COLUMBIA COUNTY
BOARD OF COMMISSIONERS

PROJECT ACCESS
IMPROVEMENTS MANUAL

Columbia County
Engineering Services Division
Roads Construction Department
(706) 868-3356

Adopted February 3, 2015

A. GENERAL INFORMATION

GENERAL: The following guidelines shall be used in the determination of the requirements for ProjectAccess Improvements on County roadways for development projects and in the design and construction of turn lanes. The guidelines apply to Project Access Improvements (PAI) along County roads classified as Collector or Arterial only. PAI proposed along state routes shall be reviewed for permit by the Georgia Department of Transportation and are exempt from these guidelines. Design of lanes and other access facilities shall be in accordance with American Association of State Highway and Transportation Officials standards, Manual on Uniform Traffic Control Devices (MUTCD), and Columbia County Code of Ordinances. Construction, material specifications and workmanship shall conform to Columbia County Construction Standards and Specifications, latest edition.

B. TRAFFIC ANALYSIS

GENERAL REQUIREMENTS: To determine if turn lanes are required, the amount of traffic must first be calculated for the proposed development. At a minimum, all developments will be required to submit a Trip Generation Report. A Trip Generation Report is a calculation of the total number of projected trips generated by a development. This information can be provided on the Cover Sheet of the development plans or as a separate calculation (include project name, phase, and date on firm/company letterhead). Each land use within a development generates a unique trip rate. The unit rates for trip projections shall be based on the latest edition of ITE Trip Generation Manual. The total trips are disbursed into left and right turns into the development at each entry point. The distribution of entry volumes is assumed to be 50% of the total trips for the left and right turn movement. Distribution of entry volumes less or greater than 50% will be considered only when distributions from existing peripheral developments of similar use(s) can be analyzed for validation purposes. Uneven distribution of entry volumes can be introduced for consideration by both the developer and the County.

If the Trip Generation Report is acceptable to the County and the turning volume at each entry point is equal to or greater than the lowest threshold values in Table 1 or 2, as applicable, then the developer shall be required to submit a Traffic Study. To determine if the lowest threshold value is met, select Table 1 or 2 as applicable for the turning movement. Select the appropriate Posted Speed Limit value for the development frontage. If the projected turn value is greater than or equal to the lowest value under the appropriate Lane Route column, then further study is required in the form of a Traffic Study. All applicants that submit for a Conceptual Design application shall be required to submit at a minimum a review/analysis of access in the form of a Traffic Study.

TRAFFIC STUDY: The Traffic Study shall meet the requirements as outlined in the Traffic Study Requirements, Checklist A-1. The Traffic Study is not considered final or approved until the County has reviewed the study, any and all revisions are made to the satisfaction of the County, and the County issues a written or stamped approval of the study to the applicant/engineer.

TURN LANE WARRANTS: Left turn lanes (LTL) and right turn lanes (RTL) shall be provided into each subdivision street or project driveway that accesses a Collector or Arterial if the

Average Daily Traffic (ADT) on the Collector or Arterial and the number of turning vehicles meet or exceed the amounts shown in Table 1 or 2, as applicable. The County may require the addition of a LTL or RTL, even when the conditions in Table 1 or 2 are not met, if roadway geometry or field conditions indicate that the safety of the traveling public would be improved. The County may also waive or alter a turn lane requirement if field conditions or other factors indicate that it is in the best interest of the County to do so. Any recommendation to add or waive a turn lane shall be reviewed for approval by the County Engineer anddocumented in the project file.

TRAFFIC PHASING: Each subsequent phase of development beyond the initial phase requires an updated Traffic Study unless the developer agrees to install the Project Access Improvements for all phases under the initial phase. In this case, if at any time the current phase of development combined with previous developments is found to generate more traffic than the approved master plan used to determinethe initial lane requirements, additional Project Access Improvements may be required as determined by the updated Traffic Study. The County may also require an updated Traffic Study if the study performed under the conceptual design phase is no longer valid due to change in development layout or older than 2years from previous approval.

TRAFFIC IMPACT STUDY: When a development is expected to produce more than 2,500 trips per day, the County reserves the right to require a Traffic Impact Study. The Traffic Impact Study shall meet the requirements as outlined in Traffic Impact Study Requirements, Checklist A-2. The Traffic Impact Study is not considered final or approved until the County has reviewed the study, any and all revisions are made to the satisfaction of the County, and the County issues a written or stamped approval of the study to the applicant/engineer. A Traffic Impact Study may also be required at the discretion of the Engineering Division where site conditions indicate any potential issues.

C. LEFT TURN LANES

LTL DESIGN CRITERIA: The basic design elements of left turn lanes are illustrated in Figures 1 and 2. Figure 1 is for a symmetrical widening about the centerline of the road, and Figure 2 is for an unsymmetrical widening. Every effort should be made to obtain the approach, departure and bay taper lengths shown on these figures. However, Columbia County recognizes that prevailing field conditions might influence the length of tapers that can be reasonably achieved. Therefore, with the prior approval of Columbia County, these taper lengths may be adjusted to match the prevailing field conditions.

STORAGE LANE LENGTH: The required length of full width storage lane provided shall be based on the daily turning volumes and the design vehicle length. This must be determined in the developer's Traffic Study. Use 25 feet of storage for passenger cars, 35 feet for Single Unit Trucks (SU), 50 for WB-40 trucks, 60 feet for WB-50 and 75 feet for WB 62 trucks. Refer to AASHTO A Policy on Geometric Design of Highways and Streets for other vehicle lengths. For un-signalized/stop-controlled intersections the storage lane length shall, typically, be based on the number of design vehicles arriving during a two-minute period within the peak hour. Similarly, for signalized intersections, the storage length shall, typically, be sufficient to accommodate the number of design vehicles arriving during 1.5 signal cycles duringthe peak hour. The minimum storage lane length shall be 100 feet on Collector Roads and 150 feet on Arterial Roads. Other storage lane lengths may be used with the prior approval of Columbia County.

