price for that item.

A. Section 207 Backfill for Minor Structures - One sample per major soil type shall be taken to ensure that the material meets requirements for Class I or II Roadway Materials as per GDOT Standard Specification 810.2.01. One in-place density test shall be taken for every three lines of longitudinal pipe between drainage structures or every 500 feet, whichever is less. One in-place density test shall be taken for every line of storm drain pipe installed under road pavement. One in-place density test shall be taken for every three drainage structures. Required compaction is 95% of the maximum dry density with optimum moisture content as determined by the testing agency. Testing as per GDT 7.

B. Section 208 Embankment- One sample per major soil type shall be taken to ensure that the material meets the requirement for Class IIB3 or better soils as per GDOT Standard Specification 810.2.01. One in-place density test shall be taken per area of embankment constructed at one time on every other lift, or every 2,000 cubic yards, whichever is less. Required compaction is a minimum of 95% of the maximum dry density and optimum moisture content as determined by the testing agency. Any areas that fail a compaction test must pass a retest prior to any additional embankment being placed at that location. Testing as per GDT 7, 20, 21, 24a, 24b, 59, 67.

C. Section 209 Subgrade - One in-place density test shall be taken per every 500 linear feet, maximum 24 foot width, for each section set up at one time, of subgrade under the pavement. Subgrade testing under miscellaneous concrete or shoulders shall be at intervals of no less than 500 ft. for each section set up at one time. Compaction shall be a minimum of 100% of maximum dry density and optimum moisture content as determined by the testing agency. Any areas that fail a compaction test must pass a retest prior to placement of subsequent lift. The subgrade shall be proof rolled with a loaded dump truck and approved by the Engineer prior to placement of any base course. Testing as per GDT 7, 20, 24a, 24b, 59, 67.

D. Section 310 Graded Aggregate Construction - One thickness measurement and one in-place density test per 500 linear feet, maximum 24 foot width, for each section set up at one time. Sections over 8 inches in depth will require testing in two lifts. A proof roll with a loaded dump truck may be required by the Engineer prior to placement of any asphalt or bituminous prime coat. Testing as per GDT 21, 59.

E. Section 400 & 402 Hot Mix Asphalt Construction – The Contractor is responsible for all Quality Control testing as required in Section 400 (On-system) and the Contractor shall hire an independent Testing Agency to perform Comparison Testing, Quality Assurance and Acceptance Testing as per Section 400 (On-system) with the following revisions:

1. Use of a Materials Transfer Vehicle (MTV) will not be required.
2. The adjustment period for density will be one day for each mix on each road.
3. Maximum air voids for all Superpave mixes must not exceed 7.8 percent for 100% pay factor on Lansing Avenue or the curb and gutter section on Central Avenue. Air voids must not exceed 7.0 for the reconstructed section of Central Avenue.
4. Laser road profile testing will not be completed. Contractor is to achieve the smoothest possible ride during construction.

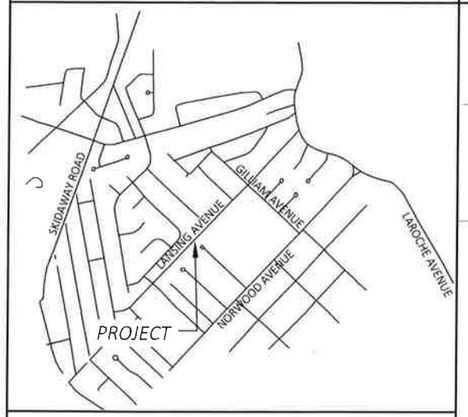
The Testing Agency shall report density and voids to the nearest 0.1 on Form OMR-TM-150 and shall provide an Asphaltic Concrete Lot Report (similar to DOT159 and 159-5) with compaction, extraction, sieve and A/C test results and corresponding recommended pay factors for each Lot. These reports will be required prior to payment. This testing may be waived by the Engineer for Lansing Avenue.

F. Section 441 Miscellaneous Concrete - One set of test cylinders per each 100 cumulative cubic yards or one set per week if placement is less than 100 cumulative cubic yards per week. Air and slump test are required when cylinders are made and at least once each day when concrete is placed. Additional tests may be required as necessary to insure adequate control. Cylinders shall be tested at 28 days in accordance with ASTM C39.

G. Section 500 Concrete Structures - Two sets of test cylinders per each 50 cubic yards or fraction thereof placed daily per structure. Air and slump tests are required when cylinders are made and approximately every third load thereafter to insure adequate control. Cylinders shall be tested at 7 and 28 days in accordance with ASTM C39. Additional cylinders may be taken for early breaks as necessary.

Revised July 2021

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
GA			



LOCATION SKETCH

CHATHAM COUNTY, GEORGIA

CONSTRUCTION PLAN

LANSING AVENUE TRAFFIC CALMING PROJECT

CHATHAM COUNTY

FUNCTIONAL CLASSIFICATION
URBAN MINOR COLLECTOR

VERTICAL DATUM	: NAVD 88
COORDINATE ZONE	: GEORGIA EAST
COORDINATE SYSTEM	: NAD 83, STATE PLANE
PROJECT UNITS	: ENGLISH
DESIGN SPEED	: 25 MPH

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND CHATHAM COUNTY IN ANY WAY. THE ATTENTION OF THE BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTION 102.04, 102.05 AND 104.3 OF THE GEORGIA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

SCALE IN FEET
0 100 200 400

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

PLANS COMPLETED

DRAWING NO.
1-01

GA

1. THE FOLLOWING UTILITY OWNERS HAVE FACILITIES ON THIS PROJECT

COMCAST CABLE
145 PARK OF COMMERCE DRIVE
SAVANNAH, GA 31405
PH: 912-353-6060

AGL
1668 CHATHAM PARKWAY
SAVANNAH, GA 31405
912-239-6508

WATER UTILITY MANAGEMENT
621 STEPHENSON AVENUE
SAVANNAH, GA. 31415
PH: 912-651-6573

AT&T
2624 NORWICH ST
BRUNSWICK, GA 31520
912-264-0567

GEORGIA POWER COMPANY
3100 KILOWATT DRIVE
SAVANNAH, GA. 31405
PH: 912-306-2187

2. CONTRACTOR TO MAINTAIN ACCESS TO ALL PARCELS DURING CONSTRUCTION. ACCESS TO DRIVES WILL BE PROVIDED AT ALL TIMES.

3. ALL BORROW SITES AND WASTE SITES FOR THIS PROJECT SHALL BE APPROVED BEFORE USE. ANY EXCESS MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR.

4. CONTRACTOR IS TO CLEAN OR FLUSH OUT ALL DRAINAGE PIPE AND STRUCTURES AT THE COMPLETION OF CONSTRUCTION TO REMOVE ANY SILT AND DEBRIS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT.

5. CONTRACTOR TO ENSURE THAT THE SITE IS STABILIZED AT THE END OF EACH DAY.

6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF ALL EXISTING UTILITIES (ABOVE OR BELOW GROUND) AS SHOWN ON THESE PLANS ARE APPROXIMATE AND WERE LOCATED BASED ON EITHER VISUAL OBSERVATIONS AT THE SITE, EXISTING SURVEYS AND/OR FROM THE OWNERS. CHATHAM COUNTY DOES NOT GUARANTEE THAT EXISTING UTILITY LOCATIONS SHOWN ARE EXACT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES (ABOVE OR BELOW GROUND) BEFORE BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND THE UTILITIES PROTECTION CENTER AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. CONTRACTOR SHALL COORDINATE WORK WITH UTILITY COMPANIES TO VERIFY LIMITS OF CLEARING AND GRUBBING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY OWNER AND/OR ENGINEER OF ANY UTILITY CONFLICTS WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

7. THE CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF RIGHT OF WAY OR ACQUIRED EASEMENT AND SHALL AT NO TIME ENCROACH ONTO PRIVATE PROPERTY.

10. ADDITIONAL CONTACT INFORMATION

TENNELL BLOUNT
CHATHAM COUNTY PROJECT MANAGER
CHATHAM COUNTY ENGINEERING DEPT.
124 BULL ST., SUITE 430
SAVANNAH, GA. 31401
PH: 912-652-7800

11. ALL WORK ON THE PROJECT SHALL CONFORM TO GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) STANDARDS, SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS, CURRENT EDITION, EXCEPT AS MODIFIED BY THESE PLANS.

12. ALL MATERIAL SHALL BE OBTAINED FROM GDOT APPROVED SUPPLIERS.

13. ALL TRAFFIC CONTROL SHALL BE ACCORDING TO THE MUTCD, CURRENT EDITION AND GDOT STANDARDS. A TRAFFIC CONTROL PLAN MUST BE APPROVED BY THE COUNTY ENGINEER PRIOR TO BEGINNING ANY WORK.

14. ANY REFERENCE TO "THE DEPARTMENT" SHALL BE UNDERSTOOD BY THE CONTRACTOR TO MEAN CHATHAM COUNTY DEPARTMENT OF ENGINEERING, AND REFERENCES TO "THE DEPARTMENTS SPECIFICATIONS" SHALL BE UNDERSTOOD BY THE CONTRACTOR TO MEAN THE GEORGIA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS, CURRENT EDITION.

15. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL POST MOUNTED STREET NAME SIGNS WITHIN THE PROJECT LIMITS. IF A STREET NAME SIGN MUST BE MOVED TO COMPLETE THE WORK, IT SHALL BE RESET AT THE END OF EACH WORK DAY.

16. MAILBOXES SHALL BE RELOCATED AS REQUIRED FOR CONSTRUCTION. THIS WORK WILL BE INCLUDED IN THE BID PRICE FOR GRADING COMPLETE AND WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

17. ANY DISTURBED AREA SHALL BE STABILIZED WITH TEMPORARY GRASS OR MULCH AT THE END OF EACH DAY.

18. ALL WATER USED FOR CONSTRUCTION SHALL BE METERED THROUGH AN APPROVED BACKFLOW PREVENTION DEVICE AND FIRE HYDRANT METER.

19. A QUALIFIED REPRESENTATIVE OF THE PRIME CONTRACTOR SHALL BE ON SITE WHILE ANY SUBCONTRACTOR IS WORKING ON THE PROJECT. IF ADEQUATE MANAGEMENT IS NOT PRESENT TO CONTROL THE WORK, THE WORK MAY BE SUSPENDED BY COUNTY PERSONNEL UNTIL SUCH TIME AS THE CONTRACTOR'S SUPERINTENDENT IS ON SITE AND HAS ADEQUATELY ADDRESSED ANY PROBLEMS OR CONCERNS.

20. ALL DRAINAGE PIPE SHALL BE REINFORCED CONCRETE PIPE. ALL PIPE JOINTS SHALL BE WRAPPED WITH TWO LAYERS OF FILTER FABRIC, FOUR FEET WIDE CENTERED ON THE JOINT WITH A ONE FOOT MINIMUM OVERLAP. COST FOR WRAPPING THE JOINTS SHALL BE INCLUDED IN THE OVERALL COST FOR THE PIPE. ALL PIPE SHALL BE STAMPED WITH A CPT STAMP. PIPE DELIVERED TO THE SITE MUST BE A MINIMUM OF TEN DAYS OLD.