LTL CURB AND GUTTER: In general, curb and gutter will not be required in the construction of leftturn lanes. However, any existing curb and gutter disturbed or removed by left turn lane construction shall be replaced. In some cases, curb and gutter may be necessary due to right-of-way limitations, drainage considerations or physical constraints or conditions where its installation would be appropriate.

SHOULDER WIDTH: Shoulder width shall be ten feet from back of curb or edge of pavement. However, consideration for a reduced shoulder width may be given due to right-of-way limitations or field conditions but in no case shall be less than 6'.

If curb and gutter is not required, the first two feet of the shoulder shall be paved using the same pavement section and cross slope as the adjacent pavement.

EXISTING CROSS DRIVEWAYS/STREETS: If a new project that requires a LTL has an access driveway or street that aligns with an existing development driveway/street, the existing development driveway/street does not have a LTL, and the County determines through its own Trip Generation Report that the driveway warrants a LTL, then the developer shall be responsible for providing a LTL forboth driveways/streets. The minimum requirements for storage and taper lengths will be allowed for the existing driveway. Other existing development driveways/streets (either on the same or oppositeside of the street as the project driveway/street) that fall within the construction limit of the LTL will be handled on a case by case basis.

DIVIDED ROADWAYS: Developments on roadways divided by an existing median will not be required to install a LTL in the median. Such developments may request a median break. If the median break is approved by Columbia County, a left turn lane shall be constructed. If the development access point aligns with an existing access point on the opposite side of the roadway, or if directed by Columbia County, a LTLshall also be constructed for opposing traffic.

ADDITIONAL LEFT TURN LANES: Dual left turn lanes may be needed to satisfy high volume demands. Capacity analysis should be used to identify the need for dual left turn lanes. Dual left turn laneswill be considered when the peak hour left turn volume is 300 vehicles or greater.

D. RIGHT TURN LANES

RTL DESIGN CRITERIA: Table 3 contains guidelines for lengths of taper and full-width RTL. The taper length in Table 3 applies to right turn lanes only. When traffic studies are conducted, the length ofthe full-width lane needed for storage must be determined. If the length of full-width storage is greater than the length of full-width storage shown in Table 3, the longer length shall be provided.

Like LTL storage, the RTL storage is dependent on the type of traffic control in effect. At signalized intersections, the amount of storage shall be based on the number of vehicles arriving during 1.5 signal cycles. Minimal storage is required for right turn lanes at unsignalized intersections, so Table 3 will likely apply.

RTL CURB AND GUTTER: All right turn lanes (RTL) shall be provided with 24" vertical face curb and gutter provided the subdivision or non-subdivision development proposes or contains existing curb &gutter streets and/or parking lots. If the subdivision or non-subdivision development does not propose orcontain existing curb & gutter along its streets and/or parking lots, then the RTL curb and gutter requirement may be waived.

SHOULDER WIDTH: Shoulder width shall be ten feet from back of curb.

E. ALL WIDENING OF COUNTY ROADWAYS FOR PROJECT ACCESS IMPROVEMENTS

DITCH INVERTS: Ditch inverts shall be 2' flat bottom. V-bottom ditch inverts form flat channels over time which steepen the side walls along the channel bottom. This condition inhibits channel vegetation and limits the use of conventional mowing and maintenance equipment.

DITCH FRONT AND BACK SLOPES: Ditch front and back slopes should be designed at 4:1 slopeswhich is the maximum slope allowed using conventional mowing and maintenance equipment. Steeper slopes result in increased maintenance labor and unsafe roadside working conditions for the maintenance crews. Subdivision entrances should be designed to provide for the best possible landscape and maintenance environment along its entire main road frontage, not just at the driveway.

CLEAR ZONE: Clear Zone requirements on roads widened for construction of Project Access Improvements shall be in accordance with American Association of State Highway and Transportation Officials Roadside Design Guide, latest edition. If warranted by traffic volume, posted speed limit and field conditions, Columbia County may require a greater clear zone dependent upon the availability of existing right-of-way.

The Clear Zone should be clear of obstructions such as poles, guy wires, and trees. Obstructions shall be removed from the Clear Zone as directed by the Columbia County at no cost to the County. If obstructions are unavoidable, appropriate protection such as breakaway poles, guardrail, and safety end treatment on culverts shall be used as directed by Columbia County.

RIGHT-OF-WAY/EASEMENTS: Any offsite right-of-way and/or easements required for lane improvement construction shall be acquired by the developer at no expense to the County. If the developer demonstrates that he has made a determined effort, but is unable to acquire the necessary right-of-way and/or easements, Columbia County may initiate acquisition proceedings, at the expense of the developer, after authorization by the Board of Commissioners.

In the event that the developer is unable to negotiate acquisition of the necessary right-of-way and easements prior to completion of the project site work, Columbia County would not object to acceptance of the Final Plat, provided the developer submits a Performance Bond for a minimum twenty four month period for 150% of the total project cost, including, but not limited to, engineering, right-of-way and/or easement acquisition, utility adjustments, and furnishing and installing all materials. The developer will be responsible for providing the cost estimate for review and approval by the Columbia County.

MULTIPLE ENTRY POINTS: Each entry point for a development shall be considered individually in the determination of the requirement for Project Access Improvements along a County roadway, based upon a reasonable distribution of entry volumes among the entry points. LTL and/or RTL will be require dat any entry point that meets the thresholds in Table 1 and 2, as applicable.

EXISTING DRIVEWAYS/STREETS: Instances may arise where an existing driveway will be used to access a site/property that will be redeveloped or expanded. For an expansion, if the traffic generated by the existing land use, plus the traffic generated by the expansion, meet the thresholds in Table 1 and 2, as applicable, then a RTL and/or LTL will be required and shall meet the requirements contained herein. For a redevelopment, the traffic generated by the new land use shall be used to determine the RTL and/or LTL requirement.

PHASED DEVELOPMENTS: In the event that a phased development is proposed, and the first phase(s) of the development does (do) not meet the requirements of Table 1 and 2, as applicable, the developer will not be required to install a RTL and/or LTL with the first phase. However, when the development meets the thresholds in the Tables, the RTL and/or LTL will be required and shall meet the requirements contained herein. In the case of deferring RTL and LTL to future phases, the guidelines shall apply to each phase that has a connection to the initial phase. The guidelines shall also apply to the developer of each phase. In any case, the developer will be encouraged to install the RTL and/or LTL during the earlier stages of the development.

COORDINATION WITH COLUMBIA COUNTY PROJECTS: A development requiring any lane construction on a roadway with a planned Columbia County improvement project will require coordination with the County. At the option of Columbia County, an equivalent amount of funds, in lieu of the left turn lane construction, will be deposited with Columbia County for its use in the construction of the left turn lane during the Columbia County improvement project.

COORDINATION WITH PLANNED BICYCLE CORRIDORS: A development requiring the Project Access Improvements to a County roadway along a designated bicycle route, as defined by the Augusta Regional Transportation Study (ARTS) Bicycle and Pedestrian Plan (current edition), will require additional 4’ wide bike lanes or paved shoulder to meet the goals of the study. For dedicated bike lane routes, the lane shall be provided on one side for RTL-only projects and both sides for LTL improvement projects. The master plan is available from the Columbia County website under the Engineering Division webpage. The paving section of the bike lane(s) shall use the same pavement section and cross slope as the adjacent pavement. Pavement markings and signage shall be in accordance with Georgia DOT and MUTCD latest standards.

ROUNDABOUT INTERSECTIONS: Columbia County recognizes that the roundabout is the preferred safety alternative for new intersections when placed in the appropriate location and designed properly for the local conditions. For projects meeting the requirements of a Traffic Impact Study or a project intersection meeting the warrants for a signalized intersection, the roundabout must be considered as an alternative to turn lane access facilities or signalized intersections.

Roundabouts may not operate well if there is too much traffic entering the intersection or if the percentageof traffic on the major road is too high. Candidate intersections shall be analyzed to determine whether a roundabout will perform acceptably. Shown below are thresholds to determine if a roundabout capacity analysis is required:

Roundabout Selection Criteria		
# of Circulatory Lanes	*** ADT**	**** % traffic on Major Road**
Single-lane	< 25,000	< 90
Two-lane	< 45,000	< 90

** Based on traffic entering the circulatory roadway for a four-legged roundabout. A reasonable approximation for a three-legged roundabout is 75% of the values shown above.*

** The current amount of traffic in all directions on the county road(s) plus the current amount of traffic from the existing cross driveway (if applicable) plus the projected amount of traffic from the development at buildout.*

*** The volume of the traffic entering the roundabout from the Major Road divided by the total traffic volume entering the roundabout, as a percentage.*

Other things to consider when evaluating roundabouts as an alternative are Right of Way, sight distance, environmental impacts, and access to adjacent properties.

GDOT Design Policy Manual, Chapter 8 Roundabouts, and NCHRP 672 shall serve as the primary resources used by the County for validation criteria and design guidelines.

Minimum Requirements for Left Turn Lanes

TABLE 1

Left Turn Lane Criteria

Posted Speed Limit (mph)	2 Lane Routes (ADT)		More Than 2 Lanes on Main Road (ADT)	
	<6000	≥6000	<10000	≥10000
30 to 35	300 LTV/day	200 LTV/day	400 LTV/day	300 LTV/day
40 to 50	250 LTV/day	175 LTV/day	325 LTV/day	250 LTV/day
≥55	200 LTV/day	150 LTV/day	250 LTV/day	200 LTV/day

LTV/day – Left turning vehicles entering development per day over a 24 hour period

Minimum Requirements for Right Turn Lanes

TABLE 2

Right Turn Lane Criteria

Posted Speed Limit (mph)	2 Lane Routes (ADT)		More Than 2 Lanes on Main Road (ADT)	
	<6000	≥6000	<10000	≥10000
35 or less	200 RTV/day	100 RTV/day	200 RTV/day	100 RTV/day
40 to 50	150 RTV/day	75 RTV/day	150 RTV/day	75 RTV/day
≥55	100 RTV/day	50 RTV/day	100 RTV/day	50 RTV/day

RTV/day – Right turning vehicles entering development per day over a 24 hour period

TABLE 3

Minimum RTL Storage and Taper Lengths

Posted Speed Limit (mph)	*Minimum Full Width Storage (ft)	*Minimum Taper Length (ft)
25		50
30	75	50
35	100	50
40	150	50
45	175	100
50	225	100
55	250	100

* Storage and taper lengths are determined in the traffic study. These are the minimum lengths allowed.

CHECKLIST A-9

Traffic Study Requirements

Contact the Engineering Division at (706) 868-4223 to discuss scope of study prior to collecting any data.

All applicants that submit for a Conceptual Design application shall be required to submit at a minimum a review/analysis of access.

A proposed use that generates 2,400 or more trips per day for the overall development (all uses combined) shall be required to submit a full Traffic Impact Study.

A Traffic Impact Study may also be required at the discretion of the Engineering Division where site conditions indicate any potential issues.