21. WASHING OUT OF CONCRETE TRUCKS ON THE GROUND WILL NOT BE ALLOWED. A SHALLOW PIT WITH A PLASTIC LINEAR WILL BE REQUIRED TO BE CONSTRUCTED AND REMOVED OR TEMPORARY STORAGE CONTAINERS UTILIZED. IF PITS ARE USED, THEY SHALL BE PROPERLY CLEANED OUT, BACKFILLED, COMPACTED, GRADED AND GRASSED. THE COST FOR THIS SHALL BE INCLUDED IN THE OVERALL BID SUBMITTED FOR THE PROJECT.

811
Know what's **below.**
Call before you dig.

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

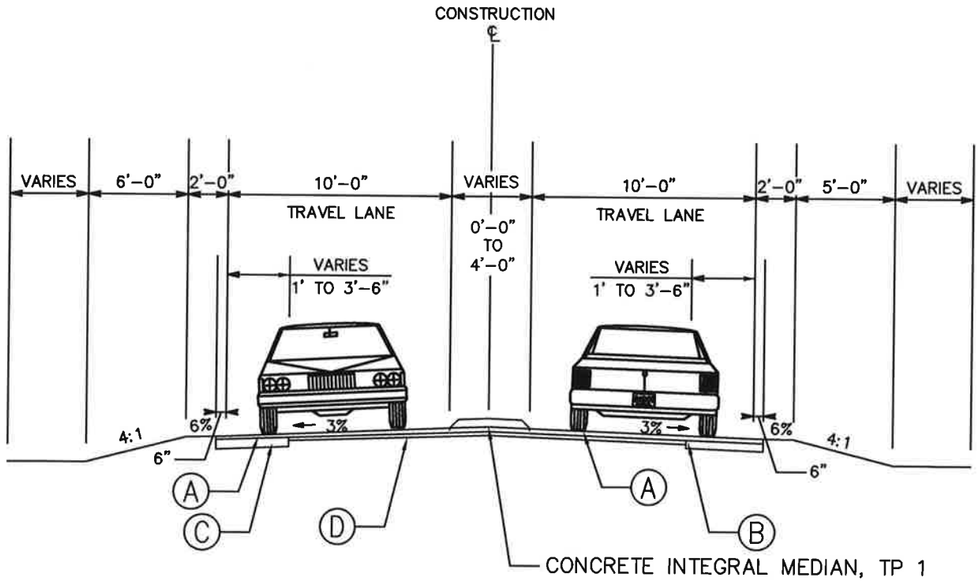
REVISION DATES

LANSING AVENUE TRAFFIC CALMING

GENERAL NOTES

CHATHAM COUNTY

DRAWING NO.
4-01



TYPICAL SECTION
LANSING AVENUE
STA 103+38 TO STA 104+70

PAVEMENT DESIGN

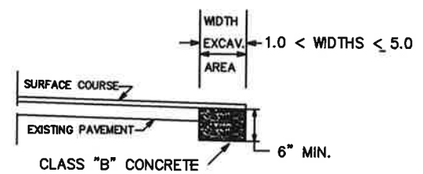
Ⓐ 165 LB/SY ASPHALTIC CONCRETE 9.5 MM TP 2 SUPERPAVE

Ⓑ PAVEMENT REINFORCING FABRIC

Ⓒ 6" CLASS B CONCRETE

Ⓓ VARIABLE DEPTH MILLING OR LEVELING AS REQUIRED

CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING DETAIL



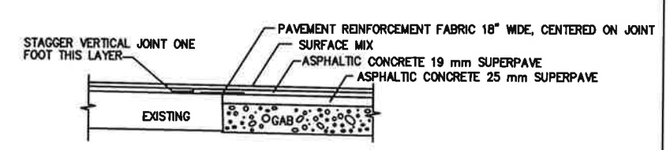
NO SCALE

CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING
Item Code 500–9999 – Cu. Yds.

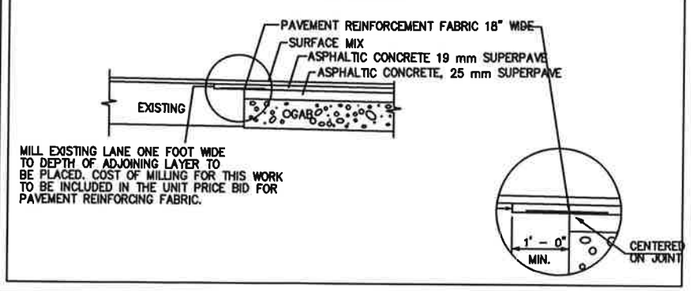
IN EXCAVATED AREAS THAT ARE 5'–0" OR LESS IN WIDTH, CLASS "B" CONCRETE SHALL BE PLACED IN LIEU OF THE ASPHALT SPECIFIED BY THE TYPICAL SECTION. PAYMENT WILL BE MADE UNDER "CLASS B CONCRETE BASE AND PAVEMENT WIDENING". IN EXCAVATED AREAS GREATER THAN 5'–0" IN WIDTH, THE CONTRACTOR SHALL PLACE BASE AND PAVING AS SPECIFIED ON THE TYPICAL SECTION.

PAVEMENT REINFORCING FABRIC DETAIL

TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH TWO INCHES OR MORE OF ASPHALTIC CONCRETE



TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE



CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
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REVISION DATES

LANSING AVENUE TRAFFIC CALMING

TYPICAL SECTIONS

CHATHAM COUNTY

DRAWING NO. 05-01

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
GA			

100+00

101+00

102+00

103+00

104+00

105+00

BURKE AVENUE 50' R/W
(UNOPENED)

BURKE AVENUE 50' R/W
(UNOPENED)

UNOPENED 60' R/W

ex outfall ditch

BEGIN PROJECT
LANSING AVENUE
STA 100+00
N 727210.6426
E 996434.1092

LANSING AVENUE
R/W VARIES

BEGIN INTEGRAL CONCRETE MEDIAN
TYPE 1 FACE STA 103+85.22

4' R
103+89.22

Ex. 48 in RCP

BEGIN OVERLAY
STA 103+00

+38.02
10.00 RT

+49.71
10.50 LT

+85
13.25 RT

+85
13.25 LT

+29.22
13.25 RT

+25
13.25 LT

+68.09
10.00 RT

+70.31
10.00 LT

A-3

A-3

END OVERLAY
STA 105+00

END INTEGRAL CONCRETE MEDIAN
TYPE 1 FACE STA 104+25.22

4' R
104+21.22

NOTES

1. Mill approximately 75 ft at begin overlay and approximately 25 ft at end overlay for grades and tie–in.

PROPERTY AND EXISTING R/W LINE	℄
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	-C-F-
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

SCALE IN FEET
0 20 40 80

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
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REVISION DATES		

LANSING AVENUE TRAFFIC CALMING

CONSTRUCTION PLAN

CHATHAM COUNTY

DRAWING NO. 13-01

			STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
			GA			

PROPERTY AND EXISTING R/W LINE	℄
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C— F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

SCALE IN FEET
0 20 40 80

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
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REVISION DATES		

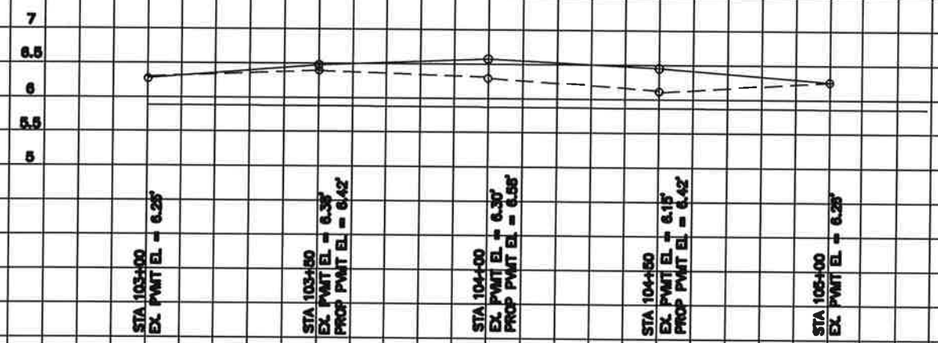
CHATHAM COUNTY, GEORGIA

CONSTRUCTION PLAN

LANSING AVENUE TRAFFIC CALMING

DRAWING NO. 13-02

			STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
			GA			



NOT TO SCALE

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
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REVISION DATES

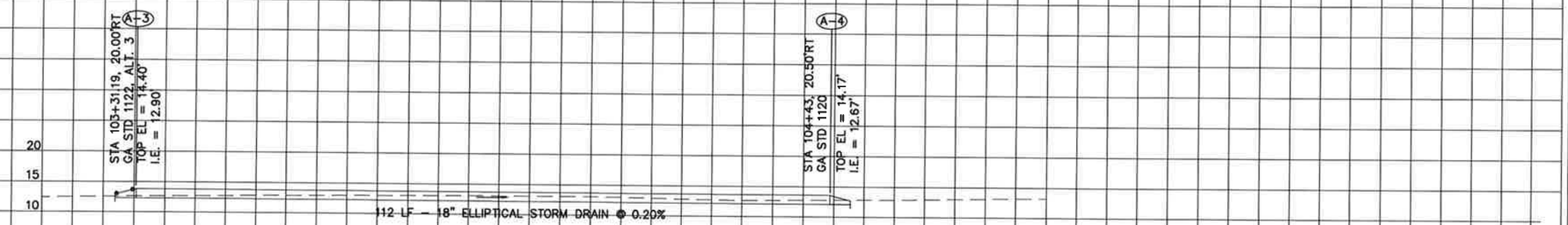
LANSING AVENUE TRAFFIC CALMING

ROADWAY PROFILE

CHATHAM COUNTY

DRAWING NO. 15-01

			STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
			GA			



SCALE 1 inch = 10 feet
Vert.
SCALE 1 inch = 10 feet
Horiz.