Review/Analysis of access includes the following:

1. A vicinity map showing location of the proposed development in relation to the transportation system.
2. A description and site plan of proposed use/development including size and nature of the entire proposed development and proposed site access points (include spacing).
3. Average Daily Traffic volumes on existing roads at or near proposed access point(s) measured within the last 24 months (check with the County or State as they may have applicable count data available).
4. Safety analysis of proposed site access including stopping sight distance, intersection sight distance, and operational characteristics.
5. Trip generation from ITE latest edition and proposed distribution percentages.
6. Turn lane warrants and analysis based on Columbia County's Criteria and Guidelines for Project Access Improvements on County Roadways.
7. Driveway analysis including lane configuration, throat length and channelization.
8. Parking needs, required and provided spaces.
9. Appendix to include applicable raw count data, calculation sheets, and sight distance profile.
10. A Signal Warrant Analysis per Georgia DOT standards and criteria may be required at the discretion of the County Engineer.

CHECKLIST A-2

Traffic Impact Study Requirements

A proposed use that generates 2,400 or more trips per day for the overall development (all uses combined) shall be required to submit a full Traffic Impact Study.

A Traffic Impact Study may also be required at the discretion of the Engineering Division where site conditions indicate any potential issues or where stipulated as a condition of a rezoning.

A Traffic Impact Study shall include the following:

1. Report shall be prepared and stamped by a Professional Engineer.
2. A vicinity map showing location of the proposed development in relation to the transportation system.
3. A description of proposed development including size and nature of the entire proposed development and proposed site access points
4. A proposed site plan.
5. A description of adjacent land uses and roadway network including road names, classifications, lane configurations, traffic control and pedestrian, bicycle and transit facilities.
6. Traffic volumes on existing roads at proposed access point measured within the last 24 months.
7. Operational analysis including average delay, level of service, volumes/capacity ratios, and queue length analysis of: Intersection of site access and main road and any additional study intersection(s).
8. Accident data summary and analysis (data may be obtained from the County).
9. Safety analysis of proposed site access including stopping sight distance, intersection sight distance, and operational characteristics.
10. Growth factor based on historical count data in the area.
11. Future no build base year volumes and performance evaluation.
12. Future no build horizon year (5 yrs beyond base year) volumes and performance evaluation.
13. State any assumptions including passby and internal capture.
14. Trip generation from ITE latest edition.
15. Trip distribution show distribution percentages and volumes.

16. Intersection evaluation based on the Roundabout Selection Criteria (refer to PAI policy). If the intersection meets the selection criteria, a roundabout capacity analysis using the latest version of Georgia DOT's Roundabout Analysis Tool is required. Contact the County for further guidance.
17. Access location and spacing.
18. Turn lane warrants and analysis.
19. Driveway analysis including lane configuration, queue lengths, throat length and channelization.
20. Future build base year volumes and performance evaluation.
21. Future build conditions horizon year (5 yrs beyond base year) volumes and performance evaluation.
22. Parking needs, required and provided spaces.
23. Description and analysis of mitigation measures.
24. A Signal Warrant Analysis per Georgia DOT standards and criteria may be required at the discretion of the County Engineer.
25. Appendix to include applicable raw count data, calculation sheets, computer software output of performance evaluation, and warrant worksheets.

SPEED LIMIT	"L"	"B"	"S"
30 MPH	90'	50'	*
35 MPH	125'	50'	*
40 MPH	160'	50'	*
45 MPH	270'	100'	*
50 MPH	300'	100'	*
55 MPH	330'	100'	*

* DETERMINED BY THE TRAFFIC STUDY.
100' **MINIMUM** ON COLLECTOR ROADS AND 150' MINIMUM ON ARTERIAL ROADS.

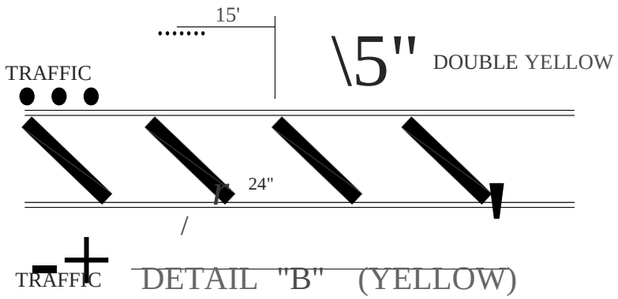
THE ABOVE TABLE AND THE DRAWING BELOW ARE BASED ON A SYMMETRICAL WIDENING OF SIX FEET (6') ABOUT THE CENTERLINE OF THE EXISTING ROAD.

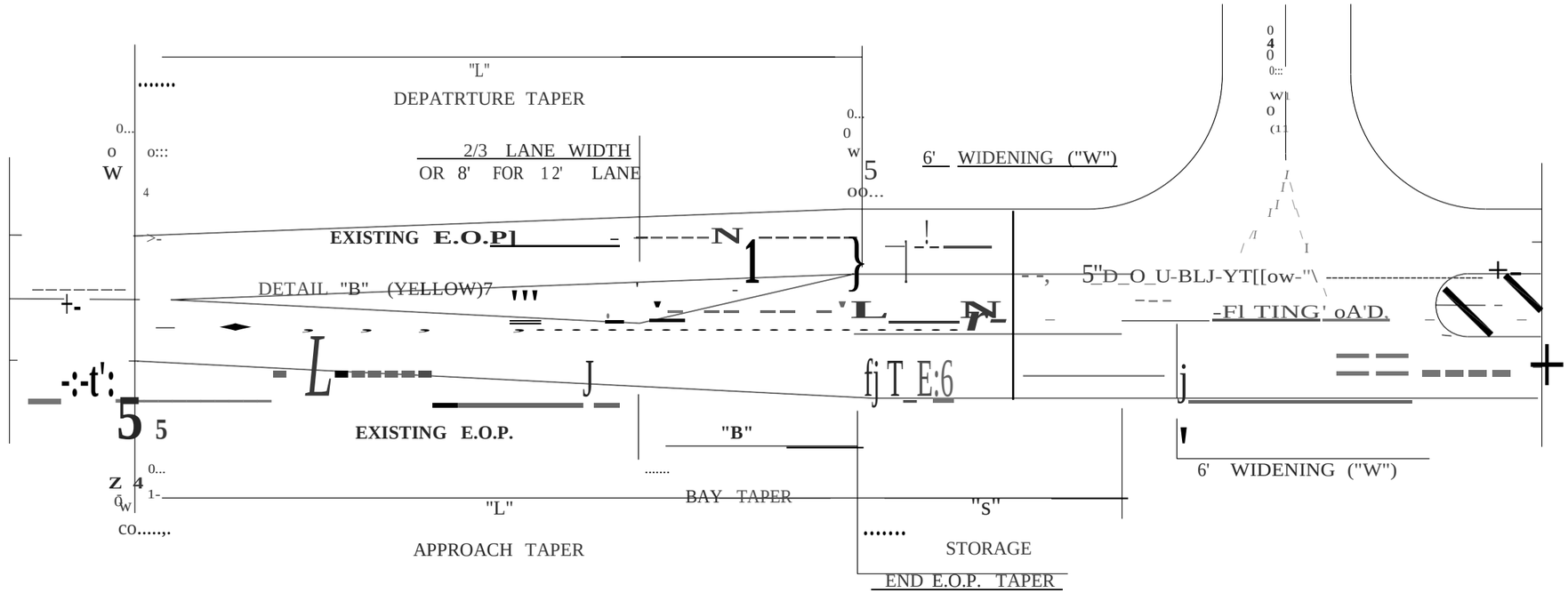
MINIMUM LANE SHIFT TAPER LENGTHS FOR CENTER LEFT TURN LANES AREBASED ON THE FOLLOWING EQUATIONS:

1. FOR POSTED SPPEDS LESS THAN OR EQUAL TO 40 MPH, L=WS**2/60.
2. FOR POSTED SPEEDS EQUAL TO OR GREATER THAN 45 MPH, L=WS.

WHERE: L= MINIMUM TAPER LENGTH
W = WIDTH OF THE OFFSET FROM CENTERLINE AND/ORTHE EDGE OF PAVEMENT.
S = POSTED SPEED LIMIT

S**2 = SPEED RAISED TO THE POWER OF 2





MINIMUM DESIGN ELEMENTS OF LEFT TURN LANES (SYMMETRICAL WIDENING ABOUT THE CENTERLINE)

BY	REVISION	DATE

COLUMBIA COUNTY
ENGINEERING SERVICES DIVISION
STANDARD DRAWING

Figure 1 - Symmetrical Widening of Left Turn Lanes

DATE: XXXXXX 2014

SHEET: XXX

SPEED LIMIT	"L"	"B"	"S"
30 MPH	180'	50'	*
35 MPH	250'	50'	*
40 MPH	320'	50'	*
45 MPH	540'	100'	*
50 MPH	600'	100'	*
55 MPH	660'	100'	*

* DETERMINED BY THE TRAFFIC STUDY.

100' MINIMUM ON COLLECTOR ROADS AND
150' MINIMUM ON ARTERIAL ROADS.

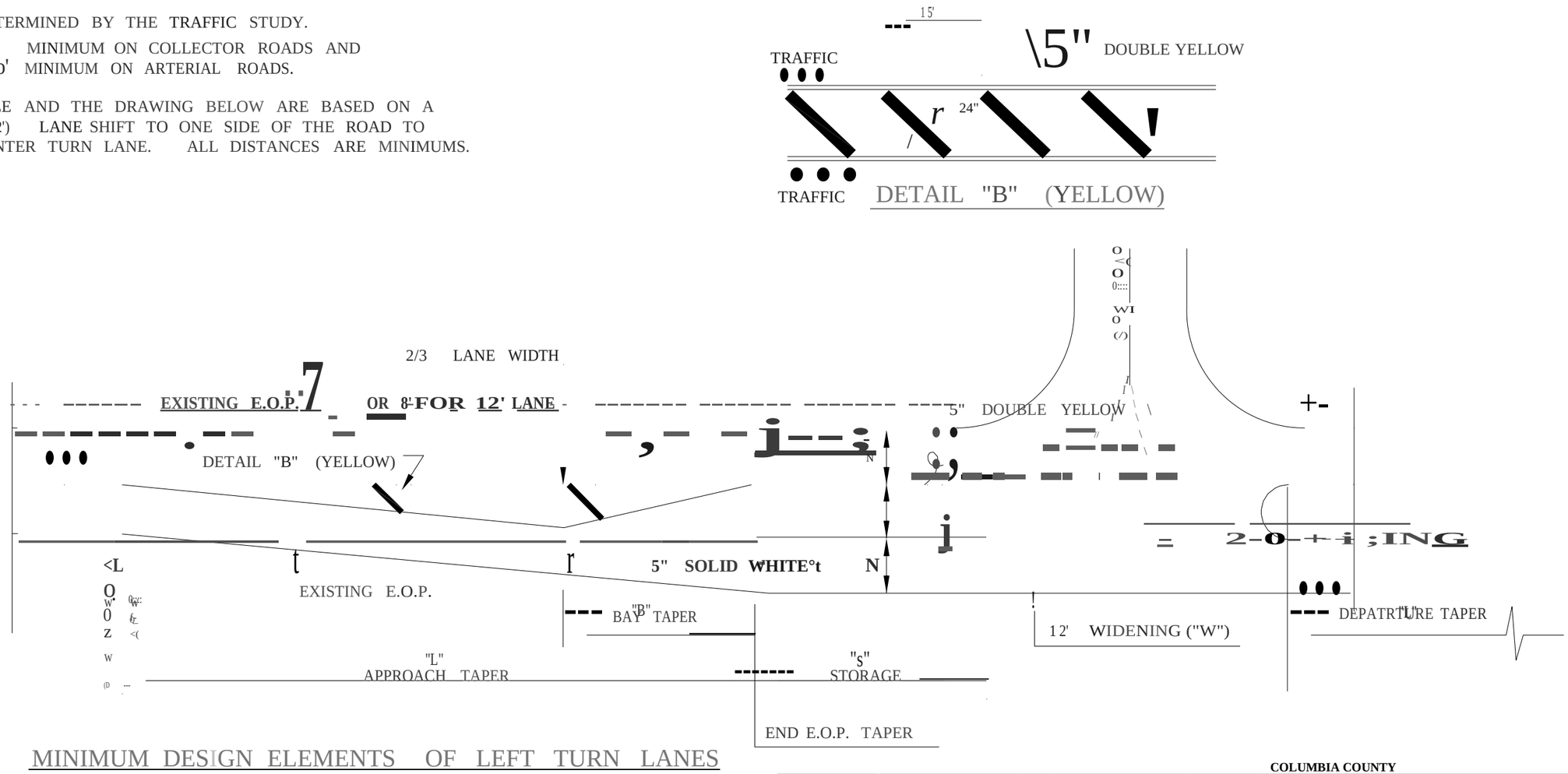
THE ABOVE TABLE AND THE DRAWING BELOW ARE BASED ON A TWELVE FOOT (12') LANE SHIFT TO ONE SIDE OF THE ROAD TO PROVIDE THE CENTER TURN LANE. ALL DISTANCES ARE MINIMUMS.