PROPERTY AND EXISTING R/W LINE	—P—
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C— F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
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REVISION DATES

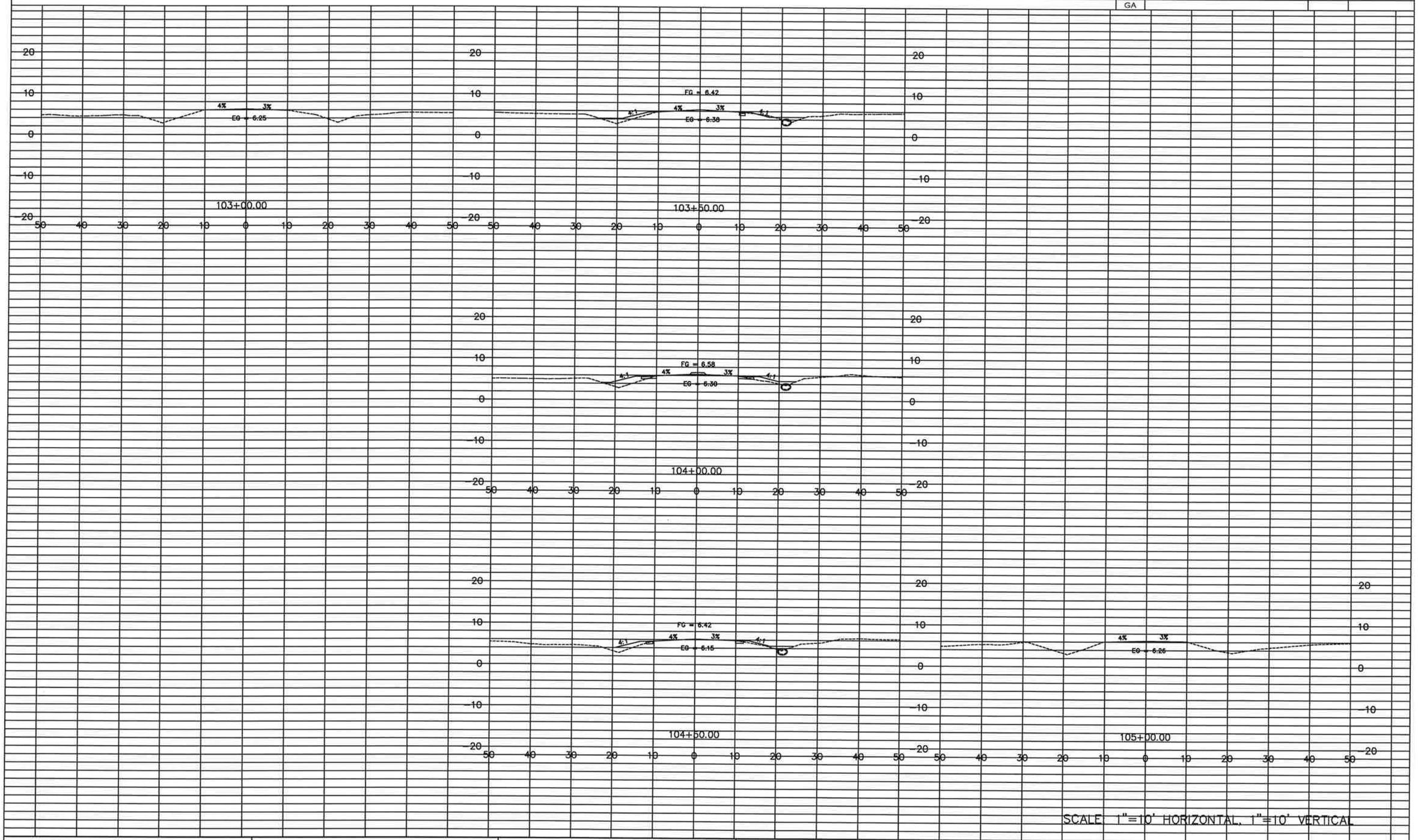
LANSING AVENUE TRAFFIC CALMING

DRAINAGE PROFILE

CHATHAM COUNTY

DRAWING NO.
22-01

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
GA			



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

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

REVISION DATES

LANSING AVENUE TRAFFIC CALMING

EARTHWORK CROSS SECTIONS

CHATHAM COUNTY

DRAWING NO. 23-01

			STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
			GA			

UTILITY LINECODES

	EXISTING	TO BE REMOVED	PROPOSED	TYPE OF UTILITY
OVERHEAD	E	E	E	ELECTRIC
	E-T	E-T	E-T	ELECTRIC/TELECOMMUNICATIONS
	E-TV	E-TV	E-TV	ELECTRIC/CABLE TV
	E-TC	E-TC	E-TC	ELECTRIC/TRAFFIC CONTROL
	E-T-TV	E-T-TV	E-T-TV	ELECTRIC/TELECOMMUNICATIONS/CABLE TV
	E-T-TV-TC	E-T-TV-TC	E-T-TV-TC	ELECTRIC/TELECOMMUNICATIONS/CABLE TV/TRAFFIC CONTROL
	E-TV-TC	E-TV-TC	E-TV-TC	ELECTRIC/CABLE TV/TRAFFIC CONTROL
	E-T-TC	E-T-TC	E-T-TC	ELECTRIC/TELECOMMUNICATIONS/TRAFFIC CONTROL
	GW	GW	GW	GUY WIRE
	T	T	T	TELECOMMUNICATIONS
	T-TC	T-TC	T-TC	TELECOMMUNICATIONS/TRAFFIC CONTROL
	T-TV-TC	T-TV-TC	T-TV-TC	TELECOMMUNICATIONS/CABLE TV/TRAFFIC CONTROL
	T-TV	T-TV	T-TV	TELECOMUNICATIONS/CABLE TV
	TV	TV	TV	CABLE TV
	TV-TC	TV-TC	TV-TC	CABLE TV/TRAFFIC CONTROL
	TC	TC	TC	TRAFFIC CONTROL
UNDERGROUND	E	E	E	ELECTRIC (QL-D)
	E(C)	E(C)		ELECTRIC (QL-C)
	E(B)	E(B)		ELECTRIC (QL-B)
	T	T	T	TELECOMMUNICATIONS (QL-D)
	T(C)	T(C)		TELECOMMUNICATIONS (QL-C)
	T(B)	T(B)		TELECOMMUNICATIONS (QL-B)
	TV	TV	TV	CABLE TV (QL-D)
	TV(C)	TV(C)		CABLE TV (QL-C)
	TV(B)	TV(B)		CABLE TV (QL-B)
	W	W	W	WATER (QL-D)
	W(C)	W(C)		WATER (QL-C)
	W(B)	W(B)		WATER (QL-B)
	**W	**W	**W	WATER FOR LABELED PIPE SIZES (QL-D)
	**W(C)	**W(C)		WATER FOR LABELED PIPE SIZES (QL-C)
	**W(B)	**W(B)		WATER FOR LABELED PIPE SIZES (QL-B)
	NW	NW	NW	NON-POTABLE WATER (QL-D)
	NW(C)	NW(C)		NON-POTABLE WATER (QL-C)
	NW(B)	NW(B)		NON-POTABLE WATER (QL-B)
	**NW	**NW	**NW	NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-D)
	**NW(C)	**NW(C)		NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-C)
	**NW(B)	**NW(B)		NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-B)
	STM	STM	STM	STEAM (QL-D)
	STM(C)	STM(C)		STEAM (QL-C)
	STM(B)	STM(B)		STEAM (QL-B)
	**STM	**STM	**STM	STEAM FOR LABELED PIPE SIZES (QL-D)
	**STM(C)	**STM(C)		STEAM FOR LABELED PIPE SIZES (QL-C)
	**STM(B)	**STM(B)		STEAM FOR LABELED PIPE SIZES (QL-B)
	SS	SS	SS	SANITARY SEWER WITH FLOW DIRECTION (QL-D)
	SS(C)	SS(C)		SANITARY SEWER WITH FLOW DIRECTION (QL-C)
	SS(B)	SS(B)		SANITARY SEWER WITH FLOW DIRECTION (QL-B)
	**SS	**SS	**SS	SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-D)
	**SS(C)	**SS(C)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-C)
	**SS(B)	**SS(B)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-B)
	SFM	SFM	SFM	SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-D)
	SFM(C)	SFM(C)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-C)
	SFM(B)	SFM(B)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-B)
	G	G	G	GAS (QL-D)
	G(C)	G(C)		GAS (QL-C)
	G(B)	G(B)		GAS (QL-B)
	**G	**G	**G	GAS FOR LABELED PIPE SIZES (QL-D)
	**G(C)	**G(C)		GAS FOR LABELED PIPE SIZES (QL-C)
	**G(B)	**G(B)		GAS FOR LABELED PIPE SIZES (QL-B)
	P	P	P	PETROLEUM (QL-D)
	P(C)	P(C)		PETROLEUM (QL-C)
	P(B)	P(B)		PETROLEUM (QL-B)
	**P	**P	**P	PETROLEUM FOR LABELED PIPE SIZES (QL-D)
	**P(C)	**P(C)		PETROLEUM FOR LABELED PIPE SIZES (QL-C)
	**P(B)	**P(B)		PETROLEUM FOR LABELED PIPE SIZES (QL-B)
	TC	FOR PROPOSED/TEMPORARY TRAFFIC CONTROL INFORMATION REFER TO TRAFFIC SIGNAL PLANS		TRAFFIC CONTROL (QL-D)
	TC(C)			TRAFFIC CONTROL (QL-C)
	TC(B)			TRAFFIC CONTROL (QL-B)
	UNK(B)	LINK(B)		UNKNOWN UTILITY FOUND IN SUE INVESTIGATION (QL-B)

UTILITY SYMBOLS

EXISTING	PROPOSED	TEMPORARY	
			UTILITY POLE/GUY POLE
			LIGHT POLE
			GUY ANCHOR
M	M	M	MARKER
X	X	X	SPLICE BOX
			CABINET
			VENT
E	E	E	ELECTRIC MANHOLE
H	H	H	HAND HOLE
E	E	E	TRANSFORMER
E	E	E	ELECTRIC METER
E	E	E	ELECTRIC BOX
T	T	T	TELECOMMUNICATIONS MANHOLE
T	T	T	TELECOMMUNICATIONS PEDESTAL
SLC	SLC	SLC	SUBCRIBER LOOP CARRIER (aka "SLICK")
			PHONE BOOTH
			CABLE TV PEDESTAL
TV	TV	TV	CABLE TV MANHOLE
W	W	W	WATER VALVE
W	W	W	WATER METER
W	W	W	WATER MANHOLE
			FIRE HYDRANT ASSEMBLY (INCLUDES ASSOCIATED VALVE)
BFP	BFP	BFP	BACKFLOW PREVENTER
PIV	PIV	PIV	PRESSURE INDICATOR VALVE
ARV	ARV	ARV	AIR RELEASE VALVE
W	W	W	WELL
W	W	W	WATER VAULT
W	W	W	WATER VALVE MARKER
			STAND PIPE

EXISTING	PROPOSED	TEMPORARY	
			CLEANOUT
BS	BSI	BS	SANITARY SEWER MANHOLE
ARV	ARV	ARV	AIR RELEASE VALVE
GT	GT	GT	GREASE TRAP
			SANITARY SEWER FORCE MAIN VALVE
			GAS VALVE
G	G	G	GAS METER
G	G	G	GAS MANHOLE
GPR	GPR	GPR	GAS PRESSURE REGULATOR
G	G	G	GAS VAULT
GTS	GTS	GTS	GAS TEST STATION
P	P	P	PETROLEUM VALVE
TB	FOR PROPOSED/TEMPORARY TRAFFIC CONTROL INFORMATION REFER TO TRAFFIC SIGNAL PLANS		TRAFFIC CONTROL MANHOLE/ ELECTRIC COMMUNICATIONS BOX
C			TRAFFIC CONTROL PEDESTRIAN SIGNAL/BUTTON POST

MISCELLANEOUS

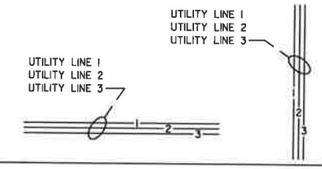
LOS	LIMITS OF OVERHEAD AND SUBSURFACE UTILITY INVESTIGATION
TH	TEST HOLE (QL-A ONLY)
EOI	END OF INFORMATION
	QUALITY LEVEL (QL) DELINEATION
PID	POLE ID
MH ID	SANITARY SEWER MANHOLE (SSMH) ID
C123	CONFLICT LOCATION (UTILITY IMPACT ANALYSIS (UIA) ONLY)
	END OF UTILITY

ABBREVIATIONS

MANHOLE = LENGTH x WIDTH x DEPTH

PR	TELEPHONE PAIR SIZE	PVC	POLY VINYL CHLORIDE
SVC	SERVICE, UNKNOWN SIZE/TYPE	STR	FIBER STRAND SIZE
MTD	MULTIPLE TILE DUCT	TCP	TERRA COTTA PIPE
MCD	MULTIPLE CONCRETE DUCT	ACP	ASBESTOS CONCRETE PIPE
DIP	DUCTILE IRON PIPE	VCP	VITRIFIED CLAY PIPE
TRD	TRANSITE (ASBESTOS) DUCT	STD	SINGLE TILE DUCT
FOC	FIBER OPTIC CABLE	SCPD	SINGLE CREOSOTE PINE DUCT
CIP	CAST IRON PIPE	SD	SPLIT DUCT
SC	SCREEN CABLE	3PH	3 PHASE ELECTRIC
PE	POLYETHYLENE		

MULTI-UTILITY IDENTIFICATION



QUALITY LEVELS AND DEFINITIONS

QL-D DEPICTED ACCORDING TO UTILITY RECORD INFORMATION AND IN-FIELD VISUAL INSPECTION. NO ELECTRONIC DESIGNATING INFORMATION WAS OBTAINED.