MINIMUM LANE SHIFT TAPER LENGTHS FOR CENTER LEFT TURN LANES AREBASED ON THE FOLLOWING EQUATIONS:

1. FOR POSTED SPPEDS LESS THAN OR EQUAL TO 40 MPH, L=WS**2/60.
2. FOR POSTED SPEEDS EQUAL TO OR GREATER THAN 45 MPH, L=WS.

WHERE: L= MINIMUM TAPER LENGTH
W = WIDTH OF THE OFFSET FROM CENTERLINE AND/ORTHE EDGE OF PAVEMENT.
S = POSTED SPEED LIMIT

S**2 = SPEED RAISED TO THE POWER OF 2



MINIMUM DESIGN ELEMENTS OF LEFT TURN LANES

(UNSYMMETRICAL WIDENING)

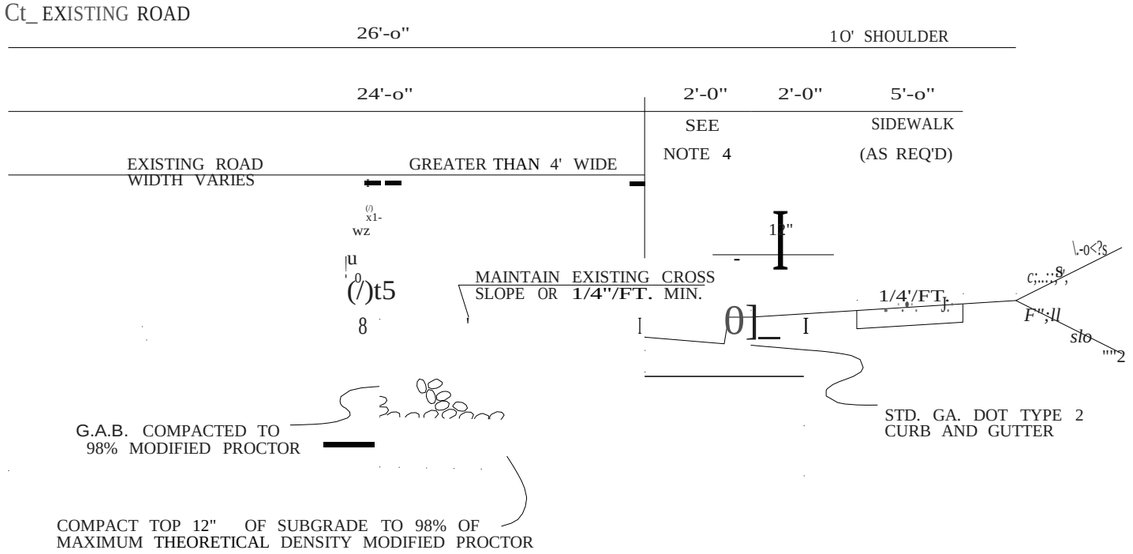
BY	REVISION	DATE

COLUMBIA COUNTY
ENGINEERING SERVICES DIVISION
STANDARD DRAW-ING

Figure 2 - Unsymmetrical Widening of Left Turn Lanes

DATE: XXXXXX 2014 SHEET: XXX

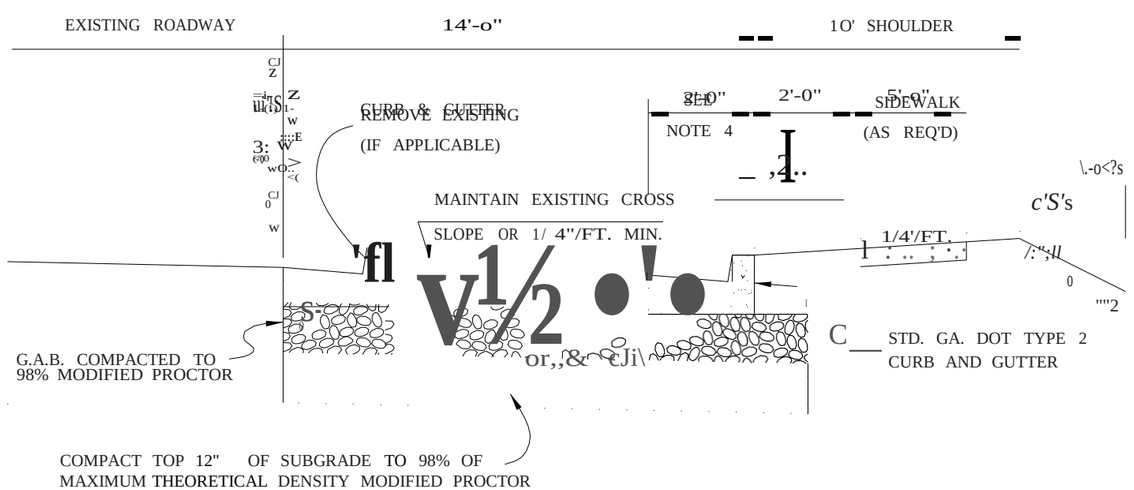
Ct_ EXISTING ROAD



TYPICAL DECELERATION LANE SECTION FOR ROAD WITHOUT EXISTING CURB AND GUTTER

(GREATER THAN 4' WIDE)

([_ EXISTING ROAD



TYPICAL DECELERATION LANE SECTION FOR ROADS WITH EXISTING CURB AND GUTTER

(GREATER THAN 4' WIDE)

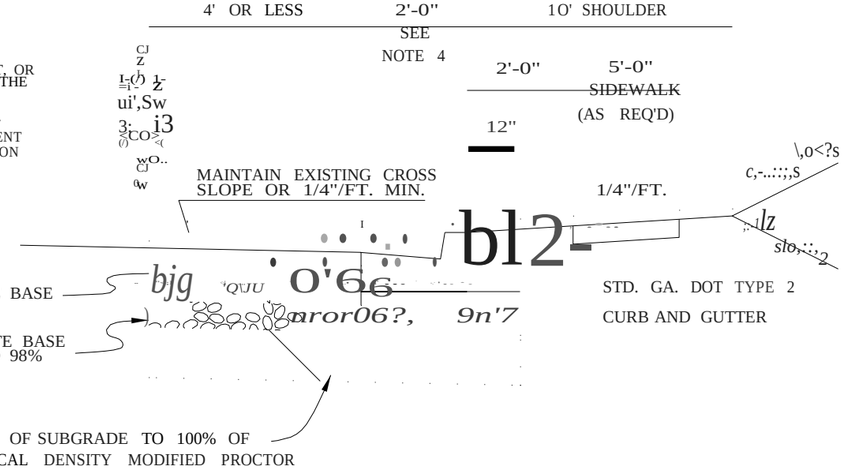
MINIMUM PAVEMENT STRUCTUAL SECTIONS (SEE NOTE 6)				
ROAD CLASSIFICATION	G.A.B.	25 MM SP	19 MM SP	12.5 MM OR 9.5 MM SP
PRINCIPAL ARTERIAL	10"	2-1/2"	2-1/2"	1-1/2"
MAJOR ARTERIAL	10"	------	4"	1-1/2"
MINOR ARTERIAL	10"	------	3"	1-1/2"
MAJOR COLLECTOR	10"	------	3"	1-1/2"
MINOR COLLECTOR	8"	------	2"	1-1/2"

ABBREVIATIONS

G.A.B. GRADED AGGREGATE BASE
SP SUPERPAVE ASPHALTIC CONCRETE

NOTES

1. IF A DELAY IN PAVING IS EXPECTED BY THE DEVELOPER OR THE COUNTY, THE STONE BASE MATERIAL MAY BE PRIMED. PRIME COATS SHALL BE APPLIED IN ACCORDANCE WITH THE GDOT STANDARD SPECIFICAIOTNS, LATEST EDITIONS.
2. A BITUMINOUS TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF ASPHALTIC CONCRETE ANDON FACE OF SAW CUT ASPHALT EDGE AND CONCRETE GUTTER. TACK COAT SHALL BE ASPHALT CEMENT, VISCOSITY GRADE AC-10, AC-15, AC-20, OR AC-30. APPLICATION RATE SHALL BE 0.05 GAL/SY OR AS DIRECTED BY ENGINEER. TACK COATS SHALL BE APPLIED IN ACCORDANCE WITH THE GEORGIA D.O.T. STANDARD SPECIFICATIONS, LATEST EDITIONS.
3. USE 30"CURB AND GUTTER ON MAJOR AND PRINCIPAL ARTERIALS OR MATCH EXISTING.
4. A GDOT TYPE lll FLUME, HOOD BACK INLET, OR CATCH BASIN IS REQUIRED AT THE END OF THE NEW CURB SECTION IF AN EXISTING DITCH SECTION IS PRESENT IN THE RIGHT-OF-WAY.
5. THESE ARE THE MINIMUM REQUIRED PAVEMENT SECTIONS. MATCH EXISTING PAVEMENT SECTION IF GREATER.