QL-C EXISTING UTILITY STRUCTURES HAVE BEEN FIELD LOCATED AND SURVEYED TO ASSIST IN DEPICTING THE UTILITIES SHOWN ON RECORDS. NO ELECTRONIC DESIGNATING INFORMATION WAS OBTAINED.

QL-B INFORMATION WAS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROPRIATE HORIZONTAL POSITION OF THE SUBSURFACE UTILITIES. QL-B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

QL-A OBTAIN PRECISE HORIZONTAL AND VERTICAL POSITION OF THE UTILITY LINE BY EXCAVATING A TEST HOLE. THE TEST HOLE SHALL BE DONE USING VACUUM EXCAVATION OR COMPARABLE NONDESTRUCTIVE EQUIPMENT IN A MANNER AS TO CAUSE NO DAMAGE TO THE UTILITY LINE. AFTER EXCAVATING A TEST HOLE, A FIELD SURVEY SHALL BE PERFORMED TO DETERMINE THE EXACT LOCATION AND POSITION OF THE UTILITY LINE.

TELEPHONE PAIR SIZE TABLE

TELEPHONE PAIR SIZE	TELEPHONE CABLE DIAMETER
5 - 100	0.50 TO 2.00 IN
101 - 2400	UP TO 3.50 IN

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

REVISION DATES

CHATHAM COUNTY, GEORGIA

UTILITY LEGEND

LANSING AVENUE TRAFFIC CALMING

DRAWING NO. 24-00

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
GA			

BEGIN INTEGRAL CONCRETE MEDIAN
TYPE 1 FACE STA 103+85.22

EXIST' R/W

Ex Water Manhole

+70.31
0.00 LT

LANSING AVENUE

Ex SS Manhole

EXIST' R/W

END INTEGRAL CONCRETE MEDIAN
TYPE 1 FACE STA 104+25.22
4' R
104+21.22

PROPERTY AND EXISTING R/W LINE	—℄—
REQUIRED R/W LINE	———
CONSTRUCTION LIMITS	--C--F--
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

SCALE IN FEET
0 20 40 80

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

REVISION DATES

LANSING AVENUE TRAFFIC CALMING

UTILITY PLAN

CHATHAM COUNTY

DRAWING NO. 24-01

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
GA			

BURKE AVENUE 50' R/W (UNOPENED)

UNOPENED 60' R/W

100+00

101+00

102+00

103+00

104+00

105+00

5" SOLID WHITE THERMOPLASTIC EDGE STIPE (TYP)

5" SOLID DOUBLE YELLOW THERMOPLASTIC STRIPE

REQUIRED 46 SQ. YDS TRAFFIC STRIRING YELLOW, DETAIL "A"

LANSING AVENUE R/W VARIES

W6-1 (36X36)
STA 100+62.61

R4-7 (18X24)
STA 103+89.21

R4-7 (18X24)
STA 104+21.22

MATCH LINE
AT STATION - 106+00.00
SHEET NUMBER 28-02

PROPERTY AND EXISTING R/W LINE	℄
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C— F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

SCALE IN FEET
0 20 40 80

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

REVISION DATES

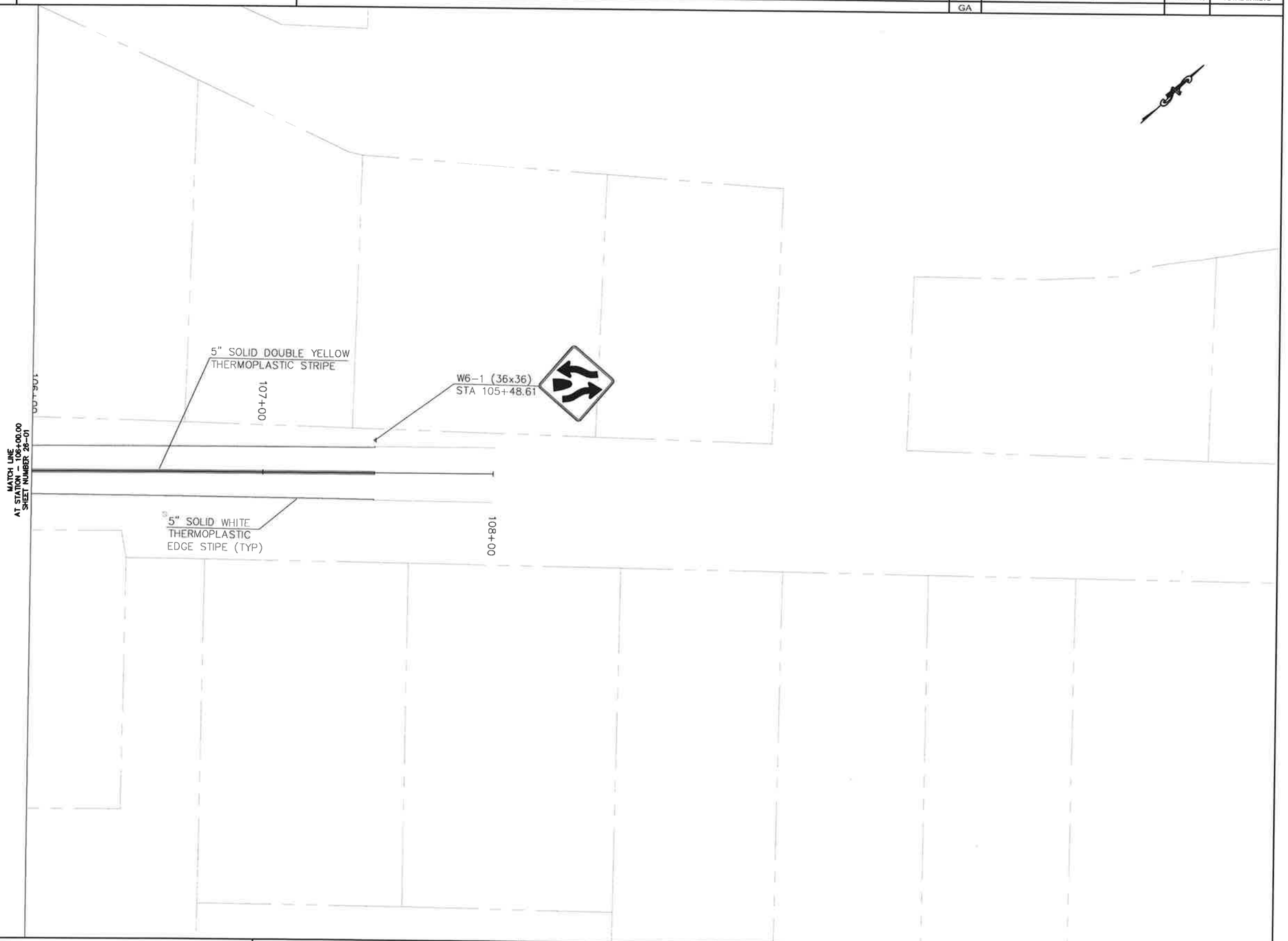
CHATHAM COUNTY, GEORGIA

SIGNING AND MARKING PLAN

LANSING AVENUE TRAFFIC CALMING

DRAWING NO. 26-01

			STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
			GA			



PROPERTY AND EXISTING R/W LINE	℄
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C— F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

SCALE IN FEET
0 20 40 80

CHATHAM COUNTY
DEPARTMENT OF ENGINEERING
124 BULL STREET, SUITE 430
SAVANNAH, GA 31401
PHONE: (912) 652-7800 FAX: (912) 652-7818

REVISION DATES		

CHATHAM COUNTY, GEORGIA

SIGNING AND MARKING PLAN

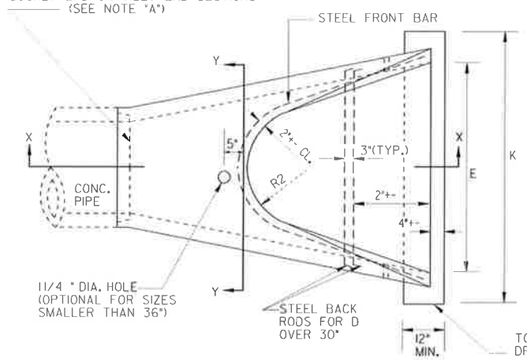
LANSING AVENUE TRAFFIC CALMING

DRAWING NO. 26-02

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

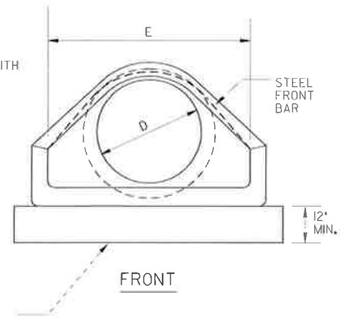
CONCRETE FLARED END SECTION

END SECTION TO PIPE JOINT SHOWN AS TYPICAL:
HUB END ON OUTLET END SECTIONS;
SOCKET END ON INLET END SECTIONS
(SEE NOTE "A")



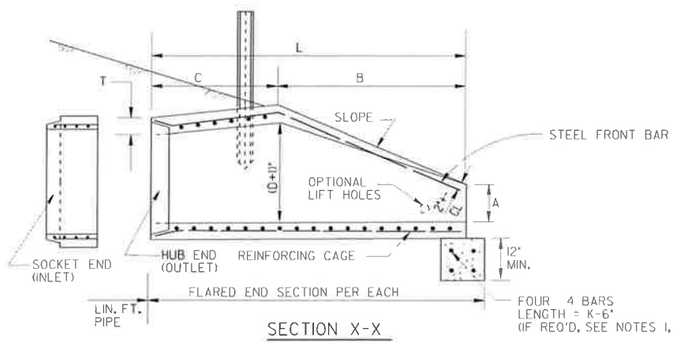
PLAN

INSTALLATION: (D OVER 30")
CABLE, CHAIN, OR LIFTING PIN WILL EXTEND THRU 11/4 " HOLE WITH A PLATE OR REBAR CONNECTED INSIDE THE CONC. SECTION TO PROVIDE ADEQUATE BEARING AREA OR A LIFTING ASSEMBLY DEVICE MAY BE USED TO GIVE 3 LIFT POINTS, HOOKS CONNECTED DIRECTLY TO CONCRETE IS NOT PERMITTED. DAMAGE FROM IMPROPER HANDLING SHALL BE CAUSE FOR REJECTION.

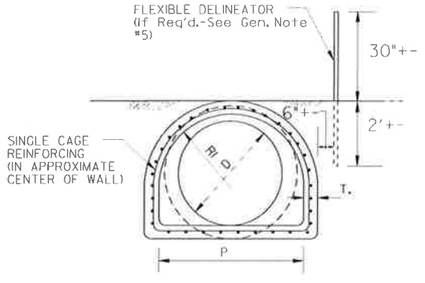


FRONT

NOTE: DO NOT CUT CONCRETE PIPE. USE FULL LENGTH SECTIONS ONLY. WARP SLOPE TO CONFORM WITH PIPE LENGTH AND END SECTION.



SECTION X-X



SECTION Y-Y

REINFORCING CAGE:

(1.) WIRE FABRIC HAVING EQUAL STEEL AREA AS INNER CAGE FOR CLASS II PIPE, AASHTO M-170.
(2.) ALTERNATE: # 3 BARS SPACED 12"+ LONGITUDINALLY WITH # 2 BARS TRANVERSELY AT 6' O.C. MAX. SPACING, SPOT WELDED OR TIED TO FORM CAGE. (BACK RODS MAY BE OMITTED.)

NOTE "A":
CONTRACTOR WILL INFORM PRODUCER IF CONCRETE FLARED END SECTION IS FOR INLET OR FOR OUTLET END. SOCKET (TONGUE OR SPIGOT) END IS REQUIRED FOR INLETS. HUB (GROOVE OR BELL) END IS REQUIRED FOR OUTLETS. SOCKET TO SOCKET OR HUB TO HUB JOINT WILL NOT BE ACCEPTED UNLESS A REINFORCED CONCRETE COLLAR IS BUILT AROUND THE JOINT WITH NO PAYMENT BEING MADE FOR THE COLLAR.
FLARED END SECTIONS SHALL BE JOINTED TO PIPE WITH ALL SPACE IN THE JOINT FILLED WITH EITHER BITUMINOUS PLASTIC CEMENT OR PREFORMED PLASTIC GASKET (SEC. 848).

WALL THICKNESS (T) IS SHOWN AS NOMINAL AND MAY BE INCREASED AT PRODUCER'S OPTION FOR DESIRED JOINT DESIGN OR TO ALLOW A FLAT OUTSIDE BOTTOM ON THE FLARE, WITH INSIDE DIMENSIONS OF FLARE RETAINED AS SHOWN.

T = PIPE WALL THICKNESS (0.0833D + 1"+- TYPICAL)

DIMENSIONS AND REINFORCING FOR CONCRETE FLARED END SECTIONS (+- 1" TOLERANCE)

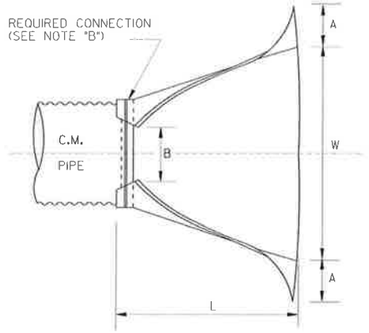
PIPE DIA	FRONT BAR	BACK RODS	SLOPE +-	A	B	C*	L*	E	P	R1	R2	OUTLET TOEWALL (IF REQ'D) K= E + 2'	OUTLET TOEWALL (IF REQ'D) CU.YDS. CONC.
12"	#3 x 5' 4"	NOT REQ'D.	2:2d	4"	2'0"	4' 1"	6'1"	2'0"	1'8"	10"	9"	4'-0"	.148
15"	#3 x 6' 0"	NOT REQ'D.	2:2d	6"	2'3"	3'10"	6'1"	2'6"	2'0"	1'0"	11"	4'-6"	.167
18"	#3 x 7' 2"	NOT REQ'D.	2:2d	9"	2'3"	3'10"	6'1"	3'0"	2'5"	1'4"	1'0"	5'-0"	.185
24"	#3 x 9' 10"	NOT REQ'D.	2.4d	10"	3'8"	2' 6"	6'2"	4'0"	2'9"	1'5"	1'2"	6'-0"	.222
30"	#4 x 11' 8"	NOT REQ'D.	2.4d	12"	4'6"	1' 8"	6'2"	5'0"	3'1"	1'6"	1'3"	7'-0"	.259
36"	#4 x 13' 10"	2-#4 x 6'3"	2.4d	15"	5'3"	2'11"	8'2"	6'0"	4'0"	2'0"	1'8"	8'-0"	.296
42"	#4 x 13' 10"	2-#4 x 7'4"	2.4d	21"	5'3"	2'11"	8'2"	6'6"	4'6"	2'4"	1'10"	8'-6"	.315

NOTE: SPECIFIED REINFORCING IS MINIMAL AND MAY BE INCREASED AT PRODUCERS OPTION TO AID CASTING & HANDLING. ALTERNATE REINFORCEMENT PERMITTED IF APPROVED.

* NOTE: 'C' AND 'L' DIMENSION MAY BE MEASURED TO EITHER END OF JOINT CONNECTION AT PIPE.

METAL FLARED END SECTION

(USE ONLY WITH COR. METAL PIPE)



PLAN

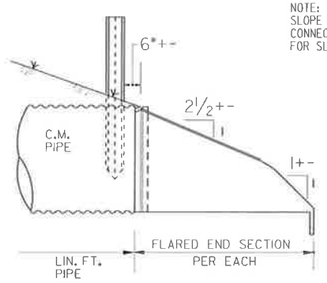
NOTE: GALVANIZED STEEL FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED STEEL PIPE AND ALUMINUM FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED ALUMINUM PIPE UNLESS OTHERWISE APPROVED BY D.O.T. OFFICE OF MATERIALS AND TESTS.

FLARED END SECTION DIMENSIONS

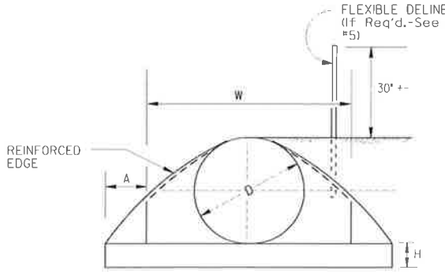
PIPE SIZE "D"	THICKNESS GALV. STEEL	THICKNESS ALUM.	A A= 0.4D +- 1"	B B=0.5 D +- 1"	H H=0.25D +- 1" (MIN.6")	L L=1.67D +- 1 1/2"	W W=2.0D +- 2"
12"	.064"	.060"	5"	6"	6"	1'8"	2'0"
15"	.064"	.060"	6"	7"	6"	2'3"	2'6"
18"	.064"	.060"	7"	9"	6"	2'6"	3'0"
24"	.064"	.060"	9"	1'0"	6"	3'4"	4'0"
30"	.079"	.105"	1'0"	1'3"	7"	4'2"	5'0"
36"	.079"	.105"	1'2"	1'6"	9"	5'0"	6'0"
42"	.109"	.164"	1'5"	1'9"	10"	5'10"	7'0"

NOTE: WHERE METAL FLARED END SECTIONS ARE USED WITH MULTIPLE PIPE LINES, THE STANDARD SPACING BETWEEN PIPES (S=D OR 3 FT.) MAY HAVE TO BE INCREASED (S=1.75 D TYPICAL), TO PREVENT OVERLAP OF END SECTION WINGTIPS. SEE ALSO STD. 1030D.

NOTE:
SLOPE DRAIN PIPES WILL REQUIRE AN ELBOW FOR CONNECTION TO THE FLARED END SECTION. PAYMENT FOR SLOPE DRAIN PIPE WILL INCLUDE THIS ELBOW.



SIDE



FRONT

NOTE "B":

THE CONNECTION BETWEEN METAL FLARED END SECTION AND C.M. PIPE WILL BE ONE OF THE FOLLOWING:

(a) A STRAP BAND OR THREADED ROD PROVIDED BY THE MANUFACTURER WILL LOCK END SECTION ONTO PIPE. A CORRUGATION AT THE PIPE AND WILL BE NON-SPIRALED (PERPENDICULAR TO CL OF PIPE)

(b) A DIMPLE BAND COLLAR WILL BE SHOP BOLTED TO END SECTION. PIPE WILL BE INSERTED INTO BAND COLLAR TO MEET THE END SECTION.

(c) A STUB PIPE WILL BE RIVITED TO THE END SECTION AND THE MAIN PIPE CONNECTED TO THE STUB WITH A NORMAL CONNECTING BAND.

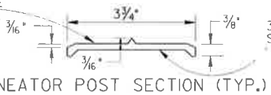
(d) OTHER TYPE CONNECTION IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE D.O.T.

SPECIAL NOTE:
FLARED END SECTIONS ARE NORMALLY LIMITED TO USE OUTSIDE THE CLEAR ZONE OR BEHIND BARRIER AND WHERE HYDRAULICS PERMIT. SEE OTHER STANDARDS OR DETAILS FOR TAPERED HEADWALLS, SAFETY SLOPE END SECTIONS OR OTHER PIPE END STRUCTURES.

GENERAL NOTES :

1. TOEWALLS ARE REQ'D. FOR OUTLETS OF CONC. STORM DRAINS, EXCEPT WHERE DITCH PAVING OR OTHER EROSION PROTECTION IS PROVIDED OR WHERE THE OUTLET VELOCITY IS LESS THAN 8 FT/SEC. TOEWALLS ARE NOT REQUIRED FOR SIDE DRAINS, SLOPE DRAINS OR INLETS OF STORM DRAINS THIS CRITERIA MAY BE VARIED WHERE SPECIFIED BY THE DESIGNER OR THE ENGINEER.
2. TOEWALLS WILL BE PAID FOR AS CU. YDS. OF CLASS "A" OR "B" CONCRETE. CONTRACTOR MAY ELECT TO CONSTRUCT TOE WALL WITH SAND CEMENT BAG RIPRAP OR STONE RIPRAP TO SAME MINIMUM DIMENSIONS WITH NO ADDITIONAL PAYMENT.
3. PRECAST TOEWALLS SHALL BE CL. "A" CONCRETE; CAST-IN-PLACE TOEWALLS MAY BE CL "A" OR "B" CONCRETE AND MAY BE TRENCH FORMED. WHERE PLANS ITEMIZE ONE CLASS OF CONCRETE AND CONTRACTOR ELECTS TO USE OTHER CLASS, NO ADDITIONAL PAYMENT IS MADE. NO PAYMENT IS MADE FOR STEEL IN TOEWALL.
4. CENTERLINE OF FLARED END SECTION WILL ALIGN WITH CENTERLINE OF PIPE, IF PIPE IS SKEWED, THE EMBANKMENT SLOPE WILL BE WARPED TO CONFORM WITH END SECTION.
5. FLEXIBLE DELINEATORS SHALL BE REQUIRED AT CROSS DRAIN FLARED END SECTIONS, BOTH INLET AND OUTLET. PAYMENT FOR FLARED END SECTION WILL INCLUDE DELINEATORS, SEE DETAIL AND NOTES BELOW. DELINEATORS NOT REQ'D. FOR SIDE DRAIN, SLOPE DRAIN, OR LONG PIPE.

1" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX, ON EACH SIDE OF RIDGE.



3" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX.

DELINEATOR POST SECTION (TYP.)

NOTE:
DELINEATOR POST SHALL CONFORM TO SEC. 911 FOR FLEXIBLE DELINEATOR POST EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED AND LENGTH IS 4'-6" FROM TOP TO BOTTOM POINT. ALTERNATES PERMITTED IF APPROVED BY D.O.T. LABORATORY.

SPECIAL NOTE :
PIPE SIZES (D) ARE "NOMINAL-MINIMUM" INSIDE DIAMETERS IN ACCORDANCE WITH GEORGIA STANDARD FOR PIPE CULVERTS. "D" DIMENSION FOR FLARED END SECTION SHALL EQUAL THE "D" DIMENSION FOR CONNECTING PIPE CULVERT.

BY	REV. REFLECTIVE SHEETING REVISION	DATE
G.O		6-9-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
FLARED END SECTIONS
FOR PIPES

NO SCALE — REV. & REDR. SEPT., 1999

DES. ____ REV. ____ RETR. ____ CHK. ____

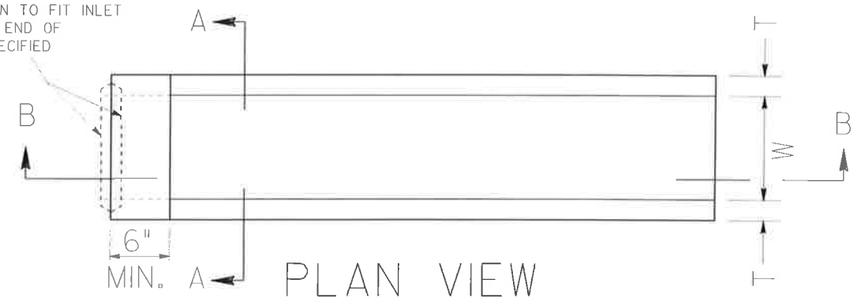
(SUBMITTED) _____ STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) _____ CHIEF ENGINEER

NUMBER 1120

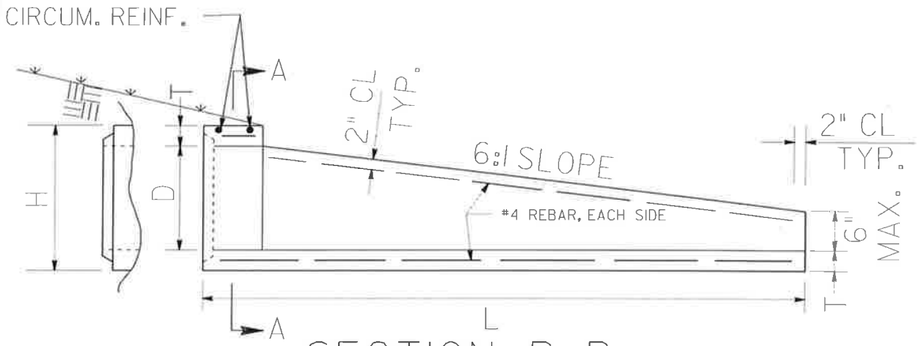
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

JOINT DESIGN TO FIT INLET OR OUTLET END OF PIPE AS SPECIFIED



PLAN VIEW

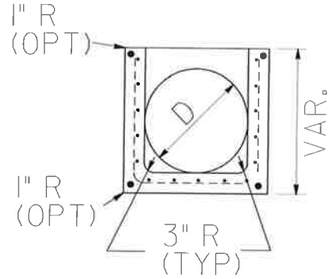
(BAR GRATE NOT SHOWN)



SECTION B-B

ALTERNATE 3

PIPE DIA	T (MIN)	D	H	L
15"	3"	15"	21"	4'-6"
18"	3"	18"	24"	6'-0"
24"	3"	24"	30"	9'-0"
30"	4"	30"	38"	12'-6"
36"	4"	36"	44"	15'-6"
42"	4"	42"	50"	18'-6"
48"	5"	48"	58"	22'-0"



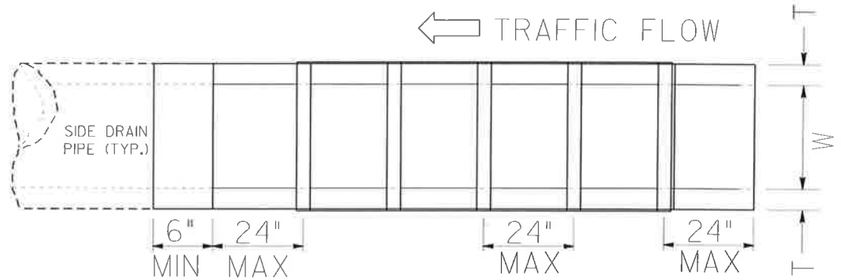
SECTION A-A

GENERAL NOTES:

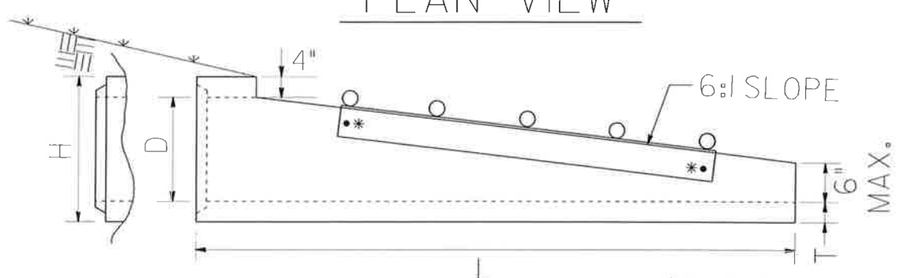
1. CONCRETE STRENGTH SHALL BE 4000 PSI MINIMUM
2. REINFORCING SHALL BE PER AASHTO M170, CLASS II REINFORCED CONCRETE PIPE, PLUS ONE #4 BAR TOP AND BOTTOM, EACH SIDE.
3. WALLS MAY HAVE 1/4" TAPER. WALL THICKNESSES SHOWN ARE THE MINIMUM.
4. LIFT HOLES MAY BE PROVIDED IN THE SIDE WALLS FOR HANDLING.
5. END SECTION JOINT WILL BE A MATCHED FIT TO THE ADJOINING PIPE JOINT AT ALL INLET AND OUTLET ENDS. NON-FITTING JOINTS WILL REQUIRE A BUILT-IN-PLACE REINFORCED COLLAR CONNECTION WITH NO ADDITIONAL PAYMENT.
6. ALL END SECTIONS FOR PIPES WITH "D" OVER 24" ON SINGLE LINES WILL HAVE GALV. SAFETY BARS, SPACED NOT MORE THAN 24" ON CENTERS, AND INSTALLED PERPENDICULAR TO THE MAINLINE TRAFFIC FLOW. ALL END SECTIONS FOR MULTIPLE LINE PIPES WILL HAVE GRATES.
7. TYPICAL USE OF SAFETY END SECTIONS IS AT THE ENDS OF PIPES UNDER DRIVEWAYS OR SIDEROADS WHERE THE PIPE CULVERT IS PARALLEL TO THE MAINLINE AND FALLS INSIDE THE MAINLINE CLEAR ZONE WIDTH.

D	(MIN) GRATE LENGTH	GRATE WIDTH (TYP) #
15"	2'-4"	1'-9 5/8"
18"	2'-4"	2'-0 5/8"
24"	6'-4"	2'-6 5/8"
30"	8'-6"	3'-2 5/8"
36"	12'-4"	3'-8 5/8"
42"	14'-6"	4'-2 5/8"
48"	18'-4"	4'-10 5/8"

TYPICAL GRATE WIDTHS SHOWN ARE MEASURED FROM INSIDE TO INSIDE OF THE 3/8" THICK ANGLE IRON. GRATE FIT WITH END SECTION SHALL BE CHECKED BEFORE DELIVERY.

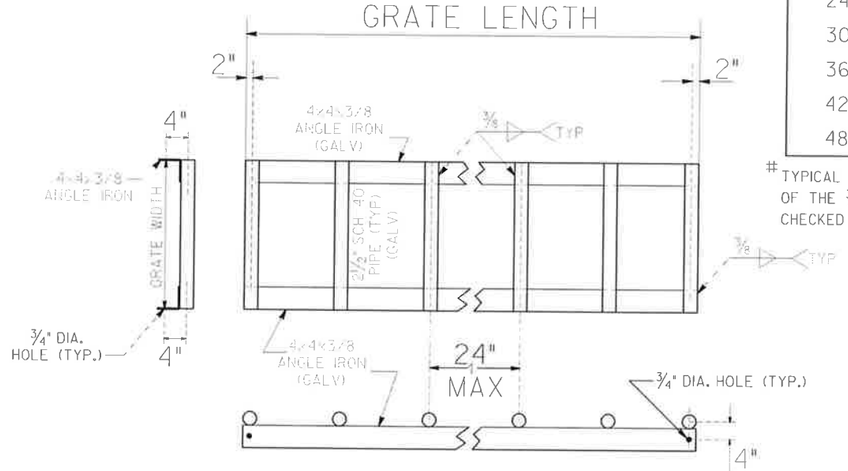


PLAN VIEW



SIDE VIEW

* 5/8" GALV. HEX HEAD BOLT, WASHER & NUT (FOUR) CONNECTIONS



GALVANIZED SAFETY GRATE DETAIL

DATE	REVISION	BY
1-28-05	REVISED TO 1122 PAGE 3	G.L.O.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
SAFETY END SECTION
(CONCRETE)
(FOR SIDE DRAIN PIPE OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE 3

NO SCALE

OCT., 2000

DESIGNED
DRAWN
TRACED
CHECKED

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

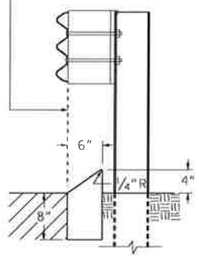
(APPROVED) CHIEF ENGINEER

NUMBER 1122

SHEET 3 OF 3

GDOT Georgia Department of Transportation | P. I. Number

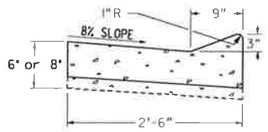
FACE OF CURB MUST ALIGN WITH BACK EDGE OF GUARDRAIL AND THE FACE OF THE OFFSET BLOCK.



TYPE 8

TYPE 8 HEADER CURB IS USED IN CONJUNCTION WITH GUARDRAIL CONNECTIONS TO CONCRETE BARRIER AS NOTED ON GA. STD. 4382.

RAISED EDGE WITH CONCRETE GUTTER

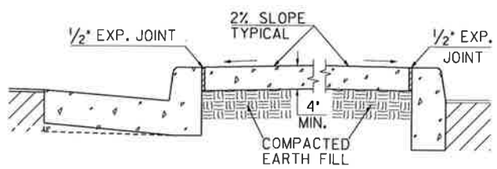


RAISED EDGE TO BE CONSTRUCTED WITH SAME CONCRETE MIX AS THE GUTTER AND SHALL BE FORMED MONOLITHIC WITH GUTTER. JOINTS IN RAISED EDGE SHALL MATCH THOSE IN THE GUTTER.

NOTE:
IF CONCRETE MEDIAN INTERCEPTS PEDESTRIAN CROSSWALKS, WHEELCHAIR RAMPS (CONSTRUCTION DETAIL A-3 AND A-4) WILL BE REQUIRED.

CONCRETE MEDIAN (Between Curbs)

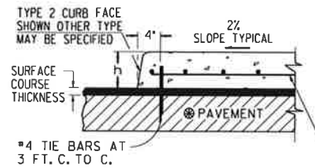
NOTE: CURB TYPES SHOWN ARE TYPICAL. OTHER TYPES MAY BE SPECIFIED.



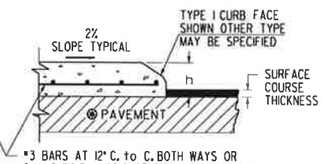
NOTE:
WIDTH OF CONCRETE MEDIAN WILL BE AS SHOWN IN PLANS

CONCRETE MEDIANS (Integral)

-WITH TIE BARS-



-WITHOUT TIE BARS-

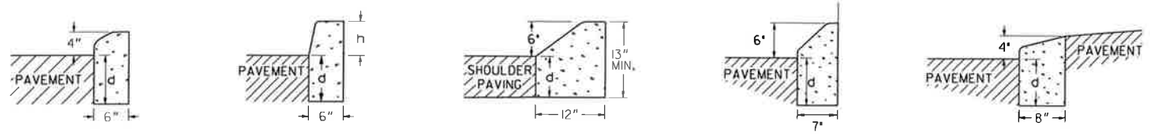


NOTE:
IF FINAL SURFACE COURSE IS PRESENT OR MUST BE INSTALLED BEFORE THE CONCRETE MEDIAN CAN BE INSTALLED, THEN DOWELED IN CONCRETE MEDIAN IS REQUIRED.

CURB TYPE	h	d
1	4"	6" min.
2	6"	8" min.
3	8"	10" min.
4	10"	12" min.
6	6"	7" min.
7	6"	8" min.
9	4"	8" min.

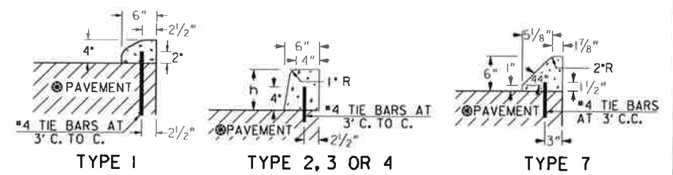
THE DIMENSION d MAY BE INCREASED AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB WILL ALIGN WITH BOTTOM OF PAVEMENT TYPICAL SECTION.

CONCRETE HEADER CURBS



TYPE 1 | TYPE 2, 3 OR 4 | TYPE 6 | TYPE 7 | TYPE 9 TRUCK APRON IN ROUNDABOUTS

CONCRETE DOWELED INTEGRAL CURBS

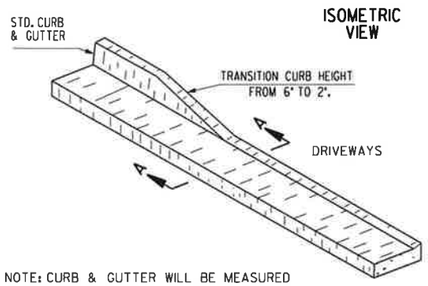


⊛ NOTES:
1. CONCRETE CURB CAN BE INSTALLED AFTER INTIAL SET AS LONG AS TIE BARS ARE DRILLED INTO UNDERLAYING CONCRETE PAVEMENT.
2. CONCRETE CURB CAN BE INSTALLED BEFORE INITIAL SET WITH DOWELS THAT ARE DRIVEN INTO UNDERLYING CONCRETE PAVMENT.
3. JOINTS IN CURB AND CONCRETE MEDIAN WILL MATCH THOSE IN THE CONCRETE PAVEMENT.
4. ALL TYPES OF CONCRETE CURB CAN BE PLACED ON ASPHALT PAVEMENTS WHERE TIE BARS MAY BE EITHER DRIVEN OR DRILLED INTO THE UNDERLYING PAVEMENT. CONTRACTION JOINTS SHALL BE CONSTRUCTED IN CURB OR CONCRETE MEDAIN AT 20 FT. SPACING.

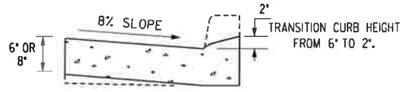
MINIMUM TIE BAR LENGTHS (FOR CONC. DOWELED CURBS OR CONC. MEDIAN)		
CURB TYPE	P.C. CONC. PAV.	ASPHALT PAV.
1	6"	8"
2, 3 or 4	8"	12"
7	6"	8"
9	6"	8"

NOTE:
TIE BARS FOR DOWELED CURBS MAY BE UNCOATED PLAIN OR DEFORMED BILLET-STEEL BARS (GRADE 40) AS USED FOR CONCRETE REINFORCEMENT. (AASHTO M-31)

DETAILS OF RECESSED CURB FOR DRIVEWAYS



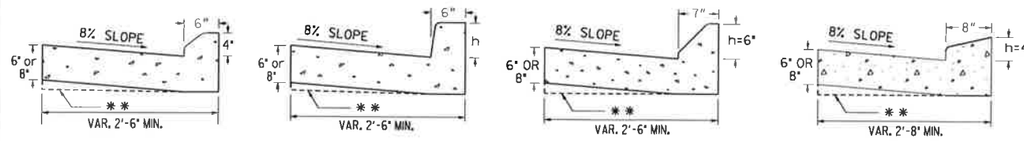
NOTE: CURB & GUTTER WILL BE MEASURED FOR PAYMENT THRU THE DRIVE



SECTIONAL VIEW
SECTION A-A

(SEE SEPARATE CONSTRUCTION DETAILS FOR DRIVEWAYS)

CONCRETE CURB & GUTTER

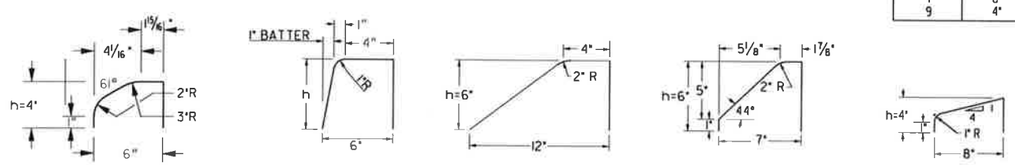


TYPE 1 | TYPE 2, 3 OR 4 | TYPE 7 | TYPE 9

** AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING OF BASE COURSE, BUT THE GUTTER THICKNESS MUST NOT BE LESS THAN THE SPECIFIED 6" OR 8" AT ANY POINT.

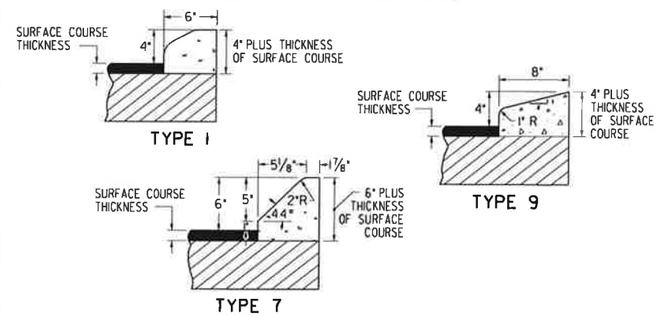
CURB FACE DESIGN

TYPE	h
1	4"
2	6"
3	8"
4	10"
6	6"
7	6"
9	4"



TYPE 1 | TYPE 2, 3 OR 4 | TYPE 6 | TYPE 7 | TYPE 9

CONCRETE INTEGRAL CURB



BY	REVISION	DATE
HAC	REV. TP 1 C.F.D. RADIUS DWS	01-25-21
	REV. TP 9 C.F.D. DIM. HT. TO 1" FROM GR. LEVEL TO RADIUS	
JAHR	REV. TYP. 1 C.F.D. TYP. 8 OFFSET BLOCK & TYP. 9 C.D.C. ADDED TP 9 CURB & GUTTER	02-10-20
TC	REV. TYPE 9 CURB DETAIL & REV. OVERALL LAYOUT	11-15-11
GLO	REV. MEDIAN NOTE AND ADDED TYPE 9 CURB DETAIL	1-27-11
	ADDED TYPE 9 DETAIL	3-03

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CONCRETE CURB & GUTTER
CONCRETE CURBS, CONCRETE MEDIANS

NOT TO SCALE | OCT. 2011

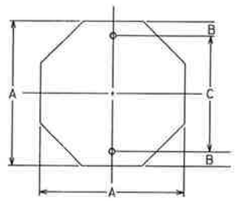
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE DESIGN POLICY ENGINEER

(APPROVED) Daniel M Rus CHIEF ENGINEER

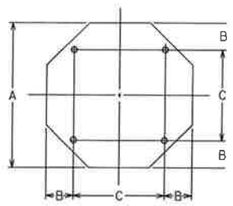
NUMBER 9032B

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

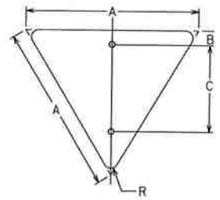


OCTAGON

A	B	C
24	3	18
30	3	24
36	3	30

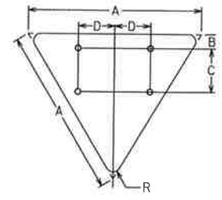


A	B	C
48	9	30

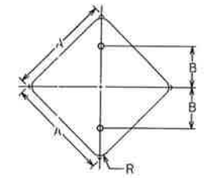


EQUILATERAL TRIANGLE

A	B	C	R
30	3	18	1 1/2
36	3	21	2
48	3	27	3

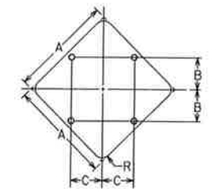


A	B	C	D	R
60	3	18	15	3



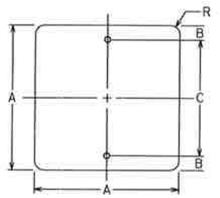
DIAMOND

A	B	R
24	12	1 1/2
30	15	1 7/8
36	18	2 1/4



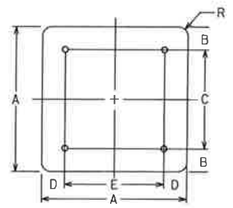
A	B	C	R
*36	10	10	2 1/4
48	15	15	3
60	18	18	3 3/4

*FOR TWO POST ERECTION

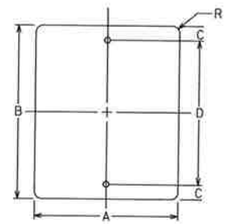


SQUARE

A	B	C	R
18	3	12	1 1/2
24	3	18	1 1/2
30	3	24	1 7/8

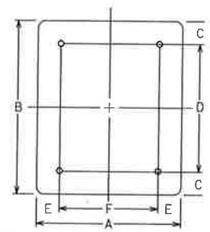


A	B	C	D	E	R
36	6	24	6	24	2 1/4
48	6	36	6	36	3

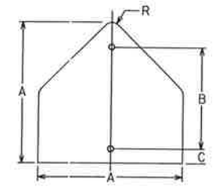


VERTICAL RECTANGLE

A	B	C	D	R
12	18	1 1/2	15	1 1/2
18	24	3	18	1 1/2
24	30	3	24	1 1/2
30	36	3	30	1 7/8

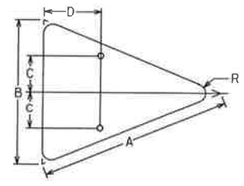


A	B	C	D	E	F	R
36	48	6	36	6	24	2 1/4
48	60	6	48	9	30	3



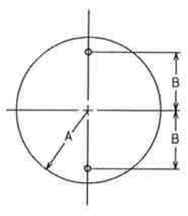
PENTAGON

A	B	C	R
30	21	3	1 7/8
36	24	3	2 1/4



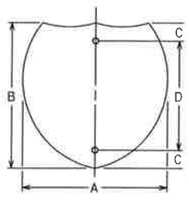
ISOSCELES TRIANGLE

A	B	C	D	R
40	30	7 1/2	12	1 7/8
48	36	9	15	2 1/4



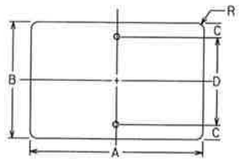
CIRCLE

A	B
15	12
18	15



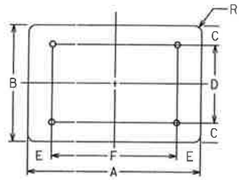
INTERSTATE SHIELD

A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



HORIZONTAL RECTANGLE

A	B	C	D	R
21	15	1 1/2	12	1 1/2
24	12	1 1/2	9	1 1/2
24	18	3	12	1 1/2
30	15	1 1/2	12	1 1/2
30	24	3	18	1 1/2
36	12	1 1/2	9	1 1/2
36	24	3	18	1 1/2
48	12	1 1/2	9	1 1/2
48	24	3	18	1 7/8



A	B	C	D	E	F	R
48	36	6	24	9	30	2 1/4
60	24	3	18	12	36	1 1/2
60	36	6	24	12	36	2 1/4

DATE	REVISIONS

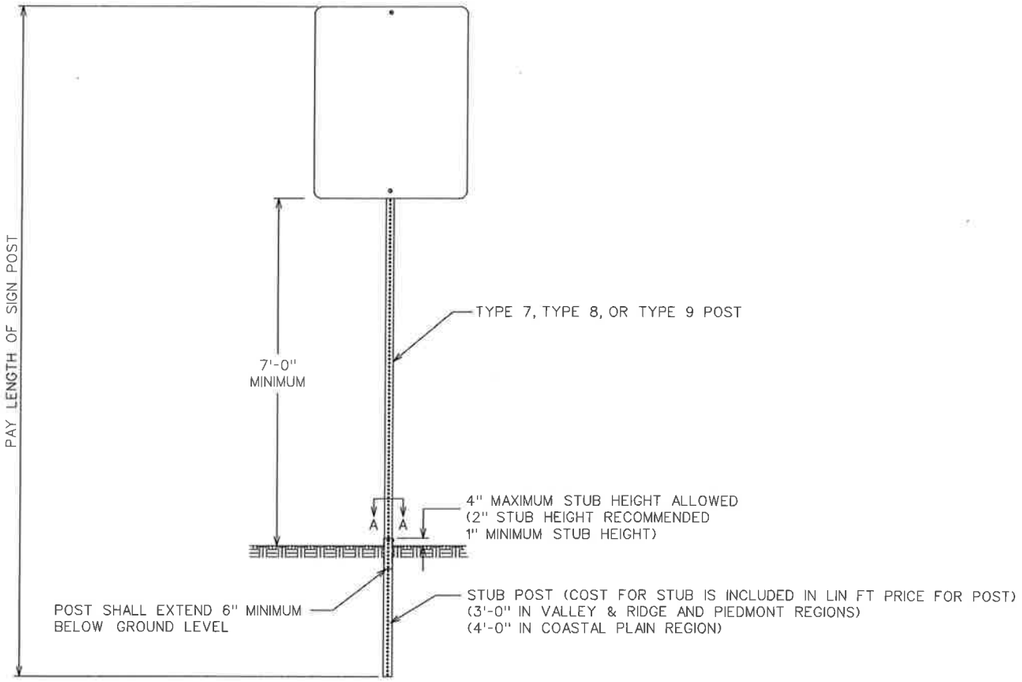
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF SIGN PLATES

NO SCALE JANUARY 2000

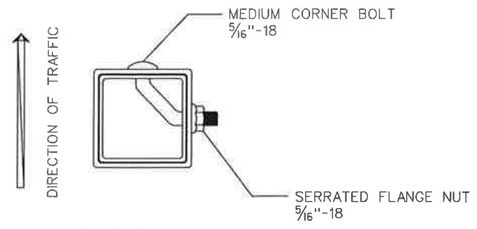
PCBDTB

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



FRONT VIEW

POST	STUB SIZE
TYPE 7	2¼" x 2¼"
TYPE 8	2¾" x 2¾"
TYPE 9	2½" x 2½"



SECTION A-A

SIGN POST SELECTION CHART

70 MPH Wind Load Chart + 15% Gust Factor

	SLIP BASE NOT REQUIRED				GROUND MOUNTED BREAKAWAY SIGN SUPPORT REQUIRED				
	TYPE 7 2" 14 ga.		TYPE 9 2-1/4" 14 ga	TYPE 8 2-1/2" 12 ga.	TYPE 8 2-1/2" 12 ga.		TYPE 8 w/TYPE 9 Insert* 2-1/2" 12 ga. W/2-1/4" 14 ga.		
Sign Centroid	1 Post	2 Post	1 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
	SQUARE FOOTAGE				SQUARE FOOTAGE				
6'	13.50	27.00	19.25	30.00	60.00	90.00	49.25	98.50	147.75
7'	11.60	23.20	16.50	25.75	51.50	77.25	42.25	84.50	126.75
8'	10.15	20.30	14.45	22.55	45.10	67.65	37.00	74.00	111.00
9'	9.00	18.00	12.85	20.00	40.00	60.00	32.85	65.70	98.55
10'	8.10	16.20	11.55	18.00	36.00	54.00	29.55	59.10	88.65
11'	7.40	14.80	10.50	16.40	32.80	49.20	26.90	53.80	80.70
12'	6.80	13.60	9.65	15.00	30.00	45.00	24.65	49.30	73.95
13'	6.25	12.50	8.90	13.85	27.70	41.55	22.75	45.50	68.25
14'	5.80	11.60	8.25	12.90	25.80	38.70	21.15	42.30	63.45
15'	5.00	10.00	6.45	10.10	20.20	30.30	16.55	33.10	49.65
16'	4.70	9.40	6.05	9.45	18.90	28.35	15.50	31.00	46.50
17'	4.40	8.80	5.70	8.90	17.80	26.70	14.60	29.20	43.80
18'	4.15	8.30	5.40	8.40	16.80	25.20	13.80	27.60	41.40
19'	3.95	7.90	5.10	7.95	15.90	23.85	13.05	26.10	39.15
20'	3.75	7.50	4.85	7.55	15.10	22.65	12.40	24.80	37.20

SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN *PLUS* HALF THE HEIGHT OF SIGN.
EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) *PLUS* 7 FT. = 9' CENTROID.

SIGN PLATE SHALL NOT EXCEED 48" IN WIDTH ON A SINGLE POST.

* TYPE 9 INSERT SHALL BE A CONTINOUS POST INSERTED INTO THE TYPE 8 POST WHERE REQUIRED. THE INSERT POST SHALL EXTEND FROM THE BOTTOM OF THE SLIP BASE UPPER ASSEMBLY TO 4" BELOW THE BOTTOM OF THE SIGN. THE INSERT POST SHALL NOT EXTEND ABOVE THE BOTTOM OF THE SIGN. PAYMENT FOR THE INSERT POST SHALL BE PER LINEAR FOOT OF TYPE 9 POST.

GROUND MOUNTED BREAKAWAY SIGN SUPPORT WILL BE MEASURED AND PAID FOR SEPARATELY. THE COST FOR THIS WORK SHALL INCLUDE THE UPPER AND LOWER ASSEMBLY, STUB POST, CLASS "A" CONCRETE, ALL HARDWARE NECESSARY TO COMPLETE THE INSTALLATION, AND BE INCLUDED IN THE BID PRICE SUBMITTED FOR ITEM 636-3010.

DATE	REVISIONS

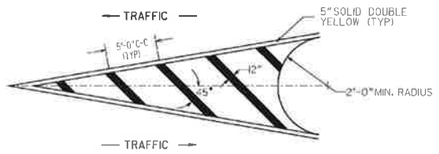
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

TYPE 7, 8, AND 9
SQUARE TUBE POST
INSTALLATION DETAIL

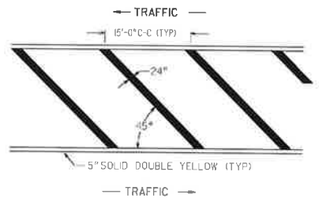
NO SCALE JULY 2002

			COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

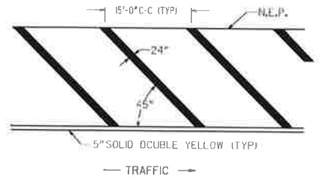
DETAIL "A" (YELLOW)



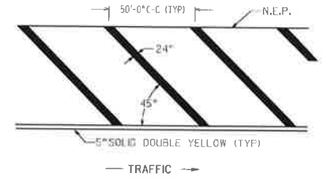
DETAIL "B" (YELLOW)



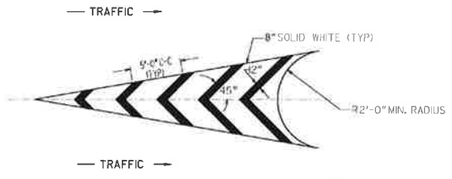
DETAIL "C" (YELLOW)



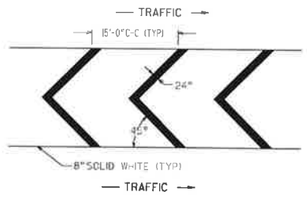
DETAIL "D" (YELLOW)



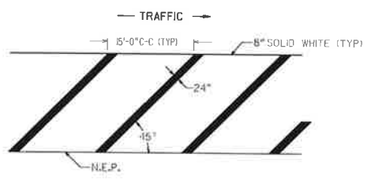
DETAIL "A" (WHITE)



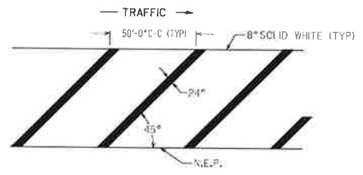
DETAIL "B" (WHITE)



DETAIL "C" (WHITE)



DETAIL "D" (WHITE)



GENERAL NOTES:

1. FOR YELLOW STRIPING, THE SQUARE YARDS SHOWN ON PLAN, SUMMARY AND DETAILED ESTIMATE SHEETS INCLUDE THE AREA WITHIN THE BORDERS AND THE 5" SOLID DOUBLE YELLOW BORDER.
2. FOR WHITE STRIPING, THE SQUARE YARDS SHOWN ON PLAN, SUMMARY AND DETAILED ESTIMATE SHEETS INCLUDES THE AREA WITHIN THE BORDERS AS WELL AS THE 8" SOLID WHITE BORDER.

GEORGIA
DEPARTMENT OF TRANSPORTATION

- NO SCALE -

DATE	REVISIONS
6/25/04	Modified general note 1
1/18/05	CHANGED BORDER
11/21/08	Modified general note 1

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: TRAFFIC OPERATIONS

SIGNING AND MARKING PLANS

DETAIL OF PAVEMENT MARKING HATCHING

JANUARY 2000

NUMBER T-14