TYPICAL WIDENING SECTION (LESS THAN 4' WIDE)

LOCAL STREETS, MAJOR AND MINOR COLLECTORS, AND ALL ARTERIALS

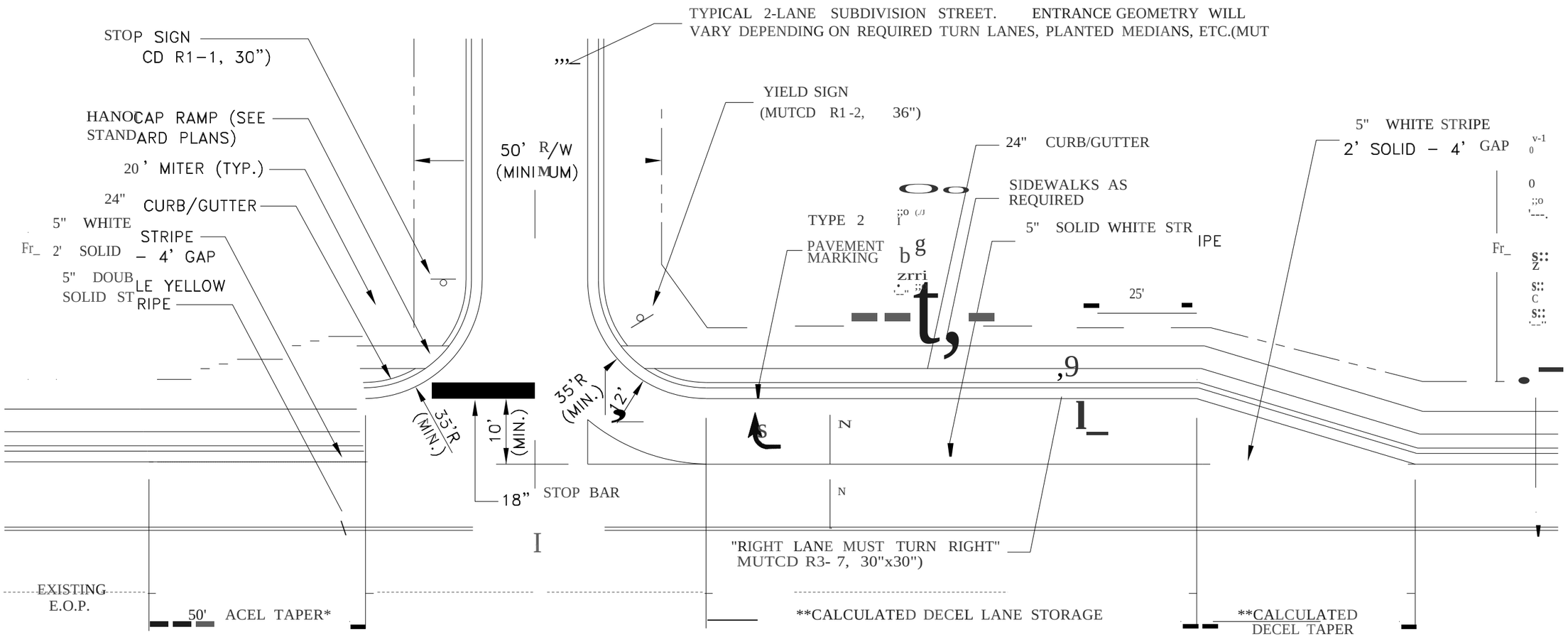
1-1/2" 12.5 **MM** OR 9.5 **MM** SUPERPAVE ASPHALTIC CONCRTE
5" 3000 PSI CONCRETE BASE (LOCAL STREETSAND MINOR COLLECTORS) OR
7" 3000 PSI CONCRETE BASE (MAJOR COLLECTORS AND ARTERIALS)

BY	REVISION	DATE

COLUMBIA COUNTY
ENGINEERING SERVICES DIVISION
STANDARD DRAING

Roadway Widening Sections

DATE: XXXXXX 2014 SHEET: XXX



* NOTE: ACEL TAPERS ARE NOT CURBED WHEN JOINING AN UNCURBED ROAD

SHOW THE FOLLOWING NOTES ON THE APPROVED PLANS:

A.) SIGNING, STRIPING, MARKING AND HIGH LEVEL WARNING DEVICES TO BE PLACED AS SHOWN AND/OR AS DIRECTED BY THE COLUMBIA COUNTY TRAFFIC ENGINEER AND/OR COLUMBIA COUNTY INSPECTOR. THIS TRAFFIC CONTROL PLAN IS SUBJECT TO CHANGE BY THE COLUMBIA COUNTY TRAFFIC ENGINEER.

B.) WARNING DEVICES SHALL BE PLACED PRIOR TO THE COMMENCEMENT OF ANY ROAD IMPROVEMENT WORK ON COUNTY ROADS AND SHALL REMAIN IN PLACE UNTIL THE CONCLUSION OF ALL SIGNING AND STRIPING WORK.

C.) ALL WARNING DEVICES SHALL BE EITHER TYPE 1 BARRICADES OR DRUMS WITH WARNING LIGHTS ON EVERY OTHER DEVICE, AND SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND COLUMBIA COUNTY FOR COLOR, SIZE, REFLECTIVITY, HEIGHT, ANDPLACEMENT.

D.) MAXIMUM SPACING OF WARNING DEVICES SHALL BE EQUAL TO THE POSTED SPEED OF THE ROAD IN M.P.H. (I.E. 30 FT SPACING FOR 30 M.P.H. SPEED LIMIT).

E.) ALL SIGNS SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS FOR COLOR, SIZE, REFLECTIVITY, HEIGHT AND PLACEMENT.

F.) STRIPING (WHITE AND YELLOW) AND ARROW MARKING SHALL BE APPLIED USING GEORGIA D.O.T.STANDARD THERMOPLASTIC.

G.) CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, OR OVERLAY AS SPECIFIED BY THECOLUMBIA COUNTY TRAFFIC ENGINEER OR INSPECTOR.

H.) ALL SIGNS MUST BE INSTALLED CONCURRENTLY WITH THE PERFORMANCE OF THE STRIPING WORK.

** NOTES:

1. AS DETERMINED BY THE APPLICANT'S FINAL COLUMBIA COUNTY APPROVED TRAFFIC STUDY.
2. DECEL TAPERS ARE NOT CURBED WHEN ADJOINING AN UNCURBED ROAD.

BY	REVISION	DATE

COLUMBIA COUNTY
ENGINEERING SERVICES DIVISION
STANDARD DRAW-ING

Deceleration Lane

DATE: 2014 SHEET: